



THE CITY OF SAN DIEGO

MEMORANDUM

DATE: October 10, 2022

TO: Distribution

FROM: Rania Amen, City Engineer

SUBJECT: Microtrench Standard Drawing SDG 165

After over a year of close coordination with the private telecommunication industry, the City of San Diego (City) is pleased to officially distribute the updated Microtrench Standard Drawing SDG 165. Many productive discussions with the telecommunication industry have led to the modifications, which we believe to be reasonable while protecting the City's assets. We value the partnership that has been created and look forward to further collaboration on future efforts.

Prior to releasing this updated version of the Standard Drawing SDG 165, the City once again reviewed the telecommunication industry's last round of comments regarding the separation between the bottom of the paving section and the top of the highest conduit and concern about conflicts with cobbles encountered in the City Right of Way (ROW). It is important to provide a basis for the City's current direction and highlight opportunity for future updates with emerging technologies or innovative solutions.

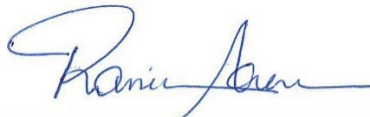
The City's Capital Improvement Program (CIP) projects excavate approximately 200 miles of trenches annually. In addition, City crews perform scheduled road repairs and emergency pipeline repairs throughout the City. This includes full-depth asphalt repairs as well as reconstruction of some city roads that necessitate excavation beyond the street pavement section. As discussed in our past meetings, the City's concern with the proposed 1" separation from the bottom street pavement section, to the top of conduit is the anticipated impact to the private conduit with any perpendicular trench cut. Damages to private utility conduit can cause extended periods of inactivity to the City's contractor performing work, with costly delays and schedule impacts. Proper separation of a conduit to the bottom of a pavement section is critical to avoiding additional costs and delays to an already impacted community.

In the spirit of collaboration and as a compromise, the proposed requirement was modified from the original proposal of 6" depth below pavement section down to 4". The 4" protects a microtrench utility conduit in place and allows other contractors to investigate the subsurface utility for discovery during their work as with any other utility in the street.

Regarding cobbles, the City of San Diego has a variety of soil formations in the ROW. Some areas may have cobbles in the subsurface and at any depth; not all are directly below the pavement section. If cobbles are encountered near the surface, the trench work even at 1" below pavement would be impacted.

In 2021 and 2022 the City collected 638 subsurface samples throughout the City. The City found 86% of the streets to be free of cobbles down to 16". Of the areas with cobble within the top 16", the cobble was found commonly below the pavement section, meaning conduits at even 1" below pavement sections would encounter conflicts. In those anticipated scenarios, the contractor should work with the City's Resident Engineer to coordinate a change in the field to continue moving forward with the work with the best proposed solution.

In summary, the City would like to thank the telecommunication industry for this partnering effort. With emerging technologies advancing, we anticipate a need for continuous re-evaluation of this standard as more innovative materials and methodologies become available. In the interim, the City will continue collaborating with its industry partners in the quarterly Construction Industry meetings as well as the monthly Utility Coordination meetings.



Rania Amen, PE
City Engineer

Attachments: 1. SDG 165

Distribution:

Honorable Mara Elliott, City Attorney
Randy Wilde, Senior Policy Advisor, Mayor's Office
Kris McFadden, Deputy Chief Operating Officer
Alia Khouri, Deputy Chief Operating Officer
Jorge Riveros, Transportation Department Director
Elyse Lowe, Development Services Department Director
CIPRAC Members
Deputy City Engineers
ROW Utilities Coordination Committee Members

NOTES:

1. CLEARANCE SEPARATIONS BETWEEN DRY AND WET UTILITIES SHALL BE MAINTAINED PER CALIFORNIA PUBLIC UTILITY CODE GENERAL ORDER 128.
2. **PERMITTING REQUIREMENTS:** ALL MICROTRENCH PERMITS REQUIRE A DEVELOPMENT SERVICES DEPARTMENT DIGITAL SUBMISSION WITH A GEOSPATIAL ALIGNMENT PER DEVELOPMENT SERVICES DEPARTMENT FORMAT REQUIREMENTS.
3. **CONDUIT ANCHORING:** CONTRACTOR MUST PROVIDE THEIR METHOD OF WEIGHING / ANCHORING DOWN CONDUITS IN THEIR PERMIT. TO PREVENT CONDUITS FROM FLOATING, AND TO MAINTAIN REQUIRED DEPTH FOR TOP OF CONDUIT.
4. **MICROTRENCHING USAGE:** MICROTRENCHING PER SDG-165A AND / OR SDG-165B SHALL BE ON ASPHALT STREETS ONLY. MICROTRENCHING SHALL NOT BE PERMITTED IN OR THROUGH EXISTING CONCRETE PAVED STREETS, PARKWAYS, CURB, GUTTER, CROSS GUTTER, BUS PAD, SIDEWALK, FLOATING CURB EXTENSION, BUS BULB, TRUCK PILLOW, RAISED CROSSWALK, ISLAND, MINI- ROUNDABOUT, OR SIMILAR ELEMENTS. MICROTRENCHING MAY BE PERMITTED, AT THE CITY'S DISCRETION, IN OR THROUGH EXISTING IMPROVEMENTS AND SPECIAL PAVEMENTS (SUCH AS DECORATIVE ASPHALT PAVING, AND PERPENDICULAR TO SPEED BUMPS). EXISTING IMPROVEMENTS AND SPECIAL PAVEMENTS SHALL BE RESTORED IN KIND AS APPROVED BY THE CITY.
5. **DAMAGE TO EXISTING IMPROVEMENTS:** CONNECTION TO SERVICE LATERALS, JUNCTION BOXES, ETC. SHALL BE DONE SUCH THAT EXISTING IMPROVEMENTS ARE NOT DISTURBED, SETTLED, OR DAMAGED. ANY DAMAGE TO EXISTING IMPROVEMENTS BY PARALLEL OR PERPENDICULAR MICROTRENCHING ACTIVITIES SHALL BE RESTORED IN KIND AS APPROVED BY THE CITY. DAMAGE TO CONCRETE CURB, GUTTER, SIDEWALK, AND PAVEMENT SHALL BE REMOVED AND RESTORED IN ACCORDANCE WITH **SDG-156**.
6. **TRENCH CUTS:** CONTRACTOR SHALL MAKE ALL REASONABLE EFFORTS TO ACHIEVE STRAIGHT AND UNIFORM CUTS WITH NEAT EDGES. SELECTION OF CUTTING WHEEL SHALL BE SUCH THAT IT MINIMIZES DAMAGE TO THE ADJACENT AC SURFACE. RADII TRENCH CUTS SHALL HAVE NO MORE THAN 3 CUTS.
7. **MICROTRENCH WIDTH:** MICROTRENCH WIDTH SHALL BE A MINIMUM OF 1 INCH AND A MAXIMUM OF 2 ½ INCHES. TRENCHES WITH WIDTH GREATER THAN 2 ½ INCHES MUST FOLLOW **SDG-117** (NARROW TRENCH RESURFACING FOR ASPHALT CONCRETE SURFACE STREETS), WHICH REQUIRES A DIFFERENT BACKFILL MATERIAL. THE CITY MAY CHANGE THE PERMIT TO **SDG-117** BY AN AS-BUILT CHANGE IF THE TRENCH EXCEEDS 2 ½ INCHES IN CONSTRUCTION.
8. **MICROTRENCH ALIGNMENT OFFSET TO AN ADJACENT MICROTRENCH:** NO MICROTRENCHING SHALL BE LESS THAN 2 FEET FROM ADJACENT MICROTRENCHES (EDGE TO EDGE). THIS MAY REQUIRE THE CONTRACTOR TO POTHOLE TO VERIFY PARALLEL UTILITIES SIZE AND TRENCH WIDTH TO ENSURE PROPER SEPARATION.
9. **CONDUIT PLACEMENT IN TRENCH:** THE TOP OF HIGHEST CONDUIT SHALL BE 12 INCHES MINIMUM FROM TOP OF PAVEMENT OR 4 INCHES FROM BOTTOM OF PAVEMENT SECTION TO INCLUDE ASPHALT, BASE AND CTB, WHICHEVER IS GREATER.
10. **CONDUIT SIZE:** 2 INCH MAXIMUM CONDUIT SIZE SCH 40 PVC OR EQUIVALENT HDPE PER NATIONAL ELECTRICAL CODE.
11. **TRENCH IDENTIFICATION:** INSTALL FOLDED WARNING / IDENTIFICATION TAPE WARNING TAPE **PER SDM-105**. EACH TRENCH SHALL BE IDENTIFIED WITH A CALLOUT ON THE PULLBOX / VAULT / JUNCTION BOX LID WITH THE NAME OF THE OWNER OF THE MICROTRENCH.
12. **MICROTRENCH BACKFILL AND REQUIREMENTS TO OPEN THE STREET TO TRAFFIC:** ALL MICROTRENCHES SHALL BE COMPLETELY BACKFILLED WITH A CEMENT SAND SLURRY 2000 PSI MINIMUM AND 2% CALCIUM CHLORIDE TO FINISH GRADE. THIS IS AN INTERIM CONDITION AND CONTRACTOR SHALL FOLLOW CURING TIME REQUIREMENTS (PER NOTE 14) TO OPEN THE STREET TO TRAFFIC PRIOR TO COMPLETING PAVING REQUIREMENTS FOR FINAL RESTORATION.
13. **SLURRY VOID REDUCTION:** CONTRACTOR SHALL USE A VIBRATOR TO ENSURE SLURRY FILL WITHOUT VOIDS.
14. **SLURRY CURE TIME:** ALLOW A MINIMUM OF THREE HOURS FOR SLURRY TRENCH BACKFILL CURE TIME FOR TRENCHES PARALLEL TO THE STREET BEFORE OPENING TO TRAFFIC.
15. **FINAL MICROTRENCH RESTORATION:** WITHIN 7 DAYS OF PLACING THE SLURRY BACKFILL TO GRADE, MILL THE SLURRY BACKFILL AND EXISTING PAVEMENT A MINIMUM DISTANCE OF 6 INCHES ON EACH SIDE OF THE TRENCH, TO A DEPTH OF 4 INCHES AND RESURFACE WITH 1/2 INCH TYPE III CLASS C2 ASPHALT. TACK ALL EDGES OF THE MILLED AREA WITH ASPHALTIC EMULSION.

SEE ADDITIONAL NOTES ON SHEET 2

SHEET 1 OF 4

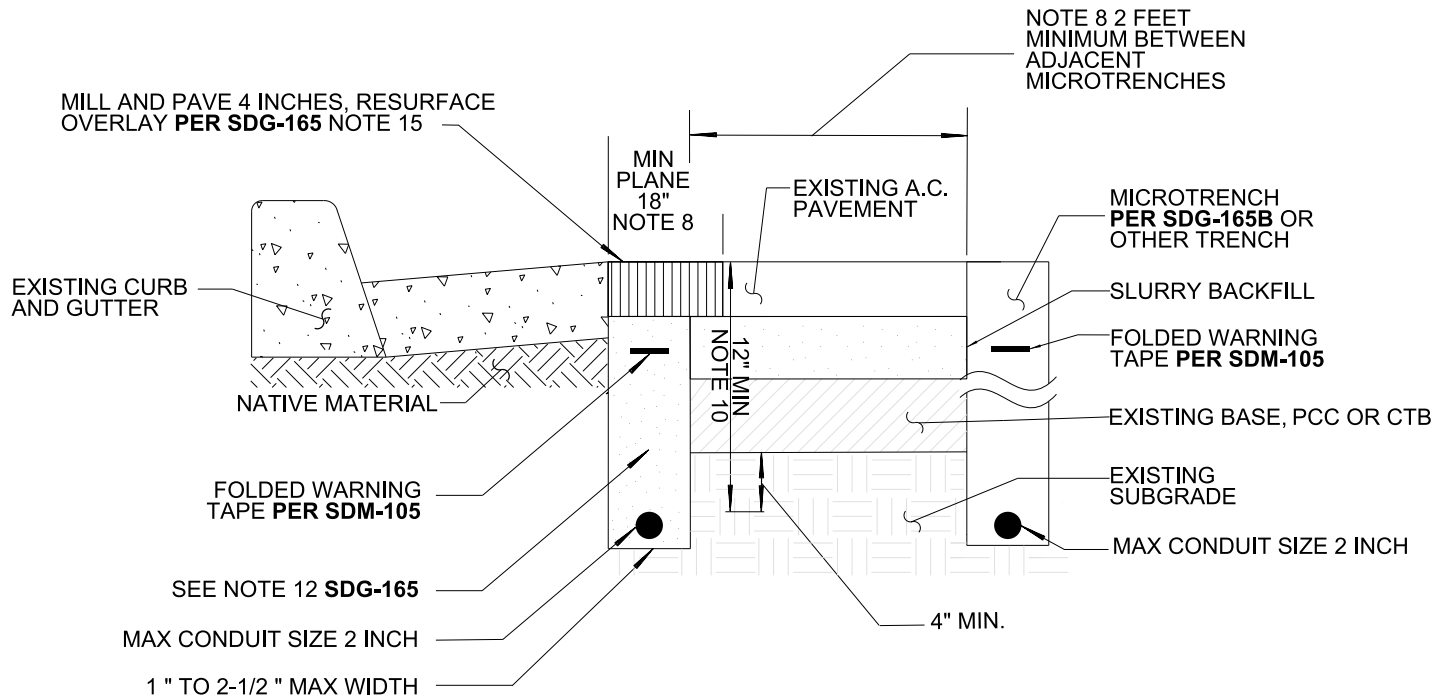
REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	GENERAL MICROTRENCH NOTES	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE <i>Alaine James</i> 10/10/22 COORDINATOR R.C.E. 81047 DATE
ORIGINAL	HY	M. GIBSON	05/17			
REDRAFTED	CD	J. NAGELVOORT	0918			
UPDATED	RC	R. AMEN	1022			
						DRAWING NUMBER SDG-165

NOTES (CONTINUED):

16. **FINAL MICROTRENCH RESTORATION WHEN ADJACENT TO ANOTHER TRENCH:** WHEN RESTORING A MICROTRENCH SEPARATED BY 2 FEET (EDGE TO EDGE) FROM ANY ADJACENT TRENCH THE MICROTRENCH RESTORATION SHALL FOLLOW NOTE 15 FOR TRENCH RESTORATION AND **SDG-107** FOR FULL LIMITS OF THE PERMITTED ALIGNMENT TO MAINTAIN INFLUENCE AREA INTEGRITY.
17. **MICROTRENCHING IN BIKE LANES:** FOR THE WORK IN THE BIKE LANE, CONTRACTOR SHALL PROVIDE A POTHOLING PLAN FOR REVIEW WITH THE ENGINEER FOLLOWING PRE-CONSTRUCTION MEETING. THE BIKE LANE SHALL BE FULLY CLOSED AND APPROPRIATE TRAFFIC CONTROL PLAN AND SIGNAGE USED. MICROTRENCHING IN THE BIKE LANE REQUIRES THAT SLURRY BACKFILL BE COMPLETED BEFORE END OF APPROVED WORKDAY WITH CURING TIME PER NOTE 14. RESTORATION TO THE TRENCH SHALL BE PER NOTE 15.
18. **FINAL MICROTRENCH RESTORATION IN BIKE LANES:** THE CONTRACTOR SHALL RESTORE FULL WIDTH OF BIKE LANE TO THE FACE OF CURB AND PLACE 1 ½ INCH THICKNESS OF ASPHALT PER **SDG-107**.

SHEET 2 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
ORIGINAL	HY	M. GIBSON	05/17		<div><div><div>Alaine James</div><div>COORDINATOR</div></div><div><div>10/10/22</div><div>R.C.E. 81047</div><div>DATE</div></div></div>
REDRAFTED	CD	J. NAGELVOORT	09/18		
UPDATED	RC	R. AMEN	10/22		
				GENERAL MICROTRENCH NOTES	DRAWING NUMBER
					SDG-165



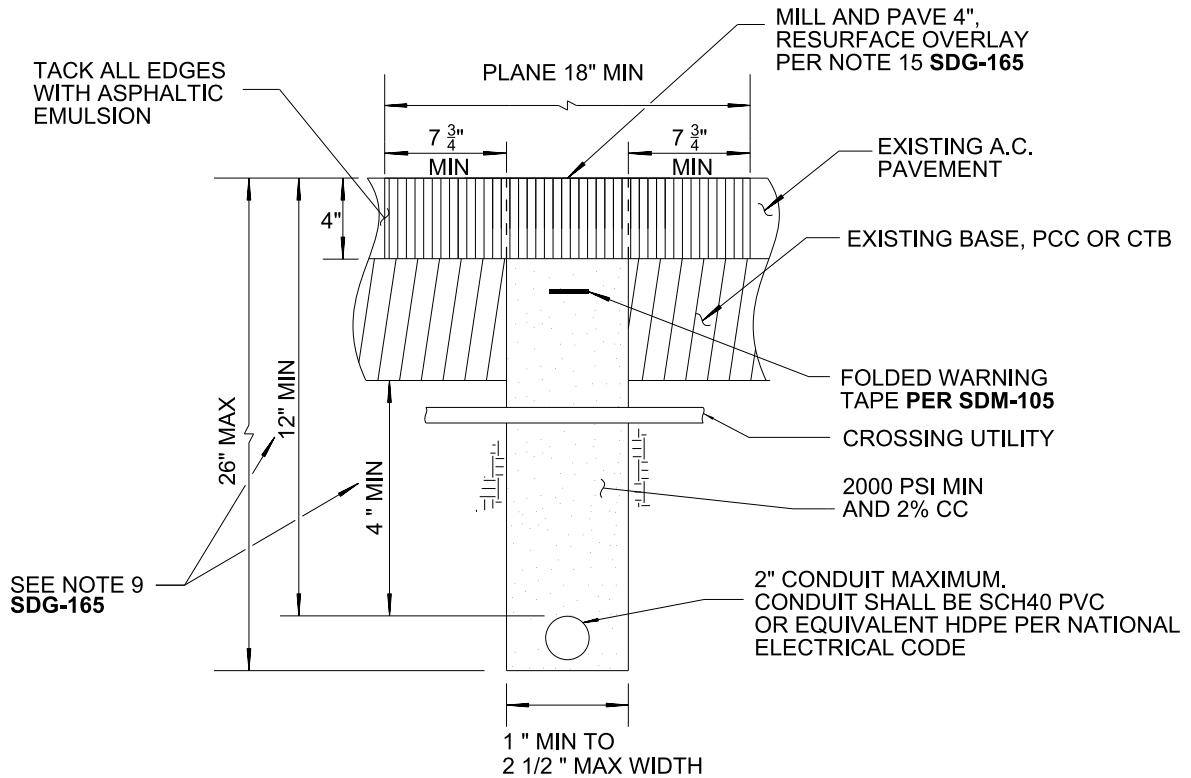
LEGEND ON PLANS:
 — MTC — MICROTRENCH CONDUIT (MTC)

NOTES:

1. APPLICABLE WHERE CONCRETE GUTTER IS VISIBLE OR EXPOSED.
2. SHALL NOT BE APPLICABLE AT STREET INTERSECTIONS OR ALONG MEDIAN CURBS.
3. TRENCH LOCATION SHALL BE AT THE EDGE OF CURB.

SHEET 3 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
ORIGINAL	HY	M. GIBSON	05/17		
REDRAFTED	CD	J. NAGELVOORT	09/18	MICROTRENCH FOR DRY UTILITIES AT EDGE OF CURB AND GUTTER	<i>Alaine James</i> 10/10/22 COORDINATOR R.C.E. 81047 DATE
UPDATED	ED	R. AMEN	10/22		
				DRAWING NUMBER	SDG-165A



NOTES:

1. SHALL APPLY TO ALL MICROTRENCHING AT STREET INTERSECTIONS.
2. TRENCH LOCATION SHALL BE AT LEAST 9 INCHES FROM LIP OF GUTTER.
3. TRENCH SHALL BE AT LEAST 12 INCHES FROM ANY EXISTING CONCRETE STRUCTURE.
3. TRENCH LOCATION SHALL AVOID WHEEL PATH OF TRAVEL.

SHEET 4 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
ORIGINAL	HY	M. GIBSON	05/17		
REDRAFTED	CD	J. NAGELVOORT	09/18	MICROTRENCH FOR DRY UTILITIES AWAY FROM EDGE OF CURB AND GUTTER	<i>Alaine James</i> 10/10/22 COORDINATOR R.C.E. 81047 DATE
UPDATED	RC	R. AMEN	10/22		
				DRAWING NUMBER	SDG-165B