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SECTION 1 - PLAN SUBMISSIONS AND GENERAL NOTES

1 GENERAL

1.1 PRELIMINARY MATTERS

A. Purpose - The Standards, as set forth herein, are intended for quality and uniformity of public and private infrastructure improvements. These Standards are intended to complement all City, County, State and Federal Standards.

B. Conflicts with Other Regulations - When the provisions of this Standard are inconsistent with one another or when the provisions of this Standard conflict with provisions found in other adopted ordinances or regulations, the more restrictive provision shall govern.

C. Relationship with Other Ordinances and Regulations - It shall be the applicant's responsibility to determine and comply with all applicable City, County, State and Federal Ordinances or Regulations governing land development activities.

D. Severability - If a court of competent jurisdiction declares that any Section, Division, Item or Paragraph of this Standard is invalid, that ruling shall not affect the validity of any other part of this Standard or of the Standard as a whole, which shall remain in full force and effect.

1.2 DEFINITIONS

Unless otherwise stated in these standards, words or phrases which have a well-known technical or construction industry or trade meaning are used in accordance with such recognized meanings. Some definitions refer to definitions provided in the City's Land Development Code, Chapter 1213.02 and numbered as included therein. Words shall have meanings for singular or plural tenses.

A. Defined Terms

1. AASHTO - Refers to all the publications of the American Association of State Highway Transportation Officials, and specifically, A Policy on Geometric Design of Highways and Streets, current edition.
2. Addenda - Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the Contract Documents.

3. Agreement -The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
4. ASTM - American Society for Testing and Materials.
5. Bond - Any form of security approved as to form and amount by the City, including a cash deposit, surety bond, letter of credit, collateral, or other instrument of credit.
6. City - City of Hudson, Ohio or City Manager or designee.
7. City Engineer - A professional Engineer, registered in the State of Ohio, who has been appointed as the City Engineer, or the City Engineer's authorized agent.
8. Contract Documents - The Contract Documents establish the rights and obligations of the parties and include the agreement, addenda (which pertain to the Contract Documents), Contractor's bid (including documentation accompanying the bid and any post bid documentation submitted prior to the notice of award) when attached as an exhibit to the agreement, the notice to proceed, the bonds, these General Conditions, the supplementary conditions (if included), the Specifications and the Drawings as the same are more specifically identified in the agreement, together with all written amendments, change orders, work change directives, field orders, and Engineer's written interpretations and clarifications issued on or after the effective date of the agreement. Approved shop drawings and the reports and drawings of subsurface and physical conditions and the reports and drawings relating to a hazardous condition are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format of text, data, graphics, and the like that may be furnished by City to Contractor are not Contract Documents.

9. Contract Times - The number of days or the dates stated in the agreement to: (i) achieve Substantial Completion; and (ii) complete the work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
10. Contractor - An individual, company, firm, or other party or organization who contracts with an Owner to construct all or a portion of a project.
11. Crossovers - Paved areas within medians to allow traffic to cross from one side of a divided road to the other.
12. Design Engineer - A licensed professional Engineer registered in the State of Ohio responsible for the design and preparation of Contract Documents.
13. Developer - Any person, firm, corporation, agent, partnership, or entity who seeks to improve and/or modify land in accordance with the City's development regulations.
14. Development - A man-made change to improved or unimproved real estate.
15. Division - Each Section is divided up into Divisions (i.e. Division I - MATERIALS).
16. Drawings or Plans - The approved plans, profiles, typical cross sections, working drawings, supplemental drawings, text, notes, or exact reproductions that show the location, character, dimensions, and details of the work to be done.
17. Easement - Per City's Land Development Code 1213.02, #107.
18. Edge of Pavement - The location of the white or yellow edge line on an uncurbed road, the edge of the gutter plate on a curb and gutter road or the face of the curb on a curbed road.

19. Evaluation Datum - As established by the current Summit County mapping system utilized for the Graphical Information System developed by Summit County.
20. Erosion Control - Any method or means of controlling sediment or runoff from a construction site, as specified in the "Construction Site, Best Management Practices" Handbook, a Department of Natural Resources publication.
21. Final Completion - Resolution of all items including punch lists, submittal of close-out documentation, and final acceptance by the City.
22. Hazardous Environmental Conditions - The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the work.
23. Hazardous Waste or Materials - The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. Improvements - Any changes, additions, modifications, revisions, etc., to infrastructure, structures, land, etc.
25. Item - In a Division, these are the main categories (i.e., Item 3.14 - TRENCHES).
26. Lot - Per City's Land Development Code 1213.02, #162.
27. Non-residential driveways/entrances within public right-of-way - Designated paved areas connecting the public roadway with a private driveway or parking lot used for non-residential purposes.
28. OMUTCD - Ohio Manual of Uniform Traffic Control Devices. Ohio Department of Transportation Manual that establishes uniform standards

for traffic control devices, such as signs, signals, markings, and construction signage.

29. Owner - The individual, entity, public body, or authority with whom Contractor has entered into the Agreement and for whom the work is to be performed.
30. Paragraph - Under each Item, further breakdown (i.e., Paragraph 1.2.A - Defined Terms).
31. Parcel - A lot or tract of land.
32. PCBs - Polychlorinated biphenyl's.
33. Petroleum - Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
34. Plans - See definition of Drawings.
35. Project - The total construction of which the work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.
36. Public Improvement - Public sewers, water mains, storm water relief provisions, highways, parkways, sidewalks, streets lighting, and all other public improvements to be required by the City.
37. Punch List - A list of deficiencies requiring corrective action before final payment or acceptance of the project.
38. Preliminary Plan - Per City's Land Development Code, 1213.02, #223.
39. Record Drawings - Design plans reviewed in the field and revised to show actual construction dimensions and quantities. The Drawings shall be prepared under the direct supervision of a registered surveyor and the

Plans shall be sealed by the surveyor. (“Sometimes referred to as “As-built”).

40. Resident Project Representative - An individual or firm appointed or employed by the City as the authorized representative of the City Engineer assigned to review on-going construction and to ensure compliance with approved plans and specifications.
41. Right-of-Way - A strip of land dedicated, condemned, or reserved for public use (ROW).
42. Road or Roadway - Limits of the paved area including paved shoulders, traveled lanes, gutters and curbs within public right-of-way.
43. Samples - Physical examples of materials, equipment, or workmanship that are representative of some portion of the work and which establish the Standards by which such portion of the work will be judged.
44. Section - Main segment of how these standards are divided (i.e. Section 2 - WATER DISTRIBUTION).
45. Shop Drawings - All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the work.
46. Site - Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the work is to be performed, including lands or areas being developed by private developer, and also including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
47. Specifications - That part of the Contract Documents or Drawings consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the work and certain administrative details applicable thereto.

48. Standard - This document, entitled "City of Hudson, Ohio, Engineering Standards for Infrastructure Construction."
49. State Plane Coordinates - Established by the Ohio Coordinate System, North Zone, NAD 83, or latest coordinate version.
50. Subdivider or Developer - Per City's Land Development Code 1213.02, #321. (See Developer also)
51. Subdivision - Per City's Land Development Code 1213.02, #322.
52. Subgrade - The surface of the roadbed on which the pavement structure, curb and gutter, and/or shoulders are constructed.
53. Substantial Completion - The time at which the work (or a specified part thereof) has progressed to the point where, in the opinion of City Engineer, the work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the work refer to Substantial Completion thereof.
54. Supplier - A manufacturer, fabricator, supplier, distributor, material man, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment as specified on, or in, the approved Contract Documents, drawings, specifications, etc., to be incorporated in the work by Contractor or any Subcontractor.
55. Surveyor - A licensed professional surveyor registered in the State of Ohio responsible for the preparation and supervision of plats, easements, boundary surveys, construction staking, record drawings, etc.
56. Thru Lane - The portion of roadway for the thru movement of vehicles, exclusive of shoulders, turn lanes, curbs and gutters.
57. Turn Lanes - The portion of the roadway for the turning movement of vehicles, exclusive of shoulders, thru lanes, curbs and gutters.

58. Work - The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
59. Written Amendment - A written statement modifying the Contract Documents, signed by Owner and Contractor on or after the effective date of the agreement and normally dealing with the non-engineering or non-technical rather than strictly construction-related aspects of the Contract Documents.

B. Terminology

1. Intent of Certain Terms or Adjectives - Whenever in the Contract Documents the terms "as allowed," "as approved," or terms of like effect or import are used, or the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of the City or City Engineer as to the work, it is intended that such action or determination will be solely to evaluate, in general, the completed work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to the City or City Engineer any duty or authority to supervise or direct the performance of the work or any duty or authority to undertake responsibility of work.

2. Day - The word “day” shall constitute a calendar day of 24 hours measured from midnight to the next midnight.
3. Defective - The word “defective”, when modifying the word “work, “ refers to work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to the City’s or City Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion).
4. Furnish, Install, Perform, Provide - The work “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

1.3 BONDING AND INSURANCES

Provide bonds and insurances in accordance with City, County, State and Federal Codes and Ordinances. Provide appropriate guarantees per Chapter 1208 of the City’s Land Development Code, latest edition. Provide full name, address and telephone number of Contact person involved and same for

the bonding company and/or insurance company. All bonding companies shall be listed on the Treasury Listing # 270.

1.4 STANDARD NOTES FOR DRAWINGS

For construction plans in the absence of detailed project specifications, the following list of notes shall be included on the plans. If detailed specifications are provided, the information shall be included therein or on the plans at Design Engineer's preference or as directed by the City.

- A. General Construction Notes - See Exhibit A at the end of this Section.
- B. Waterwork Notes, City of Hudson Water Service Area - See Exhibit B at the end of this Section.
- C. Waterwork Notes, City of Hudson, City of Cleveland Water Service Area - See Exhibit C at the end of this Section.

1.5 PLAT OF SURVEY, DESCRIPTION, AND EASEMENT MINIMUM REQUIREMENTS

Exhibit D at the end of this Section includes the Plat of Survey, Description, and Easement Minimum Requirements that shall be included with all applications for same.

1.6 SUBSTITUTES AND "OR-EQUALS"

A. General - Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, operation, service life, and quality required. When the specification or description contains or is followed by the words "or as approved", other items of material or equipment or material or equipment of other Suppliers may be submitted to City Engineer for review under the circumstances subsequently described. See Exhibit E for application form.

City Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to this Item. City Engineer will be the sole judge of acceptability. No "or-equal" materials and equipment or substitute procedures will be ordered, installed or utilized until City Engineer's review is complete, which will be evidenced by either a Change Order for a substitute construction method or procedure or an approved Shop Drawing for an "or equal" material or equipment. City Engineer will advise Contractor in writing of any negative determination.

City may require Contractor to furnish at Contractor's expense a special performance guarantee, bond, or other surety with respect to any substitute for a length of time as determined by the City Engineer.

City Engineer will record time spent by City Engineer and Engineer's Consultants in evaluating substitute or "or equal" items proposed or submitted by Contractor pursuant to this Item and in making changes in the Contract Documents (or in the provisions of any other direct contract with City for work on the Project) occasioned thereby. Whether or not City Engineer approves a substitute or "or equal" items item so proposed or submitted by Contractor, Contractor shall reimburse City for the charges of City Engineer and Engineer's Consultants for evaluating each such proposed substitute or "or equal".

Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense including any additional data requested by the City, and in an expeditious manner to allow timely performance of the evaluation by City Engineer.

B. "Or-Equal" Items - If in City Engineer's sole discretion an item of material or equipment proposed by Contractor in a written application is functionally equal to that named and sufficiently similar so that no change in related work will be required, as determined from information submitted by Contractor, it may be considered by City Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in City Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Item, a proposed item of material or equipment will be considered functionally equal to an item so named if:

1. In the exercise of reasonable judgment the City Engineer determines that: (i) it is at least equal in quality, service life, durability, dependability, appearance, operation, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;
2. Contractor certifies that: (i) there is no increase in cost to the City; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

3. An "Or Equal" may not be approved if in City's judgement the spare parts, etc. are not compatible with existing City inventory, or equipment would require stocking additional spare parts not compatible with existing equipment.

C. Substitute Items - If in City Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 1.6.B, it will be considered a proposed substitute item.

Contractor shall submit sufficient information as provided below to allow City Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by City Engineer from anyone other than Contractor.

The procedure for review by City Engineer will be as set forth below and as City Engineer may decide is appropriate under the circumstances.

Contractor shall first make written application to City Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner or City for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by City Engineer in evaluating the proposed substitute item. City Engineer may require Contractor to

furnish additional data about the proposed substitute item. Substitutions will not be accepted if they are only shown or implied on Shop Drawings. See Exhibit F application form.

D. Substitute Construction Methods or Procedures - If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by the City Engineer. Contractor shall submit sufficient information in writing to allow the City Engineer, in City Engineer's sole discretion, to determine that the substitute proposed is mostly equivalent to that expressly called for by the Contract Documents. The procedure for review by City Engineer will be similar to that provided above. The use of an approved substitute means, method, technique, sequence or procedure of construction does not relieve the Contractor of his responsibility to provide an acceptable work product or his liability for all construction practices and procedures in the performance of the work.

1.7 GENERAL PLAN STANDARDS

All plans for public and private improvements, modifications, additions, etc., to the infrastructure within the City shall be submitted for review in accordance with the City's Land Development Code, Appendix A - Submittal Requirements, latest edition and other City Codes and Ordinances governing said improvements. Drawings shall be created and stamped by a registered professional engineer for infrastructure improvements as the design engineer and architect for building improvements. Construction drawings shall be submitted at the size 24" x 36", with the proposed improvements drawn to a scale of 1"=20'. A minimum of six complete sets of plans shall be submitted after all approvals have been given by the City. The plans and specifications shall also be submitted in a digital format compatible with the City's current release of AutoCAD software and word processing software and in State Plane Coordinates.

The impervious area for all site development work, public and private, shall meet the minimum requirements of the Land Development Code. The impervious area shall be "boxed" and shown in the upper right corner of the title sheet or first sheet of the construction drawings. The following information shall be included."

1. Impervious area as a percentage of the developed site.

2. The impervious area in acres or square feet.
3. The total site area in acres and square feet.

The area within public right-of-ways shall be excluded when computing the impervious area.

1.8 SHOP DRAWINGS

In order that the City Engineer may determine conformance with information given in the Drawings and Specifications and compatibility with the design concept of the computed project as a functioning whole as indicated by the Drawings and Specifications, the Contractor shall cause to be prepared and shall submit to the City Engineer detail drawings of apparatus and materials for each product, material, etc., to be used with a project.

Shop Drawing requirements are included below. The City Engineer's review of any shop drawing shall not release the Contractor from responsibility for deviations from the Drawings and Specifications and the function and quality of the project.

For the shop drawings required by the City, all shop drawings shall be checked, approved and certified in writing by the Contractor as being in conformance with the requirements of these Standards by initialing, dating and indicating each item number before being forwarded to the City Engineer.

Sufficient shop drawings shall be submitted to provide for the retaining by the City Engineer of three copies. Drawings will be reviewed and returned by the City Engineer with appropriate comments. Neither fabrication, shipment nor installation shall begin until such drawings have been returned (with review stamp affixed) by the City Engineer. If the Contractor installs any piping, reinforcing steel, electrical work, machinery, apparatus or material or product prior to the returning of the shop drawings (with review stamp affixed) by the City Engineer, the Contractor shall be required to remove at no cost to the City, all or any part of the items which are not satisfactory, or not opened for inspection.

When submitting shop drawings to the City Engineer, the quantity of drawings submitted and the descriptions of the items for which the shop drawings are being submitted shall be indicated on the Contractor's transmittal. Shop drawing submittals in the form of blueprints (or blue lines), such as piping layouts, steel reinforcing, structural steel, miscellaneous metals, electrical layouts, etc., at the Contractor's option, may include two copies - one blueprint (or blue line) and one sepia. The sepia will be returned with

the City Engineer's comments noted. The use of sepias will eliminate errors in transferring comments from copy to copy and is encouraged whenever possible.

Layout drawings for electrical work shall show locations and sizes of conduit runs, pull and junction boxes, outlets, lighting fixtures, panelboards, switches, motor controls, disconnects, etc., and will be used by the City Engineer to verify the location and size of conduit, wire and equipment. Conduit layout drawings shall be submitted early. No work shall proceed until such drawings have been returned (with review stamp affixed) by the City Engineer.

Shop drawings regarding pumps, blowers, etc., shall include all information on electrical components and characteristics, appropriate curve data at various operating and efficiency levels, manufacturer's motor data sheets, hardware and accessories. Shop drawings will not be reviewed and returned until all such information is received.

1.9 RECORD DRAWINGS ("AS-BUILTS")

The Contractor for public and private projects shall keep one record copy of City-approved plans, including all specifications, drawings, Ohio EPA approved letter, addenda, change orders and shop drawings (record documents) at the project site in an approved location. The record documents shall be kept current, and shall be available to the City Engineer for inspection at all times. Record documents shall be properly labeled, shall be kept in a clean, dry and legible condition, with the Contractor to provide files and racks for storage, and shall not be used for construction purposes.

The record drawings shall be annotated by the Contractor to show all changes made during construction in accordance with the requirements below. Prior to substantial completion, and/or final payment and acceptance by the City, and prior to customers being tied into utilities, the Contractor for the project shall deliver the record drawings to the City Engineer with certification that the record drawings, as submitted, show all changes made during construction.

Record drawings shall be completed and submitted to the City in both digital format compatible with the City's current edition of software and reproducible mylars or vellums. All field information shall be created utilizing State Plane Coordinates.

For the record drawings required by the City, the annotating of drawings for changes made during construction shall include those as indicated in the record drawings contents list included at the end of this Section as, Exhibit G (Pages G1-G3).

The required certification shall be by an Affidavit for Record Drawings as similarly included (Page G-4). Record Drawings shall be prepared under the direct supervision of a registered surveyor or registered engineer and sealed by the registered surveyor or registered engineer.

II. PRECONSTRUCTION

1.10 PRECONSTRUCTION CONFERENCE

Prior to construction beginning on a project, a preconstruction conference shall be held to discuss construction activities and concerns. A minimum of 48 hours prior to the preconstruction conference being held, all submittals required per the City's Land Development Code, latest edition and other City, County, State and Federal laws shall have been submitted and approved by the City. This includes items such as the plans, specifications, shop drawings, preconstruction videos, payment of fees and escrows, etc. The City, Owner, Prime Contractor, major subcontractors and affected utilities shall be present. Scheduling of this meeting shall take place a minimum of 48 hours after submission of a minimum of six sets of approved construction drawings.

1.11 PRECONSTRUCTION VIDEO TAPING

Prior to mobilizing equipment or delivering materials to a project site, all construction projects that front public property or are within existing or proposed rights-of-way shall be video taped. Video taping shall extend from right-of-way to right-of-way and twenty feet onto private property along the route of construction. In easement areas, video taping shall extend twenty feet each side outside of the easement as well as the full easement area. Video taping shall include both audio and video, and the existing conditions documented, specifically for restoration concerns. Video tape shall be submitted and accepted by the City a minimum of two weeks prior to construction.

Identify house and business addresses or otherwise provide a means of measurement so that the location of taping could be easily determined. Video tape format shall be as directed by the City. Construction shall not begin until City has reviewed and approved the preconstruction video tape.

1.12 MONUMENTS / PROPERTY PINS

The Contractor shall, prior to actual construction, erect protective barricades around all visible survey monuments that are in or adjacent to the construction area and as noted on the drawings. Any other monument or property corner stake, pin or marker discovered or uncovered during progress of the work shall be protected from damage or loss and the City Engineer shall be notified in writing as to the exact location.

Any survey monument, property corner, property pin, right-of-way or other marker damaged or destroyed by the Contractor's forces shall be replaced by a licensed surveyor, employed by and at the expense of the Contractor. The Contractor shall provide the Owner and the City Engineer certification by the registered surveyor as to the replacement of the marker.

III. CONSTRUCTION

1.13 REPLACEMENTS

Where any pavements, driveways, parking areas, curbs, gutters, berm stone, sidewalks, water lines, gas lines, sewers, catch basins, headwalls, drains, field tile, conduit pipes, cables, fences, landscaping, or other existing facilities are removed or otherwise disturbed in carrying out a project, they shall be replaced in "as good as" or "better" condition as originally found at the expense of the Contractor and to the approval of the City per these Standards as a minimum. Any such material or product broken, damaged, or disturbed to such an extent as to require replacement shall be replaced with new material or product at the expense of the Contractor or Developer (if it is a private project).

Work, materials and products shall be in accordance with all applicable requirements of these Standards and, where not included herein, the requirements of all applicable ODOT Items as approved by the City Engineer.

In any event, the Contractor shall be liable for any damage or disturbance to public or private property caused by movement of equipment or by other operations and the Contractor shall repair or replace, to the condition existent prior to his operations any public or private property damaged or disturbed by his operations. If not possible to repair to preexisting condition, then the items shall be replaced new per these Standards at no expense to the City.

1.14 TEMPORARY ENVIRONMENTAL CONTROLS

The Contractor shall provide and maintain methods, equipment, and temporary construction as necessary to provide controls over environmental conditions along the route or in the area or site of construction and related areas under the Contractor's control, and remove physical evidence of such temporary controls upon completion of work. All such temporary controls shall be in accordance with applicable Federal, State, County and local laws, rules and regulations governing noise, dust, water quality, pollution and erosion and sediment control, and the requirements of these Standards. In the event of conflict between the requirements of these Standards and Federal, State, County and local laws rules and regulations, the more restrictive shall apply.

Temporary Environmental controls, as applicable to soil erosion and sediment control, shall be in accordance with Section 1421 of these Codified Ordinances, ODOT Item 207, and as required by Summit County Soil and Water Conservation District (SWCD). Where heavy construction equipment is no longer needed, the Contractor shall either final grade and seed or temporary seed to prevent soil erosion. No area where construction is complete shall sit for longer than 7 days without being seeded or as required by the Ohio Rainwater and Land Development Handbook, latest edition. Silt barriers shall stay in place until grass has grown so soil will not erode. Any findings and corrections required per the review and on-site inspection by Summit County SWCD shall be mitigated by the Contractor.

Particular attention shall be given to dust, mud and dirt control in the streets, sidewalks and drives within the limits of the project and any haul roads leading to or away from the project that are used by the Contractor, his subcontractors and his material suppliers. The City of Hudson reserves the right to mandate street clean up for dirt, dust and mud control in the interest of public health and safety, either daily, weekly or hourly depending on the circumstances surrounding the condition of the street, sidewalk and drives.

The following methods of control shall be used.

1. The streets and haul roads shall be swept by an automatic self-contained mechanical sweeper with integral water spray and vacuum equipment. All work shall be in accordance and compliance with the City of Hudson noise ordinance.

2. All excessive dirt that gets on the pavement shall be removed by means of hand shoveling or appropriate mechanical equipment and the area swept as in method (1) above.
3. Sidewalks and driveways shall be cleaned by means of shovels and hand brooms or approved mechanical equipment.
4. If authorized or directed by the Owner or the City, any dust remaining shall be controlled in accordance with ODOT Item 616, including the use of calcium chloride as permitted by the City.

The Contractor shall comply with the above requirements on a daily basis. If the Contractor fails to perform the above work in a satisfactory manner, all work, except cleanup operations will be stopped immediately, at no additional cost to the City, until the Contractor has complied with the above requirements to the satisfaction of the Owner and the City.

1.15 MAINTENANCE OF FLOW AND DRAINAGE

During construction, where existing sewers, ditches or other drainage ways are encountered and are interfered with, flow shall be maintained in the existing sewers, ditches or other drainage ways. Sewage or other liquid must be handled by the Contractor either by connection into other sewers, with the approval of the City Engineer; by providing temporary conduit to maintain flow through the trench or other excavation; or by temporarily pumping to a satisfactory outlet; and shall not be pumped, bailed or flumed over the street or ground surface. Existing field tile drains shall be free to drain at all times. The Contractor shall be available 24 hours, 7 days a week to immediately correct or free any sewer, ditch or drainage way that becomes clogged or stopped due to the work the Contractor is undertaking.

The Contractor shall be responsible for maintaining drainage in new and existing structures as required to protect his work, and shall be responsible for maintaining drainage on the project site where his construction operations alter the existing conditions. Failure to comply or to act when called to remedy a drainage issue may require the City of Hudson to act on the issue and charge the Contractor for the cost to make the correction.

1.16 REMOVAL, REPAIR, AND TUNNELING OF TREES, SHRUBS, BUSHES AND OTHER LANDSCAPING ITEMS

Trees, shrubs, bushes, and other landscaping items which are in the immediate vicinity of the route of construction and the complete destruction of which cannot be prevented, despite extreme care on the part of the Contractor, shall be removed, stored (if possible) and reset or removed and disposed of by the Contractor, if not previously removed by the Owner. The City Engineer shall be consulted and his permission shall be obtained prior to the removal of any trees, shrubs, bushes and other landscaping items not labeled to be removed. The Contractor shall consult the City Engineer well in advance of pipe laying or other construction activity concerning such removals. Trees to be removed shall be felled so as not to injure trees or structures that remain or other construction activity. Removal shall include the removal of stumps and roots to a minimum of 12 inches below grade.

An exception to the above shall be made for trees noted on the drawings to be tunneled. Tunneling will be required if excavation occurs within that area encircled by drawing a circle having a diameter in feet equal to the tree diameter in inches about the center of the tree. Contractor shall determine appropriate manner for tunneling at no additional cost to the City.

Other trees, tree limbs, shrubs, and bushes that are so located that equipment of the Contractor will damage same during construction shall be carefully trimmed and shaped, as approved by the City, by workmen skilled in tree trimming. All limbs and branches shall be flush cut. Trees and bushes, other than those whose removal is approved by the City Engineer, which are destroyed or damaged to the extent that their continued life is impaired shall be replaced by the Contractor at his expense and to the satisfaction of the Owner and City.

Prior to Final Payment, the contractor shall contact the City's Arborist to have the Arborist inspect all trees, shrubs and bushes along the line of the work and to have the Arborist supervise the operation to properly trim, prune, repair and protect any that have been damaged, and to designate those which have been so damaged as to require replacement.

1.17 DEWATERING REQUIREMENTS FOR TRENCHES AND OTHER EXCAVATIONS

Any person installing any well, well point, pit or other device used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report form with the Ohio

Department of Natural Resources, Division of Water, within 30 days of the well completion in accordance with the Ohio Revised Code Section 1521.01 and 1521.05 (or applicable sections within the Ohio Revised Code). In addition, any such facility that has a capacity to withdraw waters of the state in an amount greater than 100,000 gallons per day from all sources shall be registered by the owner with the Chief of the Division of Water, Ohio Department of Natural Resources (or appropriate division), within three months after the facility is completed in accordance with Section 1521.16 of the Ohio Revised Code (or appropriate section within the Ohio Revised Code). For copies of the necessary well log, drilling report, or registration forms, please contact: Ohio Department of Natural Resources; Fountain Square; Columbus, Ohio 43224-1387; (614) 265-6717 (or appropriate address and telephone number should they change). Also, any well, well point, pit or other device installed for the purpose of lowering the ground water level to facilitate construction of a project shall be properly abandoned in accordance with the provisions of this plan or as directed by the director or his representative.

Sewage or other liquid shall be handled by the Contractor either by connection into other sewers, with the approval of the City Engineer; by providing temporary conduit to maintain flow through the trench or other excavation; or by temporarily pumping to a satisfactory outlet with the approval of the City Engineer; and shall not be pumped, bailed or flumed over the street or ground surface.

1.18 PROTECTION OF WETLANDS

Improvements designed that may directly or indirectly affect wetlands shall be in conformance with the City's Land Development Code, Chapter 1207, latest edition and as approved by the U.S. Army Corps of Engineers and/or the Ohio Environmental Protection Agency (OEPA). If work is within 100 lineal feet from a wetlands area, Contractor shall use caution so as not to disturb wetlands as per the Land Development Code. If the improvements will directly or indirectly affect the wetland area, the protections/construction methods below shall apply.

Specific areas along the project route may be shown or noted as wetlands areas on the drawings or as noted or shown within an approved wetland delineation. The Contractor shall properly protect wetlands areas by using care to avoid such areas. In all areas that the Contractor's work includes excavation in wetlands areas the work shall comply with all U.S. Army Corps of Engineers requirements but at a minimum the Contractor shall remove and stockpile the top 12 inches of topsoil. Said topsoil shall

be replaced at wetlands areas prior to final grading. Final grading will include the restoration of wetlands areas to the original ground profile and no change in ground contours except as noted and approved on the plans or drawings. Existing seeds in wetlands areas will be worked into the surface of restored areas to enhance the restoration of wetlands' vegetation. Mulching material shall be provided at all disturbed wetlands areas and restored wetlands areas in accordance with mulching requirements in this Standard. Protection of wetlands areas shall include the following:

1. All unsuitable/excess dredged and excavated material not used as backfill over the pipeline shall be removed and disposed of at a separately approved, by the City, upland disposal site.
2. Turbidity controls in the form of silt curtains or similar type cloth material shall be installed downstream from the project area and shall remain in place during all excavation and restoration operations, until the work has been approved by the City.
3. That the fill created by the discharge shall be properly maintained to prevent erosion and other non-point sources of pollution.
4. Exposed bank surfaces shall be mulched with approved erosion control matting until natural vegetation becomes re-established.

1.19 TESTING FOR COMPACTION IN TRENCHES

For compacted earth and granular backfill in trenches, the Contractor shall employ a testing laboratory to make tests on the site at no cost to the City. For backfill in trenches the testing shall be as required for the infrastructure being installed, but at a minimum the testing shall occur at every lift (6" maximum) every 100' spacing along the trench, except for roadway crossings the spacing shall be every 10' or in each driving lane of the roadway. All substandard compaction shall be repaired/replaced by the Contractor at Contractor's expense.

1.20 REMOVAL OF EXCESS EXCAVATED MATERIALS

All excess excavated material which has been stockpiled at the work site, and which will not be used for backfill or other fill purposes, shall be removed from the project area within 48 hours of the excavation. In all cases, stockpiles of all excavated material and all construction materials shall be of

limited size and shall be neatly maintained in such a manner that they will not block existing drainage or be hazardous to pedestrian or vehicular traffic in any way. The limitation relative to the stockpiling of all excavated material and all construction materials shall be controlled by the Owner and the City. In the event the Contractor fails to remove excess excavated material as required above, or fails to satisfactorily modify his operations relative to the stockpiling of excavated or construction material upon order of the Owner or the City, all work except cleanup operations will be stopped, and remain stopped, until the order of the Owner or the City has been complied.

The removal and disposal of all surplus excavated material shall be the responsibility of the Contractor. The City or Owner shall be provided with any surplus material desired, to be delivered at a location selected by City or Owner within City corporation limits. The City or Owner shall require the selected location to be leveled or contoured by Contractor daily at no expense to the City.

Silt barriers shall be placed within 24 hours around long term stockpiles of soil (unless temporary seeding is used) as well as along the down slope, or drainage course, and portions of staging sites. Long term stockpiles shall be defined as stockpiles remaining after 48 hours of the excavation. Also, excavated materials and stored materials shall not be placed next to trees within that area encircled by drawing a circle having a diameter in feet equal to the tree diameter in inches about the center of the tree.

1.21 MANUFACTURER'S SERVICES

The equipment manufacturer for all equipment that will be owned and/or operated by the City, shall furnish a competent factory trained, certified, service representative who shall supervise or inspect the installation; test, align, adjust and calibrate the equipment as necessary; and instruct City personnel in their operation and maintenance of the equipment. The City shall have the right to audio/video tape all sessions regarding equipment operation and maintenance instructions. Manufacturer's services shall be provided as required until the operation and understanding of the equipment is satisfactory to the City at no additional cost to the City.

Manufacturer's Services shall be provided as required by the City for more complex equipment installations such as electrical, HVAC, etc. other than piping installations.

The City shall be notified a minimum of 72 hours prior to the scheduled time for the arrival of the service representatives on the project site. The manufacturer's service representative shall, prior to

leaving the project site and for each visit, complete a manufacturer's service representative's report. as provided in Exhibit H

1.22 INSPECTION BY CITY

City shall employ competent resident project representatives to observe the construction of projects and check for conformance with these Standards and the drawings and specifications. These inspections and costs for same shall be as specified in the City's Land Development Code, latest edition. This includes any project within the City's corporation limits including but not limited to Cleveland Water, Summit County D.O.E.S., Summit County Engineering, East Ohio Gas, Ohio Edison, ALLTEL, Adelphia Cable, or any other public or private utility or quasi - governmental entity.

IV. POST CONSTRUCTION

1.23 CLEANUP

At the conclusion of all work, the Contractor shall cleanup all rubbish and foreign materials and leave all areas of work in a condition at least as good as existed prior to construction activities, or as approved by the City, ready for use.

1.24 SEEDING, RESTORATION AND LANDSCAPING

Seeding, restoration and landscaping shall be as specified in Section 9 of these Standards and the City's Land Development Code, latest edition.

1.25 WARRANTIES

In addition to guarantees provided per the City's Land Development Code, latest edition; Contractor shall provide manufacturer warranties for all materials installed or furnished for a project. The warranty period shall begin upon Final Completion as defined herein, or such other date as agreed to by City in writing.

1.26 OPERATION AND MAINTENANCE MANUALS

For equipment that will be owned and/or operated by the City, four copies of an Operation and Maintenance (O&M) Manual shall be furnished by the manufacturer. O&M manuals shall be submitted and approved prior to achieving substantial completion.

The O&M Manual shall give complete data on the equipment, and the manufacturer of the equipment, including parts list, lubrication instructions, model number, manufacturer's telephone number

and address, local manufacturers representative telephone number, name and address, etc., and shall be submitted to the City Engineer for review not later than 30 days prior to the arrival of the factory trained service representative, when manufacturer's services are also required for the equipment.

1.27 SPARE PARTS

Spare parts will be required for those items as indicated in these Standards. The spare parts shall be furnished and delivered to the location designated by the City and shall be properly labeled and packaged for extended storage.

1.28 PROJECT CLOSE-OUT

Final completion, correction of work as required in punch lists, provisions of acceptable record documents, waiver of liens from all subcontractors, suppliers, materialmen, etc., provision of required guarantees and the provisions of this document are required prior to project close-out. The City's Land Development Code, latest edition contains specific requirements for each of these. The maintenance bonds and warranties shall begin upon project close-out, which will be Final Completion.

EXHIBIT A
GENERAL CONSTRUCTION NOTES

1. CONSTRUCTION OF THE SITE WORK AND UTILITIES SHALL BE GOVERNED BY THE CITY OF HUDSON'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL PERMITS REQUIRED FOR THE PROJECT.
3. THE CONTRACTOR MUST ALERT THE OHIO UTILITY PROTECTION SERVICES AT 1-800-362-2764 AT LEAST 48 HOURS BEFORE ANY EXCAVATION IS TO BEGIN.
4. ALL EXISTING APPURTENANCES (UTILITY POLES, VALVES, HYDRANTS, MANHOLES, ETC.) ARE TO BE MAINTAINED BY THE CONTRACTOR UNLESS OTHERWISE SHOWN ON THE PLANS.
5. THE DESIGN ENGINEER CERTIFIES THAT ALL UTILITIES ARE SHOWN AS THEY APPEAR ON EXISTING RECORDS OR FIELD LOCATED.
6. ALL KNOWN ABOVE AND UNDERGROUND SERVICES HAVE BEEN NOTED ON THE DRAWINGS. THE CONTRACTOR ACCEPTS FULL RESPONSIBILITY FOR ANY SERVICES DAMAGED DURING THE CONSTRUCTION OF THE PROJECT WHETHER SHOWN OR NOT ON THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING THE SERVICE AS SOON AS POSSIBLE AT THE CONTRACTOR'S OWN EXPENSE.
7. VIDEO TAPING OF PROJECT SHALL BE DELIVERED AND ACCEPTED BY THE CITY OF HUDSON ENGINEERING DEPARTMENT A MINIMUM OF 14 CALENDAR DAYS PRIOR TO START OF CONSTRUCTION ACTIVITIES.
8. NOTIFY THE CITY OF HUDSON ENGINEERING DEPARTMENT A MINIMUM OF FORTY-EIGHT HOURS (2 WORKING DAYS) PRIOR TO THE START OF CONSTRUCTION.
9. A PRECONSTRUCTION MEETING SHALL BE SCHEDULED A MINIMUM OF 48 HOURS (2 WORKING DAYS) AFTER SUBMISSION OF A MINIMUM OF 6 APPROVED SETS OF PLANS AND ALL SHOP DRAWINGS APPLICABLE TO THE PROPOSED IMPROVEMENTS. A PRECONSTRUCTION MEETING MUST BE HELD PRIOR TO START OF ANY CONSTRUCTION.
10. THE LIMITS OF CLEARING AND GRADING SHALL BE FIELD STAKED AND LINED WITH ORANGE CONSTRUCTION FENCING 48 HOURS (2 WORKING DAYS) PRIOR TO THE PRECONSTRUCTION MEETING. AREAS BEYOND THE LIMITS OF CLEARING AND GRADING SHALL NOT BE DISTURBED INCLUDING THE STOCKPILE OF ANY MATERIALS OR CONSTRUCTION TRAFFIC.
11. ALL ROAD SURFACES, EASEMENTS, OR RIGHT-OF-WAY DISTURBED BY THE CONSTRUCTION OF ANY PART OF THESE IMPROVEMENTS ARE TO BE RESTORED ACCORDING TO THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION" AS DIRECTED BY THE CITY OF HUDSON AND/OR ITS ENGINEER.
12. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY OF HUDSON OR ITS REPRESENTATIVE IF SUSPECTED HAZARDOUS MATERIAL OR ANY OTHER MATERIAL THAT MAY CREATE A HEALTH RISK IS DISCOVERED ON SITE.

13. ALL DISTURBED STORM SEWERS AND/OR APPURTENANCES, SIGNS, GUARD RAILING, MAIL AND/OR PAPER BOXES, DRIVE CULVERTS, FENCES, TREES, LANDSCAPING, OR OTHER ITEMS DISTURBED BY THE CONSTRUCTION SHALL BE RESTORED OR REPAIRED TO AT LEAST THE BEFORE-CONSTRUCTION CONDITION.
14. ANY DEFECTS DISCOVERED IN NEW CONSTRUCTION, WORKMANSHIP, EQUIPMENT OR MATERIALS SHALL BE REPAIRED, OR CORRECTED BY APPROVED METHODS AS DIRECTED BY THE CITY OF HUDSON.
15. NUCLEAR COMPACTION TESTING SHALL BE REQUIRED FOR ALL FILL AREAS OVER TWO FEET (2') IN DEPTH, AT 6" LIFTS PER ASTM A-1557, 95% MODIFIED.
16. APPROVAL BY THE CITY OF HUDSON ENGINEER CONSTITUTES NEITHER EXPRESSED NOR IMPLIED WARRANTIES AS TO THE FITNESS, ACCURACY, OR SUFFICIENCY OF PLANS, DESIGNS OR SPECIFICATIONS.
17. DURING TAPPING OF EXISTING UTILITIES, ANY TRAFFIC CONTROL REQUESTED OR REQUIRED BY THE CITY OF HUDSON WILL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE CITY.
18. COMPLIANCE WITH THE OCCUPATIONAL AND SAFETY ACT OF 1970 IS REQUIRED BY ALL CONTRACTORS ON THIS PROJECT.
19. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
20. ALL DISTURBED AREAS SHALL RECEIVE 4" OF TOPSOIL AND BE SEEDED AND MULCHED AS PER SECTION 9 – LANDSCAPING AND STREET TREES OF THE CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
21. IF MUD, SOIL, OR OTHER DEBRIS IS DEPOSITED ON ADJACENT STREETS, ROADS, OR OTHER PROPERTY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF SUCH AS DIRECTED BY THE CITY OF HUDSON OR ITS ENGINEER AT THE END OF EACH WORK DAY, OR AS REQUIRED DURING THE WORK DAY.
22. ALL PROPOSED SLOPES 3:1 OR STEEPER AND ALL EARTHEN DRAINAGE WAYS SHALL RECEIVE JUTE OR EXCELSIOR MATTING AS PER ODOT 667 OR 668.
23. ALL STORM SEWERS WITHIN PUBLIC RIGHTS-OF-WAY AND CITY OF HUDSON EASEMENTS SHALL BE PER SECTION 4 – STORM COLLECTION OF THE CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
24. ALL PIPES SHALL BE PLACED OVER 4" OF BEDDING. BEDDING MATERIAL SHALL BE AS SPECIFIED IN CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION, FOR THE TYPE OF PIPE.
25. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING THE FLOW OF VEHICULAR AND PEDESTRIAN TRAFFIC AROUND THE JOB SITE. TRAFFIC CONTROL SHALL BE COORDINATED WITH THE CITY OF HUDSON POLICE DEPARTMENT.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PLANT TICKETS FOR ALL MATERIALS DELIVERED TO THE SITE. PLANT TICKETS MUST SHOW NET QUANTITY OF DELIVERED MATERIAL. MATERIAL DELIVERED OR PLACED WITHOUT PLANT TICKETS

SHALL BE REMOVED AND PROPERLY DISPOSED AT THE EXPENSE OF THE CONTRACTOR.

27. ALL DELIVERED MATERIALS SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF HUDSON OR OTHER APPLICABLE AGENCIES. THE CITY OF HUDSON, OR ITS REPRESENTATIVE, RESERVES THE RIGHT TO REJECT ANY DELIVERED MATERIAL WHICH DOES NOT CONFORM TO THE APPLICABLE STANDARDS AND SPECIFICATIONS.
28. THE CITY OF HUDSON OR ITS REPRESENTATIVE, RESERVES, THE RIGHT TO HALT ALL CONSTRUCTION ACTIVITY FOR NONCONFORMANCE OF PLANS, SPECIFICATIONS AND OTHER APPLICABLE STANDARDS OR REGULATIONS.
29. ALL CHANGES TO APPROVED DRAWINGS AND/OR SPECIFICATIONS MUST BE REAPPROVED BY THE CITY OF HUDSON PRIOR TO CONSTRUCTION.
30. ALL PAVING MATERIAL MUST BE PROVIDED BY ODOT CERTIFIED SUPPLIER. WRITTEN PROOF SHALL BE REQUIRED UPON DELIVERY OF MATERIALS. THE CERTIFIED MIX DESIGN MUST BE SUBMITTED TO, AND APPROVED BY, THE CITY OF HUDSON PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING.
31. CONTRACTOR/DEVELOPER SHALL PROVIDE ALL REQUIRED ROADWAY SIGNAGE AS PER ODOT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES INCLUDING STREET IDENTIFICATION SIGNAGE PER CITY STANDARDS FOR ALL ASPECTS OF THE IMPROVEMENT.
32. ALL BONDS AND OR LETTERS OF CREDIT SHALL NOT BE RELEASED OR REDUCED AND NO WATER OR SANITARY SEWER CUSTOMERS CAN BE CONNECTED UNTIL ALL RECORD DRAWINGS HAVE BEEN SUBMITTED, REVIEWED AND APPROVED BY THE CITY OF HUDSON.
33. ALL WORK, EXCEPT SIDEWALKS, STREET TREES AND STREET LIGHTS, AS PART OF THESE PLANS SHALL BE COMPLETED, INCLUDING PUNCH LIST ITEMS AND DEFICIENCY WORK WITHIN 1 YEAR OF THE DATE OF APPROVAL BY THE CITY ENGINEER. SIDEWALKS, STREET TREES AND STREET LIGHTS SHALL BE COMPLETED WITHIN TWO YEARS OF THE DATE OF APPROVAL BY THE CITY ENGINEER.
34. FAILURE TO COMPLETE THE PROJECT IN ITS ENTIRETY AS APPROVED BY THE PLANNING COMMISSION, INCLUDING PUNCH LIST ITEMS, WILL RESULT IN THE CITY OF HUDSON HOLDING ALL FUTURE ZONING CERTIFICATES UNTIL ALL WORK HAS BEEN COMPLETED AND APPROVED.
35. MANUFACTURERS OR SUPPLIERS AFFIDAVIT FOR ALL CONSTRUCTION MATERIALS SHALL BE PROVIDED AS PER THE CITY'S "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION PRIOR TO THE START OF CONSTRUCTION.
36. THE CONSTRUCTION OF SANITARY SEWERS, WATER MAINS, LIFT STATIONS AND APPURTENANCES IS PROHIBITED UNTIL ALL PLANS HAVE BEEN APPROVED BY THE OHIO ENVIRONMENTAL PROTECTION AGENCY.
37. ALL SANITARY SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.

38. ALL SANITARY SEWERS CONSTRUCTED IN SUMMIT COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES (SC-DOES) SERVICE DISTRICTS AND SERVED BY SC-DOES SHALL COMPLY WITH SC-DOES REQUIREMENTS.
39. SHOP DRAWINGS FOR THE PROPOSED LIGHT FIXTURES SHALL BE ATTACHED TO THE APPROVED LIGHTING PLAN AND SUBMITTED WITH THE SIX SETS OF PLANS AS REQUIRED IN NOTE 8. THE LIGHT FIXTURES SHALL HAVE A RECESSED LAMP, FLAT LENSES AND OPTIONAL HOUSE SHIELDING AVAILABLE. THE CITY MAY REQUIRE HOUSE SHIELDS TO BE ADDED AND OTHER MODIFICATIONS AFTER CONSTRUCTION AT THE EXPENSE OF THE CONTRACTOR.
40. THE OWNER SHALL SUBMIT A NOTICE OF INTENT (N.O.I.) APPLICATION TO THE OHIO ENVIRONMENTAL PROTECTION AGENCY (E.P.A.) AND OBTAIN AUTHORIZATION FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (N.P.D.E.S.) OR THE LATEST FEDERAL, STATE AND/OR LOCAL REGULATIONS. THE OWNER SHALL SUBMIT A COPY OF THE N.P.D.E.S. PERMIT TO THE CITY OF HUDSON 48 HOURS (2 WORKING DAYS) PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING.

EXHIBIT B
WATERWORK NOTES
CITY OF HUDSON WATER SERVICE AREA

NOTE: THESE WATER WORK NOTES APPLY TO AREAS OF HUDSON THAT ARE TO BE SERVED WITH CITY OF HUDSON WATER.

1. ALL WATER MAINS AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION", LATEST EDITION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY AND ALL AREAS ALONG THE ROUTE OF THE WATER MAIN. THIS WILL INCLUDE LAWNS, DRIVES, DITCHES, CULVERTS, LANDSCAPING, ETC, AND ANY OTHER AREAS DISTURBED DURING THE CONSTRUCTION PROCESS.
3. ALL TESTING SHALL BE IN ACCORDANCE WITH THE CITY OF HUDSON "ENGINEERING STANDARDS FOR INFRASTRUCTURE CONSTRUCTION" AND BE COORDINATED WITH THE CITY OF HUDSON. AWWA C-600 PRESSURE TESTING AND C-651 DISINFECTION BY CHLORINATION OF THE WATER MAIN WILL BE REQUIRED.
4. ALL PROPOSED TRENCHES LOCATED UNDER EXISTING OR PROPOSED PAVEMENT SHALL BE FILLED WITH LOW STRENGTH MORTAR. THE METHOD OF BACKFILLING AS DIRECTED BY THE ENGINEER, SHALL CONFORM TO ODOT 613 TYPE 1. SLAG OR FLY ASH IS NOT PERMITTED IN MIX. PAVEMENT INCLUDES, BUT IS NOT LIMITED TO, ROADWAY SURFACES, SIDEWALKS, BIKE WAYS, DRIVEWAYS, SHOULDERS, ETC. THE LIMITS OF THE LOW STRENGTH MORTAR SHALL INCLUDE 45° ANGLE OF REPOSE FROM ALL EDGES OF PAVEMENT.
5. FIELD STAKING AND RECORD DRAWINGS SHALL BE PROVIDED TO THE CITY BY THE CONTRACTOR, AS SUPERVISED AND STAMPED BY A LICENSED PROFESSIONAL SURVEYOR. RECORD DRAWINGS (AS-BUILTS) IN BOTH REPRODUCIBLE AND DIGITAL FORMAT COMPATIBLE WITH THE CITY OF HUDSON STANDARDS TO BE SUBMITTED TO AND APPROVED BY THE CITY OF HUDSON PRIOR TO UTILITY SERVICE CONNECTIONS BEING MADE.
6. A 4' MINIMUM HORIZONTAL CLEARANCE AND A 12" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE EDGE OF THE WATER MAIN PIPE TO THE EDGE OF THE STORM SEWER PIPE.
7. A 10' MINIMUM HORIZONTAL CLEARANCE AND AN 18" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE EDGE OF THE WATER MAIN PIPE TO THE EDGE OF ALL SANITARY SEWERS AND/OR FORCE MAIN PIPE.
8. ALL VALVES, FITTINGS, BENDS, TEES, ETC. SHALL HAVE MEGALUG JOINT RESTRAINTS BY EBBA IRON, INC.
9. ALL WATER MAINS WITHIN LOW STRENGTH MORTAR BACKFILL SHALL BE WRAPPED IN POLYETHYLENE AS PER AWWA C-105. OTHER AREAS TO BE WRAPPED IN POLYETHYLENE SHALL BE AS SHOWN ON THE DRAWINGS, AS DETERMINED FROM DIPRA REPORT OR AS REQUIRED BY THE CITY.
10. WHERE WATER MAINS CROSS SEWER TRENCHES, THE TRENCH IS TO BE BACKFILLED WITH ODOT 304 CRUSHED LIMESTONE.

11. TAPPING SLEEVES SHALL BE ROMAC TYPE, WRAP AROUND STAINLESS STEEL WITH # 316 STAINLESS STEEL BOLTS AND NUTS.
12. MANUFACTURER'S AFFIDAVIT: THE MANUFACTURER SHALL FURNISH AN AFFIDAVIT INDICATING THAT ALL PIPE, FITTINGS, VALVES, FIRE HYDRANTS, AND APPURTENANCES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REFERENCED STANDARDS. A COPY OF EACH AFFIDAVIT, INDICATING THE PROJECT ON WHICH THE MATERIAL IS TO BE USED SHALL BE FORWARDED TO THE CITY OF HUDSON PRIOR TO THE PRECONSTRUCTION MEETING BEING SCHEDULED.
13. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS. THE CITY MAY GRANT SPECIAL PERMISSION FOR BUILDINGS FOUR STORIES AND HIGHER WITH A FIRE SUPPRESSION SYSTEM.
14. PROPOSED FACILITIES SHALL BE DESIGNED TO MAINTAIN A MINIMUM OF 35 PSI PRESSURE DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.
15. ALL WATER MAINS GREATER THAN 12 INCH DIAMETER SHALL BE LAID TO GRADE WITH HIGH POINTS AND LOW POINTS HAVING ADEQUATE BLOW-OFFS VIA USE OF HYDRANTS.
16. FOR ALL NON-RESIDENTIAL WATER SERVICE, A BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED PER CITY OF HUDSON AND OEPA STANDARDS AND REQUIREMENTS. FOR RESIDENTIAL WATER SERVICE A BACKFLOW PREVENTION DEVICE MAY BE REQUIRED FOR SWIMMING POOLS, IRRIGATION SYSTEMS, ETC. CONTACT THE CITY SERVICE/WATER DISTRIBUTION DEPARTMENT FOR THE REQUIREMENTS AND STANDARDS FOR BACKFLOW PREVENTION, THERMAL EXPANSION CONTROL, ETC.
17. ALL WATER METER SETTINGS MUST BE APPROVED BY THE CITY OF HUDSON. METERS SHALL BE MAGNETIC DRIVE, WITH A SCANCODE REMOTE READ, MUST READ IN CUBIC FEET, SET WITH VALVES BEFORE AND AFTER THE METER. IT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO PROVIDE AND RUN A REMOTE WATER METER WIRE FROM THE PROPOSED WATER METER LOCATION TO THE VICINITY OF THE PROPOSED ELECTRIC METER LOCATION. CONTACT THE CITY SERVICE/WATER DISTRIBUTION DEPARTMENT FOR THE COMPLETE STANDARDS AND REQUIREMENTS FOR WATER METERS, PRESSURE REGULATORS, ETC.
18. FOR NEW WATER MAIN CONSTRUCTION THE DRAWINGS SHALL HAVE BEEN REVIEWED BY THE OHIO EPA AND WRITTEN APPROVAL RECEIVED PRIOR TO THE START OF CONSTRUCTION.

EXHIBIT C
WATERWORK NOTES, CITY OF HUDSON
CITY OF CLEVELAND WATER SERVICE AREA

NOTE: THESE WATER WORK NOTES APPLY TO AREAS OF HUDSON THAT ARE TO BE SERVED WITH CITY OF CLEVELAND WATER.

1. ALL WATER MAINS AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF CLEVELAND SPECIFICATIONS MODIFIED BY THE CITY OF HUDSON AND SUPPLEMENTED BY THE CITY OF HUDSON STANDARDS WHERE APPLICABLE.
2. ALL PIPE SHALL BE CLASS 53 AS PER AWWA C150 AND MANUFACTURED ACCORDING TO AWWA C151. PIPE JOINTS SHALL BE RUBBER GASKET PUSH ON MEETING AWWA C111. PIPE SHALL HAVE A BITUMINOUS EXTERIOR COATING AND CEMENT MORTAR WITH SEAL COAT, INTERIOR LINING AS PER AWWA C104. ALL PIPE SHALL HAVE A MINIMUM 5' OF COVER.
3. ALL FITTINGS, VALVES, TEES, BENDS, ETC. SHALL MEET AWWA C153 AND SHALL HAVE FIELD INSTALLED JOINT RESTRAINTS "WEDGE ACTION MEGALUG" BY EBAA IRON, INC. AND CONCRETE THRUST BLOCKS.
4. ALL VALVES SHALL BE RESILIENT WEDGE MEETING REQUIREMENTS OF AWWA C509, OPEN RIGHT-CLOCKWISE PER CLEVELAND STANDARDS; BUT SHALL NOT BE THIN WALLED, DUCTILE IRON BODY CASTINGS.
5. ALL HYDRANTS SHALL BE MUELLER A423 CENTURION OR AMERICAN DARLING B84B; ALL THREADS SHALL MEET THE CITY OF HUDSON FIRE DEPARTMENT SPECIFICATIONS. STEAMER NOZZLE SHALL BE MACK NATIONAL; 2 1/2" NOZZLES SHALL BE NATIONAL STANDARD THREADS
6. ALL PIPES, FITTINGS, VALVES, FIRE HYDRANTS AND APPURTENANCES SHALL BE APPROPRIATELY MARKED FOR IDENTIFICATION PURPOSES. THE MATERIALS AND METHODS OF MANUFACTURE, AND COMPLETED PIPES, FITTINGS VALVES AND APPURTENANCES SHALL BE SUBJECT TO INSPECTION AND REJECTION AT ALL TIMES. THE CITY OF HUDSON AND CITY OF CLEVELAND HAVE THE RIGHT TO MAKE INSPECTIONS.
7. MANUFACTURER'S AFFIDAVIT: THE MANUFACTURER SHALL FURNISH AN AFFIDAVIT INDICATING THAT ALL PIPE, FITTINGS, VALVES, FIRE HYDRANTS AND APPURTENANCES HAVE BEEN MANUFACTURED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REFERENCED STANDARDS. A COPY OF THE AFFIDAVIT, INDICATING THE PROJECT ON WHICH THE MATERIAL IS TO BE USED SHALL BE FORWARDED TO THE CITY OF HUDSON PRIOR TO THE PRECONSTRUCTION MEETING BEING SCHEDULED.
8. BEDDING MATERIAL SHALL BE SAND, ODOT 703.06, SLAG IS NOT PERMITTED. BEDDING SHALL BE PLACED 6" BELOW AND 12" ABOVE THE PIPE BARREL. BEDDING MATERIAL AT HYDRANTS SHALL BE NO. 6 CRUSHED LIMESTONE AND NO. 57 CRUSHED LIMESTONE AT FLUSHING ASSEMBLIES.
9. BEDDING MATERIAL SHALL BE PLACED IN 6" LAYERS AND COMPACTED BY HAND OR MECHANICAL TAMPING PER ASTM A-1557 TO 95% OF MAXIMUM DENSITY BY MODIFIED PROCTOR, AS TESTED BY A GEOTECHNICAL COMPANY, WITNESSED BY THE INSPECTOR AND WRITTEN RESULTS SUBMITTED TO THE CITY.

10. ALL BEDDING AND BACKFILL MUST BE PLACED AND TAMPED SO AS NOT TO DAMAGE OR DISPLACE JOINTS, FITTINGS, PIPE, ETC.
11. TAPPING SLEEVES SHALL BE MECHANICAL JOINTS MADE IN TWO HALVES FOR ASSEMBLY AROUND MAIN. SLEEVES SHALL BE CAST IRON WITH GASKETS EXTENDING THE ENTIRE LENGTH TO FORM A WATER TIGHT JOINT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ANY AND ALL AREAS ALONG THE ROUTE OF THE WATER MAIN. THIS WILL INCLUDE LAWNS, DRIVES, DITCHES, CULVERTS, LANDSCAPING, ETC, AND ANY OTHER AREAS DISTURBED DURING THE CONSTRUCTION PROCESS.
13. ALL TESTING SHALL BE COORDINATED WITH THE CITY OF CLEVELAND. AWWA C-600 PRESSURE TESTING AND C-651 DISINFECTION BY CHLORINATION OF THE WATER MAIN WILL BE REQUIRED.
14. ALL PROPOSED TRENCHES LOCATED UNDER EXISTING OR PROPOSED PAVEMENT SHALL BE FILLED WITH LOW STRENGTH MORTAR. THE METHOD OF BACKFILLING, AS DIRECTED BY THE ENGINEER, SHALL CONFORM TO ODOT 613 TYPE 1. SLAG OR FLY ASH IS NOT PERMITTED IN MIX. PAVEMENT INCLUDES, BUT IS NOT LIMITED TO, ROADWAY SURFACES, SIDEWALKS, BIKE WAYS, DRIVEWAYS, SHOULDERS, ETC. THE LIMITS OF THE LOW STRENGTH MORTAR SHALL INCLUDE THE 45° ANGLE OF RESPOSE FROM THE EDGES OF PAVEMENT.
15. THE CONTRACTOR MUST CONTACT THE OHIO UTILITIES PROTECTION SERVICES, 1-800-362-2764, 48 HOURS BEFORE ANY UNDERGROUND WORK IS TO BEGIN.
16. FIELD STAKING AND RECORD DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR, AS SUPERVISED AND STAMPED BY A LICENSED PROFESSIONAL SURVEYOR. RECORD DRAWINGS (AS-BUILTS) IN BOTH REPRODUCIBLE AND DIGITAL FORMAT COMPATIBLE WITH CITY OF HUDSON STANDARDS TO BE SUBMITTED TO AND APPROVED BY THE CITY OF HUDSON PRIOR TO SERVICE CONNECTIONS TO THE WATER MAIN. RECORD DRAWINGS TO BE PROVIDED TO CITY OF CLEVELAND PER THEIR REQUIREMENTS.
17. A 4' MINIMUM HORIZONTAL CLEARANCE AND A 12" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE EDGE OF THE WATER MAIN PIPE TO THE EDGE OF STORM SEWER PIPE.
18. A 10' MINIMUM HORIZONTAL CLEARANCE AND AN 18" MINIMUM VERTICAL CLEARANCE SHALL BE MAINTAINED FROM THE EDGE OF THE WATER MAIN PIPE TO THE EDGE OF ALL SANITARY SEWERS AND/OR FORCE MAIN PIPE.
19. ALL WATER MAINS WITHIN LOW STRENGTH MORTAR BACKFILL SHALL BE WRAPPED IN POLYETHYLENE AS PER AWWA C-105. OTHER AREAS TO BE WRAPPED IN POLYETHYLENE SHALL BE AS SHOWN ON THE DRAWINGS, AS DETERMINED FROM DIPRA REPORT, OR AS REQUIRED BY THE CITY OF HUDSON OR THE CITY OF CLEVELAND.
20. WHERE WATER MAINS CROSS SEWER TRENCHES, THE TRENCH IS TO BE BACKFILLED WITH ODOT 304 CRUSHED LIMESTONE.
21. BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS. THE CLEVELAND WATER DISTRICT MAY GRANT SPECIAL PERMISSION FOR BUILDINGS WITH FIRE SUPPRESSION SYSTEMS.

22. PROPOSED FACILITIES SHALL BE DESIGNED TO MAINTAIN A MINIMUM OF 35 PSI PRESSURE, OR AS REQUIRED BY THE CITY OF CLEVELAND WATER DISTRICT, DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.
23. ALL WATER MAINS GREATER THAN 12 INCH DIAMETER SHALL BE LAID TO GRADE WITH HIGH POINTS AND LOW POINTS HAVING ADEQUATE BLOW-OFFS VIA USE OF HYDRANTS.
24. DEPENDING ON TYPE OF SERVICE REQUESTED A BACKFLOW PREVENTER MAY BE REQUIRED PER CITY OF CLEVELAND STANDARDS. THE CONTRACTOR/DEVELOPER SHALL CONTACT CLEVELAND WATER DEPARTMENT AND OBTAIN THE REQUIREMENTS IN WRITING. THE WRITTEN REQUIREMENTS SHALL BE SUBMITTED TO THE CITY OF HUDSON PRIOR TO THE START OF CONSTRUCTION.
25. FOR NEW WATER MAIN CONSTRUCTION THE DRAWINGS SHALL HAVE BEEN REVIEWED BY THE OHIO EPA AND WRITTEN APPROVAL RECEIVED PRIOR TO THE START OF CONSTRUCTION.

**EXHIBIT D
CITY OF HUDSON
PLAT OF SURVEY, DESCRIPTION, AND EASEMENT, MINIMUM REQUIREMENTS**

Date: _____ Job No.: _____ Description: _____

<u>Chk</u>	<u>Item</u>	<u>Comment</u>
<input type="checkbox"/>	1. Information in legals is consistent with survey drawings.	_____
<input type="checkbox"/>	2. Lot boundary closes.	_____
<input type="checkbox"/>	3. Acreage is correct.	_____
<input type="checkbox"/>	4. Adjacent property owners with deed volume and subdivision are shown on survey drawing. Right-of-ways, centerlines, lot lines, section lines, adjacent properties and adjoining subdivision shown on the survey drawing. All bounds with senior rights and along right-of-way and centerlines shall be referenced in legals	_____
<input type="checkbox"/>	5. Signature block for City is completed.	_____
<input type="checkbox"/>	6. Copy of drawing forwarded to the City Engineer in digital format, AutoCAD Release 14 or DXF format. The digital copy shall be in State Plane Coordinates	_____
<input type="checkbox"/>	7. Final copies of survey drawing and legals are forwarded to the reviewing agency.	_____
<input type="checkbox"/>	8. Mylar is forwarded to the City for signatures.	_____
<input type="checkbox"/>	9. Basis for bearing shown on the survey drawings and referenced in legals. The basis of bearing shall be Ohio Coordinate System, North Zone, NAD83, or latest coordinate version.	_____
<input type="checkbox"/>	10. Existing structures and house numbers shown on the survey drawings. Includes gas and oil wells with setbacks.	_____

<u>Chk</u>	<u>Item</u>	<u>Comment</u>
<input type="checkbox"/>	11. Intent of boundary. Legals and survey drawings shall not be ambiguous.	
<input type="checkbox"/>	12. Legend.	
<input type="checkbox"/>	13. Area within right-of-way shown on survey drawings and noted legals for metes and bounds.	
<input type="checkbox"/>	14. All pins or reference monuments found or set shall be shown on survey drawings and referenced in legals. Monumentation must be set at all corners or reference monuments set.	
<input type="checkbox"/>	15. All easements and purpose must be shown on the survey drawing and referenced in legals.	
<input type="checkbox"/>	16. For lot splits with on-site septic, show existing septic tanks, leach beds, etc. on the survey drawing; or, the surveyor shall verify in writing that the on-site septic disposal system is not located on the split parcel.	
<input type="checkbox"/>	17. All proposed easements shall be described in and recorded with the deed for the servient parcel.	
<input type="checkbox"/>	18. Survey drawing and legal descriptions must meet the minimum standards of Summit County and Ohio Revised Code.	
<input type="checkbox"/>	19. Surveyor's name, Ohio Registration number and date must be on the plat and descriptions.	
<input type="checkbox"/>	20. State Plane Coordinates shall be shown at a minimum of four property corners and any other location as directed by the City.	

EXHIBIT E
APPLICATION FOR USE OF "OR-EQUAL" ITEM

TO: _____

PROJECT: _____

SPECIFIED ITEM:

Page	Paragraph	Description
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A. The undersigned requests consideration of the following as an "or-equal" item in accordance with Item 1.6 of the "Engineering Standards for Infrastructure Construction".

B. Change in Contract Price (indicate + or -) \$ _____

C. Attached data includes product description, specifications, drawings, photographs, references, past problems and remedies, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified. For consideration of the attached data as SHOP DRAWINGS, submittal shall be in accordance with the requirements of Item 1.8 of the "Engineering Standards for Infrastructure Construction".

D. Signature: _____

Firm: _____

Address: _____

Telephone: _____ Date: _____

Attachments: _____

For use by CITY ENGINEER:

- _____ Accepted as evidenced by affixed SHOP DRAWING REVIEW stamp.
- _____ Accepted as evidenced by included CHANGE ORDER.
- _____ Not accepted as submitted. See Remarks.
- _____ Acceptance requires completion of submittal as required for SHOP DRAWINGS.
- _____ Not accepted. Do not resubmit.

By: _____ Date: _____

Remarks: _____

EXHIBIT F
APPLICATION FOR USE OF SUBSTITUTE ITEM

TO: _____

PROJECT: _____

SPECIFIED ITEM:

Page	Paragraph	Description
A.		The undersigned requests consideration of the following as a substitute item in accordance with Item 1.6 of the "Engineering Standards for Infrastructure Construction". _____
B.		Change in Contract Price (indicate + or -) \$ _____
C.		Attached data includes product description, specifications, drawings, photographs, references, past problems and remedies, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified. For consideration of the attached data as SHOP DRAWINGS, submittal shall be in accordance with the requirements of Item 1.8 of the "Engineering Standards for Infrastructure Construction".
D.		Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The undersigned certifies that the following paragraphs, unless modified by attachments are correct:

1. The proposed substitute does not affect dimensions shown on Drawings.
2. The undersigned will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse affect on other contractors, the construction schedule, or specified warranty requirements. (If proposed substitution affects construction schedule, indicate below using + or -.)

_____ CONSECUTIVE CALENDAR DAYS

4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item, and agrees to reimburse the OWNER for the charges of the ENGINEER for evaluating this proposed substitute item.

E. Signature: _____

Firm: _____

Address: _____

Telephone: _____ Date: _____

Attachments: _____

For use by ENGINEER:

- _____ Accepted as evidenced by affixed SHOP DRAWING REVIEW stamp.
- _____ Accepted as evidenced by included CHANGE ORDER.
- _____ Not accepted as submitted. See Remarks.
- _____ Acceptance requires completion of submittal as required for SHOP DRAWINGS.
- _____ Not accepted. Do not resubmit.

By: _____ Date: _____

Remarks: _____

EXHIBIT G

RECORD DRAWINGS CONTENTS LIST

The following is a list of items to use when compiling record drawings. A general rule to follow when compiling record drawings is that any important deviations from original Drawings made during construction shall be noted on record drawings.

I. TITLE SHEET

- A. Prime CONTRACTOR - Name and Address
 - 1. Any Major Subcontractors - Name and Address
- B. Resident Project Representative
- C. Buried or concealed materials used on Project.
- D. For all valves, indicate the number of turns to open and indicate direction to open (clockwise or counter-clockwise).
- E. A bold note to indicate that the set of plans are "Record Drawings".
- F. Surveyor's Certification.

II. WATER AND FORCE MAIN CONSTRUCTION

- A. Show unusual connections to existing mains in detail. (Schematic, where necessary).
- B. Show correct horizontal alignment and grade, including centerline elevations for all mains installed to grade.
- C. Show correct stationing of tees, bends (horizontal and vertical), valves, air release valves, blow-off chambers.
- D. Show perpendicular distances from hydrant to water main and from hydrant to watch valve. If connection to water main is by a parallel or over the main tee, so indicate this on the record drawings.
- E. Show correct beginning and ending stationing and type of encasement pipes. Note type of annular space fill material used.

III. PAVEMENT CONSTRUCTION

- A. Show correct top and invert elevations for catch basins, inlets, M.H.'s. installed where changes are greater than 0.25'.
- B. Show corrected stationing and horizontal location dimension for all piping and structures.

IV. SEWER CONSTRUCTION

- A. Show distance between manholes. (Center to center of M.H. lids to the nearest foot).
- B. Show correct elevations for inverts and manhole tops (inverts to the nearest hundredth and tops to the nearest tenth).
- C. Show correct stationing for manholes.
- D. Show correct horizontal location dimension for sewers.
- E. Show references for all service connections as follows:
 - 1. Distance of wye to downstream M.H.
 - 2. Horizontal distance of service connection end to downstream M.H.
 - 3. Perpendicular distance from main to service connection.
 - 4. Elevation of service connection invert.
- F. Show correct beginning and ending stationing and type of encasement pipes. Note type of annular space fill material used.

V. BUILDING/STRUCTURE CONSTRUCTION

- A. Show changes in location of fences, buildings and permanent benchmark elevations.
- B. Show changes in building dimensions greater than 3 inches and note changes in construction materials.
- C. Add notes on Drawings to refer to Shop Drawings where possible to identify changes in structural steel, etc.
- D. Show major changes in location of equipment. Add notes on Drawings to refer to Shop Drawings for detail changes in equipment.
- E. Show changes in schematics.
- F. Show major changes in grading plan.
- G. For yard piping, show changes in location, material, elevation and size. Indicate the type of piping support in excavated areas. For manholes and catch basins, show changes in location and elevation.

VI. ELECTRICAL WORK

- A. Revise the following on record drawings:
 - 1. Accurately record final routing of all ductbanks, manholes and handhole locations including dimensions from buildings or other fixed objects as reference points.
 - 2. Overhead circuits and pole line locations as applicable.
 - 3. Show actual locations of grounding electrodes.
 - 4. Show all panels, control stations, load centers, etc., locations.
 - 5. Revise motor control center elevation views as required.
 - 6. Show branch circuit arrangements on a typed legend for panelboards provided under this Project. Correct existing field legends where modifications are made to existing panelboards.
 - 7. Revise control schematics to reflect final electrical identification for wire numbers, terminal numbers, components, etc.
 - 8. Revise one-line diagram as required.
 - 9. Revise process and instrumentation diagrams (P&ID), if applicable.
- B. Revise the following shop drawing submittals to indicate as-built conditions:
 - 1. Layout drawings.
 - 2. Motor control centers.
 - 3. Variable frequency controllers.
 - 4. Instrumentation systems.
 - 5. Control panels.

VII. PLUMBING

- A. Show changes in schematics.
- B. Show changes in location, size and materials.
- C. Show major changes in location of equipment.
- D. Reference Shop Drawings using notes on record drawings when needed to determine construction details. Provide reproducible copies of erection drawings prepared by CONTRACTOR or suppliers.
- E. Update detail sheets with details actually used. Add and delete details to reflect actual details utilized.
- F. For underground items, provide record drawings with information required in Items II, IV, V, IX.

VIII. HEATING, VENTILATING AND AIR CONDITIONING

- A. Show changes in schematics.
- B. Show changes in location, size and materials for ductwork and piping.

- C. Show major changes in location and dimensions of equipment.
- D. Reference Shop Drawings using notes on record drawings when needed to determine construction details. Provide reproducible copies of control drawings and erection drawings prepared by CONTRACTOR or suppliers.
- E. Update detail sheets with details actually used. Add and delete details to reflect actual details utilized.
- F. For underground items, provide record drawings with information required in Items II, IV, V, IX.

IX. DETAIL SHEETS

- A. Any details not used or not applicable shall be so noted. Example - If three alternates for pavement are on detail sheet, the two not used shall be so noted. (Box and cross out unused details).

X. ALL CONSTRUCTION (WATER MAIN, FORCE MAIN, PAVEMENT, SEWER AND BUILDING)

- A. Denote any area where any existing utility was repaired, replaced or relocated. Show correct location if plan location was incorrect.
- B. Note and accurately locate all existing underground utilities encountered during construction, whether shown on the Drawings or not.

XI. SUBMITTAL FORMAT

- A. A digital copy of the Record Drawings shall be submitted to the City of Hudson. The information shall be in State Plane Coordinates, North Zone, NAD83, or latest coordinate version.
- B. The information submitted shall be in accordance with the Elevation Datum established by Summit County.

**AFFIDAVIT
FOR RECORD DRAWINGS**

_____, the **CONTRACTOR** on

(Contractor) (Project title per Contract Documents)

_____, hereby certifies that the enclosed record drawings show all changes made during construction, as specified herein.

By: _____
CONTRACTOR (Authorized Signature)

Sworn to and subscribed before me this _____ day of _____,
_____.

NOTARY PUBLIC

EXHIBIT H
MANUFACTURER'S SERVICE REPRESENTATIVE'S REPORT

Project _____ CONTRACTOR _____

Name and address of Manufacturer _____

_____ Phone No. _____

* Name of Representative _____

Address to Contact _____ Phone No. _____

Items covered by Inspection _____

Contractor's Representative Present _____

Owner's Representative Present _____

Date or Dates of Inspection _____

Time of Day _____ (Inspection Started) _____ (Inspection Completed)

Were Manufacturer's Drawings, Operation Instructions and Spare Parts Lists on the job at or prior to Inspection?

_____ yes _____ no. If answer is no, list deficiencies.

** Description of operation accomplished under supervision of Manufacturer's Representative or problems encountered _____

** Recommendations made by Manufacturer's Representative _____

Manufacturer's Representative's Signature _____

Is a return visit recommended or needed? _____ yes _____ no

If so, how soon? _____

Instruct Plant Personnel in operation and maintenance of equipment? _____ yes _____ no

CITY ENGINEER (Authorized Signature)

OWNER (Authorized Signature)

* Attach company or representative's card

** Use second sheet if additional space required.