

TYPICAL MICROTRENCH SECTION

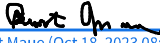
**NOTES:**

IN CONSULTATION WITH THE CITY ATTORNEY'S OFFICE, CITY OF PASADENA, DEPARTMENT OF PUBLIC WORKS IS ADMINISTRATIVELY INTERPRETING THE PASADENA MUNICIPAL CODE TO BE PREEMPTED BY CALIFORNIA STATE SENATE BILL 378 (MICROTRENCHING) SIGNED BY THE GOVERNOR ON OCTOBER 8, 2021. THE PREEMPTION IS UPHELD UNLESS AND UNTIL A WRITTEN FINDING IS MADE TO DEMONSTRATE THAT MICROTRENCHING FOR A FIBER INSTALLATION WOULD HAVE A SPECIFIC ADVERSE IMPACT ON THE PUBLIC HEALTH OR SAFETY. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC) "GREENBOOK" ADOPTED BY THE BOARD OF PUBLIC WORKS AS AMENDED BY THE LATEST CORRESPONDING CITY OF PASADENA SUPPLEMENTS AND MODIFICATIONS TO THE ABOVE "BLUE BOOK."

**GENERAL:**

1. MICROTRENCHING SHALL ONLY BE USED TO INSTALL TELECOMMUNICATION FIBER CONDUIT.
2. MICROTRENCHING SHALL NOT BE ALLOWED IN COLLECTOR/MAJOR STREETS, NOR CONCRETE PAVED STREETS, ASPHALT OVERLAYED CONCRETE STREETS, SIDEWALKS, PARKWAYS, CURBS AND GUTTERS.
3. THE CONTRACTOR SHALL IDENTIFY ALL EXISTING UTILITIES, INCLUDING SERVICE CONNECTIONS IN THE FIELD. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (U.S.A.) AT LEAST 48 HOURS PRIOR TO START OF WORK AT 8-1-1, OR TOLL-FREE AT 1-800-422-4133. THE CONTRACTOR SHALL FURTHER SUPPLEMENT THE FINDINGS OF U.S.A. TO DETERMINE THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES BY USING A MOBILE GROUND PENETRATING RADAR SYSTEM. THE CONTRACTOR SHALL POTHOLE ALL CROSSING UTILITIES AND PARALLEL UTILITIES WITHIN 18-INCHES OF THE PROPOSED ALIGNMENT TO A DEPTH OF 6-INCHES BELOW THE BOTTOM OF THE MICROTRENCH TO DETERMINE THE EXISTING UTILITY ALIGNMENT AND ELEVATION. POTHOLES SHALL BE IMMEDIATELY BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS OR RESTORED AS DIRECTED BY THE ENGINEER.
4. THE FOLLOWING ITEMS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL:
  - A. PROVIDE A DETAILED PLAN TO SCALE WITH CLEAR DIMENSIONS, INCLUDING BUT IS NOT LIMITED TO PROPERTY LINES, CURB AND GUTTER LINES, PARKWAYS, STREET CENTERLINES, ALL EXISTING UNDERGROUND UTILITIES, AND THE PROPOSED MICROTRENCH. THE FINAL TRENCH LOCATION(S) IS SUBJECT TO APPROVAL BY THE CITY ENGINEER.
  - B. THE PLAN SHALL INCLUDE ANY AFFECTED TRAFFIC SIGNAL LOOP DETECTORS. THE APPLICANT SHALL REPLACE ANY DAMAGED LOOPS - THE ENTIRE SYSTEM - DURING THE MICROTRENCHING PER REQUIREMENTS BY DEPARTMENT OF TRANSPORTATION (DOT).
  - C. A STREET CROSS-SECTION THAT INCLUDES THE FOLLOWING INFORMATION:
    - (1) THE CURB AND GUTTER, ASPHALT CONCRETE (AC) ROADWAY APPROXIMATE THICKNESS, BASE, DEPTH AND WIDTH OF MICROTRENCH, DEPTH OF TOPMOST CONDUIT, DISTANCES OF MICROTRENCH TO FACE OF GUTTER, CONCRETE PAVEMENT OR STRUCTURE AS APPLICABLE, AND BACKFILL MATERIAL.
    - (2) AC RESTORATION INCLUDING WIDTH AND DEPTH OF GRIND AND CAP, STARTING FROM GUTTER FACE, CURB, SLAB OR STRUCTURE AS APPLICABLE.
  - D. DETAIL SHOWING CONDUIT FROM MAIN MICROTRENCH ALIGNMENT TO LATERAL, SURFACE CONNECTIONS INCLUDING TO ANY JUNCTION/PULL BOX. INCLUDE SPECIFIC INFORMATION OF DEPTH, SIZE, AND METHOD OF EXCAVATION BELOW EXISTING CURB AND GUTTER.
  - E. SPECIFICATIONS OF THE PROPOSED EQUIPMENT PARTICULARLY SUITABLE FOR MICROTRENCHING, INCLUDING:
    - (1) MICROTRENCHER CAPABLE OF MEETING TARGET DEPTH AND WIDTH IN A SINGLE PASS WITH AN INTEGRAL HOOD AND ASSOCIATED VACUUM SYSTEM. SELECTION OF CUTTING WHEEL SHALL BE SUCH THAT IT MINIMIZES DAMAGE TO THE ADJACENT AC SURFACE.

CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS

DRAWN BY: DAVID WONG	<h1>MICROTRENCHING</h1>	REVISION: 1	UNITS: ENG.
CHECKED BY: DANIEL DIAZ		STANDARD PLAN: <h1>S-427</h1>	
SUBMITTED BY: YANNIE WU-BOWMAN		APPROVED BY: FOR KRIS MARKARIAN:  Brent Maue (Oct 18, 2023 08:23 PDT) CITY ENGINEER	10/18/2023
RCE NO. 57442 EXPIRES DECEMBER 31, 2023		DATE	

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**NOTES (CONTINUED):**

- (2) MOBILE SLURRY PLACEMENT WITH AN ON-BOARD VIBRATOR AND NARROW TROUGH TO MATCH MICROTRENCH WIDTH.
  - (3) MOBILE GROUND PENETRATING RADAR SYSTEM THAT IS CAPABLE OF LOCATING BOTH METALLIC AND NON-METALLIC PIPES AND CABLES TO A DEPTH OF 24-INCHES.
- F. OTHER SITE SPECIFIC ITEMS AS REQUIRED BY THE ENGINEER.

**LIMITS OF REMOVALS, TRENCH WIDTH, AND LOCATION**

- 5. THE MICROTRENCH SHALL BE CONSTRUCTED WITH CONTINUOUS UNIFORM STRAIGHT AND NEAT EDGES.
- 6. MICROTRENCH ALIGNMENTS SHALL CONSIST OF RUNS PARALLEL TO THE CENTERLINE OF THE STREET. STREET CROSSING MAY BE DONE PROVIDED THE ALIGNMENT IS PERPENDICULAR TO THE STREET CENTERLINE TO THE EXTENT POSSIBLE.
- 7. THE EDGE OF THE MICROTRENCH RESTORATION LIMIT SHALL BE A MINIMUM OF 24 INCHES FROM THE EXISTING FACE OF THE GUTTER, EXISTING CONCRETE STRUCTURE, OR CURB IF GUTTER IS NOT PRESENT. THE PROPOSED MICROTRENCH SHALL MAINTAIN A MIN. OF 12 INCH CLEARANCE FROM ALL EXISTING PARALLEL UNDERGROUND UTILITY FACILITIES.
- 8. THE MICROTRENCH WIDTH SHALL BE A MINIMUM OF 1 INCH AND A MAXIMUM OF 2 INCHES.
- 9. UP TO TWO (2) VERTICALLY STACKED CONDUITS CAN BE PLACED WITHIN A MICROTRENCH.
- 10. THE CONDUIT SHALL BE INSTALLED AT A MINIMUM DEPTH OF 12 INCHES BELOW THE EXISTING AC PAVEMENT SURFACE, AT LEAST 1 INCH BELOW THE BOTTOM OF THE AC PAVEMENT, AND THE BOTTOM OF THE MICROTRENCH SHALL BE AT A MINIMUM DEPTH OF 18 INCHES BELOW THE EXISTING AC PAVEMENT SURFACE.
- 11. ANCHORS/SPACERS SHALL BE PLACED AT A MAXIMUM OF 10 FEET APART ALONG THE ALIGNMENT TO ENSURE THE MICROTRENCH DOES NOT RISE FROM THE BOTTOM OF THE MICROTRENCH AND DOES NOT TOUCH THE WALLS OF THE MICROTRENCH DURING INSTALLATION.
- 12. FOR MICROTRENCHING ON MORATORIUM STREETS, (THOSE REPAVED WITHIN THE LAST FIVE YEARS), THE LIMITS OF THE RESTORATION SHALL BE HALF WIDTH OF THE STREET FROM CENTERLINE TO OUTER EDGE OF GUTTER. THE RESTORATION SHALL BE COLD MILLING AND ARHM RESURFACING A MIN. OF 1.75 INCHES PER STANDARD PLAN S-415.

**BACKFILL**

- 13. ALL MICROTRENCHES SHALL BE COMPLETELY BACKFILLED WITH 2-SACK CEMENT SLURRY TO FINISH GRADE BY THE END OF THE WORKDAY.

**GRIND AND RESURFACE SECTION**

- 14. COMMENCEMENT OF SURFACE PREPARATION SUCH AS GRINDING/CHIPPING FOR ASPHALT CONCRETE (AC) PAVING REPLACEMENT SHALL OCCUR NO SOONER THAN 48 HOURS AFTER SLURRY BACKFILL OF TRENCH.
- 15. AS SOON AS BACKFILL HAS CURED, NOT TO EXCEED 10 CALENDAR DAYS, ASPHALT CONCRETE (AC) SHALL BE GROUND AND CAPPED AS FOLLOWS:
  - A. EXISTING AC AND SLURRY BACKFILL SHALL BE GROUND DOWN 4 INCHES, FOR A MINIMUM WIDTH OF 18 INCHES, THE AREA SHALL BE RESURFACED WITH 3 INCHES THICK AC BASE COURSE B-PG 64-10, AND TOPPED WITH 1 INCH THICK AC WEARING COURSE D2-PG 64-10.
  - B. TACK COAT ALL EDGES WITH EITHER SS-1H EMULSIFIED ASPHALT OR PG 64-10 PAVING ASPHALT IMMEDIATELY BEFORE THE ADJOINING AC IS PLACED.

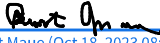
**VAULTS AND SERVICE CONNECTIONS**

- 16. THE USE OF HYDRO-JETTING IS NOT PERMITTED. TRENCHLESS METHODS SHALL NOT CREATE A VOID TWO TIMES GREATER THAN CONDUIT. VOID SHALL BE COMPACTED AND BACKFILLED WITH APPROVED CONTROLLED LOW-STRENGTH MATERIAL, AS REQUIRED BY THE ENGINEER.

**IDENTIFICATION**

- 17. EACH MICROTRENCH SHALL BE IDENTIFIED WITH A METAL IDENTIFICATION TAG LISTING THE OWNER, YEAR OF CONSTRUCTION AND INCLUDE THE WORDS "NOT A SURVEY POINT". PLACE THE TAG AT EACH END OF THE MICROTRENCH AND AT INTERVALS NOT TO EXCEED 50 FEET.

**CITY OF PASADENA - DEPARTMENT OF PUBLIC WORKS**

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