ALLEN COUNTY
Sanitary Engineering Department

204 N. Main Street, Suite 301, Lima, OH 45801

RULES, REGULATIONS, PROCEDURES AND GENERAL SPECIFICATIONS GOVERNING WASTEWATER TREATMENT AND COLLECTION

The following Procedures and Criteria are for the information and use of Developers, their Engineers and others in planning and designing sanitary sewers and wastewater treatment facilities in Allen County, Ohio. These Procedures and Criteria are established under authority of Section 6117 and 6103 of the Ohio Revised Code.

Accepted by the Board of County Commissioners on

BOARD OF COUNTY COMMISSIONERS

Jay Begg

Cory Noonan

Greg Sneary

August 2017

Stephen M. Kayatin, P. E.
Sanitary Engineer

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 PROTECTION OF COUNTY SANITARY SEWERAGE SYSTEMS

1.1 Purpose

The rules and regulations contained herein are adopted to provide a well- planned and uniform sanitary sewage system in Allen County, Ohio, in order to preserve and promote the general health and welfare of the public.

1.2 Authority

The Board of County Commissioners, Allen County, Ohio, are authorized to adopt rules and regulations for the construction, maintenance, protection and use of sewers and sewer improvements as provided in Chapter 6117.01 of the Ohio Revised Code.

1.3 Interpretation

The provisions of these regulations shall be held to be minimum requirements. Whenever these provisions are different from the requirements of other lawfully adopted regulations the more restrictive rule or higher standard shall prevail.

1.4 References

1.4.1. City of Lima, Ohio's Standards and Specifications

1.4.2. Water supply, sewerage, and sewage treatment for public buildings in Ohio.

1.4.3. Recommended standards for sewage works, dated May 10, 1960, (ten states standards).

1.4.4. Allen County Subdivision Regulations.(Updated)

1.4.5 Chapter 6117.01 of the Ohio Revised Code

1.5 Definitions

1.5.1 **Bill of Sale –** Instrument required to be signed by the Developer to convey all infrastructure improvements to the Commissioners.

1.5.2 **Biochemical Oxygen Demand** - (BOD) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure, as prescribed in "Standard Methods", in five days at 20 degrees Celsius, expressed in milligrams per liter (mg./l.).

1.5.3 **Building sewer**- part of the sanitary system, which connects the plumbing of the house or building to a common or public sewer. The building sewer begins three feet from the foundation wall.

1.5.4 **Compatible Pollutants** - Pollutants that the treatment plant was designed to treat which are BOD, SS, and Fecal Coliform bacteria, plus additional pollutants identified in the NPDES Permit if the publicly owned treatment works were designed to treat such pollutants and in fact does remove such pollutants to a substantial degree.

1.5.5 **Contractor** -shall mean any person undertaking a contract under these Rules and Regulations acting directly or through a duly qualified and authorized representative.

1.5.6 **County** - shall mean Allen County, Ohio.

1.5.7 **County Commissioners** - shall mean board of County Commissioners of Allen County.

1.5.8 **County Engineer** - shall mean the County Engineer of Allen County, Ohio.

1.5.9 **Developer's Agreement** - agreement required to be entered into with the Commissioners outlining all requirements of the Developer to connect to a sanitary or waterline improvement owned by the Commissioners for a development area.

1.5.10 **Domestic sewage** - sewage derived principally from dwellings, business buildings, institutions and the like, which originates within the building, including the waste from kitchens, water closets, lavatories, bathrooms, showers and laundries.

1.5.11 **Easement** - shall mean an acquired legal right for the specific use of land owned by others.

1.5.12 **Foundation Drains** - Subsurface drains lay around the foundation of a building, either within or outside of the building foundation for the purpose of carrying ground or subsurface water to some point of disposal.

1.5.13. **Industrial sewage** - the liquid waste from industrial processes as distinct from domestic sewage.

1.5.14 **Industrial User** - shall mean, for the purpose of industrial cost recovery:

I) Any nongovernment, nonresidential or noncommercial user of the treatment works which discharges to the sanitary sewer.

In determining the amount of a user's discharge for the purposes of high strength surcharges, the County may exclude domestic wastes or discharges from sanitary conveniences.

II) Any user of the treatment works that discharges wastewater to the treatment works which contains toxic pollutants or poisonous solids, liquid, or gases in sufficient quantity either singly or by interaction with other wastes, to contaminate the sludge of any County systems, or to injure or to interfere with any sewage treatment process, or which constitutes a hazard to humans or animals, creates a public nuisance, or creates any hazard in or has an adverse effect on the waters receiving any discharge from the treatment works.

1.5.15 **Industrial Waste** - shall mean the wastewater from industrial processes, trade, or business as distinct from domestic or sanitary wastes.

1.5.16 **Infiltration** - shall mean water other than wastewater that enters a sewer system (including building drains and building sewers) from the ground through such means as defective pipes, pipe joints, connections, or manholes, downspouts, groundwater drains, foundation drains, infiltration does not include, and is distinguished from, inflow.

1.5.17 **Infiltration/Inflow** - shall mean the total quantity of water from both infiltration and inflow without distinguishing the source.

1.5.18 **Inflow** - shall mean water other than wastewater the enters sewer system (including building drains and building sewers) from sources such as roof leaders, cellar drains, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface run-off, street wash waters, or drainage, inflow does not include, and is distinguished from, infiltration.

1.5.19 **Inspector** - shall mean a duly appointed representative of the County who is responsible for the enforcement of the specifications and quality of construction.

1.5.20 **Non-Industrial User** - shall mean users of the wastewater facilities not classified as an industrial user.

1.5.21 **Normal Domestic Wastes** - shall mean wastes which are characterized by a per capita discharge of 75 gal/day at a loading of 240 mg/l BOD and 200 mg/l SS (normal domestic sewage).

1.5.22 **NPDES Permit** - shall mean National Pollutant Discharge Elimination System as issued by the State of Ohio Environmental Protection Agency under authorization issued by the U.S. EPA. Region V.

1.5.23 **ODOT** - shall mean Ohio Department of Transportation

1.5.24 **Operation, Maintenance, and Replacement Costs** - shall mean labor, materials, supplies, equipment accessories, and appurtenances costs required to operate the facilities, keep the facilities in operating condition, and maintain the capacity and performance during the service life of the treatment works for which such works were designed and constructed.

1.5.25 **Owner** - shall mean any person, individual, firm, company, association, society, corporation, group or political subdivision that is the legal owner of the real estate involved to be served by a sanitary sewer.

1.5.26 **Person** - shall mean the state, any municipal corporation, political subdivision of the state, person as defined in Section 1.59 of the Revised Code, or interstate body created by compact.

1.5.27 **PH** - shall mean the logarithm of the reciprocal of hydrogen ion concentration. The concentration of hydrogen ions is expressed in moles per liter of solution.

1.5.28 **Public Sewer** - shall mean a common sewer subject to the jurisdiction of the County Commissioners.

1.5.29 **Sanitary Engineer** - shall mean the appointed representative of the County Commissioners in the Allen County Sanitary Engineering Department who is a registered professional engineer.

1.5.30 **Sanitary Sewer** - a pipe or conduit designed for the purpose of carrying domestic and industrial sewage from the point of origin to sewage treatment or disposal works or to a place of disposal, but which is not intended to carry storm, surface, ground, or subsurface water.

1.5.31 **Sanitary Sewer/Waterline Extension Agreement –** agreement required to be entered into with the Commissioners outlining all requirements of an individual corporation or developer to extend a sanitary sewer or waterline to serve a development area.

1.5.32 **Segregated Domestic Wastes** - are discharges from nonresidential sources generated from normal human biological activities, separate and distinct from industrial trade or process discharges.

1.5.33. **Sewage** - the liquid or water carried waste from residences, business building, and institutions together with those from industrial establishments.

1.5.34 **Shall** - is mandatory.

1.5.35 **Standard Methods** - shall mean the most recent edition of Standard methods for the Examination of Water and Wastewater published by the American Public Health Association.

1.5.36. **Storm Sewer** - a pipe or conduit designed for the purpose of carrying storm, surface, cooling and drainage water from the point of origin to some point of disposal, but which is not intended to carry domestic or industrial sewage.

1.5.37 **Suspended Solids** - shall mean total suspended matter that either floats on the surface of, or is in suspension in, water, wastewater, or other liquids, and that is removable by laboratory filtering as prescribed in "Standard Methods" and referred to as filterable residue.

1.5.38 **Treatment Works** - shall mean any and all devices and systems used in the storage, treatment, recycling, and reclamation of domestic or industrial wastes of a liquid nature, or necessary to recycle or reuse water at the most economical cost over the useful life of the works, including interceptor sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as stand-by treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process or is used for ultimate disposal of residues resulting from such treatments; or any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of wastewater, including storm water runoff, or industrial waste,

including waste in combined storm water and sanitary sewer systems.

1.5.39 **Unpolluted Water** - is water of quality equal to or better than the effluent criteria in effect or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the treatment works provided. It shall contain not more than 300 mg/1 of dissolved solids, and not more than 90 mg/1 of suspended solids and 45 mg/1 of biochemical oxygen demand.

1.5.40 **User** - shall mean those premises connected or required to be connected to the public sewer system.

1.5.41 **User Charge** - shall mean that amount paid by each premise connected to the treatment works proportionate to the service provided. This charge shall cover all operations, maintenance and replacement costs for the treatment works.

1.5.42 **Wastewater** - shall mean the spent water of a community or segment of a community, from the standpoint of source, it may be a combination of the liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any ground water, surface water, and storm water that may be present.

2.0 SUMMARY OF PROCEDURES FOR THE CONSTRUCTION OF SANITARY SEWERAGE SYSTEMS

2.1 Assessment Sanitary Sewerage Projects

2.1.1 A resolution by the Commissioners establishing a sewer district.

2.1.2 Receipt by the Commissioners of a petition from affected property owners or a request from the Township Trustees, Allen County Department of Health, or Environmental Protection Agency for a sanitary sewerage improvement.

2.1.3 Preparation of a General Plan of sanitary sewerage for the sewer district or sub-district and approval of it by the Commissioners and Ohio Environmental Protection Agency.

2.1.4 Preparation of detailed plans, specifications, cost estimates and tentative assessments for each improvement by the Sanitary Engineer.

2.1.5 Approval of the detailed plans, specifications, cost estimates, and tentative assessments by the Commissioners, by the municipality, (if within one), County Health Department, and the Ohio Environmental Protection Agency.

2.1.6 Passage and publication of a resolution of necessity by the Commissioners and notification of each property owner affected by the project and Clerk of Council of Municipality (if the project is within one) of the hearing.

2.1.7 The Commissioners conducts a public hearing for all property owners who will be assessed or affected by the proposed improvement and hears endorsements and objections to the proposed improvement. The Commissioners also receives letters for five days after the hearing from such property owners that state endorsements or objections to the proposed improvement.

2.1.8 Passage of a resolution to proceed with the improvement the Commissioners not sooner than five days after the public hearing.

2.1.9 Resolution to advertise for construction bids in a newspaper of general circulation in the County not sooner than ten (10) days after passage of the resolution to proceed.

2.1.10 Receipt of construction bids by the Commissioners and tabulation of such bids by the Sanitary Engineer.

2.1.11 Issuance of notes to finance the improvement by the Commissioners.

2.1.12 Award of the construction contract by the Commissioners to the lowest and best bidder.

2.1.13 Construction of the project.

2.1.14 Computation of the final cost of the project and revision of the tentative assessments in the same ratio as the final cost is to the Engineer's estimated cost. **(In no case can the final costs or assessments exceed the estimated costs or tentative assessments at the time of the public hearing).**

2.1.15 Each property owner may pay his assessment interest free in cash during a 30-day period allowed by law following the Commissioners approval of said assessments. Immediately after the approval of said assessment a notice is mailed to each property owner stating the amount of his final assessment.

2.1.16 Issuance of bonds and redemption of notes by the Commissioners.

2.1.17 Computation of final unpaid assessments including bond interest.

2.1.18 Approval of final unpaid assessments as certified by the Sanitary Engineer including bond interest by the Commissioners and certification to the County Auditor for placing on the tax duplicate for collection.

2.2 Non-Assessment Sanitary Sewer Projects for Subdivision, Condominium and Multi-Family Development extensions:

2.2.1 Consultation by the Developer/Owner with the Sanitary Engineer as to general requirements for extending sanitary sewer. Developer/Owner shall enter into a Developer's Agreement prior to commencement of the project with the Commissioners for the extension of pressurized or gravity sanitary sewer.

2.2.2 The Developer/Owner should furnish three copies of the detailed plans, specifications and estimates of cost as prepared by a Professional Engineer licensed in the State of Ohio for the project.

2.2.3 Review and approval of all plans and specifications by Sanitary Engineer shall be completed in accordance with all local, federal and state regulation.

2.2.4 At the time of submission of the detailed plans and specifications to the Sanitary Engineer, the Owner's Engineer shall also submit in triplicate shop drawings for sanitary sewer appurtenances.

2.2.5 Submission of one hundred percent performance bond or other satisfactory guarantee and necessary easements by the Developer or Owner to the County when plans are submitted. Sanitary sewer will not be approved for use until all easements and land transfers have been recorded.

2.2.6 Construction of the sanitary sewer infrastructure will tested by a reputable, experienced, bonded and insured contractor.

2.2.7 Submission of three sets of "As built" drawings, certified test results and recorded easements will be required to be submitted to the Sanitary Engineer by the Owner's Engineer prior to acceptance of the project by the Commissioners. At the time of acceptance the Owner will be required to sign a Bill of Sale turning over all infrastructure to the Commissioners.

2.2.8 Upon completion of all required steps above the County shall take over all operations and maintenance of the infrastructure.

2.2.9 A Capital Permit shall be obtained from the County Sanitary Engineering Department for the connection of each house to the sanitary sewer main upon the acceptance of the wastewater disposal plant and sanitary sewers by the Commissioners.

2.3 Construction of Commercial, Residential Single-Family and Multi-Family Subdivision Developments using Package WWTP and supporting collection systems.

2.3.1 The Developer should consult with the County Health Department and the Sanitary Engineer as to the possible methods of sewage disposal for his proposed subdivision.

2.3.2 If a package wastewater treatment plant is to be constructed, the Developer should obtain the services of a Professional Engineer experienced in wastewater plant design and licensed to practice in the State of Ohio.

2.3.3 The Developer and his Engineer should submit in quadruplicate for the use and/or approval of the Ohio Environmental Protection Agency, County Health Department, the Sanitary Engineer and the Municipal Engineer (if within a Municipality) a preliminary plan of wastewater disposal for the proposed subdivision.

2.3.4 An examination of the proposed plant site shall be made by the Developer and his Engineer, the Ohio Environmental Protection Agency, the County Health Department, the Sanitary Engineer, and the Municipal Engineer (if within a Municipality).

2.3.5 The Developer shall obtain written permission to discharge the plant effluent into a drainage course or storm sewer from the authority concerned with the maintenance of said drainage course or storm sewer prior to the submission of the detailed plans and specifications.

2.3.6 The Developer shall enter into an Developer's Agreement with the Commissioners, which shall oversee the design, construction and operation of the proposed wastewater treatment plant as approved by the Sanitary Engineer.

2.3.7 Prior to the approval of the detailed plans and specifications, the Developer shall submit all deeds, easements, bonds, and deposits as stated in the Agreement with the Commissioners.

2.3.8 The Developer and his Engineer shall submit five satisfactory copies of the detailed plans, specifications and estimates of cost for approval to the Municipality (if located within one) or Township Trustees, the County Health Department, the Sanitary Engineer, the Commissioners, and the Ohio Environmental Protection agency.

2.3.9 At the time of submission of the detailed plans specifications to the Sanitary Engineer, the Developer's Engineer shall submit in triplicate to the Sanitary Engineer detailed shop drawings, catalog data, performance curves, etc. for his approval.

2.3.10 NO CONSTRUCTION IS TO COMMENCE UNTIL THE DETAILED PLANS, SPECIFICATIONS AND SHOP DRAWINGS ARE APPROVED AND ALL REQUIRED PERMITS FROM PUBLIC AGENCIES HAVE BEEN OBTAINED. Upon approval of the detailed plans, specifications and shop drawings, construction may commence under the continuous daily inspection of the Developer's Engineer and the Sanitary Engineer. The Developer shall obtain necessary building permits, road-opening permits, and any other permits necessary for the contemplated work prior to the start of construction.

2.3.11 The wastewater disposal plant and sanitary sewers shall be accepted for operation and maintenance only after construction is completed to the satisfaction of the Environmental Protection Agency, the County Health Department, and the Sanitary Engineer. All necessary final documents must be submitted and approved by the Commissioners, including three sets of "As built" drawings as prepared by the Developer's Engineer and payment of all engineering and inspection costs incurred by the Sanitary Engineer. At the time of acceptance the Owner will be required to sign a Bill of Sale turning over all infrastructure to the Commissioners.

2.3.12 A sewer permit shall be obtained from the Sanitary Engineer for the connection of each house to the sanitary sewer main upon the acceptance of the wastewater disposal plant and sanitary sewers by the Commissioners, County Health Department, the Sanitary Engineer, the Commissioners, and the Ohio Environmental Protection Agency.

3.0 APPROVAL OF PLANS

3.1 Drawing Contents

3.1.1 Preliminary - The Developer's Engineer shall submit three (3) copies of the preliminary drawings to the Sanitary Engineer as specified in the Development Procedures. The preliminary drawings shall have a sheet size of 24" X 36" and shall be drawn scale of not less than one inch equals one hundred feet (1"=100)'.

The preliminary drawings shall show the name of the Sewer District, improvement number, Subdivision name, Owner or Developer, the Registered Engineer preparing the drawings, lot layout, location of existing and proposed facilities, general features, and existing and proposed contours to the following intervals: 5 feet where the slope is greater than 10% 1 foot where the slope is less than 10%

3.1.2 Detailed Construction - The Developer's Engineer shall submit three (3) copies of the detailed construction drawings together with design computations and supporting data to the Sanitary Engineer.

Each sheet shall have a title block of 6" x 3" in the upper right hand corner showing the Sewer District number, improvement number, plant name, section, Engineer's name and seal, signature, sheet number, number of sheets, and scale. Each sheet shall have a revision block 2" x 3" directly left of the title block. The scale shall be represented graphically directly left of the revision block and shall be 1" = 50' horizontal and 1' = 5' vertical. Each sheet shall have a North arrow.

A cover sheet is required containing a vicinity map, signature block, and sheet reference numbers. The signature block shall include spaces for the Board of County Commissioners, Sanitary Engineer, County Engineer (when project involves a road right-of-way), and political entities if applicable.

The size, location, dimensions, and elevations of all existing structures in the streets and easements shall be shown on both the drawings and profile. This includes gas mains, electric and telephone poles and conduits, storm sewers, waterlines, sewer lines, streetlights, catch basins, manholes, and all other structures above or below ground, which may affect construction.

The construction drawings shall show property lines, corporation lines, section lines, and other boundary lines, subdivisions indicating plat book page and lot numbers, private driveways, lanes and easements with correct dimensions using dashed lines, bench marks with location, description, and elevations conforming to the U.S.G.S. datum.

Proposed water and/or sewer lines shall be shown as dark solid lines. The profiles of the water and/or sewer lines shall be shown as solid dark lines. The profiles of the water and/or sewer lines shall be shown on the same sheet as the plan.

The type of materials, joints, and strength shall be shown on the construction drawings using ASTM or AWWA nomenclature. Each set of construction drawings shall contain the General Notes as outlined in Appendix A.

The approval of the detailed construction drawings is valid for six (6) months from the date of the Sanitary Engineer's signature of approval. If construction has not started at the end of the six (6) month period, the construction drawings must be resubmitted for approval.

3.1.3 As-Built Record Drawings - The Developer's Engineer shall submit to the Sanitary Engineer as built information and changes during construction on the original drawings. All manholes, risers, valves, fire hydrants, and similar structures shall be located with a minimum of two (2) measurement in feet and tenths of a foot, shall be on the horizontal, and shall not exceed one hundred (100) feet in length. Distances between valves within an intersection shall be shown.

Objects that will be acceptable for reference on the as built drawings are fire hydrants, curbs (perpendicular distance), manholes, utility poles (give description and number), house corner (give house number), corner of concrete drive (give house number), and trees (with spikes).

One set of the record drawings shall be submitted to the Sanitary Engineering Department for review. Upon notification by the Sanitary Engineer of approval, the Developer's Engineer shall furnish the Sanitary Engineering Department two (2) sets of permanent reproducible tracings and two (2) sets of the record drawings. See Appendix D for Typical "As Built" Plan and Profile Sheet.

3.2 Plans for proposed sanitary sewerage improvements which are proposed for construction in Allen County, Ohio, outside of any municipal corporation, inside of any municipality with the municipality's consent to the County's acting on behalf of the municipality, or within or connecting or proposed to connect to any County operated sewer district or system, shall be prepared by a Professional Engineer licensed to practice in the State of Ohio, who is experienced in such work and shall be submitted to the Allen Sanitary Engineer (hereinafter called the Sanitary Engineer) for approval. Said plans shall then be submitted to the Ohio Environmental Protection Agency and to other agencies and authorities as contained in Chapter 2 of those rules and regulations prior to the installation of the improvements. Plans for the following classes of improvements must be submitted for approval, whether proposal for construction within or without any County sewer district previously established by the Commissioners.

Class A- Single/Multi-Family Residential:

Proposed public sanitary sewerage including treatment plants, sanitary sewage conveyance systems and any changes in existing structures or methods of treatment for unincorporated communities, or other lands outside of municipal corporations or connecting with any County system. A Public Sanitary Sewerage System shall be construed to mean a system serving three or more dwellings or buildings as described above, except for that sanitary sewerage which is constructed on public lands, in public highways, dedicated roadways, streets or alleys, or in easements which serve less than three dwellings or buildings as above described, but which may, in the opinion of the Sanitary Engineer, be made to serve additional dwellings or buildings, existing or proposed, along its line, or which may be extended to serve additional dwellings or buildings.

Class B- Commercial/Industrial:

Proposed sanitary sewerage including treatment or supply facilities of industrial or commercial establishments which discharge their wastes into a sanitary sewerage system operated and maintained by the County of Allen, Ohio, or which is under lease or franchise from said County.

For the purposes of these regulations, an industrial establishment shall be one engaged in the manufacture of a product, and a commercial establishment shall be one, which is engaged in selling goods or services to either a public or a private clientele or providing sanitary services to the general public.

3.3 Proposed sanitary sewerage improvements of the classifications described in Section 2.1 of this Chapter may be constructed in the County outside of any municipal corporation or inside of any municipality with the municipality's consent to the County's acting on behalf of the municipality subject to the following regulations:

Case 1:

Within established sewer district on undedicated thoroughfares or private rights-of-way:

If the improvement is proposed for construction on an undedicated thoroughfare or private right-of-way, and is to be operated by the Commissioners, the Owner shall agree to dedicate the thoroughfare or furnish a right-of-way deed for the private right-of-way. For this purpose he shall furnish to the County, before he shall be given a permit for the construction work, a bond, acceptable to the Commissioners, in an amount fixed by said Board, but not less than one thousand dollars ($1,000.00) to insure the dedication of such thoroughfare or the furnishing of such right-of-way deed, within a time prescribed by the Commissioners, and free and clear of all encumbrances, and also to insure the grading, draining, and other improvements as prescribed by these or other rules and regulations of the Commissioners. Such improvements shall be designed by, and the construction of such improvements shall be under the general supervision of a Professional Engineer licensed in the State of Ohio, experienced in the design and construction of sanitary sewerage facilities.

Case 2:

Within a sewer district on a dedicated thoroughfare:
If the improvement is proposed for construction within an established County Sewer District, on a dedicated and accepted thoroughfare or right-of-way, the improvement shall be designed by and the construction of such improvements shall be under the supervision of a Professional Engineer, registered in the State of Ohio, and experienced in the design and construction of sanitary sewerage facilities, and constructed under the provisions of the Commissioners, and County Sewer District Law (Section 6117.01 et seq. of the Ohio Revised Code).

3.4 Three copies of satisfactory detailed plans, specifications, cost estimates, detailed shop drawings, catalog data, and pump performance curves, etc. for all improvements provided for under Section 3.1 and 3.2 of this Chapter shall be submitted to the Sanitary Engineer, and shall be accompanied by (1) a report prepared by the design engineer, giving all pertinent data regarding the project, and (2) a communication addressed to the

Commissioners referring to the plans and specifications and requesting their approval of the same. The Owner shall sign such a communication.

3.4.1 All plans and specifications, which are improperly prepared or accompanied by insufficient or inaccurate information, may be rejected by the Sanitary Engineer, whereupon, revised plans and specifications or more sufficient data shall be submitted, as required. Construction of the improvement will not be authorized until satisfactory engineering plans and data have been submitted to and approved by all of the approving authorities.

3.5 At the time of submission of the plans and specifications, there shall be deposited with the Sanitary Engineer, an amount of money, as estimated by the Sanitary Engineer, sufficient to cover the cost of examining such plans and the accompanying data, including any field investigations and inspections in connection therewith, including inspection of construction.

3.6 The submission to and approval of plans and specifications for sanitary sewerage improvements by the Commissioners will not relieve the Owner from requirements of the Ohio Environmental Protection Agency with reference to the approval of plans and specifications for certain improvements.

3.7 The authorization to construct any sanitary sewerage improvement shall be a letter issued to the Owner from the Sanitary Engineer stating that permission to commence with construction has been granted. Such a letter shall not be sent until the approvals of the Commissioners and, where necessary, Ohio Environmental Protection Agency has been secured.

4.0 GENERAL CONSTRUCTION, DESIGN REQUIREMENTS AND SPECIFICATIONS OF SANITARY SEWERAGE IMPROVEMENTS.

4.1 No sanitary sewerage construction included under the classifications of Chapter 3 shall be started until after the plans have been approved by the Sanitary Engineer and the Ohio Environmental Protection Agency, and authorization has been granted by the Sanitary Engineer, as herein provided. The installation shall be in strict accordance with such approved detailed plans, specifications, and shop drawings, etc. Construction of sanitary sewerage facilities to be operated by the County shall not proceed until detailed shop drawings have been submitted in triplicate and approved by the Sanitary Engineer.

4.2 If any change or modification is deemed necessary or desirable by the public officials or persons, firm or corporation having charge of work, previous to or during the construction, such change or modification shall be incorporated in revised plans, which shall be submitted for approval in the same manner as required for original plans.

4.3 Before receiving a permit for any work requiring excavation in any street, highway or road right-of-way, the person desiring to make such excavation shall obtain from the proper authority, the required permit for such work, and shall agree to comply with all requirements of the authority issuing such "road opening permit". If the authority having jurisdiction over a particular street or highway requires no "road opening permit", a written statement to that effect must be obtained from the authority.

4.4 The material and workmanship must conform in all respects to the requirements of the these specifications, including the standard detail drawings of the Appendices, of the Sanitary Engineer which specification and detailed drawings shall be considered as minimum specifications and if built by contract, the contract shall contain this stipulation.

4.5 No construction work in connection with the improvement shall be done except in the presence of an inspector authorized by the Sanitary Engineer. Forty-eight hours of notice of the intention to begin work shall be given to the Sanitary Engineer to enable him to arrange to place one or more, if needed, inspectors on the work. The Owner's Engineer may also act as Resident Engineer for the improvement.

4.6 If the Sanitary Engineer has proof or evidence that any such work is being improperly done, he may order all work stopped and the Owner or his contractor shall thereupon stop and shall not resume until authorized in writing by the Sanitary Engineer to do so.

4.7 Wye-branches, manholes and other sanitary sewer appurtenances shall be placed where required by the Sanitary Engineer.

4.8 Connections with sanitary sewers constructed under this chapter shall be subject to all the requirements of Chapter 5 of these rules, regulations, procedures and general specifications.

4.9 At the completion of the work, a set of "As Built" plans shall be furnished by the Owner prior to processing final payment.

4.10 Sanitary sewerage facilities constructed with the consent of the Commissioners for private operation may, after completion, be turned over to the County by proper legal procedure, inspection, accompanied by proper easements or dedication of suitable rights-of-way.

4.11 No provision in this article shall be so construed as to relieve the Owner from the responsibility to furnish all private engineering, surveying and inspection services necessary in connection with the improvements.

4.12 The County expressly disclaims any responsibility for the accuracy or completeness of information given on drawings, orally or in writing by any of its employees in regard to existing structures, and the contractor shall have no claim against the County on the account of such information given.

4.13 In excavating and backfilling trenches, and constructing sanitary sewerage facilities, care must be taken not to move or injure any structures, and water courses, whether above, at or below the surface of the ground. If necessary, the contractor or the sewer builder in the case of house sanitary sewer connections, shall at his own expense sling, shore up, and secure and maintain in operating condition any such structure or watercourse. If damaged, he shall repair any such damage, and shall maintain them in good repair until the final acceptance of the job.

4.14 Approval of the quality of all materials and workmanship by the Sanitary Engineer shall be required. The Sanitary Engineer may require testing of equipment or materials at the place of manufacture by an independent testing laboratory or by others, at no expense to the County.

4.15 General minimum specifications applying to sanitary sewer lines, other than house connections, which are discussed in Chapter 5 of these rules and regulations, are as follows:

4.15.1 Material Selection - The materials listed below may be accepted for sanitary sewer construction. However, the design engineer should contact the Sanitary Engineering Department prior to final material selection. The selection of materials should take into account the nature of the wastes to be transported, compatibility with adjacent and connecting materials and the cleaning methods, which will be used.

All sanitary sewer pipe shall be one of the following:

4.15.1.1 PVC (ASTM-D-3034 SDR 35) - all diameters

4.15.1.2 PVC (profile wall gravity sewer pipe)- one-piece seamless extruded (ASTM F-794) joints shall conform to ASTM-C-443-63T and C425 and any changes thereto.
- 15” diameter and larger.

4.15.2 The minimum size of sanitary sewer mains shall be eight inches (8”) inside diameter.

4.15.3 The slope of the sanitary sewer main shall be determined so as to provide a minimum velocity of two feet (2') per second when the sewer is flowing half-full. The minimum slope per foot shall meet the following table values:

Sewer Size inches	Slope ft/100 ft.	Capacity CFS	Capacity gal/min.
4	1.20	0.180	80
6	0.62	0.393	176
8	0.40	0.698	313
10	0.28	1.09	489
12	0.22	1.57	705
15	0.15	2.45	1,100
18	0.12	3.53	1,585
21	0.10	4.81	2,160
24	0.08	6.28	2,820
27	0.07	7.95	3,570
30	0.06	9.82	4,409
33	0.05	11.88	5,334
36	0.045	14.14	6,349
42	0.037	19.24	8,639
48	0.031	25.13	11,280
54	0.026	31.81	14,280
60	0.023	39.27	17,630

4.15.4 Testing shall consist of low pressure air (Appendix E) or exfiltration (Appendix F) and deflection tests (Appendix G) for all gravity sanitary sewer lines. Vacuum tests (Appendix H) shall be performed on all manholes. All force mains shall be tested using hydrostatic tests. The Sanitary Engineering Department Inspector must be present to witness all testing of sanitary sewers and sign off on all testing forms. The Owner/Engineer will be responsible to ensure all testing documents are submitted to the Sanitary Engineer.

4.15.4.1 Testing of all gravity sewer shall be performed using leakage and deflection tests.

4.15.4.2 Test Inspection - The leakage and deflection tests for subdivision development gravity sewer shall be carried out and certified by a registered Professional Engineer witnessed by the County's inspector and the results sent to the Sanitary Engineer using the County's report forms (Appendix E through H).

4.15.4.3 Deflection Test - Deflection tests on gravity sewer must be run more less than 30 days after final full backfill has been placed. No pipe shall exceed a deflection of 5%.

4.15.4.4 Leakage Allowance - The maximum allowable leakage outward for any gravity sewer section tested is 100 gallons per inch diameter per mile of pipe per day. The above allowable leakage rate is equivalent to 0.08 gallons per inch of diameter per 100 feet of pipe per hour.

4.15.5 The minimum inside diameter of manholes shall be four feet (4') in accordance with the Allen County Standards. Kor-n-seal manhole connections shall be used when connecting into any existing manholes. The appropriate Kor-n-seal details shall be present on all construction drawings. All newly installed sanitary manholes shall have a "No Flow In Flow" manhole dish (ASTM-D-1248) or an acceptable equivalent for prevention of Infiltration and Inflow. All newly installed sanitary manholes shall be constructed with interior chimney seals (ASTM C-923) between dome and casting. Precast concrete manholes shall be constructed so that there will be amaximum of twelve inches of precast concrete rings between the manhole cover frame and the top precast concrete section. Manhole frames, covers and steps shall be in accordance with Allen County standards. See Appendix B for details.

4.15.6 Water Tightness - Manholes shall be constructed to permit grade adjustments by use of cast-in-place or precast concrete adjusting collars not to exceed 12 inches in height. Solid manhole covers should be used in all locations. The manhole casting shall be adjusted so the top of the manhole cover is slightly above grade to prevent the entrance of surface water. All manhole covers, seating frames, and adapter rings shall be machined to a firm and even bearing to provide a true fit into the frames. Inlet and outlet pipes shall be joined to the manhole with a gasket flexible watertight connection. The type connection specified shall be clearly noted in the specifications and on the detailed drawings.

4.15.7 Flow Channel - The invert of the lowest pipe entering a manhole shall be at least three inches above the top of the base slab so that the sewer flow channel may be installed and shaped. The flow channel through manholes should be made to conform in shape, slope and smoothness to maintain the same velocity as that in the sewers. Cut pipe shall not extend beyond the inside face of the manhole wall. Concrete placed inside the manhole to form the channel through the manhole shall not be placed between the pipe and the opening so as to interfere in any way with the flexibility of the joint.

4.15.8 Drop Manholes - All drop manholes shall be precast and used when the invert of the inflow sewer is two feet or more above the manhole invert. When this difference in elevation is less than two feet, the manhole invest shall be filleted to prevent solids deposition. Due to the unequal earth pressures that would result from the backfilling operation in the vicinity of the manhole, the entire outside drop connection shall be encased in precast concrete. Drop manholes should be constructed with outside drop connection. Inside drop connections (when necessary) shall be secured to the interior wall of the manhole and provide access for cleaning.

4.15.9 Manholes shall not be spaced greater than 400 feet on sanitary sewers.

4.15.10 The allowable pipe loading shall be computed by using the maximum trench width - usually the pipe outside diameter plus eighteen inches (O.D. + 18") or 30 inches, whichever is greater - and an "ordinary bedding" condition.

4.15.11 All sanitary sewers shall be laid on an angular granular bedding, equivalent to #57 slag or limestone, from four inches below the bottom of the pipe placed to the pipe spring-line and shall have a hand-placed, well-compacted hand-selected

backfill in maximum six inch (6”) layers to twelve inches (12”) above the top of the pipe. All sanitary sewer construction shall be in accordance with the Standards and Specifications of the Sanitary Engineer, which shall be considered as minimum.

4.15.12 Miscellaneous

4.15.12.1 Casing - If casing is required, the casing pipe shall be steel pipe of size and thickness acceptable to the County Sanitary Engineering Department and approved by the Ohio E.P.A.

4.15.12.2 Encasement - If encasement is required, concrete shall completely surround the pipe and shall have a minimum thickness of one sixth of the inside diameter of the pipe or four (4) inches, whichever is greater. The ultimate compressive strength for the concrete shall be greater than 2500 p.s.i. at 28 days.

4.15.12.3 Railroad and Highway Crossings - If casing is required, a casing pipe shall be designed to meet the requirements of the local authority having jurisdiction and in compliance with Item 1 of this Section. The inside diameter of the casing pipe shall be at least four (4) inches greater than the largest outside diameter of the sewer pipe, joints or couplings.

4.15.12.4 Stream Crossings - The crown of all sewers crossing the streams shall be at sufficient depth below the natural bottom of the streambed. The minimum cover over the crown of the pipe shall meet one of the following requirements:

One foot if the sewer is located in rock or the sewer is constructed in accordance with any method as prescribed in Items 4.15.12.1 and 4.15.12.2 of this Section.

Four feet if the sewer is located in materials other than rock. The crossing shall be free from change in grade and the sewer should be designed to cross the stream as nearly perpendicular to the stream flow as possible.

4.15.12.5 Sewer Outfall - A sewer outfall structure shall be so located that it does not restrict the free flow in the stream.

4.15.12.6 Sewer Above the Ground - If a sewer is constructed above the ground, the sewer should be adequately protected against freezing, and shall be free from leakage. The structure supporting the pipe shall be designed to prevent frost heave, overturning and settlement.

4.16 All sanitary sewer mains shall be extended along dedicated road rights-of-way to the limits of the property being served by those utilities. It may be required that sanitary sewers mains that are located within easements, also be extended to the limits of the property being served by those utilities.

4.17 Water mains and main sanitary sewers are to be constructed on opposite sides of traveled ways or pavements within easements and dedicated roads right-of- ways. In instances, where this is a physical impossibility, a minimum of ten (10) feet shall be maintained between water mains and main sanitary sewers. The construction of sewers in easements at the rear or side of residential lots shall be prohibited except as approved by the Sanitary Engineer.

4.18 All construction shall be carried in accordance with state and federal requirements. The County has the right to shut down all construction in accordance with section 4.3 of these rules and regulations if evidence of unsafe conditions exist for County and/or contractor.

5.0 SANITARY SEWER SERVICE CONNECTIONS

5.1 No sewage disposal device or equipment shall be installed on property accessible to an improved public sanitary sewerage system. No sewage disposal device or equipment shall be used on property, which is accessible or becomes accessible to an improved public sanitary sewerage system. Whenever an improved sanitary sewerage system is made available, property owners fronting the sewerage system will be given ninety (90) days to connect to the new public sewerage system following completion of the system. Said connection shall be so ordered by the Allen County Health Department. Any abandoned sewage tank or other device or equipment used for treatment or disposal of sewage shall be thoroughly cleaned, broken up, and filled to the ground surface with a suitable filling material as approved by the Public Health Department.

5.2 The Owner of the property requesting permission to connect to a sanitary sewer system by the Sanitary Engineering Department will be required to complete an in-house inspection by the Allen County Health Department.

5.3 No new connection, repair, removal, or any excavation of a service lateral shall be made to any sanitary sewers without a permit from the Sanitary Engineer. All fees are established in accordance with policy established by the Commissioners. See also Industrial Permits, Section 6.5. The County shall make all taps into mainline sewers with its tapping machine. The Allen County Sanitary Engineering Department shall furnish and install all saddles onto the mainline sewer. The excavation area shall accordance to all Federal, State, and County safety standards prior to a Sanitary Engineering Department representative making access.

5.4 Permits shall be kept and made visible on the job at all times while the work is in progress.

5.5 The material and workmanship must conform in all respects to the requirements of the these specifications, including the standard detail drawings of the Appendices, of the Sanitary Engineer which specification and detailed drawings shall be considered as minimum specifications and if built by contract, the contract shall contain this stipulation.

All work shall be inspected by an inspector representing the Sanitary Engineer. Contractors shall notify the Allen County Sanitary Engineering Department 24 hours in advance of the date and time at which construction of the sanitary sewer lateral will begin. The inspector from the Allen County Sanitary Engineering Department shall be present at all times of the testing process or in the absence of the inspector a representative from the engineering firm shall be present as arranged by the inspector. The Contractor shall uncover any work covered previous to the inspection and an opportunity must be given to inspect the inside as well as the outside of the sewer pipe. All materials and workmanship shall be in strict accord with the sanitary sewer specifications of the Sanitary Engineer governing such work and the same is hereby made a part of these rules, regulations, procedures, and specifications.

5.6 The Sanitary Engineer shall approve the quality of all materials and workmanship, and shall have the right to inspect the site at all times. He may order removed from the job any inferior or defective material and he may cause any portion of a house connection to be re-laid which is not laid to the Sanitary Engineering Department's satisfaction. The Sanitary Engineer shall have free access to all buildings and fixtures therein connected to the sanitary sewers to inspect such fixtures. The Sanitary Engineer in any duty prescribed

by these rules and regulations may act through properly authorized representatives.

5.7 The sanitary sewers shall be used for all water borne wastes from water closets, urinals, lavatories, normal kitchen, bathroom and laundry fixtures, refrigerators, soda fountains, cellar and garage floor drains, or other fixtures which may be designated by the Sanitary Engineer whether from residences, factories, commercial buildings, enterprises, trailers, schools, buildings, and for no other purpose except by special written permission of the Sanitary Engineer. Wastes from the above sources shall hereinafter be called "sanitary wastes". No such sanitary wastes shall be allowed to enter any storm sewer, storm ditch, watercourse, stream or pond. No wastes which are likely to cause damage or stoppage of sanitary sewers or which may interfere with the treatment thereof will be permitted to enter a sanitary sewer.

5.8 In no case may storm, surface or ground water, or water from drain spouts, roofs, cisterns, yard drains, subsoil drains, footer drains, foundations drains, or waste material from water motors, cooling water, or excessively hot waters be allowed to enter a sanitary sewer except with the written permission of the Sanitary Engineer.

5.9 Vaults, cesspools, and septic tanks serving homes shall be subject to the rules and regulations of the Ohio Environmental Protection Agency and/or Allen County Health Department.

5.10 Before receiving a permit for any work requiring excavation in any street, highway or road right-of-way, the person desiring to make such excavation shall obtain from the proper authority the required permit for each excavation and shall agree to comply with all the requirements of the issuing authority, or shall obtain a written statement by that authority that no road opening permit is required. This permit shall be shown to the inspector at the commencement of construction and shall be kept "on-the-job" at all times, while work is in progress.

5.11 If any Owner's Contractor shall neglect or refuse to do anything required by these rules and regulations within a responsible time after receiving written notice from the Sanitary Engineer to do so, the Sanitary Engineer may order such work to be done and charge the cost to the Contractor. The Contractor's diligence in making restoration of damaged property, settled backfill or reseeding for which he is responsible, will be considered in issuing permits to the Contractor.

5.12 In addition, any paving, sidewalks, drives, etc. that are damaged or removed during installation of a service lateral and need to be repaired within one year after completion will be billed to the Owner. The Owner shall upon receiving notification in writing from the Sanitary Engineer of the necessity for such repairs, immediately perform or have performed the work called for in such notification. Failure by the Owner to complete the work within a period of 96 hours after such notification may cause such work to be done either by contract with some capable person, or by such other arrangements as may be most convenient and satisfactory. The bill for the cost of the repairs shall be rendered to the Owner who shall be liable for and shall pay such bill immediately

5.13 Where a connection is to be made a temporary or private sanitary sewer lying within street lines, property owners will be required to sign an agreement or blanks provided for that purpose, which they will make no objection to a permanent sanitary sewer or to the tax assessed for the same.

5.14 A separate and individual sanitary sewer connection shall be made for each building. No connection shall serve more than one building unless the Sanitary Engineer gives specific authority.

5.15 The Sanitary Engineer shall allow or disallow the use of any material for house connections or sanitary sewer mains, as he shall see fit. The Sanitary Engineer shall have the authority to make a change in materials authorized for use in systems under his jurisdiction at any time.

5.16 The sanitary sewer pipe shall be installed so that the barrel will be supported over its full length on: (a) firm, undisturbed earth shaped to the bottom quadrant of the pipe with bell holes to receive bells or couplings with at least one inch of clearance below the bottom of the bell, or (b) on a minimum four inch bedding of well compacted #57 stone excavated material of a granular nature. The sanitary sewer lateral shall be laid so as to be centered in a dry trench of minimum width (30" is usually considered the maximum width) in a straight line with uniform slope. The minimum slope shall be 1/8 inch per foot. The minimum pipe size shall be six inch (6") inside diameter and shall be of the premium joint type.

5.17 Hand backfill shall be placed and compacted under and around the pipe in six-inch layers to one foot above the top of pipe. Sand or granular material will not be required for this purpose, but the material used must be free of rocks or stones one or more inches in diameter and be capable of compaction. Frozen, lumpy, saturated, or other non-compactable material will not be accepted. Material for hand backfill should under no circumstances be dumped on the exposed pipe, but should be moved along the trench. The remainder of the trench may be machine backfilled. Backfill entering the trench must come upon previously placed machine backfill. Direct placement of machine backfill on hand backfill will not be allowed. All excavations in paved areas shall be backfilled with well-compacted sand and gravel, or in accordance with the requirements of the road-opening permit, if stricter.

5.18 The Sanitary Engineer is granted the right to enter any and all properties, to inspect sewer connections and any appurtenances thereto, to collect samples of wastes, and to test for violations of these rules and regulations.

5.19 The presence of the Sanitary Engineer or his authorized inspector does not relieve the Contractor of his duty to protect any structures above, below or at the surface of the ground. Should any damage arise due to the negligence of the sewer builder, it shall be his bonded duty to make right any such damage within a period of 96 hours. If the owner fails to do this, the Sanitary Engineer may order the damages to be repaired or the damaged property replaced either by contract, with some capable person, without advertising or by other arrangements as may be most convenient and satisfactory. The bill for the entire cost of the work shall be rendered to the Contractor who shall be liable for and shall pay the same at once.

5.20 The County will perform all maintenance of the sanitary sewer main. The homeowner will be responsible for the maintenance of the sanitary sewer lateral between the right-of-way and the house. The County may require the property owner to make whatever repairs or perform any maintenance that the County deems necessary for the proper functioning of the sanitary sewerage system. If the County is called upon or finds it necessary to repair or maintain any house connection, the cost of such repair or maintenance shall be

billed directly to the homeowner. The County disclaims any responsibility for damages caused by/or arising from any stoppage of the main sanitary sewer.

5.21 The connection between the interior plumbing and the sanitary sewer service connection shall be made at a point approximately three feet outside the foundation wall.

5.22 Adapters shall be used to connect between dissimilar pipe sizes or joints between (a) lateral and branch of wye in main, (b) house connection and lateral, and (c) cast iron soil pipe and house connection. If adapters are not available, where the soil pipe and house connection pipe are to be connected, adequate concrete encasement will be required.

6.0 INDUSTRIAL AND DAMAGING WASTES

6.1 Industrial wastes of a nature, which will cause damage to the sanitary sewerage system, or which will interfere with the treatment processes shall be barred from the sanitary sewerage system. In no case will an industry or commercial establishment be allowed to discharge oils, gasoline's, thinners, any highly volatile substances, any highly acid or basic substances, or any other waste which may tend to damage the sanitary sewerage system or cause a stoppage of the same. The Sanitary Engineer shall have authority to enter any property for the purpose of obtaining samples of waste discharged into the sewers.

6.2 An industry must, upon application for sewer service, present to the Sanitary Engineer, a tabulation of the chemical analysis of the waste to be discharged into the sanitary sewerage system and the volume of such waste, or if this is not available, the expected waste analysis based on similar processes now in operation.

6.3 The Sanitary Engineer shall, if he finds it necessary, require pretreatment of a waste prior to its discharge into a public sanitary sewerage system.

6.4 The permit fee for connecting any industry to a sanitary sewer shall be based on the actual cost plus overhead for reviewing the plans and inspecting the construction of the connection from the main sanitary sewer to the plant buildings and of any pretreatment devices.

6.5 A monthly report of the quantity and characteristics of any industrial waste discharged into a sanitary sewer shall be presented to the Sanitary Engineer no later than the 15th day of the following month.

6.6 In addition to the minimum charge and volume charge, any user discharging wastewater containing BOD in excess of 200 mg/l (or COD in excess of 500 mg/l) or suspended solids of 250 mg/l shall be subject for surcharges to the regular quarterly sewer bill an additional amount as directed by the Sanitary Engineer and approved by the Commissioners on individual applications of users.

6.7 Each industrial user shall provide protection from accidental discharge of prohibited materials or wastes regulated by these Rules and Regulations. The facilities to prevent accidental discharge of prohibited materials shall be borne by the owners of the industrial user facilities.

6.8 If, for any reason, a facility does not comply with or will be unable to comply with any prohibitive or limitations in these Regulations, the user responsible for such discharge shall immediately notify the County so that corrective action may be taken to protect the treatment system. All costs involved with said corrective action shall be assessed against the property owner.

7.0 USE OF PUBLIC SEWERS

7.1 No person, firm or corporation shall discharge or cause to be discharged any storm water, ground water, roof run off, sub-surface drainage, cooling water or unpolluted industrial process water to any sanitary sewer.

7.2 It shall be unlawful to discharge into the building sanitary sewer the surface water, which collects in basement or foundation excavations. If the building sanitary sewer is complete before the plumbing can be connected thereto, the builder or sewer tapper shall keep the end of the building sanitary sewer tightly closed with a plumber's plug or other watertight plug.

7.3 It shall be unlawful for any person, firm or corporation to discharge or permit the discharge of any of the following described waters or wastes to any public sanitary sewer:

(a) Any oils, acids, cyanides, explosives or inflammable compounds, industrial chemicals, poisons and any other substances, gas or liquid, which may in any way damage or interfere with the use or operation of the sanitary sewers, or sewage treatment plant in excess of maximum concentration as determined by the Sanitary Engineer or which may create a hazard to life.

(b) Any garbage that has not been properly shredded.

(c) Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewage works.

(d) Any waters or wastes containing suspended solids of such character and quality that unusual attention or expense is required to handle such materials at the sewage treatment plant, or having a chlorine demand greater than 25 p.p.m.

8.0 PROTECTION FROM DAMAGE

8.1 No unauthorized person shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenances or equipment which is a part of the County sanitary sewerage system. Any person violating this provision shall be subject to immediate prosecution under charge of disorderly conduct.

9.0 SANITARY SEWER SERVICE CHARGE, BILLING PROCEDURE AND INFORMATION

9.1 In accordance with Section 6117.02 (A) of the Revised Code the Commissioners shall fix reasonable rates, including penalties for late payments, for the use, or the availability for use, of the sanitary facilities of a sewer district to be paid by every person and public agency whose premises are served, or capable of being served, by a connection directly or indirectly to those facilities when those facilities are owned or operated by the county and may change the rates from time to time as it considers advisable. When the sanitary facilities to be used by the county are owned by another public agency or person, the schedule of rates to be charged by the public agency or person for the use of the facilities by the county, or the formula or other procedure for their determination, shall be approved by the board at the time it enters into a contract for that use.

The Sanitary Engineer shall regularly review the quarterly sanitary sewer service charge for each individual connection to any and all sanitary sewerage systems operated and maintained by the County Sanitary Engineering Department in County Sewer Districts. The purpose of the sewer service charges is to provide the department for all expenses incurred by it in operating, maintaining and financing of improvements to the sanitary sewerage systems under its jurisdiction.

9.2 Quarterly sewer service charges as established by the Commissioners are normally billed to the owner of any property connected to a County operated sanitary sewerage system. If the owner of any property elects to have his tenant or lessee pay these charges as they accrue, such tenant or lessee does so as the agent of the owner, and such owner shall be held responsible for unpaid charges.

9.3 In accordance with 6117.02 (C) when any quarterly sewer service charge is not paid by the final pay date of the particular quarter, a fee is charged of said date and is indicated on the sewer service statement itself, the amount shall be deemed delinquent. When a sewer service charge has become delinquent, a 10% penalty shall be added to the final net pay amount. The County shall not be liable for sewer service statements not delivered by the postal authority due to change of addresses or the postal authority failure to complete their assigned tasks.

9.4 Delinquent sewer service charges not paid by the second Monday in September of each year, shall be certified to the County Auditor for collection with the taxes due for a particular property and they shall become a lien against the property. All certifications shall be made at least annually prior to the second Monday in September.

9.5 Bills for sewer service charges will be mailed where directed as a matter of convenience to the owner of property or their agents. Failure to receive bills will not relieve anyone of the responsibility for prompt payment. It is the property owner's obligation to notify the Sanitary Engineer of any change of, or error of address.

9.6 Current bills and delinquent bills not certified to the County Auditor for sewer service charges are payable at the office of the Sanitary Engineer or at any one of several locations specified on the bills themselves.

9.7 In accordance with Section 6117.02 (B) of the Revised Code the board also shall establish reasonable charges to be collected for the privilege of connecting to the sanitary facilities of the district, with the requirement that, prior to the connection, the charges shall be paid in full, or, if determined by the board to be equitable in a resolution relating to the payment of the charges, provision considered adequate by the board shall be made for their payment in installments at the times, in the amounts, and with a carrying charge as may be found by the board in that resolution to be fair and appropriate. No public agency or person shall be permitted to connect to those facilities until the charges have been paid in full or provision for their payment in installments has been made.

If the connection charges are to be paid in installments, the board shall certify to the county auditor information sufficient to identify each parcel of property served by a connection and, with respect to each parcel, the total of the charges to be paid in installments, the amount of each installment, and the total number of installments to be paid. The auditor shall record and maintain the information supplied in the sewer improvement record provided for in section 6117.33 of the Revised Code until the connection charges are paid in full. The board may include amounts attributable to connection charges being paid in installments in its billings of rates and charges for the use of sanitary facilities as follows:

9.7.1 Installment – The customer shall pay their connection fee over an installment period of five (5) years with a carrying charge to be determined at the time of connection. A residential customer will need to provide proof of meeting the County's low-to- moderate income status, for approval to exercise the installment option prior to connection. Customers with multiple equivalency based connection charge shall exercise the installment option upon providing information to calculate said charge, and verification by the Sanitary Engineer prior to connection.

10.0 VIOLATIONS

10.1 Whoever violates Section 6103.29 and/or 6117.45 of the Ohio Revised Code shall be fined in accordance with the Ohio Revised Code.

Whoever violates these rules, regulations, procedures, and general specifications shall be subject to injunction action or other legal actions under the pertinent sections of the Ohio Revised Code.

11.0 POSSIBLE INVALIDITIES AND OTHER AGREEMENTS

11.1 The several parts of the foregoing rules, regulations, procedures, and general specifications are hereby declared separate and in the event any provision or part hereof shall be declared void and ineffective for any cause, such declaration shall not effect nor render invalid any other provision or part hereof.

Nothing in these rules, regulations, procedures and general specifications shall prohibit the Board of County Commissioners or the Sanitary Engineer from entering into an agreement with any person, firm corporation or governmental agency for the furnishing of a service or performance of any act not specifically mentioned in these rules, regulations, procedures and general specification.

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

Appendix A

General Notes

Sanitary Engineering Department
General Notes

1. Sanitary sewers shall be V.C.P. (ASTM-C-700), PVC (ASTM-D-3034 SDR 35), or PVC profile wall gravity sewer pipe - one piece seamless extruded (ASTM F-794) joints shall conform to ASTM-C-443-63T and C425 and any changes thereto.

2. Contractor shall notify the Allen County Sanitary Engineering Department 2 working days in advance of the date at which construction will begin on the sanitary sewers.

3. Contractor shall notify the Allen County Sanitary Engineering Department 2 working days in advance of the date and time at which testing of the sanitary sewers will begin. The inspector from the Allen County Sanitary Engineering Department shall be present at all times of the testing process or in the absence of the inspector a representative from the engineering firm shall be present as arranged by the inspector.

4. Testing shall consist of air and/or exfiltration tests for sanitary sewer lines and air and/or vacuum tests for manholes. The Sanitary Engineering Department Inspector must be present to witness all testing of sanitary sewers.

5. Sanitary sewers are required to have a final inspection performed by the Allen County Sanitary Engineering Department Inspector and Wastewater Collection Superintendent with the contractor being present before approval of final plat will be given. The County must complete a video inspection of the system after completion of construction and testing before final approval may be given.

6. Kor-n-seal manhole connections shall be used when connecting into any existing manholes. The appropriate Kor-n-seal details shall be present on all construction drawings.

7. All sanitary sewer laterals shall be 6" in diameter and will be ran to the right-of-way and/or property line. The lateral pipe material shall be compatible with the main line material.

8. All laterals provided to the right-of-way and/or property line must be air tested at the same time as the main line.

9. Bonds or Letters of Credit will only be accepted by the Sanitary Engineering Department for sanitary sewer systems, which are "substantially complete" (See Definition). A Bond or Letter Credit will not be accepted for more than 25% of the total construction estimates.

10. As-Built drawings showing all sanitary sewer laterals shall be provided to the Sanitary Engineering Department before approval of the final plat may be given.

11. All newly installed sanitary manholes shall have a "No Flow In Flow" manhole dish (ASTM-D-1248) or an acceptable equivalent for prevention of Infiltration and Inflow.

12. All newly installed sanitary manholes shall be constructed with interior chimney seals (ASTM C- 923) between dome and casting , and Infi-shield seal wraps for manhole joints.

Definition: substantially complete: Any sanitary sewer system, which is capable of being tapped into and providing quality sanitary service.

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

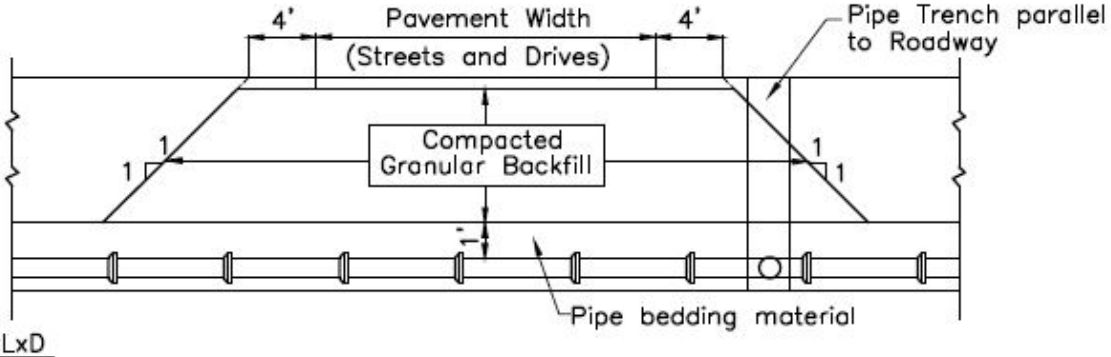
Appendix B

Gravity Mainline Sewer Standard Details

Sanitary Engineering Department

Gravity Mainline Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing GB1 Filename: Granular Backfill Date: 04–23–15 Note:



$$C.Y. = \frac{W \times L \times D}{27}$$

Where: W= I.D. Pipe + 2'
D= Depth from Sub grade of Pavement to 1' above Pipe Barrel
L= Pavement Width + 8' + D or length of area filled with Item 703.11 Type 3 + D

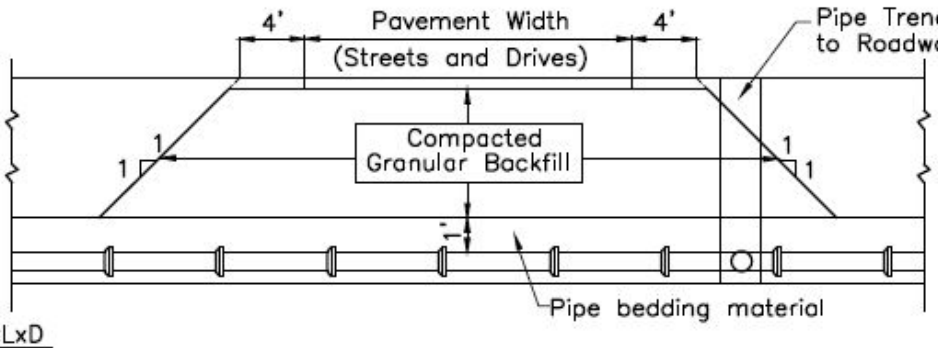
GRANULAR BACKFILL LIMITS

Pipe Size	6"–12"	15"–21"	24"–27"
Max. Pay Trench Width	36"	42"	48"

MAXIMUM PAY WIDTH TABLE

Sanitary Engineering Department
Gravity Mainline Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing GB1 Filename: Granular Backfill Date: 04-23-15 Note:



$$C.Y. = \frac{WxLxD}{27}$$

Where: W= I.D. Pipe + 2'
D= Depth from Sub grade of Pavement to 1' above Pipe Barrel
L= Pavement Width + 8' + D or length of area filled with Item 703.11 Type 3 + D

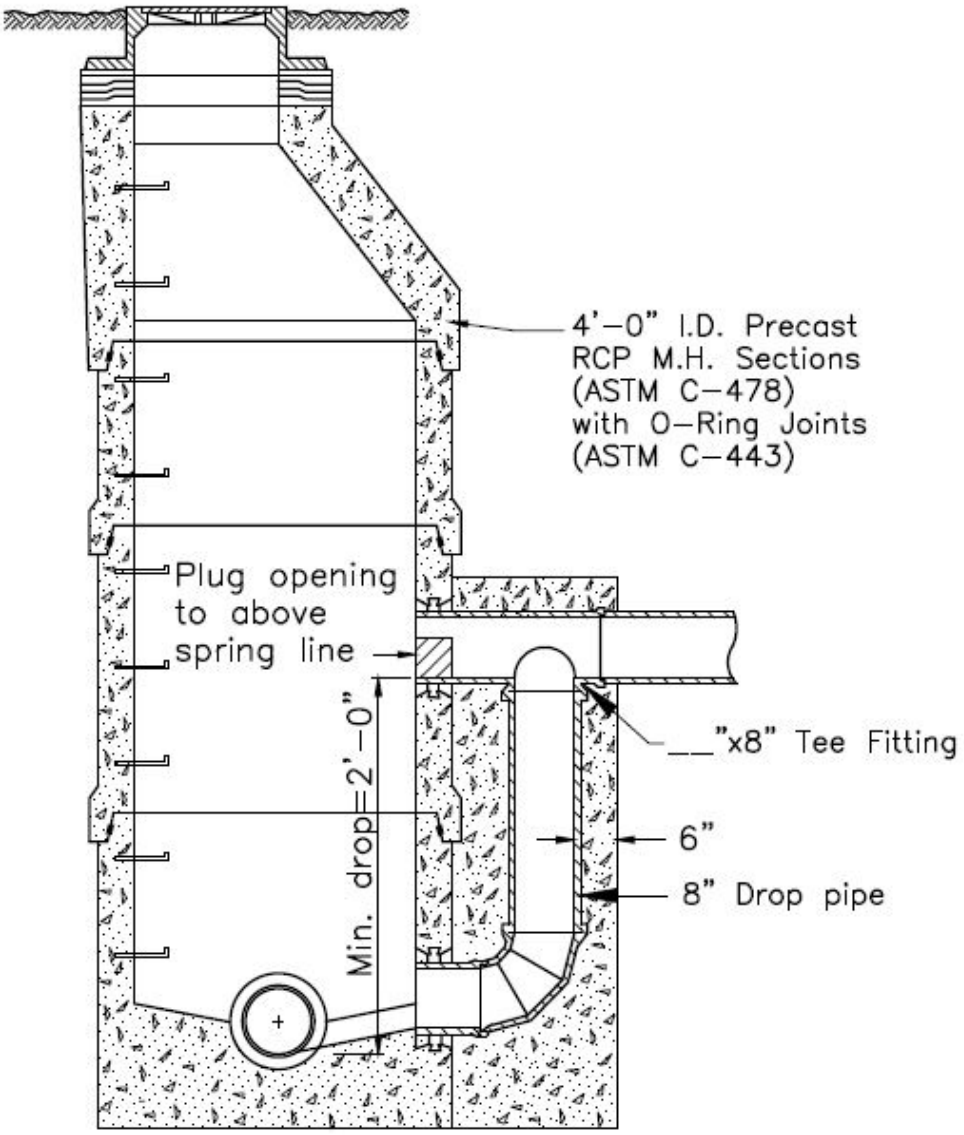
GRANULAR BACKFILL LIMITS

Pipe Size	6"–12"	15"–21"	24"–27"
Max. Pay Trench Width	36"	42"	48"

MAXIMUM PAY WIDTH TABLE

Sanitary Engineering Department
Gravity Mainline Sewer Standard Details

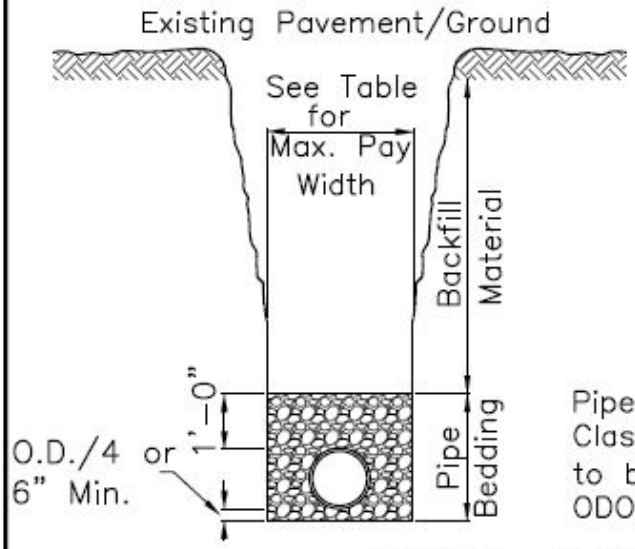
SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing MTB1 Filename: Manhole Type B Date: 04–23–15 Note:



TYPE "B" MANHOLE

Sanitary Engineering Department
Gravity Mainline Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing ST1 Filename: Sewer Trench Date: 05-08-2017 Note:



Trench Backfill Material

1. Under pavement and drives use Granular Backfill meeting requirements of Item 703.11, Type 3. Compact in 6" layers to a density of not less than 95%. The upper 3' shall be compacted to a density of not less thn 100% unless otherwise specified.

2. Within 4' of pavement, use 703.11, Type 3 to within 12" of the surface. Remainder of trench to use select excavated material with top 6" being topsoil.

3. Lawn and open areas back fill with select excavated material with top 6" being topsoil.

Pipe Bedding ASTM D2321
Class 1A granular material
to be #67 Crushed Stone
ODOT Item 703.01

TYPICAL SEWER TRENCH

Pipe Size	6"–12"	15"–21"	24"–27"
Max. Pay Trench Width	36"	42"	48"

MAXIMUM PAY WIDTH TABLE

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

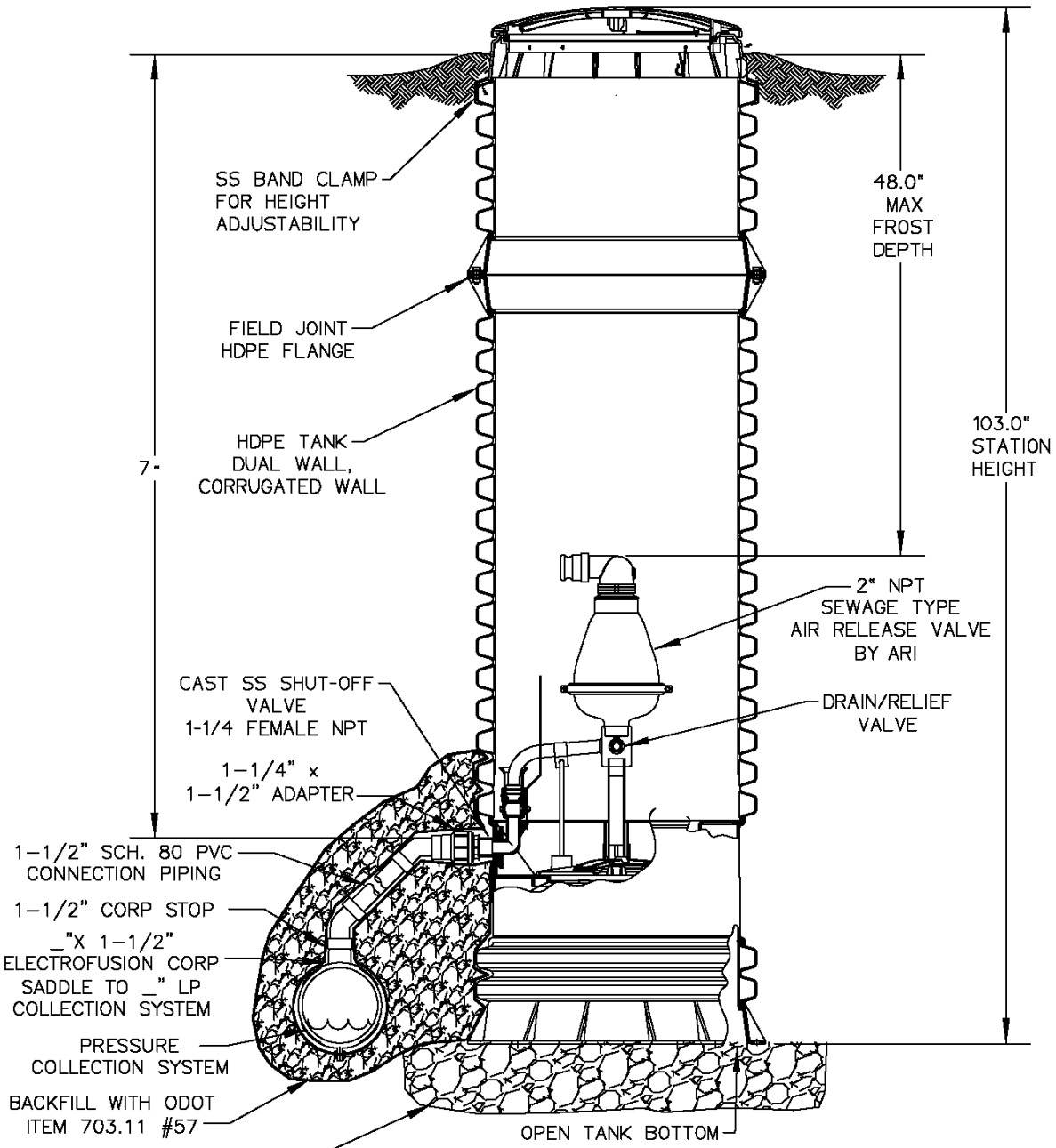
Appendix B

High Pressure Sewer Standard Details

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing ARS1 Filename: Air Release Station _ E-One Date: 05-08-17 Note:



AIR RELEASE STATION

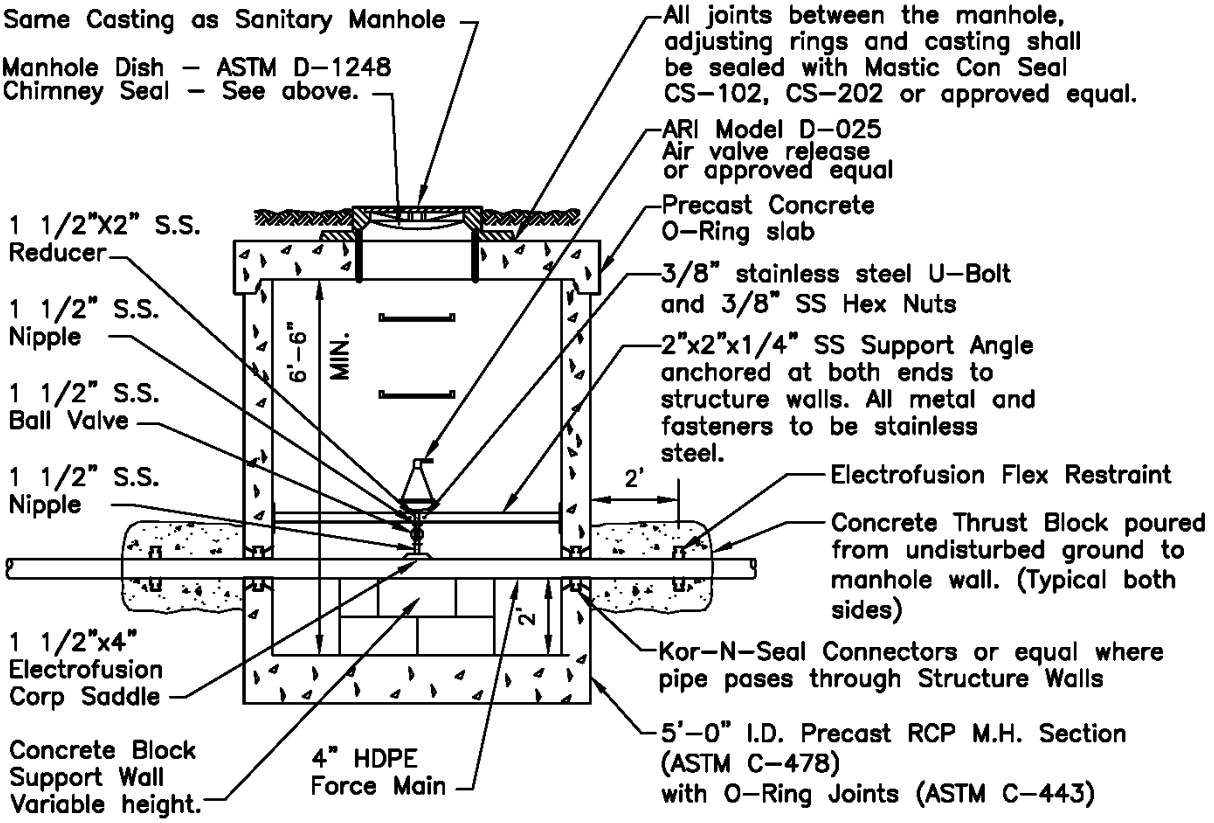
NTS

BY ENVIRONMENT ONE
OR APPROVED EQUAL

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing AR1 Filename: Air Release Date: 05–15–06 Note:

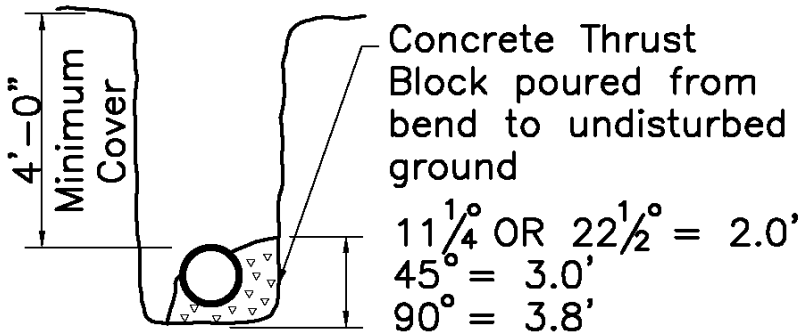


AUTOMATIC AIR RELEASE VALVE WITH STRUCTURE NTS

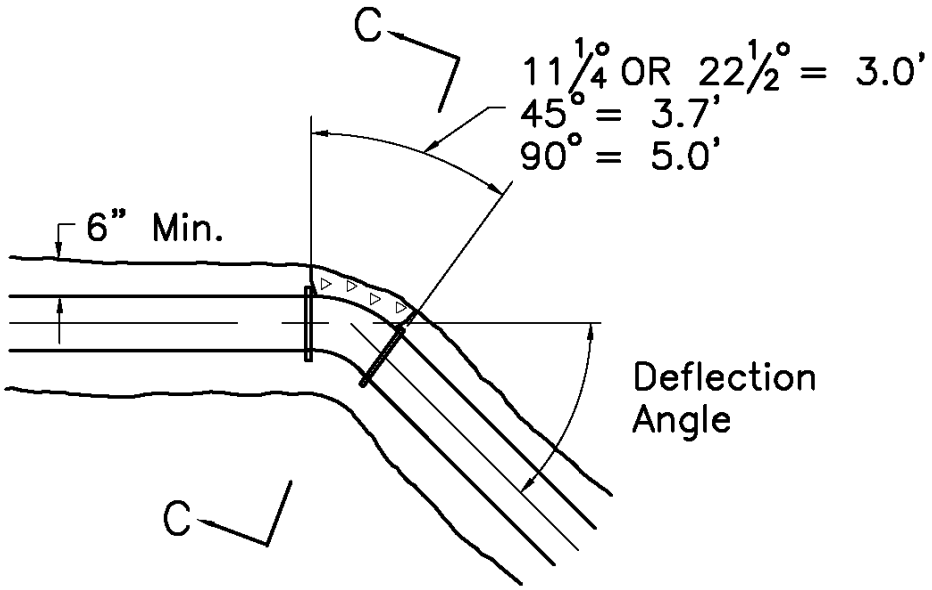
Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing CTB1
	Filename: Concrete Thrust Blocking Date: 04-23-15 Note:



SECTION C-C

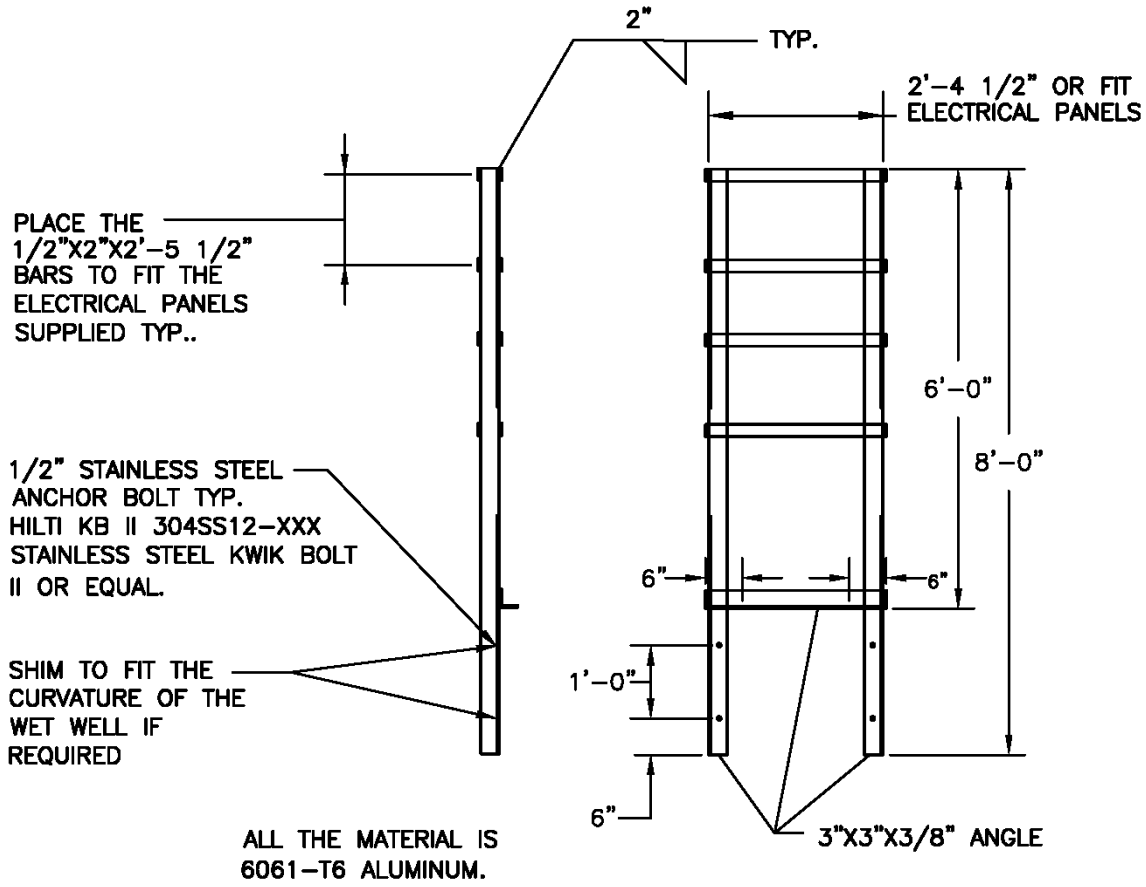


CONCRETE THRUST BLOCKING DETAIL

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing EPSR1 Filename: Electrical Panel Support Rack Date: 06–09–06 Note:



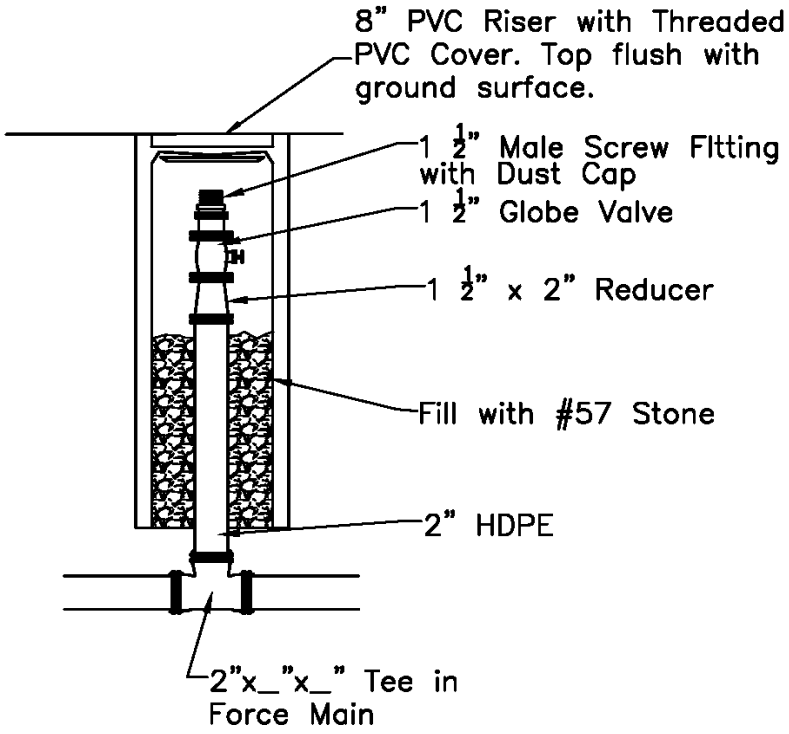
ELECTRICAL PANEL SUPPORT RACK

NTS

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing FP1 Filename: Flush Port Date: 05-15-06 Note:

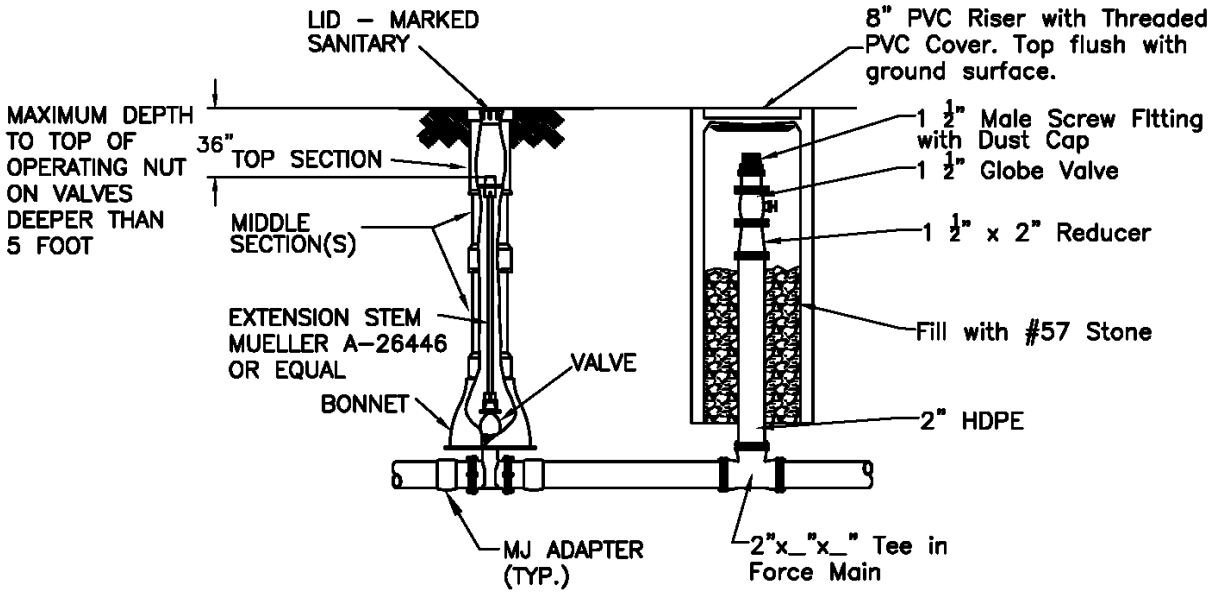


FLUSHING STATION

NTS

Sanitary Engineering Department
High Pressure Sewer Standard Details

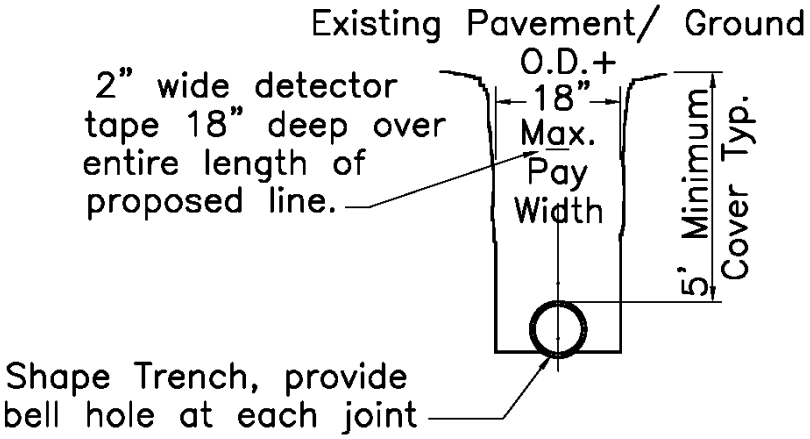
SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing FS1 Filename: Flush Station Date: 05–15–06 Note:



FLUSHING STATION
NTS

Sanitary Engineering Department
High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing FMT1 Filename: Force Main Trench Date: 04–23–15 Note:



Trench Backfill Material

1. Under pavement and drives use Granular Backfill meeting requirements of Item 703.11, Type 3. Compact in 6" layers to a density of not less than 95%. The upper 3' shall be compacted to a density of not less thn 100% unless otherwise specified.

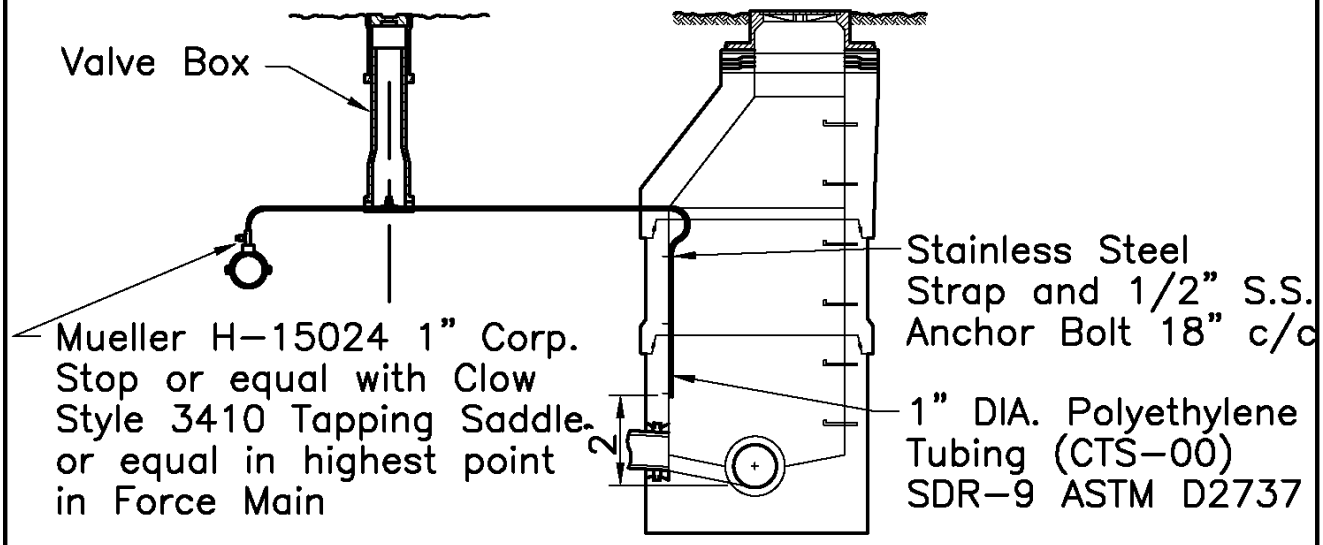
2. Within 4' of pavement, use 703.11, Type 3 to within 12" of the surface. Remainder of trench to use select excavated material with top 6" being topsoil.

3. Lawn and open areas back fill with select excavated material with top 6" being topsoil.

TYPICAL FORCE MAIN TRENCH

Sanitary Engineering Department
High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing ARM1
	Filename: Air Release – Manual Date: 04–23–15 Note:

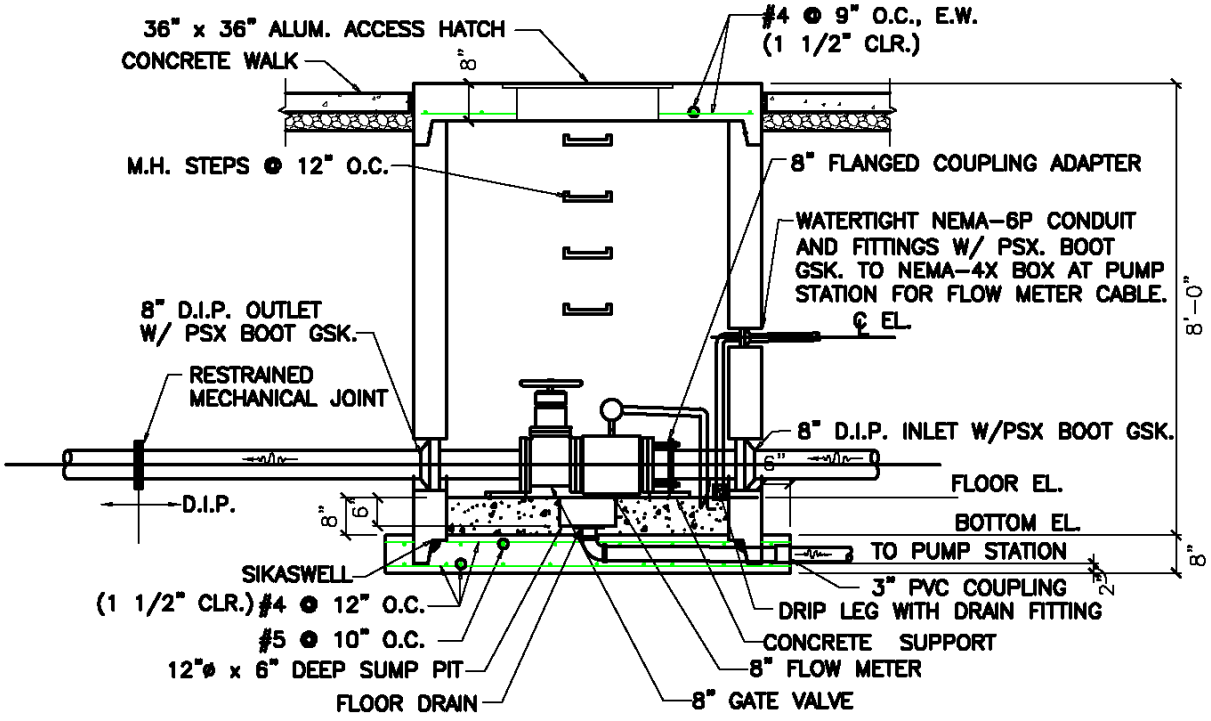


MANUAL AIR RELEASE ASSEMBLY

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing MM1 Filename: Meter Manhole Date: 4–23–15 Note:

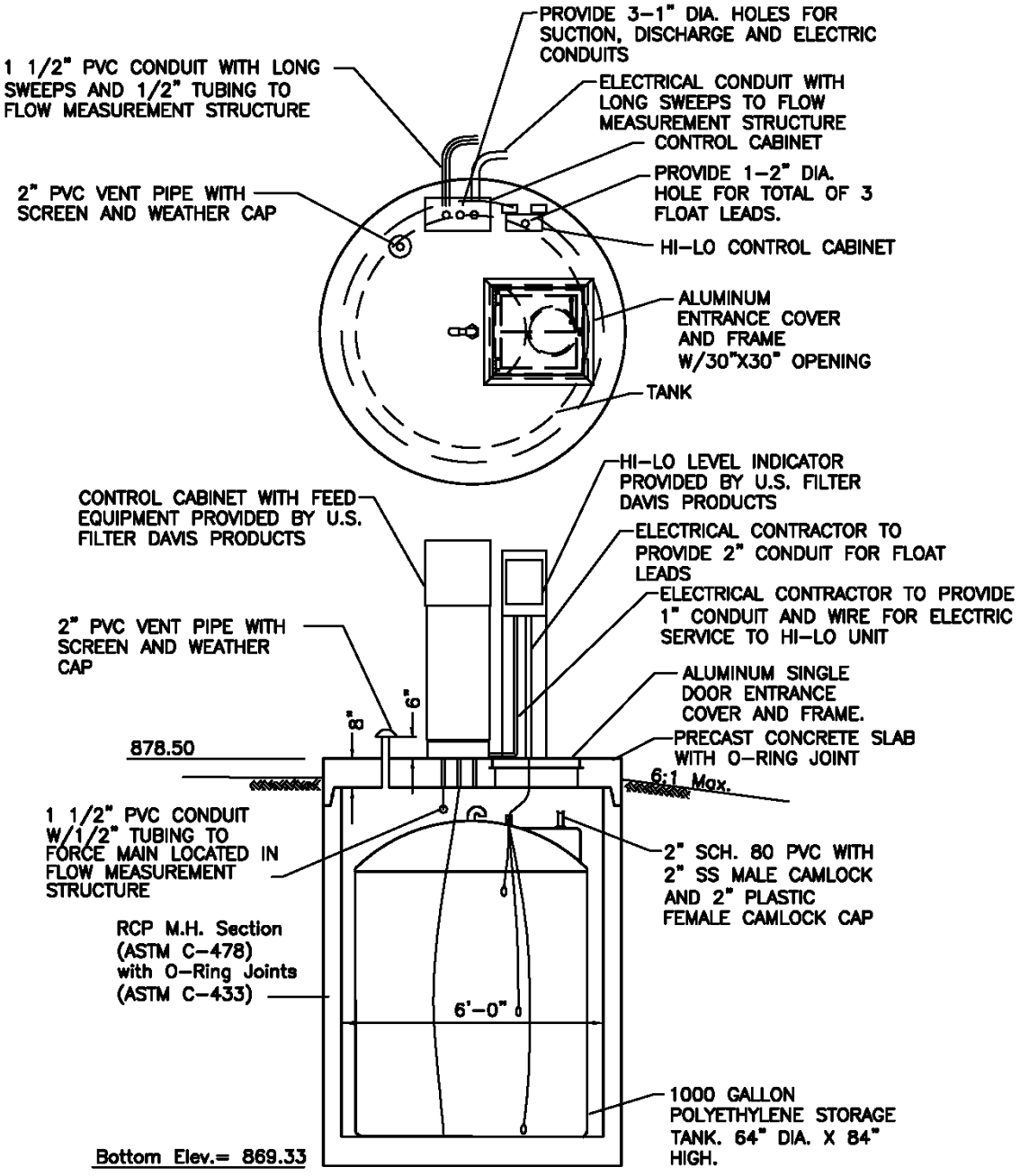


METER MANHOLE

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing OC1 Filename: Odor Control Date: 05-15-06 Note:



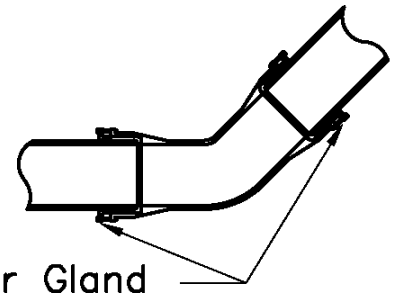
ODOR CONTROL SYSTEM

NTS

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing RMJ1 Filename: Restrained MJ Date: 04–23–15 Note:



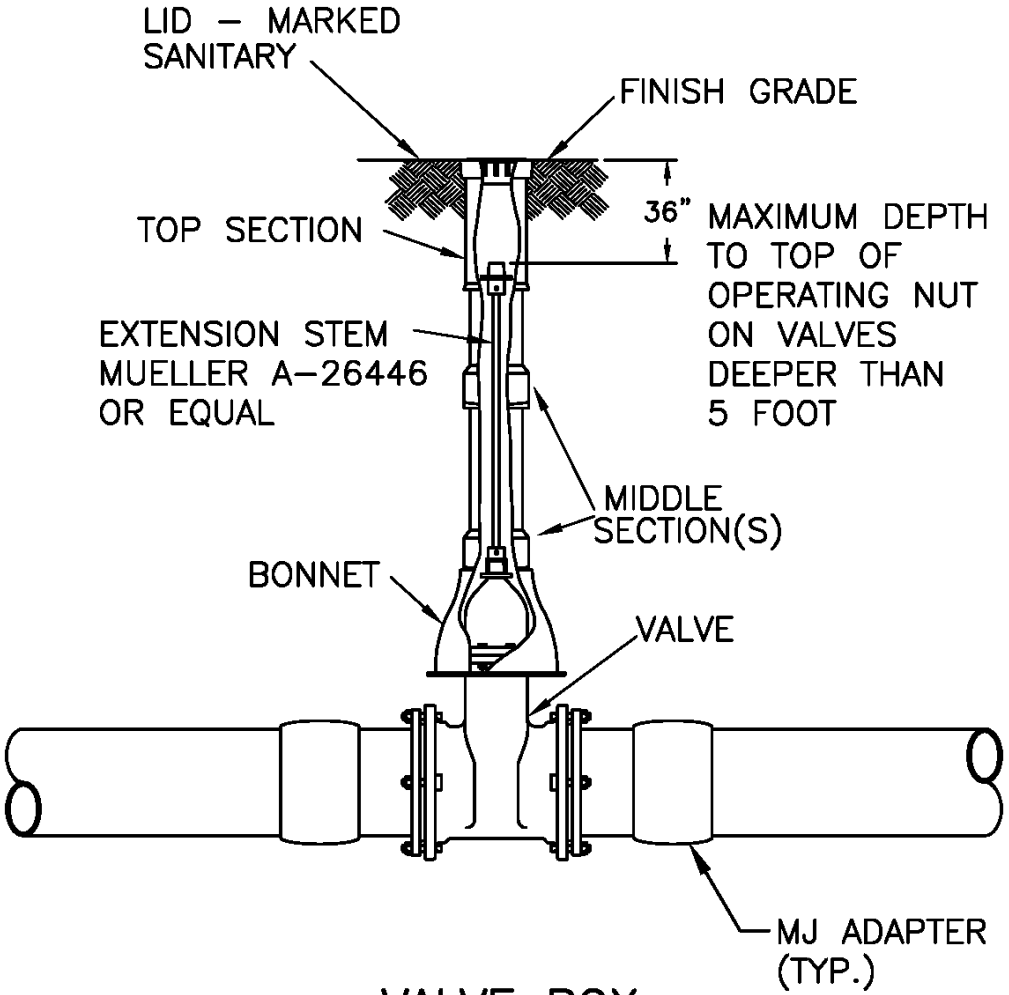
Retainer Gland
(Uni–Flange Series 1300 or equal
for PVC Pipe)

RESTRAINED MECHANICAL JOINT

Sanitary Engineering Department

High Pressure Sewer Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing V1 Filename: Valve Date: 05–15–06 Note:



VALVE BOX

NTS

Sanitary Engineering Department

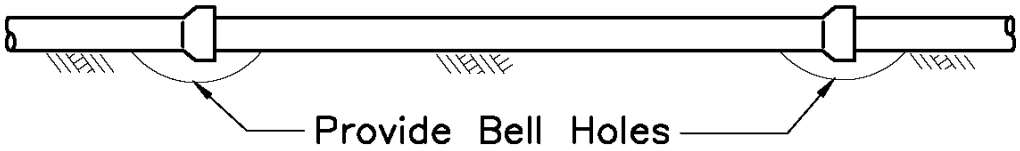
3230 North Cole Street, Lima, Ohio 45801

Appendix B

Low Pressure Standard Details

Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing BP1 Filename: Bedding of Pipe Date: 04-23-15 Note:



Pipe Bells – Never allow pipe bells to rest on or settle down to original trench bottom.

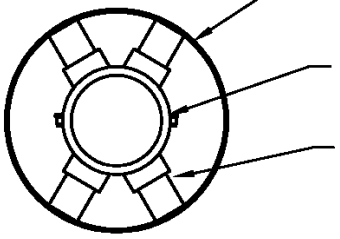
Pipe – Make certain that pipe barrel is given an even bearing for its full length.

BEDDING OF PIPE

AWWA C-600 Laying
Condition Type 2

Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing CD1 Filename: Casing Date: 05–11–06 Note:



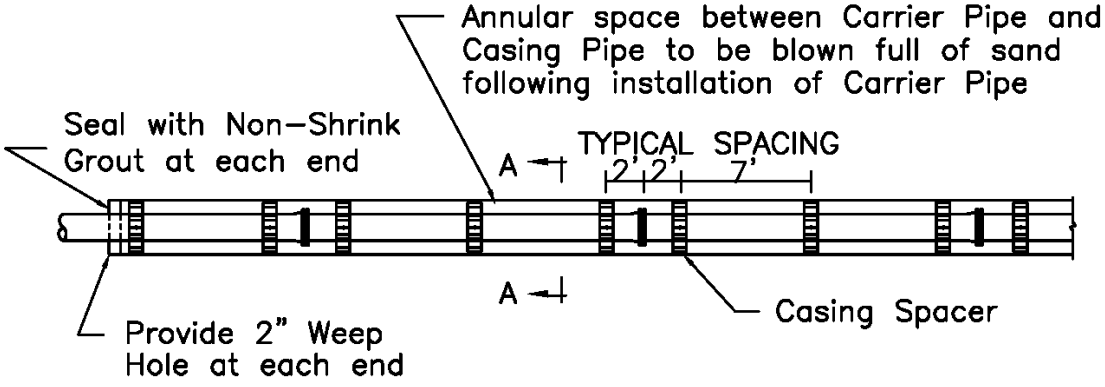
Casing: Steel Pipe conforming to ASTM A–139 Class B

Carrier Pipe

Carrier Pipe shall be centered within Casing by use of Model CCS Stainless Steel Casing Spacers as manufactured by Cascade Waterworks of Yorkville, Il. or prior approved equal.

Wood Blocks cut as required and banded to each length of sewer pipe with Galv. Steel Strap may be allowed as alternate with approval of Engineer. Allow 1" max. clearance between blocks & casing pipe.

SECTION A–A



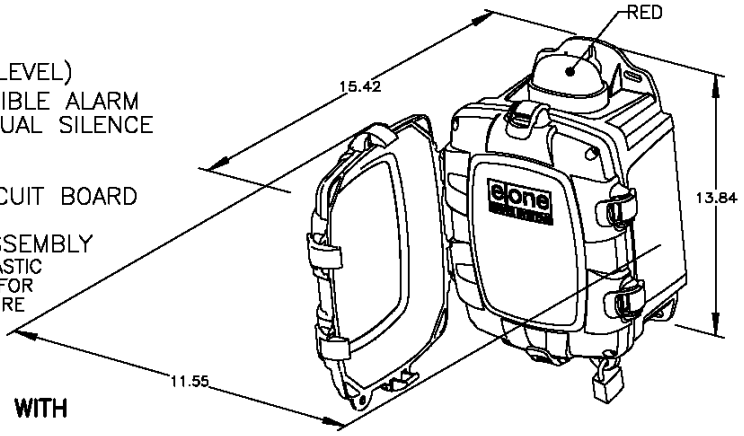
CASING DETAILS

Sanitary Engineering Department
Low Pressure Standard Details

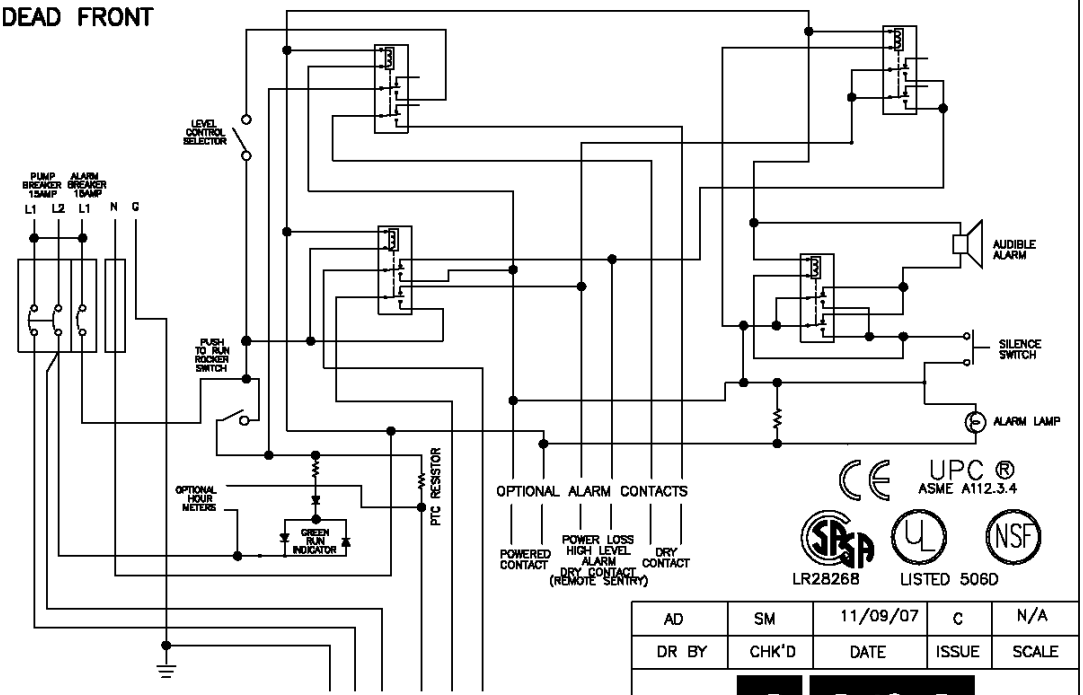
SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing C1 Filename: Controls Date: 05-03-17 Note:

SIMPLEX
SENTRY

REDUNDANT RUN (HIGH LEVEL)
EXTERNAL VISUAL & AUDIBLE ALARM
EXTERNAL LATCHING MANUAL SILENCE
MANUAL RUN
PUMP RUN INDICATOR
CONFORMAL COATED CIRCUIT BOARD
PADLOCK
NEMA 4X ENCLOSURE ASSEMBLY
CORROSION PROOF THERMOPLASTIC POLYESTER APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE



PANEL TO INCLUDE:
GENERATOR RECEPTACLE WITH
AUTO TRANSFER RELAY
RUN-TIME/HOUR METER
MAIN SERVICE DISCONNECT BREAKER
DEAD FRONT



CE UPC ® ASME A112.3.4
LR28268 LISTED 506D

PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

CONTROL CABLE:
TYPE TC: DIRECT BURIAL, 12AWG, SIX CONDUCTOR

AD	SM	11/09/07	C	N/A
DR BY	CHK'D	DATE	ISSUE	SCALE

e/one SEWER SYSTEMS

SIMPLEX SENTRY, 240V 60Hz.
DOUBLE POLE POWER

LM000326

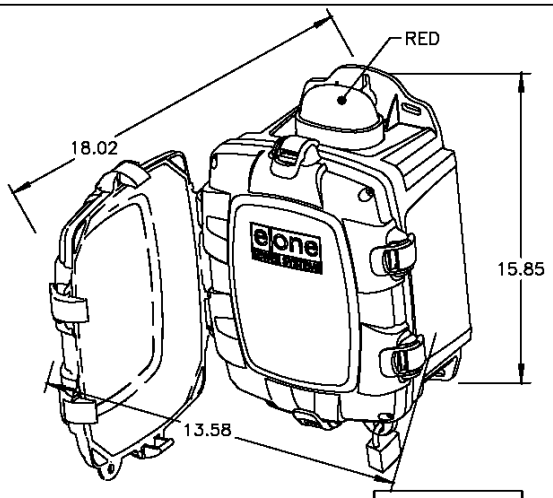
Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing DC1 Filename: Duplex Controls Date: 05-04-2017 Note:

DUPLEX ALTERNATING PANEL T-260

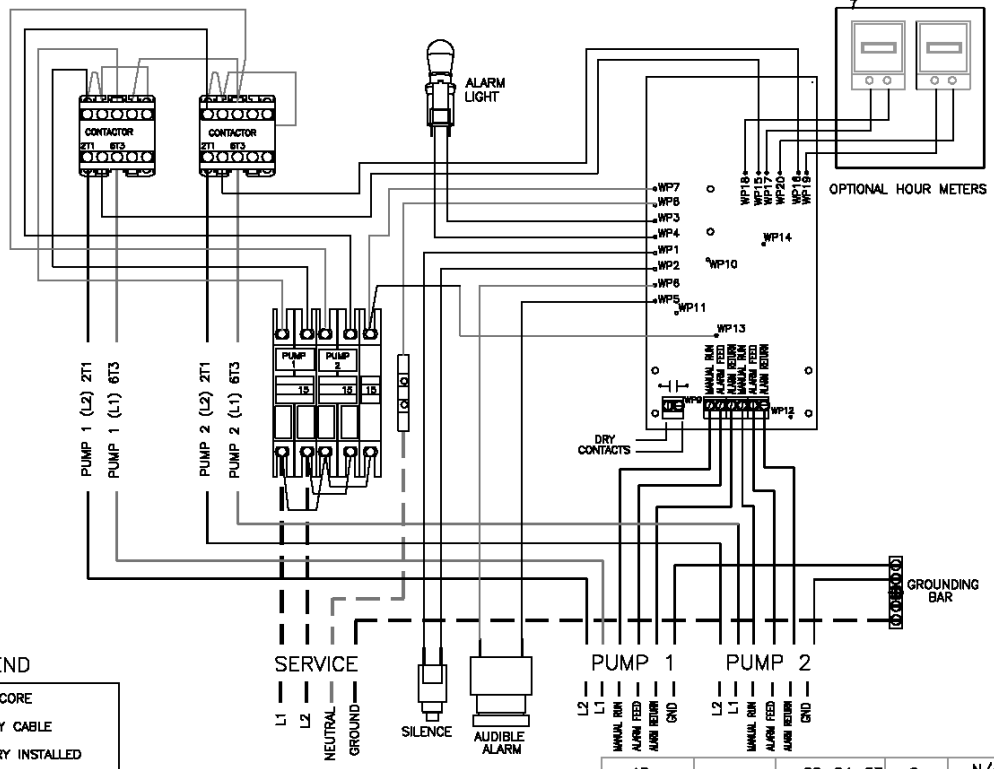
EXTERNAL VISUAL & AUDIBLE ALARM
EXTERNAL LATCHING MANUAL SILENCE
MANUAL RUN
PUMP RUN INDICATORS
CONFORMAL COATED CIRCUIT BOARD
PADLOCK
ALARM DRY CONTACT
NEMA 4X ENCLOSURE ASSEMBLY

CORROSION PROOF THERMOPLASTIC POLYESTER APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE



OPTIONS:

☐ HOUR METER



LEGEND

——— FROM CORE
— — SUPPLY CABLE
——— FACTORY INSTALLED

PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRN/YEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

CE UPC ® ASME A112.3.4

CSA LR28268 UL LISTED 506D NSF

CONTROL CABLE:
TYPE TC: DIRECT BURIAL, 12AWG, SIX CONDUCTOR

AD	SM	09-24-07	C	N/A
DR BY	CHK'D	DATE	ISSUE	SCALE

e/one SEWER SYSTEMS

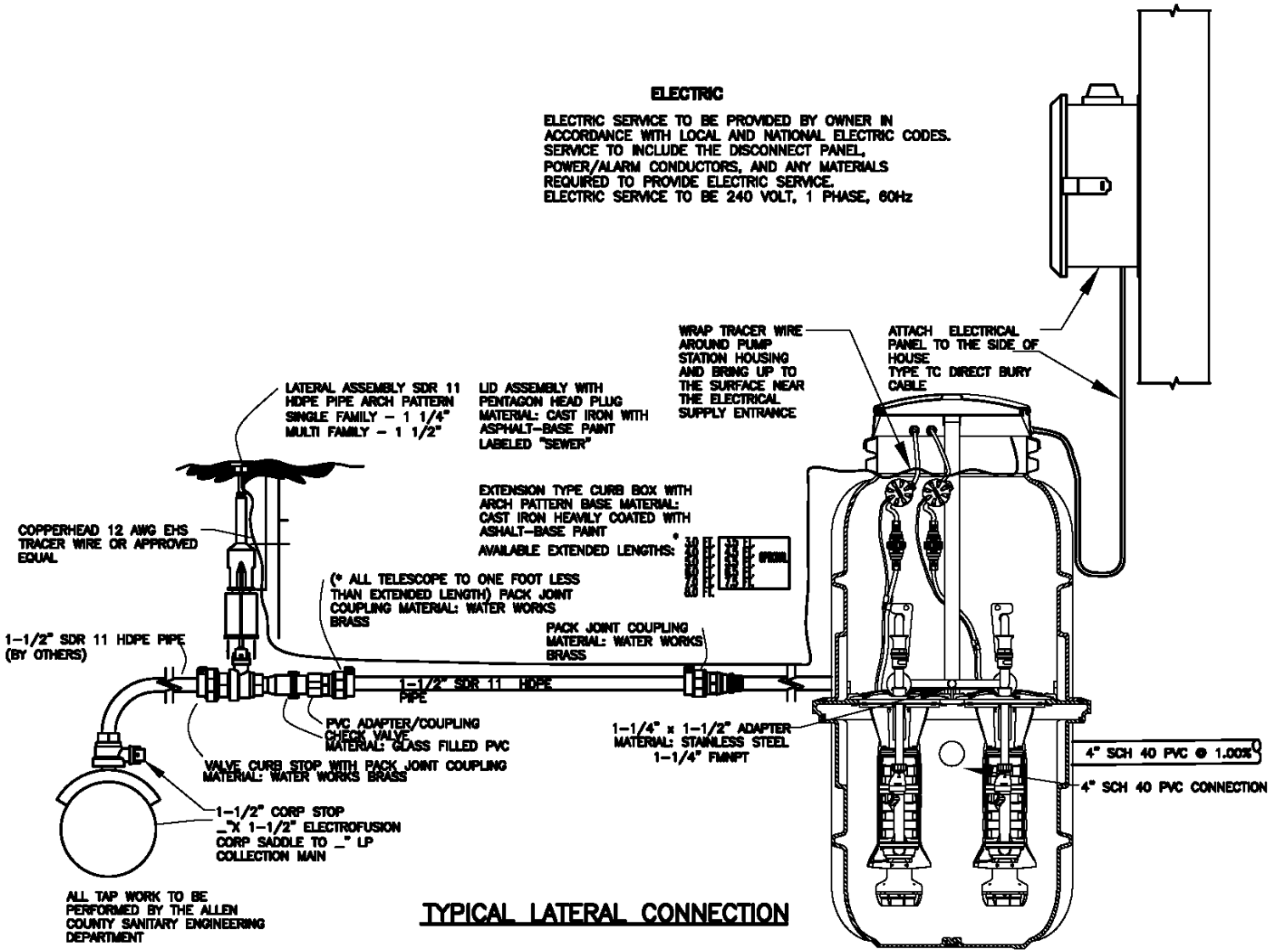
DUPLEX T-260 ALTERNATING PANEL, 240V 60Hz DOUBLE POLE POWER WIRED LEVEL CONTROL

LM000329 P1

Sanitary Engineering Department

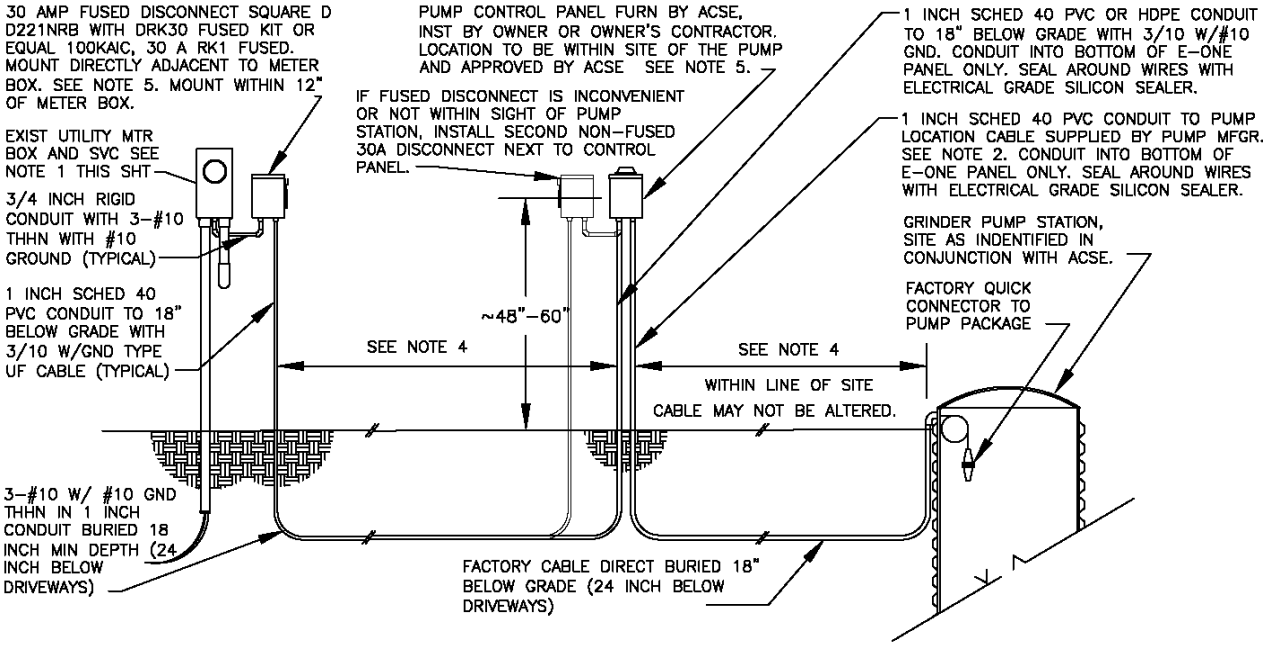
Low Pressure Standard Details

Standard Detail Drawing	EDL1
SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Filename: E-One Duplex Lateral Connection Date: 05-04-2017 Note:



Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing EES1 Filename: E-One Electric Service Date: 04-23-15 Note:



TYPICAL ELECTRIC SERVICE

CHANGES MAY BE MADE IN FIELD AS APPROVED BY ASCE AND HOME OWNER.

NOTES:

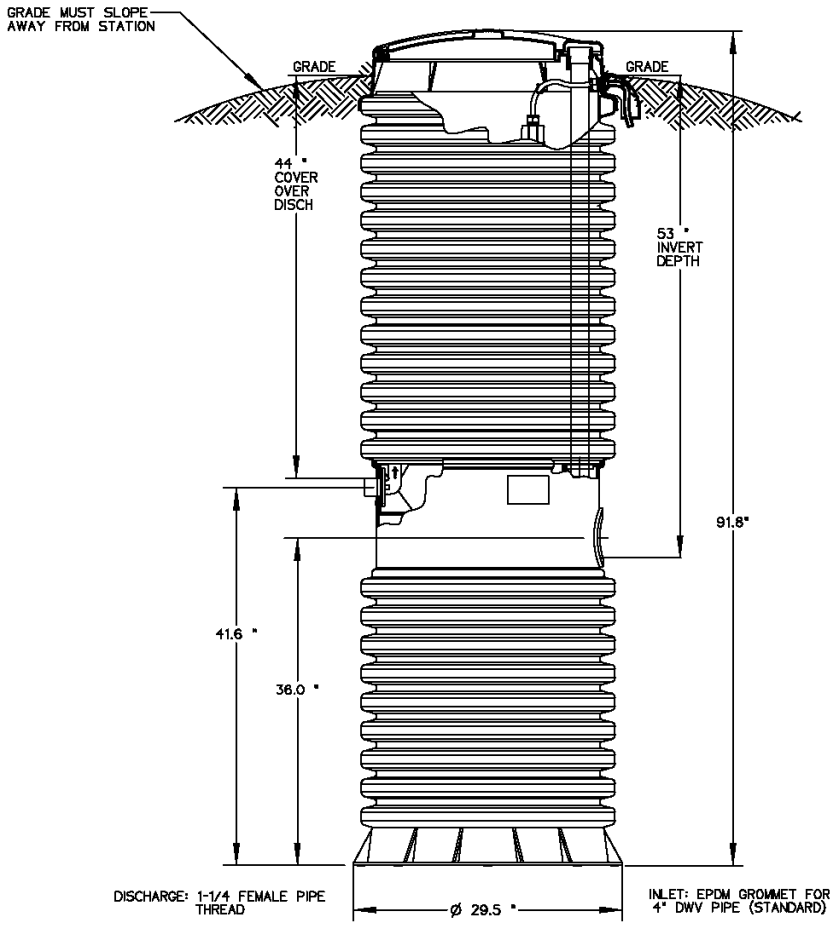
1) OWNER OR OWNER'S CONTRACTOR TO COORDINATE WITH UTILITY TO REMOVE AND INSTALL METER DURING RETROFIT. DO NOT ATTEMPT TO REMOVE METER WITHOUT UTILITY ASSISTANCE. INSTALL DOUBLE LUGS ON LOAD SIDE OF METER BASE AND TRANSFER EXISTING CONDUCTORS AND NEW #10 TO NEW LUG.
2) FACTORY CABLE FOR PUMP STATION SUPPLIED IN STANDARD LENGTHS WITH FACTORY QUICK CONNECTS EACH END. LENGTH MAY NOT BE ALTERED. ALLEN COUNTY SANITARY ENGINEERS OFFICE TO DETERMINE APPROPRIATE LENGTH AND SUPPLY CABLE WITH PUMP STATION. OWNER OR OWNERS CONTRACTOR TO INSTALL.
3) "ASCE" REFERS TO "ALLEN COUNTY SANITARY ENGINEER"
4) DISTANCE TO BE DETERMINED BY LOCATIONS IDENTIFIED IN CONJUNCTION WITH ASCE.
5) INSTALL J-BLOCK BEHIND 30 AMP DISCONNECT AND E-ONE PANEL ON ALUMINUM AND VINYL SIDED STRUCTURES.
6) ALL ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF ALL LOCAL BUILDING CODES.
7) ELECTRICAL WIRING SHALL NOT BE ROUTED THROUGH THE STRUCTURE, AND MUST REMAIN OUTSIDE THE DWELLING UNIT. THE ELECTRICAL SOURCE SHALL BE FROM THE UTILITY METER BASE. IF METER BASE IS UNSUITABLE, THE HOMEOWNER SHALL REPLACE THE BASE WITH A SUITABLE DEVICE.

Sanitary Engineering Department

Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing EI1 Filename: E_ONE Installation Date: 05-03-17 Note:

DH071-93



AD	CAH	07/12/07	B	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE

BALLAST REQUIREMENTS

A CONCRETE ANCHOR IS REQUIRED ON ALL MODEL DH071-93 STATIONS

SPECIFIC CONCRETE DIMENSIONS ARE REQUIRED TO ACHIEVE NECESSARY BALLAST EFFECT

SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

e/one SEWER SYSTEMS

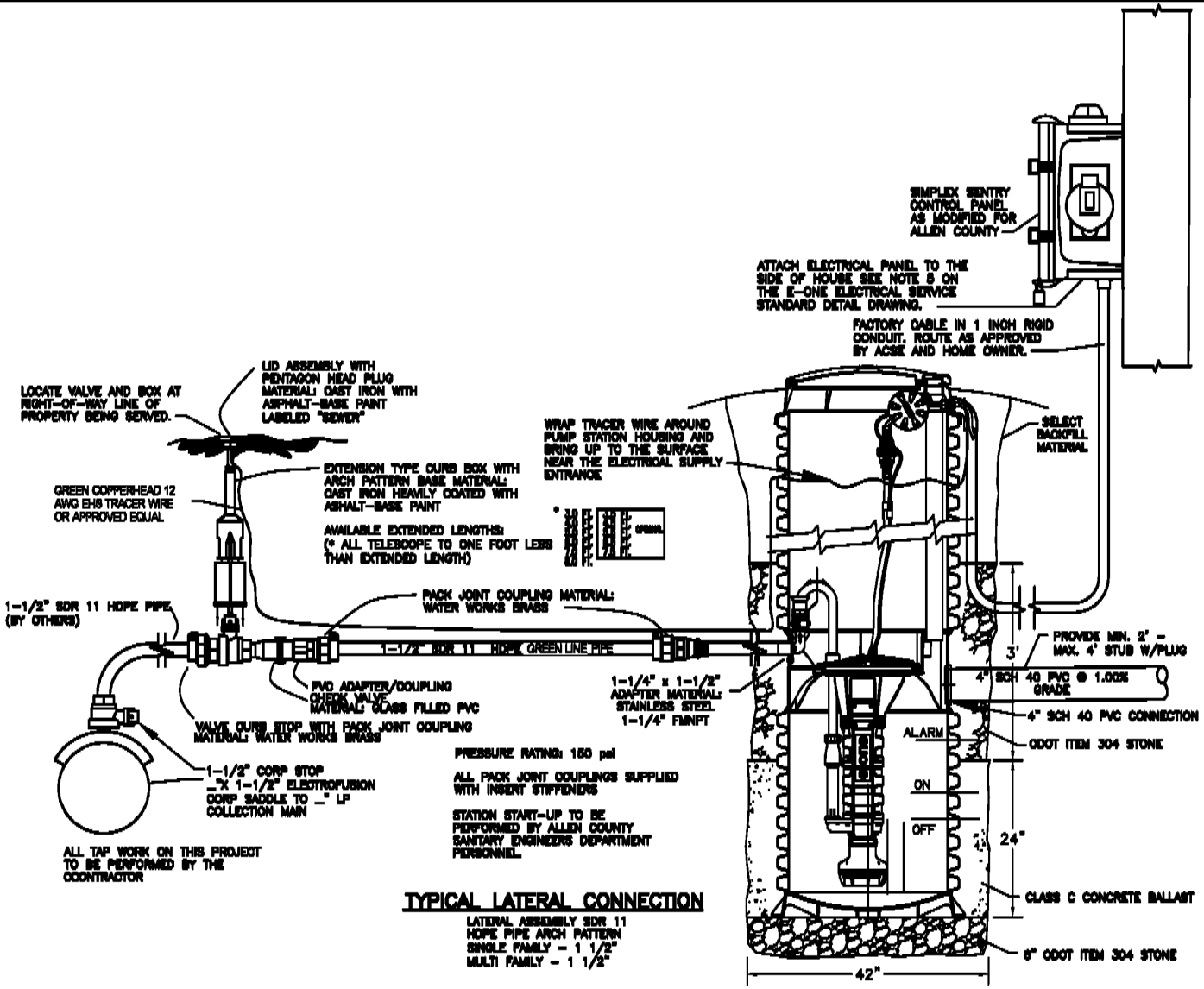
MODEL DH071-93 / DR071-93

NA0050P06

Sanitary Engineering Department

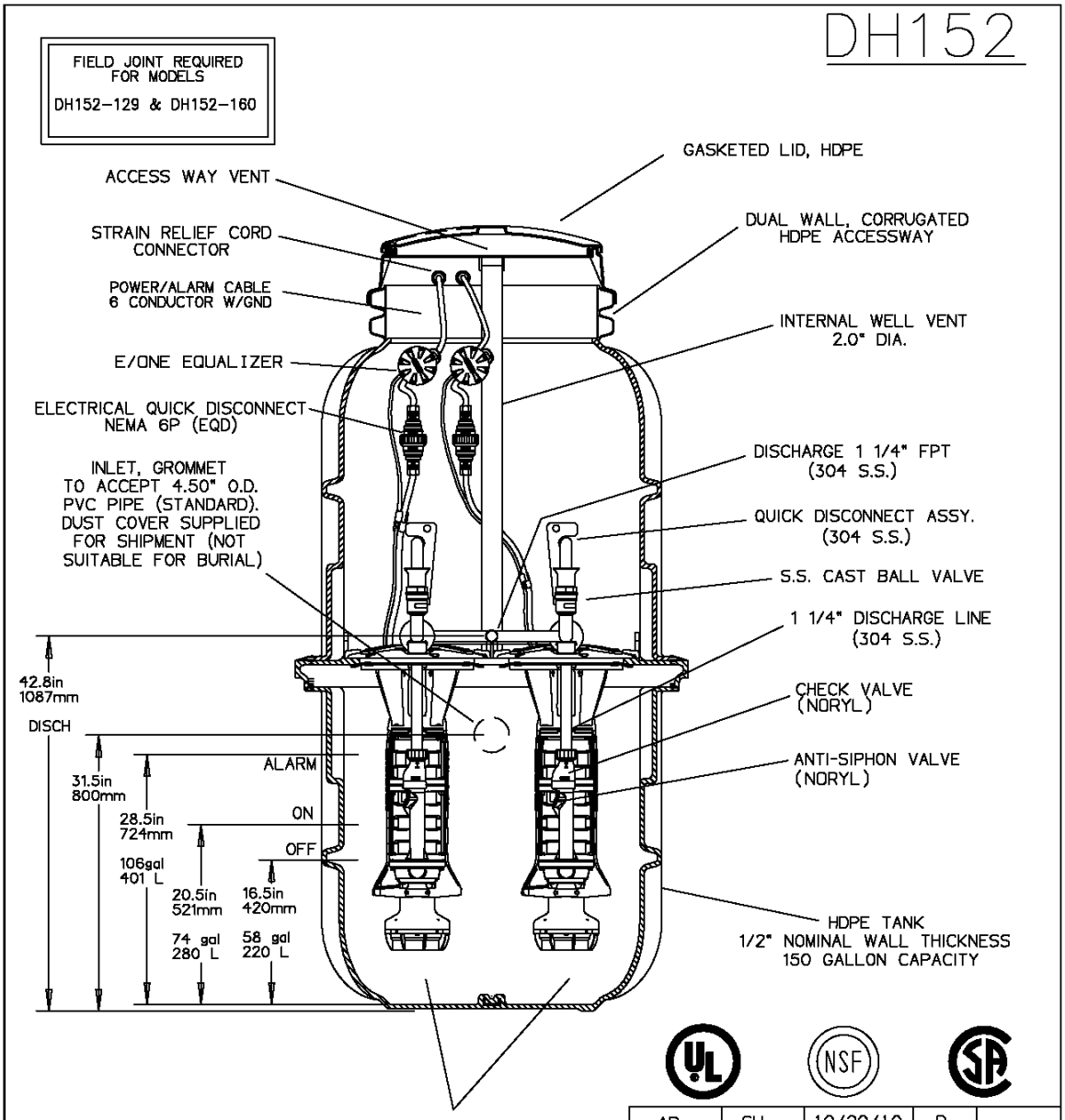
Low Pressure Standard Details

Standard Detail Drawing	ELC1
SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Filename: E-One Lateral Connection Date: 05-03-2017 Note:



Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing ESM1 Filename: E-ONE Section Model 152 Date: 05-04-2017 Note:



BALLAST REQUIREMENTS

A CONCRETE ANCHOR IS REQUIRED
ON ALL OUTDOOR MODEL DH152 STATIONS

SPECIFIC CONCRETE DIMENSIONS ARE REQUIRED
TO ACHIEVE NECESSARY BALLAST EFFECT

SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

AD	CH	10/20/10	D	
DR BY	CHK'D	DATE	ISSUE	SCALE

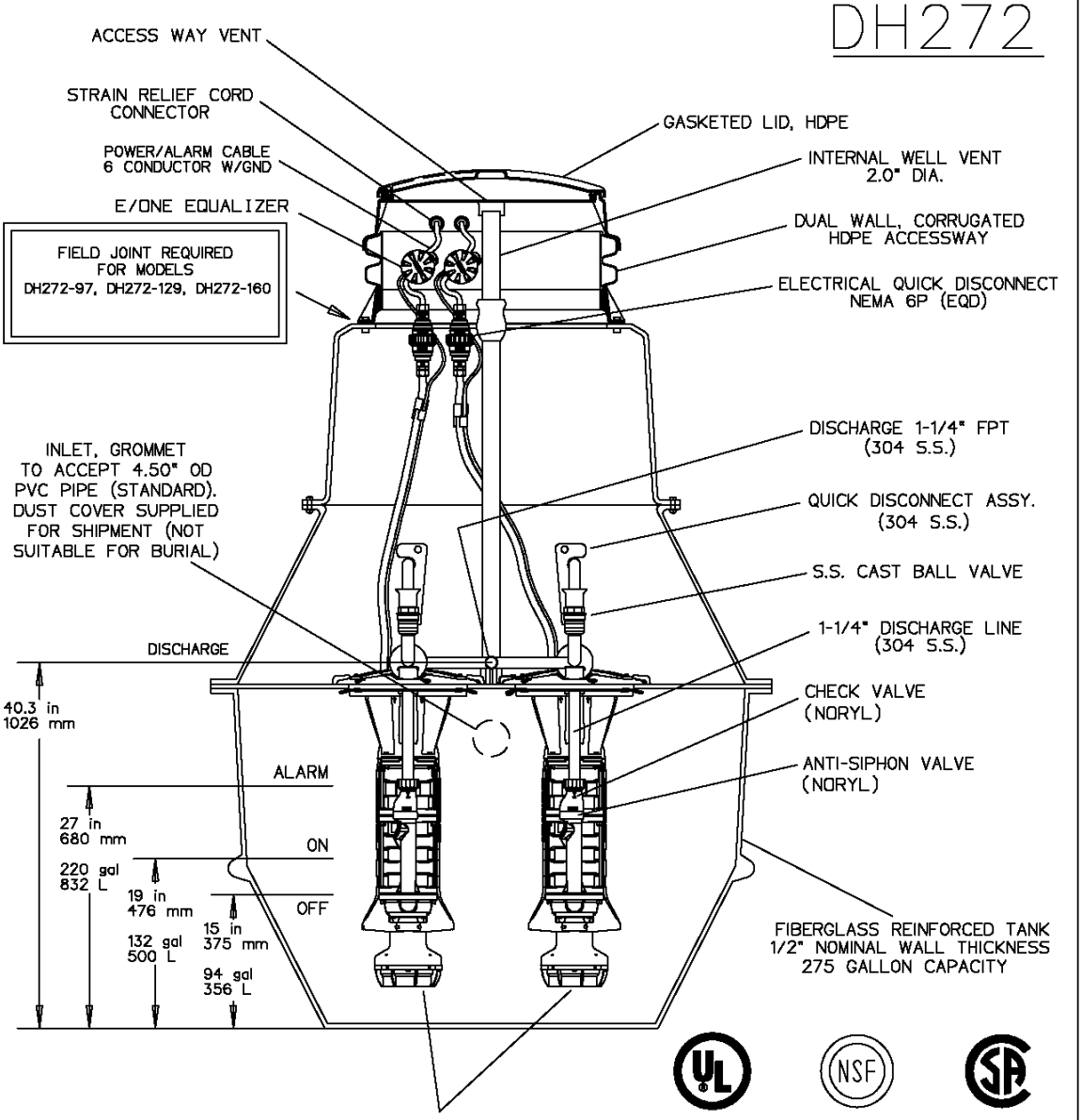
e|one
SEWER SYSTEMS

MODEL DH152
DETAIL SHEET

NA0052P02

Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing ESM2 Filename: E-ONE Section Model 272 Date: 05-04-2017 Note:



AD	CH	10/20/10	D	
DR BY	CHK'D	DATE	ISSUE	SCALE

e|one
SEWER SYSTEMS

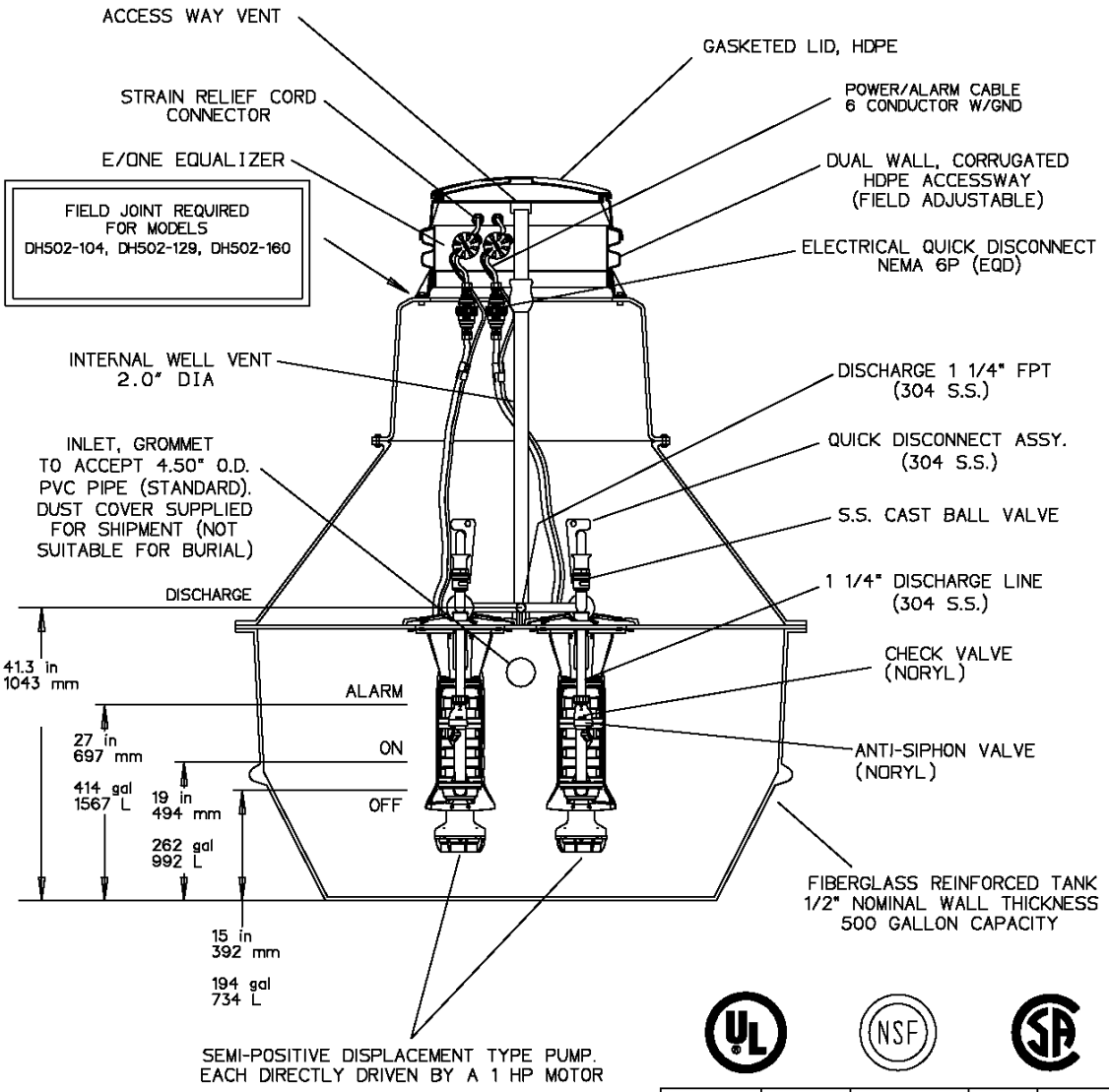
MODEL DH272
DETAIL SHEET

NA0053P02

Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing ESM3 Filename: E-One Section Model 502 Date: 05-04-2017 Note:

DH502



CONCRETE BALLAST MAY BE REQUIRED
SEE INSTALLATION INSTRUCTIONS
FOR DETAILS

AD	CH	10/20/10	D	
DR BY	CHK'D	DATE	ISSUE	SCALE

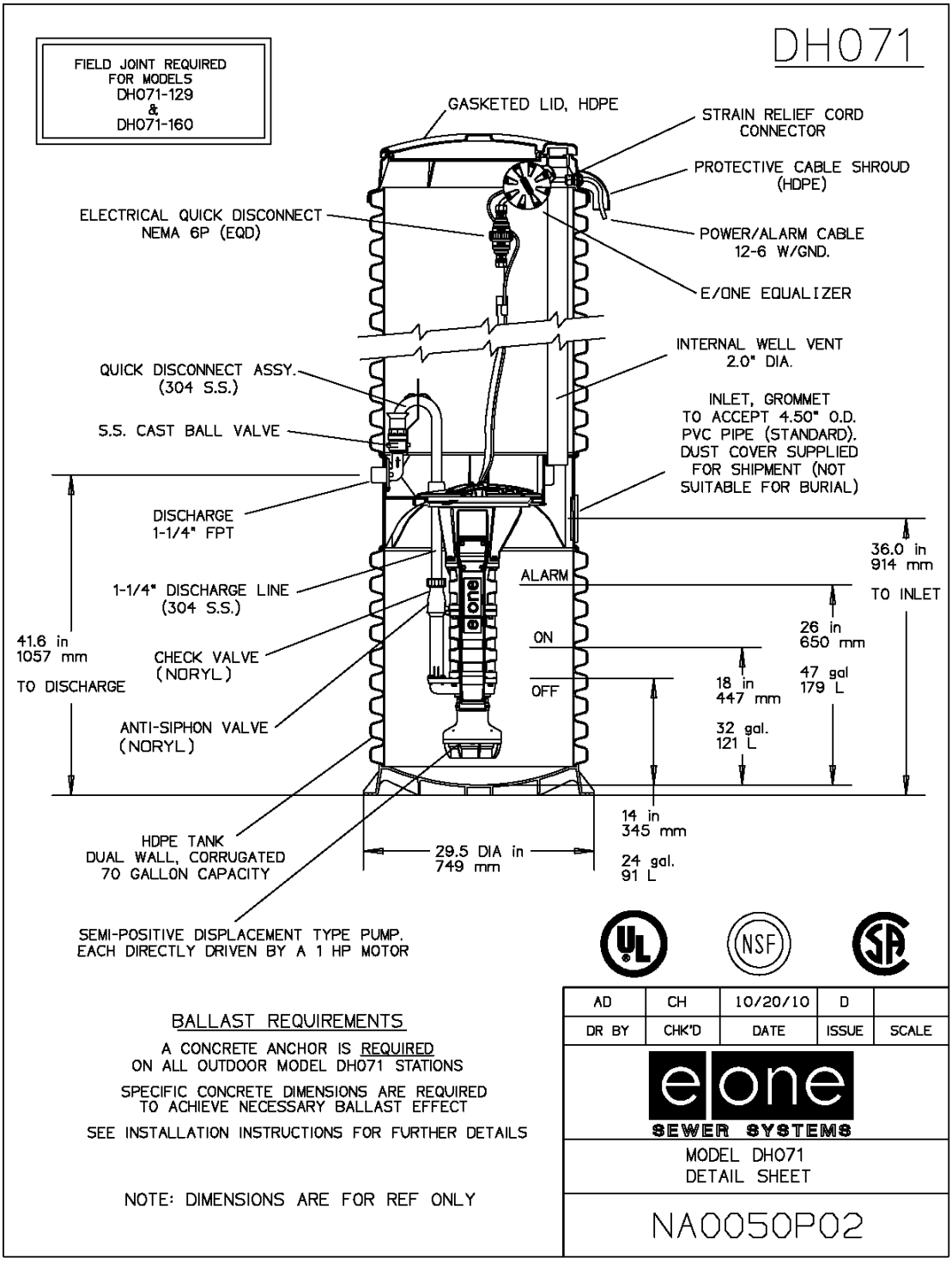
e/one SEWER SYSTEMS

MODEL DH502
DETAIL SHEET

NA0054P02

Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing ES1 Filename: E_ONE Section Date: 05-03-2017 Note:



BALLAST REQUIREMENTS

A CONCRETE ANCHOR IS REQUIRED ON ALL OUTDOOR MODEL DH071 STATIONS

SPECIFIC CONCRETE DIMENSIONS ARE REQUIRED TO ACHIEVE NECESSARY BALLAST EFFECT

SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

NOTE: DIMENSIONS ARE FOR REF ONLY

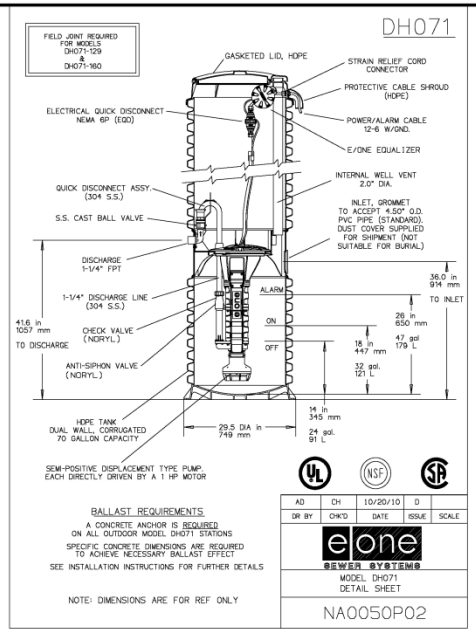
AD	CH	10/20/10	D	
DR BY	CHK'D	DATE	ISSUE	SCALE

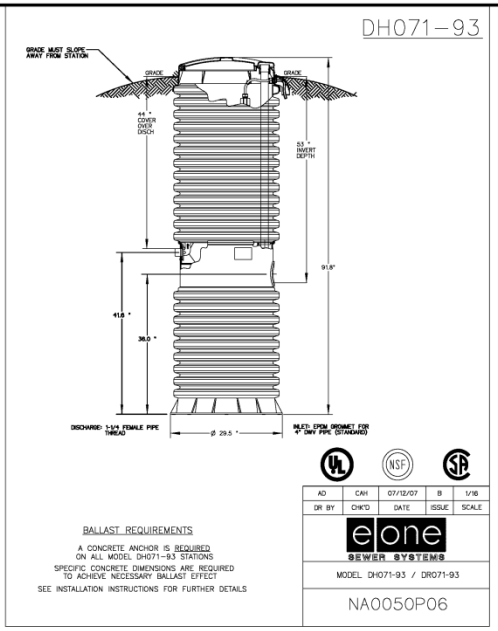
e|one
SEWER SYSTEMS

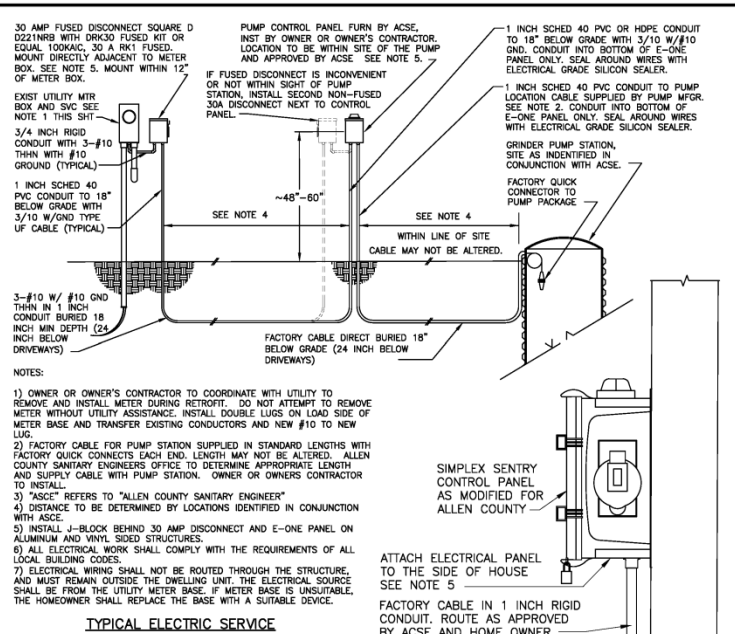
MODEL DH071
DETAIL SHEET

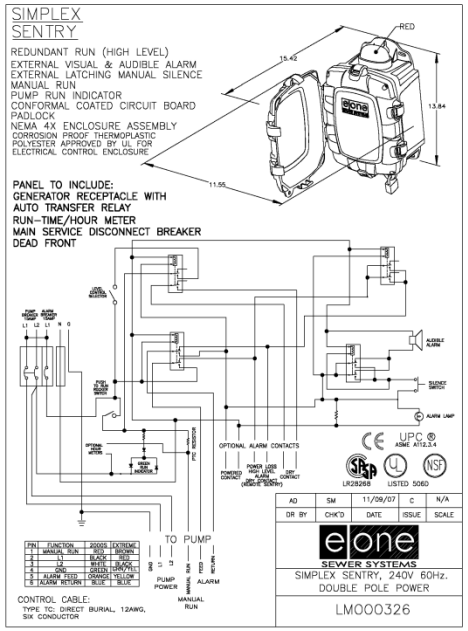
NA0050P02

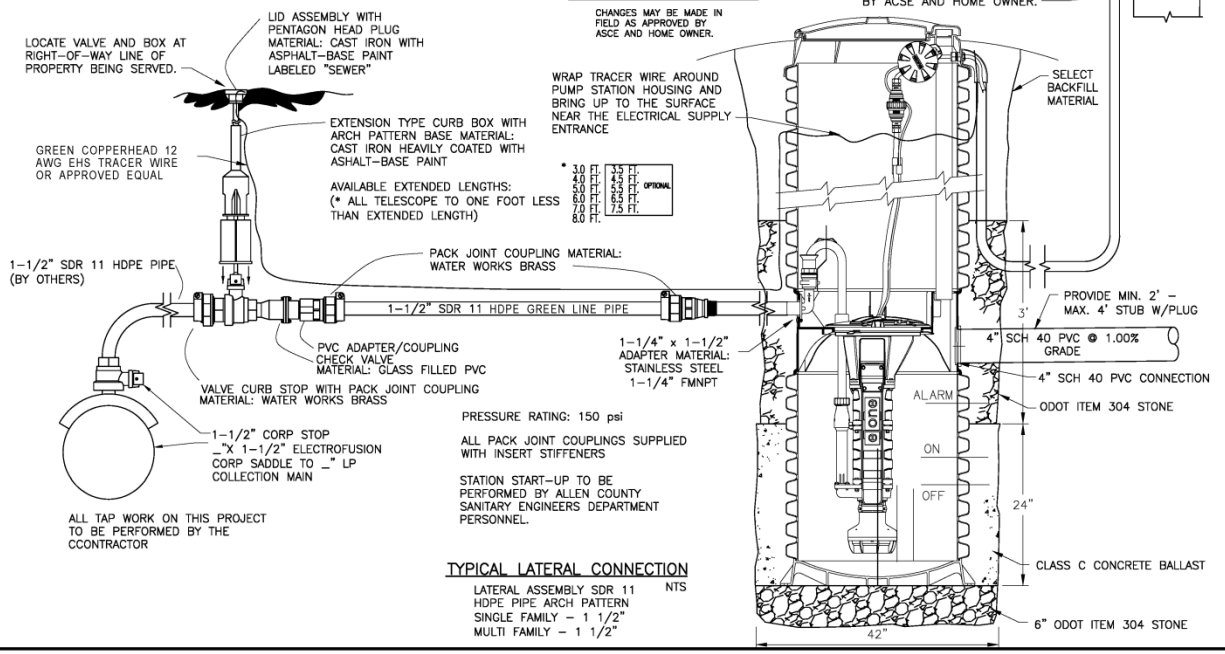
Sanitary Engineering Department
Low Pressure Standard Details







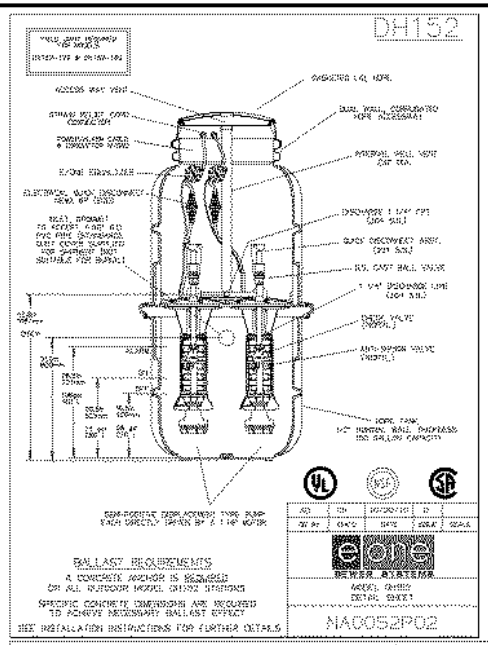


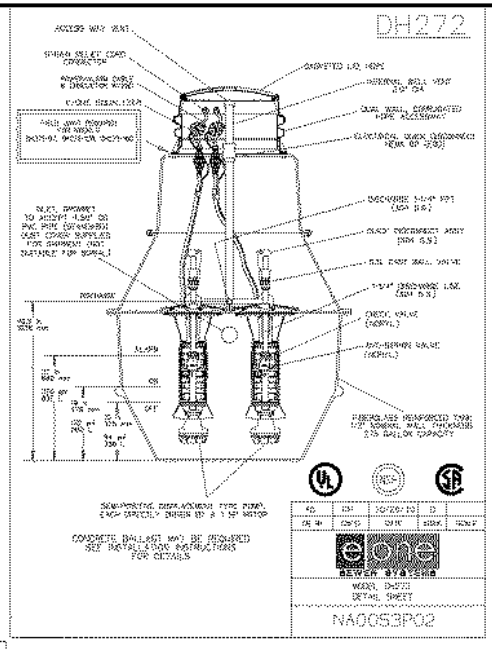


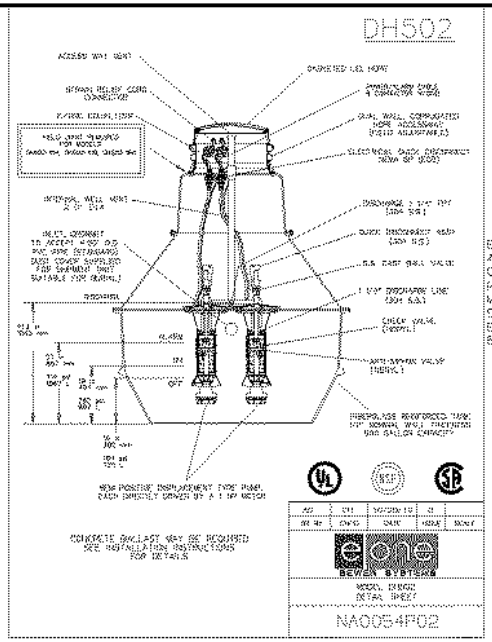
AGENCY: SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO
PROJECT: SINGLE FAMILY RESIDENTIAL LP SANITARY COLLECTION
SUBJECT: STANDARD DRAWING NO. GPD 1.0
DATE: 05-04-17
DRAWING NO.: 1

D:\eps\ACSE\Standards\GRINDER PUMP DETAILS 1.dwg, DETAIL 22X34, 6/29/2017 8:19:00 AM

Sanitary Engineering Department
Low Pressure Standard Details

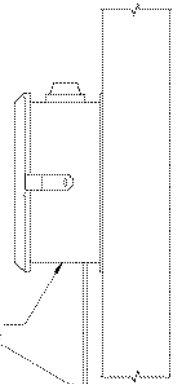


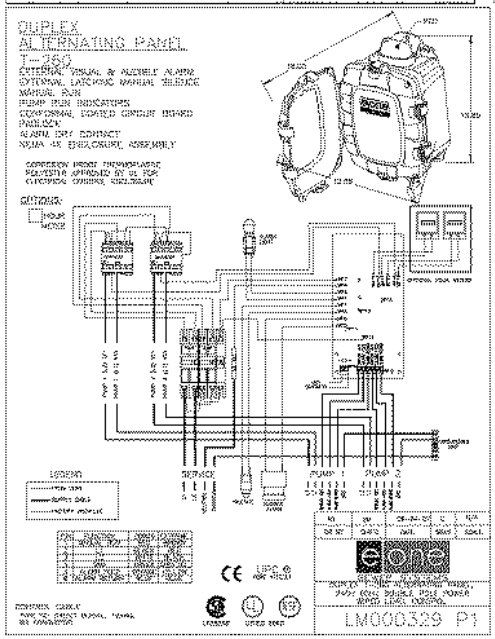


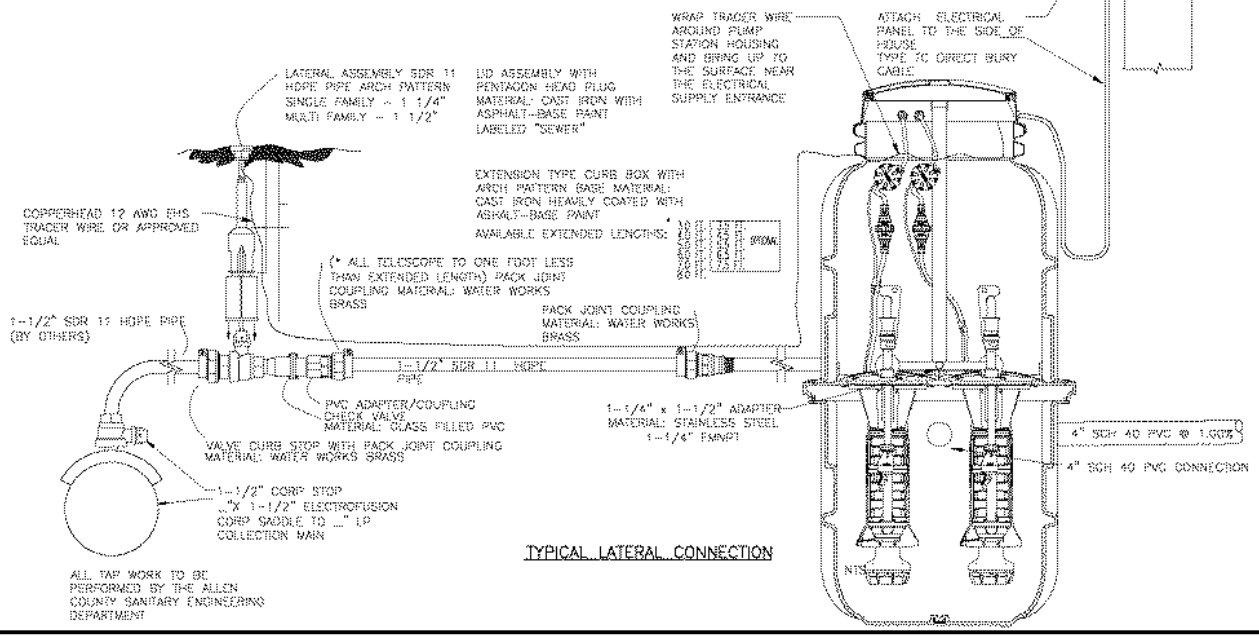


ELECTRIC

ELECTRIC SERVICE TO BE PROVIDED BY OWNER IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRIC CODES. SERVICE TO INCLUDE THE DISCONNECT PANEL, POWER/ALARM CONDUCTORS, AND ANY MATERIALS REQUIRED TO PROVIDE ELECTRIC SERVICE.
ELECTRIC SERVICE TO BE 240 VOLT, 1 PHASE, 60Hz







SANITARY ENGINEERING DEPARTMENT
ALLEN COUNTY, OHIO

MULTIPLE FAMILY RESIDENTIAL LP SANITARY COLLECTION

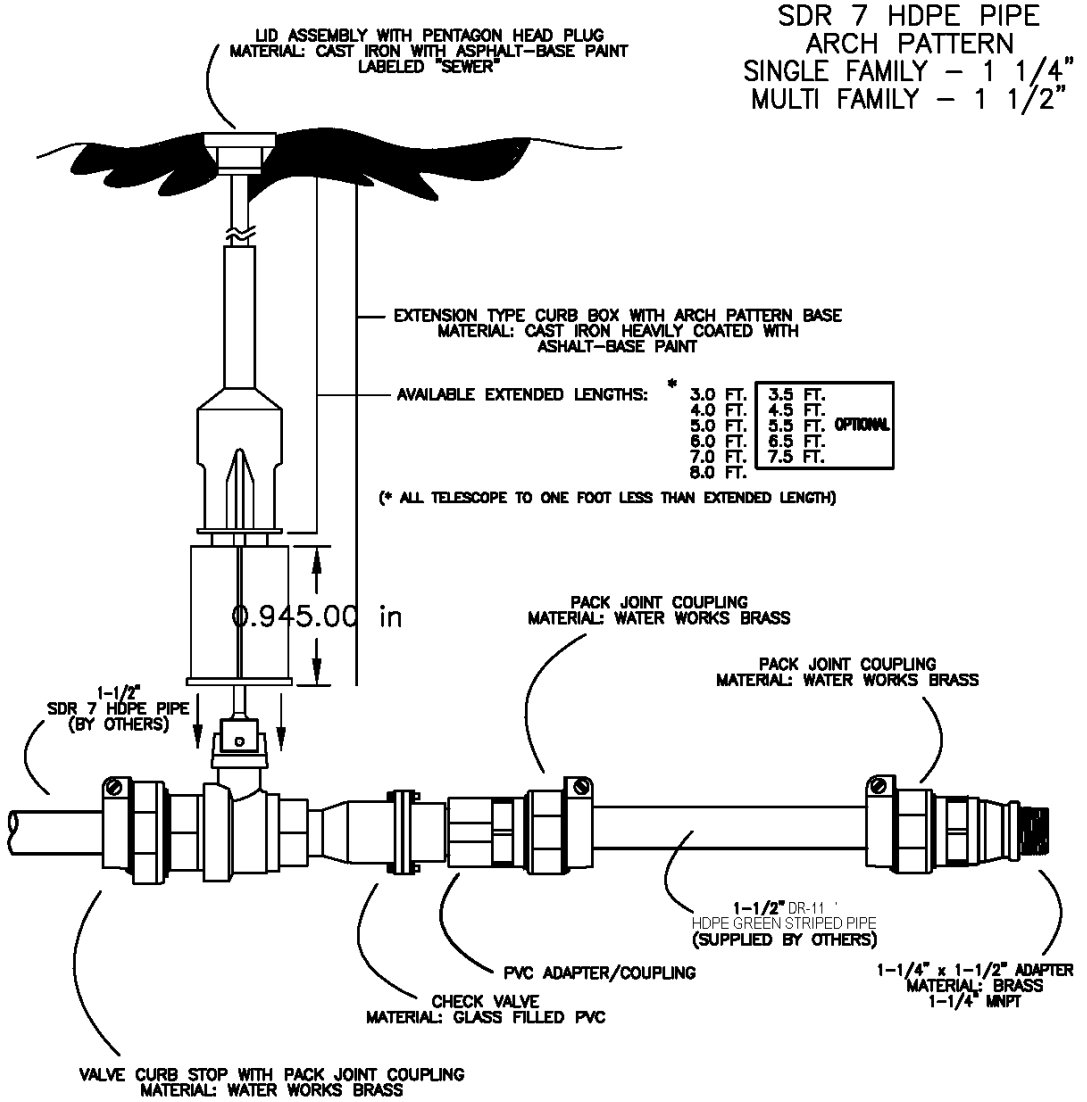
STANDARD DRAWING NO. GPD 2.0

DATE: 04-17

Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing LK1 Filename: Lateral Kit Date: 05-15-06 Note:

LATERAL ASSEMBLY
SDR 7 HDPE PIPE
ARCH PATTERN
SINGLE FAMILY – 1 1/4"
MULTI FAMILY – 1 1/2"



PRESSURE RATING: 150 psi

ALL PACK JOINT COUPLINGS SUPPLIED
WITH INSERT STIFFENERS

ASSEMBLY TO BE USED WITH 1-1/2"SDR 7
PIPE ONLY

*FOR ORDERING INFORMATION SEE PA1372P01 LATERAL ORDER CODE

APS	WRS	01/06/97	-	3/16
DR BY	CHK'D	DATE	ISSUE	SCALE

environment | one
CORPORATION

LATERAL ASSEMBLY
1-1/2" SDR 7 HDPE PIPE ARCH PATTERN

PA 1330 P01

Sanitary Engineering Department
Low Pressure Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing SP1 Filename: Specifications Pressure Date: 05-15-06 Note:

ELECTRIC

ELECTRIC SERVICE TO BE PROVIDED BY OWNER IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRIC CODES. SERVICE TO INCLUDES THE DISCONNECT PANEL, POWER/ALARM CONDUCTORS, AND ANY MATERIALS REQUIRED TO PROVIDE ELECTRIC SERVICE.

SPECIFICATIONS FOR LOW PRESSURE SANITARY COLLECTION SYSTEM

PIPE

ALL PIPING TO BE HIGH DENSITY POLYETHYLENE (HDPE) CONFORMING WITH ASTM D3350 WITH CELL CLASSIFICATION PE345464C. ALL PIPE TO BE DR11:

- 2" AND SMALLER DIAMETERS TO BE IPS
- 3", 4", 6" AND LARGER DIAMETER TO BE IPS
- 5" DIAMETER TO HAVE AN ID OF 4.511"

PIPE TO BE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING (HDD) METHODS IN COMPLIANCE WITH ASTM F1962.

12 AWG GREEN STRIPE PIPE TO BE ACCOMPANIED BY GREEN TRACER-WIRE

VALVES

PROVIDE CLOW F-G100 RESILIENT WEDGE VALVES AT THE LOCATIONS CALLED FOR.

PROVIDE STEM EXTENSION AND VALVE BOX.

FLUSH STATION

PROVIDE 1 1/2" MALE STANDARD THREAD FITTING ON 2" RISER WITH 2 EACH 45° BENDS. PROVIDE 1 1/2" GLOBE SHUTOFF VALVE. LOCATE IN 8" PVC RISER WITH SCREWED PLUG CAP.

AIR RELEASE STRUCTURE

SEE ALLEN COUNTY STANDARD

SERVICE TAPS

PROVIDE 1 1/2" ELECTROFUSION CORP. SADDLE WITH BRASS CC THREADS AND A FORD MODEL ____ 1 1/2" X 1 1/4" THREADS. TAP TO BE MADE UNDER PRESSURE.

Sanitary Engineering Department

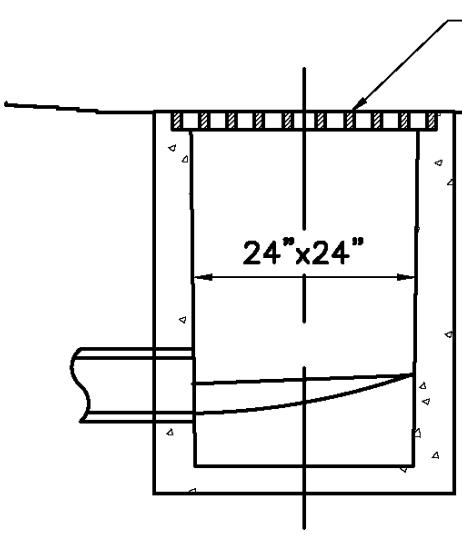
3230 North Cole Street, Lima, Ohio 45801

Appendix B

Miscellaneous Standard Details

Sanitary Engineering Department
Miscellaneous Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing CB1
	Filename: Catch Basin 2–2–B Date: 04–23–15 Note:



O.D.O.T. standard No. 2–2–B with 8" walls for brick, solid concrete block or poured in place. Precast to be as man–ufactured by Bluffton Precast Concrete or equal with 6" walls.

Provide Concrete Fill as required for sewer inverts.

6" & 12" Risers are available

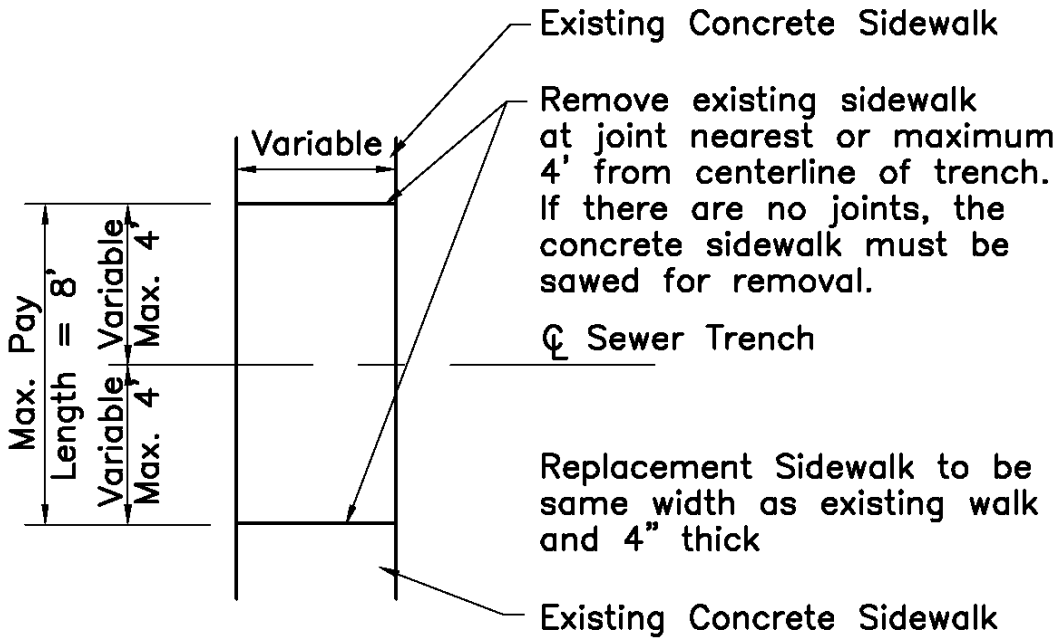
CATCH BASIN 2–2–B

NTS

Sanitary Engineering Department

Miscellaneous Standard Details

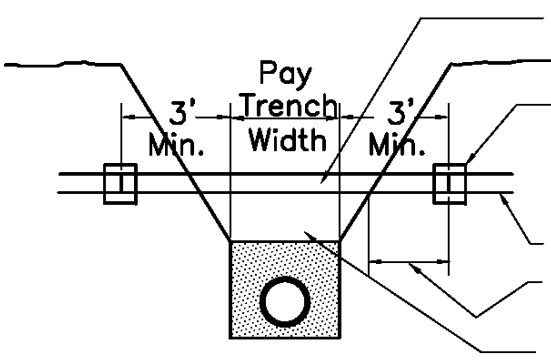
SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing CSR1
	Filename: Concrete Sidewalk Replacement Date: 04-23-15 Note:



CONCRETE SIDEWALK REPLACEMENT

Sanitary Engineering Department
Miscellaneous Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing DR1 Filename: Drainage Replacement Date: 05-08-2017 Note:



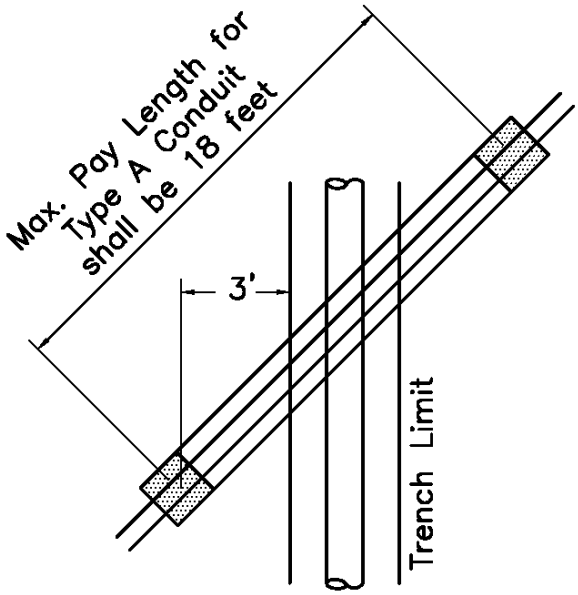
Replacement Pipe – Type A Conduit (same size as existing)

Provide a concrete collar or other acceptable means of joining pipe such as a Fernco flexible coupling with stainless steel clamps.

Existing Drainage Pipe

Minimum of 2' of undisturbed bearing surface

Compacted Granular Back fill under pipe



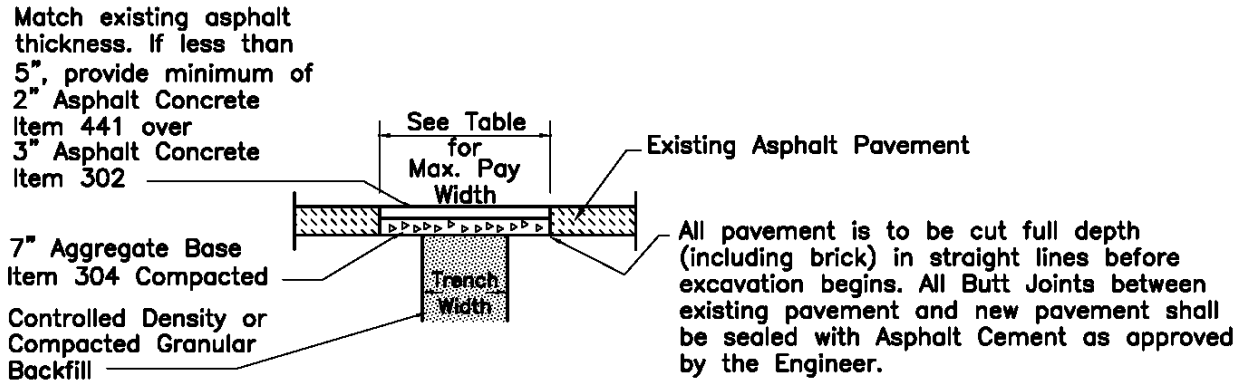
The Contractor shall restore all existing drainage disturbed during tie work. Replacement pipe for drainage crosing the trench shall be Type A Conduit as specified under 611.02. Drainage pipe parallel to the trench shall be replaced with Type B Conduit as specified under 611.02. Type of conduit shall be determined by the Engineer.

*Pay length for all drainage pipes shall be paid in accordance with Item 611.16and 611.17. Quantities to be used at the direction of the Engineer are established in the bid schedule.

DRAINAGE REPLACEMENT

Sanitary Engineering Department
Miscellaneous Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing RR1 Filename: Roadway Replacement Date: 05–08–17 Note:



ROADWAY PAVEMENT REPLACEMENT – TYPE 1

Pipe Size	6"–12"	15"–21"	24"–27"
Max. Pay Pavement Width	6'–0"	6'–6"	7'–0"

MAXIMUM PAY WIDTH TABLE

NOTE: DAMAGE TO PAVEMENT, BERM, DRAINAGE, ETC. OUTSIDE OF PAY LIMITS SHALL BE REPAIRED AT CONTRACTORS EXPENSE TO ENGINEER'S SATISFACTION.

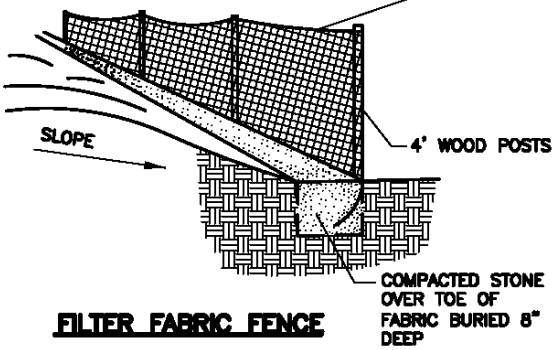
Sanitary Engineering Department
Miscellaneous Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing SEC1 Filename: Soil Erosion Control Date: 05-08-17 Note:

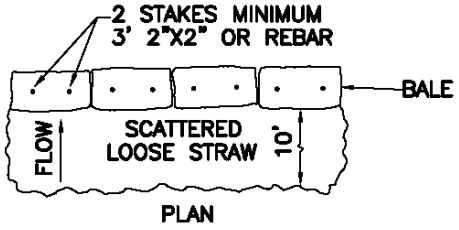
CONSTRUCT SEDIMENT FENCE ON LOW SIDE OF EXCAVATIONS AND SOIL STOCKPILES TO PREVENT SEDIMENT FROM BEING WASHED INTO THE DRAINAGE SYSTEM.

LOCATE POSTS DOWNSIDE OF FABRIC TO HELP SUPPORT FENCING.

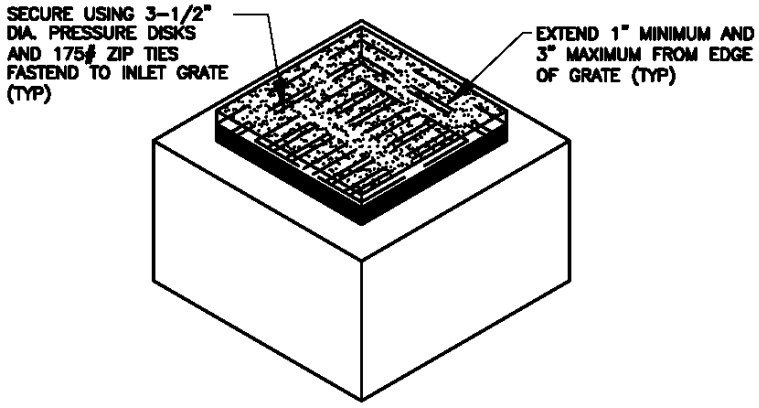
ITEM 832 FILTER FABRIC FENCE 712.09 TYPE C



FILTER FABRIC FENCE



STRAW BALE FILTER DIKE

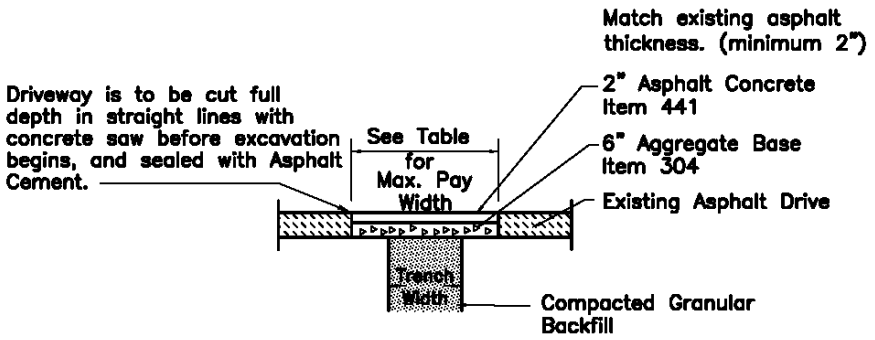


INLET PROTECTION

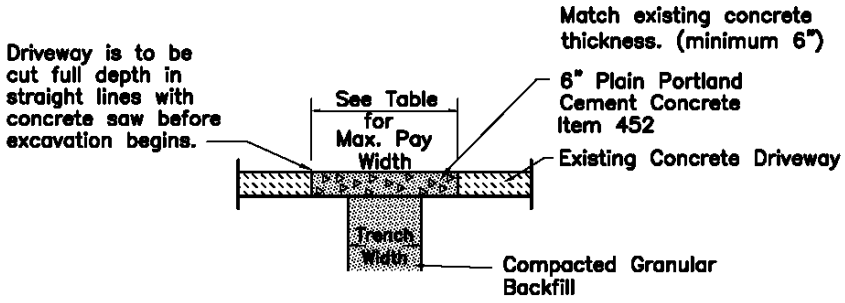
THREE DIMENSIONAL NATURAL FIBER INLET PROTECTION DEVICE (SEDIGUARD BY EARTH SUPPORT SYSTEMS OR APPROVED EQUIVALENT)

Sanitary Engineering Department
Miscellaneous Standard Details

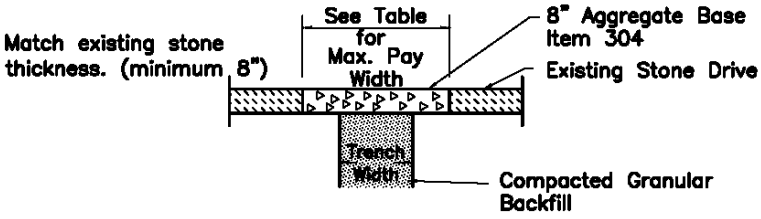
SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing VDR1 Filename: Various Driveway Replacements Date: 05-08-17 Note:



ASPHALT DRIVEWAY REPLACEMENT



CONCRETE DRIVEWAY REPLACEMENT



STONE DRIVEWAY REPLACEMENT

Pipe Size	6"-12"	15"-21"	24"-27"
Max. Pay Pavement Width	6'-0"	6'-6"	7'-0"

MAXIMUM PAY WIDTH TABLE

NOTE: DAMAGE TO PAVEMENT, BERM, DRAINAGE, ETC. OUTSIDE OF PAY LIMITS SHALL BE REPAIRED AT CONTRACTORS EXPENSE TO ENGINEER'S SATISFACTION.

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

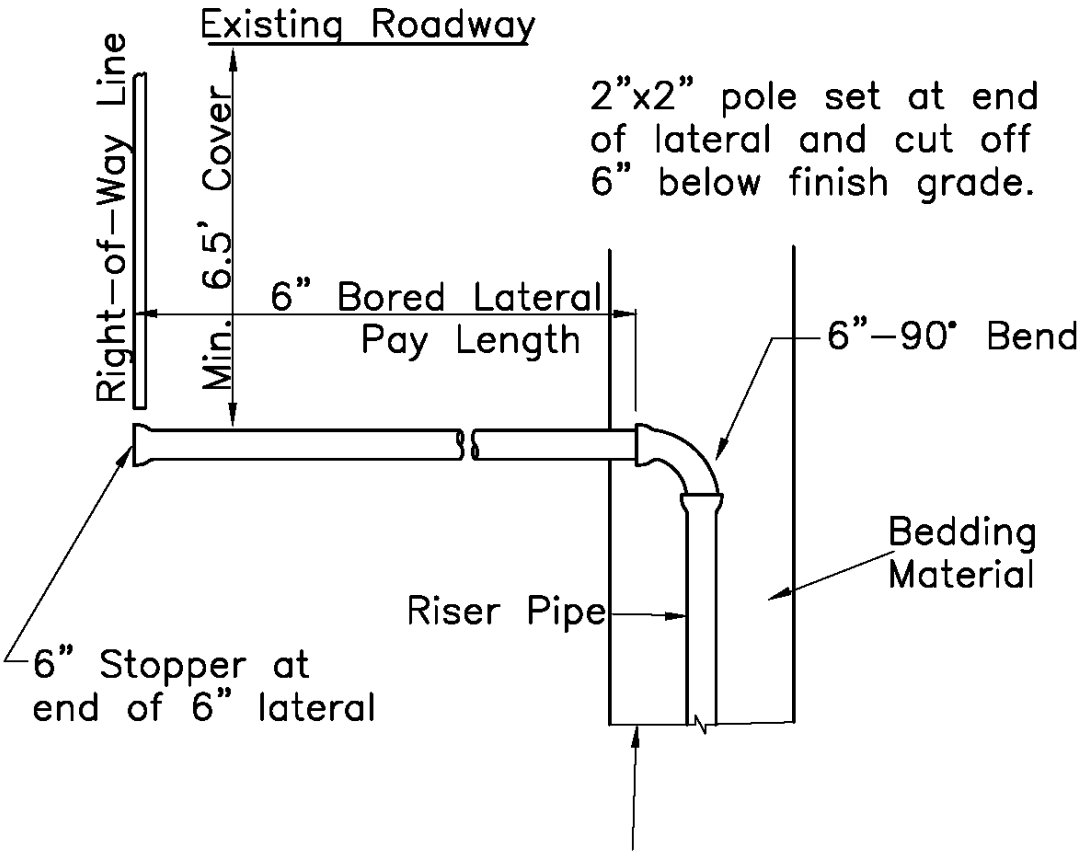
Appendix B

Service Connection Standard Details

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing BC1 Filename: Bored Connection Date: 05-08-17 Note:



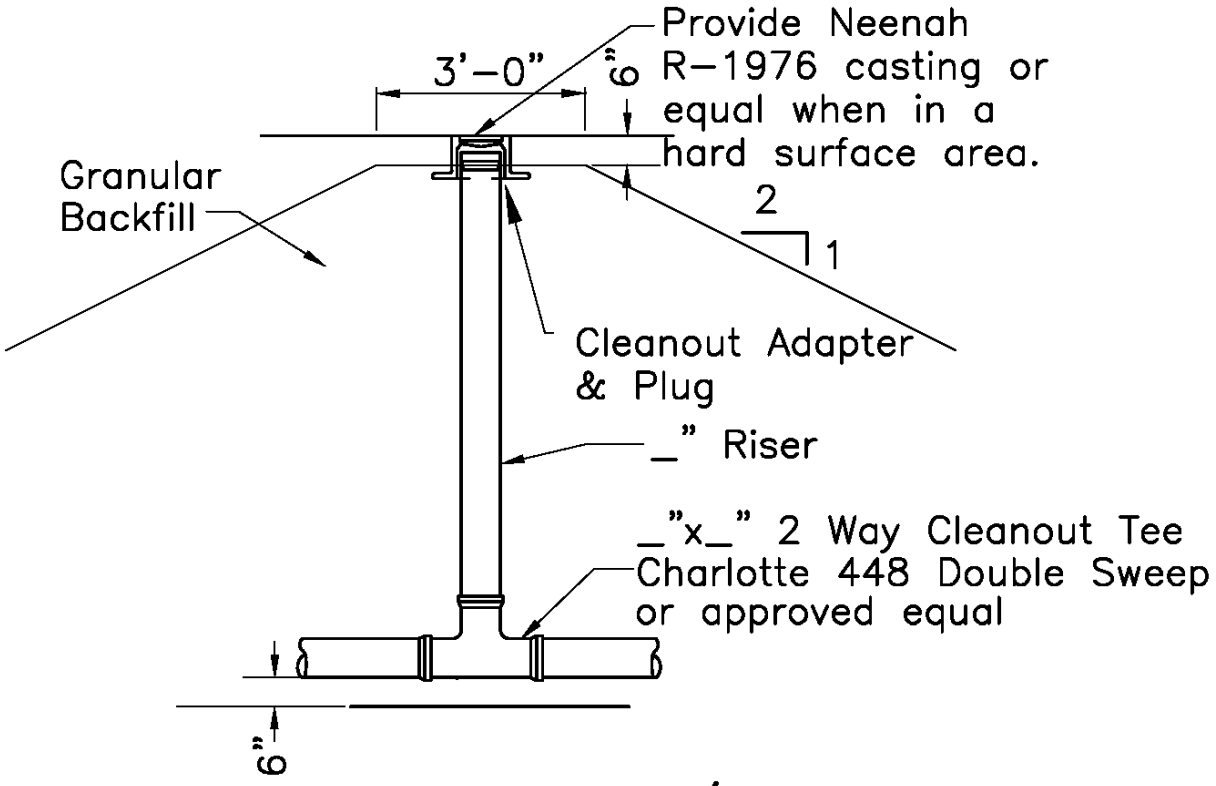
BORED CONNECTION

Pipe shall be 6" seamless PVC Schedule 40 or HDPE

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing COR1 Filename: Cleanout at RW Date: 05-08-2017 Note:



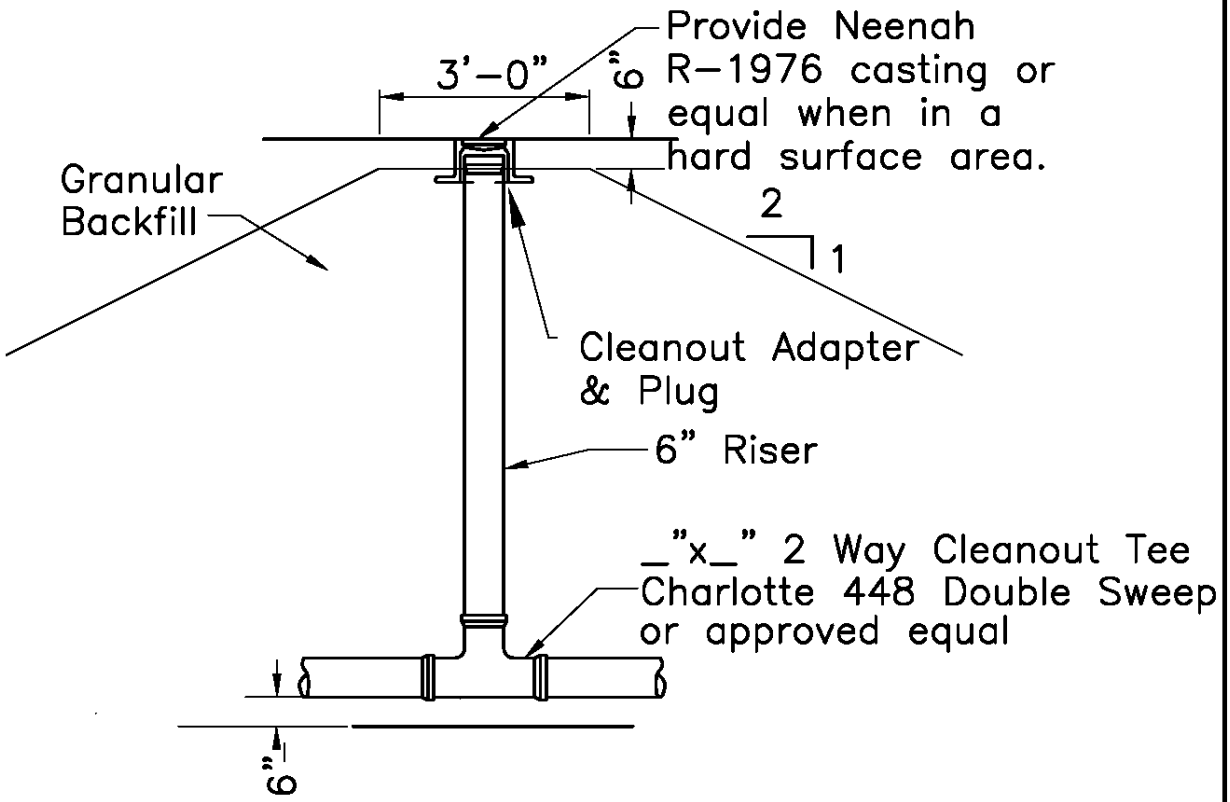
CLEAN OUT AT R/W

May be 4" or 6"

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing CO1 Filename: Cleanout Date: 05-08-2017 Note:

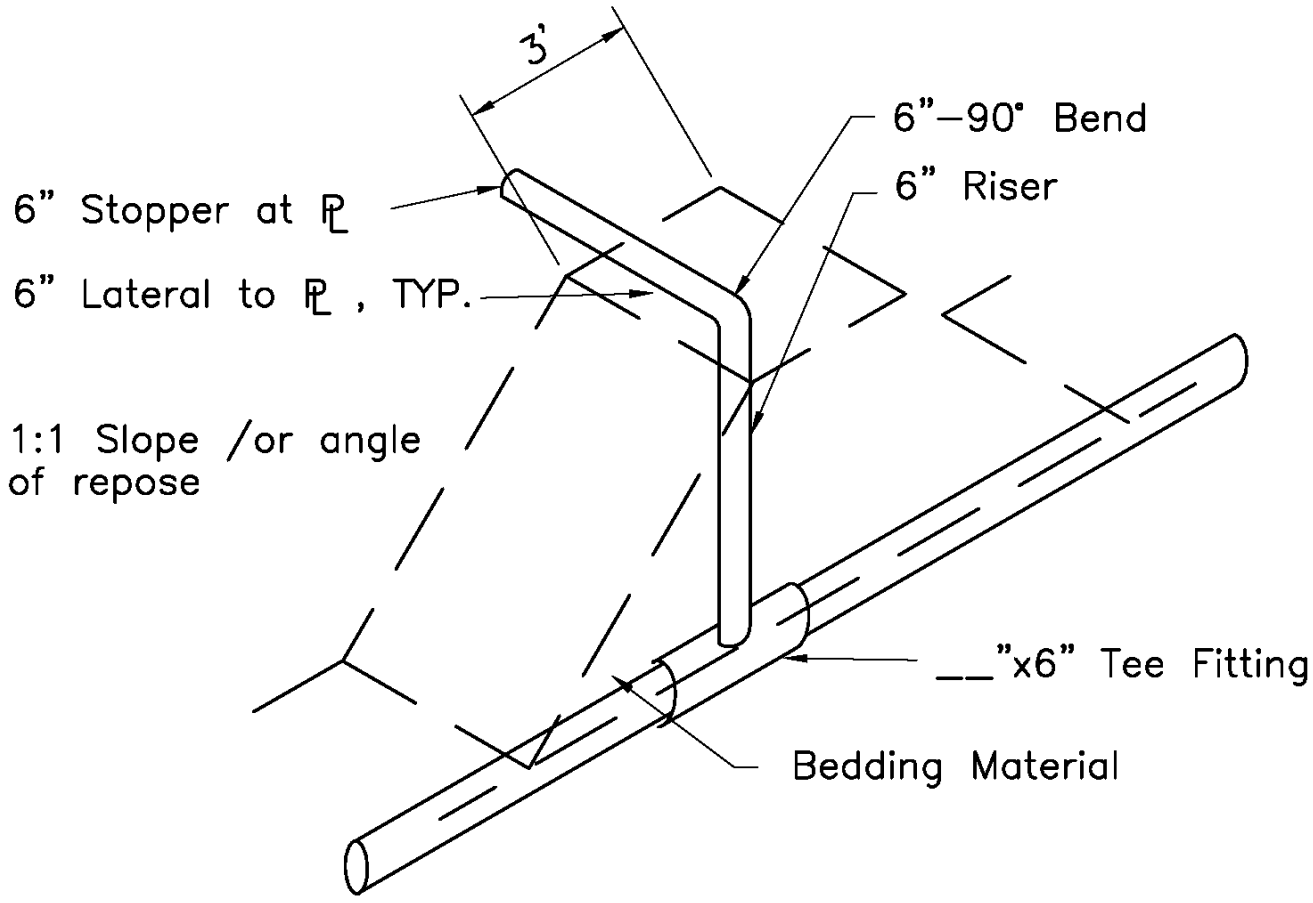


CLEAN OUT

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing R1 Filename: Riser Date: 05-11-06 Note:

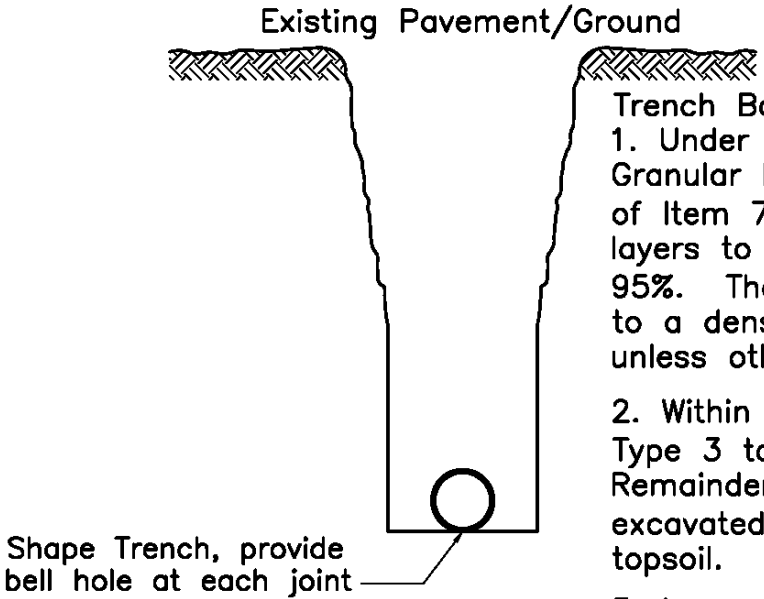


RISER DETAIL

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing PLT1 Filename: Sch40 Lateral Trench Date: 05-08-17 Note:



Trench Backfill Material

1. Under pavement and drives use Granular Backfill meeting requirements of Item 703.11, Type 3. Compact in 6" layers to a density of not less than 95%. The upper 3' shall be compacted to a density of not less thn 100% unless otherwise specified.

2. Within 4' of pavement, use 703.11, Type 3 to within 12" of the surface. Remainder of trench to use select excavated material with top 6" being topsoil.

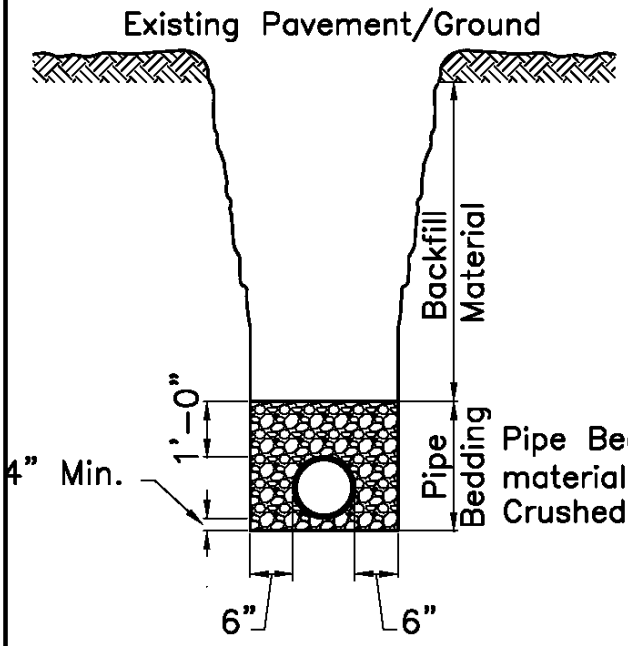
3. Lawn and open areas back fill with select excavated material with top 6" being topsoil.

TYPICAL SCH40 PIPE LATERAL TRENCH

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing PLT2 Filename: SDR35 Lateral Trench Date: 05-08-17 Note:



Trench Backfill Material

1. Under pavement and drives use Granular Backfill meeting requirements of Item 703.11, Type 3. Compact in 6" layers to a density of not less than 95%. The upper 3' shall be compacted to a density of not less thn 100% unless otherwise specified.

2. Within 4' of pavement, use 703.11, Type 3 to within 12" of the surface. Remainder of trench to use select excavated material with top 6" being topsoil.

3. Lawn and open areas back fill with select excavated material with top 6" being topsoil.

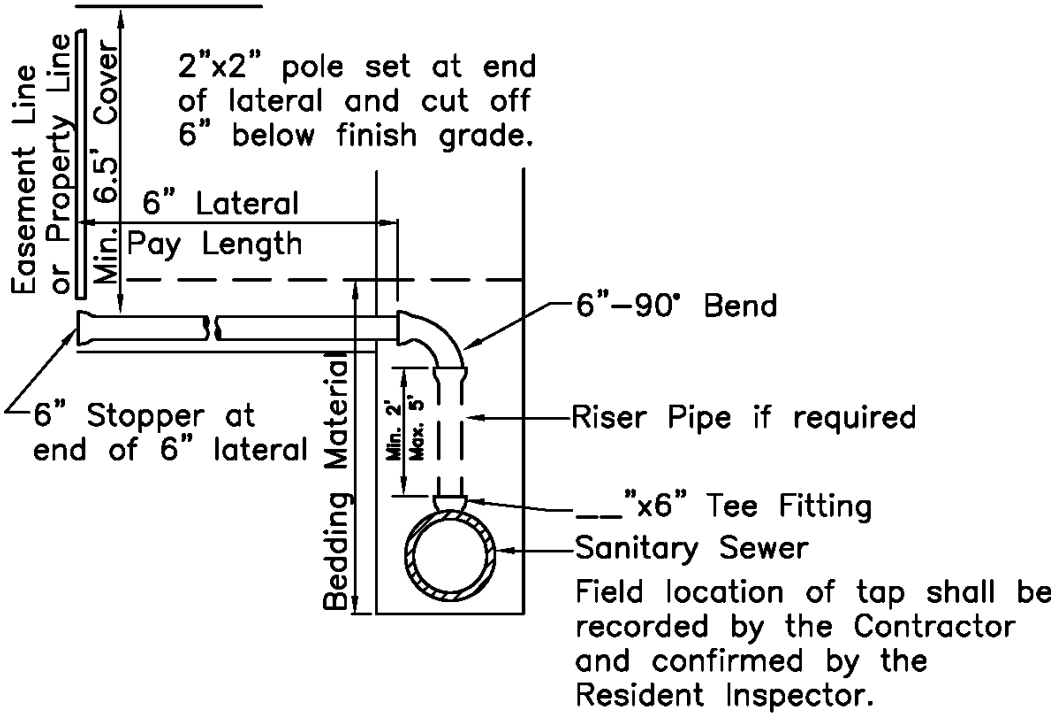
Pipe Bedding granular material to be #57 Crushed Stone

TYPICAL SDR35 PIPE LATERAL TRENCH

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing SC1
	Filename: Sewer Connection 12 or less Date: 05–11–06 Note:



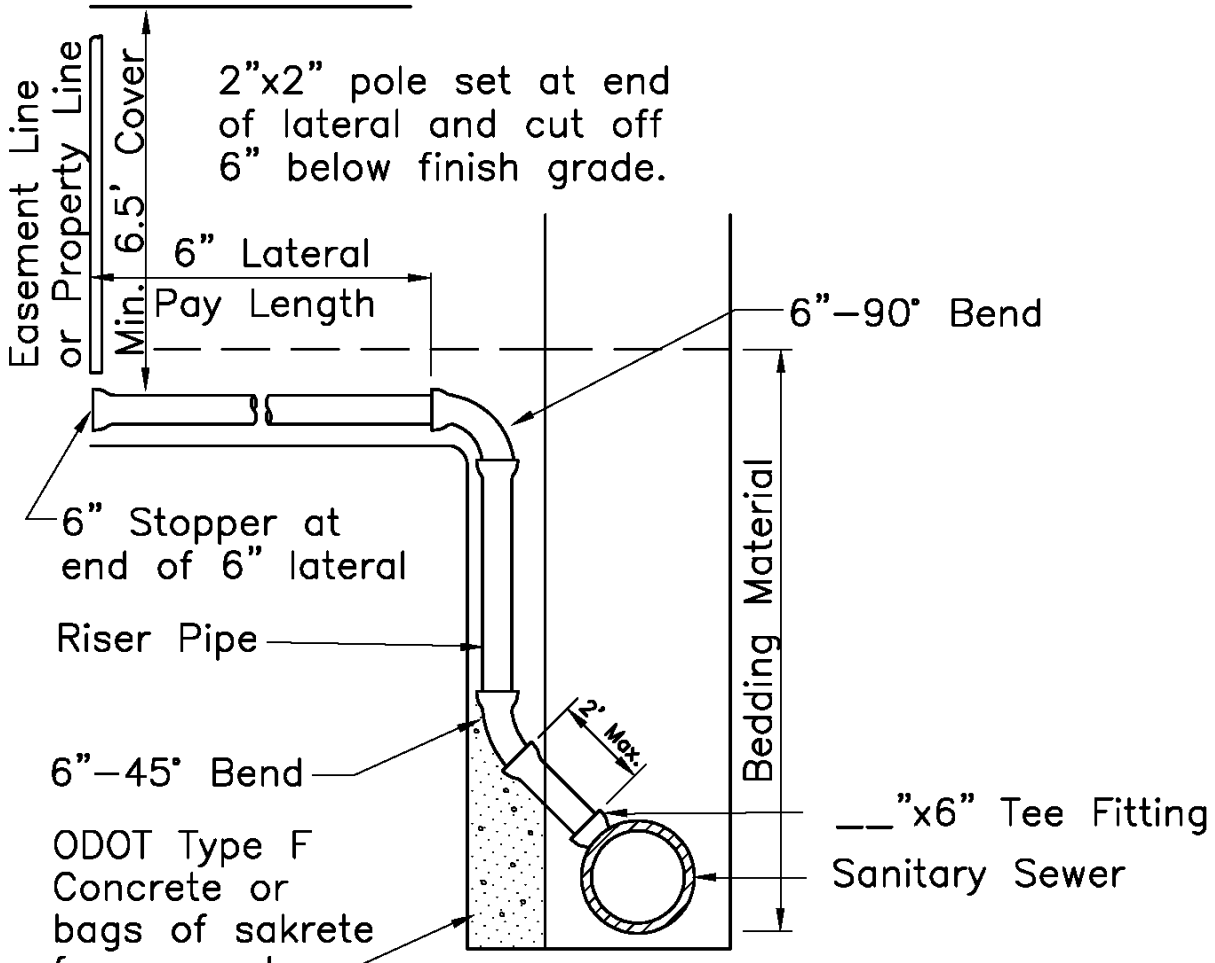
SEWER CONNECTION

For Mainline Sewers 12' Deep or Less
Tee in Vertical Position

Sanitary Engineering Department

Service Connection Standard Details

SANITARY ENGINEERING DEPARTMENT ALLEN COUNTY, OHIO	Standard Detail Drawing SC2 Filename: Sewer Connection Date: 05-11-06 Note:



Field location of tap shall be recorded by the Contractor and confirmed by the Resident Inspector.

SEWER CONNECTION

For Mainline Sewers over 12' Deep
Tee at 45° Angle

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

Appendix C

Tap Connection

Procedures and Requirements

APPENDIX C

Procedures, Requirements And Specifications For Connection To The Allen County Sanitary Engineering Department Sanitary Sewer System

The following will be required by the property owner and/or their contractor when connecting a structure to an approved private sanitary sewer system, or system connected to a sanitary sewer system owned and operated by the Allen County Sanitary Engineering Department:

1. The property owner or their contractor is required to obtain a Capital Permit from the Allen County Sanitary Engineer's (ACSE) Office located at 3230 North Cole Street, Lima, OH 45801, Telephone: 419-996-4670. The Capital Permit is required for all new construction and old construction replacing on-lot private systems. A yellow and white copy of the permit will be given at the time of application, with the yellow copy to be posted on the job site at the time of lateral excavation, and the white copy as property owner's record. **No inspection will be conducted without the yellow copy of the permit being on-site.**

2. When working within a public right-of-way the property owner or contractor must obtain a right-of-way permit from the appropriate local jurisdiction.

3. Tapping of approved sanitary sewer system may be done by the property owner or contractor in accordance with procedures, requirements and specifications stated herein.

4. The property owner or contractor is required to contact the ACSE Dept. at 419-996-4670 twenty four (24) hours prior to the inspection being needed. All work is to be left exposed for inspection.

5. The following is required when connection is being made to an existing structure replacing an on-lot private system:
   a.) An inspection of the structures inside plumbing will be required by the Allen County Health Department prior to issuance of an ACSE Capital Permit. Contact information: 419-228-4457
   b.) Make application to receive Capital Permit from the ACSE Dept.
   c.) Disconnect building sewer from septic tank.
   d.) Have the septic tank's contents removed by a licensed scavenger.
   e.) Crack the bottom of tank, remove tank lid and fill the empty tank with a solid inert material (ex. earth or stone).
   f.) Uncover building sewer to building drain for inspection of condition and material. At least two (2) joints shall be exposed.
   g.) Plumbing waste lines and other drain lines within and outside the structure shall be inspected for compliance with the following: roof down spout drains, footer drains, sump pumps discharging footer drain water, cistern over flow drains, and surface and sub-surface drainage lines are not allowed to be connected to the building sanitary drain or building sewer. Only water used within the building shall be discharged to the sanitary sewer.

6. No industrial or hazardous waste or storm water are allowed in ACSE Dept.'s sanitary sewer system.

7. The following is required when connection is being made to a new structure:
   a) Follow all inside plumbing requirements of the Allen County Health Dept. Contact information: 419-228-4457
   b) Make application to receive Capital Permit and connection procedures from ACSE Dept.

8. The property owner or their contractor is required to call the ACSE Department 24 hours in advance to schedule completion of service tap in section 7, or have an inspection. Work by contractor shall be completed prior to final inspection.

9. The building service lateral for a single family dwelling shall be at least four (4) inches nominal inside diameter. The building service lateral for multi-family dwellings, commercial, industrial or public buildings shall be at least six (6) inches nominal inside diameter.

10. Gravity Service Connection: The minimum slope for the service lateral shall be 1/8" per foot. The building sewer shall be connected to the building drain by using rigid PVC material or non-shear flexible coupling. A building sewer shall be laid in undisturbed earth using premium joint pipe as listed below. "Clean-outs" shall be installed as follows:

    a.) One (1) within ten (10) feet from your building.
    b.) One (1) every one-hundred (100) feet of length to the sanitary sewer, or at any change in direction greater than 45°.
    c.) One (1) at the road right-of-way. A two (2) way clean-out tee (Charlotte style 448 or approved equal) must be utilized to allow testing/cleaning/surveillance equipment access in either direction. This "clean-out" shall be six (6) inch for commercial and four (4) inch for residential.
    d.) Types of acceptable pipe which can be used for laterals:
        i) Polyvinyl Chloride (PVC) SDR 35 pipe meeting (ASTM D3034) and National Sanitation Foundation (NSF). Pipe shall be bedded with #57 stone to 12 inches above top, 4 inches below and 6 inches on each side of pipe.
        ii) Polyvinyl Chloride (PVC) Schedule 40 pipe meeting (ASTM D1785 & D2625) and National Sanitation Foundation (NSF). Pipe may be laid on undisturbed, virgin soil.
        iii) Bored Connections Across Roadways – Use 6" seamless High Density Polyethylene pipe material.

11. Combination Gravity/Low Pressure Service Connection: In addition to the above requirements, please reference the "Installation Requirements for Low Pressure Pump System Connection".

12. The following is required in the event a service connection is not available on the County's sewer system:
    a) A determination will be made at the time of application for Capital Permit whether a service connection is available.

b) The property owner or their contractor will be required to excavate the area around the ACSE Depts. sewer to expose the area where connection shall be made on the mainline.

c) The ACSE Dept. will drill the opening on the mainline and install the proper T-saddle. The contractor shall connect to the T-saddle and complete service lateral installation to structure. It is the responsibility of the property owner or their contractor to properly shore the excavation prior to departmental staff entering trench to complete tap.

13. Low Pressure Collection Systems – Contact Allen County Sanitary Engineering Department for details of materials and connection procedures.

14. Issuance of a Capital Permit and inspection of the service lateral by the ACSE Dept. does not remove the property owner's responsibility for material and/or craftsmanship of work performed by their contractor.

Stephen M. Kayatin, P.E.
Sanitary Engineer

Revised 4/15/98
Revised 12/22/03 5.c.) "Clean-outs"
Revised 9/1/10
Revised 3/12
Revised 4/4/12
Revised 11/25/13
Revised 8/9/17

INSTALLATION REQUIREMENTS FOR
LOW PRESSURE PUMP SYSTEM CONNECTION
SERVING A <u>SINGLE</u> FAMILY RESIDENCE
See Drawing GPD 1.0

1. House lateral to be 4" Sch 40 PVC
   ASTM D 1785 - PVC Sch 40pressure rated
   ASTM D 2665 – PVC Drain, Waste and Vent Pipe

2. Electric service to be 240v / 1ph / 60 Hz to the pump location.

3. Builder to contact Allen County Sanitary Engineering Department 72 hours or 3 working days before work to schedule.

4. When ordering, the Builder is to determine:
   a. Depth of cover over 4" inlet sewer.
   b. Length of type TC direct-bury cable required between pump unit and alarm panel.

5. Bill of Materials:
   a. E-One Model DH071 pump unit. 4" inlet for 4" Sch 40 PVC pipe
      1 ¼" female NPT threaded outlet
   b. MOD-250-1 alarm panel
   c. 30amp fused disconnect (#10AWG-4 wire:2 pwr, neutral, & ground)
   d. Type TC direct bury electric cable to service pumps
   e. 1 ¼" x 1 ½" Stainless Steel bushings
   f. 1 ½" DR 11 HDPE (green stripe pipe) for discharge force main
   g. Service Lateral Kit for 1 ½" SDR 11 HDPE Pipe Valve Box to be plastic
   h. Copperhead #12 AWG EHS green tracer wire or equal installed with 1 ½" force main between the pump and the pressure main.
   i. Corporation stop with corporation saddle provided by ACSE Department
   j. E-One Pump Station, appurtenances, and pricing contact information:
      Covalen
      Office: 877-770-8277
      Cell: 574-870-9467
6. Pump Start-up
   a. Electrical work to be completed before pump start-up can be scheduled.*
      ****<u>Refer to diagram inside E-1 panel</u>***
   b. ACSE Department to initiate and complete the start-up of the pump installation.

7. Easement to be granted to ACSE Department by property owner for operation and maintenance of pump station and electrical.

INSTALLATION REQUIREMENTS
FOR LOW PRESSURE PUMP SYSTEM SERVING
MULTIPLE FAMILY RESIDENCES

See Drawing GPD 2.0

1. House lateral to be 4" Schedule 40 PVC or SDR 35 PVC
   ASTM D 1785 – PVC Schedule 40 – pressure rated
   ASTM D 2665 – PVC Drain, Waste and Vent Pipe
   ASTM D 3034 – SDR 35 PVC

2. Electric service to be 240v / 1ph / 60 Hz to the pump location.

3. Contractor to contact Allen County Sanitary Engineering Department 48 hours before scheduling start-up.

4. When ordering, the Contractor to determine:
   a. Depth of cover over 4" inlet sewer.
   b. Lengths of type TC direct bury cable required between pump unit and alarm panel.

5. Bill of Materials:
   a. One of following E-One pumps or approved equal by ACSE Dept.:
      DH 152-150 gallon tank capacity – 2 to 12 homes
      DH 272-275 gallon tank capacity – 13 to 20 homes
      DP 502-500 gallon tank capacity – 21 to 24 homes
      4" inlet for 4" Schedule 40 PVC pipe
      1¼" female NPT threaded outlet

   b. Duplex MOD-260-1 alarm panel
   c. Type TC direct bury electric cable to service pumps
   d. 1¼" x 1½" Stainless Steel bushings
   e. 1½" DR 11 HDPE (green stripe pipe) for discharge force main
   f. Service Lateral Kit for 1½" SDR 11 HDPE Pipe
      Valve Box to be plastic
   g. Copperhead #12 AWG EHS green tracer wire installed with 1½" force main between the pump and the pressure main.
   h. Corporation stop w/corporation saddle provided by ACSE Dept.
   i. E-One Pump Station, appurtenances, and pricing contact information:
      Covalen
      Office: 877-770-8277
      Cell: 574-870-9467

6. Pump Start-up
   a. Electrical work to be completed before pump start-up can be scheduled.
   b. ACSE Dept. to initiate and complete the start-up of the pump installation.

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

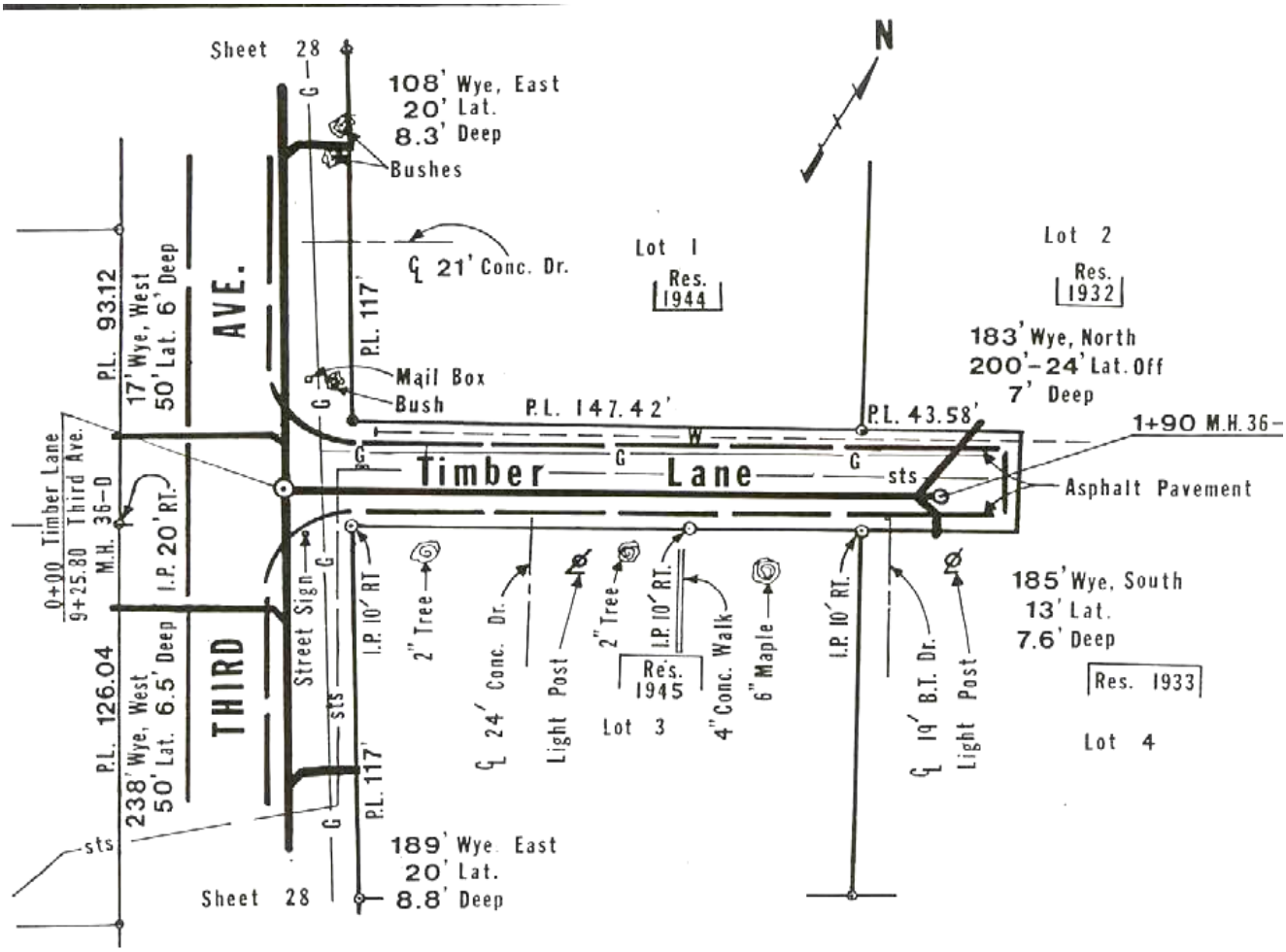
Appendix D

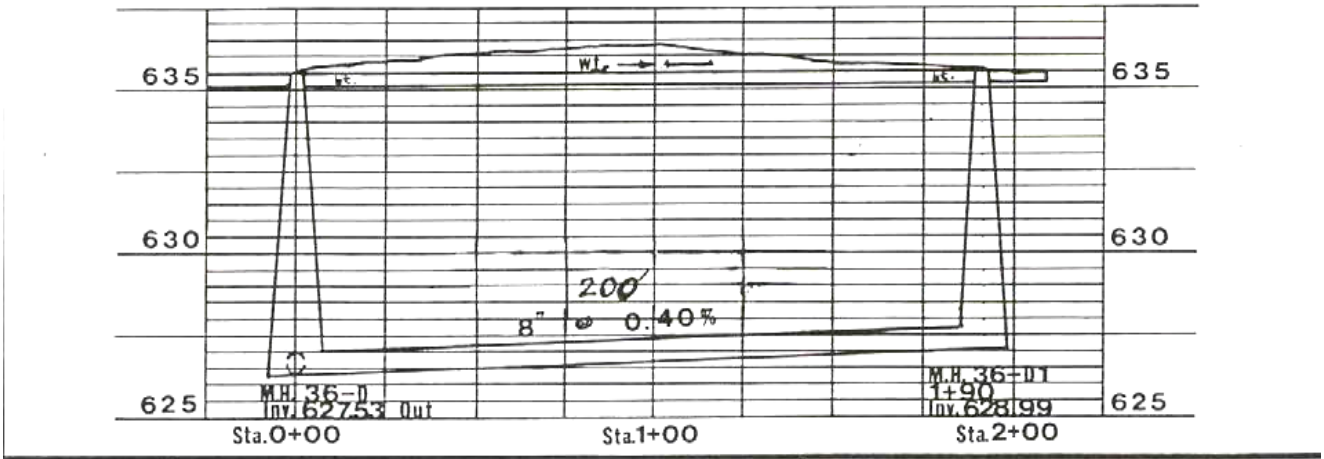
Typical As Built Sheet

APPENDIX D

Sanitary Engineering Department

Typical As Built Sheet





Rev. 78 by D.B.

Scale:
1"=5' Vert.
1"=50' Hor.

TYPICAL
"AS BUILT"
PLAN & PROFILE SHEET

Sanitary Engineering Department

Approved _____ Date

Sanitary Engineer

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

Appendix E

Sanitary Sewer Air Test Report

Allen County Ohio
Sanitary Engineering Department
3230 North Cole Street
Lima, Ohio 45801
419-996-4670

SANITARY SEWER AIR TEST REPORT

Inspected By:_____ Date:_____

Project Name: _____ Pipe Size & Material: _____

Contractor Name: _____ Date Trench Backfilled:_____

Mailing Address: _____ Date of Test: _____

_____

THIS TEST SHALL BE PERFORMED NO EARLIER THAN 14 CALENDAR DAYS AFTER THE TRENCH HAS BEEN BACKFILLED.

MH	to MH	Air Pressure (psi)		Time		Time Elapsed	Pressure Drop	Comments
		Start	Finish	Start	Finish			

Reviewed By: _____ Date: _____

TIME ALLOWED FOR PRESSURE LOSS FROM 3.5 PSIG TO 2.5 PSIG

Pipe Diameter (in)	Minimum Time (min. sec)	Length for Minimum Time (ft)	Time for Longer Length (sec/ft)	Specification Time for Length (L) Shown (min. sec)										
				100 ft.	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft	500 ft	550 ft	600 ft
6	5:40	398	0.8548	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:25	7:07	7:50	8:33
8	7:33	298	1.5196	7:33	7:33	7:33	7:33	7:36	8:52	10:08	11:24	12:40	13:56	15:12
10	9:27	239	2.3743	9:27	9:27	9:27	9:54	11:52	13:51	15:50	17:48	19:47	21:46	23:45
12	11:20	199	3.4190	11:20	11:20	11:20	14:15	17:06	19:57	22:48	25:39	28:30	31:20	34:11
15	14:10	159	5.3423	14:10	14:10	17:48	22:16	26:43	31:10	35:37	40:04	44:31	48:58	53:25
18	17:00	133	7.6928	17:00	19:14	25:39	32:03	38:28	44:52	51:17	57:42	64:06	70:31	76:56
21	19:50	114	10.4708	19:50	26:11	34:54	43:38	52:21	61:05	69:48	78:32	87:15	95:59	104:42
24	22:40	99	13.6762	22:48	34:11	45:35	56:59	68:23	79:47	91:10	102:34	113:58	125:22	136:46
27	25:30	88	17.3089	28:51	43:16	57:42	72:07	86:33	100:58	115:24	129:49	144:14	158:40	173:05
30	28:20	80	21.3690	35:37	53:25	71:14	89:02	106:51	124:39	142:28	160:16	178:05	195:53	213:41
33	31:10	72	25.8565	43:06	64:38	86:11	107:44	129:17	150:50	172:23	193:55	215:28	237:01	258:34

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

Appendix F

Exfiltration Test Report

Allen County Ohio
Sanitary Engineering Department
3230 North Cole Street
Lima, Ohio 45801
419-996-4670

SANITARY SEWER EXFILTRATION TEST REPORT

Inspected By: _____ **Date:** _____

Project Name: _____

Contractor Name: _____

Mailing Address: _____

_____

Pipe Size & Material: _____

Date Construction Started: _____

Date Trench Backfilled _____

MH to MH		Length of Section (ft.)	Water Table* (inches)	Cone Taper Length	Rim to Top of Cone (inches)	Start Test			End Test			Loss in Inches	Exfiltration (G.P.D.)	
						Date	Time	Water Level**	Date	Time	Water Level**		Actual	Allowable***

Reviewed By: _____ Date: _____

* Distance in inches from top of pipe to top of water table.

** Distance in inches from rim to water level measured in upstream manhole of the section tested.

NOTES:

1) Water level in testing manholes shall cover frame flange
2) The allowable exfiltration shall be based on the shortest segment between manholes in the section tested, but not less than 100 feet.
3) In a four (4) foot diameter barrel section each one (1) inch drop equates to 7.83 gallons actually lost.
4) In a five (5) foot diameter barrel section each one (1) inch drop equates to 12.24 gallons actually lost.

For larger diameter pipe, refer to Section 02595 - 3.02 of the Specifications for Subdivisions & Sanitary Sewer Extensio

Pipe Diameter (inches)	***Allowable per 100' (G.P.D.)	Pipe Diameter (inches)	***Allowable per 100' (G.P.D.)
8	15.15	12	22.73
10	18.94	15	28.41

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

Appendix G

Deflection Test Report

ALLEN COUNTY SANITARY ENGINEERING DEPARTMENT
SANITARY DEFLECTION TEST REPORT
Inspected By: _____ Date: _____

Project Name: _____ Pipe Size & Material: _____

Contractor Name: _____ Date Construction Started: _____

Mailing Address: _____ Date Trench Backfilled: _____

_____ Date of Test: _____

Type: ☐ Mandrel ☐ Dimension Checked ☐ Go-No-Go Pig

THIS TEST SHALL BE PERFORMED NO EARLIER THAN 30 CALENDAR DAYS AFTER THE TRENCH HAS BEEN BACKFILLED.

MH	to MH	Length of Section	Passed	Comments

Reviewed By: _____ Date: _____

Sanitary Engineering Department

3230 North Cole Street, Lima, Ohio 45801

Appendix H

Manhole Vacuum Test Report

Allen County Ohio
Sanitary Engineering Department
3230 North Cole Street
Lima, Ohio 45801
419-996-4670

SANITARY SEWER MANHOLE VACUUM TEST REPORT

Project:	Inspecting For:	JOB NO.
Date:	Engineer:	Page of
Location:	Testing Co.:	
Contractor:	Field Inspector:	

Street Name	M.H. Station Number	Manhole Depth	Manhole Diameter	Allowable Drop Time	Actual Drop Time	Pass/Fail	Comments

Depth (ft)	Manhole Diameter (in.)								
	30	33	36	42	48	54	60	66	72
	Time, seconds								
8	11	12	14	17	20	23	26	29	33
10	14	15	18	21	25	29	33	36	41
12	17	18	21	25	30	35	39	43	49
14	20	21	25	30	35	41	46	51	57
16	22	24	39	34	40	46	52	58	67
18	25	27	32	38	45	52	59	65	73
20	28	30	35	42	50	53	65	72	81
22	31	33	39	46	55	64	72	79	89
24	33	36	42	51	59	64	78	87	97
26	36	39	46	55	64	75	85	94	105
28	39	42	49	59	69	81	91	101	113
30	42	45	53	63	74	87	98	108	121

Notes:

1. A vacuum of 10 inches of mercury shall be drawn on the manhole with the valve on the vacuum line of the test head closed and the vacuum pump shut off.
2. The time shall be measured for the vacuum to drop 1-inch.
3. The manhole shall pass if the time for the vacuum reading to drop from 10 inches of mercury to 9 inches of mercury meets or exceeds the values indicated in the Table to the left.
4. If the manhole fails the initial test, necessary repairs shall be made by an approved method.
5. The manhole shall then be retested until a satisfactory test is obtained.