

REFERENCES

THE FOLLOWING NOTES TO BE USED IN CONJUNCTION WITH CITY OF SAN DIEGO STANDARD DRAWING **SDSW-110**.

DESIGN CONDITIONS

DESIGN OF STORMWATER INFRASTRUCTURE SHALL CONFORM TO THE STORMWATER STANDARDS MANUAL AND DRAINAGE DESIGN MANUAL AND SHALL BE SUBJECT TO REVIEW. USE OF THIS DETAIL DOES NOT PRECLUDE SUCH REQUIREMENTS.

WALLS ARE TO BE USED FOR THE LOADING CONDITIONS SHOWN FOR EACH TYPE OF WALL. DESIGN HEIGHT MAY BE EXCEEDED BY SIX INCHES BEFORE GOING TO NEXT SIZE. SPECIAL FOOTING DESIGN IS REQUIRED WHERE FOUNDATION MATERIAL IS INCAPABLE OF SUPPORTING TOE PRESSURE LISTED IN TABLE, ON **SDSW-110**.

DESIGN CRITERIA

THE DESIGN CRITERIA APPLIES TO DETAILS **SDSW-110** IN THE SAN DIEGO STANDARD DRAWING LIST. DESIGN CODES 2022 CBC, ACI 318-19

MINIMUM REQUIRED MATERIAL PROPERTIES:

f_c = 4000 PSI
f_y = 60 KSI FOR ALL REBAR

LATERAL EARTH PRESSURE AT LEVEL BACKFILL:

ACTIVE = 45 PSI/FT (TRIANGULAR)
HEAVY LIVE LOAD SURCHARGE = 90 PSF (UNIFORM)
FOR WALLS HIGHER THAN 6 FT INVERTED TRIANGLE FOR EQUIVALENT 15H APPLIED AT A HEIGHT OF 2/3H MEASURED FROM THE BOTTOM OF THE WALL FOOTING - SEISMIC EARTH PRESSURE.

DESIGN LOADS ARE PROJECT SPECIFIC AND THEREFORE SHOULD THERE BE ANY DEVIATION TO THE PARAMETERS PROVIDED ABOVE, A STAMPED AND SIGNED STRUCTURAL CALCULATION SHALL BE PERFORMED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER AND SUBMITTED TO THE CITY OF SAN DIEGO FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

THE LIVE LOAD SURCHARGE VALUES AND DESCRIPTIONS ARE FOR TYPICAL LOADING SCENARIOS AND SERVE AS A GENERAL GUIDE. CONFIRMATION OF THE VALUES USED SHALL BE VERIFIED PER THE GIVEN SPECIFIC PROJECT PARAMETERS BY THE USER AND APPROVED BY THE CITY PRIOR TO INSTALLATION.

SHOULD THERE BE A SITUATION IN WHICH THE BACKFILL ON ONE SIDE OF LINER IS GREATER THAN THE OTHER, A STAMPED AND SIGNED STRUCTURAL CALCULATION SHALL BE PERFORMED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER THAT VERIFIES THE OVERALL GLOBAL STABILITY OF THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT LIMITED TO THE FOLLOWING CHECKS WITH MINIMUM FACTORS OF SAFETY OF 1.5 WHERE APPLICABLE: OVERTURNING, SLIDING AND BEARING PRESSURE.

REINFORCEMENT

GRADE 60 DEFORMED REBAR SHALL CONFORM TO ASTM A706. BARS SHALL LAP 40 BAR DIAMETERS, WHERE SPLICED, UNLESS OTHERWISE SHOWN ON THE PLANS. BENDS SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE, A.C.I. BACKING FOR HOOKS IS FOUR DIAMETERS.

JOINTS

WHEN APPLICABLE, VERTICAL CONTROL JOINTS SHALL BE PLACED AT 20' INTERVALS MAXIMUM. JOINTS SHALL BE DESIGNED TO RESIST SHEAR AND OTHER LATERAL FORCES WHILE PERMITTING LONGITUDINAL MOVEMENT. VERTICAL EXPANSION JOINTS SHALL BE PLACED AT 96' INTERVALS MAXIMUM.

CONCRETE

CONCRETE SHALL BE 660-CW-4000.

BACKFILL

NO BACKFILL MATERIAL SHALL BE PLACED AGAINST TO CONCRETE LINER UNTIL THE CONCRETE HAS DEVELOPED A STRENGTH OF 3,000 PSI IN COMPRESSION AS DETERMINED BY TEST CYLINDERS, OR UNTIL 28 DAYS AFTER WALL HAS PLACED. BACKFILL MATERIAL SHALL CONFORM TO STANDARD SPECIFICATIONS OR SPECIAL PROVISIONS. COMPACTION OF BACKFILL MATERIAL BY JETTING OR PONDING WITH WATER WILL NOT BE PERMITTED. EACH LAYER OF BACKFILL SHALL BE MOISTENED AS DIRECTED BY THE ENGINEER AND THOROUGHLY TAMPED, ROLLED OR OTHERWISE COMPACTED UNTIL THE RELATIVE COMPACTION IS NOT LESS THAN 90%.

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
UPDATED	RC	R. AMEN	02/26		
				CONCRETE LINER: NOTES	<i>Alaine James 2/18/2026</i> COORDINATOR R.C.E. 81047 DATE
					DRAWING NUMBER
					SDSW-110

INSPECTIONS

CALL FOR INSPECTIONS AS FOLLOWS:

- A. WHEN THE WALL FOOTING HAS BEEN FORMED, WITH THE STEEL TIED SECURELY IN ITS FINAL POSITION, AND IS READY FOR THE CONCRETE TO BE PLACED
- B. FINAL INSPECTION WHEN ALL WORK HAS BEEN COMPLETED.

SOIL

ALL FOOTINGS SHALL EXTEND AT LEAST 12" INTO UNDISTURBED NATURAL SOIL OR APPROVED COMPACTED FILL. SOIL SHOULD BE DAMPENED PRIOR TO PLACING CONCRETE FOOTINGS.

GROUND WATER TABLE IS ASSUMED BELOW THE BOTTOM OF THE BASING. IF THE GROUND WATER IS ABOVE THE BOTTOM OF THE BASING, A STAMPED AND SIGNED STRUCTURAL CALCULATION SHALL BE PERFORMED BY A CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER.

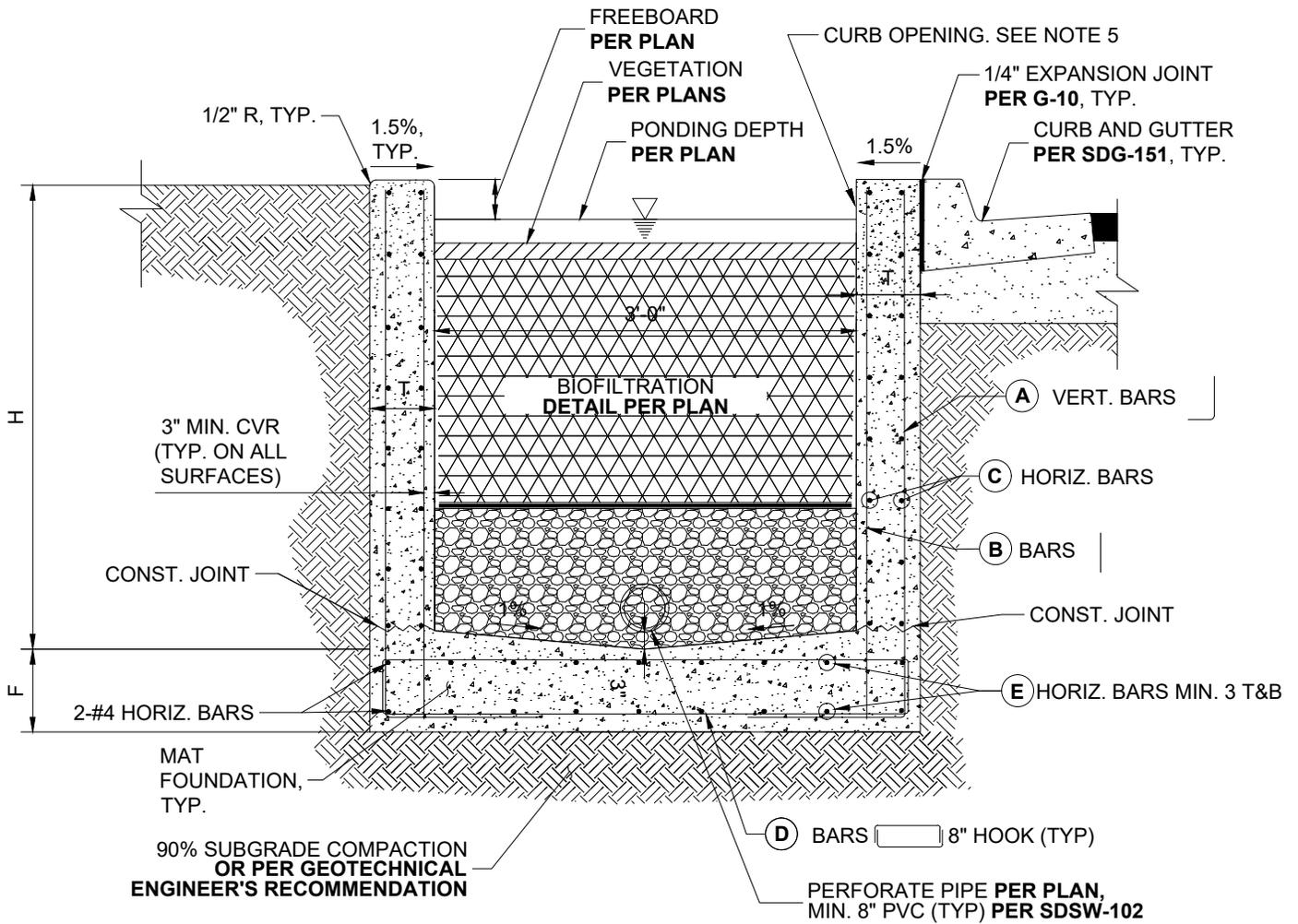
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UPDATED	RC	R. AMEN	02/26		<i>Alaine James 2/18/2026</i> COORDINATOR R.C.E. 81047 DATE
				CONCRETE LINER: NOTES	DRAWING NUMBER SDSW-110

NOTES:

1. DESIGN OF STORMWATER INFRASTRUCTURE SHALL CONFORM TO THE STORMWATER STANDARD MANUAL AND DRAINAGE DESIGN MANUAL, AND SHALL BE SUBJECT TO REVIEW. USE OF THIS DETAIL DOES NOT PRECLUDE SUCH REQUIREMENTS.
2. CONCRETE STRENGTH SHALL BE 4000 PSI (660-CW-4000).
3. SEE SHEET 1 FOR ADDITIONAL NOTES.
4. DETAIL MAY ONLY BE USED IF INFILTRATION IS PERMITTED PER THE CURRENT APPROVED STORMWATER MANUAL REQUIREMENTS.
5. REINFORCING STEEL SHALL LAP 40 BAR DIAMETERS.
6. CURB OPENING LOCATIONS AND DETAILS **PER PLANS**.
7. INSTALL PIPE PENETRATIONS THROUGH IMPERMEABLE SIDE WALL ACCORDING TO ASTM D6497.
8. WHERE NEGATIVE DRAINAGE EXISTS BETWEEN EDGE OF SIDEWALK AND BIOFILTRATION, INSTALL 3"W X 6"H NOTCHES IN RAISED CURB AT MINIMUM 1' SPACING OR AS SPECIFIED ON PLANS.

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REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
UPDATED	RC	R. AMEN	02/26		
				CONCRETE LINER: PARTIAL INFILTRATION WITH FOUNDATION OPENINGS FOR PARKWAY PLANTERS (NO PARKING ZONE AND NO PEDESTRIAN WALKWAY)	<i>Alaine James</i> 2/18/2026 COORDINATOR R.C.E. 81047 DATE
					DRAWING NUMBER SDSW-110



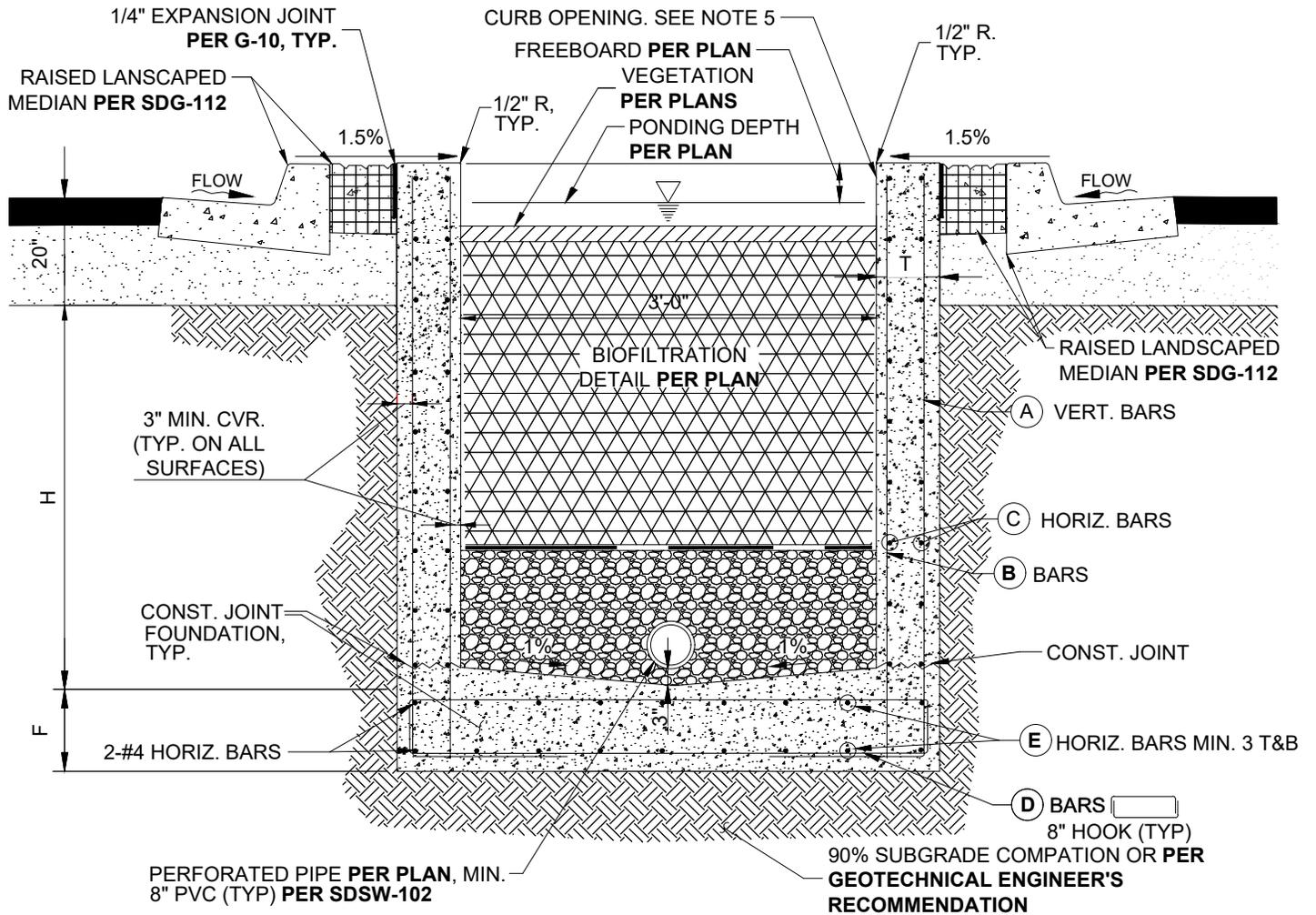
SECTION A-A

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REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE	
UPDATED	RC	R. AMEN	02/26			CONCRETE LINER: NO INFILTRATION FOR PARKWAY PLANTERS (NO PARKING ZONE AND NO PEDESTRIAN WALKWAY)
				DRAWING NUMBER SDSW-110		



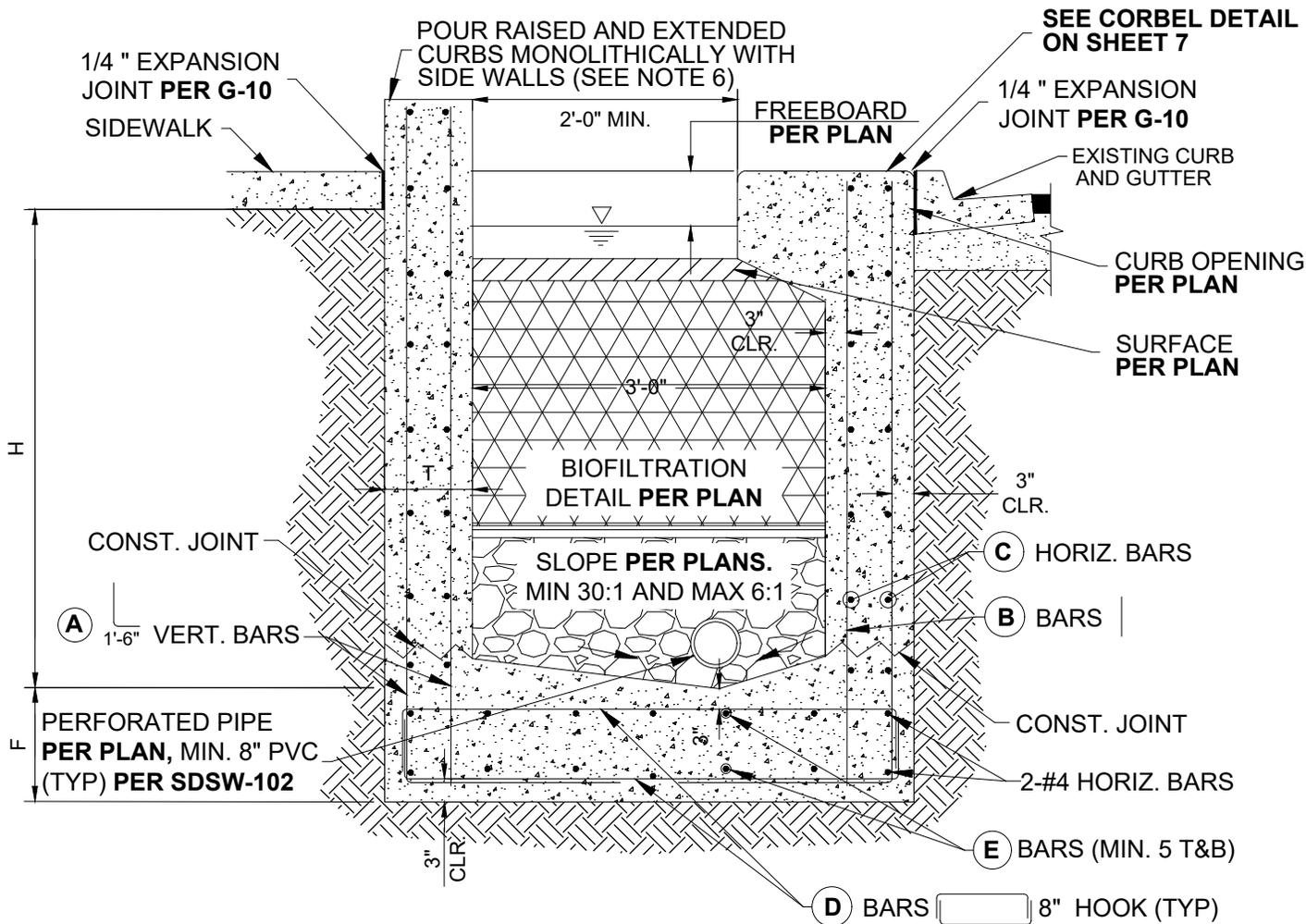
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SHEET 6 OF 11

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE	
UPDATED	RC	R. AMEN	02/26		CONCRETE LINER: PARTIAL INFILTRATION WITH FOUNDATION OPENINGS FOR ROADWAY MEDIAN	<i>Alaine James 2/18/2026</i> COORDINATOR R.C.E. 81047 DATE
				DRAWING NUMBER		SDSW-110



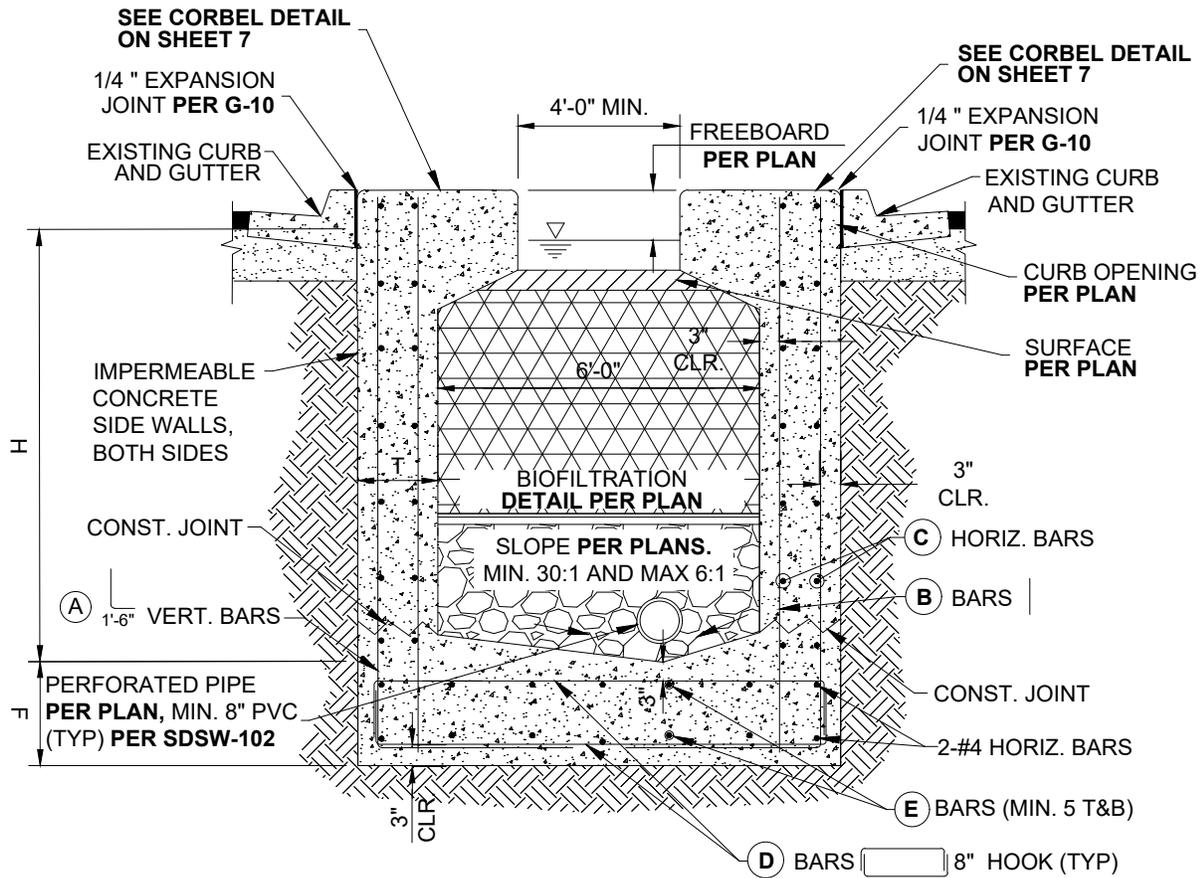
SECTION VIEW

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5. CURB OPENING LOCATIONS AND DETAILS PER PLANS.
6. INSTALL PIPE PENETRATIONS THROUGH IMPERMEABLE SIDE WALL ACCORDING TO ASTM D6497.
7. WHERE NEGATIVE DRAINAGE EXISTS BETWEEN EDGE OF SIDEWALK AND BIOFILTRATION, INSTALL 3"W X 6"H NOTCHES IN RAISED CURB AT MINIMUM 1' SPACING OR AS SPECIFIED ON PLANS.

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REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE	
UPDATED	RC	R. AMEN	02/26		CONCRETE LINER: SIDES AND BOTTOM SINGLE CORBEL	<i>Alaine James 2/18/2026</i> COORDINATOR R.C.E. 81047 DATE
				DRAWING NUMBER		SDSW-110



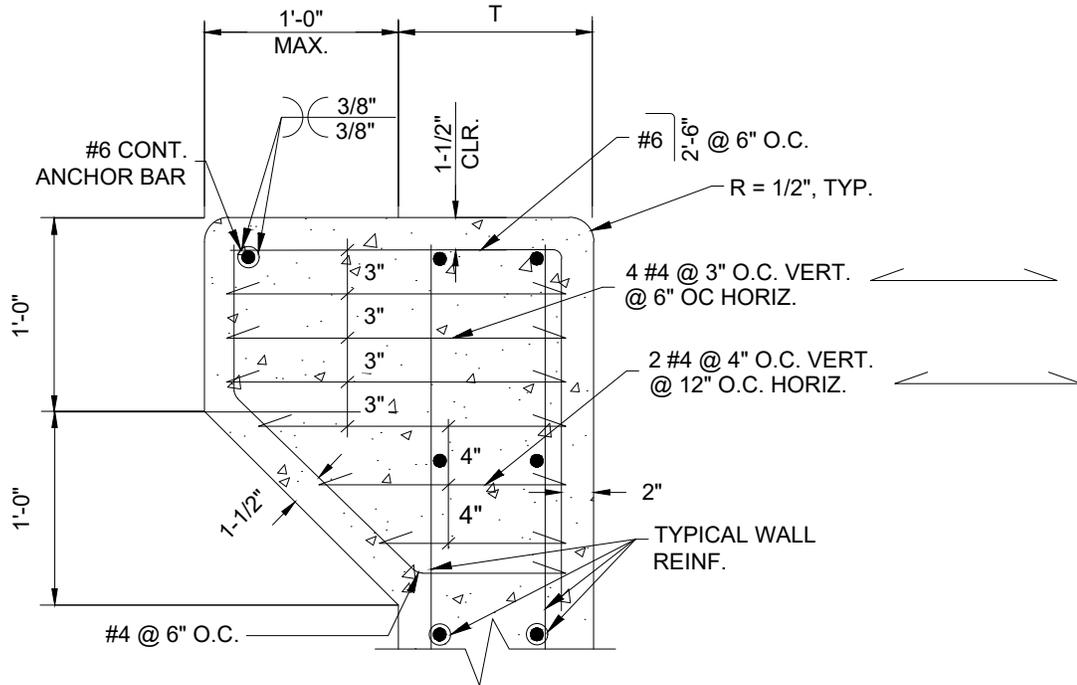
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5. REINFORCING STEEL SHALL LAP 40 BAR DIAMETERS.
6. CURB OPENING LOCATIONS AND DETAILS **PER PLANS**.
7. INSTALL PIPE PENETRATIONS THROUGH IMPERMEABLE SIDE WALL ACCORDING TO ASTM D6497.
8. WHERE NEGATIVE DRAINAGE EXISTS BETWEEN EDGE OF SIDEWALK AND BIOFILTRATION, INSTALL 3"W X 6"H NOTCHES IN RAISED CURB AT MINIMUM 1' SPACING OR AS SPECIFIED ON PLANS.

SHEET 8 OF 11

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
UPDATED	RC	R. AMEN	02/26		<i>Alaine James 2/18/2026</i> COORDINATOR R.C.E. 81047 DATE
				CONCRETE LINER: SIDES AND BOTTOM DOUBLE CORBEL	DRAWING NUMBER SDSW-110



CORBEL DETAIL

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO – STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE	
UPDATED	RC	R. AMEN	02/26		CONCRETE LINER: SIDES AND BOTTOM CORBEL	<i>Alaine James 2/18/2026</i> COORDINATOR R.C.E. 81047 DATE
				DRAWING NUMBER		SDSW-110

DIMENSIONS AND REINFORCING STEEL			
HEAVY TRAFFIC LOADING 90 PSF			
HEIGHT H (MAX)	3'-0"	5'-0"	7'-0"
THICKNESS T (MIN)	0'-7"	0'-10"	1'-0"
THICKNESS F (MIN)	1'-4"	1'-4"	1'-6"
"A" BARS	#4@12" CENTERED	#5@12"	#5@9"
"B" BARS	-	#4@12"	#4@9"
"C" BARS	#4@12" CENTERED	#4@12" EF	#4@12" EF
"D" BARS	#5@6"	#5@6"	#5@6"
"E" BARS	#5@6" T&B	#5@6" T&B	#5@6" T&B
MAXIMUM SOIL PRESSURE	813 PSF	1373 PSF	1600 PSF

**CONCRETE LINER WITH AND WITHOUT PARTIAL INFILTRATION
WITH FOUNDATION OPENINGS FOR PARKWAY PLANTERS
(NO PARKING ZONE AND NO PEDESTRIAN WALKWAY)**

DIMENSIONS AND REINFORCING STEEL			
HEAVY TRAFFIC LOADING 90 PSF			
HEIGHT H (MAX)	3'-0"	5'-0"	7'-0"
THICKNESS T (MIN)	0'-7"	0'-10"	1'-0"
THICKNESS F (MIN)	1'-4"	1'-4"	1'-6"
"A" BARS	#5@12" CENTERED	#5@9"	#5@6"
"B" BARS	-	#4@9"	#4@9"
"C" BARS	#4@12" CENTERED	#4@12" EF	#4@12" EF
"D" BARS	#5@6"	#5@6"	#5@6"
"E" BARS	#5@6" T&B	#5@6" T&B	#6@6" T&B
MAXIMUM SOIL PRESSURE	1067 PSF	1653 PSF	1876 PSF

**CONCRETE LINER NO INFILTRATION WITH FOUNDATION
OPENINGS FOR ROADWAY MEDIAN**

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UPDATED	RC	R. AMEN	02/26		
				CONCRETE LINER: BIOFILTRATION SECTION DIMENSIONS AND REINFORCING STEEL	<i>Alaine James</i> 2/18/2026 COORDINATOR R.C.E. 81047 DATE
					DRAWING NUMBER SDSW-110

DIMENSIONS AND REINFORCING STEEL			
HEAVY TRAFFIC LOADING 90 PSF			
HEIGHT H (MAX)	3'-0"	5'-0"	7'-0"
THICKNESS T (MIN)	0'-7"	0'-10"	1'-0"
THICKNESS F (MIN)	1'-4"	1'-4"	1'-4"
"A" BARS	#4@12" CENTERED	#5@12"	#5@9"
"B" BARS	-	#4@12"	#4@9"
"C" BARS	#4@12" CENTERED	#4@12" EF	#4@12" EF
"D" BARS	#5@6"	#5@6"	#5@6"
"E" BARS	#5@6" T&B	#5@6" T&B	#5@6" T&B
MAXIMUM SOIL PRESSURE	1253 PSF	1627 PSF	1853 PSF

CONCRETE LINER SIDES AND BOTTOM SINGLE CORBEL

DIMENSIONS AND REINFORCING STEEL			
HEAVY TRAFFIC LOADING 90 PSF			
HEIGHT H (MAX)	3'-0"	5'-0"	7'-0"
THICKNESS T (MIN)	0'-7"	0'-10"	1'-0"
THICKNESS F (MIN)	1'-4"	1'-4"	1'-4"
"A" BARS	#4@12" CENTERED	#5@12"	#5@9"
"B" BARS	-	#4@12"	#4@9"
"C" BARS	#4@12" CENTERED	#4@12" EF	#4@12" EF
"D" BARS	#5@6"	#5@6"	#5@6"
"E" BARS	#5@6" T&B	#5@6" T&B	#5@6" T&B
MAXIMUM SOIL PRESSURE	1187 PSF	1733 PSF	1635 PSF

CONCRETE LINER SIDES AND BOTTOM DOUBLE CORBEL

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				CONCRETE LINER: BIOFILTRATION SECTION DIMENSIONS AND REINFORCING STEEL	<i>Alaine James</i> 2/18/2026 COORDINATOR R.C.E. 81047 DATE
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