

MICROTRENCHING NOTES

GENERAL

1. MICROTRENCHING MAY BE USED TO INSTALL UNDERGROUND FIBER TELECOMMUNICATION CONDUITS PURSUANT TO CALIFORNIA GOVERNMENT CODE 65964.5.
2. REFER TO MICROTRENCHING STANDARD FILE NO. 120,965 "MICROTRENCHING DETAILS AND TABLES" FOR MICROTRENCH CLEARANCE REQUIREMENTS AND MICROTRENCH MATERIAL REQUIREMENTS.
3. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST SAN FRANCISCO PUBLIC WORKS STANDARD SPECIFICATIONS, DPW ORDER NO. 187,005 "REGULATIONS FOR EXCAVATING AND RESTORING STREETS IN SAN FRANCISCO", SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC) ASSET PROTECTION STANDARDS, CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) GENERAL ORDER 128, AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS AS APPLICABLE.
4. MICROTRENCHING THROUGH AN INTERSECTION OR LEGAL PEDESTRIAN CROSSING MAY REQUIRE CURB RAMP EVALUATION AND CONSTRUCTION PER DPW ORDER NO. 184,350. IF CONSTRUCTION IS REQUIRED, THE CONTRACTOR SHALL PROVIDE CURB RAMP DESIGN PLAN(S) AND OBTAIN APPROVAL FROM THE DISABILITY ACCESS COORDINATOR.
5. UNDERGROUND SERVICE ALERT (U.S.A.) MUST BE CONTACTED AT LEAST 48 HOURS PRIOR TO THE START OF WORK. ALL EXISTING UTILITIES, INCLUDING SERVICE CONNECTIONS IN THE FIELD MUST BE IDENTIFIED WITHIN A MINIMUM DISTANCE OF 3- FEET ON EITHER SIDE OF THE PROPOSED ALIGNMENT.
6. EXPLORATORY WORK SHALL BE PERFORMED TO AVOID CONFLICTS WITH OTHER UTILITIES, MEET THE UNDERGROUND UTILITY CLEARANCE REQUIREMENTS AS STATED IN NOTES 39-42 BELOW, AND TO DETERMINE THE EXISTING UTILITY ALIGNMENT AND ELEVATION. EXPLORATORY HOLES SHALL BE IMMEDIATELY BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE CITY STANDARD SPECIFICATIONS OR RESTORED AS DIRECTED BY THE CITY ENGINEER OR THEIR DESIGNEE.
7. ANY FACILITIES DAMAGED DURING CONSTRUCTION MUST BE RESTORED.
8. MICROTRENCHING WITHIN OTHER JURISDICTIONS SUCH AS CALTRANS, PORT OF SAN FRANCISCO, SAN FRANCISCO RECREATION AND PARKS, GOLDEN GATE NATIONAL RECREATION AREA, SHOULD BE COORDINATED APPROPRIATELY.
9. MICROTRENCHING WITHIN THE LIMITS OF HOMEOWNER ASSOCIATIONS OR COMMUNITY GROUPS SHALL BE COORDINATED APPROPRIATELY.

LIMITS OF REMOVAL, TRENCH WIDTH, AND LOCATION

10. THE MICROTRENCH EXCAVATION LIMITS SHALL FOLLOW DPW ORDER NO. 187,005 AND MAY NOT EXCEED 1,200 LINEAR FEET AT ANY TIME.
11. THE MICROTRENCH SHALL BE CONSTRUCTED WITH CONTINUOUS, UNIFORM, STRAIGHT AND NEAT EDGES. DAMAGED PAVEMENT AND CONCRETE SPALLS WITHIN 12-INCHES OF THE MICROTRENCH SHALL BE REPAIRED TO FACILITATE STRAIGHT PAVEMENT CUTS.
12. MICROTRENCH ALIGNMENTS SHALL CONSIST OF RUNS PARALLEL TO THE CENTERLINE OF THE STREET.
13. THE EDGE OF THE MICROTRENCH SHALL BE A MINIMUM DISTANCE FROM THE EXISTING PAVEMENT FEATURE AS SHOWN IN TABLE A ON MICROTRENCHING STANDARD FILE NO. 120,965.
14. MICROTRENCH SHALL BE LOCATED OUTSIDE OF WHEEL PATH TO THE EXTENT POSSIBLE TO MINIMIZE VEHICULAR LOADING.
15. MICROTRENCH WIDTH SHALL BE A MINIMUM OF 1-INCH AND A MAXIMUM OF 2-INCHES FOR STANDARD DETAIL 2, AND FOR STANDARD DETAIL 1, A MAXIMUM OF 4-INCHES WITH THE CITY ENGINEER OR THEIR DESIGNEE'S APPROVAL.
16. THE TOPMOST CONDUIT SHALL BE INSTALLED AT A MINIMUM DEPTH OF 18-INCHES BELOW THE TOP OF PAVEMENT SURFACE.
17. THE MAXIMUM DEPTH FROM THE TOP OF PAVEMENT SURFACE TO THE BOTTOM OF THE TRENCH SHALL BE 26-INCHES.
18. MICROTRENCHING MAY BE ALLOWED ON CONCRETE PAVED STREETS ON AN EXISTING JOINT PER STANDARD DETAIL 2 WITH APPROVAL FROM CITY ENGINEER OR THEIR DESIGNEE.

RESTORATION

19. THE MICROTRENCH SHALL BE COMPLETELY FILLED WITH A 5000 PSI CEMENT SAND SLURRY OR A FIBER-REINFORCED CEMENTITIOUS MATERIAL AS SHOWN ON THE DETAILS TO FINISH GRADE WITHIN 120 HOURS AFTER THE PLACEMENT OF CONDUIT.
20. BACKFILL/BEDDING BELOW CEMENT SAND SLURRY SHALL BE DRY SAND AND PLACED 2-INCHES ABOVE AND BELOW EDGE OF NEW CONDUIT(S). SEE NOTE 37 FOR ADDITIONAL REQUIREMENTS.
21. CEMENT SAND SLURRY FILL SHALL CONTAIN ACCELERANTS OR OTHER ADMIXTURES IN ACCORDANCE WITH SECTION 207 OF THE STANDARD SPECIFICATIONS AND SHALL BE CURED PER THE MANUFACTURER'S RECOMMENDATIONS BEFORE OPENING TO TRAFFIC.

NON-STANDARD PAVEMENT SHALL BE RESTORED IN KIND.

22. NON-STANDARD PAVEMENT SHALL BE RESTORED IN KIND.
23. IF MICROTRENCHING THROUGH THERMOPLASTIC PAINT (SUCH AS DESIGNATED TRANSIT LANE OR BICYCLE FEATURES), THE THERMOPLASTIC PAINT SHALL BE RESTORED IN KIND. THE CONTRACTOR SHALL CONTACT SFMTA TO REQUEST FOR RESTORATION.
24. ALL TRAFFIC MARKINGS AND FEATURES DISTURBED BY MICROTRENCHING OPERATIONS SHALL BE RESTORED IN KIND. THE CONTRACTOR SHALL CONTACT SFMTA TO REQUEST RESTORATION.
25. THE CONTRACTOR SHALL REFER TO SFMTA "REGULATIONS FOR WORKING IN SAN FRANCISCO STREETS" SECTION 11 WHEN WORK WILL DISTURB OR DAMAGE ROADWAY DETECTORS SUCH AS TRAFFIC SIGNAL AND BIKE COUNTER DETECTOR LOOPS AND SENSORS.
26. IN ACCORDANCE WITH THE SAN FRANCISCO MUNICIPAL TRANSPORTATION AUTHORITY (SFMTA) "REGULATIONS FOR WORKING IN SAN FRANCISCO STREETS," THE CONSTRUCTION SITE SHALL BE METAL-PLATED AND PROTECTED WITH APPROPRIATE TRAFFIC CONTROL ELEMENTS IF NOT COMPLETED AND RESTORED THE SAME DAY.

VAULTS AND SERVICE CONNECTIONS

27. CONNECTION TO SERVICE LATERALS, JUNCTION BOXES, ETC. SHALL BE DONE SUCH THAT THE CURB, GUTTER, PARKING STRIP OR BUS PAD ARE NOT DISTURBED, SETTLED OR DAMAGED. REMOVAL LIMITS OF SIDEWALK SHALL FOLLOW APPLICABLE SAN FRANCISCO PUBLIC WORKS STANDARDS AND REQUIREMENTS AS APPROVED BY THE CITY ENGINEER OR THEIR DESIGNEE.

IDENTIFICATION

28. EACH MICROTRENCH 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 MICROTRENCH AND AT INTERVALS NOT TO EXCEED 50- FEET.
29. WARNING/IDENTIFICATION TAPE SHALL BE FOLDED AND INSTALLED TO IDENTIFY LOCATION OF MICROTRENCH, 2-INCHES MAXIMUM ABOVE CONDUIT AND PER APWA COLOR CODE SPECIFICATION.

EXCLUSIONS

30. MICROTRENCHING SHALL NOT BE ALLOWED IN SIDEWALKS, PARKWAYS, CURBS OR GUTTERS.
31. MICROTRENCHING ALIGNMENT SHALL NOT CROSS RAILWAYS OR TRACKWAYS.
32. STANDARD DETAIL 2 SHALL NOT BE USED ON THE SAN FRANCISCO BICYCLE NETWORK INCLUSIVE OF BICYCLE LANES, CYCLE TRACKS, TRAFFIC CALMING DEVICES AND OTHER FEATURES.
33. STANDARD DETAIL 2 SHALL NOT BE USED AT AN INTERSECTION OR LEGAL CROSSING.
34. STANDARD DETAIL 2 SHALL NOT BE USED AT BENDS IN THE CONDUIT.

MATERIAL PROPERTIES

35. REFER TO MICROTRENCHING STANDARD FILE NO. 120,965 TABLE B FOR MATERIAL REQUIREMENTS.
36. CEMENT SAND SLURRY SHALL BE FLOWABLE AND SELF-COMPACTING.
37. DRY SAND SHALL BE SE 50 OR BETTER AND COMPACTED BY WATER METHOD.
38. MATERIAL COLOR SHALL MATCH ADJACENT PAVEMENT.

UNDERGROUND UTILITY CLEARANCES

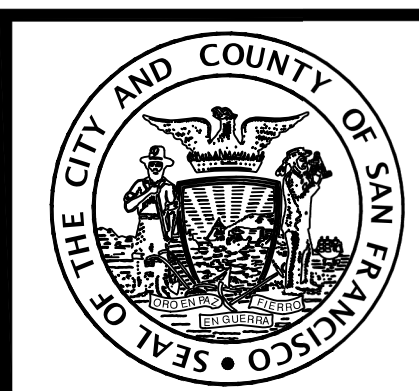
39. MICROTRENCH SHALL MAINTAIN 2- FEET MINIMUM HORIZONTAL CLEARANCE FROM EXISTING CONDUIT, PIPE, OR OUTSIDE WALL OF AN UNDERGROUND UTILITY ACCESS VAULT OR STRUCTURE, EXCEPT FOR UTILITY CROSSINGS WHERE 1- FOOT MINIMUM VERTICAL CLEARANCE FROM EXISTING PIPE IS REQUIRED, UNLESS OTHERWISE NOTED BELOW.
40. MICROTRENCH SHALL MAINTAIN 3- FEET MINIMUM HORIZONTAL CLEARANCE AND 1- FOOT MINIMUM VERTICAL CLEARANCE FROM EXISTING WATER ASSETS SUCH AS HYDRANT LATERALS, WATER MAINS, AND AUXILIARY WATER SUPPLY SYSTEM (AWSS) LINES, UNLESS OTHERWISE REQUIRED BY THE UTILITY OWNER.
41. MICROTRENCH SHALL MAINTAIN 3- FEET MINIMUM HORIZONTAL CLEARANCE AND 6- INCH MINIMUM VERTICAL CLEARANCE FROM TRAFFIC SIGNAL INTERCONNECT CONDUITS AND ALL CITY- USED UNDERGROUND COMMUNICATION CONDUITS, UNLESS OTHERWISE REQUIRED BY THE UTILITY OWNER.
42. MICROTRENCH SHALL MAINTAIN 3.5- FEET MINIMUM HORIZONTAL CLEARANCE AND 1- FOOT MINIMUM VERTICAL CLEARANCE FROM WASTEWATER ASSETS SUCH AS SIDE SEWERS, CULVERTS, AND SEWER MAINS, UNLESS OTHERWISE REQUIRED BY THE UTILITY OWNER.

PERMIT

43. THE CONTRACTOR SHALL SUBMIT A COMPLETE UTILITY EXCAVATION APPLICATION AND FOLLOW ALL REQUIREMENTS LISTED ON THE BUREAU OF STREET-USE AND MAPPING WEBSITE.
44. THE CONTRACTOR SHALL SUBMIT THE FOLLOWING AS PART OF THE EXCAVATION PERMIT APPLICATION, INCLUDING BUT NOT LIMITED TO:
 - A) A DETAILED SITE PLAN SHOWING THE LENGTH, WIDTH, AND LOCATION OF THE MICROTRENCH IN THE RIGHT-OF-WAY, AND THE PROPOSED CONNECTIONS TO SERVICE LATERALS AND JUNCTION BOXES AND CONSTRUCTION METHODS.
 - B) A STREET CROSS SECTION SHOWING THE APPROXIMATE PAVEMENT SECTION, DEPTH AND WIDTH OF MICROTRENCH, DEPTH OF TOPMOST CONDUIT, AND DISTANCE OF MICROTRENCH TO NEAREST PAVEMENT FEATURE.
 - C) PROPOSED FILL MATERIAL AS SPECIFIED IN TABLE B ON MICROTRENCHING STANDARD FILE NO. 120,965.
 - D) CUT SHEETS OF THE PROPOSED EQUIPMENT PARTICULARLY SUITABLE FOR MICROTRENCHING.

NO.	DATE	DESCRIPTION	BY	APP.
TABLE OF REVISIONS				

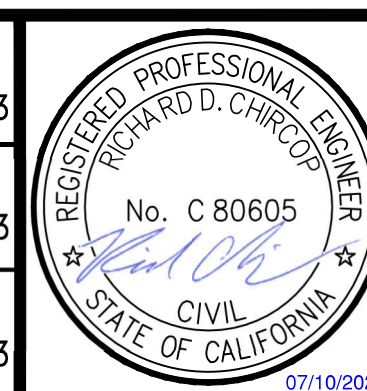
REFERENCE INFORMATION & FILE NO. OF SURVEYS



BUREAU OF ENGINEERING
CITY & COUNTY OF SAN FRANCISCO
SAN FRANCISCO PUBLIC WORKS
49 SOUTH VAN NESS AVENUE, Suite 800
SAN FRANCISCO, CA 94103

Acting Section Mgr: DEANNA CALLEROS <i>Deanna Calleros</i>	Date: 07/10/2023
Acting Bureau Mgr: IQBAL DHAPA <i>Iqbal Dhapa</i>	Date: 07/10/2023
City Engineer: ALBERT KO <i>Albert Ko</i>	Date: 07/12/2023

DESIGNED: DATE: PUBLIC WORKS 4/23	CHECKED: DATE: PUBLIC WORKS 4/23
DRAWN: DATE: PUBLIC WORKS 4/23	



SCALE: NOT TO SCALE
SHEET OF SHEETS: 1 OF 2

MICROTRENCHING STANDARD

MICROTRENCHING NOTES

CONTRACT NO. NONE
DRAWING NO. MT-1
FILE NO. 120,964
REV. NO.

Dimension Scale: 1 Model Units: Inches Measurement Units are English