OWNERS:

ELKHART COUNTY, INDIANA, ACTING THROUGH
ITS BOARD OF COUNTY COMMISSIONERS
ELKHART COUNTY HIGHWAY DEPARTMENT
ENGINEERING SECTION
610 STEURY AVENUE
GOSHEN, IN 46528

HIGHWAY
ELKHART COUNTY

Elkhart County Highway Department
610 Steury Avenue, Goshen, Indiana 46528
Phone: 574-534-9394 • Fax: 574-533-7103

Project Bid Documents

for

County Road 22/Orpha Drive and County Road 37

Intersection Improvements

Middlebury, Indiana

Prepared by:

LOCHMUELLER GROUP
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South Bend, Indiana 46601

Engineer:

BARBARA K. SWIHART STUTZMAN
REGISTERED
No. PE10911254
STATE OF INDIANA
PROFESSIONAL ENGINEER

Barbie Swihart Stutzman

Date: 09/18/2026

Division 1:

General Conditions

For

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

OWNERS: ELKHART COUNTY, INDIANA, ACTING THROUGH
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DEFINITIONS

The following terms, as used in these Contract Documents, are defined as follows:

"ADDENDA"	Written or graphic instruments issued prior to the opening of Bids, which clarify, correct, or change the bidding documents or Contract Documents.
"APPROVED"	The words "approved", "acceptable", "satisfactory", "in the judgment of", and words of like import, shall mean approval by, acceptable to, satisfactory to, or in the judgment of, the Engineer or Owner.
“BONDS"	Bid, Performance, Payment, or Maintenance Bonds, and other instruments of security collectively or individually as applicable.
"CHANGE ORDER"	A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.
"CONTRACTOR'	The person, firm, or corporation to whom the enclosed contract is awarded by the Owner and who is subject to the terms hereof.
"COUNTY SPECIFICATIONS”	The current Elkhart County roads guidelines and standards for design and public improvements.
"DIRECTED"	The words "directed", "required", "permitted", "ordered", "designated", and words of like import shall imply the direction, requirement, permission, order of designation of the Engineer or Owner.
"ENGINEER"	The Elkhart County Highway Division, or, the Elkhart Co. Manager of Engineering, or duly authorized representative designated by the Owner.
"FIELD ORDER"	A written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 7.5 but which does not involve a change in the Contract Price or the Contract Time.
“FINAL ACCEPTANCE”	The date when OWNER accepts ENGINEER’S recommendation of final payment.

"GENERAL REQUIREMENTS"	Sections of Division A of the Specifications.
"LAWS AND REGULATIONS; LAWS OR REGULATIONS"	Laws, rules, regulations, ordinances, codes and/or orders.
"MUTCD"`	Manual of uniform traffic control devices.
"NOTICE TO PROCEED"	A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.
"OWNER"	The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided. This typically being Elkhart County, Indiana, acting through its Board of County Commissioners.
"PARTIAL UTILIZATION"	Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.
"PROJECT"	The total construction of which the Work to be provided under the Contract Documents may be the whole or a part as indicated elsewhere in the Contract Documents.
"RESIDENT PROJECT REPRESENTATIVE"	The authorized representative of ENGINEER who is assigned to the site or any part thereof
"SHOP DRAWINGS"	All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.
"SPECIFICATIONS"	Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

“STANDARD DETAILS”	The current INDOT standard sheets with standard details.
“STANDARD SPECIFICATIONS”	The latest edition of the Indiana Department of Transportation Standard Specifications and current supplemental Technical Specifications.
“STOP ORDER or STOP WORK ORDER	Written order from OWNER or ENGINEER to stop all work covered by the Contract Documents.
"SUBCONTRACTOR"	An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.
“SUBSTANTIAL COMPLETION”	See Paragraph 12.5 of these General Conditions.
"SUPPLEMENTARY CONDITIONS"	The part of the Contract Documents which amends or supplements these General Conditions.
"SURETY"	Financial guarantee that insures the CONTRACTOR’S obligation.
"UNDERGROUND FACILITIES"	All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments. In addition, any encasement containing such facilities that have been installed underground to furnish any of the following services or materials; electricity, gases, steam, liquid petroleum products, telephone or other communication means, cable television, sewage and drainage removal, traffic or other control systems or water.
"UNIT PRICE WORK"	Work to be paid for on the basis of unit prices.
"WORK"	Work to be done under this Contract at the site of the improvement.
"WORK DIRECTIVE CHANGE"	A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed.

"WRITTEN AMENDMENT"	A written amendment of the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly Work-related aspects of the Contract Documents

ARTICLE 1 - PRELIMINARY MATTERS

1.1 Delivery of Bonds

When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as called for in the Contract Documents.

1.2 Copies of Documents

OWNER shall furnish to CONTRACTOR up to three (3) copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

1.3 Contract Documents

These Contract Documents are complementary and what is called for in one shall be as binding as if called for in all. The intention of these Contract Documents is to include in the Contract Price the costs of all labor and materials, water, fuel, tools, plant, equipment, light, transportation, taxes, bonds, and all other expense and profit as may be necessary for the proper and complete execution of the work.

1.4 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence when the Contractor receives the Notice to Proceed from the Engineer. CONTRACTOR shall not be paid for any work performed prior to receiving the Notice to Proceed from the Engineer.

1.5 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run unless such work is specifically approved by the owner/engineer.

1.6 Before Starting Construction

Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably

have known thereof.

1.7 Submission for Review

Within ten (10) days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:

1.7.1 An estimated progress schedule indicating the starting and completion dates of the various stages of the Work; and

1.7.2 A preliminary schedule of Shop Drawings and/or sample submissions.

1.7.3 CONTRACTOR shall provide an updated progress schedule at all scheduled progress meetings.

1.8 Delivery of Certificates

Before any Work at the site is started, CONTRACTOR shall deliver to OWNER, with a copy to ENGINEER, certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain.

1.9 Subcontracts

The Contractor shall not execute an Agreement with any Subcontractor or permit any Subcontractor to perform any work in this Contract until he has received written approval of such Subcontractor from the Owner or Owner's appointed designee.

1.10 Preconstruction Conference

Following the Effective Date of the Agreement, but before CONTRACTOR starts the Work at the site, a conference attended by CONTRACTOR, ENGINEER and others, as appropriate, will be held to discuss the schedules referred to in paragraph 1.7, as well as the Subcontractors proposed by Contractor for certain portions of the work, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

1.11 Non-Discrimination

In compliance with the Acts of Indiana General Assembly, 1933, Chapter 270, the Contractor hereby agrees:

1.11.1 That in the hiring of employees for the performance of work under this Contract or any Subcontract hereunder, no Contractor, Subcontractor, nor any person acting on behalf of such Contractor or Subcontractor shall, by reason of race or color,

discriminate against any citizen qualified to do work to which the employment relates;

1.11.2 That no Contractor, Subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this Contract on account of race or color;

1.11.3 That there may be deducted from the amount payable to the Contractor by the Owner under this contract, a penalty of Five Dollars ($5.00) for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of this Contract; and

1.11.4 That this Contract may be canceled or terminated by the Owner, and all money due or to become due hereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this section of the Contract.

1.12 Insurance

1.12.1 Contractor's Liability Insurance:

a) The Contractor shall maintain such insurance as well as protect himself from claims under Workmen's Compensation Acts and other employee benefit acts; from claims for damages because of bodily injury, including death, to his employees and all others; and from claims for damages to property, any or all of which may arise out of or result from the Contractor's operation under the Contract, whether such operations be by himself or by any subcontractor, or anyone directly or indirectly employed by either of them. This insurance shall be written for not less than any limits of liability specified herein and shall name Elkhart County as an additional insured.

1.12.2 Contractor's Insurance:

The types and minimum amount of insurance to be provided for by the Contractor shall be as follows:

a) Workmen's Compensation and Occupational Disease Insurance

The Contractor shall provide Workmen's Compensation and Occupational Disease Insurance as required by law. Such policy shall specifically include coverage for the State of Indiana, and such adjoining states as required by the Contractor's operations.

b) Employer's Liability Insurance

The Contractor shall provide Employer's Liability with a minimum coverage of $1,000,000.

c) Comprehensive General Liability Insurance

The Contractor shall maintain a Comprehensive General Liability form of Insurance with bodily injury of not less than $1,000,000 for any one (1) occurrence, and $2,000,000 aggregate. The insurance policy shall include the following:

1. Premises Operations: The policy shall include coverage for the following special hazards when applicable to the project:

i) Property damage arising out of blasting or explosion.

ii) Property damage arising out of collapse of or structural injury to any building or structure due to grading of land, excavation, borrowing, filling, backfilling, tunneling, pile driving, cofferdam work or caisson work or to moving, shoring, underpinning, raising, or demolition of any building or structure or rebuilding of any structural support thereof.

iii) Injury to or destruction of wires, conduits, pipes, mains, sewers, and other similar property of any apparatus in connection therewith below the surface of ground, if caused by use of mechanical equipment.

2. Contractual (Broad Form Indemnification): The Contractor agrees to indemnify and save harmless the Owner and the Engineer, their agents and employees, from and against all loss or expense (including costs and attorneys' fees) by reason of liability imposed by law upon the Owner or the Engineer for damages because of bodily injury, including death, at any time resulting there from, sustained by any person or persons or an account of damage to property is due or claimed to be due to negligence of the Contractor, his Subcontractors, employees or agents.

3. Contractor's Protective: The Contractor shall maintain this type of coverage on a "Blanket" basis to cover the operations of any subcontractors.

d) Automobile Liability Insurance

The Contractor shall maintain Comprehensive Automobile Liability Insurance with bodily injury liability limits of not less than $1,000,000 for one (1) occurrence and $2,000,000 aggregate. This coverage may be provided either as a separate policy or as part of the Comprehensive General Liability Policy described previously. The automobile insurance must include coverage for all owned, non-owned and hired vehicles.

e) Furnish Indiana State Forms No. 19 (Workmen's Compensation) and No.105 (Occupational Disease Act).

f) Umbrella Policy Insurance

The Contractor shall maintain a minimum $3,000,000 Umbrella Policy in addition to their primary insurance.

1.13 Proof of Carriage Insurance

1.13.1 Contractor shall not commence work until he has obtained all insurance specified herein, has filed with the Owner one (1) copy of Certificate of Insurance, and such insurance has been approved by the Owner.

1.13.2 Should any Coverage approach expiration during the Contract period, it shall be renewed prior to its expiration, and certificate again filed with the Owner.

1.13.3 If any of such policies are canceled or are changed so as to reduce the coverage evidenced by the Certificate, at least ten (10) days prior written notice by registered mail of such cancellation or change shall be sent to the Owner.

1.13.4 All insurance provided for under this Section shall be written by Insurance Companies licensed to do business in Indiana and Countersigned by resident Indiana agent. The insurance company shall file with the Owner, one (1) copy of Affirmation of Authority, on the form furnished by the Engineer, as verification of the resident agent.

1.13.5 All insurance shall be maintained in full force and effect until the Contract has been fully and completely performed.

1.14 Performance and Payment Bond

The Contractor shall furnish a Performance and Payment Bond (form attached) equal to one hundred percent (100%) of the Contract Price.

ARTICLE 2 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

2.1 Intent

The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

2.1.1 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for.

2.1.2 If during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.2 Amending and Supplementing Contract Documents:

The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

2.2.1 A formal Written Amendment,

2.2.2 A Change Order, or

2.2.3 A Work Directive Change (pursuant to paragraph 8.1).

In addition, the requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

2.2.4 A Field Order,

2.2.5 ENGINEER's approval of a Shop Drawing or sample, or

2.2.6 ENGINEER's written interpretation or clarification.

ARTICLE 3 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS

3.1 Availability of Lands

OWNER shall indicate, as shown in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent

structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim for an extension of Contract Time.

3.2 Physical Conditions - Underground Facilities

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

3.2.1 OWNER and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,

3.2.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for coordination of the Work with the owners of such Underground Facilities during construction, for the safety and protection thereof, and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

3.3 Not Shown or Indicated

If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency) as permitted by paragraph 4.2.1, identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility.

3.4 Assignment of Contract

The Contractor shall not assign this Contract or any part hereof without prior consent of the Owner.

ARTICLE 4 - CONTRACTOR'S RESPONSIBILITIES

4.1 Supervision and Superintendence

4.1.1 CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

4.1.2 CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

4.2 Labor, Materials and Equipment

4.2.1 CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site, particularly in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents.

4.2.2 Unless otherwise specified in the General Conditions, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

4.2.3 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as

otherwise provided in the Contract Documents.

4.3 Substitutes or "Or-Equal" Items

4.3.1 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the following as supplemented in the General Conditions. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR's expense additional data about the proposed substitute.

4.3.2 If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents.

4.3.3 ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any

substitute. ENGINEER will record time required by ENGINEER and ENGINEER's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's consultants for evaluating each proposed substitute.

4.4 Contractor Responsibility

CONTRACTOR shall be fully responsible to OWNER and ENGINEER for all acts and omissions of the Subcontractor, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any monies due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

4.5 Subcontractor Responsibility

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and ENGINEER.

4.6 Permits

Unless otherwise provided in the General Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses.

4.7 Laws and Regulations

4.7.1 CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

4.7.2 If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 2.2. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising

therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

4.8 Taxes

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

4.9 Use of Premises

4.9.1 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or ENGINEER to the extent based on a claim arising out of CONTRACTOR's performance of the Work.

4.9.2 During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

4.9.3 CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

4.10 Record Documents

CONTRACTOR shall maintain in a safe place at the site one (1) record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications issued in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER.

4.11 Safety and Protection

4.11.1 CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

a) All employees on the Work and other persons and organizations who may be affected thereby;

b) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

c) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

4.11.2 CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 4.11.1(b) or 4.11.1(c) caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR.

4.11.3 CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by CONTRACTOR to OWNER.

4.12 Emergencies

In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER or OWNER, is obligated to act to prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variations.

4.13 Shop Drawings and Samples

4.13.1 After checking and verifying all field measurements and after complying with applicable procedures specified in the General Conditions, CONTRACTOR shall submit to ENGINEER for review and approval three (3) copies of all Shop Drawings. All submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.

4.13.2 CONTRACTOR shall also submit to ENGINEER for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents.

4.13.3 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to ENGINEER for review and approval of each such variation.

4.13.4 ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER's review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction.

4.13.5 ENGINEER's review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission.

4.13.6 Where a Shop Drawing or sample is required by the Specifications, any

related Work performed prior to ENGINEER's review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

4.14 Continuing the Work

CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 13.4 or as CONTRACTOR and OWNER may otherwise agree in writing.

4.15 Indemnification:

To the fullest extent permitted by Laws and Regulations CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and their consultants, agents and employees from and against all claims, damages, losses, and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineer, architects, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense:

4.15.1 (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting there from and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law and Regulations regardless of the negligence of any such party.

4.15.2 In any and all claims against OWNER or ENGINEER or any of their consultants, agents or employees by any employee of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 1.12.2 (c)2 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

4.16 Sanitation

4.16.1 The Contractor shall introduce and enforce among his employees, such regulations in regard to cleanliness and the disposal of garbage and wastes as shall comply with the Local ordinances. The Contractor shall take such means as the Owner may direct to effectually prevent the creation of a nuisance at the work site

or any part of the property of the Owner. Under no circumstances shall the Contractor create or maintain a nuisance. The Contractor shall construct toilets and maintain them in a sanitary condition, properly secluded from public observation at such points as shall be approved.

4.16.2 All waste, rubbish and debris – whether personal or from construction related processes – shall be removed from the job site and adjacent properties by hauling away and shall not be buried or discarded.

4.17 Road Closing Requirements

Work within the road right-of-way that necessitates a full closure of the road or any lane restrictions requires that the contractor notify **48 hours prior to the commencement of work** all that apply from the following list:

ROAD CLOSING – NOTIFICATION NUMBERS

Fax, call, or mail notification of road/bridge closing to the appropriate people

Please note date of successful notification

POLICE, FIRE, EMS
Elkhart County PSCC (911 Center) 533-4151

SCHOOLS

Baugo	293-8583	fax:
Concord	875-6577	fax: 875-1617
		fax: 875-8762
Elkhart	262-5695	fax: 262-5750
Fairfield	831-2188	fax:
Goshen	533-8631	fax:
Middlebury	825-9410	fax:
Northwood	574-773-3131	fax:

POST OFFICES

Bristol	848-4713	fax: 533-9998
Elkhart	293-5502	fax: 293-5501
Goshen	533-3915	fax: 533-8077
Middlebury	825-2505	fax:
Wakarusa	862-2010	fax:

NEWS MEDIA

Elkhart Truth	294-1661	fax: 294-3895
Goshen News	533-2151	fax: 534-8830
Channel 16	574-631-1616	fax: 293-3297
		fax: 631-1639
Channel 22	574-293-3148	fax: 289-0622
Channel 28	574-679-4545	fax: 522-7609

OTHERS:
Elkhart County Hwy….. 533-0538

Elkhart County requires a written notification of the agencies notified, including time and date of successful notification. This notification must be given to Elkhart County Highway 24 hours prior to road closings or lane restrictions. This may be faxed to Elkhart County Highway.

The Contractor shall notify all applicable offices, agencies, media and schools, including Elkhart County Highway 24 hours prior to the removal of any lane restrictions or closures.

The Contractor shall coordinate the specific timing of the activation of any new signalization system, reopening, etc. When practical, the Contractor shall provide access through the site for emergency vehicle traffic.

ARTICLE 5 - OTHER WORK

5.1 Related Work at Site

OWNER may perform other work related to the Project at the site by OWNER's own forces, have work performed by utility owners, or let other direct contracts.

5.1.1 CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs, CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work.

ARTICLE 6 - OWNER'S RESPONSIBILITIES

6.1 Communication

OWNER shall issue all communications to CONTRACTOR through ENGINEER.

6.2 Appointment of Engineer

In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer whom CONTRACTOR makes no reasonable objection to, whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to arbitration.

6.3 Payment

OWNER shall furnish the data required of OWNER under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due.

6.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 8.4.

6.5 Inspection

OWNER's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 11.3.

6.6 Service Termination

In connection with OWNER's right to stop Work or suspend Work, see paragraphs 11.5 and 13.1. Paragraph 13.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.

ARTICLE 7 - ENGINEER'S STATUS DURING CONSTRUCTION

7.1 Owner's Representative

ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and ENGINEER.

7.2 Visits to Site

ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and qualified design professional, ENGINEER will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

7.3 Project Representation

If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in observing the performance of the Work.

7.4 Clarifications and Interpretations

ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

7.5 Authorized Variations in Work

ENGINEER may authorize minor variations in the Work from the requirements of the

Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on OWNER, and also on CONTRACTOR who shall perform the Work involved promptly.

7.6 Rejecting Defective Work

ENGINEER will have authority to disapprove or reject Work which ENGINEER believes to be defective, and will also have authority to require special inspection or testing of the Work at CONTRACTOR'S expense.

7.7 Decisions on Disputes

7.7.1 ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 9 and 10 in respect to changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty (30) days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty (60) days after such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

7.7.2 When functioning as interpreter and judge under paragraphs 7.7.1 ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

7.8 Limitations on Engineer's Responsibilities

Neither ENGINEER's authority to act under this Article 7 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

7.8.1 ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the

Contract Documents.

7.8.2 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

ARTICLE 8 - CHANGES IN THE WORK

8.1 Work Modifications

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Written Amendment, a Change Order, or a Work Directive Change. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

8.2 Disagreement

If OWNER and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change, a claim may be made therefore as provided in Article 9 or Article 10.

8.3 Contract Price and Time

CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents.

8.4 Change orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

8.4.1 Changes in the Work which is ordered by OWNER.

8.4.2 Changes in the Contract Price or Contract Time which are agreed to by the parties.

8.4.3 Changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER.

8.5 Notification of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 9 - CHANGE OF CONTRACT PRICE

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

9.1 Change Order

The Contract Price may only be changed by a Change Order or by a Written Amendment.

9.2 Determination of Contract Price

The value of any Work covered by a Change Order (extra work order) for an increase or decrease in the Contract Price shall be determined in one of the following ways:

9.2.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved.

9.2.2 On the basis of the actual Cost of the Work, plus the allowable Contractor's mark-up as per INDOT Specification 109.05 added thereon for overhead and profit.

9.3 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. The term Cost of the Work shall **not** include any of the following:

9.3.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, attorneys, auditors, accountants, purchasing and contracting agents, CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work.

9.3.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

9.3.3 Any part of CONTRACTOR's capital expenses, including interest on CONTRACTOR's capital employed for the Work and charges against CONTRACTOR for delinquent payments.

9.3.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same.

9.3.5 Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

ARTICLE 10 - CHANGE OF CONTRACT TIME

The Contract Time may only be changed by a Change Order or a Written Amendment. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than fifteen (15) days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within thirty (30) days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by ENGINEER.

No extension of Contract Time shall be allowed for weather, changes in quantities placed,

or ENGINEER review times set forth in this contract.

ARTICLE 11 - WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

11.1 Warranty and Guarantee

CONTRACTOR warrants and guarantees to OWNER and ENGINEER that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 11.

11.2 Access to Work

ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

11.3 Tests and Inspections

CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

11.3.1 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefore, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval.

11.3.2 The Contractor shall assume full responsibility for paying all costs in connection with testing or certification of materials required under INDOT Standard Specifications. In the case of failed or rejected materials or product used in construction of the project either by CONTRACTOR or SUBCONTRACTORS, independent third-party testing may be used at CONTRACTOR’S expense.

11.3.3 If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

11.3.4 Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR's obligations to perform

the Work in accordance with the Contract Documents.

11.4 Uncovering Work

11.4.1 If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and replaced at CONTRACTOR's expense.

11.4.2 If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment.

11.5 Owner May Stop the Work

If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

11.6 Correction or Removal of Defective Work

If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, attorneys and other professionals) made necessary thereby.

11.7 Three Years Correction Period

If, within three (3) years after the date of Final Acceptance, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER's written instructions, either correct such defective Work, or, if it has been rejected by OWNER and/or Engineer remove it from the site and replace it with non-defective work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, attorneys and other professionals) will be paid by CONTRACTOR.

11.8 Maintenance Bond

Each Contractor shall furnish prior to Final Acceptance a Maintenance Bond (form attached) in an amount at least equal to ten percent (10%) of the Contract Price, guaranteeing for a period of three (3) years after the date of acceptance by the Owner, that all workmanship and materials entered into the Contract are in accordance with the Plans and Specifications. Each Contractor shall remove any defects due to faulty workmanship and/or materials and shall pay for any damage to other work resulting there from which shall appear within the guarantee period. Should such quality assurance tests, as are called for in the contract Plans and Specifications (e.g., roll test, density, concrete strength, etc.), not be performed or if the work is not performed within reasonable conformity to the Plans and Specifications, the maintenance bond period may be extended to six (6) years.

11.9 Acceptance of Defective Work:

If instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER's evaluation of and determination to accept such defective Work. If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price.

11.10 OWNER May Correct Defective Work:

If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 11.6, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven (7) days' written notice to CONTRACTOR, correct and remedy any such deficiency. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price.

ARTICLE 12 - PAYMENTS TO CONTRACTOR AND COMPLETION

12.1 Schedule of Values

The schedule of values (itemized proposal) established at contract unit prices will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

12.2 Application for Progress Payment

At least fifteen (15) days before each regularly scheduled County Commissioners Meeting, CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

12.3 Contractor's Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

12.4 Review of Applications for Progress Payment

12.4.1 ENGINEER will, within ten (10) days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten (10) days after presentation of the Application for Payment with ENGINEER's recommendation, the amount recommended will become due and when due will be paid by OWNER to CONTRACTOR. All progress payments will be subject to a ten Percent (10%) retainage that will not be released until Maintenance Bond is received.

12.4.2 ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the Work in progress as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of ENGINEER's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents and that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or OWNER to withhold payment to CONTRACTOR.

12.4.3 ENGINEER's recommendation of final payment will constitute an additional representation by ENGINEER to OWNER that the conditions precedent to

CONTRACTOR's being entitled to final payment as set forth in paragraph 12.9 have been fulfilled.

12.4.4 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

a) The Work is defective, or completed Work has been damaged requiring correction or replacement.

b) The Contract Price has been reduced by Written Amendment or Change Order.

c) OWNER has been required to correct defective Work or complete Work in accordance with paragraph 11.10, or

d) Of ENGINEER's actual knowledge of the occurrence of any of the events enumerated in paragraphs 13.2.1 through 13.2.9 inclusive.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against OWNER on account of CONTRACTOR's performance or furnishing of the Work or Liens have been filed in connection with the Work or there are other items entitling OWNER to a set-off against the amount recommended, but OWNER must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action.

12.5 Substantial Completion

When CONTRACTOR considers the entire Work ready for its intended use (that is, use by the public) and all work items are complete, CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete and request that ENGINEER issue a certificate of Substantial Completion. Within seven (7) calendar days for a contract price under $1,000,000.00 and fourteen (14) calendar days otherwise, OWNER, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be corrected before final payment.

The ENGINEER may recommend to the OWNER that a Waiver of Time be provided to the CONTRACTOR for the seven (7) or fourteen (14) calendar days listed herein if the CONTRACTOR has demobilized from the site, and there are no remaining defective or incomplete Work items. A Waiver of Time is a document that waives the Liquidated Damages for the seven (7) or fourteen (14) day time-frame. A Waiver of Time may be given for part or the entirety of the seven (7) or fourteen (14) day period listed herein. The amount of time provided in the Waiver of Time is at the discretion of the OWNER.

12.6 Partial Utilization

Use by OWNER of any finished part of the Work, which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and useable part of the Work that can be used by OWNER without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

12.6.1 OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefore. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 12.5 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

12.6.2 OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any such part of the Work although it is not substantially complete. A copy of such request will be sent to ENGINEER and within a reasonable time thereafter OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of the Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and

will deliver such list to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the Work, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

12.7 Final Inspection

Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

12.8 Final Application for Payment

After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents--all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable, CONTRACTOR may make application for final payment following the procedure for progress payments.

12.9 Final Payment and Acceptance

12.9.1 If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation--all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten (10) days after receipt of final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application to OWNER for payment. Thereupon ENGINEER will give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 12.15. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty (30) days after presentation to OWNER of the Application and accompanying documentation, in appropriate form and substance, and with ENGINEER's recommendation and notice of acceptability, the amount

recommended by ENGINEER will become due and will be paid by OWNER to CONTRACTOR.

12.9.2 If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted.

12.10 Contractor's Continuing Obligation

CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance of a certificate of Substantial Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by ENGINEER, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 12.11).

12.11 Waiver of Claims

The making and acceptance of final payment will constitute:

12.11.1 A waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 12.10 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

12.11.2 A waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

ARTICLE 13 - SUSPENSION OF WORK AND TERMINATION

13.1 OWNER May Suspend Work

OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than one hundred eighty (180) days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed.

CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the extension of the Contract Time directly attributable to any suspension.

13.2 Conditions of Termination by Owner

Upon the occurrence of any one or more of the following events:

13.2.1 If CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

13.2.2 If a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

13.2.3 If CONTRACTOR makes a general assignment for the benefit of creditors;

13.2.4 If a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;

13.2.5 If CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

13.2.6 If CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 1.7 as revised from time to time);

13.2.7 If CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

13.2.8 If CONTRACTOR disregards the authority of ENGINEER; or

13.2.9 If CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

13.3 Termination by Owner

13.3.1 OWNER may, after giving CONTRACTOR and the surety, if there be one, seven (7) days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

13.3.2 Where CONTRACTOR's services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

13.3.3 Upon seven (7) days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

13.4 Conditions of Termination by Contractor

13.4.1 If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than one hundred eighty (180) days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty (30) days after it is submitted, or

13.4.2 If OWNER fails for thirty (30) days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven (7) days' written notice to OWNER and ENGINEER, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable

termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven (7) days' written notice to OWNER and ENGINEER stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 4.14 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with the OWNER.

ARTICLE 14 - MISCELLANEOUS

14.1 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

14.2 Computation of Time

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

14.2.1 A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

14.3 Bid Submission

Each bidder who submits a proposal for any portion of the work included in the Project Manual must submit with its bid this form fully completed and signed by an authorized officer of the bidder and must provide the data requested by the form. Unless this form is fully completed and signed by the bidder, the proposal made by that bidder will be incomplete and will not be considered by the Board of County Commissioners.

BID FORM

1. Name of Bidder _____

2. Business Address _____

3. Number of years engaged in contracting business under present firm's name:___ years.

4. *Experience in the contracting work generally similar to this project, including list of complexes, locations and approximate contract cost thereof.

_____

_____

_____

5. Have you ever defaulted on a contract? _____Yes _____No
   If Yes, when, with whom and why? _____

_____

6. *It is a necessary requirement of this Specification that each Contractor show evidence for five (5) jobs guaranteed for one (1) year on workmanship, unconditionally, and where Contractor has agreed to return and repair this work at no expense to the Owner.

_____ _____

_____ _____

_____ _____

7. *Have you ever filed bankruptcy or been adjudged bankruptcy?
   _____Yes_____ No

8. Do you employ any black, Hispanic, female or oriental minority persons? If yes, please state the number of each of such minority persons you presently employ. _____Yes_____No

   If no, please state reasons.

_____

_____

9. Have you encouraged minority building subcontractors to submit proposals in connection with your bid? _____Yes _____ No. If yes, state the name(s) of the minority subcontractors who have been contacted by you for the purpose of submitting a bid/proposal. If no, please state reasons.

_____

_____

_____

10. Do you intend to use any minority subcontractors in performing the work or providing the materials contained within your bid? _____Yes _____No. If yes, please state the name of the subcontractor. If no, please state reasons.

_____

_____

_____

11 Have you been involved in any complaints or litigation relative to the use of minority subcontractors? _____Yes _____No. If yes, what is the status of the complaints of the litigation?

_____

_____

_____

12 Additional pertinent comments:

_____

_____

_____

BY: _____

_____
(Signature of official completing this form)

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned_____

_____

as PRINCIPAL, and _____

_____as SURETY, are held and firmly bound unto the Elkhart County Board of County Commissioners, hereinafter called the "Owner", in the penal sum of

_____ Dollars ($_____) lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Bid, dated_____

for: _____

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified herein after the opening of the same, or if no period be specified within or sixty (60) days after the said opening, and shall within the period specified therefore, or, if no period be specified within ten (10) days after the prescribed forms are presented to him for signature, enter into a written contract with the Owner in accordance with the bid as accepted, and give Bond for faithful performance and proper fulfillment of such Contract; or in the event of the withdrawal of said bid within the period specified, or the failure to

enter into such Contract and give such Bond within the time specified if the Principal shall pay the Owner the difference between the amount specified in said Bid and the amount for which the Owner may procure the required work or suppliers or both, if the latter amount be in excess of the former, then the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals this _____ day of _____, ____ the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

IN PRESENCES OF: INDIVIDUAL PRINCIPALS:

_____ _____ (SEAL)

_____ _____ (SEAL)

_____ _____ (SEAL)

_____ _____ (SEAL)

ATTEST: CORPORATE PRINCIPAL:

_____ _____ (SEAL)

_____ _____ (SEAL)

Business Address_____

By: _____

Title:_____

ATTEST: CORPORATE SURETY:

_____ _____ (SEAL)

_____ _____ (SEAL)

Business Address_____

By: _____

Title:_____

Power-of-Attorney for person signing for Surety Company must be attached to Bond.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____

certify that I am the_____

Secretary of the Corporation named as Principal in the within Bond; that _____

_____ who signed the said Bond on behalf of the Principal was then _____of the corporation, that I know his signature, and his signature thereto is genuine; and that said Bond was duly signed, sealed, and attested to, for and in behalf of said corporation by authority of its governing body.

_____ (SEAL)

PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, That_____ _____as principal and _____ as surety, are firmly bound unto Elkhart County, Indiana, acting through its Board of County Commissioners (OWNER) in the penal sum of an amount equal to one hundred percent (100%) the amount of his bid or the contract price, if the proposal is accepted, for the payment of which, well and truly to be made, we bind ourselves, jointly and severally, and our joint and several heirs, executors, administrators, and assigns, firmly by these presents, this _____day of_____, ____.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SUCH That, Whereas, the principal is herewith submitting a bid and proposal for the erection, construction and completion of INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003 in accordance with the plans and specifications approved and adopted by said OWNER, which are made a part of this bond.

NOW, THEREFORE, if the said OWNER awards said principal the contract for work and said principal promptly enter into a contract with said OWNER (“Construction Agreement”) for the said work and well and faithfully does and performs the same in all respects

according to the plans and specifications provided by the said OWNER, and according to the time, terms, and conditions specified in the Construction Agreement, and in accordance with all requirements of law, and promptly pays all debts incurred by him or any subcontractor in the construction of said work, including labor, service, and materials furnished, then this obligation shall be void; otherwise to remain in full force, virtue and effect.

IT IS AGREED that the principal and surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the OWNER for the performance of the Construction Agreement including compliance with all of the plans and specifications provided by the OWNER, and according to the time, terms, and conditions specified in the Construction Agreement, and in accordance with all requirements of law. Principal and surety further agree to defend, indemnify, and hold harmless OWNER from claims, demands, liens or suits by any person or entity seeking payment for Principal's failure to perform under the Construction Agreement.

IT IS AGREED that the principal and surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Construction Agreement, which is incorporated herein by reference. Principal and surety further agree to defend, indemnify, and hold harmless OWNER from claims, demands, liens or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use

in the performance of the Construction Agreement. The payment bond granted to OWNER is also for the benefit of the subcontractors, laborers, material suppliers, and those performing services.

IT IS AGREED that no modifications, omissions, or additions in or to the terms and conditions of the Construction Agreement, plans, specifications, drawings, or profile; defect in the Construction Agreement; or defect in the proceedings preliminary to the letting and awarding of the Construction Agreement will discharge or any wise affect the obligation of surety on these bonds.

IN WITNESS WHEREOF, we hereunto set our hands and seal this _____day of _____, ____.

NAME_____	NAME_____
ADDRESS_____	ADDRESS_____
BY_____	BY_____
Signature Title	Signature Title
_____	_____
(Printed or Typed) Surety	(Printed or Typed) Principal

State of Indiana, County of _____ss:

Personally appeared before me,_____

as principal and_____

as surety and each acknowledged the execution of the above bond this_____ day

of _____, ____.

BY_____
Signature Notary Public

_____
(Printed or Typed)

Witness my hand and notarial seal the said last named date.

My Commission Expires _____, ____.

_____
(County of Residence)

Accepted and approved this _____day of_____, _____.

_____
Bradley D. Rogers, President

_____
Suzanne M. Weirick, Vice President

_____
Bob Barnes, Member

ATTEST: _____
Tiara Jackson, Auditor

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENT: That we,_____

_____, as

Principal, and

_____

as Surety, are held and firmly bound to the _____

_____ in

the sum of_____

_____

_____Dollars ($_____)

for the payment of which sum well and truly to be made, we jointly and severally bind ourselves, our heirs, executors, administrators, and successors, firmly by these present.

THE CONDITIONS OF THE ABOVE OBLIGATION are that, whereas the Principal, entered into a contract with the Owner on the _____day of_____, _____, to construct _____according to the Plans and Specifications, and also warranting the work and materials as provided in the aforesaid Contract and Specifications, for a period of three (3) years from the date of final acceptance of work by the Owner.

Now, if the said Principal shall faithfully perform and fulfill all the requirements of said Warranty and Guaranty, and make all repairs required under said Guaranty and, in the manner provided for, then this Bond to be null and void, otherwise to be in full force and effect.

IN WITNESS WHEREOF, this statement is executed in two (2) counterparts, each one of which shall be deemed an original, this_____ day of_____, _____.

(SEAL) _____
Principal

ATTEST:

_____ BY:_____

_____ _____
Title Title

(SEAL)

ATTEST:

_____ BY:_____

_____ _____
Title Title

APPROVED this _____ day of_____, _____.

ELKHART COUNTY, INDIANA
By and Through Its
BOARD OF COUNTY COMMISSIONERS

_____
Bradley D. Rogers, President

_____
Suzanne M. Weirick, Vice President

_____
Bob Barnes, Member

ATTEST: _____
Tiara Jackson, Auditor

AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, ____, by and between _____ (a corporation organized and existing under the laws of the State of Indiana), hereinafter referred to as the "CONTRACTOR," and "ELKHART COUNTY, INDIANA," acting through the Board of Commissioners, hereinafter referred to as the "OWNER."

WITHESSETH, that the Contractor and the Owner, for the considerations stated herein, mutually agree as follows:

ARTICLE 1 -- STATEMENT OF WORK

The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services, including utility and transportation services, and traffic control, and perform and complete all work required for INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003, in Elkhart County, Indiana, as more particularly described in the Specifications, Special Provisions, General Requirements, Supplementary Conditions, Terms for Bidding, plans and drawings, and other items contained therein prepared by Elkhart County ("ENGINEER") and referred to herein as the "Construction Documents." All such Construction Documents have been reviewed and approved by the parties hereto and all are incorporated herein by reference as a part of this Agreement consistent with Article 4 below. All undertakings, duties, obligations, and performance required of Contractor by the Construction Documents and this Agreement are hereinafter referred to as the "Work."

ARTICLE 2 -- CONTRACTOR REPRESENTATIONS

The Contractor represents to Owner that it is fully experienced and properly qualified as an expert to render the performance required for the Work, and that it is properly equipped, organized and financed for performance of this Agreement. Contractor further represents and acknowledges that it is an independent contractor, and that Contractor IS NOT, in any manner or

form, an agent, employee, or representative of Owner.

CONTRACTOR INDEMNIFICATION

The Contractor agrees to indemnify and save harmless the Owner and Engineer, their agents and employees, from and against all loss or expense (including court costs and attorneys' fees of defense or enforcement) by reason of liability imposed by law or otherwise upon the Owner or Engineer, for (1) damages because of bodily injury, including death at any time resulting therefrom, sustained by any person or persons, or (2) on account of damage to property or property rights or interests, including loss of use thereof, arising out of or in consequence of the performance of the Work, provided such injury to persons or damage to property is due or claimed to be due to negligence of the Contractor, its subcontractors, employees or agents, or in violation of this Agreement.

REQUIREMENTS FOR CONTRACTORS ON PUBLIC WORKS PROJECTS

1) The provisions of Indiana Code Section 5-16-13 are hereby incorporated by reference including, but not limited to, the following specific provisions:
   a) Contractor must contribute in work performed by its employees, materials supplied directly by Contractor, and services supplied directly by its employees of at least fifteen percent (15%) of the total contract price.
   b) Contractor must maintain general liability insurance in the amounts provided in the Construction Documents but in no event less than One Million Dollars ($1,000,000.00) for each occurrence limit and Two Million Dollars ($2,000,000.00) for the general aggregate limit.
   c) Contractor must implement and comply with the requirements of Indiana Code Section 22-5-1.7 concerning the E-Verify system with respect to its employee hiring. Contractor must submit, before work begins on the Agreement, the E-Verify case verification number for each individual who is required to be verified under Indiana Code Section 22-5-1.7. An

individual who is required to be verified under Indiana Code Section 22-5-1.7 whose final case result is final non-confirmation may not be employed on this Work.

d) Contractor may not pay cash to any individual employed by the Contractor for work done by the individual on this Work.

e) Contractor must be in compliance with the Federal Fair Labor Standards Act of 1938, as amended (29 USC 201-209) and Indiana Code Section 22-2-2-1 through Indiana Code Section 22-2-2-8.

f) Contractor must be in compliance with Indiana Code Section 22-3-5-1 and Indiana Code Section 22-3-7-34.

g) Contractor must be in compliance with Indiana Code Section 22-4-1 through Indiana Code Section 22-4-39.5.

h) Contractor must be in compliance with Indiana Code Section 4-13-18-1 through Indiana Code Section 4-13-18-7.

2) Drug Testing of Employees. Indiana Code Section 4-13-18 regarding the drug testing of employees of public works contractors applies to the Agreement as the estimated cost hereof is at least One Hundred Fifty Thousand Dollars ($150,000.00) and has been awarded after June 30, 2015.

3) Nondiscrimination. Pursuant to Indiana Code Section 22-9-1-10, Contractor and its subcontractors, if any, shall not discriminate against any employee or applicant for employment to be employed in the performance of the Agreement with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, religion, color, sex, disability, national origin, ancestry, or veteran status. Breach of this covenant may be regarded as a material breach of the Agreement.

4) Anti-nepotism. Contractor is aware of the provisions of Indiana Code Section 36-1-21 et seq. with respect to anti-nepotism in contractual relationships with governmental entities.

Contractor certifies that none of the owners of Contractor is a relative of any elected Council Member or Commissioner of the County of Elkhart, Indiana.

5) Investment Activity. Pursuant to Indiana Code Section 5-22-16.5-13, Contractor certifies that Contractor is not engaged in investment activities in Iran.

ARTICLE 3 -- THE CONTRACT PRICE

The Owner will pay the Contractor for the performance of the Work subject to additions and deductions provided herein, in current funds, and per applicable Indiana law and the required procedures for payments by Owner, the sum of **$**_____. The Contractor shall start the Work on or after **April 5, 2027**, be substantially complete by **August 6, 2027** and receive final acceptance on or before **September 3, 2027**. Any Work remaining to be completed after **August 6, 2027** or Final Acceptance has not been received by **September 3, 2027** is subject to the following damages:

For each and every day Work contemplated in this Agreement fails to achieve substantial completion, beyond the substantial completion date herein established (August 6, 2027) or final acceptance has not been received by the final acceptance date herein established (September 3, 2027), Contractor shall owe and pay to Owner the sum of $3,000 per day, as liquidated damages and not as penalty. In establishing said $3,000 sum per day as and for liquidated damages owed by the Contractor to Owner, the parties hereto stipulate and agree that the actual damages that would be suffered by Owner because of the failure of Contractor to timely complete the Work contemplated are indefinite and uncertain; however, the parties hereto stipulate that the sum herein established is a reasonable estimate by the parties of the probably damages to be suffered by the Owner upon the failure of the Contractor to timely complete the Work contemplated. The liquidated damages herein established shall be deducted daily from the Contract Price herein established, thereby reducing the same for the total amount of liquidated damages as herein stipulated, and hence reducing payments of the Contract Price Owner would otherwise make. If an intermediate date is specified for one or more of the items or phases of the

contract, liquidated damages will apply for that particular item or phase as if the intermediate date specified for said item or phase is conclusion of said portion of project or contract.

ARTICLE 4 -- CONTRACT DOCUMENTS

The Contract Documents forming a part of this Agreement by reference shall consist of the following:

a. This Agreement.

b. Memos:

c. Invitation for Bids.

d. Notice to Bidders.

e. Signed copy of Bid and Itemized Bid Form.

f. General Conditions and Supplementary Conditions.

g. Construction Specifications and Related Documents.

h. Plans.

i. Addendums

ARTICLE 5 -- PROJECT CONTROL

The Contractor will carry out this project and complete the Work under the direction of the Owner and the Owner's agents, the Engineer, or other consultant designated by the Owner. The Owner's designated representative during the construction period will make visits to the site at intervals appropriate to the various states of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents.

This Agreement, to include the Contract Documents enumerated in Article 4 above, constitutes the full agreement and understanding of the parties hereto, and save for change orders and procedures therefore set forth within the Contract Documents, shall not be amended by the parties, other than by instrument executed by each party hereto.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed

in various counterparts effective as of the date and year first above written.

CONTRACTOR:

By_____ Signature

_____ Printed Name

_____ Title

OWNER: **ELKHART COUNTY, INDIANA**, by and through its Board of County Commissioners

_____
Bradley D. Rogers, President

_____
Suzanne M. Weirick, Vice-President

_____
Bob Barnes, Member

ATTEST: _____
Tiara Jackson, Auditor

Division 2:

Supplemental Provisions

For

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

OWNERS: ELKHART COUNTY, INDIANA, ACTING THROUGH
ITS BOARD OF COUNTY COMMISSIONERS
ELKHART COUNTY HIGHWAY DEPARTMENT
ENGINEERING SECTION
610 STEURY AVENUE
GOSHEN, IN 46528

Elkhart County Highway Department
610 Steury Avenue, Goshen, Indiana 46528
Phone: 574-533-0538 • Fax: 574-533-7103

INDEX

SP1 – GENERAL INFORMATION

1. GENERAL

The following Technical Provisions are in addition to the latest edition of the Indiana Department of Transportation "STANDARD SPECIFICATIONS", which Standard Specifications shall apply to this contract. Where the words "Standard Specifications" and also where reference consisting of a number or numbers are used, they shall be construed as referring to the latest edition of the Indiana Department of Transportation Standard Specifications and current supplementary specifications and standard detail drawings.

The term “State” as used in the Standard Specifications shall be deleted and replaced with the term “County”.

The term “Engineer” as used in the Standard Specifications shall be the person, firm, or corporation named as such in the written Agreement between the OWNER and CONTRACTOR.

2. HIERARCHY

The hierarchy of governing authority in the contract Documents is as follows.

A. Division 1 provisions as modified by the Supplementary Provisions
B. Project Specifications
C. Project Drawings
D. County Specifications
E. INDOT Standard Specifications
F. INDOT Standard Drawings

3. GENERAL DESCRIPTION OF WORK

The Orpha Drive & CR 27 Intersection Improvement includes widening to add left turn lanes on both legs of CR 22/Orpha Drive and northbound on CR 37. The project includes the realignment of the Pumpkinvine Nature Trail at this intersection. Construction will include new sanitary sewer along CR 22/Orpha Drive and along CR 37 within the project limits. Drainage will be handled with open ditches with inlets. The roadway improvements will include striping of the roadways.

SP2 – TIME OF COMPLETION

1. MOBILIZATION

Work on this Contract shall not begin prior to notice to proceed.

The Contractor shall notify the Owner at least two (2) weeks in advance of his intention to perform any Work on the project. The Contractor shall give the owner/inspector updated schedules of work on a bi-weekly basis or as the schedule changes. The Contractor shall also notify the appropriate agencies of his intention to close any County Road in connection with the project. See ROAD CLOSING REQUIREMENTS.

Note that maintenance off traffic signage shall be installed, in accordance with the plans and specifications, prior to any other work, and shall be removed only upon final acceptance of the project. These signs shall be checked on a daily basis and promptly reset as needed.

No road closures shall be permitted unless approved in writing by the engineer and owner.

2. INTERMEDIATE COMPLETION

The Contract includes Intermediate Completion Dates.

The Contractor shall complete all work necessary to open the intersection to traffic by August 6, 2027.

Final completion and final acceptance shall be September 3, 2027.

The Contractor shall not restrict traffic while school is in session from April 5, 2027, through May 31, 2027.

3. SUBSTANTIAL COMPLETION

Add the following new definition to the DEFINITIONS section of the General Provisions:

"SUBSTANTIALLY COMPLETE"	The time at which the Work (or a specified portion thereof) is ready for its intended use and all work items (in the specified portion thereof) are complete.

Add the following at the beginning of Section 12.5 of the General Provisions:

A project is considered substantially complete when the entire Work is ready for its intended use and all work items are complete.

4. LIQUIDATED DAMAGES

The completion date as referred to in ARTICLE 3 of the Agreement will be used interchangeably with the term Final Acceptance. Final Acceptance is the point in time where the Engineer provides recommendation of final payment to the Owner as outlined in Section 12.9 of the General Provisions.

Liquidated damages will apply for the following dates and any intermediate dates until conclusion of said portion of project or contract.

Description	Date
Substantial Completion	August 6, 2027
Final Acceptance	September 3, 2027

5. REVIEW TIMES

The Engineer is allowed to use to the following time to produce items owed to the Owner or Contractor per this agreement and the Owner is not obligated to provide the Contractor a change of contract time, therefore.

In Section 12.5 of the General Provisions, ‘a reasonable time thereafter’ is seven (7) calendar days for a contract price under $1,000,000.00 and fourteen (14) calendar days otherwise. The Owner is not required to provide the Contractor a change in contract time therefore.

In Section 12.9 of the General Provisions, the Engineer will indicate in writing Engineer's recommendation of payment and present the Application to Owner for payment within fourteen (14) calendar days after receipt of final Application for Payment. The Engineer may recommend to the Owner that a Waiver of Time be provided to the Contractor for the fourteen (14) calendar days listed herein if the Contractor has demobilized from the site, there are no remaining defective or incomplete Work items. A Waiver of Time is document that waives the Liquidated Damages for the timeframe indicated in the document. A Waiver of Time may be given for part or the entirety of the fourteen (14) day period listed herein. The amount of time provided in the Waiver of Time is at the discretion of the Owner.

6. CHANGE OF CONTRACT TIME

Add the following new definition to the DEFINITIONS section of the General Provisions:

> No extension of Contract Time shall be allowed for weather or changes in quantities placed. Changes in Contract Time will only be considered if requested in writing by the Contractor in accordance with Article 10 of the General Conditions.

Determination and Extension of Contract Time for Completion and Failure to Complete on Time shall be in accordance with the Agreement and all applicable requirements of 108.08 and modified as follows.

A. This completion date is a ‘fixed calendar date’ as defined by INDOT Standard Specifications section 108.

B. Changes in Contract Time will only be considered if requested in writing by the Contractor in accordance with Article 10 of the General Conditions.

SP3 – UTILITIES

1. GENERAL

   The Contractor shall determine the location of all underground and overhead utility lines within the project limits. If proper clearances cannot be obtained, affected planned structures shall be placed as otherwise directed and approved by the adjacent utility representatives (and as accepted by the Engineer).

2. COORDINATION WITH UTILITIES

   The Contractor shall be responsible for utility property and services in accordance with 107.20 of INDOT's Standard Specifications. All of the permanent and temporary utility appurtenances in their present or relocated positions shall have been considered in the bid. No additional compensation will be allowed for any delays, inconvenience, or damage sustained by the Contractor due to any interference from the said utility appurtenances or the operations of moving them.

   The plan drawings include a list of names for the known companies that may have utilities located within the limits of construction in this contract. If any of these utilities are affected, it shall be the Contractor's responsibility to identify and coordinate with that utility.

   The prime contractor shall be ultimately responsible for the completeness and promptness of utility location(s) for subcontractors. Multiple locations of the same facilities may be required throughout the project time.

SP4 – BUY AMERICAN REQUIREMENT

1. GENERAL

   Buy American Requirements shall be in accordance with 106.01(c) of INDOT's Standard Specifications.

SP5 – STORAGE OF CONTRACTOR'S EQUIPMENT, MATERIALS AND TEMPORARY OFFICES

1. GENERAL

   The Contractor will be permitted to store non-operating construction equipment, workmen's vehicles, materials and temporary offices within the limits of the Right-of-Way with approval from Owner.

   In the event that the Right-of-Way is not available for storage, the Contractor shall procure an adequately secure operations site as an incidental item to the contract.

   All areas within the limits of the Right-of-Way that are used by the Contractor for temporary storage, of any kind, shall be restored to their original condition by the Contractor at his own expense, when no longer required for that purpose.

   The Contractor shall not use property adjacent to the project Right-of-Way for storage, parking or any other use without prior approval from the property owner.

SP6 – HAZARD COMMUNICATIONS PROGRAM

1. GENERAL

   Pursuant to the latest requirement of OSHA the bidder is obligated to inform his employees concerning the health and safety hazards of all chemical substances that may be required in the performance of this contract.

SP7 – ENVIRONMENTAL RESTRICTIONS

1. GENERAL

   A. All trees or shrubs outside the permanent Right-Of-Way line shall not be disturbed unless otherwise shown on the plans.

2. PERMITS

   Regulatory permits for this project to be obtained by the OWNER are as follows:

   - Construction Storm Water General Permit (CSGP)

   The CONTRACTOR is responsible for securing all other permits that may be required for this project in accordance with the Standard Specifications.

SP8 – CONSTRUCTION STAKING

1. GENERAL

The Contractor shall provide construction layout/surveying under the direction of a licensed land surveyor for the improvements as shown in the project plans and specifications. The cost of this item shall be included in the cost of other items and shall include, but may not be limited to the following:

Locate existing bench marks and run level circuit to check elevations. Set new bench marks (if needed) every 500 feet. Bench mark data sheets shall be provided to the project Engineer.

Stake right-of-way as needed.

Stake all easement lines.

Preserve and perpetuate existing property corners, which are at risk from construction operations. (This item must be performed under the direct supervision of a licensed surveyor.)

Field notes shall be kept in standard field notebooks supplied by the Contractor in a clear, orderly and neat manner consistent with standard engineering practices and procedures. The field books shall be available for inspection by the Engineer at all times and shall become the property of the Owner on completion of the work.

The supervision of the Contractor's construction staking personnel shall be the responsibility of the Contractor and any errors resulting from the operations of such personnel shall be corrected at the expense of the Contractor and at no additional cost to the Owner.

The Engineer may check the accuracy of the staking as necessary but will assume no responsibility for the accuracy of the layout or the final result of construction accuracy.

Surveying pertaining to existing right-of-ways and monument perpetuation shall be performed under the direction of a Land Surveyor licensed in the State of Indiana.

SP9 – CONTRACTOR'S RESPONSIBILITY FOR MATCHING OLD WORK

1. GENERAL

Where new work is to be fitted to old work, the Contractor shall check all leading dimensions and conditions in the field and report any errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of new parts to old. If such parts do not fit properly, the Contractor shall make and pay for such alterations or new parts as may be necessary to assure proper fits and connections meeting the approval of the Engineer.

SP10 – DUST AND AIR POLLUTION CONTROL

1. GENERAL

Provision shall be made for prompt removal from traveled roadways of all dirt and other materials that have been deposited thereon by operations concerned with the project whenever the accumulation is sufficient to cause the formation of dust or mud, interfere with drainage, damage pavements, or create a traffic hazard.

2. CONSTRUCTION

Construction methods and means shall be employed to keep flying dust and air pollution to a minimum. Provisions shall be made for the control of dust on the project and on the roads, streets and other areas affected by the project wherever traffic or buildings or construction materials are affected by such dust. The materials and methods used for dust control shall be subject to approval by the Engineer.

The cost of controlling dust and air pollution shall be included in the costs of other pay items and no additional payment will be made.

SP11 – CONTAMINATION PRECAUTION

1. GENERAL

Contractor shall take all precautions to avoid the spillage of construction-related liquids and fuels during the project. All portable stationary fuel tanks shall have secondary containment.

SP12 – EXISTING TRAFFIC CONTROL DEVICES

1. GENERAL

(a) This work shall consist of the removal and delivery to the County of all roadway signs and delineators that are to be removed and not reused in this contract. These items are to be delivered to the location specified by the Engineer. This work will not be paid for separately but shall be included in the cost of other items.

(b) Signs that are not required to be removed or are planned for reuse that are damaged by the Contractor shall be replaced by the Contractor.

(c) All existing regulatory signs shall be maintained at all times during construction. For questions that should arise, the Engineer will be notified.

(d) For all other signs that are to be disturbed, the County will be notified as to the reinstallation of these signs.

(e) All existing traffic signals, masts, poles and other hardware if removed must be salvaged and maintained in good condition by the Contractor. The County has

salvage rights for all removed items if not reused in the course of constructing this project.

SP13 – MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

1. GENERAL

Wherever in the Contract Documents reference is made to the Manual on Uniform Traffic Control Devices, MUTCD, it shall be interpreted to mean the 2025 Indiana Manual on Uniform Traffic Control Devices.

SP14 – PROOFROLLING

1. GENERAL

Proofrolling of the natural ground surface or subgrade treated surface shall be in accordance with 203.26. All areas where HMA will be placed shall be required to pass a proofroll prior to paving operations. Any soft soils encountered during the proofrolling operations, which will not readily compact, shall be removed and replaced with Structure Backfill to an elevation two (2) feet above the ground water level, if ground water is encountered. Otherwise backfilling shall be accomplished in accordance with 203.09. The Contractor shall schedule a proofroll with the Owner's representative 24 hours in advance of all proofrolls. A load ticket will be required for the truck performing the proof roll, showing a minimum gross weight of 68,000 lbs. for a tri-axle or tandem axle truck. No quad axle trucks will be allowed unless the fourth axle is lifted from the surface for the test.

2. PAYMENT

No direct payment will be made for proofrolling. The cost of this work shall be included in bid price of other items.

SP15 – DISPOSAL OF UNSUITABLE MATERIAL

1. GENERAL

A. No temporary Right-of-Way has been provided on this contract for disposal of unsuitable material. The disposal of any peat and/or any other unsuitable soil that might be encountered throughout the length of the project shall be in accordance with all applicable requirements of 203.12.

B. Excess peat material left over after placement as set out in 203.12 shall be disposed of outside the Right-of-Way with no additional payment.

C. Excess material may be utilized as "topsoil" where appropriate.

SP16 – RECORD DRAWINGS

1. GENERAL

   Record Drawings shall be required for the Project.

   The Contractor shall provide the Owner with two (2) neatly prepared and reproducible sets of record drawings and two (2) complete sets in PDF format on a CD or DVD.

2. MINIMUM RECORD DRAWING REQUIREMENTS

   Record drawings shall include the following, but not be limited to:

   a) Installed structure locations (including GPS coordinates) and elevations
   b) Elevations of installed improvements at regular intervals not to exceed 50 feet, i.e., curb and gutter, pavement centerline, swales and ditches, etc.
   c) Detention/Retention basin elevations with constructed capacity
   d) Any other newly constructed or reconstructed features pertinent to the project

   Record drawing preparation shall be incidental to the contract.

SP17 – COORDINATION CLAUSE

1. GENERAL

   A. Contractor shall coordinate the work on this project with any other public works projects that may be taking place within the vicinity of the project site, or that are seen to, or are expected to, have an effect on this project or that this project has an effect on another. This includes coordination with projects funded by Elkhart County, neighboring counties, municipalities, utilities or INDOT.

   B. Contractor shall coordinate with the County's awarded material suppliers to schedule material deliveries to the site. See Appendices B and C for the awarded supplier contact information.

SP18 – MATERIAL TESTING

1. LABORATORY INSPECTION AND TESTING

   A. All collection, laboratory inspection and testing of materials shall be performed as required under Article 106.02 of the Standard Specifications except as modified herein. It is the responsibility of the Contractor to see that all work is performed as required herein. The collection, laboratory inspection and testing of materials shall be performed by an

independent testing laboratory.

B. The minimum number of samples and/or tests will be in accordance with INDOT's "Manual for Frequency of Sampling and Testing and Basis for Use of Material" unless superseded by the Technical Provisions and Supplementary Specifications for this project. This manual is available for review at INDOT's Office of the Division of Materials and Tests.

C. The cost of this work shall be included in the bid price of other items.

D. The Engineer, or the Engineer's Authorized Representative, may require that collection, laboratory inspection and testing of materials be performed in addition to the minimum number of tests required as described above. A written order will be provided to the Contractor requesting the additional work. Payment for the additional collection, laboratory inspection and testing of materials will be made either by change order or under the item allowance for Inspection and Testing if included in the contract. All test results shall be given to the owner/inspector in a timely manner.

SP19 – VIDEO REQUIREMENTS FOR CONSTRUCTION CORRIDOR

1. GENERAL

The Contractor shall provide video footage with sound including the entire project with any off-site areas used for material storage, hauling, dumping, and other areas that may be affected by the construction process.

The video shall provide a complete record of the physical conditions of the entire project BEFORE mobilization and AFTER cleanup. The video shall be cataloged by automobile odometer readings taken in one-tenth (1/10) of a mile increment for those areas accessible by automobile, or by project Stationing, either via on-screen text or audible notes. Time and date stamp shall be recorded throughout and clearly legible on the video.

2. QUALITY

The video shall be 720p quality or better. The videos shall be in mpeg-4 or H.264 format. Should multiple individual files be used, each should overlap 100 feet with the one previous to it. The center of the road, driveways, landscaping, and lawn areas adjacent to the project should be clearly visible.

3. COST AND TIMELINE

The cost of video recording shall be incidental to the other project items. However, no application for payment will be approved until after the pre-construction videos have been reviewed and accepted by both the Engineer and Owner. **The pre-construction videos shall be provided to the Engineer at least two (2) weeks prior to the application of initial progress payment.** Prior to final payment application to release retainage, the Contractor shall submit to the Engineer the post-construction video.

Division 3:

Project Technical Specifications

For

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

OWNERS: ELKHART COUNTY, INDIANA, ACTING THROUGH
ITS BOARD OF COUNTY COMMISSIONERS
ELKHART COUNTY HIGHWAY DEPARTMENT
ENGINEERING SECTION
610 STEURY AVENUE
GOSHEN, IN 46528

Elkhart County Highway Department
610 Steury Avenue, Goshen, Indiana 46528
Phone: 574-533-0538 • Fax: 574-533-7103

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TP1 – CLEARING RIGHT-OF-WAY

1. GENERAL

Clearing right-of-way shall include the removal and/or trimming of all trees and brush within the permanent right-of-way or construction limits, whichever is greater, or unless specifically identified on the contract plans to remain. Stumps shall be entirely removed and filled with sand.

Incidental to the work shall be the removal of any miscellaneous obstructions within the right-of-way, including but not limited to fence, concrete pads, existing retaining walls, signs and landscape.

The work shall include the removal of portions of existing HMA pavement as indicated by plan details and/or within the construction limits or to the permanent R/W line, whichever is greater.

It is the Contractor's responsibility to adequately inspect the site and clarify the intent of the project prior to submitting a bid.

2. PAYMENT

Items included in this item shall be paid for as Lump Sum under the pay item(s) noted below:

Pay Item	**Pay Unit**
Clearing Right of Way	LS

TP2 – UTILITY COORDINATION

1. GENERAL

The Contractor shall determine the location of all underground and overhead utility lines within the project limits. If proper clearances cannot be obtained, affected planned structures shall be placed as otherwise directed and approved by the adjacent utility representatives (and as accepted by the Engineer). The Contractor shall be solely responsible the coordination of utility work plans.

2. COORDINATION WITH UTILITIES

The Contractor shall be responsible for utility property and services in accordance with 107.20 of INDOT's Standard Specifications. All of the permanent and temporary utility appurtenances in their present or relocated positions shall have been considered in the bid. No additional compensation will be allowed for any delays, inconvenience, or damage sustained by the Contractor due to any interference from the said utility appurtenances or the operations of moving them.

A list of names for the known companies that may have utilities located within the limits of construction in this contract are included below. If any of these utilities are affected, it shall be the Contractor's responsibility to identify and coordinate with that utility.

AT&T Long Distance & Lumen National
Dean Norwich
DeanNorwich@jmceainc.com
574-344-0833

Comcast
Damion Sims
Damion_Sims@concast.com
708-518-8786

Elkhart County Fiber Optic
Ben Hudson
bhudson@elkcohwy.org
574-533-0538

Frontier (Telephone)
Robin Branson
robin.n.branson@ftr.com
574-875-3789

Middlebury Public Works
Jeff Palmer
publicworks@middleburyin.com

New Paris Telephone/Community Fiber Network
Rob Smith
Rob.Smith@nptel.com
219-204-3143

NIPSCO Electric
Bradley Crise
BCrise@nisource.com
219-628-0925

NIPSCO Gas
Joe Hartman
jrhartman@nisource.com
260-463-3999

The prime contractor shall be ultimately responsible for the completeness and promptness of utility location(s) for subcontractors. Multiple locations of the same facilities may be required throughout the project time.

The Contractor shall be solely responsible the coordination of utility work plans. This includes but it not limited to maintaining an open line of communication with the owners of utilities, tracking the progress of utility relocation work, and scheduling utility coordination meetings.

The Contractor shall document all communication with utilities and maintain a daily log of utility relocation progress. Documentation shall be submitted to the Engineer within 24 hours of written request from the Engineer. Failure to provide documentation will result in a reduction in pay quantity for this item at the discretion of the Engineer/Owner.

2. PAYMENT

No direct payment shall be made for utility coordination. Utility coordination shall be included in the cost of other items

TP3 – EARTHWORK

1. GENERAL

   (a) This work shall consist of all earthwork required for the completion of the project as detailed on the plans and in the specifications. This item includes excavation, embankment construction, hauling, disposal and/or compaction of all material not being removed under some other item which is encountered within the limits of the work and also from intersecting entrance approaches beyond the Right-of-Way limits necessary for the construction of the roadway in accordance with the Specifications and in reasonably close conformance with the lines, grades, thickness and typical cross section shown on the plans or as directed.

   (b) Excavation for culverts, ditches, sewers, tunnels, and other approach structures will not be paid for directly, but the cost thereof shall be included in the cost of other pay items. Removal and disposal of piles of broken concrete and similar debris located on the Right-of-Way shall be included in the cost of earthwork. Where surplus material is suitable for use in the roadway or bridge approach embankment, it may be used as allowed by the Engineer.

   (c) Borrow shall consist of approved material required for construction of embankments. No direct payment will be made for borrow required for embankment construction in accordance with lines, grades and typical cross sections specified.

   (d) The work shall include salvaging topsoil and replacement of topsoil for top dressing areas to receive sod or mulch seeding. Contractor shall utilize topsoil stockpiled as part of the clearing project. Prior to reuse, extraneous material such as stones, roots, or other organics shall be removed from the topsoil.

2. MATERIALS

   None.

3. CONSTRUCTION

   (a) PAVEMENT REMOVAL

   Removal of pavement shall consist of the removal and satisfactory disposal of portland cement concrete pavement; portland cement concrete resurface with its base; or the total of any combination of base, binder, and surface course of any pavement on a portland cement concrete base, including the base. Each complete pavement removed will be considered as a separate item and paid for as such when removed. Pavement removal shall include only the removal and disposal of existing public road, driveway or street and alley pavement as required for the planned construction. Integral curb that is removed with the adjacent pavement shall be paid for as pavement removal. Prior to performing the work of pavement removal at locations indicated on the plans or where directed, concrete pavement to be removed shall be cut with a power-driven concrete saw along designated line. Sawing shall be such that any portion of the

pavement to remain in place will not be damaged. Any portion that is damaged or removed outside the designated lines shall be replaced with no additional payment. Sawing of pavement to be removed will not be paid for directly but shall be included in the cost of pavement removal.

(b) EXCAVATION & EMBANKMENTS

Excavation and embankment methods and testing shall conform to the INDOT standard specifications.

4. BASIS OF PAYMENT

Earthwork, including all items noted above and its required testing will be measured as a lump sum pay item

Pay Item	**Pay Unit**
Earthwork	Lump Sum

TP4 – INSPECTION HOLE

1. GENERAL

This work shall consist of digging inspection holes in accordance with 105.03, to verify the presence of the existing water table, underground utilities, or as directed by the engineer to identify potential conflicts with the proposed construction.

2. MATERIALS

Materials, tools, equipment, labor, and incidentals shall be provided as required.

3. CONSTRUCTION

Utility locates and coordination shall be in accordance with 105.06 and 107.20.

Once any utility locates are marked in the field, inspection holes shall be dug at locations as identified by the engineer. The inspection holes shall be dug to a depth of up-to five feet in depth. The inspection hole shall be dug as large as necessary, not to exceed an area of 30 square feet.

Once the engineer no longer requires the inspection hole to remain open, it shall be backfilled and compacted with B borrow in accordance with 211. If the inspection hole is to remain open beyond the day that it was dug, it shall be marked and protected to provide warning that the hole exists.

4. BASIS OF PAYMENT

Inspection holes will be paid for at the contract unit price per each.

Pay Item	**Pay Unit**
Inspection Hole	EACH

The cost of digging, backfilling, B borrow, measuring, coordination, and all necessary incidentals shall be included in the cost of inspection holes.

TP5 – SUBGRADE TREATMENT

1. GENERAL

   Subgrade Treatment shall be in accordance with Section 207 - Subgrade

2. MATERIALS

   Subgrade Treatment shall conform to the INDOT specifications in effect at the time of bidding for the subgrade treatment types identified.

3. CONSTRUCTION

   Subgrade treatment shall be installed in accordance with INDOT standard specifications.

4. BASIS OF PAYMENT

   Compaction and/or placement of the materials used for subgrade treatment shall be included in the unit price of those items.

Pay Item	**Pay Unit**
Subgrade Treatment, Type II	SYS
Subgrade Treatment, Type III	SYS

TP6 – COMPACTED AGGREGATE

1. GENERAL

   (a) Compacted Aggregate for Subbase shall be in accordance with Section 301 – Aggregate Base

   (b) Compacted Aggregate for shoulders shall be in accordance with Section 303 – Aggregate Pavements or Shoulders

   (c) Dense Graded Subbase shall be in accordance with Section 302 - Subbase

   (d) Aggregate to maintain temporary access to driveways may be salvaged from existing onsite gravel roads, drives and shoulders.

   (e) It shall be the Contractor's responsibility to verify that subgrade elevations are in agreement with the plan/profile.

   (f) Areas with inadequate soils may require undercut and replacement with compacted aggregate. These areas will be identified by the Engineer during the course of the project through proof rolls or other means. The Engineer will direct the Contractor in the appropriate treatment that may consist of excavation and replacement of the inferior soils with No. 2 Compacted Aggregate, No. 53 Compacted Aggregate, Geogrid, or combinations of some or all of the above. Undercut of unsuitable soils to be paid as common excavation (undistributed) in accordance with Section 203.

2. CONSTRUCTION

   The compacted aggregate shall be constructed in accordance with INDOT Section 300 – Aggregate Bases.

   Existing Subgrade (or Previously Constructed Subbase) – Prior to constructing the compacted aggregate, the subgrade shall be cleaned of all foreign substances and shall contain no frozen material. The Subgrade shall receive a subgrade treatment in accordance with the plans, Standard Specifications, and as directed by the Engineer. The first 6" below the pavement structure subgrade shall be compacted to at least 100% of dry density, as per AASHTO T 99. Compaction shall not be less than 100% of Standard Proctor as per ASTM D 698. It shall be inspected by the Engineer or his representative for adequate compaction and surface tolerances. Ruts or soft, yielding spots having inadequate compaction shall be corrected to the satisfaction of the designated representative.

   The compacted aggregate material shall be placed in layers of uniform thickness with an approved spreader.

   Layer thickness generally shall not exceed 5 inches after compaction. When vibrating or other approved types of special compacting equipment are to be used, approval may be given for increasing the permissible thickness of layers, provided the ability of such equipment to achieve acceptable compaction to the full layer depth is demonstrated. When the course is constructed in more than one layer, the previously constructed layers shall be cleaned of loose and foreign matter. The water content of the material shall be maintained

during placement at the optimum percentage (1 – ½%) as determined by ASTM D 1557.

Compaction – While at optimum moisture (1 – ½%) the compacted aggregate shall be compacted with equipment capable of obtaining the desired density to the full depth. The rolling shall continue until the base is compacted to not less than 100% of the maximum dry density as determined in accordance with AASHTOT99.

Finishing – The surface of the compacted aggregate shall be finished by blading or with automated equipment especially designed for this purpose and rolled with a steel-wheeled roller. In no case will thin layers of fine materials be added to the top layer of the base course in order to meet the grade.

Surface Finish Tolerances – The surface of the completed crushed stone base shall not show any deviation in excess of ½ inch when tested with a 12-foot straight edge. The completed thickness of the base shall be within ½ inch plus or minus of the thickness indicated, and the average thickness shall not be less than the design thickness.

Maintenance – The base shall be maintained in a condition that will meet all specification requirements until the work is accepted.

3. PAYMENT

Payment will be made at the unit price as indicated below:

Pay Item	**Pay Unit**
Compacted Aggregate, No 53 (Shoulders)	TON
Compacted Aggregate, No 53 (Subbase)	CYS
Dense Graded Subbase	CYS
Geogrid, Type 1B	SYS

TP7 – HMA PAVEMENTS & ASPHALT MATERIALS

1. GENERAL

   This work shall consist of placing HMA pavement as described in the plans and specifications. The APAI Guide for Specifying Asphalt Pavements for Local Governments (Appendix A) shall be the governing specification for HMA pavements, except as noted herein this Special Provision.

   Reference 2026 INDOT Standard Specifications.

   The maximum % Binder Replacement allowed in the Surface and Base course shall be 25%. 100% virgin material is acceptable.

   Liquid Asphalt Sealant, Joint Adhesive Surface, and Joint Adhesive Intermediate shall be installed in accordance with the INDOT Special Provision 401.

2. MATERIALS

   HMA pavement mixture shall use Petroleum Asphalt Cement and required aggregates for:
   HMA Surface Type C, 9.5 mm
   HMA Intermediate Type C, 19.0 mm
   HMA Base Type C, 25.0 mm

   The HMA pavement mixture shall incorporate the MSCR Binder 58H-28 (Base Liquid) for HMA, Surface, Type C, 9.5 mm and HMA Intermediate, Type C, 19.0 mm. The HMA pavement mixture shall incorporate the MSCR Binder 58S-28 (Base Liquid) for HMA, Base, Type C, 25.0 mm in accordance the standard specifications and special provisions.

   Only CAPP aggregates shall be permitted in the asphalt courses. All references to 904.01 additional payment for the use of Slag Aggregate are deleted.

   Liquid Asphalt Sealant, Joint Adhesive shall be in accordance with Special Provision 401 and 906.

3. CONSTRUCTION

   HMA pavement construction shall be installed in accordance with INDOT standard specifications.

   Finished HMA thickness shall be in accordance with INDOT specifications.

4. BASIS OF PAYMENT

   The HMA mixture will be paid for by the ton in place.

Pay Item	Pay Unit
HMA Surface Type C, 9.5 mm	TON
HMA Intermediate Type C, 19.0 mm	TON
HMA Base Type C, 25.0 mm	TON
HMA Surface Type B	TON
HMA Intermediate Type B	TON

No payment will be made for Liquid Asphalt Sealant or Joint Adhesive. The cost of installing these items shall be included in the cost of the HMA pavement.

TP8 – ASPHALT FOR TACK COAT

1. GENERAL

   Tack coat emulsion shall consist of grade AE-T Bituminous Material.

2. CONSTRUCTION

   Asphalt for Tack Coat shall be installed in accordance with INDOT standard specifications.

   The existing surface shall be cleaned and swept prior to the application to permit adhesion of the bituminous materials. This material shall be applied immediately preceding the placement of each HMA layer at an application rate of 0.08 gal/syd. The tack coat shall be uniformly applied and evenly distributed over the entire HMA surface. Tack coat shall not be applied to a wet surface.

3. BASIS OF PAYMENT

   No payment will be made for Asphalt for Tack Coat. The cost of this item shall be included in the cost of the HMA pavement.

TP9 – DRAINAGE STRUCTURES

1. GENERAL

   (a) All new structures shall be installed to the elevations shown on the plans or as otherwise determined by the Engineer.

   (b) At the connection of a pipe to a concrete structure, gasketed connections shall be employed for all pipes equal to or less than 18” nominal diameter. Pipes entering structures at an angle greater than 15 degrees from perpendicular to the structure wall shall not require a gasketed connection.

   (c) Pipes shall extend through walls, a sufficient distance, to allow for placement of the gasketed connection or a concrete collar, as needed.

   (g) Field constructed connections to structures, new or existing, shall be core drilled.

   (h) Catch basins shall be constructed with a minimum two-foot sump. Inlets shall have no sump.

2. CLEAN-UP

   (a) Clean-up shall be in accordance with sub-section 104.08 of the State Specifications.

   (b) No payment will be made for clean-up.

3. SEWER PIPE AND APPURTENANCES

   (a) DESCRIPTION – this work shall consist of the construction or reconstruction of storm sewer and appurtenances in accordance with specifications section 715 and in reasonably close conformance with the lines and grades shown on the plans or established by the Engineer.

   (b) MATERIALS – Materials shall be in accordance with State Specifications Section 715 and details shown on the drawings.

   (c) GENERAL REQUIREMENTS – Manholes, inlets and catch basins shall comply with Section 720 of the State Specifications. Risers shall not exceed three risers of twelve inches in total height. Manholes, inlets and catch basins shall be done in accordance with the details shown on the drawings.

4. BASIS OF PAYMENT

   The accepted quantities for each class and diameter of sewer pipe specified will be paid for at the contract price per lineal foot complete in place. The accepted quantities of manholes, clean-outs, pipe end sections, inlets, catch basin and drywells will be paid for at the contract unit price each in place. The payment shall be full compensation for furnishing and installing all materials, labor, excavation, backfilling, structure backfill material, pavement removal, testing, video inspection, dewatering, compaction and all appurtenances.

Pay Item	Pay Unit
Pipe, Type 2, Circular, 15 IN.	LFT
Pipe, Type 2, Circular, 18 IN.	LFT
Pipe, Type 2, Circular, 24 IN.	LFT
Pipe End Section, Diameter 24 IN.	EACH
Inlet, E7	EACH
Inlet, F7	EACH
Manhole, C4	EACH

TP10 –SEWER STRUCTURES

1. GENERAL

   (a) All new structures shall be installed to the elevations shown on the plans or as otherwise determined by the Engineer.

   (b) At the connection of a pipe to a concrete structure, gasketed connections shall be employed for all pipes equal to or less than 18” nominal diameter. Pipes entering structures at an angle greater than 15 degrees from perpendicular to the structure wall shall not require a gasketed connection.

   (c) Pipes shall extend through walls, a sufficient distance, to allow for placement of the gasketed connection or a concrete collar, as needed.

   (d) Field constructed connections to structures, new or existing, shall be core drilled.

   (e) Catch basins shall be constructed with a minimum two-foot sump. Inlets shall have no sump.

2. CLEAN-UP

   (a) Clean-up shall be in accordance with sub-section 104.08 of the State Specifications.

   (b) No payment will be made for clean-up.

3. SEWER PIPE AND APPURTENANCES

   (a) DESCRIPTION – this work shall consist of the construction or reconstruction of sanitary sewer and appurtenances in accordance with specifications section 715 and in reasonably close conformance with the lines and grades shown on the plans or established by the Engineer.

   (b) MATERIALS – Materials shall be in accordance with State Specifications Section 715 and details shown on the drawings.

   (c) GENERAL REQUIREMENTS – See Appendix B

      1. Town of Middlebury Standard Specification and Development Guide, Chapter 3: Sanitary Sewer Construction
      2. Town of Middlebury Standard Specification and Development Guide, Chapter 4: Sanitary Sewer Testing Procedures
      3. Town of Middlebury Standard Specification and Development Guide, Chapter 8: Tracer Wire
      4. Other Sections containing pertinent and incidental Work.

4. BASIS OF PAYMENT

   1. For the sanitary pipe, laterals and connections include cot of:

a. Excavating and disposing of surplus excavated materials replaced by pipe, bedding, and granular cover, and backfill.
b. Removal of existing sanitary sewers as required.
c. Protecting existing utilities, site objects, and new Work which are to remain in service after completion of new sewers and appurtenances.
d. Sheeting, shoring, and bracing materials, and installation and removal.
e. Dewatering.
f. Granular bedding and cover materials, and placement and compaction.
g. Pipe materials and laying.
h. Placing and compacting granular or excavated trench backfill materials as appropriate. Granular backfill material is not anticipated and is only to be used where native excavated material is determined by the Engineer to be unsuitable for reuse.
i. Fittings.
j. Flow control including bypass pumping, if required.
k. Providing connectors.
l. Coring manhole connection for sanitary sewer pipe, furnishing and installing flexible boot, and providing watertight seal.
m. Sewer testing and internal inspections, including televising.
n. Clean up.
o. Reconnecting or repair of utilities damaged by sewer installation.
p. Other pertinent and incidental Work.
q. General requirements of Sections listed.

2. Do not include cost of:
   a. Manholes.
   b. Work included in other Bid items.

3. Measurement for Payment:
   a. Measure 8-inch sanitary sewer at actual length of pipe completed in feet.
   b. Measure 10-inch sanitary sewer at actual length of pipe completed in feet.
   c. Measure 6-inch sanitary laterals at actual length of pipe completed in feet from sewer main to right of way.
   d. Measure 10-inch sanitary sewer connections per each completed cored and booted connection.
   e. Measure sewer on straight horizontal line along centerline of sewer including fittings.

4. For the sanitary manhole include cost of:
   a. Excavating and disposing of surplus excavated materials including existing structures.
   b. Protecting existing utilities, site objects, and new Work which are to remain in service after completion of structures.
   c. Sheeting, shoring, and bracing materials, and installation and removal.
   d. Dewatering.
   e. Maintaining function of storm sewer and sanitary sewer system during construction.
   f. Bedding and backfill materials, and placement and compaction.

g. Standard manhole bases, risers, flat top/cone sections, adjusting rings, connections to sewers, plastic gaskets, pipe fittings, and frames and covers including components installation.
h. Exterior manhole barrel joint wrap for sanitary manholes
i. Chimney seals for sanitary manholes
j. Pipe to manhole connections.
k. Placing and compacting backfill materials.
l. Internal inspection.
m. Clean up.
n. Other pertinent and incidental Work.
o. General requirements of Sections listed.

5. Do not include cost of:

   a. Surface restoration.
   b. Work included in other Bid items.

6. Measurement for Payment:

   a. Measure manholes as each item acceptably completed.

Pay Item	**Pay Unit**
Manhole, C4	EACH
Pipe, Sanitary Sewer, 8 IN.	LFT
Pipe, Sanitary Sewer, 10 IN.	LFT
Lateral, Sanitary Sewer, 6 IN.	LFT
Connection, Sanitary Sewer, 10 IN.	EACH

TP11 - EROSION CONTROL

1. GENERAL

The Contractor is responsible for complying, implementing, updating, and maintaining the approved Storm Water Pollution Prevention Plan and best management practice measures as approved under the Construction Storm Water General Permit (CSGP).

Contractor is required to supply the Owner a copy of all project documentation generated and compile during the execution of work.

2. MEASUREMENT AND PAYMENT

There shall be no separate payment of Temporary Erosion Control, any work necessary to comply with the Construction Storm Water General Permit (CSGP), inspection and documentation requirements shall be incidental to the Contract and compensation included in the cost of Clearing.

TP12 – SPECIAL RIGHT-OF-WAY CONDITIONS

1. GENERAL

This item shall include any work necessary to address an unforeseen condition found during construction. If an unforeseen condition is encountered, the Contractor shall advise the Engineer of the condition. A method of resolving the condition will be provided to the Contractor so that the cost of the additional work can be determined. The Contractor must receive written approval from Elkhart County before proceeding with any additional work. This approval will define the amount of this bid item to be applied to the cost of the additional work. The Contractor will only receive payment for this item if extra work approved by Elkhart County is performed and then only the approved amount. Any unused portion of this item will be deleted from the contract upon completion of the project.

Pay Item	**Pay Unit**
Special Right of Way Condition	LS

TP13 – MAINTAINING TRAFFIC

1. GENERAL

   All signs and traffic control devices shall be in accordance with the Indiana Department of Transportation Standard Specifications and the Indiana MUTCD.

   When necessary, or as directed by the Engineer, the Contractor shall provide standard reflective barrels with approved weighting systems, flaggers, caution tape, temporary pavement markings, etc. Reflective barrels shall be placed to warn motorists of hazards. Maximum spacing of barrels shall be 30 ft.

   The Contractor shall be responsible for safe driving of haul trucks, heavy equipment, etc. related to the project work, including subcontractors.

   Temporary pavement markings shall be required before two-way traffic is allowed on a newly paved road, if more than one lane is present in the same direction, turn lanes or if previous pavement markings existed.

   “Road Construction Ahead” signage shall be installed prior to any other work and shall be removed only upon final acceptance of the project or initial acceptance of the segment for paving packages. These signs shall be checked on a daily basis and promptly reset as needed.

2. RESPONSIBILITY

   The Contractor shall be totally responsible for the maintenance of traffic. Maintaining of traffic shall be the non-delegable duty of the Contractor to fulfill each and every responsibility and to accept full liability. All applicable provisions of 107.12 shall apply to work being done under traffic.

   The Contractor shall give a 24 hr./day emergency phone number to the owner and to local law enforcement authorities, for the prompt response to project-related concerns during non-work hours.

3. RESIDENTIAL AND COMMERCIAL ACCESS

   Access to residential and business driveways within the project limits shall be maintained at all times. Temporary closure of driveway access may be allowed upon approval of the Engineer and adequate notification of the property owner. All driveways shall be accessible at the end of each workday. Stone, gravel or other temporary materials needed to make driveways and roadways accessible will not be paid for directly but will be included in the Maintenance of Traffic pay item.

4. LANE CLOSURES AND RESTRICTIONS

   The timing of any lane restrictions shall be subject to approval by the Engineer. Lane restrictions shall be during daylight hours only unless otherwise approved by the Engineer.

   The Contractor shall keep lane restrictions to an absolute minimum, as reasonable in order to complete the work. When lane restrictions are necessary, the Contractor shall perform

continuous work operations so as to lift the lane restrictions as soon as possible. Lane restrictions shall not remain in place while the Contractor is not actively working.

The Contractor shall coordinate the specific timing of the activation of any new signalization system, reopening, etc. When practical, the Contractor shall provide access through the site for emergency vehicle traffic. The practicality, as previously stated, shall be decided by the Engineer.

5. CONDITION OF TRAFFIC CONTROL DEVICES AND DAILY LOGS

   A. Construction signs and barricades shall be as per current INDOT standard specifications and drawings, as well as the current Indiana MUTCD, and shall be in new condition for good functioning (i.e., visible, readable, reflective, etc.). Every temporary traffic control device not supported on posts driven into the ground shall be anchored with a minimum of four 30-pound sandbags. Sandbags shall be in new condition and tightly sealed. Torn or leaking sandbags shall be immediately replaced. The Contractor will be responsible for maintenance of traffic including all construction signs necessary or as directed by the Engineer for the duration of construction.

   B. In the event the condition or placement of the traffic control devices are found to be in violation of the provisions of this contract, there may be deducted from the amount payable to the Contractor by the Owner under this Contract, a penalty of two-hundred and fifty ($250.00) dollars for each day the condition and/or placement of the traffic control devices are in violation of the provisions in this contract.

6. PAYMENT

   Payment will be made at the unit price for traffic control pay items as indicated below:

Pay Item	**Pay Unit**
Maintenance of Traffic	LS
Road Closure Sign Assembly	EACH
Detour Route Marker Assembly	EACH
Construction Sign, A	EACH
Barricade, III-A	LFT
Barricade, III-B	LFT

Division 4:

Bid Documents

For

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

OWNERS: ELKHART COUNTY, INDIANA, ACTING THROUGH
ITS BOARD OF COUNTY COMMISSIONERS
ELKHART COUNTY HIGHWAY DEPARTMENT
ENGINEERING SECTION
610 STEURY AVENUE
GOSHEN, IN 46528

Elkhart County Highway Department
610 Steury Avenue, Goshen, Indiana 46528
Phone: 574-533-0538 • Fax: 574-533-7103

NOTICE TO BIDDERS

Notice is hereby given that the Board of County Commissioners of Elkhart County, Indiana, will receive bids up to **9:00 AM on October 12, 2026** for the **INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003.** It is the responsibility of the bidder to ensure that its bid is delivered on time to the Office of the Elkhart County Commissioners, County Administration Building, 117 N. Second Street, Goshen, IN 46526.

Plans, Specifications and bidding documents may be obtained from the **Elkhart County Highway Department, website** at www.elkcohwy.org starting at **9:00 AM** on **September 18, 2026**. Plans, Specifications and Bidding Documents may not be obtained prior to this date.

Plans, Specifications and Bidding Documents will be available for inspection at the Elkhart County Highway Department Office, 610 Steury Ave, Goshen, Indiana starting on **September 18, 2026**. A pre-bid meeting will be held at the Elkhart County Highway Department Office, 610 Steury Ave, Goshen, Indiana at **10:00 AM** on **September 30, 2026.**

Proposals shall be properly and completely executed on proposal forms furnished by the County in accordance with Revised Indiana Form 96 and shall be accompanied by the Contractor's Financial Statement form taken from Form 96 for any proposal of $5,000 or more.

The Contractor shall submit an itemized proposal of the approximate quantities and components of labor and materials to complete the contract. Said proposal shall be upon the standard bid sheets used by Elkhart County, said sheet must contain an authorized signature of the Contractor, and sheet must be the first page of the submittal, or the bid of the Contractor may, at the discretion of Elkhart County, be rejected and declared invalid. Each proposal shall be accompanied by a non-collusion affidavit as required by the Statutes of Indiana. Bids shall be enclosed in a sealed envelope, bearing the title of the project and name and address of bidder.

Bids will be accepted only from bidders who are sufficiently and currently pre-qualified by the Indiana Department of Transportation. Proof of pre-qualifications must be submitted with the bid.

A current Contractor's Financial Statement taken from Form 96 and the Indiana Department of Transportation pre-qualification certificate may be placed on file with the Board of County Commissioners of Elkhart County at the Highway Division annually in lieu of executing these documents for each project.

All work may begin on **April 5, 2027** and shall be completed by **September 3, 2027**. Delays in completion beyond that date shall result in liquidated damages levied against the Contractor by Elkhart County. The damage charges shall be $3,000 per day per item beyond the above stated date and any intermediate completion dates noted in the specifications. The Contractor shall not restrict traffic while school is in session from April 5, 2027, through May 31, 2027. The roadway shall be open to traffic no later than August 6, 2027.

A satisfactory bid bond (10% of bid), payable to the Board of County Commissioners of Elkhart County, Indiana executed by the bidder shall be submitted with each bid.

No bids shall be withdrawn after the opening of the bids without the consent of the Board of Commissioners of Elkhart County for a period of thirty (30) days after the scheduled time of closing.

Said work shall be subject to all the provisions of the plans and specifications therefore herein above referred to including the completion date thereof and penalty clause as therein set forth.

The Board of County Commissioners reserves the right to reject any and all Bids or to waive any informalities in the bidding.

Dated this 8th day of September, 2026
Board of County Commissioners of Elkhart County
By Tiara Jackson, Auditor

Advertise: September 16, 2026 and September 23, 2026 - Elkhart Truth and Goshen News

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003 **BID DOCUMENTS**

The approximate quantities for this contract are as shown on the itemized bid tabs included on the attached pages. If extra work is necessary due to shifting of any of the items of construction or if additional work is called for in accordance with these specifications, such work shall be paid for on the basis of the following itemized unit prices. In addition to the above, the said unit prices shall also be the basis of payment to the Contractor for actual quantities placed. **The attached sheet (s) must be completely filled out, submitted with the sealed bid, and must be the first pages of the bid package submittal, or Elkhart County may at its discretion, reject the bid and declare the same invalid**. An authorized signature of the Contractor is mandatory upon the bid sheets. All other items necessary to properly complete this project or specifically outlined, shall be included within the line items provided and will be considered as incidental. The award of this contract will be based on the sum of the items listed below.

NOTE: Any Item may be withdrawn by Elkhart County at any time prior to performing the work.

ELKHART COUNTY

BID TOTAL _____ dollars

($_____)

Acknowledge Receipt of Addenda No.(s) _____.

Submitted by: _____
Company

_____
Authorized Signature

Date: _____ Phone:_____

ATTEST: _____

ELKHART COUNTY, INDIANA

BOARD OF COUNTY COMMISSIONERS

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

ITEMIZED PROPOSAL

NO.	SPEC. SECTION	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	105	CONSTRUCTION ENGINEERING	1.00	LS		
2	107/TP4	INSPECTION HOLE	3.00	EACH		
3	110	MOBILIZATION AND DEMOBILIZATION	1.00	LS		
4	201/TP1	CLEARING RIGHT OF WAY	1.00	LS		
5	TP12	SPECIAL RIGHT OF WAY CONDITIONS	1.00	LS	$100,000.00	
6	202	SIGN, REMOVE	1.00	EACH		
7	202	INLET, REMOVE	1.00	EACH		
8	202	PIPE, REMOVE	331.00	LFT		
9	TP3	EARTHWORK	1.00	LS		
10	207/TP5	SUBGRADE TREATMENT, TYPE II	6370.00	SYS		
11	207/TP5	SUBGRADE TREATMENT, TYPE III	522.00	SYS		
12	207/TP5	GEOGRID, TYPE IB	254.00	SYS		
13	301/TP6	COMPACTED AGGREGATE NO. 53	87.00	CYS		
14	302/TP6	DENSE GRADED SUBBASE	79.00	CYS		
15	303/TP6	COMPACTED AGGREGATE NO. 53	488.00	TON		
16	306	MILLING, ASPHALT, 1 1/2 IN.	534.00	SYS		
17	401/TP7	HMA SURFACE, TYPE C, 9.5 MM	485.00	TON		
18	401/TP7	HMA SURFACE, TYPE B, 9.5 MM	37.00	TON		

NO.	SPEC. SECTION	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
19	401/TP7	HMA INTERMEDIATE, TYPE C, 19.0 MM	916.00	TON		
20	401/TP7	HMA INTERMEDIATE, TYPE B, 19.0 MM	58.00	TON		
21	401/TP7	HMA BASE, TYPE C, 25.0 MM	2232.00	TON		
22	604	DETECTABLE WARNING SURFACES	19.00	SYS		
23	610	PCCP FOR APPROACHES, 6 IN.	216.00	SYS		
24	610	PCCP FOR APPROACHES, 9 IN.	218.00	SYS		
25	611	MAILBOX ASSEMBLY, SINGLE	3.00	EACH		
26	616	RIPRAP, REVETMENT	60.00	TON		
27	616	GEOTEXTILE FOR RIPRAP TYPE 1B	114.00	SYS		
28	621	MOBILIZATION AND DEMOBILIZATION FOR SEEDING	1.00	EACH		
29	621	MULCHED SEEDING R	2494.00	SYS		
30	621	SODDING, NURSERY	158.00	SYS		
31	715/TP9	PIPE, TYPE 2, CIRCULAR, 15 IN.	64.00	LFT		
32	715/TP9	PIPE, TYPE 2, CIRCULAR, 18 IN.	40.00	LFT		
33	715/TP9	PIPE, TYPE 2, CIRCULAR, 24 IN.	207.00	LFT		
34	715/TP10	PIPE, SANITARY SEWER, 8 IN.	919.00	LFT		
35	715/TP10	PIPE, SANITARY SEWER, 10 IN.	339.00	LFT		
36	715/TP10	LATERAL, SANITARY SEWER, 6 IN.	169.00	LFT		
37	715/TP10	CONNECTION, SANITARY SEWER, 10 IN.	1.00	EACH		
38	715/TP9	PIPE END SECTION, DIAMETER 24 IN.	1.00	EACH		

NO.	SPEC. SECTION	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
39	715	ADJUST WATER VALVE TO GRADE	4.00	EACH		
40	720/TP9	INLET, E7	1.00	EACH		
41	720/TP9	INLET, F7	2.00	EACH		
42	720/TP9 & TP10	MANHOLE, C4	8.00	EACH		
43	720	FIRE HYDRANT ASSEMBLY	1.00	EACH		
44	801/TP13	ROAD CLOSURE SIGN ASSEMBLY	8.00	EACH		
45	801/TP13	DETOUR ROUTE MARKER ASSEMBLY	33.00	EACH		
46	801/TP13	CONSTRUCTION SIGN, A	10.00	EACH		
47	801/TP13	MAINTAINING TRAFFIC	1.00	LS		
48	801/TP13	BARRICADE, III-A	96.00	LFT		
49	801/TP13	BARRICADE, III-B	48.00	LFT		
50	802	SIGN POST, SQUARE TYPE 2 UNREINFORCED ANCHOR BASE	66.00	LFT		
51	802	SIGN, SHEET, RELOCATE	18.00	EACH		
52	802	SIGN, SHEET, WITH LEGEND, 0.080 IN.	40.00	SFT		
53	802	RELOCATE JAYCO SIGN	1.00	EACH		
54	808	LINE, PAINT, SOLID, WHITE, 4 IN.	363.00	LFT		
55	808	LINE, PAINT, SOLID, YELLOW, 4 IN.	2475.00	LFT		
56	808	PAVEMENT MESSAGE MARKING, PAINT, LANE INDICATION ARROW	6.00	EACH		
57	808	TRANSVERSE MARKING, PAINT, STOP LINE, WHITE, 24 IN.	64.00	LFT		

NO.	SPEC. SECTION	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
58	808	TRANSVERSE MARKING, PAINT, CROSSWALK LINE, WHITE, 12 IN.	294.00	LFT		
59	808	TRANSVERSE MARKING, PAINT, CROSSHATCH LINE, WHITE, 12 IN.	490.00	LFT		
60	808	TRANSVERSE MARKING, PAINT, CROSSHATCH LINE, YELLOW, 12 IN.	263.00	LFT		
					TOTAL BID:	

APPENDICES

For

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

APPENDIX A – APAI HMA SPECIFICATIONS

APPENIX B - TOWN OF MIDDLEBURY STANDARD SPECIFICATION AND DEVELOPMENT GUIDE

OWNERS:

ELKHART COUNTY, INDIANA, ACTING THROUGH
ITS BOARD OF COUNTY COMMISSIONERS
ELKHART COUNTY HIGHWAY DEPARTMENT
ENGINEERING SECTION
610 STEURY AVENUE
GOSHEN, IN 46528

HIGHWAY
ELKHART COUNTY

Elkhart County Highway Department
610 Steury Avenue, Goshen, Indiana 46528
Phone: 574-534-9394 • Fax: 574-533-7103

APPENDIX A

For

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

APPENDIX A – APAI HMA SPECIFICATIONS

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Asphalt Pavement Association of Indiana, Inc.

APAI
ASPHALT PAVEMENT ASSOCIATION of INDIANA

ASPHALT PAVEMENT GUIDANCE SPECIFICATION FOR LOCAL AGENCIES

This document is intended to provide recommended guidance for local government asphalt pavement applications. These specifications incorporate the latest asphalt paving technologies and presents best practices, procedures and processes but is not intended to replace sound engineering knowledge, judgment, and experience.

APAI recommends work shall be performed in accordance with the project specifications and the current Indiana Department of Transportation (INDOT) specifications, Section 402 – Hot Mix Pavement.

DESIGN GUIDANCE

Conversions

All asphalt mixture and #53 Compacted Aggregate bid items should be measured in weight (tons). To convert from roadway area (SY) and depth of material (in) to weight (tons):

$$Area\ (SY) \times \frac{110\ \frac{lbs}{SYD}}{2{,}000\ \frac{lbs}{ton}} \times Depth\ (in) = \_\_\ tons$$

Excavation Common bid item should be measured in volume (CYD). To convert from roadway length (ft), width (ft) and depth (ft) to volume (CYD):

$$\frac{L\ (ft) \times W(ft) \times D(ft)}{27\ \frac{ft^3}{CYD}} = \_\_\ CYD$$

Lift Thicknesses

INDOT design guidelines specify the following minimum and maximum finished lift thicknesses for mixture pavement size designations:

Mixture Size Designation	Minimum Lift Thickness, in.	Maximum Lift Thickness, in.	Target HMA Layer Thickness, in.
9.5 mm	1.0	2.5	1.5 or 2.0
12.5 mm	1.5	3.75	2.5 – 3.0
19.0 mm	2.0	5.0	2.5 – 4.0
25.0 mm	3.0	7.5	4.5 – 6.0

Materials

Asphalt Performance Grade (PG) binders for asphalt pavement shall be supplied by an INDOT approved supplier listed on INDOT's Qualified Sources List for Performance-Graded Asphalt Binder Suppliers and shall meet the requirements of Section 902.01 (a). Aggregate materials used in asphalt mixtures shall be supplied by a source listed on INDOT's Qualified Sources Lists for Certified Aggregate Producer as well as the qualified list for Dolomite Aggregates and Polish Resistant Aggregates when applicable. Aggregates shall meet the requirements of Section 904. The asphalt mixture design mix formula (DMF) shall be prepared by an INDOT Qualified Mix Design Laboratory. An Agency may request a DMF to be submitted for approval prior to paving.

The DMF shall be based on the mixture type, mixture size, and PG binder designation. In the construction season of 2025, Indiana's base binder grade will change from PG 64-22 to PG 58-28. Along with this change, the asphalt binder designations and testing requirements will be in accordance with Multiple Stress Creep Recovery (MSCR) per AASHTO M332 and elastic response requirements per AASHTO R92. These changes are encouraged prior to the 2025 construction season if the Contractor can do so. Any references to asphalt PG binders henceforth in this document will refer to the PG 58-28 MSCR binder specifications.

Current PG Binder Designation	***2025 MSCR Binder Designation***	***MSCR Binder Traffic Designation***
PG 64-22	PG 58S-28	"S" - Standard
PG 70-22	PG 58H-28	"H" - Heavy
PG 76-22	PG 58E-28	"E" - Extremely Heavy

This table may be used to assist the Agency in selecting the appropriate mixture criteria given the traffic conditions.

Mixture Type		***Type B***	***Type C***
Design ESAL		*<3,000,000*	*≥3,000,000*
AADT (Average Annual Daily Traffic)		*<15,000*	*15,000 - 30,000*
*AADTT (Average Annual Daily Truck Traffic)**		*<1700*	*≥1700*
Surface	Mixture Size Designation	9.5 mm 12.5 mm	9.5 mm 12.5 mm
	Recommended PG Binder	58S-28	58H-28
Intermediate	Mixture Size Designation	12.5 mm 19.0 mm	12.5 mm 19.0 mm
	Recommended PG Binder	58S-28	58H-28
Base	Mixture Size Designation	19.0 mm 25.0 mm	19.0 mm 25.0 mm
	Recommended PG Binder	58S-28	58S-28

* Heavy trucks are commercial vehicles with 2+ axles and 6+ tires.

*** If a pay item is designated as a PG 58S-28 and a surface mixture has less than or equal to 15.0% binder replacement, the binder grade shall be 58H-28.***

PLEASE NOTE: Many local and Community Crossing projects have ESAL counts below 3,000,000 and will be Type B mixtures. It is imperative to provide the correct mixture designation on the project plans and

specifications, e.g. HMA, Type B, 58S, Surface, 9.5 mm.

The plant discharge temperature for any mixture shall not be more than 315°F whenever PG 58S-28 and PG 58H-28 binders are used. The temperature of each mixture at the time of spreading shall not be less than 245°F. No mixture shall be placed on a previously paved course that has not cooled to less than 175°F. Warm mix asphalt (WMA) mixtures may be produced by using a water-injection foaming device or additives as specified and according to the manufacturers' recommendations.

INDOT specifications allow a maximum of 25.0% binder replacement from RAP (recycled asphalt pavement) and RAS (recycled asphalt shingles) combined for all asphalt mixtures.

Asphalt wedge and leveling shall consist of surface or intermediate mixtures.

CONSTRUCTION GUIDANCE

Subgrade, Subbase, Milling and Surface Preparation

Prior to asphalt mixture placement, subgrade should be checked for adequate compaction with no visible water or movement. Subgrade should be firm, dry and unyielding under the pressure of construction trucks. A proof roll is recommended to check for soft areas and verify uniform subgrade stability.

Crushed aggregate material for subbase shall be uniformly compacted, smooth and clean prior to mixture placement.

Milled surface shall have uniform milling pattern. Care should be taken to minimize scabbing which can cause future delamination. Milled surface shall be inspected for integrity and areas with visible distress and fatigue cracking should be patched or repaired where necessary. Milled surface shall be swept or vacuumed prior to mixture placement.

Verify that roadway is graded properly to direct water to proper drainage or containment areas and minimize water puddling on surface. Utility structures shall be adjusted to proper grade.

Surfaces on which an asphalt mixture course is placed shall be clean and free from debris and vegetation at the time of mixture placement.

Tack Coat

Tack coat shall be uniformly applied across the entire width of pavement to be overlaid. The asphalt material shall be uniformly applied across the entire width of pavement to be overlaid and shall cover a minimum of 95% of the surface. Areas of inadequate coverage that create streaking or areas of excessive coverage that create ponding shall be corrected to obtain an even distribution. Contact surfaces of curbing, gutters, manholes and other structures shall be tacked. Sufficient time should be given for the tack to break and set to minimize tracking from hauling and laydown equipment.

Asphalt Mixture Placement

Segregation of aggregate in the mat should be minimized. Transverse and longitudinal joints shall be properly constructed.

The finished mat should be smooth with no deviations greater than ¼ inch over 10 feet. A continuous slope/grade between paver passes should be maintained. Roadway should be crowned appropriately to ensure proper drainage.

Truck bodies should arrive at the site tarped and clean of debris. Qualified material from INDOT's list of Anti-Adhesive Materials (no diesel fuel) shall be used to clean equipment and hand tools.

Compaction

Proper compaction is the most critical part of asphalt installation as it impacts service life directly by increasing resistance to rutting and cracking. The mat shall be compacted with rollers immediately after the mixture has been spread and finished. A rolling pattern should be established by Contractor to achieve density targets. Number of rollers, sizes and types may vary depending on mixture type and depth, speed of production and weather. Mixture temperatures of mat should be monitored to ensure proper compaction. Extra compaction effort in handwork areas inaccessible to rollers may be needed.

Rollers shall not cause undue displacement, cracking, or shoving. The rolling pattern should be adjusted if detrimental results are observed.

To avoid scuffing, the mat should cool to a minimum of 160° F prior to allowing traffic on the freshly paved surface. Additional cooling time may be needed on hot summer days.

Weather Limitations

Asphalt mixture courses less than 1" are to be placed when the ambient and surface temperatures are 60° F or above. Asphalt mixture courses equal to or greater than 1" but less than 2" are to be placed when the ambient and surface temperatures are 45° F or above. Asphalt mixture courses equal to or greater than 2" are to be placed when the ambient and surface temperatures are 32° F or above. Mixture shall not be placed on a frozen subgrade. However, asphalt mixture courses may be placed at lower temperatures provided the density of the asphalt mixture course is monitored by the Contractor and approved by the Agency and Inspector.

Asphalt Mixture Acceptance

Verify correct, specified asphalt mixtures are delivered to project site. Asphalt mixture courses shall be installed at the specified compacted lift thickness. It is recommended to request an INDOT Type D certification to verify mixture types. For unit price contracts, truck delivery tickets should be collected to document tonnage placed.

A Type D certification shall be supplied by Contractor and shall list test results for air voids and binder content for material supplied to the project. A Type D certification shall be submitted to the Inspector each day asphalt material is received.

If the user has questions regarding this guide, APAI encourages you to contact the contractor located in your area. A list of APAI member firms and asphalt plant locations can be found on the APAI website at www.asphaltindiana.org.

APPENDIX B

For

INTERSECTION IMPROVEMENTS AT CR 22/ORPHA DRIVE AND CR 37- ELKHART COUNTY PROJECT NO. 25003

APPENDIX B – TOWN OF MIDDLEBURY STANDARD SPECIFICATION AND DEVELOPMENT GUIDE

OWNERS:

ELKHART COUNTY, INDIANA, ACTING THROUGH
ITS BOARD OF COUNTY COMMISSIONERS
ELKHART COUNTY HIGHWAY DEPARTMENT
ENGINEERING SECTION
610 STEURY AVENUE
GOSHEN, IN 46528

Elkhart County Highway Department
610 Steury Avenue, Goshen, Indiana 46528
Phone: 574-534-9394 • Fax: 574-533-7103

ORDINANCE NO. 497-B

AN ORDINANCE AMENDING THE TOWN OF MIDDLEBURY COMPREHENSIVE PUBLIC WORKS, UTILITY, AND DEVELOPMENTAL STANDARDS ORDINANCE

WHEREAS Indiana Code Chapter 36-1-3 permits any town in the State of Indiana to exercise any power or perform any function necessary to the public interest in the context of its municipal or internal affairs, which is not prohibited by the Constitution of the United States or of the State of Indiana, or denied or pre-empted by any other law, or is not expressly granted by any other law to another governmental entity;

WHEREAS the Town Council of the Town of Middlebury, Indiana is the Town legislative body and is authorized by law to adopt ordinances and resolutions governing its public works, utility, and developmental functions;

WHEREAS the Town Council of the Town of Middlebury adopted Ordinance No. 497 entitled the "Town of Middlebury Comprehensive Public Works, Utility, and Developmental Standards Ordinance" on September 17, 2007 ("**Standards Ordinance**");

WHEREAS the Town Council of the Town of Middlebury adopted Ordinance No. 497-A amending the Standards Ordinance on September 4, 2012;

WHEREAS the Middlebury Water Superintendent and Middlebury Town Manager have reviewed and recommended further amendment of Ordinance No. 497 in accordance with the terms and provisions contained herein to address water shutoff procedures;

NOW, THEREFORE, BE IT HEREBY ESTABLISHED, ORDERED, ADOPTED, AND ORDAINED by the Town Council of the Town of Middlebury, Indiana as follows:

1. **Amendment and Replacement of Exhibit A**. Ordinance No. 497, as amended, is hereby amended as follows: Exhibit A attached to Ordinance No. 497 is hereby deleted in its entirety and replaced with the document titled "Town of Middlebury Standard Specification and Development Guide," which is attached hereto and incorporated herein by reference as the new Exhibit A.

4. **Amendatory Effect**. All other provisions of Ordinance No. 497, as amended by Ordinance 497-A, of the Town of Middlebury, Indiana shall remain in full force and effect.

5. **Effective Date.** This Ordinance shall be effective immediately upon its date of adoption.

ORDAINED AND ADOPTED this 5th day of January, 2026.

TOWN COUNCIL OF THE TOWN OF MIDDLEBURY, INDIANA

By: Karl Miller

Karl Miller, President

ATTEST:

ChaLi' Kuiper

ChaLi' Kuiper, Middlebury Clerk-Treasurer

EXHIBIT A

[See Attachment]

TOWN OF MIDDLEBURY

STANDARD SPECIFICATION AND DEVELOPMENT GUIDE

Middlebury
Grown from Tradition

Middlebury, Indiana Town Council:

Karl Miller, Council President

January 5, 2024
Date Adopted

Gary Cripe, Council Vice President

Kevin Miller, Council Member

Mike Holloway, Council Member

Kent Kauffman, Council Member

Mary Cripe, Town Manager

Town of Middlebury

TOWN CONTACTS

Town Hall Address
Middlebury Town Hall
418 N. Main Street
Middlebury, IN 46540

Town Council Meeting Schedule
First and Third Monday of every month at 6:00 p.m.

Town Manager
Mary Cripe
Office: Town Hall
Ph: 825-1499 Fax: 825-1485
townmanager@townofmiddlebury.in.gov

Town Council

Karl Miller, President

Gary Cripe, Vice President

Kevin Miller, Member

Mike Holloway, Member

Kent Kauffman, Member

Clerk Treasurer
ChaLi' Kuiper
Office: Town Hall
Ph: 825-1499 Fax: 825-1485
clerk@townofmiddlebury.in.gov

Public Works Superintendent
Robert Miller
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publicworks@townofmiddlebury.in.gov

Park Superintendent
Tom Enright
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Ph: 825-3283
Fax: 825-1485

Wastewater Department Superintendent
Cole McClain
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Ph: 825-1499 Fax: 825-1485
wwtp@townofmiddlebury.in.gov

GIS Coordinator/Locator
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locator@townofmiddlebury.in.gov

Water Department Operator
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Town Attorney
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Yoder, Ainlay, Ulmer & Buckingham
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Goshen, IN 46528
Ph: 533-1171 Fax: 534-4174

TOWN OF MIDDLEBURY

STANDARD SPECIFICATION AND DEVELOPMENT GUIDE

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APPENDIX B: BONDS

Performance Bond
Maintenance Bond
Town of Middlebury, Indiana Maintenance Guarantee

1.0 STANDARD DESIGN PRACTICE AND CRITERIA

1.1. Town Streets and Right-of-Way

Town streets and right-of-way improvements shall be designed, constructed and tested in accordance with the most current version of the following documents:

a. The Middlebury Standard Specification and Development Guide.
b. The Elkhart County Roads Guidelines and Standards (Street Standards).
c. The Elkhart County Subdivision Control Ordinance.
d. The Indiana Department of Transportation (INDOT) Standard Specifications.
e. Chapter V, “Local Roads and Streets”, as outlined in the American Association of State Highway and Transportation Officials (AASHTO) geometric design policy.

1.2. Sanitary Sewers

Sanitary sewers and appurtenances shall be designed, constructed and tested in accordance with the most current version of the following documents:

a. Indiana State law and regulations as administered by the Indiana Department of Environmental Management (IDEM) under 327-IAC-3, as amended.
b. The Middlebury Standard Specification and Development Guide.
c. Recommended Standards for Wastewater Facilities (Ten States Standards).

1.3. Water Mains

Watermains and appurtenances shall be designed, constructed and tested in accordance with the most current version of the following documents:

a. Indiana State law and regulations as administered by the Indiana Department of Environmental Management under 327-IAC-8, as amended.
b. The Middlebury Standard Specification and Development Guide.
c. Recommended Standards for Water Works (Ten States Standards).
d. American Water Works Association standards.

1.4. Storm Water Facilities

Storm water sewers, systems and storage facilities shall be designed, constructed and tested in accordance with the most current version of the following documents:

a. The Middlebury Standard Specification and Development Guide.
b. The Elkhart County Roads Guidelines and Standards (Street Standards).
c. The INDOT Standard Specifications.

2.0 STREET, SIDEWALK, AND CURB CONSTRUCTION

All streets, roadways, sidewalks or curbs shall be developed in accordance with the prevailing requirements of the INDOT Standard Specifications, the Elkhart County Street Standards and the following provisions.

2.1. Procedures

All phases of construction including stripping, linear grading, subgrade construction and paving of street, roadway, curb and sidewalk shall be preceded by a pre-construction meeting scheduled with Town officials. Work begun prior to or without such pre-construction meeting will be considered unauthorized and may be subject to delay in acceptance of dedication or non-acceptance altogether.

2.2. Procedures – Testing and Records

All test results, pre-construction inspection and inspection records shall be promptly provided upon request by the Town. The lack of test records or other documentation may result in rejection of completed work or delay in acceptance of completed work until such requested records are provided.

All tests, inspections and otherwise documented quality control efforts will be as per the Elkhart County Street Standards and INDOT Standards Specifications.

2.3. Deviation from Elkhart County Street Standards

a. Sidewalks and Curb Ramps

Residential and commercial developments shall include sidewalks within street right-of-way. Sidewalks shall be a minimum of 5’-0” in width and shall be parallel with the right-of-way line and no closer than 2’-0” from the curb or the edge of pavement. Sidewalks and curb ramps shall be 4” minimum thickness constructed in accordance with the INDOT Standard Specifications for Plain Concrete Sidewalk and Curb Ramps – Section 604.

Sidewalks and curb ramps shall be constructed in accordance with the INDOT Standard Drawing(s) E 604, current edition with date based on commencement of construction. Details provide construction constraints; curb ramps will need to be designed/constructed based on each curb ramps existing/proposed conditions.

Detectable warnings surfaces shall be encapsulated panels with truncated domes manufactured for permanent installation. Color shall be red with finish that is UV-stable, non-fading, and resistant to wear and weathering.

b. Acceleration-Deceleration Lanes for Residential Subdivisions

Acceleration-deceleration lanes shall be required for planned residential subdivisions with: (i) thirty (30) lots or more per road entrance by average; or (ii) an average daily traffic (ADT) count on the respective entrance roads of greater than one thousand (1,000).

c. Use or Non-use of Cul-de-sacs in any Type of Subdivision

Cul-de-sac arrangements shall be specifically reviewed for each subdivision of any type or character to ensure that a cul-de-sac arrangement is not established

which would prohibit or interfere with future desirable development, beyond the area of the then being platted subdivision area. The cul-de-sacs will be routinely accepted only when there would appear to be little or no potential for future development of comparable facilities or uses in areas outside the area being platted, but adjacent thereto, or when adequate access to such outside areas exists or appears readily attainable.

d. Curb Cuts

When a curb cut exists along a public street in the Town and a driveway cut or curb cut is proposed, the existing curb shall not be removed. The driveway cut or curb cut must meet the specifications established by these Street Standards with the curb being cut or ground down to the point, but no lower than the point, allowed by these Street Standards. (A minimum of 2" of reveal shall remain at the face of the curb.)

e. Flowable Fill

All excavations made into, under, across or within two (2) feet of the finished edges of public roads, streets and alleys (paved or unpaved) gutters, or curbs shall be backfilled with "removeable flowable fill" in accordance with current INDOT Standard Specifications. This material also known as "controlled density fill" shall meet the following criteria:

1) Compressive strength: 50 PSI to 150 PSI.
2) Flowability: minimum spread diameter of 8 inches, verified by the following test:

    a) Fill a 3-inch diameter by 6-inch-high open-ended cylinder to the top with flowable fill.
    b) Place on a smooth, level, non-porous surface.
    c) Pull the cylinder straight up within five seconds.
    d) Measure the spread diameter; it shall be greater than 8 inches.

All flowable fill shall be removable type as defined by INDOT, suitable for future utility access or excavation. Field verification of flow characteristics may be performed by the Town of Middlebury Department of Public Works prior to placement.

f. Pavement Removal

On concrete streets and alleys, only one method of concrete pavement removal is acceptable.

1) All cuts shall be sawed the full depth of the pavement with a concrete saw.
2) Where possible, all cuts shall be made at pavement joints.

On asphalt streets and alleys, two methods of asphalt surface removal are acceptable.

1) All cuts shall be sawed to a minimum of one-third the depth of the pavement and then completed with a mechanical hammer equipped with a suitable chisel, starting from the center of the cut. A minimum saw cut depth of 2" is required; or

2) All cuts shall be made with a mechanical hammer equipped with a suitable chisel, starting from the center of the cut. Before final repairs are made, the cuts shall be “squared”. The edges of all cuts are to be straight.

g. Compacted Aggregate

Recycled concrete aggregate, blast furnace slag, steel slag, or any other reclaimed or industrial by-product materials may be used as substitutes for natural aggregate in INDOT No. 53 applications, provided they meet the performance and quality requirements outlined in INDOT Standard Specification Section 904.03 and are sourced from INDOT-certified suppliers.

All aggregate materials – whether natural or reclaimed – shall conform to INDOT No. 53 aggregate gradation and durability standards. Acceptance is contingent upon verification of compliance with INDOT certification and specification criteria.

Native soil may be used in place of compacted aggregate base provided that the following conditions are met:

a) The native material must support proofrolling with a fully loaded tandem axle dump truck without pumping, rutting, or displacement.
b) The truck shall have a minimum gross vehicle weight of 50,000 lbs.
c) The subgrade shall be proofrolled in the presence of a Town of Middlebury representative.
d) Areas that fail proofrolling shall be undercut and replaced with compacted aggregate or other approved structural fill.

h. Work Permits

1) The work permit forms and fees established in the Elkhart County Roads Guidelines and Standards for Design and Public Improvement shall not be part of these Street Standards within the Town. All work, however, planned or proposed to take place within the public right-of-way under the jurisdiction of the Town or within the Town limits including federal or state highways shall include an application for right-of-way permit and shall be submitted in writing to the Superintendent of the Town of Middlebury Department of Public Works for approval and compliance with the Street Standards prior to commencement of any such work. The application for right-of way permit application is provided in Appendix A herein (Form 8.6).
2) Work permits are required for any and all work within public rights-of-way as defined above regardless of scope except those activities undertaken by private property owners to maintain yards or landscaping, private irrigation systems, or existing private driveways.
3) Activities requiring work permits shall include but are not limited to the following:
   a) Installation, maintenance or repair of private utilities including sewer leads, water services, buried or overhead power, telephone, gas or communication services.
   b) Installation, maintenance or repair of semi-private/public utility plant facilities including power lines, telephone, gas mains, fiber optic or ducts appurtenant to communication equipment of any kind.

c) Excavation of any kind to any depth.
d) Temporary loading or unloading within public rights-of-way that will impede, block or close a street for more than 30 minutes.
e) Any other activity that may affect Town streets, utilities or public improvements.

i. Pavement Markings

1) All pavement markings shall conform to INDOT Standard Specifications Section 808.
2) All longitudinal markings shall be grooved in. Width of grooving to be 2-inches wider than the marking itself. Depth of grooving shall be 80 to 100 mils (0.08 to 0.10 inches). Grooving shall match the marking layout, such as continuous grooving or skipped grooving. Prior to placing material, surface shall be clean, dry, and free of cracks or joints.
3) Longitudinal markings shall be paint with glass beads for reflectivity, of color required per MUTCD standards. Thickness to be 15 to 20 mils.
4) Transverse markings shall be pre-formed thermoplastic. Marking material to be heat applied.

j. Street Name Signs

1) Font type shall be Series B.
2) Letter height shall be 4-inch uppercase with lowercase letters proportional to uppercase.
3) Letter case shall be mixed case.
4) Background shall be green with white text color.
5) Sheeting shall be retroreflective, ASTM D4956 Type III, IV, or X.
6) Commons sizes shall include 8” x 24”, 8” x 30”, and 8” x 36”.
7) Material shall be Aluminum sheet (ASTM B209, alloy 5502-H38 or 6061-T.
8) Street signs may be sourced from Michael Todd Company (574-457-9270) or any other supplier offering products that meet applicable MUTCD standards and Town Specifications.

k. Street Lighting

1) Lantern Fixture:

a) Model - Chelsea 35-15; six-sided copper fixture.
b) Finish – Natural raw copper.
c) Lamp Type – 60-watt LED “corn” lamp, medium base (E40), rated for outdoor use.
d) Voltage – 100V nominal; fixture and lamp shall be compatible with 120V service unless otherwise specified.
e) Mounting - Post-top installation with secure mechanical attachment and weatherproof wiring connections.

2) Post Assembly:

a) Height – 12 feet to top of post (excluding fixture).
b) Diameter – 3-1/2” outside diameter (OD).
c) Material – Structural-grad extruded aluminum.
d) Surface – Smooth.
e) Finish – Powder – coated semi-gloss black (standard); color shall be UV-resistant and suitable for outdoor exposure.

3) Base:

a) Model – Middlebury aluminum casting.
b) Height – 40-inches.
c) Special Feature – Decorative cast leaves at top of base.
d) Finish – Match post finish (semi-gloss black powder coat).

4) Foundation:

a) Bolt Circle Diameter – 10-inches.
b) Anchor Bolts - Four (4) bolts, 5/8" diameter, spaced at 90° intervals.
c) Bolt Length - 16" minimum for single fixture; 20" minimum for multiple fixtures or taller posts.
d) Standard Footing: 20" diameter x 36" deep concrete footer (minimum).
e) Heavy Duty Footing: 24" diameter x 48" deep for taller posts or multiple fixtures.
f) Concrete - Minimum 3,000 psi compressive strength; include rebar cage if required by soil conditions or structural review.

5) Pole Receptacle:

a) Receptacle – 20 A, 125 V duplex, GFCI protected.
b) Mounting Height – As specified on pole detail.
c) Cover- Weatherproof.

6) Conduit:

d) Type - Schedule 40 PVC or equivalent, suitable for direct burial.
e) Depth – Minimum 18 inches below grade.
f) Stub-up- Extend 2 inches above top of concrete footing for wiring access.
g) Routing - Conduit shall be continuous and free of sharp bends; coordinate with electrical plans for routing and handhole locations.

l. Trees

1) Tree planting shall not be permitted within the public right-of-way, including but not limited to areas within or adjacent to roadways, sidewalks, alleys, utility corridors, or drainage easements.
2) Exceptions shall not be granted unless explicitly approved in writing by the Town of Middlebury and in accordance with local ordinances.

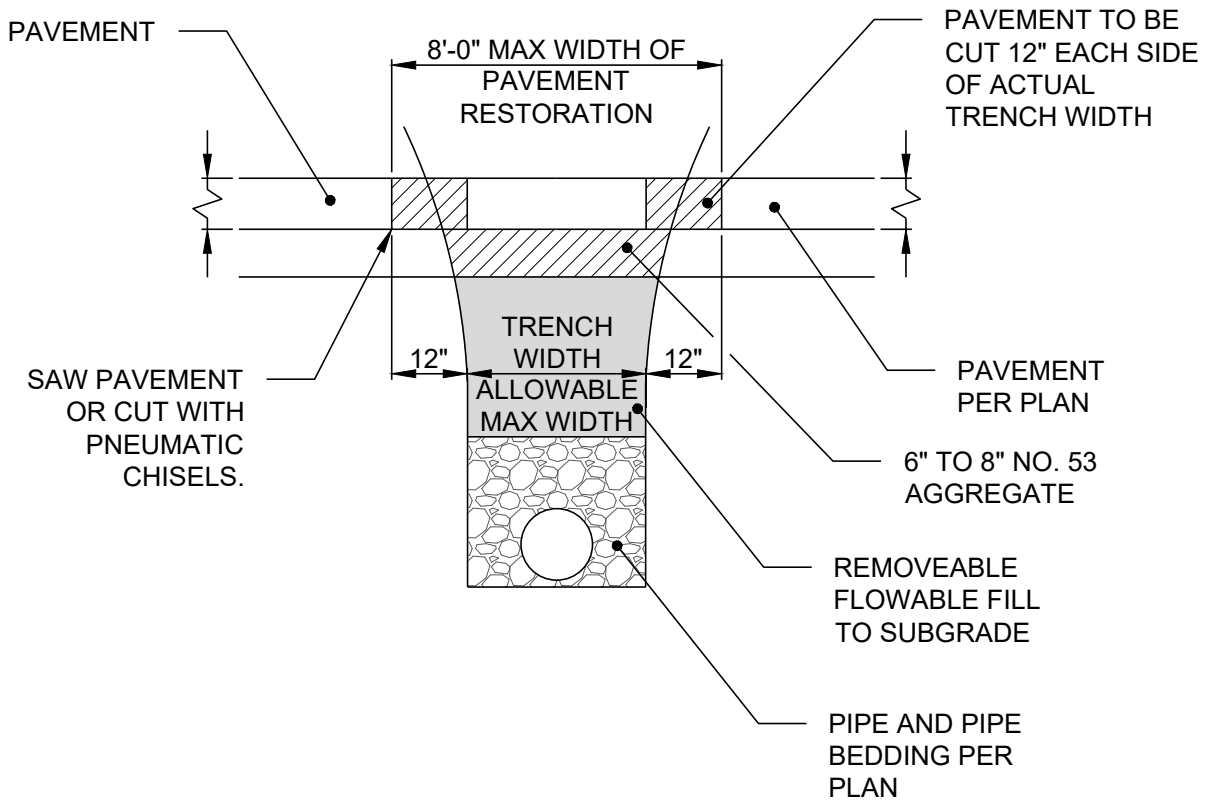
m. Underdrains

1) Underdrains shall be installed only when recommended by a qualified geotechnical engineer in writing based on subsurface investigation and site-specific soil conditions. The use of underdrains shall not be assumed or included by default in design or construction plans.

2.4. Guarantee and Maintenance Agreement, Acceptance of Dedication

Guarantee and maintenance agreement along with acceptance of completed roadways will be as required by Middlebury Town Ordinance 497. To obtain a copy of such,

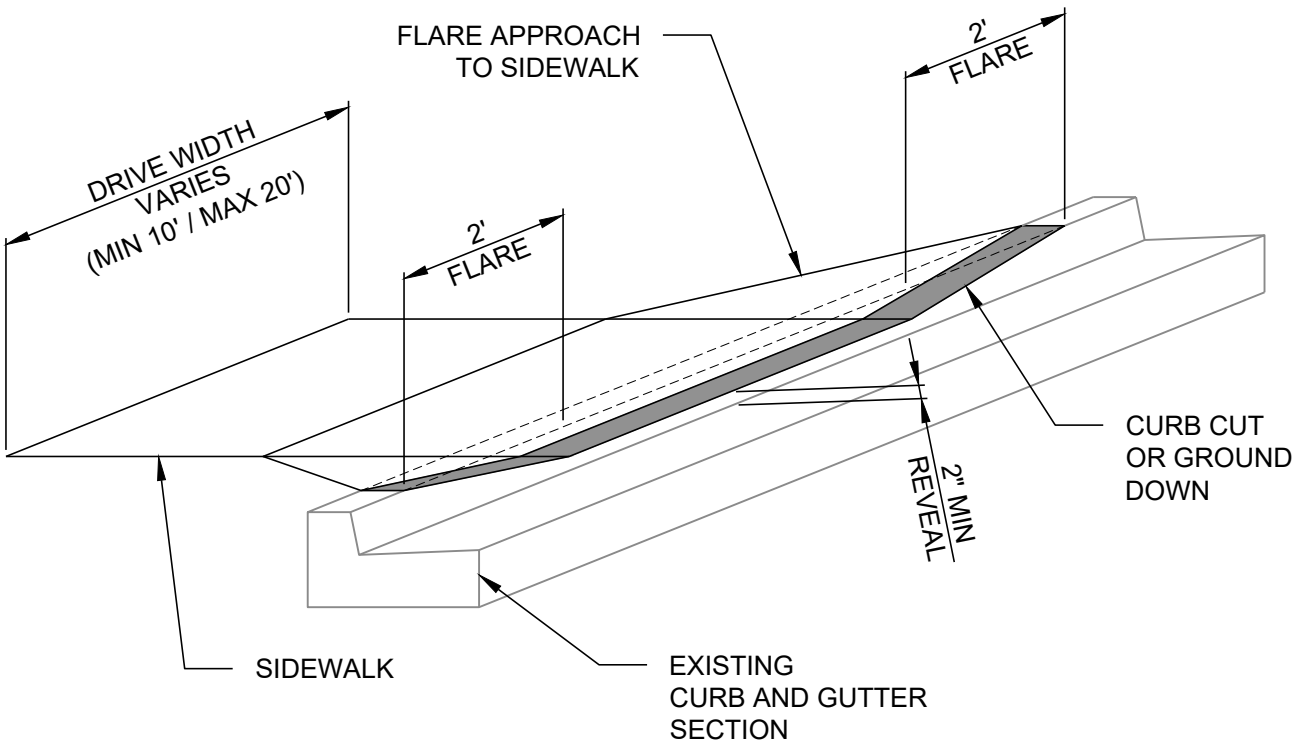
contact the Town Manager at 574-825-1499. An example of the standard form for such maintenance agreement is included in Appendix B.



PAVEMENT, CUTTING & RESTORATION DETAIL

NOT TO SCALE

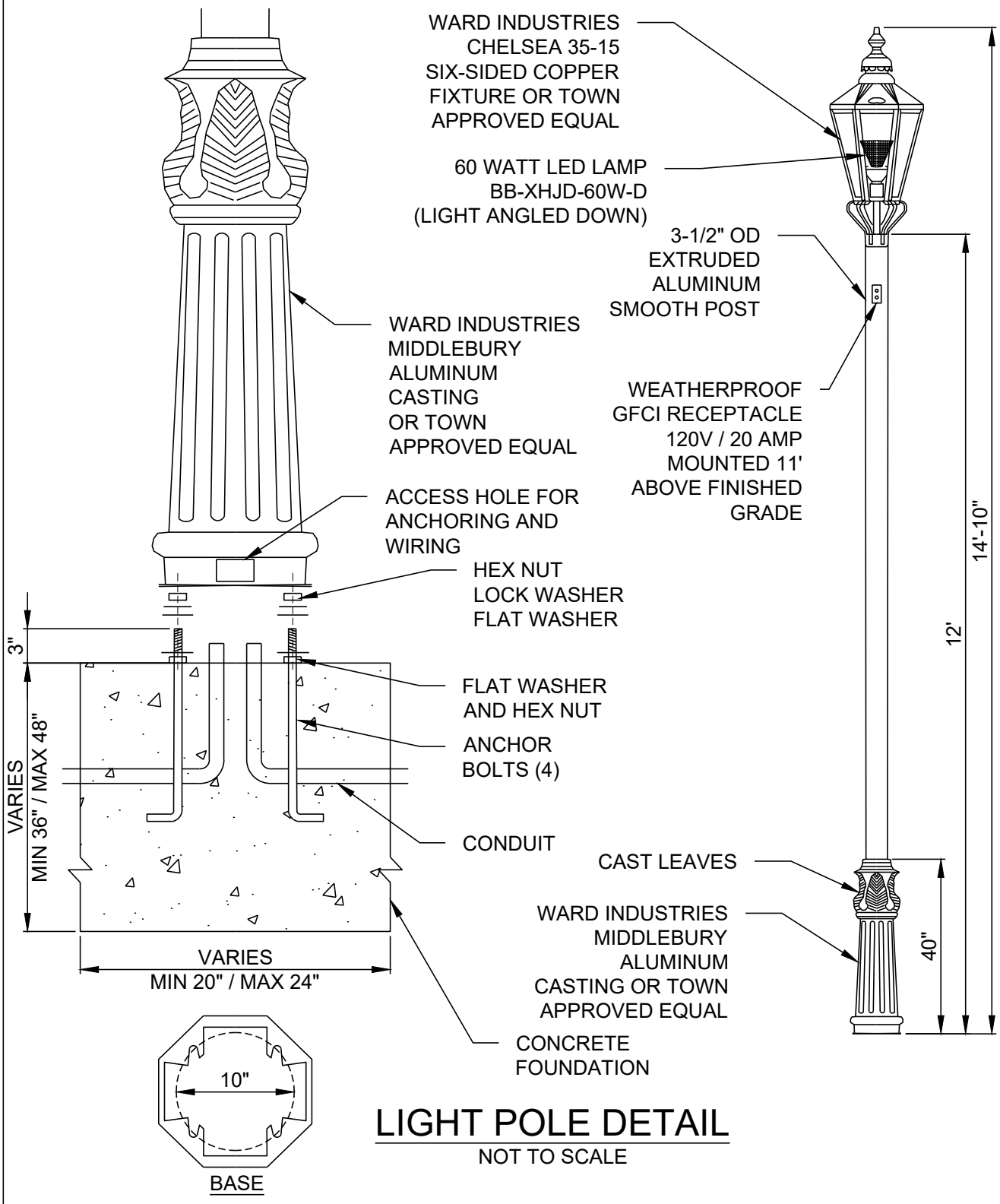
Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 2 - STREET, SIDEWALK, AND CURB CONSTRUCTION
		FIGURE 2.1
		PAVEMENT, CUTTING & RESTORATION DETAIL
		DEC. 11, 2025



DRIVEWAY CURB CUT DETAIL

NOT TO SCALE

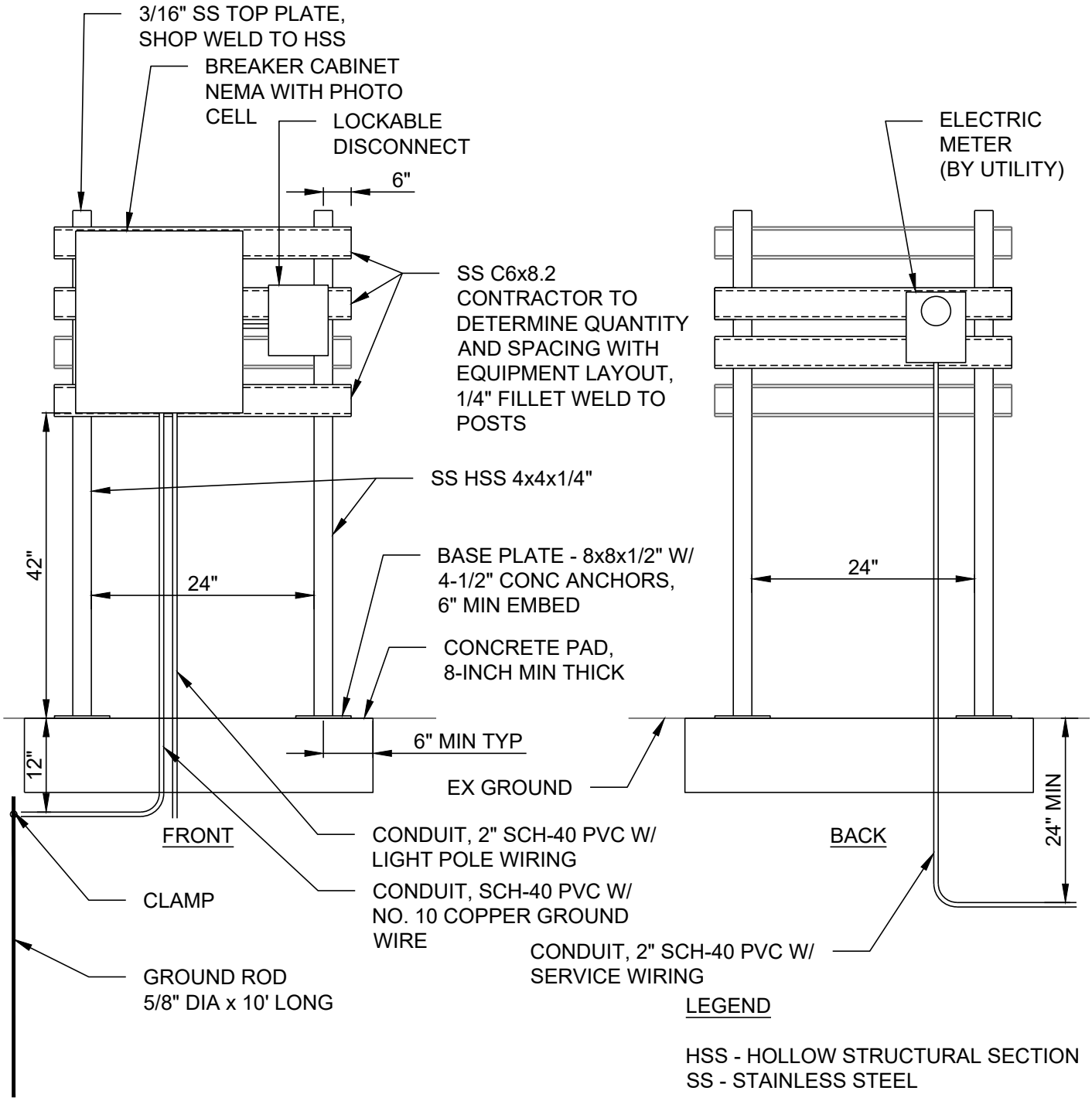
Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 2 - STREET, SIDEWALK, AND CURB CONSTRUCTION
		FIGURE 2.2
		DRIVEWAY CURB CUT DETAIL
		DEC. 11, 2025



LIGHT POLE DETAIL

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 2 - STREET, SIDEWALK, AND CURB CONSTRUCTION
		FIGURE 2.3
		LIGHT POLE DETAIL
		DEC. 11, 2025



LIGHTING H-PANEL DETAIL

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 2 - STREET, SIDEWALK, AND CURB CONSTRUCTION
		FIGURE 2.4
		LIGHTING H-PANEL
		DEC. 11, 2025

3.0 SANITARY SEWER CONSTRUCTION

3.1 General

a. Sewer pipe shall be the size shown on drawings prepared and certified by a registered professional engineer in the State of Indiana. Sanitary sewer installation shall meet all requirements of these specifications. Drawings and specifications shall be submitted to and approved by the Town's authorized representative prior to any construction and shall be permitted through IDEM.
b. The design of sanitary sewers shall be in accordance with the most recent edition of the "Recommended Standards for Wastewater Facilities" as adopted by the Great Lakes-Upper Mississippi River Board of State Sanitary Engineers, commonly known as "Ten State Standards" and 327-IAC-Article 3.
c. All necessary permits shall be obtained by or on behalf of the developer.
d. These standards are to be used in conjunction with the other Town ordinances.
e. The plans shall also be submitted to the Town in electronic form compatible with the latest version of AutoCAD.

3.2 Length of Open Trench

a. Except by permission of the Town's authorized representative, not more than 250 feet of trench shall be opened at any one time. Not more than 250 feet of trench may be opened in advance of the completed pipe laying operation, and not more than one street crossing may be obstructed by the same trench at any one time.

3.3 Relation to Water Mains

a. Sewers must be laid at least 10 feet horizontally from any existing or proposed water main. The distance is to be measured edge to edge. Should specific conditions prevent this separation, the contractor shall notify the Town's authorized representative for specific instructions regarding the treatment of the separation. Special conditions may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on one side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. It may be necessary to install 150 psi water main pipe and joints as sewer pipe for the congested areas.
b. Whenever the sewer crosses a water main it should be laid at least 18 inches below the main or the water main should be relaid with fittings to cross over the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints.
c. When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the sewer shall be designed and constructed equal to water main grade pipe and shall be pressure tested to assure watertightness prior to backfilling.

3.4 Polyvinyl Chloride Pipe

a. Pipe Material

The pipe shall conform to ASTM D3034 with a minimum Standard Dimension Ratio (SDR) rating of 35 for 6-inch through 15-inch diameter sewer and ASTM F679 with a minimum Pipe Stiffness (PS) rating of 46 for 18-inch diameter sewer and larger, each with bell and spigot joints. In specialized cases, pipe may be required to conform to ASTM D3034 SDR of 26 for 6-inch through 15-inch

diameter sewer, and ASTM F679 PS of 115 for 18-inch diameter sewer and larger. If no SDR rating is specifically shown on the project plans, SDR 35 and/or PS46 pipe will be used. All polyvinyl chloride sewer joints shall be watertight and meet the requirements of ASTM D3212. Installation of the pipe shall conform to ASTM D2321. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other injurious defects. The pipes shall be as uniform as commercially practical in color (green), opacity, density, and other physical properties.

b. Pipe Fittings

Polyvinyl chloride fittings shall meet the requirements of ASTM D3034 and provide a watertight connection. Service connections shall be manufactured to accept a 6-inch polyvinyl chloride pipe or as specified on the plans. Location of the lateral service shall be connected to the main using a “WYE” connector. Location of “WYE” connections shall be determined in the field unless otherwise stipulated on the plans. Pipe fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, and other injurious defects.

c. Backfilling

1) All PVC pipe for Sanitary Sewers shall be installed in accordance with ASTM D2321.
2) The Contractor shall not backfill sewers above the top of the pipe until the sewer elevations, gradient, alignment and the pipe joints have been installed correctly. The engineer, Town or Town’s authorized agent shall retain the capacity to check, inspect, and approve all sewer elevations, gradient, alignment, and pipe joints at any time during construction.
3) All sewer pipes shall have the space between the pipe and the bottom and sides of the trench backfilled fully by hand and thoroughly tamped and compacted, as fast as placed. Lifts shall not exceed 4-inches up to a depth of at least 12-inches above the top of the pipe. The backfill shall be carried up evenly on both sides. Backfill material to this point will be number eight (8) crushed stone or approved equal for bedding up to bottom of pipe and INDOT B-Borrow for Initial Backfill.
4) Backfilling within open or grass areas from 12-inches above the top of the pipe to final grade shall be made in lifts not to exceed 12 inches in depth and shall meet the compaction of 95% standard proctor density. The trench shall be backfilled using the material originally excavated from the trench unless the material is not Class B borrow or better. If the originally excavated material is of less quality than Class B borrow, the engineer or Town shall determine its reuse in the excavation. Contractor to provide material testing of excavated native material and provide properties upon Town’s request.
5) Backfilling within 5 feet of pavement from 12-inches above the top of the pipe to final grade shall be made in lifts not to exceed 6-inches in depth and shall meet the compaction of 100% standard proctor density. The trench shall be backfilled using select native granular material. If the originally excavated material is of less quality than Class B borrow, the engineer or Town shall determine its reuse in the excavation. Contractor to provide material testing of excavated native material and provide properties upon Town’s request.
6) Backfill shall be free from stones larger than 2-inches, frozen material, or other hard material. No rock having a diameter as previously described shall be placed within 3-feet of the installed pipe.

7) Backfilling shall not be left unfinished for more than 100 feet behind the completed pipe work.

3.5 Manhole Structure

a. Manhole Requirements

Manholes shall be 4-feet in diameter, unless otherwise specified, and shall be constructed of precast concrete in accordance with the ASTM C478 for "Precast Reinforced Concrete Manhole Risers and Tops". The minimum wall thickness shall be 5-inches, unless otherwise specified or shown on the plans. Manhole tops shall be of the eccentric cone type. Precast flat covers and flat bottoms shall be a minimum of 8 inches thick. Each section joint shall be single off-set and contain a lobe style gasket with external joint sealer as approved by the Engineer.

b. Manhole Anti-Floatation

Provide integral anti-floatation collars (extended bases) with a minimum width of 6 inches around bottom of all manholes. Provide larger collars for manholes that calculations indicate have buoyancy safety factors less than 1.2 so that required factor of safety is achieved. Other methods of buoyancy control may also be acceptable upon Town's approval.

c. Rubber Pipe Gaskets

All manholes shall use high performance boot type or compression-type connections meeting ASTM C923. The gaskets shall be installed so that the sewer pipe can be inserted through the gasket and the gasket sealed to the sewer pipe through the use of a compression wedge or ring. The end result shall produce a watertight, flexible connection between the sewer pipe and the manhole wall.

d. Manhole Steps

Each manhole section shall contain standard steps. Steps shall be plastic such as copolymer polypropylene meeting requirements of ASTM D4101, Type II, Grade 49108, reinforced with deformed 3/8-inch diameter reinforcing bar which conforms to requirements of ASTM A615, Grade 60.

e. Frames and Covers

All manhole covers shall be Neenah 1772A or 1772B with Type B lid or Town approved equal. The word "SANITARY" shall be directly cast on the surface of the lid. Manhole lids to have concealed pick holes and a gasket seal. Manhole frames and covers shall be of gray iron free from any blowholes, etc., and shall conform to ASTM A48. Frames and covers shall be rated for H20 and H20S loading conditions (16,000 lbs) as designated in AASHTO "Standard Specifications for Highway Bridges".

f. Manhole Drop Connection for Gravity Sewer

The manhole structure shall be 5-feet in diameter, unless otherwise specified. The drop connection shall be constructed as detailed and paid for separately under the respective bid item Manhole Drop Connection (Gravity). All pipe

material used for the gravity drop connection shall be of the size, type, and joint installed under the item titled “Polyvinyl Chloride Pipe.” The designated drop connection shall extend the discharge to within a minimum of 2-feet of the floor of the structure.

3.6 Connection into Existing Manhole

All taps into existing manhole structures shall be cored. High performance flexible connectors meeting ASTM C923 shall be installed for all pipes 18 inches or smaller. Under no circumstances shall saw cutting or busting of the manhole wall be permitted. Pipes entering the existing structure shall protrude no more than 6 inches and have a watertight mortar collar placed on both the interior and exterior sides of the structure.

3.7 Six Inch Sanitary Service Lateral, Wye and Fittings

a. Pipe Material

Six-inch building connections shall be of the same material and material specification as the main line sewer with push on gasketed joint. Glued joints will not be allowed. Wyes and required fittings shall meet the requirements of the material specification of the main line sewer. The Contractor shall supply and install the necessary wyes, bends, plugs and other fittings, which may be required for the installation of the sewer lateral.

b. Service Lateral Installation

The Contractor shall install sanitary laterals at locations shown on the plans or as designed by the engineer, the Town, or the Town’s authorized representative. The designated building connections shall extend from the sewer main to the adjacent property line (right-of-way). The connection shall be laid with a minimum rise of 0.61% for 6” diameter pipe. A removable watertight plug shall be installed in the end of each connection. The terminus of the building connection shall be at a depth to provide satisfactory fall between the building and the installed pipe. After installation of the sanitary lateral, and before backfill of trench, the Contractor shall coordinate with Town so that they may obtain a GPS locate.

c. Marking Lateral Locations

For new construction, the terminus of each building connection shall be marked by a 2-inch by 2-inch green treated wooden stake that shall extend vertically from the plugged end to within ½-inch of the surface. A ½-inch reinforcing rod, 12-inches long, shall be attached to the 2-inch by 2-inch stake so that later location can be determined using a metal detector. During the placement of new concrete curb, utility marking shall be embossed into the top of the curb. The marking shall be a 2” high letter stamping tool and be a letter “S” for sanitary sewer lateral.

d. Recording Lateral Locations

The Contractor shall keep a record of the location of all building connections, tee-wyes, and the other openings in the sewer. Locations shall be recorded from the nearest downstream manhole to the center of the lateral. Lateral location information shall include the invert elevation, from grade, at the pipes terminus at the property line. All such locations shall be compiled in a neat readable manner and delivered to the Town with the completed record drawings of the project.

3.8 Bore and Jack

a. Casing Material

1) Steel casing shall be electric-fusion, arc-welded steel pipe in accordance with ASTM A139, grade B, or electric-resistance welded pipe in accordance with ASTM A53, Type E, Grade B, as applicable. Material furnished under this specification shall be covered by the type of certification specified in the INDOT Frequency Manual and in accordance with 916.
2) Casing pipe shall be smooth wall steel with a yield strength of 35,000 pound per square inch and shall be of the diameter and wall thickness as shown on the plans. The interior and exterior of the pipe shall be coated with a protective asphaltic barrier.
3) The inner diameter of the casing pipe has been selected to provide minimum tolerance for the installation of the carrier pipe. The contractor may, at his own expense, use a larger inner diameter casing pipe if he so desires.

b. Casing Thickness Requirements

1) Steel casing thickness to meet the requirements of INDOT Section 716.

c. Casing Spacers

1) Manufactured casing spacers are required on the top and bottom of the pipe to prevent from floating.
2) Casing spacers shall be at a 6-foot maximum spacing center to center.
3) Carrier pipe shall be attached to casing spacers or other insulating device that removes the pipe load from the pipe bell and distributes the weight of the pipe to the pipe's body.

d. Sheeting and Shoring

1) Sheeting and shoring shall be provided if the nature of the conditions of the soil or height of exposed face is such as to endanger either the traveling public or the integrity of the road surface. The design of the sheeting and shoring system shall be the responsibility of the Contractor.

e. Jacking

1) This method shall consist of pushing steel pipe into the embankment.
2) Excavation shall be undertaken within the steel cutting edge or shield attached to the front section of the pipe to form and to cut the required opening for the pipe. Excavation shall be undertaken with the shield and shall not be carried ahead to the pipe far enough to cause loss of soil. When jacking in loose, granular, or running soils, the shield shall have means of inserting steel baffle plates and shelves for the purpose of preventing voids.
3) The thrust wall shall be adequate for installation of the jacked pipe. It shall be constructed normal to the proposed line of thrust.
4) The face of the excavation shall be adequately bulkheaded at the end of the day to prevent loss of soil at the heading.
5) A suitable lubricant, such as bentonite, may be applied to the outside surface of the jacked pipe to reduce frictional forces. This shall be

accomplished using pressure equipment which pumps the lubricant to the outside of the shield on the lead pipe or the lubricant may be pumped to the outside surfaces of the pipe through grout holes.

f. Boring

1) This method shall consist of pushing the pipe into the wall with a boring auger rotating within the pipe to remove the spoil.
2) Advancement of the cutting head ahead of the pipe will not be permitted except for that distance to permit the cutting head teeth to cut clearance for the pipe. If granular, loose, or unstable soil is encountered during the boring operation, the cutting head shall be retracted into the casing a distance that permits a balance between pushing pressure and the ratio of pipe advancement to quality of spoil to ensure no voiding is taking place. The excavation by the cutting head shall not exceed the outside diameter of the pipe by more than 1/2-inch. The face of the cutting head shall be arranged to provide reasonable obstruction to the free flow of soft or porous material.
3) The use of water or liquids to soften or wash the face will not be permitted. Water may be used in sticky clays to facilitate spoil removal providing water is introduced behind the cutting head. Lubricating agents, such as bentonite, may be used to lubricate the casing and reduce friction between casing and embankment jacking.
4) This method shall consist of pushing steel pipe into the embankment.

g. Obstruction in Installation

If an obstruction is encountered during installation which stops the forward progress of the pipe, and it becomes evident that it is impossible to advance the pipe, and if ordered, operations shall cease, and the pipe shall be abandoned in place and filled completely with grout or other approved materials.

h. Carrier Pipe

Carrier pipe shall be attached to casing spacers or other insulating device that removes the pipe load from the pipe bell and distributes the weight of the pipe to the pipe's body.

i. Casing End Caps

Casing ends shall be sealed with wrap around rubber end seals secured with stainless steel banding straps.

3.9 Dewatering

a. When groundwater is known or anticipated, a dewatering system of sufficient capacity to handle the flow shall be maintained at the site until its operation can be safely halted. The dewatering system shall be equipped with screens or filter media sufficient to prevent the displacement of fines. Equipment shall have sound attenuation to comply with Town noise control requirements. Fuel spill containment shall be provided.

3.10 Tracer Wire

a. Refer to Section 8 for tracer wire requirements.

3.11 Force Main

a. Force Main Material

1) Ductile Iron Pipe

i. Pipe – Pressure Class 250 in accordance with ANSI A21.51 (AWWA C151). Cement mortar lining complying with ANSI A21.4 or AWWA C104, standard thickness. Outside coating to be asphaltic, 1 mil thick.
ii. Unrestrained Joints - Push-on joint with circular rubber gasket. Mechanical joint push-on with circular rubber gasket. Joints shall utilize standard rubber compound.
iii. Restrained Joints - Mechanical joint push-on restrained type, with circular rubber gasket, and retainer glands. Joints shall utilize standard rubber compound.

2) C-900 PVC Pipe

i. Pipe – PVC made from virgin compounds as defined in ASTM D1784 and as per AWWA C900). Pipe shall have dimension ratio DR of 18 (235 psi). Pipe color to be green.
ii. Unrestrained Joints - Push-on type.
iii. Restrained Joints – Push-on joints with circular rubber gasket, and the appropriate style of PVC restraint harness and tie rods. Fusible Joints. Integral restrained joints and circular rubber gasket.

3) Solid Wall PE pipe

i. Pipe – High Density Polyethylene (HDPE PE4710) black interior, black with green identification stripe exterior. Pipe shall have dimension ratio DR of 11.0 (200 psi). Conform to Ductile Iron Pipe Size (DIPS). Cell Classification shall be ASM D3350, PE445576E. Fusion fittings and joining methods shall be per AWWA C906.
ii. Joints – Joints and fittings shall be specifically manufactured for and be compatible with, PE piping materials. All joints and connections shall be restrained to prevent separation and pullout due to internal pressure, thrust, or thermal expansion and contraction.

4) Fittings for Ductile Iron, PVC, and PE (MJ Adapter)

i. Use restrained mechanical joint with retainer gland on DIP and PVC pipe. Utilize mechanical joint with ductile iron backer ring for MJ Adapter connection to PE pipe. Push on joint fittings not allowed.
ii. All joints shall be rated for 250 psi pressure minimum with a surge safety factor of 100 psi.
iii. Compact style in accordance with AWWA C153.
iv. Cement lined w/ Ceramic Epoxy Lining.

1. Protecto 401.
2. Town approved equal.

b. Backfilling shall be as described in Section 3.4.c for gravity sewer pipe.

c. Depth of Bury

Force main shall not be less than 5.0 feet deep to the top of the pipe or greater than 7 feet.

3.12 Wastewater Combination Air Manhole

a. Manufacturer

Wastewater air release valves shall be manufactured by

1) ARI (Poly body only)
2) Val-Matic Valve & Manufacturing
3) Town approved equal.

b. Materials

Air Release Valves shall be constructed and tested in accordance with AWWA C512. The valve shall have full size NPT inlets and outlets equal to the nominal valve size. The body inlet connection shall be hexagonal for a wrench connection. The cover shall be bolted to the valve body and sealed with a flat gasket. A threaded adjustable orifice button shall provide drop tight shutoff to the full valve pressure rating.

c. Operation

Wastewater Combination Air Valves shall be automatic float operated and designated to exhaust large quantities of air during the filling of a piping system and close upon liquid entry. The valve shall open during draining or if a negative pressure occurs. The valve shall also release accumulated air from a piping system while the system is in operation and under pressure. The valve shall perform the functions of both Wastewater Air Release and Wastewater Air/Vacuum Valves and furnished as a single body or Dual Body as indicated on the plans

d. Connections

Single Body Valves sizes 3-inches and smaller shall have full size NPT inlets and outlets equal to the nominal valve size with a 2-inch inlet on 1-inch valves. The body inlet connection shall be hexagonal for a wrench connection. Valve sizes 4-inches and larger shall have bolted flanged inlets and NPT outlets. Flanges shall be in accordance with ANSI B16.1 for Class 125 iron flanges.

e. Design

1) Single and Dual Body Valves shall provide an extended body with a through flow area equal to the nominal size. Floats shall be unconditionally guaranteed against failure including pressure surges. A resilient bumper shall be provided on 4-inch and larger sizes to cushion the float during sudden opening conditions. The seat shall provide drop tight shutoff to the full valve pressure rating.
2) Dual Body Valves shall consist of a Wastewater Air release valve pipe to a Wastewater Air/ Vacuum Valve with a full-ported brass ball valve.
3) The Wastewater Air Release Valve shall have an extended leverage mechanism with sufficient mechanical advantage so that the valve will open under full operation pressure. An adjustable threaded resilient orifice button shall be used to seal the precision discharge orifice in the cover.

4) The Wastewater Air/Vacuum Valve sizes 4-inches and larger shall have a cover fitted to the valve body by means of a machined register to maintain concentricity between the top and bottom guide bushing at all times. The tandem float assembly shall have a hexagonal guide shaft supported in the body by circular bushings to prevent binding from debris. The upper float shall be protected against direct water impact by an internal baffle. The seat shall be a minimum of 0.5-inches thick on 2-inches and larger valves and secured in such a manner as to prevent distortion.
5) Single Body Valves shall have a full port orifice, a double guided plug, and an adjustable threaded orifice button. The 1-inch body shall be globe style to increase float clearance and reduce clogging. The plug shall be protected against direct water impact by an internal baffle and an extended float stem. The plug shall have a precision orifice drilled through the center stem. The float shall include a sensitivity skirt to minimize spillage.

f. Cleanouts

A cleanout shall be installed in each structure upstream of the combination air release valve. The cleanout shall be of the same diameter as the mainline pipe and accessible through a bolted flange.

g. Shop Drawings

Reference information shall include one (1) set of dimensional drawings, one (1) set of parts list drawings, and two (2) operation and maintenance manuals.

h. Placement

Combination air release/vacuum valves shall be placed to facilitate proper operation of the forcemain (including placement at high-points).

i. Odor Control

In populus areas, Provide a activated carbon/charcoal filter system to control odors.

1. Filter shall be compatible with the combination air valve.
2. A.R.I. Model OD-20 Series, attached to the structure according to Figure 2 of A.R.I. OD-20 Technical Bulletin.
3. Orenco Systems Model CF3.
4. OCS ARVF-20
5. Or Town approved equal.

3.13 Monitoring Manhole

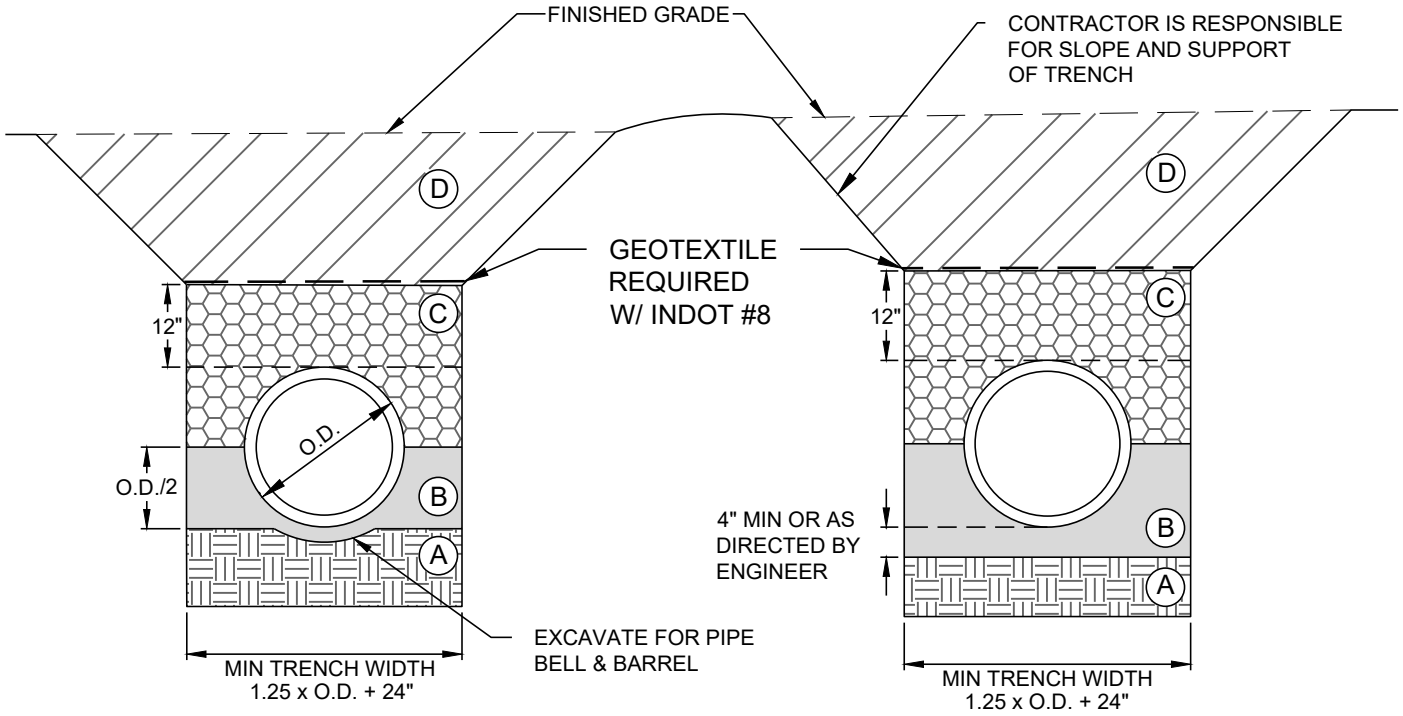
a. For significant industrial or commercial dischargers or “Significant Industrial Users” as defined by Middlebury Ordinance No. 701, the Town may require a monitoring device designed to document discharges to the Town’s system. Such device shall include but may not be limited to ISCO Model 420 Flow Master, ISCO Model 914 Battery Back-up, TRACOM Palmer-Bowlus Flume (permanent) sized to accommodate the expected volume; TRACOM Built-in Sampler with stainless sensor bracket and TRACOM integral staff gauge.
b. Installation will be within an approved concrete vault/manhole in a location as approved by Town staff. The manhole shall be placed to allow access 24 hours a day and shall be in an area kept free of snow or other debris.
c. The vault shall not be placed in a parking or loading area that will be intermittently blocked by parked vehicles.

3.14 Municipal Lift Station

Refer to Section 09 for Lift Station requirements.

The Town discourages the installation of new municipal lift stations unless determined by the Town to be the only feasible alternative.

Development projects proposing new municipal lift stations must be reviewed in advance of detailed project planning to avoid delays.



IN SUITABLE SOILS

UNSUITABLE SOILS

FILL REGION	DESCRIPTION	MATERIAL
A	UNDISTURBED EARTH	N/A
B	BEDDING	INDOT #8 AGGREGATE, MECHANICALLY TAMPED TO 95% STANDARD PROCTOR DENSITY
C	INITIAL BACKFILL	INDOT #8 OR B - BORROW, MECHANICALLY TAMPED TO 95% STANDARD PROCTOR DENSITY
D	BACKFILL (PAVEMENT)	SELECT NATIVE GRANULAR MATERIAL (*), 6 INCH LAYERS, SOLIDLY TAMPED TO SUB-GRADE OF STREET BASE TO 100% STANDARD PROCTOR DENSITY
	BACKFILL (OPEN OR GRASSY AREAS)	SELECT NATIVE GRANULAR MATERIAL (*) 12 INCH LAYERS, 95% STANDARD PROCTOR
* DEFINED AS NO STONES LARGER THAN 2 INCHES, DEBRIS, OR ORGANIC MATERIAL OF INDOT B - BORROW QUALITY OR BETTER.		

NOTES:

1. PIPE SHALL BE FIRMLY BEDDED ON UNDISTURBED SOIL WHEN SUITABLE. IN THE EVENT THE SOIL CAN NOT BE SHAPED, OR THE CONTRACTOR PREFERS THE TRENCH SHALL BE EXCAVATED TO A GREATER DEPTH AND BACKFILLED WITH SELECTED FILL AND COMPACTED AS SHOWN. IN ALL CASES BELL HOLES SHALL BE PROVIDED SO THAT BELL SUPPORTS NO WEIGHT.
2. TRENCHING DETAIL IS FOR PIPE STRUCTURAL REQUIREMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR SAFETY AND OPERATIONS, INCLUDING DETERMINING THE SLOPE OF THE TRENCH WALLS AND SUPPORT, SHEETING AND SHORING.

TYPICAL TRENCH, PIPE LAYING AND BEDDING DETAIL

NOT TO SCALE

Middlebury
Grown from Tradition

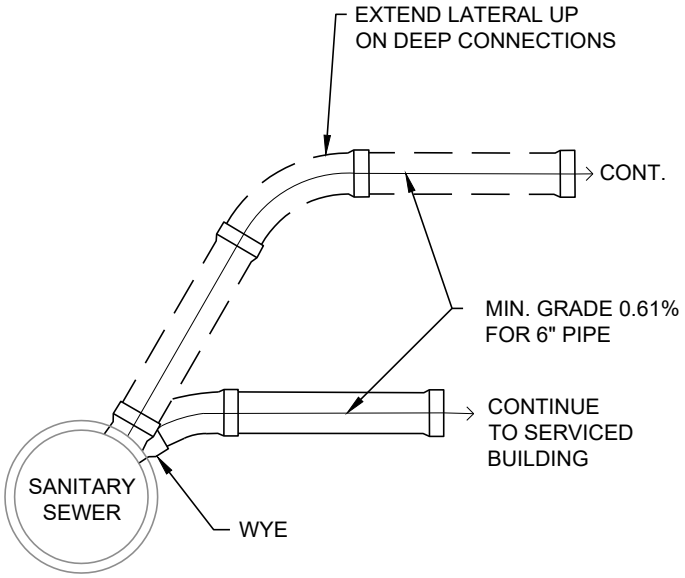
TOWN OF MIDDLEBURY
DETAILS

SECTION 3 - SANITARY SEWER

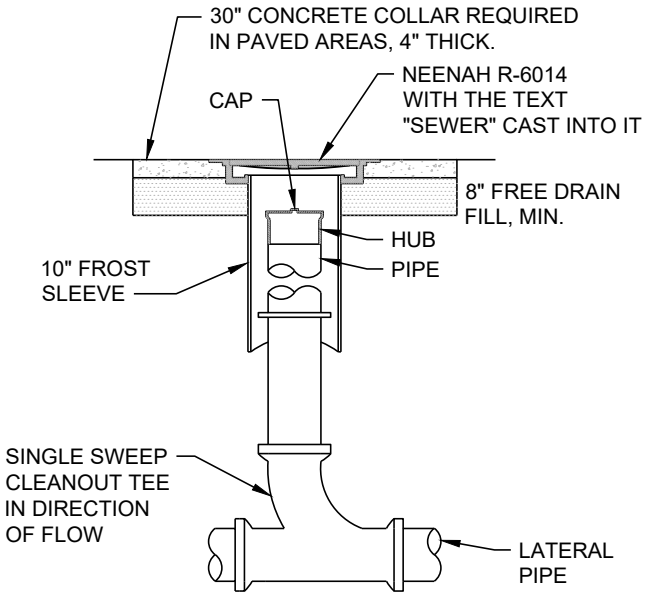
FIGURE 3.1

TRENCH BEDDING

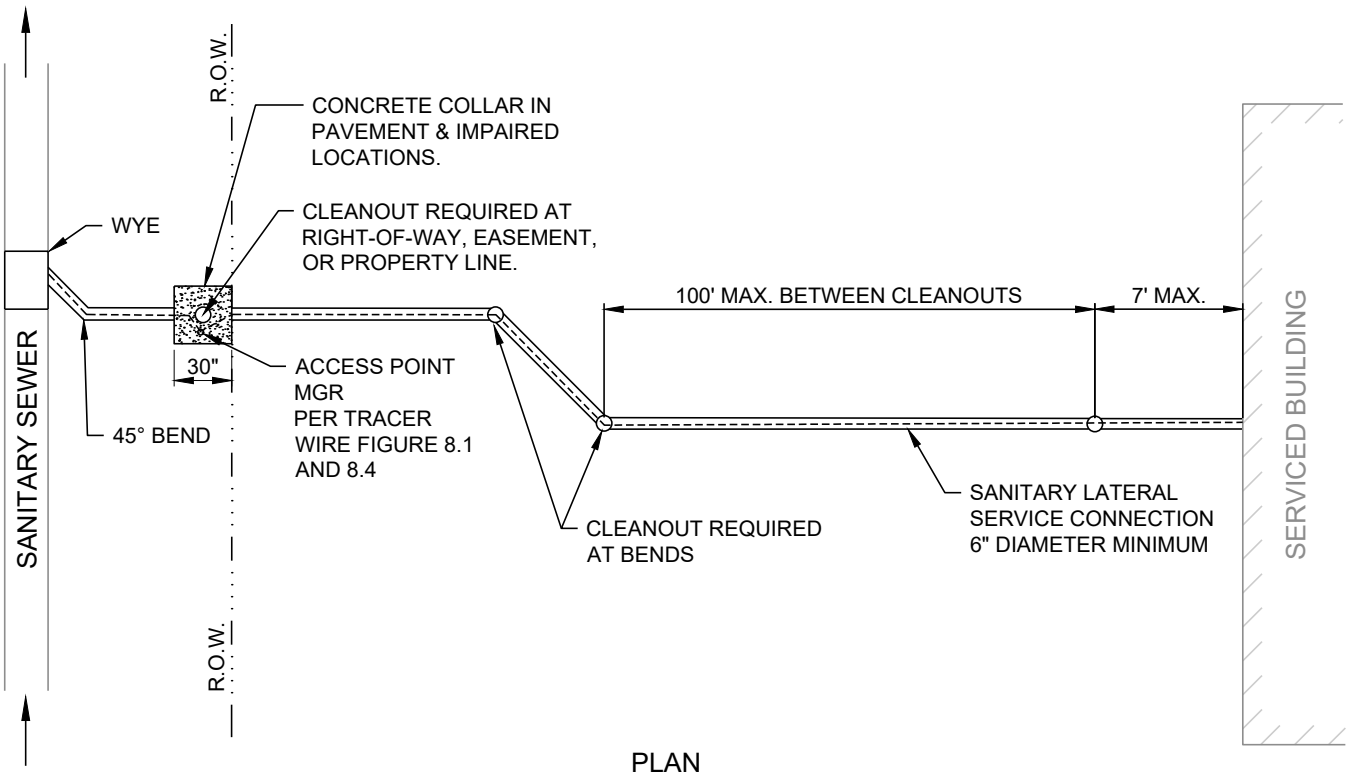
DEC. 11, 2025



PROFILE



CLEANOUT

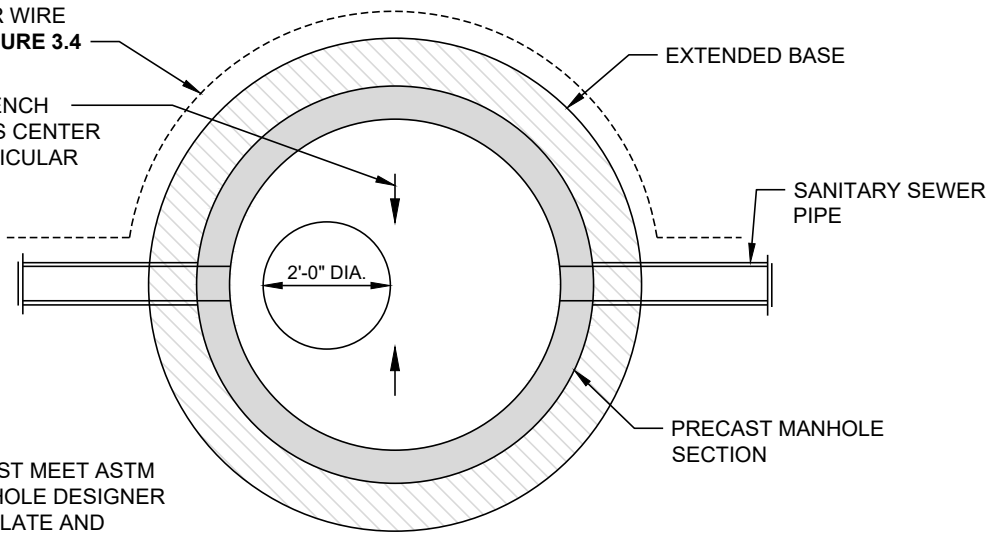


PLAN

TYPICAL SERVICE LATERAL CONNECTION

NOT TO SCALE

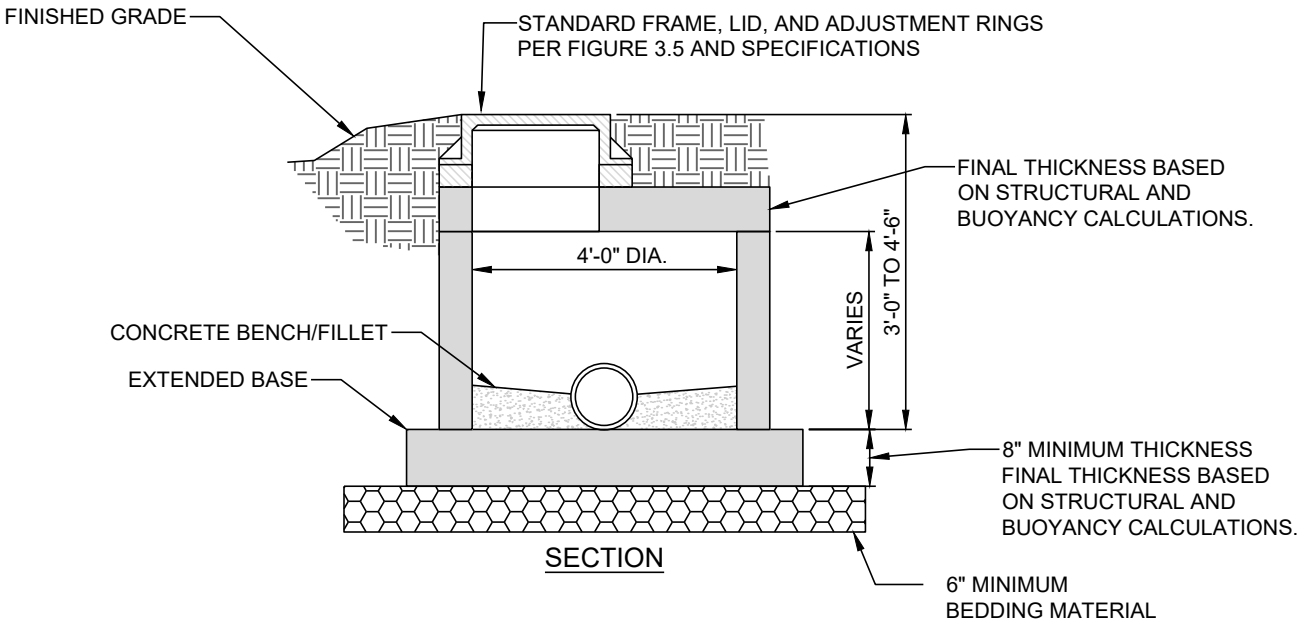
Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.2
		SERVICE/LATERAL
		DEC. 11, 2025



TOP PLAN

NOTE:

1. REINFORCEMENT MUST MEET ASTM C478. PRECAST MANHOLE DESIGNER EXPECTED TO CALCULATE AND VERIFY STRUCTURE EXCEEDS STANDARDS.

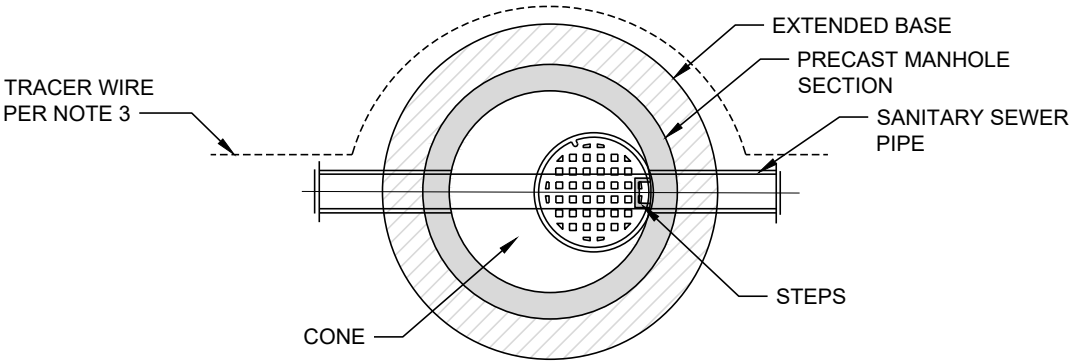


SECTION

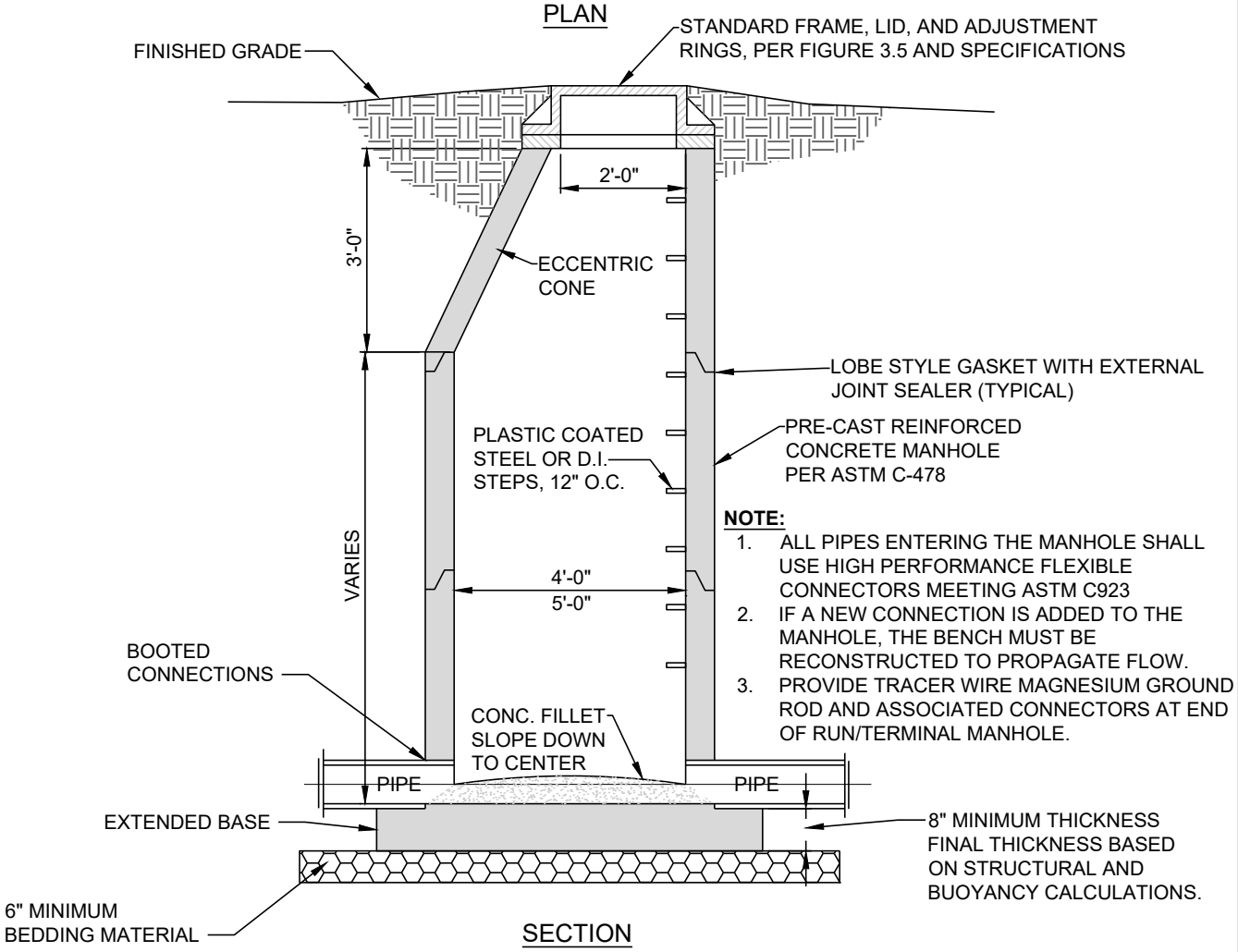
SHALLOW STANDARD MANHOLE (3' TO 4' 6" DEEP)

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.3
		SHALLOW MANHOLE
		DEC. 11, 2025



PLAN



NOTE:

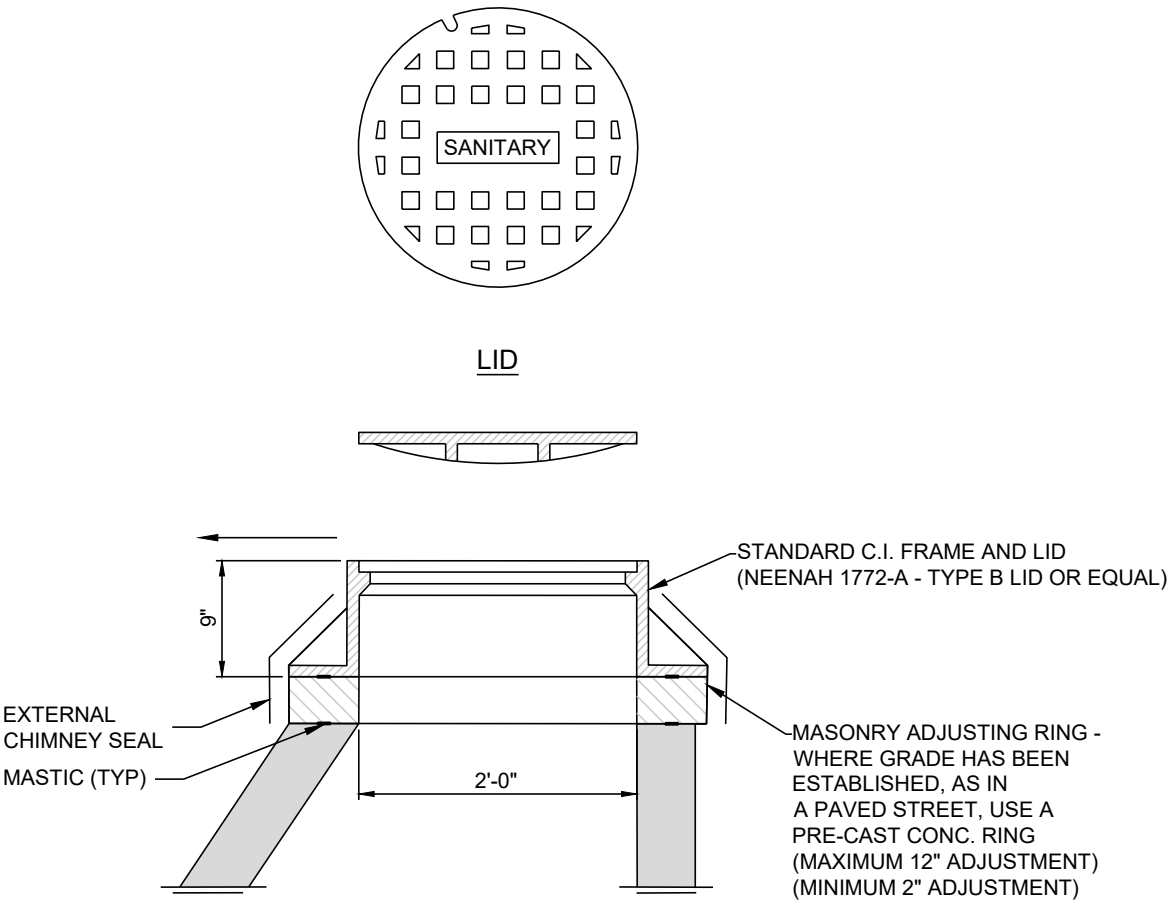
1. ALL PIPES ENTERING THE MANHOLE SHALL USE HIGH PERFORMANCE FLEXIBLE CONNECTORS MEETING ASTM C923
2. IF A NEW CONNECTION IS ADDED TO THE MANHOLE, THE BENCH MUST BE RECONSTRUCTED TO PROPAGATE FLOW.
3. PROVIDE TRACER WIRE MAGNESIUM GROUND ROD AND ASSOCIATED CONNECTORS AT END OF RUN/TERMINAL MANHOLE.

SECTION

STANDARD PRECAST MANHOLE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.4
		PRECAST MANHOLE
		DEC. 11, 2025



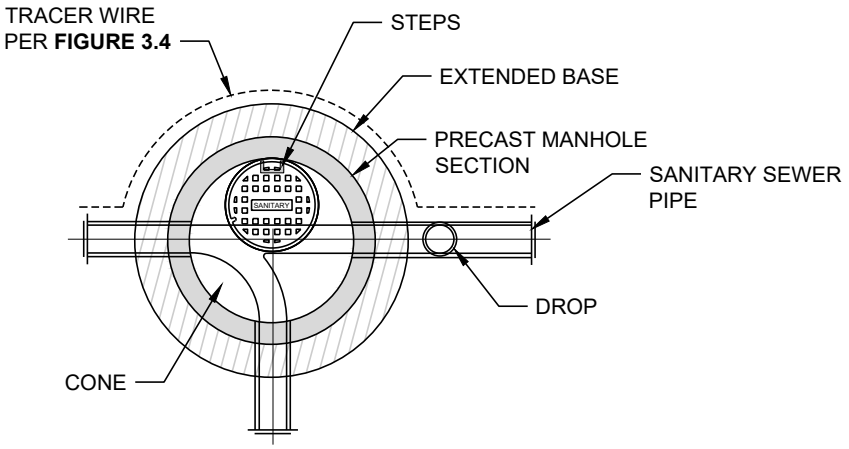
MANHOLE FRAME AND COVER TOP FINISHING

NOT TO SCALE

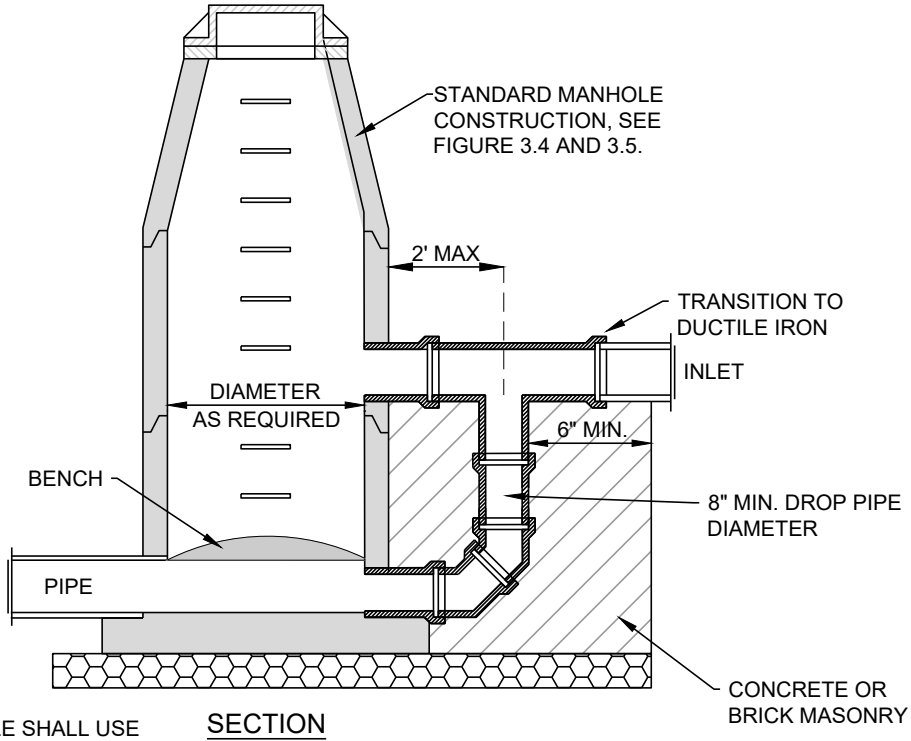
Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.5
		FRAME AND COVER
		DEC. 11, 2025

MIN. PIPE SIZES FOR DROP MANHOLE

MAINLINE	DROP
8"	8"
12"	8"
15"	10"
18"	12"
21"	16"
24"	18"
27"	20"
30"	24"
36"	30"
42"	36"



PLAN



SECTION

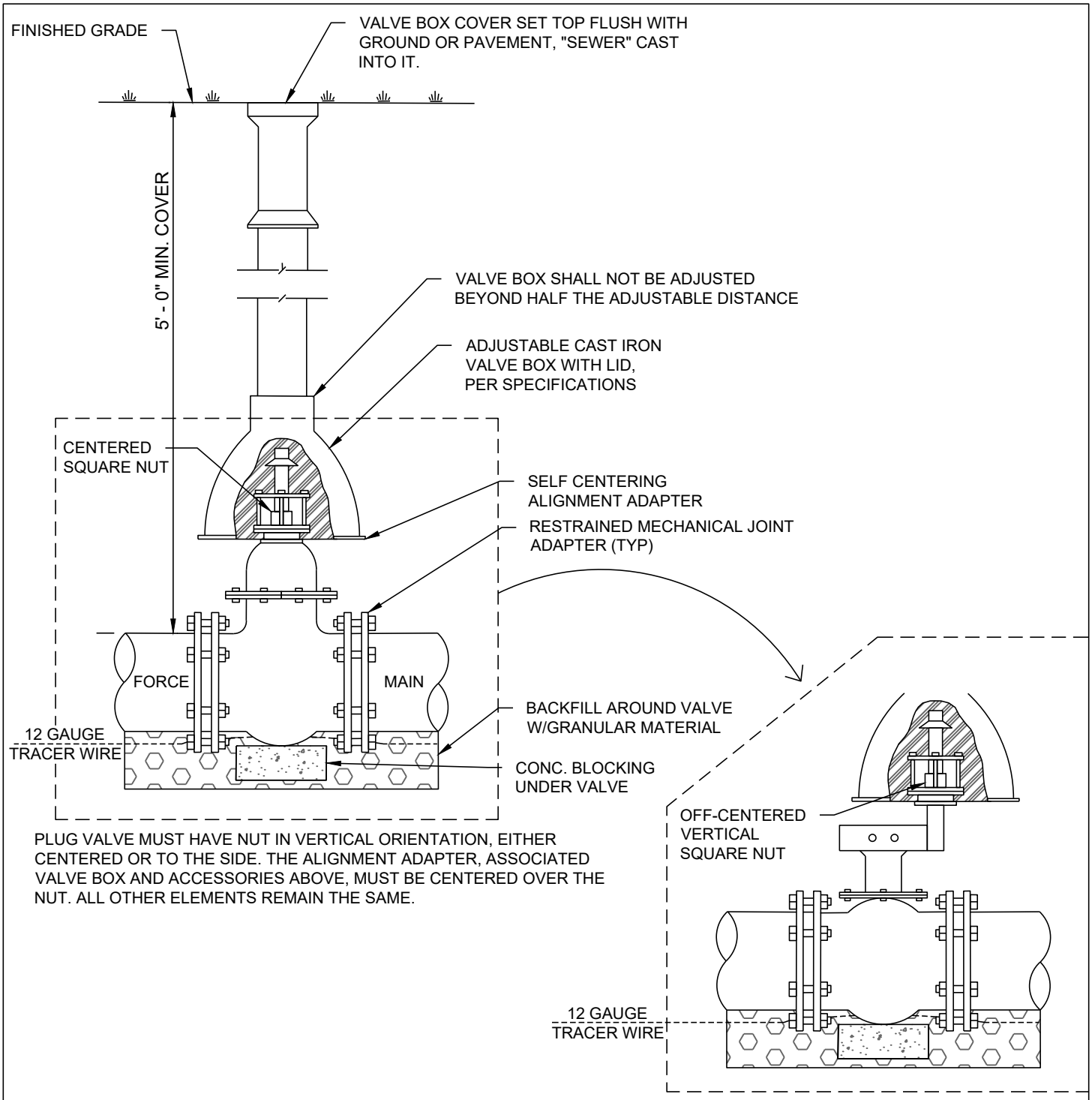
NOTE:

1. ALL PIPES ENTERING THE MANHOLE SHALL USE HIGH PERFORMANCE FLEXIBLE CONNECTORS MEETING ASTM C923
2. MANHOLE DROP CONNECTION IS REQUIRED FOR ALL MANHOLES WITH A 24 INCH DROP OR LARGER.

STANDARD EXTERNAL DROP MANHOLE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.6
		EXTERNAL DROP
		DEC. 11, 2025

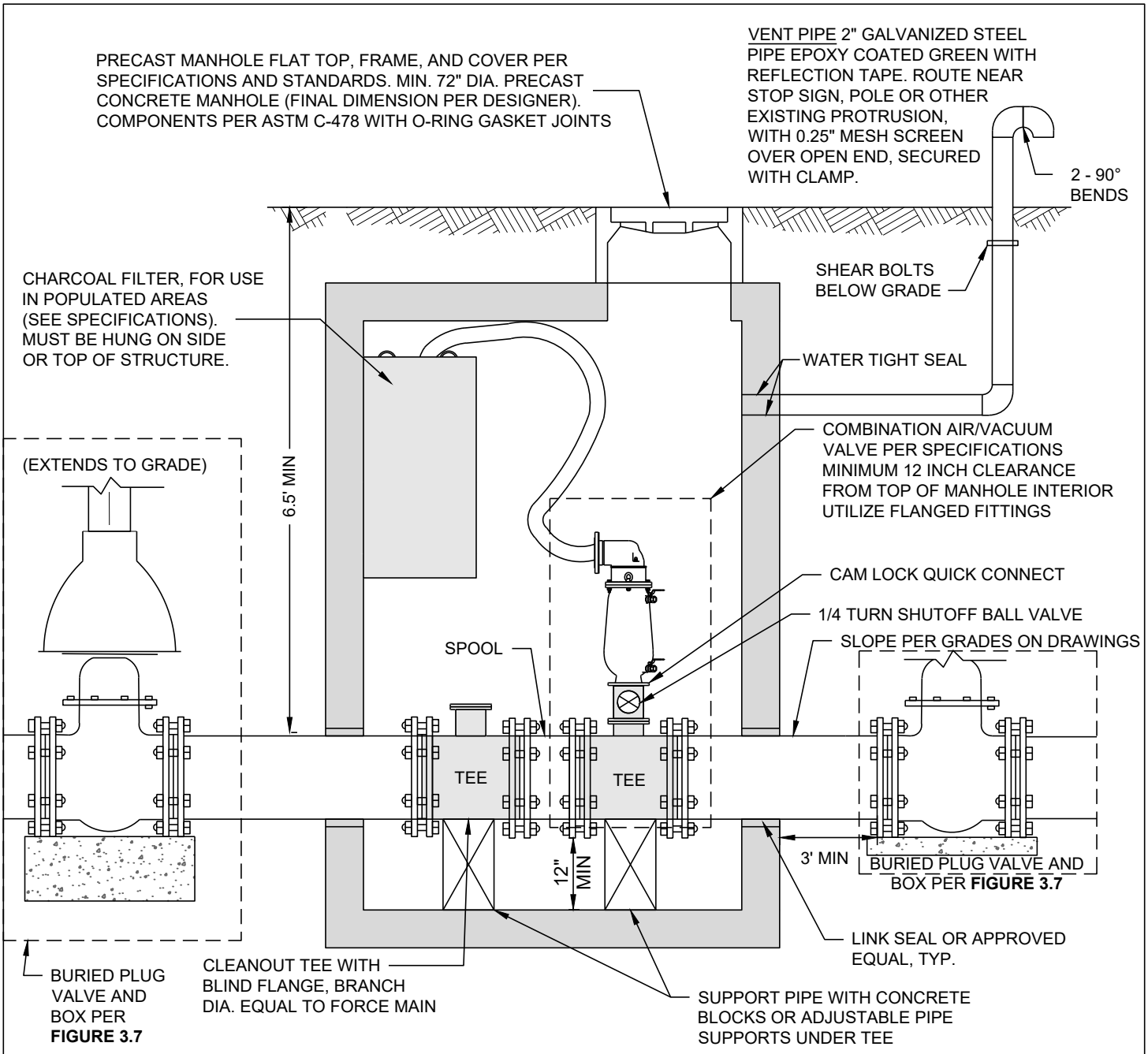


PLUG VALVE MUST HAVE NUT IN VERTICAL ORIENTATION, EITHER CENTERED OR TO THE SIDE. THE ALIGNMENT ADAPTER, ASSOCIATED VALVE BOX AND ACCESSORIES ABOVE, MUST BE CENTERED OVER THE NUT. ALL OTHER ELEMENTS REMAIN THE SAME.

PLUG VALVE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.7
		PLUG VALVE
		DEC. 11, 2025



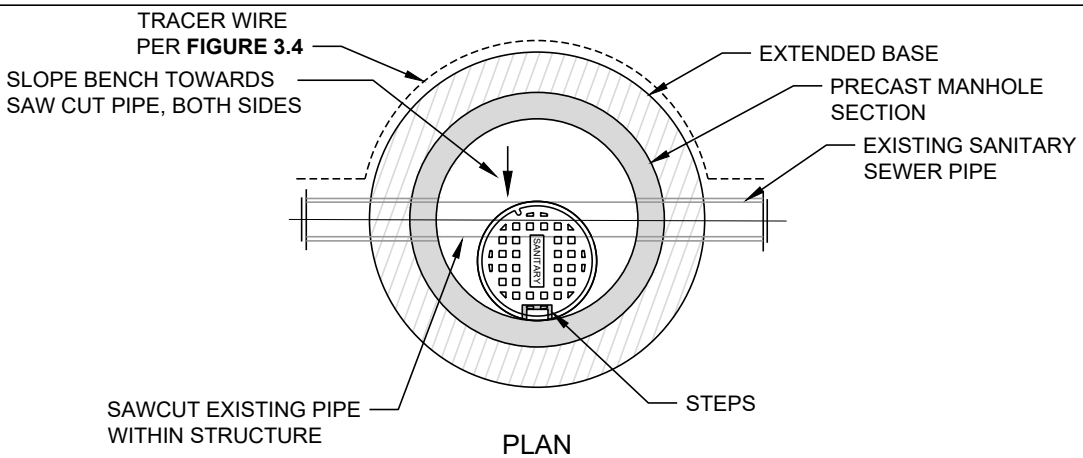
NOTES:

1. CORED OPENINGS SHALL BE LARGE ENOUGH TO ALLOW PASSAGE OF THE PIPE FLANGE.
2. FORCE MAIN PIPING THROUGH THE STRUCTURE SHALL BE DUCTILE IRON FROM VALVE TO VALVE, LINED WITH CERAMIC EPOXY.
3. 36" FRAME AND COVER, NEENAH R-1741-D OR APPROVED EQUAL, WITH SELF SEALING GASKET AND CONCEALED PICK HOLES. LID TO BE PLACED WITH REMOVABLE CENTER LID LOCATED OVER THE STRUCTURE STEPS, AND HAVE THE WORD "SANITARY" WRITTEN ON IT.
4. THIS DETAIL SERVES AS A GUIDANCE OF MINIMUM REQUIREMENTS. DESIGN ENGINEER IS RESPONSIBLE FOR SPECIFIC PROJECT REQUIREMENTS.

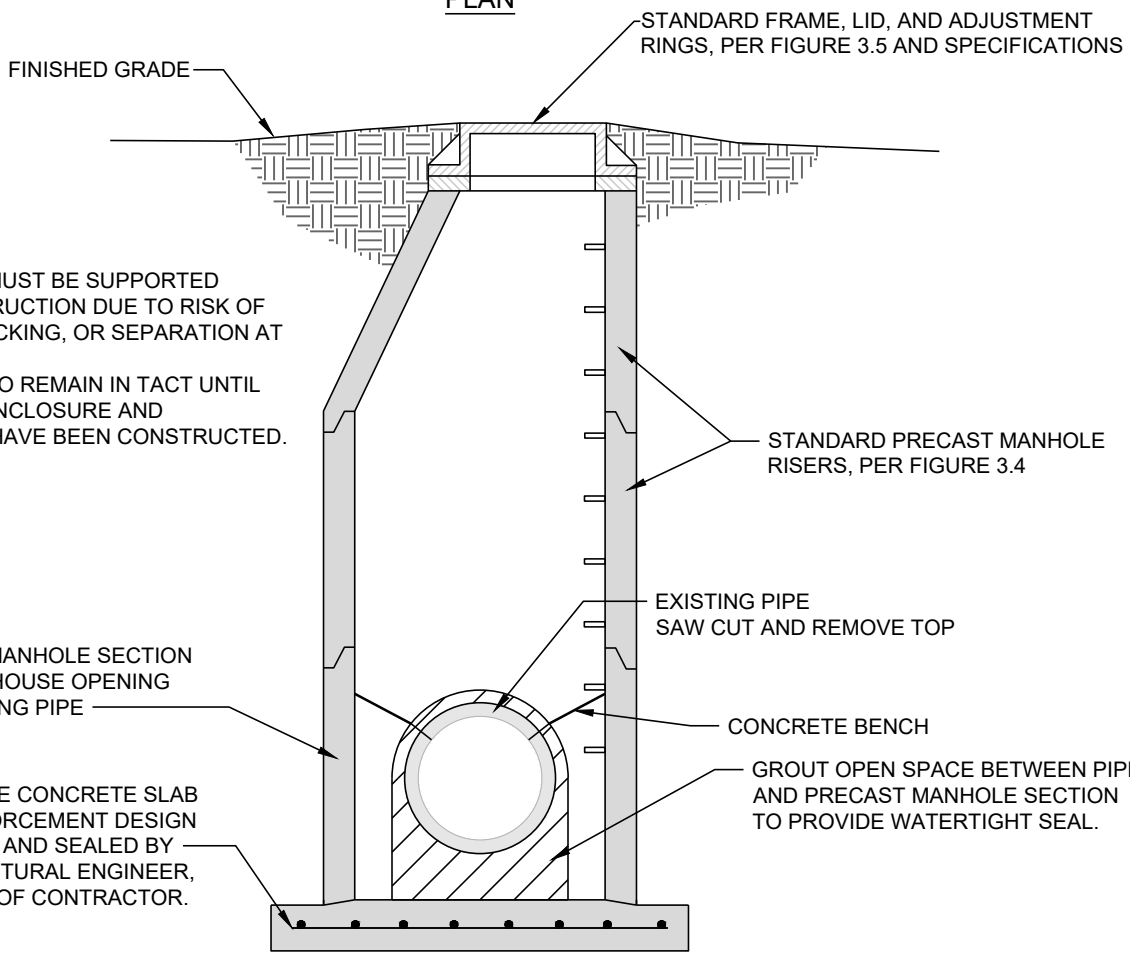
FORCE MAIN AIR RELEASE VALVE MANHOLE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.8
		FORCE MAIN ARV MH
		DEC. 11, 2025



PLAN



NOTE:

1. EXISTING PIPE MUST BE SUPPORTED DURING CONSTRUCTION DUE TO RISK OF SHEARING, CRACKING, OR SEPARATION AT JOINTS.
2. EXISTING PIPE TO REMAIN IN TACT UNTIL WATER TIGHT ENCLOSURE AND CONNECTIONS HAVE BEEN CONSTRUCTED.

SECTION

STANDARD DOGHOUSE MANHOLE OVER EXISTING PIPE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 3 - SANITARY SEWER
		FIGURE 3.9
		DOGHOUSE MANHOLE
		DEC. 11, 2025

4.0 SANITARY SEWER TESTING PROCEDURES

4.1 General

All tests shall be performed by the Contractor and be witnessed by the Engineer, the Town Public Works Superintendent or another Town's authorized representative. Tests conducted otherwise shall not be accepted by the Town. Testing of sanitary sewer shall be scheduled with the Town 48 hours in advance of such test. Contact the Public Works Superintendent at 574-825-1493.

4.2 Testing

a. Low Pressure Air Test – Gravity Sewer

1) This test shall be performed according to ASTM C828. This practice shall be performed on lines after connection laterals, if any, have been plugged and braced adequately to withstand the test pressure, and after the trenches have been backfilled for a sufficient time to generate a significant portion of the ultimate trench load on the pipeline.

2) To perform the low-pressure air test, all openings in the test section are to be securely plugged. Air is then to be added until the internal pressure of the line is raised to approximately 4.0 psi. After this pressure is reached, allow the pressure to stabilize. The pressure will normally drop as the air temperature stabilizes. This usually takes 2 to 5 minutes, depending on the pipe size. The pressure should be reduced to 3.5 psi before starting the test. Once the pressure has stabilized the test may begin. If the pressure drops more than 1.0 psi during the test time, the line is presumed to have failed the test. If a 1.0 psi drop does not occur within the test time, as shown in the following table (Table 4A), the line has passed the air test.

Table 4A

Pipe Diameter (in)	Time (min/100 ft.)
6-inch	0.7
8-inch	1.2
10-inch	1.5
12-inch	1.8
15-inch	2.1
18-inch	2.4

3) Groundwater above the pipe will reduce air loss. If the section of pipe under test shows significant infiltration, the Engineer or the Engineer's duly authorized agent may require an infiltration test.

b. Infiltration-Exfiltration

It shall be in the judgment of the Engineer or their authorized agent to require an infiltration-exfiltration test based upon field conditions that may warrant the additional testing. Where groundwater table is more than four feet above the average invert of the sewer being tested or less than four feet below ground surface an infiltration test will be required. Where groundwater is not within limits required for infiltration test, an exfiltration test will be required. It is the intent of this requirement and specification to secure the collection system, including manholes, with a minimum amount of infiltration and exfiltration. The maximum allowable infiltration and exfiltration shall be 200 gallons per mile, per inch of

diameter of sewer, per 24-hour day, at any time during the day. The joints shall be tight and the Contractor, at the Contractors own expense, shall repair visible leakage in the joints in excess of that specified above by any means found necessary. It shall be the Contractor's responsibility to conduct the necessary test, or to make arrangements (at no additional cost to the Owner) for the tests to be made by other qualified parties, to determine if the newly constructed sewer system meets the requirements mentioned above. The infiltration and exfiltration tests shall be made in the presence of the Engineer or his duly authorized agents. (The results of the infiltration and exfiltration test on the newly completed sewer must be submitted to the Indiana Department of Environmental Management, within three (3) months of completion of the sewer construction).

In accordance with the above specifications, the maximum allowable quantity shall be as set forth in the following tabulations:

Pipe Diameter	Gallons per Day per Linear Foot
6-inch x 0.0378787	0.2273
8-inch	0.3030
10-inch	0.3788
12-inch	0.4545
15-inch	0.5682
18-inch	0.6818

c. Deflection Testing

1) Deflection measurements shall be made upon completion of the project providing the pipe has been installed for not less than 30 days and not more than 12 months prior to testing. No pipe shall exceed a vertical deflection of five percent (5%). The engineer may require either complete or random deflection testing.
2) Note: The period of 30 days to 12 months is deemed an adequate time for the soil to settle and stabilize. This phenomenon is dependent on geographical climatic conditions such as: heavy rains or snow, water tables, extended dry periods or freeze-thaw cycles. The engineer shall designate when the testing will be performed.
3) Perform tests on plastic gravity sanitary sewer pipe installed by this project in presence of Engineer.
4) Provide necessary test mandrel, cable, reeling equipment, and other materials and equipment required to perform tests. Provide cable at each end of test mandrel to allow withdrawal if mandrel becomes stuck.
5) Test mandrel shall be solid sleeve or cage type as approved by Engineer.

   i. Identification of outside diameter of mandrel and size and type of pipe on which it is intended to be used shall be permanently affixed to mandrel.
   ii. Do not use worn, damaged or deformed mandrels.
   iii. Mandrel sizes shall be calculated to be the specified percentage of the base ID of the pipe installed on this project as indicated in the Contractor's submittals.
   iv. Base ID from which mandrel size shall be calculated is minimum pipe ID derived by subtracting statistical tolerance package from pipe's average ID. Tolerance package is defined as square root of sum of squared standard manufacturing tolerances.

Average ID = Average OD - 2t
Tolerance Package = (A2 + B2 + C2) 1/2

Where:
A = OD Tolerance per applicable ASTM or AWWA standard
B = Wall Thickness Tolerance per applicable ASTM or AWWA standard
C = Out of Roundness Tolerance per applicable ASTM or AWWA standard
t = Design Wall Thickness per applicable ASTM or AWWA standard

v. Pipe deflection testing shall be performed no sooner than completed backfilling and compacting to final grade. Pipes tested less than 30 days after installation shall use a 3% mandrel. Pipes tested later than 30 days after installation and shall use a 5% mandrel.
vi. Pipe deflection shall also be tested one (1) year following substantial completion using a 5% mandrel.

6) Sewer is considered to have passed deflection test if mandrel can be drawn through sewer system being tested without aid of mechanical assistance. If mandrel is of such size and weight as to be impractical for manpower alone, mechanical device may be used if calibrated meter with recording device is used which indicates pulling force applied. Pulling forces greater than weight of device will be cause for failure.
7) Correct failed sewers by excavating sewer at point of failure and for distance of 10 ft on either side, allowing sewer to return to its original round cross section and backfill according to Specifications. All sections failing original mandrel test shall be retested after excavating and backfilling.
8) Sewers failing to return to original round cross section as evidenced by failing second deflection test shall be removed and replaced at no cost to Owner. Do not use devices to generate internal pressures, apply internal forces, or vibrations to correct failed sewers.

4.3 Manhole Vacuum Test

Installed manholes shall be tested in accordance with ASTM C1244-20, standard test method for concrete sewer manholes by negative air pressure (vacuum) test. This test shall demonstrate the integrity of the installed materials and the construction procedures. This test method is used for testing concrete manhole sections utilizing mortar, mastic, or gasketed joints. The test procedure shall be as follows, in accordance with ASTM C1244-22.

1) All lift holes shall be plugged
2) All pipes entering the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manhole.
3) The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations.
4) A vacuum of 10-inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, the vacuum pump shutoff. The time shall be measured for the vacuum to drop to 9-inch of mercury.
5) The manhole shall be deemed acceptable if the duration of time between the drop of 10-inches of mercury to 9-inches of mercury is less than the values indicated in Table 4B.
6) If the manhole fails the initial test, necessary repairs shall be made by an approved method. The manhole shall be re-tested until a satisfactory test is obtained.

TABLE 4B Minimum Test Times for Various Manhole Diameters									
Depth	Diameter, in.								
(ft.)	30	33	36	42	48	54	60	66	72
	Time, s								
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	29	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

4.4 Shop Drawings

Drawings of the manholes must be submitted to the engineer, the Town or the Town's authorized representative for approval prior to construction.

4.5 Forcemain Pressure Test (Jointed)

Force main shall be installed and tested as per the manufacture's instruction and as per AWWA C600 "Installation of Ductile-Iron Water Mains and Their Appurtenances", and AWWA C605 "Underground Installation of Polyvinyl Chloride Pressure Pipe and Fittings."

a. Leakage Test

1) No pipe installation will be accepted if the leakage is greater than that determined by the formula. Allowable leakage in gallons per hour shall be less than:
$L = SDP^{0.5}/148{,}000 = Gal./Hr.$
L = Leakage, gallons per hr
S = Length of pipe tested, feet
D = Nominal diameter of piping, in.
P = Average pressure during test, lbs per sq in.

2) Any leakage in excess of the above formula will be repaired by the Contractor at his own expense.

3) Pumps, gauges, connections, measuring devices, or any other necessary apparatus will be furnished by the Contractor. Leakage testing will be considered an incidental cost of force main and any cost thereof should be included in the unit prices of other pay items.

4.6 Forcemain Pressure Test (Fused)

a. Perform hydrostatic pressure testing for fused thermoplastic piping systems in accordance with ASTM F2164. Test pressure shall be 1.5 times operating pressure or as specified in other sections.

b. Open vents at high points to purge air pockets while piping system is filling. Venting may also be provided by loosening flanges or with equipment vents.

c. Testing:

1) After section of piping to be tested has been filled with water, apply test pressure by means of force pump of such design and capacity that required pressure can be applied and maintained without interruption for duration of test.
2) Measure test pressure by means of tested and properly calibrated pressure gauge acceptable to Engineer.
3) Maintain test pressure for sufficient length of time to permit pipe and test fluid to equalize temperatures and pipe to expand and stabilize but not less than 4 hours.
4) Continue to add make up test fluid to maintain test pressure.
5) Reduce pressure by 10 psi and monitor pressure for 1 hour. No pressure loss allowed.

d. If leakage is evident, make appropriate repairs and retest.

4.7 Internal Inspection

a. Televise all sanitary sewers 36 inches in diameter and smaller constructed in this Project.

b. Provide necessary safety equipment, personnel, lighting and materials to inspect sewer.

c. Inspection shall be done jointly by Contractor's representative and Engineer.

e. Conduct internal inspections when groundwater is at normal level or above top of pipe, whichever is greater.

f. For purposes of inspection, normal groundwater levels shall be that indicated in soils investigations conducted for design of project.

g. Contractor shall verify groundwater level at no more than 200 ft intervals by measuring water level with piezometers, test pits, well holes or other methods approved by Engineer. Contractor shall provide all necessary equipment, materials, and labor for such verification.

h. Where groundwater is not above top of pipe during inspection, Contractor shall wait for groundwater to rise or raise groundwater level by jetting or water soaking to at least 2 ft above crown of pipe if level is insufficient for testing.

i. Sewer considered to have failed internal inspection if any of following are observed.

1) Visible infiltration at joint or connection.

2) Joints open in excess of ½ in. more than width of opening when joint is "home."
3) Improperly connected lateral or service sewer.
4) Cracked or broken pipe (beyond 0.01 in. for RCP).
5) Variance from design line and grade. Any variations from grade in excess of 0.05 ft or standing water in the pipe in excess of 0.05 ft.
6) Noncompliance with Specifications or requirement of Contract Documents.

j. Repair failed sewers by removing and replacing defective pipe sections or by other approved means.

k. Provide a televising record to the Town on flash drive.

5.0 WATER MAIN CONSTRUCTION

5.1 General Requirements

a. All pipe, fittings, valves, hydrants, and appurtenances shall be shown on drawings and such drawings and specifications shall be submitted to the Town's authorized representative for approval prior to any construction. Water main installation shall meet all requirements of these specifications. All pipe, fittings, valves, hydrants, and appurtenances shall be new and unused.
b. All water system components shall be manufactured domestically.
c. The design of water mains shall be in accordance with the most recent edition of the "Recommended Standards for Water Works" as adopted by the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, commonly known as "Ten State Standards" and 327-IAC-Article 8.
d. All necessary permits shall be obtained by or on behalf of the developer.
e. These standards are to be used in conjunction with other Town Ordinances.
f. The plans shall also be submitted in AutoCAD compatible with the latest version of "WaterCAD" for input to the Town's water system model.

5.2 Quality Assurance

a. The contractor shall test and disinfect water mains as specified in Section 6.0.
b. The contractor shall collect and submit samples of water from water mains constructed. Collect samples after the water mains have been disinfected. Submit the samples to the applicable regulatory agency for bacteriological analysis. Collection and submittal of these samples shall meet the requirements of the applicable regulatory agency. Copies of all test results shall be submitted to the Town, refer to Section 6.0.
c. Testing shall be at the direction and in the presence of authorized Town staff.

5.3 Ductile Iron Water Main Pipe and Fittings

a. Pipe

1) Ductile iron pipe shall meet the requirements of ANSI/AWWA C151/A21.51 and be a minimum 8" diameter. Pipe shall have a rated working pressure of 150 psi plus 100 psi surge and a safety factor of 2 and a minimum depth of 5 feet of cover top of the pipe. Except as otherwise noted in this specification, the pipe shall be Thickness Class 52. Pipe shall be in 20-foot lengths.
2) Pipe joints shall be push-on type. Joints shall meet the requirements of ANSI/AWWA C111/A21.11. Joint gaskets shall be Fastite or Town approved equal. Restrained joint gaskets, for working pressures of up to 350 psi, shall be American Amarillo Fast-Grip, or Town approved equal. Each restrained joint gasket shall have a minimum of two bronze wedges for pipe sizes 12-inch diameter and smaller and a minimum of four bronze wedges for pipe sizes larger than 12-inch diameter securely installed, around it's perimeter, to promote pipe connectivity. The length of restrained pipe joints required shall be indicated on the drawings.

b. Fittings

1) Fittings shall be ductile iron. Fittings for standard size fittings shall meet the requirements of ANSI/AWWA C110/A21.10. Compact or short body fittings 3 inch through 12 inch shall meet the requirements of

ANSI/AWWA/C153/A21.53. Fitting shall have a pressure rating of at least 150 psi.

2) Fitting joints shall be mechanical joints or restrained push-on joints. Joints shall meet the requirements of ANSI/AWWA C111/A21.11. Thrust block mechanical joints as indicated on the drawings and specified in the Section. Restrained joints may be used instead of mechanical joints and thrust blocking. Restrained joint gaskets, for working pressure of up to 350 psi, shall be American Amarillo Fast-Grip, or Town approved equal. Pipe connecting to restrained joint fittings shall also have restrained joints as indicated on the drawings and specifications. The length of restrained pipe joints required shall be designed by a professional engineer and indicated on the drawings.
3) Fitting markings shall meet the requirements of ANSI/AWWA C110.

c. Adapters

1) Adapters from ductile iron water mains to flange joint valves or fittings shall be cast iron or ductile iron. Adapters shall meet the requirements of ANSI/AWWA C219. Adapters shall have a pressure rating of at least 150 psi. Adapters shall be Dresser Style 128, Smith-Blair Type 912 or equal.
2) Adapter ends connecting to ductile iron water mains shall have plain ends, push-on joints, mechanical joints or restrained push-on joints. Adapters with plain ends, push-on joints or mechanical joints may be used where restrained joints are not required. Adapters shall have restrained push-on joints where restrained joint piping is required as indicated on the drawings and specified. Mechanical joints and push-on joints shall meet the requirements of ANSI/AWWA C111/A21.11. Restrained joint gaskets, for working pressures of up to 350 psi, shall be Field Lok 350, Fast-Grip, or Town approved equal.
3) Adapter ends connecting to flange joint valves or fittings shall have joints complying with the specifications for the applicable valves or fittings.

d. Lining and Coating

Line the inside surfaces of all pipe, fittings, and adapters with cement mortar lining and bituminous seal coat. Cement mortar lining and bituminous seal coat shall meet the requirements of ANSI/AWWA C104/A21.4. Coat the outside surfaces of all pipe, fittings and adapters with bituminous coating. Outside coating shall meet the requirements of ANSI Specifications A21.51. (AWWA Standard C151.)

e. Gaskets

Gaskets for mechanical joints and push-on joints shall meet the requirements of ANSI/AWWA C111/A21.11.

f. Nuts and Bolts

1) Nuts and bolts for mechanical joints shall be high strength, heat treated, cast iron. Nuts shall be hexagon. Bolts shall be tee head. Nuts and bolts shall meet the requirements of ANSI/AWWA C111/A21.11.
2) Nuts and bolts for restrained push-on joints shall meet the requirements of the joint manufacturer.

5.4 High Density Polyethylene Pipe for Waterway Crossings

a. Pipe – High Density Polyethylene (HDPE PE4710) black interior, black with blue identification stripe exterior. Pipe shall have dimension ratio DR of 9.0 (200 psi). Conform to Ductile Iron Pipe Size (DIPS). Cell Classification shall be ASTM D3350, PE445576E. Fusion fittings and joining methods shall be per AWWA C906.
b. Pipe shall be NSF compliant suitable for potable water.
c. Joints – Joints and fittings shall be specifically manufactured for and be compatible with, PE piping materials. All joints and connections shall be restrained to prevent separation and pullout due to internal pressure, thrust, or thermal expansion and contraction.
d. Utilize mechanical joint with ductile iron backer ring for MJ Adapter Kit connection to HDPE pipe. Push on joint fittings not allowed.
e. All joints shall be rated for 250 psi pressure minimum with a surge safety factor of 100 psi.
f. Ductile fittings shall be compact style in accordance with AWWA C153.
g. Gate valves shall be installed on each side of the waterway crossing.

5.5 Valves

a. Gate Valves

1) Buried gate valves 4” and larger shall be full ductile iron body, non-rising stem, fusion bond epoxy coated and resilient seat gate valves. Valves shall meet the requirements of ANSI/AWWA C509 and shall have mechanical joint ends. Mechanical joints and joint accessories shall meet the requirements of ANSI/AWWA/C111/A21.11. Valve opening direction shall be consistent with operation of existing valves in the waterworks in which the valves are installed, unless otherwise directed by the Town’s authorized representative, valves shall open counter clockwise.
2) Three-inch buried gate valves shall be iron body, non-rising stem gate valves. Valves shall meet the requirements of ANSI/AWWA C509 except ends shall be screwed. Screwed ends shall meet the requirements of ANSI B16.3. Valve opening direction shall be consistent with operation of existing valves in the waterworks in which the valves are installed, unless otherwise directed by the Town’s authorized representative.
3) Gate valves 4” and larger installed above ground or in structures shall be resilient seat, iron body, outside screw, and yoke gate valves. Valves shall meet the requirements of ANSI/AWWA C509, except those parts of ANSI/AWWA C509 only applicable to non-rising stem gate valves and wrench nuts. Outside screw and yoke gate valves shall have flange joint ends and malleable iron handwheels. Flange joints and accessories shall meet the requirements of ANSI/AWWA C110. Nuts and bolts shall be cadmium plated. Gaskets shall be full face and shall be red rubber or equal.
4) Gate valves smaller than 4” installed above ground or in structures shall be resilient seat bronze, 125 lb. S.W. P. double disc, screwed-in bonnet, rising stem, inside screw gate valves with screwed ends and malleable

iron handwheels. Valves shall meet the requirements of Federal Specification WW-V-54d for Class A, Type III valves.

5) The following requirements apply to all gate valves: Wedge shall be ductile iron, fully encapsulated in synthetic rubber except of guide and wedge nut areas. Synthetic rubber shall be molded in place and bonded to the wedge; mechanical fasteners are not allowed. Stem shall be sealed by at least two O-rings; contained within the stuffing box (grooving of stem O-rings is not allowed). All stem seals shall be replaceable with the valve wide open and while subjected to full rated pressure. Valve body and bonnet shall be coated, inside and out; with fusion-bonded epoxy. Bonnet and stuffing box bolts and nuts shall be type 18-8 stainless steel and must be installed by the manufacturer.

6) Gate valves shall be manufactured by American Flow Control or Mueller or Town approved equal.

7) Gate valves shall be configured for installation within 3 feet of adjoining fittings.

c. Valves shall be placed on each side of a tee (i.e. 3-valves total) or cross (4-valves total). This includes tees associated with a fire hydrant assembly.

d. Insertion valves shall be EZ Valve System by Advanced Valve Technologies, LLC or Town approved equal.

e. Curb Stops

Buried valves 2” and smaller shall be curb stops. Curb stops shall meet the requirements of AWWA C800, ASTM B-62 for 85-5-5-5 composition bronze, and USAS B2.1. Curb stops shall be Ford B44-444-Q-NL (Ball Valve) within utility easement or right of way, and no more than 5’ from curb line.

5.6 Polyethylene Pipe Encasement

a. Test existing soil, every 1,000 feet along proposed water main route for corrosivity during design. If soil is found to be corrosive, then encase proposed water main in polyethylene as described below.

b. The ductile iron water main pipe, valves, and associated fittings shall be encased (wrapped) in polyethylene in accordance with AWWA C105/ANSI A21.5. The polyethylene wrap shall be V-Bio enhanced. It shall consist of three (3) layers of co-extruded linear low-density polyethylene (LLDPE), fused into a single thickness of not less than eight (8) mils. The inside surface of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a blend of anti-microbial biocide to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion.

c. The wrap shall be overlapped one (1) foot in each direction at joints and secured in place around the pipe. Wrap at tap locations shall be taped tightly prior to tapping. Contractor shall make all necessary repairs to the wrap following tapping operations.

5.7 Valve Boxes

a. Valve boxes for gate valves shall be cast iron. Valve boxes shall be two piece or three piece type. Each two piece type box shall be complete with bottom section, top section, and cover. Each three piece box shall be complete with base, center section, top section and cover. Valve boxes shall be extension type with slide or screw type adjustment. Each base and bottom section shall be the proper size for the valve served. Each valve box assembly shall be the proper length for the

valve served. The minimum thickness of metal shall be 3/16-inch. Cast the word "WATER" in each valve box cover. Valve box shall be by Tyler Union or Town approved equal.

b. Valve boxes for curb stops shall be cast iron. Curb boxes shall be extension type. Each curb box shall be complete with foot pieces, curb box and lid. Curb box shall be Ford EA-1-50-40-42R or Town approved equal.

c. Valves shall include a valve box adapter as manufactured by Adapter, Inc., 2033 S. 54th Street, West Allis, Wisconsin.

5.8 Fire Hydrants

a. Fire hydrants shall be Model No. K81-D as manufactured by Kennedy, painted red (by the manufacturer).

b. Fire hydrants shall meet or exceed AWWA C502. Hydrants shall comply with Factory Mutual Research Corporation and Underwriter's Laboratories UL 246 Standard; proof of compliance shall be cast on the ductile iron hydrant barrel. Rated water working pressure shall be 175 psi; test pressure shall be 350 psi; and hydrants shall include the following specific design and performance criteria.

c. The main valve closure shall be of the compression type, opening against system pressure and closing with the pressure (counter clockwise open – clockwise closed). The traffic feature shall be designed so the nozzle section of the hydrant can be rotated by degree a full 360 degrees during field installation if necessary.

d. The main valve opening shall not be less than 5-1/4 inches and shall be designed so that removal of the seat, drain valve mechanism, internal rod and all working parts can be removed through the of the hydrant without disturbing the ground line joint or the nozzle section of the hydrant. The bronze seat shall be threaded into mating threads of bronze for easy field removal.

e. The drain system shall be bronze and activated by the main stem without use of auxiliary rods, toggles, pins, etc. The drain mechanism shall be completely closed after no more than three turns of the operating nut in the opening direction. There shall be a minimum of two inside ports and four outlets to the exterior of the hydrant. Drain closure is to be by direct compression; sliding seals are not permitted.

f. The operating nut, stem, coupling and main valve assembly shall be capable of withstanding input torque of 200 foot-pounds in both opening and closing directions. There shall be an internal top housing with three O-rings to seal the operating threads from the waterway. The reservoir created by the O-rings shall be filled with lubricant and designed such that the operating threads are coated each time the hydrant is operated. A stop nut in this housing shall preclude over-torquing of the stem.

g. Friction loss through the hydrant shall not exceed 3.0 psi at 1,000 gpm through the 4-1/2 inch pumper nozzle. Flow testing and certification of the feature shall be conducted by an independent testing laboratory and be in accordance with AWWA C502.

h. The hydrant nozzle shall be field replaceable without special tools, excavation or disturbing the ground line joint. Nozzles shall be of a breech-lock design and be sealed by heavy duty O-rings.

i. Shoe and lower valve washer shall be coated, inside and out, with fusion bonded epoxy.

j. Shoe shall be attached to lower barrel with stainless steel bolts and nuts.

k. An Affidavit of Compliance must be submitted by the manufacturer certifying compliance with these specifications.

l. Fire department connections shall be as manufactured by Storz Fire Protection Products.

m. Fire department connections shall be located a minimum 18" above finished grade.

n. Interval spacing shall not exceed 500 feet.
o. Contractor shall flush fire hydrant assembly and leave the isolation valve turned "on" before turning over to the Town.

5.9 Tapping Sleeves

a. Tapping sleeves shall be Stainless Steel split sleeves. Each sleeve shall have a branch connection with a flange end. The inside diameter of each branch shall be oversized to permit entry and exit of tapping machine cutters. Each flange shall have a recess to center a tapping valve. Recesses shall meet the requirements of MSS SP-60. Flange dimensions and drilling shall meet the requirements of ANSI B16.1. The sleeve dimensions shall be such that the sleeve will not leak when installed on cast iron, ductile iron, or polyvinyl chloride pipe with outside diameters shown in AWWA Standards.
b. Tapping sleeves shall have a working pressure rating of 200 psi.
c. Tapping sleeves shall be Ford FAST-XXX-X-U100, FAST-XXX-XA, or Town approved equal.

5.10 Tapping Saddles

a. Tapping saddles shall have a working pressure rating of 250 psi. Saddle bodies shall be stainless steel. Saddle straps shall be corrosion resistant steel alloy. Saddle gaskets shall be positively confined O-ring gasket. The sleeve dimensions shall such that the sleeves will not leak when installed on cast iron, ductile iron or polyvinyl chloride pipe with outside diameter shown in AWWA Standards.
b. Each saddle used for making a wet connection shall have a branch connection with a flange end. The inside diameter of each branch shall be oversized to permit entry and exit of tapping machine cutters. Each flange shall have a recess to center a tapping valve. Recesses shall meet the requirements of MSS SP-60. Flange dimensions and drill shall meet the requirements of ANSI B16.1.
c. Each saddle used for making a dry connection shall have a branch connection with a flange or mechanical joint end. Flange dimensions and drilling shall meet the requirements of ANSI B16.1. Nuts, bolts and gaskets for flange joints shall meet the requirements of ANSI/AWWA C110. Nuts and bolts shall be cadmium plated. Gaskets shall be full face and shall be red rubber or equal. Mechanical joints and accessories shall meet the requirements of ANSI/AWWA C111/A21.11.
d. Gaskets used to seal joints between saddle bodies and tapped pipes shall be O-ring type, circular in cross section, and made of natural or synthetic rubber with a Durometer Hardness of 7 0$\pm$ 5.
e. Tapping saddle shall be series T3 by Total Piping Solutions, Inc. or Town approved equal.

5.11 Nut Torque Requirements

a. Various nuts shall be tightened to the manufacturers' written torque requirements.
b. Contractor shall maintain and calibrate their torque wrenches. Contractor shall provide, to the Town, their 12-month torque wrench calibration certificate upon request.

5.12 Residential Water Service Connection

a. Residential corporation stop shall be compression. Ford – FB1000-4-Q-NL.
b. Residential curb stops shall be ball valves. Ford – B44-444-Q-NL.
c. Curb stop box shall be Ford EA-1-50-40-42R.

d. Service connection requirements:

1) Service connections shall be in accordance with AWWA C-800.
2) Taps to the water main shall be made so that the corporation stop is installed 45 degrees from the vertical axis of the main. The residential corporation stops shall be 1".
3) Residential service lines shall be 1" PE DR9 pipe unless otherwise approved. Installation depth shall be a minimum of 60" and/or 72" maximum cover.
4) Service pipe shall be laid 90 degrees to the main.
5) Service assembly shall extend from the main to the right-of-way limits.
6) For multi-family or commercial services, submit service size design certified by a Professional Engineer registered in the State of Indiana.
7) During the placement of new concrete curb, utility marking shall be embossed into the top of the curb. The marking shall be a 2" high letter stamping tool and be a letter "W" for water service.

e. Service locations:

The location of the service connection shall be located in the field by the Town Representative. Generally, the location should be near a property line appropriate for the most direct or shortest route from the service shutoff to the home. The route shall be selected to avoid plantings, landscaping, driveways, sidewalks, and other exterior appurtenances wherever possible. In no case shall a water service be placed closer than 10 feet horizontally from a sewer utility or any part of a septic system.

f. Services crossing pavement:

Service leads, when crossing undisturbed pavement, shall be installed by boring, moling or other acceptable methods, which does not disturb the pavement or its support.

g. Marking service connection locations

Each service connection location shall be marked at the right-of-way line by a 2" by 2" blue painted treated wood stake 24" long driven exactly above the terminal end of the connection. The service shall also be permanently marked in the top of the concrete curb along the street exactly above the service line with the letter "W" imprinted thereon.

5.13 Water Meter Standards

SIZE	MANUFACTURER
	FORD
1-1/2" Meter Setting	
Corporation Stop	1-1/2" FB1000-6-Q-NL
Line material	Rigid copper or PE
Meter	1-1/2" OMNI+ Compound (C^2)
2" Meter Setting	
Corporation Stop	2" FB1000-7-Q-NL
Line material	Rigid copper or PE

Meter	2” OMNI+ Compound (C^2)
1” Meter Setting	
Corporation Stop	1” FB1000-4-Q-NL
Line material	K Copper 1" or PE
Meter	1" iPERL Smart Water Meter
5/8” Meter Setting	
Corporation Stop	5/8” FB1000-3-Q-NL
Line material	K Copper 3/4" or PE
Meter	5/8" iPERL Smart Water Meter

Notes:
1. All fittings must be compression.
2. The Middlebury Water Utility will determine the location of meter settings.
3. For any areas where municipal water is not available and a private well is installed, such private well or wells shall be metered if the improvement is connected to the Town’s wastewater system.

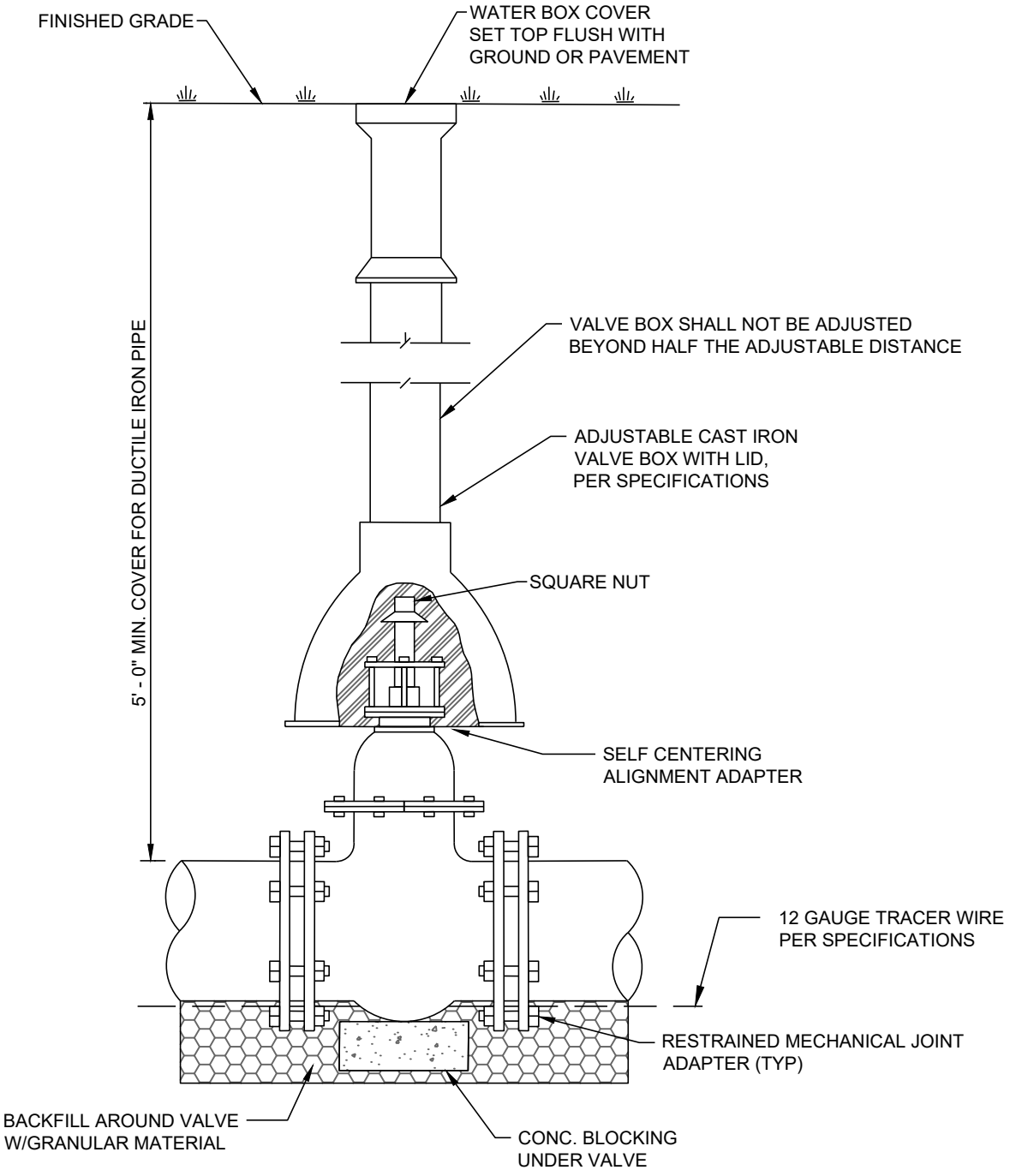
5.14 Cross Connection and Backflow Protection

To prevent cross connection hazards, Contractor shall comply with the following:

a. Town of Middlebury Ordinance No. 368 – Cross Connection and Backflow Prevention.
b. 327 IAC 8-10-4 Cross connection hazards.

5.15 Tracer Wire

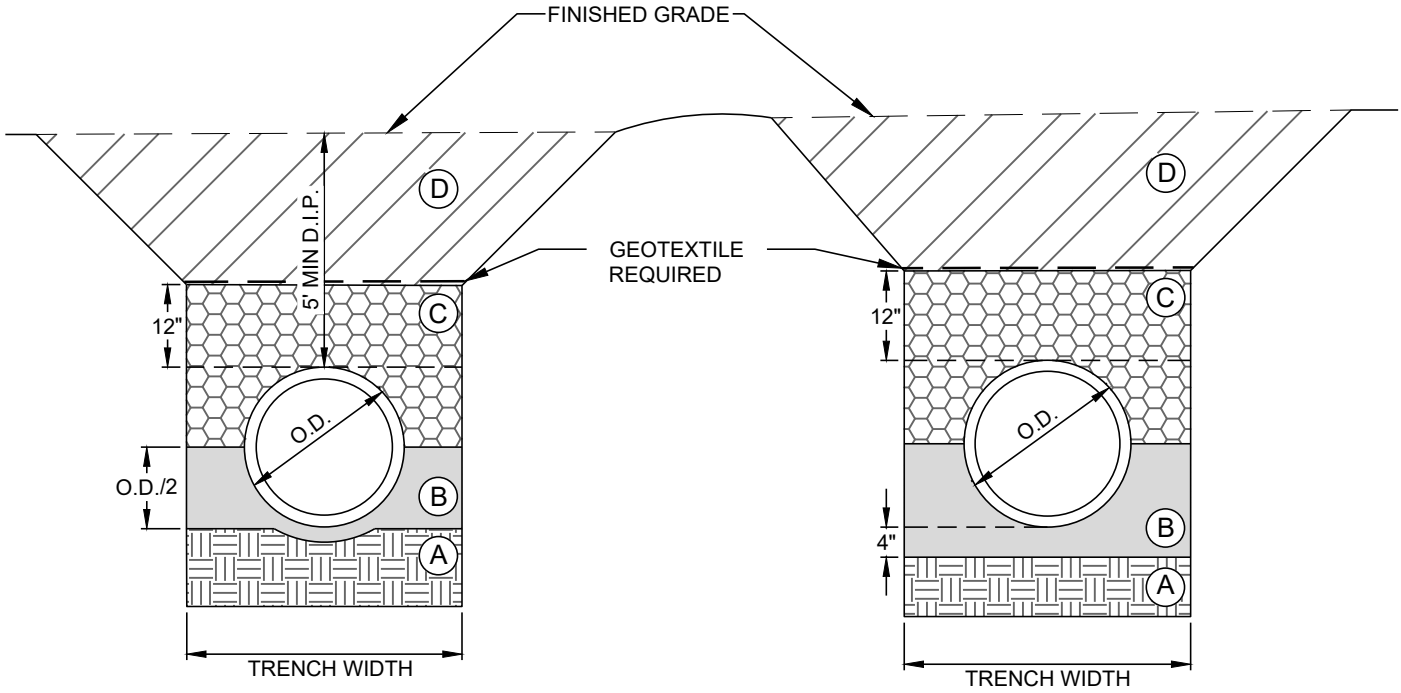
a. Refer to Section 8 for tracer wire requirements.



TYPICAL GATE VALVE & VALVE BOX

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 5 - WATER MAIN
		FIGURE 5.1
		GATE VALVE AND BOX
		DEC. 11, 2025



IN SUITABLE SOILS

UNSUITABLE SOILS

FILL REGION	DESCRIPTION	MATERIAL
A	UNDISTURBED EARTH	N/A
B	BEDDING	INDOT #8 AGGREGATE MECHANICALLY TAMPED TO 95% STANDARD PROCTOR DENSITY
C	INITIAL BACKFILL	INDOT #8 AGGREGATE, MECHANICALLY TAMPED TO 95% STANDARD PROCTOR DENSITY
D	BACKFILL (PAVEMENT)	SELECT NATIVE GRANULAR MATERIAL (*), 6 INCH LAYERS, SOLIDLY TAMPED TO SUB-GRADE OF STREET BASE TO 100% STANDARD PROCTOR DENSITY
	BACKFILL (OPEN OR GRASSY AREAS)	SELECT NATIVE GRANULAR MATERIAL (*) 12 INCH LAYERS, 95% STANDARD PROCTOR
* DEFINED AS NO STONES LARGER THAN 2 INCHES, DEBRIS, OR ORGANIC MATERIAL OF INDOT B - BORROW QUALITY OR BETTER.		

NOTES:

1. THE MAXIMUM TRENCH WIDTH FOR ALL PIPE INSTALLATION SHALL BE PIPE OUTER DIAMETER PLUS 24 INCHES.
2. PIPE SHALL BE FIRMLY BEDDED ON UNDISTURBED SOIL WHEN SUITABLE. IN THE EVENT THE SOIL CAN NOT BE SHAPED, OR THE CONTRACTOR PREFERS THE TRENCH SHALL BE EXCAVATED TO A GREATER DEPTH AND BACKFILLED WITH SELECTED FILL AND COMPACTED AS SHOWN. IN ALL CASES BELL HOLES SHALL BE PROVIDED SO THAT BELL SUPPORTS NO WEIGHT.
3. TRENCHING DETAIL IS FOR PIPE STRUCTURAL REQUIREMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR SAFETY AND OPERATIONS, INCLUDING DETERMINING THE SLOPE OF THE TRENCH WALLS AND SUPPORT, SHEETING AND SHORING.

TYPICAL TRENCH, PIPE LAYING AND BEDDING DETAILS

NOT TO SCALE

Middlebury
Grown from Tradition

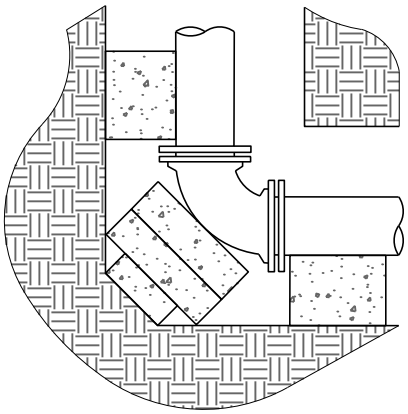
TOWN OF MIDDLEBURY
DETAILS

SECTION 5 - WATER MAIN

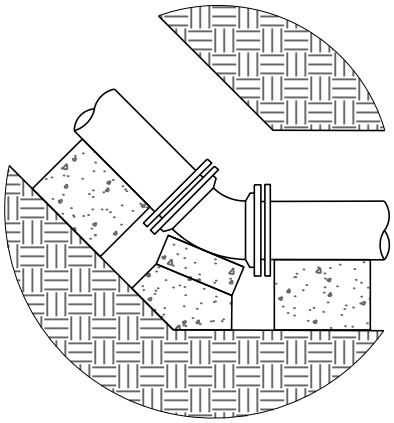
FIGURE 5.2

TRENCH BEDDING

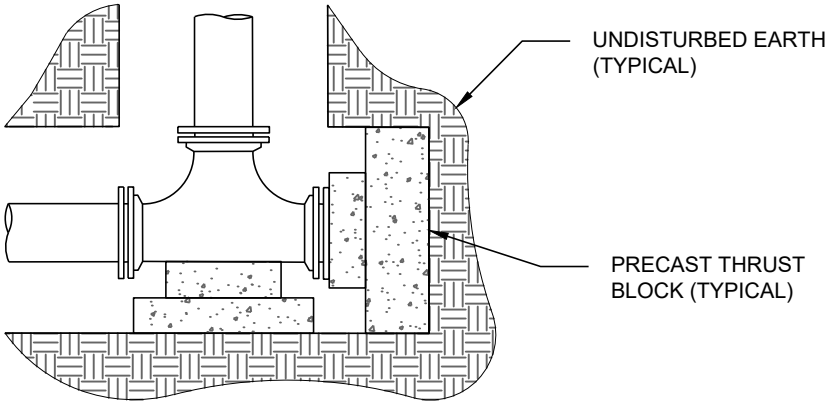
DEC. 11, 2025



90 DEGREE ELBOW



45 DEGREE ELBOWS



TEES AND PLUGGED ENDS

NOTES:

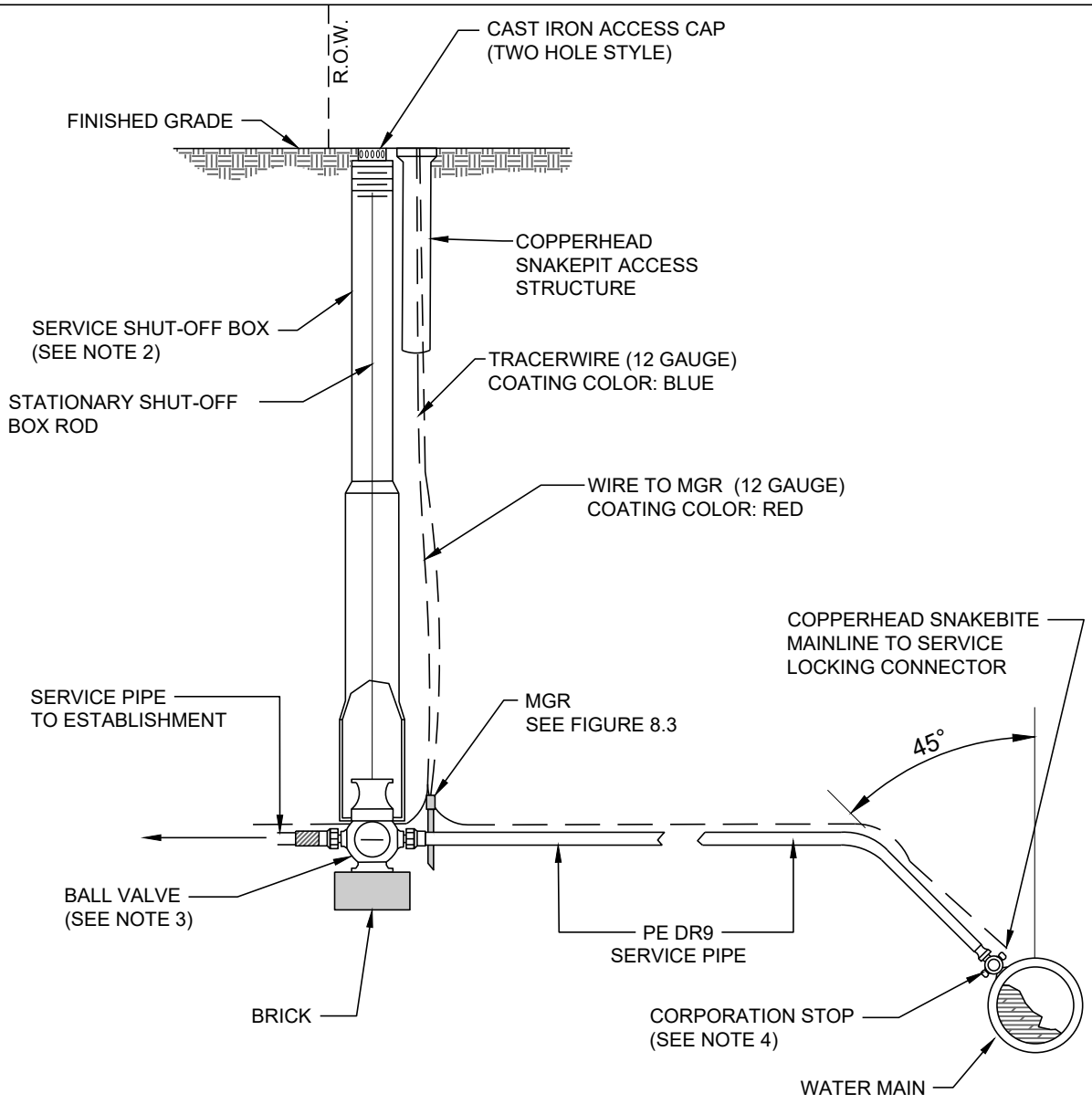
1. ALL BLOCKS BEAR AGAINST UNDISTURBED EARTH. IF SOIL IS UNSTABLE, IT MAY BE NECESSARY TO INCREASE THE AREA OF BEARING AGAINST THE UNDISTURBED SOIL. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY SOIL CONDITIONS AND PROVIDE SQUARE FOOT OF BEARING AREA REQUIRED FOR EACH FITTING.

2. PRECAST THRUST BLOCKS ARE TO BE USED IN ADDITION TO RESTRAINED JOINTS.

TYPICAL THRUST BLOCKING INSTALLATIONS

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 5 - WATER MAIN
		FIGURE 5.3
		THRUST BLOCKING
		DEC. 11, 2025



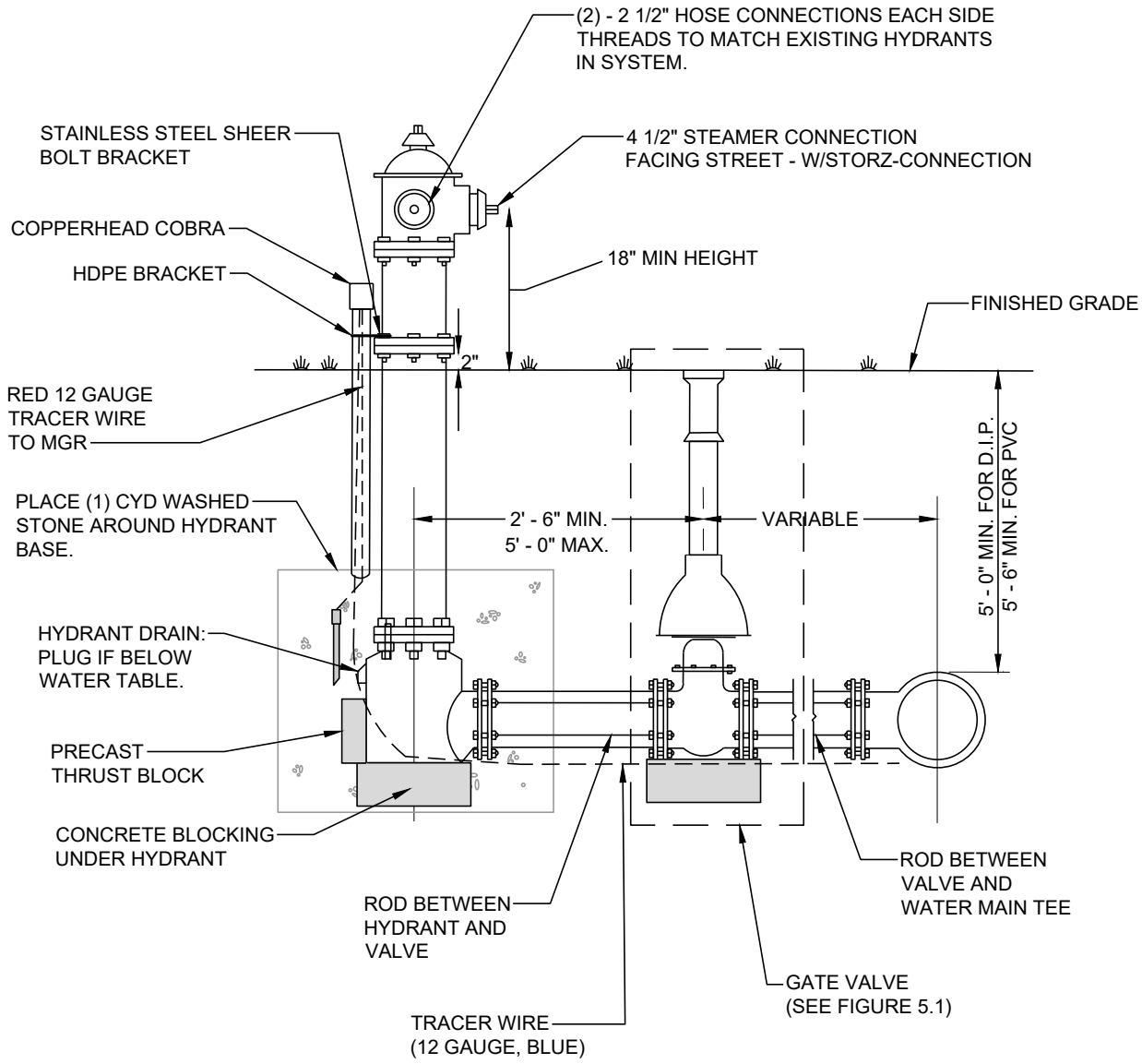
NOTE:

1. WHEN CONNECTING EXISTING SERVICE TO NEW MAIN. EXISTING SERVICE BOX & ACCESSORIES ARE TO BE USED & ADAPTER FITTINGS INSTALLED.
2. SERVICE SHUT-OFF BOX: FORD EA-1-50-40-42R
3. 1 INCH BALL VALVE: FORD B44-444-Q-NL
4. CORPORATION STOP: FORD FB1000-4-Q-NL

WATER SERVICE CONNECTION

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 5 - WATER MAIN
		FIGURE 5.4
		WATER SERVICE CONNECTION
		DEC. 11, 2025

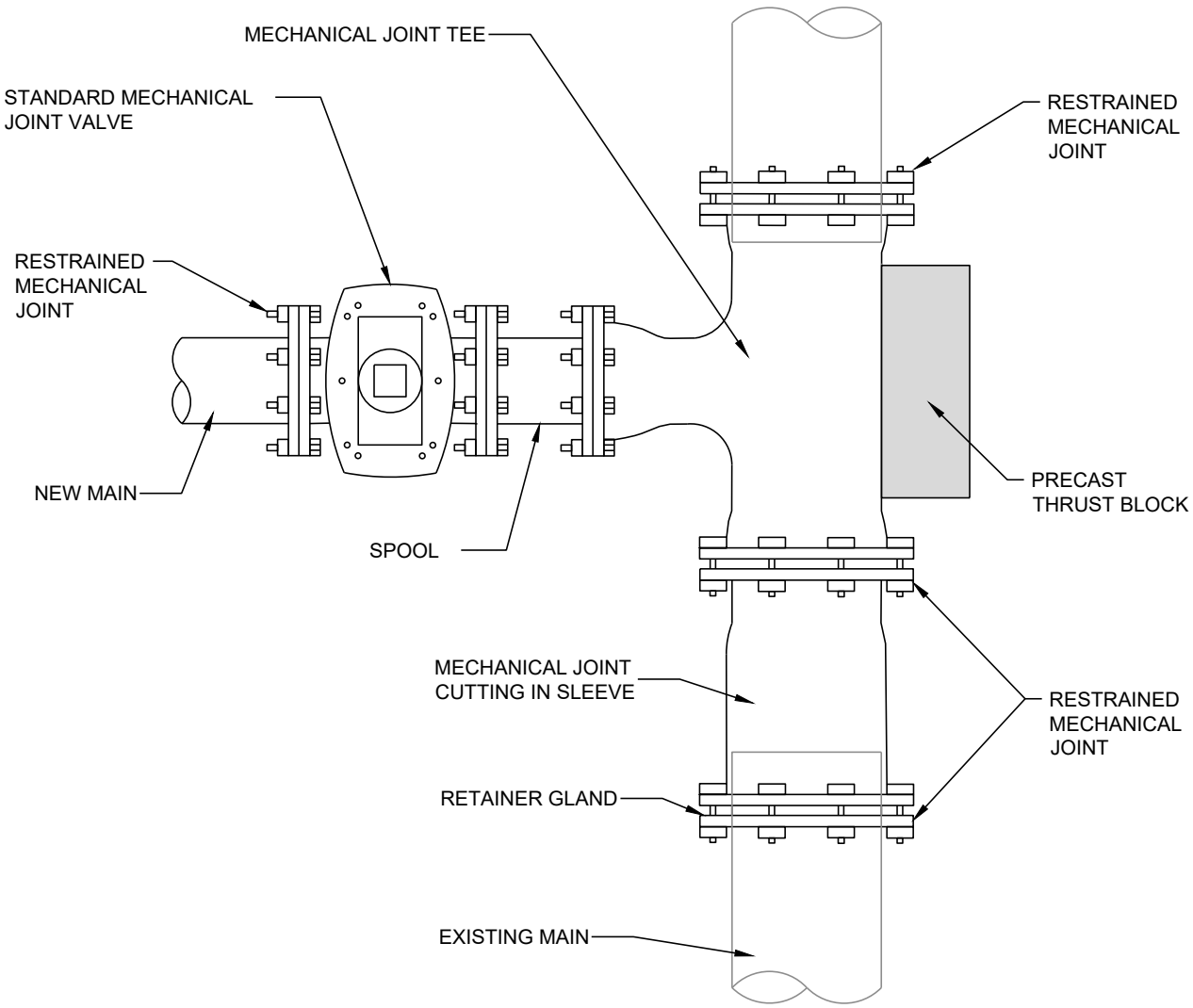


TYPICAL HYDRANT ASSEMBLY

NOT TO SCALE

HYDRANT TO BE KENNEDY K81D - PAINTED RED (BY MANUFACTURER)
W/ COUNTER - CLOCKWISE TO OPEN
SEE FIGURE 8.3 FOR TRACER WIRE, ACCESS POINT, AND MGR REQUIREMENTS.

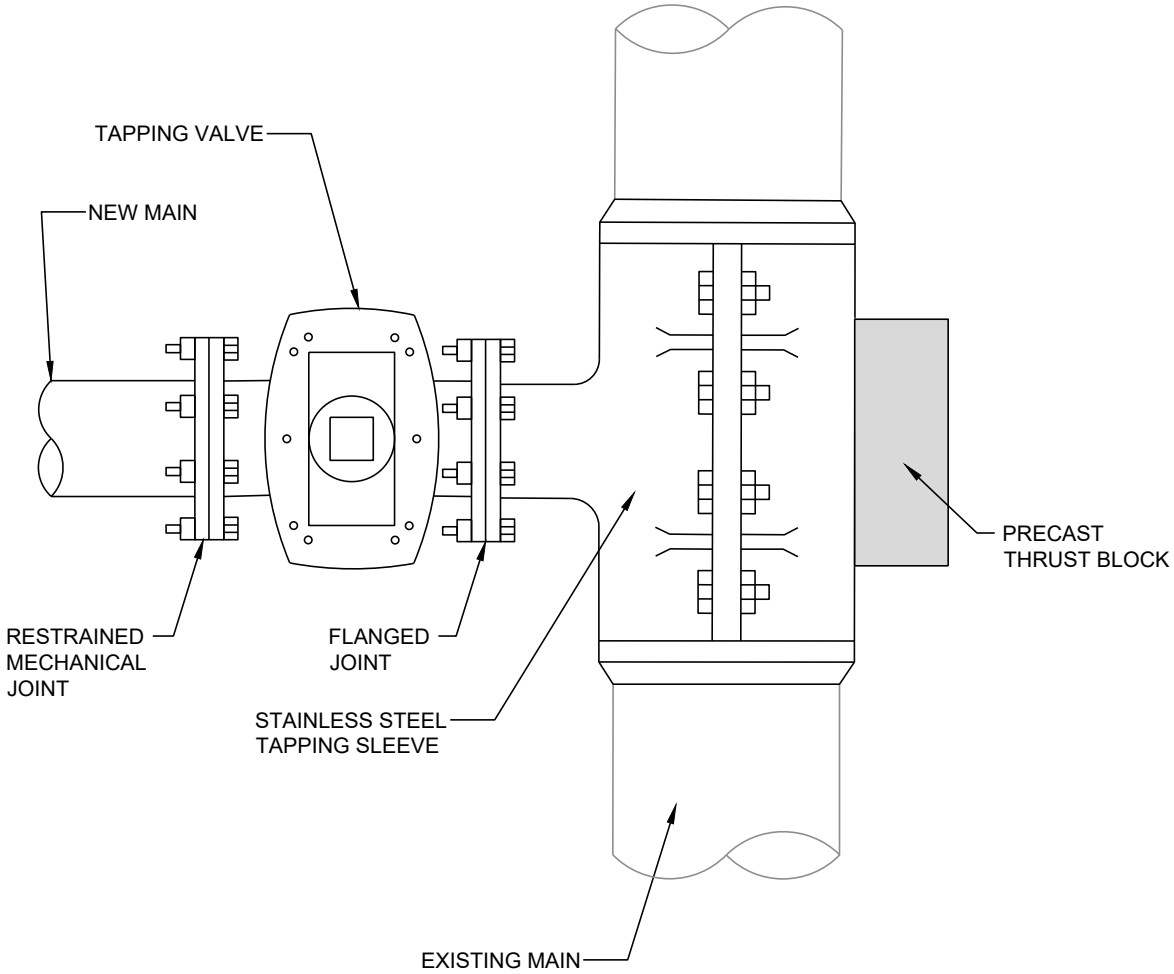
Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 5 - WATER MAIN
		FIGURE 5.5
		HYDRANT ASSEMBLY
		DEC. 11, 2025



DRY TAP METHOD

CONNECTING NEW MAIN TO EXISTING MAIN
NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 5 - WATER MAIN
		FIGURE 5.6
		DRY TAP METHOD
		DEC. 11, 2025



WET TAP METHOD DETAIL

(UNDER PRESSURE) CONNECTING NEW MAIN TO EXISTING MAIN
NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 5 - WATER MAIN
		FIGURE 5.7
		WET TAP METHOD
		DEC. 11, 2025

6.0 WATER MAIN TESTING PROCEDURES AND PRACTICES

6.1 Standards

a. All water mains and their accessories shall be installed and pressure and leak tested in accordance with the applicable provisions of AWWA Standard C600 “Installation of Ductile Iron Water Drains and their Appurtenances”, C602 “”Cement –Mortar Lining of Water Pipelines in Place – 4-inch and Larger”, or C605 “Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water”.

b. All water mains and their accessories shall be disinfected and tested in accordance with the applicable provisions of AWWA Standard C651, AWWA Manual M12, and the *Standard Methods for the Examination of Water and Wastewater*.

c. The persons working with the distribution system are required to be familiar with the standard construction and testing requirements. The identified standards are available at the office of the water utility for review.

d. Unless otherwise specified, all procedures apply to new mains, cleaned mains, cleaned and relined mains, repaired mains, and mains that have been out of service.

6.2 Procedures

Water main construction shall be immediately followed by pressure and leakage testing followed by disinfection and bacteria sampling.

6.3 Procedure Records

During the testing and disinfection procedure of a facility to be connected to the existing water system, the Contractor (i.e. person controlling the construction activity) shall maintain a record of activity. The record of activity shall include:

a. Flushing of the main- how long the line is flushed (start and end time), the rate of flow from the flowing hydrant or blowoff connection including flushing-flow velocity (2.5-4.0 fps), and calculated volume of water wasted.

b. Pressure & Leakage Test- record diameter of the main, length of the main, starting pressure (150 psi) and time, ending pressure and time, volume of recovery water required.

c. For testing of private systems connected to the Town’s system that have operating pressures above 100 psi, test pressures shall be double the operating pressure. Such tests and systems shall be completely buffered from the Town’s system by adequate backflow and pressure reducing devices. Required test data shall be the same as above.

d. Disinfection- including volume of the treated line in gallons, type and amount of chlorine reagent used, concentration of available chlorine applied, residual chlorine value in the new main, date and time of the 24 to 28 hour retention period, date and time of the second flushing of line, and the date and time when line is finally refilled with system water.

e. Bacterial Analyses- including date and time of samples, receipt of instructions of laboratory or supervisor to release line or repeat disinfection, and time the line is opened for use in system.

f. Forms are available for procedure documentation.

g. The person in responsible charge shall obtain a signature of approval from the Water Superintendent prior to the Town’s acceptance of the water mains permanent connection to the existing water system.

6.4 Water Utility Supervision

No water valve shall be operated for filling, flushing or testing of a main without the direct supervision of a town employee familiar with the operations requiring the valves operation. The Town will provide the necessary personnel upon request.

6.5 Pressure and Leakage Test (HDPE)

a. Perform hydrostatic pressure testing for fused thermoplastic piping systems in accordance with ASTM F2164. Test pressure shall be 1.5 times operating pressure or as specified in other sections.

b. Open vents at high points to purge air pockets while piping system is filling. Venting may also be provided by loosening flanges or with equipment vents.

c. Testing:

1) After section of piping to be tested has been filled with water, apply test pressure by means of force pump of such design and capacity that required pressure can be applied and maintained without interruption for duration of test.
2) Measure test pressure by means of tested and properly calibrated pressure gauge acceptable to Engineer.
3) Maintain test pressure for sufficient length of time to permit pipe and test fluid to equalize temperatures and pipe to expand and stabilize but not less than 4 hours.
4) Continue to add make up test fluid to maintain test pressure.
5) Reduce pressure by 10 psi and monitor pressure for 1 hour. No pressure loss allowed.

d. If leakage is evident, make appropriate repairs and retest.

6.6 Pressure and Leakage Test (DI and PVC)

a. Pressure test in accordance with AWWA C600. Under the direction of the town, the new water mains shall be slowly filled to ensure that all air has been expelled from the main, hydrants, air valves and service leads. Once all air is expelled, the new main shall be flushed at a minimum velocity of 3.0 feet per second for a minimum of 1 hour. The required "scour" flow rate shall be calculated as shown in Table 6A and shall be verified in the field using a pitot gage, flow meter or trajectory measurement. The Contractor shall be responsible for all de-chlorination and disposal of all flushing water and providing any necessary hoses or equipment for flushing and prevent unnecessary erosion.

Table 6A*
Flow Rate for 3.0 ft/s Line Velocity

Main Size(in.)	Gallons per Minute
4	120
6	260
8	470
10	730
12	1,060

16	1,880

* Table values provided from AWWA C-651 Table 3

b. The tap for the pressure and leak testing and chlorination shall be installed within ten feet of the source if practical. Otherwise, the tap shall be installed immediately outside of existing pavement. The Contractor is responsible for all work associated with the excavation, including proper trench protection, barricades, traffic control and proper backfilling and compaction upon successful completion of the test.

c. The Contractor shall conduct the pressure and leak test and provide the required testing equipment after the new main has been properly filled and flushed. The pressure and leak test shall be conducted as follows:

1) Air shall be expelled completely from the pipeline section under test. If permanent air vents are not located at all high points, corporation stops rated for design pressure of pipeline shall be installed at these points to expel any air as the line is filled with water. After expelling air, all vents shall be closed. Following testing corporation stops shall be removed and pipe plugged.
2) Decrease pressure in the main to be tested to approximately 20 psi. Observe test gauge to ensure the pressure doesn't rise due an existing valve or tapping valve leaking. This is done to ensure that water that is not disinfected does not enter the existing main from installed main while performing the actual test.
3) Before application of the test pressure, a pressure test pump, sanitized for connection to a municipal water main, will be connected to the main at the testing point. The pressure will be slowly increased to 150 psi and allowed to stabilize (+/- 5 psi) for a minimum of 15 minutes. This process accounts for line movement under pressure and water absorption by the lining and may take several cycles of pressurizing and bleeding trapped air.
4) A reservoir of potable water, capable of being calibrated to fractions of a gallon, shall be connected to the test pump and the initial level of water recorded.
5) The pump pressure shall be maintained at 150 psi for two hours with all makeup water withdrawn from the reservoir.
6) After two hours, the water level in the reservoir will be measured and the volume of water drawn from the reservoir calculated and compared with the following allowable leakage:

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

L = testing allowance (makeup water) (gph)
S = length of pipe tested (ft)
D = nominal diameter of the pipe (in.)
P = average test pressure during the hydrostatics test (psi [gauge])

(Based upon an allowable leakage of 10.49 gpd/mi/in)

Table 6B**
Allowable leakage per 1,000 feet of DIP at 150 psi Test Pressure

Test pressure	Nominal Pipe Diameter, inches										
	4	6	8	10	12	14	16	18	20	24	30
	Allowable Leakage, gallons										
150	0.33	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.66	1.99	2.48

** Table values provided from AWWA C-600 Table 5.A

7) When testing against closed metal-seated valves, an additional testing allowance per closed valve of 0.0078 gal/h/in of nominal valve size shall be allowed.
8) Any exposed pipe, fittings, valves, hydrants and joints shall be examined carefully during the pressure test. Any damaged or defective pipe, fittings, valves, hydrants, or joints that are discovered during the pressure test shall be repaired or replaced with reliable materials, and the test shall be repeated until satisfactory results are obtained.
9) If any test discloses leakage greater than that specified above, the Contractor shall, at his own expense, locate and make repairs as necessary until the leakage is within the specified allowance. No repair clamps of any kind will be allowed. Repair shall consist of removing leaking section and replacing with couplings and pipe.

6.7 Pre-Flushing

The Contractor shall coordinate with the Town to flush the source water, as near the shutoff as possible prior to tying-in to ensure that contaminants or debris are not introduced into the new pipe.

6.8 Preliminary Flushing

Before flushing the main shall be filled with potable water to eliminate air pockets. The main shall then be flushed through a hydrant at the end of the main at a velocity not less than 3.0 ft./sec to remove particulates. If no hydrant is installed at the end of the main, the Contractor shall provide a tap large enough to develop a velocity in the main of at least 3.0 ft./sec, unless the water utility determines that conditions do not permit the required flow to be discharged to waste. The gallons per minute to achieve 3.0 ft./sec velocities for different diameter pipes are provided in Table 6A.

NOTE - Flushing is no substitute for preventive measures during construction.

a. The Town shall supply water for use in disinfecting and flushing mains. However, all such supply is at the Contractor's expense. Discharge to Town sewers of flushing volumes is prohibited unless approved by the Town. If approved, expenses for such discharge will be the Contractor's obligation.
b. The Contractor shall furnish all necessary pipe and hose connections. The person in responsible charge shall exercise care in the use of the water to prevent contamination of the existing water supply.
c. Measures shall be taken prior to flushing to provide adequate drainage during flushing.
d. Drainage shall be directed away from the main, and flooding of the trench shall be prevented.
e. Coordinate activities with the Town 72 hours in advance to allow for meter placement and authorization.

6.9 Methods of Disinfection

Disinfection of water main shall be in accordance with AWWA C651 “Disinfecting Water Mains”.
All portions of the water main that was worked on as well as any portion(s) of the network that was taken out-of-service to allow completion of the contract shall be chlorinated. The chlorine solution to be used may be made from Calcium or Sodium Hypochlorite.

The use of Calcium Hypochlorite granules left in the main to be dissolved on filling of the main is not an approved method.

a. Continuous Feed Method

1) The continuous feed method consists of completely filling the main to remove all air pockets, flushing the completed main to remove particulates, and filling the main with chlorinated potable water so that after a 24 to 28 hour holding period in the main there will be a free chlorine residual of not less than 10 mg/L at all locations of the main.
2) At a point not more than 10 ft. downstream from the beginning of a new main, water entering the new main shall receive a dose of chlorine pumped at a constant rate such that the water at any location will have not less than 25 mg/L free chlorine. To assure that this concentration is provided, a water department representative shall measure the chlorine concentration at regular intervals at available blow-offs or hydrants in accordance with procedures described in the current editions of "Standard Methods for the Examination of Water and Wastewater" or using an appropriate chlorine test kit.
3) The table below gives the amount of chlorine required for each 100 ft. of pipe of various diameters. Solutions of 1% chlorine may be prepared with Sodium Hypochlorite or Calcium Hypochlorite. During the application of chlorine, valves shall be closed so that the strong chlorine solution in the main being treated will not flow into water mains in active service. Chlorine application shall not cease until the entire main is filled with heavily chlorinated water. The chlorinated water shall be retained in the main for 24 to 28 hours, during which time all valves and hydrants in the section treated shall be operated in order to disinfect the appurtenances. At the end of this 24 to 28 hour period, the treated water in all the portions of the main shall have a residual of not less than 10 mg/L of free chlorine.

Table 6C***
Chlorine Required to Produce 25 mg/L Concentration in 100 feet of Pipe by diameter

Pipe size (in.)	Volume (gals in 100 feet of Pipe)	100% Chlorine solution gals per 100 feet of Pipe	1% Chlorine solution gals per 100 feet of Pipe
4	65	0.013	0.16
6	150	0.030	0.36
8	260	0.054	0.65
10	410	0.085	1.02
12	590	0.120	1.44
16	1040	0.217	2.60

*** Table values provided from AWWA C-651 Table 4

NOTE: To make 1% chlorine solution using HTH granular Calcium Hypochlorite add 1 pound of Calcium Hypochlorite to 8 gallons of water. Using Sodium Hypochlorite, dilute the hypochlorite according to the

percent available chlorine on the container. For example, if you have 5% household bleach, place 1 gallon in 4 gallons of water. You then have 5 gallons of 1% solution.

b. Slug Method (Emergency Use Only)

1) At a point not more than 10 ft. downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 100 mg/L of free chlorine. To assure that this concentration is provided, a water department representative shall measure the chlorine concentration at regular intervals along the main where taps and/or hydrants have been provided. The chlorine shall be applied continuously and for sufficient period to develop a solid column or 'slug' of chlorinated water that will, as it moves through the main, expose all interior surfaces to a concentration of approximately 100 mg/L for at least 3 hours.
2) The free chlorine residual shall be measured in the slug as it moves through the main. If at any time it drops below 50 mg/L, the Contractor shall stop the flow, chlorination equipment shall be relocated at the head of the slug, and as flow is resumed, chlorine shall be applied to restore the free chlorine in the slug to not less than 100 mg/L.
3) As the chlorinated water flows past fittings and valves, related valves and hydrants shall be operated so as to disinfect appurtenances and pipe branches.

6.10 Flushing after Disinfection

After the applicable retention period, the heavily chlorinated water shall be flushed from the main into the sewer until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the system. Where domestic sewers are not available, the heavily chlorinate shall be dechlorinated with a neutralizing chemical to thoroughly neutralize the chlorine residual. The replacement water shall be allowed to remain in the pipeline for 24 to 28 hours prior to sampling for physical, bacteriological, and chemical testing.

6.11 Analytical Tests

After the appropriate retention time (24 to 28 hours or 3 hours for the slug method), after flushing and before the water main is placed into service, two consecutive sets of acceptable samples, taken at least 24 hours apart, shall be collected for sanitary analysis. Suitable sample piping shall be furnished by the Contractor to allow sample collection. The sampling point or points shall provide samples, which are representative of the water in all sections of the main for which sanitary approval is requested. All samples shall be collected in a manner as to avoid contamination from the environment surrounding the main. Rubber or synthetic hose shall not be connected to the main to collect a representative sample. The area around the sampling point of the main shall not be filled with water. At least one sample shall be taken from each main, and in the case where a main is greater than 1000 feet, one sample from each 500 feet of line. The samples shall be submitted to a certified laboratory for bacteriological, chemical, and physical analysis. The following analyses shall be completed and reported on the appropriate form. Total chlorine residual, Total Coliform (Membrane Filtration method), pH, and turbidity.

6.12 Final Flushing

Disinfected water mains after being repaired shall be flushed within 4 hours of being placed into service. Flushing shall be designed to restore water quality to that of the

source water, immediately prior to being placed into service. The length of time of flushing shall depend on the size and length of the water main, however at least three volumes of water should flow through the entire length of the main.

6.13 Redisinfection

If the initial disinfection and flushing fail to produce satisfactory analytical results, the main may be reflushed and shall be resampled. If check samples show the presence of coliform organisms, then the main shall be rechlorinated by the Contractor, using the continuous feed method of chlorination, until satisfactory results are obtained.

6.14 Final Connection

Water mains and appurtenances must be completely installed, flushed, tested for leakage, disinfected, and satisfactory bacteriological sample results received prior to permanent connections being made to the active distribution system where the new main was isolated from the existing system. Sanitary construction practices must be followed during installation of the final connection to insure that there is no contamination of the new or existing water main with foreign material or groundwater. The new pipe, fittings, and valve(s) required for the connection will be spray-disinfected or swabbed with a minimum 1 - 5% solution of chlorine just prior to being installed.

6.15 Dechlorination

Contact the wastewater superintendent before discharging the highly chlorinated water to the sewer. The discharge of water to the environment with chlorine concentrations greater than the ambient distribution system chlorine residual is prohibited. The highly chlorinated water must be dechlorinated before being discharged to the environment. The method of dechlorination is at the discretion of the contractor as long as the procedure does not cause harm to the environment.

7.0 STORM SEWERS CONSTRUCTION

7.1 General

a. Under this specification watertight joints will be allowed and hydrostatic or air testing will not be required for storm sewers unless because of suspected excessive leakage or other problems the Town's authorized representative deems such to be necessary.

b. This specification covers the following types of materials for storm sewers, culverts, underdrains, inlet drains, conduits and miscellaneous applications.

   1) Reinforced concrete pipe and fittings.
   2) Polyvinyl chloride pipe (PVC).
   3) PVC composite pipe.
   4) HDPE pipe.

c. Sewer pipe shall be of the size shown on the drawings prepared and certified by a registered professional engineer. Storm sewer installation shall meet all requirements of these specifications.

d. This specification requires project plans and construction specifications to be submitted to and approved by the Town and all appropriate regulatory agencies prior to beginning any work.

e. These standards are to be used in conjunction with other Town ordinances.

f. All necessary permits shall be obtained by or on behalf of the developer. The developer is ultimately responsible form ensuring all permits are obtained and maintained.

7.2 Pipe Marking

Each length of pipe shall bear the name or trademark of the manufacturer, the location of the plant and the date of manufacture. Each length shall likewise be marked to designate the class or strength of the pipe. Marking methods shall conform to applicable ASTM standards and be compatible with the pipe material. The marking shall be made on the exterior or interior of the pipe barrel near the bell or groove end and shall be plainly visible.

7.3 Reinforced Concrete Pipe and Fittings

a. Reinforcing concrete pipe and fittings shall conform to ASTM C76 for circular pipe and ASTM C507 for elliptical pipe.

b. Reinforced concrete pipe and fittings for normal conditions shall be reinforced in accordance with ASTM C76, Class III, Wall B (minimum). Acceptance shall be on the basis of Subsection 4.1.1 of ASTM C76.

c. All pipe shall be subject to visual inspection for cracks, spalling, and joint integrity prior to installation. Damaged pipe shall be rejected.

d. Circumferential reinforcing in circular pipe shall be required. No elliptical reinforcing or combination of elliptical and circumferential reinforcing or part circular reinforcing shall be permitted in circular pipe. Reinforcement details shall be submitted for approval and verified during inspection.

e. Concrete pipe shall be steam cured and shall not be shipped from point of manufacture for at least five days after having been cast.

f. Joints shall conform to the requirements of ASTM C443. Gaskets shall be of an oil resistant type having a maximum swell of 20% when tested in accordance with ASTM D471. Lubricant for jointing shall be approved by gasket manufacturer.

1) All rubber gasket similar to and equal to “Press-Seal” or “Tylox” conforming to ASTM Designation C443. The gasket shall be attached to the spigot of the pipe. The joint shall meet watertight performance criteria per ASTM C443.
2) Butyl mastic joint sealer in rope or trowel applied form specifically made for permanently sealing joints in tongue and groove concrete sewer pipe. The material shall adhere tightly to the pipe surface and form a tight, flexible joint. The material shall have been in use for at least five years. Test results and material specifications shall be submitted to the Town’s authorized representative and shall have been approved prior to use on the project.

7.4 Polyvinyl Chloride Pipe and Fittings

a. Polyvinyl chloride (PVC) pipe and fittings shall comply with ASTM D3034.
b. Pipe shall be SDR-35 for standard gravity sewers unless otherwise shown on plans.
c. Pipe shall be SDR-26 only per direction from Engineer for deeper burial and loading conditions.
d. Pipe joints shall be gasketed bell-and-spigot type conforming to ASTM D3212 for watertight performance.
e. All pipes shall be inspected for cracks, deformation, and joint integrity prior to installation. Damaged pipe shall be rejected.

7.5 PVC Composite Pipe and Fittings

a. PVC Composite, Truss pipe, shall conform to ASTM F794.
b. PVC Composite, Corrugated pipe with smoother interior, shall conform to ASTM F949.
c. Pipe joints shall conform to ASTM D3212 for watertight performance.
d. All pipes shall be inspected for cracks, deformation, and joint integrity prior to installation. Damaged pipe shall be rejected.

7.6 HDPE Pipe and Fittings

a. HDPE, Corrugated pipe with smooth interior, shall comply with ASTM F667 or ASTM F2306
b. Pipe shall be manufactured from PE materials conforming to ASTM D3350
c. Pipe joints shall conform to ASTM D3212 for watertight performance.
d. All pipes shall be inspected for cracks, deformation, and joint integrity prior to installation. Damaged pipe shall be rejected.

7.7 Manholes and Other Structures

a. Manholes shall be constructed of cast-in-place (monolithic) or precast concrete sections. Precast manhole sections shall conform to requirements of ASTM C478. Cast-in-place construction shall be approved by the Town’s authorized representative prior to placement.
b. Concrete

1) Cement shall be Portland cement and shall meet the requirements of ASTM C150, ACI 301, and ACI 318. Concrete for precast manhole sections shall be 3000 psi concrete. Cast-in-place manholes shall use 4000 psi concrete. Ready mix concrete shall conform to ASTM C94. Maximum size of aggregate shall be ¾ inch. Slump shall be between 2 and 5 inches.

2) Manhole bases for both monolithic and precast circular manholes shall extend beyond the outside diameter of the manhole barrel a minimum of 6 inches and be reinforced.
3) Manhole bases shall be cast or placed on a minimum of 6 inches of INDOT No. 8 compacted crushed stone.
4) Forms for chamber and structures shall be plywood or other approved material. Steel forms shall be used for the inside face on monolithic concrete manholes.

c. Manhole Anti-Floatation

1) Provide integral anti-floatation collars (extended bases) with a minimum width of 6 inches around bottom of all manholes. Provide larger collars for manholes that calculations indicate have buoyancy safety factors less than 1.2 so that required factor of safety is achieved. Other methods of buoyancy control may also be acceptable upon Town's approval.

d. Reinforcement

1) Reinforcing steel shall conform to ASTM A615, Grade 60 deformed bars, or ASTM A706 for weldable rebar.

e. Joints and Gaskets

1) The joint design of the precast sections shall consist of a tongue and groove joint.
2) The joint shall consist of a preformed flexible rubber gasket on the spigot (tongue) end of the precast manhole section and shall form a watertight seal. The gasket shall conform to Sections 6.1.6, 6.1.7 and 9 of ASTM C443. Gasket installation shall follow the manufacturer's recommendations and be verified in the field prior to backfilling.

f. Openings

1) Openings for sewer connections shall be factory-formed and circular or horseshoe shaped with grooved or roughened surfaces to improve mortar bond.
2) Additional field openings shall be core drilled, smooth-edged, free of spalls, and approved by Town's authorized representative.
3) Openings shall not compromise structural integrity or reinforcement.
4) Where PVC booted connections are specified, boots shall meet the following requirements:
   i. Boots shall be Flexible rubber sleeves conforming to ASTM C923
   ii. Boots shall be Sized to match pipe outside diameter and structure wall thickness
   iii. Boots shall be Installed using stainless sheet expansion bands per ASTM C923 Section 6.2.
   iv. Field installed boots shall be watertight and inspected prior to backfilling.
   v. Manufacturer's installation instructions shall be followed, and submittals shall include boot type, band material, and sizing chart.

g. Mortar

1) Mortar shall be composed of one part Portland cement to two parts sand, mixed with potable water. Materials shall conform to ASTM C270, Type M or S.

h. Castings

1) Manhole castings shall be gray iron, free of crack, blowholes, or other defects, conforming to ASTM A48, Class 35B, or cast iron conforming to ASTM A536.
2) Castings shall match the configuration shown in Figure 7.1.
3) Unless specifically designated otherwise, manhole castings shall be the non-locking type. The joint between the casting frame and cone section shall be fully mortared or gasketed and coated with a coal tar epoxy coating upon reaching its final set to become a watertight joint.

i. Steps

1) Each manhole section shall contain standard steps. Steps shall be plastic such as copolymer polypropylene meeting requirements of ASTM D4101, Type II, Grade 49108, reinforced with deformed 3/8-inch diameter reinforcing bar which conforms to requirements of ASTM A615, Grade 60. Steps shall be placed as shown on the drawings. Embedment depth shall ensure secure anchorage per manufacturer's recommendations.

j. Submittals

1) Contractor shall submit shop drawings and casting certifications prior to installation.

k. Inspection

1) All structures shall be inspected for cracks, honeycombing, dimensional accuracy, and joint integrity prior to installation. Damaged or non-compliant units shall be rejected.
2) Inspection shall be performed by the Town's authorized representative. Rejected units shall be removed from site.

7.8 Catch Basins and Drain Inlets

a. Cast iron or ductile iron frames and grates for catch basins and drain inlets shall be as specified in the INDOT Standard Specifications. Bearing surfaces shall be clean and shall provide uniform contact. Castings shall be tough, close-grained gray iron, sound, smooth, clean, free from blisters, blow holes, shrinkage, cold shuts and all defects.
b. Gray iron castings shall conform to ASTM A48 Class No. 30-B.
c. Frames and grates shall meet AASHTO H-20 loading unless otherwise specified.
d. Catch basin and inlet structures shall be precast and as specified in the INDOT Standard Specifications. Structures shall conform to ASTM C478 or C913.
e. Contractor shall submit shop drawings and casting certifications prior to installation.

7.9 Inspection and Rejection of Pipe

a. The quality of all materials, the process of manufacture, and the finished pipe shall be subject to inspection and approval by the Town. Such inspection may be made at the place of manufacture or on the work after delivery or at both places; and the pipe shall be subject to rejection at any time on account of failure to meet any of the specification requirements even though sample pipes may have been accepted as satisfactory at the place of manufacture.
b. Prior to being lowered into the trench, each pipe shall be carefully inspected and those not meeting the specifications shall be rejected and at once removed from the work.
c. The Town's authorized representative shall have the right to cut cores from such pieces of the concrete pipe as desired for such inspection and tests as they may wish to apply.
d. Holes left by the removal of cores shall be filled in an approved manner by and at the expense of the manufacturer of the pipe.
e. The Town's authorized representative shall also have the right to take samples of concrete after it has been mixed, or as it is being placed in the forms or molds, and to make such inspection and tests thereof as they deem necessary.
f. Any pipe which has been damaged after delivery will be rejected.

7.10 Handling Pipe

Each pipe section shall be handled into its position in the trench only in such manner and by such means as the Town's authorized representative approves as satisfactory. As far as practicable, the contractor shall furnish slings, straps, and other approved devices to permit satisfactory support of all parts of the pipe when it is lifted. All pipes are to be lifted and not dragged to prevent joint or bell damage.

7.11 Notice of Town's Authorized Representative

The Town's authorized representative shall be notified in advance of any pipe installation activities. Under ordinary circumstances, a minimum of 15 feet of pipe shall be laid and left exposed for inspection prior to any backfilling. No pipe shall be covered until approved and GPS-located by the Town's authorized representative.

7.12 Laying Pipe

a. All pipe shall be reinspected for soundness and damage due to handling immediately before being lowered into the trench. Any pipe found to be unsound or damaged shall be rejected and shall be removed immediately from the site of the work.
b. Pipe installation procedures shall conform to ASTM C12 for concrete pipe and ASTM D2321 for flexible pipe.
c. All pipe shall be laid accurately to the required line and grade as shown on the drawings, and in the manner prescribed by the pipe manufacturer and appropriate ASTM Specifications, to form a close, concentric joint with the adjoining pipe and to bring the invert of each section to the required grade. The supporting of pipe on block will not be permitted.
d. Pipe laying shall proceed upgrade, beginning at the lower end of the sewer.
e. Practically watertight work is required and the contractor shall construct the sewers with the type of joint specified.
f. All pipe shall be laid to the line and grade as shown on the drawings. Variations from a uniform line and grade shall be cause for the line to be rejected.
g. The ends of the pipe shall be satisfactorily cleaned just before laying, and the joint shall be made in a satisfactory manner in accordance with the

recommendations of the manufacturer for the particular type of joint and the directions of the Town's authorized representative. All joint work shall be performed by experienced personnel.

7.13 Pipe Bedding and Haunching

a. Each pipe section shall be laid in a firm foundation of bedding material and properly haunched, and carefully backfilled.

b. Prior to pipe installation, carefully bring bedding material to grade along the entire length of pipe to be installed. To provide adequate support for the pipe, the following bedding procedures shall be followed:

1. When angular 12 to 60 mm (1/4-inch to 1/2-inch) clean graded stone, slag or crushed stone material is used for bedding, little or no compaction is necessary due to the nature of the angular particles. A depth of 4 to 6 inches is generally sufficient to provide uniform bedding. If Class I (ASTM D2321) material is used for bedding, it must also be utilized for haunching up to or above the spring line of the pipe to avoid loss of side support through migration of Class II (ASTM D2321) haunching material into the bedding.
2. Take care with coarse sands and gravels and maximum size 20 mm (3/4-inch) material to provide a uniformly compacted bedding. Excavate the bedding material or place it to a point above the pipe bottom, based on the depth of loose material and required compaction to bring the material to grade. Use hand or mechanical tamping to compact the bedding material to a minimum 95% of maximum dry density per ASTM D698 Standard Proctor density.
3. Slightly damp material will generally result in maximum compaction with a minimum of effort. If water is added to improve compaction or if water exists in the trench, take care to avoid saturation of Class II (ASTM D2321) material, which could result in stability problems. Verify bedding grade and uniformity after compaction to ensure proper pipe support.

c. Bedding material shall have a minimum thickness beneath the pipe of 4 inches (100 mm) or one-eighth of the outside diameter of the pipe, whichever is greater, and shall extend up the sides of the pipe one-sixth of the outside diameter of the pipe, or as required for granular backfill.

d. For rigid pipe, such as concrete or ductile iron, backfill between the bedding material and a plane 12 inches (300 mm) over the top of the pipe shall be hand-placed, finely divided earth, free from debris and stones or granular backfill if required.

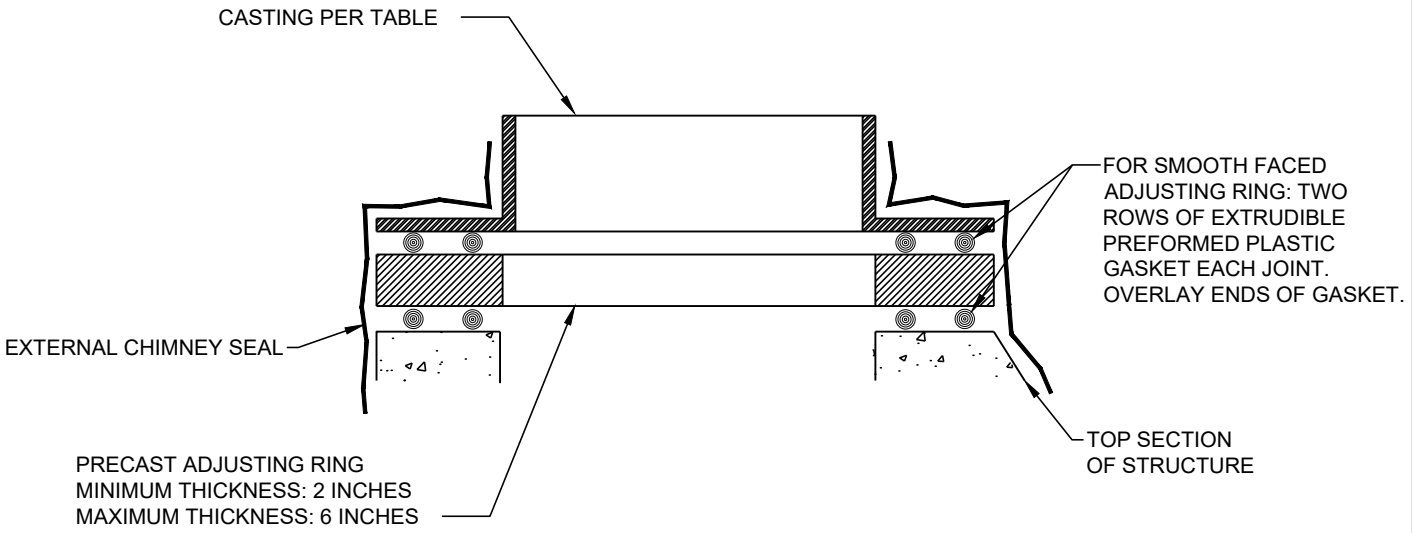
e. For flexible pipe and corrugated metal pipe, the placement of embedment material or haunching around the pipe must be done with care. The ability of the pipe to withstand loading in a trench depends largely on the method employed in its installation. If crushed stone, pea gravel or graded gravel or sand is used to backfill between the bedding material and a plane 12 inches (300 mm) over the top of the pipe, it shall be hand-placed. Care should be taken so as not to compact directly over the pipe. Initial backfill shall be placed and compacted in lifts on both sides of the pipe to maintain alignment and prevent displacement.

f. In yielding subsoils, the trench bottom shall be undercut to the depth necessary and backfilled with graded, crushed stone to form a firm foundation. No additional payment shall be made for stabilizing yielding subsoils.

g. Where excavation occurs in rock or hard shale, the trench bottom shall be undercut and a minimum of 6 inches (150 mm) crushed stone bedding placed prior to pipe installation. Additional payment for rock excavation shall be made on "unit cost" projects only, and as prescribed under basis for payment.

7.14 Final Sewer Cleaning

Prior to final acceptance and final manhole-to-manhole inspection of the sewer system by the Town's authorized representative, the Contractor shall flush and clean all parts of the system. All accumulated construction debris including rocks, gravel, sand, silt and other foreign material shall be removed from the sewer system and collected at or near the closest downstream manhole. Cleaning shall be performed using high-velocity flushing equipment, mechanical rodding, or bucketing as necessary to ensure unobstructed flow and readiness for inspection. All manholes shall be free of standing water and shall be accessible for visual inspection at the time of final review.



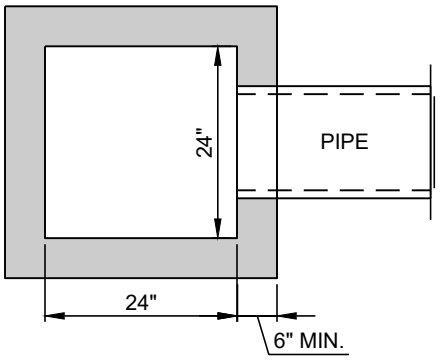
LOCATION	NEENAH FOUNDARY	EJIW
COMBINATION CURB BOX	R-3031-B	7045
ROLL CURB INLET	R-3501-L1	7420
AREA INLET PAVED	R-2502-A TYPE D	1022-M2
AREA INLET YARD (BEEHIVE)	R-2561-A	1205
SOLID COVER "STORM"	R-1772-A TYPE B	1022

UNLESS APPROVED OTHERWISE BY THE TOWN OF MIDDLEBURY, ONLY THE ABOVE CASTINGS MAY BE SELECTED FOR STORM SEWER.

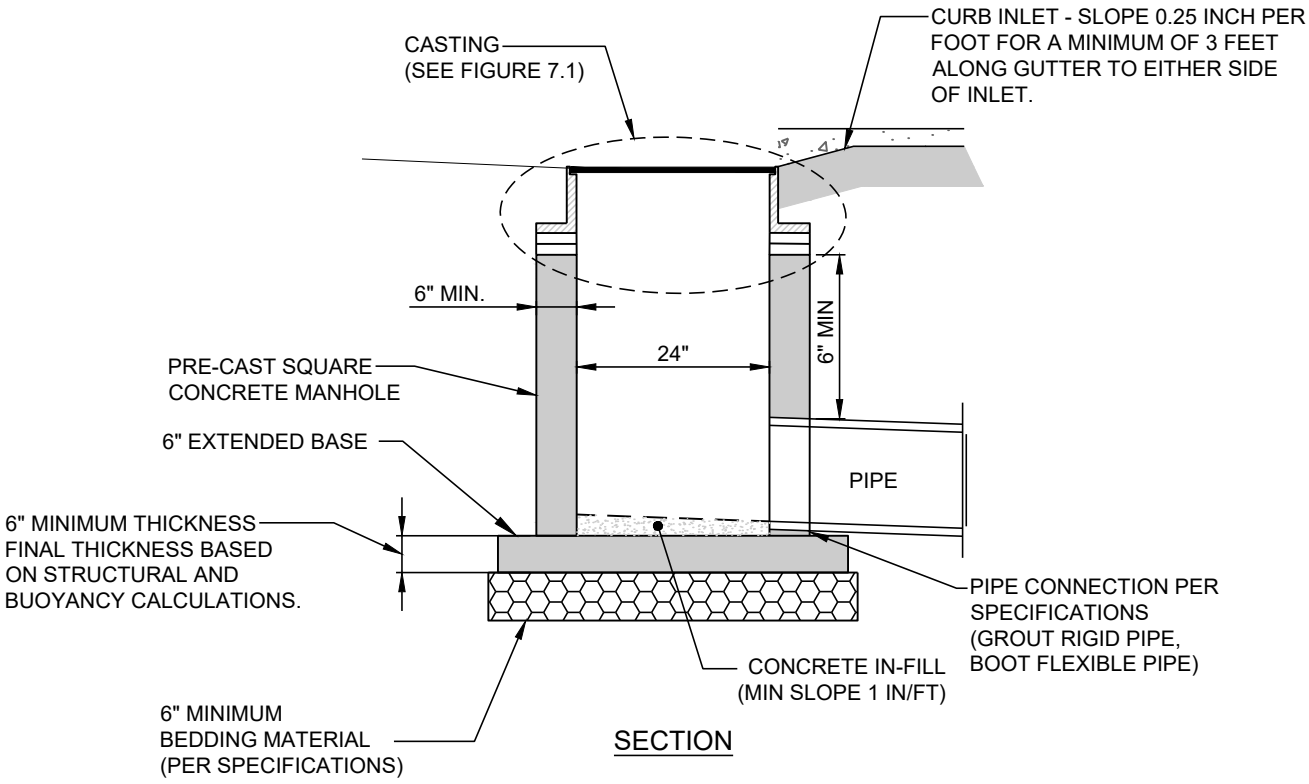
TYPICAL STORM SEWER CASTINGS

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 7 - STORM
		FIGURE 7.1
		CASTINGS
		DEC. 11, 2025



PLAN

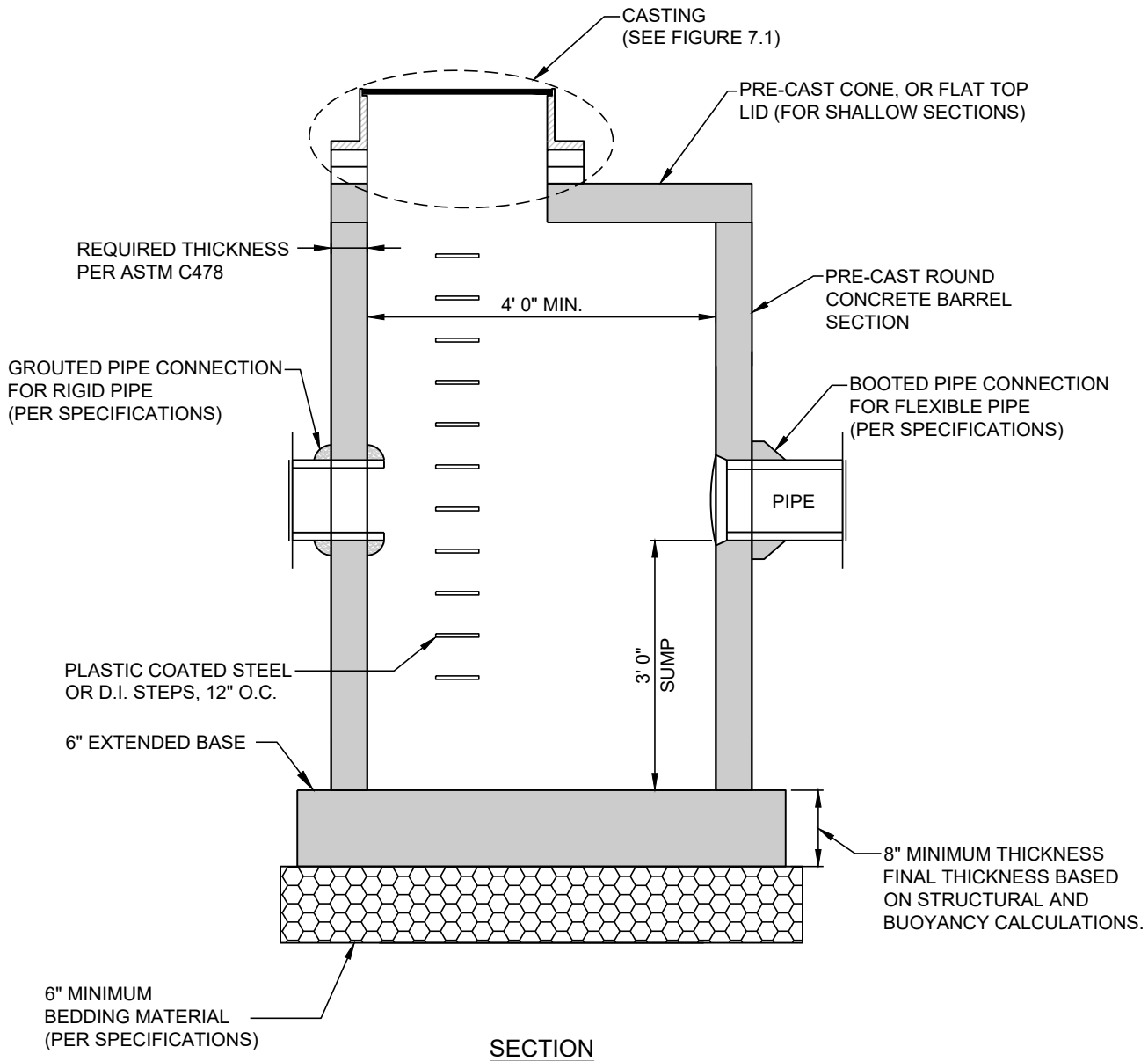


SECTION

TYPICAL INLET STRUCTURE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 7 - STORM
		FIGURE 7.2
		INLET STRUCTURE
		DEC. 11, 2025

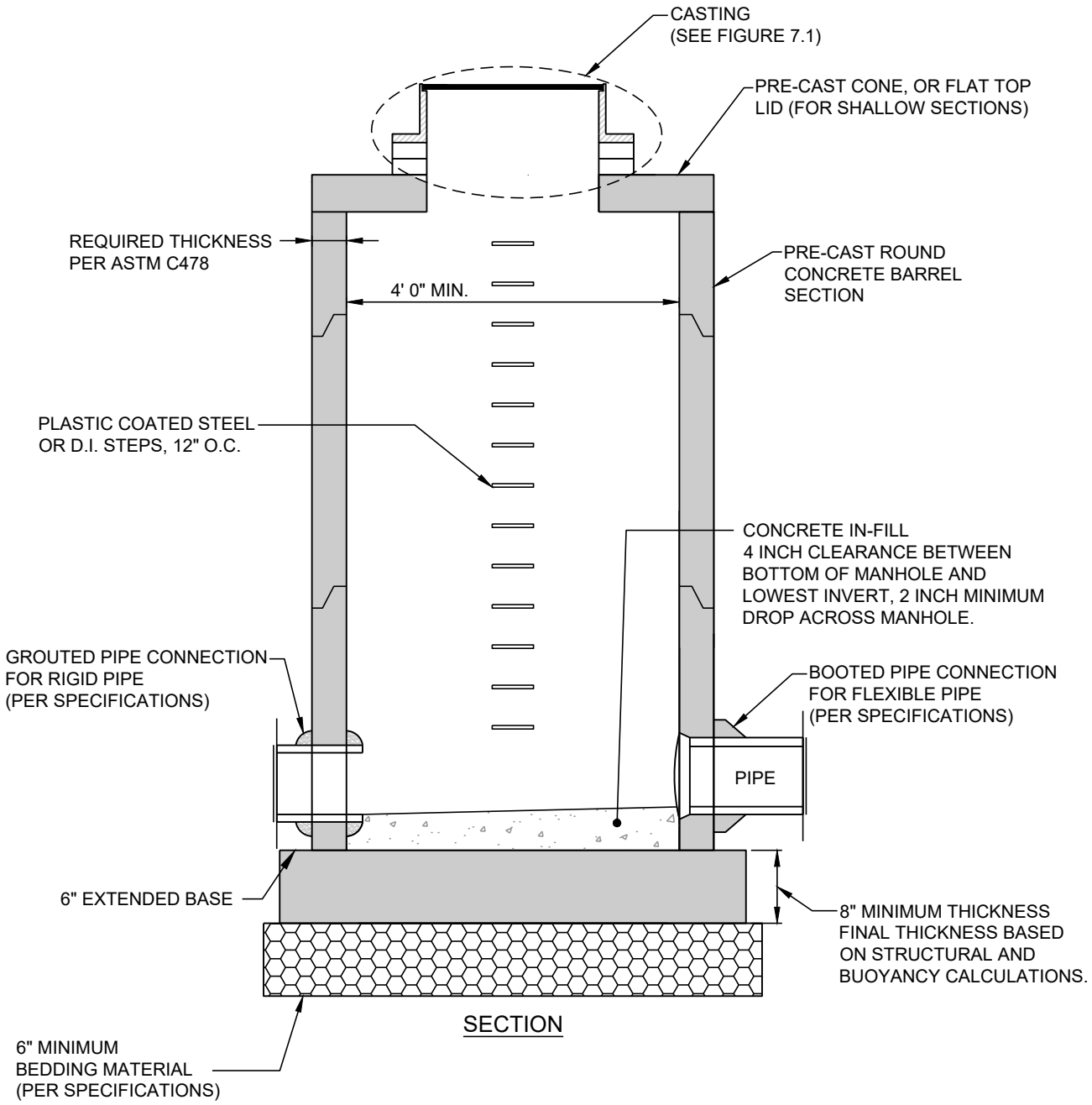


SECTION

TYPICAL CATCH BASIN STRUCTURE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 7 - STORM
		FIGURE 7.3
		CATCH BASIN
		DEC. 11, 2025



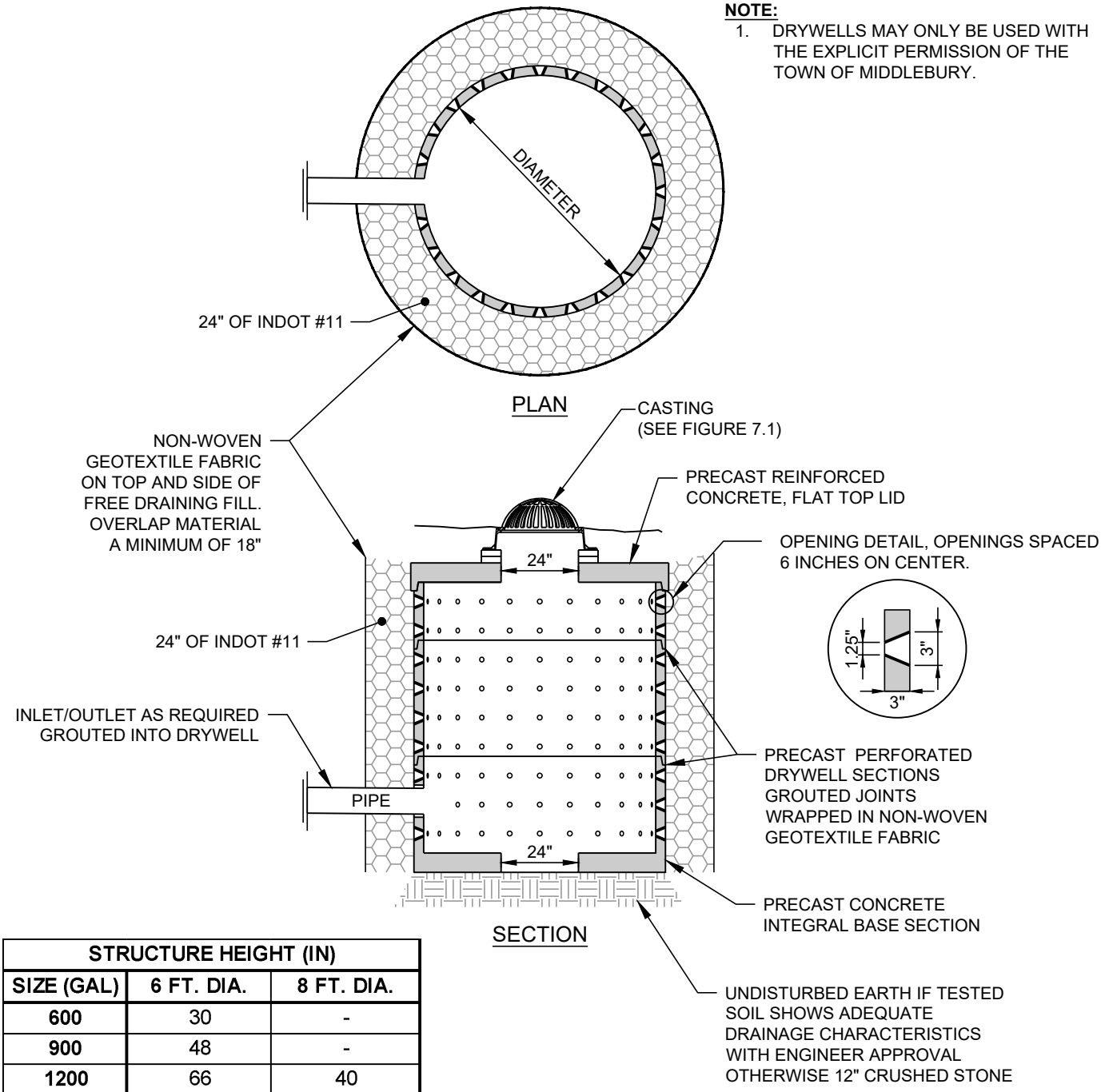
TYPICAL STORM MANHOLE STRUCTURE

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 7 - STORM
		FIGURE 7.4
		STORM MANHOLE
		DEC. 11, 2025

NOTE:

1. DRYWELLS MAY ONLY BE USED WITH THE EXPLICIT PERMISSION OF THE TOWN OF MIDDLEBURY.



STRUCTURE HEIGHT (IN)		
SIZE (GAL)	**6 FT. DIA.**	**8 FT. DIA.**
600	30	-
900	48	-
1200	66	40
1800	102	60
2500	-	84
3000	-	104
3600	-	124

TYPICAL DRYWELL STRUCTURE

NOT TO SCALE

Middlebury
Grown from Tradition

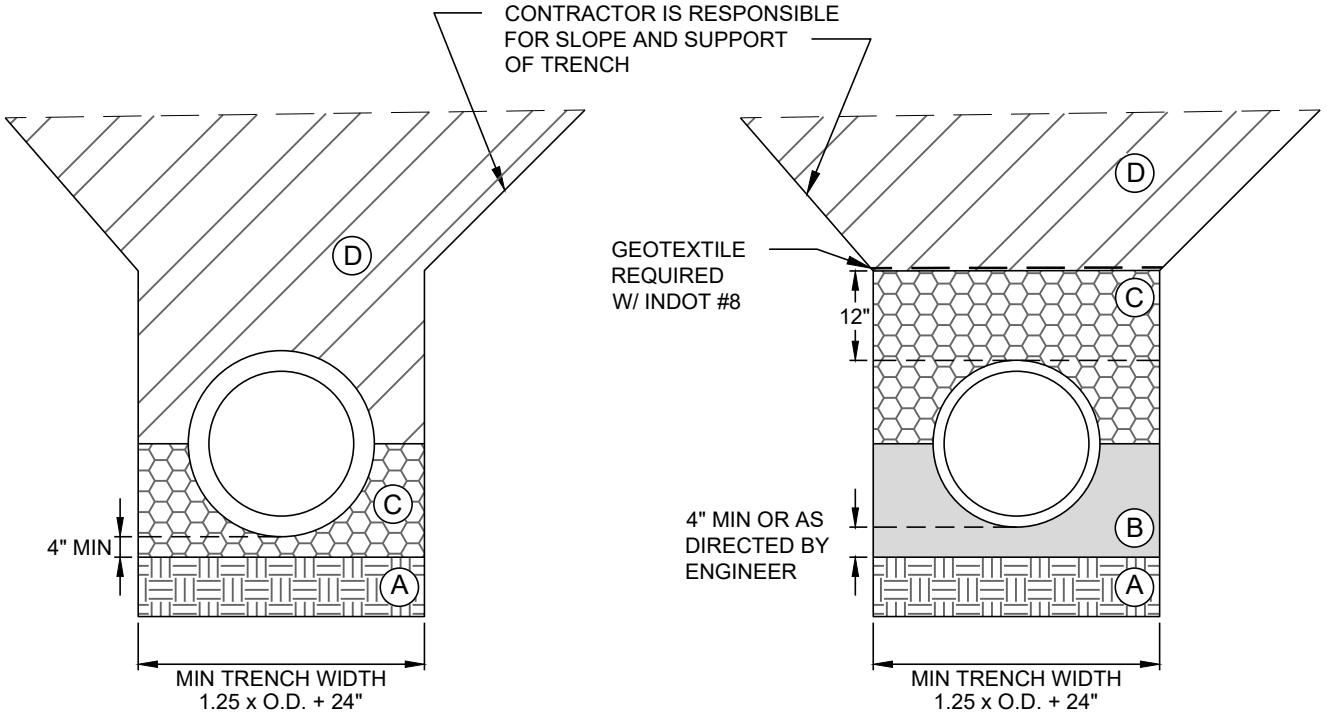
TOWN OF MIDDLEBURY
DETAILS

SECTION 7 - STORM

FIGURE 7.5

DRYWELL

DEC. 11, 2025



CONCRETE PIPE

PLASTIC PIPE

FILL REGION	DESCRIPTION	MATERIAL
A	UNDISTURBED EARTH	N/A
B	BEDDING	INDOT #8 AGGREGATE, MECHANICALLY TAMPED TO 95% STANDARD PROCTOR DENSITY
C	INITIAL BACKFILL	INDOT #8 OR B - BORROW, MECHANICALLY TAMPED TO 95% STANDARD PROCTOR DENSITY
D	BACKFILL (PAVEMENT)	SELECT NATIVE GRANULAR MATERIAL (*), 6 INCH LAYERS, SOLIDLY TAMPED TO SUB-GRADE OF STREET BASE TO 100% STANDARD PROCTOR DENSITY
	BACKFILL (OPEN OR GRASSY AREAS)	SELECT NATIVE GRANULAR MATERIAL (*) 12 INCH LAYERS, 95% STANDARD PROCTOR
* DEFINED AS NO STONES LARGER THAN 2 INCHES, DEBRIS, OR ORGANIC MATERIAL OF INDOT B - BORROW QUALITY OR BETTER.		

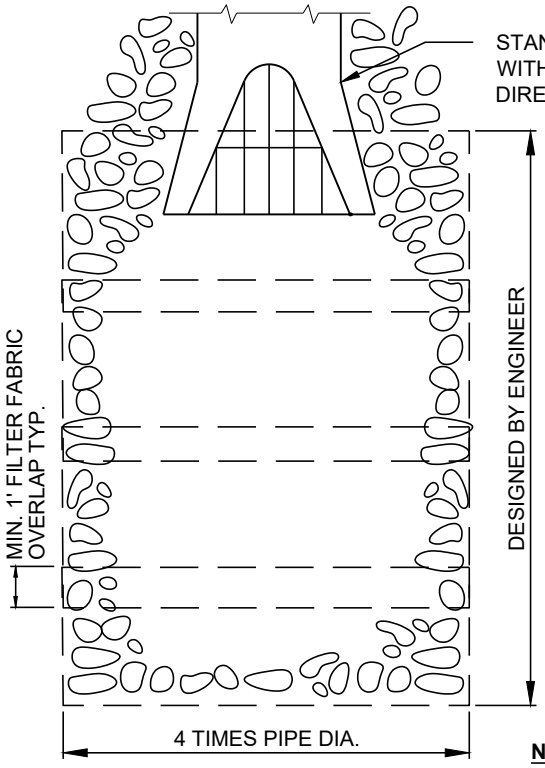
NOTES:

1. PIPE SHALL BE FIRMLY BEDDED ON UNDISTURBED SOIL WHEN SUITABLE. IN THE EVENT THE SOIL CAN NOT BE SHAPED, OR THE CONTRACTOR PREFERS THE TRENCH SHALL BE EXCAVATED TO A GREATER DEPTH AND BACKFILLED WITH SELECTED FILL AND COMPACTED AS SHOWN. IN ALL CASES BELL HOLES SHALL BE PROVIDED SO THAT BELL SUPPORTS NO WEIGHT.
2. TRENCHING DETAIL IS FOR PIPE STRUCTURAL REQUIREMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR SAFETY AND OPERATIONS, INCLUDING DETERMINING THE SLOPE OF THE TRENCH WALLS AND SUPPORT, SHEETING AND SHORING.

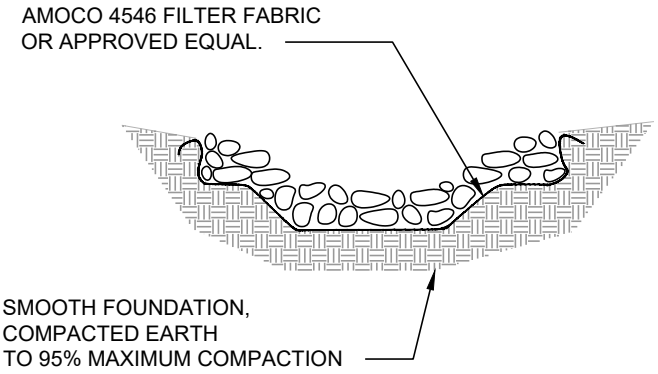
TYPICAL TRENCH, PIPE LAYING AND BEDDING DETAIL

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 7 - STORM
		FIGURE 7.6
		TRENCH BEDDING
		DEC. 11, 2025



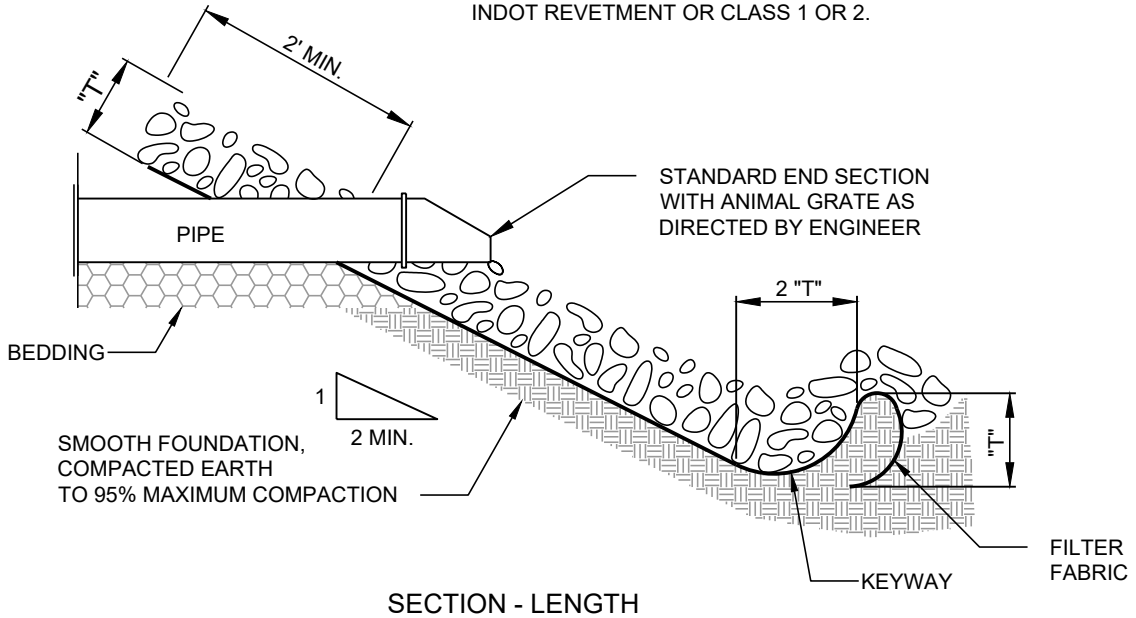
PLAN



SECTION - WIDTH

NOTE:

1. RIP RAP APRON MUST BE A MINIMUM WIDTH OF 4 TIMES THE DIAMETER OF THE PIPE, AND A THICKNESS ("T") OF 2 TIMES THE MAXIMUM STONE DIAMETER, BUT NEVER LESS THAN 18 INCHES.
2. RIP RAP MUST HAVE A MINIMUM d50 OF 8 INCHES. RIP RAP MUST BE INDOT REVETMENT OR CLASS 1 OR 2.



SECTION - LENGTH

STORM SEWER OUTLET PROTECTION

NOT TO SCALE

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 7 - STORM
		FIGURE 7.7
		OUTLET PROTECTION
		DEC. 11, 2025

8.0 TRACER WIRE

8.1 General Requirements

a. All system components, including tracer wire, connectors, ground rods and access points, must be compatible.
b. Tracer wire shall have HDPE insulation for direct bury, color coded per APWA standard for specific utility being marked.

8.2 Tracer wire and insulation

a. Tracer wire shall conform to the following ASTM standards as applicable:

1) B1010/B1010M – Standard Specification for Copper-Clad Steel Electrical Conductor for Tracer Wire Applications
2) B910/B910M – Standard Specification for Annealed Copper-Clad Steel Wire
3) B227 – Standard Specification for Hard-Drawn Copper-Clad Steel Wire
4) B170 – Standard Specification for Oxygen-Free Electrolytic Copper-Refinery Shapes
5) D1248 – Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable

b. If tracer wire manufacturer has not completed a 5-year corrosion test, a 5-year warranty must be provided.

c. Open Trench / Open Cut Installation

1) Copper-clad steel 12-AWG high strength, high carbon.
2) Break load of 450 lb. minimum.
3) HDPE insulation 30 mil minimum.
4) Copperhead 1230-HS
5) Or Town approved equal.

d. Directional Drilling / Boring

1) Copper-clad steel 12-AWG extra high strength
2) Break load of 1,150 lb. minimum.
3) HDPE insulation 45 mil minimum.
4) Copperhead 1245-EHS
5) Or Town approved equal.

e. Pipe Bursting

1) Copper-clad steel, stranded, extreme strength
2) Break load of 4,700 lb. minimum.
3) HDPE insulation 50 mil minimum.
4) Copperhead PBX-50
5) Or Town approved equal.

8.3 Connectors

a. Mainline tracer wires shall be interconnected at intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single, three-way locking Connector. At crosses, the four wires shall be joined using two, three-way locking Connectors with a short jumper wire between them.

b. Direct bury wire connectors shall include three-way lockable and mainline-to-service connectors specifically manufactured for use in underground tracer wire installation. Connectors shall be dielectric silicone filled to seal out moisture and corrosion and shall be installed in a manner as to prevent any uninsulated wire exposure.
c. Non-locking, friction fit, or taped connectors are prohibited.
d. Three way locking connector

    1) SnakeBite Locking Connector (LSC1230C)
    2) Or Town approved equal.

e. Mainline-to-Service Connectors

    1) Copperhead Mainline-to-Service Connector (3WB-01)
    2) Or Town approved equal.

8.4 Grounding

a. Tracer wire must be properly grounded at all dead-ends/stubs.
b. Grounding of tracer wire shall be achieved by using a 1.5 lb., drive-in, magnesium ground rod with a minimum of 20-feet, No. 12 red HDPE insulated copper-clad steel wire connected to the rod specifically manufactured for this purpose.
c. Copperhead ANO-12
d. Or Town approved equal.

8.5 Termination / Access points

a. All tracer wire termination points must provide a direct connection point to the tracer wire by a utility locate transmitter (above ground or at grade) specifically manufactured for lite duty, concrete/driveway, or roadway applications.
b. All at-grade access points shall be appropriately identified with “sewer” or “water” on the cap and be color coded per American Public Works (APWA) standards.
c. All two-terminal tracer wire access points must include a manually interruptible conductive/connective link between the terminal for the tracer wire connection and the terminal for the ground rod wire connection.
d. All two-terminal tracer wire access points must have external direct connection points to both the tracer wire and ground rod wire from top of lid.
e. All at-grade access points shall include an encapsulated magnet molded into the top portion of the tube, to allow for detection by a ferrous metal detector.
f. All at-grade access points shall be supplied with anti-corrosion wax/gel to protect wires.
g. Service laterals on public property – Tracer wire shall terminate at an approved at-grade access point located at the edge of the road right-of-way, and out of the roadway. Approved at-grade access points shall have a two-terminal externally switchable lid, where there is a direct connection point for a locate transmitter and an external switch to turn “ground” on and off from the top of the lid.
h. Two terminally externally switchable access points

    1) Above Grade

        a) Copperhead Cobra Access Point (T2-*)

    2) At Grade

        a) Copperhead SnakePit Lite Duty (LD14*2t-SW)

b) Copperhead SnakePit Lite Duty Adjustable (LD14*2t-ADJ-SW)
c) Copperhead SnakePit Lite Duty XL (LDXL36*2T-SW)
d) Copperhead SnakePit Concrete/Driveway (CD14*2TP-SW)
e) Or Town approved equal.

i. Service laterals on private property – Tracer wire shall terminate at an approved single-terminal access point (when grounding isn't required) affixed to or near the building exterior directly above where the utility enters the building, or at a two terminal access point (when grounding is required) located within two linear feet of the building being served by the utility.

j. Single-terminal access points may include:

1) Above-grade

a) Copperhead Cobra™ Access Point (T1-*)
b) Or Town approved equal.

2) At-grade

a) Copperhead SnakePit Lite Duty (LD14*TP)
b) Copperhead Lite Duty Adjustable (LD14*TP-ADJ)
c) Copperhead Lite Duty XL (LDXL36*TP)
d) Copperhead Concrete/Driveway (CD14*TP)
e) Or Town approved equal.

k. Hydrants – Tracer wire shall terminate at an approved above-grade access point properly affixed to the hydrant-grade flange. Affixing with taper or plastic ties shall not be acceptable. Tracer wire may also terminate at an approved at grade two terminal switchable access point.

l. Hydrant access point

1) Copperhead Cobra Access Point (T2-*-FLPKG).
2) Or Town approved equal.

m. Long-runs, more than 2,500 linear feet, without service laterals or hydrants – Tracer wire access must be provided utilizing an approved at-grade access point and grounded at dead-ends utilizing a 1.5-lb., drive-in, magnesium ground rod.

8.6 Installation

a. Tracer wire installation shall be performed in such a manner that allows proper access for connection of line tracing equipment, proper locating of wire without loss or deterioration of low frequency (512 Hz) signal, and without distortion of signal caused by more than one wire being installed in close proximity to one another.
b. Tracer wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.
c. Any damage occurring during installation of the tracer wire must be immediately repaired by removing the damaged wire and installing a new section of wire with approved connectors. Taping and/or spray coating shall not be allowed.
d. Tracer wire shall be installed at the bottom half of the pipe and secured (taped/tied) at 5-foot intervals.
e. Mainline tracer wire shall not be connected to existing conductive pipes. Treat as a mainline dead-end ground using an approved waterproof connector to a Ground Rod driven into virgin soil beneath and in line with the utility.

f. All service lateral tracer wire shall be a single wire, connected to the mainline tracer wire using a three-way mainline-to-service connector, installed without cutting/splicing the mainline tracer wire.
g. In occurrences where an existing tracer wire is encountered on an existing utility that is being extended or tied into, the new tracer wire and existing tracer wire shall be connected using approved connectors.
h. Tracer wire on all service laterals/stubs must terminate at an approved tracer wire access point located directly above the utility.
i. One foot of excess/slack wire is required in all tracer wire access points after meeting final elevation.
j. Tracer wire must be properly grounded as specified.
k. At all mainline dead-ends, tracer wire shall go to ground using an approved connection to a 1.5-lb., drive-in, magnesium ground rod.
l. When grounding the tracer wire at dead-ends/stubs, the Ground Rod shall be driven into virgin soil directly beneath and in line with the utility.
m. Ground rod wire shall be connected to the ground rod terminal on the two-terminal access point lid or to the bottom terminal on the two-terminal access point.
n. Where the Ground Rod wire will be connected to a tracer wire access point, on foot of excess/slack wire is required after meeting final elevation.

8.7 Sanitary Sewer System

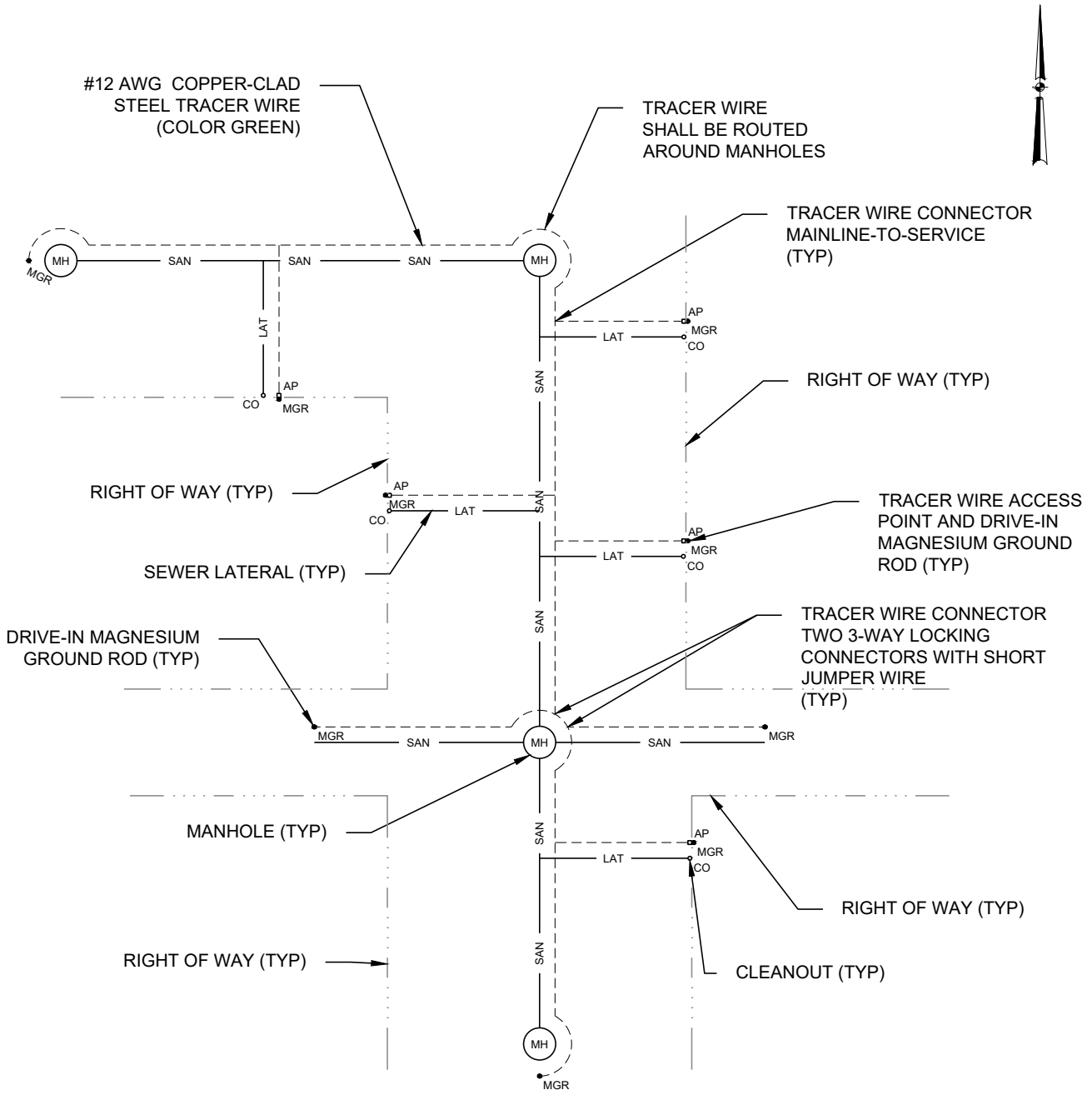
a. A mainline tracer wire must be installed, with all service lateral tracer wires properly connected to the mainline tracer wire, to promote tracing/locating capabilities from a single connection point.
b. Lay mainline tracer wire continuously, by-passing around the outside of manholes/structures on the north or east side.
c. Tracer wire on all sanitary service laterals must terminate at an approved tracer wire access point color coded green and located directly above the service lateral at the edge of road right-of-way.

8.8 Water System

a. A mainline tracer wire must be installed, with all service lateral tracer wires properly connected to the mainline tracer wire, to promote tracing/locating capabilities from a single connection point.
b. Lay mainline tracer wire continuously, by-passing around the outside of valves and fittings on the north or east side.
c. A single tracer wire only shall be installed on all water service laterals and must terminate at an approved tracer wire access point, color coded blue and located directly above the service lateral at the edge of road right-of-way.
d. Tracer wire access points will be installed at all fire hydrants.
e. All conductive and non-conductive service lines shall include tracer wire.

8.9 Testing

a. All new tracer wire installations shall be located using typical low frequency (512 Hz) line tracing equipment, witnessed by the contractor, engineer and facility owner as applicable, prior to acceptance of ownership.
b. This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project.
c. Continuity testing in lieu of actual line tracing shall not be accepted



TRACER WIRE SANITARY SEWER GROUNDING

NOT TO SCALE

NOTES:

1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.
2. LAYOUT PER COPPERHEAD INDUSTRIES.

LEGEND

ACCESS POINT AP
MAGNESIUM GROUND ROD MGR
CLEANOUT CO

Middlebury
Grown from Tradition

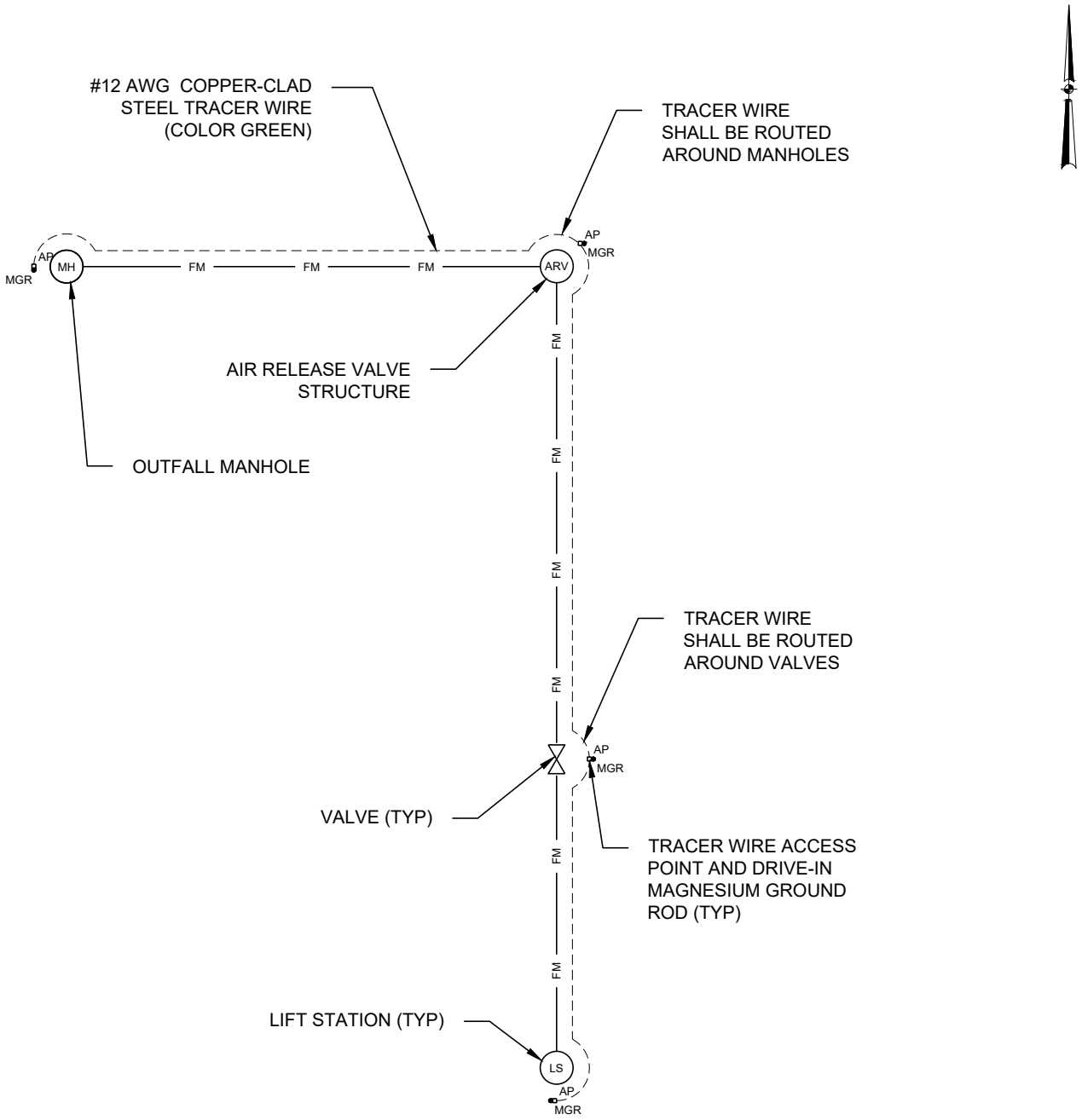
TOWN OF MIDDLEBURY
DETAILS

SECTION 8 - TRACER WIRE

FIGURE 8.1

TRACER WIRE SANITARY SEWER GROUNDING

DEC. 11, 2025



TRACER WIRE FORCE MAIN GROUNDING

NOT TO SCALE

NOTES:

1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.
2. LAYOUT PER COPPERHEAD INDUSTRIES.

LEGEND

ACCESS POINT MAGNESIUM GROUND ROD — AP / MGR

Middlebury
Grown from Tradition

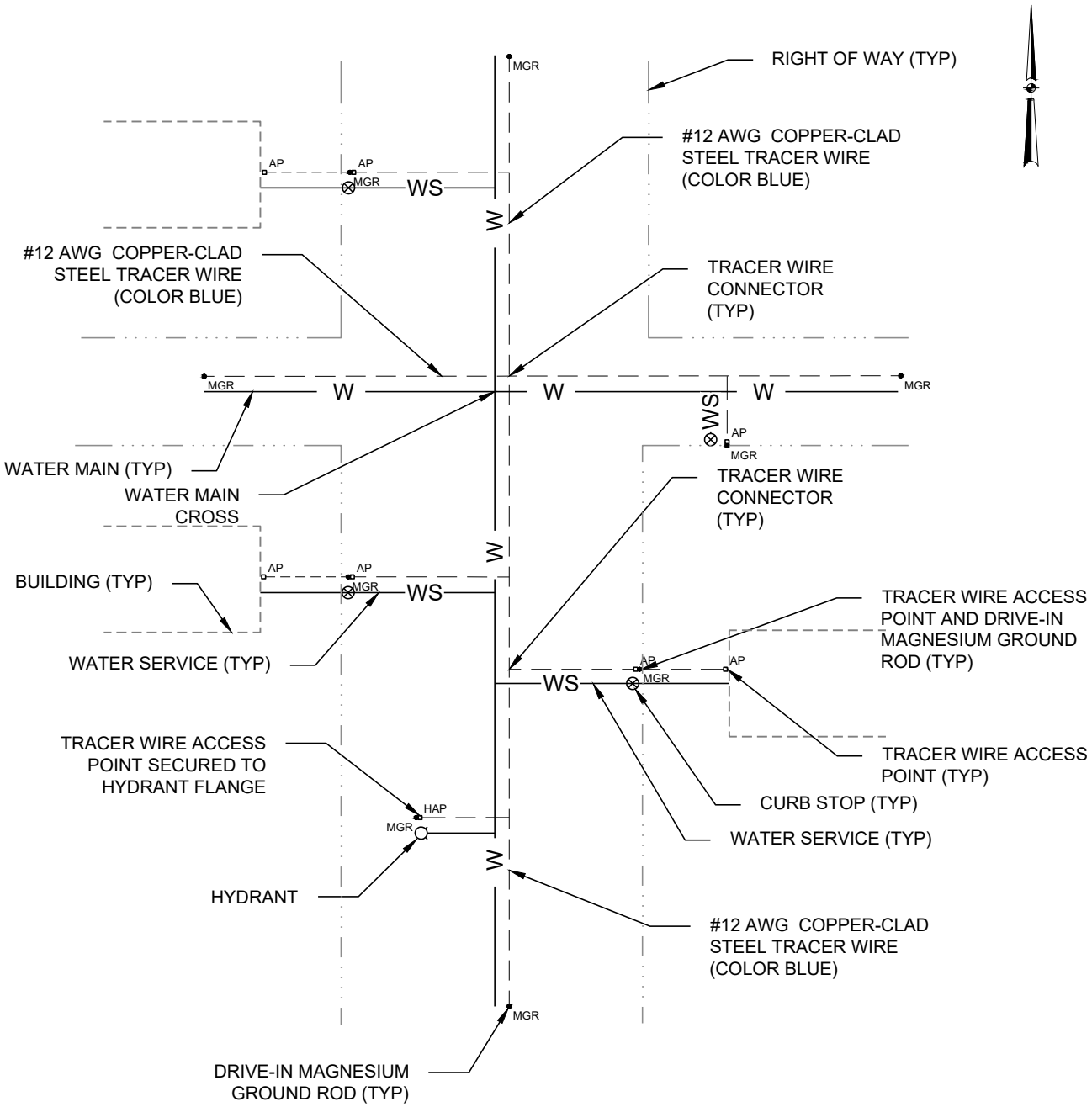
TOWN OF MIDDLEBURY DETAILS

SECTION 8 - TRACER WIRE

FIGURE 8.2

TRACER WIRE FORCE MAIN GROUNDING

DEC. 11, 2025



TRACER WIRE GROUNDING

NOT TO SCALE

NOTES:

1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.
2. LAYOUT PER COPPERHEAD INDUSTRIES.

LEGEND

HYDRANT	○
CURB STOP	⊗
ACCESS POINT	AP
HYDRANT ACCESS POINT	HAP
MAGNESIUM GROUND ROD	MGR

Middlebury
Grown from Tradition

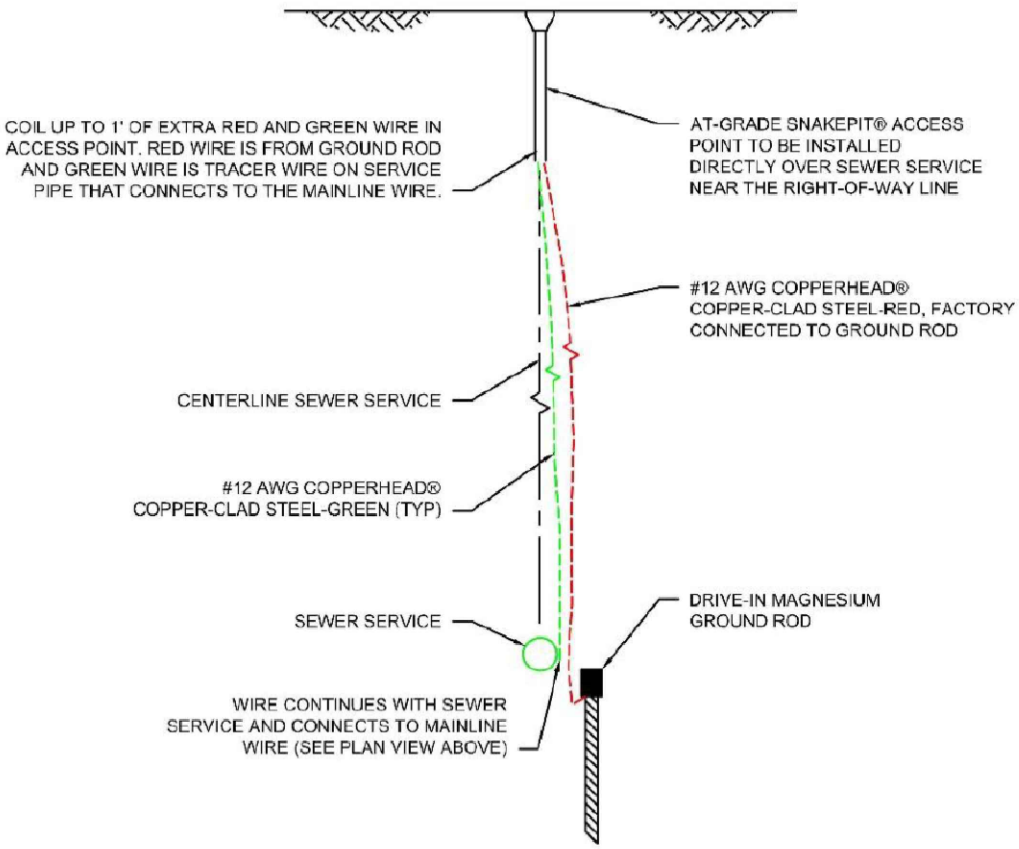
TOWN OF MIDDLEBURY
DETAILS

SECTION 8 - TRACER WIRE

FIGURE 8.3

TRACER WIRE WATERMAIN GROUNDING

DEC. 11, 2025



MAGNESIUM GROUNDING ROD

NOT TO SCALE

NOTES:
1. LAYOUT PER COPPERHEAD INDUSTRIES.

Middlebury Grown from Tradition	TOWN OF MIDDLEBURY DETAILS	SECTION 8 - TRACER WIRE
		FIGURE 8.4
		MAGNESIUM GROUNDING ROD
		DEC. 11, 2025

9.0 INTRODUCTION

9.1. Introduction

Sanitary collection within the service area shall be provided by the construction of gravity sanitary sewers, except where it is demonstrated to be unfeasible, and pumping is required.

If a sanitary lift station is proposed, it shall be the developer's responsibility to provide the services of a Professional Engineer licensed in the State of Indiana to demonstrate that a sanitary lift station is the most economical for sanitary sewage conveyance

This Section presents basic concepts and general criteria for sanitary lift station facilities. Sample drawings and these specifications are provided to present general lift station arrangement and components. Utilizing the information herein, the Developer shall prepare a complete set of site-specific Lift Station drawings and specifications and submit to the Town for approval.

9.2. Procedures

Developer and their engineer shall submit the following documentation for review and approval to the Town to demonstrate the need for a sanitary lift station prior to preparing the specific design – justification of lift station need, preliminary calculations for entire drainage area flows, and sizing of the lift station for present planned development and ultimate development.

Developer shall utilize the Town's Specifications and Details as a guideline in preparing the design.

After design is prepared, the Developer shall submit the design, drawings, specifications, and all supporting calculations for approval as follows:

- Preliminary design including capacity, hydraulic design, pump selection, system curves, preliminary site layout, and list of selected equipment and materials.
- Once approved, the design shall be completed and submitted to the Town for approval.

9.3. General

The Lift Station shall be of the submersible type with two distinct structures for the wet well and valve vault.

The Lift Station structures, including electrical and mechanical equipment shall be protected from physical damage by the 100-year flood. The station shall remain fully operational and accessible during the 25-year flood.

Lift Station structures shall be designed to withstand the hydrostatic forces that they will be subject.

All stations shall have a minimum of two pumps of equal capacity with each pump sized to handle peak design flow.

9.4. Capacity and Sizing

a. Capacity

Capacity shall be determined using the guidelines of Ten States Standards.

b. Wet Well

The effective wet well volume shall be based on the design average flow of the lift station with a filling time not to exceed 30 minutes. The pump manufacturer's duty cycle recommendations shall be used in selecting the minimum cycle time.

9.5 Lift Station Site

The site work shall be generally level graded to remove runoff from site in a non-erosive manner.

a. Pavement

Lift Station site shall be paved with concrete as shown in Figure 9.1.

Paved access drive shall be a minimum of 14 ft width and a minimum of 50 ft in length.

b. Fencing

Perimeter fencing shall comply with ASTM A392 and be 6 ft tall (height measured between top and bottom of outer edge of the selvage knuckle or twist) with three strands of barbed wire. The fencing should include a green screen material. The access gate should be a 20 ft slide gate centered on the access drive.

1) Fabric

Fabric shall be steel wire helically wound and interwoven to provide continuous mesh without knots or ties, conforming to requirements of ASTM A491 with the following:

a) Mesh Size: 2 inch
b) Wire Size: 9-guage (0.148 inches)
c) Aluminum Coating: Minimum of 0.40 ounces per square foot in accordance with ASTM A91.
d) Fabric Ties: Minimum of 9-gauge aluminum or zinc wire.
e) Selvages: Knuckled at one selvage and twisted at the other.

2) Framework

Posts and rails conforming to ASTM F1043 and ASTM F1083.

a) ASTM F1043, Group 1A, round steel pipe, Schedule 40.
b) Post Size (outside diameter):

- Top Rail: 1.66 inches
- Line Post: 2.375 inches
- End, Corner, and Pull Post: 2.875 inches
- Slide Gate Posts: In accordance with manufacture directions

c) Metallic coating shall be zinc coating per ASTM A123 consisting of not less than 1.8 ounces per square foot.

3) Tension Wire

Provide horizontal tension wire along bottom of fence fabric.

Wire shall be metallic coated wire of 0.177 inches diameter complying with ASTM A817 and coated with zinc of not less than 0.8 ounces per square foot of wire surface.

4) Horizonal Slide Gates

Slide gate shall Type II Cantilever Slide Gate, Class 2 in compliance with ASTM F 1184. Fabric and pipe shall conform to previous requirements in this section. The height shall match the height of the adjacent fence.

a) Frame Assembly: 1-7/8 inch outside diameter pipe with welded joints.
b) Gate Posts: 4 inch outside diameter
c) Hardware: Latches shall permit operation from both sides of gate and have integral eye openings for padlocking with the padlock accessible from both sides of gate.

5) Fittings

Fittings shall comply with ASTM F 626.

a) Provide post and line caps for each post.
b) Steel Tension bars shall be not less in length than 2” shorter than full height of chain link fence fabric. Provide one bar for each gate and end post, and two for each corner and pull post.
c) Barbed wire arms with means for attaching strands of barbed wire, integral with post cap shall be Type I, single slanted arm for line posts and corner arms at fence corner posts.
d) Wire Ties shall be hot dip galvanized, 0.106 inch diameter wire.

6) Barbed Wire

Provide zinc Coated Steel Barbed Wire complying with ASTM A 121 Chain link fence grade. Barbed wire should be two stranded with 0.099 inch diameter wire with 2-point round barbs spaced not more than 4 inches o.c.

7) Fence Screening

Install Fence Screen Commercial Block to outside of fencing. Fabric to provide 95% blockage.

a) Green Fence Screen panels shall be constructed of 2” polypropylene webbing for edge reinforcement with 3/8” brass grommets at 24” O.C.
b) Attach to fence with manufacturer recommended fasteners or galvanized hog rings
c) Fence Screen Material Specifications:

- Weight – 400 g/m2
- Grab Tensile Strength – 420 / 256 lbs
- Burst Strength – 469 psi
- Shade Percentage – 95%

8) Grounding

Fence shall be grounded with bare copper, solid wire No. 6 AWG and smaller with No. 30 AWG bare wire bonding jumpers and 5/8 inch by 96 inch grounding rods with Exothermic welded connectors for connections below ground.

c. Overhead Lighting

Site should include a minimum of one overhead light pole.

9.6 Force Main

Force main shall be provided, installed, and tested per Section 3 and Section 4 of these Specifications.

9.7 Lift Station Structures

Provide precast concrete wet well and related components in accordance with Section 3.5 a., 3.5 b. and 3.5 c. of these Specifications. Concrete fillets shall be provided in the bottom of the wet well per pump manufacturer's recommendations, with a minimum floor slope of 1 to 1 angled toward the bottom of the pump.

a. Aluminum Hatches

The lid of the valve vault and wet well shall have two distinct aluminum hatches each, H-20 rated. Retractable safety grates across hatch openings should be provided unless otherwise noted.

1) Prefabricated Drainage Channel Type:

Provide access hatches and frames of material, type, and size as shown on Drawings.

a) Door leaves shall be 1/4 inch minimum diamond pattern plate with reinforcing on underside to withstand live load of 300 pounds per square foot with max deflection of 1/150 span.
b) Frames shall be 1/4 inch minimum thick channel to allow for adequate water drainage with anchor flange around perimeter.
c) Equip hatches with heavy stainless steel hinges with 3/8 inch minimum stainless steel pins bolted to underside and pivot so cover does not protrude into channel frame.
d) Provide compression spring operators enclosed in telescoping tubes for smooth, easy and controlled door operation.
e) Equip hatches with hold-open arm with positive locking device with conveniently positioned release handle for easy and controlled closing.
f) Provide 316 stainless steel snap lock mounted on underside of leaf with removable topside handle and socket recessed in cover.
g) Provide drainage channel coupling.
h) Pipe drain to wet well below or floor drain in valve vault.
i) Hardware shall be 316 stainless steel.
j) Factory finish on aluminum surfaces shall be mill finish with bituminous coating applied to surfaces in contact with concrete.
k) Manufacturer shall warranty in writing against defects in material and workmanship for 5 years.

9.8 Pumps

Pumps shall be submersible style and be provided with a pump removal system and controls related equipment. The pumps should be sized to meet the peak capacity of the lift station with the largest unit out of service.

a. Performance Requirements

1) Equipment shall be suitable intended installation.
2) Equipment shall be suitable for continuous operation at maximum fluid temperature of 104 degrees Fahrenheit (F) at all operating speeds specified and without external cooling fluid.
3) Motor horsepower of each pump shall be non-overloading throughout entire pump performance curve.
4) Design motor for up to 15 evenly spaced starts per hour.
5) Equipment shall be free from shock, vibration, cavitation, overheating, and noise while operating at specified conditions.
6) Motor housing shall be air filled to provide dissipation of heat, permanent bearing lubrication and prevent airborne moisture contamination.
7) Equipment shall be continuous operation without damage while operating under load and unsubmerged.
8) Design equipment for continuous submergence under water without loss of watertight integrity to depth of 65-feet.
9) Design equipment for removal and reinstallation of pumps without need to enter wet well and without removal of fasteners.
10) Design pump removal guide mechanism and permanently mounted discharge connection elbow so no part of pump bears on wet well structure.
11) Connection of pump to permanently mounted discharge elbow shall not leak.
12) Design equipment so parts readily accessible for inspection and repair, easily duplicated and replaced, and suitable for service specified.
13) Entire pumping unit, including pump, motor and power cable assembly, monitoring equipment, and pump removal system shall be suitable for installation in Class I, Division 1 or 2, Group D hazardous classified locations as approved by Factory Mutual.
14) Casing shall be end suction with centerline discharge.

b. Pump Removal System

Guide system - Provide two Type 316 stainless steel guide rails, stainless steel upper and intermediate guide brackets as recommended by pump manufacturer for connecting rail(s) to structure, and slide bracket for connecting pump to guide rail(s). Guide cables in lieu of guide rails are not acceptable. Guide rail diameter and thickness as recommended by pump manufacturer. Provide upper guide rail bracket with integral hooks on both sides of guide plate that fastens to structure. Contractor to verify elevations during submittal process.

1) Discharge Elbow

The discharge base elbow shall provide for automatic, leak-tight connection to pump discharge. The elbow shall meet the requirements of ANSI B16.1 Class 125 flange for connection to piping. Provide for connection of guide rails.

2) Grip-Eye Lifting System

a) Furnish pump lifting-chain positive-recovery system consisting of the following:
b) Provide Grip-Eye System or equal for each pump.

c) Provide high tensile strength proof-tested Type 316 stainless steel chain, minimum 10 links, of required capacity to lift pump. Connect short-length of lifting chain to lifting bail of submersible pump.
d) Provide length of Type 316 Stainless Steel guide cable (wire-rope) connected to short-length of lifting chain to extend min. 5-feet beyond top of wet well. Guide cable shall be suitably sized to support chain and length of cable hanging. Connecting link between guide cable and chain shall be sized to allow grip-eye to slip over to access chain links. Ends of cable shall not be frayed. Weld or epoxy ends to prevent fraying. Contractor shall coil additional length at top of wet well and use Type 316 stainless steel wire to hold coil shape. If no hooks are provided with upper guide bracket, Contractor shall provide Type 316 stainless steel hook at top of wet well from which to hang guide cable. Type 316 stainless steel wire tie coil to hook. At free end of guide cable attach plastic tag or stainless steel tag with the words "NOT FOR LIFTING PUMP" stamped into tag. Grip-Eye shall be able to slip over attached tag without interference.
e) Furnish forged Grip-Eye of stainless steel, provided separately to connect to the end of the lifting cable or chain of Owner's pump lifting device.
f) Grip-Eye shall be sized per pump manufacturer's recommendation.
g) Provide miscellaneous hardware for installation, including shackles to connect short-length of lift chain to pump lifting bail and link to connect short-length of lift chain to guide cable. Material: Type 316 Stainless Steel.

c. Acceptable Manufacturers

1) Vaughan Company
2) Xylem (N-Impeller)
3) Variations must be approved by the Town

9.9 Valves

a. Eccentric Plug Valves

1) Manufacturers: Dezurik, Henry Pratt, Valmatic
2) Non-lubricated, resilient seated eccentric plug valve in compliance with AWWA C517-09.
3) Drip-tight shut-off up to full pressure rating of valve with pressure in either direction.
4) Provide grease zerk fittings in upper bonnet and lower body bearing for sludge applications.
5) Provide 100 percent full port valve for thickened sludge services. Port area shall be 100 percent of the connection pipe area.
6) Pressure rating for valves 12-inch and smaller: 175-psig.
7) Cast iron body, ASTM A126, Grade B.
8) Bonnet shall be ASTM A126 Grade B cast iron or nickel aluminum bronze alloy C95500.
9) NBR, V packing, U-cup, or O-ring seals.
10) Nickel seats.
11) Balanced plug coated with NBR. Valves for digester gas service shall be provided with 316 stainless steel plugs.
12) Flanged ends, 125-pound ANSI Standards.
13) Mechanical joint ends for buried piping.
14) Stainless steel bearings.
15) Valves 4-inch and smaller, maximum operating pressure 25 psig and less: lever actuator.

16) Valves 4-inch and smaller, maximum operating pressure greater than 25 psig: gear actuator.
17) Valves 6-inch and larger: gear actuator.

b. Air Cushioned Swing Check Valve

1) Manufacturers: DeZurik, APCO; G.A. Industries, Inc.; Henry Pratt, 8501 Series; Val-Matic
2) Swing check with outside lever, weight, and air cushion chamber.
3) Suitable for flow direction horizontal or vertical up.
4) External adjustable counterweight to initiate valve closure.
5) External air cushion chamber to dampen valve closure. Closing speed adjustable.
6) Cast or ductile iron body, disc, and cover.
7) Stainless steel hinge shafts.
8) Flanged ends meeting 125-lb ANSI standards.
9) Rated 200-lb water-oil-gas (WOG).
10) Stainless steel body seat, resilient field replaceable seat ring on disc.

9.10 Electrical

All electrical equipment shall be in accordance with the NEC and, where applicable, meet all requirements for hazardous locations. Developer shall coordinate with NIPSCO for providing electrical service. Station shall be provided with a separate utility transformer and meter/main with ground fault protection. Primary power to the station shall be 480 V, 60 Hz, 3-phase service per NIPSCO applicable standards unless approved by the Town. Single-phase 120 V power shall be provided for lights, controls, convenience receptacles, and miscellaneous equipment.

a. Conduit

Conduit shall be a minimum of 2-inch and run concealed below grade or in concrete slabs and shall not impose tripping or maintenance hazards.

b. Power Panel

1) Panel

a) Rack Mounted.
b) 277/480 V, 3-PHASE, 4 WIRE power supply.
c) NEMA 4X Stainless Steel.
d) Provide with pad-lockable outer door, and inner swing out panel.
e) Design panel forced ventilation and heating to allow operation of all VFDs with a minimum ambient temperature of -10 ˚F, maximum ambient temperature of 122 ˚F.
f) Panel shall be equipped with manufacturer’s standard door stop kit at upper and lower door openings capable of preventing damage to door/inner panel or cabinet from wind gusts that may try to overextend door/inner panel opening range. Kits shall also be able to latch in place to hold outer door and inner panel fully open.

2) Inner Swing Out Panel Mounted Devices

a) VFD Keypad (HKU).
b) Main Circuit Breaker Disconnect (CB).

3) Rear of Panel Mounted Devices

   a) VFDs for each pump.
   b) Surge protection device.
   c) Control power transformer.
   d) Circuit breaker for each pump.
   e) Main disconnect in accordance.

c. Variable Frequency Drives (VFDs)

1) Pulse width modulated (PWM) Heavy Duty Variable Frequency Drive (VFD) and associated components shall be installed in an overall, separate enclosure that is NEMA rated.
2) Manufacturers.

   a) ABB ACQ580-31.
   b) Allen Bradley PowerFlex 755TL Series.

3) General:

   a) Ambient temperature -10 to 50 oC.
   b) Humidity: 5 to 95%, non-condensing.
   c) cUL/UL approved or CSA certified and UL listed.
   d) Factory wiring shall be labeled at each end with markers which correspond to the approved shop drawing wiring diagrams.

4) Input Power.

   a) 460 Volts Alternating Current (VAC) (+8%, -10%).
   b) 3-phase, 3-wire, any phase sequence.
   c) 60 Hertz (+/-5%).
   d) Capable of withstanding line voltage transients up to 3000 volts in accordance with ANSI 37.90.1 and ANSI C62.41.
   e) Drive shall be constructed to limit line noise generated due to voltage distortion and line notch. Include as required to meet IEEE 519:

      - Insulated Gate Bipolar Transistor (IGBT) switching.
      - Direct Current (DC) Link Inductor.
      - Active front end, ultra-low harmonic type.

5) Output Power.

   a) Match to motor.
   b) 3-phase, 3-wire.
   c) Sinusoidal wave, pulse width modulated wave form.
   d) Maximum output: 460 VAC.
   e) 6 to 60 Hertz, adjustable.
   f) Frequency accuracy: +/- 1% of setting.
   g) Rate full load output current in excess of motor nameplate current and increase motor current due to harmonics.
   h) Output open and short circuit protection.
   i) Power transistors shall be IGBT’s with Peak Inverse Voltage (PIV) ratings of 1200 volts minimum.

6) Motor Performance.

a) 0.5% speed regulation in manual or automatic speed control mode.
b) 150% starting torque.
c) 100% rated torque from 60 Hertz to specified turndown over 10:1 speed range.

7) Drive features.

a) Control Mode: Volts/Hertz
b) Selectable library of routines for 4-20 milliamps direct current (mAdc) follower circuitry to include output proportional to current, offset, slope, minimum clamp, and separate acceleration and deceleration adjustments.
c) Design circuit to accept 4-20 mAdc positive or negative signal, grounded or un-grounded.
d) Automatic restart on nuisance shutdown for up to 5 successive attempts.
e) Minimum Efficiency for constant torque applications.

- 100% rated speed and load – 95% or better.
- 70% rated speed and 100% load – 94% or better.
- 50% rated speed and 100% load – 93% or better.
- 30% rated speed and 100% load – 91% or better.
- 20% rated speed and 100% load – 87% or better.

f) Include PI (proportional, integral) control function integral to drive.
g) 110% overload capacity for 60 seconds.

8) Short Circuit and Drive Input Protection:

a) Instantaneous over-current trip shutdown set at 180% and 150% overload capacity for 60 seconds.
b) Under-voltage protection with automatic restart.
c) Input power circuit breaker with 65,000 amps interrupting capacity (AIC), labeled in accordance with UL Standard 489 with through the door operator.

- Provisions to lock in “OFF” position.
- Mechanical interlock to prevent opening cabinet door with disconnect in the “ON” position, or moving disconnect to the “ON” position with the door open.
- Auxiliary contact on main disconnect to isolate control power when control power fed from an external source.
- Barriers and warning signs on terminals that are energized with power disconnect “OFF”.

9) Internal Protective Features:

a) Output phase sequence independent of input phase sequence.
b) Phase loss protection.
c) High or low sustained voltage shutdown.
d) 120 vac or 24 volts direct current (vdc) grounded control circuits.
e) Anti-regenerative circuit to protect inverter during deceleration.
f) Transistor over-current and over-temperature protection.
g) Electrically isolated low voltage logic.
h) DC bus fuse protection.
i) MOV (metal oxide varistor) surge protection.

10) Inverter Adjustments

a) Maximum Speed: 50 to 100% rated.
b) Minimum Speed: 6 to 70% rated.
c) Current limit: 10% to 150%.
d) Linear Acceleration: 3 to 300 seconds.
e) Linear Deceleration: 3 to 300 seconds.
f) Torque boost.
g) Maximum voltage level.
h) Electronic thermal overload: 10 to 100% of drive current.
i) Carrier frequency: 2.2 to 8.0 kilohertz (kHz) adjustable.
j) Up to three adjustable skip frequencies.
k) Selectable volts/Hertz patterns to include general purpose, variable torque, constant torque, constant horsepower, and programmable.
l) Fault Recovery: Auto Restart.
m) Loss of Power: Auto Restart.
n) I/O Assignments: Field Adjustable.

11) Inverter Diagnostic and Shutdown Protective Features:

a) External fault.
b) Low line voltage.
c) High line voltage.
d) Instantaneous current overload.
e) Internal over-temperature.
f) Over-current stall.
g) Over-voltage stall.
h) Ground fault.
i) Blown input fuse.
j) Control power supply failure.

12) Inverter construction:

a) Modular construction for ease of maintenance.
b) Easily accessible from front.
c) Construct boards of fire retardant materials in accordance with NEMA Grade FR4 specifications.

13) External Signals.

a) Provide I/O expansion card(s) as required to accommodate the drive signals as shown on the P&ID drawings.
b) Capable of accepting two-wire or three-wire start/stop control contacts in the automatic mode.
c) Accept 4-20 mAdc input speed reference with adjustable bias and gain.
d) Accept 0-10,000 ohm potentiometer input speed reference.
e) Accept external safety shutdown signals as specified or shown on drawings.
f) Provide dry contact for remote indication of drive run status.
g) Provide dry contact for remote indication of common equipment fail alarm.
h) Provide isolated 4-20 mAdc powered signal for remote indication of drive speed.

14) Operator interface:

a) Provide front of panel multifunction display/keypad, capable of controlling drive and setting drive parameters. Provide as a minimum with the following functions:

- Start
- Stop
- Reset
- Increase/Decrease Speed Control
- Manual or Remote Mode.

b) Display shall indicate following parameters:

- Control mode – manual or automatic.
- Output frequency.
- Output voltage.
- Output current.
- Motor RPM.
- Alarms and Faults.

c) Keypad functions shall include:

- Menu driven.
- Parameters stored in non-volatile memory.
- Password or code protected.

15) Enclosures:

a) Variable Frequency Drive to be mounted in a separate enclosure.

9.11 Controls

a. Instrumentation

1) Submersible Level Sensor

a) Manufacturer and Model Number: Endress+Hauser FMX21
b) Provide Suspension Clamp Accessory.
c) Provide intrinsically safe barriers when used in hazardous areas.
d) Sensor Range in H20.
e) Junction Box and Breather Assembly:

- Desiccant systems not allowed.
- 2 wire, 4-20 mAdc.
- Fused.
- Output loop resistance 0-1000 ohms.
- Range of measurement as described in Section 40 70 00.
- Span and off-set adjustable.
- Active transient protection.
- Repeatability: ± 0.25%.
- Accuracy: ± 0.50% of span.
- Loop powered.

f) Outdoor applications: provide NEMA 4X overall enclosure with thermostatically controlled heater to allow use in temperatures down to -25°F.

2) Multipoint Level Rod

a) Manufacturers & Models: FOGrod
b) For Class 1, Divisions 1 or 2 hazardous (classified) locations, provide intrinsically safe barrier device by same manufacturer in corresponding control panel.
c) Probe Length: 80 in / 2.0 m
d) Number of Sensors / Level Points: 10
e) Provide 10 point level controller. Use 3 points for backup control system.

3) Pressure Gauge/Indicator

a) Manufacturers: Ashcroft 1009 or U.S. Gauge, Division of Ametek, Inc.
b) Gauge Housing Material: 316 Stainless Steel
c) Mounting: Stem
d) Dial Size: 3-1/2 inch
e) Units shall be bellows or Bourdon tube actuated pressure gauges. Gauges shall be stem mounting with 3-1/2-inch dial size, unless otherwise noted.
f) Accuracy shall be ±1% of span at ambient conditions of 73.4°F and 29.92" Hg barometric pressure. ASME B40.100 Grade 1A minimum.
g) The sensing element material shall be phosphor-bronze if coupled with diaphragm seal, otherwise provide type 316 stainless steel.
h) For pressure applications less than 15psi:

- Provide bellows type gauge (Ashcroft 1188 or equal).
- Compound style (suitable for vacuum and pressure).
- Case Material: Phenolic.
- Bellows and Socket material: Type 316 stainless steel. Media being measured must be compatible with the wetted parts of the pressure instrument.
- Window: laminated safety glass.

i) Accessories:

- Include isolation valve to isolate from process when being serviced.
- Provide with threaded end seal as specified in this Section.

j) Pressure Seal, Threaded End

- Manufacturers: Red Valve, Series 742.
- Pressure Sensors are to be of the threaded end design with standard NPT threads. Port area shall be 100% of the mating pipe port area through the entire sensor length. The main body of the sensor shall be completely protected from the process fluid by a flexible elastomer sensing sleeve.
- The sensor sleeve shall measure pressure for 360° around the full circumference. The elastomer sensing sleeve shall be one piece construction with integral flanges locked in by bolted end covers. Flexible sensing ring shall have a cavity behind the ring filled with fluid to transfer pressure to the gauge.
- The sensor sleeve flanges shall have a molded O-ring, which shall fit into a mating O-ring groove machined into the sensor metal body. Threaded end covers shall hold down tightly on the rubber flange to positively lock it in place.
- Diameter: ½ inch.

b. PLC Panel

1) General Requirements

a) Panels shall be constructed using factory-fabricated enclosures.
b) Follow PLC manufacturer's written installation requirements for layout of PLC-specific panels.
c) Provide a minimum of 25% free back panel space for future expansion unhindered by current devices, wiring, etc.
d) Provide a minimum of 25% free terminal blocks of each type used in each panel. This is in additional to planned spare wiring terminations. Spares shall be shown on panel drawings.
e) The panel builder shall be a current Underwriters laboratories listed UL-508A industrial control panel builder and shall present its follow-up service procedure file number on submittals. All devices within the panel shall be UL listed and/or recognized where applicable and shall be mounted and wired in accordance with the most current edition of UL-508A and the NEC. A serialized UL-508A label shall be applied to all control panels prior to shipment to the Project site.
f) Arrange panel to allow all conduits for intrinsically safe wiring to enter the panel enclosure within the intrinsically safe section of the panel. Provide separate terminal strips for intrinsically safe wiring entering and leaving the panel.
g) Install instruments and devices, plumb, and wire panels at panel shop or other facility prior to shipment to job-site.
h) Standard Signal Interfaces:

- Unless otherwise specified, discrete input and output signals shall conform to the following:

  - Isolated non-powered (dry) contact closure.
  - Dry contacts shall be powered from panel or device receiving signal.
  - PLC based outputs shall be provided with an interposing relay when any of the following conditions apply:

    When driving solenoids; Potential in-rush current exceeds 75% of rated capacity of the I/O Module; The current requirement of the driven device is insufficient to fully engage the output module consistently; The voltage required to drive the output is incompatible with the output module.

- Unless otherwise specified, analog input and output signals shall conform to the following:

  - 4-20 mAdc.
  - For 2-wire, loop-powered transmitters, provide regulated, fused, and isolated 24Vdc power supply at panel for driving of devices. Size power supply for 30% minimum spare capacity minimum.
  - Where isolation is required for interfacing with particular equipment supplied, provide necessary I/I converters. Provide I/I converters where impedance capabilities of new or existing signal transmitter will be exceeded by addition of PLC input.

i) Wiring:

- In addition to NEC and NEMA requirements, wiring shall conform to following:
    - Power: 12 AWG stranded minimum, type MTW, 600V.
    - Control: 16 AWG stranded minimum, type MTW, 300V.
    - Analog Signal: Twisted pair, 18 AWG, Beldon 8760 or equal.
- Wire color code:
    - AC neutral conductor: White.
    - AC hot conductor: Black.
    - Grounding conductor: Green.
    - AC control conductor, powered from within panel: Red.
    - AC control conductor, powered from remote source: Orange.
    - DC (+) power conductor, discrete signal: Blue.
    - DC (-) power conductor, discrete signal: Blue with white stripe.
    - DC control conductor, discrete signal: Blue.
    - Twisted pair cable (+) signal conductor, analog signal: White.
    - Twisted pair cable (-) signal conductor, analog signal: Black.
    - Intrinsically safe wiring: Light Blue.
- Design control panels to keep 480Vac power, 120Vac power and discrete signals, and analog and other low voltage signals separated.
    - Do not run 480Vac power, 120Vac power and discrete signals, or analog or other low voltage signals in the same conduit or wire-duct.
    - Where 480Vac power, 120Vac power and discrete signals, or analog or other low voltage signals must cross, they shall do so at right angles.
- Wiring Within Wire Duct:
    - Wherever feasible plastic wire duct with cover shall be used for routing of wire within control panel.
    - Size wire duct to be no more than 50% full.
    - Maintain 2” clearance between wire duct and terminals.
- Wiring outside of wire duct.
    - Wiring outside of ducts shall be restrained by use of plastic wire-ties.
    - Restrain wiring every six inches (minimum).
    - Provide abrasion protection for wires passing through holes or across abrasive metal edges.
    - Adhesive type wire fasteners shall not be used. Hard screw type shall be employed.
- Each conductor or twisted pair cable shall be labeled near its termination point.
- Color-coded multi-conductor cable or multi-pair cable shall be labeled on overall jacket near its point of fan-out. Each pair of a multi-pair cable, when not color-coded, shall be labeled at its termination point in addition to the overall jacket.
- Labels shall be machine-printed wrap-around types with tag visible from front without removal of wire from termination.

j) Terminations:

- Wiring within control panel shall be continuous and terminated only at terminal blocks or equipment terminals. Splices or butt connectors shall not be used within panel.
- No more than two wires shall be terminated at any one terminal.
- Make external connections by way of numbered terminal blocks on numbered terminal strips.
- When signals are powered from remote location, switched terminal blocks shall be used where conductors enter or leave panel.
- When signals are powered from within panel, fused terminal blocks shall be used where conductors enter or leave panel.
- Provide integral bussing system on terminal block array where more than two terminations require common source or drain connection. Jumpered terminations shall not be acceptable.
- Provide knife disconnect-type terminal blocks with test sockets for all analog loops.
- Include provisions for grounding of shields on shielded twisted pair cables entering or leaving panel. Cable shields shall be grounded at terminal block end only. Shields shall run entire length of cable within panels. Running of twisted pairs without shields within panels is not permissible.
- Provide separate terminal strips for each of the following types of signals.
    - 480Vac power circuits.
    - 120Vac power circuits.
    - 120Vac discrete signals.
    - 12Vdc, 24Vdc or 48Vdc discrete signals.
    - Analog signals.
    - Serial or parallel digital communication signals.
    - Intrinsically safe circuits.

k) Power Distribution:

- Panels having 240Vac or 480Vac power supply:
    - Provide internal main circuit breaker to isolate power to panel.
    - Provide circuit breakers as shown on one lines.
    - Provide single-phase surge suppression/line conditioner, sized for total panel loadings (Benden Isotrol, or equal) between secondary leads and 240vac power distribution block.
- Panels having 120Vac power supply:
    - Provide circuit breaker on power supply entering panel.
    - Provide single-phase surge suppression/line conditioner, sized for total panel loadings (Benden, Isotrol) between circuit breaker and 120Vac power distribution block.
    - Provide monitoring relay on incoming power supply to indicate presence of utility power to the PLC. Utility Power, UPS Status, and Surge Protection Device (SPD) status shall be continuously monitored by SCADA system.
- Provide separately fused power supply to each major panel component.

l) Additional panel requirements.

- Provide separately fused power circuits for panel powered devices entering panel from field. Provide separate circuit for each device. Devices may be 5-Amp fused terminal blocks: Solenoid actuated valves; Loop powered transmitters; 120Vac switched cord and receptacles; Relays
- Include digital transient surge suppressor/varistor installed in parallel with output contact at terminal strip for each PLC output signal driving an inductive load including: relays; solenoids; motor starters; and motors.
- PLC input and outlet module connections:

    - Input and output signals for process equipment serving the same function shall be assigned to separate I/O Modules so that failure of any one module does not disable an entire unit process. E.g. failure of one card shall not prevent every blower from running.
    - Except for 4-wire instruments, all analog loops shall be powered from respective process control panel.
    - 120 volts alternating and direct current for Process Control System inputs shall be sourced from respective process control panel.
    - 120 volts alternating and direct current for Process Control System outputs shall be sourced from respective location receiving control signal.

- Motor Protection Relays (MPR):

    - First named submersible pump manufacturer uses proprietary pump monitoring units, supplied by the pump manufacturer. Units shall be installed into control panels as shown on Drawings. One unit shall be supplied for each of the submersible pumps referenced. Coordinate size, mounting, and wiring requirements for monitoring units with Contractor. Units shall be the source of Motor Overtemp, and Seal Fail signals.
    - Other listed manufacturers utilize specifically designed relays manufactured by third parties for monitoring of pump alarm signals. Relays shall be installed into control panels as shown on Drawings. Relays may or may not be provided by pump manufacturer dependant upon manufacturer selected and signal being monitored. Coordinate relay provision, type, mounting requirements, and wiring requirements with Contractor.

- Labels and Nameplates:

    - Panel Designation: Engraved with Engineer's tag number and description shown on the Drawings and in Specifications.; Laminated white plastic with ½-in. high black characters.; Fastened with stainless steel screws.
    - Front of panel mounted devices: Provide nameplate for each front of panel device with descriptive phrase using nomenclature as listed on Drawings and in Specifications.; Laminated white plastic with 3/16-in. high black characters.; Fastened with stainless steel screws.
    - Rear of panel mounted devices: Provide nametag for each rear of panel device with labels used on panel drawings.; Thermo-embossed or laser printed with 1/8-in. high black characters on clear or white background or laminated white plastic with 3/16-in. high

black characters.; Self-adhesive backing.; Clean area with mineral spirits prior to affixing labels
- Panel Finish: Remove mill scale, grease, and oil.; Primer thickness shall be 0.8 mil., minimum. Finish coat shall be two-part epoxy or baked dry powder, 3-mil., minimum dry film thickness. Color: Standard manufacturer's finish.

- Intrusion Alert:
  - Provide proximity switches for enclosures, one per panel, mounted on inside top of panel door, opposite hinge point, wired to PLC input. Larger panels that have more than 2 doors shall have additional proximity switches for intrusion alert.
  - Alerts shall be transmitted to SCADA HMI.

- Conveniences:
  - Control panels shall be provided with door-activated, internal fluorescent panel lighting units. One unit shall be provided for every 3 feet of panel width and shall be mounted on the inside, top of the panel. Lighting shall be consistent for entire project.
  - Control panels shall be provided with 120Vac, service outlet circuits within the back-of-panel area. The circuits shall be provided with three-wire, 120Vac, 15-ampere duplex GFCI receptacles, one for every 3 feet of panel width and spaced evenly along the back-of-panel area. GFCI receptacles shall not be used for supplying power to UPS.The UPS receptacle shall be a simplex non-GFCI receptacle for plug in of UPS where applicable. Receptacle shall be labeled "120VAC FOR UPS ONLY".

m) PLC shall be manufactured by Rockwell Automation.

2) Panel Construction – Indoor And Outdoor Enclosures

a) Manufacturers: Hoffman, Saginaw, Hammond, or Rittal.
b) Indoor and outdoor enclosures shall conform to NEMA requirements as follows:

- NEMA 7 for indoor or outdoor enclosures in class 1, division 1 or 2 hazardous (classified) locations.
- NEMA 4X – type 316 stainless steel for outdoor enclosures or indoor enclosures in wet and/or corrosive environment.
- NEMA 12 for indoor enclosures not in classified or corrosive environments.

c) In addition to NEMA standards, conform to the following requirements:

- Minimum metal thickness: 14 Ga.
- Indoor enclosures: equip with rubber-gasketed doors with continuous metal hinges. Equip doors with 3-point lockable latches.
- Outdoor enclosures: equip with hinged dead-front inner doors and rubber-gasketed, continuous metal hinged outer weather doors. Equip weather doors with toggle style door clamps.
- Equip outdoor enclosures with thermostatically controlled heaters capable of maintaining internal panel temperature of 50°F with 20mph

wind at ambient temperature of -20°F. Heater shall operate at 120Vac, 60Hz power.

- NEMA 4X enclosures shall be furnished with door gaskets.
- Size to adequately dissipate heat generated by equipment mounted in or on panel.

- Prior to final fabrication of panels, verify layout of front-of-panel devices with respect to rear-of-panel devices. Maintain minimum of 3 inches clearance between door and sub-panel mounted devices.

3) Process Control Description

a) PLC-based control panels shall have hard-wired, backup of certain functions to provide device operation independent of the Process Control System PLCs and control and monitor mechanical equipment as a redundancy for critical systems.

- In the event of PLC, or level transmitter failure, relay back-up (Level Rod Mode) shall operate critical pumps. Level Rod mode control shall be provided for Pumps.
- Any pump station Level Rod Mode control systems described herein shall be for control and alarm purposes. In the event of Primary Level Transmitter, or PLC failure, Level Rod Mode back-up shall operate the associated pumps.

o Level Rod Mode Back-Up

In normal PLC operation, level signals shall bypass the Level Rod Mode controls. When a failure of the PLC, or Primary Level Transmitter failure occurs, the Level Rod Mode controller shall assume command of pumps on reaching the “PUMP START LEVEL” Level Rod switch.

Level Rod mode may also be manually initiated from the swing out panel mounted Level Rod Mode Test Pushbutton (HS), or from the OIU and HMI using the “LEVEL ROD MODE TEST” pushbutton.

When manually initiated, Level Rod Mode shall be limited to one draw down cycle of the pumps and automatically revert to normal PLC based operation.

i. When Level Rod Mode control is initiated, an alarm indicating such will be delivered to the SCADA for staff alert and OIU and HMI display.
ii. Front of panel hardwired selector switches (HS) shall be used to determine lead pump for each system.
iii. Include alternation function for lead pump when selected via Level Rod Mode Sequence Pump 1/Pump 2/Alternate 3-position Selector Switch (HS).
iv. Selected pump in Level Rod Mode shall be started on activation of “PUMP START LEVEL” Level Rod switch. In all modes of control (Hand, Automatic, Level Rod Mode), station operation shall be limited to the operation of selected lead pump only.
v. Selected pump in Level Rod mode shall stop on activation of “PUMP STOP LEVEL” Level Rod switch. Normal PLC based transducer control shall be resume. If wet well level again

reaches the “PUMP START LEVEL” Level Rod switch, system shall re-enter the Level Rod mode for one cycle and start selected pump.

vi. Level Rod mode control may be reset during a Level Rod mode pump down cycle using the inner swing out panel hardwired Level Rod Mode Reset Pushbutton (HS), or the HMI/OIU based “LEVEL ROD MODE RESET”.

vii. Delay timers shall be provided to prevent simultaneous start-up of multiple pumps.

- In Auto, each pump has the following functionality available to the operator at HMI/OIU when placed into the PLC manual mode of control.

  - OIU/HMI Start.
  - OIU/HMI Stop.
  - Speed control via OIU/HMI speed entry (VS Mode).

- In Auto, each pump has the following functionality available to the operator at HMI/OIU when placed into the PLC automatic mode of control.

  - Remote automatic control:

    PLC automatic operation: PLC shall start and stop lead and lag pumps based on submersible pressure transducer.

    Provide HMI/OIU entry for following set points: High level alarm; Start pump start level; and Stop pump stop level.

    PLC shall typically limit number of operating pumps to one.
    PLC shall allow both pumps to run if high level alarm level is reached.

    When wet well level reaches stop level, operating pump(s) shall be stopped.

  - Pump Sequence Control:

    PLC and HMI/OIU shall be configured to accommodate manual or automatic pump sequencing control using HMI/OIU selection “Pump Sequence Manual/Auto”.

    In manual sequence mode, pump sequence shall be selected by operator at OIU using OIU selection “Manual Pump Sequence”. Allow operator to select P1 Lead/P2 Lag, or P2 Lead/P1 Lag.

    In automatic sequence selection, sequence shall be automatically rotated between P1 Lead/P2 Lag and P2 Lead/P1 Lag sequences at interval set by operator using HMI/OIU selection “AUTO SEQUENCE CHANGE DAY AND TIME”. Initial setting for sequence change shall be Monday at 1:00 pm.

    Failure, placement in Local or PLC manual mode of operation, or other condition that prevents PLC automatic control of pump shall cause sequence change to remove affected pump from lead or lag position in sequence.

Pump operating set point, start offset, stop offset, pump minimum and maximum speed set points shall be adjusted at system start-up to minimize pump on/off sequencing and provide stable pump operation.

9.12 Emergency Power

In the case of power loss from the electrical utility, an emergency generator and automatic transfer switch (ATS) shall be provided. The ATS will switch from normal utility power to emergency power upon normal power failure, and switch back to normal power when restored.

a. Automatic Transfer Switch

1) Manufacturer: Cummins Power Generation.
2) Transfer Switch Products, General
   a) Number of Poles and Current and Voltage Ratings: As indicated.
   b) Solid-State Controls: Repetitive accuracy setting of within 2% or better over an operating temperature range of -20 to 70 degrees Celsius.
   c) Resistance to Damage by Voltage Transients: Components meet or exceed voltage surge withstand capability requirements when tested according to American National Standards Institute (ANSI) C37.90.1. Components meet or exceed voltage impulse withstand test of National Electrical Manufacturers Association (NEMA) ICS 1.
   d) Neutral Terminal: Where 2- or 3-pole switches are indicated, provide fully rated, solid, unswitched neutral terminal except as indicated.
   e) Enclosures as required by NEC.
   f) Factory Wiring: Train and bundle factory wiring and identify consistently with Shop Drawings, by color code or by numbered or lettered wire and cable tape markers at terminations.

      - Designated terminals accommodate field wiring.
      - Power Terminals Arrangement and Field Wiring Space: Suitable for top, side or bottom entrance of feeder conductors as indicated.
      - Terminals: Pressure type, suitable for copper or aluminum conductors of sizes indicated.
      - Control Wiring: Equipped with lugs suitable for connection to terminal strips.

   g) Electrical Operation: Accomplish by nonfused, momentarily energized solenoid or electric motor-operated mechanism, mechanically and electrically interlocked in both directions. Switches using components of molded case circuit breakers or contactors not designed for continuous duty, repetitive switching between active power sources are not acceptable.
   h) Switch Action: Mechanically held in both directions for double-throw switches.
   i) Switch Contacts: Use silver composition for switching load current. Provide separate arcing contacts for units rated 225 amps and more.
   j) Overcurrent devices are not part of switch products.

   k) Comply with Level 1 equipment in accordance with NFPA No. 110.
   l) Switching arrangement:

- Switch operator has programmed neutral position arranged to provide midpoint between 2 working switch positions with an intentional, controlled, timed pause during transfer at midpoint.
- Midpoint pause is adjustable from 0.5 to 30 seconds minimum, and factory set at 2.0 seconds, except as indicated.
- Time delay occurs for both transfer directions.

3) Automatic Transfer Switch Features

a) Voltage sensing for each phase of normal source. Pick-up voltage adjustable from 85% to 100% nominal and drop-out voltage adjustable from 75% to 98% pick-up value. Factory set for pick-up at 90% and drop-out at 85%.
b) Time-delay override of normal source voltage sensing delays transfer and engine start signals. Adjustable 0 to 6 seconds, and factory set at 1 second.
c) Voltage/Frequency Lockout Relay: Prevents premature transfer. Voltage pick-up adjustable from 85% to 100% nominal. Factory set to pick-up at 90%. Pick-up frequency adjustable from 90% to 100% nominal. Factory set to pick-up at 95%.
d) Retransfer Time Delay: Adjustable from 0 to 30 minutes and factory set at 10 minutes. Provides automatic defeat of delay upon loss of voltage or sustained undervoltage of standby source when normal supply has been restored.
e) Test Switch: Simulates normal source failure.
f) Switch-Position Pilot Lights: Indicate source to which load is connected.
g) Source Available Indicating Lights: Supervise sources via transfer switch normal and standby source sensing circuits.

- Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
- Standby Power Supervision: Red light with nameplate engraved "Standby Source Available."

h) Source Available Contacts: Supervise sources and provide 2 normally open Single Pole Double Throw (SPDT) contacts to indicate source availability.

- Normal Power Supervision: "Utility Power Available."
- Standby Power Supervision: "Generator Power Available."

i) Unassigned Auxiliary Contacts: 2 normally open Single Pole Double Throw (SPDT) contacts for each switch position.

- Rating: 10 amps at 240 Volts Alternating Current (VAC).

j) Transfer Override Switch: Overrides automatic retransfer control so ATS remains connected to standby power source regardless of condition of normal source. Pilot light indicates override status.
k) Engine Starting Contacts: One isolated normally closed and 1 isolated normally open. Contacts are gold-flashed or gold-plated and rated 10 amps at 32 Volts Direct Current (VDC) minimum.
l) Engine Shut-Down Contacts: Time delay adjustable from 0 to 5 minutes. Factory set at 5 minutes.

b. Generator

1) Manufacturer: Cummins Power Generation
2) Ratings: 3-phase, 4-wire 277/480 volt, 60 Hz
3) Motor starting kilovoltamp (KVA) required to start and operate following load steps without exceeding 20% maximum voltage dip with return to steady state in less than 2 seconds:

    a) Step No. 1: 15 KW misc. loads.
    b) Step No. 2: Pumps needing to meet lift station capacity operating on VFDs.

4) Generator Package shall include engine generator set, cooling system, fuel system, starting system, and weatherproof housing.
5) Functional Description: Switching "On-Off" switch on generator control panel to "On" position starts generator set. "Off" position of same switch initiates shutdown of unit. When unit is running, specified system or equipment failures or derangements automatically shut down unit and initiate alarms. Operation of remote emergency stop switch also shuts down unit.
6) System Performance
    a) Steady-State Voltage Operational Bandwidth: 1% of rated output voltage from no load to full load.
    b) Steady-State Voltage Modulation: Less than 0.25 Hertz.
    c) Transient Voltage Performance: Not more than 10% variation for 50% step-load increase or decrease. Voltage recovers to remain within steady-state operating band within 2 seconds.
    d) Steady-State Frequency Operational Bandwidth: 0.5% of rated frequency from no load to full load.
    e) Steady-State Frequency Stability: When system is operating at constant load within rated load, there are no random speed variations outside steady-state operational band and no regular or cyclical hunting or surging of speed.
    f) Transient Frequency Performance: Less than 3 Hertz variation for 50% step-load increase or decrease. Frequency recovers to remain within steady-state operating band within 3 seconds.
    g) Output Waveform: At no load, harmonic content measured line-to-line or line-to-neutral does not exceed 5% total and 3% for single harmonics. Telephone influence factor determined according to NEMA MG1 does not exceed 50.
    h) Sustained Short-Circuit Current: For 3-phase bolted short circuit at system output terminals, system will supply minimum of 300% of rated full-load current for not less than 10 seconds and then clear fault automatically, without damage to any generator system component.
    i) Temperature Rise of Generator: Within acceptable limits for insulation systems used according to NEMA MG 1 when operating continuously at standby rating conditions. Temperature rise shall not exceed 125oC.
    j) Nonlinear Load Performance: System performance is not degraded from that specified in this Article by continuous operation, with load current having minimum total harmonic content of 15% root mean square (rms), and minimum single harmonic content of 10% rms.
    k) Starting Time: Maximum total time period for cold start, with ambient temperature at low end of specified range, is 10 seconds. Time period includes output voltage and frequency settlement within specified steady-state bands.

9.13 Miscellaneous

a. Bypass Pump Connection

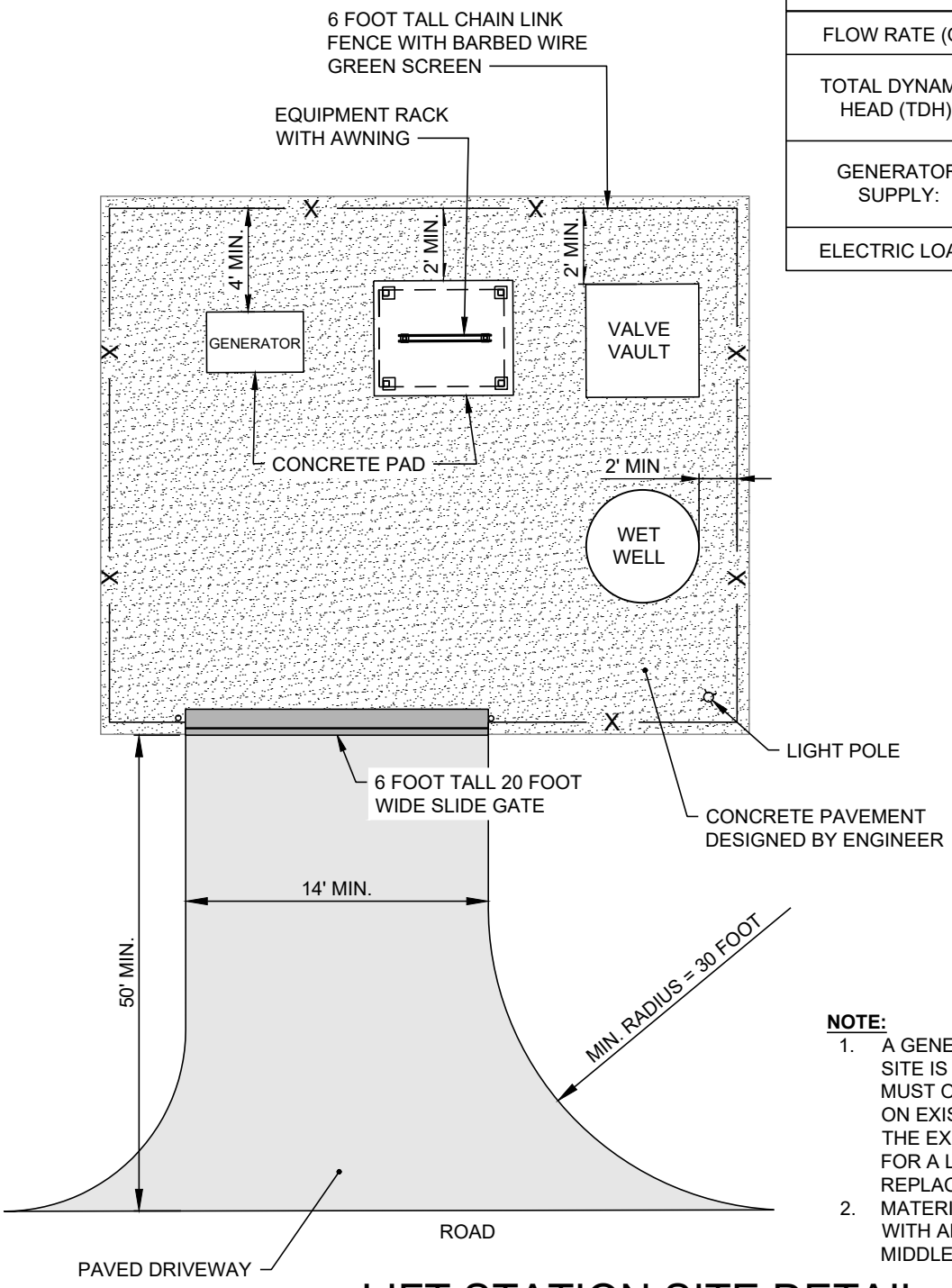
Bypass pumping connections provided in the suction piping and valve vault bypass connection shall be 4-inch male Cam-Lock provided with a cover.

b. Awning for Control Panel

Outdoor panels shall be covered with a pre-framed panel pre-engineered metal awning.

1) Roof slope shall be a minimum of 2:12 pitch single slop (shed roof) configuration.
2) Panels shall be factory assembled and delivered to the site in a ready-to-be-installed arrangement that do not require pre-setting of anchor bolts.
3) Dead Loads shall include the self-weight of the structure and a collateral roof dead load of 5 psf uniformly distributed on main roof members (excluding roof sheeting and secondary support members).
4) Minimum live loads shall be per IBC, latest edition adopted in the jurisdiction.
5) Ground snow load shall be 25 psf applied in accordance with the method prescribed in IBC, latest edition adopted in the jurisdiction (importance factor I_s = 1.1).
6) Wind loads shall be a basic wind speed of 115 mph (3-second gust) with an Exposure factor of B applied in accordance with IBC, latest edition adopted in the jurisdiction (importance factor I_w = 1.1).
7) Seismic loads in accordance with IBC, latest edition adopted in the jurisdiction (importance factor I_E=1.1)
8) The loads listed above shall be combined in compliance with IBC, latest edition adopted in the jurisdiction.

DESIGN DATA SUMMARY	
FLOW RATE (Q):	
TOTAL DYNAMIC HEAD (TDH):	
GENERATOR SUPPLY:	☐ DIESEL ☐ NATURAL GAS
ELECTRIC LOAD:	



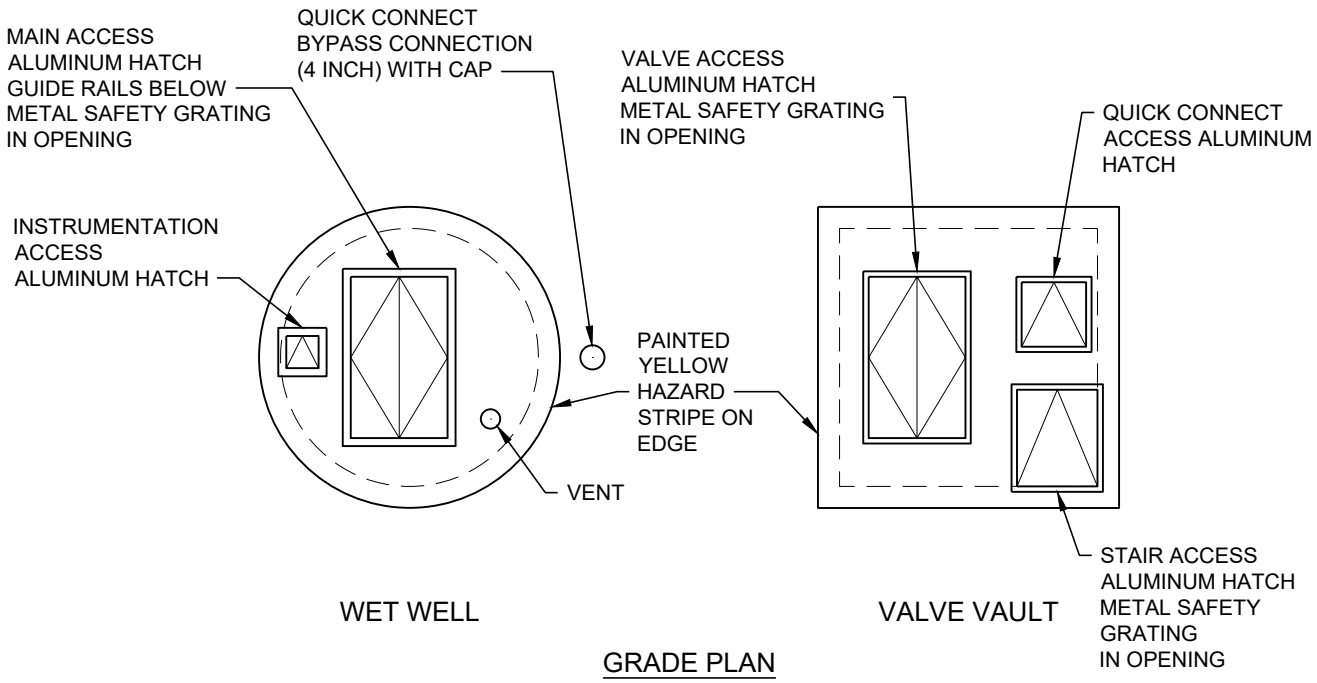
NOTE:

1. A GENERAL CONFIGURATION FOR THE SITE IS SHOWN. PROPOSED PLANS MUST ORIENT THE FACILITIES BASED ON EXISTING CONDITIONS. SHOWN IS THE EXPECTED MINIMUM REQUIRED FOR A LIFT STATION, AND DOES NOT REPLACE DETAILED DESIGN.
2. MATERIALS MAY ONLY BE CHANGED WITH APPROVAL BY THE TOWN OF MIDDLEBURY.

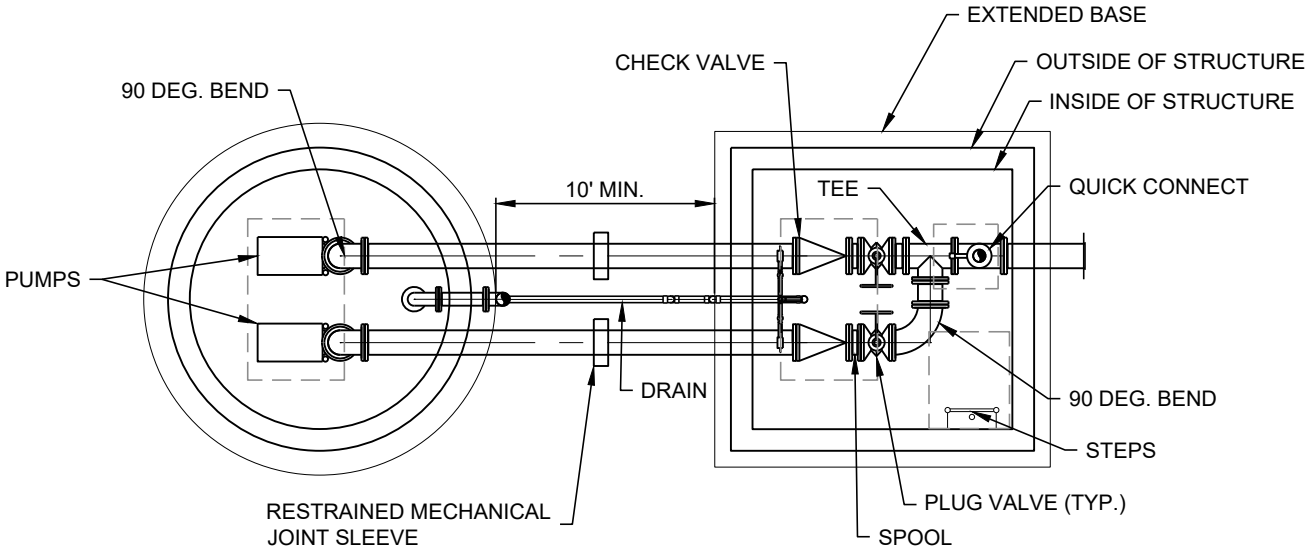
LIFT STATION SITE DETAIL

NOT TO SCALE

	NOT FOR CONSTRUCTION
TOWN OF MIDDLEBURY DETAILS	SECTION 9 - LIFT STATION
	FIGURE 9.1
	LIFT STATION SITE
	DEC. 11, 2025



GRADE PLAN



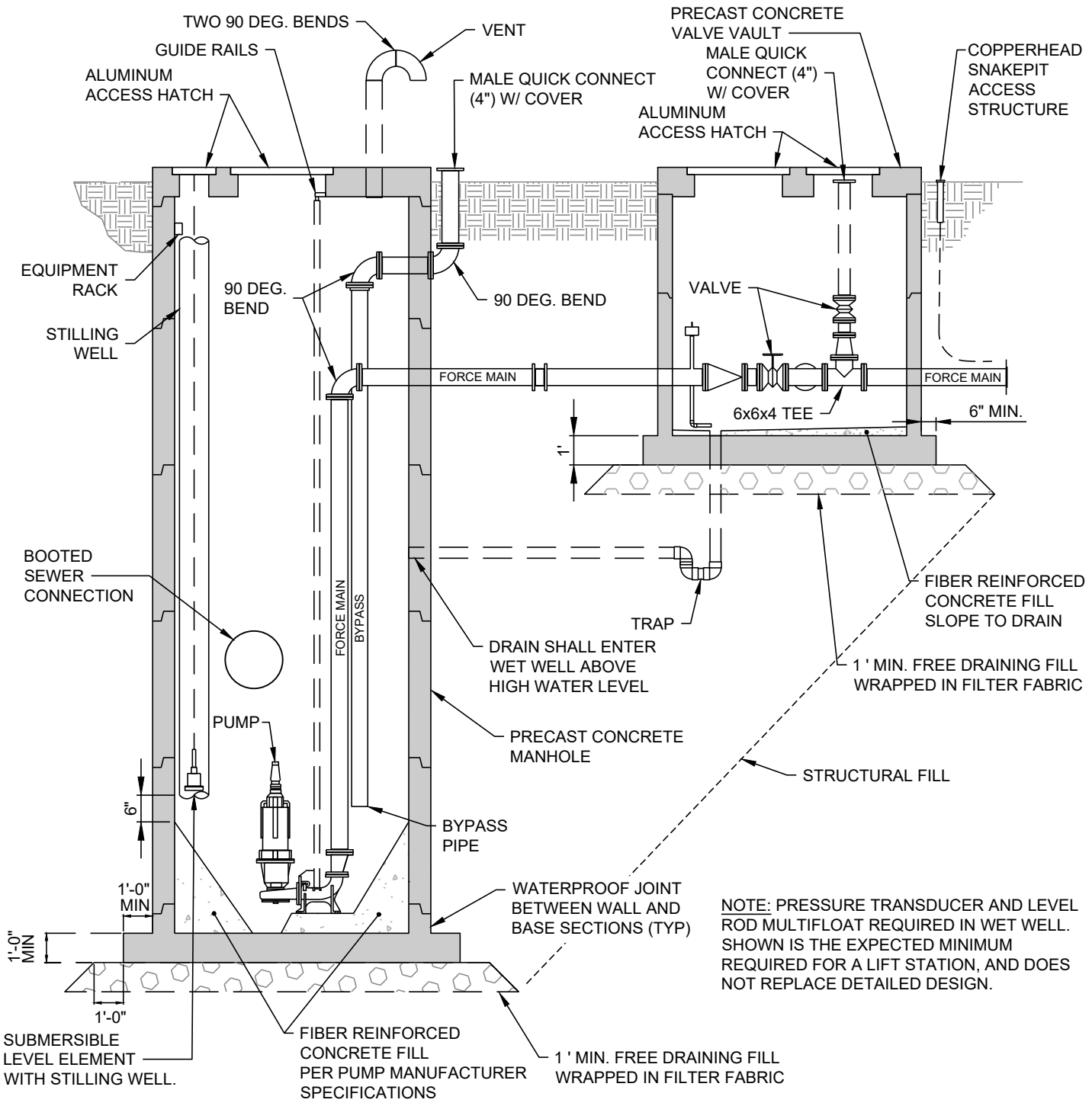
LOWER PLAN

NOTE:
SPECIFIC SIZE AND CHARACTERISTICS TO BE DETERMINED DURING DESIGN. SHOWN IS THE EXPECTED MINIMUM REQUIRED FOR A LIFT STATION, AND DOES NOT REPLACE DETAILED DESIGN.

LIFT STATION PLAN VIEW DETAIL

NOT TO SCALE

	NOT FOR CONSTRUCTION
TOWN OF MIDDLEBURY DETAILS	SECTION 9 - LIFT STATION
	FIGURE 9.2
	LIFT STATION GRADE/LOWER
	DEC. 11, 2025



NOTE: PRESSURE TRANSDUCER AND LEVEL ROD MULTIFLOAT REQUIRED IN WELL. SHOWN IS THE EXPECTED MINIMUM REQUIRED FOR A LIFT STATION, AND DOES NOT REPLACE DETAILED DESIGN.

LIFT STATION SECTION VIEW DETAIL

NOT TO SCALE

	NOT FOR CONSTRUCTION
TOWN OF MIDDLEBURY DETAILS	SECTION 9 - LIFT STATION
	FIGURE 9.3
	LIFT STATION SECTION
	DEC. 11, 2025

THIS DETAIL IS PROVIDED AS A PLACEHOLDER FOR FUTURE LIFT STATION CONTROL PANEL

LIFT STATION PANEL DETAIL

NOT TO SCALE

	NOT FOR CONSTRUCTION
TOWN OF MIDDLEBURY DETAILS	SECTION 9 - LIFT STATION
	FIGURE 9.4
	LIFT STATION PANEL
	DEC. 11, 2025

10.0 MISCELLANEOUS REQUIREMENTS

10.1 Project Introduction

a. All projects except those involving single family individual homesites will require review and approval by the Town.
b. Initiation of project approval will require completion of a Project Introduction Questionnaire as provided herein in Appendix A. Included with the form is a flow chart outlining the process for project approval.
c. The completed form shall be filed with the Middlebury Town Manager who will then schedule and coordinate project review.

10.2 Project Approvals – Minimum Submittal Requirements

a. Residential Subdivision

The submittal shall provide 3 complete packages including the following:

1) Complete County application package
2) Project preliminary plat and project master plan
3) Complete project utility master plan
4) Project storm water master plan
5) Proposed project roadway cross sections and design criteria
6) Completed storm sewer and retention area sizing spreadsheet (See Appendix A)
7) Projected wastewater and water supply needs
8) Project development standards and restrictive covenants
9) Schedule of acquired or pending permits
10) Detail project schedule and phasing plan

HELPFUL HINT:
Applicants should schedule a pre-submittal work session with the Town at the project planning stage to ensure concurrent review with the County Plan Commission and avoid costly delays.

b. Commercial or Industrial Development (Industrial Plat or PUD)

The submittal shall provide 3 complete packages including the following:

1) Complete County application package
2) Project preliminary plat or development plan
3) Complete project utility master plan
4) Project storm water master plan
5) Proposed project roadway cross sections and design criteria
6) Completed storm sewer and retention area sizing spreadsheet (See Appendix A)
7) Projected wastewater and water supply needs
8) Project development standards and restrictive covenants
9) Schedule of acquired or pending permits
10) Detail project schedule and phasing plan

c. Site Plan Review

Required for all commercial or industrial sites within the Town boundary or other sites which will be connected to Town utilities.

1) If the project is within a County or Town approved planned unit development, provide a complete copy of such including any development standards or restrictive covenants.
2) Three (3) complete sets of project civil site plans, including as a minimum:
   a) Site dimensional plan
   b) Site grading plan
   c) Site utility plan
   d) Site erosion control and storm water management plan
   e) Landscape and lighting plan
   f) Construction details plan

3) Preliminary building plans including at a minimum floor plans, street façade, exterior treatment

CHECK THE STANDARDS:
Applicants requesting site plan review must confirm zoning clearance and ensure plans meet all Elkhart County zoning standards, including parking, setbacks, and lighting.

4) Traffic projections report (i.e. expected daily trips)
5) Wastewater and water supply needs including fire flow requirements
6) Completed Industrial Wastewater Questionnaire
7) Completed Project Introduction form
8) Completed Request for Review form
9) Project timeline and phasing plan (if applicable)
10) Schedule of acquired or pending permits

d. Request for In Lieu of Annexation Agreement and Utility Service Agreement

Such requests shall be made in writing to the Town Manager and must include all information required under subparagraphs a or b or c above.

e. Request for Annexation

Such requests shall be made in writing to the Town Manager and must include all sufficient information to determine contiguity to Town boundaries and legal location of the subject land. At a minimum provide:

1) Legal description
2) Sketch map of boundary
3) Vicinity map indicating relationship to existing Town boundaries
4) Narrative cover letter signed by the party having authority to make the request as the land owner or authorized representative thereof providing all needed contact information.

10.3 Approval Process

a. Depending upon the project scope, the Town Manager will schedule a staff technical review session. The Town Manager will advise as to the date and time of such session. For projects located outside of the Town's boundaries, costs incurred by the Town for engineering review will be invoiced to and shall be the responsibility of the developer.

b. If no session is scheduled, written comments will be forwarded to the applicant generally within two weeks. Revised plans should be submitted as soon as possible to avoid delay.

c. For development projects such as subdivisions or planned unit developments the request will be scheduled for review by the Town Council only after all technical comments have been addressed to the satisfaction of the Town Staff, and Town Manager. The Town Manager will notify the applicant of the date and time of the Council's review. The Council session will normally be the next available agenda after the project reaches technical compliance. If project approval requires rezoning, the Council session will be scheduled to allow appropriate public notice. Such notice will be coordinated with the Elkhart County Planning Department.

d. For projects that include request for annexation, the Town legal counsel shall schedule ordinance review, hearing and approval by the Town Council. The Town Manger will inform the applicant as to date and time of such.

10.4 As-builts Record Documents

a. General

The contractor or owner/developer is to maintain an accurate set of record drawings reflecting modifications to the approved plan documents. These documents are to be kept separately from the field set of documents. If the record documents become lost or destroyed, it is the contractor's responsibility to recreate to the same quality as the originals. The contractor shall submit to the Town Manager two (2) neatly prepared and reproducible sets of record drawings, as well as an electronic copy of the record drawings (in current AutoCAD format) with the Final Request for Acceptance. Final payment will not be released until the record drawings are complete and accepted by the Town.

Roadway and street as-builts will be as required by the Elkhart County Street Standards. Generally, utility installation documentation shall include the following, but the Town may require additional documentation:

1) Location and depth of the constructed storm sewers, sanitary sewers, water mains and force mains.
2) Location and depth of all constructed structures.
3) Location of all valves and fittings.
4) Location of any service taps, wyes, service leads or laterals.
5) Identify and locate all buried utilities that cross the installed utility (i.e. sewer, water, gas, telephone, electric, etc.)
6) Locations shall be dimensioned off of the existing structures and property irons or fixed objects within 50 feet of any located item.

b. Sanitary Sewer

As-builts shall include pipe alignment, pipe invert elevations, laterals and service leads measured from the next downstream manhole to the center of the service

wye or tee, along with accurate vertical location of the service lateral at the terminus. (See Sections 3 and 4 for other details related to as-built requirements.) The as-built record will also include a manhole as-built form for each structure and a service wye data sheet for each lateral, refer to Appendix A.

c. Water Supply

As-builts shall include accurate pipe alignment both vertically and horizontally and will accurately depict the exact location of all fittings, bends, vertical alignment changes, valves, plug ends and thrust blocks. Valves shall be located with a minimum two measurement ties accurate to within one tenth of one foot taken at approximately 90 degrees to each other. Services including curb boxes shall be measured from the nearest fixed objects within 50 feet and shall include a minimum of two ties taken at approximately 90 degrees to each other. Valves, hydrants, services leads and curb boxes shall be further recorded on forms provided for that specific purpose included in Appendix A.

10.5 Uniform Traffic Control

Traffic maintenance devices shall be in accordance with Indiana Manual on Uniform Traffic Control Devices for streets and highways and the INDOT Standard Specifications.

a. Contractor's Responsibility

1) The Contractor shall be responsible for coordination of traffic control with co-existing construction projects, with respect to detours, signage, etc.
2) The work shall be done as per INDOT Specifications Sections 801 and 104.04, and as per plan details. Road Construction Ahead signs shall be installed prior to the beginning of all other work operations and shall be removed only after notification from the Engineer. The Contractor shall be responsible for the maintaining of the signs and required warning lights on a periodic basis, (minimum once per week) and additional prompt maintenance when alerted to problems by the Town.

b. Signage

1) Signs shall be as per INDOT standard detail drawings. Signs shall be subject to rejection due to wear and tear. All type III barricades shall have reflective material on both sides of the planks and shall be incidental to the item "Maintaining Traffic," regardless of being relocated within the project. Construction signage and any incidental detour route marker assemblies shall be placed for optimum visibility to the motorists, (i.e. with the avoiding of obstructions), and growth of vegetation over signage shall be eliminated as part of normal maintenance. When sand bagged, temporary sign standards are acceptable, the contractor shall provide a sufficient number of sandbags to keep signs erect in windy conditions.
2) Include the placement of additional reflective barrels, and yellow plastic "Caution" tape at potential hazard areas as needed. Include the placement and maintaining of temporary aggregate pavement at approaches as directed. Maintaining traffic shall otherwise be performed as per INDOT Standard Specifications.

c. Flagmen

The Contractor shall provide flagmen as needed for safe operation of traffic during short term traffic interruptions. The Prime Contractor shall be responsible for the daily use of personal safety equipment, (i.e. reflective vests, hard hats, etc.) and for safe operation of equipment and haul trucks on the project, for all crews and subcontractors.

d. 2-Way Traffic and Road Closure

Twenty-four hour per day, safe, 2-way traffic shall be maintained on all streets during construction, except where road closure and detour are allowed by the Town of Middlebury. Access at approaches within the project limits shall be maintained at all times.

10.6 Erosion Control

a. Temporary Seeding

1) Temporary seeding shall be implemented as necessary and/or as directed by the Town or as specified in the approved Stormwater Pollution Prevention Plan (SWPPP), for effective erosion control during rough grading phases.
2) Acceptable temporary seed species and rates shall include:

Wheat or Rye:	150lbs/acre
Spring Oats:	100lbs/acre
Annual Ryegrass:	40lbs/acre

3) A fertilizer application of 400 lbs./acre of 12-12-12 analysis material shall accompany the seeding application. Mulching is not required but may be used to enhance germination. Temporary seeding is encouraged for use for the time period between final grading and the completion of exterior construction at building sites, to promote early stabilization.

b. Erosion Control Handbook

A copy of the Indiana Storm Water Quality Manual (ISWQM) as published by IDEM, shall be kept onsite by the Contractor during the construction of the project for use as a reference for the proper implementation of erosion control measures as planned. Stockpile locations must be selected to minimize runoff and erosion per IDEM Stormwater guidance.

c. Permanent Seeding

1) Rural seed mix and rates shall total 170 lbs./acre, including:

a) Low endophyte Kentucky 31 Fescue or approved equal: 95lbs/acre
b) Perennial rye grass: 65lbs/acre
c) Jasper Red Fescue or approved equal: 10lbs/acre

2) Urban seed mix and rates shall total 150 lbs./acre, including:

a) Turf-Type Tall Fescue Blend or approved equal: 95lbs/acre
b) Perennial Ryegrass: 45lbs/acre
c) White Dutch Clover or approved equal: 10lbs/acre

The Contractor shall provide Proof of Compliance with the above prior to seeding.

3) Permanent seeding shall be done promptly, and progressively as final grading is completed at the various project areas, in order to allow for the earliest possible achievement of fully established and stabilized grass for erosion control purposes (i.e. multiple mobilizations for seeding shall be made as areas are final graded, rather than one mobilization after all grading is complete).

4) The Contractor shall schedule the construction work so as to take best advantage as possible of the allowable seeding season. This season shall be as described in the "ISWQM", and repeated here as follows:

   a) Optimum Seeding Dates - 3/1 thru 5/10 and 8/10 thru 9/30
   b) Extensive Irrigation Dates- 5/10 thru 8/10

5) The Contractor shall be responsible for irrigation as necessary or as directed by the Owner until 90 days, minimum, beyond the completion and acceptance by the Owner of all project work.

6) Site preparation for seeding shall include "ISWQM" practices:

   a) Disking of the top 3-4 inches of subsoil.
   b) Placement of an even-depth topsoil application of 4 inches minimum.
   c) The topsoil shall then be compacted slightly to improve contact with the subsoil.

7) Fertilizer application shall include:

   a) Initial: 400-600#/acre of 12-12-12 analysis material
   b) Tilling to obtain a uniform seed bed, working the fertilizer into the soil 2-4 inches deep with a disk or rake operating across the slope.
   c) Supplemental: Additional fertilizer to reach 1,000 lbs./acre, timed to support establishment

8) Seeding methods shall include:

   a) Drill or cultipacker-seeder, or by broadcasting
   b) Seed shall be covered to a depth of 1/4 to 1/2 inch.

9) Mulch shall be applied to cover at least 75% of the soil surface, and shall consist of straw, hay, wood fiber, cellulose, excelsior, etc. as given in the "ISWQM".

10) The mulching rate shall be 2 tons per acre, and if straw or hay is used, it shall be anchored immediately by one of the following methods:

   a) crimping
   b) hydro mulching w/short cellulose fibers
   c) applied liquid tackifier
   d) netting secured by metal staples

11) The scheduling of work operations shall be the responsibility of the contractor, subject to potential changes by weather, etc. In general, however, operations involving control of stormwater runoff, erosion control protection, etc., shall be given priority within the schedule. In

regard to erosion control, this involves the optimum use of the available seeding season as previously given.

12) All disturbed areas shall be stabilized within 14 days of final grading or temporary cessation of work, per IDEM Construction Stormwater General Permit (CSGP) requirements.

d. Erosion Control Maintenance

1) The contractor shall inspect all erosion and sediment control measures at least once every seven (7) calendar days and within 24 hours of a rainfall event of 0.5 inches or greater, in accordance with the CSGP.
2) Inspections shall include all perimeter controls, sediment basins, stabilized construction entrances, and other BMPs identified in the approved SWPPP.
3) The contractor shall promptly re-seed any disturbed or washed-out areas to maintain vegetative stabilization and prevent sediment discharge
4) Inlet protection measures shall be inspected daily when work is being performed in the vicinity of these features.
5) If any erosion control measures are disturbed or displaced, they shall be reset or replaced by the end of the same workday to ensure continued effectiveness.
6) All inspection and maintenance activities shall be documented in writing, with records kept onsite or made available to the Owner or regulatory agencies upon request. Documentation shall include the date, time, inspector name, observed conditions, corrective actions taken, and follow-up needs.

e. Contamination Precaution

The contractor is herein advised of the well-draining quality of the existing sandy soils within Town areas which pose an elevated risk of groundwater contamination. In order to protect the groundwater resource from contamination, the contractor must take all precautions to avoid the release of construction related liquids during the project including fuels, oils, concrete washout, and other potential pollutants.

10.7 Special Notes and Requirements

a. Utility Locations

For protection of underground utilities, contractor shall call Indiana's Utility Location Service at 811 or (800) 382-5544 a minimum of three working days prior to excavating in the vicinity of utility lines. All "Holey Moley" participating members will thus be routinely notified. The contractor shall be responsible for notifying utility Owners who may not be part of the "Holey Moley" alert system. Notify the Town (48 hours in advance) at 574-825-1499 prior to any excavation anywhere within Town rights-of-way. No work will begin prior to the contractor obtaining confirmation that the Town has visited the site and marked Town utilities.

b. Preconstruction Meeting

Prior to the start of construction, the contractor shall request a pre-construction meeting with the Town of Middlebury to review project issues. At that time, the

contractor shall provide the Town with an updated work plan for review and discussion.

c. Preconstruction Video

The Contractor shall be responsible for providing a pre-construction videotape of the construction corridor. The videotape shall provide good color frames and have sound capabilities used to point out existing surface conditions. A date and time stamp shall be visible during the extent of the production. The pre-construction video(s) shall be delivered in digital format on a USB flash drive to the Town of Middlebury prior to the start of construction. It is suggested that if possible, the preconstruction video be made after a rain event to show any existing drainage problems. Also required will be drone videotaping of the construction corridor before and after construction.

d. Compaction Requirement

Compaction testing shall be required during restoration of any excavation within Town rights-of-way. It shall be the responsibility of the contractor to order these tests and provide the necessary documentation, verifying passing tests, to the Supervisor of Public Works or Town Manager. Failed tests shall be followed by documentation of corrective measures and passing test results obtained in the same immediate locations.

e. Construction Stormwater General Permit

Projects disturbing less than one (1) acre are not subject to CSGP permitting but must still implement erosion and sediment control measures consistent with the Indiana Storm Water Quality Manual (ISWQM) and Town requirements. These controls shall be documented in the project's site plan and maintained throughout construction.

Projects disturbing one (1) acre or more, or part of a larger common plan of development that cumulatively disturbs one acre or more, must obtain CSGP coverage prior to the start of land-disturbing activities. The SWPPP shall be submitted to the Elkhart County Soil & Water Conservation District (SWCD) for review and approval in accordance with CSGP requirements. The contractor shall be responsible for submitting the Notice of Intent (NOI) and securing permit coverage from IDEM.

f. Protection and Restoration of Property

The Contractor shall not enter upon private or Town property for any purpose without obtaining proper permission. He shall be responsible for the preservation from injury or damage resulting directly or indirectly from the execution or nonexecution of the work of all public and private property adjacent to the work. He shall take all necessary precautions to prevent damage to trees, pipes, conduits, and other underground structures, public utilities, etc., and shall protect carefully from disturbance or damage all property marks or markers. The contractor shall contact all utilities in the area of the proposed construction and have them locate their utility lines prior to the start of work.

g. Opening of Section of Work

Whenever, in the opinion of the Town, all of the work or any portion thereof is in suitable condition for opening or use, it shall be opened as may be directed, but such opening shall not be construed as an acceptance of the work or any part thereof, or as a waiver of any of the provisions of these specifications.

h. Limitations of Operations

Whenever, in the judgment of the Town, the contractor has obstructed or closed a greater portion of any street, sidewalk or alley than is necessary for the proper prosecution of the work or is carrying on operations to the prejudice of work already started, the Town may require the contractor to finish the part on which work is in progress before any additional portions are started. Work shall be conducted so as to create a minimum amount of inconvenience to the public.

i. Final Cleaning Up

Before acceptance or approval of any work, adjacent property, the right-of-way or streets, and all grounds occupied by the contractor in connection with the work, shall be cleaned of all rubbish, excess materials, temporary buildings, etc., and the contractor shall restore in an acceptable manner all property, both public and private, which may have been damaged during the prosecution of the work, and all parts of the work shall be left in a neat and presentable condition, as good as or better than it was at the beginning of construction.

j. Removal and Replacement of Unclassified Road Surfacing, Sidewalks, Curb and Gutter, Driveways, etc.

The contractor shall keep the site clean and free of debris during construction. The contractor shall provide dust control at the project site for the duration of the project. The contractor shall restore and/or repair all sidewalks, crosswalks, curbs, gutters, driveways, shoulders of roads and paved streets, parking areas, mailbox turn-outs, parkways, lawns, mailboxes, street signs, miscellaneous structures, etc. The replacement and/or repair work shall be done without delay, as soon as the work immediately adjacent is completed. In any event, the removed or damaged facilities, etc. shall be restored to a condition equal to or better than that, which existed prior to the start of the work.

k. Limitations on Open Trench

The contractor shall not open, nor leave open, any more trench than is absolutely necessary, and as approved by the Town, to carry out construction work in an efficient manner.

l. Contractor’s Performance Bond

The Contractor's performance bond shall remain in force throughout the period of construction and shall continue in force for a period of one (1) year following the final inspection and acceptance of the project by the Owner.

m. Work Performed by Town Employees

If the Town in its sole judgment determines that the Town’s employees and equipment must be used to perform work that is the contractor’s responsibility, the Town may charge the contractor using the following rates:

Professionals	$150.00/hr.
Non-Professionals	$100.00/hr.
Vacuum Truck	$600.00/hr.
Backhoe Loader	$400.00/hr.
Mini Excavator	$400.00/hr.
Service Truck	$200.00/hr.
Non CDL Dump Truck	$100.00/hr.
CDL Dump Truck	$300.00/hr.
Skid Loader	$400.00/hr.
Mobilization Fee	$1,000.00
Portable Air Compressor	$100.00

The Town, through the Director of Public Works, reserves the right to implement this option after the problem is called to the attention of the Contractor's representative on the project and a satisfactory response, in his sole judgment, is not received. Notice to the Contractor and the required time for response will be dependent upon the circumstances involved. Matters of public safety or imminent hazard to Town property may require immediate response and, therefore, reaction by the Contractor or Town employees.

Examples of Contractor's responsibilities most frequently neglected to a degree that the Town feels compelled to intervene, include, but are not limited to:

Traffic Control
Clean-up and Restoration

The Town will bill the contractor after performing the work. Remittance shall be required within 30 days. Billings may include materials, equipment, vendor services, and subcontractor services.

10.8 Signs - Private

Refer to the Town of Middlebury's current Sign Ordinance.

APPENDIX A – FORMS

Town of Middlebury

Copies of this information Issued
Date: _____ By: _____

Date installed: _____

HOUSE SEWER SERVICE LEAD AND WYE DATA

Name: _____ (Provide Dimensioned Sketch w/ North Arrow)

Address: _____

Lot: _____ Plat: _____

Parcel: _____ Section: _____

Lead Size: _____ Main Size: _____

Down Stream MH#: _____ To MH#_____

Distance to Downstream MH: _____

Depth of Main: _____ Elevation: _____

Lead Invert (Depth/Elevation): _____
(At end or R.O.W.)

Ties to lead location: _____

_____

_____

Note: The plumber shall take it upon himself to physically locate the end of the sewer lead and determine the grade necessary to make the connection.

Service Length: _____

Clean out at Right of Way: _____

This data sheet provided by: _____

Total Length: _____

COMMENTS: _____

_____

_____

_____

_____

Town of Middlebury

PIPE MANDRELL TEST

(Performed 30 days or greater after the installation is complete and pipe is backfilled)

PROJECT _____ JOB # _____

CONTRACTOR _____ FOREMAN _____

MAX.ALLOWABLE DEFLECTION _____ %

Date	From: MH = STA	To: MH = STA	Pipe Material	Pipe Diameter (in)	Length (ft)	Deflection (%)	Pass/Fail

COMMENTS: _____

_____

_____

Signed: _____
Town Representative

Signed: _____
Contractor Representative

Town of Middlebury

LOW PRESSURE AIR TEST

PROJECT _____ JOB # _____

CONTRACTOR _____ FOREMAN _____

DATE _____

MH or STA: From / To	Pipe Dia.	Pipe Material	Length	Test Pressure	Time	Pressure Drop	Pass/Fail

If the pressure drops ≥ 1 psi during the test, the pipe has failed.

Refer to Sanitary Sewer Testing Procedures in Standard Specification Section 4, and Table 4A.

Pipe Diameter (in)	Time (min/100 ft.)
6-inch	0.7
8-inch	1.2
10-inch	1.5
12-inch	1.8
15-inch	2.1
18-inch	2.4

COMMENTS: _____

_____

Town Representative: _____ Title: _____ Date: _____

Contractor Representative: _____ Title: _____ Date: _____

Town of Middlebury

MANHOLE VACUUM TEST

Project Number: _____ Date: _____

Contractor Name: _____ Job Number: _____

Manhole Number	Diameter (in)	Manhole Depth (ft)	Spec Test Time (sec)	Negative Pressure (10")	Actual Drop (1" max.)	Pass/Fail	Manhole Clean (Yes/No)	Steps (Yes/No)

Minimum Test Times for Various Manhole Diameters						
Depth (ft)	Diameter (in)					
	36	48	60	72	84	96
	Time (seconds)					
6	11	15	20	25	29	34
8	14	20	26	33	38	45
10	18	25	33	41	48	56
12	21	30	39	49	57	67
14	25	35	46	57	67	78
16	29	40	52	67	76	89
18	32	45	59	73	86	100
20	35	50	65	81	95	111
22	39	55	72	89	105	122
24	42	59	78	97	114	133
26	26	64	85	105	124	144
28	49	69	91	113	133	155
30	53	74	98	121	143	166

COMMENTS: _____

_____

Town Representative: _____ Title: _____ Date: _____

Contractor Representative: _____ Title: _____ Date: _____

*Calculated from ASTM C 1244-02. The Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test.

Town of Middlebury

Copies of this information Issued
Date: _____ By: _____

Date installed: _____

HOUSE WATER SERVICE DATA

Name: _____

Address: _____

Lot: _____ Plat: _____

Parcel: _____ Section: _____

Lead Size: _____ Main Size: _____

Depth of Main: _____ Elevation: _____

Lead (Depth):_____
(At end or R.O.W.)

Ties to service location: _____

_____

_____

(Provide Dimensioned Sketch w/ North Arrow)

Note: The plumber shall be responsible to physically locate the end of the water service and determine materials to make the connection.

If cover (min. 60") cannot be maintained contact Town representatives.

This data sheet provided by: _____

Service Length: _____

Curb Stop at Right of Way: _____

Total Length: _____

COMMENTS: _____

_____

_____

_____

Town of Middlebury

WATER SYSTEM TESTING PROCEDURE RECORD

Contractor's Name: _____

Contractor's Address: _____

Project Name: _____

Project Location: _____

Pipe Data:
Existing Pipe Connection Point (Describe-General Location, Size, Connection Method)

Connection Point No. 1:_____

_____

Connection Point No. 2:_____

_____

Connection Point No. 3:_____

_____

New Pipe Description:
Length:_____/_____

Diameter:_____/_____

Type: _____DI _____ PVC _____HDPE

Pipe Filling Data:
Town Representative Present:_____

Fill Date:_____

Chlorination Method: ☐ Granular ☐ Liquid

Free Chlorine Residual (>25 mg/l) _____
Location No. 1: _____

Free Chlorine Residual (>25 mg/l) _____
Location No. 2: _____

Calculated Volume of Water Used: _____

Special Note: All testing shall be performed in the presence of a town-authorized representative.

Pressure & Leakage Test:
Date:_____

Start Time:_____(a.m./p.m.)

End Time: _____(a.m./p.m.)

Test Duration:_____2 hours_____(required)

Test Pressure:_____150 psi_____(required)

Pressure Drop During Test:_____psi
(Maximum Pressure Drop Allowed – 5psi)

Allowable Leakage shall be calculated as follows:

$$\text{Allowable Leakage} = \frac{\text{PipeLength(ft)} \times \text{NominalDia.(in)}}{10{,}875}$$

Calculated Allowable Leakage:_____ oz/gal

Volume of Water Required to Return the System Pressure to 150 psi:_____ oz/gal

Water Main: ☐ Passed / ☐ Failed Tests

Test Witnessed By:_____

Bacteria & Chlorine Residual Sample 1:
Town Representative Present:_____

First Sample Date:_____

Testing Laboratory:_____

Sample Results: ☐ Positive ☐ Negative

Chlorine Residual in System:_____

Bacteria & Chlorine Residual Sample 2:
Town Representative Present:_____

First Sample Date:_____

Testing Laboratory:_____

Sample Results: ☐ Positive ☐ Negative

Chlorine Residual in System:_____

Initial Flushing Record:

Required Flushing Velocity:_____

Min. Flow Volume Required:_____

Date:_____

Start Time of Flush:_____(a.m./p.m.)

End Time of Flush:_____ (a.m./p.m.)

Duration of Flush:_____ min.

Flush Rate:_____ gpm

Volume of Water Used:_____ gal

Final Flush Record:

Required Flushing Velocity:_____

Min. Flow Volume Required:_____

Date:_____

Start Time of Flush:_____(a.m./p.m.)

End Time of Flush:_____ (a.m./p.m.)

Duration of Flush:_____ min.

Flush Rate:_____ gpm

Volume of Water Used:_____ gal

Additional Comments:

Town of Middlebury

DEVELOPMENT INTRODUCTION/REVIEW REQUEST

Project Name:
_____

Owner/ Developer

_____
Corporate Name

_____
Developer's Name

_____
Address

_____

_____

_____
Phone No. Fax No.

Design Engineer

_____
Corporate Name

_____
Engineer's Name

_____
Address

_____

_____

_____
Phone No. Fax No.

Type of Development:

☐ Single Family Residential ☐ Multi- Family Residential ☐ Commercial ☐ Industrial

Number of Development Parcels_____ Development Acreage: _____

Additional Site Information: _____

_____

_____

_____

Development Location:

_____ Qtr. Section: _____ Township: _____ Range: _____

Descriptive Location: _____

_____

_____

Nearest Cross Streets: _____

_____

DEVELOPMENT INTRODUCTION/REVIEW REQUEST

Development Access:

The development is to gain public access from what town or county road(s): _____

_____

_____

Wastewater Service:

Proposed Number of EDU's: _____ Estimated Wastewater Flow: _____

For Town Use

Proposed Municipal Wastewater Connection Point: _____

_____

_____

If a lift station is required, provide the station's service area as an attachment. What is the station's proposed pumping capacity: _____

Calculated Wastewater Connection Fee: _____

Water Service:

Proposed Number of Equivalent Dwelling Units: _____

Estimated Water Demand: _____

For Town Use

Proposed Municipal Water Main Connection Points (two connection points will generally be required): _____

_____

_____

Calculated Water Connection Fee: _____

☐ Upper Pressure Zone ☐ Lower Pressure Zone

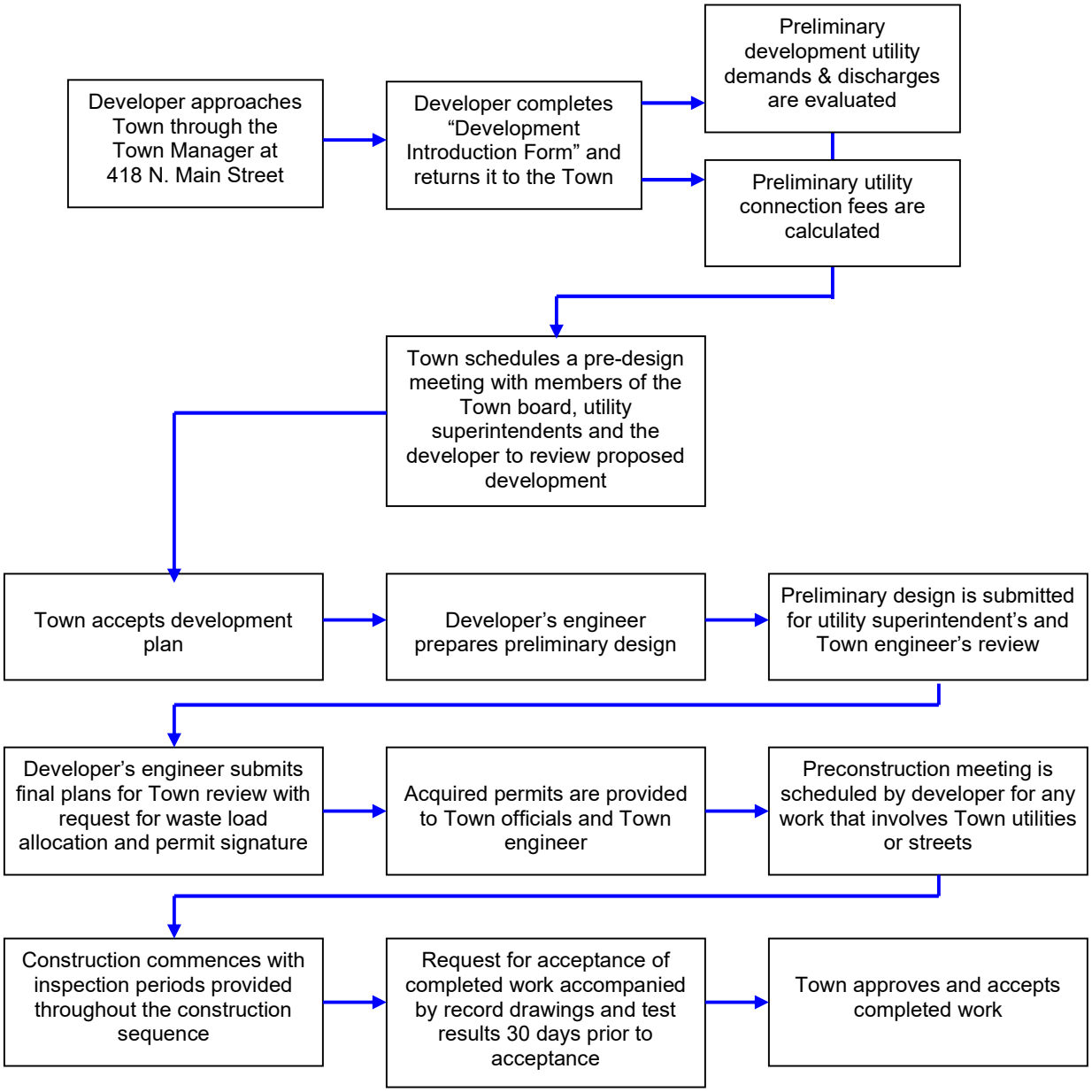
Stormwater:

Developments plans for stormwater maintenance: _____

_____

_____

DEVELOPMENT PROCEDURAL FLOW CHART



Town of Middlebury

Industrial User Wastewater Survey

General Information

1. Company Name: _____
2. Parent Company or Owning Entity: _____
3. Facility Street Address: _____
4. City, State, Zip: _____
5. Mailing Address (if different): _____
6. City, State, Zip: _____
7. Facility Contact Name: _____ Title: _____
8. Phone Number: (_____) _____ 9. Email: _____
10. Property Owner: _____ 11. Contact: _____
(if Property Owner is a company)
12. Phone Number: (_____) _____ 13. Email: _____
14. Describe the type of business activity conducted at this site. Include primary products or services and raw materials used. Describe the company's manufacturing processes, if any.

_____

_____

15. Is your business: ☐ New to the area ☐ Relocating ☐ Remaining in same location

Starting date for new business or at new location: _____

16. Is the building: ☐ Being Constructed ☐ Being Remodeled (skip to question 19)
17. If you are constructing a new building, will it be connected to the public sewer system?
☐ Yes ☐ No
18. Completion date(s) of newly constructed building(s) at this site (if known): _____
(skip to question 21)
19. If remodeling or expanding, is the building presently connected to the public sewer system?
☐ Yes ☐ No
20. If remodeling or expanding, please describe project: _____

_____

21. Will you or are you planning to change your business process? If yes, how? (increasing size or production, etc.) ☐ Yes ☐ No

_____

22. Average number of employees per shift: 1st: ___ 2nd: ____ 3rd: _____ Total: _____

23. Normal operating schedule: Actual times: ____ Hours/Day: ____ Days/Week: _____

Waste Discharge

24. Do you or will you discharge wastewater containing commercial/industrial waste
☐ Yes ☐ No (other than restrooms, lunchrooms, etc.)

If yes, the discharge goes to the (mark all that apply): ☐ Sanitary sewer ☐ Storm drain

☐ Onsite disposal system (e.g. drain field, drywell, septic tank) ☐ Waste haulers
☐ Other (explain)

_____

25. Is the discharge: ☐ Batch ☐ Continuous ☐ Both

Batch Discharge: Estimate _____/gpd *or* Actual _____/gpd

Continuous Discharge: Estimate _____/gpd *or* Actual _____/gpd

26. Identify all processes that generate wastes, and the type of wastes generated (e.g. equipment or floor washing, cooling, metal finishing, x-ray/photo waste, utility blowdown, etc.). Attach additional sheet(s) if needed.

☐ Domestic ☐ Equipment/Facility washdown ☐ Process Water (coating rinse waters, etc.)

☐ Air pollution control equipment ☐ Non-contact cooling water ☐ Contact cooling water

☐ Boiler/Tower blowdown ☐ Stormwater runoff to sewer ☐ Other (Explain)

_____

_____

Include flows (gpd) for each process identified.

_____

_____

27. List types and concentration of pollutants in your commercial/industrial waste discharge (if known). Attach a flow diagram and additional sheet(s) if needed: _____

_____

28. Do you or will you use oils, fats, or grease (cooking or petroleum) in your business?
☐ Yes ☐ No

29. Identify pretreatment system(s) that are or will be installed (pH neutralization, oil/water separator, etc.). Attach additional sheet(s) if needed:

_____

_____

30. Identify the chemicals used at this site (e.g. acids, caustics, detergents, metal salts, solvents, etc.). Attach a list on a separate sheet of paper if necessary:

_____

_____

31. Is there or will there be, any substance discharged in the wastewater, which, if otherwise ☐ Yes ☐ No
disposed of, would be considered a hazardous waste under Resource Conservation Recovery Act (RCRA) requirements? (40 CFR 261) If yes, list these substances:

_____

32. If you have processing or chemical storage area, do you or will you have floor drains?
☐ Yes ☐ No ☐ N/A

Signature Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name	Title	
		( )
Signature	Date	Phone

Town of Middlebury

APPLICATION FOR SITE (COMMERCIAL, INDUSTRIAL) PLAN REVIEW

Allow two weeks minimum for Site Plan Review Process.

Project name: _____

Owner name, address and phone number: _____

_____

_____

Property address (as assigned by Town or County Building Department): _____

_____

_____

Parcel ID (Tax ID Number, example 04-022-210-009):_____

Current use of property: _____ Proposed use: _____

Contractor's name, address and phone number: _____

_____

_____

APPLICANT MUST PROVIDE AN ACCURATE SITE PLAN (TO SCALE) SHOWING PROPERTY LINES AND DIMENSIONS, SITE GRADING, UTILITIES, STORM WATER FEATURES, BUILDING DIMENSIONS, YARD SETBACKS, AND DISTANCES TO ADJOINING BUILDINGS. A LANSCAPE PLAN SHOWING LANDSCAPING AREAS, COMPONENTS, SITE LIGHTING AND PEDESTRAIN WALKWAYS MUST ACCOMPANY THE SITE PLAN. SITE PLAN MUST INCLUDE PARKING LOT LAYOUT, SPACES, DRIVES, LANDSCAPING, AND WALKWAYS. ALSO PROVIDE BUILDING PLANS INCLUDING AT MINIMUM, FLOOR PLAN, STREET FAÇADE, AND EXTERIOR FINISH.

Building area: _____ Building height: _____

Proposed parking area (Check one) ☐ Asphalt ☐ Concrete

Average number of cars documented or anticipated per day: _____

Number of employees on largest work shift: _____ Visitor/customers: _____

Seating capacity: (restaurants, theaters, and churches) _____

Existing sewer lateral: ☐ Exists ☐ None ☐ Unknown

Existing water services: ☐ Exists ☐ None ☐ Unknown

Within wellhead protection area: ☐ Yes ☐ No

Town of Middlebury

Have you obtained a zoning clearance? ☐ Yes ☐ No (If yes, please attach.)

Have you completed a waste water questionnaire? ☐ Yes ☐ No (If yes, please attach.)

Have you completed a development introduction form? ☐ Yes ☐ No (If yes, please attach.)

Have you met with Town officials? ☐ Yes ☐ No

If yes, who: _____

Submitted by: _____

Address: _____

Phone: _____

FOR TOWN USE ONLY:

_____ Date received

_____ Date Referred to Engineer

_____ Date Review Comments Due to Town Manager

_____ Date Review Due to Applicant

Did applicant provide:

☐ 5 submittal packages including
☐ Complete site design
☐ Min. Review Fee or Deposit
☐ County approved PUD (if any)
☐ Building plans

MINIMUM NON-REFUNDABLE REVIEW FEE DEPOSIT

Commercial Site $300.00 Industrial Site $1,000.00

If review requires funds in excess of the minimum review process will be suspended until added fees are received by the Town.

100-YEAR RETENTION POND CALCULATIONS

In Accordance with Elkhart County Highway Drainage Standards

Project: _____ Date: _____

County: _____ Job No. _____

City/Town: _____ Engineer: _____

Inputs:

Surface	Runoff Coefficient	Area (SFT) Developed	Area (SFT) Undeveloped
Permeable Surface	**0.3**		
Impermeable Surface	**0.9**		
TOTAL			

Outflow Rate (1)	

(1) Runoff coefficient for undeveloped rate shall be 0.2

Storm Duration (T_c) (hr.)	10-year Intensity (i) (in/hr.)	100-year Intensity (i) (in/hr.)	Inflow Rate I = ciA (cfs)	Outflow Rate O (cfs)	Storage Rate $\Delta S = I - O$ (cfs)	Required Storage (Acre-feet) $\frac{(\Delta S)*T_c}{12}$
0.25	4.32	6.47				
0.5	2.64	3.96				
0.75	1.81	2.71				
1	1.33	1.98				
2	1.01	1.55				
3	0.74	1.14				
4	0.6	0.92				
5	0.5	0.77				
6	0.43	0.67				
7	0.38	0.59				
8	0.34	0.53				
9	0.31	0.48				
10	0.29	0.44				
15	0.21	0.32				
20	0.16	0.25				
24	0.14	0.22				

Required Retention Pond Storage		**Acre-ft**
		CFT

Town of Middlebury

APPLICATION FOR SIGN REVIEW/APPROVAL

Allow two weeks minimum for Sign Review/Approval Process.

Project/site name: _____

Owner name, address and phone number: _____

_____

_____

Property address (as assigned by Town or County Building Department): _____

_____

_____

Parcel ID (Tax ID Number, example 04-022-210-009): _____

Current use of property: _____ Proposed use: _____

Sign contractor's name, address and phone number: _____

_____

_____

APPLICANT MUST PROVIDE AN ACCURATE SITE PLAN (TO SCALE) SHOWING THE SIGN, PROPERTY LINES AND DIMENSIONS, BUILDING DIMENSIONS, YARD SETBACKS, AND DISTANCES TO ADJOINING BUILDINGS. SITE PLAN MUST INCLUDE PARKING LOT LAYOUT, SPACES, DRIVES, LANDSCAPING AND WALKWAYS.

Sign area: _____ Sign height: _____

Sign type: _____

Have you obtained a zoning clearance? ☐ Yes ☐ No (If yes, please attach.)

Have you completed site plan review? ☐ Yes ☐ No (If yes, please attach.)

Have you completed a development introduction form? ☐ Yes ☐ No (If yes, please attach.)

Have you met with Town officials? ☐ Yes ☐ No

If yes, who: _____

Town of Middlebury

Submitted by: _____

Address: _____

Phone: _____

Please describe how the proposed sign complies or differs from what is allowed under Ordinance 250A:

_____

_____

_____

_____

FOR TOWN USE ONLY:

_____ Date received

_____ Date Referred to Council

_____ Date Review Comments Due to Town Manager

_____ Date Review Due to Applicant

Did applicant provide:

☐ 5 submittal packages including

☐ County approved PUD (if any)

☐ Complete site design

☐ Building plans

☐ Complete sign design

☐ Min. Review Fee or Deposit

Town of Middlebury

APPLICATION FOR RIGHT-OF-WAY PERMIT

Allow two weeks minimum for review and approval process.

Project name: _____

Owner or contractor name, address and phone number: _____

_____

_____

Property address (nearest or at worksite): _____

_____

_____

Work will occur within the R-O-W of _____ between _____

and _____.

Describe the work proposed: _____

Contractor's name, address and phone number: _____

_____

_____

Provide minimum of two 24-hour emergency contacts:

_____ _____

APPLICANT MUST PROVIDE AN ACCURATE ENGINEERING PLAN (TO SCALE) SHOWING RIGHT-OF-WAY LINES AND DIMENSIONS, GRADING, UTILITIES, EXISTING STORM WATER FEATURES AND DISTANCES TO ADJOINING BUILDINGS. THE PLAN SHOWING WORK AREAS AND COMPONENTS MUST INCLUDE EXISTING SURFACE IMPROVEMENTS INCLUDING LANDSCAPING, AND WALKWAYS.

Duration of work: From _____ to: _____

Will the work require excavation? _____ To what depth: _____

Will the work connect to Town utilities? _____

Will the work disrupt power to Town facilities? _____

Will the work require a street closure? _____

Have you completed a waste water questionnaire? ☐ Yes ☐ No (If yes, please attach.)

Have you completed a development introduction form? ☐ Yes ☐ No (If yes, please attach.)

Have you met with Town officials? ☐ Yes ☐ No

If yes, who? _____

Town of Middlebury

Submitted by: _____

Address: _____

Phone: _____

FOR TOWN USE ONLY:

_____ Date received

_____ Date Referred to Engineer

_____ Date Review Comments Due to Town Manager

_____ Date Review Due to Applicant

_____ Date of Pre-Construction Meeting (req.)

Did applicant provide:

☐ 5 submittal packages including

☐ Certificate of Insurance
☐ Security bond with a value equivalent to pavement related work

☐ County approved PUD (if any)

☐ Complete engineering design

☐ Building plans

☐ Building plans

☐ Min. Review Fee or Deposit

MINIMUM NON-REFUNDABLE REVIEW FEE DEPOSIT

Commercial Site: $20.00 Industrial Site: $100.00

Pavement Cut Fee: $20 if 100 linear feet or less, $15 per 100 LFT to a maximum of $1000

If review requires funds exceeding the minimum amount, the review process will be suspended until added fees are received by the Town.

WASTEWATER DISCHARGE PERMIT APPLICATION FOOD SERVICE FACILITY

* * * * * * * * * * *

TOWN OF MIDDLEBURY
WASTEWATER TREATMENT PLANT
121 YORK DR.
MIDDLEBURY, INDIANA 46540

Jody Nihart, Pretreatment Coordinator
(574) 524-6658
pretreatment@middleburyin.com

Cole McClain, WWTP Superintendent
(574) 536-8401

This permit application must be completed by an official of the firm requesting to be issued a discharge permit. Inclusion of documents indicated within this application as being necessary, including but not limited to pretreatment plans, process plans, spill and slug control plans, water bills, etc., will expedite the permit issuance process. Should you require assistance in completing this document, do not hesitate to contact the Town of Middlebury Pretreatment Coordinator. Please email completed application to pretreatment@middleburyin.com or drop off to Town Hall at 418 N. Main.

INSPECTION ON ALL GREASE INTERCEPTORS, TRAPS, AND DYE TESTING REQUIRES 48 HOURS OF NOTICE PRIOR TO OPERATION/ OPENING AND/OR HEALTH DEPARTMENT FINAL INSPECTION.

TOWN OF MIDDLEBURY
WASTEWATER DISCHARGE PERMIT APPLICATION
FOOD SERVICE FACILITY
418 N Main St, Middlebury, IN 46540
Phone: 574-825-1499

Facility Information

Name of Facility: _____

Application Date: _____

Address: _____

City: _____ State: _____ Zip: _____

Facility Phone Number: _____ FAX: _____

Email Address (REQUIRED): _____

Mailing Address (if different): _____

Corporate Office/Business Owner Information

Name of Business: _____

Contact Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Business Phone Number: _____FAX_____

Email Address: _____

IF YOU ARE APPLYING FOR A NEW FACILITY, PROCEDE TO PAGE 4

APPLICATION RENEWAL ONLY

Since the last application cycle, has this facility made any changes to the following:

Location Information *(Seating Capacity, Hours of Operation)*	☐ Yes	☐ No
Kitchen Equipment *(Fryers, Three Bay Sinks, Mop Sinks, Floor Drains, etc.)*	☐ Yes	☐ No
Service Practices *(Onsite Food Prep, Disposable Packaging, Food Trucks, etc.)*	☐ Yes	☐ No
Grease Trap/Interceptor Information	☐ Yes	☐ No
Grease Trap/Interceptor Hauler Information	☐ Yes	☐ No
Additive Information *(Use of additives such as enzymes or bacteria to reduce grease)*	☐ Yes	☐ No

Was this facility deemed to be in "non-compliance" at any point in the last application cycle?

☐ Yes ☐ No

IF YOU INDICATED "NO" ON ALL PRECEDING QUESTIONS, YOU MAY ADVANCE DIRECTLY TO THE AFFIDAVIT PAGE OF THIS APPLICATION. CHANGES TO THE FACILITY INDICATED WITH A "YES" MUST BE DETAILED ON THE FOLLOWING PAGES

Location Information

Seating Capacity: _____

Hours of Operation:
If not open, indicate "NA"

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday

Type of Food Service Facility (check one or two if applicable)

☐ Food Preparation ☐ Food Packager ☐ Restaurant

☐ Fast Food Restaurant ☐ Takeout Facility ☐ School Cafeteria

☐ Other Cafeteria ☐ Meat Processor ☐ Supermarket

☐ Health Care Facility ☐ Club/Organization ☐ Church

☐ Mobile Truck ☐ Bakery ☐ Hotel/Motel

☐ Other, Specify: _____

Type (Kind) of Food Served

_____

_____

_____

_____

Equipment and Serving Information

Check all that apply to your facility:

☐ Commercial Dishwasher
☐ Garbage Disposal
☐ 3-Bay Sink
☐ Stove/Oven
☐ Mop Sink
☐ Drive Thru
☐ Floor Drains
☐ Deep Fryer
☐ Meals prepared on site and served on plates washed on site
☐ Limited menu food served on plates washed on site
☐ Food served on disposable packaging
☐ Food Truck(s)

How many? _____ Full Service: ☐ Yes ☐ No

Grease Trap/Interceptor Information

(Use additional sheets if needed)

Grease Interceptors and Grease Traps are devices designed to collect, contain, or remove food wastes and grease from the waste stream while allowing the balance of the liquid waste to discharge to the wastewater collection system (sewer) by gravity.

***Grease Interceptor* – Located underground and outside a food service facility**

***Grease Trap* – Located inside a food service facility or under a sink**

Location	Size (gallons)	Type	Cleaning Frequency
		☐ Interceptor ☐ Trap	
		☐ Interceptor ☐ Trap	
		☐ Interceptor ☐ Trap	

Grease Trap/Interceptor Hauler Information
(Not Fryer Grease)

Name of Hauler: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Additive Information

Does your facility use any additives in the plumbing, grease interceptor or grease trap (i.e., enzymes, bacteria, etc.)?

☐ Yes ☐ No

If yes, please complete the following table and attach an MSDS for each product.

Location	Additive Name	Additive Frequency

AFFIDAVIT PAGE

NEW AND EXISTING APPLICANTS MUST SIGN

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

Signature: _____

Printed Name: _____

Position/Title: _____

Date: _____

Town of Middlebury

GREASE TRAP/INTERCEPTOR REPORTING LOG

Middlebury
Grown from Tradition

THIS FORM MUST BE POSTED IN KITCHEN

Facility Name:	**Address**:
Permit Number:	**Email:**

Reporting Quarter: (Interceptors/grease traps cleaned as stated in Ordinance)

☐ First ☐ Second ☐ Third ☐ Fourth ☐ None Required This Quarter

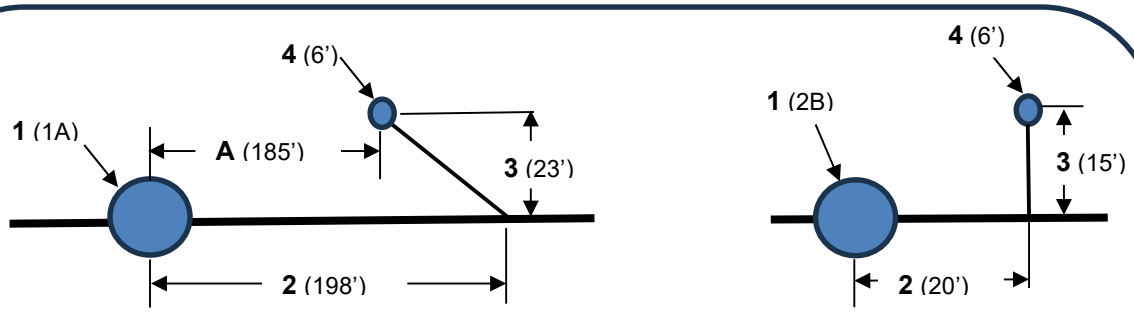
Date Cleaned	Name of Hauling Contractor (If you clean trap put self)	Amount of Solids or Grease Removed (lbs. or gal.)	Initials of Owner or Manager

Post this log in a plastic sleeve on the wall in the kitchen in a safe area, protected from food, water and grease.

Utility Service Location Record Standards

Water Service Record

(Required on each record drawing sheet)



	1	2	A	3	4
EX:	1A	198'	185'	23'	6'
EX:	2B	20'	-	15'	6'

1 = Nearest fire hydrant.
2 = Location of corporation stop from hydrant.
A = Location of curb stop from nearest fire hydrant over the water main when not perpendicular (feet).
3 = Length of water service perpendicular to water main (feet).
4 = Depth of water service at curb stop.

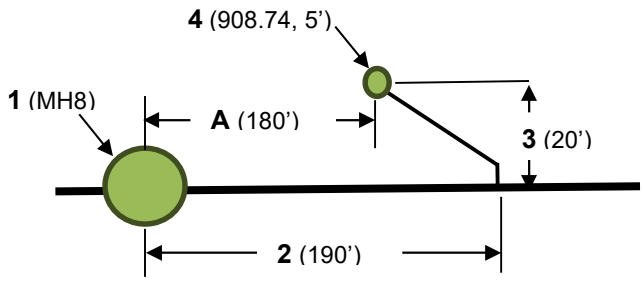
Record Information

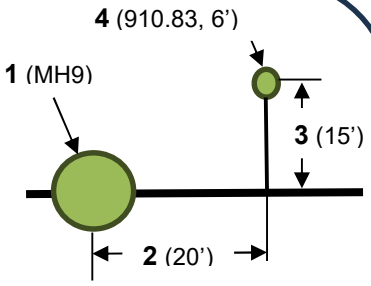
(Required on cover sheet)

CONTRACTOR:	*CONTRACTOR NAME* *BUSINESS* *STREET ADDRESS / P.O. BOX* *CITY, STATE, ZIP CODE* *PHONE NUMBER*
CONTRACTOR SUPERINTENDENT:	*NAME*
COMPLETION:	*MONTH, YEAR*
PROJECT INSPECTOR:	*NAME*

Sanitary Lateral Service Record

(Required on each record drawing sheet)





	1	2	A	3	4
EX:	MH8	190'	180'	20'	908.74, 5'
EX:	MH9	20'	-	15'	910.83, 6'

1 = Downstream sanitary manhole number.
2 = Location of wye from downstream sanitary manhole (feet).
A = Location of cleanout from downstream sanitary manhole over the sanitary sewer main when not perpendicular (feet).
3 = Length of sanitary lateral perpendicular to sanitary sewer main (feet).
4 = Depth of sewer lateral at cleanout (invert elevation, feet).

APPENDIX B – BONDS

PERFORMANCE BOND

Contractor	**Surety**
Name: **[Full formal name of Contractor]** Address *(principal place of business)*: **[Address of Contractor's principal place of business]**	Name: **[Full formal name of Surety]** Address *(principal place of business)*: **[Address of Surety's principal place of business]**
Owner	**Contract**
Name: **[Full formal name of Owner]** Mailing address *(principal place of business)*: **[Address of Owner's principal place of business]**	Description *(name and location)*: **[Owner's project/contract name, and location of the project]** Contract Price: **[Amount from Contract]** Effective Date of Contract: **[Date from Contract]**

Bond

Bond Amount: **[Amount]**

Date of Bond: **[Date]**

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
_____ *(Full formal name of Contractor)*	_____ *(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:

    3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;

    3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

    3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

    5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

    5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

    5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

    5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

   7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

   7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

   7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

    14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

    14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

    14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

    14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

    14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

16. Modifications to this Bond are as follows: **[Describe modification or enter "None"]**

Town of Middlebury, Indiana MAINTENANCE BOND

The undersigned certifies that he/she is the Secretary/Custodian of the Company named as Principal in the within Bond; that _____ who signed the said Bond on behalf of the Principal was then the _____ of the Company, that I know his/her signature, and his/her signature thereto is genuine; and that said Bond was duly signed, sealed, and attested to, for and on behalf of said Company by authority of its governing body.

_____ (Seal)
Signature

_____
Printed Name

Title: Secretary/Custodian

KNOW ALL MEN BY THESE PRESENTS, that _____ as Principal and _____ as Surety, are held and firmly bound to the Town of Middlebury, Indiana acting by and through the Town Council of the Town of Middlebury, Indiana ("Owner") in the sum of _____ Dollars ($_____), (10% of final construction costs) for the payment of which sum well and truly to be made, we jointly and severally bind ourselves, our heirs, representatives, successors, and assigns firmly by these presents this _____ day of _____, 20_____.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SUCH that, Whereas, the Principal, entered into a construction contract on the _____ day of _____, 20_____ to construct and install _____ according to the plans and specifications; it is hereby warranted and guaranteed that the work and materials as provided in the work and the plans and specifications as completed are free of defect, and such warranty shall extend for a period of three (3) years from the date of final acceptance of the work by the Owner.

NOW, THEREFORE, if the said Principal shall faithfully perform and fulfill all of the requirements of said Warranty and Guaranty, and make all repairs required under said Warranty and Guaranty, and in the manner provided for, then this Bond to be null and void; otherwise to remain in full force and effect.

IN WITNESS WHEREOF, this Maintenance Bond is executed on the _____ day of _____, 20____ by the Principal and Surety.

NAME OF PRINCIPAL

By:_____

_____
Printed Name

_____
Title

NAME OF SURETY

By:_____

_____
Printed Name

_____
Title

STATE OF INDIANA)
)SS:
COUNTY OF _____)

Before me, a Notary Public in and for said County and State, this _____ day of _____, 20_____, personally appeared _____, of _____, as Principal and acknowledged that as said officer he executed the foregoing Maintenance Bond for and on behalf and in the name of said Principal, for the uses and purposes therein mentioned, and that he was authorized so to do.

WITNESS my hand and notarial seal.

_____
Notary Public

_____
(printed or typed name)
Residing in Elkhart County, Indiana

My Commission Expires:
_____

STATE OF INDIANA)
)SS:
COUNTY OF _____)

Before me, a Notary Public in and for said County and State, this _____ day of _____, 20_____, personally appeared _____, of _____, as Surety and acknowledged that as said officer he executed the foregoing Maintenance Bond for and on behalf and in the name of said Surety, for the uses and purposes therein mentioned, and that he was authorized so to do.

WITNESS my hand and notarial seal.

_____
Notary Public

_____
(printed or typed name)
Residing in Elkhart County, Indiana

My Commission Expires:
_____

Accepted and approved this _____ day of _____, 20_____.

TOWN COUNCIL OF THE TOWN OF
MIDDLEBURY, INDIANA

By:_____

Title:_____

ATTEST:

By:_____

Title:_____

TOWN OF MIDDLEBURY, INDIANA MAINTENANCE GUARANTEE

WHEREAS the undersigned individual, individuals, partnership, corporation, limited liability company, limited liability partnership, or other entity, as "Principal," is the owner and/or developer of _____ located in the Town of Middlebury, Elkhart County, State of Indiana; and

WHEREAS the final plat/plans showing the location, construction, and installation of a _____ ("Improvements") have been filed with the _____ for approval and recording, and with the Town Council of the Town of Middlebury, Indiana for acceptance of the Improvements, which is incorporated herein and made a part of this instrument by reference;

WHEREAS the Town Council of the Town of Middlebury, Indiana is unwilling to accept the Improvements described until certain promises and guarantees of Principal for such maintenance have been made;

WHEREAS Principal desires to make such promises and guarantees as required by the Town Council of the Town of Middlebury, Indiana as hereinafter more particularly described;

NOW, THEREFORE, in consideration of the agreement by the Town Council of the Town of Middlebury, Indiana to accept the Improvements described, Principal does hereby unconditionally warrant the work and materials of the Improvements to be free from defect and to meet the specifications, standards, and requirements of the Town of Middlebury, Indiana for a period of three (3) years from the date of this guarantee. Further, Principal does hereby promise and agree to remedy any such defect or shortcoming within sixty (60) days of discovery. Provided Principal fulfills the requirements of this Guarantee, the commitments, promises, and guarantees of Principal herein stated shall terminate and be of no further force or effect three (3) years from the date of this guarantee.

If Principal fails to fulfill the requirements and obligations of this Guarantee, the Town Council of the Town of Middlebury, Indiana shall be entitled to perform or cause to have performed the necessary remedy for the Improvements specified herein to the then standards of the Town of Middlebury, and Principal shall pay or cause to be paid to the Town Council of the Town of Middlebury, Indiana all costs and expenses, direct and indirect, including proper allowance for administrative time, expenses and effort, and professional services, encountered or incurred by the Town Council of the Town of Middlebury, Indiana as a result of the failure of Principal to fulfill the requirements and obligations of this Guarantee, together with all costs of collection of such sums including reasonable attorney fees.

As security for all commitments, promises, agreements, and guarantees of Principal herein made, Principal does hereby pledge, transfer, assign, and set over unto the Town Council of the Town of Middlebury a Maintenance Bond in the amount of _____ Dollars ($_____) (10% of final construction costs) from a surety company authorized to do business in the State of Indiana, which Maintenance Bond shall be fully payable to the Town Council of the Town of Middlebury, Indiana and shall be conditioned upon the full and complete satisfaction by Principal of all commitments and obligations of Principal under this Guaranty.

All provisions hereof to the contrary notwithstanding, Principal shall be responsible and legally obligated to the Town Council of the Town of Middlebury, Indiana for any and all costs and expenses, direct and indirect, including proper allowance for administrative time, expenses and effort, and professional services, encountered or incurred by the Town Council of the Town of Middlebury, Indiana as a result of the failure of Principal to fulfill this Guarantee, not otherwise satisfied or covered by the Maintenance Bond described above. Additionally, the Town Council of the Town of Middlebury, Indiana shall be entitled to payment by Principal of all costs of collection of such sums, including reasonable attorney fees.

All persons executing this Maintenance Guarantee are both individually and jointly responsible for all commitments, promises, representations, and guarantees herein stated.

Further, this Maintenance Guarantee shall be binding upon and shall inure to the benefit of the heirs, representatives, successors and assigns of Principal and the Town Council of the Town of Middlebury, Indiana.

Dated this _____ day of _____, 20____.

PRINCIPAL: _____
Signature

_____
Printed Name

Approved and accepted by the Town Council of the Town of Middlebury, Indiana this _____ day of _____, 20_____.

By_____

Title_____

ATTEST:

By:_____

Title:_____