REQUIREMENTS & GUIDELINES

FOR

CHICAGO UNDERGROUND INFRASTRUCTURE SYSTEMS

September 2025

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APPENDICES

Chapter 1 Introduction

This document works in conjunction with the latest edition of CDOT's "Rules and Regulations for Construction in the Public Way" (**Regulations**) and provides further details on the requirements for permitting and construction in Chicago Underground Infrastructure Systems.

The Chicago Underground Infrastructure System (CUIS) includes the Chicago Freight and Trolley Tunnel System (CFTTS) which consists of approximately 36-miles of accessible tunnels under Chicago's Central Business District and includes the three trolley tunnels under the Chicago River at Van Buren St., Washington Blvd., and LaSalle St. The CUIS also includes the Wacker Drive Road Tunnel (WDRT), a multi-level post-tension roadway from Congress Parkway to Michigan Avenue. Finally, the CUIS includes all Utilidor systems under CDOT Jurisdiction located within the Public Way.

Chapter 2 Permitting Process Overview

2.1 General Information

Contractors who propose to use or work in the Chicago Underground Infrastructure Systems shall obtain a permit from CDOT in accordance with the Permit Requirements set forth in CDOT's Regulations document. Prior to requesting the public way permit, the Permittee shall obtain the appropriate access agreement from CDOT and the City's Department of Law ("DOL"). Electronic versions of the agreement with all required attachments shall be emailed to Jing Li (Jing.Li@cityofchicago.org), cc'ing Avia Lee (Avia.Lee@cityofchicago.org) at DOL. Access agreements require updated Certificates of Insurances (COI's) for all contractors on the agreement with correct coverage. Access agreements have terms limited to one-year periods. A contractor requiring further access to the Chicago Underground Infrastructure Systems after their agreement ends will need to sign a new agreement for the following year period. Contractors are advised to contact CDOT at least 60 days before an access agreement is set to end to request a new agreement and avoid interruptions in access. A contractor may not use or perform any work within the Chicago Underground Infrastructure Systems without an executed agreement in place.

All submittals sent to the Chicago Department of Transportation (CDOT), Division of Engineering for work within the Chicago Underground Infrastructure Systems shall conform to the following requirements specified herein.

Electronic versions of the cover sheet and submittals shall be emailed to the following parties:

Attention: Ms. Jing Li, E.I.T.
Chicago Department of Transportation
Email: Jing.Li@cityofchicago.org

Attention: Mr. Steve Freese, P.E.
GFT
Email: srfreese@gftinc.com

Attention: Mr. James J. (J.J.) Madia, P.E.
GFT
Email: jjmadia@gftinc.com

Attention: Mr. Michael Lewicki
GFT
Email: melewicki@gftinc.com

Questions regarding these requirements shall be directed at Jing Li. The complete submittal including cover sheet shall be provided to CDOT-Division of Engineering at the following address:

Ms. Jing Li, E.I.T.
Chicago Department of Transportation
Division of Engineering
2 N. LaSalle St., Suite 820
Chicago, Illinois 60602
Phone: (312) 744-3920
Email: Jing.Li@cityofchicago.org

2.2 Permit Drawing Requirements

1. The baseline for all permit drawings shall be in accordance with the latest version of the Illinois Department of Transportation (IDOT) Computer Aided Design, Drafting, Modeling and Deliverables Manual. If there are any contradictions to the additional information required below, please contact CDOT for guidance.
2. All permit drawings shall be the same size, either 11-inch x 17-inch or 24-inch x 36-inch and bound together on the short side.
3. All permit drawing submittals shall have a cover sheet with the following information:
    a. Name, address, and site location map of the project
    b. Dates – submitted approved constructed
    c. Name, address, and phone number of the project owner
    d. Name, address, and phone number of the project engineer
    e. Name, address, and phone number of the Contractor
    f. Names of the principal design professional(s) for each professional design firm used on the project
    g. Index of all drawings
    h. Drawings shall be stamped and signed by a Registered Professional Engineer licensed in the State of Illinois.
    i. Indication as to which of the indexed drawings each seal applies
    j. Registration number of the professional design firm
4. The title block and border of each sheet of the permit drawings shall contain the following information:
    a. Project name and location

b. Name, address, and registration number of the professional design firm(s) responsible for preparation of the documents

c. Signature of the project manager

d. Date of issuance of the drawings

e. Graphic and written scale

f. Drawing title

g. Drawing number

h. Revision block with appropriate revision number and revision date

5. All permit drawings which show structural modifications to the tunnels shall be stamped and signed by a Registered Structural Engineer licensed in the State of Illinois. All other drawings shall be stamped and signed by a Registered Professional Engineer licensed in the State of Illinois.

6. Unless otherwise indicated, the drawings shall comply with the requirements in the latest edition of the *Manual for Code Enforcement Officials and Design Professionals,* as published by the State of Illinois, Department of Professional Regulation.

Chapter 3 Chicago Freight and Trolley Tunnel System (CFTTS)

3.1 Permitting and Construction Process

1. The Permittee shall demonstrate to CDOT that the proposed work is necessary by showing that the existing infrastructure of the Permittee within the CFTTS in the vicinity of the proposed project is already fully utilized.
2. All interior conduit, borehole penetrations, shafts, and bulkhead installation drawings shall be submitted to CDOT for review. Notification of pending submittals shall occur at least two weeks prior to receipt of submittal.
3. At CDOT's request, the Permittee shall disclose in a letter to CDOT a list of utilities in the tunnel system and/or facilities owned by the Permittee or a list of the utilities of which the Permittee is a subsidiary.
4. First review of submittals will typically occur within three weeks (15 business days) from the date CDOT-DOE receives the construction agreement from the Dept. of Law. The review timeframe of re-submittals will vary based on the extent of the comments from the previous submittal. The above review periods may increase if multiple submittals are submitted concurrently.
5. The Permitee, at its sole cost, is responsible for all permit and conduit use fees as required by the CDOT Division of Infrastructure Management. All fees are outlined in the City of Chicago's Municipal Code, "10-20-230 Utilidor Use – Permit and fees."
6. The Permittee, at its sole cost, is required to employ the services of a Consulting Engineering Firm, (licensed in the State of Illinois and acceptable to the City of Chicago) who shall provide **a full-time designated representative** to oversee all installations in the CFTTS.
7. Prior to construction, the Consulting Engineering Firm shall complete a "pre-construction" inspection, with CDOT's CTS Consultant to review the approved plans, looking for any potential conflicts or issues that may arise during construction.
8. During construction, the Consulting Engineering Firm shall inform CDOT of any deviations from the permitted drawings. The Consulting Engineering Firm shall prepare a revised plan sheet showing the proposed changes and submit to CDOT for review and approval **prior to initiating this work**. All plan details and/or notes to be revised shall be bubbled and the corresponding revision shall be placed directly adjacent to the bubbled area. All plan revisions shall be accompanied by a revision date and, as applicable, sealed by an IL PE/SE. See Appendix A for an example plan sheet that illustrates formatting requirements for plan revisions.
9. The Consulting Engineering Firm, upon completion of the tunnel bore and conduit installations **but prior** to fiber-optic cable pulling, shall schedule a "pre-pull installation" inspection with CDOT's CTS Consultant to verify that all conduit and

junction/pull boxes have been installed in compliance with the permitted drawings and approved deviations.

10. CDOT's CTS Consultant will report any unapproved deviations in the installations including those that would adversely affect personnel safety or future freight tunnel installations. The Contractor shall correct any deviations noted and arrange for a re-inspection prior to pulling fiber-optic cables.

11. Within seven (7 days) of completing the work, the Contractor shall schedule a "post-installation" inspection with CDOT after cable pulling and splicing has been completed verifying all materials, equipment, and garbage have been removed from the freight tunnels.

12. All inspections within the CFTTS will require the Consulting Engineering Firm to provide the following field reports to CDOT (as applicable):

    a. Pre-Construction Inspection report of area, any potential conflicts

    b. Post-Tunnel Bore, pre-conduit build

    c. Pre-pull inspection

    d. Final Inspection

13. All field reports shall be submitted to CDOT and CDOT's Consultant **within ten (10) business days. Failure to do so will restrict the Owner, Engineering Firm, and the Contractor from accessing CFTTS to perform future work.**

3.2 Design Requirements

1. Fiber-optic conduit installation drawings shall show at a minimum:
    a. A detailed plan and section drawings of all intersections showing all existing conduit, junction box and pull box locations. These drawings shall also indicate in detail the location of the proposed conduits, junction boxes and pull boxes complete with their means of attachment to the tunnel lining.

    b. A detailed plan and section drawings of all conduit transition points (where conduit transverses the tunnel from one side to the other, etc.) showing all existing conduit, junction box and pull box locations. These drawings shall also indicate in detail the location of the proposed conduits, junction boxes and pull boxes complete with their means of attachment to the tunnel lining.

    c. Detailed plans and section drawings of all tunnel areas that are congested and where proposed routing of utilities in exact conformance with CDOT requirements is prohibitive. These plans and details/sections shall show all existing utilities. These drawings shall also indicate in detail the location of the proposed conduits, junction boxes and pull boxes complete with their means of attachment to the tunnel lining.

d. Detailed section drawings of all tunnel areas where proposed utilities are required to transition due to obstructions such as junction boxes, pull boxes, electrical distribution panels, communication equipment, tunnel spurs, shafts, light fixtures, etc.

2. Tunnel bore drawings shall show at a minimum:

a. Detailed plans of the surface and of the tunnel showing the location of the proposed tunnel bore, the proposed manhole installation, existing utilities and other existing infrastructure.

b. Detailed section of the tunnel bore location showing the location and geometry of the proposed borehole, proposed manhole installation, existing utilities and other existing infrastructure. Pertinent elevations shall be shown including the top of pavement/grade, bottom of excavation, penetration of tunnel lining, tunnel invert and known inverts of existing utilities.

3.2.1 Tunnel Structural Design Requirements

1. All submittals which involve tunnel structural modifications, including but not limited to greater than 12-inch diameter tunnel lining penetrations, multiple penetrations which require the removal of 1.25-square feet of tunnel lining within a 4’ x 4’ area, bulkheads, columns and conduit supports, which will affect the integrity in any way, shall supply structural calculations which support the details shown on the permit drawings.

2. All submittals for the installation of electrical and mechanical equipment, including but not limited to pumps, fans, lighting fixtures and electrical distribution equipment, shall include calculations which support the details shown on the drawings.

3. All calculations shall be submitted on 8.5-inch x 11-inch paper, printed on one side only and separated by project feature or engineering discipline.

4. The cover sheet of all structural calculations shall be signed and sealed by a Registered Structural Engineer licensed in the State of Illinois. The cover sheet of all other calculations shall be signed and sealed by a Registered Professional Engineer or Registered Structural Engineer licensed in the State of Illinois. The expiration date of the license shall be shown with the seal.

5. In addition to the required seals and signatures, the cover sheets of all calculations shall include the following information:

   a. Name and address of the project

   b. Name, address, and phone number of project owner

   c. Name, address, and phone number of project engineer

d. Name, address, and phone number of Contractor (if applicable)

e. Names of the principal design professional(s) for each professional design firm used on the project

f. All applicable codes utilized on the project

g. Index of all calculations

h. Registration number of the professional design firm

6. The title block of each calculation page shall at a minimum show the following information:

   a. Name of the project

   b. Project feature covered by the calculations

   c. Name of the design professional responsible for the calculation

   d. Name of the design professional responsible for checking the calculation

   e. Name of the professional design firm

   Unless otherwise indicated, the calculations shall comply with the requirements in the latest edition of the *Manual for Code Enforcement Officials and Design Professionals*, as promulgated by the State of Illinois, Department of Professional Regulation.

3.2.2 Conduit Design Requirements

1. All conduits (rigid and flexible) and hangers shall be of a corrosion resistant material or shall be suitably protected to withstand the tunnel environment including hydrostatic pressures. The following conduit materials are acceptable for installation within the tunnel systems:

   a. Aluminum

   b. Galvanized Steel

   c. Fiberglass

   d. Stainless Steel

   e. Schedule 80 PVC may be allowed for communication and non-power infrastructure upon CDOT approval.

2. The following materials are not acceptable for use as conduit, inner duct or hangers within the tunnels:

   a. Plastic

   b. PVC, CPVC or other chloride containing materials

3. Material acceptable for inner duct shall be limited to high-density polyethylene or

MaxCell Fabric Innerduct.

4. Maximum allowable conduit size in the tunnel systems shall be limited to 4-inches. The use of larger conduit sizes will require approval from CDOT prior to submitting the proposed construction documents.

5. All conduits passing under the Chicago River (i.e. through the tunnel bulkheads) shall be capable of resisting a hydrostatic head of 135-feet. All connections for conduit passing under the Chicago River shall be watertight. All conduit materials listed in Section 3.3.1 herein shall be considered acceptable materials for conduits passing under the Chicago River. In addition to conduit connections passing under the Chicago River being watertight, all sleeves connecting conduits through bulkheads shall be watertight.

6. All conduits connected with the stainless steel bulkhead sleeves shall have suitable dielectric isolation from the bulkhead sleeves. The following methods of isolation are acceptable:

    a. Dielectric isolating coupling

    b. Dielectric isolating flange

7. All conduits installed within the tunnels and located within the middle 3-feet of the tunnel's horizontal cross-section shall have a minimum vertical clearance of at least 6.5-feet measured from the bottom of the conduit to the invert of the tunnel. The use of flexible aluminum or stainless steel conduit may be used, upon prior approval from CDOT, in situations where using rigid piping would not meet the minimum clearance requirements. Flexible, liquid-tight or small diameter conduit (1-inch and 1.25-inches) can be used in situations where large diameter conduits would not meet the minimum clearance requirements.

8. All conduits are to be installed as close as practically possible to the tunnel crown or tunnel walls. Care is to be taken to ensure that conduits crossing tunnel intersections do not impede future conduit installations or tunnel accessibility. All submittals shall provide detailed plans and sections of all tunnel intersections to show the methods and conduit route to be used to maintain the minimum clearance requirements.

9. All conduits shall be clearly identified using a phenolic nameplate or self-adhesive moisture resistant sticker attached every 300-feet and at each side of tunnel intersections. Conduit identification shall be attached prior to the "pre-installation" inspection. Each label shall contain the following information:

    a. Conduit owner

    b. Twenty-four hour telephone contact number

    c. Owners Asset ID #

10. Conduit hangers shall be limited to metallic pipe hangers suspended from tunnel lining with threaded metal rod, unistrut and U-bolts or unistrut and metallic pipe straps. Conduit hangers, threaded metal rod, unistrut, U-bolts and metallic pipe straps shall be hot dipped galvanized steel or stainless steel. Conduit hangers shall be anchored to tunnel lining with Hilti HIT-HY-200 system utilizing threaded rod, or approved equal. Product data for the proposed anchoring system shall be submitted in accordance with the product submittal requirements outlined in Section 3.2.2.

3.2.3 Junction and Pull Box Requirements

1. All junction and pull boxes shall be of a corrosion resistant material or shall be suitably protected to withstand the tunnel environment. The following materials are acceptable for junction and pull box installations within the tunnel systems:
    a. Aluminum
    b. Galvanized Steel
    c. Fiberglass
    d. Stainless Steel
2. The following materials are **not** acceptable for use as junction and pull box installations within the tunnels:
    a. Plastic
    b. PVC, CPVC or other chloride containing materials
3. Junction and pull boxes will be allowed at borehole locations and shall observe the following spacing limitations within the tunnel systems:
    a. Junction and pull boxes shall be located at a minimum of 25 feet from all tunnel intersections. For typical tunnel intersections, the start of the intersection will be the start of the radius of the tunnel curve.
    b. Junction and pull boxes shall be located at a minimum of 20 feet from the face of all tunnel bulkheads.
    c. Junction and pull boxes shall be located at a minimum of 15 feet from other junction and pull boxes already installed in the tunnels. An exception may be granted for side-to-side junction and pull boxes.
    d. In the instance where the proposed junction and/or pull boxes are placed side by side with an existing box, the proposed box shall maintain the same profile as the existing box.
    e. Under no circumstances will any junction or pull box be installed within river crossing tunnel segments.

f. Junction boxes shall be installed every 1,000 feet. In between junction boxes a six inch by six inch pull box may be used.

g. Junction and pull boxes shall allow for full access to tunnel bore and its link-seal to allow for maintenance and repairs if they were to become necessary.

4. All junction and pull boxes shall adhere to the maximum dimensions listed below. Prior approval from CDOT is required for proposed boxes that exceed the following maximum dimensions:

   a. Maximum projection from tunnel crown or wall: 15-inches.

   b. Width: limited to 36-inches; 24-inches is the preferred maximum width.

   c. Length: limited to 36-inches; 24-inches is the preferred maximum length.

   d. 2-inch and smaller diameter conduit shall utilize a maximum box size of 24-inches x 24-inches x 15-inches.

   e. 3-inch to 4-inch diameter conduit shall utilize a maximum box size of 36-inches x 36-inches x 15-inches.

   f. 6-inch and larger diameter conduit (if approved by CDOT) shall utilize a maximum box size of 48-inches x 36-inches x 15-inches.

5. All junction and pull boxes shall be clearly identified using a phenolic nameplate or self-adhesive moisture resistant sticker which shall be placed on a fixed part of the box (i.e. not on the removable door) with the following information:

   a. Junction or pull box owner

   b. Twenty-four-hour telephone contact number

   c. Owners Junction Box Asset ID #

6. All junction and pull boxes shall conform to the contour of the tunnel at their installation location.

7. Nothing can be hanging out or obstructing the closing of the junction box. The junction box must be closed completely.

Acceptable

Unacceptable

3.2.4 Borehole Requirements

1. Proposed tunnel bore submittals shall only include the necessary information for the construction of the borehole. Proposed borehole submittals shall not include any drawings proposing the installation of new conduits within the tunnels or in trenched construction, except for short laterals to connect to an adjacent building.
2. No new borehole shall be constructed within 500-feet of an existing borehole belonging to the Permittee, a utility owned by the Permittee, or a utility of which the Permittee is a subsidiary. CDOT-DOE may waive this requirement if the Permittee can prove that their nearby existing boreholes are already used to capacity.
3. All annular spaces of the borehole, casing and inner duct shall be mechanically sealed using a link-seal or duct plug. The tunnel penetration sealing or other tunnel lining repairs shall be made with non-shrink cement mortar.

3.2.5 Bulkhead Requirements

1. The assumed river water level for design purposes is at Elevation ± 0.0 feet Chicago City Datum (CCD), The below grade bulkhead between the Chicago Freight Tunnel and the building in question shall be designed to resist an equivalent fluid pressure of 75 pounds per cubic foot below the design river level.
2. Any penetrations of the CFTTS into the building shall be sealed in a manner which prevents the passage of water into or out of the building.
3. For bulkheads with access doors, a pipe with provisions for a shut-off valve located below the door opening shall be provided to check for water in the tunnel before the door is opened.
4. Embedded metals which have exposed parts shall either be hot-dip galvanized in accordance with Chapter 13-120 of the Chicago Building Code or corrosion resistant steel.
5. Concrete Construction shall be in accordance with all applicable ACI Code.
6. Steel Construction shall be in accordance all applicable AISC Code.
7. A minimum of two core samples of the existing freight tunnel concrete lining shall be taken at the proposed bulkhead location. One core shall be taken at the 2 or 10 o'clock position and the other at the 4 or 8 o'clock position. The core locations shall be diagonally opposite of each other. The core samples shall be tested for compressive strength in accordance with Chapter 13-120 of the Chicago Building Code to establish allowable design values for transfer of the unbalanced load acting on the bulkhead to the existing concrete tunnel lining. All core holes shall be filled flush to the surface with epoxy grout upon completion of the coring

operations. Design loads shall be shown on the permit drawings, along with the material test results.

8. Bulkhead Design Criteria

There are three (3) types of bulkhead designs used in the CFTTS.

Type 1 – Concrete Bulkhead for River Crossing, no access door

Type 2 – Concrete Bulkhead for River Crossing with access door

Type 3 – Concrete Bulkhead (**Non-River Crossing**), solid, no access door

a. Materials

i. Concrete

Solid Bulkheads: $f'_c = 4000$ psi @ 28 days
Access Bulkheads: $f'_c = 4000$ psi @ 28 days

ii. Reinforcement: ASTM A615, Grade 60, epoxy-coated ($f_y = 60$ ksi)

iii. Fibers: Polypropylene, 1.5 lbs. /cu. yd.

iv. Concrete Placing Temperature

Solid Bulkheads: $T \leq 65^oF$

Access Bulkheads: $T \leq 65^oF$

v. Access Doors: Stainless Steel AISI 304, designed to resist 50 feet hydrostatic pressure acting on either side.

vi. Existing Concrete Tunnel Lining: Assumed $f'_c = 2000$ psi- To be verified at each bulkhead location by concrete core sampling and testing.

vii. Hydrophilic Water Stop: Must be Comprised of Non-Bentonite, modified chloroprene rubber. It must be place immediately preceding the concrete pour to minimize the expansion. It must be place around the entire circumference of the tunnel and 6" away from the finished face of the bulkhead, at the location of every form that is constructed.

b. Driving Force

i. Case I: Water load only, equivalent to 50 feet hydrostatic pressure.

ii. Case II: Combined water load and silt load, equivalent to 45 feet hydrostatic pressure and 30 feet of silt (γ_{sat} = 90pcf, lateral), with allowance for 1/3 overstress.

c. Resisting Forces (Conservative)

i. #6 dowels for shear resistance = 5 kips/dowel for $f'_c = 2000$ psi (existing concrete). This value will adjust accordingly for $f'_c = <2000$

psi as determined by core testing of the tunnel within 10'of proposed Bulkhead.

ii. Frictional Resistance = 0.60 x concrete dead load.

iii. Bond = 10 psi (maximum) over lower half of tunnel perimeter surface.

d. Factors of Safety

i. F.S. = $\frac{Resisting\ Force}{Driving\ Force} = \frac{Dowels+Friction}{Driving\ Force} \geq 2.5$

ii. F.S. = $\frac{Dowels+Friction+Bond}{Driving\ Force} \geq 3.0$

3.2.6 Joint Build Requirements

1. Detailed map of CFTTS Joint Build / Server Farm can be found in Appendix C.
2. The design shall be based on the existing conditions within the freight tunnel. CDOT may require a walk out of the proposed conduit route prior to tendering submittals.
3. Only 2 in. rigid conduit will be allowed in the conduit restriction zone (see Appendix C). This area is located from Station 6+44 on the north end to station 2+78 on the south end.
4. All conduit is to be installed using Unistrut, leaving 1.5 in. of space at the top and bottom of each Unistrut.
5. The Joint Build junction boxes will be used solely as a connection point with the tunnel bore. Spooling or splicing of fiber optic cable is prohibited within these junction boxes.
6. No new pull boxes or junction boxes are allowed within this area.
7. All splice locations outside of the conduit restriction zone must be indicated on the permit drawings. If no splice is indicated, a pull box or rigid split pipe will be utilized in lieu of a junction box.
8. Junction box assignments for splicing outside of the conduit restriction zone will be issued on a case-by-case basis, with the location to be determined during the initial walk out.
9. All conduit penetrations into the tunnel bore junction boxes will be accomplished by using a hole-saw or hydraulic punch press, with a locking ring securing the conduit to the junction box.

3.2.7 Product Submittals

1. Copies of manufacturer's data for all commercial products to be used shall be submitted along with any applicable drawings and calculations.
2. Manufacturer's data shall be submitted on 8.5-inch x 11-inch paper, printed on

one side only and separated by product. Photographic reproductions of manufacturer's brochures and other information are preferred to maintain a consistent format to the submittal. Manufacturer's data and/or catalog information pertaining to interior conduit installations or boreholes does not have to be submitted under separate cover but may be included on the drawings. CDOT reserves the right to request such information that is deemed pertinent to permit compliance.

3. Manufacturer's data shall clearly indicate the following information:
    a. Manufacturer's name, address, and telephone number
    b. Model number of product
    c. Product nominal size, overall dimensions, and materials of manufacture
    d. Applicable standards or certifications to which the product is manufactured, such as ASTM, ANSI, ICC-ES and NEMA
    e. Applicable product ratings such as allowable operating pressure, electrical rating, and output capacity
    f. Applicable product MSDS information
4. Manufacturer's data shall be submitted with a cover sheet which shall include the following information:
    a. Name and address of the project
    b. Name, address, and phone number of project owner
    c. Name, address, and phone number of project engineer
    d. Name, address, and phone number of Contractor (if applicable)
    e. Index of all product submittals

3.3 Tunnel Access Notification Requirements

1. All work within the CFTTS requires an access monitor be present, which will be provided by CDOT or CDOT's CTS Consultant. Entry into the tunnel system is prohibited without an access monitor present. One day entries are limited to Tuesday's and Thursday's for the Chicago Freight Tunnels. Multiple day projects shall commence on Tuesday or Thursday and continue uninterrupted daily until completion. CDOT reserves the right to reduce daily tunnel access to Tuesday through Thursday's **only.**

2. The Contractor / Consulting Engineering Firm shall notify CDOT (Jing Li) and CTS Consultant (Steve Freese & Michael Lewicki) via email by 10:00 am, one business day in advance of tunnel entry. All notifications submitted sooner than 48 hours in advance of the entry will be rejected. The entry notification must include the

following information: company name(s), list of personnel names accessing the tunnel, start and finish time, a description of the work being performed, along with the location, and a copy of the public way permit.

3. All entrants into the CFTTS must have a clear color copy of their Driver's License/State ID and a Confined Space Training certificate no older than two years on record with CDOT-DOE. The driver's license shall be placed in the center of a 8-1/2 x 11 sheet on company letterhead (portrait orientation). One (1) driver's license shall be placed on the letterhead with the confined space certificate on a separate sheet. These two items should be in the same .pdf file, emailed to CDOT.

4. Entry and exit times into and out of the CFTTS shall occur during the weekday between the hours of 8 am to 4 pm. If entry is required outside of weekday hours, CDOT-DOE and the CTS Consultant will require a minimum of five (5) business days advance notice to provide access monitoring. Entry on a holiday will only be allowed if an emergency exists and requires immediate CDOT approval and coordination.

   Additionally, the Contractor maybe subject to any fees for access monitoring duties outside the normal weekday hours.

5. For any scheduled tunnel entries, all personnel listed on the entry notification shall be onsite at the entry point no later than one (1) hour after the scheduled entry time. If the 1-hour limit is exceeded, the access monitoring arrangement cannot be guaranteed and entry to the tunnel may be denied.

6. Access monitoring requested at remote access locations over extended periods of time maybe subject to all fees associated with the access monitoring duties.

3.4 Joint Build Special Requirements

1. Joint Build requirements govern the normal design and construction requirements within the CFTTS. CDOT reserves the right to modify the proposed conduit routing to meet the current and future needs of all tunnel users and maintain access to all sections of the tunnel system.

2. Upon approval of the permit drawings, the Contractor shall schedule a walk through with CDOT prior to commencing work.

3. Specific restrictions particular to the Server Farm Joint Build can be found in Appendix C.

3.5 Project Closeout Requirements

1. A complete set of As-Built drawings shall be submitted by the Permittee to CDOT for their review within fifteen (15) days of the "post-installation" inspection. **As-Built drawings are to be clearly marked in red with bubbles to indicate the**

changes from the approved and permitted documents. See Appendix A for example of how to highlight changes to the approved drawings.

2. The Consulting Engineering Firm shall provide this office with a letter, sealed by a Licensed State of Illinois Professional and/or Structural Engineer as is appropriate, stating that the work was performed in accordance with the approved plans, that all materials and construction debris has been removed and the site cleaned, and that all points of access to the tunnel system have been secured.
3. The Consulting Engineering Firm shall submit a photo log (reference Appendix C for example) of the following phases of construction (pre and post), including:
    a. Inner duct/fiber optic cable installation at each junction box location.
    b. Splice box installations in the junction box(s).
    c. Placement of the coiled slack fiber optic.
    d. Fiber optic cable being properly secured to the manhole brackets and hangers.
    e. All conduits showing, they have been properly identified and labeled.
    f. The CFTTS have been cleaned of all materials and debris.
4. All installations within the CFTTS shall be subject to inspections and approval by CDOT-DOE. If CDOT-DOE finds that the installation is not in accordance with the plans and guidelines **or** the Owner / Permitee has existing deficiencies within the CFTTS, the User / Contractor will be required to correct these prior to close-out. These deficiencies may include, but not limited too:
        a. Debris removal
        b. Junction Box repairs (Leaking, Open, Unlabeled)
        c. Materials clean-up

    All deficiencies shall be corrected to the satisfaction of CDOT-DOE at **its own expense within fifteen (15) days of the notification.**

Chapter 4 Wacker Drive

4.1 Permitting and Construction Process

1. This section outlines the Permitting and Construction Process for any proposed work within the public way of the Wacker Drive Road Tunnel (WDRT) corridor.
2. Permit Drawings shall be prepared in accordance with Chapter 2 of these guidelines. First review of the drawings typically occurs within three weeks (15 business days) from the date CDOT-DOE receives the construction drawings. Additional reviews may be required based on the extent of the comments from the previous submittal.
3. Prior to requesting pubic way permits from CDOT – Division of Infrastructure Management (DoIM), the Contractor and the Design Engineer shall schedule a preliminary onsite meeting with CDOT – DOE representatives to discuss scope of work, preliminary job limits and restoration requirements. At conclusion of this meeting, the Permittee / Contractor will be presented with a form from CDOT which shall be signed by all parties, acknowledging that work will be performed in accordance with all the above-mentioned guidelines (See Appendix B for Sample Acknowledgment Form). Attached to the form will be a drawing or sketch documenting the agreed panels planned for restoration.
4. Contractor shall provide CDOT-DOE with all required submittals in accordance with Section 4.2.3 of these guidelines. First review of the submittal package typically occurs within two weeks (10 business days) from the date CDOT-DOE receives the construction drawings.
5. CDOT - DOE will not release its authorization for public way permits to CDOT -DoIM until all submittals have been approved by the CDOT – DOE representative.
6. Prior to commencing restoration, Permitee / Contractor shall have a final meeting with CDOT-DOE representatives to confirm schedule, restoration limits, and that the required submittals have been completed.
7. During construction, the Contractor shall inform CDOT – DOE of any changes from the permitted drawings. The Contractor shall prepare a revised plan sheet showing the proposed changes and submit to CDOT – DOE for review and approval **prior to initiating this work**. All plan revisions shall be bubbled and the corresponding revisions shall be placed directly adjacent to the bubbled area. All plan revisions shall be accompanied with a revision date and, as applicable, sealed by an IL PE/SE. See Appendix A for an example plan sheet that illustrates formatting requirements for plan revisions.
8. Contractor to contact Bridge Section and obtain all necessary permits. Copies of the permit shall be provided to CDOT and CTS Consultant prior to construction.

4.2 Design Requirements

4.2.1 Wacker Drive Road Tunnel

1. All restoration work on lower Wacker Drive shall be performed in accordance to IDOT's STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (SSRBC) and special attention is called to the following SSRBC Sections:

   Section 210 FABRIC FOR GROUND STABILIZATION

   Section 442 PAVEMENT PATCHING

   With the following exception: Change the sixth paragraph of Article 442. 06 (a)(2) to "All patches shall be tied to the adjacent lane of pavement, Portland cement concrete shoulders, and curb and gutter with No. 6 transverse tie bars, 24-inch long, embedded 8 inches at 24 inches on center according to Article 420.05(b) or as otherwise directed by CDOT."

   Section 1020 PORTLAND CEMENT CONCRETE

2. Detail drawings shall be in accordance with IDOT's HIGHWAY STANDARDS, with special attention called to the following Standards:

   442101 CLASS B PATCHES

   420111 PCC PAVEMENT ROUNDOUTS

   420701 PAVEMENT FABRIC

   The Contractors shall be responsible for ensuring restoration is in accordance with the latest/current highway standards as posted on IDOT's website.

3. The thickness of the PCC used for restoration shall match the existing conditions. The final surface of the finished PCC shall be performed according to IDOT SSRBC Article 420.09(e).

4. Restoration work to all sidewalks, medians or curbs installed within the WDRT must be in accordance with Section 4.2.5 of the **CDOT Regulations** and Article 424.01 – 424.07 of the IDOT SSRBC.

5. Hot-poured joint sealer will be required for most restoration joints on Lower Wacker Drive (cold-poured may be approved by CDOT in certain situations) in accordance with Articles 442.06(i), 420.12 and Section 1050 of the IDOT SSRBC.

6. Flowable backfill is mandatory for all work in the Central Business District (CBD) unless previously approved by CDOT, **CDOT Regulations** Article 4.2.1, Flowable Backfill.

4.2.2 Upper Wacker Drive

1. Restoration work to all sidewalks, medians or curbs installed along Upper Wacker Drive must be in accordance with Section 4.2.5 of the **CDOT Regulations** and Article 424.01 – 424.07 of the IDOT SSRBC.

2. PCC mix design used for restoration of items on Upper Wacker shall be high performance concrete. The mix design shall be CDOT approved high performance concrete mix.

4.2.3 Product Submittals

1. Contractor shall provide the following documentation to CDOT's CTS Consultant for review and approval prior to concrete placement:
    a. Contractor performing work
    b. CDOT Approved Mix Design
    c. IDOT Approved Mix Supplier
    d. Reinforcement Materials: Dowel Bar / Tie Bar information per CDOT PDG manual
    e. Finishing Material (As Required: Polyurea Striping, Hot-Poured Joint Sealer, Clear Curing Compound)
    f. IDOT approved QC Testing Company with personnel, IDOT certificates, and equipment calibration documents.

Restoration work shall not commence unless <u>all</u> the above documentation has been submitted and approved by CDOT's CTS consultant.

4.3 Contractor Notification Requirements

CDOT & CDOT's CTS Consultant shall be notified of any work taking place via email, no sooner than 48 hours in advance and no later than 24 hours in advance of restoration work.

4.4 General Requirements

1. All excavations shall be in accordance with Section 4.1 of the **CDOT Regulations**.
2. Contractors shall provide photos of all phases of the pavement restoration, including:
    a. General location of the excavation
    b. Area of excavation – (Any concrete pavement adjacent to the excavation that has been undermined, or the soil has been disturbed shall be removed to the next pavement joint)
    c. Depth of the existing concrete pavement
    d. Spacing of dowel and tie bars
    e. Epoxy in the holes and around the dowel and tie bars
    f. Areas of excavation with the dowel bars, tie bars, and reinforcement fabric (if required) in place

g. Installed Geotechnical Fabric for Ground Stabilization (If applicable, WDRT from Harrison Street to Randolph Street)

3. Contractor shall perform quality control testing and documentation in accordance with the IDOT SSRBC and the Supplemental and Recurring Special Provision check sheet No. 31" Quality Control / Quality Assurance of Concrete Mixtures." Contractor can view and download the latest MI 654 and MI 655 forms from CDOT's QC/QA website at: http://www.cdotqcqa.com.

   a. All compressive strength specimens shall be 6" x 12"

4. For all other applicable restoration Standards, not specifically mentioned in this document, the Contractor shall reference CDOT's Regulations document.

4.5 Special Requirements

4.5.1 Upper Wacker Drive Bridge Deck Special Requirements

1. Upper Wacker Drive consists of a post-tensioned reinforced concrete bridge deck for a vast majority of the Wacker Drive Road Tunnel System. **Drilling or coring into the post-tensioned reinforced concrete bridge deck is not allowed.**

2. Restoration work or improvements to all sidewalks, medians or curbs that are installed directly on top of the post-tensioned bridge deck shall be in accordance with the requirements of Section 4 specified herein.

3. In the case that an expansion joint is located within the excavation limits, it will be the responsibility of the contractor to replace the entire expansion joint. Splicing of the expansion joint will not be allowed.

4.5.2 Wacker Drive Road Tunnel (WDRT) Special Requirements

1. The Lower Wacker Drive pavement consists of a 12-inch PCC jointed pavement. It should also be noted that there is existing geotechnical fabric over the subgrade of Wacker Drive from Harrison Street to Randolph Street **(Figure 4.1).**

2. Pavement coring within the Wacker Drive Road Tunnel - Restoration performed for pavement coring, shall be in accordance with the Wacker Drive restoration requirements described herein.

3. CDOT approved restoration limits must be shown in the project drawings. Typical restoration limits will be from joint to joint, the minimum dimensions for all patches shall be a length of six (6) feet and a width that includes the full width of the travel lane as approved by CDOT.

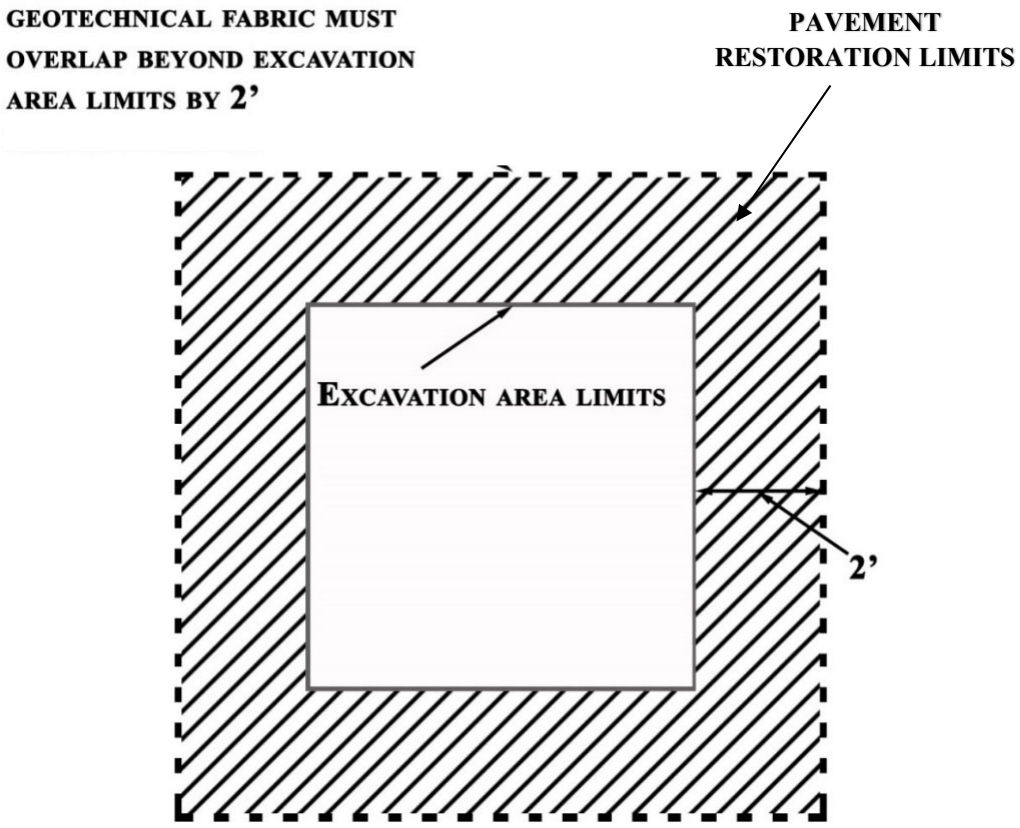


Figure 4.1 Geotechnical Fabric Limits

4.6 Work Zone Traffic Control

Work zone traffic control and detour plans shall be in accordance with CDOT's Rules and Regulations for Construction in the Public Way. Contractors shall submit a copy of their lane closure permit.

4.7 Project Closeout Requirements

1. CDOT shall be provided the following documentation required for close-out:

a. A complete set of As-Built drawings submitted by the permittee to CDOT for their review within fifteen (15) days of the post-installation inspection. **As-Built drawings are to be clearly marked in red with bubbles to indicate the changes from the approved and permitted documents. See Appendix A for example of how to highlight changes to the approved drawings.**

b. Completed CDOT MI-654 and MI-655 forms following the final break results.

Chapter 5 Utilidor Systems

5.1 Permitting and Construction Process

1. This section outlines the Permitting and Construction Process for any proposed work within any City of Chicago Utilidor System.
2. Permit Drawings shall be prepared in accordance with Section 3.2 of these guidelines. First review of the drawings typically occurs within three weeks (15 business days) from the date CDOT-DOE receives the construction drawings. Additional reviews may be required based on the extent of the comments from the previous submittal.
3. CDOT–Division of Engineering (CDOT-DOE) will review all plans for new installations and the pulling of fiber optic cable in existing inner duct. At a minimum the plans shall contain a plan view with manholes; building connections; coil slack locations; fiber optic cable size and length; splice box details and locations; and cross sections of the Utilidor with conduit assignment indicated.
4. The requirements herein specified in Chapter 5 of these Guidelines shall be shown in the plans and incorporated as plan notes. These sections shall be included with your next plan submittal for this project and for all future projects and plan submittals involving the City Utilidor system.
5. The Permitee, at its sole cost, is responsible for all permit and conduit use fees as required by the CDOT Division of Infrastructure Management. All fees are outlined in the City of Chicago's Municipal Code, "10-20-230 Utilidor Use – Permit and fees."
6. If an existing adjacent Utilidor manhole does not have a direct connection to a building the initial User shall provide at their own expense a minimum 6-inch diameter connection in accordance with CDOT–DOE requirements. The initial User understands that access to the connection shall be managed by CDOT-DOE. Users of the Utilidor shall not be restricted from utilizing the connection installed by the initial User(s).
7. CDOT is not responsible for the maintenance and repairs of the connection to the building, it is understood the User(s) shall be mutually responsible.

5.2 General Utilidor Requirements

1. Any proposed connections to the Utilidor System shall be through CDOT's existing manholes; new manholes installation shall not be permitted.
2. All penetrations into Utilidor manholes will be at a right angle to the vault wall. Penetration location will be determined by CDOT personnel and marked on the vault wall for contractor. Due to minimal thickness of the vault wall, "knockouts" will not be an approved location for vault wall penetrations. Link seals are mandatory.

3. Justification shall be provided for running an individual fiber optic cable line for a substantially length of in lieu of running a main line and branching off from an approved splice box location. The User understands that running an individual fiber optic cable line in lieu of a main line and branching off shall reduce the availability of conduits and/or inner duct.
4. CDOT prefers the storage of slack coils and splices either inside the building it is feeding, in the telecoms own infrastructure or in the joint build. If CDOT –DOE approves the coiling of slack fiber optic cable, the length of the slack shall not exceed 75 feet per each manhole. Additionally, slack coils will not be allowed in every manhole within the limits of the installation. The location and placement of slack coils and splice cases are subject to approval by CDOT-DOE.
5. If approved, splice boxes shall be spaced at a minimum of 1500 feet apart.
6. The User and/or its Contractor are required to obtain all public way permits.
7. All work shall be in accordance with the CDOT-DOE approved plans. The User shall not alter, modify, construct, or change the plans without CDOT-DOE's approval.
8. CDOT-DOE shall assign the conduit position and the number of conduits to be used by the User. Duct assignments will apply for a maximum of ninety (90) days from the approved submittal date. If the project does not commence within the ninety (90) day period, CDOT-DOE will require that the user starts over with the submittal process. If the assigned duct is occupied contact Jing Li at (312)744-3920 or email at Jing.Li@cityofchicago.org.
9. Contractor shall provide appropriately labeled photos with manhole number and direction photo facing of all phases of the installation (pre and post), including:
    a. Inner duct/fiber optic cable installation showing every manhole it has been installed and in the assigned conduit location.
    b. Splice box installation in the manhole(s).
    c. Placement of the coiled slack fiber optic.
    d. Fiber optic cable being properly secured to the manhole brackets and hangers.
    e. Fiber optic cable has been properly identified and labeled.
    f. The manhole and the area around the manhole have been cleaned of all debris.

5.3 Special Utilidor Requirements

5.3.1 WDRT Utilidor Special Requirements

1. Coiling of fiber or splice cases will not be allowed in manhole #30, located above the Washington Trolley Tunnel.
2. The WDRT Utilidor System is located beneath Lower Wacker Drive beginning at

Van Buren Street and terminating at Michigan Avenue. The Utilidor's 32 conduit package is based on a grid system of 4 columns and 8 rows (Figure 5.1). The # 1 conduit is assigned to the upper left corner facing the Chicago River with sequential numbering from left to right. The #32 conduit is assigned to the lower right corner away from the Chicago River.

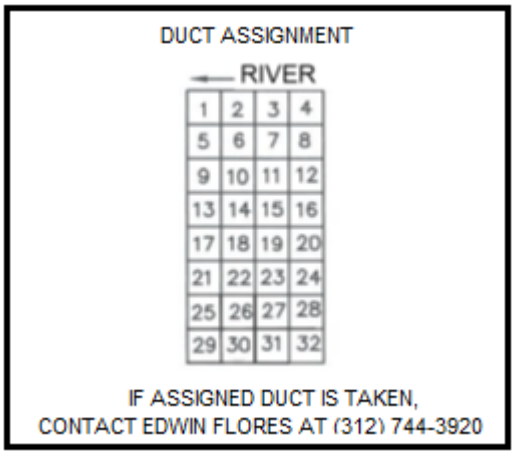


Figure 5.1 Utilidor Conduit Assignment

3. At Van Buren St. there is an Utilidor tie-in point to the CFTTS. The tie-in point is located at the Van Buren St. bulkhead. See Appendix D for tie-in details.

5.4 Utilidor Access Notification Requirements

1. The User / Contractor shall notify CDOT (Jing Li) and CDOT's CTS Consultant (Steve Freese, Michael Lewicki & JJ Madia) via email 48 hours prior to performing any activities within the Utilidor System. The notification requirements shall contain at minimum:
   a. A copy of the public way permit.
   b. The User's 24 hour contact name and telephone number.
   c. The Contractor's 24 hour contact name and telephone number.
   d. Work description, Utilidor MH location(s) and project limits.
   e. Start and end dates.

5.5 Special Access Notification Procedures

1. The following Utilidor access requirements shall be followed if the manholes are located in the WDRT median **or** if the manholes have been locked with the Stabi-Loc System.
   a. For Stabil-Loc Systems, CDOT's CTS Consultant will provide access to the locked manholes for the scheduled start date and through the project end date **ONLY**.

b. For median access within the WDRT, the Contractor will be required to provide CDOT's CTS Consultant with locks (and keys) to be installed at specified access gates. **(CDOT only allows access through gates adjacent to southbound lanes along the North / South section of Lower Wacker Drive, unless otherwise authorized by CDOT).**These contractor locks may remain in place until completion of contractor work based on provided schedule. CDOT's CTS Consultant will remove all locks after 14 days.

2. Contractors working in Joint Build manholes located in the median of WDRT shall follow the access requirements in accordance with Section 5.4, Utilidor Access Notification Procedure.

5.6 Execution of Work

1. CDOT-DOE requires that the Contractor open all manhole lids for verification and inspection of the assigned conduit. Prior to completing the pull the contractor shall pull a rope through the assigned conduit location. At CDOT–DOE discretion, rodding and televising of the conduit may also be required to ensure the passage of three (3) inner ducts. **Any deviations from the approved duct assignment shall be reviewed and approved by CDOT-DOE prior** to completing the pull of the inner duct and/or fiber optic cable.
2. The contractor shall **completely** dewater all manholes for inspection, maintenance, and installation work.
3. The placement of the coiled slack fiber optic cable in the manhole shall not interfere with the other Users of the manhole.
4. The fiber optic cable shall be placed and attached along the walls of the manhole.
5. The fiber optic cable shall be securely attached to existing brackets and hangers, if present. If no brackets or hangers are provided, the User shall provide and install them, securely attaching the cable to the newly installed brackets. Submit materials and procedures for attachment.
6. All coiled slack fiber optic cable shall be secured to itself at a minimum of eight (8) locations with zip ties or other means that will not separate when moved in the manhole.
7. All fiber optic cable shall be properly identified and labeled in all manholes.
8. No inner duct shall be allowed to extend into the manhole. The inner duct shall be terminated at the inside faces of the manhole.
9. If no inner duct exist in the conduit a minimum of three (3) inner ducts shall be pulled prior to the fiber optic cable(s) being pulled. In the event micro fiber is being installed, contractor may replace one (1) of the three (3) inner duct with one (1) MicroDucts factory bundled inner duct.
10. All installations, including cable, innerduct and/or related appurtenances shall be

subject to inspection and approval by CDOT-DOE. If CDOT-DOE finds that the installation is not in accordance with the plans and the guidelines, the User / Contractor shall correct any deficiencies to the satisfaction of CDOT-DOE at **its own expense within seven (7) days of notification.**

5.7 WDRT Utilidor Special Execution of Work

1. In manhole #18 located adjacent to the 222 N. LaSalle Street building the 32 conduit package transitions from a vertical package on the west manhole wall to a horizontal package on the east manhole wall. To identify the proper conduit assignment in the horizontal package the Contractor shall pre-pull back through from the vertical package in manhole #17 located adjacent to the 221 N. LaSalle Street building.

2. When occupying ducts in Manholes 31, 32, and/or 33 within the Utilidor (Figure 5.2), jack moon plugs are to be installed on both faces of the occupied ducts in manhole #32. Depending on which direction you are entering manhole #32, a jack moon plug will also be required upstream (#31) & downstream (#33). In addition to the jack moon plugs, all empty inner-ducts will receive duct plugs and all occupied inner-ducts will receive Simplex sealing plugs. The goal is to maintain water tight seals leading into and out of the Washington Blvd. Trolley Tunnel.

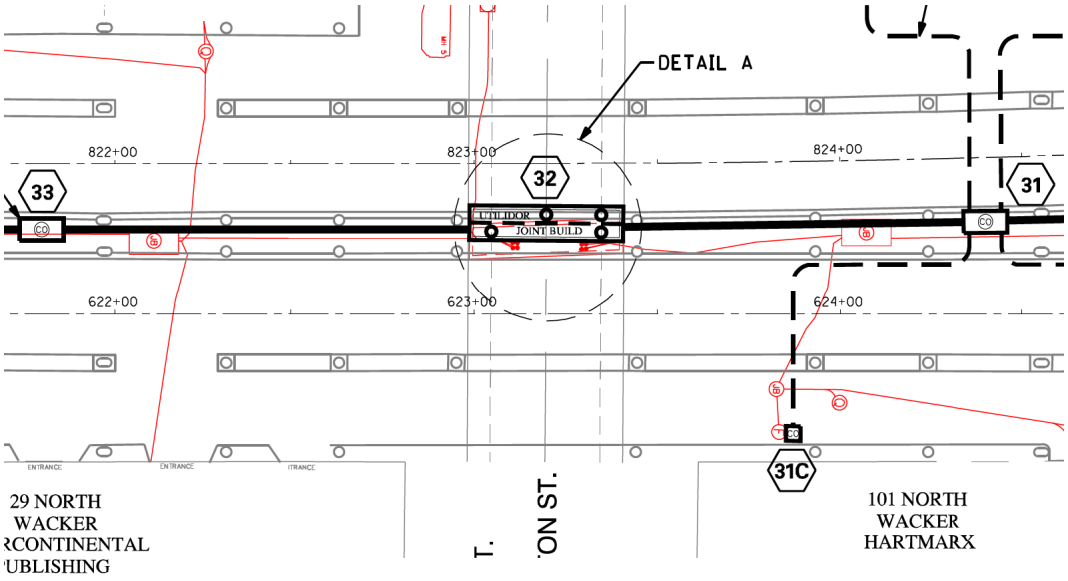


Figure 5.2 Associated Washington Blvd. Trolley Tunnel Manholes

5.8 Project Closeout

1. The telecom user / owner shall submit a cover letter to CDOT-DOE on user / owner letterhead **within fifteen (15) days** after the completion of the permitted activities stating:

   a. The inner duct/fiber optic cable installation has been inspected by the User in every manhole and it has been installed in the assigned conduit location by their Contractor and/or the User has inspected the splicing operation and/or

the placement of a splice box in the manhole(s) and it has been properly performed by their Contractor.

b. The placement of the coiled slack fiber optic cable has been installed in the approved manhole(s) and does not interfere with the access to the other User's fiber optic cable in the manhole(s).

c. The fiber optic cable has been properly secured to the manhole brackets and hangers.

d. The fiber optic cable has been properly identified and labeled.

e. The manhole and the area around the manhole have been cleaned of all debris.

2. If the fiber optic cable(s) and related appurtenances have been installed incorrectly or improperly the User shall remove and relocate its facilities at **its own expense within seven (7) days of notification.**

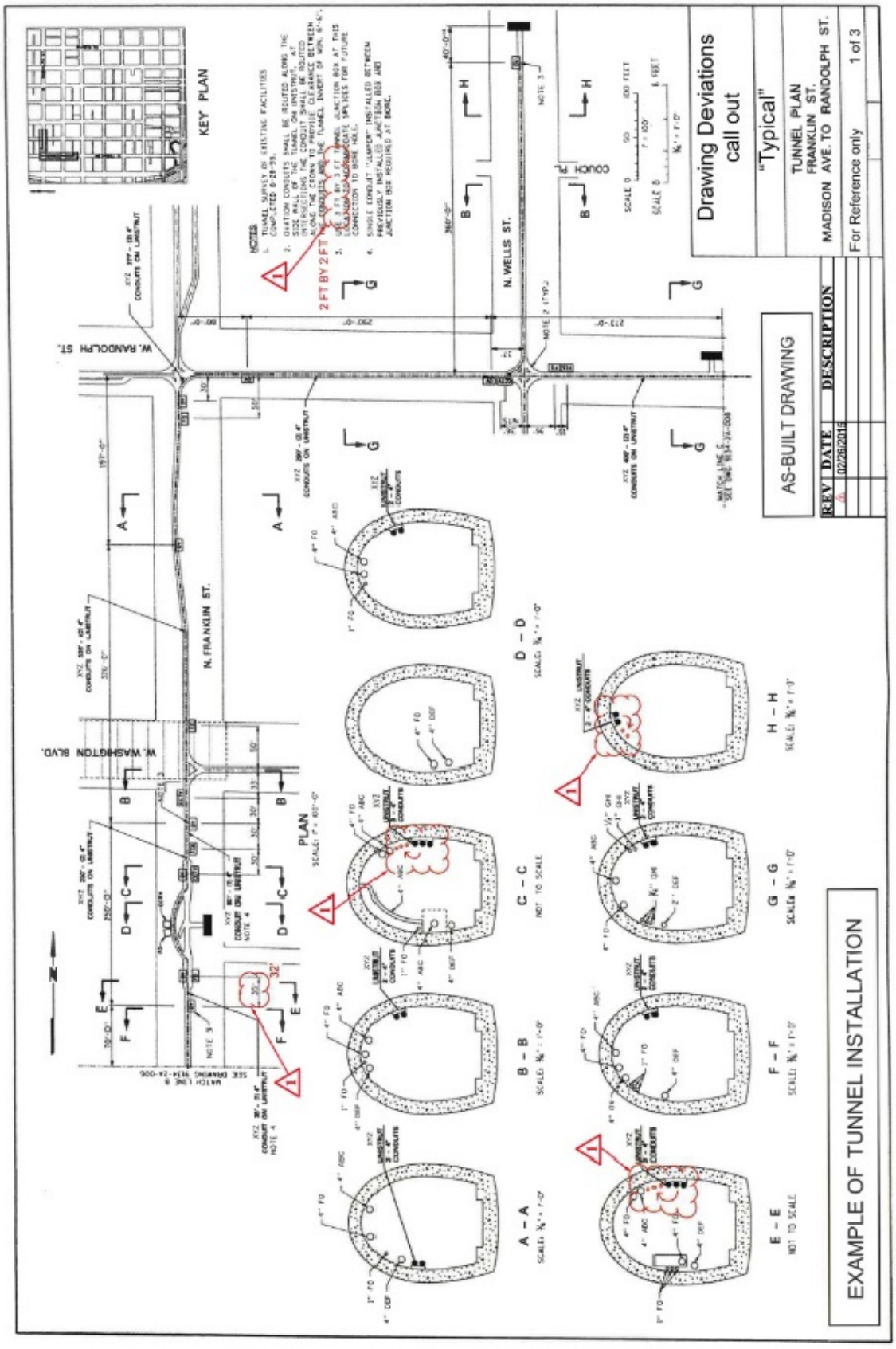
3. The Contractor / Consulting Engineering Firm shall submit a photo log (reference Appendix C for example) of all phases of construction as listed in section 5.2.9 of this document.

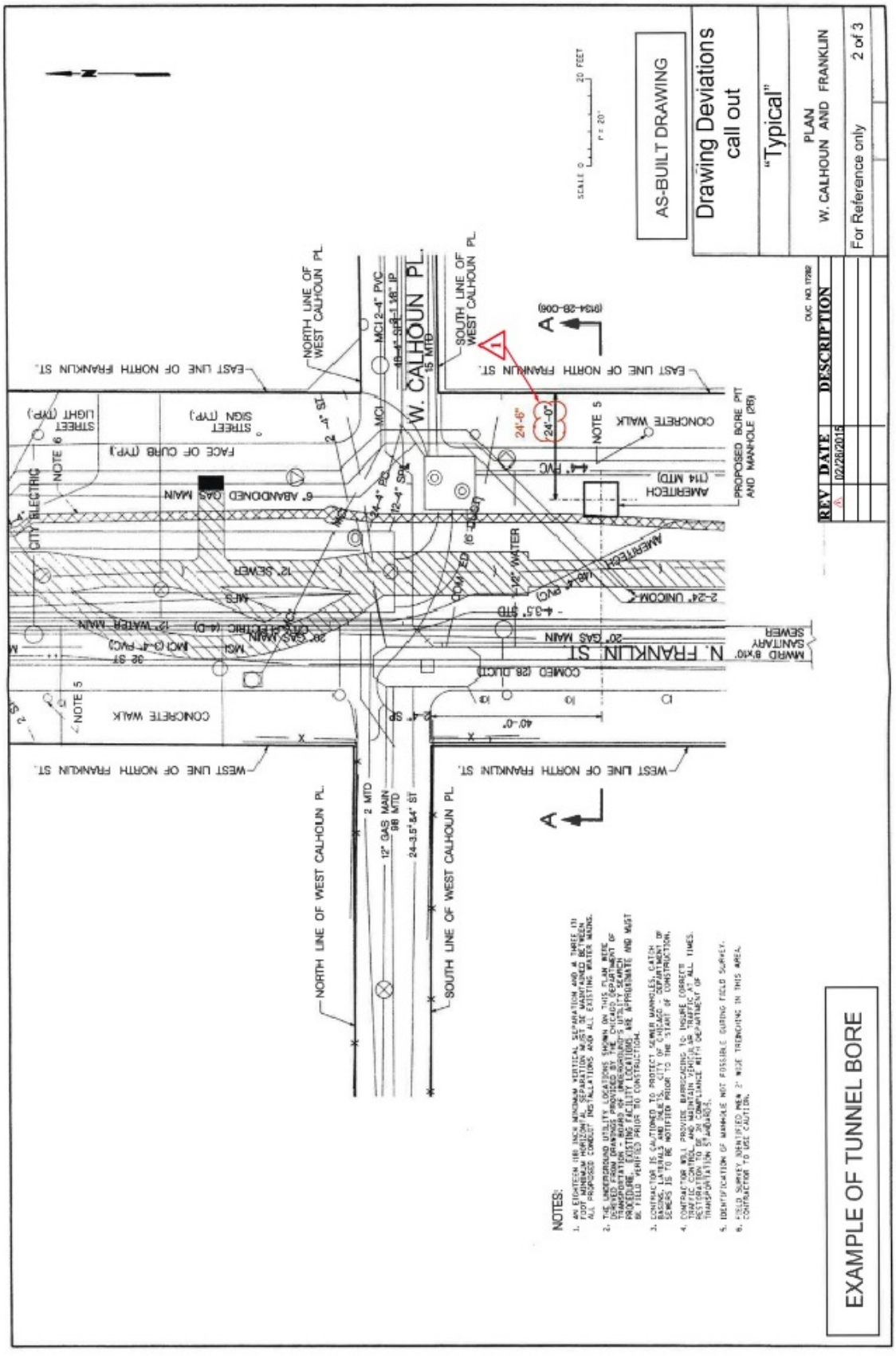
4. All Utilidor installations shall be subject to inspections and approval by CDOT-DOE. If CDOT-DOE finds that the installation is not in accordance with the plans and guidelines **or** the Owner / Permitee has existing deficiencies within the Utilidor System, the User / Contractor will be required to correct these prior to close-out. All deficiencies shall be corrected to the satisfaction of CDOT-DOE at **its own expense within fifteen (15) days of the notification.**

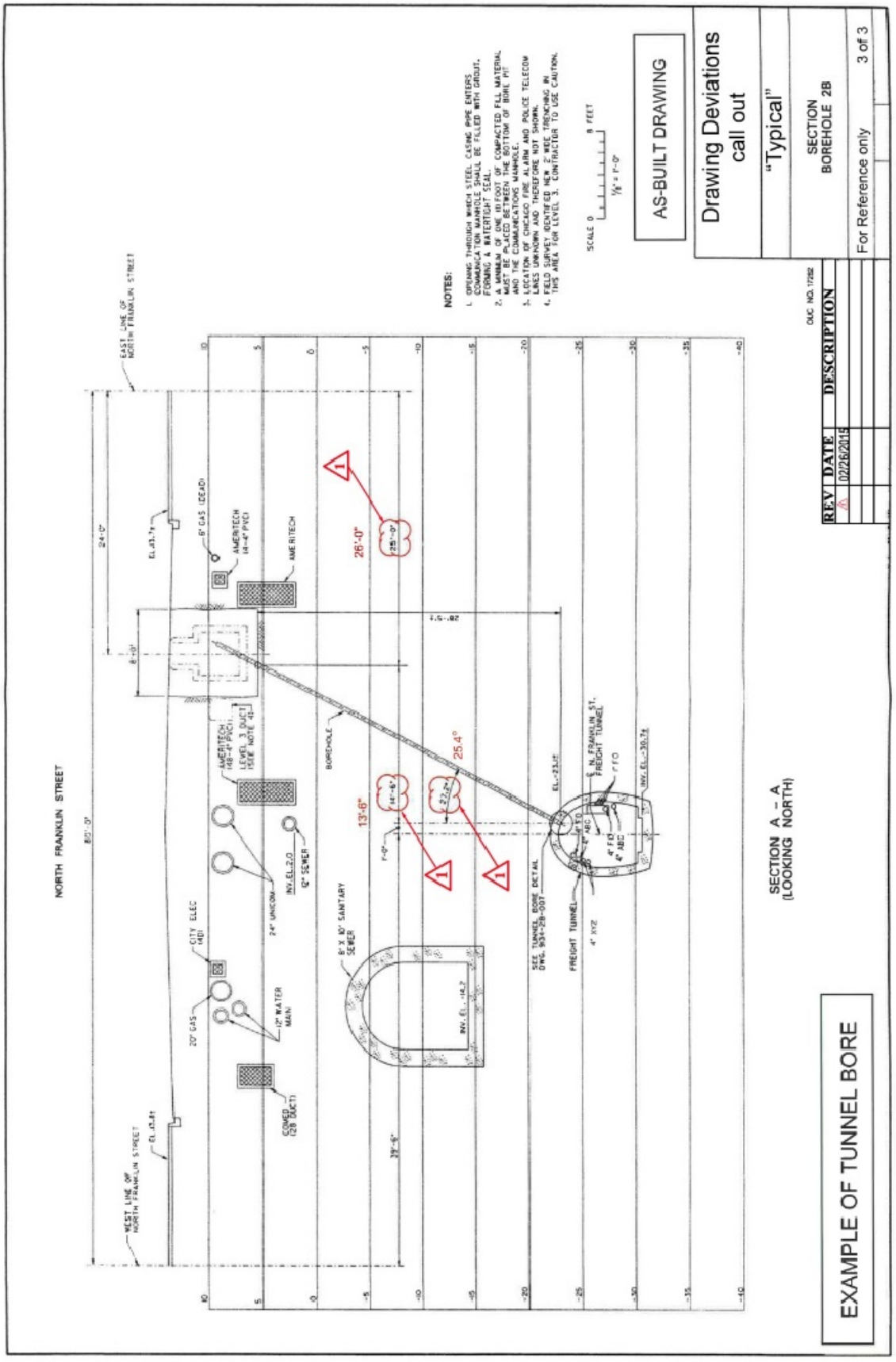
5. The cover letter shall include a complete set of as-built drawings submitted by the permittee to CDOT for their review within fifteen (15) days of the post-installation inspection. **As-Built drawings are to be clearly marked in red with bubbles to indicate the changes from the approved and permitted documents. See Appendix A for example of how to highlight changes to the approved drawings.** Utilidor as-built plans shall include the final fiber optic cable footages between each manhole. Also, include the entering and exiting footage count of the fiber optic cable at each manhole.

APPENDIX A

EXAMPLE DRAWINGS:
REVISIONS FROM PERMITTED DRAWINGS


KEY PLAN
NOTES
2FT BY 2FT
N. WELLS ST.
W. RANDOLPH ST.
N. FRANKLIN ST.
W. WASHINGTON BLVD.
PLAN
A – A
B – B
C – C
D – D
E – E
F – F
G – G
H – H
Drawing Deviations call out
"Typical"
TUNNEL PLAN
FRANKLIN ST.
MADISON AVE. TO RANDOLPH ST.
For Reference only
1 of 3
AS-BUILT DRAWING
REV DATE DESCRIPTION
02/26/2015
EXAMPLE OF TUNNEL INSTALLATION


AS-BUILT DRAWING
Drawing Deviations call out
"Typical"
PLAN
W. CALHOUN AND FRANKLIN
For Reference only
2 of 3
REV DATE DESCRIPTION
02/26/2015
W. CALHOUN PL.
N. FRANKLIN ST.
NORTH LINE OF WEST CALHOUN PL.
SOUTH LINE OF WEST CALHOUN PL.
EAST LINE OF NORTH FRANKLIN ST.
WEST LINE OF NORTH FRANKLIN ST.
CONCRETE WALK
PROPOSED BORE PIT AND MANHOLE (28)
AMERITECH (114 MTD)
12" GAS MAIN 98 MTD
20" GAS MAIN
12" SEWER
12" WATER MAIN
6" ABANDONED GAS MAIN
FACE OF CURB (TYP.)
STREET SIGN (TYP.)
STREET LIGHT (TYP.)
CITY ELECTRIC
COMED (6" DUCT)
2-24" UNICOM
MWRD 8'X10' SANITARY SEWER
COMED (28 DUCT)
EXAMPLE OF TUNNEL BORE


EXAMPLE OF TUNNEL BORE
SECTION A - A
(LOOKING NORTH)
NORTH FRANKLIN STREET
EAST LINE OF NORTH FRANKLIN STREET
WEST LINE OF NORTH FRANKLIN STREET
BOREHOLE
SEE TUNNEL BORE DETAIL DWG. 934-28-007
FREIGHT TUNNEL
N. FRANKLIN ST. FREIGHT TUNNEL
8' X 10' SANITARY SEWER
12" WATER MAIN
20" GAS
CITY ELEC
24" UNICOM
12" SEWER
8" GAS (DEAD)
AMERITECH
AMERITECH (LEVEL 3 DUCT)
COMED (2Ø DUCT)
26'-0"
25'-0"
25.4°
13'-6"
NOTES:
1. OPENING THROUGH WHICH STEEL CASING PIPE ENTERS COMMUNICATION MANHOLE SHALL BE FILLED WITH GROUT, FORMING A WATERTIGHT SEAL.
2. A MINIMUM OF 3' OF COMPACTED FILL MATERIAL MUST BE PLACED BETWEEN THE BOTTOM OF BORE PIT AND THE COMMUNICATIONS MANHOLE.
3. LOCATION OF CHICAGO FIRE ALARM AND POLICE TELECOM LINES UNKNOWN AND THEREFORE NOT SHOWN.
4. FIELD SURVEY IDENTIFIED NEW 2' WIDE TRENCHING IN THIS AREA FOR LEVEL 3. CONTRACTOR TO USE CAUTION.
SCALE 0 8 FEET
1/8" = 1'-0"
AS-BUILT DRAWING
Drawing Deviations call out
"Typical"
SECTION BOREHOLE 2B
For Reference only
3 of 3
DUC NO. 17282
REV DATE DESCRIPTION
1 02/26/2015

APPENDIX B

SAMPLE FORM:
PERMITEE ACKNOWLEDGMENT FORM

"SAMPLE FORM"

Acknowledgment Of Pavement Restoration Work

November 22, 2011

(Permittee)
(Address)
(City, State, Zip Code)

RE: (Pavement / Sidewalk) Restoration For (xxx) (N/S/E/W) Wacker Drive – (Upper / Lower) Level

(Permittee):

(Permitee's) contractor, (ABC Construction) agrees to restoration of the concrete pavement on (upper / lower) level Wacker Drive at (xxx) (N/S/E/W) Wacker Drive. Restoration limits were agreed to during the field meeting held on (Month DD, Year), with the following parties on hand; (List of Attendees with company / organization). All work shall be performed in accordance with CDOT's Requirements & Guidelines for the Chicago Tunnel Systems and with the current IDOT Standard Specifications for Road and Bridge Construction.

**** The following paragraph is required for new installations ****
The excavation work shall be performed in accordance with the drawings approved by CDOT's-DOE and prepared by (ABC Engineering) dated (April 27, 2011 and revised June 09, 2011). Any variation from the indicated installation will require prior approval from CDOT's-DOE.

Restoration work shall commence within 14 days of the field meeting date. (ABC Construction) is required to contact CDOT's CTS consultant prior to beginning any work. All restoration work will be performed to the City's satisfaction at no cost to the City.

Additional Requirements: _____

_____

_____

_____

Contractor Representative: _____ CDOT Representative: _____

Date: _____ Date: _____

cc: Permitee, Contractor, Stephan Freese, Edwin Flores

APPENDIX C

SAMPLE FORM:
PHOTO LOG

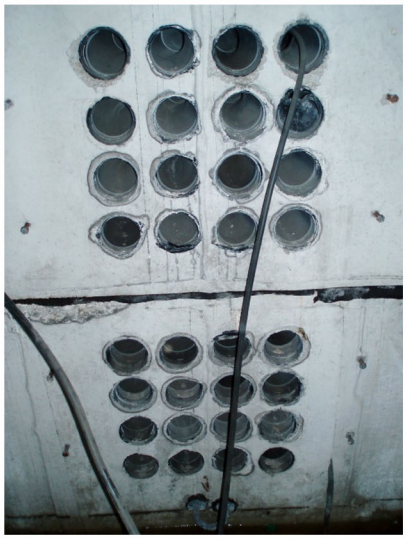
Chicago Department of Transportation
Division of Engineering
2 N. LaSalle St., Suite 820
Chicago, Illinois 60602

****Photo logs shall be on company letterhead CDOT logo for example use only****

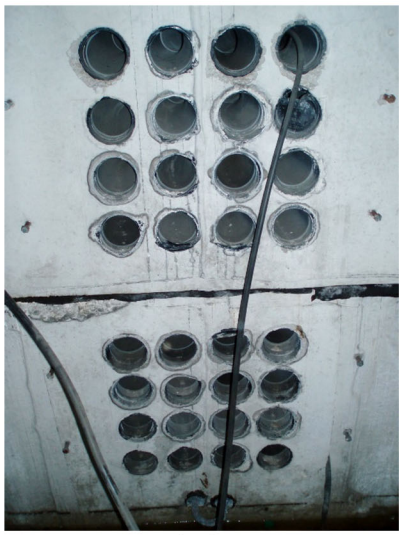
PROJECT NUMBER: EXAMPLE PHOTO LOG

MM/DD/YYYY
CFTTS Before: Area #: XX, LID #XXXX (Facing XX), Unlabeled

MM/DD/YYYY
CFTTS After: Area #: XX, LID #XXXX (Facing XX), Completed, Labeled



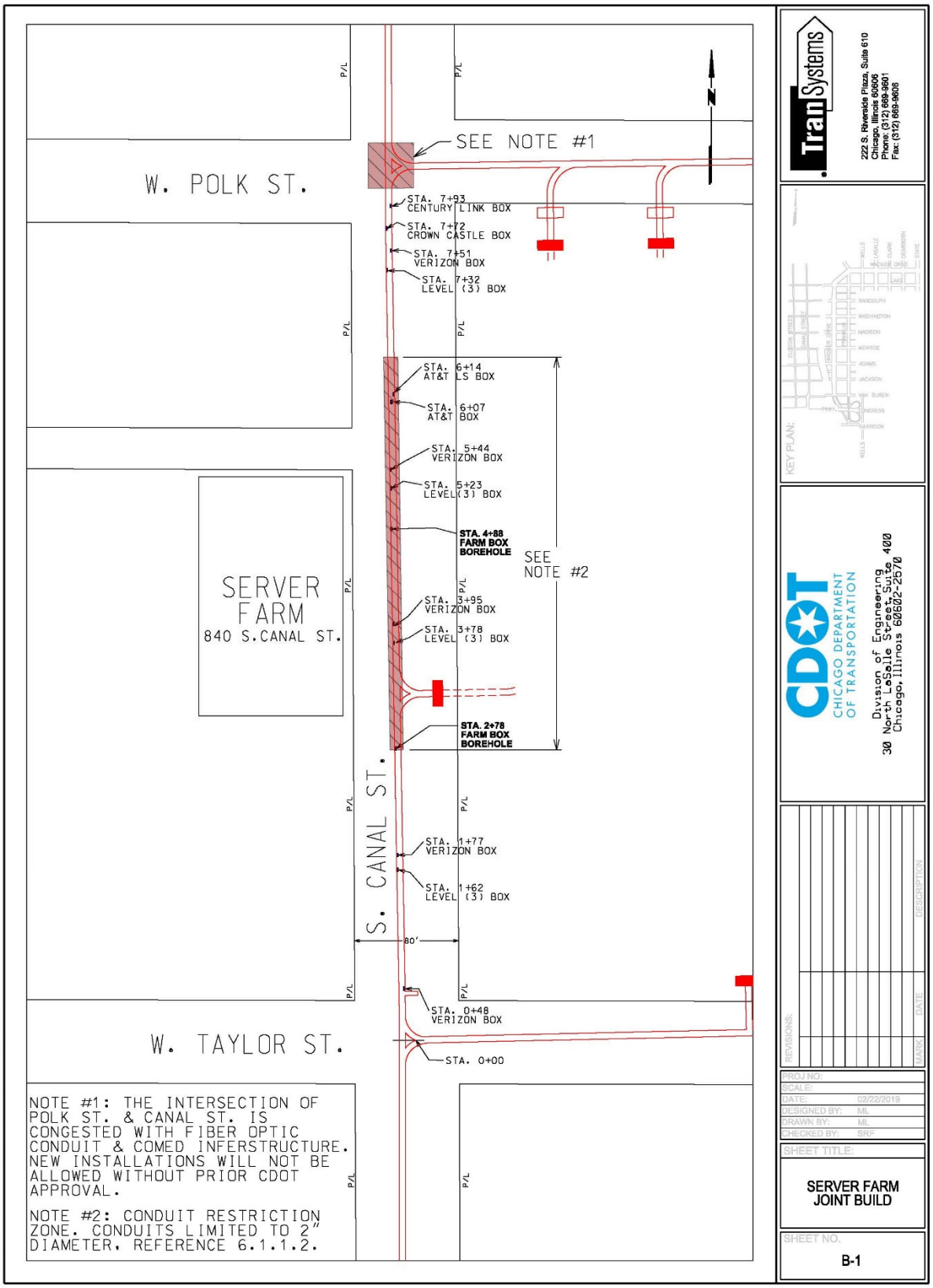
MM/DD/YYYY
Utilidor Before: WDRT MH# XX, Wall Direction XX



MM/DD/YYYY
Utilidor After: WDRT MH# XX, Wall Direction XX

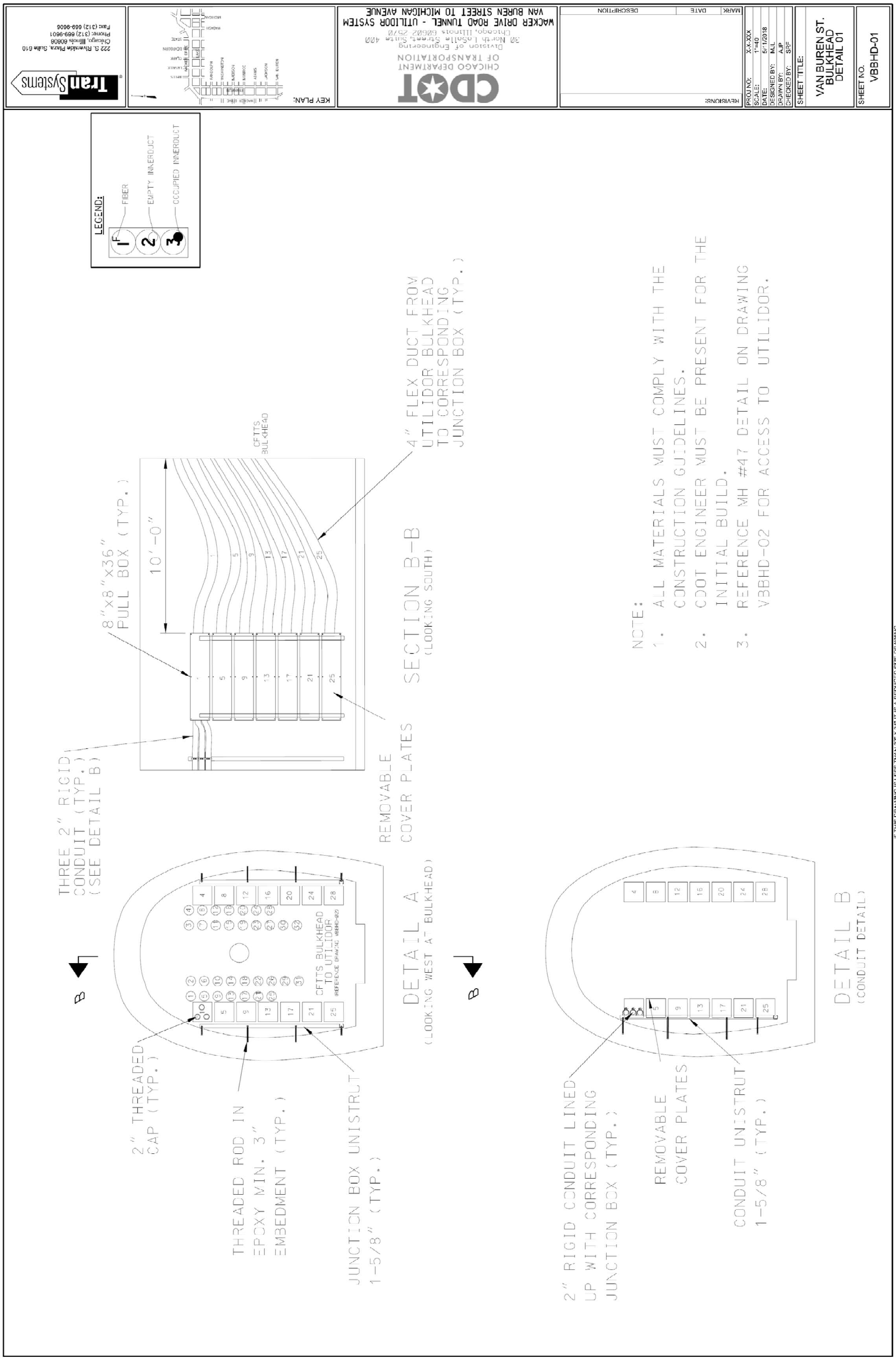
APPENDIX D

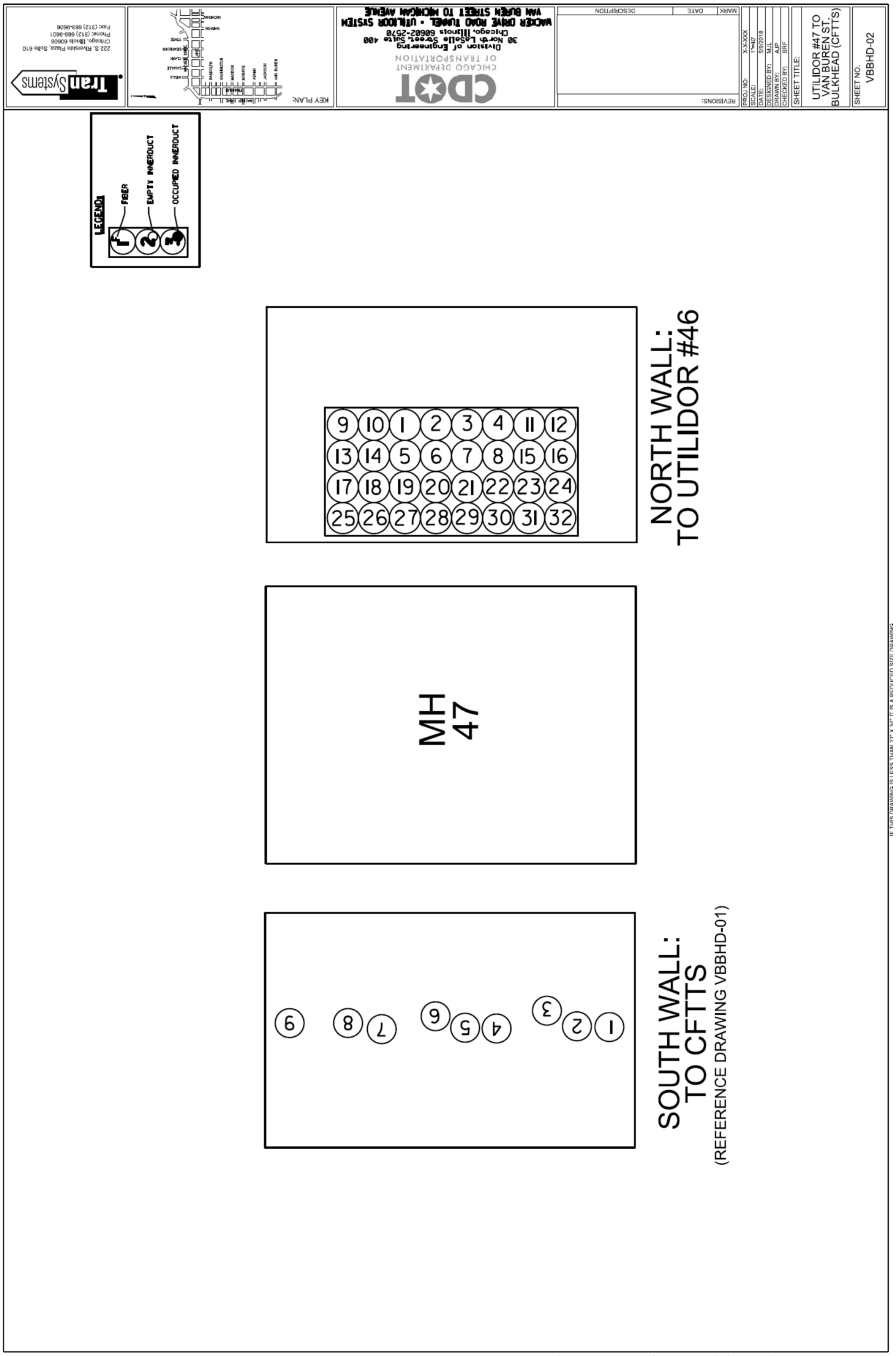
SERVER FARM
JOINT BUILD


W. POLK ST.
SEE NOTE #1
STA. 7+93 CENTURY LINK BOX
STA. 7+72 CROWN CASTLE BOX
STA. 7+51 VERIZON BOX
STA. 7+32 LEVEL (3) BOX
STA. 6+14 AT&T LS BOX
STA. 6+07 AT&T BOX
STA. 5+44 VERIZON BOX
STA. 5+23 LEVEL(3) BOX
STA. 4+88 FARM BOX BOREHOLE
SEE NOTE #2
SERVER FARM
840 S.CANAL ST.
STA. 3+95 VERIZON BOX
STA. 3+78 LEVEL (3) BOX
STA. 2+78 FARM BOX BOREHOLE
S. CANAL ST.
80'
STA. 1+77 VERIZON BOX
STA. 1+62 LEVEL (3) BOX
STA. 0+48 VERIZON BOX
W. TAYLOR ST.
STA. 0+00
P/L
NOTE #1: THE INTERSECTION OF POLK ST. & CANAL ST. IS CONGESTED WITH FIBER OPTIC CONDUIT & COMED INFERSTRUCTURE. NEW INSTALLATIONS WILL NOT BE ALLOWED WITHOUT PRIOR CDOT APPROVAL.
NOTE #2: CONDUIT RESTRICTION ZONE. CONDUITS LIMITED TO 2" DIAMETER, REFERENCE 6.1.1.2.
TranSystems
222 S. Riverside Plaza, Suite 610
Chicago, Illinois 60606
Phone: (312) 869-9601
Fax: (312) 869-9606
KEY PLAN:
CDOT
CHICAGO DEPARTMENT OF TRANSPORTATION
Division of Engineering
30 North LaSalle Street, Suite 400
Chicago, Illinois 60602-2570
REVISIONS:
MARK
DATE
DESCRIPTION
PROJ NO:
SCALE:
DATE: 02/22/2019
DESIGNED BY: ML
DRAWN BY: ML
CHECKED BY: SRF
SHEET TITLE:
SERVER FARM JOINT BUILD
SHEET NO.
B-1
IF THIS DRAWING IS LESS THAN 22" X 34" IT IS A REDUCED SIZE DRAWING

APPENDIX E

UTILIDOR TO CFTTS TIE-IN DETAILS:
VAN BUREN ST. BULKHEAD
& UTILIDOR VAULT #47


TranSystems
KEY PLAN:
CDOT
CHICAGO DEPARTMENT OF TRANSPORTATION
Division of Engineering
30 North LaSalle Street, Suite 400
Chicago, Illinois 60602-2570
WACKER DRIVE ROAD TUNNEL - UTILIDOR SYSTEM
VAN BUREN STREET TO MICHIGAN AVENUE
REVISIONS:
MARK
DATE
DESCRIPTION
SHEET TITLE:
VAN BUREN ST. BULKHEAD DETAIL 01
SHEET NO.
VBBHD-01
LEGEND:
1 FIBER
2 EMPTY INNERDUCT
3 OCCUPIED INNERDUCT
THREE 2" RIGID CONDUIT (TYP.) (SEE DETAIL B)
8"x8"x36" PULL BOX (TYP.)
10'-0"
CFITS BULKHEAD
4" FLEX DUCT FROM UTILIDOR BULKHEAD TO CORRESPONDING JUNCTION BOX (TYP.)
SECTION B-B
(LOOKING SOUTH)
REMOVABLE COVER PLATES
NOTE:
1. ALL MATERIALS MUST COMPLY WITH THE CONSTRUCTION GUIDELINES.
2. CDOT ENGINEER MUST BE PRESENT FOR THE INITIAL BUILD.
3. REFERENCE MH #47 DETAIL ON DRAWING VBBHD-02 FOR ACCESS TO UTILIDOR.
CFITS BULKHEAD TO UTILIDOR
DETAIL A
(LOOKING WEST AT BULKHEAD)
2" THREADED CAP (TYP.)
THREADED ROD IN EPOXY MIN. 3" EMBEDMENT (TYP.)
JUNCTION BOX UNISTRUT 1-5/8" (TYP.)
DETAIL B
(CONDUIT DETAIL)
2" RIGID CONDUIT LINED LP WITH CORRESPONDING JUNCTION BOX (TYP.)
REMOVABLE COVER PLATES
CONDUIT UNISTRUT 1-5/8" (TYP.)
IF THIS DRAWING IS LESS THAN 22" X 34" IT IS A REDUCED SIZE DRAWING


LEGEND:
FIBER
EMPTY INNERDUCT
OCCUPIED INNERDUCT
NORTH WALL:
TO UTILIDOR #46
MH
47
SOUTH WALL:
TO CFTTS
(REFERENCE DRAWING VBBHD-01)
UTILIDOR #47 TO
VAN BUREN ST.
BULKHEAD (CFTTS)
SHEET NO.
VBBHD-02
KEY PLAN:
REVISIONS:
30 North LaSalle Street, Suite 400
Chicago, Illinois 60602-2570
WACKER DRIVE ROAD TUNNEL - UTILIDOR SYSTEM
VAN BUREN STREET TO MICHIGAN AVENUE