



\*SEE NOTE 12  
 \*\*SEE NOTE 16 (A)

### TYPICAL MICROTRENCH SECTION

INSTALLATIONS BETWEEN 14" AND 18" DEPTH ONLY

**NOTES:**

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.

**GENERAL:**

1. MICRO-TRENCHING SHALL ONLY BE USED TO INSTALL TELECOMMUNICATION CONDUITS BETWEEN 14-INCHES AND 18-INCHES DEPTH BELOW SURFACE.
2. MICRO-TRENCHING SHALL NOT BE ALLOWED IN CONCRETE PAVED STREETS, NOR SIDEWALKS, PARKWAYS, CURBS AND GUTTERS, FLOATING CURB EXTENSION, MEDIANS, DRIVEWAYS, BIKEWAY PROTECTION FACILITIES, CROSS GUTTER, BUS PAD, BUS BULB, TRUCK PILLOW, RAISED CROSSWALK, ISLAND, MINI-ROUNDBOUT, OR SIMILAR ELEMENTS.
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 MICRO-TRENCH, 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. IF EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE INSPECTOR, ENGINEER AND UTILITY OWNER TO PERFORM THE REPAIRS PROMPTLY ACCORDING TO THEIR REQUIREMENTS AND PER ASSOCIATED CITY PERMITS.
5. THE FOLLOWING ITEMS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL:
  - A. PROVIDE A DETAILED SITE PLAN PER THE LATEST CITY DESIGN UTILITY EXCAVATION PERMIT CHECKLIST FOUND ON THE CITY'S WEBSITE. ALL EXISTING INFRASTRUCTURE ABOVE AND BELOW GRADE ALONG THE CORRIDOR OF THE PROPOSED ALIGNMENT MUST BE ANNOTATED ON THE SITE PLAN AS ACCURATELY AS POSSIBLE.



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### MICROTRENCHING

SUBMITTED BY : Joshua Carvalho, P.E.

DRAWING NO.

APPROVED BY :

DATE : 09/28/2022

Alex Nazarchuk, P.E., City Engineer

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NOTES: (CONTINUED)

- B. 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 MICRO-TRENCH, DEPTH OF TOPMOST CONDUIT, DISTANCES OF MICRO-TRENCH TO FACE OF GUTTER, CURB, CONCRETE PAVEMENT OR STRUCTURE AS APPLICABLE, AND BACKFILL MATERIAL.
  - 2. AC REINSTATEMENT INCLUDING WIDTH AND DEPTH OF GRIND AND CAP, STARTING FROM GUTTER FACE, CURB, SLAB OR STRUCTURE AS APPLICABLE.
- C. DETAIL SHOWING CONDUIT FROM MAIN MICRO-TRENCH 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.
- D. CUT SHEETS OF THE PROPOSED EQUIPMENT PARTICULARLY SUITABLE FOR MICRO-TRENCHING, INCLUDING:
  - 1. MICRO-TRENCHER 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.
  - 2. MOBILE CONCRETE/SLURRY PLACEMENT WITH AN ON-BOARD VIBRATOR AND NARROW TROUGH TO MATCH MICRO-TRENCH WIDTH.
  - 3. MOBILE GROUND PENETRATING RADAR SYSTEM THAT IS CAPABLE OF LOCATING BOTH METALLIC AND NON-METALLIC PIPES AND CABLES TO A DEPTH OF 26-INCHES.
- E. OTHER SITE SPECIFIC ITEMS AS REQUIRED BY THE ENGINEER.

LIMITS OF REMOVALS, TRENCH WIDTH, AND LOCATION

- 6. THE MICRO-TRENCH SHALL BE CONSTRUCTED WITH CONTINUOUS UNIFORM STRAIGHT AND NEAT EDGES.
- 7. MICRO-TRENCH 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.
- 8. THE EDGE OF THE MICRO-TRENCH SHALL BE A MINIMUM OF 18-INCHES FROM THE EXISTING EDGE OF THE GUTTER, EXISTING CONCRETE STRUCTURE, OR FACE OF CURB IF GUTTER IS NOT PRESENT.
- 9. THE MICRO-TRENCH WIDTH SHALL BE A MAXIMUM OF 4-INCHES.
- 10. MICRO-TRENCHING MAY BE PERMITTED UPON THE ENGINEER'S DISCRETION ON SPECIAL PAVEMENTS SUCH AS DECORATIVE ASPHALT PAVING, AND THROUGH EXISTING IMPROVEMENTS SUCH AS PERPENDICULAR TO SPEED BUMPS. SPECIAL PAVEMENTS AND EXISTING IMPROVEMENTS SHALL BE RESTORED IN KIND AS APPROVED BY THE ENGINEER. HOWEVER, MICRO-TRENCHING THROUGH EXISTING CURB, GUTTER, MEDIANS, DRIVEWAYS, BIKEWAY PROTECTION FACILITIES, CROSS GUTTER, BUS PAD, SIDEWALK, FLOATING CURB EXTENSION, BUS BULB, TRUCK PILLOW, RAISED CROSSWALK, ISLAND, MINI-ROUNDBOUT, OR SIMILAR ELEMENTS IS NOT PERMITTED.
- 11. UP TO TWO (2) VERTICALLY STACKED CONDUITS CAN BE PLACED WITHIN A MICRO-TRENCH. STACKED HEIGHT OF 4-INCH MAX.
- 12. THE TOP CONDUIT IN THE MICRO-TRENCH SHALL BE INSTALLED AT A MINIMUM DEPTH OF 14-INCHES BELOW THE EXISTING AC PAVEMENT SURFACE, AND THE BOTTOM OF THE MICRO-TRENCH SHALL BE AT A MAXIMUM DEPTH OF 18-INCHES BELOW THE EXISTING AC PAVEMENT SURFACE. ALL OTHER DEPTHS OUTSIDE OF THIS RANGE SHALL COMPLY WITH SM-15 FOR STANDARD TRENCHING.
- 13. ANCHORS/SPACERS SHALL BE PLACED AT A MAXIMUM OF 10- FEET APART ALONG THE ALIGNMENT TO ENSURE THE CONDUIT DOES NOT RISE FROM THE BOTTOM OF THE MICRO-TRENCH AND DOES NOT TOUCH THE WALLS OF THE MICRO-TRENCH DURING INSTALLATION.

BACKFILL

- 14. ALL MICRO-TRENCHES SHALL BE COMPLETELY BACKFILLED WITH A 1-SACK CEMENT SAND SLURRY TO FINISH GRADE BY THE END OF THE WORK DAY.



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NOTES: (CONTINUED)

GRIND AND RESURFACE SECTION

15. COMMENCEMENT OF SURFACE PREPARATION SUCH AS GRINDING/CHIPPING FOR ASPHALT CONCRETE PAVING REPLACEMENT WILL OCCUR NO SOONER THAN 48 HOURS AFTER SLURRY BACKFILL OF TRENCH. FIELD CONDITIONS OR MATERIAL USED MAY NECESSITATE A LONGER WAIT AS DETERMINED BY THE INSPECTOR.
16. AS SOON AS BACKFILL HAS CURED, NOT TO EXCEED 30 CALENDAR DAYS, ASPHALT CONCRETE SHALL BE GROUND AND CAPPED AS FOLLOWS:
  - A. EXISTING ASPHALT CONCRETE AND SLURRY BACKFILL SHALL BE GROUND DOWN 2-INCHES, FOR A WIDTH OF 24-INCHES, BUT NO LESS THAN 6-INCHES FROM BOTH EDGES OF THE MICRO-TRENCH, AND RESURFACED WITH CLASS C2 ASPHALT AND BINDER GRADE PER GREENBOOK STANDARDS. WIDTH LIMITS OF ASPHALT RESTORATION MAY BE INCREASED BASED ON FIELD CONDITIONS AND SHALL BE AT THE SOLE DISCRETION OF THE CITY.
  - B. TACK COAT ALL EDGES WITH EITHER SS-1H EMULSIFIED ASPHALT OR PG 64-10 PAVING ASPHALT IMMEDIATELY BEFORE THE ADJOINING ASPHALT CONCRETE IS PLACED.
  - C. WHERE ANGULAR CROSSING OR ANY LENGTH-WISE CUTS OF A BIKE LANE OCCUR BY MICROTRENCHING, THE CAPPING LIMITS SHALL EXTEND THE FULL WIDTH OF THE BIKE LANE. PERPENDICULAR CROSSINGS MAY RECEIVE TYPICAL CAPPING WIDTH PER NOTE 16.A. ABOVE. PAVEMENT MARKINGS SHALL BE RESTORED IN KIND. WHERE NO BIKE LANE MARKINGS EXIST, CONTRACTOR SHALL CONSULT WITH THE CITY PUBLIC WORKS DEPARTMENT AND SANTA MONICA DEPARTMENT OF TRANSPORTATION TO DETERMINE LOCATION OF ANY PLANNED BIKE LANES SO THAT IMPACT OF PAVEMENT SURFACE MAY BE AVOIDED.
  - D. PAVEMENT SHALL BE LEVEL WITH ADJACENT ROADWAY ELEVATIONS AND SHALL PROVIDE A SMOOTH SURFACE PER GREENBOOK SECTION 302-5 AS AND SUBJECT TO ACCEPTANCE BY THE CITY PUBLIC WORKS INSPECTOR.

VAULTS AND SERVICE CONNECTIONS

17. CONNECTION TO SERVICE LATERALS, JUNCTION BOXES, ETC., SHALL BE DONE SUCH THAT CURB AND GUTTER IS NOT DISTURBED, SETTLED OR DAMAGED. REMOVAL LIMITS OF SIDEWALK SHALL FOLLOW APPLICABLE STANDARDS AND REQUIREMENTS AS APPROVED BY THE ENGINEER.
18. 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 (CLSM).

IDENTIFICATION

19. EACH MICRO-TRENCH SHALL BE IDENTIFIED WITH A METAL IDENTIFICATION TAG LISTING THE OWNER, YEAR OF CONSTRUCTION, AND INCLUDE THE WORDS "NOT A SURVEY POINT", IF THE WORK IS MORE THAN 50 FEET IN LENGTH. PLACE THE TAG NEAR EACH END OF THE MICRO-TRENCH AND AT INTERVALS NOT TO EXCEED 50 FEET. UTILITY COMPANY WILL BE RESPONSIBLE TO RE-INSTALL METAL MARKERS AFTER STREET PAVING OCCURS IN FUTURE YEARS.



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