

DEVELOPMENT LENGTH SCHEDULE (INCHES)				
BAR SIZE	MIN BAR SPACING (INCHES) <small>[MAX OF db+1" OR 2db]</small>	TENSION		COMPRESSION
		NOTED AS L _d ON DRAWINGS	NOTED AS L _{dh} ON DRAWINGS	NOTED AS L _{dc} ON DRAWINGS
		f _c (PSI)	f _c (PSI)	f _c (PSI)
#3	1.375	15	8	8
#4	1.500	19	10	10
#5	1.625	24	12	12
#6	1.750	29	15	15
#7	1.875	42	17	17
#8	2.000	48	19	19
#9	2.375	54	22	22

GRADE BEAM REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)			
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)	
		f _c = 4 KSI	
		TOP BARS	OTHER
#4	1.500	33	25
#5	1.625	41	31
#6	1.750	49	37
#7	1.875	71	54
#8	2.000	81	62
#9	2.375	91	70

FOOTING REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)			
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION LAP (LTS)	
		f _c = 4 KSI	
		TOP BARS	OTHER
#4	1.500	33	25
#5	1.875	41	31
#6	2.250	49	37
#7	2.625	71	54
#8	3.000	81	62
#9	3.500	91	70

FOUNDATION / RETAINING WALL REINFORCEMENT - VERTICAL BARS LAP SPLICE LENGTH SCHEDULE (INCHES)			
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)	COMPRESSION (LCS)
		f _c = 4 KSI	
#4	2.000	25	15
#5	2.125	31	19
#6	2.250	37	23
#7	2.625	54	27
#8	3.000	62	30
#9	3.500	70	34

FOUNDATION / RETAINING WALL REINFORCEMENT - HORIZONTAL BARS LAP SPLICE LENGTH SCHEDULE (INCHES)			
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)	COMPRESSION (LCS)
		f _c = 4 KSI	
#4	1.500	33	15
#5	1.875	40	19
#6	2.250	48	23
#7	2.625	70	27
#8	3.000	81	30
#9	3.500	91	34

SLAB/SLAB-ON-GRADE REINFORCEMENT LAP SPLICE LENGTH SCHEDULE (INCHES)		
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)
		f _c = 4 KSI
#4	1.500	25

SHEARWALL REINFORCEMENT - VERTICAL BARS LAP SPLICE LENGTH SCHEDULE (INCHES)			
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)	COMPRESSION (LCS)
		f _c = 4 KSI	
#4	2.000	25	15
#5	2.125	31	19
#6	2.250	37	23
#7	2.375	54	27
#8	2.500	62	30
#9	2.875	70	34

SHEARWALL REINFORCEMENT - HORIZONTAL BARS LAP SPLICE LENGTH SCHEDULE (INCHES)			
BAR SIZE	MIN BAR SPACING (INCHES)	TENSION (LTS)	COMPRESSION (LCS)
		f _c = 4 KSI	
#4	1.500	33	15
#5	1.875	40	19
#6	2.250	48	23
#7	2.625	105	27
#8	3.000	121	30
#9	3.500	137	34

LAP SPLICE NOTES:

- TABULATED VALUES ARE PER ACI-08 REQUIREMENTS FOR NORMALWEIGHT CONCRETE. THE VALUES ON THIS SHEET DO NOT APPLY TO LIGHTWEIGHT CONCRETE.
- SEE TYPICAL DETAILS FOR CLEAR COVER.
- MINIMUM BAR SPACING DIAGRAM - "S"

○ FIRST BAR
○ SECOND BAR PLACED OR SPLICE BAR
- WHERE ACTUAL CONDITIONS DIFFER FROM THE CLEAR COVER SHOWN ON THE TYPICAL DETAILS OR DIFFER FROM PROVIDED SCHEDULED BAR SIZE, MINIMUM SPACING AND/OR f_c, LENGTHS SHALL BE ADJUSTED ONLY WITH THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
- TABULATED VALUES ARE FOR NON-EPOXY COATED REINFORCEMENT. FOR EPOXY COATED REINFORCEMENT MULTIPLY VALUES BY 1.3 FOR "TOP BARS" AND 1.5 FOR ALL OTHER REINFORCEMENT.
- WHERE BARS OF DIFFERENT SIZES ARE LAP SPICED IN TENSION, THE LAP LENGTH SHALL BE THE TENSION LAP SPLICE LENGTH (LTS) OF THE SMALLER BAR.
- WHERE BARS OF DIFFERENT SIZES ARE LAP SPICED IN COMPRESSION, THE COMPRESSION LAP LENGTH (LCS) SHALL BE THE LARGER OF THE COMPRESSION DEVELOPMENT LENGTH (L_{dc}) OF THE LARGER BAR OR THE COMPRESSION LAP SPLICE LENGTH OF THE SMALLER BAR.
- "TOP BARS" ARE DEFINED PER ACI HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE DEVELOPMENT LENGTH OR SPLICE. *OTHER BARS ARE ALL BARS FOR WHICH THIS DOES NOT APPLY*.
- FOUNDATION WALL LAP SPLICES ARE BASED ON A MINIMUM 2 INCH CLEAR COVER. IF CLEAR COVER IS REDUCED ON INTERIOR FACE, LAP SPLICES MUST BE REVISED.

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SEALS AND SIGNATURES



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FMS
Facilities Management Services

PROJECT TITLE ADVANCED PROTEIN CRYSTALLIZATION FACILITY, ARGONNE NATIONAL LABORATORY
PROJECT NO C10539.00

DRAWING TITLE
LAP SPLICE SCHEDULES

DESIGNED	AE CAD FILE	FACILITY (NOI)
Designer	SO 0.5	
DRAWN	AE DWG. NO.	
Author	SO 0.5	
CHECKED	CAD NO.	
Checker		
PROJECT MANAGER	DWG STATE	
ANL - JESSE ADAMS	BND ORDER	
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