

CITY OF WILLOUGHBY LAKE COUNTY, OHIO

ERIE STREET WATER LINE REPLACEMENT

L.C. IMPROVEMENT NO. 413W-2018

BID DATE _____

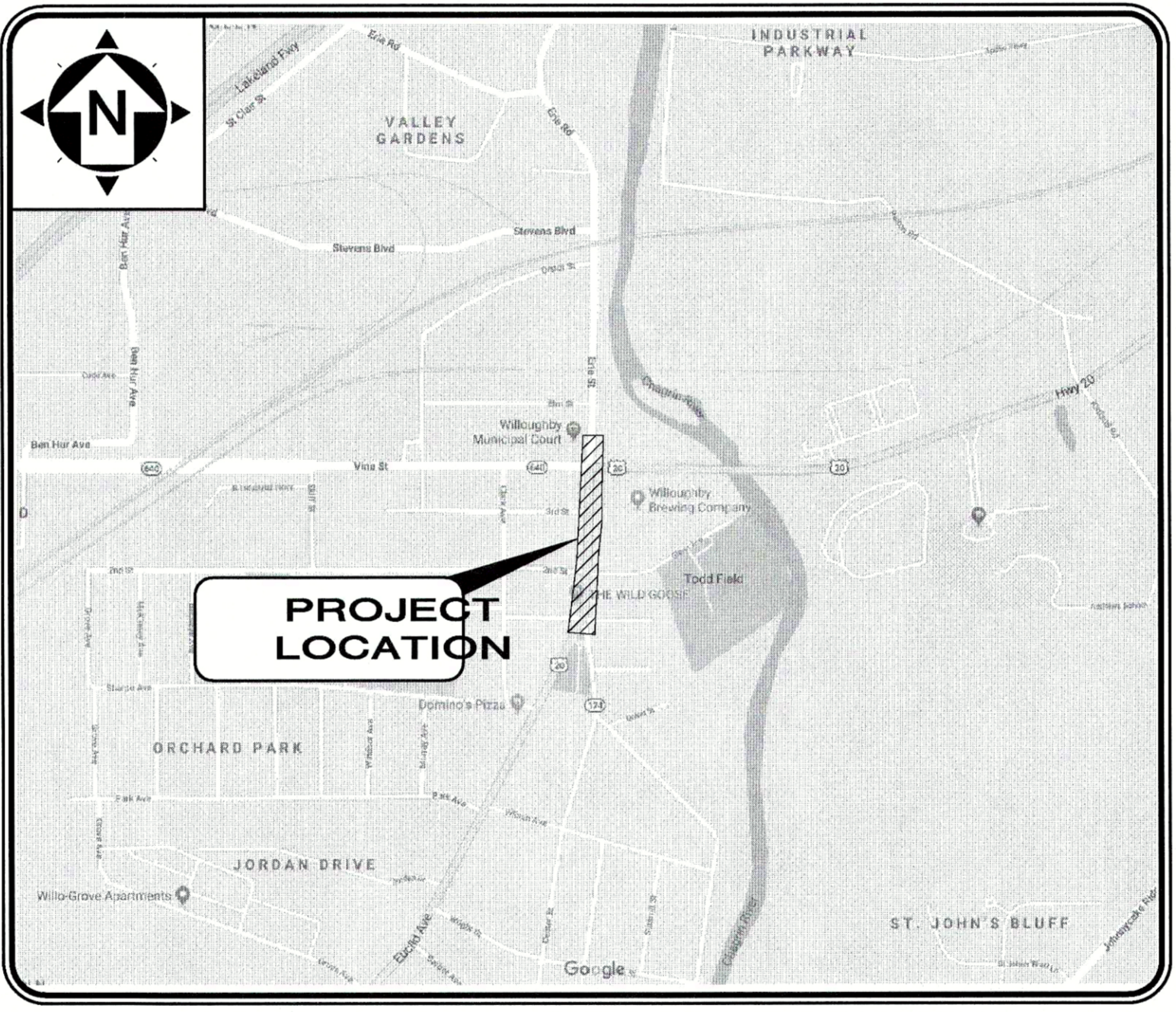


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LOCATION MAP - CITY OF WILLOUGHBY
NOT TO SCALE

APPROVALS

BOARD OF LAKE COUNTY COMMISSIONERS:

PRESIDENT Jerry C. Cirino 10-24-19 DATE
 COMMISSIONER John R. Hamercheck 10-24-19 DATE
 COMMISSIONER Ron Young 10-24-19 DATE

LAKE COUNTY SANITARY ENGINEER

ENGINEER Randall J. Rothlisberger 10/16/2019 DATE
 RANDALL J. ROTH LISBERGER, P.E.

CITY OF WILLOUGHBY

DIRECTOR OF PUBLIC SERVICE Lee Bock 10-10-19 DATE
 LEE BOCK
 ENGINEER Jim Sayles 10-9-19 DATE
 JIM SAYLES, P.E.

PROJECT DESCRIPTION

WATER MAIN REPLACEMENT ON ERIE STREET IN THE CITY OF WILLOUGHBY, LAKE COUNTY, OHIO

2016 SPECIFICATIONS

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

ISSUED FOR UTILITY COORD.	08/28/18	AS SHOWN	MFC	MPC/JPL	XXX
ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	

ERIE STREET WATER LINE REPLACEMENT
LAKE COUNTY DEPARTMENT OF UTILITIES - WILLOUGHBY -
COVER SHEET

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	COVER
SHEET	OF
1	20

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.



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.



1-800-362-2764
CALL TWO WORKING DAYS BEFORE YOU DIG
(NON MEMBERS MUST BE CALLED DIRECTLY)

Michael P. Cyvas

MICHAEL P. CYVAS P.E. No. 56012

10.9.19
DATE

EXISTING LINETYPES	
FENCE, GENERAL	
FENCE, BARBED WIRE	
FENCE, CHAIN LINK	
FENCE, DECORATIVE	
FENCE, ELECTRIC	
FENCE, VINYL	
FENCE, WOOD	
FENCE, WOVEN WIRE	
CABLE RAIL	
GUARDRAIL	
HANDRAIL	
CABLE T.V., ABANDONED	
CABLE T.V.	
CABLE T.V., OH	
CABLE T.V., UG	
CABLE T.V., SERVICE	
CABLE T.V., SERVICE OH	
CABLE T.V., SERVICE UG	
COMMUNICATION, ABANDONED	
COMMUNICATION	
COMMUNICATION, OH	
COMMUNICATION, UG	
COMMUNICATION, SERVICE	
COMMUNICATION, SERVICE OH	
COMMUNICATION, SERVICE, UG	
ELECTRIC, ABANDONED	
ELECTRIC, DUCT BANK	
ELECTRIC	
ELECTRIC, OH	
ELECTRIC, UG	
ELECTRIC, SERVICE	
ELECTRIC, SERVICE OH	
ELECTRIC, SERVICE, UG	
FIBER OPTIC, ABANDONED	
FIBER OPTIC, DUCT BANK	
FIBER OPTIC	
FIBER OPTIC, OH	
FIBER OPTIC, UG	
FIBER OPTIC, SERVICE	
FIBER OPTIC, SERVICE OH	
FIBER OPTIC, SERVICE, UG	
GAS, ABANDONED	
GAS	
GAS, SERVICE	
SANITARY, ABANDONED	
SANITARY FORCE MAIN	
SANITARY SEWER	
SANITARY LEACH LINE	
SANITARY SEWER, DOUBLE	
SANITARY SEWER, SERVICE	
STORM SEWER	
STORM SEWER, DOUBLE	
STORM, ROOF DRAIN	
STORM, UNDERDRAIN	
STORM SEWER, ABANDONED	
STORM CULVERT	
STORM SEWER	
STORM SEWER, DOUBLE	
STORM, ROOF DRAIN	
STORM, UNDERDRAIN	
TELEPHONE, ABANDONED	
TELEPHONE	
TELEPHONE, OH	
TELEPHONE, UG	
TELEPHONE, SERVICE	
TELEPHONE, SERVICE OH	
TELEPHONE, SERVICE, UG	
TRAFFIC, ABANDONED	
TRAFFIC LINE	
TRAFFIC LINE, OH	
TRAFFIC LINE, UG	
TRAFFIC, LOOP WIRE	
TRAFFIC, SPAN WIRE	
WATER LINE, ABANDONED	
WATER LINE	
WATER LINE, DOUBLE	
WATER LINE, SERVICE	

EXISTING LINETYPES	
BRUSH LINE	
BUSH LINE	
TREE LINE	
MAJOR CONTOUR	
MINOR CONTOUR	
WATER EDGE	
COUNTY LINE	
CORPORATION LINE	
ANNEXATION AREA	
SECTION LINE	
TOWNSHIP LINE	
FLOOD PLAIN LIMIT	
WETLAND LIMIT	
FARM LINE	
BOUNDARY LINE	
PROPERTY LINE	
LEASE LINE	
RIGHT-OF-WAY LINE	
RIGHT-OF-WAY C/L	
SURVEY STATIONING	
CONSTRUCTION FENCE	
SILT FENCE	
FILTER FENCE	
FILTER SOCK	

PROPOSED LINETYPES	
FENCE, GENERAL	
FENCE, BARBED WIRE	
FENCE, CHAIN LINK	
FENCE, DECORATIVE	
FENCE, ELECTRIC	
FENCE, VINYL	
FENCE, WOOD	
FENCE, WOVEN WIRE	
CABLE RAIL	
GUARDRAIL	
HANDRAIL	
ELECTRIC, DUCT BANK	
ELECTRIC, OH	
ELECTRIC, UG	
ELECTRIC, SERVICE OH	
ELECTRIC, SERVICE, UG	
GAS	
GAS, SERVICE	
SANITARY FORCE MAIN	
SANITARY SEWER	
SANITARY LEACH LINE	
SANITARY SEWER, DOUBLE	
SANITARY SEWER, SERVICE	
STORM SEWER	
STORM SEWER, DOUBLE	
STORM, ROOF DRAIN	
STORM, UNDERDRAIN	
WATER LINE	
WATER LINE, DOUBLE	
WATER LINE, SERVICE	
BUSH LINE	
TREE LINE	
MAJOR CONTOUR	
MINOR CONTOUR	
WATER EDGE	
BOUNDARY LINE	
PROPERTY LINE	
EASEMENT LINE	
LEASE LINE	
RIGHT-OF-WAY LINE	
RIGHT-OF-WAY C/L	
PHASE LINE	
TEMPORARY RIGHT-OF-WAY	
WORK LIMIT	
SETBACK	
SURVEY STATIONING	
CONSTRUCTION FENCE	
SILT FENCE	
FILTER FENCE	
FILTER SOCK	

EXISTING SYMBOLS	
SANITARY MANHOLE	
SANITARY CLEANOUT	
SANITARY LINE CAP	
SANITARY LINE PAINT MARKING	
SANITARY STRUCTURE NUMBER	
SANITARY VENT PIPE	
STORM MANHOLE (SOLID LID)	
STORM MANHOLE (OPEN GRATE)	
CURB INLET	
CURB INLET (DOUBLE)	
CATCH BASIN	
CATCH BASIN (ROUND LID)	
CATCH BASIN (DOME)	
CATCH BASIN (SIDE INLET)	
DRAIN	
DOWNSPOUT	
STORM CLEANOUT	
STORM LINE CAP	
STORM ENDWALL	
STORM HEADWALL	
STORM LINE PAINT MARKING	
STORM STRUCTURE NUMBER	
ROCK CHANNEL PROTECTION	
SURFACE DRAINAGE FLOW	
STORM FLOOD ROUTING ARROW	
FIRE HYDRANT	
WATER SIAMESE CONNECTION	
WATER VALVE	
WATER VALVE BOX	
WATER METER	
WATER METER PIT	
WATER LINE REDUCER	
WATER LINE CAP	
WATER LINE PLUG	
WATER LINE PAINT MARKING	
POST INDICATOR VALVE	
WATER MANHOLE	
WATER FLUSHING ASSEMBLY	
WATER FIXTURE	
WATER FITTING (TEE)	
WATER FITTING (CROSS)	
WATER FITTING (45' WYE)	
WATER FITTING (11.25')	
WATER FITTING (22.50')	
WATER FITTING (45')	
WATER FITTING (90')	
IRRIGATION SPRINKLER HEAD	
IRRIGATION CONTROL BOX	
IRRIGATION BOX	
STEAM MANHOLE	
STEAM VENT	
COMBINED SEWER MANHOLE	
GAS LIGHT POST (YARD)	
GAS MANHOLE	
GAS VALVE	
GAS VALVE BOX	
GAS METER	
GAS REGULATOR	
GAS VENT PIPE	
GAS LINE PAINT MARKING	
GAS LINE FIXTURE	
ELECTRIC LIGHT POST (YARD)	
ELECTRIC MANHOLE	
ELECTRIC PULL BOX	
ELECTRIC CONTROL BOX	
ELECTRIC JUNCTION BOX	
ELECTRIC VAULT BOX	
ELECTRIC METER	
ELECTRIC PEDESTAL	
ELECTRIC RISER BOX	
ELECTRIC TRANSFORMER	
ELECTRIC HVAC UNIT	
ELECTRIC GROUND LIGHT	
ELECTRIC LINE PAINT MARKING	
CABLE TV MANHOLE	
CABLE TV PEDESTAL	
CABLE TV PAINT MARKING	
TELEPHONE MANHOLE	
TELEPHONE PULL BOX	
TELEPHONE PEDESTAL	
TELEPHONE RISER BOX	
TELEPHONE LINE PAINT MARKING	

EXISTING SYMBOLS	
TELEPHONE PAY PHONE	
FIBER OPTIC CABLE MANHOLE	
FIBER OPTIC CABLE PAINT MARKING	
TRAFFIC CONTROL MANHOLE	
TRAFFIC CONTROL BOX	
TRAFFIC CONTROL PAINT MARKING	
TRAFFIC PULL BOX	
TRAFFIC SIGNAL PEDESTAL	
UNKNOWN, PULL BOX	
UNKNOWN, CLEANOUT	
UNKNOWN, MANHOLE	
UNKNOWN, VALVE	
MONITORING WELL	
TEST WELL	
WATER WELL	
SOIL BORING	
SWAMP	
POLE, ELECTRIC	
POLE, TELEPHONE	
POLE, LIGHT	
POLE, LIGHT, DECORATIVE	
POLE, LIGHT-OVERHEAD	
POLE, CABLE TV	
POLE, UTILITY	
POLE, GENERAL	
POLE, TRAFFIC CONTROL	
POLE, GUY	
POLE, BRACE	
POLE, ELECTRIC/TELEPHONE	
POLE, ELECTRIC W/LIGHT	
POLE, ELECTRIC/TELEPHONE/LIGHT	
POLE, ELECTRIC/TELEPHONE/CABLE TV	
POLE, ELEC./TELE./LIGHT/CABLE TV	
POLE, GUY WIRE	
SIGN	
SIGN, DOUBLE SIDED	
SIGN, DUAL POST	
SIGN, RAILROAD	
POST	
BOLLARD	
DELINEATOR POST	
PARKING BUMPER BLOCK	
HANDICAP PARKING SYMBOL	
HANDICAP PARKING SYMBOL	
HANDICAP DETECTABLE WARNING	
MAILBOX	
PAPERBOX	
PARKING METER	
PARKING METER	
GRAVE HEADSTONE	
EX. BARBEQUE GRILL	
FUEL PUMP	
FLAG POLE	
RAISED PAVEMENT MARKER	
GUARDRAIL, CENTER POST	
GUARDRAIL, TERMINAL POST	
GUARDRAIL, BOTTOM POST	
GUARDRAIL, TOP POST	
FENCE POST	
PICNIC TABLE	
BENCH	
DECIDUOUS TREE	
EVERGREEN TREE	
STUMP	
BUSH	
IRON PIN FOUND	
SOLID IRON PIN FOUND	
IRON PIPE FOUND	
DRILL HOLE FOUND	
CHISELED "X" FOUND	
MONUMENT BOX FOUND	
MONUMENT CONCRETE FOUND	
MONUMENT RIGHT-OF-WAY FOUND	
PK NAIL FOUND	
MAG NAIL FOUND	

EXISTING SYMBOLS	
SPIKE FOUND	
HUB FOUND	
AXLE FOUND	
WOOD POST FOUND	
CORNER STONE FOUND	
AERIAL TARGET FOUND	
GPS CONTROL FOUND	
BENCHMARK FOUND	

PROPOSED SYMBOLS	
SANITARY MANHOLE	
SANITARY MANHOLE, ADJUST	
SANITARY CLEANOUT	
SANITARY LINE CAP	
SANITARY STRUCTURE NUMBER	
SANITARY VENT PIPE	
STORM MANHOLE (SOLID GRATE)	
STORM MANHOLE (OPEN GRATE)	
STORM MANHOLE, ADJUST	
CURB INLET	
CURB INLET (DOUBLE)	
CURB INLET, ADJUST	
CURB INLET (DOUBLE), ADJUST	
CATCH BASIN	
CATCH BASIN (SOLID)	
CATCH BASIN, ADJUST	
CATCH BASIN (SIDE INLET)	
DRAIN	
DOWNSPOUT	
STORM CLEANOUT	
STORM LINE CAP	
STORM HEADWALL	
STORM STRUCTURE NUMBER	
ROCK CHANNEL PROTECTION	
SURFACE DRAINAGE FLOW	
SURFACE DRAINAGE FLOW	
STORM FLOOD ROUTING ARROW	
FIRE HYDRANT	
FIRE HYDRANT, ADJUST	
WATER SIAMESE CONNECTION	
WATER VALVE	
WATER VALVE BOX	
WATER METER	
WATER LINE REDUCER	
WATER LINE CAP	
WATER LINE PLUG	
POST INDICATOR VALVE	
WATER MANHOLE	
WATER FLUSHING ASSEMBLY	
WATER METER	
GAS LIGHT POST (YARD)	
GAS MANHOLE	
GAS VALVE	
GAS METER	
GAS REGULATOR	
GAS VENT PIPE	
ELECTRIC LIGHT (GROUND)	
ELECTRIC LIGHT POST (YARD)	
ELECTRIC MANHOLE	
ELECTRIC MANHOLE, ADJUST	
ELECTRIC PULL BOX	
ELECTRIC CONTROL BOX	
ELECTRIC JUNCTION BOX	
ELECTRIC VAULT BOX	
ELECTRIC METER	
ELECTRIC PEDESTAL	
ELECTRIC TRANSFORMER	
ELECTRIC AIR CONDITION UNIT	
POLE, ELECTRIC	
POLE, TELEPHONE	
POLE, LIGHT	
POLE, LIGHT, DECORATIVE	
POLE, LIGHT-OVERHEAD	
POLE, CABLE TV	
POLE, UTILITY	
POLE, GENERAL	

PROPOSED SYMBOLS	
POLE, TRAFFIC CONTROL	
POLE, GUY	
POLE, BRACE	
POLE, ELECTRIC/TELEPHONE	
POLE, ELECTRIC W/LIGHT	
POLE, ELECTRIC/CABLE TV	
POLE, ELEC./TELE./LIGHT	
POLE, ELEC./TELE./CABLE TV	
POLE, ELEC./TELE./LIGHT/CABLE	
POLE, TELEPHONE/LIGHT	
POLE, TELEPHONE/CABLE TV	
POLE, TELE./LIGHT/CABLE TV	
POLE, CABLE TV W/LIGHT	
POLE, FLAG	
GUY WIRE	
POST, SIGN (SINGLE SIDED)	
POST, SIGN (DOUBLE SIDED)	
POST, SIGN (DUAL POST)	
POST (GENERAL)	
BOLLARD	
DELINEATOR POST	
FENCE POST	
PARKING COUNT	
PARKING BUMPER BLOCK	
HANDICAP PARKING SYMBOL	
HANDICAP DETECTABLE WARNING	
MAILBOX	
PAPERBOX	
PARKING METER	
STREET SIGN	
TRAFFIC CONTROL MANHOLE	
TRAFFIC CONT. MANHOLE (ADJ)	
TRAFFIC CONTROL BOX	
TRAFFIC PULL BOX	
TRAFFIC SIGNAL PEDESTAL	
INLET PROTECTION	
STRAW BALE CHECK DAM	
TREE (DECIDUOUS)	
TREE (EVERGREEN)	
BUSH	

PRECONSTRUCTION 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. THE MEETING WILL BE HELD AT THE LAKE COUNTY UTILITIES LEARNING AND BUSINESS CENTER, (ULAB).

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:

- 1. 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
DOMINION EAST OHIO
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

LEE BOCK
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 COSTS FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICES STIPULATED FOR THE VARIOUS ITEMS IN THE BID PROPOSAL. 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 PRICE BID FOR CLEARING AND GRUBBING.

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 PRICES BID FOR CLEARING AND GRUBBING. TEMPORARY LOCATION FOR MAIL BOXES SHALL BE COORDINATED WITH THE LOCAL POST MASTER.
- 2. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF WILLOUGHBY TO HAVE THE CITY REMOVE CITY OWNED SITE FURNISHINGS, INCLUDING TRASH RECEPTACLES, FLOWER BOXES, ETC. TO BE STORED OFF-SITE DURING CONSTRUCTION BY THE CITY.
- 3. 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. SUBSURFACE SOIL INVESTIGATIONS WERE NOT PERFORMED FOR THIS PROJECT.

DRAINAGE OF ROADWAY AREA DURING CONSTRUCTION:

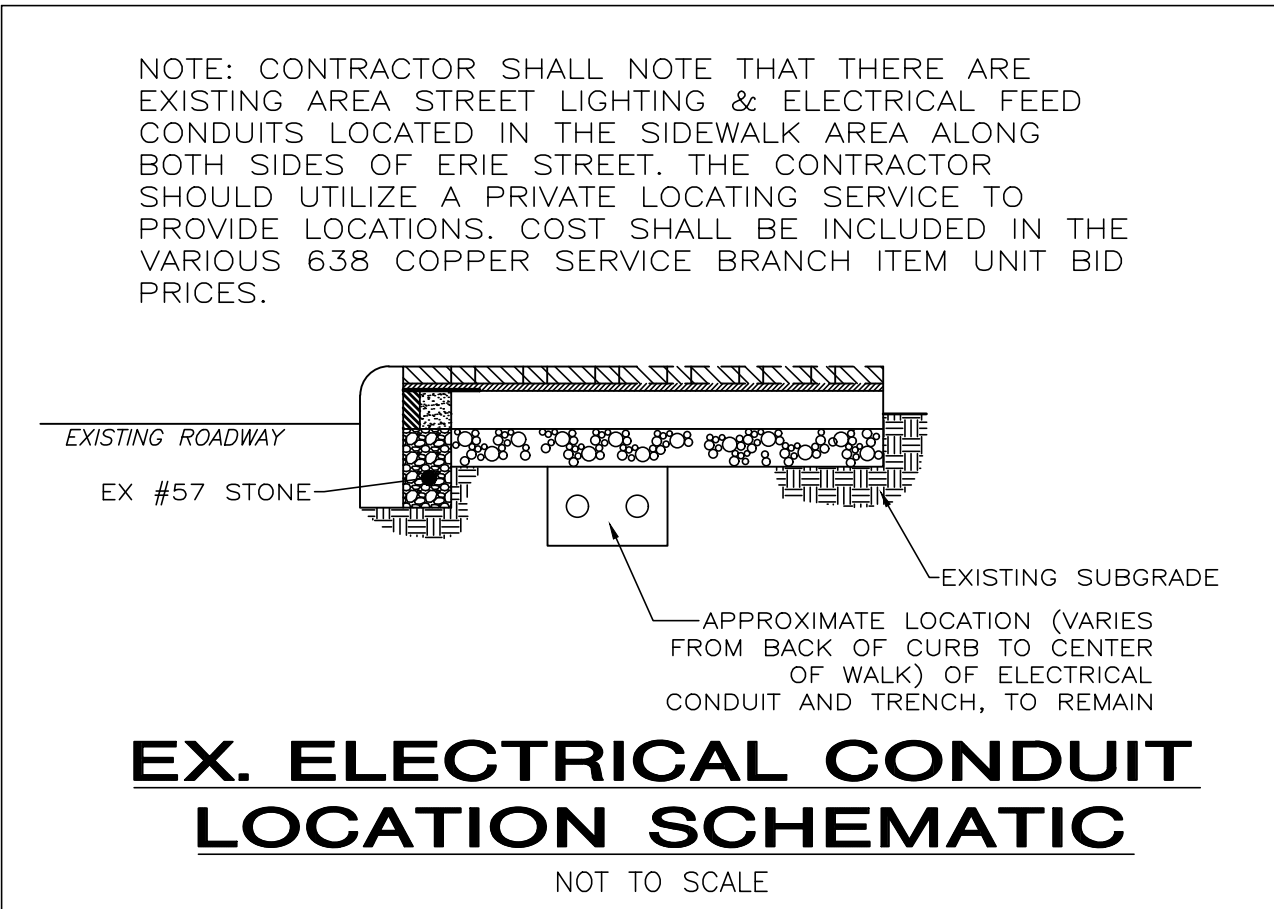
- 1. THE CONTRACTOR SHALL BE REQUIRED DURING THE COURSE OF HIS WORK WITHIN AND ADJACENT TO THE EXISTING AND PROPOSED PAVEMENT AREAS TO MAINTAIN THE ROADWAY AREA IN SUCH CONDITION THAT IT WILL BE WELL DRAINED AT ALL TIMES. THE SURFACE OF THE PAVEMENT SUBGRADE AND THE GROUND SURFACE ABOVE THE FINAL PAVEMENT 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.

CONTINGENCY ITEMS FOR DRAINAGE:

- 1. AS A RESULT OF THE PROPOSED CONSTRUCTION, STORM DRAINAGE MAY POND WITHIN THE PROJECT WORK LIMITS. SUITABLE PROVISIONS FOR COLLECTING, CONVEYING AND DISCHARGING ANY SUCH LOCALIZED PONDING SHALL BE AS DIRECTED BY THE ENGINEER. UNRECORDED STORM WATER CONNECTIONS MAY ALSO BE ENCOUNTERED DURING THE EXECUTION OF THIS CONTRACT. UNRECORDED STORM WATER CONNECTIONS SHALL BE CONNECTED TO THE EXISTING STORM SEWER, CATCH BASINS OR MANHOLES AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN UNRECORDED CONNECTIONS ARE ENCOUNTERED.



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.

DOMINION EAST OHIO (DEO) NOTES:

- 1. ONE-FOOT MINIMUM VERTICAL AND HORIZONTAL CLEARANCE MUST BE MAINTAINED BETWEEN DEO'S EXISTING PIPELINE(S) AND ALL OTHER IMPROVEMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE LATERAL AND SUBJACENT SUPPORT OF DEO'S PIPELINE(S), IN COMPLIANCE TO 29 CFR, PART 1926, SUBPART P. (SAFE EXCAVATION & SHORING). EXTREME CARE SHOULD BE TAKEN NOT TO HARM ANY DEO FACILITY OR APPURTENANCES. NOTIFY DEO IMMEDIATELY IF ANY HARM HAS BEEN INFLICTED UPON DEO'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 ERIE STREET, EUCLID AVE., RIVER STREET, EAST & WEST SPAULDING, 2ND STREET, GLENN AVE, 3RD STREET, VINE STREET AND MENTOR AVE..
- 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: ERIE STREET BETWEEN RIVER STREET AND VINE 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	WALL THICKNESS
OPEN-CUT TRENCH INSTALLATION			
DIP WATERLINE	12,8,6,4 INCH	DUCTILE IRON PIPE WITH PUSH ON & RESTRAINED JOINTS PER REQUIREMENTS	CLASS 53 DIP
FIRE HYDRANTS SHALL BE EQUIPPED WITH A 5" STORZ PUMPER CONNECTION			

ADDITIONAL REQUIREMENTS:

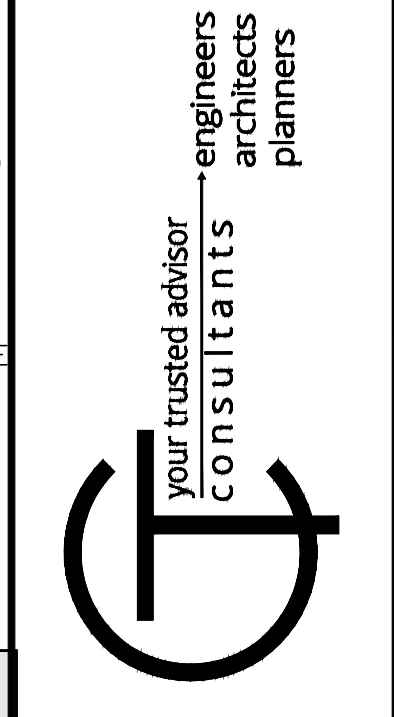
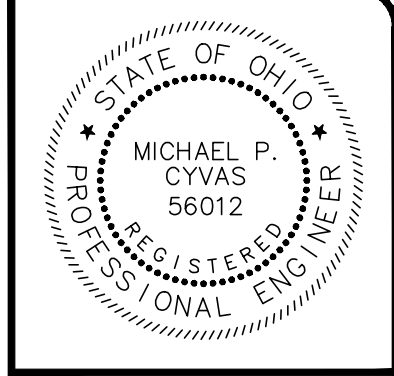
- 1. THE CONTRACTOR SHALL FIELD EXCAVATE ALL CONNECTION POINTS AND LOCATE ALL NECESSARY UTILITIES 5 DAYS IN ADVANCE OF MAKING CONNECTIONS, IN ORDER TO VERIFY LOCATIONS AND CLEARANCES.
- 2. ALTHOUGH SPECIFIC VERTICAL BEND SIZES ARE IDENTIFIED IN THE PLAN, THE CONTRACTOR SHALL UTILIZE THE MOST EFFICIENT 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.
- 6. CONSTRUCTION SEQUENCE SHOULD ALLOW FOR THE STARTING OF MAIN AT THE SOUTH END OF PROJECT WITH A SAMPLE TAP PLACED NO FARTHER THAN 5 FEET FROM END OF NEW MAIN.

EXCAVATION AND BACKFILL

- 1. NO SLAG PRODUCTS WILL BE PERMITTED FOR BEDDING OR BACKFILL MATERIAL. BACKFILL FOR ALL UNDERGROUND UTILITIES INSTALLED UNDER PAVEMENT, SIDEWALK, AND STRUCTURES OR WITHIN A 1:1 ZONE OF INFLUENCE PARALLEL OR TRANSVERSE TO PAVEMENT, SIDEWALK OR STRUCTURES SHALL BE "COMPACTED GRANULAR BACKFILL" AS DESCRIBED IN SPECIFICATION SECTION 02235 AND IN ACCORDANCE WITH THE PLANS. BACKFILL IN OTHER AREAS SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 02234 - "COMPACTED BACKFILL" OR SECTION 02235 - "COMPACTED GRANULAR BACKFILL".
- 2. BACKFILL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 9" IN DEPTH. BACKFILL MATERIAL SHALL BE PLACED WITH 2% OF THE OPTIMUM MOISTURE. THE ENGINEER MAY ORDER THE REMOVAL, REFILLING, RE-COMPACTION AND RETESTING OF ALL BACKFILL NOT MEETING THE REQUIREMENTS OF THE CONTRACT.
- 3. BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED USING MACHINE MOUNTED COMPACTION EQUIPMENT IN LAYERS SUFFICIENT TO MEET THE COMPACTION REQUIREMENT ODOT 203.
- 4. NO BACKFILLING OF ANY TRENCHES OR EXCAVATIONS WILL BE PERMITTED WITHOUT TAMPING EQUIPMENT BEING 5 ALL EXCAVATION SHALL BE CONSIDERED UNCLASSIFIED. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ROCK OR SHALE EXCAVATION.
- 5. THE OWNER AND THE ENGINEER DO NOT GUARANTEE THE SUITABILITY OR SUGGEST THAT THE EXISTING EXCAVATED MATERIAL IN ITS PRESENT STATE WILL CONSIST OF THE PROPER MOISTURE CONTENT TO ACHIEVE THE REQUIRED COMPACTION WITHOUT DRYING OR ADDING WATER TO THE MATERIAL. UPON REQUEST, THE OWNER WILL PROVIDE ACCESS TO THE SITE FOR THE CONTRACTOR TO CONDUCT SUCH INVESTIGATIONS AND TESTS DEEMED NECESSARY TO MAKE HIS DETERMINATION.

SERVICE CONNECTIONS:

- 1. 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.
- 2. THE CONTRACTOR SHALL EXPECT AT LEAST ONE SERVICE CONNECTION FOR ADDRESS NUMBER ON BOTH SIDES OF THE STREET FOR THE ENTIRE PROJECT LENGTH.
- 3. 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.
- 4. 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.
- 5. THE CONTRACTOR SHALL BE REQUIRED TO BYPASS AND MAINTAIN THE FLOW TO/FROM ALL HOUSE UTILITY CONNECTIONS DURING CONSTRUCTION.
- 6. 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.
- 7. THE COST OF UTILITY RELOCATION, REPLACEMENT, AND/OR SUPPORT SHALL BE INCLUDED IN THE COST PER LINEAL FOOT OF PROPOSED WATERLINE.
- 8. THE LCDU REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY WHEN LEAD SERVICE LINES ARE ENCOUNTERED.



DATE	REVISION	NO	ISSUED FOR: UTILITY COORD.	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
			08/28/18	AS SHOWN	MPC	MPC/JPL		XXX

ERIE STREET WATER LINE REPLACEMENT
LAKE COUNTY DEPARTMENT OF UTILITIES - WILLOUGHBY -

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	GN-02
SHEET	OF
3	20

ITEM SPECIAL - WATER MAIN:

- A. 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.
- B. 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, APRIL 2018 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.
- C. OWNERSHIP. ALL WATER MAINS AND APPURTENANCES WITHIN THE DEDICATED RIGHT-OF-WAY ARE OWNED, OPERATED AND MAINTAINED BY THE LAKE COUNTY DEPARTMENT OF UTILITIES.
- D. 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.
- E. 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.
- F. 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.
- G. 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.
- H. 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

- I. THE EXISTING WATER SERVICE MAY BE TAKEN OFF SERVICE FOR 4 HOURS MAXIMUM, COORDINATED WITH LAKE COUNTY.

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 SECTION 310000 "COMPACTED BACKFILL", 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.
- 6. 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 UNLESS ANY OF THE ABOVE UTILITIES ARE ENCOUNTERED AND NOT SHOWN ON THE DRAWINGS.

LCDU WATER WORKS NOTES:

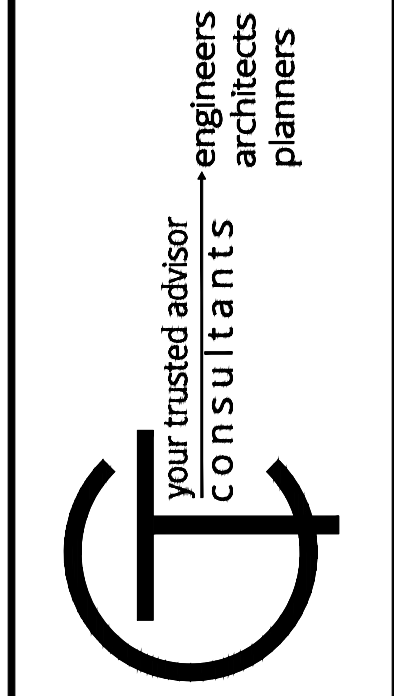
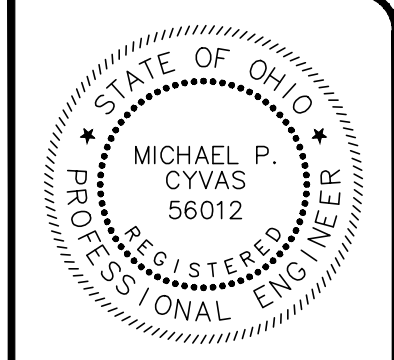
- 1. ONLY WATER/SEWER CONTRACTORS LICENSED BY THE LAKE COUNTY BOARD OF COMMISSIONERS MAY INSTALL WATER MAINS.
- 2. THIS APPROVAL BY THE LCDU SHALL EXPIRE IF THE WATERLINE CONSTRUCTION HAS NOT BEEN INITIATED BY A DEVELOPER WITHIN (12) MONTHS OF THE EFFECTIVE APPROVAL DATE AS SHOWN ON THE ORIGINALLY SUBMITTED FOR APPROVAL BLUEPRINT COPY. (THIS IS NOT TO BE CONSTRUED AS THE DATE THAT IS SHOWN ON THE ORIGINAL MYLAR TITLE SHEET.)
- 3. THE CONTRACTOR SHALL NOTIFY THE LCDU AT LEAST 48 HOURS IN ADVANCE OF ANY WORK IN THEIR SYSTEMS.
- 4. 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.
- 5. WATERLINE WORK SHALL NOT BEGIN UNTIL THE AREAS OF CONSTRUCTION ARE ROUGH GRADED.
- 6. 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.
- 7. ALL HYDRANTS SHALL BE POSITIONED SO THAT THE STEAMER NOZZLES POINT IN THE DIRECTION SHOWN ON THE PLANS.
- 8. 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.
- 9. ALL BOLTS SHALL BE STAINLESS STEEL TYPE 304 OR 316. WITH ANTI-GALLING AGENT.
- 10. 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.
- 11. 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)
- 12. ALL WATER MAIN PIPE SHALL BE DUCTILE IRON PIPE, ANSI A21.51, THICKNESS CLASS 53, UNLESS OTHERWISE SHOWN ON THE PLANS, WITH PUSH-ON JOINTS, CEMENT LINED ANSI A 21.4. FITTINGS TO BE FULL BODY-ONLY.

LCDU WATER WORKS NOTES:

- 13. 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.
- 14. 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.
- 15. NO WATER SERVICE CONNECTIONS TO ANY BUILDING SHALL BE PERMITTED PRIOR TO FINAL ACCEPTANCE BY THE LCDU INCLUDING RECTIFICATION OF ALL PUNCH LIST ITEMS.
- 16. 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.
- 17. 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.
- 18. THE CONTRACTOR SHALL NOTIFY THE FIRE DEPARTMENT PRIOR TO ANY PRESSURE TESTING. FIRE DEPARTMENT SHALL WITNESS ANY PRESSURE TESTING.
- 19. 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.
- 20. 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.

MAINTENANCE OF TRAFFIC:

- 1. SEE MAINTENANCE OF TRAFFIC SHEET FOR REQUIREMENTS REGARDING LANE CLOSURES, TRAFFIC SIGNAL MODIFICATIONS, PAVEMENT MARKINGS, SIGNS AND BARRICADES.



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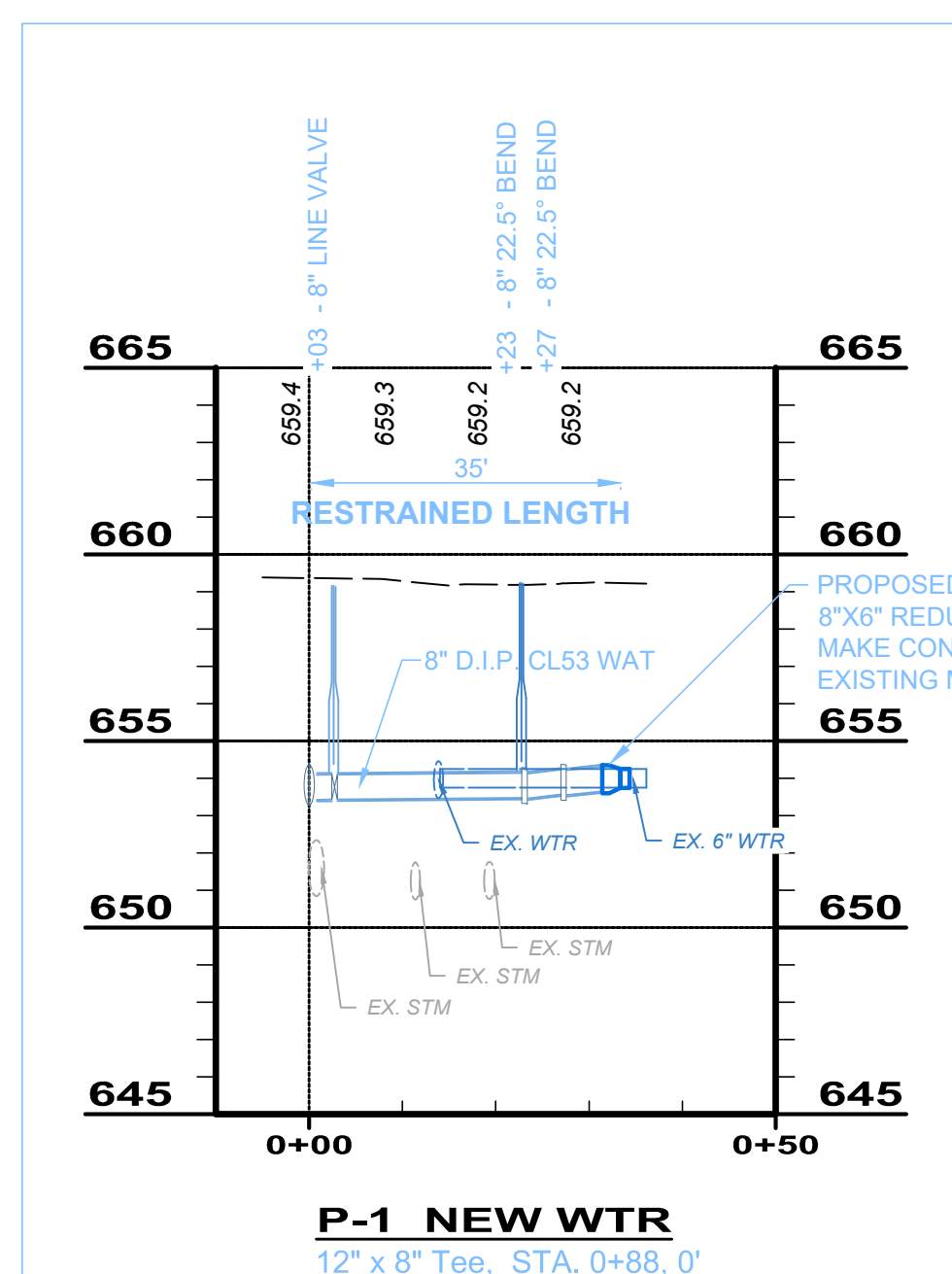
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LAKE COUNTY DEPARTMENT OF UTILITIES

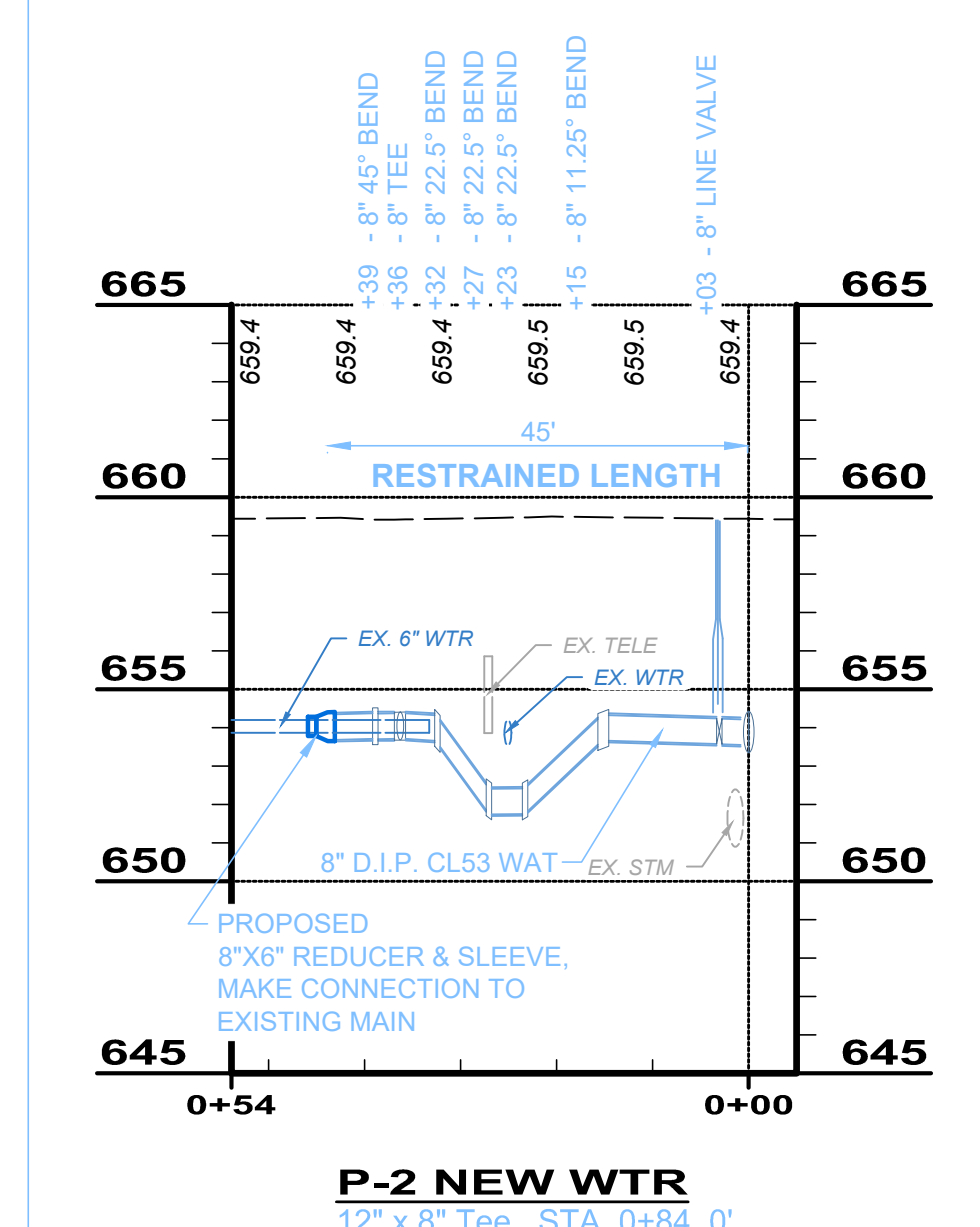
- WILLOUGHBY -

WATERWORKS NOTES

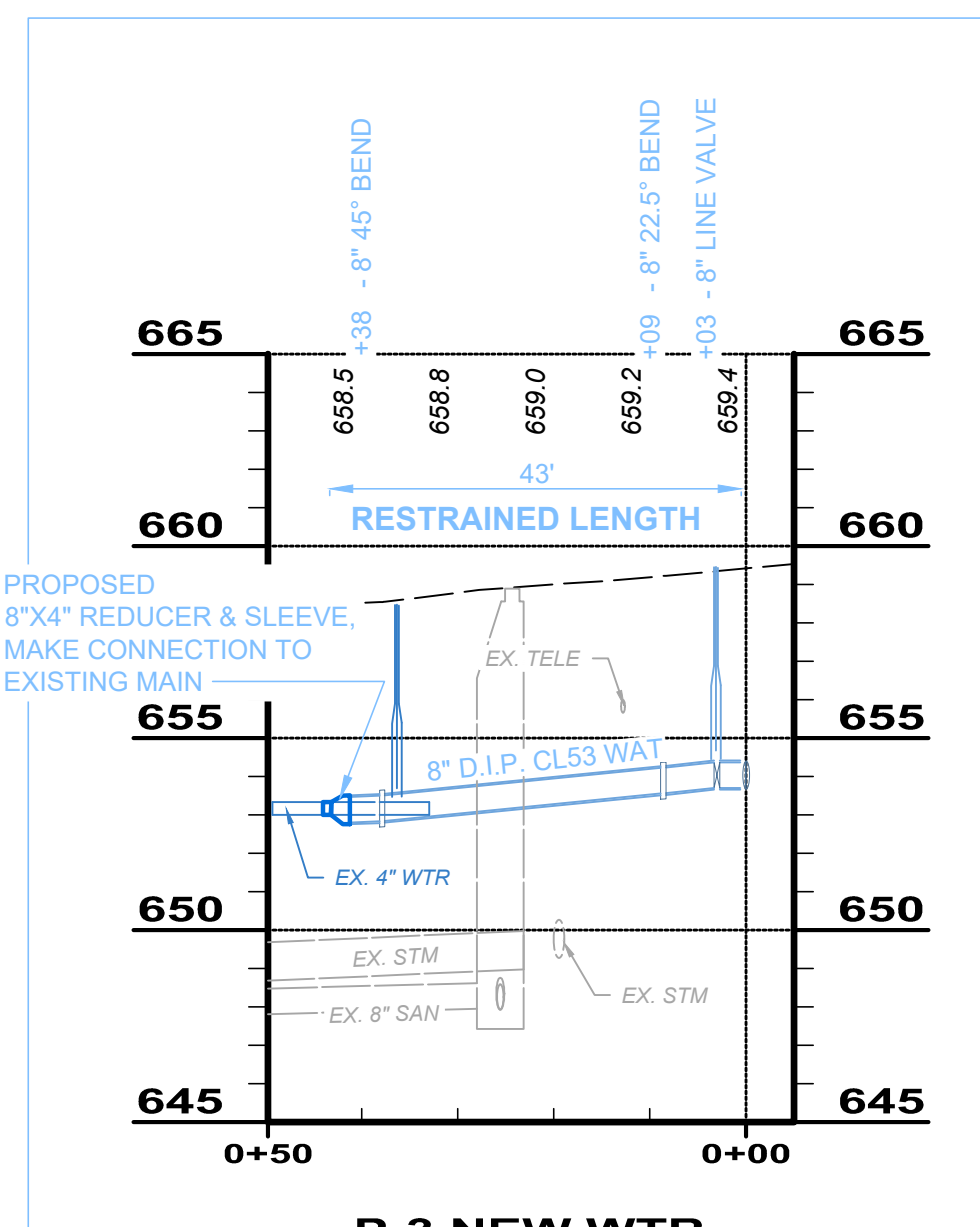
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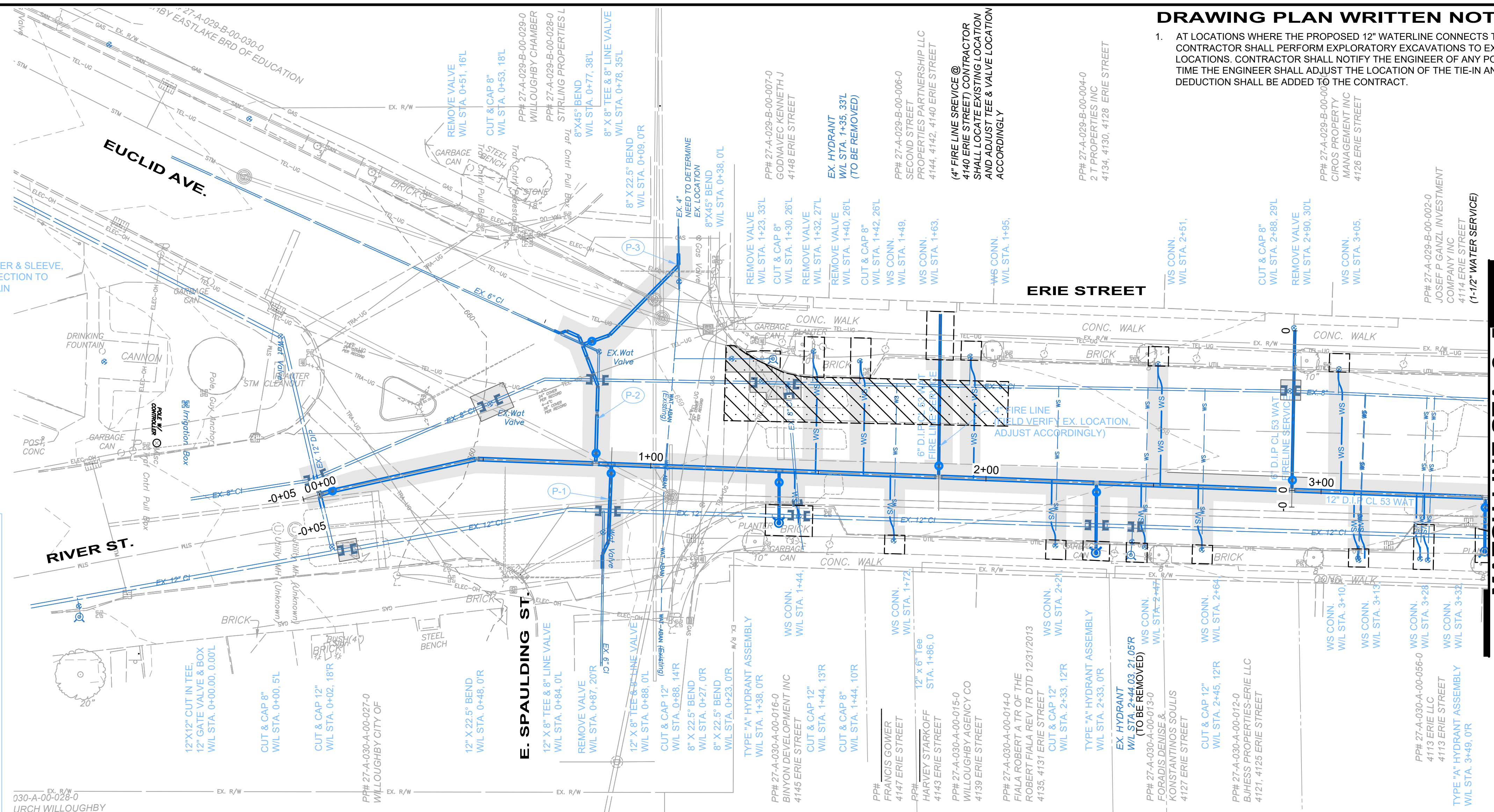
P-1 NEW WTR
12" x 8" Tee, STA. 0+88, 0'



P-2 NEW WTR
12" x 8" Tee, STA. 0+84, 0'

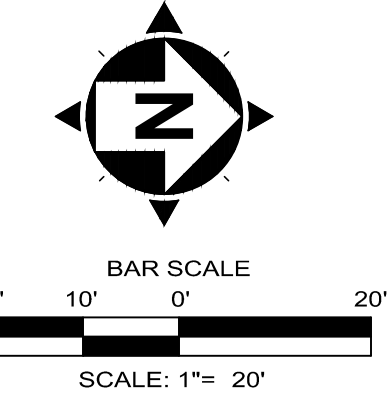


P-3 NEW WTR
8" Tee, STA. 0+36, 0'

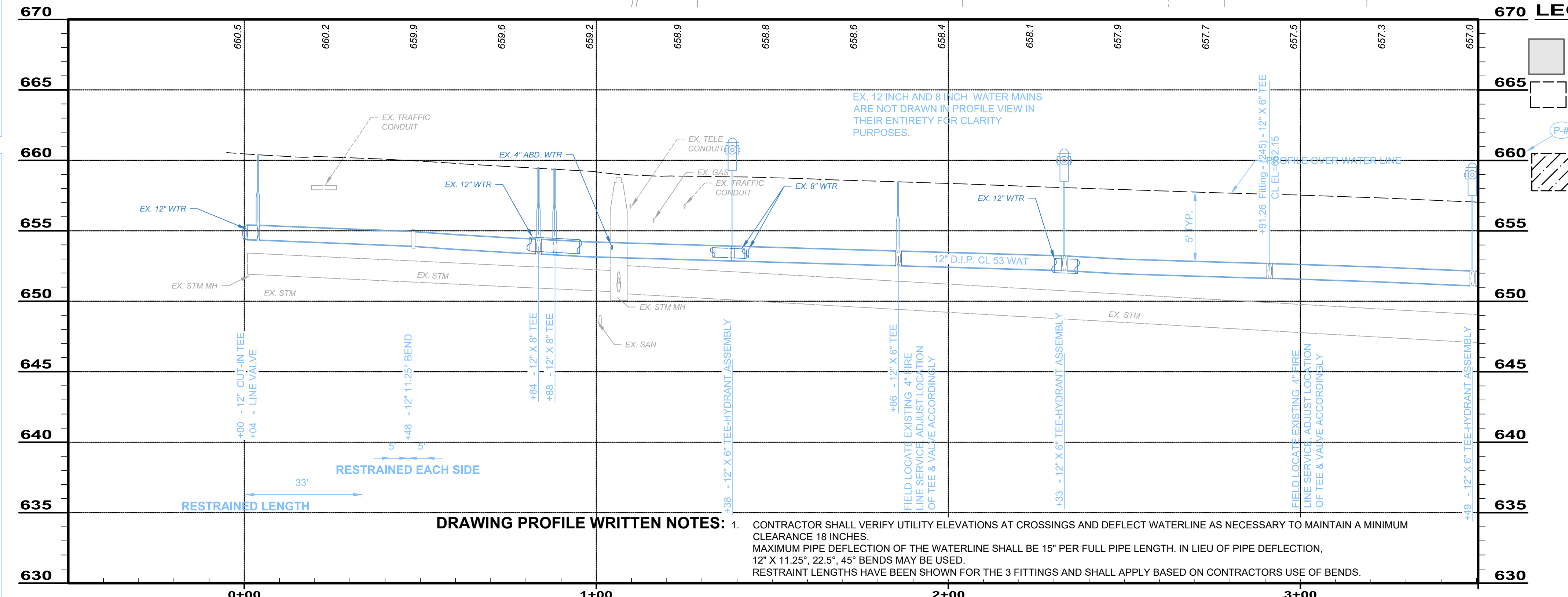


DRAWING PLAN WRITTEN NOTES:

- AT LOCATIONS WHERE THE PROPOSED 12" WATERLINE CONNECTS TO THE EXISTING WATERMAIN, CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS TO EXPOSE/INVESTIGATE THE TIE-IN LOCATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY POSSIBLE CONFLICTS. AT THIS TIME THE ENGINEER SHALL ADJUST THE LOCATION OF THE TIE-IN AND NO ADDITIONAL COST OR DEDUCTION SHALL BE ADDED TO THE CONTRACT.



MATCH LINE STA. 3+50

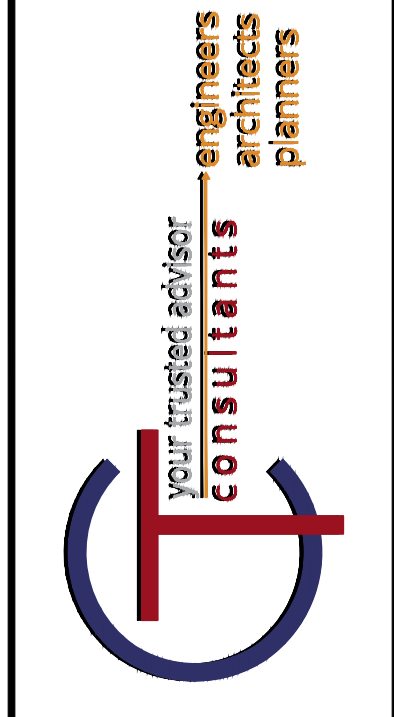
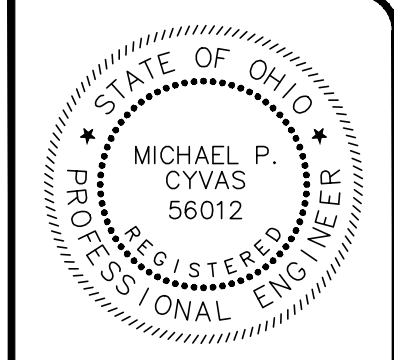


DRAWING PROFILE WRITTEN NOTES:

- CONTRACTOR SHALL VERIFY UTILITY ELEVATIONS AT CROSSINGS AND DEFLECT WATERLINE AS NECESSARY TO MAINTAIN A MINIMUM CLEARANCE 18 INCHES. MAXIMUM PIPE DEFLECTION OF THE WATERLINE SHALL BE 15" PER FULL PIPE LENGTH. IN LIEU OF PIPE DEFLECTION, 12" X 11.25", 22.5", 45" BENDS MAY BE USED. RESTRAINT LENGTHS HAVE BEEN SHOWN FOR THE 3 FITTINGS AND SHALL APPLY BASED ON CONTRACTORS USE OF BENDS.

670 LEGEND:

- TYPE "C" PAVEMENT REPLACEMENT
- SIDEWALK REPLACEMENT AREA (BRICK OR CONCRETE)
- SEE WATER MAIN PROFILE #P-1, P-2 & P-3.
- ADDITIONAL 304 AGGREGATE BASE AND TYPE "C" PAVEMENT REPLACEMENT DUE TO WATER MAIN REPAIRS.
- 700 ADDITIONAL SF OF 304 AGGREGATE BASE & PAVEMENT REPAIRS



ISSUED FOR: UTILITY COORD.	NO.	REVISION	DATE
030-A-00-028-0	1		XXXX18

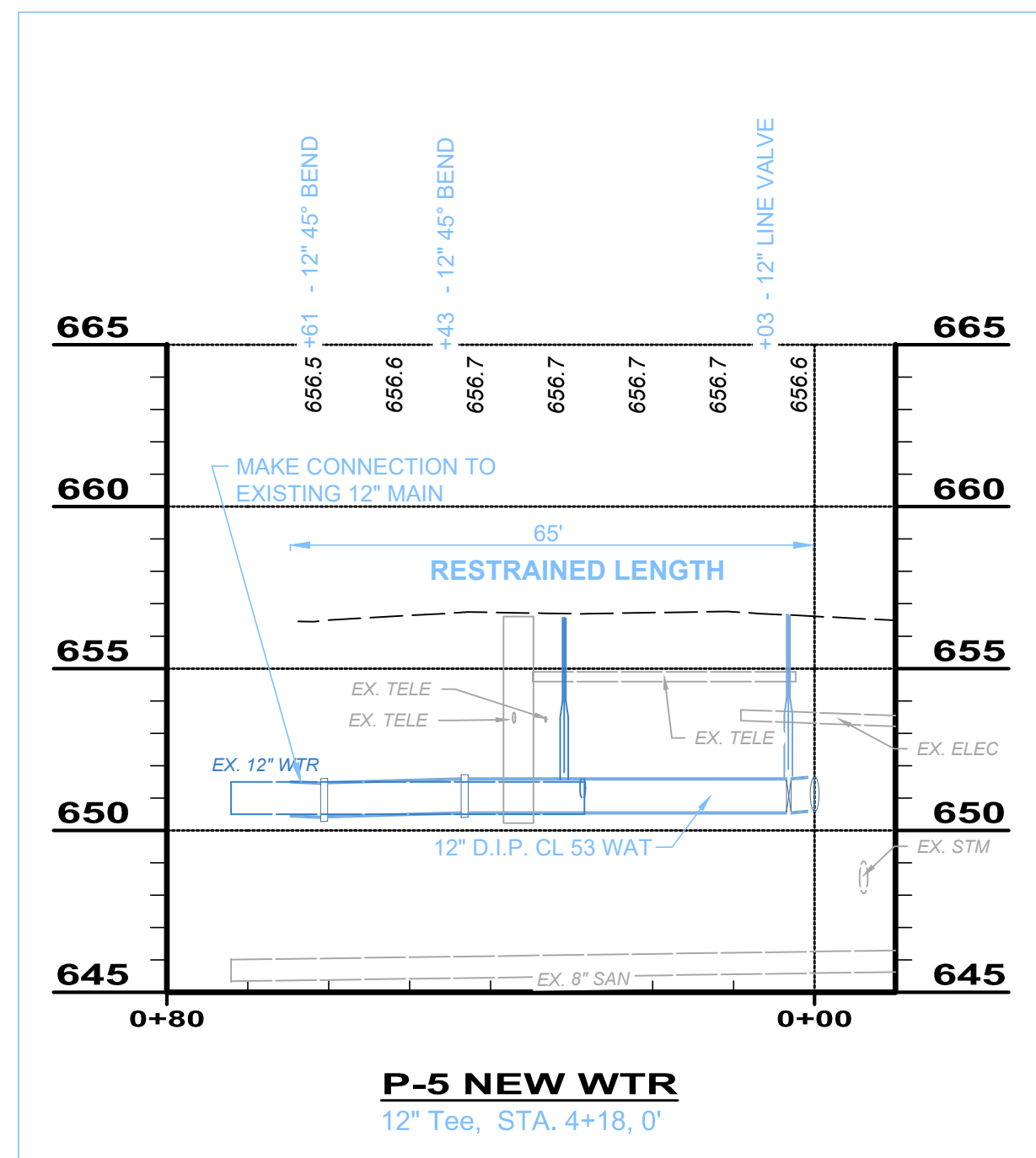
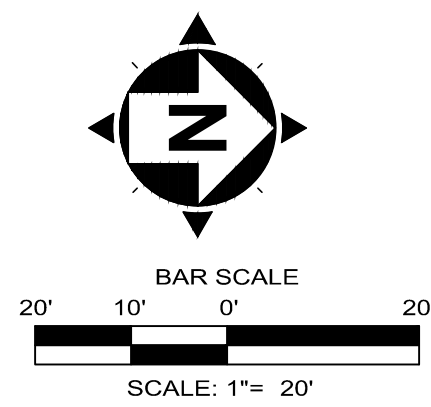
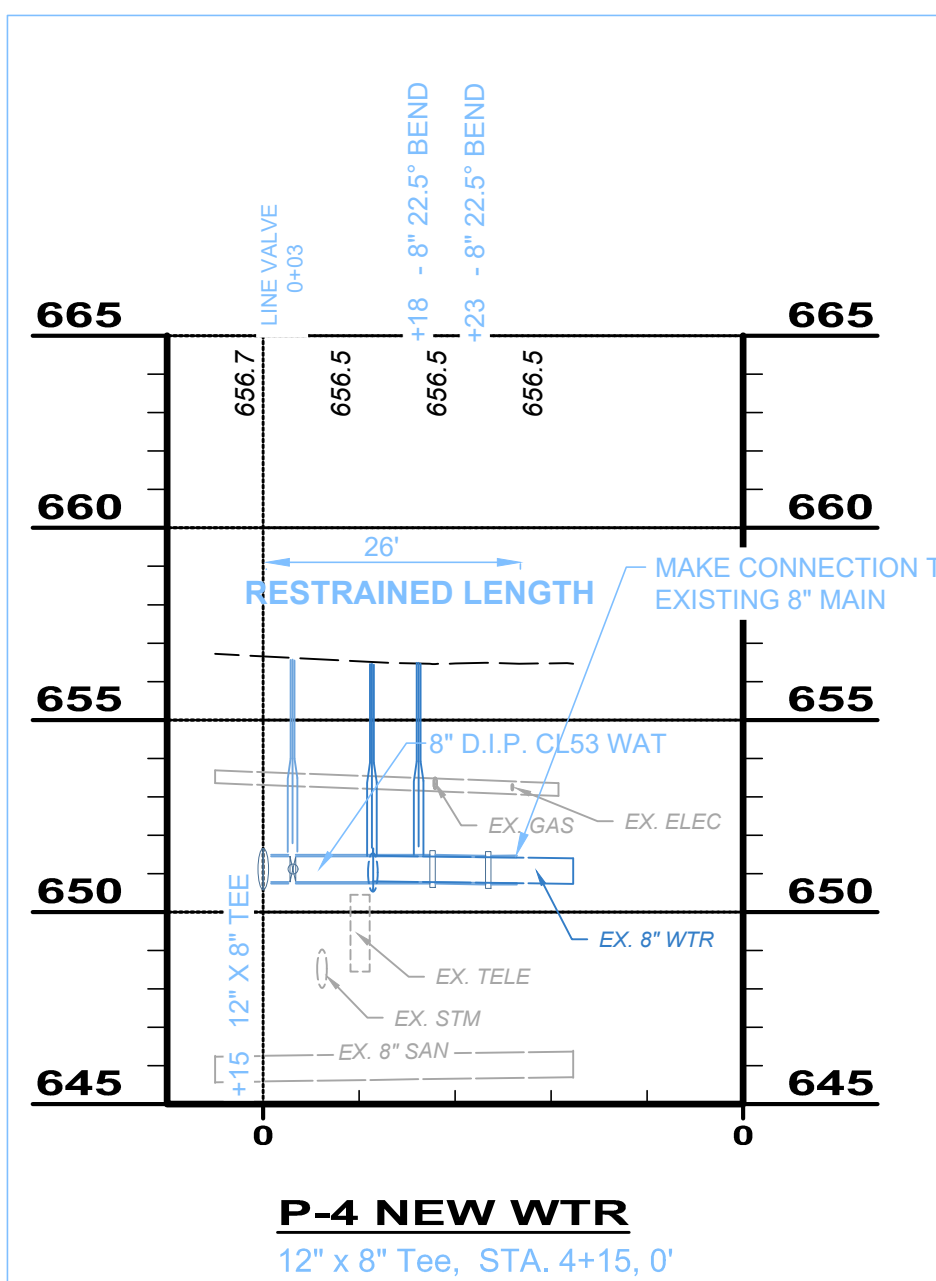
SCALE:	AS SHOWN	MPC
DESIGNED BY:	MPC/JPL	
DRAWN BY:	MPC/JPL	
CHECKED BY:	XXX	

ERIE STREET WATER LINE REPLACEMENT OF UTILITIES - WILLOUGHBY -

PLAN & PROFILE

STA. 0+00 TO STA. 3+50

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	PP-01
SHEET	5
OF	20



LEGEND:

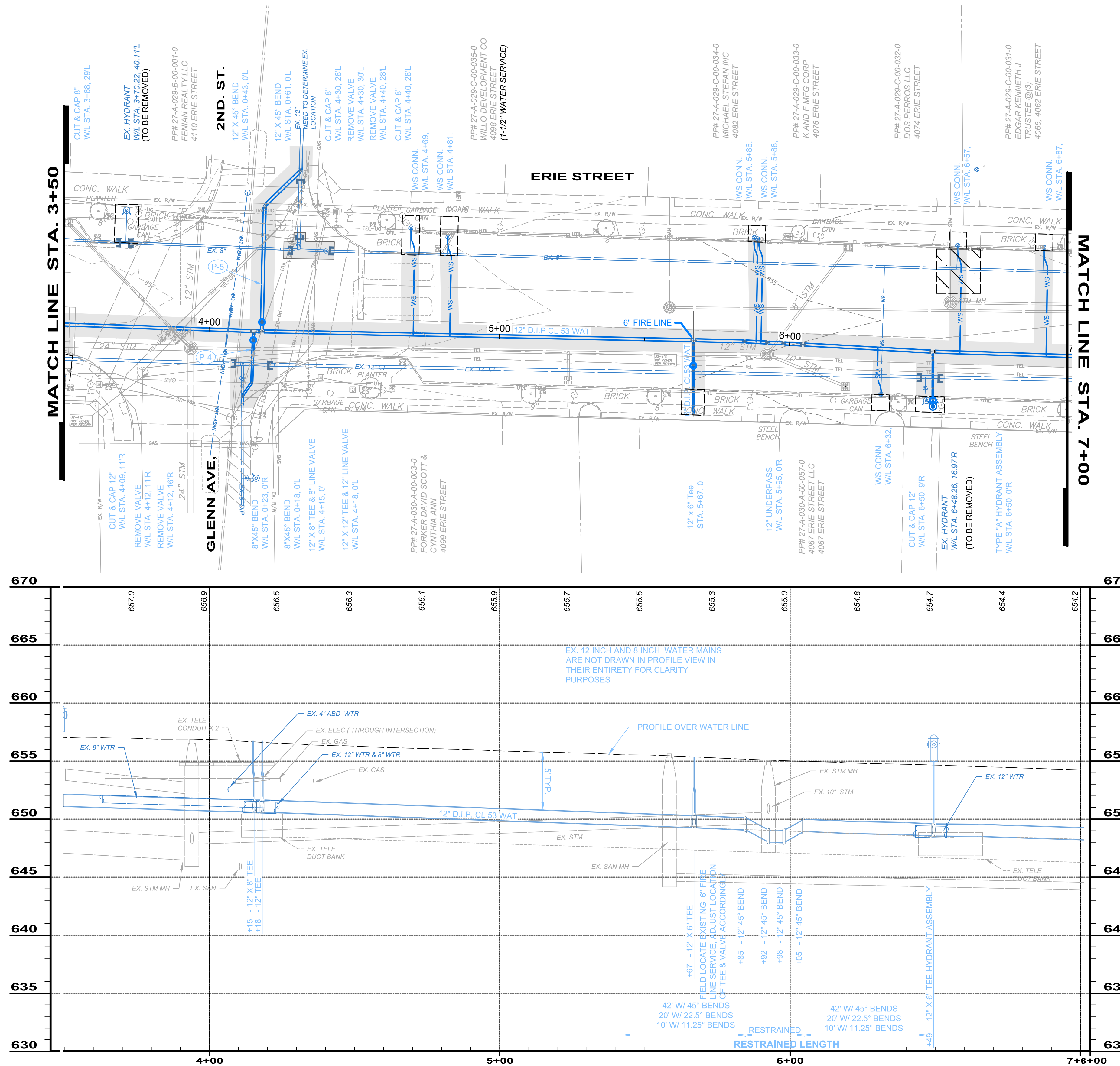
- TYPE "C" PAVEMENT REPLACEMENT
- SIDEWALK REPLACEMENT AREA (BRICK OR CONCRETE)
- SEE WATER MAIN PROFILE # P-3 & P-4
- ADDITIONAL 304 AGGREGATE BASE AND TYPE "C" PAVEMENT REPLACEMENT DUE TO WATERMAIN REPAIRS.
- 129 ADDITIONAL SF OF 304 AGGREGATE BASE & PAVEMENT REPAIRS

DRAWING PLAN WRITTEN NOTES:

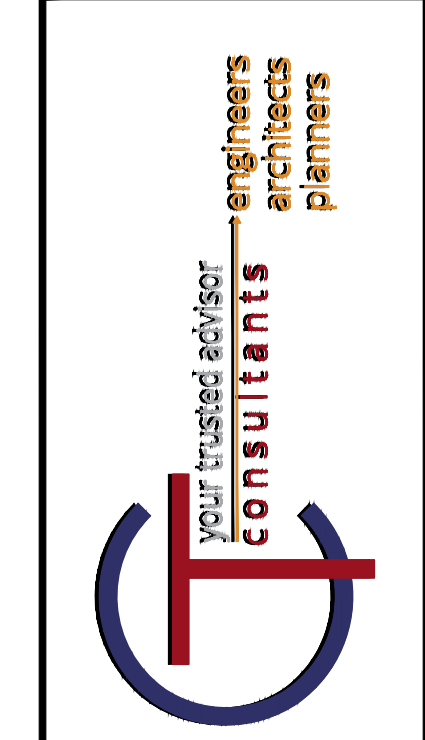
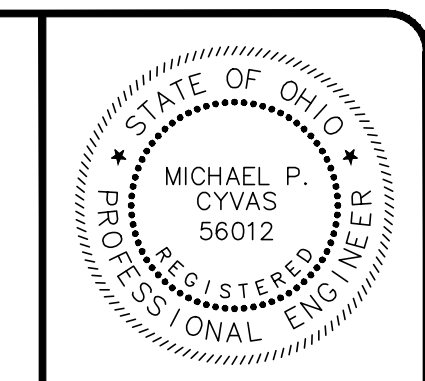
- AT LOCATIONS WHERE THE PROPOSED 12" WATERLINE CONNECTS TO THE EXISTING WATERMAIN, CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS TO EXPOSE/INVESTIGATE THE TIE-IN LOCATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY POSSIBLE CONFLICTS. AT THIS TIME THE ENGINEER SHALL ADJUST THE LOCATION OF THE TIE-IN AND NO ADDITIONAL COST OR DEDUCTION SHALL BE ADDED TO THE CONTRACT.

DRAWING PROFILE WRITTEN NOTES:

- CONTRACTOR SHALL VERIFY UTILITY ELEVATIONS AT CROSSINGS AND DEFLECT WATERLINE AS NECESSARY TO MAINTAIN A MINIMUM CLEARANCE 18 INCHES. MAXIMUM PIPE DEFLECTION OF THE WATERLINE SHALL BE 15" PER FULL PIPE LENGTH. IN LIEU OF PIPE DEFLECTION, 12" X 11.25", 22.5", 45" BENDS MAY BE USED. RESTRAINT LENGTHS HAVE BEEN SHOWN FOR THE 3 FITTINGS AND SHALL APPLY BASED ON CONTRACTORS USE OF BENDS.



ALIGNMENT - NEW 12 INCH6



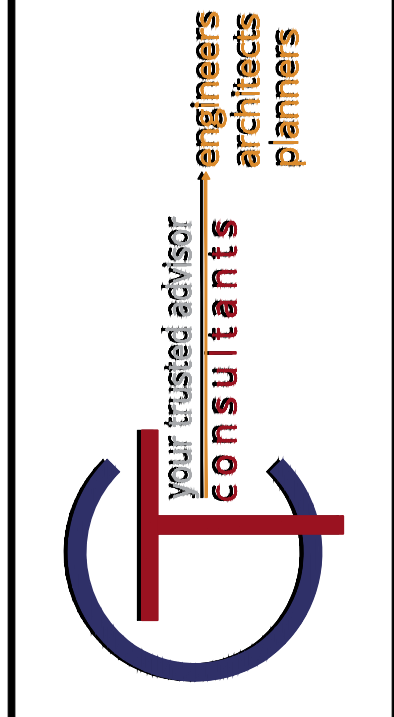
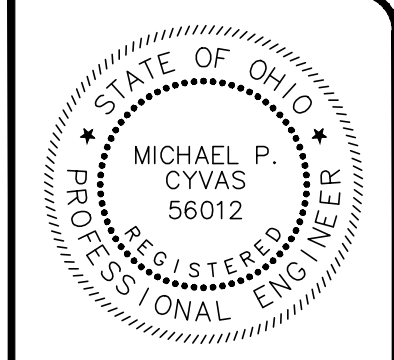
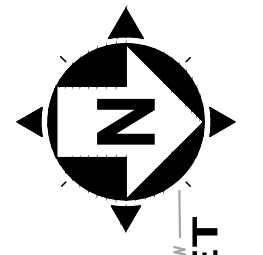
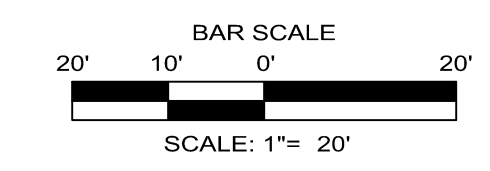
NO.	REVISION	DATE
1		XXXX18

ISSUED FOR: UTILITY COORD. AS SHOWN
 SCALE: AS SHOWN
 DESIGNED BY: MFC
 DRAWN BY: MFC/JPL
 CHECKED BY: XXX

ERIE STREET WATER LINE REPLACEMENT OF UTILITIES
 LAKE COUNTY DEPARTMENT OF UTILITIES
 - WILLOUGHBY -

PLAN & PROFILE
 STA. 3+50 TO STA. 7+00

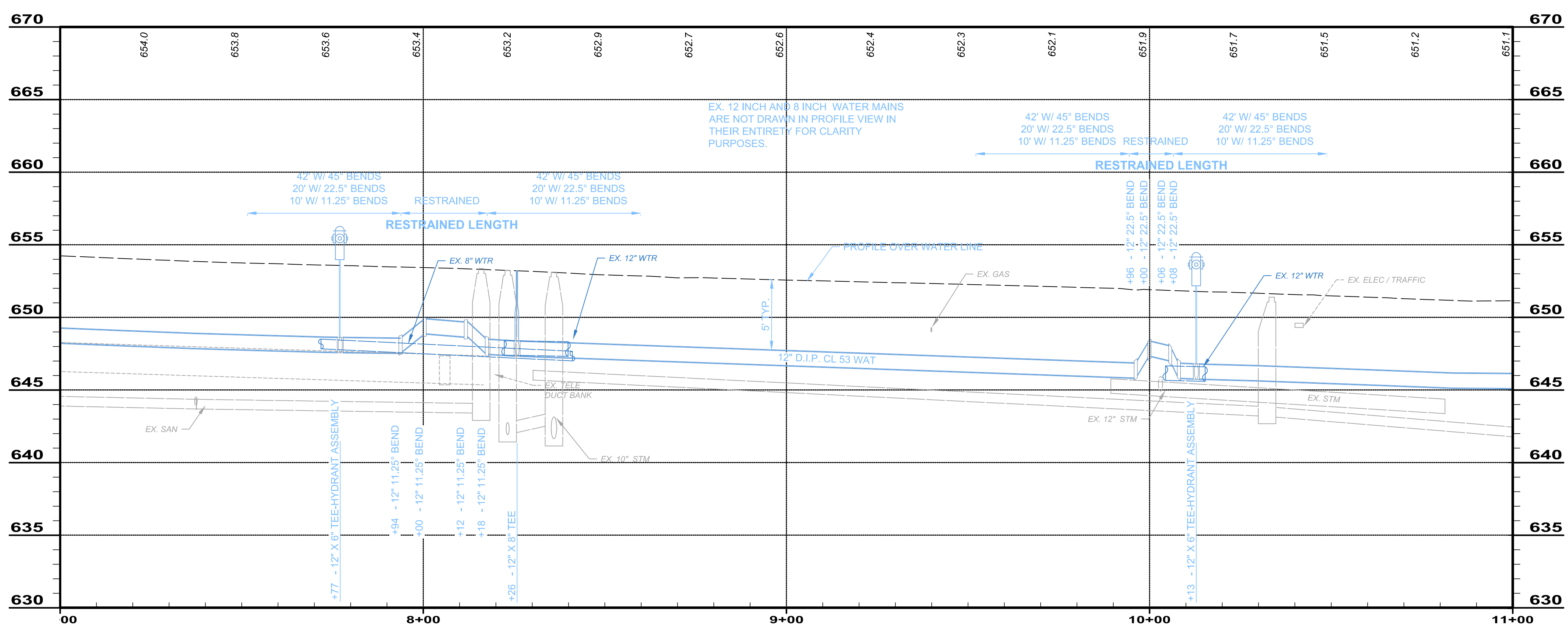
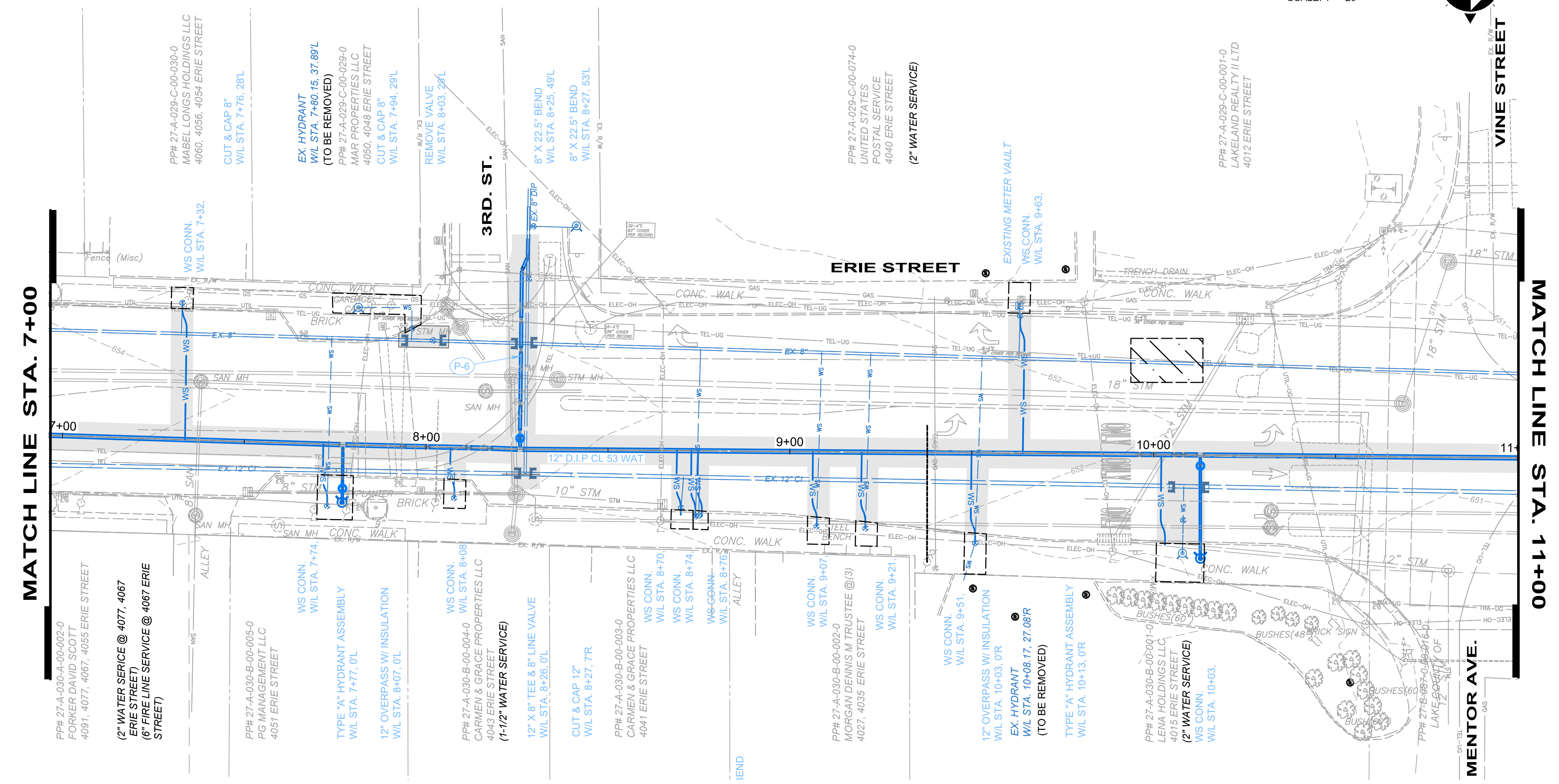
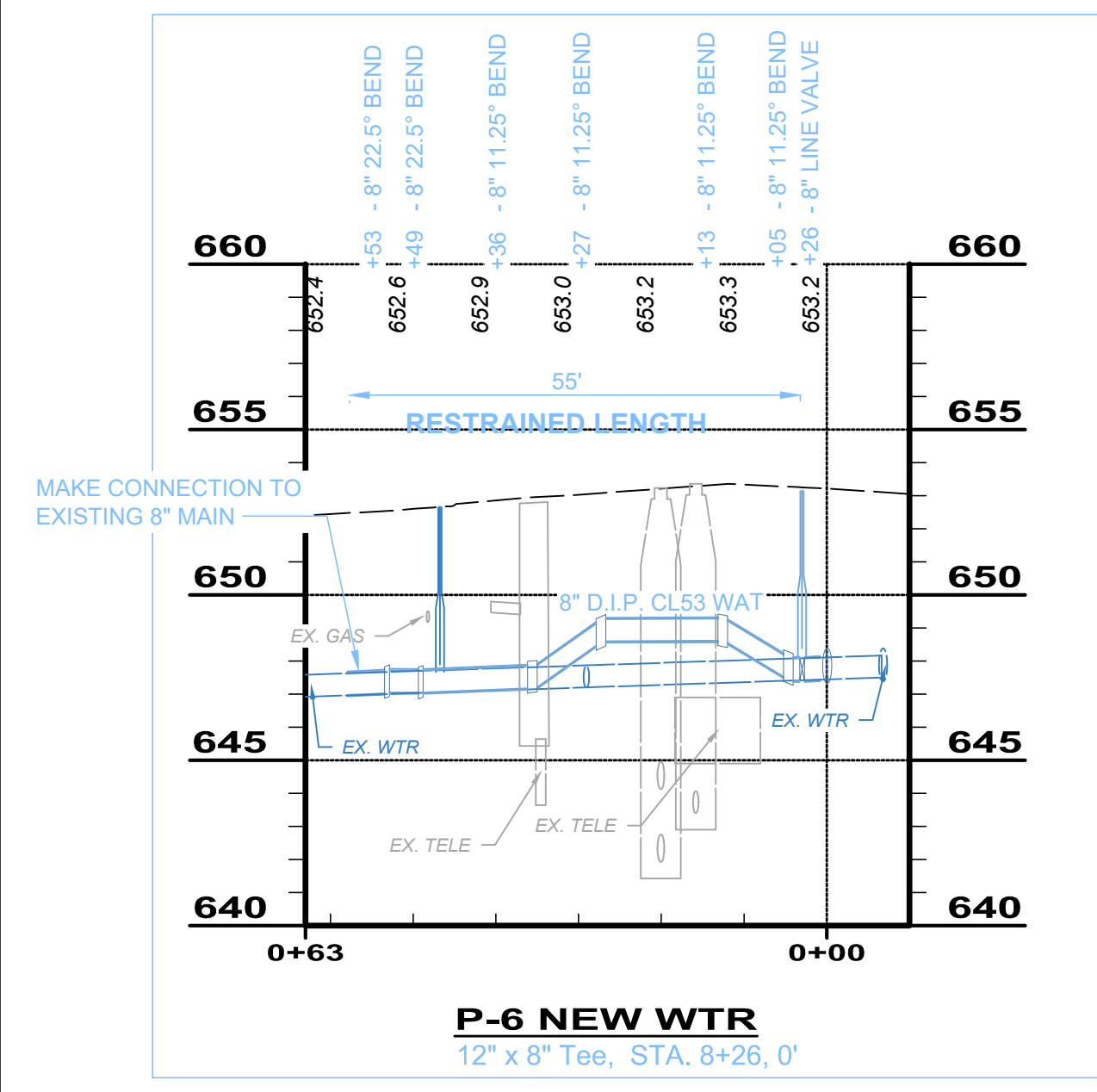
PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	PP-02
SHEET	6
OF	20



ISSUED FOR: UTILITY COORD.	NO	REVISION	DATE
ISSUE DATE:	08/28/18		XXXX18
SCALE:	AS SHOWN		
DESIGNED BY:	MPC		
DRAWN BY:	MPC/JPL		
CHECKED BY:	XXX		

ERIE STREET WATER LINE REPLACEMENT OF UTILITIES
LAKE COUNTY DEPARTMENT OF UTILITIES
- WILLOUGHBY -
PLAN & PROFILE
STA. 7+00 TO STA. 11+00

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	PP-03
SHEET	7
OF	20



LEGEND:

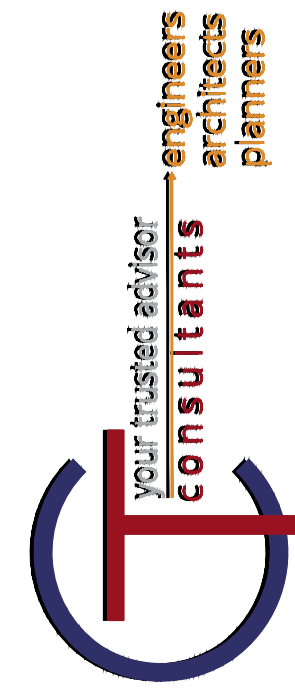
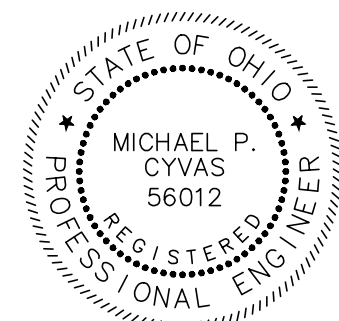
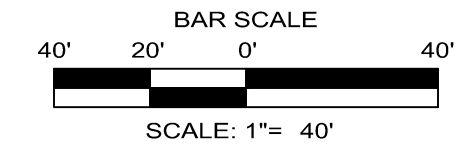
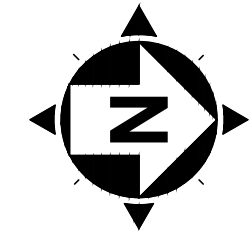
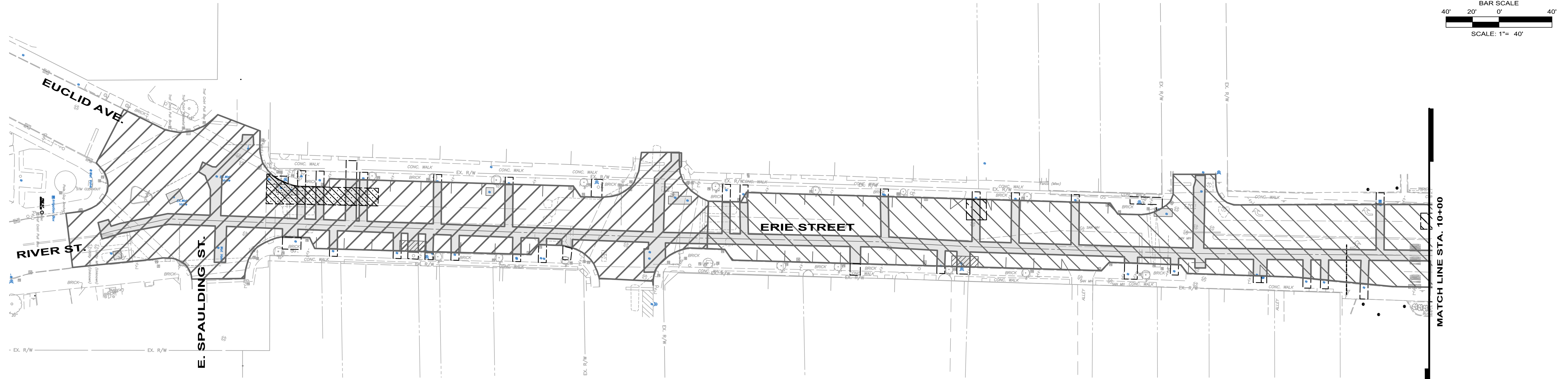
- TYPE "C" PAVEMENT REPLACEMENT
- SIDEWALK REPLACEMENT AREA (BRICK OR CONCRETE)
- SEE WATER MAIN PROFILE # P-5 & P-6
- ADDITIONAL 304 AGGREGATE BASE AND TYPE "C" PAVEMENT REPLACEMENT DUE TO WATERMAIN REPAIRS.
- 228 ADDITIONAL SF OF 304 AGGREGATE BASE & PAVEMENT REPAIRS

DRAWING PLAN WRITTEN NOTES:

- AT LOCATIONS WHERE THE PROPOSED 12" WATERLINE CONNECTS TO THE EXISTING WATERMAIN, CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS TO EXPOSE/INVESTIGATE THE TIE-IN LOCATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY POSSIBLE CONFLICTS. AT THIS TIME THE ENGINEER SHALL ADJUST THE LOCATION OF THE TIE-IN AND NO ADDITIONAL COST OR DEDUCTION SHALL BE ADDED TO THE CONTRACT.

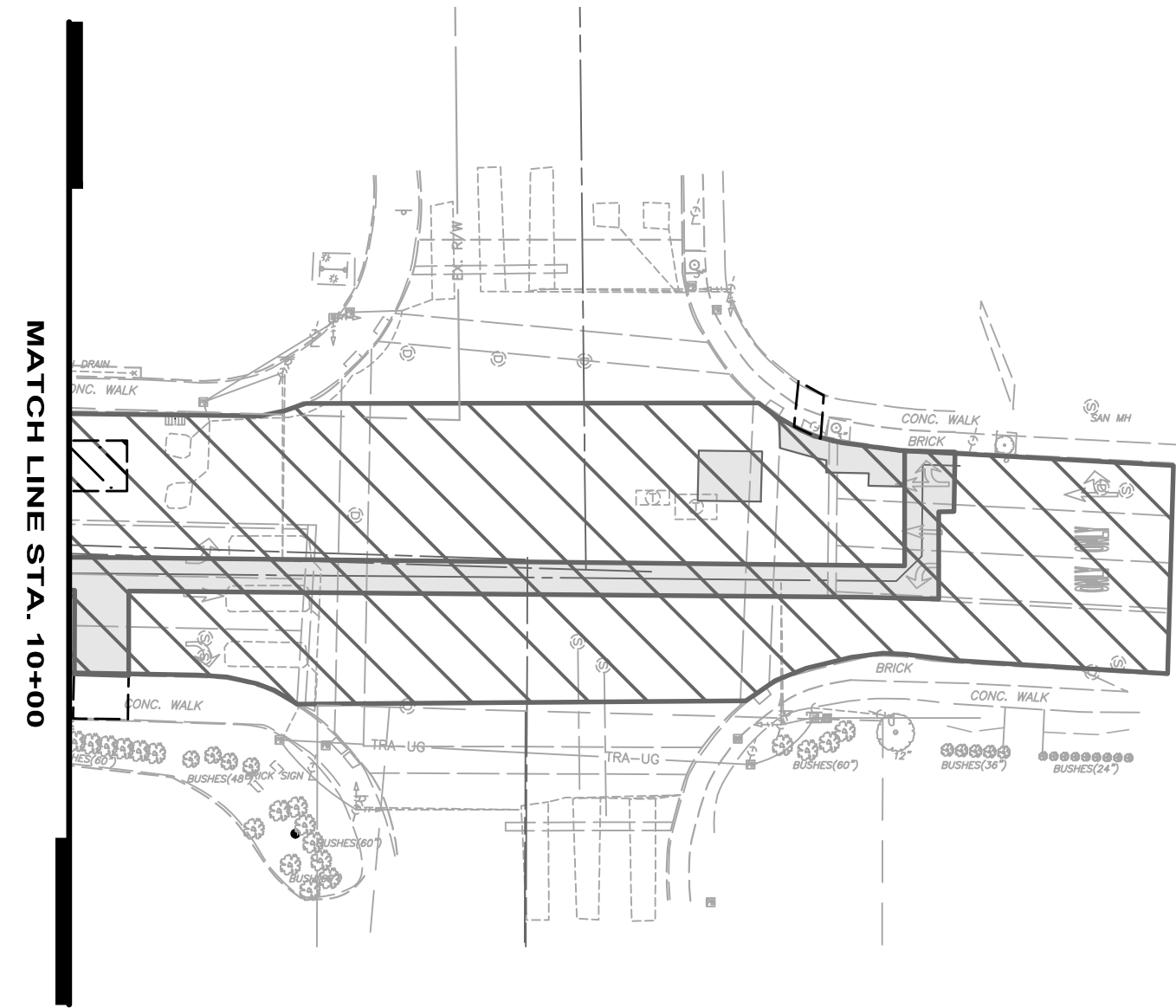
DRAWING PROFILE WRITTEN NOTES:

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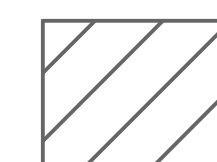
NO.	REVISION	DATE
1		XXX/18

ISSUED FOR UTILITY COORD.	08/28/18
ISSUE DATE:	AS SHOWN
SCALE:	MPC
DESIGNED BY:	MPC/JPL
DRAWN BY:	XXX
CHECKED BY:	XXX

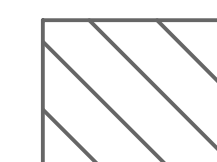


LEGEND:

1.5 INCHES PAVEMENT PLANING and 1.5 INCHES 441 SURFACE COURSE



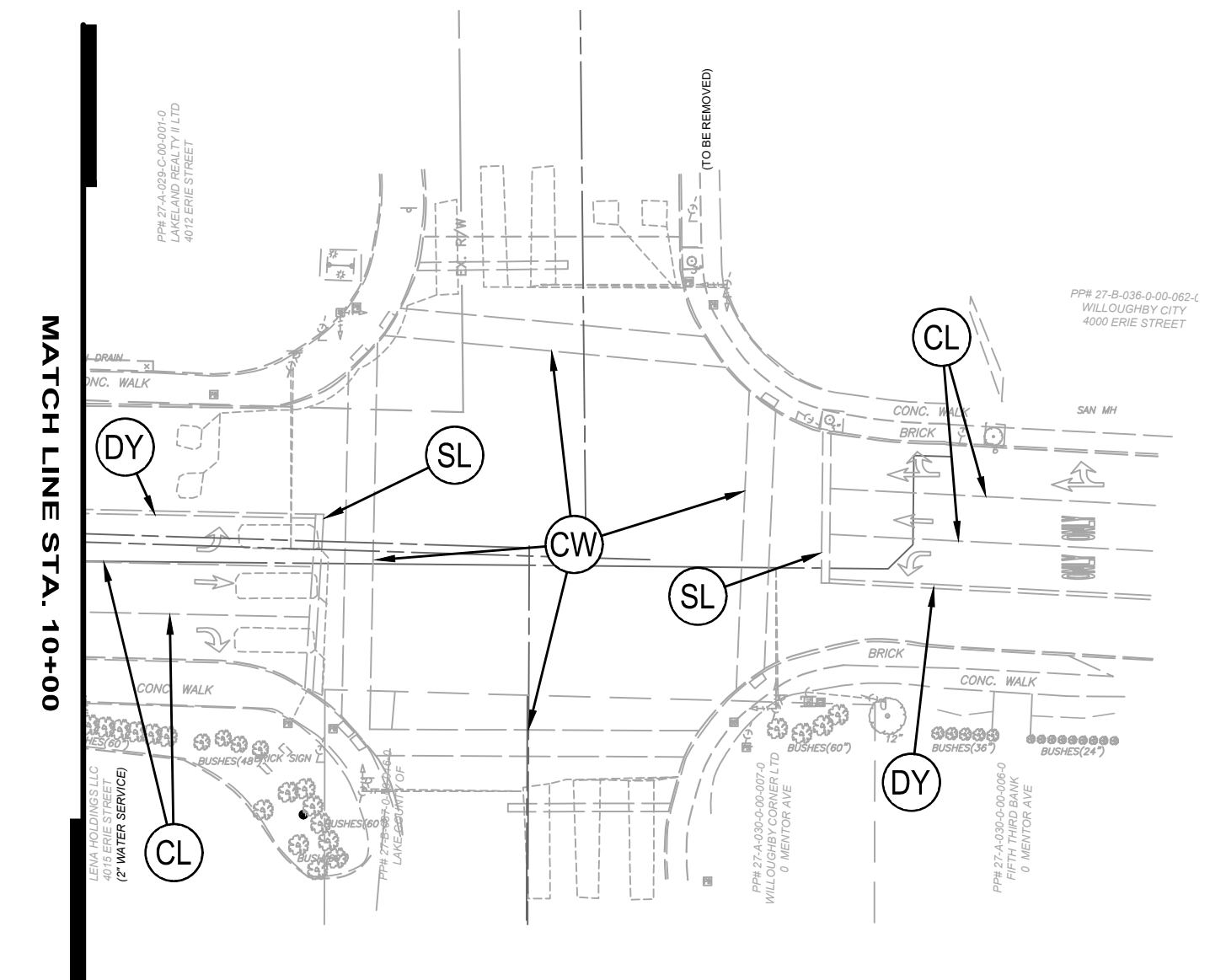
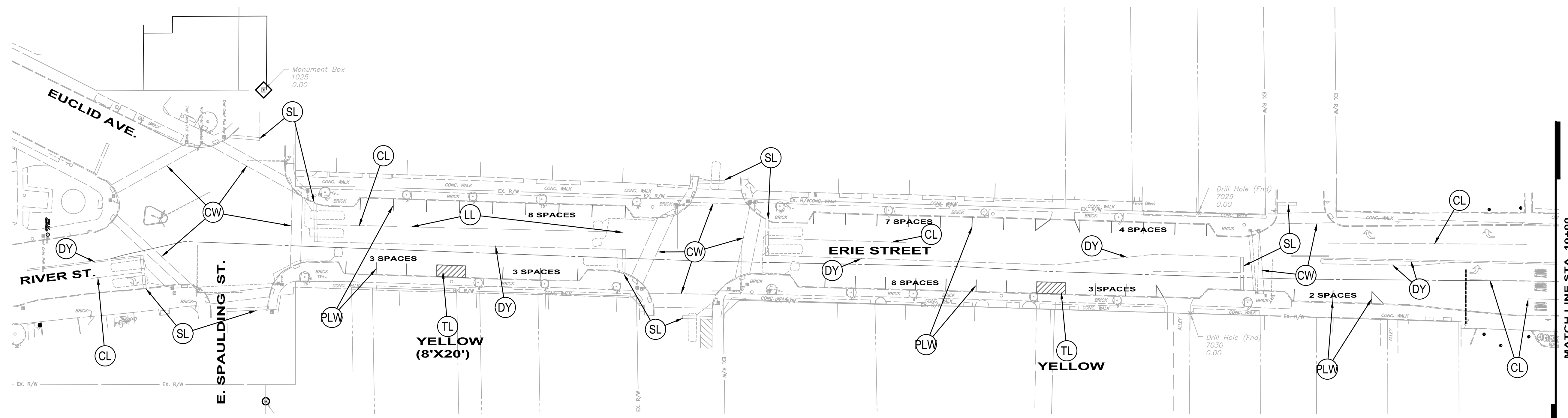
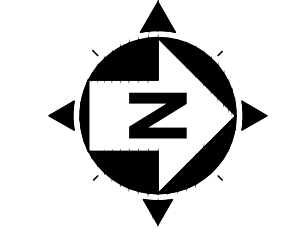
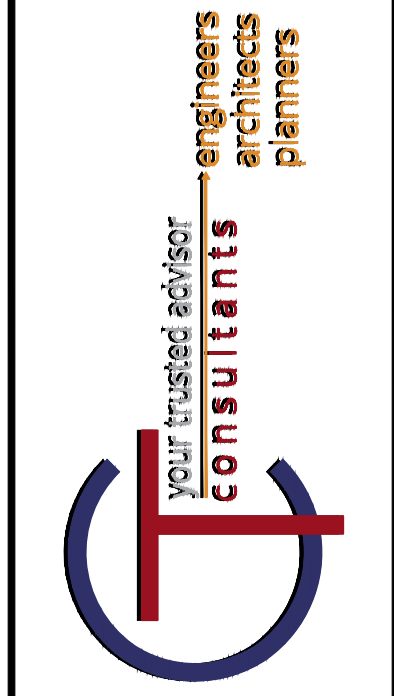
Note: LCDU financial responsibility includes pavement mill and fill from Spaulding Ave to 2nd Street and for trench repair areas from 2nd Street to Vine Street.



The City of Willoughby has Financial responsibility for Mill & Fill area from 2nd Street to Vine Street less trench repair pavement limits.

**ERIE STREET WATER LINE
REPLACEMENT OF UTILITIES
- WILLOUGHBY -
PAVEMENT
REPLACEMENT AREAS**

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	PR-1
SHEET	OF
9	20



- LEGEND**
- CHANNELIZING LINE
 - DOUBLE YELLOW LINE
 - LANE LINE
 - STOP BAR, 24"
 - TRANSVERSE LINE
 - YELLOW LINE
 - CROSSWALK LINE
 - DOTTED LINE, 4 INCH
 - PARKING LINE (WHITE OR YELLOW)

NOTE: ALL PAVEMENT MARKINGS SHOWN ARE ILLUSTRATED AS EXISTING. THESE MARKINGS ARE TO BE REPLACED IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ODOT'S STANDARDS FOR SIZE AND SPACING. REFER ODOT STANDARD CONSTRUCTION DRAWINGS.

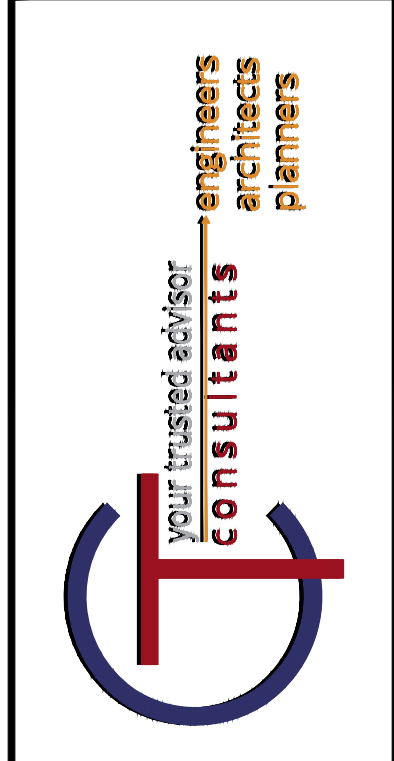
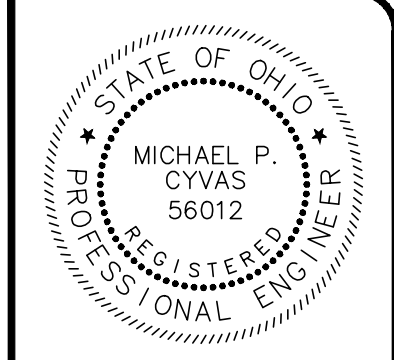
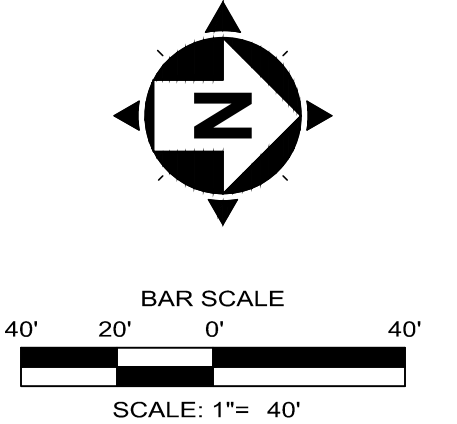
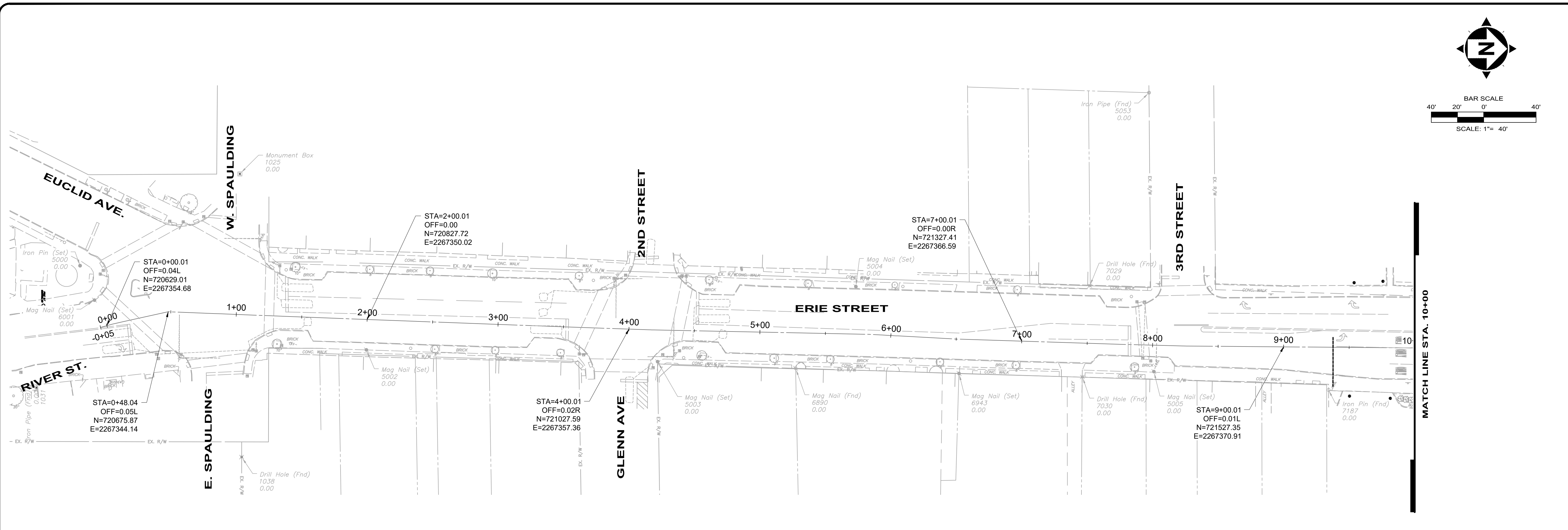
ALL LANE ARROWS, WORD "ONLY", STOP LINES, CHANNELIZING LINES, LANE LINES, DOUBLE YELLOW CENTER LINES, CROSSWALK LINES, PARKING AND NO PARKING ZONE SHALL BE STRIPED.

NO.	REVISION	DATE
1		XXX/18

ISSUED FOR: UTILITY COORD.	08/28/18
ISSUE DATE:	AS SHOWN
SCALE:	MPC
DESIGNED BY:	MPC/JPL
DRAWN BY:	XXX
CHECKED BY:	XXX

ERIE STREET WATER LINE REPLACEMENT OF UTILITIES - WILLOUGHBY - PAVEMENT MARKING PLAN

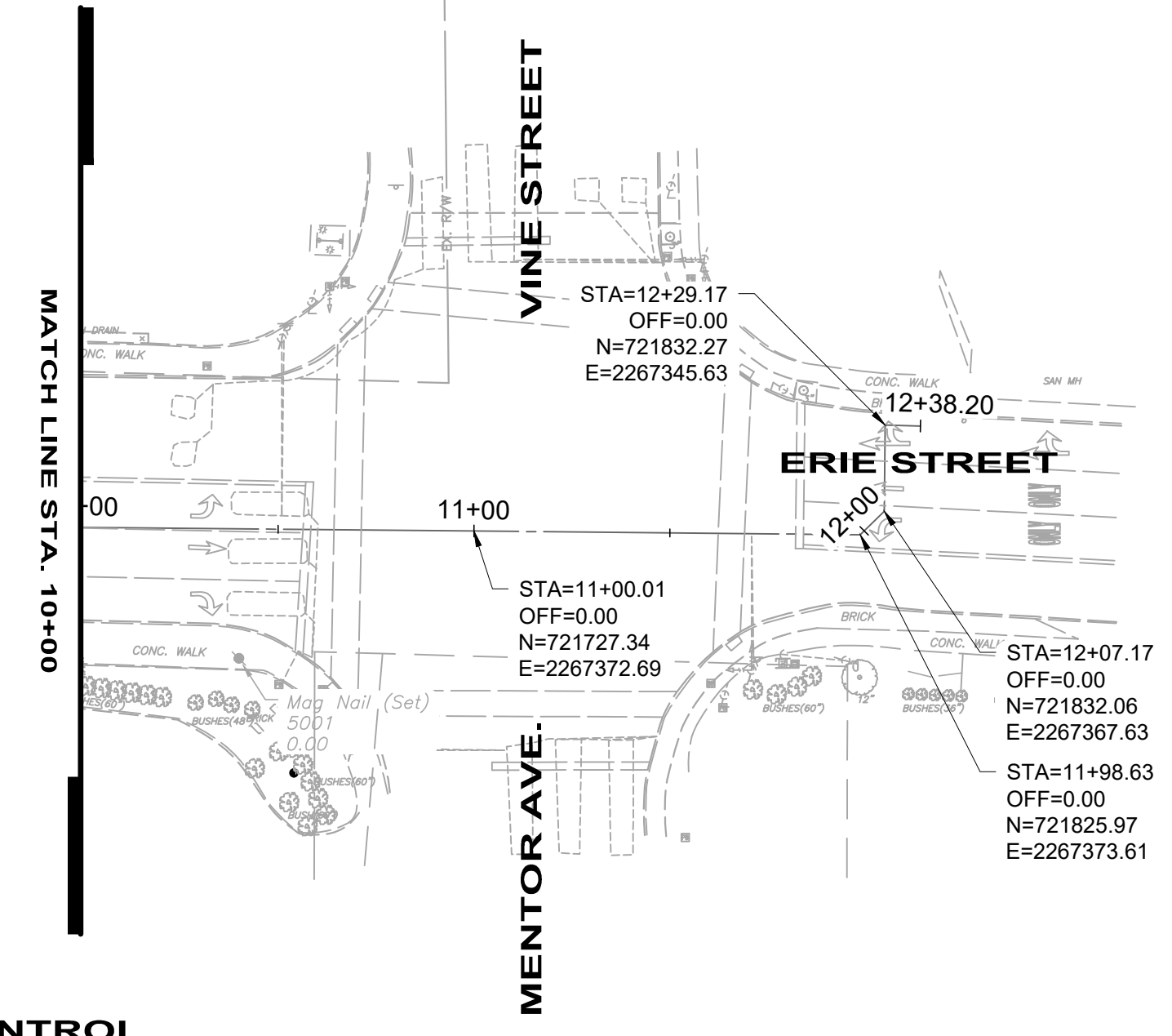
PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	PM-1
SHEET	10
OF	20



NO.	REVISION	DATE
1		XXX/18

ISSUED FOR: UTILITY COORD.	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
AS SHOWN	08/28/18	AS SHOWN	MPC	MPC/JPL	XXX

POINT TABLE				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
1038	0.00	720731.87	2267455.11	SCDHF
5000	0.00	720608.52	2267308.93	SCIPI
5001	0.00	721667.33	2267405.17	SCMNS
5002	0.00	720827.12	2267373.26	SCMNS
5003	0.00	721049.45	2267382.28	SCMNS
5004	0.00	721200.81	2267324.88	SCMNS
5005	0.00	721428.33	2267389.85	SCMNS
5052	0.00	721422.69	2267053.22	SCIPIF
5053	0.00	721424.57	2267176.77	SCIPIF
5110	0.00	721777.20	2266942.81	SCDHF
6001	0.00	720619.49	2267335.26	SCMNS
6890	0.00	721154.81	2267387.30	SCMNF
6943	0.00	721279.58	2267391.29	SCMNS
7029	0.00	721379.40	2267324.27	SCDHF
7030	0.00	721373.75	2267393.89	SCDHF
7187	0.00	721561.68	2267403.94	SCIPIF



"SCXXX" = SURVEY CONTROL
 "DHF" DRILL HOLE FOUND
 "MNF" MONUMENT FOUND
 "MNS" MAG NAIL SET
 "MNF" MAG NAIL FOUND
 "IPIS" IRON PIN SET
 "IPIF" IRON PIN FOUND

**ERIE STREET WATER LINE
 REPLACEMENT OF UTILITIES
 LAKE COUNTY DEPARTMENT OF UTILITIES
 - WILLOUGHBY -
 CONTROL PLAN**

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	CNT-1
SHEET	11
OF	20

ITEM 614 - MAINTAINING TRAFFIC :

- ALL CONSTRUCTION TRAFFIC CONTROL DEVICES USED FOR THIS PROJECT SHALL CONFORM TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, HEREINAFTER REFERRED TO AS THE MANUAL, AND SHALL BE FURNISHED, ERECTED, MAINTAINED, RELOCATED AND REMOVED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY SAFEGUARDS, SUCH AS BARRICADES, LIGHTING, FLAGGERS, PLASTIC DRUMS, FLASHING ARROW PANELS AND SUCH OTHER TRAFFIC CONTROL DEVICES AS PROVIDED IN ODOT ITEM 614, MAINTAINING TRAFFIC, SO AS TO AVOID DAMAGE AND/OR INJURY TO VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION. WHENEVER THE ENGINEER DEEMS IT NECESSARY, HE MAY DIRECT THAT ADDITIONAL OR ALTERNATIVE DEVICES BE USED.
- TRAFFIC CONTROL DEVICES SHALL BE SET UP PRIOR TO THE START OF CONSTRUCTION AND SHALL BE PROPERLY MAINTAINED DURING THE TIME SUCH SPECIAL CONDITIONS EXIST. THEY SHALL REMAIN IN PLACE ONLY AS LONG AS THEY ARE NEEDED AND SHALL BE IMMEDIATELY REMOVED THEREAFTER. WHERE OPERATIONS ARE PERFORMED IN PHASES, THERE SHALL BE IN PLACE ONLY THOSE DEVICES THAT APPLY TO THE CONDITION PRESENT DURING THE PHASE-IN PROGRESS. ALL SIGNS WITH MESSAGES WHICH DO NOT APPLY DURING A CERTAIN PERIOD SHALL BE COVERED OR SET ASIDE OUT OF THE VIEW OF TRAFFIC.
- CONFLICTING PAVEMENT MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH SECTION 641.10 OF THE OHIO SPECIFICATIONS BEFORE ANY SECTION OF ROADWAY IS MADE AVAILABLE TO USE BY TRAFFIC. ALL PERMANENT AND TEMPORARY PAVEMENT MARKINGS ARE TO BE MAINTAINED THROUGHOUT THE PROJECT. ANY DAMAGED OR FADED PAVEMENT MARKINGS SHALL BE CORRECTED WITHIN EIGHT HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE PROBLEM. IF WEATHER IS NOT CONDUCTIVE TO PAVEMENT MARKING INSTALLATION THEN REPAIRS SHALL BE MADE ON THE FIRST WEATHER PERMISSIVE DAY AFTER NOTIFICATION.
- ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 APPLICABLE SECTIONS OF THE SPECIFICATIONS AS WELL AS THE MANUAL. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS, UNLESS OTHERWISE SEPARATELY ITEMIZED IN THE PLANS.

PROVIDING CONTINUOUS ACCESS TO RESIDENCES & BUSINESSES:

- THE CONTRACTOR SHALL PROVIDE DETAILS OF THE PROPOSED METHODS TO MAINTAIN SAFE AND CONTINUOUS ACCESS FOR VEHICLES, TRUCKS AND SAFETY EQUIPMENT TO ALL ADJOINING PROPERTIES AND INTERSECTING STREETS. THESE PLANS SHALL INCLUDE ALL TEMPORARY MATERIALS NECESSARY TO PROVIDE SAFE, ADEQUATE DRIVE SURFACES TO ALL ADJOINING PROPERTIES. THE COST FOR ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO PROVIDE CONTINUOUS ACCESS SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS. PLANS MUST BE SUBMITTED TO THE ENGINEER AND APPROVED PRIOR TO COMMENCING ANY WORK.
- SHOULD THE ENGINEER, AT ANY TIME PRIOR TO OR DURING CONSTRUCTION, DEEM ANY PART OF THE CONTRACTOR'S PLANS FOR SAFE AND CONTINUOUS ACCESS TO RESIDENCES AND BUSINESSES INADEQUATE, ADDITIONAL MATERIALS, CLOSURES AND/OR DIVERSIONS SHALL BE REQUIRED AT NO ADDITIONAL COST TO THE COUNTY.

NOTIFICATION OF PROPERTY OWNERS:

- THE CONTRACTOR SHALL NOTIFY ALL RESIDENCES AND BUSINESSES ALONG THE PROJECT ROUTE IN WRITING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING WORK ON THE PROJECT. SUCH NOTICE SHALL INCLUDE, AT A MINIMUM, A BRIEF PROJECT DESCRIPTION, TENTATIVE CONSTRUCTION SCHEDULE, LIMITS OF CONSTRUCTION, THE CONTRACTOR'S NAME, ADDRESS AND PHONE NUMBER, AS WELL AS A CONTACT PERSON'S NAME AND EMERGENCY PHONE NUMBER WHERE HE COULD BE REACHED DURING NON-WORK HOURS. THE NOTICE SHALL BE REVIEWED AND APPROVED BY LAKE COUNTY AND MADISON TOWNSHIP PRIOR TO BEING DISTRIBUTED. IN ADDITION, THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE INDIVIDUAL PROPERTY OWNERS PRIOR TO STARTING ANY WORK ON OR AFFECTING THE INDIVIDUAL'S PROPERTY. ALL COSTS ASSOCIATED WITH THE ABOVE SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS.

FAILURE TO COMPLY:

- FOR ANY FAILURE TO COMPLY WITH PROVISIONS FOR TRAFFIC CONTROL SET OUT IN THESE PLANS AND NOTES OR WITH THE PROVISIONS OF THE MANUAL, THE HIGHWAY IN THE VICINITY OF THE WORK AREA SHALL BE CONSIDERED IN A CONDITION UNACCEPTABLE FOR THE SAFETY AND CONVENIENT USE BY THE TRAVELING PUBLIC. ANY FAILURE TO KEEP THE HIGHWAY IN THE VICINITY OF THE WORKING AREA IN A CONDITION ACCEPTABLE FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC SHALL BE CONSIDERED A BREACH OF THIS CONTRACT. WORK SHALL BE SUSPENDED UNTIL THE CONTRACTOR COMPLIES WITH THE PROVISIONS OF THE AFOREMENTIONED ITEMS.

NOTIFICATION:

- THE CITY OF WILLOUGHBY POLICE, FIRE, PUBLIC SERVICE DEPARTMENTS SHALL BE NOTIFIED AT LEAST ONE (1) WEEK PRIOR TO THE ACTUAL START OF CONSTRUCTION.

CITY OF WILLOUGHBY POLICE DEPARTMENT
JACK BECKWITH, CHIEF OF POLICE
(440)-953-4229

CITY OF WILLOUGHBY FIRE DEPARTMENT
TODD UNGAR, FIRE CHIEF
(440)-953-4343

CITY OF WILLOUGHBY ADMINISTRATOR
LEE BOCK, SERVICE DIRECTOR
(440)-953-4111

MATERIALS FOR MAINTAINING TRAFFIC:

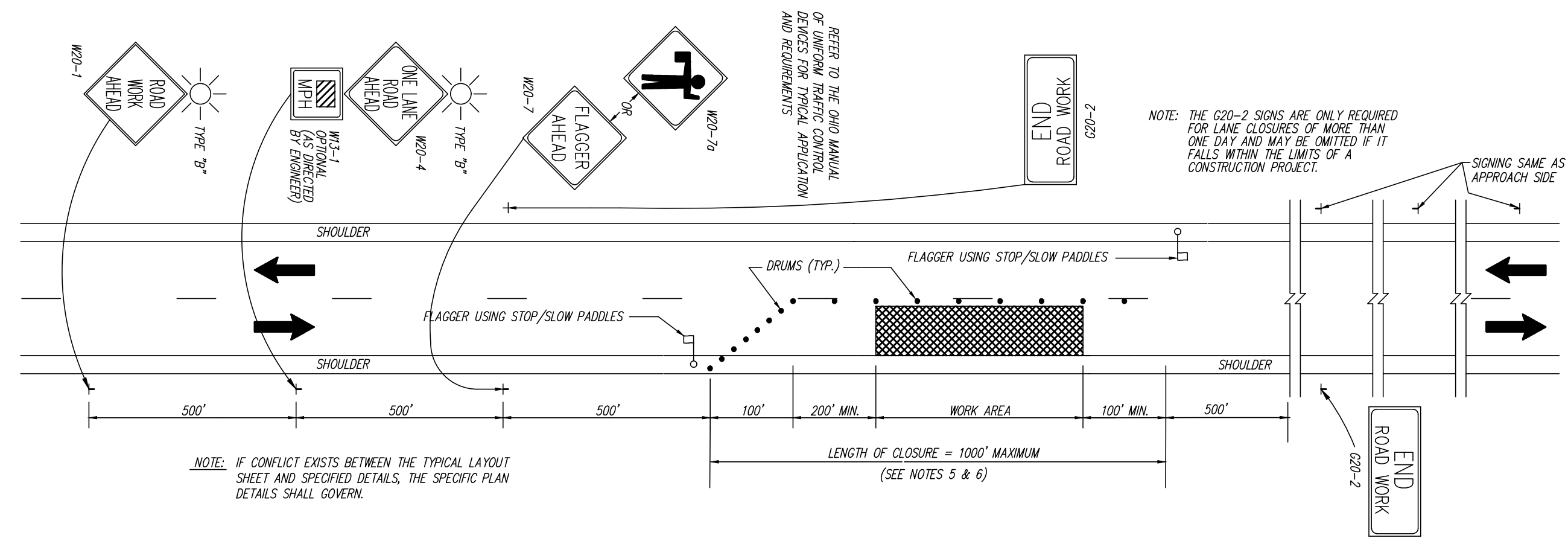
- SIGN DIMENSION AND SPECIFICATIONS, INCLUDING LETTER SIZES, SHALL BE AS PROVIDED IN THE MANUAL OR SIGN DESIGN DRAWINGS PROVIDED IN THESE PLANS. THE SIGNS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER PRIOR TO THE START OF THE PROJECT. ALL COST FOR SUPPLY, INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL OF SAID SIGNS SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS.
- SIGN SUPPORTS SHALL BE OF SUFFICIENT SIZES AND HEIGHT TO SUPPORT THE SIGNS AT THE HEIGHT INDICATED IN THE MANUAL. SUPPORTS SHALL ALSO BE ADEQUATE IN MASS AND STABILITY TO PREVENT SIGNS FROM BEING BLOWN OVER BY WIND OR VEHICULAR-GENERATED AIR TURBULENCE. ALL COSTS FOR SUPPLY, INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL OF SAID SIGNS SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS.
- ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A OR B SHALL BE PROVIDED FOR MAINTAINING DRIVEWAY ACCESS TO RESIDENCES AND BUSINESSES AND SIDE STREET ACCESS. ALL COSTS FOR SUPPLY, INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL THIS MATERIAL SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS.

TRAFFIC SIGNAL MODIFICATIONS:

- THE CONTRACTOR BE RESPONSIBLE TO PROVIDE TRAFFIC SIGNAL MODIFICATIONS NECESSARY FOR ASSIGNING RIGHT OF WAY AT THE EXISTING SIGNALIZED INTERSECTIONS WHICH ALIGNS WITH THE MOT PLAN IMPLEMENTED BY THE CONTRACTOR. IF MODIFICATIONS ARE REQUIRED, THE CONTRACTOR SHALL SUBMIT A PLAN IN ADVANCE FOR APPROVAL BY THE ENGINEER. THE PLAN SHALL PROVIDE ENOUGH INFORMATION IN ORDER TO MAKE AN INFORMED DECISION. THE CONTRACTOR SHALL HAVE CERTIFIED ELECTRICAL/SIGNAL ELECTRICIANS PERFORM THE REQUIRED WORK.

SEQUENCE OF CONSTRUCTION:

- THE CONTRACTOR BE RESPONSIBLE TO PROVIDE TRAFFIC SIGNAL MODIFICATIONS AND LANE CLOSURES NECESSARY FOR ASSIGNING RIGHT OF WAY. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE ENGINEER THE SEQUENCE OF CONSTRUCTION AND PHASING IN ORDER TO PROVIDE THE LEAST INCONVENIENCE TO THE TRAVELING PUBLIC AND AT THE SAME TIME PROVIDE THE CONTRACTOR WITH THE NECESSARY ROOM FOR HIS/HERS MEANS AND METHODS FOR WATER LINE CONSTRUCTION. THE DETAIL IN THIS PLAN IS INTENDED TO PROVIDE 2 WAY TRAFFIC ON A MINIMUM OF 10' WIDE LANES SEPARATED BY TEMPORARY BARRIERS AND MARKINGS. THIS SHALL BE WORKED INTO THE CONTRACTOR'S PLAN FOR CONSTRUCTION OF THE WATER MAIN.

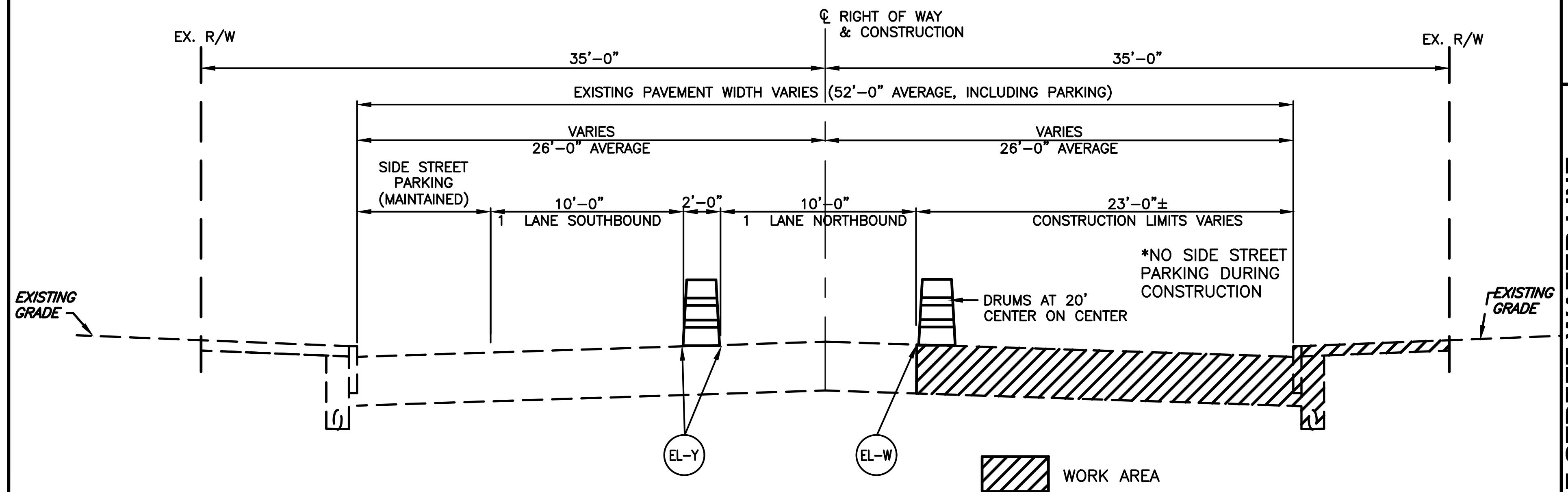


NOTES:

- 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 AND CONFORM TO OTHER REQUIREMENTS AS DESCRIBED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) IN PART6: TEMPORARY TRAFFIC CONTROL.
- DRUMS SHALL BE SPACED AT 20' CENTER TO CENTER ALONG THE CLOSURE. DRUMS ON THE ADVANCE TAPER SHALL BE SPACED AT 10' CENTER TO CENTER. CONES HAVING A MINIMUM HEIGHT OF 28" MAY BE SUBSTITUTED FOR DRUMS FOR DAYTIME LANE CLOSURES. PROVISIONS SHALL BE MADE TO STABILIZE THE CONES TO PREVENT THEM FROM BLOWING OVER.
- THE LOCATION OF THE ADVANCE WARNING SIGNS SHOULD BE ADJUSTED TO PROVIDE FOR ADEQUATE SIGHT DISTANCE FOR THE EXISTING VERTICAL AND HORIZONTAL ROADWAY ALIGNMENT. THE DISTANCES SHOWN ARE MINIMUMS.
- WITHIN THE LENGTH OF CLOSURE, PROVISIONS SHALL BE MADE TO CONTROL TRAFFIC ENTERING FROM INTERSECTING STREETS AND DRIVES AS NECESSARY TO PREVENT WRONG WAY MOVEMENTS.
- THE ENGINEER MAY SHORTEN THE MAXIMUM ALLOWABLE LENGTH OF CLOSURE TO RELIEVE EXCESSIVE TRAFFIC BACKUPS. ALL TRAFFIC CONTROL SIGNS, CHANNELIZING DEVICES AND THE FLAGGER SHALL BE MOVED FORWARD BEFORE THE CLOSURE REACHES THE MAXIMUM ALLOWABLE LENGTH. ONLY ONE SIDE OF THE ROAD SHALL BE CLOSED AT ANY ONE TIME.
- PAYMENT FOR ALL OF THE ABOVE, UNLESS ITEMIZED SEPARATELY, SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS.

CLOSING ONE LANE BY USE OF FLAGGER OPERATION

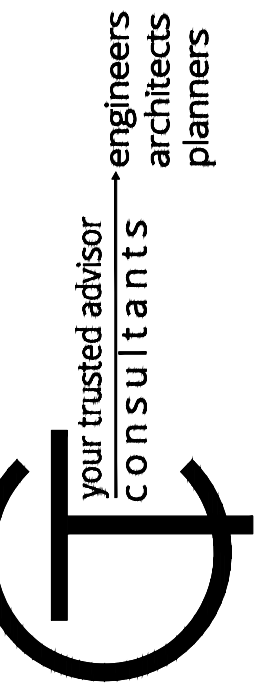
NOT TO SCALE



MOT - TYPICAL SECTION

NOT TO SCALE

- EL-W 4" WIDE WHITE EDGE LINE
- EL-Y 4" WIDE YELLOW EDGE LINE

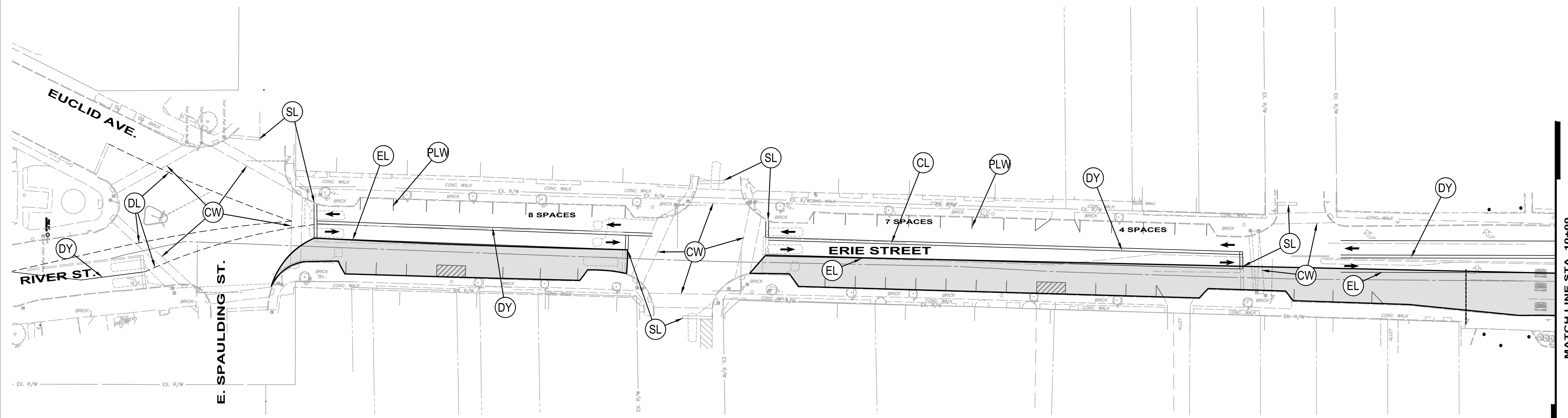
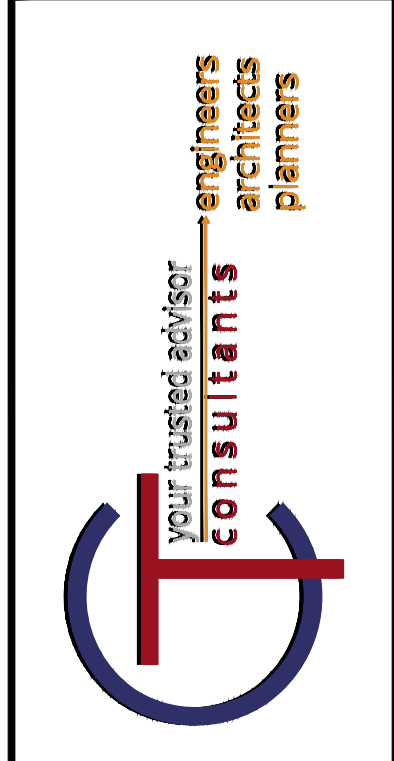


NO	REVISION	DATE

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CHECKED BY:	

ERIE STREET WATER LINE REPLACEMENT
LAKE COUNTY DEPARTMENT OF UTILITIES - WILLOUGHBY -
MAINTENANCE OF TRAFFIC

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	MOT-01
SHEET	OF
12	20



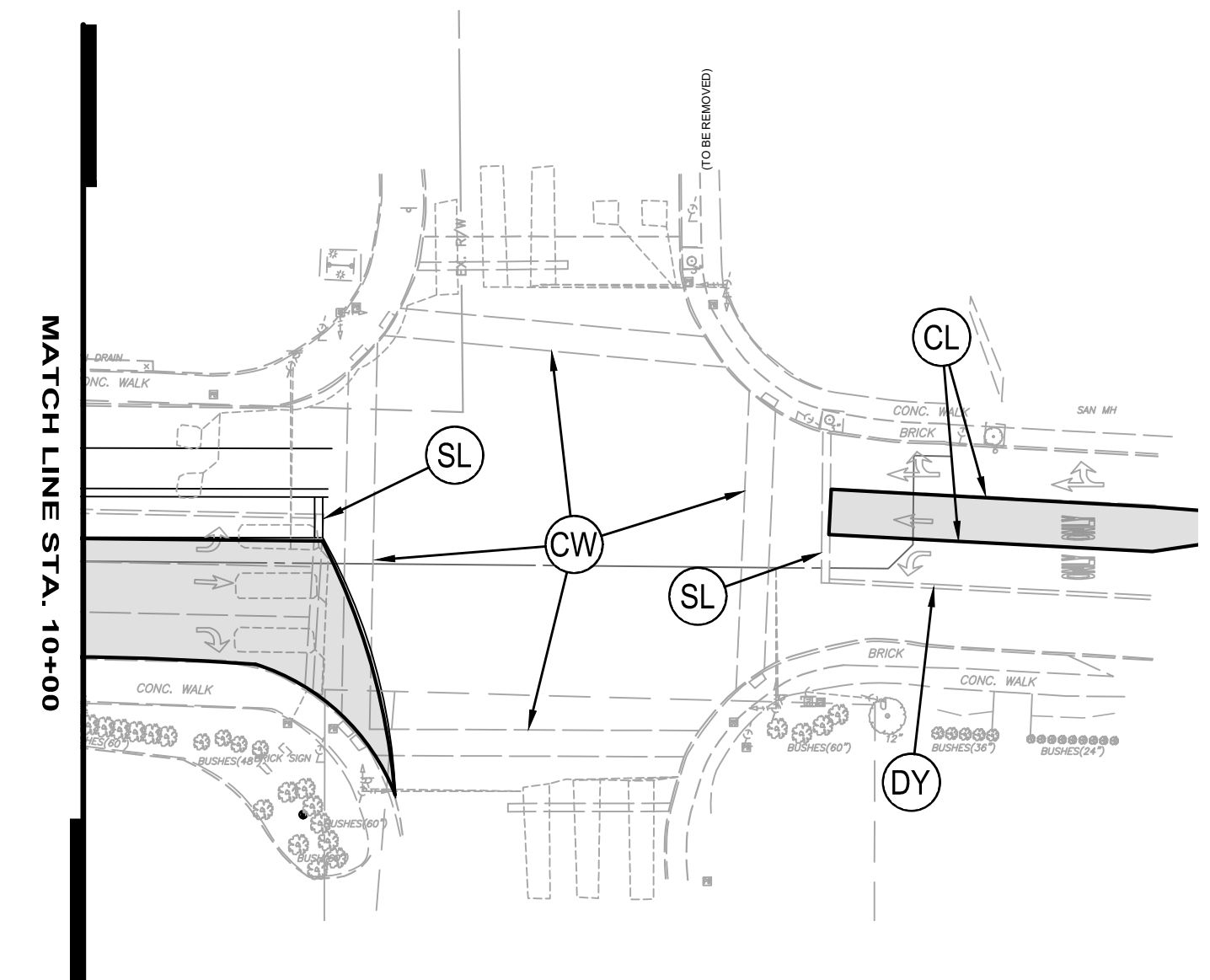
WORK AREA: BETWEEN INTERSECTIONS.

AREAS WITHIN INTERSECTIONS SHALL BE DEFINED BY THE CONTRACTOR WITH LCDU APPROVAL.

NOTE: SEE M.O.T. NOTES FOR ADDITIONAL INFORMATION REGARDING CONTRACTOR REQUIREMENTS.

LEGEND

- CHANNELIZING LINE
- DOUBLE YELLOW LINE
- LANE LINE
- STOP BAR, 24"
- EDGE LINE
- YELLOW LINE
- CROSSWALK LINE
- DOTTED LINE, 4 INCH
- PARKING LINE (WHITE OR YELLOW)



NO.	REVISION	DATE
1		XXXX18

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ISSUE DATE:	08/28/18	SCALE:	AS SHOWN	DESIGNED BY:	MPC
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				CHECKED BY:	XXX

ERIE STREET WATER LINE REPLACEMENT OF UTILITIES - WILLOUGHBY - MAINTENANCE OF TRAFFIC PLAN

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	MOT-2
SHEET	OF
13	20

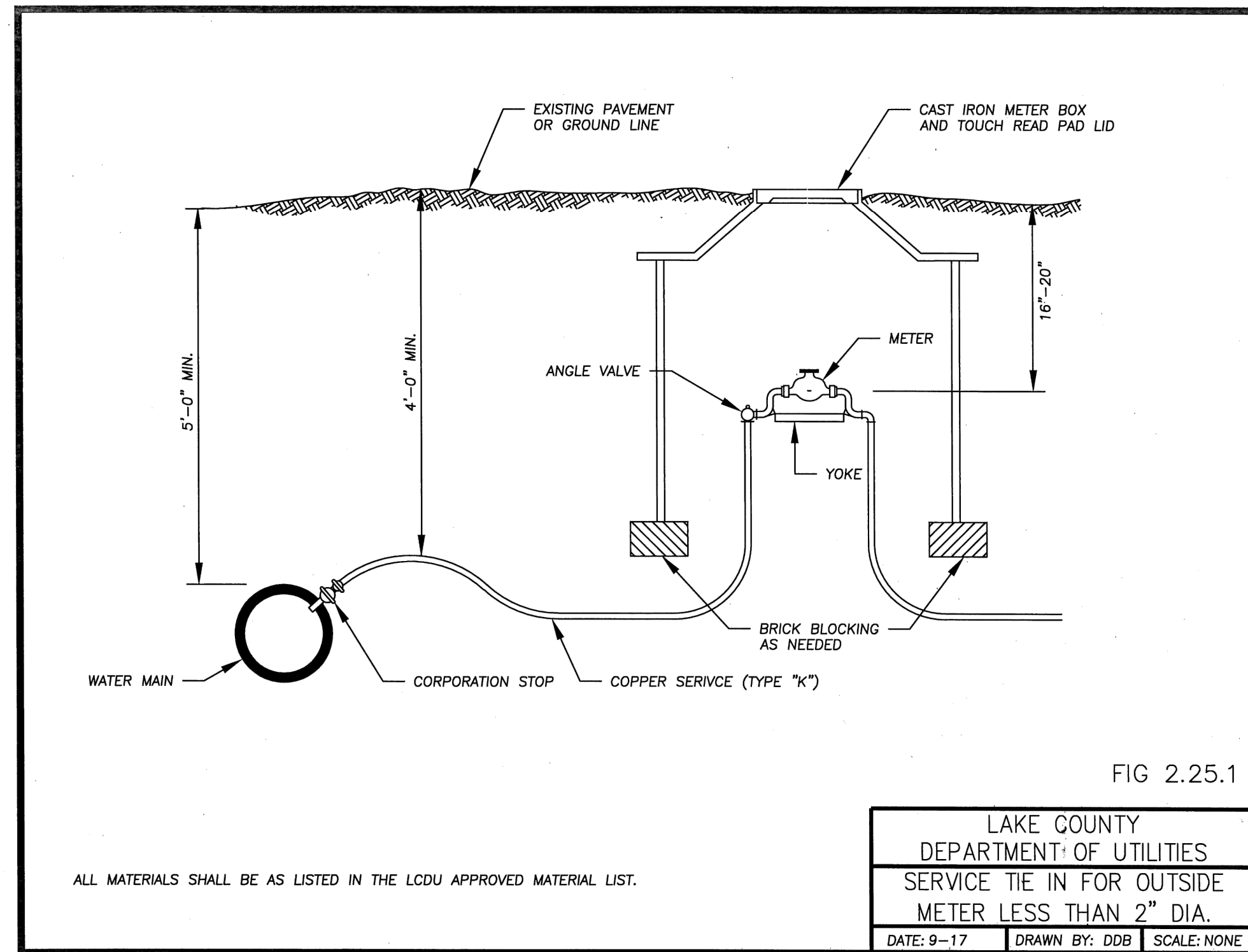


FIG 2.25.1
LAKE COUNTY
DEPARTMENT OF UTILITIES
SERVICE TIE IN FOR OUTSIDE
METER LESS THAN 2" DIA.
DATE: 9-17 DRAWN BY: DDB SCALE: NONE

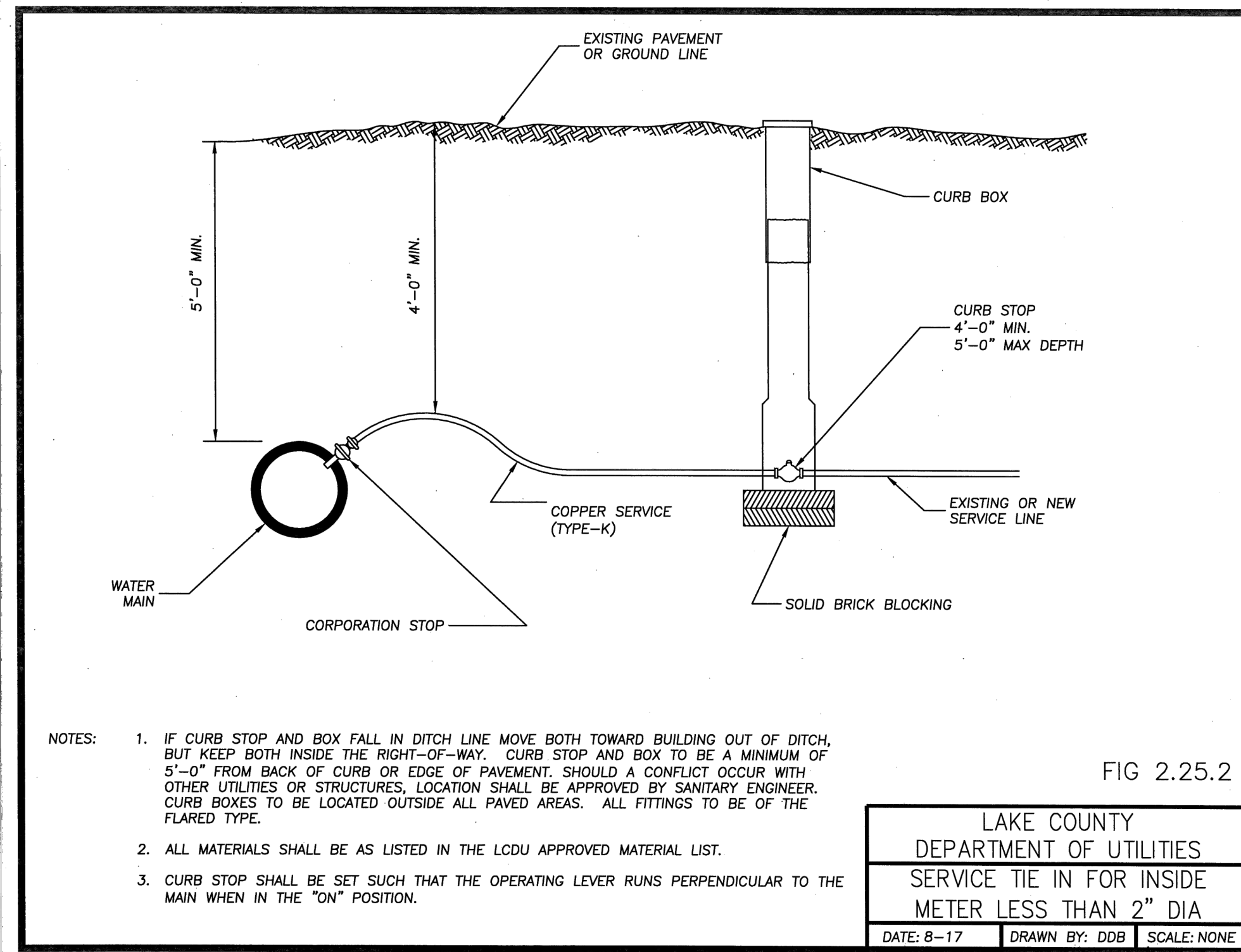


FIG 2.25.2
LAKE COUNTY
DEPARTMENT OF UTILITIES
SERVICE TIE IN FOR INSIDE
METER LESS THAN 2" DIA.
DATE: 8-17 DRAWN BY: DDB SCALE: NONE

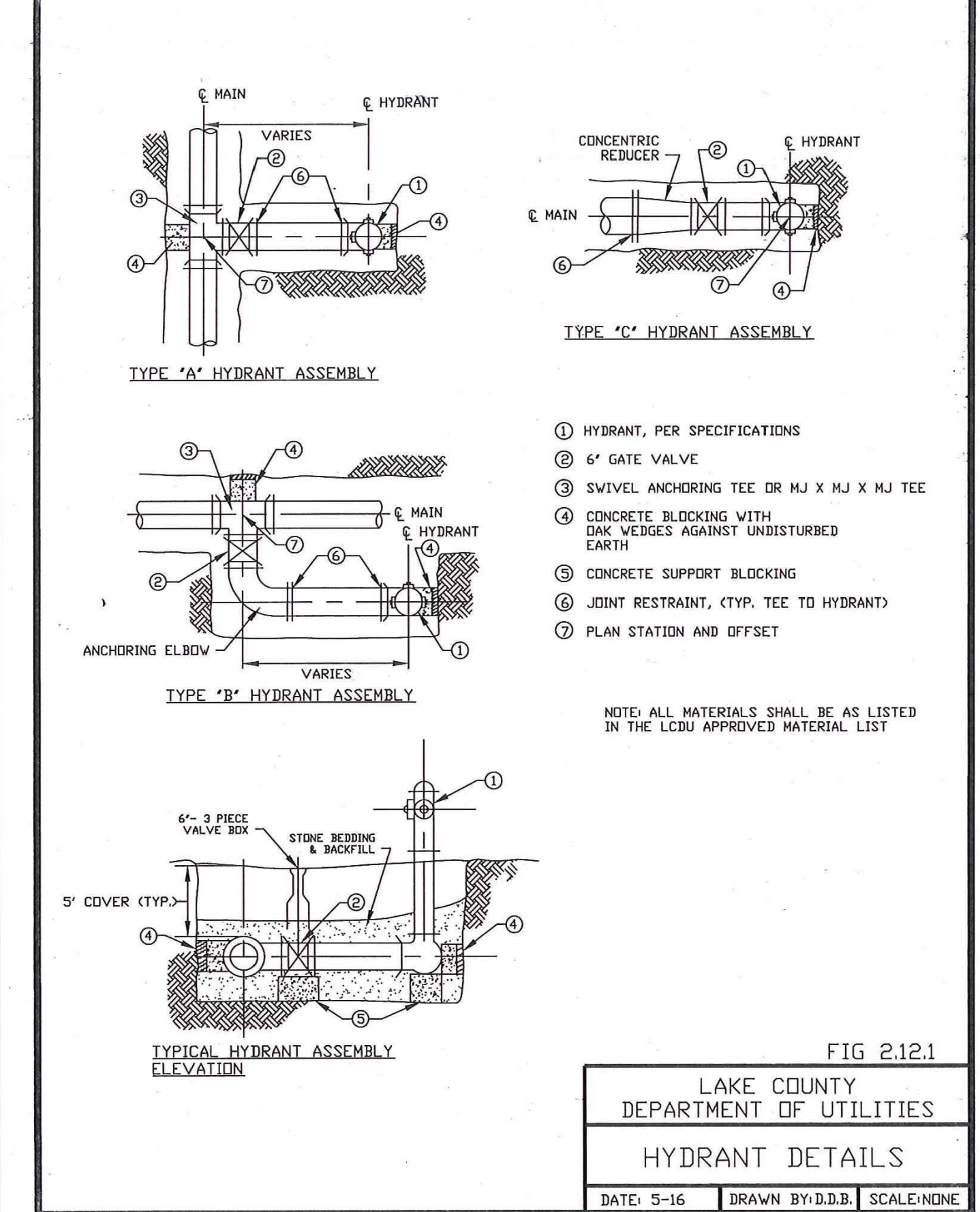
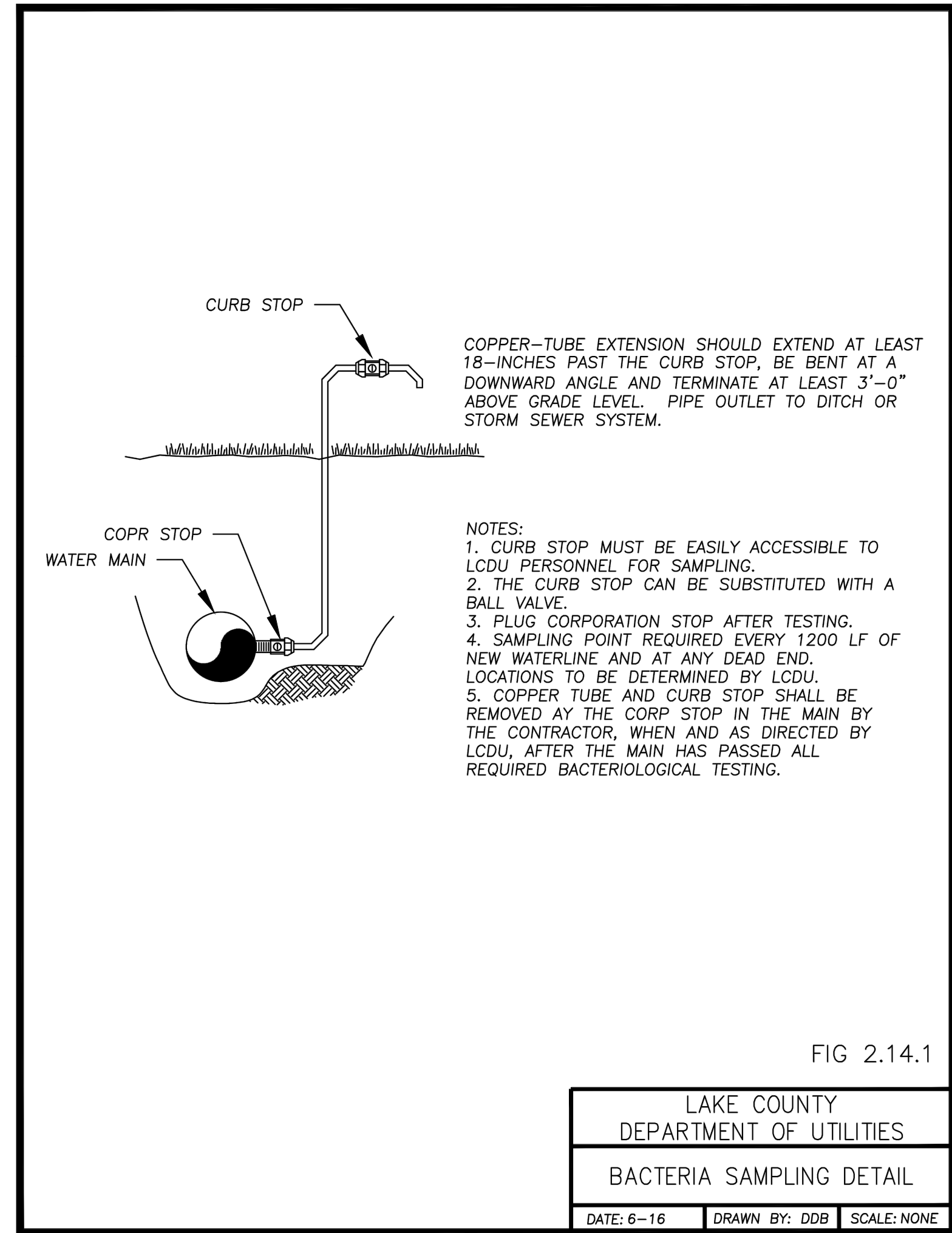


FIG 2.12.1
LAKE COUNTY
DEPARTMENT OF UTILITIES
HYDRANT DETAILS
DATE: 5-16 DRAWN BY: D.D.B. SCALE: NONE



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 AT 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

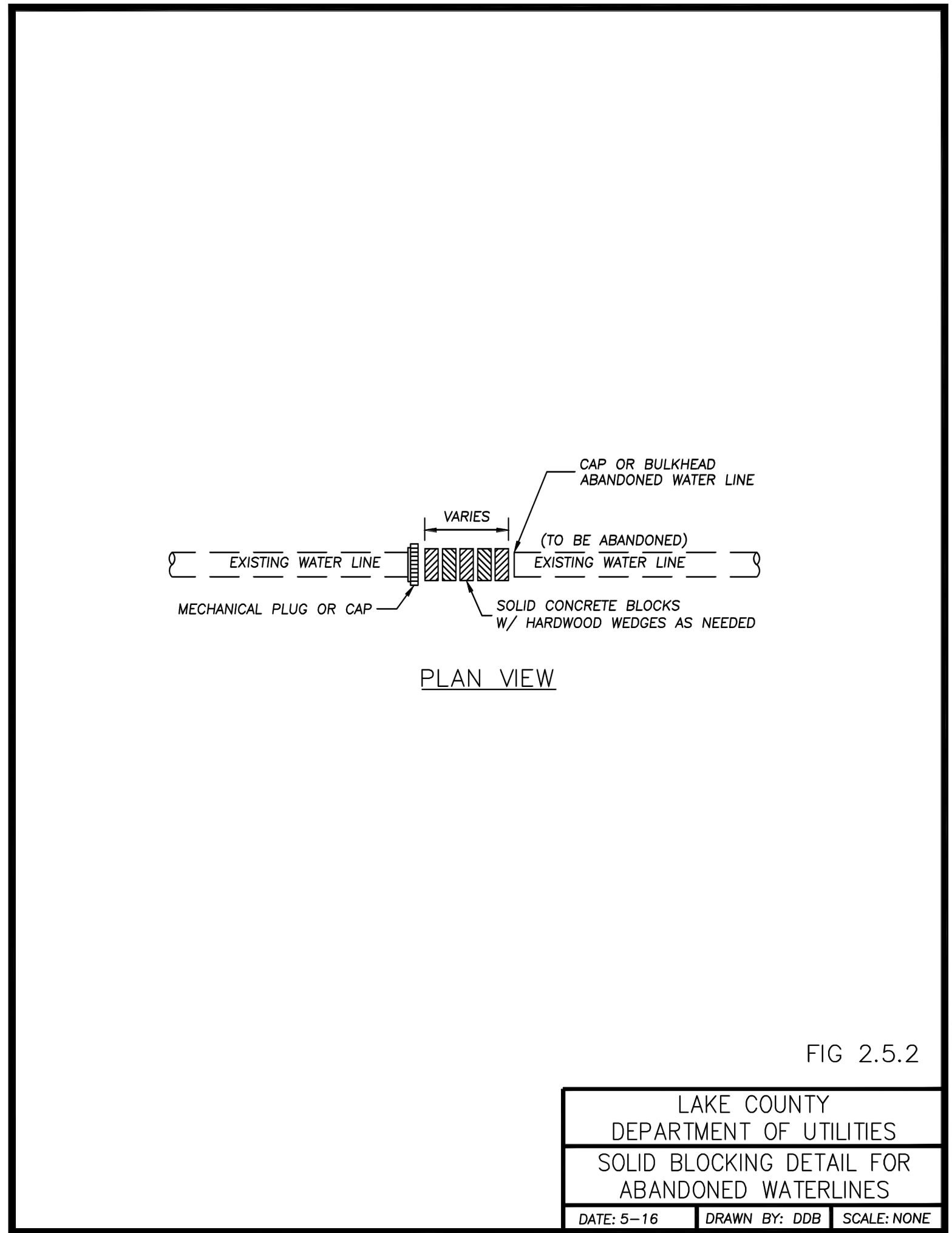


FIG 2.5.2
LAKE COUNTY
DEPARTMENT OF UTILITIES
SOLID BLOCKING DETAIL FOR
ABANDONED WATERLINES
DATE: 5-16 DRAWN BY: DDB SCALE: NONE

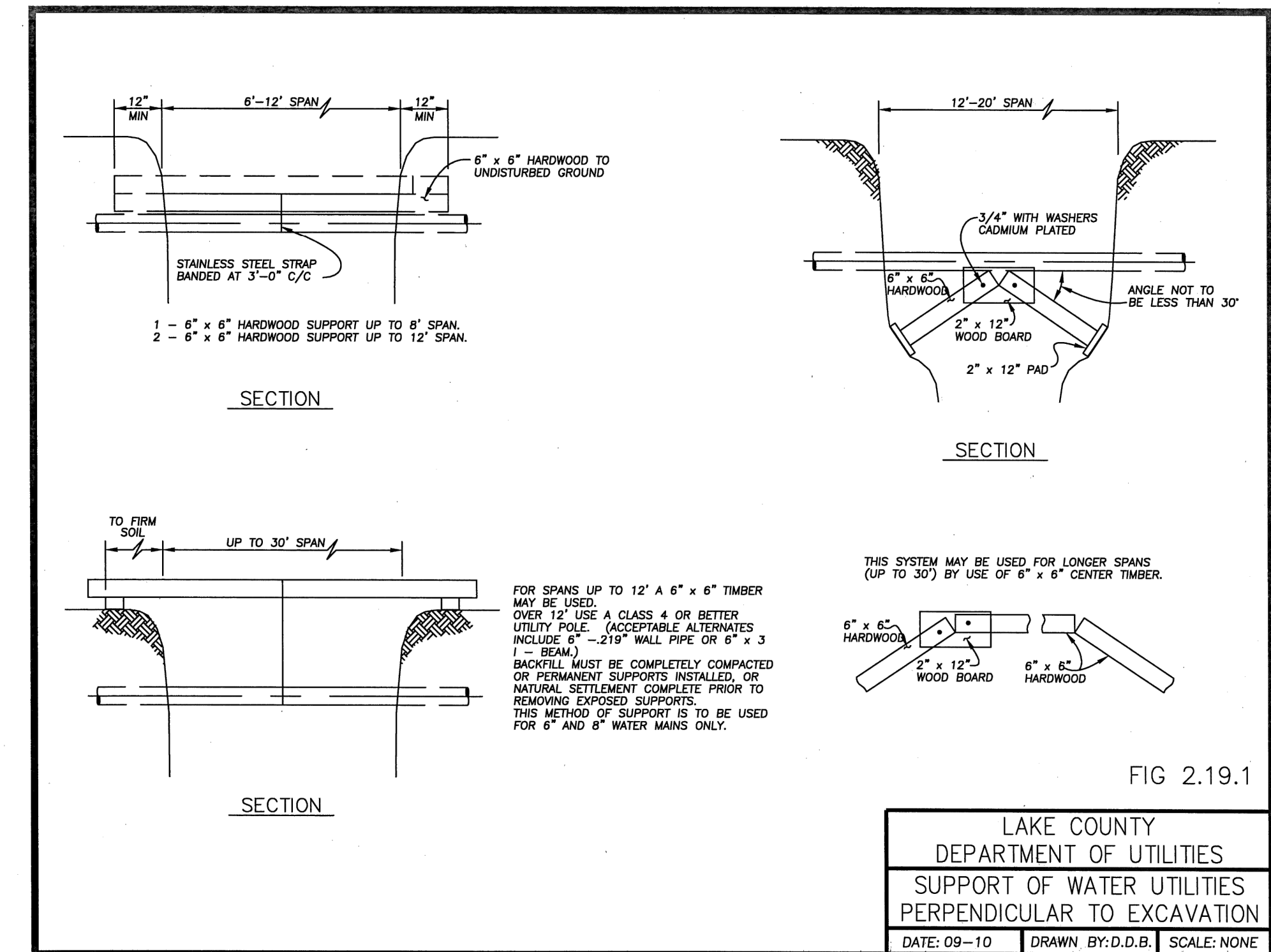
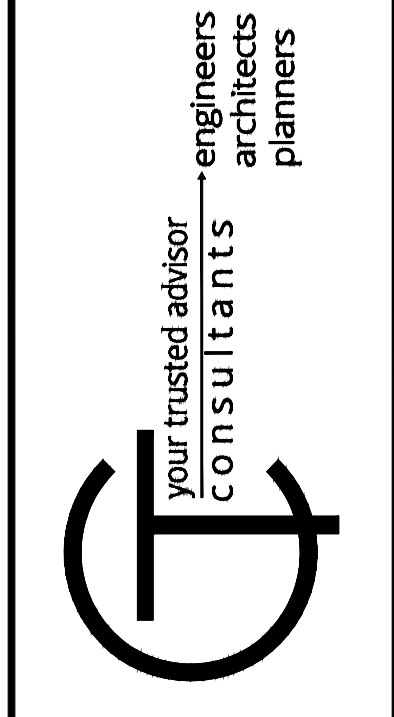
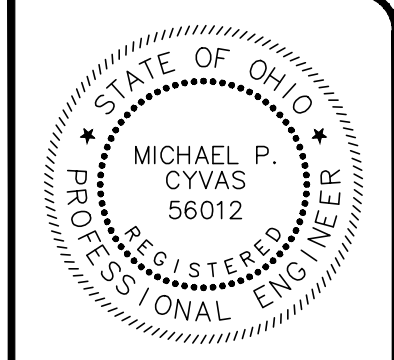


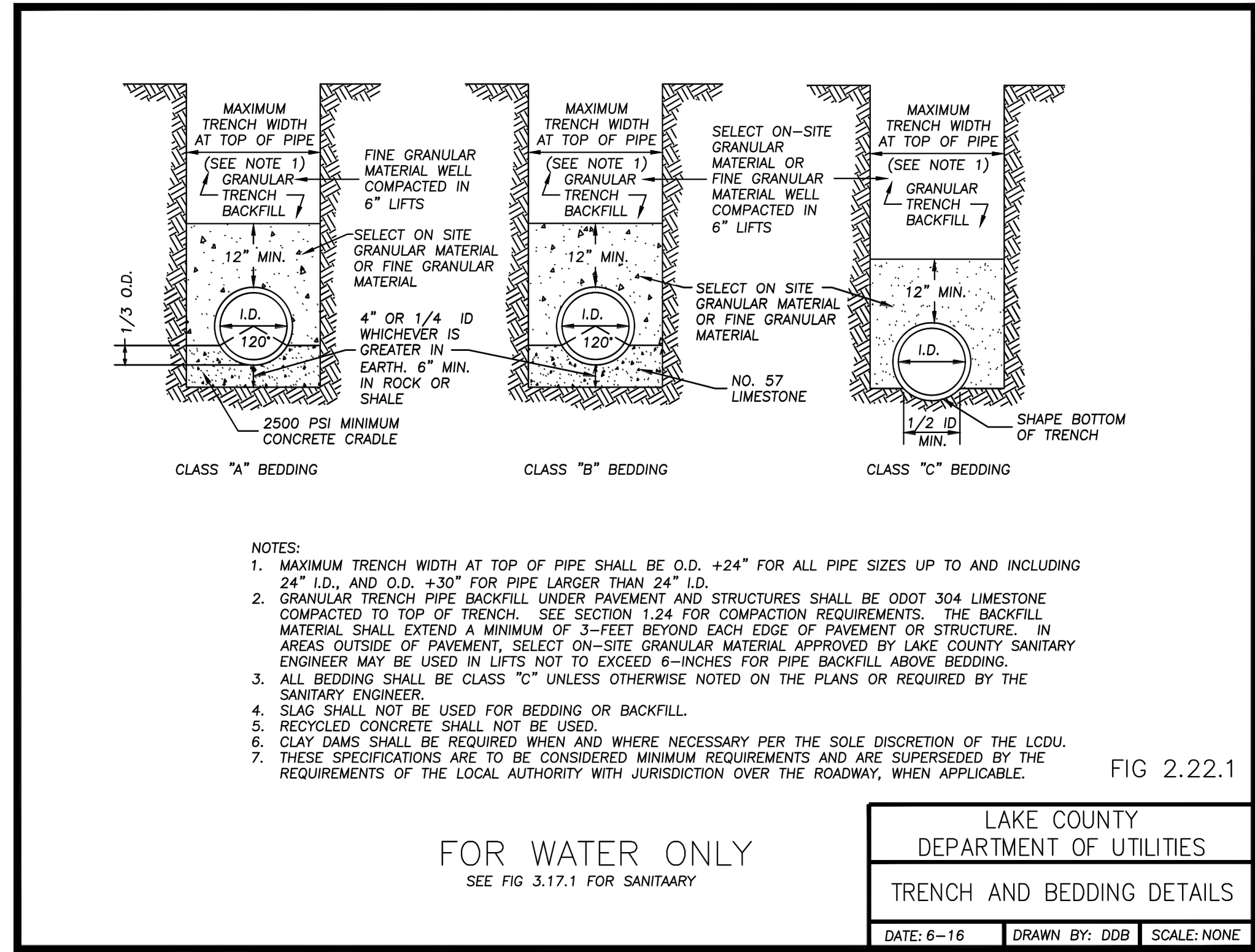
FIG 2.19.1
LAKE COUNTY
DEPARTMENT OF UTILITIES
SUPPORT OF WATER UTILITIES
PERPENDICULAR TO EXCAVATION
DATE: 09-10 DRAWN BY: D.D.B. SCALE: NONE



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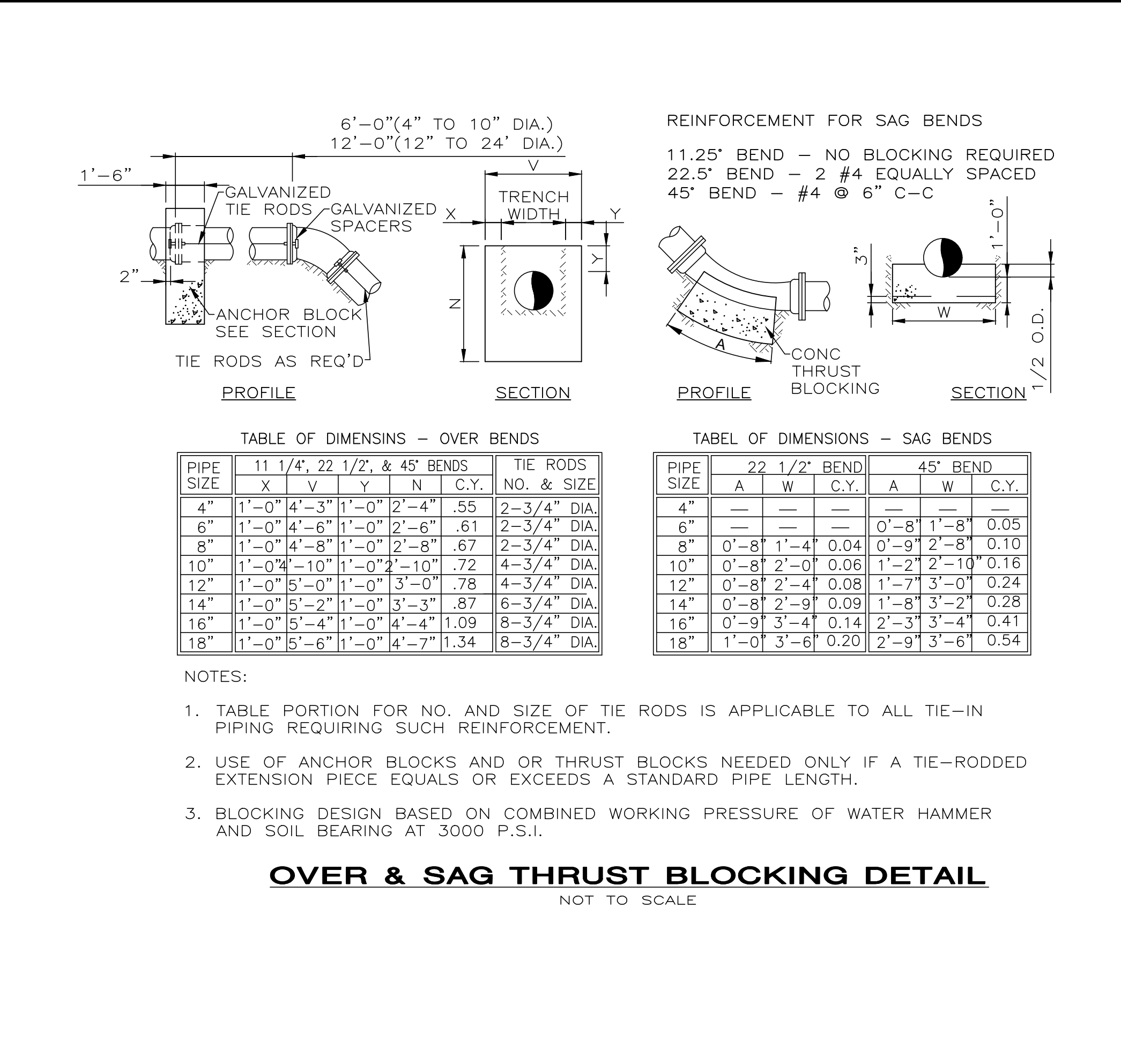
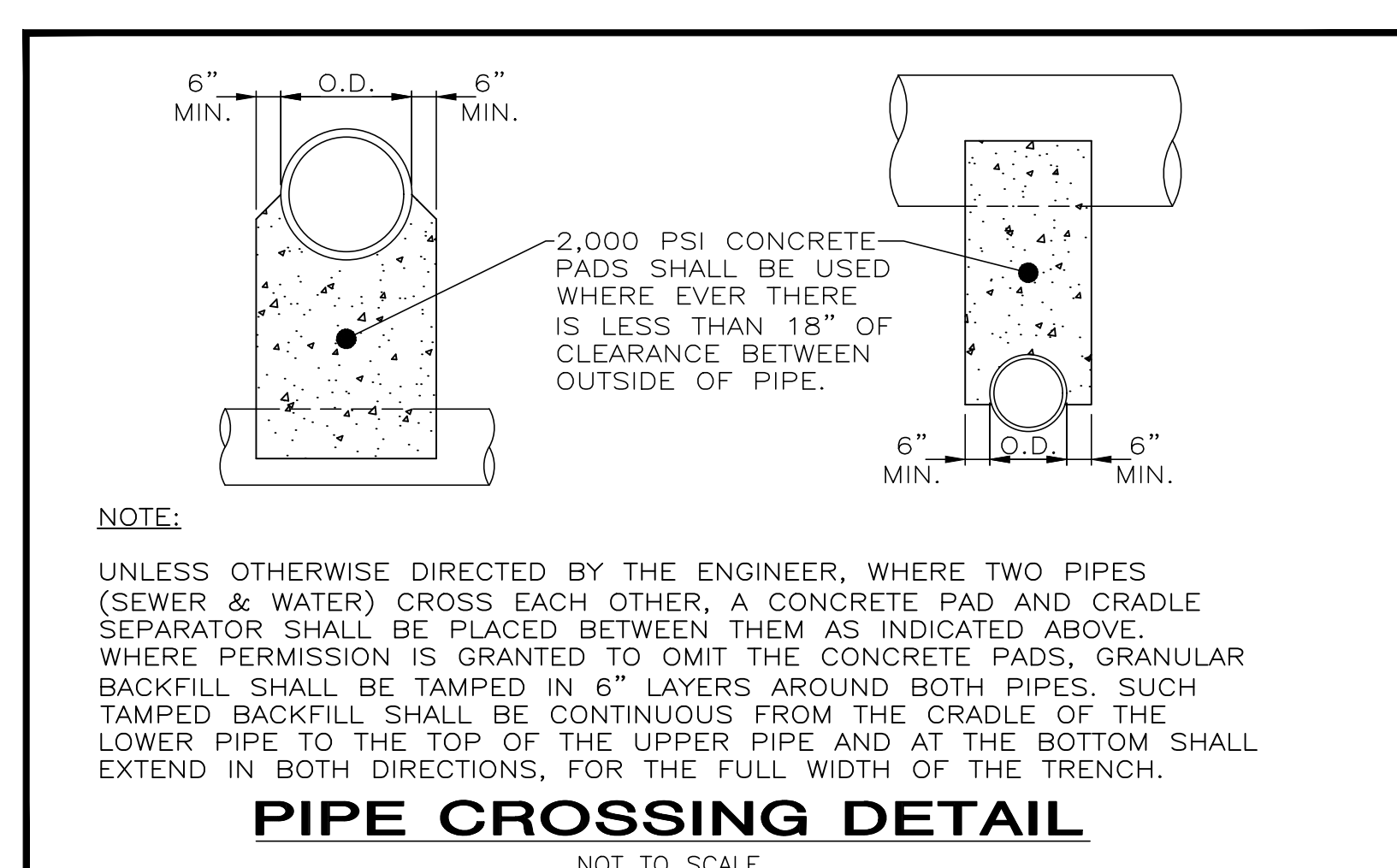
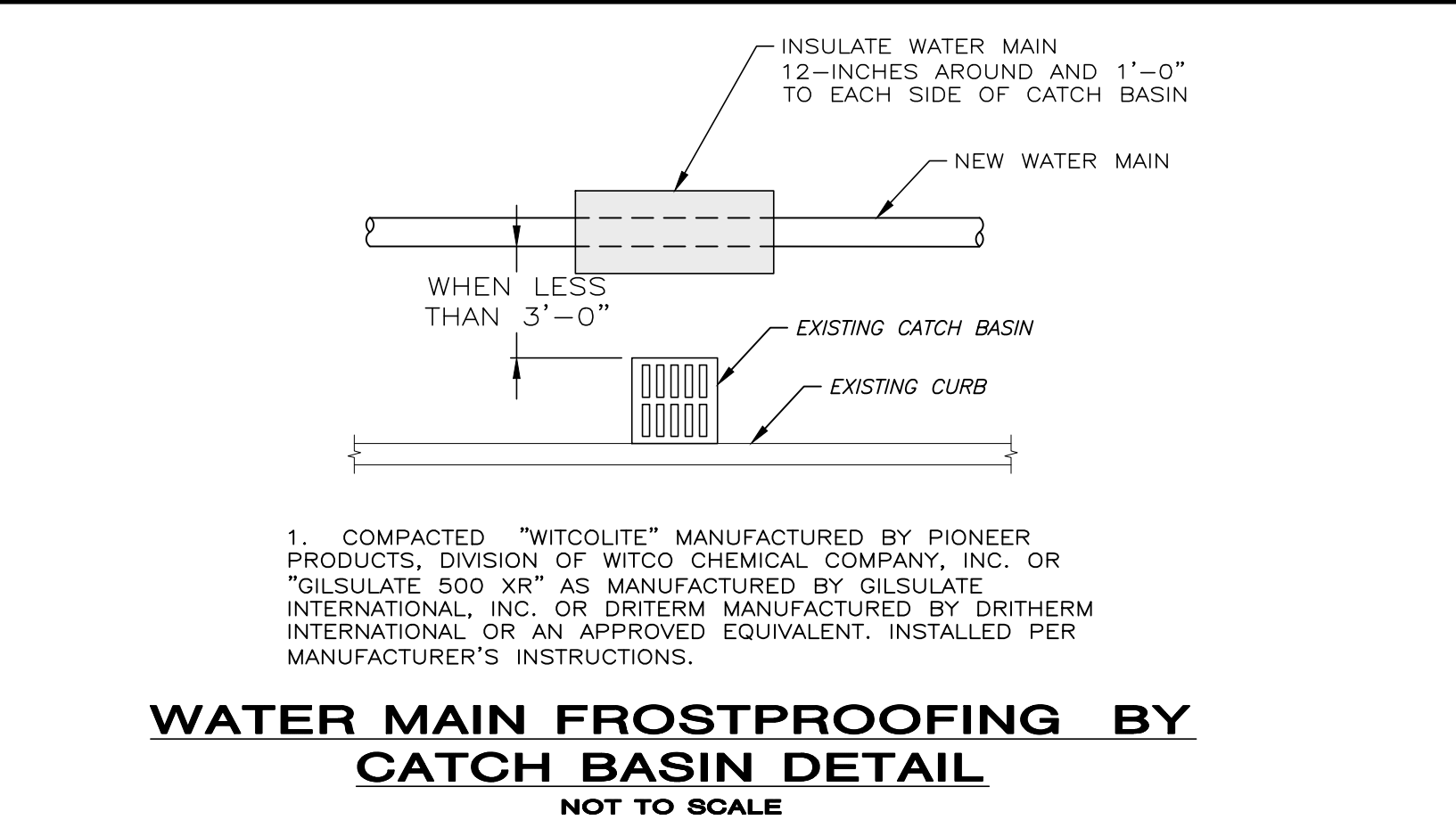
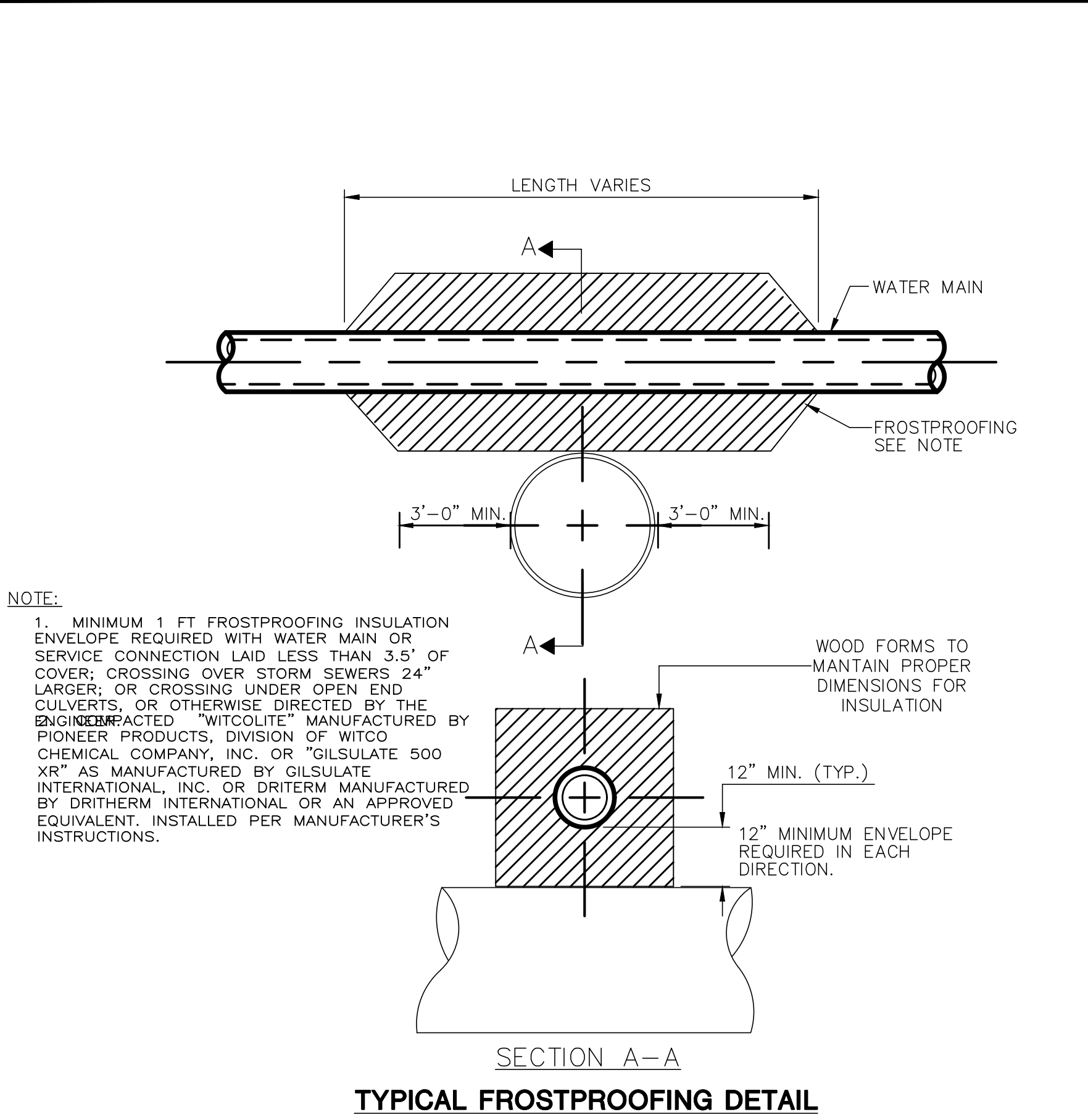
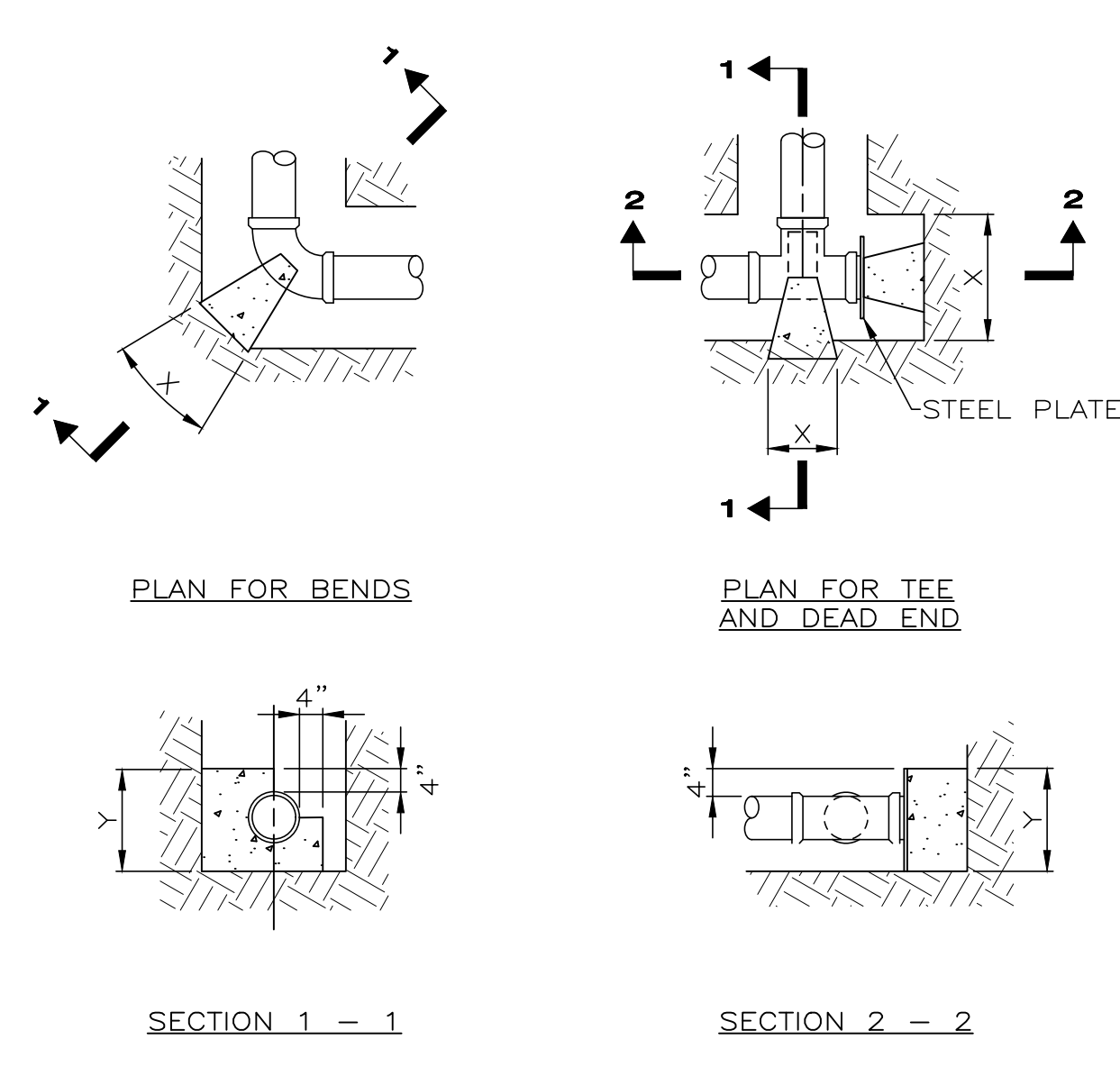
PROJECT NO.
180608
DISCIPLINE
CIVIL
SHEET NAME
CD-01
SHEET **14** OF **20**



SIZING SCHEDULE BEARING FACE (X Y) IN SQ. FT. CONCRETE VOLUME IN CU. YD.

PIPE SIZE	22-1/2° BEND SOIL BEARING CAPACITY			45° BEND SOIL BEARING CAPACITY		
	1,000 P.S.F.	3,000 P.S.F.	5,000 P.S.F.	1,000 P.S.F.	3,000 P.S.F.	5,000 P.S.F.
4	1.40	0.46	0.26	2.70	0.90	0.54
6	2.80	0.93	0.56	5.50	1.83	1.10
8	4.80	1.60	0.96	9.60	3.20	1.92
10	7.90	2.63	1.96	15.70	5.23	3.14
12	11.30	3.76	2.26	22.30	7.43	4.46
14	15.30	5.10	3.06	30.20	10.06	6.04
16	19.80	6.60	3.96	39.10	13.03	7.82
	1.17	0.76	0.49	1.21	0.79	0.51

PIPE SIZE	90° BEND SOIL BEARING CAPACITY			TEE OR DEAD END SOIL BEARING CAPACITY		
	1,000 P.S.F.	3,000 P.S.F.	5,000 P.S.F.	1,000 P.S.F.	3,000 P.S.F.	5,000 P.S.F.
4	4.90	1.63	0.96	3.50	1.16	0.70
6	10.20	3.40	2.04	7.20	2.40	1.44
8	17.70	5.54	3.54	12.50	4.16	2.50
10	28.90	9.60	5.76	20.40	6.80	4.06
12	41.10	13.70	8.22	29.10	9.70	5.82
14	55.80	18.60	11.16	39.50	13.16	7.90
16	72.20	24.06	14.44	51.10	17.03	10.22
	2.14	1.39	0.90	1.54	1.00	0.65



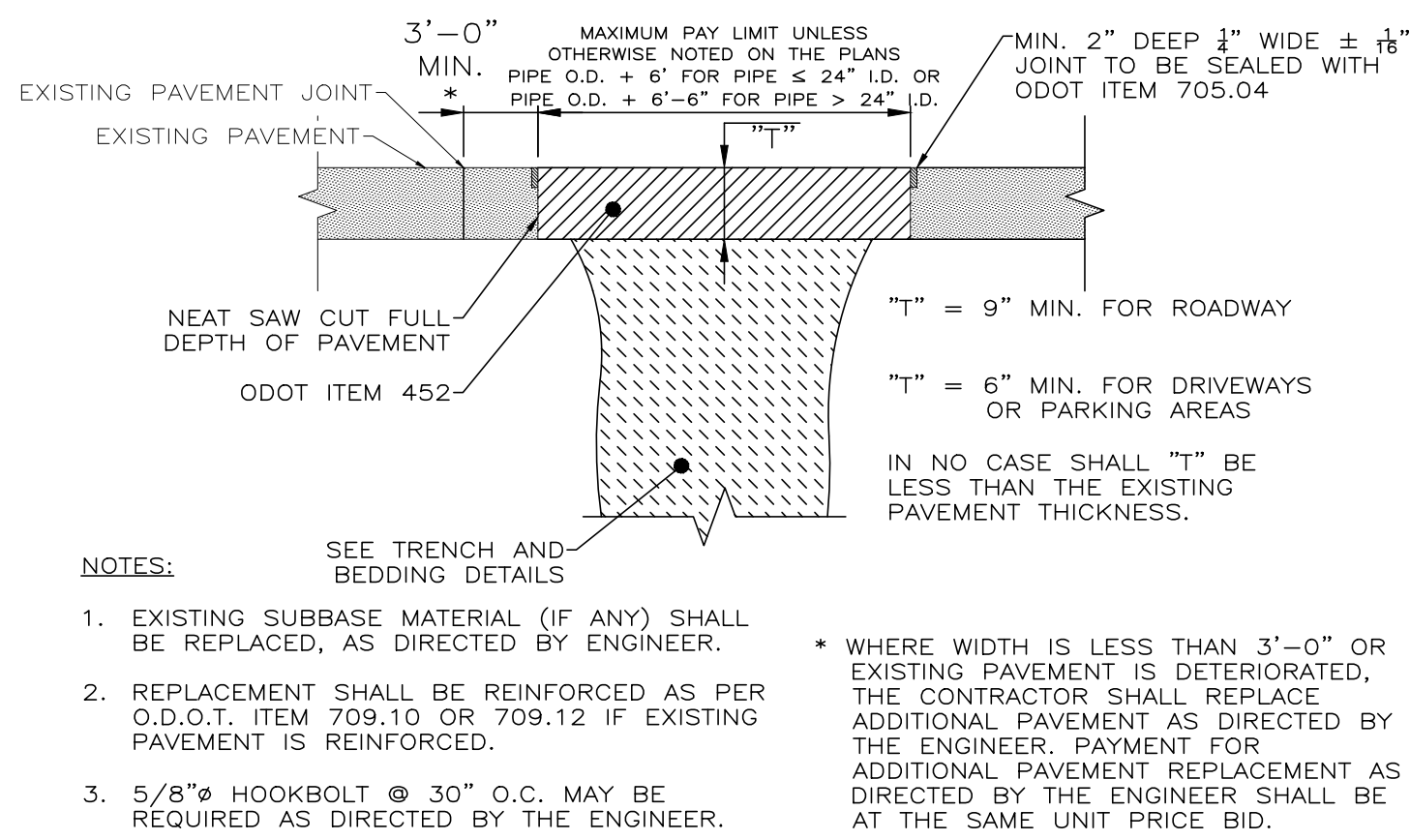
STATE OF OHIO
 MICHAEL P. CYVAS
 56012
 REGISTERED PROFESSIONAL ENGINEER

your trusted advisor
 consultants
 engineers
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ERIE STREET WATER LINE REPLACEMENT
 LAKE COUNTY DEPARTMENT OF UTILITIES
 - WILLOUGHBY -

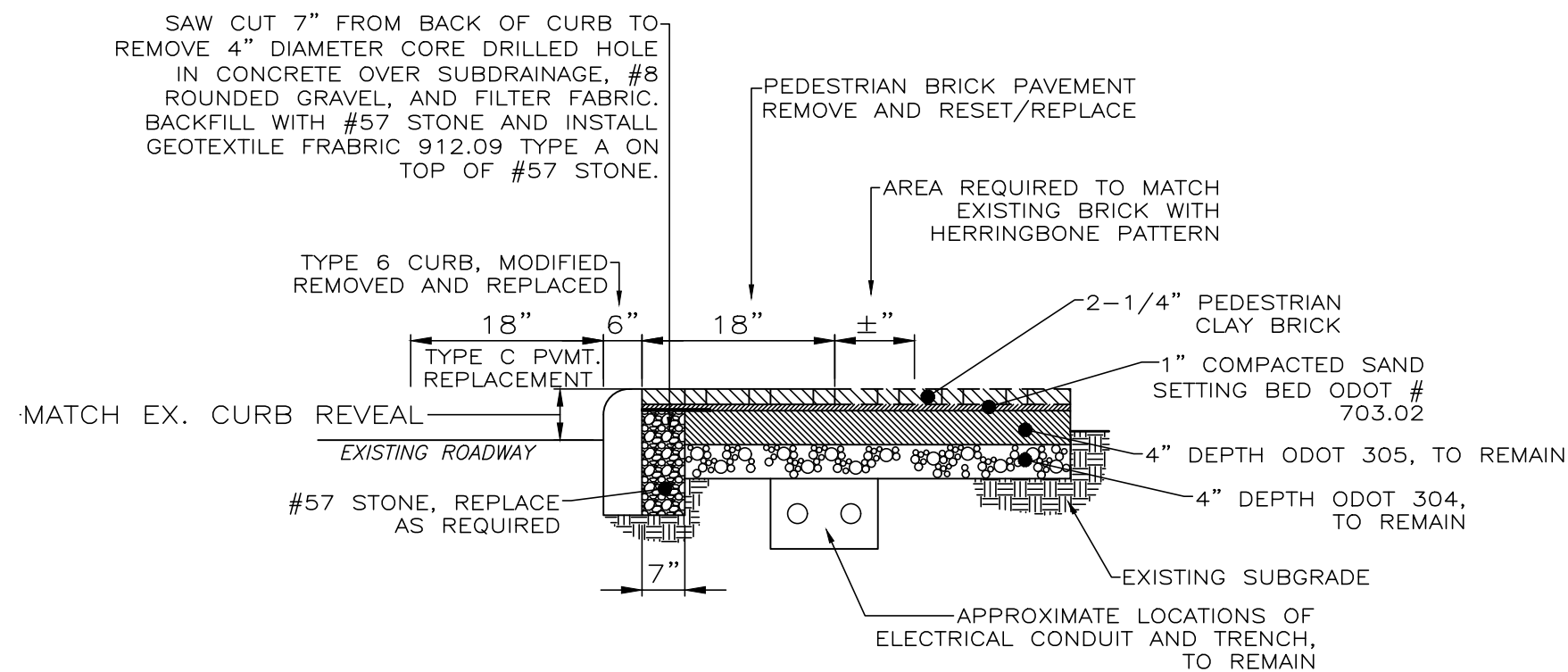
CONSTRUCTION DETAILS 3

PROJECT NO. 180608
 DISCIPLINE CIVIL
 SHEET NAME CD-03
 SHEET 16 OF 20



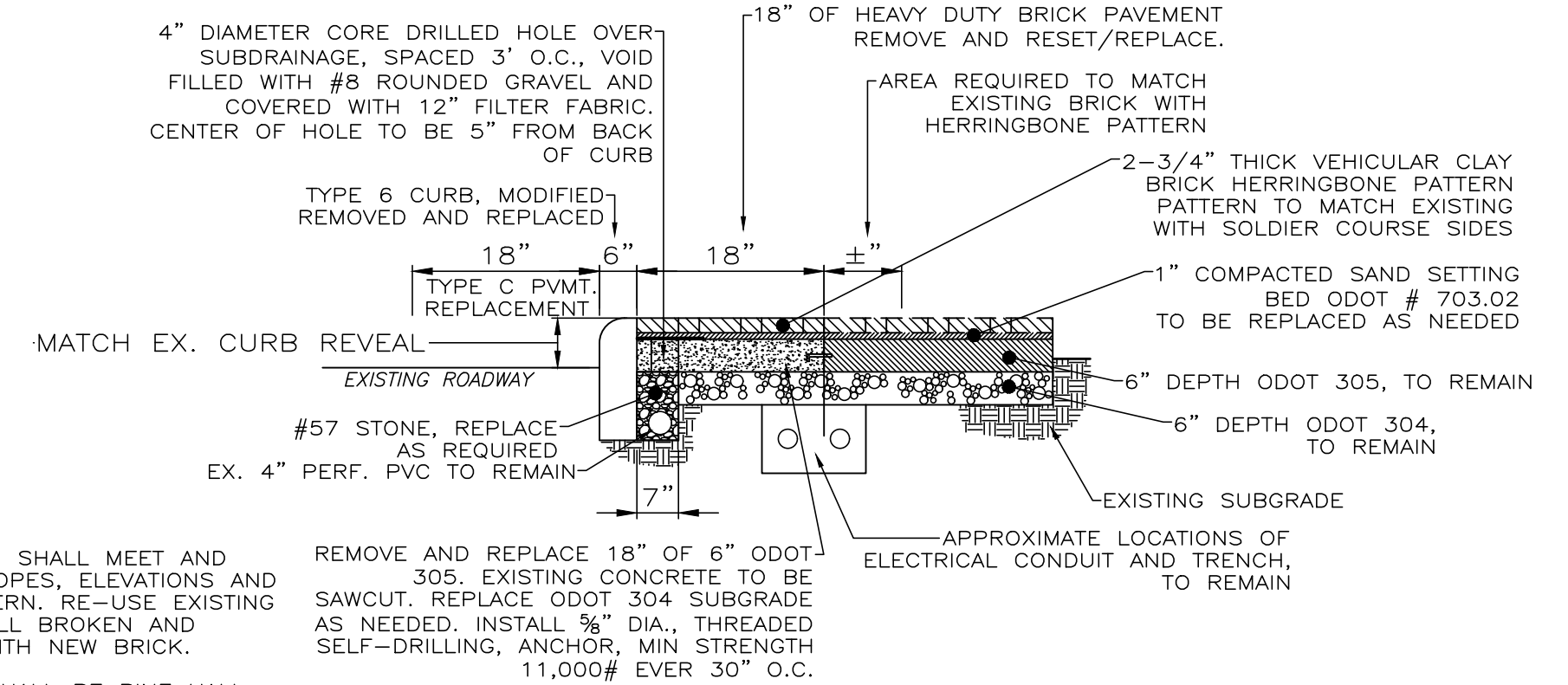
TYPE A PAVEMENT REPLACEMENT

NOT TO SCALE



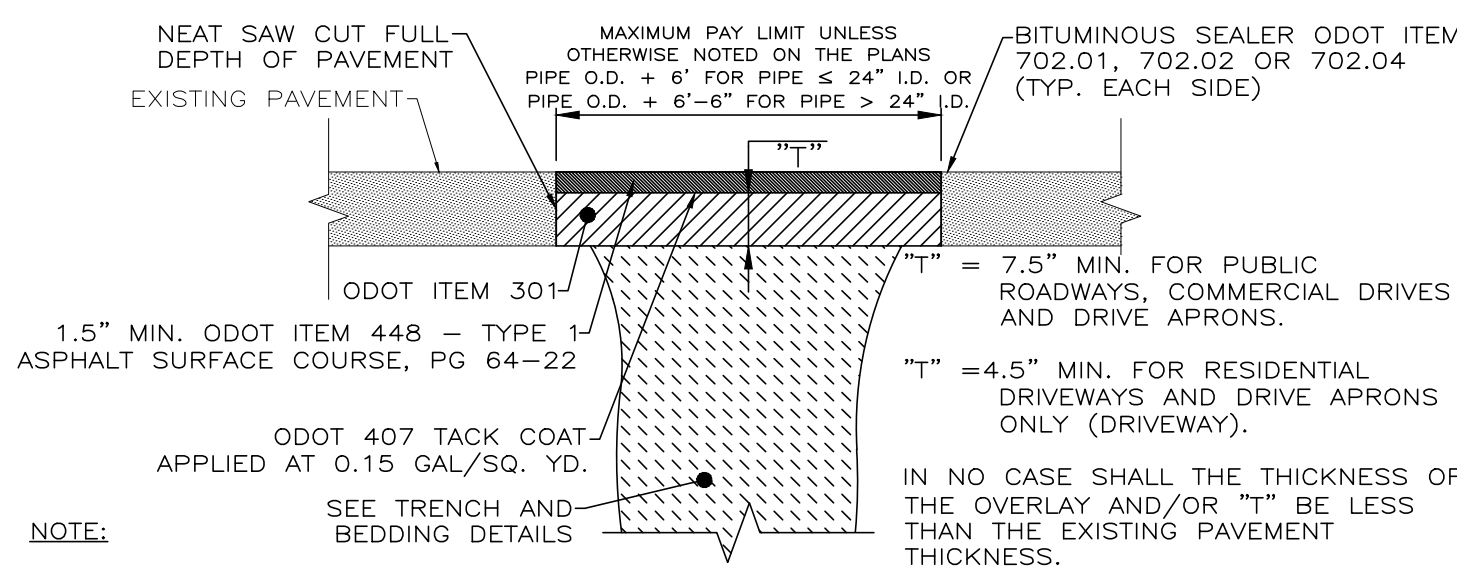
PEDESTRIAN CLAY BRICK PAVEMENT FOR SIDEWALKS

NOT TO SCALE



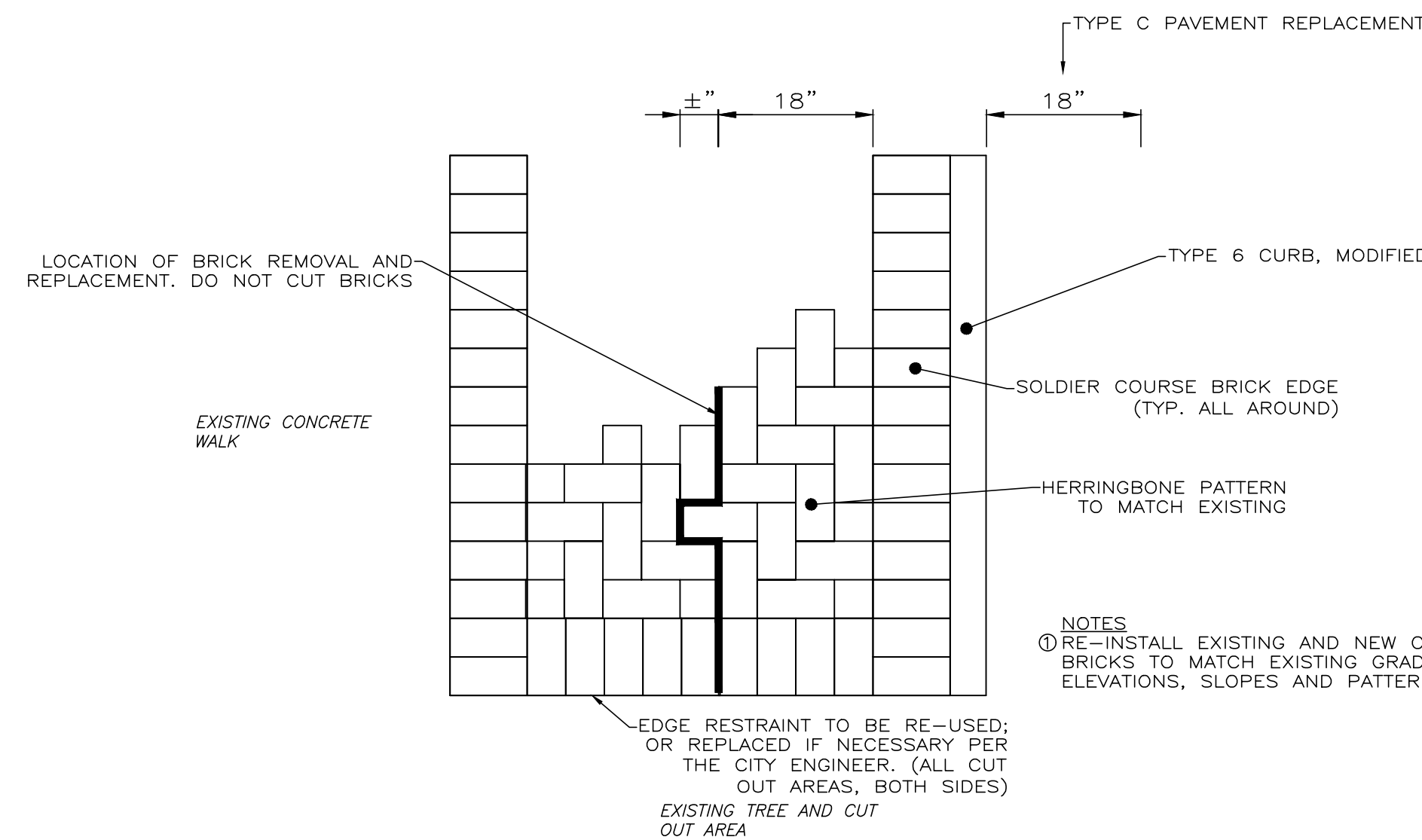
HEAVY DUTY CLAY BRICK PAVEMENT FOR SIDEWALKS

NOT TO SCALE



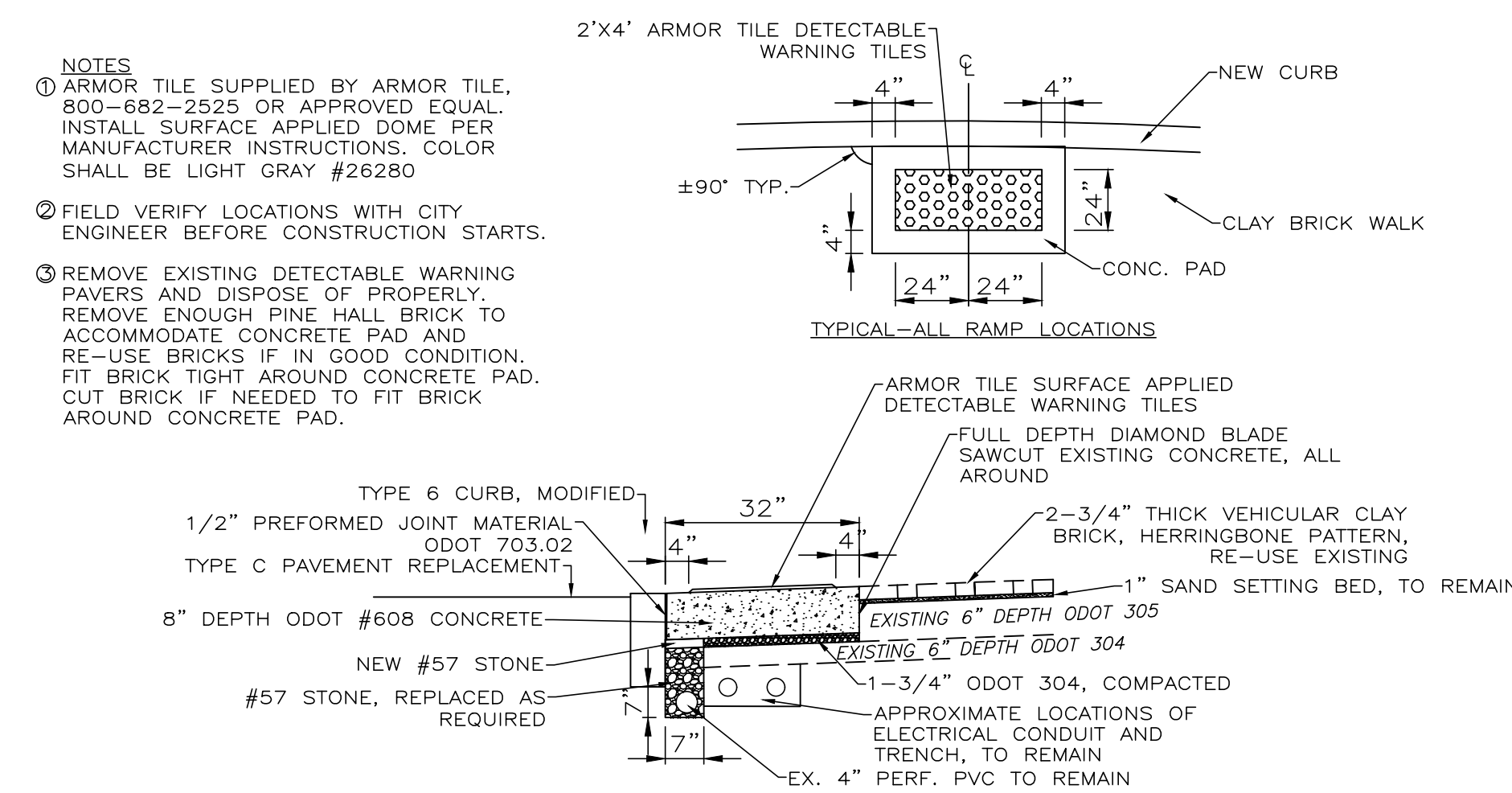
TYPE C PAVEMENT REPLACEMENT

NOT TO SCALE



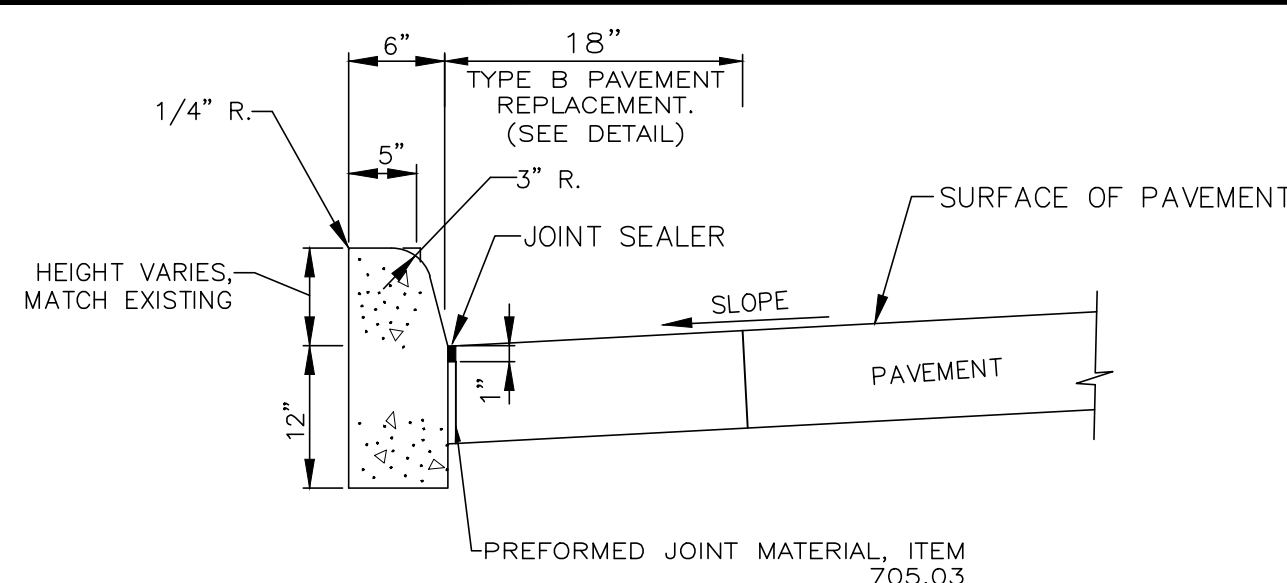
SIDEWALK PAVER PATTERN AND REMOVAL AREA

NOT TO SCALE

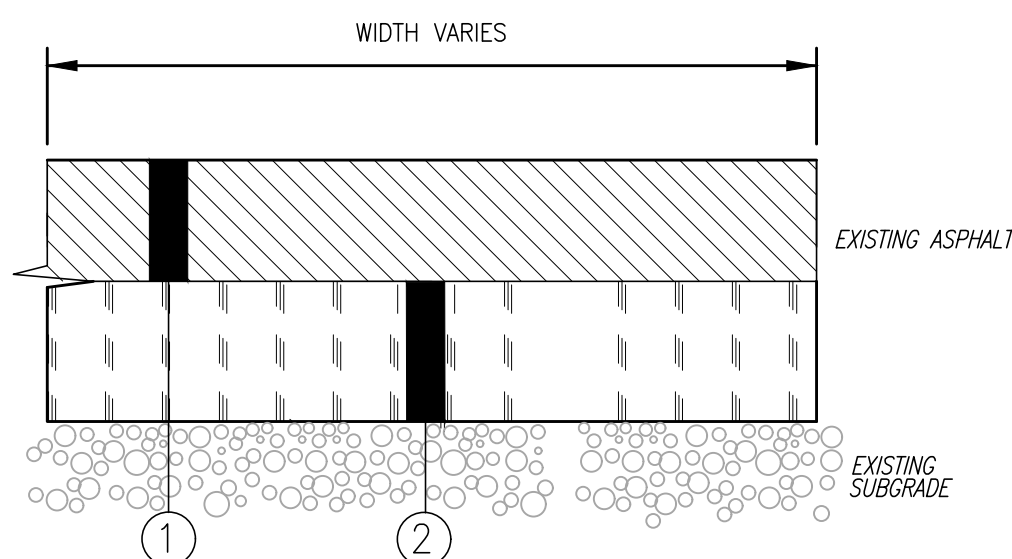


HANDICAP RAMP REPLACEMENT

NOT TO SCALE

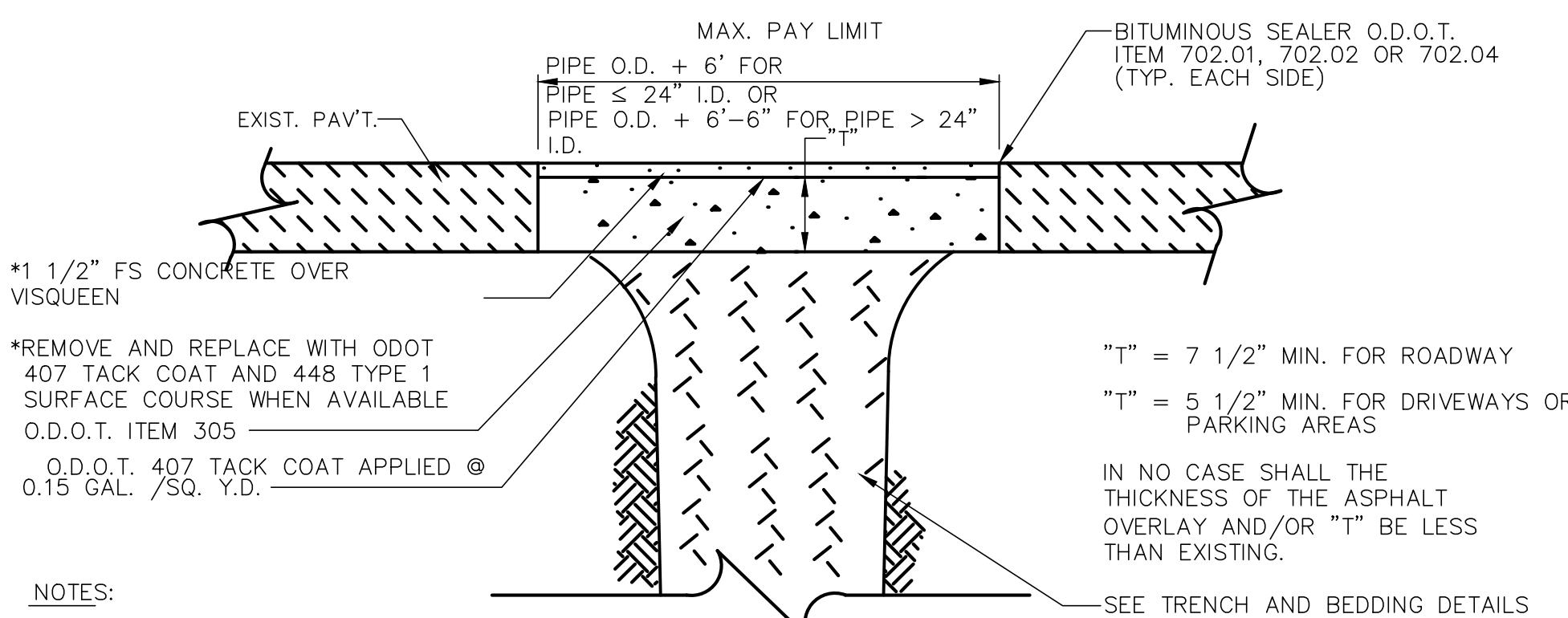


CURB, TYPE 6 MODIFIED (VERTICAL CURB)



304 AGGREGATE BASE, AS PER PLAN (REPAIR DETAIL)

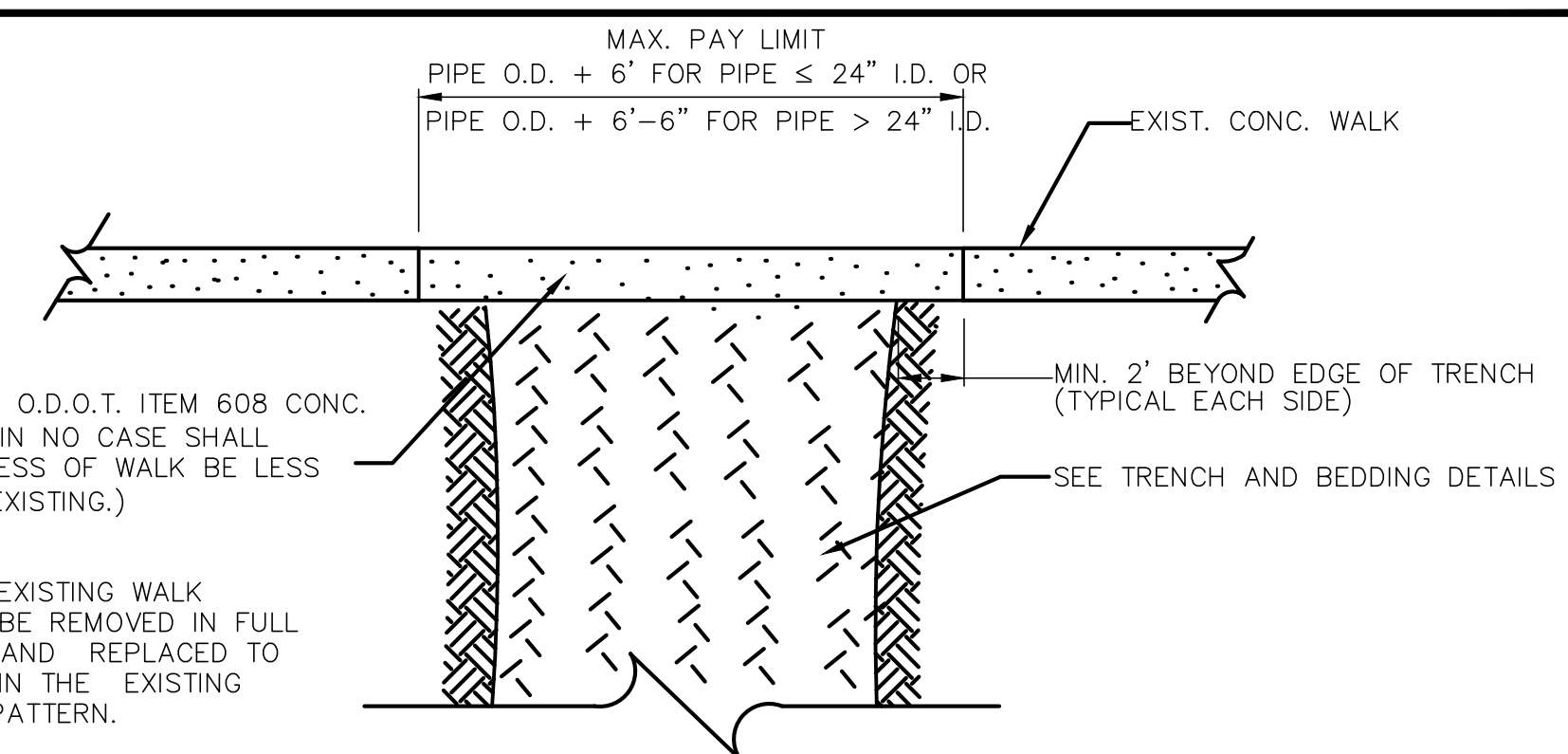
1. TYPE C PAVEMENT REMOVED & REPLACED AREA PAID UNDER SEPARATE BID ITEM
2. ODOT ITEM 304 - EXISTING BASE REMOVED & NEW ODOT 304 COMPACTED IN PLACE AVERAGE THICKNESS OF 12 INCHES



TYPE W PAVEMENT REPLACEMENT

7/08 SD-5-2.1

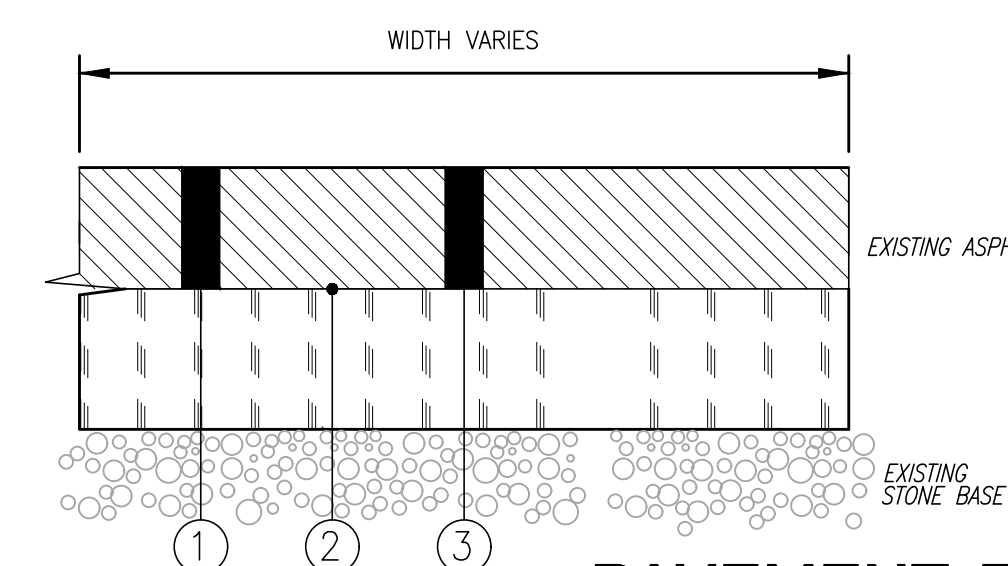
IF WATER LINE IS CONSTRUCTED DURING THE WINTER MONTHS (ASPHALT NOT AVAILABLE) TYPE W SHALL BE USED IN LIEU OF TYPE C.



CONCRETE WALK REPLACEMENT

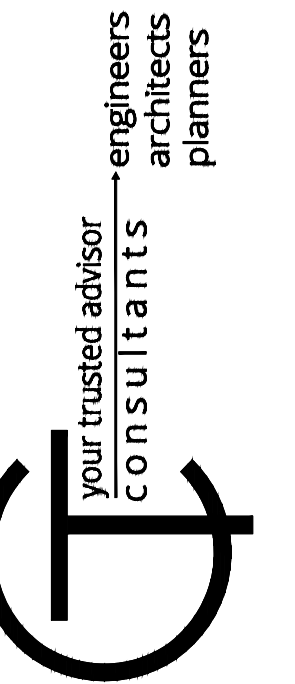
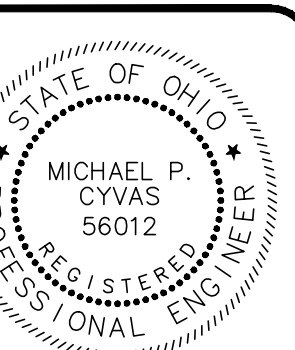
12/18

SD-5-7



1. 1.5" PAVEMENT PLANING
2. ODOT ITEM 407 - TACK COAT (0.10 GAL/SY)
3. 1.5" ODOT ITEM 448 - ASPHALT SURFACE COURSE, TYPE 1, PG64-22

PAVEMENT RESURFACING DETAIL



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ERIE STREET WATER LINE REPLACEMENT
LAKE COUNTY DEPARTMENT OF UTILITIES
- WILLOUGHBY -

CONSTRUCTION DETAILS 4

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	CD-04
SHEET	17
OF	20

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. EROSION CONTROL SHALL CONSIST OF TEMPORARY CONTROL MEASURES AS DETAILED ON THE PLANS OR ORDERED BY THE GOVERNING AGENCY DURING THE LIFE OF THE CONTRACT TO CONTROL SOIL EROSION AND SEDIMENTATION THROUGH USE OF EROSION CONTROL BEST MANAGEMENT PRACTICES (BMP'S).
2. TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS, THE LOCATION AND SIZE OF WHICH ARE DETAILED ON THE PLANS, SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY CLEARING OR EARTHWORK OPERATIONS. CONDITIONS THAT DEVELOP DURING CONSTRUCTION THAT WERE NOT FORESEEN DURING DESIGN STAGE; THAT REQUIRE ADDITIONAL OR MODIFIED TEMPORARY OR PERMANENT BMP'S SHALL BE APPROVED BY THE DESIGN ENGINEER AND REFLECTED ON THE REVISED SWP3.
3. SEDIMENT PONDS, SEDIMENT TRAPS, AND PERIMETER SEDIMENT CONTROLS, SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF GRUBBING. THEY SHALL CONTINUE TO FUNCTION UNTIL DISTURBED AREAS ARE RE-ESTABLISHED WITH TEMPORARY VEGETATION. NO SEDIMENT CONTROLS SHALL BE PLACED IN A STREAM.
4. TRENCH DEWATERING OR GROUND WATER, WHICH CONTAINS SEDIMENT SHALL PASS THROUGH A SEDIMENT SETTLING POND OR EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE. ALTERNATIVES MAY INCLUDE DEWATERING INTO SUMP PIT, FILTER BAG OR EXISTING VEGETATED UPSLOPE AREA. SEDIMENT LADEN WATER SHALL NOT BE DISCHARGED TO STREAMS OR THE STORM SEWER SYSTEM.
5. THE SWP3, NOTES AND DETAILED DRAWINGS ARE INTENDED TO SERVE AS BASIC GUIDELINES. ALL EROSION CONTROL PRACTICES SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE ODNR RAINWATER AND LAND DEVELOPMENT MANUAL.
6. ADDITIONAL EROSION CONTROL BMP'S MAY BE MANDATED BY THE GOVERNING AGENCY AT ANY TIME DURING THIS PROJECT AS UNFORSEEN SITUATIONS MAY ARISE THAT WARRANT FURTHER EROSION AND SEDIMENT CONTROL PRACTICES.

CLEARING AND GRUBBING:

1. LIMITS OF CLEARING AND GRADING SHALL BE CLEARLY MARKED ON THE SITE WITH SIGNAGE, FLAGGING AND/OR CONSTRUCTION FENCING.
2. THE CONTRACTOR SHALL LIMIT THE SURFACE AREA OF ERODABLE EARTH MATERIAL EXPOSED BY EXCAVATION, BORROW, AND FILL OPERATIONS AND PROVIDE IMMEDIATE PERMANENT OR TEMPORARY CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT STREAMS OR OTHER WATER COURSES, LAKES, PONDS, WETLANDS OR OTHER AREAS OF WATER IMPOUNDMENT.

STABILIZATION:

1. PERMANENT AND TEMPORARY STABILIZATION ARE DEFINED IN PART VII OF THE OEPA AUTHORIZATION FOR FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM OHIO EPA PERMIT NO. 0H000002 EFFECTIVE DATE 4/21/03 – EXPIRATION DATE 4/20/08 DISTURBED AREAS MUST BE STABILIZED AS SPECIFIED IN THE FOLLOWING TABLES BELOW:

PERMANENT STABILIZATION	
AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROL
ANY AREA THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREA WITHIN 50 FT OF A STREAM AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TEMPORARY SEEDING:

1. SEEDING AREAS SHALL BE INSPECTED AND WHERE THE SEED HAS NOT PRODUCED 80% COVER SHALL BE RESEED AS NECESSARY BY THE CONTRACTOR. AREAS SHALL BE STABILIZED WITH MULCH WHEN CONDITIONS PROHIBIT SEEDING.
2. STRAW MULCHING SHALL BE APPLIED AT A RATE 2-3 STANDARD 45 LB. BALES PER 1000 SQ.FT. OF DISTURBED AREA OR 2 TONS PER ACRE. ALL HYDROSEEDING MUST BE STRAW MULCHED ACCORDING TO THE ABOVE SPECIFICATIONS UNLESS IT IS WATERED WEEKLY.
3. ALL WATER QUALITY STRUCTURES, SEDIMENT TRAPS, EARTHEN DIVERSIONS OR EMBANKMENTS SHALL BE SEEDDED AND MULCHED WITHIN 7 DAYS OF COMPLETED CONSTRUCTION.

TEMPORARY STABILIZATION	
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROL
ANY AREA WITHIN 50 FT OF A STREAM AND NOT AT FINAL GRADE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 21 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FT OF A STREAM	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA. FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S)
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO ONSET OF WINTER WEATHER (NOV 1) STRAW MULCH 2 TO 3 BALES PER 1000 SQ.FT. AND OR 2 TONS PER ACRE

PERMANENT STABILIZATION OF CONVEYANCE CHANNELS:

1. OPERATORS SHALL UNDERTAKE SPECIAL MEASURES TO STABILIZE CHANNELS AND OUTFALLS AND PREVENT EROSION FLOWS. MEASURES MAY INCLUDE SEEDING, DORMANT SEEDING (AS DEFINED IN THE LATEST EDITION OF UODNR RAINWATER AND LAND DEVELOPMENT MANUAL), MULCHING, EROSION CONTROL MATTING, SODDING, RIPRAP NATURAL CHANNEL DESIGN WITH BIO ENGINEERING TECHNIQUES OR ROCK CHECK DAMS.

TIMING:

1. SEDIMENT CONTROL STRUCTURES SHALL BE FUNCTIONAL THROUGHOUT THE COURSE OF EARTH DISTURBING ACTIVITY. SEDIMENT BASINS AND PERIMETER SEDIMENT BARRIERS SHALL BE IMPLEMENTED PRIOR TO GRADING AND WITHIN SEVEN DAYS FROM THE START OF GRUBBING. THEY SHALL CONTINUE TO FUNCTION UNTIL THE SLOPE DEVELOPMENT AREA IS PERMANENTLY RESTABILIZED. AS CONSTRUCTION PROGRESSES AND THE TOPOGRAPHY IS ALTERED, APPROPRIATE CONTROLS MUST BE CONSTRUCTED TO ADDRESS THE CHANGING DRAINAGE PATTERNS.

FILTER SOCK & DIVERSIONS:

1. SHEET FLOW RUNOFF FROM DENUDED AREAS SHALL BE INTERCEPTED BY FILTER SOCK OR DIVERSIONS TO PROTECT ADJACENT PROPERTIES AND WATER RESOURCES FROM SEDIMENT TRANSPORTED VIA SHEET FLOW. WHERE INTENDED TO PROVIDE SEDIMENT CONTROL, FILTER SOCKS SHALL BE PLACED ON A LEVEL CONTOUR. THE EPA PERMIT NO. 0H0000003 DOES NOT PRECLUDE THE USE OF OTHER SEDIMENT BARRIERS DESIGNED TO CONTROL SHEET FLOW RUNOFF. FILTER SOCK IS NOT PERMITTED TO BE USED FOR CONTROLLING CONCENTRATED SURFACEWATER FLOW (ONLY SHEET FLOW).
2. STORMWATER DIVERSION PRACTICES SHALL BE USED TO KEEP RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHERE PRACTICABLE. SUCH DEVICES, WHICH INCLUDE SWALES, DIKES OR BERMS, MAY RECEIVE FROM AREAS UP TO 10 ACRES.

INLET PROTECTION:

1. OTHER EROSION AND SEDIMENT CONTROL PRACTICES SHALL MINIMIZE SEDIMENT LADEN WATER ENTERING ACTIVE STORM DRAIN SYSTEMS, UNLESS THE STORM DRAIN SYSTEM DRAINS TO A SEDIMENT POND. INLET PROTECTION IS MANDATORY WHERE SEDIMENT SETTLING PONDS WILL NOT BE IMPLEMENTED.

NON-SEDIMENT POLLUTANTS CONTROLS:

1. NO SOLID (OTHER THAN SEDIMENT) OR LIQUID WASTE, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED IN STORMWATER RUNOFF. ALL NECESSARY BMP'S MUST BE IMPLEMENTED TO PREVENT THE DISCHARGE OF NON-SEDIMENT POLLUTANTS TO THE DRAINAGE SYSTEM OF THE SITE OR SURFACE WATERS OF THE STATE. UNDER NO CIRCUMSTANCE SHALL CONCRETE TRUCKS WASH OUT DIRECTLY INTO A DRAINAGE CHANNEL, STORM SEWER OR SURFACE WATERS OF THE STATE. NO EXPOSURE OF STORMWATER TO WASTE MATERIALS IS RECOMMENDED.

OFF-SITE TRAFFIC:

1. OFF-SITE VEHICLE TRACKING OF SEDIMENTS AND DUST GENERATION SHALL BE MINIMIZED.

TRENCH AND GROUND WATER CONTROL:

1. THERE SHALL BE NO TURBID DISCHARGES TO SURFACE WATERS OF THE STATE RESULTING FROM DEWATERING ACTIVITIES. IF TRENCH OR GROUND WATERS CONTAIN SEDIMENT, IT MUST PASS THROUGH A SEDIMENT SETTLING CONTROL DEVICE, PRIOR TO BEING DISCHARGED FROM THE CONSTRUCTION SITE. ALTERNATIVELY, SEDIMENT MAY BE REMOVED BY SETTLING IN PLACE OR DEWATERING INTO INTO A SUMP PIT, FILTER BAG OR COMPARABLE PRACTICE. GROUND WATER DEWATERING WHICH DOES NOT CONTAIN SEDIMENT OR OTHER POLLUTANTS ARE NOT REQUIRED TO BE TREATED PRIOR TO DISCHARGE, HOWEVER, CARE MUST BE TAKEN WHEN DISCHARGING GROUND WATER TO ENSURE THAT IT DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL THAT SHOWS THE EQUIPMENT THE CONTRACTOR INTENDS TO USE TO CLARIFY AND FILTER ANY WATER PUMPED FROM THE TRENCH TO THE STORM SEWER OR TO A SURFACE DRAINAGE FEATURE (DITCH/SWALE).
3. SEE <[HTTP://WWW.CLEARCREEKSYSTEMS.COM/FILTRATION/PFSERIES.HTM](http://www.clearcreeksystems.com/filtration/pfseries.htm)> FOR POTENTIAL EQUIPMENT "OR EQUAL". ALSO SEE CH. 5, P.33 OF "RAINWATER AND LAND DEVELOPMENT" MANUAL.

MAINTENANCE:

1. ALL TEMPORARY AND PERMANENT CONTROL PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ENSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED IN A FUNCTIONAL CONDITION UNTIL ALL UP SLOPE AREAS THEY CONTROL ARE PERMANENTLY STABILIZED. THE CONTRACTOR SHALL COMPLY WITH THE MAINTENANCE SCHEDULE INCLUDED IN THE APPROVED PLANS FOR THE PROPOSED EROSION CONTROLS. A WRITTEN DOCUMENT CONTAINING THE SIGNATURES OF ALL CONTRACTORS AND SUB-CONTRACTORS INVOLVED IN THE IMPLEMENTATION OF THE BMPS MUST BE MAINTAINED AS PROOF ACKNOWLEDGING THAT THEY REVIEWED AND UNDERSTAND THE CONDITIONS AND RESPONSIBILITIES OF THE SWP3.

INSPECTION:

1. ALL STORMWATER CONTROLS ON THE SITE ARE INSPECTED AT LEAST ONCE EVERY SEVEN CALANDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN ONE-HALF INCH OF RAIN PER 24 HOUR PERIOD. A WRITTEN RECORD DOCUMENTATING THE RESULTS OF THESE INSPECTIONS MUST BE CREATED AND MAINTAINED WITH THE SWP3. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF OR THE POTENTIAL FOR POLLUTANTS ENTERING THE EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE SWP3 SHALL BE OBSERVED TO ENSURE THAT THOSE ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO THE RECEIVING WATERS. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFF-SITE VEHICLE TRACKING.
 - I. WHEN PRACTICES REQUIRE REPAIR OR MAINTENANCE. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE IS IN NEED OF REPAIR OR MAINTENANCE, WITH EXCEPTION OF A SEDIMENT SETTLING POND, IT MUST BE REPAIRED OR MAINTAINED WITHIN THREE DAYS OF INSPECTION. SEDIMENT SETTLING PONDS MUST BE REPAIRED OR MAINTAINED WITHIN 10 DAYS OF THE INSPECTION.
 - II. WHEN PRACTICES FAIL TO PROVIDE THEIR INTENDED FUNCTION. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE FAILS TO PERFORM ITS INTENDED FUNCTION AND THAT ANOTHER, MORE APPROPRIATE CONTROL PRACTICE IS REQUIRED, THE SWP3, MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN 10 DAYS OF INSPECTION.
 - III. WHEN PRACTICES DEPICTED ON THE SWP3 ARE NOT INSTALLED. IF THE INSPECTION REVEALS THAT A CONTROL PRACTICE HAS NOT BEEN IMPLEMENTED IN ACCORDANCE WITH THE SWP3. THE SWP3 MUST BE AMENDED AND THE NEW CONTROL PRACTICE MUST BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION. IF THE INSPECTION REVEALS THAT THE PLANNED CONTROL PRACTICE IS NOT NEEDED, THE RECORD MUST CONTAIN A STATEMENT OF EXPLANATION AS TO WHY THE CONTROL PRACTICE IS NOT NEEDED.

WASTE DISPOSAL:

1. CONTAINERS (e.g., DUMPSTERS, DRUMS) SHALL BE AVAILABLE FOR DISPOSAL OF DEBRIS, TRASH, HAZARDOUS OR PETROLEUM WASTES. ALL CONTAINERS MUST BE COVERED AND LEAK-PROOF. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THE PERTINENT MATERIAL.

CLEAN HARD FILL:

1. BRICKS, HARDENING CONCRETE, AND SOIL WASTE SHALL BE FREE FROM CONTAMINATION WHICH MAY LEACH CONSTITUENTS TO WATERS OF THE STATE.
2. CLEAN CONSTRUCTION WASTES THAT WILL BE DISPOSED INTO THE PROPERTY, SHALL BE SUBJECT TO ANY LOCAL PROHIBITIONS FROM THIS TYPE OF DISPOSAL.

CONSTRUCTION & DEMOLITION DEBRIS:

1. ALL CONSTRUCTION & DEMOLITION DEBRIS (C&DD) WASTE SHALL BE DISPOSED OF IN AN OHIO EPA APPROVED C&DD LANDFILL AS REQUIRED BY OHIO REVISED CODE (ORC) 3714. ALSO, MATERIALS WHICH CONTAIN ASBESTOS MUST COMPLY WITH AIR POLLUTION REGULATIONS (SEE OHIO ADMINISTRATIVE CODE (OAC) 3745-20).

CONSTRUCTION CHEMICAL COMPOUNDS:

1. AREA SHALL BE DESIGNATED FOR MIXING OR STORAGE OF COMPOUNDS SUCH AS FERTILIZERS, LIME ASPHALT, OR CONCRETE. THESE DESIGNATED AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORMWATER DRAINAGE AREA.

EQUIPMENT FUELING & MAINTENANCE:

1. EQUIPMENT FUELING & MAINTENANCE SHALL BE IN DESIGNATED AREAS ONLY.

A SPILL PREVENTION CONTROL AND COUNTERMEASURES:

1. A SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN MUST BE DEVELOPED FOR SITES WITH ONE ABOVE-GROUND STORAGE TANK OF 660 GALLONS OR MORE, TOTAL ABOVE-GROUND STORAGE OF 1,330 GALLONS, OR BELOW-GROUND STORAGE OF 4,200 GALLONS OF FUEL.

CONCRETE WASH WATER:

1. ALL DESIGNATED CONCRETE WASHOUT AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORMWATER DRAINAGE AREAS.

CONTAMINATED SOILS:

1. ALL CONTAMINATED SOIL MUST BE TREATED AND/OR DISPOSED IN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITIES OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITIES (TSDFs).

SPILL REPORTING REQUIREMENTS:

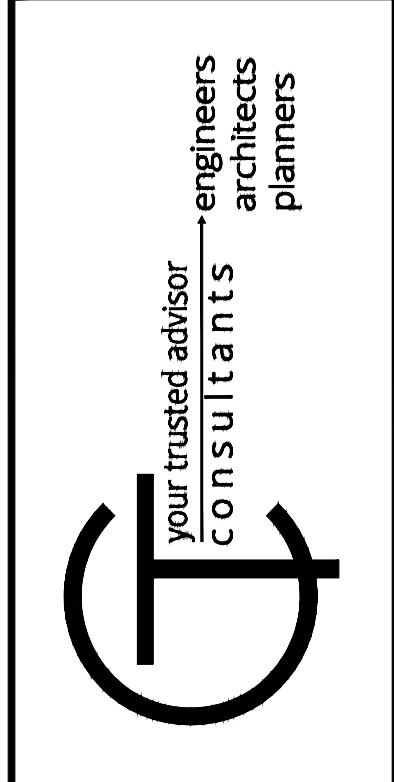
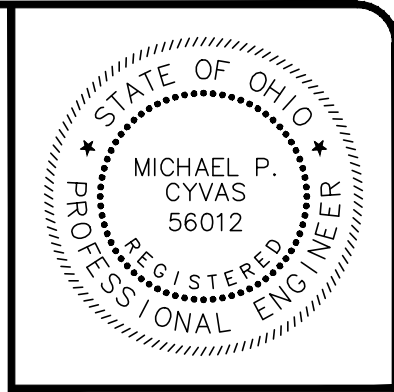
1. THE CONTRACTOR SHALL CONTACT THE OHIO EPA AT 800-282-9378, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE (216-771-1365) IN THE EVENT OF A PETROLEUM SPILL (>25 GALLONS) OR THE PRESENCE OF SHEEN.

OPEN BURNING:

1. OPEN BURNING IS NOT PERMITTED.

DUST CONTROLS/SUPPRESSANTS:

1. USED OIL MAY NOT BE USED AS A DUST SUPPRESSANT. NO DUST SUPPRESSANT SHALL BE APPLIED NEAR CATCH BASINS, STORM SEWERS OR OTHER DRAINAGE WAYS.



ISSUED FOR: UTILITY, COORD.	NO	DATE	REVISION
ISSUE DATE: 08/28/18			
SCALE: AS SHOWN			
DESIGNED BY: MFC/JPL			
DRAWN BY: MFC/JPL			
CHECKED BY: XXX			

ERIE STREET WATER LINE REPLACEMENT
LAKE COUNTY DEPARTMENT OF UTILITIES
 - WILLOUGHBY -
SWPPP GENERAL NOTES

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	SWPPP-01
SHEET	OF
18	20

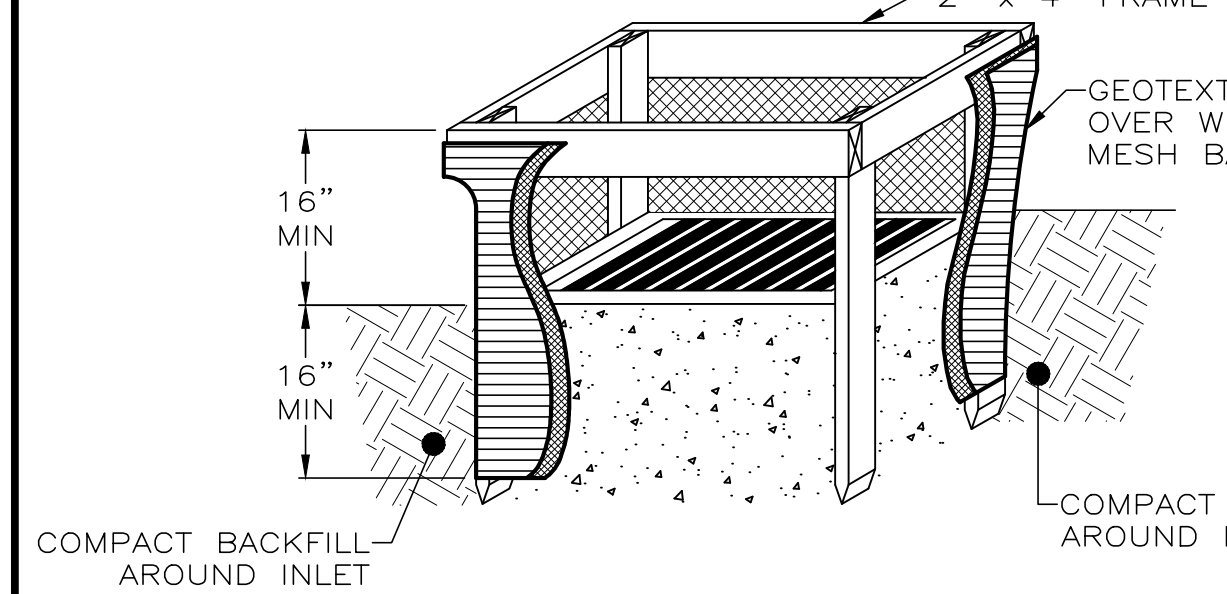
SEEDING DATES	SPECIES	POUNDS/1,000 SF	POUNDS/ACRE	NOTES
MAR. 1 TO AUG. 15	OATS	3	128 (4 BU)	FOR CLOSE MOWING & WATERWAYS WITH <2.0 FT/SEC VELOCITY
	TALL FESCUE	1	40	
	ANNUAL RYEGRASS	1	40	
	PERENNIAL RYEGRASS	1	40	
	TALL FESCUE	1	40	
	ANNUAL RYEGRASS	1	40	
	PERENNIAL RYEGRASS	1.25	55	
	PERENNIAL RYEGRASS	3.25	142	
	CREeping RED FESCUE	0.4	17	
	KENTUCKY BLUEGRASS	0.4	17	
AUG. 16TH TO NOV.	OATS	3	128 (3 BU)	DO NOT SEED LATER THAN AUGUST
	TALL FESCUE	1	40	
	ANNUAL RYEGRASS	1	40	
	WHEAT	3	120 (2 BU)	
	TALL FESCUE	1	40	
	ANNUAL RYEGRASS	1	40	
	PERENNIAL RYE	1	40	
	TALL FESCUE	1	40	
	ANNUAL RYEGRASS	1	40	
	ANNUAL RYEGRASS	1.25	40	
PERENNIAL RYEGRASS	3.25	40		
CREeping RED FESCUE	0.4	40		
KENTUCKY BLUEGRASS	0.4	40		

GENERAL USE:	POUNDS/ACRE	POUNDS/1,000 SF	NOTES
CREeping RED FESCUE	20-40	1/2-1	FOR CLOSE MOWING & WATERWAYS WITH <2.0 FT/SEC VELOCITY
DOMESTIC RYEGRASS	10-20	1/4-1/2	
KENTUCKY BLUEGRASS	20-40	1/2-1	
TALL FESCUE	40-50	1-1 1/4	
TURF-TYPE (DWARF) FESCUE	90	2 1/4	
STEep BANKS OR CUT SLOPES:			
TALL FESCUE	40-50	1-1 1/4	
CROWN VETCH	10-20	1/4-1/2	
TALL FESCUE	20-30	1/2-3/4	DO NOT SEED LATER THAN AUGUST
FLAT PEA	20-25	1/2-3/4	
TALL FESCUE	20-30	1/2-3/4	DO NOT SEED LATER THAN AUGUST
ROAD DITCHES AND SWALES:			
TALL FESCUE	40-50	1-1 1/4	
TURF-TYPE:			
(DWARF) FESCUE	90	2 1/4	
KENTUCKY BLUEGRASS	5	0.1	
LAWNS:			
KENTUCKY BLUEGRASS	100-120	2	
PERENNIAL RYEGRASS	100-120	2	
KENTUCKY BLUEGRASS	100-120	2	
CREeping RED FESCUE		1-1/2	FOR SHADED AREAS

NOVEMBER 1 TO FEB. 29 USE MULCH ONLY OR DORMANT SEEDING
 NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED.

NOTE: STRAW MULCHING SHALL BE APPLIED AT A RATE OF 90 POUNDS PER 1,000 SF OF DISTURBED AREA OR TWO (2) TONS/ACRE. ALL HYDROSEEDING MUST BE WOOD CELLULOSE FIBER AND APPLIED AT 2,000 LBS/AC OR 46 POUNDS PER 1,000 SF.

SEEDING CHARTS

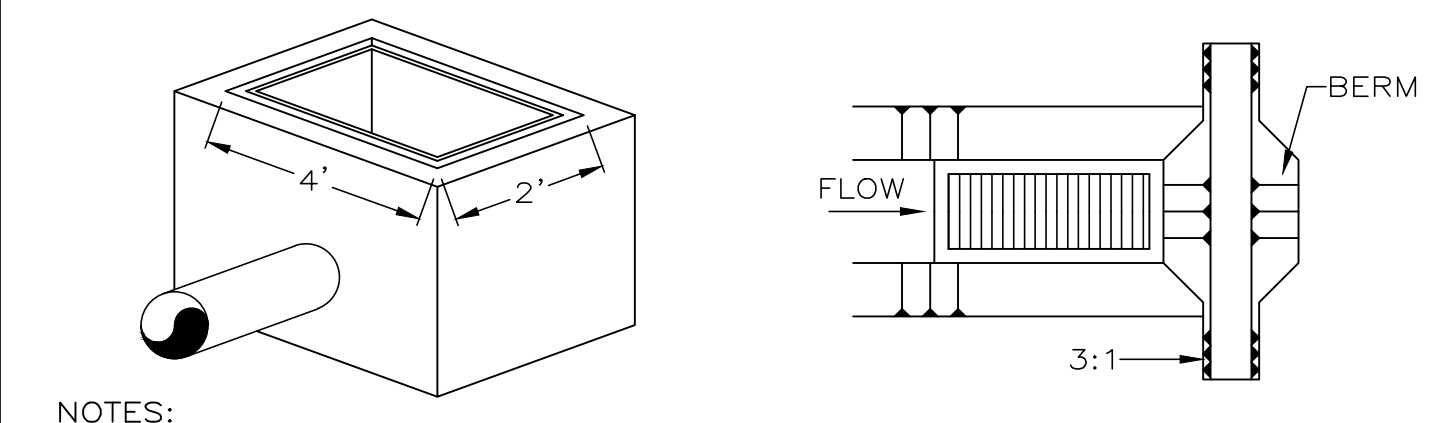
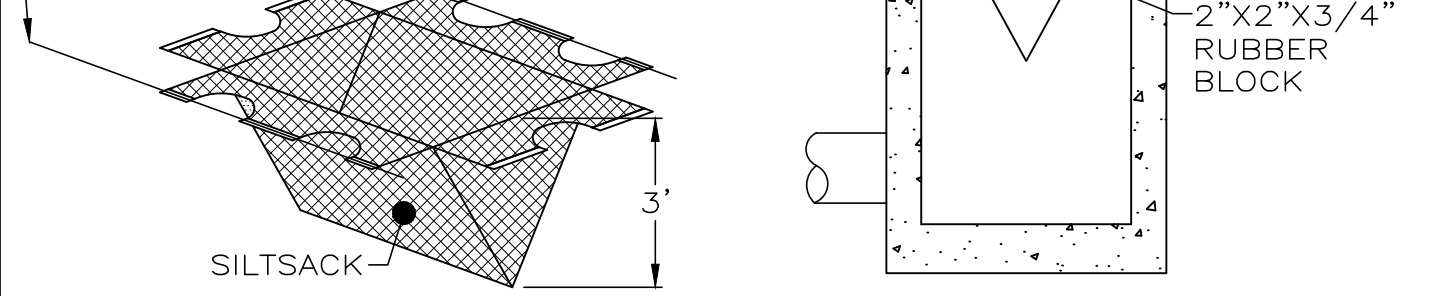
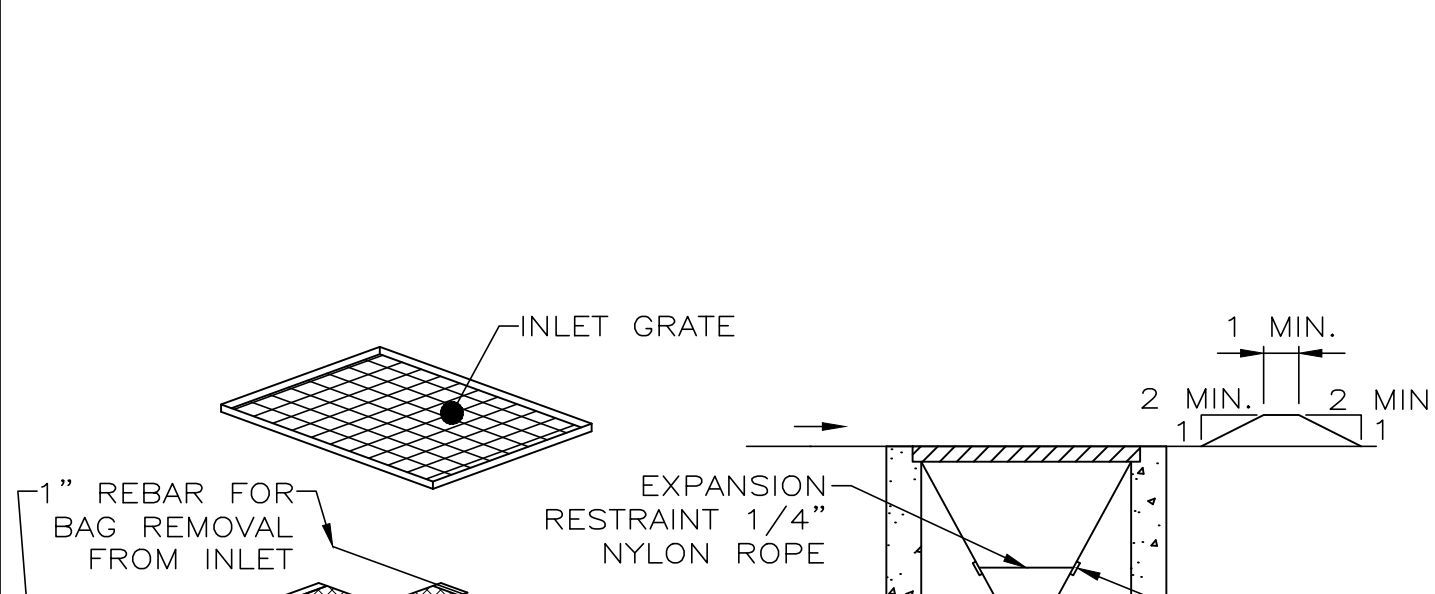


NOTES FOR INLET PROTECTION IN SWALES, DITCH LINES OR YARD INLETS:

- INLET PROTECTION SHALL BE CONSTRUCTED EITHER BEFORE UPSLOPE LAND DISTURBANCE BEGINS OR BEFORE THE STORM DRAIN BECOMES OPERATIONAL.
- THE EARTH AROUND THE INLET SHALL BE EXCAVATED COMPLETELY TO A DEPTH AT LEAST 16 INCHES.
- THE WOODEN FRAME SHALL BE CONSTRUCTED OF 2-BY-4-INCH CONSTRUCTION-GRADE LUMBER. THE 2-BY-4-INCH POSTS SHALL BE DRIVEN 18 INCHES INTO THE GROUND AT FOUR CORNERS OF THE INLET AND THE TOP PORTION OF 2-BY-4-INCH FRAME ASSEMBLY USING THE OVERLAP JOINT SHOWN. THE TOP OF THE FRAME SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.
- WIRE MESH SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT FABRIC WITH WATER FULLY IMPOUNDED AGAINST IT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY TO THE FRAME.
- GEOTEXTILE SHALL HAVE AN EQUIVALENT OPENING SIZE OF 20-40 SIEVE AND BE RESISTANT TO SUNLIGHT. IT SHALL BE STRETCHED TIGHTLY AROUND THE FRAME AND FASTENED SECURELY. IT SHALL EXTEND FROM THE TOP OF THE FRAME TO 18 INCHES BELOW THE INLET NOTCH ELEVATION. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
- BACKFILL SHALL BE PLACED AROUND THE INLET IN COMPACTED 6 INCH LAYERS UNTIL THE EARTH IS EVEN WITH NOTCH ELEVATION ON ENDS AND TOP ELEVATION ON SIDES.
- A COMPACTED EARTH DIKE OR A CHECK DAM SHALL BE CONSTRUCTED IN THE DITCH LINE BELOW THE INLET IF THE INLET IS NOT IN A DEPRESSION AND IF RUNOFF BYPASSING THE INLET WILL NOT FLOW TO A SETTLING POND. THE TOP OF EARTH DIKES SHALL BE AT LEAST 6 INCHES HIGHER THAN THE TOP OF THE FRAME.

INLET PROTECTION DETAIL

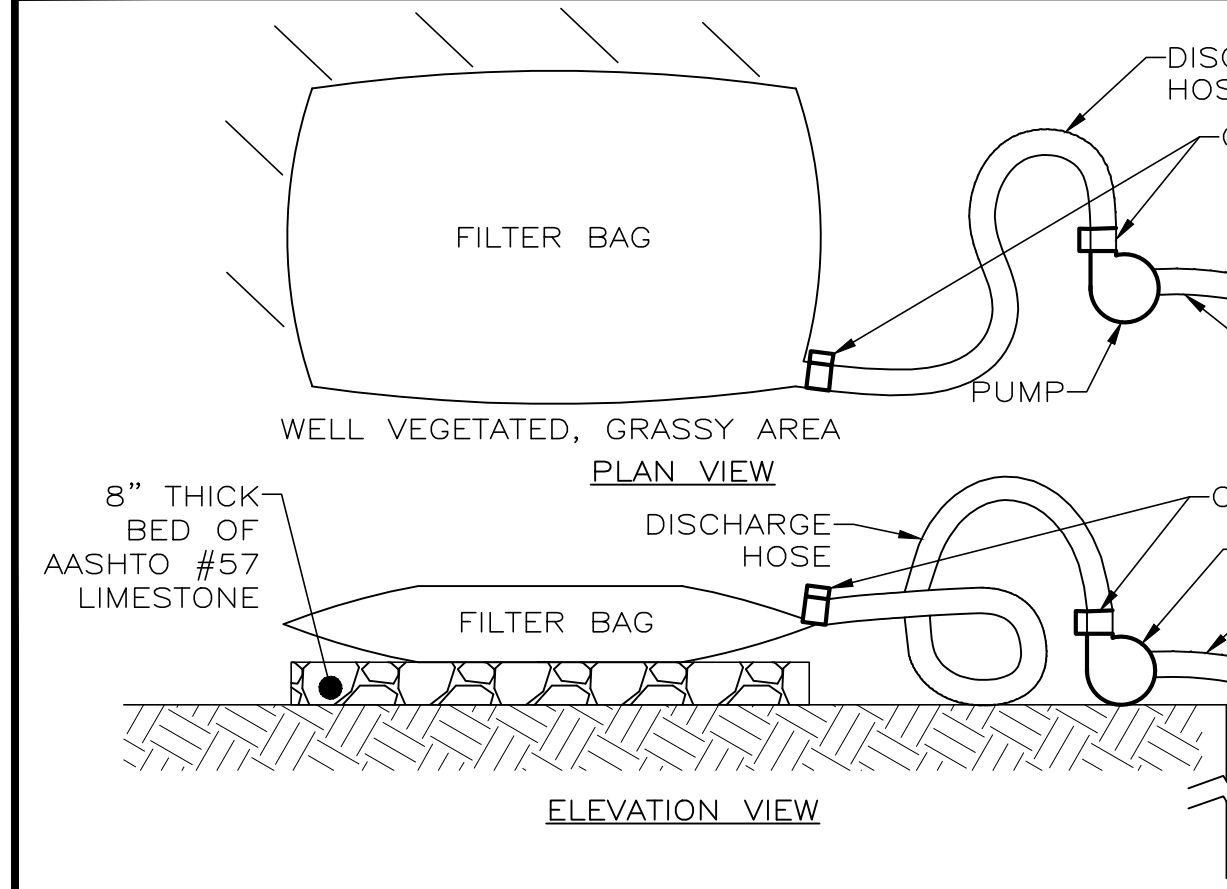
NOT TO SCALE



- NOTES:**
- MAXIMUM DRAINAGE AREA = 1/2 ACRE.
 - INLET PROTECTION IS NOT REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP.
 - BERMS REQUIRED FOR ALL INSTALLATIONS.
 - EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

SILTSACK DETAIL

NOT TO SCALE



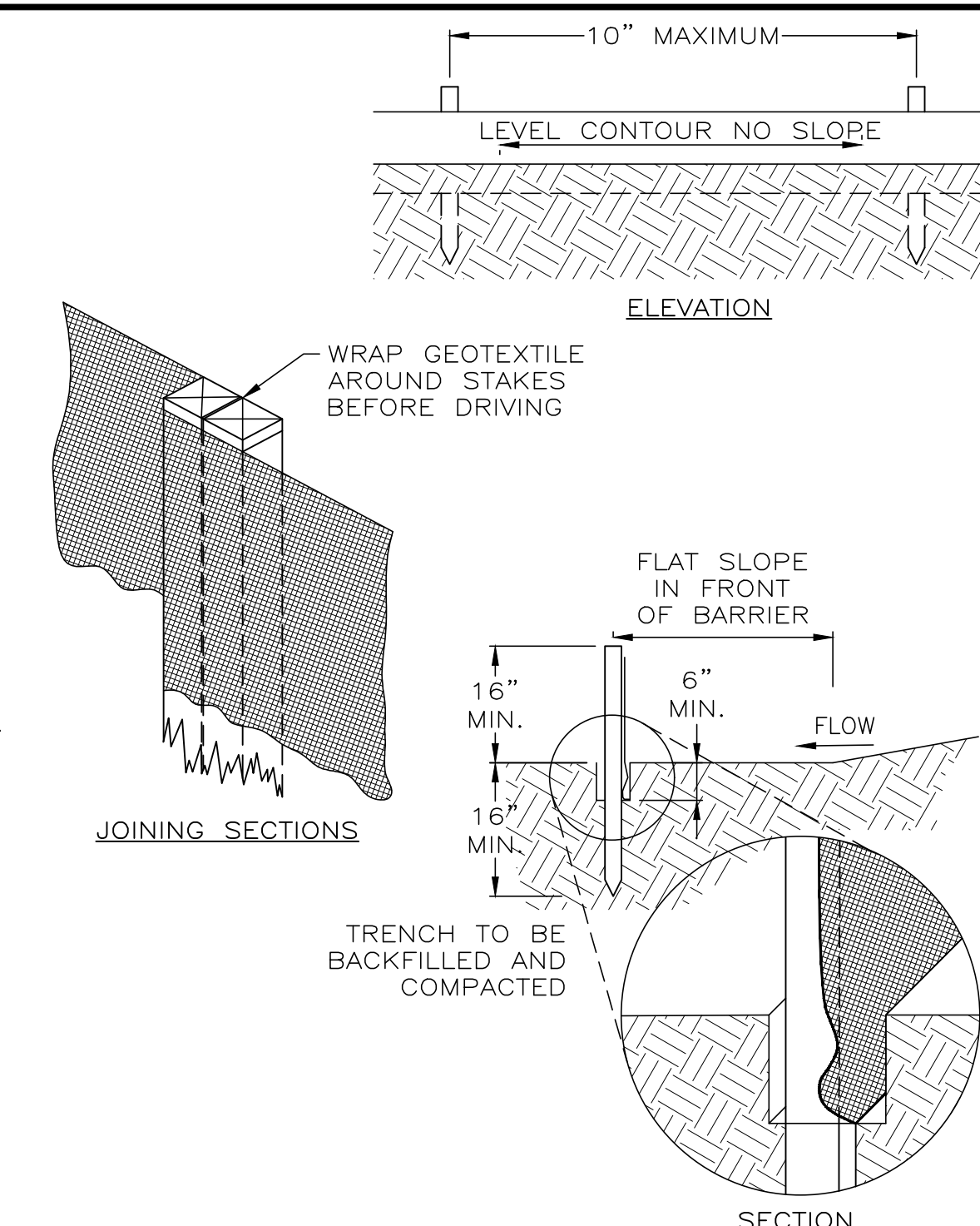
PUMPED WATER FILTER BAG DETAIL

NOT TO SCALE

- NOTES:**
- USE FILTER BAGS MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS, CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
 - A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED. REPLACE FILTER BAGS WHEN THEY BECOME 1/2 FULL. KEEP SPARE BAGS AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED.
 - PLACE BAGS IN WELL-VEGETATED (GRASSY) AREAS, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, PROVIDE A GEOTEXTILE FLOW PATH. DO NOT PLACE BAGS ON SLOPES GREATER THAN 5%.
 - INSERT PUMP DISCHARGE HOSE INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.
 - THE PUMPING RATE SHOULD BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
 - INSPECT FILTER BAGS DAILY. IF ANY PROBLEM IS DETECTED, CEASE PUMPING IMMEDIATELY AND DO NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

FABRIC-SILT FENCE NOTES:

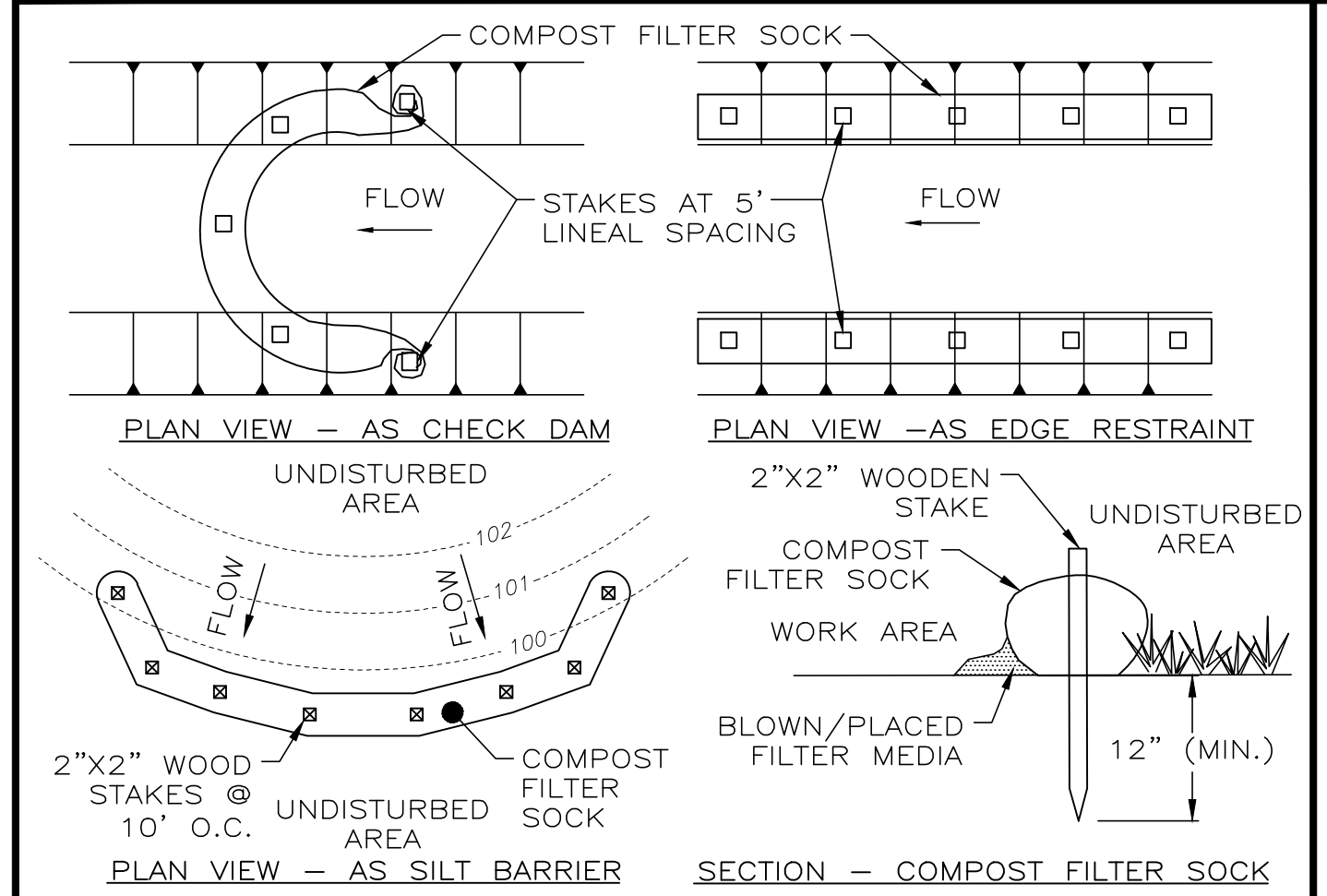
- SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
- ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
- TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
- WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
- SILT FENCE HEIGHT SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
- THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.
- THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 INCHES OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6-INCH-DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.
- SEAMS BETWEEN SECTION OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.
- SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY 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, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE:
 - THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED.
 - ACCUMULATED SEDIMENT SHALL BE REMOVED, OR
 - OTHER PRACTICES SHALL BE INSTALLED.
- SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE. SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED IMMEDIATELY.
- CRITERIA FOR SILT FENCE MATERIALS:
 - FENCE POSTS - THE LENGTH SHALL BE A MINIMUM OF 32 INCHES LONG. WOOD POSTS WILL BE 2 X 2 INCH HARDWOOD OF SOUND QUALITY. THEY SHALL BE FREE OF KNOTS, SPLITS AND OTHER VISIBLE IMPERFECTIONS THAT WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 FEET. POSTS SHALL BE DRIVEN A MINIMUM OF 16 INCHES INTO THE GROUND WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
 - SILT FENCE FABRIC - SEE CHART TO THE RIGHT.



MINIMUM CRITERIA FOR SILT FENCE FABRIC (ODOT, 2003)		
FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LBS	ASTM D 4632
MAXIMUM ELONGATION AT 60 LBS	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS	ASTM D 4833
MINIMUM TEAR STRENGTH	40 PSI	ASTM D 4533
APPARENT OPENING SIZE	≤ 0.84 mm	ASTM D 4751
MINIMUM PERMITTIVITY	1x10 ⁻² sec ⁻¹	ASTM D 4491
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355

FABRIC SILT FENCE DETAIL

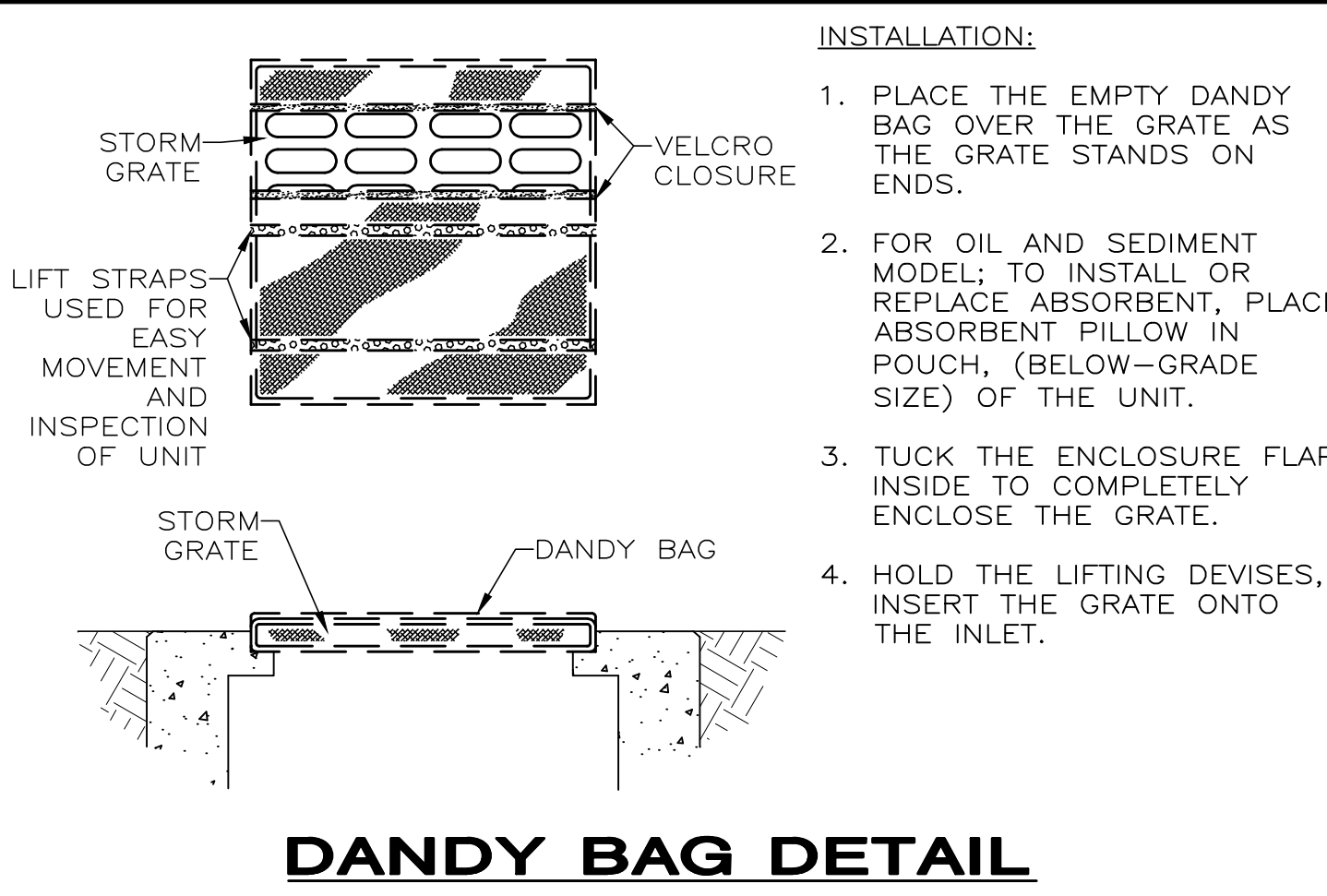
NOT TO SCALE



COMPOST FILTER SOCK

NOT TO SCALE

- NOTES:**
- THIS PROJECT REQUIRES THE USE OF 8" DIA. COMPOST FILTER SOCK. SOCK FABRIC, COMPOST, USAGE, AND MAINTENANCE SHALL MEET AND FOLLOW THE STANDARDS OF THE LATEST VERSION OF THE OHIO RAINWATER AND LAND DEVELOPMENT MANUAL. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCK.
 - COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8' UP SLOPE AT 45° TO THE MAIN SOCK ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY SOCK SHALL NOT EXCEED THAT SHOWN IN THE OHIO RAINWATER AND LAND DEVELOPMENT MANUAL.
 - SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED IN THE OHIO RAINWATER AND LAND DEVELOPMENT MANUAL. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
 - BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.



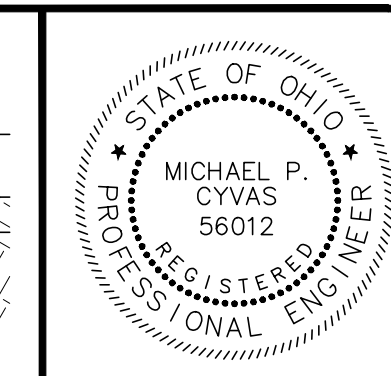
DANDY BAG DETAIL

NOT TO SCALE

- INSTALLATION:**
- PLACE THE EMPTY DANDY BAG OVER THE GRATE AS THE GRATE STANDS ON ENDS.
 - FOR OIL AND SEDIMENT MODEL: TO INSTALL OR REPLACE ABSORBENT, PLACE ABSORBENT PILLOW IN POUCH, (BELOW-GRADE SIZE) OF THE UNIT.
 - TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE.
 - HOLD THE LIFTING DEVICES, INSERT THE GRATE ONTO THE INLET.
- MAINTENANCE:**
- THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH RAIN EVENT OR AS DIRECTED BY THE ENGINEER/INSPECTOR. DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.
 - FOR OIL AND SEDIMENT MODEL: REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION.

DANDY CURB BAG DETAIL

NOT TO SCALE



your trusted advisor
 engineers
 architects
 planners
 consultants

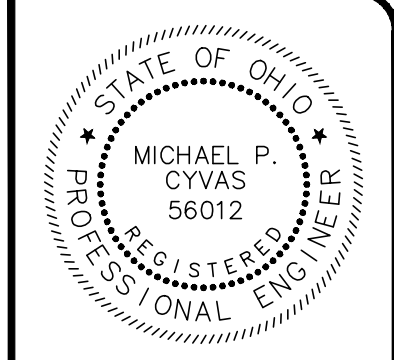
NO.	DATE	REVISION

ISSUED FOR/UTILITY COORD.	ISSUE DATE:	SCALE:	DESIGNED BY:	MPC	MPC/JPL	CHECKED BY:	XXX
	08/28/18	AS SHOWN					

ERIE STREET WATER LINE REPLACEMENT
 LAKE COUNTY DEPARTMENT OF UTILITIES
 - WILLOUGHBY -

SWPPP DETAILS

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	SWPPP-02
SHEET	OF
19	20

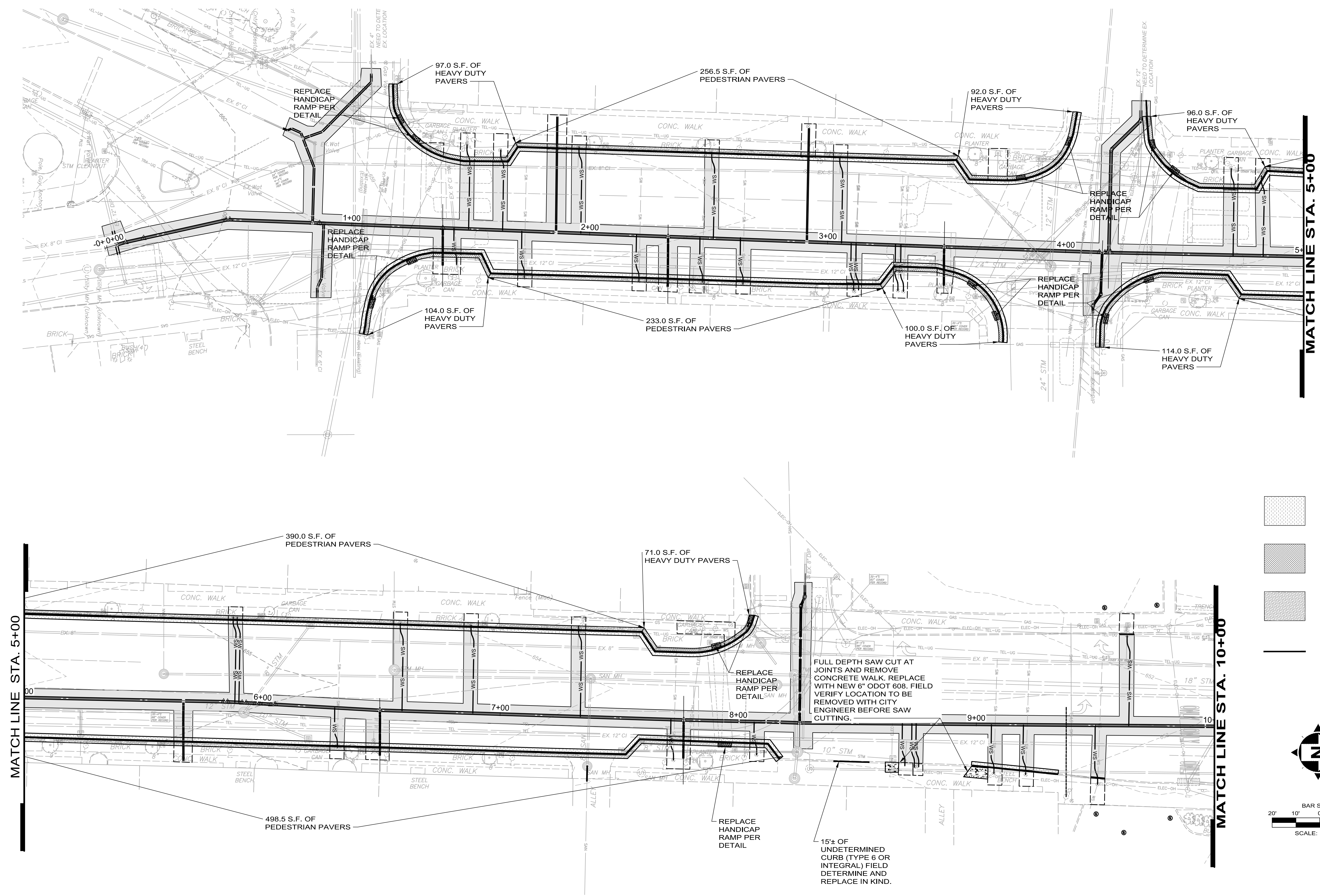


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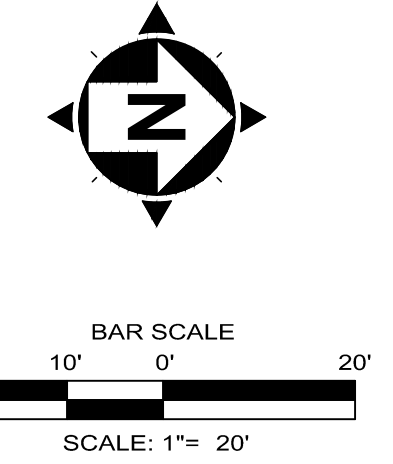
NO	REVISION	DATE

ERIE STREET WATER LINE REPLACEMENT OF UTILITIES - WILLOUGHBY - DOWNTOWN IMPROVEMENTS

PROJECT NO.	180608
DISCIPLINE	CIVIL
SHEET NAME	DTI-01
SHEET	20
OF	20



- TYPE C PAVEMENT REPLACEMENT, 18" WIDTH PER DETAILS 260 S.F. TOTAL
- HEAVY DUTY CLAY BRICK PAVEMENT REPLACEMENT, 18" WIDTH PER DETAILS 674 S.F. TOTAL
- PEDESTRIAN CLAY BRICK PAVEMENT REPLACEMENT, 18" WIDTH PER DETAILS 1,378 S.F. TOTAL
- TYPE 6 CURB, MODIFIED REPLACEMENT - included in the per unit cost for the various waterline trench repairs and Pedestrian Clay Brick Pavement (pavers) Replacement Items.



FULL DEPTH SAW CUT AT JOINTS AND REMOVE CONCRETE WALK. REPLACE WITH NEW 6" ODOT 608. FIELD VERIFY LOCATION TO BE REMOVED WITH CITY ENGINEER BEFORE SAW CUTTING.

15± OF UNDETERMINED CURB (TYPE 6 OR INTEGRAL) FIELD DETERMINE AND REPLACE IN KIND.