



RC CHANNEL TRANSITION STRUCTURAL DETAIL
NOT TO SCALE

TYPICAL WALL STEEL SPACING
NOT TO SCALE

STRUCTURAL NOTES

GENERAL:

- DIMENSIONS FROM FACE OF CONCRETE TO STEEL ARE TO THE NEAREST EDGE OF BAR AND SHALL PER DETAIL HEREON.
- CONCRETE DIMENSIONS SHALL BE MEASURED HORIZONTALLY OR VERTICALLY ON THE PROFILE, AND PARALLEL TO OR AT RIGHT ANGLES (OR RADIALLY) TO CENTERLINE OF RC CHANNEL ON THE PLAN UNLESS OTHERWISE SHOWN.
- ALL BAR BENDS AND HOOKS SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318).
- PLACING OF REINFORCEMENT SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", (ACI 318).
- TRANSVERSE CONSTRUCTION JOINTS SHALL NOT BE PLACED WITHIN 30 INCHES OF MANHOLE OR JUNCTION STRUCTURE OPENING, OR SIDE INLETS
- CONSTRUCTION JOINTS IN WALLS AND SLABS SHALL BE IN THE SAME PLANE. NO STAGGERING OF JOINTS WILL BE PERMITTED. TRANSVERSE CONSTRUCTION JOINTS SHALL BE NORMAL OR RADIAL TO THE CENTERLINE OF CONSTRUCTION UNLESS OTHERWISE SHOWN.
- TRANSVERSE STRAIGHT REINFORCING STEEL SHALL TERMINATE ONE AND ONE-HALF INCHES FROM THE CONCRETE SURFACES UNLESS OTHERWISE SHOWN ON THE PLANS
- EXPOSED EDGES OF CONCRETE MEMBERS SHALL BE CHAMFERED 3/4" X 3/4".
- NO SPLICES IN TRANSVERSE STEEL REINFORCEMENT WILL BE PERMITTED OTHER THAN SHOWN IN THE DRAWING WITHOUT APPROVAL OF THE ENGINEER. NO MORE THAN ONE SPLICE SHALL BE PERMITTED IN ANY LONGITUDINAL BAR BETWEEN TRANSVERSE JOINTS. SPLICES SHALL BE STAGGERED.
- ALL LAP SPLICES SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE'S "BUILDING CODE (ACI 318) REQUIREMENTS FOR REINFORCED CONCRETE". LONGITUDINAL STEEL SHALL BE LAPPED 24 BAR DIAMETER AT SPLICES. TRANSVERSE STEEL SHALL BE LAPPED USING THE FOLLOWING TABLE:

BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18
LENGTH OF LAP SPLICE	25"	31"	37"	62"	81"	103"	130"	160"	TENSION LAP SPLICING NOT PERMITTED	

ADDITIONAL NOTES FOR RC OPEN CHANNEL SECTIONS:

- LONGITUDINAL STEEL SHALL TERMINATE TWO INCHES FROM TRANSVERSE CONSTRUCTION JOINTS.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE SPACED NOT TO EXCEED 50 FEET NOR BE LESS THAN 10 FEET, MEASURED ALONG THE CENTERLINE OF CONSTRUCTION, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS.
- TRANSVERSE CONSTRUCTION JOINTS SHALL BE PLACED AT THE JUNCTION OF RECTANGULAR OPEN CHANNEL SECTIONS WITH CLOSED CONDUIT SECTIONS.
- THE MAXIMUM SPACING OF BARS IN CURVED SECTIONS SHALL NOT EXCEED THAT SHOWN ON THE TYPICAL SECTIONS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS. STEEL SHALL BE PLACED RADIALLY FROM THE MAXIMUM SPACING.
- AT THE BEGINNING AND ENDING OF ALL POURS, A COMPLETE CURTAIN OF REINFORCEMENT COMPOSED OF B₁, B₄, AND B₇ BARS SHALL BE PLACED THREE INCHES FROM THE TRANSVERSE CONSTRUCTION JOINT.
- THE BAR LENGTHS TABULATED FOR TRANSITIONS ARE APPLICABLE TO THE LARGER SECTION ONLY. THE BARS REQUIRING ADJUSTMENT ARE THOSE TABULATED IN THE TABLE HEREON AND SHALL BE ADJUSTED AS NECESSARY WITHIN THE TRANSITION.
- B₁ AND B₄ BARS MAY BE SPLICED ABOVE THE LONGITUDINAL CONSTRUCTION JOINT. USE LAP SHOWN IN THE TABLE HEREON.
- THE LONGITUDINAL CONSTRUCTION JOINTS SHALL BE CONTINUOUS.
- THE SPACING OF THE LONGITUDINAL BARS IN THE SLAB SHALL BE BASED ON THE DISTANCE BETWEEN THE LONGITUDINAL CORNER BARS NEAREST THE INSIDE FACE OF THE STRUCTURE AND THE NUMBER OF BARS SPECIFIED IN THE TABLE. THE SPACING IN THE WALLS SHALL BE BASED ON THE WALL HEIGHT AND THE NUMBER OF BARS IN THE TABLE.
- EDGE BEAM SHALL BE 12" WIDE OR T₁, WHICHEVER IS GREATER, FROM STATION STA _+_____ TO STA _+_____.
- DIMENSIONS SHOWN WITH A PLUS/MINUS SIGN ARE APPROXIMATE. CONTRACTOR SHALL ADJUST SUCH DIMENSIONS TO MATCH PROPOSED FINISH GRADE.

RC CHANNEL TABLE

SECTION NUMBER	1	2	3	4
WIDTH	W	-	-	-
HEIGHT	H	-	-	-
THICKNESS (INCHES)	BASE OF WALL	T ₁	-	-
	SLAB AT FACE OF WALL	T ₂	-	-
	SLAB AT C	T ₃	-	-
	TOP OF WALL	T ₄	-	-
INVERT DROP	V	-	-	-
STEEL CLEARANCE INVERT	C	-	-	-
B ₁ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₂ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₃ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₄ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₅ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₆ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₇ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₈ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
B ₉ BAR	BAR # AND SPACING	-	-	-
	HORIZONTAL LENGTH	-	-	-
	VERTICAL LENGTH	-	-	-
#4 LONGITUDINAL BAR	BOTTOM SLAB	-	-	-
	SIDE WALLS	-	-	-
	HEELS	-	-	-
TOTAL #4 LONGITUDINAL BARS	-	-	-	-
#4 CARRIER BARS IN BOTTOM SLAB	-	-	-	-
CONCRETE QUANTITY: CY/LINEAR FT	-	-	-	-
STEEL QUANTITY: LBS/LINEAR FT	-	-	-	-

RC CHANNEL LOCATION

CHANNEL SECTION NUMBER	STATIONS		REMARKS
	FROM	TO	
1	-	-	-
2	-	-	-

DESIGN DATA

LIVE LOAD

HS15 - 44

DEAD LOAD

WEIGHT OF CONCRETE = 150 pcf
SOIL DENSITY = XXX pcf

LATERAL LOADS

EARTHSHIDE = XX psf (EFP)
WATERSIDE = 40 psf (EFP)
SEISMIC_{SOIL} = XX X PGA X H² (FORCE)
SEISMIC_{WALL} = PGA X WGT_{WALL} (FORCE)

SOIL INFORMATION

MODULUS OF SUBGRADE REACTION:
K = XXX pci

SEISMIC

PGA = x.xxx g

ULTIMATE STRENGTH

f'_c = 4,000 ps
f_y = 60,000 psi
φ = 0.90 (Flexural Reduction)
φ = 0.85 (Shear/Conc Reduction)
β = 0.85 (Steel/Conc Reduction)
REDUCTION FACTORS PER ACI 318, LATEST CODE

GOVERNING CODES

- USACE EM 1110-2-2104, STRENGTH DESIGN FOR RC HYDRAULIC STRUCTURES
- AMERICAN CONCRETE INSTITUTE (ACI 318), LATEST EDITION.

DATE: 9/2/21

REVISION	DESCRIPTION	APP.	DATE
D			
C			
B			
A			

DESIGNED	WATERSHED PROJECT MANAGER	DATE
DRAWN	WATERSHED DEPUTY DIRECTOR	DATE
CHECKED	WATERSHED DIRECTOR	DATE

**VENTURA COUNTY
PUBLIC WORKS AGENCY
WATERSHED PROTECTION**

SPEC. NO.	-
PROJ. NO.	-

PROJECT NAME	RC CHANNEL TRANSITION STRUCTURAL DETAILS
SHEET	-
OF	-
DRAWING SET NO.	WPD-?-???