REINFORCEMENT BAR DEVELOPMENT LENGTH (ID) FOR NORMAL WEIGHT CONCRETE													
LOCATION	CONC F'C(PSI)	STEEL GRADE	BAR SIZE										
			3	4	5	6	7	8	9	10	11	14	18
			"IDH"=DEVELOPMENT LENGTH IN INCHES										
TOP	3000	60	16	22	27	35	45	63	80	102	125	170	250
OTHER	3000	60	13	17	21	27	37	49	62	78	96	131	192
TOP	4000	60	14	19	23	31	42	55	69	88	108	147	216
OTHER	4000	60	12	15	18	24	32	42	53	68	83	113	166
TOP	5000	60	13	17	21	27	37	49	62	79	97	132	193
OTHER	5000	60	12	13	16	21	29	38	48	61	74	101	149
TOP	6000	60	12	15	19	25	34	45	57	72	88	120	177
OTHER	6000	60	12	12	15	19	26	35	44	55	68	92	136
TOP	7000	60	12	14	18	23	32	42	53	67	82	111	163
OTHER	7000	60	12	12	14	18	24	32	40	51	63	86	126

NOTES:

1. DEVELOPMENT LENGTHS SHOWN IN THE SCHEDULE ARE CATEGORY 3 LENGTHS PER THE 1999 CRSI DESIGN HANDBOOK. THE MINIMUM CONCRETE COVER MUST BE GREATER THAN DB AND THE CENTER TO CENTER SPACING MUST BE GREATER THAN 3DB. WHERE DB IS THE NOMINAL BAR DIAMETER.
2. BARS NOT MEETING CATEGORY 3 REQUIREMENTS SHALL BE PER UBC SECTION 1912. CATEGORY 1 AND 2 DEVELOPMENT LENGTHS MAY BE FOUND IN THE 1999 CRSI DESIGN HANDBOOK.
3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE BELOW THE BAR.
4. DEVELOPMENT LENGTH SHALL BE INCREASED BY 30% FOR LIGHT WEIGHT CONCRETE.

REINFORCEMENT BAR LAP SPLICE (ID) FOR NORMAL WEIGHT CONCRETE (CLASS "B" SPLICE)										
LOCATION	CONC F'C(PSI)	BAR SIZE								
		3	4	5	6	7	8	9	10	11
		"IDH"=DEVELOPMENT LENGTH IN INCHES								
TOP	3000	21	28	35	46	63	82	104	132	162
OTHER	3000	16	22	27	35	48	63	80	102	125
TOP	4000	18	24	30	40	54	71	90	114	140
OTHER	4000	16	19	23	31	42	55	59	88	108
TOP	5000	18	22	27	36	48	64	81	102	126
OTHER	5000	16	17	21	27	37	49	62	79	97
TOP	6000	18	20	25	33	44	58	74	93	115
OTHER	6000	16	16	19	25	34	45	57	72	88
TOP	7000	16	18	23	30	41	54	68	86	106
OTHER	7000	16	16	18	23	32	42	53	67	82

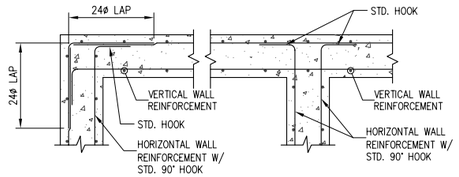
NOTES:

1. LAP LENGTHS SHOWN IN THE SCHEDULE ARE CATEGORY 3 LAP SPLICES PER THE 1999 CRSI DESIGN HANDBOOK. THE MINIMUM CONCRETE COVER MUST BE GREATER THAN DB AND THE CENTER TO CENTER SPACING MUST BE GREATER THAN 3DB. WHERE DB IS THE NOMINAL BAR DIAMETER.
2. BARS NOT MEETING CATEGORY 3 REQUIREMENTS SHALL BE PER UBC SECT. 1912. CATEGORY 1 AND 2 LAP SPLICE LENGTHS MAY BE FOUND IN THE 1999 CRSI DESIGN HANDBOOK.
3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE BELOW THE BAR.
4. THE SMALLER LAP SPLICE LENGTH MAY BE USED WHEN TWO BARS OF DIFFERENT SIZES ARE TO BE LAPPED.
5. LAP SPLICE LENGTH SHALL BE INCREASED BY 30% FOR LIGHT WEIGHT CONCRETE.

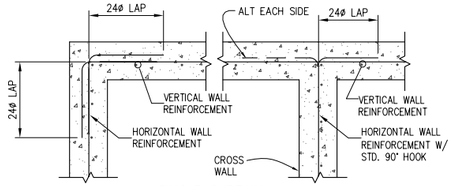
REINFORCEMENT BAR DEVELOPMENT (IDH) FOR STANDARD HOOKS IN NORMAL WEIGHT CONCRETE GENERAL USE (NOT FOR FRAME JOINTS)												
CONCRETE F'C (PSI)	STEEL GRADE	BAR SIZE										
		3	4	5	6	7	8	9	10	11	14	18
		"IDH"=DEVELOPMENT LENGTH IN INCHES										
3000	60	6	8	10	12	14	16	18	20	22	37	50
4000	60	6	7	9	10	12	14	15	17	19	32	43
5000	60	6	7	8	9	11	12	14	15	17	29	39
6000	60	6	7	7	8	10	11	13	14	16	27	35
7000	60	6	7	7	8	9	10	12	14	15	25	33

NOTES :

1. SIDE COVER MUST BE GREATER THAN OR EQUAL TO 2 1/2"
2. END COVER MUST BE GREATER THAN OR EQUAL TO 2"
3. HOOK DEVELOPMENT LENGTH SHALL BE INCREASED BY 30% FOR LIGHT WEIGHT CONCRETE

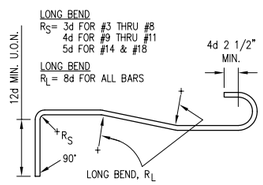


DOUBLE CURTAIN

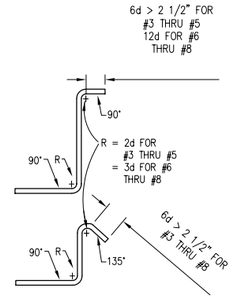


SINGLE CURTAIN

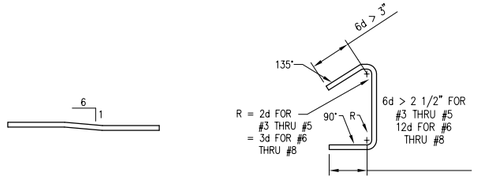
STANDARD WALL & FOOTING INTERTSECTION REINFORCEMENT



BENDS & STANDARD HOOKS



STIRRUPS



BAR OFFSETS

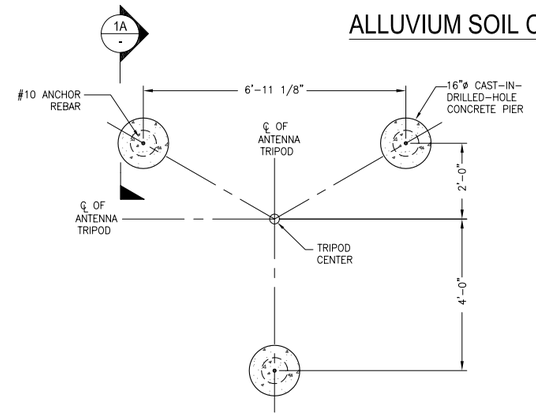
TIES & HOOPS

NOTES:

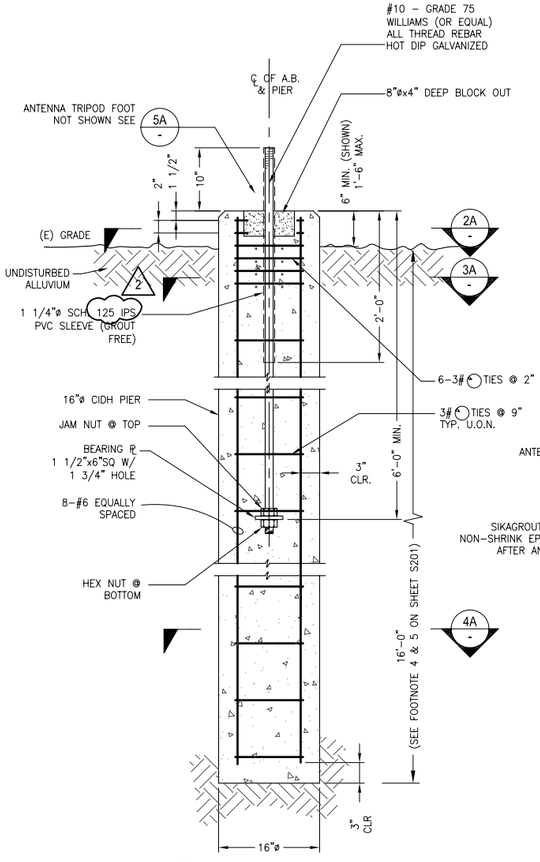
1. 'd' IS NOMINAL BAR DIAMETER
2. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS

STANDARD REINFORCING HOOKS & BENDING DETAILS

ALLUVIUM SOIL CONDITION



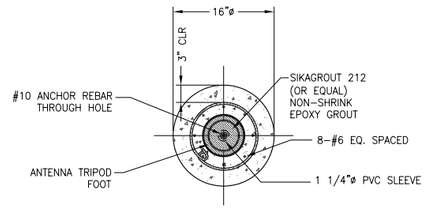
A ANTENNA FOUNDATION PLAN
ref: scale: 1/2" = 1'-0"



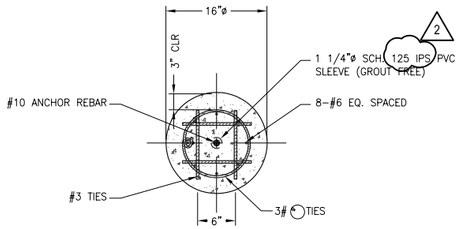
1A SECTION
ref: scale: 1" = 1'-0"

NOTES

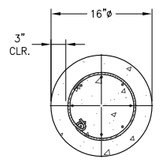
1. FOR GENERAL NOTES, SEE DWG. S001.
2. FOR PIER TEST SCHEDULE, SEE DWG. S201.



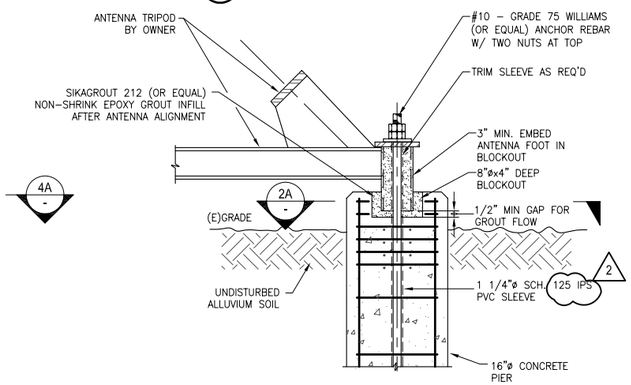
2A PIER SECTION
ref: scale: 1" = 1'-0"



3A PIER SECTION
ref: scale: 1" = 1'-0"



4A PIER SECTION
ref: scale: 1" = 1'-0"



5A DETAIL
ref: scale: 1" = 1'-0"

Sym.	Description	Date	Drawn By	Appr. By
2	PVC SLEEVE REVISION	2-25-04	CEU	GK
1	ANCHOR ROD REVISION	12-9-03	CEU	GK
0	ISSUED FOR CONSTRUCTION	12-5-03	DK2	RAC

PH: (800) 889-WRMS
Fax: (925) 933-5167
WRMS ENGINEERING
Walnut Creek, CA
Seattle, WA
Boston, MA

Drawn By: LCM
Designed By: GK
Date: 9/29/03
Proj. No.: 02-242

ALLEN TELESCOPE ARRAY
HAT CREEK RADIO OBSERVATORY
HAT CREEK, CA

STRUCTURAL
ANTENNA FOOTING & REINFORCING DETAILS (SOIL CONDITION)

One Inch at Full Scale (0 .5 1.0)
Dwg. No: S002
Rev.: 2