





**INDEX EXPLANATION:**

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**DISCIPLINE INFORMATION:**

IDENTIFIER:	DISCIPLINE:
G	GENERAL
C	CIVIL
S	STRUCTURAL
A	ARCHITECTURAL
D	PROCESS
M	MECHANICAL (PLUMBING & HVAC)
E	ELECTRICAL
Y	INSTRUMENTATION
TK	TANK DRAWINGS
SWPPP	STORM WATER POLLUTION PREVENTION PLAN

**GENERAL ABBREVIATIONS:**

AR	AIR RELEASE VALVE	MV	MUD VALVE
AV	AIR & VACUUM VALVE	N	NORTHING
BA	BALL VALVE	OH	OVERHEAD
BFV	BUTTERFLY VALVE	PD	PLUG DRAIN VALVE
BK	BACKPRESSURE VALVE	PF	PRESSURE RELIEF
BM	BENCH MARK	PG	PRESSURE REGULATOR
BP	BACKFLOW PREVENTER	PI	PINCH VALVE
CB	CATCH BASIN	PR	PROPOSED
CL	CENTER LINE	PRV	PRESSURE REDUCING VALVE
CO	CONE VALVE	PT	PRESSURE TEMPERATURE RELIEF
CPP	CORRUGATED PLASTIC PIPE	PV	PLUG VALVE
CV	CHECK VALVE	PVC	POLYVINYL CHLORIDE PIPE
DIP	DUCTILE IRON PIPE	R/W	RIGHT OF WAY
E	EASTING	RJ	RESTRAINED JOINT
EG	EXISTING GRADE	SAN	SANITARY
EL	ELEVATION	SCH	SCHEDULE
EX	EXISTING	SB	SOIL BORING
FG	FINISHED GRADE	SDR	STANDARD DIAMETER RATIO
FH	FIRE HYDRANT	SS	STAINLESS STEEL
FL	FLANGED	STA	STATION
FRP	FIBERGLASS REINFORCED PLASTIC	STL	STEEL PIPE
FTG	FITTING	STM	STORM
GL	GLOBE VALVE	SU	SURGE VALVE
GS	GALVANIZED STEEL	SV	SOLENOID VALVE
GV	GATE VALVE	TYP	TYPCIAL
HDPE	HIGH-DENSITY POLYETHYLENE PIPE	UG	UNDERGROUND
KG	KNIFE GATE VALVE	VB	VALVE BOX
KN	KNIFE VALVE	WAT	WATER
MH	MANHOLE	WV	WATER VALVE
MIN	MINIMUM		
MJ	MECHANICAL JOINT		

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**GENERAL SYMBOLOGY NOTES:**

- THIS IS A STANDARD SHEET SHOWING COMMONLY USED SYMBOLOGY.
- ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.
- SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE NEW IMPROVEMENTS SO AS TO HIGHLIGHT SPECIFIC TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.
- SYMBOLOGY OR DIAGRAMMATICAL LEGENDS MAY BE SHOWN ON INDIVIDUAL SHEETS FOR SCHEDULES, DIAGRAMS, DETAILS, SCHEMATICS OR EQUIPMENT.

**DRAWING CODED NOTE TYPES:**

- CT CONTRACTUAL NOTES ARE DEPICTED WITH A HEXAGON, SQUARE, CIRCLE OR TRIANGLE. ALL OTHER EXISTING WRITTEN CALLOUTS SHOWN ON THE REUSED SCANNED PLANS, SECTIONS & DETAILS ARE FOR EXISTING CONDITIONS AND REFERENCE ONLY. MANY OF THOSE NOTES FROM THE SCANNED DRAWINGS PERTAIN TO PREVIOUS WORK DONE.

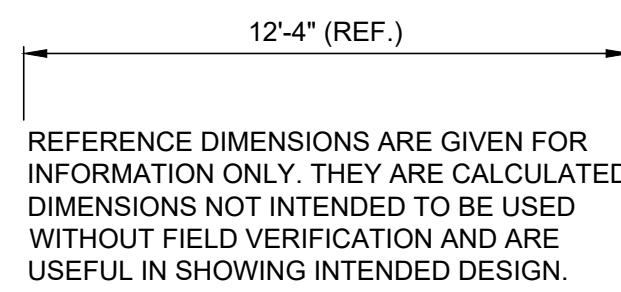
**PLAN REVISIONS:**

	REVISION DESCRIPTION
	REVISION DESCRIPTION

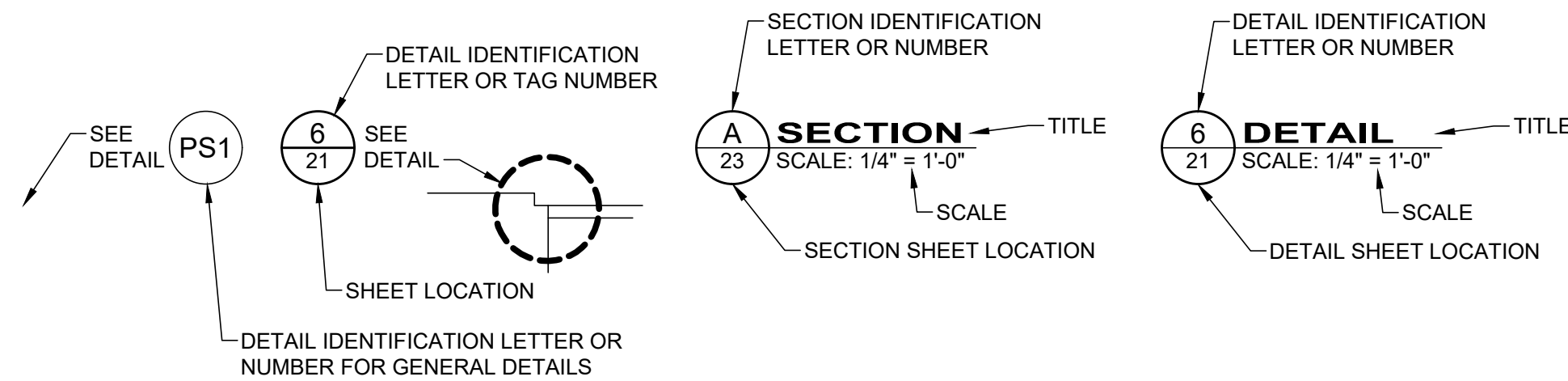
**DEMOLITION CODED NOTES:**

	DEMOLITION DESCRIPTION
	DEMOLITION DESCRIPTION

**REFERENCE DIMENSION:**



**DETAIL REFERENCES:**

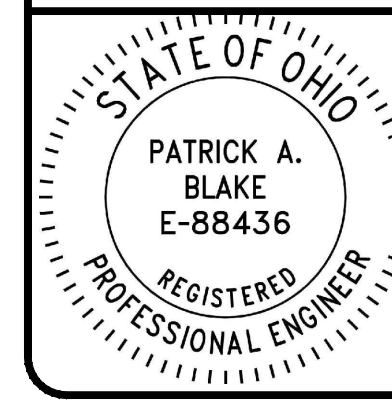


**SITE SYMBOL LEGEND:**

EX:	PR:	
		POST, MAILBOX
		POST, SIGN
		POST, SIGN - DOUBLE
		POST, SIGN - DUAL
		GEOTECH - SOIL BORING
		BUSH
		TREE, DECIDUOUS
		TREE, EVERGREEN
		TREE, STUMP
		NAIL - MAG
		PIN - IRON
		PIPE - IRON
		SPIKE
		GAS METER
		GAS VALVE
		GAS VENT
		POLE - ELECTRIC (POWER)
		POLE - TRAFFIC
		POLE - GENERAL
		POLE - GUY
		POLE - GUY ANCHOR
		POLE - LIGHT
		SANITARY CLEAN-OUT
		SANITARY MANHOLE - 48"
		CATCH BASIN - 2X2
		CURB INLET - 2X3
		STORM CLEAN-OUT
		STORM DRAIN
		STORM MANHOLE - 48"
		WATER HYDRANT, FDC
		WATER HYDRANT, FIRE
		WATER VALVE W/TEXT

**SITE LINE LEGEND:**

EX:	
	RIGHT-OF-WAY (APPROXIMATE NOT SURVEYED)
	PROPERTY LINE (APPROXIMATE NOT SURVEYED)
	BUILDING OUTLINES
	CONTOURS - MAJOR
	CONTOURS - MINOR
	SLOPE LINE
	SLOPE - BREAKLINE
	SLOPE - TOP
	SLOPE - TOE
	WATER CENTERLINE
	WATER EDGE
	EDGE OF ROAD
	FENCE - GENERAL
	FENCE - CHAIN LINK
	GUIDE RAIL
	TREE LINE
	ELECTRIC LINE
	ELECTRIC LINE - OH
	ELECTRIC LINE - UG
	GAS LINE
	GAS SERVICE
	SANITARY LINE
	STORM LINE
	WATER LINE
	WATER SERVICE
	GUIDE RAIL
	STORM LINE
	WATER LINE
	EDGE OF PAVEMENT
	CENTERLINE
	PERMANENT CONSTRUCTION EASEMENT LINE (PCE)
	TEMPORARY CONSTRUCTION EASEMENT LINE (TCE)
	WORK LIMITS
	DEMO - HASH
	DEMO - "X"



NO	REVISION	DATE

**CITY OF NILES, OHIO**  
**MAURO CIRCLE WATERLINE REPLACEMENT**

TRUMBULL COUNTY

NILES, OHIO

ISSUED FOR:	BID
ISSUE DATE:	10/24
SCALE:	AS SHOWN
DESIGNED BY:	PAB
DRAWN BY:	PAB
CHECKED BY:	AEF

**LEGENDS, SYMBOLS, & SHEET INDEX**

PROJECT NO.	
242290	
DRAWING NAME	
C-02	
SHEET	OF
2	7

**GENERAL:**

1. ANY REVISIONS TO THE ACCEPTED CONSTRUCTION DOCUMENTS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION IN THE FIELD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKEOUT/LAYOUT AND SHALL NOTIFY THE ENGINEER, IN WRITING, OF ANY DISCREPANCIES.
3. NO WORK SHALL COMMENCE WITHOUT AN EXECUTED NOTICE TO PROCEED.
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH OSHA SAFETY REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ALL VISITORS, EMPLOYEES AND WORKERS ON THE CONSTRUCTION SITE.
5. THE CONTRACTOR SHALL CONSTRUCT THIS PROJECT IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL BUILDING CODES.
5. ALL EXCAVATIONS ARE TO BE SECURED AND PROTECTED AT ALL TIMES.
6. ALL SEDIMENT AND EROSION CONTROL PRACTICES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AS PER ODOT ITEM 832.
7. ANY DISTURBED AREAS NOT SCHEDULED FOR CONSTRUCTION ACTIVITIES WITHIN SIXTY DAYS OF DISTURBANCE SHALL BE TEMPORARILY STABILIZED.
8. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR ON-SITE DURING CONSTRUCTION SHALL BE HANDLED AND LEGALLY DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM OR SURFACE WATERS. POLLUTANTS OF CONCERN INCLUDE, BUT ARE NOT LIMITED TO, FUELS, LUBRICANTS, SOLVENTS, CONCRETE BI-PRODUCTS AND CONSTRUCTION MATERIALS.
9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE SECURITY OF ALL STORED MATERIALS.
10. AS BUILT RECORDS - THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A SET OF PROJECT RECORD DOCUMENTS. THESE DOCUMENTS SHALL INCLUDE REVIEWED SHOP DRAWINGS, CHANGE ORDERS, EQUIPMENT OPERATING INSTRUCTIONS, FIELD TEST RECORDS AND AS BUILT DRAWINGS. THE AS BUILT DRAWINGS SHALL BE MARKED LEGIBLY IN RED WITH THE ACTUAL LOCATION OF EQUIPMENT AND CONDUITS AS CONSTRUCTED. ALL EQUIPMENT AND UNDERGROUND CONDUITS INSTALLED SHALL HAVE LOCATIONS MARKED IN DISTANCE OFF A LANDMARK AT LEAST EVERY 25 FEET AND AS NECESSARY AT BENDS FOR LOCATION OF A LATER DATE. FINAL DOCUMENTS AND PLANS SHALL BE DELIVERED TO THE OWNER. THE OWNER SHALL APPROVE THE FINAL DOCUMENTS & AS BUILTS ARE TO THEIR SATISFACTION PRIOR TO RELEASE OF THE RETAINER.

**STANDARD SPECIFICATIONS:**

1. THE "CONSTRUCTION AND MATERIAL SPECIFICATIONS" OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION (ODOT), 2023 EDITION, CURRENT ODOT SUPPLEMENTAL SPECIFICATIONS, AND CURRENT ODOT STANDARD DRAWINGS SHALL GOVERN WORK AND MATERIALS WHICH ARE NOT SPECIFIED OR MODIFIED HEREIN OR ON THE PROJECT CONTRACT DRAWINGS. ALL REFERENCES TO "THE DEPARTMENT" SHALL BE CHANGED TO "THE OWNER OR HIS REPRESENTATIVE." THE PROJECT CONTRACT DRAWINGS AND SPECIFICATIONS, IN THE EVENT OF A DISCREPANCY, SHALL SUPERSEDE THE ODOT SPECIFICATIONS.

**UNDERGROUND UTILITIES:**

1. THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. NEITHER THE OWNER NOR THE ENGINEER ENSURES THEIR ACCURACY OR COMPLETENESS.
2. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL PUBLIC AND PRIVATE UTILITIES WHICH MAY BE AFFECTED BY THE CONSTRUCTION. THE LOCATION OF UTILITIES AND STRUCTURES, BOTH SURFACE AND SUBSURFACE, ARE SHOWN ON THE DRAWINGS FROM DATA AVAILABLE AT THE TIMES OF SURVEY AND ARE NOT NECESSARILY COMPLETE OR CORRECT. THE EXACT LOCATION AND PROTECTION OF UTILITIES AND STRUCTURES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST THREE DAYS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS, PRIOR TO CONSTRUCTION TO HAVE UTILITIES STAKED, MARKED OR OTHERWISE DESIGNATED IN THE CONSTRUCTION AREA IN SUCH A MANNER; OR LOCATING SHALL BE COORDINATED TO STAY 48 HOURS AHEAD OF THE PLANNED CONSTRUCTION.
4. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF THE UTILITY OR STRUCTURE AND ITS EFFECT ON THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY OWNER.
5. OSHA STANDARDS PROHIBIT CRANE OR BACKHOE OPERATIONS WITHIN TEN (10) FEET OF ENERGIZED PRIMARY CONDUCTORS. TEMPORARY RELOCATION OF ELECTRICAL UTILITIES, INCLUDING RESTRAINT POLES, RELOCATION OF POLES AND RUBBER COVERING OF ENERGIZED CONDUCTORS MAY BE REQUIRED. THE COORDINATION AND COST OF THESE SERVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MAY RESTRAIN POLES IF THE METHOD OF SUPPORT HAS BEEN SUBMITTED TO AND APPROVED BY THE UTILITY OWNER.
6. PIPELINE UTILITY MARKERS SHALL BE FLEXIBLE FIBERGLASS POSTS AS APPROVED BY THE ENGINEER.

**EXISTING UTILITIES:**

1. THE LOCATIONS OF THE UNDERGROUND UTILITIES ARE PLOTTED ACCORDING TO THE INFORMATION FURNISHED BY THE UTILITIES CONCERNED AND THE OWNER DOES NOT GUARANTEE THE ACCURACY THEREOF. CONTRACTOR TO CALL OUPS (1-800-362-2764) \*48 HOURS BEFORE YOU DIG\* AND CALL OIL & GAS PRODUCERS PROTECTIVE (1-800-925-0988). CONTRACTOR ALSO TO COORDINATE HIS WORK WITH THE UTILITIES LISTED ON THE COVER SHEET.
2. 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 EXPENSE TO THE OWNER INCLUDING ANY INSPECTION FEES OR MAINTENANCE CREWS. CABLE RELOCATION AND SUPPORT COST SHALL BE INCLUDED IN OTHER BID ITEMS.
3. 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 WORK IS GOING ON ADJACENT TO THE POLE. THE COST FOR ANY REQUIRED PROTECTION OR RELOCATION OF EXISTING POWER OR TELEPHONE POLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NOT BE THE RESPONSIBILITY OF THE OWNER.
4. DELAYS TO THE CONTRACTOR AS RESULT OF TIMING OF UTILITY RELOCATIONS OR PROTECTION SHALL NOT BE CONSIDERED COMPENSABLE DELAYS, AS IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS WORK WITH THE UTILITY COMPANY'S SCHEDULE.
5. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL THE EXISTING UNDERGROUND UTILITIES PRIOR TO THE INSTALLATION OF ANY PROPOSED IMPROVEMENT INDICATED ON THE PLANS. SHOULD A CONFLICT EXIST AT A UTILITY CROSSING, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IMMEDIATELY. BEFORE ANY LOCATION ACTIVITIES ON THE EXISTING UTILITIES ARE UNDERTAKEN THE OWNER OF THE UTILITY SHALL BE GIVEN A MINIMUM OF A 5 BUSINESS DAY NOTICE OF THE INTENDED WORK. THE MEANS AND METHODS TO BE UTILIZED FOR LOCATION WORK SHALL BE APPROVED BY THE UTILITY OWNER, IN WRITING BEFORE THE WORK IS UNDERTAKEN.

**PROTECTION OF EXISTING UTILITIES AND PIPES:**

1. SHOULD IT BECOME NECESSARY TO CHANGE THE POSITION OR TEMPORARILY REMOVE ANY STORM DRAIN, SANITARY SEWER, ELECTRIC CONDUITS, WATER PIPES, GAS PIPES, PROCESS OR OTHER PIPES OR WIRES IN ORDER TO PERMIT THE CONTRACTOR TO USE A PARTICULAR METHOD OF CONSTRUCTION OR IN ORDER TO CLEAR THE STRUCTURES BEING BUILT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE LOCATION AND CIRCUMSTANCES AND SHALL CEASE WORK, IF NECESSARY, UNTIL SATISFACTORY ARRANGEMENTS HAVE BEEN MADE BY THE OWNERS OF SAID PIPES OR WIRES TO PROPERLY CARE FOR THE SAME. NO CLAIMS FOR DAMAGES WILL BE ALLOWED ON ACCOUNT OF ANY DELAY OCCASIONED THEREBY. THE ENTIRE COST OF THE CHANGES OR TEMPORARY REMOVAL MUST BE INCLUDED IN THE PRICES STIPULATED FOR THE VARIOUS ITEMS OF WORK TO BE DONE UNDER THIS CONTRACT.
2. NO SURFACE, GROUND OR TRENCH WATER SHALL BE ALLOWED TO FLOW INTO EXISTING SANITARY SEWERS.
3. CONTRACTOR IS RESPONSIBLE FOR THE PRESERVATION OF ALL FENCES, RETAINING WALLS, STEPS, UTILITY POLES, MONUMENTS, UTILITY APPURTENANCES, SIGNAGE AND LANDSCAPE BEDS. IF DAMAGED, THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OF THESE ITEMS AT NO ADDITIONAL COST TO THE OWNER.

**MATERIAL DISPOSAL AND TEMPORARY SURFACES:**

1. THE REMOVAL AND DISPOSAL OF ALL SURPLUS EXCAVATED MATERIAL AND CONSTRUCTION DEBRIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR ULTIMATE DISPOSAL. THE DISPOSAL OF ALL CONSTRUCTION DEBRIS SHALL BE AT AN APPROVED LOCATION BY THE OWNER AND THE ENGINEER. THE DISPOSAL OF ALL "CLEAN" WASTE MATERIAL SHALL BE AT APPROVED LANDFILLS, AND/OR OTHER SITES APPROVED BY THE OWNER AND ENGINEER. THE DISPOSAL OF EXISTING PIPELINE AND TANK SEDIMENTS AND WASTEWATER SLUDGE SHALL BE AT AN APPROVED LOCATION. THE CONTRACTOR SHALL OBTAIN ALL APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE AND FEDERAL AGENCIES AND/OR PRIVATE LANDOWNERS. THE CONTRACTOR SHALL FURNISH THE ENGINEER A COPY OF ALL APPROVALS OR WRITTEN PERMISSION PRIOR TO DISPOSING OF ANY WASTE AT SAID SITE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE RESTORATION OF ALL MATERIAL WASTE AREAS USED IN THE COURSE OF THIS CONTRACT. THE RESTORATION WORK SHALL INCLUDE CLEANUP, SHAPING AND GRADING AND ESTABLISHMENT OF VEGETATIVE COVER BY SEEDING AND MULCHING IN ACCORDANCE WITH ODOT SPECIFICATION NO. 659. THE FINAL GRADING OF WASTE AREAS SHALL BE PROPERLY SLOPED TO PROVIDE DRAINAGE RUNOFF. ALL ROCKS, BOULDERS AND CONCRETE CHUNKS SHALL BE BURIED WITHIN THE WASTE AREA TO A DEPTH OF AT LEAST TWO (2) FEET AND SHALL NOT BE VISIBLE AT COMPLETION.
3. THE COST OF HEREIN DESCRIBED WORK, INCLUDING SEEDING AND MULCHING NECESSARY TO SECURE THESE RESULTS, SHALL BE CONSIDERED INCIDENTAL TO THE OTHER VARIOUS ITEMS OF WORK IN THIS CONTRACT AND INCLUDED IN THE RESPECTIVE PAY ITEMS. NO SEPARATE PAYMENT SHALL BE MADE.
4. TEMPORARY SURFACES WHERE EXCAVATION ARE LOCATED IN STREETS, DRIVES AND PARKING AREAS SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR AND SHALL BE FULLY MAINTAINED TO MINIMIZE INCONVENIENCE TO THE PUBLIC AT NO ADDITIONAL COST TO THE OWNER.
5. THE ABOVE DESCRIBED WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF ALL WORK AND INCLUDED IN THE RESPECTIVE PAY ITEMS AND SHALL NOT BE A SEPARATE PAY ITEM.
6. DUMP SITES MUST BE APPROVED BY THE OWNER.

**CLEARING AND GRUBBING:**

1. THE CONTRACTOR SHALL INCLUDE ALL NECESSARY PRECAUTIONS TO PROTECT AND SAVE ALL TREES WHICH ARE ADJACENT TO THE LINE OF WORK AND SHALL REMOVE ONLY THOSE TREES WHICH ARE DESIGNATED FOR REMOVAL ON THE PLANS OR DIRECTED BY THE ENGINEER. TREE ROOTS AND OVERHANGING BRANCHES SHALL BE CUT AND REMOVED FROM THE SITE, EXCEPT WITH SPECIAL PERMISSION OF THE ENGINEER. WHEN REQUIRED, THE CUTTING OF ROOTS AND BRANCHES SHALL BE DONE IN A MANNER TO LEAVE A SMOOTH END WITHOUT SPLITTING OR CRUSHING. THE CUT END SHALL BE NEATLY TRIMMED. ALL DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE SATISFACTION OF THE ENGINEER. WHERE MISCELLANEOUS SMALL TREES AND SHRUBS ARE NOTED TO BE REMOVED AND RESET, THE COST OF SUCH WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF THE PROJECT.

**RESTORATION:**

1. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR REPLACEMENT OF TREES TO BE REMOVED AS CALLED OUT PER PLAN.
2. CONTRACTOR SHALL RESTORE ANY DISTURBED AREAS CAUSED FROM CONSTRUCTION TO PRE-CONSTRUCTION CONDITIONS OR BETTER OR AS PER PLAN. FOR DISTURBED LAWN AREAS, THE CONTRACTOR SHALL INSTALL COMPACTED, SCREENED, IMPORTED TOPSOIL TO PROVIDE A SMOOTH TRANSITION FROM NEW OR EXISTING CURB OR SIDEWALK SURFACES TO THE NON-PAVED SURFACE.
3. THE COMPOSITION OF SEED MIXTURE SHALL CONFORM TO THE PROJECT SPECIFICATIONS FOR SEEDING.

**DUST CONTROL:**

1. WATER IS TO BE PROVIDED BY THE CONTRACTOR FOR USE AS DUST CONTROL, AS DIRECTED BY THE ENGINEER. NO SEPARATE PAYMENT WILL BE MADE.

**PROHIBITED CONSTRUCTION ACTIVITIES:**

1. THE USE OF EXPLOSIVES, UNLESS A PERMIT IS ISSUED BY THE OWNER.
2. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, STREAM CORRIDORS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE.
3. 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 MAN-MADE CHANNELS LEADING THERETO.
4. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT.
5. 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.
6. RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER.
7. OPERATION ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OF 8:00 AM AND 5:00 PM OR OUTSIDE THE HOURS ALLOWED BY LOCAL ORDINANCES OR REGULATIONS.
8. CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER AND CLOSING CLEAR ACCESS:
  - BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES;
  - BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASI-PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE; OR
  - BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.

**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 WATERLINE ITEMS.

**MONUMENTS, PROPERTY CORNERS AND BENCHMARKS:**

1. MONUMENTS, PROPERTY CORNER MARKERS AND BENCHMARKS SHALL NOT BE DISTURBED BY THE CONTRACTOR. IN THE EVENT THAT IT IS NECESSARY TO REMOVE MONUMENTS, PROPERTY CORNER MARKERS OR BENCHMARKS FOR THE CONSTRUCTION OF THE WORK, THE CONTRACTOR SHALL HAVE A REGISTERED LAND SURVEYOR PROPERLY REFERENCE THE POINTS AND SHALL HAVE SAME RESET AFTER THE CONSTRUCTION HAS PASSED THE AREA, AT NO ADDITIONAL COST TO THE OWNER.

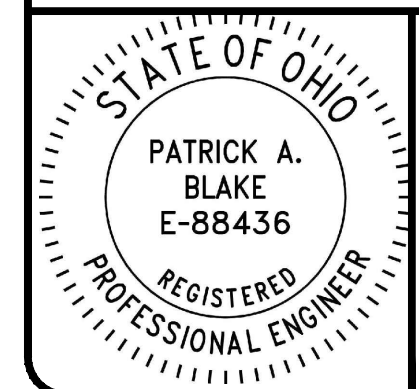
**WATER MAIN:**

1. 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.
2. OWNERSHIP: ALL WATER MAINS AND APPURTENANCES WITHIN THE DEDICATED RIGHT-OF-WAY ARE OWNED, OPERATED AND MAINTAINED BY THE CITY OF NILES WATER DEPARTMENT.
3. INSPECTION. ALL WORK ON WATER MAINS AND APPURTENANCES SHALL BE INSPECTED BY, APPROVED BY, AND COORDINATED WITH THE CITY OF NILES PRIOR TO BEING PLACED IN SERVICE. THE CONTRACTOR SHALL NOTIFY THE WATER DEPARTMENT AT LEAST THREE WORKING DAYS PRIOR TO INITIATING ANY WORK ON THE WATER MAINS AND APPURTENANCES.
4. 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 CITY OF NILES WATER DEPARTMENT IN AN APPROVED CONTAINER. WATER IN THE MAIN TO BE DISINFECTED SHOULD HAVE A TURBIDITY ACCEPTABLE TO THE CITY OF NILES WATER DEPARTMENT. ALL TESTS ARE TO BE PERFORMED BY A CITY OF NILES - APPROVED LABORATORY.
5. 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 WATER DEPARTMENT 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 WATER DEPARTMENT 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.
6. 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.
7. LOCATION OF STERILIZATION AND TESTING CONNECTIONS SHALL BE AS DIRECTED BY THE CITY OF NILES WATER DEPARTMENT 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.
8. 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 GRADING IS COMPLETED.
9. 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, RED. IF THE COATING ON THE HYDRANT IS DAMAGED BEFORE INSTALLATION THE HYDRANT MUST BE PAINTED.
10. THE CONTRACTOR SHALL NOTIFY THE CITY UTILITY DEPARTMENT AND WATER SUPERINTENDENT PRIOR TO ANY PRESSURE TESTING. CITY UTILITY DEPARTMENT SHALL WITNESS ANY PRESSURE TESTING.
11. 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.
12. ALTHOUGH SPECIFIC VERTICAL BEND SIZES ARE IDENTIFIED IN THE PLAN, THE CONTRACTOR SHALL UTILIZE THE MOST EFFICIENT MEANS TO ACCOMPLISH THE WATER LINE CONSTRUCTION WHILE MAINTAINING VERTICAL PIPE ELEVATIONS INDICATED IN THE PLAN. OVERPASSES ARE NOT PREFERRED AND IF THE POSSIBILITY EXISTS DUE TO ACTUAL FIELD LOCATIONS, CLEARANCES AND PHASED CONSTRUCTION, THE BENDS SHOULD BE OMITTED.
13. 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.
14. 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.
15. THE CONTRACTOR SHALL SUPPLY ALL PIPE AND ADAPTERS TO CONNECT TO EXISTING PIPING. THE ADAPTERS MUST BE SUBMITTED TO AND APPROVED BY CITY OF NILES PRIOR TO CONSTRUCTION.
16. THE COST OF UTILITY RELOCATION, REPLACEMENT, AND/OR SUPPORT SHALL BE INCLUDED IN THE COST PER LINEAL FOOT OF PROPOSED WATERLINE.
17. ABANDONED PIPELINE ENDS SHALL BE FILLED WITH LSM CONCRETE AND CAPPED UNLESS OTHERWISE NOTED ON THE PLANS.
18. ALL VALVE BOXES AND COVERS REMOVED DURING THIS PROJECT SHALL BE RETURNED TO THE OWNER.
19. ALL NEW CAPS ON ABANDONED LINES SHALL BE SECURE AND WATER TIGHT.
20. ALL NEWLY INSTALLED HYDRANTS SHALL BE FLOW TESTED AT THE COMPLETION OF THE PROJECT.
21. ALL WATER FOR FLUSHING OPERATIONS SHALL BE PAID FOR BY THE CONTRACTOR AT CURRENT RATES AS ESTABLISHED BY THE CITY OF NILES. CONTRACTOR SHALL COORDINATE FLUSHING DISCHARGE LOCATION WITH THE CITY OF NILES PRIOR TO TESTING.

**PROPERTY OWNER NOTIFICATIONS:**

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 MAURO CIRCLE.

1. CITY OF NILES WILL SUPPLY THE CONTRACTOR WITH A COMPLETE LIST OF HOMES AND BUSINESSES THAT WILL BE IMPACTED BY SHUTDOWN OF WATER SERVICES.
2. THE CONTRACTOR WILL BE GIVEN A MAXIMUM OF 8 HOURS TO MAKE THE CONNECTION TO THE EXISTING MAIN. COORDINATION OF ALLOWABLE TIME FRAME WITH CITY OF NILES IS REQUIRED.



NO	REVISION	DATE

**CITY OF NILES, OHIO**

**MAURO CIRCLE WATERLINE REPLACEMENT**

**TRUMBULL COUNTY** **NILES, OHIO**

ISSUED FOR:	BID
ISSUE DATE:	10/24
SCALE:	AS SHOWN
DESIGNED BY:	PAB
DRAWN BY:	PAB
CHECKED BY:	AEF

**GENERAL NOTES (1 OF 2)**

PROJECT NO.	
<b>242290</b>	
DRAWING NAME	
<b>C-03</b>	
SHEET	OF
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**EXCAVATION, BACKFILL AND COMPACTION:**

1. ALL EXCAVATION WILL BE CONSIDERED UNCLASSIFIED, NO COMPENSATION WILL BE ALLOWED THE CONTRACTOR FOR ROCK OR SHALE EXCAVATION.
2. ALL BACKFILL WILL BE AS DESCRIBED IN SPECIFICATION DIVISION 31 , USING MACHINE MOUNTED COMPACTION EQUIPMENT TO MEET THE COMPACTION REQUIREMENT OF 100% OF MAXIMUM LABORATORY DRY DENSITY PER ASTM D 698.
3. 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.
4. BACKFILLING OF ANY TRENCHES OR EXCAVATIONS WILL NOT BE PERMITTED WITHOUT MACHINE MOUNTED COMPACTION EQUIPMENT BEING USED.
5. SLAG PRODUCTS WILL NOT BE PERMITTED FOR BEDDING, BACKFILL, OR TRAFFIC COMPACTED SURFACE.

**STRUCTURAL BACKFILL AND FILL:**

1. NO BACKFILL SHALL BE PLACED AGAINST ANY STRUCTURAL ELEMENT UNTIL THE STRENGTH LEVEL OF THE IN-PLACE CONCRETE HAS ATTAINED THE SPECIFIED DESIGN STRENGTH.
2. THE CONTRACTOR MAY TEST IN-PLACE BACKFILL STRENGTH USING NON-DESTRUCTIVE PROCEDURES OF ASTM C803, PENETRATION RESISTANCE.
3. EXISTING ON-SITE SOILS WHICH ARE FREE OF ORGANIC CONTAMINATION AND OTHER OBJECTIONABLE MATERIALS MAY BE UTILIZED AS SITE FILL MATERIAL. COMPACT MAXIMUM EIGHT (8") INCH LOOSE LAYERS UNIFORMLY TO NOT LESS THAN 90% STANDARD PROCTOR UNLESS OTHERWISE SPECIFIED. REFER TO THE SPECIFICATIONS SECTION 02300 FOR BACKFILLING. SHALE AND/OR SLAG MAY NOT BE USED AS A BACKFILL OR FILL MATERIAL.
4. POROUS STRUCTURAL BACKFILL SHALL BE PLACED FULL LENGTH AND TO THE TOP OF CULVERTS AND ALL STRUCTURES. THE THICKNESS NORMAL TO WALL FACE SHALL BE NOT LESS THAN 18 INCHES.
5. POROUS STRUCTURAL BACKFILL SHALL BE CRUSHED LIMESTONE GRAVEL OF STONE NO. 467, 57, 67, 6 OR 78 SIZE.
6. ALL SHALE EXCAVATIONS SHALL BE REMOVED FROM THE SITE AND NOT USED AS BACKFILL.

**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.
2. BEFORE ANY LOCATION ACTIVITIES ON THE EXISTING UTILITIES ARE UNDERTAKEN THE OWNER OF THE UTILITY SHALL BE GIVEN A MINIMUM OF A 5 BUSINESS DAY NOTICE OF THE INTENDED WORK. THE MEANS AND METHODS TO BE UTILIZED FOR LOCATION WORK SHALL BE APPROVED BY THE UTILITY OWNER, IN WRITING BEFORE THE WORK IS UNDERTAKEN.

**TRAFFIC MAINTENANCE:**

1. MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH ODOT ITEM 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD).
2. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW AND ACCEPTANCE BY THE ENGINEER PRIOR TO BEGINNING WORK.
3. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE LOCAL ACCESS, VEHICULAR AND PEDESTRIAN INCLUDING PERSONS WITH DISABILITIES, TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR WILL FURNISH, MAINTAIN AND SUBSEQUENTLY REMOVE ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, BARRIERS, TEMPORARY PAVEMENT, LIGHTING, FLAGGERS, SIGNING, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROLS TO INSURE THE SAFETY OF PERSONS AND VEHICLES DURING CONSTRUCTION WITHIN THE PROJECT LIMITS.
4. AT ALL EXCAVATION LOCATIONS THE CONTRACTOR SHALL PROVIDE SUITABLE FLASHERS, BARRICADES, AND TRAFFIC CONTROL DEVICES AS DEEMED NECESSARY BY THE ENGINEER AND IN ACCORDANCE WITH THE MUTCD. SUCH TIME AS THE AREA IS COMPLETELY BACKFILLED.
5. ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.



NO	REVISION	DATE

**CITY OF NILES, OHIO**  
**MAURO CIRCLE WATERLINE REPLACEMENT**

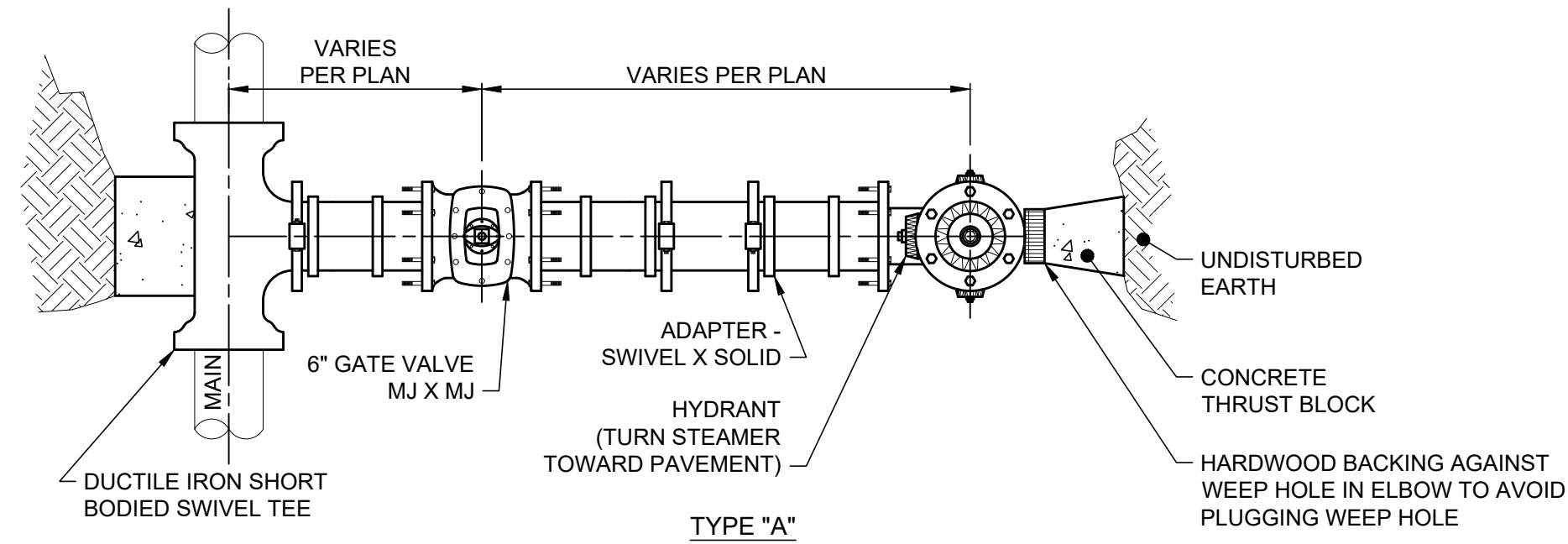
TRUMBULL COUNTY

NILES, OHIO

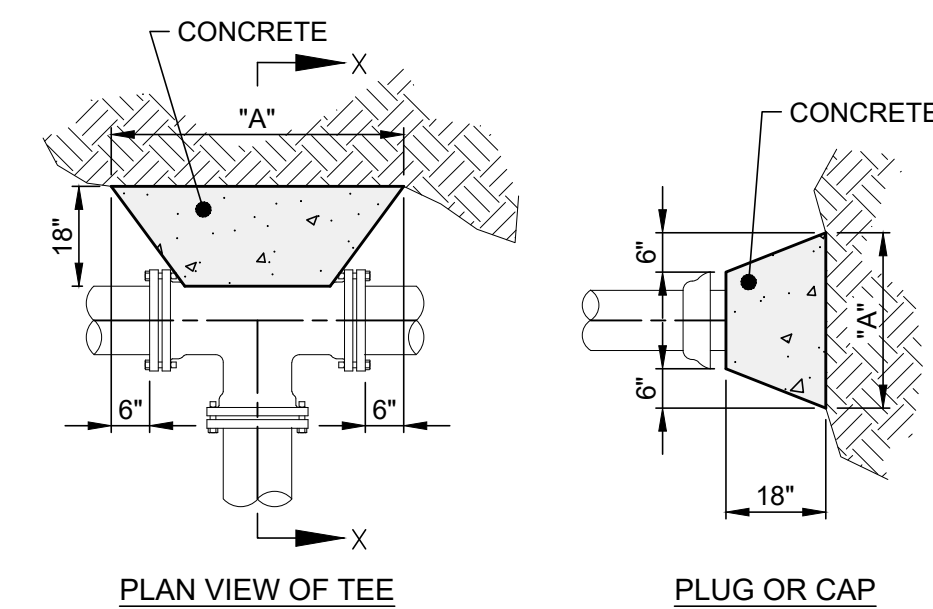
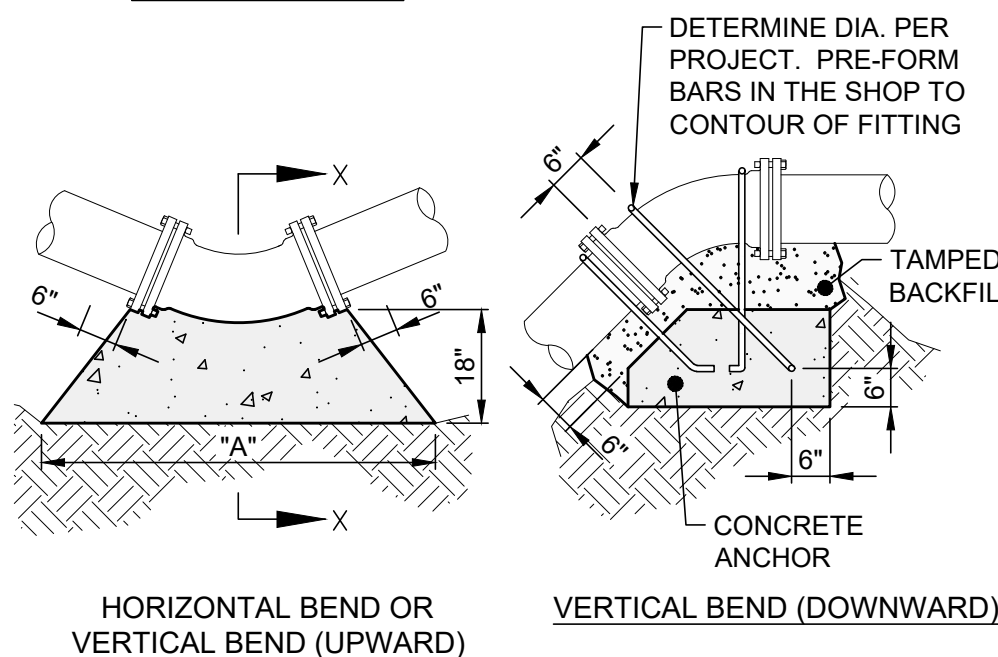
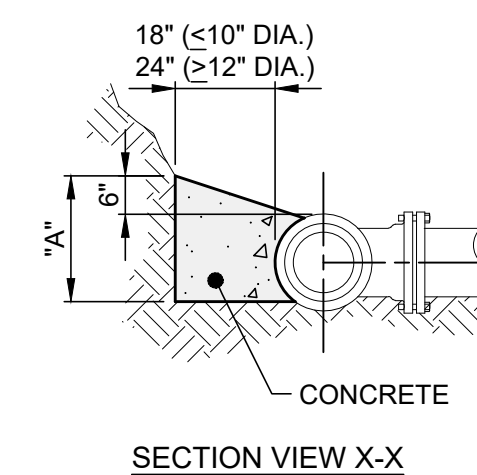
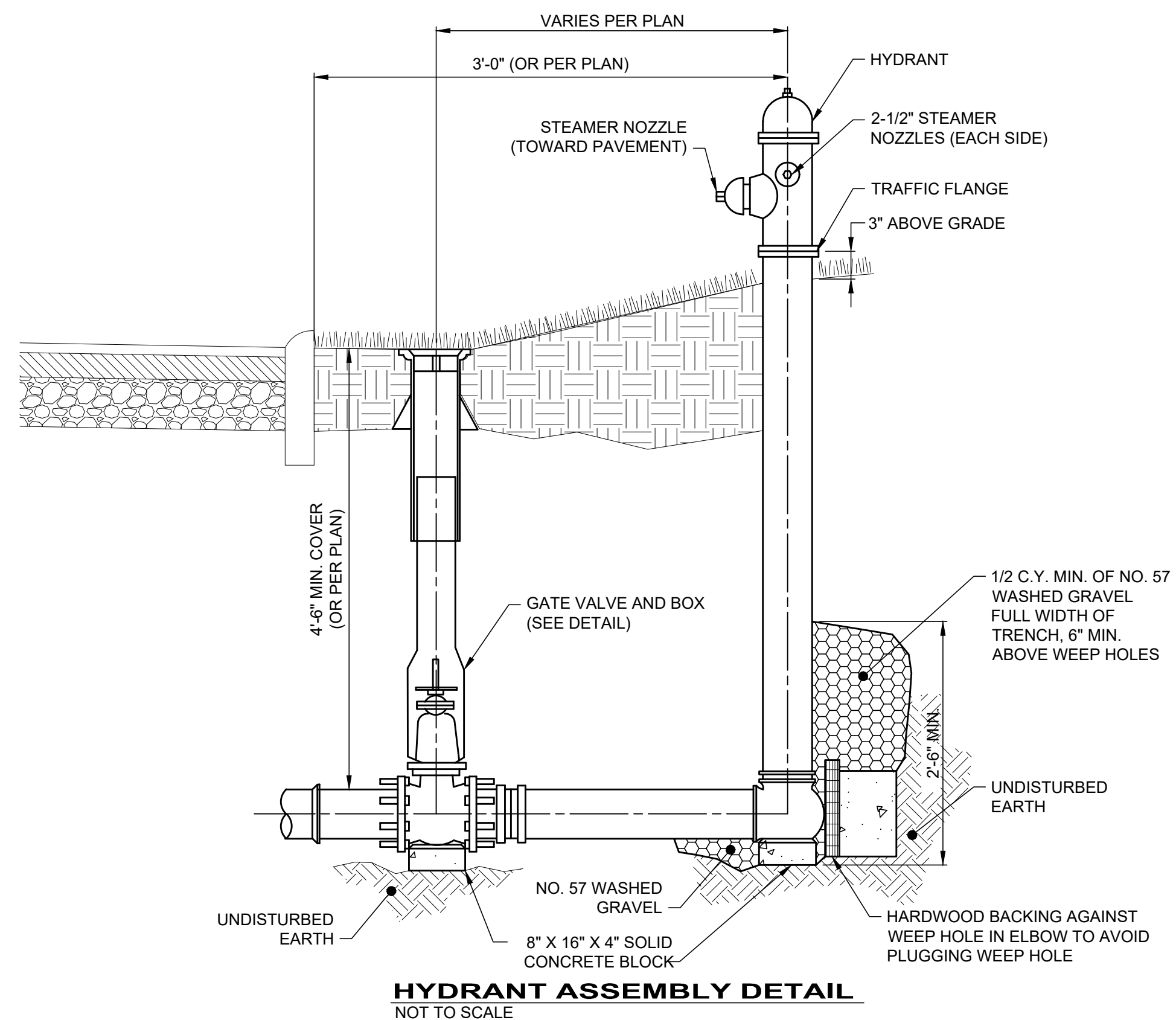
ISSUED FOR:	BID
ISSUE DATE:	10/24
SCALE:	AS SHOWN
DESIGNED BY:	PAB
DRAWN BY:	PAB
CHECKED BY:	AEF

**GENERAL NOTES (2 OF 2)**

PROJECT NO.	
242290	
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C-04	
SHEET	OF
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- NOTES:
- SEE DETAIL FOR CONCRETE THRUST BLOCKS.
  - HYDRANT TYPE SHALL BE PER THE LOCAL WATER DEPARTMENT OR FIRE DEPARTMENT REQUIREMENTS.
  - PAINT SHALL BE A POLYURETHANE ENAMEL TYPE AND PRIMER SHALL BE PER MANUFACTURER SPECIFICATION.
  - PAINT AND PRIMER SHALL BE SHOP APPLIED COLOR CHOICE OF WATER DEPARTMENT.

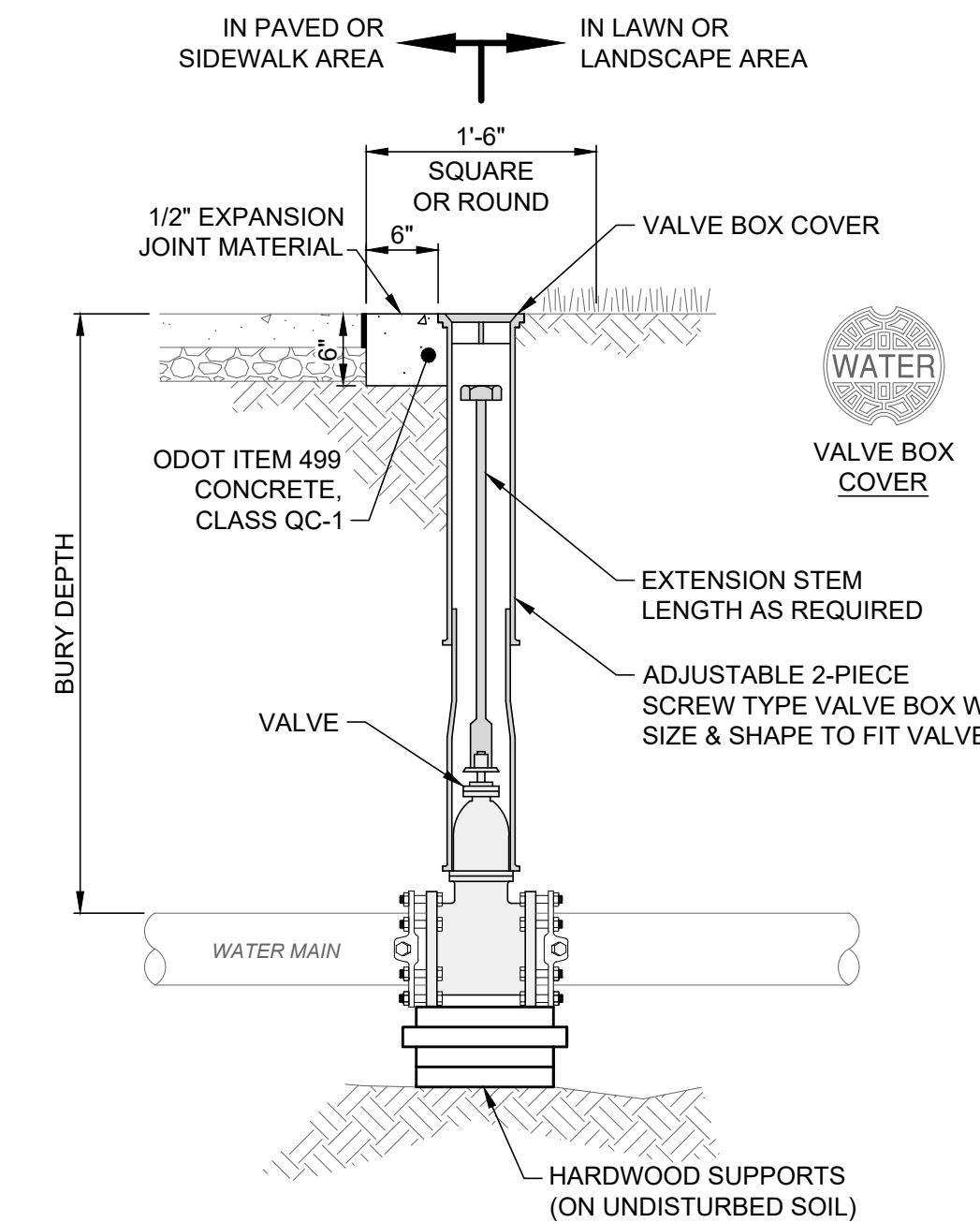


- NOTES:
- ALL CONCRETE SHALL BE ODOT ITEM 499, CLASS QC-MISC.
  - ALL DIMENSIONS SHOWN ARE MINIMUMS.
  - THRUST BLOCKS SHALL BE POURED TO UNDISTURBED EARTH.

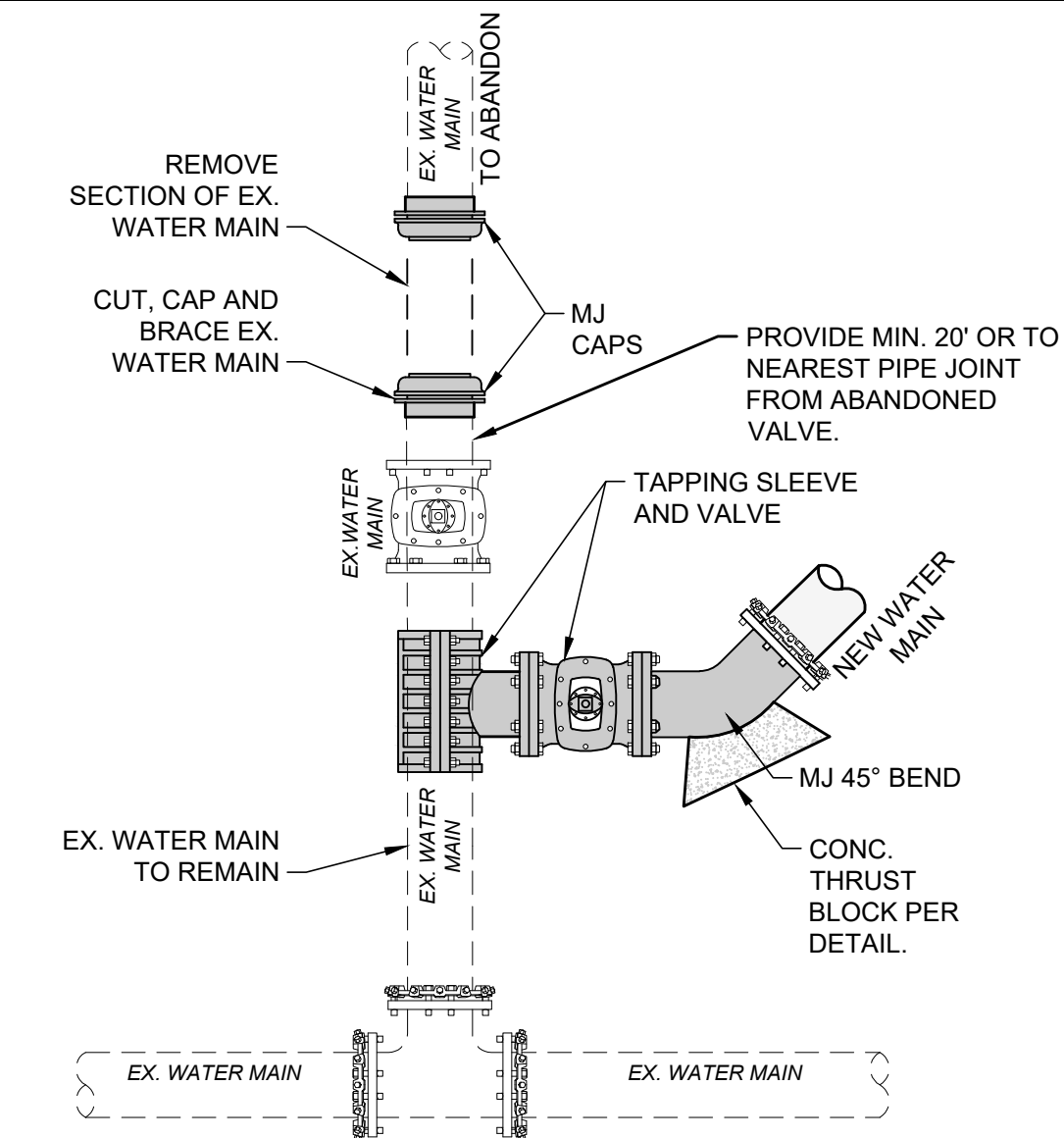
"A" DIMENSIONS

DIA.	HORIZONTAL BENDS			TEE	PLUG
	90°	45°	22.5°		
6"	17"	13"	9"	13"	14"
8"	23"	17"	12"	17"	19"
10"	28"	21"	15"	21"	24"
12"	34"	25"	18"	25"	29"
16"	45"	33"	24"	28"	38"

**CONCRETE THRUST BLOCK DETAIL**  
SCALE: NONE

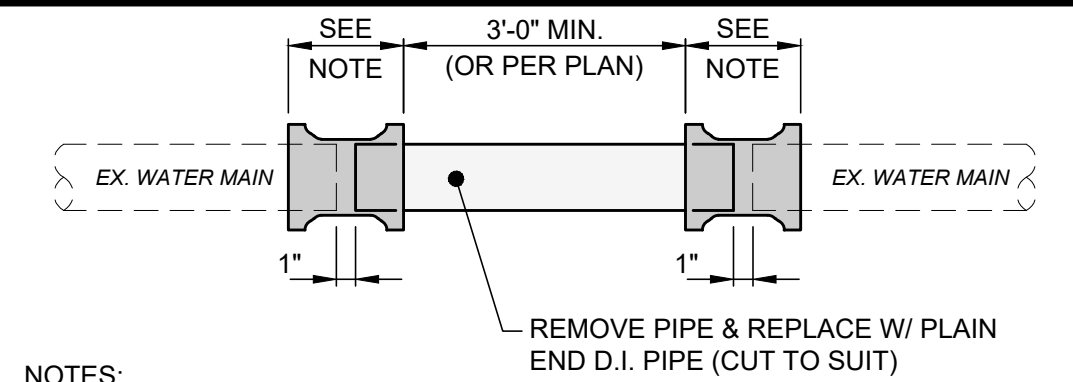


**WATER VALVE & VALVE BOX SETTING DETAIL**  
SCALE: NONE



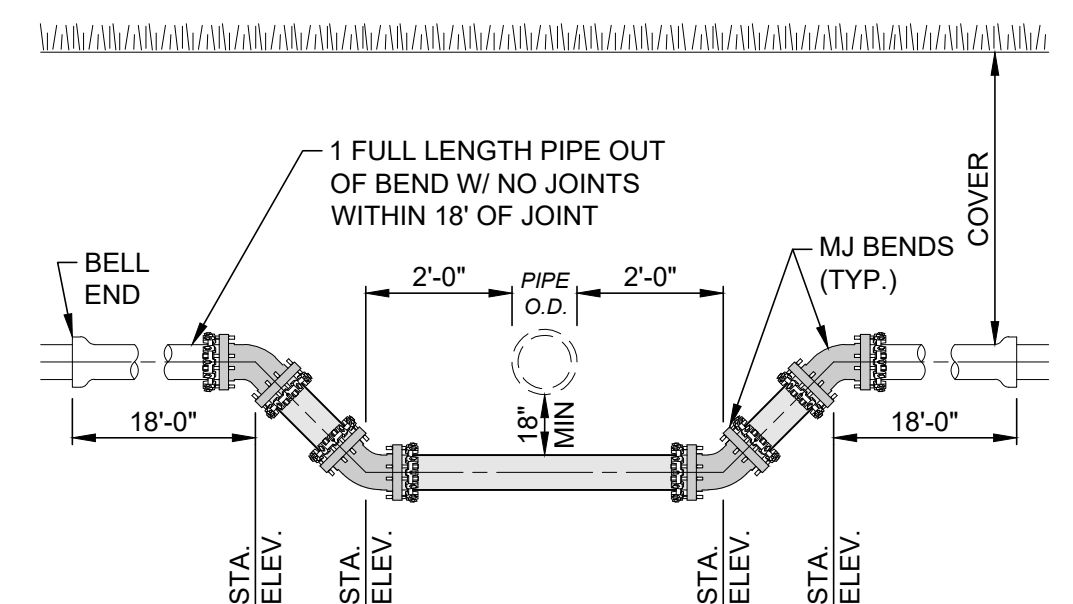
- NOTES:
- DO NOT CUT AND CAP, OR ABANDON IN-PLACE, THE EX. WATER MAIN UNTIL THE NEW WATER MAIN IS DISINFECTED AND APPROVED.
  - ABANDON PORTIONS OF EX. WATER MAIN AS SHOWN ON UTILITY PLANS.

**WATER MAIN RECONNECTION DETAIL**  
SCALE: NONE



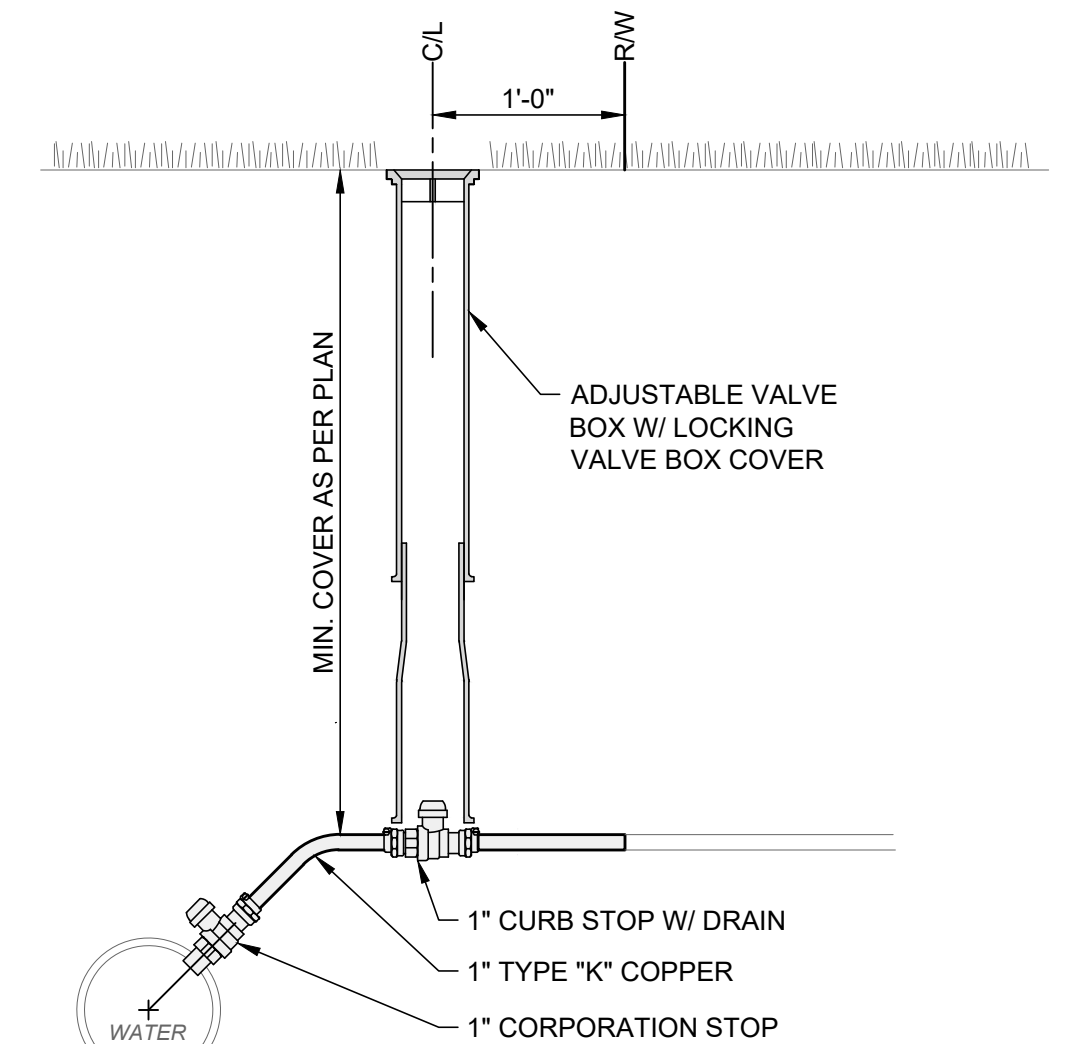
- NOTES:
- CONNECTION SHALL BE MADE WITH RESTRAINED MECHANICAL JOINT SOLID SLEEVES OF D.I. CLASS 350 OR COMPRESSION COUPLINGS. COMPRESSION COUPLINGS SHALL BE GASKET, SLEEVE TYPE.
  - EACH COUPLING SHALL CONSIST OF (1) MIDDLE RING WITHOUT STOPS; (2) FOLLOWER GLANDS; (3) RUBBER COMPOUND WEDGE SECTION GASKETS; AND STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304). THE MIDDLE RING AND FOLLOWER GLANDS SHALL BE EITHER STEEL OR DUCTILE IRON (ASTM-A536).

**SPOOL PIECE DETAIL**  
SCALE: NONE



- NOTES:
- ENTIRE OFFSET INCLUDING BENDS SHALL BE BUILT WITH DUCTILE IRON RESTRAINED MECHANICAL JOINTS, CLASS 52 CEMENT LINED PIPE. IF AN INTERMEDIATE JOINT IS REQUIRED BETWEEN BENDS, THE ENTIRE UNDERPASS SHALL BE BUILT WITH BOLTLESS RESTRAINED PIPE AND FITTINGS.

**WATER MAIN LOWERING DETAIL**  
SCALE: NONE



**1" WATER SERVICE DETAIL**  
SCALE: NONE



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**CITY OF NILES, OHIO**  
**MAURO CIRCLE WATERLINE REPLACEMENT**

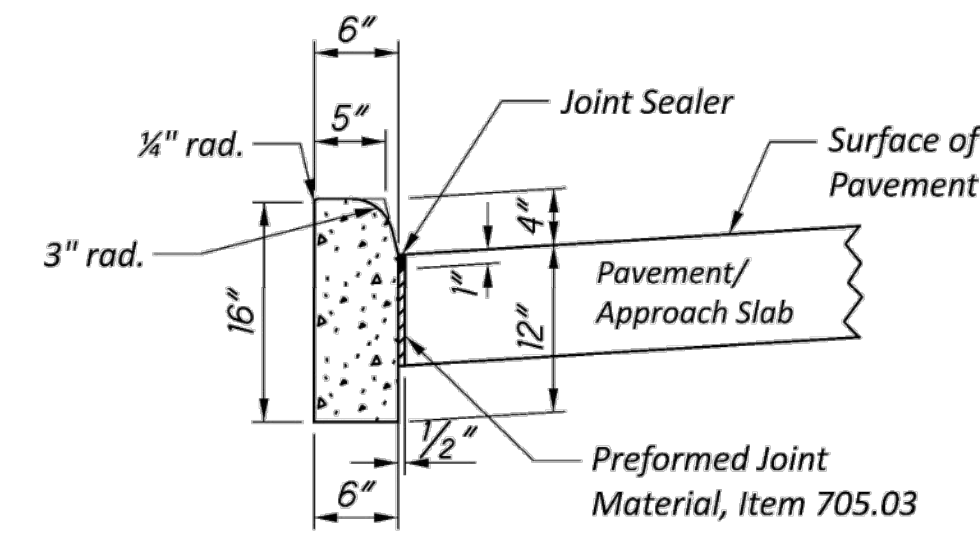
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NILES, OHIO

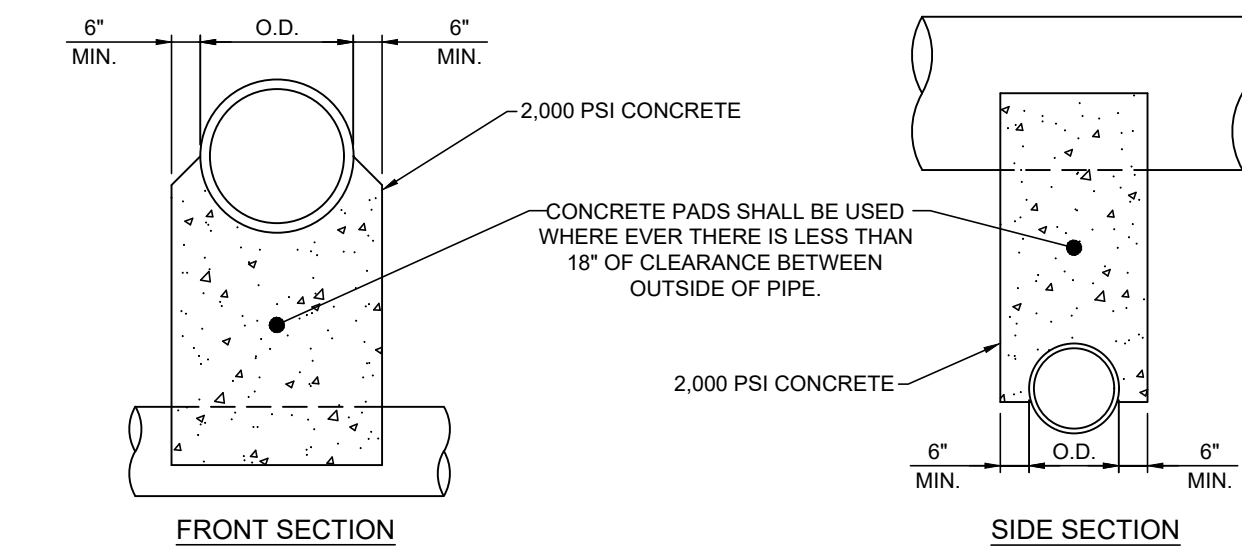
ISSUED FOR:	BID
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DESIGNED BY:	PAB
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**CONSTRUCTION DETAILS ( 1 OF 2 )**

PROJECT NO.	
242290	
DRAWING NAME	
C-05	
SHEET	OF
5	7



TYPE 4-C

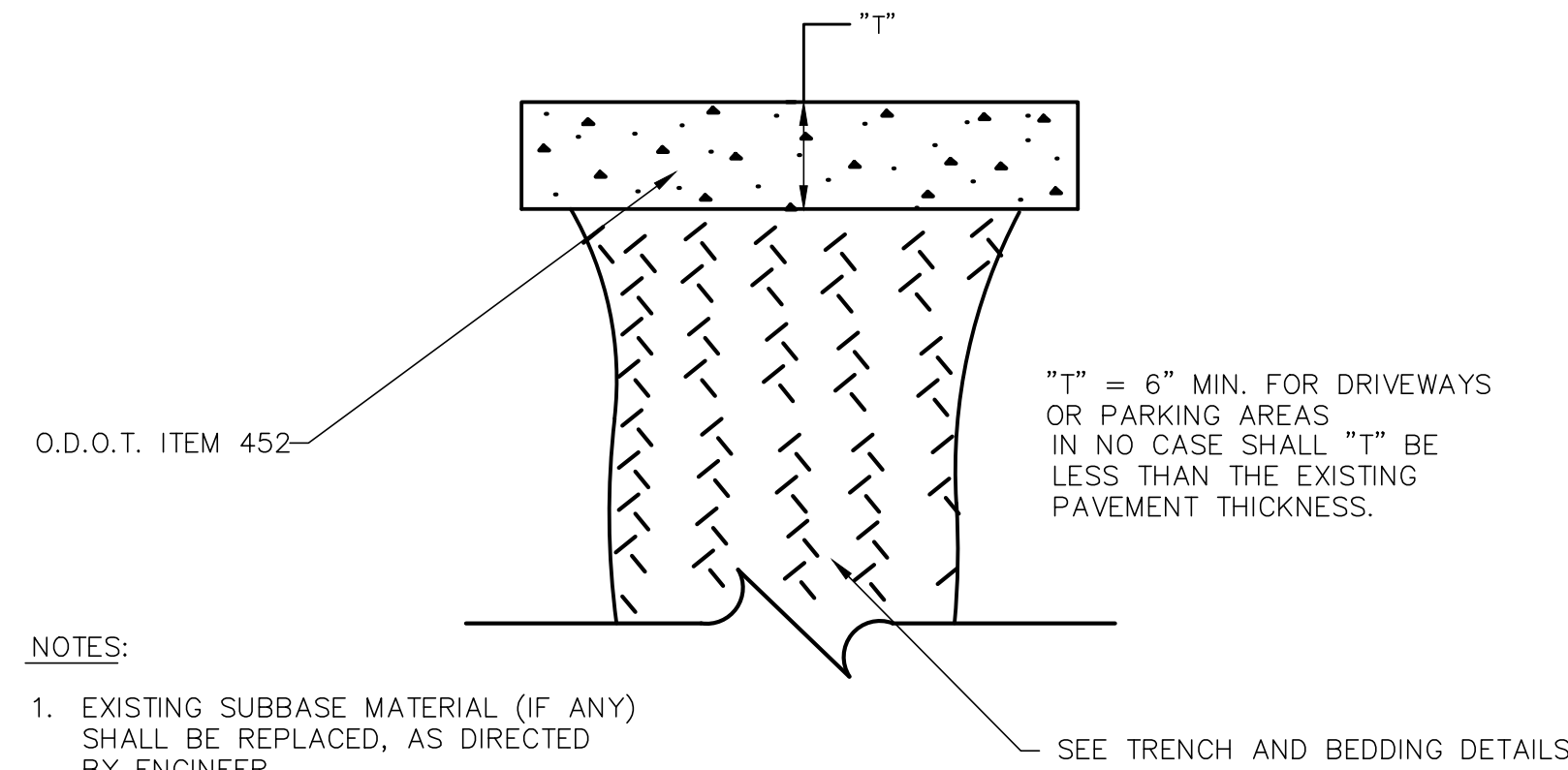


NOTE:

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, WHERE TWO PIPES (SEWER & WATER) CROSS EACH OTHER, A CONCRETE PAD AND CRADLE SEPARATOR SHALL BE PLACED BETWEEN THEM AS INDICATED ABOVE. WHERE PERMISSION IS GRANTED TO OMIT THE CONCRETE PADS, GRANULAR BACKFILL SHALL BE TAMPED IN 6" LAYERS AROUND BOTH PIPES. SUCH TAMPED BACKFILL SHALL BE CONTINUOUS FROM THE CRADLE 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.

PIPE CROSSING DETAIL

NOT TO SCALE



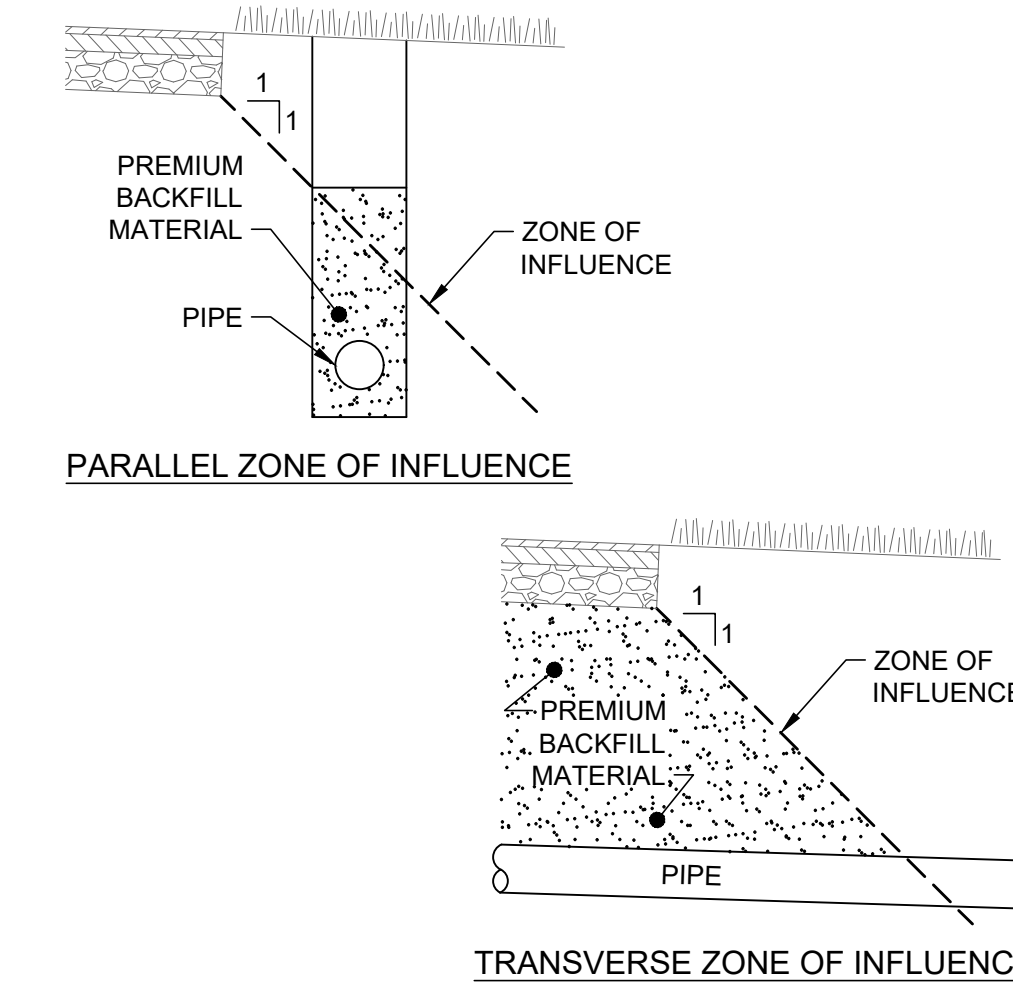
NOTES:

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

"T" = 6" MIN. FOR DRIVEWAYS OR PARKING AREAS. IN NO CASE SHALL "T" BE LESS THAN THE EXISTING PAVEMENT THICKNESS.

X WHERE WIDTH IS LESS THAN 3'-0" OR EXISTING PAVEMENT IS DETERIORATED, THE CONTRACTOR SHALL REPLACE ADDITIONAL PAVEMENT AS DIRECTED BY THE ENGINEER. PAYMENT FOR ADDITIONAL PAVEMENT REPLACEMENT AS DIRECTED BY THE ENGINEER SHALL BE AT THE SAME UNIT PRICE BID.

TYPE A PAVEMENT REPLACEMENT (CONCRETE)  
DRIVEWAY, APRON, OR PARKING LOT, AS PER PLAN



NOTES:

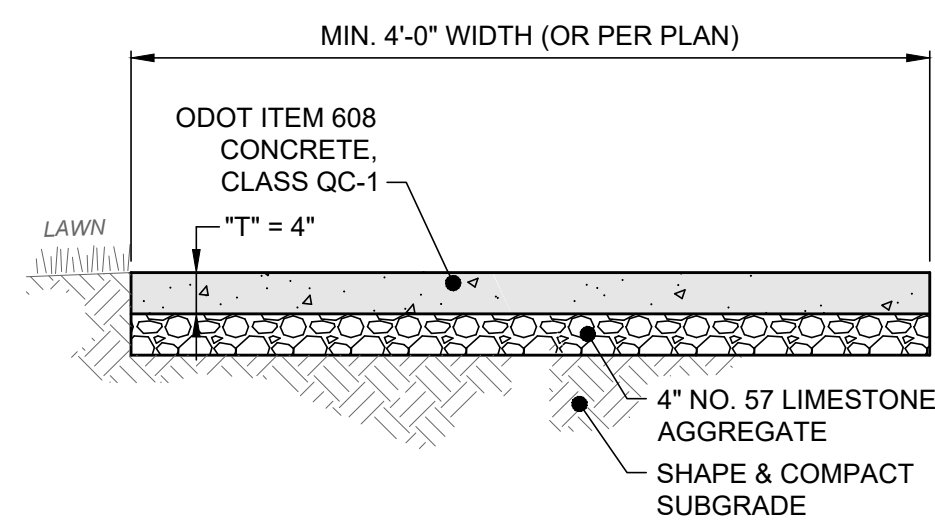
- EXCAVATED TRENCH WIDTH: MEASURED FROM BOTTOM OF TRENCH TO 12" OVER TOP OF PIPE (WITHIN THE PIPE EMBEDMENT), THE MIN. TRENCH WIDTH SHALL BE 9" AND THE MAX. SHALL BE:
  - O.D. + 24" FOR 24" AND SMALLER I.D. PIPE
- FINAL BACKFILL: ALL AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE SHALL BE PREMIUM BACKFILL (ODOT ITEM 304 LIMESTONE). PAVEMENT INCLUDES ROADWAY, SHOULDER AND DRIVEWAY, BUT NOT SIDEWALK. NO SLAG OR SLACKER AGGREGATES ALLOWED. IN ALL OTHER AREAS, THE FINAL BACKFILL SHALL BE SUITABLE ON-SITE MATERIAL.
- PIPE EMBEDMENT:
 

CLASS "A": SHALL BE USED FOR ALL PIPES UNDER PAVEMENT OR STRUCTURES WITH LESS THAN 12" OF PIPE COVER TO THE SUBGRADE. THE CONCRETE CRADLE SHALL BE IN ACCORDANCE WITH ODOT ITEM 499, CLASS QC-1. THE INITIAL BACKFILL SHALL BE NO. 57 COURSE INTERLOCKING LIMESTONE AGGREGATE.

CLASS "B": SHALL BE USED FOR ALL PIPES UNLESS OTHERWISE NOTED ON THE PLANS. BEDDING AND HAUNCHING SHALL BE NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN AREAS UNDER PAVEMENT, STRUCTURES OR WITHIN THE ZONE OF INFLUENCE, THE INITIAL BACKFILL SHALL BE NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE. IN ALL OTHER AREAS, THE INITIAL BACKFILL MAY BE SUITABLE ON-SITE MATERIAL FOR RIGID PIPE, AND SHALL BE NO. 57 OR 67 COURSE INTERLOCKING LIMESTONE AGGREGATE FOR FLEXIBLE PIPE.
- SUBBEDDING: WHERE AN UNSTABLE TRENCH BOTTOM CONDITION IS ENCOUNTERED, EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH MATERIAL AS DIRECTED BY THE ENGINEER.
- GEOTEXTILE FABRIC SHALL BE PER ODOT 712.09, TYPE A, AND INSTALLED AFTER ALL INITIAL BACKFILL.

TRENCHING, EMBEDMENT AND BACKFILL DETAIL

SCALE: NONE

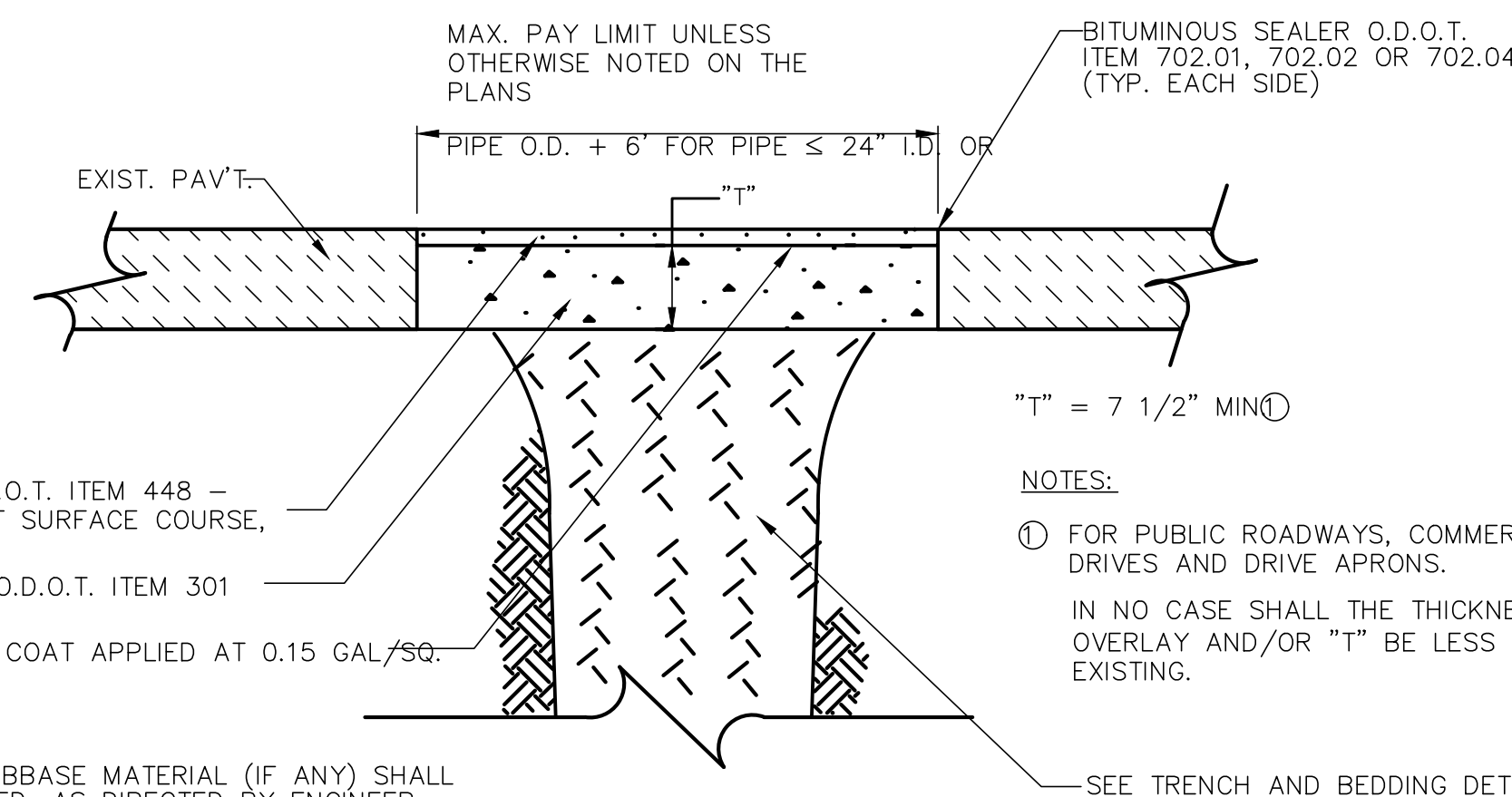


NOTES:

- SAW CUT OR HAND TOOL JOINT 1/8" WIDE BY 1/4 OF "T" DEEP.
- ROUND ALL EDGES AND JOINTS WITH A 1/4" RADIUS.
- LIGHTLY BROOM THE FINISH PERPENDICULAR TO THE WALKING PATH OR PER PLAN.
- APPLY LIQUID-MEMBRANE CURING COMPOUND (200 S.F./GAL.)

CONCRETE WALK DETAIL

SCALE: NONE



NOTES:

- FOR PUBLIC ROADWAYS, COMMERCIAL DRIVES AND DRIVE APRONS. IN NO CASE SHALL THE THICKNESS OF THE OVERLAY AND/OR "T" BE LESS THAN EXISTING.

TYPE C ASPHALT PAVEMENT REPLACEMENT (ROADWAY)

(ASPHALT)  
10/10

SD-5-3



NO	REVISION	DATE

CITY OF NILES, OHIO  
MAURO CIRCLE WATERLINE REPLACEMENT

TRUMBULL COUNTY

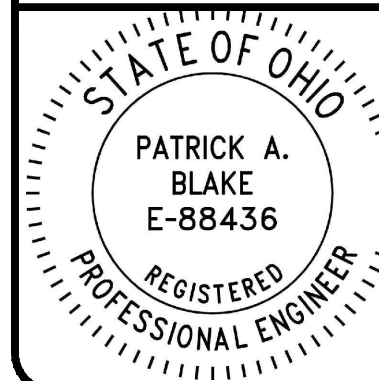
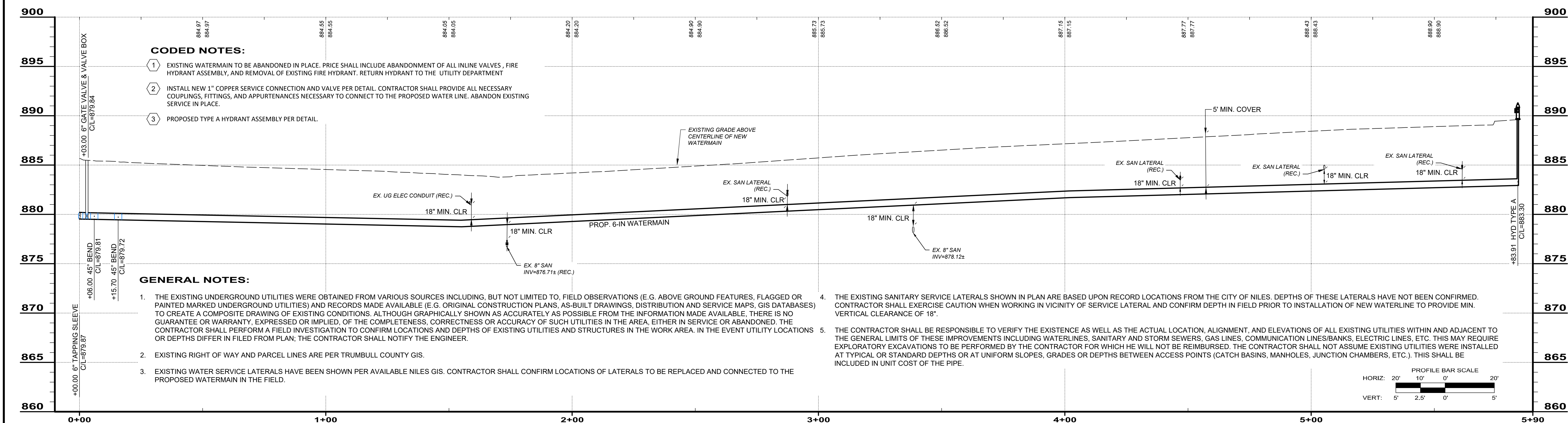
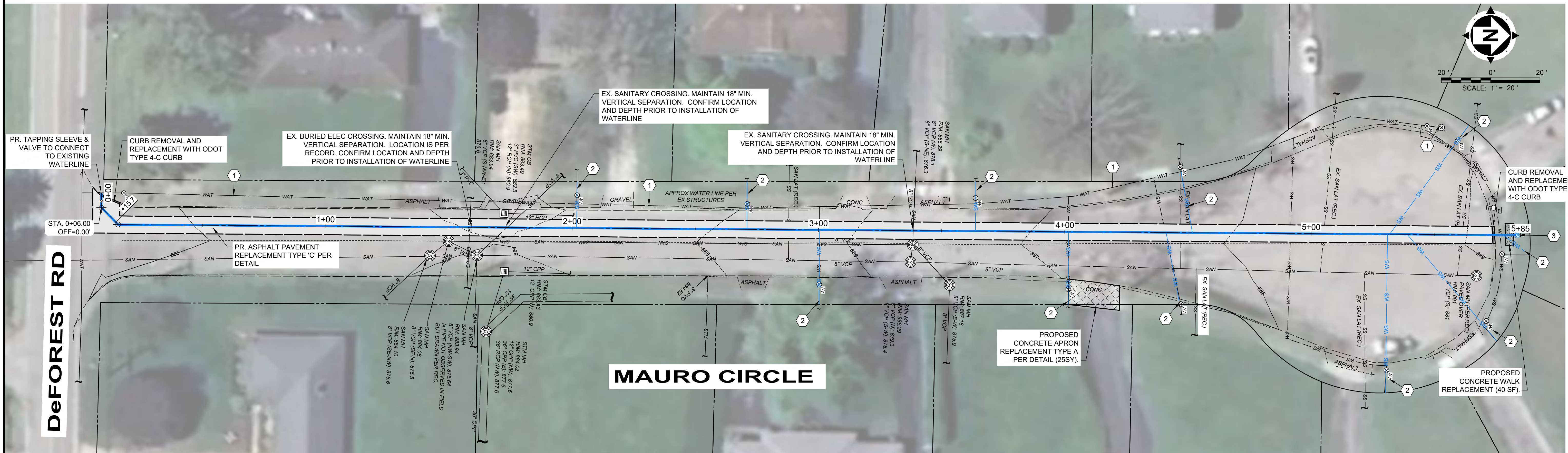
NILES, OHIO

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CHECKED BY:	AEF

CONSTRUCTION DETAILS ( 2 OF 2 )

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SHEET	OF
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NO	REVISION	DATE

**CITY OF NILES, OHIO**

**MAURO CIRCLE WATERLINE REPLACEMENT**

TRUMBULL COUNTY NILES, OHIO

ISSUED FOR: BID  
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**PLAN & PROFILE**

PROJECT NO. **242290**  
 DRAWING NAME **C-07**  
 SHEET **7** OF **7**