

THE CITY OF SAN DIEGO

MEMORANDUM

DATE: April 30, 2021

TO: Distribution

FROM: James Nagelvoort, City Engineer

SUBJECT: Updated Standard Drawing SDG-117 Narrow Trench Resurfacing for Asphalt Concrete Surface Streets

In response to the increased need for the installation of multiple conduits, the Standard Drawing SDG-117 for Narrow Trench Resurfacing for Asphalt Concrete Surface Streets (SDG-117) has been updated to allow the installation of more than one conduit in a narrow trench. As shown on attached updated SDG-117, the following options can be used for narrow trench resurfacing:

- 1. Option A for one conduit
- 2. Option B for two conduits
- 3. Option C for three conduits (for conduits stacked vertically with spacers)

Additional requirements on the location of the trench and clearance separations between utilities have been added to SDG-117. This drawing is also posted in the City's website, <u>Updates Approved for Use - 2018 Standard Drawings | Engineering & Capital Projects | City of San Diego Official Website</u>.

Please notify your project managers, construction managers, designers, consultants, and maintenance and operation crews of the new updated standard. If you need additional information, please contact Luis Schaar at 858–627–3220 or <u>lschaar@sandiego.gov</u>.

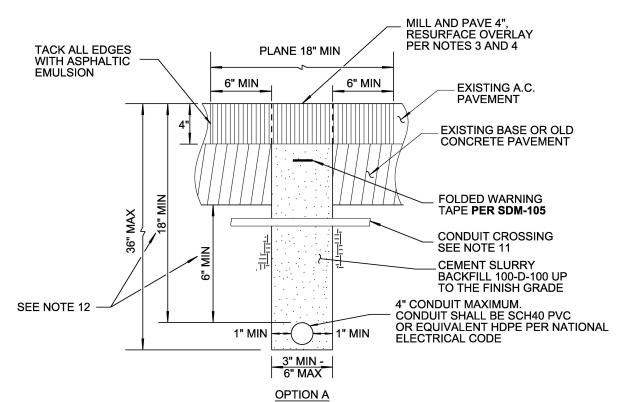
James Nagelvoort, P.E. City Engineer

Attachment: SDG-117 Narrow Trench Resurfacing for Concrete Surface Streets

Distribution: Honorable Mara Elliott, City Attorney Paola Avila, Chief of Staff, Office of the Mayor Jay Goldstone, Chief Operating Officer Alia Khouri, Deputy Chief Operating Officer Kristina Peralta, Deputy Chief Operating Officer Jeff Sturak, Deputy Chief Operating Officer Page 2 Distribution April 30th, 2021

Matthew Helm, Chief Compliance Officer David Nisleit, Chief, Police Department Colin Stowell, Chief, Fire-Rescue Department CIPRAC Members Deputy City Engineers

"ATTACHMENT"



NOTES (OPTION A):

TRENCH LOCATION SHALL BE 36 INCHES MINIMUM AND 72 INCHES MAXIMUM FROM LIP OF GUTTER, AND AT LEAST 1. 36 INCHES CLEAR FROM ANY CITY UNDERGROUND FACILITIES.

TRENCHING IN THE BIKE LANE MUST BE APPROVED BY THE RESIDENT ENGINEER. THE BIKE LANE SHALL BE FULLY CLOSED AND RE-ROUTED WITH THE APPROPRIATE TRAFFIC CONTROL AND THE WORK SHALL BE COMPLETED WITHIN 7 DAYS OF TRENCHING. CONTRACTOR IS REQUIRED TO SUBMIT A POTHOLING PLAN FOR REVIEW PRIOR TO WORK AND COMMITMENT TO REPAVING FULL WIDTH OF BIKE LANE TO THE FACE OF CURB (GRIND AND OVERLAY) TO THE SATISFACTION OF THE RESIDENT ENGINEER. ANY TRENCHING IN THE BIKE LANE SHALL BE PERFORMED IN SEGMENTS NOT TO EXCEED 500 LINEAR FEET PER SEGMENT. THE CONTRACTOR SHALL FULLY COMPLETE THE WORK ON EACH SEGMENT PRIOR TO MOVING TO THE NEXT SEGMENT.

- CEMENT SLURRY BACKFILL SHALL BE THOROUGHLY CONSOLIDATED, HAVE A MAXIMUM SLUMP OF 4 INCHES. FLY 2 ASH MEETING THE REQUIREMENTS OF 201-1.2.5.3 MAY BE ADDED (NOT AS A SUBSTITUTE) TO THE MINIMUM CEMENT REQUIREMENTS. SLURRY COMBINED GRADING SHALL MEET REQUIREMENTS OF 201-1.3.2 (A) GRADING D.
- BALL DROP TEST PER ASTM D6024 SHALL BE PERFORMED ON SLURRY AND ACHIEVE A MAXIMUM INDENTATION DIAMETER OF 3 INCHES PRIOR TO PLACEMENT OF ASPHALT CONCRETE. SLURRY PLACED IN NARROW TRENCHES WHERE BALL DROP TEST CANNOT BE PERFORMED SHALL BE CURED A MINIMUM OF 48 HOURS PRIOR TO PLACEMENT OF ASPHALT CONCRETE. PERMANENT RESURFACING SHALL BE COMPLETED IN NO MORE THAN 7 DAYS AFTER PLACEMENT OF CEMENT SLURRY.
- DURING PLACEMENT, CONCAVE SLURRY SURFACE WITH A SHOVEL TO 1/2 INCH 1 INCH DEPTH. 4.
- MINIMUM SPECIFIED SEPARATIONS MUST BE MAINTAINED UNTIL SLURRY HAS FULLY CURED. IT IS THE 5. RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE CONDUIT DOES NOT SHIFT HORIZONTALLY OR FLOAT VERTICALLY IN THE TRENCH DURING THE APPLICATION OF THE SLURRY. SPOT POUR ONE SACK SLURRY OVER CONDUIT AT 25 FOOT INTERVALS TO PREVENT CONDUIT FROM FLOATING.
- 6 CUTS SHALL BE STRAIGHT. EXISTING A.C. PAVEMENT WILL NOT REQUIRE SAW CUTTING WHEN USING ROCKWHEEL FOR EXCAVATION PROVIDED THAT A SMOOTH SURFACE IS PRODUCED.

REVISION BY APPROVED DATE RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE CITY OF SAN DIEGO - STANDARD DRAWING ORIGINAL BAHMANIAN 04/86 J. NAGELVOORT 02/16 UPDATED AA unger 04/30/21 NARROW TRENCH RESURFACING FOR UPDATED LS M. GIBSON 05/17 COORDINATOR (R.C.E. 56523 DATE ASPHALT CONCRETE SURFACE STREETS REDRAFTED CD J. NAGELVOORT 09/18 DRAWING **OPTION A - ONE CONDUIT** UPDATED LS J. NAGELVOORT 04⁄21 **SDG-117A** NUMBER

SEE ADDITIONAL NOTES ON SHEET 2

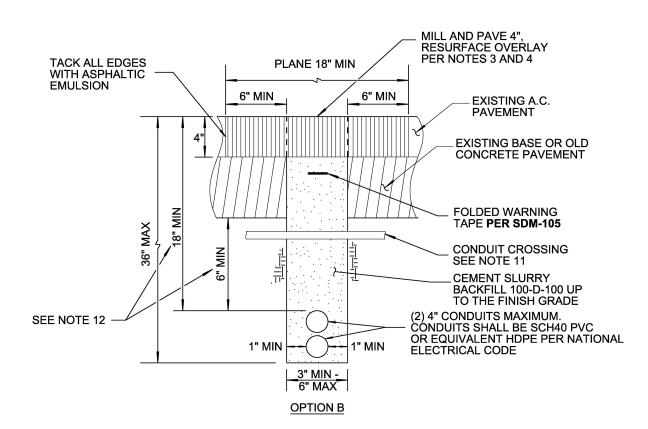
SHEET 1 OF 6

NOTES (CONTINUED FOR OPTION A):

- 7. TRENCH SHALL BE MILLED TO A DEPTH OF 4 INCHES AND A MINIMUM OF 18 INCHES WIDE OR 12 INCHES WIDER THAN TRENCH WIDTH, WHICHEVER IS GREATER, AND RESURFACED WITH 1/2 INCH TYPE III CLASS C2 ASPHALT.
- 8. WHEN PCC TRENCH RESURFACING IS DIRECTED BY CITY ENGINEER, SHOWN ON THE PLANS, OR REQUIRED FOR A PCC SURFACED STREET, FOR ASPHALT STREETS SEE SDG-107 (NOTE #3) AND FOR CONCRETE SURFACED STREETS SEE SDG-108.
- 9. SDG-117A SHALL BE USED FOR THE PLACEMENT OF ONE CONDUIT. FOR THE PLACEMENT OF TWO CONDUITS USE SDG-117B AND FOR PLACEMENT OF THREE OR MORE CONDUITS USE SDG-117C OR SDG-119.
- 10. ALLOW THREE HOURS MINIMUM FOR ONE SACK SLURRY TRENCH BACKFILL CURE TIME FOR TRENCHES PARALLEL TO THE STREET BEFORE OPENING TO TRAFFIC.
- 11. SLEEVE EXISTING CONDUITS AT CROSSING.
- 12. TOP OF CONDUIT SHALL BE 18 INCHES MINIMUM FROM TOP OF PAVEMENT OR 6 INCHES MINIMUM FROM BOTTOM OF PAVEMENT SECTION, WHICHEVER IS GREATER.
- 13. CLEARANCE SEPARATIONS BETWEEN DRY AND WET UTILITIES PER CALIFORNIA PUBLIC UTILITY CODE GENERAL ORDER 128 SHALL BE MAINTAINED

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE	
ORIGINAL		BAHMANIAN	04⁄86			
UPDATED	AA	J. NAGELVOORT	02/16		CAtungea 04/30/21	
UPDATED	LS	M. GIBSON	05⁄17	NARROW TRENCH RESURFACING FOR ASPHALT CONCRETE SURFACE STREETS OPTION A - ONE CONDUIT	COORDINATOR / R.C.E. 56523 DATE	
REDRAFTED	CD	J. NAGELVOORT	09/18			
UPDATED	LS	J. NAGELVOORT	04⁄21			
					NUMBER ODO-IT/A	

SHEET 2 OF 6



NOTES (OPTION B):

SEE ADDITIONAL NOTES ON SHEET 4

1. TRENCH LOCATION SHALL BE 36 INCHES MINIMUM AND 72 INCHES MAXIMUM FROM LIP OF GUTTER, AND AT LEAST 36 INCHES CLEAR FROM ANY CITY UNDERGROUND FACILITIES.

TRENCHING IN THE BIKE LANE MUST BE APPROVED BY THE RESIDENT ENGINEER. THE BIKE LANE SHALL BE FULLY CLOSED AND RE-ROUTED WITH THE APPROPRIATE TRAFFIC CONTROL AND THE WORK SHALL BE COMPLETED WITHIN 7 DAYS OF TRENCHING. CONTRACTOR IS REQUIRED TO SUBMIT A POTHOLING PLAN FOR REVIEW PRIOR TO WORK AND COMMITMENT TO REPAVING FULL WIDTH OF BIKE LANE TO THE FACE OF CURB (GRIND AND OVERLAY) TO THE SATISFACTION OF THE RESIDENT ENGINEER. ANY TRENCHING IN THE BIKE LANE SHALL BE PERFORMED IN SEGMENTS NOT TO EXCEED 500 LINEAR FEET PER SEGMENT. THE CONTRACTOR SHALL FULLY COMPLETE THE WORK ON EACH SEGMENT PRIOR TO MOVING TO THE NEXT SEGMENT.

- 2. CEMENT SLURRY BACKFILL SHALL BE THOROUGHLY CONSOLIDATED, HAVE A MAXIMUM SLUMP OF 4 INCHES. FLY ASH MEETING THE REQUIREMENTS OF 201-1.2.5.3 MAY BE ADDED (NOT AS A SUBSTITUTE) TO THE MINIMUM CEMENT REQUIREMENTS. SLURRY COMBINED GRADING SHALL MEET REQUIREMENTS OF 201-1.3.2 (A) GRADING D.
- 3. BALL DROP TEST PER ASTM D6024 SHALL BE PERFORMED ON SLURRY AND ACHIEVE A MAXIMUM INDENTATION DIAMETER OF 3 INCHES PRIOR TO PLACEMENT OF ASPHALT CONCRETE. SLURRY PLACED IN NARROW TRENCHES WHERE BALL DROP TEST CANNOT BE PERFORMED SHALL BE CURED A MINIMUM OF 48 HOURS PRIOR TO PLACEMENT OF ASPHALT CONCRETE. PERMANENT RESURFACING SHALL BE COMPLETED IN NO MORE THAN 7 DAYS AFTER PLACEMENT OF CEMENT SLURRY.
- 4. DURING PLACEMENT, CONCAVE SLURRY SURFACE WITH A SHOVEL TO 1/2 INCH 1 INCH DEPTH.
- 5. MINIMUM SPECIFIED SEPARATIONS MUST BE MAINTAINED UNTIL SLURRY HAS FULLY CURED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE CONDUIT DOES NOT SHIFT HORIZONTALLY OR FLOAT VERTICALLY IN THE TRENCH DURING THE APPLICATION OF THE SLURRY. SPOT POUR ONE SACK SLURRY OVER CONDUIT AT 25 FOOT INTERVALS TO PREVENT CONDUIT FROM FLOATING.
- CUTS SHALL BE STRAIGHT. EXISTING A.C. PAVEMENT WILL NOT REQUIRE SAW CUTTING WHEN USING ROCKWHEEL FOR EXCAVATION PROVIDED THAT A SMOOTH SURFACE IS PRODUCED.

REVISION	BY	APPROVED	DATE		RECOMMENDED BY THE CITY
ORIGINAL		BAHMANIAN	04⁄86	CITY OF SAN DIEGO – STANDARD DRAWING	OF SAN DIEGO STANDARDS COMMITTEE
UPDATED	AA	J. NAGELVOORT	02/16		Chtringer 04/30/21
UPDATED	LS	M. GIBSON	05⁄17	NARROW TRENCH RESURFACING FOR ASPHALT CONCRETE SURFACE STREETS	COORDINATOR R.C.E. 56523 DATE
REDRAFTED	CD	J. NAGELVOORT	09/18		
UPDATED	LS	J. NAGELVOORT	04⁄21	OPTION B - TWO CONDUITS	DRAWING SDG-117B
					NUMBER ODG-IIID

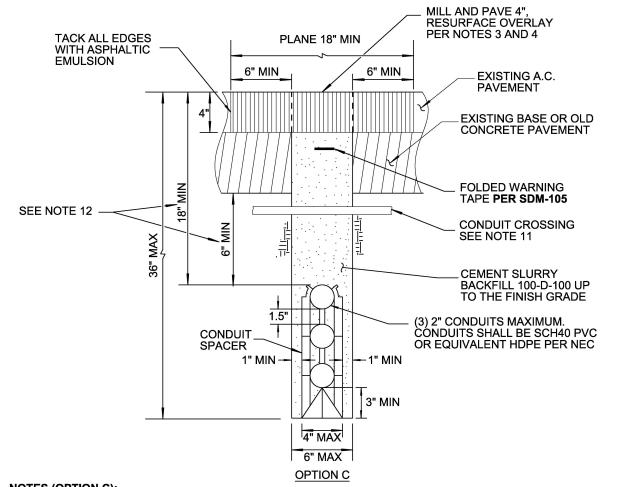
SHEET 3 OF 6

NOTES (CONTINUED FOR OPTION B):

- 7. TRENCH SHALL BE MILLED TO A DEPTH OF 4 INCHES AND A MINIMUM OF 18 INCHES WIDE OR 12 INCHES WIDER THAN TRENCH WIDTH, WHICHEVER IS GREATER, AND RESURFACED WITH 1/2 INCH TYPE III CLASS C2 ASPHALT.
- 8. WHEN PCC TRENCH RESURFACING IS DIRECTED BY CITY ENGINEER, SHOWN ON THE PLANS, OR REQUIRED FOR A PCC SURFACED STREET, FOR ASPHALT STREETS SEE SDG-107 (NOTE #3) AND FOR CONCRETE SURFACED STREETS SEE SDG-108.
- 9. SDG-117A SHALL BE USED FOR THE PLACEMENT OF ONE CONDUIT. FOR THE PLACEMENT OF TWO CONDUITS USE SDG-117B AND FOR PLACEMENT OF THREE OR MORE CONDUITS USE SDG-117C OR SDG-119.
- 10. ALLOW THREE HOURS MINIMUM FOR ONE SACK SLURRY TRENCH BACKFILL CURE TIME FOR TRENCHES PARALLEL TO THE STREET BEFORE OPENING TO TRAFFIC.
- 11. SLEEVE EXISTING CONDUITS AT CROSSING.
- 12. TOP OF CONDUIT SHALL BE 18 INCHES MINIMUM FROM TOP OF PAVEMENT OR 6 INCHES MINIMUM FROM BOTTOM OF PAVEMENT SECTION, WHICHEVER IS GREATER.
- 13. CLEARANCE SEPARATIONS BETWEEN DRY AND WET UTILITIES PER CALIFORNIA PUBLIC UTILITY CODE GENERAL ORDER 128 SHALL BE MAINTAINED

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY	
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UPDATED	AA	J. NAGELVOORT	02/16		CAtungea 04/30/21	
UPDATED	LS	M. GIBSON	05⁄17	NARROW TRENCH RESURFACING FOR ASPHALT CONCRETE SURFACE STREETS OPTION B - TWO CONDUITS	COORDINATOR R.C.E. 56523 DATE	
REDRAFTED	CD	J. NAGELVOORT	09⁄18			
UPDATED	LS	J. NAGELVOORT	04⁄21		DRAWING SDG-117B	
					NUMBER ODO-IIID	

SHEET 4 OF 6



NOTES (OPTION C):

1. TRENCH LOCATION SHALL BE 36 INCHES MINIMUM AND 72 INCHES MAXIMUM FROM LIP OF GUTTER, AND AT LEAST 36 INCHES CLEAR FROM ANY CITY UNDERGROUND FACILITIES.

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- 2. CEMENT SLURRY BACKFILL SHALL BE THOROUGHLY CONSOLIDATED, HAVE A MAXIMUM SLUMP OF 4 INCHES. FLY ASH MEETING THE REQUIREMENTS OF 201-1.2.5.3 MAY BE ADDED (NOT AS A SUBSTITUTE) TO THE MINIMUM CEMENT REQUIREMENTS. SLURRY COMBINED GRADING SHALL MEET REQUIREMENTS OF 201-1.3.2 (A) GRADING D.
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- 5. MINIMUM SPECIFIED SEPARATIONS MUST BE MAINTAINED UNTIL SLURRY HAS FULLY CURED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE CONDUIT DOES NOT SHIFT HORIZONTALLY OR FLOAT VERTICALLY IN THE TRENCH DURING THE APPLICATION OF THE SLURRY. SPOT POUR ONE SACK SLURRY OVER CONDUIT AT 25 FOOT INTERVALS TO PREVENT CONDUIT FROM FLOATING.

SEE ADDITIONAL NOTES ON SHEET 6

SHEET 5 OF 6

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ORIGINAL		BAHMANIAN	04⁄86			
UPDATED	AA	J. NAGELVOORT	02/16		Choungea 04/30/21	
UPDATED	LS	M. GIBSON	05⁄17	NARROW TRENCH RESURFACING FOR	COORDINATOR R.C.E. 56523 DATE	
REDRAFTED	CD	J. NAGELVOORT	09⁄18	ASPHALT CONCRETE SURFACE STREETS		
UPDATED	LS	J. NAGELVOORT	04⁄21	OPTION C - THREE CONDUITS		
					NUMBER ODG-IIIO	

NOTES (CONTINUED FOR OPTION C):

- 6. CUTS SHALL BE STRAIGHT. EXISTING A.C. PAVEMENT WILL NOT REQUIRE SAW CUTTING WHEN USING ROCKWHEEL FOR EXCAVATION PROVIDED THAT A SMOOTH SURFACE IS PRODUCED.
- 7. TRENCH SHALL BE MILLED TO A DEPTH OF 4 INCHES AND A MINIMUM OF 18 INCHES WIDE OR 12 INCHES WIDER THAN TRENCH WIDTH, WHICHEVER IS GREATER, AND RESURFACED WITH 1/2 INCH TYPE III CLASS C2 ASPHALT.
- 8. WHEN PCC TRENCH RESURFACING IS DIRECTED BY CITY ENGINEER, SHOWN ON THE PLANS, OR REQUIRED FOR A PCC SURFACED STREET, FOR ASPHALT STREETS **SEE SDG-107** (NOTE #3) AND FOR CONCRETE SURFACED STREETS **SEE SDG-108**.
- 9. FOR PLACEMENT OF ADDITIONAL CONDUITS THAT EXCEED THE MAXIMUM ALLOWABLE TRENCH DIMENSIONS IN **SDG-117C** USE **SDG-119**.
- 10. ALLOW THREE HOURS MINIMUM FOR ONE SACK SLURRY TRENCH BACKFILL CURE TIME FOR TRENCHES PARALLEL TO THE STREET BEFORE OPENING TO TRAFFIC.
- 11. SLEEVE EXISTING CONDUITS AT CROSSING.
- 12. TOP OF CONDUIT SHALL BE 18" MINIMUM FROM TOP OF PAVEMENT OR 6" MINIMUM FROM BOTTOM OF PAVEMENT SECTION, WHICHEVER IS GREATER.
- 13. CONDUIT DUCT SPACERS SHALL BE USED TO MAINTAIN A 3 INCH MINIMUM SEPARATION FROM THE BOTTOM OF THE TRENCH AND 1 INCH SEPARATIONS FROM THE SIDES OF THE TRENCH TO INSURE SLURRY ENCAPSULATION OF THE CONDUIT PACKAGE.
- 14. SPACERS SHALL BE PLACED EVERY 6 FEET ON CENTER ALONG THE ALIGNMENT OF THE CONDUIT.
- 15. CLEARANCE SEPARATIONS BETWEEN DRY AND WET UTILITIES PER CALIFORNIA PUBLIC UTILITY CODE GENERAL ORDER 128 SHALL BE MAINTAINED.

UPDATED	CD LS	J. NAGELVOORT	09/18 04/21	NARROW TRENCH RESURFACING FOR ASPHALT CONCRETE SURFACE STREETS OPTION C - THREE CONDUITS	DRAWING SDG-117C
UPDATED	LS	M. GIBSON	05/17		COORDINATOR R.C.E. 56523 DATE
UPDATED	AA	J. NAGELVOORT	02/16		Chtringer 04/30/21
ORIGINAL		BAHMANIAN	04⁄86	CITY OF SAN DIEGO – STANDARD DRAWING	OF SAN DIEGO STANDARDS COMMITTEE
REVISION	BY	APPROVED	DATE		RECOMMENDED BY THE CITY

SHEET 6 OF 6