

Chapter 1: General

1.1 Introduction

The City of Hilliard Engineering Design Manual (hereinafter the “Manual”) has been developed to promote uniformity in the application of engineering practices, policies, and guidelines with respect to the design of all public works within the public right-of-way or easements. Public works include street, stormwater management (quality and quantity), water, sanitary sewer, pedestrian and bicycle facilities, structures, traffic signals, maintenance of traffic, street lighting, signing and pavement marking, and landscaping. The intent of the Manual is to provide standards and best practices to the designer. It is not intended to supersede requirements of law nor engineering judgment and sound principles by a knowledgeable design professional.

The Engineer responsible for applying the concepts and practices assembled in this Manual is required to hold current registration as a Professional Engineer in the State of Ohio with experience in the discipline in which the plans are being prepared.

While this Manual compiles guidelines, practices, and requirements from a variety of sources, it is not warranted or represented to be comprehensive in every respect. Engineering knowledge, experience, and judgment must always be used to determine whether, and how, to apply the information included herein to specific situations.

New or different design techniques presented herein or contemplated in the future with new technology or materials do not imply that existing public works designs are unsafe or unsuitable nor do they mandate the initiation of improvement projects to meet current design standards. However, if a rehabilitation project or modification of existing infrastructure is being contemplated as a public- or privately-funded project, attempts should be made to reasonably upgrade infrastructure to meet current design guidelines and/or City standards.

1.2 Engineering Plan Review and Approval Process

All proposed work in public right-of-way or public easement in the City of Hilliard is subject to review by the Engineering Division to verify conformance to current City design requirements, standard drawings and construction standards, specifications, and regulations. The information contained herein is updated per the revision date on the cover, and should be considered to supersede all previous documents. This document is supplemental to the Codified Ordinances of the City of Hilliard.

Plan approval is subject to the specific application and can generally be categorized into one of the following three classifications: Capital Improvement Projects, Private Development Projects, and Private Utility Projects. As-builts for Commercial development projects must be submitted in order to receive a certificate of occupancy.

1.2.1 Capital Improvement Projects (CIP)

Capital Improvement Projects include street, storm, water, traffic signal, sanitary sewer, bike/pedestrian, street lighting, signing or pavement marking projects, or other public works projects located in public right-of-way or easements that are funded through City or other public agency capital dollars.

1.2.1.A. The Process

For CIP work, the plan review and approval process and project submittal schedule shall be coordinated with the City of Hilliard project manager in order to meet City expectations, priorities, and budgets. Project coordination with private utilities is the responsibility of the design consultant unless otherwise arranged in the project scope.

1.2.1.B. Plan Review Timeline

For small design projects that are limited in scope, plan submittals may be combined and review times can be expected between two (2) to four (4) weeks. For larger or more complex projects, plan submittals may be split into disciplines and review times may be longer. All review times stated above are estimates and are also dependent on work load and staff availability.

1.2.1.C. Plan Signatures and Permits

The City project manager will obtain all City official signatures or permits required for final plan approval for CIP work. It is the responsibility of the design consultant to obtain all other necessary signatures or permits on behalf of the City.

1.2.2 Private Development Projects

Private Development Projects can be categorized into one of the following three classifications: subdivision projects, thoroughfare plan street projects, and residential/commercial building permit projects.

1.2.2.A. Subdivision Projects

Subdivision Projects include residential subdivisions with local streets and utilities to be dedicated as public infrastructure.

1.2.2.A.1 The Process

Subdivision Projects will be reviewed using a three-step process unless the size or scope of the project requires a further breakdown of the process. Step 1 is the preliminary design, which corresponds to a 30%-complete submission. Step 2 is the detailed design, which corresponds to a 90%-complete submission. Step 3 corresponds to final plans and title sheet. In some cases, upon request by the Developer, the City Engineer may approve combining two of these steps in the process. Each submittal shall be complete and include all necessary plans, calculations, studies, and reports required for review of the corresponding submittal. If the documents are deemed incomplete, the applicant shall be notified in writing and shall have an opportunity to correct the deficiencies and resubmit the required plans for review. The City will not review partial plan submissions. All final plans or reports shall be signed and sealed by the design engineer. Coordination of the project with private utilities is the responsibility of the design engineer, and plan revisions resulting from conflicts with private utilities may result in a modified process.

1.2.2.A.2 Plan Review Timeline

Plans are reviewed in the order in which they are received and logged into the official City of Hilliard plan tracking system. Incomplete plans submissions will not be logged into the tracking system. For 30% submission the estimated review times can be expected to be between two (2) and four (4) weeks depending on the complexity of project. For 90% submission the estimated review times can be expected to be between one (1) and three (3) weeks depending on the complexity of project. Final review and/or back checks typically can be done in one (1) week. All review times stated above are estimates and are also dependent on workload and staff availability. Holidays or scheduled leave shall be factored into these timelines.

1.2.2.A.3 Plan Signatures and Permits

The design consultant shall obtain all necessary signatures or permits required for the plans.

1.2.2.B. Thoroughfare Plan Street Projects

Thoroughfare Plan Street Projects include projects that construct new streets or modify existing streets or intersections. This includes turn lane work, shoulder widening, addition/modification of traffic signals or pedestrian/bicycle facilities to accommodate private development projects that are designated as arterial or network collector on the City of Hilliard Thoroughfare Plan.

1.2.2.B.1 The Process

Because Thoroughfare Plan Street Projects can vary drastically in terms of size and scope, these projects will be reviewed using a process similar to CIP work designated in Section 1.2.1 and the developer's schedule will be factored into the process. Each submittal shall be complete and include all necessary plans, calculations, studies, and reports required for review of the corresponding submittal. If the documents are deemed incomplete, the applicant shall be notified in writing and shall have an opportunity to correct the deficiencies and resubmit the required plans for review. The City will not review partial plan submissions. All final plans or reports shall be signed and sealed by the design engineer. Coordination of the project with private utilities is the responsibility of the design engineer, and plan revisions resulting from conflicts with private utilities may result in a modified process.

1.2.2.B.2 Plan Review Timeline

Plans are reviewed in the order in which they are received and logged into the official City of Hilliard plan tracking system. Incomplete plans submissions will not be logged into the tracking system. For each plan submittal the expected review time shall be between two (2) and four (4) weeks. For larger or more complex projects, plan submittals may be split into disciplines and review times may be longer. All review times stated above are estimates and are also dependent on work load and staff availability. Holidays or scheduled leave shall be factored into these timelines.

1.2.2.B.3 Plan Signatures and Permits

The design consultant shall obtain all necessary signatures or permits required for the plans.

1.2.2.C. Residential/Commercial Building Permit Projects

Residential/Commercial Building Permit Projects include the review of multi-family (rental or condominium ownership) or commercial civil/site plans to ensure that they meet the requirements of the City zoning code and that utilities are designed to meet the requirements of this Manual. These projects are coordinated through the City of Hilliard Building Division with support from the Engineering and Planning Divisions.

1.2.2.C.1 The Process

Residential/commercial building projects will be reviewed using a two-step process unless the size or scope of the project requires a further breakdown of the process. Step 1 is the preliminary design, which corresponds to a 30%-complete submittal. This plan submittal shall precede and be independent of any Building Division plan submittal. Step 2 corresponds to final plans and title sheet. This plan submittal may be either part of the initial Building Division plan submittal or be independent of this submittal. Approval of the final plans must precede any Building Division plan submittal. Each submittal shall be complete and include all necessary plans, calculations, studies, and reports required for review of the corresponding submittal. If the documents are deemed incomplete, the applicant shall be notified in writing and shall have an opportunity to correct the deficiencies and resubmit the required plans for review. The City will not review partial plan submissions. All final plans or reports shall be signed and sealed by the design engineer. Coordination of the project with private utilities is the responsibility of the design engineer, and plan revisions resulting from conflicts with private utilities may result in a modified process.

1.2.2.C.2 Plan Review Timeline

Plans are reviewed in the order in which they are received and logged into the official City of Hilliard plan tracking system. Incomplete plans submissions will not be logged into the tracking system. For 30% submission the estimated review times can be expected to be between three (3) and four (4) weeks depending on the complexity of project. For Final submission the estimated review times can be expected to be between two (2) and three (3) weeks depending on the complexity of project. Final review and/or back checks typically can be done in two (2) weeks. All review times stated above are estimates and are also dependent on work load and staff availability. Holidays or scheduled leave shall be factored into these timelines.

1.2.2.C.3 Plan Signatures and Permits

The design consultant shall obtain all necessary signatures or permits required for the plans.

1.2.2.D. Residential/Commercial Right-of-Way Projects

All agencies or individuals performing any construction or occupancy activity in the public right-of-way are required to submit a right-of-way permit with the City of Hilliard Division of Engineering. The public right-of-way includes the street pavement, curb, sidewalk, tree lawn, and driveway approaches.

1.2.2.D.1 The Process

The applicant shall obtain and complete a right-of-way permit application and submit the form to the Engineering Division. Each application submittal shall include necessary plans. Any work requiring lane closure or working in or near traffic shall submit a Maintenance of

Traffic (MOT) plan in compliance with the Ohio Manual of Uniform Traffic Control Devices (OMUTCD). Off-duty City of Hilliard police officer(s) will be assigned to the project when deemed necessary and will be paid for at the Contractor's expense. Payment in full of the permit fee must accompany the application. Permit applications and associated plans will not be reviewed, approved, or issued until fees are paid in full. The City's Construction Inspector shall be notified by the applicant prior to the start of the work. Requests for night or weekend work shall be made in writing to the Director of Public Service as a request for the extension of work hours. This request shall be in accordance with the requirements of Section 509.08(b) of the City's Codified Ordinances.

1.2.2.D.2 Permit Review Timeline

Permit and plan review and approval may take up to five (5) to ten (10) working days. All review times stated above are estimates and are also dependent on work load and staff availability. Permits are logged into the City of Hilliard plan tracking system and a copy of the approved permit with receipt will be provided to the applicant. A copy of the permit shall be available at the job site.

1.2.2.D.3 Right-of-Way Permit Types and Fees

a) Excavation Permits (Construction)

An excavation permit is needed when excavating within the right-of-way of any public street or alley. The work covered by this permit includes excavations in street or alley pavement, sidewalk, driveway, or the non-paved area with-in the right-of-way for any purpose whatsoever. The application fee for an excavation permit (construction) is \$100.

b) Occupancy Permits (Minor Maintenance)

An occupancy permit is needed when it is necessary to occupy the right-of-way of any public street or alley. It is necessary to obtain this permit when working on or in any roadway appurtenance, or when it is necessary to occupy a portion of public right-of-way for any reason including, but not limited to, work on or in buildings or properties outside the right-of-way. The application fee for an occupancy permit (minor maintenance) is \$50.

1.3 Engineering Plan Review and Construction Inspection Fees

This section is applicable only to Private Development Projects.

1.3.1 Required plan review and inspection fees for private development projects as set forth in the City of Hilliard's Development Code 1181.11 (c) & (d) established by Ordinance 01-77, the City's Comprehensive Fee Schedule Ordinance 08-35 and said fee schedule as amended by Resolution 08-R-41.

1.3.2 This policy is established in conformance with Hilliard City Code 1181.11 (c) & (d) established by Ordinance 01-77 adopted by City Council on December 17, 2001. It applies to all development projects involving the construction, modification, addition, or removal of public infrastructure. This includes, but is not limited to, roadway components, storm sewers, waterlines, sanitary sewers, street lights, traffic signals, grading, sidewalks, bike paths, bridges, culverts, and erosion and sediment control measures both temporary and permanent.

1.3.3 Use of Standard Construction Costs: An Ohio-registered professional engineer shall prepare an estimate of the construction cost based on unit prices. Engineer's estimates or opinions of probable construction cost must be based on construction cost unit prices that use "Prevailing Wage" consistent with Ohio law. This estimate shall be submitted to the City Engineer for review and approval. Once approved, this engineer's estimate shall be used to determine the amount of plan review and construction inspection fees that are to be paid by the developer and/or applicant.

1.3.4 City of Hilliard establishes that the Engineering Division shall collect plan review and construction inspection fees for the cost associated in providing these services. Fees are calculated as follows:

1.3.4.A. Subdivisions

Fees for plan review for subdivisions shall be four (4) percent of the estimated construction cost for all public improvements or modifications, as described above.

1.3.4.B. Private Improvements

Fees for private improvements such as commercial/industrial civil/site plans shall be four (4) percent of the estimated construction cost for all public improvements associated with the project plus the storm water management and erosion and sediment control provisions, site grading, sidewalks, driveways, etc. that are subject to the purview of the City Engineer for code compliance and engineering standards.

1.3.4.C. Code Compliance and Engineering Standards

In addition to the review fees for the public improvements portions of private civil/site plans, a plan review fee shall be two (2) percent of the estimated construction cost of the private work that is subject to the review of the City Engineer for code compliance and engineering standards.

1.3.4.D. Construction Inspection

Fees for construction inspection services shall be ten (10) percent of the estimated construction cost for all public improvements or modifications, as described above.

1.3.5 Plan Review Fee and Construction Inspection Fee Content

1.3.5.A. General

All fee payments shall be provided with a certified construction cost estimate prepared by the Ohio-registered professional engineer responsible for the project "Drawing of Record." Each item of work, or pay item related to public improvements or modifications to public improvements, as defined above, shall be included in the construction cost estimate.

1.3.5.B. Construction Cost Summary

The construction cost summary shall be signed, sealed, dated and show, in tabular format, the pay item number according to City of Columbus and/or Ohio Department of Transportation

specifications, the pay item name in full, the unit of measure, the approved quantity, and the standard unit price.

1.3.5.C. Construction Cost Estimate

The total construction cost of each pay item shall be calculated by multiplying the quantity used by the standard unit price. The construction cost estimate shall be tabulated by row with a total cost displayed at the bottom of the calculated cost column. The total construction cost estimate shall be multiplied by four (4) percent for subdivision and private improvements plan review fees, and ten (10) percent for construction inspection fees, with the product rounded to the nearest ten (10) dollars. Fees shall be paid according to the fee submission schedule below.

1.3.6 Plan Review Fee and Construction Inspection Fee Submission Schedule

1.3.6.A. Plan Review Fee

The developer or his agent shall submit three (3) copies of construction drawings, supporting calculations, and exhibits for review by the Division of Engineering to the office of the City Engineer. A certified lump sum cost estimate, based upon the anticipated plan quantities shown on the construction drawings, shall be submitted on the "Preliminary Project Cost Estimate" form with the drawings and a down payment of the Plan Review Fee in an amount of fifty (50) percent of the anticipated final Plan Review Fee. The balance of the Final Plan Review Fee as established by the approved engineer's estimate is payable at the time the plans are submitted for Final Plan Review.

1.3.6.B. Plan Review Fee Reconciliation

A final certified construction cost estimate shall be submitted on the City's standard "Final Project Cost Estimate" form, based upon the final approved plan quantities shown on the construction drawings fully approved by the appropriate review agencies. The amount of the previously submitted fees shall be subtracted from the final estimated total cost to determine the balance of the plan review fee due.

1.3.6.C. Construction Inspection Fee

A copy of the certified construction cost estimate shall be submitted on the City's standard "Final Project Cost Estimate" form, based upon the plan quantities shown on the construction drawings fully approved by the appropriate review agencies. The construction inspection fee shall be submitted for payment to the office of the City Engineer either before or at the time of the pre-construction meeting for the project. In the event the City does not hold a pre-construction meeting, fees must be submitted to the office of the City Engineer prior to plan approval and scheduling of any construction activities.

1.3.6.D. As-Built Quantities

Field changes and adjustments to plan design resulting in changes to approved plan quantities during construction shall not cause changes to the amount of the plan review or construction inspection fee already submitted.

1.3.6.E. Refunds

No portion of the plan review or construction inspection fee is refundable.

1.4 Engineering Plan Format and Content

Plan format and content is based on the size and complexity of the project. Large capital improvement projects will typically follow an ODOT-type of plan format. Private development projects will typically follow an abbreviated plan format. Private utility projects may only include limited detail depending upon the type and scope of work being conducted.

1.4.1 All Projects

The following information shall be considered the minimum requirements for all plans:

1.4.1.A. Plan size:

22" x 34" (full size)

11" x 17" (half size)

1.4.1.B. Plan scale:

Horizontal: 1" = 20' (unless otherwise noted) shown in written and graphical format.

Vertical: 1" = 5' (unless otherwise noted) shown in written and graphical format.

1.4.1.C. Hilliard Plan Number:

A record plan number for each project containing public infrastructure shall be obtained from the City of Hilliard project manager and shall be included in the bottom right corner of each plan sheet.

1.4.1.D. Half Size

Text size and line work used on all plans shall be legible in half size.

1.4.2 Capital Improvement Projects (CIP)

Capital Improvement Projects will typically follow an ODOT-type of plan format.

1.4.2.A. Plan Submissions

All plan submissions shall contain one full-size plan set, one half-size plan set, and one electronic (PDF) plan set for all plans and supporting documentation submitted. All paper and electronic plan submissions shall be to scale. In addition to the above, final plan submissions shall include a bound half-size set with a heavy duty back and clear front cover and electronic AutoCAD files with all layers labeled in a logical manner.

1.4.2.B. Plan Organization

Plans shall be organized in a logical manner in the general order listed below. Small or simple projects may combine some of the information on sheets. Large or more complicated projects may require additional sheets to adequately depict the design information. Engineering judgment should be used to determine the level of detail necessary, but in all cases, the detail provided shall be sufficient and legible to construct the proposed improvements. The design consultant should review the project details with the City project manager prior to plan submission to ascertain the level of detail needed.

1. Title Sheet, including the engineer's seal/signature, all approval signatures, location map, and sheet index
2. Schematic Plan
3. Typical Sections
4. General Notes
5. General Summary
6. Details (Scale: 1" = 10')
7. Erosion & Sediment Control and/or Stormwater Management Plan
8. Plan and Profile
9. Cross sections at 50-foot intervals (Scale: 1" = 5' vertical and 1" = 10' horizontal)
10. Pavement and/or Intersection Details
11. Waterline Plan and Profile
12. Storm Sewer Profiles
13. Traffic Control (Signing & Pavement Marking)
14. Traffic Signal Plan and Details
15. Lighting Plan and Details
16. Landscape Plan and Details
17. Maintenance of Traffic Plan

1.4.3 Private Development - Thoroughfare Plan Street Projects

Follow content and format detailed in Section 1.4.2 Capital Improvement Projects (CIP).

1.4.4 Private Development - Subdivision Projects

1.4.4.A. Plan Submissions

- 1.4.4.A.1** All plan submissions shall contain two full-size plan sets. Final plan submissions shall include four (4) full-size sets of plans, four (4) half size sets of plans, one electronic (PDF) set of plans (printable to scale), and the electronic AutoCAD files with all layers labeled in a logical manner.
- 1.4.4.A.2** All drawings shall have the orientation of north being the top of the sheet or being to the right of the sheet. Lettering shall be orientated so that it is legible from either the bottom or the right side of the sheet.
- 1.4.4.A.3** All plan sheets shall be titled and numbered, with the Title Sheet being sheet No. 1.
- 1.4.4.A.4** A North arrow shall be provided on all plan views.
- 1.4.4.A.5** Both a written and a graphical scale shall be provided on all plans, profiles and details.
- 1.4.4.A.6** A clear distinction shall be made between proposed and existing elements of the plan.

1.4.4.B. Plan Organization

Plan sheets shall be organized in the order and with the content listed below:

1.4.4.B.1 Title Sheet

This sheet identifies the project and provides information for the project location. The title sheet shall have the following information:

- a) Title Block at top of sheet including:
 - 1) Title of Plan (i.e. Public Sanitary Sewer; Public Street, Storm Sewer, Water Line & Street Lighting; etc.).
 - 2) Project Name.
 - 3) City of Hilliard, Ohio.
 - 4) Year of Design.
 - 5) Hilliard Record Plan Number (to be provided by the City).
- b) Location map (Scale: 1" = 1000'), locating the project in the City's vicinity.
- c) Site Index map (Scale: either 1" = 100' or a maximum 1" = 200') showing:
 - 1) General site layout.
 - 2) Identification of site parcel, including property owner and parcel number.
 - 3) Edges of pavement of all abutting streets.
 - 4) Street names, both existing and proposed.
 - 5) Municipal corporate boundaries.
 - 6) Site boundaries with bearings and distances.
 - 7) Identification of adjacent parcels, including County Auditor's parcel number, property address, property lines, and property owner name.
 - 8) Proposed and existing rights-of-way, property lines.
- d) All applicable Standard Drawings.
- e) Index of sheets.
- f) OUPS Notification to Dig Phone Number.
- g) Benchmark list, based upon NAVD 88.
- h) City of Hilliard signature approval and date, including technical details disclaimer.
- i) Norwich Township Fire Department signature approval and date.
- j) City of Columbus Utilities signature approval and date, including reference note for water and/or sewer agreement between the City of Hilliard and the City of Columbus.
- k) Signature, seal, date of signature, and registration number of the engineer of record.
- l) Standard revision block.
- m) Developer/Owner and design firm names, addresses, and telephone numbers.

1.4.4.B.2 General Notes Sheet

This sheet shall include the most current edition of City of Hilliard general notes for streets, sewers, water lines, fire hydrants, and any other utilities, as well as any special notes as required. The numbering system of the City's standard notes shall be maintained and shall not be changed. Any deletions to the general notes shall be shown in a note at the end of each section of standard notes. This note shall read: "The following Notes have been deleted: AA, BB., XX., YY., ZZ."

1.4.4.B.3 Estimate of Quantities Sheet

Estimate of Quantities are to be presented in tabular form using the City of Columbus or ODOT Item Number or specifying otherwise. All phases of the project must be clearly broken out in the quantity table and on all plan sheets. This table could be included on the General Note sheet or the Typical Section & Details sheet. Placing this table on the title sheet is strongly discouraged. These quantities must contain, at a minimum: Item Number, Quantity, Unit and Description.

1.4.4.B.4 Typical Section & Details Sheet

This sheet is used to show the street typical section and any additional pertinent detail drawings needed to adequately describe the construction process. It should include:

- a) Street Typical Sections.
- b) Intersection Details.
- c) Handicap Curb Ramp Details.
- d) Other applicable construction details.

1.4.4.B.5 Site Survey/Existing Topographic Plan

This sheet shall provide all easement and boundary information as well as existing structures. It shall be provided on an as-necessary basis at the discretion of the City Engineer.

1.4.4.B.6 Roadway Plan and Profile Sheets (Including Waterline Details)

This plan shall include all information necessary for the construction of the proposed roadway improvements within existing or proposed right-of-way or easements. This plan shall contain the following minimum information.

- a) Existing topographic features within development area.
- b) Existing and proposed right-of-way and property line information.
- c) Identification of adjacent parcels, including property owner name, address and County Auditor's parcel number.
- d) Location of all known utilities, both public and private.
- e) Centerline stationing of proposed road.
- f) Centerline bearing of proposed road.
- g) Horizontal curve data for proposed road including points of curvature (PC) and points of tangency (PT) on the plan.
- h) Profile showing profile grade elevations for both the proposed road and existing ground.
- i) Vertical curve information on the proposed road profile.
- j) All utility crossings, both public and private.
- k) Location, size, and type of all storm sewer structures.
- l) The public water main shall be shown on the street plan and profile sheet.
- m) Location of all service taps, fire hydrants, fittings, and valves on both the plan and profile.
- n) Provide a table with blank columns for as-built state plane coordinates for all water line appurtenances, including fire hydrants, valves, fittings and services. Stationing should also be shown on this table for all appurtenances except for service lines.

- o) All backfill and lines of influence shall be shown and labeled with type and station.
- p) Superelevation tables.

1.4.4.B.7 Storm Sewer Profiles

The following information is required on all storm sewer profile sheets.

- a) Minimum Scale: 1" = 20' Horizontal and 1 = 5' Vertical.
- b) Stationing of storm sewer shall begin at most downstream structure and continue upstream.
- c) The storm profiles shall show the size, slope, pipe material and/or class of proposed pipe.
- d) All proposed utility crossings.
- e) The normal water service elevation must be shown at all end-of-run locations where the storm system empties into a retention basin.
- f) Structure and headwall types.
- g) All backfill types and limits are to be shown and stationed.
- h) Location of all proposed manholes, catch basins, inlets, vaults, structures, etc., with type of structure and coordinates or stationing. Storm sewer top of casting, invert, window and orifice elevations.
- i) All areas requiring fills to be constructed prior to storm sewer installation per Columbus CMS 901.04 shall be shown with cross-hatching.

1.4.4.B.8 Culverts

A profile for each roadway culvert shall be provided showing invert, roadway edge of pavement and/or top of curb, roadway centerline, and design storm and 100-year headwater and tail-water elevations. A table with each profile shall also be provided showing the design and 100-year storm discharge values, head and tail water elevations and outlet velocities. Appropriate erosion control (i.e. rock channel protection type and size) must be shown.

1.4.4.B.9 Master Grading Plan

These sheets shall contain all information necessary for establishing grades and elevations for each proposed lot on the site. The proposed grades shall be coordinated with existing abutting property grading. This plan shall contain the following minimum information:

- a) Existing contours (1-ft intervals) shall be labeled with elevations and shall extend 50 feet (minimum) beyond the project work limits to show adequate tie in.
- b) Proposed elevation spot grades at the following locations:
 - 1) All property corners.
 - 2) Top of curb or edge of pavement at all side property lines extended to the street.
 - 3) Front building setback line on all side property lines.
 - 4) High point of all side property lines with the distance from front property line denoted.
 - 5) Rear yard swales at all side property lines, and possibly at center of lot if lot is extremely wide.
- c) All existing and proposed utilities.
- d) Proposed ground around the house elevation on all lots.

- e) Sanitary and storm sewer top of casting elevations.
- f) Proposed landscape mounding contours and proposed retention/detention basin contours.
- g) Direction of flow arrows for normal drainage flows.
- h) Major flood routing path arrows.
- i) Ditch centerline, including direction of flow arrows and slope.
- j) Any stream corridor protection zones (SCPZ) and their calculated width as defined in Chapter 7 of this Manual.
- k) A typical lot legend for grading showing and labeling all of the items in section 1.4.4.B.9.

1.4.4.B.10 Storm Water Management Basin Details

Dimensioned cross sections and plan views for each water quality Best Management Practice (BMP) selected shall be shown. A table showing the required Water Quality Volume (WQv) and drawdown time, as well as the designed storage and designed drawdown time of the basin, shall be provided.

- a) Storm Water Retention/Detention Basin Information.
 - 1) Maximum allowable storm water release rates as calculated per the requirements of Chapter 7 of this Manual for 1- through 100-year design storm frequency events.
 - 2) Actual storm water release rates calculated in the storm water management report for 1- through 100-year design storm frequency events.
 - 3) Storage required and provided for the Water Quality (WQ) and 1- through 100-year design storm frequency events that were calculated in the stormwater management report.
 - 4) Elevation of ponding at each of the calculated storm events in item 2) above.
- b) Orifice plate location and details.
- c) Spillway area location, designation, dimensions, and cross section, including overflow weir elevation.
- d) Outlet design details.
- e) Cross sections of detention basins, wet or dry, shall be provided and dimensioned. Side slopes, basin bottom slope, the elevation of each inlet and outlet structure, and maximum water surface elevations for WQv storage, the critical storm, and the 100-year design storm shall be annotated. An elevation view and plan view of each outlet riser structure shall be provided and annotated.
- f) For all storm water retention/detention basins, the following must be designed per Chapter 7 of this Manual and shown:
 - 1) 100-year design storm pool elevation
 - 2) Pond contours with side slopes noted
 - 3) Emergency overflow (spillway) location
 - 4) Normal pool elevation
 - 5) Safety shelf or submerged bench
 - 6) 1-foot minimum freeboard from 100-year design storm elevation to top of bank

1.4.4.B.11 Sanitary Sewer Plan

This plan shall contain all information of the proposed sanitary sewer, services, and easements. The sanitary plan may be submitted as a separate submission, however, it must contain all elements of a plan set, including but not limited to a title sheet, a complete set of general notes, quantities, detail drawings, and plan and profile of the proposed sewer. This plan shall contain the following minimum information.

- a) All existing and proposed sanitary sewer and other utilities showing size, length, and type and/or class.
- b) Sanitary sewer services information in tabular form, including station, size, riser height, extension length, slope, and elevation at end of service.
- c) All edge of pavement and building lines.
- d) Proposed pad and finished floor elevations of all proposed structures.
- e) Property lines, rights-of-way, and easements.
- f) A tributary map shall be included either as a separate sheet or on the title sheet as part of the index map depending on the size of the project.
- g) A table with State Plane Coordinates for each proposed sanitary sewer manhole. The table must include blank columns for as-built location information for all sanitary sewer manholes.
- h) Stationing, bearings, and distances (center of structure to center of structure) for all sanitary sewer main lines.

The following information is required on all sanitary sewer profile sheets.

- a) Minimum Scale: 1" = 20' Horizontal and 1" = 5' Vertical.
- b) The elevations of all tie-in points shall be field verified.
- c) Sanitary sewer profile indicating size, slope, and type of proposed sanitary sewer.
- d) Existing and proposed grade above the sanitary sewer.
- e) All proposed utility crossings.
- f) Sanitary sewer top of casting and invert elevations.
- g) Locations of clay trench dams.
- h) Location of temporary bulkhead per Columbus CMS 901.13
- i) All backfill and lines of influence shall be shown and labeled with type and station.
- j) Bedrock and groundwater table elevation (if known) shall be shown in all profiles.

1.4.4.B.12 Erosion & Sediment Control Plan and Details Sheets

These sheets are to be submitted as part of the plan set as well as the Stormwater Pollution Prevention Plan (SWP3). The site grading shall serve as the base information for the erosion and sediment control plan. Erosion and sedimentation controls shall meet the minimum requirements of the OEPA and the City of Hilliard. All erosion and sediment controls shall be designed in accordance with the requirements of the most recent edition of the Ohio Department of Natural Resources Rainwater and Land Development Manual. The erosion and sediment control plan shall contain the following minimum information.

- a) Inlet protection locations
- b) Silt fence locations
- c) Check dam locations
- d) Construction entrance location
- e) Staging area location

- f) Fuel storage location
- g) Concrete washout location
- h) Material and debris storage location
- i) Stream crossing locations
- j) Location and preventative measures taken for any other construction activities that may impact stormwater runoff
- k) Temporary sediment settling basin locations
- l) Standard erosion control notes, including a sequence of construction
- m) Sediment and erosion control standard details
- n) Stream crossing details
- o) Sediment basin and temporary outlet structure details
- p) Sediment and erosion control quantities, if not shown on Estimate of Quantities sheet

1.4.4.B.13 Traffic Control Plan (Signing and Pavement Marking), Street Name Sign, & Street Lighting Plan

These sheets are to be submitted as part of the plan set and should include the following information:

- a) General street layout showing all existing and proposed streets and striping
- b) Street centerline and stationing
- c) Signage and striping station and offset, including street name signage
- d) Signage and Striping details and notes
- e) Lighting notes
- f) Lighting legend
- g) Lighting details
- h) Light pole locations (station and offset)
- i) All lighting cable and wiring, including dimensions from property lines and ROW lines
- j) Pull box locations
- k) Service enclosure locations
- l) Power company's transformer locations
- m) All traffic control and street lighting quantities, if not shown on Estimate of Quantities sheet

1.4.4.B.14 Landscape Plan

These sheets are to be submitted as part of the plan set and should include the following information:

- a) Planting & landscaping notes
- b) Tree planting location and type
- c) Mounding locations
- d) Retail sign locations (monument signs only, not building signs)

1.4.5 Private Development - Residential/Commercial Building Projects

1.4.5.A. Plan submissions

Refer to section 1.4.4.A for the requirements for this section

1.4.5.B. Plan Organization

Plans shall be organized in a logical manner in the order of and with the content listed below.

1.4.5.B.1 Title Sheet

Refer to section 1.4.4.B.1 for the requirements for this section

1.4.5.B.2 General Notes Sheet

Refer to section 1.4.4.B.2 for the requirements for this section

1.4.5.B.3 Schematic Plan

1.4.5.B.4 Site Survey/Existing Topographic Plan

Refer to section 1.4.4.B.5 for the requirements for this section

1.4.5.B.5 Site Demolition Plan

This sheet shall be provided on an as-necessary basis to provide clarity for projects that will be removing existing buildings and structures. It may be combined with the Site Survey Plan at the discretion of the design engineer and with approval of the City Engineer.

1.4.5.B.6 Site Dimension Plan

The site dimension plan shall contain all information necessary for the establishment of the proposed horizontal dimensions of the site including, but not limited to, the proposed building pad(s) location, pavement width, setback with width and description, rights-of-way width, property lines, easements with width and description, curb radii, sidewalks width and material, and bike paths width and material. The plan shall contain the following information with appropriate elements clearly dimensioned and labeled:

- a) Site layout, to scale, showing existing/proposed buildings, structures, roads etc.
- b) Existing/proposed driveway and parking areas with materials.
- c) Barricade locations.
- d) Waterways such as streams, lakes ponds etc.
- e) Existing/Proposed detention/retention basins.
- f) Existing tree/vegetation limits.
- g) Clearing limits, adjoining property lines, existing/proposed utility easements with width and descriptions.
- h) All property lines, labeled with bearing and distance.
- i) All adjoining property information, including owner's name, address & County Auditor's parcel number.
- j) Property size and lot number (as applicable).
- k) Current zoning of the property.

- l) Any FEMA designated floodway, 100-year floodplain, or OEPA required setback (as applicable).
- m) Any Stream Corridor Protection Zones (SCPZ) and their calculated width as defined in Chapter 7 of this Manual.
- n) All required vehicular access restrictions to public streets.
- o) All required emergency vehicle accesses with dimensions.
- p) All existing and proposed rights-of-way, easements (including type), and no-build zones, including the widths of each.
- q) Centerline with Hilliard Record Plan reference where applicable, edge of pavement and/or back of curb, and right-of-way of all adjacent public or private streets. Dimension the total width of the street (note EP – EP or BC – BC) and right-of-way (proposed and existing).
- r) Dimension all proposed pavement and parking lot areas. This should include the pavement width, radius returns of curbs, number of parking spaces, including their length and width, and drive aisle width.
- s) Size, location, and type of all proposed sidewalks or bike paths including all ramps to be built on site or within the public right of way.
- t) Location and proposed size of all dumpster enclosures and pads.
- u) All required front, side, and rear yard setbacks, including all building and pavement setbacks.
- v) All proposed and/or existing ingress/egress, access, or cross access easement aisles, drives, or driveways.
- w) All handicap stall locations with dimensions and striping.

1.4.5.B.7 Utility Plan

These sheets shall contain all information for the underground and aboveground utilities. Easements, rights-of-way, and pipe alignments shall be included. Existing and proposed storm sewer, sanitary sewer, waterline, field tiles, roof drains, gas lines, electric lines, fiber optic lines, cable lines, and associated services shall be shown. This plan shall contain the following:

- a) All existing (dashed) and proposed (solid) utilities including all field tiles and drainage ditches.
- b) Size and type (water, sanitary, etc.) of proposed and existing utility services, mains, and tees.
- c) Invert at proposed building and end-of-service elevations of sanitary services in tabular form.
- d) Proposed pad and finished floor elevations.
- e) Location of all fire hydrants, meters, valves, and related service taps.
- f) Gas line and utility pole locations.
- g) Property lines, easements, and right-of-ways.
- h) Distance and material of storm and/or sanitary main lines, measured from center of structure to center of structure, in tabular form as appropriate to plan set.
- i) Location of all proposed manholes, catch basins, inlets, vaults, structures, and other manmade utility structures with coordinates, descriptions and inverts.
- j) A table with State Plane Coordinates that includes blank columns for as-built information for storm structure, water structures (valves and fire hydrants only), and sanitary manholes.

1.4.5.B.8 Storm Sewer Profiles

Refer to section 1.4.4.B.7 for the requirements for this section

1.4.5.B.9 Master Grading Plan

Refer to section 1.4.4.B.9 for the requirements for this section

1.4.5.B.10 Storm Water Management Basin Details

Refer to section 1.4.4.B.10 for the requirements for this section

1.4.5.B.11 Erosion & Sediment Control Plan and Details Sheets

Refer to section 1.4.4.B.12 for the requirements for this section

1.4.5.B.12 Sanitary Sewer Plan

Refer to section 1.4.4.B.11 for the requirements for this section

1.4.5.B.13 Roadway Improvement Plan and Profile Sheets (Including Waterline Details):

Refer to section 1.4.4.B.6 for the requirements for this section

1.4.5.B.14 Intersection Detail Sheets

- a) Minimum Scale: 1" = 10'
- b) Intersection details that include curb return curve data, intersection grading
- c) Centerline bearing
- d) Centerline and gutter line (edge of pavement) slopes
- e) Angle between intersecting centerlines
- f) Proposed locations, spot elevations and slopes for all handicap ramps. The ramps shall comply with all current ADA standards

1.4.5.B.15 Roadway Cross-Sections

These are required at 50-ft intervals (minimum) when a ditch section is used or a ditch exists beyond the back of curb.

- a) Minimum Scale: 1" = 10'
- b) Roadway cross-sections, showing existing and proposed utilities and right-of-way limits.
- c) Right-of-way lines and easements.
- d) Roadway center line and elevation.
- e) Existing and proposed cut and fill sections.
- f) Ditch side slopes.
- g) Grade tie-in points.

- h) Longitudinal ditch slope.

1.4.5.B.16 Maintenance of Traffic Plan

- a) Traffic control and maintenance information during construction including all temporary signage, signals, pavement markings, and barrel and barricade locations.
- b) MOT phasing with written description.
- c) MOT Details and references to ODOT standard drawings.
- d) Cross sections showing lane widths or work zones.

1.4.5.B.17 Traffic Control Plan (Signing and Pavement Marking)

- a) General street layout showing all existing and proposed streets and striping
- b) Street centerline and stationing
- c) Signage and striping station and offset
- d) Signage and Striping details and notes

1.4.5.B.18 Lighting Plan & Fiber Optic Line Plan.

- a) General site layout
- b) Light pole locations (station and offset)
- c) Lighting Notes
- d) Street lighting control circuit diagram
- e) Lighting distribution diagram
- f) Lighting details
- g) Fiber optic line and pull box location per project design requirements.

1.4.5.B.19 Landscape Plan

- a) Mounding
- b) Tree planting location and type
- c) Planting Notes
- d) Retail sign locations (monument signs only not building signs)

1.5 Limitations on Plan Approval

Significant construction of improvements must commence within three (3) years of final engineering plan approval. Engineering plan approval shall expire if the improvements have not commenced in this time frame and the plans must be resubmitted for approval with all relevant fees. Furthermore, the resubmitted plans shall be updated to the most current City of Hilliard design standards. Simply resubmitting previously approved plans will not be permitted.

- 1.5.1** The initial submission of an engineering plan for review must contain the items denoted below. Incomplete submittals will not be reviewed until all required materials have been received by the Engineering Division.

- 1.5.1.A.** Two (2) sets of the signed and sealed Storm Water Management Plan (including all calculations) based on the requirements set forth in this Manual.

- 1.5.1.B.** Two (2) sets of signed and sealed domestic water supply hydraulic calculations (water model) demonstrating conformance to City's fire prevention regulations.

- 1.5.1.C.** Three (3) sets of signed and sealed plans as further detailed below, submitted on ANSI D (22"x34") bond paper.
 - 1.5.1.D.** Two (2) copies of signed and sealed storm sewer calculations including a tributary area drainage map identifying all onsite and offsite areas tributary to each of the proposed storm sewer inlets. The tributary area map shall be submitted on ANSI D (22"x34") bond paper.
 - 1.5.1.E.** Two (2) sets of signed and sealed sanitary sewer calculations. The sanitary sewer tributary map is to be delineated on the title sheet of the plan set.
 - 1.5.1.F.** All plan review fees must be paid before the City will commence the review process (See Section 1.3 Plan Review Fees).
- 1.5.2** Final Approval - The following items must be submitted before the project is approved and released for construction activities to begin. This list included herein is not intended to be all inclusive. It is the responsibility of the designer to submit any additional agency approvals prior to the pre-construction meeting as applicable.
- 1.5.2.A.** One (1) copy of Notice of Intent to Discharge Stormwater (NOI) application and OEPA response letter containing the OEPA tracking number for all developments greater than one (1) acre.
 - 1.5.2.B.** One (1) copy of OEPA Permit to Install (PTI) public utilities application for projects extending all sanitary sewer utilities.
 - 1.5.2.C.** One (1) copy of Water Supply Data Sheets (WSDS) and the OEPA Project Summary Sheets, and the OEPA Permit to Install (PTI) public utilities application for projects extending all water supply utilities.
 - 1.5.2.D.** Two (2) copies of the SWP3 plan including narrative, plan sheets, and erosion control details.
 - 1.5.2.E.** Two (2) copies of the Operations & Maintenance Plan for all proposed storm water Best Management Practices (BMP's) on the project as required in Chapter 7 of this Manual.
 - 1.5.2.F.** Two (2) copies of the Inspection & Maintenance Agreement for all proposed stormwater BMP's on the project as required in Chapter 7 of this Manual.
 - 1.5.2.G.** All plan review fees must be paid before the City will commence the review process (See Section 1.3 Plan Review Fees).

1.5.3 Procedures for Plan Revisions

- 1.5.3.A.** The City of Hilliard reserves the right to require any plan submitted for revision to be updated to the most current City of Hilliard design standards. The City of Hilliard reserves the right to perform a complete review of any plan submitted for revisions. Any errors or omissions not previously noted may be required to be corrected as a part of the revision process.
- 1.5.3.B.** The following procedure is to be adhered to for all changes to the engineering plan set after the plans are approved. The purpose of the revision process is to account for unexpected field conditions and not for value engineering after the plan approval process. Value engineering is crucial, but it must be performed prior to final plan approval.
- 1.5.3.C.** The engineer of record is to submit a draft of the requested changes with an accompanying written explanation to the City Engineer. The proposed changes shall be clearly identified in the plan set. Changes should be numbered both in the revision

block on the title sheet, the sheet title block where the revision occurs, and on the plan sheet itself, in close proximity to where the revision is being shown. The change number shall be inscribed in a triangle to help distinguish it from surrounding figures.

- 1.5.3.D.** A review fee, as specified in the fees section of this document, shall be submitted before the Engineering Division will review any proposed plan revisions
- 1.5.3.E.** Upon approval of the plan revision, the mylar title sheet shall be marked with the change and submitted to the City Engineer for their approval.
- 1.5.3.F.** The final step in the revision process is the submittal of one (1) complete, full-sized copy of the revised plan set, three (3) full-sized, and three (3) half-sized copies of the revised sheets to the Division of Engineering. If the revision entails changes to more than 25% of the plan sheets, four (4) complete sets shall be submitted.

1.6 Right of Way Administration

1.6.1 Construction Permits

1.6.1.A. Construction Permit Requirements

Except as otherwise provided in the codified ordinances, no person may construct in any rights of way without first having obtained a construction permit as set forth in this chapter. This requirement shall be in addition to any requirement set forth in the City of Hilliard's codified ordinance chapters 905, 909, 913, 917 and 921 et seq. See section 907.01.3 of the codified ordinances for definitions.

1. A construction permit allows the permittee to construct and to obstruct travel, in the specified portion of the rights of way as described in the construction permit while placing facilities described therein, to the extent and for the duration specified therein.
2. Unless otherwise specified, a construction permit is valid for six (6) months from date of issuance for the area of rights of way specified in the permit.
3. No permittee may construct in the rights of way beyond the date or dates specified in the construction permit unless such permittee:
 - a. Makes a supplementary application for another construction permit before the expiration of the initial construction permit; and
 - b. Is granted a new construction permit or construction permit extension
4. Original construction permits issued under this chapter shall, when possible, be conspicuously displayed at all times at the indicated work site and be available for inspection by Inspectors and authorized City personnel. If the original construction permit is not conspicuously displayed at the indicated work site or the project involves work conducted simultaneously at multiple locations, then upon request, the construction permit must be produced within twelve (12) business hours.

1.6.1.B. Construction Permit Applications

Application for a construction permit shall be made to the Director of the Department of Public Service. In addition to any information required by the Director of Public Service, all construction permit applications shall contain, and will only be considered complete upon compliance with the following provisions:

1. Evidence that the applicant has been issued a certificate of registration or proof that the applicant has written authority to apply for a construction permit on behalf of a party that has been issued a certificate of registration; and

2. Submission of a completed construction permit application in the form required by the Director of Public Service, including, but not limited to, all required attachments, scaled, and dated drawings (or other information acceptable to the Director of Public Service) showing the location and area of the proposed project, number and location of street cuts, and the location of all existing and proposed facilities, accompanied by the certification of a registered professional engineer or other trained technical personnel acceptable to the Director of Public Service that the drawings, plans and specifications submitted with the application comply with applicable technical codes, rules and regulations; and
3. A City-approved traffic control plan demonstrating the protective measures and devices that will be employed, consistent with the Ohio Manual of Uniform Traffic Control Devices, to prevent injury or damage to persons or property and to minimize disruptions to efficient pedestrian and vehicular traffic; and
4. If the applicant proposes to replace existing poles with larger poles within the rights of way, the applicant shall, upon the reasonable request of the Director of Public Service, provide:
 - a. Evidence satisfactory to the City that there is no excess capacity on existing poles or in existing underground systems; and
 - b. Evidence to the City that it is not financially and/or technically practicable for the applicant to make an underground installation or locate its facilities on existing poles; and
 - c. The location, size, height, color, and material of the proposed replacement poles; and
 - d. Evidence satisfactory to the City that the applicant will adhere to all the applicable laws concerning the installation of such replacement poles.
5. If applicant is proposing an underground installation in existing ducts or conduits within the rights of way, the applicant shall provide credible information satisfactory to the City to sufficiently detail and identify:
 - a. The location, approximate depth, size, and quantity of the existing ducts and conduits.
6. If applicant is proposing an underground installation within new ducts or conduits to be constructed within the rights of way, the applicant must provide credible information satisfactory to the City to sufficiently detail and identify:
 - a. The location, approximate depth, size, and quantity of proposed new ducts or conduits.
7. A preliminary construction schedule and completion date.
8. Payment of all money due to the City for:
 - a. Permit fees; and

- b. Any loss, damage, or expense suffered by the City as a result of applicant's prior construction in the rights of way or any emergency actions taken by the City; and
 - c. Any certificate of registration issued to the applicant/person whose facilities are being constructed; and
 - d. Any other money due to the City from the applicant/person whose facilities are being constructed.
9. When a construction permit is requested for purposes of installing additional systems or any part of a system, the posting of a construction bond and removal bond, acceptable to the City and subject to Section 907.21 of the codified ordinance for the additional systems or any part of a system is required.

1.6.1.C. Issuance of Construction Permit; Conditions.

1. If the Director of Public Service determines that the applicant has satisfied the requirements of this chapter and the construction permit process, the Director of Public Service shall issue a construction permit subject to the provisions of this chapter.
2. The City may impose reasonable conditions in addition to the rules and regulations enacted by the Director of Public Service, upon the issuance of the construction permit and the performance of the permittee thereunder in order to protect the public health, safety and welfare, to insure the structural integrity of the rights of way, to protect the property and safety of other users of the rights of way, and to minimize the disruption and inconvenience to the traveling public.

1.6.1.D. Construction Permit Fees

The Director of Public Service shall, after providing notice to and seeking input from all providers with systems in the City right of way, develop and maintain a schedule of permit fees in an amount sufficient to recoup all reasonable costs, as allowed by law. See Chapter 190 of the City's codified ordinance for fees. No construction permit shall be issued without payment of construction permit fees except to the City or County, which shall be exempt. Construction permit fees that were paid for a permit that the City has revoked due to breach are not refundable.

1.6.1.E. Joint Applications

Applicants are encouraged to make joint application for construction permits to work in the rights of way at the same place and time. Joint applicants shall have the ability to divide amongst themselves, in proportions the parties find appropriate, any applicable construction permit fees.

1.6.2 Construction, Relocation and Restoration

1.6.2.A. Technical Information Required

Prior to commencement of any initial construction of facilities in the rights of way a construction permittee, upon the reasonable request of the Director of Public Service, shall provide technical information about the proposed route of construction. The technical information required may consist of completion of the following tasks:

1. Secure all available "as-built" plans, plats, and other location data indicating the existence and approximate location of all facilities along the proposed construction route.

2. Visibly survey and record the location and dimensions of any facilities along the proposed construction route, including, but not limited to, manholes, valve boxes, utility boxes, posts, and visible street cut repairs.
3. Determine and record the presence of and the approximate horizontal and vertical location of all underground facilities the applicant or person on whose behalf the permit was applied for owns or controls in the rights of way along the proposed system route. Upon the reasonable request of the Director of Public Service, a permittee shall also record and identify the general location of all other facilities in the rights of way along the proposed system route. For the purposes of this section, general location shall mean the alignment of other facilities in the rights of way, but shall not necessarily mean the depth of other facilities in the rights of way.
4. If a provider records the information requested above in an electronic format, the provider shall provide the City with an electronic copy of the data obtained from completion of the tasks described in this section. Incorporation of the data required herein by electronic means shall include only data for new facilities that can be readily incorporated into the City's database.
5. Where the proposed location of facilities and the location of existing underground facilities appear to conflict with the plans as drafted, construction permittee has the option of either utilizing non-destructive digging methods, such as vacuum excavation, at the critical points identified to determine as precisely as possible, the horizontal, vertical and spatial position, composition, size and other specifications of the conflicting underground facilities, or redesigning the construction plans to eliminate the apparent conflict. A construction permittee shall not excavate more than a three (3) foot by three (3) foot square hole in the rights of way to complete this task.
6. Based on all of the data collected upon completion of the tasks described in this section, adjust the proposed system design to avoid the need to relocate other underground facilities.
7. All confidential/proprietary information submitted herein shall be so labeled.

1.6.2.B. Qualified Firm

All utility engineering studies conducted pursuant to this section shall be performed by a firm specializing in utility engineering or may be performed by the construction permittee if the construction permittee is qualified to complete the project itself.

1.6.2.C. Cost of Study

The construction permittee shall bear the cost of compliance with sections 1.6.2.C through 1.6.2.E of this section.

1.6.2.D. Construction Schedule

Unless otherwise provided for in this chapter, or unless the Director of Public Service waives any of the requirements of this section due to unique or unusual circumstances, a construction permittee shall be required to submit a written construction schedule to the City ten (10) working days before commencing any work in or about the rights of way and, shall further notify the City not less than two (2) working days in advance of any excavation in the rights of way. This section shall apply to all situations with the

exception of circumstances under Section 907.20.4.1 of the City's codified ordinances (emergency situations).

1.6.2.E. Location of Facilities

1. The placement of new facilities and replacement of old facilities, either above ground or underground, shall be completed in conformity with applicable laws.
2. The City shall have the power to prohibit or limit the placement of new or additional facilities within the rights of way if the right of way is full. In making such decisions, the City shall strive to the extent possible to accommodate all existing and potential users of the rights of way but shall be guided primarily by considerations of the public health, safety, and welfare, the condition of the rights of way, the time of year, the protection of existing facilities in the right of way, future City and County plans for public improvements, development projects which have been determined to be in the public interest, and the non-discriminatory and competitively neutral treatment of providers.
3. Upon the concurrence of the City, or if it is determined by the construction permittee and any appropriate local, state, or federal agency (or other entity with jurisdictional authority) that an existing poles in the rights of way are full, then those poles may be replaced with bigger and/or taller poles in order to accommodate additional facilities or systems only after the construction permittee has made reasonable attempts to reach an acceptable solution without replacement with bigger and/or taller poles. This paragraph shall not apply to replacement of any existing pole(s) with identically sized pole(s) that results from the destruction of or hazardous condition of the existing pole(s) as long as no new facilities or additional facilities are attached.

1.6.2.F. Least Disruptive Technology

All construction or maintenance of facilities shall be accomplished in the manner resulting in the least amount of damage and disruption of the rights of way. In addition, all cable, wire or fiber optic cable installed in the subsurface rights of way under this chapter may be required to be installed in conduit, and if so required, no cable, wire or fiber optic cable may be installed under this chapter using "direct bury" techniques.

1.6.2.G. Relocation of Facilities

1. A provider shall, at its own expense, permanently remove and relocate its facilities in the rights of way whenever the City finds it necessary to request such removal and relocation. In instances where the City requests removal and/or relocation, the City shall waive all applicable construction permit fees. Upon removal and/or relocation, the provider shall restore the right of way to a condition at least as good as its condition immediately prior to said removal or relocation. If existing poles are required to be removed and/or relocated, then the existing poles will be replaced with reasonably obtainable poles of the same or similar size unless otherwise permitted by the City. The Director of Public Service may request relocation and/or removal in order to prevent unreasonable interference by the provider's facilities with:
 - a. A public improvement undertaken or approved by the City or County;
 - b. When the public health, safety, and welfare requires it, or when necessary to prevent interference with the safety and convenience of ordinary travel over the rights of way.

2. Notwithstanding the foregoing, a provider who has facilities in the right of way subject to a vacation or narrowing that is not required for the purposes of the City, shall have a permanent easement in such vacated portion or excess portion.
3. If, in the reasonable judgment of the City, a provider fails to commence the removal process and/or relocation of its facilities as designated by the City, within thirty (30) days after the City's removal order is served upon provider, or if a provider fails to substantially complete such removal, including all associated repair of the rights of way of the City, within twelve (12) months thereafter, then, to the extent not inconsistent with applicable law, the City shall have the right to:
 - a. Declare that all rights, title and interest to the facilities belong to the City with all rights of ownership, including, but not limited to, the right to connect and use the facilities or to effect transfer of all right, title and interest in the facilities to another person for operation; or
 - b. Authorize removal of the facilities installed by the provider in, on, over or under the rights of way of the City at provider's cost and expense, by another person, however the City shall have no liability for any damage caused by such action and the provider shall be liable to the City for all reasonable costs incurred by the City in such action; and
 - c. To the extent consistent with applicable law, any portion of the provider's facilities in, on, over or under the rights of way of the City designated by the City for removal and not timely removed by the provider shall belong to and become the property of the City without payment to the provider, and the provider shall execute and deliver such documents, as the City shall request, in form and substance acceptable to the City, to evidence such ownership by the City.

1.6.2.H. Pre-Excavation Facilities Location

Before the start date of any rights of way excavation, each provider who has facilities located in the area to be excavated shall be responsible to mark the horizontal and make every reasonable attempt using best efforts, to mark the approximate vertical placement of all its facilities. All providers shall notify and work closely with the excavation contractor in an effort to establish the exact location of its facilities and the best procedure for excavation.

1.6.2.I. Rights of Way Restoration

1. The work to be done under the permit, and the restoration of the rights of way as required herein, must be completed within the dates specified in the permit. In addition to its own work, the permittee must restore the general area of the work, and the surrounding areas, including trench backfill, paving and its foundations in accordance with the standards established by the Director of Public Service, subject to any applicable laws. The permittee must also inspect the area of the work and use reasonable care to maintain the same condition for twelve (12) months thereafter.
2. In approving an application for a permit, the City may choose either to have the permittee restore the rights of way or the City may restore the rights of way itself at the expense of the permittee.

3. If the City chooses to allow permittee to restore the rights of way, construction permittee shall at the time of application of a construction permit post a construction bond in an amount determined by the City to be sufficient to cover the cost of restoring the rights of way to a condition at least as good as its condition immediately prior to construction. If, twelve (12) months after completion of the restoration of the rights of way, the City determines that the rights of way have been properly restored, the surety on the construction bond shall be released.
4. The permittee shall perform the work according to the standards and with the materials specified and approved by the City.
5. By restoring the rights of way itself, the permittee guarantees its work and shall maintain it for twelve (12) months following its completion. During this twelve (12) month period, it shall, upon notification from the Director of Public Service, correct all restoration work to the extent necessary using the method required by the Director of Public Service. Weather permitting, said work shall be completed within five (5) calendar days of the receipt of the notice from the Director of Public Service.
6. If the permittee fails to restore the rights of way in the manner and to the condition required by the City, or fails to satisfactorily and timely complete all repairs required by the City, the City, at its option, with notice to provider and a reasonable time to cure, may do such work. In that event, the permittee shall pay to the City, within thirty (30) days of billing, the cost of restoring the rights of way and any other costs incurred by the City. Upon failure to pay, the City may call upon any bond or letter of credit posted by the permittee and/or pursue any and all legal and equitable remedies.

1.6.2.J. Damage to Provider's Facilities and to Other Facilities

1. In the case of an emergency, and if possible after reasonable efforts to contact the provider seeking a timely response, when the City performs work in the rights of way and finds it necessary to maintain, support, or move a provider's facilities to protect those facilities, the costs associated therewith will be billed to that provider and shall be paid within thirty (30) days from the date of billing. Upon failure to pay, the City may pursue all legal and equitable remedies in the event a provider does not pay or the City may call upon any bond or letter of credit posted by permittee and pursue any and all legal or equitable remedies.
2. Each provider shall be responsible for the cost of repairing any facilities in the rights of way that it or its facilities damage. Each provider shall be responsible for the cost of repairing any damage to the facilities of another provider caused during the City's response to an emergency caused by such provider's facilities.

1.6.2.K. Rights of Way Vacation

If the City vacates a rights of way which contains the facilities of a provider, such vacation shall be subject to the provisions of O.R.C. § 723.04.01.

1.6.2.L. Installation Requirements

The excavation, backfilling, restoration, and all other work performed in the rights of way shall be performed in conformance with all applicable laws and the standards as promulgated by the Director of Public Service.

1.6.2.M. Inspection

1. When the construction under any permit hereunder is completed, the permittee shall notify the Director of Public Service.
2. The permittee shall make the construction site available to the Inspector and to all others as authorized by law for inspection at all reasonable times during the execution and upon completion of the construction.
3. At any time, including the time of inspection, the Inspector may order the immediate cessation of any work which poses a serious threat to the health, safety, or welfare of the public, violates any law, or which violates the terms and conditions of the permit and/or this chapter.
4. The Inspector may issue an order to correct work that does not conform to the permit and/or applicable standards, conditions or codes. The order shall state that failure to correct the violation will be cause for revocation of the permit. The order may be served on the permittee as provided in section 907.23.4 of the City's codified ordinances. An order may be appealed to the Director of Public Service. The decision of the Director of Public Service may be appealed to the Mayor whose decision shall be final. If not appealed, within ten (10) days after issuance of the order, the provider shall present proof to the Director of Public Service that the violation has been corrected. If such proof has not been presented within the required time, the Director of Public Service may revoke the permit pursuant to section 907.20.5 of the City's codified ordinances.

1.6.2.N. Other Obligations

Obtaining a construction permit does not relieve permittee of its duty to obtain all other necessary permits, licenses, and authority and to pay all fees, including onsite inspection fees, required by the City, or any other city, county, state, or federal laws.

1. A permittee shall comply with all requirements of laws, including the requirements of the Ohio Utility Protection Service (OUPS) and/or its lawful successor.
2. A permittee shall perform all work in conformance with all applicable laws and standards and is responsible for all work done in the rights of way pursuant to its permit, regardless of who performs the work.
3. No rights of way obstruction or excavation may be performed when seasonally prohibited or when conditions are unreasonable for such work, except in the case of an emergency as outlined in section 907.20.4.1 of the City's codified ordinances.
4. A permittee shall not so obstruct rights of way that the natural free and clear passage of water through the gutters or other waterways shall be interfered with.
5. Private vehicles other than necessary construction vehicles may not be parked within or adjacent to a permit area. The loading or unloading of trucks adjacent to a permit area is prohibited unless specifically authorized by the permit.

1.6.2.O. Undergrounding Required

Any owner of property abutting upon a street or alley where service facilities are now located underground and where the service connection is at the property line, shall install or cause others to install underground any service delivery infrastructure from the property line to the buildings or other structures on such property to which such service is supplied.

1.6.3 Minor Maintenance Permits

1.6.3.A. Minor Maintenance Permit Requirement

No person shall perform minor maintenance of facilities in the rights of way without first having obtained a minor maintenance permit as set forth in this chapter. Minor maintenance means: (i) the routine repair or replacement of facilities with like facilities not involving construction and not requiring traffic control for more than two (2) hours at any one location; (ii) or the routine repair or replacement of facilities with like facilities not involving construction and taking place on thoroughfares and arterials between the hours of 9:00 a.m. and 3:00 p.m.; (iii) or the routine repair or replacement of facilities with like facilities not involving construction on all rights of ways, other than thoroughfares and arterials, that does not impede traffic and is for a period of less than eight (8) contiguous hours; (iv) or construction other than on thoroughfares and arterials that takes less than eight (8) continuous hours to complete, does not impede traffic and does not involve a pavement cut.

1. A minor maintenance permit allows the minor maintenance permittee to perform all minor maintenance in any part of the rights of way as required.
2. A minor maintenance permit is valid from the date of issuance until December 31 of the year in which the minor maintenance permit was issued at which time the minor maintenance permit shall expire.
3. A minor maintenance permit must be displayed or upon request produced within twelve (12) business hours.
4. A minor maintenance permit by itself shall under no circumstances provide a permittee with the ability to cut pavement without seeking additional authority from the Director of Public Service.

1.6.3.B. Minor Maintenance Permit Applications

Application for a minor maintenance permit shall be made to the Director of Public Service. In addition to any information required by the Director of Public Service, all minor maintenance permit applications shall contain, and will only be considered complete upon compliance with the following provisions:

1. Credible evidence that the applicant has obtained a certificate of registration or proof that the applicant has written authority to apply for a minor maintenance permit on behalf of a party that has been issued a certificate of registration;
2. Submission of a completed minor maintenance permit application in the form required by the Director of Public Service.

3. A statement that the applicant will employ protective measures and devices that, consistent with the Ohio Manual of Uniform Traffic Control Devices, will prevent injury or damage to persons or property and to minimize disruptions to the efficient movement of pedestrian and vehicular traffic.

1.6.3.C. Issuance of Minor Maintenance Permits: Conditions

1. If the Director of Public Service determines that the applicant has satisfied the requirements of this chapter and the minor maintenance permit process, the Director of Public Service shall issue a minor maintenance permit subject to the provisions of this chapter.
2. The City may impose reasonable conditions, in addition to the rules and regulations enacted by the Director of Public Service, upon the issuance of the minor maintenance permit and the performance of the minor maintenance permittee thereunder in order to protect the public health, safety, and welfare, to ensure the structural integrity of the rights of way, to protect the property and safety of other users of the rights of way, and to minimize the disruption and inconvenience to the traveling public.

1.6.3.D. Minor Maintenance Permit Fees

The Director of Public Service shall, after providing notice to and seeking input from all providers with systems in the City right of way, develop and maintain a schedule of permit fees in an amount sufficient to recoup all reasonable costs associated with processing minor maintenance permits, as allowed by law. See Chapter 190 of the City's codified ordinances for fee. No minor maintenance permit shall be issued without payment of minor maintenance permit fees except to the City or County, which shall be exempt. Minor maintenance permit fees that were paid for a minor maintenance permit that the City has revoked due to breach are not refundable. The Director of Public Service may revoke the minor maintenance permit as any other permit may be revoked under this chapter.