BID SET

06/04/25

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

JUNE, 2025

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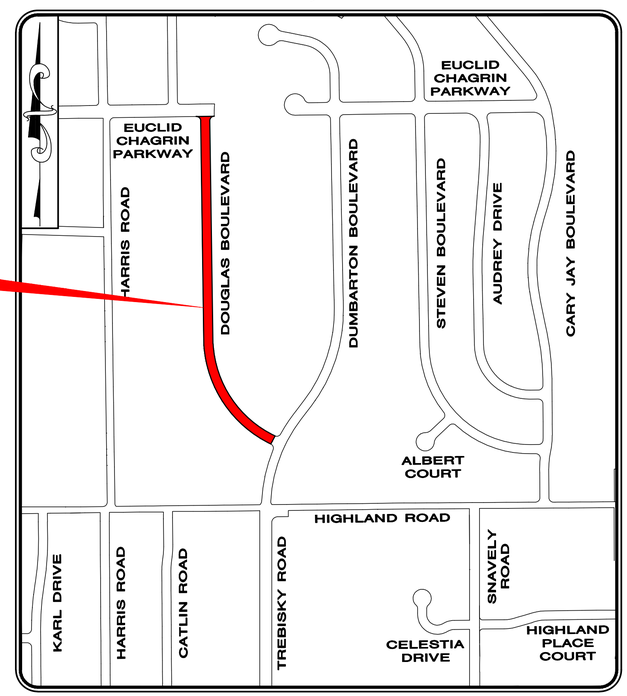


LOCATION MAP

1" = 500'

CITY OFFICIALS:

KIM A. THOMAS . . . . . MAYOR

COUNCIL-AT-LARGE	WARD COUNCIL
BOBBY JORDAN, PRESIDENT	TRACY JUSTICE, WARD I
JUANITA LEWIS	ASU MOOK ROBINSON, WARD II
DANIEL J. URSU	CASSANDRA NELSON, WARD III
TRACEY BLAIR, CLERK OF COUNCIL	BRIAN SILVER, WARD IV

BAYYINAH BROOKS, SPECIAL ASSISTANT TO THE MAYOR

CITY ADMINISTRATORS:

RYAN TIEDMAN. . . . . SERVICE DIRECTOR

NICK LOPARDO . . . . . ASSISTANT SERVICE DIRECTOR

R. TODD HUNT. . . . . LAW DIRECTOR

TOM DILELLIO . . . . . FINANCE DIRECTOR

RUDOLPH HILLIARD. . . . . BUILDING COMMISSIONER

CAMERON CAMPBELL. . . . . RECREATION DIRECTOR

CALVIN D. WILLIAMS. . . . . POLICE CHIEF

MARC NEUMANN. . . . . FIRE CHIEF

JUSTIN HASELTON . . . . . CITY ENGINEER

UNDERGROUND UTILITIES
BEFORE YOU DIG

OHIO811.org Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764
(Non-members must be called directly)

1. THE SURVEY SHOWN ON THESE PLANS WAS OBSERVED IN THE FIELD FOR CONSTRUCTION PURPOSES ONLY AND MAY NOT BE SUITABLE FOR PROPERTY LINE SURVEYS OR ANY OTHER PURPOSE.
2. 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.
3. THE CONTRACTOR IS RESPONSIBLE TO CALL OHIO UTILITIES PROTECTION SERVICE @ 1-800-362-2764, THREE WORKING DAYS PRIOR TO CONSTRUCTION.

verdantas

WILLIAM T. VASKO — P.E. No. 86752 — 5/22/25 DATE

STATE OF OHIO — WILLIAM T. VASKO E-86752 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S PROJECT No. 32053

C:\CT\CAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECON\DWG\SHEETS\C_32053 - COVER.DWG - 5/29/2025 12:53:26 PM - WVASKO

GENERAL NOTES

1. MATERIALS OF WORK FOR "AS DIRECTED" ITEMS SHALL NOT BE ORDERED FOR THE DELIVERY TO THE PROJECT OR WORK PERFORMED UNTIL AUTHORIZED BY THE ENGINEER.

2. MANHOLES, CATCH BASINS, MONUMENT BOXES, WATER VALVE BOXES AND OTHER CASTINGS SHALL BE RAISED OR LOWERED FLUSH WITH THE FINISHED SURROUNDING SURFACE. ANY METER OR VALVE BOX ENCOUNTERED WITHIN THE WORK SITE SHALL BE EXPOSED AND ADJUSTED TO GRADE PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID.

3. BEFORE THE CITY WILL APPROVE AND ACCEPT THE WORK AND RELEASE THE GUARANTY RETAINER, THE CONTRACTOR SHALL FURNISH THE CITY 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 ADJUSTOR HANDLING CLAIM, HOW CLAIM WAS RESOLVED AND IF CLAIM WAS NOT RESOLVED FOR THE FULL AMOUNT, A STATEMENT INDICATING THE REASON FOR SUCH ACTION.

4. THE CONTRACTOR SHALL PROVIDE A PRE-CONSTRUCTION VIDEO SURVEY OF THE ENTIRE PROJECT AREA. ANY DAMAGE DEEMED TO HAVE BEEN CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AT HIS OWN EXPENSE. ALL COSTS ASSOCIATED FOR THIS WORK, INCLUDING THE VIDEO TAPE SURVEY, SHALL BE INCLUDED IN THE UNIT PRICES STIPULATED FOR THE VARIOUS ITEMS IN THE BID PROPOSAL UNLESS THERE IS A PRECONSTRUCTION VIDEO DOCUMENTATION BID ITEM INCLUDED IN THE PROJECT.

5. THE PROJECT SHALL CONFORM TO THE REQUIREMENTS OF: COUNTY OF CUYAHOGA SANITARY ENGINEERING DIVISION RULES AND REGULATIONS (LATEST EDITION), UNIFORM STANDARDS FOR SEWAGE IMPROVEMENTS (LATEST EDITION), UNIFORM STANDARD SEWER DETAILS (LATEST EDITION), GENERAL COUNTY SEWER NOTES (LATEST EDITION).

TRENCH EXCAVATION AND BACKFILL

1. ALL EXCAVATION SHALL BE CONSIDERED UNCLASSIFIED. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED THE CONTRACTOR FOR ROCK OR SHALE EXCAVATION.

2. BACKFILL FOR ALL UNDERGROUND UTILITIES INSTALLED UNDER PAVEMENT, OR WITHIN A 1:1 ZONE OF INFLUENCE PARALLEL OR TRANSVERSE TO PAVEMENT, SHALL BE "COMPACTED GRANULAR BACKFILL" AS DESCRIBED IN SPECIFICATION SECTION 312323.14 AND IN ACCORDANCE WITH THE PLANS. BACKFILL IN OTHER AREAS SHALL BE AS DESCRIBED IN SPECIFICATION SECTION 312323.13 - "COMPACTED BACKFILL" OR SECTION 312323.14 - "COMPACTED GRANULAR BACKFILL". THE OWNER AND THE ENGINEER DO NOT GUARANTEE NOR SUGGEST THE INSITU MATERIAL TO BE EXCAVATED WILL BE SUITABLE OR IN ITS PRESENT STATE WILL CONSIST OF THE PROPER MOISTURE CONTENT TO ACHIEVE THE COMPACTION REQUIREMENTS. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE BACKFILL MATERIAL HE WILL USE. UPON REQUEST, THE OWNER WILL PROVIDE ACCESS TO THE SITE FOR THE CONTRACTOR TO CONDUCT SUCH INVESTIGATION AND TESTS DEEMED NECESSARY TO MAKE HIS DETERMINATION. NO EXTRA PAYMENT WILL BE MADE TO DISPOSE OF UNSUITABLE MATERIAL OR FURNISH AND PLACE SUITABLE MATERIAL MEETING THE REQUIREMENTS OF SECTION 312323.13 "COMPACTED BACKFILL" OR SECTION 312323.14 "COMPACTED GRANULAR BACKFILL".

3. SLAG PRODUCTS WILL NOT BE PERMITTED FOR BEDDING OR BACKFILL MATERIAL.

4. ALL UTILITY LINES CROSSING TRENCHES, i.e. STORM LATERALS, SANITARY SEWERS, SANITARY LATERALS, WATER MAINS, WATER SERVICE CONNECTIONS, GAS MAINS, GAS SERVICE CONNECTIONS, UNDERGROUND OBT CONDUITS, CABLE T.V. LINES SHALL BE PROTECTED AND SUPPORTED WITH HARDWOOD PLANKS OR REMOVED AND REPLACED, RECONNECTED AND SUPPORTED ACROSS THE ENTIRE WIDTH OF THE TRENCH. NO ADDITIONAL COMPENSATION WILL BE PAID FOR THE ABOVE WORK, EVEN IF NOT SHOWN ON THE PLANS.

5. ALL EXISTING SEWER CASTINGS REMOVED ON THIS PROJECT SHALL REMAIN THE PROPERTY OF THE CITY OF RICHMOND HEIGHTS AND SHALL BE DELIVERED BY THE CONTRACTOR TO A SITE DESIGNATED BY THE CITY.

6. ALL EXISTING TEST TEE MARKINGS ENCOUNTERED ON THE SIDEWALK AND/OR CURB DURING CONSTRUCTION SHALL BE REFERENCED AND RESTORED, MARKED WITH A SAW CUT SYMBOL ON THE SIDEWALK. (+) FOR STORM TEE AND (Δ) FOR SANITARY TEE.

7. BACKFILL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 9" IN DEPTH. BACKFILL MATERIAL SHALL BE PLACED WITHIN 2% OF THE OPTIMUM MOISTURE. THE ENGINEER MAY ORDER THE REMOVAL, REFILLING, RECOMPACTION AND RETESTING OF ALL BACKFILL NOT MEETING THE REQUIREMENTS OF THE CONTRACT.

8. BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED USING MACHINE MOUNTED COMPACTION EQUIPMENT IN LAYERS SUFFICIENT TO MEET THE COMPACTION REQUIREMENT ODOT 203.

9. NO BACKFILLING OF ANY TRENCHES OR EXCAVATIONS WILL BE PERMITTED WITHOUT TAMPING EQUIPMENT BEING USED. FLOODING, JETTING OR PUDDLING OF BACKFILL WILL NOT BE PERMITTED.

PROJECT PHASING

IT IS THE DESIRE OF THE CITY OF RICHMOND HEIGHTS TO HAVE THE CONTRACT WORK PROCEED IN AN ORDERLY AND NEAT MATTER IN ORDER TO KEEP THE DISRUPTION TO THE BUSINESSES AND RESIDENTS TO A MINIMUM. THUSLY THE CONTRACTOR IS TO PREPARE AND IMPLEMENT A WORK PHASING PLAN, APPROVED BY THE DIRECTOR OF PUBLIC SERVICE AND THE ENGINEER, INCLUSIVE OF THE FOLLOWING REQUIREMENTS:

1. ALL WORK SHALL BE 1/2 WIDTH, EXCEPT FOR ASPHALT MILLING AND RESURFACING OPERATIONS.

2. NO WORK SHALL BE DONE ON THE OPPOSITE SIDE OF THE STREET UNTIL ALL NEW PAVEMENT (CONCRETE OR ASPHALT BASE AND INTERMEDIATE COURSES), DRIVE APRONS, SIDEWALKS AND ROUGH GRADE LANDSCAPING ARE IN PLACE ON THE SIDE BEING CONSTRUCTED.

3. THE CITY MAY, ACCEPT A PHASING PLAN CONSISTING OF PERFORMING 1/2 WIDTH IMPROVEMENTS ALONG THE SECTIONS/PHASES OF THE PROJECT LENGTH. THE CONTRACTORS PLAN SHALL SUBSTANTIALLY COMPLETE EACH PHASE ON BOTH SIDES OF THE RIGHT-OF-WAY BEFORE MOVING ON THE THE NEXT PHASE.

4. DRIVE APRON ACCESS IS TO BE MAINTAINED AT ALL TIMES EXCEPTING DURING CONCRETE PLACEMENT AND CURING.

ROADWAY EXCAVATION AND PAVEMENT

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER FORTY-EIGHT (48) HOURS IN ADVANCE OF BEGINNING WORK WHICH REQUIRES PROOF ROLL TESTING AND/OR PRE-POUR INSPECTION PRIOR TO PLACEMENT OF PAVEMENT. WORK WILL NOT BEGIN UNTIL INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE ENGINEER.

2. PART WIDTH CONSTRUCTION AS DESCRIBED IN PROJECT PHASING GENERAL NOTE SHALL BE USED FOR PAVING OPERATIONS. PAVING OPERATIONS SHALL NOT BEGIN ON THE OPPOSITE LANE(S) UNTIL ROADWAY AND DRIVE APRONS ARE INSTALLED AND OPEN TO TRAFFIC ON THE STARTING SIDE.

3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE BARRICADE DEVICES TO PREVENT VEHICULAR TRAFFIC ON NEW CONCRETE PAVEMENT AND APRONS UNTIL THE END OF THE CURE PERIOD OR THE SPECIMEN TEST BEAMS HAVE ATTAINED A MODULUS OF RUPTURE OF 400 PSI FOR M.S. CONCRETE.

4. THE EXCAVATION, EMBANKMENT AND COMPACTION OF THE NEW ROADWAY SUBGRADES IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS 203. A MINIMUM OF TWO (2) PROOF ROLLINGS WILL BE REQUIRED AS DIRECTED BY THE ENGINEER BEFORE PAVING. THE FIRST PROOF ROLLING SHALL BE PERFORMED AFTER THE INSTALLATION OF ALL UNDERGROUND IMPROVEMENTS AND AFTER FINE GRADING JUST PRIOR TO PAVING. THE PROOF ROLLINGS SHALL BE COMPLETED AS FOLLOWS: EXCAVATION OR EMBANKMENT TO FINISHED SUBGRADE. EMBANKMENTS ARE COMPACTED AND TESTED FOR COMPACTION IN 6" LIFTS PER ODOT 203. THE SUBGRADE IS COMPACTED AND TESTED. THE SUBGRADE FOR THE NEW ROAD IS THEN PROOF ROLLED. AREAS EXHIBITING UNACCEPTABLE MOVEMENT UNDER PROOF ROLLING ARE UNDERCUT TO A DEPTH DIRECTED BY THE ENGINEER AND BACKFILLED WITH MATERIALS SPECIFIED IN THE PLANS. THE SUBGRADE IS RE-PROOF ROLLED TO VERIFY THE UTILITY OF THE UNDERCUT. UPON PASSING THE PROOF ROLL THE AREA IS APPROVED FOR THE INSTALLATION OF THE BASE MATERIAL. THE APPROVED AREAS SHALL BE PROTECTED AFTER APPROVAL AS SPECIFIED IN ODOT 105.14. THE AGGREGATE BASE MATERIAL IS PLACED PER ODOT SPECIFICATIONS, COMPACTED, TESTED AND PROOF ROLLED. UPON PASSING THE PROOF ROLL THE SPECIFIED TOP COURSES OF RIGID PAVEMENT MAY BE INSTALLED MOISTURE CONTENT OF THE SUBGRADE AT THE TIME OF PROOF ROLLING SHALL CONFORM TO SECTION 203.11 OF THE ODOT SPECIFICATIONS. THE MINIMUM EQUIPMENT SHALL CONSIST OF A SINGLE UNIT, TANDEM AXLE DUMP TRUCK CAPABLE OF BEING LOADED TO 30,000 POUND AXLE LOAD, 60,000 POUND GVW. TIRE PRESSURE SHALL BE MAINTAINED AT 90 PSI OR AS SPECIFIED UNDER SECTION 203.14 OF ODOT SPECIFICATIONS. ANY AREA PERMITTING TIRES TO LEAVE A GROOVE OF ONE (1) INCH OR MORE SHALL BE UNACCEPTABLE FOR PAVING. ANY AREA PERMITTING THE TEST VEHICLE TIRES TO LEAVE A GROOVE OF ZERO (0) TO ONE-HALF (1/2) INCH DEEP SHALL BE ACCEPTABLE. ANY AREA PERMITTING THE TEST VEHICLE TIRES TO LEAVE A GROOVE OF ONE-HALF (1/2) INCH TO ONE (1) INCH DEEP SHALL BE AT THE ENGINEER'S DISCRETION.

5. JOINT AND CRACK SEALER FOR PAVEMENT SHALL MEET THE REQUIREMENTS OF ODOT ITEM 705.04 AND ASTM D 3405. A DOUBLE BOILER SHOULD BE USED FOR HEATING THE MATERIAL.

6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SUFFICIENT SECURITY MEASURES AND/OR PERSONNEL TO PROTECT ALL NEW CONCRETE WORK FROM VANDALISM AT NO ADDITIONAL COST TO THE CITY. ANY VANDALIZED CONCRETE SHALL BE REPLACED IN FULL AT THE CONTRACTOR'S EXPENSE.

EXISTING UTILITIES

1. THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS HAVE BEEN OBTAINED BY DILIGENT FIELD CHECKS AND SEARCHES OF AVAILABLE RECORDS. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT, BUT THE CITY OF RICHMOND HEIGHTS AND THE CLEVELAND WATER DEPARTMENT DO NOT GUARANTEE THEIR ACCURACY OR COMPLETENESS.

2. BEFORE ANY WORK IS STARTED THAT WILL INTERFERE WITH THE EXISTING UTILITIES, THE CONTRACTOR SHALL CALL THE "OHIO UTILITIES PROTECTION SERVICE", AT 1-800-362-2764, FORTY-EIGHT (48) HOURS IN ADVANCE OF THE WORK. THE FOLLOWING REFERENCE NUMBERS HAVE BEEN ASSIGNED TO THIS PROJECT BY THE OHIO UTILITIES PROTECTION SERVICE. NON-MEMBER UTILITIES MUST BE CONTACTED DIRECTLY THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, AT NO ADDITIONAL EXPENSE TO THE CITY OF RICHMOND HEIGHTS, 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 AND ALL REPAIR WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE RESPECTIVE AGENCY AT NO ADDITIONAL EXPENSE TO THE CITY OF RICHMOND HEIGHTS, INCLUDING ANY INSPECTION FEES OR MAINTENANCE CREWS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF THE EXISTING UTILITY OWNERS LISTED BELOW AND THE UTILITY PROTECTION SERVICE IN ACCORDANCE WITH SECTION 153.64 OF THE OHIO REVISED CODE AND OUTLINED IN PROJECT SPECIFICATIONS. THE UTILITY OWNERSHIPS ARE AS FOLLOWS:

AT&T
ATTN: JAMES JANIS
13630 LORAIN AVE., 2ND FLOOR
CLEVELAND OHIO 44111
216-534-7285
PJ8191@att.com

ENBRIDGE GAS OHIO
ATTN: WILLIAM SNYDER
320 SPRINGSIDE DR. SUITE 320
AKRON OHIO 44333
330-664-2409
relocation@dominionenergy.com

NORTHEAST OHIO REGIONAL SEWER
ATTN: ROB STOERKEL
3900 EUCLID AVE
CLEVELAND OHIO 44115
216-881-8247

CLEVELAND WATER
ATTN: FRED ROBERTS
1201 LAKESIDE AVE
CLEVELAND OHIO 44114
216-664-2444 ext 75590
fred_roberts@clevelandwater.com

THE ILLUMINATING COMPANY
P.O. BOX 5000
CLEVELAND, OHIO 44101
PHONE: (216) 622-9800

CITY OF RICHMOND HEIGHTS
457 RICHMOND ROAD
RICHMOND HEIGHTS, OHIO 44143
PHONE: (216) 731-7014

OHIO UTILITY PROTECTION SERVICE
12467 MAHONING AVENUE
NORTH JACKSON, OHIO 44451
PHONE: (800) 362-2746

CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS
CUYAHOGA COUNTY HARDVARD AVE MAINTENANCE FACILITY
2501 HARVARD AVE
NEWBURGH HEIGHTS, OH 44105
EMAIL:
laweber@cuyahogacounty.gov

CUYAHOGA COUNTY PERMITS AND INSPECTION DEPARTMENT
2501 HARVARD AVENUE
NEWBURGH HEIGHTS, OH 44105
JUSTIN PATRONITE
PHONE: (216) 443-8209

4. WHERE EXISTING POWER OR TELEPHONE POLES ARE IN CLOSE PROXIMITY TO WORK, THE CONTRACTOR SHALL COORDINATE HIS WORK EFFORTS WITH THOSE OF THE UTILITY COMPANIES SUCH THAT THEIR EXISTING FACILITIES CAN BE MAINTAINED AND PROTECTED DURING THE TIME WORK IS GOING ON ADJACENT TO THE POLE. THE COST AND COORDINATION FOR ANY REQUIRED PROTECTION OR RELOCATION OF EXISTING POWER OR TELEPHONE POLES SHALL NOT BE THE RESPONSIBILITY OF THE CITY OF RICHMOND HEIGHTS. 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.

5. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES AFFECTED BY THE PROPOSED CONSTRUCTION.

SERVICE CONNECTIONS

1. ALL ACTIVE DRAINAGE PIPES ENCOUNTERED SHALL BE RECONNECTED TO EXISTING FACILITIES OR CONNECTED TO THE NEW FACILITIES.

2. ALL EXISTING UTILITY SERVICE CONNECTIONS (SANITARY, STORM, WATER, GAS, ELECTRIC, TELEPHONE, ETC.) WHICH ARE DAMAGED DURING THE INSTALLATION OF PIPE SHALL BE REPAIRED WITH LIKE MATERIALS OR REPLACED, AS REQUIRED. THE COST OF UTILITY SERVICE CONNECTION REPAIR/REPLACEMENT SHALL BE INCLUDED IN THE UNIT PRICES FOR ALL ITEMS IN THE PROPOSAL.

3. ALL UTILITY LINES CROSSING THE NEW TRENCH SHALL BE PROTECTED AND SUPPORTED WITH HARDWOOD PLANKS; OR REMOVED, REPLACED, RECONNECTED AND SUPPORTED ACROSS THE ENTIRE WIDTH OF THE TRENCH. IF ANY OF THESE LINES ARE DAMAGED DURING CONSTRUCTION, THEY SHALL BE REPLACED IN-KIND.

4. THE CONTRACTOR SHALL BE REQUIRED TO BYPASS AND MAINTAIN THE FLOW TO/FROM ALL HOUSE UTILITY CONNECTIONS DURING CONSTRUCTION.

5. THE CONTRACTOR SHALL EXPECT ONE UNDERGROUND SEWER, GAS AND WATER CONNECTION FOR EACH LOT (INCLUDING VACANT LOTS) ON BOTH SIDES OF THE STREET FOR THE ENTIRE PROJECT LENGTH.

6. THE COST OF UTILITY RELOCATION, REPLACEMENT, AND/OR SUPPORT SHALL BE INCLUDED IN THE COST PER LINEAL FOOT OF ASSOCIATED SEWER REPAIR.

GRASS RESTORATION

1. PRIOR TO START OF CONSTRUCTION THE CONTRACTOR SHALL INVENTORY TREELAWNS FOR EXISTING ORNAMENTAL LANDSCAPE FEATURES INCLUDING LAWN SPRINKLER SYSTEMS AND IRON PINS. ANY LANDSCAPE FEATURE DISTURBED OR DAMAGED BY THE CONTRACTOR'S ACTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION. COST OF INVENTORY AND RESTORATION SHALL BE INCLUDED IN THE UNIT BID PRICE FOR LAWN RESTORATION.

2. RESTORATION OF TREELAWNS AND GRASS AREAS IN EASEMENTS SHALL BE PERFORMED BY A LANDSCAPE CONTRACTOR TO BE APPROVED BY THE CITY ENGINEER AND SERVICE DIRECTOR. THE LANDSCAPE CONTRACTOR MUST BE EXPERIENCED IN COMMERCIAL INSTALLATIONS AND PROVIDE REFERENCES AND OTHER DETAILED INFORMATION TO ENABLE THE OWNER TO JUDGE HIS EXPERIENCE AND CAPABILITY TO PERFORM THE WORK. GRASS AREAS TO BE RESTORED SHALL BE SEEDED UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS. THE SEED SHALL BE PLACED ON A FOUR (4) INCH BED OF COMPACTED TOPSOIL THAT HAS BEEN RAKED AND BROUGHT TO AN EVEN SURFACE. TOPSOIL SHALL BE SHREDDED AND BE FREE OF ROCKS, ROOTS AND WEEDS. THE CONTRACTOR SHALL PROVIDE TOPSOIL SAMPLES AND SOURCES OF SUPPLY TO THE ENGINEER FOR APPROVAL PRIOR TO DELIVERY OF THE MATERIAL TO THE JOB SITE.

PROPERTY PINS AND MONUMENTS

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EMPLOY A REGISTERED SURVEYOR TO LOCATE, RECORD, AND MARK ALL EXISTING MONUMENTS AND PROPERTY CORNERS WITHIN THE CONSTRUCTION LIMITS. THIS COST SHALL BE DISTRIBUTED AMONG THE APPROPRIATE PROJECT PAY ITEMS. A LISTING OF THE PINS AND MONUMENTS SHALL BE SUPPLIED TO THE CITY ENGINEER PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL PINS AND MONUMENTS DURING CONSTRUCTION. IF PINS AND MONUMENTS ARE DISTURBED DURING CONSTRUCTION, THE CONTRACTOR SHALL HAVE THEM REPLACED BY THE REGISTERED SURVEYOR AT NO ADDITIONAL COST TO THE CITY.

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

GENERAL NOTES

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
GN1	
SHEET	OF
2	39

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - GENERAL NOTES.DWG - GN1 - 5/23/2025 9:41:02 AM - WILLIAM VASKO

DEVELOPERS, ENGINEERS, AND CONTRACTORS ARE TO ABIDE BY THE MOST CURRENT VERSION OF THE CLEVELAND WATER NOTES AND DETAILS. THE MOST UP-TO-DATE VERSION CAN BE FOUND AT WWW.CLEVELANDWATER.COM/CONSTRUCTION/ OR AS PROVIDED BY CLEVELAND WATER *STAFF.*

REFERENCE STANDARDS

1. AWWA C600 - INSTALLATION OF DUCTILE-IRON MAINS AND THEIR APPURTENANCES
1. AWWA C605- UNDERGROUND INSTALLATION OF POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND FITTINGS
2. AWWA C651- DISINFECTING WATER MAINS
3. ASTM D2774- STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PRESSURE PIPING
4. ASTM F1668- STANDARD GUIDE FOR CONSTRUCTION PROCEDURES FOR BURIED PLASTIC PIPE

OVERALL PIPE PREPARATION AND EXECUTION

1. ALL DUCTILE IRON PIPE SHALL BE INSTALLED PER THE MOST CURRENT REVISION OF AWWA C600, AWWA MANUAL M41, DIPRA'S "INSTALLATION GUIDE FOR DUCTILE IRON PIPE" (ISBN 0-9642194-0-9) AND "DIRECT TAPPING OF DUCTILE IRON PIPING ENCASED IN POLYETHYLENE", AS WELL AS THE MANUFACTURER'S INSTRUCTIONS.
2. ALL DUCTILE IRON BURIED WATER MAINS, FITTINGS, VALVES, FIRE HYDRANT BRANCH PIPING AND APPURTENANCES SHALL BE ENCASED WITH V-BIO® ENHANCED POLYETHYLENE ENCASEMENT INSTALLED IN ACCORDANCE WITH THE MOST CURRENT REVISION OF ANSI/AWWA C-105/A21.5 MODIFIED METHOD "A" AND ASTM A674.
3. PIPE AND ACCESSORIES SHOULD BE INSPECTED FOR DEFECTS AND CLEANLINESS BEFORE THEY ARE LOWERED INTO THE TRENCH. ANY DEFECTIVE OR DAMAGED MATERIAL SHOULD BE REPAIRED OR REPLACED, AND ALL FOREIGN MATTER OR DIRT REMOVED FROM THE INTERIOR OF THE PIPE AND ACCESSORIES BEFORE LOWERING INTO TRENCH.
4. ALL PVC PIPE SHALL BE INSTALLED PER AWWA, C605, ASTM D2774, ASTM F1668, AND MANUFACTURER'S INSTRUCTIONS.
5. ONCE DELIVERED, ALL PVC PIPE MUST BE PROTECTED FROM DIRECT SUN EXPOSURE UNTIL THE PIPE IS INSTALLED AND BACKFILLED.
6. ANY PIPE JOINT THAT HAS BEEN OVER-INSERTED SHALL HAVE BOTH THE BELL PIPE AND THE SPIGOT PIPE REMOVED AND DISCARDED.
7. IN NO CASE SHALL MAINS BE LAID WITH LESS THAN 3'-6" OF COVER IN UNPAVED AREAS AND 3'-0" TO BOTTOM OF SLAB IN PAVED AREAS. MAINS SHALL BE LAID AT A BURY DEPTH OF 6 FT MIN. UNLESS WRITTEN PERMISSION IS PROVIDED BY CLEVELAND WATER.
8. ALL MATERIALS, INCLUDING BUT NOT LIMITED TO WATER MAINS, FIRE HYDRANTS, VALVES, CONNECTION MATERIALS AND OTHER WATER APPURTENANCES, SHALL BE NEW AND UNUSED AND SHALL CONFORM TO THE MOST CURRENT CLEVELAND WATER SPECIFICATIONS. ALL MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH CLEVELAND DIVISION OF WATER STANDARDS.
9. TWO FEET ABOVE THE MAIN, DETECTABLE TRACER TAPE NOTING THE PRESENCE OF A WATER MAIN SHALL BE INSTALLED FOR THE ENTIRE LENGTH OF THE MAIN, INCLUDING HYDRANT LATERALS AND OPEN CUT INSTALLED SERVICE CONNECTIONS.
10. ALL MATERIALS USED SHALL ABIDE BY REQUIREMENTS LISTED ON MATERIAL SPECIFICATION LIST (GEN-000A).

TRACER WIRE FOR PVC PIPE

1. ALL NEW TRACER WIRE INSTALLATIONS SHALL HAVE THEIR FUNCTION VERIFIED BY BEING LOCATED USING TYPICAL LOW FREQUENCY (512HZ) LINE TRACING EQUIPMENT. THE LOCATING FIRM SHALL PROVIDE WRITTEN CERTIFICATIONS THAT THE SYSTEM IS COMPLETELY FUNCTIONAL AT TEST COMPLETION.
2. MAGNESIUM GROUND ANODE RODS ARE TO BE INSTALLED AT EACH DEAD END PER THE MANUFACTURER'S INSTRUCTIONS.
3. TRACER LINES SHALL TERMINATE AT A DEDICATED AT-GRADE ACCESS POINT/TEST STATION IDENTIFIED WITH "WATER" ON THE CAP. AT LEAST 2 FEET OF SLACK WIRE SHALL BE PROVIDED AT EACH TERMINATION POINT.
4. LATERAL TRACER LINES ON HYDRANTS, TEES, AND CROSSES ARE NOT TO CUT THE MAIN TRACER WIRE.

HYDROSTATIC PRESSURE TESTING

1. CLEAN PIPE PRIOR TO CONDUCTING HYDROSTATIC PRESSURE TESTING. CLEANING MAY BE COMPLETED VIA FLUSHING OR SWABBING EXCEPT IF DISINFECTION IS CONDUCTED USING THE TABLET METHOD.
2. FILL WATER MAIN AT A CONTINUOUS RATE, 1 FT/SEC MAXIMUM. ONCE FULL, FLUSH THE LINE NOT LESS THAN 3 FT/SEC UNLESS DIRECTED BY CLEVELAND WATER THAT CONDITIONS DO NOT PERMIT THE REQUIRED FLOW RATE TO BE ACHIEVED. FLUSHING SHALL CONTINUE UNTIL THE VOLUME OF WATER IN THE NEWLY INSTALLED MAIN HAS TURNED OVER AT LEAST ONE TIME.
3. THE HYDROSTATIC TEST PRESSURE SHALL BE 75 PSI ABOVE THE STATIC PRESSURE PREVAILING AT THE SITE, BUT IN NO CASE LESS THAN 150 PSI.
4. DURATION: 2 HOURS (WITH PRESSURE MAINTAINED WITHIN 5 PSI OF THE REQUIRED TEST PRESSURE).
5. SHOULD THE PRESSURE TEST FAIL, THE CONTRACTOR SHALL IDENTIFY THE SOURCE(S) AND CORRECT THE DEFICIENCY. THE HYDROSTATIC PRESSURE TEST SHALL BE REPEATED FOR THE PRESCRIBED DURATION TO VERIFY THAT THE NEW WATER MAIN MEETS THE TEST CRITERIA. WORK PERFORMED TO IDENTIFY AND CORRECT FAILURE SOURCE(S) AND THEIR REMEDIATION MUST BE COMPLETED TO THE SATISFACTION OF CLEVELAND WATER AT NO ADDITIONAL COST.

DISINFECTION

1. DISINFECTION FOR WATER MAINS SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN THE MOST CURRENT REVISION OF AWWA C651.

SERVICE CONNECTIONS

1. SADDLE TAPPING SHALL BE PERFORMED FOR PIPES OF ANY NOMINAL SIZE AND PRESSURE CLASS. TAP SIZE IS LIMITED TO 2-INCHES MAXIMUM.
2. TAPPING SLEEVE AND VALVE IS REQUIRED FOR SERVICE CONNECTIONS LARGER THAN 2-INCHES. THRUST RESTRAINT IS REQUIRED.
3. SERVICE CLAMPS OF SADDLES SHALL PROVIDE FULL SUPPORT AROUND THE CIRCUMFERENCE OF THE PIPE AND PROVIDE A BEARING AREA OF SUFFICIENT WIDTH ALONG THE AXIS OF THE PIPE TO PREVENT DISTORTION WHEN THE SADDLE IS TIGHTENED. NARROW U-BOLT-TYPE STRAPS AND SADDLES HAVING LUGS ARE PROHIBITED.

PIPE JOINTS

1. PIPE JOINTS SHALL ADHERE TO ANSI/AWWA C110/A21.10, C111/A21.11, C153/A21.53, C900, C905, C907 AND C909 REQUIREMENTS AND PROCEDURES FOR JOINT METHODS AND MATERIALS.
4. RESTRAINED JOINTS, AS INDICATED ON THE PLANS, SHALL COMPLY WITH ANSI/AWWA C111/A21.11.

FITTINGS AND APPURTENANCES

1. ALL FITTINGS SHALL BE APPROVED DUCTILE IRON CLASS 350, CEMENT LINED AND FUSION BOND EPOXY COATED CONFORMING TO THE REQUIREMENTS OF ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53.
2. ALL FITTINGS AND PIPES CONNECTED TO FITTINGS SHALL BE RESTRAINED USING A "RETAINED" MECHANICAL JOINT. JOINTS SHALL COMPLY WITH ANSI/AWWA C111/A21.11.
3. ALL FITTINGS MUST HAVE BELL ENDS UNLESS APPROVED BY CLEVELAND WATER.
4. PROVIDE PROPER SUPPORT FOR VALVES, HYDRANTS, AND FITTINGS SUCH THAT THE WEIGHT IS NOT APPLIED TO THE PIPE.

FIELD QUALITY CONTROL

1. PIPE SPIGOT END, BELL END, COUPLER OR FITTING, AND ELASTOMERIC GASKET SHALL BE CLEANED IMMEDIATELY BEFORE ASSEMBLY. DO NOT REMOVE FACTORY INSTALLED GASKETS. APPROVED LUBRICANTS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
2. PIPE CUTTING SHALL BE CONDUCTED IN ACCORDANCE WITH AWWA C600, C900, AND MANUFACTURER REQUIREMENTS. PIPE SHALL BE MARKED AROUND ITS ENTIRE CIRCUMFERENCE TO ENSURE A SQUARE CUT.
3. CUT ENDS OF PIPE SHALL BE BEVELED TO ENSURE PROPER JOINT ASSEMBLY. USE FACTORY-FINISHED PIPE END AS A GUIDE TO DETERMINE THE ANGLE AND LENGTH OF THE BEVEL. DEBURR AND CLEAN CUT PIPE END PRIOR TO BELL INSERTION.
4. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL PLUG ALL OPEN PIPE ENDS WITH WATERTIGHT PLUGS AS PER THE "PREVENTATIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION" SECTION OF THE MOST CURRENT REVISION OF AWWA C-651 AS TO PREVENT THE INFILTRATION OR INTRUSION OF ANY FOREIGN OBJECTS OR MATERIALS. DATE STAMPED DIGITAL PHOTOS SHALL BE PROVIDED FOR EACH WORKDAY DEMONSTRATING THAT PROPER AWWA C-651 METHODS WERE USED TO PLUG ALL OPEN WATER MAIN ENDS. EACH PHOTO SHALL CLEARLY IDENTIFY THE STATION AT WHICH THE PIPE IS PLUGGED BY USE OF A STATION MARKER PLACED AT THE PLUGGED PIPE END. PHOTOS SHALL BE SUBMITTED ON A DAILY BASIS UNLESS OTHERWISE DEFINED BY THE CLEVELAND WATER INSPECTOR OR ENGINEER. ALL PHOTOS TAKEN OVER THE COURSE OF THE PROJECT SHALL BE SUBMITTED BY THE CONTRACTOR AS PART OF THE AS-BUILT SUBMITTAL. PHOTOS ARE TO INCLUDE STATIONING MARKERS. AS-BUILTS SHALL BE DEEMED INCOMPLETE WITHOUT SAID COLLECTION OF DIGITAL PHOTOS.
5. CLEVELAND WATER INSPECTORS SHALL BE INVITED TO WITNESS TRACER WIRE VERIFICATION FOR PVC PIPE INSTALLATIONS. THIS VERIFICATION SHALL BE PERFORMED UPON COMPLETION OF ROUGH GRADING AND AGAIN PRIOR TO THE FINAL ACCEPTANCE OF THE PROJECT. CONTINUITY TESTING IN LIEU OF ACTUAL LINE TRACING SHALL NOT BE ACCEPTED. CLEVELAND WATER WILL REQUIRE COMPLETION OF THE FIRST VERIFICATION PRIOR TO CHLORINATION, WITH CERTIFICATION SUBMITTED ALONG WITH RED LINE DRAWINGS. CERTIFICATION OF THE SECOND VERIFICATION SHALL BE PROVIDED WITH AS-BUILT DRAWINGS.

CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	REVISIONS			GUIDELINES FOR WATER MAIN INSTALLATION AND REPLACEMENT
	NO.	DATE	BY	DETAIL NO.: GEN-000B
				SCALE: N.T.S. DATE: 5/31/2024

REFERENCE STANDARDS

1. ASTM A276- STAINLESS STEEL BARS AND SHAPES
2. ASTM A193/A194- ALLOY-STEEL AND STAINLESS-STEEL BOLTING FOR HIGH TEMPERATURE OR HIGH-PRESSURE SERVICE AND OTHER SPECIAL PURPOSE APPLICATIONS
3. ASTM A536- DUCTILE IRON CASTINGS
4. ASTM A1097- STEEL CASING PIPE, CARBON, ELECTRIC-FUSION (ARC)-WELDED (NPS 10 AND LARGER)
5. ASTM D2774- STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PRESSURE PIPING
6. ASTM F1668- STANDARD GUIDE FOR CONSTRUCTION PROCEDURES FOR BURIED PLASTIC
7. ANSI/AWWA C111- RUBBER-GASKET JOINTS FOR DUCTILE IRON PRESSURE PIPE AND FITTINGS
8. ANSI/AWWA C151-DUCTILE-IRON PIPE, CENTRIFUGALLY CAST
9. ANSI/AWWA C153- DUCTILE IRON COMPACT FITTINGS
10. ANSI/AWWA C110- DUCTILE IRON FLANGED FITTINGS
11. AWWA C219- BOLTED SLEEVE-TYPE COUPLINGS FOR PLAIN-END PIPE
12. AWWA C509- RESILIENT-SEATED GATE VALVES FOR WATER SUPPLY SERVICE
13. AWWA C515- REDUCED-WALL, RESILIENT-SEATED GATE VALVES FOR WATER SUPPLY SERVICE
14. AWWA C900- POLYVINYL CHLORIDE PVC PRESSURE PIPE AND FABRICATED FITTINGS
15. AWWA C909- MOLECULARLY ORIENTED POLYVINYL CHLORIDE
16. ODOT 499- CONCRETE

DUCTILE IRON PIPE

1. ALL PIPE SHALL BE AWWA C151 DUCTILE IRON, MINIMUM CLASS 52, WITH A CEMENT MORTAR LINING, HAVING PUSH-ON JOINTS WITH RADIALLY COMPRESSED RUBBER RING GASKET. MAINS 36" AND LARGER SHALL BE MINIMUM PRESSURE CLASS 350.

PVC PIPE

1. AWWA C900 CLASS 235 PSI (DR18) *OR* AWWA C909 CLASS 235 PSI (DR18)
2. INSIDE DIAMETER: NO LARGER THAN 12", NO SMALLER THAN 4".

GATE VALVES

1. AWWA C509 *OR* C515 APPROVED MODEL RESILIENT SEATED GATE VALVES
2. VALVE OPERATING NUTS: TAPERED (1 7/8" TO 2" FROM TOP TO BOTTOM) AND 2" DEEP
3. MIDDLE RING AND FOLLOWER GLANDS TO BE DUCTILE IRON ASTM A536

AIR RELIEF VALVES

1. AIR RELIEF VALVE COMPONENT PARTS SHALL CONFORM TO AWWA C800 AND ASTM B584 FOR MATERIALS THAT COME INTO CONTACT WITH POTABLE WATER.
2. VALVE INLET AND OUTLET SIZE SHALL BE 2". INSTALL ***ONLY*** CLEVELAND WATER-APPROVED AIR RELIEF VALVE PRODUCTS.

HYDRANTS

1. INSTALL ***ONLY*** CLEVELAND WATER-APPROVED HYDRANT MODELS .
2. HYDRANTS SHALL BE FACTORY EQUIPPED WITH THE APPROPRIATE HYDRANT NOZZLE, INCLUDING STORZ IF REQUESTED BY THE LOCAL MUNICIPALITY.
3. INSTALL ALL HYDRANTS WITH APPROVED PVC PIPE (ITEM 2) AND AWWA C509 6" RW GATE VALVES .
4. HYDRANT CONNECTIONS ARE TO BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY CLEVELAND WATER.
5. HYDRANT BRANCHES TO BE FULLY RESTRAINED. IF BRANCH IS SHORTENED, USE ONLY 1 SLEEVE OR COUPLING WITH NO NEW PIPE REQUIRED.
6. MIDDLE RING AND FOLLOWER GLANDS TO BE EITHER STEEL OR DUCTILE IRON ASTM A536.
7. FLUSHING HYDRANTS SHALL CONSIST OF 2" FIP VERTICAL INLET, 2" MIP OUTLET AND BE SELF-DRAINING. FLUSHING HYDRANT SHALL BE FULLY OPERABLE AND SERVICEABLE FROM ABOVE GROUND. EQUAL TO KUPERFERLE TRUFLO MODEL NO. TF500.

COMPRESSION COUPLINGS - VALVES AND HYDRANTS

1. CLASS 250 AWWA C219 GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END PIPE
2. MINIMUM WORKING PRESSURE: 250 PSI
3. EQUAL TO DRESSER STYLE NO. 38, 138, OR 162 (TRANSITION TYPE) OR ROMAC 501/ SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.
4. EACH COUPLING TO CONSIST OF 1 DUCTILE IRON MIDDLE RING WITHOUT STOPS (ASTM-A536), 2 DUCTILE IRON FOLLOWER GLANDS (ASTM A536), 2 RUBBER COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS, AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS OF ASTM A276/A193/194 TYPE 304 EXTRA HEAVY HEX TO PROPERLY COMPRESS THE GASKETS.

FITTINGS/JOINTS

1. ALL FITTINGS/JOINTS TO BE APPROVED DUCTILE IRON, CLASS 350, CEMENT LINED, OR FUSION BONDED EPOXY COATED (UNLESS OTHERWISE CALLED FOR ON PLANS) .
2. ALL FITTINGS TO BE RESTRAINED USING A "RETAINED" MECHANICAL JOINT CONFORMING TO THE MATERIAL AND PERFORMANCE REQUIREMENTS OF ANSI/AWWA C110/A21.10 AND ANSI/AWWA C111/A21.11, OR "COMPACT" FITTINGS IN ACCORDANCE WITH ANSI/AWWA C153/A21.53.
3. MUST HAVE APPROVED "TYPE I" OR "TYPE II" BOLTLESS RESTRAINED PUSH-ON JOINTS TO THE LIMITS SHOWN ON THE DRAWINGS.
4. ALL FITTINGS ARE TO HAVE BELL ENDS.

GASKETS AND LUBRICANTS

1. ELASTOMERIC GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477 FOR HIGH-HEAD APPLICATIONS.
2. GASKETS AND LUBRICANTS INTENDED FOR USE WITH POTABLE WATER SHALL BE CERTIFIED BY AN ACCREDITED TESTING AGENCY FOR COMPLIANCE WITH NSF/ANSI 61.

ANODE PROTECTION

1. MAGNESIUM ALLOY ANODES SHALL MEET ASTM B843 AND ASTM G97.
2. THERMITE WELDS ARE TO BE COATED WITH A PREFABRICATED ONE-PIECE PLASTIC CAP.
3. COPPER SLEEVES ARE REQUIRED FOR THERMITE WELD WIRE CONNECTIONS USING #10 AWG WIRE OR SMALLER.

WATER MAIN TRENCH

1. BEDDING, INITIAL, AND PREMIUM BACKFILL MATERIAL: # 57 OR #67 COARSE LIMESTONE AGGREGATE COMPLYING WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 703.11; WRITTEN APPROVAL REQUIRED BY CWD FOR SAND BEDDING FOR DUCTILE IRON PIPE.
2. SUITABLE BACKFILL: EXCAVATED MATERIAL FREE OF ROCK LARGER THAN 1.5", FROZEN MATERIALS, ORGANIC MATERIAL, AND DEBRIS.
3. TYPE 2 CONTROLLED LOW-STRENGTH MORTAR (CLSM) SHALL CONFORM TO ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 613.03. CLSM MAY BE USED AS DIRECTED BY CLEVELAND WATER.

CASING

1. CASING SPACER: 8" WIDE STAINLESS STEEL WITH EPDM LINER AND REINFORCED PLASTIC RUNNERS
2. CASING PIPE: ASTM A1097 COATED OR UNCOATED STEEL WITH A MIN. 35,000 PSI SMYS.
3. FOR 8" WATER MAIN USE 16" CASING
4. FOR 12" WATER MAIN USE 20" CASING

TRACER WIRE

1. MUST BE INSTALLED WITH A CONTINUOUS RUN OF 12-GAUGE COPPER-CLAD STEEL WIRE.
2. BREAKING LOAD: MIN. 450 POUNDS
3. MIN. 30 MILS OF BLUE HDPE INSULATION CERTIFIED FOR DIRECT BURIAL
4. GROUND ROD: MIN 1.5 LB MAGNESIUM DRIVE-IN ANODE ROD WITH CONNECTED GROUND WIRE.
5. CONNECTORS: WATERPROOF, CONTAIN DIELECTRIC SILICONE AND RATED FOR DIRECT BURIAL.
6. NON-LOCKING FRICTION FIT, TWIST-ON, AND TAPED CONNECTIONS ARE NOT PERMITTED.

SERVICE CONNECTIONS

1. ALL SERVICE CONNECTIONS SHALL BE A MINIMUM OF 1"
2. FOR CONNECTIONS 2" AND SMALLER: USE TYPE K COPPER
3. FOR CONNECTIONS 3" AND LARGER: USE CLASS 52 DUCTILE IRON WRAPPED IN V-BIO® ENHANCED POLYETHYLENE ENCASEMENT.

BOLTS AND NUTS

1. ALL BOLTS AND NUTS ON ALL RETAINED MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE 1 COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF V-BIO® POLYETHYLENE WRAP OR APPROVED EQUAL WRAPPING IN ACCORDANCE WITH ANSI/AWWA C105/A21.5 MODIFIED METHOD "A" .

CONCRETE

1. FOR BULKHEAD: CLASS QC 1 OR 4,000 PSI HIGH STRENGTH BAGGED CONCRETE MIX
2. FOR THRUST BLOCK: CLASS QC 1 WITH 4,000 PSI 28 DAY COMPRESSIVE STRENGTH (ODOT 499)

FROST PROOFING

1. USE PRE-FORMED CELLULAR CONCRETE FOAM "GILSULATE 500 XR" AS MANUFACTURED BY GILSULATE INTERNATIONAL, INC. OR APPROVED EQUAL.

LOWERING

1. PIPE USED SHALL BE 8" (MIN.) AND 12" (MAX.) IN DIAMETER.
2. MAXIMUM BEND ALLOWED TO BE 22.5 DEGREES.

TEE

1. PIPE TO BE USED ON TEE: 8" (MIN.) AND 12" (MAX)
2. AWWA C110 OR C153 DI CLASS 350 MJ FITTINGS WITH FBE COATING, CEMENT LINING, POLYETHYLENE ENCASEMENT
3. AWWA C219 PIPE COUPLINGS- ROMAC 501 OR SMITH BLAIR 441 DI ONLY
4. AWWA C509 DUCTILE IRON RESILIENT WEDGE GATE VALVE (MJ X MJ)
5. MECHANICAL JOINT RETAINER GLAND FOR PVC PIPE-TYLER UNION OR APPROVED EQUAL

CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	REVISIONS			MATERIAL CRITERIA FOR WATER MAIN INSTALLATION AND REPLACEMENT
	NO.	DATE	BY	DETAIL NO.: GEN-000A
				SCALE: N.T.S. DATE: 7/12/2024

EROSION AND DUST CONTROL

1. SEDIMENT CONTROL SHALL BE ACCOMPLISHED BY HYDRO SEEDING AND MULCHING IMMEDIATELY UPON COMPLETION OF EXCAVATION OR FILL AND FINISH GRADING IN ACCORDANCE WITH ODOT ITEM 659 OR AS DIRECTED BY THE ENGINEER.
2. THE CONTRACTOR SHALL BEGIN THE RESTORATION PROCESS AS SOON AS CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZING EACH DISTURBED AREA WITH PERENNIAL VEGETATION INSTALLED ACCORDING TO SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS.
3. THE CONTRACTOR SHALL REMOVE DAILY ALL MUD, SOIL AND DEBRIS THAT MAY BE TRACKED ONTO EXISTING STREETS OR DRIVES BY HIS EQUIPMENT OR THAT OF SUBCONTRACTORS OR SUPPLIERS.
4. 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. NO EXCESS MATERIALS ARE TO BE DISPOSED OF IN ANY WETLAND, FLOOD PLAIN OR OTHER ENVIRONMENTALLY SENSITIVE AREA.
5. EROSION CONTROL MEASURES AT THE DISPOSAL SITE MUST BE INSTALLED AND MAINTAINED UNTIL DISPOSAL IS COMPLETE AND THE DISPOSAL SITE IS PERMANENTLY STABILIZED.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY WHEN NEEDED OR ORDERED BY THE OWNER WATER OR CALCIUM CHLORIDE PER ODOT 616 FOR THE ALLEVIATION OR PREVENTION OF DUST NUISANCE ORIGINATING FROM HIS CONSTRUCTION ACTIVITIES. SUFFICIENT QUANTITIES OF CALCIUM CHLORIDE SHALL BE STORED ON THE JOB SITE AT ALL TIMES TO BE USED FOR DUST CONTROL. THE COST OF DUST CONTROL SHALL BE INCLUDED IN THE UNIT BID PRICES FOR ALL ITEMS OF THE PROPOSAL.
7. OTHER EROSION AND SEDIMENT CONTROL PRACTICES SHALL MINIMIZE SEDIMENT LADEN WATER ENTERING ACTIVE STORM DRAIN SYSTEMS, UNLESS THE STORM DRAIN SYSTEM DRAINS TO A SEDIMENT POND. INLET PROTECTION IS MANDATORY WHERE SEDIMENT SETTLING PONDS WILL NOT BE IMPLEMENTED.

EXCESS EXCAVATION

1. ALL EXCESS EXCAVATION SHALL BE DISPOSED OF IN A LOCATION TO BE SELECTED BY THE CONTRACTOR. THE CONTRACTOR MUST OBTAIN A PERMIT FROM THE CITY IF THE MATERIAL IS TO BE DISPOSED OF WITHIN THE CITY LIMITS.

MAINTAINING TRAFFIC

1. SEE MAINTENANCE OF TRAFFIC PLAN.

TRENCH EXCAVATION

1. TRENCH EXCAVATION SHALL BE ONLY ON ONE SIDE OF THE PAVEMENT AT A TIME. THE OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. PLACEMENT OF PROPOSED SUBBASE AND BASE MATERIAL SHALL FOLLOW AS CLOSELY AS POSSIBLE BEHIND EXCAVATION OPERATIONS. THE LENGTH OF REPLACEMENT SECTION WHICH IS OPEN AT ANY ONE TIME SHALL BE HELD TO A MINIMUM AND SHALL AT ALL TIMES BE SUBJECT TO APPROVAL OF THE ENGINEER

CONTRACTOR'S EQUIPMENT - OPERATION AND STORAGE

1. THE CONTRACTOR'S EQUIPMENT SHALL BE OPERATED IN THE DIRECTION OF TRAFFIC. A QUALIFIED FLAGGER SHALL BE EMPLOYED WHERE THE CONTRACTOR'S EQUIPMENT MUST MERGE WITH THE TRAFFIC STREAM. THE CONTRACTOR'S EQUIPMENT SHALL BE EQUIPPED WITH AT LEAST ONE AMBER FLASHING LIGHT. PAVERS, ROLLERS AND OTHER EQUIPMENT MAY BE PARKED IN AREAS ALONG THE HIGHWAY WHEN PAVING OPERATIONS ARE SCHEDULED TO CONTINUE WITHIN THE NEXT WORKDAY: OTHERWISE THE EQUIPMENT SHALL BE STORED AT A STORAGE AREA OUTSIDE THE R/W, THE LOCATION OF WHICH SHALL HAVE PRIOR APPROVAL OF THE ENGINEER. WHEN PARKING ALONG THE HIGHWAY THE EQUIPMENT SHALL BE PLACED AND DELINEATED AS PER 614.03. ALL EQUIPMENT AND STORED MATERIALS SHALL NOT CAUSE SIGNIFICANT SIGHT DISTANCE HAZARDS TO THE TRAVELING PUBLIC. ALL OTHER EQUIPMENT, INCLUDING PRIVATE VEHICLES, SHALL BE STORED AT THE APPROVED CONTRACTOR'S STORAGE AREA. NO EQUIPMENT SHALL BE PARKED ON PRIVATE PROPERTY UNLESS PRIOR APPROVAL OF THE OWNER AND THE PROJECT ENGINEER/SUPERVISOR HAS BEEN GRANTED.

SUSPENSION OF WORK

1. IF THE CONTRACTOR FAILS TO COMPLY WITH THE PROVISIONS FOR MAINTENANCE OF TRAFFIC AS SET FORTH IN THESE PLANS OR WITH PROVISIONS OF THE MANUAL, THE ENGINEER MAY SUSPEND WORK UNTIL THE CONTRACTOR COMPLIES WITH THE NECESSARY REQUIREMENTS. NO COMPENSATION WILL BE PAID FOR SUSPENSION OF WORK.

STATE OF OHIO — WILLIAM T. VASKO E-86752 — REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

GENERAL NOTES

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	GN2
SHEET	3
OF	39

C:\CTCAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - GENERAL NOTES.DWG - GN2 - 5/23/2025 9:41:02 AM - WILLIAM VASKO

CLEVELAND WATER DEPARTMENT NOTES:

DEVELOPERS, ENGINEERS, AND CONTRACTORS ARE TO ABIDE BY THE MOST CURRENT VERSION OF THE CLEVELAND WATER NOTES AND DETAILS. THE MOST UP-TO-DATE VERSION CAN BE FOUND AT WWW.CLEVELANDWATER.COM/CONSTRUCTION.

1. ALL WATER WORK REQUIRED, WHETHER SHOWN ON THE PLANS OR AS DIRECTED BY CLEVELAND WATER, SHALL BE AT THE EXPENSE OF THE PROJECT UNLESS OTHERWISE AGREED TO BY THE COMMISSIONER OF THE CLEVELAND DIVISION OF WATER.

2. THE INFORMATION SHOWN ON THE CLEVELAND DIVISION OF WATER'S SUMMARY OF WORK/CHARGE LETTER, STRIP MAPS, AS BUILD DRAWINGS, AND GIS ARE TAKEN FROM EXISTING AVAILABLE RECORDS, AND THEIR ACCURACY IS NOT GUARANTEED.

3. CALL THE INSPECTION AND ENFORCEMENT UNIT AT 216-664-2342 TO SCHEDULE A PRECONSTRUCTION MEETING AT LEAST 1 WEEK PRIOR TO STARTING CONSTRUCTION. THE OPERATION OF ANY VALVE OR ALTERATION OF ANY PART OF THE WATER SYSTEM BY CONTRACTORS OR THEIR EMPLOYEES IS PROHIBITED WITHOUT THE SUPERVISION OF THE CLEVELAND DIVISION OF WATER INSPECTOR. SEE ALSO NOTE 20 REGARDING ADDITIONAL ADVANCE NOTIFICATION REQUIRED IN AREAS SUSPECTED TO CONTAIN LEAD SERVICE CONNECTION (ALL AREAS INSTALLED PRIOR TO 1954).

4. PRIOR TO REQUESTING CHLORINATION, THE CONTRACTOR SHALL SUPPLY THE CLEVELAND WATER INSPECTOR WITH REDLINE DRAWINGS SHOWING CHANGES MADE FROM THE APPROVED DESIGN DRAWINGS AND ACTUAL MEASUREMENTS. CHLORINATION SHALL NOT OCCUR BEFORE THESE DRAWINGS ARE SUBMITTED.

5. FOR THE PURPOSES OF CHLORINATION AND BACTERIOLOGICAL TESTING OF THE WATER MAINS THE CONTRACTOR SHALL PROVIDE AND INSTALL, AT EACH OF THE CHLORINATION PIT LOCATIONS SHOWN AND AT OTHER LOCATIONS DETERMINED BY CLEVELAND WATER. FLUSHING / SAMPLING TAP SIZES ARE TO BE DETERMINED BY CLEVELAND WATER. CHLORINATION PITS SHALL BE SIX (6) FOOT SQUARE AND ARE TO MEET OSHA STANDARDS. NO CUSTOMER TAPS SHALL BE INSTALLED PRIOR TO CHLORINATION.

6. A TWO YEAR WARRANTY, COMMENCING FROM THE DATE OF ACCEPTANCE OF THE FINAL CHLORINATION OF THE WATER MAIN INSTALLATION SHALL BE PROVIDED BY THE BUILDER/DEVELOPER AND/OR CONTRACTOR FOR ALL WATER MAINS AND SERVICE CONNECTION WORK PERFORMED BY THE CONTRACTOR, INCLUDING TAPS IF PERFORMED. SHOULD ANY LEAKS OCCUR AND REPAIRS BE REQUIRED DUE TO DEFECTIVE MATERIAL OR POOR WORKMANSHIP. A LETTER INDICATING THE COMMENCEMENT DATE AND END DATE OF THE WARRANTY SHALL BE INCLUDED WITH THE AS-BUILT SUBMISSION IN NOTE 12.

7. USE BACKFILL MATERIAL AS SPECIFIED AND COMPACT SUFFICIENTLY IN THOSE AREAS WHERE EXISTING MAINS AND WATER SERVICE CONNECTIONS ARE EXPOSED. (SE CLEVELAND WATER STANDARD DETAIL STD-001)

8. ALL MATERIALS, INCLUDING BUT NOT LIMITED TO WATER MAINS, FIRE HYDRANTS, VALVES, CONNECTION MATERIALS AND OTHER WATER APPURTENANCES, SHALL BE NEW AND UNUSED AND SHALL CONFORM TO THE MOST CURRENT CLEVELAND WATER SPECIFICATIONS. ALL MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH CLEVELAND WATER'S STANDARDS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING WATER MAINS AND APPURTENANCES THEREOF WHEN CONSTRUCTING OR CONNECTING THE NEW WATER MAIN. THIS SHALL INCLUDE LEADED JOINTS IN EXISTING FITTINGS WHICH MAY REQUIRE REPLACEMENT FITTINGS AT THE DISCRETION OF THE INSPECTOR IF IT IS DETERMINED THEY WERE DISTURBED. ALL REPAIRS TO DAMAGED EXISTING FACILITIES SHALL BE MADE BY THE CONTRACTOR, AT THE PROJECTS' EXPENSE, TO THE SATISFACTION OF CLEVELAND WATER.

10. ALL HYDROSTATIC PRESSURE TESTING SHALL BE DONE BY THE CONTRACTOR IN THE PRESENCE OF THE CLEVELAND WATER INSPECTOR. THE HYDROSTATIC TEST PRESSURE SHALL BE 75 PSI ABOVE THE STATIC PRESSURE PREVAILING AT THE SITE, BUT IN NO CASE LESS THAN 150 PSI. THE PRESSURE TEST SHALL BE FOR A DURATION OF TWO (2) HOURS WITH THE PRESSURE BEING MAINTAINED WITHIN 5 PSI OF THE REQUIRED TEST PRESSURE. SHOULD THE PRESSURE TEST FAIL THE CONTRACTOR SHALL FIND AND CORRECT THE DEFICIENCY(S) TO THE SATISFACTION OF CLEVELAND WATER AND REPEAT THE TWO (2) HOUR PRESSURE TEST.

11. ALL BURIED WATER MAINS, FITTINGS, VALVES, FIRE HYDRANT BRANCH PIPING AND APPURTENANCES SHALL BE ENCASED WITH V-BIO® ENHANCED POLYETHYLENE ENCASEMENT INSTALLED IN ACCORDANCE WITH THE MOST CURRENT REVISION OF ANSI/AWWA C-105/A21.5 MODIFIED METHOD "A".

12. THE PROJECT'S PROFESSIONAL ENGINEER OR A DESIGNATED PROFESSIONAL SURVEYOR SHALL OBTAIN ACTUAL FIELD MEASUREMENTS OF THE MAIN DURING INSTALLATION AND SHALL FURNISH THE CLEVELAND WATER INSPECTOR WITH AS-BUILD DRAWINGS MEETING CLEVELAND WATER STANDARDS WITHIN 30 DAYS OF THE WATER MAIN GOING INTO SERVICE AND ALL TAPS/RETAPS BEING MADE. ONE HARD COPY AND ONE PDF COPY SHALL BE PROVIDED. DRAWINGS SHALL BE SIGNED, DATED, AND STAMPED WITH THE ENGINEER OR SURVEYOR'S SEAL. REDLINE DRAWINGS ARE NOT SUFFICIENT. CLEVELAND WATER RESERVES THE RIGHT TO WITHHOLD PAYMENT AND/OR APPROVAL OF FUTURE WORK IF AS-BUILTS ARE NOT SUBMITTED.

WATER MAINS:

13. ALL PIPE, UNLESS OTHERWISE APPROVED BY CLEVELAND WATER, SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED HAVING PUSH-ON JOINTS WITH RADIALLY COMPRESSED RUBBER RING GASKET AND INSTALLED AS PER THE MOST CURRENT REVISION OF AWWA C600.

14. ALL FITTINGS, UNLESS OTHERWISE CALLED FOR, SHALL BE APPROVED DUCTILE IRON, CLASS 350, CEMENT LINED OR FUSION BONDED EPOXY COATED. ALL FITTINGS AND PIPE CONNECTED TO FITTINGS SHALL BE RESTRAINED USING A "RESTRAINED" MECHANICAL JOINT CONFORMING TO THE MATERIAL AND PERFORMANCE REQUIREMENTS OF ANSI/AWWA/ C-110/A21.10 AND ANSI/AWWA C-111/A21.11, OR "COMPACT" FITTINGS IN ACCORDANCE WITH ANSI.AWWA C-153/A21.53. EXCEPT FOR ANCHOR TEES, REDUCERS, OR OTHER SPECIAL CIRCUMSTANCES WHEN CALLED BY CLEVELAND WATER, ALL FITTINGS ARE TO HAVE BELL ENDS.

15. ALL BOLTS AND NUTS ON ALL "RESTRAINED" MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING.

16. WHERE SHOWN ON THE PLANS, OR WHEN OTHERWISE CALLED FOR, PIPE AND FITTINGS SHALL HAVE AN APPROVED "TYPE I" OR "TYPE II" BOLTLESS RESTRAINED PUSH-ON JOINTS TO THE LIMITS SHOWN ON THE DRAWINGS.

17. AT THE END OF EACH WORKDAY, THE CONTRACTOR SHALL PLUG ALL OPEN PIPE ENDS WITH WATER TIGHT PLUGS AS PER THE "PREVENTIVE AND CORRECTIVE MEASURES DURING CONSTRUCTION" SECTION OF THE MOST CURRENT REVISION OF AWWA C-651 AS TO PREVENT THE INFILTRATION OR INTRUSION OF ANY FOREIGN OBJECTS OR MATERIALS. DATE STAMPED DIGITAL PHOTOS SHALL BE PROVIDED FOR EACH WORKDAY DEMONSTRATING THAT PROPER AWWA C-651 METHODS WERE USED TO PLUG ALL OPEN WATER MAIN ENDS. EACH PHOTO SHALL CLEARLY IDENTIFY THE STATION AT WHICH THE PIPE IS PLUGGED. THE STATIONING SHALL BE SHOWN BY THE USE OF A STATION MARKER PLACED AT THE PLUGGED PIPE END. PHOTOS SHALL BE SUBMITTED ON A DAILY BASIS UNLESS OTHERWISE DEFINED BY THE CLEVELAND WATER INSPECTOR OR ENGINEER. ALL PHOTOS TAKEN OVER THE COURSE OF THE PROJECT SHALL BE SUBMITTED BY THE CONTRACTOR AS PART OF THE AS-BUILT SUBMITTAL. PHOTOS ARE TO INCLUDE STATIONING MARKERS. AS-BUILTS SHALL BE DEEMED INCOMPLETE WITHOUT SAID COLLECTION OF DIGITAL PHOTOS.

HYDRANTS:

18. IN ALL HYDRANT INSTALLATION THE CONTRACTOR SHALL FACE ALL HYDRANT'S 4" (STEAMER) NOZZLE TOWARD THE PAVEMENT PRIOR TO TESTING AND CHLORINATION OF WATER MAINS. ONLY CLEVELAND WATER APPROVED HYDRANT MODELS SHALL BE INSTALLED. CONTRACTOR SHALL CONSULT WITH THE LOCAL MUNICIPALITY'S ENGINEERING OR SERVICE DEPARTMENT TO OBTAIN HYDRANT NOZZLE THREAD REQUIREMENTS IF NOT INDICATED ON THE APPROVED PLANS. ALL HYDRANTS SHALL BE FACTORY EQUIPPED WITH THE APPROPRIATE HYDRANT NOZZLE. HYDRANT BRANCHES SHALL BE FULLY RESTRAINED AND INSTALLED PER THE APPROPRIATE HYDRANT CLEVELAND WATER HYDRANT DETAIL. HYDRANT BRANCH VALVES SHALL BE PLACED DIRECTLY AFTER THE HYDRANT TEE UNLESS OTHERWISE APPROVED BY THE INSPECTOR IN WRITING.

VALVES:

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

LEAD SERVICE CONNECTIONS:

20. LEAD SERVICES: A MINIMUM OF 45 DAYS BEFORE THE PRECONSTRUCTION MEETING, CWD SHALL PROVIDE A NOTICE TO ALL AFFECTED CUSTOMERS THAT THEIR WATER SERVICE LINE WILL BE DISTURBED. A MINIMUM OF 75 DAYS BEFORE THE PRECONSTRUCTION MEETING ,THE CONTRACTOR OR ENGINEER SHALL PROVIDE CWD (AND THE LOCAL MUNICIPALITY IF OUTSIDE THE CITY OF CLEVELAND) A LIST OF ALL CUSTOMER ADDRESSES THAT WILL BE AFFECTED BY THE WATER MAIN REPLACEMENT PROJECT. FAILURE TO PROVIDE A LIST OF CUSTOMER ADDRESSES IN A TIMELY MANNER MAY RESULT IN PROJECT DELAYS. ANY CITY-OWNED LEAD SERVICE LINE ENCOUNTERED SHALL BE REPLACED WITH TYPE K COPPER. THE REPLACEMENT SERVICE LINE SHALL BE SIZE-ON-SIZE WITH A 1-INCH MINIMUM DIAMETER. IF A CUSTOMER-OWNED LEAD SERVICE LINE IS ENCOUNTERED, THE CONTRACTOR SHALL LEAVE A CWD-SUPPLIED CUSTOMER NOTIFICATION DOOR HANGER ON ALL ACCESSIBLE POINTS OF ENTRY TO THE HOME AND IMMEDIATELY NOTIFY THE CWD INSPECTOR. IF THE CWD INSPECTOR IS NOT AVAILABLE, CALL PAYTON HALL AT (216) 664-2444, EXT. 73000 OR (216) 971-2721. CUSTOMERS WITH A CUSTOMER-OWNED LEAD SERVICE LINE SHALL NOT BE RECONNECTED TO THE NEW WATER MAIN WITHOUT EXPRESS WRITTEN APPROVAL FROM PAYTON HALL, OR HIS APPROVED REPRESENTATIVE AT CWD. AS PART OF THE CONTRACT, THE CONTRACTOR SHALL OFFER EACH CUSTOMER TO REPLACE LEAD SERVICES FROM THE CORPORATION STOP TO THE INLET STOP & WASTE VALVE INSIDE THE CUSTOMER'S HOME. IF THE REPLACEMENT IS NOT COVERED UNDER THE BID ITEMS, THE CONTRACTOR SHALL PROVIDE CWD (AND THE LOCAL MUNICIPALITY IF OUTSIDE THE CITY OF CLEVELAND) WITH A CHANGE ORDER AND COST ESTIMATES FOR THE CUSTOMER-OWNED LEAD SERVICE LINE REPLACEMENT. UPON APPROVAL FROM CWD (AND THE LOCAL MUNICIPALITY IF OUTSIDE THE CITY OF CLEVELAND), THE CONTRACTOR SHALL PERFORM THE REPLACEMENT OF THE CUSTOMER-OWNED LEAD SERVICE LINE. AS STATED ABOVE, CUSTOMERS WITH CUSTOMER-OWNED LEAD SERVICE LINES SHALL NOT BE RECONNECTED TO THE NEW WATER MAIN WITHOUT EXPRESS WRITTEN APPROVAL FROM PAYTON HALL, OR HIS APPROVED REPRESENTATIVE AT CWD. IN THE EVENT THAT A CWD WAIVER IS GRANTED SUCH THAT A CUSTOMER-OWNED LEAD SERVICE LINE IS NOT REPLACED, CWD SHALL SUPPLY THE CONTRACTOR WITH LEAD FILTERS AND PITCHERS THAT THE CONTRACTOR SHALL DISTRIBUTE TO EACH RESIDENCE WITHIN THE PROJECT AREA, INCLUDING TO ALL UNITS OF MULTI-UNIT HOUSING BUILDINGS. THE FILTERS SHALL BE POUR-THROUGH PITCHER TYPE LEAD FILTERS THAT ARE NSF/ANSI-53 CERTIFIED TO REMOVE LEAD. THE PITCHER, A 3-MONTH SUPPLY OF FILTERS, AND CWD-SUPPLIED USE INSTRUCTIONS AND OTHER APPLICABLE MATERIALS SHALL BE DISTRIBUTED. RECORDS OF RESIDENTS WHO RECEIVED AND WHO REFUSED THE FILTERS SHALL BE PROVIDED BY THE CONTRACTOR TO CWD (AND THE LOCAL MUNICIPALITY IF OUTSIDE THE CITY OF CLEVELAND). AT THE BEGINNING OF THE DAY THAT A CUSTOMER IS SCHEDULED TO BE CONNECTED TO THE NEW WATER MAIN, THE CONTRACTOR SHALL DISTRIBUTE THE APPROPRIATE CWD-SUPPLIED CUSTOMER NOTIFICATION DOOR HANGER AND OTHER APPLICABLE MATERIALS ON ALL ACCESSIBLE POINTS OF ENTRY TO THE HOME AND IN A PROMINENT LOCATION AT ALL MULTI-UNIT HOUSING BUILDINGS. THE APPROPRIATE DOOR NOTIFICATION WILL BE DETERMINED BY (1) WHETHER A CUSTOMER-OWNED LEAD SERVICE LINE REMAINS IN THE PROJECT AREA AND (2) THE TYPE OF MATERIAL OF THE INDIVIDUAL CUSTOMER-OWNED SERVICE LINE.

21. DIELECTRIC COUPLINGS: IN THE EVENT THAT A CWD WAIVER IS GRANTED SUCH THAT A CUSTOMER-OWNED LEAD SERVICE LINE IS NOT REPLACED, AND A NEW SERVICE LINE IS CONNECTED TO A CUSTOMER-OWNED LEAD SERVICE LINE, A DIELECTRIC COUPLING SHALL BE PROVIDED TO TRANSITION FROM THE NEW MATERIALS TO THE LEAD PIPE. THE MODEL COUPLING USED IS SUBJECT TO APPROVAL FROM CWD. HARDCO-PHILMAC UTC OR CWD-APPROVED EQUAL.

GENERAL SERVICE CONNECTIONS:

22. AS PART OF THE AS-BUILT SUBMISSION IN NOTE 12, THE CONTRACTOR SHALL PROVIDE A TABLE SHOWING ALL EXISTING CONNECTIONS, IDENTIFIED BY CLEVELAND WATER CONNECTION NUMBER, SHOWING THE FOUND CONNECTION MATERIAL FOR BOTH THE CITYSIDE AND OWNERSIDE CONNECTION, AS WELL AS THE NEW CONNECTION MATERIAL FOR ALL CONNECTIONS REPLACED. THE TABLE SHALL ALSO NOTE ANY REVISED CONNECTION MEASUREMENTS AND SIZES. A SAMPLE TABLE WILL BE PROVIDED. THE SUBMISSION SHALL BE IN MICROSOFT EXCEL FORMAT. CLEVELAND WATER SHALL REQUIRE THE DELIVERY AND ACCEPTANCE OF THIS TABLE BEFORE THE PRESSURE TEST AND CHLORINATION / DISINFECTION OF THE MAIN WILL BE PERMITTED.

23. NEW WATER SERVICE CONNECTIONS LOCATIONS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY AND ARE NOT PART OF THE WATER MAIN APPROVAL. THE SPECIFIC LOCATION FOR EACH CONNECTION WILL BE DETERMINED BY CLEVELAND WATER PRIOR TO THE TAPS BEING INSTALLED. ALL PERMITS FOR TAPS AND METERS FOR PARCELS ASSOCIATED WITH THE WATER MAINS INSTALLED ON THIS PROJECT ARE TO BE OBTAINED BY THE LAND OWNER OF SAID IMPROVEMENT PLANS. IT IS THE LAND OWNER'S RESPONSIBILITY TO ARRANGE FOR OBTAINING PERMITS FOR ALL WATER SERVICE CONNECTIONS BEFORE ANY SERVICE CONNECTION WORK MAY PROCEED. ALL FEES CAN BE OBTAINED FROM THE CLEVELAND WATER PERMITS AND SALES SECTION AT 216-664-3130 PROMPT #7 OR 216-664-2444 X75209. ACCOUNTS SHALL BE INITIATED IN THE LAND OWNER'S NAME AS PART OF THE PERMITTING PROCESS. ALL RESPONSIBILITIES ASSOCIATED WITH EACH WATER SERVICE, INCLUDING, THE OWNERSIDE INSPECTIONS, METER SET/METER PIPING INSPECTION AND THE METER INSTALLATION SHALL BE THE RESPONSIBILITY OF SAID OWNER. METER INSTALLATIONS WILL NOT BE AUTHORIZED TO BE INSTALLED UNTIL ALL INSPECTIONS HAVE BEEN COMPLETED. ESTIMATED BILLS MAY ENSUE IF A HOME IS IDENTIFIED AS HAVING WATER SERVICE BUT NO METER HAS BEEN INSTALLED. IF NEW OWNERS, ONCE PARCELS ARE SOLD OFF AND TRANSFER TITLE, DO NOT CONTACT CLEVELAND WATER TO ESTABLISH ACCOUNTS IN THEIR NAME, ACCOUNTS AND THEIR ASSOCIATED BILLS WILL REMAIN IN THE NAME OF OUR LAST OWNER OF RECORD WHICH MAY BE THE DEVELOPER OR BUILDER. IT IS THE RESPONSIBILITY OF THE NEW OWNER TO TRANSFER ACCOUNTS INTO THEIR NAME WHEN THE PROPERTIES LEGALLY TRANSFER. UPON TRANSFER OF PROPERTY, SELLER OF PROPERTY MUST COMMUNICATE ALL UNCOMPLETED PORTIONS OF THE REFERENCED RESPONSIBILITIES TO THE NEW OWNER.

24. ONE INCH SERVICE CONNECTIONS SHALL BE PERMITTED TO SERVICE NEW HOMES (AS SHOWN ON APPROVED WATER MAIN EXTENSION PLANS) BASED ON THE FOLLOWING CRITERIA:
    - 24.1. PEAK FLOW DEMANDS DO NOT EXCEED 25 GPM FOR AN INDIVIDUAL HOME/UNIT INCLUSIVE OF ALL USAGE (DOMESTIC AND/OR IRRIGATION)
    - 24.2. LENGTH OF ONE INCH CONNECTION DOES NOT EXCEED 75 FEET AS MEASURED FROM THE MAIN TO THE POINT OF ENTRY INTO THE PROPOSED HOME/UNIT
    - 24.3. THE CONNECTIONS DO NOT INCLUDE LIMITED AREA OR NFPA 13D SPRINKLER SYSTEMS.
    - 24.4. ANY SERVICE REQUESTS DIFFERING FORM THE STATED CRITERIA SHALL REQUIRE THE SUBMITTAL OF A COMPLETE WATER SERVICE APPLICATION FOR EACH WATER SERVICE REQUEST.

25. ALL CURB VALVE BOXES & METER VAULTS WILL BE INSTALLED IN GRASS AREAS WHEN POSSIBLE. CURB VALVES SHALL BE PLACED APPROXIMATELY 2 FEET OFF THE CURB. CURB VALVES IN EASEMENTS SHALL BE PLACED APPROXIMATELY 3 FEET OFF THE WATER MAIN. IF VALVE BOXES OR METER VAULTS ARE INSTALLED OUTSIDE OF A DEDICATED RIGHT OF WAY OR EASEMENT FOR THE PURPOSES OF WATER SUPPLY, A STANDARD CLEVELAND EASEMENT FOR A VAULT SHALL BE PROVIDED.

EMERGENCIES:

26. IF A WATER MAIN OR SERVICE CONNECTION BREAK OCCURS DURING CONSTRUCTION AND EMERGENCY ASSISTANCE IS REQUIRED, PLEASE NOTIFY CLEVELAND WATER AT 216-644-3060. THIS LINE IS AVAILABLE 24/7/365.

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

GENERAL NOTES

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
GN3	
SHEET	OF
4	39

STANDARD SPECIFICATIONS - SEWER MAINS AND APPURTENANCES

DEVELOPER/ENGINEER PROCEDURES
All Developer/Engineering Procedures as established by Cuyahoga County Department of Public Works (CCDPW) shall be followed, which include: Latest ODOT Specifications, Municipality standards, Uniform Standards For Sewerage Improvements and Uniform Standards Sewer Details, Cuyahoga County Sanitary Engineering Division Rules and Regulations, and Contractor Permit Information. **In the case of conflicts between written specifications and drawings, the written specification shall apply.** One (1) electronic copy in pdf format, and six (6) paper set of detail drawings on 22" x 34" sheets signed by the City Engineer and Design Engineer, (including plan and profile, applicable sewer details, proposed and existing topography and all buried utilities) and specifications of all proposed sewers and shall be submitted for review and approval to: Cuyahoga County Department of Public Works, c/o Permit Department, 2501 Harvard Ave., Newburgh Heights, OH 44105. Upon the Sanitary Engineer's approval of the detail drawings and specifications for construction, the developer/engineer will have eighteen (18) months from the date of the approval of plans to begin construction or plans must be resubmitted to the CCDPW for approval. The cost to record any and all easements and/or plats for Developer's projects for sewer lines, water lines, or pump stations to be dedicated to Cuyahoga County or a given community for ownership, operation and maintenance shall be at the cost of the Developer/Engineer.

COLLECTION SYSTEM IMPROVEMENTS
The CCDPW and/or Municipality shall determine whether or not the County sewer collection and tributary system has available capacity to allow for a development to proceed. Gravity sewers shall consist of a minimum size of eight (8) inch diameter for mainline sewers and six (6) inch diameter for service laterals at minimum slope of 1% (for laterals) and full flow minimum velocities of two (2) fps. The CCDPW shall require sewers and pump stations to be sized and to be installed at depths for the ultimate development of the entire tributary service area. Gravity sewers and service laterals shall be required in place of force mains/pressure sewers when the CCDPW determines it is in the public interest to do so. The requirements herein shall generally supersede any other requirements and any conflict in requirements shall be ultimately determined by CCDPW.

Generally, design shall be in accordance with Ohio E.P.A. regulations, the latest version of "Ten State Standards" and shall conform to the latest Uniform Standards For Sewerage Improvements, Uniform Standards Sewer Details, and ODOT Specifications.

The Developer and/or Engineer shall not allow other new utilities to be installed within six (6) feet horizontally of an installed new sanitary sewer or in the same trench as the sewer except at crossings. Should this occur, the Developer will be responsible for maintaining the sanitary sewer mains and the CCDPW will not permit taps to said line until the other utility lines are relocated six (6) feet away from the sanitary sewer. Sewer lines shall be located within the public road right-of-way, or within an approved easement. Water mains shall be installed with at least a ten (10) feet horizontal and eighteen (18) inch vertical separation from any sanitary sewers per Uniform Standards For Sewerage Improvements. The County also requires eighteen (18) inch vertical separation from any sanitary or storm sewers, measured from out-to-out.

COLLECTION MATERIAL MINIMUM REQUIRED SPECIFICATIONS AND INSTALLATION STANDARDS
LINE CONSTRUCTION STAKING
Gravity sanitary sewers and force mains shall be staked prior to the installation of new pipe. A State of Ohio Registered Professional Surveyor shall be required for the mainline staking and offsets. Staking shall be for both line and grade no greater spacing than every fifty (50) feet plus at all fittings and off-set at ten (10) feet. All public gravity sewers shall be installed with the use of a laser to insure that they are installed properly to grade.

MAIN LINE AND SERVICE LATERAL SEWER PIPE
All sewer pipe and laterals shall be buried below the frost line consisting of a minimum of at least three (3) feet of cover over the top of the pipe; for this requirement, the Designer shall consider both the existing grade and any anticipated future grade. All sewers (storm and sanitary) crossing a creek shall have six (6) inches of concrete (3000 PSI) encasement. Depths for sewers mains, laterals and force mains with less than three (3) feet of cover shall be approved in writing by the CCDPW prior to the construction phase; additional requirements for such situations may be mandated by the CCDPW.

Flexible PVC sewer pipe buried with less than thirteen (13) feet of cover shall be solid wall pipe; PVC compounds shall meet the requirements of ASTM F-789, SDR 35, six (6) inch through fifteen (15) inch diameter and ASTM F-679 (eighteen (18) inch through thirty (30) inch diameter pipe), conforming to ASTM D-3034, with joints conforming to ASTM D-3212. Fittings shall conform to ASTM D-3034. Gaskets shall conform to ASTM F-477. Pipe bedding shall conform to the Uniform Standards For Sewerage Improvements.

Flexible PVC sewer pipe buried with more than thirteen (13) feet of cover shall be solid wall pipe; PVC compounds shall meet the requirements of ASTM F-949. Pipe shall meet minimum pipe stiffness rating of PS-115 and shall consist of SDR 26 or thicker walled pipe as needed, as recommended by the manufacturer for the actual buried depth, conform to ASTM D-3034 through fifteen (15) inch diameter and ASTM F-679 for larger sizes. Fittings shall conform to ASTM D-3034. Pipe bedding shall conform to the Uniform Standards For Sewerage Improvements.

HDPE sewer pipe shall meet the requirements: N-12 meeting AASHTO M294 with water-tight joint meeting ASTM D3212, gasket meeting ASTM F477 and ASTM D2321, or HP Pipe meeting ASTM F2764 with water-tight joint meeting ASTM D3212, gasket meeting ASTM F477 and ASTM D2321 and SaniTite HP pipe meeting ASTM F2764 (Dual wall 12"-24" and Triple wall 30"-60") with water-tight joint meeting ASTM D3212, gasket meeting ASTM F477 (Double gasket) and ASTM D2321

Alternate pipe different than those specified above for gravity sewer installations may be used, but piping material shall conform to the latest Uniform Standards For Sewerage Improvements and Uniform Standards Sewer Details.

All sewers and laterals in the near vicinity of borings, drilling, and/or jacking of any piping shall also be CCTV inspected by the contractor at his cost to assure that no damage has been done to the piping. A copy of the video(s) and accompanying report(s) shall be submitted to the CCDPW.

All existing sewers, existing sewer laterals, and/or other existing facilities to be re-used shall be located by the contractor and CCTV inspected prior to beginning of construction at the contractor's expense. The CCTV inspection shall be submitted to the CCDPW and approved before the re-use of any existing facilities may be incorporated into the project.

Service lateral pipe shall be six (6) inch diameter consisting of PVC (solid wall pipe) and shall conform to the Uniform Standards For Sewerage Improvements. If the design necessitates a larger service lateral pipe for larger usage customers, the increased size shall be subject to CCDPW approval. Service lateral pipes shall not be installed without a Permit from the County and without calling at least 24 hours in advance for inspection at (216) 443-8209. County service lateral inspections will only be performed during normal County work hours. Service laterals shall only serve gravity drains in the customer's structure, including if possible basement or lower level, such as floor drains, toilet, sink, showers, slop sinks, clothes washer drains, etc. Service laterals which cannot be gravity shall utilize an approved grinder pump system. Service laterals for residential customers shall have a test-tee installed within three (3) feet of the right-of-way line. Service laterals for commercial customers shall have a test-tee installed within five feet (5') of the building foundation exterior, and at the right-of-way line. Service laterals shall not have any bends other than 45-degree or 22.5-degree bends. Ninety (90) degree bends (Horizontal or Vertical) are not acceptable. Test Tees are to be installed behind bends (upstream of) greater than 22.5-degree. One Test Tee should be installed for every one hundred (100) feet of pipe installed and spaced and located to allow access for easy cleaning. All Cleanouts shall be straight cleanouts or Test Tees, no swiping cleanouts. Clean water connections of the sanitary sewer are prohibited, including, but not limited to, storm water drains, yard drains, driveway drains, roof water drains, exterior footer or foundation by gravity or with interior sump pump, etc. In developments where connection to a service lateral will not occur for more than thirty (30) days, the Developer's contractor shall install a watertight cap and lateral 2x2 markers including a metal rod so the ends can be located or unless approved by the Engineer. When a building(s) is abandoned, existing service laterals shall be cut and capped with a watertight cap adjacent to the sewer main. All new lateral riser shall conform to Uniform Standards Detail No. 10 (with two 45 deg bends instead of one 90 deg bend as shown) and the lateral should be installed vertical to the surface. All Test Tees shall conform to the Uniform Standards Sewer Detail. All lateral connections to existing cleanouts and/or Test Tees shall be made at the lowest point in the Cleanout or Test Tee; connections above this point are prohibited. Solvent cement type joints or glued joints are prohibited or unless approved by the Engineer.

In all communities where the CCDPW issues permits, the installation of Bentonite Clay Dams (per the Uniform Standard Detail) on sanitary sewers, storm sewers, and sanitary and storm laterals may be required by the CCDPW. Where sewers and laterals cross creeks and/or ditches, two additional Dams may be required on the pipe, one on either side of the crossing. **In addition, in Olmsted Township, the installation of Bentonite Clay Dams shall be required on all sanitary and storm laterals; plus, where sewer laterals cross creeks and/or ditches, a minimum of two Dams shall be required on every pipe, one Dam on either side of the crossing.**

Connections of service laterals and/or sewers to existing and/or proposed sewer pipe mains shall be as follows:

a. To PVC Sewer Mains - cut out a section of the existing sewer main, install a manufactured PVC wye (with six (6) inch or appropriate size branch) with water tight PVC no-hub couplings, or approved equal, pipe adaptors for connections on sewer mains 18-inch and smaller. Where sewer mains are larger than 18-inch, Inserta-tees maybe used, manufactured by Inserta Fittings Company, or approved equal. PVC to PVC piping connections should be completed using a manufactured PVC No-Hub coupling or unless approved by the Engineer. Pipe bedding and installation shall conform to the Uniform Standards or Sewerage Improvements.

b. To Concrete Sewer Mains - cut out a section of the existing sewer main, install a manufactured RCP wye (with six (6) inch or appropriate size branch) with water- tight Strongback Fernco type, or approved equal, pipe adaptors. Where sewer mains are larger then 10-inch, core pipe and install a manufactured flexible watertight six (6) inch rubber boot with stainless steel band(s), Model NPC Kor-N-Tee (as manufactured by NPC) or approved equal. Pipe bedding and installation shall conform to the Uniform Standards For Sewerage Improvements. RCP to PVC piping connections should be completed using a Strongback Fernco connection or equal.

c. To Vitrified Clay Pipe Sewer Mains - remove one (1) section of existing pipe (joint-to-joint), install a manufactured watertight PVC wye (with six (6) inch or appropriate size branch) with water-tight Strongback Fernco type, or approved equal, pipe adaptors on sewer mains 18-inch and smaller. Where sewer mains are larger then 18-inch, Inserta-tees maybe used, manufactured by Inserta Fittings Company, or approved equal. Pipe bedding and installation shall conform to the Uniform Standards For Sewerage Improvements.

Service lateral connections to manholes shall use a KOR-N-SEAL or approved equal (connections are only allowed in special cases and only one (1) inside drop per manhole allowed). Service laterals from the public sewer main to the building foundation shall not be installed until the building foundation and basement construction has been completed.

External grease interceptors shall be installed in services for all food service businesses and oil/grit interceptors on all services for customers with floor drains in garage/warehouse type buildings. Interceptors are to be sized as required by CCDPW Rules and Regulations with a minimum effective grease interceptor size of 750 gallons. The customer shall be responsible for maintenance by cleaning/pumping their interceptor on a regular schedule. Interceptors shall be constructed water-tight and shall meet the requirements of CCDPW standards. The inlet and outlet pipes shall be sized from the building foundation to the grease trap shall be six inch (6") diameter minimum with a six (6) inch minimum diameter outlet to three (3) feet outside the tank. There shall be cleanouts installed in the inlet pipe and outlet pipes outside the grease interceptor.

PRESSURE SEWER/FORCE MAIN PIPE
Pressure sewer/force main pipe shall be designed for a minimum pressure of 150 p.s.i. and shall consist of:
a. PVC, conforming to AWWA C900, DR 18 (solid wall pipe with PVC compounds meeting the requirements of SDR-26 ASTM D-2241), pipe shall include rubber gaskets or o-rings confirming to the requirements of ASTM D-3139.
b. Ductile Iron Pipe (DIP) shall have a minimum wall thickness of Class 52, with push-on type joints, cement lined (AWWA C104), and shall meet the requirements of AWWA C150 and C151.
c. HDPE, conforming to SDR 11 (ASTM F714 and D3035). Pipe joints shall be joined by use of the heat fusion technique of butt fusion resulting in a monolithic pipe, All joints shall be fully restrained and as strong as the pipe in both tension and hydrostatic loading.
d. Pressure sewer pipe shall be pressure tested per manufacturer's recommendations.
e. Restrained joints shall be used at a minimum at all joint fittings and at the next pipe joint from each fitting in all directions. Restrained joints shall consist of Meg-a-Lugs, Model Ebba Series 100 or equal as approved by CCDPW.
f. Thrust blocks shall be used at all change of direction fittings in addition to the restrained joints, and shall be 4,000 psi concrete.
g. Commercial and non-residential force mains shall have minimum cover of six (6) feet.
h. Grinder pump pressure sewers/force mains shall be flexible HDPE SDR 11, jointless. The sewer shall be installed with a minimum of six (6) feet of cover.
i. All high points in force main shall have an air release valve installed in a standard manhole conforming to the Uniform Standards Sewer Details.
j. Two (2) No. 8 stranded wires shall be buried with all PVC and HPDE pressure sewer pipes located at the 10:00 and 2:00 positions and terminated in valve boxes, along with four (4) inch wide tape noting "SEWER FORCE MAIN BURIED BELOW" buried over pipe twelve (12) inch below finish grade.

GENERAL PIPE REQUIREMENTS & TESTING
All manufacturer's recommendations for unloading, installation, trench preparation, assembly, backfill, pressure or infiltration test, deflection tests, etc. shall be followed unless in conflict with these specifications, the latest version of Ten State Standards, Ohio EPA, or the Uniform Standards For Sewerage Improvements standards. If there is a conflict, the more restrictive requirements shall govern, unless approved in writing by the CCDPW. The use of recycled concrete or slag for bedding and backfill is not approved by the CCDPW.

Installed sanitary sewer pipe eight (8) inch to twenty four (24) inch shall require an air testing conforming with ASTM F-1417; concrete pipe shall be tested per ASTM C-969, ASTM C-1103 or ASTM C-1214; clay pipe shall be tested per ASTM C-828 or ASTM C-1091. Installed sanitary sewer pipe twenty seven (27) inch to forty eight (48) inch shall require weir testing per the Uniform Standards For Sewerage Improvements.

All flexible pipe 8-inch and larger (Sanitary, Combined & Storm) shall meet maximum five (5) percent deflection (Mandrel) testing at 60-days from the time of backfilling the sewer trench. The mandrel shall be as specified in the Uniform Standards. When the use of the specified mandrel is not possible, laser profiling per ODOT 611.12 and 611.13 is required and shall be used in lieu of the mandrel testing. All testing above shall be performed by a certified independent agency paid by the contractor and witnessed by a representative (Inspector) of the CCDPW.

All new gravity sewers 8-inch and larger shall be CCTV inspected by a CCDPW approved company regularly engaged in this type of work upon completion of installation. Costs shall be paid for by the contractor unless otherwise noted in the specifications. A copy of the video(s) and accompanying report(s) shall be submitted to the CCDPW.

SEWER PIPEBACKFILL
Material used for bedding and backfilling along the sides of the sewer and cover to a height of 12 inches over the top of the sewer shall consist of coarse interlocking aggregate No. 57, 6, 67, 68, 7, 78, or 8 and as per Uniform Standard Sewer Details. Slag or recycled concrete is not permitted. Backfill above the pipe shall be premium backfill using Low Strength Mortar (LSM) when within five (5) feet of pavement or within city right-of-way or unless indicated differently in the specifications. All material shall be compacted to 95% Proctor in maximum 12-inch lifts.

MANHOLES/STRUCTURES
All manholes/structures shall be watertight structures made of precast concrete sections with full depth channels and shall meet the requirements of ASTM C-478 and Uniform Standards For Sewerage Improvements and Details. Chimney seals shall be installed on all new sanitary manholes. All manhole/structure frames and castings shall conform to the Uniform Standards For Sewerage Improvements and Details. Openings in ALL Structure Section for ALL pipes (Sanitary, Combined & Storm) shall be prefabricated. Flexible connections shall be provided for sanitary, storm and combined sewers. Premium seals shall meet ASTM C-923.

All new sanitary manholes shall be vacuum tested in accordance with the procedures of ASTM C-1244. No bricks shall be used as grade rings. The testing shall be performed by a certified independent agency paid by the contractor and witnessed by a representative (Inspector) of the CCDPW.

GENERAL COUNTY SEWER NOTES

REVISIONS:

SCALE
NO SCALE

DATE: JUNE 2022

UNIFORM STANDARDS: CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS --- MUNICIPAL ENGINEERS ASSOCIATION OF NE OHIO

SHEET NO. 4

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

GENERAL NOTES

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
GN4	
SHEET	OF
5	39

C:\CTICAD_DRIVE\$_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - GENERAL NOTES.DWG - GN4 - 5/23/2025 9:41:02 AM - WILLIAM VASKO

SURVEY

EX:

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

GROUND

EX:

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

VEGETATION

EX:

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

UTILITIES - MISCELLANEOUS

EX:

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

UTILITIES - TRAFFIC

EX:

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

UTILITIES - POLE

EX:

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

UTILITIES - STORM

EX:

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

UTILITIES - SANITARY

EX:

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

UTILITIES - GAS

EX:

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

UTILITIES - WATER

EX: PR:

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

UTILITES - WATER

PROPOSED:

- WATER LINE
- WATER SERVICE

EXISTING:

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

BOUNDARIES

EXISTING:

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

FEATURES

EXISTING:

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

VEGETATION

EXISTING:

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

UTILITES - STORM

EXISTING:

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

UTILITES - SANITARY

EXISTING:

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

UTILITES - GAS

EXISTING:

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

UTILITES - TRAFFIC

EXISTING:

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

UTILITES - CABLE TV:

EXISTING:

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

UTILITES - MISCELLANEOUS

EXISTING:

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

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

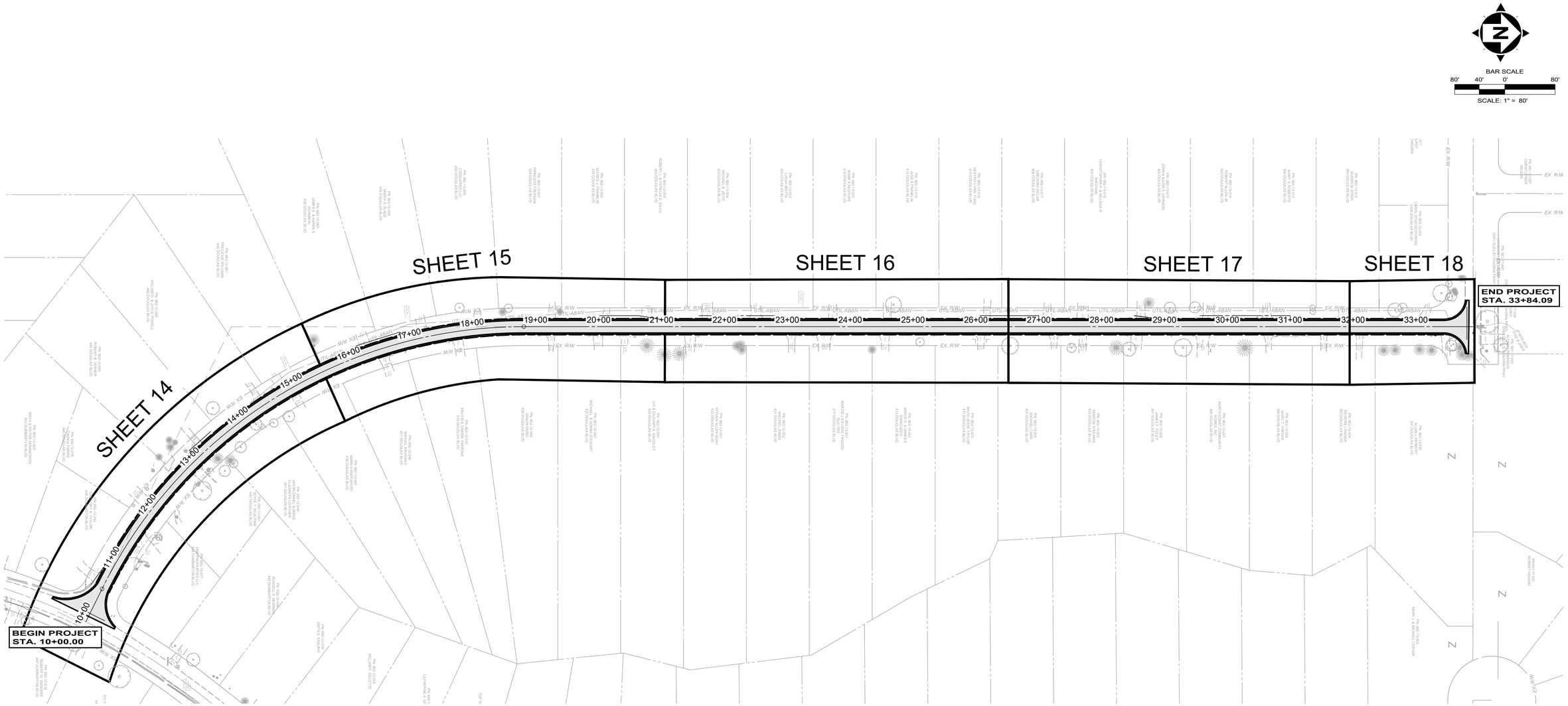
CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	WTV

LEGEND AND SYMBOLS

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
LGND	
SHEET	OF
6	39

C:\CTICAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - LEGEND.DWG - LGND - 5/22/2025 9:55:46 AM - WILLIAM VASKO



DOUGLAS BOULEVARD - SCHEMATIC PLAN

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
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SCHEMATIC PLAN

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
SCHEMATIC	
SHEET	OF
7	39

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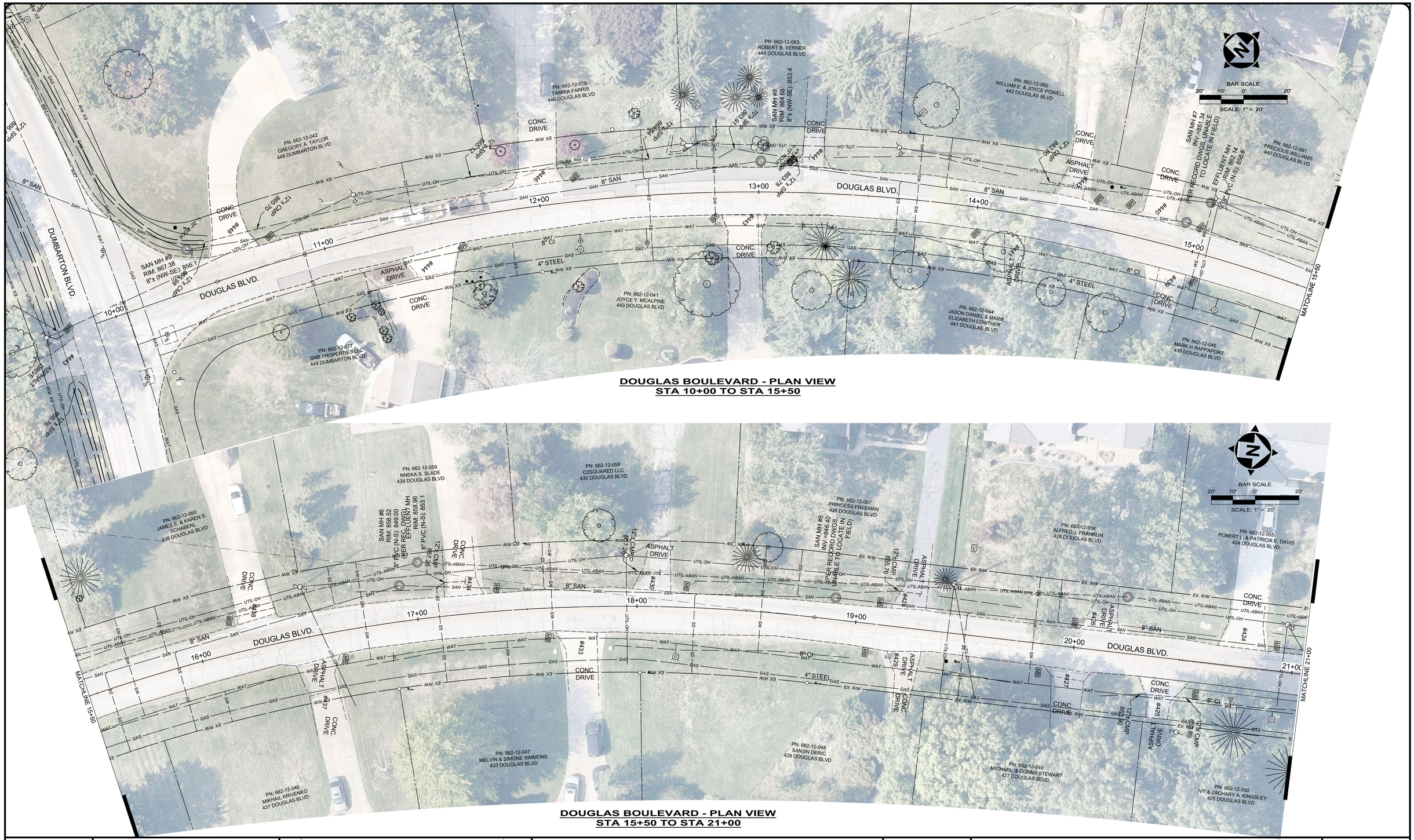

DOUGLAS BOULEVARD - PLAN VIEW
STA 10+00 TO STA 15+50

DOUGLAS BOULEVARD - PLAN VIEW
STA 15+50 TO STA 21+00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

EXISTING CONDITIONS PLAN

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	ExCond 10+00-21+00
SHEET	8
OF	39

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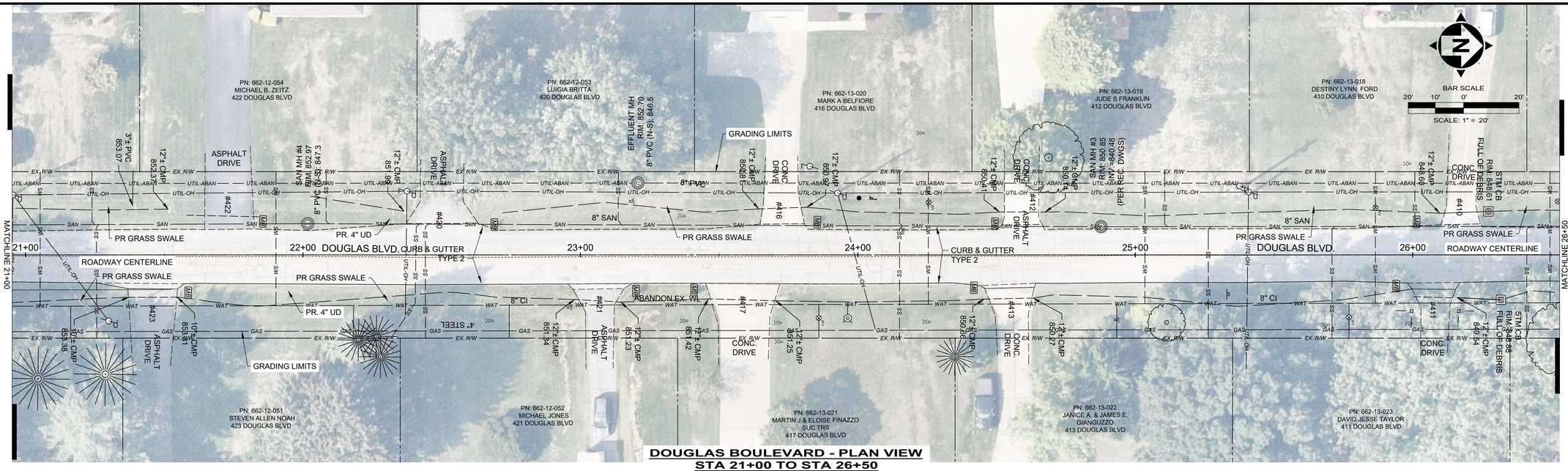
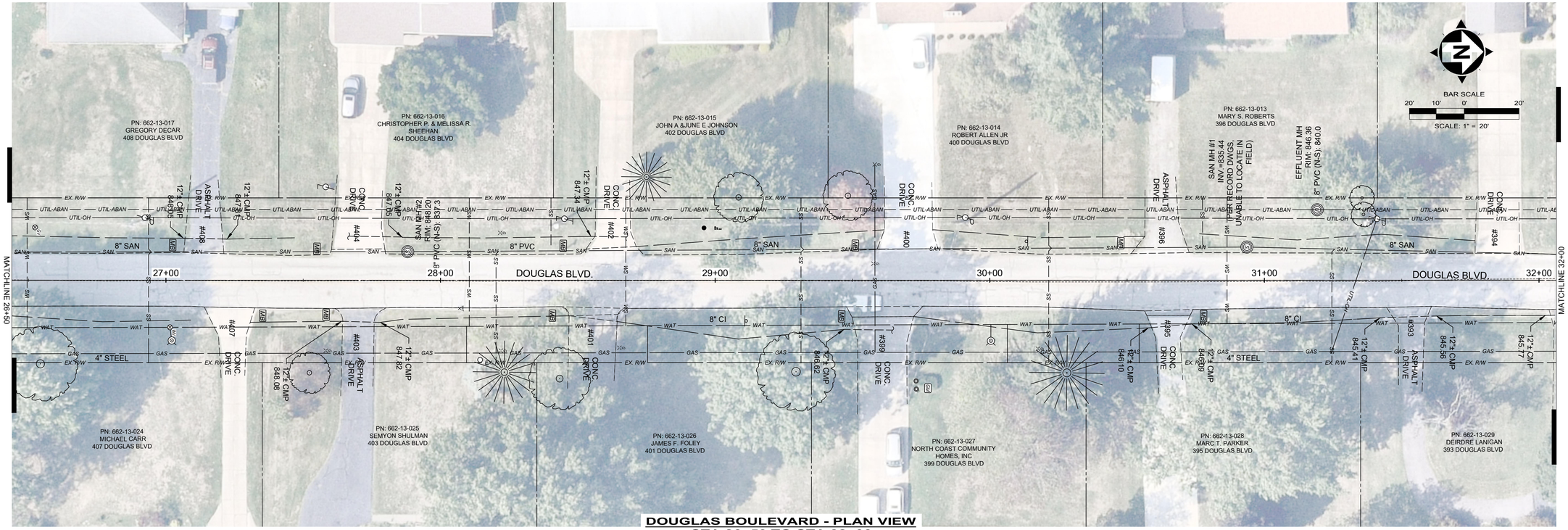


DOUGLAS BOULEVARD - PLAN VIEW
STA 21+00 TO STA 26+50



DOUGLAS BOULEVARD - PLAN VIEW
STA 26+50 TO STA 32+00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

EXISTING CONDITIONS PLAN

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	ExCond 21+00-32+00
SHEET	9
OF	39

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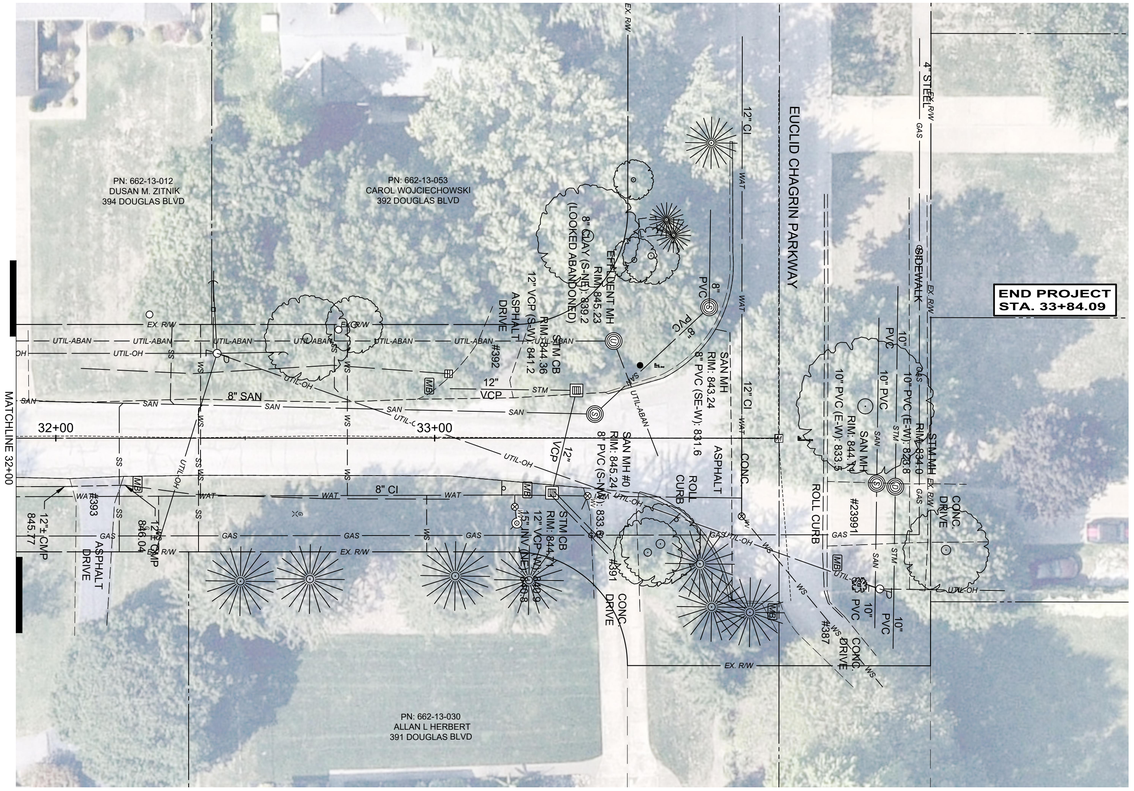


BAR SCALE

20' 10' 0' 20'

SCALE: 1" = 20'

DOUGLAS BOULEVARD - PLAN VIEW
STA 32+00 TO STA 34+00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

EXISTING CONDITIONS PLAN

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	ExCond 32+00-34+00
SHEET	10
OF	39

C:\CTICAD_DRIVE\$_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETSIC_32053 - EXCOND.DWG - EXCOND 32+00-34+00 - 5/22/2025 9:55:31 AM - WILLIAM VASKO

EXISTING LEGEND

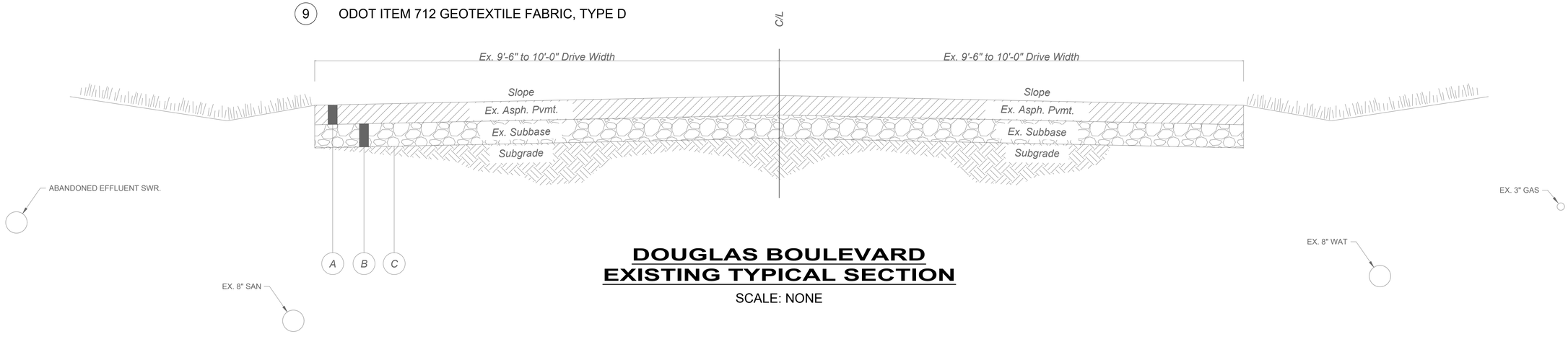
- (A) *Ex. Bituminous Pavement*
- (B) *Ex. Aggregate Subbase*
- (C) *Ex. Soil Subgrade*

PROPOSED LEGEND

1. ODOT ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1 (448), PG 64-22, 1-1/2"
2. ODOT ITEM 407 TACK COAT FOR INTERMEDIATE COURSE (0.04 GAL/SY)
3. ODOT ITEM 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2 (448), 2"
4. ODOT ITEM 301 ASPHALT CONCRETE BASE, 5-1/2"
5. ODOT ITEM 304 AGGREGATE BASE, LIMESTONE, PROOF ROLLED & COMPACTED TO 98% MAX DENSITY OF STANDARD PROCTOR, 6" THICKNESS
6. ODOT ITEM 203 PROOFROLL & COMPACT SUBGRADE
7. ODOT ITEM 609 6" CONCRETE CURB AND GUTTER, TYPE 2-A (SEE GENERAL DETAILS)
8. ODOT ITEM 605 UNDERDRAIN, (SEE GENERAL DETAILS)
9. ODOT ITEM 712 GEOTEXTILE FABRIC, TYPE D

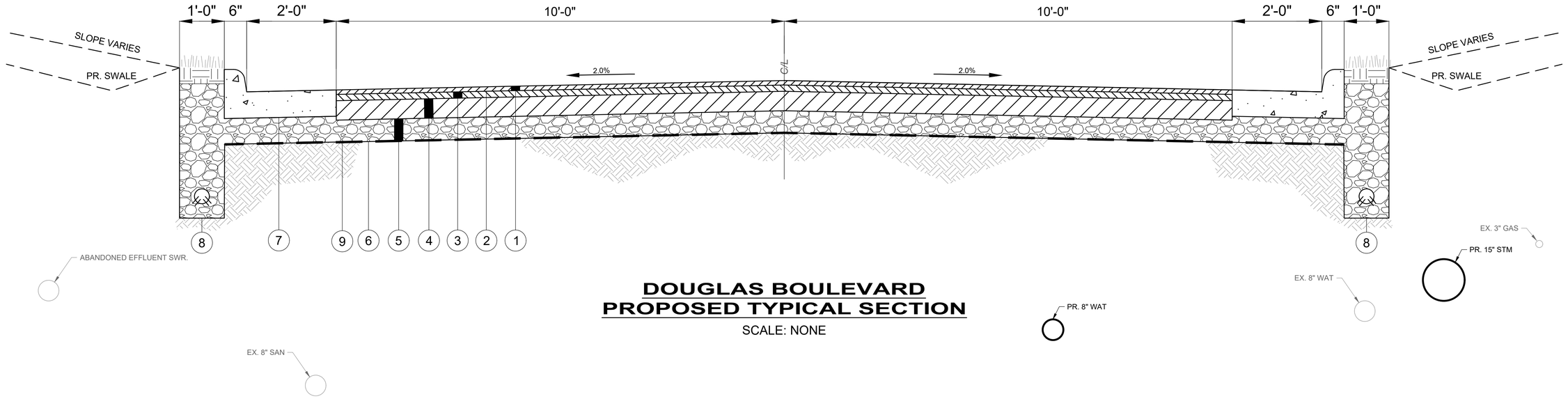
NOTES:

1. THIS DETAIL IS FOR REFERENCE ONLY. SEE THE LAYOUT PLAN FOR ACTUAL LOCATION, CONFIGURATION AND DIMENSIONS OF NEW DRIVE LANE LOCATIONS; THE GRADING PLAN FOR SPECIFIC ELEVATIONS AND SLOPES; AND THE DETAIL SHEETS FOR OTHER APPLICABLE DETAILS.



DOUGLAS BOULEVARD
EXISTING TYPICAL SECTION

SCALE: NONE



DOUGLAS BOULEVARD
PROPOSED TYPICAL SECTION

SCALE: NONE

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

TYPICAL SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	TYP
SHEET	11
OF	39

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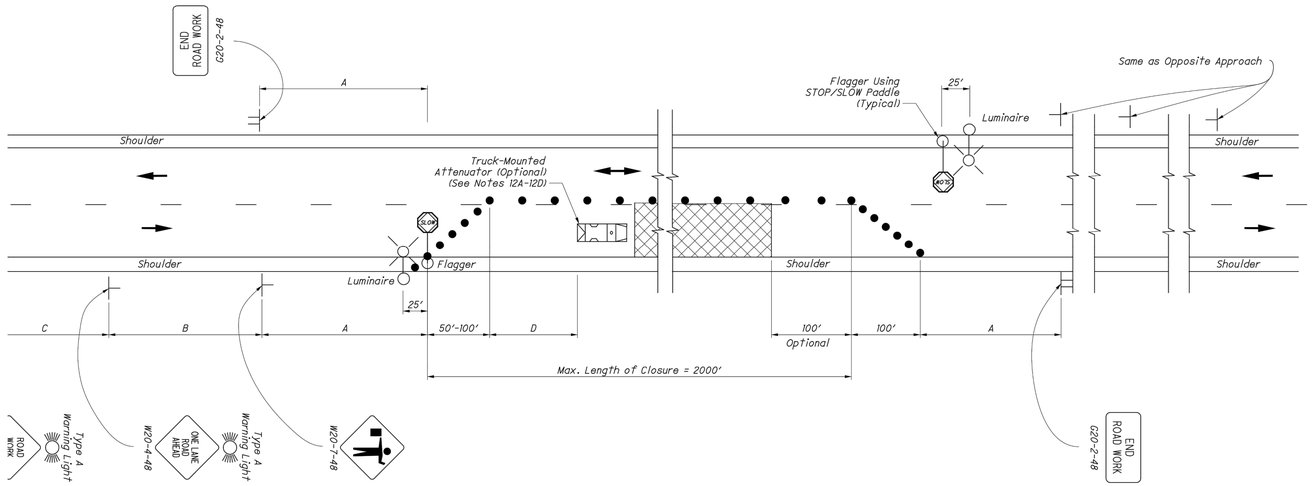


NOTES:

FLAGGERS

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

LENGTH OF CLOSURE

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

SIGN LOCATION AND SPACING

3A. The minimum spacing between work zone signs is shown in Table I. Maximum spacing should not be greater than 1.5 times the distances shown in Table I.

3B. Sign spacing should be adjusted to avoid conflict with existing signs. Minimum spacing to existing signs shall be 200' for speeds of 45 mph or less and a minimum of 400' for speeds of 50 mph or greater.

3C. The location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.

ADJUSTMENTS FOR SIGHT DISTANCE

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

BASIC SIGNING

5A. ROAD WORK AHEAD (W20-1) signs shall be provided on entrance ramps or roadways entering the work limits.

5B. END ROAD WORK (G20-2) signs are only required for lane closures of more than 1 day. It is intended that these signs be placed on the mainline, on all exit ramps, and on roadways exiting the work limits.

5C. Overlapping of signing for adjacent projects should be avoided where the messages could be confusing. Any ROAD WORK AHEAD (W20-1) or END ROAD WORK (G20-2) sign which falls within the limits of another traffic control zone shall be omitted or covered during the period when both projects are active.

SIGNING DETAILS

6A. The Advisory Speed (W13-1P) plaque shall be used when specified in the plan.

6B. 36" warning signs may be used when the approach speed limit is 40 mph or less.

FLASHING WARNING LIGHTS

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

DRUMS / CONES

8A. Drum spacing shall be as follows:

a) Spacing along the closure shall be 40' center-to-center.
b) Spacing along the approach taper shall be 10' center-to-center.

8B. Cones may be substituted for drums as follows:

a) Cones used for daytime traffic control shall have a minimum height of 28".
b) Cones used for nighttime traffic control shall have a minimum height of 42".
c) Use of cones at night shall be prohibited along tapers.

8C. Provisions shall be made to stabilize the cones and drums to prevent them from blowing over.

8D. A minimum of two drums shall be used to close the paved shoulder.

(RESERVED FOR FUTURE USE)

9A. (intentionally blank)

AREA ILLUMINATION

10A. Adequate area illumination of each flagger station shall be provided at night. Use of portable flood lighting is acceptable. Luminaires shall be located adjacent to each flagger station.

10B. To ensure the adequacy of floodlight placement and the elimination of glare, the Contractor and the Engineer shall drive through the worksite each night when the lighting is in place. Light placement and shielding shall be adjusted to the satisfaction of the Engineer.

INTERSECTION / DRIVEWAY ACCESS

11. Within the length of closure, provision shall be made to control traffic entering from intersecting streets and major drives as necessary to prevent wrong-way movements and to keep vehicles off of new pavement not ready for traffic. The Contractor shall:

a) Place across the closed lane, either three drums (cones) or barricades, and/or
b) Provide an additional flagger at every public street intersection and major driveway.

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

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

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

SHADOW VEHICLE

12A. The shadow vehicle shall be in place and unoccupied whenever workers are in the work area. This vehicle shall be removed from the pavement whenver workers are not in the work area.

12B. The shadow vehicle shall be equipped with a high-intensity yellow rotating, flashing, oscillating, or strobe lights).

12C. The vehicle shall be equipped with a truck-mounted attenuator when called for in the plans.

12D. Other protective devices may be used in lieu of the shadow vehicle shown when approved by the Engineer.

CHIP SEAL OPERATIONS

13. For chip seal operations, additional signing shall be incorporated in the advanced warning area.

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

TABLE I (SIGN SPACING)

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

TABLE II

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

LEGEND

WORK AREA
DRUMS/CONES
DIRECTION OF TRAVEL
SHADOW VEHICLE

ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G. DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

FOR OPERATIONS WITHOUT POSITIVE PROTECTION OCCURRING WITHIN 10 FEET OF AN OPEN TRAVELED LANE THAT MEET ALL OF THE FOLLOWING CRITERIA:

ON A MULTI-LANE DIVIDED INTERSTATE, OTHER FREEWAY OR EXPRESSWAY; AND AN AUTHORIZED SPEED LIMIT OF 45 MPH OR GREATER THAT IS IN EFFECT AT THE TIME OF THE OPERATION;AND, AADT OF 50,000 (OR AADT OF 30,000 WITH 25% OR HIGHER PERCENT TRUCKS)

"WITHOUT POSITIVE PROTECTION" MEANS USE OF DRUMS, CONES, SHADOW VEHICLE, ETC, WITHOUT PROTECTION FROM PORTABLE BARRIER OR OTHER RIGID BARRIER ALONG THE WORK AREA. THIS PHRASE DOES NOT APPLY TO CASES WHERE POSITIVE PROTECTION IS REQUIRED. MOBILE OPERATIONS ARE REGARDED AS "WITHOUT POSITIVE PROTECTION". FOR WORK ZONES USING A COMBINATION OF BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES (CONES, DRUMS, ETC), THE DESIGNATION SHALL BE BASED UPON THE TYPE OF DEVICES USED IN THE AREA THAT WORKERS ARE LOCATED

IF MULTIPLE ACTIVE LOCALIZED QUALIFYING WORK AREAS OCCUR WITHOUT POSITIVE PROTECTION, PER MAINLINE TRAFFIC DIRECTION, PROVIDE A UNIFORMED LEO AND OFFICIAL PATROL CAR IN ADVANCE OF:

THE FIRST ACTIVE WORK AREA THAT DRIVERS WILL ENCOUNTER; OR THE ACTIVE WORK AREA LATERALLY CLOSEST TO THE OPEN TRAVELED LANE; OR OTHER LOCATION AS APPROVED BY THE ENGINEER.

THE UNIFORMED LEO AND OFFICIAL PATROL CAR MAY RELOCATE AMONG THE LISTED LOCATIONS AS APPROPRIATE AS THE OPERATIONS PROCEED IN THE LOCALIZED QUALIFYING WORK AREAS.

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS
ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH
RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE THAT SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE.

ADDITIONAL TRAFFIC MAINTENANCE NOTES

1. ONE-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES FOR LOCAL TRAFFIC AND EMERGENCY VEHICLES. LOCAL ACCESS TO ABUTTING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES. ACCESS TO ALL DRIVEWAYS SHALL ALSO BE MAINTAINED AT ALL TIMES.

2. PART WIDTH CONSTRUCTION, ONE LANE WIDTH, SHALL BE USED DURING THE PERFORMANCE OF PAVING OPERATIONS.

3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN SAFE AND SATISFACTORY LOCAL ACCESS, VEHICULAR AND PEDESTRIAN, TO ALL ABUTTING PROPERTIES WITHIN THE PROJECT. THE CONTRACTOR SHALL FURNISH, MAINTAIN, AND SUBSEQUENTLY REMOVE ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, BARRIERS, TEMPORARY PAVEMENT, LIGHTING, FLAGMEN, TEMPORARY GUARDRAIL, DETOUR AND CONSTRUCTION SIGNING AND OTHER TRAFFIC CONTROLS SO AS TO AVOID DAMAGE AND/OR INJURY TO AND ENSURE THE SAFETY OF VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION BOTH WITHIN AND OUTSIDE OF THE PROJECT LIMITS.

4. MAINTAINING TRAFFIC SHALL BE IN ACCORDANCE WITH ODOT ITEM 614 AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. DETOUR ROUTES & SIGNAGE SHALL MEET THE APPROVAL OF THE CITY ENGINEER.

5. IN ORDER TO MAINTAIN LOCAL AND DRIVEWAY ACCESS, THE CONTRACTOR SHALL FURNISH AND INSTALL TRAFFIC COMPACTED SURFACE, TYPE A OR B IN ACCORDANCE WITH ODOT ITEM 410 LIMESTONE OR GRAVEL ONLY INCLUDING NECESSARY WATER AND CALCIUM CHLORIDE IN ACCORDANCE WITH ODOT ITEM 616 AS DIRECTED BY THE ENGINEER. NO SEPARATE PAYMENT WILL BE MADE FOR MAINTAINING TRAFFIC INCLUDING PROVIDING TRAFFIC COMPACTED SURFACES, OTHER TEMPORARY ROADWAYS, TRAFFIC CONTROL, AND ALL OTHER SAFEGUARDS. COST FOR MAINTAINING TRAFFIC INCLUDING ALL MATERIALS, LABOR AND EQUIPMENT FOR CONSTRUCTION, MAINTENANCE AND SUBSEQUENT REMOVAL SHALL BE INCLUDED IN THE UNIT PRICES STIPULATED FOR THE VARIOUS ITEMS OF THE PROPOSAL.

6. LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

7. NOTICE OF CLOSURE SIGNS, FOR SEVERAL SIDE ROADS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

8. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN SIGNS AND SIGN SUPPORTS, AS DETAILED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND TYPE III BARRICADES OF THE TYPE AND LOCATION AS SHOWN ON THE PLANS.

9. ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

10. IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT ALTERNATE METHODS FOR THE MAINTENANCE OF TRAFFIC, PROVIDED THE INTENT OF THE ABOVE PROVISIONS IS FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS THEREFROM. NO ALTERNATIVE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED IN WRITING BY THE ENGINEER.

11. PAYMENT FOR THE MAINTENANCE OF TRAFFIC ITEMS, UNLESS SPECIFIED SEPARATELY, SHALL BE AT THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC, WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS DETAILED IN THE PLANS.

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

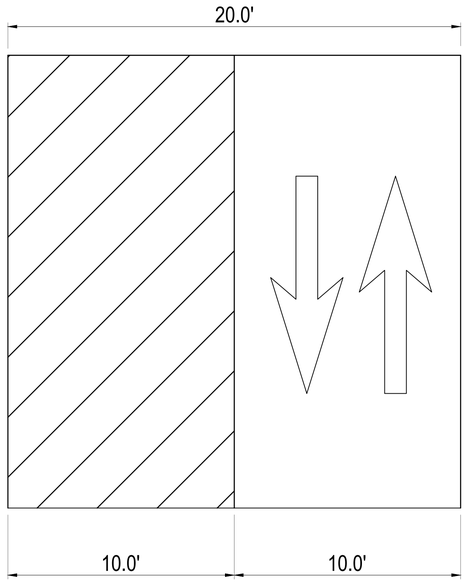
ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

MOT NOTES

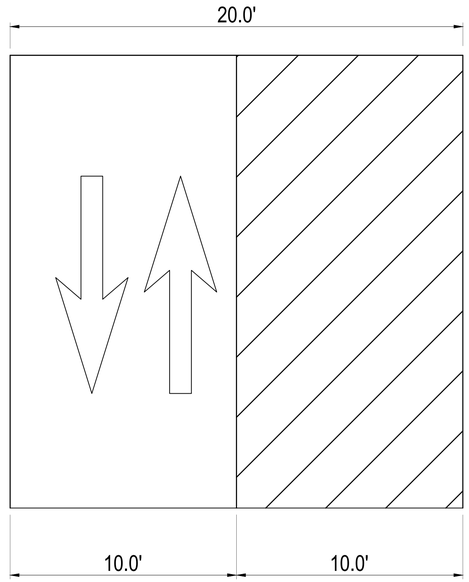
PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	MOT
SHEET	12
OF	39

C:\CTICAD_DRIVE9_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - MAINTENANCE OF TRAFFIC.DWG - MOT - 5/22/2025 9:55:23 AM - WILLIAM VASKO

STA. 10+00 TO STA. 34+00



PHASE 1



PHASE 2

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
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DESIGNED BY:	WTV
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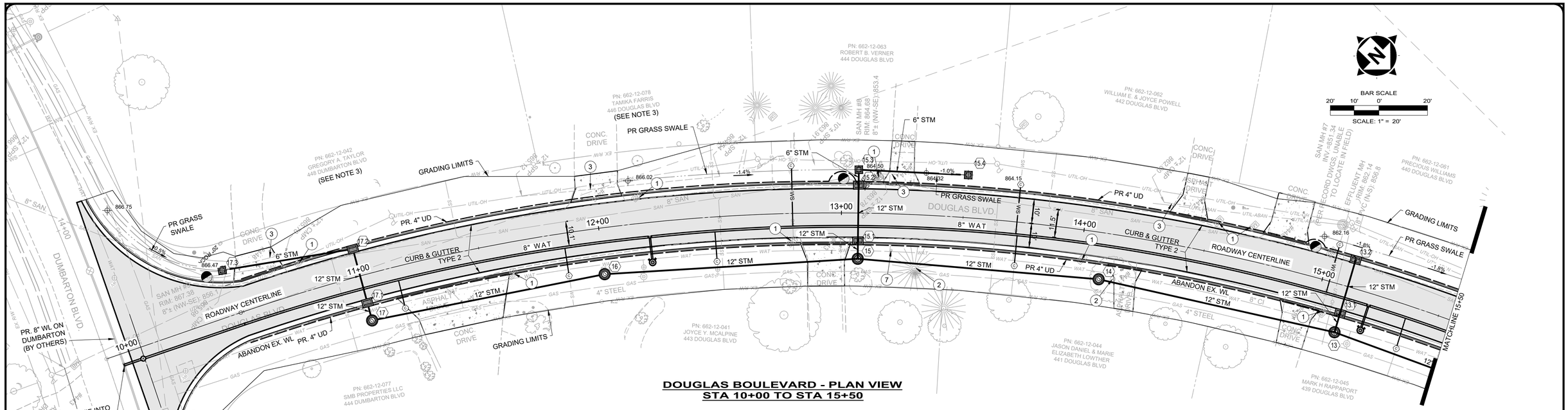
CHECKED BY:	JRH

MOT PHASING PLAN

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
PHASING	
SHEET	OF
13	39

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - MAINTENANCE OF TRAFFIC.DWG - PHASING - 5/22/2025 9:55:23 AM - WILLIAM VASKO



DOUGLAS BOULEVARD - PLAN VIEW
STA 10+00 TO STA 15+50

SHEET LEGEND

- REMOVE AND REPLACE EX. DRIVE WITH 6" CONCRETE DRIVE
- NEW ASPHALT ROADWAY (SEE TYPICAL SECTIONS)
- FIRE HYDRANT ASSEMBLY
- VALVE BOX
- WS — WATER SERVICE LINE REPLACEMENT AND APPROX. POSITION OF CORP. STOP
- MANHOLE ADJUSTED TO GRADE (SEE NOTE 13)
- (1) STORM STRUCTURE NUMBER DESIGNATION

SHEET CODED NOTES

1. REMOVE AND REPLACE EX. MAILBOX
2. REMOVE EX. TREE
3. REMOVE EX. CULVERT PIPE
4. REMOVE EX. CATCH BASIN
5. PLUG EX. 12" OPENING AND ADJUST GRATE ELEV.
6. CLEANOUT AND ADJUST EX. CATCH BASIN TO GRADE AND CONNECT TO PROPOSED STORM SEWER
7. REMOVE AND RE-LOCATE EX. SIGN

IMPROVEMENTS NOTES:

1. PROPOSED WATER LINE IMPROVEMENT LOCATIONS ARE APPROXIMATE AND MAY BE ADJUSTED PER FIELD CONDITIONS, AS APPROVED BY THE ENGINEER. WATER LINES SHALL BE INSTALLED A MINIMUM DEPTH OF 6' BELOW GRADE AND MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION FROM THE NEAREST SANITARY SEWER.
2. ANY ENCOUNTERED ROOF DRAINS SHALL BE RE-CONNECTED TO THE EXISTING OR PROPOSED STORM SEWER, WHICHEVER IS CLOSER.
3. ALL PARCELS WITHIN THE PROJECT AREA SHALL BE CONSIDERED TO HAVE ONE (1) OF EACH SERVICE LINE/LATERAL (WATER, SANITARY, STORM, AND GAS) TO BE PRESENT, WHETHER ILLUSTRATED IN THE PLANS OR NOT. IF NOT ILLUSTRATED IN THE PLANS, THE CONTRACTOR IS EXPECTED TO FIELD LOCATE PRIOR TO CONSTRUCTION.
4. ALL WATER SERVICE LINES SHALL BE REPLACED UP TO THE CORP. STOP AND CONNECTED TO THE PROPOSED WATER MAIN. CORP. STOPS SHALL BE POSITIONED WITHIN THE EXISTING TREE LAWN, WHERE POSSIBLE. SEE DETAIL.
5. AT LOCATIONS WHERE THE PROPOSED 8" WATERLINE CONNECTS TO THE EXISTING WATERMAIN, CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS TO EXPOSE/INVESTIGATE THE TIE-IN LOCATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY POSSIBLE CONFLICTS. AT THIS TIME THE ENGINEER SHALL ADJUST THE LOCATION OF THE TIE-IN AND NO ADDITIONAL COST OR DEDUCTION SHALL BE ADDED TO THE CONTRACT.
6. CONTRACTOR SHALL VERIFY UTILITY ELEVATIONS AT CROSSINGS AND DEFLECT WATERLINE AS NECESSARY TO MAINTAIN A MINIMUM CLEARANCE OF 18 INCHES. MAXIMUM PIPE DEFLECTION OF THE WATERLINE SHALL BE 15" PER FULL PIPE LENGTH. IN LIEU OF PIPE DEFLECTION, 12" X 11.25°, 22.5°, 45° BENDS MAY BE USED. RESTRAINT LENGTHS HAVE BEEN SHOWN FOR THE 3 FITTINGS AND SHALL APPLY BASED ON CONTRACTORS USE OF BENDS.
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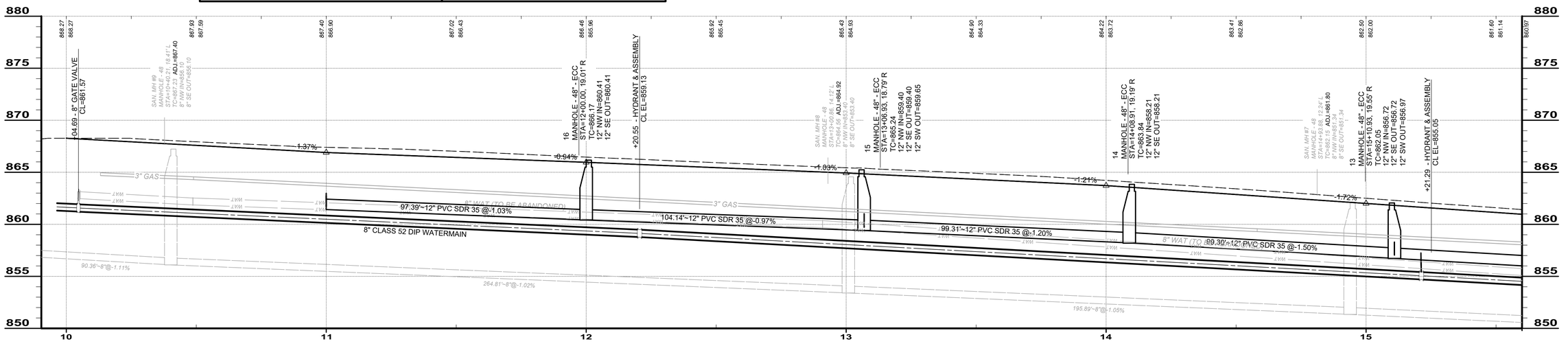
12. CONTRACTOR SHALL LOCATE AND INVENTORY EXISTING PAVEMENT MARKINGS FOR RE-STRIPING UNDER ODOT ITEM 642 TRAFFIC PAINT AND PAID FOR UNDER A LUMP SUM ITEM.
13. FOR EXISTING MANHOLES LOCATED WITHIN THE PROPOSED CURB AND GUTTER, THE CONTRACTOR SHALL ATTEMPT TO ROTATE THE CONE OF THE MANHOLE SO THAT THE CASTING IS ENTIRELY WITHIN, OR OUT OF THE CURB LINE. IF ROTATING THE CONE IS NOT POSSIBLE, THEN THE CURB LINE SHOULD BE ADJUSTED TO ACCOMMODATE THE EXISTING RIM.



NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

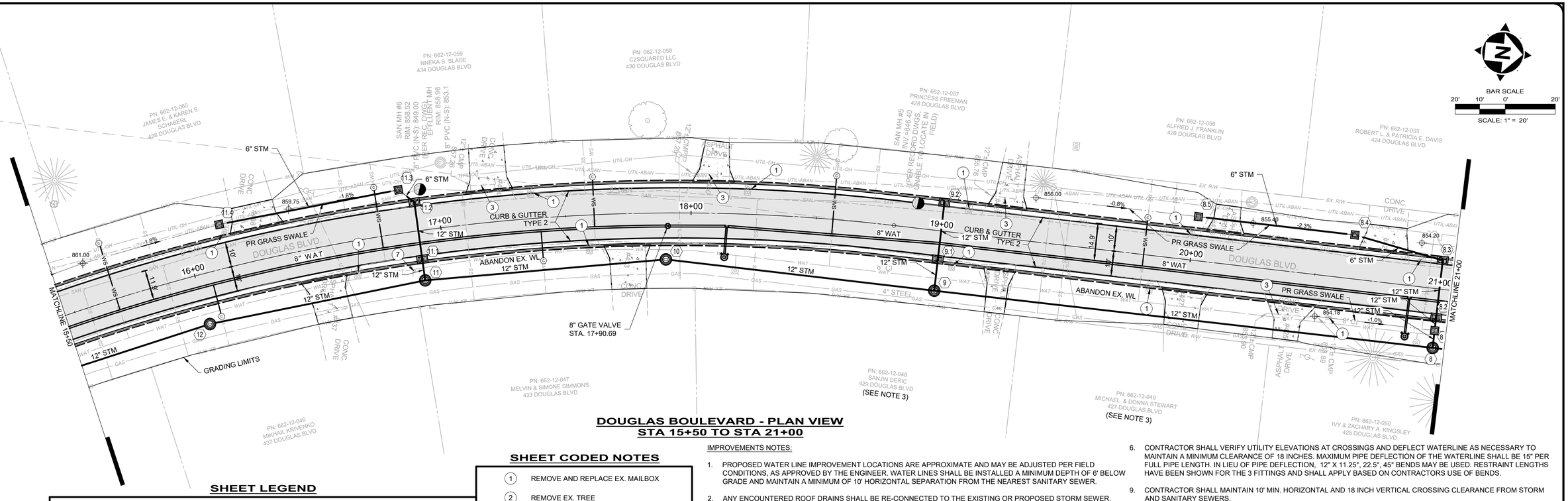
PLAN & PROFILE

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	P&P 10+00-15+50
SHEET	14
OF	39

STATE OF OHIO — WILLIAM T. VASKO E-86752 — REGISTERED PROFESSIONAL ENGINEER

verdantas

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - PLAN AND PROFILE.DWG - P&P 10+00-15+50 - 5/23/2025 9:29:12 AM - WILLIAM VASKO



BAR SCALE

20' 10' 0' 20'

SCALE: 1" = 20'

DOUGLAS BOULEVARD - PLAN VIEW
STA 15+50 TO STA 21+00

SHEET LEGEND

- REMOVE AND REPLACE EX. DRIVE WITH 6" CONCRETE DRIVE
- NEW ASPHALT ROADWAY (SEE TYPICAL SECTIONS)
- FIRE HYDRANT ASSEMBLY
- VALVE BOX
- WS — WATER SERVICE LINE REPLACEMENT AND APPROX. POSITION OF CORP.
- MANHOLE ADJUSTED TO GRADE (SEE NOTE 13)
- 1 — STORM STRUCTURE NUMBER DESIGNATION

SHEET CODED NOTES

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2. REMOVE EX. TREE
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4. REMOVE EX. CATCH BASIN
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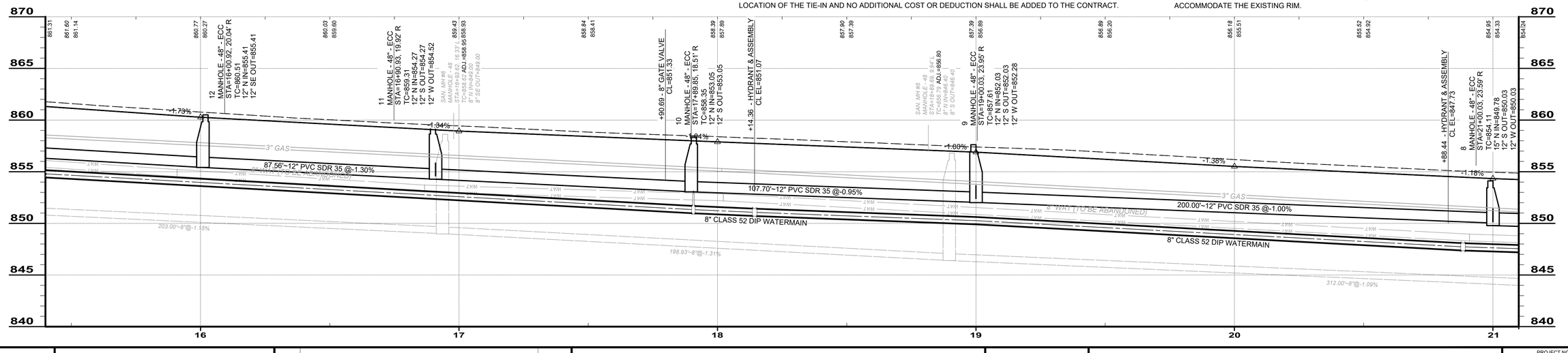


STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

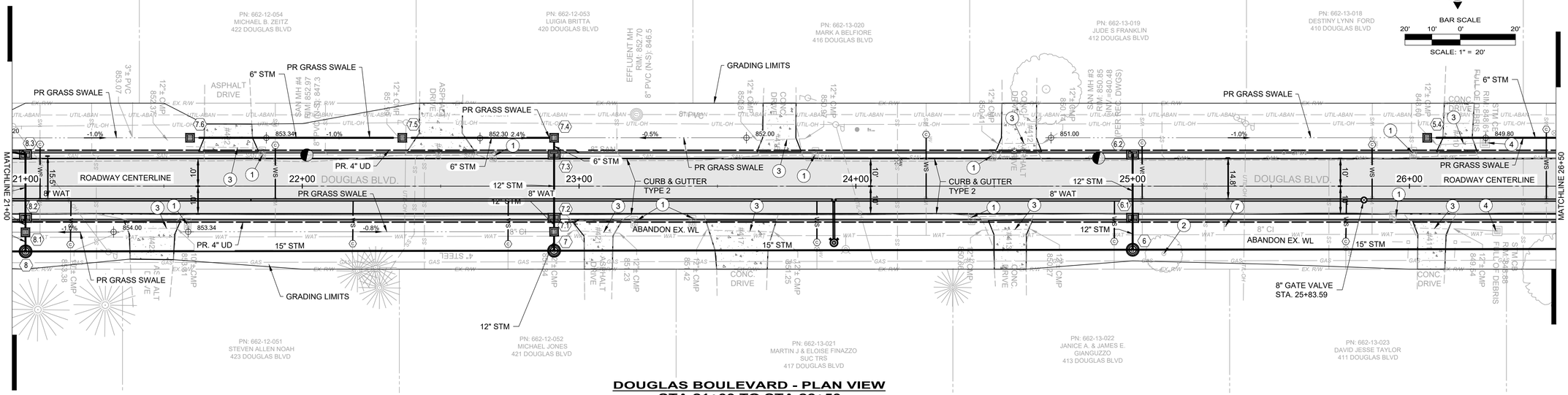
DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

PLAN & PROFILE

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	P&P 15+50-21+00
SHEET	15
OF	39



DOUGLAS BOULEVARD - PLAN VIEW
STA 21+00 TO STA 26+50

SHEET LEGEND

- REMOVE AND REPLACE EX. DRIVE WITH 6" CONCRETE DRIVE
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- FIRE HYDRANT ASSEMBLY
- VALVE BOX
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- MANHOLE ADJUSTED TO GRADE
- (1) STORM STRUCTURE NUMBER DESIGNATION

SHEET CODED NOTES

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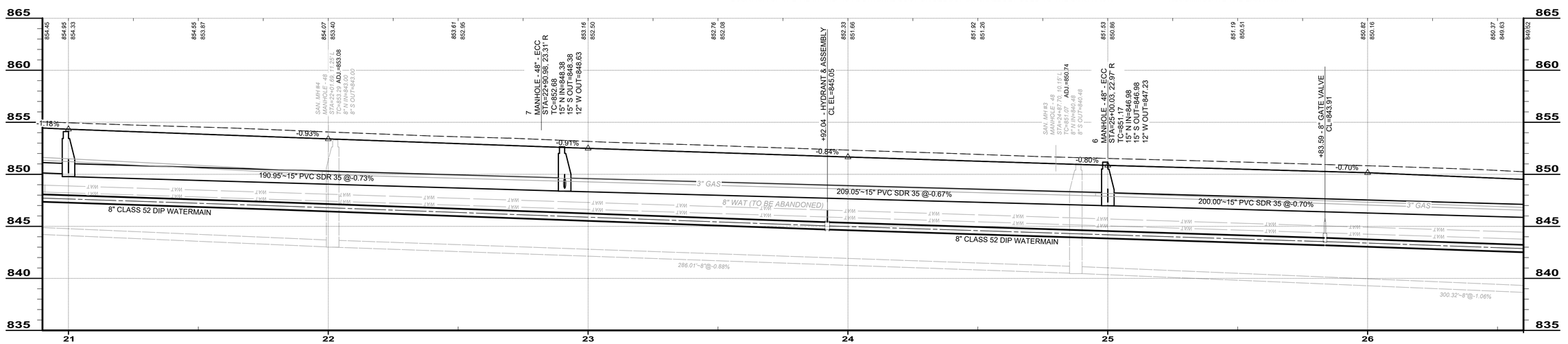

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
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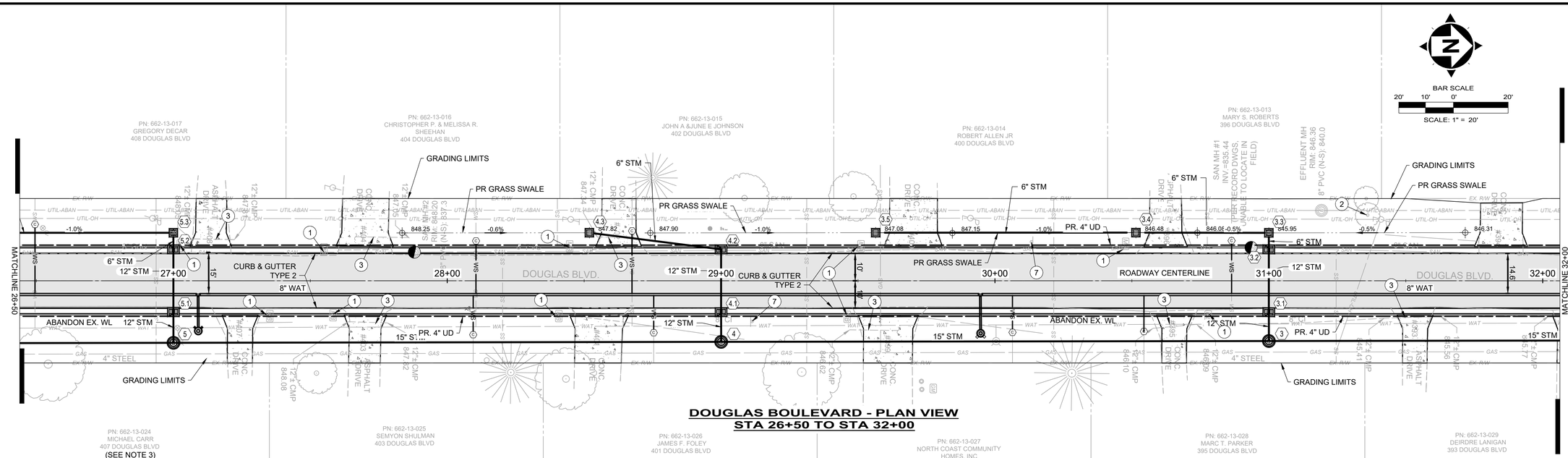
PLAN & PROFILE

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
P&P 21+00-26+50	
SHEET	OF
16	39

C:\CTICAD_DRIVE\R_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - PLAN AND PROFILE.DWG - P&P 21+00-26+50 - 5/23/2025 9:29:12 AM - WILLIAM VASKO



DOUGLAS BOULEVARD - PLAN VIEW STA 26+50 TO STA 32+00

SHEET LEGEND

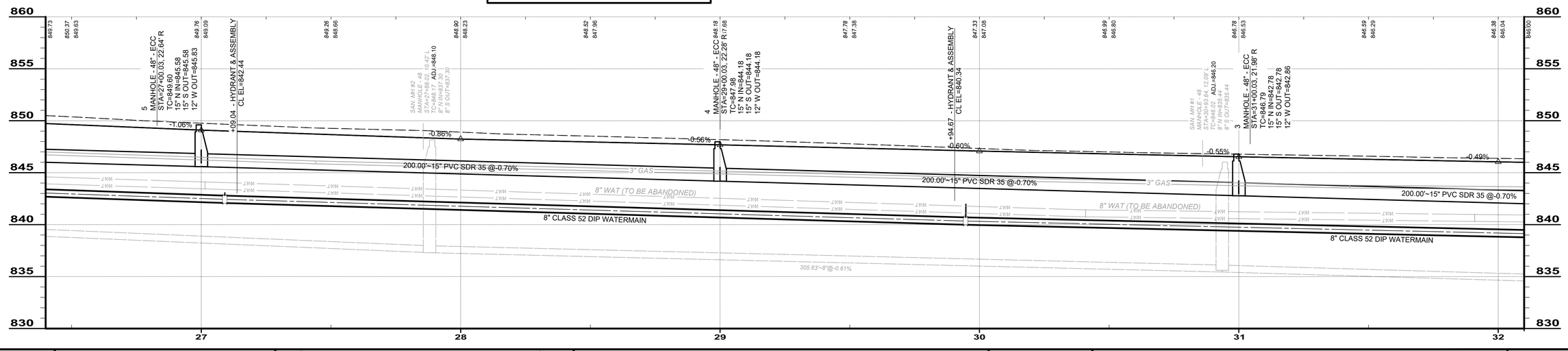
- REMOVE AND REPLACE EX. DRIVE WITH 6" CONCRETE DRIVE
- NEW ASPHALT ROADWAY (SEE TYPICAL SECTIONS)
- FIRE HYDRANT ASSEMBLY
- VALVE BOX
- WS — WATER SERVICE LINE REPLACEMENT AND APPROX. POSITION OF CORP.
- MANHOLE ADJUSTED TO GRADE (SEE NOTE 13)
- (1) STORM STRUCTURE NUMBER DESIGNATION

SHEET CODED NOTES

1. REMOVE AND REPLACE EX. MAILBOX
2. REMOVE EX. TREE
3. REMOVE EX. CULVERT PIPE
4. REMOVE EX. CATCH BASIN
5. PLUG EX. 12" OPENING AND ADJUST GRATE ELEV.
6. CLEANOUT AND ADJUST EX. CATCH BASIN TO GRADE AND CONNECT TO PROPOSED STORM SEWER
7. REMOVE AND RE-LOCATE EX. SIGN

IMPROVEMENTS NOTES:

1. PROPOSED WATER LINE IMPROVEMENT LOCATIONS ARE APPROXIMATE AND MAY BE ADJUSTED PER FIELD CONDITIONS, AS APPROVED BY THE ENGINEER. WATER LINES SHALL BE INSTALLED A MINIMUM DEPTH OF 6' BELOW GRADE AND MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION FROM THE NEAREST SANITARY SEWER.
2. ANY ENCOUNTERED ROOF DRAINS SHALL BE RE-CONNECTED TO THE EXISTING OR PROPOSED STORM SEWER, WHICHEVER IS CLOSER.
3. ALL PARCELS WITHIN THE PROJECT AREA SHALL BE CONSIDERED TO HAVE ONE (1) OF EACH SERVICE LINE/LATERAL (WATER, SANITARY, STORM, AND GAS) TO BE PRESENT, WHETHER ILLUSTRATED IN THE PLANS OR NOT. IF NOT ILLUSTRATED IN THE PLANS, THE CONTRACTOR IS EXPECTED TO FIELD LOCATE PRIOR TO CONSTRUCTION.
4. ALL WATER SERVICE LINES SHALL BE REPLACED UP TO THE CORP. STOP AND CONNECTED TO THE PROPOSED WATER MAIN. CORP. STOPS SHALL BE POSITIONED WITHIN THE EXISTING TREE LAWN, WHERE POSSIBLE. SEE DETAIL.
5. AT LOCATIONS WHERE THE PROPOSED 8" WATERLINE CONNECTS TO THE EXISTING WATERMAIN, CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATIONS TO EXPOSE/INVESTIGATE THE TIE-IN LOCATIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY POSSIBLE CONFLICTS. AT THIS TIME THE ENGINEER SHALL ADJUST THE LOCATION OF THE TIE-IN AND NO ADDITIONAL COST OR DEDUCTION SHALL BE ADDED TO THE CONTRACT.
6. CONTRACTOR SHALL VERIFY UTILITY ELEVATIONS AT CROSSINGS AND DEFLECT WATERLINE AS NECESSARY TO MAINTAIN A MINIMUM CLEARANCE OF 18 INCHES. MAXIMUM PIPE DEFLECTION OF THE WATERLINE SHALL BE 15" PER FULL PIPE LENGTH. IN LIEU OF PIPE DEFLECTION, 12" X 11.25°, 22.5°, 45° BENDS MAY BE USED. RESTRAINT LENGTHS HAVE BEEN SHOWN FOR THE 3 FITTINGS AND SHALL APPLY BASED ON CONTRACTORS USE OF BENDS.
9. CONTRACTOR SHALL MAINTAIN 10' MIN. HORIZONTAL AND 18 INCH VERTICAL CROSSING CLEARANCE FROM STORM AND SANITARY SEWERS.
10. INSTALLATION AND PRESSURE TESTING SHALL BE IN ACCORDANCE WITH AWWA C-605. DISINFECTION SHALL BE PER AWWA C-651.
11. THE CUTTING & CAPPING OF WATER LINES SHALL BE INCIDENTAL TO THE UTILITY ITEM BEING INSTALLED AND CROSSING THE EXISTING MAIN. A UNIT PRICE OF 1 CUT & CAP SHALL BE UTILIZED IF IT IS DETERMINED THAT THERE IS A NEED FOR ADDITIONAL LOCATIONS.
12. CONTRACTOR SHALL LOCATE AND INVENTORY EXISTING PAVEMENT MARKINGS FOR RE-STRIPING UNDER ODOT ITEM 642 TRAFFIC PAINT AND PAID FOR UNDER A LUMP SUM ITEM.
13. FOR EXISTING MANHOLES LOCATED WITHIN THE PROPOSED CURB AND GUTTER, THE CONTRACTOR SHALL ATTEMPT TO ROTATE THE CONE OF THE MANHOLE SO THAT THE CASTING IS ENTIRELY WITHIN, OR OUT OF THE CURB LINE. IF ROTATING THE CONE IS NOT POSSIBLE, THEN THE CURB LINE SHOULD BE ADJUSTED TO ACCOMMODATE THE EXISTING RIM.



NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

PLAN & PROFILE

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	P&P 26+50-32+00
SHEET	17
OF	39

STATE OF OHIO — WILLIAM T. VASKO E-86752 — REGISTERED PROFESSIONAL ENGINEER

verdantas

C:\CTICAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECON\DWG\SHEETS\C_32053 - PLAN AND PROFILE.DWG - P&P 26+50-32+00 - 5/23/2025 9:29:12 AM - WILLIAM VASKO

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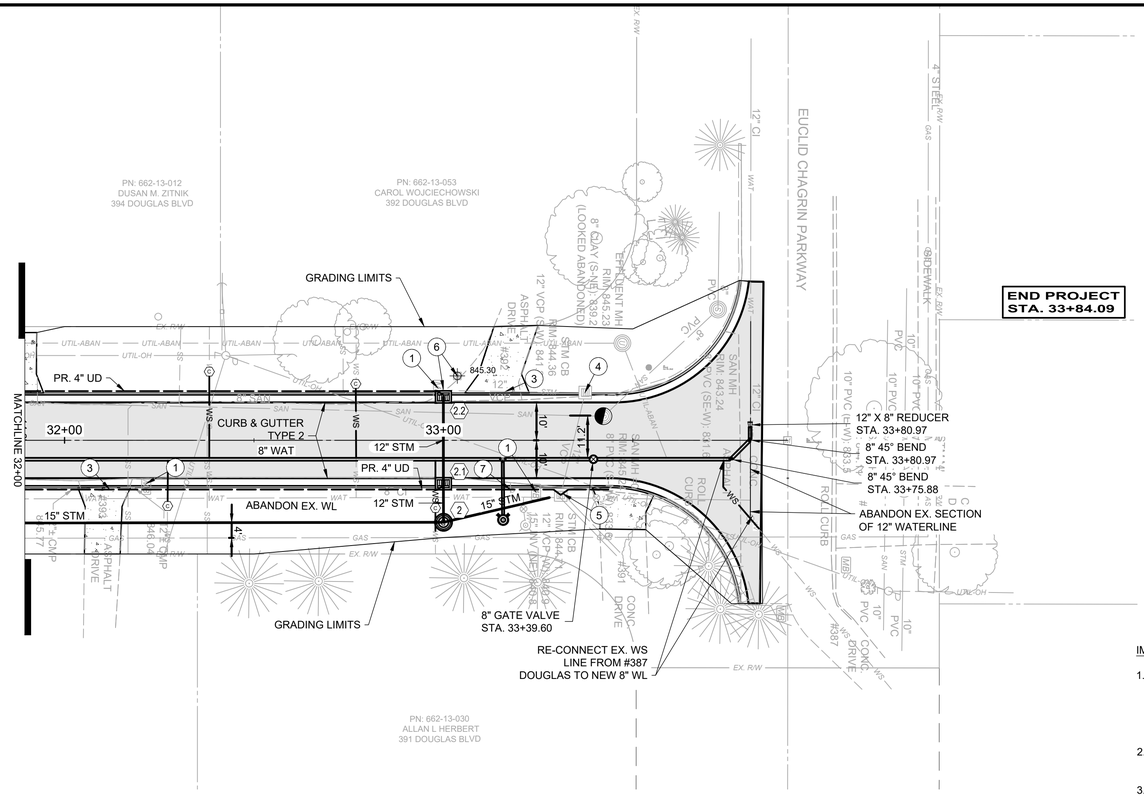
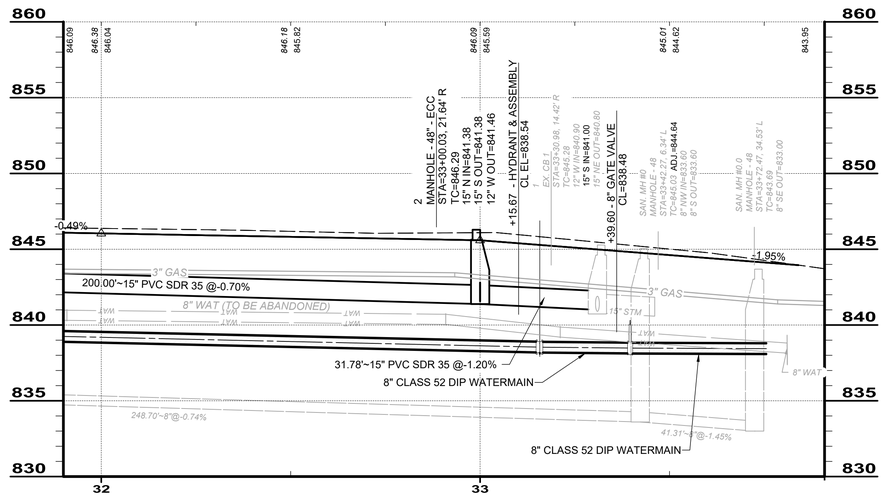


DOUGLAS BOULEVARD - PLAN VIEW
STA 32+00 TO STA 34+00

BAR SCALE
20' 10' 0' 20'
SCALE: 1" = 20'



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STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

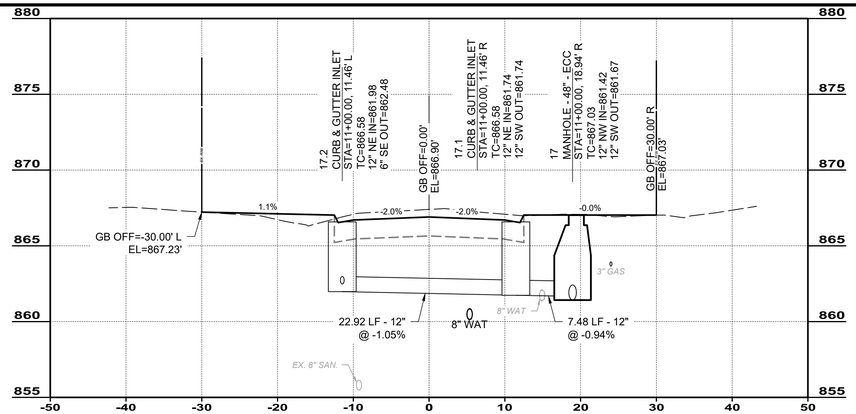
CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

PLAN & PROFILE

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
P&P 32+00-34+00	
SHEET	OF
18	39

C:\CTICAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECON\DWG\SHEETS\C_32053 - PLAN AND PROFILE.DWG - P&P 32+00-34+00 - 5/23/2025 9:29:12 AM - WILLIAM VASKO



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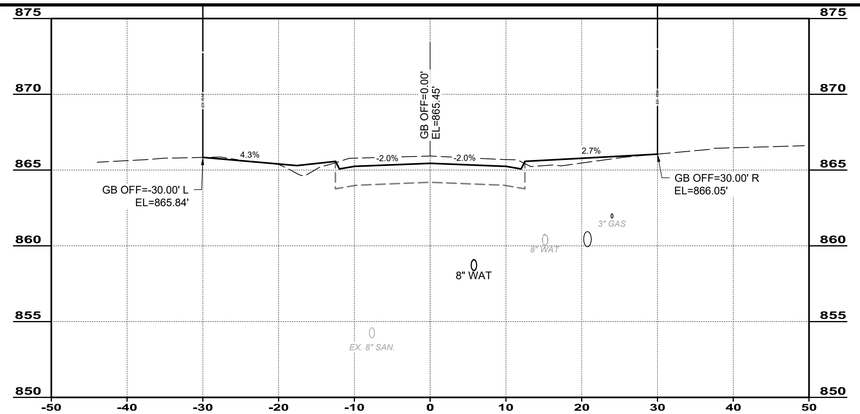

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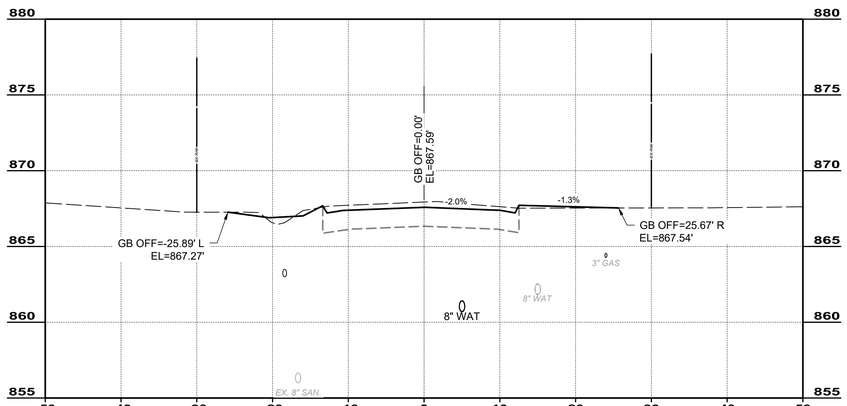

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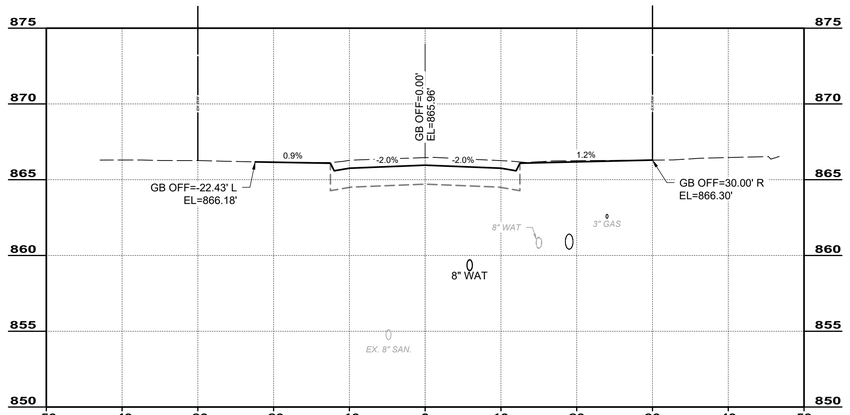

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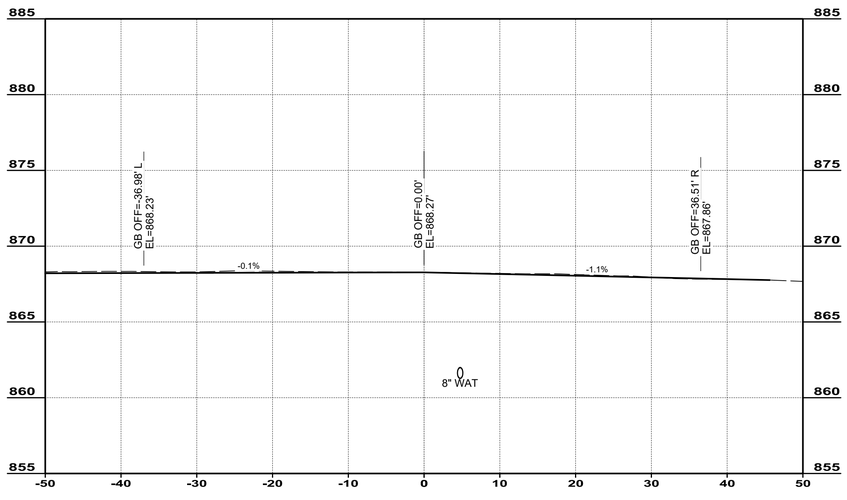

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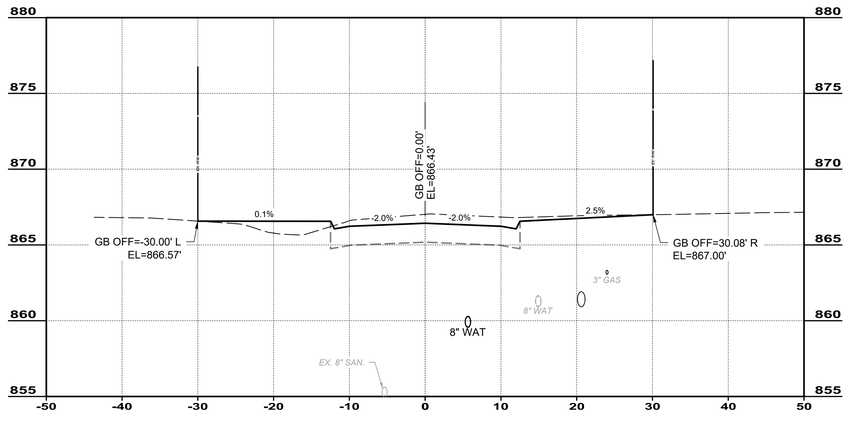

11+50.00

STATE OF OHIO
WILLIAM
T. VASKO
E-86752
REGISTERED
PROFESSIONAL ENGINEER

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NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

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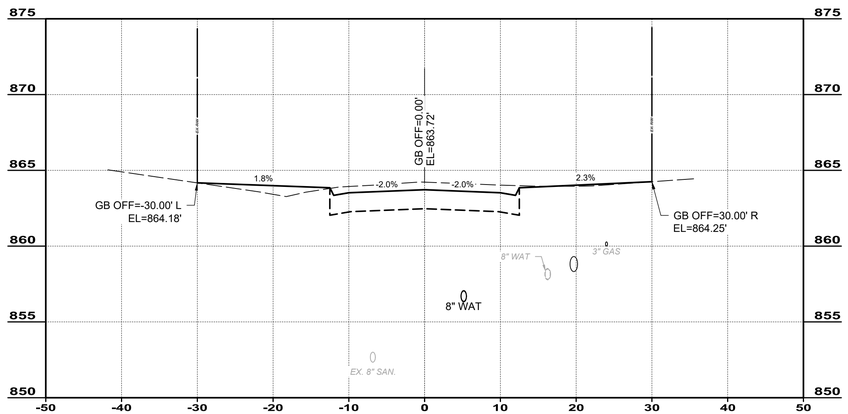
CROSS SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	XS 10+00-12+50
SHEET	19
OF	39

C:\CTICAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - CROSS SECTIONS.DWG - XS 10+00-12+50 - 5/29/2025 12:52:55 PM - WILLIAM VASKO



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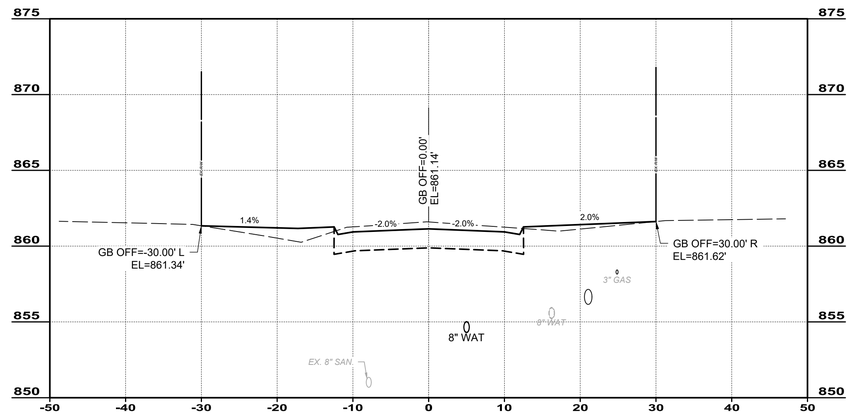

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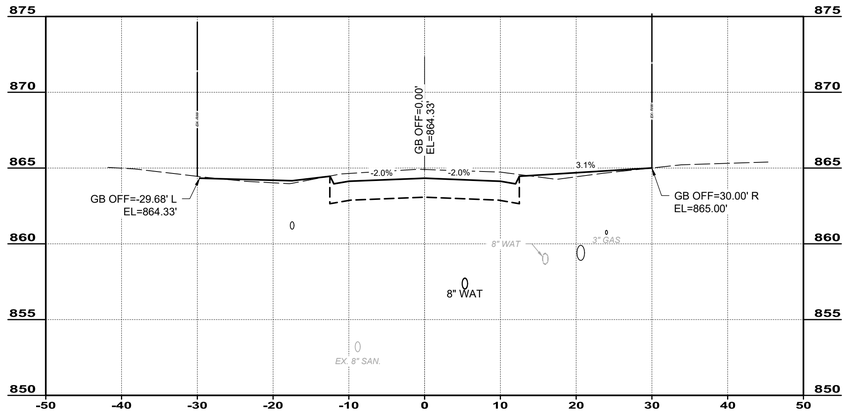

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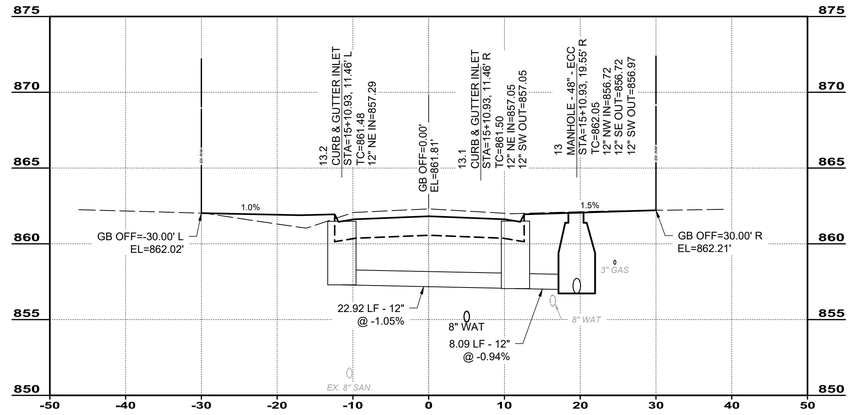

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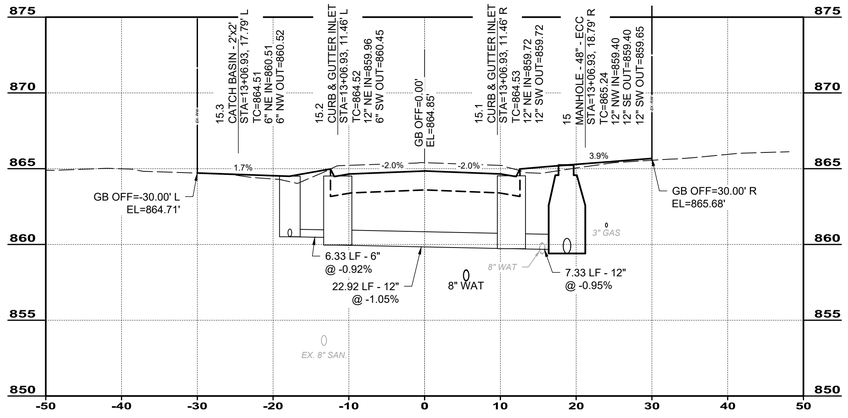

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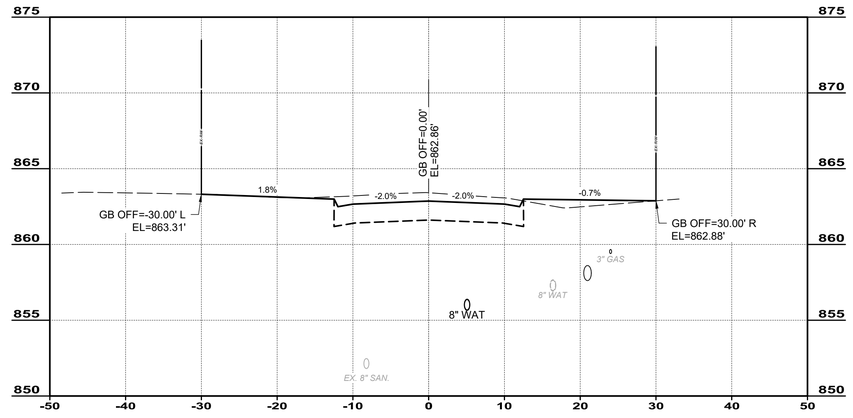

14+50.00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

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CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
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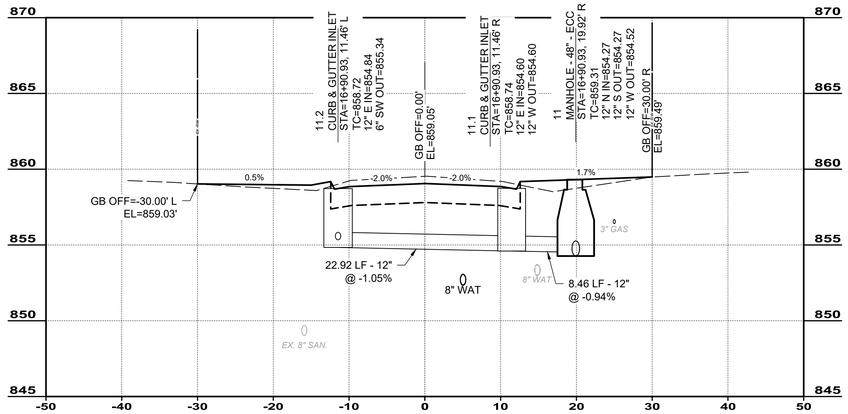
CROSS SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	XS 13+00-15+50
SHEET	20
OF	39

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWGS\SHEETS\C_32053 - CROSS SECTIONS.DWG - XS 13+00-15+50 - 5/29/2025 12:52:55 PM - WILLIAM VASKO



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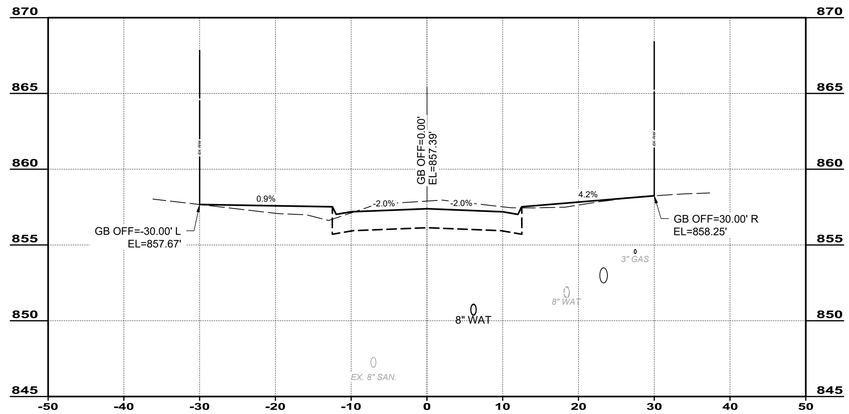

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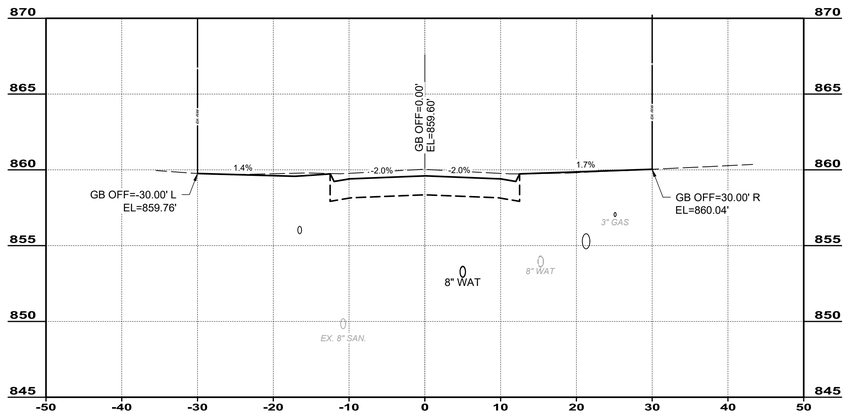

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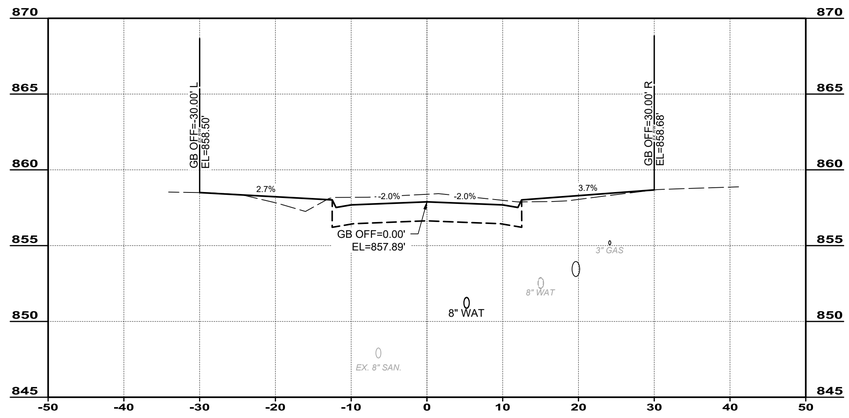

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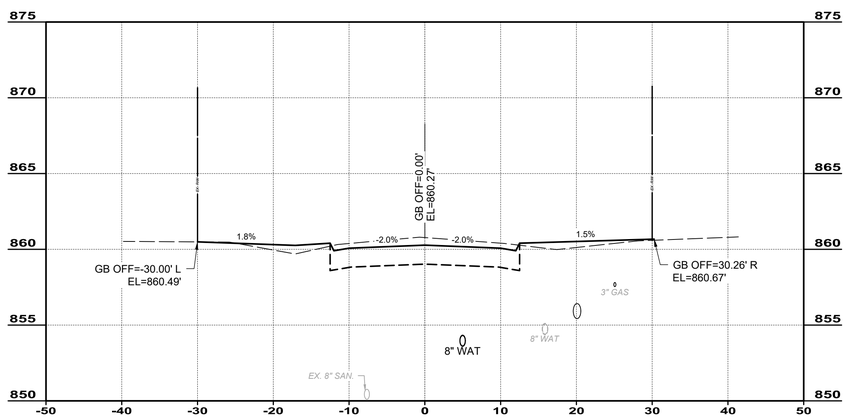

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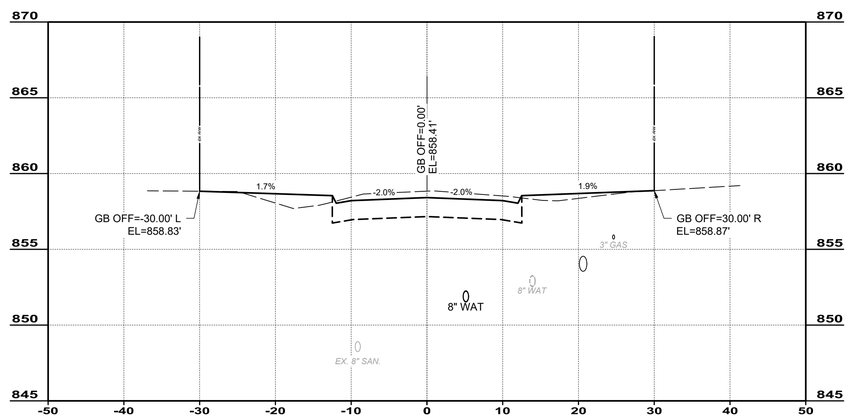

17+50.00

STATE OF OHIO
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CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
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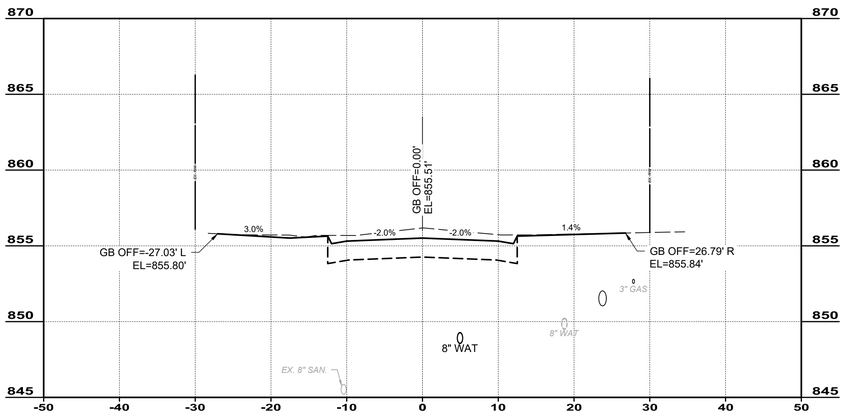
CROSS SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	XS 16+00-18+50
SHEET	21
OF	39

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECON\DWG\SHEETS\C_32053 - CROSS SECTIONS.DWG - XS 16+00-18+50 - 5/29/2025 12:52:55 PM - WILLIAM VASKO



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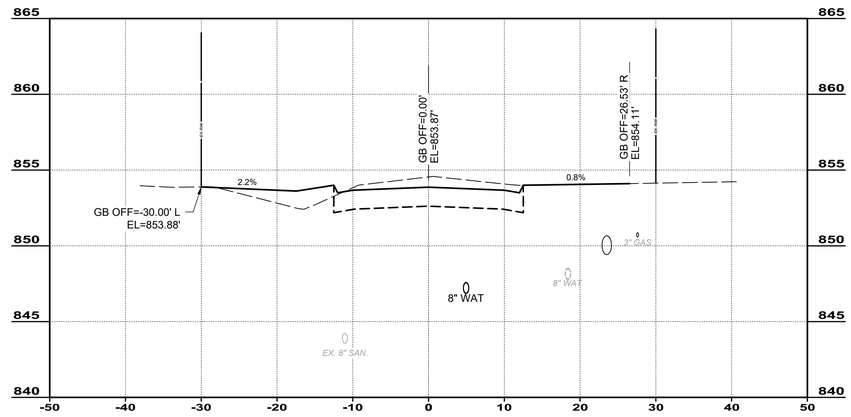

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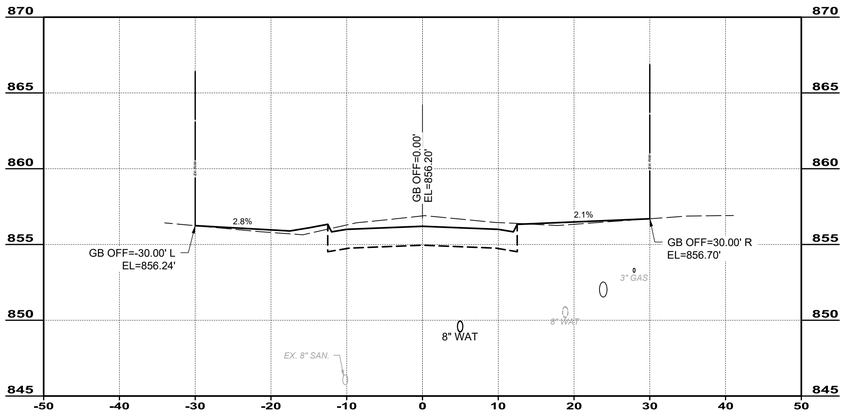

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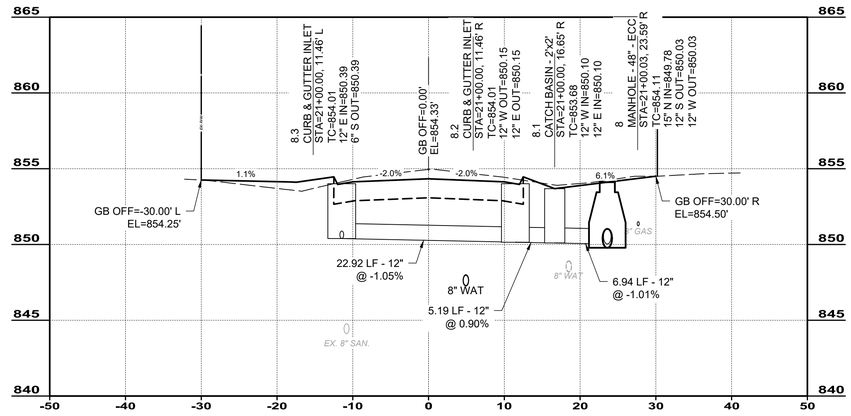

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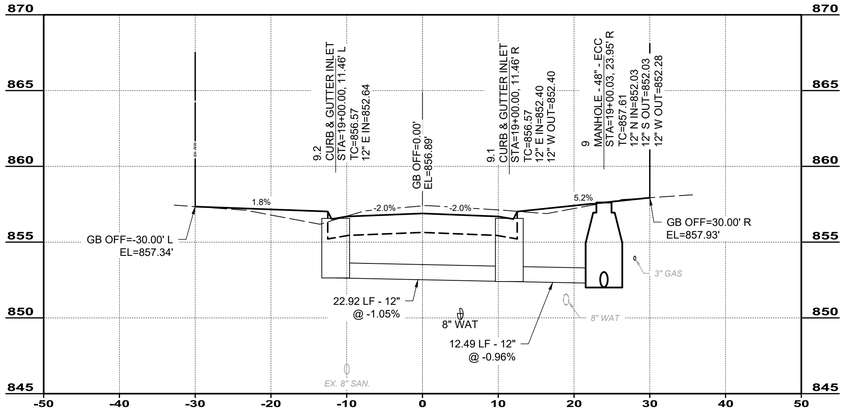

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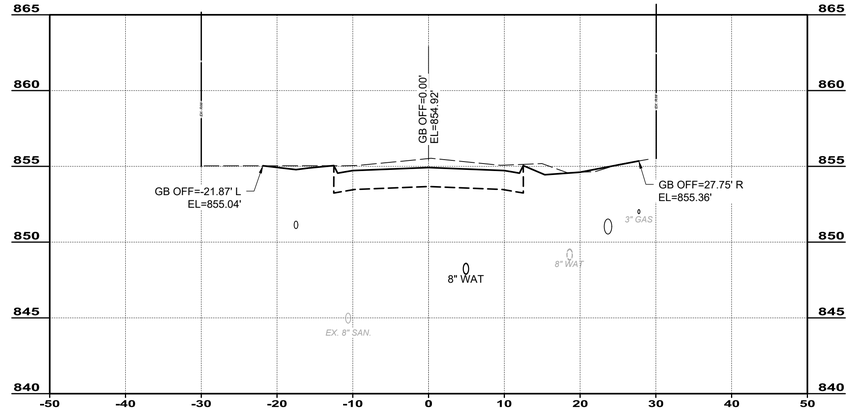


20+50.00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

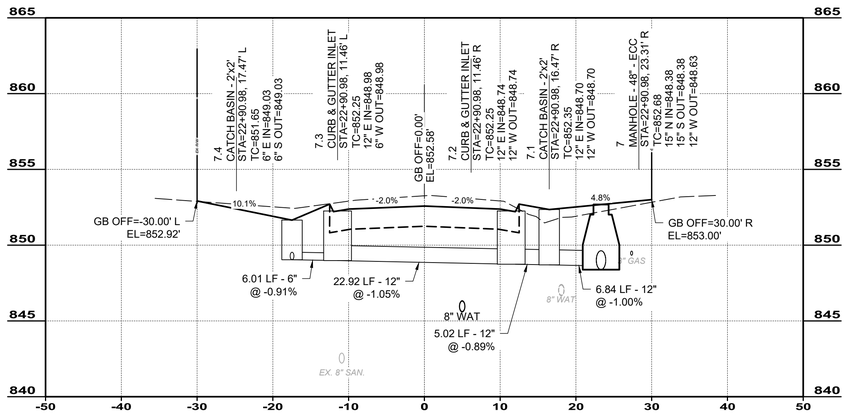
DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

CROSS SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	XS 19+00-21+50
SHEET	22
OF	39



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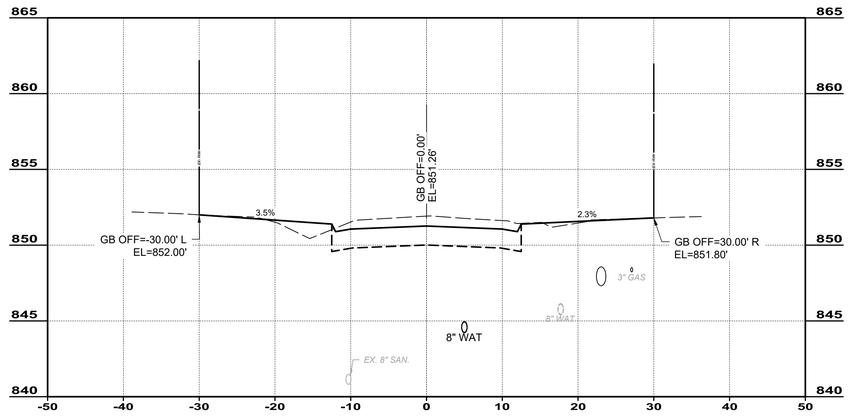
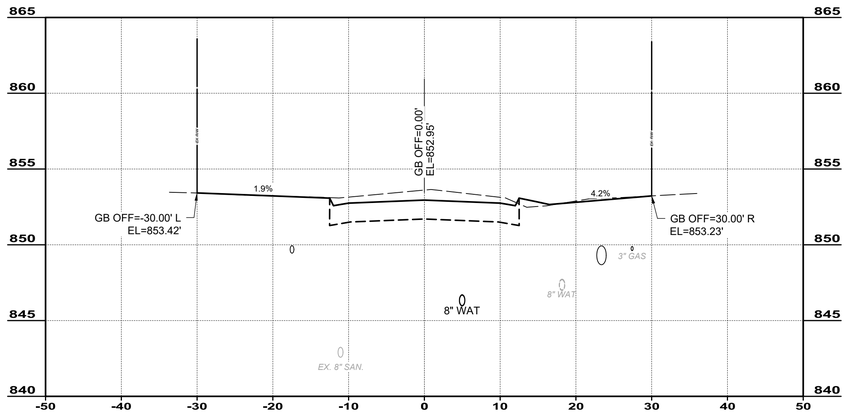


24+50.00



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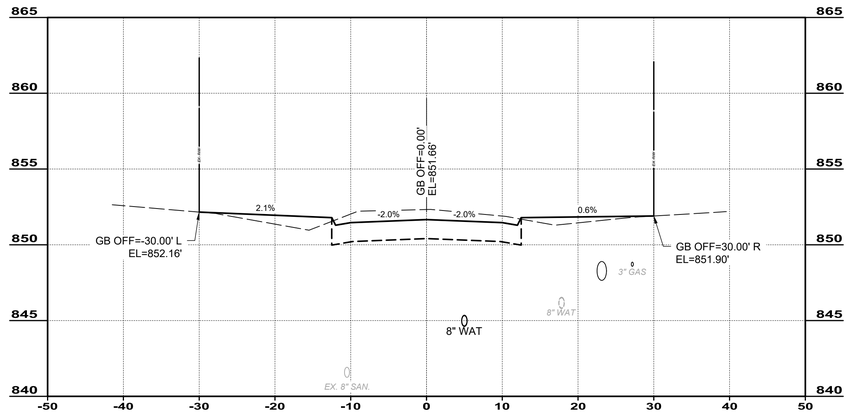

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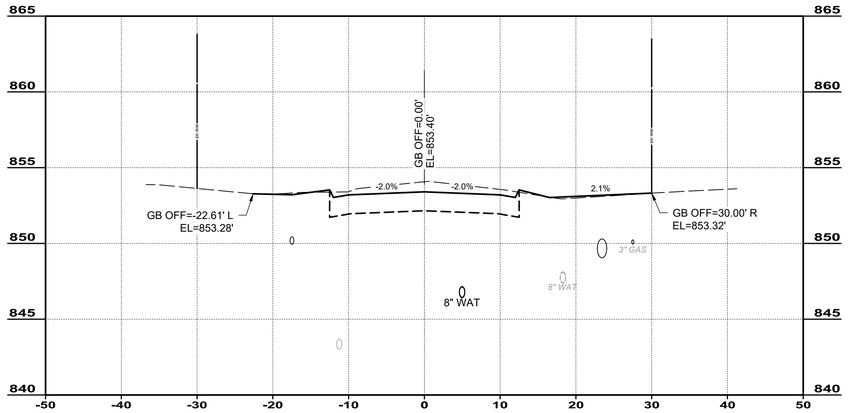
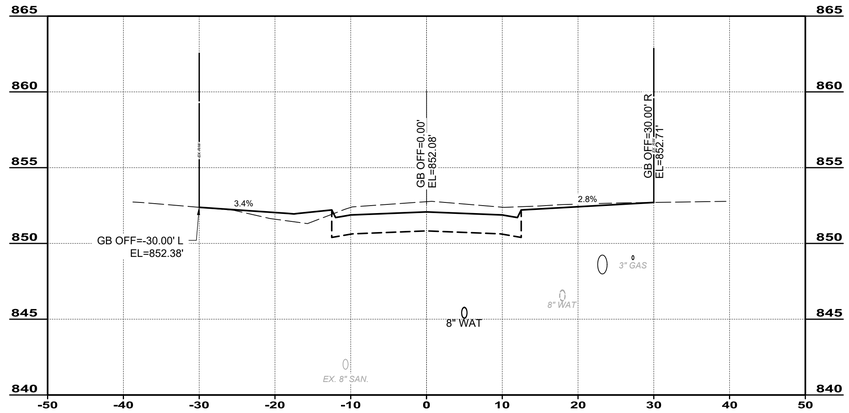


22+00.00



23+50.00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

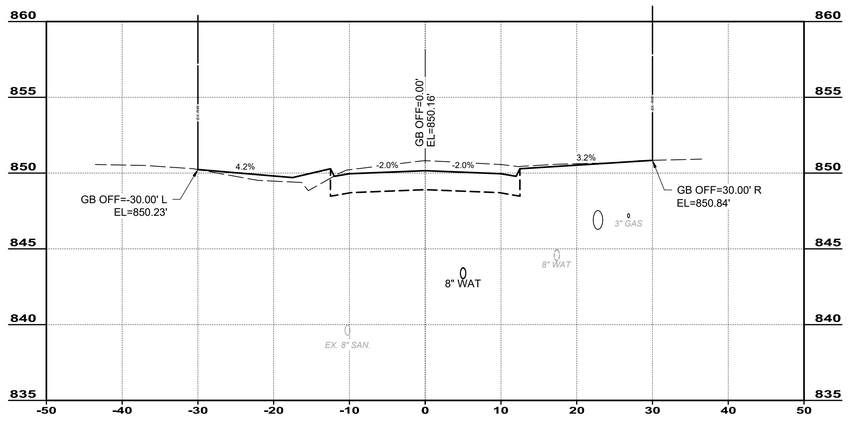
CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

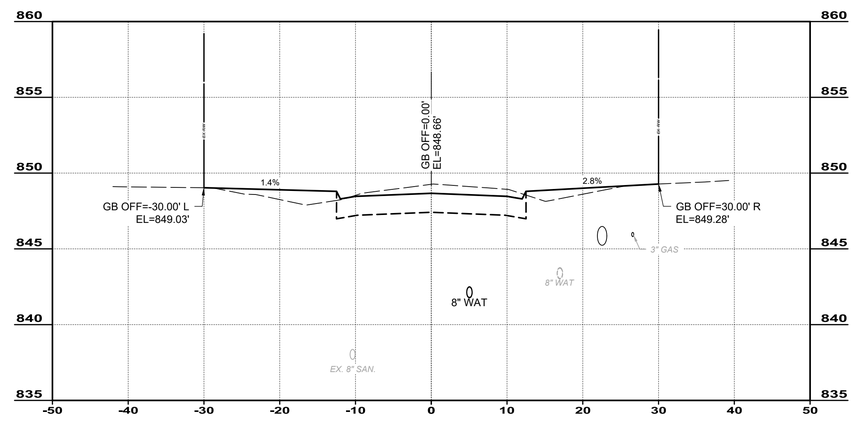
CROSS SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	XS 22+00-24+50
SHEET	23
OF	39

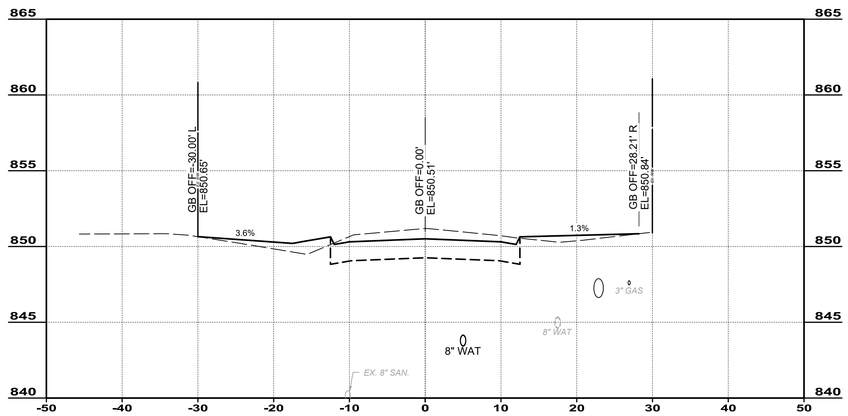
C:\CTICAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - CROSS SECTIONS.DWG - XS 22+00-24+50 - 5/29/2025 12:52:56 PM - WILLIAM VASKO



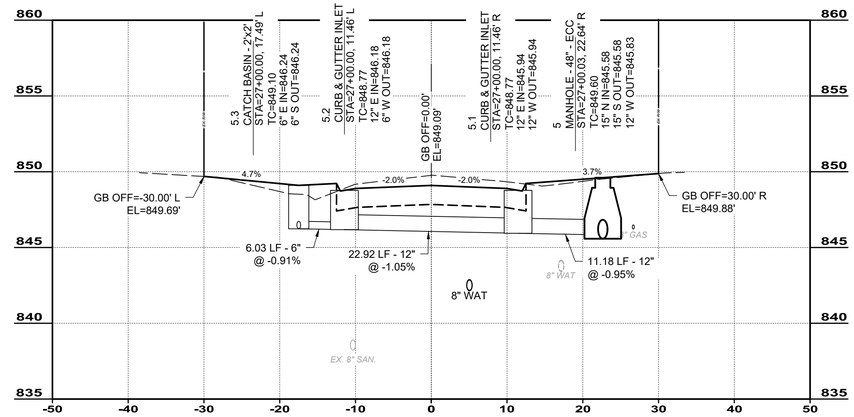
26+00.00



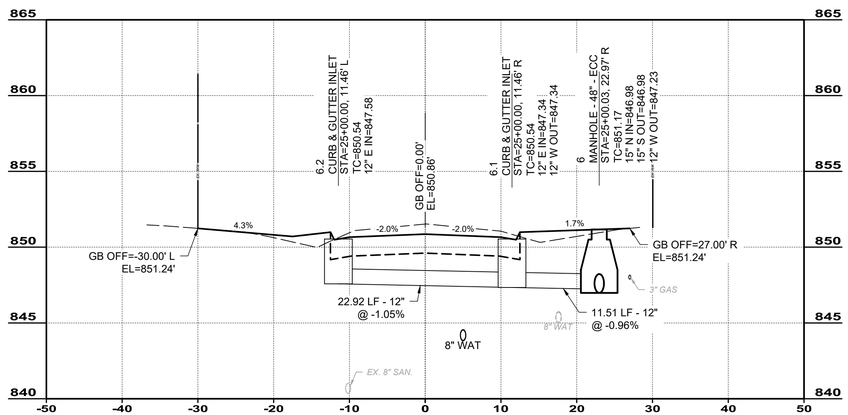
27+50.00



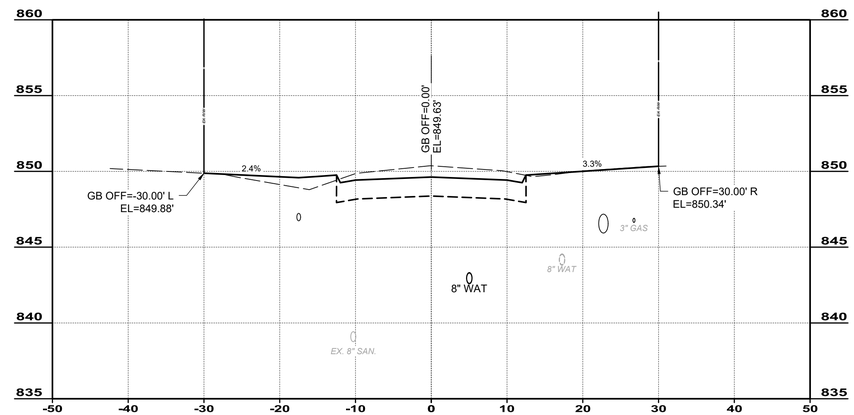
25+50.00



27+00.00



25+00.00



26+50.00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

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NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

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ISSUE DATE:	JUNE, 2025
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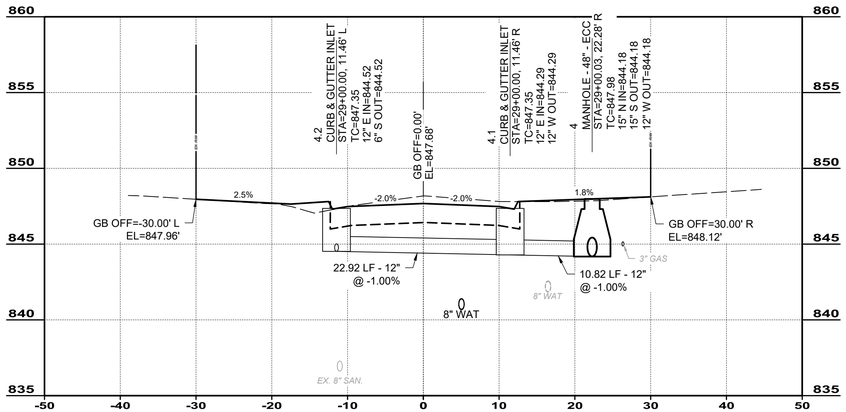
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

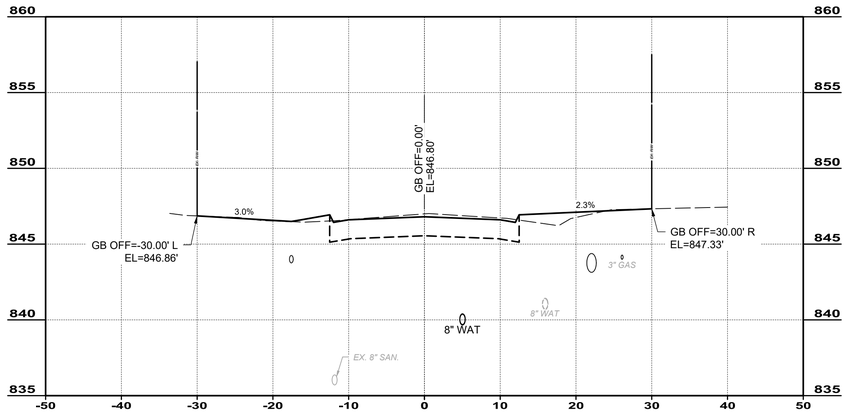
CROSS SECTIONS

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
XS 25+00-27+50	
SHEET	OF
24	39

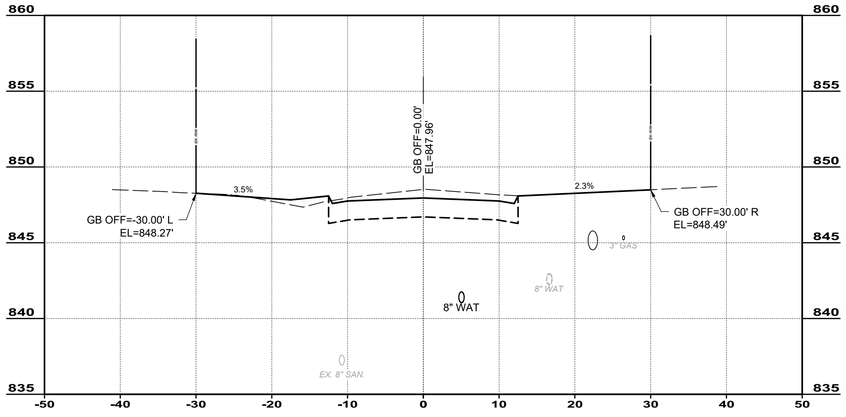
C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWGS\SHEETS\C_32053 - CROSS SECTIONS.DWG - XS 25+00-27+50 - 5/29/2025 12:52:55 PM - WILLIAM VASKO



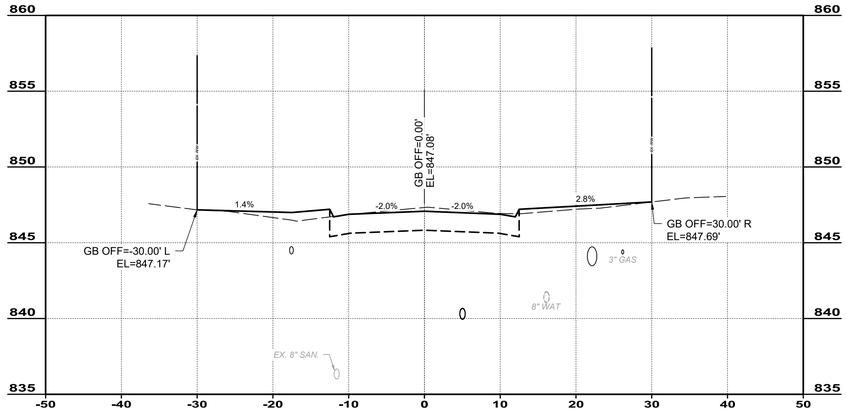
29+00.00



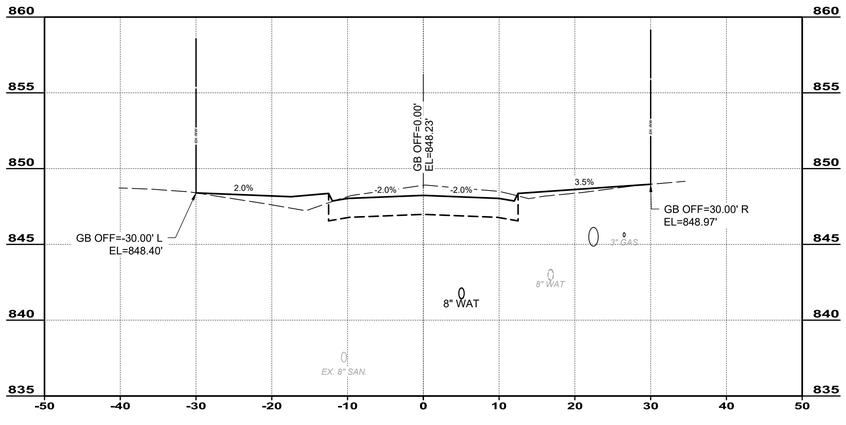
30+50.00



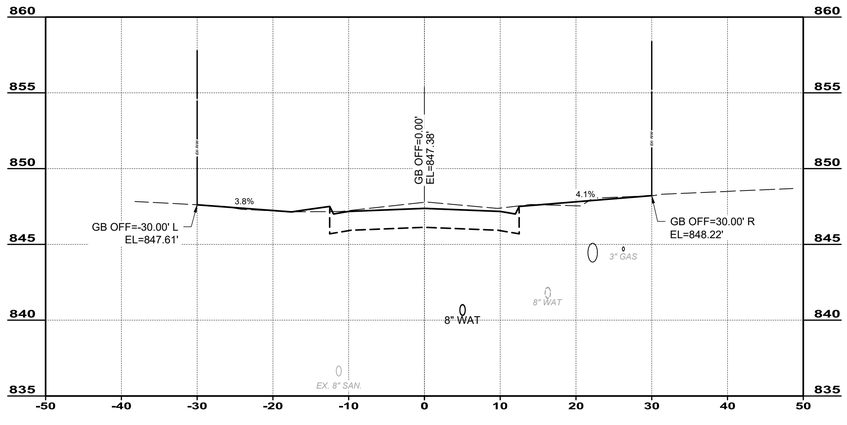
28+50.00



30+00.00



28+00.00



29+50.00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
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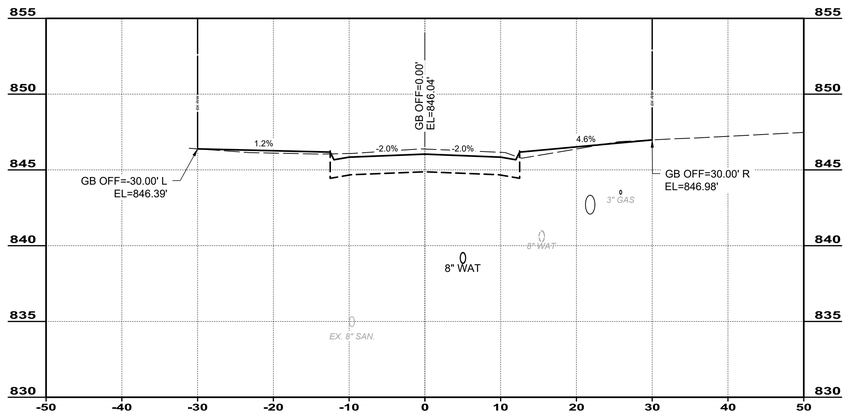
CHECKED BY:	JRH

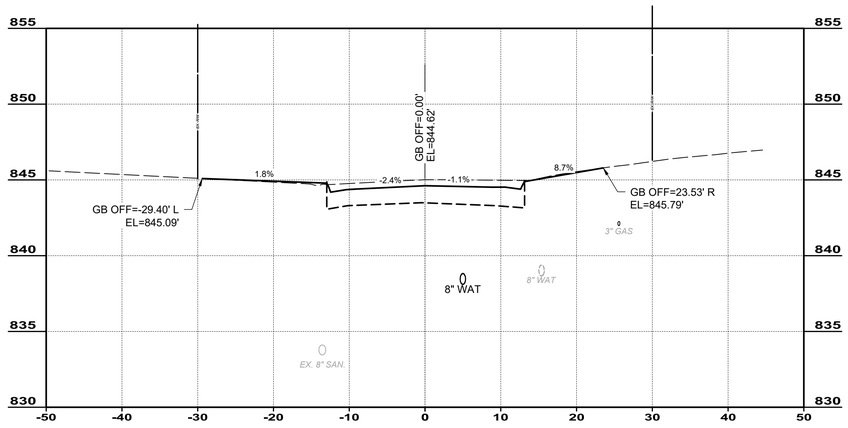
CROSS SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	XS 28+00-30+50
SHEET	25
OF	39

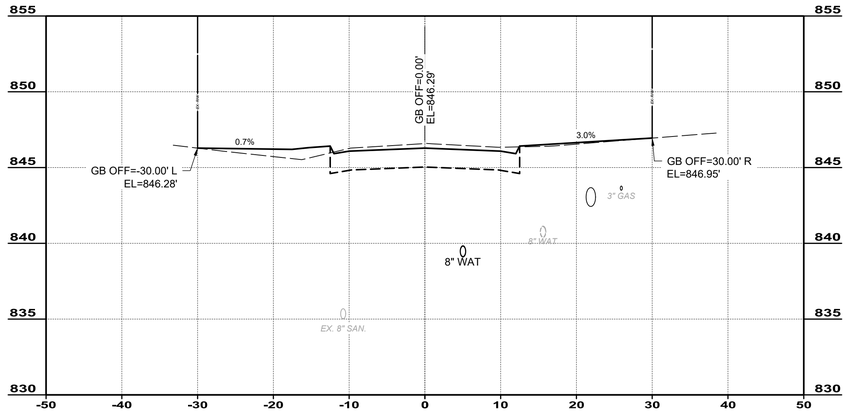
C:\CTICAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECON\DWG\SHEETS\C_32053 - CROSS SECTIONS.DWG - XS 28+00-30+50 - 5/29/2025 12:52:56 PM - WILLIAM VASKO



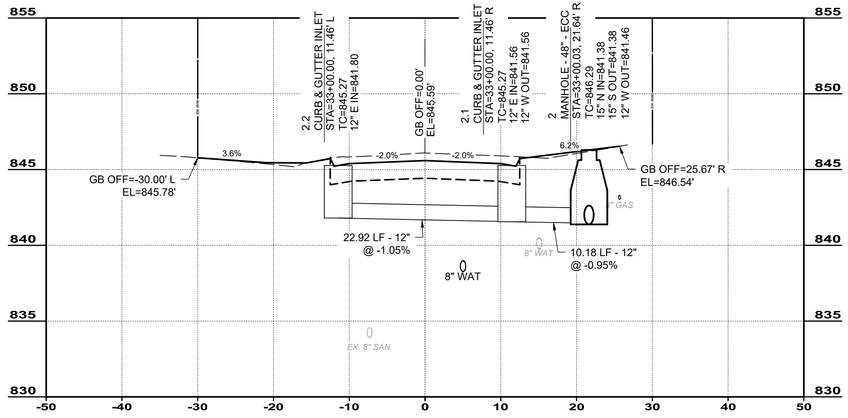
32+00.00



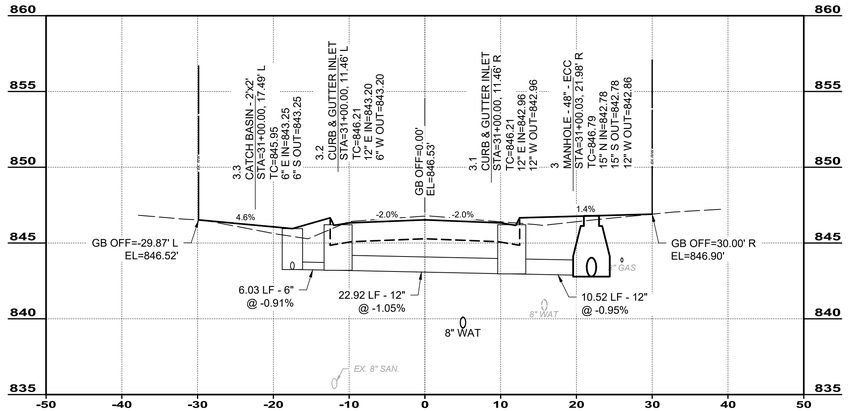
33+50.00



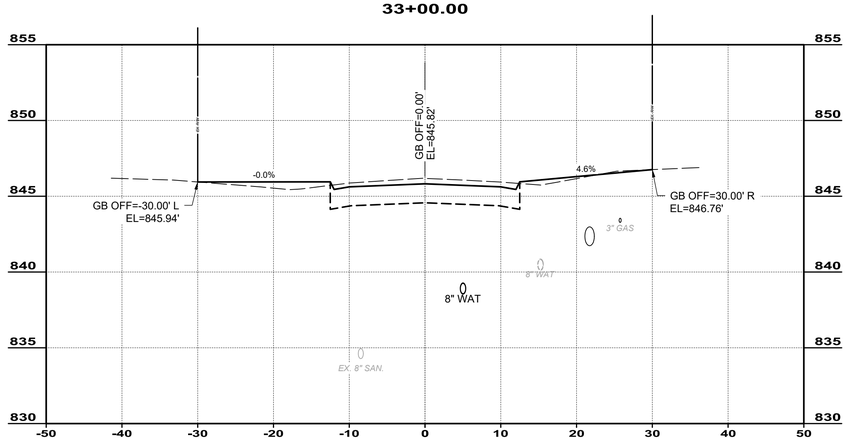
31+50.00



33+00.00



31+00.00



32+50.00

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
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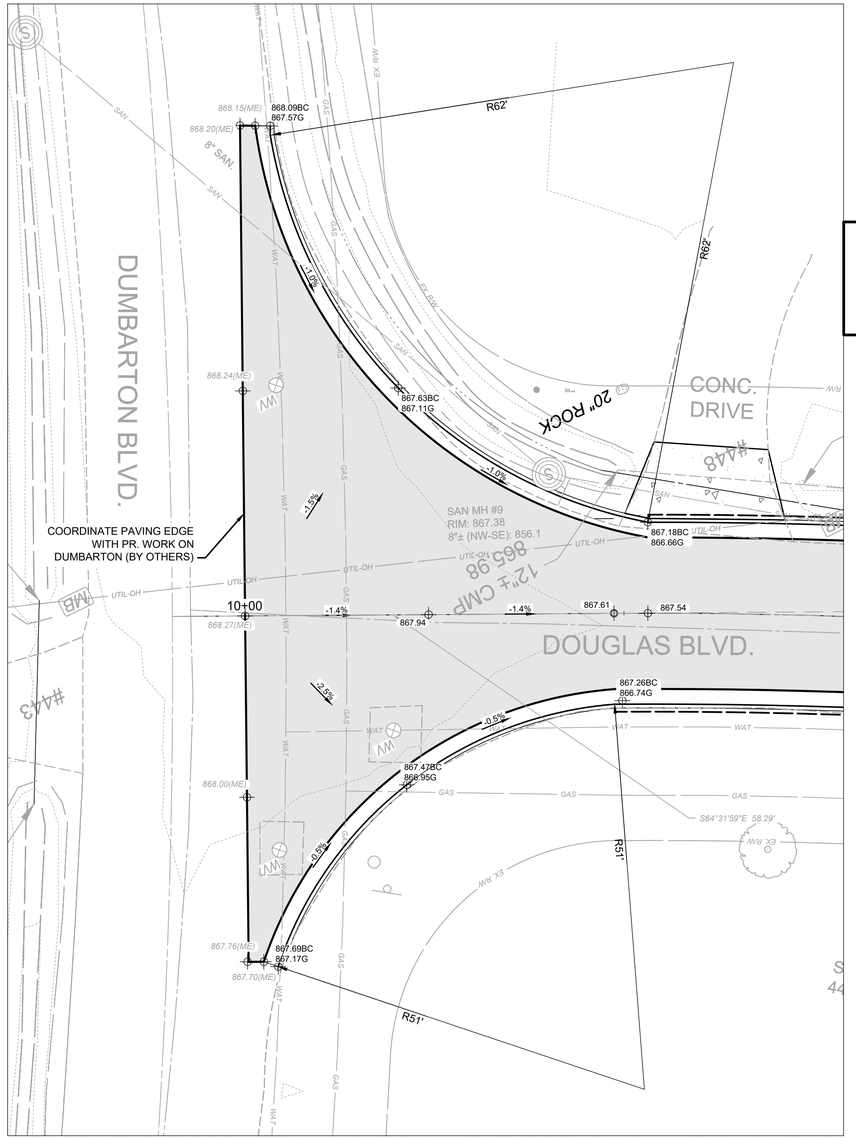
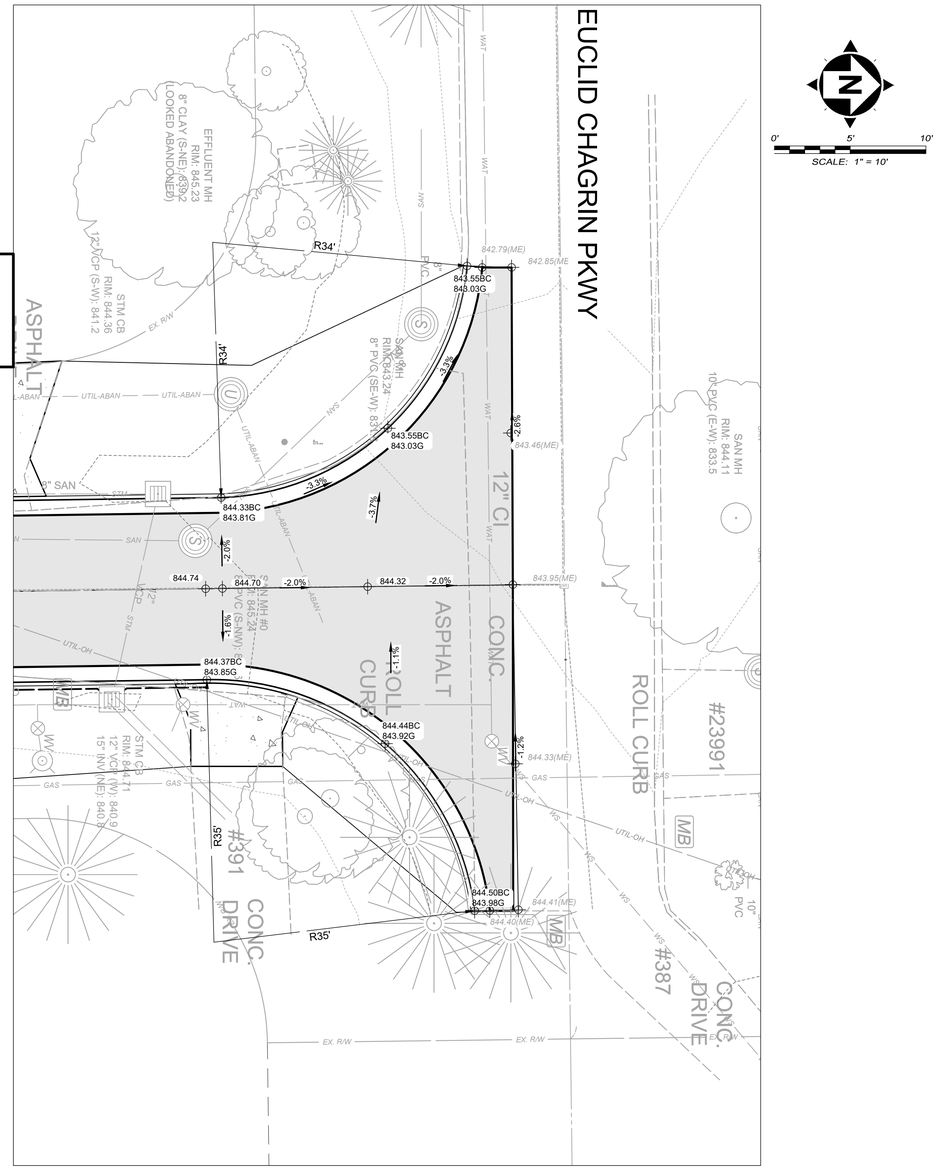
DRAWN BY:	WTV
CHECKED BY:	JRH

CROSS SECTIONS

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	XS 31+00-33+50
SHEET	26
OF	39



DOUGLAS BLVD - DUMBARTON BLVD INTERSECTION



DOUGLAS BLVD - EUCLID CHAGRIN PKWY INTERSECTION

0' 5' 10'
SCALE: 1" = 10'

SHEET LEGEND

868.08(ME)	MATCH EXISTING ELEVATION
867.85	PROPSED ELEVATION
867.85BC 867.33G	BACK OF CURB ELEVATION GUTTER ELEVATION
-2.2%	PROPOSED SLOPE

STATE OF OHIO
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CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

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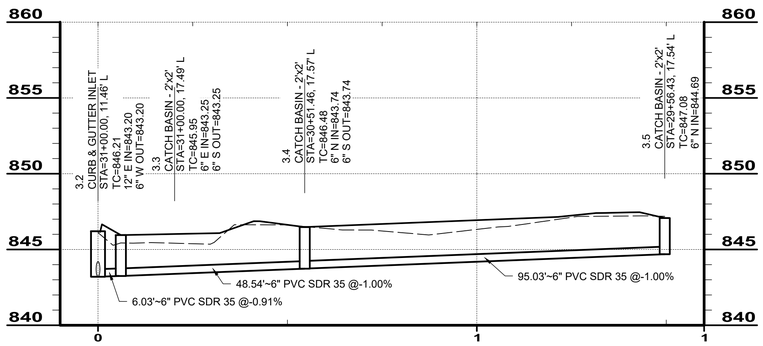
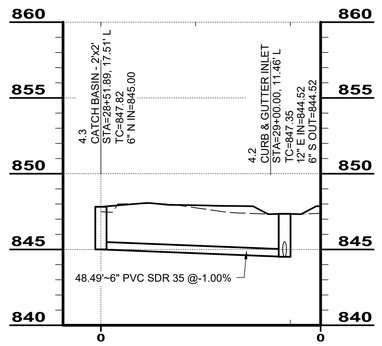
DRAWN BY:	WTV
CHECKED BY:	JRH

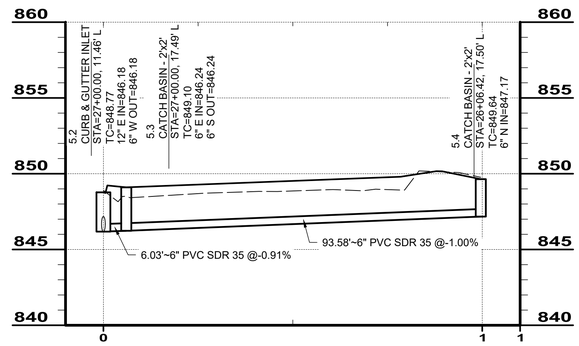
INTERSECTION DETAILS

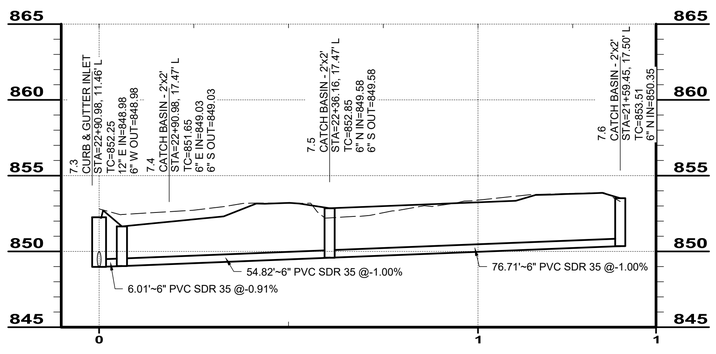
PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
INTERSECTION	
SHEET	OF
27	39

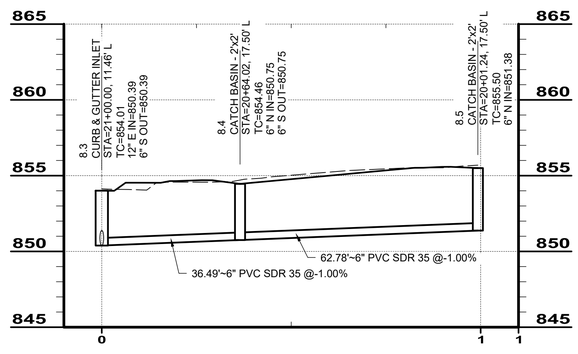
C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - INTERSECTION AND DRIVE DETAILS.DWG - INTERSECTION - 5/22/2025 12:52:11 PM - WILLIAM VASKO

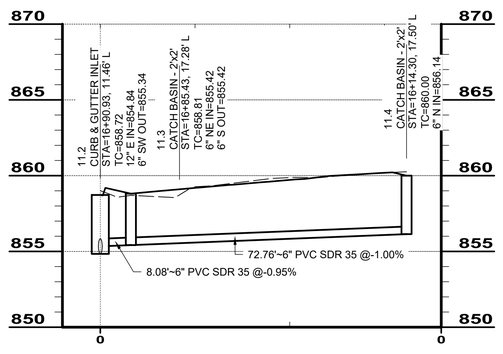


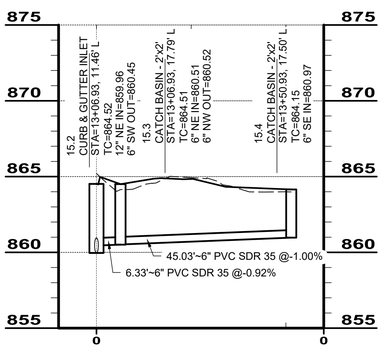


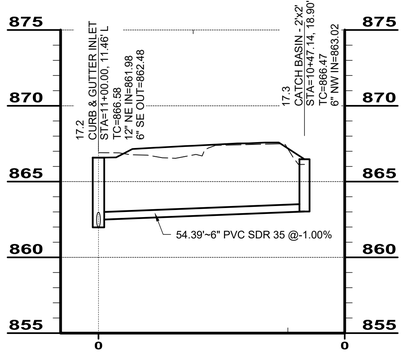












STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

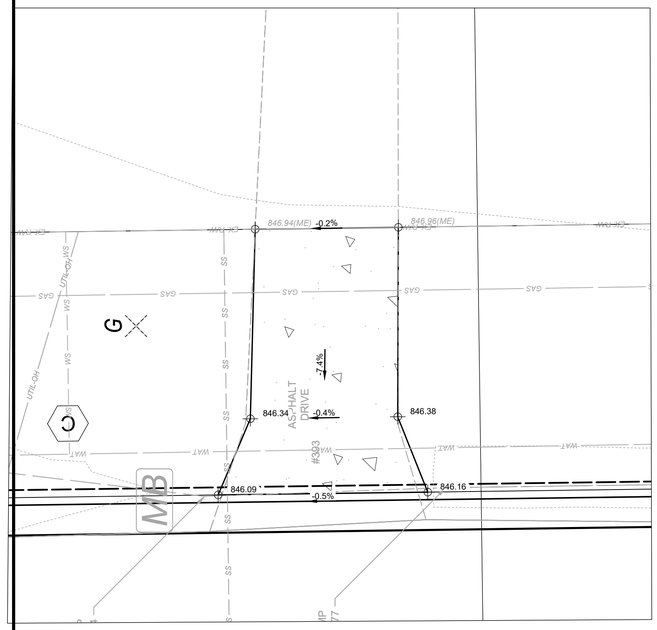
CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

STORM SEWER PROFILES

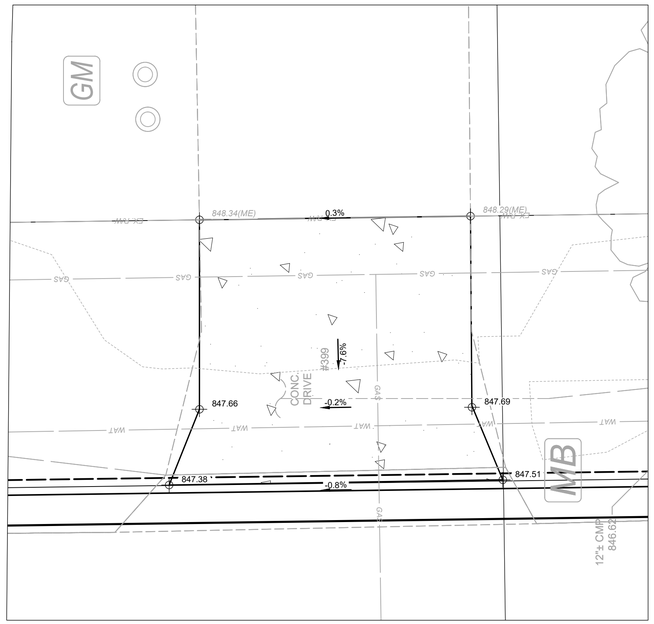
PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
STORM PROFILES	
SHEET	OF
28	39

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECOND\WG\SHEETS\C_32053 - PLAN AND PROFILE.DWG - STORM PROFILES - 5/23/2025 9:29:12 AM - WILLIAM VASKO



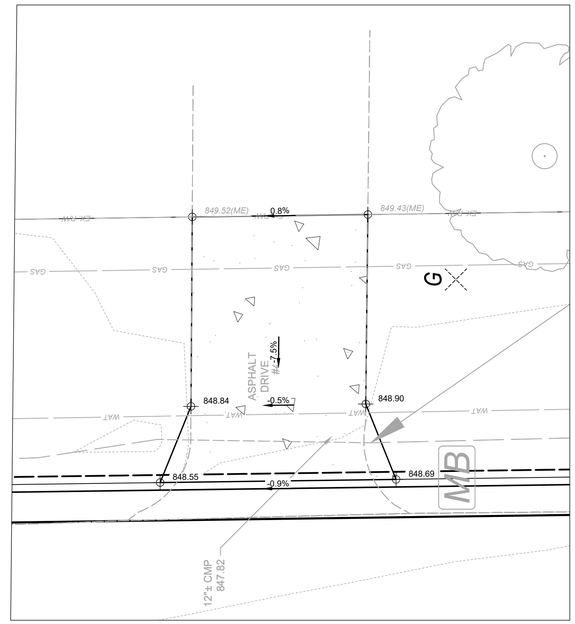
0' 2.5' 5'
SCALE: 1" = 5'

393 DOUGLAS BLVD - NORTH DRIVE APRON



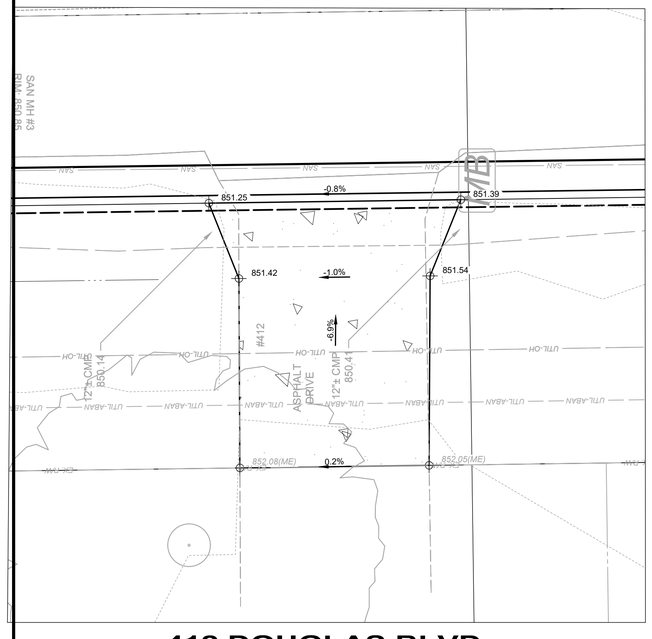
0' 2.5' 5'
SCALE: 1" = 5'

399 DOUGLAS BLVD



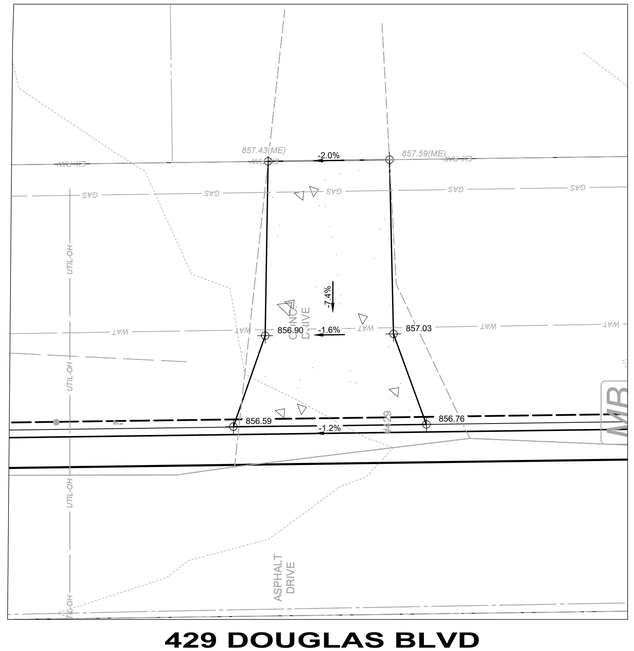
0' 2.5' 5'
SCALE: 1" = 5'

403 DOUGLAS BLVD



0' 2.5' 5'
SCALE: 1" = 5'

412 DOUGLAS BLVD



0' 2.5' 5'
SCALE: 1" = 5'

429 DOUGLAS BLVD

0' 2.5' 5'
SCALE: 1" = 5'

433 DOUGLAS BLVD

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

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NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

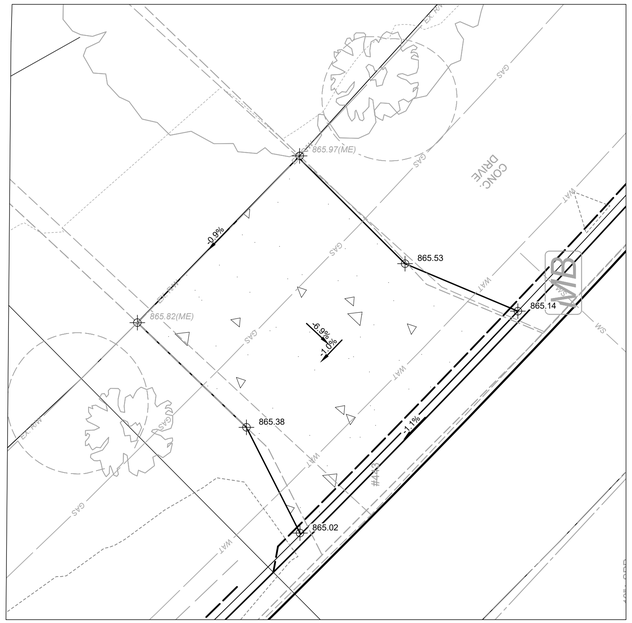
CUYAHOGA COUNTY, OHIO

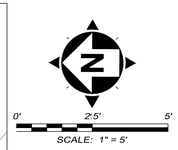
ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

DRIVEWAY DETAILS 1

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
DRIVE DETAIL	
SHEET	OF
29	39

C:\CTC\CAD_DRIVES_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - INTERSECTION AND DRIVE DETAILS.DWG - DRIVE DETAIL - 5/22/2025 12:52:11 PM - WILLIAM VASKO





443 DOUGLAS BLVD

STATE OF OHIO
WILLIAM
T. VASKO
E-86752
REGISTERED
PROFESSIONAL ENGINEER

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NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

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DRAWN BY:	WTV
CHECKED BY:	JRH

DRIVEWAY DETAILS - 2

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	DRIVE DETAIL - 2
SHEET	30
OF	39

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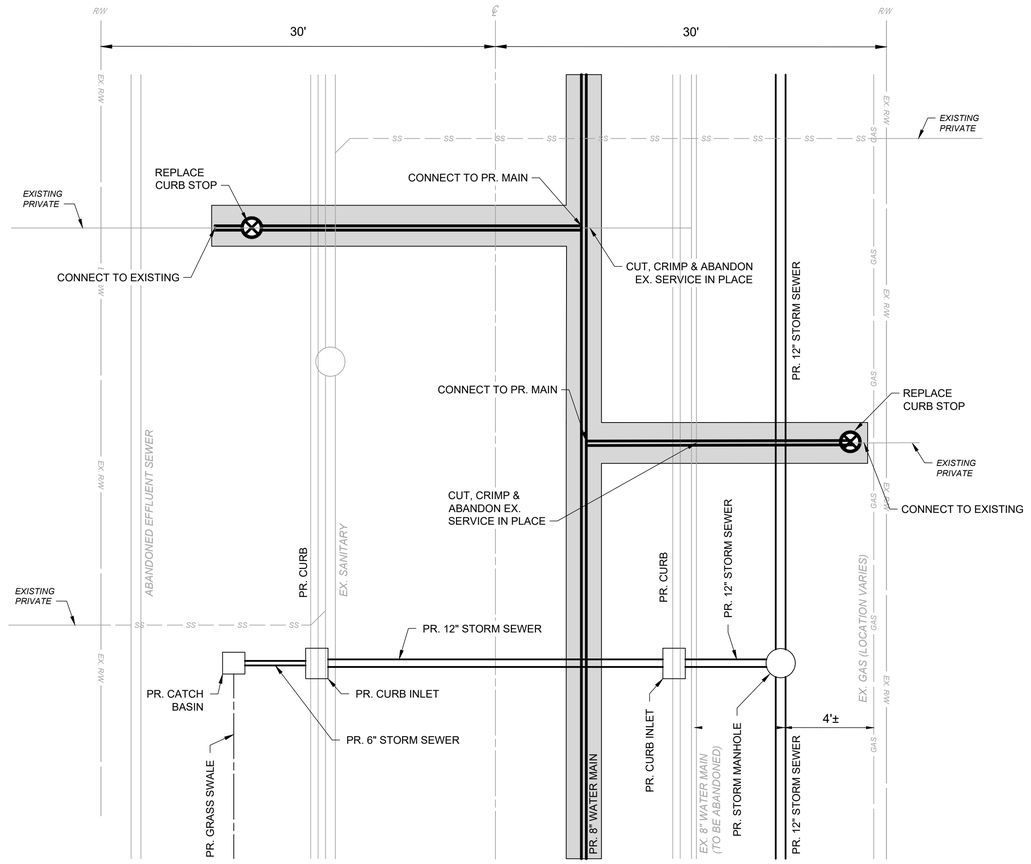


= APPROXIMATE LIMITS OF TRENCH, (SEE DETAIL ON SHEET 28)

NOTES:

1. FOR ALL WATER SERVICES: REPLACE FROM CURB STOP BOX TO PR. MAIN W/ NEW CURB STOP AND BOX.
2. THIS TYPICAL SECTION IS FOR ILLUSTRATIVE PURPOSES ONLY AND IS INTENDED TO GUIDE THE CONTRACTOR FOR THE PROPOSED WORK INVOLVING THE WATER SERVICE LINES. DIMENSIONS AND LOCATIONS VARY AND SOME UTILITIES MAY BE LOCATED DIFFERENTLY THAN SHOWN OR NOT PRESENT. REFER TO THE PLANS FOR ADDITIONAL INFORMATION.

TYPICAL ROADWAY UTILITY DETAIL

SCALE: NONE

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

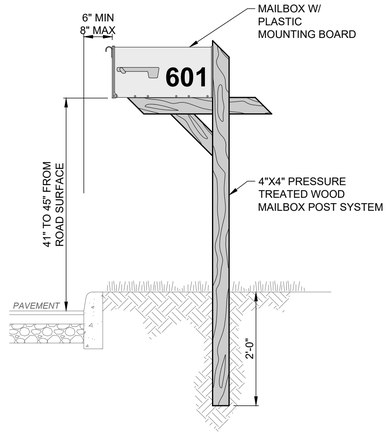
CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

GENERAL DETAILS

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
DET-1	
SHEET	OF
31	39

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWGS\SHEETS\C_32053 - DETAILS.DWG - DET-1 - 5/22/2025 3:21:49 PM - WILLIAM VASKO



NOTES:

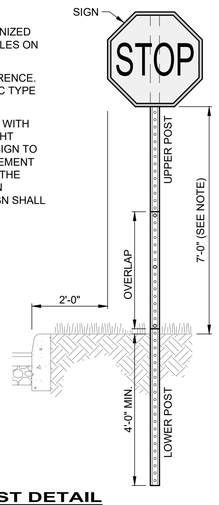
1. MAILBOX SHALL BE [MEDIUM CAPACITY 9"±T X 7"±W X 20"±L] OR [LARGE CAPACITY 11"±T X 9"±W X 23"±L] CONSTRUCTED OF GALVANIZED STEEL WITH GLOSSY BLACK [WHITE] POWDER-COATED FINISH WITH MOUNTING HARDWARE AND 4" WHITE [BLACK] VINYL ADDRESS NUMBERS ON EACH SIDE.
2. IN RURAL AREAS, MAILBOX SHALL BE OFFSET 3'-0" MIN. FROM EDGE OF TRAVEL LANE.
3. ADJACENT MAILBOXES SHALL BE AT LEAST 3'-0" APART.

MAILBOX W/ WOOD POST DETAIL

SCALE: NONE

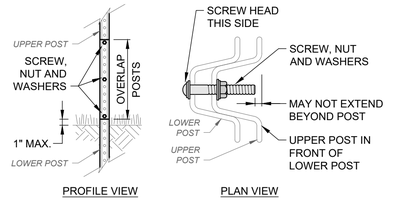
NOTES:

1. POSTS SHALL BE 2 LB/FT GALVANIZED STEEL U-CHANNEL WITH 3/8" HOLES ON 1" CENTERS.
2. "STOP" SIGN SHOWN FOR REFERENCE. SEE LAYOUT PLAN FOR SPECIFIC TYPE OF SIGN(S) TO BE USED.
3. IN RESIDENTIAL AND ALL AREAS WITH SIDEWALKS, THE MINIMUM HEIGHT MEASURED FROM BOTTOM OF SIGN TO TOP OF CURB OR EDGE OF PAVEMENT SHALL BE 7'-0". THE HEIGHT TO THE BOTTOM OF A SECONDARY SIGN MOUNTED BELOW ANOTHER SIGN SHALL BE 6'-0".



SIGN POST DETAIL

SCALE: NONE

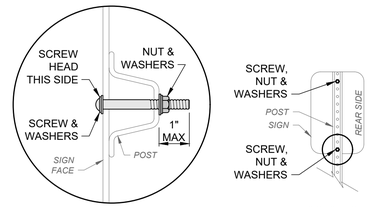


NOTES:

1. OVERLAP UPPER AND LOWER POSTS 36" MIN. WITH UPPER POST AT OR 1" ABOVE THE FINISH GRADE.
2. JOIN POSTS USING (3) SETS OF: (1) 5/16"Ø GALVANIZED STEEL PAN HEAD MACHINE SCREW; (1) GALVANIZED HEX NUT; (2) GALVANIZED STEEL WASHERS; AND (2) NYLON WASHERS.
3. MACHINE SCREW MUST BE PLACED IN CORRECT ORIENTATION WITH HEAD ON OUTSIDE OF POST.

SIGN POST OVERLAP DETAIL

SCALE: NONE

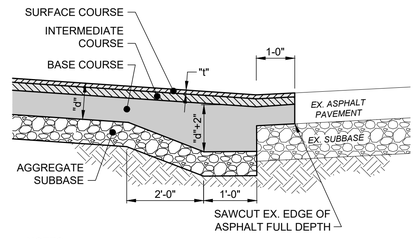


NOTES:

1. JOIN SIGN TO POST USING (2) SETS OF: (1) 5/16"Ø GALVANIZED STEEL PAN HEAD MACHINE SCREW; (1) GALVANIZED HEX NUT; (2) GALVANIZED STEEL WASHERS; AND (2) NYLON WASHERS.
2. MACHINE SCREW MUST BE PLACED IN CORRECT ORIENTATION WITH HEAD ON OUTSIDE OF SIGN.

SIGN PANEL ATTACHMENT DETAIL

SCALE: NONE

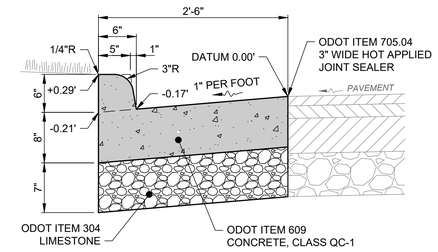


NOTES:

1. "t" IS THE THICKNESS OF THE NEW ASPHALT SURFACE COURSE. SEE THE SEPARATE ASPHALT PAVEMENT DETAIL.
2. TACK COAT SHALL BE APPLIED TO THE EXPOSED EX. ASPHALT BASE COURSE AND ALL SIDES OF EACH PATCH.
3. A SEALANT SHALL BE APPLIED AROUND THE EDGE OF PATCH.

BUTT JOINT DETAIL

SCALE: NONE



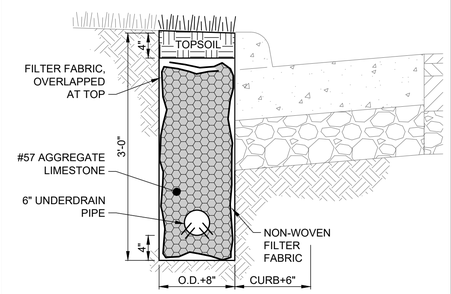
30" WIDE VERTICAL CURB & GUTTER

NOTES:

1. EXTEND EXPANSION JOINTS TO TOP OF CURB.
2. JOINT SEAL TO EXTEND THE FULL GUTTER WIDTH AND CURB FACE.
3. INSTALL 1" PREFORMED JOINT MATERIAL AND USE 5/8"Ø X 18" LONG DOWELS INTO COLD JOINTS BOTTOM WHERE NEW CURB MEETS EXISTING CURB OR AT EXPANSION JOINTS.
4. PROVIDE BUTT JOINTS BETWEEN CURB AND GUTTER AND NEW OR EXISTING RIGID PAVEMENTS WITH TIE BARS OR HOOK BOLTS PROVIDED AT 5' INTERVALS.
5. PROVIDE CONTRACTION JOINTS AT 15' O.C.
6. APPLY LIQUID-MEMBRANE CURING COMPOUND (200 S.F./GAL.).
7. THIS DETAIL SHOWS ASPHALT PAVEMENT FOR REFERENCE ONLY. SEE SITE PLAN FOR ACTUAL TYPE OF PAVEMENT.

(ODOT TYPE 2) VERTICAL CURB & GUTTER DETAIL

SCALE: NONE

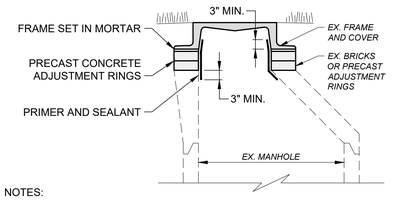


NOTES:

1. THIS DETAIL SHOWS A 6" WIDE CURB FOR REFERENCE ONLY. SEE SITE PLAN FOR TYPE OF CURB AND ACTUAL WIDTH.
2. AGGREGATE MUST EXTEND UNDER AND BEYOND THE CURB TO MEET THE PAVEMENT SUBBASE AND ALLOW SUB-DRAINAGE.
3. FILTER FABRIC SHALL BE ODOT 712.09 TYPE "A".
4. REMOVE OR COMPACT ALL LOOSE EXCAVATION AT BOTTOM OF TRENCH BEFORE INSTALLING AGGREGATE.
5. MAINTAIN POSITIVE DRAINAGE OF PIPE INVERTS WITH NO DIPS OR HUMPS IN FLOW LINE.
6. UNDERDRAIN SHALL BE PERFORATED PVC SDR 35 PIPE WITH PERFORATIONS TURNED DOWN OR HDPE SINGLE WALL CORRUGATED PIPE.

CURB UNDERDRAIN DETAIL

SCALE: NONE

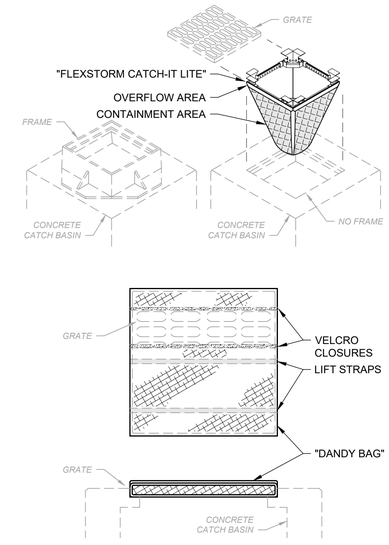


NOTES:

1. REMOVE FRAME AND CASTING.
2. CLEAN SURFACES OF FRAME, CASTING AND PRECAST MANHOLE. REMOVE RUST, DEBRIS AND LOOSE MORTAR.
3. CLEAN SURFACES OF ADJUSTMENT RINGS OR BRICKS. REMOVE LOOSE BRICK AND MORTAR. IF EXCESSIVE BRICK DAMAGE, REPLACE WITH NEW ADJUSTMENT RINGS.
4. FILL ALL VOIDS WITH CEMENTITOUS GROUT. IF SURFACE IS ROUGH, IRREGULAR OR CONTAINS EXCESSIVE VOIDS THAT PREVENTS AN EFFECTIVE SEAL, APPLY PATCHING MIX TO PROVIDE A SMOOTH UNIFORM SURFACE. DRY INTERIOR SURFACES PER MANUFACTURER'S RECOMMENDATION.
5. APPLY PRIMER AND SEALANT (I.E. FLEX-SEAL) TO MANHOLE ADJUSTMENT RINGS. THICKNESSES SHALL BE PER MANUFACTURER'S RECOMMENDATION. APPLY TO ENTIRE SURFACE OF ADJUSTMENT RINGS, AS WELL AS MANHOLE STRUCTURE AND CASTING AT LEAST 3" ABOVE AND BELOW ADJUSTMENT RINGS. ALLOW PRIMER TO CURE PRIOR TO APPLYING SEALANT.

ADJUST SANITARY MANHOLE CASTING DETAIL

SCALE: NONE

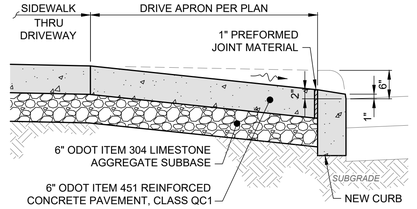


NOTES:

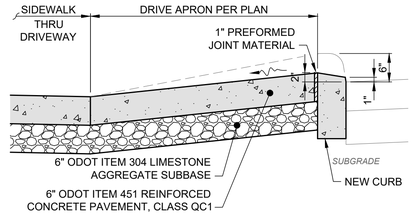
1. ALL NEW AND EXISTING STORM INLET BASINS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED.
2. INLET PROTECTION SHALL BE INSTALLED AS EACH STORM INLET IS CONSTRUCTED.
3. NOT ALL ITEMS SHOWN MAY APPLY OR DIFFERENT TYPES OR CONFIGURATIONS MAY BE REQUIRED. THE CONTRACTOR SHALL MEASURE EACH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

INLET PROTECTION DETAIL

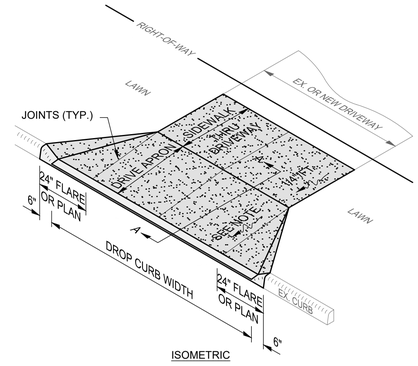
SCALE: NONE



SECTION A-A



SECTION A-A (FOR REVERSE GRADED DRIVE APRON)



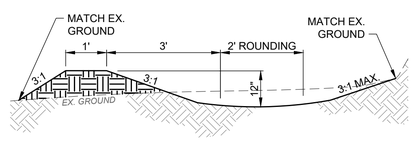
ISOMETRIC

NOTES:

1. CONCRETE AT ACTIVE DRIVE APRONS SHALL BE CLASS QC MS.
2. THE DROP CURB SHALL BE HAND FORMED AT THE TIME THE CONCRETE CURB IS POURED.
3. JOINTS SHALL BE PROVIDED AT THE NORMAL FACE AND BACK OF SIDEWALK LOCATION.
4. SEE GRADING PLAN FOR ACTUAL SLOPES AND ELEVATIONS.
5. THIS DETAIL SHOWS A DRIVE APRON WITH VARIOUS APRON FLARES FOR REFERENCE ONLY; SEE LAYOUT PLAN FOR ACTUAL APRON CONFIGURATION AND FLARE WIDTHS.

CONCRETE DRIVE APRON DETAIL

SCALE: NONE



SWALE DETAIL

SCALE: NONE

STATE OF OHIO
WILLIAM
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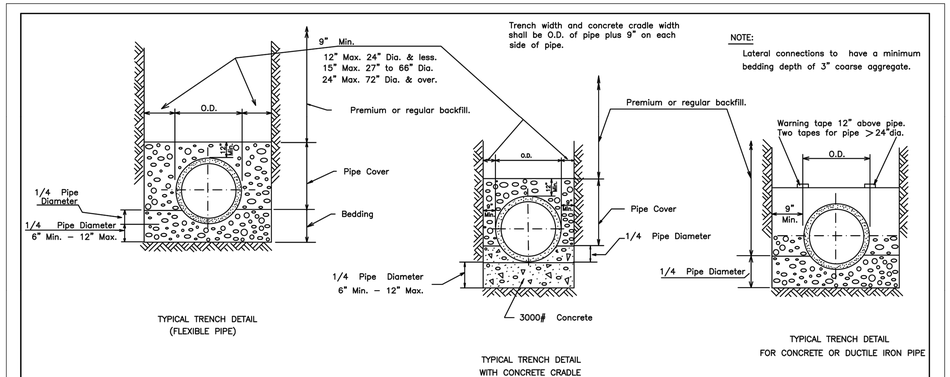
PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	DET-2
SHEET	32
OF	39



NOTE:
Lateral connections to have a minimum bedding depth of 3" coarse aggregate.

Pipe Cover shall consist of coarse interlocking aggregate no. 57,6,67,68,7,78,or8.

Bedding shall consist of coarse interlocking aggregate no.57,6,67, 68, 7, 78, or 8 for 60" or smaller diameter pipe. For 66" or larger diameter pipe no. 4 aggregate may also be used.

Premium Backfill, when required, shall consist of coarse interlocking limestone aggregate No. 57, 6, 67, 68, 7, 78, 8, ODOT CMS Item 304 limestone, or limestone screenings, compacted the same as the pipe cover. Premium Backfill within five (5) feet of pavement or within municipality right-of-way shall be LSM (Low Strength Mortar), ODOT item 613, Type 2, or as directed by the CCDPW.

All sanitary and storm sewer trenches (including sewer lateral trenches) in the existing right-of-way, including under existing pavements, shall be backfilled to the subgrade elevation with LSM (Low Strength Mortar).

All Sanitary and storm sewer trenches (including sewer lateral trenches) under proposed pavements and all sewer trenches in the proposed private right-of-way shall be backfilled with premium backfill.

All sanitary and storm sewer trenches (including sewer lateral trenches) in all easements shall be backfilled with premium backfill.

For concrete and ductile iron pipe, pipe cover is to the springline or greater.

In paved areas coarse interlocking aggregate to the top of the trench on all types of pipe.

TYPICAL TRENCH DETAILS

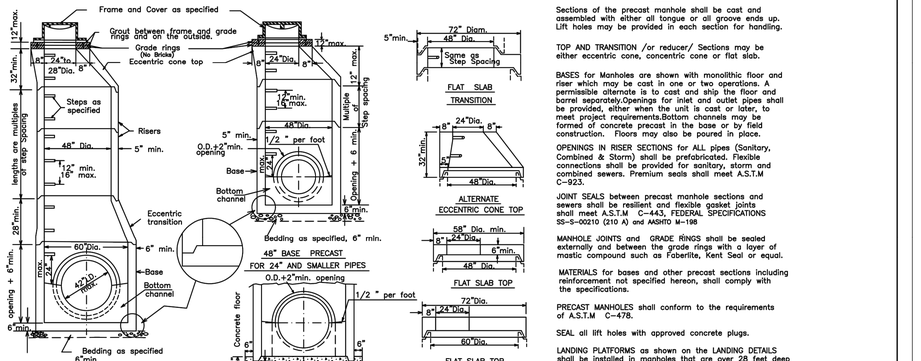
REVISIONS:

SCALE NO SCALE

DATE: OCTOBER 2021

UNIFORM STANDARDS: CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS --- MUNICIPAL ENGINEERS ASSOCIATION OF NE OHIO

SHEET NO. 12



NOTES

Sections of the precast manhole shall be cast and assembled with either all tongue or all groove ends up. Lift holes may be provided in each section for handling.

TOP AND TRANSITION /or reducer/ Sections may be either eccentric cone, concentric cone or flat slab.

BASES for Manholes are shown with monolithic floor and riser which may be cast in one or two operations. A permissible alternate is to cast and ship the floor and barrel separately.Openings for inlet and outlet pipes shall be provided, either when the unit is cast or later, to meet project requirements.Bottom channels may be formed of concrete precast in the base or by field construction. Floors may also be poured in place.

OPENINGS IN RISER SECTIONS for ALL pipes (Sanitary, Combined & Storm) shall be prefabricated. Flexible connections shall be provided for sanitary, storm and combined sewers. Premium seals shall meet A.S.T.M C-923.

JOINT SEALS between precast manhole sections and sewers shall be resilient and flexible gasket joints shall meet A.S.T.M C-443, FEDERAL SPECIFICATIONS SS-S-00210 (210 A) and AASHTO M-198

MANHOLE JOINTS and GRADE RINGS shall be sealed externally and between the grade rings with a layer of mastic compound such as Foberlite, Kent Seal or equal.

MATERIALS for bases and other precast sections including reinforcement not specified hereon, shall comply with the specifications.

PRECAST MANHOLES shall conform to the requirements of A.S.T.M C-478.

SEAL all lift holes with approved concrete plugs.

LANDING PLATFORMS as shown on the LANDING DETAILS shall be installed in manholes that are over 28 feet deep to the invert with a maximum vertical spacing of 20 feet.

MANHOLE FRAMES – chimney seals will be required on all new sanitary manholes.

SANITARY MANHOLES shall have a minimum 3" vertical drop from casting elevations.

PRECAST CONCRETE MANHOLE
42" PIPE OR SMALLER

REVISIONS:

SCALE NO SCALE

DATE: OCTOBER 2021

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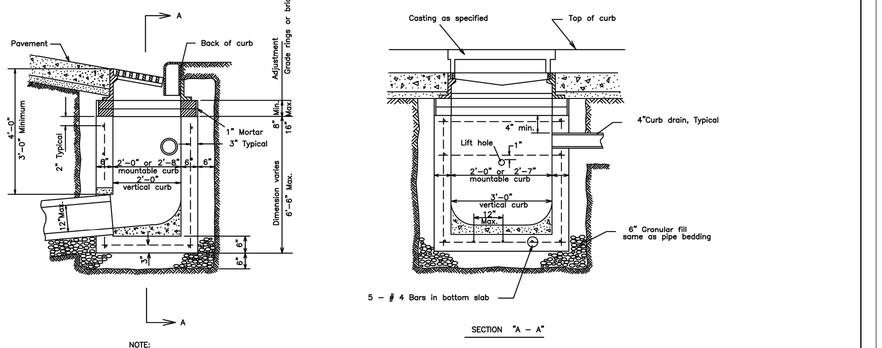
SHEET NO. 5



NOTE:

All reinforcing shall be # 4 deformed bars Concrete shall be ODOT class "C" #4000 PSI in 28 days.

OPENINGS IN RISER SECTIONS for ALL pipes (Sanitary, Combined & Storm) shall be prefabricated. Flexible connections shall be provided for sanitary, storm and combined sewers. Premium seals shall meet A.S.T.M C-923.

RECTANGULAR PRECAST CONCRETE INLET BASIN

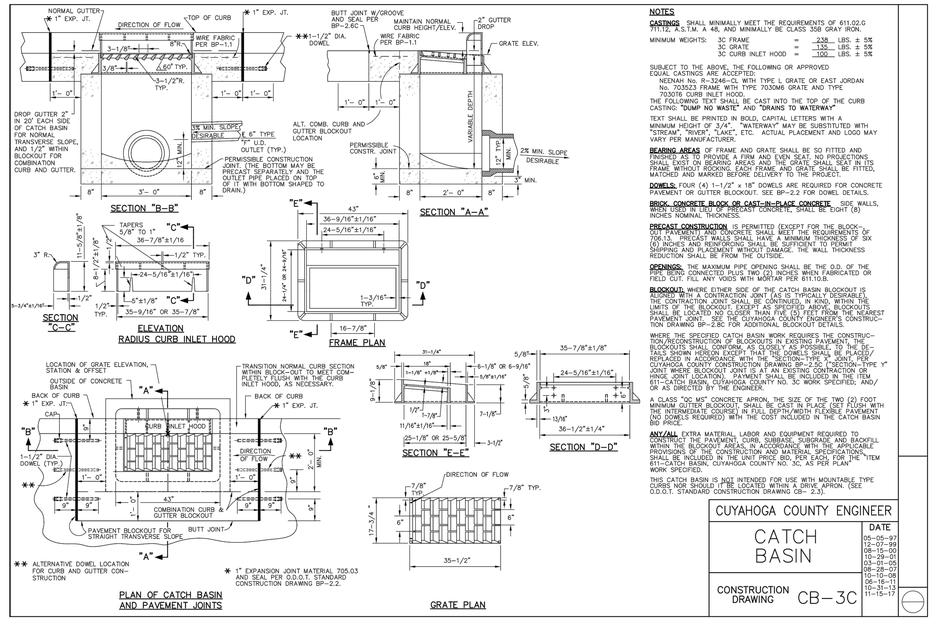
REVISIONS:

SCALE NO SCALE

DATE: OCTOBER 2021

UNIFORM STANDARDS: CUYAHOGA COUNTY DEPARTMENT OF PUBLIC WORKS --- MUNICIPAL ENGINEERS ASSOCIATION OF NE OHIO

SHEET NO. 23



NOTES

CASTINGS SHALL MINIMALLY MEET THE REQUIREMENTS OF 611.02.G TITLE A.S.T.M. A 48, AND MINIMALLY BE CLASS 35B GRAY IRON.

MINIMUM WEIGHTS: 3C FRAME = 235 LBS. ± 5%
3C GRATE = 135 LBS. ± 5%
3C CURB INLET HOOD = 100 LBS. ± 5%

SUBJECT TO THE ABOVE, THE FOLLOWING OR APPROVED EQUAL CASTINGS ARE ACCEPTED:
NEENAH No. R-3246-C, WITH TYPE L GRATE OR EAST JORDAN No. 7035Z3 FRAME WITH TYPE 7030M6 GRATE AND TYPE 7030T6 CURB INLET HOOD.
THE FOLLOWING TEXT SHALL BE CAST INTO THE TOP OF THE CURB CASTING: **"DUMP NO WASTE" AND "DRAINS TO WATERWAY"**

TEXT SHALL BE PRINTED IN BOLD, CAPITAL LETTERS WITH A MINIMUM HEIGHT OF 2-1/4". "WATERWAY" MAY BE SUBSTITUTED WITH "STREAM", "RIVER", "LAKE", ETC. ACTUAL PLACEMENT AND LOGO MAY VARY PER MANUFACTURER.

BEARING AREAS OF FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTIONS SHALL EXIST ON BEARING AREAS AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING. EACH FRAME AND GRATE SHALL BE FITTED, MATCHED AND MARKED BEFORE DELIVERY TO THE PROJECT.

DOWELS: FOUR (4) 1-1/2" x 18" DOWELS ARE REQUIRED FOR CONCRETE PAVEMENT OR GUTTER BLOCKOUT. SEE BP-2.2 FOR DOWEL DETAILS.

BRICK, CONCRETE BLOCK OR CAST-IN-PLACE CONCRETE SIDE WALLS, WHEN USED IN LIEU OF PRECAST CONCRETE, SHALL BE EIGHT (8) INCHES NOMINAL THICKNESS.

PRECAST CONSTRUCTION IS PERMITTED (EXCEPT FOR THE BLOCK-OUT PAVEMENT) AND CONCRETE SHALL MEET THE REQUIREMENTS OF 706.13. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF SIX (6) INCHES AND SHALL BE REINFORCED AS REQUIRED TO PERMIT HANDLING, SHIPPING AND PLACEMENT WITHOUT DAMAGE. THE WALL THICKNESS REDUCTION SHALL BE FROM THE OUTSIDE.

OPENINGS: THE MAXIMUM PIPE OPENING SHALL BE THE O.D. OF THE PIPE TO BE CONNECTED PLUS TWO (2) INCHES WHEN FABRICATED OR FIELD CUT. FILL ANY VOIDS WITH MORTAR PER 611.10.B.

BLOCKOUT: WHERE EITHER SIDE OF THE CATCH BASIN BLOCKOUT IS ADJOINED WITH A CONTRACTION JOINT (AS IS TYPICALLY DESIRABLE), THE CONTRACTION JOINT SHALL BE CONTINUED, IN KIND, WITHIN THE BLOCKOUT AREA. IN ADDITION, NO CONTRACTION JOINT WITHIN THE BLOCKOUT SHALL BE LOCATED NO CLOSER THAN FIVE (5) FEET FROM THE NEAREST PAVEMENT JOINT. SEE THE CUYAHOGA COUNTY ENGINEER'S CONSTRUCTION DRAWING BP-2.8C FOR ADDITIONAL BLOCKOUT DETAILS.

WHERE THE SPECIFIED CATCH BASIN WORK REQUIRES THE CONSTRUCTION/RECONSTRUCTION OF BLOCKOUTS IN EXISTING PAVEMENT, THE BLOCKOUTS SHALL CONFORM AS CLOSELY AS POSSIBLE TO THE DETAILS SHOWN HEREON EXCEPT THAT THE DOWELS SHALL BE PLACED / REPLACED IN ACCORDANCE WITH THE "SECTION-TYPE X" JOINT, PER CUYAHOGA COUNTY CONSTRUCTION DRAWING BP-2.5C. ("SECTION-TYPE Y" JOINTS ARE NOT PERMITTED AT CATCH BASIN LOCATIONS.) THE CONCRETE REMOVAL LOCATIONS / PAYMENT SHALL BE INCLUDED IN THE ITEM 611-CATCH BASIN, CUYAHOGA COUNTY NO. 3C WORK SPECIFIED, AND/OR AS DIRECTED BY THE ENGINEER.

A CLASS "QC MS" CONCRETE APRON, THE SIZE OF THE TWO (2) FOOT MINIMUM GUTTER BLOCKOUT, SHALL BE CAST IN PLACE (SET FLUSH WITH THE INTERMEDIATE COURSE) IN FULL DEPTH/WIDTH FLEXIBLE PAVEMENT. (NO DOWELS REQUIRED) WITH THE COST INCLUDED IN THE CATCH BASIN BID PRICE.

ANY/ALL EXTRA MATERIAL, LABOR AND EQUIPMENT REQUIRED TO REMOVE AND REPLACE PAVEMENT, CURB, SUBBASE, SUBGRADE, AND BACKFILL WITHIN THE BLOCKOUT AREA, IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, SHALL BE INCLUDED IN THE UNIT PRICE BID, PER EACH, FOR THE "ITEM 611-CATCH BASIN, CUYAHOGA COUNTY NO. 3C, AS PER PLAN" WORK SPECIFIED.

THIS CATCH BASIN IS NOT INTENDED FOR USE WITH MOUNTABLE TYPE CURBS NOR SHOULD IT BE LOCATED WITHIN A DRIVE APRON. (SEE O.D.O.T. STANDARD CONSTRUCTION DRAWING CB- 2.3).

CUYAHOGA COUNTY ENGINEER

CATCH BASIN

CONSTRUCTION DRAWING CB-3C

DATE
05-05-97
12-07-99
08-15-00
10-29-01
03-01-05
08-28-07
10-10-08
05-16-11
10-31-13
11-15-17

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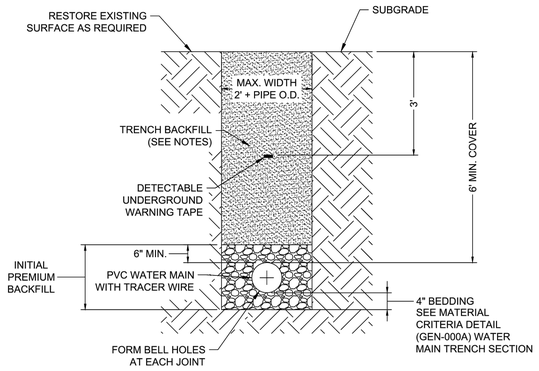
DISCIPLINE	CIVIL
SHEET NAME	DET-3
SHEET	33
OF	39

C:\CTICAD_DRIVE\$_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - DETAILS.DWG - DET-3 - 5/22/2025 3:21:49 PM - WILLIAM VASKO

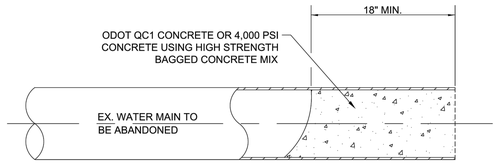


IN EARTH

NOTES:

1. PLACE AND COMPACT INITIAL PREMIUM BACKFILL USING HAND-HELD OR WALK BEHIND EQUIPMENT. DO NOT ALLOW BACKFILL MATERIAL TO FREE-FALL INTO TRENCH.
2. UNDER EXISTING AND FUTURE PAVEMENT, SIDEWALKS, AND DRIVEWAYS WITHIN THE CITY OF CLEVELAND CORPORATION LIMITS, PLACE AND COMPACT CONTROLLED LOW STRENGTH MORTAR - CONTROLLED DENSITY FILL (CLSM-CDF) TRENCH BACKFILL TO PAVEMENT SUBGRADE. PLACE CLSM-CDF IN OTHER MUNICIPALITIES WHERE PERMITTED OR DIRECTED.
3. UNDER EXISTING AND FUTURE PAVEMENT, SIDEWALKS, AND DRIVEWAYS IN OTHER MUNICIPALITIES WHERE PERMITTED, PLACE AND COMPACT PREMIUM TRENCH BACKFILL MATERIAL IN MAXIMUM 6" LIFTS TO 95% OF STANDARD PROCTOR AT +/2% OF OPTIMUM MOISTURE CONTENT TO PAVEMENT SUBGRADE. IF NOT PERMITTED, FOLLOW LOCAL REQUIREMENTS.
4. IN LAWNS AND STREETSCAPE AREAS, PLACE AND COMPACT SUITABLE TRENCH BACKFILL MATERIAL IN MAXIMUM 6" LIFTS TO 85% OF STANDARD PROCTOR AT +/-3% OF OPTIMUM MOISTURE CONTENT TO FINAL RESTORATION SUBGRADE.

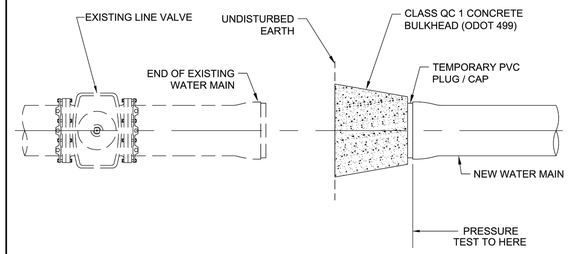
REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	WATER MAIN TRENCH DETAILS
NO.	DATE	BY		DETAIL NO.: PVC-001
				SCALE: N.T.S. DATE: 7/9/2024



NOTE:

1. DRAIN THE WATER MAIN COMPLETELY PRIOR TO INSTALLING PLUGS.

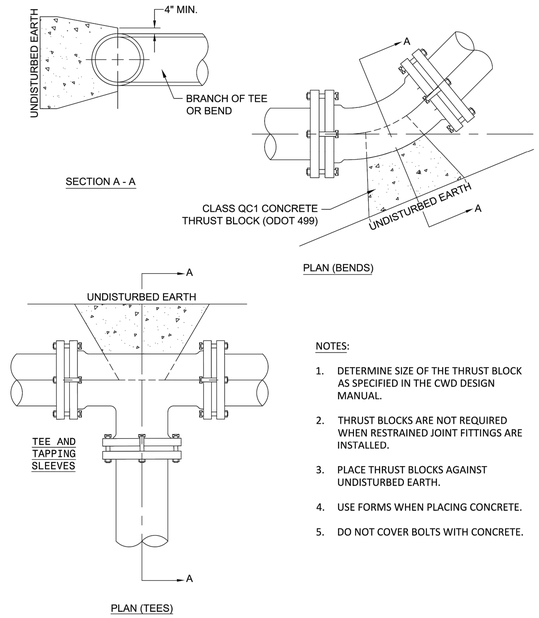
REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	PLUGGING ABANDONED WATER MAIN ENDS
NO.	DATE	BY		DETAIL NO.: GEN-004
				SCALE: N.T.S. DATE: 10/31/2023



NOTES:

1. INSTALL TEMPORARY PLUG OR CAP AND BULKHEAD FOR PRESSURE TEST. DETERMINE SIZE OF THE BULKHEAD REQUIRED TO WITHSTAND THE TEST PRESSURE AND THE SIZE OF PIPE TO BE TESTED.
2. AFTER PASSING THE TEST, CONNECT TO THE EXISTING WATER MAIN WITH NEW PIPE AND SOLID SLEEVE.
3. REPAIR DAMAGE TO THE EXISTING WATER MAIN CAUSED BY SUCCESSFUL OR UNSUCCESSFUL PRESSURE TESTING TO THE SATISFACTION OF CWD.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	ALTERNATE PRESSURE TESTING DETAIL
NO.	DATE	BY		DETAIL NO.: GEN-002
				SCALE: N.T.S. DATE: 1/26/2024

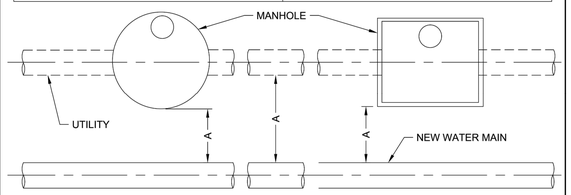


NOTES:

1. DETERMINE SIZE OF THE THRUST BLOCK AS SPECIFIED IN THE CWD DESIGN MANUAL.
2. THRUST BLOCKS ARE NOT REQUIRED WHEN RESTRAINED JOINT FITTINGS ARE INSTALLED.
3. PLACE THRUST BLOCKS AGAINST UNDISTURBED EARTH.
4. USE FORMS WHEN PLACING CONCRETE.
5. DO NOT COVER BOLTS WITH CONCRETE.

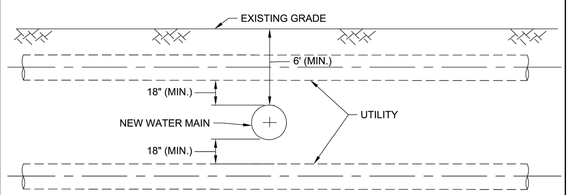
REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	CONCRETE THRUST BLOCKS FOR TEES AND HORIZONTAL BENDS
NO.	DATE	BY		DETAIL NO.: GEN-005
				SCALE: N.T.S. DATE: 5/31/2024

HORIZONTAL CLEARANCE (A)	
STORM, SANITARY AND COMBINED SEWERS	GAS, DUCTBANK, OTHER UTILITY
10 FT (MIN.)	5 FT (MIN.) *



* UNLESS OTHERWISE AUTHORIZED BY CWD

PLAN VIEW

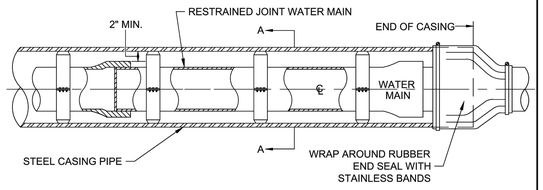


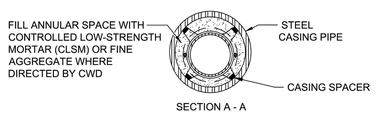
PROFILE VIEW

NOTES:

1. ADJUST HORIZONTAL OR VERTICAL ALIGNMENT AS NEEDED TO ACHIEVE REQUIRED SEPARATION. SEE DETAILS GEN-L01 AND GEN-L02 FOR VERTICAL BEND RESTRAINT AND LOWERING REQUIREMENTS.
2. IF EXISTING SEPARATION IS LESS THAN REQUIRED, SEPARATION MUST BE IMPROVED OR MAINTAINED.
3. SEE SECTION 8.8 OF THE MOST CURRENT VERSION OF '10 STATES STANDARDS - RECOMMENDED STANDARDS FOR WATER WORKS' FOR SEPARATION FROM SEWERS AND SOURCES OF CONTAMINATION.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	HORIZONTAL AND VERTICAL CLEARANCE FOR UTILITIES
NO.	DATE	BY		DETAIL NO.: GEN-017
				SCALE: N.T.S. DATE: 5/31/2024





SECTION A - A

NOTES:

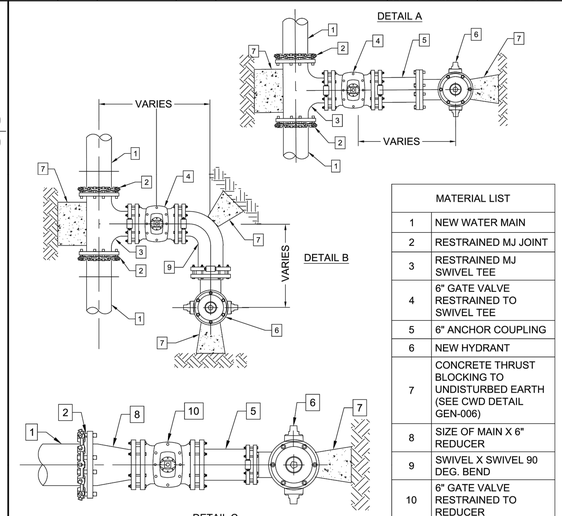
STEEL CASING PIPE:
- ASTM A1097
- MIN. 35,000 PSI SMYS
- MIN. WALL THICKNESS = 3/8"
- MIN. 2" CLEARANCE BETWEEN OUTSIDE DIAMETER OF PIPE JOINT AND INSIDE DIAMETER OF CASING.

CASING SPACERS:
- 8" WIDE STAINLESS STEEL WITH EPDM LINER AND REINFORCED PLASTIC RUNNERS.

SPACING ON PVC PIPE:
- 1 AT END OF BELL
- 1 AT JOINT INSERTION LINE
- 1 AT PIPE MIDPOINT

SPACING ON DUCTILE IRON PIPE:
- MAX. 8 FT

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	WATER MAIN IN STEEL CASING
NO.	DATE	BY		DETAIL NO.: GEN-016
				SCALE: N.T.S. DATE: 7/9/2024

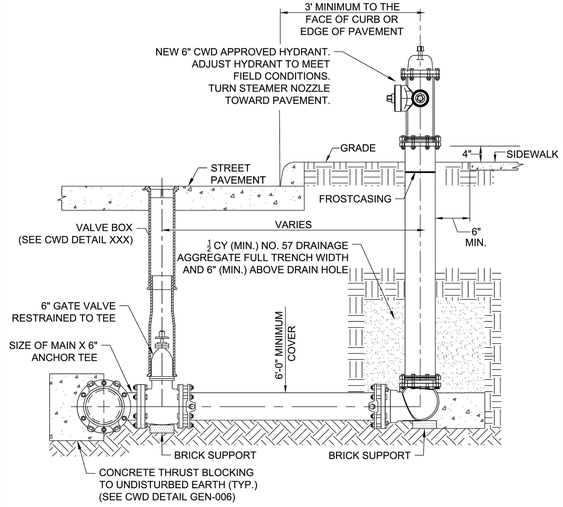


MATERIAL LIST	
1	NEW WATER MAIN
2	RESTRAINED MJ JOINT
3	RESTRAINED MJ SWIVEL TEE
4	6" GATE VALVE RESTRAINED TO SWIVEL TEE
5	6" ANCHOR COUPLING
6	NEW HYDRANT
7	CONCRETE THRUST BLOCKING TO UNDISTURBED EARTH (SEE CWD DETAIL GEN-006)
8	SIZE OF MAIN X 6" REDUCER
9	SWIVEL X SWIVEL 90 DEG. BEND
10	6" GATE VALVE RESTRAINED TO REDUCER

NOTES:

1. INSTALL RESTRAINED JOINTS ON ALL PIPE AND FITTINGS.
2. ADJUST NEW HYDRANT TO MEET FIELD CONDITIONS. TURN STEAMER NOZZLE TOWARD PAVEMENT.
3. INSTALL NEW 8" PIPE WITH 36 LF (MIN.) FULLY RESTRAINED JOINTS OR NEW 12" PIPE WITH 54 LF (MIN.) RESTRAINED JOINTS.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	TYPICAL NEW HYDRANT INSTALLATION DETAILS
NO.	DATE	BY		DETAIL NO.: GEN-H09
				SCALE: N.T.S. DATE: 5/31/2024



NOTES:

1. SEE DETAILS GEN-H02, GEN-H03, GEN-H08 AND GEN-H09 FOR HYDRANT INSTALLATIONS.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	6" HYDRANT ELEVATION DETAIL
NO.	DATE	BY		DETAIL NO.: GEN-H13
				SCALE: N.T.S. DATE: 5/28/2024

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

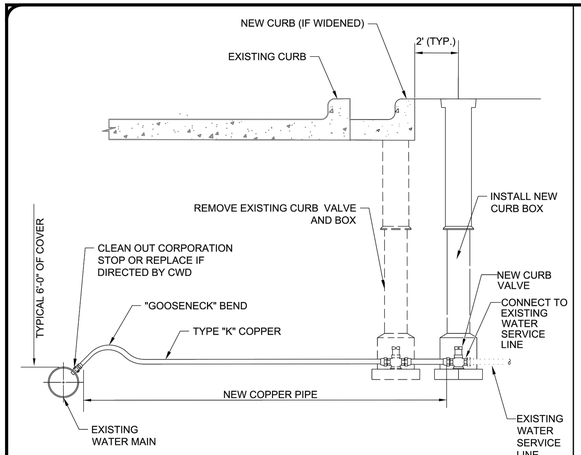
CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

CLEVELAND WATER DEPARTMENT DETAILS

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
DET-4	
SHEET	OF
34	39

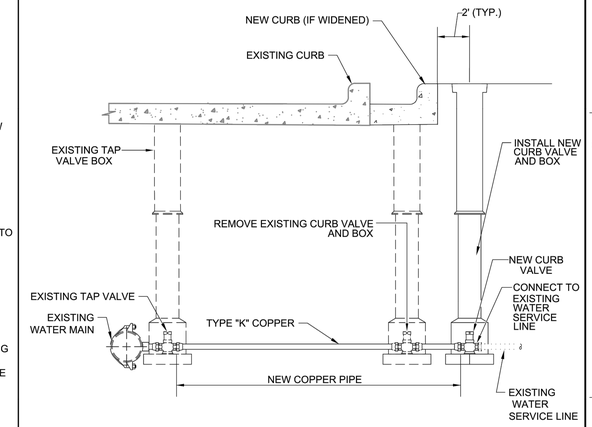
C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECONDWG\SHEETS\C_32053 - DETAILS.DWG - DET-4 - 5/22/2025 3:21:49 PM - WILLIAM VASKO



NOTES:

1. REPLACE ALL CITYSIDE CONNECTIONS. IF EXISTING CONNECTION IS 5/8" OR 3/4", REPLACE WITH 1" TYPE K COPPER.
2. REPLACE ALL CUSTOMER SIDE LEAD AND GALVANIZED CONNECTIONS.

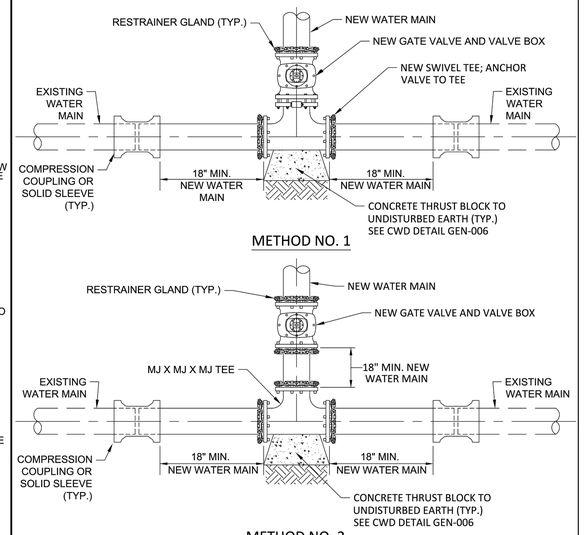
REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	REPLACE 1" & SMALLER WATER SERVICE LINE	
NO.	DATE	BY		DETAIL NO.:	GEN-C01
				SCALE: N.T.S.	DATE: 10/31/2023



NOTES:

1. REPLACE ALL CITYSIDE CONNECTIONS WITH NEW TYPE K COPPER MATCHING THE SIZE OF THE EXISTING CONNECTION.
2. REPLACE ALL CUSTOMER SIDE LEAD AND GALVANIZED CONNECTIONS.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	REPLACE 1 ½" AND 2" WATER SERVICE LINE	
NO.	DATE	BY		DETAIL NO.:	GEN-C03
				SCALE: N.T.S.	DATE: 10/31/2023



METHOD NO. 1

METHOD NO. 2

NOTES:

1. USE METHOD NO. 1 UNLESS DIRECTED BY CWD.
2. THRUST BLOCKS NOT REQUIRED IF BOLTLESS RESTRAINED JOINTS ARE USED.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	CUT-IN TEE DETAILS	
NO.	DATE	BY		DETAIL NO.:	GEN-T01
				SCALE: N.T.S.	DATE: 1/15/2024

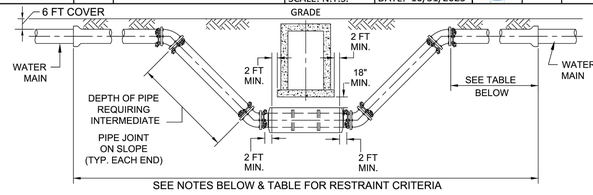


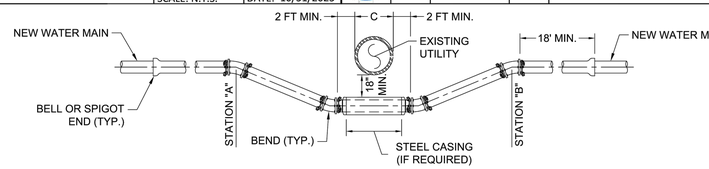
TABLE 1 - RESTRAINED PIPE CRITERIA FOR PIPE LOWERING

DIAMETER	BEND	STATIC PRESSURE	RESTRAINED LENGTHS
8"	11.25°	0-275 PSI	1
	22.5°	0-250 PSI	1
		251-275 PSI	2
	45° (*)	0-125 PSI	1
		126-275 PSI	2
12"	11.25°	0-275 PSI	1
	22.5°	0-165 PSI	1
		166-275 PSI	2
	45° (*)	0-65 PSI	1
		66-215 PSI	2
		216-275 PSI	3
16"	11.25°	0-275 PSI	1
	22.5°	0-115 PSI	1
		116-275 PSI	2
	45° (*)	0-45 PSI	1
		46-165 PSI	2
		166-275 PSI	3

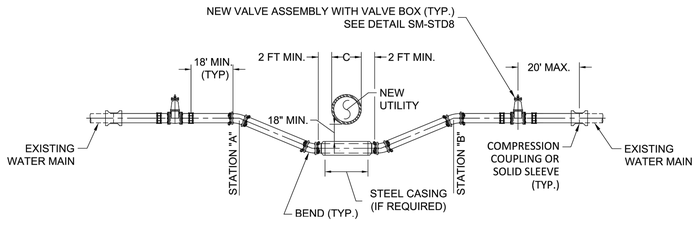
NOTES:

1. TO LOWER WATER MAIN TO CLEAR OBSTACLE WHERE DEPTH OF PIPE LOWERING REQUIRES AN INTERMEDIATE JOINT ON SLOPE, THE ENTIRE OFFSET SHALL HAVE D.I. CLASS 52 BOLTLESS RESTRAINED PUSH-ON JOINT PIPE AND FITTINGS; OR AWWA C-900 RESTRAINED JOINT PIPE AS APPROVED BY CWD. JOINT RESTRAINT SHALL EXTEND BEYOND TOP VERTICAL BEND TO THE LIMITS SHOWN IN TABLE 1.
2. STATIC PRESSURE CALCULATIONS FOR RESTRAINED LENGTHS INCLUDE 75 PSI FOR TESTING.
3. 45° BENDS REQUIRE CWD AUTHORIZATION.
4. SEE DETAIL GEN-L02 FOR ADDITIONAL REQUIREMENTS.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	VERTICAL BEND RESTRAINT REQUIREMENTS	
NO.	DATE	BY		DETAIL NO.:	GEN-L01
				SCALE: N.T.S.	DATE: 5/31/2024



INSTALL NEW WATER MAIN UNDER EXISTING UTILITY



LOWER EXISTING WATER MAIN UNDER NEW UTILITY

NOTES:

1. MAX. BEND ANGLE IS 22.5 DEGREES.
2. NO JOINTS ARE PERMITTED WITHIN 18 FT OF UPPER VERTICAL BENDS.
3. DO NOT INSTALL NEW WATER SERVICE LINES BETWEEN STATIONS "A" AND "B".
4. PROVIDE TEMPORARY WATER SERVICE TO EXISTING CUSTOMERS THROUGHOUT CONSTRUCTION.
5. STEEL CASING IS REQUIRED IF "C" IS 24" OR LARGER.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	WATER MAINS UNDER UTILITIES	
NO.	DATE	BY		DETAIL NO.:	GEN-L02
				SCALE: N.T.S.	DATE: 5/31/2024

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

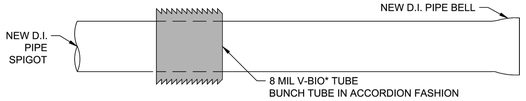
CLEVELAND WATER DEPARTMENT DETAILS

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
DET-5	
SHEET	OF
35	39

C:\CTICAD_DRIVE\$_H\2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECON\DWG\SHEETS\C_32053 - DETAILS.DWG - DET-5 - 5/22/2025 3:21:49 PM - WILLIAM VASKO

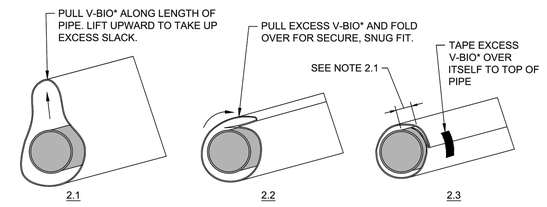
STEP 1:

1.1 REMOVE ALL LUMPS OF CLAY, MUD, CINDERS, OR OTHER MATERIAL THAT MIGHT HAVE ACCUMULATED ON THE PIPE SURFACE DURING STORAGE.
1.2 PLACE TUBE OF V-BIO* AROUND PIPE PRIOR TO LOWERING INTO TRENCH.



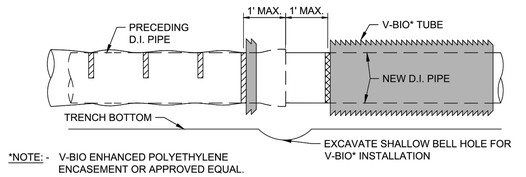
STEP 2:

2.1 MAINTAIN 1 FT MIN. BETWEEN END OF V-BIO* TUBE AND PIPE SPIGOT.



STEP 3:

3.1 INSERT D.I. PIPE SPIGOT INTO PRECEDING PIPE BELL.

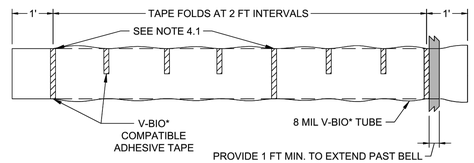


*NOTE: - V-BIO ENHANCED POLYETHYLENE ENCASEMENT OR APPROVED EQUAL.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	V-BIO* POLYWRAP ENCASEMENT	
NO.	DATE	BY		DETAIL NO.:	PWE-001A
				SCALE: N.T.S.	DATE: 5/28/2024

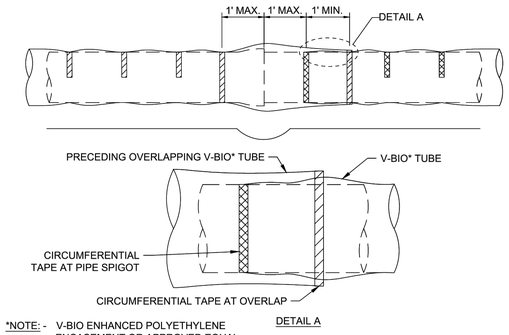
STEP 4:

4.1 TAPE V-BIO* FOLDS ALONG PIPE AT 2 FT INTERVALS. TAPE CIRCUMFERENTIALLY EVERY 4 FT (EVERY OTHER).
4.2 MAKE SURE THAT NO DIRT, BEDDING MATERIAL, OR WATER BECOMES TRAPPED BETWEEN THE WRAP AND THE PIPE.
4.3 ALLOW 1 FT MIN. V-BIO* WRAP TO EXTEND BEYOND PIPE BELL END.



STEP 5:

5.1 OVERLAP V-BIO* WITH PRECEDING V-BIO* TUBE AND TAPE CIRCUMFERENTIALLY. OVERLAP MUST EXTEND AT LEAST 1 FT MIN. PAST V-BIO* TUBE END.

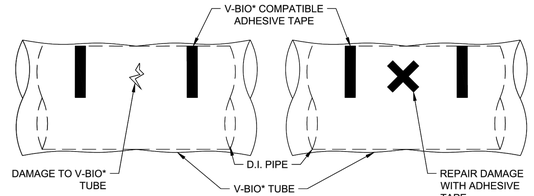


*NOTE: - V-BIO ENHANCED POLYETHYLENE ENCASEMENT OR APPROVED EQUAL.

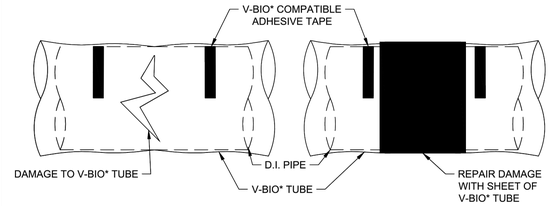
REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	V-BIO* POLYWRAP ENCASEMENT	
NO.	DATE	BY		DETAIL NO.:	PWE-001B
				SCALE: N.T.S.	DATE: 5/28/2024

STEP 6:

6.1 REPAIR ALL SMALL RIPS, TEARS, OR OTHER TUBE DAMAGE WITH ADHESIVE TAPE.
6.2 REPAIR BADLY DAMAGED AREAS WITH SEPARATE V-BIO* SHEETS AND SEAL EDGES WITH CIRCUMFERENTIAL ADHESIVE TAPE.
6.3 BACKFILL TRENCH IN ACCORDANCE WITH AWWA C600 STANDARD. AVOID DAMAGING V-BIO* DURING BACKFILL OPERATIONS.



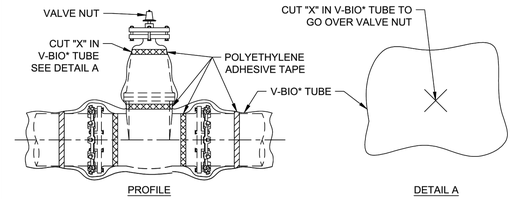
6.1: REPAIR FOR SMALL TEARS AND RIPS



6.2: REPAIR FOR LARGE TEARS AND RIPS

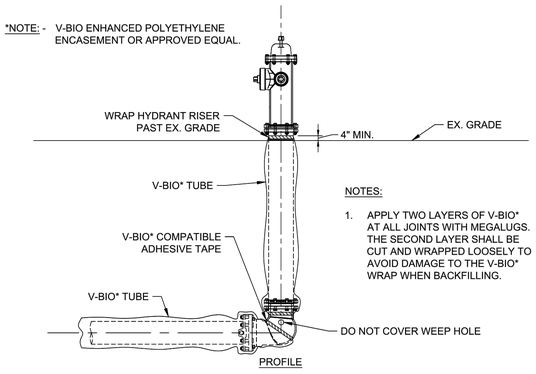
*NOTE: - V-BIO ENHANCED POLYETHYLENE ENCASEMENT OR APPROVED EQUAL.

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	V-BIO* POLYWRAP ENCASEMENT REPAIR	
NO.	DATE	BY		DETAIL NO.:	PWE-001C
				SCALE: N.T.S.	DATE: 4/1/2024



V-BIO* ON VALVES

*NOTE: - V-BIO ENHANCED POLYETHYLENE ENCASEMENT OR APPROVED EQUAL.



NOTES:

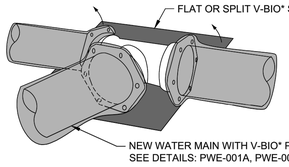
1. APPLY TWO LAYERS OF V-BIO* AT ALL JOINTS WITH MEGALUGS. THE SECOND LAYER SHALL BE CUT AND WRAPPED LOOSELY TO AVOID DAMAGE TO THE V-BIO* WRAP WHEN BACKFILLING.

V-BIO* ON HYDRANTS

REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	V-BIO* POLYWRAP ENCASEMENT FOR APPURTENANCES	
NO.	DATE	BY		DETAIL NO.:	PWE-002A
				SCALE: N.T.S.	DATE: 5/28/2024

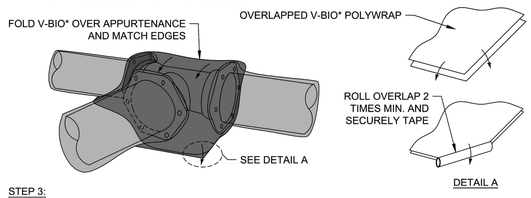
STEP 1:

1.1 WRAP ODD-SHAPED APPURTENANCES SUCH AS TEES, BENDS, AND CROSSES WITH A FLAT SHEET OR SPLIT LENGTH OF V-BIO* BY PASSING THE SHEET UNDER THE PIPE AND OVER THE APPURTENANCE AND BRINGING IT TOGETHER AROUND THE BODY OF THE PIPE.



STEP 2:

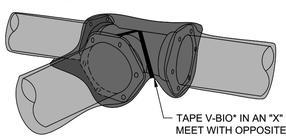
2.1 MAKE SEAMS BY BRINGING THE EDGES OF THE V-BIO* TOGETHER. FOLD SEAMS OVER 2 TIMES MIN. AND TAPE SECURELY TO APPURTENANCE.



STEP 3:

3.1 OVERLAP THE JOINTS AS YOU WOULD WITH A NORMAL INSTALLATION. TAPE THE V-BIO* SECURELY IN PLACE WITH VALVE STEMS AND OTHER PENETRATIONS (SEE DETAIL PWE-002A). REPAIR ANY CUTS, TEARS, OR OTHER AREAS OF DAMAGE WITH ADDITIONAL TAPE AND V-BIO*

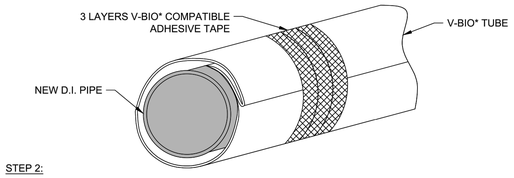
*NOTE: - V-BIO ENHANCED POLYETHYLENE ENCASEMENT OR APPROVED EQUAL.



REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	V-BIO* POLYWRAP ENCASEMENT FOR APPURTENANCES	
NO.	DATE	BY		DETAIL NO.:	PWE-002B
				SCALE: N.T.S.	DATE: 5/28/2024

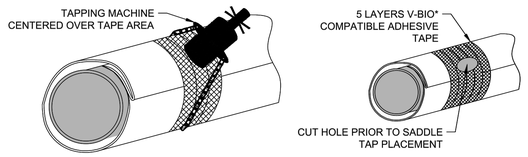
STEP 1:

1.1 WRAP THREE LAYERS OF V-BIO* ADHESIVE TAPE CIRCUMFERENTIALLY AROUND THE PIPE WHERE TAPPING MACHINE AND CHAIN WILL BE MOUNTED.



STEP 2:

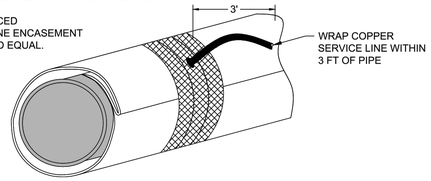
2.1 MOUNT THE TAPPING MACHINE ON THE PIPE AREA COVERED BY V-BIO* ADHESIVE TAPE. MAKE THE TAP AND INSTALL CORPORATION STOP DIRECTLY THROUGH THE TAPE AND V-BIO* TUBE. INSPECT ENTIRETY OF CIRCUMFERENTIAL TAPE WRAP FOR DAMAGE AND MAKE NECESSARY REPAIRS.



STEP 3:

3.1 WRAP ANY CONNECTED COPPER SERVICE LINE WITHIN 3 FT OF THE PIPE WITH V-BIO*.

*NOTE: V-BIO ENHANCED POLYETHYLENE ENCASEMENT OR APPROVED EQUAL.



REVISIONS			CITY OF CLEVELAND DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER (CWD)	V-BIO* POLYWRAP ENCASEMENT SERVICE LINE TAPPING	
NO.	DATE	BY		DETAIL NO.:	PWE-003
				SCALE: N.T.S.	DATE: 5/29/2024

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

CLEVELAND WATER DEPARTMENT DETAILS

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
DET-6	
SHEET	OF
36	39

C:\CTICAD_DRIVES_H2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD. RECON\DWG\SHEETS\C_32053 - DETAILS.DWG - DET-6 - 5/22/2025 3:21:49 PM - WILLIAM VASKO

CONTROL MAP

STATE OF OHIO, COUNTY OF CUYAHOGA, CITY OF RICHMOND HEIGHTS

BEING A PART OF THE ORIGINAL EUCLID TOWNSHIP LOT 66, TRACT 12

BAR SCALE

100' 50' 0' 100'

SCALE: 1"= 100'

NOTES:

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

LEGEND:

- *CENTERLINE MONUMENT*
- *I.PIN SET*
- *I.PIN FOUND*
- *I.PIPE FOUND*
- *Ex R/W* — *LIMITS OF PUBLIC R/W*
- *CENTERLINE PUBLIC R/W*
- *PARCEL LINES*
- *SUBDIVISION LINES*

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	689143.6640	2239439.8360	867.44	Iron Pin (Set)
10	688781.4380	2239375.5710	869.77	Iron Pin (Set)
11	689449.5130	2239667.2660	863.70	Iron Pin (Set)
12	689819.7470	2239884.9510	862.72	Iron Pin (Set)
13	690232.6550	2239857.0230	855.47	Iron Pin (Set)
14	690630.2010	2239889.3310	852.55	Iron Pin (Set)
15	691067.0430	2239835.7440	848.88	Iron Pin (Set)
16	691402.7450	2239869.2770	847.19	Iron Pin (Set)
20	689429.7590	2239122.5650	862.74	Iron Pin (Set)
21	689901.9440	2239029.3610	856.31	Iron Pin (Set)

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
22	690358.9400	2238989.7200	851.58	Iron Pin (Set)
23	690854.4030	2238984.4740	847.40	Iron Pin (Set)
24	691312.6360	2238978.1160	844.42	Iron Pin (Set)
50	688696.0870	2238377.9720	0.00	Monument Box (Fnd)
51	688717.6200	2240236.4520	0.00	Monument Box (Fnd)
52	689354.6240	2239663.7910	0.00	Iron Pin (Fnd)
53	689258.0780	2239592.5670	0.00	Iron Pin (Fnd)
54	689281.7000	2239536.2650	0.00	Iron Pin (Fnd)
55	689542.6640	2239721.4390	0.00	Iron Pipe (Fnd)
56	689996.1750	2239909.1640	0.00	Iron Pin (Fnd)

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
57	689994.8300	2239849.3670	0.00	Iron Pin (Fnd)
58	690044.1140	2239849.2980	0.00	Iron Pin (Fnd)
59	690096.1660	2239908.4140	0.00	Iron Pin (Fnd)
60	691360.4470	2239853.0740	0.00	Monument Box (Fnd)
61	689006.2590	2239472.7600	0.00	Iron Pin (Fnd)
62	689215.4640	2239314.9710	0.00	Iron Pin (Fnd)
63	689275.4130	2239334.6470	0.00	Iron Pin (Fnd)
64	689369.6690	2239231.3650	0.00	Iron Pin (Fnd)
65	689344.1420	2239173.8180	0.00	Iron Pipe (Fnd)
66	689656.5230	2239073.8350	0.00	Iron Pin (Fnd)

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
67	689764.2520	2239052.3880	0.00	Iron Pin (Fnd)
68	689700.1790	2239001.5960	0.00	Iron Pipe (Fnd)
69	689799.2470	2238988.9170	0.00	Iron Pin (Fnd)
70	691349.4430	2238996.8540	0.00	Monument Box (Fnd)
71	691349.5800	2238996.9320	0.00	Monument Box (Fnd)
72	691346.5800	2238784.9700	0.00	Monument Box (Fnd)
73	691364.7690	2240183.0190	0.00	Monument Box (Fnd)
74	689840.2610	2239047.2970	0.00	Iron Pin (Fnd)
111	689449.5130	2239667.2660	863.71	Iron Pin (Set)
112	689819.7470	2239884.9510	862.72	Iron Pin (Set)

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
113	690232.6550	2239857.0230	855.44	Iron Pin (Set)
114	690630.2010	2239889.3310	852.52	Iron Pin (Set)
115	691067.0430	2239835.7440	848.87	Iron Pin (Set)
116	691402.7450	2239869.2770	847.15	Iron Pin (Set)
120	689429.7590	2239122.5650	862.74	Iron Pin (Set)
121	689901.9440	2239029.3610	856.31	Iron Pin (Set)
200	691015.5440	2239837.4660	851.53	Benchmark (Set) A IN ALBERTVL

STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

SURVEY CONTROL 1

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	Control 1
SHEET	37
OF	39

C:\ETCAD_DRIVE_HOD\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD RECON\DWG\SHEETS\C_32053 - SURVEY CONTROL.DWG - CONTROL 1 - 5/22/2025 2:39:55 PM - WILLIAM VASKO


CONTROL MAP
STATE OF OHIO, COUNTY OF CUYAHOGA,
CITY OF RICHMOND HEIGHTS
BEING A PART OF THE ORIGINAL EUCLID TOWNSHIP LOT 66, TRACT 12
N
BAR SCALE
100' 50' 0' 100'
SCALE: 1"= 100'
SCOTTISH HIGHLANDS No.5 RESUBDIVISION PLAT VOL. 197 PAGE 23
SCOTTISH HIGHLANDS SUBDIVISION NO.4 PLAT VOL. 179 PAGE 36
SCOTTISH HIGHLANDS PLAT VOL. 139 PAGE 10
BRANDYWINE DRIVE 60'
BALMORAL DRIVE 60'
DUMBARTON BLVD. 60'
CLAYMORE BLVD. 60'
HARMS ROAD 80'
HARRIS ROAD 50'
EUCLID-CHAGRIN PARKWAY 80'
DOUGLAS BLVD. 60'
RIGHT OF WAY VACATED PER PLAT VOL.205 P. 33
IP MON BOX FND & USED
IP MON BOX USED FOR LINE
N89°04'48"E 338.10'
N89°04'48"E 17.01'
N89°16'04"E 714.94'
S89°16'04"W 262.00'
S89°16'04"W 330.01'
N89°21'27"E 230.01'
N0°55'12"W 759.24'
S0°39'50"E 690.00'
N0°38'32"W 223.25'
N0°46'23"W 1509.87'
N1°08'43"W 1315.69'
PN:661-17-002 JONATHON E. HENRY 387 DOUGLAS BLVD
PN:661-17-005 THEODORE J FARINACCI
PN:661-17-001 ROBERT HIGHAM
PN:661-18-014 DARNELL PAUL
PN: 662-13-054 THOMAS R. & MARIA HARRIS, TRUSTEES
PN: 662-13-054 TARA MOORE
PN: 662-13-011 GAYLE L PHILPOT 23950 EUCLID CHAGRIN PKWY
PN: 662-13-053 CAROL WOJCIECHOWSKI 392 DOUGLAS BLVD
PN: 662-13-030 ALLAN L HERBERT 391 DOUGLAS BLVD
PN: 662-13-052 MARY J. & MICHAEL CERVEN
PN: 662-13-031 EUGENE F PRANIEWICZ
PN: 662-13-050 CHRISTINE & ERIC HILL
PN: 662-13-012 DUSAN M. ZITNIK 394 DOUGLAS BLVD
PN: 662-13-029 DEIRDRE LANIGAN 393 DOUGLAS BLVD
PN: 662-13-032 IESHA KIDD
PN: 662-13-049 MARIA & ANNA LYATKHER
PN: 662-13-013 MARY S. ROBERTS 396 DOUGLAS BLVD
PN: 662-13-028 MARC T. PARKER 395 DOUGLAS BLVD
PN: 662-13-033 TERRELL BOWDEN
PN: 662-13-048 JOHN L. JURANKO
PN: 662-13-014 ROBERT ALLEN JR 400 DOUGLAS BLVD
PN: 662-13-027 NORTH COAST COMMUNITY HOMES, INC 399 DOUGLAS BLVD
PN: 662-13-034 DONALD ARDALE
PN: 662-13-047 MICHAEL S. & NICOLE A. ADKINS
PN: 662-13-015 JOHN A &JUNE E JOHNSON 402 DOUGLAS BLVD
PN: 662-13-026 JAMES F. FOLEY 401 DOUGLAS BLVD
PN: 662-13-035 JOHN R & NELETRIE TOLBERT
PN: 662-13-046 NORTH COAST COMMUNITY HOMES, INC.
PN: 662-13-016 CHRISTOPHER P. & MELISSA R. SHEEHAN 404 DOUGLAS BLVD
PN: 662-13-025 SEMYON SHULMAN 403 DOUGLAS BLVD
PN: 662-13-036 SUSAN J. RAPPAPORT
PN: 662-13-045 DANIEL A. & DEBORAH J. CEK
PN: 662-13-017 GREGORY DECAR 408 DOUGLAS BLVD
PN: 662-13-024 MICHAEL CARR 407 DOUGLAS BLVD
PN: 662-13-037 MARIANNE HOGLER
PN: 662-13-044 ERIC VAN NOSTRAN
PN: 662-13-018 DESTINY LYNN FORD 410 DOUGLAS BLVD
PN: 662-13-023 DAVID JESSE TAYLOR 411 DOUGLAS BLVD
PN: 662-13-038 SAMMIE L. DUNNER JR.
PN: 662-13-043 MICHAEL SCOTT
PN: 662-13-019 JUDE S FRANKLIN 412 DOUGLAS BLVD
PN: 662-13-022 JANICE A. & JAMES E. GIANGUZZO 413 DOUGLAS BLVD
PN: 662-13-039 LISA A STOREY
PN: 662-13-042 ROBERT STOREY
PN: 662-13-020
PN: 662-13-041 SHERWOOD M & MARCIA R.

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

SURVEY CONTROL 2

PROJECT NO.	32053
DISCIPLINE	CIVIL
SHEET NAME	Control 2
SHEET 38	OF 39

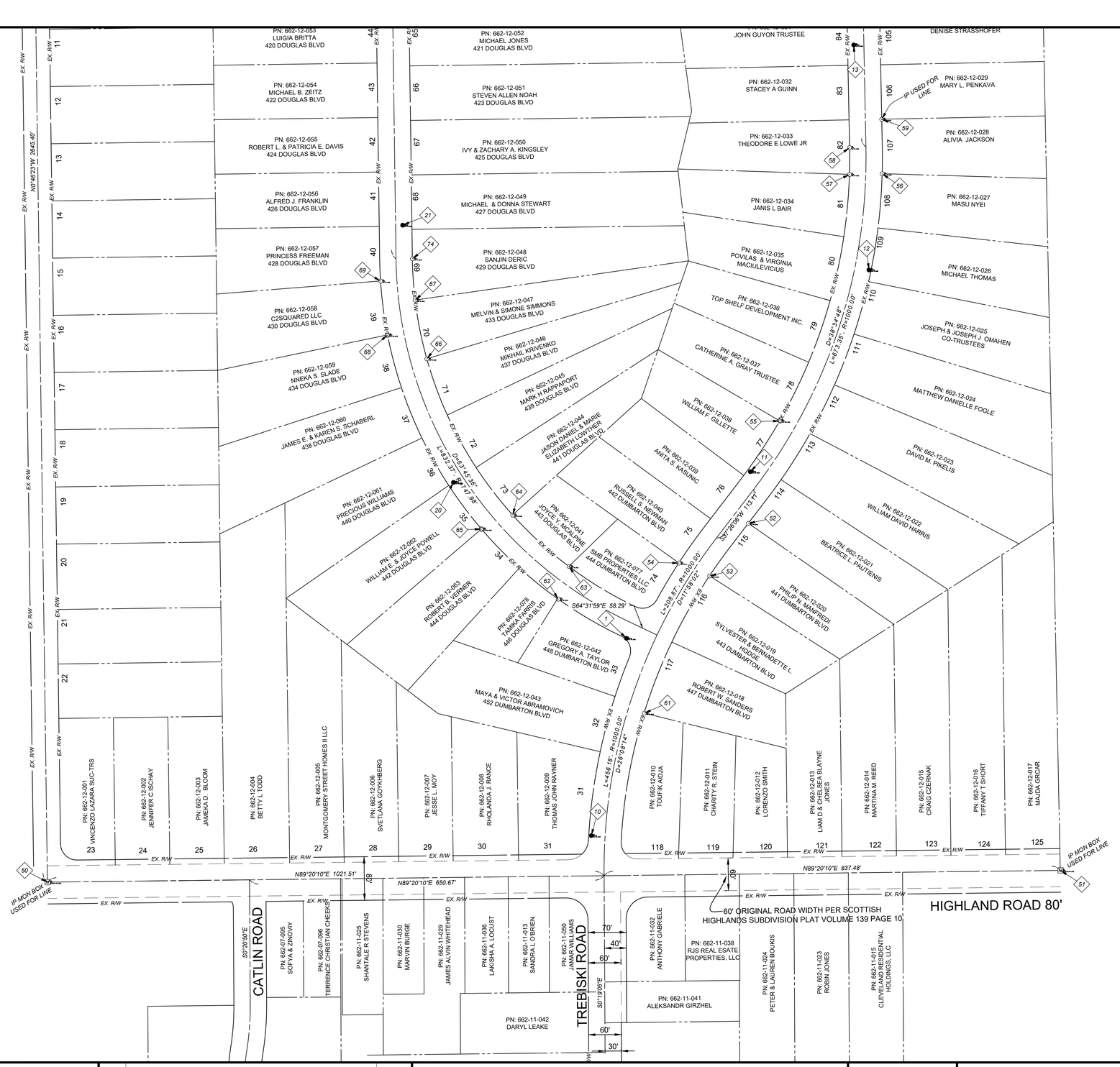
STATE OF OHIO
WILLIAM T. VASKO E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

CONTROL MAP

STATE OF OHIO, COUNTY OF CUYAHOGA,
CITY OF RICHMOND HEIGHTS
BEING A PART OF THE ORIGINAL EUCLID TOWNSHIP LOT 66, TRACT 12

BAR SCALE
100' 50' 0' 100'
SCALE: 1"= 100'



STATE OF OHIO
WILLIAM T. VASKO
E-86752
REGISTERED PROFESSIONAL ENGINEER

verdantas

NO	REVISION	DATE

CITY OF RICHMOND HEIGHTS

DOUGLAS BOULEVARD RECONSTRUCTION

CUYAHOGA COUNTY, OHIO

ISSUED FOR:	BID
ISSUE DATE:	JUNE, 2025
SCALE:	AS SHOWN
DESIGNED BY:	WTV
DRAWN BY:	WTV
CHECKED BY:	JRH

SURVEY CONTROL 3

PROJECT NO.	
32053	
DISCIPLINE	
CIVIL	
SHEET NAME	
Control 3	
SHEET	OF
39	39

C:\ETTCAD_DRIVE\BL_HC2025\RICHMOND HEIGHTS\32053 - DOUGLAS BLVD RECON\DWG\SHEET\SC_32053 - SURVEY CONTROL.DWG - CONTROL 3 - 5/22/2025 2:59:50 PM - WILLIAM.VASKO