

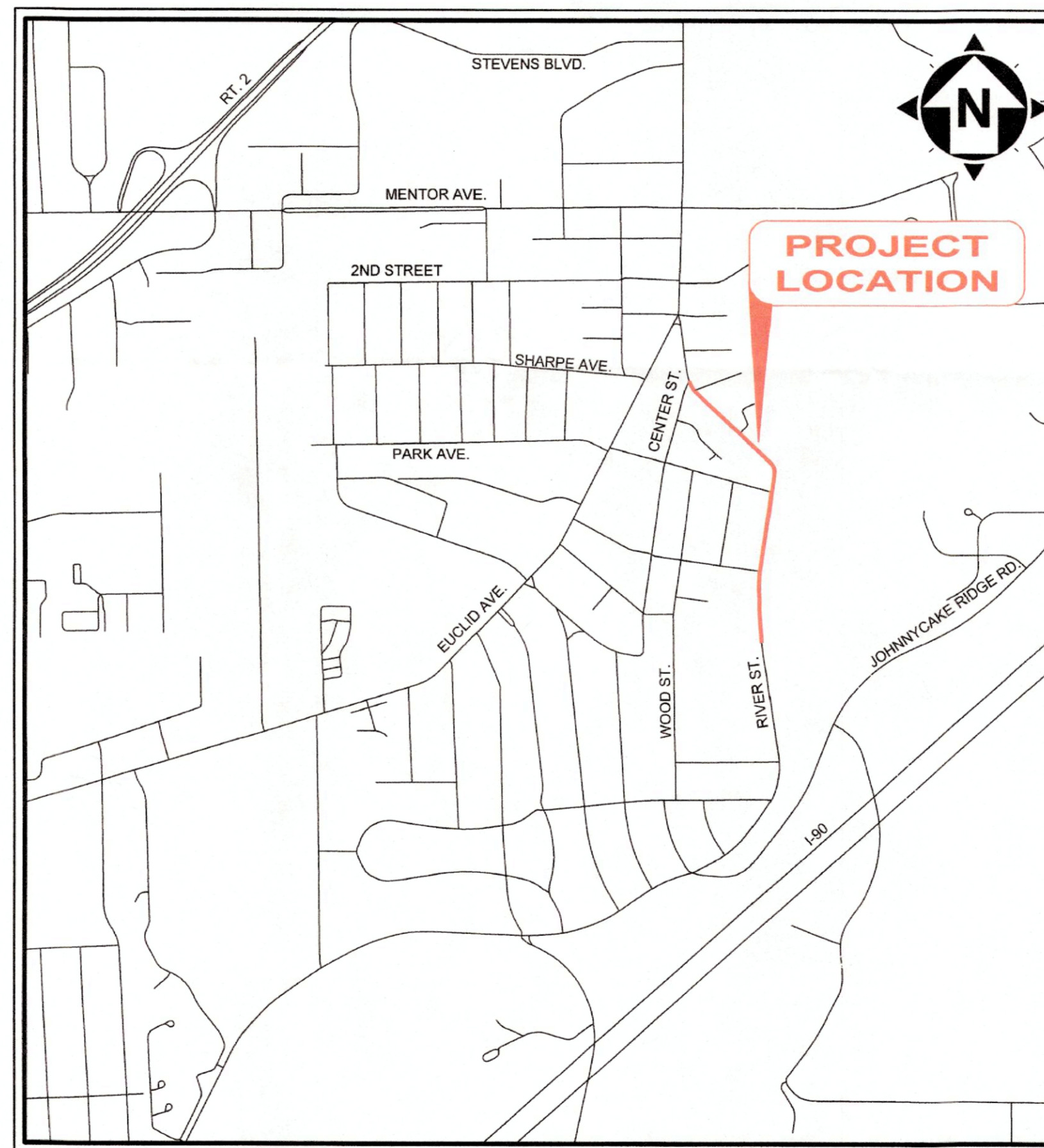
RIVER STREET WATERLINE REPLACEMENT

CITY OF WILLOUGHBY LC IMPROVEMENT #475W-2023 LAKE COUNTY BOARD OF COMMISSIONERS LAKE COUNTY DEPARTMENT OF UTILITIES LAKE COUNTY, OHIO PART A

AUGUST 2024



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LOCATION MAP
NOT TO SCALE

APPROVALS

BOARD OF LAKE COUNTY COMMISSIONERS:

	10-3-24
PRESIDENT JOHN T. PLECNIK	DATE
	10-3-2024
COMMISSIONER JOHN R. HAMERCHECK	DATE
	10-3-24
COMMISSIONER RICHARD J. REGOVICH	DATE

LAKE COUNTY SANITARY ENGINEER

	9/19/2024
ENGINEER RANDALL J. ROTHLSBERGER, P.E.	DATE

LAKE COUNTY UTILITIES SPECIFICATIONS

UNLESS OTHERWISE INDICATED IN THE PLANS AND SPECIFICATIONS, THE WATER WORK SHALL BE GOVERNED BY THE LAKE COUNTY DEPARTMENT OF UTILITIES RULES AND REGULATIONS.

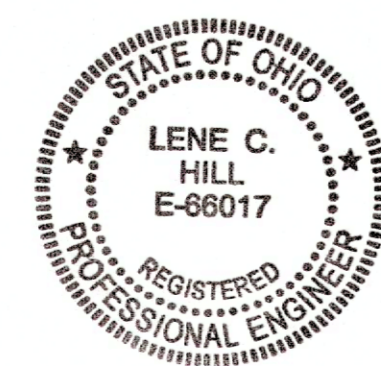


1-800-362-2764

CALL TWO WORKING DAYS BEFORE YOU DIG (NON MEMBERS MUST BE CALLED DIRECTLY)

NOTE:

THE SURVEY SHOWN ON THESE PLANS WAS OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR ANY OTHER PURPOSE.



8/8/2024
DATE



LENE C. HILL P.E. No. 66017

ENGINEER'S PROJECT No. 231956

NOTE:

THESE PLANS WILL BE MOST EASILY READABLE WHEN VIEWED IN COLOR

PRE-CONSTRUCTION MEETING:

1. A PRE-CONSTRUCTION MEETING SHALL BE HELD 14 DAYS PRIOR TO CONSTRUCTION WITH THE LAKE COUNTY DEPARTMENT OF UTILITIES AND THE CITY OF WILLOUGHBY.

GENERAL NOTES:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR SECURING A SITE FOR DISPOSAL OF ALL EXCAVATED MATERIAL THAT IS UNSUITABLE FOR USE AS BACKFILL AND ALL OTHER EXCESS EXCAVATED MATERIALS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH THE LOCATION OF THE DISPOSAL SITE AND WRITTEN PERMISSION FOR USE OF THE SITE FROM THE PROPERTY OWNER. THE COST FOR SECURING AND MAINTAINING THE DISPOSAL SITE WILL BE INCLUDED IN THE UNIT PRICES STIPULATED FOR THE VARIOUS ITEMS IN THE BID PROPOSAL.
2. ALL OVER-THE-ROAD VEHICLES USED ON THE PROJECT BY ALL CONTRACTORS AND SUB-CONTRACTORS WILL BE CLEARLY MARKED SHOWING ITS COMPANY AFFILIATION.
3. BEFORE LAKE COUNTY WILL APPROVE AND ACCEPT THE WORK AND RELEASE THE GUARANTY RETAINER, THE CONTRACTOR WILL FURNISH LAKE COUNTY A WRITTEN REPORT INDICATING THE RESOLUTION OF ANY AND ALL PROPERTY DAMAGE CLAIMS FILED WITH THE CONTRACTOR BY ANY PART DURING THE CONSTRUCTION PERIOD. THE INFORMATION TO BE SUPPLIED SHALL INCLUDE, BUT NOT BE LIMITED TO, NAME OF CLAIMANT, DATE FILED WITH CONTRACTOR, NAME OF INSURANCE COMPANY AND/OR ADJUSTER HANDLING CLAIM, HOW CLAIM WAS RESOLVED AND IF CLAIM WAS NOT RESOLVED FOR THE FULL AMOUNT, A STATEMENT INDICATING THE REASON FOR SUCH ACTION.
4. THE SURVEY AND ROADWAY ALIGNMENT SHOWN ON THESE PLANS WAS OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY, AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR ANY OTHER PURPOSE.
5. ALL WORK SHALL BE PERFORMED BETWEEN THE HOURS OF 7:30 A.M. AND 7:30 P.M., WEEKDAYS AND SATURDAYS.

UNDERGROUND UTILITIES:

1. THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

UTILITIES NOTIFICATION:

1. THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE CITY OF WILLOUGHBY AND LCDU DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.
2. BEFORE ANY WORK IS STARTED THAT WILL INTERFERE WITH THE EXISTING UTILITIES, THE CONTRACTOR SHALL CALL THE "OHIO UTILITIES PROTECTION SERVICE" AT 1-800-362-2764, FORTY-EIGHT (48) HOURS IN ADVANCE OF THE WORK IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT NO ADDITIONAL EXPENSE TO THE CITY AND LCDU, TO AVOID DAMAGE TO EXISTING UNDERGROUND AND OVERHEAD UTILITIES DURING THE ENTIRE PROJECT. IN THE EVENT OF DAMAGE TO EXISTING PUBLIC AND/OR PRIVATE UTILITIES, THE AGENCY CONCERNED SHALL BE NOTIFIED IMMEDIATELY AND ALL REPAIR WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE AGENCY AT NO ADDITIONAL COST TO THE CITY OR LCDU, INCLUDING ANY INSPECTION OR MAINTENANCE FEES.
3. THE OWNER OF THE UNDERGROUND UTILITY FACILITY SHALL, WITHIN FORTY-EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, AFTER NOTICE IS RECEIVED, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.
4. WHERE EXISTING POWER OR TELEPHONE POLES ARE IN CLOSE PROXIMITY TO WORK, THE CONTRACTOR SHALL COORDINATE HIS WORK EFFORTS WITH THOSE OF THE UTILITY COMPANIES SUCH THAT THEIR EXISTING FACILITIES CAN BE MAINTAINED AND PROTECTED DURING THE TIME THAT WORK IS GOING ON ADJACENT TO FACILITY.
5. THE COST AND COORDINATION FOR ANY REQUIRED PROTECTION, SUPPORT OR RELOCATION OF EXISTING POWER OR TELEPHONE POLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. DELAYS TO THE CONTRACTOR AS A RESULT OF TIMING OF POLE RELOCATION, SUPPORT OR PROTECTION SHALL NOT BE CONSIDERED COMPENSABLE DELAYS, AS IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS WORK IN CONFORMANCE TO THE UTILITY COMPANY'S SCHEDULE.
7. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES AFFECTED BY THE PROPOSED CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF THE EXISTING UTILITY OWNERS LISTED BELOW AND THE UTILITY PROTECTION SERVICE IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE AND OUTLINED IN PROJECT SPECIFICATIONS.

UTILITIES OWNERSHIP:

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT

FRED RANDOLPH
DESIGN SUPERVISOR
THE ILLUMINATING COMPANY
7755 AUBURN ROAD
PAINESVILLE, OH 44077
PHONE: (440) 358-4991
FRANDOLPH@FIRSTENERGYCORP.COM

WILLIAM SNYDER
ENBRIDGE, INC.
320 SPRINGSIDE DRIVE, STE. 320
AKRON, OH 44333
PHONE: (330) 664-2409
FAX: (888) 504-0126
RELOCATION@DOMINIONENERGY.COM

ROGER MADDEN
INTELLIFIBER NETWORKS
1111 SUPERIOR AVE, STE. 500
CLEVELAND, OH 44114
PHONE: (440) 274-0209
FAX: (440) 812-0500

JAMES JANIS
AT&T/OHIO
13630 LORAIN AVENUE, 2ND FLOOR
CLEVELAND, OH 44111
PHONE: (216) 476-6142
FAX: (216) 476-6013

MATHEW HANNAH
CONSTRUCTION COORDINATOR
TIME-WARNER CABLE
7820 DIVISION DRIVE
MENTOR, OH 44060
PHONE: (216) 575-8016
EXT: 216-555-1101
MATHEW.HANNAH@CHARTER.COM

RANDY ROTHLSBERGER
LAKE COUNTY DEPARTMENT OF UTILITIES
105 MAIN STREET
PHONE: (440) 350-2645
FAX: (440) 350-2666

RICH PALMISANO
DIRECTOR OF PUBLIC SERVICE
CITY OF WILLOUGHBY
ONE PUBLIC SQUARE
WILLOUGHBY, OH 44094
PHONE: (440) 953-4111
FAX: (440) 953-4382

VIDEOTAPING:

1. THE CONTRACTOR SHALL PROVIDE PRE CONSTRUCTION ABOVE-GROUND VIDEOTAPING OF ALL AREAS WITHIN OR ADJACENT TO THE CURRENT WORK LIMITS. THE CONTRACTOR SHALL NOT START ANY WORK UNTIL SUCH TIME AS THE ENGINEER HAS ADVISED THAT THE VIDEOTAPING AND PHOTO WORK IS COMPLETE.

PROTECTION/REPLACEMENT OF PROPERTY CORNERS:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND MARK EXISTING PROPERTY CORNER MONUMENTS SUCH AS IRON PINS AND PIPES PRIOR TO CONSTRUCTION. ALL MONUMENTS SHALL BE CLEARLY MARKED IN THE FIELD AND SHALL BE PROPERLY PROTECTED DURING THE COURSE OF CONSTRUCTION. SHOULD THE CONTRACTOR BE UNABLE TO PROTECT THE EXISTING PROPERTY CORNER MONUMENTS, THE CONTRACTOR SHALL HAVE AN APPROVED REGISTERED SURVEYOR REFERENCE THE LOCATION OF EACH MONUMENT DISTURBED AND REPLACE THEM AT THE CONTRACTOR'S EXPENSE PRIOR TO FINAL PAYMENT.

MATERIAL SPECIFICATIONS AND TESTING:

1. MATERIAL SPECIFICATIONS CALLED FOR ON THE CONSTRUCTION PLANS AND THE CONTRACT DOCUMENTS REPRESENT THE MINIMUM REQUIRED FOR EACH APPLICATION. THE CONTRACTOR MAY DESIRE TO SUBSTITUTE ALTERNATE MATERIALS AND SUCH SUBSTITUTIONS MUST BE EQUIVALENT IN QUALITY TO THE MATERIAL CALLED FOR AND MUST BE APPROVED IN WRITING BY THE LAKE COUNTY SANITARY ENGINEER OR THE WILLOUGHBY ENGINEER PRIOR TO PLACEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE MATERIAL TESTING AS CALLED OUT IN THE CONTRACT DOCUMENTS AND SHALL HIRE AN APPROVED INDEPENDENT TESTING FIRM TO PERFORM TESTING UNDER THE DIRECTION OF THE ENGINEER.

CONNECTION TO EXISTING PIPE:

1. WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO, OR TO CROSS EITHER OVER OR UNDER AN EXISTING PIPE, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE AND ADJUST LINE AND/OR GRADE AS NECESSARY BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.
2. PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT CONDUIT ITEM.

UNDERDRAIN RECONNECTION:

1. EXISTING UNDERDRAINS ENCOUNTERED DURING THE REMOVAL OF EXISTING PAVEMENT SHALL BE RECONNECTED.

PROTECTION OF TREES:

1. THE CONTRACTOR IS TO TAKE CARE DURING EXCAVATION, PIPE INSTALLATION AND BACKFILLING, IN AREAS IMMEDIATELY ADJACENT TO TREES, TO MINIMIZE THE DISTURBANCE OF ROOT SYSTEM AND TREE LIMBS. THE COST OF ANY EXTRA EFFORT SUCH AS HAND EXCAVATION IS TO BE INCLUDED IN THE UNIT PRICE BID FOR PIPE INSTALLATION.

PROTECTION AND RESTORATION OF PROPERTY:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE PROPERTY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE OR INJURY TO PROPERTY AND/OR PERSONS DURING THE PROSECUTION OF THE WORK, RESULTING FROM ANY ACT, OMISSION, NEGLIGENCE OR MISCONDUCT IN HIS MANNER OR METHOD OF EXECUTING THE WORK, OR AT ANY TIME DUE TO DEFECTIVE WORK OR MATERIALS, AND SAID RESPONSIBILITY WILL NOT BE RELEASED UNTIL THE DAMAGE OF INJURY ARE REMEDIATED AND THE PROJECT SHALL HAVE BEEN COMPLETED AND ACCEPTED.
3. WHEN OR WHERE ANY DIRECT OR INDIRECT DAMAGE OR INJURY IS DONE TO PUBLIC OR PRIVATE PROPERTY BY OR ON ACCOUNT OF ANY ACT, OMISSION, NEGLIGENCE OR MISCONDUCT IN THE EXECUTION OF THE WORK, OR IN CONSEQUENCE OF THE NON-EXECUTION THEREOF BY THE CONTRACTOR, HE SHALL RESTORE, AT HIS OWN EXPENSE, SUCH PROPERTY TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING BEFORE SUCH DAMAGE OR INJURY WAS DONE BY REPAIRING, REBUILDING OR OTHERWISE RESTORING AS MAY BE DIRECTED, OR SHALL MAKE GOOD SUCH DAMAGE OR INJURY IN AN ACCEPTABLE MANNER.
4. WHEN ROAD SIGNS AND SUPPORTS INTERFERE WITH CONSTRUCTION, THEY SHALL BE REMOVED AND ERECTED IN A TEMPORARY LOCATION IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PERTINENT ITEM.

MAIL BOXES, FENCES, OR NEWSPAPER BOXES AND SITE FURNISHINGS:

1. WHEN MAIL BOXES, FENCES, OR NEWSPAPER BOXES INTERFERE WITH CONSTRUCTION, THE CONTRACTOR SHALL REMOVE AND ERECT THEM IN A TEMPORARY LOCATION DURING CONSTRUCTION (EXCEPT FENCES) IN A MANNER SATISFACTORY TO AND AS DIRECTED BY THE ENGINEER. AFTER COMPLETION OF THE CONSTRUCTION BEFORE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL ERECT THE MAIL BOXES, FENCES, OR NEWSPAPER BOXES IN A PERMANENT LOCATION IN ACCORDANCE WITH THE PLANS AND POSTAL SERVICE REGULATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PERTINENT ITEM. TEMPORARY LOCATION FOR MAIL BOXES SHALL BE COORDINATED WITH THE LOCAL POST MASTER.
2. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE PROPERTY OWNERS/LESSEES TO HAVE THEM REMOVE TABLES/CHAIRS/BENCHES/TEMPORARY SIGNS, ETC. TO BE STORED OFF-SITE DURING CONSTRUCTION, BY THE OWNERS/LESSEES.

SUBSURFACE INVESTIGATIONS:

1. IT IS THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN INVESTIGATION OF SUBSURFACE CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL, a GEOTHERMAL REPORT PREPARED BY CT CONSULTANTS DATED FEBRUARY 21st 2024 IS INCLUDED IN THE BID DOCUMENTATION.

DRAINAGE OF ROADWAY AREA DURING CONSTRUCTION:

1. THE CONTRACTOR SHALL BE REQUIRED DURING THE COURSE OF HIS WORK WITHIN AND ADJACENT TO THE EXISTING AND PROPOSED PAVEMENT AREAS TO MAINTAIN THE ROADWAY AREA IN SUCH CONDITION THAT IT WILL BE WELL DRAINED AT ALL TIMES. THE SURFACE OF THE PAVEMENT SUBGRADE AND THE GROUND SURFACE ABOVE THE FINAL PAVEMENT SUBGRADE PRIOR TO TRIMMING SHALL BE MAINTAINED IN A SMOOTH CONDITION TO PREVENT PONDING OF WATER AFTER RAINS. DITCHES OF ADEQUATE DEPTH SHALL BE CONSTRUCTED AND MAINTAINED PARALLEL TO EACH SIDE OF THE PROPOSED EDGE OF PAVEMENT TO INSURE THE THOROUGH DRAINAGE OF THE SUBGRADE SURFACE AT ALL TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COSTS REQUIRED TO CORRECT POOR SUBGRADE CONDITIONS DUE TO HIS NEGLIGENCE IN PROPERLY MAINTAINING SUBGRADE DRAINAGE.

PIPE CROSSING:

1. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, WHERE A PROPOSED PIPE CROSSES WITHIN 18 INCHES OF ANOTHER PROPOSED OR EXISTING PIPE, A CONCRETE PAD AND CRADLE SEPARATOR SHALL BE PLACED BETWEEN THEM AS DETAILED. WHERE PERMISSION IS GRANTED TO OMIT THE CONCRETE PADS, GRANULAR BACKFILL SHALL BE TAMPED IN 6 INCH LAYERS AROUND BOTH PIPES. SUCH TAMPED BACKFILL SHALL BE CONTINUOUS FROM THE GRADE OF THE LOWER PIPE TO THE TOP OF THE UPPER PIPE AND AT THE BOTTOM, SHALL EXTEND IN BOTH DIRECTIONS FOR THE FULL WIDTH OF THE TRENCH.
2. PAYMENT FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PERTINENT CONDUIT ITEMS.

REMOVAL ITEMS:

1. ALL ITEMS NOTED ON THE PLANS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN AN APPROPRIATE MANNER BY THE CONTRACTOR UNLESS OTHERWISE NOTED.

ENBRIDGE GAS (FORMERLY DEO) NOTES:

1. ONE-FOOT MINIMUM VERTICAL AND HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN ENBRIDGE'S EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF ENBRIDGE'S PIPELINE(S), IN COMPLIANCE TO 29 CFR, PART 1926, SUBPART P, (SAFE EXCAVATION & SHORING). EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY ENBRIDGE FACILITY OR APPURTENANCES. NOTIFY ENBRIDGE IMMEDIATELY IF ANY HARM HAS BEEN INFLICTED UPON ENBRIDGE'S FACILITIES (PIPELINES, ETC.) OR APPURTENANCES THERETO (PIPE COATING, TRACER WIRE, CATHODIC PROTECTION WIRES & DEVICES, TEST SITES, VALVE BOXES, ETC.).

PROPERTY OWNER NOTIFICATIONS:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL OF THE HOMES AND BUSINESSES THAT WILL BE AFFECTED BY THE INTERRUPTION OF WATER SERVICE WHEN THE NEW WATERLINE IS CONNECTED TO THE EXISTING WATERLINE ON RIVER STREET, SOUTH STREET, WILSON AVENUE, AND UNION STREET.
2. LAKE COUNTY WILL SUPPLY THE CONTRACTOR WITH A COMPLETE LIST OF HOMES AND BUSINESSES THAT WILL BE IMPACTED BY SHUTDOWN OF WATER SERVICES. IN GENERAL, THE INTERRUPTION OF WATER SERVICE WILL AFFECT OF THE RESIDENTIAL, COMMERCIAL AND BUSINESSES ABUTTING RIVER STREET BETWEEN ROSELAWN AVENUE AND CENTER STREET.
3. THE CONTRACTOR WILL BE GIVEN A MAXIMUM OF 4 HOURS TO MAKE THE CONNECTION BETWEEN THE HOURS OF 12 MIDNIGHT AND 6 AM IN THE MORNING. NO NIGHT WORK WHERE RESIDENTIAL APARTMENTS/HOMES EXIST WITHIN WORK AREA.

PIPE SPECIFICATIONS:

MATERIAL SPECIFICATIONS			
ITEM	SIZE	MATERIAL	FITTINGS
OPEN-CUT TRENCH INSTALLATION			
PVC WATERLINE	12, 8, 6, 4 INCH	AWWA C909 PVC-O	DUCTILE IRON, AWWA C153 OR C110
FIRE HYDRANTS SHALL BE EQUIPPED WITH A 5" STORZ PUMPER CONNECTION			

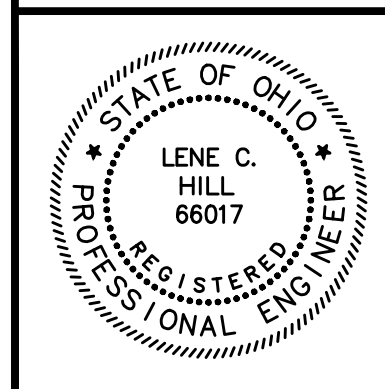
ADDITIONAL REQUIREMENTS:

1. THE CONTRACTOR SHALL FIELD EXCAVATE ALL CONNECTION POINTS AND LOCATE ALL NECESSARY UTILITIES 5 DAYS IN ADVANCE OF MAKING CONNECTIONS, IN ORDER TO VERIFY LOCATIONS AND CLEARANCES.
2. ALTHOUGH SPECIFIC VERTICAL BEND SIZES ARE IDENTIFIED IN THE PLAN, THE CONTRACTOR SHALL UTILIZE THE MOST EFFICIENT MEANS TO ACCOMPLISH THE WATER LINE CONSTRUCTION. OVERPASSES ARE NOT PREFERRED AND IF THE POSSIBILITY EXISTS DUE TO ACTUAL FIELD LOCATIONS, CLEARANCES AND PHASED CONSTRUCTION, THE BENDS SHOULD BE OMITTED.
3. ALL HYDRANT ASSEMBLIES SHALL UTILIZE BOLTLESS RESTRAINTS.
4. ALL OVERPASSES THAT ARE CONSTRUCTED AND ARE LESS THAN 5' IN DEPTH SHALL BE INSULATED PER THE PLAN DETAIL.
5. ALL REFERENCES TO CUT & CAP SHALL BE PAID FOR UNDER THE WATER LINE ABANDONED PAY ITEM. MECHANICAL PLUG OR CAPS SHALL BE PROVIDED FOR LIVE WATER MAINS. CAP OR BULKHEADS SHALL BE PROVIDED FOR ABANDONED LINES. UNDER THIS ITEM, SOLID CONCRETE BLOCKS W/ HARDWOOD WEDGES ARE AS NEEDED.

PART A / PART B:

THE CONTRACT DRAWINGS ARE DEVIDED INTO TWO PARTS: PART A AND PART B, PART A IS FOR THE CONSTRUCTION OF A 12" WATERLINE AND PART B IS A RETAINING WALL AND SOIL STABILIZATION PROJECT.

WATERLINE CONSTRUCTION DRAWINGS AND SPECIFICATIONS FOR THE ENTIRE WATERLINE ARE IN PART A OF THE CONTRACT DRAWINGS. WATERLINE QUANTITIES FOR THE SECTION OF THE WATERLINE THAT IS LOCATED WITHIN THE 400 LF OF RETAINING WALL AND SOIL STABILIZATION PROJECT ARE INCLUDED IN PART B FOR FUNDING PURPOSES.



NO	REVISION	DATE

**CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
RIVER STREET WATERLINE
REPLACEMENT (475W-2023)
LAKE COUNTY, OHIO**

ISSUED FOR:	BID SET
ISSUE DATE:	08/2024
SCALE:	AS SHOWN
DESIGNED BY:	LCH
DRAWN BY:	TJM
CHECKED BY:	LCH

GENERAL NOTES 1

PROJECT NO.	
231956	
DISCIPLINE	
CIVIL	
SHEET NAME	
GN-1	
SHEET	OF
2	19

SERVICE CONNECTIONS:

- ALL WATER SERVICE CONNECTIONS SHOWN ON THE PLAN WERE DERIVED FROM LCDU RECORDS. THE CONTRACTOR SHALL LOCATE AND VERIFY ALL CONNECTIONS. ALL ACTIVE CONNECTIONS ENCOUNTERED SHALL BE RECONNECTED TO EXISTING FACILITIES OR CONNECTED TO THE NEW FACILITIES, EVEN IF NOT SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL EXPECT AT LEAST ONE SERVICE CONNECTION FOR ADDRESS NUMBER ON BOTH SIDES OF THE STREET FOR THE ENTIRE PROJECT LENGTH..
- ALL EXISTING UTILITY SERVICE CONNECTIONS (SANITARY, STORM, WATER, GAS, ELECTRIC, TELEPHONE, ETC.) WHICH ARE DAMAGED DURING THE INSTALLATION OF PIPE SHALL BE REPAIRED WITH LIKE MATERIALS OR REPLACED, AS REQUIRED. THE COST OF UTILITY SERVICE CONNECTION REPAIR/REPLACEMENT SHALL BE INCLUDED IN THE UNIT PRICES FOR ALL ITEMS IN THE PROPOSAL.
- ALL UTILITY LINES CROSSING THE NEW TRENCH SHALL BE PROTECTED AND SUPPORTED WITH HARDWOOD PLANKS; OR REMOVED, REPLACED, RECONNECTED AND SUPPORTED ACROSS THE ENTIRE WIDTH OF THE TRENCH. IF ANY OF THESE LINES ARE DAMAGED DURING CONSTRUCTION, THEY SHALL BE REPLACED IN-KIND.
- THE CONTRACTOR SHALL BE REQUIRED TO BYPASS AND MAINTAIN THE FLOW TO/FROM ALL HOUSE UTILITY CONNECTIONS DURING CONSTRUCTION.
- THE CONTRACTOR SHALL SUPPLY ALL PIPE AND ADAPTERS TO CONNECT TO EXISTING PIPING. THE ADAPTERS MUST BE SUBMITTED TO AND APPROVED BY LCDU PRIOR TO CONSTRUCTION.
- THE COST OF UTILITY RELOCATION, REPLACEMENT, AND/OR SUPPORT SHALL BE INCLUDED IN THE COST PER LINEAL FOOT OF PROPOSED WATERLINE.
- THE LCDU REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY WHEN LEAD SERVICE LINES ARE ENCOUNTERED.

ITEM SPECIAL - WATER MAIN:

- DESCRIPTION. THIS WORK CONSISTS OF CONSTRUCTING WATER MAINS, VALVES, FITTINGS AND BOXES. THE WORK ALSO INCLUDES FURNISHING ALL MATERIALS, EXCAVATION, BEDDING, LAYING PIPE, JOINTING, HYDROSTATIC TESTING, STERILIZING, BACKFILLING, RESTORATION OF DISTURBED FACILITIES AND SURFACES. DISPOSAL OF ALL SURPLUS EXCAVATION AND DISCARDED MATERIALS, AND OTHER ITEMS NECESSARY TO COMPLETE THE WORK.
- CONSTRUCTION AND MATERIAL SPECIFICATIONS. ALL WATER MAINS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH "COUNTY OF LAKE, OHIO - COUNTY OF LAKE, UTILITIES DEPARTMENT RULES AND REGULATIONS, MARCH 2024, AND AS MODIFIED HEREIN. A COPY OF THE SPECIFICATIONS IS ON FILE IN THE OFFICE OF THE LAKE COUNTY SANITARY ENGINEER, LAKE COUNTY ADMINISTRATION CENTER, 105 MAIN ST., PAINESVILLE, OHIO.
- OWNERSHIP. ALL WATER MAINS AND APPURTENANCES WITHIN THE DEDICATED RIGHT-OF-WAY ARE OWNED, OPERATED AND MAINTAINED BY THE LAKE COUNTY DEPARTMENT OF UTILITIES.
- INSPECTION. ALL WORK ON WATER MAINS AND APPURTENANCES SHALL BE INSPECTED BY, APPROVED BY, AND COORDINATED WITH THE LAKE COUNTY DEPARTMENT OF UTILITIES PRIOR TO BEING PLACED IN SERVICE. THE CONTRACTOR SHALL NOTIFY THE LAKE COUNTY DEPARTMENT OF UTILITIES AT LEAST THREE WORKING DAYS PRIOR TO INITIATING ANY WORK ON THE WATER MAINS AND APPURTENANCES.
- BACTERIOLOGICAL TESTING AND STERILIZATION. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO STERILIZE THE PROPOSED WATER MAINS AND APPURTENANCES FOR SAMPLE COLLECTION IN ACCORDANCE WITH THE WATER MAIN CONSTRUCTION AND MATERIAL SPECIFICATIONS AND AWWA STANDARD C650 SECTION 7.3. BACTERIOLOGICAL SAMPLES SHALL BE COLLECTED BY THE LAKE COUNTY DEPARTMENT OF UTILITIES IN AN APPROVED CONTAINER. WATER IN THE MAIN TO BE DISINFECTED SHOULD HAVE A TURBIDITY ACCEPTABLE TO THE LAKE COUNTY DEPARTMENT OF UTILITIES. ALL TESTS ARE TO BE PERFORMED BY THE LAKE COUNTY LABORATORY OR A LAKE COUNTY DEPARTMENT OF UTILITIES - APPROVED LABORATORY.
- SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL SCHEDULE THE WORK ON THE WATER MAINS AND APPURTENANCES TO MINIMIZE THE NUMBER AND DURATION OF INTERRUPTIONS TO WATER SERVICE. ALL WATER SERVICE INTERRUPTIONS SHALL BE SCHEDULED WITH THE LAKE COUNTY DEPARTMENT OF UTILITIES DURING OFF PEAK WATER DEMAND PERIODS AND SHALL NOT EXCEED A PERIOD OF FOUR HOURS THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION PLAN TO THE LAKE COUNTY DEPARTMENT OF UTILITIES FOR REVIEW AND APPROVAL PRIOR TO ANY WORK ON THE WATER MAINS. THE CONTRACTOR SHALL NOTIFY ALL CUSTOMERS AFFECTED BY THE WATER MAIN SHUT DOWN TWO (2) WORKING DAYS PRIOR TO THE PROPOSED SHUT DOWN.
- WATER MAIN MUST BE STAKED OUT BY A PROFESSIONAL SURVEYOR AND CUT SHEETS UTILIZED. NEW WATER MAINS MUST PROVIDE MINIMUM 18" VERTICAL SEPARATION FROM ALL STORM/SANITARY SEWERS, GAS LINES AND OTHER WATERLINES.
- THE CONTRACTOR SHALL NOTIFY THE LAKE COUNTY DEPARTMENT OF UTILITIES AT THE FOLLOWING LOCATION AT LEAST THREE WORKING DAYS PRIOR TO THE START OF THE WATER MAIN RELOCATION WORK:

LAKE COUNTY DEPARTMENT OF UTILITIES
LAKE COUNTY ADMINISTRATION CENTER
105 MAIN STREET
PAINESVILLE, OHIO 44077
(440) 350-2652
- THE EXISTING WATER SERVICE MAY BE TAKEN OFF SERVICE FOR 4 HOURS MAXIMUM, COORDINATED WITH LAKE COUNTY.

EXCAVATION, BACKFILL AND COMPACTION:

- ALL EXCAVATION WILL BE CONSIDERED UNCLASSIFIED, NO COMPENSATION WILL BE ALLOWED THE CONTRACTOR FOR ROCK OR SHALE EXCAVATION.
- ALL BACKFILL WILL BE AS DESCRIBED IN SPECIFICATION SECTION 310000 "EARTHWORK", USING MACHINE MOUNTED COMPACTION EQUIPMENT TO MEET THE COMPACTION REQUIREMENT OF 100% OF MAXIMUM LABORATORY DRY DENSITY PER ASTM D 698.
- THE OWNER AND THE ENGINEER DO NOT GUARANTEE NOR SUGGEST THE IN-SITU MATERIAL TO BE EXCAVATED WILL BE SUITABLE OR IN ITS PRESENT STATE WILL CONSIST OF THE PROPER MOISTURE CONTENT TO ACHIEVE THE COMPACTION REQUIREMENTS. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE BACKFILL MATERIAL HE WILL USE. UPON REQUEST, THE OWNER WILL PROVIDE ACCESS TO THE SITE FOR THE CONTRACTOR TO CONDUCT SUCH INVESTIGATION AND TESTS DEEMED NECESSARY TO MAKE HIS DETERMINATION. NO EXTRA PAYMENT WILL BE MADE TO DISPOSE OF UNSUITABLE MATERIAL OR FURNISH AND PLACE SUITABLE MATERIAL MEETING THE REQUIREMENTS OF SECTION 310000.
- BACKFILLING OF ANY TRENCHES OR EXCAVATIONS WILL NOT BE PERMITTED WITHOUT MACHINE MOUNTED COMPACTION EQUIPMENT BEING USED.
- SLAG PRODUCTS WILL NOT BE PERMITTED FOR BEDDING, BACKFILL, OR TRAFFIC COMPACTED SURFACE.
- ALL UTILITY LINES CROSSING THE NEW WATERLINE TRENCH, (i.e. STORM SEWERS, STORM LATERALS, SANITARY SEWERS, SANITARY LATERALS, WATER MAINS, WATER SERVICE CONNECTIONS, GAS MAINS, GAS SERVICE CONNECTIONS, UNDERGROUND OCT CONDUITS, CABLE T.V. LINES) SHALL BE PROTECTED AND SUPPORTED WITH HARDWOOD PLANKS OR REMOVED AND REPLACED, RECONNECTED AND SUPPORTED ACROSS THE ENTIRE WIDTH OF THE TRENCH. NO ADDITIONAL COMPENSATION WILL BE PAID FOR THE ABOVE WORK.

LCDU WATER WORKS NOTES:

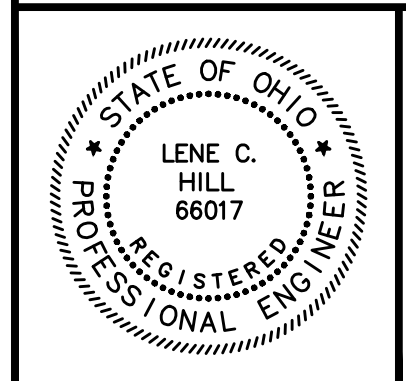
- ONLY WATER/SEWER CONTRACTORS LICENSED BY THE LAKE COUNTY BOARD OF COMMISSIONERS MAY INSTALL WATER MAINS.
- THIS APPROVAL BY THE LCDU SHALL EXPIRE IF THE WATERLINE CONSTRUCTION HAS NOT BEEN INITIATED BY A DEVELOPER WITHIN (12) MONTHS OF THE EFFECTIVE APPROVAL DATE AS SHOWN ON THE ORIGINALLY SUBMITTED FOR APPROVAL BLUEPRINT COPY. (THIS IS NOT TO BE CONSTRUED AS THE DATE THAT IS SHOWN ON THE ORIGINAL MYLAR TITLE SHEET.)
- THE CONTRACTOR SHALL NOTIFY THE LCDU AT LEAST 48 HOURS IN ADVANCE OF ANY WORK IN THEIR SYSTEMS.
- THE LCDU SHALL PERFORM INSPECTION SERVICES. THE COST OF INSPECTION SHALL BE INCLUDED AS PART OF THIS CONSTRUCTION PROJECT AT THE CURRENT BASE RATE AS ESTABLISHED BY THE LAKE COUNTY BOARD OF COMMISSIONERS. (SEE SECTION 7 FEE SCHEDULE) COST FOR LAKE COUNTY INSPECTION FEE AND OTHER FEES SHALL BE INCLUDED IN THE UNIT PRICES BID FOR OTHER WATERLINE ITEMS.
- WATERLINE WORK SHALL NOT BEGIN UNTIL THE AREAS OF CONSTRUCTION ARE ROUGH GRADED.
- ALL WATERLINES ON THIS PROJECT SHALL BE LAID AT THE ELEVATIONS AND GRADES SHOWN ON THE DRAWINGS. HIGH POINTS IN THE WATERLINE MUST OCCUR AT THE STATIONED HYDRANT TEE LOCATIONS.
- ALL HYDRANTS SHALL BE POSITIONED SO THAT THE STEAMER NOZZLES POINT IN THE DIRECTION SHOWN ON THE PLANS.
- THE PROPOSED WATERLINE SHALL HAVE 5' MINIMUM COVER OVER THE TOP OF PIPE AT ALL PLACES, EXCEPT AT SPECIFIC HYDRANT TEE LOCATIONS AS SHOWN ON THE PLANS.
- ALL BOLTS SHALL BE STAINLESS STEEL TYPE 304 OR 316 WITH ANTI-GALLING AGENT.
- ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR PRELIMINARY CHECKING. THE ENGINEER SHALL FORWARD CHECKED SHOP DRAWINGS TO THE LCDU FOR FINAL CHECKING AND APPROVAL.
- THE LCDU SHALL PROVIDE WATER FOR THE NEW WATER MAIN WITHOUT COST FOR THE INITIAL OPERATION. ALL WATER FOR FLUSHING OPERATIONS SHALL BE PAID FOR BY THE CONTRACTOR AT CURRENT RATES AS ESTABLISHED BY THE LAKE COUNTY BOARD OF COMMISSIONERS PER 100 CUBIC FEET OF WATER USED. (SEE SECTION 7 FEE SCHEDULE)
- ALL WATER MAIN PIPE SHALL BE AN APPROVED MATERIAL AS SHOWN ON THE APPROVED PLANS.
- LOCATION OF STERILIZATION AND TESTING CONNECTIONS SHALL BE AS DIRECTED BY THE LCDU AND ALL COSTS ASSOCIATED WITH PLACING AND UTILIZING SAID STERILIZATION AND TESTING CONNECTIONS SHALL BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF THE WATER MAINS. NO BACTERIA SAMPLES ARE TO BE TAKEN FROM FIRE HYDRANTS.
- LCDU WILL MAKE THE NECESSARY NEW SERVICE CONNECTION TAPS FOR THE CONTRACTOR AT CURRENT RATES AS ESTABLISHED BY THE LAKE COUNTY BOARD OF COMMISSIONERS PER 8" AND GREATER TAPS WITHIN RIGHT OF WAY. (SEE SECTION 7 FEE SCHEDULE) SERVICE CONNECTIONS TO EXISTING BUILDINGS SHALL BE MADE BY THE CONTRACTOR.
- NO WATER SERVICE CONNECTIONS TO ANY BUILDING SHALL BE PERMITTED PRIOR TO FINAL ACCEPTANCE BY THE LCDU INCLUDING RECTIFICATION OF ALL PUNCH LIST ITEMS.
- ALL CURB STOP BOXES, VALVE BOXES, ETC. TO BE SET AS SHOWN ON THE PLANS. RIMS WILL BE RAISED OR LOWERED AND BOXES PLUMBED BY THE CONTRACTOR AT TIME OF HOUSE CONSTRUCTION WHEN FINAL YARD GRADING IS COMPLETED.
- ALL PROJECT HYDRANTS SHALL HAVE A FIELD COAT OF APPROVED PAINT APPLIED BY THE CONTRACTOR WITH THE EXCEPTION OF HYDRANTS THAT ARE FACTORY PAINTED WITH A ONE COAT UV RESISTANT HIGH GLOSS 2-PART POLYURETHANE ENAMEL, COLOR AS SPECIFIED. IF THE COATING ON THE HYDRANT IS DAMAGED BEFORE INSTALLATION THE HYDRANT MUST BE PAINTED.
- THE CONTRACTOR SHALL NOTIFY THE FIRE DEPARTMENT PRIOR TO ANY PRESSURE TESTING.
- ALL PROPOSED WATER LINES SHALL BE LAID OUT BY A REGISTERED SURVEYOR WITH GRADE STAKES AT A MINIMUM OF EVERY 50' AND AT ALL FITTINGS AND A CUT SHEET PROVIDED PRIOR TO CONSTRUCTION.
- THE CONTRACTOR/DEVELOPER SHALL SUBMIT A THREE YEAR MAINTENANCE BOND TO THE COMMISSIONERS BY DEVELOPER IN THE AMOUNT OF TEN PERCENT OF THE FINAL CONSTRUCTION COSTS AS CERTIFIED BY THE DEVELOPER'S ENGINEER, FOR PUBLIC EXTENSION PROJECTS.

SEQUENCE OF CONSTRUCTION:

THE CONTRACTOR SHALL CARRY OUT THE WORK IN THE FOLLOWING ORDER:

- INSTALL NEW WATERLINE.

CONTRACTOR SHALL FIELD VERIFY THE DEPTH OF THE EXISTING 8" WATERLINE AT HYDRANT LINE CROSSINGS TO DETERMINE CONSTRUCTION MTHODOLGY AND INSTALLATION SEQUENCE TO MINIMIZE SERVICE DISRUPTIONS.
- TEST NEW WATERLINE.
- CONNECT NEW WATERLINE TO EXISTING 12" WATERLINE. WATER SHALL BE FED FROM THE SOUTH.
- INSTALL NEW SERVICE LATERALS AND CURB BOXES.
- CONNECT NEW WATERLINE TO EXISTING WATERLINES ON SIDE STREETS.
- CONNECT TO EXISTING WATERLINE AT THE SOUTH END OF THE PROJECT.



NO	REVISION	DATE

**CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
RIVER STREET WATERLINE
REPLACEMENT (475W-2023)
LAKE COUNTY, OHIO**

ISSUED FOR:	BID SET
ISSUE DATE:	08/2024
SCALE:	AS SHOWN
DESIGNED BY:	LCH
DRAWN BY:	TJM
CHECKED BY:	LCH

GENERAL NOTES 2

PROJECT NO.	231956
DISCIPLINE	CIVIL
SHEET NAME	GN-2
SHEET	OF
3	19

SURVEY

EX:

- ARIAL TARGET
- AXLE
- BENCH MARK
- CHISLED "X"
- DRILL HOLE
- GPS TARGET
- HUB
- MONUMENT BOX
- MONUMENT - CONCRETE
- MONUMENT - RIGHT-OF-WAY
- NAIL - MAG
- PIN - IRON
- PIN - IRON, 1" DIAMETER
- PIPE - IRON
- SPIKE
- STAKE
- STONE - CORNER
- LAND HOOK

GROUND

EX:

- GEOTECH - SOIL BORING
- GEOTECH - MONITORING WELL
- GEOTECH - TEST WELL
- WATER, SWAMP
- ROCK, LARGE

VEGETATION

EX:

- BUSH / SHRUB
- TREE - DECIDUOUS
- TREE - EVERGREEN
- TREE - STUMP

UTILITIES - MISCELLANEOUS

EX:

- MISCELLANEOUS PULL BOX
- MISCELLANEOUS CLEAN OUT
- MISCELLANEOUS MANHOLE
- MISCELLANEOUS MANHOLE - LID ONLY
- MISCELLANEOUS PAINT MARK
- MISCELLANEOUS VALVE

UTILITIES - TRAFFIC

EX:

- TRAFFIC CONTROL BOX
- TRAFFIC PULL BOX
- TRAFFIC MANHOLE
- TRAFFIC MANHOLE - ADJUST
- TRAFFIC MANHOLE - LID ONLY
- TRAFFIC PAINT MARK
- TRAFFIC SIGNAL - PEDESTRIAN

UTILITIES - POLE

EX:

- POLE - BRACE
- POLE - CABLE TV
- POLE - CABLE TV / LIGHT
- POLE - POWER / CABLE
- POLE - POWER / LIGHT
- POLE - POWER / TELEPHONE
- POLE - POWER / TELEPHONE / CABLE TV
- POLE - POWER / TEL / CABLE TV / LIGHT
- POLE - POWER / TELEPHONE / LIGHT
- POLE - TELEPHONE / CABLE TV
- POLE - TELEPHONE / CABLE TV / LIGHT
- POLE - TELEPHONE / LIGHT
- POLE - ELECTRIC (POWER)
- POLE - GENERAL
- POLE - GUY
- POLE - GUY ANCHOR
- POLE - LIGHT
- POLE - LIGHT - DECORATIVE
- POLE - LIGHT - OVERHEAD
- POLE - MISCELLANEOUS
- POLE - TELEPHONE
- POLE - TRAFFIC

UTILITIES - STORM

EX:

- CAP, STORM PIPE
- CATCH BASIN - SQUARE
- CATCH BASIN - SQUARE - ADJUST
- CATCH BASIN - SQUARE - SIDE INLET
- CATCH BASIN - SQUARE - SIDE INLET - ADJ.
- CATCH BASIN - SQUARE - SOLID LID
- CATCH BASIN - SQUARE - SOLID LID - ADJ.
- CATCH BASIN - DOME
- CATCH BASIN - ROUND
- CURB INLET
- CURB INLET - ADJUST
- CURB INLET - DOUBLE
- CURB INLET - DOUBLE - ADJUST
- STORM CLEAN-OUT
- STORM DRAIN
- STORM MANHOLE
- STORM MANHOLE - ADJUST
- STORM MANHOLE - GRATE
- STORM MANHOLE - GRATE - ADJUST
- STORM MANHOLE -SIDE INLET
- STORM MANHOLE - LID ONLY
- STORM PAINT MARK
- STORM STRUCTURE NUMBER

UTILITIES - SANITARY

EX:

- SANITARY CAP / PLUG
- SANITARY CLEAN-OUT
- SANITARY MANHOLE
- SANITARY MANHOLE - ADJUST / RECON
- SANITARY MANHOLE - LID ONLY
- SANITARY PAINT MARK
- SANITARY SERVICE MARKER (END)
- SANITARY STRUCTURE NUMBER

UTILITIES - GAS

EX:

- GAS LIGHT - POST
- GAS METER
- GAS MANHOLE
- GAS MANHOLE - ADJUST
- GAS MANHOLE - LID ONLY
- GAS MARKER POST
- GAS PAINT MARK
- GAS REGULATOR
- GAS SERVICE (END)
- GAS TEST BOX
- GAS VALVE
- GAS VALVE W/ TEXT
- GAS VALVE - BOX
- GAS VENT

UTILITIES - WATER

EX:

- WATER CAP
- WATER PLUG
- FIRE DEPARTMENT CONNECTION
- FIRE DEPARTMENT CONNECTION - BUILDING
- FIRE HYDRANT
- BACTERIA SAMPLING POINT
- IRRIGATION CONTROL BOX
- IRRIGATION SPRINKLER
- WATER METER
- WATER METER PIT
- WATER MANHOLE
- WATER MANHOLE - ADJUST
- WATER MANHOLE - LID ONLY
- WATER PAINT MARK
- WATER REDUCER
- WATER SERVICE MARKER (END)
- WATER VALVE
- WATER VALVE W/ TEXT
- WATER VALVE - UNKNOWN EXACT POSITION

UTILITES - WATER

PROPOSED:

- WATER LINE
- WATER SERVICE

EXISTING:

- WATER LINE
- WATER DOUBLE LINE
- WATER LINE - ABANDONED
- WATER SERVICE

BOUNDARIES

EXISTING:

- BOUNDARY LINE
- SUBDIVISION LINE
- RIGHT-OF-WAY - CL
- RIGHT-OF-WAY
- RIGHT-OF-WAY - LA
- PROPERTY LINE
- PROPERTY LEASE
- ANNEXATION LINE
- CORPORATION LINE
- COUNTY LINE
- FARM LOT LINE
- FLOOD ZONE LINE
- SECTION LINE
- STATE LINE
- TOWNSHIP LINE
- EASEMENT LINE
- SETBACK LINE
- SETBACK - STREAM
- PHASE LINE
- WATERSHED LINE
- WETLAND LINE

FEATURES

EXISTING:

- FEATURES - GENERAL
- FENCE - GENERAL
- FENCE - BARB WIRE
- FENCE - CHAIN LINK
- FENCE - DECORATIVE
- FENCE - ELECTRIC
- FENCE - VINYL
- FENCE - WOOD
- FENCE - WOVEN WIRE
- FENCE - WROUGHT IRON
- GUARDRAIL
- GUARDRAIL - CABLE
- HANDRAIL
- WALL - RETAINING
- WALL - SCREENING
- WALL - STONE

VEGETATION

EXISTING:

- TREE LINE
- BUSH LINE
- BRUSH LINE
- TREE DRIP LINE

UTILITES - STORM

EXISTING:

- STORM LINE
- STORM LINE - ABANDONED
- STORM DOUBLE LINE
- STORM UNDERDRAIN

UTILITES - SANITARY

EXISTING:

- SANITARY LINE
- SANITARY DOUBLE LINE
- SANITARY LINE - ABANDONED
- SANITARY FORCE MAIN
- SANITARY SERVICE

UTILITES - GAS

EXISTING:

- GAS LINE - ABAN.
- GAS LINE
- GAS SERVICE

UTILITES - TRAFFIC

EXISTING:

- TRAFFIC LINE - ABANDONED
- TRAFFIC LINE - OH
- TRAFFIC LINE - UG
- TRAFFIC LOOP

UTILITES - CABLE TV:

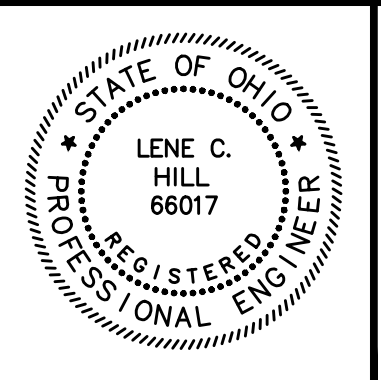
EXISTING:

- CATV LINE
- CATV LINE - ABAN.
- CATV LINE - OH
- CATV LINE - UG

UTILITES - MISCELLANEOUS

EXISTING:

- UTILITY LINE
- UTILITY LINE - ABAN.
- UTILITY LINE - OH
- UTILITY LINE - UG



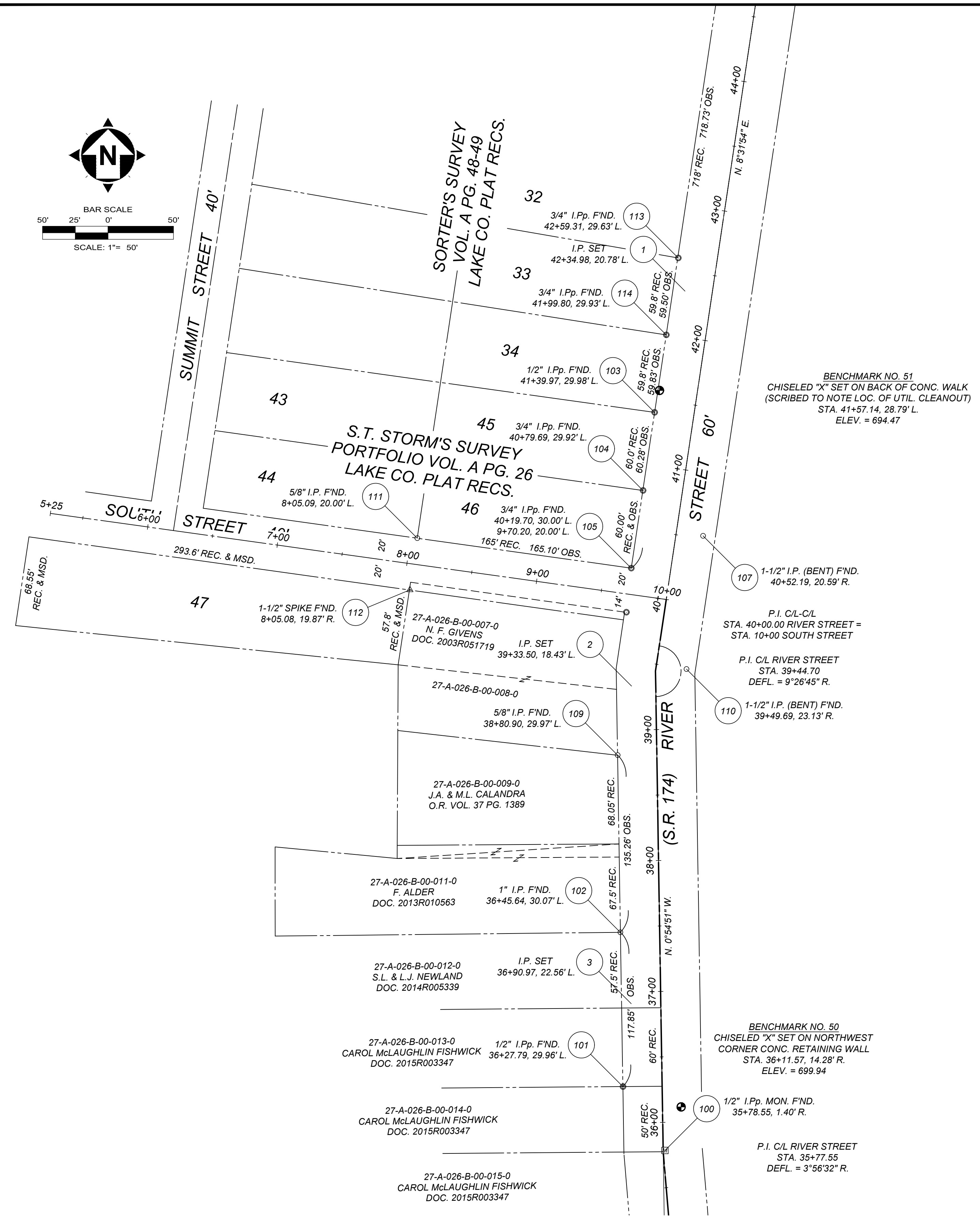
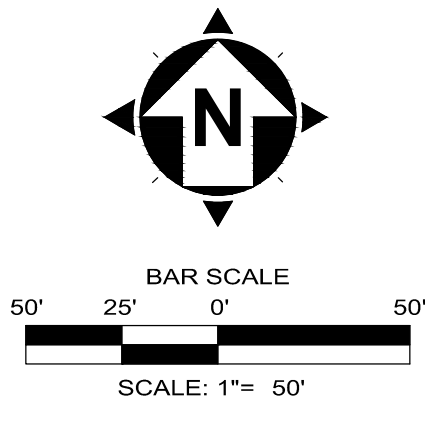
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CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

ISSUED FOR:	BID SET
ISSUE DATE:	08/2024
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DRAWN BY:	TJM
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LEGEND

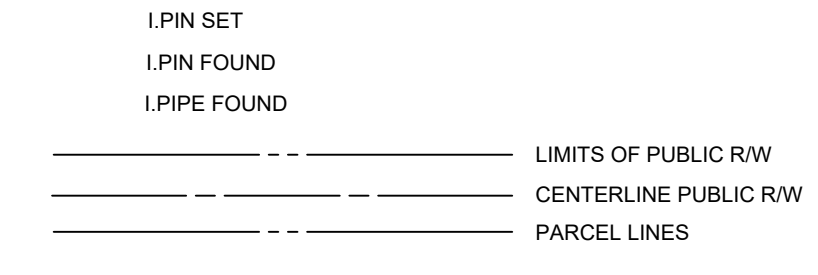
PROJECT NO.	
231956	
DISCIPLINE	
CIVIL	
SHEET NAME	
LGND-1	
SHEET	OF
4	19



NOTES:

- THIS PLAN HAS BEEN PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND MAY BE SUBJECT TO EASEMENTS AND OTHER RESTRICTIONS, EITHER RECORDED OR UNRECORDED. THE SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS, RECORD ENCUMBRANCES, RESTRICTIVE COVENANTS OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
- THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.
- THE PROJECT CONTROL COORDINATE SYSTEM IS BASED UPON THE FOLLOWING:
 - HORIZONTAL DATUM - PROJECT CONTROL COORDINATES FOR THIS PROJECT HAVE BEEN ESTABLISHED BY GPS/RTK OBSERVATIONS UTILIZING THE OHIO COORDINATE SYSTEM OF 1983 (ZONE 3401-OHIO NORTH). OHIO STATE PLANE GRID COORDINATE VALUES ARE EXPRESSED IN UNITS OF U.S. SURVEY FEET.
 - VERTICAL DATUM - NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- THE SURVEY AND STREET ALIGNMENTS SHOWN HEREON WERE OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR OTHER PURPOSES. THE PROPERTY LINES SHOWN HEREON OUR SUBJECT TO AN ACCURATE BOUNDARY SURVEY AND ARE BASED ON FOUND MONUMENTS LOCATED IN THE FIELD AND BEST FIT TO THE RECORDS.
- AN ALTA/NSPS LAND TITLE SURVEY WAS NOT PERFORMED.
- EASEMENTS, RECORD RESTRICTIONS AND SETBACKS WERE NOT ADDRESSED DURING THIS SURVEY.
- ALL DIMENSIONS GIVEN ARE EXPRESSED IN US SURVEY FEET.
- THE BENCHMARK ELEVATIONS SHOWN IN THE PROJECT CONTROL TABLE ARE AT THE TOP OF THE RED CAP OF THE IRON PIN SET.
- IRON PINS SET ARE 5/8\" IRON PINS SET WITH A RED CAP INSCRIBED WITH \"CT REF\"

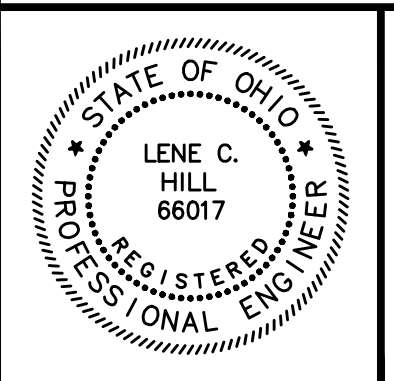
LEGEND:



PRIMARY PROJECT CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	718511.1958	2268132.7412	694.16	Iron Pin (Set)
2	718209.5509	2268091.9863	695.46	Iron Pin (Set)
3	717966.9924	2268091.7200	697.86	Iron Pin (Set)

SECONDARY PROJECT CONTROL				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	717854.9625	2268117.4695		Monument Box (Fnd) 1/2IN ID PIPE
101	717903.7023	2268085.3286		Iron Pipe (Fnd) 1/2IN BENT
102	718021.5337	2268083.3377		Iron Pin (Fnd) 1IN
103	718418.6079	2268109.5515		Iron Pipe (Fnd) 1/2IN
104	718358.9867	2268100.6735		Iron Pipe (Fnd) 3/4IN
105	718299.6659	2268091.6886		Iron Pipe (Fnd) 3/4IN
106	718265.9470	2268087.9432		Iron Pipe (Fnd) 1/2IN
107	718324.2992	2268146.5358		Iron Pin (Fnd) 1.5IN BENT
108	718322.3743	2268146.0559		SCMOC 5.5IN SLIGHTLY BENT
109	718156.7787	2268081.2857		Iron Pin (Fnd) 5/8IN
110	718222.5533	2268133.8478		Iron Pin (Fnd) 1.5IN BENT
111	718322.5219	2267928.1741		Iron Pin (Fnd) 5/8IN
112	718283.0386	2267922.6355		Spike (Fnd) 1.5IN
113	718536.5707	2268127.6061		Iron Pipe (Fnd) 3/4IN ID BENT
114	718477.7681	2268118.4799		Iron Pipe (Fnd) 3/4IN ID

BENCHMARK				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
50	717888.1876	2268129.8188	699.94	Benchmark (Set) CHISELED \"X\" ON NW
51	718435.4107	2268113.2807	694.47	Benchmark (Set) CHISELED \"X\" ALONG BACK



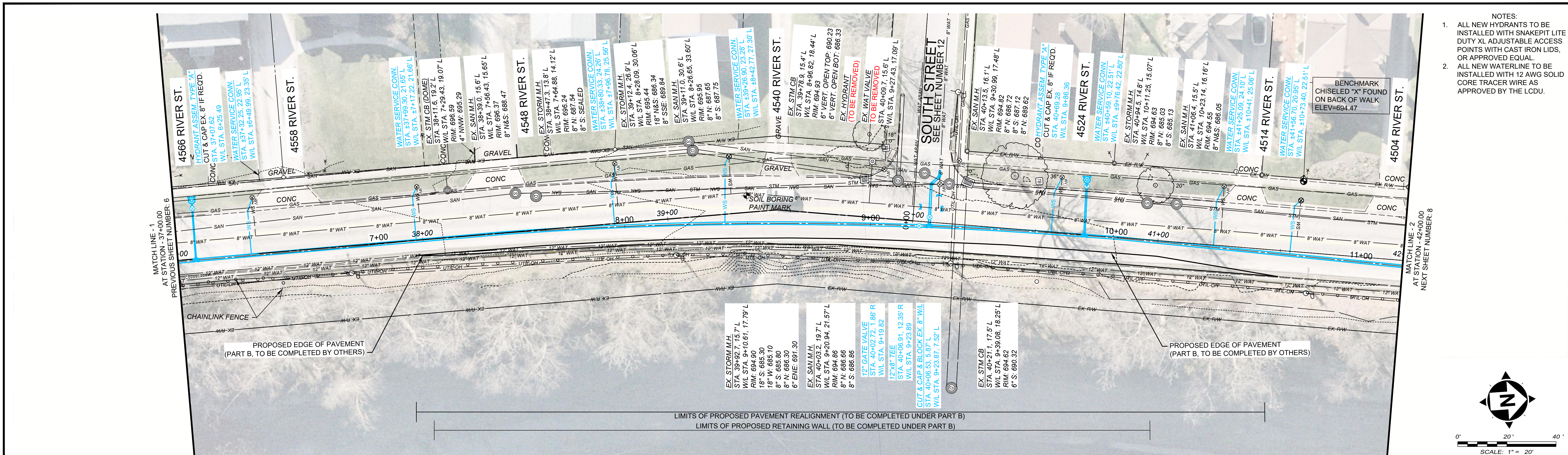
NO	REVISION	DATE

**CITY OF WILLOUGHBY AND
 LAKE COUNTY DEPARTMENT OF UTILITIES
 PART A
 RIVER STREET WATERLINE
 REPLACEMENT (475W-2023)
 LAKE COUNTY, OHIO**

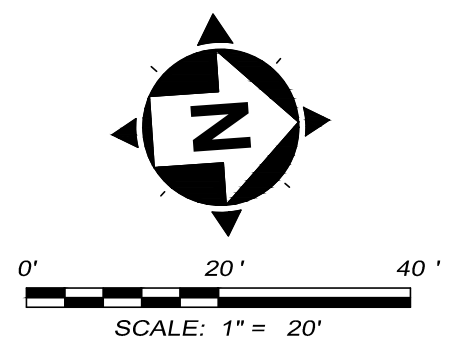
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 ISSUE DATE: 08/2024
 SCALE: AS SHOWN
 DESIGNED BY:
 DRAWN BY:
 CHECKED BY:

PROJECT SURVEY CONTROL

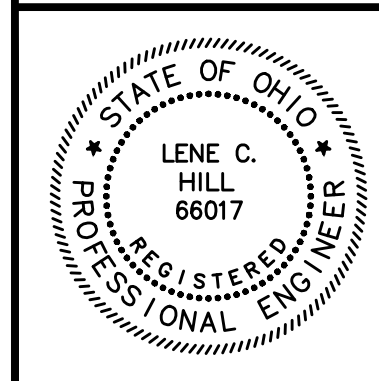
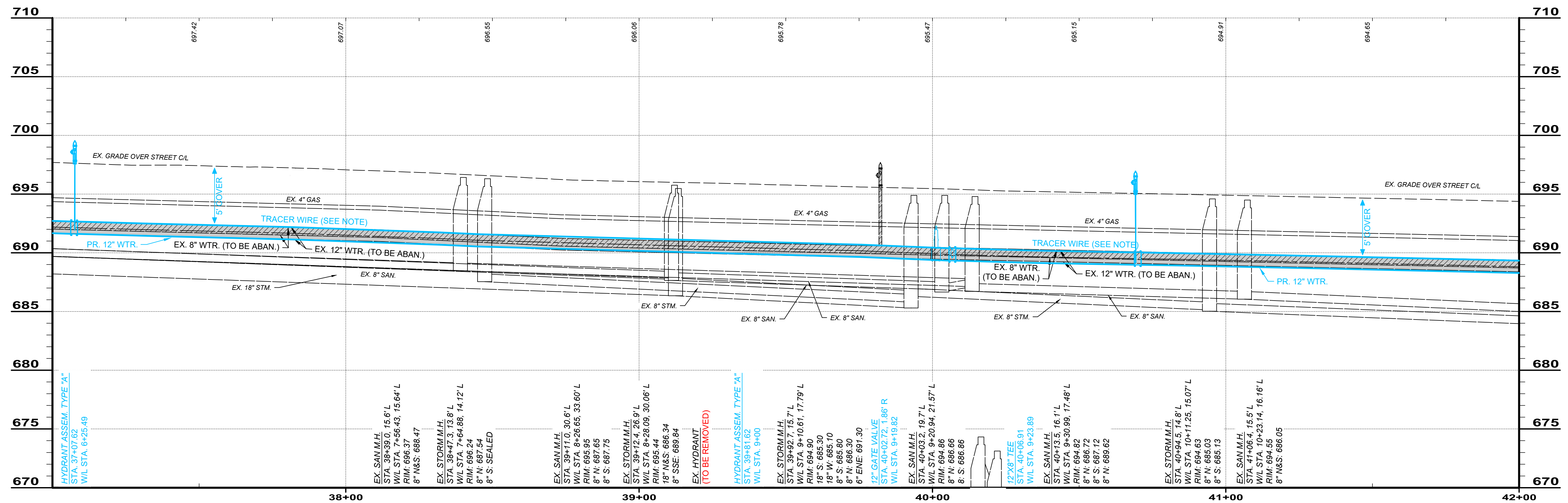
PROJECT NO.	231956
DISCIPLINE	CIVIL
SHEET NAME	CONTROL
SHEET OF	5 OF 19



- NOTES:
- ALL NEW HYDRANTS TO BE INSTALLED WITH SNAKEPIT LITE DUTY XL ADJUSTABLE ACCESS POINTS WITH CAST IRON LIDS, OR APPROVED EQUAL.
 - ALL NEW WATERLINE TO BE INSTALLED WITH 12 AWG SOLID CORE TRACER WIRE AS APPROVED BY THE LCDU.



RIVER STREET (S.R. 174)



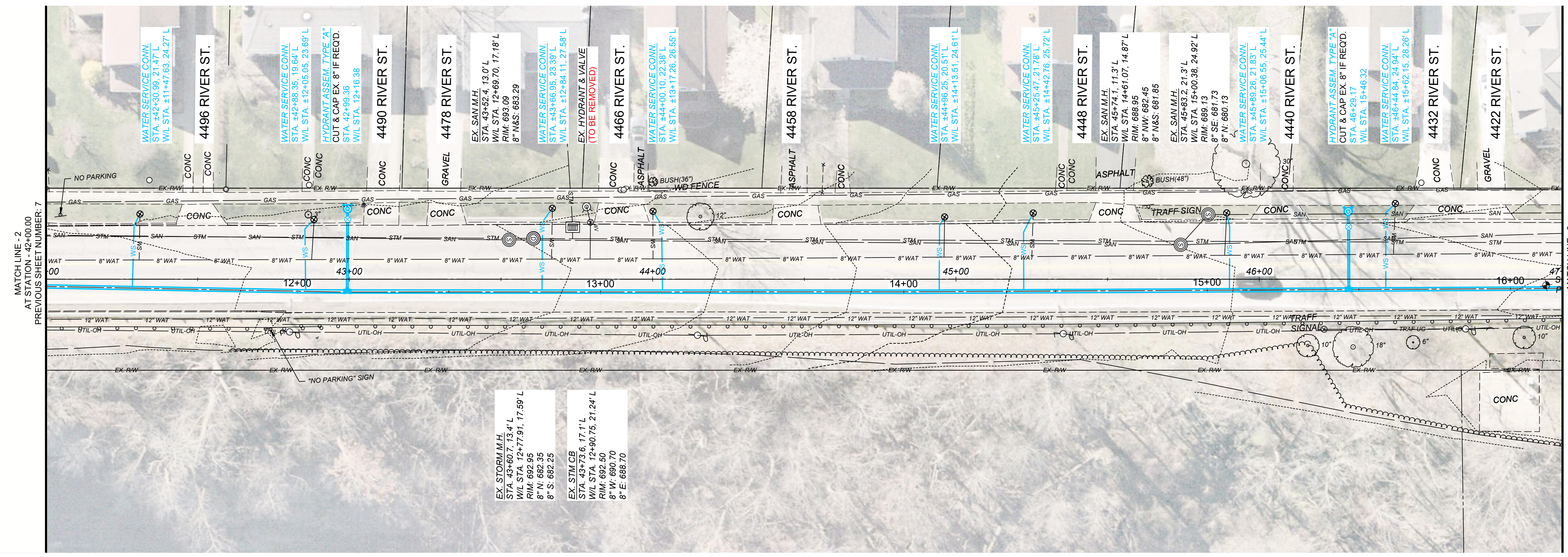
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CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

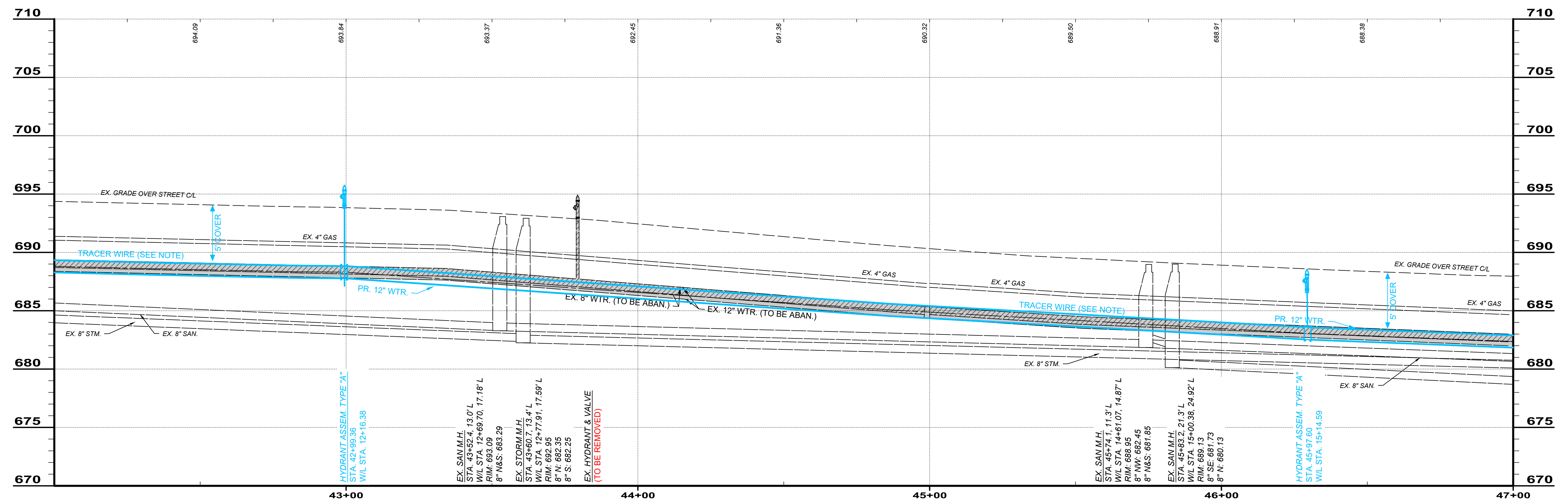
ISSUED FOR: BID SET
ISSUE DATE: 08/2024
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: TJM
CHECKED BY: LCH

**PLAN & PROFILE
STA. 37+00 TO 42+00**

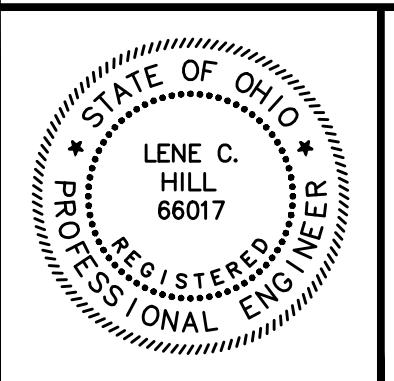
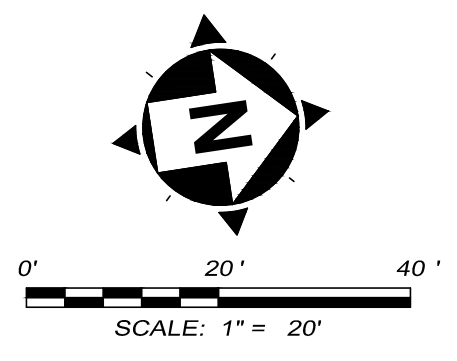
PROJECT NO. 231956
DISCIPLINE CIVIL
SHEET NAME PLAN 2
SHEET OF 7 19



RIVER STREET (S.R. 174)



- NOTES:
- ALL NEW HYDRANTS TO BE INSTALLED WITH SNAKEBIT LITE DUTY XL ADJUSTABLE ACCESS POINTS WITH CAST IRON LIDS, OR APPROVED EQUAL.
 - ALL NEW WATERLINE TO BE INSTALLED WITH 12 AWG SOLID CORE TRACER WIRE AS APPROVED BY THE LCDU.



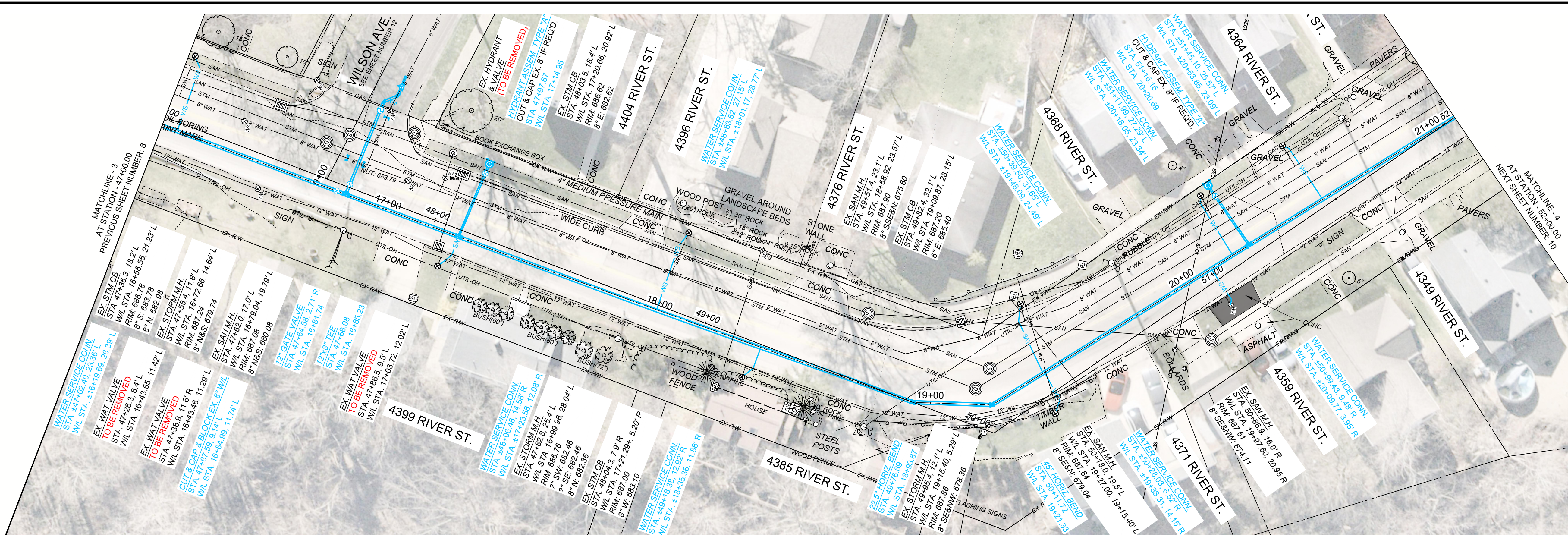
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CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

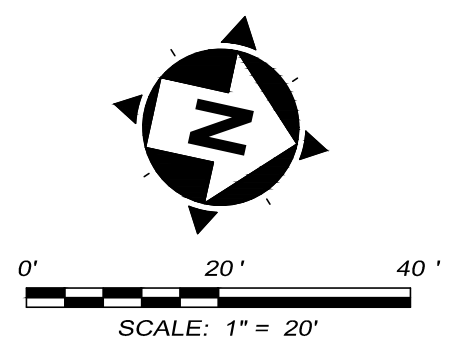
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**PLAN & PROFILE
STA 42+00 TO 47+00**

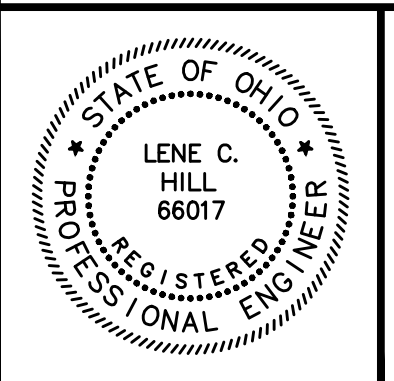
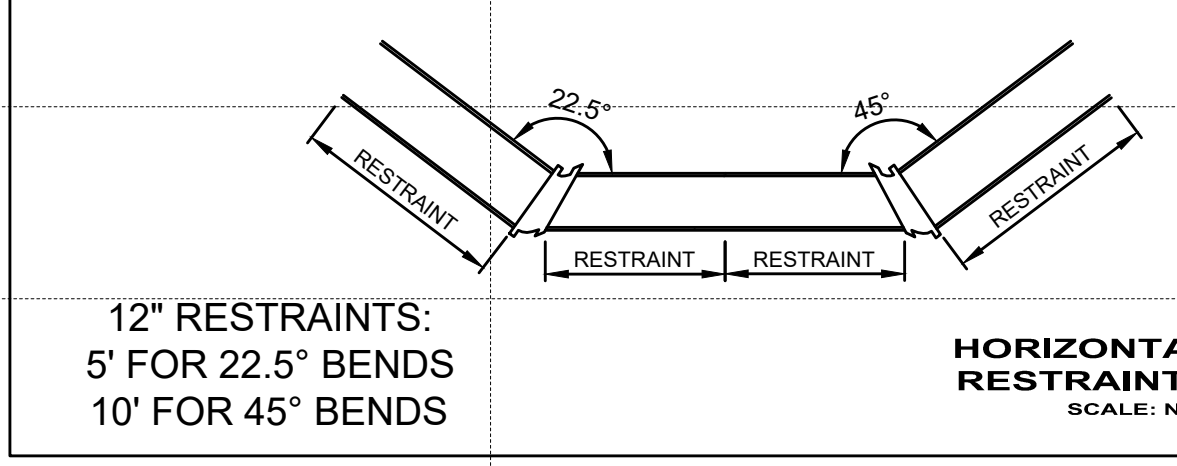
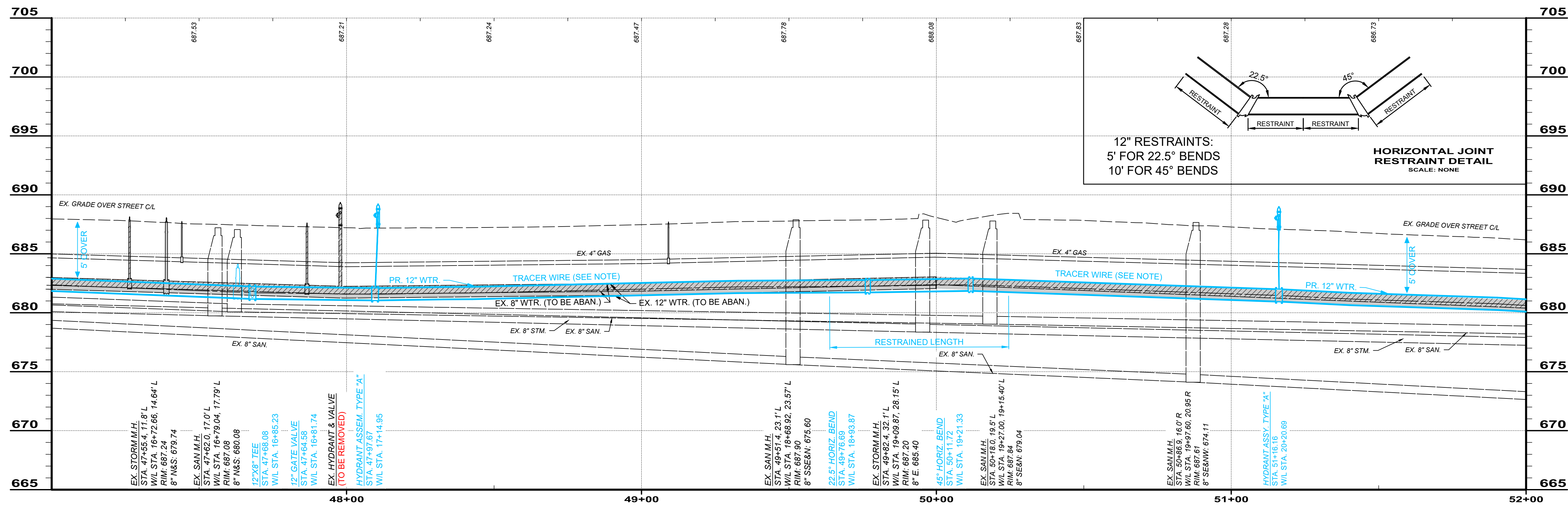
PROJECT NO. 231956	
DISCIPLINE CIVIL	
SHEET NAME PLAN 3	
SHEET 8	OF 19



- NOTES:
- ALL NEW HYDRANTS TO BE INSTALLED WITH SNAKEBIT LITE DUTY XL ADJUSTABLE ACCESS POINTS WITH CAST IRON LIDS, OR APPROVED EQUAL.
 - ALL NEW WATERLINE TO BE INSTALLED WITH 12 AWG SOLID CORE TRACER WIRE AS APPROVED BY THE LCDU.
- DENOTES REPLACEMENT OF EXISTING DRIVEWAY IN-KIND UNLESS OTHERWISE NOTED



RIVER STREET (S.R. 174)



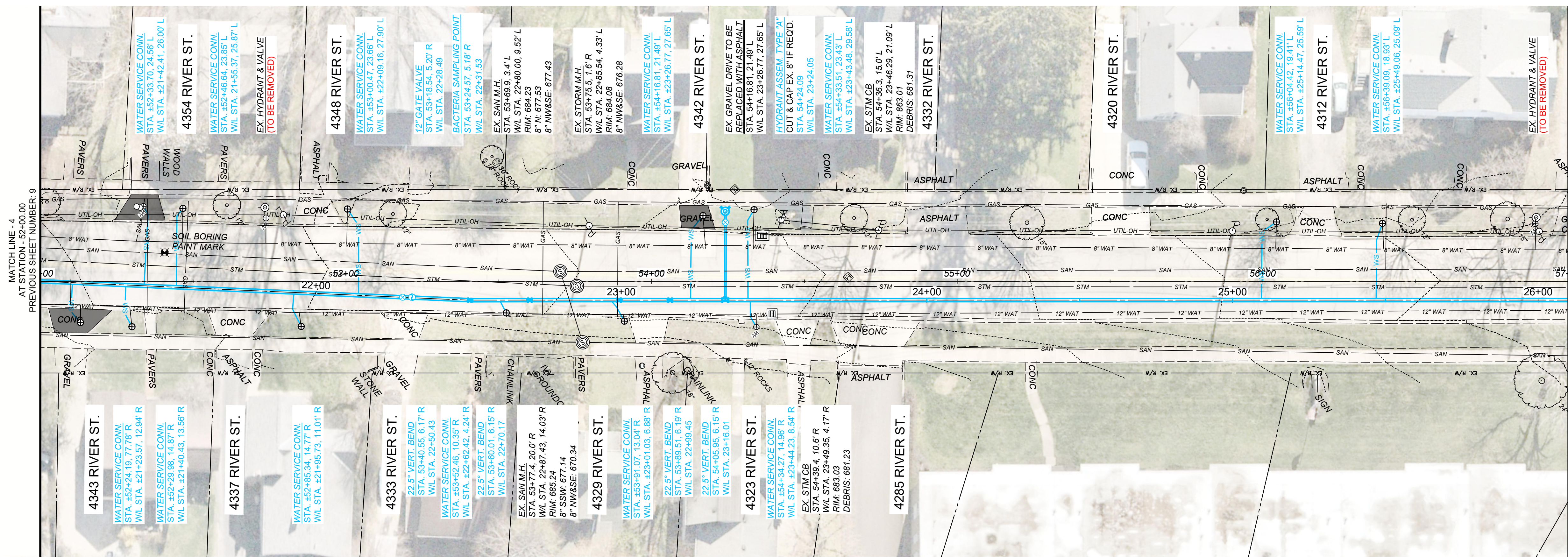
NO	REVISION	DATE

CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

ISSUED FOR:	BID SET
ISSUE DATE:	08/2024
SCALE:	AS SHOWN
DESIGNED BY:	LCH
DRAWN BY:	TJM
CHECKED BY:	LCH

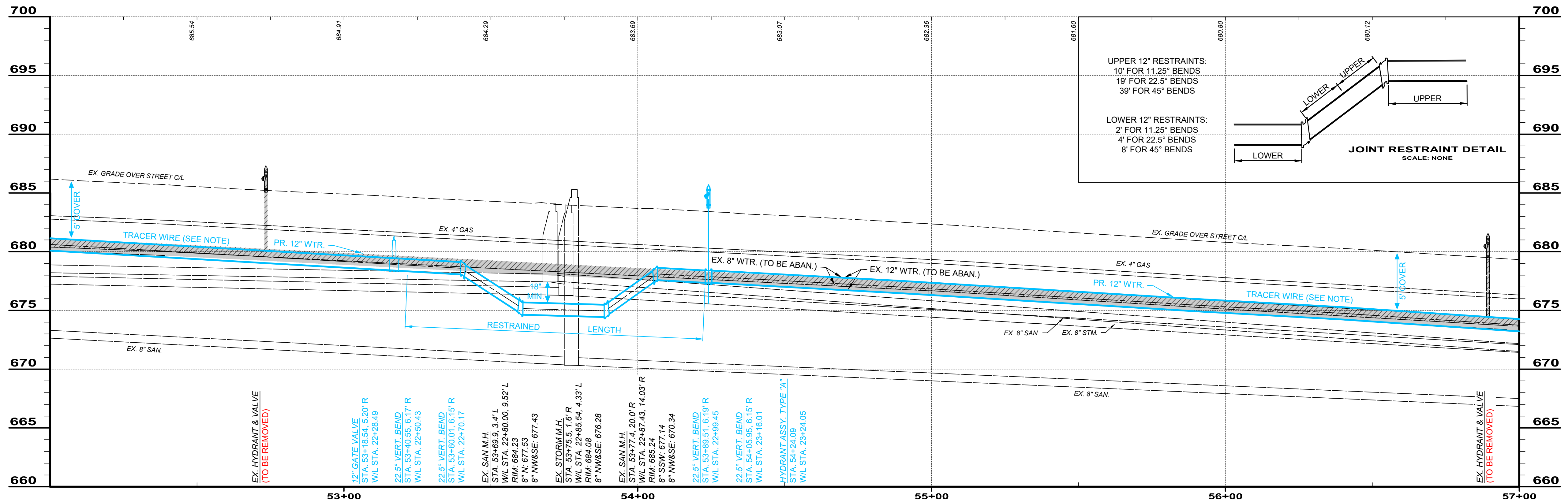
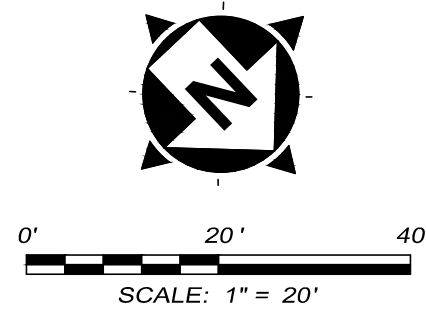
**PLAN & PROFILE
STA. 47+00 TO 52+00**

PROJECT NO.	231956
DISCIPLINE	CIVIL
SHEET NAME	PLAN 4
SHEET	9
OF	19



RIVER STREET (S.R. 174)

- NOTES:
- ALL NEW HYDRANTS TO BE INSTALLED WITH SNAKEPIT LITE DUTY XL ADJUSTABLE ACCESS POINTS WITH CAST IRON LIDS, OR APPROVED EQUAL.
 - ALL NEW WATERLINE TO BE INSTALLED WITH 12 AWG SOLID CORE TRACER WIRE AS APPROVED BY THE LCDU.
- DENOTES REPLACEMENT OF EXISTING DRIVEWAY IN-KIND UNLESS OTHERWISE NOTED

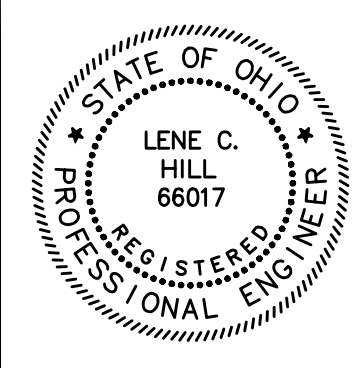


CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

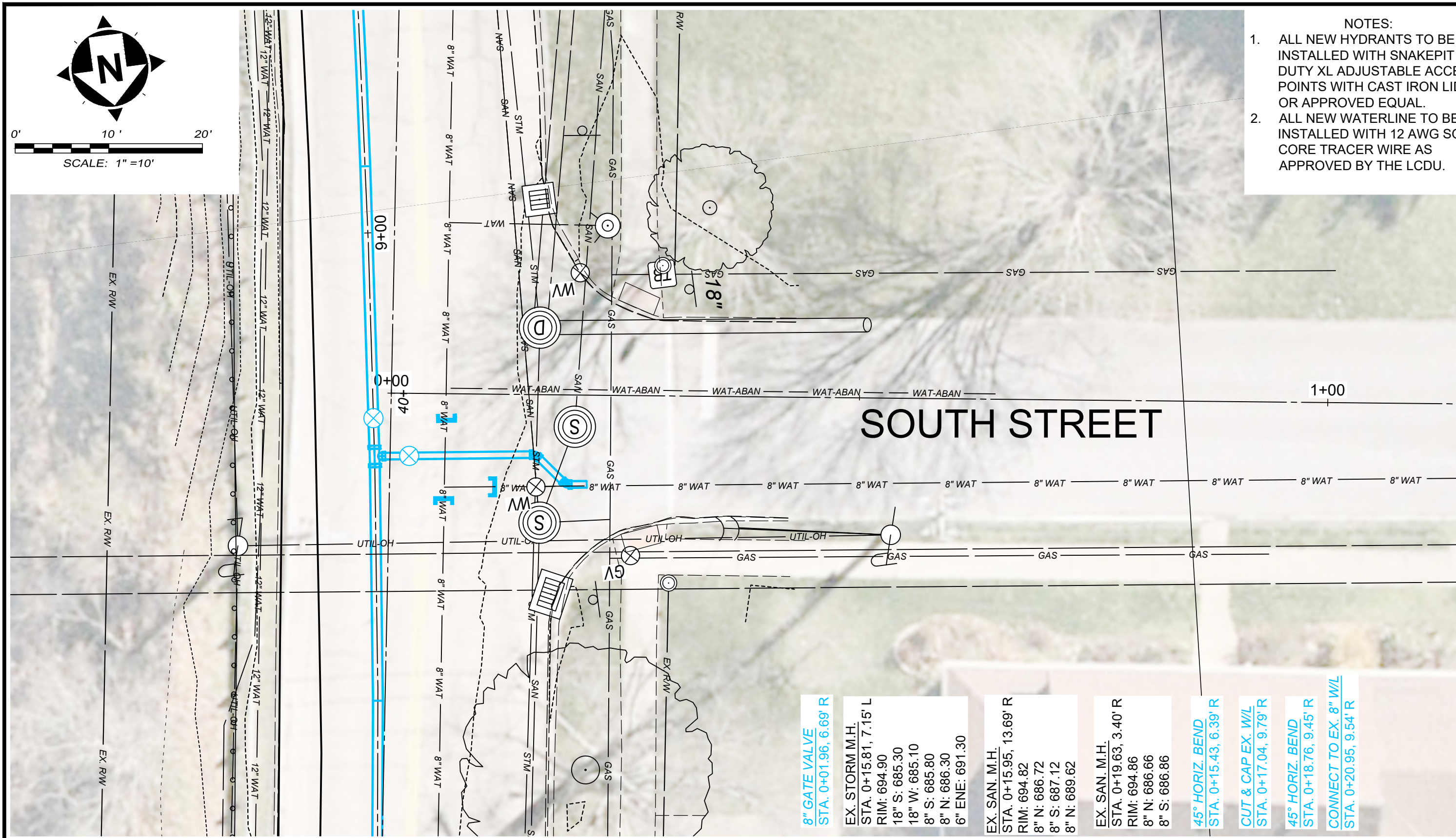
ISSUED FOR: BID SET
ISSUE DATE: 08/2024
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: TJM
CHECKED BY: LCH

**PLAN & PROFILE
STA. 52+00 TO 57+00**

PROJECT NO.		231956
DISCIPLINE		CIVIL
SHEET NAME		PLAN 5
SHEET	OF	
10	19	



NO	REVISION	DATE

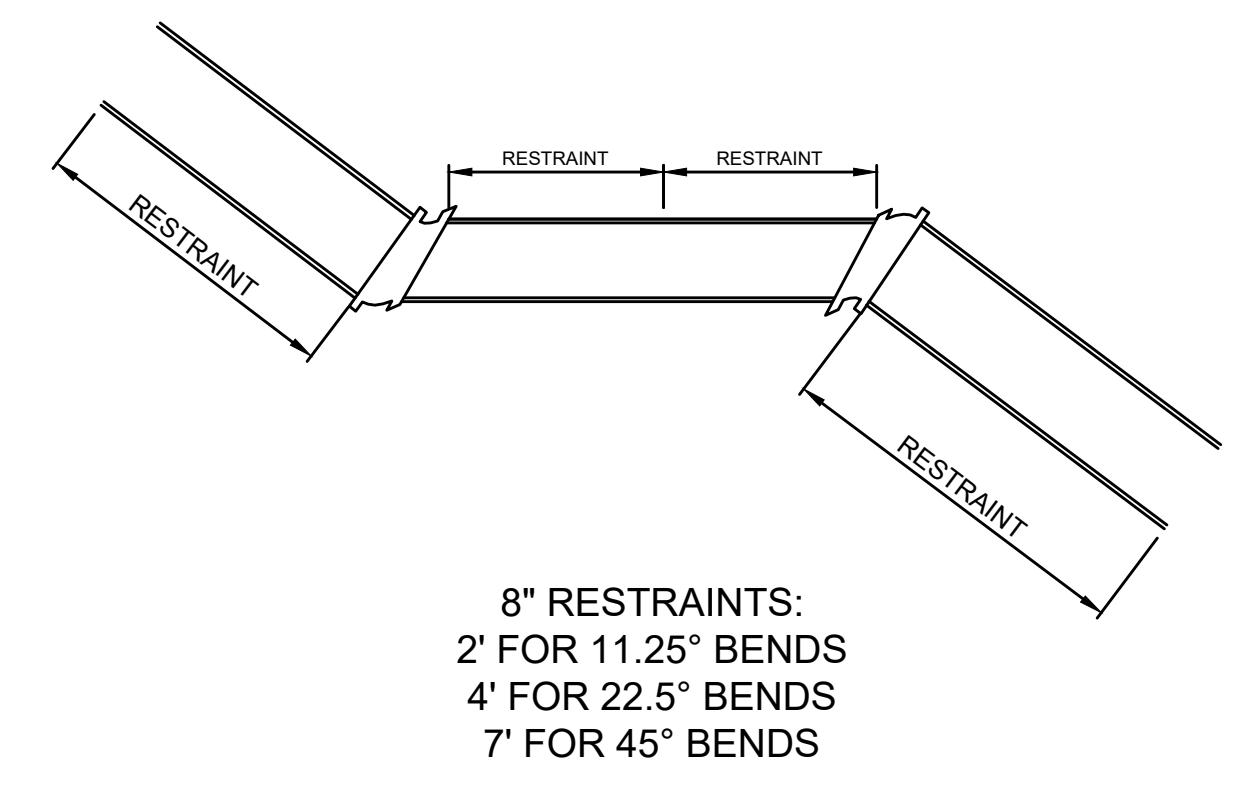
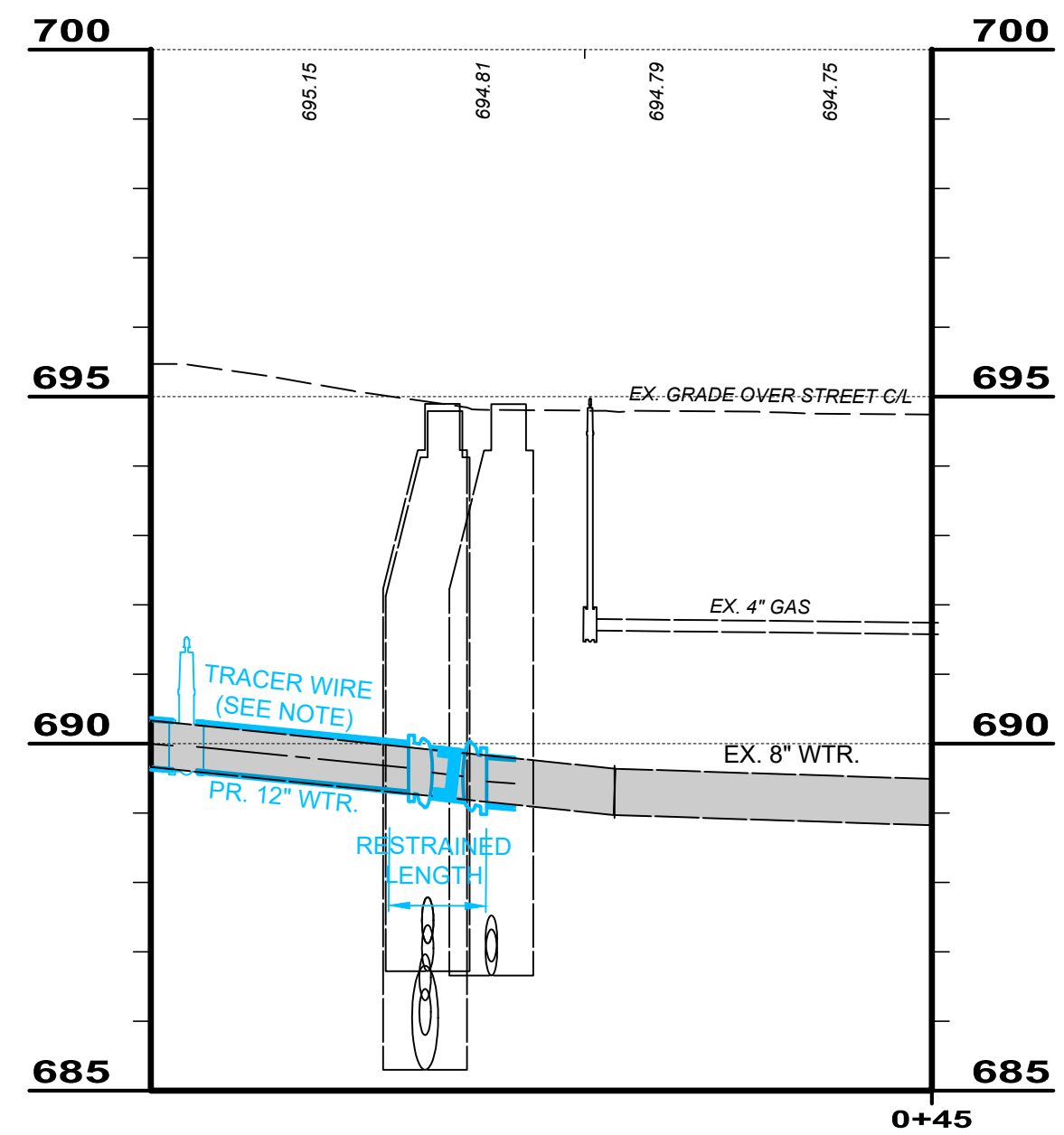


- NOTES:
1. ALL NEW HYDRANTS TO BE INSTALLED WITH SNAKEPIT LITE DUTY XL ADJUSTABLE ACCESS POINTS WITH CAST IRON LIDS, OR APPROVED EQUAL.
 2. ALL NEW WATERLINE TO BE INSTALLED WITH 12 AWG SOLID CORE TRACER WIRE AS APPROVED BY THE LCDU.

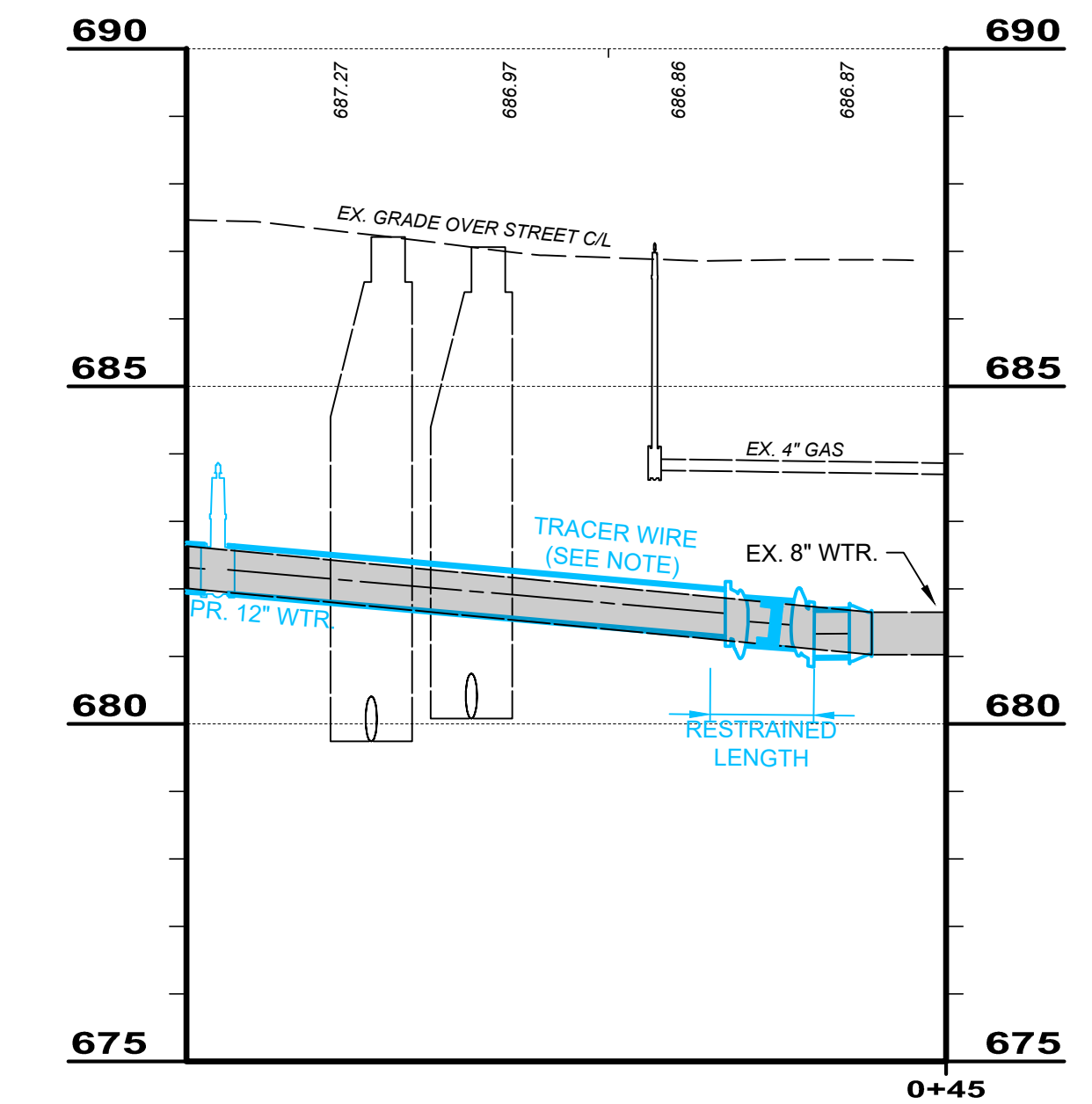
SOUTH STREET AT RIVER STREET



WILSON AVENUE AT RIVER STREET

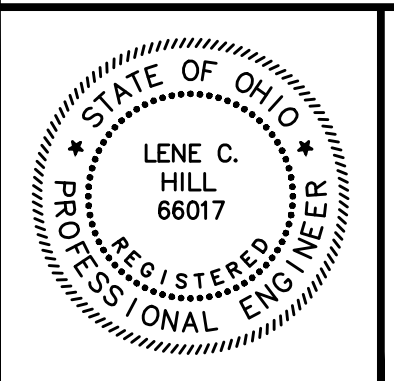


HORIZONTAL JOINT RESTRAINT DETAIL
SCALE: NONE



- 8" GATE VALVE
STA. 0+01.96, 6.69' R
- EX. STORM M.H.
STA. 0+15.81, 7.15' L
RIM: 694.90
18" W: 685.30
8" S: 686.30
6" ENE: 691.30
- EX. SAN M.H.
STA. 0+15.95, 13.69' R
RIM: 694.82
8" N: 686.72
8" S: 687.12
8" N: 689.62
- EX. SAN M.H.
STA. 0+19.63, 3.40' R
RIM: 694.86
8" N: 686.66
8" S: 686.86
- 45° HORIZ. BEND
STA. 0+15.43, 6.39' R
- CUT & CAP EX. W/L
STA. 0+17.04, 9.79' R
- 45° HORIZ. BEND
STA. 0+18.76, 9.45' R
- CONNECT TO EX. 8" W/L
STA. 0+20.95, 9.54' R

- 8" GATE VALVE
STA. 0+01.75, 7.90' R
- EX. STORM M.H.
STA. 0+10.90, 5.89' L
RIM: 687.24
8" N&S: 679.74
- EX. SAN M.H.
STA. 0+16.89, 0.00'
RIM: 687.08
8" N&S: 680.08
- 45° HORIZ. BEND
STA. 0+32.84, 5.03' R
- 45° HORIZ. BEND
STA. 0+36.56, 8.18' R
- CUT & CAP EX. W/L
STA. 0+33.92, 8.07' R
- 8" X 6" REDUCER
STA. 0+39.93, 8.09' R



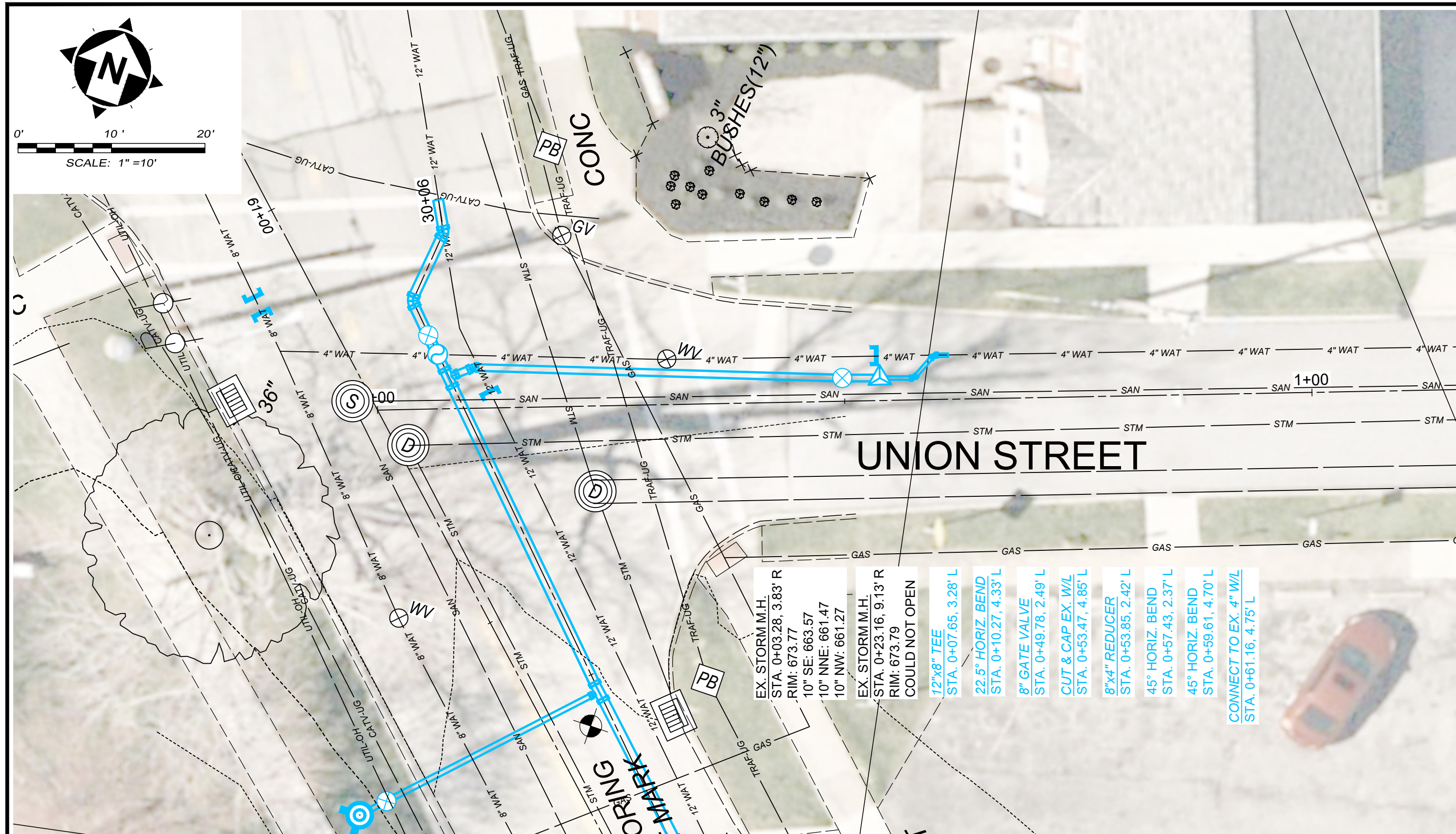
NO	REVISION	DATE

**CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES**
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

ISSUED FOR: BID SET
ISSUE DATE: 08/2024
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DESIGNED BY: LCH
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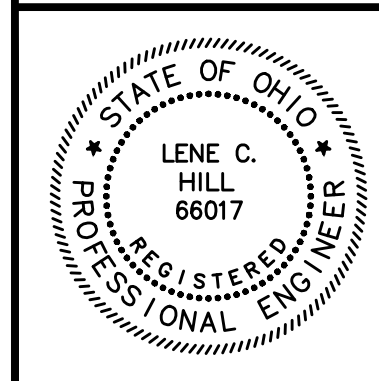
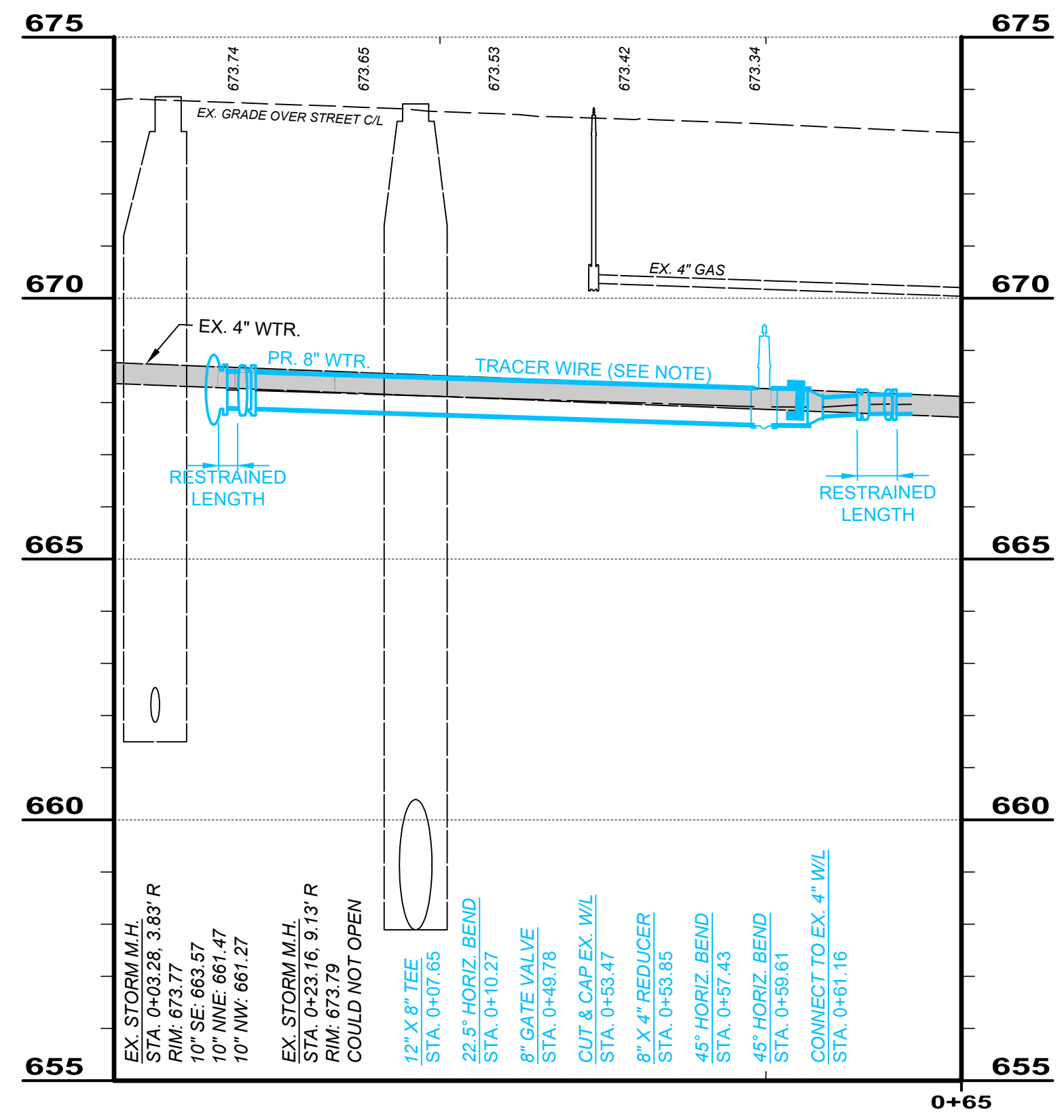
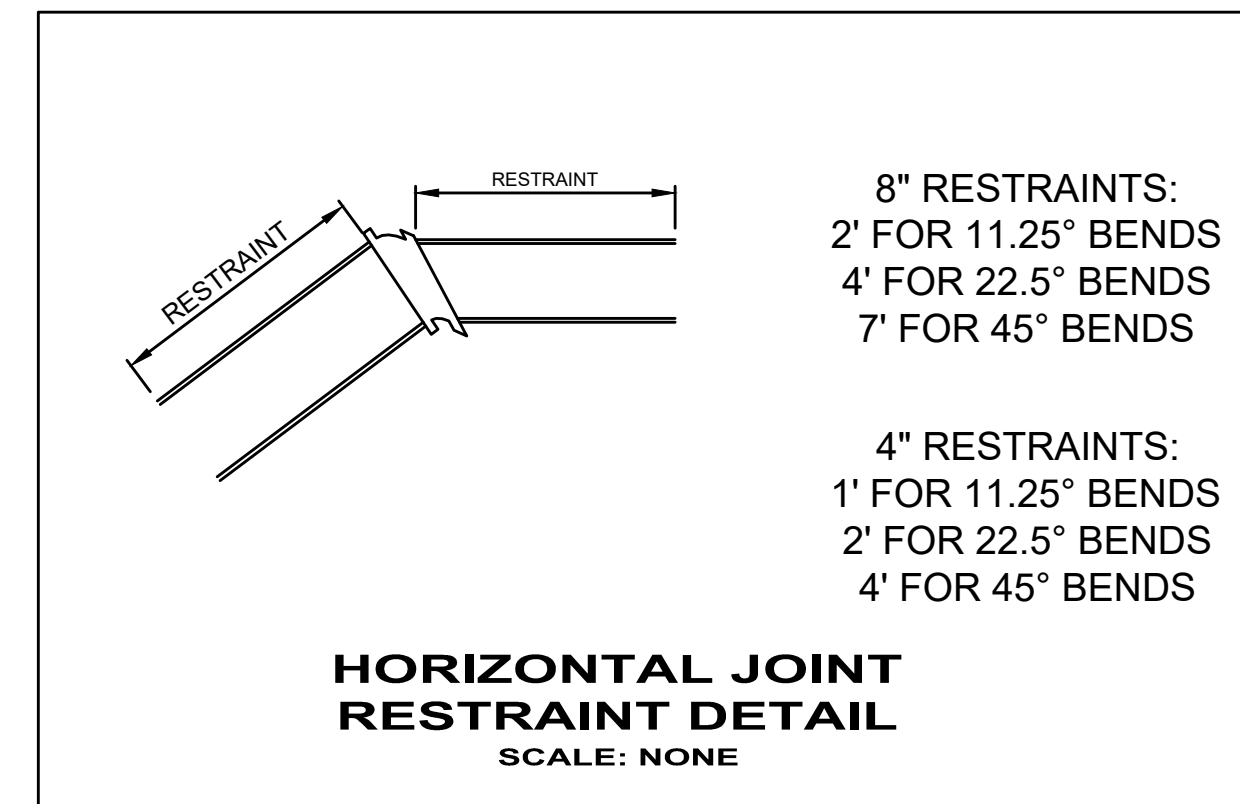
**INTERSECTION DETAILS
SOUTH STREET AND
WILSON AVENUE**

PROJECT NO. 231956	
DISCIPLINE CIVIL	
SHEET NAME INTERSECTIONS	
SHEET 12	OF 19



UNION STREET AT RIVER STREET

- NOTES:
1. ALL NEW HYDRANTS TO BE INSTALLED WITH SNAKEPIT LITE DUTY XL ADJUSTABLE ACCESS POINTS WITH CAST IRON LIDS, OR APPROVED EQUAL.
 2. ALL NEW WATERLINE TO BE INSTALLED WITH 12 AWG SOLID CORE TRACER WIRE AS APPROVED BY THE LCDO.



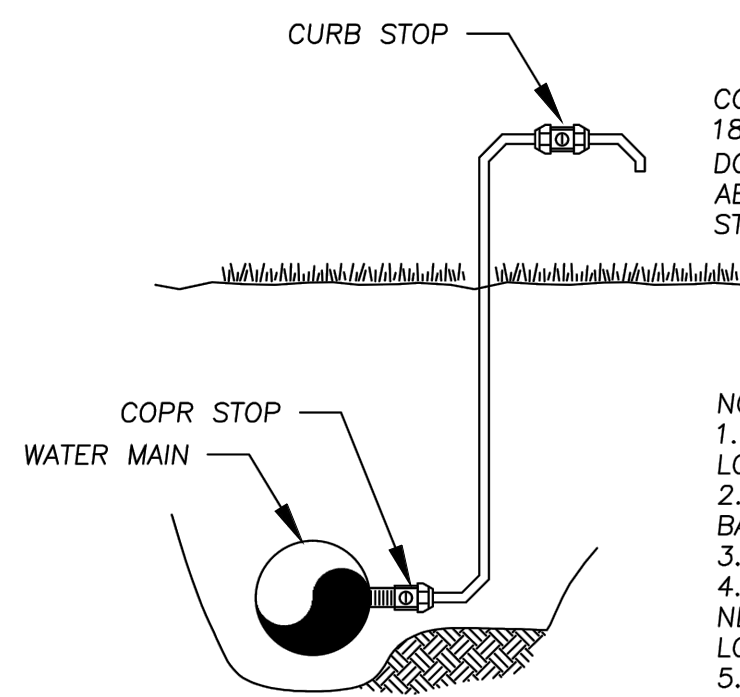
NO	REVISION	DATE

CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

ISSUED FOR:	BID SET
ISSUE DATE:	08/2024
SCALE:	AS SHOWN
DESIGNED BY:	LCH
DRAWN BY:	TJM
CHECKED BY:	LCH

**INTERSECTION DETAILS
UNION STREET**

PROJECT NO.	231956
DISCIPLINE	CIVIL
SHEET NAME	INTERSECTIONS 2
SHEET	OF
13	19

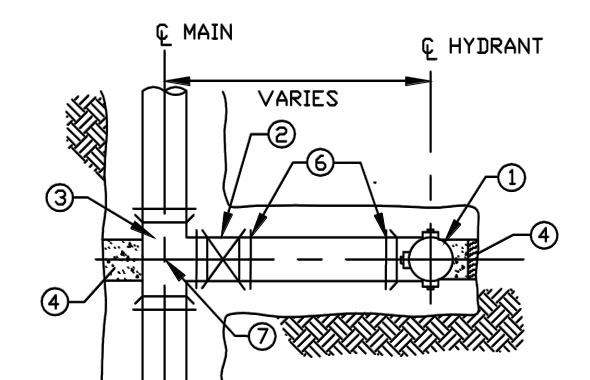


COPPER-TUBE EXTENSION SHOULD EXTEND AT LEAST 18-INCHES PAST THE CURB STOP, BE BENT AT A DOWNWARD ANGLE AND TERMINATE AT LEAST 3'-0" ABOVE GRADE LEVEL. PIPE OUTLET TO DITCH OR STORM SEWER SYSTEM.

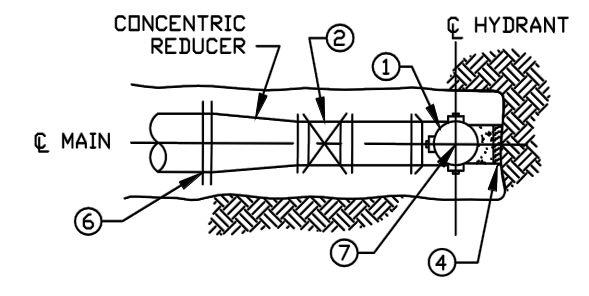
- NOTES:
1. CURB STOP MUST BE EASILY ACCESSIBLE TO LCDU PERSONNEL FOR SAMPLING.
 2. THE CURB STOP CAN BE SUBSTITUTED WITH A BALL VALVE.
 3. PLUG CORPORATION STOP AFTER TESTING.
 4. SAMPLING POINT REQUIRED EVERY 1200 LF OF NEW WATERLINE AND AT ANY DEAD END. LOCATIONS TO BE DETERMINED BY LCDU.
 5. COPPER TUBE AND CURB STOP SHALL BE REMOVED BY THE CORP STOP IN THE MAIN BY THE CONTRACTOR, WHEN AND AS DIRECTED BY LCDU, AFTER THE MAIN HAS PASSED ALL REQUIRED BACTERIOLOGICAL TESTING.

FIG 2.14.1

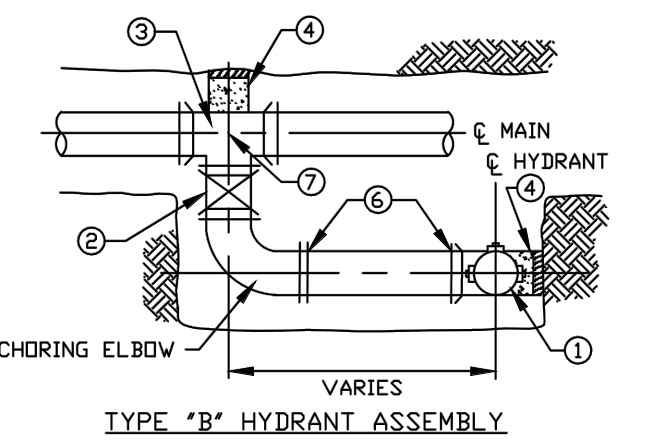
LAKE COUNTY DEPARTMENT OF UTILITIES		
BACTERIA SAMPLING DETAIL		
DATE: 6-16	DRAWN BY: DDB	SCALE: NONE



TYPE "A" HYDRANT ASSEMBLY



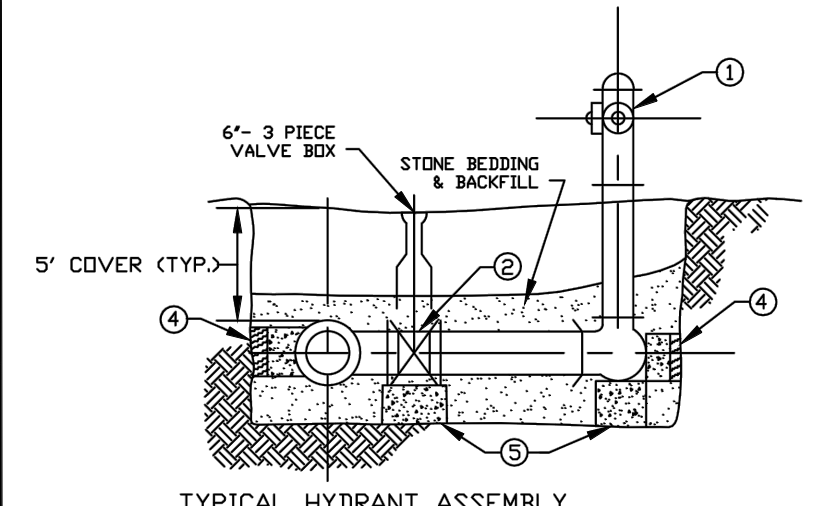
TYPE "C" HYDRANT ASSEMBLY



TYPE "B" HYDRANT ASSEMBLY

- 1 HYDRANT, PER SPECIFICATIONS
- 2 6" GATE VALVE
- 3 SWIVEL ANCHORING TEE OR MJ X MJ X MJ TEE
- 4 CONCRETE BLOCKING WITH OAK WEDGES AGAINST UNDISTURBED EARTH
- 5 CONCRETE SUPPORT BLOCKING
- 6 JOINT RESTRAINT, (TYP. TEE TO HYDRANT)
- 7 PLAN STATION AND OFFSET

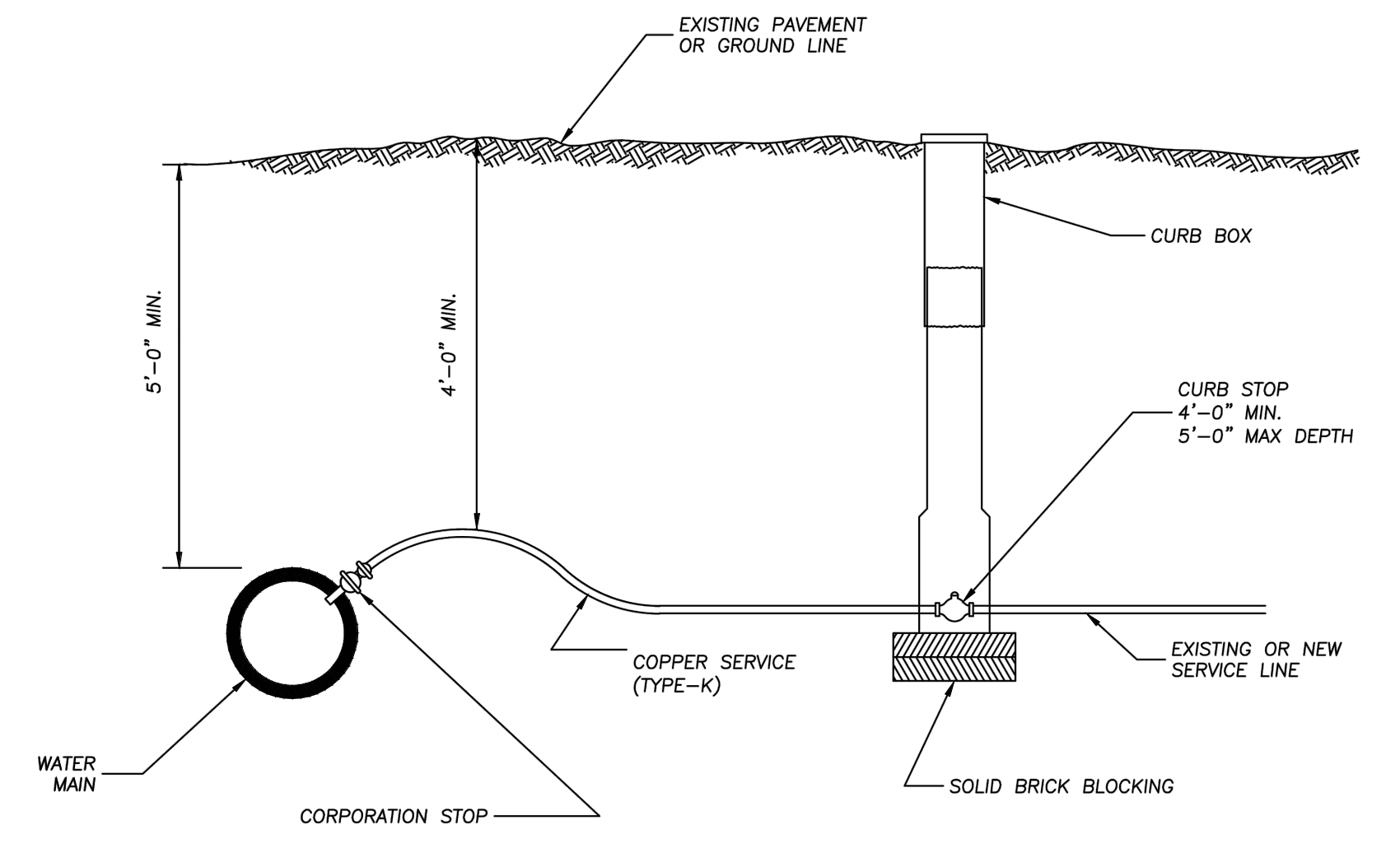
NOTE: ALL MATERIALS SHALL BE AS LISTED IN THE LCDU APPROVED MATERIAL LIST



TYPICAL HYDRANT ASSEMBLY ELEVATION

FIG 2.12.1

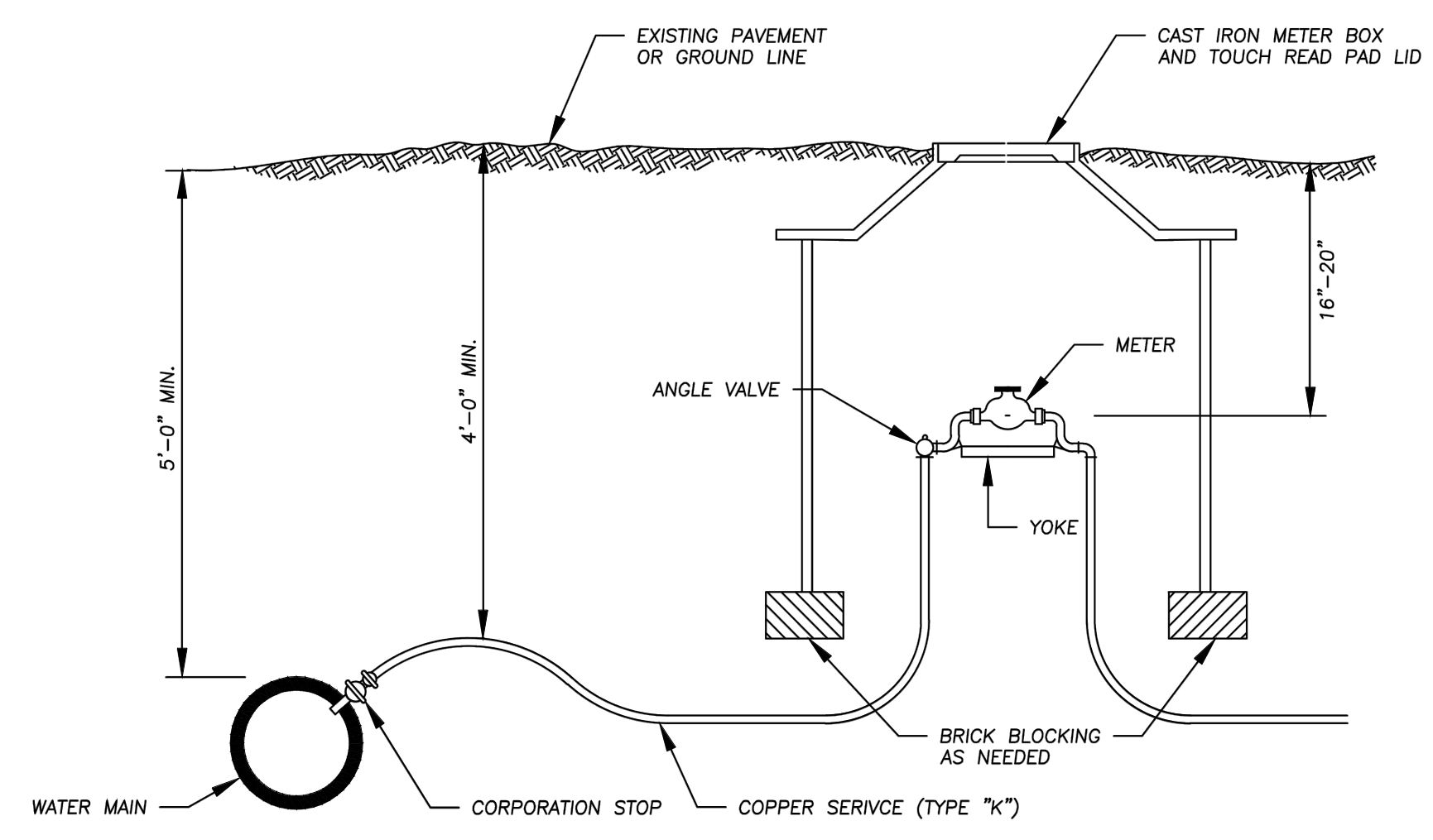
LAKE COUNTY DEPARTMENT OF UTILITIES		
HYDRANT DETAILS		
DATE: 5-16	DRAWN BY: D.D.B.	SCALE: NONE



- NOTES:
1. IF CURB STOP AND BOX FALL IN DITCH LINE MOVE BOTH TOWARD BUILDING OUT OF DITCH, BUT KEEP BOTH INSIDE THE RIGHT-OF-WAY. CURB STOP AND BOX TO BE A MINIMUM OF 5'-0" FROM BACK OF CURB OR EDGE OF PAVEMENT. SHOULD A CONFLICT OCCUR WITH OTHER UTILITIES OR STRUCTURES, LOCATION SHALL BE APPROVED BY SANITARY ENGINEER. CURB BOXES TO BE LOCATED OUTSIDE ALL PAVED AREAS. ALL FITTINGS TO BE OF THE FLARED TYPE.
 2. ALL MATERIALS SHALL BE AS LISTED IN THE LCDU APPROVED MATERIAL LIST.
 3. CURB STOP SHALL BE SET SUCH THAT THE OPERATING LEVER RUNS PERPENDICULAR TO THE MAIN WHEN IN THE "ON" POSITION.

FIG 2.25.2

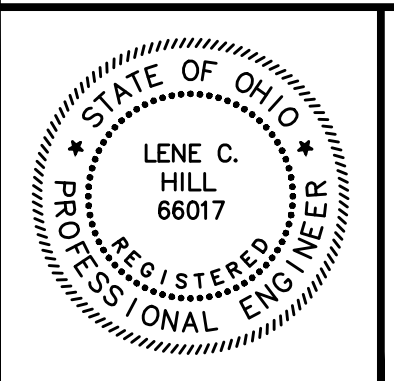
LAKE COUNTY DEPARTMENT OF UTILITIES		
SERVICE TIE IN FOR INSIDE METER LESS THAN 2" DIA		
DATE: 8-17	DRAWN BY: DDB	SCALE: NONE



ALL MATERIALS SHALL BE AS LISTED IN THE LCDU APPROVED MATERIAL LIST.

FIG 2.25.1

LAKE COUNTY DEPARTMENT OF UTILITIES		
SERVICE TIE IN FOR OUTSIDE METER LESS THAN 2" DIA.		
DATE: 9-17	DRAWN BY: DDB	SCALE: NONE



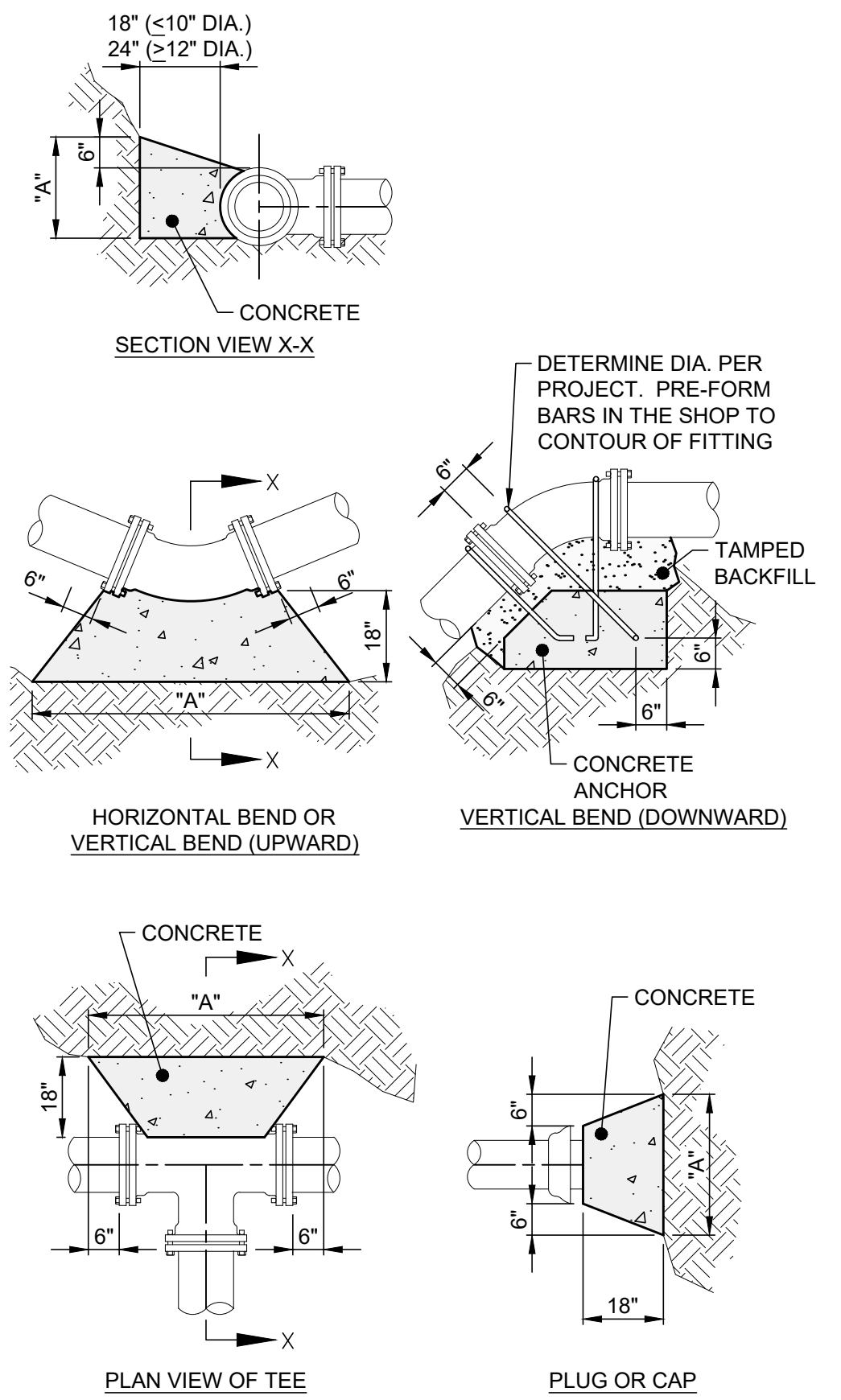
NO	REVISION	DATE

CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

ISSUED FOR: BID SET
ISSUE DATE: 08/2024
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: TJM
CHECKED BY: LCH

CONSTRUCTION DETAILS 1

PROJECT NO. 231956	
DISCIPLINE CIVIL	
SHEET NAME DET-1	
SHEET 14	OF 19

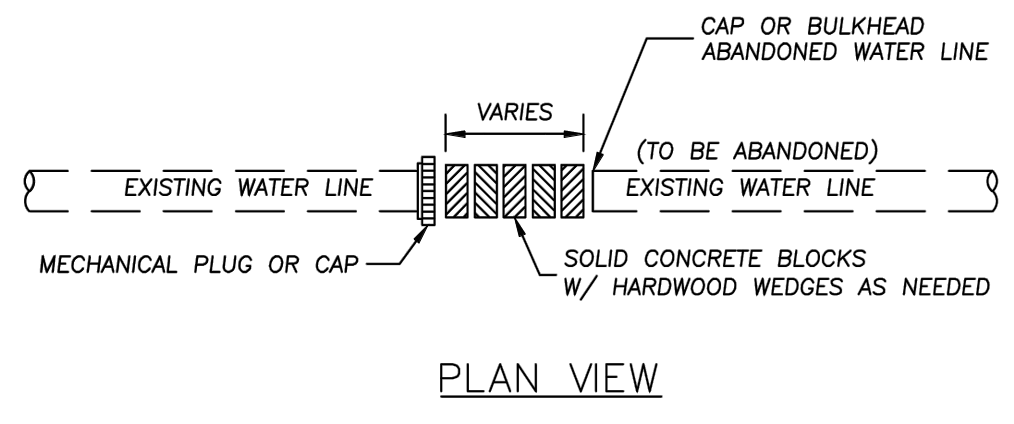


NOTES:

- ALL CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-1.
- ALL DIMENSIONS SHOWN ARE MINIMUMS.
- THRUST BLOCKS SHALL BE POURED TO UNDISTURBED EARTH.

"A" DIMENSIONS				
DIA.	90°	45°	22.5°	TEE
6"	17"	13"	9"	13"
8"	23"	17"	12"	17"
10"	28"	21"	15"	21"
12"	34"	25"	18"	25"
16"	45"	33"	24"	38"

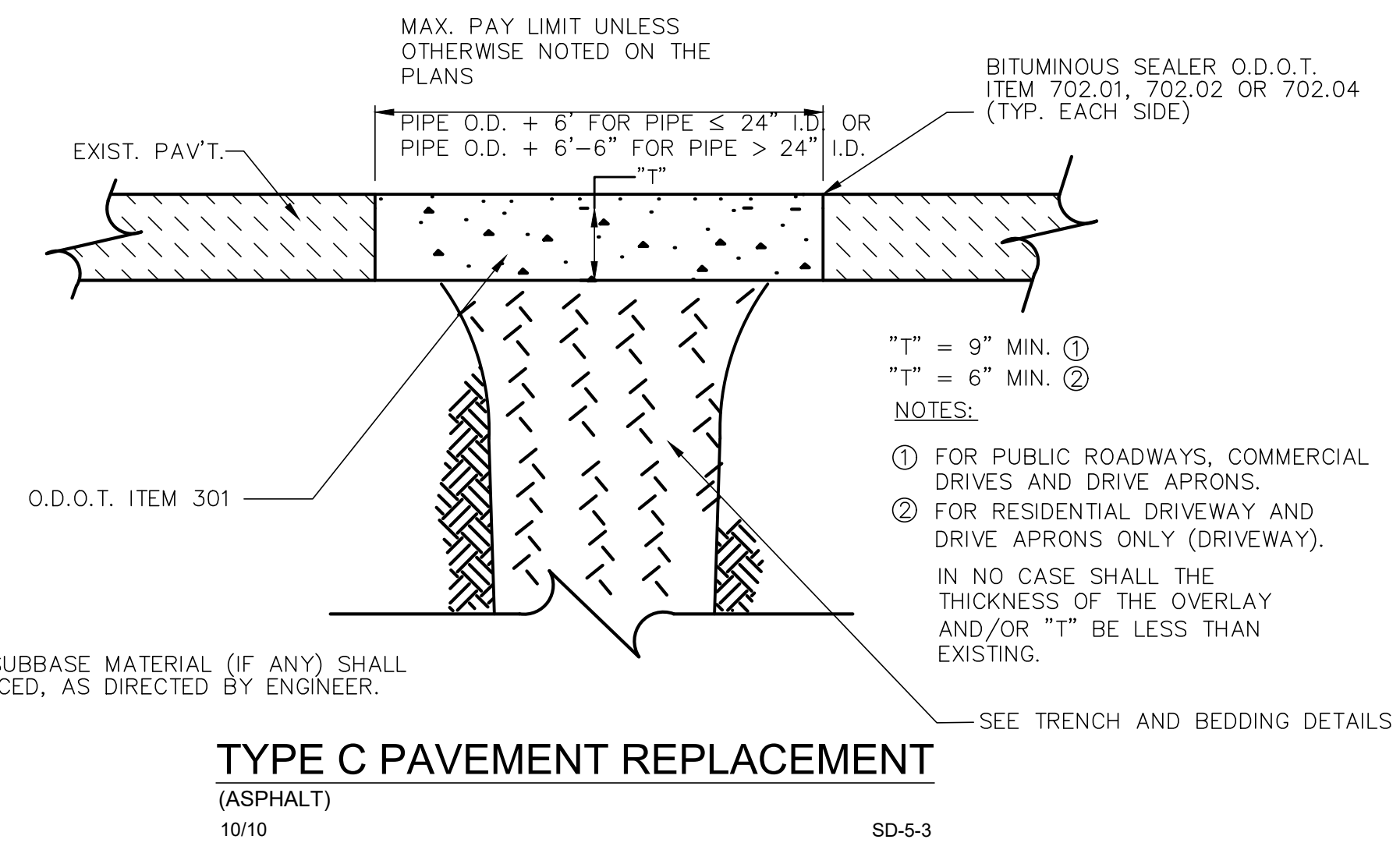
CONCRETE THRUST BLOCK DETAIL
SCALE: NONE



PLAN VIEW

LAKE COUNTY
DEPARTMENT OF UTILITIES
SOLID BLOCKING DETAIL FOR ABANDONED WATERLINES
DATE: 5-16 DRAWN BY: DDB SCALE: NONE

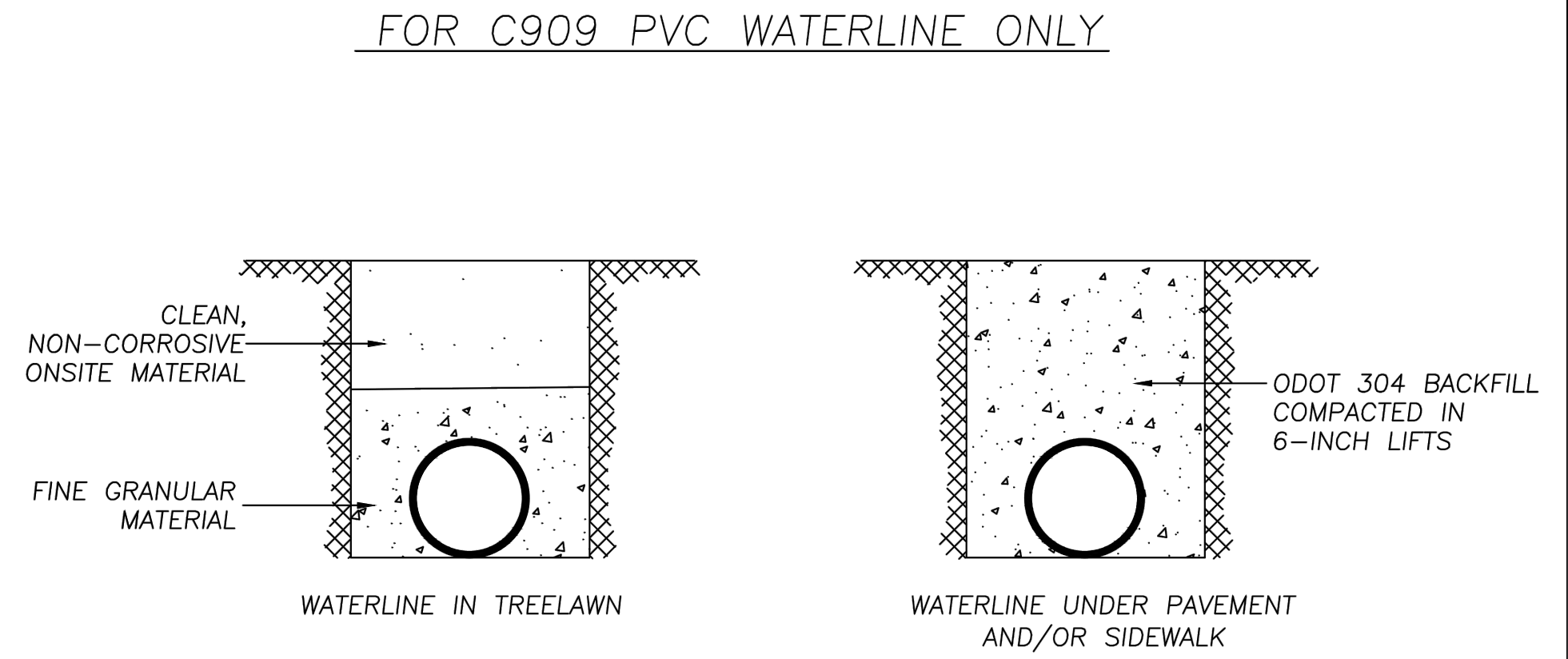
FIG 2.5.2



TYPE C PAVEMENT REPLACEMENT
(ASPHALT)
10/10 SD-5-3

NOTE:
1) EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY ENGINEER.

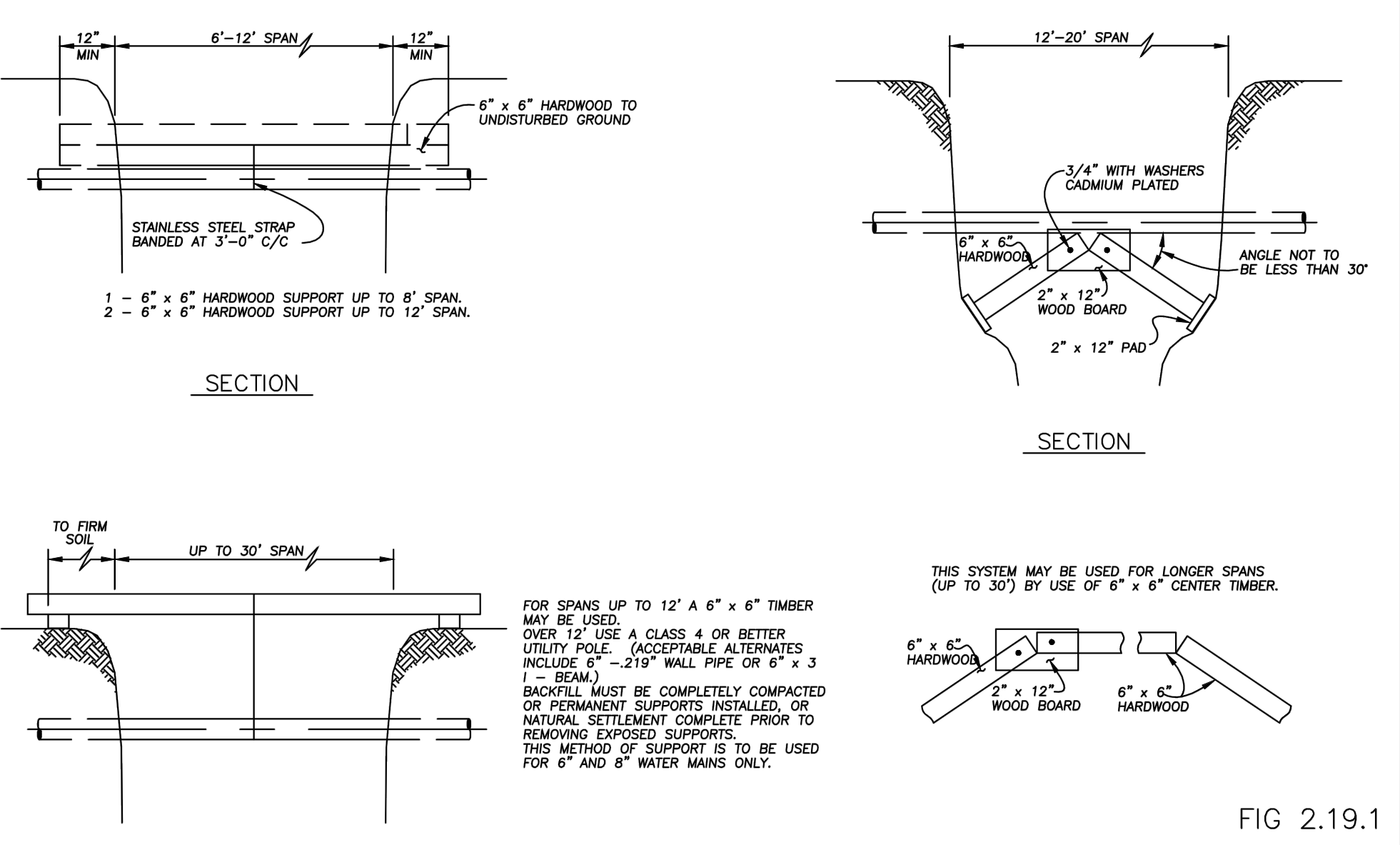
- NOTES:
- FOR PUBLIC ROADWAYS, COMMERCIAL DRIVES AND DRIVE APRONS.
 - FOR RESIDENTIAL DRIVEWAY AND DRIVE APRONS ONLY (DRIVEWAY).
- IN NO CASE SHALL THE THICKNESS OF THE OVERLAY AND/OR "T" BE LESS THAN EXISTING.
- SEE TRENCH AND BEDDING DETAILS



- FOR C909 PVC WATERLINE ONLY
- NOTES:
- RECYCLED MATERIAL SHALL NOT BE USED. ALL VALVES, HYDRANTS, HYDRANT VALVES SHALL BE BACKFILLED WITH 57 LIMESTONE.
 - FINE GRANULAR MATERIAL SHALL HAVE NO ROUGHS BIGGER THAN 1-INCH TO 2-INCH IN DIAMETER.
 - ON-SITE GRANULAR MATERIAL REQUIRED, OTHERWISE PROVIDE SAND (ODOT 703) OR ODOT 304.

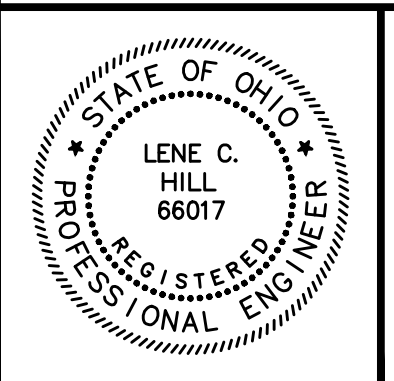
LAKE COUNTY
DEPARTMENT OF UTILITIES
FLEXIBLE TRENCH AND BEDDING
DATE: 10-2020 DRAWN BY: SC SCALE: NONE

FIG 2.22.2



LAKE COUNTY
DEPARTMENT OF UTILITIES
SUPPORT OF WATER UTILITIES PERPENDICULAR TO EXCAVATION
DATE: 09-10 DRAWN BY: D.D.B. SCALE: NONE

FIG 2.19.1



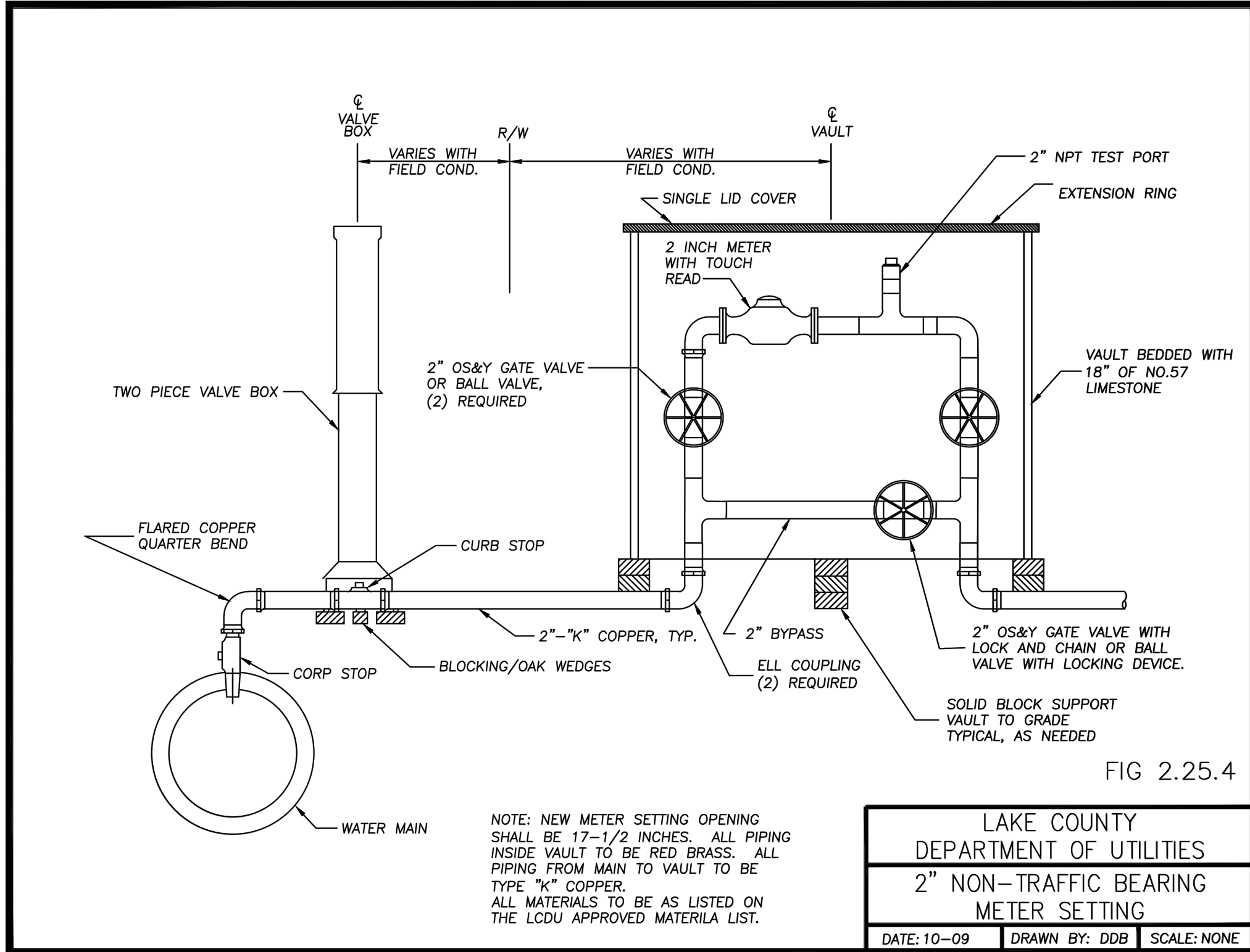
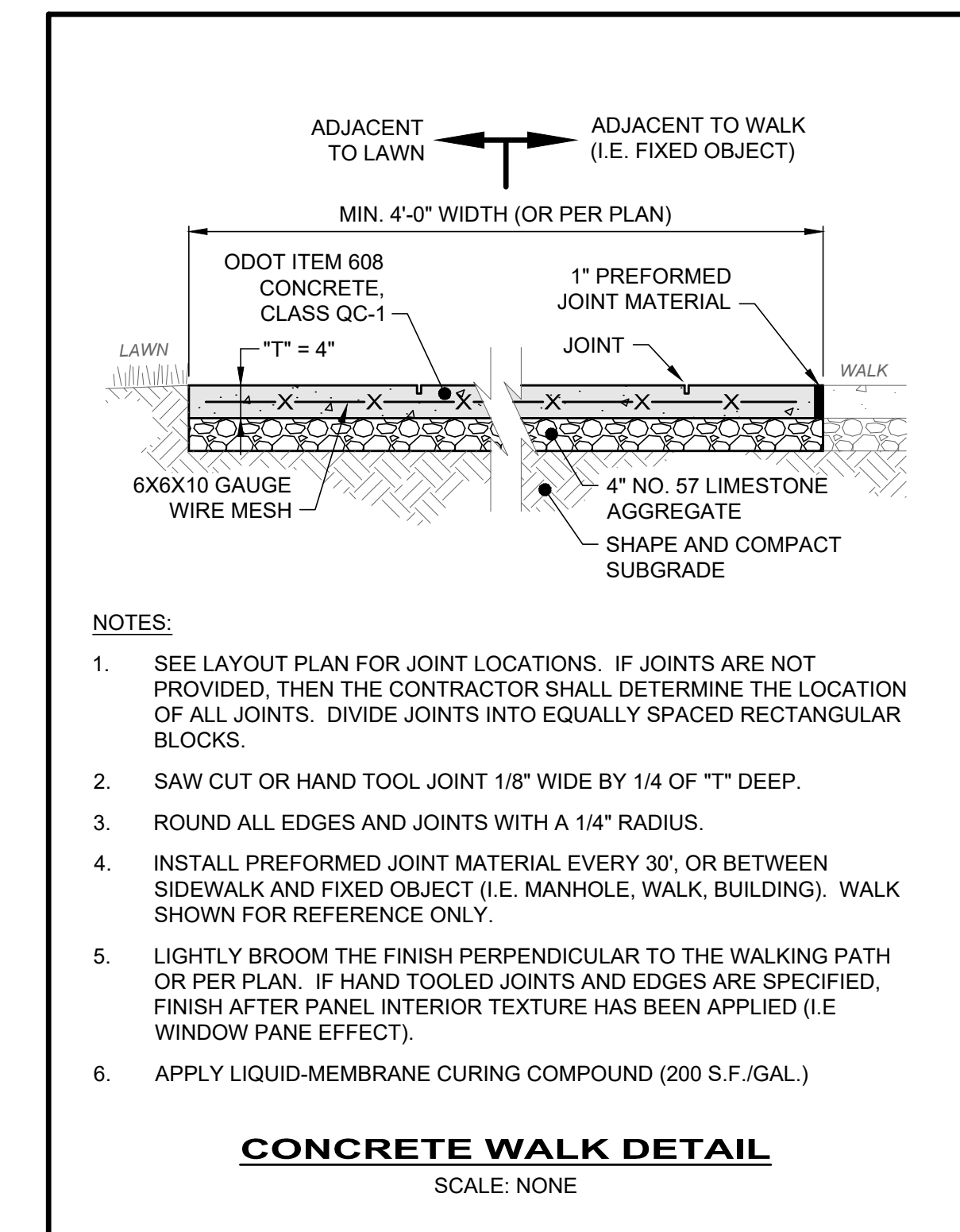
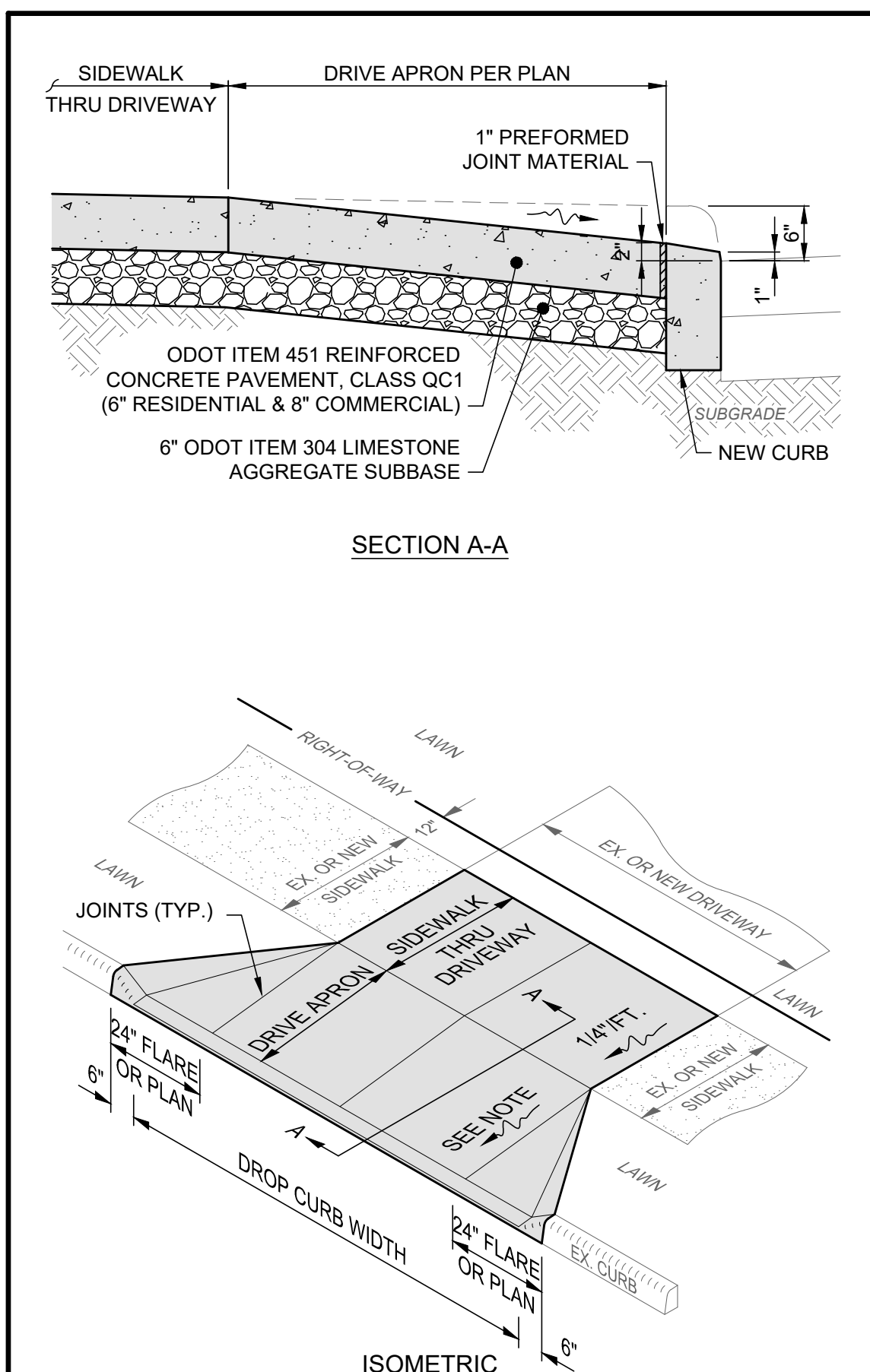
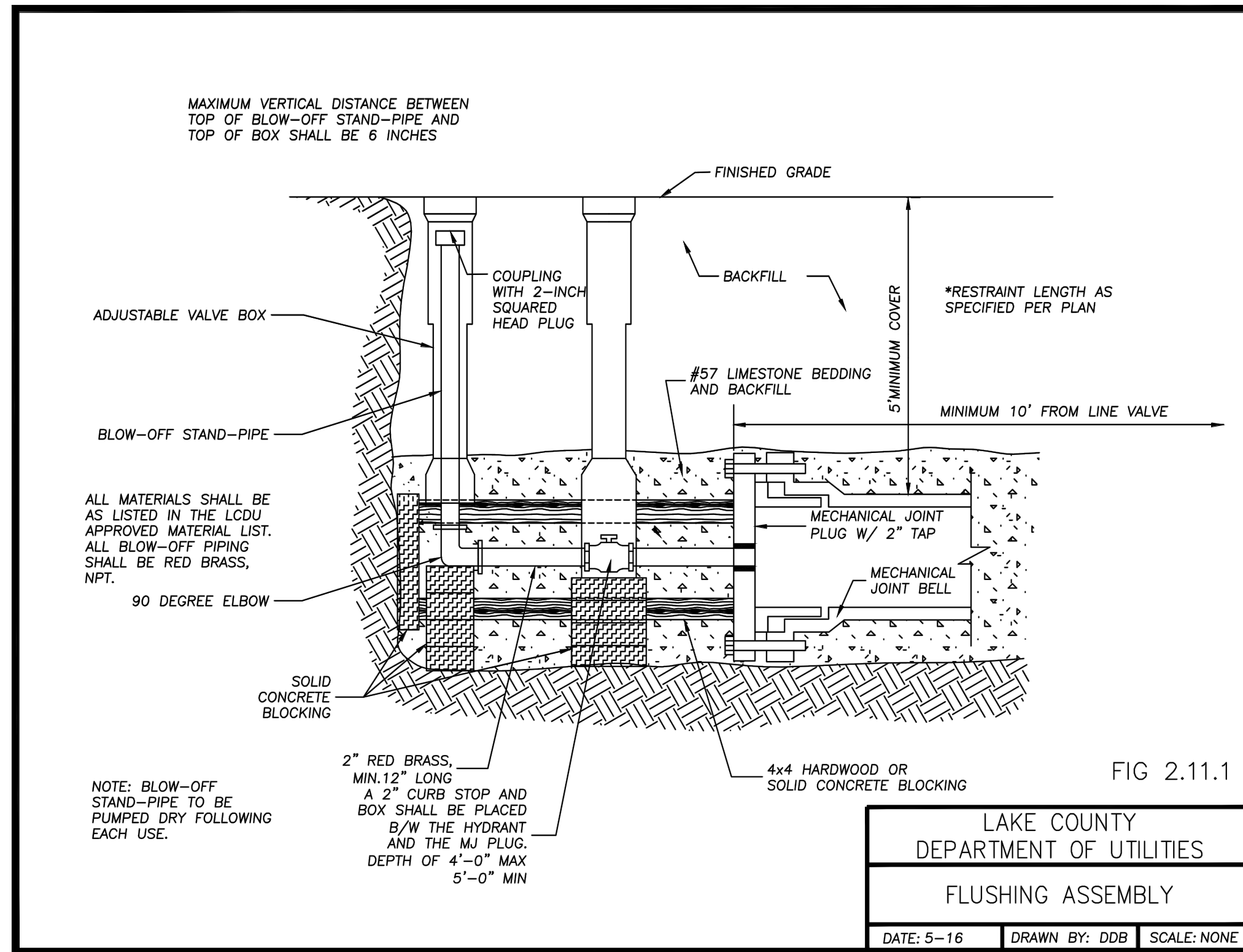
NO	REVISION	DATE

CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
RIVER STREET WATERLINE REPLACEMENT (475W-2023)
LAKE COUNTY, OHIO

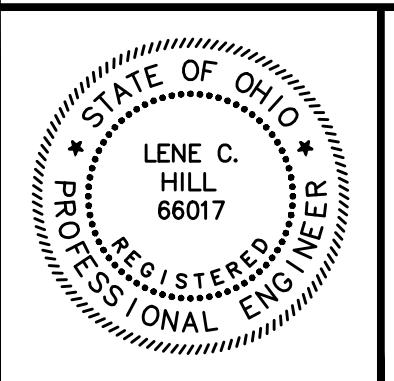
ISSUED FOR: BID SET
ISSUE DATE: 08/2024
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: TJM
CHECKED BY: LCH

CONSTRUCTION DETAILS 2

PROJECT NO.	231956
DISCIPLINE	CIVIL
SHEET NAME	DET-2
SHEET	OF
15	19



- NOTES:
1. CONCRETE AT ACTIVE DRIVE APRONS SHALL BE CLASS QC MS.
 2. THE DROP CURB SHALL BE HAND FORMED AT THE TIME THE CONCRETE CURB IS POURED.
 3. JOINTS SHALL BE PROVIDED AT THE NORMAL FACE AND BACK OF SIDEWALK LOCATION.
 4. MINIMUM DRIVE APRON SLOPE PERMITTED IS 1/8"/FT. (1.00%) AND MAXIMUM IS 1"/FT. (8.33%). SEE GRADING PLAN FOR ACTUAL SLOPES AND ELEVATIONS.
 5. THIS DETAIL SHOWS A DRIVE APRON WITH VARIOUS APRON FLARES FOR REFERENCE ONLY; SEE LAYOUT PLAN FOR ACTUAL APRON CONFIGURATION AND FLARE WIDTHS.



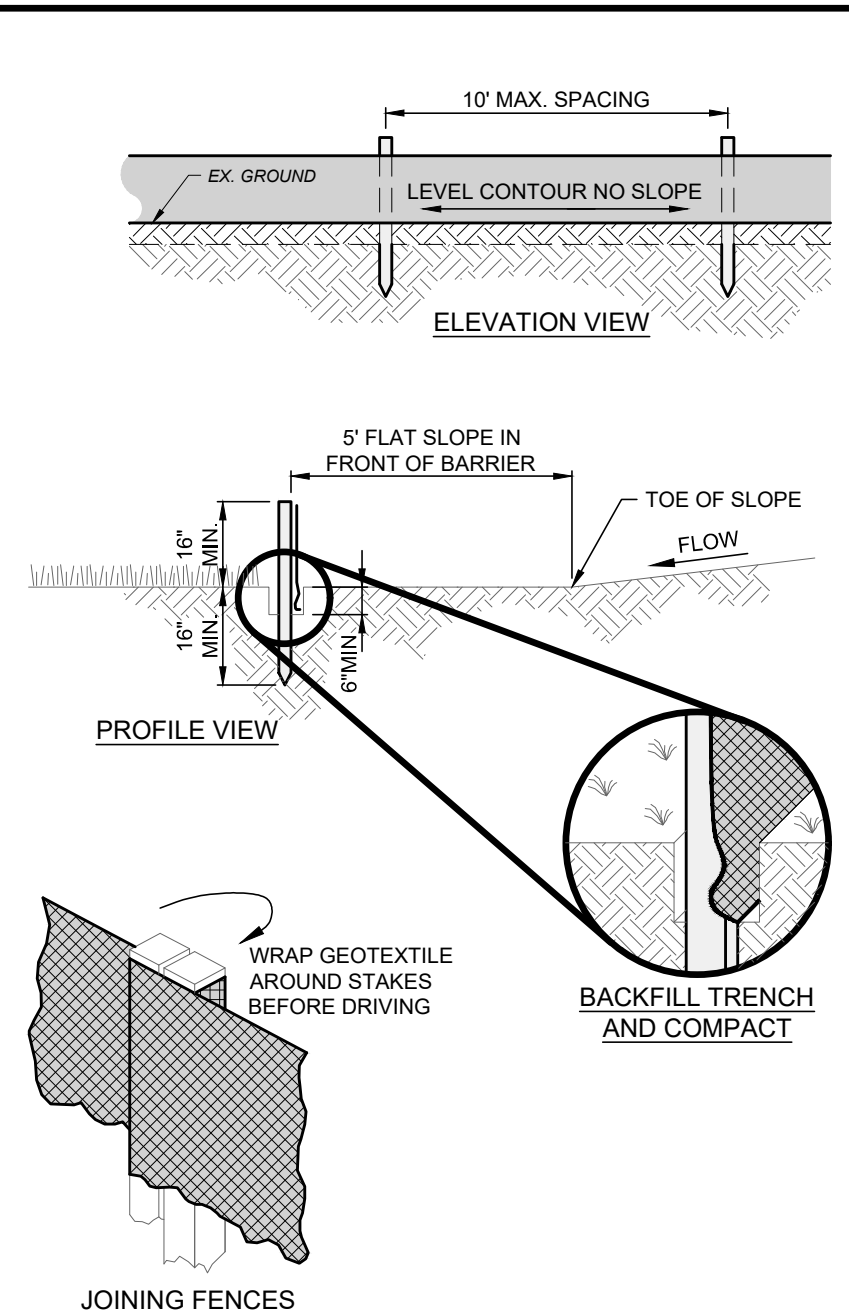
NO	REVISION	DATE

**CITY OF WILLOUGHBY AND
 LAKE COUNTY DEPARTMENT OF UTILITIES
 PART A
 RIVER STREET WATERLINE
 REPLACEMENT (475W-2023)
 LAKE COUNTY, OHIO**

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 DRAWN BY: TJM
 CHECKED BY: LCH

CONSTRUCTION DETAILS 3

PROJECT NO. 231956	
DISCIPLINE CIVIL	
SHEET NAME DET-3	
SHEET 16	OF 19



- NOTES:
- PRESERVE VEGETATION FOR 5 FEET OR AS MUCH AS POSSIBLE UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RE-ESTABLISHED WITHIN 7 DAYS FROM SILT FENCE INSTALLATION.
 - SILT FENCE MAY ONLY PASS RUNOFF AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, THEN CHANGE THE LAYOUT OF THE SILT FENCE. REMOVE ACCUMULATED SEDIMENT OR INSTALL OTHER PRACTICES.
 - SILT FENCE SHALL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, VERIFICATION FABRIC IS SECURELY ATTACHED TO FENCE POSTS, AND VERIFICATION FENCE POSTS ARE FIRMLY IN THE GROUND. BUILT UP SEDIMENT SHALL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED 1/3 THE FENCE HEIGHT.
 - THE MAXIMUM DRAINAGE AREA PER 100 FEET OF SILT FENCE IS 1/2 ACRE AND IS DEPENDENT ON THE SLOPE PER THE CHART BELOW:

MAX. DRAINAGE AREA (AC.) PER 100-FT OF SILT FENCE (*)	RANGE OF SLOPE PER INDIVIDUAL DRAINAGE AREA
0.50 AC.	<2% (50H:1V)
0.25 AC.	≥2% (50H:1V) BUT <20% (5H:1V)
0.125 AC.	≥20% (5H:1V) BUT <50% (2H:1V)

(*) SILT FENCE CANNOT BE USED FOR SLOPES ≥50% (2H:1V).

SILT FENCE DETAIL
SCALE: NONE

- THE SEED BED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION.
- SOIL AMENDMENTS MAY BE REQUIRED TO ESTABLISH VEGETATION. PERFORM SOIL TESTS TO PREDICT THE NEED FOR LIME OR FERTILIZER. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS.
- APPLY SEED UNIFORMLY. COVER BROADCASTED SEED BY RAKING OR DRAGGING, AND LIGHTLY TAMPING INTO PLACE.
- MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
- INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.

TEMPORARY SEEDING SPECIES SELECTION			
DATES	SPECIES	LB/1,000 SF	LB/AC.
MARCH 1 - AUGUST 15	OATS	3	128
	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
AUGUST 16 - OCTOBER 31	PERENNIAL RYEGRASS	2	40
	TALL FESCUE	1	40
	RYE	3	112
NOVEMBER 1 - FEBRUARY 28	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
	WHEAT	3	120
	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	2	40
	TALL FESCUE	1	40

TEMPORARY SEEDING NOTES

- SUBSOILING SHALL OCCUR WHEN SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING IS NOT PERMITTED ON SLIP-PRONE AREAS.
- THE SEED BED SHALL BE PREPARED BY APPLYING AGRICULTURAL GROUND LIMESTONE OR FERTILIZER AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 3".
- APPLY SEED UNIFORMLY ON FIRM, MOIST SEED BED BETWEEN MARCH 1 AND MAY 31 OR AUGUST 1 AND SEPTEMBER 30. TILLAGE FOR SEEDBED PREPARATION SHALL OCCUR WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. SEEDING SHOULD NOT BE APPLIED BETWEEN OCTOBER 1 AND NOVEMBER 20 BECAUSE SEEDS MAY GERMINATE, BUT WILL NOT SURVIVE THE WINTER. IF SEEDING MUST OCCUR, INCREASE THE SEEDING RATE BY 50% AND ANCHOR. APPLY ADDITIONAL MULCH AND IRRIGATION AS REQUIRED TO ENSURE GERMINATION.
- MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
- SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS.
- SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF SEEDING. DURING THIS PERIOD INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.
- ADEQUATE PERMANENT VEGETATION SHALL BE GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE BASED ON VISUAL INSPECTION.

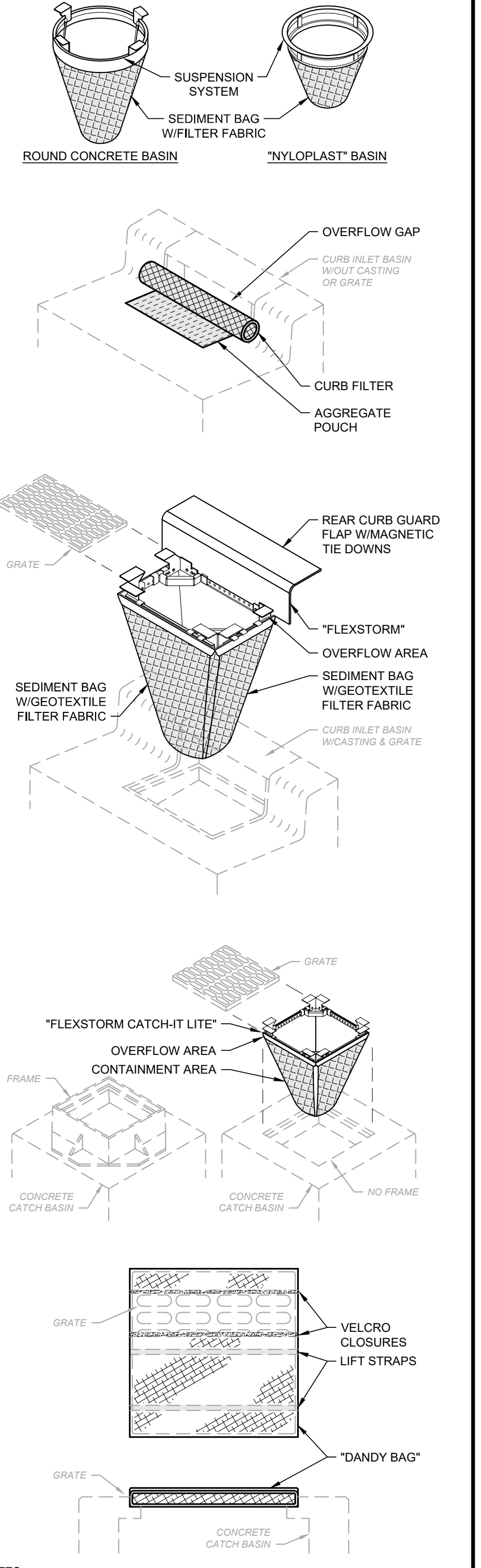
PERMANENT SEEDING FERTILIZATION AND MOWING CHART				
MIXTURE	FORMULA	LB/AC.	TIME	MOW
CREeping RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	10-10-10	500	FALL, YEARLY, OR AS NEEDED	≥3"
TALL FESCUE	10-10-10	500		≥4"
TURF-TYPE FESCUE	10-10-10	500		
CROWN VETCH FESCUE	0-20-20	400	SPRING, AND YEARLY AFTER ESTABLISHED	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		

PERMANENT SEEDING SPECIES SELECTION		
SEED MIX	SEED RATE LB/AC.	NOTES:
GENERAL USE		
CREeping RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20 - 40 10 - 20 20 - 40	FOR CLOSE MOWING AND WATERWAYS WITH <2.0 FT./SEC. VELOCITY
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE	90	
STEEP BANKS OR CUT SLOPES		
TALL FESCUE	40 - 50	
CROWN VETCH TALL FESCUE	10 - 20 20 - 30	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20 - 25 20 - 30	DO NOT SEED LATER THAN AUGUST
ROAD DITCHES AND SWALES		
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE KENTUCKY BLUEGRASS	90 5	
LAWN		
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100 - 120 100 - 120	
KENTUCKY BLUEGRASS CREeping RED FESCUE	100 - 120 100 - 120	FOR SHADED AREAS

PERMANENT SEEDING NOTES

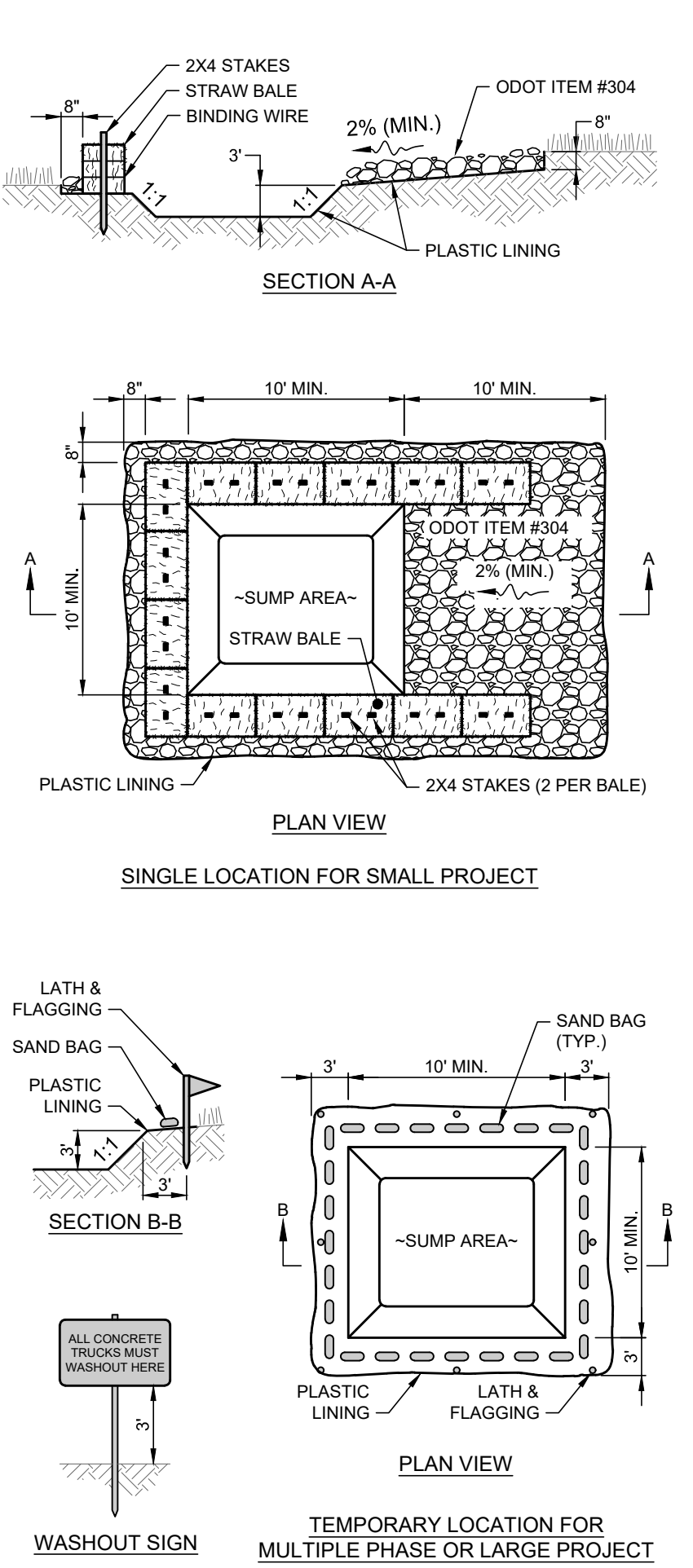
- MULCH SHALL CONSIST OF ONE OF THE FOLLOWING:
 - UNROTTED SMALL GRAIN STRAW SPREAD UNIFORMLY AT 2 TONS/AC. (2 TO 3 BALES).
 - WOOD-CELLULOSE FIBER (I.E. HYDROSEEDING) APPLIED AT 1 TON/AC.
 - ROLLED EROSION CONTROL PRODUCT OR MULCH MATTING APPLIED PER MANUFACTURER RECOMMENDATION.
 - WOOD MULCH OR CHIPS APPLIED AT 6 TONS/AC.
- MULCH SHALL BE ANCHORED IMMEDIATELY BY ONE OF THE FOLLOWING METHODS:
 - PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL USING A DISK, CRIMPER OR SIMILAR TOOL.
 - NETTING PER MANUFACTURER RECOMMENDATION IN CONCENTRATED RUNOFF AREAS OR CRITICAL SLOPES.
 - SYNTHETIC BINDERS AT MANUFACTURER RATE.
 - WOOD-CELLULOSE FIBER BINDER AT A NET DRY WEIGHT OF 750 LB/AC., MIXED WITH WATER, AND CONTAIN 50 LB/100 GAL. MAX. OF WOOD CELLULOSE FIBER.

MULCHING NOTES



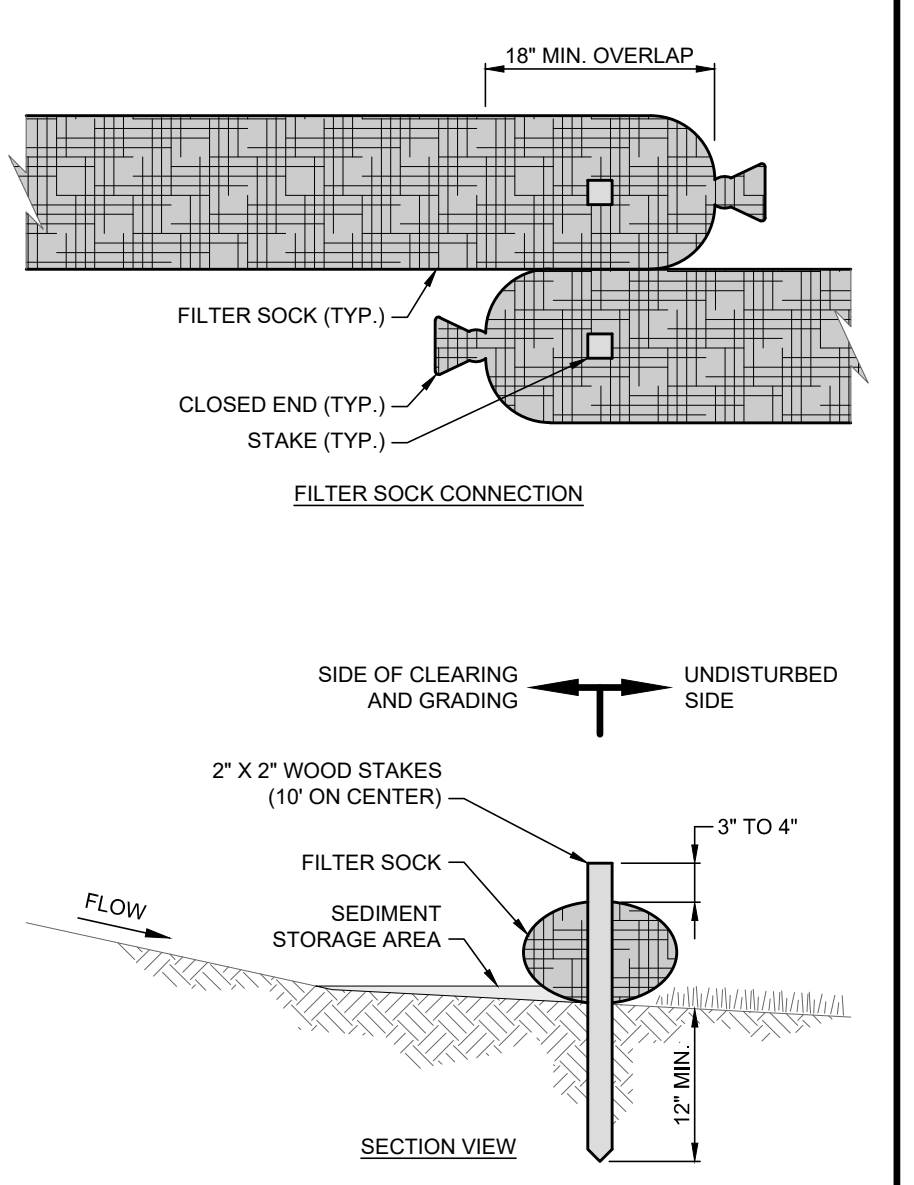
- NOTES:
- ALL NEW AND EXISTING STORM INLET BASINS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED.
 - INLET PROTECTION SHALL BE INSTALLED AS EACH STORM INLET IS CONSTRUCTED.
 - NOT ALL ITEMS SHOWN MAY APPLY OR DIFFERENT TYPES OR CONFIGURATIONS MAY BE REQUIRED. THE CONTRACTOR SHALL MEASURE EACH INLET TO CONFIGURE AND ASSEMBLE CUSTOMIZED INLET FILTERS.

INLET PROTECTION DETAIL
SCALE: NONE



- NOTES:
- CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 100' FROM STORM SEWER INLETS, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS OF THE STATE.
 - IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE, CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO A CONSTRUCTION ENTRANCE.
 - CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE WASTE GENERATED. LARGE SITES MAY REQUIRE MULTIPLE CONCRETE WASHOUT AREAS.
 - PLASTIC LINING SHALL BE DOUBLE-LINED, CONTINUOUS 10-MIL POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS INSTALLED ON A SMOOTH, LEVEL SURFACE, FREE OF LARGE ROCKS AND DEBRIS.
 - CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
 - CONCRETE WASHOUT AREA SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOW.
 - PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE.
 - CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR PLASTIC LINING SHALL BE REPAIRED IMMEDIATELY. REPLACE THE ENTIRE CONCRETE WASHOUT AREA WHEN IT IS 75% FULL.

CONCRETE WASHOUT DETAIL
SCALE: NONE



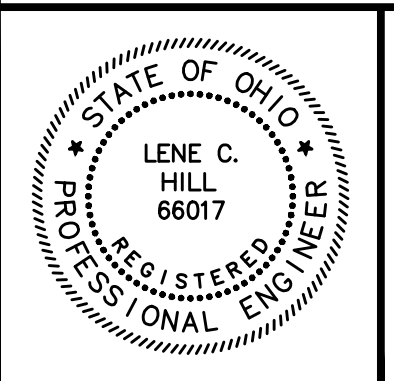
- NOTES:
- FILTER SOCKS SHALL BE CONTINUOUS, TUBULAR, HDPE KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST.
 - COMPOST SHALL BE WEED, PATHOGEN AND INSECT FREE, FREE OF REFUSE, CONTAMINANTS OR MATERIALS TOXIC TO PLANT GROWTH, BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2".
 - FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES PARALLEL TO THE BASE OF THE SLOPE. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND MID-SLOPE.
 - THE FLAT DIMENSION OF THE SOCK SHALL BE AT LEAST 1.5 TIMES THE NOMINAL DIAMETER.
 - FILTER SOCKS SHALL BE PLACED AT LEAST 5' FROM THE TOE OF SLOPE FOR SEDIMENT DEPOSIT.
 - TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
 - BUILT UP SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED 1/3 THE FILTER SOCK HEIGHT.
 - BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - WHEN A FILTER SOCK IS NO LONGER REQUIRED, IT SHALL BE DISPERSED ON-SITE.
 - THE MAXIMUM DRAINAGE AREA PER 100 FEET OF FILTER SOCK IS 1/2 ACRE AND IS DEPENDENT ON THE SLOPE PER THE CHARTS BELOW:

MAX. DRAINAGE AREA (AC.) PER 100-FT OF FILTER SOCK (*)	RANGE OF SLOPE PER INDIVIDUAL DRAINAGE AREA
0.50 AC.	<2% (50H:1V)
0.25 AC.	≥2% (50H:1V) BUT <20% (5H:1V)
0.125 AC.	≥20% (5H:1V) BUT <50% (2H:1V)

(*) FILTER SOCK CANNOT BE USED FOR SLOPES ≥50% (2H:1V).

MAX. SLOPE LENGTH ABOVE FILTER SOCK				
SLOPE (%)	RATIO (H:V)	12"	18"	24"
0% TO <2%	0 TO <50:1	250'	300'	350'
≥2% TO <10%	≥50:1 TO <10:1	125'	200'	25'
≥10% TO <20%	≥10:1 TO <5:1	100'	150'	200'
≥20% TO <50%	≥5:1 TO ≥2:1	50'	75'	100'

FILTER SOCK DETAIL
SCALE: NONE



NO	REVISION	DATE

CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
**RIVER STREET WATERLINE
REPLACEMENT (475W-2023)**
LAKE COUNTY, OHIO

ISSUED FOR: BID SET
ISSUE DATE: 08/2024
SCALE: AS SHOWN
DESIGNED BY: LCH
DRAWN BY: TJM
CHECKED BY: LCH

SWPPP DETAILS

PROJECT NO.	231956
DISCIPLINE	CIVIL
SHEET NAME	SWP3-1
SHEET	OF
17	19

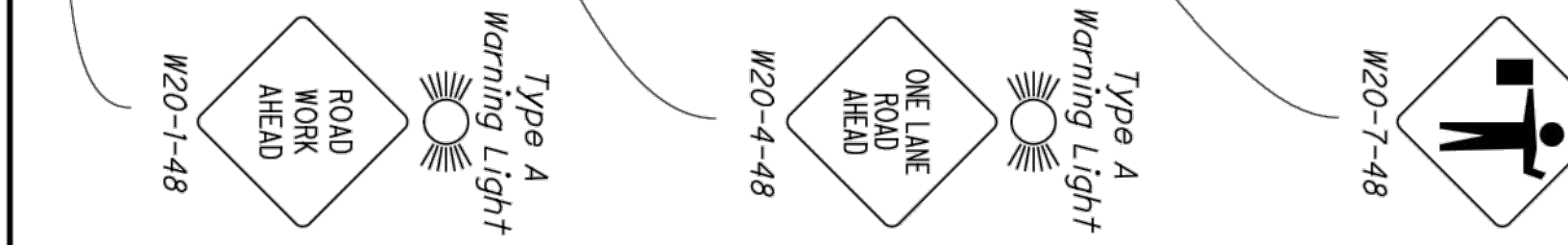
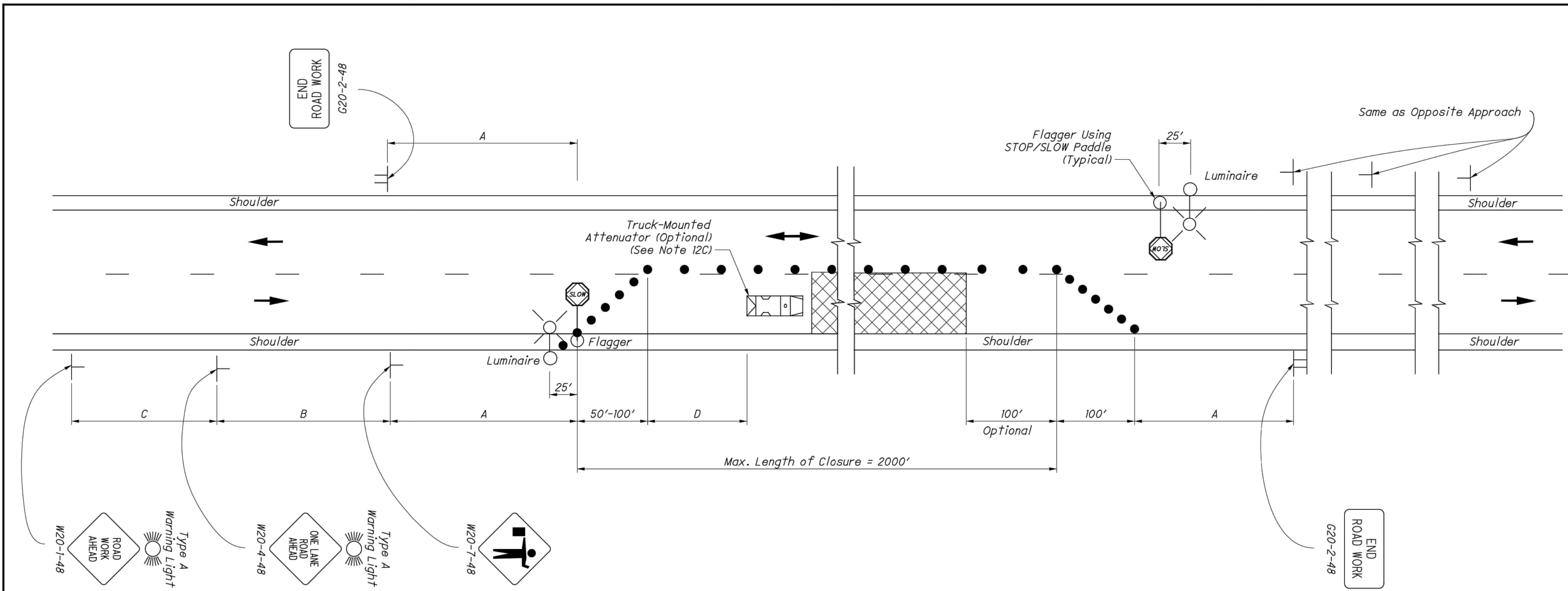
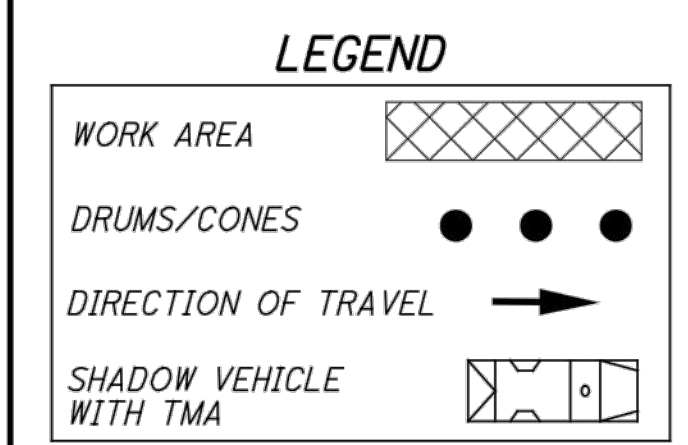


TABLE I (SIGN SPACING)

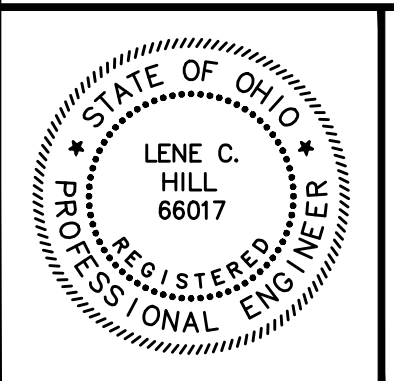
ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	A	B	C
Two-Lane (< 40 MPH)	100	100	100
Two-Lane (45-50 MPH)	350	350	350
Two-Lane (55-60 MPH)	500	500	500

TABLE II

SPEED LIMIT (MPH)	BUFFER (D) (FT) MIN.
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570



THIS DRAWING REPLACES MT-97.10 DATED 07-18-2014.
 STANDARD ROADWAY CONSTRUCTION DRAWING
FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY - STATIONARY OPERATION
 SCD NUMBER: **MT - 97.10**
 OFFICE OF ROADWAY ENGINEERING
 CIVIL ENGINEER: Soisson
 STATE OF OHIO DEPARTMENT OF TRANSPORTATION ADMINISTRATOR: David L. Holstein
 REVISION DATE: 04-19-2019



NO	REVISION	DATE

CITY OF WILLOUGHBY AND LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
RIVER STREET WATERLINE REPLACEMENT (475W-2023)
 LAKE COUNTY, OHIO

ISSUED FOR: BID SET
 ISSUE DATE: 08/2024
 SCALE: AS SHOWN
 DESIGNED BY: LCH
 DRAWN BY: TJM
 CHECKED BY: LCH

MAINTENANCE OF TRAFFIC DETAILS

PROJECT NO.	
231956	
DISCIPLINE	
CIVIL	
SHEET NAME	
MOT-1	
SHEET	OF
18	19

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NOTES:

FLAGGERS

1. *Flaggers, one for each direction, shall be used to control traffic continuously for as long as a one lane operation is in effect. The flaggers shall be able to communicate with each other at all times.*

LENGTH OF CLOSURE

2. *Several small work areas close together should be combined into one work zone. However, the closure shall not be more than 2000' long unless approved by the Engineer. The minimum length between closures shall be 2000'. Only one side of the road shall be closed in any one work zone.*

SIGN LOCATION AND SPACING

- 3A. *The minimum spacing between work zone signs is shown in Table 1. Maximum spacing should not be greater than 1.5 times the distances shown in Table 1.*
- 3B. *Sign spacing should be adjusted to avoid conflict with existing signs. Minimum spacing to existing signs shall be 200' for speeds of 45 mph or less and a minimum of 400' for speeds of 50 mph or greater.*
- 3C. *The location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

ADJUSTMENTS FOR SIGHT DISTANCE

4. *The location of the flagger station and the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

BASIC SIGNING

- 5A. *ROAD WORK AHEAD (W20-1) signs shall be provided on entrance ramps or roadways entering the work limits.*
- 5B. *END ROAD WORK (G20-2) signs are only required for lane closures of more than 1 day. If is intended that these signs be placed on the mainline, on all exit ramps, and on roadways exiting the work limits.*
- 5C. *Overlapping of signing for adjacent projects should be avoided where the messages could be confusing. Any ROAD WORK AHEAD (W20-1) or END ROAD WORK (G20-2) sign which falls within the limits of another traffic control zone shall be omitted or covered during the period when both projects are active.*

SIGNING DETAILS

- 6A. *The Advisory Speed (W13-1P) plaque shall be used when specified in the plan.*
- 6B. *36" warning signs may be used when the approach speed limit is 40 mph or less.*

FLASHING WARNING LIGHTS

7. *Type A flashing warning lights shown on the ROAD WORK AHEAD (W20-1) signs and on the LANE CLOSED AHEAD (W20-5) signs are required whenever a night lane closure is necessary.*

DRUMS / CONES

- 8A. *Drum spacing shall be as follows:*
 - a) *Spacing along the closure shall be 40' center-to-center.*
 - b) *Spacing along the approach taper shall be 10' center-to-center.*
- 8B. *Cones may be substituted for drums as follows:*
 - a) *Cones used for daytime traffic control shall have a minimum height of 28".*
 - b) *Cones used for nighttime traffic control shall have a minimum height of 42".*
 - c) *Use of cones at night shall be prohibited along tapers.*
- 8C. *Provisions shall be made to stabilize the cones and drums to prevent them from blowing over.*
- 8D. *A minimum of two drums shall be used to close the paved shoulder.*

(RESERVED FOR FUTURE USE)

- 9A. *(intentionally blank)*

AREA ILLUMINATION

- 10A. *Adequate area illumination of each flagger station shall be provided at night. Use of portable flood lighting is acceptable. Luminaires shall be located adjacent to each flagger station.*
- 10B. *To ensure the adequacy of floodlight placement and the elimination of glare, the Contractor and the Engineer shall drive through the worksite each night when the lighting is in place. Light placement and shielding shall be adjusted to the satisfaction of the Engineer.*

INTERSECTION / DRIVEWAY ACCESS

11. *Within the length of closure, provision shall be made to control traffic entering from intersecting streets and major drives as necessary to prevent wrong-way movements and to keep vehicles off of new pavement not ready for traffic. The Contractor shall:*
 - a) *Place across the closed lane, either three drums (cones) or barricades, and/or*
 - b) *Provide an additional flagger at every public street intersection and major driveway.*

Drums (cones) placed across the closed lane shall be located 25' beyond the projected pavement edges of the driveway or cross highway, as shown in Standard Construction Drawings (SCDs MT-97.11 or MT-97.12. For barricades, see SCD MT-101.60.

Existing STOP signs shall be relocated as necessary to assure proper location for the traffic conditions.

The method of control shall be subject to the approval of the Engineer.

SHADOW VEHICLE

- 12A. *The shadow vehicle shall be in place and unoccupied whenever workers are in the work area. This vehicle shall be removed from the pavement whenever workers are not in the work area.*
- 12B. *The shadow vehicle shall be equipped with a high-intensity yellow rotating, flashing, oscillating, or strobe light(s).*
- 12C. *The shadow vehicle shall be equipped with a truck-mounted or trailer attenuator (TMA) in accordance with CMS 614.03 when called for in the plans.*

CHIP SEAL OPERATIONS

13. *For chip seal operations, additional signing shall be incorporated in the advanced warning area.*
 - a) *The LOOSE GRAVEL (W8-7) and FRESH TAR (W21-2) signs shall both be used in advance of the chip seal operation.*
 - b) *Repeat the LOOSE GRAVEL sign with a 35 mph Advisory Speed (W13-1) plaque every half mile per CMS 422.09.*
 - c) *The FRESH TAR and the LOOSE GRAVEL signs shall both be used for signing of side roads intersecting the work area.*

THIS DRAWING REPLACES MT-97.10 DATED 07-18-2014.

STANDARD ROADWAY CONSTRUCTION DRAWING

FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY - STATIONARY OPERATION

SCD NUMBER
MT - 97.10

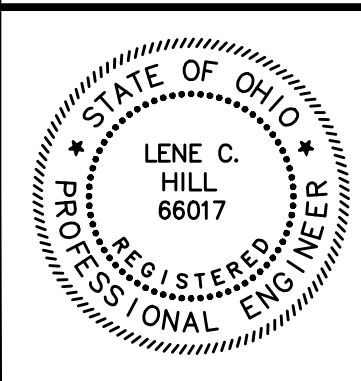
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OFFICE OF
ROADWAY
ENGINEERING

STATE ENGINEER
Soisson

STATE OF OHIO DEPARTMENT OF
TRANSPORTATION ADMINISTRATOR
David L. Holstein

REVISION DATE
04-19-2019



NO	REVISION	DATE

**CITY OF WILLOUGHBY AND
LAKE COUNTY DEPARTMENT OF UTILITIES
PART A
RIVER STREET WATERLINE
REPLACEMENT (475W-2023)
LAKE COUNTY, OHIO**

ISSUED FOR:	BID SET
ISSUE DATE:	08/2024
SCALE:	AS SHOWN
DESIGNED BY:	LCH
DRAWN BY:	TJM
CHECKED BY:	LCH

**MAINTENANCE OF TRAFFIC
NOTES**

PROJECT NO.		231956
DISCIPLINE		CIVIL
SHEET NAME		MOT-2
SHEET	OF	
19	19	