

**AN ORDINANCE TO AMEND CHAPTER 42 OF THE CITY CODE TO
ADOPT A NEW UNDERGROUND FACILITIES COORDINATION
MANUAL**

#0106

Sponsor:

**Council
Member
Oliver**

WHEREAS, on April 19, 2007, City Council approved the adoption of the Underground Facilities Coordination Manual (the “Manual”), which sets forth the practices, policies, and procedures governing the installation, adjustment, and maintenance of facilities within the rights-of-way of the streets in the City; and

WHEREAS, the Manual is codified in Section 42-722 of the City Code; and

WHEREAS, in the fourteen years since the Manual was adopted, the City has determined that certain revisions to the Manual are necessary and appropriate, including but not limited to, establishing a permit close out process, requiring permittees to provide certain notifications and plans to the City, requiring that permanent surface repair be done by the City at the permittee’s expense, unless otherwise agreed during the permitting process, and increasing permit fees to make the administration of Chapter 42 and the Manual revenue-neutral; and

WHEREAS, the Department of Public recommends that the City adopt the new Underground Facilities Coordination Manual containing the aforementioned revisions, which is attached to this Ordinance as Attachment “1”; and

WHEREAS, in light of the foregoing, City Council deems it necessary and appropriate to amend Chapter 42 of the City Code to adopt the new Underground Facilities Coordination Manual.

**NOW, THEREFORE, THE COUNCIL OF THE CITY OF WILMINGTON
HEREBY ORDAINS:**

SECTION 1. Section 42-722 of the City Code is hereby deleted in its entirety and replaced with a new Section 42-722, which is attached to this Ordinance as Attachment “1” and incorporated herein.

SECTION 2. This Ordinance shall become effective upon its passage by City Council and approval by the Mayor.

First Reading.....November 4, 2021
Second Reading.....November 4, 2021
Third Reading.....

Passed by City Council,

President of City Council

ATTEST: _____
City Clerk

Approved this ____ day of _____, 2021.

Mayor

SYNOPSIS: This Ordinance amends Section 42-722 of the City Code to adopt a new Underground Facilities Coordination Manual.

FISCAL IMPACT STATEMENT: This Ordinance has no anticipated fiscal impact because the increased permit fees are revenue-neutral.

W0115438

ATTACHMENT 1

Sec. 42-722. - Underground Facilities Coordination Manual.

EXHIBIT B

City of Wilmington

Department of Public Works

UNDERGROUND FACILITIES COORDINATION MANUAL

November 1, 2021

Preface

It is in the public interest for utility and similar installations to be accommodated within the rights-of-way of City streets. Since this accommodation can significantly affect the function of the streets within the City, occupancy and use of the rights-of-way must be regulated to ensure that:

- ◆ Traffic flows freely and public safety is maintained.
- ◆ The methods of access to the underground facilities and repair of the street structure are uniform and applicable to all persons who install facilities in the rights-of-way.
- ◆ Applicable federal, state, and local laws are complied with.

This Underground Facilities Coordination Manual (this “Manual”) presents the practices, policies, and procedures governing the installation, adjustment, and maintenance of facilities within the rights-of-way of the streets in the City of Wilmington (the “City”). It establishes the requirements and working relationships between the Department of Public Works (the “Department”) and the facilities owners and contractors. It describes how facilities may be accommodated along or within the rights-of-way of City controlled and maintained streets.

This Manual is to be used by City personnel, employees, or contractors of persons with facilities in the rights-of-way, and other agencies involved with or affected by the design, construction, adjustment, relocation, or maintenance of underground facilities.

Such closely related subjects as rights-of-way, legal requirements, plans, and construction may of necessity be touched upon in this Manual but are not covered in detail.

It is recognized that technological advances may affect some requirements concerning underground facilities installations. Documented requests for consideration of these advances will be acknowledged and evaluated promptly.

This Manual is intended to provide uniform direction to those opening and restoring the streets in the City so that the integrity of City streets is maintained and the safety and convenience of the public using these streets is not unduly impaired or jeopardized.

This Manual (dated November 1, 2021) replaces all previous manuals issued by the City.

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CHAPTER ONE: INTRODUCTION

1.1 Purpose and Objectives. The "facilities coordination" process for the purpose of installing, maintaining, and repairing underground utilities involves a complex series of issues. A primary reference resource for this Manual is the Delaware Department of Transportation Utilities Design Manual, dated May 2007 (the "UDM"), except as noted and/or modified herein. It is recognized that many unique engineering and operational issues exist in an urban environment. As such, not all sections of the UDM apply in this urban environment. The purpose of this Manual is to unify, organize, simplify, and condense the issues to help the user identify, find, and understand the pertinent regulations and procedures for facilities work in the City whether in State or City maintained roads.

The objectives of this Manual are:

- ◆ To provide standard requirements for permitting excavation in City streets and rights-of-way.
- ◆ To enable persons installing facilities in the rights-of-way to accomplish their work with the least delay and minimum interference.
- ◆ To prevent service disruptions, damage to in-place underground installations of other service providers, and the creation of hazardous conditions.
- ◆ To ensure that standards, specifications, and environmental considerations are met.
- ◆ To ensure the proper performance, high quality, and timely accomplishment of underground facilities work is achieved.
- ◆ To ensure that the work performed provides for the safety and, so far as possible, the convenience of the users of City streets during and following construction.

The information in this Manual applies to all public and private utilities and other persons that have facilities located within the rights-of-way of streets under the City's jurisdiction.

1.2 Authority. This Manual is issued and updated pursuant to the Department's authority under Chapter 42 of the City Code.

1.3 Exceptions to Requirements. Any request for deviation from the requirements described in this Manual due to extreme hardship shall be submitted in writing to the Commissioner of Public Works (the "Commissioner"). The request should include full justification supporting the claimed hardship condition. The Department will promptly review the claim and provide a recommendation that will be forwarded to the Commissioner for final action.

The City recognizes and encourages innovative techniques and new technologies in the removal and restoration of street pavements and rights-of-way. To that end, the Commissioner may waive or revise certain specific requirements of this Manual, when such action would effectively advance a new technology and/or state of knowledge. The burden of testing or otherwise demonstrating that a new technique is likely to be effective rests with the requestor.

1.4 Definitions. Words used in this Manual shall have the meanings given herein, unless otherwise expressly stated. Unless otherwise expressly stated, words not defined herein shall be given the meaning set forth in the City Code, as amended; words not defined therein shall be

given the meaning set forth in Title 47 of the United States Code, as amended; and words not defined therein shall have their common and ordinary meaning.

CHAPTER TWO: REQUIREMENTS

2.1 Type of Work. This Manual applies to work on existing underground facilities or the installation of new underground facilities (collectively, "Utility Construction Work"). The person owning the facilities or its authorized contractor (who must be licensed to work in the City) shall coordinate and execute the work in accordance with this Manual.

2.2 Bonding. The performance bond to be provided to the City for the duration of the Permit (as defined in Section 3.0 of this Manual) shall be in an amount equal to the estimated value of the construction in the right-of-way. The facility owner or its contractor shall furnish sufficient information regarding these construction costs to adequately support the bond amount proposed.

2.3 Insurance. Any person placing facilities in the rights-of-way shall file with the City evidence of workers' compensation and liability insurance as specified in the City Code.

2.4 Planning. Pursuant to Section 42-714(d) of the City Code, any utility company with underground facilities within the City's right-of-way is required to submit a five-year plan in GIS format, updated annually, showing street locations of proposed construction.

2.5 Street Safety.

2.5.1 The Department considers street safety to be a high priority and an essential and indispensable component of every project from the planning through the design and construction phases. Companies that install, maintain, service, operate, or otherwise work upon facilities within the street right-of-way in the City are obliged to consider the safety of the general public. This includes, but is not limited to, providing appropriate traffic control and provisions for alternative pedestrian traffic routes.

2.5.2 All reasonable measures shall be taken for the protection and safe operation of traffic during and after installation of facilities. For all facilities maintenance or construction operations within public street rights-of-way, the following requirements apply:

2.5.2.1. When a Permit is required, a traffic control plan shall be prepared in conformance with the current Delaware Manual on Uniform Traffic Control Devices ("MUTCD") and shall be submitted with the application for a permit.

2.5.2.2. This traffic control plan is subject to review and approval by the Department prior to issuance of a Permit.

2.5.2.3. The Police Department shall review traffic control plans submitted with Permit applications to determine the need for police personnel for traffic control, which, if necessary, shall be provided at the permittee/contractor's expense. A road closure permit shall be required for any work that the permittee plans to perform that necessitates a road closure. Permittee shall obtain a road closure permit prior to closing any street in the City. Failure to obtain a road closure permit shall be cause for suspension of all work.

2.5.2.4 Failure by the facilities owner or its contractor to provide for traffic safety in accordance with the approved plan will be cause for immediate suspension of operations. Work will not be allowed to continue until the City is satisfied that the traffic control has been installed in accordance with the approved plan.

2.5.2.5 When utility work requires the closure of a City street, all appropriate emergency companies shall be notified, including police, fire, and ambulance services. The duration of the closure must be included in the notification.

2.6 Street Markings.

2.6.1 Paint used in utility location shall conform to the color schedule for the service established by the Delaware Underground Damage Prevention and Safety Act.

2.6.2 Any temporary street markings approved as a part of the traffic control plan to assist with providing good traffic flow and public safety shall conform in color, width, and type given on the traffic control plan.

2.6.3 Any temporary street markings provided for traffic control during the work period shall have a minimum 60-day life expectancy. At the completion of the work, the painted marking shall be removed from the street surface by mechanical brushing or grinding and the surface shall be treated with a bitumastic coating to make the temporary markings inconspicuous.

2.6.4 Any traffic control markings existing prior to the cutting of the road shall be reinstalled on the repaired surface in the equivalent color, width, type of paint, and spacing as existed prior to construction.

2.7 Flaggers and Traffic Control Equipment. The contractor shall provide traffic "flaggers" in accordance with the requirements of the traffic control plan and the MUTCD.

2.8 Inspection of Traffic Control.

2.8.1 An American Traffic Safety Services Association Traffic Control Supervisor designated by the facilities owner shall make daily inspections of the traffic controls during the work and take necessary action to assure that it is in compliance with the approved traffic control plan.

2.8.2 When a facilities owner or a contractor employed by the facilities owner fails to follow the approved traffic control plan, City inspectors shall suspend the work until the approved traffic control is in place. Failure to follow the traffic control plan violates 21 *Del. C.* § 4105 and is subject to penalties as provided by law.

2.9 Design. Facilities installed in the right-of-way area of City streets must meet or exceed the requirements listed below.

2.9.1. Electric power and communications shall be installed in accordance with the recommendations of the National Electric Safety Code ("NESC").

2.9.2. Water transmission and distribution piping shall be a minimum of four (4) feet below the surface to the top of the pipe.

2.9.3. Pipelines carrying natural gas and hazardous materials must comply with U.S. DOT Rules and Regulations governing transportation of such materials, including CFR 49, Parts 192 and 195.

2.9.4. Pressure pipelines and liquid petroleum pipelines not covered in 2.9.3 above: Piping shall be a minimum of four (4) feet below the surface to the top of the pipe unless covered by a similar recognized industry code.

2.9.5. Fiber optic facilities: American National Standard for the Physical Location and Protection of Below Ground Physical Plant (EIA/TIA-590) and NESC provisions for communications cable apply.

2.10 References. The UDM, latest edition, the MUTCD, latest edition, and the Standard Specifications for Road and Bridge Construction, dated August 2020 or latest edition, are cited as appropriate reference sources for methods and materials not otherwise delineated herein. It is recognized that many unique engineering and operational issues exist in an urban environment. As such, not all sections of the various State manuals referenced in this Manual apply in this urban environment. Other industry publications and codes may provide useful reference

information. Sound professional engineering judgment must be applied in addressing these issues. Any deviations from the above noted references shall be approved by the Commissioner in writing prior to implementation.

CHAPTER 3: PERMIT PROCEDURE AND REQUIREMENTS

3.0 Purpose. The purpose of the Utility Construction Permit (the "Permit") is to alert the City when the work proposed is taking place, and to facilitate verification of traffic control, notification to police, fire, and ambulance services, and inspection of the work to ensure the integrity of the street.

3.1 Compliance. Compliance with this Manual is mandatory for all excavation work within the rights-of-way of City streets. Requests for waivers from any part of this Manual shall be made in writing to the Commissioner. A waiver may be granted, or revision made, if the utility or contractor demonstrates to the Commissioner that the issuance of a waiver will not deviate from the intent of this Manual. Any waiver granted shall be made in writing and kept at the project site for proof of waiver.

3.2 Applicability. The requirements shall be applicable to every firm, utility, contractor, or other entity that for any reason finds it necessary to cut the surface and excavate in any street or pavement within the City right-of-way.

3.3. Permit application is available online at the following link:
<https://cityworks.wilmingtonde.gov/PLL/template/Home.aspx>

The online application process consists of the following steps:

1. Sign into your account online (or request an account online if you have not already done so)
2. Complete Permit application online
 - a. Enter work location
 - b. Provide details about the work
 - c. Upload supporting required documents
 - d. Confirm and submit
3. Receive confirmation that application is under review
4. Receive bill for Permit fee and final restoration costs
5. Pay fee and final restoration costs
6. Receive approved Permit

3.3.1 The Permit will be closed ninety (90) days after issuance. In cases where the work has not been completed within the 90-day period, the permittee shall apply for an extension. Unless otherwise approved in writing by the City, there will be no more than two (2) extensions. Permit fees shall apply for each Permit extension.

3.4 Permit Fees.

3.4.1 Permit fees, where allowed by law, are designed to recover, among other things, expenses related to processing and record keeping; research related to Permit evaluation; applicable field inspections; review of traffic control and public safety issues; coordination with other City departments; and communications. Final street restoration shall be performed by the City as determined during the permitting application process. Cost for final restoration shall be born solely by the permittee.

3.4.2 Permits shall be issued only upon payment of all applicable Permit fees including final restoration costs. Permit fees are listed in Appendix A. No other fees shall apply to

underground excavation work. The Permit fees will be adjusted from time to time to achieve a neutral cost position for the City.

3.5 Permit Close Out. Upon completion of all utility work associated with the Permit, the permittee shall request a Permit close out.

3.6 Notices. All mail shall be directed to:

Commissioner of Public Works
City of Wilmington
Department of Public Works
City/County Building, 6th Floor
800 N. French Street
Wilmington, DE 19801-3537

CHAPTER 4: STANDARD CONSTRUCTION METHODS

4.0 Purpose. To ensure the quality of Utility Construction Work, as defined in Section 2.1 of this Manual, such work shall be conducted utilizing the following guidelines.

4.1 Open Cutting.

4.1.1 While "Open Cuts" in roadways are undesirable, it is recognized that in an urban environment the majority of Utility Construction Work must be conducted using this method.

4.1.2 When open cutting is allowed, the facilities owner or contractor employed by the facilities owner must adhere strictly to the backfill, backfilling, and restoration requirements specified in this Manual or as modified due to special conditions approved in writing by the Commissioner.

4.1.3 Prior to any operation in the City right-of-way, permittee shall notify the Department at least twenty-four (24) hours in advance in writing for inspection services. Failure to provide proper notice shall result in suspension of all Utility Construction Work and termination of Permit.

4.1.4 The permittee is required to submit a schedule to the Department every two (2) weeks outlining its plans for the next two (2) weeks for the duration of the Utility Construction Work. This activity schedule shall reflect specific details related to actual construction activities that the contractor plans to have in progress during this two-week period. The two-week schedule shall include information concerning planned road closures. This activity schedule is to be submitted to the City no later than noon of each Thursday. Failure to comply will result in a suspension of all Utility Construction Work. Any changes to planned Utility Construction Work shall be reported by the permittee on the City Traffic Advisory Collector web application.

4.2 Excavation.

4.2.1 Whenever practical, the contractor shall saw cut the pavement over the area of proposed excavation prior to actual excavation. If saw cutting prior to excavation is not practical, the pavement surrounding the opening shall be saw cut to provide a rectangular repair of the road surface prior to temporary restoration. A circular core bore, keyhole, or vacuum excavation method may be utilized only as approved by the Commissioner. Flowable fill or Class C concrete shall be used to backfill for these types of excavation.

4.2.2 Pavement removed shall be disposed of at the contractor's expense at an offsite location and shall not be permitted to be used in the backfill material.

4.2.3 Excavated material shall not be used as backfill in the area of the work that constitutes the roadway or pedestrian pathway. Such material shall be promptly removed from the work

site. It shall not be stored at the work site overnight except during emergencies or with specific authorization of the City. Care must be taken as to the location of stockpiled material so that drainage will not be adversely impacted.

4.2.4 Any water encountered during excavation either from ground water, potable water system, or stormwater shall be pumped from the excavation and discharged using approved dewatering practice in accordance with the requirements of the Delaware Erosion and Sediment Control Handbook prior to release to an existing gutter, swale, or other drainage structure. It is the Permit holder's responsibility to obtain a dewatering permit from DNREC prior to the start of dewatering when it is anticipated that water removal shall be required. The contractor shall also pursue and maintain the pumping system to minimize undermining of the walls of the excavation during the Utility Construction Work. Water or liquid that may be the result of a broken or otherwise leaking line that is not stormwater, groundwater, or potable water shall be removed from the excavation and properly disposed of by the contractor. At no time shall liquid that is not stormwater, potable water, or groundwater be allowed to be discharged into any drainage system of the City without written approval of the Commissioner.

4.2.5 Inlet sediment control ("ISC") devices shall be placed in all drainage inlets within construction limits prior to any saw cutting or excavation work being performed. Operations shall be halted if ISC devices are not in place prior to the start of excavation. Upon completion of the Utility Construction Work, the ISC device shall be removed and the contractor shall take extreme care to not dump any material in the drainage inlet. Any debris that gets in the inlet shall be removed immediately and be properly disposed of by the contractor.

4.3 Backfill of Excavation.

4.3.1 Following completion of the work that required the excavation, the trench shall be backfilled in accordance with DelDOT Standard Specifications for Road and Bridge Construction (latest addition), Section 207.3 or as required by the standard procedures of the company if they are more stringent. Material shall be placed as shown in Figures C-1 Temporary Patch, C-2a Permanent Patch, Hot-Mix Pavements and C-2b Permanent Patch, P.C.C. Pavements with Hot-Mix overlay. All backfill shall be compacted using equipment that is specifically designed for that purpose.

4.3.2 The Commissioner may, for reasonable cause, require soil testing to determine gradation, compaction, and other parameters relevant to the proper reconstruction of the roadway. Should the City require said testing, the expense shall be borne entirely by the contractor and/or the facilities owner that opened the street. Testing shall be performed by a testing agency approved by the City with the results of the testing reported directly to the City.

4.4 Surface Treatment.

4.4.1 Temporary Restoration, In the event that hot mix asphalt is not available due to cold weather conditions, the contractor shall place graded aggregate base course in two (2) five-inch lifts and topped with two (2) inches of cold patch mix. The patched area is to be monitored on a regular basis by the facilities owner or contractor and repaired as needed until a permanent hot mix repair can be installed in accordance with Figure C-1, Temporary Patch. When conditions permit, the cold patch mix shall be completely removed, and the surface of the patch shall be temporarily restored using Type C hot-mix asphalt.

4.4.2 Steel plating of a street cut may be provided in lieu of a temporary patch for short-term interruptions of the work. Steel plates shall be utilized in accordance with Del DOT Standard Specification 801.3.3 C without exception.

4.4.3 Permanent surface repair (i.e., all final paving of patched areas) shall be performed by the City, unless it is determined otherwise by the City during the permitting process. The cost

of the final paving shall be the responsibility of the permittee and shall be encumbered prior to permit issuance. The minimum length of paving for roads subject to the five-year moratorium set forth in City Code Section 42-713(i)(1) shall be fifty (50) feet. The width of paving for such roads shall be curb to curb, full width. For roads not subject to the five-year moratorium, the minimum length of paving shall be twenty-five (25) feet and the minimum width of paving shall be one-half of the road width. The restoration cost shall be \$40.00 per square yard for trench lengths less than seventy-five (75) feet. Lengths of permanent surface restoration greater than seventy-five (75) feet shall be billed at \$26.00 per square yard. These rates shall be adjusted as necessary as detailed in section 3.4.2 of this Manual. The area shall be determined at the onset of the Utility Construction Work based on plan provided by the permittee. Adjustments to the area requiring final paving shall be made once all final patching has been completed. Any adjustments of area, and therefore cost, shall be born solely by the permittee. Additionally, any permanent patching that was not completed by the permittee prior to the permanent surface repair shall be completed by the City. The cost for the permanent patching shall be billed to the Permit holder at a rate of \$80.00 per square yard. All final payments shall be made to the City prior to Permit close out.

4.4.5 Utilities shall not be required to restore sections of roadway that include previously existing repairs or restoration, except in instances where the current work intersects with the sections containing previous street repairs. In that situation, the repair shall include resurfacing of the previously repaired area.

4.5 Damage to Existing Facilities.

4.5.1. If the contractor damages or suspects an existing facility has been damaged directly or indirectly by the contractor's actions, the contractor shall notify the Department and the owner of the damaged facility at the time of discovery.

4.5.2. The method of repair to a damaged facility must meet with the approval of the owner of the facility.

4.6 Decorative/Special Pavements. Decorative paving restoration: Any cobblestone and other special or decorative surfaces, including sidewalks, curbs and/or gutters, base and sub-base shall be restored to match original construction conditions and appearance. This restoration may entail additional pavement removal as directed by the Commissioner.

4.6.1 All decorative/special pavements shall be photographed and uploaded to the City Portal prior to work beginning. Failure to provide required photographs shall result in work being suspended until the proper photographs have uploaded and approved.

4.7 Removal of abandoned equipment at grade facilities. All abandoned equipment at grade facilities, such as manholes, water valves, gas valves etc., shall be removed and properly backfilled. The at grade casting shall be removed a minimum of eight (8) inches below finish grade and the hole shall be filled with flowable fill or Class C concrete mix.

4.8 Abandoned Pipes. Abandoned pipes shall be capped to prevent soil intrusion prior to final backfilling. Photos shall be taken and uploaded to the City Portal for proof of capping.

4.9 Details. The details contained in Appendix B shall be followed for temporary and permanent patches, respectively.

APPENDIX A
PERMIT FEES

Schedule of fees and charges

- (1) Permit application fee - \$53.00
- (2) Engineering inspection (up to 200 square yards) - \$225.00
- (3) Engineering Inspection for areas more than 200 square yards - \$1.50 per square yard
- (4) Reinspection fee applicable when time of pavement opening exceeds Permit time period - \$50.00
- (5) Final Paving
 - Paving lengths less than 75 feet - \$40.00 per square yard
 - Paving lengths greater than 75 feet - \$26.00 per square yard
 - Permanent Patching (as noted in Section 4.4.3 of this Manual) - \$80.00 per square yard

Fees (1), (2), (3) and (5) (if applicable) above are due at the time of application. The fee for item (4) will be billed to the permittee/contractor if the time period exceeds the Permit approved time allowance.

Fees as listed above are not applicable to the following:

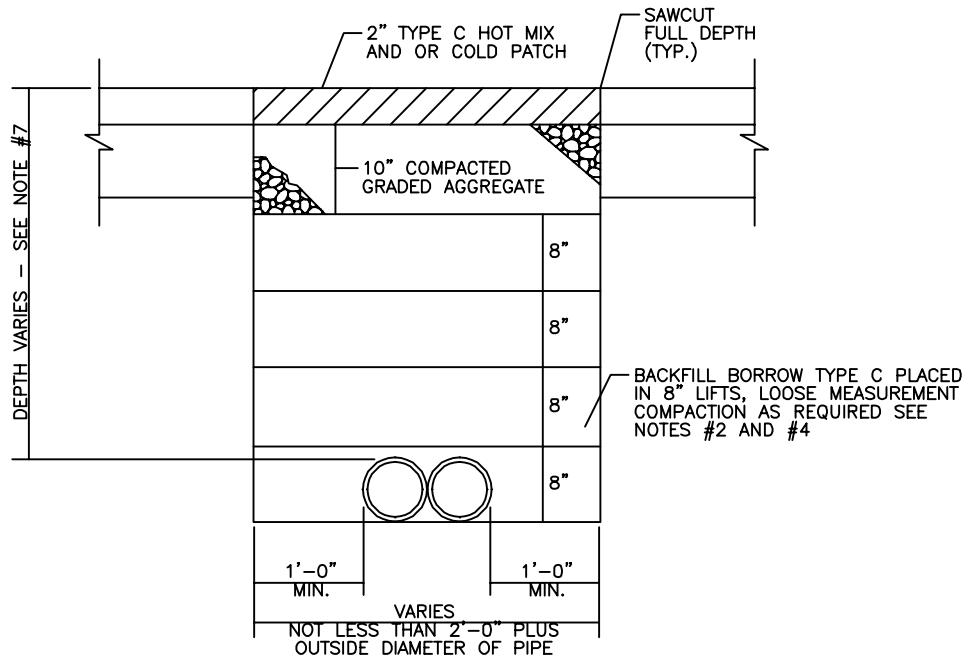
- (1) City-owned utilities.
- (2) Utilities required by the City to relocate their facilities.
- (3) Transportation improvement projects funded by federal, state, or local governments.

APPENDIX B
DETAILS

CITY OF WILMINGTON UNDERGROUND FACILITY COORDINATION MANUAL

FIGURE C-1 TEMPORARY PATCH

MINIMUM DESIGN REQUIREMENTS



NOTES:

1. TEMPORARY PATCHES THAT UTILIZED "COLD PATCH" DURING WINTER MONTHS OR AS A TEMPORARY COVER SHALL BE RESTORED USING 2" TYPE C HOT MIX BY APRIL 15TH OR SHALL BE RESTORED USING THE PERMANENT PATCH DETAILS C-2A OR C-2B
2. GRADED AGGREGATE SHALL MEET THE REQUIREMENTS OF THE DELDOT STANDARD SPECIFICATIONS, SECTION 301-GRADED AGGREGATE BASECOURSE.
3. BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS AS PER SECTION 209 AND SECTION 1001, BORROW, TYPE C OF THE DELDOT STANDARD SPECIFICATIONS, LATEST VERSION. SUBMIT MATERIAL SOIL ANALYSIS FOR APPROVAL PRIOR TO USE.
4. COMPACTION SHALL MEET THE REQUIREMENTS AS PER SECTION 207 OF THE DELDOT STANDARD SPECIFICATIONS.
5. FLOWABLE FILL IS ALLOWABLE AS BACKFILL MATERIAL. FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF THE DELDOT STANDARD SPECIFICATIONS, SECTION 208.
6. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS SET FORTH IN THE CURRENT DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
7. DEPTH - REFER TO INDIVIDUAL UTILITY STANDARDS

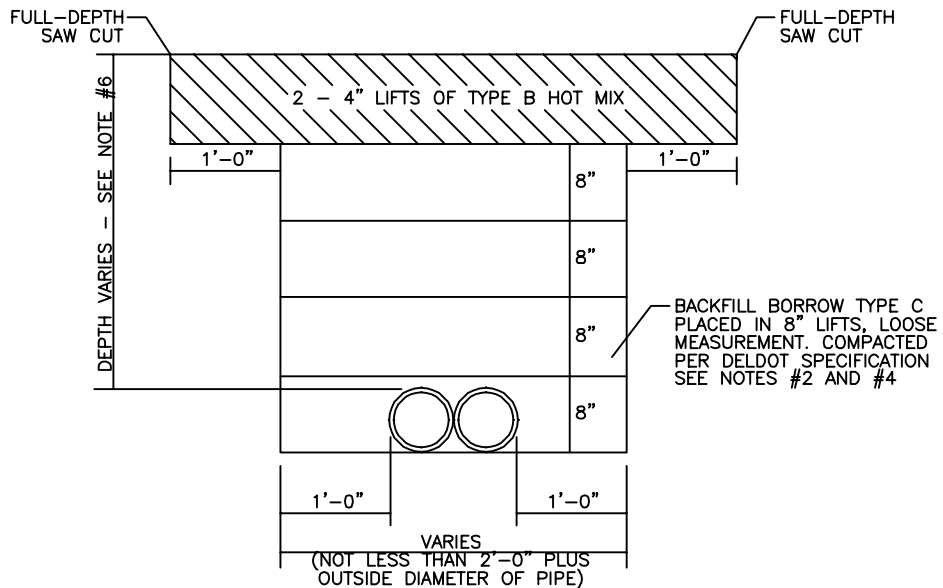


CITY OF WILMINGTON, DELAWARE
DEPARTMENT OF PUBLIC WORKS
UNDERGROUND FACILITY COORDINATION MANUAL
STANDARD DETAILS
FIGURE C-1
TEMPORARY PATCH

CITY OF WILMINGTON UNDERGROUND FACILITY COORDINATION MANUAL

FIGURE C-2a PERMANENT PATCH (SEMI-FINAL RESTORATION)

MINIMUM PERMANENT CROSS-ROAD OR LONGITUDINAL PATCH FOR
HOT-MIX PAVEMENTS ON CITY STREETS



NOTES:

1. THIS IS A MINIMUM FINAL PATCH WHEN THE CITY IS PERFORMING THE FINAL HOT-MIX PAVING.
2. GRADED AGGREGATE SHALL MEET THE REQUIREMENTS OF THE DELDOT STANDARD SPECIFICATIONS, SECTION 301-GRADED AGGREGATE BASECOURSE.
3. BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS AS PER SECTION 209 AND SECTION 1001, BORROW, TYPE C OF THE DELDOT STANDARD SPECIFICATIONS, LATEST VERSION. SUBMIT MATERIAL SOIL ANALYSIS FOR APPROVAL PRIOR TO USE.
4. COMPACTION SHALL MEET THE REQUIREMENTS AS PER SECTION 207 OF THE DELDOT STANDARD SPECIFICATIONS.
5. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS SET FORTH IN THE CURRENT DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
6. DEPTH - REFER TO INDIVIDUAL UTILITY STANDARDS

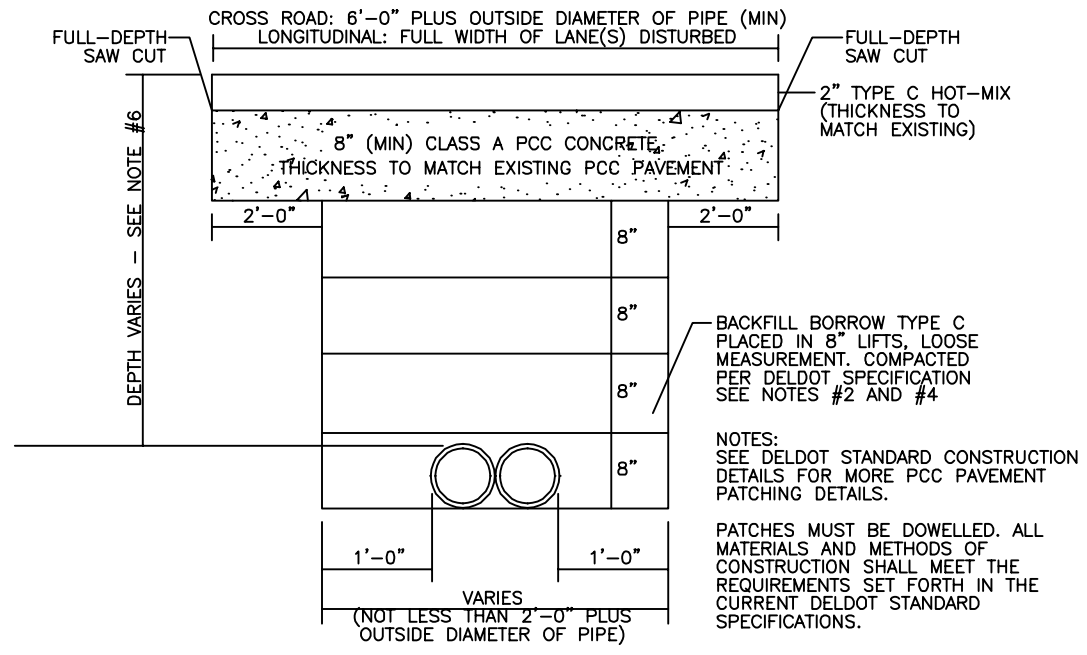


CITY OF WILMINGTON, DELAWARE
DEPARTMENT OF PUBLIC WORKS
UNDERGROUND FACILITY COORDINATION MANUAL
STANDARD DETAILS
FIGURE C-2a
PERMANENT PATCH

CITY OF WILMINGTON UNDERGROUND FACILITY COORDINATION MANUAL

FIGURE C-2b PERMANENT PATCH (SEMI-FINAL RESTORATION)

MINIMUM PERMANENT CROSS-ROAD OR LONGITUDINAL PATCH FOR
PCC OR COMPOSITE PAVEMENTS ON CITY STREETS



NOTES:

1. THIS IS A MINIMUM FINAL PATCH WHEN THE CITY IS PERFORMING THE FINAL HOT-MIX PAVING.
2. P.C.C. SHALL ONLY BE USED ONCE THE EXISTING ROADWAY PAVEMENT SECTION HAS BEEN CONFIRMED TO BE P.C.C. OR COMPOSITE PAVEMENT. USE DETAIL C-2A FOR ALL HOTMIX PAVEMENTS.
3. BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS AS PER SECTION 209 AND SECTION 1001, BORROW, TYPE C OF THE DELDOT STANDARD SPECIFICATIONS, LATEST VERSION. SUBMIT MATERIAL SOIL ANALYSIS FOR APPROVAL PRIOR TO USE.
4. COMPACTION SHALL MEET THE REQUIREMENTS AS PER SECTION 207 OF THE DELDOT STANDARD SPECIFICATIONS.
5. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL MEET THE REQUIREMENTS SET FORTH IN THE CURRENT DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
6. DEPTH - REFER TO INDIVIDUAL UTILITY STANDARDS



CITY OF WILMINGTON, DELAWARE
DEPARTMENT OF PUBLIC WORKS
UNDERGROUND FACILITY COORDINATION MANUAL
STANDARD DETAILS
FIGURE C-2b
PERMANENT PATCH