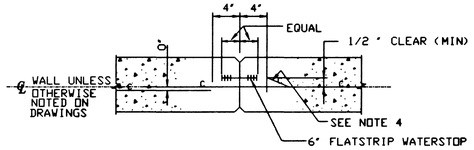
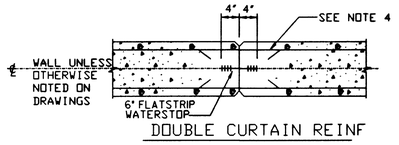


SINGLE CURTAIN REINF

WITH WATERSTOP S-121 NO WATERSTOP S-122



DOUBLE CURTAIN REINF

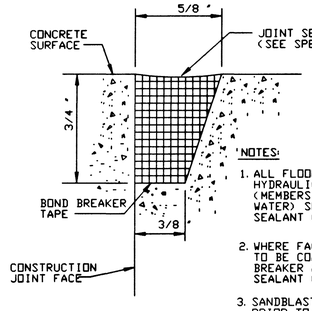
WITH WATERSTOP S-123 NO WATERSTOP S-124

NOTES:

1. IN ALL WALL CONSTRUCTION JOINTS WITH WATERSTOPS APPLY 2 COATS OF BOND BREAKER TO FACE OF JOINT AVOID COATING WATERSTOP
2. WHERE WATERSTOP IS REQUIRED IN SINGLE CURTAIN WALL REINFORCEMENT PLACE WATERSTOP ON WATER SIDE OF WALL
3. UNLESS OTHERWISE NOTED 3/4 " CHAMFERS SHALL BE OMITTED IN SURFACES TO RECEIVE ARCHITECTURAL TREATMENT
4. UNLESS SPECIFICALLY NOTED OTHERWISE #5 AND LARGER BARS SHALL BE CONTINUOUS THRU JOINT. #4 & SMALLER SHALL STOP ALTERNATE AT JOINT
5. STAGGER SPLICES UNLESS NOTED OTHERWISE

VERTICAL WALL CONSTRUCTION JOINT DETAILS

REV 010196

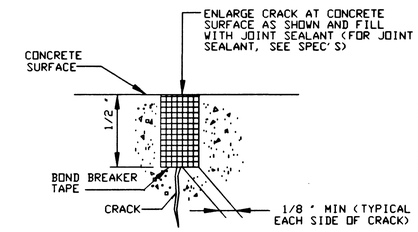


NOTES:

1. ALL FLOOR JOINTS OF HYDRAULIC STRUCTURES (MEMBERS COVERED WITH WATER) SHALL HAVE A SEALANT GROOVE
2. WHERE FACE OF JOINT IS TO BE COATED WITH BOND BREAKER AVOID COATING SEALANT GROOVE
3. SANDBLASTING REQUIRED PRIOR TO APPLICATION OF PRIMER
4. USE BONDBREAKER TAPE ONLY ON SLIP DOWEL JOINTS

SEALANT GROOVE

REV 010196 S-131

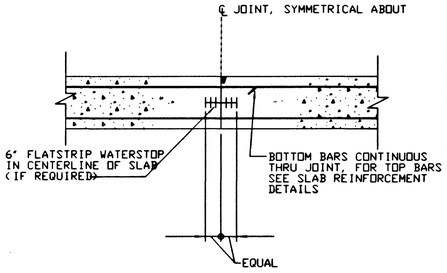


NOTE:

PRIOR TO FILLING, STRUCTURES TO CONTAIN WATER SHALL HAVE ALL CRACKS REPAIRED AS SHOWN IN THIS DETAIL

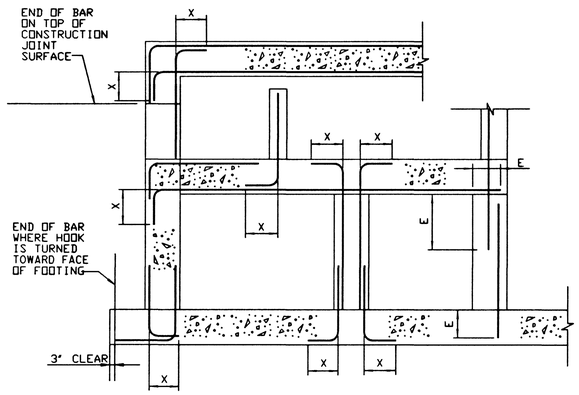
CONCRETE CRACK REPAIR

REV 010196 S-132



SUSPENDED SLAB CONSTRUCTION JOINT DETAIL

REV 010196 S-137



SECTION

LENGTH (INCHES)			
BAR SIZE	HOOK X	LAP	EMBEDMENT E
#3	6"	18"	12"
#4	8"	18"	14"
#5	10"	23"	18"
#6	12"	28"	22"
#7	14"	33"	25"
#8	16"	SEE TABLE BELOW	SEE TABLE BELOW
#9	19"		
#10	22"		
#11	24"		

LENGTH (INCHES)						
REBAR SIZE	FOR 1" TO < 2" CONCRETE COVER		FOR 2" TO < 3" CONCRETE COVER		FOR 3" AND LARGER CONCRETE COVER	
	REBAR SPACING (CENTER TO CENTER)		REBAR SPACING (CENTER TO CENTER)		REBAR SPACING (CENTER TO CENTER)	
	< 8"	≥ 8"	< 8"	≥ 8"	< 8"	≥ 8"
LAP						
#8	62"	62"	37"	37"	37"	37"
#9	99"	79"	69"	55"	49"	42"
#10	125"	100"	88"	70"	63"	50"
#11	154"	123"	108"	86"	77"	62"
EMBEDMENT E						
#8	48"	48"	29"	29"	29"	29"
#9	77"	61"	54"	43"	38"	33"
#10	97"	77"	68"	54"	49"	39"
#11	119"	95"	84"	67"	60"	48"

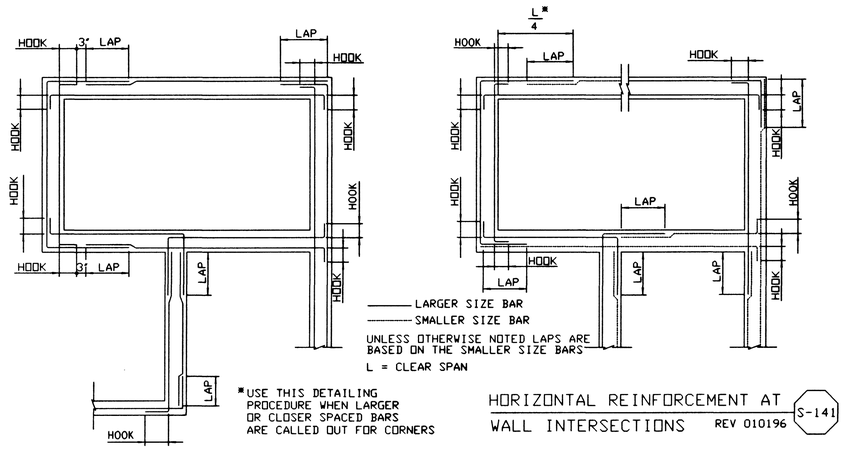
NOTES:

1. USE LAP LENGTHS AS DETERMINED FROM THESE TABLES UNLESS SHOWN OTHERWISE
2. THE TABLES SHOWN ARE FOR f'C=4000 PSI AND fy=60,000 PSI
3. MULTIPLY THE LAP & E SHOWN IN THESE TABLES BY 1.3 FOR WALL HORIZONTAL REBARS AND SLAB BARS WITH 12" OR MORE FRESH CONCRETE UNDERNEATH
4. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, LAP LENGTH SHALL BE THE LARGER OF:
   - EMBEDMENT LENGTH OF LARGER BAR
   - LAP LENGTH OF SMALLER BAR
5. UNLESS NOTED OTHERWISE USE REBAR COUPLERS FOR SPLICES OF #11 AND LARGER BARS
6. ALL DOWEL BARS SHALL EXTEND AN EMBEDMENT LENGTH E INTO ANOTHER MEMBER OR ACROSS A CONSTRUCTION JOINT UNLESS SHOWN TO SPLICE WITH OTHER BARS OR TO EXTEND TO THE FAR FACE OF THE MEMBER AND END WITH A STANDARD HOOK

STANDARD 90° BAR HOOKS, EMBEDMENT LENGTHS AND LAP LENGTHS

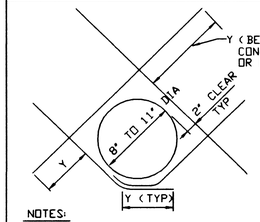
REV 010196 S-143

UNLESS OTHERWISE NOTED ON DRAWINGS



HORIZONTAL REINFORCEMENT AT WALL INTERSECTIONS

REV 010196 S-141



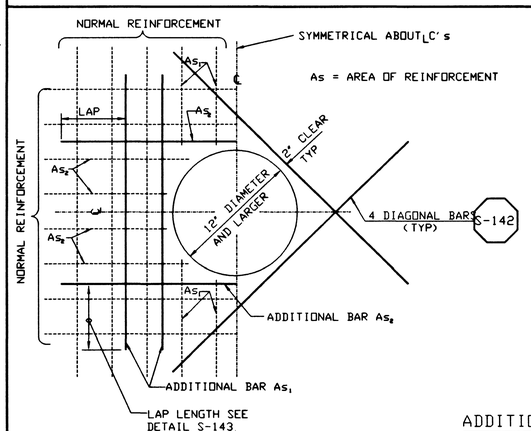
BAR SIZE	Y GRADE 60
#4	15"
#5	21"
#6	24"
#7	27"
#8	36"
#9	42"

NOTES:

1. CUT NORMAL REINFORCEMENT 2" CLEAR OF OPENING
2. DIAGONAL BARS TO BE PLACED:
   - A) AT CENTERLINE OF WALL OR SLAB WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED
   - B) AT EACH FACE OF WALL OR SLAB WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED
3. UNLESS OTHERWISE NOTED, SIZE OF DIAGONAL BARS SHALL BE THE SIZE OF THE LARGEST NORMAL REINFORCING BAR CUT
4. THIS DETAIL TO BE USED ONLY WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER DETAIL IS SPECIFIED

DIAGONAL REINFORCEMENT AT CIRCULAR OPENINGS (8" - 11" DIA)

REV 010196 S-142



NOTES:

1. CUT NORMAL REINFORCEMENT AT OPENINGS:
   As1 AND As2 = 1/2 AREA OF CUT BARS TO BE ADDED ON EACH SIDE OF OPENING
2. ADDITIONAL BARS As1 AND As2 TO BE PLACED:
   - A) AT CENTERLINE OF WALLS OR SLABS WHERE ONE LAYER OF REINFORCEMENT IS PROVIDED
   - B) AT EACH FACE OF WALLS OR SLABS WHERE TWO LAYERS OF REINFORCEMENT ARE PROVIDED
3. INCREASE SIZE OF ADDITIONAL BARS AS NEEDED TO FIT WITHIN A DISTANCE OF 2 X WALL/SLAB THICKNESS FROM OPENING, PROVIDE 2" MIN CLEAR BETWEEN BARS
4. THIS DETAIL TO BE USED ONLY WHEN NO OTHER DETAIL IS INDICATED ON THE DRAWINGS
5. WHERE A SLAB OR INTERSECTING WALL CONNECTS WITHIN ONE WALL THICKNESS OF THE OPENING, ADDITIONAL BARS ON THAT SIDE MAY BE OMITTED

ADDITIONAL REINFORCEMENT AT CIRCULAR OPENINGS (12" DIA OR LARGER)

REV 010196 S-144

THE ORIGINAL CONTRACT DOCUMENT WAS SEALED AND SIGNED BY SAM MOUAWAD

AS BUILT
DATE
A 12APR99
△

REV	DATE	BY	DESCRIPTION

SCALE: NONE

WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED MW
DRAWN MW
CHECKED C. LEE

SUBMITTED THE ORIGINAL CONTRACT DOCUMENT WAS SIGNED BY SAM MOUAWAD
PROJECT ENGINEER R. C. E. NO. DATE
RECOMMENDED THE ORIGINAL CONTRACT DOCUMENT WAS SIGNED BY VICKI J SCHARNHORST
MONTGOMERY WATSON R. C. E. NO. DATE

MONTGOMERY WATSON
Las Vegas, Nevada

MONTGOMERY WATSON
3014 WEST CHARLESTON BLVD
LAS VEGAS, NV. 89102-1944
(702) 878-8010

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CITY OF LAS VEGAS
BONANZA/MOJAVE WATER RESOURCE CENTER
STRUCTURAL STANDARD DETAILS - 2

DWG. 49
GS-2
513-64

JOB No. 26784 FILE No. P:\proj\vwrf\str\bzn0#s#.dgn DATE/TIME DD-MMM-YYYY HH:MM