Commonwealth of Virginia Statewide Agencies Radio System (STARS)

Request for Proposal 2001-035

VOLUME III
(Appendices)

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APPENDIX A

SYSTEM LOADING REQUIREMENTS

Table A-1A

STARS CZ-01

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	725	304	22	761	319	23	798	334	24	54.4%	492	5% Max	3	6	0.5
Fire/Rescue	9	40	2	9	42	2	10	44	2	62.7%	35	5% Max	6	2	0.5
Supervision/Admin	12	26	2	13	28	2	13	29	2	70.1%	31	5% Max	7	6	0.5
Other	607	182	37	637	191	39	668	200	40	43.4%	394	5% Max	10	2	0.5
MCT	253			266			278			54.4%	151	5% Max	1	6	0.5

Table A-1B

STARS CZ-02

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	384	103	7	403	108	7.35	422	113	8	54.9%	252	5% Max	3	6	0.5
Fire/Rescue	1	0	0	1	0	0	1	0	0	100.0%	1	5% Max	6	2	0.5
Supervision/Admin	15	9	1	16	10	1	17	10	1	71.3%	20	5% Max	7	6	0.5
Other	521	128	38	547	135	40	573	141	42	50.2%	380	5% Max	10	2	0.5
MCT	147			154			162			54.9%	89	5% Max	1	6	0.5

Table A-1C

STARS CZ-03

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	281	100	14	295	105	14.8	309	110	16	55.2%	194	5% Max	3	6	0.5
Fire/Rescue	2	4	1	2	4	1	2	4	1	71.4%	6	5% Max	6	2	0.5
Supervision/Admin	3	9	1	3	10	1	4	10	1	84.2%	12	5% Max	7	6	0.5
Other	531	74	23	558	78	24	584	82	26	46.4%	321	5% Max	10	2	0.5
MCT	129			135			142			55.2%	78	5% Max	1	6	0.5

Table A-1D

STARS CZ-04

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	176	47	5	184	49.7	4.94	193	52	5	52.5%	111	5% Max	3	6	0.5
Fire/Rescue	2	0	5	2	0	5	2	0	6	71.4%	6	5% Max	6	2	0.5
Supervision/Admin	2	1	1	2	1	1	2	2	1	82.4%	4	5% Max	7	6	0.5
Other	244	62	21	256	65	22	269	68	23	47.3%	170	5% Max	10	2	0.5
MCT	66			69			73			52.5%	38	5% Max	1	6	0.5

Table A-1E

STARS CZ-05

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	308	110	17	323	115	17.6	339	121	18	55.3%	214	5% Max	3	6	0.5
Fire/Rescue	0	0	0	0	0	0	0	0	0	0.0%	0	5% Max	6	2	0.5
Supervision/Admin	6	8	1	6	8	1	6	8	1	107.0%	16	5% Max	7	6	0.5
Other	396	108	26	416	113	28	436	119	29	51.1%	298	5% Max	10	2	0.5
MCT	137			144			151			55.3%	83	5% Max	1	6	0.5

SYSTEM LOADING REQUIREMENTS

Table A-1F

STARS CZ-06

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	223	88	9	234	91.9	9.14	246	96	10	50.7%	141	5% Max	3	6	0.5
Fire/Rescue	0	0	4	0	0	4	0	0	4	50.0%	2	5% Max	6	2	0.5
Supervision/Admin	3	1	1	3	1	1	3	2	1	89.5%	5	5% Max	7	6	0.5
Other	427	104	26	448	109	27	469	114	29	51.5%	315	5% Max	10	2	0.5
MCT	94			99			103			50.7%	52	5% Max	1	6	0.5

Table A-1G

STARS CZ-07

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	287	114	19	301	119	20.2	315	125	21	57.0%	210	5% Max	3	6	0.5
Fire/Rescue	2	2	7	2	2	7	2	2	8	63.6%	8	5% Max	6	2	0.5
Supervision/Admin	5	9	2	5	9	2	6	10	2	106.1%	18	5% Max	7	6	0.5
Other	338	67	19	355	71	20	372	74	20	46.6%	218	5% Max	10	2	0.5
MCT	137			144			151			57.0%	86	5% Max	1	6	0.5

Table A-1H

STARS CZ-08

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	212	76	9	223	79.6	9.87	234	83	10	53.9%	143	5% Max	3	6	0.5
Fire/Rescue	3	2	12	3	2	13	3	2	13	64.7%	12	5% Max	6	2	0.5
Supervision/Admin	4	4	2	4	4	2	4	4	2	90.9%	9	5% Max	7	6	0.5
Other	628	111	25	659	116	26	691	122	28	51.1%	430	5% Max	10	2	0.5
MCT	93			98			102			53.9%	55	5% Max	1	6	0.5

Table A-1I

STARS CZ-09

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	271	87	4	285	91.2	4.1	299	96	4	56.1%	183	5% Max	3	6	0.5
Fire/Rescue	4	5	0	4	5	0	4	6	0	66.7%	7	5% Max	6	2	0.5
Supervision/Admin	32	22	1	34	23	1	36	24	1	57.6%	35	5% Max	7	6	0.5
Other	318	88	32	334	92	34	350	97	36	46.9%	226	5% Max	10	2	0.5
MCT	160			168			176			56.1%	99	5% Max	1	6	0.5

Table A-1J

STARS CZ-10

	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/ Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	561	129	21	589	136	22.2	617	142	23	49.8%	337	5% Max	3	6	0.5
Fire/Rescue	2	2	1	2	2	1	2	2	1	80.0%	4	5% Max	6	2	0.5
Supervision/Admin	11	9	1	12	10	1	13	10	1	70.2%	16	5% Max	7	6	0.5
Other	531	127	37	557	133	39	584	140	41	49.4%	378	5% Max	10	2	0.5
MCT	225			236			248			49.8%	123	5% Max	1	6	0.5

SYSTEM LOADING REQUIREMENTS

Table A-1K

STARS CZ-11															
	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	387	105	11	407	111	12	426	116	13	55.3%	258	5% Max	3	6	0.5
Fire/Rescue	4	4	9	4	4	9	4	4	10	64.7%	12	5% Max	6	2	0.5
Supervision/Admin	3	4	1	4	5	1	4	5	2	91.8%	9	5% Max	7	6	0.5
Other	583	138	41	613	145	43	642	152	45	48.4%	406	5% Max	10	2	0.5
MCT	170			179			187			55.3%	103	5% Max	1	6	0.5

Table A-1L

STARS CZ-12															
	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	140	39	4	147	40.6	4.31	154	43	5	54.3%	92	5% Max	3	6	0.5
Fire/Rescue	0	0	8	0	0	8	0	0	9	62.5%	6	5% Max	6	2	0.5
Supervision/Admin	1	3	2	1	3	2	2	3	2	87.5%	6	5% Max	7	6	0.5
Other	189	65	21	198	68	22	208	71	23	46.8%	141	5% Max	10	2	0.5
MCT	61			64			67			54.3%	36	5% Max	1	6	0.5

Table A-1M

STARS CZ-13															
	Initial Total Units			5 YR Growth			10 YR Growth			Busy Hour Impact (%)	Busy Hour Radio Qty	Delayed Call GOS (%)	STD Call-Sec/Unit	Calls/Hour/Unit	Call Overhead (Sec)
	Mob	Port	CS	Mob	Port	CS	Mob	Port	CS						
Law Enforcement	547	80	12	574	83.8	13	601	88	14	53.4%	340	5% Max	3	6	0.5
Fire/Rescue	3	2	1	3	2	1	3	2	1	66.7%	4	5% Max	6	2	0.5
Supervision/Admin	3	3	1	3	3	1	3	3	1	105.1%	7	5% Max	7	6	0.5
Other	577	63	25	605	66	26	634	70	28	43.8%	320	5% Max	10	2	0.5
MCT	354			372			389			53.4%	208	5% Max	1	6	0.5

TABLE A-2
FREQUENCY / CHANNEL PLAN

Communication Zone	Initial Channels	10 Year Channels	Arbitrary Channel Set	Set 1				Set 2				
				Arbitrary Channel Number	Tx Freq (MHz)	Rx Freq (MHz)	Tx Delta (MHz)	Arbitrary Channel Set	Arbitrary Channel Number	Tx Freq (MHz)	Rx Freq (MHz)	Tx Delta (MHz)
CZ-01	13	14	A	1	158.7225	154.6575		B	5	158.7975	154.7325	
				2	158.8575	154.8075	0.1350		6	159.1125	154.8825	0.3150
				3	159.1875	154.9575	0.3300		7	159.2625	155.0325	0.1500
				4	159.3375	155.1075	0.1500		8	159.4125	155.2575	0.1500
CZ-02	10	11	C	15	158.7375	154.6725		D	21	158.8125	154.7425	
				16	158.9250	154.8225	0.1875		22	159.1275	154.8975	0.3150
				17	159.2025	154.9725	0.2775		23	159.2775	155.0475	0.1500
				18	159.3525	155.1225	0.1500		24	159.4275	155.3175	0.1500
CZ-03	9	10	E	26	158.7525	154.6875		F	30	158.8200	154.7625	
				27	158.9925	154.8375	0.2400		31	159.1425	154.9125	0.3225
				28	159.2175	154.9875	0.2250		32	159.2925	155.0625	0.1500
				29	159.3675	155.1375	0.1500		33	159.4425	155.3775	0.1500
CZ-04	6	7	G	36	158.7675	154.7025						
				37	159.0075	154.8525	0.2400					
				38	159.2325	155.0025	0.2250					
				39	159.3825	155.1525	0.1500					
CZ-05	9	10	H	43	158.8275	154.7775		I	47	158.7825	154.7125	
				44	159.1575	154.9275	0.3300		48	159.0975	154.8675	0.3150
				45	159.3075	155.0775	0.1500		49	159.2475	155.0175	0.1500
				46	159.4575	155.4225	0.1500		50	159.3975	155.1975	0.1500
CZ-06	8	9	J	53	158.8425	154.7925						
				54	159.1725	154.9425	0.3300					
				55	159.3225	155.0925	0.1500					
				56	159.4725	155.4375	0.1500					
CZ-07	8	9	A	1	158.7225	154.6575		B	5	158.7975	154.7325	
				2	158.8575	154.8075	0.1350		6	159.1125	154.8825	0.3150
				3	159.1875	154.9575	0.3300		7	159.2625	155.0325	0.1500
				4	159.3375	155.1075	0.1500		8	159.4125	155.2575	0.1500
CZ-08	9	10						C	15	158.7375	154.6725	
									16	158.9250	154.8225	0.1875
									17	159.2025	154.9725	0.2775
									18	159.3525	155.1225	0.1500
CZ-09	8	9	H	43	158.8275	154.7775		I	47	158.7825	154.7125	
				44	159.1575	154.9275	0.3300		48	159.0975	154.8675	0.3150
				45	159.3075	155.0775	0.1500		49	159.2475	155.0175	0.1500
				46	159.4575	155.4225	0.1500		50	159.3975	155.1975	0.1500
CZ-10	11	12	G	36	158.7675	154.7025						
				37	159.0075	154.8525	0.2400					
				38	159.2325	155.0025	0.2250					
				39	159.3825	155.1525	0.1500					
CZ-11	10	11	D	21	158.8125	154.7425		E	26	158.7525	154.6875	
				22	159.1275	154.8975	0.3150		27	158.9925	154.8375	0.2400
				23	159.2775	155.0475	0.1500		28	159.2175	154.9875	0.2250
				24	159.4275	155.3175	0.1500		29	159.3675	155.1375	0.1500
CZ-12	5	6	C	15	158.7375	154.6725						
				16	158.9250	154.8225	0.1875					
				17	159.2025	154.9725	0.2775					
				18	159.3525	155.1225	0.1500					
CZ-13	10	11	H	43	158.8275	154.7775		I	47	158.7825	154.7125	
				44	159.1575	154.9275	0.3300		48	159.0975	154.8675	0.3150
				45	159.3075	155.0775	0.1500		49	159.2475	155.0175	0.1500
				46	159.4575	155.4225	0.1500		50	159.3975		0.1500

NOTES:

1)		Highlighted/shaded cell represents a frequency that has not been licensed in the communications zone that it is placed in.
2)	(TS)	A capital TS in parenthesis after a department abbreviation means that the frequency is simplex, without a matching receive frequency.
3)	unassigned	Some channel/frequency sets do not have frequency assignments at present.
4)	(S)	A capital S in parenthesis after a department abbreveiation means that the receive frequency is licensed for simplex operation.
5)		The following COV channels/frequencies are licensed for narrowband (15 kHz) operation: 1-8, 15-18, 21-24, 26-33, 36-39, 43-50, and 53-56.
6)		All other channels are licensed for wideband (30 kHz) operation.

TABLE A-2
FREQUENCY / CHANNEL PLAN

Communication Zone	Initial Channels	10 Year Channels	Set 3						Unassigned Channel/Freq. Set
			Arbitrary Channel Number	Previous Tx Use	Tx Freq (MHz)	Previous Rx Use	Rx Freq (MHz)	Tx Delta (MHz)	
CZ-01	13	14	14	VSP	159.0000	VSP	154.9350		
			13	VSP	159.1650	VSP	155.4450	0.1650	
			11	DGIF	159.3750	DGIF	151.2050	0.2100	
			10	DOF (TS)	159.2250	VSP TAC 3 (S)	155.4975		
			12	DOF	159.4650	DOF	151.1900	0.2400	
			9		unassigned		unassigned		1
CZ-02	10	11	25	DFS (TS)	158.4450	VSP TAC 1 (S)	155.4525		
			19	DOF (TS)	159.2550	VSP (S)	155.5050	0.8100	
			20	MRC	159.4200	MRC	151.4300	0.1650	
CZ-03	9	10	34	DOF (TS)	159.3600	VSP SURV 3 (S)	155.5725		
			35		unassigned		unassigned		1
CZ-04	6	7	42	VSP	159.1350	VSP	155.4600		
			41	DOF (TS)	159.3000	VSP SURV 1 (S)	155.5425	0.1650	
			40	DGIF	159.4350	DGIF	151.4300	0.1350	
CZ-05	9	10	51	DOF (TS)	159.3300	VSP SURV 2 (S)	155.5575		
			52	DOF (TS)	159.4500	VSP AGFE (S)	155.6025	0.1200	
CZ-06	8	9	57	DOF (TS)	159.2850	VSP TAC 4 (S)	155.5125		
			58	DOF (TS)	159.4050	VSP EPU (S)	155.5875	0.1200	
			59	DOT (TS)	159.9925	DOT (S)	156.0600	0.5875	
			60		unassigned		unassigned		1
			61		unassigned		unassigned		1
CZ-07	8	9	9		unassigned		unassigned		
CZ-08	9	10	14	VSP	159.0000	VSP	154.9350		
			13	VSP	159.1650	VSP	155.4450	0.1650	
			19	DOF (TS)	159.2550	VSP (S)	155.5050	0.0900	
			11	DGIF/MRC	159.3750	DGIF	151.2050	0.1200	
			10	DOF/MRC (TS)	159.2250	VSP TAC 3 (S)	155.4975		
			12	DOF	159.4650	DOF	151.1900	0.2400	
CZ-09	8	9	51	DOF (TS)	159.3300	VSP SURV 2 (S)	155.5575		
CZ-10	11	12	62	VSP	158.9850	VSP	154.9050		
			42	VSP	159.1350	VSP	155.4600	0.1500	
			41	DOF (TS)	159.3000	VSP SURV 1 (S)	155.5425	0.1650	
			40	DGIF	159.4350	DGIF	151.4300	0.1350	
			63	DOF (TS)	159.1750	VSP TAC 2 (S)	155.4675		
			64	DOF (TS)	159.4800	VSP (S)	156.2250	0.3050	
			65		unassigned		unassigned		1
			66		unassigned		unassigned		1
CZ-11	10	11	F 30	VSP	158.8200	VSP	154.7625		
			F 31	VSP	159.1425	VSP	154.9125	0.3225	
			F 32	VSP	159.2925	VSP	155.0625	0.1500	
CZ-12	5	6	19	DOF (TS)	159.2550	VSP (S)	155.5050		
			20	MRC	159.4200	MRC	151.2800	0.1650	
CZ-13	10	11	62	VSP	158.9850	VSP	154.9050		
			51	DOF (TS)	159.3300	VSP SURV 2 (S)	155.5575	0.3450	
			52	DOF (TS)	159.4500	VSP AGFE (S)	155.6025	0.1200	
							Total Unassigned Channels/Freq. Sets		6

System Loading Requirements for Table A-1

Criteria for calculating System Loading during Busy Hour

1. Initial Total Units: All Mobile, Portable, and Control Station radios for each County and Agency were entered on a master spread sheet from UARC assignment #3. These totals are represented in each CZ table. MCT numbers came from UARC Assignment #11.

2. 5 Year and 10 Year Growth: A 1% increase per year of the total radios was derived from Needs Assessment Report.

3. Busy Hour Impact % is derived from:

a. From each agency, used worst case busy hour from UARC Assignment #5.
b. Busy Hour is the same hour for each agency.
c. 2% of the total Busy Hour Qty was added to Busy Hour Total as Roamers
d. 20% of the total Busy Hour Qty was added to Busy Hour Total as Wide Area Talk group
e. Total Busy hour % = (Total Busy Hour Qty + 2% Roamer + 20% Wide Area)/Total Initial Radio Qty
f. Total Initial Radio Qty = Mobile + Portable + Control Station

4. Busy Hour Qty:

a. Law Enforcement Busy Hour Radio Qty is derived by:

(Mobiles+10 year growth) % Busy Hour Impact) +*
(Portables+10 year growth) % Busy Hour Impact)/4 +*
(Control Station+10 year growth) % Busy Hour Impact)*

b. Fire/Rescue, Supervision/Admin, and Other Busy Hour Radio Qty is derived by:

*(Mobiles*10 year growth* % Busy Hour Impact) +*
*(Portables*10 year growth* % Busy Hour Impact) +*
*(Control Station*10 year growth* % Busy Hour Impact)*

c. VSP has 1319 Vehicular Repeaters. A percentage of these were subtracted from total VSP portables for each zone. This % was derived from:
*Total Zone VSP Portables - (Total Zone VSP Portables/VSP Total Statewide Portables)*1319 Vehicular Repeaters)*

d. For calculating Busy Hour Qty for MCTs, Busy Hour Impact % was used from Law Enforcement since the majority of MCTs fall under this category.

5. Delayed Call Grade of Service (GOS): < 5% (target = 3% to 5%)

a. Maximum Call Delay of 1 second is used

6. STD Call-Sec/Unit: Derived from UARC Assignment #5.

7. Calls/Hour/Unit: Derived from UARC Assignment #5.

8. **Call Overhead:** 0.5 seconds without Digital Latency. Based on Transmission Trunking.

APPENDIX B

TABLE B-1
EXISITNG SITES

Site No.	Site Name	Agency	Site Type	Site Address	County/City Site Location	Owned/Leased*
1101	State Police Headquarters	VSP	LMR and Microwave	7700 Midlothian Turnpike, Richmond, VA 23235	Chesterfield	O
1102	1st Division Headquarters	VSP	Dispatch and Microwave	9300 Brook Road	Hanover	O
1103	Petersburg Area Office	VSP	LMR and Microwave	8312 Halifax Road, Petersburg, VA 23801	Dinwiddie	O
1104	West Point Area Office	VSP	Microwave	32303 King William Road-P.O. Box 230, West Point, VA 23181	King William	O
1105	Warsaw Area Office	VSP	LMR and Microwave	State Route 3, Warsaw, VA 22572	Richmond	O
1106	Louisa Area Office	VSP	LMR and Microwave	3707 Cross Country Road, Mineral, VA 23117	Louisa	O
1107	Branches Church	VSP	Microwave-not in use	3601 Iron Bridge Road, Richmond, VA 23234	Chesterfield	O
1108	Powhatan Repeater	VSP	Microwave	1818 Page Road, 2 miles East of Flat Rock, 1 mile North of Route 60 on Page Road (Rt. 675)	Powhatan	O
1109	Burgess Repeater	VSP	LMR and Microwave	Highway 360 between Burgess store AWP Post Office, Fairport, VA 22432	Northumberland	L/T
1201	2nd Division Headquarters	VSP	Dispatch, Microwave, LMR	15148 State Police Road, Culpeper, VA 22701	Culpeper	O
1202	Fredericksburg Area Office	VSP	LMR and Microwave	3804 Loren Drive, Fredericksburg, VA 22401	Spotsylvania	O
1203	Warrenton Area Office	VSP	Microwave	224 Box 29, Warrenton, VA, 20186	Fauquier	O
1204	Gordonsville Repeater	VSP	LMR and Microwave	VA Rt. 15, 2 mi N of Gordonsville	Orange	O/L
1205	Fork Mountain Repeater	VSP	LMR and Microwave	Fork Mtn, 7 mi W of Madison	Madison	O/L
1206	Hogback Mountain Repeater	VSP	LMR and Microwave	Jefferson Natl Park	Warren	O/L
1207	Pinnacle Ridge Repeater	VSP	LMR and Microwave	Pinnacle Ridge, Gore, VA	Frederick	O
1208	Luray Area Office	VSP	Microwave	St. Rt. 616, S of Luray, VA	Page	O
1209	Winchester Area Office	VSP	Microwave	US Rt. 11, 3 mi S of Winchester	Frederick	O
1210	Harrisonburg Area Office	VSP	LMR and Microwave	1.5 mi S of I81/11 S. of Harrisonburg	Rockingham	O
1211	Warrenton Training Center	VSP	LMR and Microwave	US Rt. 17 1 mi N of Warrenton	Warrenton	L/T
1301	3rd Division Headquarters	VSP	Dispatch, LMR and MW	US Rt. 460 exit Rt. 613	Appomattox	O
1302	Long Mountain Repeater	VSP	LMR and Microwave	Long Mountain, Rustburg, VA. 24588 (County of Campbell)	Campbell	O/L
1303	South Hill Area Office	VSP	LMR and Microwave	US Rt. 1 (1 mile North of South Hill) South Hill, VA. 23970	Mecklenburg	O
1304	Halifax Repeater	VSP	LMR and Microwave	Intersection Rt. 501 & VA Rt. 610, Halifax, VA. 24558	Halifax	O
1305	Halifax Area Office	VSP	Microwave	355 N. Main St, Halifax, VA. 24558-0727	Halifax	O
1306	Sprouses Corner Area Office	VSP	LMR and Microwave	US Rt. 60 and US Rt. 15 at Sprouses Corner,	Buckingham	O
1307	Cumberland Repeater	VSP	LMR and Microwave	VA Rt. 45 (3 mi. west of:), Cumberland, VA. 23040	Cumberland	O
1308	Bear Den Mountain Repeater	VSP	LMR and Microwave	Bear Den Mountain, (State Police building off Skyline Drive) Afton, VA. 22920	Augusta	O/L
1310	Staunton Area Office	VSP	Microwave	Rat 250 E. and State Rt. 126, Staunton, VA. 24401	Staunton (city)	O
1401	4th Division Headquarters	VSP	Microwave, Dispatch	Exit 77 off of I-81, 2 mi. E of Wytheville on N side of Frontage Rd., Rt. 336	Wythe	O
1402	Walker Mountain Repeater	VSP	Microwave, LMR	7 mi. N of Wytheville, on Rt. 206, 4 mi. E of Rt. 52	Bland	O/L
1403	Dismal (Flat Top) Mtn. Rptr.	VSP	Microwave, LMR	End of Rt. 663, 10 km S of Narrows	Giles	O/L
1404	Beamer Knob Repeater	VSP	Microwave, LMR	2.75 mi. W of Fancy Gap, approx. 1 mi. off of Rt. 775 on Rt. 1099	Carroll	O/L
1405	White Top Mountain Repeater	VSP	Microwave, LMR	White Top Mountain, Smyth County, 2 mi SE of Kannarock	Smyth	O/L
1406	East River Mountain Repeater	VSP	Microwave, LMR	Off Cove Creek Rd. Tazewell County, Virginia (6 mi. up mountain)	Tazewell	O/L

TABLE B-1
EXISITNG SITES

Site No.	Site Name	Agency	Site Type	Site Address	County/City Site Location	Owned/Leased*
1407	Big A Mountain Repeater	VSP	Microwave, LMR	Fire tower on Big A Mountain, 5 miles NW of Honaker, Virginia	Buchanan	O/L
1408	Claypool Hill Area Office	VSP	Microwave	US Rt. 19, 1 mi. S of intersection with US Rt. 460	Tazewell	O
1409	High Knob Repeater	VSP	Microwave, LMR	4 miles south of Norton	Wise	O
1410	Wise Area Office	VSP	Microwave	1207 Norton Rd., Wise, VA 24293	Wise	O
1411	Hunter's Gap Repeater	VSP	Microwave, LMR	1 mile west of Rt. 70 on Powell Mountain, Jonesville	Lee	O/L
1412	Bristol Area Office	VSP	Microwave	868 Bonham Rd. Bristol, Virginia 24201	Washington	O
1413	Vansant Area Office	VSP	Microwave	E side of Rt. 83, 2.5 miles S of Vansant	Buchanan	O
1414	Dublin Area Office	VSP	Microwave	5290 Bagging Plant Rd., intersection of Clayborne Blvd. and Bagging Plant Rd.	Pulaski	O
1501	5th Division Headquarters	VSP	Microwave, Dispatch, LMR	1557 South Military Highway, Chesapeake, VA 23327-1067	Chesapeake (city)	O
1502	Hampton Repeater	VSP	Microwave, LMR	4911 Mercury Blvd, Hampton, VA 23605	Hampton (city)	O
1503	Williamsburg Repeater	VSP	Microwave, LMR	147 Fenton Mill Road, Williamsburg, VA 23188	York	O
1504	Waverly Repeater	VSP	Microwave, LMR	Rt. 460, Waverly, VA	Sussex	O
1505	Emporia Repeater	VSP	Microwave, LMR	2361 Sussex Dr, Emporia, VA 23847	Greensville	O
1506	Franklin Area Office	VSP	Microwave, LMR	30010 Camp Parkway, Courtland, VA 23837	Southampton	O
1507	Suffolk Repeater	VSP	Microwave	2900 Pruden Blvd, Suffolk, VA 23434	Suffolk (city)	O
1508	Melfa Area Office	VSP	Microwave, LMR	27384 Lankford Highway, Melfa, VA 23410	Accomack	O
1509	Eastville Repeater	VSP	Microwave, LMR	Hampton County Landfill ,Cape Charles, VA 23310	Northampton	O/L
1601	6th Division Headquarters	VSP	Microwave, Dispatch	3775 West Main Street, Salem, Virginia, 24153	Roanoke	O
1602	Poor Mountain Repeater	VSP	Microwave, LMR	Poor Mountain 3 miles northwest of Calloway, Virginia	Montgomery	O
1603	Fort Lewis Mountain Repeater	VSP	Microwave, LMR	Fort Lewis Mountain near Big Bear Rock	Roanoke	O/L
1604	Bull Mountain Repeater	VSP	Microwave, LMR	Bull Mountain 3 miles north of Stewart, Virginia	Patrick	O/L
1605	Martinsville Area Office	VSP	Microwave	4200 Greensboro Road; P.O. Box 4586, Martinsville, Virginia 24115	Henry	O
1606	Danville Area Office	VSP	Microwave	121 Maple Wood Street, Danville, VA 24543	Danville (city)	O
1607	White Oak Mountain Repeater	VSP	Microwave, LMR	Off of Highway US 29, 541 Tower lane (RT 1032), Danville, VA	Pittsylvania	L/T
1608	Bedford Area Office	VSP	Microwave	874 Blue Ridge Avenue Bedford, VA 24523	Bedford	O
1609	North Mountain Repeater	VSP	Microwave, LMR	North Mountain 20 miles west of Lexington, Virginia	Allegheny	O/L
1610	Lexington Area Office	VSP	Microwave	3861 South Lee Highway, Natural Bridge, VA 24578	Rockbridge	O
1611	Clifton Forge Area Office	VSP	Microwave	1714 Main Street, Clifton Forge, Virginia	Allegheny	O
1612	Duncan Knob Repeater	VSP	Microwave, LMR	Duncan Knob 10 miles north of Warm Springs, Virginia	Bath	O/L
1613	Sounding Knob Repeater	VSP	Microwave, LMR	Sounding Knob, Jack Mountain, southeast of Monterey, Virginia	Highland	O/L
1614	Greens Knob	VSP	Microwave	Rt. 635, 1.5 miles north of Rt. 619, Stewartsville, Virginia	Bedford	O/L
1701	7th Division Headquarters	VSP	Microwave, Dispatch, LMR	9801 Braddock Rd, Fairfax, VA 22039	Fairfax	O
1702	Independent Hill Area Office	VSP	Microwave, LMR	14420 Dumfries Rd., Manassas, VA, 22110	Prince William	O
1703	Columbia Pike Repeater	VSP	Microwave, LMR	1426A Columbia Pike, Arlington, VA 22048	Arlington (city)	O/L
1704	Quantico Marine Base	VSP	LMR, Microwave	2117 McCarrack Road, Quantico Marine Base, VA	Prince William	L/T
2101	Richmond District Shop	VDOT	Microwave	2400 Pine Forest Drive, Colonial Heights, VA 23834	(city)	O/V
2102	Fulton Depot	VDOT	Microwave	505 Bickerstaff Rd., Richmond, VA 23231	Richmond (city)	O/V
2103	Central Office	VDOT	Microwave	1221 East Broad Street	Richmond (city)	O/V

TABLE B-1
EXISITNG SITES

Site No.	Site Name	Agency	Site Type	Site Address	County/City Site Location	Owned/Leased*
2201	Falmouth	VDOT	Microwave	87 Deacon Road, Fredericksburg, VA, 22405	Stafford	O/V
2202	Culpeper	VDOT	Microwave	1601 Orange St.(RT 15), Culpeper, VA, 22701	Culpeper	O/V
2203	Massanutten Mountain	VDOT	LMR	Big Mountain Road, Massanutten ,VA , 22840	Rockingham	O/V
2301	Lynchburg	VDOT	Microwave	4219 Campbell Ave, Lynchburg, VA 24502	Campbell	O/V
2401	Wytheville VDOT	VDOT	Microwave	U.S. Rt. 11, 1.2 mi W of Wytheville	Wythe	O/V
2402	Tazewell VDOT	VDOT	Microwave	Rt. 61, 0.2 mi N of the intersection of Rts. 19 and 460	Tazewell	O/V
2403	Dial Rock VDOT	VDOT	Microwave	Dial Rock Road, Tazewell	Tazewell	O/V
2404	Wise Residency VDOT	VDOT	Microwave	703 Hurricane Rd., NE, Wise	Wise	O/V
2405	Jonesville Residency VDOT	VDOT	Microwave	US Rt. 58, 1 mile west of Jonesville	Lee	O/V
2406	Lebanon VDOT	VDOT	Microwave	Rt. 71, Lebanon, VA 24266	Russell	O/V
2501	Suffolk	VDOT	Microwave	1700 North Main Street, Suffolk, VA 23434	Suffolk (city)	O/V
2601	Salem Shop VDOT	VDOT	Microwave	731 Harrison Street, Salem, VA 24153	Salem (city)	O/V
2602	Salem Area VDOT HQ	VDOT	Microwave	714 S Broad Street, Salem, VA 24153	Salem (city)	O/V
2603	Chatham VDOT	VDOT	Microwave	19281 U.S. Hwy 29, Chatham, VA, 24531	Pittsylvania	O/V
T1	Big Walker Mountain Tunnel	N/A	LMR	RT 77	N/A	
T2	Hampton Roads Tunnel	N/A	LMR	RT 64	N/A	
T3	Elizabeth River Downtown Tunnel	N/A	LMR	RT 264	N/A	
T4	Monitor/Merrimack Memorial Bridge Tunnel	N/A	LMR	RT 664	N/A	
T5	Chesapeak Bay Bridge Tunnel (North)	N/A	LMR	RT 13	N/A	
T6	Chesapeak Bay Bridge Tunnel (South)	N/A	LMR	RT 13	N/A	
T7	Elizabeth River Midtown Tunnel	N/A	LMR	RT 58/337	N/A	
T8	East River Mountain Tunnel	N/A	LMR	RT 77	N/A	
*						
L/T	Leased Tower					
O/L	Owned Towers on Leased Land					
O	Towers Owned by VSP					
O/V	Towers Owned by VDOT					

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Alcoholic Beverage Control
Department Within Agency:	Public Safety
Contact Name:	Robert Butler
Contact Phone Number:	804-213-4655
Contact Fax Number:	804-213-4574
Contact Email:	N/A

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
NONE								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Aviation
Department Within Agency:	Flight Operations & Safety Division
Contact Name:	William M. Jeffries, Manager
Contact Phone Number:	804-236-3639
Contact Fax Number:	804-236-3643
Contact Email:	jeffries@doav.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
VA Dept. of Aviation Office	5702 Gulfstream Road, Richmond, VA 23250-2422	Richmond	Henrico	37-40-47.1	77-19-49.9	X		State hangar on grounds of DOAV office complex. This is the only site we own.

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	**Capitol Police**
Department Within Agency:	
Contact Name:	**Captain Larry Dollings**
Contact Phone Number:	
Contact Fax Number:	
Contact Email:	ldollings@capitolpolice.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
James Monroe Building	14th & Franklin St.	Richmond		NO INFO	NO INFO			NO INFORMATION GIVEN

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Conservation & Recreation
Department Within Agency:	State Parks Division
Contact Name:	Warren Wahl
Contact Phone Number:	804-786-5055
Contact Fax Number:	804-786-9294
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
NONE								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Corrections
Department Within Agency:	
Contact Name:	James Thurston
Contact Phone Number:	804-674-3160
Contact Fax Number:	804-674-3536
Contact Email:	thurstonjh@vadoc.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Powhatan CC	1.5 MI N RTS. 711 & 615	State Farm	Powhatan	37-37-25	077-50-10			Correctional Center
James River CC	1954 State Farm Rd.	State Farm	Powhatan	37-37-25	077-50-10			Correctional Center
VA. CC for Women	272 Dogwood Dr.	Big Stone Gap	Wise	36-50-34	082-47-16			Womens Correctional Center
Southampton CC	Rt. 308 N RT 58	Capron	Southampton	36-43-30	077-15-15			Correctional Center
Bland CC	RT. 42 22.5 km E	Bland	Bland	37-10-15	080-53-20			Correctional Center
Brunswick CC	RT 606 2 MI S of 641	Lawrenceville	Brunswick	36-46-30	077-49-15			Correctional Center
Staunton CC	RT 11, .2 MI S of RT 250	Staunton		38-08-43	079-04-03			Correctional Center
Sussex I State Prison	RTS 625 & 602	Sussex	Sussex	37-02-52	077-12-10			State Prison
Sussex Farm	RTS 625 & 602	Sussex	Sussex	37-02-52	077-02-10			Farm (Vegetables)
Sussex II State Prison	RT 61, 11 km N	Tazewell	Tazewell	37-08-40	081-23-50			State Prison
St. Brides CC	1 MI N Int. Sanderson & Indian Creek	Chesapeake		36-36-40	076-11-00			Correctional Center
Red Onion State Prison	Rt. 361	Pound	Wise	37-06-51	082-33-02			State Prison
Academy For Staff Development	1900 River Rd. W	Crozier	Goochland	NO INFO	NO INFO			Training Facility
Fluvanna CC For Women	RT 250 5 km W of Zion Crossroad	Troy	Fluvanna	37-59-04	078-16-10			Womens Correctional Center

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Mecklenburg CC	RT 707 6 MI S	Boydton	Mecklenburg	36-39-40	078-21-50			Correctional Center
Nottoway CC	RT 650 Schutt Rd.	Burkeville	Nottoway	37-11-18	078-10-48			Correctional Center
Marion Corr. Treatment Ctr.	502 E Main St.	Marion	Smyth	37-01-40	081-10-50			Correctional Treatment Center
Buckingham & Dillwyn CC	US 15, 3 MI N of RT 20	Dillwyn	Buckingham	37-34-02	078-28-29			Correctional Center
Deep Meadow CC	RTS. 611 & 616	State Farm	Powhatan	37-37-10	077-50-50			Correctional Center
Deerfield CC	1 MI SE of RTS 308 & 652	Capron	Southampton	36-43-45	077-14-33			Correctional Center
Augusta CC	450 Little River Rd.	Craigsville	Augusta	38-03-42	079-23-04			Correctional Center
Prince George Farm	NO INFORMATION GIVEN	NO INFO	NO INFO	NO INFO	NO INFO			Agricultural Site
Tazewell Corr. Unit #31	RT 61, 11 km N	Tazewell	Tazewell	37-08-40	081-23-50			Correctional Center
Appalachian Men's DC	RT 80, 1.5 MI N of RT 19	Honaker	Russell	37-03-09	082-02-09			Detention Center
Patrick Henry Corr. Unit #2	RT 58, 11 km W of Martinsville	Ridgeway	Henry	36-37-25	079-57-15			Correctional Center
Botetourt Corr. Unit #25	201 State Drive	Troutville	Botetourt	37-25-25	079-50-45			Correctional Center
Wise Corr. Unit #18	RT 72, 3 km S	Coeburn	Wise	36-55-00	082-27-45			Correctional Center
Chatham DC	1 MI Int. RTS 57 & 823	Chatham	Pittsylvania	36-48-15	079-25-40			Diversion Center
Rustburg Corr. Unit #9	Int. RTS 24 & 615	Rustburg	Campbell	37-16-05	079-04-10			Correctional Center
Pulaski Corr. Unit #1	RT 11, 5 km W of Radford	Dublin	Pulaski	37-07-45	080-36-55			Correctional Center
Fairfax Corr. Unit #30	RTS 29 & 211	Fairfax		38-51-00	077-22-30			Correctional Center
Haymarket Corr. Unit #26	RT. 15, 7 MI N	Haymarket	Prince William	38-54-45	077-37-30			Inactive prison site
Stafford DC	2 km E RT 628	Stafford	Stafford	38-22-50	077-25-15			Diversion Center

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Culpeper Corr. Unit #11	RT 15, .5 MI S	Culpeper	Culpeper	38-27-25	078-00-00			Admin. Bldg. for P & P
Cold Springs Corr. Unit #10	RT 11, 1 MI S	Greenville	Augusta	37-59-30	079-09-05			Correctional Center
White Post DC	RT 552, 16k km Front Royal	White Post	Clarke	39-03-10	078-08-15			Detention Center
Caroline Corr. Unit #2	.4 MI N RT 30 & 301	Hanover	Caroline	37-50-00	077-19-50			Correctional Center
Harrisonburg DC	At end of RT 948	Harrisonburg		38-31-55	078-48-30			Diversion Center
Halifax Corr. Unit #23	RT 501 & 729	Halifax	Halifax	36-43-40	078-55-50			Correctional Center
Pocahontas Corr. Unit #13	RT 360 & 604	Chesterfield	Chesterfield	37-24-10	077-33-45			Correctional Center
Baskerville Corr. Unit #4	RTS 675 & 678	Baskerville	Mecklenburg	36-43-20	078-18-05			Correctional Center
Tidewater Corr. Unit #22	Thrasher & Greenbrier Farms Rd.	Chesapeake		36-45-15	076-13-20			Correctional Center
Dinwiddie Corr. Unit #27	RT 460, 24 km W. of Petersburg	Church Rd.	Dinwiddie	37-10-25	077-40-10			Correctional Center
Keen Mountain CC	RT 624, 4 km NE of RT 460	Oakwood	Buchanan	37-13-30	081-58-15			Correctional Center
Greensville CC	1 MI S of RTS 139 & 646	Jarratt	Greensville	36-47-45	077-29-00			Correctional Center
Dillwyn CC	1.5 MI N RTS 20 & 15	Dillwyn	Buckingham	37-34-21	078-28-22			Correctional Center
Indian Creek CC	1 km E of RT 168	Chesapeake		36-36-42	076-10-33			Correctional Center
Haynesville CC	RT 360, 8 km E of Warsaw	Haynesville	Richmond	37-57-25	076-50-25			Correctional Center
Coffeewood CC	RT 615, 5 MI S	Culpeper	Culpeper	38-21-55	078-01-07			Correctional Center
Lunenburg CC	690 Falls Rd., Highway #49	Victoria	Lunenburg	37-01-00	078-12-45			Correctional Center

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	**Department of Emergency Management**
Department Within Agency:	
Contact Name:	**A. Fred Vincent**
Contact Phone Number:	**804-674-2420**
Contact Fax Number:	**804-674-2419**
Contact Email:	fvincent@vdem.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
NONE								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	**Department of Environmental Quality**
Department Within Agency:	**Mobile Sources (OIS)**
Contact Name:	**Joseph Donahay**
Contact Phone Number:	**804-698-4493**
Contact Fax Number:	**804-698-4555**
Contact Email:	jwdonahay@deq.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
NONE								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	**Department of Fire Programs**
Department Within Agency:	
Contact Name:	**Drew Wallner**
Contact Phone Number:	**804-371-0220**
Contact Fax Number:	**804-371-0219**
Contact Email:	dwallner@vdfp.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
NONE								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	**Department of Forestry**
Department Within Agency:	
Contact Name:	**Joe Schaefer**
Contact Phone Number:	**804-977-6555**
Contact Fax Number:	
Contact Email:	schaeferj@dof.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
New Kent Forestry Center								Forestry of Tree Nursery
Louisa Co. Office								Forestry Operations
Lancaster Co. Office								Forestry Operations
Sandston District Office								Forestry Operations
Halifax Co. Office								Forestry Operations
Goochland Co. Office								Forestry Operations
Gloucester County Office								Forestry Operations
Coyt Wilson Tract								Forestry Operations
Farmville Region Office								Forestry Operations
Dinwiddie Co. Office								Forestry Operations
Carroll-Grayson Co. Office								Forestry Operations
Brunswick County								Forestry Operations
Hockley Progeny Test Area								Forestry Operations
Augusta Forestry Center								Tree Nursery
Amherst Office Tract								Forestry Operations
Amelia Office Tract								Forestry Operations
Pittsylvania co. Office								Forestry Op Office and Equipment

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Headquarters Shop Tract								Forestry Operations
Eastern Shore Office								Forestry Operations
Chilton Woods State Forest								Forest Management
Appomattox County								Forest Management, Growing Trees
James City/York County								Office
Lunenburg Co. Office								Develop for Lunenburg Co. Area Office
Hawks Tract								State Forest
Hoffman Tract								Forest Management
Matthews Tract								Restoration of American Chestnut
Gallion State Forest								Forestry Operations
Rockbridge County Land								Forestry Operations
Sussex/Greensville Work Unit								Forestry Operations
Prince George Co. Office								Forestry Operations
Batesville Tract - Albemarle								Forestry Operations
Niday State Forest								Forestry Operations
Mecklenburg Co. Office								Forestry Operations
Garland Gray Forestry Center								Forestry Operations
Georgia Orchard								Forestry Op. Seed Orchard
Judge J. Paul State Forest								Forest Research
Conway Robinson State Forest								Forestry Operations
HQ Bldg/Admin Support Fac.								Forestry Operations
Prince Edward State Forest								Forestry Operations
Bourassa State Forest								
Zoar State Forest								Forestry Operations
Lesesne State Forest								Forestry Operations

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Whitney State Forest								Forestry Operations
Cumberland State Forest								State Forest
029 Buckingham/011 Appomattox								Forestry Operations
Big Stone Gap-Wise Co.								Forestry Op Office and Equipment
Abingdon Regional Office								Forestry Op Regional Office
Waverly Regional Office								Forestry Operations
Crawford Tract								
Fauquier Co.								Forestry Op Office and Equipment
Tappahannock-Essex Co.								Forestry Op Regional Office
Staunton Regional Office								Forestry Operations
Spotsylvania Co. Office								Forestry Operations
Southampton Co. Office								Forestry Operations
Woodstock Office								Forestry Op PFC and Equipment
Salem Regional Office								Forestry Operations
Portsmouth District Office								Forestry Operations

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Game & Inland Fisheries
Department Within Agency:	Law Enforcement
Contact Name:	Joe Cooke
Contact Phone Number:	804-367-1252
Contact Fax Number:	
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Thompson	Blue Mountain		Fauquier	NO INFO	NO INFO			Easy access SR-638; Tower, opposition - maybe
Hidden Valley	Near Abingdon		Washington	NO INFO	NO INFO			Easy access SR-690; Tower, no opposition

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Health
Department Within Agency:	Office of EMS
Contact Name:	Everette Vaughan
Contact Phone Number:	804-371-3500 ext. 3518
Contact Fax Number:	804-371-3543
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
NONE								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Information Technology
Department Within Agency:	
Contact Name:	Paul D. Hoppes
Contact Phone Number:	804-371-5580
Contact Fax Number:	804-786-4177
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Monroe Building	14th & Franklin St.	Richmond		37-32-11	077-25-47	X		State office building
Powhatan CC		Powhatan	Powhatan	NO INFO	NO INFO			MCI Tower Site

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Juvenile Justice
Department Within Agency:	Division of Institutions
Contact Name:	John Coble
Contact Phone Number:	804-371-0712
Contact Fax Number:	804-786-7171
Contact Email:	coblejs@dji.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Natural Bridge JCC	Rt. 1425 Arnolds Valley Rd., Nat. Bridge, VA 24579		Rockbridge	37-35-10N	079-30-24W	X		100 acres
Beaumont JCC	State Route 522, Richmond, VA 23014		Powhatan	37-39-50N	077-54-25W	X		2286.28 acres
Bon Air JCC	1900 Chatsworth Ave., Bon Air, VA 23235		Chesterfield	37-31-10	077-34-00W	X		430.43 acres
Barrett JCC	State Route 651, Georgetown Rd., Hanover, VA 23069		Hanover	37-42-45N	077-21-40W	X		143.77 acres
Hanover JCC	7093 Broadneck Rd., Hanover, VA 23069		Hanover	37-45-10	077-20-20W	X		1805.76 acres
Culpeper JCC	1240 Coffeewood Dr., Mitchells, VA 22729		Culpeper	38-21-39N	078-01-24W	X		43.022 acres
Camp Washington	4007 Burdette rd., Carrsville, VA		Isle of Wight	NO INFO	NO INFO			49.87 acres

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Marine Resources Commission
Department Within Agency:	
Contact Name:	Colonel Steve Bowman
Contact Phone Number:	
Contact Fax Number:	
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
	30 Jefferson Ave.	Newport News		NO INFO	NO INFO			Used for central dispatching, boat maintenance, and central purchasing wareshouse.
Burgess Radio Tower	NO INFORMATION GIVEN		Northumberland	NO INFO	NO INFO			Own both tower and property.

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Military Affairs
Department Within Agency:	Public Safety
Contact Name:	LTC Art Bachman
Contact Phone Number:	804-298-6158
Contact Fax Number:	804-298-6303
Contact Email:	Art.Bachman@va.ngb.army.mil

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Alleghany Armory	Route 60 West	Clifton Forge	Alleghany	37-47-44.0	79-50-01.0			Adjacent to a community college
Bedford Armory	29A Omaha Beach Circle	Bedford	Bedford	37-19-53.0	79-30-49.1			
Blackstone Armory	1008 Darville Road	Blackstone	Nottoway	37-04-23.2	77-57-00			
Charlottesville Armory	1640 Avon Street	Charlottesville	Albermarle	38-00-12.7	78-29-42.4			
Chatham Armory	326 S. Main Street	Chatham	Pittsylvania	36-49-19.9	79-23-48.5			Located in a residental area
Fort Pickett		Blackstone	Dinwiddie, Nottoway	37-03-08.6	77-56-28.9			Plenty of land
Danville Armory	3194 North Main Street	Danville	Pittsylvania	36-38-10.5	79-23-11.9			
Warrenton Armory	629 Waterloo Road	Warrenton	Fauquier	38-42-55.8	77-48-01.4			
State Military Reservation	General Booth Blvd.	Virginia Beach	N/A	36-48-40.6	75-59-07.1			
Suffolk Armory	2761 Godwin Blvd.	Suffolk	N/A	36-46-38.2	76-34-59.7			
Franklin Armory	900 Armory Drive	Franklin	Southampton	36-40-30.7	76-55-41.9			
Org. Maintenance Shop #12	557 Calvert Street	Staunton	Augusta	38-08-29.4	79-04-13.8			
South Boston Armory	701 Hamilton Road	South Boston	Halifax	36-42-56.6	78-54-45.4			
Rocky Mount Armory	212 Tanyard Road	Rocky Mount	Franklin	37-00-01/6	79-53-01.0			

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Harrisonburg Armory	340 South Willow Street	Harrisonburg	Rockingham	38-26-46.7	78-52-45.6			
Lexington Armory	199 Green House Road	Lexington	Rockbridge	37-48-07.6	79-25-13.9			
Lynchburg Armory	168 Constitution Lane	Lynchburg	Campbell	37-19-38.5	79-12-57.9			
Waller Depot	5001 Waller Road	N/A	Henrico	37-35-18.0	77-29-28.6			
Woodstock Armory	451 Hoover Road	Woodstock	Shenandoah	38-51-12.0	78-31-15.2			
Martinsville Armory	315 Commonwealth Blvd.	Martinsville	Henry	36-41-51.0	79-53-39.7			
Norfolk Armory	3777 Virginia Beach Blvd.	Norfolk	N/A	36-51-21.5	76-13--58.1			
Onancock Armory	67 Kerr Street	Onancock	Accomac	37-42-44.7	75-44-15.3			
Petersburg Armory	1800 Baylors Lane	Petersburg	N/A	37-12-22.0	77-24-38.9			
Portsmouth Armory	3200 Elmhurst Lane	Portsmouth	N/A	36-48-11.4	76-22-16.9			
Radford Armory	6th & Scott Streets	Radford	Montgomery	37-07-54.8	80-34-02.3			
Richlands Armory	175 Essayons Drive	Cedar Bluff	Tazewell	37-04-25.7	81-45-52.6			

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Mines, Minerals, & Energy
Department Within Agency:	
Contact Name:	Jackie T. Davis
Contact Phone Number:	540-523-8118
Contact Fax Number:	540-523-8121
Contact Email:	jtd@mme.state.va.us

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Buchanan/Smith Bldg.	3405 Mt. Empire Rd., RT 23 S	Big Stone Gap	Wise	36-51-21.3N	82-45-36.6W		X	Excellent radio site with tower, bldg., & fence.

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Department of Motor Vehicles
Department Within Agency:	
Contact Name:	Gail Morykon
Contact Phone Number:	
Contact Fax Number:	
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
NONE								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Virginia State Police
Department Within Agency:	
Contact Name:	Captain John Furlough
Contact Phone Number:	
Contact Fax Number:	
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Refer to Table B-1								

TABLE B-2
Potential Site Locations/Agency Owned Properties

COV AGENCY:	Virginia Department of Transportation
Department Within Agency:	
Contact Name:	Bill Brown
Contact Phone Number:	
Contact Fax Number:	
Contact Email:	

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Haymarket HQ								Maintenance
Arcola HQ								Maintenance & Construction
Hillsboro Area HQ								Maintenance & Construction
St. Louis HQ								Maintenance & Construction
Dale City HQ								Maintenance & Construction
Dumfries HQ								Maintenance & Construction
Gainesville HQ								Maintenance & Construction
Reston HQ								Maintenance & Construction
Arlington Co. HQ								
Merrifield Area HQ								
Van Dorn HQ								Maintenance & Construction
Newington Area HQ								Maintenance & Construction
Fairfax Area HQ								Maintenance & Construction
Northern VA District Maint. HQ								Maintenance
Equipment Depot								Admin. Offices & Maintenance
Central Office Annex Lot								Administrative Offices
Central Office Annex								Administrative Offices

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Central Office Lot								Administrative Offices
White Post Oak Area HQ								Maintenance & Construction
Stanley Area HQ								Maintenance & Construction
Area HQ								Maintenance & Construction
Front Royal Area HQ								Maintenance & Construction
Luray Residency								Admin. Offices & Maintenance
Winchester Area HQ								Highway Op. & Maintenance
Hayfield Sub-Area HQ								Maintenance & Construction
Cross Junction Area HQ								Maintenance & Construction
Winchester Area HQ								Maintenance & Construction
Stephens City Area HQ								Maintenance & Construction
Rt. 629 Storage Lot								Store Material
Mt. Jackson Area HQ								Maintenance & Construction
Edinburgh Residency								Admin. Offices & Maintenance
Linville Storage Lot								Store Chemical Abrasives
McGaheysville Area HQ								Maintenance & Construction
Chimney Rock Area HQ								Maintenance & Construction
Mt. Crawford Area HQ								Maintenance & Construction
Harrisonburg Residency								Admin. Offices & Maintenance
Route 624								Store Material
Monterey Area HQ								Maintenance & Construction
McDowell Area HQ								Maintenance & Construction
Greenville Area HQ								Maintenance & Construction
Moscow Area HQ								Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Mint Springs Area HQ								Maintenance & Construction
Fishersville Area HQ								Maintenance & Construction
Staunton Residency Lot								Admin. Offices & Maintenance
Raphine Storage Lot								Store Material
E. Lexington Area HQ								Store Chemical Abrasives
Potts Creek Area HQ								Maintenance and Storage
Kerrs Creek Area HQ								Maintenance & Construction
Fairfield Area HQ								Maintenance & Construction
Warm Springs Area HQ								Maintenance & Construction
Millboro Springs Area HQ								Maintenance & Construction
Covington Area HQ								Maintenance & Construction
Triangle Area HQ								Maintenance & Construction
Longdale Storage Lot								Store Chemical Abrasives
Staunton District Lot								Admin. Offices & Maintenance
Rappahannock Area HQ								Area HQ/Maintenance
Amissville Storage Lot								Store Chemicals & Materials
Thoroughfare Gap Storage								Store Chemicals & Materials
Markham Storage Lot								Store Chemicals & Materials
Bealeton HQ								Maintenance & Construction
Marshall Storage Lot								Store Chemicals & Materials
Marshall HQ Lot								Maintenance & Construction
Warrenton HQ								Maintenance & Construction
Warrenton Residency Temp Trans to DSP 15								Admin. Offices & Maintenance
Gordonsville Area HQ								Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Mule Graveyard Storage Lot								Store Material
Rhoadsville HQ								Maintenance & Construction
Madison HQ Lot								Maintenance & Construction
W. Culpeper HQ								Maintenance & Construction
Culpeper Residency Lot								Admin. Offices & Maintenance
Route 64 & 29 Storage Lot								Store Chemical Abrasives
Albemarle/Greene Storage Lot								Store Material
Covesville Storage Lot								Maintenance & Construction
Boyd's Tavern HQ								Maintenance & Construction
Yancy's Mill HQ								Maintenance & Construction
Keene HQ								Maintenance & Construction
Free Union Area HQ								Maintenance & Construction
Charlottesville Residency								Admin. Offices & Maintenance
Palmyra HQ								Maintenance & Construction
Ferncliff HQ								Maintenance & Construction
Cuckoo HQ								Maintenance & Construction
Louisa Residency Lot								Admin. Offices & Maintenance
Culpeper District Complex								Admin. Offices & Maintenance
Thornburg Storage Area								Store Material
Carmel Church Storage Lot								
Chemical Storage Building								
West Point Area HQ								Maintenance & Construction
Rumford Area HQ								Maintenance & Construction
Tappahannock Area HQ								Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Ladysmith Area HQ								Maintenance & Construction
Bowling Green Residency								Admin. Offices & Maintenance
Garrisonville Lot								Storage Lot - Transferred to row for commuter pkg. Lot
Post Oak Area HQ								Maintenance & Construction
Chancellor Sub-Area HQ								Maintenance & Construction
Massaponax Area HQ								Maintenance & Construction
Stafford Area HQ								Maintenance & Construction
Brook Sub-Area HQ								Maintenance & Construction
Eskimo Area HQ								Maintenance & Construction
Burgess Area HQ								Maintenance & Construction
Potomac Mills HQ								Maintenance HQ & Storage
Hague Area HQ								Maintenance & Construction
Lottsburg Area HQ								Maintenance & Construction
Brookvale Area HQ								Maintenance & Construction
Warshaw Residency								Admin. Offices & Maintenance
Shackleford Area HQ								Maintenance & Construction
St. Stephens Church Area HQ								Maintenance & Construction
Gloucester Area HQ								Maintenance & Construction
Saluda Residency								Admin. Offices & Maintenance
R/W Elizabeth River Dtn. Tunnel								
Storage Building								Storage of GPCB Parts
Pine Chapel Shop								Maintenance & Shop
Chincoteague Bridge (On R/w)								Bridge Tenders Office
Eastville HQ								Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Temperanceville HQ								Maintenance & Construction
Accomack Residency								Admin. Offices & Construction
Croaker Area HQ								Maintenance & Construction
Seaford Area HQ								Maintenance & Construction
Williamsburg Residency								Admin. Offices & Maintenance
Laskin Road Parking								Commuter Parking Lot & Trash Transfer Station
Wayside HQ								Maintenance & Construction
Bowers Hill HQ								Maintenance & Construction-Portion Surplus
Norfolk Residency								Admin. Office & Maintenance
Whaleyville Sub-Area HQ								Maintenance & Construction
Walters Sub-Area HQ								Maintenance & Construction
Bartlett Sub-Area HQ								Store Chemicals & Materials
Bartlett HQ								Maintenance & Construction
Smithfield Area HQ								Maintenance & Construction
Whaleyville Area HQ								Maintenance & Construction
Windsor Area HQ								Maintenance & Construction
Surry Area HQ								Maintenance & Construction
Waverly Residency								Admin. Office & Maintenance
Skippers Sub-Area HQ								Chemical Storage
Emporia HQ Lot								Maintenance & Construction
Capron HQ								Maintenance & Construction
Franklin Area HQ								Maintenance & Construction
Franklin Residency								Maintenance & Construction
Suffolk District HQ								Admin. Offices & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Mechanicsville HQ								Maintenance & Construction
Old Church HQ								Maintenance & Construction
Sandy Hook HQ								Maintenance & Construction
Montpelier HQ								Maintenance & Construction
Hadensville HQ								Maintenance & Construction
Ashland Residency								Residency Office & Maintenance
Magnolia Storage Lot								Vacant - Surplus
New Kent HQ								Maintenance & Construction
Short Pump HQ								Maintenance & Construction
Charles City HQ								Maintenance & Construction
Basie Road Area HQ								Maintenance & Construction
Sandston Residency Lot								Residency Office & Maintenance
Buildings Owned by VDOT (Not Land)								
Powhatan HQ								Maintenance & Construction
Bethia Area HQ								Maintenance & Construction
Beach HQ								Maintenance & Construction
Bon Air HQ								Maintenance & Construction
Carson Rest Area								Highway Maintenance
Rest Area								
Rest Area								
Route 711 Storage Lot								Storage Lot
Dewitt Storage Lot								Store Materials
Church Road Area HQ								Maintenance & Construction
McKenney Area HQ								Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Rt. 703 Area HQ								Maintenance & Construction
Chesterfield Residency								Residency Offices & Maintenance/Construction
Prince George HQ								Maintenance & Construction
Carson Area HQ								Maintenance & Construction
Petersburg Residency Lot								Residency Offices & Maintenance
Pocahantas HQ								Maintenance & Construction
New Victoria Area HQ								Maintenance & Construction
Kenbridge Area HQ								Maintenance & Construction
Jennings Sub HQ								Maintenance & Construction
Nottoway HQ								Maintenance & Construction
Amelia Residency								Residency Offices & Maintenance
Rest Area								
Rest Area								
Slatersville HQ								Maintenance & Construction
Clarksville Storage Lot								On Right Of Way
Nottoway River Maint. Lot								Storage of Materials
Chase City HQ								Maintenance & Construction
Oilville Area HQ								Maintenance & Construction
Clarksville Area HQ								Maintenance & Construction
Lawrenceville Area HQ								Maintenance & Construction
Burnt Store Storage Lot								Storage of Materials
Atlee Area HQ								
Burnt Store Area HQ								Maintenance & Construction
Sturgeonville Area HQ								Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
S. Brunswick Area HQ								Maintenance & Construction
Bracey Sub-Area HQ								Maintenance & Construction
South Hill Residency Lot								Residency Maintenance/Construction
Richmond District HQ								District Maintenance & Construction
Route 29B & 660 Lot								
Suffolk Traffic Control Ctr. (Right of Way)								Location of TMS Center
Wood Mill Wayside								Picnic & Rest Area/Recreation Area for Traveling Public
Amherst Wayside								Picnic & Rest Area/Recreation Area for Traveling Public
Old Madison Hght Storage Lot								Maintenance & Construction & Support of Hwy. Activities
Berlin HQ								Maintenance & Construction
Madison Heights Area HQ								Maintenance & Construction
Bryant Area HQ								Maintenance & Construction
Shipman Area HQ								Maintenance & Construction
Stony Creek Lot								Maintenance & Construction
Forks of Buffalo Area HQ								Maintenance & Construction
Amherst Area HQ								Maintenance & Construction
Amherst Residency								Residency Offices and Construction & Maintenance
Long Mountain Storage Lot								Store Material & Support Maintenance & Construction
Yellow Branch Area HQ								Maintenance & Construction
Timberlake Area HQ								Maintenance & Construction
Gladys Area HQ								Maintenance & Construction
Rustburg Area HQ								Maintenance & Construction
Appomattox Residency								Residency Offices and Construction & Maintenance
Robert E. Lee Wayside								

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Denton's Corner Storage Lot								Store Chemical Abrasives & Support Maintenance/Construction
Wards Corner Area HQ								Area HQ (Was Right of Way)
Willis Mt. Storage								Store Material & Support Maintenance/Construction
Green Bay Area HQ								Maintenance & Construction
Brown's Store Area HQ								Maintenance & Construction
Skiffes Creek Sub-Area HQ								Maintenance & Construction - Right to use land only
Cumberland Area HQ								Maintenance & Construction
Andersonville Area HQ								Maintenance & Construction
Manteo Area HQ								Maintenance & Construction
Farmville Area HQ								Maintenance & Construction
Dillwyn Area HQ								Maintenance & Construction
Field Office Unit								TTF Admin. Staff
Bethal Area HQ								Maintenance & Construction
Volens Area HQ								Maintenance & Construction
Cluster Springs Area HQ								Maintenance & Construction
Fredericksburg District								Admin. Offices & Maintenance
Phenix Area HQ								Maintenance & Construction
Crafton Gates Sub-Area HQ								Store Material & Support Maintenance/Construction
Crafton Gates Area HQ								Maintenance & Construction
Matthews Area HQ								Maintenance & Construction
Sinai Area HQ								Maintenance & Construction
Cluster Springs Sub-Area HQ								Maintenance & Storage & Support Construction
Halifax Residency								Residency Office & Maintenance & Construction
Chatham Storage Lot								Storage Lot

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Kentuck Area HQ								Maintenance & Construction
Brosville Area HQ								Maintenance & Construction
Gretna Area HQ								Maintenance & Construction
Fredericksburg Residency								Admin. Offices & Maintenance
Mt. Airy Area HQ								Maintenance & Construction
Rondo Area HQ								Maintenance & Construction
Chatham Area HQ (Camp #5)								Maintenance & Construction
Falmouth Sub-Area HQ								Maintenance & Construction
Chatham Residency								Maintenance & Construction
Lynchburg District HQ								Maintenance & Construction
Smith Mt. Lake Sub-Area HQ								Maintenance & Construction
Edge Hill Area HQ								Maintenance & Construction
Big Island Area HQ								Maintenance & Construction
New London Area HQ								Maintenance & Construction
Irving Area HQ								Maintenance & Construction
Bedford Residency								Residency Office & Maintenance & Construction
Weigh Station - Hollins								Official Weigh Station
Starky Area HQ								Maintenance & Construction
Hanging Rock Area HQ								Maintenance & Construction
Dawn Area HQ								Maintenance & Construction
Airport Area HQ								Maintenance & Construction
Rt. 11 Storage Area								Store Chemical Abrasives & Support Maintenance/Construction
Buchanan Area HQ								Maintenance & Construction
Rest Area - Carolina Co.								Rest Stop

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Troutville Area HQ								Maintenance & Construction
Eagle Rock Area HQ								Maintenance & Construction
New Castle Area HQ								Maintenance & Construction
Zions Cross Rd. HQ								Maintenance & Construction
Salem Residency								Residency Office & Maintenance & Construction
Boones Mill Storage Area								Storage Area & Maintenance/Construction
Sydnorsville Area HQ								Maintenance & Construction
Glade Hill Area HQ								Maintenance & Construction
Burnt Chimney Area HQ								Maintenance & Construction
Calloway Area HQ								Maintenance & Construction
Rocky Mount Residency								Maintenance & Offices
Stanardsville HQ								Maintenance & Construction
Vesta Area HQ								Maintenance & Construction
Peters Creek Area HQ								Maintenance & Construction
Patrick Springs Area HQ								Maintenance & Construction
Rivanna Area HQ								Construction & Maintenance Program
Fairystone Area HQ								Maintenance & Construction
Carlisle Area HQ								Maintenance & Construction
Horsepasture Storage Area								Storage/Maintenance & Construction
Orange HQ								Maintenance & Construction
New Horsepasture Area HQ								Maintenance & Construction
Martinsville Residency								Office & Maintenance
Rest Stop - Ironto								Well House
Wade's Lane Storage Lot								Storage of Materials/Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Chemical Storage Lot								Storage of Chemical Abrasives/Maintenance & Construction
Midland Area HQ								Maintenance & Construction
Ironto Area HQ								Maintenance & Construction
Dublin Area HQ								Maintenance & Construction
Pearisburg Area HQ								Maintenance & Construction
Washington HQ								Maintenance & Construction
Christiansburg Residency								Maintenance & Residency/Construction
Check Area HQ								Maintenance & Construction
Floyd Area HQ								Maintenance & Construction
Lexington Residency								Maintenance & Construction
Willis Area HQ								Maintenance & Construction
Laurel Area HQ								Maintenance & Construction
Fancy Gap Area HQ								Maintenance & Construction
Hillsville Residency								Residency Office & Maintenance & Construction
Mason Creek Storage Lot								Storage of Materials/Maintenance & Construction
Salem District Complex								Admin. Offices & Maintenance/Construction
Jonesville Storage Lot								Used for Chemical Storage & Hwy. Maintenance/Construction
Fancy Hill Area HQ								Maintenance & Construction
Nickelsville Area HQ								Maintenance & Construction
Ft. Blackmore Area HQ								Service/Maintenance & Construction
Pattonsville Area HQ								Used to Support Hwy. Maintenance & Construction
On U.S. Forest Service Land								
Dryden Area HQ								Maintenance & Construction
Ewing Area HQ								Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Jonesville Residency Lot								Hwy Maintenance & Construction
Swoope Area HQ								Maintenance & Construction
Wytheville Residency Lot								Construction & Maintenance Program
Phillips Storage Area								Storage
Route 77 Storage Area								Chemical Storage
Fort Chiswell HQ Lot								Maintenance & Construction
Speedwell HQ								Hwy Maintenance & Construction
Baywood HQ Lot								
Independences HQ								Maintenance & Construction
Mauzy Area HQ								Maintenance & Construction
Elk Creek HQ								Maintenance & Construction
Volney HQ Lot								Maintenance & Construction
Wytheville Residency Lot								Maintenance & Construction
Harrisonburg Residency Lot								Construction & Maintenance Program
Rest Area (R/W)								
Rest Area (R/W)								
Bluefield Storage Lot								Construction & Maintenance Program
Toms Brook Area HQ								Maintenance & Construction
Springville Area HQ								Support Hwy. Maintenance & Construction
Gratton Area HQ								Area HQ/Storage
Crandon Lot								Support Hwy. Maintenance & Construction
Claypool Hill HQ Lot								Support Hwy. Maintenance & Construction
Rocky HQ Lot								Support Hwy. Maintenance & Construction
Bland Area HQ								Support Hwy. Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Tazewell Residency Lot								Support Hwy. Maintenance & Construction
Storage Area Lot								Store Chemical Abrasives
Right of Way								Parking/Community Center
Chemical Storage Lot (R/W)								
Radio Transmission Tower								Support Hwy. Maintenance & Construction
On U.S. Forest Service Land								
High Point HQ Lot								Support Hwy. Maintenance & Construction
Oakwood HQ Lot								Support Hwy. Maintenance & Construction
Deskins HQ Lot								Support Hwy. Maintenance & Construction
Central Warehouse Complex								
Blackford Area HQ Lot								Support Hwy. Maintenance & Construction
Big Rock HQ Lot								Support Hwy. Maintenance & Construction
Lebanon Residency Lot								Support Hwy. Maintenance & Construction
Rest Area (R/W)								
Abingdon Area HQ Lot								Maintain Highways
Abingdon Storage Lot								Storage Fro Hwy. Maintenance & Construction
Glade Spring HQ								Support Hwy. Maintenance & Construction
Columbia Pike HQ								Maintenance & Construction
Marion HQ								Support Hwy. Maintenance & Construction
Konnarock Sub-Area HQ								Support Hwy. Maintenance & Construction
Sugar Grove HQ								Support Hwy. Maintenance & Construction
Manassas Residency								Maintenance & Construction
Greendale Area HQ								Support Hwy. Maintenance & Construction
N. Bristol Area HQ								Support Hwy. Maintenance & Construction

Site Name	Site Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Site Description/Comments
Chilhowie HQ								Support Hwy. Maintenance & Construction
Lake Ridge HQ								Maintenance & Construction
Broadford Area HQ								Support Hwy. Maintenance & Construction
Abingdon Residency								Support Hwy. Maintenance & Construction
E. Stone Gap Area HQ								Support Hwy. Maintenance & Construction
Coeburn Area HQ Lot								Support Hwy. Maintenance & Construction
Fremont Area HQ								Support Hwy. Maintenance & Construction
Glamorgan HQ Lot								Maintenance & Construction
Wise Residency Lot								Maintenance & Construction
Bristol District Complex								Maintenance & Construction
Hampton Roads Tunnel/Toll Facility								Tunnel

APPENDIX C

GROUNDING & SURGE PROTECTION FOR THE COMMONWEALTH OF VIRGINIA COMMUNICATIONS SYSTEM

TOWERS, BUILDINGS & EQUIPMENT

Prepared By:

CTA Communications, Inc.
A Hayes Seay Mattern & Mattern, Inc. Company

1.0 DESCRIPTION OF WORK

The Systems Integrator shall be responsible for providing a complete grounding system for the antenna towers, buildings, and other site structures. The work shall include internal and external grounding systems for equipment in the communications buildings, grounding of the antenna towers, antennas, guys, transmission lines, telephone lines, AC power line grounding and grounding of the Communications Center facility.

2.0 GENERAL

The purpose of this specification is to establish minimum requirements for a grounding system that shall provide a high degree of personnel and equipment lightning protection. In the event that any item specified within this document conflicts with the current National Electrical Code or applicable local building-grounding related codes, the most stringent Codes shall take precedence.

Protective measures to prevent equipment damage and minimize personnel hazards against lightning shall incorporate system grounding and bonding using good RF practices for the conduction of steep wave front currents. While all conductors and connections have some associated resistance, the inductive reactance is normally much larger. All grounding and bonding conductors shall have low inductance interconnections to minimize the inductive voltage rise associated with the sharp wave front. All elements of the system and conducting elements in near proximity to the system shall be grounded and bonded together to enable all parts of the radio site to rise above earth equally.

3.0 SUBMITTALS

3.1 As-Built Drawings and Catalog Data

As-built drawings (D) and catalog data (C) shall be submitted for the following items:

a. Grounding and bonding plan (D)

b. Ground rods (C)

c. Surge suppression devices (C)

d. Bulkhead panels (RF, power, phone, etc.) (C)

e. Coaxial cable grounding kit (C)

f. exterior ground rings (D)

3.2 Test Reports

Test reports shall be submitted as specified.

4.0 GROUNDING FOR COMMUNICATIONS TOWERS, BUILDINGS AND EQUIPMENT

The Systems Integrator shall prepare a plan for the lightning and surge protection measures to be implemented, taking into account such items as the radio installation, equipment to be protected, and local conditions. The Systems Integrator shall submit this plan to the COV PM and Engineer at the design review. The Systems Integrator's plan shall meet all requirements of this specification and receive approval by the COV PM.

4.1 Ground Resistance Measurements

Unless specified elsewhere, the maximum DC resistance between any point on the ground system and earth ground shall be less than five (5) ohms.

Equipment specifically designed for this purpose shall be used to measure the resistance of a point to ground, and the measurement shall be made by following the instructions provided with the instrument.

The resistance to earth of the earth electrode subsystem shall be measured only by the fall of potential technique. This shall be accomplished prior to the completion of construction of associated buildings and structures.

4.2 Ground Test Wells

Each site shall have a ground test well for the purpose of verifying baseline ground resistance readings and for future testing of the grounding system. The inclusion of a test well affords easy accessibility for initial verification of the site’s ground resistance and for subsequent tests designed to detect any future degradation of the site ground system.

The test wells at each site shall be a minimum of 8 inches in diameter and have a waterproof cover. The test wells shall be equipped with a copper or copper-clad lug to facilitate convenient connection of test equipment into the grounding system.

4.3 Equipment

4.3.1 Ground Rods

Ground rods shall be bare copper or copper-clad steel, 3/4 inch in diameter, and a minimum of 10 feet in length. The thickness of the copper jacket shall not be less than 0.012 inch (0.3 mm). Multiple interconnected ground rods shall be used uniformly spaced around the facility with a distance between ground rods not more than twice the rod length (20 feet) when used around towers and equipment buildings. When used in the circumferential ground ring, the spacing is allowed to be 40 feet, as described in sections 4.3.1, 4.3.2.2 and section 4.7 on fences.

The rods shall be interconnected with a 2/0 AWG bare copper cable, per Line item #1 in Table 3, buried at least 1.5 feet below grade level using exothermic weld connections at all ground rod connections. Larger size cables as well as greater burial depths will be specified where earth and atmospheric conditions so dictate. Ground rods shall be driven into the earth using the appropriate tools. If a ground rod cannot be driven straight down the total length of the ground rod, it shall be driven at an angle not greater than 45 degrees. Auguring and back filling are not permissible, unless used in conjunction with Doping as described in paragraph 4.4.4 " Doping of Ground Systems."

4.3.2 Conductors

4.3.2.1 Below Ground Conductors

Connections made to ground rods, or to conductors below ground shall be made using an exothermic weld process, such as Cadweld or COV approved equivalent, to ensure firm, mechanically rigid, and maintenance-free connections as described in section 6.0 on Bonding. Conductors shall be placed at the same depth as the top of the ground rods. Interconnecting grounding cables shall be brazed or welded to each ground rod and shall close on itself to form a complete loop with the ends brazed or welded together. Coverage of the earth electrode subsystem by asphalt, concrete, etc, shall be discouraged and kept to a minimum in an effort to maintain the effectiveness of the grounding subsystem. Conductors used below ground for connecting ground rods together shall be as shown in Table 3, either Line Item 1.

4.3.2.2 Above Ground Conductors

Conductors used above ground for equipment, and other metal items shall be in accordance with Table 3 Line Item 1 or Line Item 2, as is appropriate for the application.

Precautions must be observed against connecting dissimilar metals that will cause deterioration of grounding surfaces or protective surfaces. Table 1 provides a grouping of metals, and Table 2 provides recommendations for contact surfaces. Section 6 of this specification outlines the bonding requirements.

4.4 Ring And Halo Ground Connections

All connections shall be made with minimum length conductors, with straight vertical (or horizontal) runs, if possible. Conductor bends, when required, shall be equal to or greater than an 8-inch radius with an included angle of not less than 90 degrees. Connecting conductors shall always point in the direction of current flow and toward earth ground, and shall approach the main ground at an angle of roughly 45 degrees as shown in Figure 1.

4.4.1 Wire and Cable Routing

The routing and layout of wires and cables shall be performed in a manner that does not jeopardize the integrity of the equipment shield. Cables or wires carrying high-level signals shall be routed as far as is feasible from low-level signal lines. Power lines and control lines subject to large transients shall be routed away from sensitive digital or other susceptible circuits.

4.4.2 Requirements for Metal Pipes Entering Building from Underground

Underground metallic pipes entering a facility shall be circumferentially bonded to the building or facility entrance plate. The size of the entrance plate is determined by the number of pipes or cables attached and shall be a minimum of ¼" thick. The plate shall be of steel construction and of sufficient size that the edges of the plate are a minimum of 12" from any cable or pipe penetration on the plate and from any other metallic object in proximity of the plate. The entrance plate shall be bonded to the earth electrode subsystem with two minimum length # 2/0 AWG copper cables and shall be circumferentially welded to the shielding (if present) of the building or shelter as shown in Figure 11. The interconnecting cables shall be welded or brazed to the earth electrode subsystem. Adequate corrosion preventative measures shall be taken.

Structural pilings, tanks, and other underground metallic masses near the periphery of the structure also shall be bonded in like manner to the earth electrode subsystem. Caution shall be used when using clamps to ground metallic gas pipes.

4.4.3 Above Ground Connections

Connections made above ground in areas exposed to weather shall preferably be made using an exothermic process, Cadweld or equivalent, except where one or more of the objects being bonded have a galvanized coating. The use of appropriate UL-approved pressure-type connections shall be used for connecting galvanized members and shall be permissible with stranded wire.

Connections made above ground shall not be made without appropriate passivation of the mating surfaces, or use of special transition clamps such as PolyPhaser Model J-1, J-2, or equivalent.

Connections of stranded conductors to equipment racks shall be by use of lugs or pressure clamps, consistent with the wire size, and grounding surface of the equipment being grounded. Figure 2 shows typical examples of connectors for grounding. Connections to the guy wires shall use pressure connections such as shown in Figure 3.

4.4.4 Doping of Ground Systems

When unable to achieve ground resistance below 5 ohms, some doping of the ground may be necessary. The doping material is added around the ground rod in an augured hole or around a conductor in a trench. The doping material shall have a constant cured resistivity of 12 ohm/cm or less. It shall set up to a hard, permanent material and shall not decompose or dissolve over time. It shall not require any maintenance after installation. It shall not rely on the continuous presence of water nor shall it add salts to the earth, which may contaminate the ground water.

4.4.5 Impermissible Practices

The following practices are not permissible:

a. Ground wire runs through metal conduit (unless the wire is permanently bonded at both ends of the conduit). The use of PVC conduit is preferred.

b. Reliance on the third wire (green wire) on ac power lines for lightning ground.

c. Drilling holes into towers or loosening of tower bolts for grounding.

d. The removal of protected surfaces, such as galvanization for grounding purposes.

e. The use of 120V single-phase GFI outlets, except where required by NEC.

f. Relying on grounding using commercial practiced such as used on telephone circuits or other leased lines.

4.5 External Grounding System

4.5.1 General

External grounding rings shall be installed which individually encircle the antenna tower and the equipment building(s).

In addition, there shall be a circumferential ring ground following the facility fence line such that the offset from the fence line is not to exceed 6 feet. Where this fence line is within 6 feet of the individual tower and building ring ground subsystems, the fence shall tie into those ground rings in keeping with the requirements of section 4.3.2.2. and section 4.7 on fences.

Where the fence line is not within 6 feet of the tower and communications building ring ground(s), an additional partial or complete ring ground shall be installed and shall be tied into the other ring ground subsystems using wire size and type as specified in Table 3, Line item #1, and bonded as described below for the tower and communications equipment building ring ground subsystems. A typical installation is shown in Figure 4.

Ground rods for the tower, building, and fence shall be installed so that the top of the rod is a minimum of 18 inches below finished soil surface, or below the frost line, whichever is greater. The ground rods for the tower ring ground shall be installed so that the bottom of the rod is a minimum of 24 inches deeper than the lowest part of the tower footing.

Each ground ring listed above, such as the tower, building, circumferential, or other, shall be interconnected with each other and with the fence ground as appropriate.

Connections to the ground rings shall be made using an exothermic weld, Cadweld process, or COV approved equivalent, with an appropriate anti-corrosion sealant applied over the bonded joints.

4.5.2 Antenna Tower Grounding

4.5.2.1 Down Conductors for Antenna Support Structures

Where copper-clad steel down conductors are used on structures not greater than 75 feet in height, the DC resistance shall not be greater than .176 ohms per 1000 feet. On structures greater than 75 feet in height, the DC resistance of the cable shall not be greater than 0.088 ohms per 1000 feet. The size of wires in copper-clad stranded cable shall not be less than 2/0 AWG. The copper covering of all copper-clad steel down conductors shall be permanently and effectively welded to the steel core. The conductivity of copper-clad conductors shall not be less than 30% of a copper conductor of equivalent cross-sectional area.

Bends in down conductors shall be gradual and have a minimum radius of 8 inches such that the included angle of the bend shall be not less than 90 degrees. Any metallic object within 6 feet of the lightning download shall be bonded to the down conductor (see NEC article 800). On structures higher than 60 feet there shall be at least one additional down conductor for each additional 60 feet or fraction thereof, except that the interval between down conductors around the perimeter shall not be less than 50 feet nor greater than 100 feet. Down conductors shall be of a continuous single wire cable bonded to the earth electrode subsystem for the tower within 6 feet of the structure but not closer than 2 feet and appropriate for the type of tower structure as described in the following paragraphs. Down conductors passing through foundations or footings shall be installed in plastic or non-metallic conduit.

All bonds between elements of the lightning protection subsystems shall be made by exothermic welding or brazing or by UL-approved high-compression clamping devices as defined in paragraph 6.1.7.d on bonding and as shown in figure 1 and 2. Welding/brazing shall be used for all bonds not readily accessible for inspection and maintenance. Soft solder shall not be used for bonding any conductor in the lightning protection subsystem.

4.5.2.2 Earth Electrode Subsystem

Two bare 2/0 AWG copper cables (or larger) shall be used by independent routes to bond the earth electrode subsystem for the tower to each of the earth electrode subsystems of the buildings.

4.5.2.3 Circumferential Ring Ground

All buildings and structures at each tower site that have signal, control, or power line interfaces with the tower or equipment building and separated by less than 200 feet (See figure 4) shall be included into the circumferential ground ring, following the fence line encircling the site facilities.

Within the circumferential ground ring there shall be individual ring grounding sub-systems for all buildings, towers, and a single ground rod for other sizeable metal structures. The site circumferential ground ring shall be tied into the other ring ground subsystems from each fence corner to the closest point on the other ring grounds via bare 2/0 AWG copper cables using an exothermic weld bonding system or equivalent. Ground rods in this part of the grounding system shall be placed at each corner of the fence and not more than 40 feet apart.

4.5.2.4 Waveguide Grounding

The minimum requirements for waveguide grounding are as follows:

a. All wave-guides to the antennas shall be grounded at least three points: near the antenna, every 200 feet, at the vertical-to-horizontal transition near the base of the tower, and at the waveguide entry port.

b. Metallic supporting structures for wave-guides shall be electrically continuous and shall be connected to the exterior earth electrode subsystem at the first and last support columns as a minimum. The wire leads shall be as direct as possible.

4.5.2.5 Monopole masts (conductive material)

The monopole mast ground system shall consist of a minimum of four ground rods, connected together per paragraph 4.3.2.1 "Below Ground Conductors" to form a tower ground ring which shall be installed a minimum of two (2) feet, but not more than (6) feet from the foundation as shown in Figures 5 and 6.

The mast shall be connected to the grounding system with wires sized in accordance with Table 3 Line Item 1 or larger with connections to the mast made per the manufacturer's instructions, and shall be short and direct with no sharp bends.

Wire sizes shall not be less than 1/0 AWG.

4.5.2.6 Wooden antenna poles

Wooden antenna poles may only be used with the approval of the COV PM. The wooden antenna pole grounding system shall consist of a minimum of two ground rods connected together per paragraph 4.3.2.1 "Below Ground Conductors," and as shown in Figure 7.

Atop the pole, ground connections to the antenna or antenna mast shall be made per manufacturer's recommendation. A ground wire in accordance with Table 3 Line Item 1 shall be run down the pole on the side opposite the antenna coax, and away from all other conductors to avoid possible flashover. The ground wire shall then be connected to the grounding system per paragraph 4.3.2.1 "Below Ground Conductors."

Wire sizes shall not be less than 1/0 AWG.

4.5.2.7 Self-supporting lattice towers

The self-supporting lattice tower grounding system shall consist of a ground rod adjacent to each tower leg. If necessary, additional ground rods shall be used to reduce the distance between rods to less than 15 feet. Ground rods shall be connected together per paragraph 4.3.2.1 "Below Ground Conductors," to form a tower ground ring which shall be installed a minimum of two (2) feet from the foundation as shown in Figure 8. Each leg of the tower shall be connected to the grounding system with the wire size as specified by Table 3 Line Item 1 or larger. Connections to the tower legs shall be short and direct with no sharp bends.

4.5.2.8 Guyed lattice towers

The guyed lattice tower grounding system shall consist of three or four ground rods at the tower base. All ground rods shall be connected together per paragraph 4.3.2.1 "Below Ground Conductors," to form a tower ground ring which shall be installed a minimum of two (2) feet from the foundation as shown in Figure 4. The ground conductors shall be connected to the grounding system with a wire as specified in Table 3 Line Item 1 or larger. Connections to the tower shall be short and direct with no sharp bends. Additionally, a ground rod shall be installed at each guy anchor point approximately one foot from the anchor footing. The top of the ground rod shall be a minimum of 18 inches below finished soil surface, or below the frost line, whichever is greater.

The bottom of the ground rod shall be a minimum of 24 inches below the lowest point of the anchor footing. A wire as called for by Table 3 line Item 1 or larger shall be used for connecting each of the guy wires to the grounding system as shown in Figure 3.

Extra care must be taken to prevent rainwater and condensate from dripping from exposed copper grounding wires onto galvanized metal surfaces, particularly for tower and guy wires. Failure to observe this precaution will cause rapid degradation of the galvanized coating and subsequent rust formation on these structural elements.

Each ground rod at the guy anchor points shall be tied back to the tower ground ring below ground, using the wire size specified in Table 3 Line Item 1 or larger.

Wire sizes shall not be less than 1/0 AWG. Many of the sections above reference a table, which I do not have.4.5.2.8 Antenna support structures on buildings

Radio antenna installations atop buildings shall have the tower, down conductors, transmission line shields, and other conducting objects within 6 feet of the tower or antenna base securely and commonly bonded together per paragraph 4.3.2.2 "Above Ground Conductors" and paragraph 4.4.3 "Above Ground Connections."

Atop steel-frame structures, the common bond point shall be bonded to building steel with a wire as called for in Table 3 Line Item 1, via two separate paths. In addition, if available, the tower shall be bonded at roof level to a large metal, earth grounded cold water pipe.

Atop reinforced concrete buildings, the common bond point shall be connected via two separate down conductors as specified by Table 3 Line Item 1. The conductors shall not be bonded to the cold water main in the basement of the building but rather bonded to the building system as described above.

Guy wires associated with towers on top of buildings shall be grounded at their anchor points to the common bond point in the same manner as for grounding the towers.

4.6 Equipment Buildings

4.6.1 External ground ring

The grounding system around the exterior of a building shall consist of a ground rod at each corner of the building with additional ground rods added around the perimeter of the building such that the distance between rods is no more than twice the length of the rods as shown in Figure 4. A ground rod shall be installed directly below the coax transmission line entrance to the building. Ground rods shall be spaced a minimum of 2 feet out from the perimeter of the building but not more than 6 feet.

4.6.2 RF Bulkhead entrance panel

A weatherproof metal bulkhead entrance panel shall be installed on the building equipment wall as shown in Figure 9. The panel shall be ANDREW ARRESTORPORT Plus or PolyPhaser Bulkhead Entrance Panels or COV approved equivalent, with size determined by the number and size of transmission lines interconnecting through it. The appropriate cable boots shall be used to weatherproof the connections.

The external side of the panel shall also include a ground bar for transmission line shield ground connections and connections to the external ground system. The ground bar shall be fabricated to avoid dissimilar metal connections as stated in the paragraph 4.3.2.2 "Above Ground Conductors" and in the applicable paragraphs of section 6.1 “Bonding Requirements.” The bar shall be connected to the building external ground system by at least two conductors as called for in Table 3 Line Item 1 or larger to form a low resistance and low inductance path to the system ground.

An internal sub-panel or a commercially available substitute, bolted directly to the bulkhead panel with multiple bolts, similar to that shown in Figure 9 shall be used to mount the transmission line surge suppressors specified in paragraph 5.1 “ Transmission Line Protection”. This sub-panel shall be constructed of metal and avoid a dissimilar metal interface as stated in paragraph 4.3.2.2 "Above Ground Conductors" and in the applicable paragraphs of section 6.1 “Bonding Requirements.” The sub-panel shall be securely fastened with a low resistance, low inductance path to the bulkhead panel (As specified in Table 3 Line Item 1).

4.7 Fences

Where sites are equipped with a cyclone-type metal fence, this fence shall be grounded to the site grounding subsystem as described below.

All metal fences within 6 feet of any ground ring or any grounded item shall be grounded to the closest ring ground at 20-foot intervals along the length and at a minimum of each corner post and each metal gate support post. A minimum 10-foot, 5/8-inch diameter copper or copper-clad ground rod shall be installed into the ground within one foot of the fence, adjacent to each gate hinge or latch point post(s), and shall be tied into the circumferential ring ground for the facility. This is to provide additional shock hazard protection from lightning.

When making connections between copper wires and galvanized fence posts, it is necessary to use an appropriate clamp to minimize the reaction between the two dissimilar metals. Refer to section 4.4.3, "Above Ground Connections," section 6 of this specification, and Table 2 for aboveground bonding requirements. A flexible, tinned, copper ground strap or braid shall be used to connect the gate to the main post. This connection shall be done using an exothermic weld process or UL approved pressure clamp. Make sure that the flexibility of the strap or braid is not compromised as a result of the bonding process.

A conductor as specified in Table 3 Line Item 1 or larger shall be used to connect the fence to the circumferential ring ground. The above ground connection shall be made by use of exothermic weld process or by a pressure clamp near the bottom of the post. The below ground connection shall be made by exothermic weld or equivalent and appropriately sealed against corrosion.

Where a metal fence surrounding the site facilities does not pass within 6 feet of the tower or equipment building ring ground, additional ground rods shall be installed and interconnected to form a partial or complete ring ground tied into the ring ground subsystems of the tower and equipment building forming a circumferential ground ring for the entire facility that is within 6 feet of the fence. See Figure 4 for a typical installation.

This circumferential ring shall have ground rods at each corner of the fence and spaced every 40 feet along its length with each corner rod tied back to the building or tower ground ring by the most direct path, thus forming a set of radials connecting the circumferential ground ring to the individual ring grounds around the equipment building(s) and tower.

The fence shall be tied into this partial ground ring at each fence corner and every 20 feet along its length using conductors as described in Table 3, Line item #1. The top of the ground rods shall be a minimum of 18 inches below the finished ground surface, or at the same level as the external ground rings to which it will be connected.

Each ground rod and the interconnecting wiring shall be bonded together using exothermic welds, Cadweld process or equivalent, using a wire sized in accordance with Table 3 Line Item 1.

4.8 Nearby Metal Objects

The following items must be connected to the external grounding system using a conductor specified in Table 3 Line Item 1 or larger.

a. The transmission-line entry window into the building. As this is the entry point into the equipment area, all transmission lines shall be grounded to this window, and extra care shall be exercised to ensure this is a very low inductance ground.

b. Ice shield and exterior cable tray between tower and building.

c. Emergency generator and generator support base.

d. Fuel tanks, either above or below ground.

e. Any sizable metal object within 6 feet of the tower or building, or external grounding system.

f. Ground system provided by the electric power utility or Telephone Company and as permitted by local electrical codes. Note that all lines (power and signal) provided by utilities are not considered satisfactorily grounded and shall be grounded by the Systems Integrator at the power panel or demark.

4.9 Transmission Line Grounding

The following applies only to antenna and transmission lines outside a building, with entry into the building and equipment room. It does not apply where antenna and transmission lines are contained entirely within a building.

4.9.1 Shield Ground

The outer conductor of coaxial transmission lines shall be grounded with appropriate coaxial cable grounding kits, such as Andrew Type 204989 or COV approved equivalent. These shall be installed per manufacturer's instructions at a minimum of three locations:

a. At the top of the vertical run, near the antenna: The tail of the cable-grounding conductor shall be bonded to the tower using the clamp provided by the manufacturer. Every 200 feet of transmission line shall also be individually grounded.

b. At the bottom of the vertical run, just above its bend to the support bridge: This point shall be as low to the ground as feasible.

c. Immediately outside the cable entrance to the equipment building, just prior to the coaxial suppressor.

4.9.2 Surge Suppressor Grounding

The surge suppressors used for protecting transmission lines entering the equipment room shall be connected to the bulkhead or bus plate using a conductor as specified by Table 3 Line Item 6 or larger.

The wires must not be closer than two inches to any other metallic objects, conduits, cable trays, or equipment cabinets or racks to minimize flashovers.

4.10 Tower-Top Mounted Preamplifiers Grounding

Internal preamplifier input port protective measures shall be verified with the amplifier manufacturer, and input port surge suppression device, PolyPhaser IS-GC50 Series or equal, shall be installed per the manufacturer's recommendation.

Additional tower-top pre-amp input protection can be provided by using DC-grounded (shunt fed) antennas, with a short coaxial lead.

The tower-top mounted preamplifier chassis shall be grounded to the tower.

Internal preamplifier output port protective measures shall be verified with the amplifier manufacturer, and output port surge suppression devices shall be installed per amplifier manufacturer's recommendations.

Tower-top pre-amps, with output carrying both DC and RF via the coaxial line shall be protected by impulse suppressors such as the PolyPhaser DC Injector, Model IS-DC50 or equal, and dc pickoff Model IS-GC50 units or equal. These units shall be installed according to manufacturer's instructions.

Where penetration of cable entry bulk heads are a part of the coaxial cables between the tower top amplifier and the communications equipment, an added protection device shall be required. The PolyPhaser IS-DC50LNZ pickoff and re-injector (PICKOR) or equal shall be employed. All surge protection devices shall be located and installed to facilitate easy replacement.

Receive only transmission lines shall be protected as outlined in paragraph 4.9.1 "Shield Ground" and paragraph 4.9.2 "Surge Suppressor Grounding."

4.11 Internal Grounding System

4.11.1 Ground window

A suitable size ground window shall be installed at the point or area where the antenna transmission lines enter the equipment room.

A ground window shall be a bare solid copper bus bar or plate of 1/8 inch or greater thickness as specified below:

a. At least 1/8 inch thick for a maximum of 8 connections.

b. At least 1/4 inch thick for more than 8 connections.

Length and width dimensions shall depend on the number of grounding conductors to be connected. Each grounding conductor shall be independently connected to the bar.

This ground window shall be installed inside the equipment room and be connected to an external ground system with two conductors as called for by Table 3 Line Item 1 or larger. If this conductor extends below the earth’s surface, the conductor shall be tinned and any splices shall be made with an exothermic process such as CADWELD or COV approved equivalent.

The following items shall be connected to the Ground Window:

a. Internal Grounding Ring (Halo).

b. The transmission line surge suppressors (via a conductor as specified in Table 3 Line Item 7).

c. Cable tray system (via a conductor as specified in Table 3 Line Item 2) or larger.

d. External ground system (via a conductor as specified in Table 3 Line Item 7).

e. Ground bus.

4.11.2 Internal Grounding Ring (Halo)

An internal grounding ring (Halo) shall be installed in the equipment room to provide a ground path for all equipment within the room including peripheral or support apparatus and to provide a protective ring around the equipment to ensure all conductive materials are at the same potential. All equipment (including radios and computers) shall be grounded to the nearest point on the halo. Adjacent equipment shall be grounded to each other.

A halo ground ring shall be installed in areas where needed to bond system or support apparatus (such as battery racks, HVAC equipment, metal door and metal doorframes, electrical panels, and transfer switches) to the ground window as a single point connection.

The internal halo-grounding ring shall be made of a conductor as specified in Table 3 Line Item 1 and shall be mounted approximately 8 feet above floor level or 6 inches below the ceiling on a 2-inch standoff from the wall. The halo-grounding ring shall be installed such that it encircles the interior of the equipment room with opposite ends of the halo conductor connecting to the interior ground window.

4.11.3 Cable Trays or Raceways

The individual sections of all metallic cable tray systems shall be bonded to each other and to the raceways which they support using cable as specified by Table 3 Line Item 6 or larger. Incidental paths through framework, cable trays, building steel, etc. shall not be considered appropriate for a reliable ground connection.

All electrically continuous bonds shall be made using appropriate fasteners with appropriate corrosion protection for the environment. Standard lock and star washers are not considered acceptable. All metallic cable trays shall be connected to the internal ground window or the halo ground ring via a conductor as specified in Table 3 Line Item 4 or larger stranded copper wire within 2 feet of each end of the run and at intervals not to exceed 50 feet along each run.

When compression type connectors are employed at an installed site or system, the Burndy compression system (or equivalent) shall be used. This system consists of connectors for indoor taps, splices, and structural steel terminations.

4.11.4 Wiring System Enclosures

All electrical and electronic wiring and distribution equipment enclosures not otherwise specified herein shall be grounded. The grounding conductor shall not penetrate equipment cabinets or cases but rather shall be terminated to a ground stud. Attachment of grounding studs to protected equipment shall be through an appropriate tapped hole with machine screw and compression fitting for the attaching cable. Mounted ground studs, when done in the manner described above must follow bonding guidelines as enumerated in section 6 of this spec.

4.11.5 Metallic Cable Sheaths

Metallic cable sheaths on all cables shall be connected to ground at both ends.

For coaxial and other high frequency cables, all connectors shall be of a type and design that provide a low impedance path from the signal line shield to the equipment case.

If the signal circuit must be isolated from the equipment case, and if the shielding effectiveness of the case must not be degraded, a connector of tri-axial design that properly grounds the outer cable shield to the case shall be used. Shields of coaxial cables and shielded balanced transmission lines shall be terminated by peripherally grounding the shield to the equipment case. Bonding of connectors shall be in accordance with the requirements stated in this specification. Coaxial shields and connector shells shall be grounded at junction boxes, patch panels, signal distribution boxes, and other interconnection points along the signal path.

4.11.6 AC Distribution Systems

AC power distribution systems shall have the neutral conductor grounded at the distribution transformer and to the earth electrode subsystem of the facility. The size of the ground conductor from the first service disconnect shall be as specified in Line item #1 of Table 3 in this specification or as specified by the National Electric Code, whichever is more conservative.

In each facility served by a common distribution transformer, the neutral shall be directly connected to the nearest point of the earth electrode subsystem. Where delta-wye system conversion is employed, the service entrance shall be a five-wire system consisting of three phase conductors, a grounded neutral conductor, and a grounding green conductor. In each facility, all power distribution neutrals shall be isolated from the equipment cases and structure elements so that no AC return current flows through the equipment or the signal reference network. The fault protection subsystem shall be installed in accordance with the National Electric Code for all installed equipment. Metal conduit shall not be used in lieu of the separate grounding (green) wire.

4.11.7 Single Building with Multiple Power Sources

All grounded (neutral) conductors shall be grounded at the first service disconnect means for each power source. For delta-wye conversions, a five-wire system shall be utilized from each source. Delta systems shall employ four wires from the source, consisting of three phase conductors and a grounded conductor for grounding purposes.

4.11.8 Multiple Buildings with a Single Power Source

Neutral conductors from multiple buildings being serviced from a single commercial power source shall be grounded at the source only. The neutral shall be isolated at the first disconnect.

4.11.9 Standby AC Generators

Motor and generator frames and housings shall be grounded in accordance with Article 250 of the National Electric Code. The generator neutral shall be grounded directly to the earth electrode subsystem. When generators are connected in parallel, the neutrals shall be interconnected and grounded with a single ground conductor.

4.11.10 AC Outlets

Grounding of receptacles and associated grounding terminals shall meet the requirements of Articles 250-146 and 250-66 of the National Electric Code (1999 or later) except where the NEC requires the use of ground fault breaker-type outlets. Aluminum and copper-clad aluminum conductors permitted by Article 410-56 shall not be used. When necessary to control noise problems, grounding of grounding terminals may be accomplished per Article 250-146. The grounding of metallic outlet boxes shall not be dependent upon serrated strips or clips.

4.11.11 DC Power Systems

One leg of each DC power system shall be grounded with a single connection directly to the earth electrode subsystem. The size of the grounding conductor shall be as specified in Table #3, Line item #1 or by the National Electric Code, whichever is more conservative. Whether grounded at the source or at the load, a separate current return from the load to the source shall be used to assure that no DC current flows in the fault protection or the signal reference subsystem.

4.11.12 Metallic Battery Racks

Metallic battery racks shall also be grounded to the facility ground system at the nearest point using cable as specified in Table #3, line item #1.

4.11.13 Fault Protection Subsystem

The fault protection subsystem ensures that personnel are protected from shock hazard and the equipment is protected from damage resulting from faults including short circuits that may develop in the electrical supply and distribution systems. The AC neutral is isolated from this subsystem throughout the facility except for one point of interface at the power service entry.

In all electrical and electronic equipment, the AC power neutral (white wire) shall be insulated from the equipment chassis, case, and facility ground system except for one point at the facility power service entry. With the circuit breaker open and the neutral disconnected, a minimum of 1.0 megohm DC resistance shall exist between either side of the AC line and the equipment case (ground).

All conduit, pipes, and tubes shall be electrically continuous and grounded to the facility ground system. All joints between sections of conduit, fittings, junction boxes and their covers shall be cleaned and bonded in accordance with the applicable paragraphs in section 6. The requirement for and use of conductive lubricant between bonded members shall be determined by the Engineer.

Portable electrical or electronic equipment cases, enclosures and housings shall be considered to be adequately grounded for personnel protection through the third wire of the power cord provided that continuity is firmly established between the case, enclosure, or housing and the receptacle's ground terminal. The third wire of the power cord shall not be used for signal ground.

Substantial metal structural elements of buildings and towers (including overall building shields where they exist) shall be acceptable substitutes for lightning down conductors provided they are permanently bonded to each other and to the lightning protection subsystem in accordance with section 6 on Bonding.

4.11.14 Equipment Rack Ground

Each equipment cabinet or rack shall have a vertical equipment ground bus, similar to that shown in Figure 10**,** with all units in the cabinet or rack to be connected. The cabinet or rack ground bus shall be secured to the rack at a minimum distance of 6 inches from power and signal leads.

Each equipment chassis shall be connected to the rack ground bus using a conductor as specified by Table 3 Line Item 8 or larger, with appropriate connectors, as shown in Figure 2, according to the requirements in section 6.0 through 6.1.7 on "Bonding."

Each equipment ground bus shall be connected to the adjacent rack and via the most direct route to the halo ground ring, to minimize inductance.

In situations where it is necessary to minimize the number of ground conductors connected to the halo ground ring, a row ground bus may be used. The individual equipment ground bus from each rack, cabinet, or enclosure in a single row shall be connected to a row ground bus. Each single row of equipment shall have a separate row ground bus consisting of a conductor as called for by Table 3 Line Item 2 or larger. Each row ground bus shall be connected to the halo ground ring via the shortest and most direct route.

The equipment or row ground bus may be connected directly to the ground window if that route is shorter or more direct than connecting to the halo ground ring.

4.11.15 Connections to the Internal Ground Ring (Halo)

The following items shall be connected to the internal ground ring, using a conductor as called for by Table 3 Line Item 7 or larger.

a. The AC-power panel enclosure and power line protectors.

b. Telephone terminal block enclosure and telephone protectors.

c. The emergency generator (if it is located in the shelter).

d. Metal battery racks.

e) Equipment ground bus or row ground bus, and halo.

f) Other significant metal objects within 6 feet of any other grounded object; such as doors and doorframes, ventilation ducts, water pipes, etc.

4.11.16 Equipment Frames and Other Metal Structures

Equipment frames and other metal structures within 6 feet of each other or any point in the grounding system shall be directly bonded together with a conductor as specified by Table 3 Line Item 5 to avoid side flash-overs and other hazards.

4.11.17 Communications Center Grounding

A Communications Center (dispatch consoles) ground-bus (Specified by Table 3 Line Item 2 or larger) shall be run under the flooring for each equipment row if possible, in a manner to allow each equipment to tie into this ground with a conductor as specified by Table 3 Line Item 6 or larger. The ground bus shall be short and direct with no sharp bends, and shall not run parallel, within 6 inches, to any power or signal leads. The ground bus shall connect to a single-point ground window and the central electronics rack ground, and then connect to the exterior building ground, except if no external ground system is being installed as part of the equipment installation. Any ground system installed shall be effectively connected to the existing building ground or electrical service ground.

Console bays shall be bonded together, and shall be connected to the Communications Center ground bus with a short, direct run of a conductor as called for by Table 3 Line Item 6 or larger, avoiding sharp bends.

5.0 SURGE PROTECTION

5.1 Transmission Line Protection

All RF transmission lines, including unused spares, must be protected by PolyPhaser coaxial suppressors or COV approved equivalent and installed at the internal metal bulkhead sub-panel to remove surge currents from the center conductor.

The types of coaxial suppressors used shall be based upon the applications and manufacturer's recommendation. RF transmission lines from the antenna, down the tower, and into the building shall be grounded as described in Paragraph 4.9 through 4.9.2 "Transmission Line Grounding."

5.2 Tower-Top Mounted Preamplifiers Protection

Internal preamplifier input port protective measures shall be verified with the amplifier manufacturer, and input port surge suppression device, PolyPhaser IS-GC50 Series or equal, shall be installed per the manufacturer's recommendation.

Additional tower-top pre-amp input protection can be provided by using DC-grounded (shunt fed) antennas, with a short coaxial lead.

The tower-top mounted preamplifier chassis shall be grounded to the tower.

Internal preamplifier output port protective measures shall be verified with the amplifier manufacturer, and output port surge suppression devices shall be installed per amplifier manufacturer's recommendations. Tower-top pre-amps, with output carrying both DC and RF via the coaxial line shall be protected by impulse suppressors PolyPhaser DC Injector, Model IS-DC50 or equal, and DC pick-off Model IS-GC50 units or equal. These units shall be installed according to the manufacturer's instructions. Where penetration of cable entry bulk heads are a part of the coaxial cables between the tower top amplifier and the communications equipment, an added protection device shall be required. The PolyPhaser IS-DC50LNZ pickoff and re-injector (PICKOR) or equal shall be employed. All surge protection devices shall be located and installed so as to be easily replaceable.

Receive only transmission lines shall be protected as outlined in paragraph 4.9.1 "Shield Ground" and paragraph 4.9.2 "Surge Suppressor Grounding."

5.3 AC Power Protection

All AC suppressors shall be used as Normal Mode (Line-Neutral) protection. The gas tube types of suppressors are not allowed. Common Mode suppression (Neutral-Ground and Line-Ground) violates NEC article 250 if the device self-sacrifices in the (N-G) or (L-G) mode. AC neutral shall be bonded to ground only at the main AC service panel. With proper grounding, Common Mode suppression is not necessary.

5.3.1 Main/Branch AC Panel Protection

AC surge suppressors, TRANSTECTOR Apex series or equal, shall be placed at the entrance panels, transfer switches, or distribution panels, to protect against power line voltage rising to damaging levels between neutral and line. The suppressor shall be installed between each incoming ac line and neutral via an appropriately sized circuit breaker rated for the interrupting current of the panel. The lead lengths from the protective devices and the associated circuit breakers shall be as short as possible. The surge protector enclosure, if a metal enclosure, shall be grounded to the internal grounding ring (Halo) with a conductor as specified by Table 3, Line Item 6, or larger. A remote status indicator must be available.

5.3.2 Emergency Generator Grounding and Surge Suppression

Generators within the communications shelter shall have their chassis tied to the building's internal ground system via a single wire sized according to Table 3, line item #1, using the grounding lug provided for that purpose on the generator chassis.

Generators mounted outside the communications shelter, whether in a separate shelter or within an outdoor housing, shall be grounded using a dedicated single ground rod tied into the site grounding system. The ground wire used for external generators shall be according to Table 3, line item #1.

Emergency generators, whether inside the shelter or outside, shall have AC surge suppressors, TRANSTECTOR Apex series, or equal, across the AC line between the generator and the automatic transfer switch. The suppressor shall be installed between each incoming AC line and neutral via an appropriately sized circuit breaker whose rating is equal to or less than the interrupting current of the service panel.

The lead lengths from the protective devices and the associated circuit breakers shall be as short as possible. The surge protector enclosure, if a metal enclosure, shall be grounded to the internal grounding ring (Halo) with a conductor as specified by Table 3, Line Item 6, or larger. A remote status indicator must be available. Additionally, all critical (red) bus branch circuits shall be supplied with Commercial Off The Shelf (COTS) surge protection devices at the equipment end as defined below in 5.3.3.

5.3.3 AC power in-line protection

The AC feed to each equipment rack shall be protected at each rack by an appropriate COTS surge protector matched to the current load of the rack. PolyPhaser MSRP-120US20A or Transtector OP820A or equivalent, is suitable for high current applications for low current applications, Transtector RMP 620AT or TrippLite ISOBAR 8 Ultra, or equivalent is appropriate. The chosen surge protectors shall protect against power line voltage rising to damaging levels between incoming lines and between line and neutral. If using surge protectors with visual status indicators, the device shall be mounted on the equipment rack so the power and status indicator lights are easily visible. The protective device shall not rely on the green ground wire in the AC power cable.

5.3.4 Computer Workstations

Computer equipment, including but not limited to, printers, CPUs, and monitors, if not protected by a surge-limiting UPS, shall be protected against power line surges using a COTS surge suppressor, such as TrippLite ISOBAR 8 Ultra, or COV approved equivalent.

The TrippLite Isobar 8 Ultra suppressors feature a fused metal oxide varistor (MOV) across both sides of the AC line and from each side of the AC line to ground. Should a fault within these suppressors occur such that the neutral were tied to ground and significant current should flow, the internal thermal circuit breakers in series with the MOV would open, thus eliminating the current flow.

5.4 Telephone Lines

All telephone lines, T1 lines, data and control lines (excluding all fiber-optic lines) entering a site shall be equipped with Bi-polar, Bi-directional SAD surge protectors, TRANSTECTOR data & telecommunication surge protectors or equivalent.

The location for these protectors can be at the equipment or telephone patch panel depending upon the application. In many cases, transient over-voltages can be coupled into both signal lines at the same time.

For these hazards, protectors shall be connected with a conductor, which will be at a minimum in accordance with Table 3 Line Item 9, to either the equipment ground or telephone patch-panel ground. In addition, the shields of these lines must all be bonded to each other and tied into the internal ground system in the most direct (low impedance) way.

5.5 GPS Receiver

When a GPS receiver with an active antenna mounted outside of the building is employed, a GPS system coaxial protector such as PolyPhaser Model IS-MR50LNZ or equal, shall be equipped, to protect against the surge from a GPS antenna. The protector shall be located between the GPS antenna and GPS receiver with a conductor as specified by Table 3 Line Item 9 or larger, to connect to the equipment rack ground.

5.6 Electro-Static Discharge Protection

Electrostatic discharge (ESD) can destroy sensitive electronic circuits, compromise quality, and even endanger human life. Electrostatic discharge is a result of two elements: chargeable bodies and motion. People are chargeable bodies in motion. A person raising an arm can generate 100 volts or more of static electricity.
It is possible to generate 6000 volts or more in a very dry working environment.

During the installation process, every precaution shall be taken when handling sensitive electronic equipment, or anything that is sensitive to damage caused by ESD.

The following precautions shall be followed to reduce possible damage caused by ESD during the installation and maintenance process.

a. Use of body grounding devices (wrist straps, heel straps with grounded conductive floor mats) by all inspection, service, and installation personnel.

b. Use of static free grounded work surfaces (table or floor mats) where appropriate.

c. Use of anti-static packaging for ESD sensitive electronic circuit or component handling.

6.0 BONDING: PURPOSE AND DEFINITION

Bonding refers to the process by which a low impedance path for the flow of an electric current is established between two metallic objects. In any realistic electronic facility, whether it is only one piece of equipment or an entire facility, numerous interconnections between metallic objects must be made in order to minimize electric shock hazards, provide lightning protection, establish references for electronic signals, etc. Each of these interconnections should be made so that the mechanical and electrical properties of the path are determined by the interconnected members and not by their connecting junctions. The joint must maintain its properties over an extended period in order to prevent progressive deterioration through corrosion or mechanical looseness. Proper bonding practices will ensure the following results:

a. Protection of equipment and personnel from the hazards of lightning discharges.

b. Establishment of fault current return paths.

c. Establishment of homogeneous and stable paths for electrical currents.

d. Minimization of voltages on enclosures and housings

e. Protection of personnel from shock hazards

f. Prevention of static charge accumulation.

6.1 Bonding Requirements

6.1.1 Surface Treatments

Surface treatments including the platings provided for added durability or corrosion protection shall offer high conductivity. Plating metals shall be electrochemically compatible with the base metals. Unless suitably protected from the atmosphere, silver and other easily tarnished metals shall not be used to plate the bond surfaces.

6.1.2 Weather and Corrosion Protection of bonded joints

All bonds shall be suitably protected against weather, corrosive atmospheres, vibrations, and mechanical damage. Under dry conditions, a corrosion preventative or sealant shall be applied within 24 hours of assembly of the bond materials. Under high humidity conditions, sealing of the bond shall be accomplished within one hour of joining.

Each bonded joint shall be protected against corrosion by assuring that the metals to be bonded are galvanically compatible. Bonds shall be painted with a moisture-proof paint or shall be sealed with a silicone or petroleum-based sealant to prevent moisture from reaching the bond area. Bonds that are located in areas not reasonably accessible for maintenance shall be sealed with permanent waterproof compounds. Anodized or other similarly protected bonds shall not require painting to meet the requirements of this standard.

External bonds shall be exothermic or equivalent except when such bonds attach to the tower or other galvanized surface (guy wires, etc.). Drilling of additional holes in the tower to facilitate grounding is not acceptable. For bonds to galvanized surfaces, use of an approved clamping device designed for the application is required.

6.1.3 Vibration protection for bonded joints

Bonds shall be protected from vibration-induced deterioration by assuring that bolts and screws are adequately torqued.

Bonding straps installed across shock mounts or other suspension or support devices shall not impede the performance of the mounting device. They shall be capable of withstanding the anticipated motion and vibrational requirements without suffering metal fatigue or other means of failure.
Extra care should be taken in the attachment of the ends of bonding straps to prevent arcing or other means of electrical noise generation with the movement of the strap.

Bonding straps with width-to-length ratio of approximately 1-to-5 and a thickness of approximately 0.030” are better than wires due to lower inductance per unit length.

6.1.4 Maximum allowable DC Resistance

All bonds for ground conductors whose primary function is to provide a path for power, control, signal currents, and lightning protection shall have a maximum DC resistance of 1.0 milliohm (0.001 ohm). The resistance across joints or seams in metallic members required to provide electromagnetic shielding shall also be 1.0 milliohm or less.

6.1.5 Use of Auxiliary conductors

Wherever possible, the bonding of metallic members to be interconnected shall be accomplished by direct contact of the mating surface without the use of an auxiliary conductor. Electrical continuity is obtained by establishing a fused metal bridge across the junction by welding, brazing, or soldering, or by maintaining a high-pressure contact between the mating surfaces with bolts.

6.1.6 Welded Bonds

Permanent connections between ferrous materials shall be exothermically welded whenever required. Welds of sufficient extent to support the load demands on the bonded members shall be considered to provide an adequate electrical bond when the following conditions are met:

a. On members, whose maximum dimension is 2 inches or less, the weld shall extend completely across the side or surface of largest dimension.

b. On members, whose largest dimension is greater than 2 inches but less than 12 inches, one weld of at least 2 inches in length shall be provided.

c. On members whose largest dimension is greater than 12 inches, two or more welds, each not less than 2 inches in length, shall be uniformly spaced across the surface of largest dimension. The maximum spacing between successive welds shall not exceed 12 inches.

d. At butt joints, complete penetration welds shall be used on all members whose thickness is ¼" or less. Where the thickness of the members is greater than ¼", the depth of the weld shall not be less than ¼".

e. A fillet weld shall have an effective size equal to the thickness of the members.

f. At lap joints between members whose thickness is less than a ¼", double fillet welds shall be provided.

g. Bonding of copper to steel shall be accomplished by either brazing or exothermic welding or by an appropriate clamping device designed for the purpose.

h. Welding of galvanized members, including but not limited to, the tower and other structures is not acceptable. Galvanized members shall be bonded using the appropriately sized clamp fastener with a sealant as recommended by the clamp manufacturer.

6.1.7 Miscellaneous Bonding Requirements

a. Soft soldering shall not be used for bonding purposes unless the joint is not subject to mechanical loads and stresses and the conducting path is not subject to lightning or power fault currents.

b. Sweat soldering shall not be used for electrical bonding unless other fasteners, such as bolts or rivets, are concurrently used to provide mechanical strength and the soft soldering requirement above is met.

c. Where required, non-current carrying members such as air conditioning and heating ducts, gutter spouts, canopies, awnings, screens, etc., normally held in place or supported with sheet metal screws or mated mechanical joints shall be bonded by soft soldering.

d. All bonds utilizing bolts and other threaded fasteners shall be adequately torqued. Before joining, all mating surfaces shall be cleaned, taking particular care to provide adequate corrosion protection to all electrical bonds made with bolts and other threaded fasteners.

e. C-clamps and spring clamps shall not be used for permanent or semi-permanent bonding.

f. Where the direct joining of structural elements, equipment, and electrical paths is impossible or impractical to achieve, bonding straps or jumpers shall be used.

g. All mating surfaces which comprise the bond shall be thoroughly cleaned before joining to remove dust, grease, oil, moisture, nonconductive protective finishes, and corrosion products. The bonding surface shall be cleaned over an area that extends at least ¼" beyond all sides of the bonded area on the larger member.

h. After initial cleaning with chemical paint removers or mechanical abrasives, the bare metal shall be wiped or brushed with dry cleaning solvent. Surfaces not requiring the use of mechanical abrasives or chemical paint removers shall be cleaned with a dry cleaning solvent to remove grease, oil, corrosion preventatives, dust, and moisture prior to bonding.

i. Clad metals shall be cleaned with fine steel wool or grit in such a manner that the cleaning process does not penetrate the cladding material. A bright, smooth surface shall be achieved. The cleaned area shall be wiped with dry cleaning solvent and allowed to air dry before completing the bond.

j. Aluminum alloy can be bonded after cleaning mating surfaces to a bright finish and brushing on an anodizing conductive coating or equivalent over the mating surface.

k. If an intentional protective coating is removed from the metal surface, the mating surfaces shall be joined within 30 minutes after cleaning.

l. All mating surface materials that comprise a bond shall be identified. Compression bonding with the use of bolts or clamps shall be utilized only between metals having acceptable coupling values (see table 1 and 2).

When the base metals form couples that are not allowed, the metals shall be plated, coated, or otherwise protected with a conductive finish, or a material compatible with each shall be inserted between the two base metals. It shall be constructed from, or plated with, an appropriate intermediate metal.

m. Because of galvanic corrosion between dissimilar metals, the welded or brazed joint shall be covered with pitch or suitable waterproof compound.

n. The chassis or case of equipment items mounted in racks, frames, or cabinets shall be directly bonded directly in accordance with the intended purpose of the grounding methods as specified within this specification.

o. Subassemblies and the various connectors used to connect equipment into the radio system shall be bonded to the chassis utilizing the maximum possible contact area. Bonding around connectors and subassemblies attached to the chassis shall be such that the entire periphery of the connector or subassembly is securely bonded to the chassis. Both the flange surface and the mating area of the panel shall be cleaned in accordance with the applicable parts of this specification before bonding. After mounting, the exposed area of the panel shall be repainted or otherwise protected from corrosion as defined herein.

p. Cable shields shall be terminated and tightly fastened to the cable connector shell with a compression or soldered connection. The cable shall be able to withstand the anticipated use without becoming noisy or suffering degradation in shielding efficiency. Coaxial connectors shall be constructed of corrosion resistant materials. Foil shields are not acceptable for peripheral bonding and do not provide mechanical durability.

q. Conductive RF gaskets shall be made of corrosion resistant material, shall meet the 0.001-ohm dc resistance requirement of this spec, and shall possess strength, resiliency, and hardness sufficient to maintain the shielding effectiveness of the bond. The surfaces contacting the gasket shall be smooth and free of oily films, corrosion, moisture, and paint. The gasket shall be firmly affixed to one of the bond surfaces by screws, conductive cement, or other means, which do not interfere with the effectiveness of the gasket.

The gaskets may be placed in a milled slot to prevent lateral movement when the bond is disassembled. Gaskets shall be a minimum of 1/8” wide. The gasket and contact surfaces shall both be protected from corrosion.

TABLE 1 - METAL GROUPS

Group	Metal
I	Magnesium, aluminum, zinc
II	Tin, lead, steel
III	Stainless steel, nickel, iron
IV	Copper, silver

TABLE 2 - METAL CONTACT SURFACES

Contact Surfaces	Inside	Outside (Weather Exposed)
Within same group	Ok	Ok
Adjacent groups	Ok	Waterproof coating must be applied after direct metal-metal contact is made. No water allowed to bridge gap.
Separated 1 group	Ok	Same as above.
Separated 2 groups	Ok	Appropriate passivation of contact surfaces or use of special transition clamps.

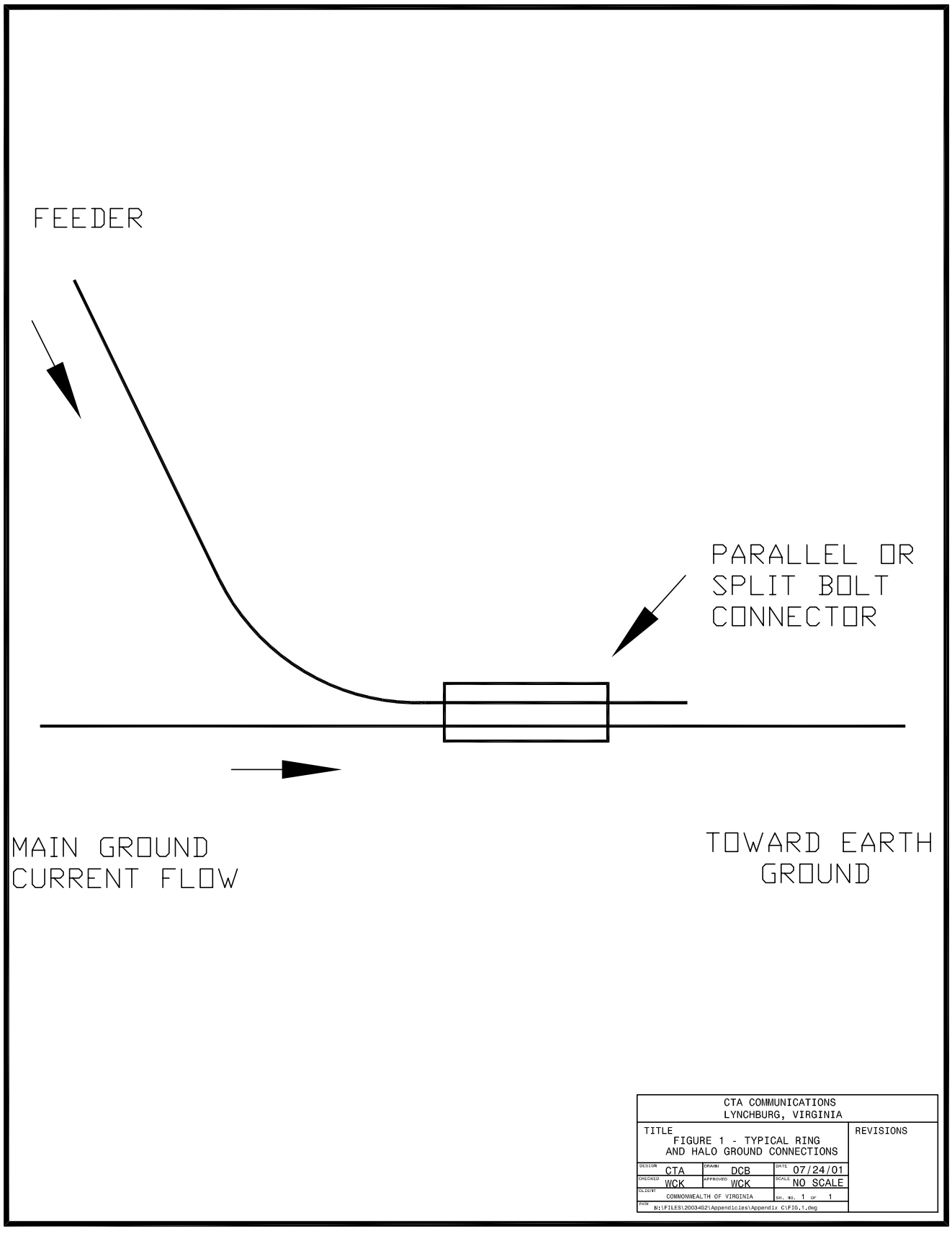
TABLE 3 – GROUNDING WIRE SPECIFICATIONS

(Note: All wire gauges and instructions are minimum acceptable criteria)

Line Item	Wire Gauge	Special Instructions
1	No. 2/0 AWG	stranded bare copper wire.
2	No. 2/0 AWG	Solid or stranded green jacketed copper wire.
3	No. 2/0 AWG	Solid copper wire.
4	No. 2/0 AWG	Stranded copper wire.
5	No. 6 AWG	Solid or stranded copper wire.
6	No. 6 AWG	Solid or stranded green jacketed copper wire.
7	No. 6 AWG	Tinned, solid, or stranded green jacketed copper wire.
8	No. 6 AWG	Stranded copper wire.
9	No. 6 AWG	Solid copper wire or strap.
10	Strap	Solid copper strap with a minimum thickness of .051 inches and a minimum width of 2 inches.
11	Strap	Solid bare copper strap with a minimum thickness of .040 inches and a minimum width of 4 inches. Other width/thickness relationships may be used as long as the cross section area is not reduced.

ATTACHMENTS:

Figure 1 - Typical Ground Connection
Figure 2 - Typical Connectors and Lugs for Grounding
Figure 3 - Typical Guy Anchor Grounding
Figure 4 - Typical External Grounding System
Figure 5 - Typical Monopole Mast Grounding
Figure 6 - Typical Grounding With Monopole Mast
Figure 7 - Typical Grounding of Wooden Antenna Pole
Figure 8 - Typical Grounding of Self Supporting Tower
Figure 9 - Typical Bulkhead Panel Grounding
Figure 10 - Typical Rack Grounding
Figure 11 - Typical Entry Plate Detail Showing Rigid Cable, Conduit, and Pipe Penetrations



CTA COMMUNICATIONS LYNCHBURG, VIRGINIA			
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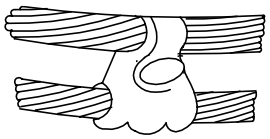
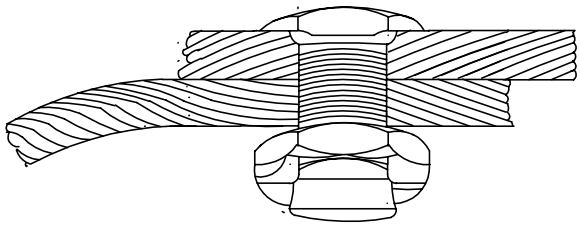
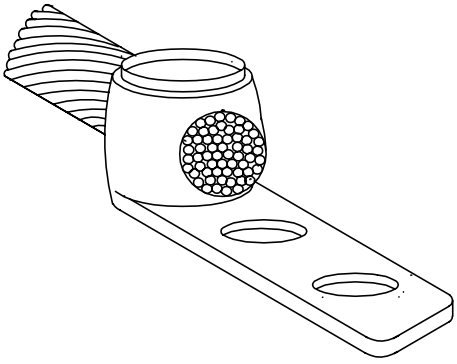
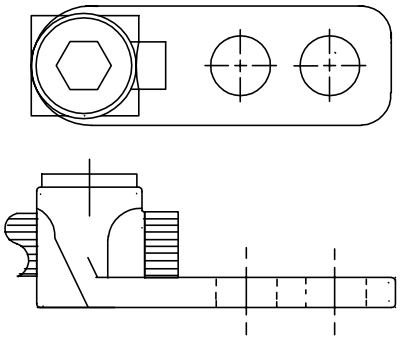


PARALLEL CONNECTOR



SPLIT BOLT
CONNECTOR





BRONZE
MOUNTING LUG

CTA COMMUNICATIONS LYNCHBURG, VIRGINIA			
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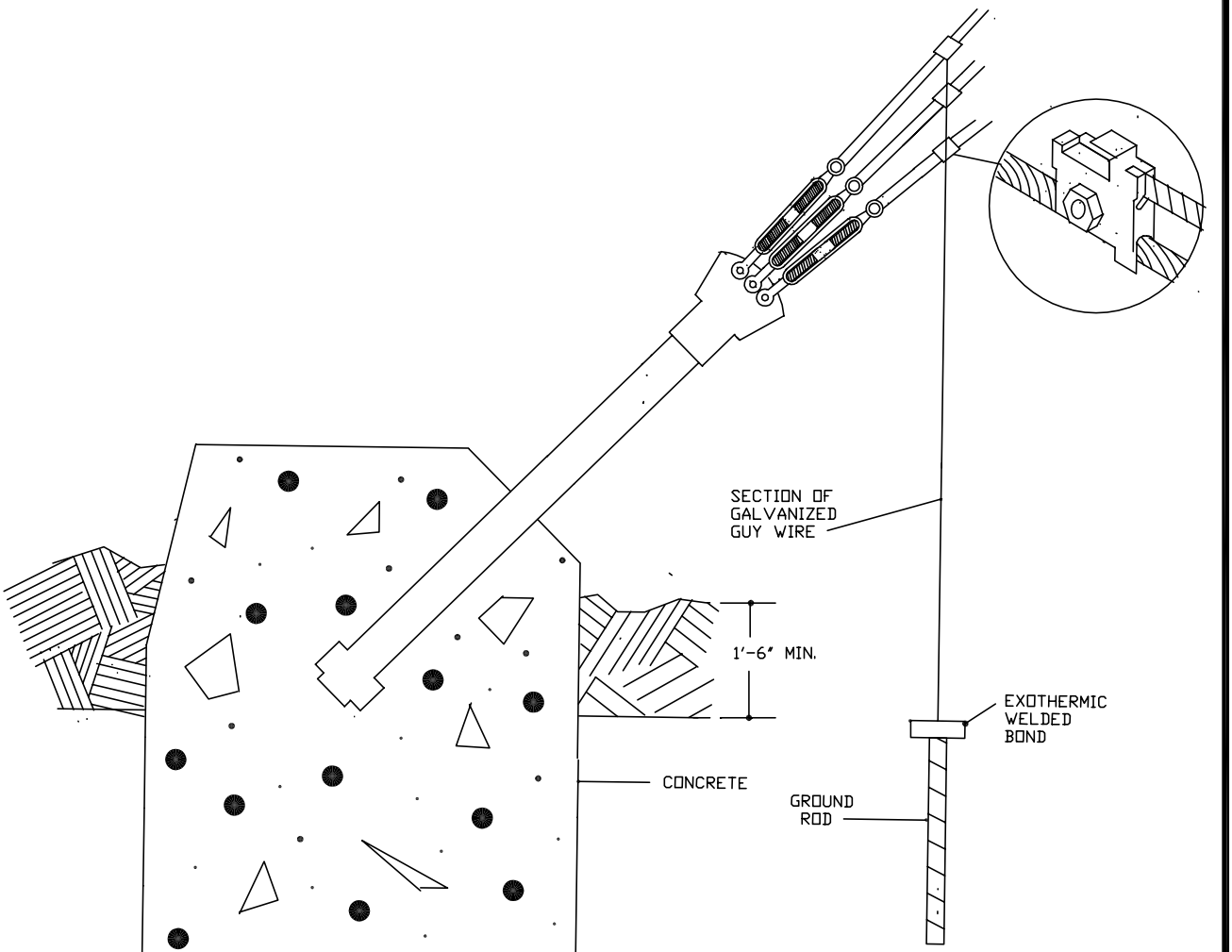
CLIENT: COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1	
PATH: N:\FILES\2003462\Appendices\Appendix C\Fig.2.dwg			



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TITLE
FIGURE 3
TYPICAL GUY ANCHOR GROUNDING

REVISIONS

DESIGN	CTA	DRAWN DCB	DATE 04/26/01
CHECKED	WCK	APPROVED WCK	SCALE NO SCALE
CLIENT	COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1
PATH	N:\FILES\2003462\Appendices\Appendix C\Fig.3.dwg		

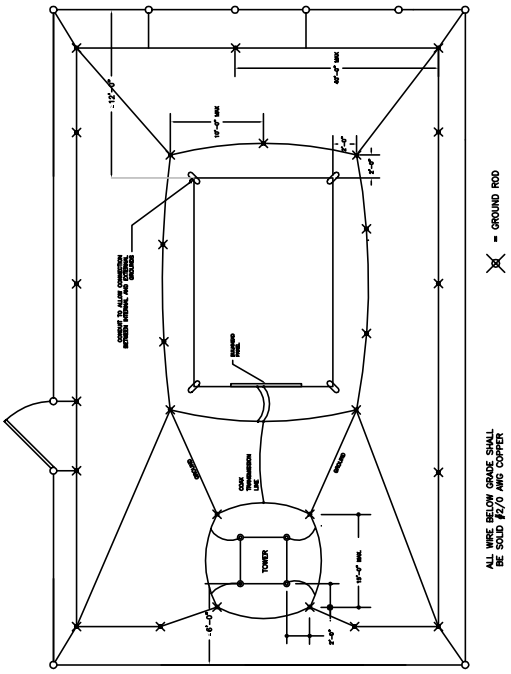
CTA COMMUNICATIONS
LYNCHBURG, VIRGINIA

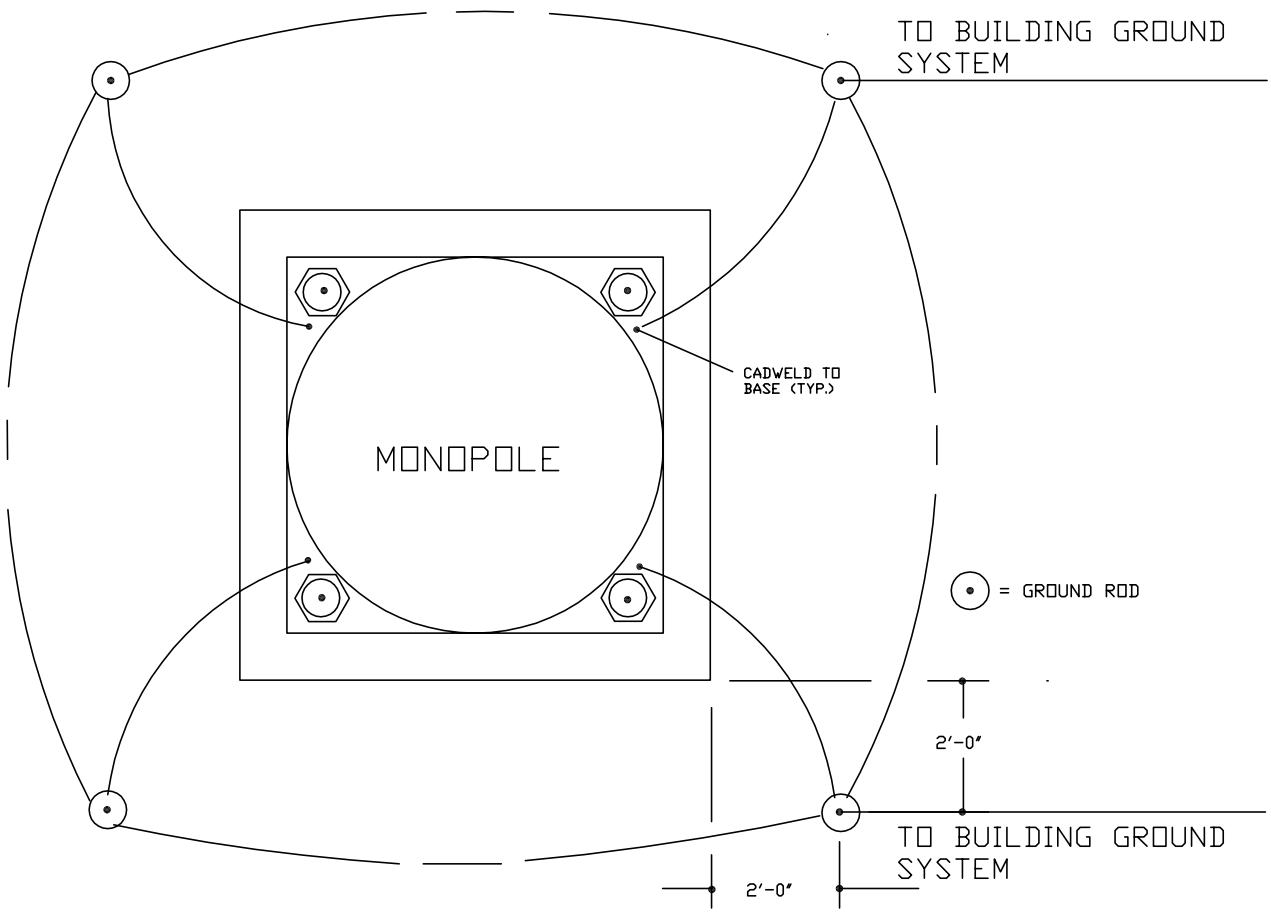
REVISIONS

TITLE FIG. 4- TYPICAL EXTERNAL GROUNDING SYSTEM

DESIGN	CTA	DRAWN	JWF
CHECKED	DCB	APPROVED	HFR
CLIENT	COMMONWEALTH OF VIRGINIA		
PATH	N:\FILES\2003\402\Appendix\Appendix C\Fig-4.dwg		

DATE 05/25/01
SCALE NO SCALE
SH. NO. 1 OF 1

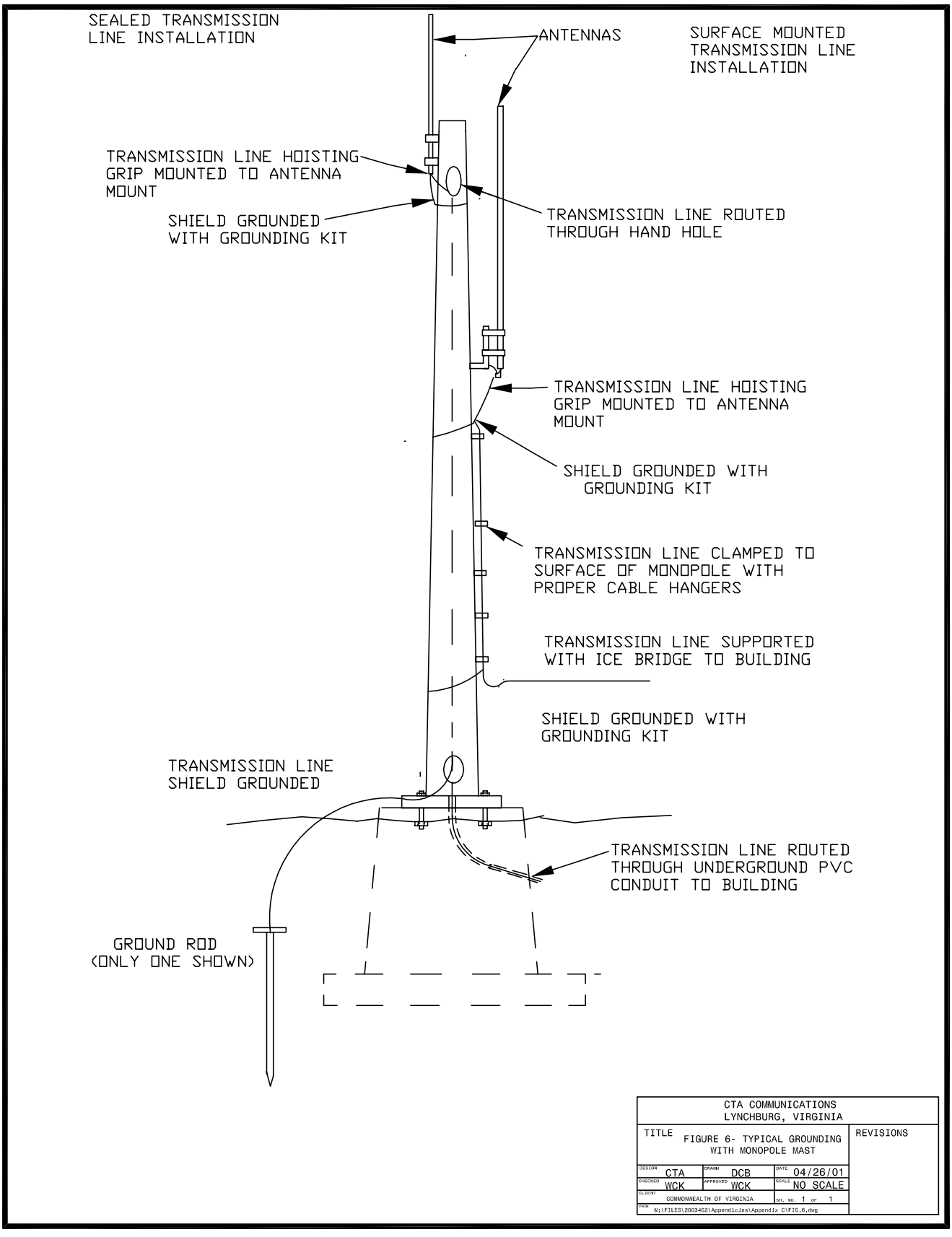


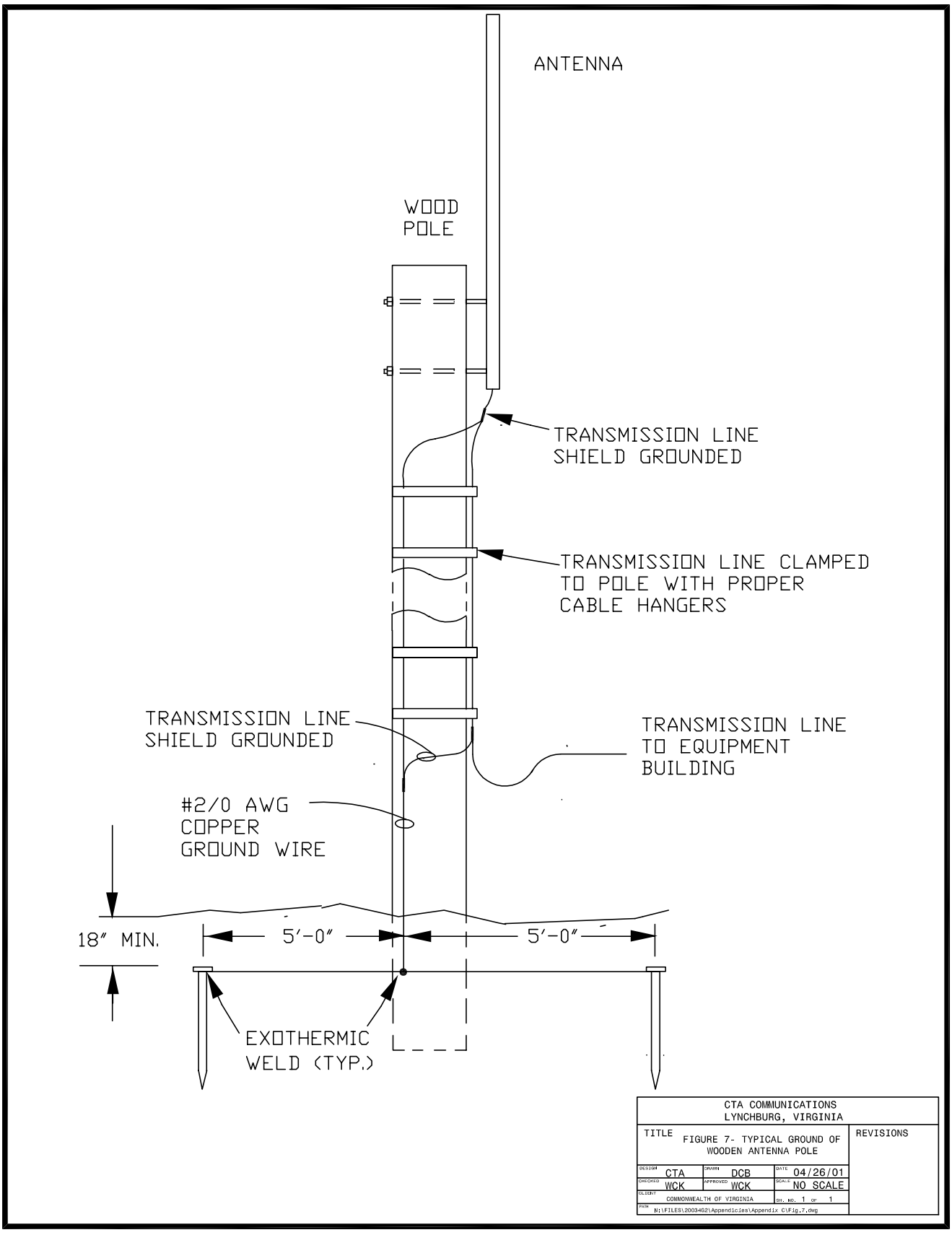


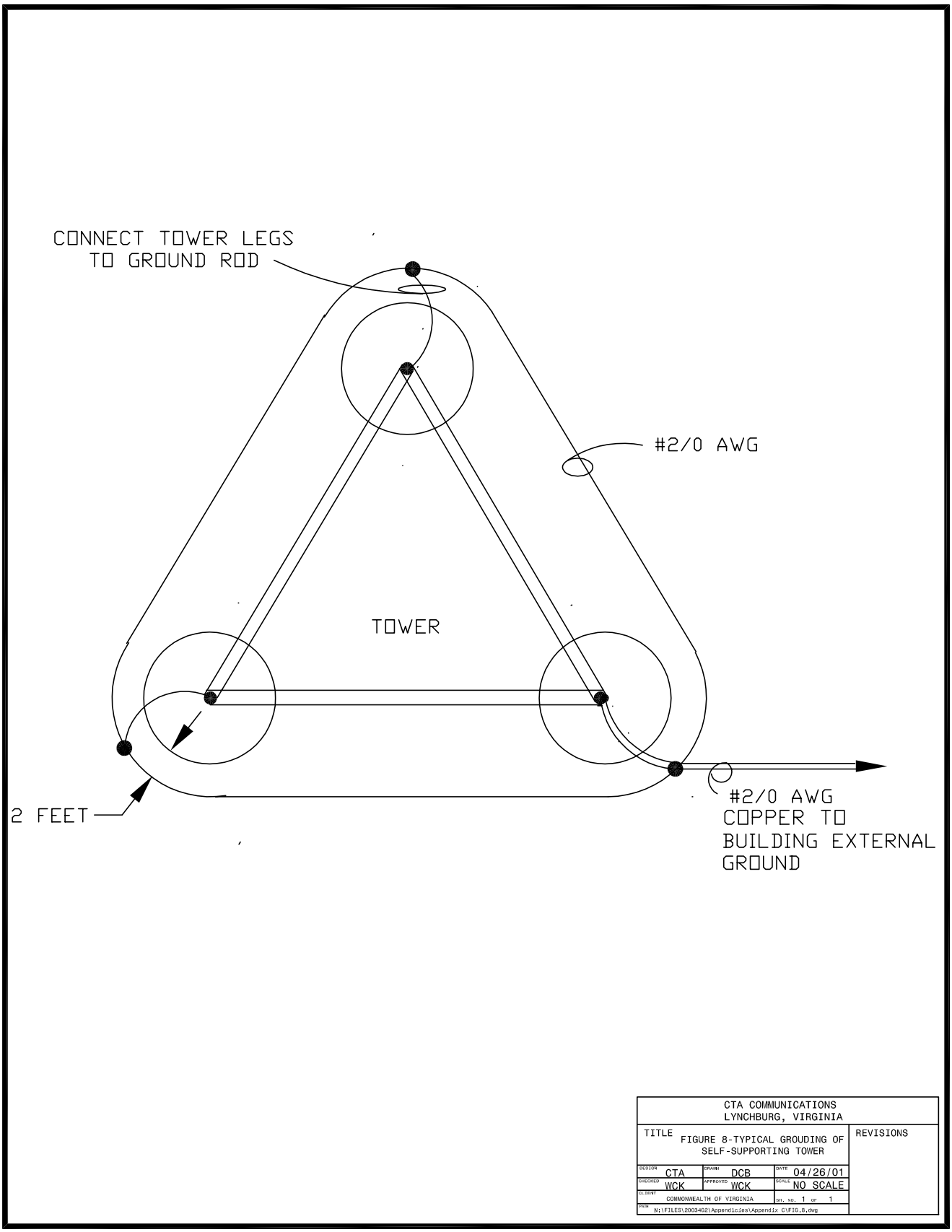
ALL WIRE BELOW GRADE SHALL BE #2/0 AWG COPPER.

TYPICAL MONOPOLE MAST GROUNDING

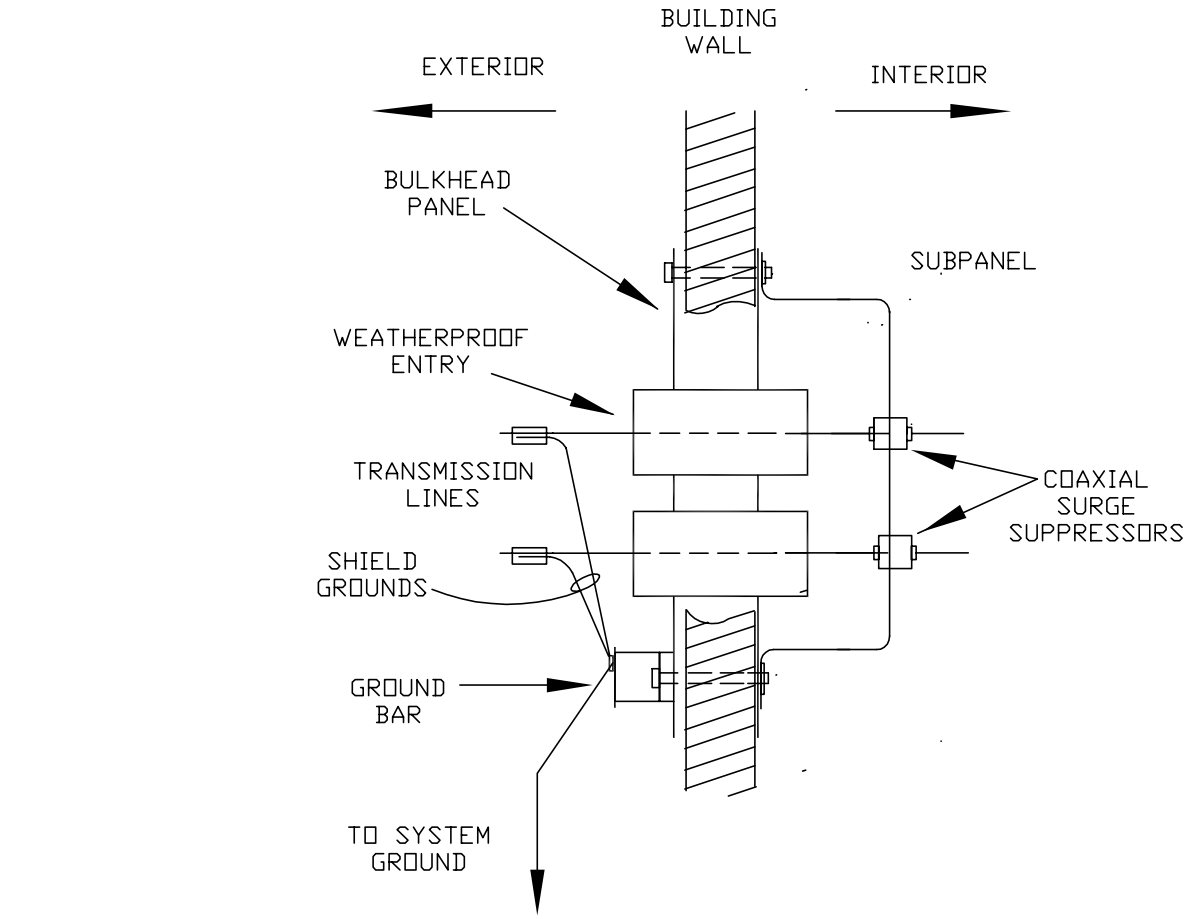
CTA COMMUNICATIONS LYNCHBURG, VIRGINIA			
TITLE: FIGURE 5-TYPICAL MONOPOLE MAST GROUNDING			REVISIONS
DESIGN: CTA	DRAWN: DCB	DATE: 04/26/01	
CHECKED: WCK	APPROVED: WCK	SCALE: NO SCALE	
CLIENT: COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1	
PATH: N:\FILES\2003462\Appendicies\Appendix C\FIG.5.dwg			

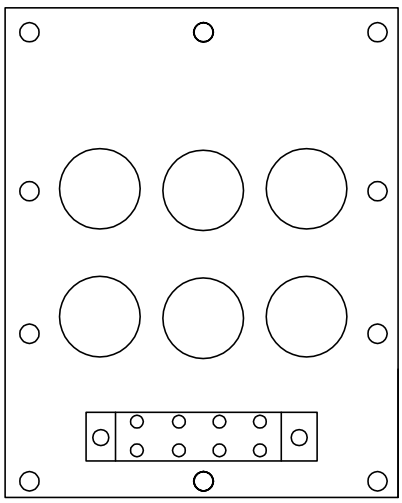

SEALED TRANSMISSION LINE INSTALLATION
ANTENNAS
SURFACE MOUNTED TRANSMISSION LINE INSTALLATION
TRANSMISSION LINE HOISTING GRIP MOUNTED TO ANTENNA MOUNT
SHIELD GROUNDED WITH GROUNDING KIT
TRANSMISSION LINE ROUTED THROUGH HAND HOLE
TRANSMISSION LINE HOISTING GRIP MOUNTED TO ANTENNA MOUNT
SHIELD GROUNDED WITH GROUNDING KIT
TRANSMISSION LINE CLAMPED TO SURFACE OF MONOPOLE WITH PROPER CABLE HANGERS
TRANSMISSION LINE SUPPORTED WITH ICE BRIDGE TO BUILDING
SHIELD GROUNDED WITH GROUNDING KIT
TRANSMISSION LINE SHIELD GROUNDED
TRANSMISSION LINE ROUTED THROUGH UNDERGROUND PVC CONDUIT TO BUILDING
GROUND ROD (ONLY ONE SHOWN)
CTA COMMUNICATIONS
LYNCHBURG, VIRGINIA
TITLE
FIGURE 6- TYPICAL GROUNDING WITH MONOPOLE MAST
REVISIONS
DESIGN CTA
DRAWN DCB
DATE 04/26/01
CHECKED WCK
APPROVED WCK
SCALE NO SCALE
CLIENT COMMONWEALTH OF VIRGINIA
SH. NO. 1 OF 1
PATH N:\FILES\2003462\Appendices\Appendix C\FIG_6.dwg


ANTENNA
WOOD POLE
TRANSMISSION LINE SHIELD GROUNDED
TRANSMISSION LINE CLAMPED TO POLE WITH PROPER CABLE HANGERS
TRANSMISSION LINE SHIELD GROUNDED
TRANSMISSION LINE TO EQUIPMENT BUILDING
#2/0 AWG COPPER GROUND WIRE
18" MIN.
5'-0"
5'-0"
EXOTHERMIC WELD (TYP.)
CTA COMMUNICATIONS
LYNCHBURG, VIRGINIA
TITLE
FIGURE 7- TYPICAL GROUND OF WOODEN ANTENNA POLE
REVISIONS
DESIGN CTA
DRAWN DCB
DATE 04/26/01
CHECKED WCK
APPROVED WCK
SCALE NO SCALE
CLIENT COMMONWEALTH OF VIRGINIA
SH. NO. 1 OF 1
PATH N:\FILES\2003462\Appendices\Appendix C\Fig.7.dwg



CTA COMMUNICATIONS LYNCHBURG, VIRGINIA			
TITLE: FIGURE 8-TYPICAL GROUDING OF SELF-SUPPORTING TOWER			REVISIONS
DESIGN: CTA	DRAWN: DCB	DATE: 04/26/01	
CHECKED: WCK	APPROVED: WCK	SCALE: NO SCALE	
CLIENT: COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1	
PATH: N:\FILES\2003462\Appendicies\Appendix C\FIG_8.dwg			



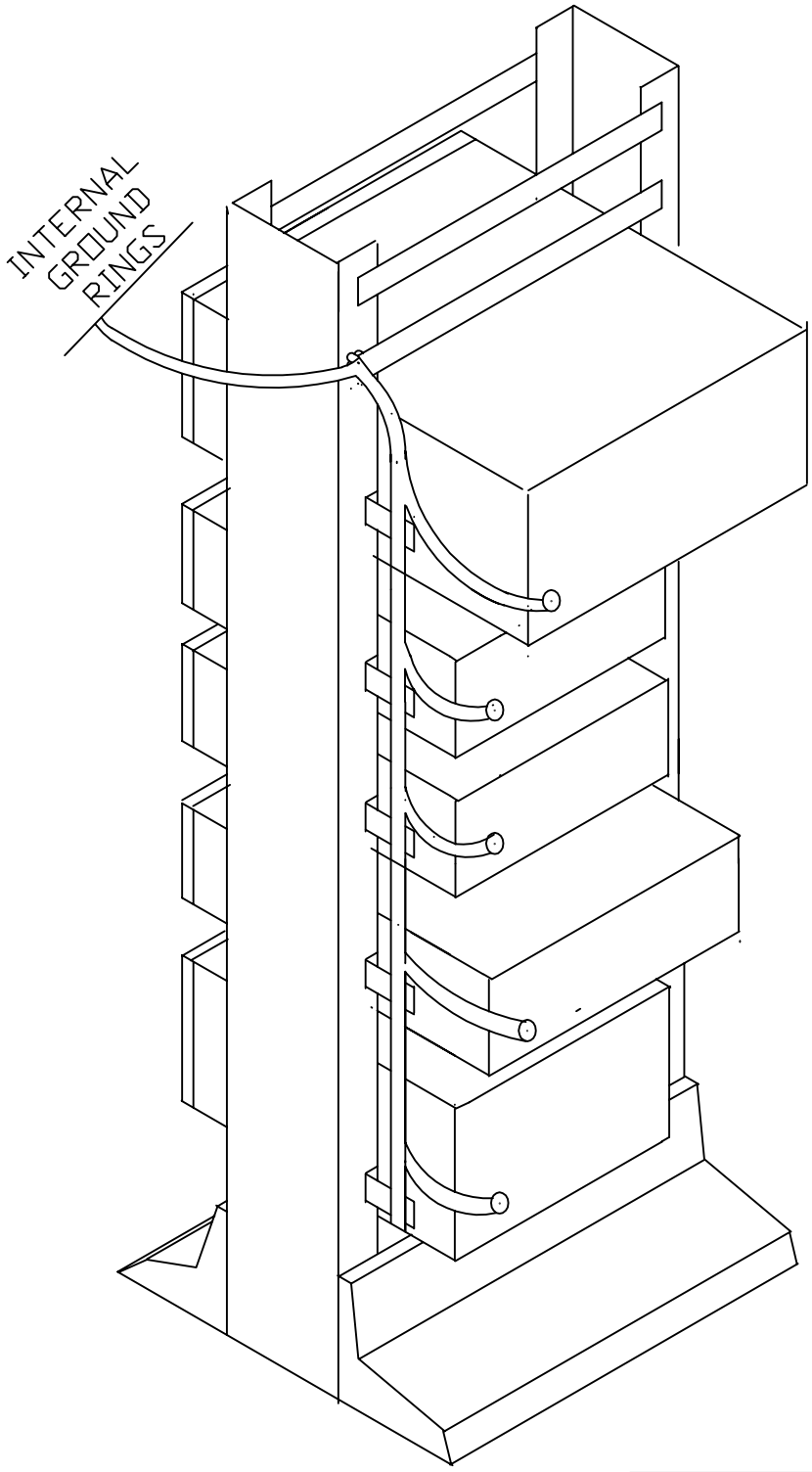


CTA COMMUNICATIONS
LYNCHBURG, VIRGINIA

TITLE: FIGURE 9-TYPICAL BULKHEAD PANEL GROUNDING

REVISIONS

DESIGN CTA	DRAWN DCB	DATE 04/26/01	
CHECKED WCK	APPROVED WCK	SCALE NO SCALE	
CLIENT COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1	
PATH N:\FILES\2003462\Appendices\Appendix C\FIG.9.dwg			



CTA COMMUNICATIONS LYNCHBURG, VIRGINIA			
TITLE: FIGURE 10-TYPICAL RACK GROUNDING			REVISIONS
DESIGN: CTA	DRAWN: DCB	DATE: 04/26/01	
CHECKED: WCK	APPROVED: WCK	SCALE: NO SCALE	
CLIENT: COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1	
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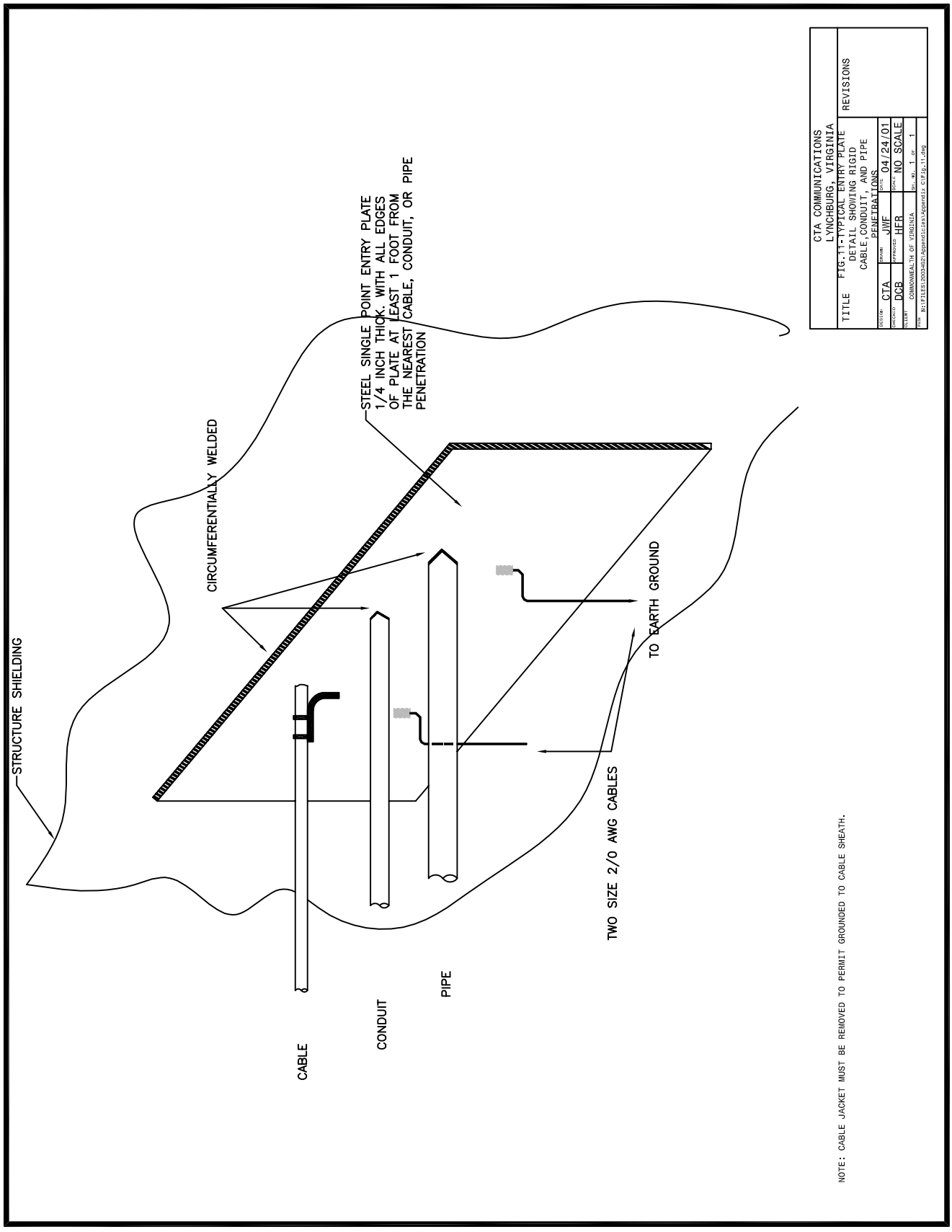

STRUCTURE SHIELDING
CIRCUMFERENTIALLY WELDED
STEEL SINGLE POINT ENTRY PLATE
1/4 INCH THICK, WITH ALL EDGES
OF PLATE AT LEAST 1 FOOT FROM
THE NEAREST CABLE, CONDUIT, OR PIPE
PENETRATION
TO EARTH GROUND
TWO SIZE 2/0 AWG CABLES
CABLE
CONDUIT
PIPE
NOTE: CABLE JACKET MUST BE REMOVED TO PERMIT GROUNDED TO CABLE SHEATH.
CTA COMMUNICATIONS
LYNCHBURG, VIRGINIA
TITLE FIG.11-TYPICAL ENTRY PLATE
DETAIL SHOWING RIGID
CABLE,CONDUIT, AND PIPE
PENETRATIONS
REVISIONS
DESIGN CTA
DRAWN JWF
DATE 04/24/01
CHECKED DCB
APPROVED HFR
SCALE NO SCALE
CLIENT COMMONWEALTH OF VIRGINIA
DWG. NO. 1 OF 1
PATH N:\FILES\2003-402\Appendix1as\Appendix CtFig.11.dwg

APPENDIX D

TABLE D-1
COV AGENCY INTEROPERABILITY TABLE

	Alcoholic Beverage Control	Aviation	Capitol Police	Conservation and Recreation	Corrections	Emergency Management	Environmental Quality	Fire Programs	Forestry	Game and Inland Fisheries	Health	Information Technology	Juvenile Justice	Marine Resources Commission	Military Affairs	Mines, Minerals, & Energy	Motor Vehicles	State Police	Transportation	Federal Government Agencies	Local Government Agencies
Department of Alcoholic Beverage Control							F			F								P			P
Department of Aviation						F					F								F		
Capitol Police						F												P		F	P
Department of Conservation & Recreation				F	F	F		F	F	P								F	F	P	P
Department of Corrections				F		P			F	P			P	P				P	F		P
Department of Emergency Management		F	F	F	P			F	F	F	F		F	P	F	F		P	F	P	P
Department of Environmental Quality								F			F			P		F					
Department of Fire Programs				F		F	F		F	F	F								F	F	P
Department of Forestry					F	F		F		F	F							F	F	F	P
Department of Game and Inland Fisheries	F			P	P	F		F	F		P		F	P		F		P	F	P	P
Department of Health		F				F	F	F	F	P			F	P				F		P	P
Department of Information Technology						F															
Department of Juvenile Justice				P	P	F				F	F							P	F		P
Marine Resources Commission				P	P	P	P			P	P					F		P		P	P
Department of Military Affairs						P												P	F	P	P
Department of Mines, Minerals, & Energy						F	F			F								F	F	F	F
Department of Motor Vehicles																		P	F		F
Department of State Police	P		P	P	P	P			F	P	F		P	P	P	F	P		F	P	P
Department of Transportation		F		F	F	F		F	F	F			F		F	F		F			
Federal Government Agencies			F	P		P		F	F	P	P			P	P	F		P			

P = Present Communications Requirements

F = Future Communications Requirements

N:files\20034G2\appendices\Appendix D\Table D-1.xls

TABLE D-2
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Alcoholic Beverage Control Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Wise County Sheriffs Office	154.890	155.565	
Dickerson County Sheriffs Office	159.075	154.860	
Norton Police Dept.	158.970	154.860	
Bigstone Gap Police Dept.	156.090	156.655	
Williamsburg Police Dept.	465.050	460.050	
Fredericksburg Police Dept.	155.850	154.725	
Chesapeake Police Dept.	155.650	155.750	
Petersburg Police Dept.	465.250	464.250	
Newport News Police Dept.	458.650	453.650	
Richmond Police Dept.			Frequencies are currently confidential
Chesterfield County Police Dept.			Frequencies are currently confidential
Norfolk Police Dept.			Frequencies are currently confidential
Virginia Beach Police Dept.			Frequencies are currently confidential
Portsmouth Police Dept.			Frequencies are currently confidential
Roanoke City Police Dept.			Frequencies are currently confidential
Roanoke County Police Dept.			Frequencies are currently confidential
Henrico County Police Dept.			Frequencies are currently confidential
Manassas Park Police Dept.			Frequencies are currently confidential
City of Manassas Police Dept.			Frequencies are currently confidential
Fairfax County Police Dept.			Frequencies are currently confidential
Arlington Police Dept.			Frequencies are currently confidential
Alexandria Police Dept.			Frequencies are currently confidential
Amherst County Sheriffs Office			Frequencies are currently confidential
Bedford County Sheriffs Office			Frequencies are currently confidential
Lynchburg Police Dept.			Frequencies are currently confidential
Giles County Sheriffs Office			Frequencies are currently confidential
Radford City Police Dept.			Frequencies are currently confidential
Radford University Police Dept.			Frequencies are currently confidential
Glouchester County Sheriffs Office			Frequencies are currently confidential
Altavista County Sheriffs Office			Frequencies are currently confidential
Halifax County Sheriffs Office			Frequencies are currently confidential
Campbell County Sheriffs Office			Frequencies are currently confidential
Danville Police Dept.			Frequencies are currently confidential
Hampton Police Dept.			Frequencies are currently confidential
Fredrick County Sheriffs Office			Frequencies are currently confidential
Suffolk Police Dept.			Frequencies are currently confidential
Orange County Sheriffs Office			Frequencies are currently confidential
Montgomery County Sheriffs Office			Frequencies are currently confidential
Northampton County Sheriffs Office			Frequencies are currently confidential
Isle of Wright Sheriffs Office			Frequencies are currently confidential
Caroline County Sheriffs Office			Frequencies are currently confidential
Colonial Height Police Dept.			Frequencies are currently confidential
Harrisonburg Police Dept.			Frequencies are currently confidential
Albemarle Sheriffs Office			Frequencies are currently confidential
Nottoway Sheriffs Office			Frequencies are currently confidential
Agusta Sheriffs Office			Frequencies are currently confidential
Waynesboro Police Dept.			Frequencies are currently confidential
Salem Police Dept.			Frequencies are currently confidential
Christiansburg Police Dept.			Frequencies are currently confidential
Abingdon Police Dept.			Frequencies are currently confidential
Pulaski County Police Dept.			Frequencies are currently confidential
Martinsville Police Dept.			Frequencies are currently confidential
Culpeper County Police Dept.			Frequencies are currently confidential
Spotsylvania Sheriffs Office			Frequencies are currently confidential
Stafford Sheriffs Office			Frequencies are currently confidential

TABLE D-3
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Aviation			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
No mobile or fixed communications radios.			

TABLE D-4
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Capitol Police			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Virginia State Police	159.000	154.935	VSP Channel 1 frequencies
Virginia State Police	158.985	154.905	VSP Channel 2 frequencies

TABLE D-5
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Conservation and Recreation

Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Galax Police Dept.	155.910	158.730	Used by New River Trail State Park
Wythe County Police Dept.	159.090	154.785	Used by New River Trail State Park
Wythe County Repeater	154.190	155.160	Used by New River Trail State Park
Wythe County talk around	155.160	155.160	Used by New River Trail State Park
Grayson County Fire and Rescue	153.815	155.940	Used by New River Trail and Grayson Highlands State Park
Grayson County Sheriffs Office	150.830	155.670	Used by New River Trail and Grayson Highlands State Park
Carroll County Sheriffs Office	150.890	155.550	Used by New River Trail State Park
Pulaski Police Dept.	158.790	155.250	Used by New River Trail State Park
USFWS-Back Bay NWR	163.150	163.150	Used by False Cape State Park
USFWS-Eastern Shore	163.150	163.150	Used by Kiptopeke State Park
Northampton County Sheriffs Office	465.375	460.375	Used by Kiptopeke State Park
Northampton County Sheriffs Office	460.375	460.375	Used by Kiptopeke State Park
Northampton County Sheriffs Office	460.175	460.175	Used by Kiptopeke State Park
DGIF-Car to Car	151.340	151.340	Used by serveral parks
UMRC			Used by serveral parks
Bedford County Sheriffs Office			Used by Smith Mountain Lake State Park
Westmoreland County Sheriffs Office	39.860	39.860	Used by Westmoreland State Park
The Nature Conservancy	151.625	151.625	Used by Div-Natural Heritage
USACOE-John Kerr Reservoir	164.350	163.437	Used by Occoneechee State Park
Franklin County Sheriffs Office			Used by Smith Mountain Lake State Park
Clifton Forge Police Dept.			Used by Douthat State Park
Convington Police Dept.			Used by Douthat State Park
Alleghany County Sheriffs Office			Used by Douthat State Park
Bath County Sheriffs Office			Used by Douthat State Park
Roanoke City Public Works	155.025	155.025	Used by Smith Mountain Lake State Park and Natural Heritage
Roanoke City Fire	154.310	154.310	Used by Smith Mountain Lake State Park and Natural Heritage
State Police- Car to Car	154.665	154.665	Used by serveral parks
Scott County Sheriffs Office	159.030	154.740	Used by Natural Tunnel State Park
Scott County Fire and Rescue	154.340	154.340	Used by Natural Tunnel State Park
Prince William County Police Dept.			Used by Leesylvania State Park
King George County Sheriffs Office	154.890	159.090	Used by Caledon State Park
King George County Fire	153.965	155.760	Used by Caledon State Park
Lancaster County Sheriffs Office	155.520	159.210	Used by Belle Isle State Park
Lancaster County TAC CH.	159.210	159.210	Used by Belle Isle State Park
Lancaster County Fire	155.745	155.745	Used by Belle Isle State Park
DGIF	151.430	159.435	Used by Hungry Mother State Park
Spotsylvania County Sheriffs Office			Used by Lake Anna State Park
Spotsylvania County Fire			Used by Lake Anna State Park
Marion Lifesaving	150.790	155.355	Used by Hungry Mother State Park
Marion Lifesaving	155.280	155.280	Used by Hungry Mother State Park
Marion Lifesaving	155.355	155.355	Used by Hungry Mother State Park
Marion Fire	159.285	159.285	Used by Hungry Mother State Park
Smyth County Sheriffs Office	39.700	39.700	Used by Hungry Mother State Park
Smyth County Sheriffs Office	39.400	39.400	Used by Hungry Mother State Park
Smyth County TAC CH.	39.880	39.880	Used by Hungry Mother State Park
Smyth County Fire and Rescue	39.500	39.500	Used by Hungry Mother State Park
Marion Police Dept.	39.960	39.960	Used by Hungry Mother State Park
SIRS	39.540	39.540	Used by several Parks
Virginia State Police	159.000	154.935	Used by Kiptopeke State Park
Town of Clarksville Police Dept.	458.875	453.875	Used by Occoneechee State Park
Pulaski County Sheriffs Office	39.280	39.280	Used by Claytor Lake State Park
X-Band Repeater	154.755	39.280	Used by Claytor Lake State Park
Charlotte County Sheriffs Office	151.220	155.715	Used by Staunton River State Park
Charlotte County Sheriffs Office	155.580	155.580	Used by Staunton River State Park
Virginia State Police	154.460	159.135	Used by James River State Park
Warren County Sheriffs Office	865.237	865.237	Used by Shenandoah River State Park
Department of Forestry	159.285	159.285	Used by Holliday Lake State Park
Virginia State Police	155.445	159.165	
Chesterfield County Radio	800 Digital	800 Digital	Used by Pocahontas State Park
Currituck County, North Carolina			Used by False Cape State Park

TABLE D-6
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Corrections			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
No information to report.			

TABLE D-7
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Va. Dept. of Emergency Management			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Virginia State Police			All VHF high band channels
Department of Forestry			All VHF high band channels KA6410
Virginia Department of Transportation	47.220	Simplex	Districts
Virginia Department of Transportation	47.280	Simplex	Districts
Virginia Department of Transportation	47.300	SImplex	Districts
Virginia Department of Transportation	47.340	Simplex	Districts
Virginia Department of Health OEMS	155.205	Simplex	
Virginia Department of Health OEMS	155.280	Simplex	
Virginia Department of Health OEMS	155.340	Simplex	
Virginia Department of Health OEMS	155.400	Simplex	
Old Dominion EMS Alliance	MED 1-10		KNEF732
Virginia Department of Health OEMS	37.100	SImplex	
Providence Fire Rescue	155.160	Simplex	
Roanoke County			800 MHz Trunked Radio System
Chesterfield Fire Department	46.460	Simplex	
Chesterfield Fire Department	46.340	Simplex	
Arlington County			800 MHz Trunked Radio System
Shenandoah National Park	166.900	166.900	
Shenandoah National Park	166.300	166.300	
Clear Channel, Inc.	161.760	161.760	EAS link to WRVA/WRVQ/WRXL

TABLE D-8
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Environmental Quality Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Currently does not use any other agencies frequencies.			

TABLE D-9
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Fire Programs			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Currently does not use any other agencies frequencies.			

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Albemarle	155.785	155.865	
Albemarle	153.845	155.955	
Albemarle	153.875	155.925	
Albemarle	153.965	155.745	
Albemarle	153.980	155.805	
Albemarle	154.995	155.835	
Albemarle	155.205	155.205	
Albemarle	155.220	155.220	
Albemarle	155.835	155.835	
Albemarle	155.955	155.955	
Amelia	46.540		
Augusta	33.440		
Augusta	33.740		Possibly changed
Augusta	33.760		
Augusta	33.800		
Bedford	460.625	460.625	
Bedford	465.600	460.600	
Bland	153.830	154.250	
Bland	153.905	155.955	
Bland	154.250	154.250	
Bland	154.295	154.295	
Bland	154.355	154.355	
Bland	155.955	155.955	
Brunswick	154.010	154.400	
Buckingham	158.835		
Campbell	151.025	151.025	
Campbell	151.115	151.115	
Campbell	155.190	155.190	
Campbell	155.250	155.250	
Campbell	155.565	155.565	
Campbell	155.745	155.745	
Campbell	155.850	151.115	
Campbell	155.850	155.850	
Charlottesville	46.260		
Charlottesville	46.460		
Dinwiddie	39.980		
Dinwiddie	39.980		
Franklin Fire and Rescue	153.935	154.965	
Franklin Fire and Rescue	154.965	154..965	
Halifax	46.100		
Nelson	153.785	155.865	
Nelson	153.785	155.865	

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry Organization	Mobile/Portrable Tx MHz	Mobile/Portable Rx MHz	Comments
Nelson	153.785	155.865	
Nelson	155.865	155.865	
Orange	153.905		WNWD 802
Patrick	151.130		For Howard Wright
Patrick	155.100		For Howard Wright
Patrick	155.835		For Howard Wright
Pulaski	45.280		For local forest warden vehicle
Pulaski	45.320		For local forest warden vehicle
Pulaski	45.400		For local forest warden vehicle
Roanoke	45.880	45.880	
Roanoke	46.480	46.480	
Roanoke	855.487	855.487	
Roanoke	855.737	855.737	
Roanoke	855.987	855.987	
Roanoke	855.987	854.987	
Roanoke	856.462	856.462	
Roanoke	856.962	856.962	
Roanoke	857.462	857.462	
Roanoke	857.962	857.962	
Roanoke	858.962	858.962	
Roanoke	859.962	859.962	
Roanoke	860.962	860.962	
Shenandoah	33.740		
Shenandoah	453.225	453.225	
Shenandoah	453.375	453.375	
Shenandoah	453.400	453.400	
Shenandoah	458.140	453.150	
Shenandoah	458.225	458.225	
Shenandoah	458.300	453.300	
Shenandoah	458.300	453.300	
Shenandoah	458.300	453.300	
Shenandoah	458.375	458.375	
Shenandoah	458.400	458.400	
Shenandoah	458.550	453.550	
Shenandoah	458.875	453.875	
Shenandoah	458.875	453.875	
Shenandoah	465.150	460.150	
Shenandoah	465.525	460.525	
Shenandoah	465.625	460.625	
Suffolk Fire Department	154.070		
Suffolk Fire Department	154.385		
	37.180		

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry

Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Abingdon Volunteer Fire Department	154.175		
Abingdon Volunteer Fire Department	154.310		
Accomack/Northampton Fireman's Association	46.080		WRZ570
Accomack/Northampton Fireman's Association	46.180		WRZ570
Alleghany County Sheriff's Department	39.320		
Alleghany County Sheriff's Department	39.500		Used for A.J. Wright
Alleghany County Sheriff's Department	39.500		
Alleghany County Sheriff's Department	39.540		
Alleghany County Sheriff's Department	39.980		
Amherst County Sheriff's Department	39.540		
Amherst County Sheriff's Department	39.820		
Amherst County Sheriff's Department	156.090	155.520	
Amherst County Sheriff's Department	154.22?	Unknown at this time	Permission to monitor
Appomattox Sheriff's Department	39.500		
Appomattox Volunteer Fire Department	46.180	46.180	
Bath County Sheriff's Department	33.820		
Bath County Sheriff's Department	39.320		
Bath County Sheriff's Department	39.320		
Bath County Sheriff's Department	465.275	460.275	
Bath County Special Police	39.400		
Blacksburg Volunteer Fire Department	153.845	155.880	
Blackstone Volunteer Fire Department	154.085	156.075	For James Bowling
Bland County Sheriff's Department	39.500		
Bland County Sheriff's Department	39.540		
Bland County Sheriff's Department	39.640		
Bland County Sheriff's Department	153.905		
Bland County Sheriff's Department	155.955		
Botetourt County Sheriff's Department	39.420	39.420	
Botetourt County Sheriff's Department	39.540	39.540	
Botetourt County Sheriff's Department	45.400	45.400	
Botetourt County Sheriff's Department	45.520	45.520	
Brunswick County Sheriff's Department	154.010	154.400	
Buchanon County Department of Emergency Services	155.160	155.160	
Buchanon County Sheriff's Department	39.500		
Buckingham County Board of Supervisors	153.935	158.835	
Buckingham Fire and Rescue	158.835		
Campbell County Board of Supervisors	45.280		
Campbell County Sheriff's Department	159.030	154.740	
Cana Volunteer Fire Department	155.955	155.955	
Cana Volunteer Fire Department	153.905	155.955	
Caroline County Emergency Units Org.	153.950	154.385	
Caroline County Emergency Units Org.	153.950	154.385	

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry

Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Caroline County Emergency Units Org.	154.385	154.385	
Caroline County Emergency Units Org.	154.965	154.965	
Caroline Office of Emergency Services	154.385		
Carroll County Sheriff's Department	39.560		
Carroll County Sheriff's Department	154.770	155.550	
Carroll/Grayson County Sheriff's Department	150.830	155.550	
Carroll/Grayson County Sheriff's Department	150.830	155.070	
Charles City Volunteer Fire Department	154.220		
Charles City Volunteer Fire Department	154.220		
Charles City Volunteer Fire Department	154.220		
Charles City Volunteer Fire Department	155.220	155.220	
Charlotte County Sheriff's Department	39.280		
Charlotte County Sheriff's Department	154.925	155.610	
Charlotte County Sheriff's Department	155.685	155.685	
Chatham Volunteer Fire Department	154.310	154.310	
Chatham Volunteer Fire Department	154.310		
Chesapeake Fire Department	153.890		
Chesapeake Fire Department	154.160		
Chesapeake Fire Department	154.415		
Clarke County Fire and Rescue Association	154.280		
Cleveland Volunteer Fire Department	154.145		
Cleveland Volunteer Fire Department	155.085		
Cleveland Volunteer Fire Department	158.955		
Clintwood Volunteer Fire Department	154.160		
Colonial Beach Police	39.500		
Colonial Beach Volunteer Fire Department	39.500	39.500	
Concord Volunteer Fire Department	154.160		
Concord Volunteer Fire Department	154.160		
COV DCR Division State Parks		151.235	
COV DCR Division State Parks		151.400	
Craig County Sheriff's Department	39.480		
Craig County Sheriff's Department	39.500		
Culpeper County Fire and Rescue Association	33.820		
Culpeper County Fire and Rescue Association	33.890		
Culpeper County Fire and Rescue Association	33.880		KNBV323
Culpeper Volunteer Fire Department	33.880		
Cumberland County Sheriff's Department	39.500		
Cumberland County Sheriff's Department	39.500	39.500	
Dickenson County Emergency Services	154.835	154.965	
Dickenson County Sheriff's Department	39.500		
Dickenson County Sheriff's Department	39.540		
Dickenson Sheriff's Department	39.600		

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry

Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Dickenson Sheriff's Department	154.770		KNGZ-312
Dickenson Sheriff's Department	154.860		KNGZ-312
Dickenson Sheriff's Department	158.910		KNGZ-312
Eastern Shore 911 Commission	154.220	154.220	
Eastern Shore 911 Commission	154.250	154.250	
Eastern Shore 911 Commission	154.280	154.280	
Eastern Shore 911 Commission	154.430	154.430	
Eastern Shore 911 Commission	154.445	154.445	
Eastern Shore 911 Commission	155.220	155.220	
Eastern Shore 911 Commission	155.355	155.355	
Eastern Shore of Virginia 911 Commission	154.220	154.220	
Eastern Shore of Virginia 911 Commission	154.250	154.250	
Eastern Shore of Virginia 911 Commission	154.280	154.280	
Eastern Shore of Virginia 911 Commission	154.430	154.430	
Eastern Shore of Virginia 911 Commission	154.445	154.445	
Eastern Shore of Virginia 911 Commission	155.220	155.220	
Eastern Shore of Virginia 911 Commission	155.355	155.355	
Ellison Volunteer Fire Department	154.055	155.925	
Emporia Volunteer Fire Department	153.830	154.340	
Emporia Volunteer Fire Department	154.340	154.340	
Emporia Volunteer Fire Department	154.831	154.340	
Emporia Volunteer Fire Department	33.880		
Essex County	155.905		WPAX832
Essex County	153.905		WPAX832
Essex County	154.295		
Fauquier County Emergency Center	46.480		
Fauquier County Emergency Center	46.500		
Floyd County Board of Supervisors	45.880		
Floyd County Fire Department	45.320		
Floyd County Volunteer Fire Department	46.100	46.100	
Floyd County Volunteer Fire Department	45.880	45.880	
Floyd County Volunteer Fire Department	45.320		
Fluvanna County Fire and Rescue	155.745		
Fluvanna County Sheriff's Department	153.965	155.745	
Franklin County Sheriff's Department	39.900		
Frederick County Fire and Rescue	154.220	154.220	
Frederick County Fire and Rescue	154.370	154.370	
Frederick County Fire and Rescue Association	154.220		
Frederick County Fire and Rescue Association	154.220		
Frederick County Fire and Rescue Association	154.280		
Frederick County Fire and Rescue Association	154.340		
Frederick County Fire and Rescue Association	154.370		

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Frederick County Fire and Rescue Association	154.370		
Galax Police Department	158.370		
Galax Volunteer Police Department	159.105	151.040	
Giles County Sheriff's Department	45.320		
Giles County Sheriff's Department	45.360		
Giles County Sheriff's Department	45.440		
Giles County Sheriff's Department	39.720		
Gloucester Volunteer Fire Department, Inc.	154.310	123.000	For two portables only
Gloucester Volunteer Fire Department, Inc.	154.310		
Gloucester Volunteer Fire and Rescue, Inc.	153.830	154.310	
Gloucester Volunteer Fire and Rescue, Inc.	154.175	155.205	
Gloucester Volunteer Fire and Rescue, Inc.	154.310	154.310	
Gloucester Volunteer Fire and Rescue, Inc.	155.205	155.205	
Goochland County Volunteer Fire and Rescue Association	153.905	155.940	
Goochland County Fire and Rescue	153.860	153.860	
Goochland County Fire and Rescue	153.905	155.940	
Goochland County Fire and Rescue	153.965	155.745	
Grayson County Sheriff's Department	150.830	154.550	
Grayson County Sheriff's Department	150.830	155.070	
Grayson County Sheriff's Department	39.560		
Grayson County Sheriff's Department	39.880		
Grayson County Sheriff's Department	153.815	155.940	
Grayson County Sheriff's Department	153.815		
Grayson County Sheriff's Department	155.940		
Gretna Volunteer Fire Department	158.865	155.115	
Halifax County Board of Supervisors	46.100		
Halifax County Board of Supervisors			County radios for transports
Halifax County Sheriff's Department	39.180		
Hanover County Fire Department	153.860		
Hanover County Fire Department	154.010		
Hanover County Fire Department	154.295		
Harrisonburg-Rockingham Emergency Operations Center	33.060	33.060	
Harrisonburg-Rockingham Emergency Operations Center	33.060	33.060	
Harrisonburg-Rockingham Emergency Operations Center	33.740	33.740	K11 553
Harrisonburg-Rockingham Emergency Operations Center	33.740	33.740	KVF 716
Harrisonburg-Rockingham Emergency Operations Center	167.975	162.975	
Harrisonburg-Rockingham Emergency Operations Center	453.150	453.150	
Harrisonburg-Rockingham Emergency Operations Center	458.150	156.170	
Harrisonburg-Rockingham Emergency Operations Center	460.525	460.525	
Harrisonburg-Rockingham Emergency Operations Center	460.625	460.625	
Harrisonburg-Rockingham Emergency Operations Center	461.100	461.100	
Harrisonburg-Rockingham Emergency Operations Center	463.000	463.000	

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Harrisonburg-Rockingham Emergency Operations Center	463.025	463.025	
Harrisonburg-Rockingham Emergency Operations Center	463.050	463.050	
Harrisonburg-Rockingham Emergency Operations Center	463.075	463.075	
Harrisonburg-Rockingham Emergency Operations Center	463.100	463.100	
Harrisonburg-Rockingham Emergency Operations Center	463.125	463.125	
Harrisonburg-Rockingham Emergency Operations Center	463.150	463.150	
Harrisonburg-Rockingham Emergency Operations Center	463.175	463.175	
Harrisonburg-Rockingham Emergency Operations Center	465.525	460.525	
Harrisonburg-Rockingham Emergency Operations Center	465.625	460.625	
Harrisonburg-Rockingham Emergency Operations Center	33.560		WNAL 734
Henrico County Division of Fire	153.830	154.340	
Henrico County Division of Fire	153.950	154.430	
Henry County	153.785	154.250	
Highland County Sheriff's Department	39.500		
Highland County Sheriff's Department	39.540		
Highland County Sheriff's Department	451.450	451.450	
Highland County Sheriff's Department	456.450	451.450	
Hillsville Volunteer Fire Department	151.085	151.085	
Hillsville Volunteer Fire Department	157.575	151.085	
Hose Company Number 4, Inc.	33.740		
Hot Springs Fire and Rescue Association	460.525	460.525	
Hot Springs Fire and Rescue Association	463.475	463.475	
Hot Springs Fire and Rescue Association	465.525	460.525	
Hot Springs Fire and Rescue Association	468.475	463.475	
Hurt Volunteer Fire Department	154.115		
Isle of Wight County	154.995		
Isle of Wight County			
J.R. Tree Services	152.420		
James City County Fire Department	154.070	154.265	
James City County Fire Department	154.070	154.355	
James City County Fire Department	154.355	154.265	
James City County Fire Department	154.355	154.355	
James City County Fire Department	154.070	154.355	
James City County Fire Department	151.370	151.370	
James City County Fire Department	154.295	154.295	
James City County Fire Department	154.830	154.235	
James City County Fire Department	154.265	154.265	
Jarratt Volunteer Fire Department	153.830	154.340	Frequency is the same as Emporia Volunteer Fire Department
Kilmarnock Fire Department	155.025		
King and Queen County Sheriff's Department	153.740	158.730	
King and Queen County Sheriff's Department	153.740	158.730	
King and Queen County Sheriff's Department	39.500		

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
King and Queen County Sheriff's Department	39.900		
King and Queen County Sheriff's Department	153.965	155.760	
King and Queen County Sheriff's Department	153.965	155.760	
King and Queen County Sheriff's Department	153.965	155.760	
King and Queen County Sheriff's Department	153.965	155.760	
King and Queen County Sheriff's Department	154.220	154.220	
King and Queen County Sheriff's Department	154.220	154.220	
King William Volunteer Fire Department	155.835		
King William Volunteer Fire Department	158.895		
Lancaster County	154.295		
Lancaster County	155.205		
Lancaster County	155.745		
Lancaster County Sheriff's Department	155.775		
Laurel Fork Fire Department	158.805	153.845	
Laurel Grove Volunteer Fire Department	154.235		
Lawrenceville Volunteer Fire Department	155.145	155.145	
Lebanon LiPrsnring Crow, Inc.	155.295		
Lee County Sheriff's Department	39.480		
Lee County Sheriff's Department	39.500		
Lexington Police Department		45.160	
Loudoun County Emergency Service	154.010		
Louisa County Emergency Services	153.980	155.805	
Louisa County Sheriff's Department	153.785	153.785	
Louisa County Sheriff's Department	153.980	155.805	
Nelson County Emergency Services	155.865	155.865	
Nelson County Emergency Services	155.955	155.955	
Nelson County Emergency Services	156.015	156.015	
Nelson County Sheriff's Department	153.785	155.865	
Nelson County Sheriff's Department		39.500	For Eddie Embrey
New Kent Sheriff's Department	39.420	39.420	
New Kent Sheriff's Department	39.540	39.540	
New Kent Volunteer Fire Department	39.440	33.440	
Northumberland County	155.205		
Northumberland County	155.745		
Northumberland County	155.775		
Norton Police Department	158.970	154.854	
Orange County Fire Chiefs Association	33.720		
Orange County Volunteer Fire Chiefs Association	33.720		
Orange County Volunteer Fire Chiefs Association	154.295	154.295	
Orange County Volunteer Fire Chiefs Association	155.055	155.055	
Orange County Volunteer Fire Chief's Association	155.895	155.895	
Orange County Volunteer Fire Chief's Association	155.985	155.985	

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Orange County Volunteer Fire Chief's Association	158.880	155.055	
Orange County Volunteer Fire Chief's Association	158.880	155.055	
Orange County Volunteer Fire Chief's Association	158.880	155.055	
Orange County Volunteer Fire Chief's Association	158.895	155.895	
Orange County Volunteer Fire Chief's Association	159.015	155.895	
Orange County Volunteer Fire Chief's Association	159.015	155.895	
Orange County Volunteer Fire Chief's Association	159.015	155.895	
Orange County Volunteer Fire Chief's Association	162.550		
Page County Board of Supervisors	33.740		
Page County Emergency Operations Center	458.125	453.125	
Page County Emergency Operations Center	458.700	453.700	
Page County Emergency Operations Center	460.400	460.400	
Page County Emergency Operations Center	465.125	465.125	
Page County Emergency Operations Center	465.325	465.325	
Page County Emergency Operations Center	465.400	465.400	
Page County Sheriff's Department	33.540		
Page County Sheriff's Department	33.740		
Patrick County	158.925	155.835	
Patrick County Sheriff's Depatrment	154.890	155.700	
Pittsylvania County Emergency Services	159.045	155.775	
Pittsylvania County Emergency Services	159.195	156.135	
Pittsylvania County Sheriff's Department		39.500	
Powhatan County Sheriff's Office	37.260		
Powhatan County Sheriff's Office	39.320		
Powhatan County Sheriff's Office	39.500		
Powhatan County Fire Association	37.180		
Prince George County	158.880	155.055	
Prince George County	158.925	155.115	
Prince George County	155.115	155.115	
Prince George County	158.925	155.115	
Prince William County Fire and Rescue Service	154.325	154.325	
Prince William County Fire and Rescue Service	154.370	154.370	
Prince William County Fire and Rescue Service	154.445	154.445	
Rappahannock County Fire and Rescue	33.480		
Rappahannock County Fire and Rescue	33.680		
Rappahannock County Fire and Rescue	33.820		
Renan Volunteer Fire Department	154.145		
Richmond County Volunteer Fire Department	45.280		
Rockbridge County Sheriff's Department		39.500	
Russell County Sheriff's Department	39.500		
Russell County Sheriff's Department	155.550		
Russell County Sheriff's Office	155.910		

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Scott County Firefighters Association	153.950		
Scott County Firefighters Association	154.340		
Scott County Sheriff's Department	39.780		
Scott County Sheriff's Department	154.740		
Scott County Sheriff's Department	159.030		
Shenandoah County Sheriff's Department		450.470	
Sheriff of Louisa County	33.820		
Slate Creek Volunteer Fire Department	154.325	154.325	
Smithfield Volunteer Fire Department	154.995	158.745	
Smithfield Volunteer Fire Department	155.775	155.775	
Smyth County Sheriff's Department	39.400		
Smyth County Sheriff's Department	39.400		
Smyth County Sheriff's Department	39.500		
Southampton County	33.800		
Spotsylvania Sheriff's Department	39.500		
Spotsylvania Sheriff's Department	154.295		
Spotsylvania Sheriff's Department	156.195		
Spotsylvania Sheriff's Department	158.955		
Stafford County Department of Fire, Rescue, and Emerg Serv.	154.175		
Stafford County Department of Fire, Rescue, and Emerg Serv.	154.205		
Suffolk Fire Department	154.070		
Suffolk Fire Department	154.385		
Sussex County Sheriff's Department	39.500		
Sussex County Sheriff's Department	39.600		
Tazewell County	39.320		
Tazewell County	39.500		
Tazewell County Sheriff's Department	39.320		
Tazewell County Sheriff's Department	39.500		
Town of Wytheville	153.770	154.325	
USDA/USFS/George Washington National Forest		171.525	Air detection
USDA/USFS/George Washington National Forest		172.325	Air detection
Victoria Fire and Rescue Company	45.400		
Walkerton CVFPA & King William Volunteer Fire Department	45.160		
Walkerton CVFPA & King William Volunteer Fire Department	45.400		
Warren County Sheriff's Department	33.680		
Warren County Sheriff's Department	33.680		
Warren County Sheriff's Department	39.500		
Washington County Emergency Services	151.025	151.025	WPCQ 971
Washington County Emergency Services	153.830	151.025	WPCQ 971
Washington County Emergency Services	154.250	154.250	WPCQ 971
Washington County Sheriff's Department	39.500		
Washington County Sheriff's Department	39.500		

TABLE D-10
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Forestry			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Washington County Sheriff's Department	39.540		
West Point Fire and Rescue, Inc.	33.740		
West Point Volunteer Fire Department	33.740		
Westmoreland County Sheriff's Department	45.280		
Westmoreland County Sheriff's Department	45.280	45.280	
Williamsburg Fire Department	154.145	154.145	
Wise County Sheriff's Office	39.420		
Wise County Sheriff's Office	39.500		
Wise County Sheriff's Office	39.840		
Wise County Sheriff's Office	153.515	153.515	
Wise County Sheriff's Office	154.040	154.040	
Wise County Sheriff's Office	154.265	154.265	
Wise County Sheriff's Office		155.715	
Wythe County Sheriff's Department	156.090	154.785	
York County Fire Department	154.010	154.400	
York County Fire Department	154.010	154.400	

TABLE D-11
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Game and Inland Fisheries

Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Accomack County Sheriff's Department	465.450	460.450	
Albemarle Police Department	465.250	460.250	
Alleghany County Sheriff's Department	453.300	453.300	
Amelia County Sheriff's Department	39.540	39.540	
Amherst County Sheriff's Department	800 MHz EDAC	800 MHz EDAC	
Appomattox County Sheriff's Department	39.540	39.540	
Augusta County Sheriff's Department	465.400	460.400	
Bath County Sheriff's Department	458.650	453.650	
Bedford County Sheriff's Department	800 MHz EDAC	800 MHz EDAC	
Bland County Sheriff's Department	39.640	39.640	
Botetourt County Sheriff's Department	460.137	465.137	
Brunswick County Sheriff's Department	151.115	156.135	
Buchanan County Sheriff's Department	154.890	159.150	
Buckingham County Sheriff's Department	39.540	39.680	
Campbell County Sheriff's Department	159.030	154.740	
Caroline County Sheriff's Department	154.385	154.950	
Carrol County Sheriff's Department	155.550	155.550	
Charles City Sheriff's Department	39.940	39.940	
Charlotte County Sheriff's Department	155.610	155.685	
Chesterfield Police Department	800 MHz Digital	800 MHz Digital	
Clarke County Sheriff's Department	39.200	39.200	
Craig County Sheriff's Department	39.480	39.480	
Culpeper Sheriff's Department	39.420	39.420	
Cumberland County Sheriff's Department	39.200	39.200	
Dickenson County Sheriff's Department	159.075	154.860	
Dinwiddie County Sheriff's Department	39.440	39.440	
Essex County Sheriff's Department	154.740	154.740	
Fairfax Police Department	800 MHz Digital	800 MHz Digital	
Fauquier County Sheriff's Department	3850.000	3850.000	
Floyd County Sheriff's Department	39.620	69.620	
Fluvanna County Sheriff's Department	154.950	159.090	
Franklin County Sheriff's Department	158.910	155.650	
Frederick County Sheriff's Department	159.030	155.010	
Giles County Sheriff's County	39.720	39.720	
Gloucester Country Sheriff's Department	465.125	460.125	
Goochland Country Sheriff's Department	154.100	154.250	
Grayson County Sheriff's Department	155.940	153.815	
Greene County Sheriff's Department	154.890	154.800	
Greensville County Sheriff's Department	151.025	153.995	
Halifax County Sheriff's Department	158.940	153.965	
Hanover County Sheriff's Department	800 MHz Analog	800 MHz Analog	
Henrico Police Department	800 MHz Digital	800 MHz Digital	
Henry County Sheriff's Department	151.010	155.667	
Highland County Sheriff's Department	456.450	451.450	
Isle of Wight Sheriff's Department	154.700	159.210	
James City Police Department	458.100	453.100	
King George County Sheriff's Department	154.890	159.090	
King and Queen County Sheriff's Department	39.480	39.480	
King William County Sheriff's Department	39.480	39.480	
Lancaster County Sheriff's Department	155.520	159.210	
Lee County Sheriff's Department	39.080	39.480	
Loudon County Sheriff's Department	800 MHz Digital	800 MHz Digital	
Louisa Country Sheriff's Department	155.805	155.805	
Lunenburg County Sheriff's Department	39.200	39.200	
Madison Country Sheriff's Department	155.730	154.800	
Mathews County Sheriff's Department	154.770	159.210	

TABLE D-11
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Game and Inland Fisheries

Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Middlesex County Sheriff's Department	39.640	39.640	
Montgomery County Sheriff's Department	39.240	39.240	
Nelson County Sheriff's Department	154.725	159.150	
New Kent County Sheriff's Department	39.160	39.160	
Northampton County Sheriff's Department	465.375	460.375	
Northumberland County Sheriff's Department	154.085	156.210	
Pittsylvania County Sheriff's Department	158.850	155.415	
Powhatan Country Sheriff's Department	39.320	39.200	
Prince Edward County Sheriff's Department	39.400	39.400	
Prince George Police Department	154.800	154.800	
Prince William Police Department	800 MHz Digital	800 MHz Digital	
Pulaski County Sheriff's Department	39.280	37.160	
Rappahannock County Sheriff's Department	39.520	39.520	
Richmond Sheriff's Department	39.540	39.860	
Roanoke Sheriff's Department	800 MHz Motorola	800 MHz Motorola	
Rockbridge County Sheriff's Department	465.275	460.275	
Rockingham County Sheriff's Department	465.200	460.200	
Russell County Sheriff's Department	155.910	155.550	
Scott County Sheriff's Department	159.030	154.740	
Shenandoah County Sheriff's Department	458.275	458.275	
Smyth County Sheriff's Department	39.400	39.400	
Southampton Sheriff's Department	39.420	39.420	
Stafford County Sheriff's Department	492.837	489.837	
Surry County Sheriff's Department	39.720	39.720	
Sussex County Sheriff's Department	39.840	39.840	
Tazewell County Sheriff's Department	155.475	155.800	
Warren County Sheriff's Department	39.840	39.840	
Washington County Sheriff's Department	158.940	155.490	
Westmoreland County Sheriff's Department	460.287	465.287	
Wise County Sheriff's Department	154.890	155.565	
Wythe County Sheriff's Department	154.785	154.785	
York County Sheriff's Department	458.150	453.150	
City of Chesapeake Police Department	158.970	155.130	
City of Emporia Police Department	465.300	460.300	
City of Newport News Police Department	800 MHz	800 MHz	
City of Poquoson Police Department	458.200	452.320	
City of Richmond Police Department	800 MHz Digital	800 MHz Digital	
City of Suffolk Police Department	155.760	155.760	
City of Virginia Beach Police Department	800 MHz	800 MHz	
Town of West Point Police Department	30.020	39.020	
U.S. Forrest Service	172.325	171.535	
U.S. Park Service	166.300	164.575	

TABLE D-12
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Health			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Currently does not use any other agencies frequencies.			

TABLE D-13
NON COV AGENCY INTEFACE TABLE

COV AGENCY: Information Technology Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
No information was reported.			

TABLE D-14
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Juvenile Justice Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Does not use any other agencies frequencies.			

TABLE D-15
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Marine Resources Commission			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Virginia State Police			All divisional D Tac Channels
Isle of Wight Sheriff			
Smithfield Police			
United States Coast Guard			Channels 16,17, and 22
Marine Channels			
Department of Game and Inland Fisheries			Talk ground channel

TABLE D-16
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Military Affairs			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Currently does not use any other agencies frequencies.			

TABLE D-17
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Mines, Minerals, and Energy			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Currently does not use any other agencies frequencies.			

TABLE D-18
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Motor Vehicles			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
Only interface with the State Police and SIRS and the			
frequencies are currently unavailable.			

TABLE D-19
NON COV AGENCY INTERFACE TABLE

COV AGENCY: State Police

Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
SIRS (All local jurisdictions)	39.540	39.540	Used for interdepartmental communications.
Bath County	458.650	453.650	Used in place of SIRS
Highland County	456.450	451.450	Used in place of SIRS
Alleghany County	458.975	453.975	Used in place of SIRS
Alleghany County	458.300	453.000	Used in place of SIRS
Covington Police Department	465.112	460.112	Used in place of SIRS
Clifton Forge Police Department	465.250	460.250	Used in place of SIRS
Clifton Forge Police Department	458.725	453.725	Used in place of SIRS
Homestead (Security)	465.025	460.025	Used in place of SIRS

TABLE D-20
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Transportation			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
No information was reported.			

TABLE D-21
NON COV AGENCY INTERFACE TABLE

COV AGENCY: Federal			
Organization	Mobile/Portable Tx MHz	Mobile/Portable Rx MHz	Comments
No information was reported.			

APPENDIX E

TABLE E-1
STARS SUBSCRIBER UNIT COUNTS

COV AGENCY	Total Mobile Quantities	Mobile Radios by Tier			5-Year Growth Initial Total	10-Year Growth Initial Total	Total Portable Quantities	Initial Encrypted Mobiles
		Command	Staff	Initial Total				
Alcoholic Beverage Control	**165**	165	0	165	174	182	**0**	**0**
Dept. of Aviation +	**4**	1	3	4	5	5	**0**	**0**
Capitol Police	**22**	7	15	22	24	25	**100**	**7**
Dept. of Conservation & Recreation	**154**	6	148	154	162	170	**248**	**72**
Dept. of Corrections	**320**	80	240	320	340	380	**208**	**0**
Dept. of Emergency Management **	**33**	15	18	33	35	37	**65**	**33**
Dept. of Environmental Quality	**0**	0	0	0	0	0	**0**	**0**
Dept. of Fire Programs	**0**	0	0	0	0	0	**13**	**0**
Dept. of Forestry +	**604**	50	554	604	635	665	**364**	**0**
Dept. of Game & Inland Fisheries +, +++	**441**	73	368	441	464	486	**312**	**279**
Dept. of Health +++	**18**	6	12	18	19	20	**0**	**0**
Dept. of Information Technology	**1**	1	0	1	2	2	**20**	**0**
Dept. of Juvenile Justice	**45**	5	40	45	48	50	**106**	**3**
Marine Resources Commission +, +++	**108**	27	81	108	114	119	**79**	**33**
Dept. of Military Affairs *, +	**15**	3	12	15	16	17	**70**	**3**
Dept. of Mines, Minerals & Energy	**150**	38	112	150	158	165	**4**	**0**
Dept. of Motor Vehicles	**99**	10	89	99	125	150	**70**	**12**
State Police +, ++	**3096**	774	2322	3096	3251	3406	**404**	**929**
Dept. of Transportation	**5000**	1000	4000	5000	5250	5500	**830**	**0**
Federal Agencies	**237**	59	178	237	249	261	**0**	**72**
TOTALS	**10512**	**2320**	**8192**	**10512**	**11071**	**11640**	**2893**	**1443**

NOTES:

1. * - 5 Mobile staff radios are for Blackhawk Helicopters

2. Mobile radio counts include the following:

- **+ 40 Aircraft radios**
- **++ 35 Motorcycle radios**
- **+++ 146 Boat radios**

3. ** - Portable radio counts include 20 Intrinsically Safe radios

TABLE E-1
STARS SUBSCRIBER UNIT COUNTS

COV AGENCY	Portable Radios by Tier			5-Year Growth Initial Total	10-Year Growth Initial Total	Initial Encrypted Portables
	Command	Staff	Initial Total			
Alcoholic Beverage Control	0	0	0	0	0	**0**
Dept. of Aviation +	0	0	0	0	0	**0**
Capitol Police	23	77	100	105	110	**30**
Dept. of Conservation & Recreation	12	236	248	261	273	**0**
Dept. of Corrections	52	156	208	216	224	**0**
Dept. of Emergency Management **	20	45	65	69	72	**53**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	13	13	14	15	**0**
Dept. of Forestry +	10	354	364	383	401	**0**
Dept. of Game & Inland Fisheries +, +++	79	233	312	328	344	**94**
Dept. of Health +++	0	0	0	0	0	**0**
Dept. of Information Technology	2	18	20	21	22	**0**
Dept. of Juvenile Justice	26	80	106	112	117	**0**
Marine Resources Commission +, +++	20	59	79	83	87	**24**
Dept. of Military Affairs *, +	15	55	70	74	77	**21**
Dept. of Mines, Minerals & Energy	1	3	4	5	5	**0**
Dept. of Motor Vehicles	10	60	70	87	105	**12**
State Police +, ++	101	303	404	425	445	**122**
Dept. of Transportation	80	750	830	872	913	**0**
Federal Agencies	0	0	0	0	0	**0**
TOTALS	**451**	**2442**	**2893**	**3055**	**3210**	**356**

TABLE E-1
STARS SUBSCRIBER UNIT COUNTS

COV AGENCY	Control Stations by Tier			5-Year Growth Initial Total	10-Year Growth Initial Total	Initial Encrypted C. Stations
	Command	Staff	Initial Total			
Alcoholic Beverage Control	0	0	0	0	0	**0**
Dept. of Aviation +	0	0	0	0	0	**0**
Capitol Police	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	0	31	31	33	35	**31**
Dept. of Corrections	12	40	52	87	90	**0**
Dept. of Emergency Management **	14	40	54	57	60	**3**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry +	0	12	12	13	14	**0**
Dept. of Game & Inland Fisheries +, +++	6	0	6	7	7	**6**
Dept. of Health +++	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	2	7	9	10	10	**3**
Marine Resources Commission +, +++	0	1	1	2	2	**1**
Dept. of Military Affairs *, +	6	0	6	7	7	**2**
Dept. of Mines, Minerals & Energy	0	1	1	2	2	**0**
Dept. of Motor Vehicles	0	12	12	13	14	**0**
State Police +, ++	14	42	56	59	62	**17**
Dept. of Transportation	60	290	350	368	385	**0**
Federal Agencies	0	0	0	0	0	**0**
TOTALS	**114**	**476**	**590**	**658**	**688**	**63**

TABLE E-1
STARS SUBSCRIBER UNIT COUNTS

COV AGENCY	Consoles by Tier			Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total
	High	Medium	Basic			
Alcoholic Beverage Control	0	0	0	0	0	0
Dept. of Aviation +	0	0	0	0	0	0
Capitol Police	2	0	0	2	3	3
Dept. of Conservation & Recreation	0	0	0	0	0	0
Dept. of Corrections	0	0	0	0	0	0
Dept. of Emergency Management **	4	0	0	4	5	5
Dept. of Environmental Quality	0	0	0	0	0	0
Dept. of Fire Programs	0	0	0	0	0	0
Dept. of Forestry +	4	0	0	4	17	27
Dept. of Game & Inland Fisheries +, +++	0	1	0	1	2	2
Dept. of Health +++	1	0	0	1	2	2
Dept. of Information Technology	0	0	0	0	0	0
Dept. of Juvenile Justice	0	0	0	0	0	0
Marine Resources Commission +, +++	1	0	0	1	2	2
Dept. of Military Affairs *, +	0	1	0	1	2	2
Dept. of Mines, Minerals & Energy	0	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	0	0	0
State Police +, ++	56	0	0	56	59	62
Dept. of Transportation	2	0	0	2	6	6
Federal Agencies	0	0	0	0	0	0
TOTALS	**70**	**2**	**0**	**72**	**98**	**111**

TABLE E-1
STARS SUBSCRIBER UNIT COUNTS

COV AGENCY	Vehicular Repeaters Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total	MCTs by Tier			5 Year Growth Initial Total	10-Year Growth Initial Total
				Rugged	Standard	Initial Total		
Alcoholic Beverage Control	0	0	0	0	0	0	0	0
Dept. of Aviation +	0	0	0	0	0	0	0	0
Capitol Police	0	0	0	2	16	18	20	25
Dept. of Conservation & Recreation	72	76	80	80	0	80	84	88
Dept. of Corrections	0	0	0	0	0	0	0	0
Dept. of Emergency Management **	0	0	0	30	0	30	32	33
Dept. of Environmental Quality	0	0	0	0	15	15	16	17
Dept. of Fire Programs	0	0	0	0	0	0	0	0
Dept. of Forestry +	12	13	14	0	14	14	15	16
Dept. of Game & Inland Fisheries +, +++	200	210	220	200	0	200	210	220
Dept. of Health +++	0	0	0	0	10	10	11	11
Dept. of Information Technology	0	0	0	1	7	8	9	9
Dept. of Juvenile Justice	0	0	0	1	8	9	10	10
Marine Resources Commission +, +++	70	74	77	15	70	85	90	94
Dept. of Military Affairs *, +	0	0	0	4	0	4	5	5
Dept. of Mines, Minerals & Energy	0	0	0	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	60	0	60	75	90
State Police +, ++	1319	1385	1451	1353	150	1503	1579	1654
Dept. of Transportation	750	788	825	260	0	260	273	286
Federal Agencies	0	0	0	0	0	0	0	0
TOTALS	**2423**	**2546**	**2667**	**2006**	**290**	**2296**	**2429**	**2558**

TABLE E-1A
STARS SUBSCRIBER UNIT COUNTS - PHASE 1

COV AGENCY	Total Mobile Quantities	Mobile Radios by Tier			5-Year Growth Initial Total	10-Year Growth Initial Total	Initial Encrypted Mobiles
		Command	Staff	Initial Total			
Alcoholic Beverage Control*	**28**	28	0	28	30	31	**0**
Dept. of Aviation	**4**	1	3	4	5	5	**0**
Capitol Police*	**22**	7	15	22	24	25	**3**
Dept. of Conservation & Recreation	**29**	1	28	29	31	32	**18**
Dept. of Corrections	**74**	19	55	74	78	82	**0**
Dept. of Emergency Management	**11**	5	6	11	12	13	**0**
Dept. of Environmental Quality	**0**	0	0	0	0	0	**0**
Dept. of Fire Programs	**0**	0	0	0	0	0	**0**
Dept. of Forestry	**133**	11	122	133	140	147	**0**
Dept. of Game & Inland Fisheries*	**88**	15	73	88	93	97	**70**
Dept. of Health	**2**	1	1	2	3	3	**0**
Dept. of Information Technology	**1**	1	0	1	2	2	**0**
Dept. of Juvenile Justice	**43**	4	39	43	46	48	**1**
Marine Resources Commission*	**35**	9	26	35	37	39	**5**
Dept. of Military Affairs*	**17**	3	14	17	18	19	**1**
Dept. of Mines, Minerals & Energy	**2**	1	1	2	3	3	**0**
Dept. of Motor Vehicles	**28**	7	21	28	30	31	**0**
State Police*	**779**	192	587	779	818	857	**58**
Dept. of Transportation	**953**	191	762	953	1001	1049	**0**
Federal Agencies*	**55**	14	41	55	58	61	**5**
TOTALS	**2304**	**510**	**1794**	**2304**	**2429**	**2544**	**161**

NOTES:
1. Console quantities derived from COV Needs Assessment Report, Revision 1, dated March 14, 2001

2. * - Agencies requiring encrypted radios for their operations

TABLE E-1A
STARS SUBSCRIBER UNIT COUNTS - PHASE 1

COV AGENCY	Portable Radios by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	Portables
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	23	77	100	105	110	**30**
Dept. of Conservation & Recreation	2	26	28	30	31	**0**
Dept. of Corrections	11	31	42	45	47	**0**
Dept. of Emergency Management	14	30	44	47	49	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	13	13	14	15	**0**
Dept. of Forestry	2	63	65	69	72	**0**
Dept. of Game & Inland Fisheries*	0	0	0	0	0	**0**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	2	18	20	21	22	**0**
Dept. of Juvenile Justice	20	60	80	84	88	**0**
Marine Resources Commission*	0	0	0	0	0	**0**
Dept. of Military Affairs*	11	29	40	42	44	**12**
Dept. of Mines, Minerals & Energy	0	0	0	0	0	**0**
Dept. of Motor Vehicles	4	11	15	16	17	**0**
State Police*	14	41	55	58	61	**17**
Dept. of Transportation	15	0	15	16	17	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**118**	**399**	**517**	**547**	**573**	**59**

NOTES:
1. Console quantities derived from CO

2. * - Agencies requiring encrypted rac

TABLE E-1A
STARS SUBSCRIBER UNIT COUNTS - PHASE 1

COV AGENCY	Control Stations by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	C. Stations
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	0	5	5	6	6	**0**
Dept. of Corrections	2	7	9	10	10	**0**
Dept. of Emergency Management	1	1	2	3	3	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	0	3	3	4	4	**0**
Dept. of Game & Inland Fisheries*	1	0	1	2	2	**1**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	2	4	6	7	7	**0**
Marine Resources Commission*	0	0	0	0	0	**0**
Dept. of Military Affairs*	3	0	3	4	4	**1**
Dept. of Mines, Minerals & Energy	0	0	0	0	0	**0**
Dept. of Motor Vehicles	1	2	3	4	4	**0**
State Police*	2	6	8	9	9	**3**
Dept. of Transportation	11	54	65	69	72	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**23**	**82**	**105**	**118**	**121**	**5**

NOTES:
1. Console quantities derived from CO

2. * - Agencies requiring encrypted rad

TABLE E-1A
STARS SUBSCRIBER UNIT COUNTS - PHASE 1

COV AGENCY	Consoles by Tier			Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total
	High	Medium	Basic			
Alcoholic Beverage Control*	0	0	0	0	0	0
Dept. of Aviation	0	0	0	0	0	0
Capitol Police*	2	0	0	2	3	3
Dept. of Conservation & Recreation	0	0	0	0	0	0
Dept. of Corrections	0	0	0	0	0	0
Dept. of Emergency Management	4	0	0	4	5	5
Dept. of Environmental Quality	0	0	0	0	0	0
Dept. of Fire Programs	0	0	0	0	0	0
Dept. of Forestry	0	0	0	0	0	0
Dept. of Game & Inland Fisheries*	0	1	0	1	2	2
Dept. of Health	0	0	0	0	0	0
Dept. of Information Technology	0	0	0	0	0	0
Dept. of Juvenile Justice	0	0	0	0	0	0
Marine Resources Commission*	0	0	0	0	0	0
Dept. of Military Affairs*	0	1	0	1	2	2
Dept. of Mines, Minerals & Energy	0	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	0	0	0
State Police*	8	0	0	8	9	9
Dept. of Transportation	0	0	0	0	0	0
Federal Agencies*	0	0	0	0	0	0
TOTALS	**14**	**2**	**0**	**16**	**21**	**21**

NOTES:
1. Console quantities derived from CO

2. * - Agencies requiring encrypted rac

TABLE E-1A
STARS SUBSCRIBER UNIT COUNTS - PHASE 1

COV AGENCY	Vehicular Repeaters Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total	Total MCT Quantities	MCTs by Tier		Initial Total	5 Year Growth Initial Total	10-Year Growth Initial Total
					Rugged	Standard			
Alcoholic Beverage Control*	0	0	0	**0**	0	0	0	0	0
Dept. of Aviation	0	0	0	**0**	0	0	0	0	0
Capitol Police*	0	0	0	**18**	2	16	18	19	20
Dept. of Conservation & Recreation	18	19	20	**10**	10	0	10	11	11
Dept. of Corrections	0	0	0	**0**	0	0	0	0	0
Dept. of Emergency Management	0	0	0	**0**	0	0	0	0	0
Dept. of Environmental Quality	0	0	0	**0**	0	0	0	0	0
Dept. of Fire Programs	0	0	0	**0**	0	0	0	0	0
Dept. of Forestry	3	4	4	**2**	0	2	2	3	3
Dept. of Game & Inland Fisheries*	49	52	54	**40**	40	0	40	42	44
Dept. of Health	0	0	0	**2**	0	2	2	3	3
Dept. of Information Technology	0	0	0	**8**	1	7	8	9	9
Dept. of Juvenile Justice	0	0	0	**7**	1	6	7	8	8
Marine Resources Commission*	15	16	17	**22**	4	18	22	24	25
Dept. of Military Affairs*	0	0	0	**4**	4	0	4	5	5
Dept. of Mines, Minerals & Energy	0	0	0	**0**	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	**14**	1	13	14	15	16
State Police*	344	362	379	**275**	248	27	275	289	303
Dept. of Transportation	138	145	152	**37**	37	0	37	39	41
Federal Agencies*	0	0	0	**0**	0	0	0	0	0
TOTALS	**567**	**598**	**626**	**439**	**348**	**91**	**439**	**467**	**488**

NOTES:
1. Console quantities derived from CO

2. * - Agencies requiring encrypted rad

TABLE E-1B
STARS SUBSCRIBER UNIT COUNTS - PHASE II

COV AGENCY	Mobile Radios by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	Mobiles
Alcoholic Beverage Control*	57	0	57	60	63	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	2	56	58	61	64	**18**
Dept. of Corrections	39	115	154	162	170	**0**
Dept. of Emergency Management	3	3	6	7	7	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	21	227	248	261	273	**0**
Dept. of Game & Inland Fisheries*	30	150	180	189	198	**70**
Dept. of Health	3	6	9	10	10	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	0	0	0	0	0	**1**
Marine Resources Commission*	36	96	132	139	146	**25**
Dept. of Military Affairs*	0	0	0	0	0	**1**
Dept. of Mines, Minerals & Energy	4	11	15	16	17	**0**
Dept. of Motor Vehicles	5	15	20	21	22	**0**
State Police*	213	639	852	895	938	**256**
Dept. of Transportation	277	1110	1387	1457	1526	**0**
Federal Agencies*	7	20	27	29	30	**9**
TOTALS	**697**	**2448**	**3145**	**3307**	**3464**	**380**

NOTES:
1. Console quantities derived from COV Needs Assessment Report, Revision 1, dated March 14, 2(

2. * - Agencies requiring encrypted radios for their operations

TABLE E-1B
STARS SUBSCRIBER UNIT COUNTS - PHASE II

COV AGENCY	Portable Radios by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	Portables
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	3	50	53	56	59	**0**
Dept. of Corrections	21	61	82	87	91	**0**
Dept. of Emergency Management	2	5	7	8	8	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	4	136	140	147	154	**0**
Dept. of Game & Inland Fisheries*	19	51	70	74	77	**21**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	0	0	0	0	0	**0**
Marine Resources Commission*	8	0	8	9	9	**3**
Dept. of Military Affairs*	3	7	10	11	11	**3**
Dept. of Mines, Minerals & Energy	0	0	0	0	0	**0**
Dept. of Motor Vehicles	5	14	19	20	21	**0**
State Police*	0	0	0	0	0	**0**
Dept. of Transportation	26	0	26	28	29	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**91**	**324**	**415**	**440**	**459**	**27**

NOTES:
1. Console quantities derived from C001

2. * - Agencies requiring encrypted r

TABLE E-1B
STARS SUBSCRIBER UNIT COUNTS - PHASE II

COV AGENCY	Control Stations by Tier			5-Year Growth Initial Total	10-Year Growth Initial Total	Initial Encrypted C. Stations
	Command	Staff	Initial Total			
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	0	10	10	11	11	**0**
Dept. of Corrections	5	17	22	24	25	**0**
Dept. of Emergency Management	1	4	5	6	6	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	0	5	5	6	6	**0**
Dept. of Game & Inland Fisheries*	2	0	2	3	3	**1**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	0	0	0	0	0	**0**
Marine Resources Commission*	0	1	1	2	2	**1**
Dept. of Military Affairs*	1	0	1	2	2	**1**
Dept. of Mines, Minerals & Energy	0	1	1	2	2	**0**
Dept. of Motor Vehicles	1	2	3	4	4	**0**
State Police*	4	12	16	17	18	**5**
Dept. of Transportation	20	95	115	121	127	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**34**	**147**	**181**	**198**	**206**	**8**

NOTES:
1. Console quantities derived from C

2. * - Agencies requiring encrypted r

TABLE E-1B
STARS SUBSCRIBER UNIT COUNTS - PHASE II

COV AGENCY	Consoles by Tier				5-Year Growth	10-Year Growth
	High	Medium	Basic	Initial Total	Initial Total	Initial Total
Alcoholic Beverage Control*	0	0	0	0	0	0
Dept. of Aviation	0	0	0	0	0	0
Capitol Police*	0	0	0	0	0	0
Dept. of Conservation & Recreation	0	0	0	0	0	0
Dept. of Corrections	0	0	0	0	0	0
Dept. of Emergency Management	0	0	0	0	0	0
Dept. of Environmental Quality	0	0	0	0	0	0
Dept. of Fire Programs	0	0	0	0	0	0
Dept. of Forestry	4	0	0	4	5	5
Dept. of Game & Inland Fisheries*	0	0	0	0	0	0
Dept. of Health	0	0	0	0	0	0
Dept. of Information Technology	0	0	0	0	0	0
Dept. of Juvenile Justice	0	0	0	0	0	0
Marine Resources Commission*	1	0	0	1	2	2
Dept. of Military Affairs*	1	0	0	1	2	2
Dept. of Mines, Minerals & Energy	0	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	0	0	0
State Police*	16	0	0	16	17	18
Dept. of Transportation	1	0	0	1	2	2
Federal Agencies*	0	0	0	0	0	0
TOTALS	**23**	**0**	**0**	**23**	**28**	**29**

NOTES:
1. Console quantities derived from C(

2. * - Agencies requiring encrypted r:

TABLE E-1B
STARS SUBSCRIBER UNIT COUNTS - PHASE II

COV AGENCY	Vehicular Repeaters Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total	MCTs by Tier		Initial Total	5 Year Growth Initial Total	10-Year Growth Initial Total
				Rugged	Standard			
Alcoholic Beverage Control*	0	0	0	0	0	0	0	0
Dept. of Aviation	0	0	0	0	0	0	0	0
Capitol Police*	0	0	0	0	0	0	0	0
Dept. of Conservation & Recreation	18	19	20	28	0	28	30	31
Dept. of Corrections	0	0	0	0	0	0	0	0
Dept. of Emergency Management	0	0	0	25	0	25	27	28
Dept. of Environmental Quality	0	0	0	0	0	0	0	0
Dept. of Fire Programs	0	0	0	0	0	0	0	0
Dept. of Forestry	3	4	4	0	8	8	9	9
Dept. of Game & Inland Fisheries*	51	54	57	83	0	83	88	92
Dept. of Health	0	0	0	0	3	3	4	4
Dept. of Information Technology	0	0	0	0	0	0	0	0
Dept. of Juvenile Justice	0	0	0	0	0	0	0	0
Marine Resources Commission*	55	58	61	11	49	60	63	66
Dept. of Military Affairs*	0	0	0	0	0	0	0	0
Dept. of Mines, Minerals & Energy	0	0	0	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	2	16	18	19	20
State Police*	360	378	396	355	39	394	414	434
Dept. of Transportation	244	257	269	96	0	96	101	106
Federal Agencies*	0	0	0	0	0	0	0	0
TOTALS	**731**	**770**	**807**	**600**	**115**	**715**	**755**	**790**

NOTES:
1. **Console quantities derived from C**

2. *** - Agencies requiring encrypted r**

TABLE E-1C
STARS SUBSCRIBER UNIT COUNTS - PHASE III

COV AGENCY	Mobile Radios by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	Mobiles
Alcoholic Beverage Control*	45	0	45	48	50	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	1	21	22	24	25	**18**
Dept. of Corrections	6	16	22	24	25	**0**
Dept. of Emergency Management	3	4	7	8	8	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	6	64	70	74	77	**0**
Dept. of Game & Inland Fisheries*	10	50	60	63	66	**70**
Dept. of Health	1	2	3	4	4	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	0	1	1	2	2	**1**
Marine Resources Commission*	0	1	1	2	2	**2**
Dept. of Military Affairs*	0	0	0	0	0	**1**
Dept. of Mines, Minerals & Energy	0	1	1	2	2	**0**
Dept. of Motor Vehicles	6	19	25	27	28	**0**
State Police*	189	567	756	794	832	**227**
Dept. of Transportation	246	984	1230	1292	1353	**0**
Federal Agencies*	28	84	112	118	124	**34**
TOTALS	**541**	**1814**	**2355**	**2482**	**2598**	**353**

NOTES:
1. Console quantities derived from COV Needs Assessment Report, Revision 1, dated March 14, 2(

2. * - Agencies requiring encrypted radios for their operations

TABLE E-1C
STARS SUBSCRIBER UNIT COUNTS - PHASE III

COV AGENCY	Portable Radios by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	Portables
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	2	22	24	26	27	**0**
Dept. of Corrections	7	19	26	28	29	**0**
Dept. of Emergency Management	2	4	6	7	7	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	1	37	38	40	42	**0**
Dept. of Game & Inland Fisheries*	0	0	0	0	0	**0**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	5	15	20	21	22	**0**
Marine Resources Commission*	0	1	1	2	2	**1**
Dept. of Military Affairs*	0	0	0	0	0	**0**
Dept. of Mines, Minerals & Energy	0	0	0	0	0	**0**
Dept. of Motor Vehicles	3	9	12	13	14	**0**
State Police*	0	0	0	0	0	**0**
Dept. of Transportation	15	0	15	16	17	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**35**	**107**	**142**	**153**	**160**	**1**

NOTES:
1. Console quantities derived from C001

2. * - Agencies requiring encrypted r

TABLE E-1C
STARS SUBSCRIBER UNIT COUNTS - PHASE III

COV AGENCY	Control Stations by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	C. Stations
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	0	5	5	6	6	**0**
Dept. of Corrections	1	5	6	7	7	**0**
Dept. of Emergency Management	2	5	7	8	8	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	0	1	1	2	2	**0**
Dept. of Game & Inland Fisheries*	1	0	1	2	2	**1**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	0	1	1	2	2	**0**
Marine Resources Commission*	0	0	0	0	0	**0**
Dept. of Military Affairs*	0	0	0	0	0	**0**
Dept. of Mines, Minerals & Energy	0	0	0	0	0	**0**
Dept. of Motor Vehicles	1	3	4	5	5	**0**
State Police*	4	12	16	17	18	**5**
Dept. of Transportation	12	56	68	72	75	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**21**	**88**	**109**	**121**	**125**	**6**

NOTES:
1. Console quantities derived from C

2. * - Agencies requiring encrypted r

TABLE E-1C
STARS SUBSCRIBER UNIT COUNTS - PHASE III

COV AGENCY	Consoles by Tier			Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total
	High	Medium	Basic			
Alcoholic Beverage Control*				0	0	0
Dept. of Aviation				0	0	0
Capitol Police*				0	0	0
Dept. of Conservation & Recreation				0	0	0
Dept. of Corrections				0	0	0
Dept. of Emergency Management				0	0	0
Dept. of Environmental Quality				0	0	0
Dept. of Fire Programs				0	0	0
Dept. of Forestry				0	0	0
Dept. of Game & Inland Fisheries*				0	0	0
Dept. of Health				0	0	0
Dept. of Information Technology				0	0	0
Dept. of Juvenile Justice				0	0	0
Marine Resources Commission*				0	0	0
Dept. of Military Affairs*				0	0	0
Dept. of Mines, Minerals & Energy				0	0	0
Dept. of Motor Vehicles				0	0	0
State Police*	16			16	17	18
Dept. of Transportation	1			1	2	2
Federal Agencies*				0	0	0
TOTALS	17	0	0	17	19	20

NOTES:
1. Console quantities derived from C(

2. * - Agencies requiring encrypted r:

TABLE E-1C
STARS SUBSCRIBER UNIT COUNTS - PHASE III

COV AGENCY	Total V. Rep. Quantities	Vehicular Repeaters Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total	MCTs by Tier Rugged	MCTs by Tier Standard	Initial Total	5 Year Growth Initial Total	10-Year Growth Initial Total
Alcoholic Beverage Control*	**0**	0	0	0	0	0	0	0	0
Dept. of Aviation	**0**	0	0	0	0	0	0	0	0
Capitol Police*	**0**	0	0	0	0	0	0	0	0
Dept. of Conservation & Recreation	**18**	18	19	20	14	0	14	15	16
Dept. of Corrections	**0**	0	0	0	0	0	0	0	0
Dept. of Emergency Management	**0**	0	0	0	2	0	2	3	3
Dept. of Environmental Quality	**0**	0	0	0	0	15	15	16	17
Dept. of Fire Programs	**0**	0	0	0	0	0	0	0	0
Dept. of Forestry	**3**	3	4	4	0	0	0	0	0
Dept. of Game & Inland Fisheries*	**50**	50	53	55	26	0	26	28	29
Dept. of Health	**0**	0	0	0	0	3	3	4	4
Dept. of Information Technology	**0**	0	0	0	0	0	0	0	0
Dept. of Juvenile Justice	**0**	0	0	0	0	1	1	2	2
Marine Resources Commission*	**0**	0	0	0	1	2	3	4	4
Dept. of Military Affairs*	**0**	0	0	0	0	0	0	0	0
Dept. of Mines, Minerals & Energy	**0**	0	0	0	0	0	0	0	0
Dept. of Motor Vehicles	**0**	0	0	0	1	7	8	9	9
State Police*	**311**	311	327	343	432	48	480	504	528
Dept. of Transportation	**137**	137	144	151	61	0	61	65	68
Federal Agencies*	**0**	0	0	0	0	0	0	0	0
TOTALS	**519**	**519**	**547**	**573**	**537**	**76**	**613**	**650**	**680**

NOTES:
1. Console quantities derived from C

2. * - Agencies requiring encrypted r

TABLE E-1D
STARS SUBSCRIBER UNIT COUNTS - PHASE IV

COV AGENCY	Mobile Radios by Tier			5-Year Growth	10-Year Growth	Initial Encrypted
	Command	Staff	Initial Total	Initial Total	Initial Total	Mobiles
Alcoholic Beverage Control*	35	0	35	37	39	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	2	43	45	48	50	**18**
Dept. of Corrections	18	52	70	74	77	**0**
Dept. of Emergency Management	4	5	9	10	10	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	13	146	159	167	175	**0**
Dept. of Game & Inland Fisheries*	19	94	113	119	125	**69**
Dept. of Health	1	3	4	5	5	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	0	1	1	2	2	**0**
Marine Resources Commission*	0	0	0	0	0	**0**
Dept. of Military Affairs*	0	0	0	0	0	**0**
Dept. of Mines, Minerals & Energy	33	99	132	139	146	**0**
Dept. of Motor Vehicles	7	19	26	28	29	**0**
State Police*	180	540	720	756	792	**216**
Dept. of Transportation	286	1144	1430	1502	1573	**0**
Federal Agencies*	11	32	43	46	48	**13**
TOTALS	**609**	**2178**	**2787**	**2933**	**3071**	**316**

NOTES:
1. Console quantities derived from COV Needs Assessment Report, Revision 1, dated March 14, 2(

2. * - Agencies requiring encrypted radios for their operations

TABLE E-1D
STARS SUBSCRIBER UNIT COUNTS - PHASE IV

COV AGENCY	Portable Radios by Tier			5-Year Growth Initial Total	10-Year Growth Initial Total	Initial Encrypted Portables
	Command	Staff	Initial Total			
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	4	67	71	75	79	**0**
Dept. of Corrections	15	43	58	61	64	**0**
Dept. of Emergency Management	2	6	8	9	9	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	3	106	109	115	120	**0**
Dept. of Game & Inland Fisheries*	10	32	42	45	47	**13**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	1	5	6	7	7	**0**
Marine Resources Commission*	0	0	0	0	0	**0**
Dept. of Military Affairs*	5	15	20	21	22	**6**
Dept. of Mines, Minerals & Energy	1	3	4	5	5	**0**
Dept. of Motor Vehicles	6	18	24	26	27	**0**
State Police*	1	3	4	5	5	**2**
Dept. of Transportation	24	0	24	26	27	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**72**	**298**	**370**	**395**	**412**	**21**

NOTES:
1. Console quantities derived from C001

2. * - Agencies requiring encrypted r:

TABLE E-1D
STARS SUBSCRIBER UNIT COUNTS - PHASE IV

COV AGENCY	Control Stations by Tier			5-Year Growth Initial Total	10-Year Growth Initial Total	Initial Encrypted C. Stations
	Command	Staff	Initial Total			
Alcoholic Beverage Control*	0	0	0	0	0	**0**
Dept. of Aviation	0	0	0	0	0	**0**
Capitol Police*	0	0	0	0	0	**0**
Dept. of Conservation & Recreation	0	11	11	12	13	**0**
Dept. of Corrections	3	12	15	16	17	**0**
Dept. of Emergency Management	10	30	40	42	44	**0**
Dept. of Environmental Quality	0	0	0	0	0	**0**
Dept. of Fire Programs	0	0	0	0	0	**0**
Dept. of Forestry	0	3	3	4	4	**0**
Dept. of Game & Inland Fisheries*	2	0	2	3	3	**1**
Dept. of Health	0	0	0	0	0	**0**
Dept. of Information Technology	0	0	0	0	0	**0**
Dept. of Juvenile Justice	1	1	2	3	3	**0**
Marine Resources Commission*	0	0	0	0	0	**0**
Dept. of Military Affairs*	2	0	2	3	3	**1**
Dept. of Mines, Minerals & Energy	0	0	0	0	0	**0**
Dept. of Motor Vehicles	1	1	2	3	3	**0**
State Police*	4	12	16	17	18	**5**
Dept. of Transportation	17	85	102	108	113	**0**
Federal Agencies*	0	0	0	0	0	**0**
TOTALS	**40**	**155**	**195**	**211**	**221**	**7**

NOTES:
1. Console quantities derived from C

2. * - Agencies requiring encrypted r

TABLE E-1D
STARS SUBSCRIBER UNIT COUNTS - PHASE IV

COV AGENCY	Consoles by Tier			Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total
	High	Medium	Basic			
Alcoholic Beverage Control*	0	0	0	0	0	0
Dept. of Aviation	0	0	0	0	0	0
Capitol Police*	0	0	0	0	0	0
Dept. of Conservation & Recreation	0	0	0	0	0	0
Dept. of Corrections	0	0	0	0	0	0
Dept. of Emergency Management	0	0	0	0	0	0
Dept. of Environmental Quality	0	0	0	0	0	0
Dept. of Fire Programs	0	0	0	0	0	0
Dept. of Forestry	0	0	0	0	0	0
Dept. of Game & Inland Fisheries*	0	0	0	0	0	0
Dept. of Health	0	0	0	0	0	0
Dept. of Information Technology	0	0	0	0	0	0
Dept. of Juvenile Justice	0	0	0	0	0	0
Marine Resources Commission*	0	0	0	0	0	0
Dept. of Military Affairs*	0	0	0	1	2	2
Dept. of Mines, Minerals & Energy	0	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	0	0	0
State Police*	16	0	0	16	17	18
Dept. of Transportation	0	0	0	0	0	0
Federal Agencies*	0	0	0	0	0	0
TOTALS	**16**	**0**	**0**	**17**	**19**	**20**

NOTES:
1. Console quantities derived from C(

2. * - Agencies requiring encrypted r:

TABLE E-1D
STARS SUBSCRIBER UNIT COUNTS - PHASE IV

COV AGENCY	Vehicular Repeaters Initial Total	5-Year Growth Initial Total	10-Year Growth Initial Total	MCTs by Tier		Initial Total	5 Year Growth Initial Total	10-Year Growth Initial Total
				Rugged	Standard			
Alcoholic Beverage Control*	0	0	0	0	0	0	0	0
Dept. of Aviation	0	0	0	0	0	0	0	0
Capitol Police*	0	0	0	0	0	0	0	0
Dept. of Conservation & Recreation	18	19	20	28	0	28	30	31
Dept. of Corrections	0	0	0	0	0	0	0	0
Dept. of Emergency Management	0	0	0	3	0	3	4	4
Dept. of Environmental Quality	0	0	0	0	0	0	0	0
Dept. of Fire Programs	0	0	0	0	0	0	0	0
Dept. of Forestry	3	4	4	0	4	4	5	5
Dept. of Game & Inland Fisheries*	50	53	55	51	0	51	54	57
Dept. of Health	0	0	0	0	2	2	3	3
Dept. of Information Technology	0	0	0	0	0	0	0	0
Dept. of Juvenile Justice	0	0	0	0	1	1	2	2
Marine Resources Commission*	0	0	0	0	0	0	0	0
Dept. of Military Affairs*	0	0	0	0	0	0	0	0
Dept. of Mines, Minerals & Energy	0	0	0	0	0	0	0	0
Dept. of Motor Vehicles	0	0	0	2	18	20	21	22
State Police*	304	320	335	319	35	354	372	390
Dept. of Transportation	231	243	255	66	0	66	70	73
Federal Agencies*	0	0	0	0	0	0	0	0
TOTALS	**606**	**639**	**669**	**469**	**60**	**529**	**561**	**587**

NOTES:

1. Console quantities derived from C

2. * - Agencies requiring encrypted r

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	ABC				DOAV				CAP POL				DCR				DOC						VDEM			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-01																												
Amelia County	357	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chesterfield County	434	7	0	0	0	0	0	0	0	0	0	0	0	6	13	2	1	20	16	7	25	6	0	1	10	44	0	0
Colonial Heights City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dinwiddie County	507	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	18	7	30	7	0	1	0	0	0	0
Goochland County	281	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	6	5	54	4	0	1	0	0	0	0
Hopewell City	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Louisa County	497	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nottoway County	316	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	54	17	278	5	0	2	0	0	0	0
Petersburg City	23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Powhatan County	261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112	90	25	462	6	0	2	0	0	0	0
Prince George County	266	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richmond City	60	7	0	0	0	4	0	0	0	22	100	18	0	4	14	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	**3020**	**16**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**22**	**100**	**18**	**0**	**10**	**27**	**4**	**1**	**230**	**184**	**61**	**849**	**28**	**0**	**7**	**10**	**44**	**0**	**2**
CZ-02																												
Caroline County	535	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	15	7	24	6	0	1	0	0	0	0
Charles City County	181	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Essex County	263	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hanover County	467	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Henrico County	238	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
King and Queen County	317	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
King George County	180	0	0	0	0	0	0	0	0	0	0	0	0	4	8	1	1	0	0	0	0	0	0	0	0	0	0	0
King William County	278	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lancaster County	133	1	0	0	0	0	0	0	0	0	0	0	0	3	5	1	1	0	0	0	0	0	0	0	0	0	0	0
New Kent County	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northumberland County	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richmond County	193	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	14	6	158	8	0	1	0	0	0	0
Westmoreland County	227	0	0	0	0	0	0	0	0	0	0	0	0	12	6	4	2	0	0	0	0	0	0	0	0	0	0	0
Total	**3410**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**19**	**6**	**4**	**36**	**29**	**13**	**182**	**14**	**0**	**2**	**1**	**0**	**0**	**0**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	ABC				DOAV				CAP POL				DCR				DOC							VDEM			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-04																												
Clarke County	178	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	20	8	20	5	0	1	0	0	0	0
Frederick County	415	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harrisonburg City	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	8	5	34	8	0	1	1	0	0	0
Page County	313	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Rockingham County	865	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Shenandoah County	512	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Warren County	217	0	0	0	0	0	0	0	0	0	0	0	0	1	7	1	1	0	0	0	0	0	0	0	0	0	0	2
Winchester City	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Total	**2515**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**7**	**1**	**1**	**35**	**28**	**13**	**54**	**13**	**0**	**2**	**2**	**0**	**0**	**5**
CZ-03																												
Culpeper County	382	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176	4	0	2	1	4	2	0
Fauquier County	651	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	1	0	0	0	0	0	0	0	0	0	0	0
Fredericksburg City	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Madison County	322	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Orange County	342	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rappahannock County	267	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotsylvania County	404	2	0	0	0	0	0	0	0	0	0	0	0	8	16	4	1	0	0	0	0	0	0	0	0	0	0	0
Stafford County	271	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	5	4	18	3	0	1	0	0	0	0
Total	**2645**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**22**	**5**	**2**	**6**	**5**	**4**	**194**	**7**	**0**	**3**	**2**	**4**	**2**	**1**
CZ-05																												
Amherst County	479	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Appomattox County	336	1	0	0	0	0	0	0	0	0	0	0	0	4	8	2	1	0	0	0	0	0	0	0	0	0	0	0
Campbell County	505	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	8	5	34	4	0	1	0	0	0	0
Charlotte County	477	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Halifax County	816	2	0	0	0	0	0	0	0	0	0	0	0	6	14	2	1	13	10	6	30	8	0	1	0	0	0	0
Lynchburg City	50	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lunenburg County	432	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	24	9	196	4	0	2	0	0	0	0
Mecklenburg County	616	1	0	0	0	0	0	0	0	0	0	0	0	6	10	2	1	40	32	11	182	6	0	2	0	0	0	0
Prince Edward County	354	0	0	0	0	0	0	0	0	0	0	0	0	7	4	7	1	0	0	0	0	0	0	0	0	0	0	0
South Boston City	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**4071**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**38**	**13**	**4**	**93**	**74**	**31**	**442**	**22**	**0**	**6**	**0**	**0**	**0**	**0**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	ABC				DOAV				CAP POL				DCR				DOC							VDEM			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-06																												
Albemarle County	725	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Augusta County	989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49	39	13	177	4	0	1	0	0	0	1
Buckingham County	583	1	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	82	66	19	264	6	0	2	0	0	0	0
Charlotttesville City	10	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumberland County	300	0	0	0	0	0	0	0	0	0	0	0	0	4	5	2	1	0	0	0	0	0	0	0	0	0	0	0
Fluvanna County	290	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	22	9	121	5	0	2	0	0	0	0
Greene County	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nelson County	474	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Staunton City	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	16	6	103	6	0	2	0	0	0	0
Waynesboro City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	**3545**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**7**	**2**	**1**	**179**	**143**	**47**	**665**	**21**	**0**	**7**	**0**	**0**	**0**	**4**
CZ-08																												
Bristol City	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Buchanan County	504	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	20	8	178	5	0	2	0	0	0	3
Dickenson County	331	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	21	8	188	7	0	2	0	0	0	3
Lee County	437	1	0	0	0	0	0	0	0	0	0	0	0	2	5	1	1	0	0	0	0	0	0	0	0	0	0	1
Norton City	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Russell County	479	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	10	5	25	4	0	1	0	0	0	1
Scott County	535	0	0	0	0	0	0	0	0	0	0	0	0	6	12	3	1	0	0	0	0	0	0	0	0	0	0	1
Tazewell County	520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	10	2	26	4	0	1	0	0	0	1
Washington County	562	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Wise County	405	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	19	5	247	5	0	2	2	2	0	2
Total	**3792**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**17**	**4**	**2**	**99**	**80**	**28**	**664**	**25**	**0**	**8**	**3**	**2**	**0**	**13**
CZ-07																												
Bland County	359	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	37	12	134	4	0	1	0	0	0	0
Carroll County	478	0	0	0	0	0	0	0	0	0	0	0	0	2	3	2	1	0	0	0	0	0	0	0	0	0	0	2
Galax City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Giles County	362	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Grayson County	446	2	0	0	0	0	0	0	0	0	0	0	0	5	4	3	1	0	0	0	0	0	0	0	0	0	0	2
Pulaski County	318	0	0	0	0	0	0	0	0	0	0	0	0	7	15	4	2	10	8	5	37	9	0	1	1	2	3	1
Smyth County	452	0	0	0	0	0	0	0	0	0	0	0	0	8	15	4	1	21	17	7	144	6	0	2	0	0	0	1
Wythe County	465	0	0	0	0	0	0	0	0	0	0	0	0	2	4	1	1	0	0	0	0	0	0	0	0	0	0	1
Total	**2888**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**43**	**14**	**6**	**77**	**62**	**24**	**315**	**19**	**0**	**4**	**2**	**2**	**3**	**8**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	ABC				DOAV				CAP POL				DCR				DOC						VDEM			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-10																												
Brunswick County	563	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	53	16	198	5	0	1	0	0	0	0
Chesapeake City	340	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	81	23	285	11	0	2	0	0	0	0
Emporia City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Franklin City	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greensville County	300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	42	13	354	9	0	2	0	0	0	0
Isle Of Wight County	319	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Norfolk City	53	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Portsmouth City	30	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Southampton County	603	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	43	14	451	8	0	2	0	0	0	0
Suffolk City	409	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Surry County	281	0	0	0	0	0	0	0	0	0	0	0	0	7	7	1	1	0	0	0	0	0	0	0	0	0	0	0
Sussex County	491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	41	10	324	6	0	2	0	0	0	1
Virginia Beach City	256	10	0	0	0	0	0	0	0	0	0	0	0	9	8	10	2	0	0	0	0	0	0	0	1	2	0	0
Total	**3651**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**15**	**11**	**3**	**324**	**260**	**76**	**1612**	**39**	**0**	**9**	**2**	**2**	**0**	**1**
CZ-09																												
Accomack County	476	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Gloucester County	225	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	25	0
Hampton City	51	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
James City County	153	1	0	0	0	0	0	0	0	0	0	0	0	6	4	1	1	0	0	0	0	0	0	0	0	0	0	0
Mathews County	87	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middlesex County	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Newport News City	65	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Northampton County	226	0	0	0	0	0	0	0	0	0	0	0	0	6	7	1	1	0	0	0	0	0	0	0	0	0	0	0
Poquoson City	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
Williamsburg City	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
York County	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1552**	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**11**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**5**	**25**	**0**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	ABC				DOAV				CAP POL				DCR				DOC						VDEM			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-11																												
Bedford City	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bedford County	747	2	0	0	0	0	0	0	0	0	0	0	0	5	12	4	1	0	0	0	0	0	0	0	0	0	0	0
Craig County	330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Danville City	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0
Floyd County	381	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Franklin County	683	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Henry County	382	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	6	4	23	6	0	1	0	0	0	1
Martinsville City	11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montgomery County	390	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Patrick County	481	0	0	0	0	0	0	0	0	0	0	0	0	2	8	2	1	0	0	0	0	0	0	0	0	0	0	1
Pittsylvania County	995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	10	6	48	4	0	1	0	0	0	0
Radford City	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roanoke City	43	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Roanoke County	251	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
Salem City	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	**4739**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**20**	**6**	**2**	**20**	**16**	**10**	**71**	**10**	**0**	**2**	**4**	**4**	**0**	**10**
CZ-12																												
Alleghany County	446	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bath County	538	1	0	0	0	0	0	0	0	0	0	0	0	6	9	4	1	0	0	0	0	0	0	0	0	0	0	2
Botetourt County	545	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	20	8	35	4	0	1	0	0	0	1
Buena Vista	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Clifton Forge City	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Covington City	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Highland County	416	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Lexington City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockbridge County	603	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	**2560**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**9**	**4**	**1**	**25**	**20**	**8**	**35**	**4**	**0**	**1**	**0**	**0**	**0**	**9**
CZ-13																												
Alexandria City	15	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Arlington City	26	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fairfax City	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fairfax County	394	12	0	0	0	0	0	0	0	0	0	0	0	4	4	1	1	12	10	5	26	6	0	1	0	0	0	0
Falls Church City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loudoun County	521	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Manasas City	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manassas Park City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prince William County	339	4	0	0	0	0	0	0	0	0	0	0	0	9	9	7	1	0	0	0	0	0	0	0	1	2	0	0
Total	**1313**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**13**	**8**	**2**	**12**	**10**	**5**	**26**	**6**	**0**	**1**	**3**	**2**	**0**	**1**
Grand Total	**39701**	**165**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**22**	**100**	**18**	**0**	**154**	**248**	**80**	**31**	**1136**	**911**	**320**	**5109**	**208**	**0**	**52**	**33**	**65**	**30**	**54**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DEQ				DFP				DOF				DGIF				DOH				DIT				DJJ						MRC			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-01																																			
Amelia County	357	0	0	0	0	0	0	0	0	6	3	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chesterfield County	434	0	0	0	0	0	0	0	0	7	3	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Colonial Heights City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dinwiddie County	507	0	0	0	0	0	0	0	0	6	3	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Goochland County	281	0	0	0	0	0	0	0	0	6	3	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hopewell City	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Louisa County	497	0	0	0	0	0	0	0	0	7	4	0	0	4	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nottoway County	316	0	0	0	0	0	0	0	0	6	3	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Petersburg City	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Powhatan County	261	0	0	0	0	0	0	0	0	7	3	0	0	7	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prince George County	266	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Richmond City	60	0	0	0	0	0	13	0	0	0	0	0	0	16	2	11	1	0	0	1	0	1	20	8	0	172	43	318	80	7	6	1	1	4	0
Total	**3020**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**45**	**22**	**0**	**0**	**41**	**21**	**21**	**1**	**0**	**0**	**1**	**0**	**1**	**20**	**8**	**0**	**172**	**43**	**318**	**80**	**7**	**6**	**1**	**1**	**4**	**0**
CZ-02																																			
Caroline County	535	0	0	0	0	0	0	0	0	10	7	0	0	4	3	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charles City County	181	0	0	0	0	0	0	0	0	0	0	0	0	7	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Essex County	263	0	0	0	0	0	0	0	0	20	10	2	1	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
Hanover County	467	0	0	0	0	0	0	0	0	6	3	0	1	6	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
Henrico County	238	0	0	0	0	0	0	0	0	9	3	0	1	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
King and Queen County	317	0	0	0	0	0	0	0	0	4	2	0	0	4	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
King George County	180	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
King William County	278	0	0	0	0	0	0	0	0	7	3	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lancaster County	133	0	0	0	0	0	0	0	0	7	3	0	0	4	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	3	0
New Kent County	213	0	0	0	0	0	0	0	0	12	12	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northumberland County	185	0	0	0	0	0	0	0	0	0	0	0	0	3	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	5	3	0
Richmond County	193	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	3	0
Westmoreland County	227	0	0	0	0	0	0	0	0	7	3	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	4	3	0
Total	**3410**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**82**	**46**	**2**	**3**	**47**	**28**	**19**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**14**	**18**	**0**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DEQ				DFP				DOF				DGIF				DOH				DIT				DJJ						MRC			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-04																																			
Clarke County	178	0	0	0	0	0	0	0	0	0	0	0	0	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Frederick County	415	0	0	0	0	0	0	0	0	6	3	0	1	2	2	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Harrisonburg City	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Page County	313	0	0	0	0	0	0	0	0	5	3	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockingham County	865	0	0	0	0	0	0	0	0	6	3	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shenandoah County	512	0	0	0	0	0	0	0	0	8	4	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Warren County	217	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Winchester City	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**2515**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**25**	**13**	**0**	**1**	**15**	**11**	**6**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CZ-03																																			
Culpeper County	382	0	0	0	0	0	0	0	0	0	0	0	0	3	3	1	0	0	0	0	0	0	0	0	0	6	1	80	20	1	1	0	0	0	0
Fauquier County	651	0	0	0	0	0	0	0	0	8	4	0	0	4	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fredericksburg City	6	0	0	0	0	0	0	0	0	0	0	0	0	14	16	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
Madison County	322	0	0	0	0	0	0	0	0	7	3	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orange County	342	0	0	0	0	0	0	0	0	10	7	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rappahannock County	267	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spotsylvania County	404	0	0	0	0	0	0	0	0	11	7	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stafford County	271	0	0	0	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**2645**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**36**	**21**	**0**	**0**	**34**	**30**	**17**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**80**	**20**	**1**	**1**	**1**	**1**	**3**	**0**
CZ-05																																			
Amherst County	479	0	0	0	0	0	0	0	0	4	3	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Appomattox County	336	0	0	0	0	0	0	0	0	4	4	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Campbell County	505	0	0	0	0	0	0	0	0	15	10	0	0	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charlotte County	477	0	0	0	0	0	0	0	0	8	4	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Halifax County	816	0	0	0	0	0	0	0	0	9	5	0	0	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lynchburg City	50	0	0	0	0	0	0	0	0	0	0	0	0	19	11	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lunenburg County	432	0	0	0	0	0	0	0	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mecklenburg County	616	0	0	0	0	0	0	0	0	8	5	0	0	7	4	3	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prince Edward County	354	0	0	0	0	0	0	0	0	10	8	2	1	3	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Boston City	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**4071**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**65**	**43**	**2**	**1**	**42**	**33**	**20**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DEQ				DFP				DOF				DGIF				DOH				DIT				DJJ						MRC			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-06																																			
Albemarle County	725	0	0	0	0	0	0	0	0	41	20	2	1	4	3	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Augusta County	989	0	0	0	0	0	0	0	0	11	8	0	1	30	29	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buckingham County	583	0	0	0	0	0	0	0	0	7	4	0	0	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Charlotttesville City	10	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumberland County	300	0	0	0	0	0	0	0	0	7	4	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fluvanna County	290	0	0	0	0	0	0	0	0	6	3	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greene County	157	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nelson County	474	0	0	0	0	0	0	0	0	8	4	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Staunton City	9	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waynesboro City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**3545**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**80**	**43**	**4**	**2**	**51**	**42**	**26**	**1**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CZ-08																																			
Bristol City	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buchanan County	504	0	0	0	0	0	0	0	0	4	4	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dickenson County	331	0	0	0	0	0	0	0	0	6	4	0	0	3	2	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lee County	437	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Norton City	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Russell County	479	0	0	0	0	0	0	0	0	5	4	0	0	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scott County	535	0	0	0	0	0	0	0	0	5	3	0	0	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tazewell County	520	0	0	0	0	0	0	0	0	7	6	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Washington County	562	0	0	0	0	0	0	0	0	20	15	2	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wise County	405	0	0	0	0	0	0	0	0	9	9	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**3792**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**56**	**45**	**2**	**2**	**20**	**14**	**11**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CZ-07																																			
Bland County	359	0	0	0	0	0	0	0	0	6	6	0	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carroll County	478	0	0	0	0	0	0	0	0	9	8	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Galax City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Giles County	362	0	0	0	0	0	0	0	0	0	0	0	0	6	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grayson County	446	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pulaski County	318	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Smyth County	452	0	0	0	0	0	0	0	0	0	0	0	0	14	15	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wythe County	465	0	0	0	0	0	0	0	0	2	1	0	0	8	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**2888**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**15**	**0**	**0**	**37**	**37**	**19**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DEQ				DFP				DOF				DGIF				DOH				DIT				DJJ						MRC			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-10																																			
Brunswick County	563	0	0	0	0	0	0	0	0	8	3	0	0	5	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chesapeake City	340	0	0	0	0	0	0	0	0	8	6	0	0	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	0
Emporia City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Franklin City	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Greensville County	300	0	0	0	0	0	0	0	0	5	3	0	0	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Isle Of Wight County	319	0	0	0	0	0	0	0	0	6	3	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	3	0
Norfolk City	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	4	0
Portsmouth City	30	0	0	0	0	0	0	0	0	7	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0
Southampton County	603	0	0	0	0	0	0	0	0	5	4	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Suffolk City	409	0	0	0	0	0	0	0	0	1	1	0	0	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0
Surry County	281	0	0	0	0	0	0	0	0	7	5	0	0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sussex County	491	0	0	0	0	0	0	0	0	26	10	2	1	8	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
Virginia Beach City	256	0	0	0	0	0	0	0	0	2	2	0	1	10	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	2	4	0
Total	**3651**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**75**	**42**	**2**	**2**	**44**	**20**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**15**	**24**	**0**
CZ-09																																			
Accomack County	476	0	0	0	0	0	0	0	0	0	0	0	0	7	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	9	3	0
Gloucester County	225	0	0	0	0	0	0	0	0	6	3	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	8	3	0
Hampton City	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	3	0
James City County	153	0	0	0	0	0	0	0	0	7	3	0	0	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	0
Mathews County	87	0	0	0	0	0	0	0	0	0	0	0	0	4	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	4	3	0
Middlesex County	134	0	0	0	0	0	0	0	0	7	3	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	3	0
Newport News City	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	8	4	1
Northampton County	226	0	0	0	0	0	0	0	0	8	6	0	0	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	9	3	0
Poquoson City	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
Williamsburg City	5	0	0	0	0	0	0	0	0	0	0	0	0	14	8	6	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	0
York County	113	0	0	0	0	0	0	0	0	0	0	0	0	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0
Total	**1552**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**28**	**15**	**0**	**0**	**43**	**26**	**19**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**62**	**48**	**36**	**1**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DEQ				DFP				DOF				DGIF				DOH				DIT				DJJ						MRC			
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	Mfac	Mtran	Pfac	Ptran	MCT	CS	MOB	PORT	MCT	CS
CZ-11																																			
Bedford City	7	0	0	0	0	0	0	0	0	7	3	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bedford County	747	0	0	0	0	0	0	0	0	6	3	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Craig County	330	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Danville City	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Floyd County	381	0	0	0	0	0	0	0	0	6	3	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Franklin County	683	0	0	0	0	0	0	0	0	8	4	0	0	7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Henry County	382	0	0	0	0	0	0	0	0	4	3	0	0	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Martinsville City	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montgomery County	390	0	0	0	0	0	0	0	0	8	5	0	0	4	7	3	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Patrick County	481	0	0	0	0	0	0	0	0	4	3	0	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pittsylvania County	995	0	0	0	0	0	0	0	0	7	5	0	0	5	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Radford City	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roanoke City	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roanoke County	251	0	0	0	0	0	0	0	0	6	4	0	0	8	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salem City	14	0	0	0	0	0	0	0	0	12	10	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**4739**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**68**	**43**	**2**	**1**	**38**	**29**	**15**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
CZ-12																																			
Alleghany County	446	0	0	0	0	0	0	0	0	6	3	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bath County	538	0	0	0	0	0	0	0	0	6	3	0	0	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Botetourt County	545	0	0	0	0	0	0	0	0	0	0	0	0	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buena Vista	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clifton Forge City	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Covington City	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Highland County	416	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lexington City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockbridge County	603	0	0	0	0	0	0	0	0	6	3	0	0	3	1	1	0	0	0	1	0	0	0	0	0	2	1	25	6	1	2	0	0	0	0
Total	**2560**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**9**	**0**	**0**	**18**	**12**	**6**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**25**	**6**	**1**	**2**	**0**	**0**	**0**	**0**
CZ-13																																			
Alexandria City	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arlington City	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fairfax City	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fairfax County	394	0	0	0	0	0	0	0	0	5	4	0	0	4	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Falls Church City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Loudoun County	521	0	0	0	0	0	0	0	0	4	3	0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manasas City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Manassas Park City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Prince William County	339	0	0	15	0	0	0	0	0	0	0	0	0	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1313**	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**9**	**7**	**0**	**0**	**11**	**9**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Grand Total	**39701**	**0**	**0**	**15**	**0**	**0**	**13**	**0**	**0**	**604**	**364**	**14**	**12**	**441**	**312**	**200**	**6**	**18**	**0**	**10**	**0**	**1**	**20**	**8**	**0**	**180**	**45**	**423**	**106**	**9**	**9**	**108**	**79**	**85**	**1**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DMA				DMME				DMV				VSP				FEDA				VDOT				Total MOB	Total PORT	Total MCT	Total CS	Total Radios	Radio/ sq mi
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS						
CZ-01																															
Amelia County	357	0	0	0	0	0	0	0	0	0	0	0	0	10	5	4	0	0	0	0	0	49	6	1	2	67	16	6	2	91	0.25
Chesterfield County	434	0	0	0	0	0	0	0	0	4	4	0	0	342	215	122	0	0	0	0	0	113	6	1	2	499	294	126	4	923	2.13
Colonial Heights City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	6	1	3	83	6	1	3	93	11.63
Dinwiddie County	507	0	0	0	0	0	0	0	0	1	0	0	1	42	21	15	0	0	0	0	0	23	6	1	2	82	39	17	4	142	0.28
Goochland County	281	0	0	0	0	0	0	0	0	0	0	0	0	22	11	8	0	0	0	0	0	33	6	1	3	68	27	10	4	109	0.39
Hopewell City	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	0	6	1	2	9	0.90
Louisa County	497	0	0	0	0	0	0	0	0	0	0	0	0	24	12	9	0	0	0	0	0	63	6	1	3	98	24	11	3	136	0.27
Nottoway County	316	10	25	4	1	0	0	0	0	0	0	0	0	8	4	1	0	0	0	0	0	18	6	1	2	61	44	7	5	117	0.37
Petersburg City	23	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	3	6	1	3	13	0.57
Powhatan County	261	0	0	0	0	0	0	0	0	0	0	0	0	14	7	5	0	0	0	0	0	13	6	1	2	66	27	9	4	106	0.41
Prince George County	266	0	0	0	0	1	0	0	0	0	0	0	0	26	13	9	0	0	0	0	0	38	7	1	3	67	21	11	3	102	0.38
Richmond City	60	0	0	0	0	0	0	0	0	15	8	14	0	0	0	0	8	55	0	0	0	86	7	13	3	254	245	78	20	597	9.95
Total	**3020**	**10**	**25**	**4**	**1**	**1**	**0**	**0**	**0**	**21**	**12**	**14**	**1**	**488**	**288**	**173**	**8**	**55**	**0**	**0**	**0**	**519**	**74**	**24**	**30**	**1348**	**755**	**278**	**57**	**2438**	**0.81**
CZ-02																															
Caroline County	535	0	10	0	1	1	0	0	0	0	0	0	0	44	22	16	0	0	0	0	0	43	6	1	2	114	54	19	4	191	0.36
Charles City County	181	0	0	0	0	0	0	0	0	0	0	0	0	6	3	2	0	0	0	0	0	18	6	1	2	33	11	5	2	51	0.28
Essex County	263	0	0	0	0	0	0	0	0	0	0	0	0	10	5	4	0	0	0	0	0	28	6	1	3	61	24	11	4	100	0.38
Hanover County	467	0	0	0	0	0	0	0	0	0	0	0	0	34	17	12	0	0	0	0	0	53	6	1	3	102	32	17	4	155	0.33
Henrico County	238	5	5	0	1	0	0	0	0	6	3	0	1	92	68	34	0	0	0	0	0	98	6	1	3	218	88	36	6	348	1.46
King and Queen County	317	0	0	0	0	0	0	0	0	0	0	0	0	12	6	4	0	0	0	0	0	23	6	1	3	43	16	8	3	70	0.22
King George County	180	0	0	0	0	0	0	0	0	1	0	0	1	8	4	3	0	0	0	0	0	33	6	1	3	48	20	6	5	79	0.44
King William County	278	0	0	0	0	0	0	0	0	0	0	0	0	14	7	5	0	0	0	0	0	28	6	1	3	52	18	7	3	80	0.29
Lancaster County	133	0	0	0	0	0	0	0	0	0	0	0	0	6	3	2	0	0	0	0	0	23	6	1	3	47	21	10	4	82	0.62
New Kent County	213	0	0	0	0	0	0	0	0	0	0	0	0	20	10	7	0	0	0	0	0	18	7	1	3	53	31	9	3	96	0.45
Northumberland County	185	0	0	0	0	0	0	0	0	0	0	0	0	8	4	1	0	0	0	0	0	23	6	1	3	41	16	7	3	67	0.36
Richmond County	193	0	0	0	0	0	0	0	0	0	0	0	0	16	8	6	0	0	0	0	0	23	6	1	2	51	24	11	3	89	0.46
Westmoreland County	227	0	0	0	0	0	0	0	0	0	0	0	0	10	5	6	0	0	0	0	0	23	6	1	2	64	25	15	4	108	0.48
Total	**3410**	**5**	**15**	**0**	**2**	**1**	**0**	**0**	**0**	**7**	**3**	**0**	**2**	**280**	**162**	**102**	**0**	**0**	**0**	**0**	**0**	**434**	**79**	**13**	**35**	**927**	**380**	**161**	**48**	**1516**	**0.44**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DMA				DMME				DMV				VSP				FEDA				VDOT				Total MOB	Total PORT	Total MCT	Total CS	Total Radios	Radio/ sq mi
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS						
CZ-04																															
Clarke County	178	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	18	6	1	2	38	18	6	3	65	0.37
Frederick County	415	0	0	0	0	0	0	0	0	2	0	0	2	44	22	20	0	0	0	0	0	33	6	1	3	91	33	23	6	153	0.37
Harrisonburg City	6	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	6	1	3	9	17	1	4	31	5.17
Page County	313	0	0	0	0	0	0	0	0	0	0	0	0	12	6	5	0	0	0	0	0	28	6	1	2	48	16	7	3	74	0.24
Rockingham County	865	0	0	0	0	0	0	0	0	0	0	0	0	30	15	13	0	0	0	0	0	68	6	1	3	110	26	15	4	155	0.18
Shenandoah County	512	0	0	0	0	0	0	0	0	0	0	0	0	26	13	12	0	0	0	0	0	53	6	1	3	90	25	14	4	133	0.26
Warren County	217	0	0	0	0	1	0	0	0	2	0	0	0	12	6	5	0	0	0	0	0	18	6	1	2	37	20	8	5	70	0.32
Winchester City	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	1	6	1	2	10	1.11
Total	**2515**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**6**	**3**	**0**	**2**	**132**	**66**	**59**	**0**	**0**	**0**	**0**	**0**	**218**	**48**	**8**	**20**	**424**	**161**	**75**	**31**	**691**	**0.27**
CZ-03																															
Culpeper County	382	0	0	0	0	0	0	0	0	1	0	0	0	83	57	37	8	0	0	0	0	143	6	1	3	232	94	42	14	382	1.00
Fauquier County	651	0	0	0	0	0	0	0	0	1	0	0	0	26	13	12	0	0	0	0	0	73	6	1	3	112	33	15	4	164	0.25
Fredericksburg City	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	1	3	19	23	14	4	60	10.00
Madison County	322	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	23	6	1	3	41	15	6	4	66	0.20
Orange County	342	0	0	0	0	0	0	0	0	0	0	0	0	10	5	4	0	0	0	0	0	28	6	1	2	50	19	6	2	77	0.23
Rappahannock County	267	0	0	0	0	0	0	0	0	0	0	0	0	10	5	4	0	0	0	0	0	33	6	1	3	48	12	7	3	70	0.26
Spotsylvania County	404	0	0	0	0	0	0	0	0	0	0	0	0	48	24	22	0	0	0	0	0	161	7	1	3	233	56	28	4	321	0.79
Stafford County	271	0	0	0	0	0	0	0	0	1	3	0	0	40	20	18	0	0	0	0	0	33	6	1	3	82	33	20	4	139	0.51
Total	**2645**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**	**0**	**225**	**128**	**101**	**8**	**1**	**0**	**0**	**0**	**494**	**49**	**8**	**23**	**817**	**285**	**138**	**39**	**1279**	**0.48**
CZ-05																															
Amherst County	479	0	0	0	0	0	0	0	0	0	0	0	0	24	12	12	0	0	0	0	0	23	6	1	2	54	23	14	2	93	0.19
Appomattox County	336	0	0	0	0	0	0	0	0	0	0	0	0	86	60	42	8	0	0	0	0	38	6	1	2	135	80	46	11	272	0.81
Campbell County	505	0	0	0	0	1	0	0	0	0	0	0	0	20	10	10	0	0	0	0	0	23	6	1	2	68	33	13	3	117	0.23
Charlotte County	477	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	18	6	1	2	38	18	6	2	64	0.13
Halifax County	816	0	0	0	0	0	0	0	0	0	0	0	0	24	12	12	0	0	0	0	0	33	6	1	2	83	49	16	4	152	0.19
Lynchburg City	50	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	83	6	1	3	107	17	11	3	138	2.76
Lunenburg County	432	0	0	0	0	1	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	18	6	1	3	43	18	5	5	71	0.16
Mecklenburg County	616	0	0	0	0	0	0	0	0	0	0	0	0	26	13	13	0	0	0	0	0	68	6	1	3	128	44	20	6	198	0.32
Prince Edward County	354	0	0	0	0	0	0	0	0	0	0	0	0	10	5	5	0	0	0	0	0	23	7	1	3	53	29	16	5	103	0.29
South Boston City	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	1	6	1	3	11	1.83
Total	**4071**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**206**	**120**	**102**	**8**	**0**	**0**	**0**	**0**	**327**	**61**	**10**	**25**	**710**	**317**	**148**	**44**	**1219**	**0.30**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DMA				DMME				DMV				VSP				FEDA				VDOT				Total MOB	Total PORT	Total MCT	Total CS	Total Radios	Radio/ sq mi
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS						
CZ-06																															
Albemarle County	725	0	0	0	0	10	0	0	1	0	0	0	0	20	10	9	0	0	0	0	0	63	6	1	2	142	39	14	5	200	0.28
Augusta County	989	0	10	0	1	1	0	0	0	3	4	0	0	38	19	18	0	0	0	0	0	68	6	1	2	164	80	36	7	287	0.29
Buckingham County	583	0	0	0	0	0	0	0	0	0	0	0	0	16	8	8	0	0	0	0	0	28	6	1	2	76	29	11	4	120	0.21
Charlotttesville City	10	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	6	1	2	7	9	4	2	22	2.20
Cumberland County	300	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	23	6	1	3	44	21	8	4	77	0.26
Fluvanna County	290	0	0	0	0	0	0	0	0	0	0	0	0	10	4	5	0	0	0	0	0	38	6	1	2	65	20	7	4	96	0.33
Greene County	157	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	34	6	1	2	44	12	6	2	64	0.41
Nelson County	474	0	0	0	0	0	0	0	0	0	0	0	0	10	5	5	0	0	0	0	0	18	6	1	2	39	16	7	3	65	0.14
Staunton City	9	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	63	6	1	3	72	12	11	5	100	11.11
Waynesboro City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	0	6	1	4	11	1.38
Total	**3545**	**0**	**10**	**0**	**1**	**11**	**0**	**0**	**1**	**4**	**7**	**9**	**0**	**110**	**54**	**53**	**0**	**0**	**0**	**0**	**0**	**335**	**60**	**10**	**23**	**653**	**244**	**105**	**40**	**1042**	**0.29**
CZ-08																															
Bristol City	12	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	14	0	0	0	134	6	1	2	149	6	9	2	166	13.83
Buchanan County	504	0	0	0	0	0	0	0	0	0	0	0	0	20	10	10	0	0	0	0	0	38	6	1	2	73	27	12	7	119	0.24
Dickenson County	331	0	0	0	0	0	0	0	0	1	3	0	0	10	5	5	0	0	0	0	0	18	6	1	2	49	27	9	7	92	0.28
Lee County	437	0	0	0	0	0	0	0	0	0	0	0	0	14	7	7	0	0	0	0	0	33	6	1	3	52	20	10	5	87	0.20
Norton City	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	18	6	1	3	19	6	1	3	29	4.14
Russell County	479	0	0	0	0	0	0	0	0	1	3	0	0	12	6	6	0	0	0	0	0	38	6	1	2	66	25	9	4	104	0.22
Scott County	535	0	10	0	1	0	0	0	0	0	0	0	0	14	7	7	0	0	0	0	0	43	6	1	3	71	40	13	6	130	0.24
Tazewell County	520	0	0	0	0	0	0	0	0	0	0	0	0	18	9	9	0	0	0	0	0	48	6	1	2	77	26	11	4	118	0.23
Washington County	562	0	0	0	0	0	0	0	0	5	3	0	0	32	16	16	0	0	0	0	0	43	6	1	2	103	42	20	4	169	0.30
Wise County	405	0	0	0	0	131	4	0	0	0	0	0	0	16	8	8	0	0	0	0	0	23	6	1	2	188	35	10	7	240	0.59
Total	**3792**	**0**	**10**	**0**	**1**	**131**	**4**	**0**	**0**	**8**	**9**	**8**	**0**	**136**	**68**	**68**	**0**	**14**	**0**	**0**	**0**	**436**	**60**	**10**	**23**	**847**	**254**	**104**	**49**	**1254**	**0.33**
CZ-07																															
Bland County	359	0	0	0	0	0	0	0	0	1	0	0	1	14	7	7	0	0	0	0	0	43	6	1	2	79	25	9	5	118	0.33
Carroll County	478	0	0	0	0	0	0	0	0	0	0	0	0	24	12	12	0	0	0	0	0	53	6	1	2	90	31	16	5	142	0.30
Galax City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	0	8	1	2	11	1.38
Giles County	362	0	0	0	0	0	0	0	0	0	0	0	0	10	5	5	0	0	0	0	0	23	6	1	2	41	16	9	3	69	0.19
Grayson County	446	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	53	6	1	2	70	16	9	5	100	0.22
Pulaski County	318	0	0	0	0	0	0	0	0	0	0	0	0	22	11	11	0	0	0	0	0	43	6	1	3	81	45	21	7	154	0.48
Smyth County	452	0	0	0	0	0	0	0	0	2	0	0	0	20	10	10	0	0	0	0	0	43	6	1	2	94	52	22	7	175	0.39
Wythe County	465	0	0	0	0	0	0	0	0	0	0	0	0	104	69	52	8	0	0	0	0	61	6	1	3	177	89	58	13	337	0.72
Total	**2888**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**1**	**202**	**118**	**101**	**8**	**0**	**0**	**0**	**0**	**319**	**48**	**8**	**18**	**632**	**282**	**145**	**47**	**1106**	**0.38**

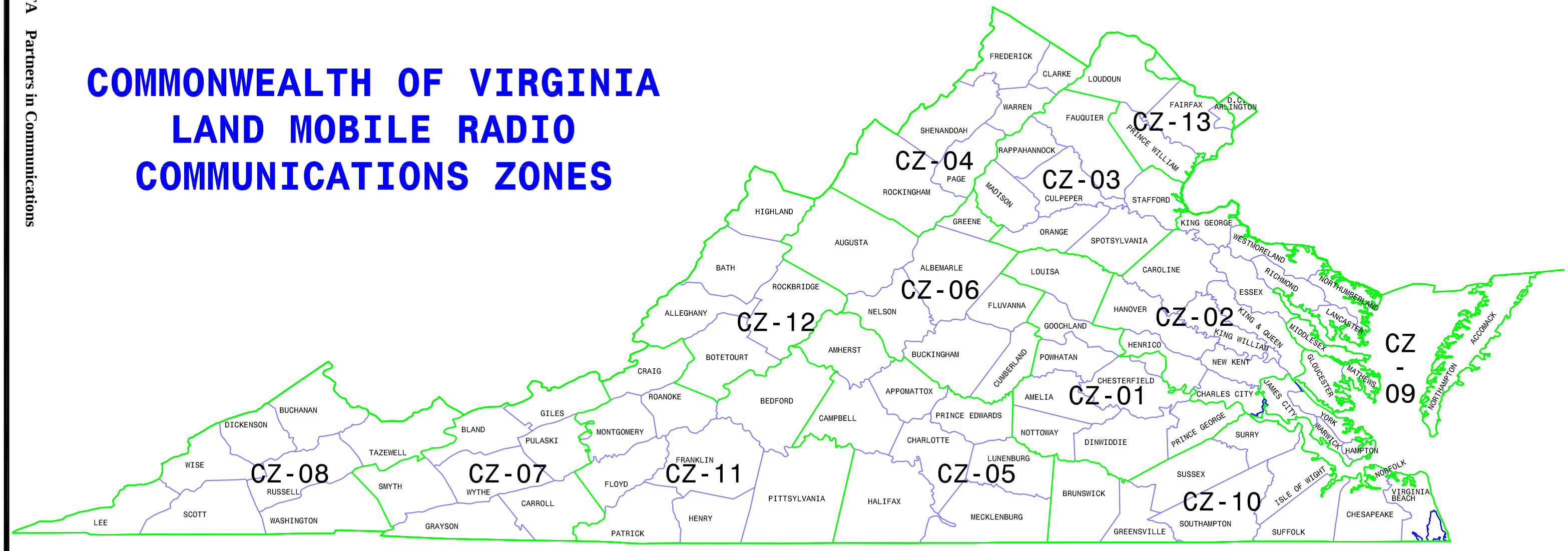
TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DMA				DMME				DMV				VSP				FEDA				VDOT				Total MOB	Total PORT	Total MCT	Total CS	Total Radios	Radio/ sq mi
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS						
CZ-10																															
Brunswick County	563	0	0	0	0	0	0	0	0	1	0	0	1	16	8	7	0	0	0	0	0	43	6	1	2	90	24	10	4	128	0.23
Chesapeake City	340	0	0	0	0	0	0	0	0	2	0	0	0	138	97	62	8	0	0	0	0	33	6	13	3	215	125	80	13	433	1.27
Emporia City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	0	6	1	3	10	5.00
Franklin City	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	2	6	4	2	14	3.50
Greensville County	300	0	0	0	0	0	0	0	0	0	0	0	0	34	17	15	0	0	0	0	0	23	6	1	2	78	37	17	4	136	0.45
Isle Of Wight County	319	0	0	0	0	0	0	0	0	0	0	0	0	14	7	6	0	0	0	0	0	38	6	1	3	67	20	11	3	101	0.32
Norfolk City	53	0	0	0	0	0	0	0	0	0	0	0	0	38	19	17	0	27	0	0	0	43	7	13	3	119	29	34	3	185	3.49
Portsmouth City	30	0	0	0	0	0	0	0	0	0	0	9	0	14	7	6	0	0	0	0	0	36	7	1	3	63	21	20	3	107	3.57
Southampton County	603	0	0	0	0	0	0	0	0	0	0	0	0	18	9	8	0	0	0	0	0	18	6	1	2	58	30	10	4	102	0.17
Suffolk City	409	0	0	0	0	1	0	0	0	3	3	0	1	12	6	5	0	0	0	0	0	88	7	5	3	111	21	14	4	150	0.37
Surry County	281	0	0	0	0	0	0	0	0	0	0	0	0	6	3	3	0	0	0	0	0	28	6	1	3	51	22	6	4	83	0.30
Sussex County	491	0	0	0	0	0	0	0	0	0	0	0	0	28	14	12	0	0	0	0	0	23	6	1	3	96	39	21	7	163	0.33
Virginia Beach City	256	0	0	0	0	0	0	0	0	2	0	0	0	46	23	20	0	0	0	0	0	70	7	13	3	155	48	50	6	259	1.01
Total	**3651**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**8**	**3**	**9**	**2**	**364**	**210**	**161**	**8**	**27**	**0**	**0**	**0**	**443**	**82**	**53**	**35**	**1105**	**428**	**278**	**60**	**1871**	**0.51**
CZ-09																															
Accomack County	476	0	0	0	0	0	0	0	0	2	3	0	1	26	13	12	0	0	0	0	0	28	6	1	2	75	34	18	3	130	0.27
Gloucester County	225	0	0	0	0	0	0	0	0	0	0	0	0	18	9	8	0	0	0	0	0	23	6	1	3	66	32	38	3	139	0.62
Hampton City	51	0	0	0	0	0	0	0	0	0	0	0	0	36	18	16	0	0	0	0	0	63	6	1	3	105	25	20	3	153	3.00
James City County	153	0	0	0	0	0	0	0	0	1	3	0	0	26	13	12	0	0	0	0	0	18	6	1	3	65	35	20	4	124	0.81
Mathews County	87	0	0	0	0	0	0	0	0	0	0	0	0	4	2	2	0	0	0	0	0	23	6	1	3	37	14	9	3	63	0.72
Middlesex County	134	0	0	0	0	1	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	23	6	1	3	46	18	9	3	76	0.57
Newport News City	65	0	0	0	0	0	0	0	0	1	3	0	0	22	11	10	0	0	0	0	0	63	7	13	3	100	29	27	4	160	2.46
Northampton County	226	0	0	0	0	0	0	0	0	0	0	0	0	18	9	8	0	0	0	0	0	23	6	1	3	69	39	15	4	127	0.56
Poquoson City	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	4	9	4	3	20	1.18
Williamsburg City	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	6	1	3	34	15	11	4	64	12.80
York County	113	0	0	0	0	0	0	0	0	0	0	0	0	14	7	6	0	0	0	0	0	5	6	1	3	26	17	12	3	58	0.51
Total	**1552**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**4**	**9**	**0**	**1**	**172**	**86**	**78**	**0**	**0**	**0**	**0**	**0**	**282**	**67**	**23**	**32**	**627**	**267**	**183**	**37**	**1114**	**0.72**

TABLE E-2
COMMUNICATION ZONE UNIT COUNT

Counties and Cities	Sq mi	DMA				DMME				DMV				VSP				FEDA				VDOT				Total MOB	Total PORT	Total MCT	Total CS	Total Radios	Radio/ sq mi
		MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS	MOB	PORT	MCT	CS						
CZ-11																															
Bedford City	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	6	1	2	29	12	1	2	44	6.29
Bedford County	747	0	0	0	0	0	0	0	0	0	0	0	0	28	14	14	0	0	0	0	0	38	6	1	2	79	35	21	3	138	0.18
Craig County	330	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	18	6	1	3	28	12	6	3	49	0.15
Danville City	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	3	8	1	3	15	0.88
Floyd County	381	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	53	6	1	2	71	15	6	2	94	0.25
Franklin County	683	0	10	0	1	1	0	0	0	0	0	0	0	24	12	12	0	0	0	0	0	43	6	1	2	84	36	13	4	137	0.20
Henry County	382	0	0	0	0	0	0	0	0	0	0	0	0	28	14	14	0	0	0	0	0	33	6	1	3	73	31	17	5	126	0.33
Martinsville City	11	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	6	1	3	4	9	1	3	17	1.55
Montgomery County	390	0	0	0	0	0	0	0	0	1	3	0	0	20	10	10	0	0	0	0	0	58	6	1	3	96	31	15	5	147	0.38
Patrick County	481	0	0	0	0	0	0	0	0	0	0	0	0	14	7	7	0	0	0	0	0	33	6	1	2	55	25	11	4	95	0.20
Pittsylvania County	995	0	0	0	0	0	0	0	0	0	0	0	0	34	17	16	0	0	0	0	0	68	6	1	3	120	35	19	4	178	0.18
Radford City	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	0	6	1	3	10	1.43
Roanoke City	43	0	0	0	0	0	0	0	0	9	9	12	0	0	0	0	0	29	0	0	0	21	7	13	3	65	16	25	4	110	2.56
Roanoke County	251	0	0	0	0	0	0	0	0	2	0	0	0	114	77	54	0	0	0	0	0	36	7	13	3	172	95	70	6	343	1.37
Salem City	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	86	7	1	3	99	17	3	13	132	9.43
Total	**4739**	**0**	**10**	**0**	**1**	**1**	**0**	**0**	**0**	**14**	**15**	**12**	**0**	**278**	**159**	**135**	**8**	**29**	**0**	**0**	**0**	**505**	**93**	**39**	**40**	**978**	**383**	**210**	**64**	**1635**	**0.35**
CZ-12																															
Alleghany County	446	0	0	0	0	0	0	0	0	0	0	0	0	20	10	10	0	0	0	0	0	28	6	1	2	58	22	12	2	94	0.21
Bath County	538	0	0	0	0	0	0	0	0	0	0	0	0	8	4	4	0	0	0	0	0	28	6	1	2	56	25	10	5	96	0.18
Botetourt County	545	0	0	0	0	0	0	0	0	1	0	0	1	26	13	12	0	0	0	0	0	33	6	1	2	71	26	15	5	117	0.21
Buena Vista	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	2	6	1	3	12	4.00
Clifton Forge City	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	0	6	1	3	10	3.33
Covington City	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	2	0	6	1	2	9	2.25
Highland County	416	0	0	0	0	0	0	0	0	0	0	0	0	4	2	2	0	0	0	0	0	33	6	1	3	39	10	4	5	58	0.14
Lexington City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	0	6	1	3	10	5.00
Rockbridge County	603	0	0	0	0	0	0	0	0	0	0	0	0	46	23	22	0	0	0	0	0	48	6	1	3	104	39	26	7	176	0.29
Total	**2560**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**104**	**52**	**50**	**0**	**0**	**0**	**0**	**0**	**170**	**54**	**9**	**21**	**330**	**146**	**71**	**35**	**582**	**0.23**
CZ-13																															
Alexandria City	15	0	0	0	0	0	0	0	0	1	0	0	0	56	28	45	0	0	0	0	0	68	6	13	2	131	34	58	2	225	15.00
Arlington City	26	0	0	0	0	0	0	0	0	1	0	0	0	32	16	26	0	111	0	0	0	43	6	1	2	191	22	27	2	242	9.31
Fairfax City	6	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	6	1	3	0	6	9	3	18	3.00
Fairfax County	394	0	0	0	0	0	0	0	0	9	3	0	0	193	109	155	8	0	0	0	0	143	6	13	3	375	135	171	13	694	1.76
Falls Church City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	13	3	0	6	13	3	22	11.00
Loudoun County	521	0	0	0	0	0	0	0	0	3	0	0	1	58	29	46	0	0	0	0	0	58	6	1	3	129	41	48	5	223	0.43
Manasas City	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	2	6	1	3	12	1.50
Manassas Park City	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1	3	0	6	1	3	10	5.00
Prince William County	339	0	0	0	0	0	0	0	0	2	3	0	1	60	30	48	0	0	0	0	0	206	7	1	3	286	54	72	5	417	1.23
Total	**1313**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**6**	**8**	**2**	**399**	**212**	**320**	**8**	**111**	**0**	**0**	**0**	**518**	**55**	**45**	**25**	**1114**	**310**	**400**	**39**	**1863**	**1.42**
Grand Total	**39701**	**15**	**70**	**4**	**6**	**150**	**4**	**0**	**1**	**99**	**70**	**60**	**12**	**3096**	**1723**	**1503**	**56**	**237**	**0**	**0**	**0**	**5000**	**830**	**260**	**350**	**10512**	**4212**	**2296**	**590**	**17610**	**0.44**

COMMONWEALTH OF VIRGINIA
LAND MOBILE RADIO
COMMUNICATIONS ZONES



N

LEGEND:

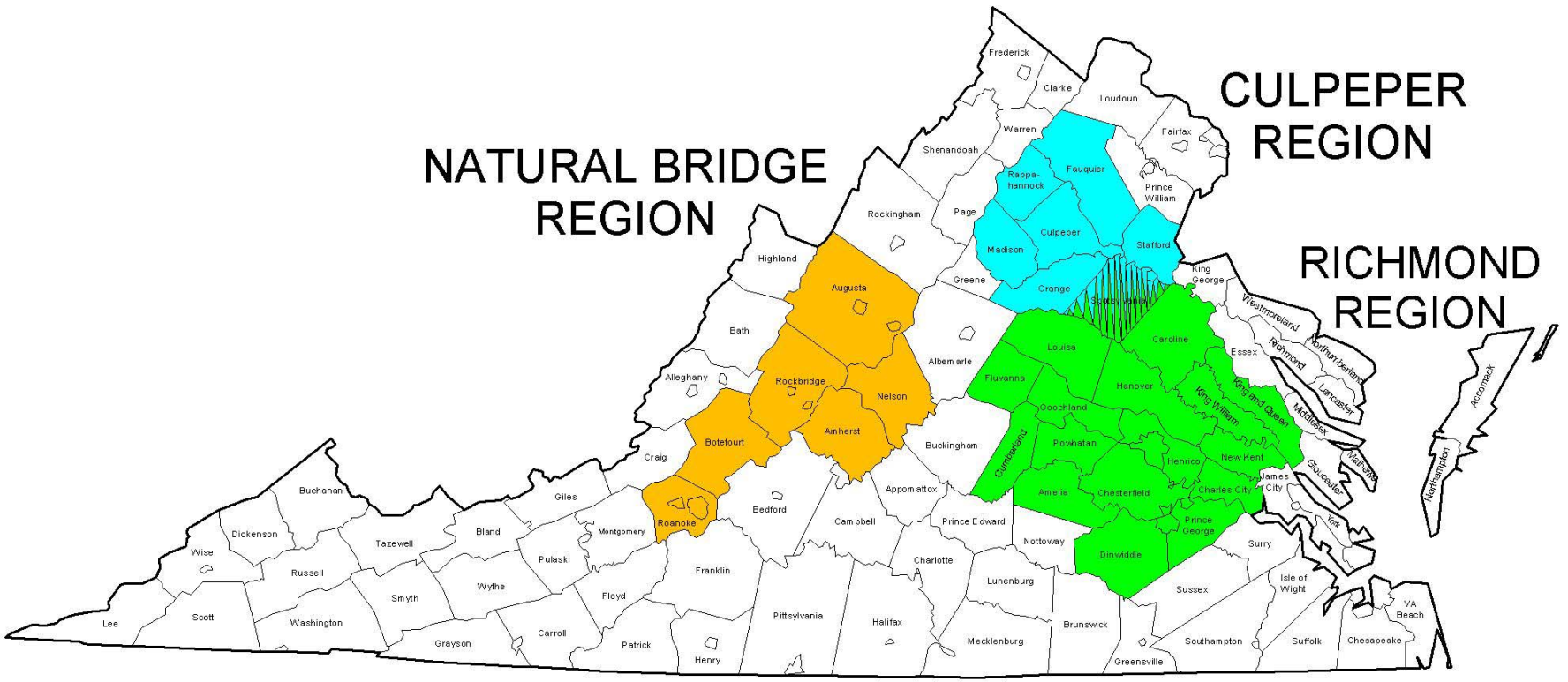
CZ = COMMUNICATIONS ZONE

CTA COMMUNICATIONS LYNCHBURG, VIRGINIA		
TITLE FIG. E-1: RADIO SYSTEM COMMUNICATIONS ZONE STRUCTURE		REVISIONS
DESIGN CTA	DRAWN JWF	DATE 07/16/01
CHECKED HFR	APPROVED WCK	SCALE NO SCALE
CLIENT COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1
PATH N:\FILES\20034G2\appendicies\appendix E\CZSfigE-1.dwg		

DEPARTMENT OF JUVENILE JUSTICE

COMMUNICATIONS

COMMONWEALTH OF VIRGINIA RFP 2001 - 035



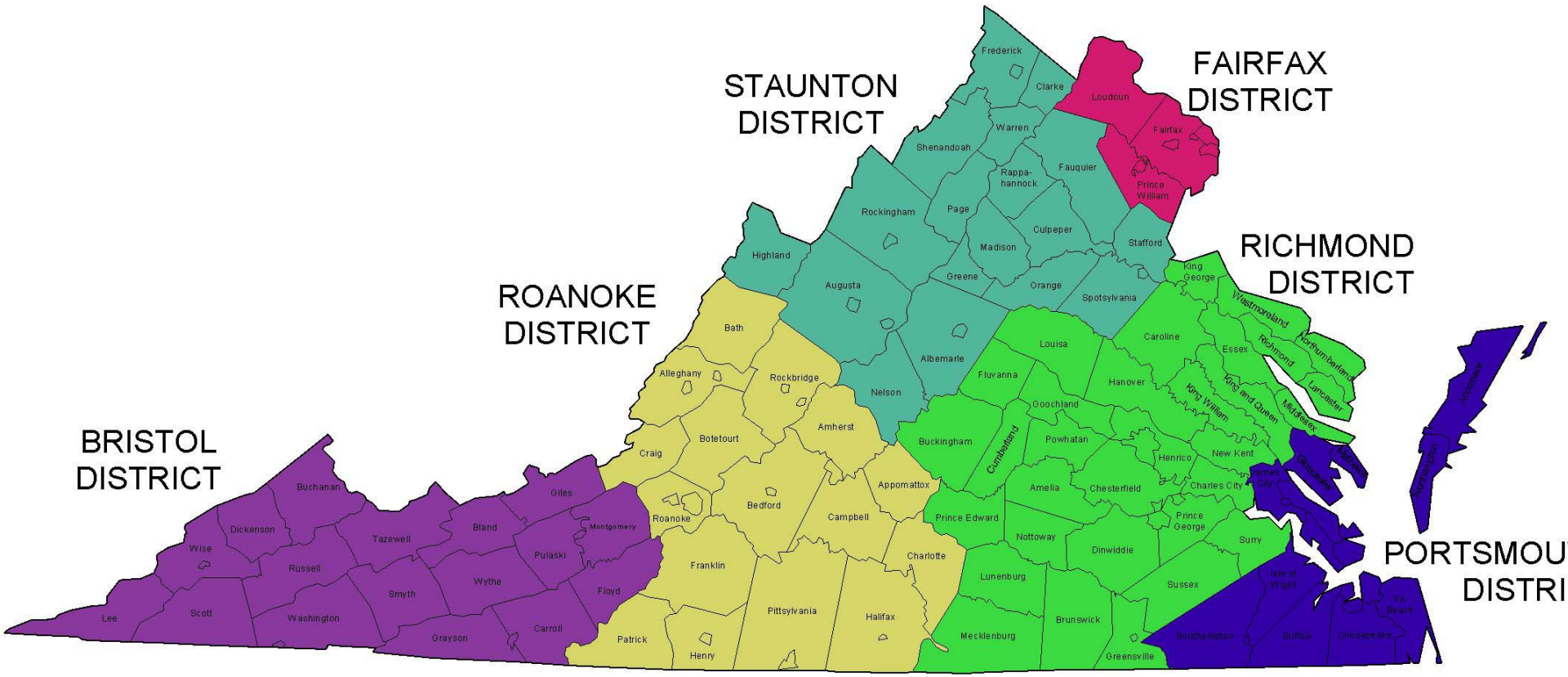
CTA Communications
20715 Timberlake Road
Lynchburg, Va. 24502
804-239-9200

Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-2

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Comm Index/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF MOTOR VEHICLES

COMMONWEALTH OF VIRGINIA RFP 2001 - 035



100 0 100 200 300 Miles

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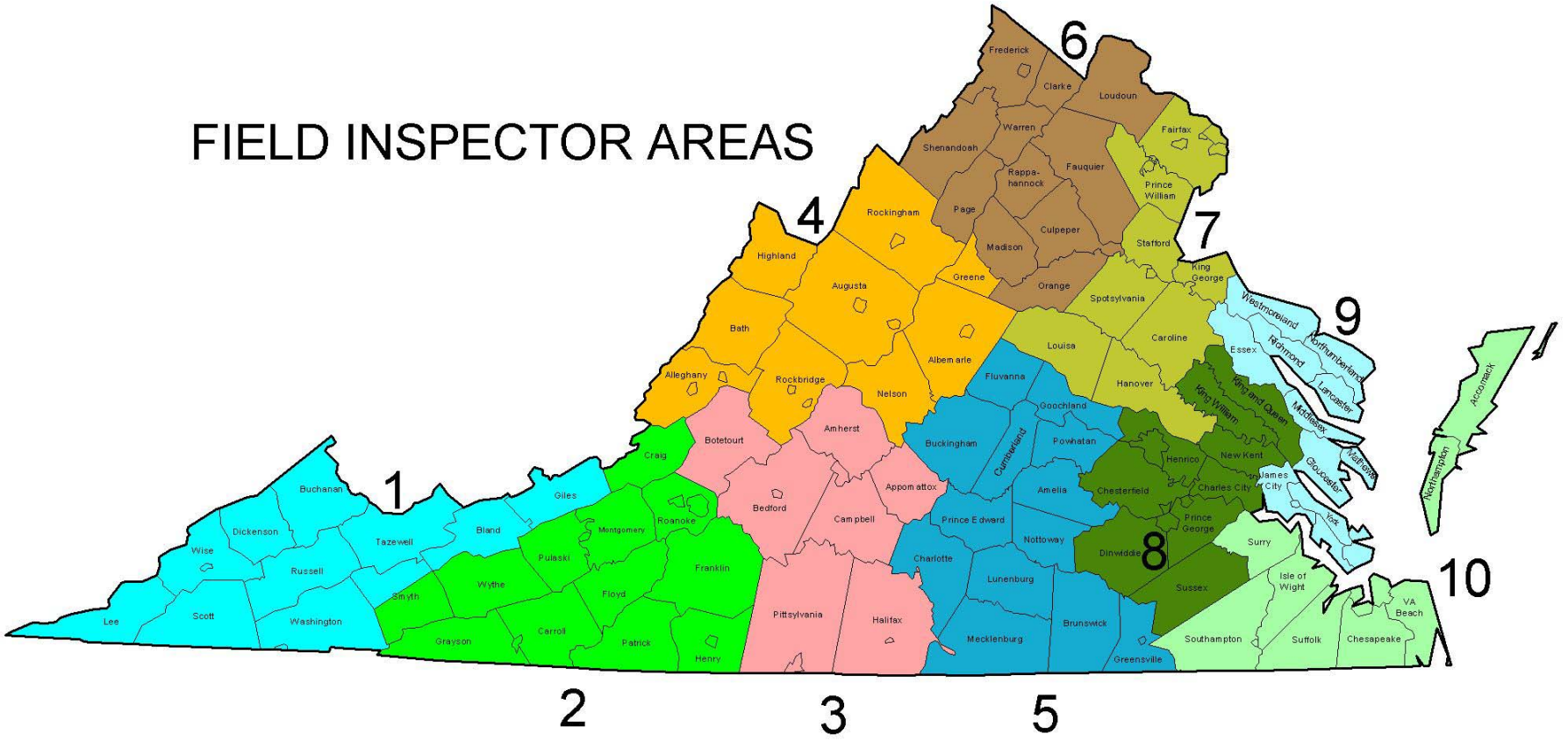
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-3

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR LAYOUT 3
Commodity/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF MINES, MINERALS AND ENERGY

COMMUNICATIONS

FIELD INSPECTOR AREAS



100 0 100 200 300 Miles

COMMONWEALTH OF VIRGINIA RFP 2001 - 035

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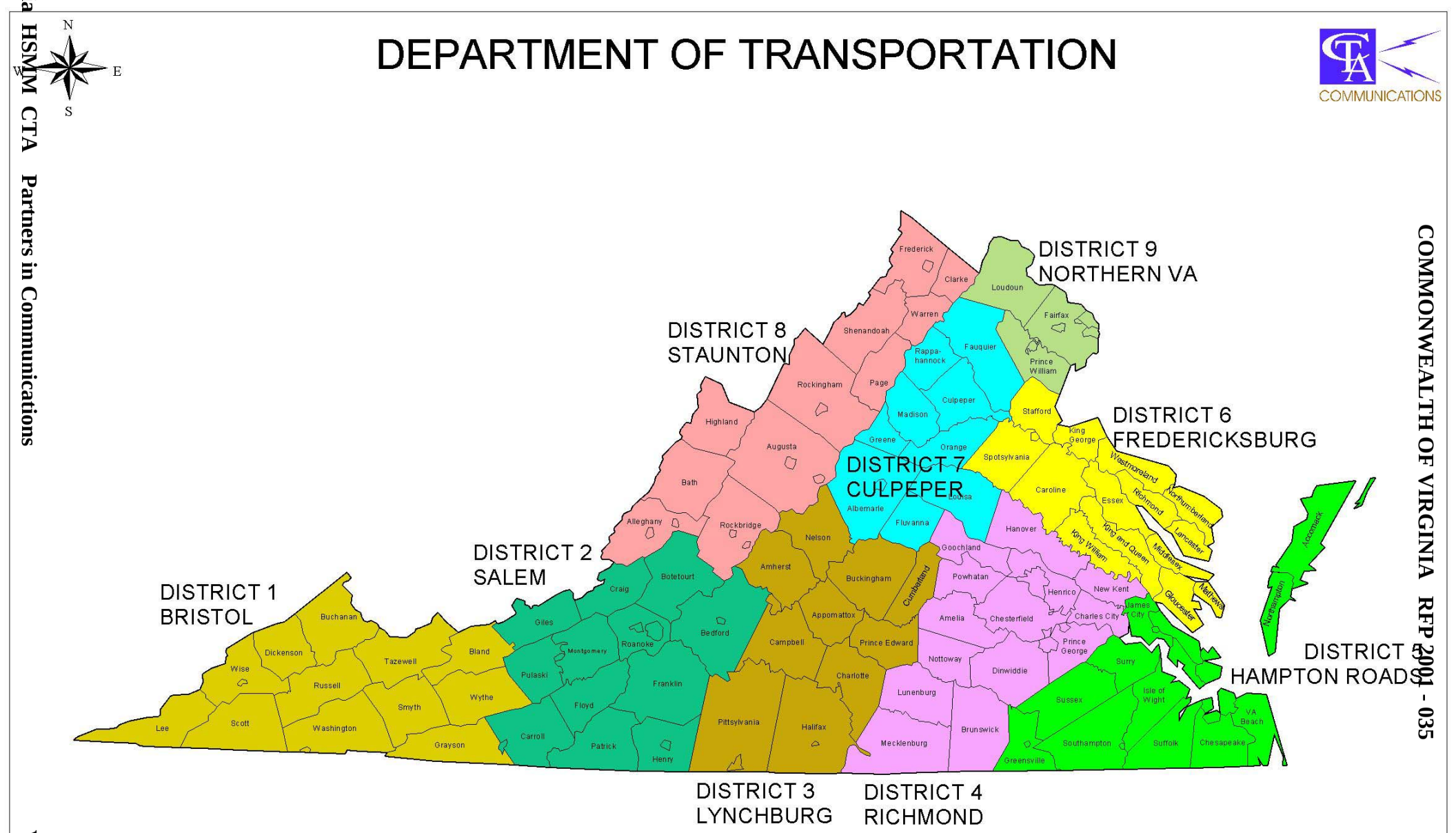
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-4

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Commodity/Client: COMMONWEALTH OF VIRGINIA



COMMONWEALTH OF VIRGINIA RFP 2001 - 035

CTA Communications
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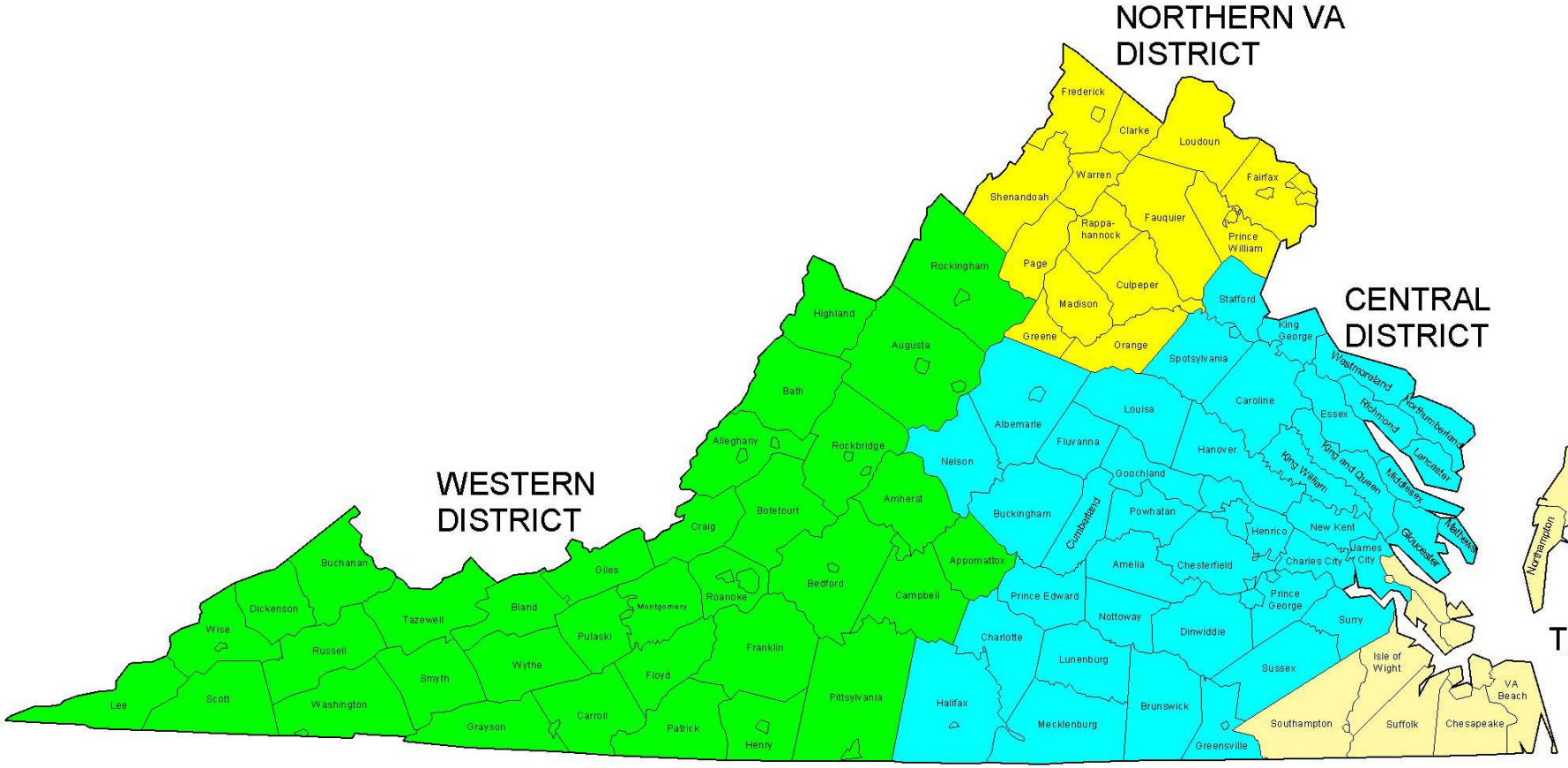
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-5

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR LAYOUT 6
Committed/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF HEALTH



100 0 100 200 300 Miles

CTA Communications
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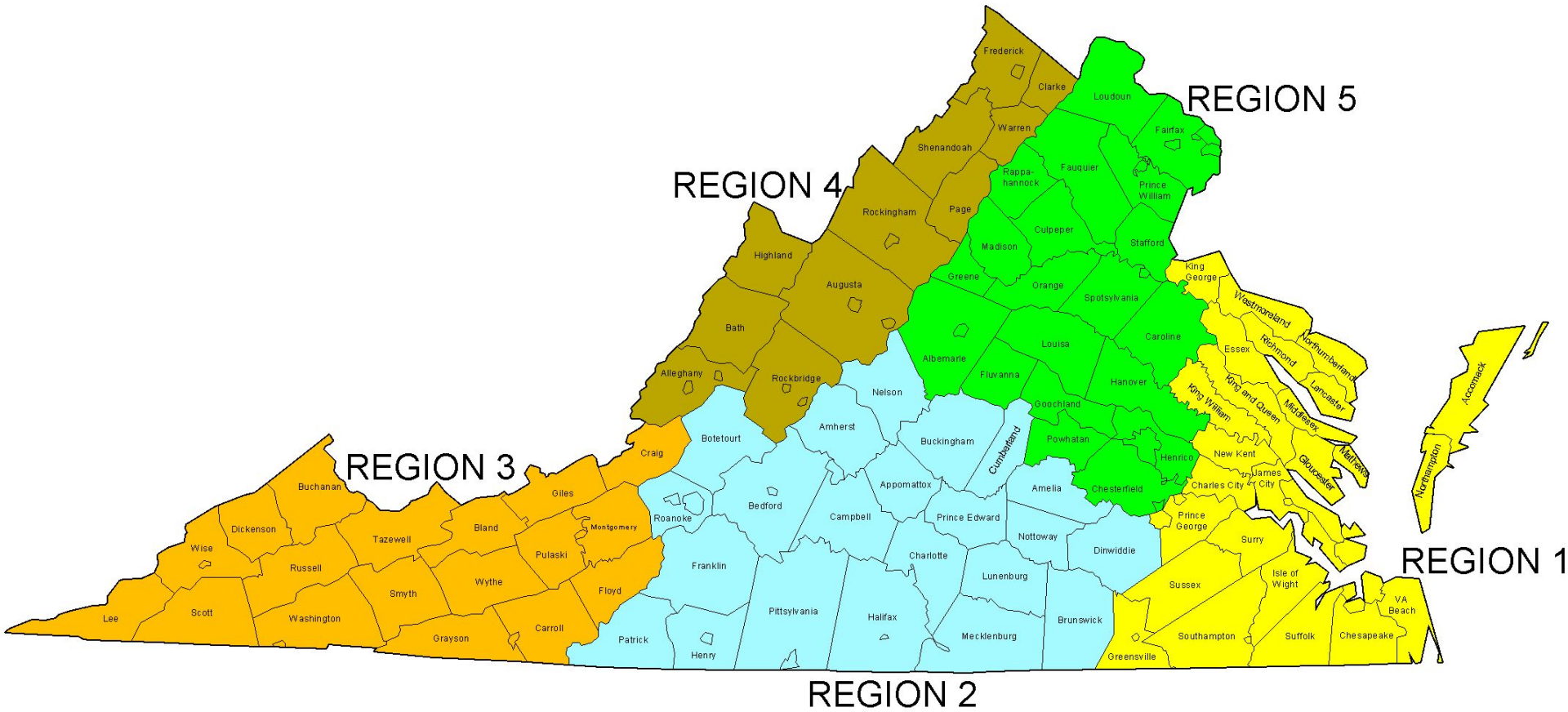
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-6

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Comm Index/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF GAME AND INLAND FISHERIES



COMMONWEALTH OF VIRGINIA RFP 2001 - 035

CTA Communications
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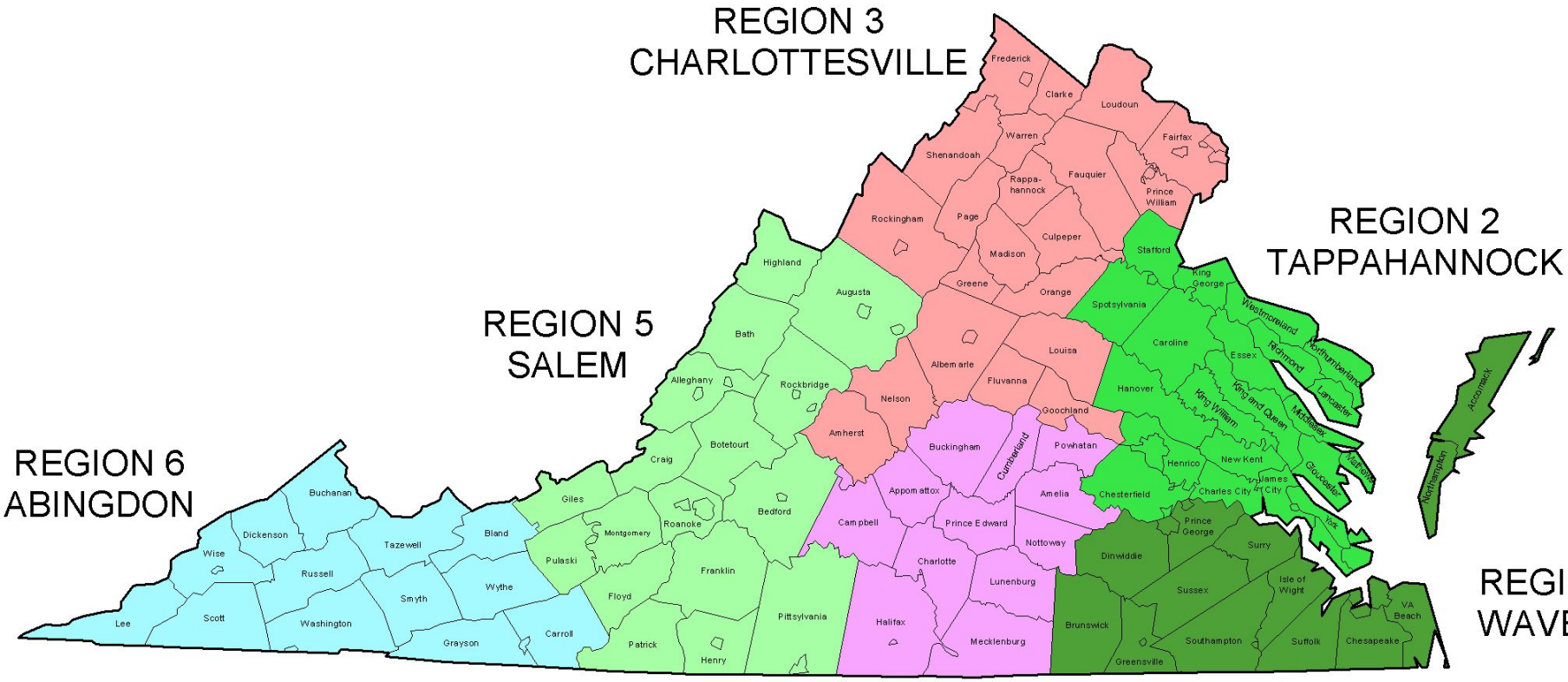
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-7
WCK	WCK	

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout 7
Commission/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF FORESTRY

CTA COMMUNICATIONS



COMMONWEALTH OF VIRGINIA RFP 2001-035

CTA Communications
20715 Timberlake Road
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804-239-9200

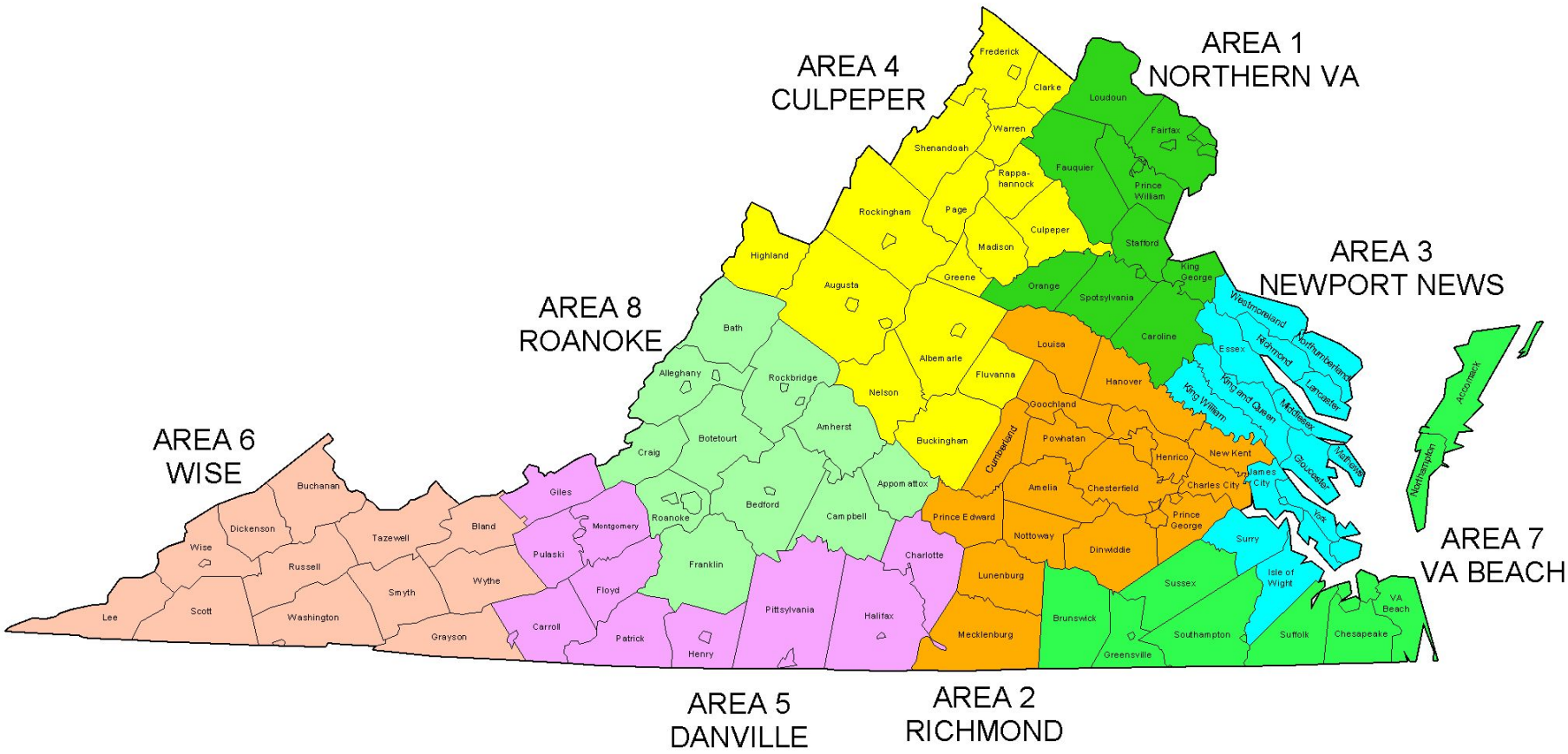
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-8

Path: H:\FILES\REGION MAPS\DEPT BOUNDARIES.APR LAYOUT 8
Commission/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF EMERGENCY MANAGEMENT

CTA COMMUNICATIONS

HAZMAT AREAS



CTA Communications
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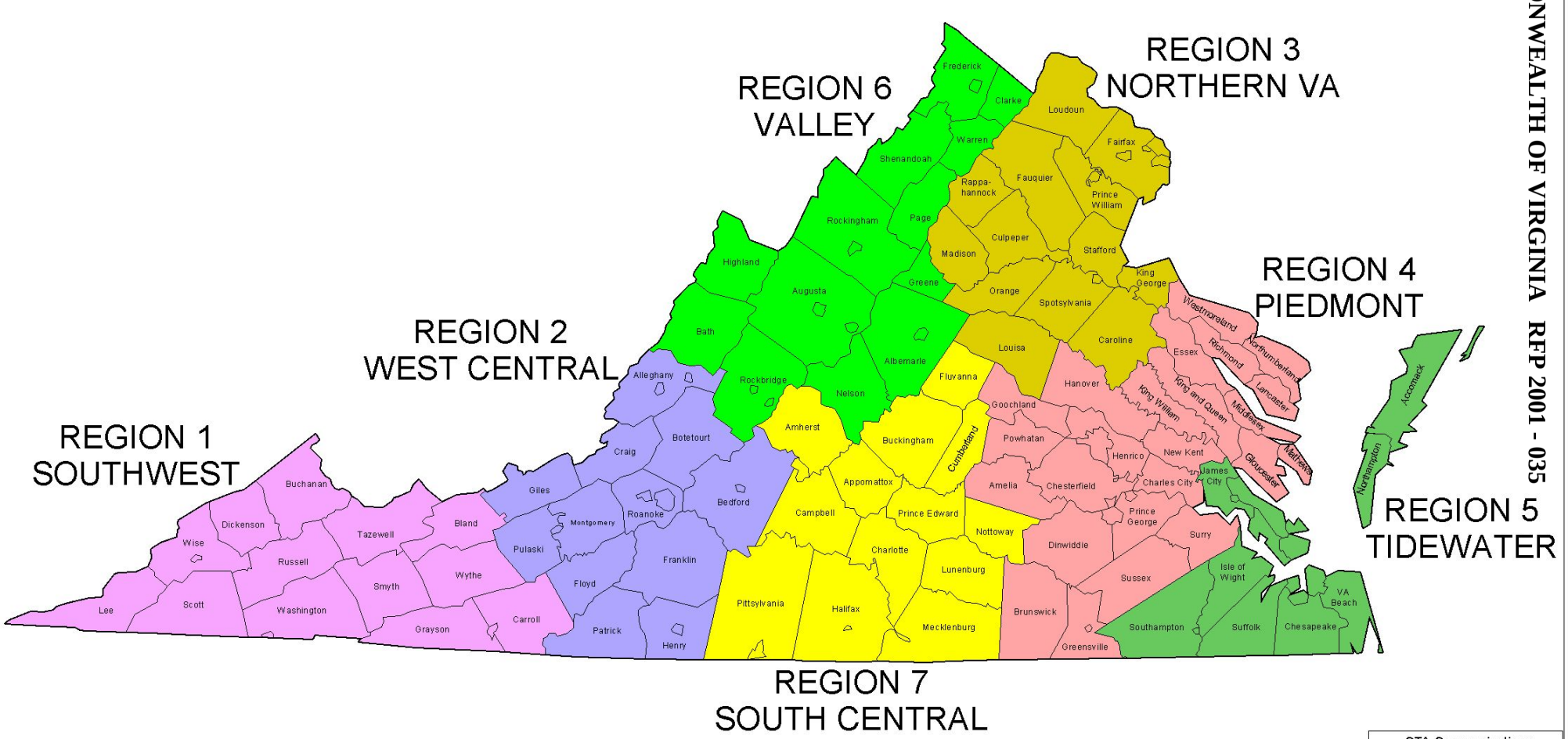
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-9

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout 9
Commodity/Client: COMMONWEALTH OF VIRGINIA

COMMONWEALTH OF VIRGINIA RFP 2001 - 035

DEPARTMENT OF ENVIRONMENTAL QUALITY

CTA COMMUNICATIONS



100 0 100 200 300 Miles

CTA Communications
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804-239-9200

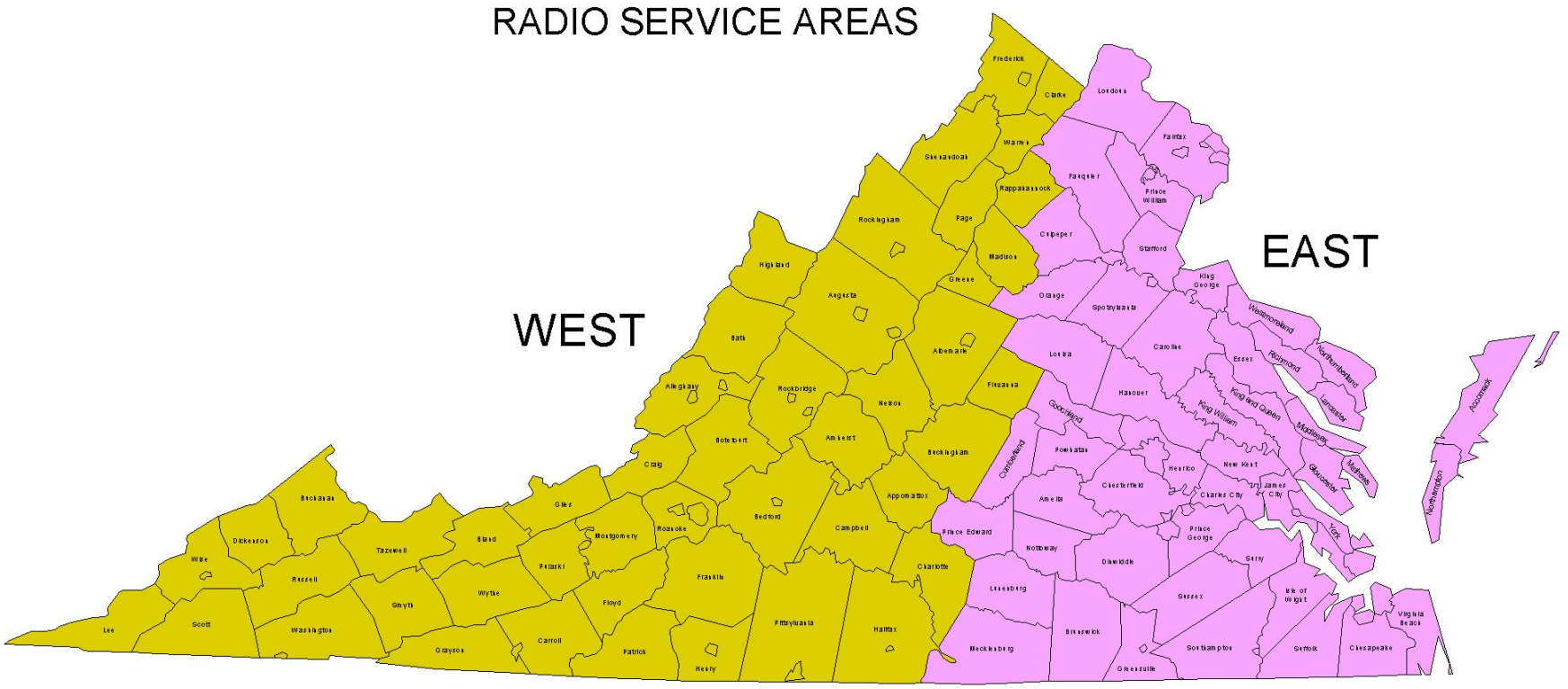
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-10
WCK	WCK	

Path: LAYOUT 10
N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Commission/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF INFORMATION TECHNOLOGY

COMMUNICATIONS

RADIO SERVICE AREAS



100 0 100 200 300 Miles

COMMONWEALTH OF VIRGINIA RFP 2001 - 035

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Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-11

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
LAYOUT 11
Commission/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF FIRE PROGRAMS

COMMUNICATIONS

RADIO SERVICE AREA

100 0 100 200 300 Miles

COMMONWEALTH OF VIRGINIA RFP 2001 - 035

CTA Communications
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Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-12
WCK	WCK	

Path: LAYOUT 12
N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Commodities/Client: COMMONWEALTH OF VIRGINIA

CAPITOL POLICE

COMMUNICATIONS

RADIO SERVICE AREA

100 0 100 200 300 Miles

COMMONWEALTH OF VIRGINIA RFP 2001 - 035

CTA Communications
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Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-13
WCK	WCK	

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout: 13
Commodities/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF AVIATION

COMMUNICATIONS

RADIO SERVICE AREA

100 0 100 200 300 Miles

COMMONWEALTH OF VIRGINIA RFP 2001 - 035

CTA Communications
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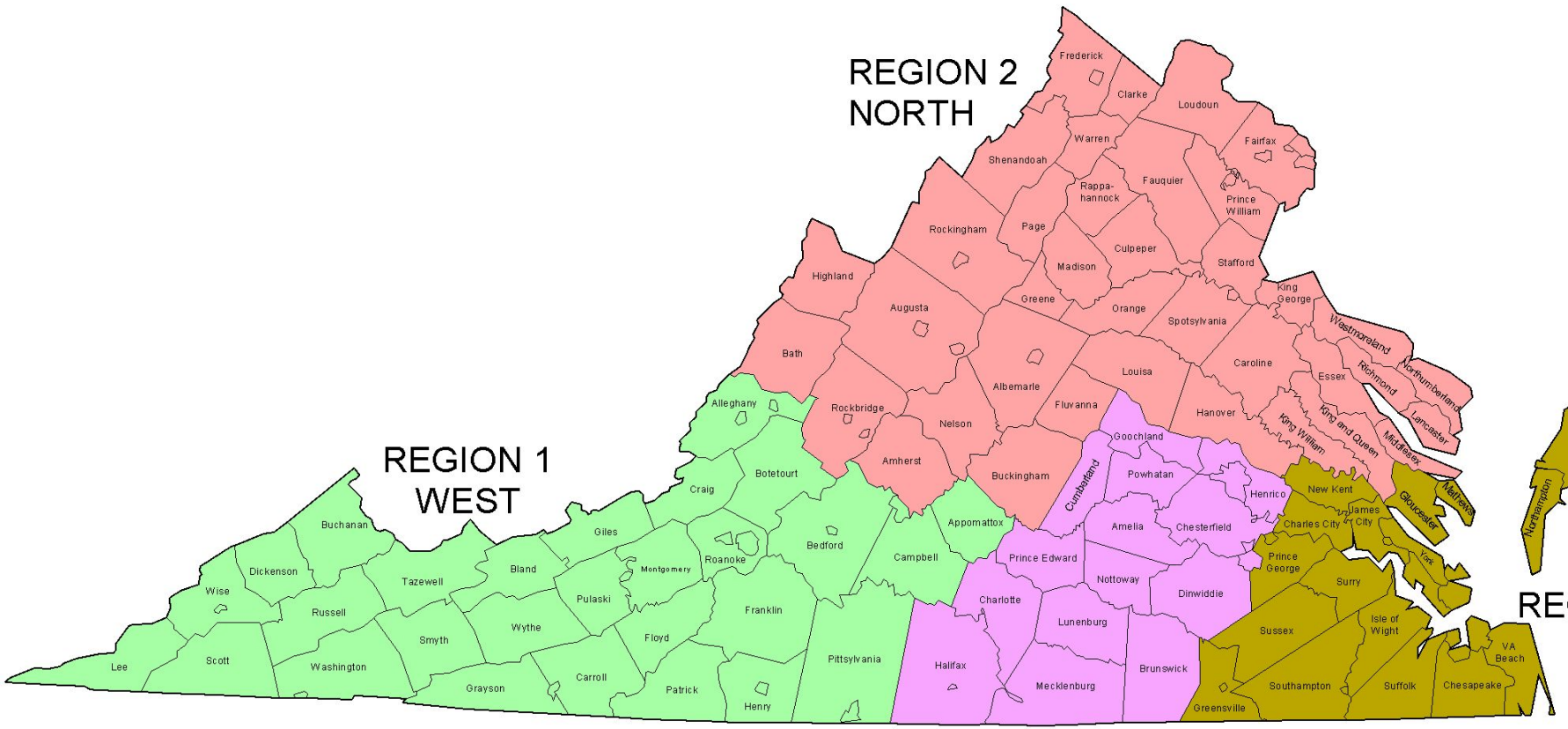
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-14
WCK	WCK	

Path: LAYOUT 14
N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Commodity/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF CORRECTIONS

COMMUNICATIONS

COMMONWEALTH OF VIRGINIA RFP 2001 - 035



CTA Communications
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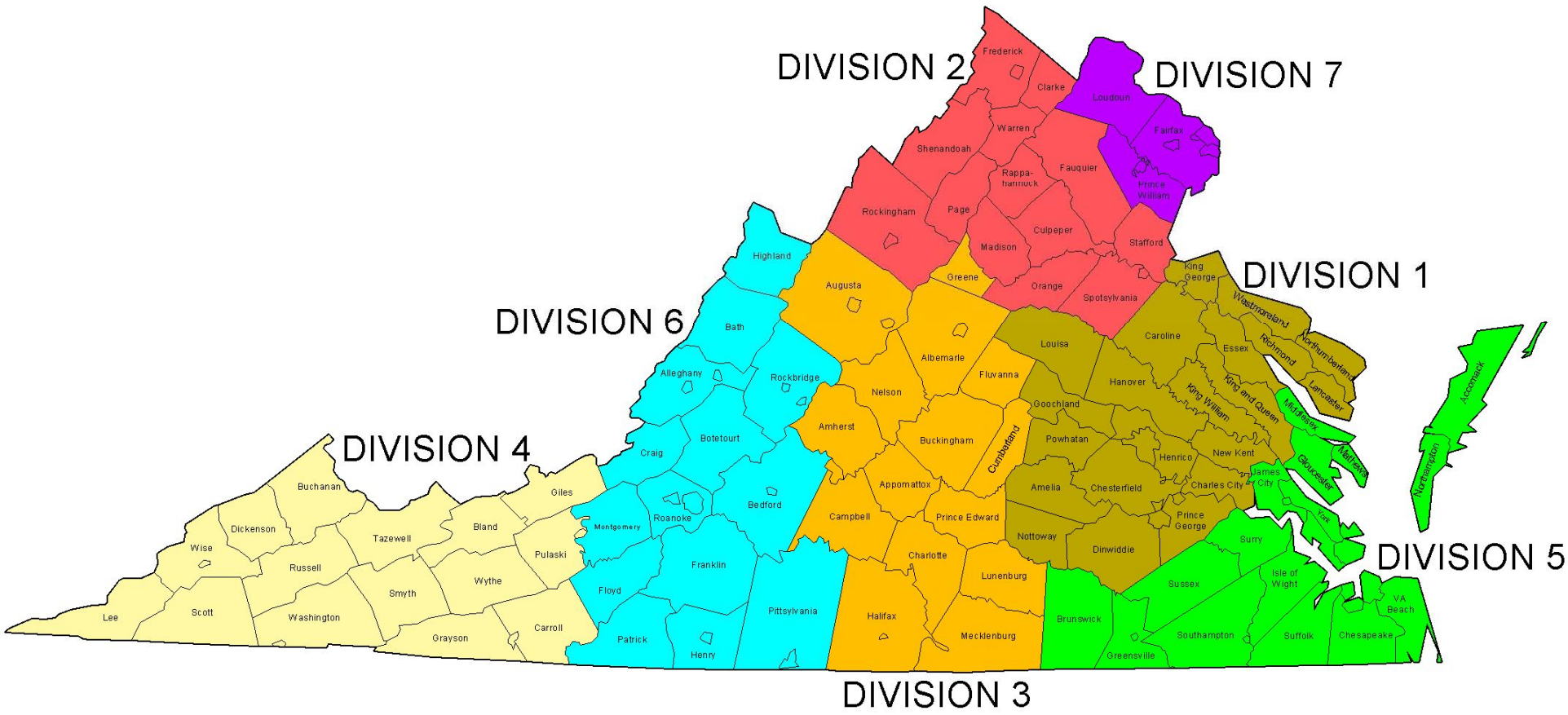
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-15

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout: 15
Commission/Client: COMMONWEALTH OF VIRGINIA

VIRGINIA STATE POLICE



COMMONWEALTH OF VIRGINIA RFP 2001 - 035

100 0 100 200 300 Miles

CTA Communications
20715 Timberlake Road
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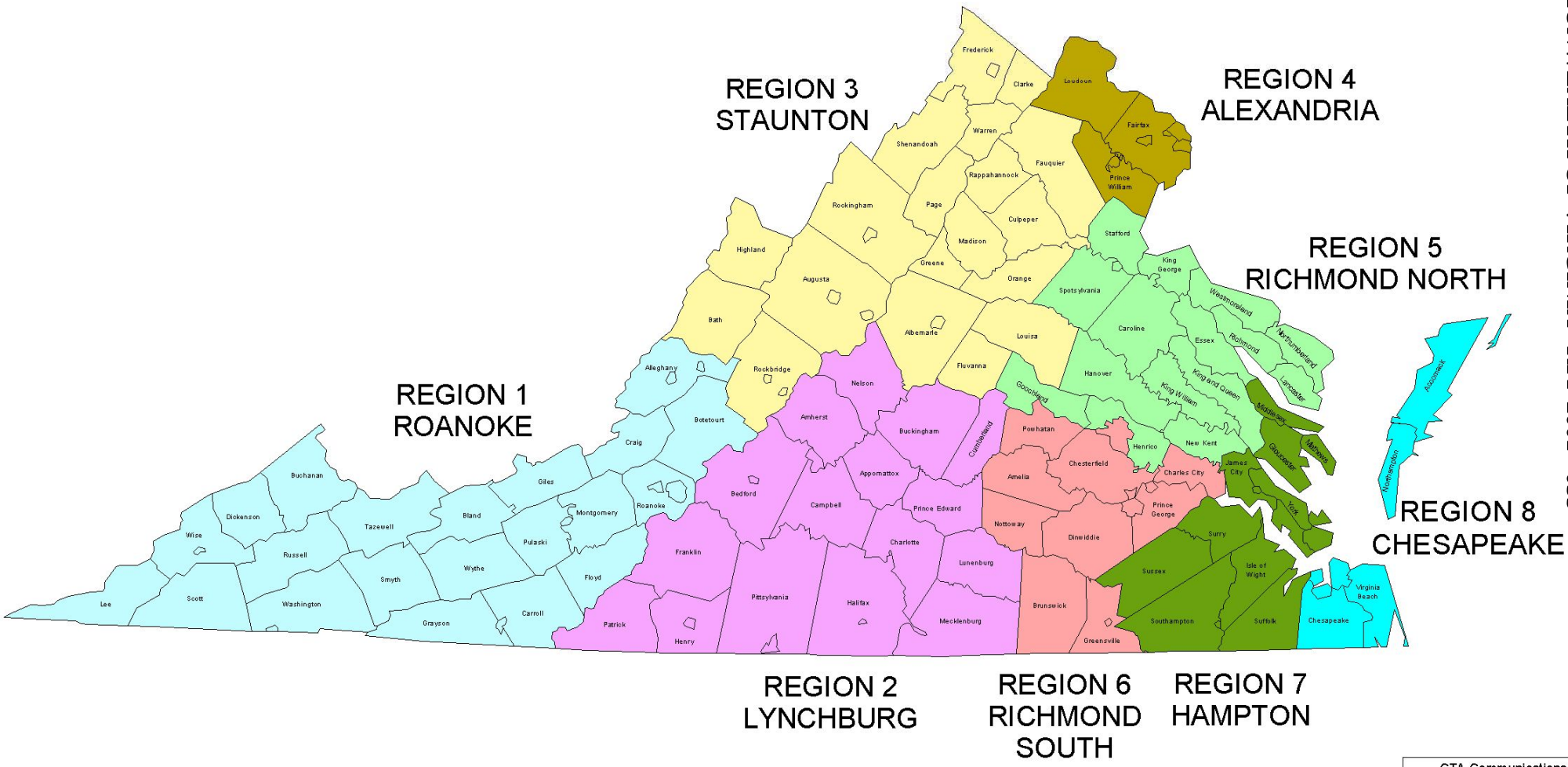
804-239-9200

Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-16
WCK	WCK	

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout 16
Commission/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL



300 200 100 0 100 200 300 Miles

CTA Communications
20715 Timberlake Road
Lynchburg, Va. 24502
804-239-9200

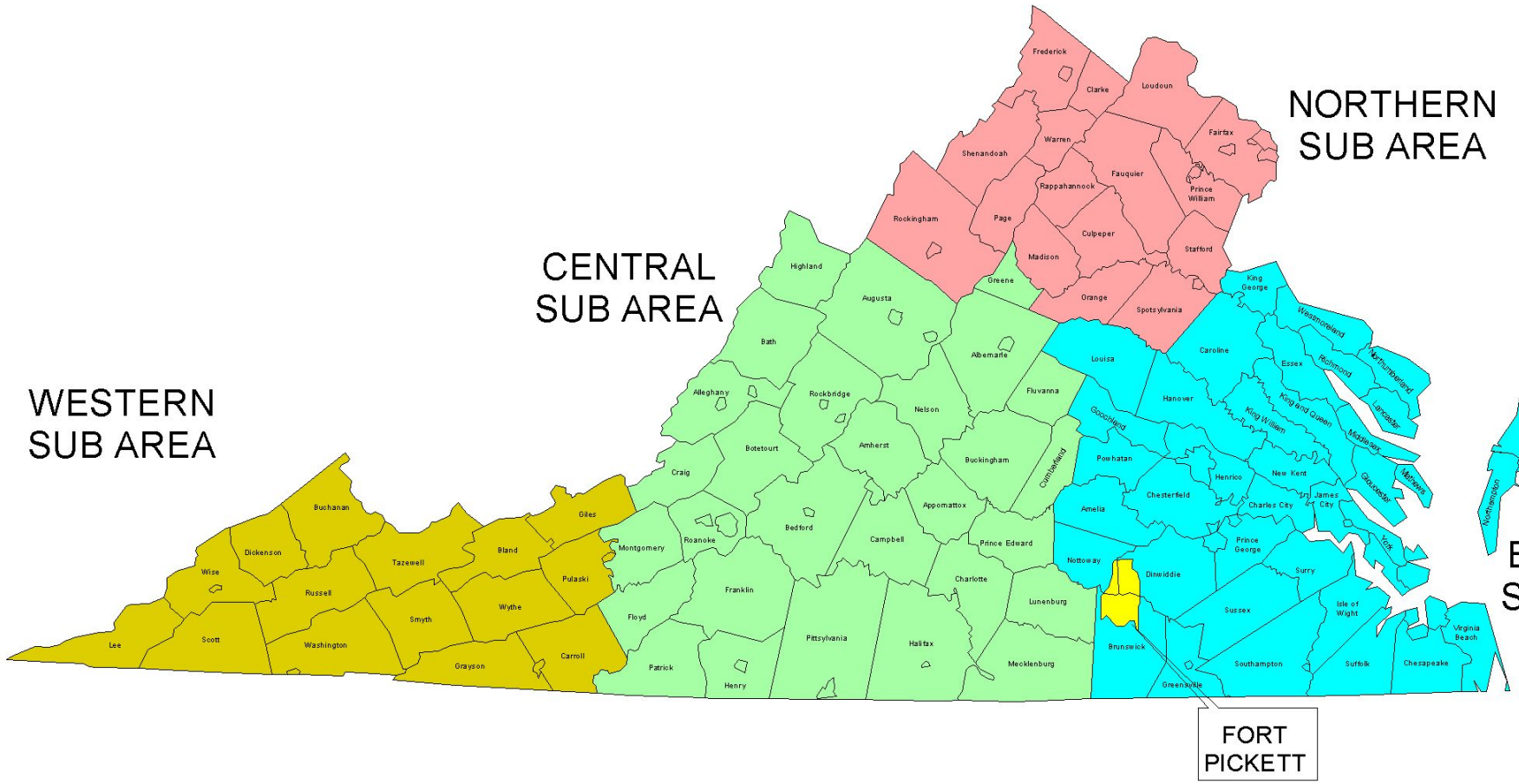
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-17
WCK	WCK	

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Commission/Client: COMMONWEALTH OF VIRGINIA

LAYOUT 17

DEPARTMENT OF MILITARY AFFAIRS

CTA COMMUNICATIONS



CTA Communications
20715 Timberlake Road
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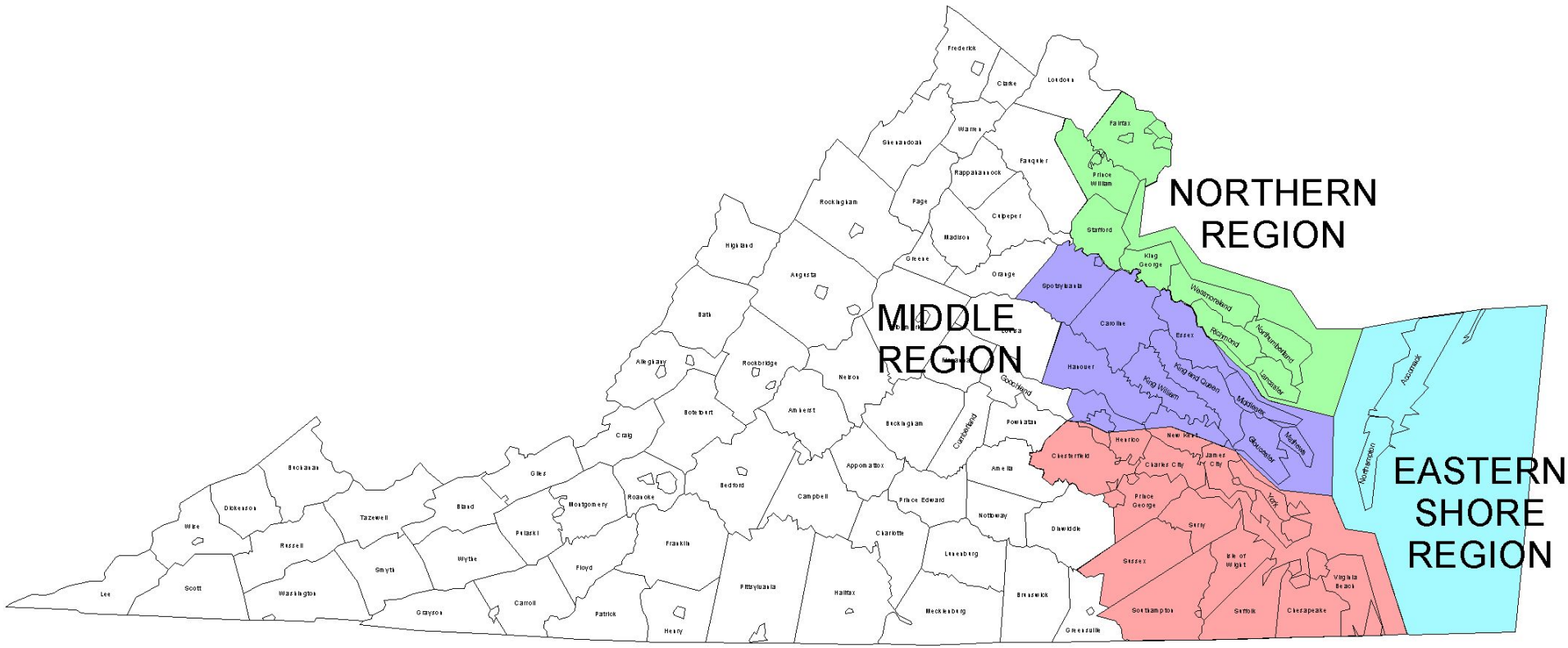
804-239-9200

Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-18

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Commission/Client: COMMONWEALTH OF VIRGINIA

LAYOUT 18

MARINE RESOURCES COMMISSION



COMMONWEALTH OF VIRGINIA RFP 2001 - 035

100 0 100 200 300 Miles

CTA Communications
20715 Timberlake Road
Lynchburg, Va. 24502
804-239-9200

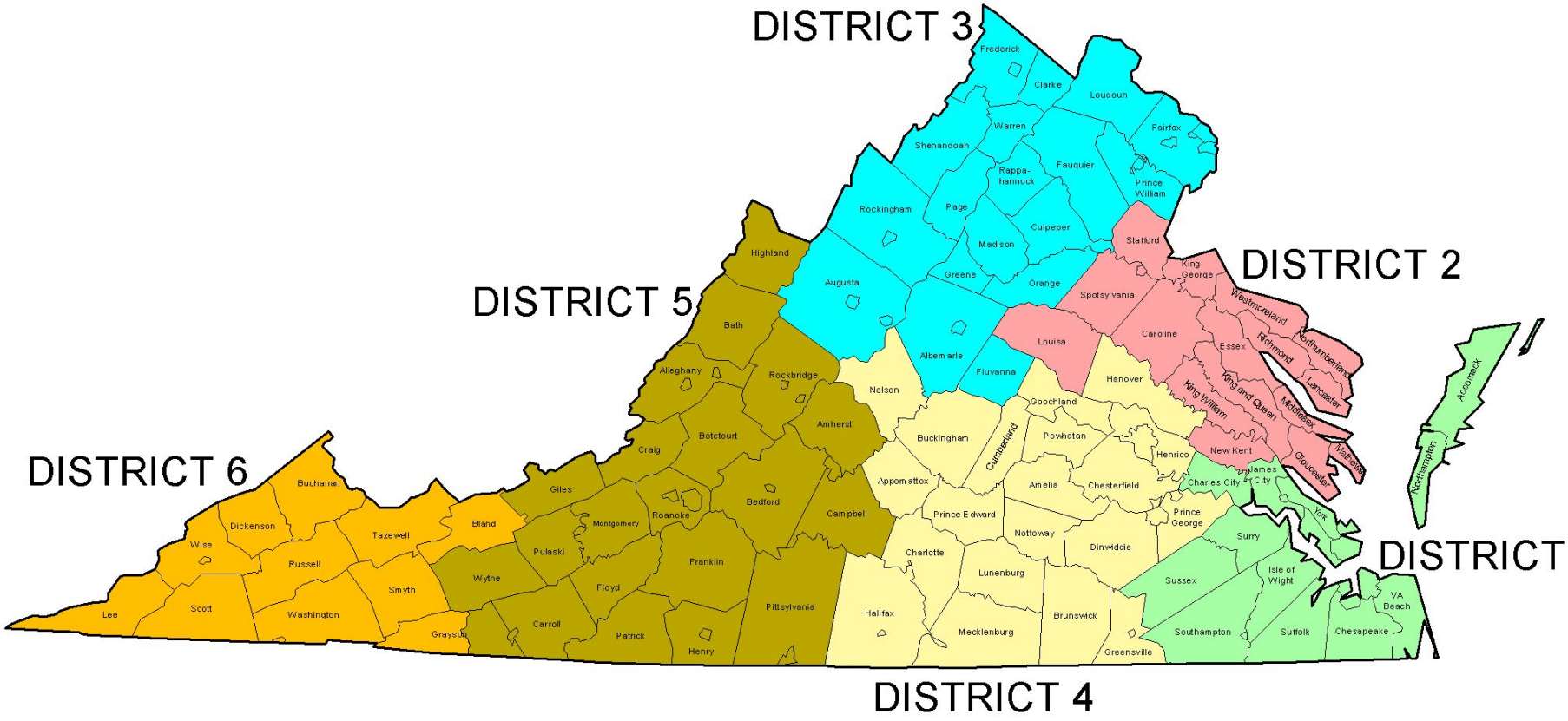
Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No. E-19
WCK	WCK	

Path: H:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout: 19
Commission/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION
DIVISION OF STATE PARKS

COMMUNICATIONS

COMMONWEALTH OF VIRGINIA RFP 2001 - 035



CTA Communications
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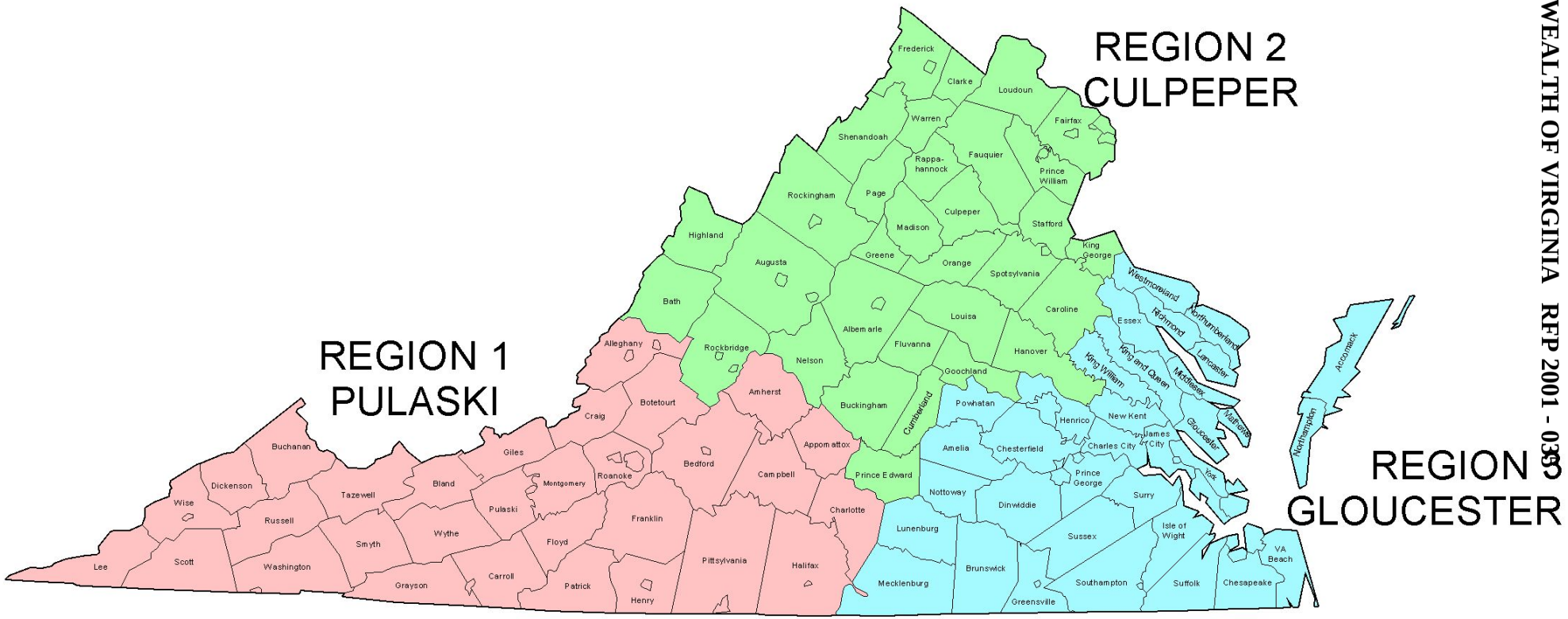
804-239-9200

Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-20

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout 20
Commission/Client: COMMONWEALTH OF VIRGINIA

DEPARTMENT OF EMERGENCY MANAGEMENT

ADMINISTRATIVE REGIONS



CTA Communications
20715 Timberlake Road
Lynchburg, Va. 24502
804-239-9200

Design	Drawn	Date
JRW	JRW	22 MAY 2001
Checked	Approved	Figure No.
WCK	WCK	E-21

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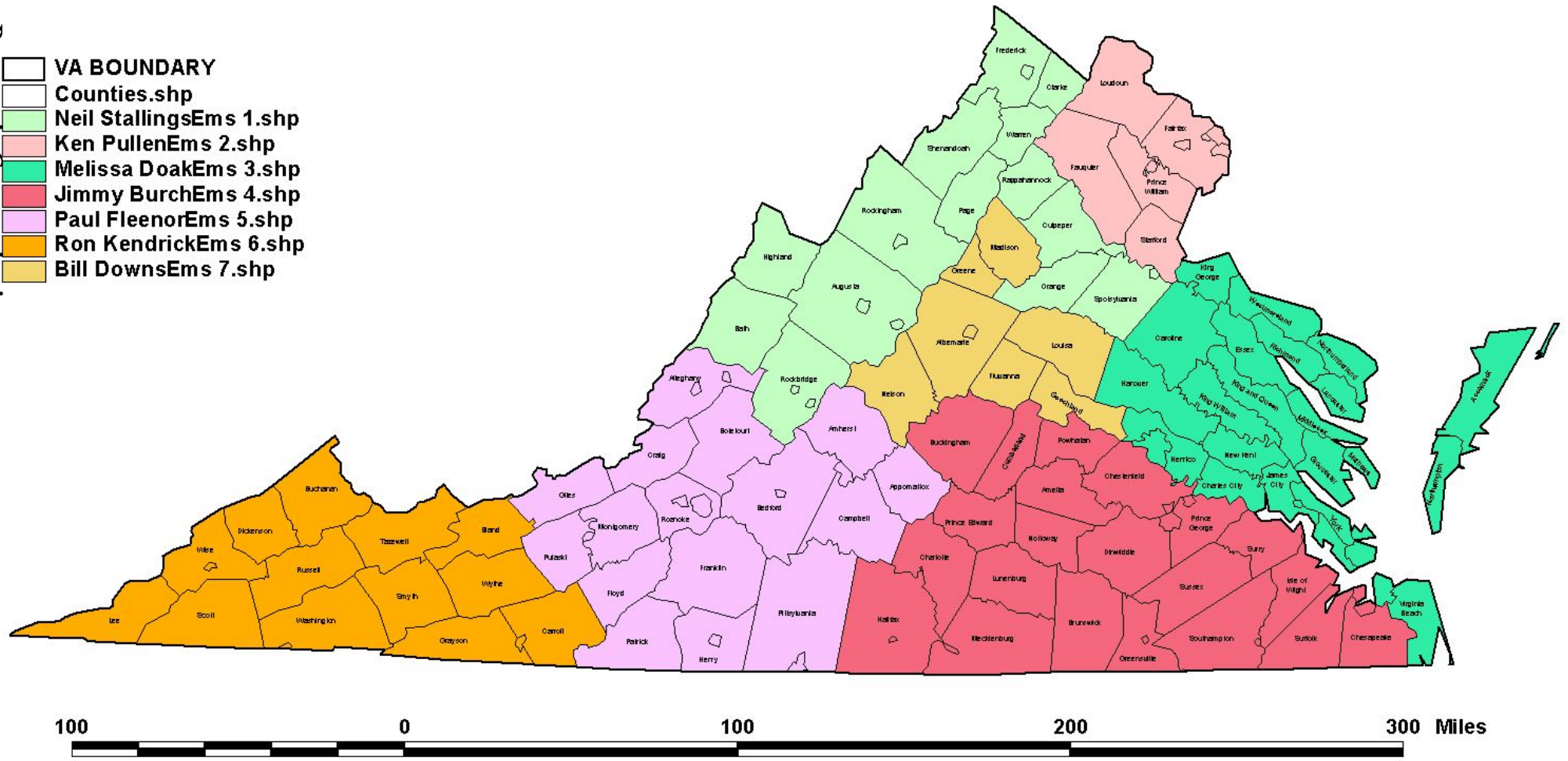
Commission/Client:
COMMONWEALTH OF VIRGINIA

OFFICE OF EMERGENCY MEDICAL SERVICES PROGRAM REPRESENTATIVES' SERVICE AREAS

COMMONWEALTH OF VIRGINIA RFP 2001 - 035



CTA Communications
20715 Timberlake Road
Lynchburg, Va. 24502
804-239-9200

Design JRW	Drawn JRW	Date 29 MAY 2001
Checked WICK	Approved WICK	Figure No. E-22

Path: N:\FILES\REGION MAPS\DEPT BOUNDARIES.APR
Layout 22
Commission Client: COMMONWEALTH OF VIRGINIA

APPENDIX F

TABLE F-1
AGENCY INTRANET ACCESS LOCATIONS

Latitude	Longitude	Agency	Site Identification	Address	City
36.48225000	-82.41102778	VDEM	Tri-Cities Iflows	2494 Hwy 75	BLOUNTVILLE, TN
36.61683333	-82.12545000	VSP	Div 4 AO 27 - Bristol		
36.61688333	-82.12576667	VDOT	Bristol District	870 Bonham Road	BRISTOL
36.63088333	-79.39688333	VSP	Div 6 AO 43 - Danville		
36.63761667	-79.85983333	VSP	Div 6 AO 42 - Martinsville		
36.67918333	-82.04113333	VSP	Aviation Field Office West - Abingdon		
36.68313333	-77.00941667	VSP	Div 5 AO 34 - Franklin		
36.68527778	-82.03472222	VSP	Abington Aviation Unit	Virginia Highlands Airport	ABINGDON
36.69336667	-80.88523333	VSP	Div 4 AO 25 - Galax		
36.69444444	-80.88416667	VSP	Galax Area 25	1175 Glendale Road	GALAX
36.70933333	-81.97765000	ABC	Abington	102 Abington Road	ABINGTON
36.71250000	-81.97972222	DOF	Abington	1240 West Main St	ABINGTON
36.72911667	-76.58283333	DOC		157 North Main Street	SUFFOLK
36.74338333	-78.11481667	VSP	Div 3 AO 22 - South Hill		
36.74338333	-77.50500000	VSP	Div 5 AO 35 - Emporia		
36.75444444	-76.58166667	VDOT	Hampton Roads District	1700 N. Main Street	SUFFOLK
36.76611111	-76.25166667	VSP	Chesapeake Bci-Ded	1417 North Battlefield Boulevard, Suite 390	CHESAPEAKE
36.76923333	-76.60671667	VSP	Safety AO 65 - Suffolk		
36.77001667	-78.92363333	VSP	Div 3 AO 23 - South Boston		
36.77194444	-76.25805556	VSP	Chesapeake Area 47	1508 Technology Drive	CHESAPEAKE
36.77223333	-76.25885000	VSP	Div 5 AO 47 - Chesapeake		
36.79535000	-76.23708333	VSP	Div 5 HQ - Chesapeake		
36.80785000	-76.22291667	ABC	Chesapeake	1103 S. Military Hwy	CHESAPEAKE
36.84611111	-76.19111111	VSP	Norfolk Area 32	814 Kempsville Road	NORFOLK
36.84866667	-76.19046667	VSP	Div 5 AO 32 - Norfolk		
36.85591667	-82.76016667	-	Buchann/Smith Bldg	Route 23 - South	BIG STONE GAP
36.85831667	-76.30471667	DOH	Tidewater Dist Medical Examiner	830 Southampton Ave	NORFOLK
36.93918333	-80.99683333	VSP	Div 4 HQ - Wytheville		
36.93918333	-80.99683333	VSP	Div 4 AO 26 - Wytheville		
36.94806667	-81.08423333	VSP	Safety AO 64 - Wytheville		
36.96583333	-81.06333333	VSP	Wytheville Bci-Ded	105 Usda Drive	WYTHEVILLE
36.97880278	-76.43061389	MRC	Marine Resources Commission	2600 Washington Ave	NEWPORT NEWS
36.98893333	-82.56576667	VSP	Div 4 AO 30 - Wise		
37.03295000	-78.45073333	DOC		199 Spotnap Road	CHARLOTTESVILLE
37.03333333	-77.09388889	DOF	Waverly	135 Bank St	WAVERLY
37.03583333	-77.09444444	VSP	Waverly Area 36	438 East Main Street	WAVERLY
37.03941667	-77.07751667	VSP	Div 5 AO 36 - Waverly		
37.04852778	-80.78302778	VDEM REG I	Vdem Region I	143 Third St	PULASKI
37.05205000	-81.77011667	VSP	Div 4 AO 28 - Claypool Hill		
37.06326667	-76.40163333	VSP	Div 5 AO 46 - Hampton/Newport News		
37.06333333	-76.40138889	VSP	Hampton/Newport News Area 46	303 Butler Farm Road	HAMPTON

TABLE F-1
AGENCY INTRANET ACCESS LOCATIONS

Latitude	Longitude	Agency	Site Identification	Address	City
37.06516667	-77.96783333	DMA	Starc Eoc	Bldg 310, Fort Picket	BLACKSTONE
37.09458333	-80.69023333	VSP	Div 4 AO 24 - Pulaski		
37.13810000	-76.83590000	VDEM	Surry Nuclear Power Station	5570 Hog Island Road	
37.15746667	-77.41405000	VSP	Div 1 AO 07 - Petersburg		
37.19583333	-77.45861111	VSP	Petersburg Area 7	25650 Simpson Road	PETERSBURG
37.21230000	-82.12505000	VSP	Div 4 AO 29 - Vansant		
37.24950000	-76.43140000	ABC	Hampton	4907 W. Mercury Blvd	HAMPTON
37.27370000	-80.13504444	VSP	Div 6 HQ - Salem		
37.27370000	-80.13504444	VSP	Div 6 AO 40 - Salem		
37.27666667	-80.12972222	VSP	Salem Area 40/66	2713 West Main Street	SALEM
37.28143333	-80.10830000	VSP	Safety AO 67 - Fairfax		
37.28143333	-80.10830000	VSP	Div 7 HQ - Fairfax		
37.28143333	-80.10830000	VSP	Div 7 AO 09 - Fairfax		
37.28173333	-80.10670000	VSP	VSP Int Affairs Field Office - Salem		
37.29076667	-77.41031667	VDOT	Richmond District	2400 Pine Forest Drive	COLONIAL HEIGHTS
37.29583333	-78.38611111	DOF	Farmville	717 East Third Street	FARMVILLE
37.29921667	-80.04726667	VDOT	Salem District	731 Harrison Ave	SALEM
37.30888889	-80.16083333	DOF	Salem	210 Riverland Drive	SALEM
37.31886667	-76.69640000	VSP	Div 5 AO 37 - Williamsburg		
37.32483333	-79.99238333	ABC	Roanoke	3023 Peters Creek Road	ROANOKE
37.32756667	-80.00091667	DOH	Western Dist. Chief Medical Examiner	6600 Northside High School Road	ROANOKE
37.33083333	-79.20296667	VSP	Safety AO 63 - Lynchburg		
37.33083333	-79.20296667	VSP	Div 3 AO 20 - Lynchburg		
37.33611111	-79.19194444	VSP	Lynchburg	1063 Airport Drive	LYNCHBURG
37.33823333	-79.55186667	VSP	Div 6 AO 41 - Bedford		
37.33951667	-79.97025000	DOC		5427 Peters Creek Road	ROANOKE
37.34550000	-79.23573333	ABC	Lynchburg	20353 Timberlake Road	LYNCHBURG
37.36353333	-78.84928333	VSP	Div 3 HQ - Appomattox		
37.36353333	-78.84928333	VSP	Div 3 AO 21 - Appomattox		
37.37673333	-79.12820000	VDOT	Lynchburg District	4219 Campbell Ave	LYNCHBURG
37.40611111	-77.52055556	VSP	Aviation Division	7411 Airfield Drive	RICHMOND
37.40845000	-77.51683333	VSP	Aviation Headquarters - Richmond		
37.41416667	-76.54000000	VSP	Gloucester Area 33	6104 Fiddlers Green Rd	GLOUCESTER
37.41613889	-76.54461111	VDEM	Vdem Region III	6104 Fiddlers Green Rd	GLOUCESTER
37.41706667	-76.54256667	VSP	Div 5 AO 33 - Gloucester		
37.46766667	-77.48681667	VSP	Safety AO 61 - Richmond		
37.49722222	-77.60555556	VSP	Safety Division	491 Southlake Boulevard	RICHMOND
37.49750000	-77.54472222	VSP	Internal Auditors	8012 Midlothian Turnpike	RICHMOND
37.49777778	-77.57027778	VSP	Bci Auto Theft Moorefield	812 Moorefield Park	RICHMOND
37.49788333	-77.54380000	VSP	VSP Professional Standards Unit - Richmond		
37.49900000	-77.53870000	VSP	VSP Admin HQ - Richmond		

TABLE F-1
AGENCY INTRANET ACCESS LOCATIONS

Latitude	Longitude	Agency	Site Identification	Address	City
37.49911667	-77.60121667	VSP	Safety Div HQ - Richmond		
37.49963889	-77.59038889	VDEM	Trade Court Facility	10501Trade Court	RICHMOND
37.50027778	-77.54916667	VSP	BCI Auto Theft Moorefield	719 Twin Ridge Lane	RICHMOND
37.50166667	-77.53888889	VDEM	VA EOC	7700 Midlothian Turnpike	RICHMOND
37.50205000	-77.58990000	DOC		10501 Trade Court	RICHMOND
37.51027778	-77.76638889	VSP	Powhatan Area 6	1765 Anderson Hwy	POWHATAN
37.51308333	-77.33052778	DOAV	Dept Of Aviation	5702 Gulfstream Road	RICHMOND
37.51944444	-77.56666667	DJJ	Bon Air Jcc	1900 Chatsworth Ave	BON AIR
37.53071667	-77.42428333	DOH	State Health Commissioner	1500 E. Main Street, Room 214	RICHMOND
37.53088333	-78.49715000	VSP	Div 3 AO 19 - Buckingham		
37.53813333	-77.43910000	DIT	Data Center	110 South 7Th Street	RICHMOND
37.53836667	-77.43308333	CAP POL	Capitol	Capitol Square	RICHMOND
37.53856667	-77.43586667	CAP POL	Admn Hq	100 N. 9Th Street	RICHMOND
37.53991667	-77.43733333	DJJ	Djj Central Office	7Th And Franklin Streets	RICHMOND
37.54000000	-77.43455000	CAP POL	Isu Hq	200 N. 9Th St.	RICHMOND
37.54000000	-77.43455000	CAP POL	Eoc	200 N. 9Th St.	RICHMOND
37.54166667	-77.38250000	VSP	Richmond Area 8	37512 Nine Mile Road, Suite B	RICHMOND
37.54208333	-77.38476667	VSP	Div 1 AO 08 - Richmond		
37.54715000	-77.43450000	DOH	Richmond Dist. Chief Medical Examiner	400 East Jackson St	RICHMOND
37.57255250	-77.49640000	ABC	Richmond	2901 Hermitage Road	RICHMOND
37.58281667	-76.85023333	VSP	Div 1 AO 03 - West Point		
37.60158333	-77.56456667	DOH	Office Of Ems	1538 E. Parham Rd	RICHMOND
37.65038333	-77.45936667	VSP	Div 1 HQ - Richmond		
37.66725000	-75.73123333	VSP	Div 5 AO 31 - Melfa		
37.67222222	-77.48194444	DGIF	Main Office	4010 W. Broad Street	RICHMOND
37.67986667	-77.76638333	VSP	Div 1 AO 06 - Powhatan		
37.68500000	-77.45416667	VSP	Ashland Area	10341 Stony Run Ln	ASHLAND
37.68695000	-79.49030000	VSP	Div 6 AO 39 - Lexington		
37.68886667	-77.45275000	VSP	Div 1 AO 01 - Ashland		
37.75277778	-77.33888889	DJJ	Hanover Jcc	7093 Broadneck Road	HANOVER
37.81720000	-79.80563333	VSP	Div 6 AO 38 - Clifton Forge		
37.86591667	-77.89330000	VSP	Div 1 AO 04 - Mineral		
37.89166667	-76.87805556	DOF	Tappahannock	623 Lewis St	TAPPAHANNOCK
37.98000000	-78.48916667	DOF	Charlottesville	470 George Dean Drive	CHARLOTTESVILLE
37.98346667	-76.73438333	VSP	Div 1 AO 02 - Warsaw		
38.02138889	-78.53138889	DOF	Charlottesville	900 Natural Resources	CHARLOTTESVILLE
38.02230556	-78.53205556	DMME	Dept Of Mines, Minerals And Energy Fontaine Rsch.Park	900 Natural Resources Drive	CHARLOTTESVILLE
38.02500000	-78.52277778	VSP	Charlottesville Area 18	906 Natural Resources Drive	CHARLOTTESVILLE
38.02545000	-78.52708333	VSP	Div 3 AO 18 - Charlottesville		
38.05000000	-77.34583333	VSP	Bowling Green Area 44	101 Ennis Street	BOWLING GREEN
38.05001667	-77.34568333	VSP	Div 1 AO 44 - Bowling Green		

TABLE F-1
AGENCY INTRANET ACCESS LOCATIONS

Latitude	Longitude	Agency	Site Identification	Address	City
38.06033333	-77.80133333	VDEM	North Anna Nuclear Power Station	Mineral	
38.13056667	-79.03880000	VSP	Div 3 AO 17 - Staunton		
38.15406667	-79.56633333	ABC	Staunton	460 Commerce Square	STAUNTON
38.26525000	-77.49590000	VSP	Div 2 AO 05 - Fredericksburg		
38.31911667	-77.44668333	VDOT	Fredericksburg District	87 Deacon Road	FREDERICKSBURG
38.36083333	-78.02333333	DJJ	Culpepper Jcc	12240 Coffeewood Dr	MITCHELLS
38.39570000	-78.91471667	VSP	Div 2 AO 16 - Harrisonburg		
38.44322222	-78.00194444	VDEM	Vdem Region Ii	119004 Industrial Blvd	CULPEPER
38.45973333	-77.99775000	VDOT	Culpepper District	1601 Orange Road	CULPEPER
38.49423333	-77.92581667	VSP	Safety AO 62 - Culpeper		
38.49423333	-77.92581667	VSP	Div 2 HQ - Culpeper		
38.49423333	-77.92581667	VSP	Div 2 AO 15 - Culpeper		
38.63886667	-77.44376667	VSP	Div 7 AO 11 - Independent Hill		
38.65166667	-77.31222222	DEQ	Northern Virginia Regional Office	13901 Crown Court	WOODBRIDGE
38.66106667	-78.48098333	VSP	Div 2 AO 14 - Luray		
38.69910000	-77.78825000	VSP	Div 2 AO 12 - Warrenton		
38.69944444	-77.78861111	VSP	Warrenton Area 12	455 West Shirley Avenue	WARRENTON
38.72643333	-77.51076667	VSP	Aviation Field Office North - Manassas		
38.72666667	-77.51388889	VSP	Manassas Aviation Unit	10511 Terminal Road	MANASSAS
38.77777778	-77.17250000	VSP	Springfield Area 48	6618 Franconia Road	SPRINGFIELD
38.77800000	-77.17306667	VSP	Div 7 AO 48 - Springfield		
38.81361667	-77.44683333	ABC	Alexandria	501 Montgomery St.	ALEXANDRIA
38.82340000	-77.28130000	DOH	Northern Virginia Chief Medical Examiner	9797 Braddock Road, Suite 100	FAIRFAX
38.86860000	-77.06488333	VSP	Div 7 AO 45 - Arlington		
38.90750000	-77.45305556	VDOT	Northern Va District		
39.07472222	-77.55527778	VSP	Loudon Area 10	41904 Loudon Center Place	LEESBURG
39.07553333	-77.55243333	VSP	Div 7 AO 10 - Leesburg		
39.12518333	-78.19393333	VSP	Div 2 AO 13 - Winchester		
		VDOT	Staunton District	Commerce Road	STAUNTON
		VDEM	Generation Corporate Response	5000 Dominion Blvd	
		DMV	Richmond Central Office	2300 West Broad Street	RICHMOND

TABLE F-2
DISPATCH CONSOLE LOCATIONS

Communication Zone	COV Agency	Console location	Location (street address)	City	County	Latitude	Longitude	Number of Consoles
CZ-01	Capitol Police	Admin. Headquarters	100 N. 9th Street	Richmond	Chesterfield			2
CZ-01	Va. Dept. of Emergency Management	VEOC	7700 Midlothian Turnpike	Richmond	Chesterfield	37-30-06.0	77-32-20.0	4
CZ-06	Dept. of Forestry	Headquarters	900 Natural Resources Rd.	Charlottesille	Albermarle	38-01-17	78-31-53	4
CZ-01	Dept. of Game and Inland Fisheries	Headquarters (?)	4010 W. Broad St.	Richmond	Chesterfield			1
CZ-10	Marine Resourses Commission	Newport News	30 Jefferson Avenue	Newport News		36-57-51.3	76-24-39.9	1
CZ-01	Military Affairs	Fort Pickett	Building 471, Fort Pickett	Blackstone	Nottoway	37-03-28.3	77-58-19.6	1
CZ-01	State Police	1st Division Headquarters	9300 Brook Road	Glen Allen	Henrico	37-38-41.0	77-27-37.0	5
CZ-03	State Police	2nd Division Headquarters	15148 State Police Road	Culpeper	Culpeper	38-29-41.0	77-55-34.0	5
CZ-05	State Police	3rd Division Headquarters	Rte. 613 and 460	Appomattox	Appomattox	37-21-40.0	78-52-06.0	5
CZ-07	State Police	4th Division Headquarters	1186 East Lee Highway	Wytheville	Wytheville	36-56-25.0	80-59-49.0	5
CZ-10	State Police	5th Division Headquarters	1557 South Military Highway	Chesapeake		36-47-44.0	76-14-17.0	5
CZ-11	State Police	6th Division Headquarters	3775 South Main Street	Salem		37-16-37.0	80-07-41.0	5
CZ-13	State Police	7th Division Headquarters	9801 Braddock Road	Fairfax	Fairfax	38-49-29.0	77-17-02.0	6
CZ-01	State Police	SPHQ	7700 Midlothian Turnpike	Richmond	Chesterfield	37-30-11.0	77-32-30.9	4
CZ-13	Dept. of Transportation		1426 Columbia Pik	Arlington				1
CZ-10	Dept. of Transportation		970 Reon Drive	Va. Beach				1

APPENDIX G

Talk Group Plan

1.0 INTRODUCTION

The following sets forth the preliminary Talk-Group Plan for the State of Virginia (COV Contract Paragraph B2.02). Refer to Table G-1.

2.0 DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL (ABC)

Twenty-five agency specific and fifty-two common talk groups are provided for the Department of Alcoholic Beverage Control. Each of the eight ABC Regions would have a single, region-wide operations channel (talk group). All ABC units in that region will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the calling channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows.

2.1 ABC Regional Operations Group (1 per region –8 total) (Priority Level Urgent) – Monitored by all units in the region and used to establish communications with other ABC units in the region.

2.2 ABC Regional Working Groups (2 per region – 16 total) (Priority Level Urgent)– Two talk groups are provided in each ABC region for communications between units. As noted above, units will initially establish communications on the regional working channel then switch to one of the regional working channels.

2.3 ABC Management (1 per agency –available all zones) (Priority Level Routine) – This talk group is reserved for use by senior Department of Alcoholic Beverage Control management.

2.4 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

2.5 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

3.0 DEPARTMENT OF AVIATION (DOAV)

Two operational talk groups are provided for the Department of Aviation. At this time, the talk groups are only listed as general talk groups since the DOAV's use of the STARS is not well defined.

4.0 CAPITOL POLICE

Twelve agency specific talk groups and four common talk groups are provided for the Capitol Police. All Capitol Police units will monitor the dispatch. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the calling channel. In addition to the agency specific talk groups, four common talk groups are provided. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows. All units will be equipped with at least 7 of the talk groups as follows:

4.1 Capitol Police Dispatch (One per agency) (Priority Level High) – primary talk group used for day-to-day operations. This talk group is monitored by the Capitol Police Communications Center. All units assigned to fixed posts, traffic control, and other similar details would monitor this talk group. This talk group would be similar to the current Channel 1.

4.2 Capitol Police Fixed Posts (One per agency) (Priority Level Urgent) – used by units assigned to the various fixed posts to communicate amongst themselves.

4.3 Capitol Police Traffic Control (One per agency) (Priority Level Urgent) – used by those units assigned to Post No. 1 and the Mansion Gate to communicate amongst themselves.

4.4 Capitol Police Unit-to-Unit (One per agency) (Priority Level Urgent) – used by any unit to talk to another unit without tying up the dispatch talk group.

4.5 Capitol Police Special Operations (Three per agency) (Priority Level High) - Three talk groups are reserved for special events.

4.6 Capitol Police Investigative Services (One per agency) (Priority Level Urgent)– Use of this talk group is restricted to investigators, supervisors and managers.

4.7 Capitol Police Administrative Services (One per agency) (Priority Level Routine) – Use of this talk group is restricted to Human Resources, Security Clearances, and training as well as the supervisors and managers.

4.8 Capitol Police Shared (One per agency) (Priority Level Routine)- This talk group is reserved for use by other agencies that have a temporary need to communicate directly with the Capitol Police. Only the Capitol Police Communications Center, supervisors and managers would have access to this talk group.

4.9 Capitol Police Supervisory Group (One per agency) (Priority Level Urgent) – Use of this talk group is restricted to operations commanders and supervisors and the management group.

4.10 Capitol Police Management Group (Priority Level Routine)– Only the Colonel, the Deputy Colonel – Operations and the Deputy Colonel – Administration would be authorized to access this talk group.

4.11 *VSP Emergency* (911) (1 per STARS Communications Zone 1 total) (Priority Level High)– All units would be equipped with this talk group. It would be used only in the event there was a need to contact the VSP Division 1 Dispatch Center. Since the Capitol Police operate only in the Richmond area, their units may only be equipped with capability in 1 Communications Zone.

4.12 *Interagency Work (Interop)* (3 per STARS Communications Zone – 3 total) (Priority Level Urgent)- This talk group will be used for those situations where on-going operations require communications among and between units of various STARS user agencies and departments. Since the Capitol Police operate only in the Richmond area, their units may only be equipped with capability in 1 Communications Zone

5.0 DEPARTMENT OF CONSERVATION AND RECREATION (DCR)

Forty-three agency specific and fifty-two common talk groups are provided for the Department of Conservation and Recreation. Each of the seven State Parks Division districts would have a district operations/law enforcement group. A separate park operation talk group is provided for each of the 30 state parks, and a special operations or events talk-group is provided in each district. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

5.1 DCR District Law Enforcement (l per State Park Division – 6 total) (Priority Level High) – This is the primary talk-group for DCR Law Enforcement and other authorized personnel.

5.2 DCR Facility Operations Group (1 per park site – 30 total) (Priority Level Routine)– A separate talk-group is provided for each of the park sites. Personnel assigned to a park would use that park's talk group as their primary talk-group

5.3 DCR District Special Operations (1 per district – 6 total) (Priority Level Urgent)- One talk group is provided in each of the six DCR districts for special operations. This talk group is for use at special events or operations were it is desirable to move radio traffic from one of the other talk groups to a different group.

5.4 DCR Management (1 per agency – available statewide) (Priority Level Routine)– This talk group is reserved for use by senior Department of Conservation and Recreation management.

5.5 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

5.6 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

6.0 DEPARTMENT OF CORRECTIONS (DOC)

Twelve agency specific and fifty-two common talk groups are provided for the Department of Corrections. Since the DOC has an extensive UHF radio system designed for use in each of the various DOC facilities, only those units involved in inmate transportation will be equipped with STARS radios. Each of the four DOC Regions would have a single, region-wide operations channel (talk group). All STARS equipped DOC units in that region will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the calling channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

6.1 DOC Regional Operations Channels (1 per region – 4 total) (Priority Level High) – Monitored by all STARS equipped units in the DOC region and used to establish communications with other STARS equipped DOC units in the region.

6.2 DOC Inmate Transport (1 per region – 4 total) (Priority Level High) – This talk group is designated for use by DOC personnel assigned to inmate transport in each region. Personnel would normally monitor the regional operations talk group then switch to this talk group as appropriate.

6.3 DOC Work Gangs (1 per region – 4 total) (Priority Level Urgent) – This talk group is designated for used by DOC personnel assigned to oversee inmate work gangs in each region. Personnel would normally monitor the regional operations talk group then switch to this talk group as appropriate.

6.4 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

6.5 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

7.0 DEPARTMENT OF EMERGENCY MANAGEMENT (VDEM)

Twenty agency specific and fifty-two common talk groups are provided for the Department of Emergency Management. Each of the six Emergency Management Regions would have a single, region-wide operations channel (talk group). All VDEM units in that region will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized or specialized working channel to communicate. When finished, the units involved switch back to the calling channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

7.1 VDEM Regional Operations Channels (1 per region – 3 total) (Priority Level Urgent) – Monitored by all VDEM units in the region and used to establish communications with other VDEM units and stations in the region.

7.2 VDEM Regional Working Group (2 per region – 6 total) (Priority Level Urgent)– Two talk groups are provided in each VDEM region for communication between units. As noted above, units will initially establish communications on the regional operations channel and then switch to one of the more localized working channels.

7.3 HAZMAT Working Group (2 per region – 6 total) (Priority Level High) – These talk groups are designated for those personnel assigned to the Hazardous Materials Section. Personnel would normally monitor the regional operations talk group then switch to this talk group as appropriate.

7.4 VEOC Staff Working Group (1 per agency – available statewide) (Priority Level Routine) – This talk group is designated for use by personnel assigned to the VEOC staff. As noted above, personnel will normally establish communications on the regional operations talk group then switch to this talk group as appropriate.

7.5 VDEM Management Working Group (1 per agency –available statewide) (Priority Level Urgent) – This talk group is reserved for use by senior VDEM management.

7.6 IFLOWS (3 per agency – available in each region) (Priority Level Routine) – These talk groups are designated for use by personnel assigned to the IFLOWS system. The STARS system will not be used to actually carry the IFLOWS data.

7.7 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

7.8 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent)– This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

8.0 DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)

Twenty-two agency specific and fifty-two common talk groups are provided for the Department of Environmental Quality. Each of the seven DEQ regions would have a single, region-wide operations channel (talk group). All DEQ units in that region will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the calling channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

8.1 DEQ Regional Operations Channels (1 per region – 7 total) (Priority Level Routine) - Monitored by all DEQ units in the region and used to establish communications with other DEQ units in the region.

8.2 DEQ Regional Working Groups (2 per region – 14 total) (Priority Level Routine) – Two talk groups are provided in each DEQ region for communication between units. As noted above, units will initially establish communications on the regional operations channel then switch to one of the more localized working channels.

8.3 DEQ Management (1 per agency –available statewide) (Priority Level Routine) – This talk group is reserved for use by senior Department of Environmental Quality management.

8.4 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

8.5 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

9.0 DEPARTMENT OF FIRE PROGRAMS (DFP)

Twenty-six agency specific and fifty-two common talk groups are provided for the Department of Fire Programs. Two operational talk groups are provided for the Department of Fire Programs in each communications zone. The DFP radios would also be equipped with the DOF Fire ground channels, assuming DOF concurrence. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

9.1 DFP Operations (2 per STARS Communications Zone) (Priority Level Urgent) Two talk-groups are provided in each communications zones for DFP operational use.

9.2 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

9.3 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

10.0 DEPARTMENT OF FORESTRY (DOF)

Sixty-one agency specific and fifty-two common talk groups are provided for the Department of Forestry. Each of the six Department of Forestry Regions would have a single, region-wide operations channel (talk group). All DOF units in that region will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the calling channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

10.1 DOF Regional Operations Channels (1 per region –6 total) (Priority Level Routine) – Monitored by all units in region and used to establish communications with other DOF units in the region.

10.2 DOF Regional Working Groups (2 per region – 12 total) (Priority Level Routine) - Two talk groups are provided in each DOF region for communications between units. As noted above, units will initially establish communications on the regional operations channel then switch to one of the more localized working channels.

10.3 Fire-ground (2 per region – 12 total) (Priority Level High) - This talk group is designated for use by personnel responding to forest fires. Personnel would normally monitor the regional operations talk group then switch to this talk group as directed by the incident commander.

10.4 DOF Administrative (1 per region –6 total) (Priority Level Routine) – This talk group is reserved for use by regional administrative personnel.

10.5 DOF State Forests (2 per region – 12 total) (Priority Level Routine) – This talk group is designated for use by personnel assigned to the state forests in each region. Personnel would normally monitor the regional operations talk group then switch to this talk group as appropriate.

10.6 DOF Nurseries (2 per region – 12 total) (Priority Level Routine) – This talk group is designated for use by personnel assigned to the nurseries in each region. Personnel would normally monitor the regional operations talk group then switch to this talk group as appropriate.

10.7 DOF Management Group– (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Forestry management.

10.8 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

10.9 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

11.0 DEPARTMENT OF GAME AND INLAND FISHERIES (DGIF)

Sixty-one agency specific and fifty-two common talk groups are provided for the Department of Game and Inland Fisheries. Each of the five DGIF regions would have a single, region-wide operations channel (talk group). All DGIF units in that region will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the calling channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

11.1 DGIF Regional Operations Channel (1 per region – 5 total) (Priority Level Routine) - Monitored by all DGIF units in the region and used to establish communications with other DGIF units in the region.

11.2 DGIF Regional Law Enforcement Group (1 per region – 5 total) (Priority Level High) - This talk group would be restricted to the 192 DGIF Law Enforcement Division personnel. Each of the regional law enforcement groups will be connected through the STARS backbone network back to the DGIF dispatch center in Richmond.

11.3 DGIF Regional Working Groups (2 per region – 10 total) (Priority Level Routine) - Two talk groups are provided in each DGIF region for communications between units. As noted above, units will initially establish communications on the regional operations channel then switch to one of the more localized working channels.

11.4 DGIF Regional Wildlife Group (1 per region – 5 total) (Priority Level Routine) - This talk group is designated for use by personnel assigned to the Wildlife Division in each region.

11.5 DGIF Regional Fisheries Group (1 per region – 5 total) (Priority Level Routine) – This talk group is designated for use by personnel assigned to the Fisheries Division in each region.

11.6 DGIF Regional Maintenance Group (1 per region – 5 total) (Priority Level Routine) – This talk group is designated for use by personnel assigned to the Maintenance Division (boat landings) in each region.

11.7 DGIF Wildlife Diversity Group (1 per region – 5 total) (Priority Level Routine) – This talk group is designated for use by personnel assigned to the Wildlife Diversity Division in each region.

11.8 DGIF Training (1 per region – 5 total) (Priority Level Routine) – This talk group has been designated for used for training purposes in each region.

11.9 DGIF Special Operations (2 per region – 10 total) (Priority Level Routine) – Two talk groups are provided in each region for special operations.

11.10 DGIF Administration (1 per region – 5 total) (Priority Level Routine) – This talk group is provided for regional administrative purposes.

11.11 DGIF Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Game and Inland Fisheries management.

11.12 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High)– All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

11.13 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

12.0 DEPARTMENT OF HEALTH

Forty-five agency specific and fifty-two common talk groups are provided for the Department of Health. Each of the five DOH districts would have a single, region-wide operations channel (talk group). All DOH units in that district will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the operations channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

12.1 DOH District Operations Channel (1 per district – 4 total) (Priority Level Routine)- Monitored by all DOH units in the region and used to establish communications with other DOH units in the region.

12.2 DOH District Working Groups (2 per region – 10 total) (Priority Level Routine) - Two talk groups are provided in each DOH district for communications between units. As noted above, units will initially establish communications on the district operations channel then switch to one of the more localized working channels.

12.3 EMS Operations Groups (2 per district – 8 total) (Priority Level High) - This talk group is designated for use by personnel assigned to the EMS Operations in each district.

12.4 DOH Shellfish Sanitation Group (1 per district - 4 total) (Priority Level Routine) - This talk group is designated for use by personnel assigned to the Shellfish Sanitation Department in each district.

12.5 DOH Radiological Health Group (1 per district – 4 total) (Priority Level High) - This talk group is designated for use by personnel assigned to Radiological Health in each district.

12.6 Chief Medical Examiner Group (1 per district –4 total) (Priority Level Routine) - This talk group is designated for use by personnel assigned to the Chief Medical Examiner’s Office in each district.

12.7 DOH Epidemiology Group (1 per district – 4 total) (Priority Level Routine) - This talk group is designated for use by personnel assigned to the Epidemiology Department in each region.

12.8 DOH Special Operations (2 per district – 10 total) (Priority Level Urgent) – Two talk groups are provided in each DOH district for special operations.

12.9 DOH Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Health management.

12.10 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

12.11 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

13.0 DEPARTMENT OF INFORMATION TECHNOLOGY (DIT)

Six agency specific and four common talk groups are provided for the Department of Information Technology. Since DIT operations are concentrated in the Richmond area, single operations channel (talk group) is provided. All DIT units will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a working channel to communicate. When finished, the units involved switch back to the operations channel. In addition to the agency specific talk groups, four common talk groups are provided. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

13.1 DIT Operations (1 per agency) (Priority Level Routine)– This talk group is monitored by all DIT units and used to establish communications with other DIT units.

13.2 Fire Brigade Group (1 per agency) (Priority Level High) – This talk group is designated for use by the DIT Fire Brigade.

13.3 DIT Maintenance Group (1 per agency) (Priority Level Routine) – This talk group is designated for use by DIT maintenance personnel.

13.4 DIT Engineering Group (1 per agency) (Priority Level Routine) – This talk group is assigned to DIT Engineering personnel.

13.5 DIT Planning Group (1 per agency) (Priority Level Routine) – This talk group is designated for use by DIT Planning personnel.

13.6 DIT Management Group (1 per agency) (Priority Level Routine) - This talk group is reserved for use by senior Department of Information Technology management.

13.7 VSP Emergency – (1 per STARS Communications Zone – 1 total) (Priority Level High) – All units would be equipped with this talk group. It would be used only in the event there was a need to contact the VSP Division 1 Dispatch Center.

13.8 Interop (3 per STARS Communications Zone – 3 total) (Priority Level Urgent) - This talk group will be used for those situations where on-going operations require communications among and between units of various STARS user agencies and departments.

14.0 DEPARTMENT OF JUVENILE JUSTICE (DJJ)

Thirteen agency specific and fifty-two common talk groups are provided for the Department of Juvenile Justice. Each of the three DJJ regions would have a single, region-wide operations channel (talk group). One transportation talk-group, one talk-group for maintenance, and one talk-group for regional management are also suggested for each region. One state-wide talk-group is reserved for DJJ management. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

14.1 DJJ Regional Operations Channel (1 per district – 3 total) (Priority Level High) - Monitored by all DJJ units in the region and used to establish communications with other DJJ units in the region.

14.2 DJJ Transportation Group (1 per region – 3 total) (Priority Level High) - One talk group is provided in each DJJ region for units assigned to the transportation function.

14.3 DJJ Maintenance Group (1 per region – 3 total) (Priority Level Routine) - One talk group is provided in each region for DJJ Maintenance operations.

14.4 DJJ Regional Management (1 per region – 3 total) (Priority Level Routine) – A talk-group is reserved in each region for regional management use.

14.5 DJJ Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Juvenile Justice management.

14.6 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

14.7 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

15.0 MARINE RESOURCES COMMISSION (MRC)

Twenty-one agency specific and fifty-two common talk groups are provided for the Marine Resources Commission. Each of the four MRC regions would have a single, region-wide operations channel (talk group). All MRC units in that region will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the operations channel. In addition, separate talk groups are provided in each region for law enforcement and investigations. The law enforcement talk group will be connected via the STARS network to the MRC dispatch center in Newport News. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

15.1 MRC Regional Operations Channel (1 per region – 4 total) (Priority Level Routine) - Monitored by all MRC units in the region and used to establish communications with other MRC units in the region.

15.2 MRC Regional Working Groups (2 per region – 8 total) (Priority Level Routine) - Two talk groups are provided in each MRC region for communications between units. As noted above, units will initially establish communications on the regional operations channel then switch to one of the more localized working channels.

15.3 MRC Regional MRC Law Enforcement Working Group (1 per region – 4 total) (Priority Level High) - This talk group would be restricted to the 65 MRC Law Enforcement Division personnel. Each of the regional law enforcement groups will be connected through the STARS backbone network back to the MRC dispatch center in Newport News.

15.4 MRC Regional Investigations Working Group (1 per region – 4 total) (Priority Level Urgent) – This talk group is designated for those MRC law enforcement division personnel working investigations.

15.5 MRC Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Marine Resources Commission management.

15.6 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

15.7 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

16.0 DEPARTMENT OF MILITARY AFFAIRS (DMA)

Twenty-one agency specific and fifty-two common talk-groups are provided for the Department of Military Affairs. Eight of the talk groups are for use in the Fort Picket and Emergency Operations Center area. Regional command and operational talk groups are provided in each of the four DMA sub-areas. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

16.1 EOC Operations Talk Group (2 per agency – 2 total) (Priority Level Urgent) - These talk groups are provided for units assigned to the EOC.

16.2 Army Aviation Operations (1 per agency – 1 total) (Priority Level Routine) - This talk group is provided for use by units assigned to the Army Aviation unit.

16.3 Fort Picket Police & Fire (1 per agency – 1 total) (Priority Level High) A single talk group is provided for police and fire units assigned to Fort Picket.

16.4 Fort Picket Public Works (1 per agency – 1 total) (Priority Level Routine) This talk group is for use by Fort Picket Public Works units.

16.5 Fort Picket Range Operations (1 per agency – 1 total) (Priority Level Urgent) - This talk group is assigned for use by personnel assigned to firing range operations at Fort Picket.

16.6 Fort Picket Logistics Operations (1 per agency – 1 total) (Priority Level Routine) - A talk group is provided for use by units assigned to the logistics function at Fort Picket.

16.7 DMA Sub-area Command (1 per sub-area – 4 total) (Priority Level Urgent) - A separate talk group is provided for use by sub-area command personnel in each of the 4 DMA sub-areas.

16.8 DMA Area Operations (2 per sub-area – 8 total) (Priority Level Urgent) - Two talk groups are provided for operational purposes.

16.9 DMA Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Military Affairs management.

16.11 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

16.11 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

17.0 DEPARTMENT OF MINES, MINERALS, AND ENERGY (DMME)

Thirty-one agency specific and fifty-two common talk groups are provided for the Department of Mines, Minerals, and Energy. Each of the ten DMME areas would have a single, area-wide operations channel (talk group). All DMME units in that area will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the operations channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

17.1 DMME Area Operations Channel (1 per region – 4 total) (Priority Level Routine) - Monitored by all DMME units in the area and used to establish communications with other DMME units in the area.

17.2 DMME Area Working Groups (2 per area – 10 total) (Priority Level Routine) - Two talk groups are provided in each DMME area for communications between units. As noted above, units will initially establish communications on the regional operations channel then switch to one of the more localized working channels.

17.3 DMME Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Mines, Minerals and Energy management.

17.4 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

17.5 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments

18.0 DEPARTMENT OF MOTOR VEHICLES (DMV)

Thirty-one agency specific and fifty-two common talk groups are provided for the Department of Motor Vehicles. Each of the six DMV districts would have a single, district-wide operations channel (talk group). All DMV units in that district will monitor the operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the operations channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

18.1 DMV District Operations Channel (1 per district – 6 total) (Priority Level Routine) - Monitored by all DMV units in the district and used to establish communications with other DMV units in the district.

18.2 DMV District Working Groups (2 per district – 12 total) (Priority Level Routine) - Two talk groups are provided in each DMV district for communications between units. As noted above, units will initially establish communications on the district operations channel then switch to one of the more localized working channels.

18.3 DMV Law Enforcement Working Group (1 per district – 6 total) (Priority Level High) – One talk group is provided in each district for use by any of the 62 DMV law enforcement officers working in the district. Its use would primarily be unit-to-unit tactical type of communications.

18.4 DMV Truck Weigh Operations Group (1 per district – 6 total) (Priority Level Urgent) - One talk group is provided in each district for use by the personnel assigned to the truck weigh program

18.5 DMV Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Motor Vehicles management.

18.6 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

18.7 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

19.0 VIRGINIA STATE POLICE (VSP)

Two hundred fifty-five agency specific talk groups (thirty-six per division) and fifty-two common talk groups are provided for the Virginia State Police. Eight talk groups are provided in each division for use by the Bureau of Field Operations; two talk groups are provided in each division for Bureau of Criminal Investigation, and five talk groups are provided in each division for various Bureau of Administrative and Support Services functions. In addition, two statewide special function talk groups are provided. One is designated for VSP senior management, and the other for use by the VSP Headquarters staff. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. It is suggested that all VSP units be equipped with the emergency (911) group in order to respond and assist with situations reported on this talk-group.

19.1 BFO Dispatch (2 per division – 1 per Communications Zone – 14 total) (Priority Level High) - Two dispatch talk-groups are provided for each VSP Division. In the 7th Division, two dispatch talk-groups are suggested in the same zone since the 7th division is all in the same Communications Zone. These talk groups are, in essence, the current dispatch channels. All BFO units will monitor the appropriate dispatch channel then switch to one of the working talk-groups as appropriate.

19.2 VCIN (1 per communications zone – 14 total) (Priority Level Urgent) - Two talk-groups are provided for VCIN traffic in each VSP Division, except for the 7th Division where two talk-groups are suggested in the same zone since the 7th division is all in the same Communications Zone. Last year VSP dispatchers ran in over 800,000 VCIN messages. By moving radio traffic related to VCIN off of the dispatch talk-group, airtime is made available for emergency use.

19.3 BFO Service (1 per communications zone – 14 total) (Priority Level Urgent) - Two talk-groups are provided for service requests (requests for wreckers, telephone notifications, etc.) for each VSP Division, except for the 7th Division where two dispatch talk-groups are suggested in the same zone since the 7th division is all in the same Communications Zone. As with the VCIN talk-group, the primary purpose in creating this talk-group is to make additional airtime available on the dispatch talk-group.

19.4 BFO Operations (2 per division – 1 per Communications Zone – 13 total) (Priority Level Urgent) - One working talk-group is provided for each Communications Zone. This talk-group will be used for unit-to-unit communications within the Communications Zone.

19.5 BFO – Special Operations (4 per division – 2 per Communications Zone – 26 total) (Priority Level High) - Two talk-groups are provided in each Communications Zone for special operations needs.

19.6 BFO – Aviation (2 per division – 1 per Communications Zone- 13 total) (Priority Level Urgent) - One talk-group is suggested in each Communications Zone for use in conjunction with Aviation Unit operations.

19.7 BFO – Speed Enforcement (1 per Communications Zone – 13 total) (Priority Level Urgent) - One talk-group is provided in each Communications Zone for units working speed enforcement details.

19.8 BFO –Tactical Operations (2 per Communications Zone – 26 total) (Priority Level High) - Two talk groups are reserved in each Communications Zone for use during tactical operations.

19.9 BFO – SIRS/Interop (1 per Communications Zone – 13 total) (Priority Level High) - One talk-group is provided for law enforcement interoperability purposes. This talk group would be used for communications between VSP and other federal, state, and local law enforcement users primarily in mutual aid type of situations. It differs from the STARS common interop talk-groups in that this talk group would be a law enforcement only talk group.

19.10 BFO – Executive Protection Detail (1 per Communications Zone – 13 total) (Priority Level High) - One talk group is provided in each Communications Zone for units assigned to the executive protection detail.

19.11 BCI – Special Operations – (1 per Communications Zone – 13 total) (Priority Level High) - One talk group is provided for special operations by units assigned to the Bureau of Criminal Investigation.

19.12 BCI – Administrative – (1 per Communications Zone – 13 total) (Priority Level Routine) - One talk-group is provided for BCI Administrative purposes.

19.13 BASS – Division Operations (1 per Communications Zone – 13 total) (Priority Level Urgent) - One talk group is provided for BASS operational purposes

19.14 BASS – Communications Maintenance (1 per Communications Zone – 13 total) (Priority Level Routine) - One talk group is provided for use by the Communications Division.

19.15 BASS – Property Maintenance (1 per Communications Zone – 13 total) (Priority Level Routine) - One talk group is provided for use by personnel assigned to BASS property maintenance functions.

19.16 BASS – Driver Training (1 per Communications Zone – 13 total) (Priority Level Routine) - One talk group is provided for BASS Driver Training purposes.

19.17 BASS – Field Training (1 per Communications Zone –13 total) (Priority Level Routine) - One talk group is provided for BASS Training Division use.

19.18 VSP Management (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior VSP management.

19.19 VSP HQ Staff (1 per agency –available all zones) (Priority Level Routine) - This talk group is for use by personnel assigned to VSP Headquarters.

19.20 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

19.21 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

20.0 VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT)

541 agency specific and 52 common talk-groups are provided for Virginia Department of Transportation. Each of the 9 VDOT districts would have a district operations talk group. A separate talk group is provided for the 45 Residencies, and two talk groups are provided for each of the departments 243 areas. VDOT units in an area will monitor the area operations channel. A unit will call the unit it needs to communicate with then, once contact is established, the units involved switch to a more localized working channel to communicate. When finished, the units involved switch back to the operations channel. In addition to the agency specific talk groups, four common talk groups are provided for each of the 13 Communications Zones. One is for emergency contact with a VSP dispatcher at the appropriate VSP Divisional Dispatch Centers and three for inter-agency operations. A description of the talk groups is as follows:

20.1 VDOT District Operations (1 per district – 9 total) (Priority Level Routine) - This talk group is used for personnel assigned to each of the nine VDOT Districts. In addition, it could be used by authorized residency level personnel to contact the district staff.

20.2 VDOT Residency Operations (1 per residency –45 total) (Priority Level Routine) This talk group is for use by personnel assigned to the 45 VDOT residencies. In addition, authorized area level personnel may use this talk group to contact Residency staff.

20.3 VDOT Area Operations (1 per VDOT area –243 total) (Priority Level Routine) - Monitored by all VDOT units assigned to the area and used to establish communications with other VDOT units in the area.

20.4 VDOT Area Working Groups (1 per area – 243 total) (Priority Level Routine) - One talk group is provided in each VDOT area for communications between units. As noted above, units will initially establish communications on the area operations channel then switch to one of the more localized working channels

20.5 VDOT Management Group – (1 per agency – available all zones) (Priority Level Routine) - This talk group is reserved for use by senior Department of Transportation management.

20.6 VSP Emergency (911) (1 per STARS Communications Zone –13 total) (Priority Level High) – All units would be equipped with this talk group. It will be used only in the event there was a need to contact the VSP Division Dispatch Center by units in the area served by that Communications Zone.

20.7 Interagency Working (Interop) (3 per STARS Communications Zone – 39 total) (Priority Level Urgent) – This talk group will be used for those situations where on-going requirements require communications among and between units of various STARS user agencies and departments.

TABLE G-1

Appendix G		COV AGENCY TALK GROUPS																	
Agency	ABC	Aviation	Capitol Police	Conserv & Recreation	Corrections	Emer Mgt	EQ	Fire Prog	Forrestry	Game	Health	IT	Juvenile J	Marine Res.	Military Affairs	Mines	DMV	VSP	VDOT
ABC																			
Regional Opns	8																		
Regional Wrkng	16																		
Management	1																		
Aviation																			
Operations		2																	
Capitol Police																			
Management			1																
Supervisory			1																
Investigative			1																
Traffic Control			1																
Fixed Post			1																
Special Ops			3																
Admin Services			1																
Dispatch			1																
Enforcement			1																
Shared			1																
Consv & Rec.																			
District LE				6															
Park Opns				30															
Special Opns				6															
DCR Management				1															
Corrections																			
Regional Opns					4														
Inmate Transport					4														
Work Gangs					4														
Emer. Mgt.																			
Region Opns						3													
Regional Wrkng						6													
HAZMAT						6													
VEOC Staff						1													
VDEM Management						1													
IFLOWS						3													
EQ																			
Regional Opns							7												
Regional Wrkng							14												
DEQ Management							1												
Fire Programs																			
Operations								26											
Forestry																			
Regional Opns									6										
Regional Working									12										
Management									1										
Administrative									6										
State Forests									12										
Nurseries									12										
Fireground									12										
Game & Inland Fisheries																			
Regional Opns										5									
Regional Wrkng										10									
Law Enforcement										5									
Wildlife Division										5									
Fisheries Division										5									
Maintenance										5									
Wildlife Diversity										5									
Training										5									
Special Opns										10									
Administration										5									
Management										1									
Health																			
District Opns											4								
District Wrkng											8								
Ems Opns											8								
Shellfish Sanitation											4								
Radiological Health											4								
Chief Medical Examiner											4								
Epidemiology											4								
Special Operations											8								
Management											1								

TABLE G-1

Appendix G		COV AGENCY TALK GROUPS																	
Agency	ABC	Aviation	Capitol Police	Conserv & Recreation	Corrections	Emer Mgt	EQ	Fire Prog	Forrestry	Game	Health	IT	Juvenile J	Marine Res.	Military Affairs	Mines	DMV	VSP	VDOT
DIT																			
Operations												1							
Fire Brigade												1							
Maintenance												1							
Engineering												1							
Planning												1							
Management												1							
Juvenile Justice																			
Regional Opns													3						
Transportation													3						
Maintenance													3						
Regional Mgmt													3						
Management													1						
Marine Resources																			
Area Opns														4					
Area Wrkng Group														8					
Management														1					
Investigations														4					
Law Enforcement														4					
Military Affairs																			
EOC Operations															2				
Army Aviation Opns															1				
Ft Pickett Police & Fire															1				
Ft Pickett Public Works															1				
Ft Pickett Range Opns															1				
Ft Pickett Logistics Opns															1				
Ft Pickett Command															1				
Subarea Command															4				
Area Operations															8				
DMA Command															1				
Mines																			
Area Opns																10			
Area Wrkng																20			
Management																1			
DMV																			
District Opns																	6		
District Wrkng																	12		
District Law Enforcement																	6		
District Truck Weigh																	6		
Management																	1		
VSP																			
BFO Dispatch																		14	
VCIN																		14	
BFO Service																		14	
BFO Wrkng																		14	
BFO Special Opns																		28	
BFO - Aviation																		13	
BFO - Speed Enforcement																		13	
BFO - Tactical																		26	
BFO - SIRS/Interop																		13	
BFO - Exec Protect																		13	
BCI Special Opns																		13	
BCI Admin																		13	
BASS Division Opns																		13	
BASS - Comm Maint																		13	
BASS - Property Maint																		13	
BASS - Driver Training																		13	
BASS - Field Training																		13	
VSP Management																		1	
VSP HQ Staff																		1	
VDOT																			
District Opns																			9
Residency Opns																			45
Area Opns																			243
Area Wrkng																			243
Management																			1
Agency Totals	25	2	12	43	12	20	22	26	61	61	45	6	13	21	21	31	31	255	541

APPENDIX H

TABLE H
Control Station Location Form

COV AGENCY:	**Alcoholic Beverage Control**
Department Within Agency:	**Bureau of Law Enforcement**
Contact Name:	**J.H. Evans**
Contact Phone Number:	**804-213-4568**
Contact Fax Number:	**804-213-4574**
Contact Email:	

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Roanoke *	3023 Peters Creek Rd. Roanoke, VA 24019	Roanoke		37.195	79.595	X		1174	
Lynchburg *	20353 Timberlake Rd. Lynchburg, VA 24506	Lynchburg	Campbell	37.207	79.141	X		903	
Abingdon *	102 Abingdon Place Abingdon, VA 24211	Abingdon		36.426	81.587	X		2067	
Staunton *	460 Commerce Sq. Staunton, VA 24401	Staunton		38.924	79.340	X		1364	
Chesapeake	1103 South Military Hwy. Chesapeake, VA 23527	Chesapeake		36.485	76.134	X		26	
Hampton	4907 West McCreary Blvd. Newport News, VA 23605	Hampton		37.150	76.259	X		16	
Alexandria	501 Montgomery St. Alexandria, VA 22313	Alexandria		38.488	77.268	X		40	
Richmond	2901 Hermitage Rd. Richmond, VA 23261	Richmond		37.343	77.278	X		203	
* Facilities are leased. Coordination/permission must be negotiated with owner prior to any modificaitons to buildings									

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Aviation**
Department Within Agency:	**Flight Operations & Safety Division**
Contact Name:	**William M. Jefferies**
Contact Phone Number:	**804-236-3639**
Contact Fax Number:	**804-236-3643**
Contact Email:	jeffries@doav.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
VA Dept. of Aviation	**5702 Gulfstream Rd.**	**Richmond**	**Henrico**	**Not Listed**	**Not Listed**			**167**	**State Hanger**

TABLE H
Control Station Location Form

COV AGENCY:	**Capitol Police**
Department Within Agency:	
Contact Name:	**Captain Larry Dollings**
Contact Phone Number:	
Contact Fax Number:	
Contact Email:	

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
None Required									

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Conservation & Recreation**
Department Within Agency:	**State Parks Division**
Contact Name:	**Bryan Anderson/Warren Wahl**
Contact Phone Number:	**804-786-5053**
Contact Fax Number:	**804-786-9294**
Contact Email:	

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Belle Isle State Park	1632 Belle Isle Rd. Lancaster, VA 22503	Lancaster	Lancaster	37-46-46	076-35-36	X		3	Antenna pole near office
Caledon Natural Area	11617 Caledon Road King George, VA 22485	King George	King George	38-20-01	077-08-15	X		49	Attached to pole on visitor center
Pocahontas State Park	10301 State Park Road Chesterfield, VA 23832	Chesterfield	Chesterfield	37-22-15	077-34-35	X		85	Attached to pole on office
Westmoreland State Park	1650 State Park Road Montross, VA 22520	Montross	Westmoreland	38-10-09	076-52-08	X		21	Antenna pole near office
Shenandoah River State Park	Daughter of Stars Drive Bentonville, VA 22610	Bentonville	Warren	38-50-09	078-17-37	X		271	Antenna pole next to shop
Lake Anna State Park	6800 Lawyers Road Spotsylvania, VA 22553	Lake Anna	Spotsylvania	38-07-10	077-49-21	X		122	Antenna pole near office
Sky Meadows State Park	11012 Edmonds Lane Delaplane, VA 20144	Delaplane	Fauquier	38-59-28	077-57-30	X		271	Antenna pole near office
Bear Creek Lake State Park	929 Oakhill Road Cumberland, VA 23040	Cumberland	Cumberland	37-31-50	078-16-20	X		99	Attached to pole on office
Holiday Lake State Park	Rt. 2 Box 622 Appomattox, VA 24522	Appomattox	Appomattox	37-23-45	078-38-15	X		143	Attached to pole on office
James River State Park	Rt. 1 Box 787 Gladstone, VA 24553	Gladstone	Buckingham	37-37-33.5 N	78-48-40.1 W		X	163	Antenna pole near shop
Occoneechee State Park	1192 Occoneechee Park Rd. Clarksville, VA 23927	Clarksville	Mecklenburg	36-37-25	078-31-35	X		102	Attached to pole on office
Staunton River State Park	1170 Staunton Trail Scottsburg, VA 24589	Scottsburg	Halifax	36-41-52	078-40-36	X		133	Attached to pole on office
Stauton River Battlefield	1035 Fort Hilltrail Randolph, VA 23962	Randolph	Charlotte	36-53-02	078-42-23	X		101	Antenna pole near visitors center
Twin Lake State Park	Rt. 2 Box 70 Green Bay, VA 23942	Green Bay	Prince Edward	37-10-38	0178-16-20	X		149	Attached to pole on office
Claytor Lake State Park	4400 State Park Road Dublin, VA 24094	Dublin	Pulaski	37-03-25	080-37-40	X		568	Attached to pole on contact station
Grayson Highlands State Park	829 Grayson Highland Lane Mouth of Wilson, VA 24363	Mouth of Wilson	Grayon	36-36-45	081-28-45	X		1151	Attached to pole on office

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Conservation & Recreation**
Department Within Agency:	**State Parks Division**
Contact Name:	**Bryan Anderson/Warren Wahl**
Contact Phone Number:	**804-786-5053**
Contact Fax Number:	**804-786-9294**
Contact Email:	

Hungry Mother State Park	2854 Park Boulevard Marion, VA 24354	Marion	Smith	36-53-05	081-31-20	X		732	Attached to pole on office
Natural Tunnel State Park	Rt. 3 Box 250 Duffield, VA 24244	Duffield	Scott	36-42-24	082-44-18	X		560	Attached to pole on shop
New River Trail Cliffview Station	451 Cliffview Road Galax, VA 24333	Galax	Grayson	36-40-51	080-55-04	X		706	Antenna pole near office
Wilderness Road State Park	Rt. 2 Box 115 Ewing, VA 24248	Ewing	Lee	36-37-01	083-31-01	X		408	Antenna pole near projected visitor center
Chippokes Plantation State Park	695 Chippokes Park Road Surry, VA 23883	Surry	Surry	37-08-45	076-44-30	X		15	Attached to pole on visitor center
Falsecape State Park	4001 Sandpiper Road VA Beach, VA 23451	VA Beach	Not Listed	36-37-16	075-54-06	X		2	Antenna pole near office
First Landing State Park	2500 Shore Drive VA Beach, VA 23451	VA Beach	Not Listed	36-55-10	076-03-10	X		4	Attached to pole on contact station
Kiptopeke State Park	3540 Kiptopeke Drive Cape Charles, VA 23310	Cape Charles	Northammpton	37-10-20	075-58-43	X		11	Attached to pole on office
York River State Park	5526 Riverview Road Williamsburg, VA 23188	Williamsburg	Not Listed	37-24-50	076-42-45	X		12	Attached to pole on visitor center
Douthat State Park	Rt. 1 Box 212 Millboro, VA 24460	Millboro	Bath	37-53-45	079-47-50	X		417	Antenna pole on building
Fairystone State Park	967 Fairystone Lake Drive Stuart, VA 24171	Stuart	Patrick	36-48-10	080-07-08	X		329	Attached to pole on office
Smith Mountain State Park	1235 State Park Road Huddleston, VA 24104	Huddleston	Bedford	37-05-29	079-35-32	X		277	Attached to pole on office
Leesylvania State Park	2001 Daniel K. Zudwig Drive Woodbridge, VA 22191	Woodbridge	Prince William	38-35-37	077-15-30	X		31	Attached to pole on office
Mason Neck State Park	7301 High Point Rd. Lorton, VA 22079	Lorton	Fairfax	38-37-42	077-15-43	X		14	Antenna pole near office

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Corrections**
Department Within Agency:	
Contact Name:	**James H. Thurston**
Contact Phone Number:	**804-674-3160**
Contact Fax Number:	**804-674-3536**
Contact Email:	thurstonjh@vadoc.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Buckingham CC	US 15 3 miles N. Rt. 20	Dillwyn	Buckingham	37-34-02	078-28-29	X		161	
Deep Meadows CC	Rts. 611 & 616	State Farm	Powhatan	37-37-10	077-50-50	X		97	
Dillwyn CC	1.5 Miles N. Rts. 20 & 15	Dillwyn	Buckingham	37-34-21	078-28-22	X		143	
Powhatan CC	1.5 Miles N. Rts. 711 & 615	State Farm	Powhatan	37-37-25	077-50-10	X		88	
Red Onion CC	Rt. 361	Pound	Wise	37-06-51	082-33-02	X		558	
Southampton CC	Rt. 308 N. Rt. 58	Capron	Southampton	36-43-30	077-15-15	X		30	
Southampton Det. Ctr	14545 Old Belfield Rd.	Capron	Southampton	36-41-26	077-51-47	X		15	
VA CC for Women	Not noted	Goochland	Goochland	37-40-33	077-53-19	X		84	
Wallens Ridge CC	272 Dogwood Dr.	Big Stone Gap	Wise	36-50-34	082-47-16	X		885	

TABLE H
Control Station Location Form

COV AGENCY:	**Virginia Department of Emergency Management**
Department Within Agency:	
Contact Name:	**A. Fred Vincent**
Contact Phone Number:	**804-674-2420**
Contact Fax Number:	**804-674-2419**
Contact Email:	**fvincent@vdem.state.va.us**

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
VEOC (Console)	7700 Midlothian Turnpike	Richmond	Chesterfield	37-30-06	77-32-20	X		85.3 m	Tower
Region 1	143 Third Street	Pulaski	Pulaski	37-02-54	80-47-00	X		176.5 m	Building
Region 2	1926 Industrial Drive	Culpeper	Gloucester	38-26-45	78-00-30	X		41.8 m	Building
Region 3	6104 Fiddler's Green Rd.	Gloucester	Gloucester	37-25-00	76-32-30		X	3 m	Building (Coordinates estimated)

TABLE H
Control Station Location Form

COV AGENCY:	**Virginia Department of Emergency Management**
Department Within Agency:	**Operations - IFLOWS**
Contact Name:	**Steve Billcheck/Fred Vincent**
Contact Phone Number:	**804-674-2400**
Contact Fax Number:	**804-674-2419**
Contact Email:	**sbillcheck@vdem.state.va.us**

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
NWS	Not Listed	Morristown	Not Listed	Not Listed	Not Listed	X		Not Listed	Tower
Bear Den Mountain	Not Listed	Not Listed	Albermarle	38045043N	078-16-30W	X		3471	Tower VSP Site
Augusta EOC	18 Government Center Lane Verona, VA 24488-0590	Verona	Augusta	38-11-30N	079-01-00W	X		1309	Tower
Bath EOC	County Court House	Warm Springs	Bath	38-02-46N	079-47-24W	X		2309	Rooftop
Duncan Knob	Not Listed	Not Listed	Bath	38-10-19N	079-41-31W	X		3839	Tower VSP Site
Botetourt EOC	1 West Main Street, #1 Fincastle, VA 24090	Fincastle	Botetourt	37-29-58N	079-52-31W	X		1259	Rooftop
Buchanan EOC	County Court House, Grundy, VA 24614	Grundy	Buchanan	37-16-40N	082-05-58W	X		1049	Rooftop
Town of Grundy EOC	Main Street, Grundy, VA 24614	Grundy	Buchanan	37-16-40N	082-05-58W	X		1049	Rooftop
Beamer Mountain	Not Listed	Not Listed	Carroll	36-40-14N	088-44-39W	X		3202	Tower VSP Site
Carroll EOC	911 Center, 605-1 Pine St. Hillsville, VA 24343	Hillsville	Carroll	36-45-53N	080-44-10W	X		2529	Rooftop
Buena Vista 911	Buena Vista, VA 24416	Buena Vista	City of Buena Vista	37-44-04N	079-21-22W	X		837	Rooftop
Clifton Forge EOC	Sheriff Dispatch Clifton Forge, VA 24422	Clifton Forge	City of Clifton Forge	37-48-55N	079-49-30W	X		1086	Rooftop
Roanoke City EOC	214 Church Ave., Municipal Bldg. Roanoke, VA 24011	Roanoke	City of Roanoke	37-15-01N	079-56-00W	X		942	Rooftop
Salem EOC	911 Center/105 S. Market St. Salem, VA 24153	Salem	City of Salem	37-15-07N	080-03-18W	X		1076	Rooftop
Waynesboro EOC	911 Center/County Admin. Bldg. Waynesboro, VA	Waynesboro	City of Waynesboro	38-03-58N	078-53-25W	X		1289	Rooftop

TABLE H
Control Station Location Form

COV AGENCY:	**Virginia Department of Emergency Management**
Department Within Agency:	**Operations - IFLOWS**
Contact Name:	**Steve Billcheck/Fred Vincent**
Contact Phone Number:	**804-674-2400**
Contact Fax Number:	**804-674-2419**
Contact Email:	**sbillcheck@vdem.state.va.us**

Dickenson EOC	Court House, Sheriff Dispatch Clintwood, VA 24228	Clintwood	Dickenson	37-09-00N	082-26-15W	X		1601	Rooftop
Town of Haysi EOC	531 Main Street Haysi, VA 24256	Haysi	Dickenson	37-12-26N	082-17-42W	X		1270	Rooftop
Franklin EOC	70 E. Court St., 911 Center Rocky Mount, VA 24151	Rocky Mount	Franklin	36-59-36N	079-53-00W	X		1151	Rooftop
Giles EOC	Sheriff Disptach Pearisburg, VA 24134	Pearisburg	Giles	37-19-34N	080-44-06W	X		1801	Rooftop
Grayon EOC	129 Davis St. Independence, VA 24348	Independence	Grayson	36-37-52N	081-09-05W	X		2700	Rooftop
White Top Mountain	Not Listed	Not Listed	Grayson	36-38-20N	081-36-21W	X		5400	Tower VSP Site
Henry EOC	911 Center, Henry County Admin. Bldg. Collinsville, VA 24078	Collinsville	Henry	36-44-33N	079-53-33W	X		938	Tower
Highland EOC	Sheriff Dispatch Monterey, VA 24465	Monterey	Highland	38-24-44N	079-34-53W	X		2900	Tower
Lee EOC	Sheriff Dispatch Jonesville, VA 22503	Jonesville	Lee	36-41-20N	083-06-38W	X		1509	Rooftop
NWS Sterling	Not Listed	Sterling	Loudoun	38-58-31N	077-28-41W	X		272	Tower
Madison Co. Sheriff	Sheriff Dispatch Madison, VA 22727	Madison	Madison	38-22-30N	078-15-43W	X		620	Tower
Montgomery EOC	911 Center Christiansburg, VA 24073	Christiansburg	Montgomery	37-07-45N	080-24-30W+H49	X		2116	Rooftop
NWS Blacksburg	Not Listed	Blacksburg	Montgomery	37-11-59N	080-25-04W	X		2103	Tower
Poor Mountain	Not Listed	Not Listed	Montgomery	37-09-45N	080-11-33W	X		3760	Tower VSP Site
Nelson EOC	Sheriff Dispatch/911 Center Lovingston, VA 22949	Lovingston	Nelson	37-45-35N	078-52-09W	X		791	Rooftop
Hogback Mountain	Not Listed	Not Listed	Page	38-45-43N	078-16-30W	X		3471	Tower VSP Site
Page EOC	911 Center-EOC 120 South St. Luray, VA 22835	Luray	Page	38-39-51N	078-27-56W	X		879	Tower
Pulaski EOC	Sheriff Dispatch Pulaski, VA 24301	Pulaski	Pulaski	37-02-52N	080-46-40W	X		1919	Rooftop

TABLE H
Control Station Location Form

COV AGENCY:	**Virginia Department of Emergency Management**
Department Within Agency:	**Operations - IFLOWS**
Contact Name:	**Steve Billcheck/Fred Vincent**
Contact Phone Number:	**804-674-2400**
Contact Fax Number:	**804-674-2419**
Contact Email:	**sbillcheck@vdem.state.va.us**

Roanoke Co. EOC	911/Public Safety Center 3568 Peters Creek Rd. Roanoke, VA 24019	Roanoke	Roanoke	37-19-27N	079-59-42W	X		1171	Tower
Vinton EOC	Municipal 911 Center 311 S. Polard St. Vinton, VA	Vinton	Roanoke	37-16-21N	079-54-16W	X		932	Pole
North Mountain	Not Listed	Not Listed	Rockbridge	37-49-14N	079-38-02W	X		3002	Tower VSP Site
Rockbridge EOC	150 S. Main Street Lexington, VA 24450	Lexington	Rockbridge	37-47-05N	079-26-32W	X		1066	Rooftop
Rockingham EOC	911 Center Harrisonburg, VA 22801	Harrisonburg	Rockingham	38-27-08N	078-52-01W	X		1341	Rooftop
Big A Mountain	Not Listed	Not Listed	Russell	37-03-09N	082002-09W	X		3707	Tower VSP Site
Russell EOC	County Admin. Bldg. Lebanon, VA 24266	Lebanon	Russell	36-54-05N	082-04-46W	X		2050	Rooftop
Scott EOC	911 Center 112 Water St. Gate City,VA 24251	Gate City	Scott	36-38-21N	082-34-46W	X		1305	Rooftop
Shenandoah EOC	911 Cneter 600 N. Main St. Woodstock, VA 22664	Woodstock	Shenandoah	38-52-53N	078-30-22W	X		791	Tower
Smyth EOC	911 Center County Admin. Bldg. Marion, VA 24354	Marion	Smyth	36-50-01N	081-31-05W	X		2234	Tower
Tri-City	2494 Highway 75 Blountville, TN 37617	Blountville	Sullivan	36-28-47N	082-24-20W	X		457	Tower
Tazewell EOC	911 Center Main St. Tazewell, VA 24651	Tazewell	Tazewell	37-06-53N	081-45-23W	X		2519	Rooftop
Warren EOC	Sheriff Disptach Front Royal, VA 22630	Front Royal	Warren	38-55-03N	078-11-37W	X		561	Tower
Washington EOC	Sheriff Dispatch W. Main St. Abingdon, VA 24210	Abingdon	Washington	36-40-43N	081-58-14W	X		2050	Tower
High Knob Mountain	Not Listed	Not Listed	Wise	36-53-52N	82-37-14W	X		4163	Tower VSP Site
Wise EOC	911 Center County Admin. Bldg. Wise, VA 24293	Wise	Wise	36-58-37N	082-34-45W	X		1965	Rooftop
Wythe EOC	911 Center County Admin. Bldg. Wytheville, VA 24360	Wytheville	Wythe	36-56-50N	081-05-05W	X		2299	Rooftop

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Environmental Quality**
Department Within Agency:	**Mobile Sources (OIS)**
Contact Name:	**Joseph Donahay - OIS, Mike Thompon-MSOP's**
Contact Phone Number:	**804-698-4493**
Contact Fax Number:	**804-698-4555**
Contact Email:	

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
DEQ - Northern regional office		Woodbridge	Prince William						

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Fire Programs**
Department Within Agency:	
Contact Name:	**Drew Wallner**
Contact Phone Number:	**804-371-0220**
Contact Fax Number:	**804-371-0219**
Contact Email:	

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
None used									

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Forestry**
Department Within Agency:	
Contact Name:	**Joe Schaefer**
Contact Phone Number:	**804-977-6555**
Contact Fax Number:	
Contact Email:	schaefers@dof.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Augusta FC	90 Forestry Center Lane	Crimora	Augusta	38-10-12	78-51-10	X		1207	Rooftop
Garland Gray	19127 Sandy Hill Rd.	Courtland	Southampton	36-51-32	77-10-22	X		95	Rooftop
Carter Mountain	Carter Mountain	Charlottesville	Albemarle	37-58-48	78-29-21	X		482	Fire Tower - 100'
Headquarters	900 Natural Resources Drive	Charlottesville	Albemarle	38-1-17	78-31-53	X		160	Rooftop
HQ Mech. Shop	470 George Dean Drive	Charlottesville	Albemarle	38-1-27.5	78-31-56		X	160	Rooftop
New Kent FC	11301 Pocahontas Trail	Providence Forge	New Kent	37-24-40	76-56-15	X			Radio Tower - 100'
Accomack	22213 Edgar Thomas Rd.	Tasley	Accomack	37-42-57	75-41-34	X		43	Radio Tower - 100'
Brunswick	564 Planters Rd.	Lawrenceville	Brunswick	36-46-12	77-49-36	X		84	Rooftop
Dinwiddie	13209 Courthouse Rd.	Dinwiddie	Dinwiddie	37-04-48	77-35-05	X		67	Rooftop
Greensville	427 S. Main St.	Emporia	Greensville	36-41-00	77-32-40	X		37	Rooftop
Prince George	16010 James River Dr.	Disputanta	Prince George	37-13-15	77-07-32	X		27	Rooftop
Southampton	21615 Governor Darden	Courtland	Southampton	36-43-03	77-04-05	X		67	Rooftop
Suffolk	440 Market St.	Suffolk	Suffolk	36-35-50	76-35-15	X		128	Rooftop
Caroline	138 Courthouse Lane	Bowling Green	Caroline	38-03-06	77-20-39	X		61	Rooftop
Gloucester	7064 Warehouse Rd.	Gloucester	Gloucester	37-24-45	76-30-50	X		26	Rooftop

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Forestry**
Department Within Agency:	
Contact Name:	**Joe Schaefer**
Contact Phone Number:	**804-977-6555**
Contact Fax Number:	
Contact Email:	schaefers@dof.state.va.us

Hanover	105 Duncan St.	Ashland	Hanover	37-45-30	77-29-02	X		67	Rooftop
James City	147 Fenton Mill Rd.	Williamsburg	James City	37-22-10	76-46-27	X		26	Rooftop
King William	4445 Upshaw Road	Aylett	King William	37-47-18	77-06-39	X		22	Rooftop
Lancaster	11260 Rt. 200 North	Kilmarnock	Lancaster	37-42-37	76-49-40	X		30	Rooftop
Middlesex	Middlesex Courthouse	Saluda	Middlesex	37-36-23	76-35-42	X		33	Rooftop
New Kent	11301 Pocahontas Trail	Providence Forge	New Kent	37-24-20	76-56-15	X		6	Rooftop
Spotsylvania	8818 Courthouse Rd.	Spotsylvania	Spotsylvania	38-11-50	77-35-15	X		94	50' Tower
Westmoreland	Courthouse Square	Montrose	Westmoreland	38-05-21.5	76-22-45.8		X	43	Rooftop
Albemarle	470 George Dean Drive	Charlottesville	Albemarle	37-58-48.5	78-29-20		X	160	Rooftop
Amherst	177 E. Monitor St.	Amherst	Amherst	37-35-33	79-02-58	X		219	Rooftop
Fairfax	12055 Government Pkwy, Ste. 904	Fairfax	Fairfax	38-51-38	77-20-00	X		137	In Bldg - (Needs to be changed)
Fauquier	675 Frost Ave.	Warrenton	Fauquier	38-44-08	77-47-55	X		146	Rooftop
Fluvanna	County Admin. Bldg.	Palmyra	Fluvanna	37-52-25	78-16-10	X		84	35' Tower
Frederick	2408 Vally Ave.	Winchester	Frederick	39-09-33	78-11-08	X		232	Rooftop
Goochland	2010 Sandy Hock Rd.	Goochland	Goochland	37-42-17	77-53-22	X		94	Rooftop
Loudon	30-G Catoctin Circle	Leesburg	Loudon	39-06-33	77-33-57	X		96	Rooftop
Louisa	430 Main St.	Louisa	Louisa	38-01-35	78-00-45	X		149	Rooftop

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Control Station Location Form

COV AGENCY:	**Department of Forestry**
Department Within Agency:	
Contact Name:	**Joe Schaefer**
Contact Phone Number:	**804-977-6555**
Contact Fax Number:	
Contact Email:	schaefers@dof.state.va.us

Madison	125 Main St.	Madison	Madison	38-22-50	78-15-25	X		180	Rooftop
Nelson	195 Calohill Dr.	Lovingston	Nelson	37-45-36	78-52-15	X		726	Rooftop
Orange	Vol. Fire Bldg.	Orange	Orange	38-14-30	78-06-48	X		146	Rooftop
Prince William	675 Frost Ave.	Warrenton	Prince William	38-45-12	77-29-35	X		79	Rooftop
Rockingham	3540 North Valley Pike	Harrisonburg	Rockingham	38-25-33	78-50-30	X		445	Rooftop
Shenandoah	215 Lakeview Rd.	Woodstock	Shenandoah	38-51-46	78-31-02	X		262	Rooftop
Amelia	9179 Washington Ave.	Amelia	Amelia	37-20-32	77-58-48	X		116	Rooftop
Appomattox	24 Main St.	Appomattox	Appomattox	37-21-23	78-49-40	X		262	Rooftop
Buckingham	Rt. 60, County Admin. Office	Buckingham	Buckingham	37-33-04	78-33-18	X		140	Rooftop
Campbell	Cabler Lane	Rustburg	Campbell	37-16-15	79-05-41	X		268	Rooftop
Charlotte	Hwy. 47 South	Charlotte CH	Charlotte	37-02-42	78-37-30	X		166	Rooftop
Halifax	1050 Crawford Rd.	Halifax	Halifax	36-46-15	78-55-20	X		128	Rooftop
Lunenburg	1305 7th St.	Victoria	Victoria	36-59-27	78-14-06	X		168	Rooftop
Mecklenburg	880 Old Cox Road	Boydton	Mecklenburg	36-41-46	78-22-47	X		124	Rooftop
Nottoway	AG Bldg. Courthouse	Nottoway CH	Nottoway	37-07-42	78-04-50	X		134	Rooftop
Powhatan	388 Old Buckingham Rd. Suite E	Powhatan	Powhatan	37-32-32	77-55-05	X		103	Rooftop
Bedford	107 B. Turnpike Rd.	Bedford	Bedford	37-20-08	79-31-18	X		310	Rooftop

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Forestry**
Department Within Agency:	
Contact Name:	**Joe Schaefer**
Contact Phone Number:	**804-977-6555**
Contact Fax Number:	
Contact Email:	schaefers@dof.state.va.us

Botetourt	**220-B Roanoke Rd.**	**Troutville**	**Roanoke**	**37-24-17**	**79-54-49**	**X**		**373**	**Rooftop**
Floyd	**Main St., Bank Bldg.**	**Floyd**	**Floyd**	**36-54-42**	**80-19-10**	**X**		**761**	**Rooftop**
Franklin	**285 S. Main St., Suite B**	**Rocky Mount**	**Franklin**	**36-59-42**	**79-53-18**	**X**		**363**	**Rooftop**
Henry	**4377 Sunset Dr.**	**Martinsville**	**Henry**	**36-37-22**	**79-58-30**	**X**		**300**	**Rooftop**
Montgomery	**75 Hampton Blvd., Suite C**	**Christiansburg**	**Montgomery**	**37-22-10**	**80-24-33**	**X**		**634**	**Rooftop**
Pittsylvania	**9 Woodlawn Heights**	**Chatham**	**Pittsylvania**	**36-49-18**	**79-23-55**	**X**		**199**	**Rooftop**
Rockbridge	**312 S. Main St.**	**Lexington**	**Rockbridge**	**37-46-54**	**79-26-45**	**X**		**332**	**Rooftop**
Buchanan	**Not Listed**	**Van Sant**	**Buchanan**	**37-13-05**	**82-08-05**	**X**		**439**	**Rooftop**
Carroll	**450 Timberline Dr.**	**Galax**	**Carroll**	**36-41-32**	**80-52-04**	**X**		**799**	**Rooftop**
Dickenson	**Clintwood Warehouse Bldg.**	**Haysi**	**Dickenson**	**37-09-03**	**82-27-28**	**X**		**622**	**Rooftop**
Russell	**Not Listed**	**Lebanon**	**Russell**	**36-54-04**	**82-04-41**	**X**		**616**	**Rooftop**
Scott	**176 E. Jackson St.**	**Gate City**	**Scott**	**36-38-41**	**82-34-40**	**X**		**478**	**Rooftop**
Tazewell	**Rt. 719 N. of Rt. 460**	**Cedar Bluff**	**Tazewell**	**37-03-53**	**81-46-24**	**X**		**713**	**Rooftop**
Washington	**1240 Main St.**	**Abingdon**	**Washington**	**36-41-44**	**82-00-55**	**X**		**677**	**Rooftop**
Wise	**E. 29th St. and 1st St.**	**Big Stone Gap**	**Wise**	**36-52-47**	**82-44-15**	**X**		**469**	**Rooftop**
Wythe	**380 S. Fourth St.**	**Wytheville**	**Wythe**	**37-55-50**	**81-05-05**	**X**		**707**	**Rooftop**

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Forestry**
Department Within Agency:	
Contact Name:	**Joe Schaefer**
Contact Phone Number:	**804-977-6555**
Contact Fax Number:	
Contact Email:	schaefers@dof.state.va.us

Wythe	100 USDA Dr., Suite F	Wytheville	Wythe	36-52-06	81-05-12	X		696	Rooftop
Buckingham	Rt. 636	Dillwyn	Buckingham	37-25-20	78-40-00	X		203	Rooftop
Chesterfield	9200 Beach Rd.	Chesterfield	Chesterfield	37-22-40	77-35-45	X		73	Rooftop
Cumberland	751 Oak Hill Rd.	Cumberland	Cumberland	37-31-25	78-17-10	X		103	65' Tower

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Game and Inland Fisheries**
Department Within Agency:	**Law Enforcement**
Contact Name:	**Major Joe Cooke**
Contact Phone Number:	**804-367-1252**
Contact Fax Number:	**804-367-2430**
Contact Email:	jcooke@dgif.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Williamsburg	5806 Mooretown Rd.	Williamsburg	James city	37-19-13	76-43-23			38	On site guyed tower 150'
Forest	910 Thomas Jefferson Rd.	Forest	Bedford	37-21-51	79-17-15			274	On site 35' Pole
Marion	1796 Highway Sixteen	Marion	Smyth	36-49-26	81-28-24			943	On site 35' Pole
Verona	127 Lee Highway	Verona	Augusta	38-11-36	79-01-03			405	On site Rooftop 15 (m)
Fredericksburg	1320 Belman Rd.	Fredericksburg	Not Listed	38-17-10	77-27-48			24	On site 35' Pole
Richmond	4010 W. Broad St.	Richmond	Not Listed	37-34-20	77-28-55			61	50' Tower on road (ant. Hgt. 100')

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Health**
Department Within Agency:	**See below**
Contact Name:	**Everette Vaughan**
Contact Phone Number:	**804-371-3500**
Contact Fax Number:	**804-371-2891**
Contact Email:	evaughan@vdh.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Richmond District, CME	400 E. Jackson St. Richmond, VA 23219	Richmond	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Western District, CME	6600 Northside High School Road Roanoke, VA 24019	Roanoke	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Tidewater District, CME	830 Southampton Road, Suite 100 Norfolk, VA 23510	Norfolk	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Northern VA, CME	9797 Braddock Road, Suite 100 Fairfax, VA 22032	Fairfax	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Office of EMS	1538 East Parham Rd. Richmond, VA 23228	Richmond	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
State Health Commissioner	1500 E. Main St., Suite 214 Richmond, VA	Richmond	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Inforamtion Technology**
Department Within Agency:	**Not Listed**
Contact Name:	**Paul Hoppes**
Contact Phone Number:	**804-371-5580**
Contact Fax Number:	**804-371-5184**
Contact Email:	phoppes@dit.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
DIT Roanoke	Peters Creek Rd.	Roanoke	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Juvenile Justice**
Department Within Agency:	**Division of Institutions**
Contact Name:	**John Coble**
Contact Phone Number:	**804-371-0712**
Contact Fax Number:	**804-786-7171**
Contact Email:	Coblejs@djj.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Culpeper JCC	12240 Coffeewood Rd., Mitchells, VA 22729	Mitchells	Culpeper	38-21-39N	078-01-24W	X		Not Listed	Not Listed
Hanover JCC	7093 Broadneck Rd., Hanover, VA 23069	Hanover	Hanover	37-45-10N	077-20-20W	X		Not Listed	Not Listed
Barrett JCC	State Rte 651, Georgetown Rd. Hanover, VA 23069	Hanover	Hanover	37-42-45N	077-21-40W	X		Not Listed	Not Listed
Bon Air JCC	1900 Chatworth Ave., Bon Air, VA 23235	Bon Air	Chesterfield	37-31-10N	077-34-00W	X		Not Listed	Not Listed
Reception & Diagnostic Ctr.	1601 Old Bon Air Rd., Bon Air, VA 23235	Bon Air	Chesterfield	37-31-10N	077-34-00W	X		Not Listed	Not Listed
Oak Ridge JCC	1801 Old Bon Air Rd., Bon Air, VA 23235	Bon Air	Chesterfield	37-31-10N	077-34-00W	X		Not Listed	Not Listed
Beaumont JCC	State Road 522, Beaumont, VA 23014	Beaumont	Powhatan	37-39-50N	077-54-25W	X		Not Listed	Not Listed
Natural Bridge JCC	Rte. 1425 Arnolds Valley Rd., Natural Bridge Sta., VA 24579	Natural Bridge Station	Rockbridge	37-35-10N	079-30-24W	X		Not Listed	Not Listed

TABLE H
Control Station Location Form

COV AGENCY:	**Marine Resources Commission**
Department Within Agency:	**Not Listed**
Contact Name:	**Colonel Steve Bowman**
Contact Phone Number:	**757-247-2278**
Contact Fax Number:	**757-247-2020**
Contact Email:	sbowman@mrc.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Main Headquarters	2600 Washington Ave. Newport News, VA	Newport News	Not Listed	36-58-43.69	076-25-50.21		X		Rooftop
Northern Area Office	6495 Northumberland Hwy. Heathsville. VA	Heathsville	Northumberland	37-55-24.3	076-28-75.9		X		None
Eastern Shore Office	15237 Arthur's Ct. Bellehauer, VA	Bellehauer	Accomack	37-32-47.62	075-48-50.05		X		None
Middle Area Office	2706 George Washington Memorial Hwy. Gloucester Pt., VA	Gloucester Pt.	Gloucester	37-16-064	076-29.69 (?)		X		None

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Military Affairs**
Department Within Agency:	**Public Safety**
Contact Name:	**LTC Art Bachman**
Contact Phone Number:	**804-298-6158**
Contact Fax Number:	**804-298-6303**
Contact Email:	Art.Bachman@va.ngb.army.mil

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
DMA Emergency Operations Ctr.	Bldg. 310, Fort Pickett	Blackstone	Nottoway	37-03-54.6	77-58-04.2		X	400'	Unknown
Winchester Armory	608 Millwooed Ave.	Winchester	Frederick	39-09-33.0	78-09-09.0			620	Unknown
Gate City Armory	157 Beech Street	Gate City	Scott	36-37-55.0	82-33-31.0			1230'	Unknown
Staunton Armory	500 Thornrose Ave.	Staunton	Augusta	38-09-07	79-04-19.0			1440	Unknown
Bowling Green Armory	18272 AP Hill Blvd.	Bowling Green	Caroline	38-03-39	77-19-06			60'	Unknown
Army Aviation Support Facility	700 Portugee Road	Sandston	Henrico	37-39-42.0	77-18-30.0			120'	Unknown
Ft. Pickett Fire Dept.	Bldg. 1485, Fort Pickett	Blackstone	Nottoway	37-02-59.0	77-57-01.8		WGS87	120'	Unknown
Ft. Pickett Public Works	Bldg. 234, Fort Pickett	Blackstone	Nottoway	37-04-03.1	77-58-11.7		WGS87	120'	Unknown
Ft. Pickett Range Operations	Bldg. 471, Fort Pickett	Blackstone	Nottoway	37-03-28.3	77-58-19.6		WGS87	120'	Unknown
Ft. Pickett Command	Bldg. 472, Fort Pickett	Blackstone	Nottoway	37-03-28.2	77-58-01.2		X	120'	Unknown
Ft. Pickett Logistics	Bldg. 307A, Fort Pickett	Blackstone	Nottoway	37-03-57.6	77-58-01.2		X	120'	Unknown

TABLE H
Control Station Location Form

COV AGENCY:	**Mines, Minerals & Energy**
Department Within Agency:	**Not Listed**
Contact Name:	**Jackie T. Davis**
Contact Phone Number:	**540-523-8119**
Contact Fax Number:	**540-523-8121**
Contact Email:	JTD@mme.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Nealy Ridge	Not Listed	Clinton	Dickenson	37-10-44	082-20-25	X		660	Not Listed
Lookout Tower	Forest Rd.	Brumley Mountain	Washinton	36-49-46	082-04-46	X		1280	Not Listed
Big A Forest Lookout Tower	Not Listed	Honaker	Russell	37-3-09.4N	082-2-08.5W		X	1130	Not Listed
High Eagle Knob Comm. Complex	Not Listed	Norton	Not Listed	36-53-52.4N	82-37-13.6W		X	1262	Not Listed
Hunter Gap Forest Lookout Tower	Not Listed	Pennington Gap	Lee	36-37-43.3N	83-5-17.6W		X	768	Not Listed
Buchanshire Water Tank	Not Listed	Grundy	Buchanan	37-13-58.4N	82-0-54.5W		X	786	Not Listed
US 23 at Mountain Empire Comm. College	Not Listed	Big Stone Gap	Wise	36-51-21.3N	82-45-36.6W		X	619	Not Listed
* Request a future Control Station in Charlottesville									

TABLE H
Control Station Location Form

COV AGENCY:	**Department of Motor Vehicles**
Department Within Agency:	**Not Listed**
Contact Name:	**W. Gail Morykon**
Contact Phone Number:	**804-367-2994**
Contact Fax Number:	**804-367-6631**
Contact Email:	dmvwgm@dmv.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Bland Motor Carrier Service Ctr.	I-77 @ Mile marker 52S, 4.2 miles N. of Route 717	Not Listed	Bland	Not Listed	Not Listed			Not Listed	Not Listed
Troutville Motor Carrier Service Ctr.	I-81 @ Mile Marker 149N, 1.4 miles S. of Route 220	Not Listed	Botetourt	Not Listed	Not Listed			Not Listed	Not Listed
Stephens City Motor Carrier Service Ctr.	I-81 @ Mile Marker 304S, 2.5 miles S. of Route 249	Not Listed	Frederick	Not Listed	Not Listed			Not Listed	Not Listed
Middletown Motor Carrier Service Ctr.	296 Kline Mill Lane	Middletown	Frederick	Not Listed	Not Listed			Not Listed	Not Listed
Dumfries Motor Carrier Service Ctr.	I-95 @ Mile Marker 154N, 1.1 miles N. of Route 234	Not Listed	Prince William	Not Listed	Not Listed			Not Listed	Not Listed
Aldie Motor Carrier Service Ctr.	39813 James Madison Parkway	Aldie	Loudon	Not Listed	Not Listed			Not Listed	Not Listed
Dahlgren Motor Carrier Service Ctr.	3930 James Madison Parkway	King George	King George	Not Listed	Not Listed			Not Listed	Not Listed
Sandston Motor Carrier Service Ctr.	I-64 @ Mile Marker 203W, 2.3 miles W. of Route 249	Not Listed	Henrico	Not Listed	Not Listed			Not Listed	Not Listed
Carson Motor Carrier Service Ctr.	I-95 @ Mile Marker 39S, 1.39 miles S. of Route 35	Not Listed	Prince George	Not Listed	Not Listed			Not Listed	Not Listed
Alberta Motor Carrier Service Ctr.	I-85 @ Mile Marker 22N, 4.7 miles S. of route 46	Not Listed	Brunswick	Not Listed	Not Listed			Not Listed	Not Listed
Suffolk Motor Carrier Service Ctr.	Rt. 58, 1.32 miles W. of Chesapeake City Line	Suffolk	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
New Church Motor Carrier Service Ctr.	4345 Lankford Highway	New Church	Accomack	Not Listed	Not Listed			Not Listed	Not Listed

TABLE H
Control Station Location Form

COV AGENCY:	**State Police**
Department Within Agency:	**Not Listed**
Contact Name:	**John Agee**
Contact Phone Number:	**804-674-2164**
Contact Fax Number:	**804-674-2602**
Contact Email:	jagee@vsp.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)	Longitude (DD-MM-SS.S)	NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
Division 1 - 17 control stations	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Division 2 - 14 control stations	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Division 3 - 15 control stations	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Division 4 - 16 control stations	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Division 5 - 20 control stations	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Division 6 - 13 control stations	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed
Division 7 - 12 control stations	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed			Not Listed	Not Listed

TABLE H

COV AGENCY:	**Department of Transportation**
Department Within Agency:	**Not Listed**
Contact Name:	**Bill Brown**
Contact Phone Number:	**804-236-3556**
Contact Fax Number:	**804-236-3619**
Contact Email:	brown_bb@vdot.state.va.us

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	US RT 17 S CITY LIMITS	Tappahannock	Essex	37-54-56.5					
	VAN DORN AREA HA 5910 MCQUINN DR.	Alexandria		38-47-46.4					
	SR 10 5 KM W	Surry	Surry	37-8-21.5					
	INT SR 777 & 778	Fancy Cap	Carroll	36-40-38.5					
	7560 MIDLOTHIAN TRPK	Richmond		37-29-59.5					
	1426 COLUMBIA PIKE	Arlington	Arlington	38-51-59.4					
	195 1.6 KM N OF US 58	Emporia		36-40-18.5					
	ELIZABETH RIVER TOLL PLZ	Norfolk		36-51-19.5					
	DRAW BRIDGE ON RT 175 ACROSS CHINCOTEAGUE CHANNEL	Chincoteague	Accomack	37-56-05.4					
	ELIZABETH RIVER TOLL PLZ RT 58	Portsmouth		36-51-9.5					
	SR 612 1.6 KM E OF US 11E	Verona	Augusta	38-12-0.5					
	INT OF US 17 BUS 29 & ALT BUS 15S	Warrenton	Fauquier	38-41-59.4					
	US 11 1.6 KM S	Edinburg	Shenandoah	38-48-44.4					
	FAIRFAX RESIDENCY 3565 CHAINBRIDGE RD.	Fairfax		38-50-45.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	2275 NORTHWESTERN PIKE US 50 1.0 KM	Winchester		39-11-28.4					
	WATERMAN DR & SR 763	Harrisonburg		38-27-30.4					
	US RT 250 2 KM E OF I64 EXIT 124	Albemarle	Albemarle	38-1-5.5					
	SR 22 2 KM E	Louise	Louise	38-0-55.5					
	LEESBURG RESIDENCY RT 7 E	Leesburg	Loudon	39-6-8.4					
	0.4 KM NW	Luray	Page	38-40-20.4					
	1835 INDUSTRY DR	Culpeper	Culpeper	38-27-5.5					
	US 460 1.6 KM SE	Bedford		37-19-7.5					
	239 STATE ST	Rock Mountain	Franklin	37-0-18.5					
	INT US BUS RT 460 & CAMRIA ST	Christiansburg	Montgomery	36-45-30.5					
	US 11 3 KM W OF 181	Abingdon	Washington	37-32-30.5					
	1992 S MILITARY HWY INT US 13 & SR 168	Chesapeake		37-21-22.5					
	INT US RT 13 AND SR 764	Accomack	Accomack	37-35-0.5					
	SR 714 1 KM S OF US 258 S	Franklin		37-26-34.5					
	US RT 460 1.6 KM RT 40	Sussex	Sussex	37-0-48.5					
	406 MAIN ST.	Warsaw	Richmond	37-17-7.5					
	RT 2 2 MI N OF BOWLING GREEN	Famers	Caroline	37-1-23.5					
	RT 33 .1 MI E OF RT 17	Saluda	Middlesex	36-53-1.5					
	RT 607 .6 KM N OF RT 218	Falmouth	Stafford	38-44-0.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	US RT. 1	Ashland	Hanover	37-21-6.5					
	RT 1 APPROX. 2 MI S	Petersburg		37-0-10.5					
	BUS RT 360	Amelia	Amelia	37-14-13.5					
	HALIFAX ST 1200 W	South Hill	Mecklenburg	36-45-16.5					
	SR 501 1 KM S	Halifax	Halifax	38-50-54.4					
	OFC BLDG SR 629 .3 KM S OF US 15	Dillwyn	Buckingham	37-32-30.5					
	SR 1003 S OF INT SR 131 AND US 460	Appomattox	Appomattox	38-38-8.4					
	BUS US 29 .2 KM S INT BUS 29 & SR 643	Amherst	Amherst	37-39-41.5					
	3301 SPEEKS DR	Midlothian	Chesterfield	37-45-10.5					
	CENTRAL OFFICE HAMPTON ROADS TUNNEL	Hampton		36-56-12.5					
	SR 615 1.6 KM W	Williamsburg		36-44-31.5					
	4717 MERCURY BLVD.	Hampton		37-20-48.5					
	SR 722 1.2 KM S OF US 221	Floyd	Floyd	37-5-48.4					
	MANASSAS RESIDENCY 10228 RESIDENCY RD	Manassas		37-19-47.4					
	US 10 AT 195 SW CORNER	Chester	Chesterfield	37-0-1.5					
	JAMES RIVER BRIDGE	Newport News		37-51-56.5					
	COLEMAN BRIDGE	Yorktown	Gloucester	37-11-7.5					
	1700 N MAIN ST.	Suffolk		38-24-47.5					
	CAMP 30 W OX RD. .5 MI N OF RT 29	Fairfax		37-13-36.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	NO INFORMATION GIVEN			37-24-31.5					
	AREA HQ 14609 TELEGRAPH RD	Dale City	Prince William	42-45-19.1					
	SR 271 .3 KM N OF I64	Short Pump	Henrico	37-11-28.4					
	SR 522 S OF I64	Sandy Hook	Goochland	37-59-4.5					
	1564 US NAVAL BASE	Norfolk		36-56-12.5					
	US 29 S KM N	Chatham	Pittsylvania	36-44-31.5					
	SR 634 1.6 KM E OF US RT 13	Eastville	North Hampton	37-20-48.5					
	SR 100	Dublin	Pulaski	37-05-48.4					
	MOUNTAIN LAKE RD	Pearisburg	Giles	37-19-47.4					
	N ISLAND HAMPTON RDS BRIDGE TUNNEL	Hampton		37-00-01.5					
	SR 712 .3 KM E OF SR 20	Keene	Albemarle	37-13-36.4					
	SR 622 3 KM W	Seaford	York	37-11-7.5					
	RT 702 3 MI S OF RT 630	Stafford	Stafford	38-24-47.5					
	US 460 7 KM E OF VANSANT	Oakwood	Buchanan	37-13-36.4					
	RT 621 OFF RT 17 .5 MI SE	Gloucester	Gloucester	37-24-31.5					
	2625 GRAND LEDGE HWY			42-35-19.1					
	US 52 5 KM N OF EXIT 58 I77	Rocky Gap	Bland	37-11-28.4					
	INT SR 616 & 759 1 KM S OF I64	Charlottesville		37-59-4.5					
	DPHFRIES AREA HQ 18200 JEFFERSON DAVIS	Dumfries	Prince William	38-33-28.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	GAINSVILLE AREA HQ 14831 LEE HWY	Gainsville	Prince William	38-47-24.4					
	859 TIMBERLAKE RD S OF GREENVIEW DR	Lynchburg		37-19-33.5					
	RESTON AREA HQ RT 675	Vienna	Fairfax	38-56-46.4					
	166 AREA HQ RT 693 & I66	Arlington	Arlington	38-51-25.4					
	SR 659 1 KM N OF SR 311	New Castle	Craig	37-30-23.5					
	SR 42 .5 KM N OF I64	Triangle	Alleghany	37-30-00.5					
	DUCK ST .8 KM W OF SR 522	Front Royal	Warren	38-57-0.4					
	ST RT 623 .5 MI E	Eskimo	Stafford	38-23-35.5					
	RT 360 .5 MI E	Lottsburg	Northumberland	37-57-55.5					
	US 60 1.4 KM E OF SR 522	Powhatan	Powhatan	37-32-57.5					
	PRINCE CHAPEL RD 1 KM S I64 & US 258	Hampton		37-2-14.5					
	NORTH ISLAND HAMPTON ROADS BRIDE TUNNEL	Hampton		37-59-59.5					
	NORTH ISLAND HAMPTON ROADS BRIDE TUNNEL	Hampton		37-0-8.5					
	S KENTUCKY AVE.	Virginia Beach		36-50-4.5					
	I64 HAMPTON ROADS BRIDGE TUNNEL	Hampton		37-0-1.5					
	SR 42 & I77	Bland	Bland	37-6-7.4					
	US RT 460 E KM W OF US RT 17	Chesapeake		36-46-18.5					
	RT 1 APPROX 1 MI S OF RT 608	Massaponax	Spotsylvania	38-11-21.5					
	INT US 58 & US 23	Weber City	Scott	36-37-58.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	INT SR 63 & 661 .4 KM S OF SR 83	Fremont	Dickenson	37-7-20.4					
	SR 16 .4 KM N OF I81 EXIT 45	Marion	Smyth	36-49-44.4					
	503 BICKERSTAFF RD.	Richmond		37-30-31.5					
	SR 106 APPROX 1/2 MI N	Prince George Ct	Prince George	37-13-15.5					
	SR 57 .2 KM E OF SR 8 14 KM N OF ST	Cruzes Store	Patrick	36-43-29.5					
	MERRIFIELD AREA HQ 8101 LEE HWY	Falls Church		38-52-30.4					
	SR 824 .2 KM S OF I64	Albemarle	Albemarle	38-2-27.5					
	SR 702 1.6 KM W	Independence	Grayson	36-37-1.5					
	FLEISHER AVE NR US 250 & US 220	Monterey	Highland	38-24-44.4					
	1.3 KM SE INT SR 170 & SR 165	Norfolk		36-54-32.5					
	US RT 301 1.6 KM S OF RT 40S	Stoney Creek	Sussex	36-55-49.5					
	SR 56 3 KM W	Shipman	Nelson	37-43-26.5					
	DEPT OF STATE POLICE	Burke Garden Siding	Tazewell	37-08-01.4					
	INT OF VA RT 30 & 650	Rumford	King William	37-43-21.5					
	RT 14 1.75 MI SE OF INT WITH RT 634	St. Stephens Church	King & Queen	37-47-25.5					
	SR 651 2 KM E OF US 11E	Troutville	Botetourt	37-25-24.5					
	SR 784 .25 MI N OF INT RT 60	Lexington		37-45-7.5					
	I77 S PORTAL WALKER MTN TUNNEL	Walker Mountain	Bland	37-2-7.4					
	INT SR 606 & 607 1.5 KM N OF I64	Croaker	James City	37-23-53.5					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	RT 40 2W MI E	McKenney	Dinwiddie	36-57-52.5					
	RT 877 2 MI S	Newington	Fairfax	38-43-54.4					
	SR 604 1.6 KM W OF SR 155	New Kent	New Kent	37-30-17.5					
	US 15 .5 KM S OF I64 .5 KM N	Zion Crossroads	Louisa	37-58-29.5					
	SR 250 & US 250	Fisherville	Augusta	38-5-3.5					
	SR 603 NEAR INT I81	Elliston	Montgomery	37-13-57.5					
	SR 783 .5 KM W OF SR 691 2 KM S	Marshall	Fauquier	38-51-24.4					
	RT 607 .6 KM N OF RT 218	Falmouth	Stafford	38-19-3.5					
	JAMESTOWN/SCOTLAND FERRY	Scotland	Surry	37-11-05.5					
	STATE POLICE		Pulaski						
	SR 345 .5 KM W OF SR 156	Sandston	Henrico	37-29-58.5					
	I77 E RIVER MOUNTAIN TUNNEL	Rocky Gap	Bland	37-16-1.4					
	NORTH VENT BLDG HAMPTON RDS TUNNEL I64	Hampton		37-0-1.5					
	SOUTH VENT BLDG HAMPTON RDS TUNNEL I64	Hampton		36-59-32.5					
	SHIP "JAMESTOWN"	NO INFORMATION	NO INFORMATION	NO INFORMATION					
	NORTH ISLAND CHESAPEAKE BAY TOWER	Hampton		37-00-03.5					
	LUNENBURG COUNTY AIRPORT	Kenbridge	Lunenburg	36-57-36.5					
	SHIP "POCAHONTAS"	NO INFORMATION	NO INFORMATION	NO INFORMATION					
	DOWNTOWN TUNNEL ADMIN. BLDG. STATE ST	Norfolk		36-50-17.5					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	RT. 786	Covington		37-46-30.5					
	DUNCAN KNOB	Warm Springs	Bath	38-9-51.4					
	I64 DRAWBRIDGE ELIZABETH RIVER	Chesapeake		36-45-28.5					
	I64 DRAWBRIDGE ON RT 233 ACROSS MILFORD HAVEN	Gwynn	Gwynn	37-29-18.5					
	ORANGE COUNTY AIRPORT	Orange	Orange	38-14-48.5					
	3975 FAIR RIDGE RD.	Fairfax		38-52-20.4					
	34 JEFFERSON AVE.	Newport News		36-57-58.5					
	DTN. ELIZABETH RIVER TUNNEL	Portsmouth		36-50-19.5					
	SR 695 1 KM E OF US RT 13	Temperanceville	Accomack	37-53-36.4					
	I64 E BOUND AT STRAWBERRY BANK BLVD.	Hampton		37-00-48.5					
	DULLES TOOL RD 3 MI W OF RT 684	McLean	Fairfax	38-56-6.4					
	JAMESTOWN SCOTLAND FERRY R 31	Surry	Surry	37-11-6.5					
	INT US RT 13 & SR 616	Whaleyville		36-36-8.5					
	RT 14 1 KM E ON INT RT 14 & 626	Foster	Mathews	37-27-32.5					
	S KENT AVE & TR 44	Virginia Beach		36-50-4.5					
	US 522 .4 KM SO FO SR 693	Cross Junction	Frederick	39-18-45.4					
	SR 688 1 KM OF INT SR 687	Franklin		36-40-22.5					
	SR 669 .5 KM OF US RT 17	Bartlett	Isle of Wight	36-57-10.5					
	US 17 AT INT SR 841 S KM SO OF SR 28	Bealeton	Fauquier	36-47-49.5					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	SR 610 1 KM S OF US RT 460	Windsor	Isle of Wight						
	RT 677 .2 MI E OF RT 301	Edge Hill	King George	38-16-48.5					
	US RT 58 813 KM W OF DANVILLE	Brosville	Pittsylvania	36-36-45.5					
	SR 696 1.6 KM N OF INT SR 612	Green Bay	Prince Edward	37-13-7.6					
	SR 1302 .2 KM N OF SR 40	Gretna	Pittsylvania	36-52-30.5					
	SR 40 .4 KM NW INT SR 649	Phenix	Charlotte	37-4-30.5					
	SR 854 .7 KM E OF SR 615	Rustburg	Campbell	37-16-4.5					
	SR 738 1 KM N OF SR 24	Lynchburg		37-15-47.5					
	RT 609 .6 MI W OF RT 360	Bethia	Chesterfield	37-24-9.5					
	RT 654 .1 MI N OF RT 655	Beach	Chesterfield	37-21-27.5					
	RT 1125 .3 MI N OF RT 58	Clarksville	Mecklenberg	36-37-20.5					
	RT 600 .1 MI N OF RT 92	Chase City	Mecklenberg	36-48-2.5					
	US 360 1 KM E INT SR 47	Crafton Gates	Charlotte	37-4-30.5					
	OFF ST RT 627 AT END OF ST RT F305	Mechanicsville	Hanover	37-38-0.5					
	RT 3 AT INT OF RT 3 & 639	Potomac Mills	Westmoreland	38-9-33.5					
	SR 762 .3 KM W OF I81	Chil Howie	Smyth	36-47-44.4					
	SR 613 .2 KM SO FO INT SR 612 & 613	Big Stone Gap	Wise	36-51-48.4					
	SR 72 1.6 KM S	Coeburn	Wise	36-55-0.4					
	US 19 1 KM E OF INT US 19 & US 460	Claypool Hill	Tazewell	37-3-30.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	SR 736 .5 KM SW OF US 52	Fort Chiswell	Wythe	36-56-2.4					
	SR 841 .4 KM NW OF INT US 58 & 221	Baywood	Grayson	36-37-32.5					
	SR 638 1 KM SE OF INT SR 604	Pattonsville	Scott	36-41-36.3					
	SR 682 .5 KM S OF US 58	Ewing	Lee	36-39-32.3					
	SR 643 1 KM E OF US 29 2 KM S	Warrenton	Fauquier	38-42-7.4					
	US 33 1.5 KM S OF SR 657 8 KM S	Cuckoo	Louisa	37-54-27.5					
	US 60 .4 KM E OF INT SR 45	Cumberland	Cumberland	37-31-3.5					
	SR 633 .8 KM W OF INT SR 640	Benhams	Washington	36-39-52.4					
	SR 612 1.2 KM N OF SR 259	Chimney Rock	Rockingham	38-39-13.4					
	SR 710 AT INT 717	Fairfield	Rockbridge	37-53-20.5					
	SW\ 694 .2 KM E OF US 11	Mint Spring	Augusta	38-2-30.5					
	US 220 3 KM N OF SR 39	Warm Springs	Bath	38-4-7.5					
	SR 151 AT INT SR 726 1.5 KM S	Bryant	Nelson	37-47-52.5					
	US 60 1 KM W OF INT SR 802E	Forks of Buff	Amherst	37-40-0.5					
	SR 651 AT INT OF SR 642	Toms Brook	Shenandoah	38-58-12.4					
	I 264 & ELIZABETH RIVER TUNNEL CONT. RM	Norfolk		36-49-59.5					
	CAMBRIA ST NW .2 KM W OF FRANKLIN ST	Christiansburg	Montgomery	37-8-12.5					
	SR 115 .4 KM 2 SR 122	Burnt Chimney	Franklin	37-6-34.5					
	LAKE RIDGE AREA HQ RT 641 .2 MI 3 OF 642	Dale City	Prince William	38-40-17.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	SR 1237 1 KM W OF US 220	Bassett	Henry	36-44-57.5					
	SR 811 1.3 KM N US 460	New London	Bedford	37-18-56.5					
	SR 623 .8 KM S OF US 17	Roanoke		37-19-30.5					
	US 11 .2 KM S OF I81 EXIT 47	Buchanan	Botetourt	37-32-38.5					
	SR 122 .2 KM W INT SR 602	Big Island	Bedford	37-31-33.5					
	US 220 .7 KM E OF SR 692	Horse Pasture	Henry	36-37-30.5					
	US 220 .7 KM N OF SR 655	Eagle Rock	Botetourt	37-36-43.5					
	AREA HQ RT 50 4.2 MI E OF RT 15	Arcola	Loudon	38-56-36.4					
	SR 72 1.5 KM E OF INT SR 619	Ft. Blackmore	Scott	36-46-54.4					
	SR 16 .1 KM SO OF SR 734	Volney	Grayson	36-37-5.4					
	SR 80 4 KM N OF US 19	Blackford	Russell	36-59-40.4					
	SR 650 1 KM E OF SR 700	Big Rock	Buchanan	37-21-0.4					
	US 11 .2 KM E OF SR 714	Glade Spring	Washington	36-46-30.4					
	RT 42 1 KM W OF SR 631	Saltville	Smyth	36-56-7.4					
	101 N FOURTEENTH ST	Richmond		37-32-11.5					
	1200 E MARSHALL ST	Richmond		37-32-25.5					
	9000 STONEY PT PWY	Richmond		37-32-53.5					
	RT 631 .7 MS SW INT RT 630	Sturgeonville	Brunswick	36-53-12.5					
	RT 623 BETWEEN US RT 1 & RT 656	Atlee	Hanover	37-41-16.5					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	RT 617 1.5 MI N OF I64	Oilville	Hanover	37-43-5.5					
	RT 638 2. MI W OF US RT 1	Burnt Store	Mecklenberg	36-42-14.5					
	INT OF RTS 657 & 775	Montpelier	Hanover	37-48-42.5					
	RT 641 .1 MI W INT RT 606	Lawrenceville	Brunswick	36-47-19.5					
	BUSINESS RT 460 AT INT RT 694	Nottoway	Nottoway	37-7-34.5					
	INT SR 620 & SR 657	Deskins	Buchanan	37-10-30.4					
	ATLANTIC CITY PLAZA	Norfolk		36-51-41.5					
	ELIZABETH RIVER TUNNEL	Norfolk		36-51-25.5					
	SR 700 .5 KM W OF SR 626	Greendale	Washington	36-43-45.4					
	SR 626 .2 KM SE OF SR 616	Berlin	Southampton	36-51-44.5					
	SR 748 .1 KM E OF SR 654	Capron	Southampton	36-42-41.5					
	SR 615 1.5 KM W OF US RT 60	Williamsburg		37-19-9.5					
	EMMETT PL 150 FT E OF STATE ST	Norfolk		36-50-17.5					
	RT 763 .2 KM N OF RT 522	Culpeper	Culpeper	38-29-37.5					
	INT F191 SR 750 1 KM N OF I64 SR 208	Ferncliff	Louisa	37-56-34.5					
	SR 692 .8 KM N OF SR 20 5 KM E	Rhoadsville	Orange	38-17-42.5					
	SR 658 .2 KM W INT US 501	Cluster Springs	Halifax	36-37-25.5					
	SR 1324 .2 KM S OF SR 130N	Madison Heights	Amherst	37-27-59.5					
	SR 640 2 KM NE OF SR 638 NE	Andersonville	Buckingham	37-28-41.5					

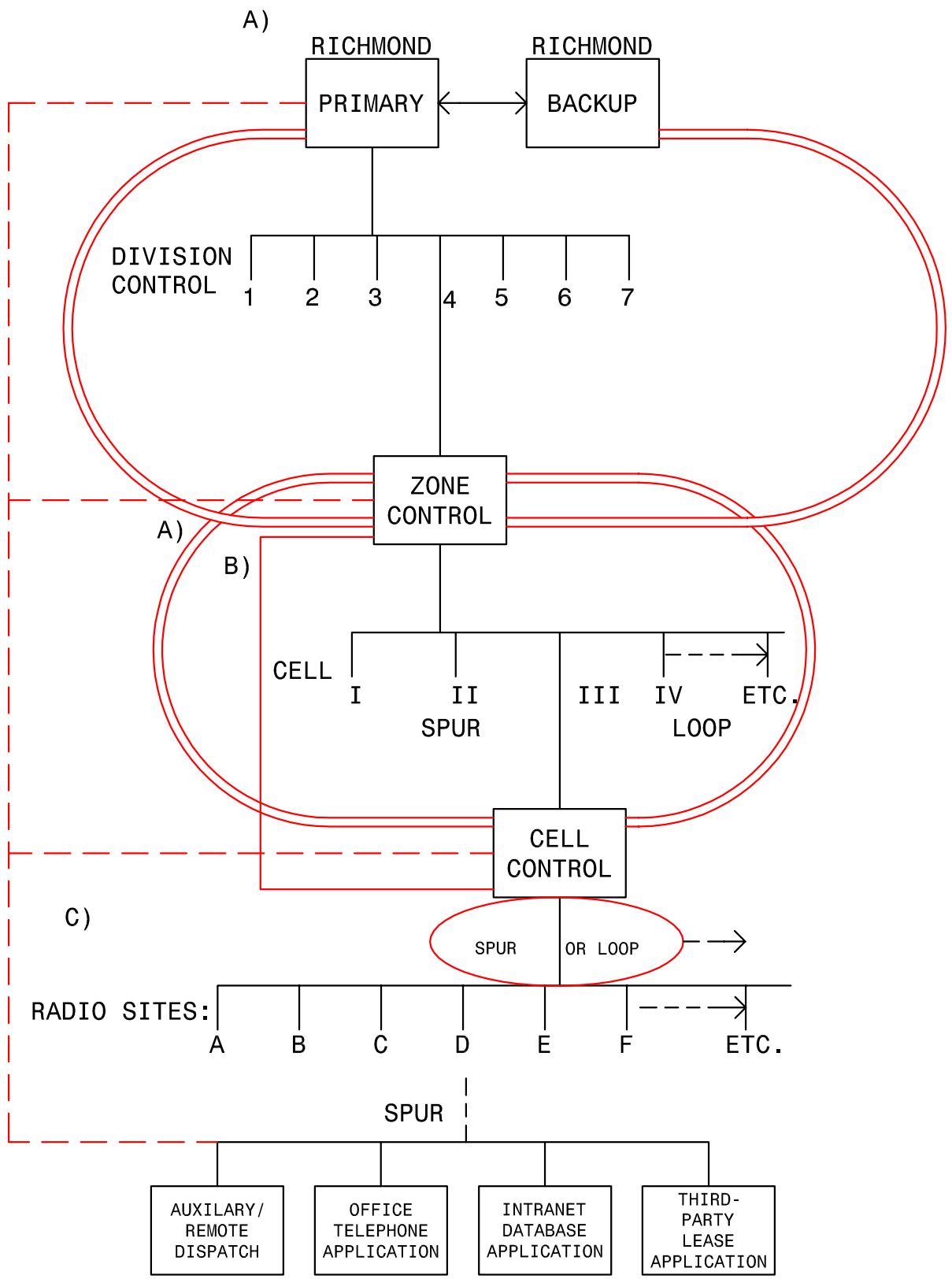
Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	SR 645 .W KM N INT US 501	Brookneal	Campbell	36-57-56.5					
	SR 726 2 KM N OF SR 729 N	Kentuck	Pittsylvania	36-40-12.5					
	SR 40 17 KM E OF BUS US RT 29	Mount Airy	Pittsylvania	36-56-15.5					
	SR 664 & 225 W OF SR 103	Stuart	Patrick	36-35-54.5					
	SR 750 .4 KM N OF US 221	Willis	Floyd	36-51-6.5					
	SR 636 .5 KM N OF US 58	Vesta	Patrick	36-43-16.5					
	SR 724 .7 KM E OF US 220	Sydnorsville	Franklin	36-53-22.5					
	US 311 1 KM N OF I81	Salem		37-19-13.5					
	SR 648 AT INT OF SR 616	Martinsville		36-40-44.5					
	US 221 2 KM S	Check	Floyd	37-1-10.5					
	US 58 .2 KM E OF SR 625	Stuart	Patrick	36-36-44.5					
	NO INFORMATION GIVEN		Dinwiddie	36-47-45.5					
	US 11 .2 KM N OF SR 620	Mt. Jackson	Shenandoah	38-41-45.4					
	SR 39 2.25 KM N	Millboro Springs	Bath	37-59-35.5					
	SR 607 3.3 KM E OF SR 42E	Moscow	Augusta	38-17-36.5					
	US 11 7 KM N OF NATURAL BRIDGE	Fancy Hill	Rockbridge	37-40-35.5					
	SR 845 .4 KM E OF US 11	Mauzy	Rockingham	38-33-59.4					
	SR 720 1 KM E OF SR 42N	Swoope	Augusta	38-12-20.5					
	SR 1018 .3 KM N OF SR 277	Stephens City	Frederick	39-4-39.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	SR 690 .2 KM S US 460	Bedford		37-21-26.5					
	SHOP 7949 GAINSFORD CT	Bristow	Prince William	38-47-0.4					
	RT 903 .2 MI NW OF RT 751	Bracey	Mecklenberg	36-35-59.5					
	INDUSTRY ST .25 KM S OF RT 3 & 522E	Culpeper	Culpeper	38-28-11.5					
	SOUTH IS I664 2.5 KM OF 25TH ST	Newport News		36-56-50.5					
	END OF ST RT 653	Petersburg		37-4-52.5					
	RT 76 1/4 MI W OF RT 653 POWHITE PKY OFC	Richmond		37-27-55.5					
	FORESTRY OFC 3409 POPLAR CREEK LN	Williamsburg		37-22-10.5					
	6904 ARMISTEAD AVE	Suffolk		36-53-28.5					
	970 REON DR	Virginia Beach		36-48-37.5					
	SR 654 .3 KM S OF SR 655	Moneta	Bedford	37-8-50.5					
	US RT 460 .5 KM S OF SR 10	Suffolk		36-45-9.5					
	SR 859 .7 KM E INT SR 659	South Boston		36-43-44.5					
	SR 133 1 KM S ON INT US 15 & SR 692	Hampden Sydney	Prince Edward	37-14-3.5					
	SR 823 W KM W OF INT SR 57 & US 29	Chatham	Pittsylvania	36-48-17.5					
	SR 57 12 KM W OF CHATHAM	Rondo	Pittsylvania	36-49-54.5					
	SR 669 .2 KM E OF US 15 4 KM N	Dillwyn	Buckingham	37-34-13.5					
	SR 718 3 KM S OF SR 40S	Glade Hill	Franklin	36-58-1.5					
	SR 602 1 KM NW	Callaway	Franklin	37-0-28.5					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	SR 680 & US 340 1.6 KM S	Berryville	Clarke	39-8-3.4					
	SR 623 1.4 KM NE OF I64 NE	Kerrs Creek	Rockbridge	37-52-58.5					
	SR 609 W KM W OF US 58	Castlewood	Russell	36-50-35.4					
	SR 791 1 KM W OF RT 21 & 658	Elk Creek	Grayson	36-43-51.4					
	SR 651 .2 KM NW OF US 21	Speedwell	Wythe	36-51-32.4					
	SR 870 1 KM FROM US 58	Dryden	Lee	36-47-8.3					
	RT 601 .4 MI N OF RT 137	Kenbridge	Lunenburg	36-57-13.5					
	RT 156 1.5 MI N OF RT 10	Hopewell		37-18-59.5					
	RT 629 1.4 MI E OF I64	Hadensville	Goochland	37-50-31.5					
	RT 155 1 MI N OF RT 5	Charles City		37-21-28.5					
	SR 868 .6 KM S OF SR 360	South Boston		36-46-50.5					
	SR 71 & 876	Nickelsville	Scott	36-45-15.4					
	US 501 1 KM SE OF GLADYS	Lynchburg		37-9-26.5					
	SR 659 3 KM FROM US 19 & 460	Springville	Tazewell	37-10-52.4					
	RT 40 .5 MI W OF RT 49	Victoria	Lunenburg	36-57-53.5					
	RT 604 .3 MI S OF RT 288	Richmond		37-24-11.5					
	I664 MONITOR MERRIMAC BRIDGE TUNNEL	Hampton		36-57-42.5					
	WATER ST UNDER RT 17 BRIDGE	Yorktown	York	37-14-19.5					
	DTR MAINT 10907 SUNSET HILLS RD	Reston	Fairfax	38-56-49.4					

Location (Name)	Location (Street Address)	City	County	Latitude (DD-MM-SS.S)		NAD 27	NAD 83	Elevation of Site	Antenna Mounting Location
	GLAMORGAN AREA HQ RT 23 & 823	Wise	Wise	37-0-13.4					
	CHANCELLOR HQ RT 760	Chancellorville	Spotsylvania	38-17-45.5					
	31220 CAMP RD	Dawn	Caroline	37-50-6.5					
	I64 ISLAND OF HAMPTON RDS. BRIDGE TUNNEL	Hampton		36-59-40.5					
	1007 THOMAS LN	Falmouth	Stafford	38-19-38.5					
	SR 709 1 KM W OF US RT 258	Smithfield	Isle of Wight	36-58-23.5					
	US 15 .5 KM S	Farmville	Prince Edward	37-17-12.5					
	RT 35 .3 MI NW INT RT 95	Prince George	Prince George	37-5-0.5					
	INT OF RTS 605 & 3	Brookvale	Lancaster	37-45-55.5					
	INT OF RTS 626 & 202	Hauge	Westmoreland	38-4-39.5					
	SR 601 1 KM S	Free Union	Albemarle	38-8-53.5					
	SR 628 1 KM N OF INT BUS US 211 N	Washington	Rappahannock	38-43-3.4					
	HILLSBORO AREA HQ RT 702 & 690	Hillsboro	Loudon	39-11-5.4					
	INT RT 230 & RT 231	Culpeper	Madison	38-21-7.5					
	SR 20 .4 KM E	Orange	Orange	38-14-34.5					
	ATLANTIC CITY PLAZA	Norfolk		36-51-25.5					
	DRAWBRIDGE RT 5 CHICKAHOMINY RIVER 9 MI W	Williamsburg		37-15-36.5					
	NEAR INT OF RST 208 & 691	Post Oak	Spotsylvania	38-9-7.5					
	AREA HQ RT 611 2.6 MI N OF RT 50	St. Louis	Loudon	39-0-33.4					

APPENDIX I



FUNCTION	CONFIGURATION	MIN. CAPACITY
A) SYSTEM CONTROL (RICHMOND).	PRIMARY RING	OC3
A) DIVISIONAL ZONE CONTROL (7 DIVISIONS)	PRIMARY RING	OC3
B) SIMULCAST CELL CONTROL (2-4 CELLS PER DIVISION).	HIGH LEVEL LOOP OR SPUR	MULTIPLE DS3 1 DS3
C) RADIO SITE (1-10 SITES PER CELL).	LOOP OR SPUR	28 DS1 OR <
D) NON-RADIO/ NON-RADIO NARROW BAND APPLICATION (CONNECT TO ANY HIERARCHY LEVEL).	BASIC LEVEL SPUR	12 DS1 OR 4 DS1 OR <

NOTES:

CTA COMMUNICATIONS
LYNCHBURG, VIRGINIA

TITLE
FIGURE I-1:
SYSTEM HIERARCHY DIAGRAM

REVISIONS

DESIGN CTA	DRAWN JWF	DATE 05/01/01
CHECKED DCB	APPROVED HFR	SCALE NO SCALE
CLIENT COMMONWEALTH OF VIRGINIA		SH. NO. 1 OF 1
PATH N:\FILES\20034G2\APPENDICIES\APPENDIX I\FIG.I-1.DWG		

APPENDIX J

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ABC	Site Name:	ROANOKE	Latitude	37-11-41
Address:	3023 PETERS CREEK ROAD	City, County:	ROANOKE,	Longitude	79-35-43
Contact Person	Robert Butler	e-mail			
		Telephone	213-465[illegible]		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

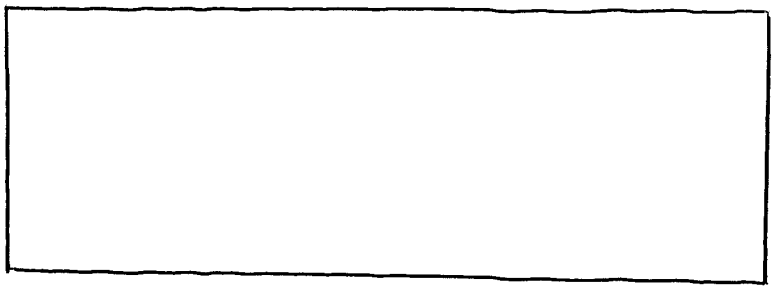
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1 STORY

THIS LOCATION IS Leased

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ABC**	Site Name:	**LYNCHBURG**	Latitude	**37-12-26**
Address:	**20353 TIMBERLAKE ROAD**	City, County:	**LYNCHBURG, CAMPBELL**	Longitude	**79-8-29**
Contact Person	Robert Butler	e-mail			
		Telephone	213-4655		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

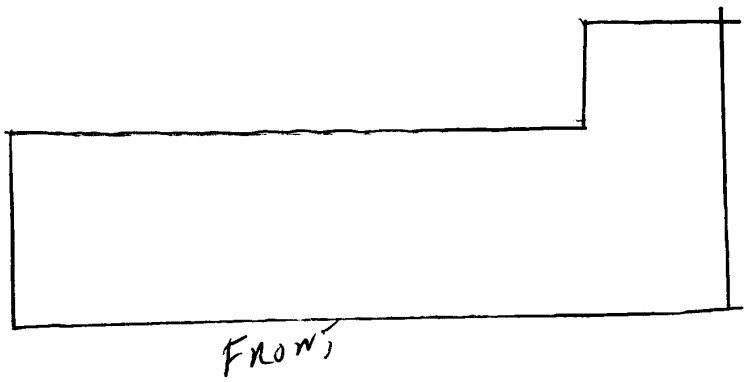
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		14
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1 Story

Approx 20,000 Sq FT

N/A

No

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ABC**	Site Name:	**ABINGTON**	Latitude	**36-25-32**
Address:	**102 ABINGTON ROAD**	City, County:	**ABINGTON,**	Longitude	**81-35-11**
Contact Person	Robert Butler	e-mail			
		Telephone	213-4655		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	~~no~~ N/A
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

NOTES: - Special considerations, comments, etc.

THIS IS A Leased site, Rent part of the 1st Floor of an office bulding

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ABC	Site Name:	STAUNTON	Latitude	38-55-27
Address:	460 COMMERCE SQUARE	City, County:	STAUNTON,	Longitude	79-20-23
Contact Person	Robert Butler	e-mail			
		Telephone	213-4655		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☑ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		20
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

NOTES: - Special considerations, comments, etc.

THIS IS A Leased FACILITY

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ABC	Site Name:	CHESAPEAKE	Latitude	36-29-4
Address:	1103 S. MILITARY HWY	City, County:	CHESAPEAKE,	Longitude	76-8-1
Contact Person	Robert Butler	e-mail			
		Telephone	213-4455		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

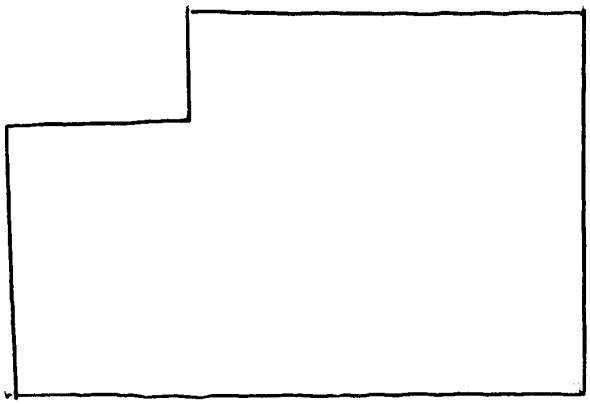
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		20
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1-Story

Approx 50,000 Sq Ft 1/2 is AN ABC Stone

2 Acres.

No

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ABC	Site Name:	HAMPTON	Latitude	37-8-58
Address:	4907 W. MERCURY BLVD	City, County:	HAMPTON,	Longitude	76-15-31
Contact Person	Robert Butler	e-mail			
		Telephone	213-4655		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☑ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

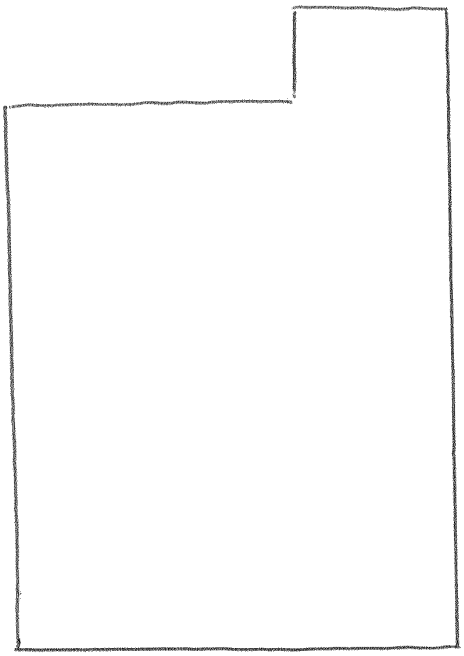
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		18
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1 STORY

Approx 50,000 SQ FT 1/2 IS AN ABC STORE

1 1/2 ACRES

PARTIALLY

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ABC	Site Name:	ALEXANDRIA	Latitude	38-29-17
Address:	501 MONTGOMERY ST.	City, County:	ALEXANDRIA,	Longitude	77-16-5
Contact Person	Robert Butler	e-mail			
		Telephone	213-4655		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

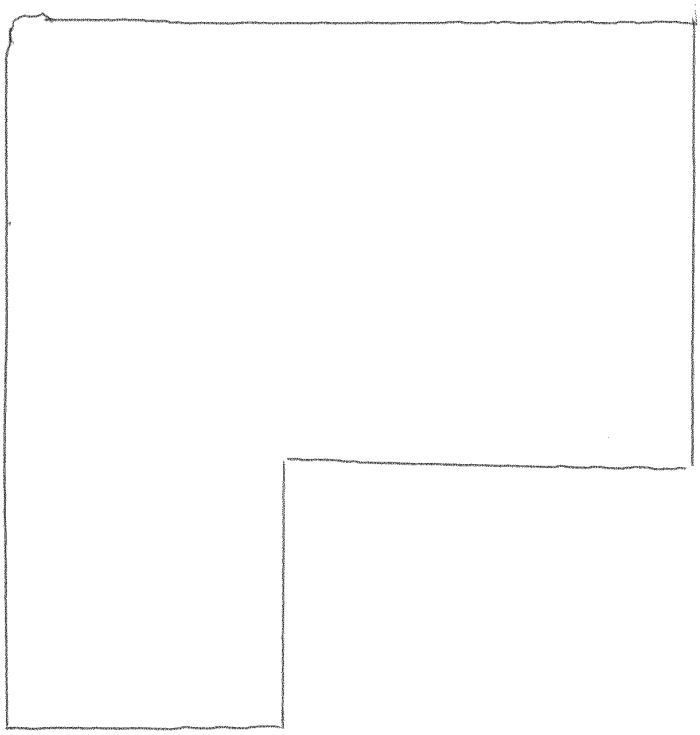
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		25
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1 story

Approx 50,000 Sq Ft 1/2 is ABC Store

1/2 Acre

No

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ABC	Site Name:	RICHMOND	Latitude	37-20-35
Address:	2901 HERMITAGE ROAD	City, County:	RICHMOND,	Longitude	77-17-52
Contact Person	Robert Butler	e-mail			
		Telephone	213-4655		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe FRAME-RELAY 64K)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

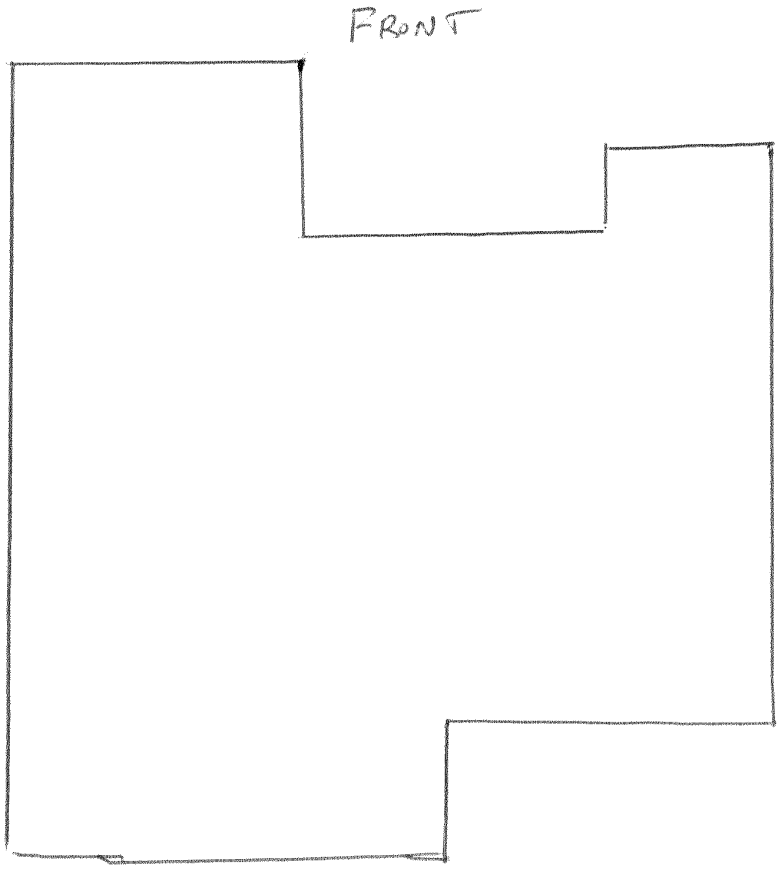
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		40
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

3-STORIES

APPROX 250,000 SQ FT

7 ACRES

YES

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	«Agency» Virginia Dept. Aviation	Site Name:	«Site_Name» State Hangar	Latitude «Latitude» 37° 30' 47.1"
Address:	«Street_Address» 5702 Gulfstream Rd.	City, County:	«City», «County» Hanover County	Longitude «Datum» 77° 19' 49.9" NAD27
Contact Person	William M. Jeffries	e-mail	jeffries@doav.state.va.us	
		Telephone	804-236-3639	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Microsoft Sequal Server
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	Yes / No ?

This site has LAN/WAN connectivity via (check one):

Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____

Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).

ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).

Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).

Other Access provided (please describe _____)

No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

Microwave connection to existing VSP microwave network

No microwave service currently at this site ✓

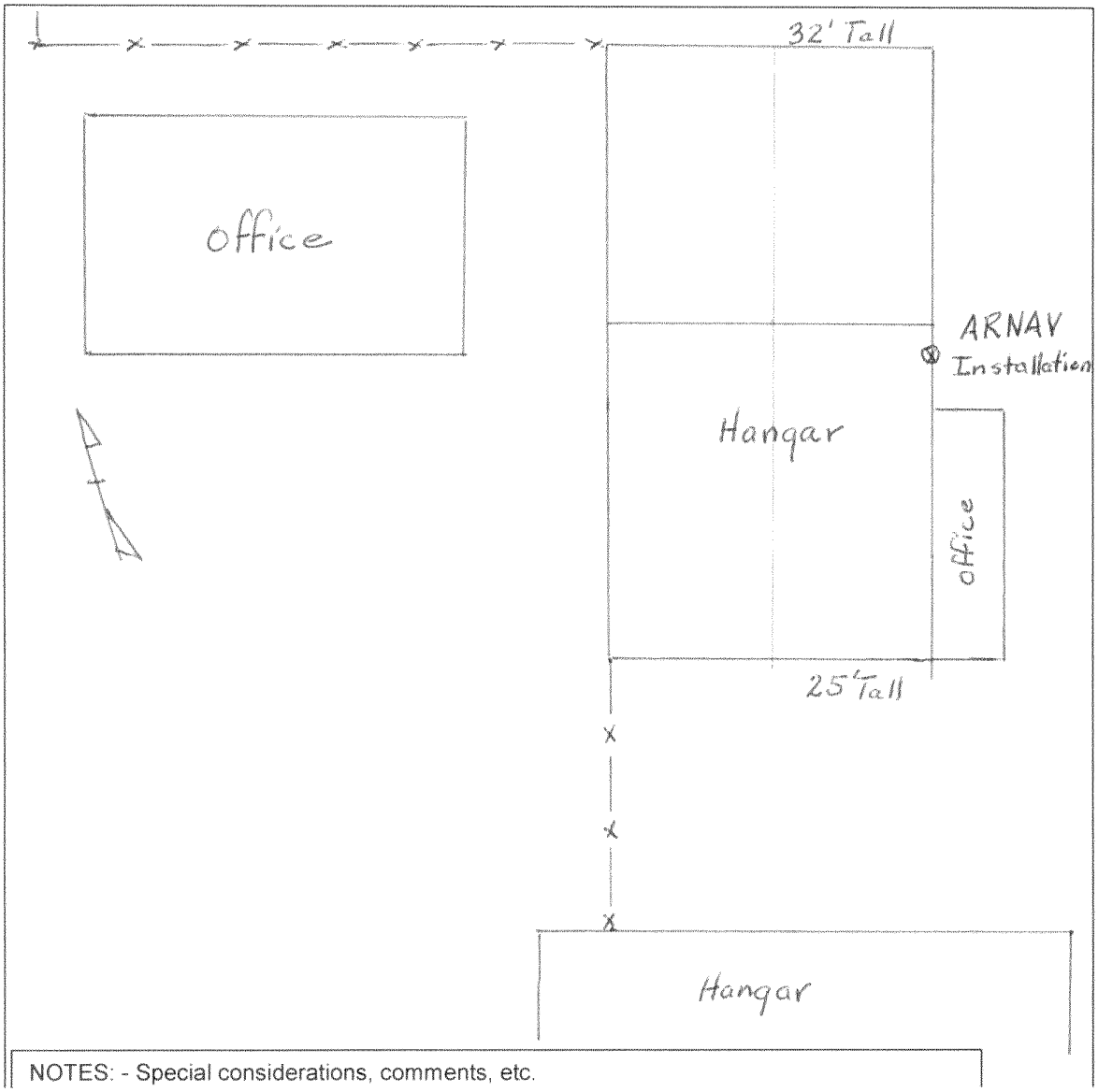
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		40
How many telephone lines service this site?		8 - 12
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Diesel Fuel	(Diesel) / Propane
	Power Output (Kw)	50
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



We do not anticipate any transmissions from this location for Intranet connections. All potential considerations are for co-locating ARNAV Transceivers to planned microwave towers

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	CAP POL	Site Name:	Adm. Hdqrtrs	Latitude
Address:	100 N. 9TH STREET	City, County:	RICHMOND,	Longitude
Contact Person	Capt. Larry Dollings	e-mail	ldollings@capitolpolice.state.va.us	
		Telephone	804-786-5035	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Windows 98
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe Service Provided by the Supreme Court & Legislative Services)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

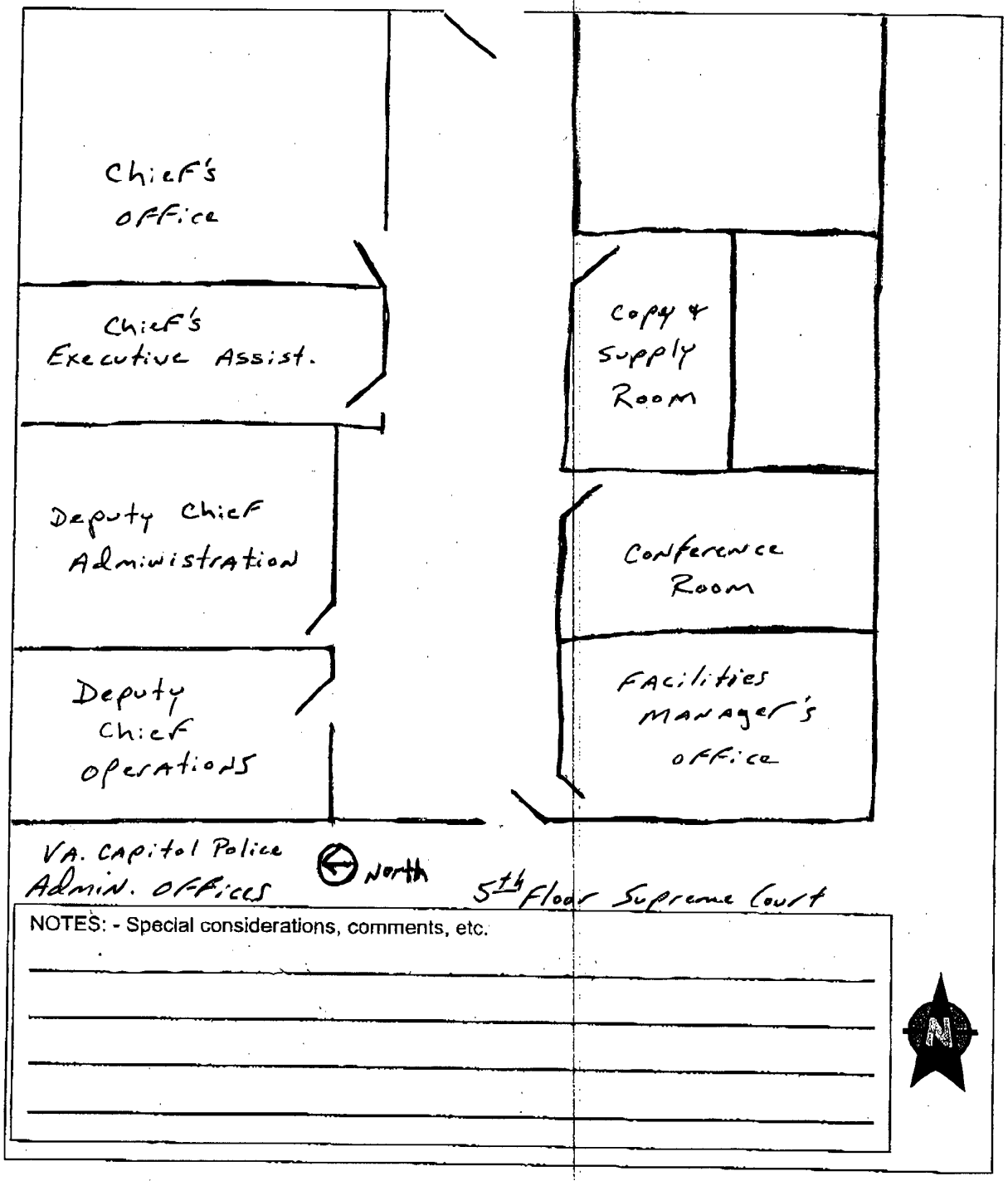
- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		5
How many telephone lines service this site?		5-6
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) No
EXISTING TOWER INFORMATION		
	Make or Model	
	Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)	
	Height	
	Approximate Age	
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

- Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:
  - Height of building
  - Size of building footprint (approximate length, width and orientation to North)
  - Size of area associated with the site that can be used for an antenna tower structure.
  - Is the area fenced?



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	CAP POL	Site Name:	Human Resources Investigations Training	Latitude
Address:	00 N. 9TH STREET	City, County:	RICHMOND,	Longitude
Contact Person	Capt. Larry Dollings	e-mail	ldollings@capitolpolice.state.va.us	
		Telephone	804-786-5035	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Windows 98
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe by Dept. of General Services)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

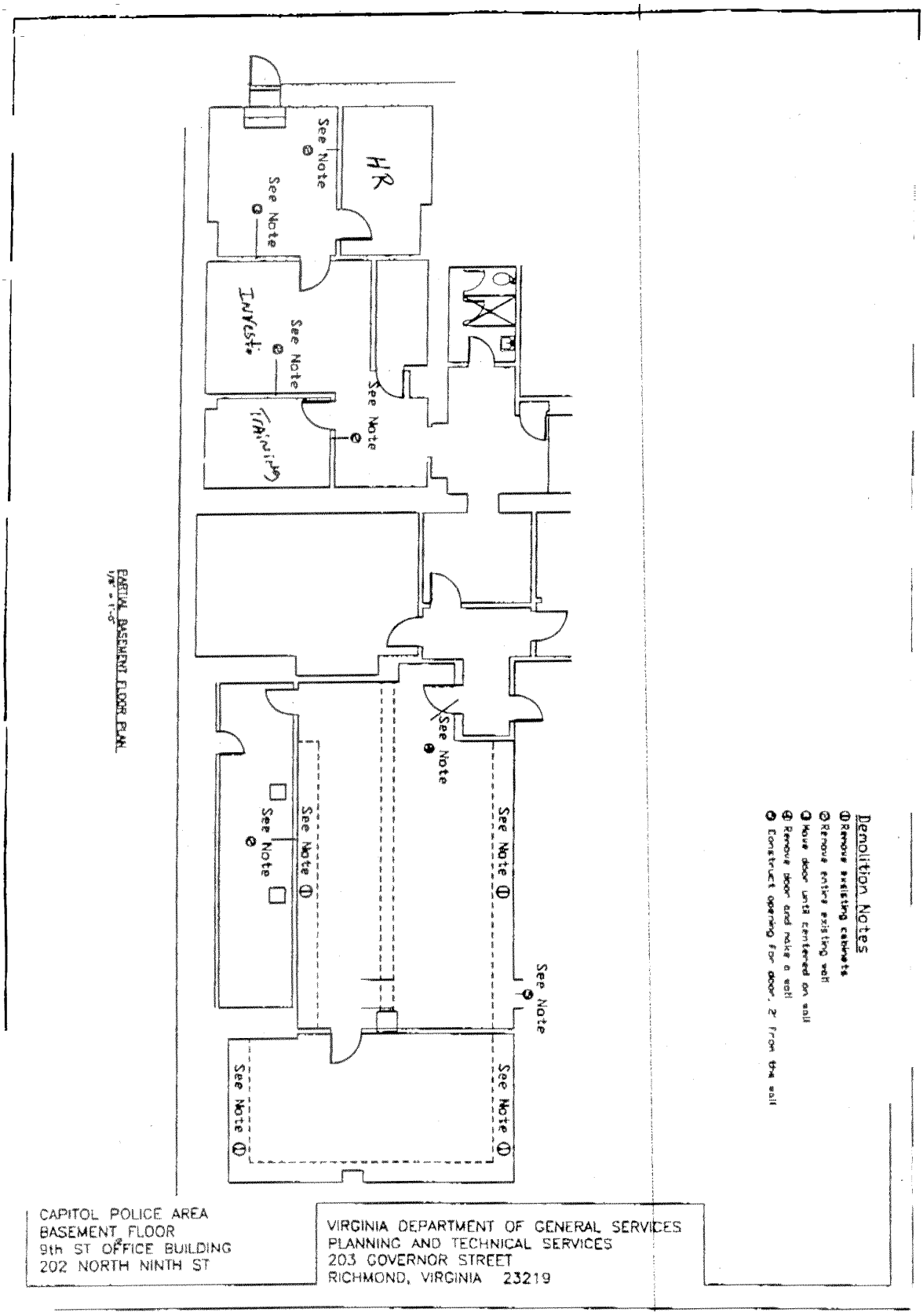
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		7
How many telephone lines service this site?		5-6
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
	Make or Model	
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
	Height	
	Approximate Age	
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).



ATTACHMENT G

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	CAP POL	Site Name:	communications OPERATIONS	Latitude
Address:	200 N. 9TH STREET	City, County:	RICHMOND,	Longitude
Contact Person	Capt. Larry Dollings	e-mail	ldollings@capitolpolice.state.va.us	
		Telephone	804-786-5035	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	8
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Windows 2000
Is this server used for applications or data?	Applications / Data / (Both)
State Police Router for VCIN Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☑ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog). VCIN Line
- ☑ Other Access provided (please describe by Dept. of General Services)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

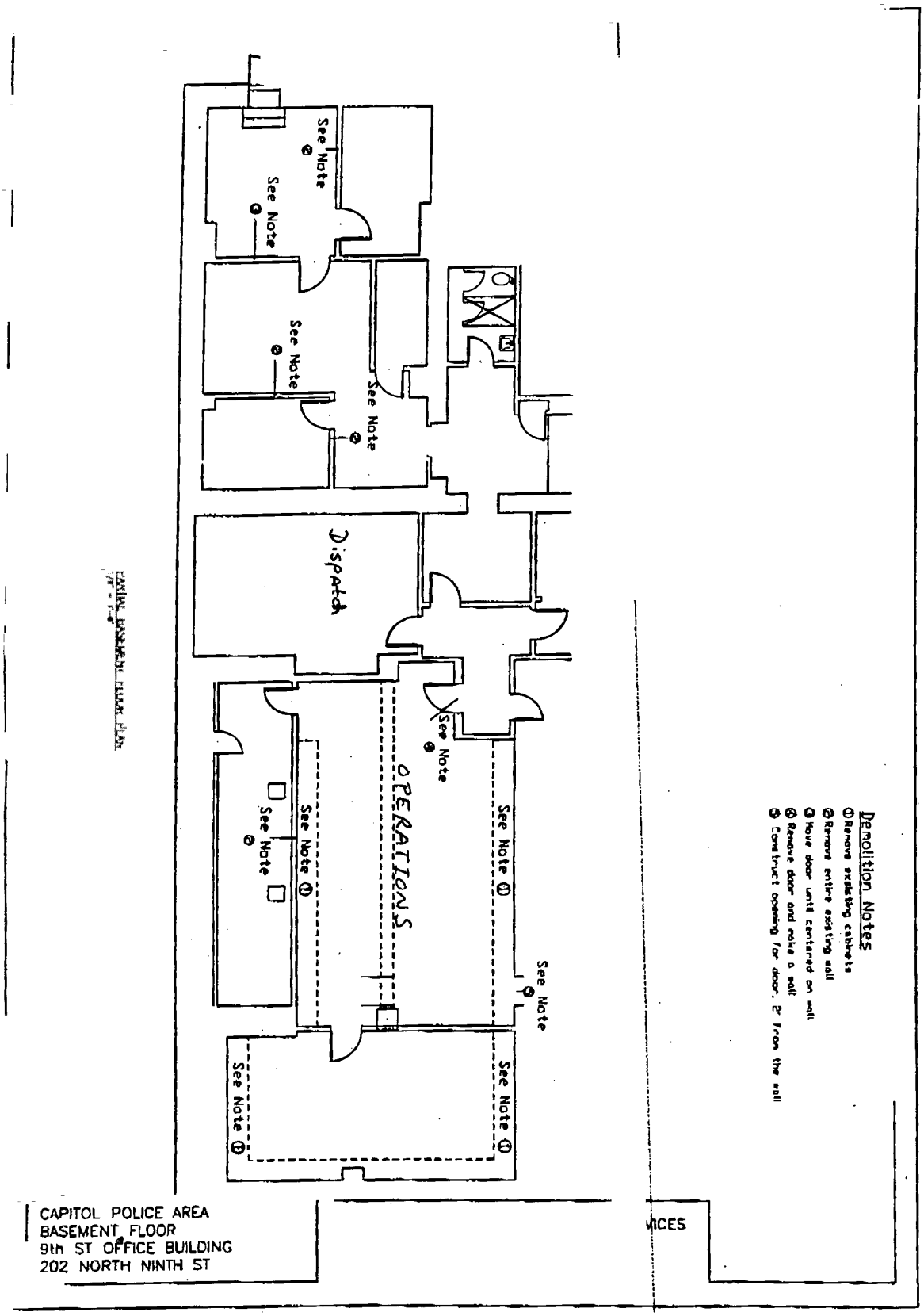
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		8
How many telephone lines service this site?		8-10?
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
	Make or Model	
	Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)	
	Height	
	Approximate Age	
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).



ATTACHMENT G

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	CAP POL	Site Name:	OPERATIONS	Latitude
Address:	PARKING Lot #3 11th & BANK STREETS	City, County:	RICHMOND,	Longitude
Contact Person	CAPT. LARRY DOLLINGS	e-mail	ldollings@capitolpolice.state.va.us	
		Telephone	804-786-5035	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☑ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY

How many telephones are located at this site?	2
How many telephone lines service this site?	1
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?	Yes / No

SITE INFORMATION

Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)

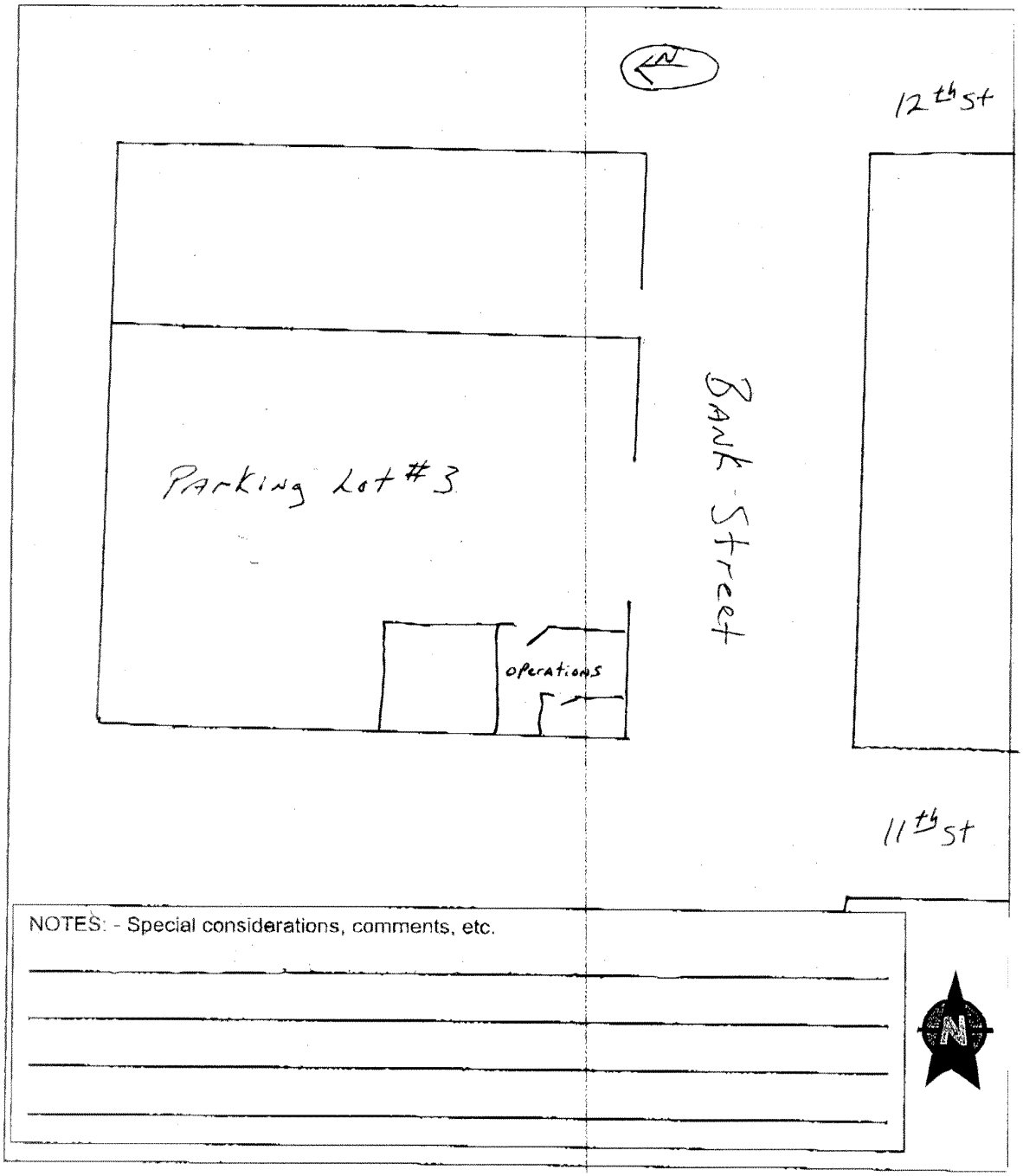
EXISTING TOWER INFORMATION

	Make or Model	
	Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)	
	Height	
	Approximate Age	
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOC	Site Name:	Eastern Regional Office	Latitude
Address:	157 NORTH MAIN STREET	City, County:	SUFFOLK,	Longitude
Contact Person	Karen Hardwick	e-mail	THURSJENJH@VADOC.STATE.VA.US HARDWICKK@VADOC.STATE.VA.US	
		Telephone	(804) 674-3547	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1200
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☒ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / No

TELEPHONE CONNECTIVITY	
How many telephones are located at this site?	50
How many telephone lines service this site?	50
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?	Yes / (No)

SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No

EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

NOTES: - Special considerations, comments, etc.

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOC	Site Name:	Northern Regional office	Latitude
Address:	199 SPOTNAP ROAD	City, County:	CHARLOTTESVILLE,	Longitude
Contact Person	Karen Hardwick	e-mail	THURSTONJH@VADOC.STATE.VA.US HARDWICKK@VADOC.STATE.VA.US	
		Telephone	(804) 674-3547	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1000
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☒ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

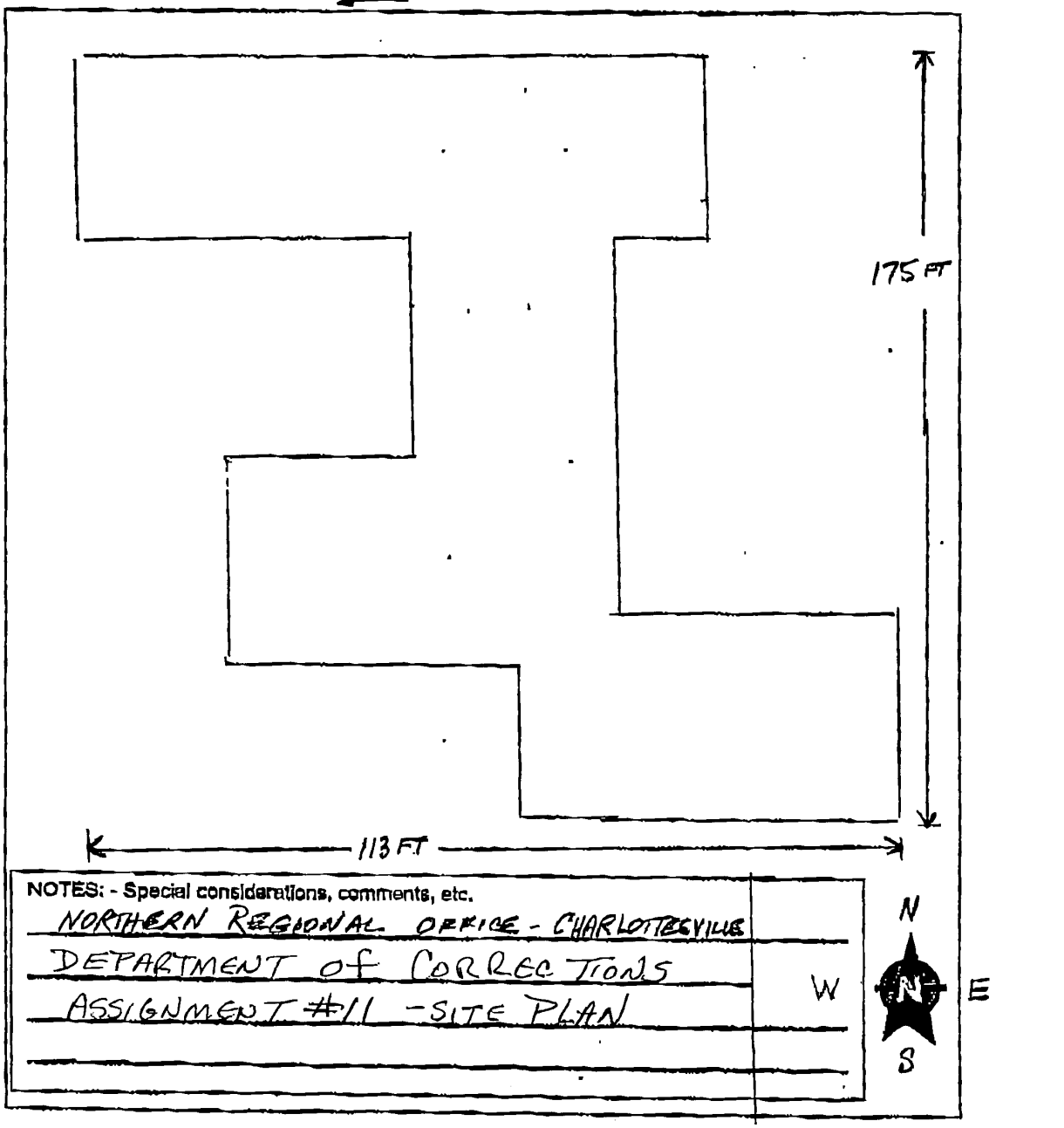
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		45
How many telephone lines service this site?		15
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building – 24 FT.
- Size of building footprint (approximate length, width and orientation to North) 175' x 113'
- Size of area associated with the site that can be used for an antenna tower structure. – NONE
- Is the area fenced? – NO



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOC	Site Name:	Western Regional Office	Latitude
Address:	5427 PETERS CREEK ROAD	City, County:	ROANOKE,	Longitude
Contact Person	Karen Hardwick	e-mail	THURSTWJH@VADOC.STATE.VA.US hardwickkk@vadoc.state.va.us	
		Telephone	(804) 674-3547	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1222
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☒ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY	
How many telephones are located at this site?	65
How many telephone lines service this site?	65
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?	(Yes) / No

SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No

EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOC	Site Name:	Central Regional Office	Latitude
Address:	10501 TRADE COURT	City, County:	RICHMOND,	Longitude
Contact Person	Karen Hardwick	e-mail	THURSTONJH@VADOC.STATE.VA.US hardwickk@vadoc.state.va.us	
		Telephone	(804) 674-3547	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1200
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☒ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		50
How many telephone lines service this site?		10
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDEM	Site Name:	VA EOC	Latitude	37-30-06
Address:	7700 MIDLOTHIAN TURNPIKE	City, County:	RICHMOND, CHESTERFIELD	Longitude	77-32-20
Contact Person	Fred Vincent	e-mail	fvincent@vdem.state.va.us		
		Telephone	8046742420		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	40
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Win 2k
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☒ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☒ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Limited space Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		60
How many telephone lines service this site?		300+
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	100
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Limited Yes / (No) SPACE
EXISTING TOWER INFORMATION		
SPHQ Tower	Make or Model	
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

NOTES: - Special considerations, comments, etc.

Underground SECURE FACILITY

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDEM REGION I	Site Name:	VDEM REGION I	Latitude	37-02-54.7
Address:	143 THIRD ST	City, County:	PULASKI, PULASKI	Longitude	80-46-58.9
Contact Person	Jack Rowell	e-mail	JRowell@vdem.state.va.us		
		Telephone	540 994 5006		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	2
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		4
How many telephone lines service this site?		6
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**VDEM**	Site Name:	**VDEM REGION II**	Latitude	**38-26-35.6**
Address:	**119004 INDUSTRIAL BLVD**	City, County:	**CULPEPER, CULPEPER**	Longitude	**70-00-07.0**
Contact Person	Cindi Causey	e-mail	ccausey@vdem.state.va.us		
		Telephone	540-829-7371		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	2
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		4
How many telephone lines service this site?		6
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**VDEM**	Site Name:	**VDEM REGION III**	Latitude	**37-24-58.1**
Address:	**6104 FIDDLERS GREEN RD**	City, County:	**GLOUCESTER, GLOUCESTER**	Longitude	**76-32-40.6**
Contact Person	WALLACE TWIGG	e-mail	WTWIGG@vdem.state.va.us		
		Telephone	804 695 9506		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	4
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site – VDEM OFFICE

CO-located with VSP area office

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		4
How many telephone lines service this site?		8
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	unk
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDEM	Site Name:	TRADE COURT FACILITY	Latitude	37-29-58.7
Address:	10501TRADE COURT	City, County:	RICHMOND, CHESTERFIELD	Longitude	77-35-25.4
Contact Person	MARK Pennington	e-mail	MPennington@vdem.state.va.us		
		Telephone	8048976500 ext 6532		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	50
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	WIN2K
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☑ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		100
How many telephone lines service this site?		200
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	500 (at least)
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDEM	Site Name:	TRI-CITIES IFLOWS	Latitude	36-28-56.1
Address:	2494 HWY 75	City, County:	BLOUNTVILLE, TN, SULLIVAN	Longitude	82-24-39.7
Contact Person	Jim Meece	e-mail			
		Telephone	423-323-1921		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☒ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network IFLOWS
- ☐ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		/
How many telephone lines service this site?		/
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDEM	Site Name:	SURRY NUCLEAR POWER STATION	Latitude 37° 11.3'
Address:	5570 HOG ISLAND ROAD	City, County:	, SURRY	Longitude 76° 41.1'
Contact Person	Fred Vincent	e-mail	fvincent@vdem.state.va.us	
		Telephone	8046742420	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☒ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		1
How many telephone lines service this site?		unk
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No unk
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		unk Yes / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDEM	Site Name:	NORTH ANNA NUCLEAR POWER STATION	Latitude 38°03.7'
Address:	MINERAL	City, County:	, LOUISA	Longitude 77°47.4'
Contact Person	Fred Vincent	e-mail	fvincent@vdem.state.va.us	
		Telephone	8046742420	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☒ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		1
How many telephone lines service this site?		unk
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No unk
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		unk Yes / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDEM	Site Name:	GENERATION CORPORATE RESPONSE	Latitude 37° 39.0 '
Address:	5000 DOMINION BLVD	City, County:	, HENRICO	Longitude 77° 35.5 '
Contact Person	Fred Vincent	e-mail	fvincent@vdem.state.va.us	
		Telephone	8046742420	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	1
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☒ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		/
How many telephone lines service this site?		unk
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No unk
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / No unk
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No unk
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	«Agency» DEQ	Site Name:	«Site_Name»	Latitude	«Latitude»
Address:	«Street_Address»	City, County:	«City», «County»	Longitude	«Datum»
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	15
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Windows NT Banyan Backbone
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☑ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		400+
How many telephone lines service this site?		3 T1s
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**DOF**	Site Name:	**CHARLOTESVILLE**	Latitude	**38-01-17**
Address:	**900 NATURAL RESOURCES**	City, County:	**CHARLOTESVILLE, ALBEMARLE**	Longitude	**78-31-53**
Contact Person	Joe Schaefer	e-mail	schaeferj@dof.state.va.us		
		Telephone	(804) 977-6555 ext. 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 Novell V4.11
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☒ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

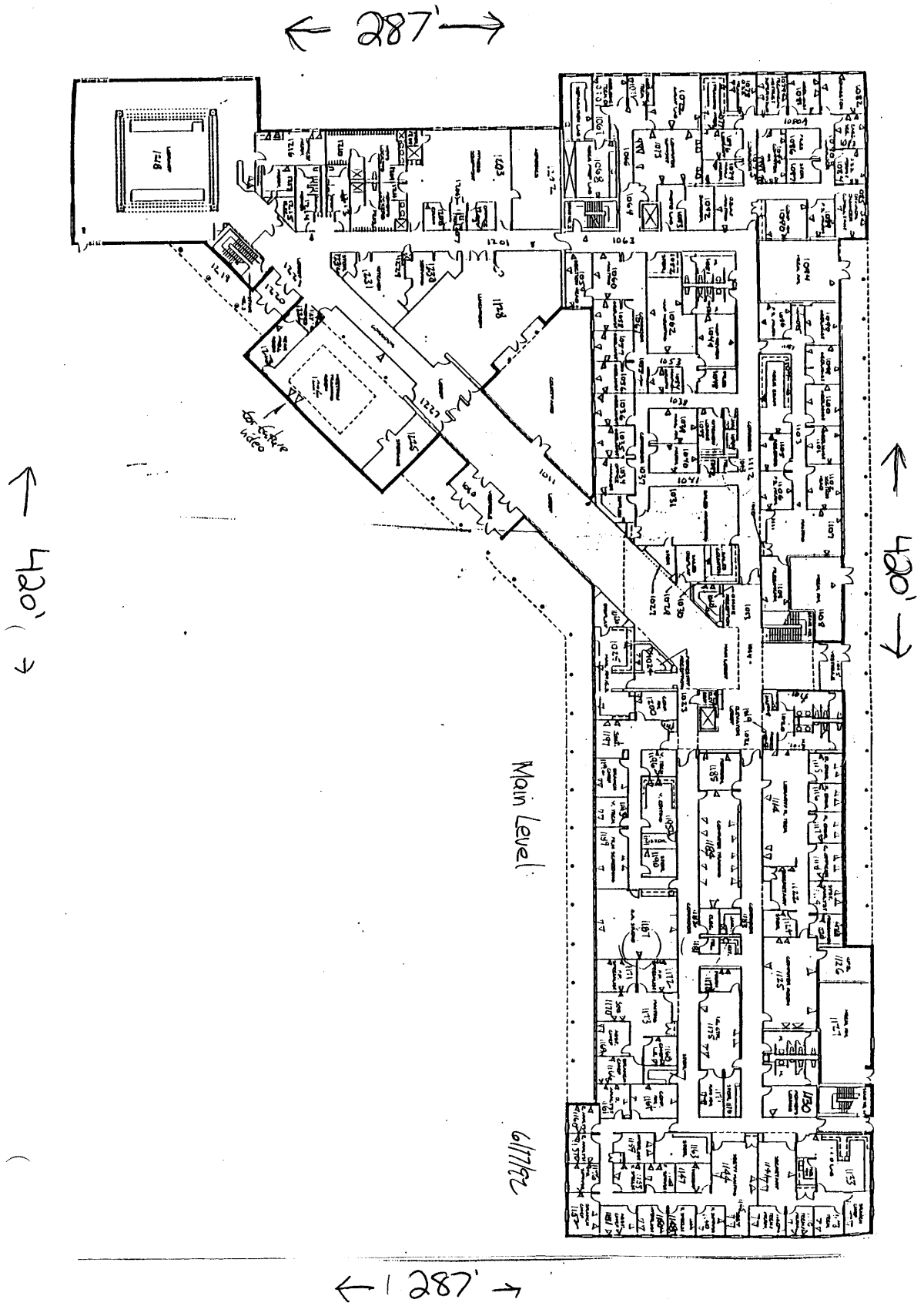
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		15 lines
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


287'
420'
420'
Main Level
6/17/02
287'

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOF	Site Name:	CHARLOTESVILLE	Latitude	38-01-17
Address:	900 NATURAL RESOURCES	City, County:	CHARLOTESVILLE, ALBEMARLE	Longitude	78-31-53
Contact Person	Jee Schaefer	e-mail	Schaeferj@dof.state.va.us		
		Telephone	(804) 977-6555 ext. 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 Novell V4.11
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☒ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower -- standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

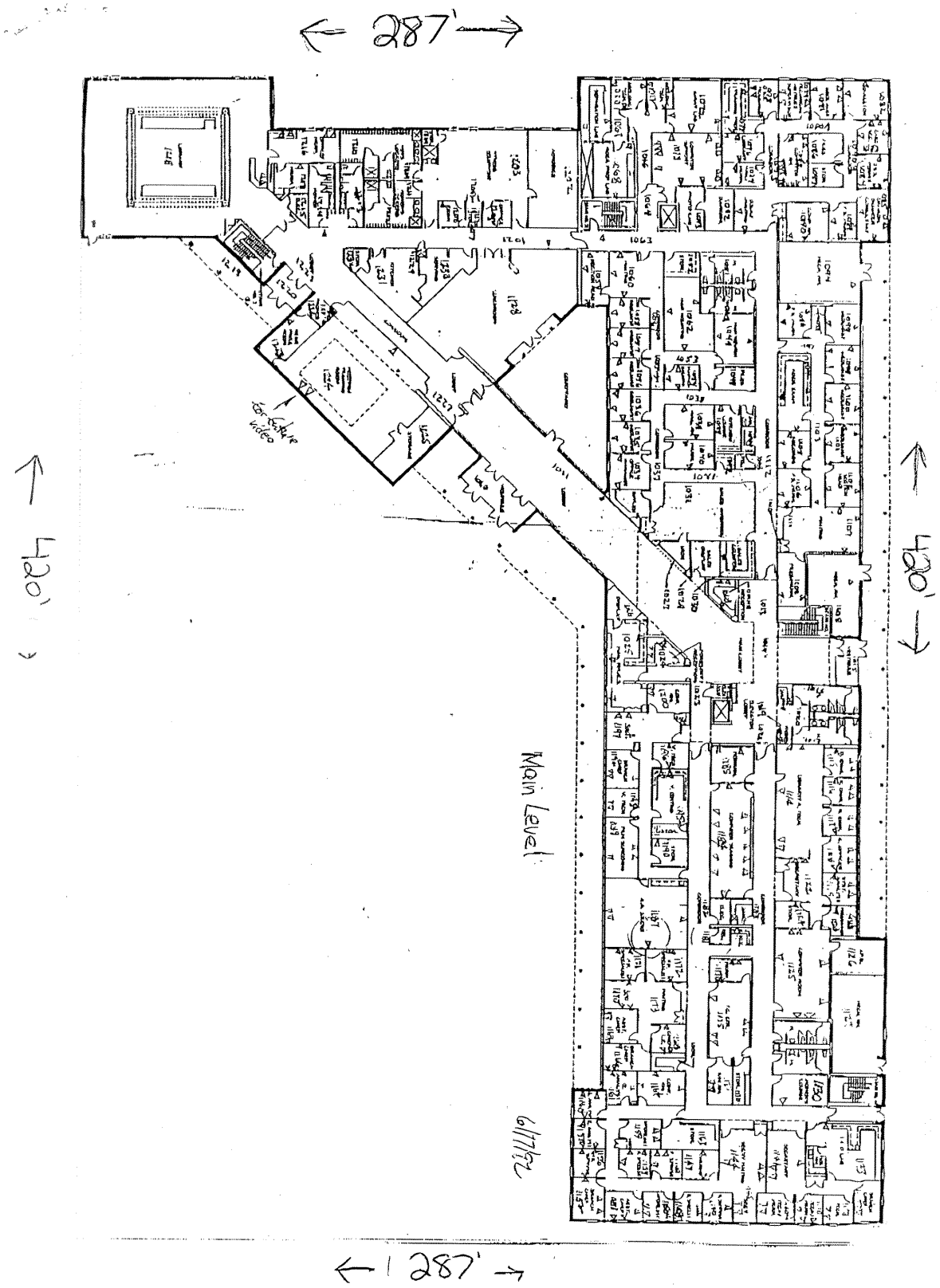
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		15 lines
Is this site served by a Private Branch Exchange (PBX)/ Key Telephone System		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOF	Site Name:	WAVERLY	Latitude	37-02-00
Address:	135 BANK ST	City, County:	WAVERLY, SUSSEX	Longitude	77-05-38
Contact Person	Joe Schaefer	e-mail	Schaefecj@dof.state.va.us		
		Telephone	(804) 977-6555 ext. 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 NOVELL V 4.11
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

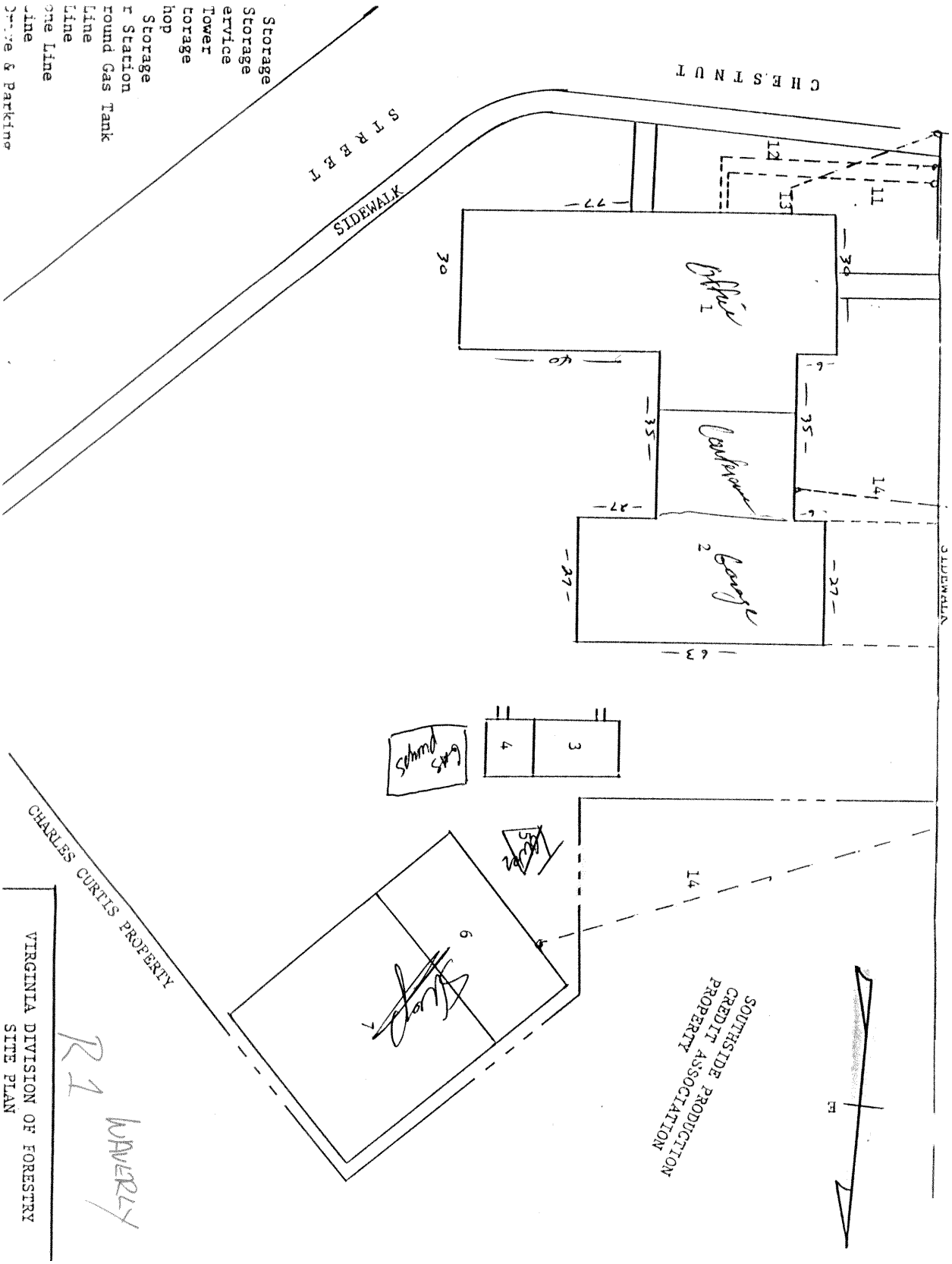
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		3 lines, Fractional T1 on leased line
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		Not Known
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		3 legged self supporting
Height		45'
Approximate Age		10 yrs
Location	Latitude	37-02-00
	Longitude	077-05-38
	Datum (NAD 27 or NAD 83)	NAD 27

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


Storage
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Storage
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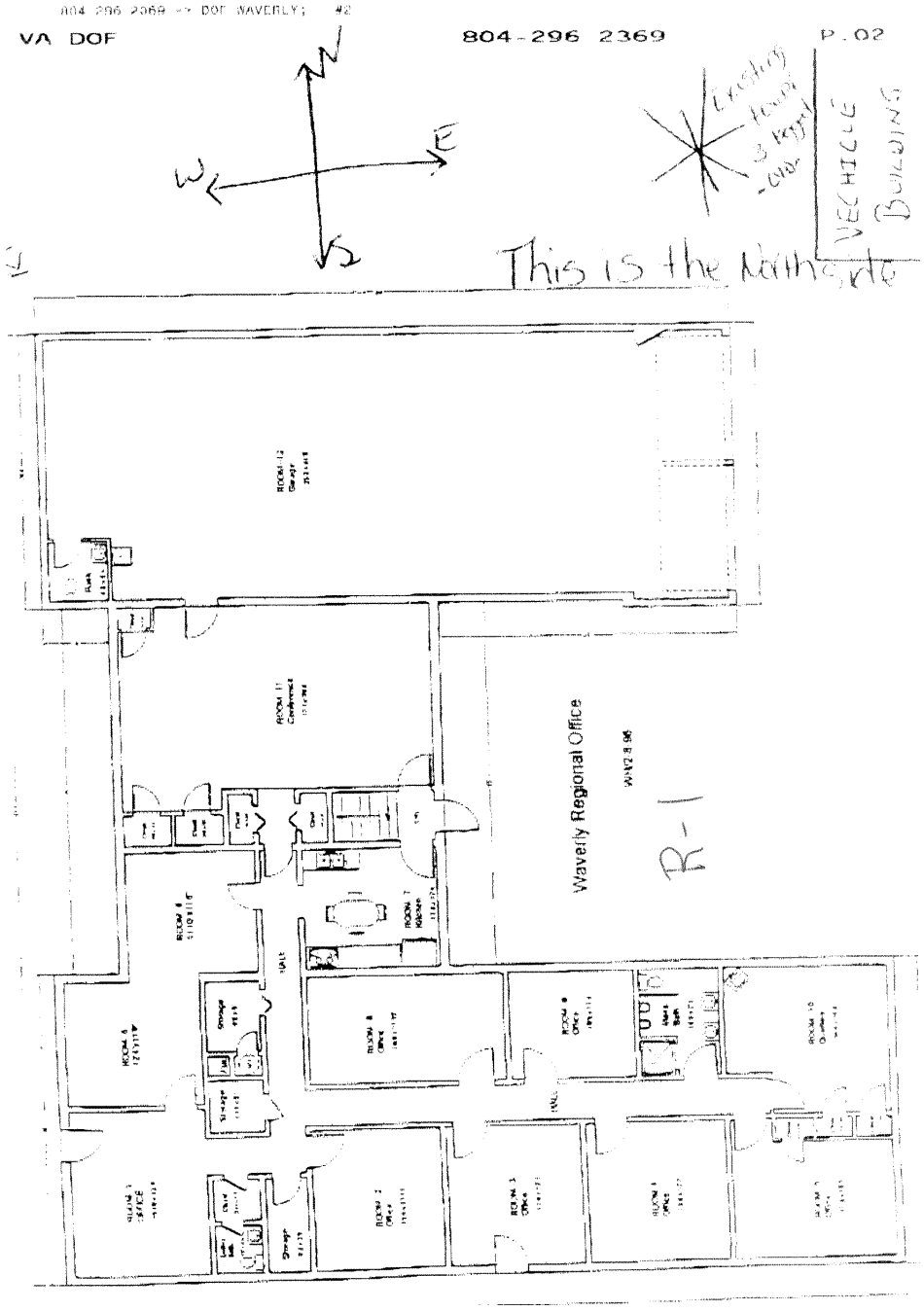
round Gas Tank
Line
Line
one Line
Line
Drive & Parking
STREET
SIDEWALK
CHESTNUT
Office
1
Cafeteria
Garage
2
SIDEWALK
Salt Dome
Gas Pumps
3
4
CHARLES CURTIS PROPERTY
VIRGINIA DIVISION OF FORESTRY
SITE PLAN
R 1 WAVERLY
SOUTHSIDE PRODUCTION
CREDIT ASSOCIATION
PROPERTY
N


This is the Northside
VEHICLE BUILDING
Waverly Regional Office
R-1

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**DOF**	Site Name:	**TAPPAHANNOCK**	Latitude	**37-53-30**
Address:	**623 LEWIS ST**	City, County:	**TAPPAHANNOCK, ESSEX**	Longitude	**76-52-41**
Contact Person	Joe Schaefer	e-mail	schaefej@dof.state.va.us		
		Telephone	(804) 977-6555 ext 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 Novell V4.11
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☒ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

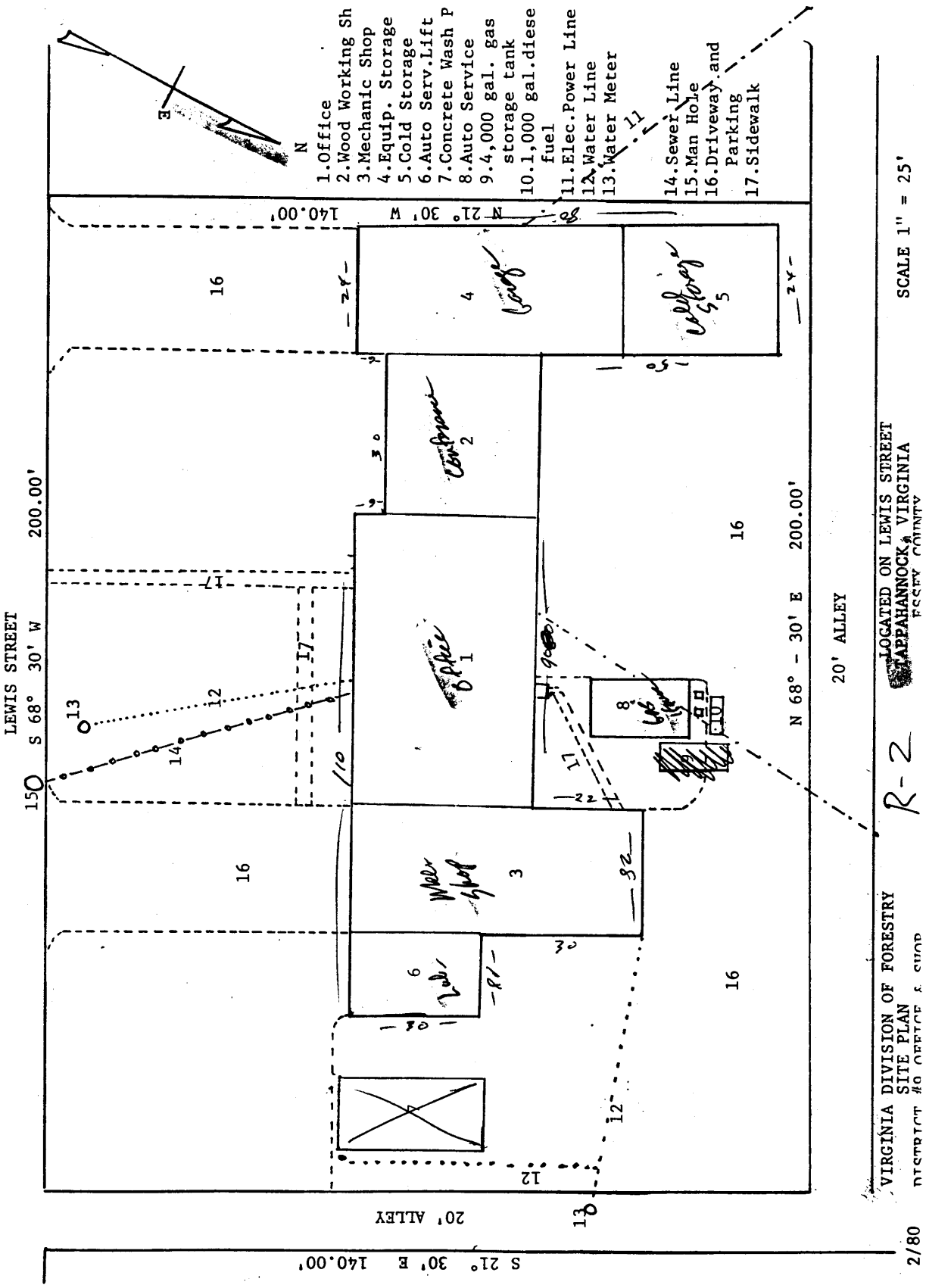
Please indicate which of the following services are available at this site (check one)

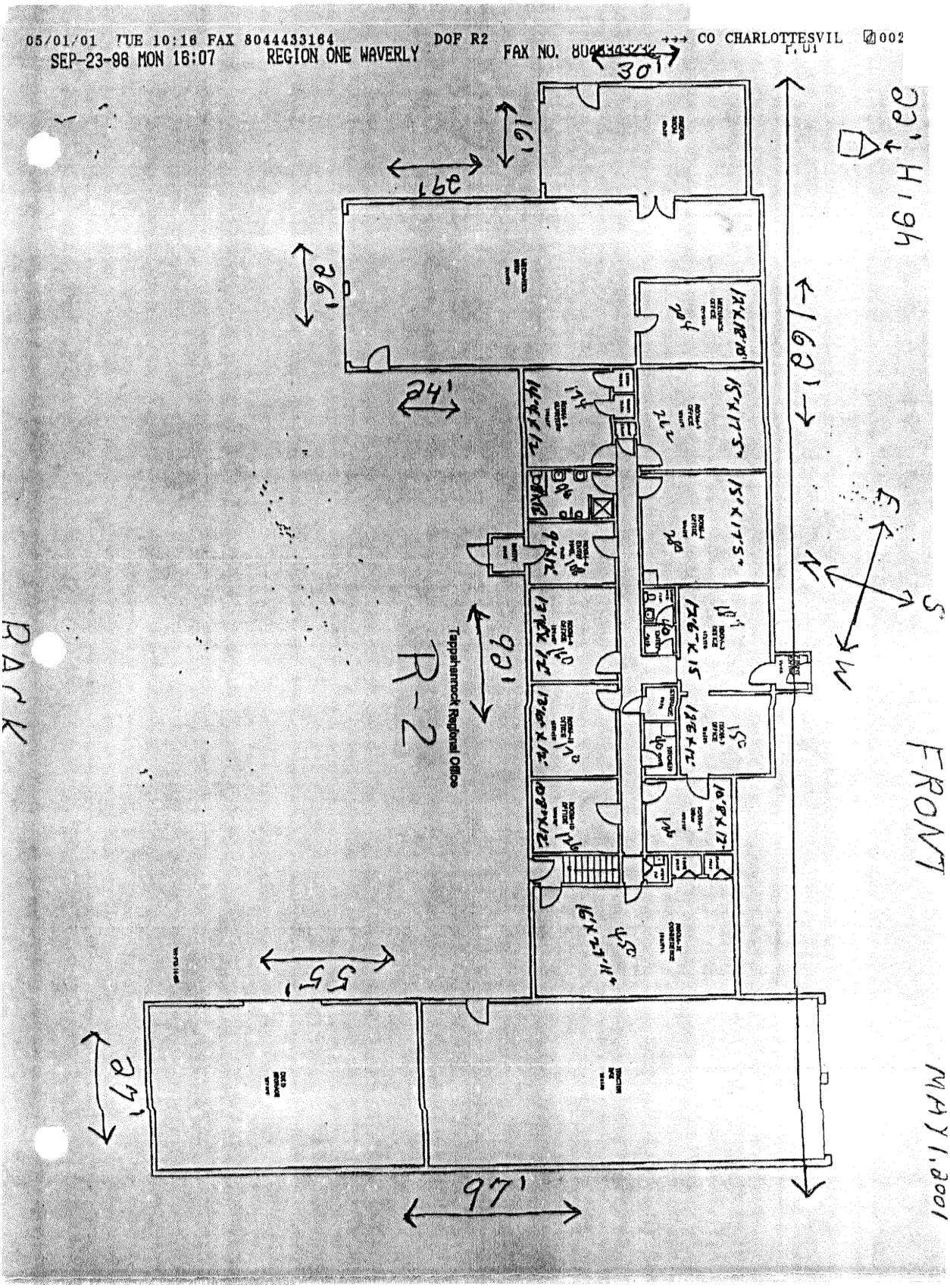
- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		3 lines, Fractional T1 on leased lines
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


1.Office
2.Wood Working Sh
3.Mechanic Shop
4.Equip. Storage
5.Cold Storage
6.Auto Serv.Lift
7.Concrete Wash P
8.Auto Service
9.4,000 gal. gas storage tank
10.1,000 gal.diese fuel
11.Elec.Power Line
12.Water Line
13.Water Meter
14.Sewer Line
15.Man Hole
16.Driveway and Parking
17.Sidewalk
N
E
N 21° 30' W 140.00'
LEWIS STREET
S 68° 30' W 200.00'
N 68° - 30' E 200.00'
20' ALLEY
S 21° 30' E 140.00'
20' ALLEY
LOCATED ON LEWIS STREET
CAPPAHANNOCK, VIRGINIA
ESSEX COUNTY
SCALE 1" = 25'
VIRGINIA DIVISION OF FORESTRY
SITE PLAN
R-2
2/80


05/01/01 TUE 10:16 FAX 8044433164 DOF R2 → CO CHARLOTTESVIL 002
SEP-23-98 MON 16:07 REGION ONE WAVERLY FAX NO.
301'
191'
391'
182'
24'
161'
46'-4"
FRONT
MAY 1, 2001
PARK
R-2
Tappahannock Regional Office
97'
57'
247'

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**DOF**	Site Name:	**CHARLOTESVILLE**	Latitude	**37-58-48**
Address:	**470 GEORGE DEAN DRIVE**	City, County:	**CHARLOTESVILLE, ALBEMARLE**	Longitude	**78-29-21**
Contact Person	Joe Schaefer	e-mail	schaeferj2@dof.state.va.us		
		Telephone	(804) 977-6555 ext. 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 Novell V4.11
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☒ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

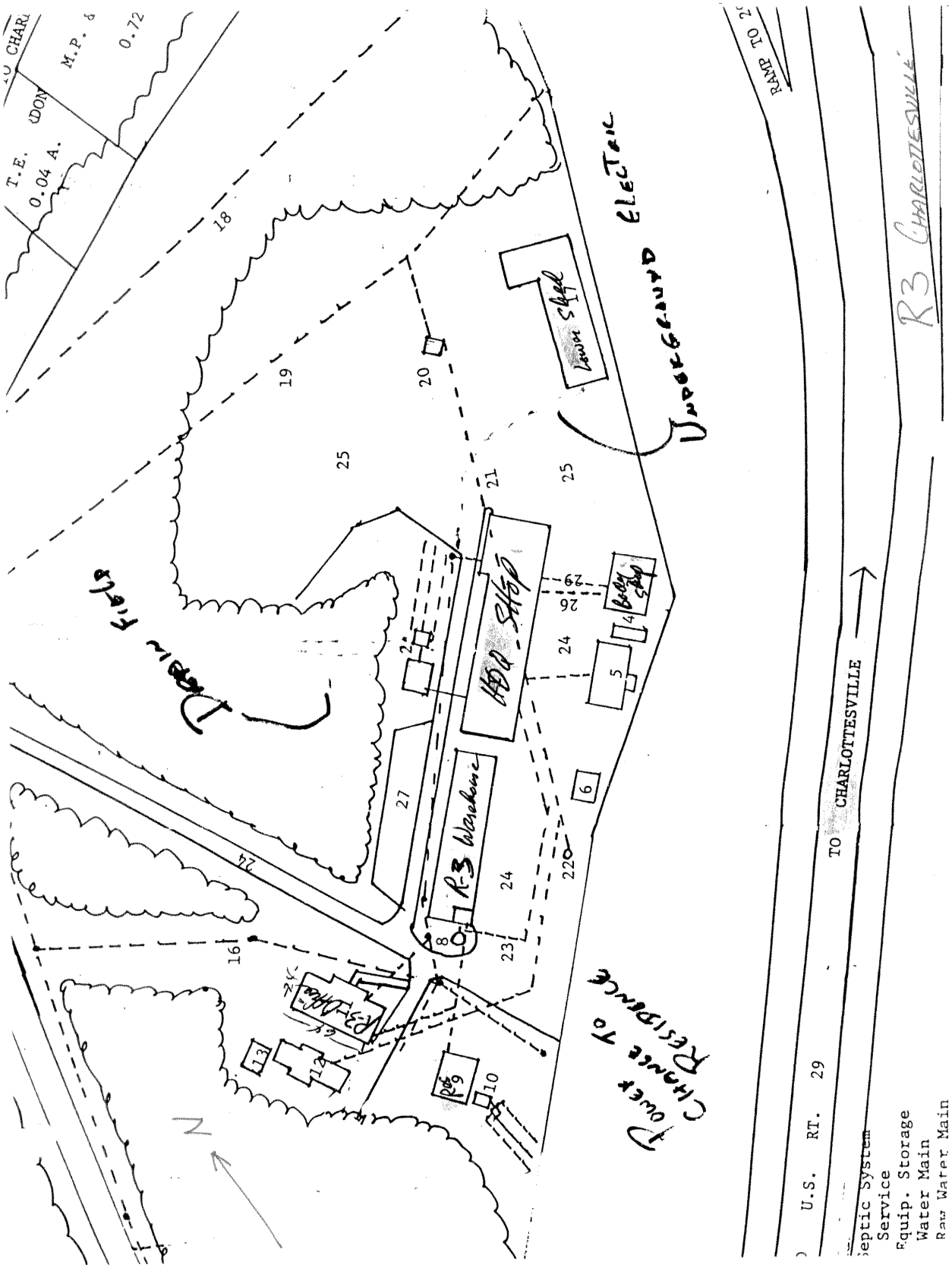
Please indicate which of the following services are available at this site (check one)

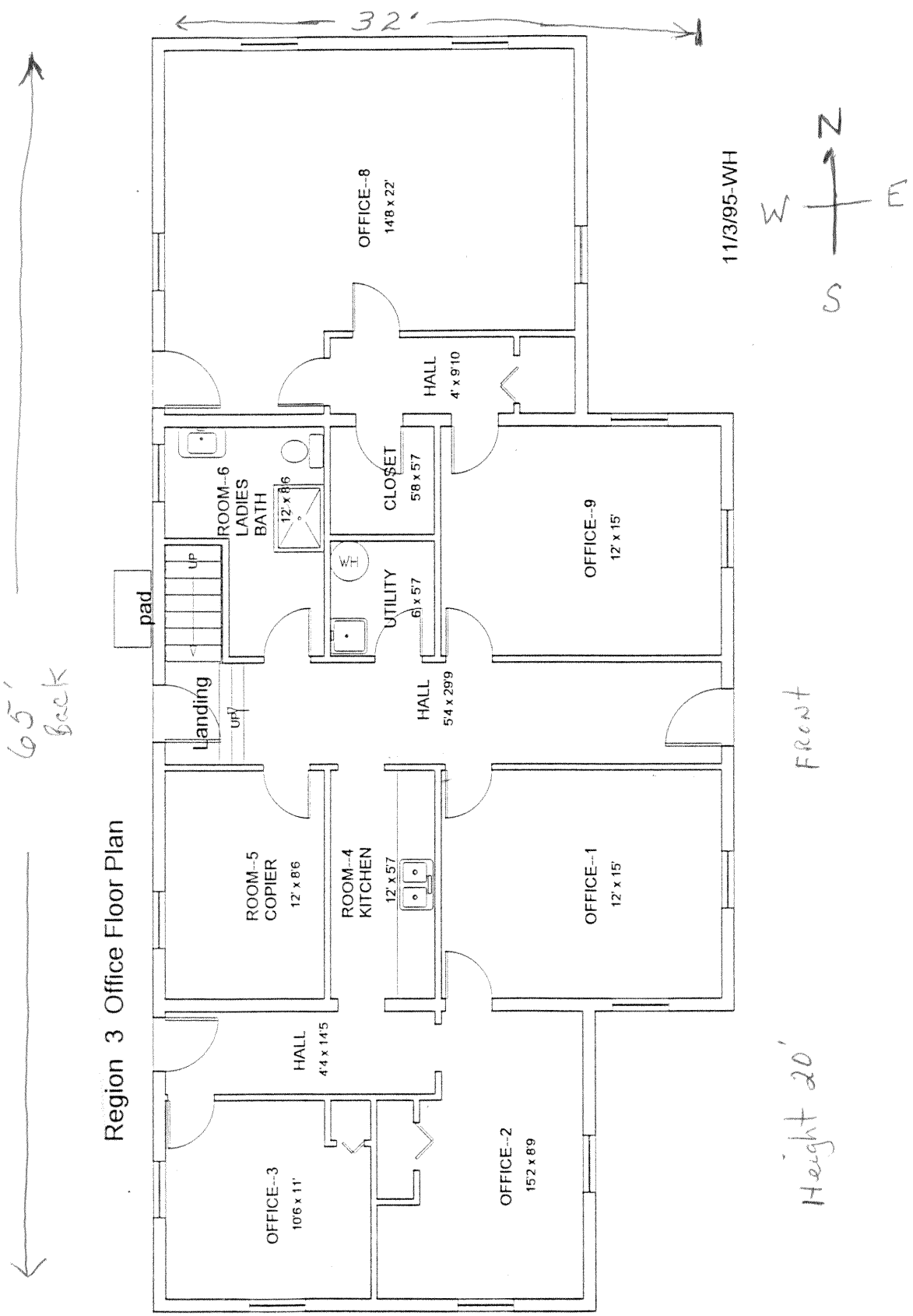
- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		3 lines, Fractional T1 on leased line
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


U.S. RT. 29
TO CHARLOTTESVILLE
RAMP TO
R3 CHARLOTTESVILLE
Underground Electric
Lawn Shed
Lawn Shed
Lawn Shed
R3 Warehouse
Power To Change Residence
Septic System
Service
Equip. Storage
Water Main
Raw Water Main
T.E.
0.04 A.
M.P.
0.72
18
19
20
21
25
24
27
26
29
22
23
16
8
9
10
12
13
6
5
4
2


32'
65' Back
Height 20'
Front
11/3/95-WH
N
W
E
S
Region 3 Office Floor Plan
OFFICE--8
14'8 x 22'
HALL
4' x 9'10
CLOSET
5'8 x 5'7
ROOM--6
LADIES
BATH
12' x 8'6
W/H
UTILITY
6' x 5'7
OFFICE--9
12' x 15'
pad
UP
Landing
UP
HALL
5'4 x 29'9
ROOM--5
COPIER
12' x 8'6
ROOM--4
KITCHEN
12' x 5'7
OFFICE--1
12' x 15'
HALL
4'4 x 14'5
OFFICE--3
10'6 x 11'
OFFICE--2
15'2 x 8'9

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**DOF**	Site Name:	**FARMVILLE**	Latitude	**37-17-45**
Address:	**717 EAST THIRD STREET**	City, County:	**FARMVILLE, PRINCE EDWARD**	Longitude	**78-23-10**
Contact Person	Joe Schaefer	e-mail	schaefej@dof.state.va.us		
		Telephone	(804) 977-6555 ext 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 Novell V4.11
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☒ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

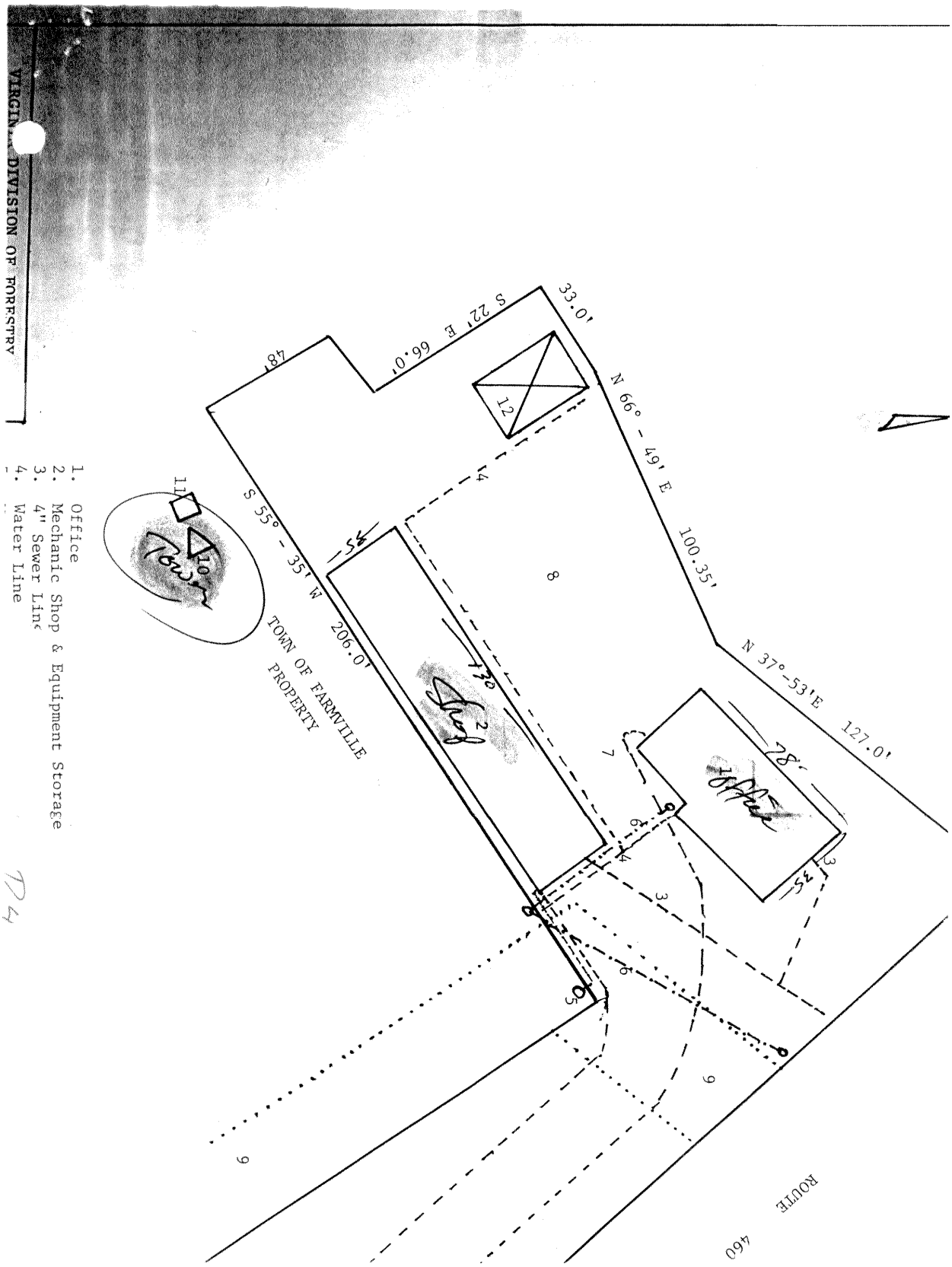
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		3 lines, Fractional T1 on leased line
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		Not Known
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		4 legged self supporting
Height		45'
Approximate Age		10+ yrs
Location	Latitude	37-17-45
	Longitude	078-23-10
	Datum (NAD 27 or NAD 83)	NAD 27

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


VIRGINIA DIVISION OF FORESTRY
1. Office
2. Mechanic Shop & Equipment Storage
3. 4" Sewer Line
4. Water Line
S 22° E 66.0'
33.0'
N 66° - 49' E 100.35'
N 37°-53'E 127.0'
S 55° - 35' W 206.0'
TOWN OF FARMVILLE PROPERTY
ROUTE 460
12
11
8
7
6
5
4
3
9

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOF	Site Name:	SALEM	Latitude	37-18-32
Address:	210 RIVERLAND DRIVE	City, County:	SALEM, SALEM	Longitude	80-09-39
Contact Person	Joe Schaefer	e-mail	schaeferj@dof.state.va.us		
		Telephone	(804) 977-6555 ext. 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 Novell V4.11
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☒ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

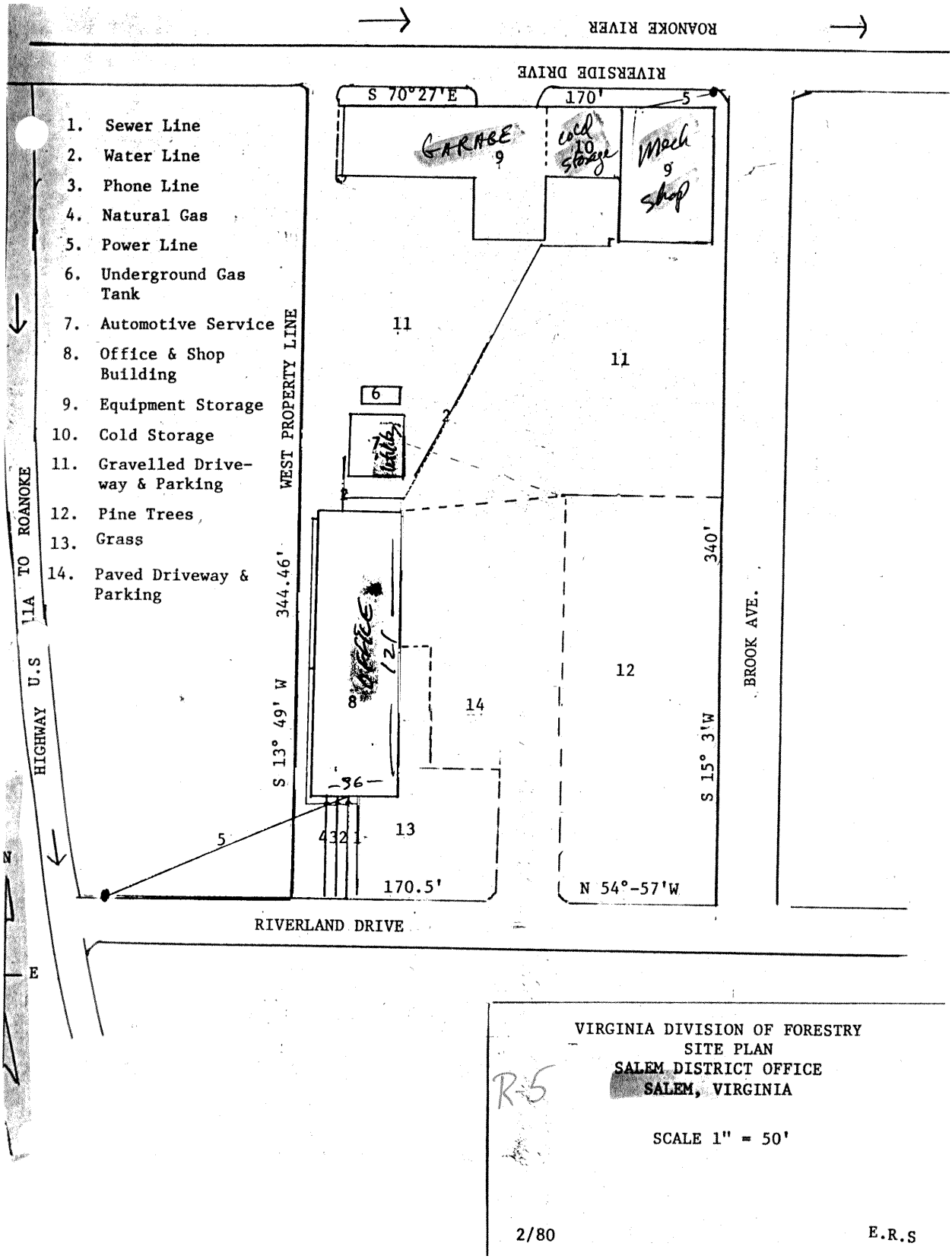
Please indicate which of the following services are available at this site (check one)

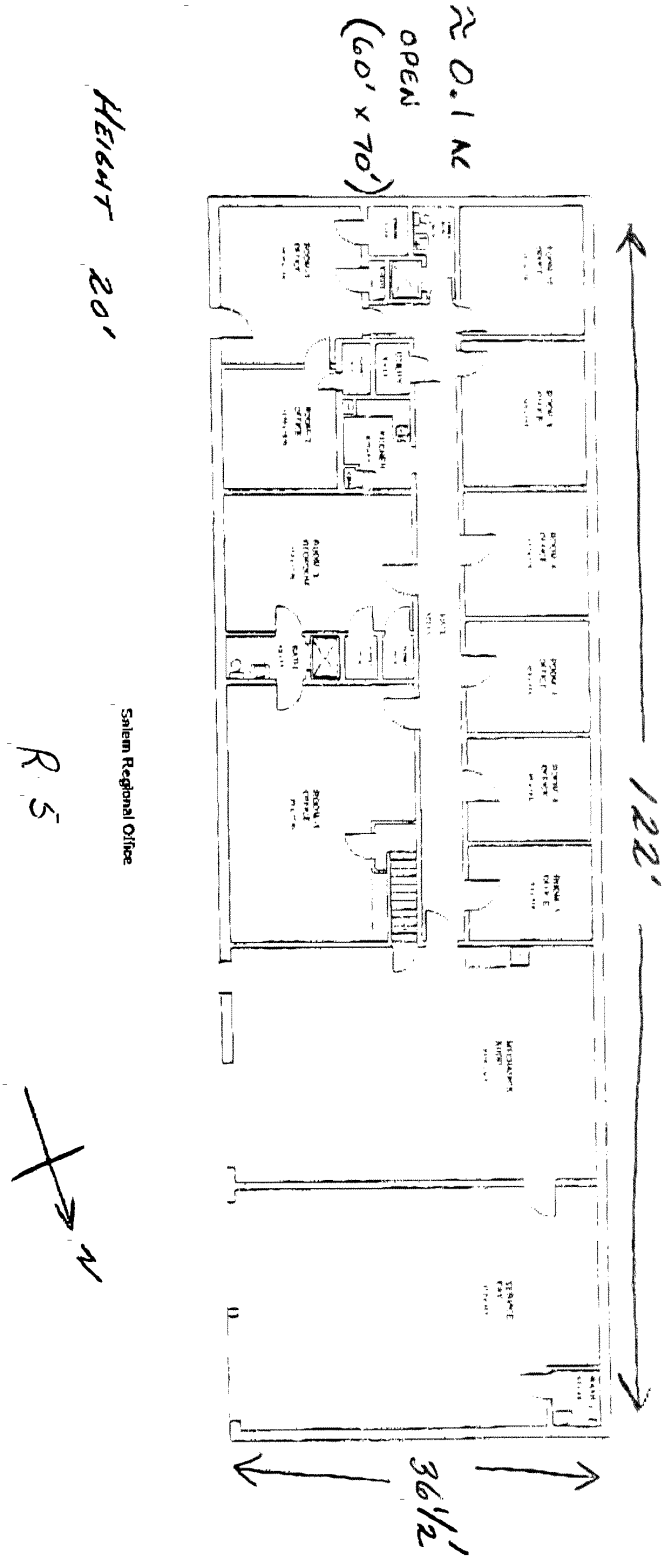
- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		3 lines, Fractional T1 on leased line
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


ROANOKE RIVER
RIVERSIDE DRIVE
S 70°27'E
170'
5
GARAGE
9
cold storage
10
Mech Shop
9
1. Sewer Line
2. Water Line
3. Phone Line
4. Natural Gas
5. Power Line
6. Underground Gas Tank
7. Automotive Service
8. Office & Shop Building
9. Equipment Storage
10. Cold Storage
11. Gravelled Driveway & Parking
12. Pine Trees
13. Grass
14. Paved Driveway & Parking
11
11
6
2
WEST PROPERTY LINE
344.46'
S 13° 49' W
11A TO ROANOKE
HIGHWAY U.S
8
12
14
36
5
4321
13
170.5'
340'
S 15° 3'W
12
BROOK AVE.
N 54°-57'W
RIVERLAND DRIVE
N
E
VIRGINIA DIVISION OF FORESTRY
SITE PLAN
SALEM DISTRICT OFFICE
SALEM, VIRGINIA
R-5
SCALE 1" = 50'
2/80
E.R.S



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**DOF**	Site Name:	**ABINGTON**	Latitude	**36-42-45**
Address:	**1240 WEST MAIN ST**	City, County:	**ABINGTON, WASHINGTON**	Longitude	**81-58-47**
Contact Person	Joe Schaefer	e-mail	SchaeferJJ@dof.state.va.us		
		Telephone	(804) 977-6555 ext 3380		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0 Novell V4.11
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☒ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

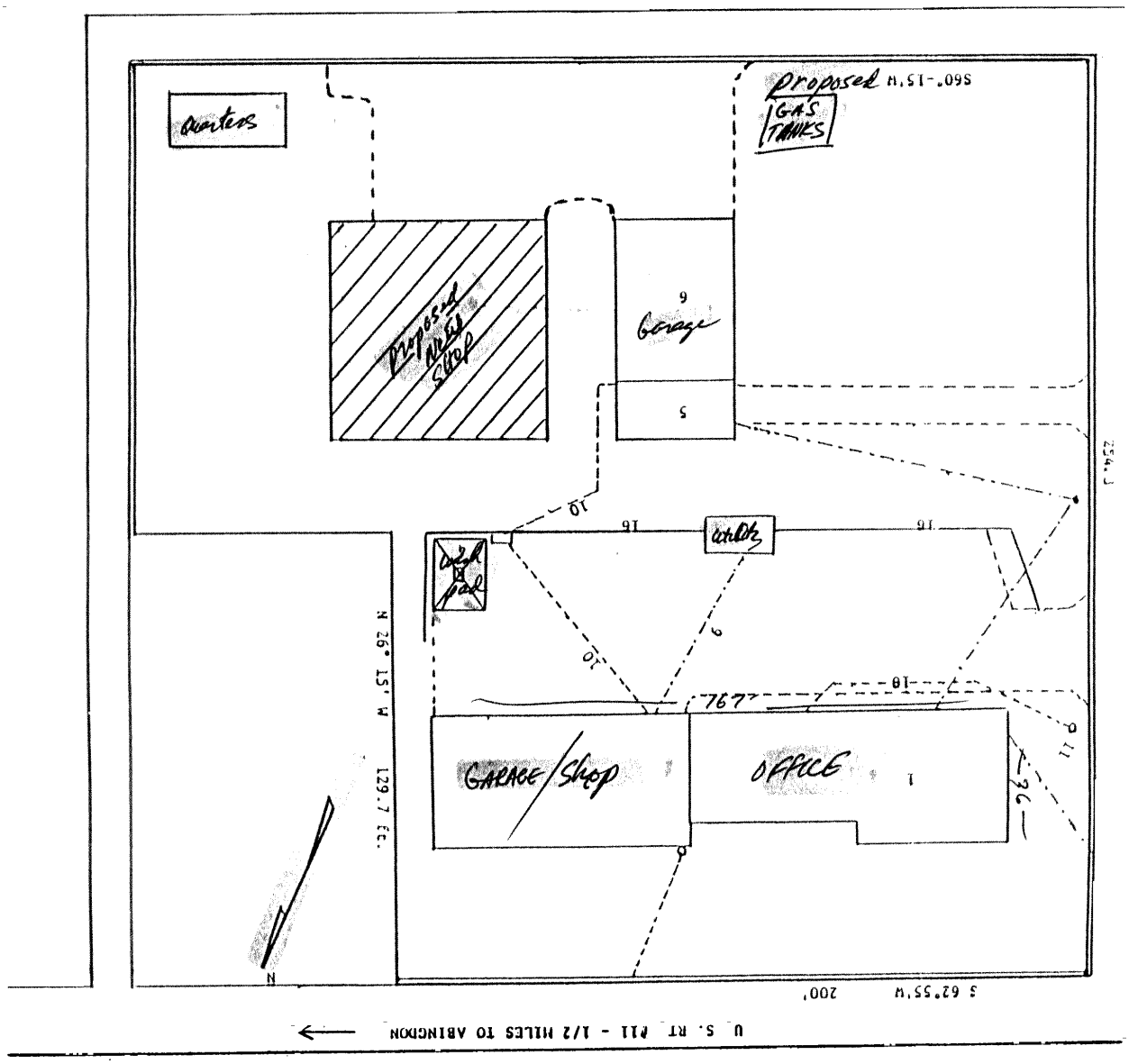
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		3 lines, Fractional T1 on leased line
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

R6

Abingdon

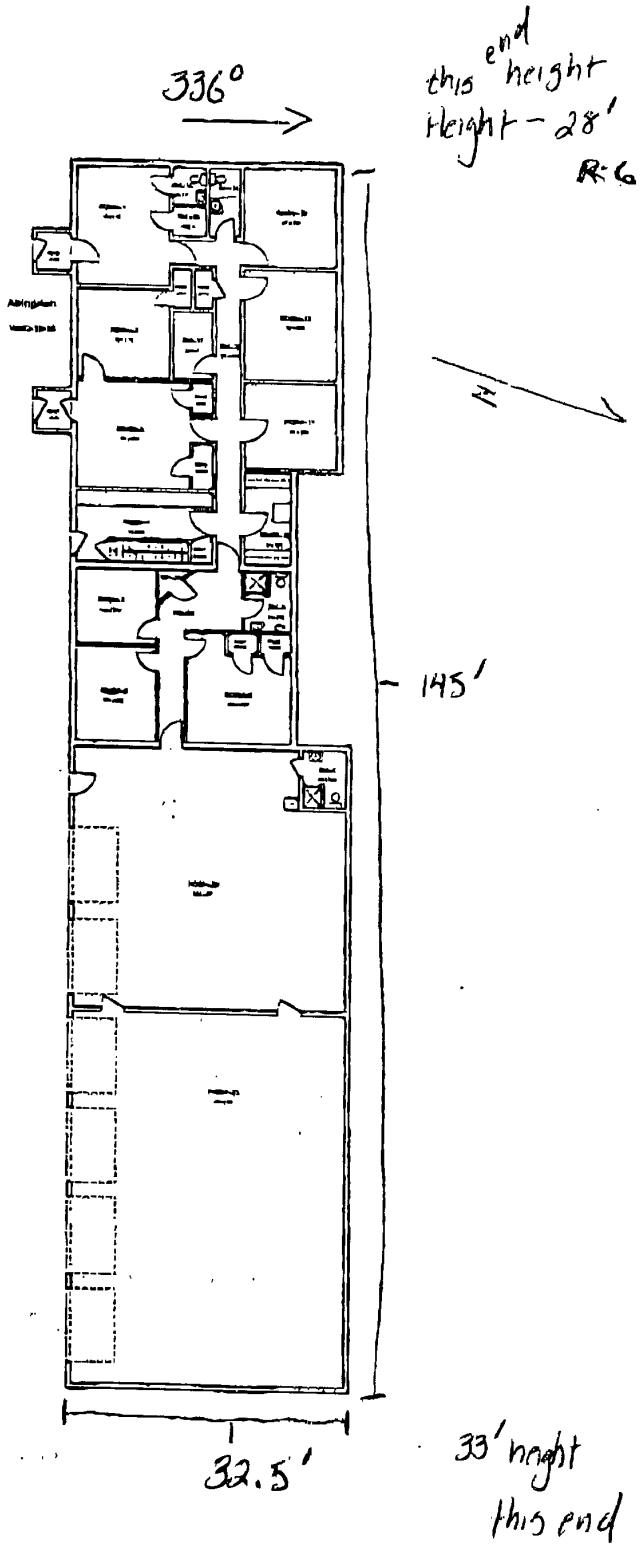

Quarters
Proposed GAS TANKS
Proposed New Shop
Garage
6
5
Wash
Sand pad
GARAGE/SHOP
OFFICE
1
767'
16
10
9
11
26
254.3
N 26° 15' W 129.7 ft.
S 62°55'W 200'
U. S. RT. #11 - 1/2 MILES TO ABINGDON

Bill,

The Dimensions were paced.

Thanks

Kevin



Assignment # 10

Vicki
7-8281

STARS Microwave Intranet Access System Load and Bandwidth Overview

Agency:	«Agency» DSIF	Site Name:	«Site_Name» Richmond	Latitude «Latitude» 37-34-20
Address:	«Street_Address» 4010 W. Broad St.	City, County:	«City», «County» Richmond	Longitude «Datum» 77-28-55
Contact Person	Maj. Joe Cooke	e-mail	jcooke@dgif.state.va.us	
		Telephone	804-367-1000	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	175
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NETWARE 5.1 WINDOWS 2000
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____

Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).

✓ (ISDN) / (fractional T1) (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs). 256 / 512

✓ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).

Other Access provided (please describe _____)

No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

Microwave connection to existing VSP microwave network

✓ No microwave service currently at this site

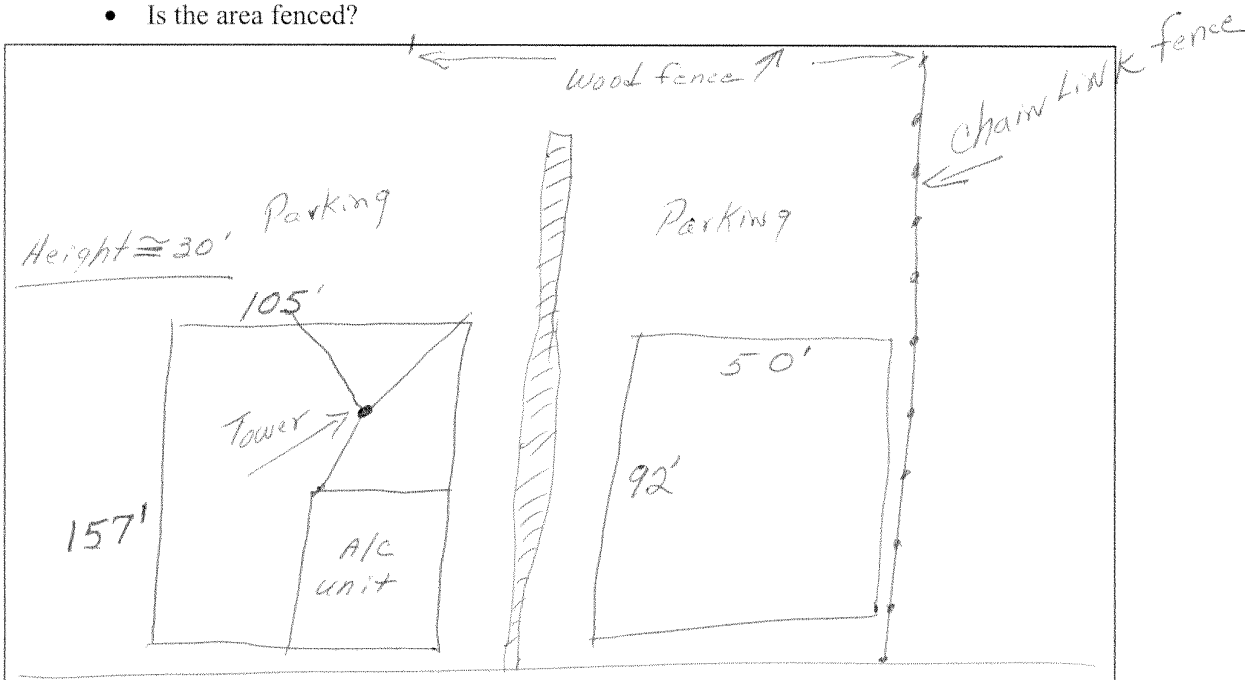
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		~~200~~ 177
How many telephone lines service this site?		225
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		PBX State Centrex (Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	2-50 Kw (one per building)
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		Rohn? (12" face)
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		guyed
Height		100 ft.
Approximate Age		12 yrs.
Location	Latitude	37-34-20
	Longitude	77-28-55
	Datum (NAD 27 or NAD 83)	27?

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOH	Site Name:	RICHMOND DIST. CHIEF MEDICAL EXAMINER	Latitude
Address:	400 EAST JACKSON ST	City, County:	RICHMOND,	Longitude
Contact Person	R. HOLLOWAY	e-mail	RHOLLOWAY @VDH . STATE . VA . US	
		Telephone	804 786-3175	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	30
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Solaris 8.0 + Windows NT
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☑ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here 1
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

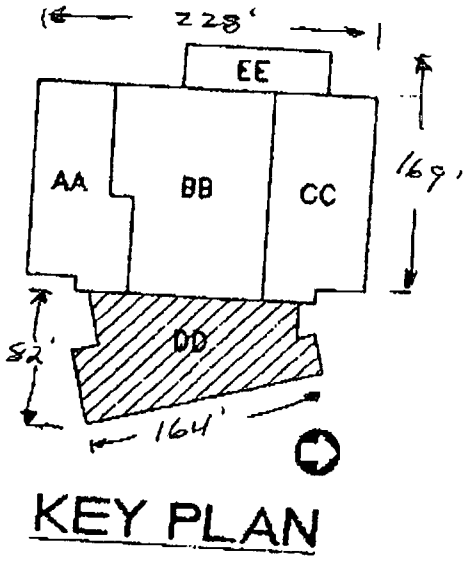
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		52 & 2 FAX
How many telephone lines service this site?		10
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	1250 Kw
Is there a location for computer equipment? (Note. This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).



KEY PLAN

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOH	Site Name:	WESTERN DIST. CHIEF MEDICAL EXAMINER	Latitude	
Address:	6600 NORTHSIDE HIGH SCHOOL ROAD	City, County:	ROANOKE,	Longitude	
Contact Person	GREGORY P. WANGER	e-mail	gwanger@vdh.state.va.us		
		Telephone	540 - 561-6615		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	9
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	—
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☑ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

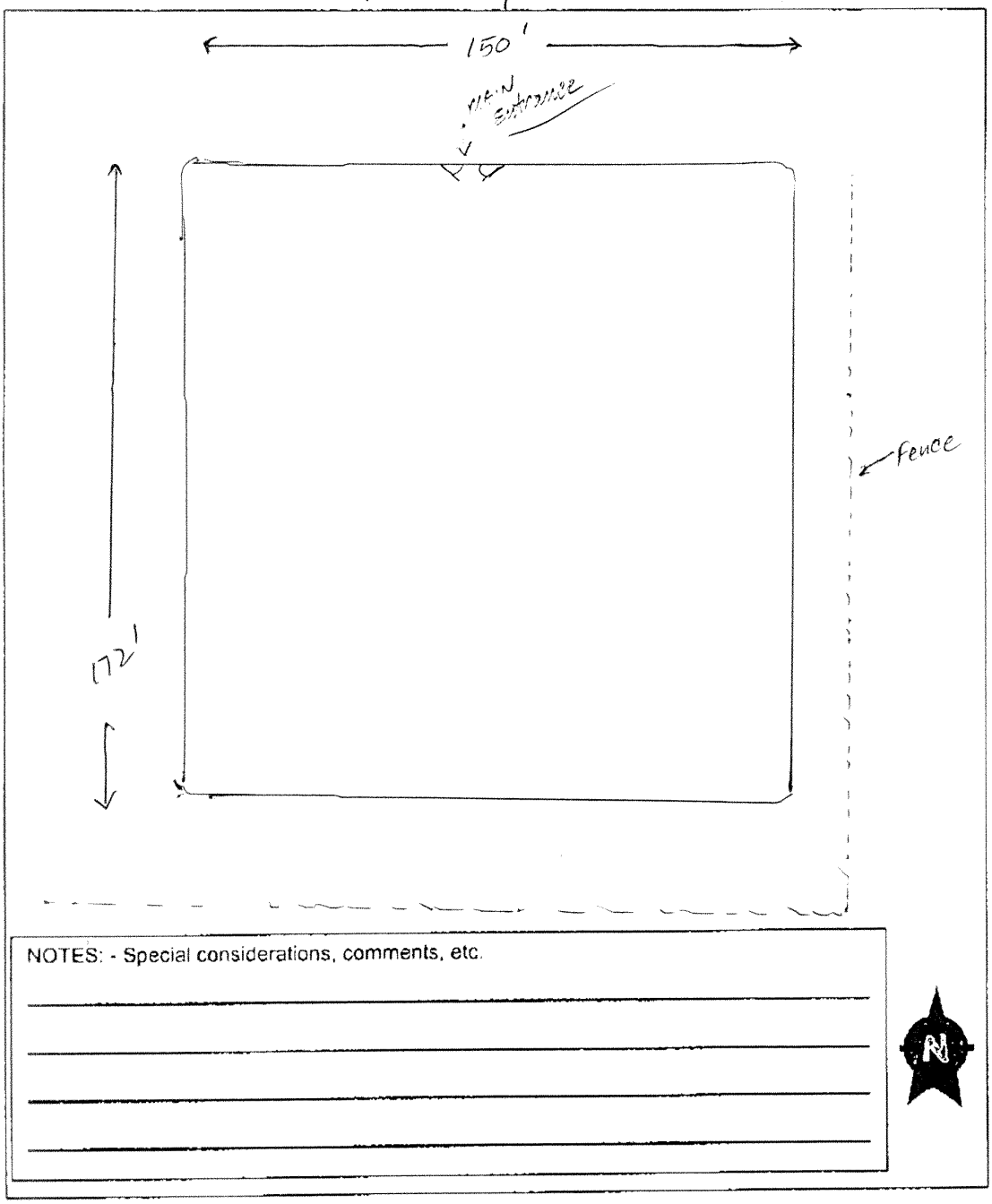
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

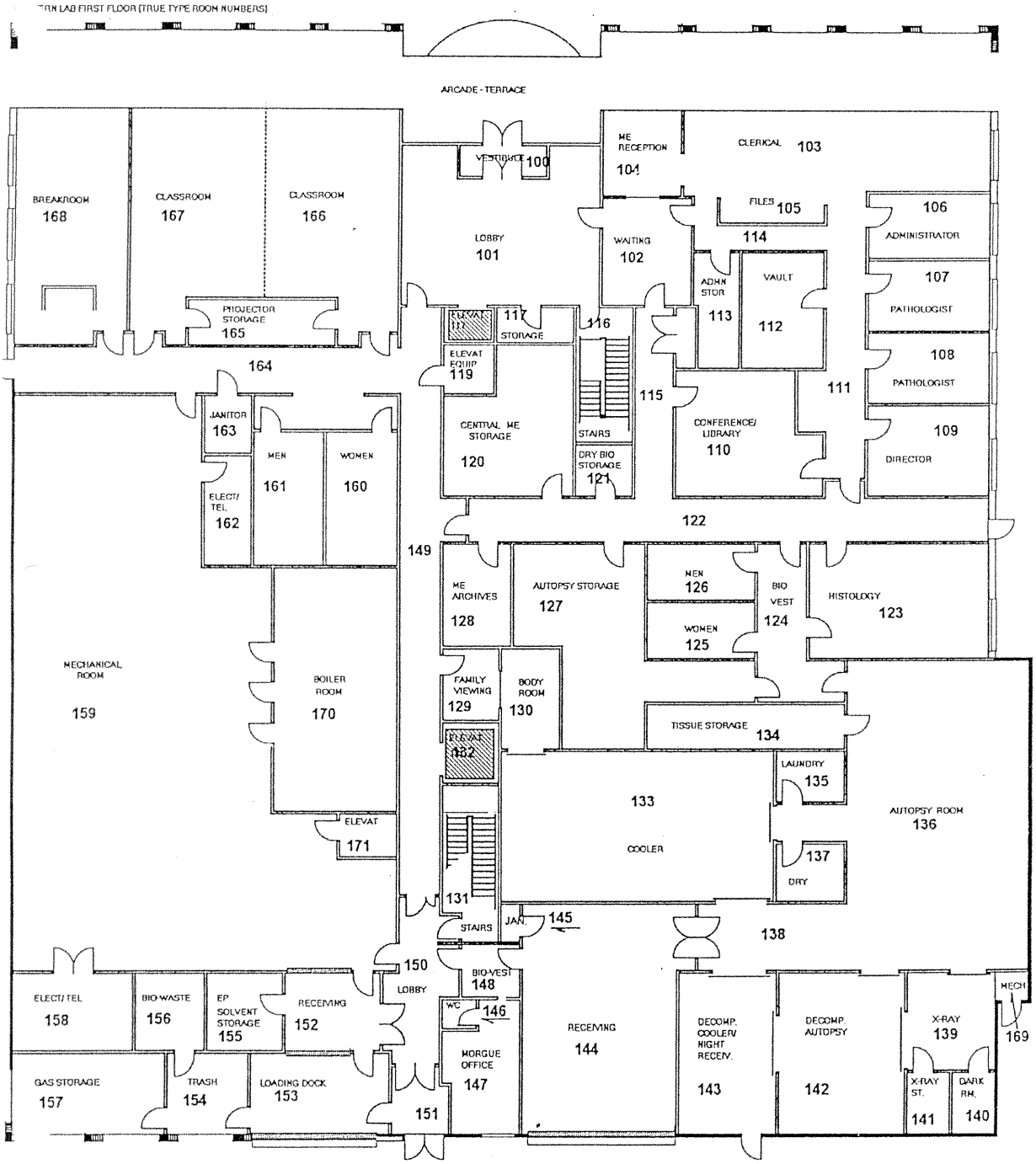
TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		20
How many telephone lines service this site?		3
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
NONE Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

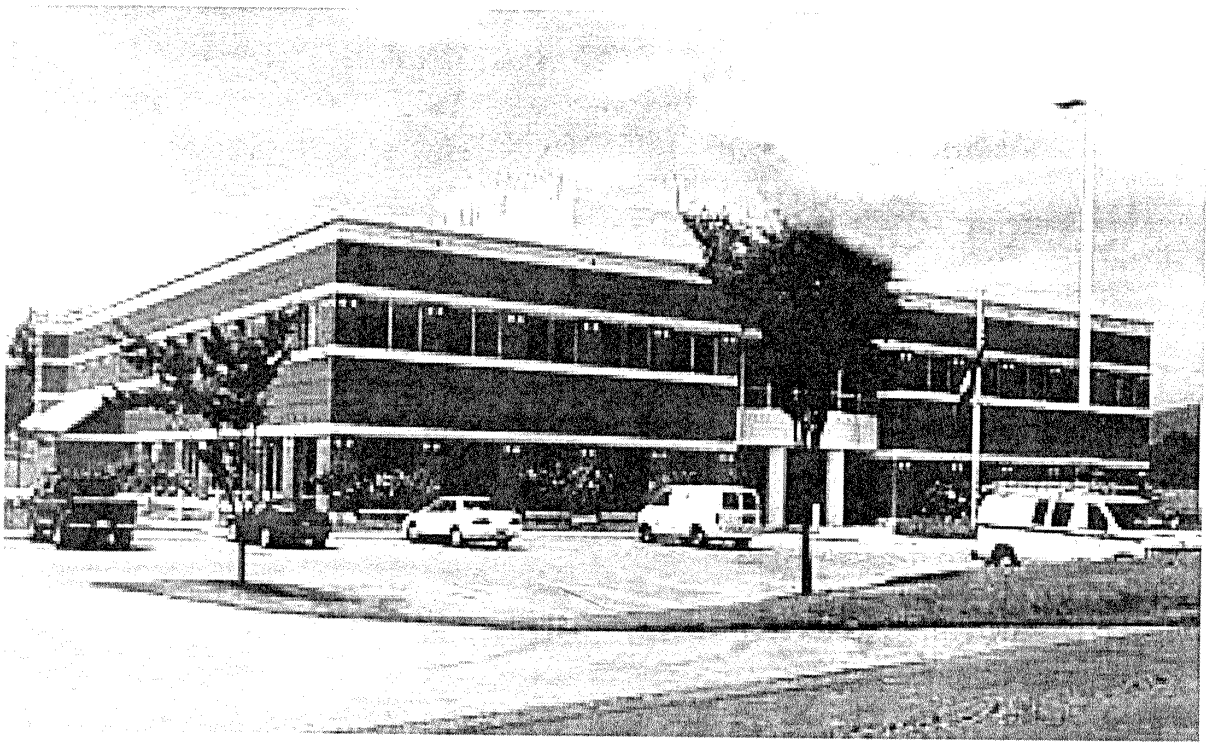
Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building – 2 story ~45' high
- Size of building footprint (approximate length, width and orientation to North) 40,000 sq feet
- Size of area associated with the site that can be used for an antenna tower structure. – 30X20'
- Is the area fenced? – PARTIALLY




TRN LAB FIRST FLOOR (TRUE TYPE ROOM NUMBERS)
ARCADE - TERRACE
BREAKROOM 168
CLASSROOM 167
CLASSROOM 166
PROJECTOR STORAGE 165
164
VESTIBULE 100
LOBBY 101
ME RECEPTION 104
CLERICAL 103
FILES 105
WAITING 102
114
ADMN STOR 113
VAULT 112
106 ADMINISTRATOR
107 PATHOLOGIST
108 PATHOLOGIST
109 DIRECTOR
111
ELEVAT 117
STORAGE
116
ELEVAT EQUIP 119
115
CENTRAL ME STORAGE 120
STAIRS
DRY BIO STORAGE 121
CONFERENCE/ LIBRARY 110
122
JANITOR 163
MEN 161
WOMEN 160
ELECT/ TEL 162
149
ME ARCHIVES 128
AUTOPSY STORAGE 127
MEN 126
WOMEN 125
BIO VEST 124
HISTOLOGY 123
MECHANICAL ROOM 159
BOILER ROOM 170
FAMILY VIEWING 129
BODY ROOM 130
TISSUE STORAGE 134
ELEVAT 132
LAUNDRY 135
133
COOLER
AUTOPSY ROOM 136
ELEVAT 171
137 DRY
131
STAIRS
JAN.
145
138
150
LOBBY
BIO-VEST 148
WC
146
ELECT/ TEL 158
BIO-WASTE 156
EP SOLVENT STORAGE 155
RECEIVING 152
RECEIVING 144
DECOMP. COOLER/ NIGHT RECEIV. 143
DECOMP. AUTOPSY 142
X-RAY 139
MECH 169
GAS STORAGE 157
TRASH 154
LOADING DOCK 153
MORGUE OFFICE 147
151
X-RAY ST. 141
DARK RM. 140



Western Office of Chief Medical Examiner, Roanoke, VA

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DOH	Site Name:	TIDEWATER DIST MEDICAL EXAMINER	Latitude
Address:	830 SOUTHAMPTON AVE	City, County:	NORFOLK,	Longitude
Contact Person	Donna Price	e-mail	dprice@vdh.state.va.us	
		Telephone	757-683-8366	

Intranet Connectivity

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	17
Is there a server at this site?	Yes / No
What operating systems are used on this server?	n/a
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☑ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here 1
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

Microwave Connectivity

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No *

* location of this equipment would require coordination between state agencies and the City of Norfolk but should be "doable".

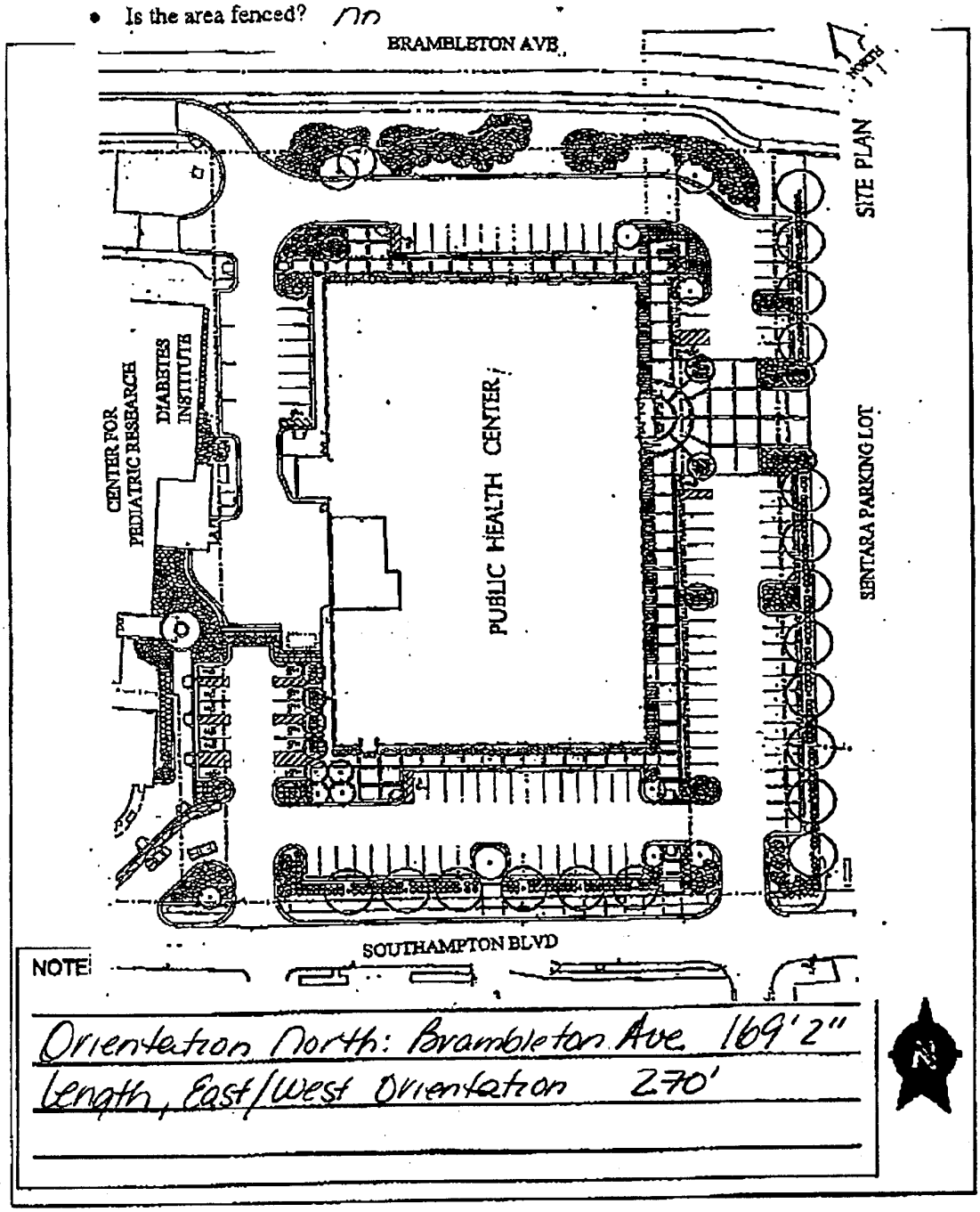
TELEPHONE CONNECTIVITY		
How many telephones are located at this site? Answer TOCME Specific - not building wide		50
How many telephone lines service this site? Answer TOCME Specific, not building		15 (including fax lines)
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No PBX
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	550 KW *
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		n/a
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

* pls note - Generator is shared among bldg users and not solely assigned to TOCME. However, 85% of operations, less AC + selected outlets, operate off generator. Contracts + capability exist for 100% operations within 18 hours.

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building 95'6"
- Size of building footprint (approximate length, width and orientation to North) > see below
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced? no



1804 371 3573

CENTRAL DISTRICT:
400 East Jackson Street
Richmond, Virginia 23219-3694
(804) 786-3174
800-447-1706 (VA only)
FAX (804) 371- 8595

WESTERN DISTRICT:
6600 Northside High School Road
Roanoke, Virginia 24019-2836
(540) 561-6615
800-862-8312 (VA only)
FAX (540) 561-6619

COMMONWEALTH of VIRGINIA
Department of Health
Office of the Chief Medical Examiner
830 Southampton Avenue
Suite 100
Norfolk, Virginia 23510-1046

TIDEWATER DISTRICT:
830 Southampton Avenue
Suite 100
Norfolk, Virginia 23510-1046
(757) 683-8366
800-395-7030 (VA only)
FAX (757) 683-2589

NORTHERN VA DISTRICT:
9797 Braddock Road, Suite 100
Fairfax, Virginia 22032-1700
(703) 764-4640
800-856-6799 (VA only)
FAX (703) 764-4645

MEMORANDUM

TO: Deborah Edwards, Office of Emergency Services

FROM: D. Price, Regional Administrator
Tidewater Office of the Chief Medical Examiner

SUBJECT: STARS Microwave Intranet Access

Please find enclosed the completed package from the TOCME. I received the dimension information this afternoon from the City of Norfolk, our current landlord. If you require additional data, please do not hesitate to contact me directly.

Though there seems no appropriate area to record the following information, I would appreciate it be passed along.

The Tidewater Office of the Chief Medical Examiner is "close" to having ham radio capabilities. We are working with Virginia A.R.E.S. and Tom Goyne (specifically) for the purchase, installation and use of the Ham Radio equipment.

Thank you.

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**DOH**	Site Name:	**OFFICE OF EMS**	Latitude N37 38.320
Address:	**1538 E. PARHAM RD**	City, County:	**RICHMOND, HENRICO**	Longitude W77 28.290
Contact Person	Everette Vaughan	e-mail	evaughan@vdh.state.va.us	
		Telephone	(804) 371-3500 ext.3518	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	4
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	WINDOWS NT 2000
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☑ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		42
* How many telephone lines service this site?		SEE BELOW
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

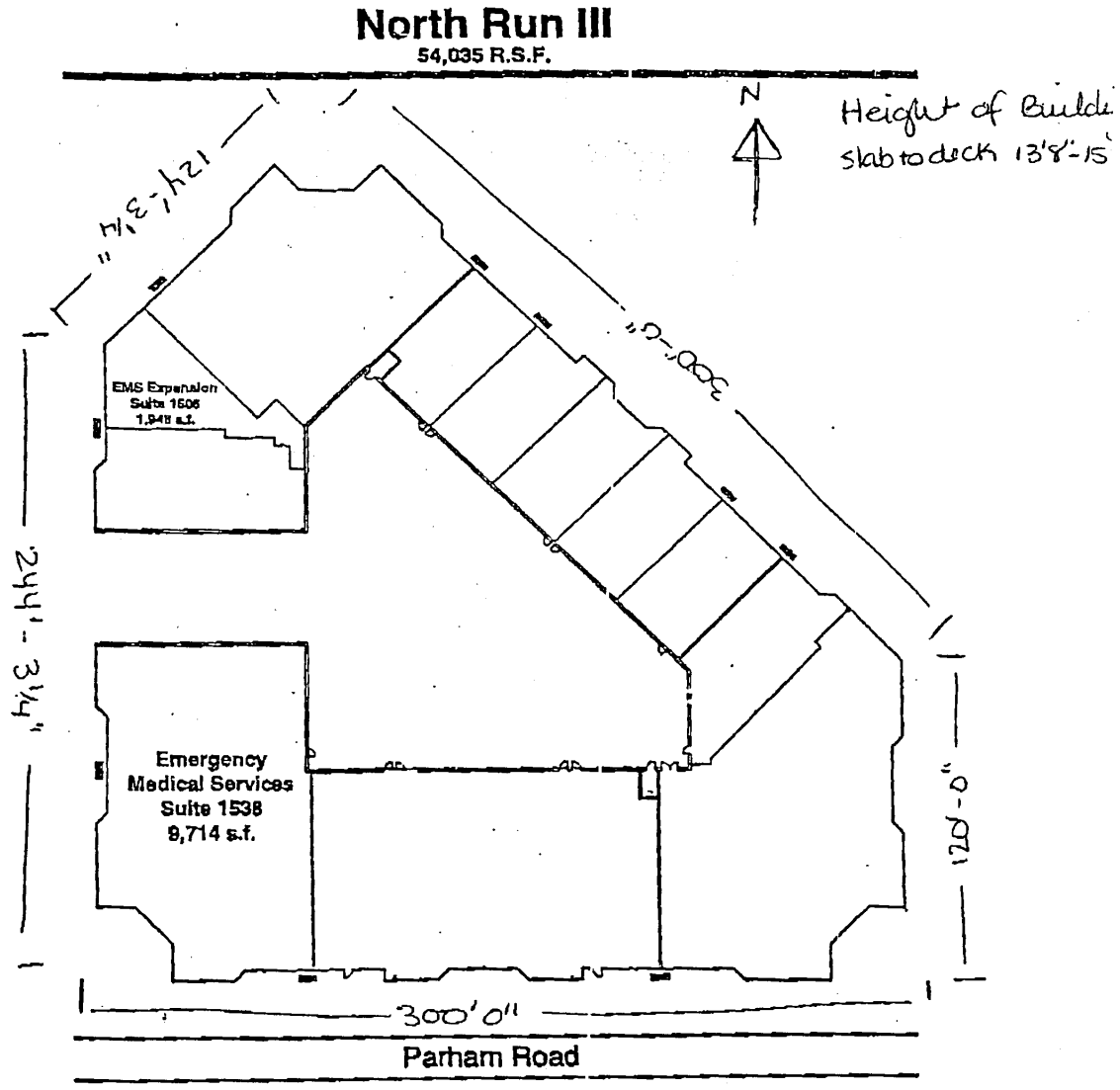
Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

* TELEPHONE LINES: 9 INCOMING LINES
9 OUTGOING LINES
2 ANALOG LINES
1 FAX LINE
7 MODEM LINES
2 TOLL FREE LINES
1 T-1 LINE

Exhibit A

DEPICTION OF THE PREMISES

ATTACHED TO AND A PART OF THE THIRD AMENDMENT TO LEASE DATED DECEMBER 4, 2000 between CROW FAMILY HOLDINGS INDUSTRIAL LIMITED PARTNERSHIP (LANDLORD) and COMMONWEALTH OF VIRGINIA, DEPARTMENT OF HEALTH ("Tenant")



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	«Agency» DIT	Site Name:	«Site_Name» DIT	Latitude «Latitude» 37,32,15
Address:	«Street_Address» 110 S. 7th St. 3rd	City, County:	«City», «County» RICHMOND	Longitude «Datum» 077,26,31
Contact Person	PAUL D. HOPPES	e-mail	PHOPPES@DIT.STATE.VA.US	
		Telephone	(804) 371-5580	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	UNKNOWN AT THIS POINT
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	EVERTYTHING
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here PRIMARY (5) DS3½s

Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).

ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).

Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).

Other Access provided (please describe _____)

No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

Microwave connection to existing VSP microwave network

No microwave service currently at this site ✓

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		Over 300
How many telephone lines service this site?		Over 300
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No CENTREX
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No DATA CENTER FOR STATE
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DJJ	Site Name:	BON AIR JCC	Latitude	37-31-10
Address:	1900 CHATSWORTH AVE	City, County:	BON AIR, CHESTERFIELD	Longitude	77-34-00
Contact Person	JOHN COBLE	e-mail	cobles@djj.state.va.us		
		Telephone	(804) 371-0712		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	60 3 to be connected
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT
Is this server used for applications or data?	Applications / (Data) / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs). 512K
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☐ No microwave service currently at this site

Note: Chesterfield County has tower (911) on D.J.J. property... Sprint in process of adding microwave equipment.

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		139
How many telephone lines service this site?		150
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / No unKnown
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Note: I am in the process of getting detailed information on tower/power source... this was not readily available since it is not DJJ ~~[illegible]~~ equipment. Additional information will be forwarded as soon as received.

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DJJ	Site Name:	CULPEPPER JCC	Latitude	38-21-39
Address:	12240 COFFEEWOOD DR	City, County:	MITCHELLS, CULPEPER	Longitude	78-01-24
Contact Person	JOHN COBLE	e-mail	coblejs@djj.state.va.us		
		Telephone	(804) 371-0712		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	75 3 to be connected
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT
Is this server used for applications or data?	Applications / (Data) / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs). 512K
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		100
How many telephone lines service this site?		100
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DJJ	Site Name:	DJJ CENTRAL OFFICE	Latitude
Address:	7TH AND FRANKLIN STREETS	City, County:	RICHMOND,	Longitude
Contact Person	JOHN COBLE	e-mail	coblejs@djj.state.va.us	
		Telephone	(804) 371-0712	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	~~200~~ 3 to be connected
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT, LINUX, UNIX
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☑ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		175
How many telephone lines service this site?		185
Is this site served by a ~~Private Branch Exchange (PBX)~~ / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DJJ	Site Name:	HANOVER JCC	Latitude	37-45-10
Address:	7093 BROADNECK ROAD	City, County:	HANOVER, HANOVER	Longitude	77-20-20
Contact Person	JOHN COBLE	e-mail	coblejs@djj.state.va.us		
		Telephone	(804) 371-0712		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	38 3 to be Connected
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT
Is this server used for applications or data?	Applications / (Data) / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs). 256K
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Note: plans are underway to allow SPRINT to install a tower/see attached plans (2 sets)

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		80
How many telephone lines service this site?		18
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No) plans to do so!
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		see proposed plans attached
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview APR 12

Agency:	MRC	Site Name:	MARINE RESOURCES COMMISSION	Latitude	36-58-43.69
Address:	2600 WASHINGTON AVE	City, County:	NEWPORT NEWS,	Longitude	76-25-50.21
Contact Person	Colonel Steven G. Bowman	e-mail	sbowman@mrc.state.va.us		
		Telephone	(757)247-2278		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	75
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Novell Six
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☒ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☒ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) No

*Dependent on OK from building owners

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		85
How many telephone lines service this site?		Unknown
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		None
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

NOTES: - Special considerations, comments, etc.

10 Story facility - Privately owned - Tower Locations must be approved by owner. - We Currently utilize USP-Hampton Comm Tower located on Mercury Blvd in Hampton, Va

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	Dept of Military Affairs	Site Name:	STARC EOC	Latitude «Latitude» 37-03-54.6
Address:	Bldg 316 Fort Pickett	City, County:	Blackstone	Longitude «Datum» 77-58-04.2 NAD 83
Contact Person	LTC Art Bachman	e-mail	Art.Bachman@va.ngb.army.mil	
		Telephone	804-298-6158	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	Varies 10 to 20
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	NT 4.0
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	Yes / (No)

This site has LAN/WAN connectivity via (check one):

Fiber Optic, leased line, multiple (T1) / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here 1

Fiber Optic, leased line, (single T1 / DS1) or other high-speed access (1.544 mBps).

ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).

Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).

Other Access provided (please describe _____)

No LAN/WAN access is available at this site. Bldg 310 is a [redacted] LAN fiber connection on our Campus Network at Fort Pickett (T-1).

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

Microwave connection to existing VSP microwave network

(No microwave service currently at this site)

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		15
How many telephone lines service this site?		25
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	20 kW
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
None	Make or Model	N/A
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

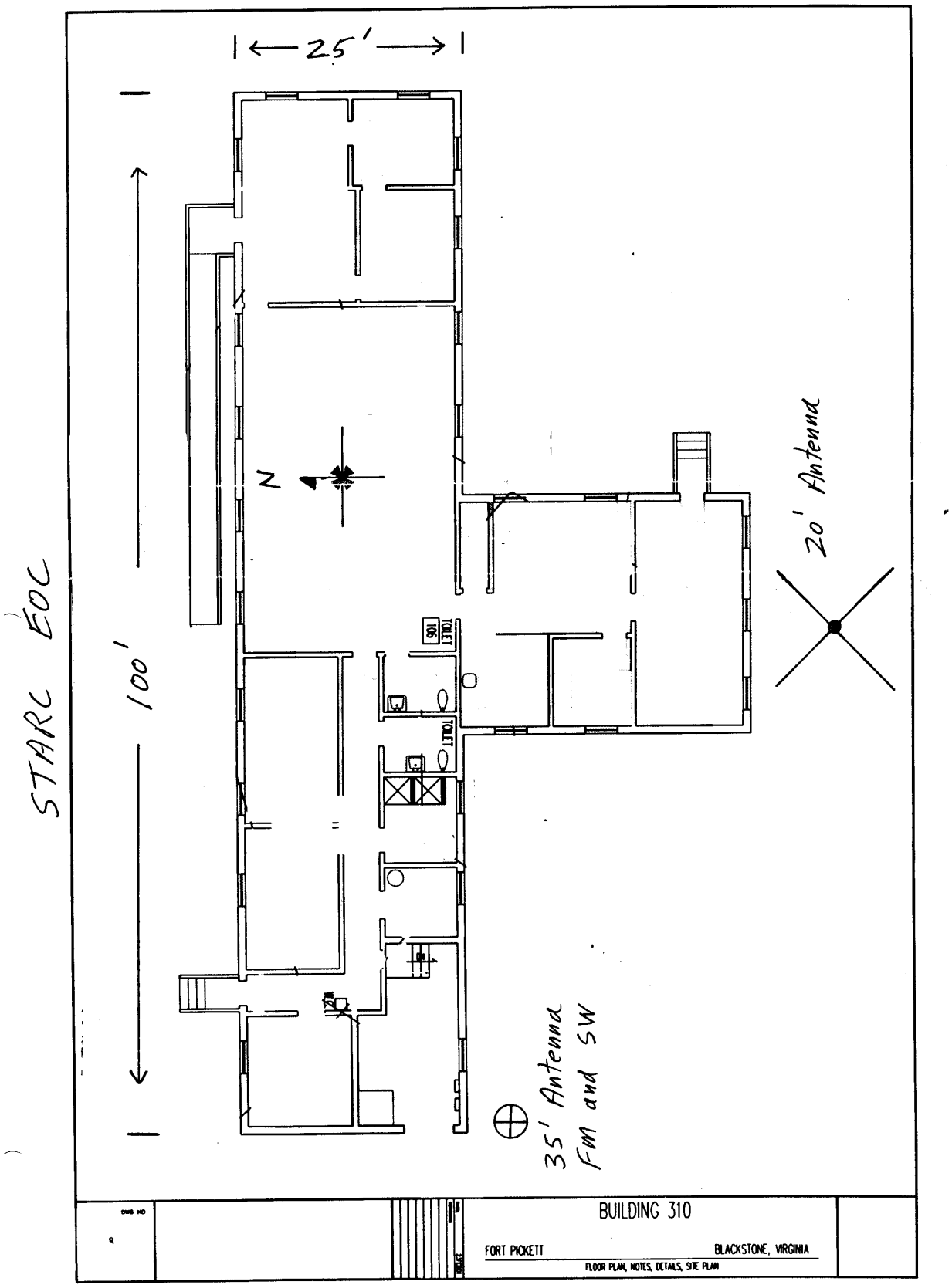
- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

See attached diagram.

No Fence.

NOTES: - Special considerations, comments, etc.

Building is located about 1/4 mile from Blackstone Airport (KBKT). Depending on size of Microwave tower, it may have to be located some distance from Bldg 310. Plenty of room available for a tower at Fort Pickett.


25'
100'
N
STARC EOC
20' Antenna
35' Antenna
FM and SW
901
TOILET
TOILET
BUILDING 310
FORT PICKETT
BLACKSTONE, VIRGINIA
FLOOR PLAN, NOTES, DETAILS, SITE PLAN

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	Dmme	Site Name:	Buchanan / Smith Bldg	Latitude DD-MM-SS	36-51-21.3 N
Address:	Rt 23 South	City, County:	Big Stone Gap Wise	Longitude DD-MM-SS	82-45-36.6 W
Contact Person	JACK DAVIS	e-mail	JTD @ mme.state.va.us		
		Telephone	540-523-8118		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	93
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Windows NT
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☑ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

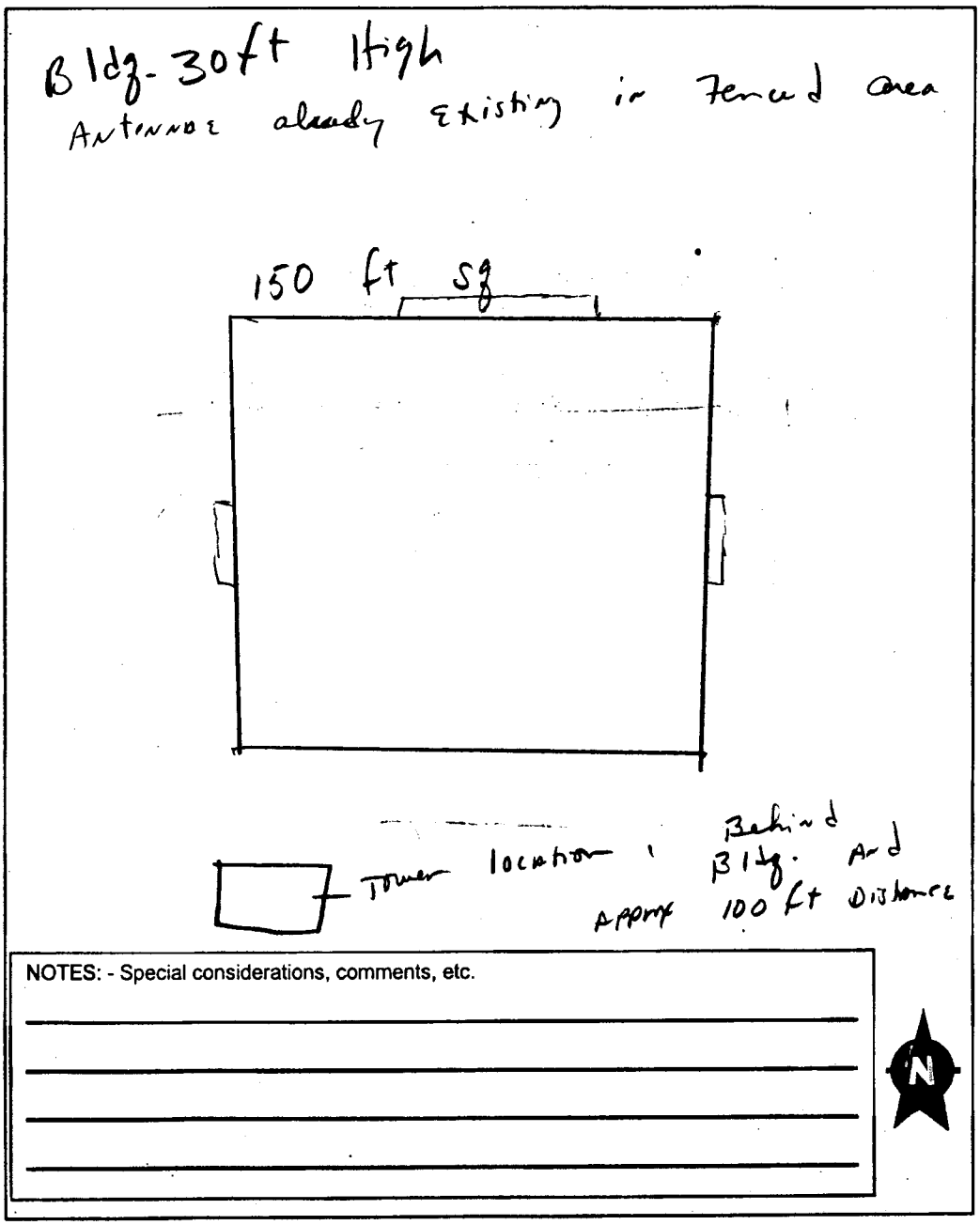
TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		135
How many telephone lines service this site?		135, Fiberoptic Cabinet
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		Self-Supporting
Height		100 ft
Approximate Age		9 - years
Location	Latitude	36·51·21.3 N
	Longitude	82·45·36.6 W
	Datum (NAD 27 or NAD 83)	NAD 83

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Dmme Radio equipment only, Includes Radio Bldg and a 25 pair Telephone Cable connecting to Dmme Htg. Bldg.

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**DMME**	Site Name:	**DEPT OF MINES, MINERALS AND ENERGY FONTAINE RESEARCH PARK**	Latitude	**38-01-20.3**
Address:	**900 NATURAL RESOURCES DRIVE**	City, County:	**CHARLOTTESVILLE, ALBEMARLE**	Longitude	**78-31-55.4**
Contact Person	JACK DAVIS	e-mail	JTD @ mme. State. VA US		
		Telephone	540- 523- 8118		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	27 - Laptops
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	windows NT
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☑ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☑ Microwave connection to existing VSP microwave network — Located with State Police and Div of Forestry
- ☐ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		Approx 50
How many telephone lines service this site?		50 - Centrex
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	Div of Forestry Warden
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

Forestry will supply - also a State police area command is located Here

NOTES: - Special considerations, comments, etc.

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	DMV	Site Name:	RICHMOND CENTRAL OFFICE	Latitude
Address:	2300 WEST BROAD STREET	City, County:	RICHMOND,	Longitude
Contact Person	David Bunn	e-mail	DMVDLB@DMV.STATE.VA.US	
		Telephone	804-367-1804	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	2 VCIN terminals
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No –

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe Frame Relay over T1, 56K PVC from DMV to VSP.
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	N/A
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ST. POLICE	Site Name:	ASHLAND AREA	Latitude	37-41-06
Address:	10341 STONY RUN LN	City, County:	ASHLAND, HANOVER	Longitude	77-27-15
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	WIN 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 KB Fname Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

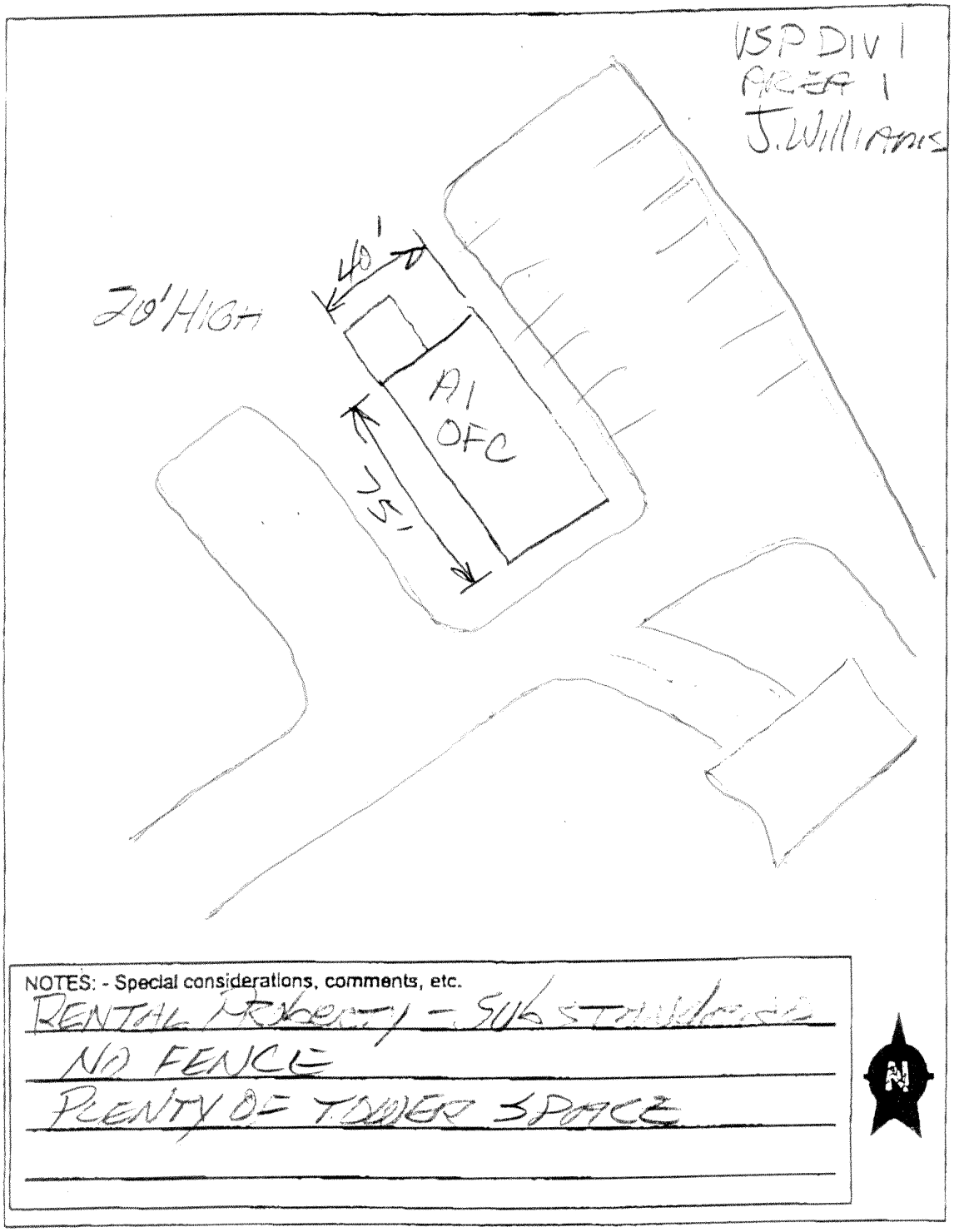
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		8
How many telephone lines service this site?		3
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / NO
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**POWHATAN AREA 6**	Latitude	**37-30-37**
Address:	**1765 ANDERSON HWY**	City, County:	**POWHATAN, POWHATAN**	Longitude	**77-45-59**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	W, N 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 KB Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

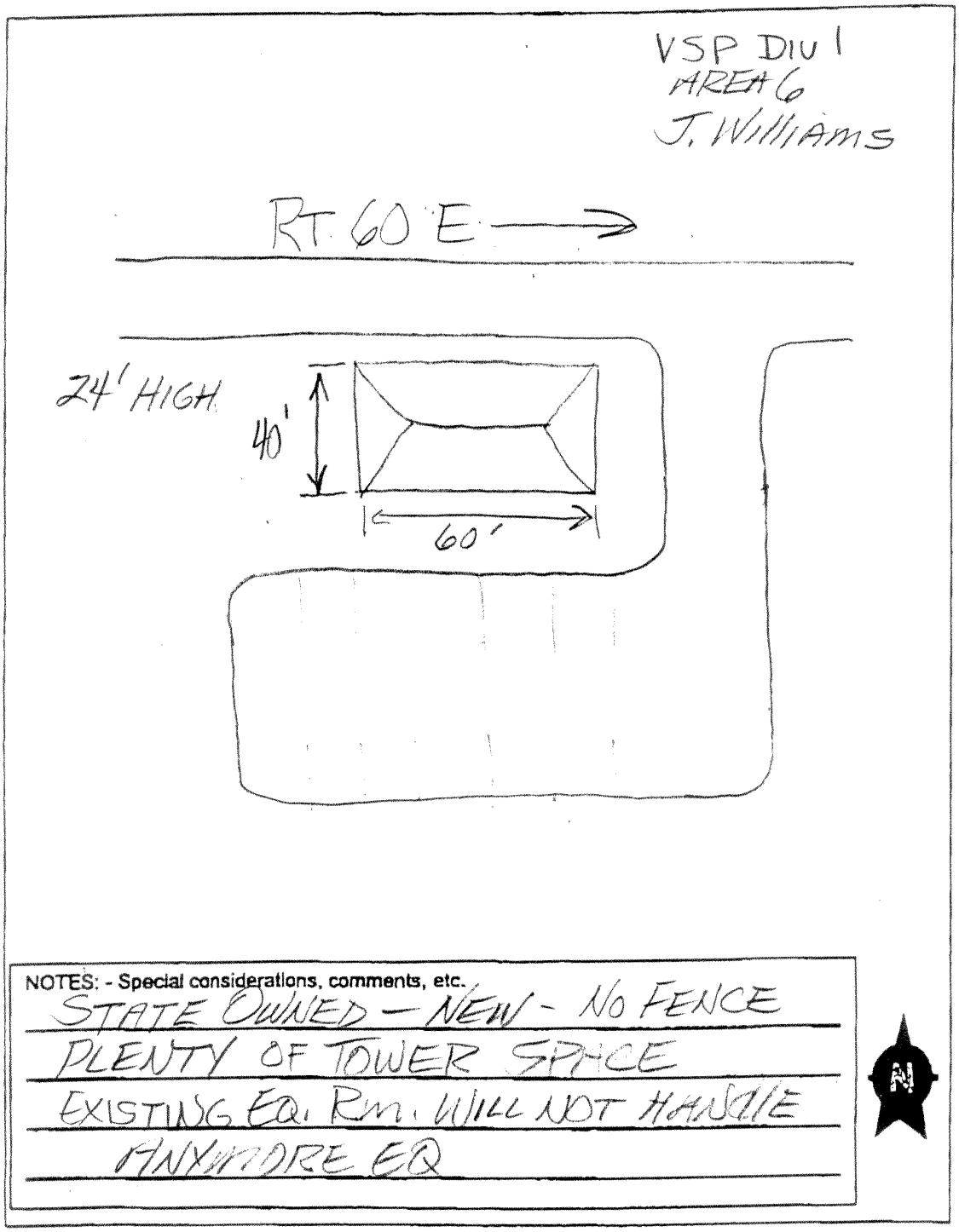
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		15
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**PETERSBURG AREA 7**	Latitude	**37-11-45**
Address:	**25650 SIMPSON ROAD**	City, County:	**PETERSBURG, DINWIDDIE**	Longitude	**77-27-31**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

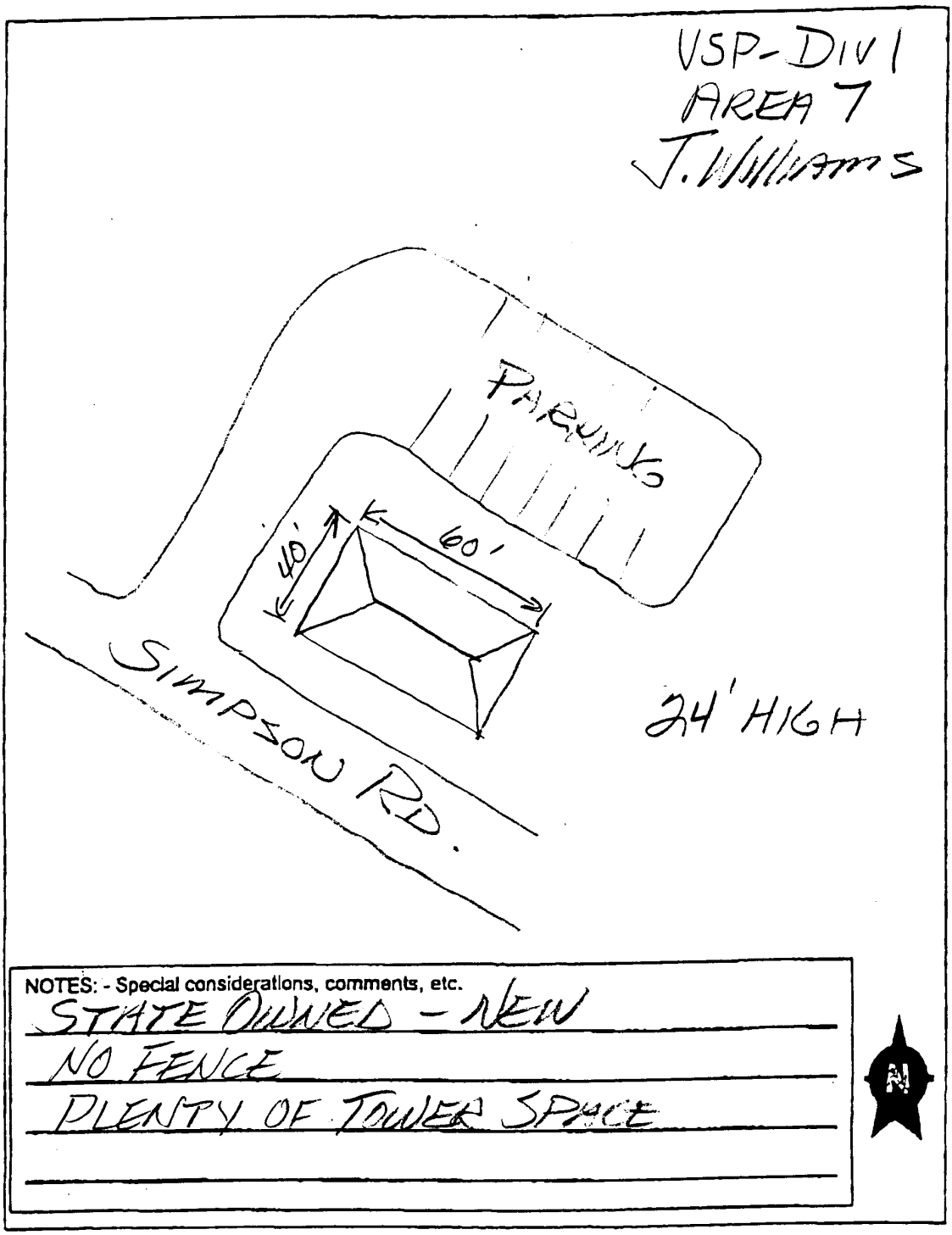
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**RICHMOND AREA 8**	Latitude	**37-32-30**
Address:	**37512 NINE MILE ROAD, SUITE B**	City, County:	**RICHMOND,**	Longitude	**77-22-57**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 KB Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

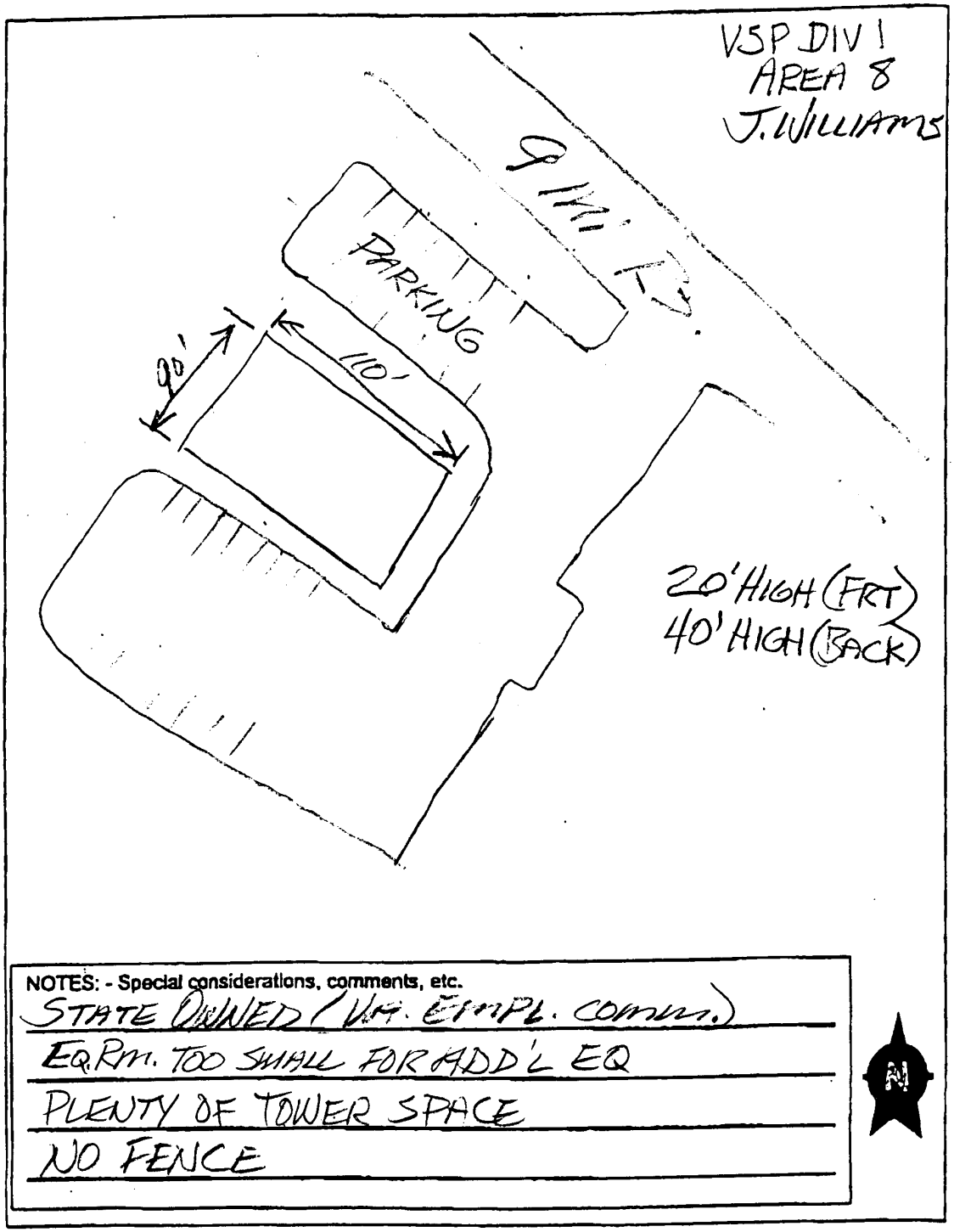
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		8
How many telephone lines service this site?		5
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

STATE OWNED (VA. EMPL. COMM.)

EQ RM. TOO SMALL FOR ADD'L EQ

PLENTY OF TOWER SPACE

NO FENCE

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**BOWLING GREEN AREA 44**	Latitude	**38-03-00**
Address:	**101 ENNIS STREET**	City, County:	**BOWLING GREEN, CAROLINE**	Longitude	**77-20-45**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	3
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

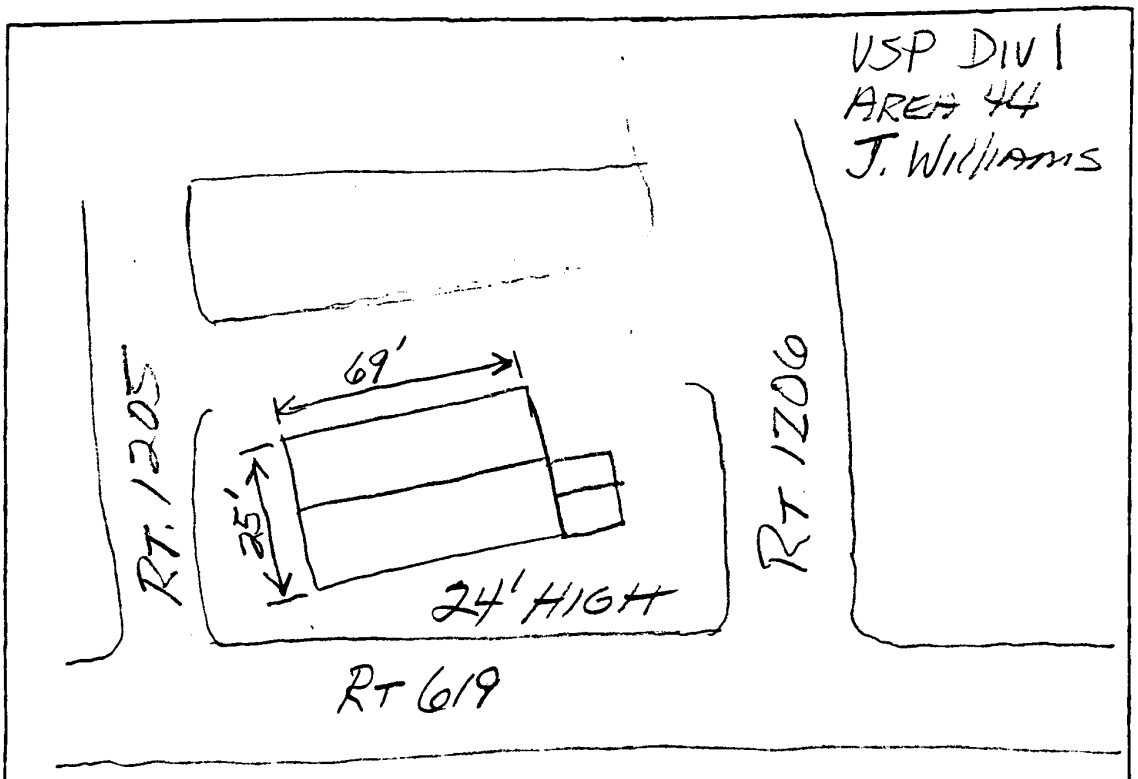
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		7
How many telephone lines service this site?		3
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

RENTAL PROPERTY – FAIR Condx.

NO FENCE

LIMITED (IF ANY) TOWER SPACE

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ST POLICE	Site Name:	WARRENTON AREA 12	Latitude	38-41-58
Address:	455 WEST SHIRLEY AVENUE	City, County:	WARRENTON, FAUQUIER	Longitude	77-47-19
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

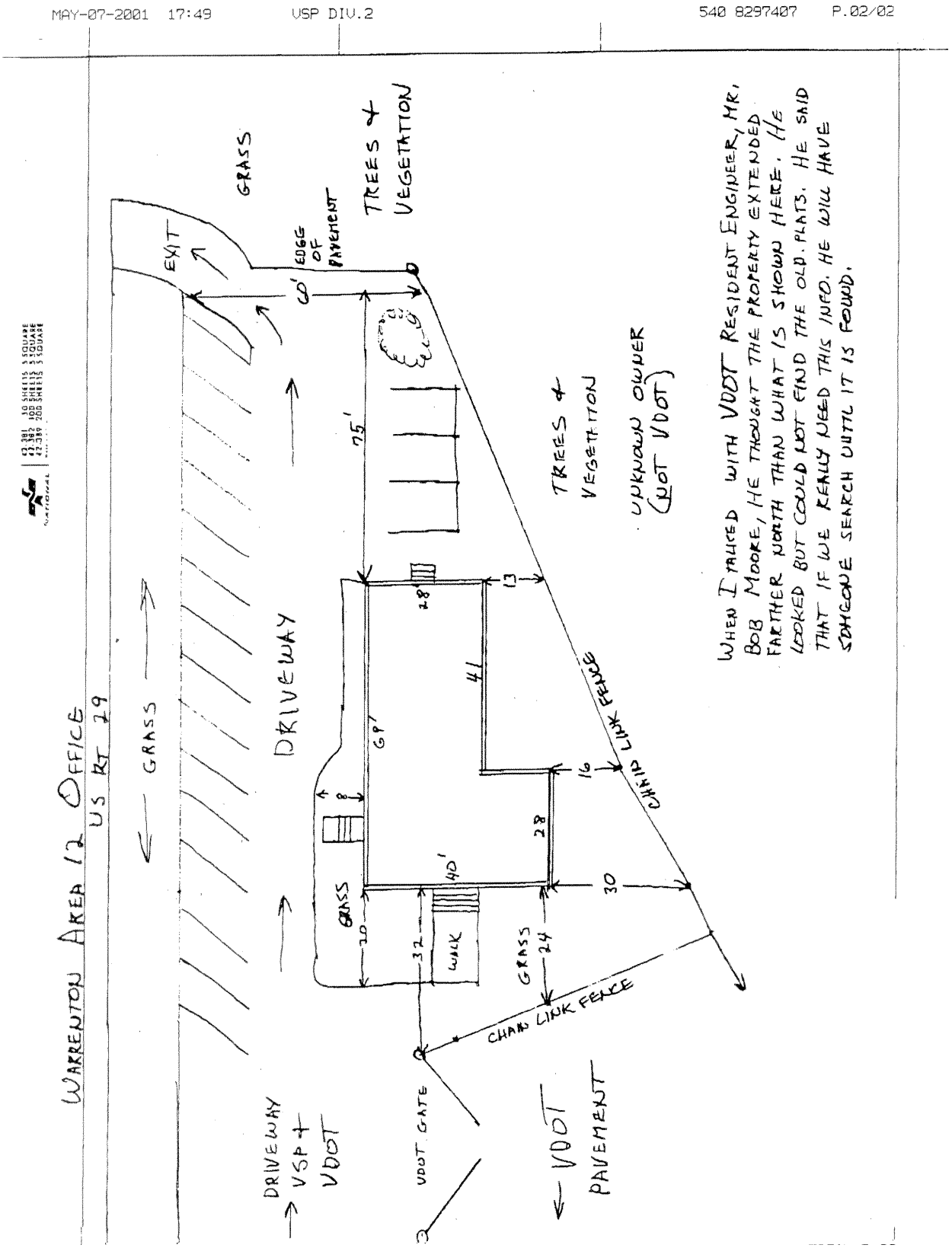
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		0
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


MAY-07-2001 17:49
VSP DIV.2
540 8297407
P.02/02
WARRENTON AREA 12 OFFICE
US RT 29
EXIT
GRASS
EDGE OF PAVEMENT
TREES & VEGETATION
75'
DRIVEWAY
TREES & VEGETATION
UNKNOWN OWNER (NOT VDOT)
CHAIN LINK FENCE
28
13
41
69'
16
28
40'
30
8
GRASS
20
32
WALK
GRASS
24
CHAIN LINK FENCE
DRIVEWAY → VSP & VDOT
VDOT GATE
← VDOT PAVEMENT
WHEN I TALKED WITH VDOT RESIDENT ENGINEER, MR. BOB MOORE, HE THOUGHT THE PROPERTY EXTENDED FARTHER NORTH THAN WHAT IS SHOWN HERE. HE LOOKED BUT COULD NOT FIND THE OLD PLATS. HE SAID THAT IF WE REALLY NEED THIS INFO. HE WILL HAVE SOMEONE SEARCH UNTIL IT IS FOUND.

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**CHARLOTESVILLE AREA 18**	Latitude	**38-01-30**
Address:	**906 NATURAL RESOURCES DRIVE**	City, County:	**CHARLOTTESVILLE, ALBEMARLE**	Longitude	**78-31-22**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

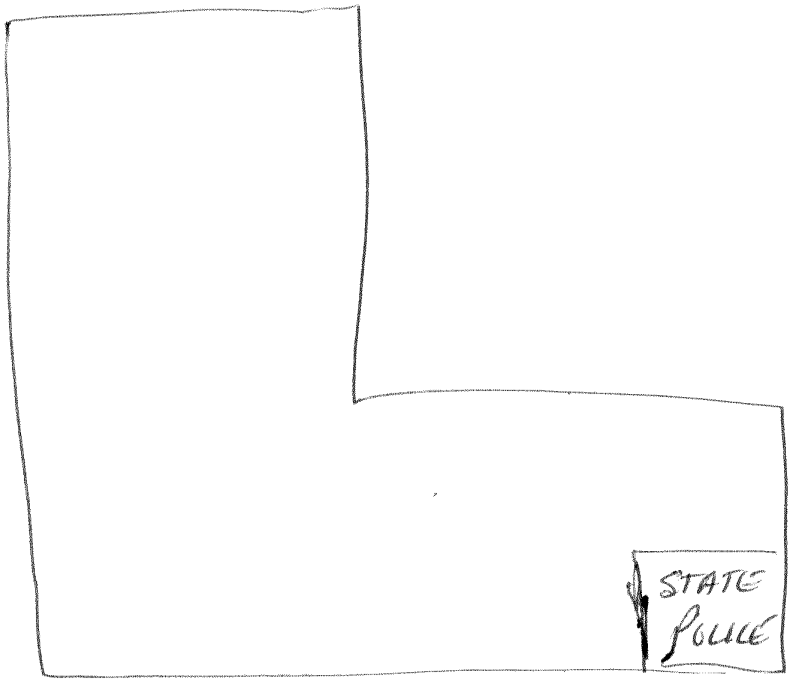
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		10
How many telephone lines service this site?		3
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	(Diesel) / Propane
	Power Output (Kw)	?
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		4" PIPE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		ATTACHED ON STRUCTURE (ROOF)
Height		10'
Approximate Age		3yrs
Location	Latitude	38-01-30
	Longitude	78-31-22
	Datum (NAD 27 or NAD 83)	27

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

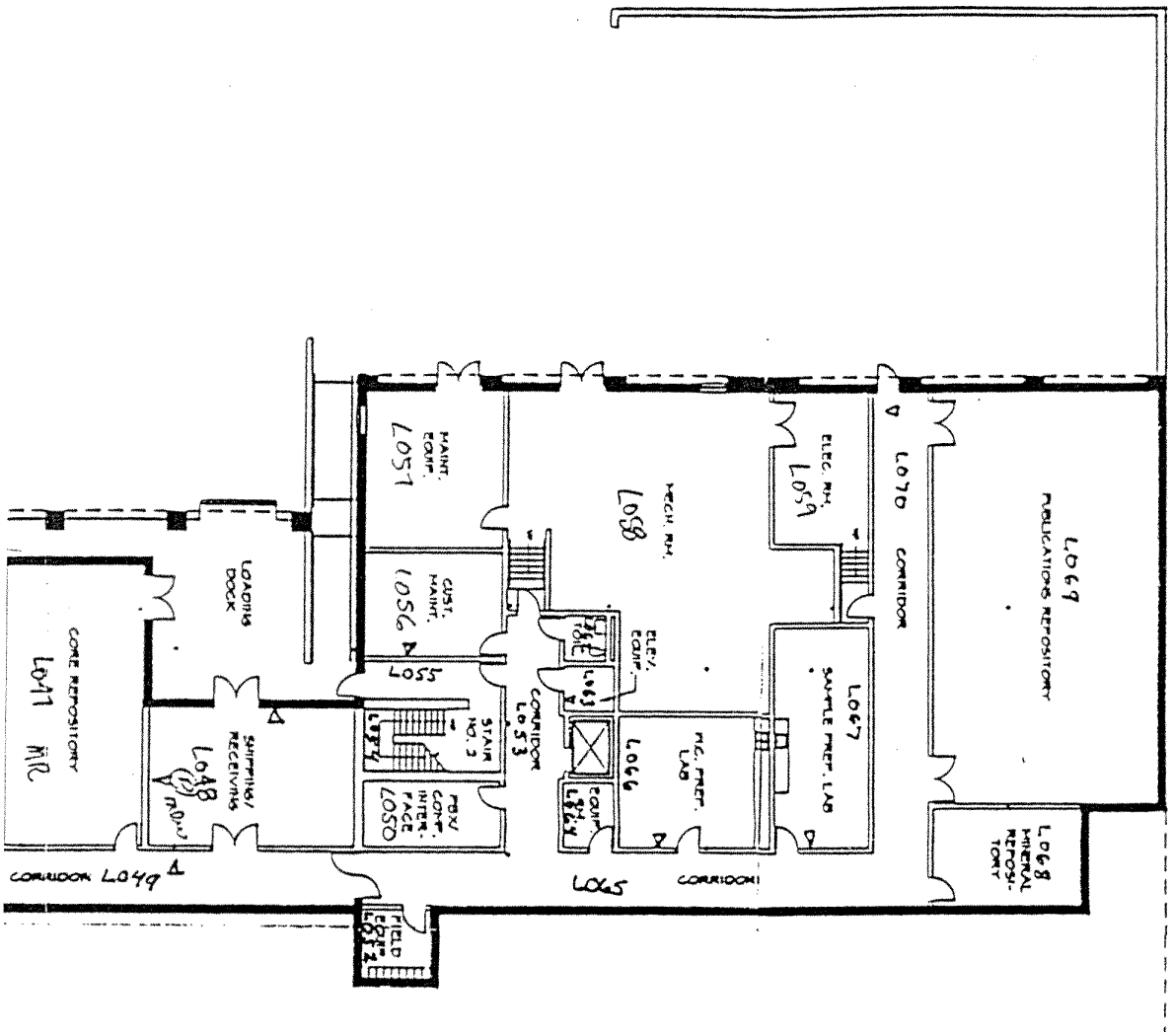
- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

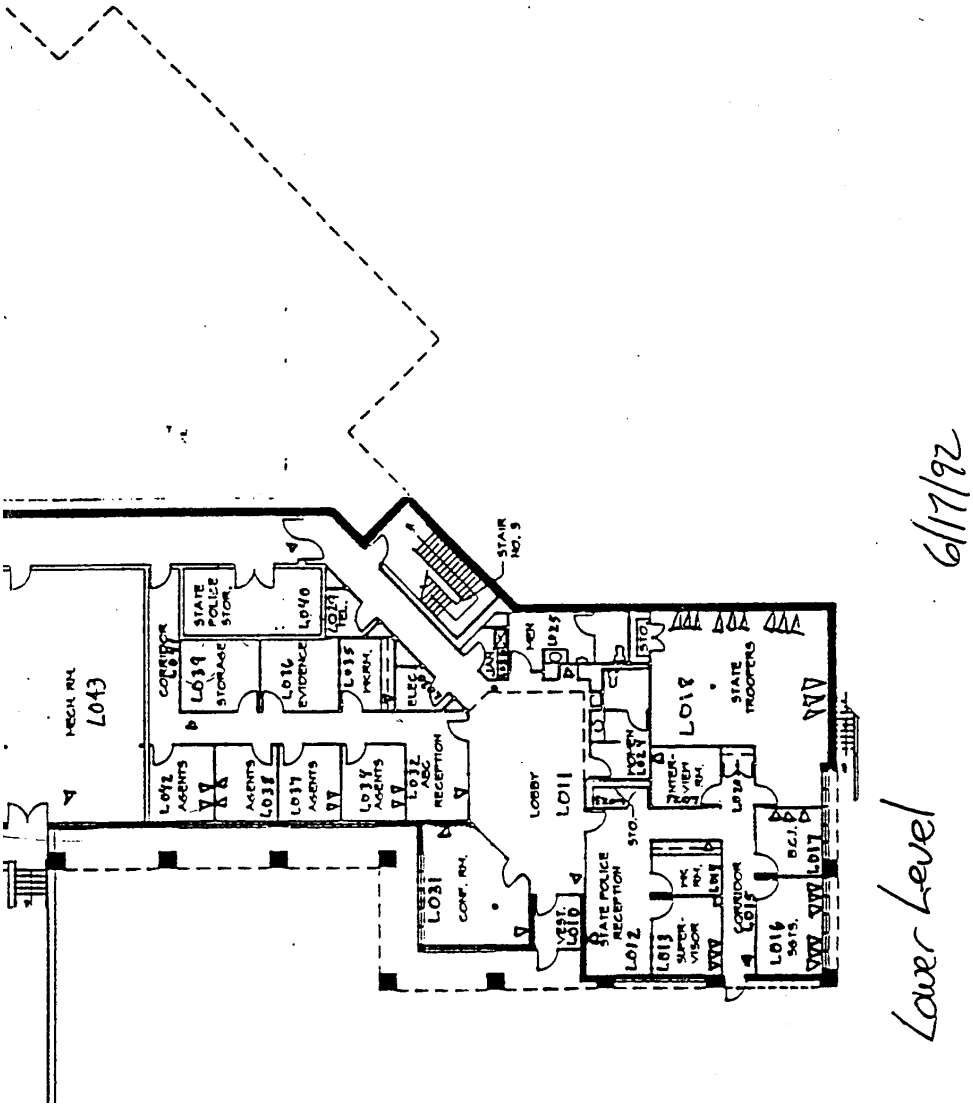


N

NOTES: - Special considerations, comments, etc.

State Police are located in VSP Floor section 3 this building which is Forestry and Mines, Minerals & Energy Headquarters


L069
PUBLICATIONS REPOSITORY
L070 CORRIDOR
ELEC. RM.
L059
MECH. RM.
L058
L067
SAMPLE PREP. LAB
L066
PIC. PREP. LAB
L068
MINERAL REPOSITORY
MAINT. EQUIP.
L057
CUST. MAINT.
L056
L055
STAIR NO. 3
L054
CORRIDOR L053
ELEV. EQUIP.
L063
L064
L065 CORRIDOR
L050
PBX/ COMM. INTERFACE
LOADING DOCK
L048
SHIPPING/ RECEIVING
CORE REPOSITORY
L047
CORRIDOR L049
FIELD OFFICE
L062


6/17/92
Lower Level
MECH. RM.
L043
CORRIDOR
L040
STATE POLICE STOR.
L039
STORAGE
L016
EVIDENCE
L015
MECH.
ELEC.
STAIR NO. 3
MEN
L025
WOMEN
L018
STATE TROOPERS
L012
AGENTS
L038
AGENTS
L037
AGENTS
L034
AGENTS
L032
ADJ. RECEPTION
LOBBY
L011
L031
CONF. RM.
VEST. L010
STATE POLICE RECEPTION
L012
L013
SUPER-VISOR
L017
MEN
L014
CORRIDOR
L016
B.C.I.
L017

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**LYNCHBURG**	Latitude	**37-20-10**
Address:	**1063 AIRPORT DRIVE**	City, County:	**LYNCHBURG, CAMPBELL**	Longitude	**79-11-31**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	WIN 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

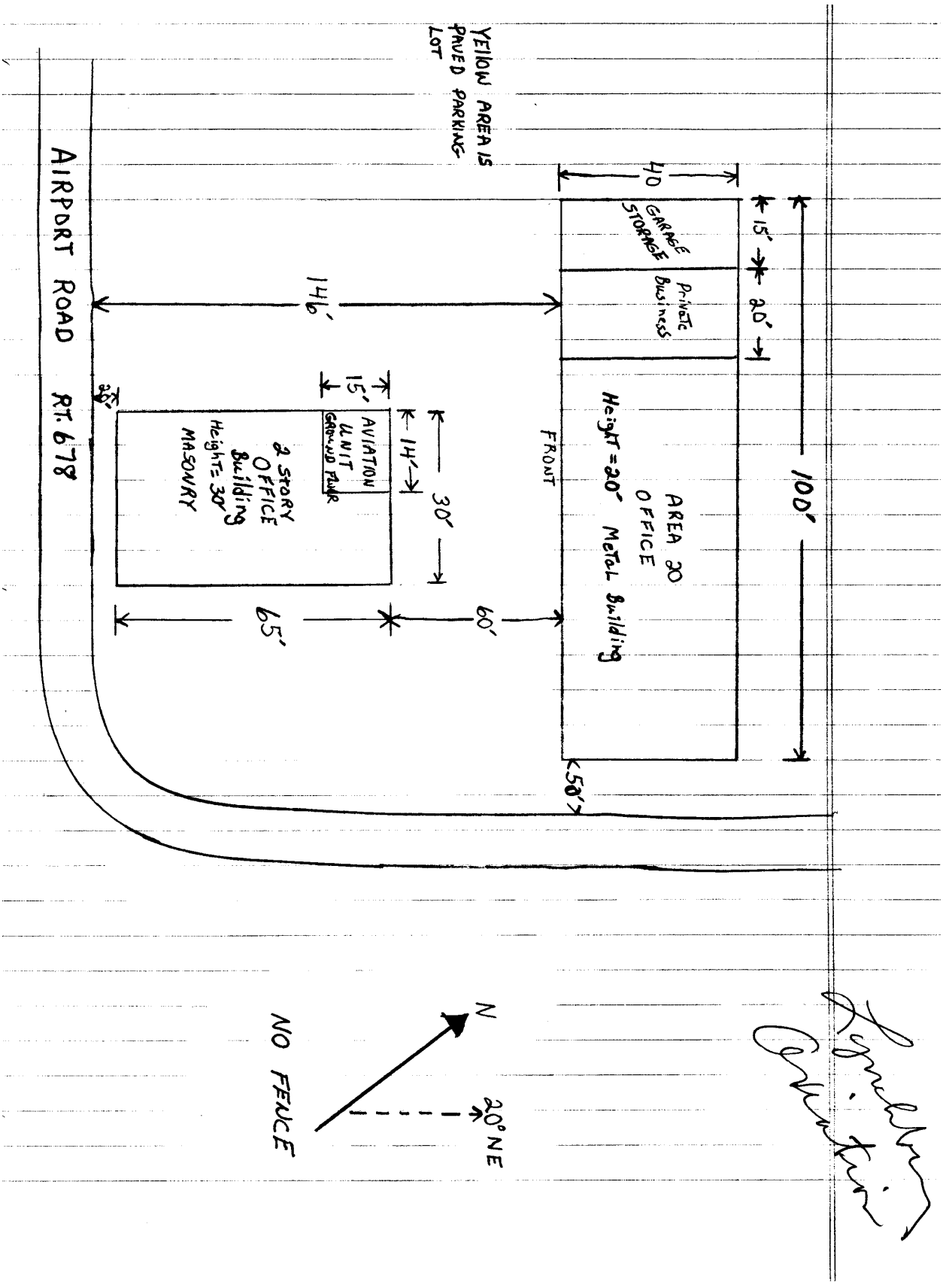
Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).


YELLOW AREA IS PAVED PARKING LOT
AIRPORT ROAD RT. 678
40
GARAGE STORAGE
PRIVATE BUSINESS
15'
20'
100'
146'
AREA 30 OFFICE
Height = 20' Metal Building
FRONT
50'
15'
AVIATION UNIT GROUND FLOOR
114'
30'
2 STORY OFFICE Building Height = 30' MASONRY
65'
60'
N
20° NE
NO FENCE

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**GALAX AREA 25**	Latitude	**36-41-40**
Address:	**1175 GLENDALE ROAD**	City, County:	**GALAX,**	Longitude	**80-53-03**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

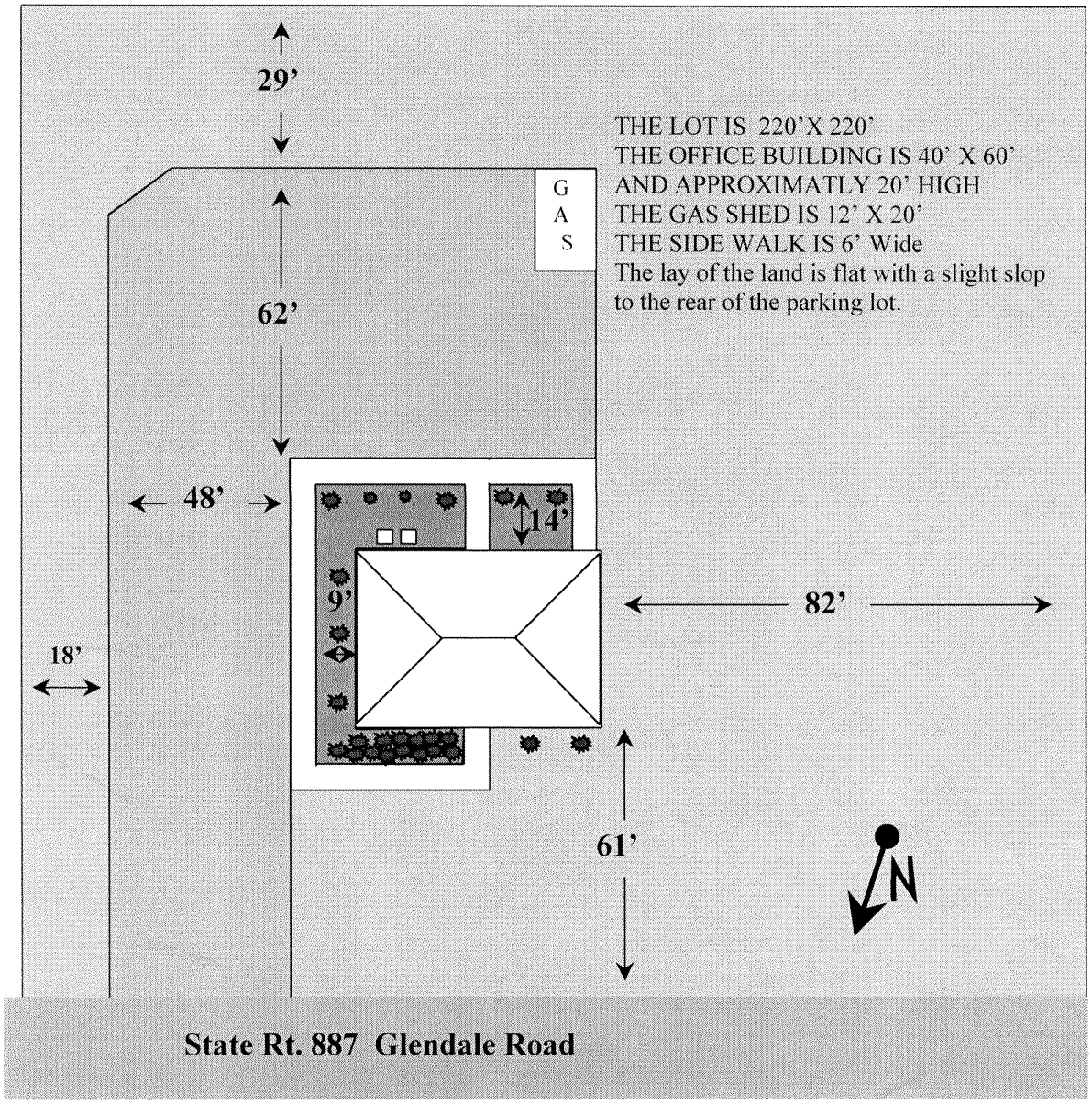
- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Virginia State Police
Area 25 Office
1175 Glendale Road
Galax, Va. 24333
540-236-5461



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**ABINGTON AVIATION UNIT**	Latitude	**36-41-07**
Address:	**VIRGINIA HIGHLANDS AIRPORT**	City, County:	**ABINGDON, WASHINGTON**	Longitude	**82-02-05**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	3
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	WIN 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

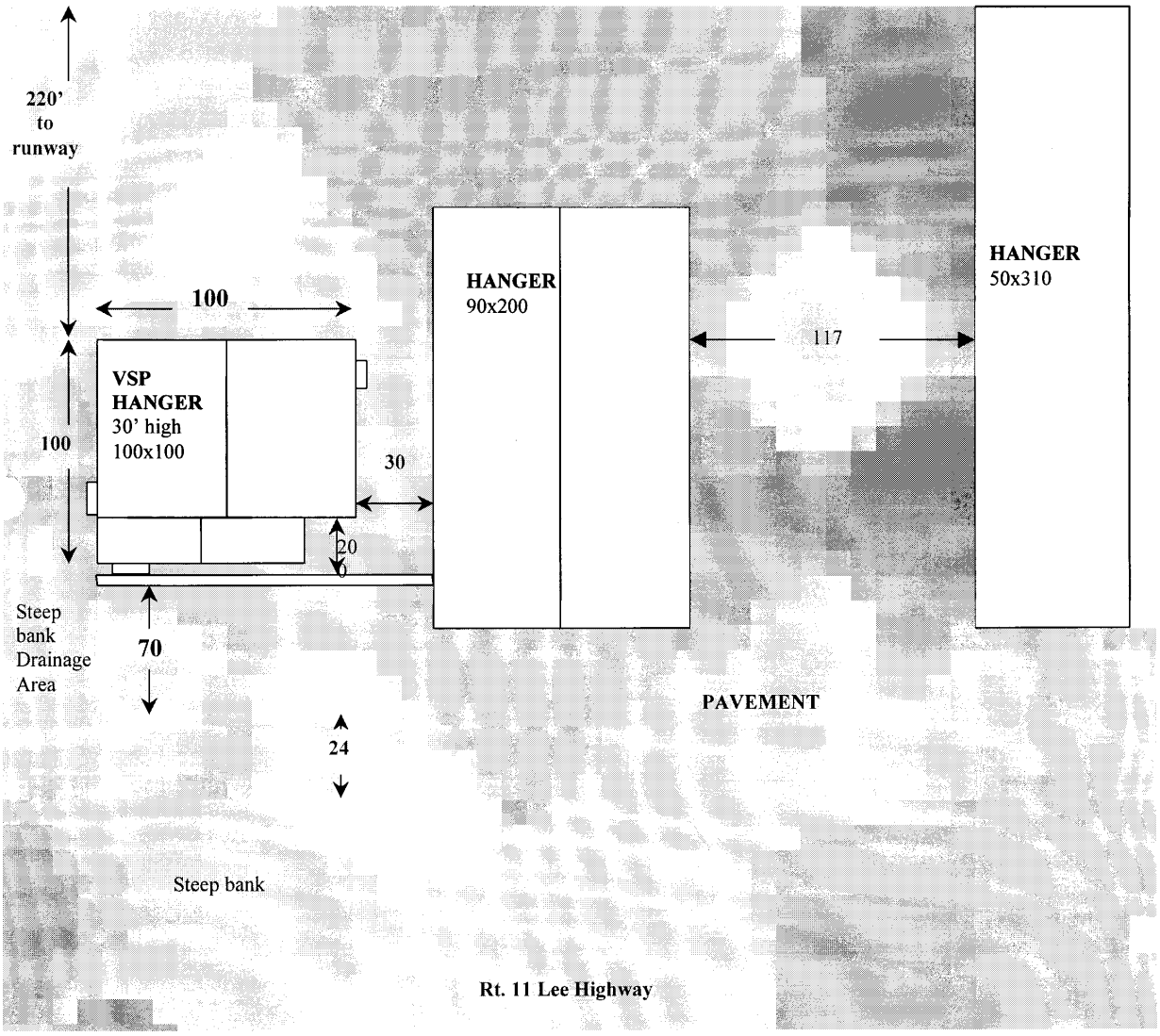
- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		6
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / (Propane)
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Abindon Aviation Division
18337 Lee Highway
Abingdon, Va. 24210
540-676-5623



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**WYTHEVILLE BCI-DED**	Latitude	**36-57-57**
Address:	**105 USDA DRIVE**	City, County:	**WYTHEVILLE, WYTHE**	Longitude	**81-03-48**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	(Yes) No
What operating systems are used on this server?	WIN 98, 95
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

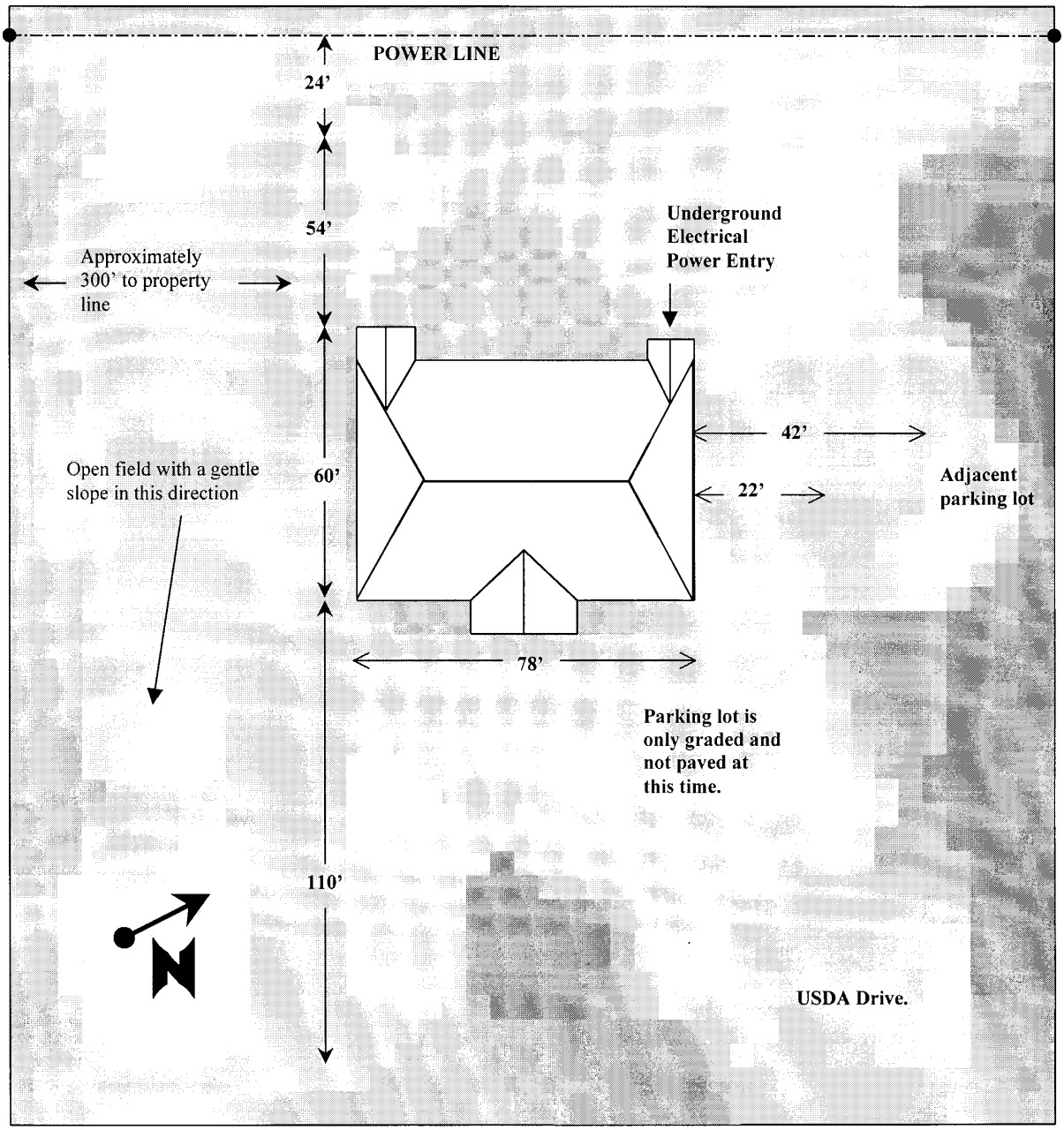
- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes / (No)

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		23
How many telephone lines service this site?		5
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Virginia State Police
BCI Office
105 USDA Drive
Wytheville, Va. 24382



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**GLOUCESTER AREA 33**	Latitude	**37-24-51**
Address:	**6104 FIDDLERS GREEN RD**	City, County:	**GLOUCESTER, GLOUCESTER**	Longitude	**76-32-24**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	W,N 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56KB Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

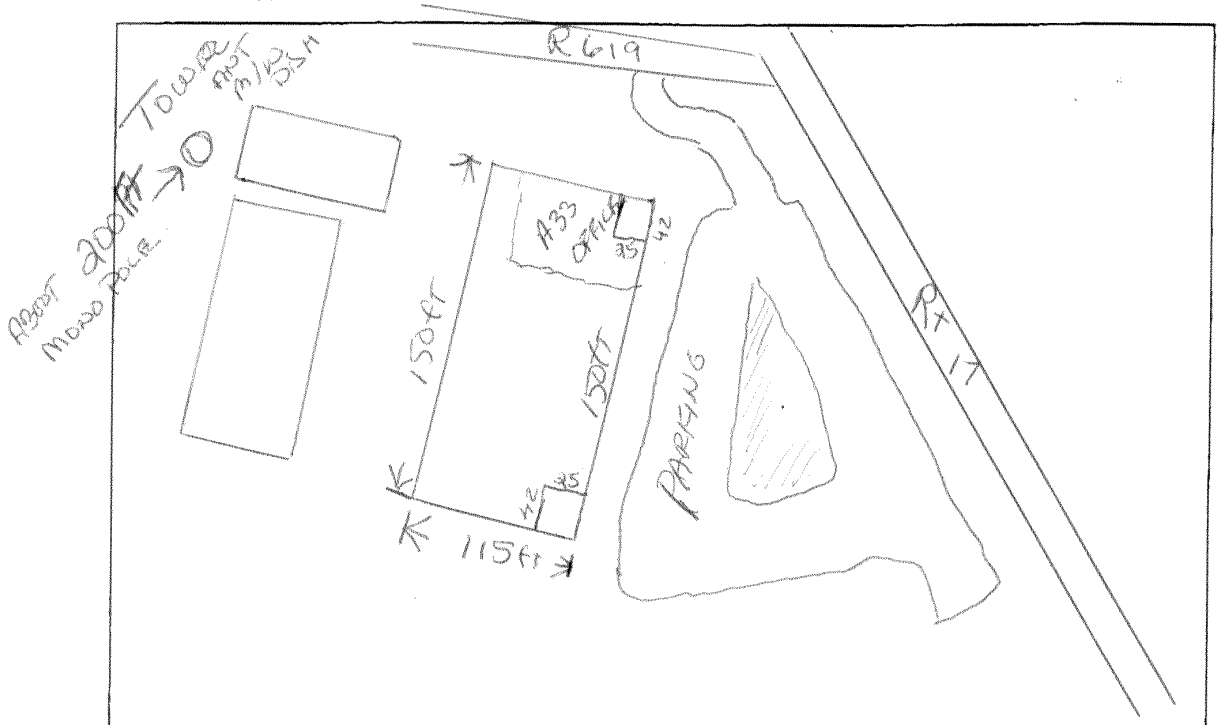
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		8
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

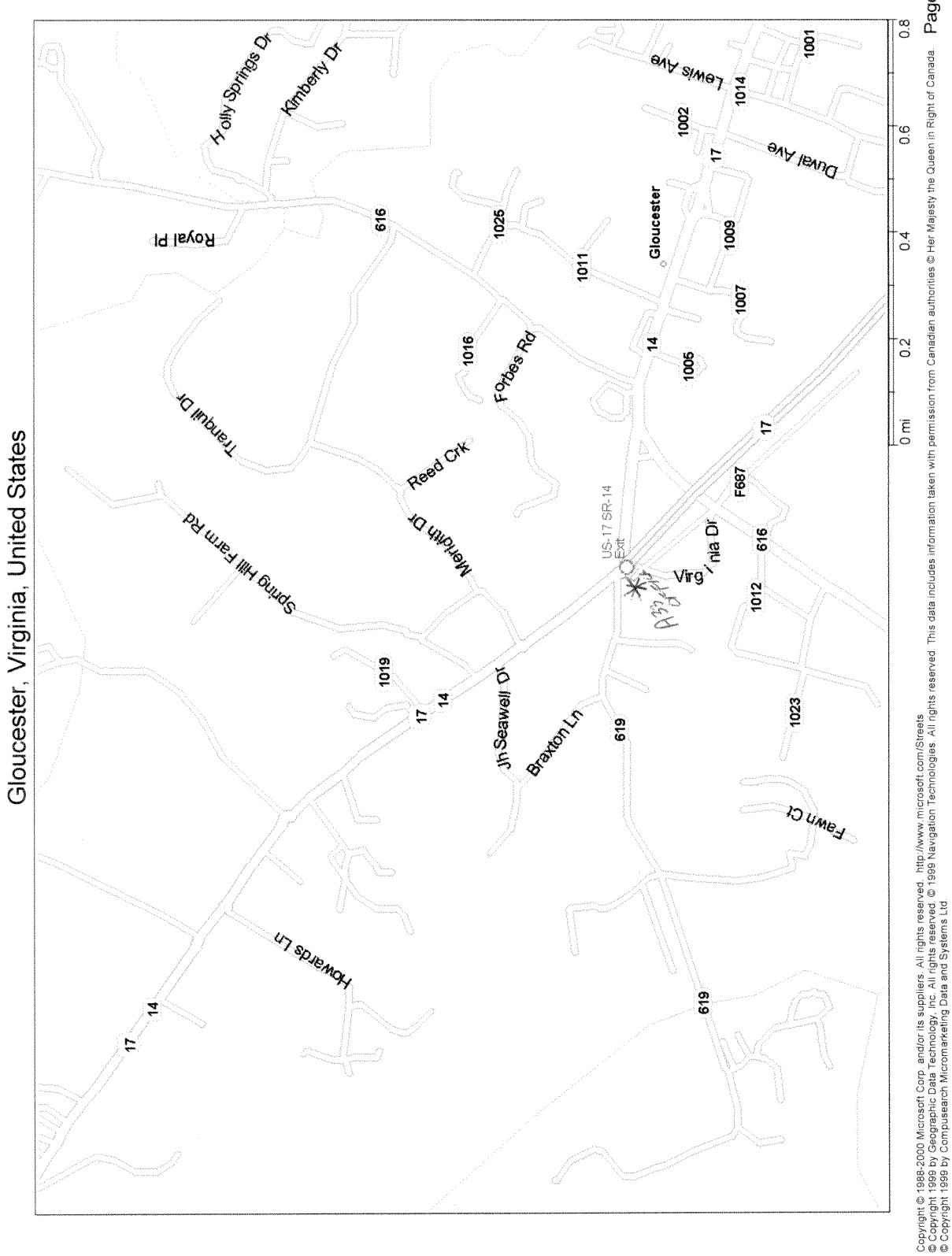
- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1 STORY FLAT ROOF WITH SLOP AT EDGES

REAR LOT EFNCED


Gloucester, Virginia, United States
Holly Springs Dr
Kimberly Dr
Royal Pl
Tranquil Dr
Spring Hill Farm Rd
Howards Ln
Reed Crk
Meredith Dr
Forbes Rd
Jh Seawell Dr
Braxton Ln
Fawn Ct
Lewis Ave
Duval Ave
Gloucester
Virginia Dr
US-17 SR-14 Exit
616
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1011
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STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ST POLICE	Site Name:	WAVERLY AREA 36	Latitude	37-02-09
Address:	438 EAST MAIN STREET	City, County:	WAVERLY, SUSSEX	Longitude	77-05-40
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 KB Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

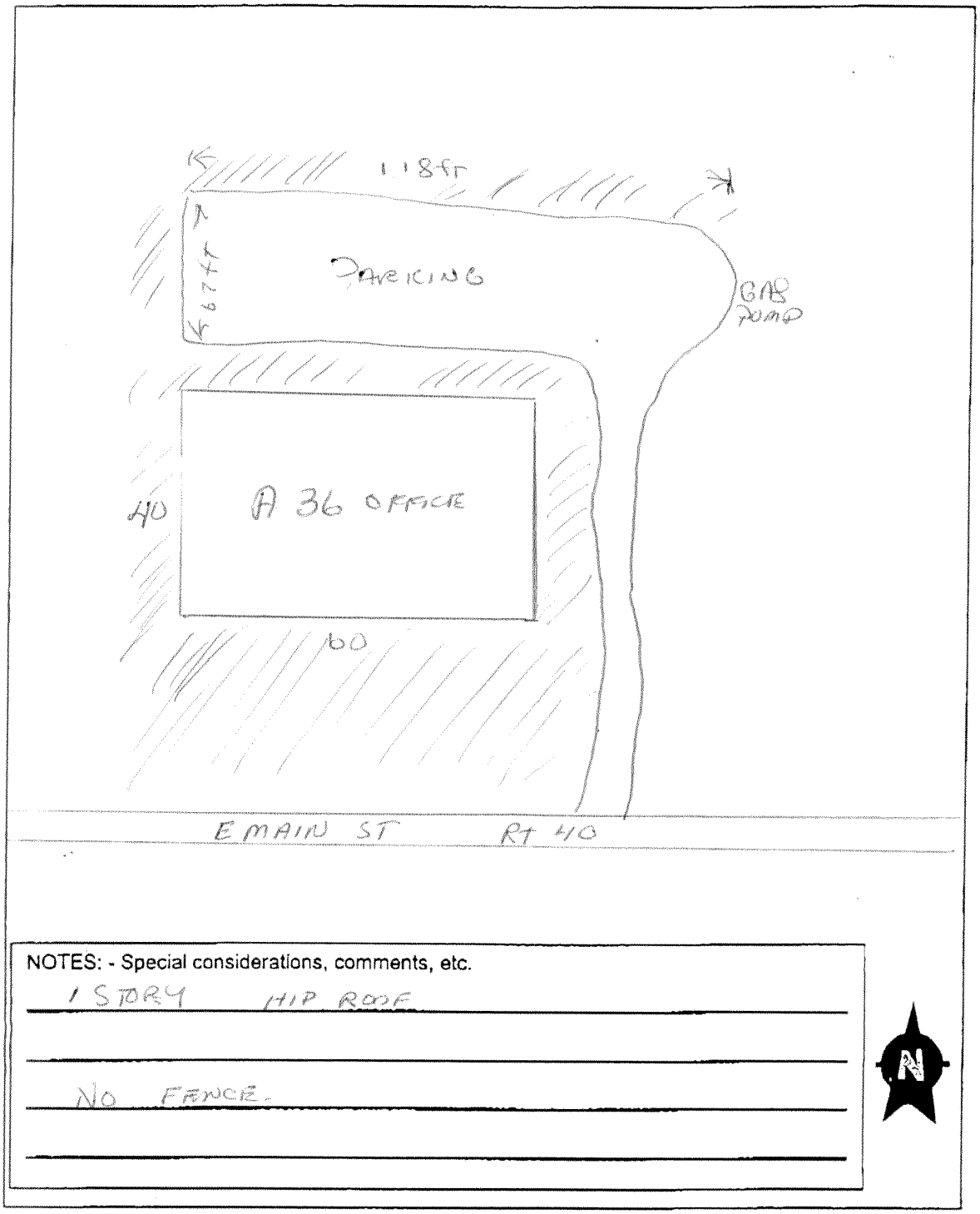
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

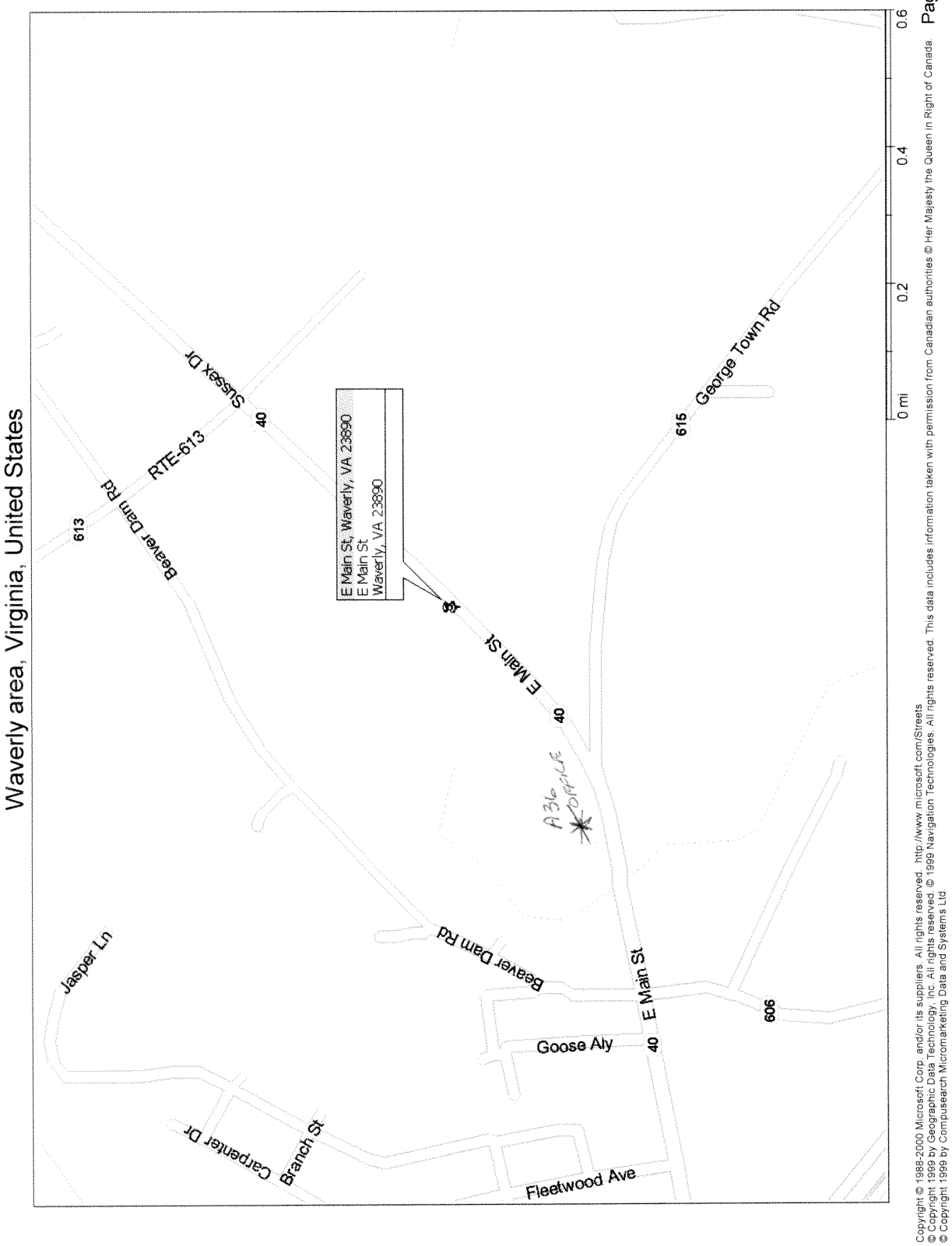
TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		3
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

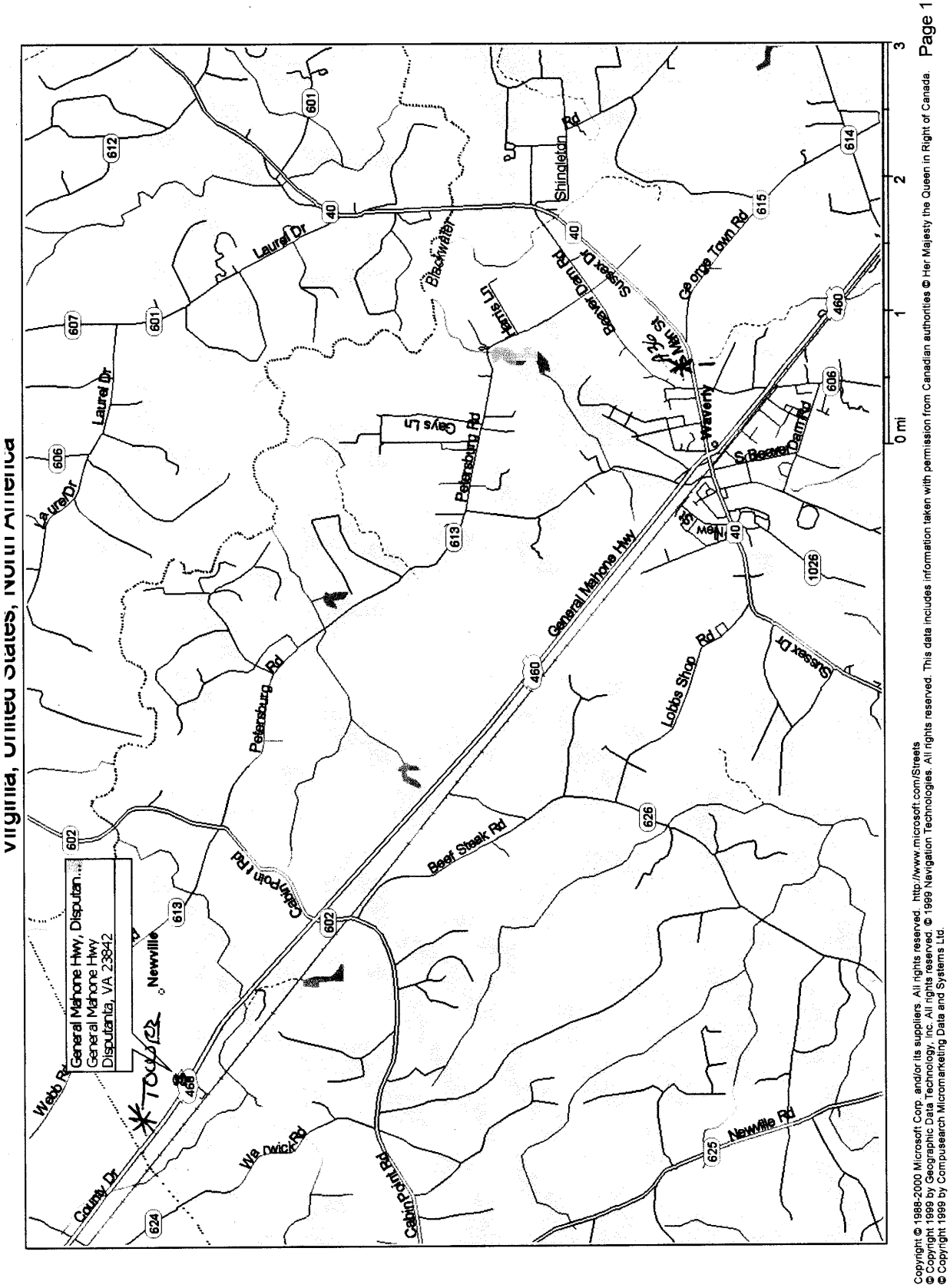
Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



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General Mahone Hwy
Disputanta, VA 23842
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Virginia, United States, North America
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STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**HAMPTON/NEWPORT NEWS AREA 46**	Latitude	**37-03-48**
Address:	**303 BUTLER FARM ROAD**	City, County:	**HAMPTON,**	Longitude	**76-24-05**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	4
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 KB Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

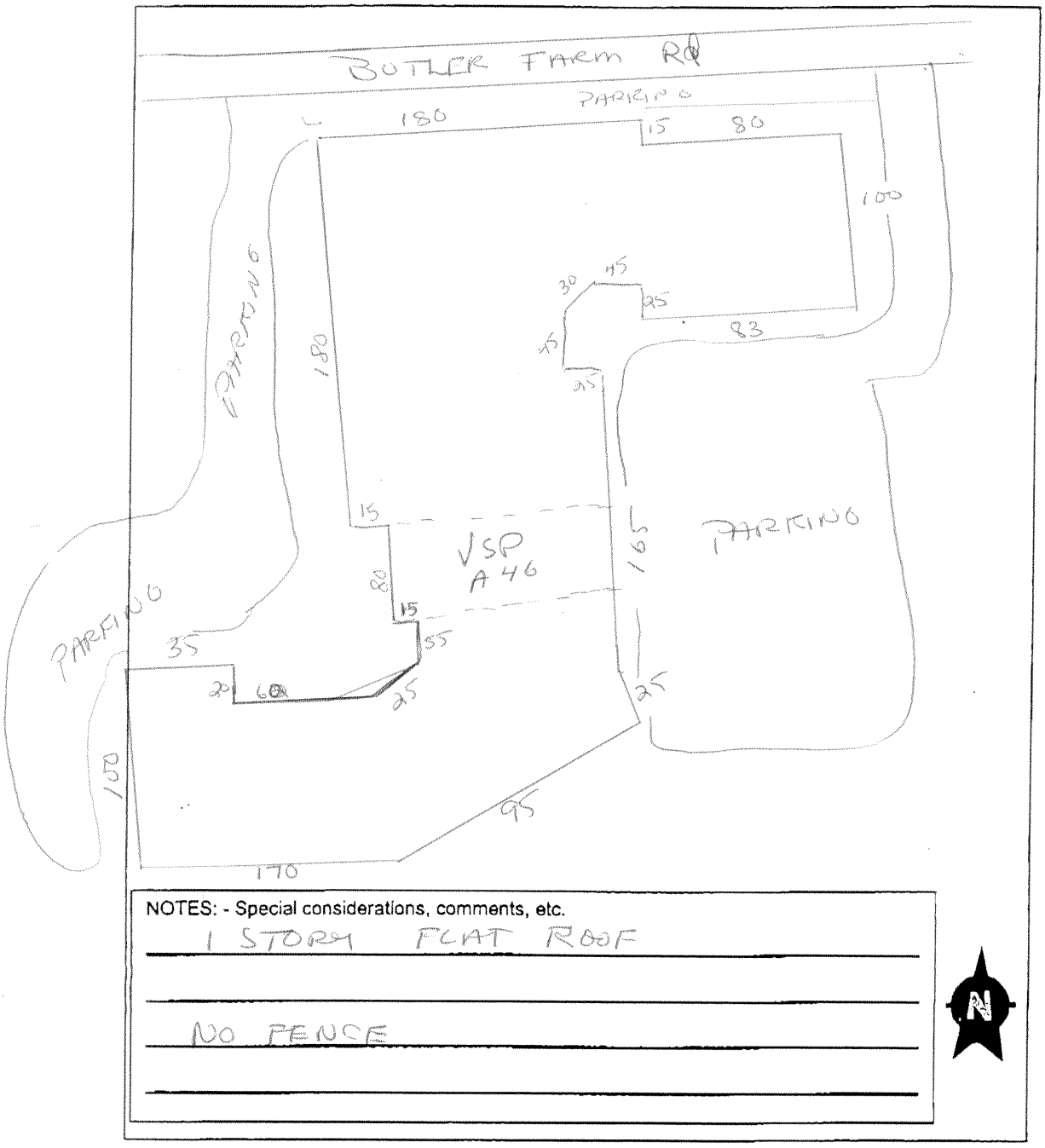
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		11
How many telephone lines service this site?		7
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

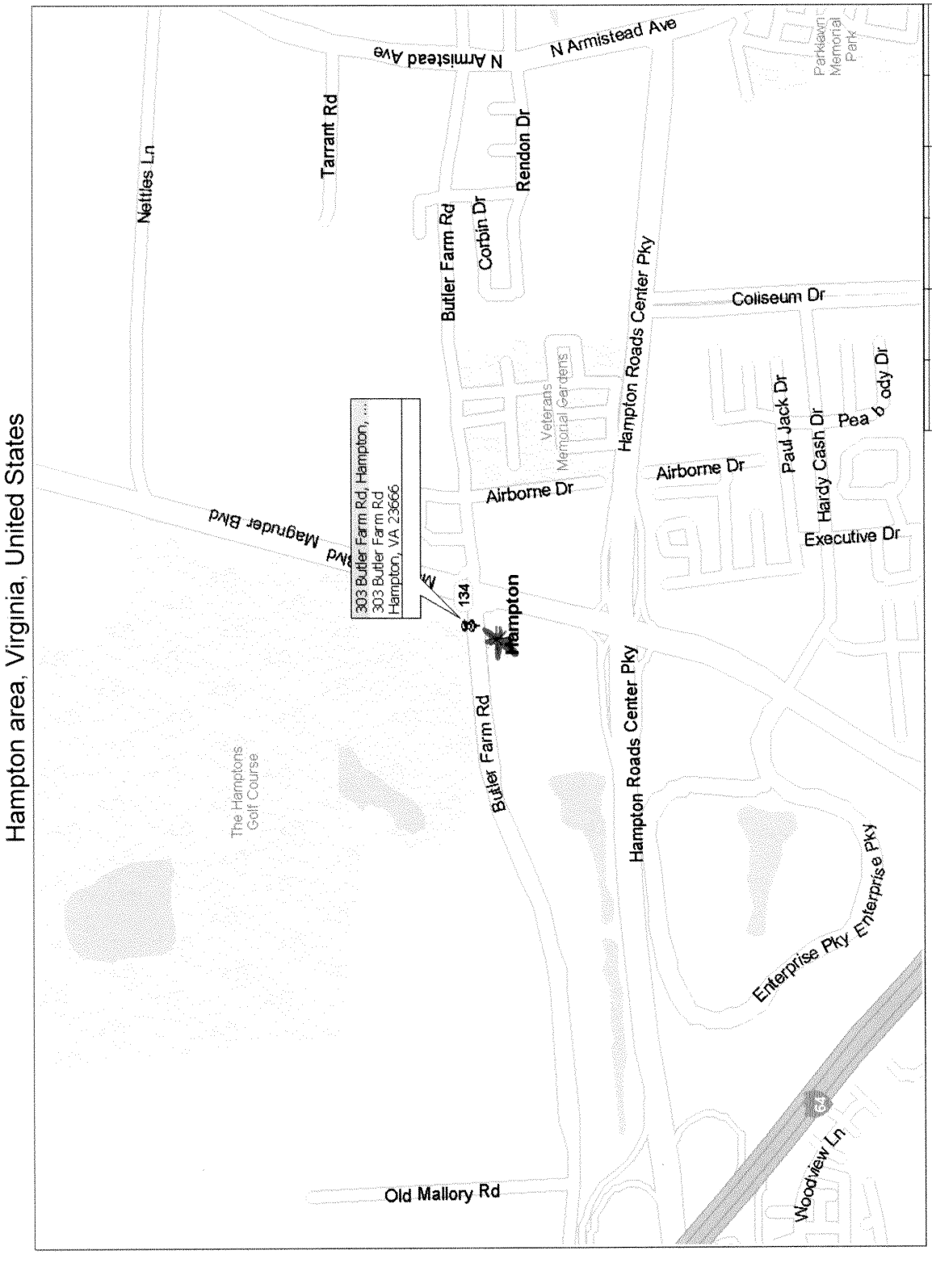
- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1 STORY FLAT ROOF

NO FENCE



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ST POLICE	Site Name:	CHESAPEAKE AREA 47	Latitude	36-46-19
Address:	1508 TECHNOLOGY DRIVE	City, County:	CHESAPEAKE,	Longitude	75-15-29
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

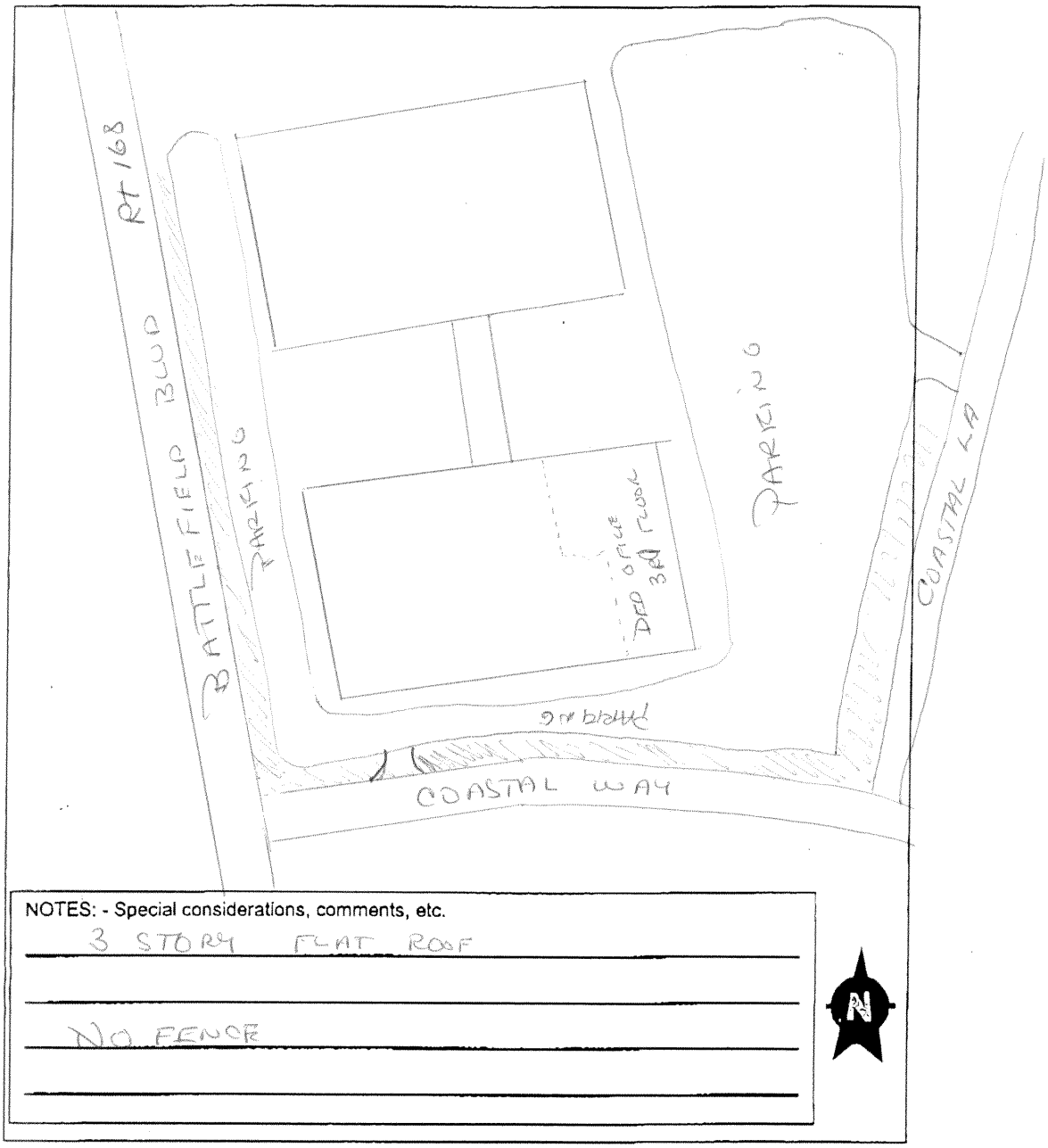
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

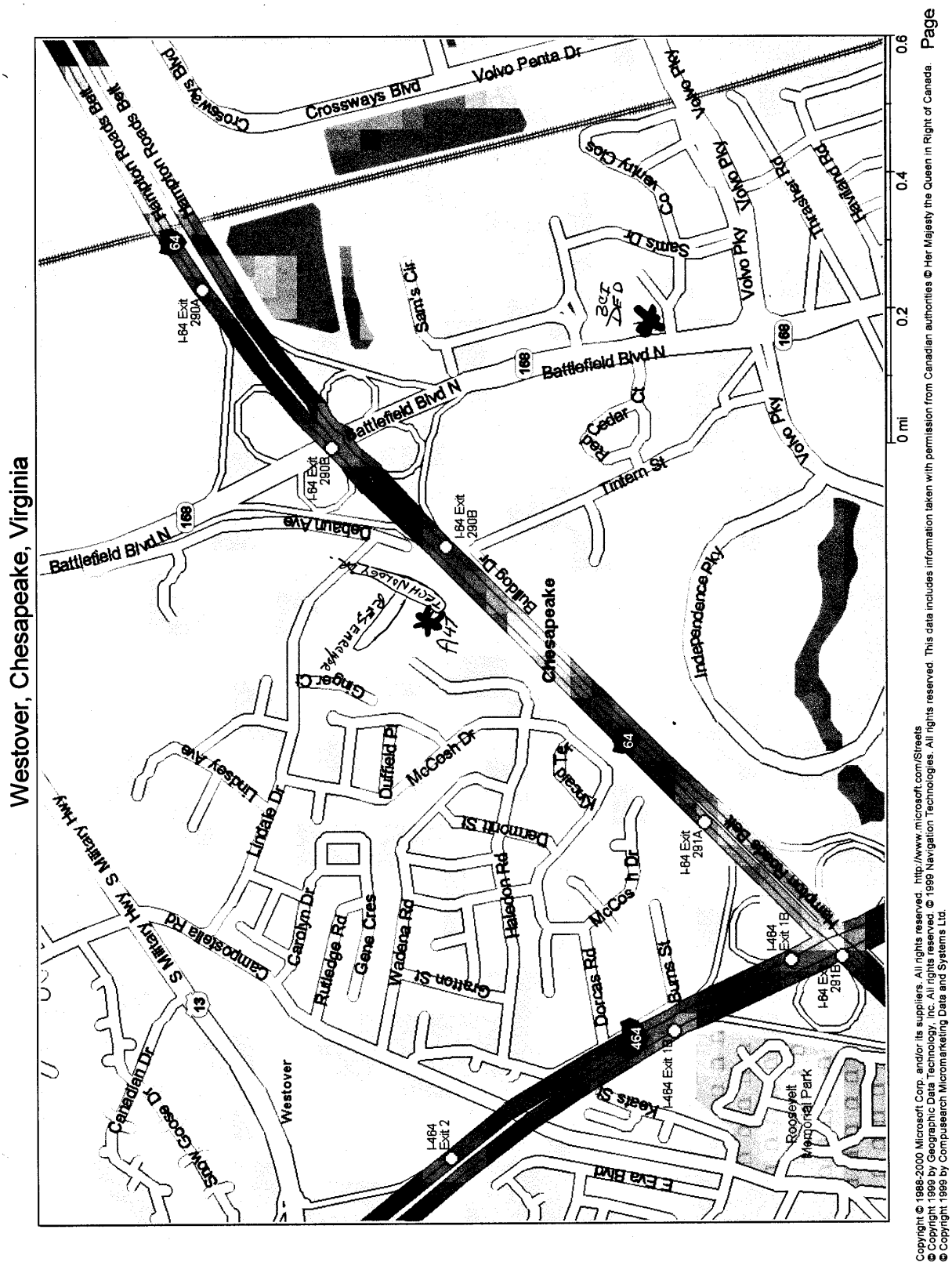
- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

3 STORY FLAT ROOF

NO FENCE



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**NORFOLK AREA 32**	Latitude	**36-50-46**
Address:	**814 KEMPSVILLE ROAD**	City, County:	**NORFOLK,**	Longitude	**76-11-28**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

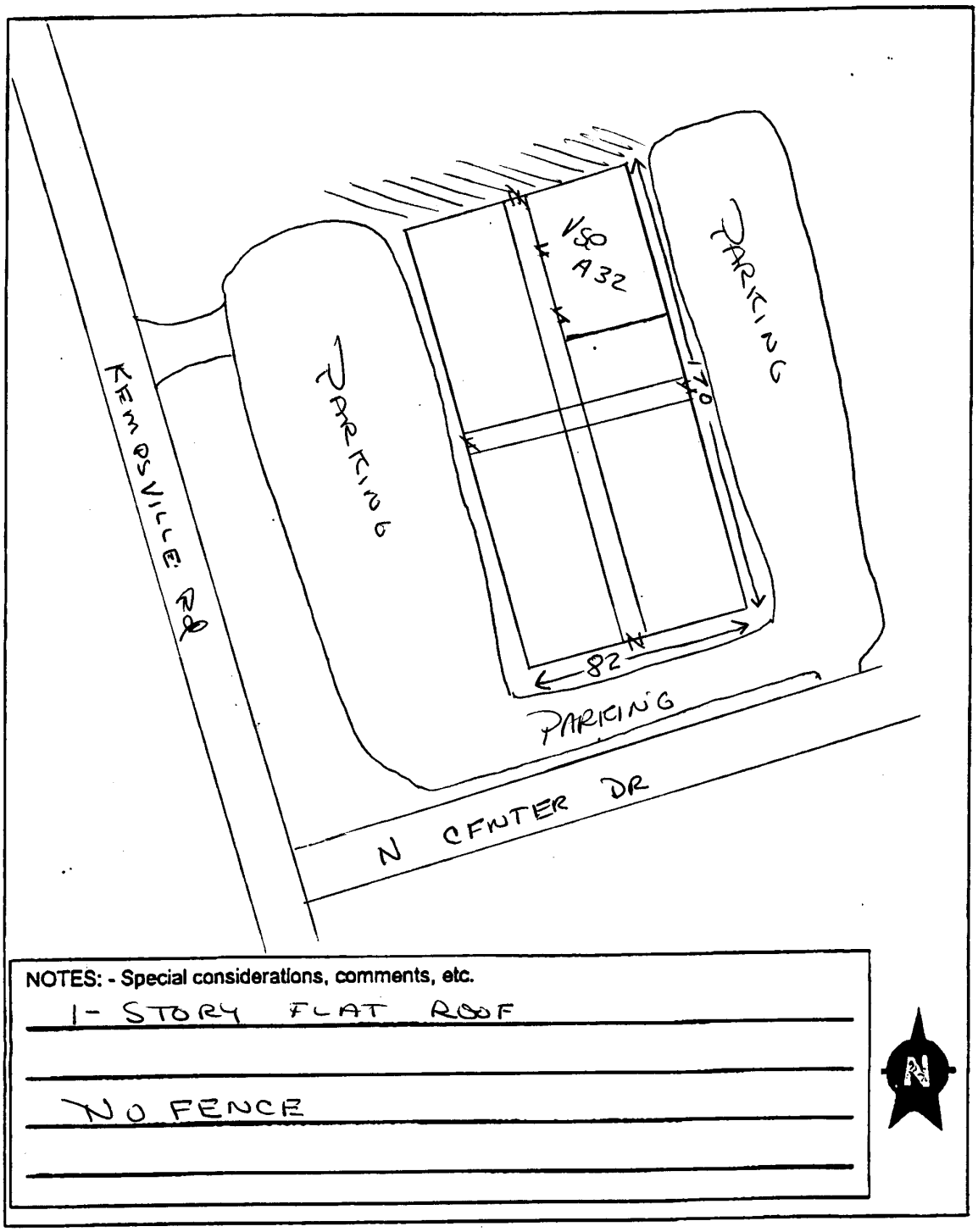
- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	
Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).		

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

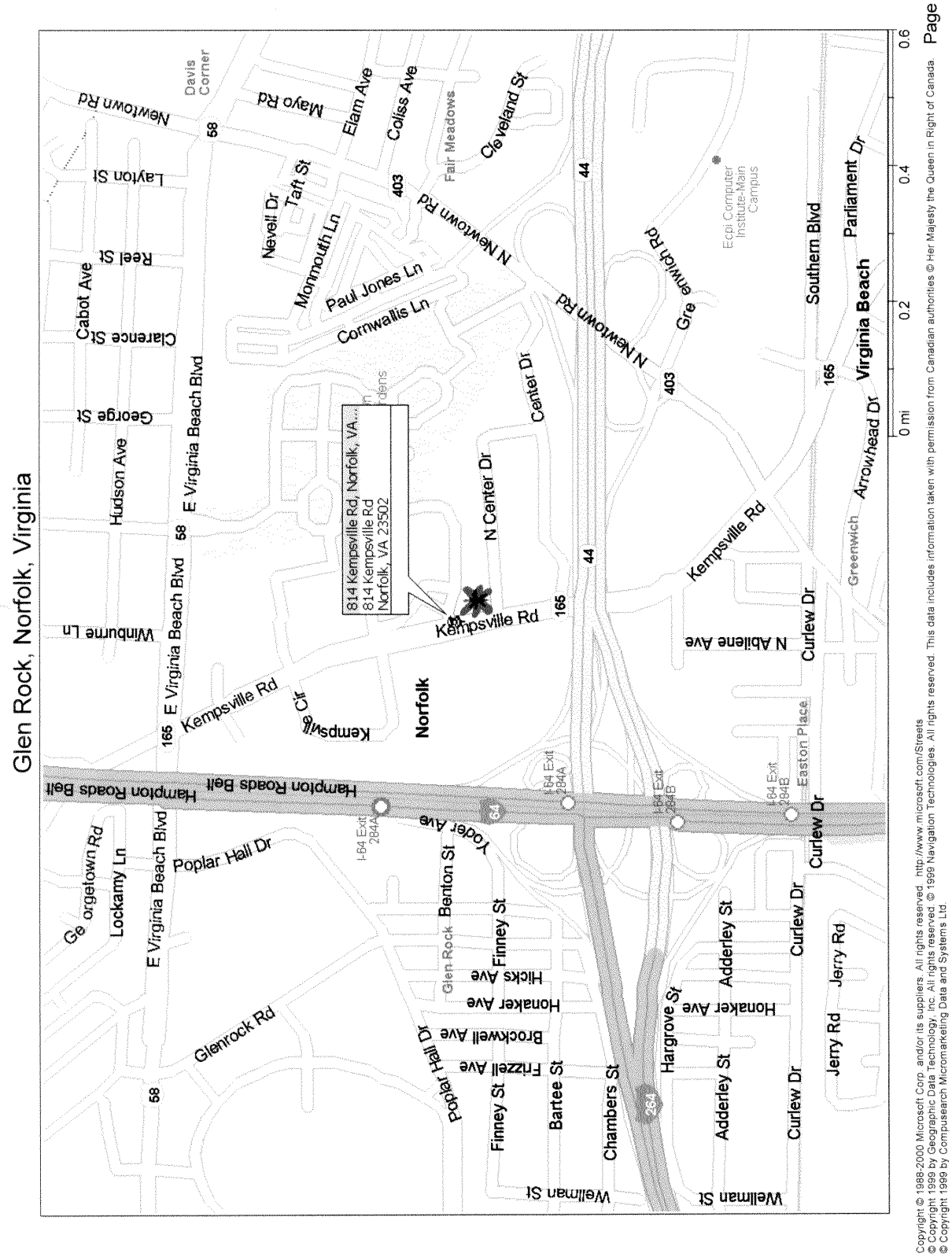
- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

1- STORY FLAT ROOF

NO FENCE



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**CHESAPEAKE BCI-DED**	Latitude	**36-45-58**
Address:	**1417 NORTH BATTLEFIELD BOULEVARD, SUITE 390**	City, County:	**CHESAPEAKE,**	Longitude	**76-15-06**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	WIN 98/95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56K Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

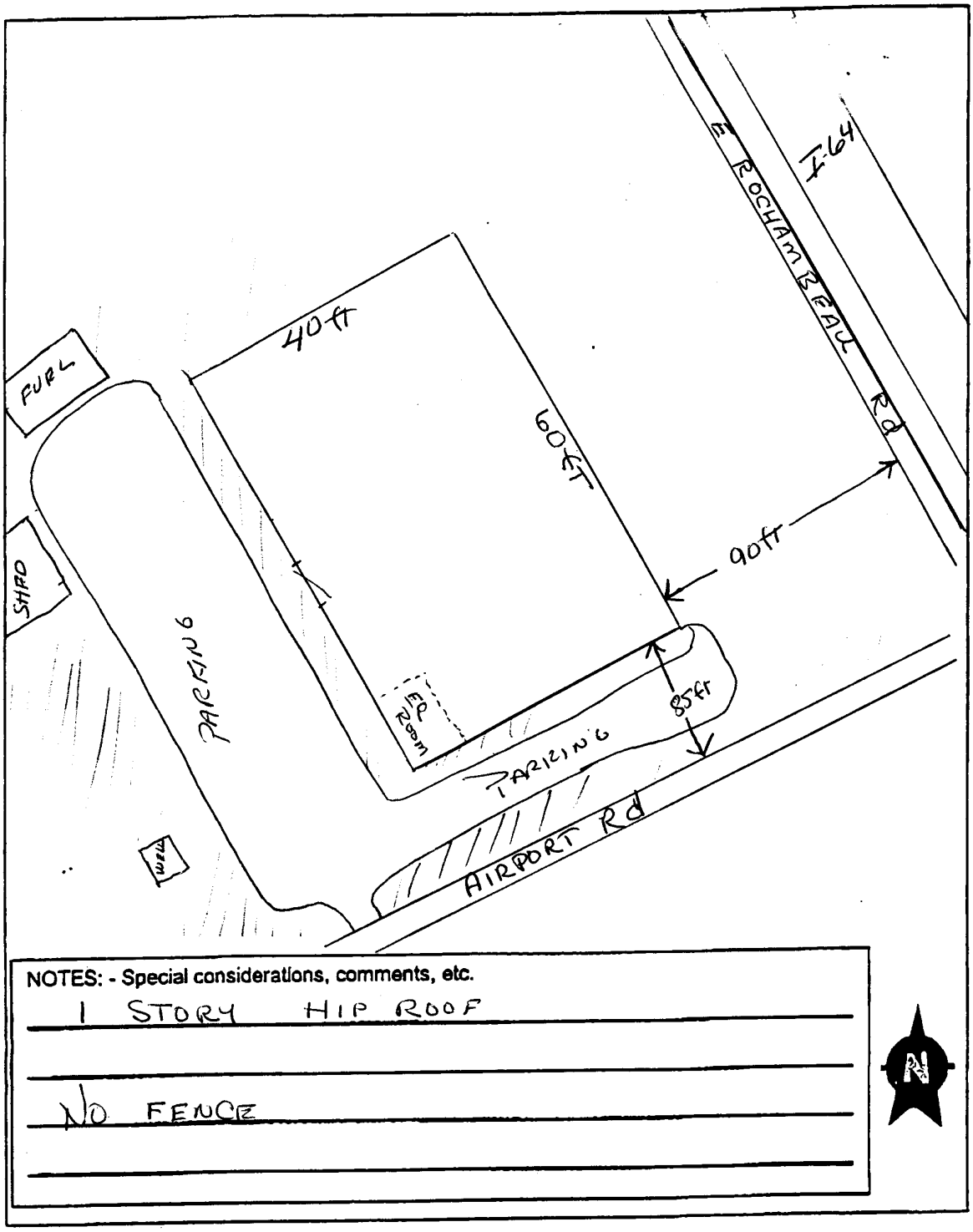
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	Yes (No)

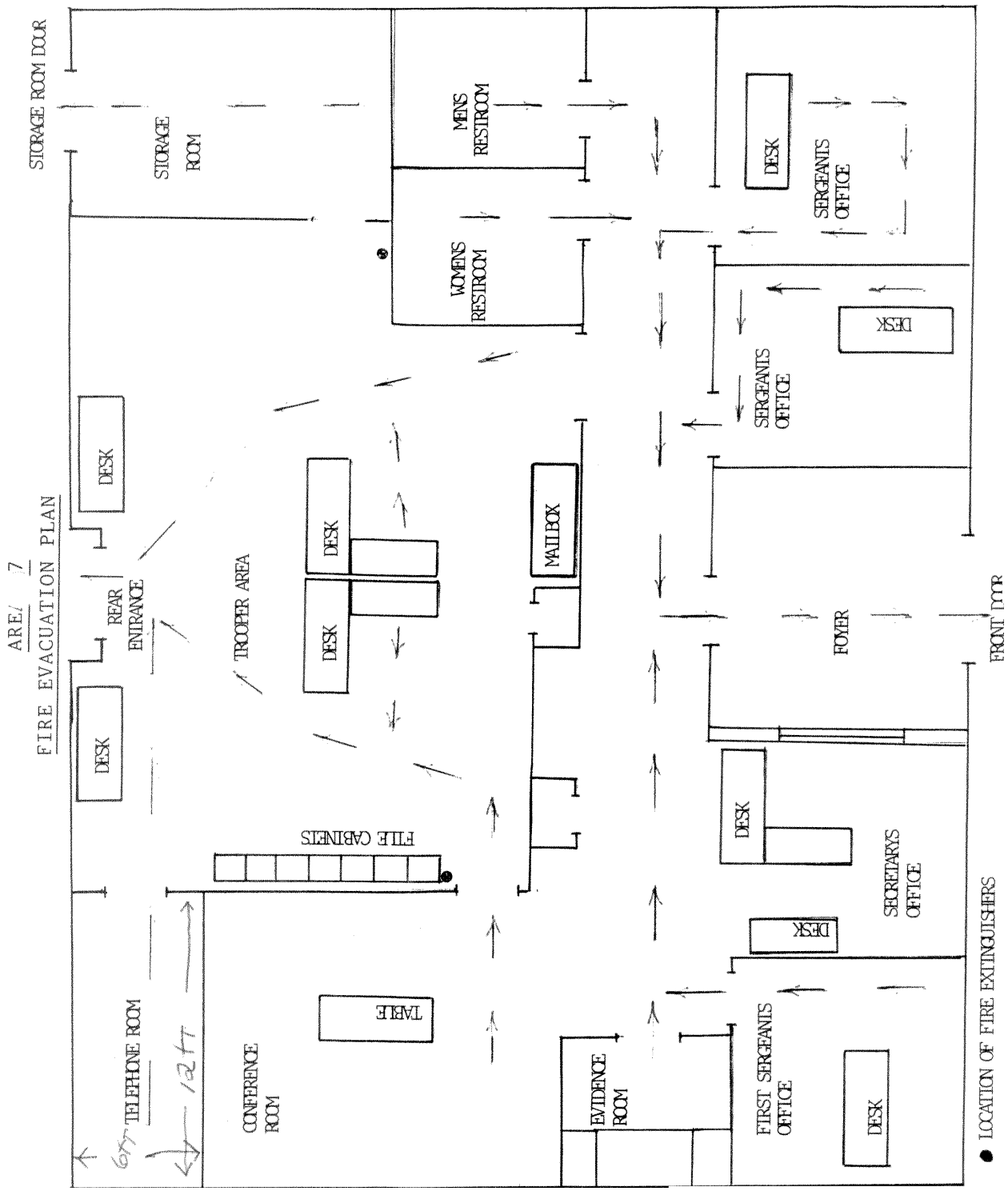
TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		20
How many telephone lines service this site?		19
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

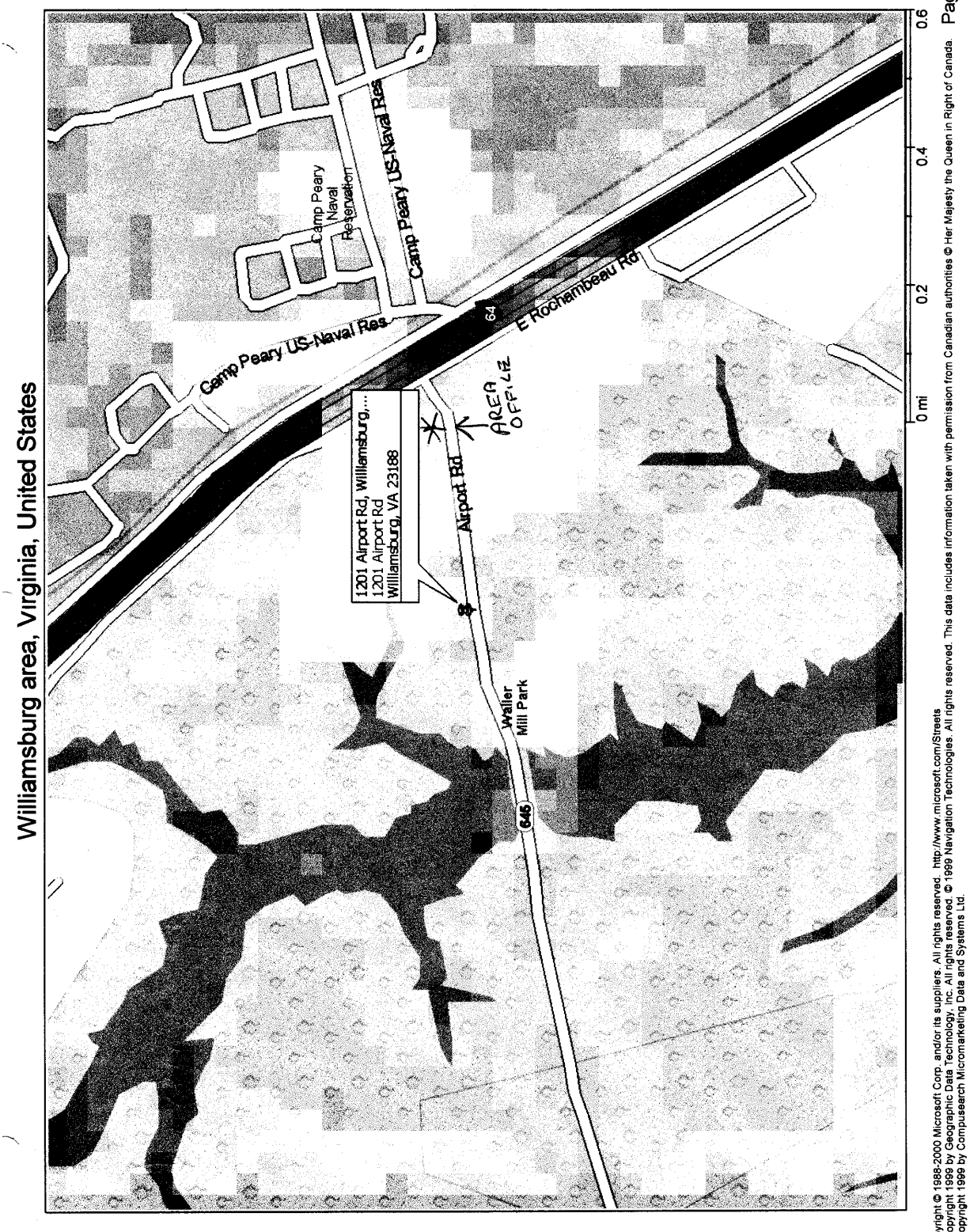
Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?




AREA 7
FIRE EVACUATION PLAN
STORAGE ROOM DOOR
STORAGE ROOM
MENS RESTROOM
WOMENS RESTROOM
DESK
SERGEANTS OFFICE
DESK
SERGEANTS OFFICE
DESK
MAILBOX
REAR ENTRANCE
TROOPER AREA
DESK
DESK
DESK
FOYER
FRONT DOOR
FILE CABINETS
DESK
SECRETARYS OFFICE
DESK
TABLE
TELEPHONE ROOM
CONFERENCE ROOM
EVIDENCE ROOM
FIRST SERGEANTS OFFICE
DESK
LOCATION OF FIRE EXTINGUISHERS


Williamsburg area, Virginia, United States
Camp Peary US-Naval Res
Camp Peary Naval Reservation
Camp Peary US-Naval Res
64
E Rochambeau Rd
1201 Airport Rd, Williamsburg,...
1201 Airport Rd
Williamsburg, VA 23188
AREA OF FILL
Airport Rd
Waller Mill Park
645
0 mi
0.2
0.4
0.6
Page
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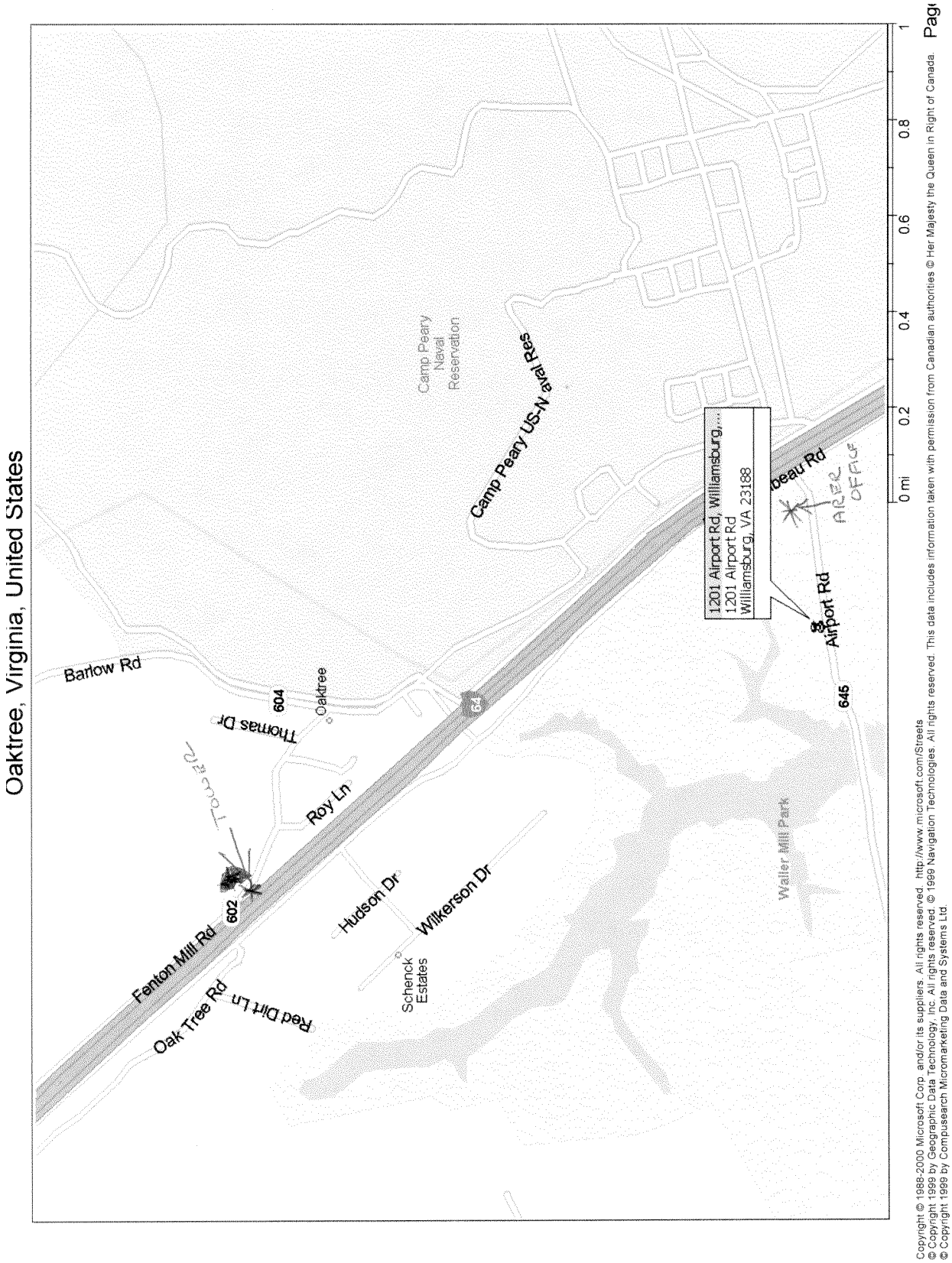
Oaktree, Virginia, United States
Barlow Rd
604
Oaktree
Thomas Dr
Roy Ln
Fenton Mill Rd
602
Hudson Dr
Wilkerson Dr
Schenck Estates
Red Dirt Ln
Oak Tree Rd
Camp Peary Naval Reservation
Camp Peary US-N Naval Res
64
1201 Airport Rd, Williamsburg,...
1201 Airport Rd
Williamsburg, VA 23188
Airport Rd
645
Waller Mill Park
0 mi
0.2
0.4
0.6
0.8
1
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STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**SALEM AREA 40/66**	Latitude	**37-16-36**
Address:	**2713 WEST MAIN STREET**	City, County:	**SALEM,**	Longitude	**80-07-47**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	WIN 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

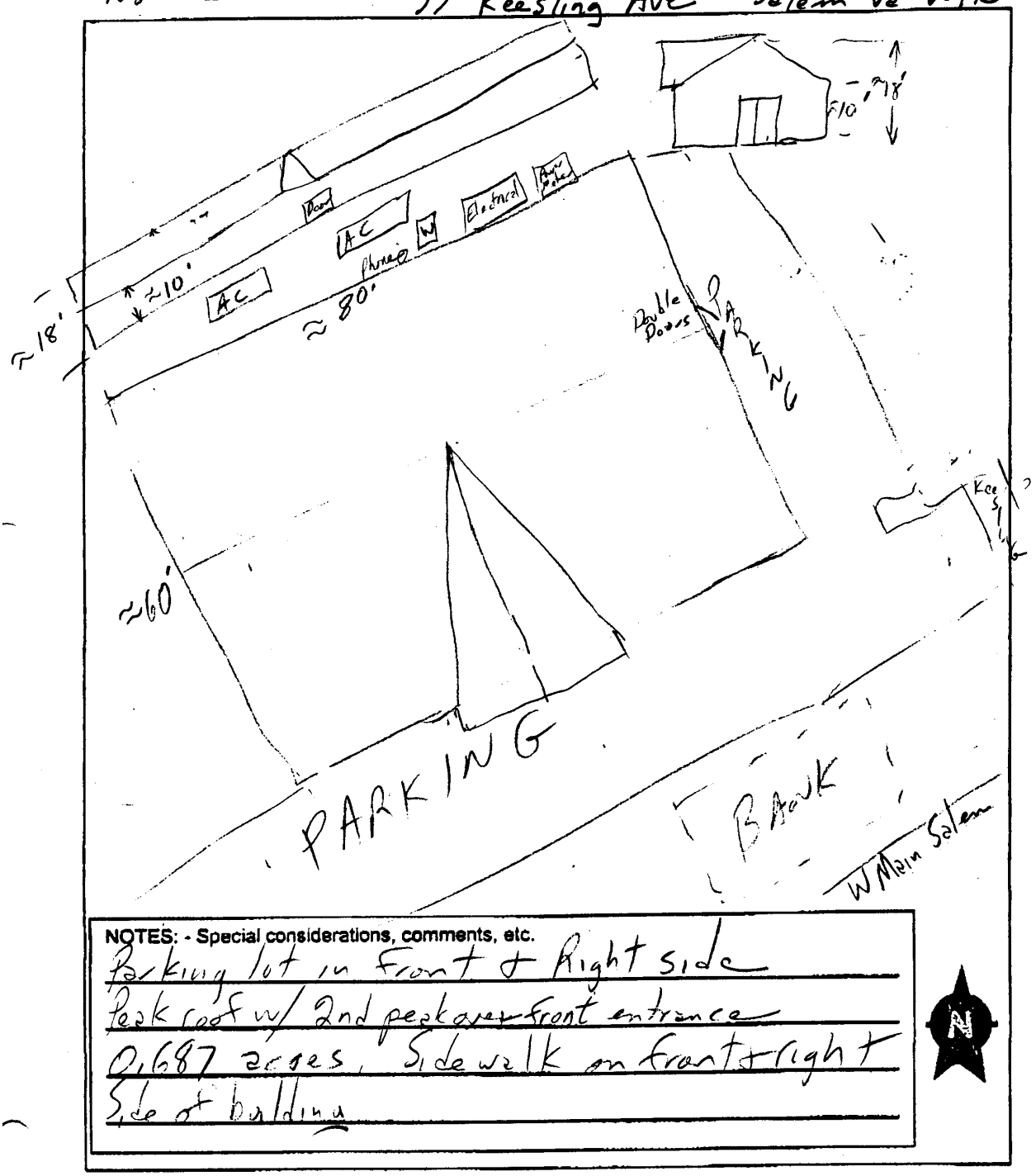
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		18
How many telephone lines service this site?		18
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

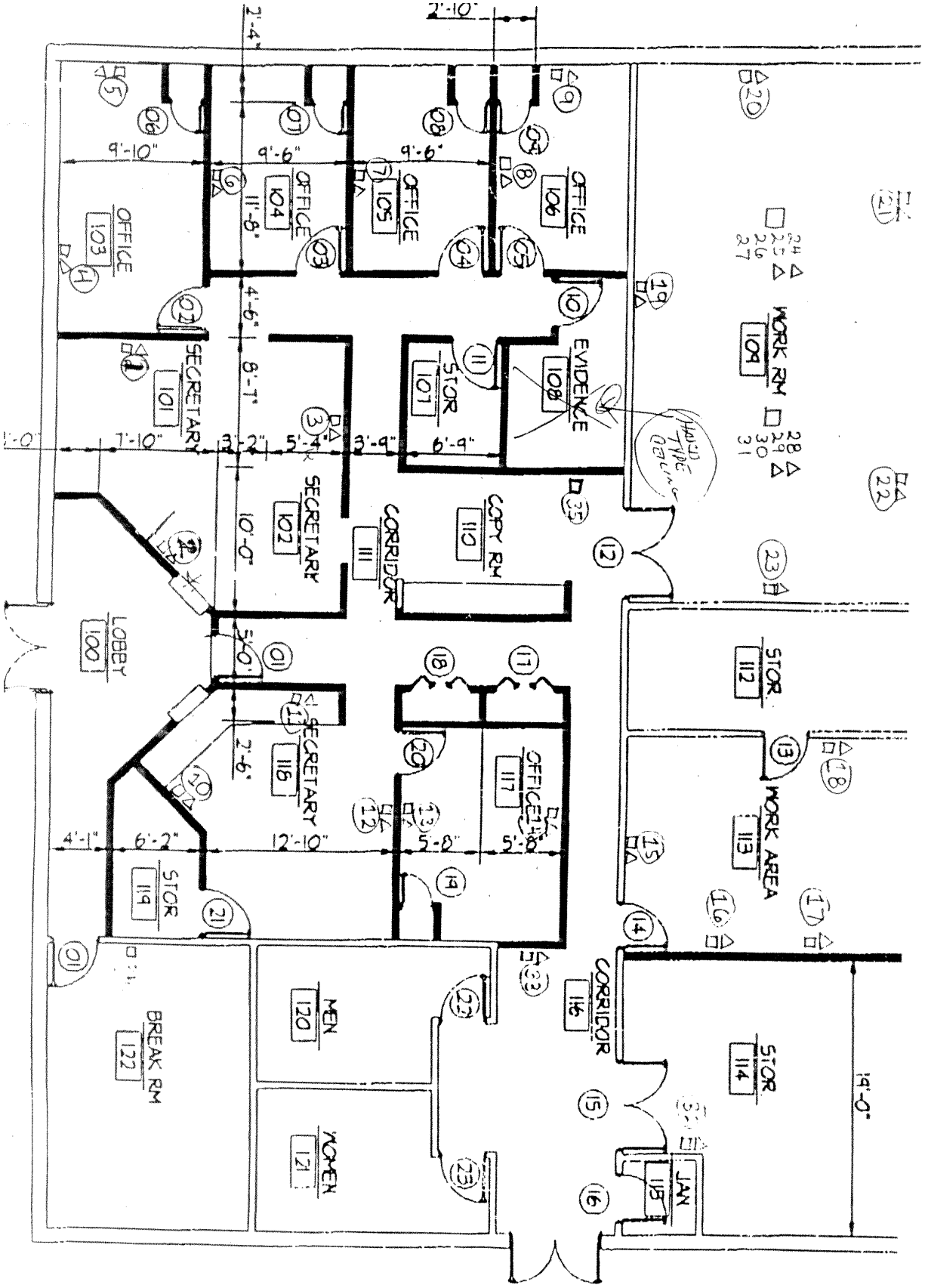
Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- ≈ 18' • Height of building
- ≈80'×60' • Size of building footprint (approximate length, width and orientation to North)
- • Size of area associated with the site that can be used for an antenna tower structure.
- No • Is the area fenced? 99 Keesling Ave Salem VA 24153



NOTES: - Special considerations, comments, etc.

Parking lot in Front & Right side
Peak roof w/ 2nd peak over front entrance
0.687 acres, Sidewalk on front & right
Side of building


OFFICE 103
OFFICE 104
OFFICE 105
OFFICE 106
SECRETARY 101
STOR 107
EVIDENCE 108
WORK RM 109
SECRETARY 102
CORRIDOR 111
COPY RM 110
LOBBY 100
STOR 112
SECRETARY 116
OFFICE 117
WORK AREA 113
STOR 119
CORRIDOR 115
STOR 114
BREAK RM 122
MEN 120
WOMEN 121
JAN 118
9'-10"
9'-6"
9'-6"
11'-8"
4'-6"
8'-7"
7'-10"
3'-2"
5'-4"
3'-9"
6'-9"
10'-0"
5'-0"
2'-6"
4'-1"
6'-2"
12'-10"
5'-8"
5'-8"
14'-0"

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**SPRINGFIELD AREA 48**	Latitude	**38-46-40**
Address:	**6618 FRANCONIA ROAD**	City, County:	**SPRINGFIELD,**	Longitude	**77-10-21**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

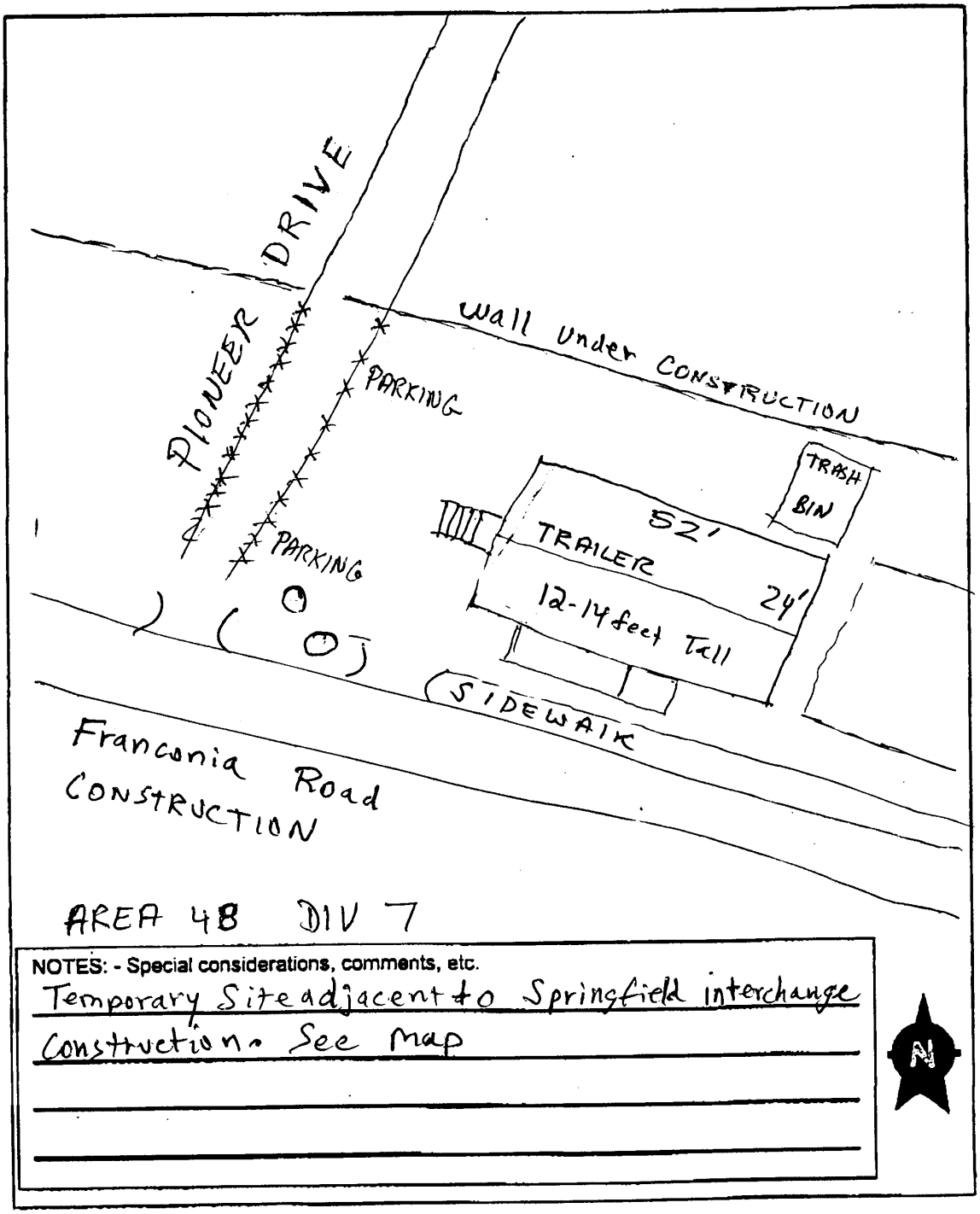
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

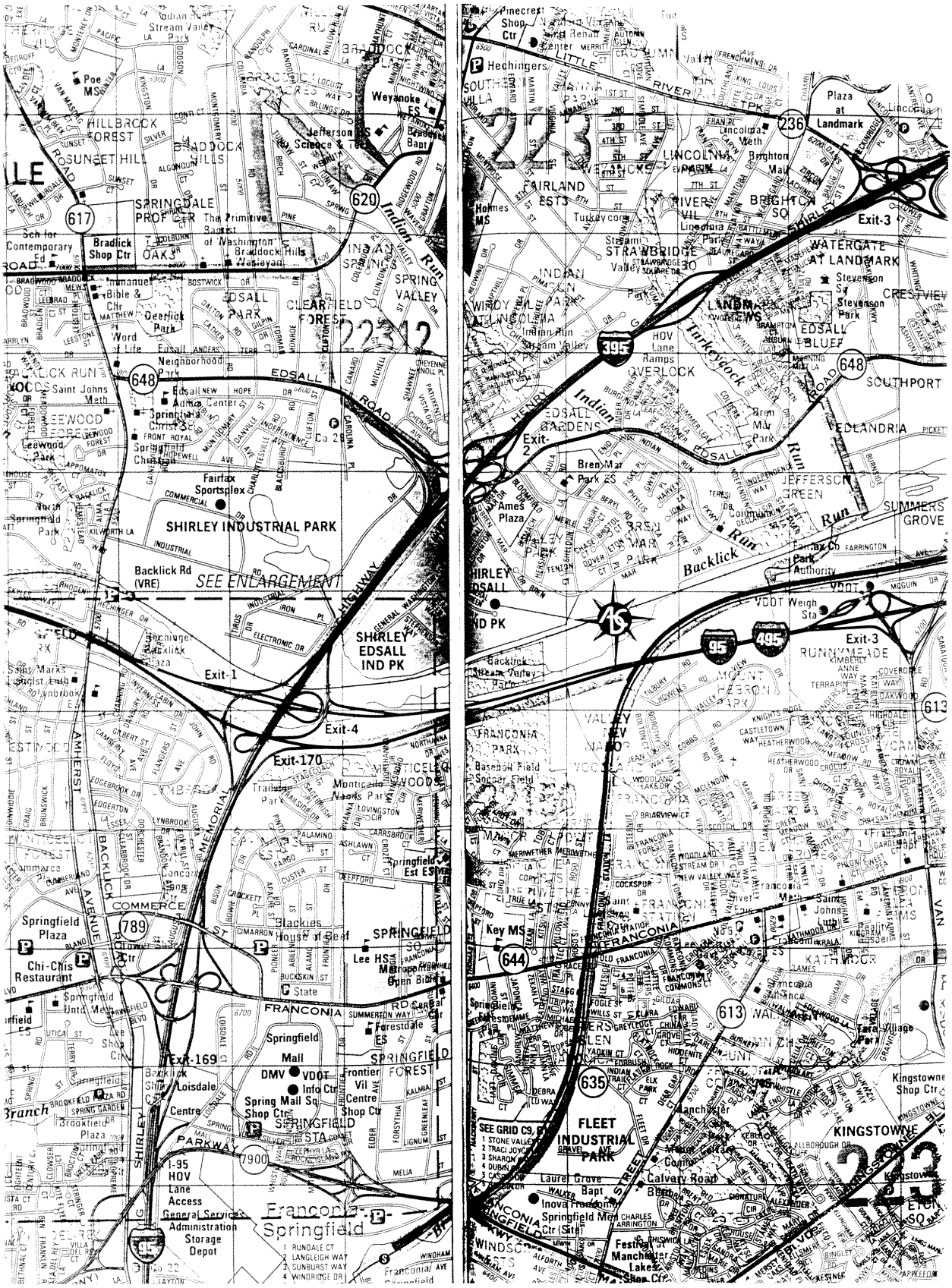
TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		9
How many telephone lines service this site?		9
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?




SHIRLEY INDUSTRIAL PARK
SEE ENLARGEMENT
SHIRLEY EDSALL IND PK
Fairfax Sportsplex
Backlick Rd (VRE)
Exit-1
Exit-4
Exit-170
Exit-169
Exit-2
Exit-3
Springfield Mall
Springfield Plaza
Springfield
Franconia
Franconia-Springfield
Backlick Shop Ctr
Bradlick Shop Ctr
Spring Mall Sq Shop Ctr
Frontier Vil Shop Ctr
Centre
Loisdale
Plaza at Landmark
Brighton Mall
Watergate at Landmark
Stevenson Park
Bren Mar Park
Ames Plaza
Fairfax Co Park Authority
VDOT Weigh Sta
Fleet Industrial Park
Springfield Mem Ctr (Site)
Manchester Lakes
Kingstowne Shop Ctr
Kingstowne
Lee HS
Key MS
Holmes MS
Poe MS
Weyanoke ES
Jefferson Science & Tech
Forestdale ES
Springfield Est ES
Saint Johns Meth
Saint Marks Lutheran
Immanuel Bible Chr
Word of Life
Springfield Christian
Leewood Park
Oakridge
Edsall Park
Oerflot Park
Neighborhood Park
Edsall Admin Center
Ravensworth
Braddock Hills
Sch for Contemporary Ed
Indian Run
Indian Run Stream Valley
Turkeycock Run
Backlick Run
Pinecrest Shop Ctr
Hechingers
Plaza at Landmark
Lincolnia Meth
Brighton Mall
Holmes MS
Turkeycock Run
Stream Valley
Strawbridge Square
Watergate at Landmark
Stevenson Park
Indian Run
Stream Valley
Ames Plaza
Bren Mar Park
Fairfax Co Park Authority
VDOT Weigh Sta
Backlick Stream Valley Park
Basemah Field
Soccer Field
Springfield Mall
Springfield Plaza
Chi-Chis Restaurant
House of Beef
Lee HS
Key MS
Forestdale ES
Springfield Est ES
Saint Johns Meth
Lutheran
Fairfax Co Park Authority
Lara Village Park
Kingstowne Shop Ctr
Kingstowne
Fleet Industrial Park
Laurel Grove Bapt
Calvary Road Bapt
Springfield Mem Ctr (Site)
Inova Fairfax Hosp
Manchester Lakes
Shea Ctr
Franconia
Springfield
Franconia-Springfield
Backlick Rd (VRE)
SEE GRID C9
1 STONE VALLEY CT
2 TRACI JOY CT
3 SHARON CT
4 DUBIN CT
1 RUNDALE CT
2 LANGLEIGH WAY
3 SUNBURST WAY
4 WINDRIDGE DR
I-95 HOV Lane Access
General Services Administration Storage Depot
Springfield Mall
Springfield Plaza
Springfield Christian
Springfield Untd Meth
Springfield Est ES
Forestdale ES
Lee HS
Key MS
Holmes MS
Poe MS
Weyanoke ES
Jefferson Science & Tech
Saint Johns Meth
Saint Marks Lutheran
Immanuel Bible Chr
Word of Life
Leewood Park
Oakridge
Edsall Park
Oerflot Park
Neighborhood Park
Edsall Admin Center
Ravensworth
Braddock Hills
Sch for Contemporary Ed
Indian Run
Indian Run Stream Valley
Turkeycock Run
Backlick Run
Pinecrest Shop Ctr
Hechingers
Plaza at Landmark
Lincolnia Meth
Brighton Mall
Holmes MS
Turkeycock Run
Stream Valley
Strawbridge Square
Watergate at Landmark
Stevenson Park
Bren Mar Park
Ames Plaza
Fairfax Co Park Authority
VDOT Weigh Sta
Backlick Stream Valley Park
Basemah Field
Soccer Field
Springfield Mall
Springfield Plaza
Chi-Chis Restaurant
House of Beef
Lee HS
Key MS
Forestdale ES
Springfield Est ES
Saint Johns Meth
Lutheran
Fairfax Co Park Authority
Lara Village Park
Kingstowne Shop Ctr
Kingstowne
Fleet Industrial Park
Laurel Grove Bapt
Calvary Road Bapt
Springfield Mem Ctr (Site)
Inova Fairfax Hosp
Manchester Lakes
Shea Ctr
Franconia
Springfield
Franconia-Springfield
Backlick Rd (VRE)
SEE GRID C9
1 STONE VALLEY CT
2 TRACI JOY CT
3 SHARON CT
4 DUBIN CT
1 RUNDALE CT
2 LANGLEIGH WAY
3 SUNBURST WAY
4 WINDRIDGE DR
I-95 HOV Lane Access
General Services Administration Storage Depot

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**LOUDON AREA 10**	Latitude	**39-04-29**
Address:	**41904 LOUDON CENTER PLACE**	City, County:	**LEESBURG, LOUDON**	Longitude	**77-33-19**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56 K5 Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		12
How many telephone lines service this site?		4
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

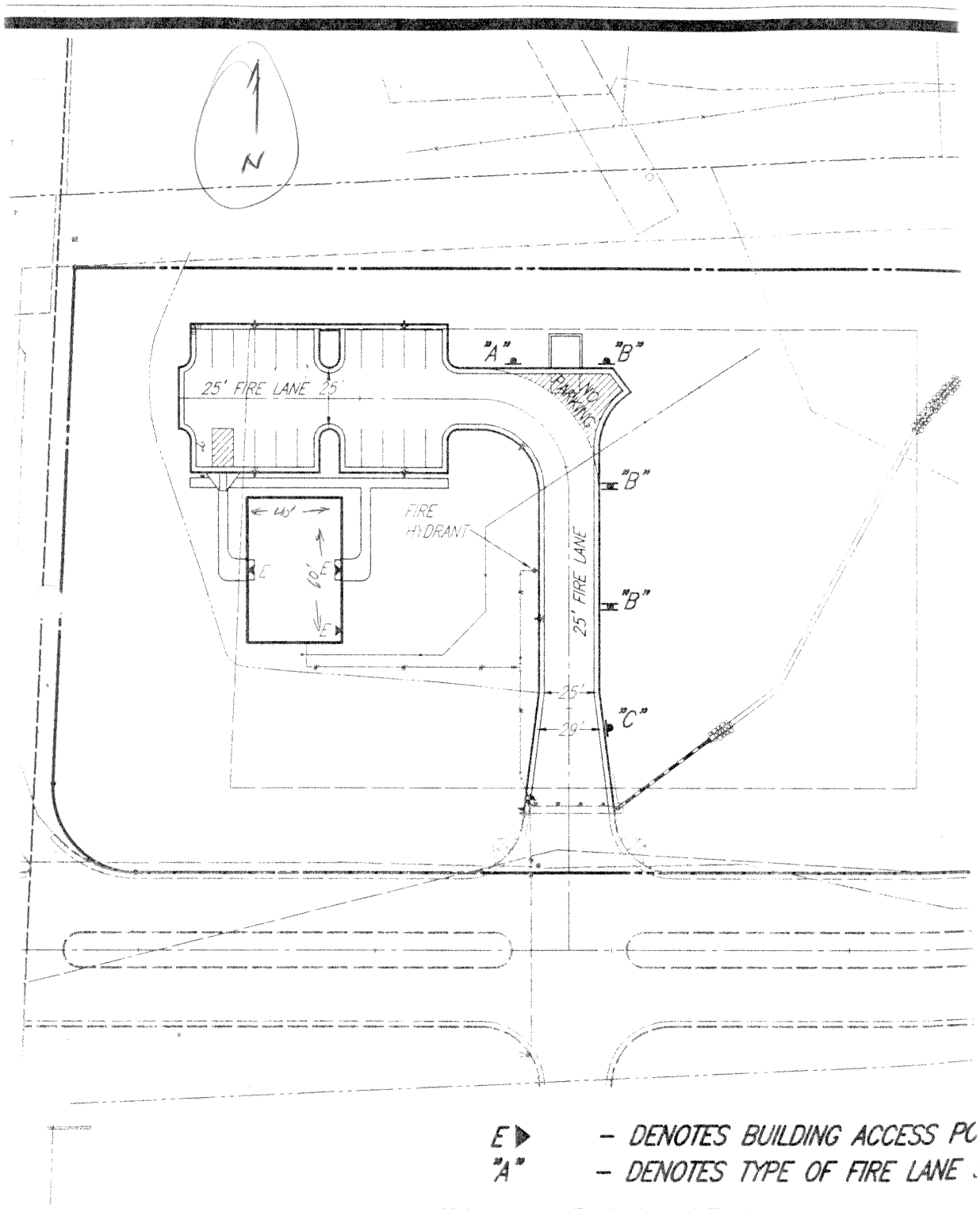
- Height of building - 20'1/2'
- Size of building footprint (approximate length, width and orientation to North) Attach
- Size of area associated with the site that can be used for an antenna tower structure. Attach
- Is the area fenced? NO

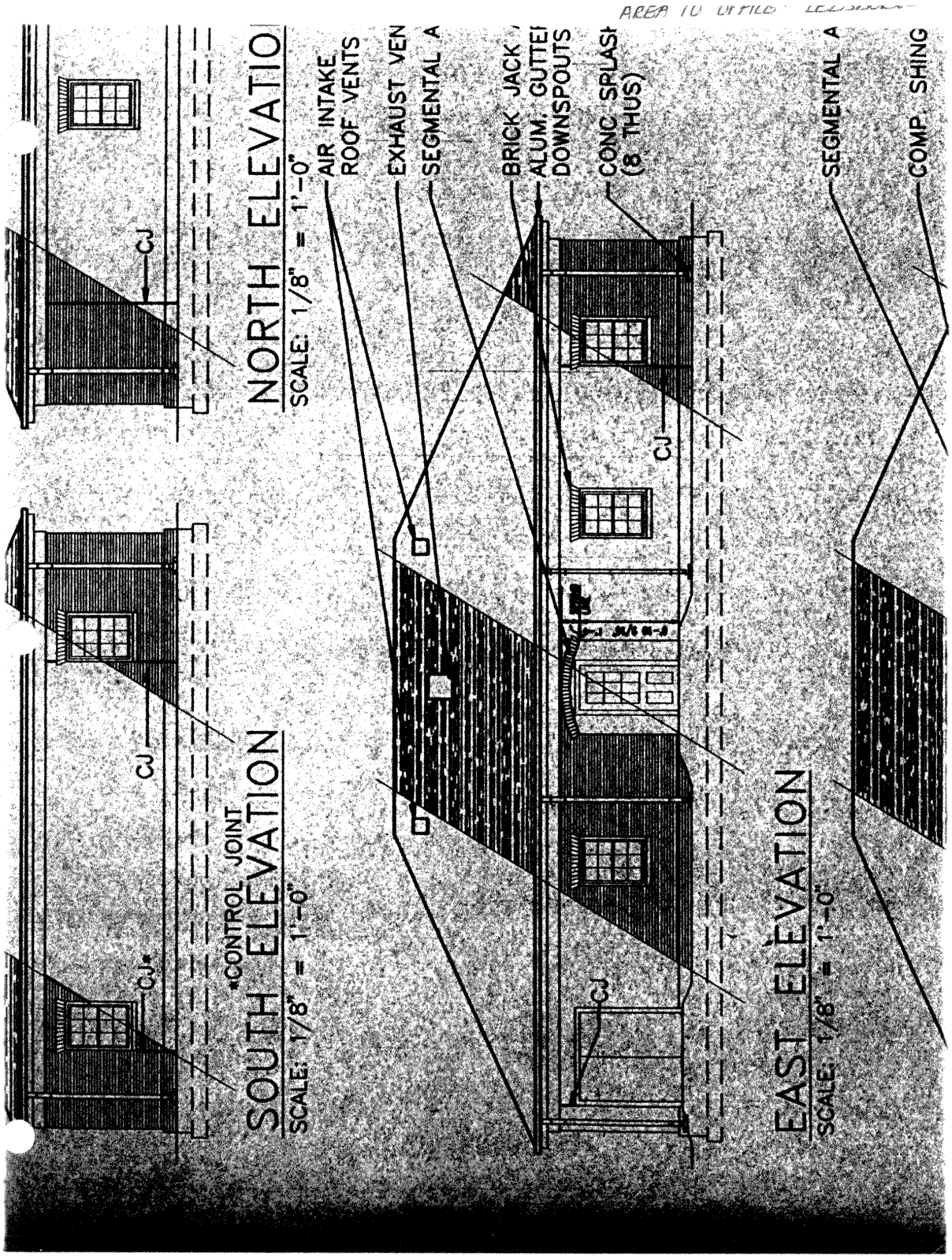
SEE ATTACHED DRAWINGS.

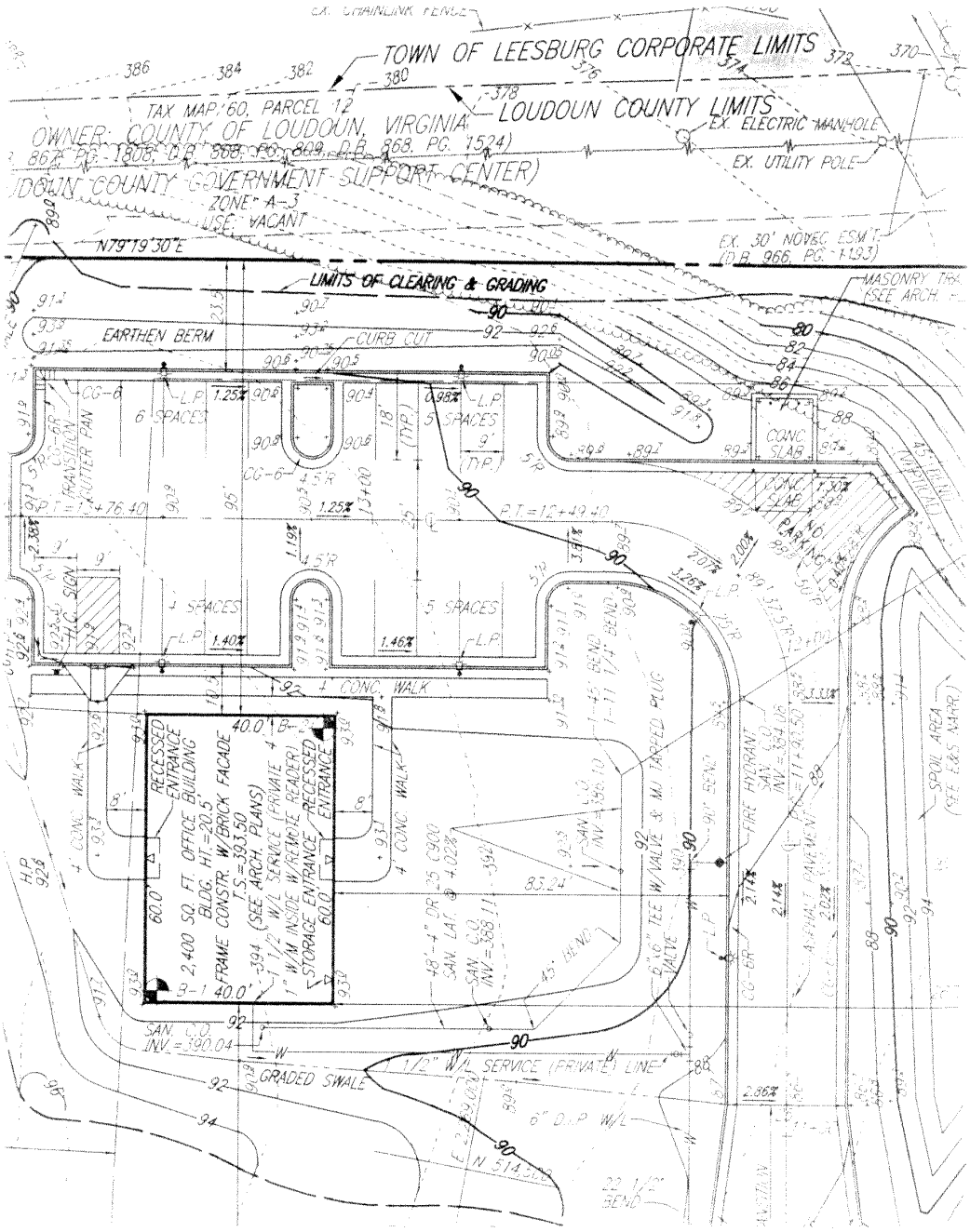
NOTES: - Special considerations, comments, etc.

Adjacent to Leesburg Airport - - - Might impact Antenna tower Height.

H.C. MORGAN


N
"A"
"B"
25' FIRE LANE 25'
NO PARKING
"B"
FIRE HYDRANT
25' FIRE LANE
"B"
25'
29'
"C"
E ▶ – DENOTES BUILDING ACCESS PO
"A" – DENOTES TYPE OF FIRE LANE


NORTH ELEVATION
SCALE: 1/8" = 1'-0"
SOUTH ELEVATION
SCALE: 1/8" = 1'-0"
EAST ELEVATION
SCALE: 1/8" = 1'-0"
*CONTROL JOINT
CJ
CJ*
AIR INTAKE
ROOF VENTS
EXHAUST VEN
SEGMENTAL A
BRICK JACK
ALUM. GUTTE
DOWNSPOUTS
CONC SPLAS
(8' THUS)
SEGMENTAL A
COMP. SHING


TOWN OF LEESBURG CORPORATE LIMITS
LOUDOUN COUNTY LIMITS
TAX MAP 60, PARCEL 12
OWNER: COUNTY OF LOUDOUN, VIRGINIA
(D.B. 868, PG. 1524)
LOUDOUN COUNTY GOVERNMENT SUPPORT CENTER)
ZONE: A-3
USE: VACANT
EX. ELECTRIC MANHOLE
EX. UTILITY POLE
EX. 30' NOV&C ESM'T.
(D.B. 966, PG. 1193)
N79°19'30"E
LIMITS OF CLEARING & GRADING
EARTHEN BERM
CURB CUT
CONC. SLAB
MASONRY THR
(SEE ARCH.
P.I. = 1+76.40
P.I. = 12+49.40
5 SPACES
4 SPACES
1 CONC. WALK
RECESSED ENTRANCE
2,400 SQ. FT. OFFICE BUILDING
HT.=20.5'
FRAME CONSTR. W/BRICK FACADE
T.S.=393.50
(SEE ARCH. PLANS)
STORAGE ENTRANCE
RECESSED ENTRANCE
60.0'
40.0'
FIRE HYDRANT
SAN. MH
INV.=384.06
SAN. C.O.
INV.=390.04
1" W/M INSIDE W/REMOTE READER
1 1/2" W/L SERVICE (PRIVATE)
1 1/2" W/L SERVICE (PRIVATE) LINE
GRADED SWALE
6" D.I.P. W/L
SPOIL AREA
(SEE E&S MAP)
ASPHALT PAVING
PARKING
HANDICAP SIGN
CONC. WALK
CG-6
CG-6A
CG-6B
TRANSITION
GUTTER PAN
1.25%
1.40%
1.46%
1.19%
2.38%
3.26%
2.00%
3.33%
2.86%
2.14%
2.17%
2.02%
18' (TYP.)
9' (TYP.)
85.24'
45.00'
22 1/2° BEND
90° BEND
45° BEND
TEE W/VALVE & MJ TAPPED PLUG
VALVE
H.P.
4.5'R
5'R

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**MANASSAS AVIATION UNIT**	Latitude	**38-43-36**
Address:	**10511 TERMINAL ROAD**	City, County:	**MANASSAS, PRINCE WILLIAM**	Longitude	**77-30-50**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	5
Is there a server at this site?	Yes / (No)
What operating systems are used on this server?	WIN 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☐ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56K Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

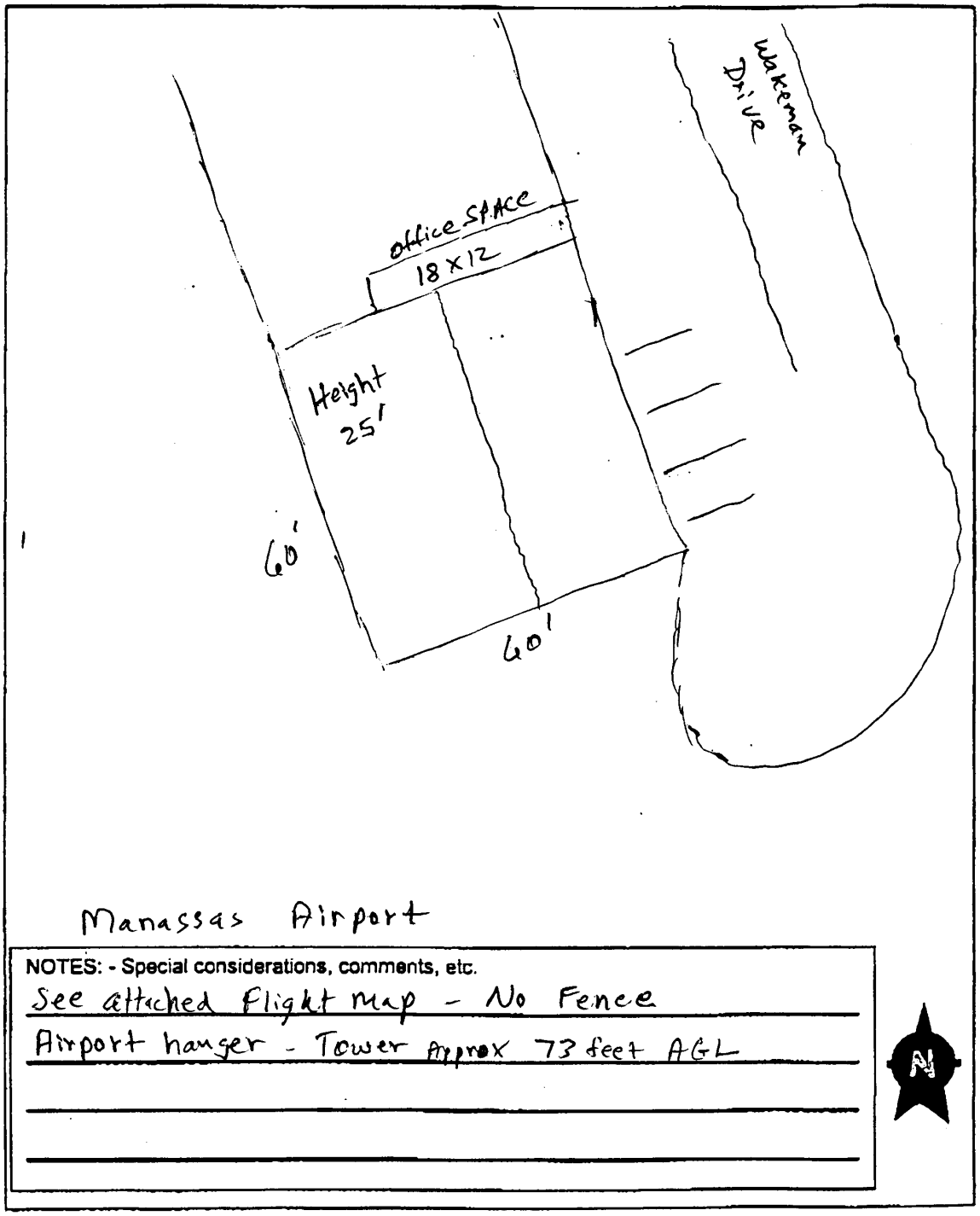
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		6
How many telephone lines service this site?		3
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

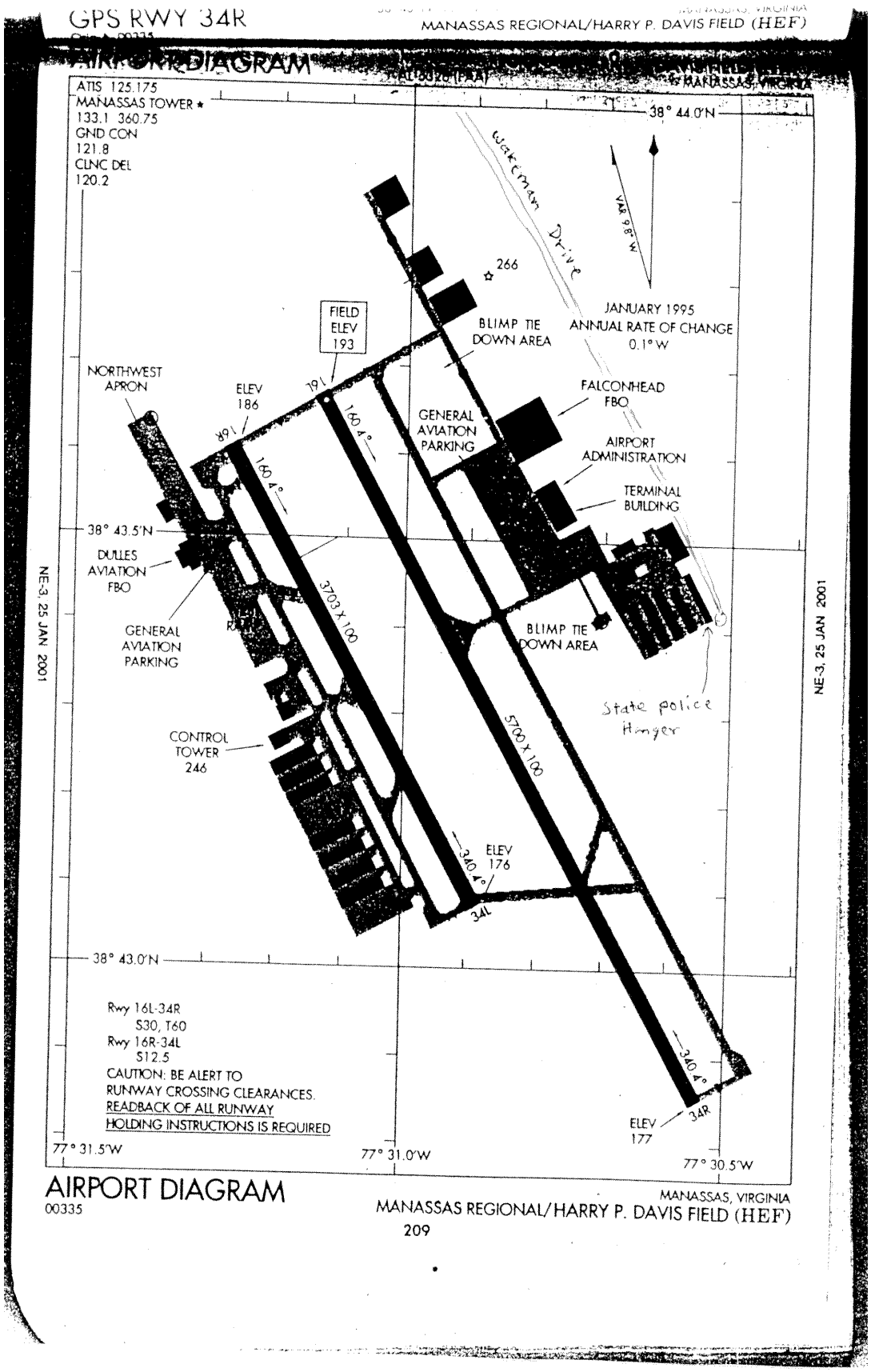
- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

See attached Flight Map - No Fence

Airport hanger - Tower Approx 73 feet AGL


GPS RWY 34R
MANASSAS REGIONAL/HARRY P. DAVIS FIELD (HEF)
AIRPORT DIAGRAM
ATIS 125.175
MANASSAS TOWER
133.1 360.75
GND CON
121.8
CLNC DEL
120.2
38° 44.0'N
Walkerman Drive
266
JANUARY 1995
ANNUAL RATE OF CHANGE
0.1°W
FIELD ELEV 193
BLIMP TIE DOWN AREA
NORTHWEST APRON
ELEV 186
191
189
160.4°
GENERAL AVIATION PARKING
FALCONHEAD FBO
AIRPORT ADMINISTRATION
TERMINAL BUILDING
38° 43.5'N
DULLES AVIATION FBO
GENERAL AVIATION PARKING
3703 X 100
BLIMP TIE DOWN AREA
State police Hanger
CONTROL TOWER 246
5700 X 100
ELEV 176
340.4°
34L
38° 43.0'N
Rwy 16L-34R
S30, T60
Rwy 16R-34L
S12.5
CAUTION: BE ALERT TO
RUNWAY CROSSING CLEARANCES.
READBACK OF ALL RUNWAY
HOLDING INSTRUCTIONS IS REQUIRED
ELEV 177
34R
77° 31.5'W
77° 31.0'W
77° 30.5'W
NE-3, 25 JAN 2001
AIRPORT DIAGRAM
00335
MANASSAS, VIRGINIA
MANASSAS REGIONAL/HARRY P. DAVIS FIELD (HEF)
209

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**INTERNAL AUDITORS**	Latitude	**37-29-51**
Address:	**8012 MIDLOTHIAN TURNPIKE**	City, County:	**RICHMOND, CHESTERFIELD**	Longitude	**77-32-41**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	16
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		#19
How many telephone lines service this site?		19
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

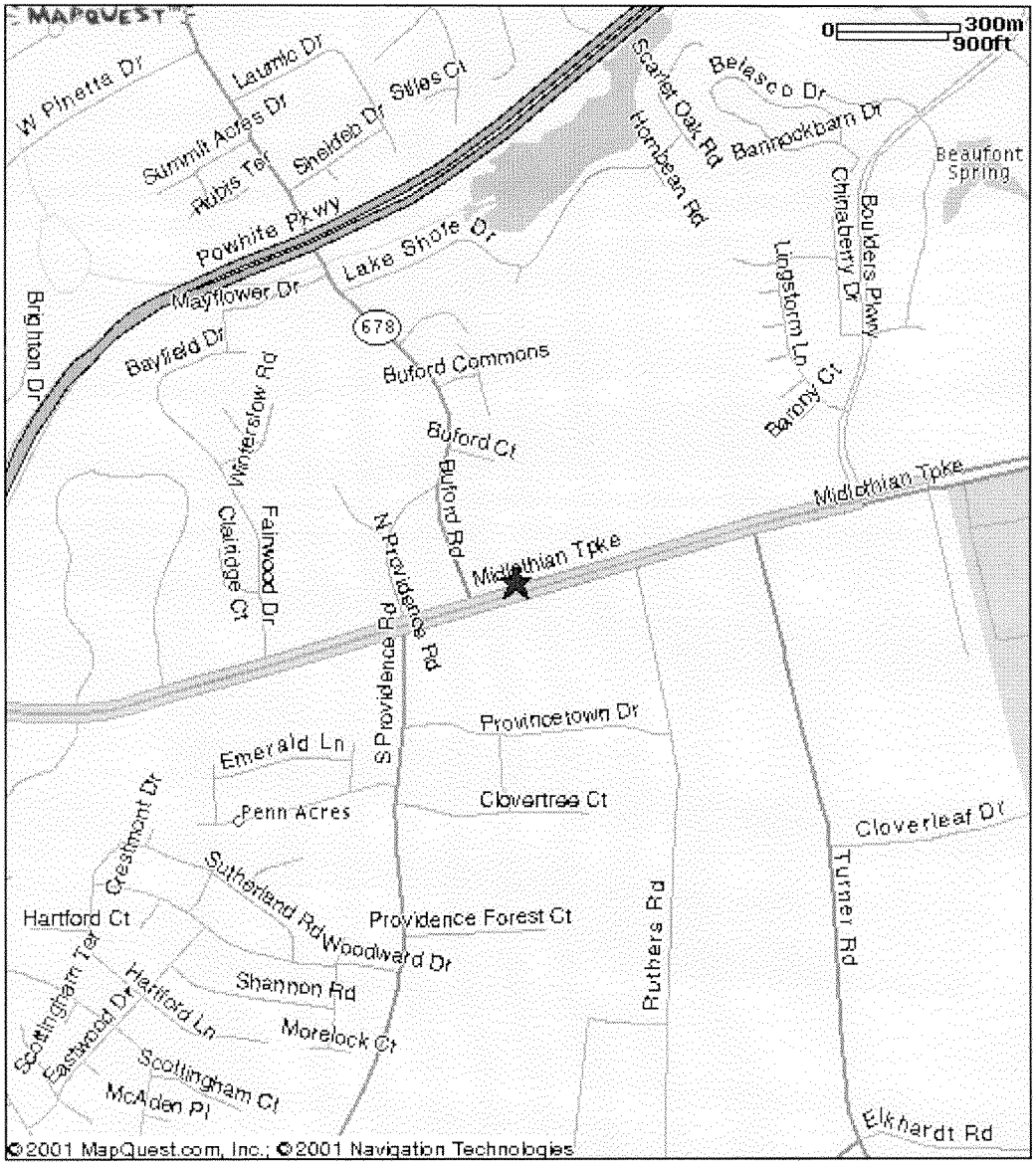
Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

Leased office space on office building. Spread spectrum application. Site is .3 mile from SPHQ. Tower would have to be a roof top mount.

NOTES: - Special considerations, comments, etc.

8012 MIDLOTHIAN TPKE, RICHMOND, VA, 23235-5232, US



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**BCI AUTO THEFT MOOREFIELD**	Latitude	**37-30-01**
Address:	**719 TWIN RIDGE LANE**	City, County:	**RICHMOND, CHESTERFIELD**	Longitude	**77-32-57**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	3
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	WIN 98
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

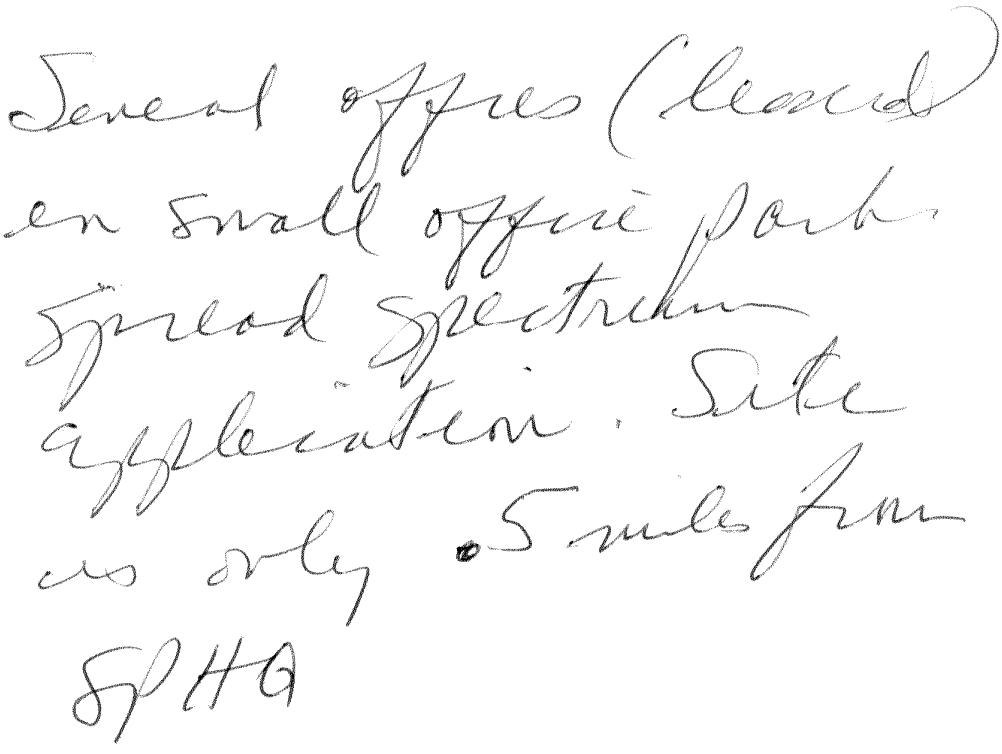
Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		5
How many telephone lines service this site?		5
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

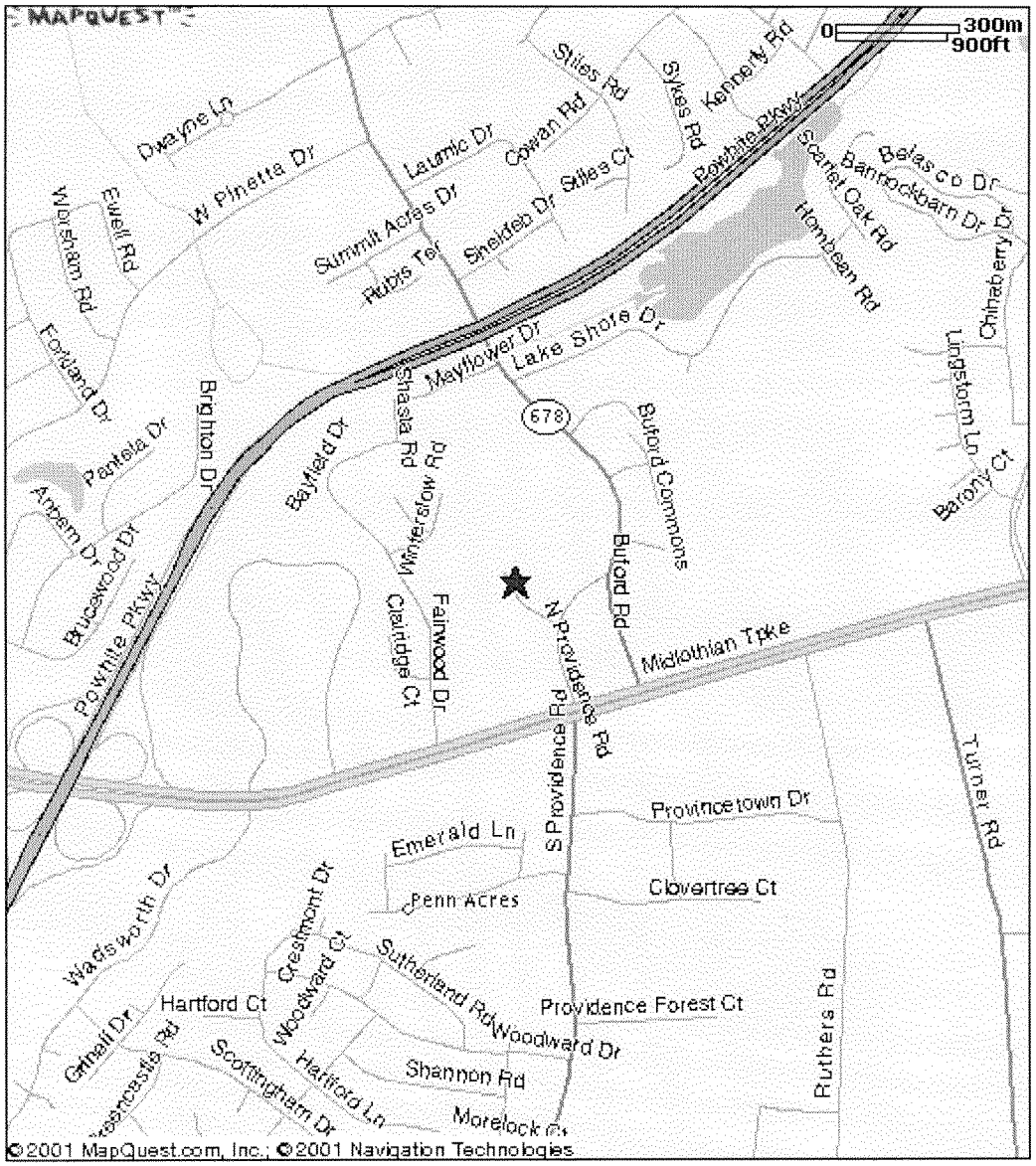
Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?



NOTES: - Special considerations, comments, etc.

719 TWINRIDGE LN, RICHMOND, VA, 23235-5270, US



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**SAFETY DIVISION**	Latitude	**37-29-50**
Address:	**491 SOUTHLAKE BOULEVARD**	City, County:	**RICHMOND, CHESTERFIELD**	Longitude	**77-36-20**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	20
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		27
How many telephone lines service this site?		20
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

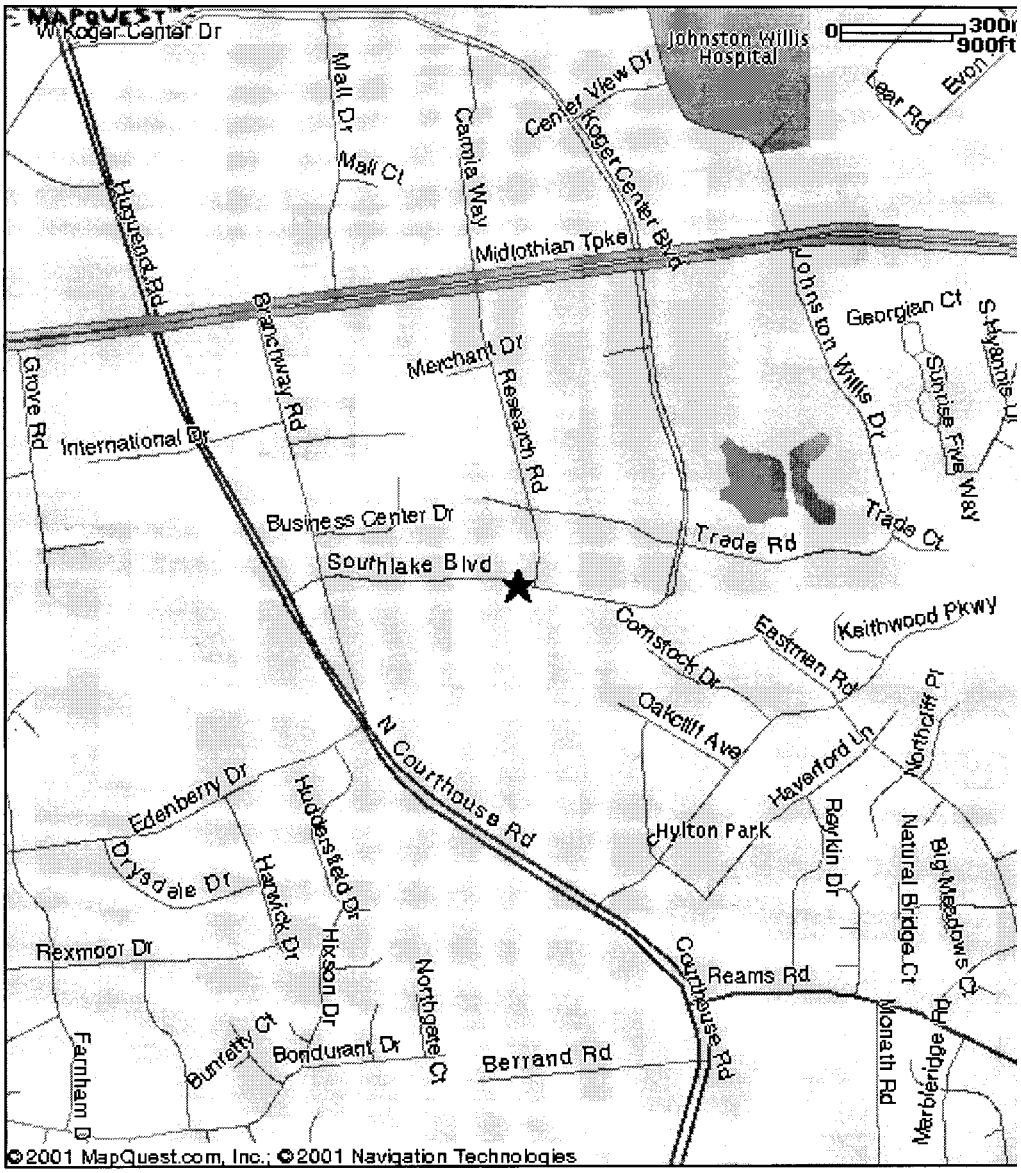
Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

Leased office building in office complex. Small tower may be erected at rear of building for spread spectrum application

NOTES: - Special considerations, comments, etc.

491 SOUTHLAKE BLVD, RICHMOND, VA, 23236-3044, US



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	**ST POLICE**	Site Name:	**AVIATION DIVISION**	Latitude	**37-24-22**
Address:	**7411 AIRFIELD DRIVE**	City, County:	**RICHMOND, CHESTERFIELD**	Longitude	**77-31-14**
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	6
Is there a server at this site?	Yes (No)
What operating systems are used on this server?	Win 98, 95
Is this server used for applications or data?	Applications / Data / Both
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☑ Other Access provided (please describe 56Kb Frame Relay)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		18
How many telephone lines service this site?		8
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / (No)
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

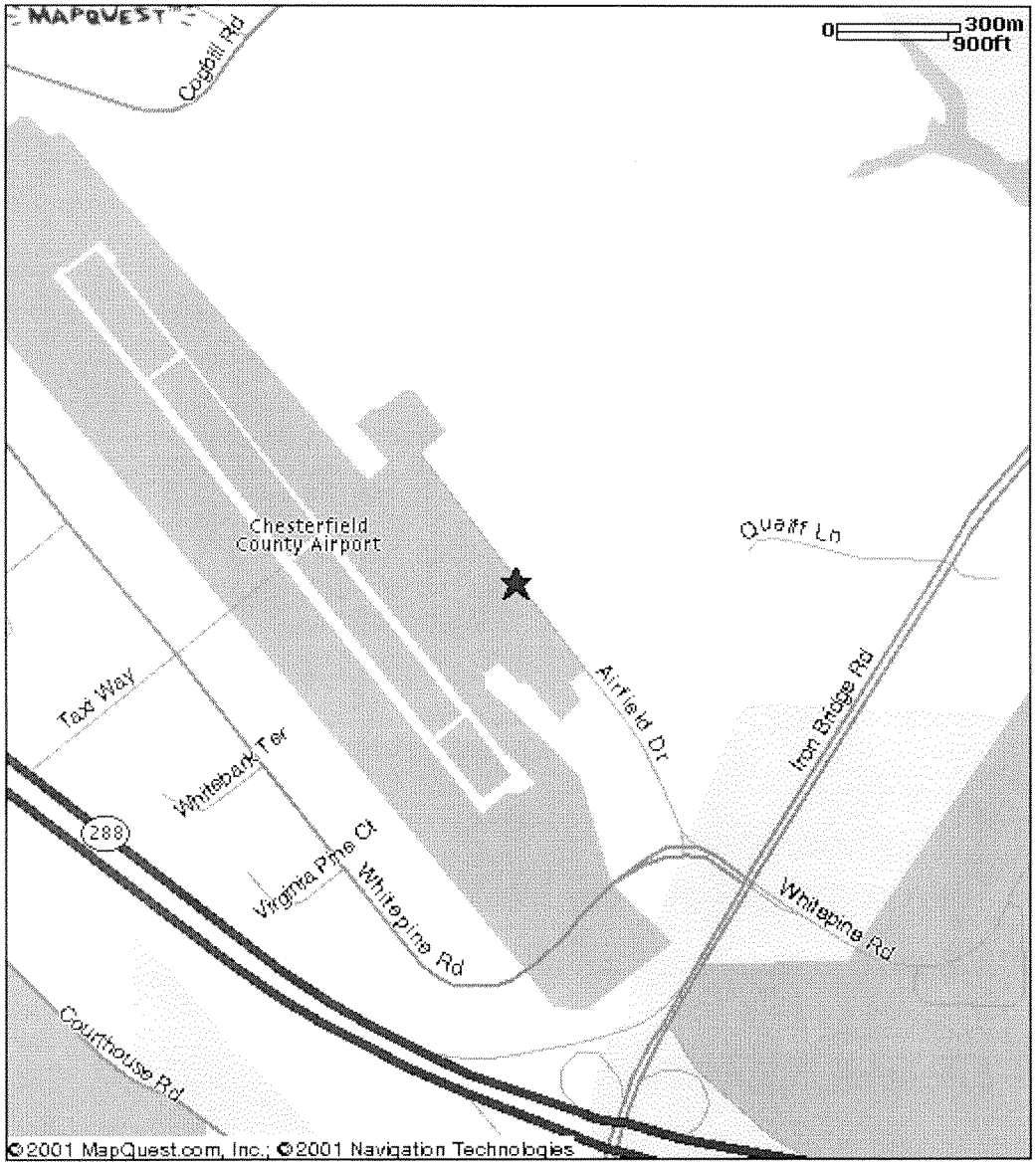
Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

This is an airplane hanger and adjacent offices at Chesterfield Airport. No tower can be erected.

NOTES: - Special considerations, comments, etc.

7411 AIRFIELD DR, RICHMOND, VA, 23237-2250, US



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	ST POLICE	Site Name:	BCI ~~[illegible]~~ MOOREFIELD	Latitude	37-29-52
Address:	~~8[illegible]~~ MOOREFIELD PARK 808	City, County:	RICHMOND, CHESTERFIELD	Longitude	77-34-13
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	50
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	WIN 98
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	(Yes) / No

This site has LAN/WAN connectivity via (check one):

- ☐ Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here _____
- ☐ Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- ☑ ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- ☐ Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- ☐ Other Access provided (please describe _____)
- ☐ No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- ☐ Microwave connection to existing VSP microwave network
- ☑ No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		88
How many telephone lines service this site?		7100
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		Yes / (No)
SITE INFORMATION		
Is this site served by a back-up power source?		Yes / (No)
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		NONE
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

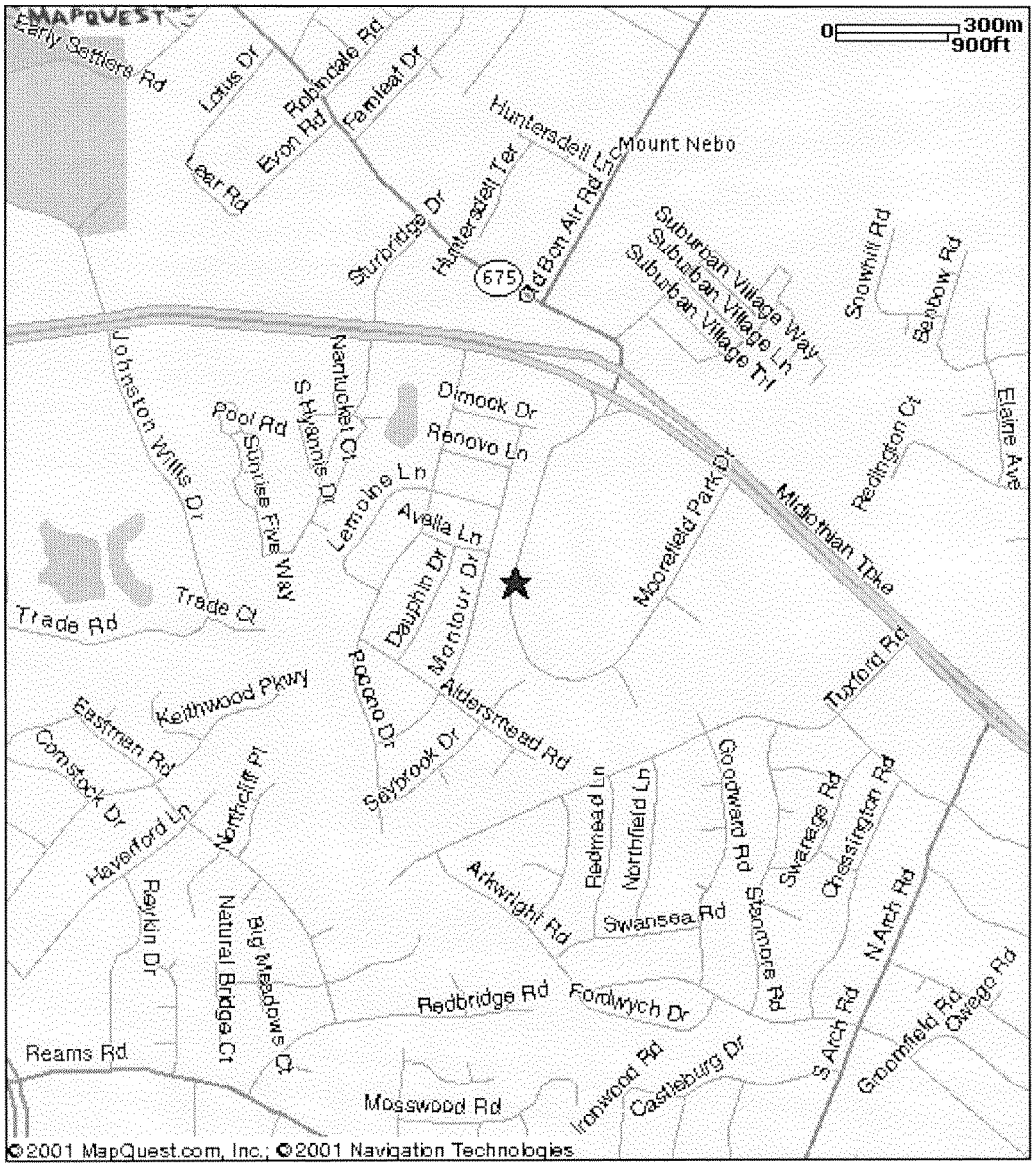
Please provide a simple sketch of your physical site below. If you have a site layout, please provide a copy. Important information to include:

- Height of building
- Size of building footprint (approximate length, width and orientation to North)
- Size of area associated with the site that can be used for an antenna tower structure.
- Is the area fenced?

This is a office complex
≈ 1.5 miles from SPHQ.
State Police has one entire
floor of this building.
No tower could be
built, but small non
top tower for spread
spectrum application

NOTES: - Special considerations, comments, etc.

808 MOOREFIELD PARK DR, RICHMOND, VA, 23236-3683, US



STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	BRISTOL DISTRICT	Latitude
Address:	870 BONHAM ROAD	City, County:	BRISTOL, WASHINGTON	Longitude
Contact Person	John Puzenski	e-mail		
		Telephone	540 669-9962	

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	~~BONH~~ 150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3 45mBps
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- YES [X] Microwave connection to existing VSP microwave network
- [X] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	SALEM DISTRICT	Latitude 37-17-00
Address:	731 HARRISON AVE	City, County:	SALEM, SALEM CITY	Longitude 80-03-22
Contact Person		e-mail		
		Telephone		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3 45mBps
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [X] Microwave connection to existing VSP microwave network
- [ ] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	LYNCHBURG DISTRICT	Latitude 37-22-30
Address:	4219 CAMPBELL AVE	City, County:	LYNCHBURG, CAMPBELL	Longitude 79-80-00
Contact Person		e-mail		
		Telephone		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3 45mBps
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [X] Microwave connection to existing VSP microwave network
- [ ] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	RICHMOND DISTRICT	Latitude 37-17-21
Address:	2400 PINE FOREST DRIVE	City, County:	COLONIAL HEIGHTS,	Longitude 77-24-10
Contact Person		e-mail		
		Telephone		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3 45mBps
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [X] Microwave connection to existing VSP microwave network
- [ ] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		FCC ASR 1041313 unk
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		guyed
Height		205'
Approximate Age		20 yrs
Location	Latitude	37 17 21
	Longitude	77 24 10
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

Base antenna VDOT Low Band
VSP-microwave
3 cellular banks, Alltel, PrimeCo, Sprint

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	HAMPTON ROADS DISTRICT	Latitude	36-45-16
Address:	1700 N. MAIN STREET	City, County:	SUFFOLK, SUFFOLK CITY	Longitude	76-34-54
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [ ] Microwave connection to existing VSP microwave network
- [X] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	FREDERICKSBURG DISTRICT	Latitude	38-18-30
Address:	87 DEACON ROAD	City, County:	FREDERICKSBURG,	Longitude	77-27-15
Contact Person		e-mail			
		Telephone			

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [X] Microwave connection to existing VSP microwave network
- [ ] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		Yes / No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	CULPEPPER DISTRICT	Latitude 38-29-55
Address:	1601 ORANGE ROAD	City, County:	CULPEPER, CULPEPER CITY	Longitude 77-59-50
Contact Person		e-mail		
		Telephone		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data / (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here 1053
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [X] Microwave connection to existing VSP microwave network
- [ ] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	STAUNTON DISTRICT	Latitude 38-09-37
Address:	COMMERCE ROAD	City, County:	STAUNTON, STAUNTON CITY	Longitude 79-02-50
Contact Person		e-mail		
		Telephone		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) / No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [ ] Microwave connection to existing VSP microwave network
- [X] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) / No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

STARS Microwave Intranet Access
System Load and Bandwidth Overview

Agency:	VDOT	Site Name:	NORTHERN VA DISTRICT	Latitude 38-54-27
Address:	14685 AVION PKWY	City, County:	CHANTILLY, FAIRFAX	Longitude 77-27-11
Contact Person		e-mail		
		Telephone		

INTRANET CONNECTIVITY

How many computers are in use at this site? (Include in this count any computers that will be connected to the Intranet. Computers that will not be connected to the intranet should not be included.)	150
Is there a server at this site?	(Yes) No
What operating systems are used on this server?	
Is this server used for applications or data?	Applications / Data (Both)
Is there a router at this site?	Yes / No

This site has LAN/WAN connectivity via (check one):

- [X] Fiber Optic, leased line, multiple T1 / DS1 or other high-speed access (3.152 mBps or higher). Please indicate the number of T1/DS1 lines here DS3
- [ ] Fiber Optic, leased line, single T1 / DS1 or other high-speed access (1.544 mBps).
- [ ] ISDN, fractional T1 (128 kBps, ½T1 – 772 kBs, ¼T1 – 386 kBs).
- [ ] Dial-up access via modem (either networked or attached to individual computers via 56KBps or slower – standard analog).
- [ ] Other Access provided (please describe _____)
- [ ] No LAN/WAN access is available at this site.

MICROWAVE CONNECTIVITY

Please indicate which of the following services are available at this site (check one)

- [ ] Microwave connection to existing VSP microwave network
- [X] No microwave service currently at this site

Is there a location for microwave equipment? (Note: This area should be located away from computer equipment. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose. Location may be inside the existing building or in an outside structure.)	(Yes) No

TELEPHONE CONNECTIVITY		
How many telephones are located at this site?		300
How many telephone lines service this site?		
Is this site served by a Private Branch Exchange (PBX) / Key Telephone System (KTS)?		(Yes) / No
SITE INFORMATION		
Is this site served by a back-up power source?		(Yes) / No
If an emergency generator exists at this site, please provide the following	Fuel	Diesel / Propane
	Power Output (Kw)	
Is there a location for computer equipment? (Note: This area should be away from the microwave equipment and should be within 500' of the server. This area must be environmentally controlled, secure, and consist of at least 4' x 4' designated for this purpose.)		(Yes) / No
EXISTING TOWER INFORMATION		
Make or Model		none
Type: (i.e. self supporting, guyed, wooden pole, attached to other structure, other)		
Height		
Approximate Age		
Location	Latitude	
	Longitude	
	Datum (NAD 27 or NAD 83)	

Please describe any other radio and microwave tenants on this tower. (Use Additional Sheets if necessary).

* No sketches were sent by VDOT for this assignment. *

APPENDIX K

Commonwealth of Virginia
RF Radiation Exposure
Compliance Plan

for

Building- and Tower-based Antenna Sites,
Mobiles and Maintenance

April 1, 2000

Commonwealth of Virginia
Department of Information Technology
110 South Seventh Street - Third Floor
Richmond, Virginia 23219

Commonwealth of Virginia RF Radiation Exposure Compliance Plan

for

Building- and Tower-based Antenna Sites,
Mobiles and Maintenance

Introduction

This document describes the Commonwealth of Virginia's action plan to comply with the Federal Communications Commission's (FCC) human exposure to Radio Frequency (RF) energy regulations. In this document the Commonwealth of Virginia has relied heavily on a Personal Communications Industry Association (PCIA) paper entitled, *Priority Actions for Timely Compliance - Safety Measures for Building-based Antenna Sites (November 1997);* FCC Dockets 96-326, 96-487, 97-303; the FCC Rules and Regulations; the FCC's *OET Bulletin No. 65*; *A Practical Guide to the Determination of Human Exposure to Radiofrequency Fields*, by the National Council on Radiation Protection and Measurements; and, the viewpoints of experts in the industry, to develop a straightforward and understandable plan that will assure the Commonwealth of Virginia's compliance with applicable FCC regulations.

The FCC environmental regulations are written in terms of limitations on human *exposure* to RF fields *for specific time periods*. The standards do not limit maximum levels of RF energy; they only limit the amount of time that an individual can remain in fields above prescribed levels. As such, compliance is predicated on limiting the duration of human exposure to RF fields (for both workers and the general public) that result from the operation of FCC-licensed wireless systems. (*See*, 47 CFR § 1.1310.)

This plan addresses a range of effective measures that can be taken to assure that neither workers nor the public are subject to RF exposures above the FCC-specified levels. Although taking such actions may not always obviate the need to measure RF fields or to model predicted RF fields for facilities that are not "categorically excluded," the procedures will provide substantial assurance that a facility does comply with the FCC's RF exposure regulations.[1]

The procedures described herein are to be employed at all radio transmitting sites that the Commonwealth of Virginia owns or manages. At sites not owned/managed by the Commonwealth of Virginia, but at which the Commonwealth of Virginia has transmitting equipment; the guidelines in this Plan are likewise to be implemented to the extent possible unless superseded by acceptable site plans developed by the actual owners/managers of the sites or other FCC licensees at the sites. It is the Commonwealth of Virginia's policy to cooperate fully with other licensees at sites to assure site compliance and to maximize the number of its sites that are "categorically excluded" from routine environmental evaluations.

[1] Requirements for categorical exclusion can be found on pages 26-28 of this document (FCC rules, Section 1.1307(b)(1)).

Commonwealth of Virginia

Safety Measures for Building- and Tower-based Antenna Sites,
Mobiles and Maintenance

Table of Contents

Background

The human radio frequency (RF) exposure guidelines adopted by the FCC are the baseline regulatory requirements for FCC-licensed services. The guidelines have also been adopted by the US Department of Labor - Occupational Safety and Health Administration (OSHA). Electromagnetic radiation is generally treated under OSHA's rules and regulations, Part 29, relating to hazardous materials. The guidelines set specific limits on the duration of human exposure to radio frequency energy as well as require rigorous compliance requirements for certification of transmitting facilities.

Commercial and private mobile radio service (CMRS and PMRS) providers and operators are required to bring their transmitter facilities in compliance with the revised FCC exposure guidelines no later than September 1, 2000, at the time of installation of a new station, or at the time of license renewal or major license modification. At multiple antenna sites, any licensee at the site that passes one of the milestones may trigger site-wide compliance. A number of the Commonwealth of Virginia's sites may be required to be in compliance before September 1, 2000, as other triggering events may occur first.

Using the general approach suggested by PCIA, the compliance options have been divided into five separate components. Each of the components is considered separately, but actual site compliance may involve a combination of actions. The five components proposed by PCIA are:

1. **Access Management**
2. **Personnel Management and Training**
3. **Identification of Problem Areas**
4. **Site Policies for Worker Safety**
5. **RF Mitigation Measures**

IMPORTANT: This document provides practical information for bringing antenna sites into compliance with the FCC RF exposure standards. Due to the complexity of the issue, this Plan cannot cover every aspect and every situation. Source documents from the FCC should be reviewed and studied to obtain a more complete picture of RF exposure requirements. (*See,* FCC Dockets 96-326, 96-487, 97-303; the FCC Rules and Regulations; and, FCC *OET Bulletin No. 65.)* There may also be other measures and approaches that may be effective in assuring that RF exposures do not exceed the applicable FCC limits. Alternative procedures should be coordinated with the Radio Engineer of the Commonwealth of Virginia's Department of Information Technology, 110 South Seventh Street, Third Floor, Richmond, Virginia. 23219, phone (804) 371-5580.

FCC Requirements

On October 15, 1997, the FCC imposed a series of new requirements on licensees of radio transmitting facilities designed to limit human exposure to radio frequency energy. The FCC defined permissible exposure limits in terms of two broad categories.

Accessible/Uncontrolled Areas: Areas in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Occupational/Controlled Areas: Areas in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

For each area, the FCC specified levels of RF fields, based on the frequency (wavelength) of the signal, above which exposure times must be limited. To determine how to comply with these regulations, it is important to understand the nature of the health hazard. Radio frequency energy in the wavelengths used for two-way land mobile radio and paging services is "non-ionizing" radiation. Unlike ionizing radiation (x-rays or nuclear energy), which has sufficient energy to dislodge electrons from atoms and cause permanent molecular damage, non-ionizing radiation merely induces heating of the cells in the body. As long as the heating is not excessive, no cell damage will occur.

The amount of cell heating is proportional to several factors: 1) the level of the radio frequency energy, 2) the wavelength of the energy (the body more readily absorbs some wavelengths, as opposed to other wavelengths), and 3) the duration of the time one is exposed to that energy. To keep heating within safe limits, the FCC developed "exposure" guidelines based on these three variables. For energy levels above the FCC prescribed thresholds, human exposure must be limited in duration.

The concept can be visualized by considering a cup of water in an oven. While the oven is on, the water heats. While the oven is off, the water cools back to room temperature. Thus, as long as the "on time" is limited and a "cool down" time is required; the water in the cup cannot exceed a given temperature. This visualization is an extreme example of radio frequency energy heating because of the very intense energy levels inside a microwave oven. Energy levels around typical two-way land mobile and paging transmitters are much lower than inside a microwave oven. Often the levels around antennas can be so low that continuous exposure does not pose a health hazard. It is only when the levels exceed those that could produce excessive heating that precautions must be employed. In fact, the FCC limits are well below those levels that could cause harm. The limits adopted by the FCC allow for the exposure to RF energy based on wavelength, energy levels, and exposure time; however, they do not set values for the maximum levels of RF energy that can be encountered.

For the general public (uncontrolled areas), the FCC established a Maximum Permissible

Exposure (MPE) level based on an exposure time of 30 minutes. In other words, the MPE established for the general public is one that can be encountered continuously for *any* 30-minute period. However, this actually means that the MPE is the permitted *continuous exposure level*. That is, during any "snapshot 30 minute period" the actual RF energy level multiplied by the exposure time in minutes may never exceed the MPE multiplied by 30 (1MPE x 30 = 30MPE).

Consider a person in a RF field at the MPE level. No matter when one begins measuring a 30 minute interval, the person can remain in that field because the exposure level (in this case the MPE level) multiplied by 30 never exceeds 30 MPE in *any* 30 minute interval. If, however, the person were in a field equal to twice the MPE level, the maximum exposure would be reached in 15 minutes (2 MPE x 15 = 30 MPE). Similarly, if one were in a field equal to three times the MPE, the maximum exposure would be reached in 10 minutes (3 MPE x 10 = 30MPE). In this case, the individual could remain in the 3 MPE field for 10 minutes and then have to stay out of the field for 20 minutes. At the conclusion of the 20-minute cool-down period, the person could return to the 3 MPE field for another 10 minutes followed by another 20-minute cool-down period.

For the controlled areas, as defined above, the MPE time is based on six-minute exposure intervals. If a technician were to work in an environment at the MPE limit for a controlled area, the technician could stay in that area indefinitely, as any six-minute period would meet the average (6 MPE). If the technician were to work in a field of twice the MPE limit, the maximum stay could be three minutes with no exposure for the next three-minute period (2 MPE x 3 = 6 MPE). The exposure limits for the controlled and uncontrolled areas are contained in Attachment C, FCC Rules and Regulations, Section 1.1310 – Table 1.

The FCC's table of exposure limits is helpful if actual measurements of the RF fields are being made or predicted. To assist in predicting RF fields, FCC *OET 65* provides two additional graphs that relate effective radiated power to distance to the MPE contour. The first chart (*OET 65*, Figure 1, page 24) is the one to be generally used. It assumes no reflections that could add to the RF field level. This would be the case much of the time on a rooftop, as antennas are normally intentionally mounted in locations that are open and not next to reflecting surfaces. The second chart (*OET 65*, Figure 2, page 25) assumes additive reflections and should be used when such reflections are expected (an antenna mounted at the same level as and adjacent to a reflective wall, such as an elevator penthouse or ground reflections).

The FCC requires that licensees of all transmitting facilities certify that the above exposure limits be met. It is important to keep in mind that compliance is only required in areas that are *accessible*. In areas that are not accessible, like beyond the edges of a rooftop in free space, compliance is not required. However, accessibility at the transmitter site is not the only factor for compliance. For example, if the emission from a high powered transmitter extends beyond free space to an adjacent building, then compliance is required at that building because it is an accessible area even though it is not part of the transmitter site. In areas where exposure is not possible, compliance is not required. As will be shown later, this concept can be used to bring a site into compliance by restricting access to areas having high RF levels.

The date of required compliance varies depending on triggering events, as follows.

Event	Date of Compliance
New Station License	Upon filing of application with FCC
Existing Station	Upon filing of application with FCC
-Modification of License	
-Renewal of License	
All stations	September 1, 2000

In determining whether a facility meets the FCC requirements, three steps should be followed:

1) Determine if the station is "categorically excluded" from a routine evaluation.
2) If not categorically excluded, perform a Routine Evaluation (RA).
3) If the site is not in compliance based on the Routine Evaluation
    a) bring the site into compliance
    b) perform a full Environmental Analysis (EA).

The FCC recognized that many stations in the two-way land mobile radio and paging services pose little health hazard and thus allowed for categorical exclusions. Attachment C lists the various exclusions.[2] For paging, generally any station having an antenna on a tower with the base of the antenna at least 10 meters above ground is categorically excluded. Similarly, a station with a roof mounted antenna or tower mounted antenna having an effective radiated power of 1,000 watts or less is categorically excluded from the routine evaluations. The licensee can presumptively certify compliance to the FCC based on this categorical exclusion. For most private land mobile systems, categorical exclusion is considered for each channel separately, as opposed to the cumulative power of all private land mobile channels at the site.

For stations not categorically excluded, the licensee must perform a Routine Environmental Evaluation. This evaluation will require summing the contributions of all transmitters at a site at all points around and on the site to determine areas in which the sum of the contributions equals or exceeds the MPE for uncontrolled and controlled areas. Areas determined by measurements, manual calculations, or computer modeling to have RF levels above either the controlled or uncontrolled levels can then be brought into compliance and the licensee can so certify compliance to the FCC.[3] A less exact alternative for a non-categorically excluded station is to assume that the station is not in compliance and follow procedures to bring it into compliance. For example, access to areas near the antenna could be restricted. But, even in this case, some knowledge of how much area to restrict is necessary.

If the site can not be brought into compliance, the Commonwealth of Virginia, Department of Information Technology and FCC must be so notified by performing a complete Environmental Assessment (EA). The EA fully describes the potential hazards and mitigating reasons why the FCC should grant the application. (It is much better to bring a site into

[2] Pages 26-28, FCC Rule Section 1.1307(b)(1). The rule actually lists those stations that are not categorically excluded.
[3] Procedures to bring a site into compliance are described in later chapters.

compliance than try to justify why it is not, and need not, be in compliance.)

Although the calculations or measurements needed to show compliance can be very complex, sites can often be brought into compliance quite simply by application of the procedures described herein. Warning signs and other restrictions to limit access to high RF field areas will generally be sufficient to bring a site into compliance. Those allowed to enter high RF field areas are required to have training in safe and proper work procedures at such sites and to follow those procedures. It is important to note, however, that a modification by any licensee of a non-categorically excluded station at a multiple-user site will trigger compliance for everyone at that site. One cannot assume that their own modification will be the date of required site compliance. For this reason, it is preferable to initiate mitigating procedures as soon as possible so that actual triggering events for compliance will be no problem for any site user.

It is also possible that even if all antennas at the site are categorically excluded, the site may not actually be in compliance, as the contribution of all transmitters may cause power densities in excess of the FCC limits. *Categorical exclusion from routine evaluations does not relieve a licensee from being in compliance with the rules*.[4] At multiple-user sites, the licensee of any antenna that produces a field equal to five per cent or more of the MPE for that frequency in any area of non-compliance must share in bringing the site into compliance, even if that station is categorically excluded. (Note: This is not five per cent of the field at the location in question, it is five per cent of the allowable MPE for that station.) If there is any question as to site compliance, a routine evaluation should be performed. In most cases, the routine evaluation will be done using computer modeling software owned by the Commonwealth of Virginia or by an independent contractor selected by the Commonwealth.

Site owners and managers do not have responsibility for site compliance under the FCC Rules and Regulations, but owners and managers can be very helpful in the compliance process. At multiple-user sites, information must be obtained from all users, even if that information states that all users are categorically excluded - *without exception*. If a Routine Evaluation is required, considerable data regarding each user must be available. (Attachment D shows and example of the type of data that will be needed for each user at the site.) At some sites, it may be advantageous to utilize the services of a competent third-party contractor to assist in the certification process.

[4] *See*, FCC OET 65 at page 12, which states, "It is important to emphasize that the categorical exclusions are ***not*** exclusions from ***compliance*** but, rather, exclusions from performing routine evaluations to demonstrate compliance."

Compliance Actions

1. Identify Problem Areas

Areas at a site in which the RF power densities equal or exceed the controlled or uncontrolled levels shall be identified.

Sites having stations not categorically excluded from routine RF evaluations must be analyzed to determine the boundaries of the controlled/occupational and uncontrolled/general public areas using the basic procedures found in FCC *OET Bulletin 65*. Such evaluations must also be performed for sites having all transmitters that are categorically excluded if there is reason to believe that hazardous levels of RF energy may be present due to the addition of individual fields.

When power densities exceed the general public (uncontrolled) MPEs, every effort shall be made to prevent access to such areas by personnel not trained in RF awareness. (See Section 2 - Access Management.) If access cannot be prevented, then appropriate signs must be posted to alert the general public of the potential hazard. (Note: It is Commonwealth of Virginia's policy to take measures necessary to limit RF levels in uncontrolled areas to below the FCC limit rather than post signs warning of the hazard, even if this means repositioning antennas or reducing power.)

In areas in which power densities may or do exceed the occupational (controlled) MPEs in accessible areas at a site, any personnel entering the area must be trained in RF awareness. They must also be made aware of the locations of such areas and take appropriate measures to assure that they will not be exposed to RF fields above the MPE time-averaged limits. To be sure that workers know when they may be subject to high RF levels, the areas where such excessive exposures are possible must be identified. There are various ways this can be done, such as:

(a) **Permanent demarcation of hot spot areas (accessible areas where power densities could exceed the controlled/occupational environment MPE limits) with signs or floor markings:** Signs or floor markings (or both) can be effective in alerting personnel of areas where RF fields may be excessive. In determining where RF fields may be at levels in excess of the controlled MPE limits, the determination can be based on calculations that factor the applicable variables for prediction of RF fields in the immediate proximity of the radiator (including transmitter power, frequency, antenna gain, etc.), on actual measurements, or on computer modeling. When relying on actual measurements, care must be taken to assure that all transmitters are radiating while the measurements are being made. Procedures described in FCC *OET 65* should be followed for determining hazardous areas. Generally, the Commonwealth of Virginia should rely on actual measurements to locate hot spots. Computer modeling will be used to identify

areas that have no potential of a safety hazard.

Caution: Snow can hide floor markings: In situations where snow could cover floor markings, the demarcation process should not rely solely on floor markings to keep personnel out of "hot spot" areas (accessible areas where power densities may equal or exceed the workplace guidelines), agencies could also install some type of vertical perimeter marking to deal with this situation. Diagrams of the area that clearly show the hot spots should be posted in areas protected from the environment.

and/or

(b) Establish three (3) foot (minimum) safety zones from any radiating devices: Alternatively, for most land mobile antenna facilities, a widely accepted rule of thumb is that establishing a 3 foot safety zone (radius) around any omnidirectional antenna or a 3 foot zone in the transmitting direction of sectorized antenna, will generally provide an adequate safety margin.

Important caveat: In *some situations, antennas may merit a safety zone of **more** than three (3) feet*. Examples are higher power/lower gain antennas or broadcast antennas that can produce high RF fields in the immediate vicinity of the antenna. In such cases where the safety zone should be extended, the responsible Commonwealth of Virginia licensee should ensure that the appropriate measures are taken to alert workers of the locations of such potentially high RF fields.

and/or

(c) Use of personal monitoring devices: Personal monitoring devices may be used by those who have occasion to work near or in the vicinity of radiating antennas. Typically, such devices are set to emit an alert when overall power densities are above the standard for a controlled environment exposures. As a matter of Commonwealth of Virginia site policy, personnel must wear personal monitoring devices at sites where there is any question as to the safety of RF levels to be encountered. Anyone needing such a device should contact his/her supervisor.

COMMONWEALTH OF VIRGINIA PERSONNEL - REQUIRED ACTIONS:

At all sites at which Commonwealth of Virginia has transmitting equipment not categorically excluded from Routine Evaluations, the responsible licensee shall take appropriate measures to identify all areas in which the RF levels equal or exceed those specified by the FCC for human RF exposure, both for controlled and uncontrolled areas, unless such determination has been made by the site owner/manager and Commonwealth of Virginia can reasonably assume the accuracy of such determination. Determinations can be made by calculations, actual measurements of fields, the "three foot rule," or computer modeling. As a minimum, once "hot spots" have been identified, signs shall be posted to alert workers at the site of the potential for exposure to high RF fields and the need to take steps to limit exposure in such areas. Also a sign shall be posted at the location of ingress

into the area of high RF fields to alert anyone entering the area that personal monitoring devices must be employed. If needed because of snow or other conditions, site maps showing "hot spots" shall be posted in protected areas near the point of ingress to the site.

2. Restrict Access

Sites should be managed in a manner such that only duly authorized or appropriately "cleared and trained" persons have access to any area or portion of the site where RF fields could cause exposures that exceed the FCC uncontrolled/general public environment limits. Such access management measures generally will involve prominently demarcating or (preferably) separating such areas from any publicly-accessible area.

Controlling access: Access to any areas where RF fields could exceed the FCC-established maximum permissible exposure (MPE) limits for the general public should be restricted or limited. This restricted area would generally be considered the "controlled" environment. The preferred method is to physically restrict access to the area and to limit the distribution of keys only to authorized personnel (which could include approved and trained contractors and their employees). Tower bases should be appropriately fenced so as to prevent unauthorized persons from climbing the tower and coming in contact with high RF fields.

At some multiple-user, rooftop-based sites, it may be useful (although not always possible) to establish a controlled environment that is made up of only a portion (or portions) of the entire rooftop. This may make it possible for other activities, (such as building repairs, servicing of air conditioning units, etc), by persons who have not had RF awareness training to take place on the uncontrolled areas of the roof. To configure a rooftop successfully to include both controlled and uncontrolled areas, the controlled areas must be clearly demarcated with prominent signs (as well as floor markings in some situations) or fenced off to prevent unauthorized persons (or anyone without the necessary RF awareness or safety training) from entering any controlled area.

Authorization of personnel: Only authorized persons should be within the controlled area. Authorized persons should, at a minimum, have received basic awareness training in RF safety. The Commonwealth of Virginia provides such training for all of its employees who must enter controlled areas in the performance of their work. The authorization requirement also must apply to personnel who may not be affiliated (either as an employee or a contractor) with the Commonwealth of Virginia. Accordingly, personnel such as window washers, HVAC technicians, etc. will either need to have the RF awareness training if they must work in controlled environment locations or must be escorted by a trained Commonwealth employee. The Commonwealth of Virginia can arrange for training of others that need access to controlled areas. For towers, any personnel climbing a tower must be fully trained in RF awareness. (The Commonwealth of Virginia will accept evidence of adequate training having been received from wireless carriers, trade associations, technical schools, etc., but a certificate of successful completion must be provided to the Commonwealth of Virginia.)

Controlling access with signs: In some situations, local building codes may preclude locking doors that provide access to a rooftop. In such cases, installation of an alarm system should be considered at the ingress point to alert anyone entering the area (such as through the

doorway) that there may be portions of the building or rooftop where special precautions may need to be taken. Under such circumstances, there should be prominent and distinctly visible signs to alert any person entering the area. Signs should be placed at the base of all towers alerting people to the potential RF hazards on the tower. All RF hazard warning signs shall include ANSI-approved hazard markings. Such signs will generally be obtained from commercial vendors or a Commonwealth of Virginia sign shop and adapted to each situation, as required. It should be noted, that posting a sign at a transmitter site, describing a hazard that does not exist, could cause an undesired action by local residents or personnel employed near the site. Therefore, proper measurements must be taken to determine a hazard exists prior to posting any signage.

Providing information with signs: Under some circumstances, signs might be used to provide information about any potential hazard at the site. Signs can also relay simple instructions, such as describing what floor markings mean. In areas of the state where snow may obliterate floor markings, signs in areas protected from the environment should show the diagram of the rooftop clearly depicting the controlled areas. Agencies could also install some type of vertical perimeter marking to deal with this situation

It is important to provide information about who to contact regarding the site or an individual transmitter or antenna. For Commonwealth of Virginia owned sites, two telephone numbers should be shown on a sign at the point of ingress to the site. The first will be the name and contact number of the site safety officer. This will generally be the technician primarily responsible for the site. The second will be for the Agency responsible for the site or default to the Department of Information Technology in Richmond, phone (804) 371-5580. For non-Commonwealth of Virginia owned sites, it is preferable to have the contact point be the site owner/manager. In all cases, all Commonwealth of Virginia transmitters will have the information about how to contact the site safety officer and the Agency or the Department of Information Technology clearly displayed on the exterior of the equipment cabinet.

In situations in which a contractor or building worker must work in a controlled environment, signs and/or floor markings can be used to advise the worker that only properly trained individuals are authorized to be at the location. If training or express permission to enter an area would be necessary, the signs also could provide the local phone number for a Commonwealth of Virginia technician, the building/tower owner, or site manager, and advise the reader to call and receive specific instructions or guidance before working at the site.

At some building-based/rooftop sites, the controlled environment areas (areas where exposures could equal or exceed the general public MPE limits) can be limited to specific, demarcated portions of the rooftop. On these types of rooftops or buildings, workers who have not undergone awareness or other RF related training may work in only those areas that have not been restricted (i.e.; controlled), as long as effective measures are in place keep workers away from the controlled areas.

There is not a single universally-acceptable approach for managing or controlling unaffiliated workers who may need to be at a controlled area in a manner that would be appropriate for all buildings/towers and all the variations of management arrangements that exist. To the greatest possible extent, such workers should not be allowed in a controlled area without

either proper training (see Section 3) or unless accompanied by a trained technician.

Role of the building/tower owner or manager: For purposes of compliance with FCC human exposure guidelines for RF energy, the obligation falls to the FCC license holders for a site. Building/tower owners and managers who do not hold a FCC license at the site are not subject to FCC enforcement action. Building/tower owners and managers who have employees may, however, be subject to enforcement of workplace safety rules by the Occupational Health and Safety Administration (OSHA). The Commonwealth of Virginia believes that the site owners/managers can play a pivotal role in helping all site occupants to come into compliance with the FCC's RF exposure guidelines. For Commonwealth of Virginia sites, the Commonwealth of Virginia will take a lead role in helping tenants assure compliance.

Potential role of a competent third-party or specialized site manager: Many multi-user, transmitter sites are being managed by specialized facility management companies. An increasingly encountered arrangement is where the owner of the building/tower contracts with a specialized site management company to optimize the use (and revenue generating capacity) of a rooftop or building. On multi-transmitter sites, a competent site manager can simplify or streamline the overall RF compliance process for all licensees with antennas at the site through such means as developing and enforcing site access procedures, identifying possible hot spots, coordinating and enforcing worker safety practices, and maintaining technical and operational data for all transmitters and antennas in service at the site, and providing the actual site certification.

Where a competent third-party site manager can effectively coordinate, manage, and certify compliance of a site, the Commonwealth of Virginia will rely on such certification of compliance. The third party certification should be sufficient for licensing or renewal purposes as long as the Commonwealth of Virginia has a reasonable basis for accepting the report or representations of the delegated party. At the same time, this in no way negates the Commonwealth of Virginia's ultimate responsibility for compliance with the RF exposure rules.

COMMONWEALTH OF VIRGINIA PERSONNEL - REQUIRED ACTIONS:

Where possible, at all sites at which Commonwealth of Virginia has transmitting equipment, access to areas in which RF levels exceed those specified by the FCC for general public/ uncontrolled areas should be appropriately limited to personnel who have been trained in RF exposure awareness. Where possible, doors providing ingress to such areas shall be locked and/or the perimeter of such areas shall be fenced. As a minimum, the technician responsible for each site shall assure that signs are in place to mark areas that have RF energy levels that equal or exceed those defined by the FCC Rules and Regulations for uncontrolled areas. (Floor markings may also be appropriate.) If floor marking is not possible to identify specific hot spots, the point of ingress shall have a sign in place warning of the RF hazard and personnel entering the area should utilize personal monitors. RF hazard warning signs shall be installed at the base of all towers. In addition, other signs that provide instructions or contact point information shall be posted, as needed. At Commonwealth of Virginia owned/managed sites, the contact point numbers to be posted shall be as described above. At both Commonwealth of Virginia owned/managed sites and those not owned/managed by Commonwealth of Virginia, each Commonwealth of Virginia

transmitter shall be marked as described above.

3. Training

All personnel who must enter into any area where power densities could exceed the uncontrolled or general public exposure limits should be appropriately trained or instructed. Depending on particular circumstances, such training could range from a basic or minimal awareness training to more extensive instruction for workers who may be subject to higher RF fields as a result of servicing or maintaining telecommunications equipment.

All personnel who have occasion to work in a controlled area, where power densities could exceed the general public MPE limits, should be aware of the potential for their exposure to RF fields and should be informed as to the steps they can take to ensure they will not be exposed to RF fields in excess of the MPE limits. The FCC regulations also consider that personnel who are only present as a result of transient passage (such as a building maintenance worker walking through -- and not necessarily spending time in -- a controlled area) should be "made fully aware of the potential for exposure [so that he/she] can exercise control over his or her exposure by leaving the area or some other appropriate means."

RF awareness training: Personnel who must have awareness training include employees of the Commonwealth of Virginia who must work at transmitter sites, similar employees of other licensees, and employees of outside contractors performing telecommunications-related service. In addition, non-affiliated workers (those not performing a telecommunication function or who work as employees or contractors working for the building owner/manager) must be trained if they must enter the controlled areas or they must be escorted by a trained Commonwealth employee.

RF awareness training should impart broadly applicable principles for working safely near energized communications antennas and equipment as well as guidance for personal protection that will be encountered under specific workplace conditions. Safety principles that are nearly universally applicable include:

(a) **In general, personnel should assume all antennas are active and energized.** Unless a worker has direct knowledge that an antenna is either a receive antenna or has been deactivated, the worker should consider antennas to be active and energized. (Receive or non-radiating antennas are sometimes identified with signs at the bottoms of the antennas.)

(b) **Personnel should habitually maintain a minimum distance of three (3) feet from an antenna. In some cases, antennas should be given more than 3 feet clearance** (in such instances, appropriate signs and other warning must be posted to indicate the necessary clearance).

(c) **Personnel should obey all posted signs and warnings.**

(d) **Personnel should not stop near omnidirectional antennas or in front of** (within the transmit zone) **directional antennas, and should keep below**

elevated antennas.

The Commonwealth of Virginia provides training for its employees and will arrange for training of non-associated employees who must work in controlled areas. As a minimum, any personnel needing to enter controlled areas should watch the video tape on antenna site safety produced by Motorola Network Services and Ric Tell Associates. A copy of the tape is available from the Department of Information Technology in Richmond.

Some workers may require additional knowledge and training: RF awareness training is generally considered the baseline for what workers/ employees/ contractors or other personnel should have had if they must enter a controlled environment. In some situations, this training may not be appropriate for individuals not involved in a telecommunication function (for instance, they might be an air conditioning technician or a building maintenance worker). The basic instruction should generally include guidance for recognizing and avoiding areas where high RF fields may be present. As such, the baseline awareness training may not necessarily be elaborate or extensive, as long as it is effective in providing workers with the information and guidance they need to avoid exposure above the MPE limits.

The amount and intensity of safety training for personnel should be commensurate with their potential to be exposed to RF as a course of performing their job. At a minimum, training should be sufficient to enable workers to recognize all potential situations where they could potentially be exposed to excessive RF fields and to be able to take the necessary action and use the appropriate tools to protect themselves. Communications technicians should, in addition to watching the video tape referenced above, review FCC *OET 65*. The Commonwealth of Virginia will additionally periodically schedule training classes for technicians at various locations throughout the state.

COMMONWEALTH OF VIRGINIA PERSONNEL - REQUIRED ACTIONS:

All Commonwealth of Virginia employees who must work in environments in which the RF energy may equal or exceed the levels defined by the FCC for uncontrolled areas shall be trained in safety procedures. Any technician who has not had such training, as provided by the Commonwealth of Virginia, shall contact his/her supervisor to obtain such training. In addition, all technicians are expected to review FCC *OET 65*. Any non-associated workers who must perform their work in a controlled environment shall, at Commonwealth of Virginia owned/managed sites, receive appropriate training in limiting exposure to RF fields by, as a minimum, being provided with the Motorola/Ric Tell and Associates video training tape. At sites not owned/managed by the Commonwealth of Virginia, such workers may be trained in a similar manner, but preferably by the site owner/manager. In lieu of training of non-associated workers, such workers may be escorted into controlled areas by trained personnel. One exception to the above is the following: The Commonwealth of Virginia at some sites have co-located contracts with commercial wireless corporations that allow unescorted access to controlled areas. At these locations it is the responsibility of the contractor to ensure compliance to the FCC regulations regarding R.F. Radiation Exposure, not the Commonwealth of Virginia.

4. Site Safety Procedures

Personnel working in areas where RF fields may equal or exceed the controlled environment/ occupational limits must use appropriate hazard-avoidance workplace measures. The fundamental safety measure for servicing an antenna should be to deactivate the unit. Depending on other circumstances, such as whether prevailing RF fields still equal or exceed the worker MPE limits after the antenna is deactivated, other measures may be necessary to ensure worker safety:

The following procedures should be followed at all times at a transmitter site:

(a) **Deactivate antennas:** An antenna and transmitter should be deactivated prior to being serviced.

(b) **"Lock out/tag out" transmitter:** The transmitter of an antenna being serviced should be tagged (lock out/ tag out) to keep it from being activated while personnel may be servicing the antenna.

Limited exception to (a) and (b): In some situations involving low-power directional antennas, it may be possible for personnel to make minor adjustments from the rear of the antenna without subjecting the service personnel to fields that are in excess of the guidelines. In order to perform such adjustments, (such as down-tilt and minor azimuth correction), personnel must be able to approach the antenna from the side or the rear so that they do not enter into the transmit path of the antenna.

Deactivating nearby antennas: In some multiple-user situations, even after an antenna being serviced is locked out, workers still may be subject to RF fields in excess of the controlled limits from the output of nearby antennas. Under such conditions, one way to reduce power densities in the area may be to have other antennas deactivated. As a practical matter, this may not always be possible if the antennas are the property of or are operated by other parties. In these cases, workers will need to take additional precautions; such as in **(e)**, **(f)** and/or **(g)** stated below.

(c) **Operating Transmitters without shields:** Shielding on transmitter power amplifiers is designed to contain RF energy and to prevent excessive RF fields in certain areas in the immediate vicinity of the transmitter. Removal of the shielding from a transmitter could significantly increase the power densities in the vicinity of the transmitter. If shields are removed during servicing, they should always be replaced.

Personnel at a site should also be mindful that some transmitters might be operating with faulty or missing shielding. Such transmitters could generate high RF fields in the transmitter room. Personal RF monitors are recommended for use, as noted in paragraph (f) below, in the vicinity of both transmitters and

antennas to assure that exposure guidelines are not exceeded. In some cases, it may be necessary or prudent to have the power to an unshielded transmitter locked out/ tagged out while service is being performed on a neighboring or adjacently located antenna.

(d) **Antennas in equipment rooms shall not be activated.** Transmit antennas should never be operated inside the equipment room, even for short term testing. This includes mobile magnet mount antennas attached to the top of transmitter cabinets as temporary installations. Any testing of transmitters should be done with the transmitter connected into a dummy load or with the transmitter connected to an antenna that is a safe distance from any personnel.

(e) **Servicing equipment in radio shops:** The above procedures apply equally to activation of transmitters in radio shops. Particular care should be taken to assure that transmitters are not connected to antennas in the shop. Such antennas could expose a number of workers in the shop to high RF fields. Use of dummy loads is the preferable method to work on transmitters. This also prevents the possibility of over-the-air interference from an activated transmitter. If transmitters must be tested with shields removed, such testing should be done in an RF tight test bay or screened room. Personnel should not be in the same test bay or screened room when the transmitter is activated. If that cannot be avoided, personnel should wear personal monitors and limit the duration of exposure. Hands and other parts of the body should be no nearer such equipment than absolutely required and then only for very limited duration.

(f) **Tower maintenance:** Personnel who must maintain antennas on towers need to observe the same general safeguards as others who work around RF equipment. However, towers pose some special problems. On a rooftop, one may be able to avoid coming in close proximity to antennas that are producing high RF fields by simply choosing an alternate path. When climbing a tower, there is only one path, straight up, meaning workers necessarily come close to the antennas. It is preferable to deactivate any antenna that a worker must pass on the journey up the tower. If that is not possible, the worker should be alert not to stop at any point on the tower that is in the major beam of any active antenna. Personal monitors should be worn. In some cases, in extremely high RF field areas, workers should consider use of RF protective clothing.

Additional measures that can be effective in reducing worker exposures or assuring a safer workplace environment (not applicable to all situations)***:***

(g) **Use of personal protective equipment/ RF protective clothing (PPE):** Appropriately selected and properly used RF protective clothing can be effective in reducing whole-body RF absorption. When RF protective clothing is worn, it is important that the full range of precautions pertinent to such situations be followed and that workers have the requisite understanding of what could impede the protective qualities of the RF protective suit, including the compatibility between frequency range of the suit and any specific exposure situation, wear and

tear on the suit, how to wear the clothing properly, etc.

(h) **Use of personal monitoring devices:** Personal monitoring devices may be used by personnel (employees, contractors, others) who have occasion to work near or in the vicinity of radiating antennas or transmitters. Personnel using such devices should be trained in their use and must comply with specific safety policies if (when) their device detects high RF fields.

(i) **Use of time averaging:** FCC exposure limits for a controlled/occupational environment specify that time averaging techniques should be based on 6-minute intervals. (See *OET Bulletin 65* for details of how to apply time averaging.)

(j) **Prominent posting of site-specific or general hazard avoidance procedures for workers:** Even though personnel at a site will generally have had RF awareness training, there may be special circumstances that merit additional notification or information about conditions that may apply to the site in question. Beyond this, important safety messages may merit repetition and additional emphasis.

COMMONWEALTH OF VIRGINIA PERSONNEL - REQUIRED ACTIONS:

All Commonwealth of Virginia employees who must work in environments in which the RF energy may equal or exceed the MPE levels defined by the FCC for uncontrolled areas must follow the above procedures to minimize or eliminate the potential for exposure to high RF fields. Non-affiliated workers who are allowed in areas having RF levels exceeding the uncontrolled MPE should be made aware of these procedures and likewise follow them when working in controlled areas. Any actions that may result in a disruption of service at a given site should be coordinated fully with end users of the system.

5. RF Mitigation Measures

To assure site-wide compliance at some multi-user sites, it may become necessary to make changes of a technical, engineering or physical nature. Such changes would be made with the intent of providing the necessary assurance that neither workers nor the public would be exposed to RF fields in excess of the applicable MPE limits. The Commonwealth of Virginia desires that the general public not be permitted access to areas in which the RF levels equal or exceed those specified by the FCC for uncontrolled areas. In addition, no tower-mounted antenna should be mounted on the tower with its base less than ten meters above ground. Examples of RF mitigation measures include:

(a) **Elevate antennas:** Elevating (raising) rooftop antennas can substantially reduce the power densities that are present at accessible areas on a rooftop.

* Placing or mounting antennas at a height above head level (approx. 7 feet or 2 meters) can substantially reduce the power densities that are present at accessible areas on the rooftop. This procedure is especially useful for rooftops where multiple rows of omnidirectional antennas are located.

At sites with towers, no antenna should be mounted with its base less than 3 meters (10 feet) above ground. (Categorical exclusion requires mounting at no less than 10 meters above ground.) Care should be exercised to assure that raising an antenna does not cause the antenna/structure to exceed the height authorized by the FCC and FAA. In addition, raising the antenna may require a modification of the station license.

(b) **Reduce power of antennas:** By lowering power to the antenna, cumulative RF fields at the site, as well as in publicly accessible areas, may be lowered. This may facilitate overall site-wide compliance.

Powering down may enable some facilities to qualify for a categorical exclusion designation -- which can relieve the licensees, including the Commonwealth of Virginia, from the FCC's requirement for performing a routine environmental evaluation. Additionally, in situations where total power densities exceed the MPE limits at any accessible area (either publicly or workplace accessible), if the output power of an antenna produces less than 5 per cent of the maximum permitted power density (based on its service category) at all accessible areas, the licensee would not share responsibility for site-wide compliance.

The Commonwealth of Virginia's general policy is that the ***ERP of an antenna should not exceed 1,000 watts unless the antenna is tower-mounted with its base more than ten meters (33 feet) above ground level***, thus qualifying the station for a categorical exclusion. Reduction in ERP can be by reducing transmitter power, reducing gain of the antenna (replacement by a lower gain antenna), or a combination of both actions. Such power reductions can, however, have a negative effect on the coverage area of a station and could potentially require the installation of satellite sites to make up for the reduced power.

Special note: **Workers should take appropriate precaution in the immediate area of "categorically excluded" antennas:** Categorical exclusion from performing a Routine Environmental Evaluation does **NOT** mean that the subject antenna will comply with FCC rules on human exposure to RF fields. Even if antennas are categorically excluded from routine environmental evaluation, RF fields in their vicinity can still exceed the MPE limits for worker exposure. Categorically exclusion does not relieve the Commonwealth of Virginia or any other licensee at a multi-user site from an obligation to comply with the exposure limits. In fact, unless appropriate measures are taken to mitigate potentially excessive worker exposure at some categorically excluded antennas, the facility will technically not be in compliance with the FCC human exposure rules. Categorical exclusion does not eliminate the requirement for the site to be in compliance with the FCC exposure limits.

For example: Consider a 1,000 watt ERP, six (6) foot paging antenna driven with a 300 watt transmitter at 835 MHz. Such a system would be expected to produce a spatially-averaged RF field equal to the controlled/occupational environment MPE limit of 2.78 mW/cm^2 at a distance of 3.1 feet from the

antenna.

However, if the transmitter power was increased and the antenna gain was lowered, the area around the antenna where the spatially-averaged field would exceed the controlled/occupational environment MPE limits could easily double. The use of three-way and four-way antennas could further exacerbate the problem by extending the distance from the antenna where the resulting power densities could exceed the controlled MPE limits. Generally, use of higher gain antennas and lower transmitter powers minimizes the spatially-averaged field.

(c) **Reposition/ relocate antennas:** The placement of individual antennas and arrays may affect the power densities that will be found at various locations at and around the site. Consideration should be given to traffic passageways that workers or employees would use while on the site so that personnel can traverse the site and maintain a minimum distance of three feet or more from any non-elevated antenna.

Directional antennas or arrays should either be placed along the outside peripheries of the site with the beam of the transmitter directed away from the building or facade mounted (so that the main beam is not directed on any accessible areas).

(d) **Increase spacing between antennas:** In locating multiple antennas on heavily used rooftops, whip antennas are often placed in multiple rows that (when viewed from above) form a grid. The spacing between antennas will affect the power densities at the various locations at the site. Where the antenna density in the grid is high (minimal distance between antennas), the power densities at any point on the site are likely to be high. Increasing the distance between antennas can be effective in reducing prevailing RF fields in some controlled area locations. In general, when antennas are placed less than 10 feet apart, workers may need to use protective measures (e.g., reducing power, wearing protective suits, etc.) or use monitoring devices when working or traversing areas where antennas are clustered. This is especially true at sites where antennas are not elevated.

Site Safety Officer

All sites must have a designated site safety officer who takes responsibility for RF Exposure compliance. Once designated, the site safety officer shall notify the Department of Information Technology of the designation. The site safety officer will generally be determined by the responsible agency of the Commonwealth of Virginia. The name and telephone number of the site contact person shall be posted at the site, as described in Section 2 of "Compliance Actions," page 9.

The site safety officer is responsible for determining if the site is in compliance with the FCC RF exposure regulations either through a determination of categorical exclusion or through a routine evaluation and implementation of mitigating measures. The site safety officer may determine that even facilities with all categorically excluded stations may require a routine evaluation. The site safety officer can request assistance from the their agency or Department of Information Technology in performing the routine evaluation.

The results of all determinations, including copies of any routine analysis that may have been performed, shall be maintained by the site safety officer with a copy forwarded to the responsible agency or Department of Information Technology. Major changes at a site required a new determination, for example, adding a new transmitting facility.

The site safety officer should be prepared to show and defend both the compliance determination and continued site compliance to authorized representatives of the Federal Communications Commission, the Occupational Safety and Health Administration, or the Environmental Protection Agency.

Mobile, Portable, and Special Equipment

Much of the radio equipment operated by the Commonwealth of Virginia is in a field environment. This operation consists of use of vehicle-mounted transceivers, low- and high-powered portable transceivers, and speed-measurement Doppler radar units. These units generally pose no RF exposure hazard when operated because of either their low transmit duty cycles or low power. However, it must be realized that these devices are almost always being operated in the uncontrolled environment. Thus procedures must be sufficient to protect the general public from excessive RF exposure. For more detailed information on how to evaluate a variety of equipment, the reader is directed to a publication entitled, *A Practical Guide to the Determination of Human Exposure to Radiofrequency Fields*, NCRP Report No. 119, published by the National Council on Radiation Protection and Measurements, 7910 Woodmont Avenue, Bethesda, MD, 20814-3095.

1. Mobile Two-Way Equipment

Vehicle-mounted two-way radio equipment typically operates at transmitter powers of 110 watts or less. Even when considering that the antenna may increase the effective radiated power to as much as 400 watts, the potential for exposure in excess of the FCC MPE limits is low, especially given that the transmit time for these units is normally of short duration . The greatest concern is that people can easily be very close to the antenna or even be touching it while the transmitter is in operation.

To reduce the risk of excessive exposure to occupants of the vehicle, the antenna should be mounted as far from the occupants as possible. Ideally, roof-mounted antennas provide a great degree of protection because the roof acts as a shield to the radio frequency energy and the antenna radiation pattern, which is horizontally outward from the antenna, minimizes the radiation in the direction of the occupants. If the antenna cannot be mounted on the roof of the vehicle, then an alternative is to mount the antenna on the trunk lid or rear fender as far from the occupants as possible. (Exceptions and reconsideration to use of a trunk lid or rear fender mount is the use of mobile data, which could increases the duration of a transmission.) In general, if the antenna is at least three feet from an occupant, the risk of excessive exposure is minimal. Mounting the antenna on a rear surface of the vehicle does, however, place the center of radiation of the antenna essentially at the same level as the head and upper body portions of occupants. Occupants in the back seat of an automobile are at greatest risk due to the proximity of the antenna.

Some installations utilize concealed antennas to minimize public awareness of the vehicle. These antennas are sometimes mounted inside the vehicle on the front or rear window. Use of these antennas should be limited, as the radio frequency energy is being radiated inside the vehicle at distances very near the occupants.

To assure the safety of the occupants of a vehicle, it is preferable to make measurements inside a vehicle once all of the radio transmitting equipment has been installed. To make the

measurements, all transmitters in the vehicle should be activated while making RF level measurements as numerous points inside the vehicle. The measurements are particularly important because some parts of the vehicle, such as the steering wheel, can be resonant at the transmitting frequency and reradiate energy. The only way to know the actual effects of the RF energy inside the vehicle is to make the measurements. If hot spots are found, it may be necessary to reposition the antenna(s) to reduce RF levels. In the alternative, signs could be posted inside the vehicle to warn operators to limit the duration of transmissions.

When operating mobile equipment, care should be taken to assure that no one outside the vehicle is within three feet of the transmitting antenna before activating the transmitter. Even more importantly, make sure no one is touching the antenna. Direct contact with the radiating element of the antenna could potentially cause burns that could occur almost instantaneously.

2. Portable (hand-held) Two-Way Equipment

Hand-held portable two-way equipment has become a necessity for public safety workers. These units provide essential communications capability from wherever a worker may be. Rarely would one of these units operate above the five watt power level for a variety of reasons, including conservation of battery life. Antennas may be either of the telescoping metal rod variety or, more typically, a wire spiral antenna encased in rubber or plastic ("rubber duckie" antenna). Because of the relative low power levels and short transmit cycles, the chances of exceeding FCC guidelines for RF exposure for these radios is minimal.

When operating hand-held radios, especially those which have transmit powers in excess of five watts and which operate above 400 MHz, care should be taken to maximize the distance between the transmit antenna and the body. For example, a hand-held radio being held in front of the face should be positioned such that the antenna is slanted away from the head and body, maximizing the distance between the tip of the antenna and the body.

Some agencies allow or require workers to wear portable radios either on their belts or affixed to clothing, such as a shirt. In these cases, the transmit antenna can be very close to the body or even touching the body with only the fabric of the clothing between the antenna and the body. Again, because of the low power levels and short duration of transmissions, it is unlikely that FCC guidelines would be exceeded. If for any reason transmission times should increase significantly, the radio should be moved away from the body for the duration of the lengthy transmission. As a rule of thumb, any transmission of one minute or longer in duration should be cause to consider moving the radio away from the body.

3. Speed-measuring Equipment (Speed Radar)

Speed measuring radar equipment most generally operates in the 10, 24, and 35 GHz bands at power levels of 100 milliwatts or less. The NRCP recommends that no part of the body should be closer than 30 cm from the radiating end of the device, or said another way, from the front of the device. In practice, it is a good idea to be totally in back of the device, as the radiated beam can diffuse somewhat to the sides. Short exposures in front of the device, for example to calibrate the device, should not be harmful. In addition, because the eyes may be particularly susceptible to radio frequency energy at these frequencies, one should never look into the front of

the device at close range while it is operating.

Conclusion

The procedures described herein are intended to provide a safe work environment for those who have to work near RF transmission equipment and for the general public. For any plan to be fully effective, each responsible individual must exercise reasonable judgment for the particular site under consideration. If there are any question that arise about a particular site or the FCC requirements, questions can be directed to Radio Engineer at Commonwealth of Virginia's Department of Information Technology, 110 S 7th Street - Third Floor, Richmond, Virginia 23219.

Attachments

A. October 21 letter from PCIA President Jay Kitchen to Dr. Robert Cleveland, FCC
B. Dr. Cleveland's reply
C. Applicable FCC Rules and Regulations
D. Commonwealth of Virginia Site Data Sheet

PCIA Logo

COPY

October 21, 1997

Dr. Robert F. Cleveland
Standards Development Branch
Allocations and Standards Division
Office of Engineering & Technology
Federal Communication Commission
2000 M Street, N.W.; Room 480
Washington, D.C. 20554

Re: Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency ("RF") Electromagnetic Fields

Dear Dr. Cleveland:

The Personal Communications Industry Association ("PCIA"), behalf of the entire personal wireless industry, wishes to thank you and Jerry Ulcek for your patience and invaluable participation both at the *"RF" Compliance Workshop* in Dallas this past August 26 -28 and at the *PCS '97 Institute* educational session addressing RF compliance. As shown by the strong turnout at both of these events, the wireless industry is approaching compliance with the new RF exposure regulations in a conscientious and diligent manner.

In the wake of your presentations and questions and answer sessions, many carriers have expressed some relief regarding the manageability of the compliance tasks at hand. In order to promote the fullest understanding of the new regulations, PCIA has reiterated below its understanding as to a number of specific compliance measures that the industry believes will be invaluable tools in performing the requisite routine evaluations. In particular:

! The new environmental regulations are exposure standards, not emissions standards, and therefore electric field strengths, magnetic field strengths, and power densities in excess of the limits set forth in Table 1 of Section 1.1310 are permissible if measures are instituted at the site to ensure that the exposure of workers and the general public remain below the limits in that table.

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- As with other licensee responsibilities, while ultimate responsibility for compliance rests with the licensee, compliance with the RF exposure regulations can be delegated to specialized consultants, site managers, or specific individuals within a company, and, as long as the delegation itself is reasonable a licensee may certify compliance on the basis on the delegate's report.

- The triggering of the "routine evaluation" requirement does not require a licensee necessarily to engage in complex modeling or measurements, if the licensee is able to institute other controls, *e.g.*, the use of RF monitors and appropriate training within controlled environments, to ensure that exposures do not exceed the limits in Table 1 of Section 1.1310.

- Taking measures to control access to building rooftops, through the use of door locks and limiting key distribution to authorized personnel, in conjunction with appropriate signs and RF training to create an awareness of the risks of RF exposure, are generally sufficient to create a "controlled environment" on a building rooftop.

- In areas where physical access controls are impractical (*e.g.*, on a ladder) or illegal (*e.g.*, fire codes prohibiting locked doors), a controlled environment may nonetheless be created if signs are posted restricting access to authorized personnel, if signs are posted creating an awareness of the potential for RF fields in excess of the general population limits, and if the licensee utilizes door alarms or other similar measures to prevent trespass.

- Within a controlled area, if appropriate, the use of signs and other obvious barriers and demarcations around "hot spots" where emissions exceed the controlled environment limits can be an effective means to ensure site compliance.

- Within a controlled area, the use of appropriate training, personal RF monitors, and "work breaks" away from RF transmitters to reduce time-averaged exposure below the limits of Table 1 in Section 1.1310 can be an effective means to ensure compliance even if "hot spots" (areas where power densities exceed the limits in Table 1 of Section 1.1310) exist within a controlled area.

- Within a controlled environment, the use of RF protective suits to reduce RF exposure of workers with appropriate training can be an effective means to ensure compliance even if "hot spots" exist within the controlled area.

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- Within a controlled environment at a multi-transmitter site, if a carrier can physically elevate its antenna so that, as a practical matter, the volume of space where the RF field exceeds 5 percent of the controlled environment limits in Table 1 of Section 1.1310 is 2 meters or more above any rooftop walkways (*i.e.*, the volume where the fields exceed 5 percent of the limit are practically inaccessible), that carrier would be relieved of any responsibility for ensuring compliance of all transmitters at the site. This assumes, of course, that the carrier does not exceed 5 percent of the general public exposure limit in any uncontrolled areas.

- A licensee may reduce the power of a transmitter to become categorically excluded, thereby relieving the licensee of the obligation to conduct a routine evaluation that includes considering the effects of nearby transmitters. While the categorical exclusion relieves a licensee of having to conduct a routine evaluation, it does not relieve the licensee from compliance with the RF exposure limits. Thus, if a licensee has reason to believe its facility may not comply with the exposure limits, notwithstanding a categorical exclusion, the licensee should undertake measures to reduce exposure in accordance with the FCC rules.

PCIA has restated its understanding of these points to ensure the Commission understands the types of compliance actions that carriers are beginning to undertake in order to ensure that they comply with the new RF regulations. PCIA understands that your office has significant responsibilities and that there are many demands on your time. PCIA nonetheless respectfully requests, to the extent any of these understandings appears to misstate the applicable requirements, that your office contact either Sheldon Moss at (703) 739-0300 x3311, or our counsel, Eric DeSilva at (202) 828-3182. Thank you in advance for your time and cooperation.

Respectfully yours,

E. “Jay” Kitchen, President

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FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

October 27, 1997

E. "Jay" Kitchen, President
Personal Communications Industry Association
500 Montgomery Street
Suite 700
Alexandria, VA 22314-1561

Dear Mr. Kitchen:

Thank you for your letter of October 21, 1997, concerning the PCIA's activities in response to the radio frequency compliance workshop held in Dallas in August attended by me and Jerry Ulcek. We are pleased to see that the PCIA is taking an active role in elaborating on the conclusions of the workshop to provide its members with further guidance on compliance with the FCC's new guidelines and policies for human exposure to radio frequency emissions

In our meeting with Sheldon Moss and Eric DeSilva on October 2, 1997, we discussed several issues related to compliance with the Commission's guidelines. As a result PCIA developed the compliance strategies and information contained in you October 21 letter to me.

Both Jerry Ulcek and I have reviewed the October 21 letter and the information it contains concerning compliance guidance and requirements. I believe that this information is accurate and should provide your members with important guidelines for meeting the FCC's new requirement in this area.

If you or your staff should have any additional questions or require further assistance, please feel free to contact either me or Jerry. We look forward to continuing to work with you and the staff at PCIA in the future in addressing these important issues.

Sincerely,

Robert F. Cleveland, Jr., Ph.D.
Office of Engineering and Technology
Federal Communications Commission

Applicable FCC Rules and Regulations

(47 C.F.R.)

1.1307 Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.

(b) In addition to the actions listed in paragraph (a) of this section, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA) if the particular facility, operation or transmitter would cause human exposure to levels of radio frequency radiation in excess of the limits in §§ 1.1310 and 2.1093 of this chapter. Applications to the Commission for construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities must contain a statement confirming compliance with the limits unless the facility, operation, or transmitter is categorically excluded, as discussed below. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(1) The appropriate exposure limits in §§ 1.1310 and 2.1093 of this chapter are generally applicable to all facilities, operations and transmitters regulated by the Commission. However, a determination of compliance with the exposure limits in § 1.1310 or 2.1093 of this chapter (routine environmental evaluation), and preparation of an EA if the limits are exceeded, is necessary only for facilities, operations and transmitters that fall into the categories listed in Table 1, or those specified in paragraph (b)(2) of this section. All other facilities, operations and transmitters are categorically excluded from making such studies or preparing an EA, except as indicated in paragraphs (c) and (d) of this section. For purposes of Table 1, "building-mounted antennas" means antennas mounted in or on a building structure that is occupied as a workplace or residence. The term "power" in column 2 of Table 1 refers to total operating power of the transmitting operation in question in terms of effective radiated power (ERP), equivalent isotropically radiated power (EIRP), or peak envelope power (PEP), as defined in '2.1 of this chapter. For the case of the Cellular Radiotelephone Service, Subpart H of Part 22 of this chapter; the Personal Communications Service, Part 24 of this chapter and the Specialized Mobile Radio Service, Part 90 of this chapter, the phrase "total power of all channels" in column 2 of Table 1 means the sum of the ERP or EIRP of all co-located simultaneously operating transmitters owned and operated by a single licensee. When applying the criteria of Table 1, radiation in all directions should be considered. For the case of transmitting facilities using sectorized transmitting antennas, applicants and licensees should apply the criteria to all transmitting channels in a given sector, noting that for a highly directional antenna there is relatively little contribution to ERP or EIRP summation for other directions.

Table 1. - Transmitters, Facilities and Operations Subject to Routine Environmental Evaluation

Experimental Radio Services (Part 5)	Power > 100 W ERP (164 W EIRP)
Multipoint Distribution Service (Subpart K of Part 21)	Non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP Building-mounted antennas: power > 1640 W EIRP
Paging and Radiotelephone Service (Subpart E of Part 22)	Non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1000 W ERP (1640 W EIRP) Building-mounted antennas: power > 1000 W ERP (1640 W EIRP)
Cellular Radiotelephone Service (Subpart H of Part 22)	Non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m

	and total power of all channels > 1000 W ERP (1640 W EIRP) Building-mounted antennas: total power of channels > 1000 W ERP (1640 W EIRP)
Personal Communications Services (Part 24)	(1) Narrowband PCS (Subpart D): non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) Building-mounted antennas: total power of all channels > 1000 W ERP (1640 W EIRP) (2) Broadband PCS (Subpart E): non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 2000 W ERP (3280 W EIRP) Building-mounted antennas: total power of all channels > 2000 W ERP (3280 W EIRP)
Satellite Communications (Part 25)	All included
General Wireless Communications Service (Part 26)	Total power of all channels > 1640 W EIRP
Wireless Communications Service (Part 27)	Total power of all channels > 1640 W EIRP
Radio Broadcast Services (Part 73)	All included
Experimental, auxiliary, and special broadcast and other program distributional services	Subparts A, G, L: power > 100 W ERP Subpart I: non-building-mounted antennas: height above (Part 74) ground level to lowest point of antenna < 10 m and power > 1640 W EIRP Building-mounted antennas: power > 1640 W EIRP
Stations in the Maritime Services (Part 80)	Ship earth stations only
Private Land Mobile Radio Services Paging Operations (Part 90)	Non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1000 W ERP (1640 W EIRP) Building-mounted antennas: power > 1000 W ERP (1640 W EIRP)
Private Land Mobile Radio Services Specialized Mobile Radio (Part 90)	Non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and total power of all channels > 1000 W ERP (1640 W EIRP) Building-mounted antennas: Total power of all channels > 1000 W ERP (1640 W EIRP)
Amateur Radio Service (Part 97)	Transmitter output power > levels specified in

	§ 97.13(c)(1) of this chapter
Local Multipoint Distribution Service (Subpart L of Part 101)	Non-building-mounted antennas: height above ground level to lowest point of antenna < 10 m and power > 1640 W EIRP Building-mounted antennas: power > 1640 W EIRP LMDS licensees are required to attach a label to subscriber transceiver antennas that: (1) provides adequate notice regarding potential radiofrequency safety hazards, e.g., information regarding the safe minimum separation distance required between users and transceiver antennas; and (2) references the applicable FCC-adopted limits for radiofrequency exposure specified in § 1.1310 of this chapter

(2) Mobile and portable transmitting devices that operate in the Cellular Radiotelephone Service, the Personal Communications Services (PCS), the Satellite Communications Services, the General Wireless Communications Service, the Wireless Communications Service, the Maritime Services (ship earth stations only) and the Specialized Mobile Radio Service authorized under Subpart H of Parts 22, 24, 25, 26, 27, 80, and 90 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use, as specified in §§ 2.1091 and 2.1093 of this chapter. Unlicensed PCS, unlicensed NII and millimeter wave devices are also subject to routine environmental evaluation for RF exposure prior to equipment authorization or use, as specified in §§ 15.253(f), 15.255(g), and 15.319(i) and 15.407(f) of this chapter. All other mobile, portable, and unlicensed transmitting devices are categorically excluded from routine environmental evaluation for RF exposure under §§ 2.1091 and 2.1093 of this chapter except as specified in paragraphs (c) and (d) of this section.

(3) In general, when the guidelines specified in § 1.1310 are exceeded in an accessible area due to the emissions from multiple fixed transmitters, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose transmitters produce, at the area in question, power density levels that exceed 5% of the power density exposure limit applicable to their particular transmitter or field strength levels that, when squared, exceed 5% of the square of the electric or magnetic field strength limit applicable to their particular transmitter. Owners of transmitter sites are expected to allow applicants and licensees to take reasonable steps to comply with the requirements contained in § 1.1307(b) and, where feasible, should encourage co-location of transmitters and common solutions for controlling access to areas where the RF exposure limits contained in § 1.1310 might be exceeded.

(i) Applicants for proposed (not otherwise excluded) transmitters, facilities or modifications that would cause non-compliance with the limits specified in § 1.1310 at an accessible area previously in compliance must submit an EA if emissions from the applicant's transmitter or facility would result, at the area in question, in a power density that exceeds 5% of the power density exposure limit applicable to that transmitter or facility or in a field strength that, when squared, exceeds 5% of the square of the electric or magnetic field strength limit applicable to that transmitter or facility.

(ii) Renewal applicants whose (not otherwise excluded) transmitters or facilities contribute to the field strength or power density at an accessible area not in compliance with the limits specified in § 1.1310 must submit an EA if emissions from the applicant's transmitter or facility results, at the area in question, in a power density that exceeds 5% of the power density exposure limit applicable to that transmitter or facility or in a field strength that, when squared, exceeds 5% of the square of the electric or magnetic field strength limit applicable to that transmitter of facility.

(4) Transition Provisions. Applications filed with the Commission prior to October 15, 1997, (or January 1, 1998, for the Amateur Radio Service only), for construction permits, licenses to transmit or renewals thereof, modifications in existing facilities or other authorizations or renewals thereof require the preparation of an

Environmental Assessment if the particular facility, operation or transmitter would cause human exposure to levels of radio frequency radiation that are in excess of the requirements contained in paragraphs (b)(4)(i) through (b)(4)(iii) of this section. In accordance with § 1.1312, if no new application or Commission action is required for a licensee to construct a new facility or physically modify an existing facility, e.g., geographic area licensees, and construction begins on or after October 15, 1997, the licensee will be required to prepare an Environmental Assessment if construction or modification of the facility would not comply with the provisions of paragraph (b)(1) of this section. These transition provisions do not apply to applications for equipment authorization or use for mobile, portable and unlicensed devices specified in paragraph (b)(2) of this section.

(i) For facilities and operations licensed or authorized under Parts 5, 21 (Subpart K), 25, 73, 74 (Subparts A, G, I, and L), and 80 of this chapter, the "Radio Frequency Protection Guides" recommended in "American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz", (ANSI C95.1-1982), issued by the American National Standards Institute (ANSI) and copyright 1982 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York shall apply. With respect to Subpart K of Part 21 and Subpart I of Part 74 of this chapter, these requirements apply only to multipoint distribution service and instructional television fixed service stations transmitting with an equivalent isotropically radiated power (EIRP) in excess of 200 watts. With respect to Subpart L of Part 74 of this chapter, these requirements apply only to FM booster and translator stations transmitting with an effective radiated power (ERP) in excess of 100 watts. With respect to Part 80 of this chapter, these requirements apply only to ship earth stations.

(ii) For facilities and operations licensed or authorized under Part 24 of this chapter, licensees and manufacturers are required to ensure that their facilities and equipment comply with IEEE C95.1-1991 (ANSI/IEEE C95.1-1992), "Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz." Measurement methods are specified in IEEE C95.3-1991, "Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields--RF and Microwave." Copies of these standards are available from IEEE Standards Board, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. Telephone: 1-800-678-4333. The limits for both "controlled" and "uncontrolled" environments, as defined by IEEE C95.1-1991, will apply to all PCS base and mobile stations, as appropriate.

(iii) Applications for all other types of facilities and operations are categorically excluded from routine RF radiation evaluation except as provided in paragraphs (c) and (d) of this section.

(5) Existing transmitting facilities, devices and operations: All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the requirements of paragraphs (b)(1) through (b)(3) of this section by September 1, 2000, or, if not in compliance, file an Environmental Assessment as specified in § 1.1311.

1.1310 Radio frequency radiation exposure limits. - The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of § 2.1093 of this chapter. Further information on evaluating compliance with these limits can be found in the FCC's OST/OET Bulletin Number 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation."

> NOTE to Introductory Paragraph: These limits are generally based on recommended exposure guidelines published by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," NCRP Report No. 86, Sections 17.4.1, 17.4.1.1, 17.4.2 and 17.4.3. Copyright NCRP, 1986, Bethesda, Maryland 20814. In the frequency range from 100 MHz to 1500 MHz, exposure limits for field strength and power density are also generally based on guidelines recommended by the American National Standards Institute (ANSI) in Section 4.1 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017.

Table 1. - Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposures

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density mW/cm^2	Averaging Time (minutes)
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*($900/f^2$)	6
30-300	61.4	0.163	1.0	6
300-1500	---	---	f/300	6
1500-100,000	---	---	5	6

(B) Limits for General Population/Uncontrolled Exposure

0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	---	---	f/150030	
1500-100,000	---	---	1.0	30

f ' frequency in MHz

* ' Plane-wave equivalent power density

NOTE 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

EQUIPMENT/ANTENNA DATA SHEET

(Use separate sheet for each station and additional pages, if necessary.)

Site Location: _____

Site Manager: _____

Type of Site (Tower, Rooftop, etc.): _____ FCC Tower ID: _____

Call sign of Station: _____ Frequency: _____ MHz

Is station *categorically excluded* from certification: _____ (yes or no)(See FCC Bulletin OET 65)

Licensee Name: _____

Radio Service: _____ (paging, SMR, cellular, business, etc.)

Transmitter Power Output: _____ watts Emission Type: _____

Antenna Type: _____

(If antenna is directional, please supply vertical and horizontal radiation patterns)

Antenna Gain: _____ dB Loss Between Transmitter and Antenna: _____ dB

Effective Radiated Power (ERP): _____ watts Antenna Length: _____ feet

Orientation of Antenna (if directional): _____ degrees (ref : true north)

Describe Any Beam-Tilt: _____

Height to Base of Antenna: _____ feet (Above ground for tower, above roof for rooftop If a rooftop site, also please provide a "to-scale" drawing of the rooftop showing the location of the antenna and features of the roof, e.g. elevator penthouses, public areas like swimming pools, etc. Also, if there are other occupied structures within 500 feet of the edges of the rooftop, provide information to describe those structures, including height, distance, and direction from the site.)

Height to Tip of Antenna: _____ feet Polarization: _____ (vertical, horizontal, circular)

Have warning signs been posted at the site in accordance with FCC OET 65? _____ (yes or no)

Is site access limited to personnel trained in RF exposure hazards and abatement? _____ (yes or no)

Describe methods employed to limit access to the site by unauthorized personnel: _____

_____

Contact person if more information is needed: _____

Phone: _____ Address: _____

APPENDIX L

Mobile Computer Command Interface for the Virginia State Police Computer Aided Dispatch System

Functional Design Specification

Table of Revisions:

Revision:	Date:	Reason:
A	04/04/2001	Draft distributed for comments
00	05/15/2001	Initial Release
01	07/3/2001	Changed the port assignment specification in section 2.3 from dynamic allocation to static assignment.
02	7/11/2001	Added Traffic Stop Summary (TSS) command and related Response message to Clear command.

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Figures:

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Appendixes:

Trademarks:

Windows NT Server and **Windows NT Workstation** are either trademarks or registered trademarks of Microsoft Corporation.

1.0 Introduction

1.1 Purpose

This document defines the Mobile Computer Terminal (MCT) Command Interface for the Virginia State Police (VSP) Computer Aided Dispatch (CAD) system. The intent of this specification is to define a general interface that will facilitate the integration of a Mobile Data Computer/Terminal system with the VSP CAD system. In keeping with this intent, MCT functionality, other than what is inherent or implied by the interface, is beyond the scope of this specification. The MCT user-interface and visual presentation format for entering and displaying commands will be specified in requirements documents for the Mobile Computer Terminal System. The only MCT System requirements imposed by this specification are that all commands and associated data elements must be supported and that all command messages must comply with the formats and protocol specified.

1.2 System Overview

Figure 1-1 below is a high-level block diagram of the VSP CAD and associated systems. A brief description of each system represented in the diagram is provided in Table 1-1.

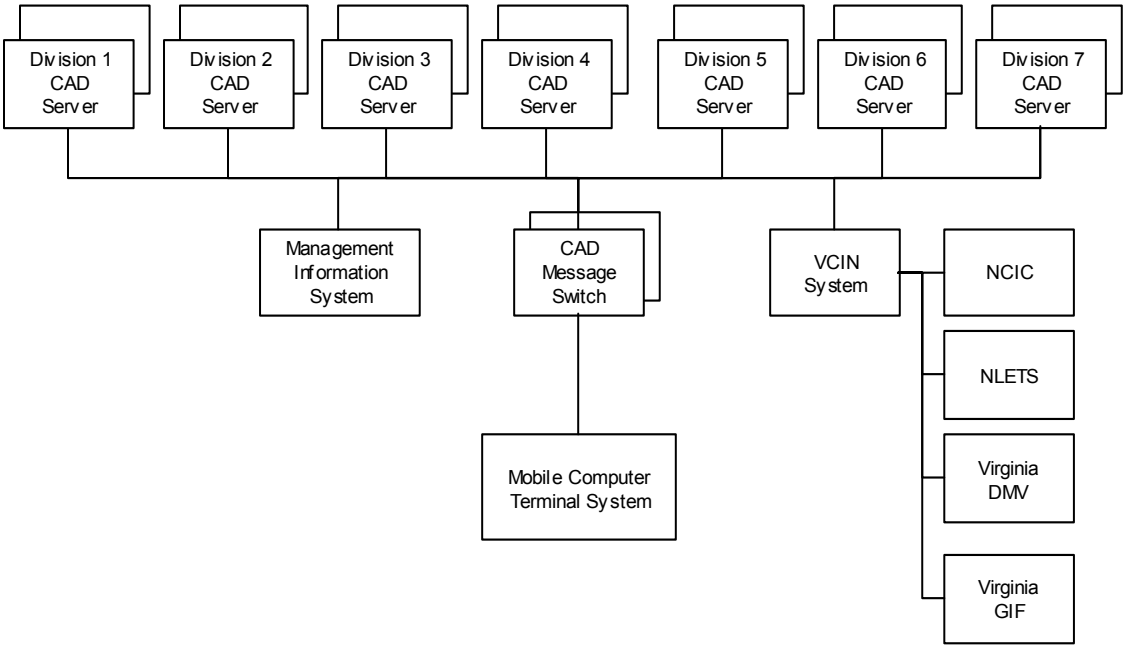

Figure 1-1 VSP CAD and Associated Systems

Table 1-1 System Descriptions

Division CAD Servers	Each of the seven VSP divisions have autonomous CAD systems that consists of dual DEC AlphaServer™(s), a shared mass storage array, and a minimum of five Windows NT Workstation™ dispatch terminals. One of the CAD servers is the operational system while the other provides fail-over redundancy and system test capability.
CAD Message Switch	The CAD Message Switch is a component of the Mobile Computer Command Interface. The switch consists of primary and backup DEC AlphaServer™ computer systems with a shared mass storage array. The Message Switch will be responsible for mobile user access security, MCT message traffic routing, and message activity logging. The links between the CAD Message Switch and Division CAD servers will be a native VSP Wide Area Network connection with a link data rate of not less than 1.5 Mb/sec.
Management Information System (MIS)	The MIS is a Windows NT Server™ based repository for all CAD History file information. Computer users, with access to the VSP network, may query the History information database using a standard Internet web browser.
VCIN	The Virginia Criminal Information Network maintains a central database for Criminal Justice agencies throughout the Commonwealth. In addition, VCIN provides access to databases maintained by the Virginia Departments of Motor Vehicles and Game and Inland Fisheries, the National Crime Information Center (NCIC), and out-of-state agencies by way of the National Law Enforcement Telecommunications System (NLETS).
Mobile Computer Terminal System	Components of the MCT System may vary depending on the particular system employed. Typically, they will include vehicle mounted PCs, a wireless communications facility, a centralized message switch, and an access gateway. The link between the MCT System access gateway and the CAD Message Switch will be a VSP native, Local Area Network connection, with a data rate of not less than 10 Mb/sec. Properties of the wireless network used to interconnect the MCT System will be defined by the wireless technology and service provider.

2.0 Systems Communication

This section provides specific information/requirements related to the network protocol layers used for communication with and by the Command Interface, CAD Message Switch system. The discussions that follow reference components of the diagram in Figure: 2-1.

2.1 Network Addressing

Internet Protocol (IP) addressing will be used throughout the network. When applicable, it is presumed that the Wireless Network Provider for the MCT System will furnish ICANN[1] assigned IP addresses for all components of the mobile system and, the CAD Message Switch network interface to the mobile system. The Network Address Translator (NAT) feature will be utilized such that the CAD Message Switch will appear as a node on the mobile network. All other IP addresses required will be assigned by VSP. Configuration and management of Network Layer Routing Protocol, if required by the mobile system, will be the responsibility of the Wireless Network Provider. If it is determined that a firewall device is required between the MCT System access gateway and CAD Message Switch, the device will be provided and managed by VSP.

2.2 Network Protocol

Transmission Control Protocol (TCP) will be utilized to provide guaranteed delivery of all message traffic between systems. It will be the responsibility of each system to provide an internal message queuing mechanism. Application protocols such as TELNET, FTP, and TFTP will be supported for systems administration, but not for general use by MCT users.

2.3 CAD Message Switch Interface

2.3.1 Physical/Internet

The CAD Message Switch Local Area Network (LAN) connection(s) will be Ethernet/IEEE 802.3 (10/100BaseT). While the initial configuration specifies a single network interface adapter, the option for a second adapter is reserved to allow configuration flexibility and/or performance enhancement. The inclusion of a second adapter does not imply that the CAD Message Switch will perform IP protocol routing or support any Network Layer Routing Protocols.

2.3.2 Transport

From a functional standpoint, the CAD Message switch can be viewed as having two logical network interfaces. Message communications with the MCT System will use the **Mobile System Interface**. Command, query, and response messages between the CAD Message Switch and Division CAD servers, MIS, and the VCIN Network, will use the **Host Systems Interface**.

2.3.2.1 Mobile System Interface

The CAD Message Switch will maintain TCP port number and IP address definitions for assignment to the mobile system. Unique port numbers will be assigned to each MCT for establishing individual bi-directional socket

[1] Internet Corporation for Assigned Names and Numbers

connections with the CAD Message Switch. The port number assignments will be administered consistent with the CAD Message Switch terminal security mechanism. Each TCP port number will be associated with an IP address and the combination assigned to a specific MCT. Assigned port and address values must be configured within an MCT before the MCT can communicate with the CAD Message Switch.

2.3.2.2 Host Systems Interface

TCP socket connections, between the CAD Message Switch and Division CAD Servers, will be established. Initialization of these connections will be attempted at systems startup and, individually, whenever a loss of connection is detected. If a connection is lost with any CAD Server or VCIN, the CAD Message Switch will continuously attempt to re-connect. The VCIN connection will be the same as currently exists on the Division CAD Servers. This connection consists of a bi-directional TCP socket utilizing port 6800.

2.3.3 Session (Connect/Disconnect)

The mobile user must initially issue an **OPER**[2] command to establish a MCT session connection with the CAD Message Switch. Conversely, to conclude the session, an **OP OFF**[3] command must be sent to terminate the connection.

2.3.3.1 Connection Security

CAD Message Switch Logon by a MCT user will require all of the following elements to match an entry in the CAD Message Switch security file:

1. The mobile user's Unit or Badge number.
2. The mobile user's VSP assigned Code number.
3. Eight character Password.

Refer to the **OPER** and **PASSWORD** commands for element details and requirements.

2.3.4 Application (Messages)

The required character string format for CAD Interface messages is defined in Section 3 of this document. Additional message formatting details may be found in the individual Command descriptions in Sections 4 and 5.

[2] Reference section 4.1 for details of the **OPER** command.
[3] Reference section 4.3 for details of the **OP OFF** command.

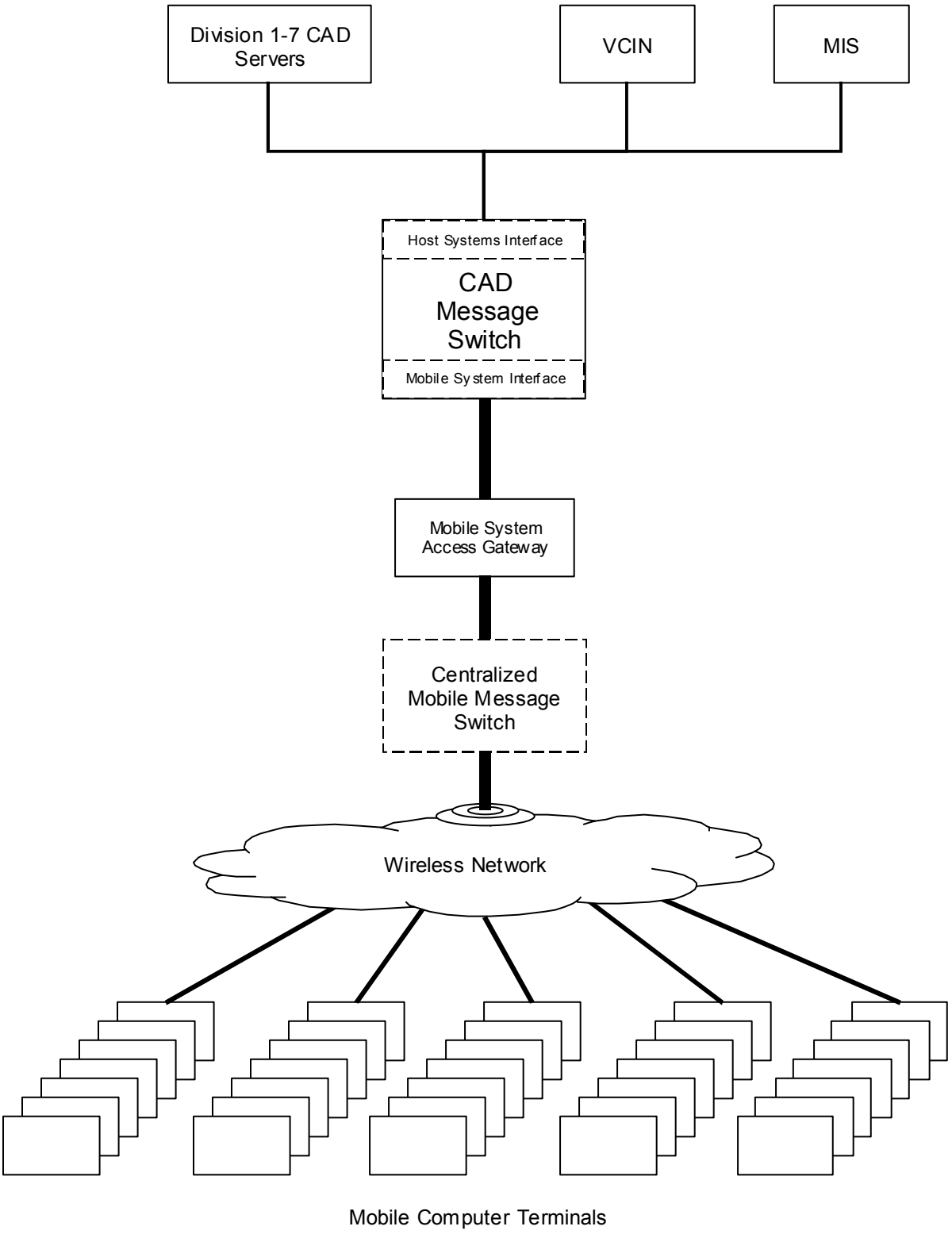

Figure 2-1 CAD Message Switch Interconnections

3.0 Message formats

All messages transmitted between the MCT and CAD Message Switch systems are ASCII encoded character strings in the format applicable for Command or Response messages. These formats are detailed in the following sub-sections.

3.1 Command messages:

<STX> ^ USERID ^ CMD ^ VAR^1 ^…^ VAR^n ^ <ETX>

Where:

<STX>	=	Start of Text indicator. (ASCII x02)
^	=	Field delimiters. (ASCII x5E)
USERID	=	Unit number of the originating MCT user or, a CAD Terminal ID
CMD	=	Character code for CAD or VCIN Query commands.
VAR^1...VAR^n	=	Command specific data elements, first through ^{n}, with ^{n} signifying the last element provided.
<ETX>	=	End of Text indicator. (ASCII x03)

3.2 Response messages:

<STX> ^ USERID ^TIME ^ RSPMSG ^ <ETX>

Where:

<STX>	=	Start of Text indicator. (ASCII x02)
^	=	Field delimiter. (ASCII x5E)
USERID	=	Unit number of the destination MCT user or, a CAD Terminal ID.
DATE/TIME	=	System date and time the response message was generated.
RSPMSG	=	Response message field. (14,700 bytes maximum)
<ETX>	=	End of Text indicator. (ASCII x03)

4.0 CAD Commands

The CAD commands supported by the MCT Command Interface are defined in this section. With the exception of three, all command sequences are originated by the MCT user. The **D**ispatch and **A**ssist commands are Dispatcher initiated sequences. Therefore, these two commands will produce unsolicited command messages to the MCT user. The **T**o command may be initiated by a Dispatcher or other CAD System terminal user, including a MCT. For this sequence, an unsolicited text message, in the form of a Response Message, will be sent to the MCT user.

For each command, the purpose, format, data elements, system actions, and response messages are defined. Data element descriptions also include the field length, data type and in some cases, an example. For clarity, representative information may be shown in some of the response examples. Such information is signified by italicized font. (See "Response message variables" example in the conventions listed below)

The terms "MCT user", "Unit" or "Unit's" and, "mobile user" are used universally throughout this document. All references are synonymous with the current user id logged on the MCT system.

The following conventions are used in the CAD Command description tables:

- Command codes are displayed in **UPPERCASE, BOLD, BLOCK** font**.**
  Example: **B**
- The ^ symbol within a command string indicates a required Space (ASCII x20) character.
  Example: **B^**……..
- Required data element identifiers are designated by **UPPERCASE, BOLD, BLOCK** font.
  Example: **B ^ M/**……..
- Required data element variables are displayed in **lowercase, bold, block** font.
  Example: **B ^ M/beginning mileage**
- Optional data elements identifiers are indicated by ***UPPERCASE, BOLD, ITALICISED*** font.
  Example: **B ^ M/beginning mileage ^** ***D/***……
- Optional data element variables are displayed in ***lowercase, bold, italicized*** font.
  Example: **B ^ M/beginning mileage ^** ***D/duty post***
- Fixed length fields are specified by stating the required number of characters.
  Example: Field length – Required 8 numeric characters.
- Variable length fields are specified in maximum number of characters.
  Example: Field length – Maximum 7 alphanumeric characters.
- The text of response messages is displayed within quotation marks.
  Example: "text" indicates TEXT (ASCII x54455854)
- Response message variables are signified by ***italicized*** font.
  Example: **"*1102* Enroute to #DIV*101000001*"**

4.1 OPER (Operator Logon) Command

Purpose: To establish initial contact with the CAD Message Switch, verify user name and password, obtain access security level. This command must be sent every time the mobile application is initialized and connection with CAD or VCIN is desired.

Command: **OPER ^ unit ^ code ^ password**

Where: **unit** is the mobile user's Unit or Badge number[4].
Field length – Maximum 5 alphabetic/numeric characters. Example: 3327
code is the mobile user's Department assigned Code[5] number.
Field length – Maximum 5 alphabetic/numeric characters. Example: 5969C
password is the current password for the user.
Field length – Required 8 alphabetic/numeric characters. Example: PAS2W0RD

Actions: **CAD Message Switch**
Verifies user name and password.
If both are valid - determines the Unit's assigned home division and establishes a session link for follow on MCT/CAD/VCIN command transactions.
Notifies the appropriate Division CAD to activate the Mobile Line.
If username and/or password is invalid, an error message is returned to the mobile user.
CAD
Accepts access level security settings from the CAD Message Switch.
Displays that the Mobile Line is Up allowing certain messages to be sent.

Responses: Maximum length – 78 alphanumeric characters.
"*1102* Connected to Division *1* CAD" – if command is successful.
"*1102* Unable to connect to CAD" – if the mobile user's home CAD is unavailable.
"Invalid Code/Password" – if the code and/or password do not match what is on file.
"Password expires in # days" – if the mobile user's password is set to expire in # days[6].

"Password expires today" – if, after 5 consecutive days, the mobile user has not issued
"Last chance to change" a successful **PASSWORD** command.

"Password has expired" – if the mobile user has not responded to all previous expiration
"Contact Supervisor" warning messages.

4.2 PASSWORD (Change Password) Command

Purpose: To allow the mobile user to change the operator sign on password as desired or required.

Command: **PASSWORD ^ old password ^ new password ^ new password**

Where: **old password** is the mobile user's current password.
Field length – Required 8 alphabetic/numeric characters.
new password is the new password. Entered twice for confirmation.
Field length – Required 8 alphabetic/numeric characters.

[4] All mobile users will be assigned a Unit Number. For law enforcement officer's, Unit Number is their assigned Badge Number.
[5] All mobile users will be assigned a Code Number. For VSP users, it is their employee code number. For other users, this number will be the same as their assigned Unit Number.
[6] Expiration warning messages will begin 5 days prior to expiration and continue until 1 day remains.

Actions: **CAD Message Switch**
Verifies and updates the mobile user's Password in the security file.
Sends updated password information to all Division CAD systems.
CAD
Updates local security file with password information from the CAD Message Switch. Passwords are retained for 90 days.

Responses: Maximum length – 78 Alphanumeric characters.
"Password has been changed" – if command execution is successful.
"Invalid password entered" – if the entered old password does not match current password on file, or if the new password is not typed twice, identically.

4.3 OP OFF (Operator Logoff) Command

Purpose: To end contact with the CAD Message Switch. This command must be sent every time the mobile data application is to be terminated.

Command: **OP ^ OFF**

Actions: **CAD Message Switch**
Signals the appropriate Division CAD to bring that Mobile Line down.
Unlinks the mobile user from the appropriate Division CAD.
CAD
Will queue any incoming messages destined for the mobile user.

Responses: Maximum length – 78 alphanumeric characters.
"Terminal signed off" – if the command is successful, response is sent to the mobile user.

4.4 B (Beginning Tour of Duty Logon) Command

Purpose: To log a unit 10-41 with beginning mileage, additional duty post assignment information, special assignment code information, and comments when needed.

Command: **B ^ M/beginning mileage ^ *D/duty post ^ S/special assignment ,comments***

Where: **M/beginning mileage** is the unit's vehicle odometer reading.
Field length – Maximum 6 numeric characters. Example: 76031
D/duty post is the unit's duty post assignment:
Field length – Maximum 7 alphabetic/numeric characters. Example: 010101A
S/special assignment is the unit's special assignment code
Field length – Maximum 3 alphabetic/numeric characters. Example: 154
,comments is any additional comments the unit may want entered into the Unit History.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit is currently in logon status….
If unit provides duty post assignment and or special assignment information, any existing duty post and special assignment information will be overwritten.
If unit does not provide duty post and or special assignment information, existing duty post and special assignment information is retained.
If Unit is not in logon status and not shown as on duty in CAD….
Unit is logged 10-41 with any information supplied.
All information will be recorded in the unit history.
PMSGR command automatically runs to retrieve and forward any personal messages on file for this Unit. Marks the messages as delivered in CAD if they are delivered successfully to the mobile user and updates the Unit History.

Responses: Maximum length – 78 alphanumeric characters.
"*1102* Beginning Mileage Required" – if mileage is not provided.
"*1102* 1041 Information Already Recorded" – if unit has previously marked 10-41
"*1102* 1041 at *HHMM 01A 01J 154*" - if unit has duty post assignment information, the last 3 characters of up to 2 duty post assignments and special assignment code returned. Same information displayed to controlling dispatcher.
"*1102* 1041 at *HHMM* No Road Assignment *154*" – if unit does not provide, and currently does not have, a road assignment set in CAD but does have a special assignment code. Same information displayed to controlling dispatcher.
"*1102* 1041 at *HHMM* No Road Assignment" – if unit does not provide, and currently does not have, a road assignment and special assignment code set in CAD. Same information displayed to controlling dispatcher.

Secondary Responses: If a PMSG (phone message) is on file for the unit marking on, CAD will retrieve the message and send it to the mobile user. The responding message format will be as follows:
to *unit* ^ PMSG ^ *message text*
ENTERED DATE:*MMDDYY* ^ ENTERED TIME:*HHMM*
OPER: *user id*
Maximum length – 285 alphanumeric characters.
Example: **"*1102* PMSG *1021 JOE GREEN AT 555-1212***
ENTERED DATE:*MMDDYY* ENTERED TIME:*HHMM*
OPER:*3327C*"

4.5 LO (Ending Tour of Duty Logoff) Command

Purpose: To log a unit 10-42 with ending mileage and comments when needed.

Command: **LO ^ M/ending mileage ,*comments***

Where: **M/ending mileage** is the unit's vehicle odometer reading.
Field length – Maximum 6 numeric characters. Example: 176031
,*comments* is any additional comments the unit may want entered into the Unit History.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If unit is currently in on duty status and not assigned to an incident….
Unit is logged off. Response sent to mobile user and dispatcher.
If unit is currently assigned to an incident….
Unit is not logged off and an error message is returned to the mobile user.
If unit is not shown on duty in CAD….
Error message is sent to mobile user.
All information will be recorded in the Unit History.

Responses: Maximum length – 78 alphanumeric characters.
"*1102* Ending Mileage Required" – if mileage is not provided.
"*1102* Not Currently Logged On" – if Unit is not shown as on duty in CAD.
"*1102* 1042 at *HHMM*" - if Unit successfully logs off in CAD. Message is sent to mobile user and dispatcher.
"*1102* Assigned, Not Logged Off" – if unit is currently assigned to an incident.

4.6 ER (Enroute to Dispatched Incident) Command

Purpose: To mark a unit enroute to the incident for which they have received a Dispatch message.

Command: **ER ,*comments***

Where: ,***comments*** is any additional comments the unit may want entered into the Unit History.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit has been dispatched to an incident….
Unit status is updated, history segments are written to the Unit and Incident Histories.
Response is sent to mobile user and dispatcher.
If Unit has not been dispatched to an incident….
Error message is returned to the mobile user.

Responses: Maximum length – 78 alphanumeric characters.
"*1102* Enroute to #DIV*101000001*" – normal response with 12 character incident number.
"*1102* Not Currently Dispatched" – if unit is not shown as dispatched in CAD.
"*1102* Already Enroute" - if unit has already marked enroute to an incident.

4.7 OS (Onscene) Command

Purpose: To mark a unit onscene at an incident that they have received a dispatch message for or, onscene at an activity that they are shown enroute to.

Command: **OS ,*comments***

Where: ,***comments*** is any additional comments the unit may want entered into the Unit History.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit has been dispatched to an incident….
Unit status is updated, history segments are written to the Unit and Incident Histories.
If Unit has not been dispatched to an incident….
Error message is sent to the mobile user.

Responses: Maximum length – 78 alphanumeric, characters.
"*1102* Onscene at #DIV*101000001*" – normal response with 9 digit incident number.
"*1102* Not Currently Enroute" – if unit is not shown as dispatched or enroute to an activity in CAD.
"*1102* Already Onscene" - if unit has already marked onscene.

4.8 CL (Change Location) Command

Purpose: To indicate that the mobile user has left the current location of the assigned incident and is enroute to another location.

Command: **CL ^ [new location] ,*comments***

Where: **[new location]** is the new location the mobile user is enroute to.
Field length – Maximum 39 alphanumeric characters. Example: 123 Main St.
Field delimiters – [(ASCII x5B) at the beginning and] (ASCII x5D) at end.
,comments is any additional comments the unit may want entered into the Unit and Incident Histories.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit has been dispatched to an incident….
Unit status is updated, history segments are written to the Unit and Incident Histories.
Response sent to mobile user and dispatcher.
If Unit has not been dispatched to an incident or activity….
Error message is sent to the mobile user.

Responses: Maximum length – 78 alphanumeric characters.
"Unit *1102* Enroute to New Location*: 123 Main St.* (#DIV*101000001*)" – if command executes successfully.
"Unit *1102* is not Assigned or Out of Service" – if unit is not shown as dispatched or enroute to an incident or activity in CAD.

4.9 TR (Transport) Command

Purpose: To indicate that the Unit currently assigned to an incident or activity is transporting a subject.

Command: **TR ^ *[new location] ,comments***

Where: ***[new location]*** is the new location the Unit is transporting a subject to. If ***new location*** is not provided, the CAD system will default the location to "Magistrate".
Field length – Maximum 39 alphanumeric characters. Example: 123 Main St.
Field delimiters – **[** (ASCII x5B) at the beginning and **]** (ASCII x5D) at end.
,*comments* is any additional comments the unit may want entered into the Unit and Incident Histories. Comments should include beginning mileage if subject being transported is the opposite sex.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit has been dispatched to an incident….
Unit status is updated, history segment is written to the Unit and Incident Histories.
Response sent to mobile user and dispatcher.
If Unit has not been dispatched to an incident or activity….
Error message is sent to the mobile user.

Responses: Maximum length – 78 alphanumeric characters.
"Unit *1102* Transporting to *123 Main St.* (#DIV*101000001*)" – if command executes successfully.
"Unit *1102* is not Assigned or Out of Service" – if unit is not shown as dispatched to an incident or activity in CAD.

4.10 TRC (Transport Complete) Command

Purpose: To indicate that the Unit has completed a transport.

Command: **TRC ^ *[new location] ,comments***

Where: ***[new location]*** is the new location the Unit has transported the subject to. If no location is given, the CAD system will default the location to the location supplied with the Transport Command.
Field length – Maximum 39 alphanumeric characters. Example: 123 Main St.
Field delimiters – [(ASCII x5B) at the beginning and] (ASCII x5D) at end.
,*comments* is any additional comments the unit may want entered into the Unit and Incident Histories. Comments should include ending mileage if subject being transported is the opposite sex.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit has been dispatched to an incident….
Unit status is updated, history segments are written to the Unit and Incident Histories.
Response sent to mobile user and dispatcher.
If Unit has not been dispatched to an incident or activity….
Error message is sent to the mobile user.

Responses: Maximum length – 78 alphanumeric characters.
"Unit *1102* Transport Complete at *123 Main St.* (#DIV*101000001*)" – if command executes successfully.
"Unit *1102* is not Assigned or Out of Service" – if unit is not shown as dispatched to an incident or activity in CAD.

4.11 TOW (Rotational Wrecker Request) Command

Purpose: To send a request for the next rotational wrecker at the scene of the mobile user's assigned incident.

Command: **TOW ^ W/zone ,*comments***

Where: **W/zone** is the rotational wrecker zone the mobile user needs a wrecker from.
Field length – Maximum 4 numeric characters. Example: 441
,***comments*** is any additional comments the unit may want entered into the Unit and Incident Histories. Comments should include any vehicle or service information the mobile user may need to pass on to the wrecker service.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit has been dispatched to an incident….
Request is sent to controlling dispatcher with the next recommended wrecker information.
History segment is written to the Unit and Incident Histories.
Response sent to mobile and dispatcher.
If Unit has not been dispatched to an incident or activity….
Error message is sent to the mobile user.

Responses: Maximum length – 78 alphanumeric characters.
"Tow Request Received for *1102* (#DIV*101000001*)" – if command executes successfully.
"Unit *1102* must be assigned to an Incident to request a TOW" – if unit is not shown as dispatched to an incident or activity in CAD.

4.12 TOWL (Rotational Large Wrecker Request) Command

Purpose: To send a request for the next large (heavy-duty) rotational wrecker at the scene of the mobile user's assigned incident.

Command: **TOWL ^ W/zone ,*comments***

Where: **W/zone** is the rotational wrecker zone for which the mobile user needs a large wrecker.
Field length – Maximum 4 numeric characters. Example: 441
,***comments*** is any additional comments the unit may want entered into the Unit and Incident Histories. Comments should include any vehicle or service information the mobile user may need to pass on to the wrecker service.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit has been dispatched to an incident….
Request is sent to controlling dispatcher with the next recommended wrecker information.
History segment is written to the Unit and Incident Histories.
Response sent to mobile user and dispatcher.
If Unit has not been dispatched to an incident or activity….
Error message is sent to the mobile user.

Responses: Maximum length – 78 alphanumeric characters.
"Tow Request Received for *1102* (#DIV*101000001*)" – if command executes successfully.
"Unit *1102* must be assigned to an Incident to request a TOW" – if unit is not shown as dispatched to an incident or activity in CAD.

4.13 GD (Give Disposition) Command

Purpose: To record disposition information for an incident from the primary unit when a summons or arrest has been affected.

Command: **GD ^ #*incident number* ^ D/disposition . *disposition* . *disposition* . *disposition* ^ L/legal code . *legal code* . *legal code* . *legal code* ^ V/vehicle code . *vehicle code* . *vehicle code* . *vehicle code* ^ I/interstate ,*comments***

Where: **#*incident number*** is the incident to which **disposition**(s) is to be applied. Only required if the Unit is not currently assigned to the incident.
Field length – Maximum 12 alphabetic/numeric characters, preceded by the # sign (ASCII x23). Example: #DIV101000001

D/disposition is a valid disposition code when a summons or arrest is made. Up to 4 codes, separated by periods (ASCII x2E), can be entered per command.
Field length – Maximum 3 alphabetic/numeric characters. Example: ART

L/legal code is a valid section number for the applicable Code of Virginia statute. There must be a corresponding **legal code** provided for each **disposition code** given.
Field length – Maximum 13 alphanumeric characters including periods (ASCII x2E) and dashes (ASCII x2D). Example: 46.2-1993.117

V/vehicle code is a valid vehicle type-code. Vehicle codes may only apply to certain disposition types. However, there must be a corresponding **vehicle code** provided for each **disposition code** given.
Field length – Maximum 1 alpha character, either "P" (ASCII x50) for passenger or "C" (ASCII x43) for commercial vehicle or "N" (ASCII x4E) for not applicable.

I/interstate is a road type indicator for where the incident occurred. "Y" for Interstate or "N" for non-Interstate highway.
Field length – Maximum 1 alpha character, either "Y" (ASCII x59) or "N" (ASCII x4E)

,***comments*** is any additional comments the unit may want entered into the Unit and Incident Histories.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If Unit is currently the primary on an incident or, #***incident number*** is provided and Unit was primary….
Records the given disposition information to the Incident History.
Returns response message to mobile user.
If Unit is not currently the primary on an incident and #***incident number*** is provided but Unit was not the primary….
Records information in the Unit History.
Error message is sent to the mobile user.
If Unit is not assigned to an incident and #***incident number*** was not provided….
Error message is sent to the mobile user.
All information will be recorded in the Unit History.

Responses: Maximum length – 78 alphanumeric characters.
"#DIV*101000001* given disposition of UTS.ART" – successful response message may include up to 4 disposition codes.
"Unit not assigned to incident" – if unit is not currently assigned as primary unit to an incident and #***incident number*** was not furnished.

4.14 TSS (Traffic Stop Summary) Command

Purpose: To provide statistical information about arrests and searches as a result of a traffic stop.

Command: **TSS ^ J/jurisdiction ^ RAC/race ^ TA/traffic arrest ^ AA/aerial arrest ^ AS/arrest search ^ SS/stop search**

Where: **J/jurisdiction code** is the numeric code assigned to the jurisdiction in which the traffic stop occurred.
Field length – Required 3 numeric characters. Example: 043
RAC/race is the VSP assigned code for the race of the traffic stop subject.
Field length – Required **W**hite, **B**lack, **H**ispanic, **A**sian, **I**ndian, **O**ther, or **U**nknown single alpha character.
TA/traffic arrest is an indicator to signify whether the traffic stop resulted in an arrest.
Field length – Required **Y**es or **N**o (ASCII x59 or x4E) alpha character.
AA/aerial arrest is an indicator to signify whether the traffic stop arrest was as a result of aerial speed enforcement.
Field length – Required **Y**es or **N**o **(**ASCII x59 or x4E) alpha character.
AS/arrest search is an indicator to signify whether a search was conducted in conjunction with an arrest.
Field length – Required **Y**es or **N**o (ASCII x59 or x4E) alpha character.
SS/stop search is an indicator to specify whether a search was conducted in conjunction with the traffic stop only.
Field length – Required **Y**es or **N**o (ASCII x59 or x4E) alpha character.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If the unit is currently assigned to a traffic stop incident….
Information provided is recorded within the CAD system for periodic transfer to the MIS system.
Enables an incident closing **C**lear command from the primary unit assigned to the traffic stop.
If the unit is not assigned to a traffic stop incident or is not the primary unit….
Error message is returned to the issuing unit.

Responses: Maximum length – 78 alphanumeric characters.
"Incident #DIV*101000001* summary accepted" – if command is successful. Response is sent to mobile user and controlling dispatcher.
"Summary not accepted (unassigned unit)" – if command is unsuccessful because the unit is not currently assigned to a traffic stop incident. Response is sent to mobile user and controlling dispatcher.
"Summary not accepted (secondary unit)" – if command is unsuccessful because the unit is assigned as secondary to the traffic stop incident. Response is sent to mobile user and controlling dispatcher.

4.15 C (Clear) Command

Purpose: To clear a mobile user from an incident or activity.

Command: **C ^ *D/disposition . disposition . disposition . disposition ,comments***

Where: ***D/disposition*** are the unit's incident disposition codes. At least one code is **required** if no disposition codes have been given with a **GD** command, the incident/activity type requires a disposition, and the unit is the primary assigned. Up to four codes, separated by periods (ASCII x2E), can be provided but none can be any for which a legal code is required.
Field length – Maximum 3 alphabetic characters. Example: WUS
,***comments*** is any additional comments the unit may want entered into the Unit and Incident Histories.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If the unit is primary on an incident or activity….
If required disposition information is not provided or is incorrect, an error message is returned to the mobile user.
If required disposition information is provided or has been previously provided with the GD command the Unit and Incident Histories are updated and the Unit's Status is changed to Available. Response message is sent to the mobile user and controlling dispatcher.
If the unit is assigned to an incident or activity but is not primary….
Unit and Incident Histories are updated to show Unit cleared from the incident. Any disposition information provided is written to the Unit History only. Unit Status is changed to Available and response is sent to mobile user and controlling dispatcher.

Responses: Maximum length – 78 alphanumeric characters.
"Unit *1102* cleared at *11:00* from #DIV*101000001*" – if command is successful and other units are still assigned to the incident or activity. Response is sent to mobile user and controlling dispatcher.
"Unit *1102* cleared at *11:00* from #DIV*101000001* (Closed)" – if command is successful and the unit is the last to clear. Response is sent to mobile user and controlling dispatcher.
"Must enter disposition when clearing Primary Unit" – if required disposition information has not been provided or is incorrect. Response is sent to mobile user.
"Unit *1102* back in service at *11:00*" – if Unit is assigned to a non-incident generating activity such as "Meal". Message is sent to controlling dispatcher and mobile user.
"Unit *1102* cannot clear from #DIV*101000001* (TSS required)" – if command is sent by the primary unit assigned to a traffic stop incident but a **TSS** command has not been issued.

4.16 OUT(*E*) (Out of Service Onscene or *Enroute*) Command

Purpose: To place a mobile user out of service onscene, or enroute to, an incident or activity.

Command: **OUT*E* ^ T/type code ^ *[location]* ^ *license* ^*@license state* ^ *license year* ^ *license type* *,comments***

Where: **OUT** command will be used to indicate the mobile user is out on the scene of an incident or activity such as a traffic stop.
OUTE command will be used to indicate the mobile user is enroute to an incident or activity such a call received from a local agency.
T/type code is an incident or activity type code defined in the CAD system.
Field length – Maximum 6 alphabetic/numeric characters.
[location] is the location of the activity or incident. Not required for all types.
Field length – Maximum 39 alphanumeric characters.
Field delimiters - Must begin with **[** (ASCII x5B)and end with **]** (ASCII x5D).
@license is the license plate number the mobile user wants run in association with this activity. The number must be preceded by the @ sign (ASCII x40).
Field length – Maximum 8 alphabetic/numeric characters. Example: @ABC123
license state is the license plate issuing state. If left blank and ***license*** is sent with the command, ***license state*** will default to VA.
Field length – Maximum 2 alphabetic characters.
license* year** is the year of registration expiration. If left blank and ***license is sent with the command, ***license year*** will default to current year.
Field length – Maximum 4 numeric characters. Example: 2001
license type is the type code[7] of vehicle license. If left blank and ***@license*** is included with the command, ***license type*** will default to PC.
Field length – Maximum 2 alphabetic characters. Example: PC
,comments is any additional comments the unit may want entered into the Unit and Incident Histories.
Field length – Maximum 78 alphanumeric characters.

[7]License plate Type Codes are defined in the NCIC Code Manual.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD. If license information is provided, the CAD Message Switch will format the query and send it to VCIN and to CAD for recording the registration request in the appropriate history files.
CAD
If the type code indicates this should generate an incident, CAD will create the incident. A message will be sent to the dispatcher that the mobile user is out on an incident or activity. A message for location verification will also be sent to the dispatcher if the location does not verify in the CAD geographical information file. All information is recorded in the Unit and Incident Histories.

Responses: **From CAD** – Maximum length 78 alphanumeric characters.
"Unit *1102* Out-of-Service Enroute to *location*" – if the **OUTE** command is used and **type code** requires an incident be created. Message is sent to mobile user and controlling dispatcher.
"Unit *1102* Out-of-Service Onscene at *location*" – if the **OUT** command is used and **type code** requires an incident be created. Message is sent to mobile user and controlling dispatcher.
"Unit *1102* Out-of-Service Enroute" – if the **OUTE** command is used and **type code** is an activity. Message is sent to mobile user and controlling dispatcher.
"Unit *1102* Out-of-Service Onscene" – if the **OUT** command is used and **type code** is an activity. Message is sent to mobile user and controlling dispatcher.
"Location Not Entered" – if **type code** requires a location and ***location*** is not entered. Error message is sent to mobile user.
"Incident Type/Out Code is Invalid" - if **type code** is not a valid code in the CAD system. Error message is sent to the mobile user.
From VCIN – Alphanumeric messages of unspecified length.
If ***license*** was submitted, the CAD Message Switch will format and the run the VCIN query or, queries if ***license state*** is not VA. Responses may include VCIN wanted, NCIC wanted, VA or other state vehicle ownership information.

4.17 CN (Case Number) Command

Purpose: To request a SP-102 case number.

Command: **CN ^ #*incident number* ^ $/division area ^ O/offense code ,*comments***

Where: **#*incident number*** is only required if the mobile user is not currently assigned to the incident the case number is being requested for.
Field length – 12 alphabetic/numeric characters, preceded by the # sign (ACII x23).
Example: #DIV101000001
$/division area is the Virginia State Police Division and the area.
Field length – Required 4 numeric characters. Example: 2101
O/offense code is the Virginia State Police defined offense code.
Field length – Required 4 numeric characters. Example: 1401
,comments is any additional comments the unit may want entered into the Unit and Incident Histories.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
If the Unit has been dispatched to an incident or ***incident number*** is provided….
History segments are written to the Unit and Incident Histories.
Case number will be issued.
Response sent to mobile user.
If the Unit has not been dispatched to an incident or ***incident number*** is not provided….
Error message is sent to mobile user.

Responses: Maximum length 78 alphanumeric characters.
"Case Number $*0121011234* Assigned to #DIV*101000001*" - if command executes successfully. Message is sent to mobile user.
"Unit is not currently assigned to an incident" – if mobile user is not shown as dispatched to an incident in CAD and ***incident number*** is not sent. Message is sent to mobile user.
"Offense code required for SP-102 Case Numbers" – if **offense code** is not sent. Message is sent to mobile user.
"A Case Number Series is required" – if **division area** is not sent. Error message is sent to mobile user.

4.18 UH (Unit History) Command

Purpose: To request a Unit History.

Command: **UH ^ *date^***

Where: ***date*** is the date of the unit history requested. If not provided CAD will default to the most current unit history.
Field length – Required 6 numeric characters. Example: 030601

Actions: **CAD Message Switch**
Forwards command message to the appropriate Division CAD.
CAD
Requested Unit History will be returned to the mobile user in the response message.

Responses: Alphanumeric indefinite length.
Refer to Appendix A for a typical Unit History response.

4.19 IH (Incident History) Command

Purpose: To request an Incident History.

Command: **IH ^ *#incident number***

Where: ***#incident number*** is the incident number of the incident history desired. If not provided CAD will default to the current or last incident the Unit was assigned to.
Field length – 12 alphabetic/numeric characters preceded by the # sign (ASCII x23).
Example: #DIV101000001

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
Requested Incident History will be returned to mobile user.

Responses: Alphanumeric indefinite length.
Refer to Appendix A for a typical Incident History response.

4.20 UR (Unit Roster) Command

Purpose: To request a Unit Roster.

Command: **UR ^ *dispatch group***

Where: ***dispatch group*** is the dispatch group the roster is being requested for. If this is not provided CAD will default to mobile user's home CAD group.
Field length – Maximum 5 alphanumeric characters beginning with "G" (ASCII x47).
Example: G101.

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
Requested Unit Roster will be returned to mobile user in a response message.

Responses: Alphanumeric indefinite length.
Refer to Appendix A for a typical Unit Roster response.

4.21 US (Unit Status) Command

Purpose: To request a Unit Status list.

Command: **US ^ *dispatch group*** or ***unit number*** or ***All***

Where: **Note: Only one of these parameters may be sent.**
dispatch group is the dispatch group the status list is being requested for. If this is not provided CAD will default to mobile user's home group.
Field length – Maximum 5 alphabetic/numeric characters beginning with "G" (ASCII x47). Example: G101.
unit number is the unit number the status list is being requested for. If this is not provided CAD will default to all units mobile user's home group.
Field length – Maximum 5 alphabetic/numeric characters. Example: 1102
ALL indicates that a status list is being requested for all units in the mobile user's home CAD.

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
Requested Unit Status will be returned to mobile user in a response message.

Responses: Alphanumeric indefinite length.
Refer to Appendix A for a typical Unit Status response.

4.22 D or A (Dispatch or Assist) Incoming Command

Purpose: These command messages are sent to the mobile user when a dispatcher issues the CAD command to dispatch the Unit to a call as either the primary or the assisting unit.

Command: **D ^ primary unit ^ *assisting unit ^ assisting unit ^ assisting unit ,comments***
or:
A ^ assigned unit ^ assisting unit ,*comments*

Where: **D -** indicates that this message is Dispatching the unit(s) to the incident and….
primary unit is the badge number of the primary unit being dispatched to the incident.
Field length – Maximum 5 alphabetic/numeric characters. Example: 1442
assisting unit are the badge numbers of assisting units being dispatched to the incident.
Field length – Maximum 5 alphabetic/numeric characters. Example: 988
,*comments* is any additional comments the unit may want entered into the Unit and Incident Histories.
Field length – Maximum 78 alphanumeric characters.

A - indicates that this message is dispatching additional units to Assist the incident primary unit and….
assigned unit is the badge number of the primary unit assigned to the incident.
Field length – Maximum 5 alphabetic/numeric characters. Example: 1442
assisting unit is the badge number of the unit being dispatched to assist.
Field length – Maximum 5 alphabetic/numeric characters. Example: 988
,*comments* is any additional comments the unit may want entered into the Unit and Incident Histories.
Field length – Maximum 78 alphanumeric characters.

Actions: **CAD Message Switch**
CAD Message switch will receive the command message from the CAD system and forward it to all specified mobile users.
CAD
Status change will be indicated for all units listed in the command.
Timer will be set to notify the dispatcher if the mobile user does not mark enroute to the call within a specified amount of time based on the settings in the Type file.

Responses: Alphanumeric text message of indefinite length.
The response Message is sent to the mobile user will include all incident history data entered to the time the dispatch or assist command is sent. The message will be formatted as follows:

Line 1 – **DISPATCHED**
Line 2 – A list of all units currently dispatched to the call, in numeric order with tic marks to indicate primary unit. Up to four units per line.
Example: **1442' +1617 392**
All other information will move down one line as needed. One blank line will follow the last line needed to display the units.
Line 3 – blank
Line 4 – incident number incident priority incident type dispatch group duty post
Example: **#Div101000168 1/1055 G/G101 /010101A**
Line 5 – Incident location ,jurisdiction code
Example: **NB 95 at 89mm ,042**
Line 6 – Blank
Line 7 – Explanation of incident type
Example: **INTOXICATED DRIVER**
Line 8 – Further location information if available
Example: **On right shoulder**
Line 9 – phone number,name,address of reporting party
Example: **8045551212,MR BROWN,124 MAIN STREET**
Line 10 –Blank
Line 11 through the last line - Incident history segments displayed as follows:
Entry Segment - /HHMM ENTRY details
Example: **/0940 ENTRY BLUE HONDA 2 OCCUPANTS**
Additional segments: /HHMM segment type unit segment details
Examples: **/0945 DISP 1102 #3037 BARKER,TPR DAVE V**
/0945 ASSTER 392 #3649 STILES,SGT KERRY L
/0946 CLEAR 1442
/1001 MISC ,VEHICLE PARTIALLY BLOCKING THE ROAD

4.23 TO (Terminal to Terminal Text Message) Command

Purpose: To send a text message to another MCT connected to the CAD Message Switch or any other CAD terminal.

Command: **TO/dest1 , *dest2* , *dest3* , *dest4* , *dest5* /message text**

Where: **dest1** is the destination terminal identifier for **message text**. At least one destination is required. This can be any MCT user connected to the CAD Message Switch or any CAD terminal, such as a dispatch or area office terminal.
Field length – Maximum 5 alphabetic/numeric characters. Example: D101
dest2 through ***dest5*** are addition destinations separated by commas.
Field length – Maximum 5 alphabetic/numeric characters per destination.
Example: 1102,D101,A101,D105
/**message text** is the text to be sent. Must be preceded by a / symbol- (ASCII x2F).

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
Requested Unit Status will be returned to mobile user in a response message.

Responses: Alphanumeric indefinite length.

4.24 CI (Court Information) Command

Purpose: To allow a mobile user to enter, update, retrieve, and delete court disposition information by date.

Command: **CI ^ action code ^ date1 ^** ***date2 ^ J/jurisdiction code ^ CD/dui convictions ^ CO/other convictions ^ DD/dismissed dui ^ DO/dismissed other ^ ND/nolle dui ^ NO/nolle other ^ LO/complied***

Where: **action code** is the function the mobile user wants to execute. Action codes are "I" for insert, "U" for update, "R" for retrieve, "D" for delete.[8].
date1 is the date of the disposition information entry.
Field length – Required 6 numeric characters. Example: 030801
date2 is the ending date of a date range. Used only when retrieving a range of disposition information[9].
Field length – Required 6 numeric characters. Example: 030801
J/ jurisdiction code [10] is the court's jurisdiction code.
Field length – Required 3 numeric characters. Example: 043

Note: - At least one of the following information field designations is **required** for **I**nsert and **U**pdate functions.

CD/ dui convictions is the total number of DUI convictions not appealed.
Field length – Maximum 3 numeric characters. Example: CD/132
CO/ other convictions is the total number of other convictions not appealed.
Field length – Maximum 3 numeric characters. Example: CO/132
DD/ dismissed dui is the total number of dismissed DUI cases.
Field length – Maximum 3 numeric characters. Example: DD/132
DO/ dismissed other is the total number of other dismissed cases.
Field length – Maximum 3 numeric characters. Example: DO/132
ND/ nolle dui the total number of nol-prossed DUI cases.
Field length – Maximum 3 numeric characters. Example: ND/11
NO/ nolle other is the total number of nol-prossed other cases
Field length – Maximum 3 numeric characters. Example: NO/11
LO/ complied is the total number of cases which complied with the law.
Field length – Maximum 3 numeric characters. Example: LO/11

[8] A single disposition file entry must be **R**etrieved prior to **D**eleting it.
[9] If ***jurisdiction code*** is provided, only disposition file entries for ***jurisdiction code*** within the date range specified will be retrieved. If ***jurisdiction code*** is not provided, all entries within the date range will be retrieved.
[10] ***jurisdiction code*** is required for **I**nsert and **U**pdate functions.

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
For **action code** –
Insert - adds new information record in the Court Information file.
Update - modifies an existing information record in the Court Information file.
Retrieve - requested information from the Court Information file.
Delete – removes an existing information record from the Court Information file.

A unit history segment will be added for each **I**nsert, **U**pdate, and **D**elete function.
Court Disposition Information file information will be transfer to MIS nightly.

Responses: Response messages returned to the mobile user will depend on **action code**.
Insert –
"Record Already Exists" - if court information for that date and jurisdiction already exists.
"Record Inserted" - if Insert function is successful.
Update –
"No Record Found" - if a record with **date1** and ***jurisdiction code*** is not found.
"Record Updated" - if a record with **date1** and ***jurisdiction code*** is found and successfully updated.
Retrieve –
If ***jurisdiction code*** is not provided, values from all records within the date range will be totaled and a message is returned in the following format:
Line 1 – **Court Disposition for Badge for date1 date2**

Line 2 –	**DUI**	**/ OTHER**
Line 3 – **Convicted, not appealed**	***102***	***10***
Line 4 – **Dismissed**	***10***	***8***
Line 5 – **Nolle Prossed**	***4***	***2***
Line 6 – **Complied With Law**		***1***
Line 7 – **TOTALS**	***116***	***21***

If ***jurisdiction code*** is provided, only the information for that jurisdiction, for that date or date range, will be sent.
"No Record Found" - - if a record with **date1** and ***jurisdiction code*** is not found.
Delete -
"Record Deleted" - if the record is deleted successfully.
Delete by date range will not be allowed.

4.25 AI (Agencies Assisted) Command

Purpose: To allow a mobile user to enter, update, retrieve, and delete Agencies Assisted Information by date.

Command: **AI ^ action code ^ date1 ^ *date2* ^ *SO/ aso* ^ *PD/apd* ^ *O/aoa***

Where: **action code** is the action the mobile user wants to execute. Action codes are **"I"** for insert, **"U"** for update, **"R"** for retrieve, **"D"** for delete.
date1 is the date, or range starting date, of the assist information. Used when inserting, updating, retrieving a single record, or deleting.
Field length – Required 6 numeric characters. Example: 030801
date2 is the ending date for a range of assist information. Used only when retrieving a range of records. All records within the range specified will be retrieved.
Field length – Required 6 alphabetic/numeric characters. Example: 030801

Note: - At least one of the following information field designations is **required** for **I**nsert and **U**pdate functions.

SO/aso is the number of times assistance was given to sheriff's office personnel.
Field length – Maximum 3 numeric characters. Example: SO/12
PD/apd is the number of times assistance was given to police department personnel.
Field length – Maximum 3 numeric characters. Example: PD/4
***O/*aoa** is the number of times assistance was given to other agency personnel.
Field length – Maximum 3 numeric characters. Example: O/6

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
For **action code** –
Insert - adds new information record in the Agency Assist Information file.
Update - modifies an existing record in the Agency Assist Information file.
Retrieve – returns information record(s) from the Agency Assist Information file.
Delete – removes an existing record from the Agency Assist Information file.

A unit history segment will be added for each **I**nsert, **U**pdate, and **D**elete function.
Agency Assist Information file information will be transfer to MIS nightly.

Responses: Response messages returned to the mobile user will depend on **action code**.
Insert –
"Record Already Exists" - if an information record for **date1** already exists.
"Record Inserted" - if new information record is inserted is successfully.
Update –
"No Record Found" - if a record for **date1** is not found.
"Record Updated" - if a record for **date1** is found and updated successfully.
Retrieve –
If a record for **date1** is found, requested information fields will be returned.

If a date range is supplied, values from all records within that date range will be totaled and a message is returned in the following format:

Line 1 –	**Agencies Assisted for Badge for date1 date2**	
Line 2 –	**Sheriff Dept.**	***10***
Line 3 –	**Local PD's**	***10***
Line 4 –	**Other**	**4**
Line 5 –	**TOTAL**	**24**

"No Record Found" - if a record for **date1** is not found.
Delete –
"Record Deleted" - if retrieved record is deleted successfully.
Delete by date range will not be allowed.

4.26 DI (Drug / Narcotics Information) Command

Purpose: To allow a mobile user to enter, update, retrieve, and delete drug/narcotics information by date.

Command: **DI ^ action code ^ date1 ^** ***date2 ^ A/arrests ^ D/distributions ^ P/possessions ^ O/other ^ V/street value ^ C/currency ^ W/weapons***

Where: **action code** is the action the mobile user wants to execute. Action codes are **"I"** for insert, **"U"** for update, **"R"** for retrieve, **"D"** for delete.
date1 is the date, or range starting date, of the assist information. Used when inserting, updating, retrieving a single record, or deleting.
Field length – Required 6 numeric characters. Example: 030801
date2 is the ending date for a range of assist information. Used only when retrieving a range of records. All records within the range specified will be retrieved.
Field length – Required 6 alphabetic/numeric characters. Example: 030801

Note: - At least one of the following information field designations is **required** for **I**nsert and **U**pdate functions.

A/arrests is the number of persons arrested.
Field length – 3 numeric characters: Example: A/12
D/distributions is the number of distribution charges placed**.**
Field length – 3 numeric characters. Example: D/4
P/possessions is the number of possession charges placed.
Field length – 3 numeric characters. Example: P/6
O/other is the number of other drug related charges placed.
Field length – 3 numeric characters. Example: O/2
V/street value is the estimated value of drugs seized in whole dollars.
Field length – 7 numeric characters. Example: V/1123123
C/currency is the amount of currency seized in whole dollars.
Field length – 7 numeric characters. Example: C/1123123
W/weapons is the number of weapons seized.
Field length – 3 numeric characters. Example: W/14

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
For **action code** –
Insert - new information record is added to the Drug/Narcotics Information file.
Update – an existing record in the Drug/Narcotics Information file is modified.
Retrieve – requested information records(s) from the Drug/Narcotics Information file are returned.
Delete – removes an existing record from the Drug/Narcotics Information file.

A unit history segment will be added for each **I**nsert, **U**pdate, and **D**elete function. Drug/Narcotics Information file information will be transfer to MIS nightly.

Responses: Response messages returned to the mobile user will depend on **action code**.
Insert –
"Record Already Exists" - if an information record for **date1** already exists.
"Record Inserted" - if the new information record is inserted successfully.
Update –
"No Record Found" - if a record for **date1** is not found.
"Record Updated" - if a record for **date1** is found and updated successfully.
Retrieve –
If a record for **date1** is found, requested information fields will be returned.

If a date range is supplied, values from all records within that date range will be totaled and a message is returned in the following format:
Line 1 – **Drug/Narcotics Information for Badge for date1 date2**
Line 2 – **Persons Arrested 10**
Line 3 – **Distribution Charges 10**
Line 4 – **Possession Charges 4**
Line 5 – **All Other Charges 3**
Line 6 – **Street Value Seized $ 1,100**
Line 7 – **Currency Seized $ 5,000**
Line 8 – **Weapons Seized 10**
"No Record Found" - if a record for **date1** is not found.
Delete –
"Record Deleted" - if retrieved record is deleted successfully.
Delete by date range will not be allowed.

4.27 MI (Mileage Information) Command

Purpose: To allow a mobile user to retrieve and update car mileage information by date or date range.

Command: **MI ^ action code ^ date1 ^ *date2* ^ *BM/beginning mileage* ^ *EM/ending mileage***

Where: **action code** is the action the mobile user wants to execute. Action codes are **"U"** for update, **"R"** for retrieve.
date1 is the date, or range starting date, of the mileage information.
Field length – Required 6 numeric characters. Example: 030801
date2 is the ending date for a range of mileage information. Used only when retrieving a range of records. All records within the range specified will be retrieved.
Field length – Required 6 alphabetic/numeric characters. Example: 030801
BM/beginning mileage only used when updating an existing record.
Field length – Maximum 6 numeric characters: Example: BM/127308
EM/ending mileage only used when updating an existing record.
Field length – Maximum 6 numeric characters. Example: EM/128410

Actions: **CAD Message Switch**
Forwards the command message to the appropriate Division CAD.
CAD
For **action code** -
Update - modifies existing mileage information.
Retrieve - returns the requested mileage information.
A unit history segment will be added for each **U**pdate function.

Responses: Response messages returned to the mobile user will depend on **action code**.
Update –
"No Record Found" - if a record for **date1** is not found.
"Record Updated" - if a record for **date1** is found and updated successfully.
Retrieve –
"No Record Found" - if a record for **date1** is not found.
If a record for **date1** is found, requested information fields will be returned.

If a date range is supplied, values from all records within that date range will be totaled and a message is returned in the following format:

Line 1 – **Mileage Information for Badge for date1-date2**

Line 2 –	**Date**	**Beginning Mileage**	**Ending Mileage**	**Total**
Line 3 –	**030101**	**54,000**	**54,365**	**365**

5.0 VCIN Query Commands

VCIN query commands supported by the MCT Command Interface are defined in this section. All VCIN query command sequences are originated by the MCT user. The message command-code and data elements provide the CAD Message Switch with a query Function and search Criteria. The CAD Message Switch will transform these commands into valid Inquiry messages and forward them to VCIN. The mobile user is responsible for understanding the specific requirements of each Inquiry type, with respect to Criteria content and format.

In addition to the command-initiated inquiries, a freeform query capability is also supported. Freeform query messages will be recognized and forwarded directly to VCIN, as is, without validation by the CAD Message Switch. Syntax error checking will be performed by either VCIN or subsequent systems. The command format of the freeform query is described at the end of this section.

With the exception of inquiries from users for whom the VSP CAD system does not maintain a history file, all inquiry messages forwarded to VCIN are copied to the appropriate Division CAD. The involvement of the Division CAD is only to record appropriate history file segments with the inquiry message, as content. No response to this action will be returned to the mobile user by the Division CAD system. VCIN response messages for a given query will vary in number, length, and order of transmission. Depending on the query type, a separate, and information specific, response may be generated by multiple systems. Because the CAD Message Switch will forward response messages on a first received, first sent basis, the order of receipt at the mobile system may be indeterminate.

The initial response returned to the mobile user, for all queries successfully sent to VCIN, will be **"ACCEPTED"**. The mobile user will then know that VCIN has accepted the query for processing. The CAD Message Switch will examine VCIN inquiry response messages for Wanted/Stolen indicators. If either status is indicated and where applicable, a copy of the response message will be sent to the mobile user's Division CAD to alert their controlling dispatcher. Due to the magnitude of possible responses, definitions for these message formats will not be provided by this document. The mobile system should accommodate the storage and

display of multiple, 80 characters per line by an indeterminate number of lines, response messages. The maximum data character length of a response message is 14,700 bytes[11].

The ensuing tables define the purpose, format, data elements, and system actions for each query command. Data element descriptions include the field length, data type and in some cases, an example. Conventions used in the query command description tables are as following:

- Query command codes are displayed in **UPPERCASE, BOLD, BLOCK** font**.**
  Example: **QA**
- The ^ symbol within a command string indicates a required Space (ASCII x20).
  Example: **QG^**……..
- Required data element designators are designated by **UPPERCASE, BOLD, BLOCK** font.
  Example: **QG ^ SER/**……..
- Required data element variables are displayed in **lowercase, bold, block** font.
  Example: **QG ^ SER/serial number**
- Optional data element designators are indicated by ***UPPERCASE, BOLD, ITALICISED*** font.
  Example: **QG ^ SER/serial number ^** ***CAL/***……
- Optional data element variables are displayed in ***lowercase, bold, italicized*** font.
  Example: **QG ^ SER/serial number ^** ***CAL/caliber***
- Fixed length fields are specified by stating the required number of characters.
  Example: Field length – Required 8 numeric characters.
- Variable length fields are specified in maximum number of characters.
  Example: Field length – Maximum 7 alphabetic/numeric characters.
- Variable length field minimum character requirements will follow the maximum number.
  Example: Field length – Maximum 7 minimum 4 alphabetic/numeric characters.

5.1 QA (Query Article) Command

Purpose: To spawn a query of the NCIC Article File for stolen, recovered, or lost articles.

Command: **QA ^ TYP/article type[12] ^ SER/serial number**

Where: **TYP/article type** – is an Article Type Code from the NCIC 2000 Article Name Dictionary.
Field length – Maximum 7, minimum 4 alphabetic characters. Example: DCOMPUT
SER/serial number – is the serial number of the article.
Field length - Maximum 20 alphabetic/numeric characters. Example: ABC1234DE5677

Actions: **CAD Message Switch**
Formats the query message and sends it to VCIN.
Sends a message copy to the appropriate Division CAD.
Forwards all VCIN response messages to the mobile user.
CAD
Creates a Unit History segment containing the query message. An Incident History segment is also written if the unit is currently assigned.

Responses: Alphanumeric text message of indefinite length.

[11] 14,700 bytes is derived from the NLETS specified maximum message length.
[12] The Article Type field may be omitted only if the inquiry is for a Virginia, Vehicle Inspection sticker. The CAD Message Switch will default **article type** to **"JSTICKE"** if message field code **TYP/** is not provided.

5.2 QG (Query Gun) Command

Purpose: To spawn a query of the NCIC Gun File for stolen, recovered or lost guns.

Command: **QG ^ SER/serial number ^ *MAK/make ^ CAL/caliber ^ MOD/model***

Where:
SER/serial number – is the serial number of the gun.
Field length - Maximum 11 alphabetic/numeric characters.
Example: R7102733487
MAK/make – is the NCIC Gun Data Code for the gun manufacturer.
Field length – Maximum 23 minimum 2 alphabetic/numeric characters.
Example: REM
CAL/caliber – is a NCIC Gun Data Code for the gun cartridge type.
Field length – Maximum 4 numeric characters. Example: 270
MOD/model – is the manufacture's model designation.
Field length – Maximum 11 alphabetic/numeric characters with intervening spaces.
Example: Model 710

Actions:
CAD Message Switch
Formats the query message and sends it to VCIN.
Sends a message copy to the appropriate Division CAD.
Forwards all VCIN response messages to the mobile user.
CAD
Creates a Unit History segment containing the query message. An Incident History segment is also written if the unit is currently assigned.

Responses: Alphanumeric text message of indefinite length.

5.3 QB (Query Boat) Command

Purpose: To spawn a query of NCIC and various state agency Boat Files for stolen, recovered or lost and registration information.

Command: **QB ^ REG/registration number ^ BHN/hull number ^ *VMA/make ^ SOC/owner ssn***

Where: Note: - Inquiries may include **REG/** and/or **BHN/**

REG/registration number – is the boat registration number including state code.
Field length - Required 8 alphabetic/numeric characters without spaces.
Example: FL1342YB
BHN/hull number – is the Hull Identification Number assigned by the manufacturer.
Field length – Maximum 20 alphabetic/numeric characters.
Example: SERCB1234E901
VMA/make – is the NCIC Boat Data Code for the boat manufacturer.
Field length – Maximum 4 minimum 2 alphabetic/numeric characters.
Example: SER
SOC/owner ssn – is the Social Security Number of the boat owner.
Field length – Required 9 numeric characters.

Actions: **CAD Message Switch**

Formats various VCIN query message(s) based on the **required** elements provided….

If **registration number** is provided, queries are generated for NCIC and, Virginia Department of Game and Inland Fisheries (DGIF) or indicated out-of-state.

If **hull number** is provided, queries are generated for NCIC, Virginia DGIF and, if **registration number** is provided, for indicated out-of-state.

Sends a message copy to the appropriate Division CAD.
Forwards all VCIN response messages to the mobile user.

CAD

Creates a Unit History segment containing the query message. An Incident History segment is also written if the unit is currently assigned.

Responses: Alphanumeric text message of indefinite length.

5.4 QV (Query Vehicle) Command

Purpose: To spawn various queries of NCIC, VCIN and/or, Virginia DMV or out-of state files for registration and lien, stolen vehicle, and wanted/missing persons information.

Command: **QV ^ LIC/license number ^ LIS/license state ^ *LIY/license year* ^ LIT/license type**
or:
QV ^ LLC/lien license number ^ LIS/license state ^ *LIY/license year* ^ LIT/license type
or:
QV ^ VIN/vehicle identification number
or:
QV ^ VLN/lien vehicle identification number

Where: Note: - Inquiries may specify either **LIC/** or **LLC/** or, **VIN/** or **VLN/**

LIC/license number – is the vehicle license plate number.
Field length - Maximum 8 alphabetic/numeric characters. Example: YB1342N

LLC/lien license number – is the vehicle license plate number.
Field length - Maximum 8 alphabetic/numeric characters. Example: YB1342N

LIY/license year – is the license plate year of expiration.
Field length - Required 4 numeric characters. Example: 2003

LIS/license state[13] – is the NCIC State Code for the license plate issuing state.
Field length – Required 2 alphabetic characters. Example: NJ

LIT/license type[14] – is a NCIC Vehicle Data Code for the license plate type.
Field length – Required 2 alphabetic characters. Example: PC

VIN/vehicle identification number – is the vehicle manufacturer assigned number.
Field length – Maximum 20 alphabetic/numeric characters.
Example: 2G4WF5510Y9985912

VLN/lien vehicle identification number - is the vehicle manufacturer assigned identification number for which lien information is being requested.
Field length – Maximum 20 alphabetic/numeric characters. Example: (see VIN/)

[13] If ***LIS/license state*** is not provided, the CAD Message Switch will default this element to **VA**
[14] If ***LIT/license type*** is not provided, the CAD Message Switch will default this element to **PC**

Actions: **CAD Message Switch**

Formats various VCIN query message(s) based on the **required** elements provided….

If **LIC/** is provided and ***license state*** is **VA**[15], queries are generated for VCIN and Virginia DMV.

If **LIC/** is provided and ***license state*** is not **VA**, queries are generated for NCIC and, the indicated out-of-state registration information.

If **VIN/** is provided queries are generated for VCIN, NCIC, and Virginia DMV or the indicated out-of-state registration information.

If **LLC/** or **VLN/** are provided, a single query will be generated for Virginia DMV registration information.

Provides ***LIS/license state*** with a default of **VA** if the element isn't provided.
Provides ***LIY/License year*** with a default of the current year if the element isn't provided.
Sends a message copy to the appropriate Division CAD.
Forwards all VCIN response messages to the mobile user.

CAD

Creates a Unit History segment containing the query message. An Incident History segment is also written if the unit is currently assigned.

Responses: Alphanumeric text message of indefinite length.

5.5 QD (Query Driver) Command

Purpose: To spawn various queries of the Virginia DMV or out-of-state drivers license file for license status information, to request a Virginia driving record transcript or by mail, and conditionally, to query NCIC and VCIN wanted/missing and other files.

Command: **QD ^ OLN/license number ^ *LIS/license state ^ QTR/transcript request ^ COB/code or badge ^ COJ/jurisdiction***

or:

QD ^ NAM/name ^ DOB/birth date ^ SEX/gender ^ *LIS/license state ^ QTR/transcript request ^ COB/code or badge ^ COJ/jurisdiction*

[15] Either specified as or defaulted to.

Where: Note: - Inquiries may specify **OLN/** or, **NAM/, DOB/** and **SEX/**.

OLN/license number – is the subjects driver's license number.
Field length – Maximum 20 alphabetic/numeric characters.
Example: T19384756
LIS/license state – is the NCIC State Code for the OLN issuing state.
Field length – Required 2 alphabetic characters. Example: MA
QTR/transcript request - is an indicator that specifies a transcript of a subjects driving record is to be returned in a response message.
Field length – Required 1 alphabetic character must be either **Y**es or **N**o
COB/code or badge – is an indicator to signify that a transcript of a subjects driving record is to be mailed to the inquiring Unit.
Field length – Required 1 alphabetic character must be either **Y**es or **N**o
COJ/jurisdiction – is the County or City jurisdiction code for the Commonwealth Attorney that is to be mailed a copy of the subjects driving transcript.
Field length – Required 3 number characters. Example: 043
NAM/name – is the subjects name in the format: **last,first ^ middle initial**
Field length - Maximum 35 including alphabetic, comma, and space characters.
Example: Jones,John J
DOB/birth date – is the subjects date of birth in the format of: YYYYMMDD
Field length – Required 8 numeric characters. Example: 19430926
SEX/gender – is the single letter **M**ale, or **F**emale.
Field length – Required 1 alphabetic character.

Actions: **CAD Message Switch**
Formats various VCIN query message(s) based on the **required** element(s) provided….

If **OLN/** is provided and ***license state*** is **VA**[16], queries are generated for VCIN and Virginia DMV.

If **OLN/** is provided and ***license state*** is **not VA**, queries are generated for NCIC and, the indicated out-of-state.

If **NAM/, DOB/,** and **SEX/** are provided, queries are generated for VCIN, NCIC and, Virginia DMV or out-of-state as indicated by ***LIS/license state***

Provides ***LIS/license state*** with a default of **VA** if the element isn't provided.
Sends a message copy to the appropriate Division CAD.
Forwards all VCIN response messages to the mobile user.
CAD
Creates a Unit History segment containing the query message. An Incident History segment is also written if the unit is currently assigned.

Responses: Alphanumeric text message of indefinite length.

5.6 QH (Query Criminal History Index) Command

Purpose: To spawn queries of VCIN/NCIC criminal history indexes and Wanted/Missing Persons files, and the Virginia Sex Offender and Concealed Weapons Permit files, for the existence of subject records.

Command: **QH ^ NAM/name ^ DOB/date of birth ^ SEX/gender ^ RAC/race ^ PUR/purpose code**

[16] Either specified as, or defaulted to.

Where: **NAM/name** – is the subjects name in the format: **last,first ^ middle initial**
Field length - Maximum 35 including alphabetic, comma, and space characters.
Example: Jones,John J
DOB/birth date – is the subjects date of birth in the format of: YYYYMMDD
Field length – Required 8 numeric characters. Example: 19430926
SEX/gender – is the single letter **M**ale, or **F**emale.
Field length – Required 1 alphabetic character.
RAC/race – is the NCIC Personal Descriptor code for the subjects race.
Field length – Required 1 alphabetic character.
PUR/purpose code – is a VCIN/NCIC code that signifies the purpose for which the inquiry is being made.
Field length – Required 1 alphabetic character. Example: C

Actions: **CAD Message Switch**
Provides the Attention data element (**ATN/name**) with the name of the Unit requesting the Criminal History information.
Formats the query message and sends it to VCIN.
Sends a message copy to the appropriate Division CAD.
Forwards all VCIN response messages to the mobile user.
CAD
Creates a Unit History segment containing the query message.

Responses: Alphanumeric text message of indefinite length.
Criminal History Index query responses are limited to an indication that a history record either does, or does not, exist. Where history records do exist, responses will include verification of subject particulars and state and FBI record identification numbers only. Queries of Criminal History Information records are not supported by the Command Interface.

5.7 VCIN (Freeform) Command

Purpose: To afford mobile users the capability to enter VCIN/NCIC commands "by hand", without the assistance of a screen entry form. It is presumed that users of this freeform command style will be familiar with the VCIN/NCIC Message Key (MKE) codes, Message Field Codes (MFC), and all format requirements thereof.

Command: **VCIN ^ MKE .. MFC^1/field $data^1$. MFC^2/field $data^2$. MFC^n/field $data^n$**

Where: **MKE** – is a VCIN/NCIC defined code for the inquiry type. The MKE must be followed by followed by two period field delimiters. (ASCII x2E2E)
MFC – is a MKE specific field identifier code, followed by a / character (ASCII x2F).
field data – is the criteria associated with the MFC terminated with period (ASCII x2E).

Actions: **CAD Message Switch**
Forwards the message to VCIN. Sends a message copy to the appropriate Division CAD.
Forwards all VCIN response messages to the mobile user.
CAD
Creates a Unit History segment containing the freeform query. If the unit is currently assigned to an incident, an Incident History segment will also be written.

Responses: Alphanumeric text message of indefinite length.

Appendix A

Sample Responses Messages

A-1. Unit History

Command: UH 1442

Response:

```
Unit History For Unit: 1442 From: 03/19/01 21:00:01 To: 03/20/01 11:44:21
*** New Date: 03/19/01 ***
/2100  (******)  LOGON                #1219   MATTHEWS,MTP HUELL W JR
                                      DPST/010101A
/2254  (5856D )  1041                 #1219   MATTHEWS,MTP HUELL W JR
                                      DPST/010101A
*** New Date: 03/20/01 ***
/0000  (5869D )  MISC                 ,AREA OFFICE
/0000  (5856D )  MISC                 ,1037 AREA OFFICE
/0014            REMINQ               QL 1442 @WA3179.NC
/0025            DISPOS #DIV101052848 T/TS     [SB 95 AT 100MM ,042] .YNL3008
                                                ,BLU FORD
/0025            REMINQ #DIV101052848 QV 1442 YNL3008 VA PC
 0027            REMINQ #DIV101052848 QO 1442 T67110022.Y
/0031            CLEAR  #DIV101052848 D/UTS
 0040            DISPOS #DIV101052852 T/TS     [SB 95 AT 100MM ,042] ,NO MORE IN
                                      FORMATION
/0043            REMINQ #DIV101052852 QL 1442 @9MR824.KY
   44            REMINQ #DIV101052852 QVIN 1442 1FUYDXYB5LH383213.KY
   45            REMINQ #DIV101052852 QN 1442 PICKETT.RICHARD.L.19570128.M.KY
   46                   #DIV101052852 QVIN 1442 1FUYDXYB5LH383213.KY
   53  (5935D )  CLEAR             52 D/UTS
/0055            DISPOS #DIV101052853 T/TS     [SB 95 AT 99MM ,042] .LEEANNS.PA
                                                ,GRN PONTIAC
   55                                53 QV 1442 LEEANNS PA 2001 PC
   56            MISC                53 ,AT 99.5MM
  100  (5856D )  REMINQ               3 QN 1442 MCILHENNEY.LEE.ANN.19790608.F.PA
/0106            CLEAR  #DIV101052853 D/UTS
  116            DISPOS              60 T/TS     [SB 95 AT 100MM ,042] .KWC1OP.NJ
                                                ,MAROON TOYOTA
  116                               60 QV 1442 KWC1OP NJ 2001 PC
  119                               60 QL 1442@KWC10P.NJ
  120            REMINQ              60 QN 1442 JOHNSON.OTIS.P.19790318.M.NJ
  120            REMINQ              60 QO 1442 J61736127703792.NJ
/0122            MISC   #DIV101052860 ,1037 SB 95 AT 100
  128            CLEAR               60 D/UTS
  135            DISPOS              64 T/TS     [NB 95 AT 101MM ,042] .YNU1950
                                                ,SILVER FD EXPLORER
   35            REMINQ              64 QV 1442 YNU1950 VA PC
   41            REMINQ               4 QN 1442 LEE.MICHELLE.MARIE.19810428.F.MD
/0144            CLEAR  #DIV101052864 D/UTS
  201            DISPOS               7 T/TS     [SB 95 AT 100MM ,042] .KS9303
                                                ,NO MORE INFORMATION
  201                                 7 QV 1442 KS9303 VA PC
  202                                 7 QL 1442@YKS9302
  206            REMINQ               7 QN 1442 JABBIE.SAIDU.19671102.M.MD
  207            REMINQ               7 QOT 1442 D24200073564
  207            REMINQ               7 QO 1442 D24200073564.Y
/0209            REMINQ #DIV101052867 QO 1442 10012825.NC
  210                                 7 QN 1442 COOKS.AHMAL.JAHMAL.19760415.M.NC
  212            MISC                 7 ,SUSP
  218             ONTCT               7 Contact in  15 Minutes
   2             CLEAR                 D/UTS
/0223            REMINQ                QL 1442@WA3179.NC
   24                                  QN 1442 GRISSOM.GEORGE.WARREN.19461229.M.N
                                       C
   29  (5935D )  DISPOS             71 T/TS     [SB 95 AT 100MM ,042] ,T/T
```

```
   30                              71 QN 1442 GARAY.JOHN.ALBERT.19571009.M.FL
   35  (5856D )  CLEAR              71 D/UTS
  308            MISC                 ,1037 AREA OFFICE
  346  (5935D )  DISPER             79 T/1046O  [NB 95 SO RT 54 EXIT 92 ,042]
  401  (5856D )  ROTREQ             79 TOW     ELLI  12    ELLIOTTS TOWING SERVIC
                                     E                           97982860
  402            REMINQ             79 QL 1442 @NWJ8397.NC
  402            MISC   #DIV101052879 ,FOUR SOULS ONBOARD
  403             OTENR #DIV101052879 ELLI
/0405            CLEAR  #DIV101052879 D/MOA WRK
  405            DISPER              4 T/105E              16.8MM ,016]
   41            MISC                4 ,1037 SB 101
  411            CHANGE              4 LOC: SB 95 AT 116.8MM ,016 -->  SB 95 AT 1
                                       01.5MM ,016
  411            ONSCNE              4
   11            CHGLOC              4 [DIV]
/0430            ONSCNE #DIV101052874
   33            CONTRL                G/G108
   34            CLEAR               4
  505            MISC                  ,1037 AREA OFFICE
  509            DISPOS             85 T/TS     [SB 95 AT 100MM ,042] ,NO MORE IN
                                       FORMATION
  513            REMINQ             85 QN 1442 MOODY.DARREN.LEE.19671127.M.NC
  514             LEAR              85 D/UTS
/0520            DISPOS #DIV101052889 T/TS     [SB 95 AT 100MM ,042] ,NO MORE IN
                                       FORMATION
   52            REMINQ             89 QL 1442@YYF5027
  525            REMINQ             89 QO 1442 437589221.Y
  534             LEAR  #DIV101052889 D/UTS
  550            REMINQ                QN 1442 RODRIGUEZ.EULOGIO.19420922.NJ
   50            REMINQ                QN 1442 RODRIGUEZ.EULOGIO.19420922.M.NJ
   53            REMINQ                QN 1442 RODRIGUEZ.EULOGIO.JR.19420922.M.NJ
/0553            REMINQ                QN 1442 RODRIGUEZ.EULOGIO.19420922.M.NJ
   54                                  QO 1442 R60942450009422.NJ
  612            MISC                  ,1037 101
  614                                98                                  LITTLE RED
                                        HONDA
  614                                98         @BX798Y.NY
  618                                98 QN 1442 CRUZ.CLEMENTE.19710202.M.NY
  619            REMINQ              98 QO 1442 468188735.NY
  619            MISC   #DIV101052898 ,FALSE HIT
  625            CONTCT #DIV101052898 Contact in  10 Minutes
  628            CLEAR  #DIV101052898 D/UTS
  647  (5972D )                              THOMPSON.VIRGIL.ANTHONY.19670707.M
                                       .MD
   48            REMINQ                QO 1442 T5612843067539.MD
   51            REMINQ                QN 1442 BRAGG.DARIN.W.19740326.M.MD
/0653            REMINQ                QN 1442 BRAGG.DARIN.W.19740326.M.IN
   57                                           1950196171.IN
  700                                  QO 1442 1950196171.IN
  70             LOGOFF
```

A-2. Incident History

Command: IH #DIV101052338

Response:

```
Incident History for: #DIV101052338  Xref: #DIV101052340
 Case Numbers: $01211045

 Entered        03/19/2001  08:46:48  BY D103  CASH
 Dispatched     03/19/2001  08:50:36  BY D101  5582D
 Enroute        03/19/2001  08:50:36
 Onscene        03/19/2001  08:55:06
 Closed         03/19/2001  16:06:51

 Initial Type: 1050D      Final Type: 1050F  (VEHICLE CRASH FATALITY)
 Initial Priority: 2      Final Priority: E
 Disposition: ACR UTS UIN 102  Offense:          Source: 9    Primary Unit: 736

 Duty Post: 014401  SAC:
 Group: G144          Beat:       Map Page:
 Loc: RT 30 AT RT 652,016   (NV)
 Loc Info: RT 652 IS SIGNBOARD RD
 Name: 911
 Addr:                                    Phone:
/0846  (CASH  )  ENTRY         2 TT,NO PI'S,
/0847  (2565D )  HOLD

/0848  (4277D )  CHANGE        TYP: 1050D  --> 1050I
                               RSP: T   --> T
                               PRI: 2  --> E
/0848            SUPP          TXT: 1052 IS 1017
/0850  (5582D )  DISPER  593    #4878   BURTON,TII ANDREW J
/0850            ASSTER  610    #4613   COX,TPR JJ
/0852  (2565D ) $CROSS         #DIV101052340
/0852            DUP           #DIV101052340
/0852            DUP           NAM: HANOVER COUNTY
                               PHO: 8045376000
   53  (5582D )  MISC          ,163 HAS BEEN NOTIFIED AND I HAVE 042 UNITS GOING
                                UNTIL I CAN GET A 016 UNIT
/0855            ONSCNE  593
/0855            MISC    593   ,RT 30 IS BLOCKED DIRECTING TRAFFIC AROUND IT ON
                                HE SHOULDER
    6            CHANGE        LOC: SIGNBOARD RD/RT 30,016 -->  RT 30 AT RT 652,
                               016,
                               LOCI:  -->  RT 652 IS SIGNBOARD RD
    7  (2565D )  ONSCNE  610
  900            CHANGE        LOC: RT 30 AT RT 652,016 -->  RT 30 AT RT 652,016
                               ,
                               TYP: 1050I -->  1050F
/0900            MISC          ,163 HAS BEEN ADVISED
  902            MISC          ,392 HAS BEEN ADVISED
  90             ASSTER  599   [RT 30 AT RT 652,016]
                                #1784   MCLENNAN,MTP LELAND H JR
    0?           ASSTOS  927   [RT 30 AT RT 652,016]
                                #5129   DZIEDZIC,TII CHRISTOPHER A
/0909            ASSTER  736   [RT 30 AT RT 652,016]
                                #5263   COLLINS,TPR TERENCE P
    9            ASSTER  1577  [RT 30 AT RT 652,016]
                                #4003   MACFARLAND,TII JAMES L
/0910            PRIU    736
   12                               CONTACTING THE ME
   13            ASSTOS  392   [RT 30 AT RT 652,016]
```

```
                                #3649   STILES,SGT KERRY L
/0913            ASSTER  686   [RT 30 AT RT 652,016]
                                #5624   BUSH,TPR GEOFFREY T
/0913           $PREMPT  686
   15                    68
                                  624   BUSH,TPR GEOFFREY T
   15                   849
                                 5634   EDWARDS, TPR MASON G
    5            MISC    686   ,ON 1046 BY MISTAKE
   20           $PREMPT  610
   21            MISC           ,392 HAS BEEN ADVISED
/0922  (5582D )  MISC           ,538 NO ANSWER AND 1287 HAS AN APPOINTMENT TODAY,
                                 HE CANT MAKE IT
/0922            MISC           ,PAGED 1458 FOR RECON
   23  (2565D )  MISC           ,5092 HAS BEEN ADVISED
   24            CONTCT  392   Contact in  30 Minutes
/0924            CONTCT  593   Contact in  30 Minutes
   24            CONTCT  927   Contact in  30 Minutes
/0925            ONSCNE  736
   2             CLEAR   1577
    8            MISC           ,STORKE FUNERAL HOME WILL BE NOTIFIED
    8            ASSTER  1458  [RT 30 AT RT 652,016]
                                #3007   WEYANT,STP RICHARD A
/0928  (5582D )  MISC           ,1564 IS NOT AVAIL
    8  (2565D )  CLEAR   849
    9            ASSTER  5092  [RT 30 AT RT 652,016]
                                #5709   GELLER,PIO CORINNE N
    9            ONSCNE  686
   32                    736
   32  (5582D )  ASSTER  518    #3474   ELMORE,STP JAMES E
                                ,FOR RECON
   33                    335 WAS NOTIFIED FOR 518
   35  (2565D )  CONTCT  686   Contact in  30 Minutes
/0943            ROTREQ  392   TOWL    LHIL  441   HILLCREST GARAGE
                                                    918044483300
   44            ROTNAK  392   TOWV    LHIL   ,NOT AVAIL
   44           $ROTREQ  392   TOW     LN1   441   #1 TOWING COMPANY INC
                                                    918044489898
   45            ROTENR  392   LN1  ,LN1 1017
   47            ROTREQ  392   TOWL    LBUD  441   BUDS TOWING
                                                    918044484500
/0949            ROTENR  392   LBUD ,LBUD 1017
   49            ONSCNE  5092
   52            ONSCNE  599
   56            ONSCNE  1458
/1006            REMINQ  927   QV 927 1HSRDG2R4JH547962
 1007             EMINQ  927   QV 927 79562
 1007            CONTCT  593   Contact in  30 Minutes
/1007            CONTCT  599   Contact in  30 Minutes
 1007            CONTCT  686   Contact in  30 Minutes
 100             CONTCT  736   Contact in  30 Minutes
/1007            CONTCT  1458  Contact in  30 Minutes
 1007            CONTCT  5092  Contact in  30 Minutes
 1022            CONTCT  392   Contact in  30 Minutes
 1030            CLEAR   392
 1031            MISC           ,STORKE 1023 AND VDOT AND 1051'S HAVE ROAD BLOCKE
                                D
   38            CONTCT  593   Contact in  30 Minutes
   38                      9
   38                    686
   38                    73
```

```
   38                    927
   38
   39
   46              LEAR  927
   48                    593
   58             REMINQ 736   QO 736 231849764
 /1109            MISC         ,1731 FROM AREA 2 WILL TRY TO LOCATE NEXT OF KIN
  109                      9
  109                    686
  110                   1458
  110                   5092
  110              LEAR  5092
  136                    736
  144              LEAR  686
  145              HGLOC 736   [AREA]
  201             ASNCAS       $01211045
  241             CHGLOC 599   [BUDS]
  241             CONTCT 1458  Contact in  20 Minutes
  306             ONSCNE
  315             ONSCNE 736
  319             MISC         ,REF KENNETH KING,INFO FROM 1733,PHS ADDRESS IS 2
                               302 COAN STAGE RD,HEATHSVILLE VA AND THEIR PHONE
                               NUMBER IS 580-4736 AND NO ONE IS THERE
  344
  348             MISC         ,U 1733 HAS MADE NOTIFICATION WITH SUBJECTS' WIFE
  35               LEAR  599
  358             CONTCT 1458  Contact in  20 Minutes
  402  (5582D )   GDISPO 736   DSP: ACR.UTS.UIN.WRK
                               ,X2
  433  (2565D )   CONTCT 736   Contact in  30 Minutes
  444  (5535D )   OK     1458
  504             OK     736
 /1507            CLEAR  1458
 /1507            CLEAR  518
  606              LEAR        DSP: ACR UTS UIN  --> ACR WRK 102
  606             CLOSE  736
```

A-3. Unit Roster

Command: UR G101

Response:

Unit Roster for D101 Requested on 03/20/01 11:45:49

Unit	Type	Group	Date	Time	Id	Name	Dpst
214	S	G101	03/20/01	05:00	#1969	AUSTIN,FSG GEORGE W JR	010101
346	S		03/20/01	05:00	#3790	MILLNER,SGT M WADE	010101
392	S		03/20/01	05:00	#3649	STILES,SGT KERRY L	010101
593	T		03/20/01	05:00	#4878	BURTON,TII ANDREW J	010101I
610	T		03/20/01	05:00	#4613	COX,TPR JJ	010101J
783	T		03/20/01	05:00	#4625	JONES,TII TONY B	010101A
>849	T		03/20/01	05:00	#5634	EDWARDS, TPR MASON G	010101A
927	T		03/20/01	05:00	#5129	DZIEDZIC,TII CHRISTOPHER A	010101C
+>1287	T		03/20/01	08:42	#2027	REED,MTP DONALD R	010101A
>1417	T		03/20/01	05:00	#5349	MAYER,TPR ERIC D	010101C
+>1538	T		03/20/01	06:58	#5055	WELLS,TII MITCHELL M	
>1543	T		03/20/01	05:00	#5672	WILLIAMS,TPR BEN D	010101C
>1617	T		03/20/01	05:00	#3884	HARRISON,STP THOMAS S	010101C
1670	T				4315	LEWIS,TII DAVID A	A
>1679	T		03/20/01	06:53	#5175	NEILSON,TII ELLEN M	
1717				10:16	#5781	PATTERSON,TPR MATTHEW T	

A-4. Unit Status

Command: US G101

Response:

Unit Status for G101 Requested on 03/20/01 11:46:23

Unit	Status	Group	Time	Incident	Type	Location
214	AVL	G101	07:15			
346	AVL		07:25			ON-CALL
392	AVL		06:59			
593	AVL		10:43			
610	AVL		08:23			
+783	ENR		11:46	#DIV101053130	1093	NB 95 NO DOSWELL
>849	OUT ONS		08:36		CTG	043
927	SPC		08:03			CO043
+>1287	OUT ONS		08:42	#DIV101053010	WZ	W BROAD ST/GASKI
>1417	OUT ONS		08:38		CTG	043
+>1538	OUT ONS		06:58	#DIV101052915	WZ	VDOT SHORTPUMP,0
>1543	OUT ONS		08:35		CTG	043
>1617	OUT ONS		08:27		CTG	043
1670			11:23			
>1679	OUT ONS		09:43		SA	
1717			11:35			

APPENDIX M

CJIS SYSTEM SECURITY

II System Security

A. System Security is defined as the overall security measures, which must be observed by all participating VCIN terminals.

1. The VCIN system shall only be used by authorized criminal justice agencies to transmit and receive criminal justice information for criminal justice purposes.

2. Any external computer system interfacing with VCIN must either be dedicated to and operated by a Criminal Justice agency or management control over that portion of the system must be under a Criminal Justice agency.

3. Only the terminals and printers on your interface system that are approved by the VCIN administrative office will be permitted access to the VCIN system. All printers will be located within the same room as the approved terminal that the printer is connected to. The data received from the VCIN system **shall not** be retransmitted to another terminal or printer not approved by the VCIN administrative office.

4. Any VCIN user agency, which acts as a control point for any other agency must assume responsibility for and enforce any security, measures necessary to prevent degradation of the VCIN network.

5. Information obtained through the VCIN system must be destroyed (shredded or burned) after it has served the purpose for which it was obtained.

6. The data received through the VCIN system **shall not** be stored within your computer system for later retrieval, except for information required to be maintained regarding mobile terminals. Any future need of the data shall be retrieved from the VCIN system.

   a. Any traffic sent and received through a mobile terminal shall be logged within your system to identify which operator who made the request for and received the data. If the data is reviewed by another operator, i.e. to assist the requestor, the access must be logged.

7. Requests for mobile data terminals shall be requested in writing and a meeting shall be held between requesting agency personnel, to include their data processing personnel, VCIN administrative staff, and state police data processing personnel. All mobile terminals shall be connected through an interface.

   a. All traffic will be transmitted through the VCIN system with the mobile terminal address and ORI number assigned by the VCIN administrative office.

1) Only mobile terminals shall be permitted to use the mobile address, all other terminals connected to the VCIN system will be assigned their own address and ORI.

2) If more than one agency is connected through the same interface with mobile terminals, each agency shall be assigned a mobile terminal address and ORI.

a. Each agency transmitting requests through the mobile terminal address shall use their ORI.

b. Mobile terminals shall be authorized to communicate from car to car, car to base, and inquire into the databases of the NCIC/VCIN and National LETS systems, except for criminal histories.

c. Criminal History shall not be transmitted to a mobile terminal.

d. The mobile terminals may have access to the VCIN system only when installed in a police vehicle or when operated in a secure location. If the terminal is removed from the police vehicle, the VCIN connection **shall not** be used except for emergency enforcement purposes.

e. Mobile Digital Terminals (MDT's) must be secured at all times to keep unauthorized persons from accessing NCIC/VCIN systems. If the terminal is lost or stolen, the agency shall disable the terminal's access to the VCIN system and notify the Criminal Justice Information Services Division Commander immediately in writing.

f. Mobile terminals must have 128-bit encryption for all data transmitted and received per NCIC Security policy.

8. All Virginia laws, policy, federal laws, FBI/NCIC policy, DMV, and NLETS policies shall apply in all cases concerning file security, control, and system security for any transaction involving the computer data bases.

9. The PCs and mobile terminals at your agency which have VCIN installed shall **not** have Internet capabilities, except those PCs that are equipped with Cyberlinxx.

10. Passwords for system access

a. When an operator has been assigned a sign-on and password to access the VCIN system it will be used only by the operator it is assigned to. If the operator provides the sign-on and password to another person or causes the sign-on or password to be displayed for use by another person, their VCIN access and certification shall be suspended for a period not to exceed 30 days by the VCIN administrative office. Any subsequent violations of the password requirements shall result in a 6 month suspension of their VCIN access and certification.

b. When the VCIN administrative office assigns the sign-on and password for the Cyberlinxx system, a letter will be sent to the agency head with this information. The agency head or his/her designee will disseminate this information only to the operator that it is assigned to. If the operator forgets their password, they must obtain it again from the agency head or his/her designee. The VCIN Control Center will not have a list of the operator's sign-on and passwords.

APPENDIX N

APPENDIX N

BUSINESS PARTICIPATION WITH SMALL BUSINESSES AND BUSINESSES OWNED BY WOMEN AND MINORITIES

The following definitions will be used in completing the information required by one or more of the three categories of businesses contained in this Appendix as applicable to your firm: (I) Participation by Small Businesses; (II) Participation by Businesses Owned by Women; and (III) Participation by Businesses Owned by Minorities.

DEFINITIONS

Period is the specified 12-month period for which the information provided in this list is applicable and valid. The period will be specified as month and year.

Firm Name, Address and Phone Number is the name, address and business phone number of the small business, women-owned business or minority-owned business with which the offeror has contracted or done business over the specified period or plans to involve on this contract, as applicable.

Contact Person is the name of the individual in the specified small business, women owned business or minority-owned business who would have knowledge of the specified contracting and would be able to validate the information provided in this list.

Type Goods or Services is the specific goods or services the offeror has contracted for from the specified small, women-owned or minority-owned business over the specified period of time or plans to use in the performance of this contract, as applicable. The offeror will asterisk (*) those goods and services that are in the offeror's primary business or industry.

Dollar Amount is the total dollar amount (in thousands of dollars) the offeror has contracted for or has done business with the listed firm during the specified period or plans to use on this contract, as applicable.

% Total Company Expenditures for Goods and Services is calculated by dividing the dollar amount of business conducted or contracted for with the indicated firm over the specified period by the total expenditure of the offeror over the specified period for goods and services.

% of Total Contract is calculated by dividing the estimated dollars planned for the indicated firm on this contract by the total offeror estimated price of this contract.

I. PARTICIPATION BY SMALL BUSINESSES

A. Offeror certifies that it ( ) is, ( ) is not, a small business concern. For the purpose of this procurement, a small business is a concern, including its affiliates, which is independently owned and operated, is not dominant in the field of operation in which it is contracting and can further qualify under the criteria concerning number of employees, average annual receipts, or other criteria, as prescribed by the United States Small Business Administration. **(Offeror's response here does not impact the score for this criterion.)**

B. PAST PARTICIPATION: List small businesses with which the offeror has contracted or done business and dollar amounts spent with each of these businesses in the most recent 12-month period for which data are available. Offerors are encouraged to provide additional information and expand upon the following format:

PERIOD: From: _____ To: _____

***IMPORTANT: Offerors are to provide the amount of total company expenditures for goods and services during the period referenced above in the space provided and the Commonwealth of Virginia will be responsible for calculating the percent figures requested in the table provided below.**

TOTAL COMPANY EXPENDITURES FOR PERIOD: _____

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	*% OF TOTAL COMPANY EXPENDISUTES FOR GOODS /SERVICES FROM SMALL BUSINESSES

I. PARTICIPATION BY SMALL BUSINESSES

Part B (Continued)

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	*% OF TOTAL COMPANY EXPENDISUTES FOR GOODS /SERVICES FROM SMALL BUSINESSES

***WHEN FIGURING THE TOTALS IN THIS COLUMN, THE TOTAL EXPENDITURES FOR ALL THREE CATEGORIES (SMALL, WOMEN AND MINORITY OWNED BUSINESSES) CANNOT EXCEED 100%**

I. PARTICIPATION BY SMALL BUSINESSES
(Continued)

C. PLANNED PARTICIPATION: Describe offeror's **plans** to involve small businesses in the performance of this **contract** either as part of a joint venture, as a partnership, as subcontractors or as suppliers. Offerors are encouraged to provide additional information and expand upon the following format:

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	**% OF TOTAL CONTRACT AMT. TO BE SPENT WITH SMALL BUSINESSES ON THIS CONTRACT

I. PARTICIPATION BY SMALL BUSINESSES

Part C (Continued)

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	**% OF TOTAL CONTRACT AMT. TO BE SPENT WITH SMALL BUSINESSES ON THIS CONTRACT

** THIS COLUMN REFLECTS WHAT PERCENTAGE OF THE 100% VALUE OF THIS CONTRACT YOU WILL AWARD TO SMALL BUSINESSES

II. PARTICIPATION BY BUSINESSES OWNED BY WOMEN

A. Offeror certifies that it ( ) is, ( ) is not, a women's business enterprise or women-owned business. For the purpose of this procurement, a women-owned business is a concern that is at least 51 percent owned by a woman or women who also control and operate it. In this context, "control" means exercising the power to make policy decisions, and "operate" means being actively involved in the day-to-day management. **(Offeror's response here does not impact the score for this criterion.)**

B. PAST PARTICIPATION: List businesses owned by women with which the offeror has contracted or done business and dollar amounts spent with each of these businesses in the **most recent 12-month period** for which data are available. Offerors are encouraged to provide additional information and expand upon the following format:

PERIOD: From: _____ To: _____

***IMPORTANT: Offerors are to provide the amount of total company expenditures for goods and services during the period referenced above in the space provided and the Commonwealth of Virginia will be responsible for calculating the percent figures requested in the table provided below.**

TOTAL COMPANY EXPENDITURES FOR PERIOD: _____

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	*% OF TOTAL COMPANY EXPENDISUTES FOR GOODS /SERVICES FROM WOMEN OWNED BUSINESSES

II. PARTICIPATION BY BUSINESSES OWNED BY WOMEN

Part B (Continued)

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	*% OF TOTAL COMPANY EXPENDISUTES FOR GOODS /SERVICES FROM WOMEN OWNED BUSINESSES

*** WHEN FIGURING THE TOTALS IN THIS COLUMN, THE TOTAL EXPENDITURES FOR ALL THREE CATEGORIES (SMALL, WOMEN AND MINORITY-OWNED BUSINESSES) CANNOT EXCEED 100%**

II. PARTICIPATION BY BUSINESSES OWNED BY WOMEN
(Continued)

C. PLANNED PARTICIPATION: Describe offeror's **plans** to involve businesses owned by women **in the performance of this contract** either as part of a joint venture, as a partnership, as subcontractors or as suppliers. Offerors are encouraged to provide additional information and expand upon the following format:

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	**% OF TOTAL CONTRACT AMT. TO BE SPENT WITH WOMEN OWNED BUSINESSES ON THIS CONTRACT

II. PARTICIPATION BY BUSINESSES OWNED BY WOMEN

Part C (Continued)

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	**% OF TOTAL CONTRACT AMT. TO BE SPENT WITH WOMEN OWNED BUSINESSES ON THIS CONTRACT

** THIS COLUMN REFLECTS WHAT PERCENTAGE OF THE 100% VALUE OF THIS CONTRACT YOU WILL AWARD TO WOMEN OWNED BUSINESSES

III. PARTICIPATION BY BUSINESSES OWNED BY MINORITIES

A. Offeror certifies that it ( ) is, ( ) is not, a minority business enterprise or minority-owned business. For the purpose of this procurement, a minority-owned business is a concern that is at least 51 percent owned and controlled by one or more socially and economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to, Blacks, Hispanic Americans, Asian Americans, American Indians, Eskimos, and Aleuts. **(Offeror's response here does not impact the score for this criterion.)**

B. PAST PARTICIPATION: List businesses owned by minorities with which the offeror has contracted or done business and dollar amounts spent with each of these businesses in **the most recent 12-month period** for which data are available. Offerors are encouraged to provide additional information and expand upon the following format:

PERIOD: From: _____ To: _____

***IMPORTANT: Offerors are to provide the amount of total company expenditures for goods and services during the period referenced above in the space provided and the Commonwealth of Virginia will be responsible for calculating the percent figures requested in the table provided below.**

TOTAL COMPANY EXPENDITURES FOR PERIOD: _____

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	*% OF TOTAL COMPANY EXPENDISUTES FOR GOODS /SERVICES FROM MINORITY OWNED BUSINESSES

III. PARTICIPATION BY BUSINESSES OWNED BY MINORITIES

Part B (Continued)

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	*% OF TOTAL COMPANY EXPENDISUTES FOR GOODS /SERVICES FROM MINORITY OWNED BUSINESSES

*** WHEN FIGURING THE TOTALS IN THIS COLUMN, THE TOTAL EXPENDITURES FOR ALL THREE CATEGORIES (SMALL, WOMEN AND MINORITY-OWNED BUSINESSES) CANNOT EXCEED 100%**

III. PARTICIPATION BY BUSINESSES OWNED BY MINORITIES
(Continued)

C. Describe offeror's **plans** to involve minority businesses **in the performance of this contract** either as part of a joint venture, as a partnership, as subcontractors or as suppliers. Offerors are encouraged to provide additional information and expand upon the following format:

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	**% OF TOTAL CONTRACT AMT. TO BE SPENT WITH MINORITY OWNED BUSINESSES ON THIS CONTRACT

III. PARTICIPATION BY BUSINESSES OWNED BY MINORITIES

Part C (Continued)

FIRM NAME ADDRESS & PHONE NO.	CONTACT PERSON	TYPE GOODS/SERVICES	DOLLAR AMOUNTS	**% OF TOTAL CONTRACT AMT. TO BE SPENT WITH MINORITY OWNED BUSINESSES ON THIS CONTRACT

** THIS COLUMN REFLECTS WHAT PERCENTAGE OF THE 100% VALUE OF THIS CONTRACT YOU WILL AWARD TO MINORITY OWNED BUSINESSES

APPENDIX O

APPENDIX O
PROPRIETARY/CONFIDENTIAL INFORMATION SUMMARY FORM
RFP # 2001-035

SECTION/TITLE	PAGE NUMBER(S)	REASON(S) FOR WITHHOLDING FROM DISCLOSURE

Identify the reason for withholding from disclosure by applying the applicable code from below and/or by written explanation.

A = This page contains information relating to "trade secrets:, and "proprietary information" including processes, operation, style of work, or apparatus, identify, confidential statistical data, amount or source of any income… of any person (or) partnership. "See Virginia Public Procurement Act, Section 11-52 (D). Unauthorized disclosures of such information would violate the Trade Secrets Act 18 U.S.C. 1905.

B = This page contains proprietary information including confidential, commercial or financial information which was provided to the Government on a voluntary basis and is the type that would not customarily release to the public. See Virginia Public Procurement Act, Section 11-52 (D); 5 U.S.C. 552 (b)(4); 12 C.F.R. 309.5(c)(4).

C = This page contains proprietary information including confidential, commercial or financial information. The disclosure of such information would cause substantial harm to competitive position and impair the Government's ability to obtain necessary information from contractors in the future. 5 U.S.C. See Virginia Public Procurement Act, Section 11-52(D); 552(b)(4); 12 C.F.R. 309.5(c)(4).

APPENDIX P

APPENDIX P

GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Please see attached printed document or click on the link below to download the PDF document.

General Conditions of the Construction Contract