

Section 10 – Electrical Requirements

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SECTION 10 – ELECTRICAL REQUIREMENTS

GENERAL REQUIREMENTS

Street Lights shall be designed based upon the latest edition of the Ohio Department of Transportation “Design Manual for Highway Lighting”, American National Standards Institute [ANSI/Illuminating Engineering Society (IES)], “American National Standard Practice for Roadway”, The Ohio Department of Transportation “Bureau of Design Services Standard Construction Drawings”, the Ohio Department of Transportation “Construction and Material Specifications”, and the Requirements of the City of Hudson Electric Department, known as Hudson Public Power.

Any proposed installation of any type of lighting shall require a right-of-way permit obtained through the Community Development Department. The applicant shall provide with the right-of-way application a detailed drawing, to scale, indicating and dimensioning the locations of the proposed lighting foundations, conduit locations, number and size of wiring, switch boxes, supplier of power, location of the power source, etc. as required by the City of Hudson. The City of Hudson shall review and request additional information or changes to the design; or, if all requirements including possible license or lease agreements have been met, the City shall grant approval.

The drawing submitted shall be based on Figure 10.5 for curbed areas. For uncurbed areas the application shall place the foundation locations such that the foundations will not be a roadway hazard or drainage impediment. The City will review the proposed locations for both curbed and uncurbed areas and may require a field review with the applicant with possible revisions to the proposed locations.

The applicant, prior to the release of the right-of-way bond, shall provide Record Drawings (“As-Built”) as per Section 1 of these “Engineering Standards for Infrastructure Construction”.

I. TYPE

10.1 POLES

A. Historical/Residential Lighting – The poles shall be of the Buckingham style, Model FF902, manufactured exclusively by Main Street Lighting in Medina, Ohio or approved equal. The poles shall be 12 feet high with a fluted shaft constructed of fiberglass. They shall be black in color. An

access door shall be provided in the base of the pole. Depending on its location within the City, an optional convenience outlet may be required.

B. Street Lighting – The poles shall be of the Whatley Style and be 20 feet high or 25 feet high, as determined by the City, with an additional 2-foot upsweep to the luminaire. Poles that may be used to light intersections shall be 25 feet high. The bracket arm shall be designed to overhang the roadway by 2 feet. The pole and bracket arm shall be painted black. A 2-½ inch by 5-inch access hole with cover shall be provided in the base of the pole. Depending on its location within the City, an optional convenience outlet may be required. The City of Hudson shall approve all designs. Proper model numbers may be obtained by calling the Public Works Department at 330-342-1750 or Hudson Public Power at 330-342-1724.

10.2 LUMINAIRE AND LAMPS

A. Historical/Residential Lighting – The Luminaire shall be plastic, as manufactured by Cooper Lighting CLB (LED) style or approved equal. Depending on the location within the City, Hudson Public Power shall approve the lamp type as metal halide. All lights shall include a photometric control. A house side shield or custom luminaire wiring may be required as determined by the City.

B. Street Lighting –The luminaire shall be manufactured by Cooper Lighting or approved equal. The wattage shall be 150, , 250 equivalent LED wattage or 150, 175, or 250 watt High Pressure Sodium or Metal Halide to match adjacent lights, as per Hudson Public Power or Hudson Engineering. All lights shall include a photometric control. Hudson Public Power or Hudson Engineering must approve all lighting designs. Designs shall be completed by a current Ohio Registered Engineer. Proper model numbers may be obtained by calling the Public Works Department at 330-342-1750 or Hudson Public Power at 330-342-1724.

10.3 FOUNDATION

A. Historical/Residential Lighting – The foundation for Buckingham style lights shall be a 24-inch diameter concrete base extending 36-inches below grade and 4-inches above finished grade. Three 5/8-inch x 16-inch galvanized anchor bolts shall project 1½-inch above the concrete base. Two 2-inch diameter conduit and one ½-inch sweeps shall be placed in the concrete base. The conduits

shall be PVC schedule 40 and be placed such that a minimum of 24-inches of cover exists from the finished grade to the top of the conduit and a minimum of 30" depth under pavement. The conduit shall extend 3-inches above the concrete base. Hudson Public Power shall supply all templates.

B. Street Lighting – The foundation for the Whatley style lights shall be a 24-inch diameter concrete base extending to a depth designed by a current Ohio professional engineer and four-inches above the finished grade. Four 1-inch galvanized anchor bolts shall project 2-inches above the concrete base. Two (2) - 2-inch diameter and one (1) - ½-inch conduit sweeps shall be placed in the concrete base. The conduit shall be PVC schedule 40 and be placed such that a minimum of 24-inches of cover exists from the finished grade to the top of the conduit. Hudson Public Power shall supply all street light templates.

10.4 CABLE

Distribution cable shall be 600V, #6 AWG standard copper with a white neutral.

10.5 CONDUIT AND TRENCH

Conduit for Historical/Residential and Street Lighting shall be 2-inches in diameter, PVC, schedule 40. The conduit shall be laid to a minimum cover of 24-inches below finished grade. (See Figure 10.5). When conduit is located within the roadway right of way, it shall be placed 2-feet behind the back of the curb or as approved by the Engineering Department. When crossing roads the conduit shall be rigid and extend five feet beyond the edge of pavement and a minimum of 30" depth in uncurbed areas the conduit location shall be as approved by the City of Hudson. When conduit is to be located in a utility easement parallel to the R/W, it shall be placed four feet behind the right of way line. Caution tape reading "CAUTION ELECTRIC LINES" shall be placed a minimum of 1 foot above the electric conduit. Electric conduit shall be installed after water, sewer laterals and natural gas lines are installed.

II. **SPACING**

10.6 POLES

A. Historical/Residential Lighting – Poles for historical/residential lighting shall be spaced as required to meet the lighting requirements of the Hudson Land Development Code (utilizing the most recent version of the IES's Lighting Handbook). Historical/residential light poles shall be installed on each side of the road that has a sidewalk. If sidewalks are located on both sides of the road,

then the light poles shall be placed on both sides of the street, evenly staggered. Pole spacing calculations along with illumination levels and uniformity shall be submitted to the City for review and approval.

B. Street Lighting – Poles for street lighting shall be placed to provide an illumination level and uniformity consistent with standards established by ODOT, ANSI/IES and the Hudson Land Development Code for the functional classification of the roadway. Pole spacing calculations along with illumination levels and uniformity shall be submitted to the City for review and approval.

III. INSTALLATION

10.7 HISTORICAL/RESIDENTIAL/STREET LIGHTS

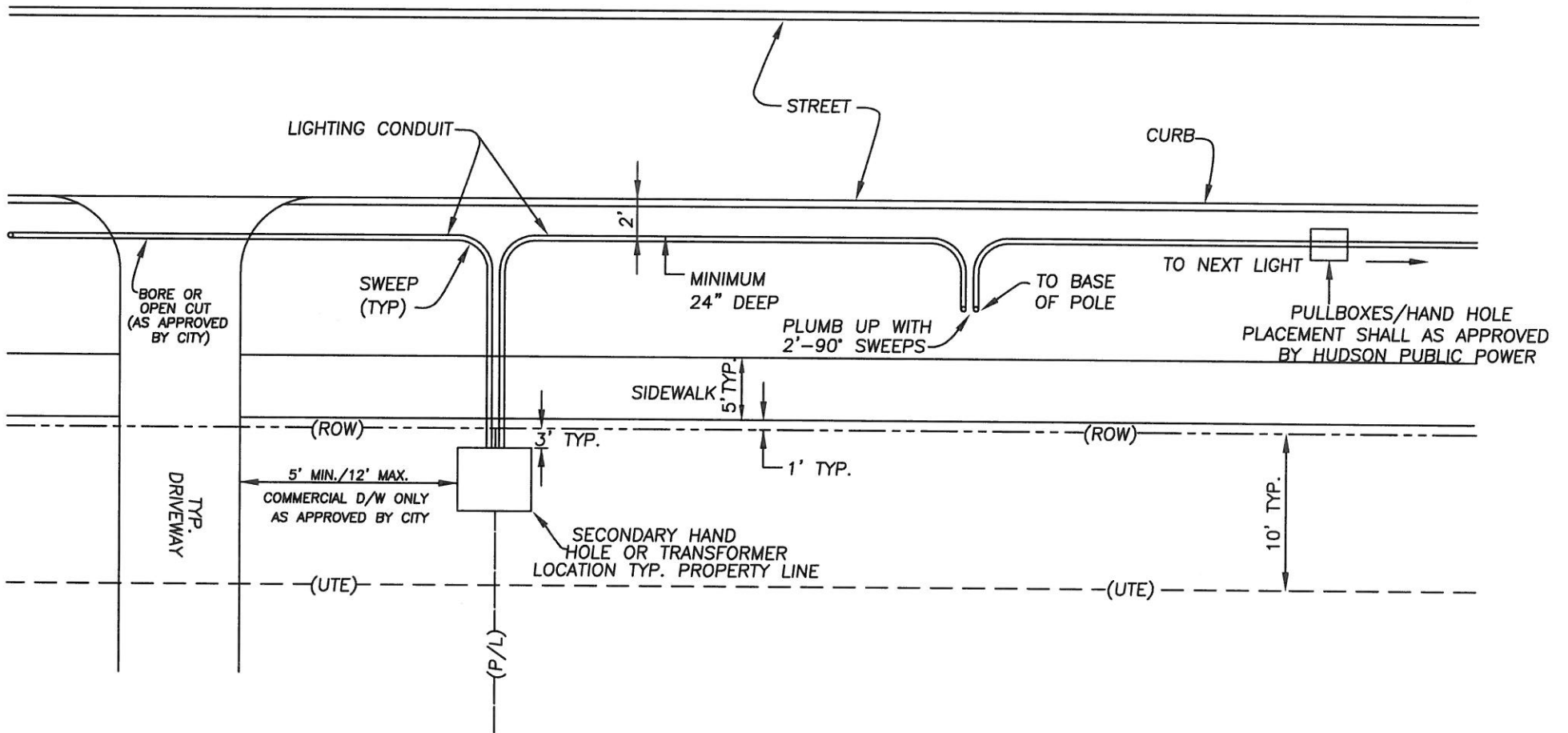
The contractor is responsible for installation of the historical/residential and street lights per the details, specifications and approved drawing including excavation, conduit placement, concrete foundation construction, luminaire installation, backfilling operations, and landscaping. Wire connections in the base between the historical/residential or street lights to the power source shall be split bolt connections. No Scotch locks are allowed. The City of Hudson shall be notified 48 hours prior to inspections for approval.

10.8 TRANSFORMERS

Single phase transformer and pads shall be provided and installed by Hudson Public Power. Three phase transformers shall be provided and installed by Hudson Public Power. The contractor shall install the three-phase transformer concrete pad per the detail and specifications in Figure 10.5 & 10.. Hudson Public Power shall approve locations of all transformers.

10.9 STRUCTURES

Requirements for light poles, spacing, & conduits, as it relates to structures (bridges, etc.) shall be approved on a case by case basis by the Hudson Engineering and Hudson Public Power.

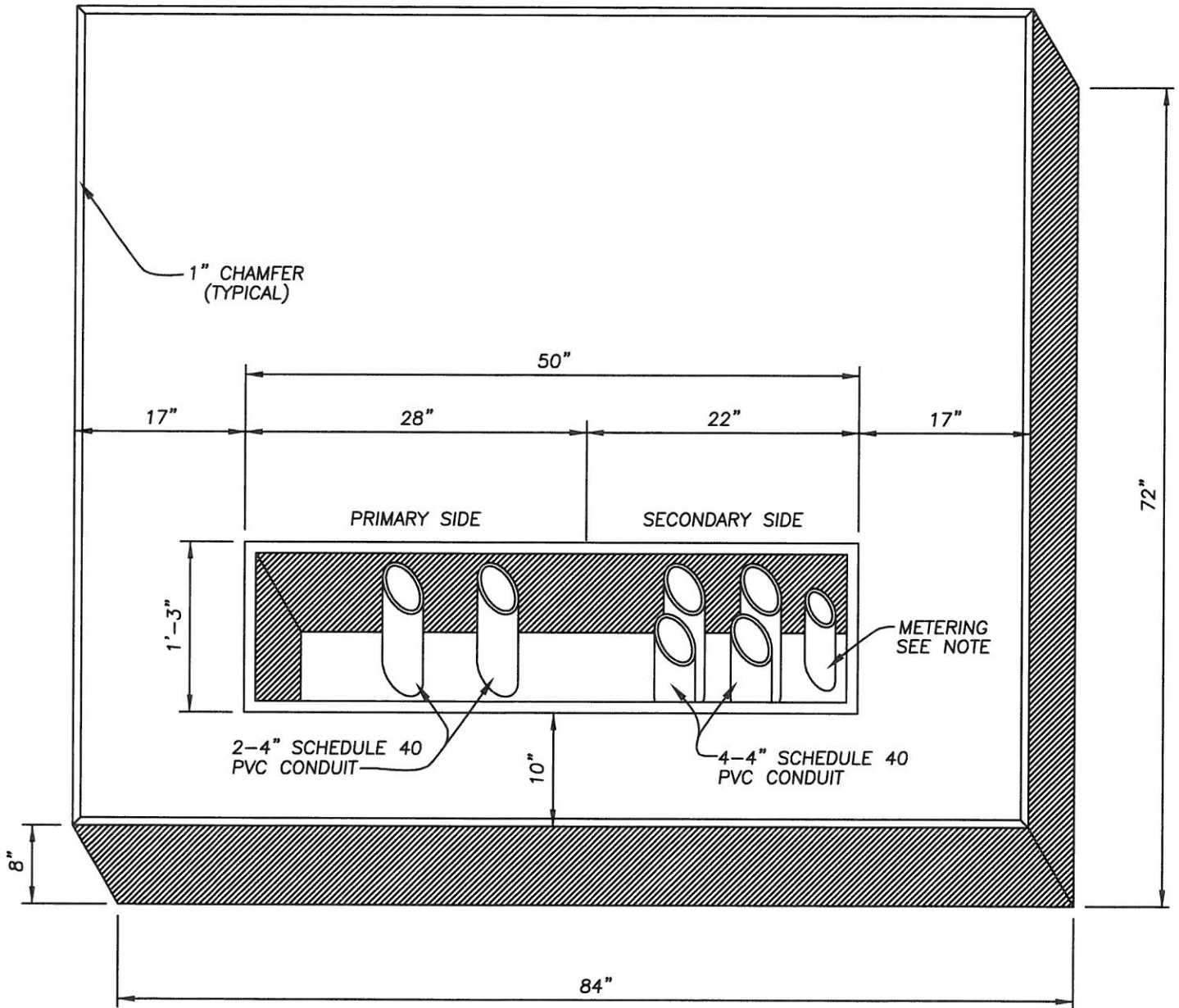


CONDUIT LOCATION WITHIN
ROADWAY RIGHT OF WAY
OF CURBED STREETS

SEE DISCLAIMER STATEMENT ON THE TITLE PAGE OF THESE ENGINEERING STANDARDS

FIG10.5.DWG 10-15-02
 REVISED 5-19-15

FIG 10.5



- COMPACTED BASE - 6" ODOT #304 STONE
- 8" CONCRETE - SMOOTH & LEVEL
- REINFORCING MESH 6" X 6"
- PAD TO BE SET AT OR NO GREATER THAN 2" ABOVE FINISHED GRADE
- NOTE: METERING CONDUIT-
 - 50' OR LESS - 1 1/4" SCHEDULE 40 PVC
 - MORE THAN 50' - 2" SCHEDULE 40 PVC

COMMERICAL DEVELOPMENT
THREE PHASE CONCRETE PAD

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FIG10.8.DWG 10-15-02
REVISED 5-19-15

FIG 10.8