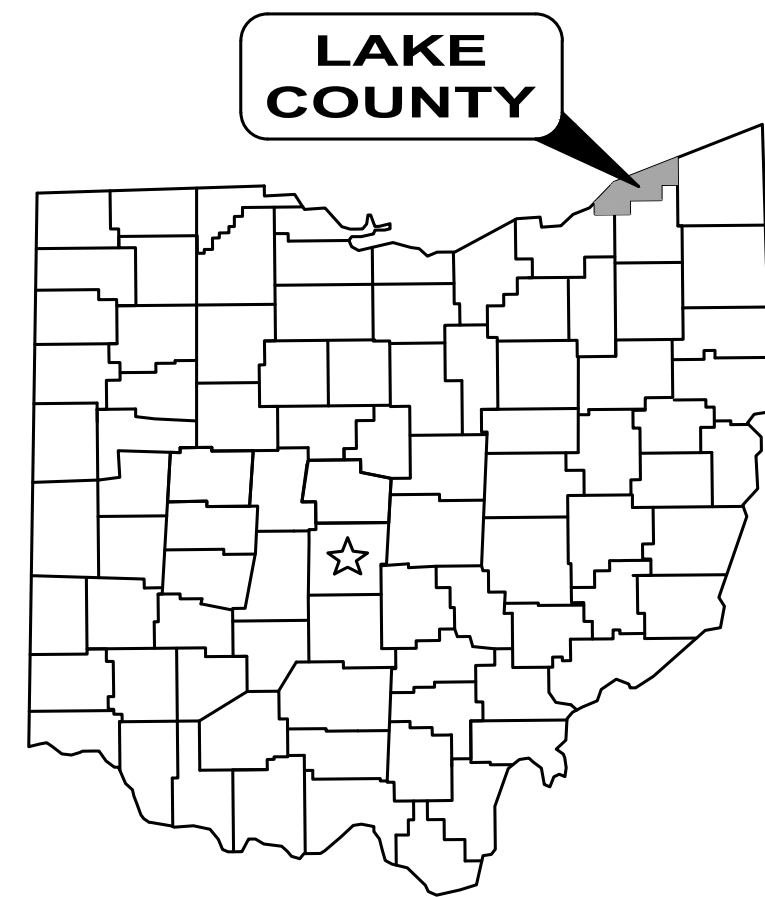


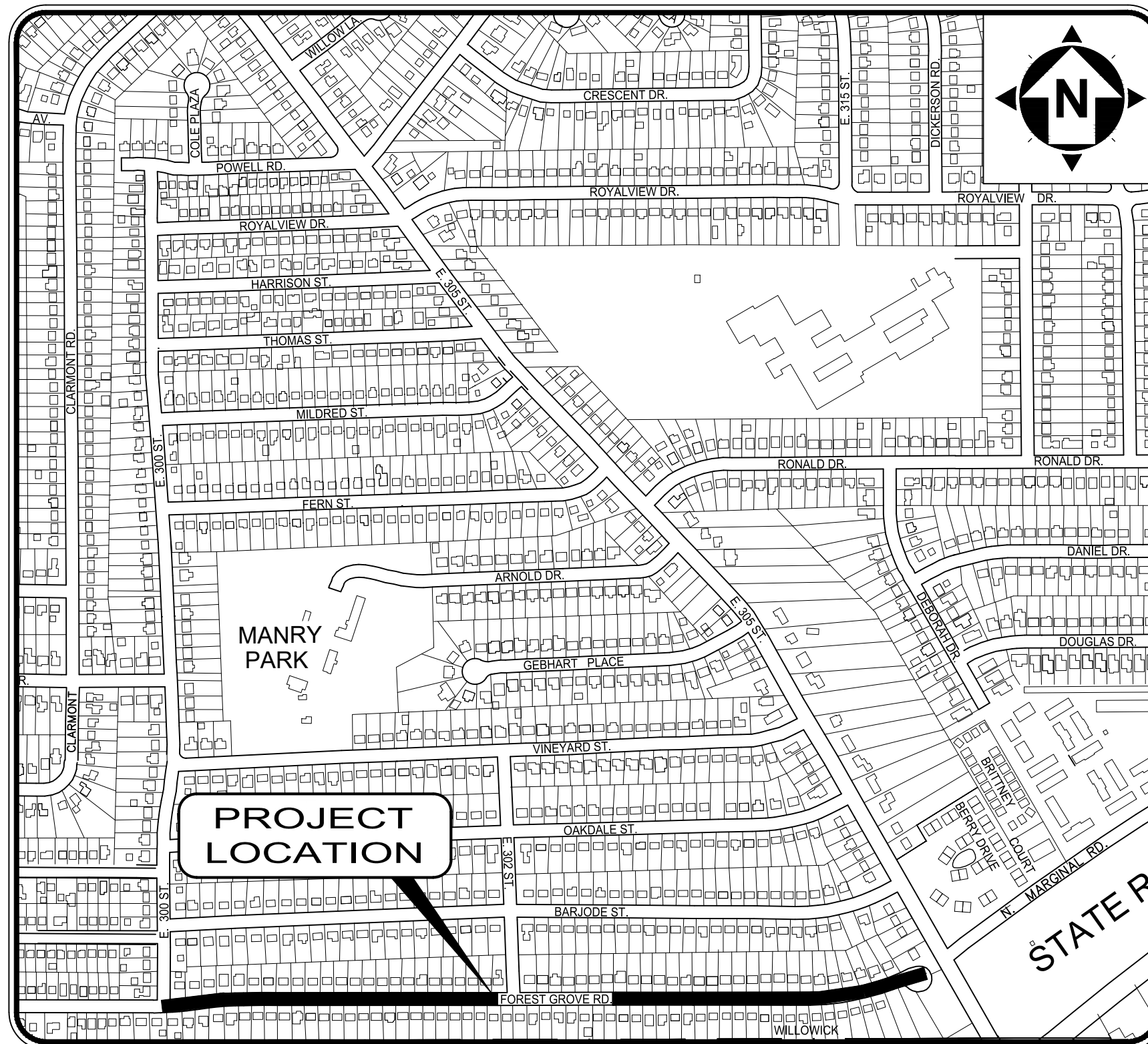
# THE CITY OF WILLOWICK

## FORESTGROVE SEWER IMPROVEMENTS: PHASE 1

### LAKE COUNTY, OHIO



AUGUST 2025



LOCATION MAP

NOT TO SCALE

#### CITY COUNCIL:

MS. MONICA KOUDELA	COUNCIL PRESIDENT
MR. PATRICK MOHORCIC	COUNCIL MEMBER
MS. NATALIE ANTOSH	COUNCIL MEMBER
MS. THERESA BISBEE	COUNCIL MEMBER
MR. CHARLIE MALTA	COUNCIL MEMBER
MR. DAVID PHARES	COUNCIL MEMBER
MR. DEVON MCFARLAND	COUNCIL MEMBER



#### OHIO 811 DESIGN SERIAL NUMBERS & UTILITY MEMBER LIST:

1. THE ILLUMINATING COMPANY
  2. DOMINION ENERGY OHIO
  3. LAKE COUNTY DEPARTMENT OF UTILITIES
  4. AT&T OHIO
  5. THE CITY OF WILLOWICK
1. UNDERGROUND BUILDING SERVICE UTILITY LINES ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING, MAINTAINING AND REPLACING AS NECESSARY TO ENSURE CONTINUAL SERVICE TO BUILDINGS.
  2. THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.



ENGINEER'S PROJECT No. 31882

#### OWNER:

THE CITY OF WILLOWICK  
30435 LAKESHORE BOULEVARD  
WILLOWICK, OH 44095  
(440) 585-3700 PHONE

#### PROJECT SITE:

FORESTGROVE RD  
BETWEEN E. 300TH ST AND THE  
CUL-DE SAC AT THE EAST END  
ADJACENT TO E. 305TH ST

#### CITY OFFICIALS:

MR. MICHAEL J. VANNI	CITY MAYOR / SAFETY DIRECTOR
MR. TODD SHANNON	SERVICE DIRECTOR
MS. CHERYL BENEDICT	FINANCE DIRECTOR
MS. MANDY GWIRTZ	LAW DIRECTOR
MS JULIE KLESS	DIRECTOR OF RECREATION
MR. ROB DAUBEMIRE	POLICE CHIEF
MR. BILL MALOVRH	FIRE CHIEF
MR. SEAN BRENNAN	CHIEF HOUSING AND ZONING INSPECTOR

#### ENGINEER:

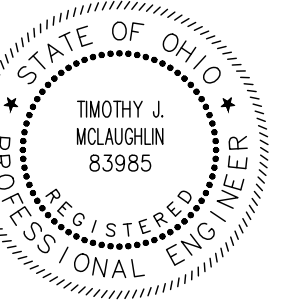
VERDANTAS  
8150 STERLING COURT  
MENTOR, OH 44060

(440) 951-9000 PHONE  
(440) 951-7487 FAX

TIMOTHY MCLAUGHLIN

P.E. No. E-83985

7/28/2025  
DATE



DATE	REVISION	NO	REVISED FOR	ISSUE DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
				6/10/2025	AS NOTED	TJM	ELE	TJM

FORESTGROVE SEWER  
IMPROVEMENTS: PHASE 1  
LAKE COUNTY, OHIO  
CITY OF WILLOWICK  
GENERAL - 00 SERIES  
COVER SHEET

PROJECT NO.	31882
DISCIPLINE	GENERAL
SHEET NAME	00G-01
SHEET	OF
1	26

EXISTING PLAN LINE SYMBOLOGY: EXISTING PLAN SYMBOLOGY:

	FENCE, GENERAL		SANITARY MANHOLE		ELECTRIC RISER BOX
	FENCE, BARBED WIRE		SANITARY CLEANOUT		ELECTRIC TRANSFORMER
	FENCE, CHAIN LINK		SANITARY LINE CAP		ELECTRIC HVAC UNIT
	FENCE, DECORATIVE		SANITARY LINE PAINT MARKING		ELECTRIC GROUND LIGHT
	FENCE, ELECTRIC		SANITARY STRUCTURE NUMBER		ELECTRIC LINE PAINT MARKING
	FENCE, VINYL		SANITARY VENT PIPE		CABLE TV MANHOLE
	FENCE, WOOD		STORM MANHOLE (SOLID LID)		CABLE TV PEDESTAL
	FENCE, WOVEN WIRE		STORM MANHOLE (OPEN GRATE)		CABLE TV PAINT MARKING
	CABLE RAIL		CURB INLET		TELEPHONE MANHOLE
	GUARDRAIL		CURB INLET (DOUBLE)		TELEPHONE PULL BOX
	HANDRAIL		CATCH BASIN		TELEPHONE PEDESTAL
	TELEPHONE, ABANDONED		CATCH BASIN (ROUND LID)		TELEPHONE RISER BOX
	TELEPHONE		CATCH BASIN (DOME)		TELEPHONE LINE PAINT MARKING
	TELEPHONE, OH		CATCH BASIN (SIDE INLET)		TELEPHONE PAY PHONE
	TELEPHONE, UG		DRAIN		FIBER OPTIC CABLE MANHOLE
	TELEPHONE, SERVICE		DOWNSPOUT		FIBER OPTIC CABLE PAINT MARKING
	TELEPHONE, SERVICE OH		STORM CLEANOUT		TRAFFIC CONTROL MANHOLE
	TELEPHONE, SERVICE, UG		STORM LINE CAP		TRAFFIC CONTROL BOX
	ELECTRIC, ABANDONED		ELECTRIC, ENDWALL		TRAFFIC CONTROL PAINT MARKING
	ELECTRIC, DUCT BANK		STORM HEADWALL		TRAFFIC PULL BOX
	ELECTRIC		STORM LINE PAINT MARKING		TRAFFIC SIGNAL PEDESTAL
	ELECTRIC, OH		STORM STRUCTURE NUMBER		UNKNOWN, PULL BOX
	ELECTRIC, UG		ROCK CHANNEL PROTECTION		UNKNOWN, CLEANOUT
	ELECTRIC, SERVICE		SURFACE DRAINAGE FLOW		UNKNOWN, MANHOLE
	ELECTRIC, SERVICE OH		STORM FLOOD ROUTING ARROW		UNKNOWN, VALVE
	ELECTRIC, SERVICE, UG		FIRE HYDRANT		MONITORING WELL
	GAS, ABANDONED		WATER SIAMESE CONNECTION		TEST WELL
	GAS		WATER VALVE		WATER WELL
	GAS, SERVICE		WATER VALVE BOX		SOIL BORING
	SANITARY, ABANDONED		WATER METER		SWAMP
	SANITARY FORCE MAIN		WATER METER PIT		POLE, ELECTRIC
	SANITARY SEWER		WATER LINE REDUCER		POLE, TELEPHONE
	SANITARY LEACH LINE		WATER LINE CAP		POLE, LIGHT
	SANITARY SEWER, DOUBLE		WATER LINE PLUG		POLE, LIGHT, DECORATIVE
	SANITARY SEWER, SERVICE		WATER LINE PAINT MARKING		POLE, LIGHT-OVERHEAD
	STORM CULVERT		POST INDICATOR VALVE		POLE, CABLE TV
	TELEPHONE, ABANDONED		WATER MANHOLE		POLE, UTILITY
	TELEPHONE		WATER FLUSHING ASSEMBLY		POLE, GENERAL
	TELEPHONE, OH		WATER FIXTURE		POLE, TRAFFIC CONTROL
	TELEPHONE, UG		WATER FITTING (TEE)		POLE, GUY
	TELEPHONE, SERVICE		WATER FITTING (CROSS)		POLE, BRACE
	TELEPHONE, SERVICE OH		WATER FITTING (45° WYE)		POLE, ELECTRIC/TELEPHONE
	TELEPHONE, SERVICE, UG		WATER FITTING (11.25°)		POLE, ELECTRIC W/LIGHT
	COMMUNICATION LINE		WATER FITTING (45°)		POLE, ELECTRIC/CABLE TV
	WATER LINE, ABANDONED		WATER FITTING (22.50°)		POLE, ELECTRIC/TELEPHONE/LIGHT
	WATER LINE		WATER FITTING (90°)		POLE, ELECTRIC/TELEPHONE/CABLE TV
	WATER LINE, SERVICE		IRRIGATION SPRINKLER HEAD		POLE, ELEC./TELE./LIGHT/CABLE TV
	NON-POTABLE WATER LINE		IRRIGATION CONTROL BOX		POLE, TELEPHONE/LIGHT
	ALUM SOLUTION LINE		IRRIGATION BOX		POLE, TELEPHONE/CABLE TV
	CHLORINE SOLUTION LINE		STEAM MANHOLE		POLE, TELEPHONE/LIGHT/CABLE TV
	SULFUR DIOXIDE SOLUTION LINE		STEAM VENT		POLE, CABLE TV W/LIGHT
	BRUSH LINE		COMBINED SEWER MANHOLE		POLE, GUY WIRE
	BUSH LINE		GAS LIGHT POST (YARD)		SIGN
	TREE LINE		GAS MANHOLE		SIGN, DOUBLE SIDED
	MAJOR CONTOUR		GAS VALVE		SIGN, DUAL POST
	MINOR CONTOUR		GAS VALVE BOX		SIGN, RAILROAD
	TOP OF BANK		GAS METER		POST
	TOP OF DITCH		GAS REGULATOR		BOLLARD
	BOTTOM OF DITCH		GAS VENT PIPE		DELINEATOR POST
	STREAM		GAS LINE PAINT MARKING		PARKING BUMPER BLOCK
	PROPERTY LINE		GAS LINE FIXTURE		HANDICAP PARKING SYMBOL
	RIGHT-OF-WAY LINE		ELECTRIC LIGHT POST (YARD)		HANDICAP PARKING SYMBOL
	RIGHT-OF-WAY CL		ELECTRIC MANHOLE		HANDICAP DETECTABLE WARNING
	SURVEY STATIONING		ELECTRIC PULL BOX		MAILBOX
	PAVED ROADWAY		ELECTRIC CONTROL BOX		
	GRAVEL DRIVEWAY		ELECTRIC JUNCTION BOX		
	CURB FACE		ELECTRIC VAULT BOX		
	CURB BACK		ELECTRIC METER		
	CURB BACK		ELECTRIC PEDESTAL		
	WETLAND AREA				

PROPOSED PLAN LINE SYMBOLOGY:

(REHABILITATED EXISTING)

	SANITARY SEWER
	STORM SEWER

PROPOSED PLAN SYMBOLOGY:

	SANITARY MANHOLE
	STORM MANHOLE (SOLID LID)
	CURB INLET
	CURB INLET (DOUBLE)
	CATCH BASIN

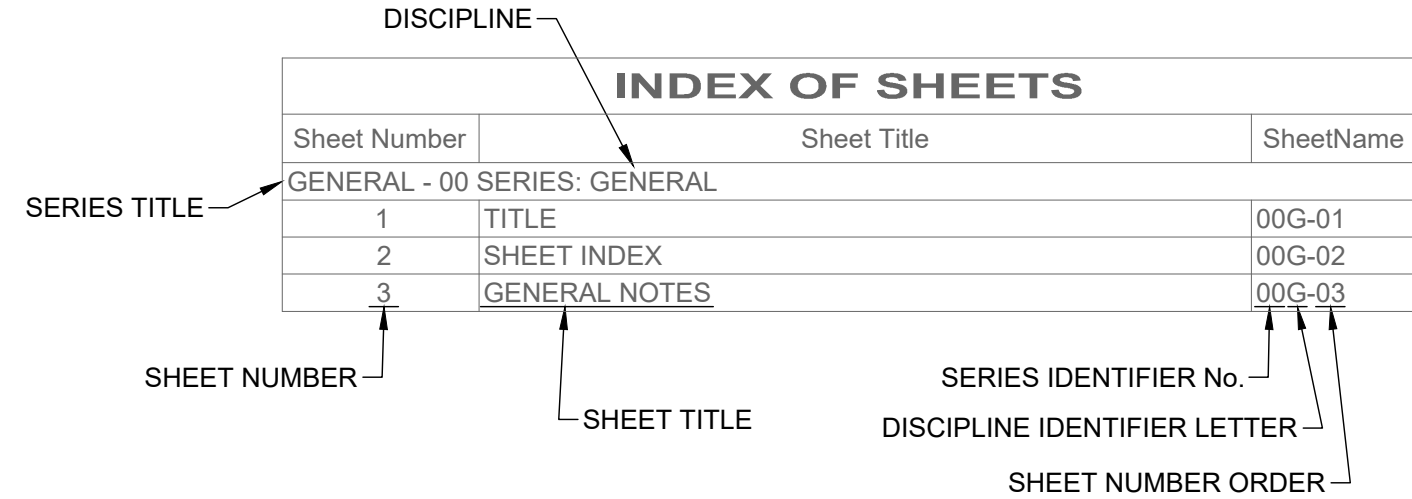
SERIES INFORMATION:

GENERAL - 00 SERIES  
CIVIL - 10 SERIES  
EROSION CONTROL - 20 SERIES

DISCIPLINE INFORMATION:

IDENTIFIER:	DISCIPLINE:
G C S A D M E Y EC	GENERAL CIVIL STRUCTURAL ARCHITECTURAL PROCESS MECHANICAL (PLUMBING & HVAC) ELECTRICAL INSTRUMENTATION EROSION CONTROL

INDEX EXPLANATION:



GENERAL SYMBOLOGY NOTES:

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

DRAWING CODED NOTE TYPES:

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

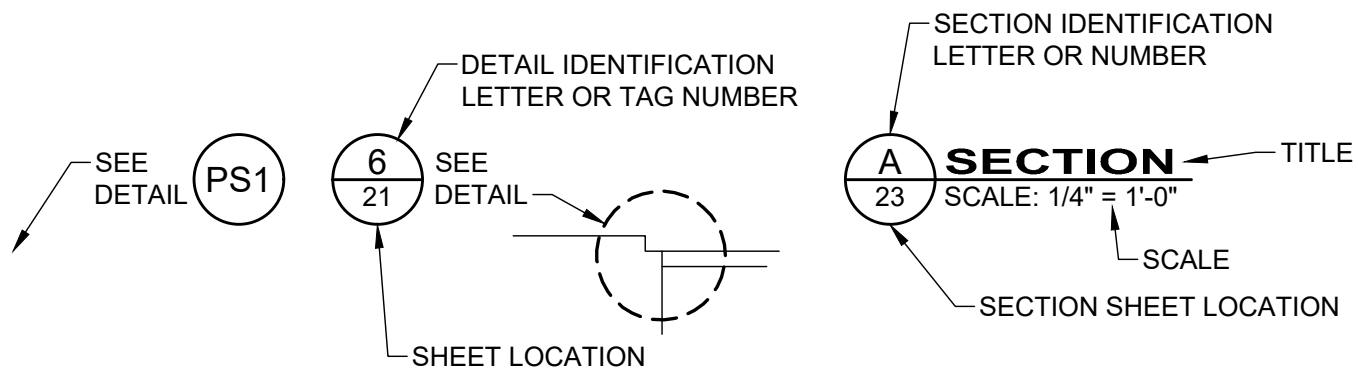
PLAN REVISIONS:

	REVISION DESCRIPTION
	REVISION DESCRIPTION

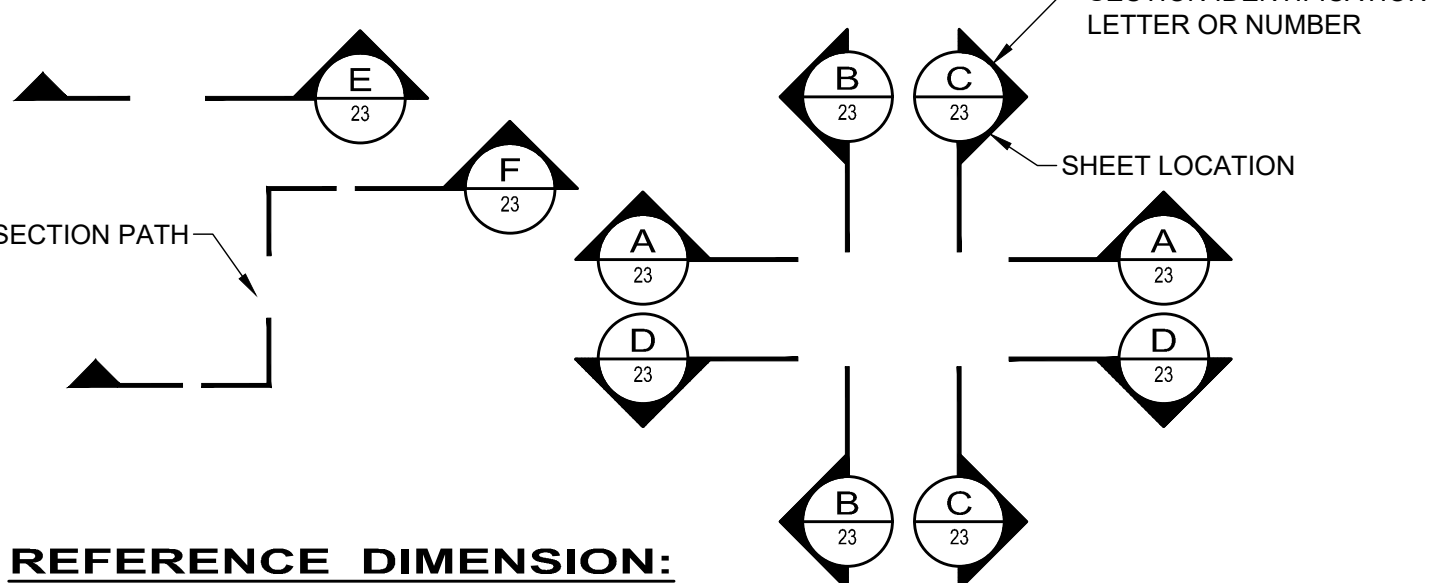
DEMOLITION CODED NOTES:

	DEMOLITION DESCRIPTION
	DEMOLITION DESCRIPTION

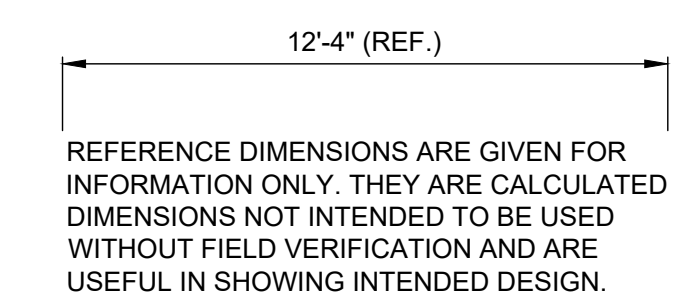
DETAIL REFERENCES:



MAJOR SECTION CUT CONVENTIONS:



REFERENCE DIMENSION:



ABBREVIATIONS

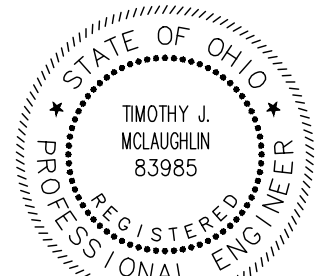
PIPE MATERIAL ID:

BR	= BRASS	PVC	= POLYVINYL CHLORIDE PIPE
BS	= BLACK STEEL	SS	= STAINLESS STEEL
BZ	= BRONZE	STL	= STEEL PIPE
CI	= GRAY CAST IRON	SDR	= STANDARD DIAMETER RATIO
CU	= COPPER	SCH	= SCHEDULE
CS	= CAST IRON		
CT	= CARBON STEEL TUBING		
DIP	= DUCTILE IRON PIPE		
DR	= DIAMETER RATIO		
FRP	= FIBERGLASS REINFORCED PLASTIC		
GS	= GALVANIZED STEEL		
HDPE	= HIGH-DENSITY POLYETHYLENE PIPE		

OTHER:

ADPOL	= ADDITIONAL GRADE
AGOOD	= AGGREGATION
ALUDRIZ	= ALUMINUM DRAINAGE
BTRVN	= BENTONITE
CLP	= CLAY
CLMAX	= CLAY MAXIMUM
CONR	= CONCRETE
CONV	= CONTINUOUS
DREF	= DRAINAGE REFERENCE
EREINF	= EROSION REINFORCING
ELSTRC	= ELECTRICAL
EMBED	= EMBEDMENT
EVYP	= EARTH VALVE
FRUNO	= FINISH UNO
VERT	= VERTICAL

Sheet List Table		
Sheet Number	Sheet Title	Sheet Description
GENERAL - 00 SERIES: GENERAL		
1	COVER SHEET	00G-01
2	SYMBOL LEGEND	00G-02
3	GENERAL NOTES	00G-03
4	GENERAL NOTES (2)	00G-04
5	MAINTENANCE OF TRAFFIC	00G-04
6	EXISTING CONDITIONS 1	01C-01
7	EXISTING CONDITIONS 2	01C-02
8	EXISTING CONDITIONS 3	01C-03
CIVIL -10 SERIES: CIVIL		
9	CONSTRUCTION DETAILS-1	10C-01
10	CONSTRUCTION DETAILS-2	10C-02
11	CONSTRUCTION DETAILS-3	10C-03
12	STRUCTURE IMPROVEMENT SCHED	10C-04
13	PLAN & PROFILE STA.0+00 TO 5+00	10C-05
14	PLAN & PROFILE STA.5+00 TO 10+00	10C-06
15	PLAN & PROFILE STA.10+00 TO 15+00	10C-07
16	PLAN & PROFILE STA.15+00 TO 20+00	10C-08
17	PLAN & PROFILE STA.20+00 TO 25+50	10C-09
18	PLAN & PROFILE STA.25+50 TO 31+00	10C-10
19	PLAN & PROFILE STA. 0+00 TO 5+00	10C-11
20	PLAN & PROFILE STA. 5+00 TO 10+00	10C-12
21	PLAN & PROFILE STA. 10+00 TO 15+00	10C-13
22	PLAN & PROFILE STA. 15+00 TO 20+00	10C-14
23	PLAN & PROFILE STA. 20+00 TO 25+50	10C-15
24	PLAN & PROFILE STA. 25+50 TO 31+00	10C-16
EROSION CONTROL - 20 SERIES: CIVIL		
25	EROSION CONTROL DETAILS	20C-01
26	SWPPP NOTES	20C-02



verdantas

ISSUED FOR:	REVISE	DATE	NO	REVISION
FORESTGROVE SEWER IMPROVEMENTS: PHASE 1	6/10/2025			
CITY OF WILLOWICK	AS NOTED			
DESIGNED BY:	TJM			
DRAWN BY:	ELE			
CHECKED BY:	TJM			

FORESTGROVE SEWER IMPROVEMENTS: PHASE 1	GENERAL - 00 SERIES
CITY OF WILLOWICK	SYMBOL LEGEND
LAKE COUNTY, OHIO	

PROJECT NO.	31882
DISCIPLINE	GENERAL
SHEET NAME	00G-02
SHEET	2
OF	26

GENERAL:

- THE CONTRACTOR SHALL PERFORM ALL OF THE WORK AND FURNISH ALL OF THE LABOR AND MATERIALS NECESSARY FOR THE FINAL COMPLETION OF THIS CONTRACT IN THE MANNER AND UNDER THE CONDITIONS HEREIN SPECIFIED AND PROVIDED AND IN ACCORDANCE WITH THE CONTRACT DRAWINGS. FOR SUMMARY OF WORK TO BE PERFORMED, THE CONTRACTOR SHALL REFER TO SPECIFICATION SECTION 011100.
- A PRE-CONSTRUCTION VIDEO TAPE OF THE PROJECT AREA WILL BE REQUIRED AND SUBMITTED TO THE ENGINEER BEFORE CONSTRUCTION BEGINS.
- THE CONTRACTOR SHALL NOT COMMENCE ANY FORM OF CONSTRUCTION WITHOUT CONTACTING THE ENGINEER, AS APPROPRIATE, A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION ACTIVITY TO ARRANGE FOR OBSERVATION. IF ANY CHANGE IN THE WORK SCHEDULE BECOMES NECESSARY, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE ENGINEER TO AVOID UNNECESSARY OBSERVATION COSTS. IF NO NOTIFICATION IS MADE IN REGARDS TO CANCELLATION OF WORK, THE CONTRACTOR WILL BE CHARGED FOR THE TIME INCURRED.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE LOCAL ACCESS, VEHICULAR AND PEDESTRIAN, TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR WILL FURNISH, MAINTAIN AND SUBSEQUENTLY REMOVE ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, BARRIERS, TEMPORARY PAVEMENT, LIGHTING, FLAGGERS, SIGNING AND OTHER TRAFFIC CONTROLS TO INSURE THE SAFETY OF PERSONS AND VEHICLES DURING CONSTRUCTION WITHIN THE PROJECT LIMITS.
- ACCESS TO ALL DRIVEWAYS WILL BE MAINTAINED AT ALL TIMES EXCEPT THE TIME WHEN SEWER INSTALLATION AND PAVEMENT REPLACEMENT WILL NOT PERMIT.
- ALL SHOP DRAWINGS WILL BE SUBMITTED TO THE ENGINEER FOR PRELIMINARY CHECKING. THE ENGINEER SHALL FORWARD THE CHECKED SHOP DRAWINGS TO THE OWNER FOR PRELIMINARY CHECKING. THE ENGINEER SHALL PROVIDE FINAL CHECKING AND APPROVAL. SHOP DRAWINGS MUST BE APPROVED PRIOR TO ORDERING ANY MATERIALS.
- BEFORE THE OWNER WILL APPROVE AND ACCEPT THE WORK AND RELEASE THE GUARANTEE RETAINER, THE CONTRACTOR WILL FURNISH THE OWNER A WRITTEN REPORT INDICATING THE RESOLUTION OF ANY AND ALL PROPERTY DAMAGE CLAIMS FILED WITH THE CONTRACTOR BY ANY PARTY 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.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL MATERIAL AND EQUIPMENT TESTING. THE OWNER MAY REQUIRE SUBGRADE COMPACTION TESTING, ASPHALT AND CONCRETE QUALITY CONTROL TESTING WHICH WILL BE PAID FOR BY THE CONTRACTOR AND INCLUDED THROUGHOUT ALL UNIT PRICE PAY ITEMS.
- WHEN MAILBOXES, FENCES, NEWSPAPER BOXES OR STREET SIGNS AND SUPPORTS INTERFERE WITH CONSTRUCTION, THE CONTRACTOR SHALL REMOVE AND ERECT THEM IN A TEMPORARY LOCATION DURING CONSTRUCTION (EXCEPT FENCES). AFTER COMPLETION OF THE CONSTRUCTION AND BEFORE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL ERECT THE MAILBOXES, FENCES, NEWSPAPER BOXES OR STREET SIGNS AND SUPPORTS IN A PERMANENT LOCATION IN ACCORDANCE WITH THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE WORK SHALL BE INCLUDED IN THE UNIT PRICES BID FOR OTHER ITEMS.
- PROPERTY PINS AND MONUMENTS ALONG THE ROUTE OF THE IMPROVEMENT, WHICH MAY BE DISTURBED BY THE CONTRACTOR, SHALL BE REFERENCED BY A PROFESSIONAL SURVEYOR, SO THEY CAN BE REPLACED IN THE EVENT THAT THEY ARE DISTURBED DURING CONSTRUCTION. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT ALL PINS, MONUMENTS AND REFERENCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF LOCATING AND REFERENCING AND REPLACING THE PROPERTY PINS AND MONUMENTS.
- RIGHT-OF-WAY LIMITS ARE NOTED ON THE PLANS ARE FROM AVAILABLE REFERENCE DOCUMENTS AND HAVE NOT BEEN MARKED OR PINNED BY FIELD SURVEY. THE CONTRACTOR SHALL PERFORM ALL WORK WITHIN THE LIMITS OF THE WORK AND MAINTAIN STAGING AND ACCESS AREAS WITHIN THE EASEMENT OR INGRESS/EGRESS LIMITS UNLESS WRITTEN AUTHORIZATION FROM THE PROPERTY OWNER AND OR OWNER IS GIVEN. ANY DISTURBANCE TO PRIVATE PROPERTY WHETHER DIRECTLY OR INDIRECTLY RELATED TO THE IMPROVEMENTS BEING MADE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO ITS EXISTING CONDITION OR BETTER.
- PAY ITEMS HAVE QUANTITIES THAT ARE GREATER THAN THAT OF WHAT IS DETAILED OR NOTED IN THE PLANS OR SPECIFICATIONS. THIS IS TO ACCOUNT FOR AN ANTICIPATED AMOUNT OF WORK THAT MAY BE ENCOUNTERED DUE TO PIPE OR MANHOLE CONDITIONS THAT WERE NOT ABLE TO BE DETERMINED BY THE OWNER PRIOR TO WORK INCLUDED IN THIS CONTRACT. IN THE EVENT OF A POINT REPAIR, THE CONTRACTOR SHALL SUBMIT UNIT PRICES FOR THE WORK WITH THE UNDERSTANDING THAT THE TOTAL QUANTITY IS ANTICIPATED TO FLUCTUATE BASED ON ENCOUNTERED CONDITIONS IN THE FIELD AFTER THE INITIAL CLEANING OF THE SEWER.
- THE OWNER RESERVES THE RIGHT TO ADD OR REMOVE ANY PORTION OF WORK, WHETHER EXPLICITLY DETAILED IN THE PLANS AND SPECIFICATIONS OR INCLUDED AS A CONTINGENCY QUANTITY, WITHOUT THE MODIFICATION OF THE UNIT PRICES SUBMITTED AT THE TIME OF BID.

PROHIBITED CONSTRUCTION ACTIVITIES:

- ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED
- THE USE OF EXPLOSIVES, UNLESS A PERMIT IS ISSUED BY THE OWNER.
- PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS DIRECTLY INTO ANY SURFACE WATERS, STREAM CORRIDORS, OR STORM SEWERS; ALL SUCH WATER WILL BE PROPERLY FILTERED OR SETTLED TO REMOVE SILT PRIOR TO RELEASE.
- DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE, OR ANY OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
- OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT. HE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AN OEPA OPEN BUILDING AIR PERMIT OR DISPOSING OF THE TREES AND STUMPS
- STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED ON THE PLANS BY THE ENGINEER FOR SUCH PURPOSES.
- RUNNING WELL POINT OR PUMP DISCHARGE LINES THROUGH PRIVATE OR PUBLIC PROPERTY AND RIGHTS-OF-WAY WITHOUT PERMISSION OF THE PROPERTY OWNER AND THE CONSENT OF THE ENGINEER.
- OPERATION ENTAILING THE USE OF VIBRATORY HAMMERS OR COMPACTORS OUTSIDE THE HOURS OF 8:00 AM AND 5:00 PM OR OUTSIDE THE HOURS ALLOWED BY LOCAL ORDINANCES OR REGULATIONS.
- CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE OR BOULEVARD WITHOUT THE PRIOR CONSENT OF MUNICIPAL OFFICIALS AND THE ENGINEER AND CLOSING CLEAR ACCESS:
  - BY FIRE PROTECTION EQUIPMENT AND EMERGENCY VEHICLES;
  - BY THE PUBLIC TO ANY COMMERCIAL OR PROFESSIONAL PLACE OF BUSINESS, QUASH-PUBLIC OR PUBLIC ESTABLISHMENT, OR PLACE OF RESIDENCE; OR
  - BY VEHICLES TO DRIVEWAYS WITHOUT THE PROVISION OF ALTERNATIVE MEANS OF BUILDING INGRESS AND EGRESS.
  - DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER.
- LOCATING STOCKPILE STORAGE AREAS IN ENVIRONMENTALLY SENSITIVE AREAS.
- INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN AND STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS.
- PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF ANY STREAM.
- DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA
- DISPOSAL OF TREES, BRUSH, AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS.
- DISCHARGING INJURIOUS SILICA DUST CONCENTRATIONS INTO THE ATMOSPHERE RESULTING FROM BREAKING, CUTTING, CHIPPING, RILLING, BUFFING, GRINDING, POLISHING, SHAPING OR SURFACING CLOSER THAN 200 FEET TO PLACES OF RESIDENCES OR COMMERCIAL, PROFESSIONAL, QUASI-PUBLIC OR PUBLIC PLACES OF HUMAN OCCUPATION.
- NO USING ANY SUBSTANCE OTHER THAN WATER TO CONTROL DUST

EXISTING UTILITIES:

- THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY A COMBINATION OF SEARCHES OF AVAILABLE RECORDS AND SURVEY COMPLETED BY VERDANTAS LLC ON 05/01/2025. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE OWNER DOES NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY AND IDENTIFY ALL UTILITIES ILLUSTRATED ON THE PLANS OR NOT IDENTIFIED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION OF THE EXISTING UTILITY OWNERS AND THE UTILITY PROTECTION SERVICE IN THE LIST FEATURED ON THE COVER OF THE PLANS IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE
- BEFORE ANY WORK IS STARTED, THE CONTRACTOR SHALL CALL THE "OHIO UTILITIES PROTECTION SERVICE", OUPS, AT 1-800-362-2764, A MINIMUM OF SEVENTY-TWO (72) HOURS IN ADVANCE OF THE WORK. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT NO ADDITIONAL EXPENSE TO THE OWNER, TO AVOID DAMAGE TO EXISTING UNDERGROUND AND OVERHEAD UTILITY LINES DURING THE ENTIRE PROJECT. IN THE EVENT OF DAMAGE TO EXISTING PUBLIC AND/OR PRIVATE UTILITIES, THE AGENCY CONCERNED SHALL BE NOTIFIED IMMEDIATELY BY THE CONTRACTOR AND ALL REPAIR WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE AGENCY AT NO ADDITIONAL EXPENSE TO THE OWNER, INCLUDING ANY INSPECTION FEES OR MAINTENANCE CREWS.
- DELAYS TO THE CONTRACTOR AS A RESULT OF TIMING OF POLE RELOCATION 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.
- NO SEPARATE PAYMENT WILL BE MADE FOR UTILITY SUPPORT, POLE SUPPORT OR POLE RELOCATION. THE CONTRACTOR SHALL INCLUDE THE COST OF UTILITY SUPPORT, POLE SUPPORT AND POLE RELOCATION IN THE UNIT PRICE(S) BID FOR OTHER RELATED ITEMS OF WORK.
- CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL THE EXISTING GAS, WATER, ELECTRIC, CABLE, FIBER, TELEPHONE, SANITARY OR OTHER UNDERGROUND UTILITIES PRIOR TO THE INSTALLATION OF ANY PROPOSED IMPROVEMENT INDICATED ON THE PLANS. SHOULD A CONFLICT EXIST AT A UTILITY CROSSING, THE PROJECT ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
- THE CONTRACTOR SHALL ANTICIPATE AT A MINIMUM ONE SERVICE CONNECTION FOR EACH UTILITY (GAS, WATER, STORM SEWER, FIBER OPTIC OR POWER) TO EACH PROPERTY, EVEN IF NOT SHOWN ON PLAN. IF PRIVATE SERVICE LINES ARE ENCOUNTERED DURING THE COURSE OF THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE, SUPPORT, AND NOT DISRUPT ANY SERVICE TO THE PROPERTY OR PROPERTIES THAT PRIVATE UTILITY LINE PROVIDES SERVICE TO. NO ADDITIONAL PAYMENT SHALL BE MADE FOR ANY LOCATING, SUPPORTING, OR MANAGING TEMPORARY SERVICE FOR ANY PRIVATE UTILITY CONNECTION.
- IT IS ANTICIPATED THAT DURING LATERAL REPLACEMENT WATER SERVICES WILL BE LOCATED WITHIN THE SAME TRENCH. CONTRACTOR SHALL EXERCISE CAUTION AND IS RESPONSIBLE FOR MAINTAINING AND SUPPORTING THE WATER SERVICE LINES. NO ADDITIONAL PAYMENT SHALL BE MADE FOR ANY DAMAGE TO WATER SERVICES DURING LATERAL REPLACEMENT ACTIVITY.
- IN THE EVENT THAT ANY LEAD SERVICE CONNECTION IS ENCOUNTERED DURING THIS PROJECT BY THE CONTRACTOR, THE WATER SERVICE PROVIDER SHALL BE IMMEDIATELY NOTIFIED AND WORK AT THAT LOCATION SHALL CEASE UNTIL DIRECTION ON HOW TO PROCEED. CONTRACTOR SHALL CONTINUE WITH WORK ONCE THE WATER SERVICE PROVIDER GIVES NOTICE TO PROCEED WITHOUT ADDITIONAL PAYMENT FOR REMOBILIZATION.

MAINTENANCE OF TRAFFIC:

- MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH ODOT ITEM 614 AND THE MOST RECENT VERSION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD). THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW AND ACCEPTANCE BY THE ENGINEER PRIOR TO BEGINNING WORK.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE LOCAL ACCESS, VEHICULAR AND PEDESTRIAN INCLUDING PERSONS WITH DISABILITIES, TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. THE CONTRACTOR WILL FURNISH, MAINTAIN AND SUBSEQUENTLY REMOVE ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, BARRIERS, TEMPORARY PAVEMENT, LIGHTING, FLAGGERS, SIGNING, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROLS TO ENSURE THE SAFETY OF PERSONS AND VEHICLES DURING CONSTRUCTION WITHIN THE PROJECT LIMITS.
- AT ALL EXCAVATION LOCATIONS THE CONTRACTOR SHALL PROVIDE SUITABLE FLASHERS, BARRICADES, AND TRAFFIC CONTROL DEVICES OR CREW AS DEEMED NECESSARY BY THE ENGINEER AND IN ACCORDANCE WITH THE OMUTCD FOR SUCH TIME UNTIL THE AREA IS COMPLETELY BACKFILLED.
- ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH ITEM 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE UNIT PRICES BID FOR OTHER ITEMS.
- ACCESS MUST BE MAINTAINED FOR EMERGENCY VEHICLES AT ALL TIMES.
- NO TRENCH WILL BE LEFT OPEN AT THE END OF A WORK DAY, WHERE PRACTICAL; ANY OPEN TRENCH WILL BE PROPERLY IDENTIFIED AND BARRICADED FOR SAFETY PURPOSES.
- PRIOR TO CLOSING OFF CLEAR ACCESS TO ANY PUBLIC ALLEY, STREET, ROAD, AVENUE, OR BOULEVARD, THE CONTRACTOR MUST HAVE CONSENT FROM LOCAL OFFICIALS AND THE ENGINEER.
- PRIOR TO CLOSING OFF ACCESS TO ANY PORTION OF PRIVATE PROPERTY WHERE SEWER WORK MAY BE LOCATED, THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE PROPERTY OWNER TO IMPLEMENT PROPOSED TRAFFIC CONTROL DEVICES WHICH SHALL ALSO REQUIRE FINAL APPROVAL BY THE ENGINEER.

ENVIRONMENTAL PROTECTION:

- ALL MATERIALS TO BE DISPOSED OF OFF-SITE MUST BE DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AT A SITE APPROVED BY THE ENGINEER. NO EXCESS MATERIALS ARE TO BE DISPOSED OF IN ANY WETLAND, FLOODPLAIN, SURFACE WATER, OR OTHER ENVIRONMENTALLY SENSITIVE AREAS. EROSION CONTROL MEASURES AT THE DISPOSAL SITE MUST BE INSTALLED AND MAINTAINED UNTIL DISPOSAL IS COMPLETE AND THE DISPOSAL SITE IS PERMANENTLY STABILIZED. GIVING EXCAVATED SOIL AWAY DOES NOT RELIEVE THE CONTRACTOR OR ENGINEER OF THIS RESPONSIBILITY.

AIR POLLUTION/NOISE CONTROL:

- CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO HOURS OF 7AM TO 7 PM UNLESS AUTHORIZED TO PERFORM OUTSIDE THOSE LIMITS BY THE OWNER.
- CONSTRUCTION EQUIPMENT WILL BE PROVIDED WITH INTAKE SILENCERS AND MUFFLERS, AS REQUIRED BY SAFETY STANDARDS.
- ALL CONSTRUCTION VEHICLES SHOULD BE EQUIPPED WITH PROPER EMISSIONS CONTROL EQUIPMENT.
- PERIODICALLY CHECK EQUIPMENT AND MACHINERY FOR PROPER TUNING TO MINIMIZE EXHAUST EMISSIONS AND NOISE.
- UNPAVED AREAS WILL BE WET DOWN (AS NECESSARY) DURING CONSTRUCTION TO MINIMIZE DUST

TREE/VEGETATION PROTECTION:

- TREE REMOVAL WILL BE LIMITED TO THE TIME PERIOD BETWEEN OCTOBER 1 AND MARCH 31.
- NO TREES MAY BE REMOVED, CUT, OR TRIMMED WITHOUT APPROVAL FROM THE OWNER AND CITY.
- NO TREE REMOVAL WILL BE PERMITTED OUTSIDE THE RIGHT-OF-WAY WITHOUT PERMISSION OF THE ENGINEER AND OWNER(S).
- TREES WHICH ARE NOT REMOVED WILL BE PROTECTED BY ENSURING THAT TREES TO BE REMOVED ARE FELLED SO AS NOT TO INJURE THE REMAINING TREES.
- PRIOR TO CLEARING, THE CONTRACTOR AND ENGINEER, SHALL WALK THE RIGHT-OF-WAY IN THE PROJECT LIMITS IN AN EFFORT TO DESIGNATE THE TREES THAT ARE TO BE SAVED. TREES TO BE SAVED WILL BE CLEARLY MARKED BY PAINT WITH THE LETTER "S". TREES TO BE PROTECTED BY AN APPROPRIATE BARRIER SHALL BE MARKED WITH AN "S" ENCLOSED IN A CIRCLE. TREES MARKED FOR REMOVAL IN THE PLANS WILL BE INSPECTED BY THE OWNER AND THE ENGINEER BEFORE REMOVAL & WILL BE SAVED WHERE POSSIBLE.
- SOIL AND OTHER MATERIAL WILL NOT BE STORED NEXT TO OR WITHIN THE DRIP LINE OF TREES.
- PRESERVATION OF LANDSCAPING SHOULD TAKE PRECEDENCE OVER REMOVAL. IF REMOVAL OR DAMAGE IS UNAVOIDABLE, EXISTING VEGETATION SHOULD BE REPAIRED OR REPLACED "IN-KIND" UNLESS THE PROPERTY OWNER SPECIFIES OTHERWISE.
- IF TREES/SHRUBS CANNOT BE REPLACED IN THE SAME LOCATION DUE TO INSTALLATION OF THE SEWER SYSTEM, RELOCATION SHOULD BE CONSIDERED.
- THE CONTRACTOR'S ARBORIST SHALL REPAIR ALL INJURIES TO BARK, TRUNKS, LIMBS, AND ROOTS OF REMAINING VEGETATION BY PROPERLY DRESSING, CUTTING, BRACING AND PAINTING, USING ONLY APPROVED TREE SURGERY METHODS, TOOLS, AND MATERIALS.
- SELECTIVE PRUNING OF TREE LIMBS PRIOR TO INITIATION OF CONSTRUCTION SHOULD ONLY BE USED WITHIN ESTABLISHED EASEMENTS WHERE REMOVAL IS NECESSARY FOR OPERATION OF EQUIPMENT.
- LIMIT THE USE OF RIP-RAP TO AREAS WHERE STREAM FLOW CONDITIONS PREEMPT VEGETATIVE STABILIZATION.

EXCAVATION AND TRENCHING:

- TRENCHING, HAUNCHING, BEDDING, AND EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH CONSTRUCTION DETAILS AND SPECIFICATION SECTIONS 310000 AND 333100.
- NO GEOTECHNICAL SOIL BORINGS WERE PERFORMED TO DETERMINE IN-SITU SOIL CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE AND/OR OBTAIN PERTINENT SUBSURFACE INFORMATION RELATIVE TO THE PROJECT AREA WHERE EXCAVATION IS ANTICIPATED OR MAY TAKE PLACE.
- SLAG PRODUCTS OR CRUSHED CONCRETE WILL NOT BE PERMITTED FOR BEDDING, BACKFILL, OR TRAFFIC COMPACTED SURFACE.
- ALL UTILITY LINES CROSSING THE NEW SEWER TRENCH, (I.E. STORM SEWERS, STORM LATERALS, WATERLINES, WATERLINE CONNECTIONS, SANITARY SEWERS, SANITARY LATERALS, GAS MAINS, GAS SERVICE CONNECTIONS, UNDERGROUND OCT CONDUITS, CABLE TV 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 REGARDLESS IF THE EXISTING UTILITIES ARE SHOWN OR NOT SHOWN ON THE PLANS.
- ANY COMPACTION TESTING REQUIRED AT THE SOLE DISCRETION OF THE ENGINEER SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

DEWATERING:

- THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING A DEWATERING SYSTEM THAT ALLOWS THE PROPER INSTALLATION OF ANY NEW SEWER OR STRUCTURES. ALL EQUIPMENT, LABOR, AND COSTS ASSOCIATED WITH TRENCH DEWATERING SHALL BE INCLUDED IN SEVER OR STRUCTURE PAY ITEMS.
- ALL DEWATERING FLOWS FROM EXCAVATION AND TRENCHING OPERATIONS SHALL BE SETTLED INTO INSTALLATION BASINS OR DIRECTED THROUGH APPROVED FILTERING DEVICES PRIOR TO BEING DISCHARGED TO STABILIZED SITES, SUCH AS STREAMS OR STORM SEWER; NOT ONTO EXPOSED SOILS, STREAM BANKS, OR ANY EITHER SITE WHERE THE FLOW COULD CAUSE OR INCREASE THE RATE OF EROSION.
- SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER INTO THE STORM SEWER SYSTEM. FOR THE ENTIRE COURSE OF CONSTRUCTION, EROSION CONTROL (FILTERS OR OTHER APPROVED BMPS) MEASURES SHALL BE IMPLEMENTED AT ALL NEARBY INLETS TO PREVENT SILT FROM ENTERING INTO THE SYSTEM. THE CONTRACTOR SHALL IMPELMENT AND MAINTAIN THESE DEVICES FOR THE ENTIRE DURATION OF CONSTRUCTION AND SHALL ONLY REMOVED BY ORDER OF THE ENGINEER.
- CONVEY WATER FROM THE CONSTRUCTION SITE IN A CLOSED CONDUIT. TRENCH EXCAVATIONS SHALL NOT BE PERMITTED AS TEMPORARY DRAINAGE DITCHES.

CURED-IN-PLACE PIPE (CIPP) LINING NOTES:

- REFER TO SPECIFICATION SECTIONS 330130.72 AND 330130.74 FOR CIPP LINING SPECIFICATIONS, MINIMUM DESIGN CRITERIA, AND PERFORMANCE REQUIREMENTS.
- ALL CIPP LINING SYSTEMS ON PIPES 36" OR LESS SHALL BE DESIGNED IN ACCORDANCE WITH THE MOST RECENT VERSION OF ASTM F1216 AND PROJECT SPECIFICATIONS. ALL CIPP LINING SYSTEMS GREATER THAN 36" IN DIAMETER SHALL BE DESIGN IN ACCORDANCE WITH THE MOST RECENT VERSION OF ASCE MOP 145 AND PROJECT SPECIFICATIONS.
- THE CONTRACTOR SHALL SUBMIT A LINER THICKNESS CALCULATION BASED ON THE ACTUAL PHYSICAL PROPERTIES OF THE APPROVED SUBMITTED LINER SYSTEM FOR EACH SECTION IN ACCORDANCE WITH ALL SPECIFICATIONS. LINER THICKNESS CALCULATIONS SHALL BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER IN CURRENTLY LICENSED IN THE STATE OF OHIO.
- ALL LINING SYSTEMS SHALL NOT EXCEED A THICKNESS THAT WILL REDUCE THE ORIGINAL DESIGN CAPACITY OF EACH SEWER SECTION. ANY LINER SYSTEM SHALL HAVE A MANUFACTURER CERTIFIED FRICTION FACTOR LOWER THAN THAT OF THE NATIVE MATERIAL OF WHICH IT IS BEING INSTALLED IN.
- SEWER FLOWS SHALL BE MAINTAINED IN ACCORDANCE WITH SPECIFICATION 330130.03. ALL BYPASS PLANS MUST BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL VERIFY ALL VISIBLE CONNECTIONS PRIOR TO INSTALLATION OF ANY LINING SYSTEM. THIS WILL INCLUDE AT THE ENGINEER'S DISCRETION, DYE TESTING AND/OR LATERAL LAUNCHING TO CONFIRM THE SOURCE OF THE CONNECTION.
- ALL ACTIVE CONNECTIONS SHALL BE REINSTATED IMMEDIATELY AFTER THE INSTALLATION AND CURING OF LINING. LOCATOR TAPE SHALL BE INSTALLED ON ANY NEW CONNECTION INTO THE MAINLINE SEWER.
- PROTRUDING TAPS SHALL BE CUT BACK TO BE FLUSH WITH THE EXISTING PIPE SURFACE PRIOR TO INSTALLATION OF ANY LINING SYSTEM. THIS SHALL BE PAID AS A SEPARATE PAY ITEM.



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DATE	REVISION	NO	REVISED FOR	ISSUE DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:
				6/10/2025	AS NOTED	TJM	ELE	TJM

FOREST GROVE SEWER IMPROVEMENTS: PHASE 1 LAKE COUNTY, OHIO CITY OF WILLOWICK	GENERAL - 00 SERIES GENERAL NOTES
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PROJECT NO.	31882
DISCIPLINE	GENERAL
SHEET NAME	00G-03
SHEET	OF
3	26

SEWER AND MANHOLE INSTALLATION NOTES:

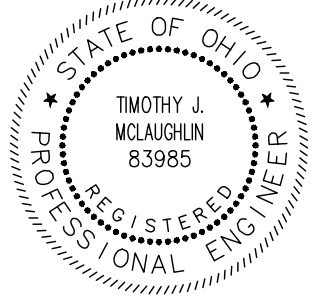
1. THE ALL SEWER PIPE MATERIALS AND INSTALLATION SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATION 333100.
2. ALL SEWER PIPE SHALL HAVE WATERTIGHT GASKETED JOINTS IN ACCORDANCE WITH ASTM D3212.
3. SEWER PIPE CONNECTION INTO A NEW PRE CAST CONCRETE STRUCTURES SHALL UTILIZE A-LOK X-CEL PREMIUM STORM CONNECTORS OR APPROVED EQUIVALENT AT THE STRUCTURE CONNECTION.
4. DEFLECTION TESTING SHALL BE PERFORMED ON ALL FLEXIBLE PIPE IN ACCORDANCE WITH THE TEN STATES STANDARDS, SECTION 33.85 AND ASTM D-2412. NO PIPE SHALL EXCEED THE MAXIMUM ALLOWABLE DEFLECTION OF 5 PERCENT.
5. AIR TESTING SHALL BE PERFORMED ON ALL SANITARY PIPE IN ACCORDANCE WITH THE LOCAL REGULATORY AGENCY AND THE TEN STATES STANDARDS, SECTION 33.94 AND ASTM F-1417. VACUUM TESTING MUST CONFORM TO ASTM C-1244.
6. ALL SEWER MAINS AND LATERALS SHALL BE TELEVISED AND REVIEWED BY THEENGINEER PRIOR TO ACCEPTANCE.
7. ALL CONCRETE SEWER STRUCTURES SHALL BE PRECAST USING A CONCRETE ADMIXTURE SUCH AS XYPEX CRYSTALLINE ADMIXTURE OR AN APPROVED EQUAL WHICH WILL ACT AS A WATERPROOF AGENT AND HYDROGEN SULFIDE INHIBITOR. THOROSEAL INSIDE OF SANITARY STRUCTURES ONLY, FULL DEPTH. (ANY COLOR BUT GRAY). ALL JOINT AND CONNECTIONS TO BE WATER PLUGGED.
8. BEARING AREAS SHALL BE FINISHED SMOOTH AND FITTED SO AS TO PROVIDE A FIRM AND EVEN SEAT FOR ALL PORTIONS OF THE COVER IN THE FRAME. EACH COVER SHALL SEAT IN THE FRAME WITHOUT ROCKING AND SHALL BE MARKED AS A MATCHED FRAME AND COVER BEFORE DELIVERY TO THE PROJECT. THE BASE OF THE FRAME SHALL BE SET ON A DOUBLE ROW OF BUTYL RUBBER SEALANT AND ADJUSTED TO CONFORM TO THE FINISHED PAVEMENT OR SHOULDER ELEVATION AND SLOPE. CASTINGS WHICH SHALL MEET ITEMS 711.12, 711.13, OR 711.14 REQUIREMENTS AND BE DESIGNED ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN HEREIN SHALL BE PROVIDED.
9. ALL STEPS SHALL HAVE A DEPRESSED TREAD OF 1/2". MIN. CLEAT HEIGHT AT THE ENDS. STEPS INSTALLED IN FRESH CONCRETE SHALL BE EMBEDDED TO MINIMUM DEPTH OF 4". STEPS INSTALLED IN MORTAR JOINTS SHALL BE EMBEDDED TO A MINIMUM DEPTH OF 7". FRICTION-FIT STEPS MEETING TO REQUIREMENTS OF 711.31 WITH A 1/2" DIAMETER REBAR MAY BE USED IN PRECAST STRUCTURES. THE RECEIVING HOLES FOR FRICTION-FIT STEPS SHALL NOT PENETRATE THE STRUCTURE WALL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO TEST LOAD MAXIMUM OF ONE STEP PER STRUCTURE TO A PROOF LOAD OF 400 LBS. IN DIRECT PULL. THE EQUIPMENT AND METHOD USED SHALL MEET THE APPROVAL OF THE ENGINEER. IF THE SELECTED STEP FAILS THE PULLOUT TEST, THE REMAINING STEPS IN THAT STRUCTURE SHALL ALSO BE TESTED. ALL STEPS NOT PASSING THE PULLOUT TEST SHALL BE REMOVED AND A NEW STEP INSTALLED AND TESTED TO THE SATISFACTION OF THE ENGINEER. COST OF TESTING SHALL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE STRUCTURE.
10. BOLT-DOWN COVERS SHALL NOT BE USED UNLESS SPECIFIED IN THE PLANS.
11. ALL STRUCTURE SECTIONS SHALL BE VISUALLY EXAMINED FOR CRACKS OR DAMAGE THAT WOULD COMPROMISE THE WATER TIGHTNESS OF THAT SECTION. ANY DAMAGED SECTION SHOULD BE RETURNED TO THE MANUFACTURER. TESTING SHALL CONFORM TO 10 STATES STANDARDS SECTION 34.7 AND ASTM C-1244. SEE SPECIFICATION SECTION(S) FOR FURTHER DETAIL
12. REFER TO SPECIFICATION SECTION 333100 FOR PRECAST CONCRETE MANHOLES.
13. WHEN EMPTY DURING CONSTRUCTION, THE STRUCTURES MAY BECOME BUOYANT. IN THE EVENT THAT THE EXCAVATIONS BECOME FLOODED, THE STRUCTURES MUST BE FILLED WITH WATER TO PREVENT FLOTATION OR THE EXCAVATION IS TO BE KEPT DEWATERED.
14. SANITARY SEWER FLOW IS TO BE MAINTAINED AT ALL TIMES.
15. ALL NEW TEST TEES SHALL BE IN ACCORDANCE WITH THE CITY OF WILLOWICK STANDARDS AND DETAILS.

MANHOLE REHABILITAITON:

1. MANHOLE REHABILITATION SHALL BE IN ACCORDANCE WITH THE SCHEDULE OF IMPROVEMENTS INCLUDED IN THE PLANS AND SPECIFICATIONS, SPECIFICALLY BUT NOT LIMITED TO, SECTION 330130.81.
2. THE CONTRACTOR SHALL PREPARE, CLEAN AND REMOVE ALL DEBRIS, SEDIMENT, ROOTS, ENCRUSTATIONS, OR OTHER OBSTRUCTIONS FROM THE MANHOLES PRIOR TO APPLICATION OF ANY SPRAY OR TROWEL ON LINING SYSTEMS
3. ALL REHABILITATION WORK DETAILED IN THE MANHOLE IMPROVEMENT SCHEDULE OR WORK NECESSARY TO INSTALL LINING SYSTEMS WITHIN THE MANHOLE IN ACCORDANCE WITH THE MANUFACTURER'S GUIDELINES AND REQUIREMENTS SHALL BE PAID UNDER THE MANHOLE CLEANING AND REHABILITAITON PAY ITEM(S).
4. ALL IMPROVEMENTS SHALL BE MADE AS TO NOT CAUSE FURTHER DAMAGE TO STRUCTURE. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PERFORM ALL PREPARATION AND REPAIRS IN SUCH MANNER THAT NO ADDITIONAL DAMAGE OCCURS THAT REQUIRES ADDITIONAL REPAIRS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS. IF THE CONTRACTOR DETERMINES THE STRUCTURE IS NOT STABLE ENOUGH FOR APPLYING NOTED IMPROVEMENTS, THE ENGINEER SHALL BE NOTIFIED TO DETERMINE COURSE OF ACTION.

MATERIAL DISPOSAL AND TEMPORARY SURFACES:

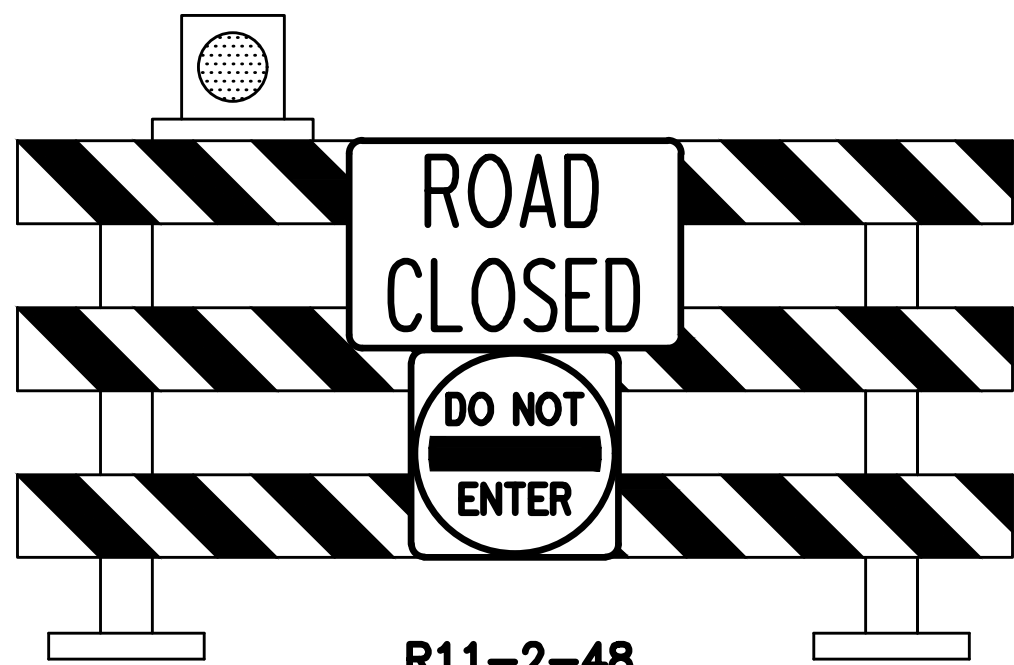
1. THE REMOVAL AND DISPOSAL OF ALL SURPLUS EXCAVATED MATERIAL AND CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR FOR ULTIMATE DISPOSAL. THE DISPOSAL OF ALL CONSTRUCTION DEBRIS SHALL BE AT AN APPROVED LOCATION BY THE OWNER AND THE ENGINEER. THE DISPOSAL OF ALL "CLEAN" MATERIAL SHALL BE AT APPROVED LANDFILLS, AND/OR OTHER SITES APPROVED BY THE OWNER AND THE DISPOSAL OF EXISTING PIPELINE AND WASTEWATER SLUDGE SHALL BE AT APPROVED LOCATION. THE CONTRACTOR SHALL OBTAIN ALL APPROVALS, PERMITS, LICENSES, ETC. STATE AND FEDERAL AGENCIES AND OR PRIVATE LANDOWNERS. THE CONTRACTOR SHALL FURNISH ENGINEER A COPY OF ALL APPROVALS OR WRITTEN PERMISSION PRIOR TO DISPOSING OF ANY WASTE SITE
2. THE COST OF HEREIN DESCRIBED WORK, INCLUDING SEEDING AND MULCHING NECESSARY TO SECURE RESULTS, SHALL BE CONSIDERED INCIDENTAL TO THE OTHER VARIOUS ITEMS OF WORK IN THIS CONTRACT INCLUDED IN THE RESPECTIVE PAY ITEMS. NO SEPARATE PAYMENT SHALL BE MADE.
3. TEMPORARY SURFACES WHERE EXCAVATION ARE LOCATED IN STREETS, DRIVES AND PARKING AREAS FURNISHED AND PLACED BY THE CONTRACTOR AND SHALL BE FULLY MAINTAINED TO MINIMIZE INCONVENIENCE TO THE PUBLIC AT NO ADDITIONAL COST TO THE OWNER.
4. THE ABOVE DESCRIBED WORK SHALL BE CONSIDERED INCIDENTAL TO THE COMPLETION OF ALL WORK INCLUDED IN THE RESPECTIVE PAY ITEMS AND SHALL NOT BE A SEPARATE PAY ITEM.



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ISSUE DATE:	6/10/2025			
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FORESTGROVE SEWER IMPROVEMENTS: PHASE 1 CITY OF WILLOWICK LAKE COUNTY, OHIO	GENERAL - 00 SERIES	
	GENERAL NOTES (2)	

PROJECT NO.	
31882	
DISCIPLINE	
GENERAL	
SHEET NAME	
00G-04	
SHEET	OF
4	26



R11-2-48  
R5-1-30  
SIGNS MOUNTED ON TYPE  
III PORTABLE BARRICADE

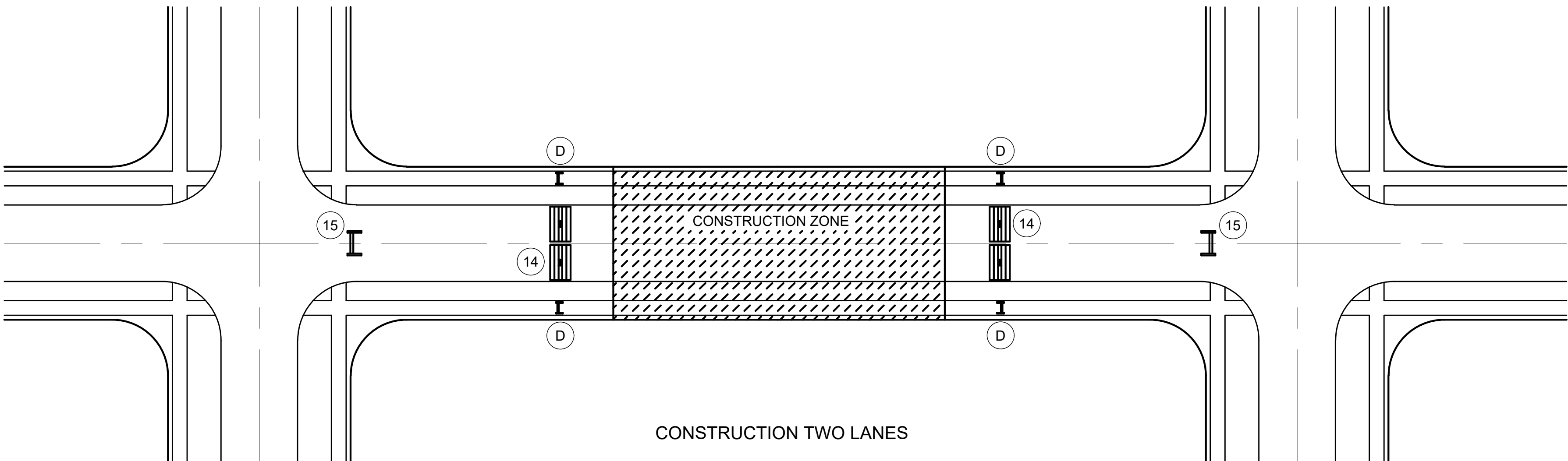
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R11-2-48  
SIGNS MOUNTED ON TYPE  
III PORTABLE BARRICADE

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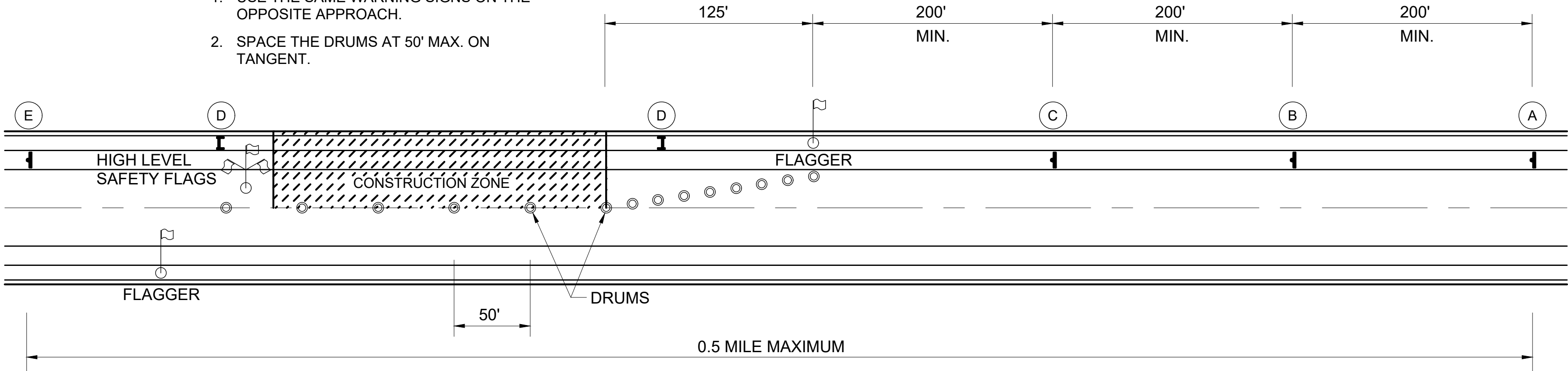
- BARRICADES: WHEN THE ROAD IS CLOSED TO TRAFFIC, BARRICADES SHALL BE USED TO EFFECTIVELY CLOSE THE ENTIRE ROADWAY. THE ENDS OF THE BARRICADE SHALL BE LOCATED BY THE ENGINEER TO EFFECT THE DESIRED CLOSING OF THE ROADWAY.
- PAINTING AND REFLECTORIZATION: ALL RAILS OF THE BARRICADES AND GATES SHALL BE REFLECTORIZED WITH ORANGE AND WHITE REFLECTORIZED TYPE "G" SHEETING IN 6" WIDE ALTERNATE STRIPES WHICH SLOPE DOWNWARD TOWARD THE CENTERLINE OF THE ROAD AT AN ANGLE OF 45°. ALL THREE RAILS OF THE ROAD CLOSED BARRICADE SHALL BE STRIPED ON THE SIDE FACING TRAFFIC. ALL GATE RAILS SHALL BE STRIPED ON BOTH SIDES. ALL POSTS, BRACES, GATE-LEGS, AND UNSTRIPED RAILS SHALL BE PAINTED WHITE.
- TYPE "C" STEADY BURNING BARRICADE WARNING LIGHTS: EACH GATE SHALL BE EQUIPPED WITH A TYPE "C" STEADY BURNING BARRICADE WARNING LIGHT, CONSPICUOUSLY VISIBLE AT ALL DISTANCES UP TO 1000' UNDER NORMAL CONDITIONS BETWEEN SUNSET AND SUNRISE DURING THE PERIOD THE ROAD IS CLOSED.
- SIGNS: WHERE THE ROAD IS CLOSED TO TRAFFIC BY THE ERECTION OF BARRICADES, "ROAD CLOSED" SIGNS (R11-2) SHALL BE MOUNTED ON THE BARRICADES AS SHOWN. WHEN TRAFFIC IS MAINTAINED, A "ROAD WORK AHEAD" SIGN (W20-1-36) SHALL BE USED ON THE RIGHT SHOULDER ON THE APPROACHES AT THE INTERSECTING STREET IN ADVANCE OF THE PROJECT. WHERE THE SIDEWALK IS CLOSED TO PEDESTRIAN TRAFFIC "SIDEWALK CLOSED" SIGNS SHALL BE ERECTED ACROSS THE WALK AT THE LOCATION SHOWN.



CONSTRUCTION TWO LANES

NOTES:

- USE THE SAME WARNING SIGNS ON THE OPPOSITE APPROACH.
- SPACE THE DRUMS AT 50' MAX. ON TANGENT.



CONSTRUCTION ONE LANE



W20-1-36

A



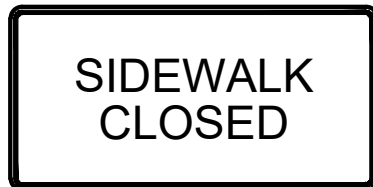
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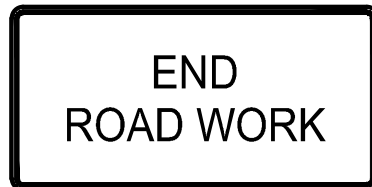
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G20-2-36

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ISSUED FOR:	REVISE	NO	REVISION	DATE
ISSUE DATE: 6/10/2025	AS NOTED			
SCALE:	TJM			
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FORESTGROVE SEWER IMPROVEMENTS: PHASE 1 CITY OF WILLOWICK LAKE COUNTY, OHIO	GENERAL - 00 SERIES MAINTENANCE OF TRAFFIC
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PROJECT NO. 31882	DISCIPLINE GENERAL
SHEET NAME 00G-04	SHEET 5
OF 26	

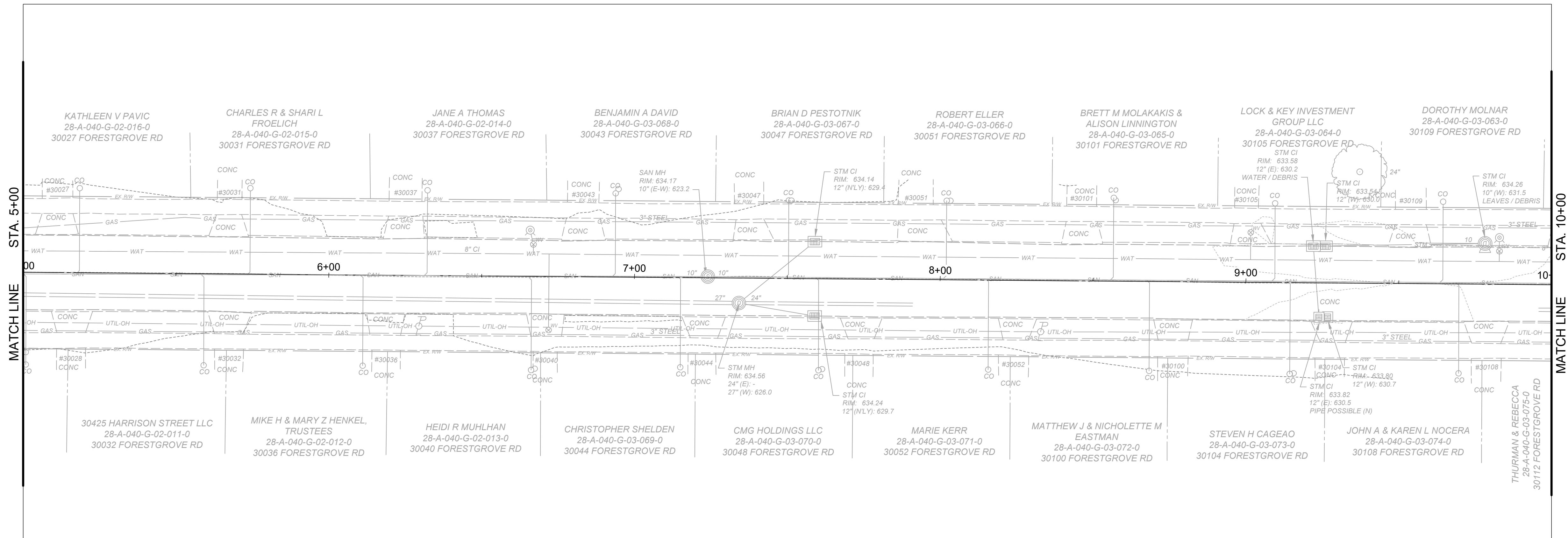
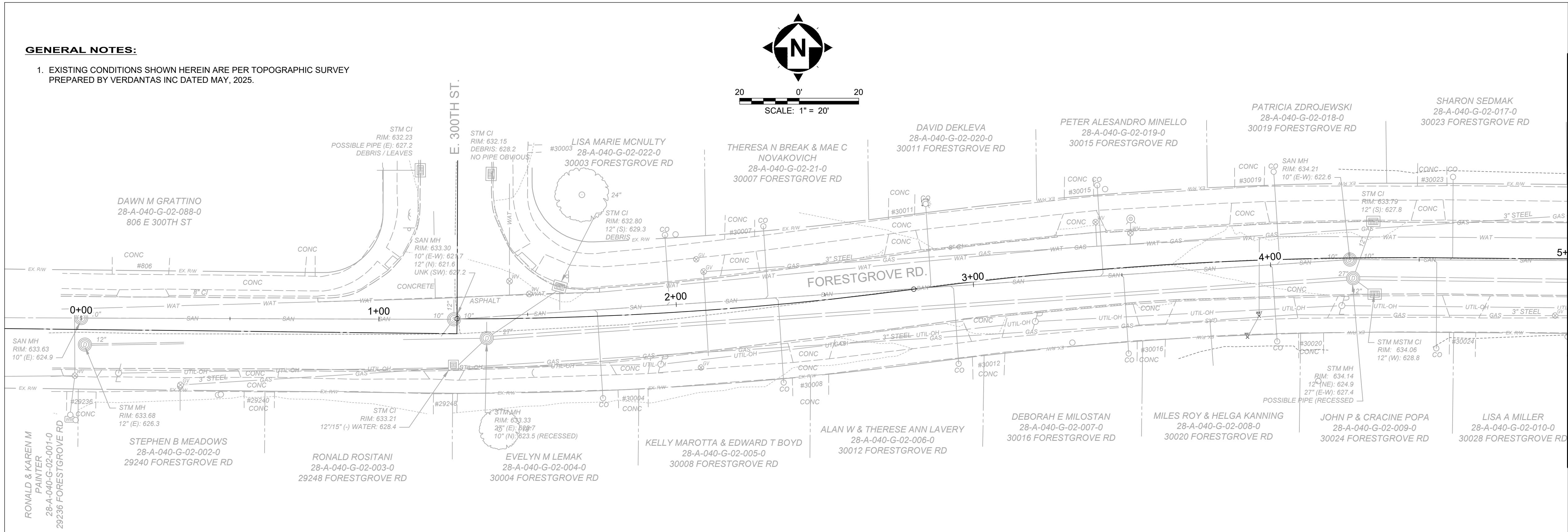


DATE	REVISION	NO	ISSUED FOR:	REVISED	DATE
			6/10/2025		
			AS NOTED		
			TJM		
			ELE		
			TJM		

FORESTGROVE SEWER  
IMPROVEMENTS: PHASE 1  
LAKE COUNTY, OHIO  
CITY OF WILLOWICK

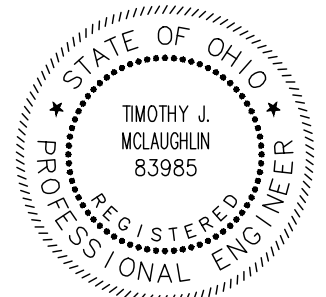
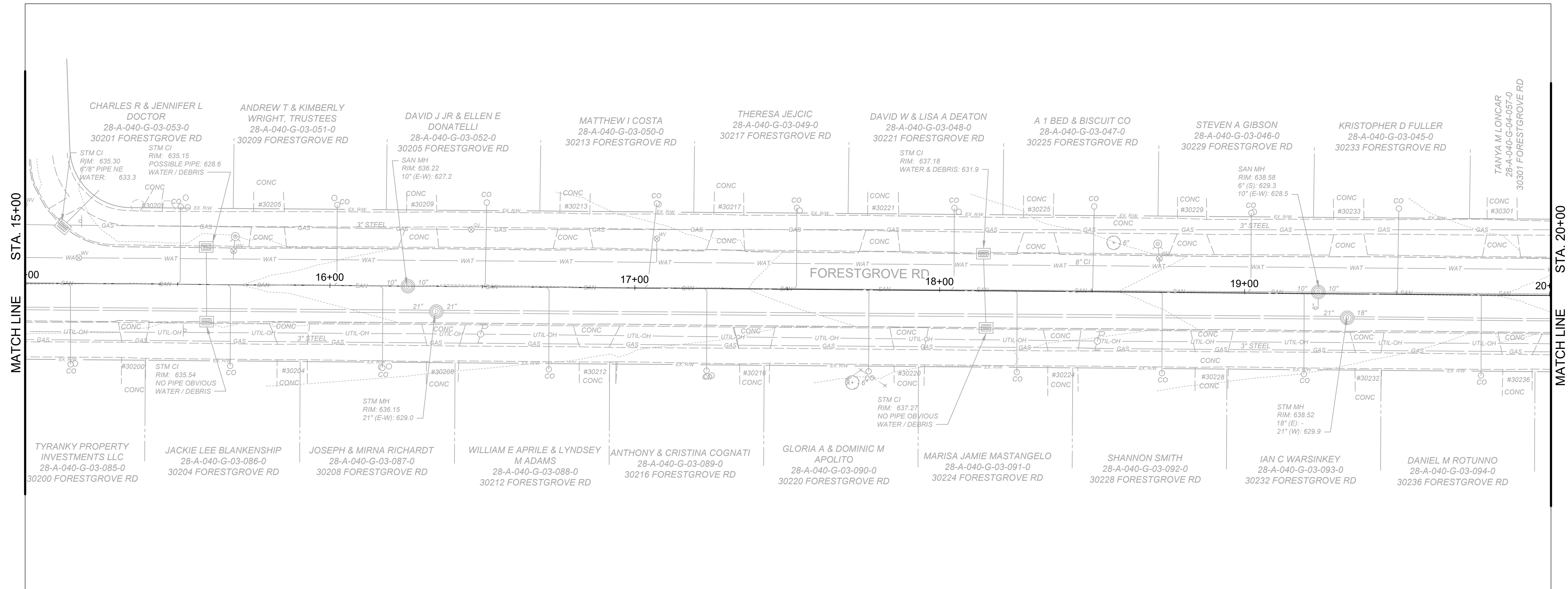
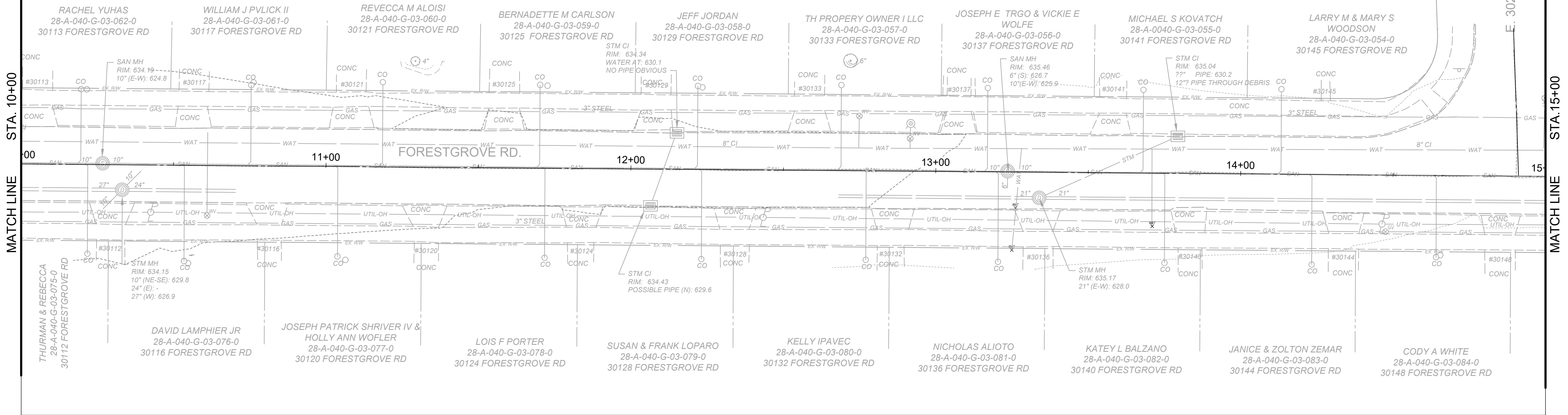
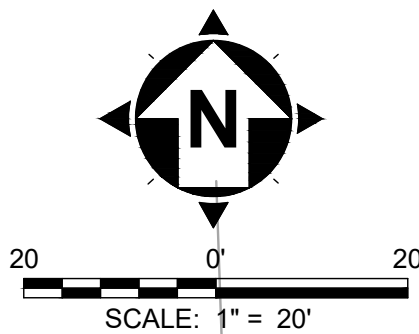
CIVIL -10 SERIES  
EXISTING CONDITIONS 1

PROJECT NO.	
31882	
DISCIPLINE	
GENERAL	
SHEET NAME	
01C-01	
SHEET	OF
6	26



GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN HEREIN ARE PER TOPOGRAPHIC SURVEY PREPARED BY VERDANTAS INC DATED MAY, 2025.



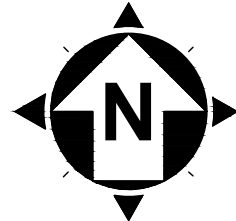
ISSUED FOR:	REVUE	NO	REVISION	DATE
610/2025				
AS NOTED				
TJM				
ELE				
TJM				

FORESTGROVE SEWER IMPROVEMENTS: PHASE 1
CITY OF WILLOWICK
LAKE COUNTY, OHIO
CIVIL -10 SERIES
EXISTING CONDITIONS 2

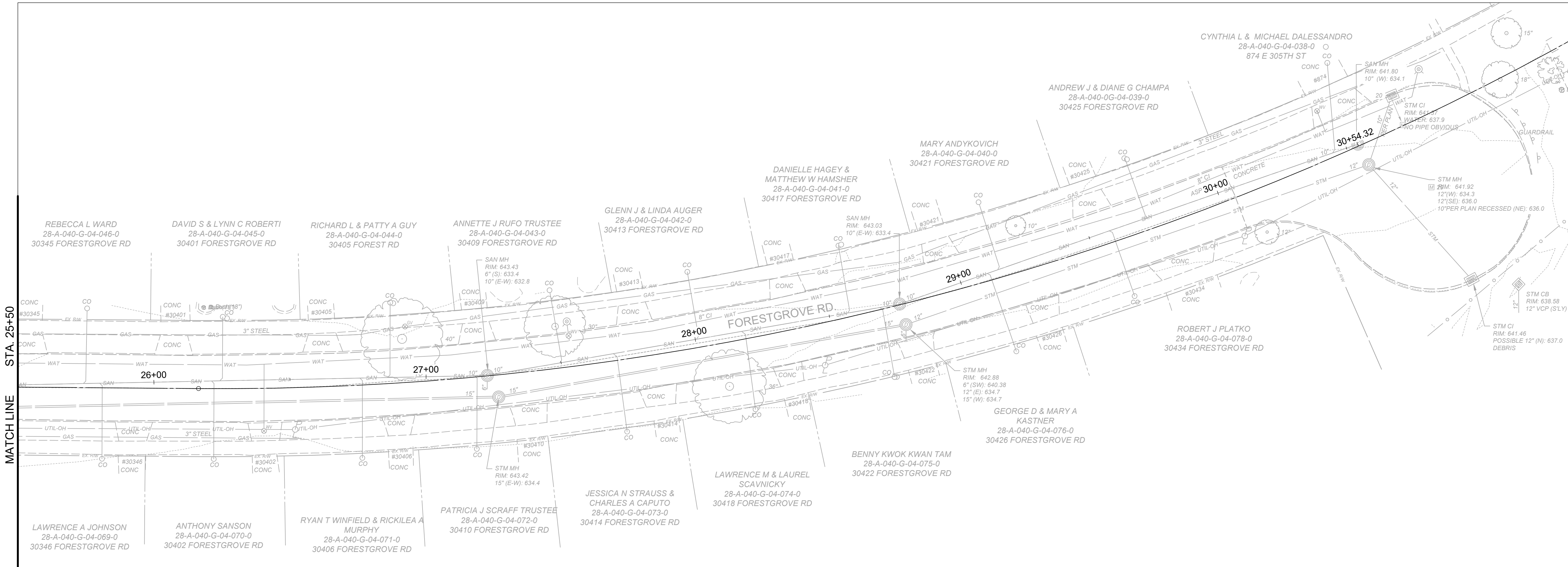
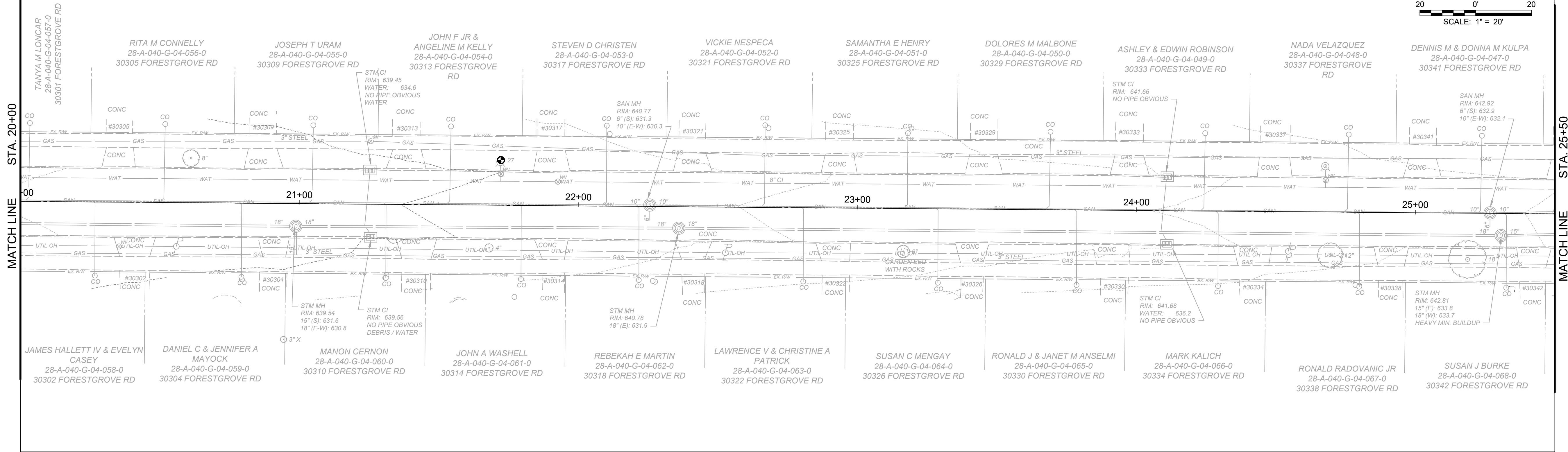
PROJECT NO.	31882
DISCIPLINE	GENERAL
SHEET NAME	01C-02
SHEET	7
OF	26

GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN HEREIN ARE PER TOPOGRAPHIC SURVEY PREPARED BY VERDANTAS INC DATED MAY, 2025.



20 0' 20'  
SCALE: 1" = 20'

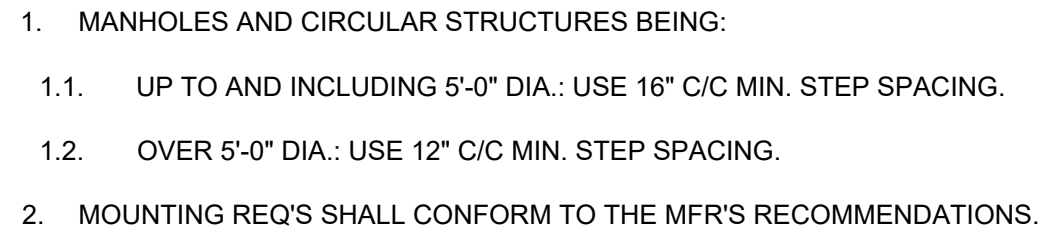


verdantas

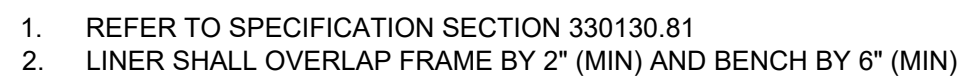
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FORESTGROVE SEWER IMPROVEMENTS: PHASE 1	CIVIL -10 SERIES
LAKE COUNTY, OHIO	EXISTING CONDITIONS 3
CITY OF WILLOWICK	

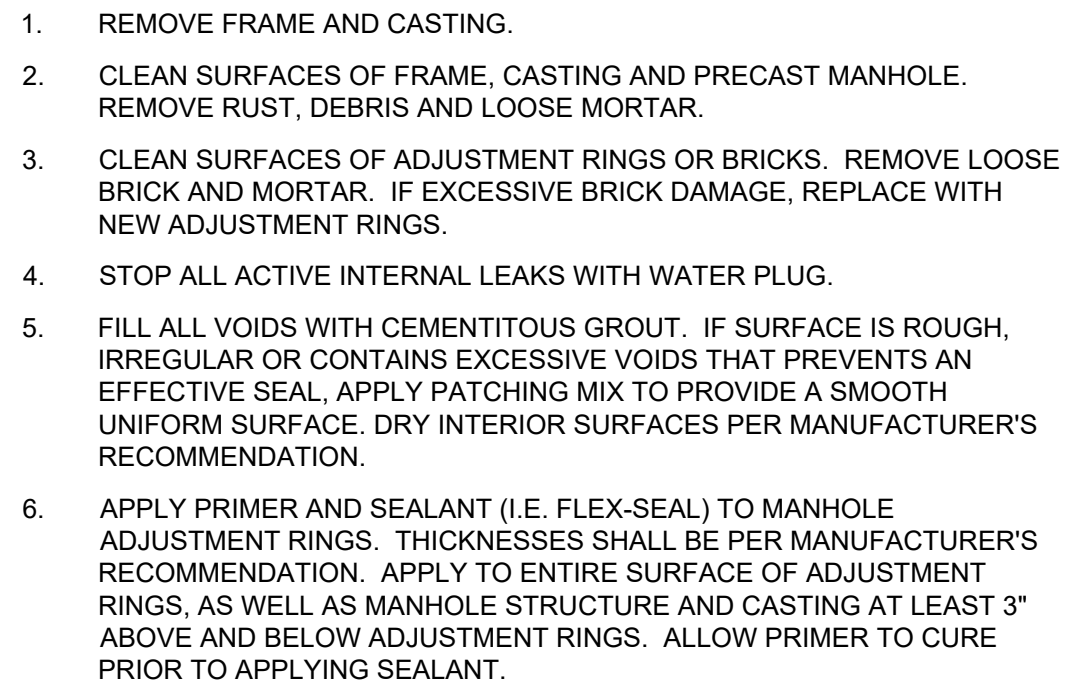
PROJECT NO.	31882
DISCIPLINE	GENERAL
SHEET NAME	01C-03
SHEET	OF
8	26



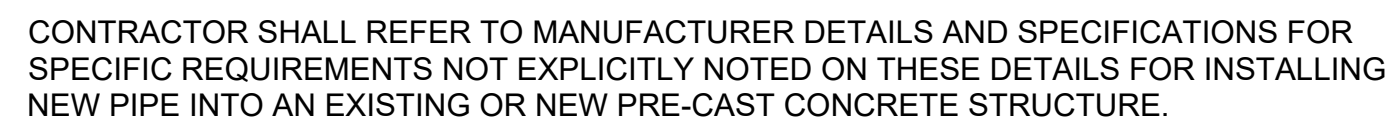
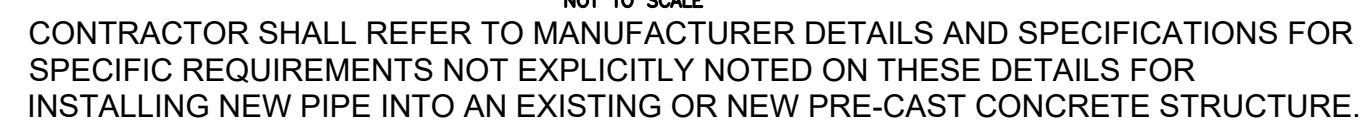
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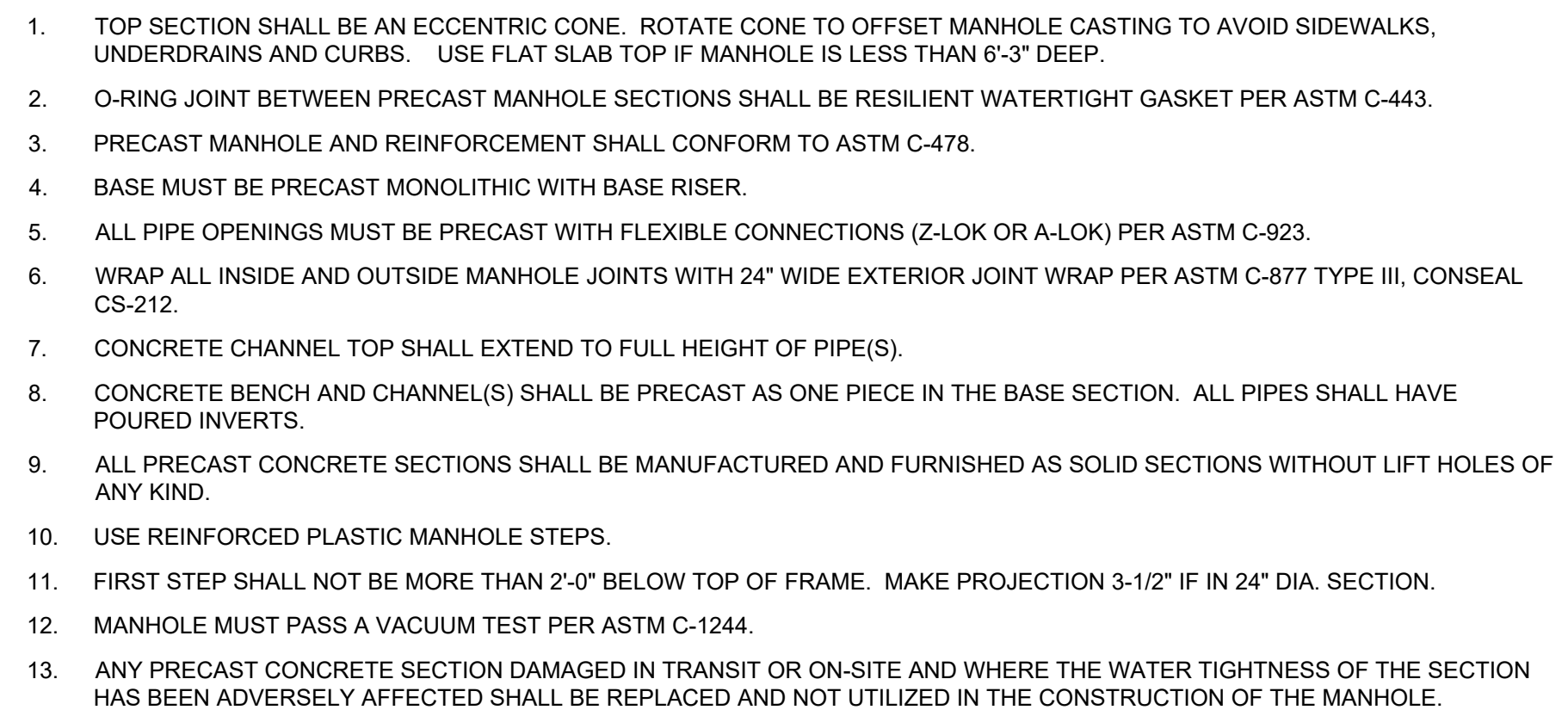
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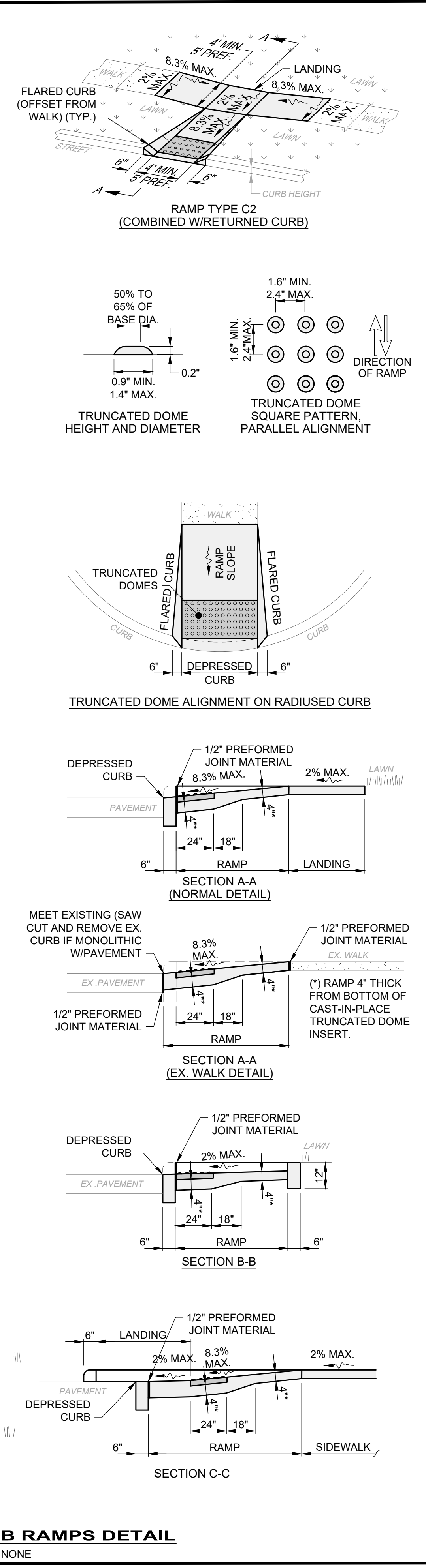
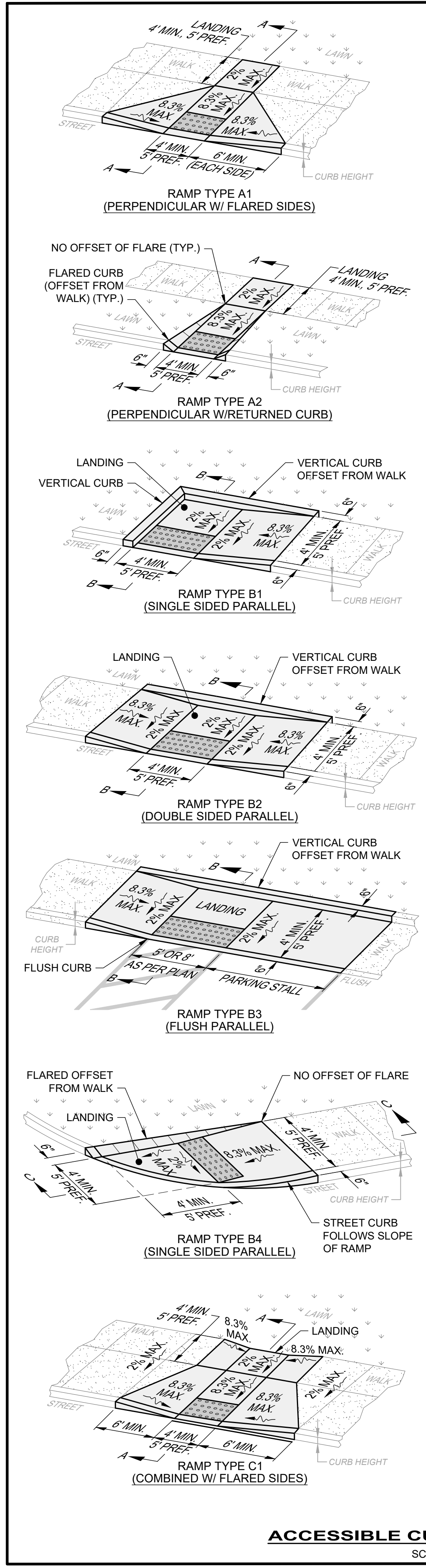


CONCENTRIC CONE TOP

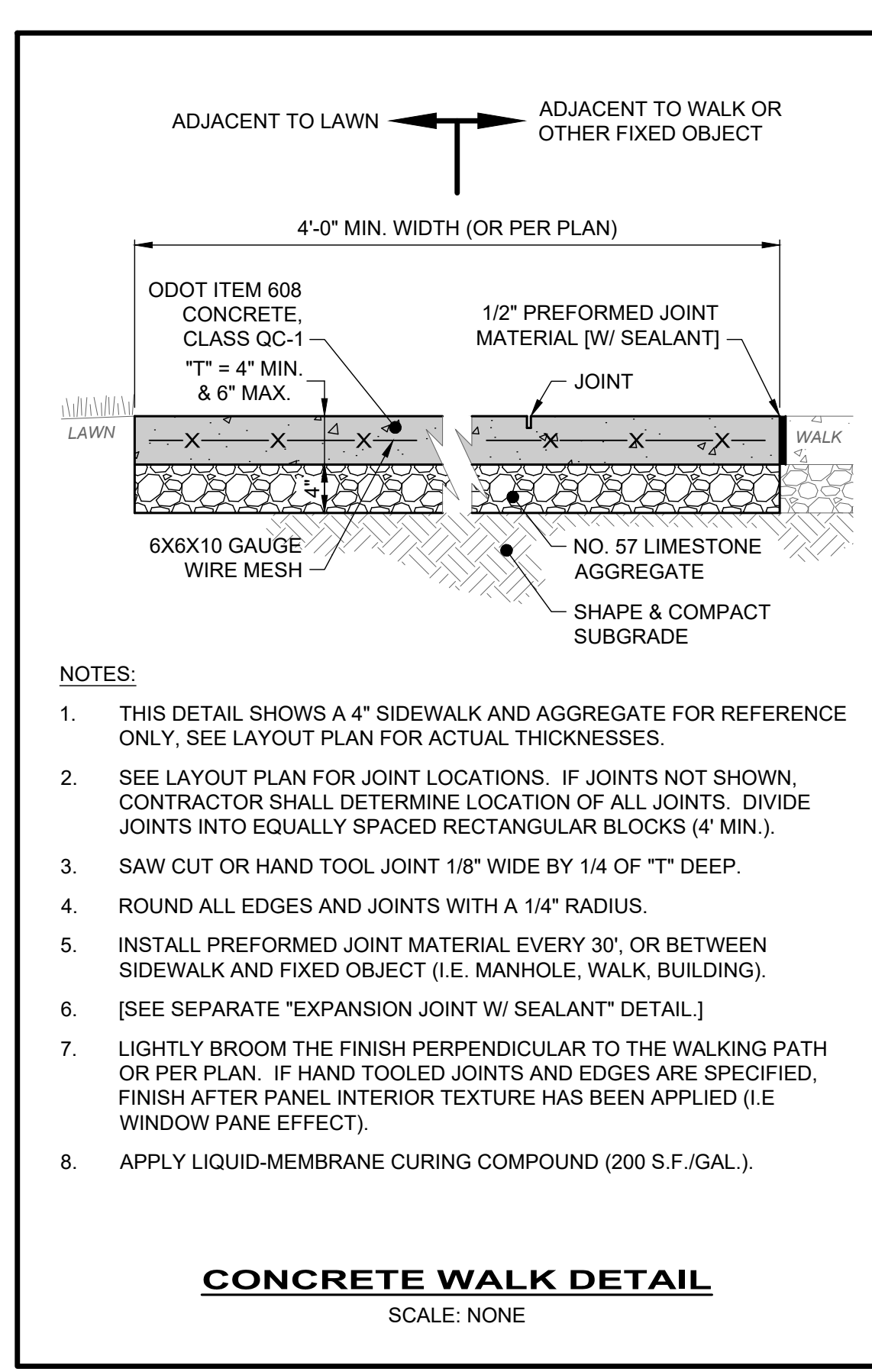


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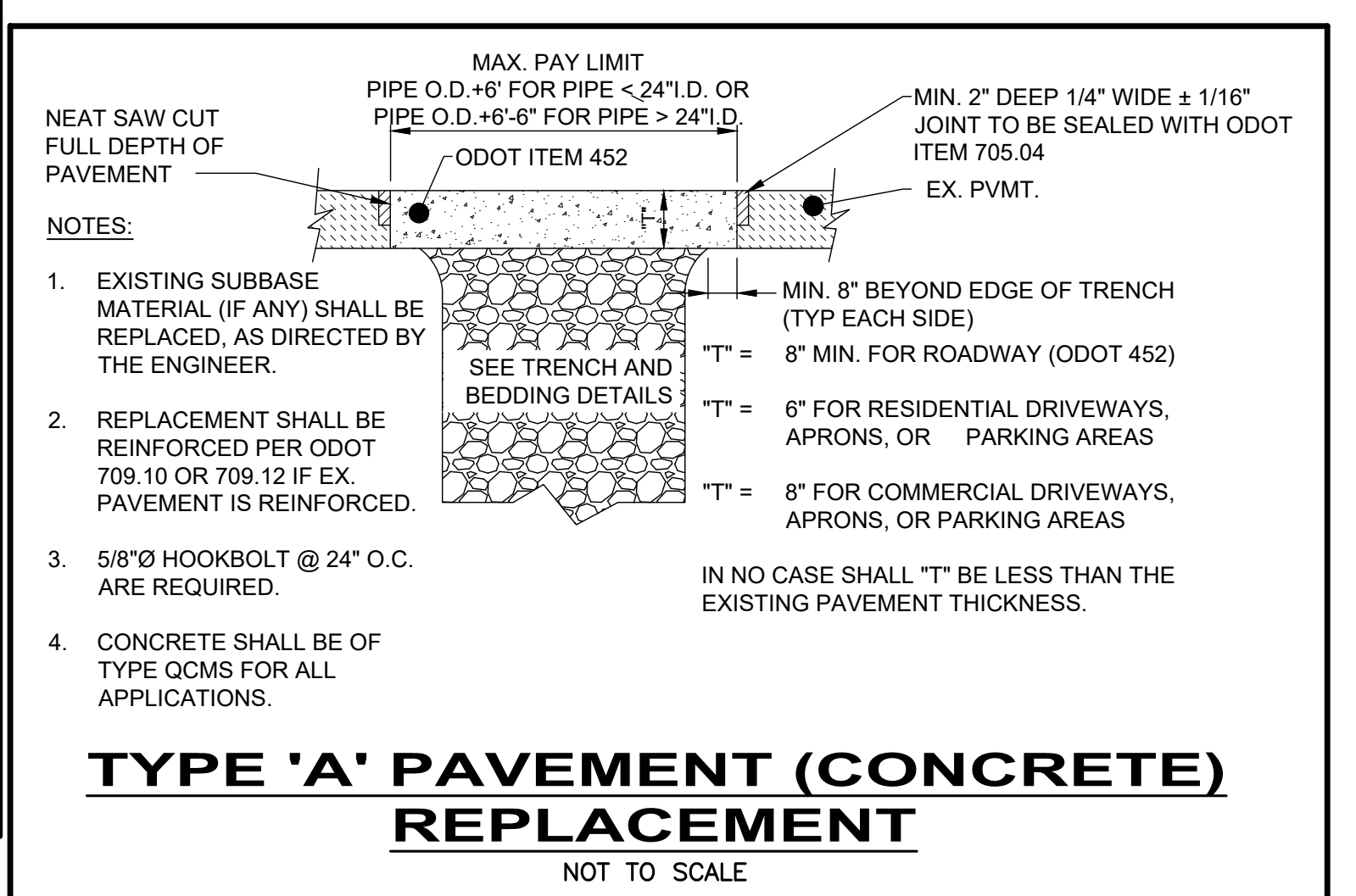
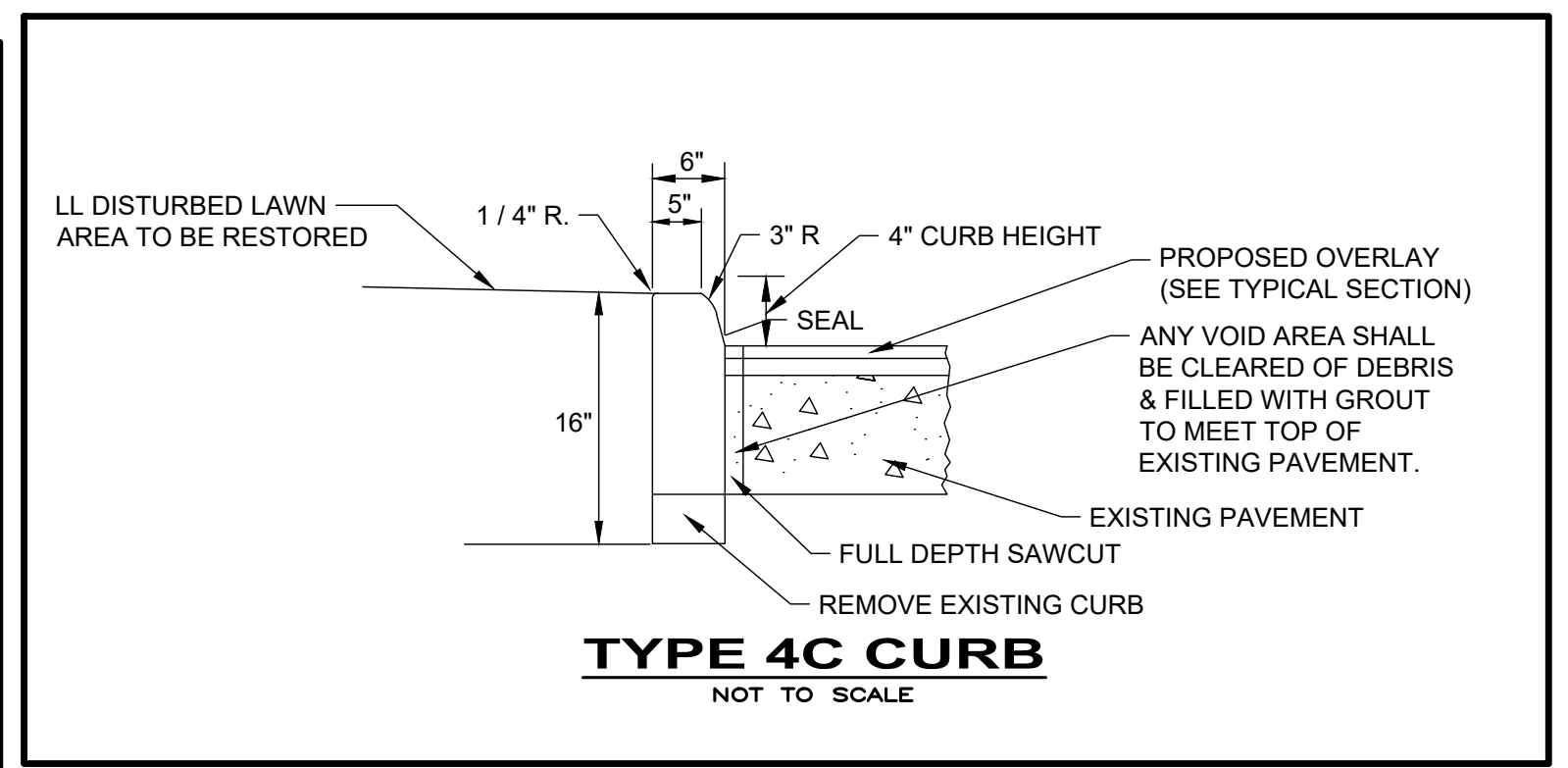


**ACCESSIBLE CURB RAMPS DETAIL**  
SCALE: NONE



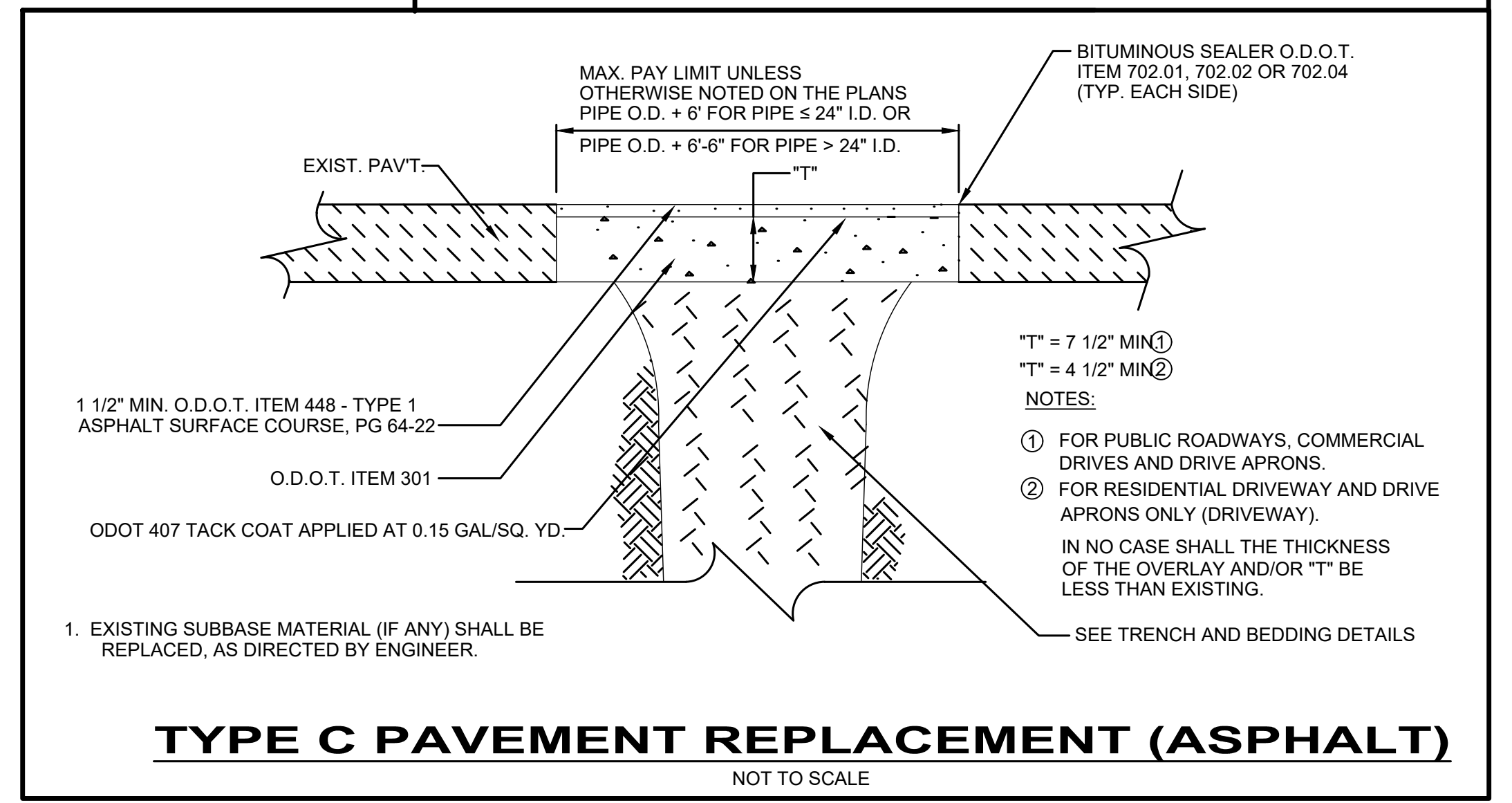
- NOTES:**
- THIS DETAIL SHOWS A 4" SIDEWALK AND AGGREGATE FOR REFERENCE ONLY, SEE LAYOUT PLAN FOR ACTUAL THICKNESSES.
  - SEE LAYOUT PLAN FOR JOINT LOCATIONS. IF JOINTS NOT SHOWN, CONTRACTOR SHALL DETERMINE LOCATION OF ALL JOINTS. DIVIDE JOINTS INTO EQUALLY SPACED RECTANGULAR BLOCKS (4" MIN.).
  - SAW CUT OR HAND TOOL JOINT 1/8" WIDE BY 1/4 OF "T" DEEP.
  - ROUND ALL EDGES AND JOINTS WITH A 1/4" RADIUS.
  - INSTALL PREFORMED JOINT MATERIAL EVERY 30', OR BETWEEN SIDEWALK AND FIXED OBJECT (I.E. MANHOLE, WALK, BUILDING).
  - [SEE SEPARATE "EXPANSION JOINT W/ SEALANT" DETAIL.]
  - LIGHTLY BROOM THE FINISH PERPENDICULAR TO THE WALKING PATH OR PER PLAN. IF HAND TOOLED JOINTS AND EDGES ARE SPECIFIED, FINISH AFTER PANEL INTERIOR TEXTURE HAS BEEN APPLIED (I.E WINDOW PANE EFFECT).
  - APPLY LIQUID-MEMBRANE CURING COMPOUND (200 S.F./GAL.).

**CONCRETE WALK DETAIL**  
SCALE: NONE



- NOTES:**
- EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY THE ENGINEER.
  - REPLACEMENT SHALL BE REINFORCED PER ODOT 709.10 OR 709.12 IF EX. PAVEMENT IS REINFORCED.
  - 5/8"Ø HOOKBOLT @ 24" O.C. ARE REQUIRED.
  - CONCRETE SHALL BE OF TYPE QCMS FOR ALL APPLICATIONS.

**TYPE 'A' PAVEMENT (CONCRETE) REPLACEMENT**  
NOT TO SCALE



- NOTES:**
- EXISTING SUBBASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY ENGINEER.

**TYPE C PAVEMENT REPLACEMENT (ASPHALT)**  
NOT TO SCALE

STATE OF OHIO  
TIMOTHY J. MC LAUGHLIN  
83985  
REGISTERED PROFESSIONAL ENGINEER

**verdantas**

NO	REVISION	DATE

ISSUED FOR:	REVISE	DATE	SCALE	DESIGNED BY:	DRAWN BY:	CHECKED BY:
		6/10/2025	AS NOTED	TJM	ELE	TJM

**FORESTGROVE SEWER IMPROVEMENTS: PHASE 1**  
CITY OF WILLOWICK  
LAKE COUNTY, OHIO

**CIVIL -10 SERIES**  
**CONSTRUCTION DETAILS-3**

PROJECT NO.	
31882	
DISCIPLINE	
CIVIL	
SHEET NAME	
10C-03	
SHEET	OF
11	26

MANHOLE IMPROVEMENT SCHEDULE - SANITARY												
MANHOLE ID	RIM TO INVERT (FT)	COVER SIZE (IN)	CONE MATERIAL	WALL MATERIAL	WALL MAX DIAMETER (IN)	BENCH MATERIAL	IMPROVEMENT TYPE	REPAIR IMPROVEMENTS				
								CONNECTIONS	STEPS	CHIMNEY	WALL	INVERT OR BENCH
S347	11.60	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
S347A	8.73	24	BRICK	BRICK	48	BRICK	N/A	N/A	N/A	N/A	N/A	N/A
S348	11.61	24	BRICK	BRICK	48	BRICK	REMOVE/REPLACE	N/A	N/A	N/A	N/A	N/A
S349	10.97	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
S350	9.39	24	BRICK	BRICK	48	BRICK	REPAIR	N/A	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
S352	9.56	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
S353	9.02	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
S354	10.08	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
S355	10.47	24	BRICK	BRICK	48	BRICK	REPAIR	N/A	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
S356	10.82	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
S357	10.63	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
S358	9.63	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	N/A	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
S359	7.70	24	BRICK	BRICK	48	BRICK	REMOVE/REPLACE	N/A	N/A	N/A	N/A	N/A

MANHOLE IMPROVEMENT SCHEDULE - STORM												
MANHOLE ID	RIM TO INVERT (FT)	COVER SIZE (IN)	CONE MATERIAL	WALL MATERIAL	WALL MAX DIAMETER (IN)	BENCH MATERIAL	IMPROVEMENT TYPE	REPAIR IMPROVEMENTS				
								CONNECTIONS	STEPS	CHIMNEY	WALL	INVERT OR BENCH
T347	9.60	24	BRICK	BRICK	48	BRICK	REMOVE/REPLACE	N/A	N/A	N/A	N/A	N/A
T347A	7.40	24	BRICK	BRICK	48	BRICK	N/A	N/A	N/A	N/A	N/A	N/A
T348	9.20	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
T349	8.56	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
T350	7.25	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
T352	7.17	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
T353	7.15	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
T354	8.62	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
T354A	8.73	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
T355	8.88	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
T356	9.11	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
T357	9.02	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	REMOVE AND RECONSTRUCT BENCH AS DETAILED IN "PRECAST CONCRETE MANHOLE (SANITARY & STORM) DETAIL
T358	8.18	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81
T359	7.62	24	BRICK	BRICK	48	BRICK	REPAIR	GROUT AROUND EX. PIPE INLETS	REMOVE/REPLACE	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81	STRUCTURAL LINING PER 330130.81

STATE OF OHIO

TIMOTHY J. McLAUGHLIN

83985

REGISTERED PROFESSIONAL ENGINEER

verdantas

DATE

REVISION

NO

ISSUED FOR:

REVUE

ISSUE DATE:

6/10/2025

SCALE:

AS NOTED

DESIGNED BY:

TJM

DRAWN BY:

ELE

CHECKED BY:

TJM

FORESTGROVE SEWER IMPROVEMENTS: PHASE 1

CITY OF WILLOWICK

CIVIL -10 SERIES

STRUCTURE IMPROVEMENT SCHED

PROJECT NO.

31882

DISCIPLINE

CIVIL

SHEET NAME

10C-04

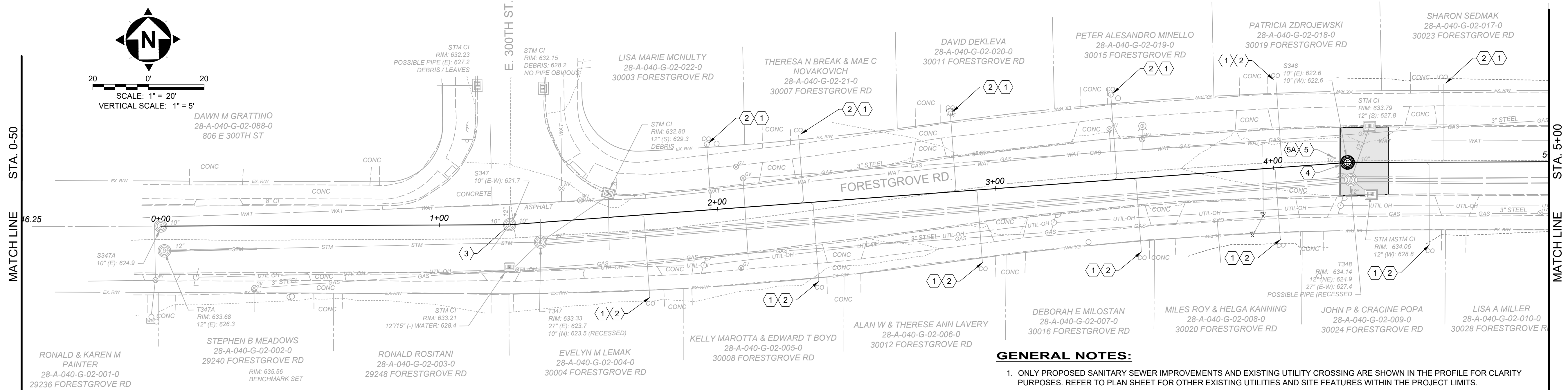
SHEET

12

OF

26

Z:\PROJECT FILES\WA-K2\WILLOWICK\31882 - FORESTGROVE SEWER IMPROVEMENTS PHASE 1\CA\DWG\SSHEETS\31882- STRUCTURE IMPROVEMENT SCHED.DWG - 12 STRUCTURE IMPROVEMENT SCHED - 7/22/2025 9:50:09 AM - MAYA BITTAR



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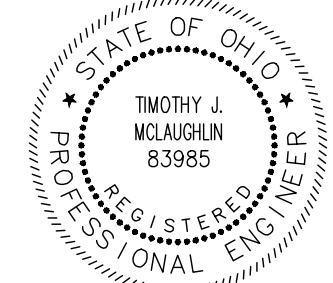
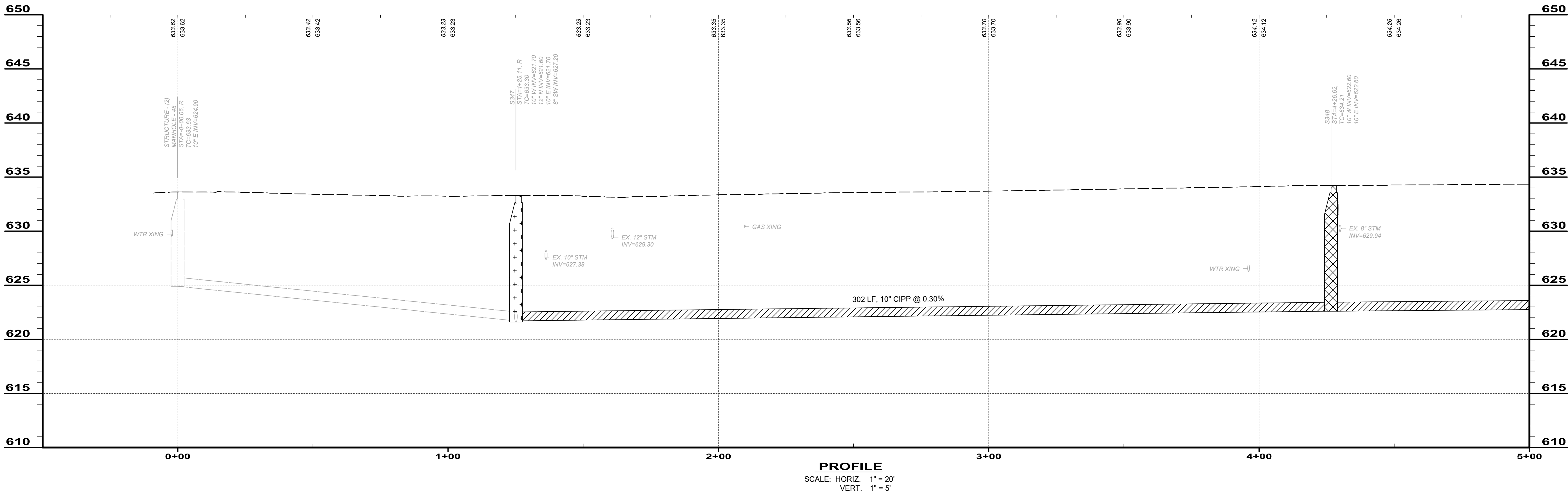
1. LATERAL REINSTATEMENT (12 EA)
2. LATERAL LINER (12 EA)
3. MANHOLE REHAB (12 VFT)
4. MANHOLE REPLACEMENT (1 EA)
5. ASPHALT ROADWAY REPLACEMENT (12 SY)
- 5A. ADDITIONAL ASPHALT ROADWAY REPLACEMENT SHOWN IS ASSOCIATED WITH STORM CATCH BASIN REMOVAL AND REPLACEMENT SEE SHEET 19
6. NOT USED

**LEGEND**

	CURED-IN-PLACE-PIPE (CIPP) LINE
	MANHOLE REHAB
	MANHOLE REPLACEMENT
	TYPE "C" PAVEMENT REPLACEMENT
	TYPE "A" PAVEMENT REPLACEMENT

**GENERAL NOTES:**

1. ONLY PROPOSED SANITARY SEWER IMPROVEMENTS AND EXISTING UTILITY CROSSING ARE SHOWN IN THE PROFILE FOR CLARITY PURPOSES. REFER TO PLAN SHEET FOR OTHER EXISTING UTILITIES AND SITE FEATURES WITHIN THE PROJECT LIMITS.
2. THE CONTRACTOR SHALL CLEAN AND CCTV SEWER NOTED FOR IMPROVEMENTS PRIOR TO THE COMMENCEMENT OF WORK AND IN ACCORDANCE WITH ALL PERTINENT NASSCO AND PROJECT SPECIFICATIONS. CCTV SHALL BE REVIEWED BY THE ENGINEER BEFORE THE AUTHORIZATION OF IMPROVEMENTSEX.
3. VCP SEWER THAT RECEIVES CIPP LINING SHALL BE IN GENERAL ACCORDANCE OF SPEC SECTION 330130.72 AND MEET MINIMUM LINER THICKNESS OF 6MM.
4. CONTRACTOR IS RESPONSIBLE TO CONFIRM AND VERIFY ANY ADDITIONAL INLETS (ACTIVE OR INACTIVE) ENTERING INTO THE SEWER. ALL INLETS SHALL REMAIN ACTIVE OR RESTORED AT THE COMPLETION OF CONSTRUCTION. ANY ADDITIONAL ACTIVE CONNECTIONS LOCATED IN THE FIELD NOT NOTED IN THE PLANS SHALL BE REINSTATED UNDER THE PAY ITEM CONNECTION REINSTATEMENT, AS PER PLAN.
5. LATERAL LINING SHALL BE PERFORMED TO THE RIGHT-OF-WAY LINE FROM THE MAIN. IF NO CLEANOUT IS PRESENT AT RIGHT-OF-WAY LINE, THE CONTRACTOR SHALL INSTALL A CLEAN OUT TEE 1' OFF THE RIGHT OF WAY LINE ON THE PROPERTY SIDE IN ACCORDANCE WITH THE TEST TEE REPLACEMENT DETAIL. CONTRACTOR TO FIELD VERIFY ALL SAN. LATERALS AND EXISTING CLEANOUTS.
6. REFER TO SPECIFICATION SECTION 330130.81 FOR ALL MANHOLE REHABILITATION MATERIAL AND APPLICATION REQUIREMENTS.
7. CLEANOUT LOCATIONS MAY VARY. CONTRACTOR IS RESPONSIBLE AND SHALL FIELD LOCATE ALL CLEANOUTS WITHOUT EXCAVATION OR DISTURBANCE TO LAWN AREAS. IF IT IS UNABLE TO BE LOCATED FROM THE SURFACE, THE CONTRACTOR SHALL LOCATE WITH A LATERAL LAUNCH AND SONDE.
8. SANITARY AND STORM SEWER RELATED IMPROVEMENTS MAY HAVE AREAS WHERE WORK CONFLICTS OR WILL REQUIRE WORK TO BE PERFORMED SIMULTANEOUSLY. REFER TO STORM PLAN AND PROFILE SHEETS AND ALL PERTINENT DETAILS AND SPECIFICATIONS FOR STORM SEWER SYSTEM IMPROVEMENTS NOT ILLUSTRATED ON THIS SHEET.



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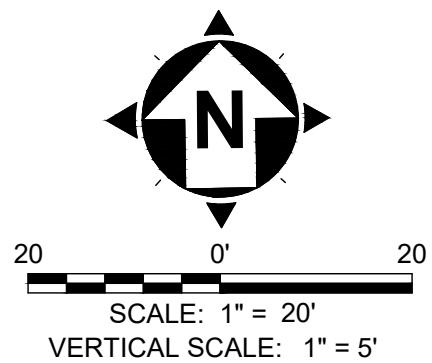
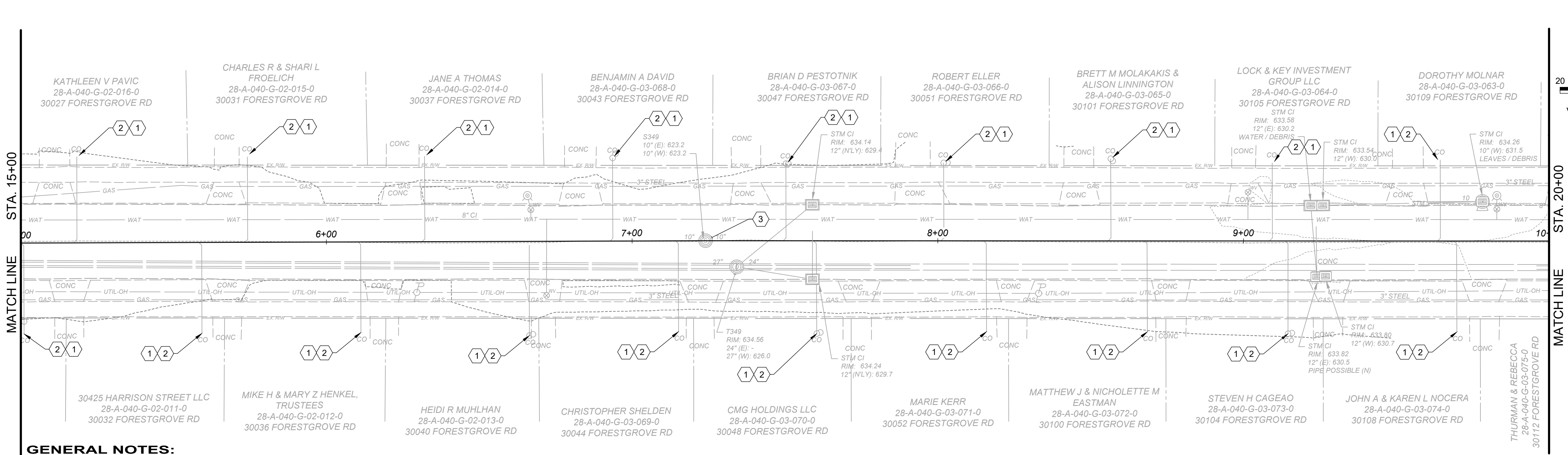
ISSUED FOR:	REVISE	NO	REVISION	DATE
PROJECT NO. 31882	6/10/2025			
DISCIPLINE CIVIL	AS NOTED			
SHEET NAME 10C-05	DESIGNED BY: TJM			
SHEET 13	DRAWN BY: ELE			
OF 26	CHECKED BY: TJM			

FOREST GROVE SEWER IMPROVEMENTS: PHASE 1  
CITY OF WILLOWICK  
LAKE COUNTY, OHIO

CIVIL -10 SERIES

PLAN & PROFILE STA.0+00 TO 5+00

PROJECT NO.	31882
DISCIPLINE	CIVIL
SHEET NAME	10C-05
SHEET	13
OF	26



**GENERAL NOTES:**

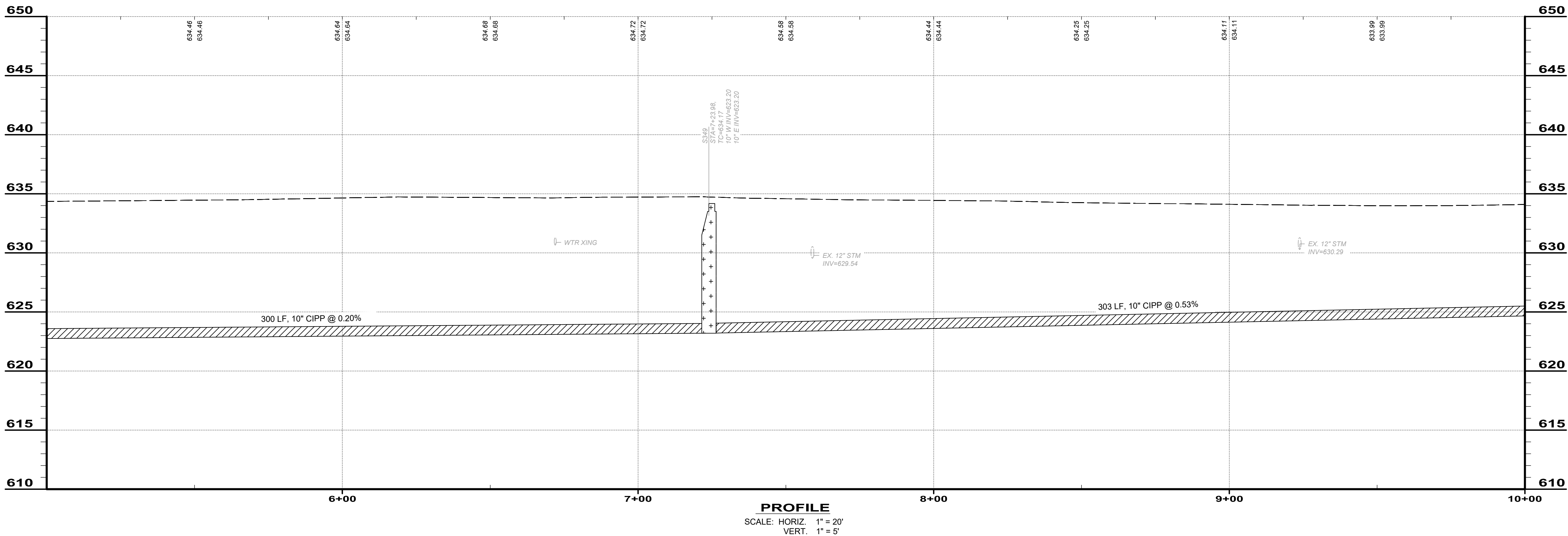
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- THE CONTRACTOR SHALL CLEAN AND CCTV SEWER NOTED FOR IMPROVEMENTS PRIOR TO THE COMMENCEMENT OF WORK AND IN ACCORDANCE WITH ALL PERTINENT NASSCO AND PROJECT SPECIFICATIONS. CCTV SHALL BE REVIEWED BY THE ENGINEER BEFORE THE AUTHORIZATION OF IMPROVEMENTSEX.
- VCP SEWER THAT RECEIVES CIPP LINING SHALL BE IN GENERAL ACCORDANCE OF SPEC SECTION 330130.72 AND MEET MINIMUM LINER THICKNESS OF 6MM.
- CONTRACTOR IS RESPONSIBLE TO CONFIRM AND VERIFY ANY ADDITIONAL INLETS (ACTIVE OR INACTIVE) ENTERING INTO THE SEWER. ALL INLETS SHALL REMAIN ACTIVE OR RESTORED AT THE COMPLETION OF CONSTRUCTION. ANY ADDITIONAL ACTIVE CONNECTIONS LOCATED IN THE FIELD NOT NOTED IN THE PLANS SHALL BE REINSTATED UNDER THE PAY ITEM CONNECTION REINSTATEMENT, AS PER PLAN.
- LATERAL LINING SHALL BE PERFORMED TO THE RIGHT-OF-WAY LINE FROM THE MAIN. IF NO CLEANOUT IS PRESENT AT RIGHT-OF-WAY LINE, THE CONTRACTOR SHALL INSTALL A CLEAN OUT TEE 1' OFF THE RIGHT OF WAY LINE ON THE PROPERTY SIDE IN ACCORDANCE WITH THE TEST TEE REPLACEMENT DETAIL. CONTRACTOR TO FIELD VERIFY ALL SAN. LATERALS AND EXISTING CLEANOUTS.
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- SANITARY AND STORM SEWER RELATED IMPROVEMENTS MAY HAVE AREAS WHERE WORK CONFLICTS OR WILL REQUIRE WORK TO BE PERFORMED SIMULTANEOUSLY. REFER TO STORM PLAN AND PROFILE SHEETS AND ALL PERTINENT DETAILS AND SPECIFICATIONS FOR STORM SEWER SYSTEM IMPROVEMENTS NOT ILLUSTRATED ON THIS SHEET.

**CODED NOTES:**

- LATERAL REINSTATEMENT (19 EA)
- LATERAL LINER (19 EA)
- MANHOLE REHAB (11 VFT)
- NOT USED
- NOT USED
- NOT USED

**LEGEND**

- CURED-IN-PLACE-PIPE (CIPP) LINE
- MANHOLE REHAB
- MANHOLE REPLACEMENT
- TYPE "C" PAVEMENT REPLACEMENT
- TYPE "A" PAVEMENT REPLACEMENT



**PROFILE**  
SCALE: HORIZ. 1" = 20'  
VERT. 1" = 5'

STATE OF OHIO  
TIMOTHY J. McLAUGHLIN  
83985  
REGISTERED PROFESSIONAL ENGINEER

verdantas

ISSUED FOR:	CONSTRUCTION	NO.	REVISION	DATE
ISSUE DATE:	1/28/24			
SCALE:	AS NOTED			
DESIGNED BY:	TJM			
DRAWN BY:	ELE			
CHECKED BY:	TJM			

FOREST GROVE SEWER  
IMPROVEMENTS: PHASE 1  
CITY OF WILLOWICK  
LAKE COUNTY, OHIO

CIVIL -10 SERIES

PLAN & PROFILE STA.5+00 TO 10+00

PROJECT NO.  
31882

DISCIPLINE  
CIVIL

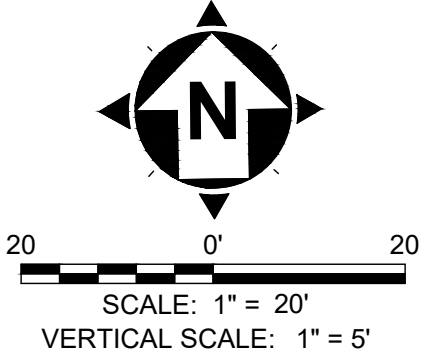
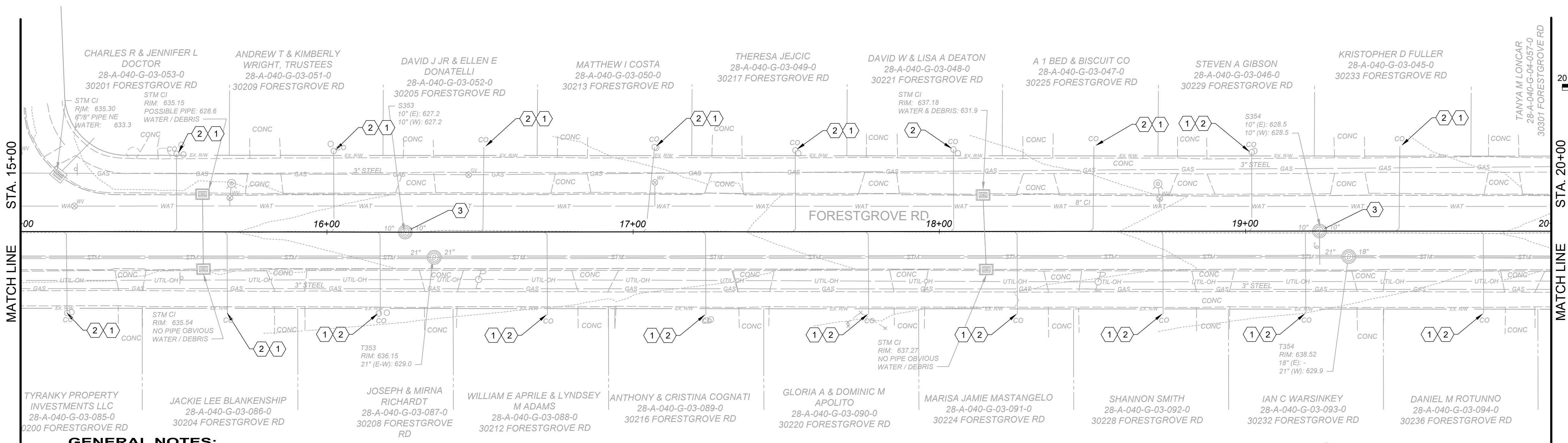
SHEET NAME  
10C-06

SHEET  
14

OF  
26

Z:\PROJECT FILES\WA-K2\WILLOWICK\31882 - FOREST GROVE SEWER IMPROVEMENTS PHASE 1\CAD\DWG\SHEETS\31882 - SANITARY P & P.DWG - 14 PLAN & PROFILE STA.5+00 TO 10+00 - 7/25/2023 11:55:09 AM - MAYA BITTAR





**GENERAL NOTES:**

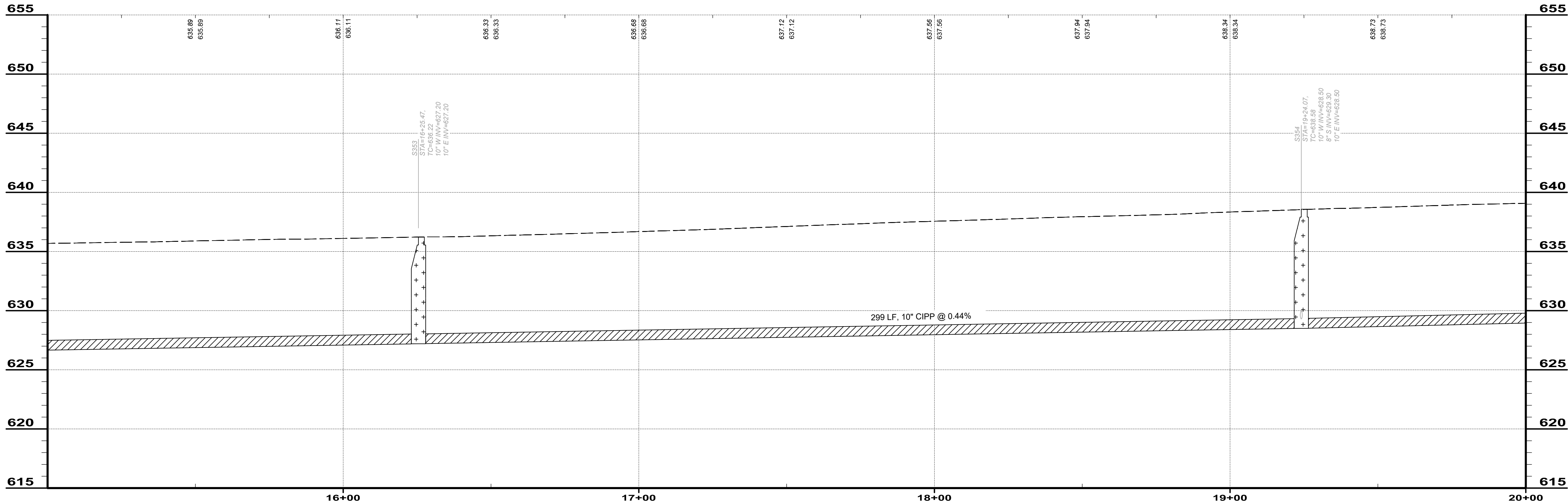
- ONLY PROPOSED SANITARY SEWER IMPROVEMENTS AND EXISTING UTILITY CROSSING ARE SHOWN IN THE PROFILE FOR CLARITY PURPOSES. REFER TO PLAN SHEET FOR OTHER EXISTING UTILITIES AND SITE FEATURES WITHIN THE PROJECT LIMITS.
- THE CONTRACTOR SHALL CLEAN AND CCTV SEWER NOTED FOR IMPROVEMENTS PRIOR TO THE COMMENCEMENT OF WORK AND IN ACCORDANCE WITH ALL PERTINENT NASSCO AND PROJECT SPECIFICATIONS. CCTV SHALL BE REVIEWED BY THE ENGINEER BEFORE THE AUTHORIZATION OF IMPROVEMENTSEX.
- VCP SEWER THAT RECEIVES CIPP LINING SHALL BE IN GENERAL ACCORDANCE OF SPEC SECTION 330130.72 AND MEET MINIMUM LINER THICKNESS OF 6MM.
- CONTRACTOR IS RESPONSIBLE TO CONFIRM AND VERIFY ANY ADDITIONAL INLETS (ACTIVE OR INACTIVE) ENTERING INTO THE SEWER. ALL INLETS SHALL REMAIN ACTIVE OR RESTORED AT THE COMPLETION OF CONSTRUCTION. ANY ADDITIONAL ACTIVE CONNECTIONS LOCATED IN THE FIELD NOT NOTED IN THE PLANS SHALL BE REINSTATED UNDER THE PAY ITEM CONNECTION REINSTATEMENT, AS PER PLAN.
- LATERAL LINING SHALL BE PERFORMED TO THE RIGHT-OF-WAY LINE FROM THE MAIN. IF NO CLEANOUT IS PRESENT AT RIGHT-OF-WAY LINE, THE CONTRACTOR SHALL INSTALL A CLEAN OUT TEE 1' OFF THE RIGHT OF WAY LINE ON THE PROPERTY SIDE IN ACCORDANCE WITH THE TEST TEE REPLACEMENT DETAIL. CONTRACTOR TO FIELD VERIFY ALL SAN. LATERALS AND EXISTING CLEANOUTS.
- REFER TO SPECIFICATION SECTION 330130.81 FOR ALL MANHOLE REHABILITATION MATERIAL AND APPLICATION REQUIREMENTS.
- CLEANOUT LOCATIONS MAY VARY. CONTRACTOR IS RESPONSIBLE AND SHALL FIELD LOCATE ALL CLEANOUTS WITHOUT EXCAVATION OR DISTURBANCE TO LAWN AREAS. IF IT IS UNABLE TO BE LOCATED FROM THE SURFACE, THE CONTRACTOR SHALL LOCATE WITH A LATERAL LAUNCH AND SONDE.
- SANITARY AND STORM SEWER RELATED IMPROVEMENTS MAY HAVE AREAS WHERE WORK CONFLICTS OR WILL REQUIRE WORK TO BE PERFORMED SIMULTANEOUSLY. REFER TO STORM PLAN AND PROFILE SHEETS AND ALL PERTINENT DETAILS AND SPECIFICATIONS FOR STORM SEWER SYSTEM IMPROVEMENTS NOT ILLUSTRATED ON THIS SHEET.

**CODED NOTES:**

- LATERAL REINSTATEMENT (19 EA)
- LATERAL LINER (19 EA)
- MANHOLE REHAB (20 VFT)
- NOT USED
- NOT USED
- NOT USED

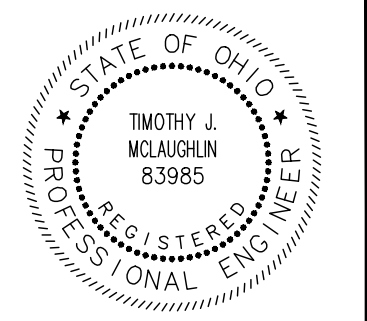
**LEGEND**

- CURED-IN-PLACE-PIPE (CIPP) LINE
- MANHOLE REHAB
- MANHOLE REPLACEMENT
- TYPE "C" PAVEMENT REPLACEMENT
- TYPE "A" PAVEMENT REPLACEMENT



**PROFILE**

SCALE: HORIZ. 1" = 20'  
VERT. 1" = 5'

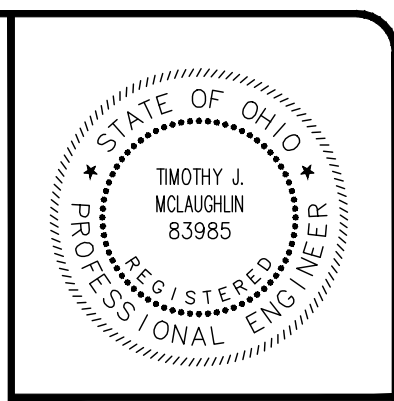


**verdantas**

DATE	REVISION	NO	ISSUED FOR: CONSTRUCTION	ISSUE DATE: 1/29/24	SCALE: AS NOTED	DESIGNED BY: TJM	DRAWN BY: ELE	CHECKED BY: TJM

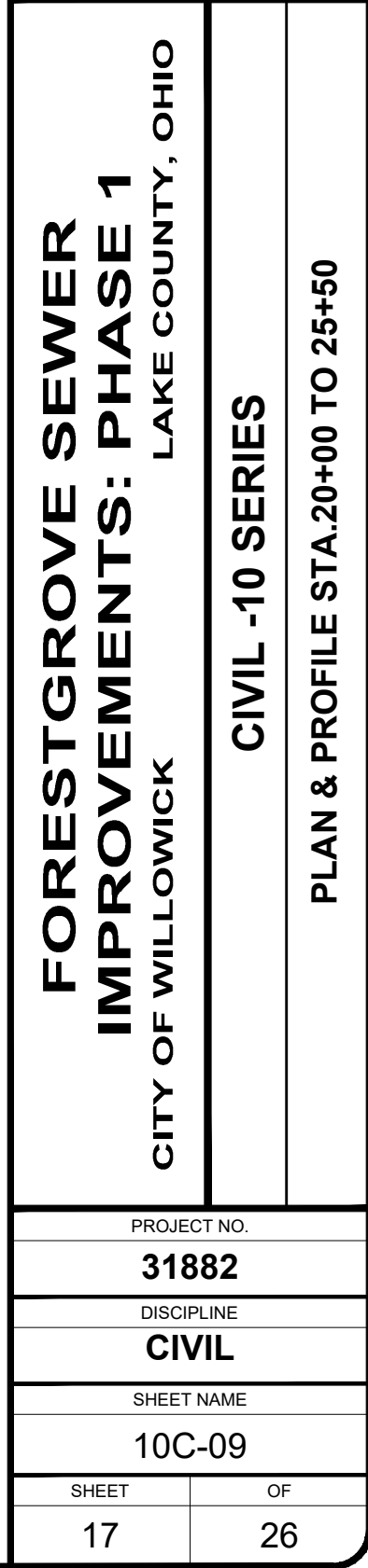
**FORESTGROVE SEWER IMPROVEMENTS: PHASE 1**  
CITY OF WILLOWICK  
LAKE COUNTY, OHIO  
**CIVIL -10 SERIES**  
PLAN & PROFILE STA.15+00 TO 20+00

PROJECT NO.	31882
DISCIPLINE	CIVIL
SHEET NAME	10C-08
SHEET 16	OF 26



ISSUED FOR: CONSTRUCTION	NO	REVISION	DATE
ISSUE DATE: 1/28/24			
SCALE: AS NOTED			
DESIGNED BY: TJM			
DRAWN BY: ELE			
CHECKED BY: TJM			

	CURED-IN-PLACE-PIPE (CIPP) LINE
	MANHOLE REHAB
	MANHOLE REPLACEMENT
	TYPE "C" PAVEMENT REPLACEMENT
	TYPE "A" PAVEMENT REPLACEMENT

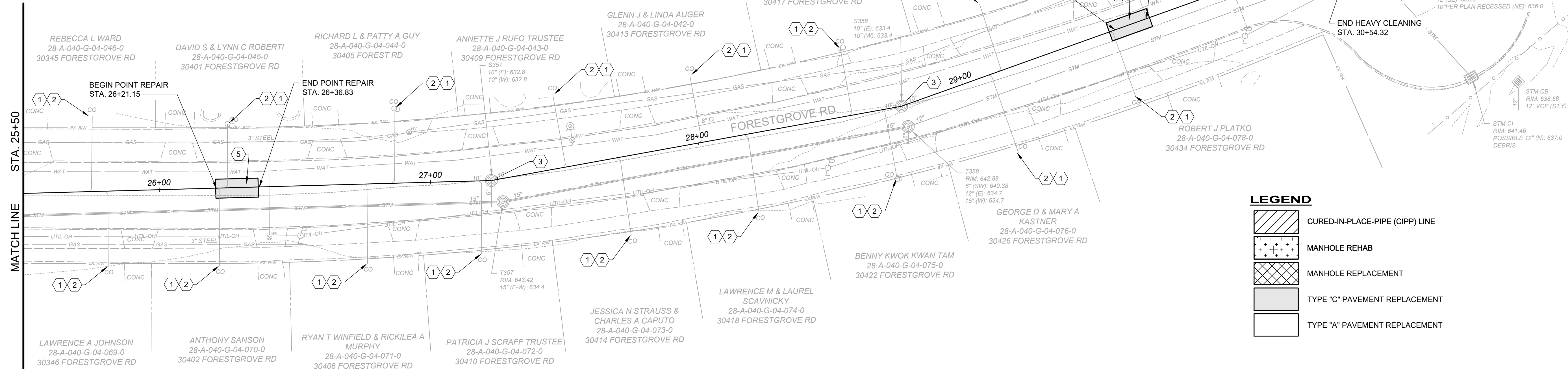
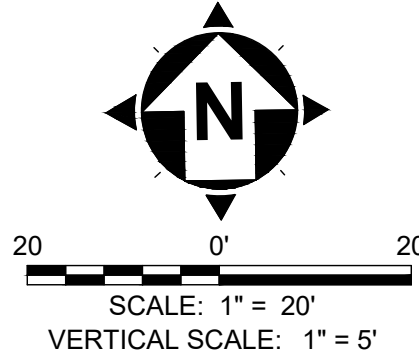


GENERAL NOTES:

1. ONLY PROPOSED SANITARY SEWER IMPROVEMENTS AND EXISTING UTILITY CROSSING ARE SHOWN IN THE PROFILE FOR CLARITY PURPOSES. REFER TO PLAN SHEET FOR OTHER EXISTING UTILITIES AND SITE FEATURES WITHIN THE PROJECT LIMITS.
2. HE CONTRACTOR SHALL CLEAN AND CCTV SEWER NOTED FOR IMPROVEMENTS PRIOR TO THE COMMENCEMENT OF WORK AND IN ACCORDANCE WITH ALL PERTINENT NASSCO AND PROJECT SPECIFICATIONS. CCTV SHALL BE REVIEWED BY THE ENGINEER BEFORE THE AUTHORIZATION OF IMPROVEMENTS.
3. CONTRACTOR IS RESPONSIBLE TO CONFIRM AND VERIFY ANY ADDITIONAL INLETS (ACTIVE OR INACTIVE) ENTERING INTO THE SEWER. ALL INLETS SHALL REMAIN ACTIVE OR RESTORED AT THE COMPLETION OF CONSTRUCTION. ANY ADDITIONAL ACTIVE CONNECTIONS LOCATED IN THE FIELD NOT NOTED IN THE PLANS SHALL BE REINSTATED UNDER THE PAY ITEM CONNECTION REINSTATEMENT, AS PER PLAN.
4. LATERAL LINING SHALL BE PERFORMED TO THE RIGHT-OF-WAY LINE FROM THE MAIN. IF NO CLEANOUT IS PRESENT AT RIGHT-OF-WAY LINE, THE CONTRACTOR SHALL INSTALL A CLEAN OUT TEE 1' OFF THE RIGHT OF WAY LINE ON THE PROPERTY SIDE IN ACCORDANCE WITH THE TEST TEE REPLACEMENT DETAIL. CONTRACTOR TO FIELD VERIFY ALL SAN. LATERALS AND EXISTING CLEANOUTS.
5. REFER TO SPECIFICATION SECTION 330130.81 FOR ALL MANHOLE REHABILITATION MATERIAL AND APPLICATION REQUIREMENTS.
6. CLEANOUT LOCATIONS MAY VARY. CONTRACTOR IS RESPONSIBLE AND SHALL FIELD LOCATE ALL CLEANOUTS WITHOUT EXCAVATION OR DISTURBANCE TO LAWN AREAS. IF IT IS UNABLE TO BE LOCATED FROM THE SURFACE, THE CONTRACTOR SHALL LOCATE WITH A LATERAL LAUNCH AND SONDE.
7. SANITARY AND STORM SEWER RELATED IMPROVEMENTS MAY HAVE AREAS WHERE WORK CONFLICTS OR WILL REQUIRE WORK TO BE PERFORMED SIMULTANEOUSLY. REFER TO STORM PLAN AND PROFILE SHEETS AND ALL PERTINENT DETAILS AND SPECIFICATIONS FOR STORM SEWER SYSTEM IMPROVEMENTS NOT ILLUSTRATED ON THIS SHEET.
8. MANHOLE REPLACEMENT SHALL INCLUDE UP TO 5'-0" OF PIPE REPLACEMENT FOR ALL EX. CONNECTIONS INCLUDING ALL FITTINGS AND COUPLERS NECESSARY TO CONNECT TO EXISTING PIPE..

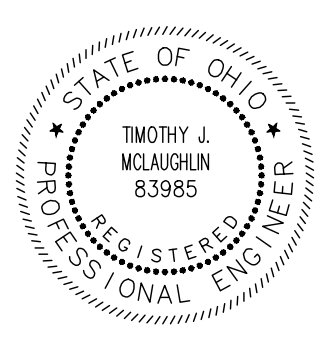
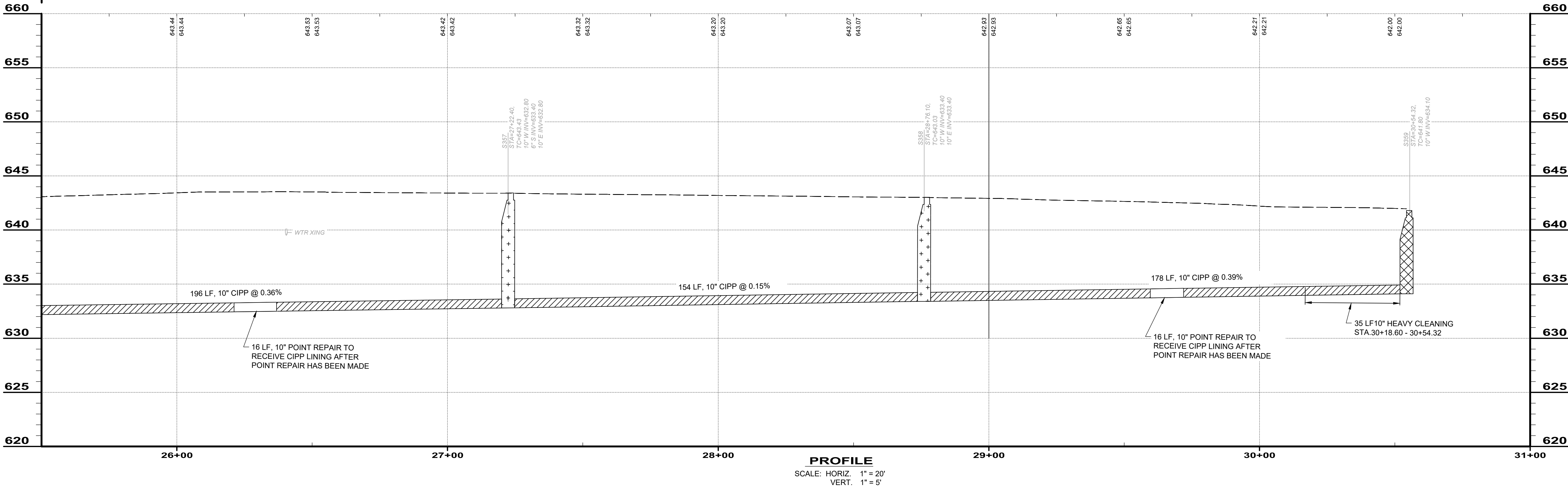
CODED NOTES:

1. LATERAL REINSTATEMENT (18 EA)
2. LATERAL LINER (18 EA)
3. MANHOLE REHAB (21 VFT)
4. MANHOLE REPLACEMENT (1 EA)
5. ASPHALT ROADWAY REPLACEMENT (25 SY)
6. CONCRETE ROADWAY REPLACEMENT (12 SY)



LEGEND

- CURED-IN-PLACE-PIPE (CIPP) LINE
- MANHOLE REHAB
- MANHOLE REPLACEMENT
- TYPE "C" PAVEMENT REPLACEMENT
- TYPE "A" PAVEMENT REPLACEMENT



verdantas

DATE	REVISION	NO	ISSUED FOR: CONSTRUCTION	ISSUE DATE: 1/28/24	SCALE: AS NOTED	DESIGNED BY: TJM	DRAWN BY: ELE	CHECKED BY: TJM

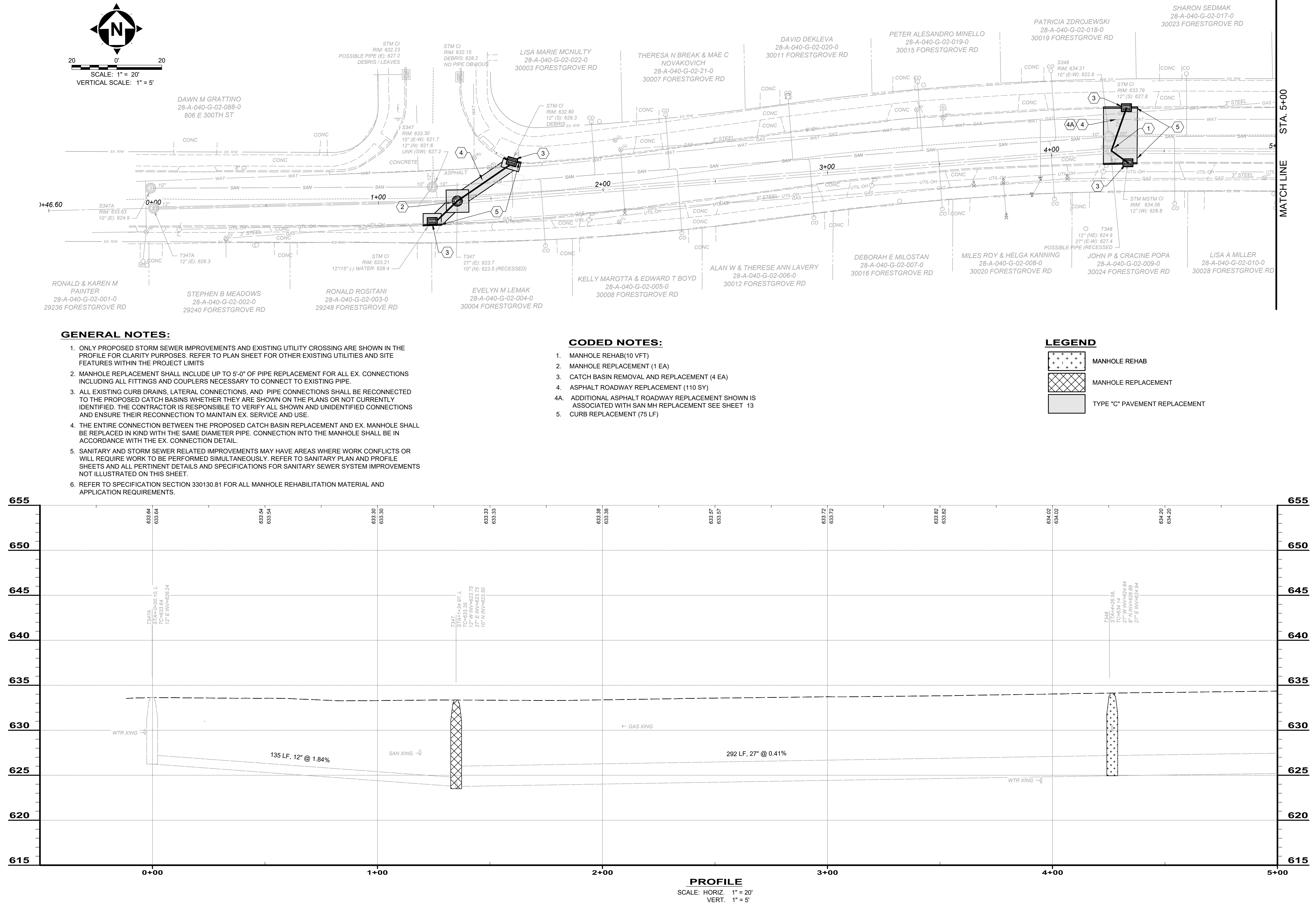
<b>FORESTGROVE SEWER IMPROVEMENTS: PHASE 1</b>		<b>LAKE COUNTY, OHIO</b>	
<b>CITY OF WILLOWICK</b>		<b>CIVIL -10 SERIES</b>	
		<b>PLAN &amp; PROFILE STA.25+50 TO 31+00</b>	
PROJECT NO.			
31882			
DISCIPLINE			
CIVIL			
SHEET NAME			
10C-10			
SHEET		OF	
18		26	

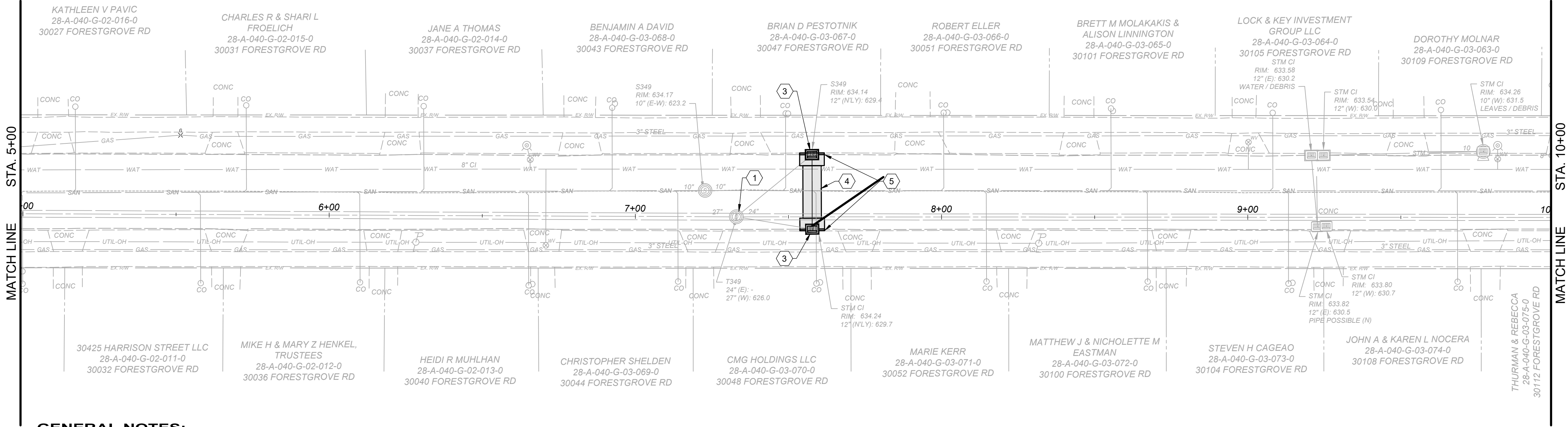


ISSUED FOR:	REVUE	NO	REVISION	DATE
PROJECT	6/10/2025			
ISSUE DATE:	AS NOTED			
SCALE:	TJM			
DESIGNED BY:	ELE			
DRAWN BY:	TJM			
CHECKED BY:				

FORESTGROVE SEWER IMPROVEMENTS: PHASE 1 CITY OF WILLOWICK LAKE COUNTY, OHIO	CIVIL -10 SERIES
	PLAN & PROFILE STA. 0+00 TO 5+00

PROJECT NO.	31882
DISCIPLINE	CIVIL
SHEET NAME	10C-11
SHEET	OF
19	26





**GENERAL NOTES:**

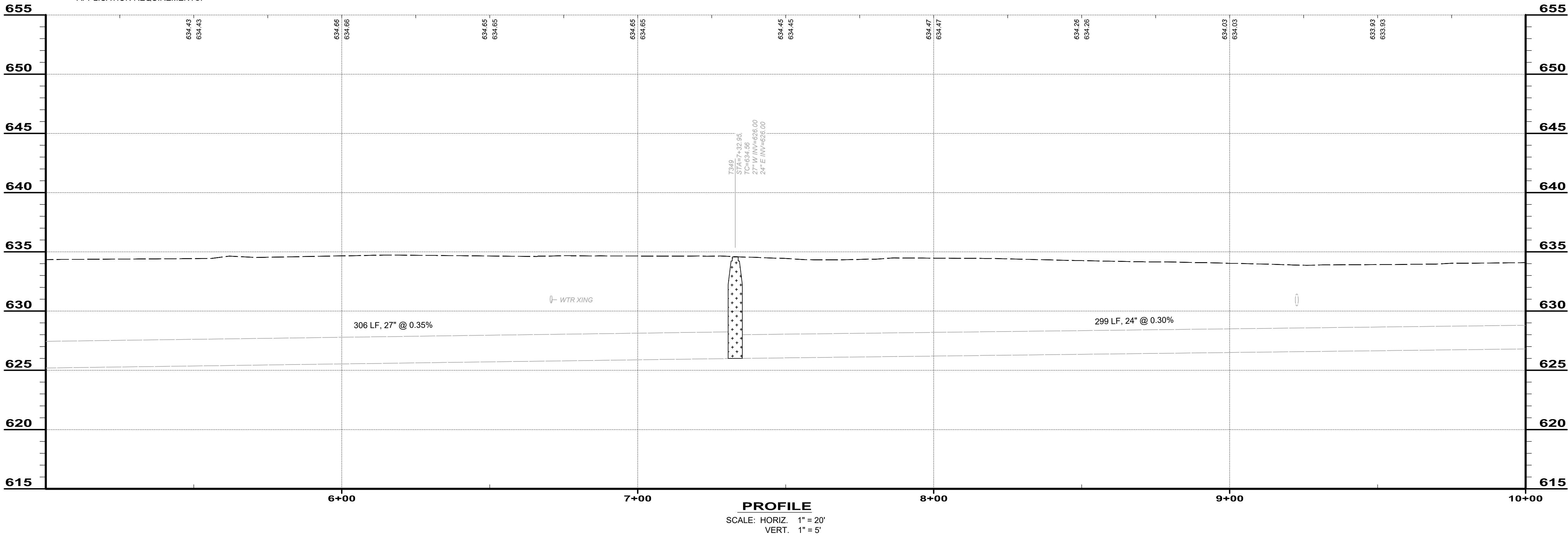
- ONLY PROPOSED STORM SEWER IMPROVEMENTS AND EXISTING UTILITY CROSSING ARE SHOWN IN THE PROFILE FOR CLARITY PURPOSES. REFER TO PLAN SHEET FOR OTHER EXISTING UTILITIES AND SITE FEATURES WITHIN THE PROJECT LIMITS
- MANHOLE REPLACEMENT SHALL INCLUDE UP TO 5'-0" OF PIPE REPLACEMENT FOR ALL EX. CONNECTIONS INCLUDING ALL FITTINGS AND COUPLERS NECESSARY TO CONNECT TO EXISTING PIPE.
- ALL EXISTING CURB DRAINS, LATERAL CONNECTIONS, AND PIPE CONNECTIONS SHALL BE RECONNECTED TO THE PROPOSED CATCH BASINS WHETHER THEY ARE SHOWN ON THE PLANS OR NOT CURRENTLY IDENTIFIED. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL SHOWN AND UNIDENTIFIED CONNECTIONS AND ENSURE THEIR RECONNECTION TO MAINTAIN EX. SERVICE AND USE.
- THE ENTIRE CONNECTION BETWEEN THE PROPOSED CATCH BASIN REPLACEMENT AND EX. MANHOLE SHALL BE REPLACED IN KIND WITH THE SAME DIAMETER PIPE. CONNECTION INTO THE MANHOLE SHALL BE IN ACCORDANCE WITH THE EX. CONNECTION DETAIL.
- SANITARY AND STORM SEWER RELATED IMPROVEMENTS MAY HAVE AREAS WHERE WORK CONFLICTS OR WILL REQUIRE WORK TO BE PERFORMED SIMULTANEOUSLY. REFER TO SANITARY PLAN AND PROFILE SHEETS AND ALL PERTINENT DETAILS AND SPECIFICATIONS FOR SANITARY SEWER SYSTEM IMPROVEMENTS NOT ILLUSTRATED ON THIS SHEET.
- REFER TO SPECIFICATION SECTION 330130.81 FOR ALL MANHOLE REHABILITATION MATERIAL AND APPLICATION REQUIREMENTS.

**CODED NOTES:**

- MANHOLE REHAB(9 VFT)
- NOT USED
- CATCH BASIN REMOVAL AND REPLACEMENT (2 EA)
- ASPHALT ROADWAY REPLACEMENT (35 SY)
- CURB REPLACEMENT (26 LF)

**LEGEND**

- MANHOLE REHAB
- MANHOLE REPLACEMENT
- TYPE "C" PAVEMENT REPLACEMENT



STATE OF OHIO  
TIMOTHY J. McLAUGHLIN  
83985  
REGISTERED  
PROFESSIONAL ENGINEER

verdantas

DATE	REVISION	NO

ISSUED FOR:	CONSTRUCTION
ISSUE DATE:	1/29/24
SCALE:	AS NOTED
DESIGNED BY:	TJM
DRAWN BY:	ELE
CHECKED BY:	TJM

FORESTGROVE SEWER IMPROVEMENTS: PHASE 1  
CITY OF WILLOWICK  
LAKE COUNTY, OHIO

CIVIL -10 SERIES

PLAN & PROFILE STA. 5+00 TO 10+00

PROJECT NO.  
31882

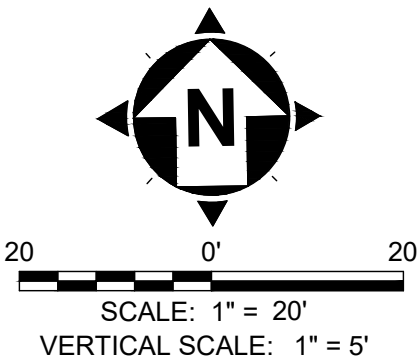
DISCIPLINE  
CIVIL

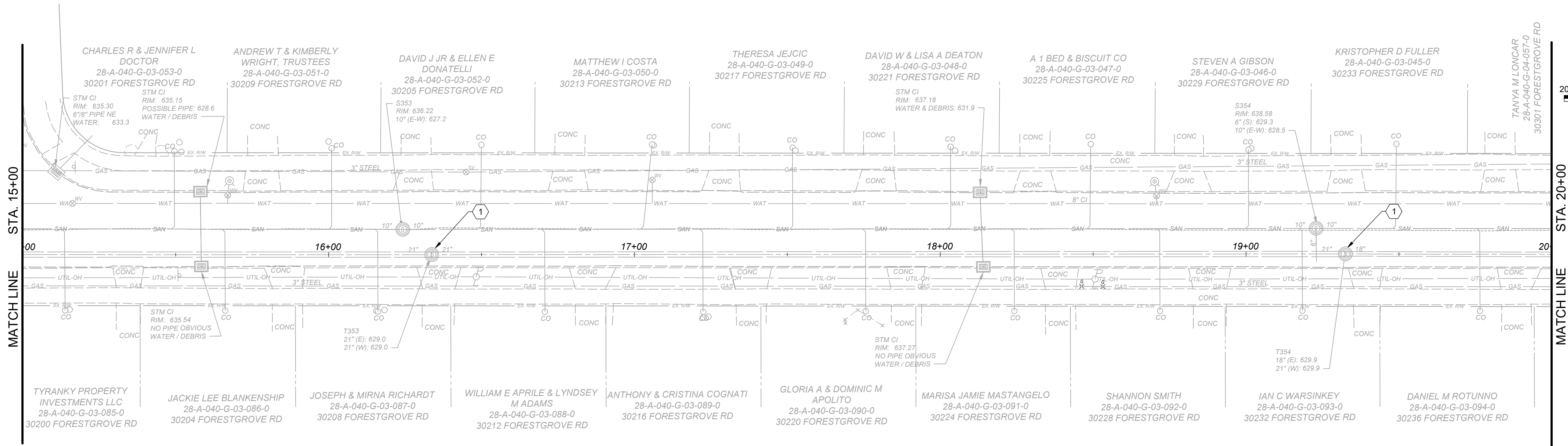
SHEET NAME  
10C-12

SHEET  
20

OF  
26

Z:\PROJECT FILES\WA.X2\WILLOWICK\31882 - FORESTGROVE SEWER IMPROVEMENTS PHASE 1\CA\DWG\SSHEETS\10C-12 STORM PLANS & PROFILES.DWG - 3D PLAN & PROFILE STA. 5+00 TO 10+00 - 7/25/2025 11:54:33 AM - MAYA BITTAR





GENERAL NOTES:

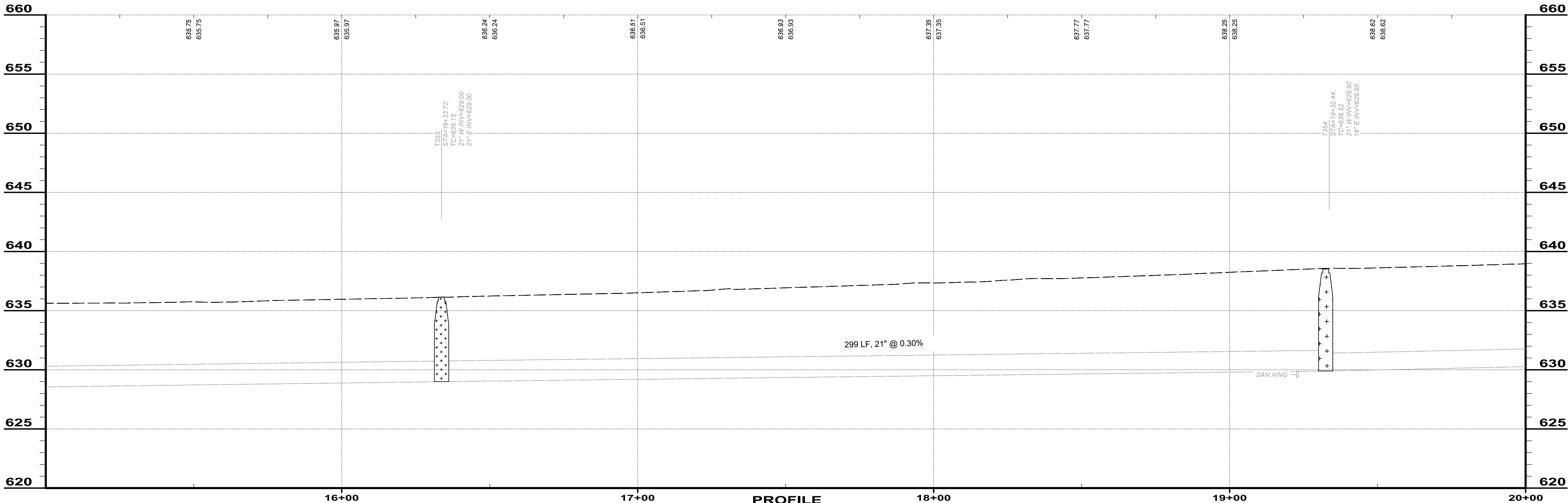
- EXISTING CONDITIONS SHOWN HEREIN ARE PER TOPOGRAPHIC SURVEY PREPARED BY VERDANTAS INC DATED MAY, 2025.
- THE CONTRACTOR SHALL CLEAN AND CCTV SEWER NOTED FOR IMPROVEMENTS PRIOR TO THE COMMENCEMENT OF WORK AND IN ACCORDANCE WITH ALL PERTINENT NASSCO AND PROJECT SPECIFICATIONS. CCTV SHALL BE REVIEWED BY THE ENGINEER BEFORE THE AUTHORIZATION OF IMPROVEMENTS.
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- REFER TO SPECIFICATION SECTION 330130.81 FOR ALL SEALING

CODED NOTES:

- MANHOLE REHAB(16 VFT)
- NOT USED
- NOT USED
- NOT USED
- NOT USED

LEGEND

- MANHOLE REHAB
- MANHOLE REPLACEMENT
- TYPE "C" PAVEMENT REPLACEMENT



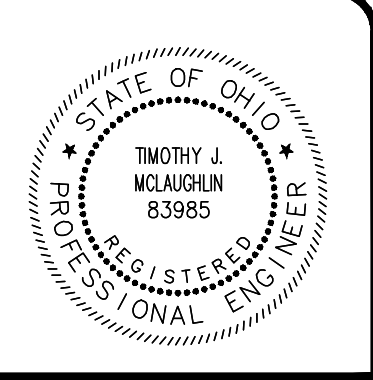
verdantas

DATE	REVISION	NO	ISSUED FOR: CONSTRUCTION
			ISSUE DATE: 1/29/24
			SCALE: AS NOTED
			DESIGNED BY: TJM
			DRAWN BY: ELE
			CHECKED BY: TJM

FORESTGROVE SEWER  
IMPROVEMENTS: PHASE 1  
CITY OF WILLOWICK  
LAKE COUNTY, OHIO

CIVIL -10 SERIES  
PLAN & PROFILE STA. 15+00 TO 20+00

PROJECT NO.	31882
DISCIPLINE	CIVIL
SHEET NAME	10C-14
SHEET	22
OF	26



ISSUED FOR: CONSTRUCTION	NO	REVISION	DATE
ISSUE DATE: 12/8/24			
SCALE: AS NOTED			
DESIGNED BY: TJM			
DRAWN BY: ELE			
CHECKED BY: TJM			

**FORESTGROVE SEWER  
IMPROVEMENTS: PHASE 1**  
CITY OF WILLOWICK  
LAKE COUNTY, OHIO

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**CIVIL -10 SERIES**

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**PLAN & PROFILE STA. 20+00 TO 25+50**

PROJECT NO.	
31882	
DISCIPLINE	
CIVIL	
SHEET NAME	
10C-15	
SHEET	OF
23	26

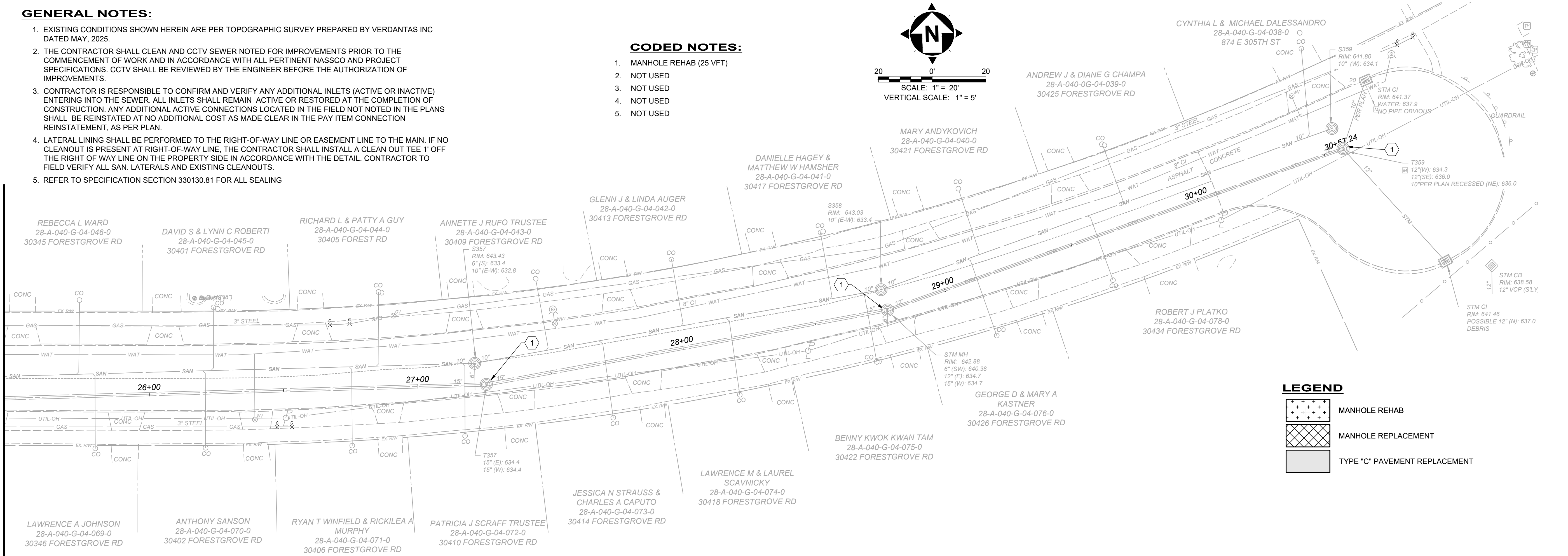
GENERAL NOTES:

- EXISTING CONDITIONS SHOWN HEREIN ARE PER TOPOGRAPHIC SURVEY PREPARED BY VERDANTAS INC DATED MAY, 2025.
- THE CONTRACTOR SHALL CLEAN AND CCTV SEWER NOTED FOR IMPROVEMENTS PRIOR TO THE COMMENCEMENT OF WORK AND IN ACCORDANCE WITH ALL PERTINENT NASSCO AND PROJECT SPECIFICATIONS. CCTV SHALL BE REVIEWED BY THE ENGINEER BEFORE THE AUTHORIZATION OF IMPROVEMENTS.
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- LATERAL LINING SHALL BE PERFORMED TO THE RIGHT-OF-WAY LINE OR EASEMENT LINE TO THE MAIN. IF NO CLEANOUT IS PRESENT AT RIGHT-OF-WAY LINE, THE CONTRACTOR SHALL INSTALL A CLEAN OUT TEE 1' OFF THE RIGHT OF WAY LINE ON THE PROPERTY SIDE IN ACCORDANCE WITH THE DETAIL. CONTRACTOR TO FIELD VERIFY ALL SAN. LATERALS AND EXISTING CLEANOUTS.
- REFER TO SPECIFICATION SECTION 330130.81 FOR ALL SEALING

CODED NOTES:

- MANHOLE REHAB (25 VFT)
- NOT USED
- NOT USED
- NOT USED
- NOT USED

MATCH LINE STA. 25+50

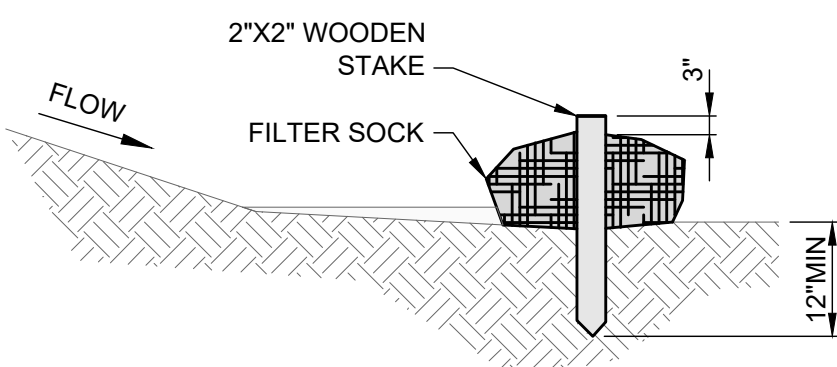


- NOTES:

1. PRESERVE VEGETATION FOR 5 FEET, OR AS MUCH AS POSSIBLE UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE RE-ESTABLISHED WITHIN 7 DAYS FROM SILT FENCE INSTALLATION.
2. SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. PERFORM ONE OF THE FOLLOWING IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW:
  - CHANGE THE LAYOUT OF THE SILT FENCE.
  - REMOVE ACCUMULATED SEDIMENT.
  - INSTALL OTHER PRACTICES.

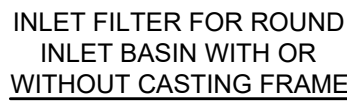
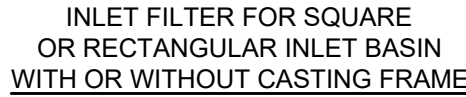
FABRIC PROPERTIES	VALUES	TEST METHOD
GRAB TENSILE STRENGTH	90 LB. MIN	ASTM D-1682
MULLEN BURST STRENGTH	190 PSI MIN	ASTM D-3786
SLURRY FLOW RATE	0.3 GAL./MIN./S.F. MAX.	
EQUIVALENT OPENING SIZE	40-80	US STD. SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY	90% MIN	ASTM-G-26

**SILT FENCE**  
SCALE: NONE



### **FILTER SOCK DETAIL**

SCALE: NONE



### INLET FILTER FOR NYLOPLAST CASTING

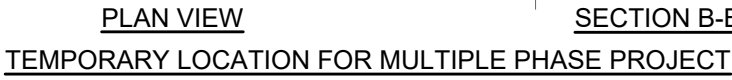


- ## NOTES

1. ALL FRAMING SHALL BE CONSTRUCTED OF CORROSION RESISTANT STEEL (ZINC PLATED OR GALVANIZED) FOR 7 YEAR MINIMUM SERVICE LIFE.
2. CONTRACTOR SHALL PROVIDE EXISTING OR PROPOSED STRUCTURE DETAILED DIMENSIONS, CASTING CALLOUT, MAKE AND MODEL TO CONFIGURE AND ASSEMBLE CUSTOMIZED FLEXSTORM INLET FILTERS.

# STORM DRAIN INLET PROTECTION DETAIL

SCALE: NONE

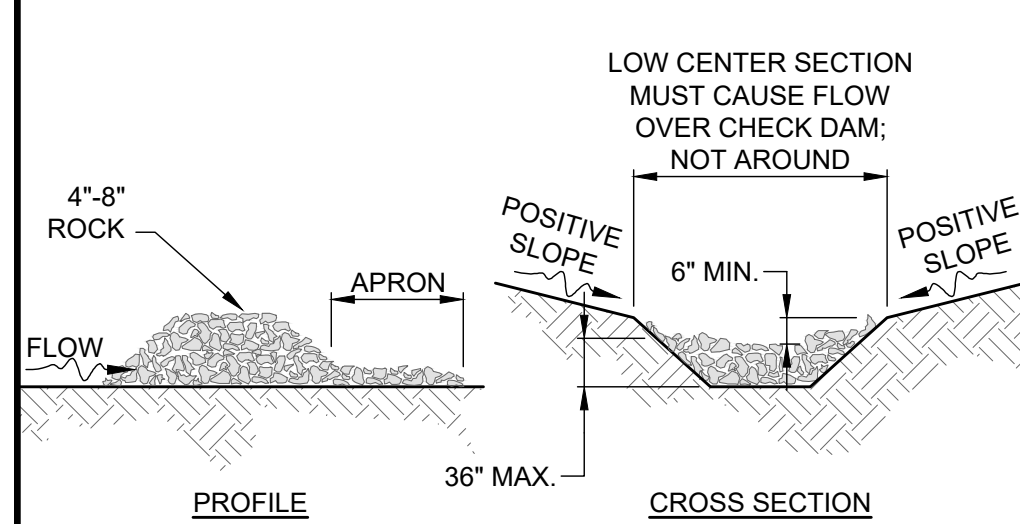


- NOTES:

1. WASHOUT PIT SHALL BE LOCATED 100' MINIMUM FROM INLETS, STREAMS, WETLANDS AND ANY OTHER SURFACE WATERS.
2. ALL EXCESS CONCRETE AND CONCRETE WASHOUT, INCLUDING FROM HAND MIXERS AND LIGHT EQUIPMENT, SHALL BE DISPOSED OF IN THE CONCRETE WASHOUT AREA. DISPOSAL OF EXCESS CONCRETE OR CONCRETE WASHOUT ON THE GROUND, OR IN STORM DRAINS, DITCHES OR WATER BODIES, IS PROHIBITED.
3. CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE WASTE GENERATED. FOR LARGER SITES, MULTIPLE CONCRETE WASHOUT AREAS MAY BE REQUIRED.
4. IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE, CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO THE CONSTRUCTION ENTRANCE.
5. PLASTIC LINING SHALL BE DOUBLE-LINED, CONTINUOUS 10-ML POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS, AND INSTALLED ON A SMOOTH, LEVEL SURFACE, FREE OF ROCKS OR DEBRIS.
6. CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
7. CONCRETE WASHOUT AREAS SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOWS.
8. PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE, BUT MUST BE SPECIFICALLY DESIGNED FOR CONCRETE WASHOUT USE.
9. CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND TO DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR POLYETHYLENE SHEETING SHALL BE REPAIRED IMMEDIATELY. THE CONCRETE WASHOUT AREA SHALL BE CLEANED OR REPLACED WHEN IT IS 75% FULL. THE POLYETHYLENE SHEETING SHALL BE REPLACED AFTER EACH CLEANING.
10. SAW CUT CONCRETE, RESIDUE FROM SAW CUT, AND GRINDINGS SHALL BE DISPOSED OF IN THE WASHOUT PIT.

## CONCRETE WASHOUT DETAIL

SCALE: NONE



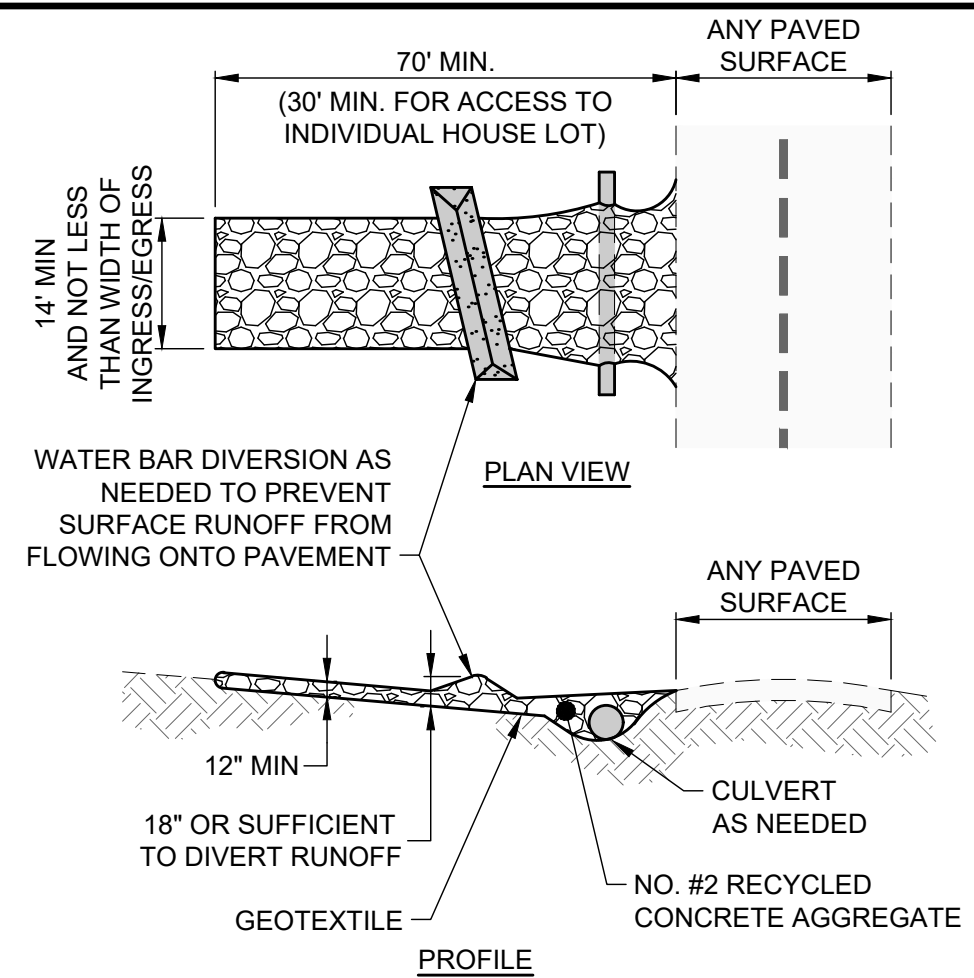
- NOTES:

- 1) THE CHECK DAM SHALL BE CONSTRUCTED OF 4" TO 8" DIAMETER STONE, PLACED SO THAT IT COMPLETELY COVERS THE TOP OF THE CHANNEL.
- 2) THE TOP OF THE CHECK DAM SHALL BE CONSTRUCTED SO THE CENTER IS APPROXIMATELY 6" LOWER THAN THE OUTER EDGES; SO WATER WILL FLOW ACROSS THE CENTER AND NOT AROUND THE ENDS.
- 3) THE MAXIMUM HEIGHT OF THE CHECK DAM AT THE CENTER OF THE WEIR SHALL NOT EXCEED 36".
- 4) SPACING BETWEEN DAMS SHALL BE AS SHOWN IN THE CONSTRUCTION PLANS OR BY THE FOLLOWING TABLE:

CHECK DAM SPACING				
DAM HEIGHT	CHANNEL SLOPE			
	< 5%	5% - 10%	10% - 15%	15% - 20%
1 FT.	65 FT.	30 FT.	20 FT.	15 FT.
2 FT.	130 FT.	65 FT.	40 FT.	30 FT.
3 FT.	200 FT.	100 FT.	65 FT.	50 FT.

# CHECK DAM DETAIL

SCALE: NONE



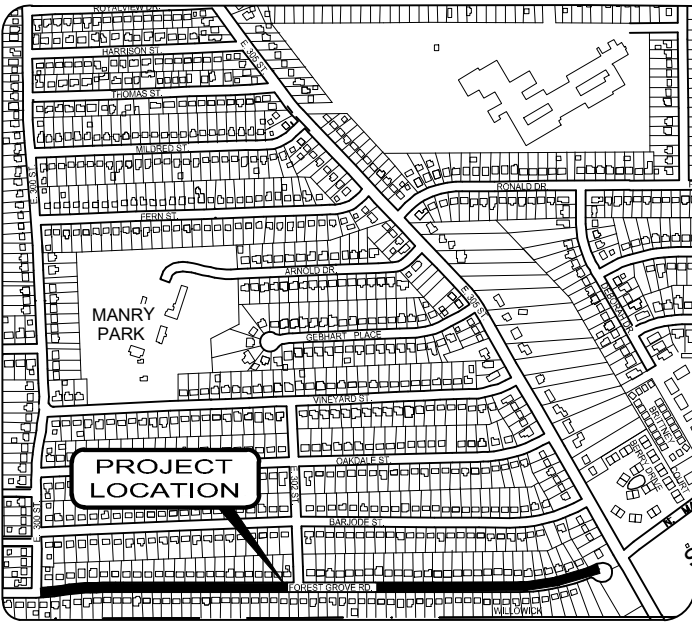
- NOTES:

1. PLACE GEOTEXTILE OVER THE ENTIRE AREA PRIOR TO PLACING STONE MEETING THE MIN. SPECIFICATIONS:
  - A. TENSILE STRENGTH = 200 LBS.
  - B. PUNCTURE STRENGTH = 80 PSI
  - C. TEAR STRENGTH = 50 LBS.
  - D. BURST STRENGTH = 320 PSI
  - E. ELONGATION = 20%
  - F. EQUIVALENT OPENING SIZE  $\leq 0.6$  MM
  - G. PERMITTIVITY = 0.001 CM/SEC
2. APPLY ADDITIONAL STONE AS CONDITIONS DEMAND AND REPLENISH STONE WHEN THE DEPTH IS LESS THAN 6". REMOVE AND REPLACE IF STONES BECOMES MUD-LADEN.
3. IMMEDIATELY REMOVE MUD DROPPED, WASHED OR TRACKED ONTO ROADS OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS BY SCRAPING OR SWEEPING.
4. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES OR TO PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION SITE SHALL BE RESTRICTED FROM MUDDY AREAS.

**CONSTRUCTION ENTRANCE**  
SCALE: NONE

ISSUED FOR: CONSTRUCTION	NO	REVISION	DATE
ISSUE DATE:			1/28/24
SCALE:			AS NOTED
DESIGNED BY:			TJM
DRAWN BY:			ELE
CHECKED BY:			TJM

VICINITY MAP



PROJECT INFORMATION

PROJECT INFORMATION:  
LAKE COUNTY, OHIO 44095  
LATITUDE: 41.624293      LONGITUDE: -81.471457

OWNER INFORMATION:  
THE CITY OF WILLOWICK  
30435 LAKESHORE BOULEVARD  
WILLOWICK, OH 44095  
(440) 585-3700 PHONE

SITE-CIVIL ENGINEER INFORMATION:  
VERDANTAS  
8150 STERLING COURT  
MENTOR, OHIO 44060  
CONTACT: TIMOTHY McLAUGHLIN, PE  
PHONE: 440-530-2352  
EMAIL: TMCLAUGHLIN@VERDANTAS.COM

TYPE OF PROJECT:  
(X) UTILITY

SOIL DISTURBING ACTIVITIES INCLUDE:  
EROSION AND SEDIMENT CONTROL, INSTALLATION, REMOVAL OF TREES, VEGETATION, TOPSOIL, UTILITIES AND SOIL BENEATH PAVEMENT SUBBASE, EARTHWORK GRADING, AND UTILITIES AND NEW PAVEMENT

NAME OF IMMEDIATE RECEIVING STREAM, SURFACE WATER OR MS4:  
CITY OF WILLOWICK STORM SEWER SYSTEM

EROSION CONTROL TIMETABLE

DESCRIPTION	CALENDAR YEAR											
STABILIZATION TYPE	J	F	M	A	M	J	J	A	S	O	N	D
TEMPORARY SEEDING			●	●	●	●	●	●	●	●		
PERMANENT SEEDING				●	●	●	●	●	●	●		
SODDING			●	●	●	●	●	●	●	●		
MULCHING	●	●	●	●	●	●	●	●	●	●	●	●
PAVING					●	●	●	●	●	●	●	

● IRRIGATION NEEDED

GENERAL NOTES

- THE CONTRACTOR IS REQUIRED TO DEVELOP THE SWP3 FOR THIS PROJECT AND SUBMIT FOR APPROVAL TO THE SWCD SHOWING THE ITEMS LISTED BELOW. SOME SWP3 ITEMS MAY ALREADY BE SHOWN ON THE SWP3, BUT MOVED TO BETTER SUIT THE CONTRACTOR'S MEANS AND METHODS.
  - LIMITS OF EARTH DISTURBING ACTIVITY
  - CONSTRUCTION ENTRANCE(S)
  - EROSION AND SEDIMENT CONTROL MEASURES
  - INLET PROTECTIONS
  - CONCRETE WASHOUT PIT(S)
  - EQUIPMENT STAGING
  - FUEL STORAGE AND VEHICLE FUELING AREA
  - CONSTRUCTION TRAILER(S)
  - SANITATION FACILITY
  - MATERIAL STOCKPILE LOCATION(S)
  - CHEMICAL COMPOUND MIXING AND STORAGE AREA
  - ANY OTHER EROSION CONTROL REQUIRED
- ALL WORK REQUIRED TO IMPLEMENT THE SWP3 INCLUDING INSPECTION FEES, MAINTENANCE AND REPAIRS SHALL BE DONE BY AND AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL AMEND THE SWP3 WHEN THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT REQUIRES INSTALLATION OF BMPS OR MODIFICATION TO EXISTING BMPS.
- ADDITIONAL OR DIFFERENT BMPS MAY BE NEEDED AS CONSTRUCTION PROGRESSES OR AS REQUIRED BY THE OWNER, SWCD OR OHIO EPA.
- PHASE CONSTRUCTION ACTIVITIES TO MINIMIZE LAND DISTURBED AT ANY ONE TIME AND LEAVE EXISTING VEGETATION IN PLACE AS LONG AS POSSIBLE.

ADMINISTRATIVE NOTES

- AN OHIO EPA NPDES PERMIT IS REQUIRED WHERE CONSTRUCTION ACTIVITIES DISTURB 1 OR MORE ACRES OF LAND, OR SMALLER SITES LESS THAN 1 ACRE THAT ARE PART OF A LARGER COMMON DEVELOPMENT. DISTURBED LAND IS LAND IN WHICH VEGETATION HAS BEEN CLEARED AND SOILS ARE EXPOSED TO STORM WATER. A NOI IS REQUIRED FOR THIS PROJECT AND MUST BE FILED WITH THE OHIO EPA AT LEAST 21 DAYS PRIOR TO THE START OF CONSTRUCTION BECAUSE THE TOTAL LAND DISTURBANCE IS GREATER THAN 1 ACRE
- THE CONTRACTOR SHALL FOLLOW THE PRACTICES AND REQUIREMENTS PROVIDED IN THE OHIO EPA NPDES CONSTRUCTION SITE STORMWATER GENERAL PERMIT OHCD000006 AND THE ODNR RAINWATER AND LAND DEVELOPMENT MANUAL, AND BE RESPONSIBLE FOR ALL NPDES TERMS AND CONDITIONS UNTIL A NOT IS FILED.
- NO CONSTRUCTION ACTIVITIES MAY BEGIN UNTIL ALL OF THE FOLLOWING OCCUR:
  - OHIO EPA NPDES AUTHORIZATION LETTER RECEIVED
  - THE CONTRACTOR FILES A CO-PERMITTEE APPLICATION TO THE OHIO EPA
  - THE CONTRACTOR ATTENDS A PRE-CONSTRUCTION MEETING WITH THE SWCD TO DISCUSS OHIO EPA NPDES PERMIT REQUIREMENTS
- OHIO EPA APPLICATION FORMS (I.E. NOI, NOT, CO-PERMITTEE NOINOT, INDIVIDUAL LOT NOINOT AND PERMIT TRANSFER) ARE ONLY ACCESSIBLE ELECTRONICALLY VIA THE OHIO EPA STREAMS APPLICATION SUBMITTAL SYSTEM USING AN INDIVIDUAL EBUSINESS CENTER ACCOUNT. VISIT THE OHIO EPA'S ELECTRONIC BUSINESS SERVICES WEBSITE FOR MORE INFORMATION, GUIDANCE AND REPORTING QUESTIONS.
- THE CONTRACTOR SHALL SELECT INDIVIDUALS TO BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND COMPLETING INSPECTION AND MAINTENANCE REPORTS. THE CONTRACTOR SHALL COMPLETE A "DELEGATION OF AUTHORITY FOR STORMWATER POLLUTION PREVENTION PLAN" AND PROVIDE A COPY TO THE OWNER AND SWCD.
- ALL PROCEDURES AND REQUIREMENTS CONTAINED IN THIS SWP3 APPLY TO ALL GENERAL AND SUBCONTRACTORS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT, INFORM, REQUIRE AND ENFORCE ALL ASPECTS AND PROCEDURES OF THE SWP3. THE CONTRACTOR SHALL HAVE ALL SUBCONTRACTORS THAT ARE OR MAY BE ENGAGED IN ACTIVITIES THAT COULD IMPACT STORMWATER COMPLETE A "SUBCONTRACTOR AGREEMENT FOR EROSION AND SEDIMENT CONTROL", AND PROVIDE A COPY TO THE OWNER AND SWCD. EACH CONTRACTOR SHALL ACCEPT FULL RESPONSIBILITY FOR ALL FINES, DAMAGES AND LIABILITY RESULTING FROM FAILURE TO PROVIDE THE REQUIRED POLLUTION CONTROL.
- THE CONTRACTOR SHALL KEEP ON-SITE COPIES OF THE NOI, NPDES, SWP3 AND INSPECTION LOGS/REPORTS.
- ALL EROSION AND SEDIMENT CONTROL WORK SHALL BE SUBJECT TO INSPECTION BY THE SWCD AND OHIO EPA.

EROSION CONTROL NOTES

- DIVERT SURFACE RUNOFF AWAY FROM DISTURBED AREAS AND STEEP SLOPES WHEREVER PRACTICABLE.
- STABILIZATION OF DISTURBED AREAS SHALL BE INITIATED WITHIN THE TIME FRAMES IN THE FOLLOWING TABLES:

PERMANENT STABILIZATION	
AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY CONTROLS
ANY AREAS TO LIE DORMANT FOR 1 YEAR OR MORE	WITHIN 7 DAYS OF MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER AND AT FINAL GRADE	WITHIN 2 DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN 7 DAYS OF REACHING FINAL GRADE

TEMPORARY STABILIZATION	
AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER AND NOT AT FINAL GRADE	WITHIN 2 DAYS OF MOST RECENT DISTURBANCE IF AREA TO REMAIN IDLE MORE THAN 14 DAYS
ANY DISTURBED AREAS TO BE DORMANT MORE THAN 14 DAYS, BUT LESS THAN 1 YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER	WITHIN 7 DAYS OF MOST RECENT DISTURBANCE WITHIN THE AREA  RESIDENTIAL SUBDIVISIONS: DISTURBED AREAS MUST BE STABILIZED AT LEAST 7 DAYS PRIOR TO TRANSFER OF PERMANENT COVERAGE FOR INDIVIDUAL LOT(S)
DISTURBED AREAS TO REMAIN IDLE OVER WINTER	PRIOR TO ONSET OF WINTER WEATHER

SEDIMENT CONTROL NOTES

- INLET PROTECTION AND SEDIMENT BARRIERS MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING.
- SEDIMENT PONDS, TEMPORARILY MODIFIED PERMANENT PONDS AND PERIMETER SEDIMENT BARRIERS MUST BE INSTALLED AS THE FIRST STEP OF GRADING AND WITHIN 7 DAYS FROM THE START OF CLEARING AND GRUBBING, AND CONTINUE TO FUNCTION UNTIL ALL DISTURBED UPLAND AREAS ARE STABILIZED.
- SEDIMENT CONTROLS MUST POND RUNOFF TO BE CONSIDERED FUNCTIONAL.
- SEDIMENT-LADEN TRENCH OR GROUND WATER MUST PASS THROUGH A SEDIMENT-SETTLING POND OR BE DEWATERED IN-PLACE USING A SUMP PIT, FILTER BAG OR OTHER COMPARABLE METHOD, PRIOR TO DISCHARGE FROM THE SITE.
- TRENCH AND GROUND WATER FREE FROM SEDIMENT OR OTHER POLLUTANTS MAY BE DISCHARGED WITHOUT TREATMENT, PROVIDED THIS WATER DOES NOT BECOME POLLUTANT-LADEN BY TRAVERSING OVER DISTURBED SOILS OR OTHER POLLUTANT SOURCES.
- SETTLED MATERIAL SHALL BE DISPOSED OF IN A STABILIZED LOCATION WHERE IT WILL NOT BE CARRIED OFF-SITE OR INTO A STORM SEWER BY RAINFALL.

OTHER WASTE CONTROL NOTES

- SOIL STOCKPILES SHALL BE RINGED WITH SILT FENCE ALONG THE BOTTOM FOOTPRINT. IF THE STOCKPILE WILL BE INACTIVE FOR 14 DAYS OR MORE, THE SURFACE SHALL BE SEEDED OR STABILIZED WITHIN 7 DAYS OF LAST DISTURBANCE.
- CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS. ALL EXCESS CONCRETE AND CONCRETE WASHOUT, INCLUDING FROM HAND MIXERS AND LIGHT EQUIPMENT, MUST BE DISPOSED OF IN A CONCRETE WASHOUT AREA TO COLLECT AND HARDEN.
- OFF-SITE TRACKING OF SEDIMENT BY CONSTRUCTION VEHICLES MUST BE MINIMIZED. THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADS TO REMOVE MUD, DIRT OR ROCK TRACKED FROM THE SITE AT THE END OF EACH WORK DAY OR AS REQUIRED DURING THE DAY. DUMP TRUCKS HAULING MATERIAL FROM THE SITE SHALL BE COVERED WITH A TARPULIN.
- IT IS PROHIBITED TO BURN, BURY OR POUR ONTO THE GROUND OR INTO STORM INLETS, DITCHES, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS SOLID OR LIQUID WASTE INCLUDING TRASH, CONSTRUCTION DEBRIS, SOLVENTS, PAINT, DIESEL FUEL, GASOLINE, MOTOR OIL, HYDRAULIC FLUID, CEMENT CURING COMPOUND, ANTIFREEZE OR OTHER TOXIC OR HAZARDOUS WASTE. WASTE MATERIALS SHALL BE COLLECTED IN A SECURELY LIDDED DUMPSTER, DISPOSED OF IN AN APPROVED LANDFILL AND EMPTIED AS NECESSARY.
- FUEL TANKS, DRUMS AND OTHER CONTAINERS HOLDING CHEMICALS MUST BE STORED WITHIN A DIKED AREA WITH A VOLUME OF AT LEAST 110% OF THE LARGEST TANK. A DIKED AREA IS NOT NECESSARY IF A SELF-CONTAINED SPILL PROOF TANK IS USED.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY FACILITIES AT THE SITE. SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS 1 TIME PER WEEK, OR MORE OFTEN IF NECESSARY.
- ANY TOXIC OR HAZARDOUS MATERIAL SPILL, REGARDLESS OF SIZE, MUST BE REPORTED WITHIN 30 MINUTES TO THE LOCAL FIRE DEPARTMENT AND OHIO EPA.
- CONTAMINATED SOIL, SOIL WHERE CONSTRUCTION CHEMICALS HAVE BEEN SPILLED OR HAZARDOUS WASTE MATERIALS MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
- STORMWATER THAT COMES IN CONTACT WITH CONTAMINATED SOIL OR HAS A VISIBLE SHEEN MUST BE COLLECTED BY A VACUUM TRUCK AND DISPOSED OF AS A WASTE WATER.

BMPS SELECTED

THE FOLLOWING BMPS ARE SELECTED FOR THE PROJECT:

- A. CONSTRUCTION SITE:
- (X) MAINTAIN PORTABLE TOILET AND EMPTY W/OUT SPILL
  - (X) PROPER STORAGE OF LANDSCAPE FERTILIZER
  - (X) MS4 MONTHLY INSPECTIONS DURING CONSTRUCTION
  - (X) RESOLVE NON-COMPLIANCE SWP3 INSPECTION ITEMS
- B. TEMPORARY EROSION CONTROL:
- (X) DEWATERING
- C. TEMPORARY SEDIMENT CONTROL:
- (X) SILT FENCE
  - (X) FILTER SOCK
  - (X) INLET PROTECTION
- D. SOIL STABILIZATION:
- (X) DUST CONTROL
  - (X) MULCHING
  - (X) SODDING
  - (X) TOPSOILING
  - (X) GRADE TREATMENT
  - (X) TEMPORARY ROLLED EROSION CONTROL PRODUCTS
  - (X) TURF REINFORCEMENT MATTING
  - (X) TREE AND NATURAL AREA PRESERVATION
  - (X) PHASED DISTURBANCE
  - (X) CLEARING AND GRUBBING
  - (X) TEMPORARY SEEDING
  - (X) PERMANENT SEEDING
  - (X) CONSTRUCTION ENTRANCE

PERMIT CLOSURE REQUIREMENTS

- FINAL STABILIZATION REQUIRES THE CONTRACTOR TO REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROLS FROM THE SITE AND ALL SEDIMENT TRAPPED BY THOSE CONTROLS BE PERMANENTLY STABILIZED.
- THE CONTRACTOR SHALL COMPLETE A "FINAL CERTIFICATION AND NOTIFICATION FOR EROSION AND SEDIMENT CONTROL" UPON PROJECT COMPLETION AND PROVIDE A COPY TO THE OWNER AND SWCD.
- ONCE CONSTRUCTION ACTIVITIES HAVE CEASED AND THE SITE REACHES FINAL STABILIZATION, THE CONTRACTOR MUST TERMINATE THE NPDES PERMIT COVERAGE BY FILING A NOT WITH THE OHIO EPA WITHIN 45 DAYS OF FINAL STABILIZATION. FINAL STABILIZATION IS DEFINED AS AN ESTABLISHED VEGETATIVE GROUND COVER OF AT LEAST 70% GROWTH DENSITY, OR OTHER MEANS OF PERMANENT STABILIZATION, OVER ALL AREAS DISTURBED DURING CONSTRUCTION.
- THE CONTRACTOR MUST MAINTAIN ALL REPORTS FOR 3 YEARS AFTER THE NOT IS FILED, AND PROVIDE DIGITAL COPIES TO THE OWNER AND SWCD.

MAINTENANCE REQUIREMENTS

- BMPS SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL UPSLOPE AREAS THEY CONTROL ARE STABILIZED.
- THE CONTRACTOR SHALL PROVIDE A QUALIFIED PERSON KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROLS, POSSESS THE TECHNICAL SKILLS TO ASSESS SITE CONDITIONS THAT COULD IMPACT STORM WATER QUALITY, AND CAN ASSESS THE EFFECTIVENESS OF ANY BMP SELECTED.
- A QUALIFIED PERSON MUST INSPECT BMPS AT LEAST ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL IN A 24-HOUR PERIOD TO DETERMINE IF THE SWP3 WAS PROPERLY IMPLEMENTED.
- THE QUALIFIED PERSON MUST PREPARE A WRITTEN REPORT AFTER EACH INSPECTION SUMMARIZING INSPECTION RESULTS INCLUDING THE FOLLOWING:
  - DATE OF INSPECTION
  - NAME AND QUALIFICATION OF THE INSPECTOR
  - WEATHER CONDITIONS
  - LOCATIONS WHERE IN-STREAM OR OFF-SITE SEDIMENTATION OR OTHER POLLUTANTS WERE OBSERVED.
  - LOCATIONS OF BMPS NEEDING MAINTENANCE.
  - LOCATIONS OF BMPS FAILING TO OPERATE CORRECTLY OR PROVIDE ADEQUATE PROTECTION.
  - LOCATION OF AREAS IN NEED OF ADDITIONAL BMPS NOT IN PLACE AT THE TIME OF INSPECTION.
  - CORRECTIVE ACTIONS REQUIRED, CHANGES TO THE SWP3 AND IMPLEMENTATION DATES.
  - GRADING AND STABILIZATION ACTIVITY LOG
  - EROSION AND SEDIMENT CONTROL AMENDMENT LOG
- ALL INCIDENCES OF NON-COMPLIANCE MUST BE IDENTIFIED IN THE REPORT. IF A REPORT DOES NOT IDENTIFY INCIDENCES OF NON-COMPLIANCE, IT MUST CONTAIN A CERTIFICATION THE SITE IS IN COMPLIANCE AT THE TIME OF INSPECTION.
- BMP MAINTENANCE OR REPAIR MUST BE COMPLETED WITHIN 3 DAYS, AND SEDIMENT POND MAINTENANCE OR REPAIR WITHIN 10 DAYS, OF THE INSPECTION THAT REVEALED A DEFICIENCY.
- WHEN AN INSPECTION REVEALS A BMP IS NOT EFFECTIVE AND A MORE APPROPRIATE BMP IS REQUIRED, THE SWP3 SHALL BE AMENDED, THE NEW BMP INSTALLED WITHIN 10 DAYS OF THE INSPECTION THAT REVEALED THE DEFICIENCY, AND THE "STORMWATER POLLUTION PREVENTION PLAN AMENDMENT LOG" FORM COMPLETED.
- WHEN AN INSPECTION REVEALS A BMP HAS NOT BEEN INSTALLED, BUT IS REQUIRED TO PROVIDE ADEQUATE CONTROL, IT MUST BE INSTALLED PRIOR TO THE NEXT STORM EVENT WHICH PRODUCES RUNOFF, BUT IN NO CASE LATER THAN 10 DAYS FROM THE INSPECTION THAT REVEALED THE DEFICIENCY.
- THE INSPECTION FREQUENCY MAY BE REDUCED TO 1 TIME PER MONTH IF THE ENTIRE SITE IS TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER WEATHER (I.E. SUSTAINED SNOW COVER OR FROZEN GROUND CONDITIONS). A WAIVER OF INSPECTION REQUIREMENTS IS AVAILABLE UNTIL 1 MONTH BEFORE THAWING CONDITIONS ARE EXPECTED IF ALL THE FOLLOWING CONDITIONS ARE MET:
  - FROZEN CONDITIONS ARE ANTICIPATED TO CONTINUE FOR EXTENDED PERIODS OF TIME (I.E. MORE THAN 1 MONTH).
  - SOIL DISTURBANCE ACTIVITIES HAVE BEEN SUSPENDED.
  - THE BEGINNING AND ENDING DATES OF THE WAIVER PERIOD ARE DOCUMENTED IN THE SWP3.
- ONCE A DEFINABLE AREA HAS BEEN FULLY STABILIZED, IT MAY BE MARKED ON THE SWP3 AND NO FURTHER INSPECTION REQUIREMENTS ARE REQUIRED FOR THAT AREA OF THE SITE.
- INSPECTIONS SHALL BE PERFORMED UNTIL A NOT IS FILED WITH THE OHIO EPA.

SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES

- HOLD A PRE-CONSTRUCTION MEETING TO DISCUSS OHIO EPA NPDES PERMIT REQUIREMENTS.
- CONTRACTOR SUBMITS CONSTRUCTION SCHEDULE FOR CONSTRUCTION ACTIVITIES.
- BEGIN INSPECTION, MAINTENANCE, RECORD KEEPING AND SITE POSTING OF BMPS.
- ESTABLISH STAGING AREA AND NON-SEDIMENT BMPS.
- INSTALL SILT FENCE, INLET PROTECTION.
- INSTALL OTHER TEMPORARY EROSION AND SEDIMENT CONTROL ITEMS AS SOON AS POSSIBLE, BUT NO LATER THAN 7 DAYS AFTER FIRST SOIL DISTURBANCE. INSPECT AND MAINTAIN BMPS FOR THE PROJECT DURATION UNTIL UPSLOPE AREAS ARE PERMANENTLY STABILIZED.
- BEGIN SITE DEMOLITION AND CONSTRUCTION.
- INSTALL DEWATERING MEASURES.
- BEGIN EARTHWORK OPERATIONS.
- APPLY TEMPORARY SEED.
- INSTALL STORM SEWERS AND INLETS.
- CONSTRUCT REMAINING UTILITIES INCLUDING SANITARY, WATER, ELECTRIC, GAS AND PHONE.
- INSTALL PAVING.
- INSPECT AND CLEAN EXISTING AND NEW STORM SEWERS AND INLETS.
- APPLY PERMANENT SEED.
- INSTALL LANDSCAPING.
- CONTINUE INSPECTIONS, MAINTENANCE, RECORD KEEPING, AND SITE POSTING UNTIL FINAL STABILIZATION ACHIEVED.
- REMOVE TEMPORARY BMPS FROM STORM SEWER AND INLETS, AND OPEN GUTTERS AND DITCHES TO OBTAIN FREE DRAINAGE.
- DISPOSE OF ALL DEBRIS AND WASTE MATERIAL.



verdantas

DATE	REVISION	NO	ISSUED FOR: CONSTRUCTION	ISSUE DATE: 1/29/24	SCALE: AS NOTED	DESIGNED BY: VALUE	DRAWN BY: VALUE	CHECKED BY: VALUE

FORESTGROVE SEWER IMPROVEMENTS: PHASE 1  
LAKE COUNTY, OHIO  
CITY OF WILLOWICK

EROSION CONTROL - 20 SERIES  
SWPPP NOTES

PROJECT NO. 31882	
DISCIPLINE CIVIL	
SHEET NAME 20C-02	
SHEET 26	OF 26