TOWN OF WHITESTOWN, INDIANA

STORMWATER & TRANSPORTATION

STANDARD SPECIFICATIONS & DETAILS

WHITESTOWN

INDIANA

ADOPTED:

TOWN HALL: (317) 769-6557
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Standard Town of Whitestown Details

1.01 Introduction

The following Chapters provide a description of acceptable materials, installation and testing for the construction of Gravity Stormwaters, force mains, manholes, water distribution piping, Storm lift stations, and their appurtenances within the **Town of Whitestown**. Use of other materials, installation practices and testing not specified herein will be allowed only with the prior written approval and authorization of the Utilities Manager of the **Town of Whitestown**.

1.02 Conformance to Town's Master Plan

To ensure the continued development of an integrated and comprehensive water/Stormwater system, all new and extended facilities shall conform to the Town's Master Plan(s) in sizing and general location. Information provided to the Town by the Developer and Design Engineer will be used to verify the conformity of the proposed project to the Master Plan. The Town will then provide the Developer and Design Engineer with the required facility size for their use in design.

1.03 Bonds & Insurance

A. Performance & Maintenance Bonds

1. The Contractor shall furnish a Maintenance bond in an amount at least equal to ten percent (10%) of the project construction cost, as security for the quality and craftsmanship of all of the Contractor's work. This bond shall remain in effect for a period of three (3) years after the date when the Town accepts the project.

2. The Contractor shall furnish a Performance bond in an amount equal to one hundred percent (100%) of the project construction cost, as security for the completion of the Contractor's work. This bond shall remain in effect until the Town accepts the project.

3. All bonds shall be in the form prescribed in the Appendices of these Standards except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

4. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

5. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify the Town and shall, within 20 days after the event giving rise to such notification,

provide another bond and surety, both of which shall comply with the bond and surety requirements above.

6. If the Contractor fails to obtain a required bond, the Town may exclude the Contractor from the project site and terminate right of access.

B. **Insurance**

1. Contractor shall obtain and maintain insurance as required in this section of the Town Standards.

2. All insurance required herein shall be purchased and maintained by the Contractor and shall be obtained from insurance companies that are duly licensed or lawfully authorized, to do business in Indiana and to issue insurance policies for the required limits and coverages, acceptable to the Town, in a form and substance reasonably satisfactory to the Town, which afford coverages set forth herein. This insurance shall be written for not less than limits of liability specified herein or as required by law, whichever coverage is greater, and shall include coverage for Contractor's indemnification obligations contained in this Contract. All companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

3. Prior to commencement of the work, Contractor shall deliver to the Town, copies of certificates of insurance establishing that the Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Town. Upon written request by the Town, the Contractor shall also furnish other evidence of such required insurance, including but not limited to certified copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles.

    a. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

4. The failure of the Town to request such certificates or other evidence of the Contractor's full compliance with these insurance requirements, or failure of Town to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

5. If the Contractor has failed to obtain and maintain the required insurance, the Town may exclude the Contractor from access to the Site.

6. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

7. Workers' Compensation:

    a. The Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:

        i. Claims under workers' compensation, disability benefits, and other similar employee benefit acts.

ii. Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees.

iii. Foreign voluntary worker compensation (if applicable).

8. Commercial General Liability—Claims Covered:

   a. The Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

      i. Claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.

      ii. Claims for damages insured by reasonably available personal injury liability coverage.

      iii. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

9. Commercial General Liability—Form and Content:

   a. Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
   b. The Contractor shall furnish the Town evidence of continuation of such insurance at final payment and three years thereafter.
   c. Broad form property damage coverage.
   d. Severability of interest.
   e. Underground, explosion, and collapse coverage.
   f. Personal injury coverage.
   g. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

      i. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

   h. The commercial General Liability Policy must be endorsed to provide that the general aggregate amount applies separately to each of Contractor's separate projects. ISO Endorsement CG2503 *Per Project Endorsement* or its equivalent shall be used to satisfy this requirement.

10. Automobile Liability:

    a. The Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.

11. Umbrella or Excess Liability:

a. Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

12. Contractor's Pollution Liability Insurance:

    a. Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result insurance shall be maintained for no less than three years after final completion.

13. Additional Insureds:

    a. All coverage provided herein shall be endorsed to include the **Town of Whitestown** as Additional Insured except for the Worker's Compensation/Employer's Liability and Professional Liability policies. ISO forms CG 2010 07 04 and CG 2037 or equivalent endorsement forms must be used on the commercial general liability policy to provide additional insured status to the Town and shall include coverage for completed operations. The policies for which the Town is named as additional insureds shall provide primary and non-contributing coverage and any valid and collectible insurance carried separately by the Town shall be in excess of the limits provided by such policies and shall be non-contributory.

    b. The commercial general liability, automobile liability and workman's compensation policies must be endorsed to provide a waiver of subrogation in favor of the Town.

    c. Include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

14. Contractor's Professional Liability Insurance:

    a. If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing

and maintenance of such insurance by such Subcontractor.

b. General Provisions: The policies of insurance required shall:

i. Be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater.

ii. Contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to the Town.

iii. Remain in effect at least until the Project is complete, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.

C. **Limits of Liability**

The limits of liability for insurance required by the Town shall provide coverage for not less than the following amounts, or greater where required by Laws and Regulations:

1. Workers' Compensation:
   a. Applicable Federal or State: Statutory

   b. Employer's Liability:
      i. Bodily Injury by Accident:
         - $1,000,000 Each Person
         - $5,000,000 Each Accident
      ii. Bodily Injury by Disease:
         - $1,000,000 Policy Limit
         - $1,000,000 Each Person

2. Contractor's Commercial General Liability:
   a. General Aggregate: $2,000,000
   b. Each Occurrence: $1,000,000
   c. Products and Completed Operations: $2,000,000
   d. Personal and Advertising Injury: $1,000,000
   e. Property Damage liability insurance shall provide Explosion, Collapse and Underground coverages.
   f. Excess or Umbrella Liability:
      i. General Aggregate: $5,000,000
      ii. Each Occurrence: $5,000,000

3. Automobile Liability:
   a. Combined Single Limit: $1,000,000 Each Accident

1.04 Easement Requirements

A. Stormwater Sewer Requirements

Easements shall be dedicated and recorded solely for the benefit of the **Town of Whitestown**. No building, structure, tree, landscaping or other obstruction shall be allowed to be placed, erected, maintained, or allowed to be within the easement.

Easement boundaries shall be shown on the plans, referenced in the specifications, and shown on the plats as "Stormwater Easement" in lieu of "Utility Easement."

1. Minimum Requirements

   a. Stormwater sewers Less than Twenty-Four inches in diameter (24"):

Depth of Sewer	**Minimum Width (feet)**
Up to and including 10 feet	20
Greater than 10 feet to and including 20 feet	30
Greater than 20 feet	40

All stormwater sewers shall be centered in the easement. For those sewers constructed in the public right-of-way, the easement shall extend the distance outside the right-of-way necessary to provide the required easement width.

In residential development as determined by the Town. If the sewer is located outside, but within five (5) feet of the right-of-way and is fifteen (15) inches or less in diameter, then the easement is only required to be ten (10) feet wide.

b. Stormwater sewers Twenty-Four Inches (24") and Larger:

The easement width will be determined on a case-by-case basis by the **Town of Whitestown**, but shall not be less than a minimum of fifty (50) feet in width.

2.01 Introduction

The following Chapter provides a description of the applicable standards for stormwater construction within the **Town of Whitestown**. Use of other standards not specified herein will be allowed only with the written approval and authorization of the Utilities Manager of the **Town of Whitestown**.

2.02 Applicable Standards

A. Stormwater Management Ordinance

1. All stormwater construction shall adhere to the most recent version of the **Town of Whitestown's Stormwater Ordinance** and the **Boone County Stormwater Technical Standards Manual** and the following:

    a. Underdrains shall not have 90 degree bends at structures.
    b. Sump pumps shall be discharged to the back of houses/lots. Discharge shall be to ditches or underdrains; discharge connections into the Town's Storm system shall require a permit and approval from Town.

3.01 General

This section provides for all surface removal, excavation, compaction, and disposal of surplus materials within the public right-of-way.

All excavations shall be backfilled to the original surface of the ground or such grades as shown on the design plans or as directed. In general, the backfilling shall be carried along as speedily as possible and as soon as the concrete, mortar, and/or other masonry work and pipe joints have sufficient strength to resist imposed load without damage.

3.02 Earthwork

A. Job Conditions

1. Weather

a. Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained on account of rain, snow, ice, drought or other adverse weather conditions.

2. Existing Utilities

a. Prior to commencement of work, the Contractor shall locate existing underground utilities in areas of the work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.

3. Use of Explosives

a. The Contractor (or any of his Subcontractors) shall not bring explosives onto site or use in work without prior written permission from the Owner. All activities involving explosives shall be in compliance with the rules and regulations of the State Department of Mines, and Minerals, Division of Explosives and Blasting. Contractor is solely responsible for handling, storage, and use of explosive materials when their use is permitted.

4. Protection of Persons and Property

a. Barricade open excavations occurring as part of this work and post with warning lights.

b. Operate warning lights as recommended by authorities having jurisdiction.

c. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

5. Dust Control

a. Use all means necessary to control dust on or near the project site where such dust is caused by the Contractor's operations or directly results from conditions left by the Contractor.

B. **Products**

1. **Soil Materials**

a. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, SP, GC, SC, ML, and CL.

b. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups MH, CH, OL, OH and PT. The Contractor shall notify the Engineer if these soil materials are encountered.

c. Sub-base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand.

d. Drainage Fill: Washed, evenly graded mixture of crushed stone, or uncrushed gravel, with 100 percent passing a 1/2 inch sieve and not more than 5 percent passing a No. 4 sieve.

e. hBackfill and Fill Materials: Satisfactory soil materials free of debris, waste, frozen materials, vegetable, and other deleterious matter.

2. **Clearing & Grubbing**

a. Work shall consist of cutting and removing designated trees, stumps, brush, logs, removal of fences, or other loose and projecting material. Unless otherwise specified, it shall also include the grubbing of stumps, roots, and other natural obstructions which, in the opinion of the Engineer, must be removed to execute properly the construction work and operate properly the facility upon the completion of construction.

b. Trees, bushes, and all natural vegetation shall only be removed with the approval of the Engineer. No cleared or grubbed materials shall be used in backfills or embankment fills. All stumps, roots, and other objectionable material shall be grubbed up so that no roots larger than 3 inches in diameter remain less than 18 inches below the ground surface. All holes and depressions left by grubbing operations shall be filled with suitable material and compacted to grade.

c. Disposal shall be by burning or other methods satisfactory to the Engineer; however, burning will be permitted only when the Contractor has obtained written permission from the local regulatory agency.

d. The Contractor shall also remove from the site and satisfactorily dispose of all miscellaneous rubbish including, but not limited to, masonry, scrap metal, rock, pavement, etc., that is under the fill or to be removed as shown on the Drawings, specified herein, or directed by the Engineer.

e. Existing improvements, adjacent property, utility and other facilities, and trees, plants, and brush that are not to be removed shall be protected from injury or damage resulting from the Contractor's operations.

f. Trees and shrubs, designated to remain or that are beyond the clearing and grubbing limit, which are injured or damaged during construction operations shall be treated or replaced at the Contractor's expense by experienced tree surgery personnel.

3. Excavation

a. Excavation of every description and of whatever substances encountered within the grading limits of the project shall be performed to the lines and grades indicated on the Drawings. All excavation shall be performed in the manner and sequence as required for the work.

b. All excavated materials that meet the requirements for fill, subgrades or backfill shall be stockpiled within the site for use as fill or backfill, or for providing the final site grades. Where practicable, suitable excavated material shall be transported directly to any place in the fill areas within the limits of the work. All excavated materials that are not suitable for fill, and any surplus of excavated material that is not required for fill shall be disposed of by the Contractor.

c. The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches, dikes and shall perform all pumping and other work necessary to divert or remove rainfall and all other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent flooding and/or damage to other locations within the construction area where it may be detrimental. The Contractor shall provide, install and operate sufficient trenches, sumps, pumps, hose piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least two (2) feet below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of two (2) feet below the lowest excavation subgrade made until the excavation is backfilled or the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures from natural ground water.

d. Excavations for concrete structural slabs on grade shall extend two (2) feet below the indicated bottom of slabs. The over-excavation shall be backfilled with 18 inches, compacted thickness, of over lot fill material or suitable material as herein specified.

The remaining six (6) inches of over-excavation shall be backfilled with porous fill material. The porous fill layer shall extend beyond the limits of the concrete slab a minimum of two (2) feet on all sides as indicated on the Drawings. The porous fill shall be crushed stone or gravel and shall have the following U.S. Standard Sieve gradation:

Sieve	1-1/2	1	3/4	1/2	3/8
% Passing	Min 100	95±5	58±17	Max 15	Max 5

e. Excavations for the construction shall be carefully made to the depths required. Bottoms for footings and grade beams shall be level, clean and clear of loose material, the lower sections true to size. Bottoms of footings and grade beams, in all locations, shall be at a minimum depth of 30 inches below adjacent exterior finished grade or 30 inches below adjacent existing grade, whichever is lower, whether so indicated or not. Footings and grade beam bottoms shall be inspected by the Engineer before any concrete is placed thereon.

f. In excavations for structures where, in the opinion of the Engineer, the ground is spongy or otherwise unsuitable for the contemplated foundation, the Contractor shall remove such unsuitable material and replace it with suitable material properly compacted.

g. Sheeting and shoring shall be provided as necessary for the protection of the work and for the safety of the personnel. The clearances and types of the temporary structures, insofar as they affect the character of the finished work, will be subject to the review of the Engineer, but the Contractor shall be responsible for the adequacy of all sheeting, bracing and coffer damming. All shoring, bracing and sheeting shall be removed as the excavations are backfilled in a manner such as to prevent injurious caving; or, if so directed by the Engineer, shall be left in place. Sheeting left in place shall be cut off 18 inches below the surface.

h. Excavation for structures which have been carried below the depths indicated without specific instructions shall be refilled to the proper grade with suitable material properly compacted, except that in excavation for columns, walls or footings, the concrete footings shall extend to this lower depth. All work of this nature shall be at the Contractor's expense.

4. Erosion Control

a. Temporary measures shall be applied throughout the construction period to control and to minimize siltation to adjacent properties and waterways. Such measures shall include, but not be limited to, the use of berms, silt barriers, gravel or crushed stone, mulch, slope drains and other methods.

b. These temporary measures shall be applied to erodible material exposed by any

activity associated with the construction of this project.

5. Fill

   a. All existing fill below structures and paved areas must be stripped. The upper six (6) inches of the natural subgrade below shall be scarified and re-compacted at optimum moisture to at least ninety-five percent (95%) of Standard Proctor Density ASTM D 698 (latest revision).

   b. All vegetation, such as roots, brush, heavy sods, heavy growth of grass and all decayed vegetable matter, rubbish and other unsuitable material within the area upon which fill is to be placed shall be stripped or otherwise removed before the fill is started. In no case will such objectionable material be allowed to remain in or under the fill area. Existing fill from excavated areas on site shall be used as fill for open and/or planted areas. Additional fill stockpiled at the site can be used for structural fill if approved by the Engineer. Any additional material necessary for establishing the indicated grades shall be furnished by the Contractor and approved by the Engineer. All fill material shall be free from trash, roots and other organic material. The best material to be used in fills shall be reserved for backfilling pipe lines and for finishing and dressing the surface. Material larger than 3 inches maximum dimension shall not be permitted in the upper 6 inches of the fill area. Fill material shall be placed in successive layers and thoroughly tamped or rolled in a manner approved by the Engineer, each layer being moistened or dried such that the specified degree of compaction shall be obtained. No fill shall be placed or compacted in a frozen condition or on top of frozen material. No fill material shall be placed when free water is standing on the surface of the area where the fill is to be placed and no compaction of fill will be permitted with free water on any point of the surface of the fill to be compacted.

   c. Where concrete slabs are placed on earth, all loam and organic or other unsuitable material shall be removed. Where fill is required to raise the subgrade for concrete slabs to the elevations as indicated on the Drawings or as required by the Engineer, such fill shall consist of suitable material and shall be placed in layers. Each layer shall be moistened or dried such that the specified degree of compaction shall be obtained. All compaction shall be accomplished in a manner and with equipment as approved by the Engineer. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for adjacent fill.

6. Backfilling

   a. After completion of footings, grade beams and other construction below the elevation of the final grades and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all trash and debris. Material for backfilling shall be as specified for

suitable material, placed and compacted as specified hereinafter. Backfill shall be placed in horizontal layers of the thickness specified and shall have a moisture content such that the required degree of compaction is obtained. Each layer shall be compacted by mechanical tampers or by other suitable equipment approved by the Engineer to the specified density. Special care shall be taken to prevent wedging action or eccentric loading upon or against the structure. Trucks and machinery used for grading shall not be allowed within 45 degrees above the bottom of the footings or grade beams.

b. The trenches shall be backfilled following visual inspection by the Engineer and prior to pressure testing. The trenches shall be carefully backfilled with the excavated materials approved for backfilling, or other suitable materials, free from large clods of earth or stones. Each layer shall be compacted to a density at least equal to that of the surrounding earth and in such a manner as to permit the rolling and compaction of the filled trench with the adjoining earth to provide the required bearing value, so that paving, if required, can proceed immediately after backfilling is completed.

7. Compaction

a. Suitable material as hereinbefore specified shall be placed in maximum 8" horizontal layers. Compaction shall be performed by rolling with approved tamping rollers, pneumatic-tired rollers, three wheel power rollers or other approved equipment. The degree of compaction required is expressed as a percentage of the maximum dry density obtained by the test procedure presented in ASTM D-698. Laboratory moisture density tests shall be performed on all fill material. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction. Compaction requirements shall be as specified below:

Fill Utilized for:	**Required Density (%)**	**Max. Permissible Lift Thickness as Compacted, Inches**
Backfill & Utility Trenches Under Foundations & Pavements	95-100	8
Backfill Around Structures	95-100	8
Field and Utility Trench Backfill Under Sidewalks and Open Areas	90-100	8

b. Field density tests shall be performed in sufficient number to insure that the specified density is being obtained. Tests shall be in accordance with ASTM Standards D 1556 or D 2922/D 3017 and shall be performed as authorized by the Engineer. Payment for field density tests shall be by the Contractor. Contractor shall provide suitable notification for coordination of testing. Delays due to the lack of adequate advance notification shall be the responsibility of the Contractor.

8. Site Grading

a. Where indicated or directed, topsoil shall be removed without contamination with subsoil and spread on areas already graded and prepared for topsoil, or transported and stockpiled convenient to areas for later application, or at locations specified. Topsoil shall be stripped to full depth and, when stored, shall be kept separate from other excavated materials and piled free of roots, stones, and other undesirable materials.

b. Following stripping, fill areas shall be scarified to a minimum depth of six (6) inches to provide bond between existing ground and the fill material. Material should be placed in successive horizontal layers not exceeding twelve (12) inches uncompacted thickness. In general, layers shall be placed approximately parallel to the finished grade line.

c. In general and unless otherwise specified, the Contractor may use any type of earth moving equipment he has at his disposal, provided such equipment is in satisfactory condition and of such type and capacity that the work may be accomplished properly and the grading schedule maintained. During construction, the Contractor shall route equipment at all times, both when loaded and empty, over the layers as they are placed, and shall distribute the travel evenly over the entire area.

d. The material in the layers shall be of the proper moisture content before rolling or tamping to obtain the prescribed compaction. Wetting or drying throughout the layer shall be required. Should the material be too wet to permit proper compaction or rolling, all work on the fill thus affected shall be delayed until the material has dried to the required moisture content. If the material is too dry, it shall be sprinkled with water and manipulated to obtain the uniform moisture content required throughout a layer before it is compacted.

e. Each layer of the fill shall be compacted by rolling or tamping to the standard specified in the Compaction section above and not less than 90% maximum density at optimum moisture content as determined by field density tests made by the Standard Proctor method. In general and unless otherwise specified, the Contractor may use any type of compaction equipment such as sheepsfoot rollers, pneumatic rollers, smooth rollers and other such equipment he has at his disposal, provided such equipment is in satisfactory condition and is of such design, type, size, weight, and quantity to obtain the required density in the embankment. If at any time the required density is not being obtained with the equipment then in use by the Contractor, the Engineer may require that different and/or additional compaction equipment be obtained and placed in use at once to obtain the required compaction.

f. The Contractor shall be responsible for the stability of all embankments and shall replace any portion which, in the opinion of the Engineer, has become displaced due to carelessness or negligence on the part of the Contractor.

9. Top Soil

a. Provide all labor, materials, equipment and services required for furnishing and placing topsoil. Samples of topsoil shall be submitted to the Engineer for review before topsoil is placed. The material shall be good quality loam and shall be fertile, friable, mellow; free from stones larger than one (1) inch, excessive gravel, junk metal, glass, wood, plastic articles, roots and shall have a liberal amount of organic matter. Light sandy loam or heavy clay loam will not be acceptable.

b. The topsoil shall be 3 inches thick in all areas to be seeded. No topsoil shall be placed until the area to be covered is excavated or filled to the required grade. Imported backfill material will be stockpiled on site for structure backfilling and top soiling.

C. **Excavation Support & Protection**

1. **Materials**

a. General: Provide adequate shoring and bracing materials which will support loads imposed. Materials need not be new, but should be in serviceable condition.

b. Structural Steel: ASTM A 36.

c. Steel Sheet Piles: ASTM A 328.

d. Timber Lagging: Any species, rough-cut, mixed hardwood, nominal 3 inches thick, unless otherwise indicated.

e. Portable Steel Trench Box Shall be OSHA Approved.

2. **Shoring**

a. Wherever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures.

b. Shoring systems retaining earth on which the support or stability of existing structures is depending must be left in place at completion of work.

3. **Bracing**

a. Locate bracing to clear columns, floor framing construction, and other permanent work.

If necessary to move a brace, install new bracing prior to removal of original brace.

b. Do not place bracing where it will be cast into or included in permanent concrete work, except as otherwise acceptable to Engineer.

c. Install internal bracing, if required, to prevent spreading or distortion of braced frames.

d. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

e. Remove sheeting, shoring, and bracing in stages to avoid disturbance to underlying soils and damage to structures, pavements, facilities, and utilities.

f. Repair or replace, as acceptable to Engineer, adjacent work damaged or displaced through installation or removal of shoring and bracing work.

4.01 Introduction

The following Chapter describes the minimum requirements and general procedures for the inspection and testing of Storm and stormwaters to be dedicated to the **Town of Whitestown**.

Any section of water not passing the tests prescribed herein shall be repaired to the satisfaction and approval of the **Town of Whitestown**, retested and re-inspected.

4.02 Testing

A. Stormwater

1. Cleanup: Upon completion of installation of the piping and appurtenances, the Contractor shall remove all debris and surplus construction materials resulting from the Work. The Contractor shall grade the ground along each side of pipe trenches in a uniform and neat manner leaving the construction area in a shape as near as possible to the original ground line.

2. Inspect Lines: Provide post installation Stormwater line jet cleaning and television inspection of the stormwater line prior to acceptance by the Town and prior to release of the 3 year maintenance bond. All video recordings are to be turned over to the Town for Engineer review and final approval. Any video deemed incomplete or otherwise deficient shall be re-televised before Town acceptance. Televising will be on an acceptable form of digital media, such as CD/DVD or portable external hard drive (flash media).

3. Deflection Test : Deflection tests shall be performed on a flexible pipe. The test shall be conducted after the final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system. No pipe shall exceed a deflection of 5 percent. If deflection exceeds 5 percent, pipe shall be replaced or corrected. The mandrel used for the deflection test shall have a diameter not less than 95 percent of the base inside diameter or average inside diameter of the pipe depending on which is specified in the ASTM Specification, including the appendix, to which the pipe is manufactured. The pipe shall be measured in compliance with ASTM D2122 Standard Test Method of Determining Dimensions of Thermoplastic Pipe and Fittings. The test shall be performed without mechanical pull devices.

4. Replacement of Defective Lines: All lines or sections of lines that are found to be laid improperly with respect to line or grade, that are found to contain broken or leaking sections of pipe, or are obstructed in such a manner that they cannot be satisfactorily corrected otherwise, shall be removed and replaced at the Contractor's expense.

5. **Low Pressure Air Test:**

a. To test for leaks, the Engineer will require that all completed piping as specified herein after back filling be tested by low-pressure air test, exfiltration, or infiltration test. Should the low pressure air test results be inconclusive, or at the request of the Engineer, an exfiltration or infiltration test will be required on the low pressure air tested segments. Labor, equipment and supplies required for all tests shall be furnished by the Contractor.

b. The low pressure air test shall consist of meeting a required holding time during a measured pressure drop. The initial test pressure shall be 5.0 psi, with the allowable pressure loss being 1.0 psi during the calculated holding time. Holding time shall be as indicated in the following table:

SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015*

1 Pipe	2 Minimum Time (min:sec)	3 Length for Minimum	4 Time for Longer	Specified Minimum for Length (L) Shown (min:sec)							
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:30	297	1.520	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:20	239	2.374	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674	22:47	34:10	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306	28:51	43:11	57:41	72:07	86:32	100:57	115:22	129:48
30	28:20	80	21.366	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15
33	31:10	72	25.852	43:05	64:38	86:10	107:43	129:16	150:43	172:21	193:53
36	34:00	66	30.768	51:17	76:55	102:34	128:12	153:50	179:29	205:07	230:46
42	39:48	57	41.88L	69:48	104:42	139:37	174:30	209:24	244:19	279:13	314:07
48	45:34	50	54.705 L	91:10	136:45	182.21	227:55	273:31	319:06	364:42	410:17
54	51:02	44	69.236 L	115:24	173:05	230:47	288:29	346:11	403:53	461:34	519:16
60	65:40	40	85.476 L	142:28	213:41	284:55	356:09	427:23	498:37	569:50	641:04

* If there is no leakage (0 psi drop) after one hour of testing, the tested section shall be accepted.

6. Exfiltration Test: In order to test for infiltration the Engineer may also require exfiltration tests on each section of pipe between manholes after it has been laid but prior to back filling of joints. Exfiltration tests shall be conducted by plugging the lower end of the section of water to be tested and filling the water with water to a point approximately five feet above the invert at the lower end and at least one foot above the pipe at the upper end, observing for leakage at all joints and measuring the amount of leakage for a given interval of time.

Exfiltration shall not exceed 110 percent times the infiltration limits set out hereinbefore. All observed leaks shall be corrected even though exfiltration is within the allowable limits.

7. Infiltration Test: To test for infiltration, the Engineer may also require that the Contractor plug the open ends of all lines at the manhole so that measurements may be made at each section of the water line. Infiltration tests shall consist of weir measurement to determine quantities of any infiltration. Measurements shall be taken at line locations directed by the Engineer. This infiltration test will not be made until the water line is completed, and the Contractor will be required to correct all conditions that are conductive to excessive infiltration and may be required to relay such sections of the line that may not be corrected even though infiltration is within allowable limits.

8. Smoke Test: Smoke testing may be used only to locate leaks and in no case shall be considered conclusive. In all cases the smoke test shall be accompanied by an air test, exfiltration test or infiltration test. Smoke testing may only be performed where ground water is low and smoke is blown into a conduit that is properly sealed. All such leaks or breaks discovered by the smoke tests shall be repaired and/or corrected by the Contractor at his own expense. Equipment and supplies required from smoke tests shall be furnished by the Contractor. The Contractor may also be required to smoke test the first section (manhole-to-manhole) of each size of pipe and type of joint on each construction contract prior to backfilling to establish and check laying and jointing procedures. Other supplementary smoke tests prior to backfilling may be performed by the Contractor at his option; however, any such tests shall not supplant the final tests of the completed work unless such final tests are waived by the Engineer.

9. I & I Limit Test: I & I Limits: The Contractor shall lay water lines, including house connections so that the access of ground water or loss of water from the water system or other Storm flow piping which does not normally flow full will be limited to 10 gallons per inch diameter per mile per day. This limitation is inclusive of manholes, water lines, house connections, and appurtenances. This requirement may be applied to a portion of the contract work, such as the water lines in a separate drainage area or to a single section of the line between two manholes.

B. **Stormwater Manholes**

1. Testing Prior to Backfilling

   a. This specification shall govern the vacuum testing of Stormwater manholes and structures and shall be used as a method of determining acceptability by the Owner, in accepting maintenance of a Stormwater manhole or structure on behalf of the public. This test shall be performed in accordance with ASTM C 1244 prior to backfilling. Other forms of testing of some manholes may be required, as deemed necessary by the Owner.
   b. Manholes shall be tested after installation with all connections in place.
   c. Lift holes, if any, shall be plugged with an approved, non-shrinkable grout prior to testing.
   d. Drop connections shall be installed prior to testing.
   e. The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab or grade rings.

f. Test Procedure

(1) Temporarily plug, with the plugs being braced to prevent the plugs or pipes from being drawn into the manhole, all pipes entering the manhole at least eight inches into the water pipe(s). The plug must be inflated at a location past the manhole/pipe gasket.

(2) The test head shall be placed inside the frame at the top of the manhole and inflated, in accordance with the manufacturer's recommendations.

(3) A vacuum of 10" of mercury shall be drawn on the manhole. Shut the valve on the vacuum line to the manhole and disconnect the vacuum line.

(4) The pressure gauge shall be liquid filled, having a 3.5 inch diameter face with a reading from zero to thirty inches of mercury.

(5) The manhole shall be considered to pass the vacuum test if it holds at least 9 inches of mercury for the following time durations:

Time (Seconds)

Manhole Depth	4’ Diameter	5' Diameter	6' Diameter
20 Feet or Less	50	65	81
20.1 to 30 Feet	74	98	121

(6) If a manhole fails the vacuum test, the manhole shall be repaired with a non-shrinkable grout or other suitable material based on the material of which the manhole is constructed and retested, as stated above.

(7) All temporary plugs and braces shall be removed after each test. Manholes will be accepted as having passed the vacuum test requirements if they meet the criteria stated above.

2. Testing After Backfilling

a. This specification shall govern the vacuum testing of Stormwater manholes and structures and shall be used as a method of determining acceptability by the Owner, in accepting maintenance of a Stormwater manhole or structure on behalf of the public. This test shall be performed AFTER backfilling. Other forms of testing of some manholes may be required, as deemed necessary by the Owner.

b. Manholes shall be tested after installation with all connections in place.
c. Lift holes, if any, shall be plugged with an approved, non-shrinkable grout prior to testing.
d. Drop connections shall be installed prior to testing.

e. The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab or grade rings.

f. Manhole shall be backfilled to final grade.

g. Test Procedure for Manholes 0 to 12 feet deep:

(1) Temporarily plug, with the plugs being braced to prevent the plugs or pipes from being drawn into the manhole, all pipes entering the manhole at least eight inches into the water pipe(s). The plug must be inflated at a location past the manhole/pipe gasket.

(2) The test head shall be placed inside the frame at the top of the manhole and inflated, in accordance with the manufacturer's recommendations.

(3) A vacuum of 10" of mercury shall be drawn on the manhole. Shut the valve on the vacuum line to the manhole and disconnect the vacuum line.

(4) The pressure gauge shall be liquid filled, having a 3.5 inch diameter face with a reading from zero to thirty inches of mercury.

(5) The manhole shall be considered to pass the vacuum test if it holds at least 9 inches of mercury for the following time durations:

Time (Seconds)

Manhole Depth	4’ Diameter	5' Diameter	6' Diameter
20 Feet or Less	50	65	81
20.1 to 30 Feet	74	98	121

(6) If a manhole fails the vacuum test, the manhole shall be repaired with a non-shrinkable grout or other suitable material based on the material of which the manhole is constructed and retested, as stated above.

(7) All temporary plugs and braces shall be removed after each test.

h. Test Procedure for Manholes 12.1 to 22 feet deep:

(1) Follow the procedures listed above, except the vacuum pressure shall be dependent on the depth of the manhole in accordance with the following table:

Depth (ft)	12	13	14	15	16	17	18	19	20	21
Vacuum Pressure (inches Hg)	10	9	8	7	6	5	4	3	2	1

(2) Manholes will be accepted as having passed the vacuum test requirements if they

meet the criteria stated above.

5.01 Introduction

A. Scope of Work

1. The asphalt concrete paving scope of work includes the construction of an aggregate base course, asphalt binder and wearing courses to match existing courses and as specified herein. This scope of work is to replace paving disturbed by the construction and any damages to paving by Contractor's operations, as well as new pavement and driveways, within the limits shown on the plans.

5.02 Applicable Standards

B. References

1. All reference in this section to the standard specifications shall refer to the most recent Edition of Standard Specifications for Road and Bridge Construction with all amendments thereto as published by the Indiana Department of Transportation.

5.03 Environmental Requirements

A. Weather Limitations:

1. Apply prime and tack coats only when ambient temperature is above 50 degrees F., and when temperature has not been below 35 degrees F for 12 hours immediately prior to application. Do not apply when bases is wet or contains an excess of moisture.

2. Construct asphalt concrete courses as specified in the INDOT Standard Specifications Section 402.12 Weather Limitations:

    a. HMA courses less than 110 lb/sq yd are to be placed when the ambient and surface temperatures are 60°F or above. HMA courses equal to or greater than 110 lb/sq yd but less than 220 lb/sq yd are to be placed when the ambient and surface temperatures are 45°F or above. HMA courses equal to or greater than 220 lb/sq yd and HMA curbing 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, HMA courses may be placed at lower temperatures, provided the density of the HMA course is in accordance with INDOT Standard Specifications Section 402.16.

5.04 Products

A. Materials

1. All materials required for work in this section shall be as specified in the INDOT Standard Specifications as follows:

    a. Base Course: Section 303.
    b. Bituminous Concrete Surface and Bituminous Concrete Base: Section 402 and 403.

5.05 Execution

A. **Inspection:**

1. Pavement installer must examine the areas excavated and backfilled and conditions under which pavement is to be constructed. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until satisfactory embankments and subgrade have been established to a uniform line, properly shaped and compacted.

A. **Base Course:**

1. Base course for all new paving shall match existing depth or consist of a minimum nine (9) inches of dense graded aggregate.

2. Base courses shall be constructed in accordance with Section 303 of the Standard Specifications.

B. **Prime Coat:**

1. Prior to placing the bituminous binder course, the granular base course shall be thoroughly cleaned and broomed and a prime coat of Refined Tar RT-2 shall be uniformly applied at the rate of 0.35 gallons per square yard by pressure distributor or other approved pressure spray method.

C. **Bituminous Concrete Courses:**

1. The bituminous base course shall be hot mixed, hot laid, bituminous concrete base, furnished and placed in accordance to match the existing depth or to a minimum compacted thickness of 3 inches.

2. The intermediate course shall be hot mixed, hot laid, bituminous concrete base, furnished and placed in accordance to match the existing depth or to a minimum compacted thickness of 2 inches.

3. The surface course shall be hot mixed, hot laid, bituminous concrete in accordance to match existing depth or to a minimum compacted depth of 1-1/2 inches.

4. Standard Specifications: All bituminous concrete paving work shall comply with Section 402 of the INDOT Standard Specifications, including the removal of pavement samples to be tested by an independent laboratory for composition and density to insure quality control.

D. **Field Testing:**

1. Provide post installation television inspection of the subsurface drainage system. This shall include all roadway underdrains and storm sewer piping. All video recordings are to be turned over to the Town for Engineer review and final approval. Any video deemed incomplete or otherwise deficient shall be re-televised before Town acceptance. Televising will be on an acceptable form of digital media, such as CD/DVD or portable external hard drive (flash media).

Appendices

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, THAT WE _____

_____

as Contractor, and _____

as Surety are held and firmly bound unto_____ as Obligee in the penal sum of _____

_____Dollars ($_____), for the

payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

WHEREAS, the Contractor entered into a contract dated _____

with the Obligee for the **Town of Whitestown** in accordance with the Contract Drawings, Plan and Specifications of the Obligee.

WHEREAS, the Specifications pertaining to said work require that the same shall be free from all defects caused by inferior materials or the result of poor workmanship for the period of three (3) years from the date of acceptance of the whole work of this contract. The bond shall be for 10% of the total contract amount.

NOW, THEREFORE, if the Principal shall in all things observe the guarantee described in the foregoing paragraph, and shall protect and indemnify said Obligee from an against any and all loss, costs, attorneys fees and expense of whatsoever kind and character which said Obligee shall sustain by reason for the failure of said Principal to faithfully observe the guarantee hereinbefore described that this obligation shall be void: otherwise the same shall be and remain in full force and effect.

Signed, Sealed and Dated this _____ day of _____,

20_____.

_____

(Name of Contractor)

_____

(Name of Surety)

_____

(Address)

By:_____ _____

(Officer of Surety)

Title:_____

_____

(Witness)

ATTEST

_____

(Officer of Surety)

_____

(Address)

APPROVED AS TO FORM

BY_____

PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*

Contractor's Name and Corporate Seal

By: _____

Signature

_____

Print Name

_____

Title

Attest: _____

Signature

_____

Title

SURETY

_____ *(seal)*

Surety's Name and Corporate Seal

By: _____

Signature *(attach power of attorney)*

_____

Print Name

_____

Title

Attest: _____

Signature

_____

Title

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 shall 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 shall 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 shall 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 shall 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

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall 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 shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall 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 shall not be reduced or set off on account of any such unrelated obligations. No right of action shall 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 may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall 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 shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall 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 shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall 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 shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

Standard Town of Whitestown Details

TOWN OF WHITESTOWN
BOONE COUNTY, INDIANA

STANDARD CONSTRUCTION DETAILS

DRAWING INDEX	
SHEET	DRAWING TITLE
--	COVER
I-0	DRAWING INDEX
1	PUBLIC ROAD TO PUBLIC ROAD
2	LOCAL STREET OF CUL-DE-SAC
3	MINOR COLLECTOR STREET
4	MAJOR COLLECTOR STREET
5	MINOR ARTERIAL STREET
6	MAJOR ARTERIAL STREET
7	ROADWAY IMPROVEMENTS - NEW ENTRY
8	TEMPORARY CUL-DE-SAC
9	RESIDENTIAL CUL-DE-SAC
10	STREET SIGNAGE
11	END OF ROADWAY
12	CONNECTION TO EXISTING STREETS
13	STANDARD BARRICADE
14	CONCRETE ROLL CURB AND GUTTER
15	GENERAL UTILITY LOCATION PLAN
16	RESIDENTIAL PAVEMENT & UNDERDRAIN
17	TYPICAL TRAIL CROSSING
18	COMMERCIAL PAVEMENT & UNDERDRAIN
19	STORM SEWER LATERAL AT UNDERDRAIN
20	SIDEWALK ADA RAMP
21	TYPICAL SIDEWALK SECTION
22	TYPICAL SIDEWALK
23	CONCRETE CHAIR BACK CURB & GUTTER
24	RESIDENTIAL DRIVE
25	RESIDENTIAL DRIVE SECTIONS
26	REPAIR CUTS WITHIN PAVEMENT LIMITS
27	PAVEMENT REPAIR SECTIONS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAWING SHEET INDEX

STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

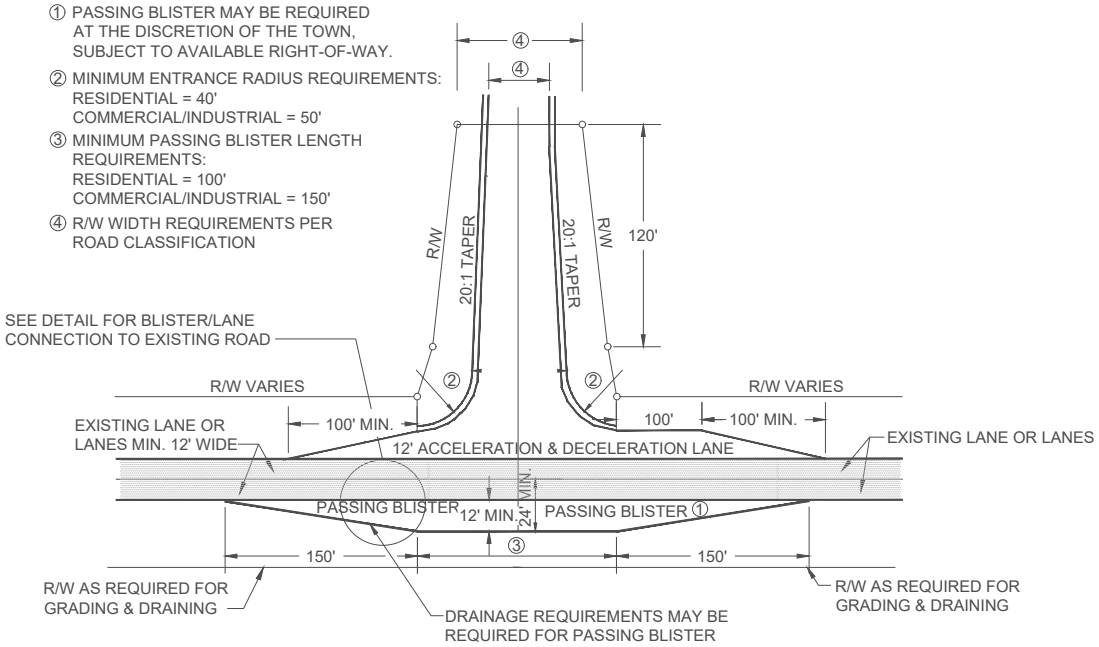
SHEET NO. I-0

① PASSING BLISTER MAY BE REQUIRED AT THE DISCRETION OF THE TOWN, SUBJECT TO AVAILABLE RIGHT-OF-WAY.

② MINIMUM ENTRANCE RADIUS REQUIREMENTS:
RESIDENTIAL = 40'
COMMERCIAL/INDUSTRIAL = 50'

③ MINIMUM PASSING BLISTER LENGTH REQUIREMENTS:
RESIDENTIAL = 100'
COMMERCIAL/INDUSTRIAL = 150'

④ R/W WIDTH REQUIREMENTS PER ROAD CLASSIFICATION



NOTE:
THIS DRAWING REPRESENTS THE MINIMUM REQUIREMENTS FOR A PUBLIC ROAD ENTRANCE. LARGER AND/OR LONGER ACCELERATION AND DECELERATION LANES MAY BE REQUIRED WHEN DEEMED NECESSARY BY THE TOWN OF WHITESTOWN TO ADEQUATELY SERVE THE ANTICIPATED TYPES AND VOLUMES OF TRAFFIC. LENGTH OF ACCELERATION AND DECELERATION LANES MAY BE MODIFIED WHEN WARRANTED AT THE DISCRETION OF THE PLANNING COMMISSION.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

MINIMUM PUBLIC ROAD TO PUBLIC ROAD ENTRANCE REQUIREMENTS

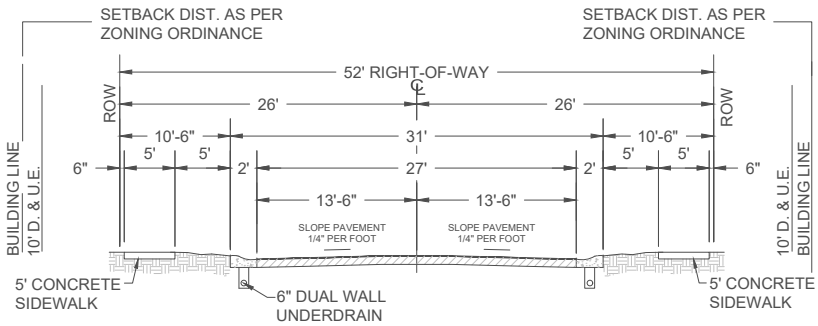
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 1



NOTE:
TWO 13'-6" TRAVEL LANES WITH NO PARKING LANE AS SHOWN ABOVE.
ALTERNATIVE, TWO 11'-0" MOVING LANES WITH ONE 8'-0" PARKING LANE.

PEDESTRIAN RAMPS AT INTERSECTIONS SHALL MEET PROWAG (PUBLIC RIGHT-OF-WAY) GUIDELINES

REVISIONS			
NO.	DESCRIPTION	DATE	BY

LOCAL STREET OR CUL-DE-SAC

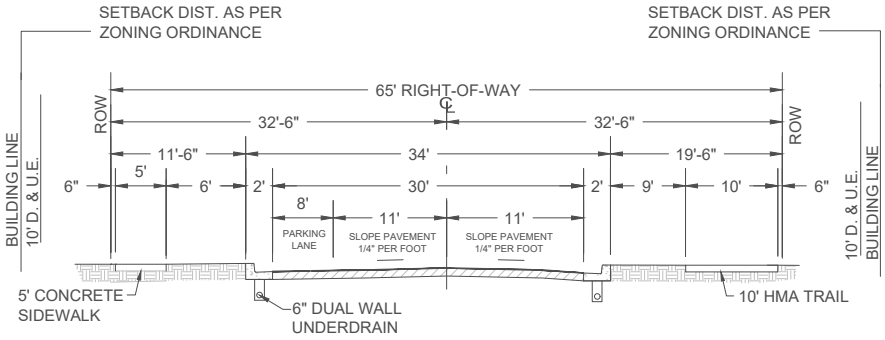
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 2



NOTE:
TWO 11'-0" TRAVEL LANES AND ONE 8'-0" PARKING LANE AS SHOWN ABOVE.

PEDESTRIAN RAMPS AT INTERSECTIONS SHALL MEET PROWAG (PUBLIC RIGHT-OF-WAY) GUIDELINES

REVISIONS			
NO.	DESCRIPTION	DATE	BY

MINOR COLLECTOR STREET

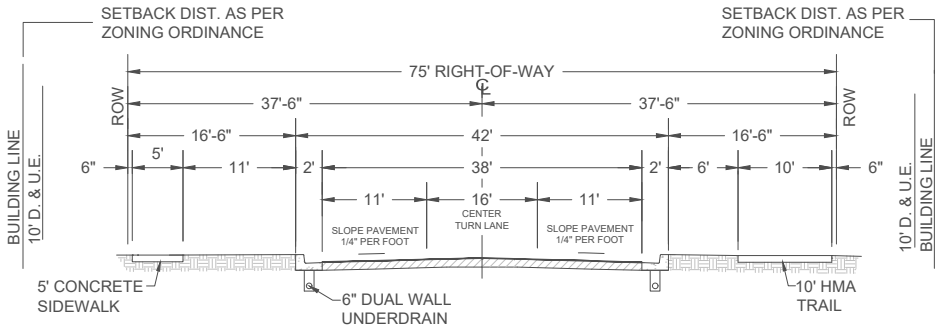
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 3



NOTE:
THREE TRAVEL LANES WITH NO PARKING LANES AS SHOWN ABOVE.
TWO OUTSIDE LANES OF 11'-0" EACH, CENTER LANE 16'-0" TOTAL, 12'-0" TURN LANE WITH 4'-0" DIVING CURB (INTERMITTENT AS NEEDED).
OPTIONAL: ADD 8'-0" OF PAVEMENT FOR EACH PARKING LANE.

PEDESTRIAN RAMPS AT INTERSECTIONS SHALL MEET PROWAG (PUBLIC RIGHT-OF-WAY) GUIDELINES

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MAJOR COLLECTOR STREET

STANDARD DETAILS

TOWN OF WHITESTOWN

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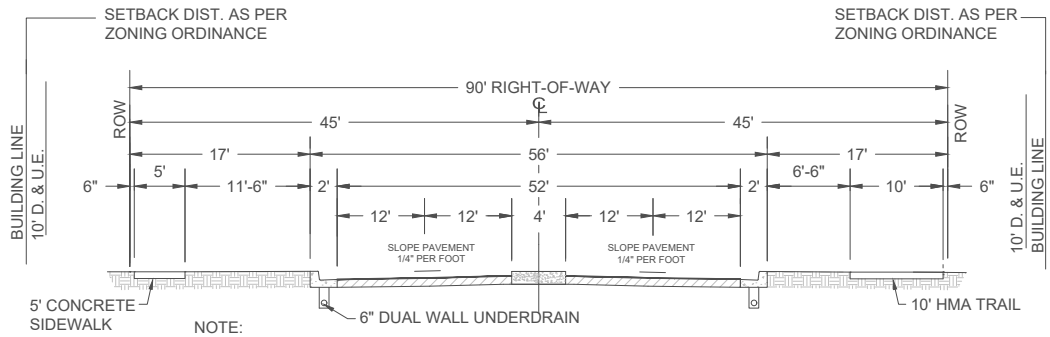
SCALE: NTS

SHEET NO. 4



NOTE:
FOUR 12'-0" TRAVEL LANES, 4'-0" CENTER CURBS, NO PARKING LANES AS SHOWN ABOVE
OPTIONAL: ADD 8'-0" OF PAVEMENT FOR EACH PARKING LANE.

PEDESTRIAN RAMPS AT INTERSECTIONS SHALL MEET PROWAG (PUBLIC RIGHT-OF-WAY) GUIDELINES

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PROFESSIONAL ENGINEER

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MINOR ARTERIAL STREET

STANDARD DETAILS

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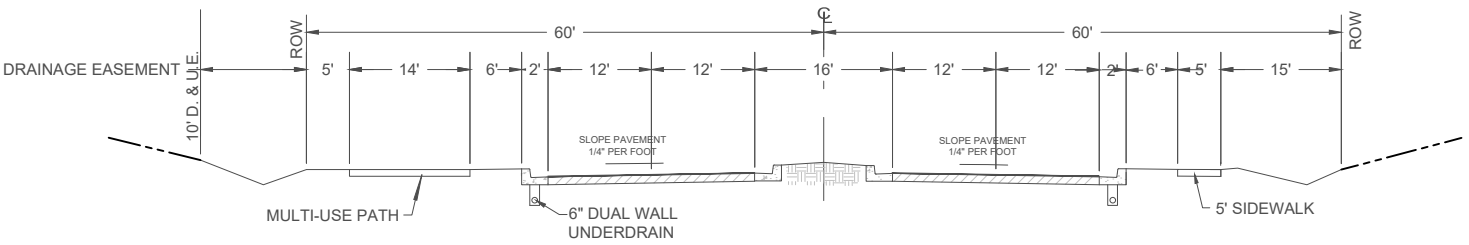
SHEET NO. 5



NOTE:
INSTALL 12'-0" TRAVEL LANES, 10'-0" GRASS MEDIAN WITH OCCASIONAL CENTER TURN LANES AND/OR CROSS-OVERS, NO PARKING LANES AS SHOWN ABOVE.
BOULEVARD HAS POTENTIAL TO BECOME FIVE-LANE ARTERIAL IF WARRANTED.
OPTIONAL: ADD 8'-0" OF PAVEMENT FOR EACH PARKING LANE.

PEDESTRIAN RAMPS AT INTERSECTIONS SHALL MEET PROWAG (PUBLIC RIGHT-OF-WAY) GUIDELINES

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MAJOR ARTERIAL STREET

STANDARD DETAILS

TOWN OF WHITESTOWN

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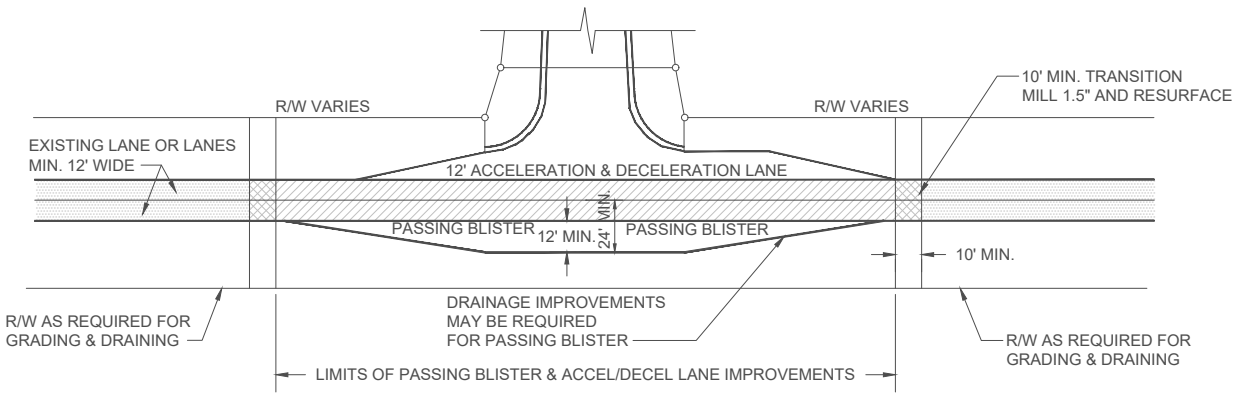
SHEET NO. 6



ROADWAY IMPROVEMENT REQUIREMENTS AT PRIVATE ENTRANCE:

THE MAIN ROAD SHALL BE MILLED, RESURFACED, AND REPAINTED AS NEEDED FOR THE LENGTH OF THE PASSING BLISTER AND ACCEL/DECEL LANE IMPROVEMENTS. PREPARE SUBGRADE FOR NEW PASSING BLISTER AND ACCELERATION & DECELERATION LANES, ACCORDING TO THE REQUIREMENTS OF THE TOWN OF WHITESTOWN STANDARD DETAILS.

ASPHALT PAVING OF THE PASSING BLISTER AND ACCELERATION AND DECELERATION LANES SHALL MEET THE MINIMUM REQUIREMENTS OF THE TOWN OF WHITESTOWN. ASPHALT PAVING OF THE MAIN ROAD LANES SHALL MEET THE MINIMUM REQUIREMENTS OF THE TOWN OF WHITESTOWN FOR ROADWAY PAVING, OR MATCH THE DEPTH OF EXISTING ASPHALT, WHICHEVER IS GREATER.

MILL EXISTING ROAD 1.5" DEEP A MINIMUM OF 10' BEYOND THE ROADWAY IMPROVEMENT LIMITS AT EACH END. CONTINUE 1.5" HMA SURFACE PAVING OVER THE MILLED AREA TO PROVIDE A SMOOTH TRANSITION BETWEEN NEW AND EXISTING ASPHALT PAVEMENT. CURBING SHALL BE EXTENDED THE ENTIRE LENGTH OF THE ACCELERATION AND DECELERATION LANES. IMPROVEMENTS SHALL BE MADE AS NECESSARY TO PROVIDE APPROPRIATE DRAINAGE WHERE THE PASSING BLISTER IS CONSTRUCTED. ADDITIONAL RIGHT OF WAY SHALL BE ACQUIRED AS NECESSARY TO CONSTRUCT PROPER DRAINAGE IMPROVEMENTS AT PASSING BLISTER.

REQUIRED ON ALL ARTERIAL AND COLLECTOR STREETS AT THE TOWN'S DISCRETION.

PEDESTRIAN RAMPS AT INTERSECTIONS SHALL MEET PROWAG (PUBLIC RIGHT-OF-WAY) GUIDELINES

REVISIONS			
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ROADWAY IMPROVEMENTS AT NEW DEVELOPMENT ENTRANCES

STANDARD DETAILS

TOWN OF WHITESTOWN

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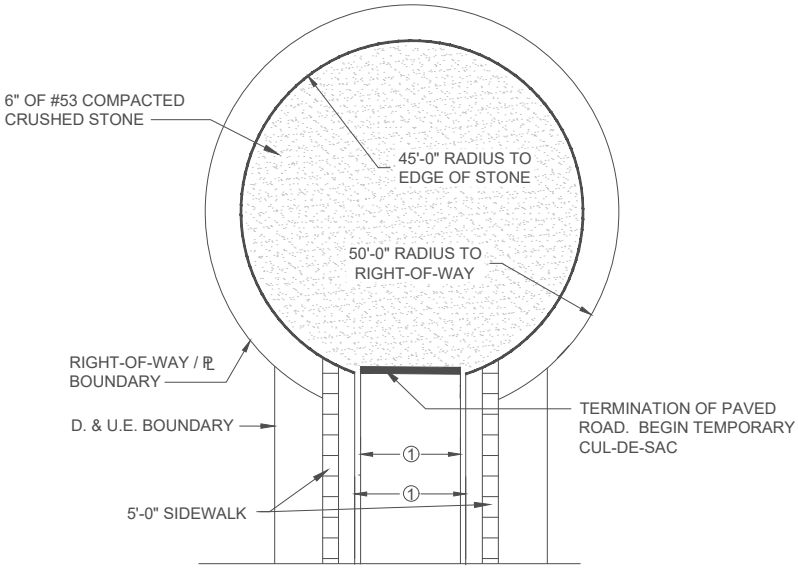
SCALE: NTS

SHEET NO. 7



NOTE:
DESIGN AND CONSTRUCTION OF TEMPORARY CUL-DE-SACS MUST PROVIDE APPROPRIATE DRAINAGE TO PREVENT PONDING.

① R/W AND ROAD WIDTH REQUIREMENTS PER ROAD CLASSIFICATION

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TEMPORARY CUL-DE-SAC

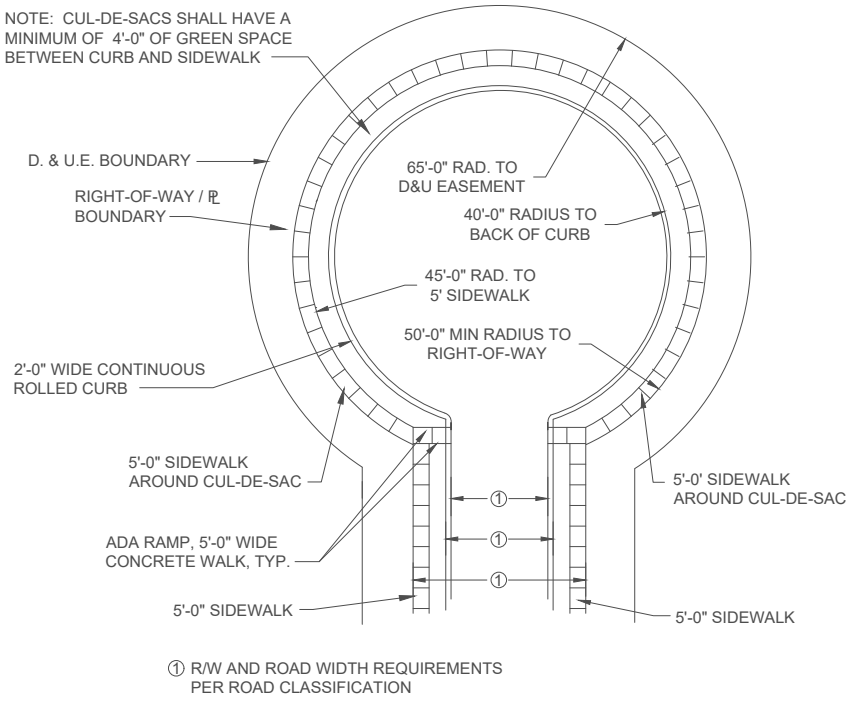
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 8



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RESIDENTIAL CUL-DE-SAC TURNAROUNDS

STANDARD DETAILS

TOWN OF WHITESTOWN

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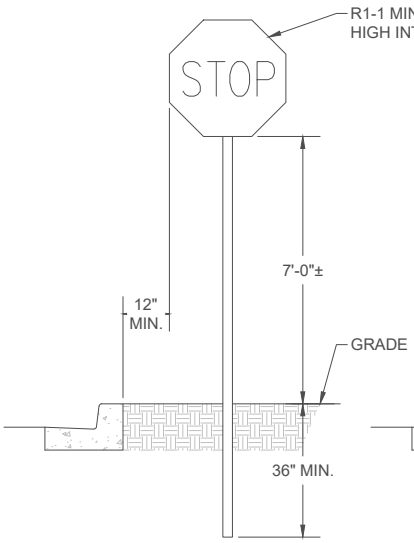
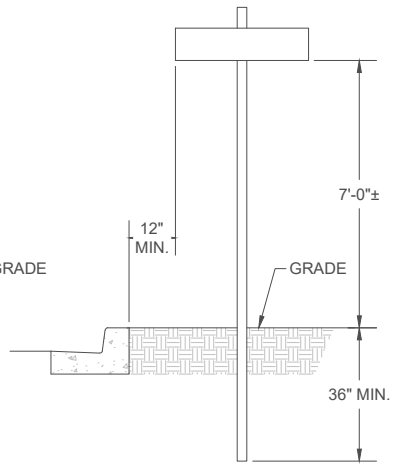
SCALE: NTS

SHEET NO. 9



STOP SIGN



NOTE: STREET NAME SIGNS TO BE LOCATED AT ALL STREETS.

STREET NAME SIGN

TRAFFIC CONTROL AND SIGNAGE NOTES:

1. THE CONTRACTOR/DEVELOPER SHALL PROVIDE AND INSTALL ALL STREET NAME AND ROAD SIGNS PER CURRENT INDOT STANDARDS AND TOWN OF WHITESTOWN DETAILS. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE CURRENT INDIANA MUTCD.
2. MATERIALS SHALL BE FREE OF BURRS, PITS AND BLEMISHES, AND SHALL PRESENT A SMOOTH CLEAN SURFACE.
3. SIGN BLANKS SHALL MEET INDOT SPECIFICATIONS UNLESS OTHERWISE SPECIFIED.
4. ALL STREET SIGNS SHALL HAVE GREEN BACKGROUND WITH WHITE LETTERS, NUMBERS AND BORDERS ON EXTRUDED ALUMINUM BLADES.
5. THE STREET NAME LETTERS TO BE ENGINEER GRADE: 9" BLADES WITH 6" NUMBERS, 6" CAPITAL LETTERS AND 4.5" LOWER-CASE LETTERS ON ALL STREETS.
6. STOP SIGNS SHALL BE MIN. 30" HIGH INTENSITY.
7. SPEED LIMIT SIGNS SHALL BE 24"X30" HIGH INTENSITY.
8. SIGN POST SHALL BE BLACK GALVANIZED SQUARE POSTS (3LBS/FT), DRIVEN INTO THE GROUND. NO EXCAVATION SHALL BE DONE TO PLACE SIGNS.
9. LARGER SIGNS MAY BE NEEDED FOR ROAD CLASSIFICATIONS GREATER THAN LOCAL PER INDIANA MUTCD REQUIREMENTS.

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STREET SIGNAGE DETAILS

STANDARD DETAILS

TOWN OF WHITESTOWN

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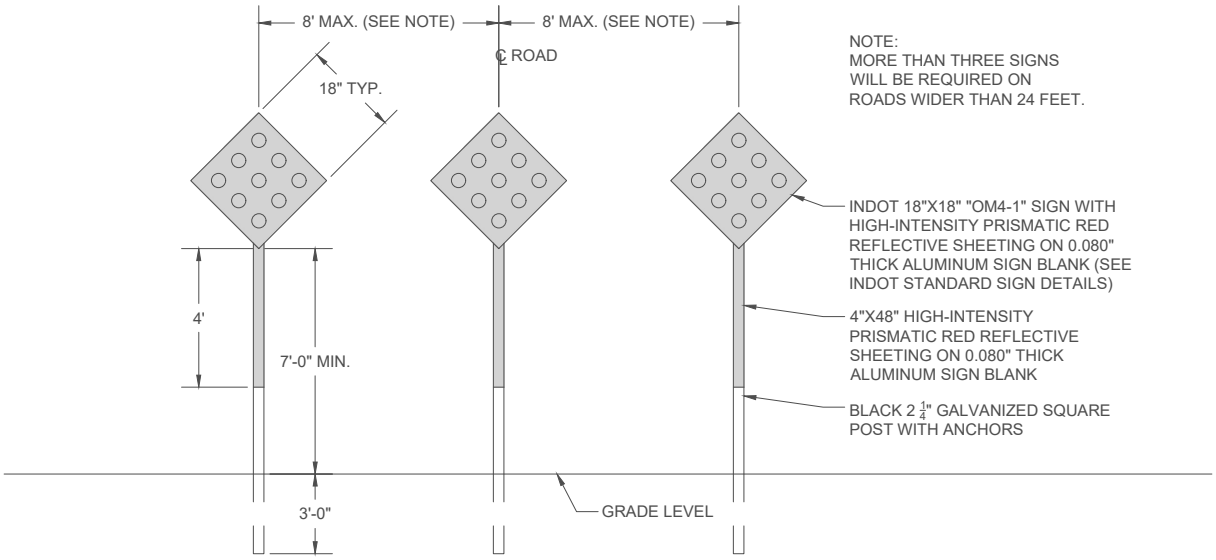
SHEET NO. 10



NOTE:
END OF ROADWAYS (DEAD-ENDS)
MUST HAVE CUL-DE-SAC OR
HAMMERHEAD TURN-AROUND
SUFFICIENT FOR FIRE TRUCKS.

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END OF ROADWAY DETAIL

STANDARD DETAILS

TOWN OF WHITESTOWN

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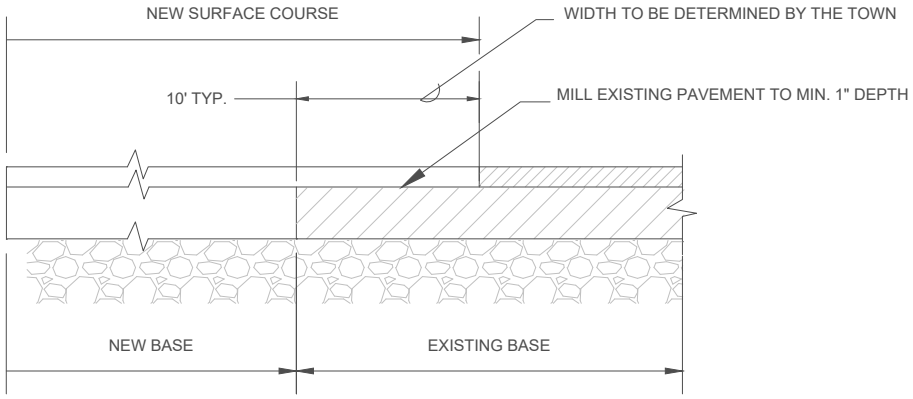
SCALE: NTS

SHEET NO. 11



REVISIONS			
NO.	DESCRIPTION	DATE	BY

CONNECTION TO EXISTING STREETS

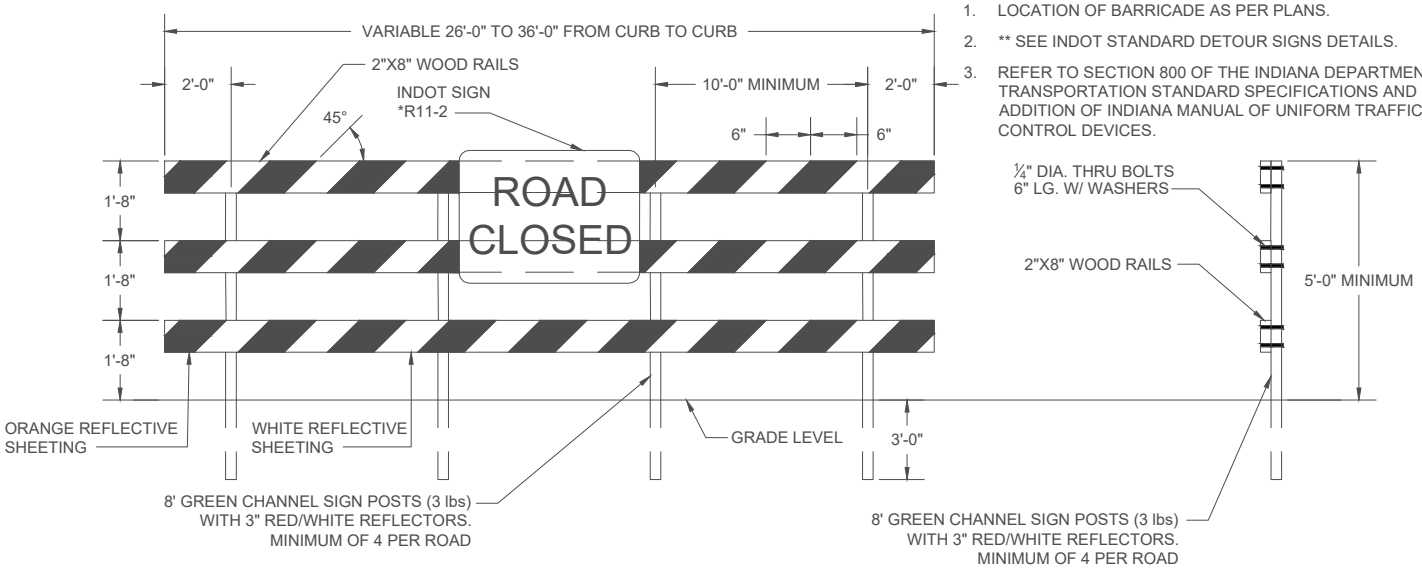
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 12



NOTES:

1. LOCATION OF BARRICADE AS PER PLANS.
2. ** SEE INDOT STANDARD DETOUR SIGNS DETAILS.
3. REFER TO SECTION 800 OF THE INDIANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND LATEST ADDITION OF INDIANA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

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STANDARD BARRICADE

STANDARD DETAILS

TOWN OF WHITESTOWN

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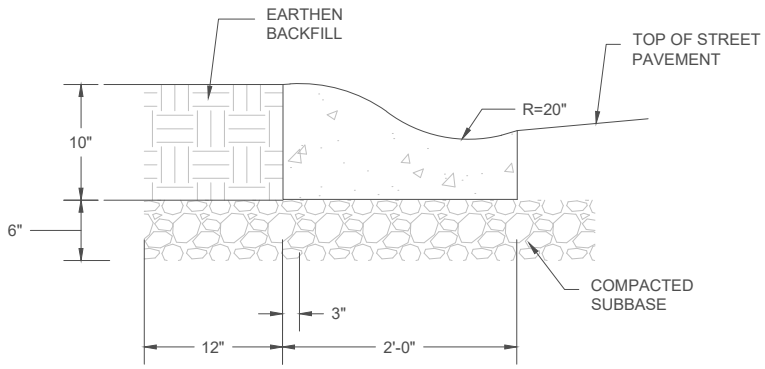
SCALE: NTS

SHEET NO. 13



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CONCRETE ROLL CURB AND
GUTTER DETAIL

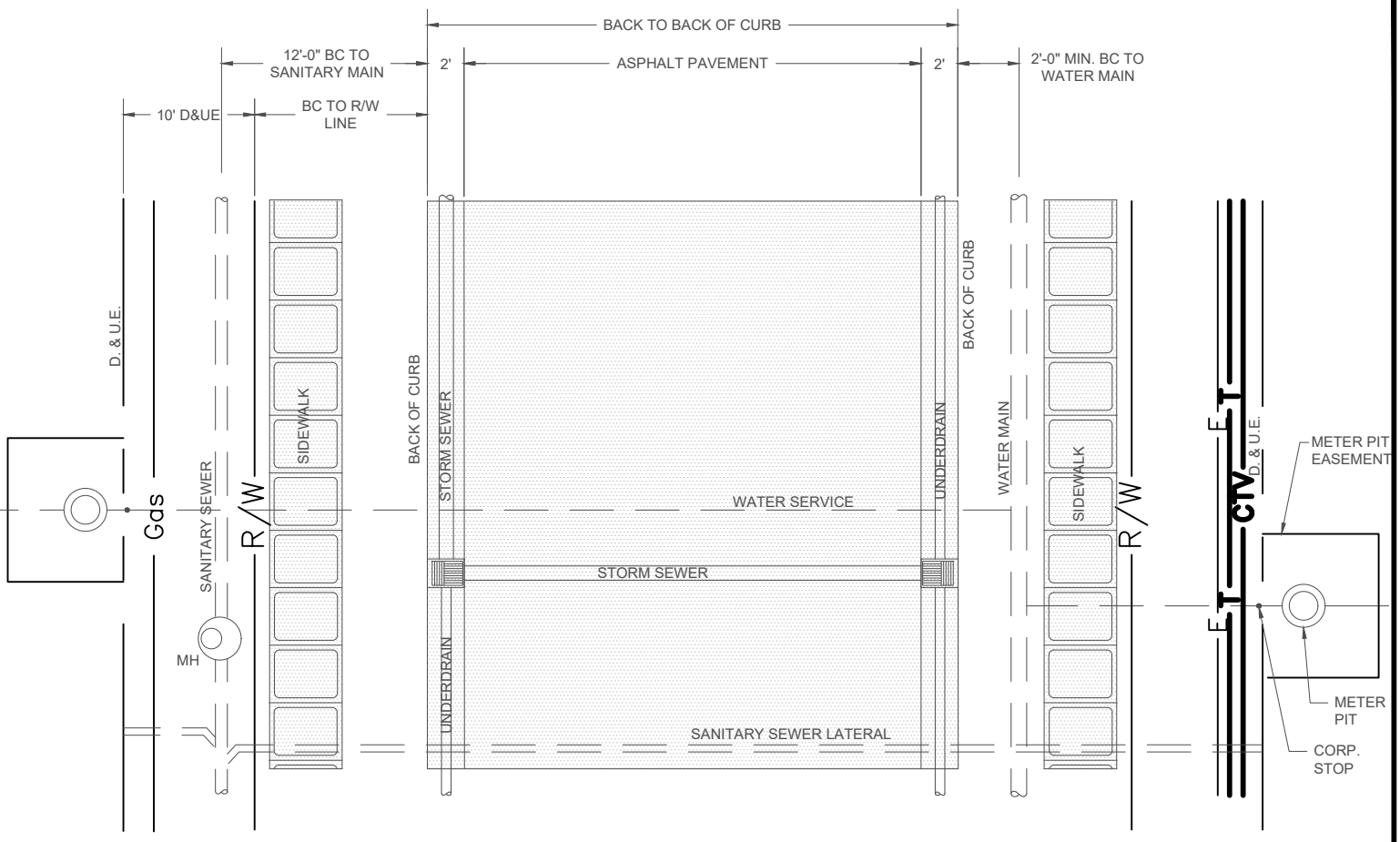
STANDARD DETAILS

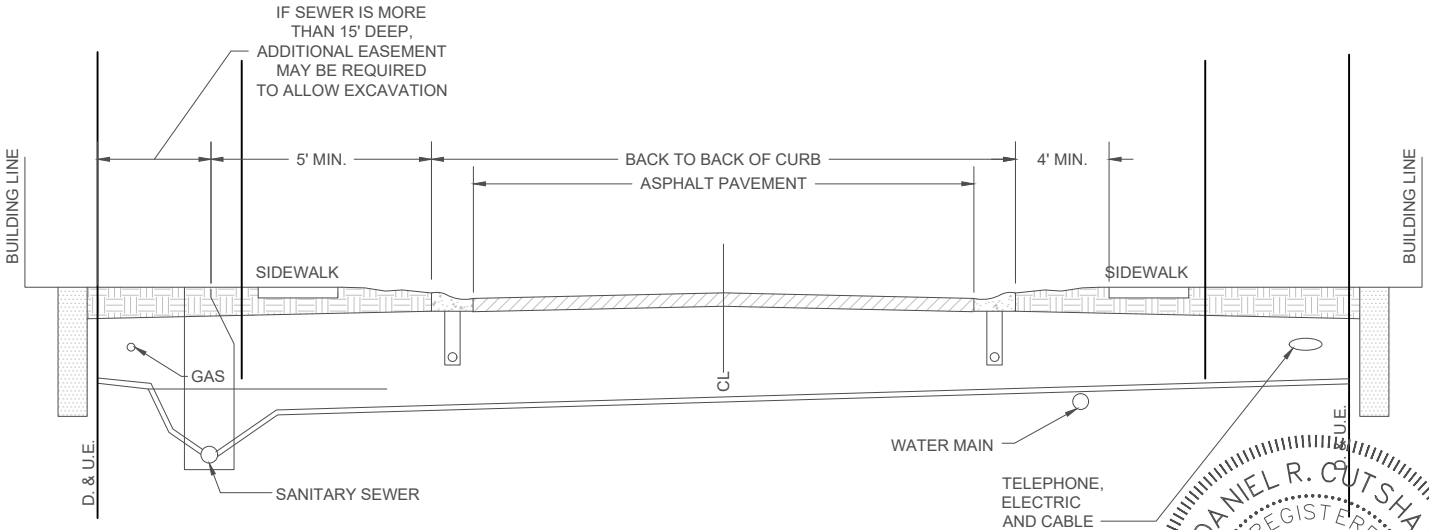
TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 14





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GENERAL UTILITY LOCATION - PLAN AND SECTION

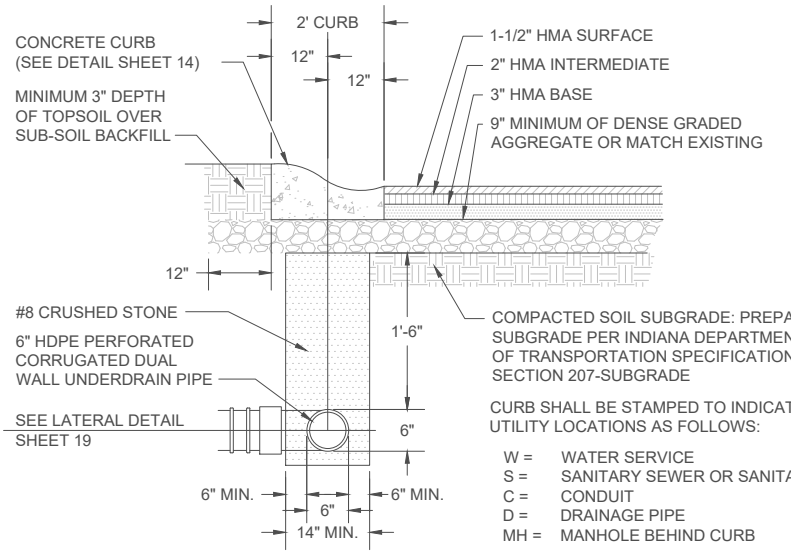
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 15



REVISIONS			
NO.	DESCRIPTION	DATE	BY

LOCAL STREET - MINIMUM PAVEMENT AND UNDERDRAIN: RESIDENTIAL DEVELOPMENTS

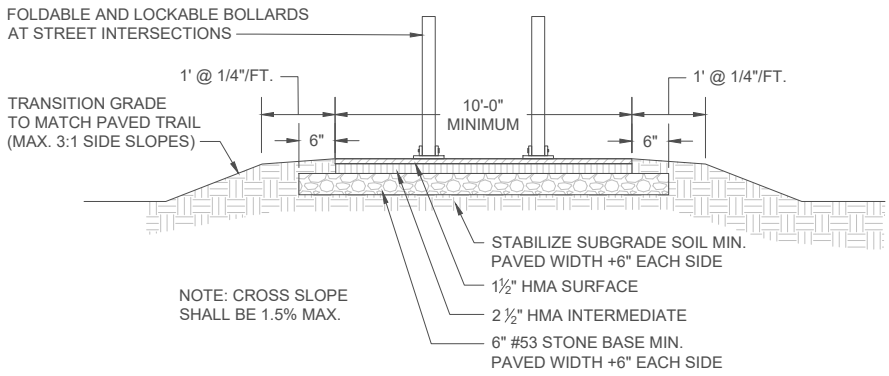
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 16



* BOLLARDS SHALL HAVE BREAKAWAY FEATURE THAT ALLOWS THEM TO BE COLLAPSED WITH THE BUMPER OF AN EMERGENCY VEHICLE.

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TYPICAL TRAIL CROSS SECTION

STANDARD DETAILS

TOWN OF WHITESTOWN

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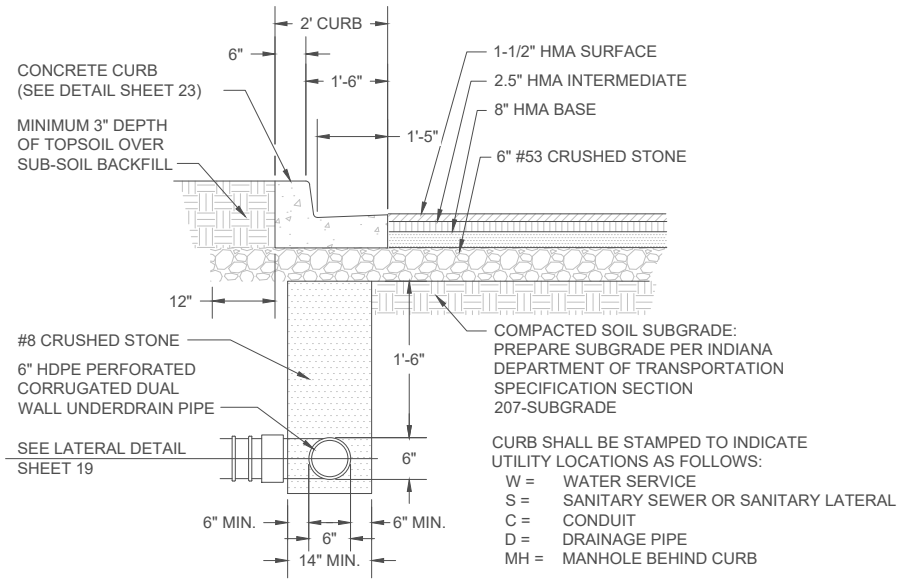
SHEET NO. 17



NOTES:

1. DEVELOPER'S ENGINEER SHALL VERIFY PAVEMENT DESIGN BASED ON SOILS INVESTIGATION IN THE AREA OF CONSTRUCTION.
2. FOR STREETS WITH HIGHER CLASSIFICATIONS THAN LOCAL, DEVELOPER'S ENGINEER SHALL SUBMIT PROPOSED PAVEMENT DESIGN FOR TOWNS APPROVAL.
3. COMMERCIAL DRIVE ENTRANCES SHALL BE DESIGNED PER APPROPRIATE INDOT REQUIREMENTS.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

LOCAL STREET - MINIMUM PAVEMENT AND UNDERDRAIN:
COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

STANDARD DETAILS

TOWN OF WHITESTOWN

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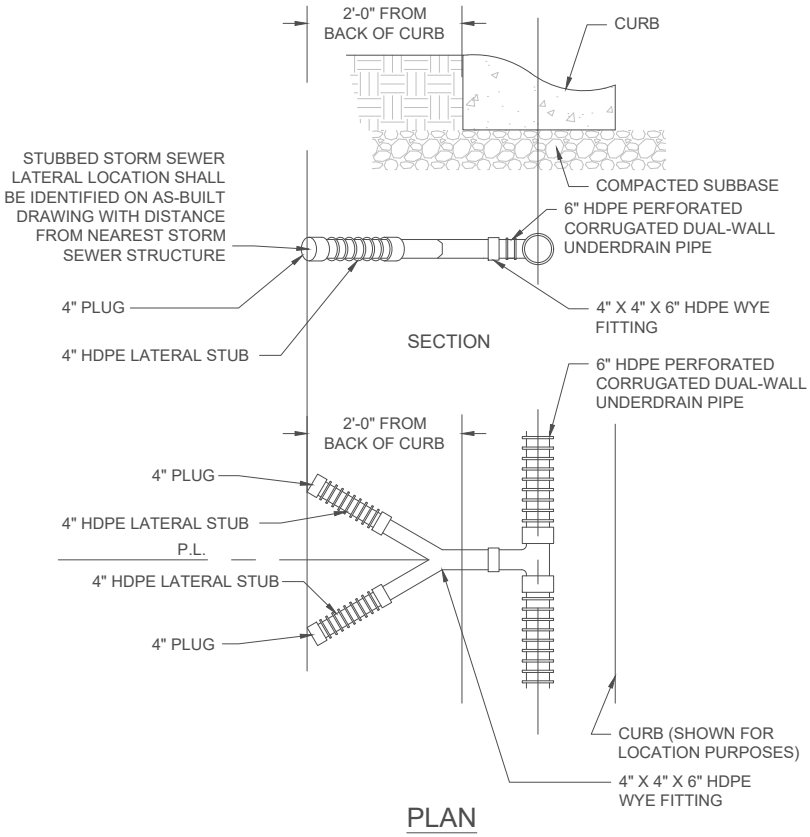
SCALE: NTS

SHEET NO. 18



NOTE: ONLY ALLOWED WHERE REAR YARD DRAIN CONNECTION IS NOT POSSIBLE

STORM SEWER LATERAL REQUIREMENTS:

1. ROUTE ALL PROPERTY LATERALS TO REAR YARD STORM SEWERS WHEN POSSIBLE.
2. ALL SUMP PUMP DISCHARGE PIPES SHALL BE CONNECTED TO STORM SEWER SYSTEM. "DAY-LIGHTING" OF SUMP PUMP DISCHARGE PIPES ALLOWED WITH TOWN PERMISSION.
3. SUMP PUMP DISCHARGE PIPE MUST BE CONNECTED TO LATERAL WITH AN APPROPRIATE FITTING.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

STORM SEWER LATERAL CONNECTION AT ROAD UNDERDRAIN

STANDARD DETAILS

TOWN OF WHITESTOWN

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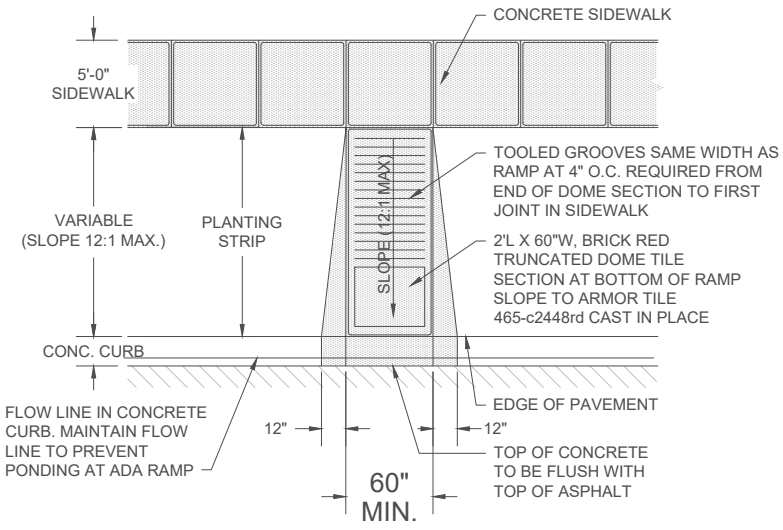
SCALE: NTS

SHEET NO. 19



REVISIONS			
NO.	DESCRIPTION	DATE	BY

SIDEWALK ADA RAMP DETAIL

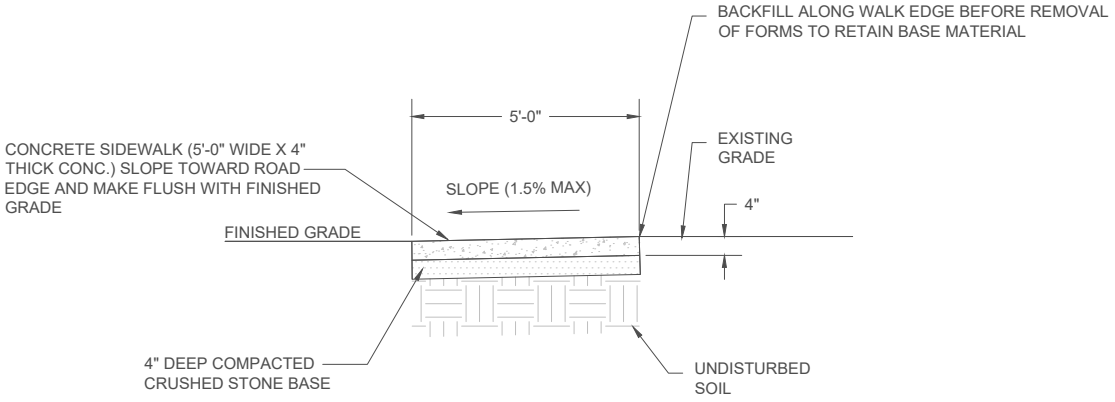
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 20



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TYPICAL SIDE WALK SECTION

STANDARD DETAILS

TOWN OF WHITESTOWN

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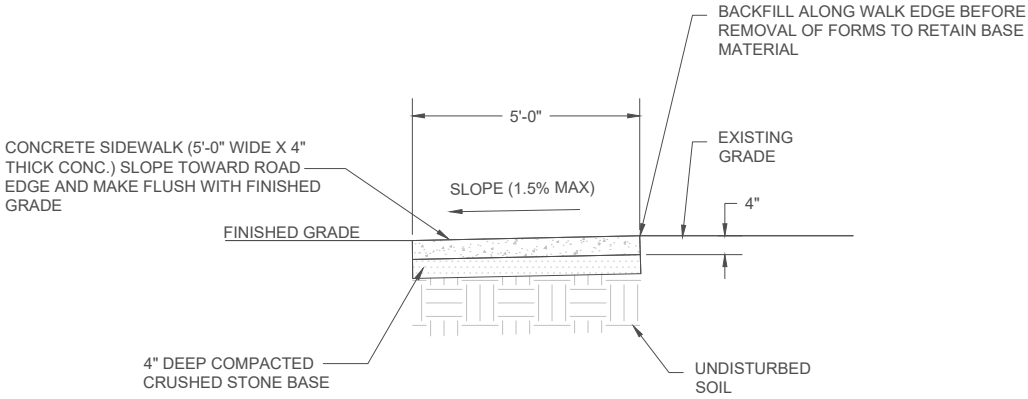
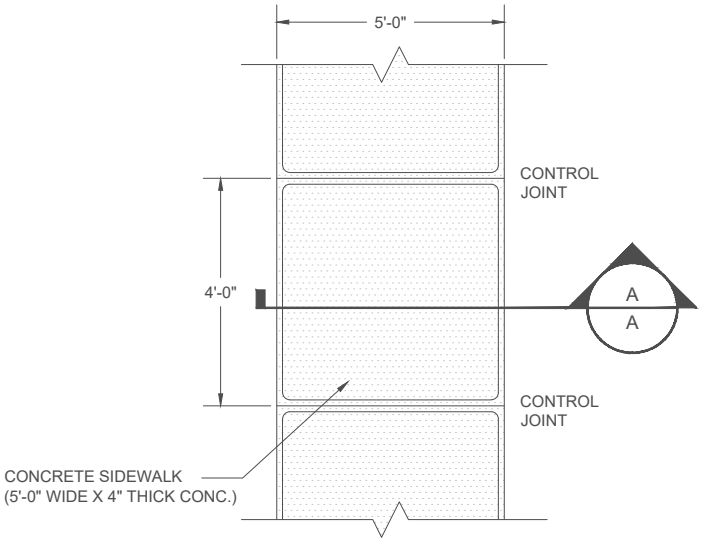
SCALE: NTS

SHEET NO. 21



SIDEWALK SECTION A-A

(FROM SHEET 62)



REVISIONS			
NO.	DESCRIPTION	DATE	BY

TYPICAL SIDEWALK
DETAIL AND SECTION

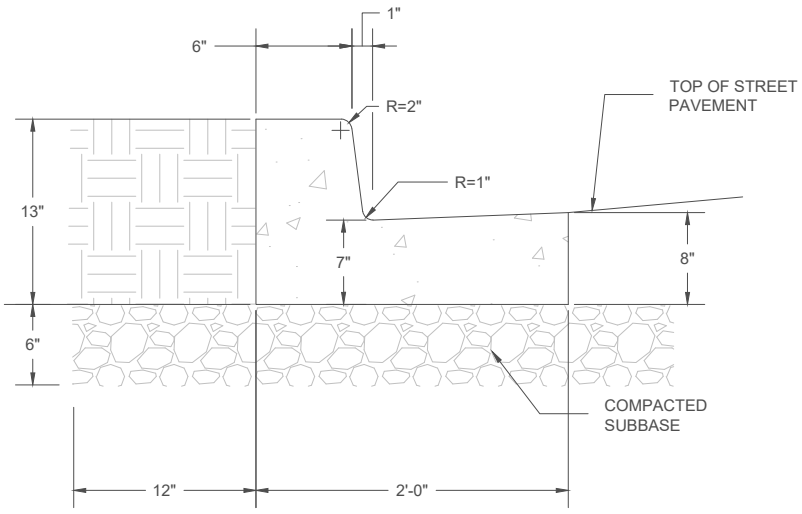
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 22



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CONCRETE CHAIR BACK CURB
AND GUTTER DETAIL

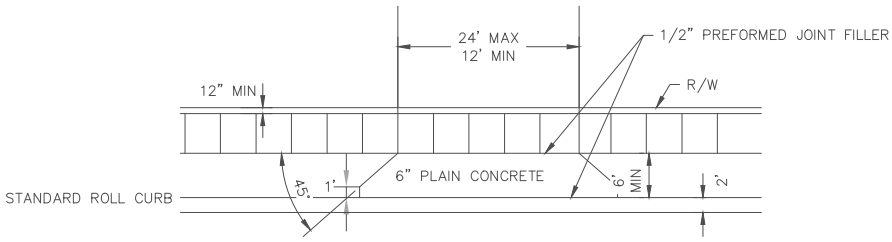
STANDARD DETAILS

TOWN OF WHITESTOWN

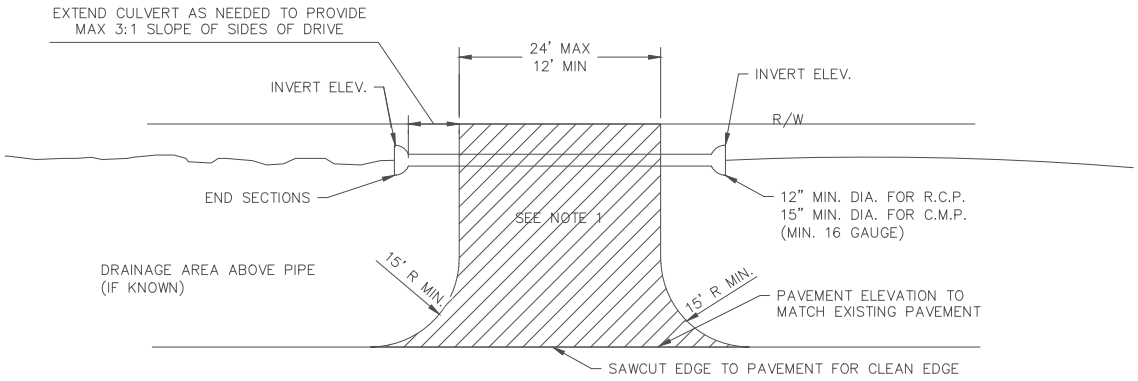
DATE: 06/30/25

SCALE: NTS

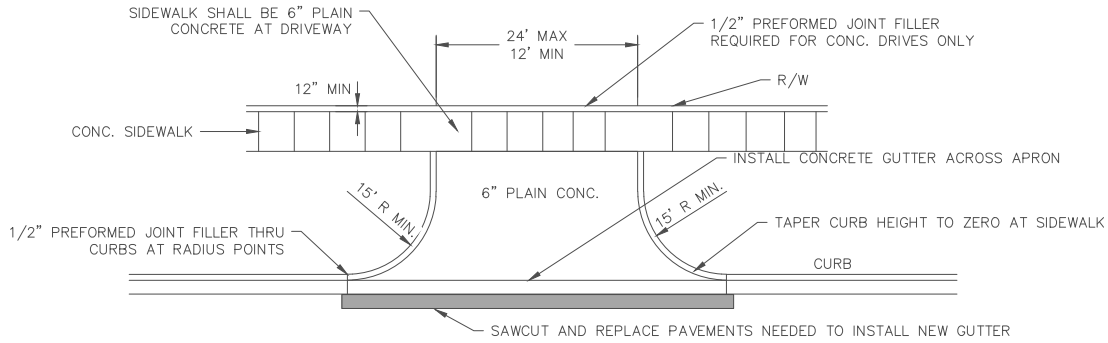
SHEET NO. 23



PRIVATE DRIVE AT ROLLED CURB
AND GUTTER AND SIDEWALK



PRIVATE DRIVE WITH OPEN DITCHES



PRIVATE DRIVE AT CHAIRBACK CURB AND GUTTER

GENERAL NOTES

1. HATCHED AREA SHALL BE EITHER 6" PLAIN CONCRETE ON 6" OF NO. 53 COMPACTED AGGREGATE OR 1.5" HMA SURFACE ON 2.5" HMA BASE ON 6" NO. 53 COMPACTED AGGREGATE BASE EXTENDING TO R/W LINE.
2. METAL OR CONCRETE END SECTION SHALL BE CONSTRUCTED ON ALL PIPES.
3. SUBGRADE UNDER ALL DRIVES SHALL BE TYPE III (IN-PLACE SOIL COMPACTION) IN ACCORDANCE WITH INDOT SPEC. 207
4. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE STANDARD AND SHALL BE CONTINUOUS ACROSS THE DRIVEWAY.
5. DRIVEWAYS SHALL BE GRADED TO PROVIDE A MINIMUM OF 1 FOOT COVER FROM TOP OF CULVERT PIPE TO TOP OF PAVEMENT
6. REFER TO DETAIL 25 FOR TYPICAL DRIVEWAY SECTIONS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

RESIDENTIAL DRIVE DETAILS

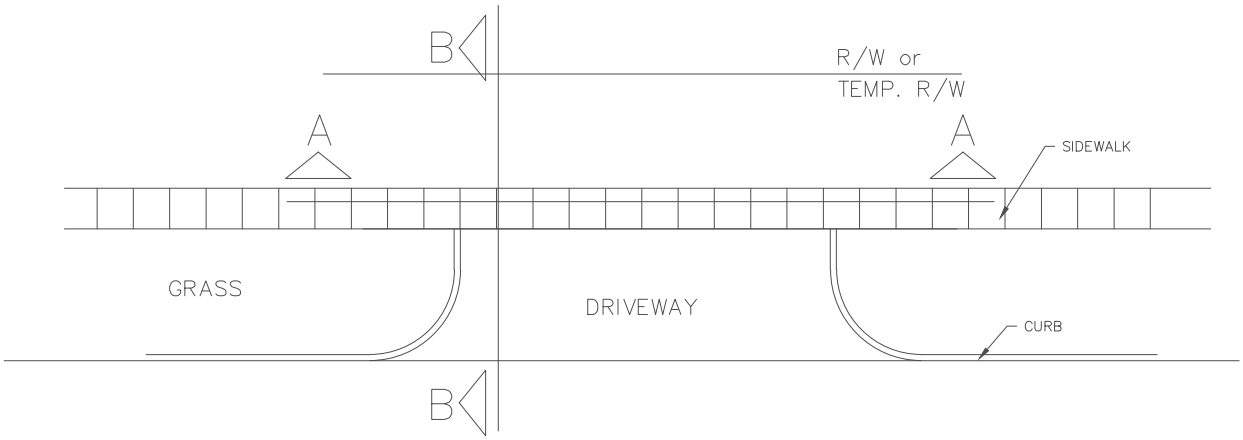
STANDARD DETAILS

TOWN OF WHITESTOWN

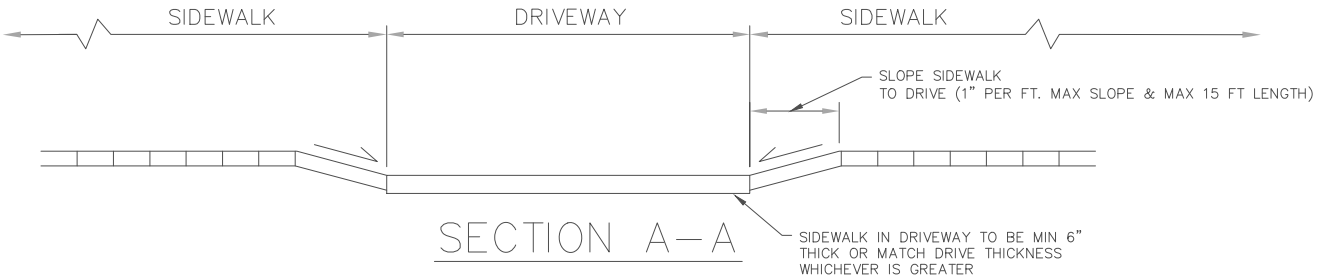
DATE: 06/30/25

SCALE: NTS

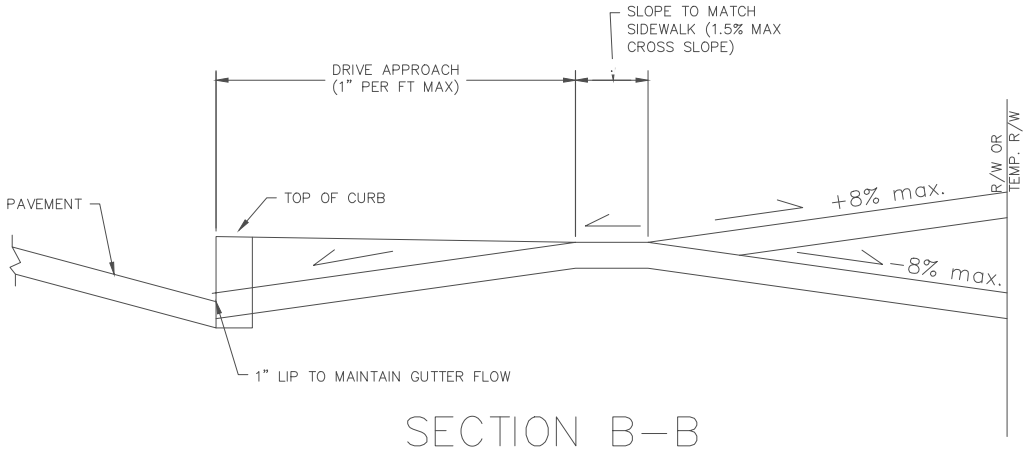
SHEET NO. 24



PLAN VIEW



SECTION A–A



SECTION B–B

GENERAL NOTES
1. BUTT JOINTS MUST BE SAWCUT TO GOOD PAVEMENT
2. SEE DETAIL 24 FOR ADDITIONAL REQUIREMENTS

REVISIONS			
NO.	DESCRIPTION	DATE	BY

RESIDENTIAL DRIVE SECTION DETAILS

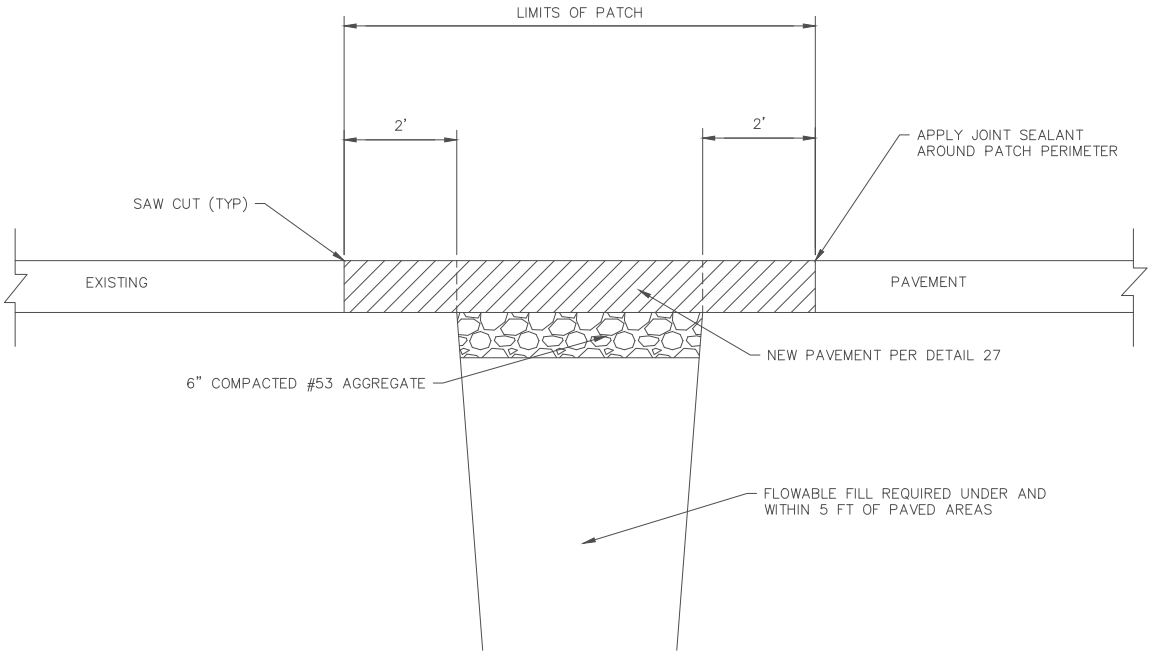
STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 25



NOTES
1. SAW CUT MIN. 1/3 PAVEMENT THICKNESS THEN BREAK OUT

DANIEL R. CUTSHAW
REGISTERED
No.
11200431
STATE OF
INDIANA
PROFESSIONAL ENGINEER

REVISIONS			
NO.	DESCRIPTION	DATE	BY

REPAIR CUTS WITHIN
PAVEMENT LIMITS

STANDARD DETAILS

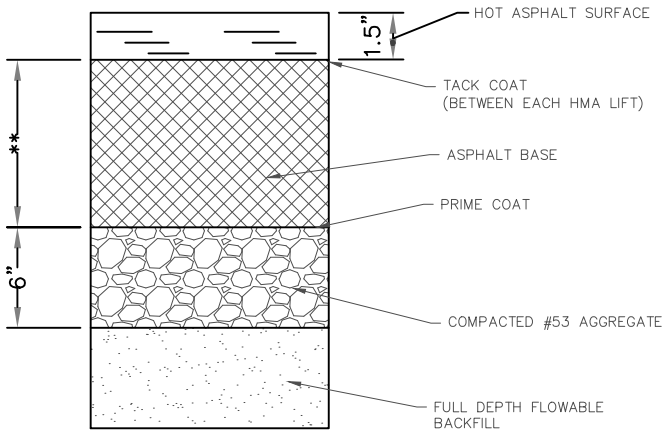
TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

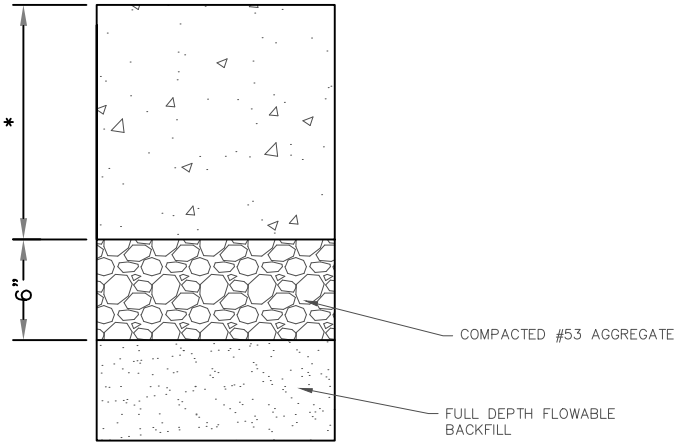
SHEET NO. 26

** MIN THICKNESS
ARTERIAL – 9.56"
COLLECTOR – 7"
LOCAL – 4.5"
OR MATCH EXISTING IF THICKER



BITUMINOUS PATCHING

* MIN THICKNESS
ARTERIAL – 8"
COLLECTOR – 7"
LOCAL – 6"
OR MATCH EXISTING IF THICKER



PLAIN CEMENT CONCRETE PATCHING

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REVISIONS			
NO.	DESCRIPTION	DATE	BY

PAVEMENT REPAIR SECTIONS

STANDARD DETAILS

TOWN OF WHITESTOWN

DATE: 06/30/25

SCALE: NTS

SHEET NO. 27