GENERAL NOTES

1. Underground facilities, structures, and utilities have been plotted from available surveys and drawings from various sources.Therefore, their locations must be considered approximate only. Also, there may be others, the existence of which is not presently known. The Board of County Commissioners of Medina County and the Medina County Sanitary Engineering Department expressly disclaims any responsibility for the accuracy and completeness of information given regarding existing underground utilities.

2. The owner offers the existing underground information as shown on the profile sheets as a guide only, but does not guarantee or assume any liability implied or otherwise for the accuracy of information given hereon. It shall be the contractor's responsibility to ascertain for himself the conditions that he may encounter during completion of the project.

3. During construction, the survey centerlines, offset locations, hubs, stakes, flags, markers, pins, and/or reference points must be protected by the contractor. If it is necessary to reset any hubs, stakes, flags, markers, pins and/or reference points which have been disturbed, the contractor shall pay the engineer all such costs of restaking at prevailing wage rates.

4. All existing property pins, rods, monuments, monument boxes, and/or benchmarks in the construction area must be protected at all times. It shall be the responsibility of the contractor to re-establish those items disturbed by his work, by using his own engineering forces, and/or as directed by the engineer at no additional cost to the owner.

5. The contractor shall visit the site and become familiar with the existing conditions prior to placement of his bid for the project.

6. Blasting will not be permitted unless approved by the owner.

7. All abandoned pipes shall be bulkheaded and filled with grout as noted on the plans.

8. All utility services shall be maintained throughout the construction period.

9. All manholes, catch basins, monument rims, valve boxes, castings, and covers shall be adjusted to finished pavement elevations, final grade or as directed by the engineer.

10. The contractor shall submit shop drawings for approval before any work can commence.

11. The contractor shall verify all dimensions and conditions related to existing construction, existing services,temporary service, and the site.

12. The contractor shall be responsible for the design, installation, and final clearance of any required needling, underpinning, shoring or bracing of existing structures.

13. Notify the engineer of any unusual soil conditions, such as springs or seepage of water encountered, or where a different bearing material is evident and there is a question of the bearing capacity.

14. See Specifications Book for: Quality of construction required, performance levels of workmanship, manufacturing and industrial standards, strength regulations, and guarantee requirements.

15. Minor alignment changes may be required during construction due to possible utility conflicts, as directed and/or approved by the engineer.

16. No supplemental clauses, conditions, notations, or stipulations by the bidders shall be permitted on or attached to the bid proposal.

17. The contractor is to confirm the invert elevations of all existing sewers affected by his work prior to commencement of work and report all findings to the engineer.

18. Paving and/or resurfacing work shall not be scheduled for completion until prior approval of the contractor's progress schedule has been granted or directed by the engineer.

19. The contractor shall obtain highway use permits from the Medina County Highway Engineer prior to commencing work within the Township or County road right of way. Individual driveway apron permits may be required based on the scope of work. Contact the Medina County Highway Engineer Permit Department to determine if permits are necessary. The Medina County Sanitary Engineer will obtain O.D.O.T. permits for work in the State of Ohio Right of Way. For any work in the City of Brunswick or the City of Medina right of way, the contractor is responsible for contacting the City to determine if any permits are necessary and to register with the City.

20. Work limits shall be limited to within the Right-of-Way. All of the contractor's operations must be confined within the existing street's Right-of-Way limits or existing easements acquired by the owner. Any additional construction easements needed for completion of his work must be secured from the property owners by the contractor at his expense and at no additional cost to the owner.

21. Excess excavation for the project shall be wasted on the project site as directed by the engineer, or excess excavation not wasted on the job site shall be hauled away by the contractor at his expense at no additional cost to the owner. Materials disposed of off-site must be disposed in an environmentally sound fashion and in accordance with all local, state, and federal regulations.

22. Trees: All trees shall be saved unless otherwise noted, or as directed by the engineer. Extreme caution must be taken to protect trees. Any damage to the trees must be repaired and the method of repair must receive prior approval from the engineer.

23. Restoration of the work area: Before release of the final payment a complete review of the entire work area will be made to verify the area is restored to pre-construction condition or better.

24. The locations of the underground utilities shown on the plans are as obtained from the owners of the utility, as required by section 153.64 Ohio Revised Code. At least two (2) working days prior to commencing construction operations, in an area which may involve underground utility facilities, the OHIO 811 and the owners of each underground utility facility shown on the plans shall be contacted by the contractor. The owner of the underground utility facility shall, within forty-eight (48) hours, excluding Saturdays, Sundays, and legal holidays, after notice is received, staked, mark or otherwise designate the location of the underground utility facilities in the construction area in such a manner as to indicate their course together with the approximate depth at which they were installed. The marking or locating shall be coordinated to stay two (2) days ahead of the planned construction.

25. All construction equipment shall be equipped with mufflers in accordance with federal safety standards.

26. All heavy equipment on road surfaces shall include metal or rubber pavement tracks.

27. The contractor shall assume full responsibility for making all necessary arrangements with all utility companies.

CAUTION:
Contact all utilities by calling
OHIO811 (1-800-362-2764)
before beginning construction.

Additional Notes for Townships and County Highways:

Medina County Highway Engineer inspectors will periodically check that:

1. Signs & Flaggers (Patrolmen) are used every day.
2. The road is washed every day.
3. The excavated area is closed or plated daily.
4. Premium fill is used if the trench is within 5'-0" of the edge of the pavement.
5. Trench boxes & ladders are used as required by M.C.H.E.
6. All equipment is parked 10'-0" minimum from the pavement edge.

WATER NOTES

1. Water mains are to be installed in accordance with the construction and material specifications as detailed in the Medina County Sanitary Engineers Rules and Regulations.

2. Pipe Materials:

   A) Polyvinyl Chloride Pressure Pipe and Fittings:
   All class rated PVC pipe and fittings shall conform to AWWA C-900 and C-909 for 6" through 12" and AWWA C-905 for 14" through 20" "Standard for Polyvinyl Chloride (PVC) Pressure Pipe for Water." All class rated pressure pipe shall be Class 150 minimum DR-18 for 6" thru 12" and PR-235, DR-18 for 14" thru 20". When using PVC C-900 or C-909 with Ductile iron valves or fittings UNI-FLANGE 1300 restrainer glands or approved equal must be used.

   B) Ductile Iron Pipe:
   Pipe shall conform to the latest edition of American Standards Association and American Water Works Association Standards ANSI/AWWA-C151/A21.51 for Ductile Iron pipe, minimum thickness class 52 (or pressure class), centrifugally cast in metal molds or sand lined molds for water or other liquids, All pipe shall be cement lined in accordance with the latest edition ANSI/AWWA-C104/A21.4 specifications for cement mortar lining for gray-iron and Ductile Iron pipe and fittings for water. Joints shall be furnished with push-on type joints in accordance with ANSI/AWWA C111/A21.111 rubber gasket joints for gray iron and ductile iron pressure pipe fittings. When using CL-52 Ductile Iron water line with Ductile Iron valves or fittings, restrained glands must be used.

   C) High Density Polyethylene:
   Materials used for the manufacturing of polyethylene pipe and fittings shall be PE 3408 High Density Polyethylene (HDPE) meeting the ASTM D3350 cell classification of 345444C.

3. The installation of Polyvinyl Chloride (PVC) pressure pipe and fittings for water mains shall follow ANSI/A.W.W.A. C 605.

4. The installation of Ductile Iron (D.I) pressure pipe and fittings for water mains shall follow ANSI/A.W.W.A. C 600.

5. Minimum depth of cover over water mains shall be five feet (5') unless otherwise noted.

6. Standard plastic tracer tape is to be buried approximately four feet (4') directly above water line to facilitate its location at a later date.

7. Hydrants shall be Mueller Centurion Model A-423, or Kennedy K-81D, 5" valve opening; minimum 200 P.S.I. operating pressure. All valves and hydrants must be from the same manufacturer (i.e. Mueller valves and Mueller hydrants, not Kennedy valves and Mueller hydrants). A six inch (6") hydrant assembly shall include the tee, valve, pipe, thrust blocking, anchor couplings at all joints, and necessary offset to set hydrant to proper grade.

8. Resilient Wedge Gate Valves must be Mueller series A-2360-20 or Kennedy Kenseal II, minimum 250 P.S.I. operating pressure. All fittings to be mechanical joint.

9. All bends, tees, crosses, valves, hydrants, and appurtenances shall be thrust blocked and have restrained joints.

10. Polyethylene Encasement:
    All mechanical joints, restrained mechanical joints, line valves, ductile iron pipe and fittings where shown on the drawing, or where required, shall be polyethylene encased. Polyethylene Encasement for mechanical joints, restrained mechanical joints, or any joint requiring bolts, shall be generally in accordance with American Nation Standard ANSI/A.W.W.A. C105/A21.5-82 for Polyethylene Encasement for Ductile-Iron Piping for Water and Other Liquids. Mechanical joints, restrained mechanical joints, and all bolted joints shall have double Polyethylene Encasement of class "C" (black) film, method "C" doubling sheet and providing one foot (1') minimum overlap on pipe or fitting on both sides of joint. All pipe and fittings where shown on the drawings or where otherwise required to be Polyethylene Encased shall be encased in using class "C" film, method "B". Polyethylene Encasement shall be securely taped snug around pipe and fittings.

11. Painting and Stainless Steel Bolts:
    After erection and before polyethylene encasement, all exposed or damaged coatings and all bolts for mechanical joints, restrained mechanical joints, flanges and victaulic or compression type bolted sleeve couplings shall be cleaned and painted with three (3) field coats of Intertol 50, Bitumastic 50, or equivalent. All bolts exposed to the ground shall be 316 stainless steel, including valve and packing nuts/bolts, mechanical "T" bolts, and bolts used on Mega-Lug anchors. Field painting of stainless steel items will not be required.

12. All water main trenches within the Zone of Influence are to be backfilled per the requirements of the road authority. Trench conditions for type "K" copper (1" or larger service connection) shall be bedded with #57 wash gravel to 1' above the pipe and backfilled per the requirements of the road authority.

13. Testing of all newly installed water mains by the MCSE is required. Testing requirements for acceptance of the water lines are:
    A) A hydrostatic pressure and leakage test per AWWA 600 specs.
    B) A disinfection (chlorination) test per MCSE standard specs. The disinfection of water mains shall follow ANSI/A.W.W.A. C 651.

14. Costs for all tests relative to testing and inspection shall be borne by the developer (owner).

15. In the testing of a new water main installation, where it is connected to an existing water main for the test, failure of the test or any damage to the existing facilities shall be the sole responsibility of the contractor.

16. Prior to performing water taps and installing the individual water service connections, the developer shall pay all required permit fees.

17. Prior to paving, the contractor shall make the water taps and install the connections from the water main to the right of way and install the curb stop and box to one foot (1') beyond the right of way limits. The contractor will be responsible for installing a pigtail from the curb box to one foot (1') beyond the general utility easements. All excavation and backfill will be performed by the contractor.

18. All water service connections shall maintain a minimum of four feet (4') of cover. At the end of each pig tail, or one foot (1') beyond the general utility easements a four inch by four inch (4"x4") pressure treated wood post shall be buried a minimum of four feet (4') deep (leaving a minimum of two and a half feet (2.5') exposed). **NOTE: The sub lot number or city lot number (whichever is applicable) must be permanently displayed on the front of each four by four (4x4) before final inspection of the project. Please refer to water detail sheet.

19. The following minimum horizontal separations (measured out-to-out clear) between the proposed water line and the sewers shall be maintained:
    A) 10 foot separation from the storm sewer
    B) 10 foot separation from the sanitary sewer

20. The following minimum vertical clearances (measured out-to-out clear) between the proposed water line and the sewers shall be maintained:
    A) 18 inch clearance from the storm sewer
    B) 18 inch clearance from the sanitary sewer

21. A minimum 35 PSI pressure shall be delivered to the curb stop boxes during normal operating conditions for all water service connections.

SANITARY SEWER NOTES

1. All sanitary sewers and appurtenances shall be constructed in accordance with the Medina County Sanitary Engineers Rules and Regulations.

2. Pipe Materials:

   Pipe shall be of the size and material specified in the proposal and shown on the plans. Pipe for sanitary sewers will be placed in two (2) categories:

   1) Flexible Pipe:
      a) ASTM-D-2680, Acrylonitrile-Butadiene Styrene (ABS) composite pipe.
      b) ASTM D-3034, F-789, F679 & F-794 Polyvinylchloride (PVC) pipe SDR 35.
      c) ASTM F-794, F-949, Profile Wall PVC Gravity Sewer Pipe.
      d) Certa-Flo Greenline PVC Gravity Sewer Pipe.

   2) Ridged Pipe:
      a) Ductile Iron Pipe, Class 52

   All flexible pipe bedding and backfilling shall be in accordance with ASTM D-2321 & MCSE Standard Drawings. MCSE Standard Drawings shall govern, should any event occur.

3. P.V.C. Trench Conditions:
   A. Use Class 'II' bedding per O.D.O.T. section 603.06. The material for this bedding shall meet O.D.O.T. specifications for #57 limestone.

   B. Trenches within the zone of influence are to be backfilled per the requirements of the authority having highway maintenance responsibility.

   C. For P.V.C. the bedding material shall be installed to a minimum of six inches (6") under the pipe and 12" above the pipe.

   D. If fill is to be constructed below the sanitary sewer, compaction tests indicating 95% compaction must be performed and observed by the M.C.S.E. and submitted for approval before construction of any sanitary sewer within said fill area can begin.

4. Sewers shall be deep enough to receive wastewater from basements, and to prevent freezing.

5. Sewers shall be laid with uniform slope between manholes.

6. All manholes shall be constructed of precast reinforced concrete with "O" ring (premium) type joints. In addition to premium joints, all riser ledges must have a layer of either mastic roping, flexible tar mastic, or butyle strips (see sanitary sewer detail sheet).

7. Manholes shall be installed at the end of each line, at all changes of grade, size, alignment, all intersections and distances not greater than 400' for sanitary sewers that are 15" or less, and at 500' feet for sanitary sewers that are 18" to 30".

8. All manholes shall be set to grade per the manhole schedule by the contractor at the time of installation. The final adjustment of the castings shall be the responsibility of the paving contractor. Final inspection, approval and acceptance of the sewer system by the Medina County Sanitary Engineer Department.

9. Water tight manhole covers shall be used where the manhole tops may be flooded by street run-off or high water. Inlet and outlet pipes shall be joined to the manhole by a gasketed, flexible, water tight connection.

10. Testing:

    1.Televised inspection of all sanitary sewers.

    2. Deflection Test:

    A) Deflection tests shall be performed on all flexible pipe. The tests shall be conducted after the final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system.

    B) No pipe shall exceed a deflection of 5 percent of the inside diameter. If deflection exceeds 5 percent, the pipe shall be excavated. Replacement or correction shall be accomplished in accordance with the requirements in the approved specifications.

    C) The rigid ball or mandrel used for the deflection test shall have a diameter not less than 95 percent of the base inside diameter or average inside diameter of the pipe depending on which is specified in the ASTM Specification, including the appendix, to which the pipe is manufactured. The tests shall be performed without mechanical pulling devices.

    3. Air Test:

    A) The air test shall, as a minimum, conform to the test procedure described in ASTM C-828 for clay pipe, ASTM C-924 for concrete pipe, and ASTM F-1417 for plastic pipe. For other materials, test procedures shall be approved by the regulatory agency.

    B) All sanitary manholes shall be air tested per ASTM specification C 1244-93 to verify water tightness and proper construction per plan details.

    4. All costs relative to the above tests shall be borne by the contractor.

11. Residential sanitary sewer connections shall be four inch (4") PVC (same as sanitary specifications) laid at a minimum slope of 1.00% and carried to a point one foot (1') beyond the right of way limits. Roof drains, foundation drains, and other clean water connections to the sanitary sewer system are prohibited. Commercial sanitary sewer connections shall be (6") PVC (same as sanitary specifications) laid at a minimum slope of 1.00% .

COUNTY: MEDINA | LOCATION: ####
DRAWN BY: EJ | REVIEWED BY: JS | DATE:4/20/2023

BY:	DESCRIPTION	DATE
EJ	REVISIONS TO SEWER NOTES	4/20/23
	REVISIONS TO WATER NOTE #17	

- GENERAL NOTES -
/

- PLAN PREPARED BY -
MEDINA COUNTY
SANITARY ENGINEER
JEREMY SINKO, P.E.
791 WEST SMITH RD.
MEDINA, OHIO 44256
(330) 723-9585

PROJECT NUMBER

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SHEET NUMBER

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