SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE MATTERN & CRAIG

SIGN DETAILS

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	8(6)

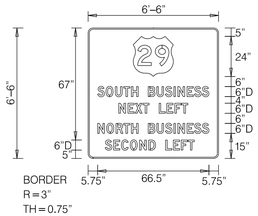
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

SIGN S-1

SIGN DETAIL



Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	S-1
WIDTH x HGHT.	6'-6" x 6'-6"
BORDER WIDTH	0.75"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	27	49	24	24

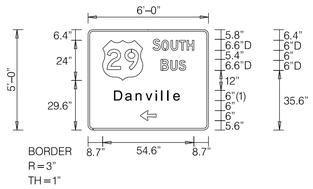
Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	S	O	U	T	H		B	U	S	I	N	E	S	S									D 2000
5.7	5	5.6	5	4.6	4.1	6	5.1	5.1	5.1	2.4	5.5	4.3	4.7	4.1	5.7							66.5	6
	N	E	X	T		L	E	F	T														D 2000
18.4	5.5	4.3	4.6	3.7	6	4.6	4.7	4.1	3.7	18.4												41.3	6
	N	O	R	T	H		B	U	S	I	N	E	S	S									D 2000
5.7	5.4	5.6	4.6	4.6	4.1	6	5.1	5.1	5.1	2.4	5.5	4.3	4.7	4.1	5.7							66.5	6
	S	E	C	O	N	D		L	E	F	T												D 2000
10.2	5.1	4.6	5.3	5.6	5.5	4.1	6	4.6	4.7	4.1	3.7	14.5										53.3	6

SIGN S-2

SIGN DETAIL



FONT:
(1) ClearviewHwy-5-W

Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	S-2
WIDTH x HGHT.	6'-0" x 5'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	8.7	29.6	24	24
AR_Type A	90	31.3	5.6	6	9.5

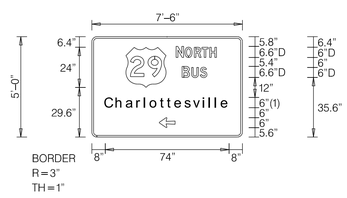
Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	S		O	U	T	H																	D 2000
38.7	4.5	0.8	5.6	5	4.6	4.1	8.7															24.5	6.6
	B		U	S																			D 2000
43.6	4.5	1.2	5.1	4.1	13.6																	14.9	6.6
	D	a	n	v	i	l	l	e															ClearviewHwy-5-W
16.1	6.6	6.4	5.7	6	3.6	3.7	3.5	4.4	16.1													39.8	6 /4.9

SIGN S-3

SIGN DETAIL



FONT:
(1) ClearviewHwy-5-W

Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	S-3
WIDTH x HGHT.	7'-6" x 5'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	20.4	29.6	24	24
AR_Type A	90	40.3	5.6	6	9.5

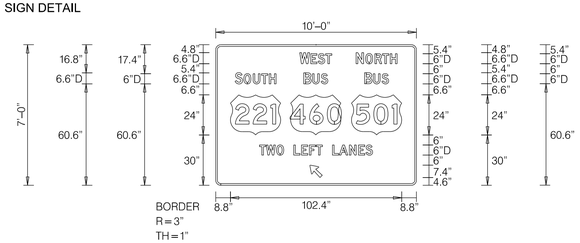
Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	N		O	R	T	H																	D 2000
50.4	4.5	0.8	5.6	4.6	4.6	4.1	15.5															24.1	6.6
	B		U	S																			D 2000
53.9	4.5	1.2	5.1	4.1	21.2																	14.9	6.6
	C	h	a	r	l	o	t	t	e	s	v	i	l	l	e								ClearviewHwy-5-W
8	6.7	6.1	6.4	4.5	3.5	6.1	4.2	4.5	6	5	6	3.6	3.7	3.5	4.4	8						74	6/4.9

SIGN S-4

SIGN DETAIL



Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	S-4
WIDTH x HGHT.	10'-0" x 7'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	8.8	30	30	24
M1_4	0	44.5	30	30.7	24
M1_4	0	81.2	30	30	24
AR_Type A	45	56.3	4.6	6	9.5

Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	W		E	S	T																		D 2000
50.2	5.9	0.7	4.3	4.6	3.7	50.6																19.2	6.6
	N		O	R	T	H																	D 2000
83.9	4.5	1.2	5.6	4.6	4.6	4.1	11.6															24.5	6.6
	S		O	U	T	H																	D 2000
11.6	4.5	0.7	5.6	5	4.6	4.1	83.9															24.5	6.6
	B		U	S																			D 2000
52.6	4.5	0.7	5.1	4.1	53																	14.4	6.6
	B		U	S																			D 2000
89	4.5	0.7	5.1	4.1	16.6																	14.4	6.6
	T	W	O		L	E	F	T		L	A	N	E	S									D 2000
26.2	4.1	6.1	4.3	6	4.6	4.7	4.1	3.7	6	4.1	6	5.5	4.3	4.1	26.2							67.6	6

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL,MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE,MATTERN & CRAIG

SIGN DETAILS

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204,C-501	8(7)

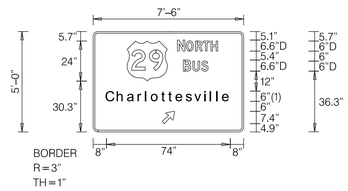
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

SIGN S-5

SIGN DETAIL



FONT:
(1) ClearviewHwy-5-W

Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

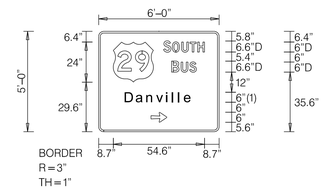
SIGN NUMBER	S-5
WIDTH x HGHT.	7'-6" x 5'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	20.4	30.3	24	24
AR_Type A	315	41.3	4.9	6	9.5

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	N		O	R	T	H																	D 2000
50.4	4.5	0.8	5.6	4.6	4.6	4.1	15.5															24.1	6.6
	B		U	S																			D 2000
53.9	4.5	1.2	5.1	4.1	21.2																	14.9	6.6
	C	h	a	r	l	o	t	t	e	s	v	i	l	l	e								ClearviewHwy-5-W
8	6.7	6.1	6.4	4.5	3.5	6.1	4.2	4.5	6	5	6	3.6	3.7	3.5	4.4	8						74	6/4.9

SIGN S-6

SIGN DETAIL



FONT:
(1) ClearviewHwy-5-W

Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

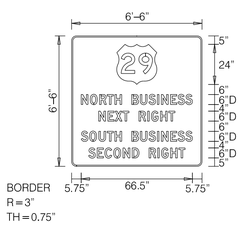
SIGN NUMBER	S-6
WIDTH x HGHT.	6'-0" x 5'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	8.7	29.6	24	24
AR_Type A	270	31.3	5.6	6	9.5

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	S		O	U	T	H																	D 2000
38.7	4.5	0.8	5.6	5	4.6	4.1	8.7															24.6	6.6
	B		U	S																			D 2000
43.6	4.5	1.2	5.1	4.1	13.6																	14.9	6.6
	D	a	n	v	i	l	l	e															ClearviewHwy-5-W
16.1	6.6	6.4	5.7	6	3.6	3.7	3.5	4.4	16.1													39.8	6 /4.9

SIGN S-7

SIGN DETAIL



Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

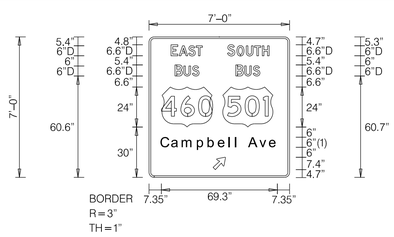
SIGN NUMBER	S-7
WIDTH x HGHT.	6'-6" x 6'-6"
BORDER WIDTH	0.75"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	27	49	24	24

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	N	O	R	T	H		B	U	S	I	N	E	S	S									D 2000
5.7	5.4	5.6	4.6	4.6	4.1	6	5.1	5.1	5.1	2.4	5.5	4.3	4.7	4.1	5.7							66.5	6
	N	E	X	T		R	I	G	H	T													D 2000
16.2	5.5	4.3	4.6	3.7	6	5.1	2.3	5.4	5	3.7	16.2											45.6	6
	S	O	U	T	H		B	U	S	I	N	E	S	S									D 2000
5.7	5	5.6	5	4.6	4.1	6	5.1	5.1	5.1	2.4	5.5	4.3	4.7	4.1	5.7							66.5	6
	S	E	C	O	N	D		R	I	G	H	T											D 2000
10.2	5.1	4.6	5.3	5.6	5.5	4.1	6	5.1	2.3	5.4	5	3.7	10.2									57.7	6

SIGN S-8

SIGN DETAIL



FONT:
(1) ClearviewHwy-5-W

Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

Letter spacings are to start of next letter

SIGN NUMBER	S-8
WIDTH x HGHT.	7'-0" x 7'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White/White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	7.4	30	30.7	24
M1_4	0	44.1	30	30	24
AR_Type A	315	38.3	4.6	6	9.5

LETTER POSITIONS (X)																						LENGTH	SERIES /SIZE
	E		A	S	T																		D 2000
13.1	4.1	0.8	5.6	4.6	3.7	52.1																18.8	6.6
	S		O	U	T	H																	D 2000
46.8	4.5	1.2	5.6	5	4.6	4.1	12.2															25	6.6
	B		U	S																			D 2000
15.5	4.5	0.7	5.1	4.1	54.1																	14.4	6.6
	B		U	S																			D 2000
51.9	4.5	0.7	5.1	4.1	17.7																	14.4	6.6
	C	a	m	p	b	e	l	l		A	v	e											ClearviewHwy-5-W
7.3	6.3	6.4	9.1	6.4	6.1	6.5	3.7	1.9	6	6.6	5.9	4.4	7.3									69.3	6/4.9

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL, MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE, MATTERN & CRAIG

SIGN DETAILS

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	8(8)

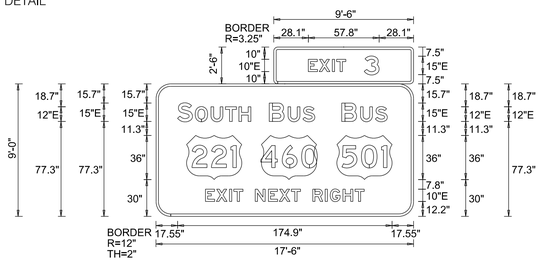
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

SIGN DETAIL

Panel Style: tab1.bsi
M.U.T.C.D.: 2009 Edition



SIGN NUMBER	S-9
WIDTH x HGHT.	17'-6" x 9'-0"
BORDER WIDTH	2"
CORNER RADIUS	12"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White / White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	24.9	30	45	36
M1_4	0	85.4	30	46.1	36
M1_4	0	147.5	30	45	36

Panel Style: guide_exp_advance_b.ssi
Dimensions are in inches.tenths

Panel Style: guide_exp_advance_b.ssi
M.U.T.C.D.: 2009 Edition

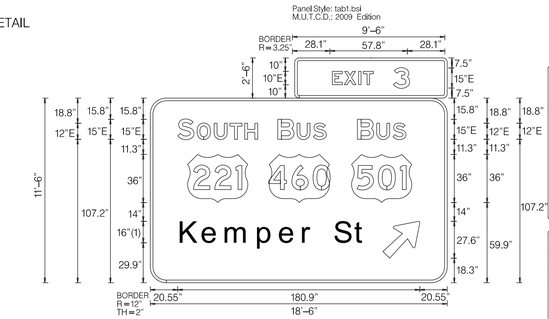
Letter spacings are to start of next letter

LETTER POSITIONS (X)																				LENGTH	SERIES /SIZE
	E	X	I	T		3															E 2000
28.1	8.9	10.7	3.5	7.5	15	12.2	28.1													57.8	10,15
	S		O	U	T	H															E 2000
17.5	12.2	2.2	12.8	11.8	11	9.7	132.7													59.8	15,12
	B		U	S																	E 2000
92.3	12.2	3.1	12.1	9.7	80.6															37.1	15,12
	B		U	S																	E 2000
151.4	12.2	3.1	12.1	9.7	21.5															37.1	15,12
	E	X	I	T		N	E	X	T		R	I	G	H	T						E 2000
40.3	8.9	10.7	3.5	7.5	10	10.7	8.9	9.8	7.5	10	10.1	4.1	10.4	9.8	7.5	40.3				129.4	10

SIGN S-9

SIGN DETAIL

Panel Style: tab1.bsi
M.U.T.C.D.: 2009 Edition



SIGN NUMBER	S-10, S-11
WIDTH x HGHT.	18'-6" x 11'-6"
BORDER WIDTH	2"
CORNER RADIUS	12"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND/BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	27.9	59.9	45	36
M1_4	0	88.4	59.9	46.1	36
M1_4	0	150.5	59.9	45	36
AR_Type A	315	173.9	18.3	22.2	35

Panel Style: guide_exp_overhead.ssi
Dimensions are in inches.tenths

FONT:
(1) ClearviewHwy-5-W

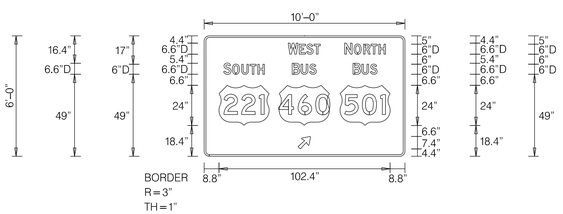
Panel Style: guide_exp_overhead.ssi
M.U.T.C.D.: 2009 Edition

Letter spacings are to start of next letter

LETTER POSITIONS (X)																				LENGTH	SERIES /SIZE
	E	X	I	T		3															E 2000
28.1	8.9	10.7	3.5	7.5	15	12.2	28.1													57.8	10,15
	S		O	U	T	H															E 2000
20.5	12.2	2.2	12.8	11.8	11	9.7	141.7													59.8	15,12
	B		U	S																	E 2000
95.3	12.2	2.2	12.1	9.7	90.5															36.2	15,12
	B		U	S																	E 2000
154.8	12.2	2.2	12.1	9.7	30.9															36.2	15,12
	K	e	m	p	e	r		S	t												ClearviewHwy-5-W
23.6	16.3	17.2	24.2	16.4	17.2	7.4	16.3	15.1	7.9	60.4										138	16 /13

SIGN S-10 /11

SIGN DETAIL



SIGN NUMBER	S-12
WIDTH x HGHT.	10'-0" x 6'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	8.8	18.4	30	24
M1_4	0	44.5	18.4	30.7	24
M1_4	0	81.2	18.4	30	24
AR_Type A	315	56.1	4.4	6	9.5

Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

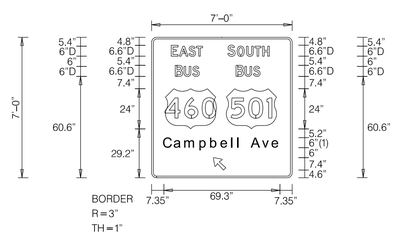
Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X)																				LENGTH	SERIES /SIZE
	W		E	S	T																D 2000
50.2	5.9	0.7	4.3	4.6	3.7	50.6														19.2	6.6
	N		O	R	T	H															D 2000
83.9	4.5	1.2	5.6	4.6	4.6	4.1	11.6													24.5	6.6
	S		O	U	T	H															D 2000
11.6	4.5	0.7	5.6	5	4.6	4.1	83.9													24.5	6.6
	B		U	S																	D 2000
52.6	4.5	0.7	5.1	4.1	53															14.4	6.6
	B		U	S																	D 2000
89	4.5	0.7	5.1	4.1	16.6															14.4	6.6

SIGN S-12

SIGN DETAIL



SIGN NUMBER	S-13
WIDTH x HGHT.	7'-0" x 7'-0"
BORDER WIDTH	1"
CORNER RADIUS	3"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
M1_4	0	7.9	29.2	30.7	24
M1_4	0	44.7	29.2	30	24
AR_Type A	45	36.9	4.6	6	9.5

FONT:
(1) ClearviewHwy-5-W

Panel Style: guide_con_circular.ssi
Dimensions are in inches.tenths

Panel Style: guide_con_circular.ssi
M.U.T.C.D.: 2009 Edition

Letter spacings are to start of next letter

LETTER POSITIONS (X)																				LENGTH	SERIES /SIZE
	E		A	S	T																D 2000
11.7	4.1	0.8	5.6	4.6	3.7	53.5														18.8	6.6
	S		O	U	T	H															D 2000
45.4	4.5	1.2	5.6	5	4.6	4.1	13.6													24.9	6.6
	B		U	S																	D 2000
14.1	4.5	0.7	5.1	4.1	55.5															14.4	6.6
	B		U	S																	D 2000
50.5	4.5	0.7	5.1	4.1	19.1															14.4	6.6
	C	a	m	p	b	e	l	l		A	v	e									ClearviewHwy-5-W
7.3	6.3	6.4	9.1	6.4	6.1	6.5	3.7	1.9	6	6.6	5.9	4.4	7.3							69.3	64.9

SIGN S-13

PROJECT	SHEET NO.
U000-118-204	8(8)

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL,MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE,MATTERN & CRAIG

SIGN DETAILS

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204,C-501	8(9)

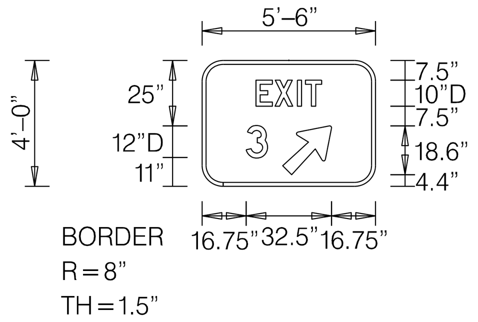
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

SIGN S–14

SIGN DETAIL



BORDER
R=8"
TH=1.5"

Panel Style: guide_exp_gore.ssi
M.U.T.C.D.: 2009 Edition

SIGN NUMBER	S–14
WIDTH x HGHT.	5'-6" x 4'-0"
BORDER WIDTH	1.5"
CORNER RADIUS	8"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White /White

SYMBOL	ROT	X	Y	WID	HT
AR_Type A	315	30.6	4.5	15	23.6

Panel Style: guide_exp_gore.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X)

						LENGTH	SERIES /SIZE
	E	X	I	T			D 2000
20.5	7.2	8.5	3.1	6.2	20.5	25	10
	3						D 2000
16.8	8.2	41.1				8.2	12

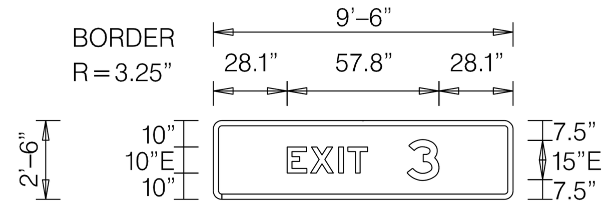
SIGN S–14

SIGN S–15

SIGN DETAIL

Panel Style: tab1.bsi
M.U.T.C.D.: 2009 Edition

BORDER
R=3.25"



SIGN NUMBER	S–15
WIDTH x HGHT.	9'-6" x 2'-6"
BORDER WIDTH	0"
CORNER RADIUS	0"
MOUNTING	Overhead
BACKGROUND	TYPE: Reflective
	COLOR: Green
LEGEND /BORDER	TYPE: Reflective
	COLOR: White/Black/White

SYMBOL	ROT	X	Y	WID	HT

Panel Style: guide_exp_overhead.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

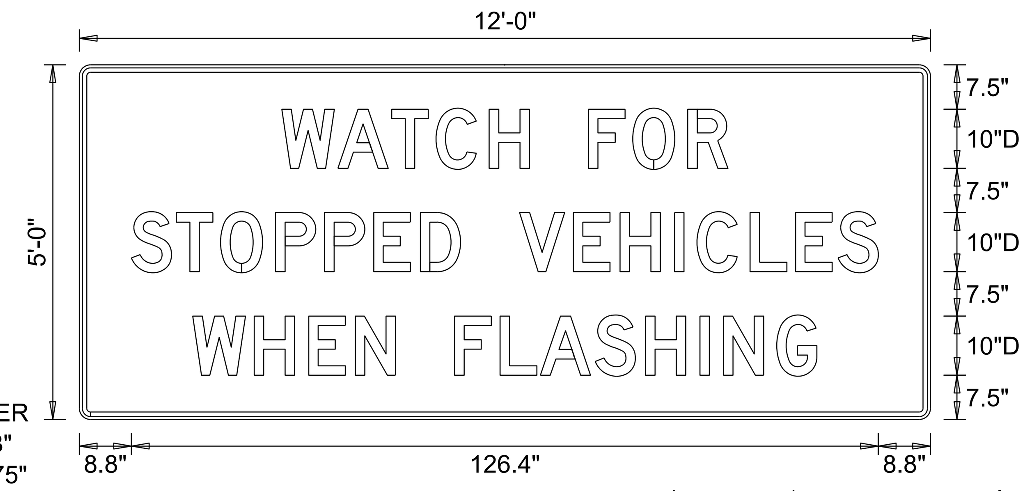
LETTER POSITIONS (X)

								LENGTH	SERIES /SIZE
	E	X	I	T		3			E 2000
28.1	8.9	10.7	3.5	7.5	15	12.2	28.1	57.8	10,15

SIGN S–15

SIGN S–16

SIGN DETAIL



BORDER
R=1.38"
TH=0.75"
IN=0.5"

SIGN NUMBER	S–16
WIDTH x HGHT.	12'-0" x 5'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	1.38"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Yellow
LEGEND/BORDER	TYPE: Non Reflective
	COLOR: Black /Black

SYMBOL	ROT	X	Y	WID	HT

Panel Style: warning_Rectangular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

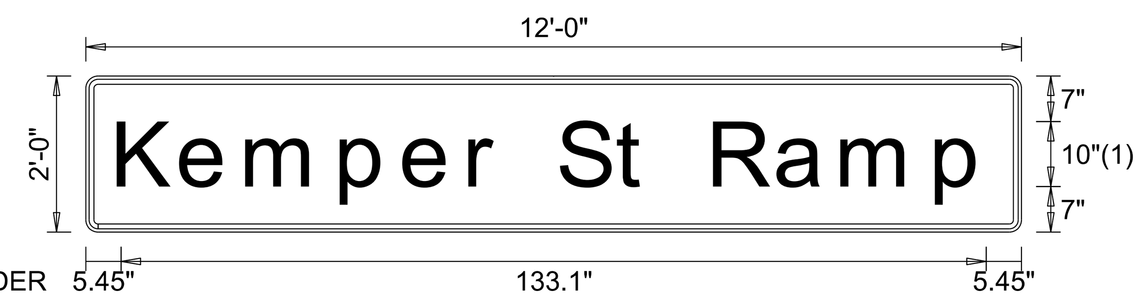
LETTER POSITIONS (X)

																		LENGTH	SERIES/SIZE
	W	A	T	C	H		F	O	R										D 2000
34.3	9.5	9.1	7.5	9	6.8	10	7.5	9.3	6.8	34.3								75.5	10
	S	T	O	P	P	E	D		V	E	H	I	C	L	E	S			D 2000
8.8	7.6	7.5	9.3	8.3	8.3	7.9	6.8	10	9.1	7.9	9.2	3.8	9	7.7	7.2	6.8	8.8	126.4	10
	W	H	E	N		F	L	A	S	H	I	N	G						D 2000
19.2	10.4	9.2	7.9	6.8	10	7.7	6.8	9.3	8.5	9.2	4	9	6.8	19.2				105.6	10

SIGN S–16

SIGN S–17

SIGN DETAIL



BORDER
R=1.38"
TH=0.75"
IN=0.5"

FONT:
(1) ClearviewHwy-5-W-R

SIGN NUMBER	S–17
WIDTH x HGHT.	12'-0" x 2'-0"
BORDER WIDTH	0.75"
CORNER RADIUS	1.38"
MOUNTING	Ground
BACKGROUND	TYPE: Reflective
	COLOR: Yellow
LEGEND/BORDER	TYPE: Non Reflective
	COLOR: Black /Black

SYMBOL	ROT	X	Y	WID	HT

Panel Style: warning_Rectangular.ssi
Dimensions are in inches.tenths

Letter spacings are to start of next letter

LETTER POSITIONS (X)

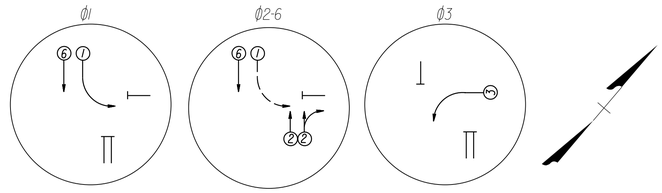
																LENGTH	SERIES/SIZE
	K	e	m	p	e	r		S	t		R	a	m	p			ClearviewHwy–5–W–R
5.4	9.6	10.2	14.5	9.6	10.2	4.6	9.1	8.8	4.9	10.1	9.7	10	14.5	7.3	5.4	133.1	10 /8.1

SIGN S–17

PROJECT	SHEET NO.
U000-118-204	8(9)

SURVEYED BY _____
SUPERVISED BY CITY OF LYNCHBURG
DESIGNED BY M.S.AGEE, MATTERN & CRAIG (540) 345-9342

PHASING DIAGRAM



SIGNS

S-1

LEFT TURN
YIELD
ON GREEN

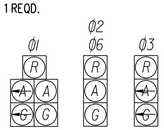
30" X 36"
R10-12
(1 REQD.)
MOUNT PER
STD SMD-2

S-2

ONLY

30" X 36"
R3-5
1 REQD.

SIGNALS



ALL SECTIONS 12"
LED (LIGHT EMITTING DIODE)
REQUIRED ON ALL INDICATIONS

SIGNAL HEAD WIRING
(SIGNAL WIRE SHALL BE 14 AWG)
1-7C FOR HEAD 1
1-5C FOR EACH HEAD 2
1-5C FOR EACH HEAD 3
1-5C FOR EACH HEAD 6

CONTROLLER TIMING CHART

PHASE	MIN GREEN	PASSAGE TIME	MAX GREEN 1	AMBER CLEAR	ALL RED CLEAR	
1	10	3.5	25	4.0	1.5	–
2–6	15	3.5	45	4.0	1.5	–
3	10	3.5	20	4.0	1.5	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–

LEGEND

- JUNCTION BOX
- THERMAL DETECTOR
- SIGNAL HEAD
- SIGNAL POLE
- CONDUIT W/CABLE
- EMERGENCY PREEMPTION DETECTOR
- CONFORMATION LIGHT
- CONTROLLER CABINET
- STREET LIGHT–18' LUMINAIRE ARM, 200W HPS TYPE III FULL CUTOFF (AEP TO PROVIDE WIRING).

POLE SCHEDULE

NO.	STANDARD			SIGNAL MOUNTING					CAMERA DISTANCE FROM POLE	EVP DISTANCE FROM POLE	TRAFFIC SIGN MOUNTING					POLE LOCATION	
	TYPE	POLE HEIGHT	MASTARM LENGTH	DISTANCE FROM POLE							DISTANCE FROM POLE					STA.	OFFSET
A	MP–1	30'	32'	19'	30'				23'	16'	26'					15+41.95	34.2'
A			34'	24.5'	32.5'				30.5'	18'	27.5'						
B	MP–1	30'	26'	14'	24'				20.5'	15.5'						14+89.65	35.5'

POLE LOCATION REF. TO KEMPER STREET CONST. BASELINE.
18' LUMINAIRE ARM REQD. ON STD. MP–1.

			RUN NO.											REMARKS
CONDUIT			1	2	3	4	5	6	7	8	9	10	11	
SIZE			1"	5–2"	5–2"	5–2"	5–2"	1"	1–3" 4–2"	1–3" 6–2"	2–2"	2"	2"	
TYPE			P	P	P	HDP	P	P	P	P	P	P	P	HDP UNDER RAMP B–2
AWG	#6	ST. LIGHT	–	1	1	1	1	–	–	1	1	1	–	AEP TO PROVIDE WIRING
	#8	2C POWER	–	–	–	–	–	–	–	1	1	–	1	
	#14		–	–	–	–	–	–	–	–	–	–	–	
		5C	–	3	3	3	2	–	5	5	–	–	–	
		7C	–	1	1	1	–	–	1	1	–	–	–	
		GROUND	1	*	*	*	*	1	*	*	–	–	*	
POWER/VIDEO CABLE			–	2	2	2	1	–	3	3	–	–	–	
EVP CABLE			–	2	2	2	1	–	3	3	–	–	–	

* #8 SYSTEM BOND WIRE SHALL BE REQUIRED IN ALL NON–METALLIC CONDUITS FOR GROUNDING.

(2)(3)(4)(5) CONDUIT QUANTITY SHOWN INCLUDES 1 SPARE CONDUIT FOR FUTURE USE.

(7)(8) CONDUIT QUANTITY SHOWN INCLUDES 2 SPARE CONDUITS FOR FUTURE USE.

(9) STUB OUT 2" CONDUIT FOR POWER SERVICES CONNECTION CONDUIT BY POWER COMPANY.

EVP EMERGENCY PREEMPTION CABLES (DETECTOR & CONFORMATION LIGHT)

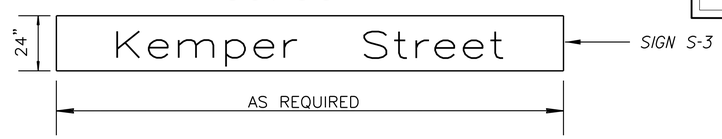
P DENOTES PVC CONDUIT (SCHEDULE 40)

HDP DENOTES HIGH DENSITY PVC CONDUIT.

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		29	U000-118-204,C-501	9(1)

SIGN S-3



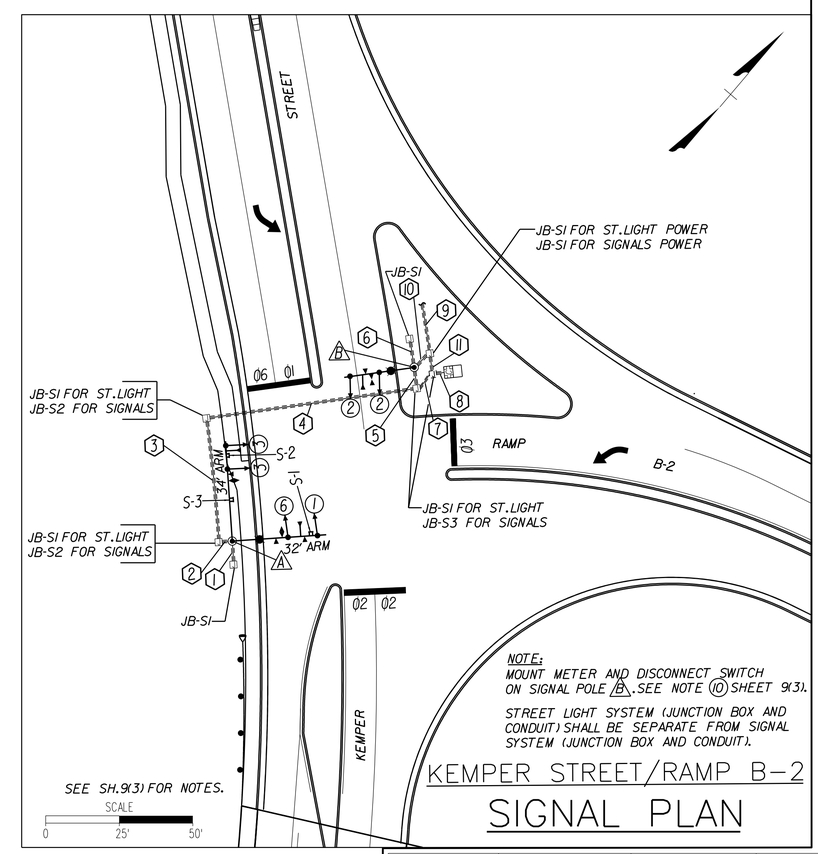
STREET SIGNS

NOT TO SCALE

12" UPPERCASE/9" LOWER CASE, GREEN BACKGROUND W/ WHITE BORDER AND MOUNT PER STD. SMD-2. MIN 2 MOUNTS PER SIGN. SIGN SHALL BE RETROREFLECTIVE.

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)



NOTE:
MOUNT METER AND DISCONNECT SWITCH ON SIGNAL POLE B. SEE NOTE 10 SHEET 9(3).

STREET LIGHT SYSTEM (JUNCTION BOX AND CONDUIT) SHALL BE SEPARATE FROM SIGNAL SYSTEM (JUNCTION BOX AND CONDUIT).

SEE SH. 9(3) FOR NOTES.

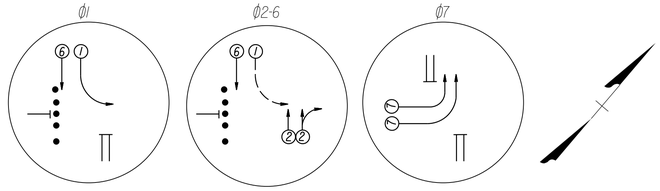
SCALE
0 25' 50'

KEMPER STREET/RAMP B–2
SIGNAL PLAN

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A		U000-118-204	9(1)

SURVEYED BY _____
SUPERVISED BY CITY OF LYNCHBURG
DESIGNED BY M.S.AGEE, MATTERN & CRAIG (540) 345-9342

PHASING DIAGRAM



SIGNS

S-1

30" X 36"
R10-12
(1 REQD.)
STD SMD-2

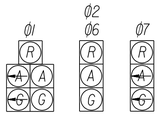
S-4

36" X 36"
R3-2
(1 REQD.)
STD SMD-2

S-2

30" X 36"
R3-5
STD SMD-2

SIGNALS



ALL SECTIONS 12"
LED (LIGHT EMITTING DIODE)
REQUIRED ON ALL INDICATIONS.

SIGNAL HEAD WIRING
(SIGNAL WIRE SHALL BE 14 AWG)
1-7C FOR HEAD 1
1-5C FOR EACH HEAD 2
1-5C FOR EACH HEAD 6
1-5C FOR EACH HEAD 7

CONTROLLER TIMING CHART

PHASE	MIN GREEN	PASSAGE TIME	MAX GREEN I	AMBER CLEAR	ALL RED CLEAR	WALK
1	10	3.5	15	4.0	1.5	–
2–6	15	3.5	40	4.0	1.5	–
7	10	3.5	35	4.0	1.5	–
–	–	–	–	–	–	–
–	–	–	–	–	–	–

PED. CROSSING WITH GREEN LIGHT ON PHASE Ø1 AND Ø2–6.

LEGEND

- JUNCTION BOX
- THERMAL DETECTOR
- SIGNAL HEAD
- SIGNAL POLE
- CONDUIT W/CABLE
- EMERGENCY PREEMPTION DETECTOR
- CONFORMATION LIGHT
- CONTROLLER CABINET
- STREET LIGHT–18' LUMINAIRE ARM, 200W HPS TYPE III FULL CUTOFF (AEP TO PROVIDE WIRING)
- ● ● ● ● ● DENOTES PED. CROSSING

POLE SCHEDULE

NO.	STANDARD TYPE	STANDARD POLE HEIGHT	STANDARD MASTARM LENGTH	SIGNAL MOUNTING DISTANCE FROM POLE					CAMERA DISTANCE FROM POLE		EVP DISTANCE FROM POLE	TRAFFIC SIGN MOUNTING DISTANCE FROM POLE					REF. ℄	POLE LOCATION STA.	POLE LOCATION OFFSET
A	MP–1	30'	30'	16.5'	27.5'				22.0'		19.0'	25.5'					KEMPER ST. ℄	19+53	35.17'
B	MP–1	30'	30'	16.0'	27.5'				21.5'		18.5'	25.0'					KEMPER ST. ℄	19+06	45.00'
B	–	–	39'	26.0'	37.0'				34.0'		29.0'								
C	MP–1	25'	–	–	–				0.0'		–	–					RAMP D–2 ℄	11+00	75.00'

18' LUMINAIRE ARM REQD. ON STD. MP–1 POLE A AND B.

*MOUNT THERMAL DETECTOR AND REMOTE TRANSMITTERS TO STD. MP–1. H = 25'. THERMAL DETECTOR SHALL BE FOCUSED ON RAMP D–1 AREA 150' TO 200' FROM STOP BAR FOR DUAL LEFT TURN LANES. SEE SIGNAL PLAN THIS SHEET.

RUN NO.

CONDUIT			1	2	3	4	5	6	7	8	9	10	11	12	REMARKS
SIZE			1"	5–2"	5–2"	5–2"	5–2"	5–2"	1–3" 5–2"	1"	2–2"	1–3" 6–2"	2–2"	1–2"	
TYPE			P	P	HDP	P	HDP	P	P	P	P	P	P	P	HDP UNDER RAMP D–1
AWG	#6	ST. LIGHT	–	1	1	1	1	1	1	–	1	1	1	–	AEP TO PROVIDE WIRING
	#8	2C POWER	–	–	–	–	–	1	1	–	1	1	1	–	
			–	–	–	–	–	–	–	–	–	–	–	–	
	#14	5C	–	4	4	4	4	1	5	–	–	5	–	–	
		7C	–	–	–	–	–	1	1	–	–	1	–	–	
		GROUND	1	*	*	*	*	*	*	1	*	*	*	*	
POWER/VIDEO CABLE			1	2	2	2	2	1	3	–	–	4	–	1	SIAMESE CABLE
EVP CABLE			1	2	2	2	2	1	3	–	–	3	–	–	

* #8 SYSTEM BOND WIRE SHALL BE REQUIRED IN ALL NON–METALLIC CONDUITS FOR GROUNDING.

2 3 4 5 7 CONDUIT QUANTITY SHOWN INCLUDES 1 SPARE CONDUIT FOR FUTURE USE.

10 CONDUIT QUANTITY SHOWN INCLUDES 2 SPARE CONDUITS FOR FUTURE USE.

11 STUB OUT 2" CONDUIT FOR POWER SERVICES CONNECTION CONDUIT BY POWER COMPANY.

EVP EMERGENCY PREEMPTION CABLES (DETECTOR & CONFORMATION LIGHT)

P DENOTES PVC CONDUIT (SCHEDULE 40)

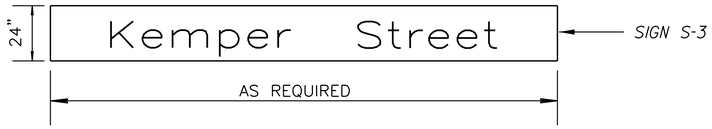
HDP DENOTES HIGH DENSITY PVC CONDUIT.

(S) DENOTES SHIELDED CONDUCTOR

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	3	VA.		29	U000-118-204, C-501	9(2)

SIGN S-3



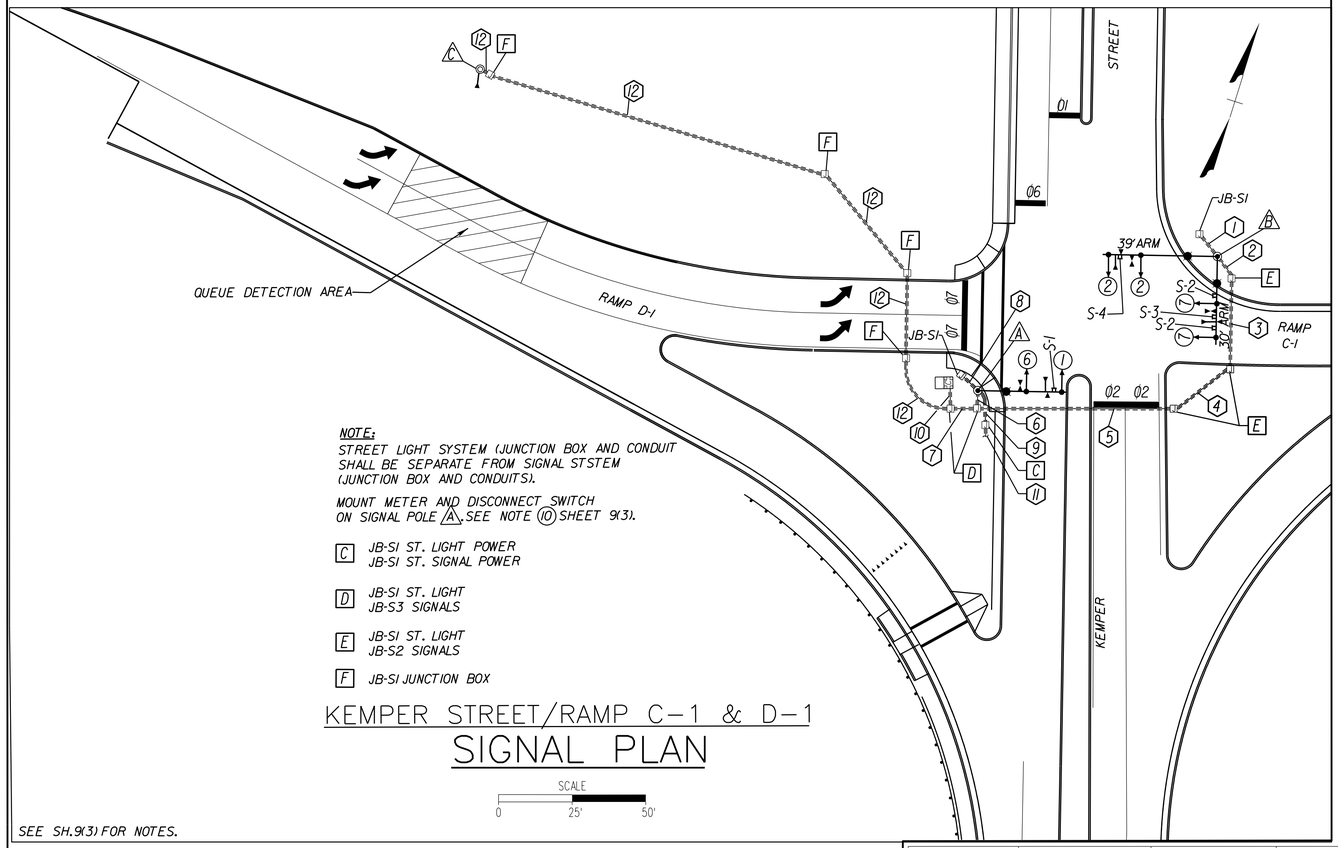
STREET SIGNS

NOT TO SCALE

12" UPPER CASE/9" LOWER CASE, GREEN BACKGROUND W/ WHITE BORDER AND MOUNT PER STD.SMD-2. MIN 2 MOUNTS PER SIGN. SIGN SHALL BE RETROREFLECTIVE.

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)



NOTE:
STREET LIGHT SYSTEM (JUNCTION BOX AND CONDUIT SHALL BE SEPARATE FROM SIGNAL STSTEM (JUNCTION BOX AND CONDUITS).

MOUNT METER AND DISCONNECT SWITCH ON SIGNAL POLE A. SEE NOTE 10 SHEET 9(3).

C JB-SI ST. LIGHT POWER
JB-SI ST. SIGNAL POWER

D JB-SI ST. LIGHT
JB-S3 SIGNALS

E JB-SI ST. LIGHT
JB-S2 SIGNALS

F JB-SI JUNCTION BOX

KEMPER STREET/RAMP C–1 & D–1
SIGNAL PLAN

SCALE
0 25' 50'

SEE SH.9(3) FOR NOTES.

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	U000-118-204		9(2)

SURVEYED BY _____
SUPERVISED BY CITY OF LYNCHBURG
DESIGNED BY M.S.AGEE, MATTERN & CRAIG (540) 345-9342

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	FHWA REGION	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.		29		U000-118-204, C-501	9(3)

QUANTITY SUMMARIES

SHT NO.	INTERSECTION	TRAFFIC CONTROLLER (1)(11)	SWITCH BOX ELECTRICAL SERVICE SE-3 TYPE B (10)	TRAFFIC SIGNAL HEAD SECTION 12" STANDARD (7)	FOUNDATION CONCRETE FOUNDATION SIGNAL POLE PF-8 (2)	CABINET FOUNDATION CONC. FOUNDATION CF-1	LUMINAIRE ARM LUMINAIRE ARM 18'	(2) TEST BORE	ELEC. SERVICE GROUND ELECTRODE 10'	SIGNAL POLE MP-1 COMBINATION LUMINAIRE MAST ARM POLE A-30, B-20' (4)(18) ONE ARM, 26'	ONE ARM, 30'	TWO ARMS, 32 & 34'	TWO ARMS 30' & 39'	SIGNAL POLE MP-1 MAST ARM POLE B-25' (18) WITH OUT ARM	CONC. FOUNDATION SIGNAL POLE PF-1	SIGNAL JUNCTION BOX (8) JB-S1	JB-S2	JB-S3	CONDUCTOR CABLE (20) (14) #2	(15) #2	#4	#4	#8 BONDED GROUND	(13) SIAMESE CABLE	CONDUIT (12) 1"	2"	3"	HANGER ASSEMBLY (5) SM-3 ONE WAY	(11) SMD-2	TRENCH EXCAVATION (3) ECI-1	SIGN PANEL STREET SIGNS	R10-12 ⊗	R3-5 ⊗	R3-2 ⊗	TRAFFIC SIGNALIZATION	(19) QUEUE DETECTION SYSTEM	(16) ADAPTIVE TRAFFIC CONTROL SYSTEM	(16)(6) FURNISH MONITOR	(9) EMERGENCY PREEMPTION (3-WAY)
	UNIT	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	LF	LF	LF	LF	LF	LF	LF	LF	LF	EA	EA	LF	SF	SF	SF	SF		LS	EA	EA	EA
9(1)	KEMPER ST. / RAMP B-2	1	1	20	2	1	2	2	1	1	–	1	–	–	–	8	2	2	26	–	707	201	309	481	22	776	11	6	4	200	16	7.5	7.5	–	–	–	1	1	1
9(2)	KEMPER ST. / RAMP C-1 & D-1	1	1	20	2	1	3	3	1	–	1	–	1	1	1	13	3	2	16	–	952	83	527	723	22	1067	22	6	4	410	16	7.5	15	9	–	1	1	1	1
		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	TOTAL	2	2	40	4	2	5	5	2	1	1	1	1	1	1	21	5	4	42	–	1659	284	836	1204	44	1843	33	12	8	610	32	15	22.5	9	–	1	2	2	2

⊗ DENOTES ITEMS TO BE PAID FOR ON BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH CURRENT ROAD AND BRIDGE SPECIFICATIONS.

PROPOSED / EXISTING

- Metal Pole
- Wood Pole
- Concrete Pole
- Mast Arm Metal Signal Pole
- Wood Pole w/Metal Mast Arm
- Combination Luminaire - Signal Metal Pole
- Combination Luminaire - Signal Wood Pole
- Combination Luminaire - Signal Concrete Pole
- One Way Signal Head
- Two Way Signal Head
- Three Way Signal Head
- Four Way Signal Head
- One Way Bracket Mounted Signal - Metal Pole
- Two Way Bracket Mounted Signal - Metal Pole
- One Way Bracket Mounted Signal - Wood Pole
- Two Way Bracket Mounted Signal - Wood Pole
- One Way Bracket Mounted Signal - Concrete Pole
- Two Way Bracket Mounted Signal - Concrete Pole
- One Way Pedestal Top Mounted Signal - Metal Pole
- Two Way Pedestal Top Mounted Signal - Metal Pole
- One Way Pedestal Top Mounted Signal - Metal Pole
- Two Way Pedestal Top Mounted Signal - Concrete Pole
- Base Mounted Local Control Cabinet
- Base Mounted System Master Cabinet
- Bracket Mounted (S. O. P.) Control Cabinet Metal Pole
- Bracket Mounted (S. O. P.) Control Cabinet Wood Pole
- Bracket Mounted (S. O. P.) Control Cabinet Concrete Pole
- Pedestal Pole - Metal
- Pedestal Pole - Concrete
- Metal Pedestal Mount: Control Cabinet
- Concrete Pedestal Mount: Control Cabinet
- Junction Box
- Man Hole
- Hand Hole
- Loop Detector
- Quadrupole Loop Detector
- Service Disconnect Switch Box
- Meter Box
- Span Wire
- Span Wire w/Cable
- Conduit Only
- Conduit w/Cable
- Guy Wire
- Pedestrian Push Button
- Pedestrian Push Button On Metal Pole
- Magnetic Detector - Multi Lane
- Magnetic Detector - Single Lane
- Magnetometer Detector Probes
- Emergency Preemptor Sensor
- Wood Utility Pole w/Overhead Wires
- Concrete Utility Pole w/Overhead Wires
- Direct Burial Cable (Signal)

SUMMARY NOTES

(1) CONTRACTOR SHALL PROVIDE AND INSTALL EIGHT (8) PHASE NAZTEC TS2 TYPE 2 MODEL 980 CONTROLLER, AS SPECIFIED BY THE CITY OF LYNCHBURG IN EXHIBIT E OF THE PROJECT MANUAL AND CABINET (P44 NAZTEC TS TYPE 1 WITH 12 CHANNEL MMU AND BUI'S) WIRED WITH ALL CIRCUITRY AND LOGIC NECESSARY TO PROVIDE THE FUNCTION OF EIGHT (8) PHASE OPERATION. THE CONTROLLER CABINET SHALL INCLUDE THE CLARY UPS AND PONY CABINET PER CITY SPECIFICATION. THE CONTROLLER SHALL BE CAPABLE OF OPERATING IN ACTUATED OR NON-ACTUATED MODE,
PROVIDE REMOTE MONITORING AND OPERATE AS A MASTER OR LOCAL CONTROLLER WHEN INTERCONNECTED. STANDARD FEATURES SHALL INCLUDE EMERGENCY VEHICLE PREEMPTION, DETECTION, CONFLICT MONITOR, ETHERNET SWITCH, 4 PORT ETHERNET FACE PLATE, UPS AND FIBER(SUPPLIED BY THE CITY) COMMUNICATION (INTEGRAL). CONTROLLER CABINET SHALL HAVE A NUMBER 2 KEY LOCK OR AS REQUIRED BY THE CITY.

(2) CONTRACTOR SHALL BE RESPONSIBLE FOR FOUNDATION DESIGN. THE CONTRACTOR SHALL FURNISH THE FOUNDATION DESIGNER, WITH THE SOIL CONDITION, SLOPE CONDITION, AND ANY OTHER FIELD DATA NECESSARY TO DESIGN THE POLE FOUNDATIONS. THESE FOUNDATIONS SHALL MEET ALL THE REQUIREMENTS OF STANDARD PF-8 EXCEPT SIZE AND REBAR REQUIREMENTS WHICH ARE TO BE DETERMINED BY THE FOUNDATION DESIGNER. FOUNDATIONS TO BE DESIGNED FOR EQUIPMENT INDICATED ON PLANS AND STREET SIGNS ATTACHED TO POLE OR MAST ARM. POLE FOUNDATION DESIGN SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION. MINIMUM 8 ANCHOR BOLTS FOR THE POLE TO FOUNDATION CONNECTION AND MINIMUM 8 BOLTS FOR THE MAST ARM CONNECTION TO THE SIGNAL POLE. A TEST BORE SHALL BE PERFORMED FOR EACH SIGNAL POLE FOUNDATION.

(3) TRENCH EXCAVATION SHALL INCLUDE TOP SOIL AND SEEDING, PAVEMENT REMOVAL AND PAVEMENT RESTORATION AS WELL AS ALL OTHER ITEMS COVERED IN SECTION 700 OF VDOT SPECIFICATIONS.

(4) COMBINATION LUMINAIRE POLE SHALL BE STD. MP-1, A=30', B=20' WITH TERMINAL STRIP UNLESS NOTED OTHERWISE. CONTRACTOR TO SUPPLY AND INSTALL LUMINAIRE EXTENSION AND LUMINAIRE. MAST ARM POLES SHALL HAVE A MIN. OF 8 ANCHOR BOLTS, COORDINATE WITH THE CITY OF LYNCHBURG.

(5) SIGNAL HEADS SHALL BE MOUNTED IN ACCORDANCE WITH STD. SM-3.

(6) INCLUDES 9" COLOR MONITOR AND TRAC BALL (MOUSE).

(7) ALL SIGNALS SHALL HAVE 5" VACCUMM FORMED BACKPLATES AND TUNNEL VISORS. BODY COLOR OF SIGNALS AND VISORS SHALL BE BLACK, FLAT BLACK INSIDE VISORS. SIGNAL HEADS SHALL BE POLYCARB BODY. INCLUDED IN EACH ITEM ARE DIALIGHT, INCANDESCENT LOOK, LIGHT EMITTING DIODES (LED) ON ALL INDICATIONS.

(8) ALL JUNCTION BOXES SHALL BE AS NOTED ON THE PLAN, CAST WITH WORDING "TRAF." FRAME AND COVER SHALL MATCH FINISHED GRADE.

SUMMARY NOTES CONT'D.

(9) EMERGENCY PREEMPTION SHALL BE COMPATIBLE WITH CITY'S OPTICOM SYSTEM AND SHALL INCLUDE:

OPTICOM EMERGENCY PREEMPTION TO ALL APPROACHES:
3M OPTICOM DISTRIBUTOR:

SAM SMITH
M.M.S. INC.
P.O. BOX 203
MIDDLEBURG, VA 20118
PHONE #: (703)-307-6738

REQUIRED EQUIPMENT:

A. SPECIAL RELAY AND TERMINATION PANEL – 10½"W x 10½"W x 5" PROTRUSIVE TO BE LOCATED IN CABINET UPPER LEFT SIDE.

B. MODEL 721 DETECTORS MOUNTED ON MAST ARMS. FIELD WIRE TO BE 3 CONDUCTOR 3M MODEL 138.

C. MODEL 752 (2WAY) RACK MOUNT PHASE SELECTORS SHALL BE 3M WITH NECESSARY MODULES AND HARNESSES.

D. MODEL 575 CONFORMATION LIGHTS MOUNTED ON MAST ARMS WITH #14-4 CONDUCTOR SIGNAL CABLE TO BE LOCATED AT TIME OF INSTALLATION.

E. STANDARD CARD RACK FOR PLUG-IN OPTICOM PHASE SELECTORS, MODEL 760 (4 CHANNEL CARD) REQ'D.

F. ABOVE TO BE DESIGNED AND INSTALLED WITH (2) COPIES OF DOCUMENTATION. SUPPLIER TO PROVIDE CERTIFICATION OF PROPER OPERATION.

(10) ELECTRICAL SERVICE FOR SIGNALS SHALL BE STD. SE-3, TYPE B, 100 AMP SERVICE WITH SINGLE POLE, 220V FUSED DISCONNECT SWITCH. (OR SERVICE AND FUSE REQUIRED FOR EQUIPMENT PROVIDED). NEMA 4 ENCLOSURE TO BE MOUNTED BELOW METER, METER BASE TO BE MOUNTED ON SIGNAL POLE STD. MP-1.

(11) STREET SIGNS REQUIRE 2 HANGER ASSEMBLIES MIN.

(12) ALL CONDUIT SHALL BE PVC UNLESS OTHERWISE NOTED.

(13) VIDEO POWER SUPPLY AND COAXIAL CABLE FROM CAMERA TO CONTROL PANEL. NOT A BID ITEM, INFORMATION ONLY, SEE NOTE (19)

(14) POWER SUPPLY FOR SIGNALS.

(15) POWER SUPPLY FOR STREET LIGHTS. AEP TO PROVIDE WIRING.

(16) INCLUDED IN THIS ITEM: INSYNC ADAPTIVE TRAFFIC CONTROL SYSTEM, ALL WIRING, EQUIPMENT, RADIO OR CELLULAR COMMUNICATIONS HARDWARE AND SOFTWARE, TO PROVIDE A COMPLETE AND FUNCTIONING SIGNAL CONTROL SYSTEM FOR ALL APPROACHES TO BOTH SIGNAL LOCATIONS/INTERSECTIONS-KEMPER/RAMP B AND KEMPER/RAMP C&D.

(17) INCLUDED IN THIS ITEM IS A MODEM: FO512 FIBER OPTIC DATA LINK (OR MOST RECENT UPGRADE MODEL) FROM TFS (TRAFFIC FIBER SYSTEMS) FOR FUTURE SINGLE MODE FIBER OPTIC INTERCONNECTION. COORDINATE LOCATION OF MODEM WITH CITY OF LYNCHBURG.

(18) ALL SIGNAL POLES AND MAST ARMS SHALL BE PAINTED FLAT BLACK (F264CY).

(19) QUEUE DETECTION SYSTEM INCLUDES WARNING SIGN AND FLASHERS,THERMAL DETECTOR, ANTENNAS, REMOTE TRANSMITTERS, PROCESSOR, BATTERY BACK-UP, BATTERIES, CABLE, CONDUIT AND SIAMESE CABLE, CABINET AND ALL INCIDENTALS FOR A COMPLETE WORKING INSTALLATION AS DISTRIBUTED BY TRAFICON. SEE SHEET 8(3) AND 8(5).
THERMAL DETECTION SYSTEM SHALL BE FLIR TRAFICON MODEL FC-334-T.

(20) ALL CONDUCTORS SHALL BE IMSA SPEC. BRAIDED WIRE.

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

NOTES

1. THE CONSTRUCTION ITEMS ON THIS PROJECT ARE TO BE INSTALLED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS DATED 2007, ROAD AND BRIDGE STANDARDS DATED 2008, AND CITY OF LYNCHBURG SPECIFICATIONS AS AMENDED BY CONTRACT PROVISIONS AND THESE PLANS. THE CONTRACTOR SHALL NOTIFY THE CITY DEPARTMENT OF PUBLIC WORKS AT (434) 455-4466 (72 HOURS) BEFORE COMMENCING CONSTRUCTION.
2. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" (1-800-552-7001) AT LEAST 48 HOURS BEFORE BEGINNING EXCAVATION OR TRENCHING TO OBTAIN FIELD UTILITY LOCATIONS.
3. TOP OF SIGNAL POLE FOUNDATION SHALL BE SAME ELEV. AS TOP OF NEAREST CURB OR FLUSH WITH ADJACENT CONC. OR SIDEWALK.
4. ALL UNDERGROUND CONDUIT SHALL BE INSTALLED IN ACCORDANCE WITH STD. ECI-1 OR ECI-2.
5. ALL CONDUIT ENTERING JUNCTION BOX SHALL NOT EXTEND INTO BOX OVER 2" 1/2" AND SHALL BE FITTED WITH APPROPRIATE BELL ENDS OR BUSHINGS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INITIAL AND FINAL TIMINGS OF THE CONTROLLER.
7. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FURNISH AND MAINTAIN, UNTIL THE WORK HAS BEEN ACCEPTED BY THE CITY, ANY AND ALL SIGNS, LIGHTS, BARRICADES, FLAGMEN, ETC., NECESSARY FOR THE SAFETY OF THE GENERAL PUBLIC, INCLUDING BOTH VEHICULAR AND PEDESTRIAN TRAFFIC. ALL COSTS FOR THE MAINTENANCE OF TRAFFIC SHALL BE INCLUDED IN THE LUMP SUM BID ITEM. MAINTENANCE OF TRAFFIC SHALL BE DONE ACCORDING TO THE VIRGINIA WORK AREA PROTECTION MANUAL (LATEST EDITION).
8. ALL DAMAGES TO EXISTING STRUCTURES, FACILITIES, PAVEMENT, GRASSED AREAS, ETC., SHALL BE RESTORED TO EXISTING CONDITION BY THE CONTRACTOR AT HIS EXPENSE.
9. POLE LOCATION SHALL BE INSTALLED WITHIN 24" OF THE LOCATION SHOWN ON THE PLAN. CONTRACTOR SHALL STAKE AND FIELD VERIFY WITH "MISS UTILITY OF VIRGINIA" THE POLE LOCATION BEFORE ORDERING POLES AND ARMS. THE CITY TRAFFIC ENGINEER OR HIS DESIGNEE SHALL APPROVE STAKED POLE LOCATIONS
10. EMERGENCY PREEMPTION EQUIPMENT SHALL BE COMPATABLE WITH THE CITY'S OPTICOM SYSTEM.
11. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE OR NONEXISTENCE OF UNDERGROUND UTILITIES. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF, OR THE NONEXISTENCE OF UNDERGROUND OR OVERHEAD UTILITIES. WHERE CONFLICTS OCCUR, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO BEGINNING WORK.
12. THE CONTRACTOR SHALL VERIFY THE ELEVATIONS OF ALL UNDERGROUND UTILITIES TO BE CROSSED PRIOR TO BORING CONDUITS. THE CONTRACTOR SHALL HAND DIG WHEN CROSSING WATERLINES, GAS LINES AND SEWER FORCE MAINS.
13. ALL U-BOLTS, NUTS, AND WASHERS SHALL BE STAINLESS STEEL. ALL PLATE MATERIAL SHALL BE GALVANIZED.
14. CONDUCTOR(S). THE PROPOSED POLE FOUNDATION SHALL BE PERMANENTLY MARKED TO INDICATE THE LOCATIONS OF ALL CONDUITS CAST IN THE FOUNDATION. THE MARKINGS SHALL CONSIST OF AN ARROW, 4 TO 6 INCHES LONG, AND A LETTER DESIGNATION AS FOLLOWS.
   (S) – SPARE CONDUIT;
   (T) – CONDUIT WITH SIGNAL OR DETECTOR CABLES;
   (E) – CONDUIT WITH ELECTRICAL SERVICE CONDUCTORS FOR TRAFFIC SIGNAL;
   (G) – CONDUIT FOR GROUNDING
15. TRAFFIC SIGNAL PLANS 9(1), 9(2), AND 9(3) SHALL BE USED FOR CONSTRUCTION OF TRAFFIC SIGNALS FOR THIS PROJECT. TRAFFIC SIGNALS SHOWN ON OTHER PLAN SHEETS OF THIS PROJECT ARE NOT TO BE USED FOR TRAFFIC SIGNAL CONSTRUCTION.

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
A	U000-118-204		9(3)

GENERAL NOTES

1. LOCATION, DEPTHS AND SIZES OF EXISTING UTILITIES SHOWN ON THE UTILITY ADJUSTMENT PLANS ARE NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY WITH TEST HOLES THE LOCATION, ELEVATION, TYPE, ROUNDNESS AND SIZE OF ALL EXISTING UNDERGROUND UTILITIES AND POINTS OF CONNECTION PRIOR TO EXCAVATION, ORDERING OF MATERIALS AND INSTALLATION FOR THIS PROJECT. THE CONTRACTOR SHALL PAY FOR ANY DAMAGE TO AND FOR MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES.

   THE CONTRACTOR SHALL NOTE THAT THE UTILITY PLAN SHEETS ARE FOR WATER RELOCATION/ADJUSTMENT/BETTERMENT WORK ONLY. THE CONTRACTOR SHALL REFER TO THE ROADWAY PLANS FOR ROADWAY AND DRAINAGE DESIGN.

2. THE CONTRACTOR SHALL COORDINATE THE VALVE OPERATIONS, CHANGEOVER OR TAPPING OF WATER FACILITIES WITH THE CITY OF LYNCHBURG 48 HRS. PRIOR TO VALVE OPERATIONS, CHANGEOVER OR TAPPING. CITY OF LYNCHBURG PUBLIC WORKS EMPLOYEES WILL OPERATE ALL EXISTING VALVES DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY: HARRY BATEMAN, CITY OF LYNCHBURG, PHONE: (434) 455-4267.

3. THE CONTRACTOR SHALL NOT PERFORM ANY GRADING OPERATIONS OVER EXISTING WATER FACILITIES WITHIN THE PROJECT WHICH WOULD IN ANY WAY JEOPARDIZE SERVICES UNTIL THE PROPOSED WATER FACILITIES ARE INSTALLED AND PLACED INTO OPERATION AND EXISTING WATER FACILITIES ARE ABANDONED. ANY DEVIATION MUST BE APPROVED BY THE ENGINEER.

4. EXISTING MAINS, HYDRANTS AND WATER SERVICES SHALL REMAIN IN SERVICE UNTIL NEW MAINS AND HYDRANTS ARE PLACED IN SERVICE AND APPROVED BY THE ENGINEER.

5. THE CONTRACTOR SHALL NOT INSTALL WATER MAIN JOINTS BENEATH PROPOSED OR EXISTING UTILITIES OR PROPOSED STORM DRAINAGE WHEN CROSSING UNDER THESE STRUCTURES. A MINIMUM OF 2 FEET BEYOND THE OUTSIDE OF THE FOREIGN PIPE OR UTILITY SHALL BE REQUIRED WHEN PLACING JOINTS, UNLESS OTHERWISE SHOWN ON THE PLANS.

6. INSTALL VALVES WITH OPERATOR STEMS IN THE VERTICAL PLANE THROUGH THE PIPE AXIS AND PERPENDICULAR TO THE PIPE AXIS. LOCATE VALVES AS SHOWN ON DRAWINGS.

   VALVE STEM EXTENSIONS SHALL BE INSTALLED WHEN THE DISTANCE FROM THE OPERATING NUT TO TOP OF VALVE BOX FRAME IS GREATER THAN 36". CONTRACTOR SHALL PROVIDE VALVE OPERATOR EXTENSIONS, AS REQUIRED, TO BRING OPERATOR TO A MINIMUM OF 12" OF PROPOSED GRADE, AND 3 FEET MAXIMUM OF PROPOSED GRADE FOR NEW VALVES. THE EXTENSION SHALL REPLACE, OR BE SECURELY ATTACHED TO THE NORMAL 2" SQUARE OPERATING NUT, SHALL BE AT LEAST AS STRONG AS THE VALVE STEM, AND SHALL BE COATED IN ACCORDANCE WITH AWWA C550.

7. WATER MAIN PIPE SHALL BE LAID WITH BELL ENDS FACING THE DIRECTION OF LAYING. WHERE GRADE IS 10 PERCENT OR GREATER, PIPE SHALL BE LAID UPHILL WITH BELL ENDS UPGRADE.

8. ALL EXISTING VALVE BOXES, AND AIR RELEASES, SHALL BE RELOCATED AND/OR ADJUSTED TO FINISH GRADE AS REQUIRED, REGARDLESS IF THEY ARE SHOWN ON THE PLANS.

9. THE CONTRACTOR, WITH HIS ASSOCIATED MATERIALS SUPPLIERS, SHALL PROVIDE CERTIFICATION ACCEPTABLE TO THE ENGINEER, THAT ALL MATERIALS SUPPLIED ON THE PROJECT MEET OR EXCEED THE SPECIFICATIONS.

10. ALL RESTRAINT SYSTEMS INSTALLED UNDER THIS CONTRACT SHALL BE PLACED BEFORE BACKFILLING OF THE TRENCH AND INSPECTED BY THE ENGINEER. TEMPORARY BUTTRESSING FOR TESTING SHALL BE PROVIDED BY THE CONTRACTOR. A MECHANICAL JOINT RESTRAINT SYSTEM SHALL BE USED FOR WATERLINE INSTALLED ON THE PROPOSED BRIDGE. THE JOINT RESTRAINTS SHALL BE A STANDARD PRODUCT OF A MANUFACTURER. REACTION BLOCKING SHALL BE USED WHERE REQUIRED BY THE CITY OF LYNCHBURG SPECIFICATIONS ON ALL BURIED WATERLINES. THE JOINT RESTRAINTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN ON SHEET 11(2).

11. PRESSURE AND LEAKAGE TESTING (WATER MAINS AND ACCESSORIES) SHALL BE IN ACCORDANCE WITH AWWA C600 AND THE LATEST EDITION OF THE CITY OF LYNCHBURG SPECIFICATION SECTION 02660.3.9 AVAILABLE AT http://www.lynchburgva.gov/manual-specifications.

12. FLUSHING OF WATER MAINS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LYNCHBURG SPECIFICATION SECTION 02660.3.10 AVAILABLE AT http://www.lynchburgva.gov/manual-specifications.

13. DISINFECTION OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C651 - LATEST REVISION, AND THE LATEST EDITION OF THE CITY OF LYNCHBURG SPECIFICATION SECTION 02660.3.9 AVAILABLE AT http://www.lynchburgva.gov/manual-specifications.

14. THE CITY OF LYNCHBURG DOES NOT GUARANTEE A 100 PERCENT SHUTDOWN OF THE WATER DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL ANTICIPATE CUT AND PLUG OPERATIONS UNDER PARTIAL PRESSURE.

15. THE CONTRACTOR SHALL CONTACT THE MISS UTILITY OF VIRGINIA ON CALL CENTER TEL# 1-800-552-7001 FOR LOCATION OF ALL UTILITIES AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION.

16. CONTRACTOR SHALL FURNISH EIGHT (8) COPIES OF ALL SHOP DRAWINGS TO THE ENGINEER PRIOR TO CONSTRUCTION AND/OR INSTALLATION OF CITY OF LYNCHBURG FACILITIES AND RELATED ITEMS. ANY ITEMS INSTALLED PRIOR TO APPROVAL OF SHOP DRAWINGS ARE DONE AT THE CONTRACTOR'S RISK AND MAY BE SUBJECT TO REMOVAL AND CORRECT INSTALLATION AT THE CONTRACTOR'S EXPENSE.

17. CONTRACTOR SHALL MAINTAIN TWO (2) CLEAN RED-LINED SETS OF UTILITY PLANS TO SERVE AS A SET OF RECORD DRAWINGS FOR THE PROJECT. THE DRAWINGS SHOULD CLEARLY DEPICT CONSTRUCTION CHANGES THAT DIFFER FROM THE UTILITY PLANS, INCLUDING BOTH THE PLAN AND PROFILE VIEWS IN THE PLANS. THE SETS OF THE RECORD DRAWINGS SHALL BE DELIVERED TO THE CITY OF LYNCHBURG PUBLIC WORKS DEPARTMENT UPON COMPLETION OF THE UTILITY PORTION OF THE PROJECT.

18. CONTINUOUS WATER SERVICE SHALL BE MAINTAINED BY THE CONTRACTOR FOR ALL LYNCHBURG CITY CUSTOMERS THROUGHOUT CONSTRUCTION. BRIEF OUTAGES WILL BE ALLOWED FOR TRANSFER OF SERVICE FROM OLD TO NEW LINES FOLLOWING A MINIMUM 24 HOUR ADVANCE NOTICE TO THE CUSTOMER.

19. ALL UTILITY CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST CITY OF LYNCHBURG MANUAL OF SPECIFICATIONS AND STANDARD DETAILS. THE MANUAL CAN BE OBTAINED ONLINE AT THE FOLLOWING WEB ADDRESS: http://www.lynchburgva.gov/manual-specifications.

20. CONTRACTOR TO COORDINATE TIE-IN OF PROPOSED 10" WATER LINE TO EXISTING 10" WATER LINE WITH ADJOINING PROJECT CALLED "MID-TOWN CONNECTOR".

21. CONTRACTOR SHALL INSTALL INSERTION VALVE ON EXISTING 10" WATER MAIN AT THE INTERSECTION OF KEMPER STREET AND HOLIDAY STREET. INSERTION VALVE SHALL BE PERFORMED WITHOUT SHUTDOWN OF THE CITY'S WATER SYSTEM. EXISTING WATERLINE IS LOCATED IN THE WEST LANE OF THE TWO SOUTHBOUND LANES OF KEMPER STREET. SEE DETAIL ON SHEET 11(5) SHOWING APPROXIMATE LOCATION OF 10" INSERTION VALVE. EXACT LOCATION OF INSERTION VALVE SHALL BE COORDINATED WITH CITY OF LYNCHBURG PUBLIC WORKS STAFF. WORK SHALL INCLUDE TRAFFIC CONTROL IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL, LATEST EDITION, TTC-16.0-OUTSIDE LANE CLOSURE OPERATION ON A FOUR-LANE ROADWAY, PLACING A W20-1 SIGN ON BOTH THE NORTHBOUND ROUTE 29 EXIT 3B AND THE SOUTHBOUND ROUTE 29 EXIT 3B, LOCATING EXISTING WATERLINE, PAVEMENT/CURBING SAWCUTTING AND REMOVAL, EXPOSING AND CLEANING EXISTING WATERLINE, FURNISHING AND INSTALLING INSERTION VALVE, BACKFILL AND COMPACTION OF TRENCH, NEW VALVE BOX, AND COMPLETE PAVEMENT/ CURBING RESTORATION.

22. FOR SUGGESTED SEQUENCE OF CONTSRUCTION, REFER TO ROADWAY PLANS - SEE 1G SERIES.

MATERIAL NOTES

1. DUCTILE IRON PIPE SHALL CONFORM WITH AWWA C 151/ANSI 21.51 AND FITTINGS SHALL CONFORM WITH ANSI/AWWA C110 OR C153 (COMPACT FITTINGS). THE PIPE AND FITTINGS SHALL BE ASPHALT COATED AND CEMENT LINED IN ACCORDANCE WITH AWWA C104/ANSI 21.40. THE PIPE THICKNESS SHALL CONFORM WITH AWWA C150/ANSI 21.50 AND SHALL BE THICKNESS CLASS 50, AS A MINIMUM. FITTINGS FOR WATER PIPE SHALL BE MECHANICAL OR PUSH-ON JOINT. FITTINGS SHALL BE EITHER DUCTILE IRON OR GRAY IRON. DUCTILE IRON PIPE SHALL BE MANUFACTURED BY:

   1. AMERICAN CAST IRON PIPE COMPANY
   2. U.S. PIPE AND FOUNDRY COMPANY
   3. MCWANE CAST IRON PIPE COMPANY

   A. DUCTILE IRON PIPE AND FITTINGS FOR BURIED SERVICE SHALL BE EITHER MECHANICAL OR BELL AND SPIGOT TYPE JOINTS AS SPECIFIED OR INDICATED. JOINTS SHALL BE MADE WITH A SINGLE WATERTIGHT RUBBER GASKET MANUFACTURED IN ACCORDANCE WITH AWWA C111/ANSI 21.11. THE JOINTS SHALL BE MADE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER.

   B. DEFLECTION: ALLOWABLE DEFLECTION SHALL BE 80% OF THE MAXIMUM DEFLECTION ALLOWED BY AWWA C600 TABLE 3 AND 4. MECHANICAL JOINTS WITH METAL TIE RODS WILL BE PROHIBITED IN AREAS WHERE PIPE IS DEFLECTED.

   C. EXTERIOR COATING OF ALL DUCTILE IRON PIPE, JOINTS AND FITTINGS SHALL BE PROVIDED AS REQUIRED BY AWWA C110, C111, C115, C151 OR C153 AS APPLICABLE. ALL PIPES, JOINTS AND FITTINGS SHALL BE EXAMINED AFTER LAYING TO DETERMINE IF THE COATING HAS BEEN DAMAGED DURING INSTALLATION. ANY DAMAGED AREAS AND ALL JOINTS SHALL BE COATED WITH APPROXIMATELY 1 MIL. OF A BITUMINOUS COATING.

   D. INTERIOR LINING FOR WATER MAINS SHALL BE CEMENT MORTAR LINED IN ACCORDANCE WITH AWWA C104, STANDARD THICKNESS INCLUDING ASPHALTIC SEAL.

   E. RESTRAINED JOINTS:

      1. CONCRETE THRUST BLOCK ANCHORS, TIE RODS, RESTRAINED JOINT PIPE, AND/OR OTHER MEANS OF RESTRAINT SHALL BE PROVIDED AT ALL CHANGES IN PIPE SIZE AND PIPE DIRECTION. CONCRETE THRUST BLOCKS SHALL BE IN ACCORDANCE WITH DETAILS ON SHEET 11(2).

      2. MECHANICALLY RESTRAINED JOINTS SHALL BE A FOLLOWER GLAND TYPE, SUITABLE FOR A 250 PSI WORKING PRESSURE AND A 500 PSI WATER HAMMER (SURGE) PRESSURE. GLANDS SHALL BE A SINGLE PIECE, EXCEPT WHERE REQUIRED TO BE SPLIT FOR APPLICATION ON EXISTING PIPE. MATERIAL SHALL BE DUCTILE IRON. JOINT SHALL BE DESIGNED TO RESTRAIN STANDARD MECHANICAL JOINTS. THE RATED PRESSURE SHALL INCLUDE A 2:1 SAFETY FACTOR. ACCEPTABLE MECHANICAL RESTRAINT DEVICE IS "MEGA-LUG" BY EBAA IRON, OR EQUAL. MECHANICAL JOINT RESTRAINT SHALL BE USED ONLY BETWEEN ABUTMENTS FACES OF PROPOSED BRIDGE OR WHERE REQUIRED BY DETAILS ON SHEET 11(2).

      3. RESTRAINED JOINTS SHALL BE USED FOR ALL FITTINGS, VALVES AND TRANSITIONS.

   F. CONNECTIONS: UNLESS OTHERWISE NOTED, CONNECTIONS TO EXISTING MAINS SHALL BE MADE USING MJ SOLID SLEEVE FITTINGS. SLEEVES SHALL BE LONG PATTERN, SOLID TYPE MADE OF GRAY- IRON OR DUCTILE IRON WITH A MINIMUM PRESSURE RATING OF 250 PSI. SLEEVES SHALL HAVE MECHANICAL JOINT ENDS SUITABLE FOR USE WITH APPROVED RESTRAINING RETAINER GLANDS. SLEEVES SHALL BE MANUFACTURED BY THE DUCTILE IRON PIPE MANUFACTURER. THE CONTRACTOR IS REQUIRED TO VERIFY THE OUTSIDE DIAMETER OF THE EXISTING WATER AND SEWER MAINS AND COORDINATE REQUIRED MODIFICATIONS, IF ANY, TO THE SLEEVE AND GLAND (MACHINING AND OTHERWISE) WITH THE MANUFACTURER. CONTRACTOR SHALL HAVE ALL MATERIALS NEEDED TO MAKE CONNECTION ON SITE PRIOR TO COMMENCING WITH THE CONNECTION.

   G. BEDDING AND BACKFILL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF LYNCHBURG SPECIFICATION SECTION 02220 AVAILABLE AT http://www.lynchburgva.gov/manual-specifications.

2. GATE VALVES SHALL BE COMPRESSION RESILIENT SEATED VALVES CONFORMING TO AWWA C509. THE VALVE SHALL BE DESIGNED SO THAT NO SLIDING OR SHEAR ON THE RESILIENT SEATING SURFACE IS PRESENT WHEN COMPRESSED TO A DROP TIGHT SHUT OFF. VALVE SHALL SEAL EQUALLY WELL IN EITHER DIRECTION. VALVE SHALL PROVIDE FULLY OPEN WATERWAY. VALVE SHALL HAVE O-RING SEALING AND A FUSION BONDED EPOXY COATING INSIDE AND OUT. VALVE SHALL BE PERMANENTLY LUBRICATED. VALVE SHALL HAVE A MANGANESE BRONZE STEM AND NUT WITH ANTI-THRUST WASHERS. OPERATING NUT SHALL BE 2 INCH SQUARE. THE VALVES SHALL BE:
   1. 2500 NRS BY AMERICAN FLOW CONTROL
   2. KENSEAL II BY KENNEDY VALVE
   3. RESILIENT WEDGE VALVE BY CLOW CORPORATION
   4. A-2360-20 BY MUELLER

   VALVES ADJACENT TO TEES OR BENDS SHALL BE TIED TO THE FITING WITH ASTM A307 THREADED CADMIUM COATED TIE RODS (SEE DETAIL 26.03 FOR NUMBER AND DIAMTER OF RODS REQUIRED.

   EACH GATE VALVE SHALL BE PROVIDED WITH A VALVE BOX CONSTRUCTED OF CAST IRON WITH A ROUND BASE. THE VALVE BOX SHALL BE THE SCREW TYPE WITH A FIVE INCH SHAFT AND THE COVER SHALL BE SLOTTED FOR EASY REMOVAL. COVERS SHALL HAVE THE WORD "WATER" CAST INTO THEM. THE VALVE BOX SHALL EQUAL OR EXCEED THAT AS MANUFACTURED BY U.S FOUNDRY OR EAST JORDAN IRON WORKS. VALVE BOX SHALL BE IN ACCORDANCE WITH CITY OF LYNCHBURG STANDARD DETAIL 26.16. VALVE BOX COVERS SHALL BE COATED WITH 2 COATS OF BLUE PAINT.

3. TAPPING SLEEVES AND VALVE SHALL BE SUITABLE FOR WET INSTALLATION WITHOUT INTERRUPTION OF WATER SERVICE. THE SLEEVE SHALL BE ALL STAINLESS STEEL CONSTRUCTION AND HAVE A FULL CIRCUMFERENCE GASKET FOR A WATERTIGHT SEAL. THE SLEEVE SHALL HAVE A MINIMUM WORKING PRESSURE OF 250 PSIG. THE SLEEVE SHALL BE EQUIPPED WITH A TEST PLUG TO ALLOW FOR PRESSURE TESTING OF THE SEAL PRIOR TO TAPPING. TAPPING SLEEVES SHALL MEET THE REQUIREMENTS OF AWWA C223 AND BE MANUFACTURED BY ROMAC INDUSTRIES, SMITH-BLAIR, OR FORD METER BOX CO.

   TAPPING VALVES SHALL MEET THE REQUIREMENTS OF GATE VALVES AS SPECIFIED ABOVE IN NOTE #2, EXCEPT THAT THE SEAT OPENINGS SHALL BE LARGER THAN NOMINAL SIZE AND VALVE ENDS SHALL BE MECHANICAL JOINT. TAPPING VALVES SHALL BE "O" RING TYPE WITH MECHANICAL JOINT AND CONFORMING TO AWWA NON-RISING STEM CONSTRUCTION. INLET FLANGE END SHALL BE CLASS 125 (ANSI B16.1) TAPPING VALVES SHALL BE MUELLER T-2360, AMERICAN FLOW CONTROL 2500 NRS, KENSEAL II, OR BY CLOW F-5093.

   TAPPING SLEEVE AND VALVE SHALL BE IN ACCORDANCE WITH DETAIL 26.06 ON SHEET 11(2).

4. INSERTION VALVE SHALL BE DESIGNED FOR INSTALLATION INTO AN EXISTING PRESSURIZED WATERLINE WHILE MAINTAINING CONSTANT PRESSURE IN WATERLINE. VALVE SHALL BE RATED FOR 250 PSI WORKING PRESSURE IN WATERLINE. VALVE SHALL HAVE A DUCTILE IRON BODY MEETING ASTM A536 GRADE 65-45-12. RESILIENT WEDGE SHALL CONFORM TO AWWA C509 REQUIREMENTS. VALVE SHALL BE COATED IN ACCORDANCE AWWA C550 (10 MILS EPOXY MINIMUM). VALVE SHALL BE NRS WITH OTHER FEATURES CONFORMING TO AWWA C515. SPLIT RESTRAINT DEVICE SHALL CONFORM TO ANSI/AWWA C110/A21.10 AND SHALL BE RATED AT 350 PSI. INSERTION VALVE SHALL BE TESTED IN PLACE AT 1.1 TIMES WORKING PRESSURE. VALVE SHALL BE FURNISHED AND INSTALLED BY TEAM INDUSTRIAL, OR EQUAL.

COMMONWEALTH OF VIRGINIA
BRADLEY C. CRAIG
Lic. No. 023879
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(UTILITY ENGINEER)

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.		29	U000-118-204,C-501	11(1)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

SURVEYED BY: ----------
SUPERVISED BY: STEVE CAMPBELL, MATTERN & CRAIG INC.(540) 345-9342
DESIGNED BY: BRADLEY C. CRAIG, MATTERN & CRAIG INC.(540) 345-9342
CADD OPERATOR: MATTERN & CRAIG INC.(540) 345-9342
REVISED BY: ----------

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	U000-118-204		11(1)

PROJECT MANAGER STEVE_CAMPBELL_MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN_& CRAIG_(540)-345-9342
DESIGN SUPERVISED BY CITY OF_LYNCHBURG
DESIGN BY BRADLEY C.CRAIG_MATTERN_& CRAIG

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204,C-501	11(2)

COMMONWEALTH OF VIRGINIA
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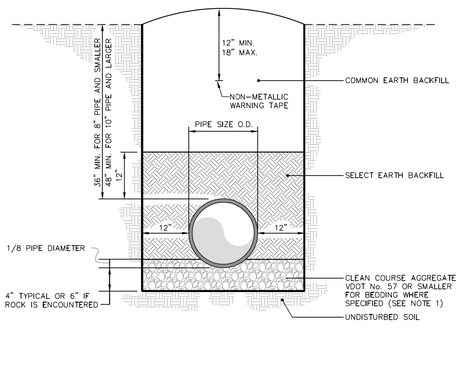
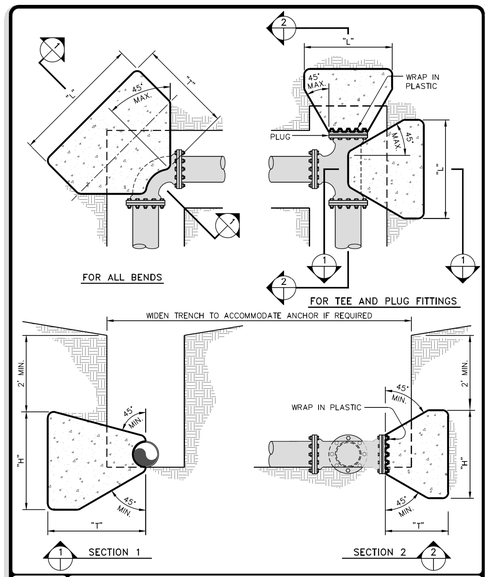


NOTES:

1. BEDDING SHALL BE REQUIRED FOR WATER LINES 16" IN DIAMETER AND LARGER OR IF ROCK IS ENCOUNTERED.
2. EXTRA DEPTH EXCAVATION SHALL BE PAID FOR AS ANYTHING BEYOND 4' OF COVER TO TOP OF PIPE.
3. ANY EXCAVATION BEYOND TRENCH LIMITS SHOWN ON DETAIL SHALL BE AT THE CONTRACTOR'S EXPENSE.

THE CITY OF LYNCHBURG
WATER LINE TRENCH DETAIL
SCALE: NOT TO SCALE | DETAIL # 26.01
REVISION DATE: 12-14-2013 | SHEET # 1 OF 1
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



THE CITY OF LYNCHBURG
TYPE "F" HORIZONTAL ANCHOR BLOCKING
SCALE: NOT TO SCALE | DETAIL # 26.02
REVISION DATE: 12-14-2013 | SHEET # 1 OF 3
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

TYPE FITTING	PIPE SIZE INCHES	DIMENSIONS (FT.) "L"	"H"	"T"	VOL. CONC CU. YARDS
TEST PRESSURE = 150 P.S.I. & BELOW					
11 1/4°	6	1.5	2	2.5	0.19
22 1/2°	6	1.5	2	2.52	0.19
45°	6	2	2.25	2.6	0.26
90°	6	2.5	2.5	3.01	0.40
TEE	6	2	2.25	2.5	0.25
PLUG	6	2	2.25	2.5	0.25
11 1/4°	8	1.66	2.16	2.67	0.23
22 1/2°	8	1.66	2.16	2.69	0.23
45°	8	2.66	2.66	2.77	0.41
90°	8	3.66	3.16	3.21	0.75
TEE	8	3.16	2.91	2.66	0.50
PLUG	8	3.16	2.91	2.66	0.50
11 1/4°	12	2	2.5	3	0.33
22 1/2°	12	2.5	2.75	3.02	0.44
45°	12	4	3.5	3.12	0.87
90°	12	5.5	4.25	3.62	1.63
TEE	12	4.5	3.75	3	0.99
PLUG	12	4.5	3.75	3	0.99
TEST PRESSURE = 151 P.S.I. to 200 P.S.I.					
11 1/4°	6	1.5	2	2.5	0.19
22 1/2°	6	1.5	2	2.52	0.19
45°	6	2	2.55	2.6	0.29
90°	6	3	2.75	3.01	0.52
TEE	6	2.5	2.5	2.5	0.34
PLUG	6	2.5	2.5	2.5	0.34
11 1/4°	8	1.66	2.16	2.67	0.23
22 1/2°	8	2.16	2.41	2.69	0.31
45°	8	3.16	2.91	2.77	0.52
90°	8	4.16	3.41	3.21	0.90
TEE	8	3.66	3.16	2.66	0.62
PLUG	8	3.66	3.16	2.66	0.62
11 1/4°	12	2	2.5	3	0.33
22 1/2°	12	3	3	3.02	0.56
45°	12	4.5	3.75	3.12	1.03
90°	12	6.5	4.75	3.62	2.14
TEE	12	5.5	4.25	3	1.35
PLUG	12	5.5	4.25	3	1.35
TEST PRESSURE = 201 P.S.I. to 250 P.S.I.					
11 1/4°	6	1.5	2	2.5	0.19
22 1/2°	6	1.5	2	2.52	0.19
45°	6	2.5	2.5	2.6	0.35
90°	6	3.5	3	3.01	0.64
TEE	6	3	2.75	2.5	0.43
PLUG	6	3	2.75	2.5	0.43
11 1/4°	8	1.66	2.16	2.67	0.23
22 1/2°	8	2.16	2.41	2.69	0.31
45°	8	3.66	3.16	2.77	0.64
90°	8	4.66	3.66	3.21	1.07
TEE	8	4.16	3.41	2.66	0.75
PLUG	8	4.16	3.41	2.66	0.75
11 1/4°	12	2.5	2.75	3	0.44
22 1/2°	12	3.5	3.25	3.02	0.69
45°	12	5.5	4.25	3.12	1.41
90°	12	7.5	5.25	3.62	2.71
TEE	12	6	4.5	3	1.56
PLUG	12	6	4.5	3	1.56

THE CITY OF LYNCHBURG
TYPE "F" HORIZONTAL ANCHOR BLOCKING
SCALE: NOT TO SCALE | DETAIL # 26.02
REVISION DATE: 12-14-2013 | SHEET # 2 OF 3
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

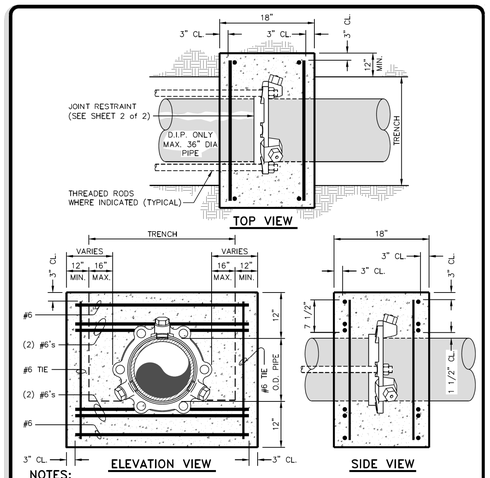
TYPE FITTING	PIPE SIZE INCHES	DIMENSIONS (FT.) "L"	"H"	"T"	VOL. CONC CU. YARDS
TEST PRESSURE = 150 P.S.I. & BELOW					
11 1/4°	16	3	2	3	0.48
22 1/2°	16	4	3	3	0.93
45°	16	6	4	3	1.81
90°	16	8	5.5	3.75	3.92
TEE	16	8	5.5	2.67	3.02
PLUG	16	8	5.5	2.67	3.02
11 1/4°	24	4.5	3	4	1.31
22 1/2°	24	6	4.5	4	2.56
45°	24	8.5	6.25	4	4.97
90°	24	12	8	4.5	9.84
TEE	24	12	8	4	8.94
PLUG	24	12	8	4	8.94
TEST PRESSURE = 151 P.S.I. to 200 P.S.I.					
11 1/4°	16	3	2.67	3	0.63
22 1/2°	16	4.5	3.5	3	1.20
45°	16	7.5	4.25	3	2.40
90°	16	10	5.75	3.75	5.11
TEE	16	10	5.75	5	6.46
PLUG	16	10	5.75	5	6.46
11 1/4°	24	5	3.5	4	1.68
22 1/2°	24	7	5	4	3.30
45°	24	10	7	4	6.54
90°	24	13	10	4.5	13.31
TEE	24	13	10	4.5	13.31
PLUG	24	13	10	4.5	13.31
TEST PRESSURE = 201 P.S.I. to 250 P.S.I.					
11 1/4°	16	3.5	3	3	0.81
22 1/2°	16	5.5	3.67	3	1.53
45°	16	7.5	5.25	3	2.95
90°	16	12	6	3.75	6.38
TEE	16	12	6	4	6.72
PLUG	16	12	6	4	6.72
11 1/4°	24	6	3.75	4	2.14
22 1/2°	24	8	5.5	4	4.13
45°	24	12	7.25	4	8.11
90°	24	14	11.5	4.75	17.21
TEE	24	14	11.5	4.75	17.21
PLUG	24	14	11.5	4.75	17.21

THE CITY OF LYNCHBURG
TYPE "F" HORIZONTAL ANCHOR BLOCKING
SCALE: NOT TO SCALE | DETAIL # 26.02
REVISION DATE: 12-14-2013 | SHEET # 3 OF 3
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

TIE ROD ANCHORS DATUM		
PIPE SIZE (INCHES)	ROD DIAMETER (INCHES)	NUMBER OF A307 RODS REQUIRED
TEST PRESSURE = 150 P.S.I. & BELOW		
6	3/4	2
8	3/4	2
10	3/4	2
12	3/4	4
16	3/4	6
20	3/4	8
24	1	8
30	1	10
TEST PRESSURE = 151 P.S.I. to 200 PSI		
6	3/4	2
8	3/4	2
10	3/4	4
12	3/4	6
16	3/4	8
20	3/4	12
24	1	10
30	1	14
TEST PRESSURE = 201 P.S.I. to 250 P.S.I.		
6	3/4	4
8	3/4	4
10	3/4	4
12	3/4	6
16	3/4	12
20	3/4	14
24	1	16
30	1	20

TIE RODS SHALL BE A307 CADMIUM COATED TIE RODS.

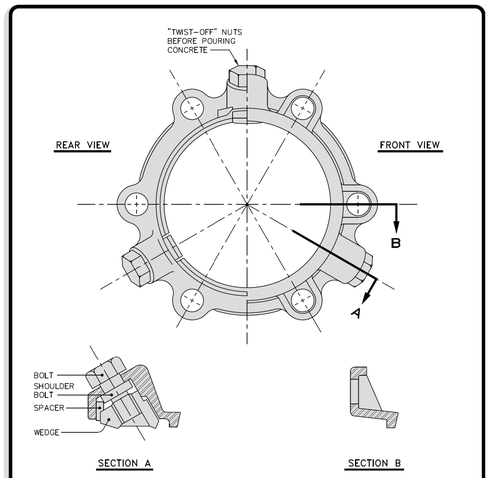
THE CITY OF LYNCHBURG
TIE ROD ANCHORS DATUM CHART
SCALE: NOT TO SCALE | DETAIL # 26.03
REVISION DATE: 12-14-2013 | SHEET # 1 OF 1
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



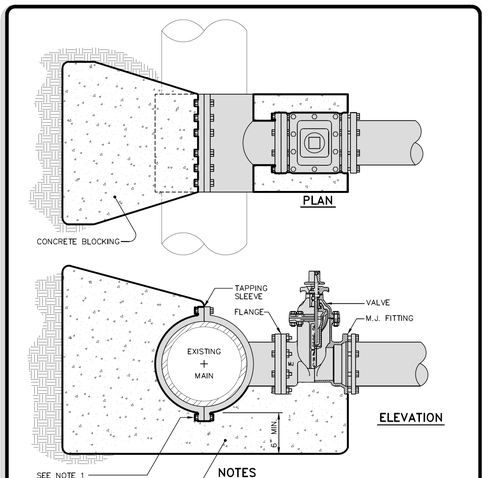
NOTES:

1. CONCRETE SHALL BE 3000 P.S.I.
2. REINFORCING BARS SHALL BE DEFORMED, AND TIED TOGETHER.
3. TRENCH BOTTOM WIDTH IN VICINITY OF THRUST BLOCK(S) INSTALLATION SHALL BE THE MINIMUM WIDTH.
4. BACKFILL AND COMPACT IN 6" LAYERS.
5. PLACE THRUST COLLAR ON ONE FULL JOINT OF PIPE.
6. LAST JOINT OF PIPE WITH THRUST COLLAR TO BE MECHANICAL JOINT PIPE.
7. PLACE RESTRAINED JOINT THRUST RING 4' FROM PLUG END OF PIPE.

THE CITY OF LYNCHBURG
THRUST COLLAR & BLOCKING DETAIL
SCALE: NOT TO SCALE | DETAIL # 26.04
REVISION DATE: 12-14-2013 | SHEET # 1 OF 2
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



THE CITY OF LYNCHBURG
THRUST RING
SCALE: NOT TO SCALE | DETAIL # 26.04
REVISION DATE: 12-14-2013 | SHEET # 2 OF 2
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



NOTES

1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS. (WRAP IN PLASTIC)
2. SEE TYPE "F" (HORIZONTAL) ANCHOR BLOCK DETAIL 26.02 FOR AREA OF CONCRETE REQUIRED.
3. TAPPING SLEEVE SHALL BE A MINIMUM OF 4' FROM NEAREST PIPE JOINT.

THE CITY OF LYNCHBURG
TAPPING SLEEVE & VALVE DETAIL
SCALE: NOT TO SCALE | DETAIL # 26.06
REVISION DATE: 12-14-2013 | SHEET # 1 OF 1
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

PROJECT	SHEET NO.
U000-118-204	11(2)

PROJECT MANAGER STEVE_CAMPBELL,MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN_& CRAIG_(540)-345-9342
DESIGN SUPERVISED BY CITY OF LYNCHBURG
DESIGNED BY BRADLEY C_CRAIG,MATTERN_& CRAIG

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204,C-501	11(2A)

COMMONWEALTH OF VIRGINIA
BRADLEY C. CRAIG
Lic. No. 023879
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MATTERN & CRAIG, INC
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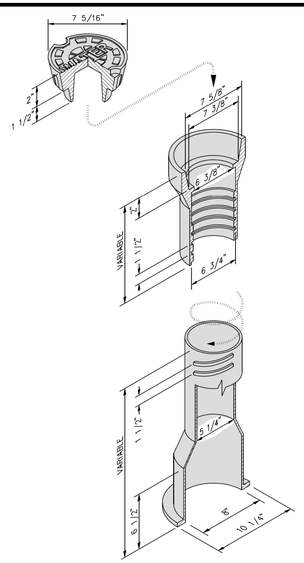
(UTILITY ENGINEER)

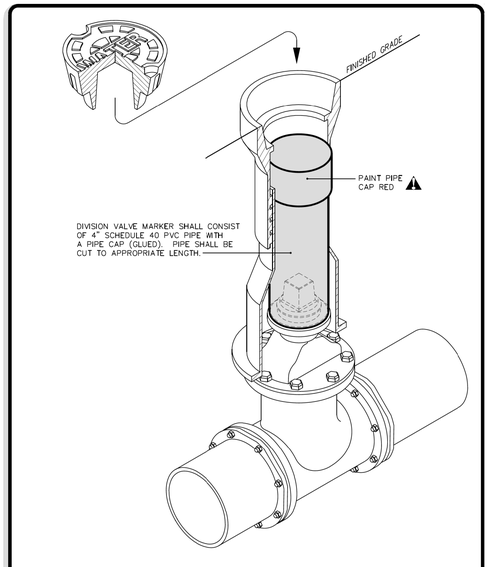


THE CITY OF LYNCHBURG

2 – PIECE ADJUSTABLE SCREW VALVE BOX DETAIL

USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

SCALE:	DETAIL #
NOT TO SCALE	26.16
REVISION DATE: 12-14-2013	SHEET # 1 OF 1

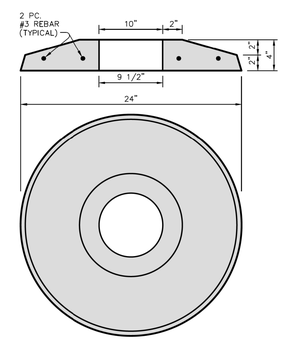


THE CITY OF LYNCHBURG

DIVISION VALVE MARKER DETAIL

USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

SCALE:	DETAIL #
NOT TO SCALE	26.17
REVISION DATE: 12-14-2013	SHEET # 1 OF 1



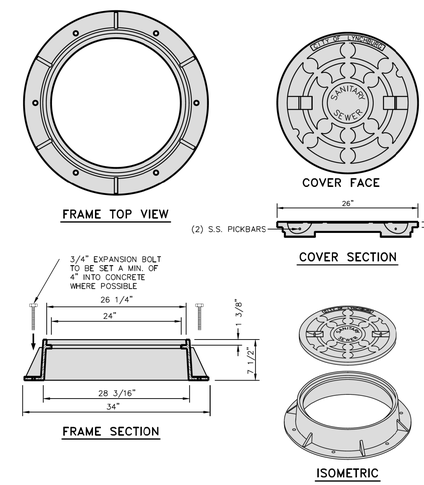
NOTES:
1. VALVE BOX PAD IS TO BE MADE OF CLASS A-3 CONCRETE (3000 PSI @ 28 DAYS).
2. TO BE USED IN UNPAVED AREAS.

THE CITY OF LYNCHBURG

VALVE BOX PRECAST SHOULDER SLAB DETAIL

USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATONS ONLY

SCALE:	DETAIL #
NOT TO SCALE	26.18
REVISION DATE: 12-14-2013	SHEET # 1 OF 1



NOTES:
1. PARTS #'s: US FOUNDRY 710 RING AND DP COVER, EAST JORDAN IRON WORKS OR APPROVED EQUAL.
2. MANHOLE FRAMES AND COVERS SHALL BE ROADWAY TYPE WITH DEEP SOCKET COVERS. MACHINE FRAMES AND COVERS TO PREVENT RATTLING. CASTINGS SHALL BE GRAY IRON MEETING REQUIREMENTS OF ASTM A48, CLASS 30.

THE CITY OF LYNCHBURG

STANDARD MANHOLE FRAME and COVER

USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

SCALE:	DETAIL #
NOT TO SCALE	27.10
REVISION DATE: 12-14-2013	SHEET # 1 OF 1

PROJECT MANAGER STEVE_CAMPBELL_MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN_& CRAIG_(540)-345-9342
DESIGN SUPERVISED BY CITY OF_LYNCHBURG
DESIGNED BY BRADLEY C.CRAIG_MATTERN_& CRAIG

COMMONWEALTH OF VIRGINIA
BRADLEY C. CRAIG
Lic. No. 023879
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(UTILITY ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	11(3)

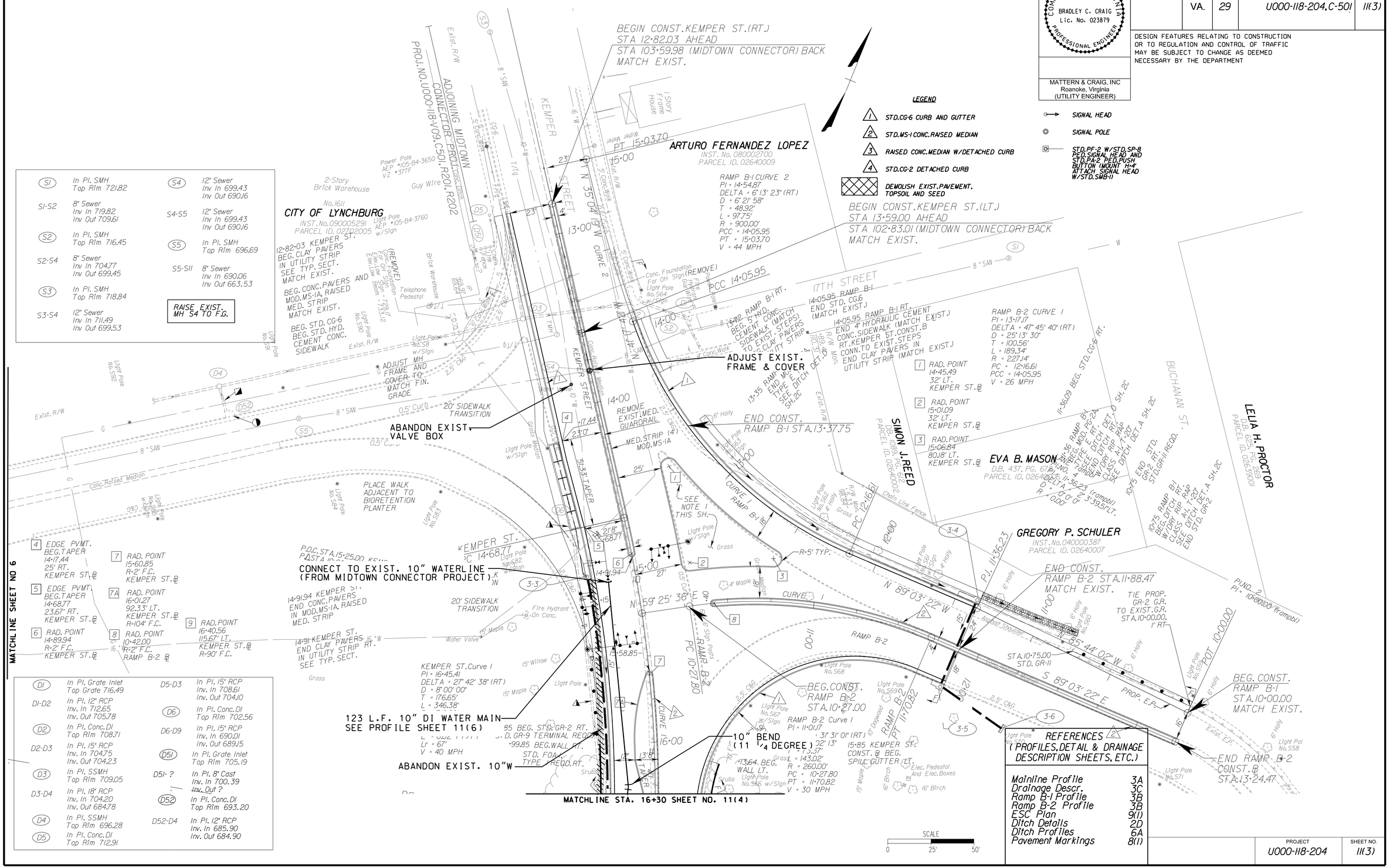
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

LEGEND

1. STD.CG-6 CURB AND GUTTER
2. STD.MS-1 CONC.RAISED MEDIAN
3. RAISED CONC.MEDIAN W/DETACHED CURB
4. STD.CG-2 DETACHED CURB

DEMOLISH EXIST.PAVEMENT. TOPSOIL AND SEED

SIGNAL HEAD
SIGNAL POLE
STD.PF-2 W/STD.SP-8 PED.SIGNAL HEAD AND STD.PA-2 PED.PUSH BUTTON (MOUNT H-4 ATTACH SIGNAL HEAD W/STD.SMB-11)



S1	In Pl. SMH Top Rim 721.82	S4	12" Sewer Inv In 699.43 Inv Out 690.16
S1-S2	8" Sewer Inv In 719.82 Inv Out 709.61	S4-S5	12" Sewer Inv In 699.43 Inv Out 690.16
S2	In Pl. SMH Top Rim 716.45	S5	In Pl. SMH Top Rim 696.69
S2-S4	8" Sewer Inv In 704.77 Inv Out 699.45	S5-S11	8" Sewer Inv In 690.06 Inv Out 663.53
S3	In Pl. SMH Top Rim 718.84		
S3-S4	12" Sewer Inv In 711.49 Inv Out 699.53		

RAISE EXIST. MH S4 TO F.G.

D1	In Pl. Grate Inlet Top Grate 716.49	D5-D3	In Pl. 15" RCP Inv. In 708.61 Inv. Out 704.10
D1-D2	In Pl. 12" RCP Inv. In 712.65 Inv. Out 705.78	D6	In Pl. Conc.DI Top Rim 702.56
D2	In Pl. Conc.DI Top Rim 708.71	D6-D9	In Pl. 15" RCP Inv. In 690.01 Inv. Out 689.15
D2-D3	In Pl. 15" RCP Inv. In 704.75 Inv. Out 704.23	D51	In Pl. Grate Inlet Top Rim 705.19
D3	In Pl. SSMH Top Rim 709.05	D51-?	In Pl. 8" Cast Inv. In 700.39 Inv. Out ?
D3-D4	In Pl. 18" RCP Inv. In 704.20 Inv. Out 684.78	D52	In Pl. Conc.DI Top Rim 693.20
D4	In Pl. SSMH Top Rim 696.28	D52-D4	In Pl. 12" RCP Inv. In 685.90 Inv. Out 684.90
D5	In Pl. Conc.DI Top Rim 712.91		

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile	3A
Drainage Descr.	3C
Ramp B-1 Profile	3B
Ramp B-2 Profile	3B
ESC Plan	9(1)
Ditch Details	2D
Ditch Profiles	6A
Pavement Markings	8(1)

PROJECT	SHEET NO.
U000-118-204	11(3)

PROJECT MANAGER STEVE_CAMPBELL_MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN_& _CRAIG_(540)-345-9342
DESIGN SUPERVISED BY CITY_OF_LYNCHBURG
DESIGNED BY BANDY_DODSON_MATTERN_&_CRAIG

D7	In Pl. Conc.DI Top Rim	DI0	In Pl. 15" RCP w/ End Section	D14	In Pl. Conc.DI Top Rim 673.09	D39	In Pl. Conc.DI Top Grate 669.35	D42	In Pl. Grate Inlet Top Grate 666.60
D7-D8	In Pl. 15" RCP Inv. In 690.01 Inv. Out 689.58	DII	In Pl. Conc.DI Top Rim	D24	In Pl. Conc.DI Top Rim 665.75	D39-D40	In Pl. 18" RCP Inv. In 664.48 Inv. Out 661.46	D42-D43	In Pl. 18" RCP Inv. In 660.70 Inv. Out 641.21
D8	In Pl. Conc.DI Top Rim	DII-DI2	In Pl. 18" RCP Inv. In 678.37 Inv. Out 676.67	D24-D25	In Pl. 18" RCP Inv. In 662.25 Inv. Out 655.12	D40	In Pl. Conc.DI Top Rim 668.00	D43	In Pl. 18" RCP w/ End Section
D8-D9	In Pl. 15" RCP Inv. In 689.46 Inv. Out 689.15	DI2	In Pl. 18" RCP w/ End Section	D25	In Pl. Conc.DI Top Rim 657.80	D40-D42	In Pl. 18" RCP Inv. In 661.40 Inv. Out 660.76		
D9	In Pl. Conc.DI Top Rim	DI3	In Pl. Conc.DI Top Rim 677.41	D25-D26	In Pl. 18" RCP Inv. In 653.77 Inv. Out 651.26	D41	In Pl. Conc.DI Top Rim		
D9-DI0	In Pl. 15" RCP Inv. In 688.97 Inv. Out 688.51	DI3-DI4	In Pl. 15" RCP Inv. In 668.10 Inv. Out 667.53	D26	In Pl. 18" RCP w/ End Section	D41-D42	In Pl. 18" RCP Inv. In 661.50 Inv. Out 660.78		

S8	In Pl. SMH Top Rim 647.45
S9	In Pl. SMH Top Rim 644.59
S10	In Pl. SMH Top Rim 644.34

LEGEND

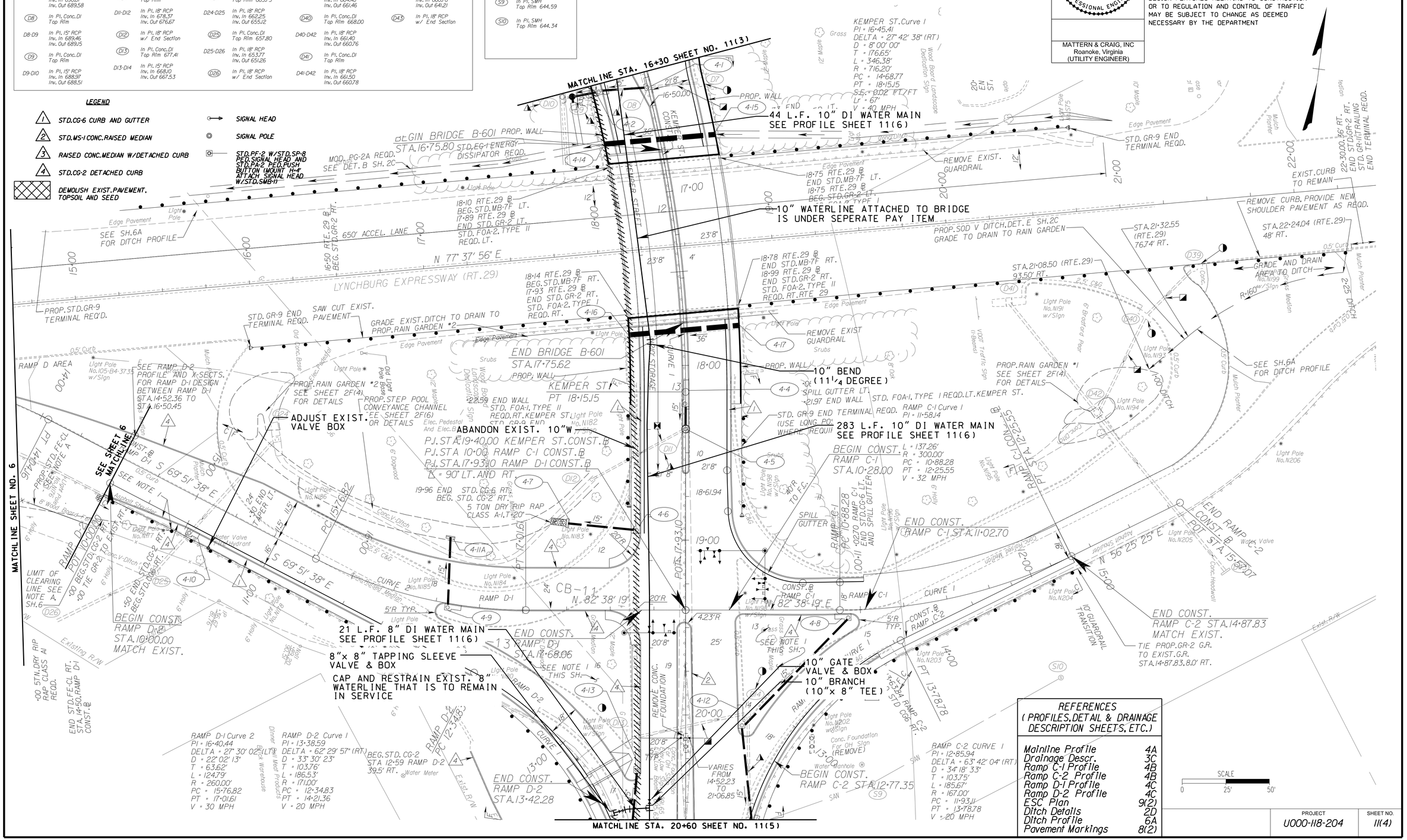
1. STD.CG-6 CURB AND GUTTER
2. STD.MS-1 CONC.RAISED MEDIAN
3. RAISED CONC.MEDIAN W/DETACHED CURB
4. STD.CG-2 DETACHED CURB

DEMOLISH EXIST.PAVEMENT, TOPSOIL AND SEED

SIGNAL HEAD

SIGNAL POLE

STD.PF-2 W/STD.SP-8 PED.SIGNAL HEAD AND STD.PA-2 PED.PUSH BUTTON (MOUNT 11'-4" ATTACH SIGNAL HEAD W/STD.SMB-11)



REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
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Drainage Descr.	3C
Ramp C-1 Profile	4B
Ramp C-2 Profile	4B
Ramp D-1 Profile	4C
Ramp D-2 Profile	4C
ESC Plan	9(2)
Ditch Details	2D
Ditch Profile	6A
Pavement Markings	8(2)

SCALE 0 25' 50'

COMMONWEALTH OF VIRGINIA
BRADLEY C. CRAIG
Lic. No. 023879
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(UTILITY ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	11(4)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROJECT	SHEET NO.
U000-118-204	11(4)

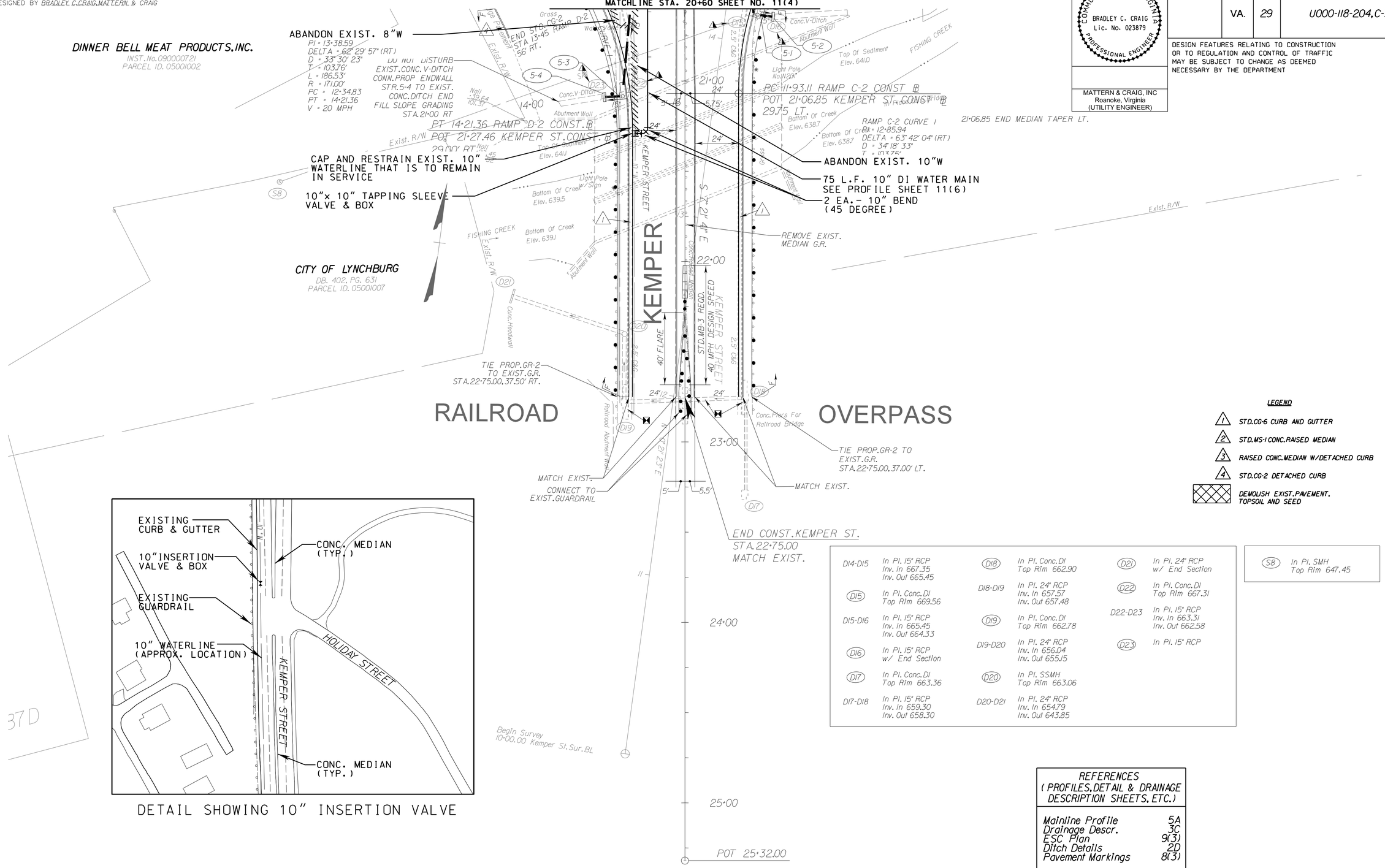
PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGN SUPERVISED BY CITY OF LYNCHBURG
DESIGNED BY BRADLEY C. CRAIG MATTERN & CRAIG

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	11(5)

COMMONWEALTH OF VIRGINIA
BRADLEY C. CRAIG
Lic. No. 023879
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(UTILITY ENGINEER)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



LEGEND

- (1) STD. CG-6 CURB AND GUTTER
- (2) STD. MS-1 CONC. RAISED MEDIAN
- (3) RAISED CONC. MEDIAN W/DETACHED CURB
- (4) STD. CG-2 DETACHED CURB
- DEMOLISH EXIST. PAVEMENT, TOPSOIL AND SEED

DI4-DI5	In Pl. 15" RCP Inv. In 667.35 Inv. Out 665.45	(DI8)	In Pl. Conc. DI Top Rim 662.90	(D21)	In Pl. 24" RCP w/ End Section
(DI5)	In Pl. Conc. DI Top Rim 669.56	DI8-DI9	In Pl. 24" RCP Inv. In 657.57 Inv. Out 657.48	(D22)	In Pl. Conc. DI Top Rim 667.31
DI5-DI6	In Pl. 15" RCP Inv. In 665.45 Inv. Out 664.33	(DI9)	In Pl. Conc. DI Top Rim 662.78	D22-D23	In Pl. 15" RCP Inv. In 663.31 Inv. Out 662.58
(DI6)	In Pl. 15" RCP w/ End Section	DI9-D20	In Pl. 24" RCP Inv. In 656.04 Inv. Out 655.15	(D23)	In Pl. 15" RCP
(DI7)	In Pl. Conc. DI Top Rim 663.36	(D20)	In Pl. SSMH Top Rim 663.06		
DI7-DI8	In Pl. 15" RCP Inv. In 659.30 Inv. Out 658.30	D20-D21	In Pl. 24" RCP Inv. In 654.79 Inv. Out 643.85		

(S8)	In Pl. SMH Top Rim 647.45

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile	5A
Drainage Descr.	3C
ESC Plan	9(3)
Ditch Details	2D
Pavement Markings	8(3)

PROJECT	SHEET NO.
U000-118-204	11(5)

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Plotted By: localuser

SURVEYED BY _____
SUPERVISED BY _____
DESIGNED BY BRADLEY, CRAIG, MATTERN & CRAIG, INC. (540) 345-9342

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

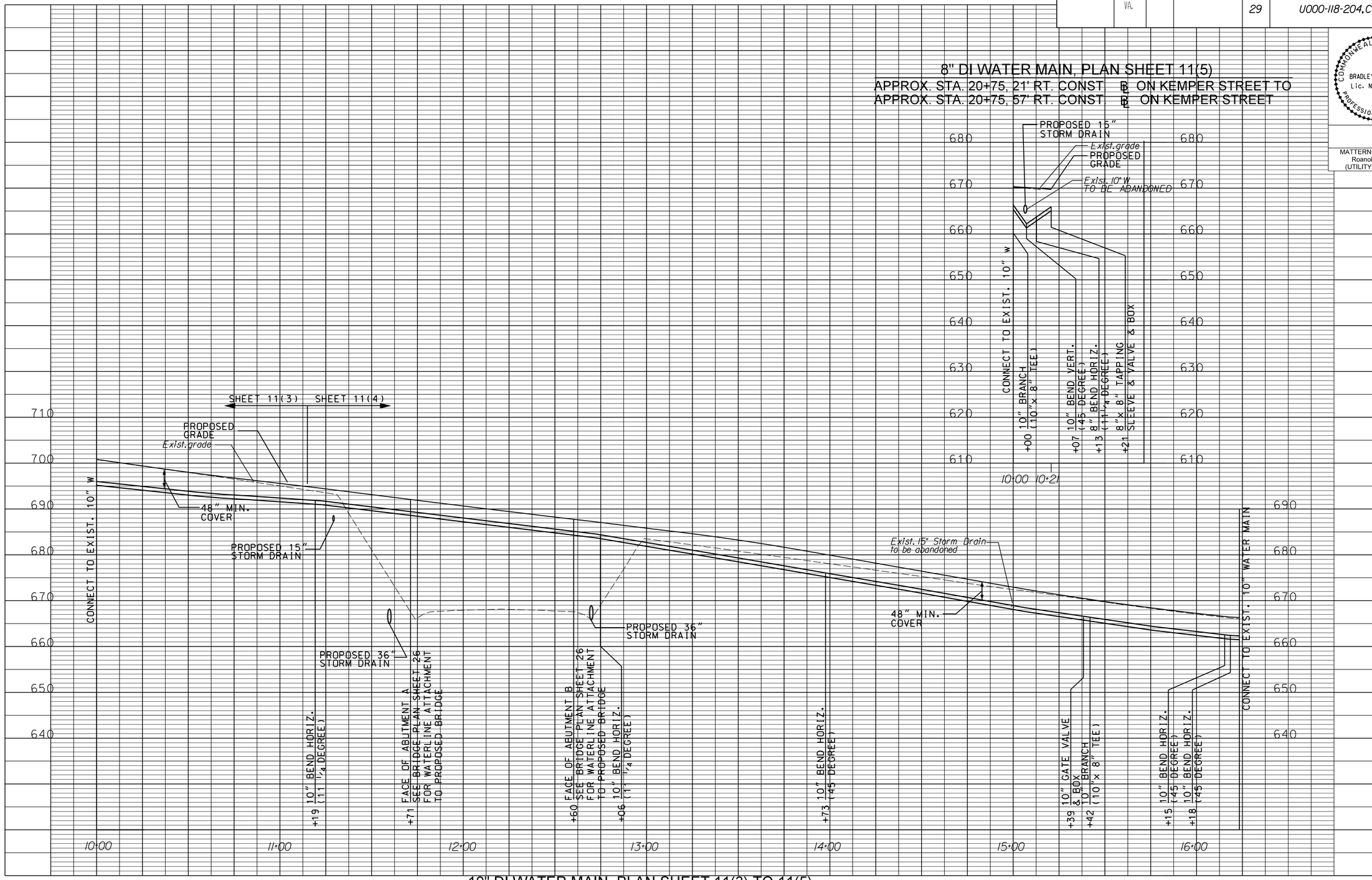
REVISED	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.			29	U000-118-204, C-501	11(6)

COMMONWEALTH OF VIRGINIA
BRADLEY C. CRAIG
Lic. No. 023879
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(UTILITY ENGINEER)

8" DI WATER MAIN, PLAN SHEET 11(5)

APPROX. STA. 20+75, 21' RT. CONST. ℄ ON KEMPER STREET TO
APPROX. STA. 20+75, 57' RT. CONST. ℄ ON KEMPER STREET



10" DI WATER MAIN, PLAN SHEET 11(3) TO 11(5)

APPROX. STA. 14+52, 18' LT. CONST. ℄ ON KEMPER STREET TO
APPROX. STA. 21+29, 28' RT. CONST. ℄ ON KEMPER STREET

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
	U000-118-204		11(6)

PROJECT MANAGER<STEVE_CAMPBELL_MATTERN & CRAIG (540)-345-9342>
SURVEYED BY <MATTERN & CRAIG (540)-345-9342>
DESIGN SUPERVISED BY <CITY OF LYNCHBURG>
DESIGN BY <RANDY DODSON_MATTERN & CRAIG>

LIGHTING PLAN
GENERAL NOTES & QUANTITIES

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	12(1)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

1. AEP WILL PROVIDE AND INSTALL ALL ORNAMENTAL LIGHT POLES, LUMINARIES AND CONDUCTOR CABLE. CONTRACTOR SHALL INSTALL ALL REMAINING ITEMS SUCH AS POLE FOUNDATIONS, JUNCTION BOXES AND CONDUITS. CONTRACTOR SHALL REMOVE ALL LIGHT POLES AS INDICATED ON THE PLANS TO BE REMOVED. CONTRACTOR SHALL RELOCATE ALL LIGHT POLES AS INDICATED ON THE PLANS TO BE RELOCATED.

2. THE CONTRACTOR SHALL FIELD VERIFY ANCHOR BOLTS AND PATTERNS ON STRUCTURES PRIOR TO INSTALLING LIGHTING POLE FOUNDATIONS.

3. ALL LUMINARIES SHALL BE FUSED IN THE TRANSFORMER BASE, HANDHOLE, FUSEBOX, OR NEAREST JUNCTION BOX BY AEP.

4. CONDUITS SHOWN ON THESE PLANS ARE DIAGRAMMATIC AND ACTUAL CONDUIT RUNS SHALL CONFORM TO THE FIELD CONDITIONS.

5. CERTAIN UTILITIES WITHIN THE VICINITY OF THIS PROJECT AREA ARE SHOWN ON THE PLANS. THE UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATELY LOCATED. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION ALL EXISTING UTILITIES AND LIGHTING SYSTEMS BEFORE PROCEEDING WITH WORK.

6. AT LOCATIONS WHERE PROPOSED CONDUIT SHALL CROSS EXISTING CONDUIT, THE CONTRACTOR SHALL HAND DIG THE TRENCH AND SHALL TAKE ADEQUATE CARE NOT TO DAMAGE THE EXISTING CONDUIT OR THE CONTENTS THEREOF. THESE CONDITIONS SHALL APPLY AT ALL SUCH CONDUIT CROSSINGS EXCEPT THOSE LOCATIONS WHERE PROPOSED CONDUIT WILL CROSS CONDUIT DESIGNATED TO BE ABANDONED.

7. CONDUIT SHALL BE INSTALLED WITH LARGE RADIUS OFFSETS (5' MINIMUM RADIUS) TO BYPASS DRAINAGE INLETS, MANHOLES, AND OTHER OBSTRUCTIONS.

   THE CONTRACTOR SHALL FURNISH AND INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL NON-METALLIC CONDUIT IN ACCORDING WITH SECTION 700 OF THE SPECIFICATIONS. THE MINIMUM EQUIPMENT GROUNDING CONDUCTORS SIZE SHALL BE THE SAME SIZE AS THE LARGEST CONDUCTOR INDICATED ON THE PLANS FOR EACH CONDUIT RUN.

8. THE LOCATION OF THE LIGHT POLE FOUNDATION GROUNDING ROD SHALL BE MARKED ON THE TOP SURFACE OF THE FOUNDATION BY A RECESSED ARROW AND INITIAL "G" FORMED IN THE CONCRETE. THE GROUND ROD SHALL TYPICALLY BE PLACED TO THE LEFT OF THE LIGHTING POLE FOUNDATION AS OBSERVED FROM THE POLE HANDHOLE.

9. CONDUCTORS IN JUNCTION BOXES, MANHOLES, AND ALL EQUIPMENT ENCLOSURES SHALL BE NEATLY ARRANGED AND LACED WITH APPROVED CABLE TIES.

10. WHERE CONDUCTOR CABLES TERMINATE IN JUNCTION BOXES OR LIGHTING STANDARDS, THEY SHALL BE TESTED AND CAPPED WITH 3 FT. OF SLACK PER CONDUCTOR.

11. LOCATIONS OF EXISTING JUNCTIONS BOXES AND MANHOLES SHOWN ON THE PLANS ARE APPROXIMATE.

12. AREAS AROUND CABINETS, JUNCTION BOXES AND MANHOLES ON SLOPES SHALL BE GRADED AS APPROVED BY THE ENGINEER.

13. THE CONTRACTOR SHALL BE RESPONSIBLE TO RETURN ALL DISTURBED AREAS AND FENCING TO THEIR ORIGINAL STATE AT THE COMPLETION OF ALL WORK. DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH SECTION 603 OF THE SPECIFICATIONS AND ALL COST FOR THIS ITEM SHALL BE INCLUDED IN THE PRICE BID FOR OTHER BID ITEMS. NO SEPARATE MEASUREMENT WILL BE MADE.

14. THE CONTRACTOR SHALL COORDINATE ELECTRICAL SERVICE WITH THE ENGINEER AND THE LOCAL POWER COMPANY.

15. SEPARATE CONTRACTS WILL BE ONGOING WITHIN THE LIMITS OF THE PROJECT. THE CONTRACTOR SHALL NOT HINDER THE WORK BEING PERFORMED BY OTHER CONTRACTORS AND SHALL COOPERATE AND COORDINATE THE WORK OF THIS PROJECT WITH OTHER CONTRACTORS.

16. THE CONTRACTOR SHALL SUBMIT ORNAMENTAL POLE DRAWINGS AND FOUNDATION DESIGN FOR REVIEW AND APPROVAL BEFORE OBTAINING ANY LIGHT POLES OR CONSTRUCTION OF FOUNDATIONS.

LIGHTING QUANTITIES

		CONCRETE FOUNDATION LF-1, TY A. SEE NOTE C	CONCRETE FOUNDATION LF-1 (MOD.) SEE NOTE B	TEST BORE	2" CONDUIT SEE NOTE F	TRENCH EXCAVATION STD ECI-1	LUMINAIRE 150 WATT H.P.S. SEE NOTE E	JUNCTION BOX JB-S1	LIGHTING POLE 16' ORNAMENTAL SEE NOTE A AND NOTE E	CONDUCTOR CABLE #1/0 SEE NOTE E	RELOCATE EXIST. LIGHT POLE (WITH TRUSS ARM AND LUMINAIRE)	REMOVE EXISTING LIGHT AND POLE SEE NOTE D
	UNIT	EA.	EA.	EA.	L.F.	L.F.	EA.	EA.	EA.	L.F.	EA.	EA.
SHEET NOS.	12(3)	7	3	10	950	950	3	12	4	3135	7	12
	12(4)	8	6	15	990	990	6	10	6	3267	8	12
	12(5)	1	2	3	200	200	2	3	2	660	1	1
	12(6)											9
	12(3&4)				1000							
	TOTAL	16	11	28	3140	2140	11	25	12	7062	16	34

NOTE A: LIGHTING POLE 16' ORNAMENTAL SHALL MATCH ORNAMENTAL LIGHT POLE USED ON MIDTOWN CONNECTOR PROJECT. CONTRACTOR COORDINATE WITH CITY OF LYNCHBURG.

NOTE B: FOUNDATION DESIGN FOR LIGHTING POLE 16' ORNAMENTAL AND RELOCATE EXIST. LIGHT POLE IS INCLUDED IN THIS QUANTITY BUT THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOUNDATION DESIGN. THE CONTRACTOR SHALL FURNISH THE FOUNDATION DESIGNER WITH THE SOIL CONDITION, SLOPE CONDITION AND ANY OTHER FIELD DATA NECESSARY TO DESIGN THE POLE FOUNDATIONS. FOUNDATION SIZE AND REBAR REQUIREMENTS ARE TO BE DETERMINED BY THE FOUNDATION DESIGNER. COORDINATE LIGHT POLE ANCHOR BOLTS WITH FOUNDATION DESIGN.

NOTE C: FOR USE WITH RELOCATED COBRA HEAD LIGHT POLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOUNDATION DESIGN. THE CONTRACTOR SHALL FURNISH THE FOUNDATION DESIGNER WITH THE SOIL CONDITION, SLOPE CONDITION AND ANY OTHER FIELD DATA NECESSARY TO DESIGN THE POLE FOUNDATIONS. FOUNDATION SIZE AND REBAR REQUIREMENTS ARE TO BE DETERMIND BY THE FOUNDATION DESIGNER. COORDINATE LIGHT POLE ANCHOR BOLTS WITH FOUNDATION DESIGN.

NOTE D: REMOVED COBRA HEAD LIGHT POLES TO BE RE-INSTALLED AT LOCATIONS NOTED AS "COBRA HEAD LIGHT (RELOCATED POLE)". ALL REMAINING REMOVED LIGHT POLES TO BE RETURNED TO OWNER (AEP).

NOTE E: FOR INFORMATION ONLY - NOT A BID ITEM.

NOTE F: THIS TOTAL QUANTITY INCLUDES 1000' OF 2" CONDUIT (FOR FIBER OPTIC SUPPLIED BY THE CITY) FOR PLAN SHEETS 12(3) AND 12(4). CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT IN SAME TRENCH WITH LIGHTING CONDUIT. COORDINATE WITH CITY OF LYNCHBURG. ALL CONDUIT SHALL BE PVC.

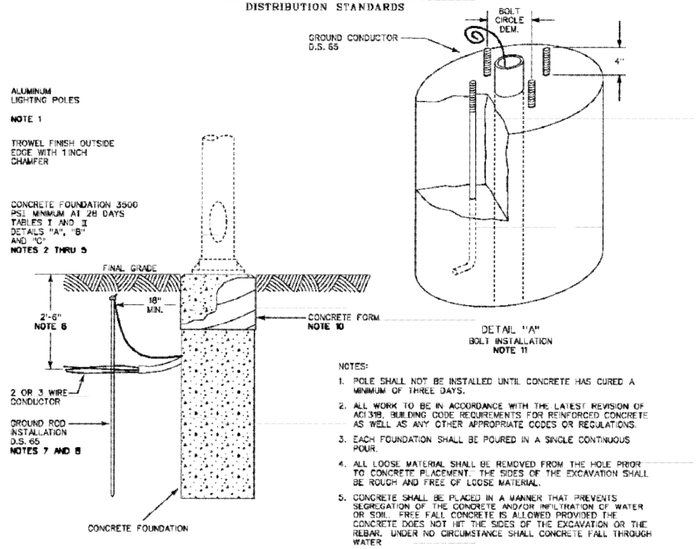
PROJECT MANAGER <Project_Mgr._Name_(000)_000-0000_(District)>
SURVEYED BY <Surveyor_Name_(000)_000-0000_(District)>
DESIGN SUPERVISED BY <Supervisor_Name_(000)_000-0000_(District)>
DESIGNED BY <Designer_Name_(000)_000-0000_(District)>

LIGHTING DETAILS

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204,C-501	12(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

AMERICAN ELECTRIC POWER COMPANY
DISTRIBUTION STANDARDS



NOTES:

1. POLE SHALL NOT BE INSTALLED UNTIL CONCRETE HAS CURED A MINIMUM OF THREE DAYS.
2. ALL WORK TO BE IN ACCORDANCE WITH THE LATEST REVISION OF ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AS WELL AS ANY OTHER APPROPRIATE CODES OR REGULATIONS.
3. EACH FOUNDATION SHALL BE POURED IN A SINGLE CONTINUOUS POUR.
4. ALL LOOSE MATERIAL SHALL BE REMOVED FROM THE HOLE PRIOR TO CONCRETE PLACEMENT. THE SIDES OF THE EXCAVATION SHALL BE ROUGH AND FREE OF LOOSE MATERIAL.
5. CONCRETE SHALL BE PLACED IN A MANNER THAT PREVENTS SEGREGATION OF THE CONCRETE AND/OR INFILTRATION OF WATER OR SOIL. FREE FALL CONCRETE IS ALLOWED PROVIDED THE CONCRETE DOES NOT HIT THE SIDES OF THE EXCAVATION OR THE REBAR. UNDER NO CIRCUMSTANCE SHALL CONCRETE FALL THROUGH WATER.
6. BURY UNDERGROUND CONDUCTORS 30" IF DIRECT BURIED AND 24" IF IN CONDUIT.
7. GROUND RODS ARE TO BE DRIVEN TO THE DEPTH SHOWN UNLESS ROCK OR OTHER OBSTRUCTIONS ARE ENCOUNTERED. RESISTANCE OF INDIVIDUAL GROUND LOCATIONS SHOULD BE LOWERED TO PRACTICAL VALUES. ADDITIONAL GROUND RODS MAY BE DRIVEN (NO MORE THAN THREE AT ANY SINGLE LOCATION).
8. GROUNDING CONDUCTOR SHALL BE CONNECTED TO GROUNDING STUD OF METALLIC POLES IN VICINITY OF HANDHOLE AND TO FIXTURES GROUNDING LUG.
10. FORM FOR CONCRETE FOUNDATION SHALL BE MADE FROM SONOTUBE OR SIMILAR MATERIAL. FORM SHALL EXTEND MINIMUM OF 12" BELOW GRADE.
11. REFER TO POLE MANUFACTURER'S INSTRUCTIONS FOR PLACEMENT OF ANCHOR BOLTS AND TORQUE REQUIREMENTS. TO SUPPLY TEMPLATE AND ANCHOR BOLTS.
12. SIZE CONDUIT FOR CONDUCTORS: TWO CONDUITS MAY BE INSTALLED IF CONDUCTOR LOOPS THROUGH FOUNDATION.
13. FORM HORIZONTAL REBAR IN RING OF 12" DIAMETER FOR 18" DIAMETER FOUNDATION.
14. HORIZONTAL TIES SHALL BE TIED TO VERTICAL REINFORCEMENT WITH STANDARD REINFORCEMENT TIE WIRE.

TABLE I
CONCRETE FOUNDATION LENGTH
NOTE 9

FOUNDATION DESIGN	DIAMETER (INCHES)	GRADE BASE FOUNDATION LENGTH (FEET)		ABOVE GRADE BASE FOUNDATION LENGTH (FEET)	
		SOIL CLASSIFICATION		SOIL CLASSIFICATION	
		HARD OR NORMAL	SOFT	HARD OR NORMAL	SOFT
A	18	4	5	6	7
B	18	5	6	7	8
C	24	5	6	7	8
D	24	6	7	8	9
E	24	6	8	6	10

JULY 15, 2002 — CONCRETE FOUNDATION — D.S. 1435 PAGE 1 OF 2

AMERICAN ELECTRIC POWER COMPANY
DISTRIBUTION STANDARDS

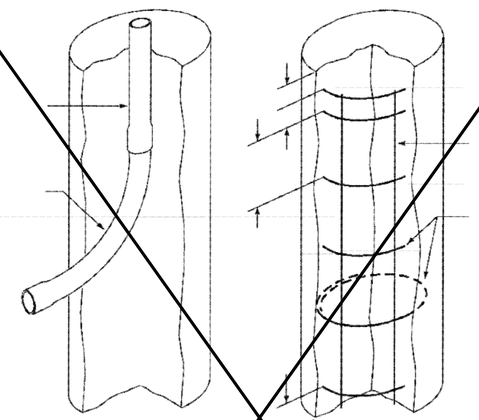
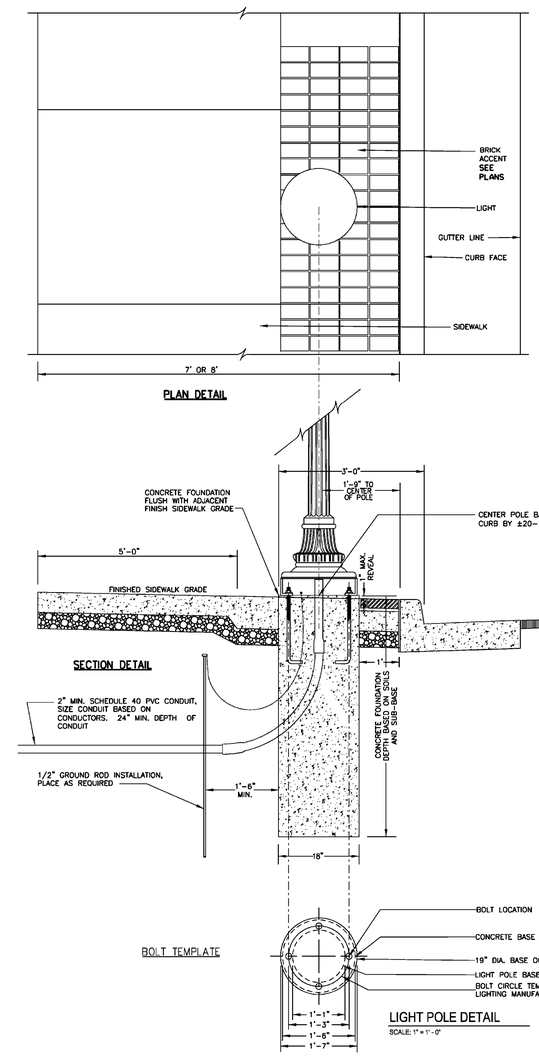
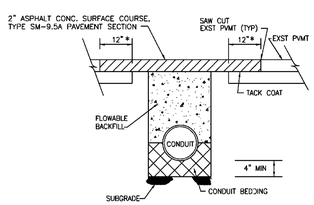


TABLE II
FOUNDATION REBAR INFORMATION

FOUNDATION SIZE		CUBIC YARDS OF CONCRETE	#6 REBAR (60 KSI) VERTICAL REINFORCEMENT REBAR		#3 REBAR (60 KSI) HORIZONTAL REINFORCEMENT REBAR		
DIAMETER (INCHES)	LENGTH (FEET)		LENGTH (FT-IN)	WEIGHT (LBS)	QUANTITY	LENGTH (FT-IN)	WEIGHT (LBS)
18	4	0.26	3'-8"	34	5	4'-2"	8
	5	0.33	4'-8"	43	6		9
	6	0.39	5'-8"	50	7		11
	7	0.46	6'-6"	59	8		13
	8	0.52	7'-6"	68	9		14
24	5	0.51	4'-8"	43	8	5'-8½"	16
	6	0.70	5'-8"	50	7		15
	7	0.81	6'-6"	59	8		17
	8	0.93	7'-6"	68	9		19
	9	1.05	8'-6"	77	10		21
	10	1.18	9'-6"	86	11		24

JULY 15, 2002 — CONCRETE FOUNDATION — D.S. 1435 PAGE 2 OF 2





* THIS DIMENSION APPLIES TO TRENCHES GREATER THAN 9" IN WIDTH. NO ADDITIONAL PAVING WIDTH IS REQUIRED FOR TRENCHES 9" OR LESS IN WIDTH.

NOTES:
1. ALL CONDUIT SHALL BE SCHEDULE 40 PVC.
2. CONDUITS SHALL HAVE A MINIMUM OF 18" COVER.

PROJECT	SHEET NO.
U000-118-204	12(2)

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE MATTERN & CRAIG

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	12(3)

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

LIGHTING PLAN LEGEND

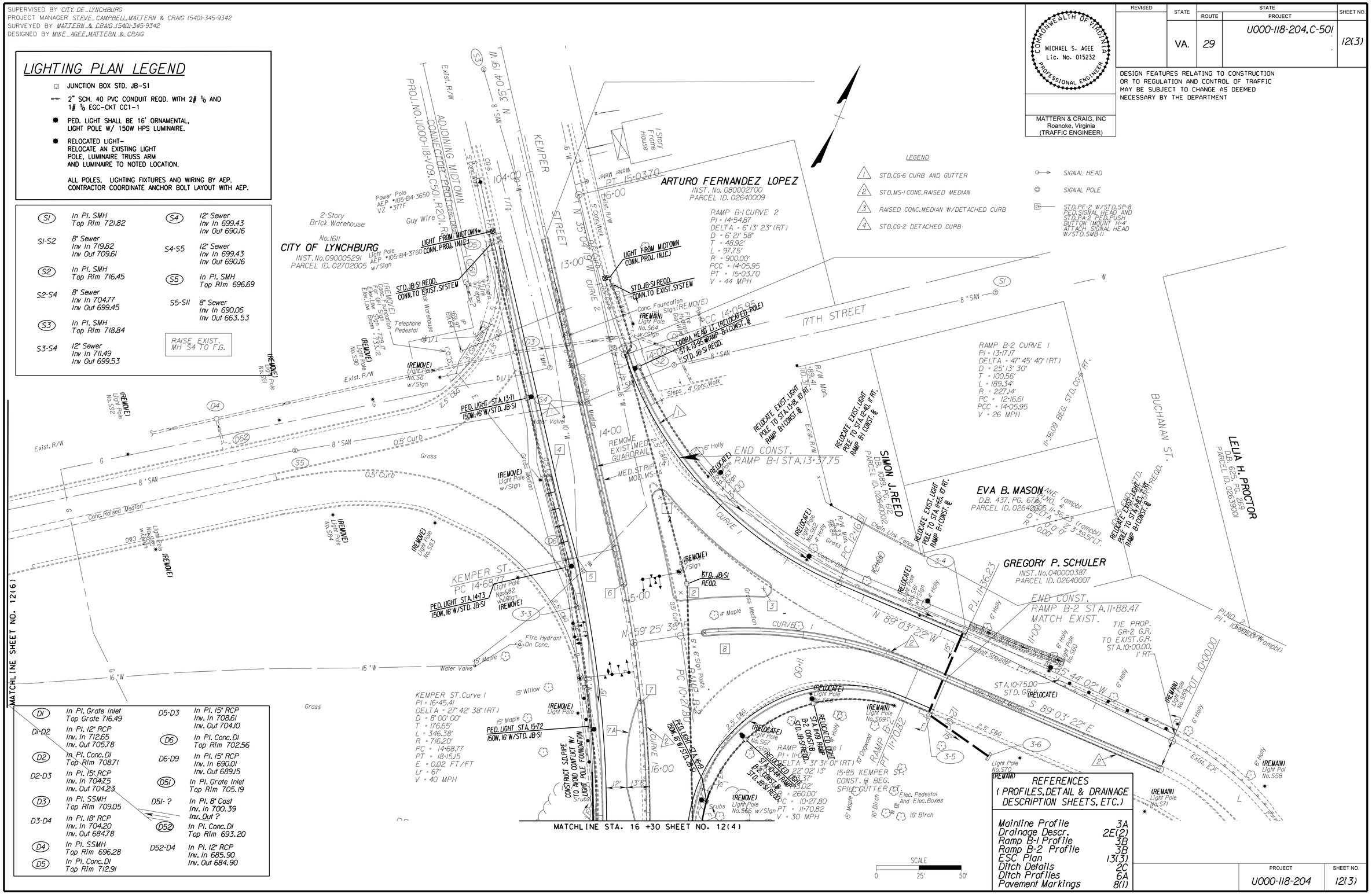
- JUNCTION BOX STD. JB-S1
- 2" SCH. 40 PVC CONDUIT REQD. WITH 2# 1/0 AND 1# 1/0 EGC-CKT CC1-1
- PED. LIGHT SHALL BE 16' ORNAMENTAL, LIGHT POLE W/ 150W HPS LUMINAIRE.
- RELOCATED LIGHT- RELOCATE AN EXISTING LIGHT POLE, LUMINAIRE TRUSS ARM AND LUMINAIRE TO NOTED LOCATION.

ALL POLES, LIGHTING FIXTURES AND WIRING BY AEP. CONTRACTOR COORDINATE ANCHOR BOLT LAYOUT WITH AEP.

S1	In Pl. SMH Top Rim 721.82	S4	12" Sewer Inv In 699.43 Inv Out 690.16
S1-S2	8" Sewer Inv In 719.82 Inv Out 709.61	S4-S5	12" Sewer Inv In 699.43 Inv Out 690.16
S2	In Pl. SMH Top Rim 716.45	S5	In Pl. SMH Top Rim 696.69
S2-S4	8" Sewer Inv In 704.77 Inv Out 699.45	S5-S11	8" Sewer Inv In 690.06 Inv Out 663.53
S3	In Pl. SMH Top Rim 718.84		
S3-S4	12" Sewer Inv In 711.49 Inv Out 699.53		

RAISE EXIST. MH S4 TO F.G.

D1	In Pl. Grate Inlet Top Grate 716.49	D5-D3	In Pl. 15" RCP Inv. In 708.61 Inv. Out 704.10
D1-D2	In Pl. 12" RCP Inv. In 712.65 Inv. Out 705.78	D6	In Pl. Conc. DI Top Rim 702.56
D2	In Pl. Conc. DI Top Rim 708.71	D6-D9	In Pl. 15" RCP Inv. In 690.01 Inv. Out 689.15
D2-D3	In Pl. 15" RCP Inv. In 704.75 Inv. Out 704.23	D51	In Pl. Grate Inlet Top Rim 705.19
D3	In Pl. SSMH Top Rim 709.05	D51- ?	In Pl. 8" Cast Inv. In 700.39 Inv. Out ?
D3-D4	In Pl. 18" RCP Inv. In 704.20 Inv. Out 684.78	D52	In Pl. Conc. DI Top Rim 693.20
D4	In Pl. SSMH Top Rim 696.28	D52-D4	In Pl. 12" RCP Inv. In 685.90 Inv. Out 684.90
D5	In Pl. Conc. DI Top Rim 712.91		



REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)	
Mainline Profile	3A
Drainage Descr.	2E(2)
Ramp B-1 Profile	3B
Ramp B-2 Profile	3B
ESC Plan	13(3)
Ditch Details	2C
Ditch Profiles	6A
Pavement Markings	8(1)

PROJECT	SHEET NO.
U000-118-204	12(3)

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE MATTERN & CRAIG

LIGHTING PLAN LEGEND

- JUNCTION BOX STD. JB-S1
- 2" SCH. 40 PVC CONDUIT REQD. WITH 2# 1/0 AND 1# 1/0 EGC-CKT CC1-1
- PED. LIGHT SHALL BE 16' ORNAMENTAL, LIGHT POLE W/ 150W HPS LUMINAIRE.
- RELOCATED LIGHT- RELOCATE AN EXISTING LIGHT POLE, LUMINAIRE TRUSS ARM AND LUMINAIRE TO NOTED LOCATION.

ALL POLES, LIGHTING FIXTURES AND WIRING BY AEP.
CONTRACTOR COORDINATE ANCHOR BOLT LAYOUT WITH AEP.

LEGEND

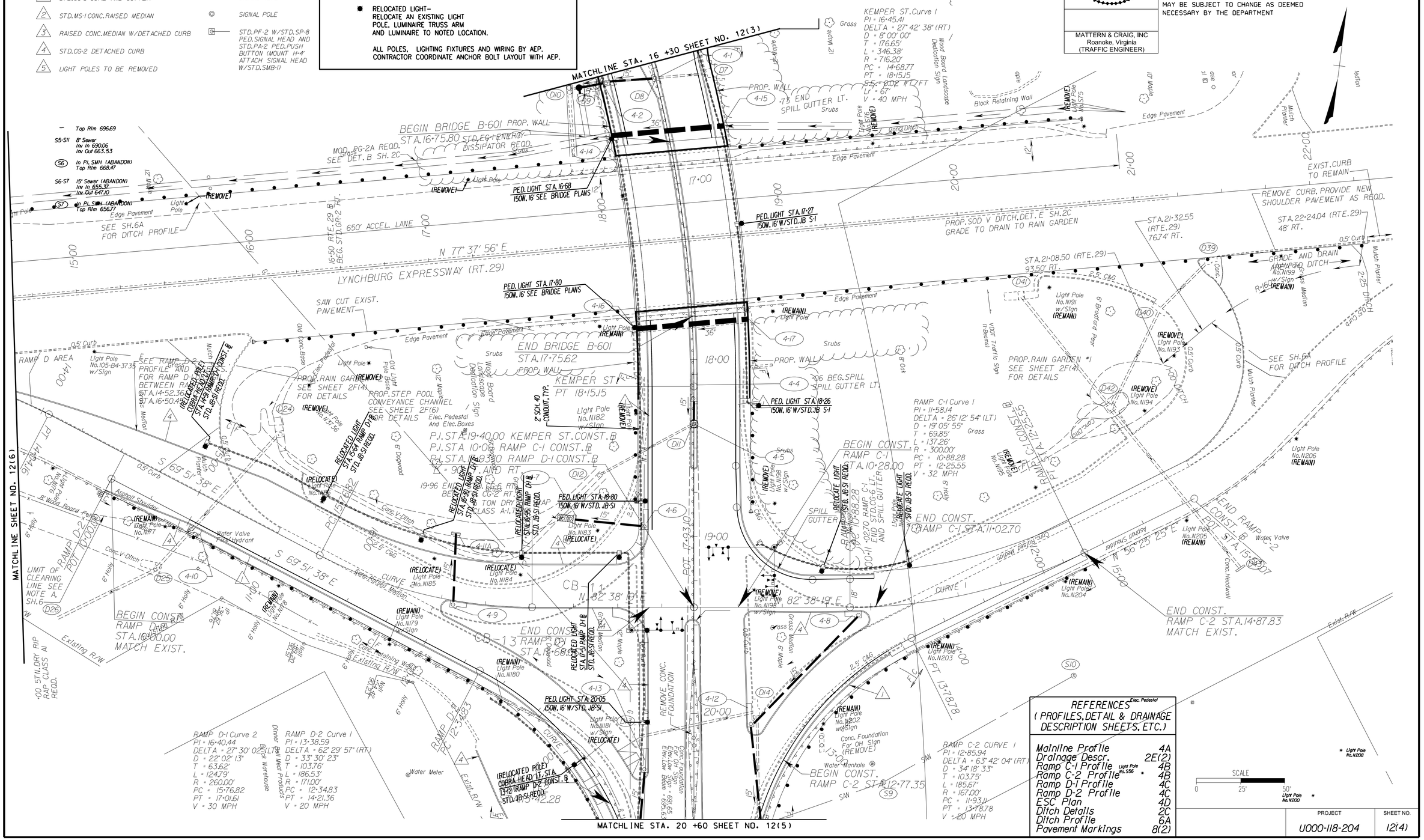
- 1 STD.CG-6 CURB AND GUTTER
- 2 STD.MS-1 CONC.RAISED MEDIAN
- 3 RAISED CONC.MEDIAN W/DETACHED CURB
- 4 STD.CG-2 DETACHED CURB
- 5 LIGHT POLES TO BE REMOVED
- SIGNAL HEAD
- SIGNAL POLE
- STD.PF-2 W/STD.SP-8 PED.SIGNAL HEAD AND STD.PA-2 PED.PUSH BUTTON (MOUNT H=4' ATTACH SIGNAL HEAD W/STD.SMB-1)

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	12(4)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile	4A
Drainage Descr.	2E(2)
Ramp C-1 Profile	4B
Ramp C-2 Profile	4B
Ramp D-1 Profile	4C
Ramp D-2 Profile	4C
ESC Plan	4D
Ditch Details	2C
Ditch Profile	6A
Pavement Markings	8(2)

PROJECT	SHEET NO.
U000-118-204	12(4)

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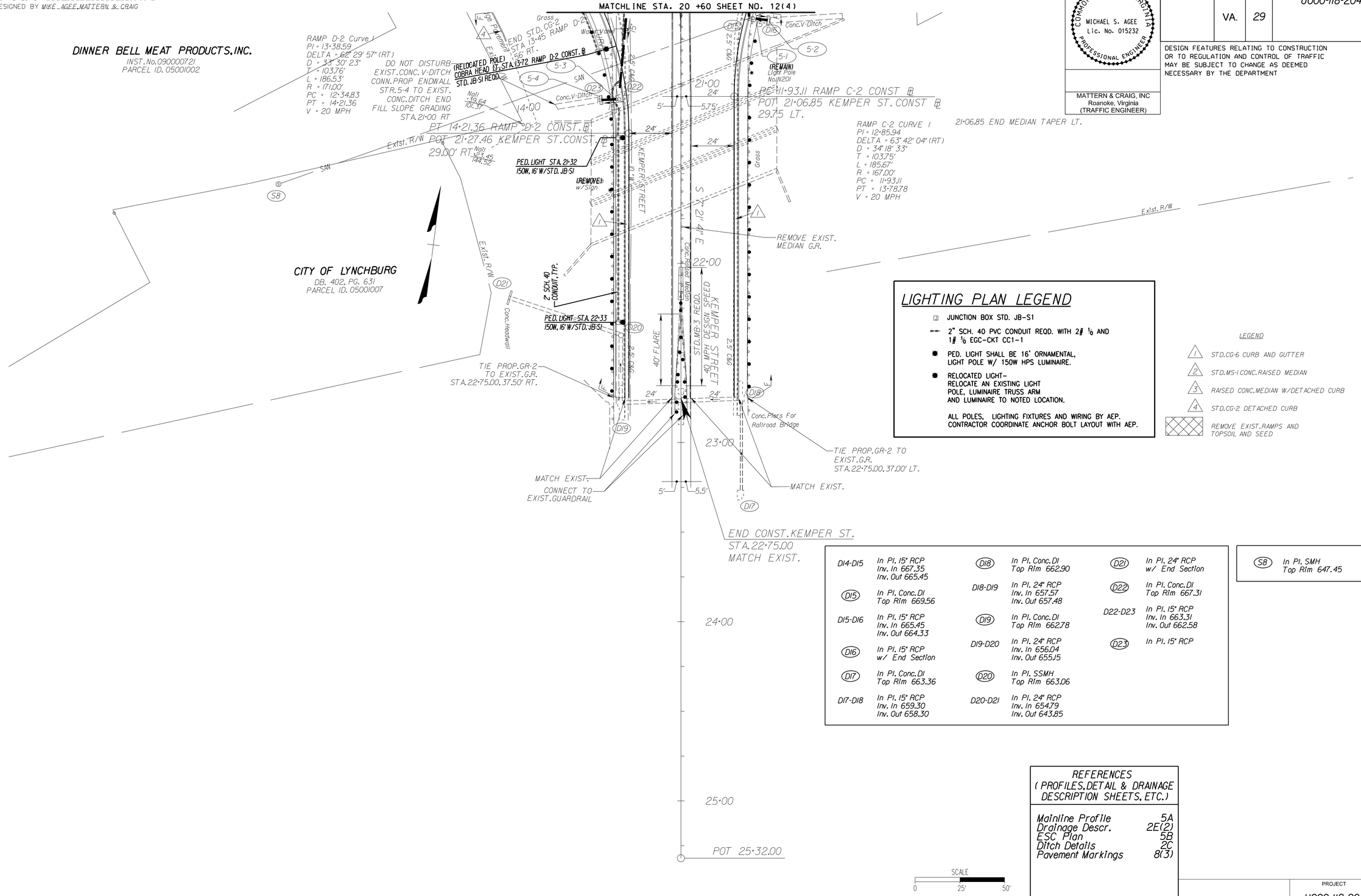

LIGHTING PLAN LEGEND

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- 2" SCH. 40 PVC CONDUIT REQD. WITH 2# 1/0 AND 1# 1/0 EGC-CKT CC1-1
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ALL POLES, LIGHTING FIXTURES AND WIRING BY AEP. CONTRACTOR COORDINATE ANCHOR BOLT LAYOUT WITH AEP.

LEGEND

- 1 STD. CG-6 CURB AND GUTTER
- 2 STD. MS-1 CONC. RAISED MEDIAN
- 3 RAISED CONC. MEDIAN W/DETACHED CURB
- 4 STD. CG-2 DETACHED CURB
- REMOVE EXIST. RAMPS AND TOPSOIL AND SEED

DI4-DI5	In Pl. 15" RCP Inv. In 667.35 Inv. Out 665.45	DI8	In Pl. Conc. DI Top Rim 662.90	D21	In Pl. 24" RCP w/ End Section
DI5	In Pl. Conc. DI Top Rim 669.56	DI8-DI9	In Pl. 24" RCP Inv. In 657.57 Inv. Out 657.48	D22	In Pl. Conc. DI Top Rim 667.31
DI5-DI6	In Pl. 15" RCP Inv. In 665.45 Inv. Out 664.33	DI9	In Pl. Conc. DI Top Rim 662.78	D22-D23	In Pl. 15" RCP Inv. In 663.31 Inv. Out 662.58
DI6	In Pl. 15" RCP w/ End Section	DI9-D20	In Pl. 24" RCP Inv. In 656.04 Inv. Out 655.15	D23	In Pl. 15" RCP
DI7	In Pl. Conc. DI Top Rim 663.36	D20	In Pl. SSMH Top Rim 663.06		
DI7-DI8	In Pl. 15" RCP Inv. In 659.30 Inv. Out 658.30	D20-D21	In Pl. 24" RCP Inv. In 654.79 Inv. Out 643.85		

S8	In Pl. SMH Top Rim 647.45

REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile	5A
Drainage Descr.	2E(2)
ESC Plan	5B
Ditch Details	2C
Pavement Markings	8(3)

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
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MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	12(5)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROJECT	SHEET NO.
U000-118-204	12(5)

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Plotted By: localuser

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL,MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE,MATTERN & CRAIG

LEGEND

- 1 STD.CG-6 CURB AND GUTTER
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ALL POLES, LIGHTING FIXTURES AND WIRING BY AEP. CONTRACTOR COORDINATE ANCHOR BOLT LAYOUT WITH AEP.

COMMONWEALTH OF VIRGINIA
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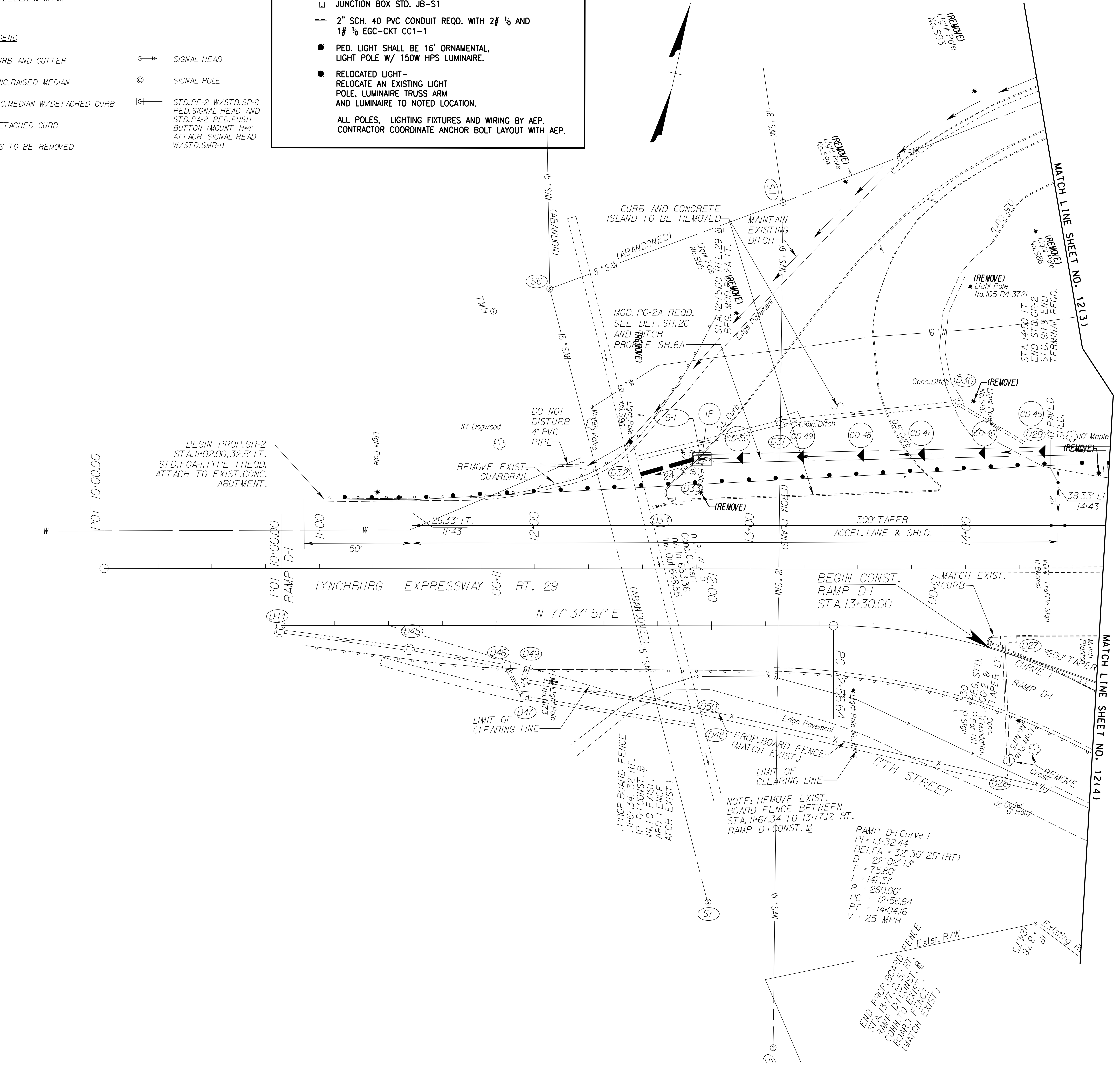
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(TRAFFIC ENGINEER)

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204,C-501	12(6)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



REFERENCES (PROFILES,DETAIL & DRAINAGE DESCRIPTION SHEETS,ETC.)	
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Drainage Descr.	2E(2)
Ramp C-1 Profile	4B
Ramp C-2 Profile	4B
Ramp D-1 Profile	4C
Ramp D-2 Profile	4C
ESC Plan	4D
Ditch Details	2C
Ditch Profile	6A
Pavement Markings	8(2)

SCALE 0 25' 50'

PROJECT	SHEET NO.
U000-118-204	12(6)

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL, MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE, MATTERN & CRAIG

EROSION CONTROL NOTES

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.		29	U000-118-204, C-501	13(1)

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:

THE LOCATION OF THE PROJECT IS IN THE CITY OF LYNCHBURG.

THE PURPOSE OF THIS PROJECT IS TO REPLACE THE EXISTING KEMPER STREET BRIDGE OVER THE LYNCHBURG EXPRESSWAY, ROUTE 29 AND ADJUST THE ROADWAY APPROACHES TO EACH END OF THE BRIDGE. THREE OF THE EXISTING LOOPS AND ONE RAMP OF THE INTERSECTION WILL BE ELIMINATED. THE REMAINING RAMPS WILL BE ADJUSTED AND SIGNALS ADDED AT THE RAMPS TERMINUS WITH KEMPER STREET TO ALLOW EAST-WEST TRAFFIC FLOW ONTO KEMPER STREET.
APPROXIMATELY 4.29 ACRES WILL BE DISTURBED FOR THIS PROJECT. ABOUT 2.29 ACRES WILL BE PAVEMENT REPLACEMENT AND 2.0 ACRES WILL BE SEEDED.

EXISTING SITE CONDITIONS:

THE EXISTING SITE IS AN INTERCHANGE AREA WITH KEMPER STREET CROSSING ABOVE THE LYNCHBURG EXPRESSWAY, ROUTE 29. THIS CREATES A DOWNWARD SLOPE OF THE EXISTING GROUND FROM KEMPER STREET AND THE EXISTING RAMPS AND LOOPS TO THE LYNCHBURG EXPRESSWAY. THERE ARE FEW SCATTERED TREES IN THE RAMP/LOOP AREAS AND A GOOD COVER OF GRASS. THE LOOPS/RAMPS INCLUDE A PARTIAL CURB AND CURB AND GUTTER SYSTEM INCLUDING PAVED AND NON PAVED DITCHES ALL EXITING THRU INLETS AND A STORM DRAIN SYSTEM. THE SYSTEM OUTFALLS TO FISHING CREEK ON THE SOUTH SIDE OF THE INTERCHANGE AREA.

ADJACENT AREAS:

TO THE WEST OF THE INTERCHANGE, A RAILROAD TRACK RUNS PARALLEL WITH KEMPER STREET. TO THE NORTH IS AN INDUSTRIAL-WAREHOUSE AND A FEW RESIDENTIAL HOMES TO THE SOUTH OF THE INTERCHANGE IS ANOTHER INDUSTRIAL-WAREHOUSE AND A LARGE WOODED AREA. FISHING CREEK RUNS ALONG THE SOUTH OF THE INTERCHANGE PARALLEL WITH ROUTE 29. TO THE EAST IS A WOODED AREA.

OFF SITE AREAS:

IF ANY OFF-SITE WASTE AREAS OR BORROW AREAS ARE REQUIRED FOR THIS PROJECT THE CONTRACTOR WILL BE RESPONSIBLE FOR ACQUIRING THE SITE AND OBTAINING ALL PERMITS AND SUBMITTING PROPER EROSION AND SEDIMENT CONTROL PLANS TO THE CITY OF LYNCHBURG FOR REVIEW AND APPROVAL.

SOILS:

MAP UNIT SYMBOL FOR THE PROJECT SITE IS UL - URBAN LAND. THE ENTIRE PROJECT AREA IS DESIGNATED URBAN LAND, UL.

CRITICAL EROSION AREAS:

IT IS CRITCAL THAT ALL RUNOFF FROM THE CONSTRUCTION SITE IS CONTAINED AND FILTERED BEFORE LEAVING THE PROJECT SITE. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE IMPLIMENTED TO CONTAIN AND FILTER RUNOFF.

EROSION AND SEDIMENT CONTROL MEASURES:

CULVERT OUTLET PROTECTION STD. 3.18: (OP)

STRUCTURALLY LINED APRONS OR OTHER ACCEPTABLE ENERGY DISSAPATING DEVICES PLACED AT THE OUTLETS OF PIPE OR PAVED CHANNEL SECTIONS USED TO PREVENT SCOUR AT STORMWATER OUTLETS, TO PROTECT THE OUTLET STRUCTURE, AND TO MINIMIZE THE POTENTIAL FOR DOWNSTREAM EROSION BY REDUCING THE VELOCITY AND ENERGY OF THE CONCENTRATED STORMWATER FLOWS.

ROCK CHECK DAM STD. 3.20: (CD)

SMALL TEMPORARY STONE DAMS CONSTRUCTED ACROSS A SWALE OR DRAINAGE DITCH TO REDUCE THE VELOCITY OF CONCENTRATED STORMWATER FLOWS, THEREBY REDUCING EROSION OF THE SWALE OR DITCH. THIS PRACTICE ALSO TRAPS SEDIMENT GENERATED FROM ADJACENT AREAS OR THE DITCH ITSELF, MAINLY BY PONDING OF THE STORMWATER RUNOFF. FIELD EXPERIENCE HAS SHOWN IT TO PERFORM MORE EFFECTIVELY THAN SILT FENCE OR STRAW BALES IN THE EFFORT TO STABILIZE "WET-WEATHER" DITCHES.

TEMPORARY SILT FENCE STD. 3.05: (SF)

A TEMPORARY SEDIMENT BARRIER CONSISTING OF SYNTHETIC FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED.

STORM DRAIN INLET PROTECTION STD. 3.07: (IP)

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET USED TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

TEMPORARY SEDIMENT TRAP STD. 3.13: (ST)

A TEMPORARY PONDING AREA FORMED BY CONSTRUCTING AN EARTHEN EMBANKMENT WITH A STONE OUTLET USED TO DETAIN SEDIMENT-LADEN RUNOFF FROM SMALL DISTURBED AREAS LONG ENOUGH TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT.

TEMPORARY DIVERSION DIKE STD. 3.09: (DD)

A TEMPORARY RIDGE OF COMPACTED SOIL CONSTRUCTED AT THE TOP OR BASE OF A SLOPING DISTURBED AREA USED TO DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED DISTURBED AREAS AND SLOPES TO A STABILIZED OUTLET AND TO DIVERT SEDIMENT-LADEN RUNOFF FROM A DISTURBED AREA TO A SEDIMENT-TRAPPING FACILITY SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY STONE CONSTRUCTION ENTRANCE STD. 3.02: (CE)

A STABILIZED STONE PAD WITH A FABRIC UNDERLINER LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE USED TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PAVED PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.

TEMPORARY SEEDING STD. 3.31: (TS)

THE ESTABLISHMENT OF A TEMPORARY VEGETATIVE COVER ON DISTURBED AREAS BY SEEDING WITH APPROPRIATE RAPIDLY GROWING ANNUAL PLANTS USED TO REDUCE EROSION AND SEDIMENTATION BY STABILIZING DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A PERIOD OF MORE THAN 30 DAYS ALSO USED TO REDUCE DAMAGE FROM SEDIMENT AND RUNOFF TO DOWNSTREAM OR OFF-SITE AREAS, AND TO PROVIDE PROTECTION TO BARE SOILS EXPOSED DURING CONSTRUCTION UNTIL PERMANENT VEGETATION OR OTHER EROSION CONTROL MEASURES CAN BE ESTABLISHED.

STORMWATER CONVEYAANCE CHANNEL STD. 3.17: (SCC)

A DESIGNED WATERWAY, SHAPED, SIZED AND LINED WITH APPROPRIATE VEGETATION OR STRUCTURAL MATERIAL USED TO SAFELY CONVEY STROMWATER RUNOFF WITHIN OR AWAY FROM A DEVELOPING AREA. TO PROVIDE FOR THE CONVEYANCE OF CONCENTRATED SURFACE RUNOFF WATER TO A RECEIVING CHANNEL OR SYSTEM WITHOUT DAMAGE FROM EROSION.

PERMANENT STABILIZATION:

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING FOLLOWING FINISHED GRADING. TOPSOIL, SEEDING, LIME, FERTILIZER AND MULCH SHALL BE ACCORDING TO THE VDOT SPECIFICATIONS SECTION 603.

STORM WATER RUNOFF CONSIDERATIONS:

THE BASIC DRAINAGE PATTERN FOR THIS PROJECT HAS NOT CHANGED. NEW INLETS HAVE BEEN ADDED TO REPLACE EXISTING INLETS AND TO INERCEPT CONSENTRATED RUNOFF AT CURB ISLAND AREAS. THE STORM DRAIN SYSTEM OUTFALLS TO THE SAME GENERAL AREAS AS THE EXISTING SITE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-3: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF SITE BORROW OR WASTE AREAS). THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

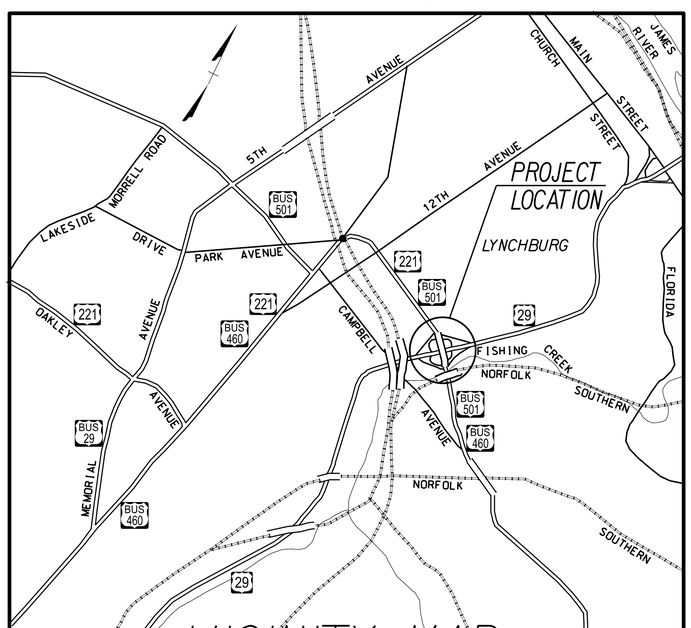
ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY *THE CITY OF LYNCHBURG, VIRGINIA.*

ES-7: ALL DISTURBED AREAS (INCLUDING DISPOSAL AREAS) ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

NOTE: ALL EROSION CONTROL/STORMWATER MANAGEMENT MEASURES MUST BE DE-WATERED PRIOR TO DECLARATION OF SUBSTANTIAL COMPLETION AND ALL TEMPORARY EROSION CONTROL MEASURES MUST BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.



VICINITY MAP
NO SCALE

MINIMUM STANDARDS:

1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.

NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.

NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL GROUND COVER IS ACHIEVED THAT, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.

NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.

NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

5. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.

NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.

a. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.
SEDIMENT TRAPS DESIGNED PER ABOVE REQUIREMENTS.
NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

b. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A TWENTY-FIVE YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

RESPONSE:

SEDIMENT BASIN NOT REQUIRED FOR THIS PROJECT.

7. CUT AND FILL SLOPES SHALL BE DESIGNED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.

NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

8. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, OR SLOPE DRAIN STRUCTURE.

RESPONSE:

PERMANENT CHANNEL WITH CHECK DAMS PROVIDED.

9. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

RESPONSE:

NOTED IN THE GENERAL EROSION AND SEDIMENT CONTROL NOTES ON THIS SHEET.

NOTED IN VDOT SPECIFICATIONS, SECTION 303.03.

10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

RESPONSE:

PROVIDED INLET PROTECTION AT ALL INLETS.

PLAN NO.	PROJECT	FILE NO.	SHEET NO.
		U000-118-204	13(1)

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL, MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE, MATTERN & CRAIG

EROSION CONTROL NOTES

REVISED	STATE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.		29	U000-118-204, C-501	13(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

MINIMUM STANDARDS CONT:

11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

RESPONSE:
PROVIDED CULVERT OUTLET PROTECTION, STD. 3.18, AT THE END OF PIPES WHERE REQUIRED.

12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

RESPONSE:
NOT APPLICABLE.

13. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX-MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

RESPONSE:
NOT APPLICABLE.

14. ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

RESPONSE:
NOT APPICABLE

15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

RESPONSE:
NOT APPLICABLE.

16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

a. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

RESPONSE:
PER VDOT SPECIFICATIONS.

b. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

RESPONSE:
PER VDOT SPECIFICATIONS.

c. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.

RESPONSE:
PER VDOT SPECIFICATIONS AND GENERAL EROSION AND SEDIMENT CONTROL NOTES ON SHEET 13(1).

d. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

RESPONSE:
PER VDOT SPECIFICATION 302.

e. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

RESPONSE:
PER VDOT SPECIFICATIONS.

f. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.

RESPONSE:
PER VDOT SPECIFICATIONS.

17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF THE DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

RESPONSE:
NOTED IN GENERAL EROSION AND SEDIMENT CONTROL NOTES ON SHEET 13(1).

18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

RESPONSE:
NOTED IN GENERAL EROSION AND SEDIMENT CONTROL NOTES ON SHEET 13(1).

MINIMUM STANDARDS CONT:

19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA:

a. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN-MADE RECEIVING CHANNEL, PIPE, OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

RESPONSE:
FISHING CREEK IS AN ADEQUATE CHANNEL.

b. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:

(1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION.

(2) (a) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.

RESPONSE: SEE PROJECT DITCH CALCULATIONS.

(b) ALL PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO-YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS.

RESPONSE:
10 YEAR STORM DOES NOT OVERTOP CHANNEL BANKS AND 2-YEAR STORM DOES NOT CAUSE EROSION OF CHANNEL BED OR BANKS.

(c) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN-YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.

RESPONSE:
SEE PIPE CALCULATIONS.

c. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN-MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:

(1) IMPROVE THE CHANNEL TO A CONDITION WHERE A TEN-YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO-YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL BED OR BANKS.

RESPONSE:
NOT APPLICABLE.

(2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN-YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES.

RESPONSE:
NOT APPLICABLE.

(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TWO-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE-DEVELOPMENT PEAK RUNOFF RATE FROM A TEN-YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN-MADE CHANNEL.

RESPONSE:
NOT APPLICABLE.

(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE PLAN-APPROVING AUTHORITY TO PREVENT DOWNSTREAM EROSION.

RESPONSE:
NOT APPLICABLE.

d. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.

RESPONSE:
NOT APPLICABLE.

e. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT OF THE SUBJECT PROJECT.

RESPONSE:
HYDROLOGIC ANALYSIS WAS PERFORMED BASED ON EXISTING AND POST DEVELOPED CHARACTERISTICS.

f. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION HE SHALL OBTAIN APPROVAL FROM THE LOCALITY OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.

RESPONSE:
SEE NOTE L.

MINIMUM STANDARDS CONT:

g. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

RESPONSE:
SEE NOTE L.

h. ALL ON-SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

RESPONSE:
INCLUDED IN PROJECT CALCULATIONS.

i. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.

RESPONSE:
SEE NOTE L.

j. IN APPLYING THESE STORMWATER RUNOFF CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

RESPONSE:
SEE NOTE L.

k. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL, AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS, AND OTHER WATERS OF THE STATE.

RESPONSE:
SEE NOTE L.

NOTE L. THIS HIGHWAY PROJECT WILL NOT REQUIRE QUALITY OR QUANTITY BASED STORMWATER MANAGEMENT. SEE STORMWATER MANAGEMENT CALCULATIONS.

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
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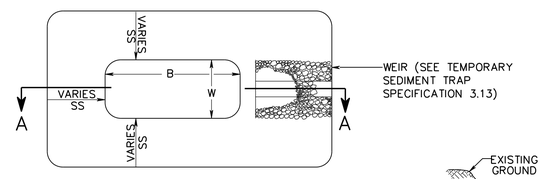
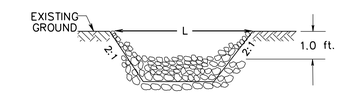
TEMPORARY SEDIMENT TRAP DETAIL

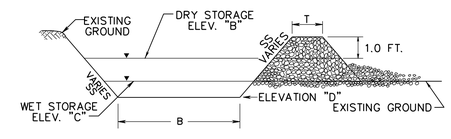
NO SCALE



PLAN VIEW OF TEMPORARY SEDIMENT TRAP



TYPICAL SECTION THRU WEIR



TYPICAL SECTION (AA) THRU TEMPORARY SEDIMENT TRAP

SEDIMENT TRAP	B	W	SS	L	T	ELEV. B	ELEV. C	ELEV. D
#1	32	20	2:1	2.5	2.5	695.95	695.15	694.00
#2	33	20	2:1	3.0	2.5	688.15	688.15	687.00
#3	25	15	2:1	1.5	2.5	670.00	669.20	668.00
#4	32	16	2:1	2.0	2.5	668.95	668.15	667.00
#5	45	12	2:1	2.5	2.5	664.00	663.20	662.00

NOTE: ALL DIMENSIONS IN FEET

PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGN SUPERVISED BY CITY OF LYNCHBURG
DESIGN BY BANDY DODSON MATTERN & CRAIG

REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)
Mainline Profile
Drainage Descr.
Erosion Control Notes 13(1) & 13(2)

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
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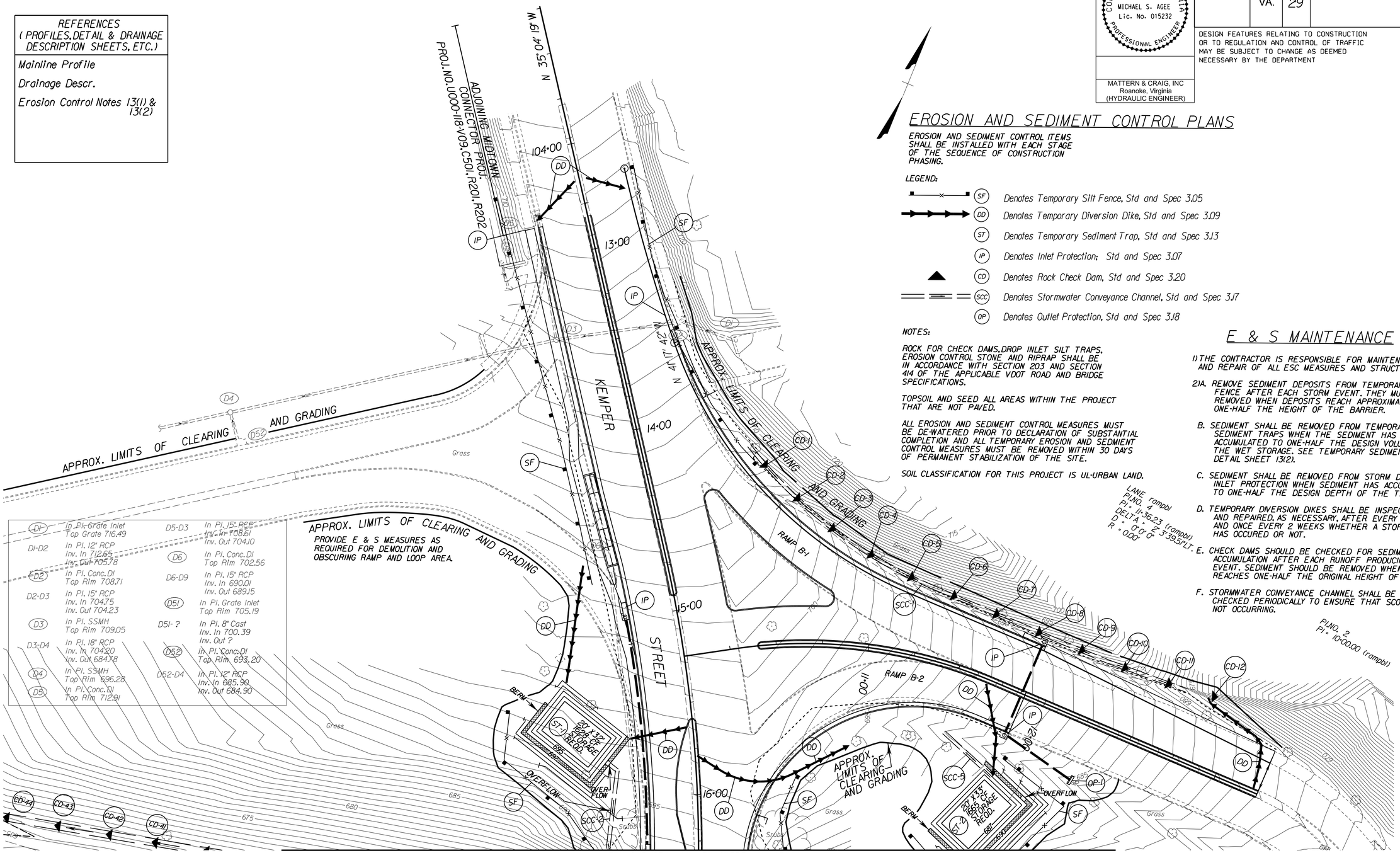
MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501,	13(3)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



MATCHLINE STA. 16 +30 SHEET NO. 13(4)

EROSION AND SEDIMENT CONTROL PLANS

EROSION AND SEDIMENT CONTROL ITEMS SHALL BE INSTALLED WITH EACH STAGE OF THE SEQUENCE OF CONSTRUCTION PHASING.

LEGEND:

- SF — Denotes Temporary Silt Fence, Std and Spec 3.05
- DD — Denotes Temporary Diversion Dike, Std and Spec 3.09
- ST — Denotes Temporary Sediment Trap, Std and Spec 3.13
- IP — Denotes Inlet Protection; Std and Spec 3.07
- CD — Denotes Rock Check Dam, Std and Spec 3.20
- SCC — Denotes Stormwater Conveyance Channel, Std and Spec 3.17
- OP — Denotes Outlet Protection, Std and Spec 3.18

NOTES:

ROCK FOR CHECK DAMS, DROP INLET SILT TRAPS, EROSION CONTROL STONE AND RIPRAP SHALL BE IN ACCORDANCE WITH SECTION 203 AND SECTION 414 OF THE APPLICABLE VDOT ROAD AND BRIDGE SPECIFICATIONS.

TOPSOIL AND SEED ALL AREAS WITHIN THE PROJECT THAT ARE NOT PAVED.

ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE DE-WATERED PRIOR TO DECLARATION OF SUBSTANTIAL COMPLETION AND ALL TEMPORARY EROSION AND SEDMIENT CONTROL MEASURES MUST BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.

SOIL CLASSIFICATION FOR THIS PROJECT IS UL-URBAN LAND.

E & S MAINTENANCE

1) THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND REPAIR OF ALL ESC MEASURES AND STRUCTURES.

2) A. REMOVE SEDIMENT DEPOSITS FROM TEMPORARY SILT FENCE AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.

B. SEDIMENT SHALL BE REMOVED FROM TEMPORARY SEDIMENT TRAPS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN VOLUME OF THE WET STORAGE. SEE TEMPORARY SEDIMENT TRAP DETAIL SHEET 13(2).

C. SEDIMENT SHALL BE REMOVED FROM STORM DRAIN INLET PROTECTION WHEN SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP.

D. TEMPORARY DIVERSION DIKES SHALL BE INSPECTED AND REPAIRED, AS NECESSARY, AFTER EVERY STORM AND ONCE EVERY 2 WEEKS WHETHER A STORM EVENT HAS OCCURED OR NOT.

E. CHECK DAMS SHOULD BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH RUNOFF PRODUCING STORM EVENT. SEDIMENT SHOULD BE REMOVED WHEN IT REACHES ONE-HALF THE ORIGINAL HEIGHT OF THE MEASURE.

F. STORMWATER CONVEYANCE CHANNEL SHALL BE CHECKED PERIODICALLY TO ENSURE THAT SCOUR IS NOT OCCURRING.

SCALE
0 25' 50'

PROJECT	SHEET NO.
U000-118-204	13(3)

PROJECT MANAGER STEVE_CAMPBELL_MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN_& _CRAIG_(540)-345-9342
DESIGN SUPERVISED BY CITY_OF_LYNCHBURG
DESIGNED BY BANDY_DODSON_MATTERN_& _CRAIG

D7	In Pl, Conc. DI Top Rim	D10	In Pl, 15" RCP w/ End Section	D14	In Pl, Conc. DI Top Rim 673.09	D39	In Pl, Conc. DI Top Grate 669.35	D42	In Pl, Grate Inlet Top Grate 666.60
D7-D8	In Pl, 15" RCP Inv. In 690.01 Inv. Out 689.58	D11	In Pl, Conc. DI Top Rim	D24	In Pl, Conc. DI Top Rim 665.75	D39-D40	In Pl, 18" RCP Inv. In 664.48 Inv. Out 664.46	D42-D43	In Pl, 18" RCP Inv. In 660.70 Inv. Out 641.21
D8	In Pl, Conc. DI Top Rim	D11-D12	In Pl, 18" RCP Inv. In 678.37 Inv. Out 676.67	D24-D25	In Pl, 18" RCP Inv. In 662.25 Inv. Out 655.12	D40	In Pl, Conc. DI Top Rim 668.00	D43	In Pl, 18" RCP w/ End Section
D8-D9	In Pl, 15" RCP Inv. In 689.46 Inv. Out 689.15	D12	In Pl, 18" RCP w/ End Section	D25	In Pl, Conc. DI Top Rim 657.80	D40-D42	In Pl, 18" RCP Inv. In 661.40 Inv. Out 660.76		
D9	In Pl, Conc. DI Top Rim	D13	In Pl, Conc. DI Top Rim 677.41	D25-D26	In Pl, 18" RCP Inv. In 653.77 Inv. Out 651.26	D41	In Pl, Conc. DI Top Rim		
D9-D10	In Pl, 15" RCP Inv. In 688.97 Inv. Out 688.51	D13-D14	In Pl, 15" RCP Inv. In 668.10 Inv. Out 667.53	D26	In Pl, 18" RCP w/ End Section	D41-D42	In Pl, 18" RCP Inv. In 661.50 Inv. Out 660.78		

NOTES:

ROCK FOR CHECK DAMS, DROP INLET SILT TRAPS, EROSION CONTROL STONE AND RIPRAP SHALL BE IN ACCORDANCE WITH SECTION 203 AND SECTION 414 OF THE APPLICABLE VDOT ROAD AND BRIDGE SPECIFICATIONS.

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NOTES CONT'D:

SOIL CLASSIFICATION FOR THIS PROJECT IS UL-URBAN LAND.

SEE SHEET 13(3) FOR EROSION AND SEDIMENT MAINTENANCE.

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
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PROFESSIONAL ENGINEER

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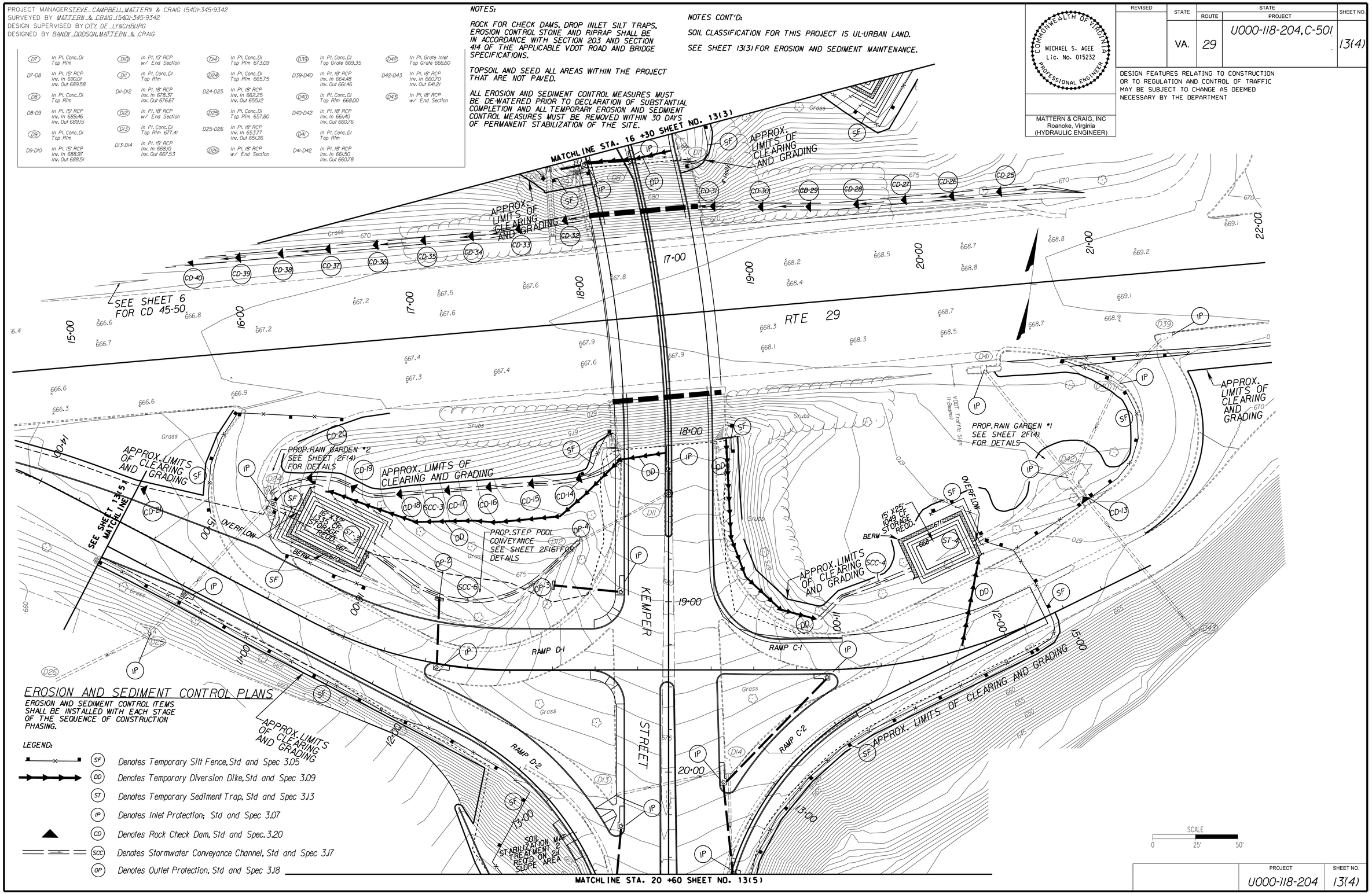
Roanoke, Virginia
(HYDRAULIC ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	13(4)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



EROSION AND SEDIMENT CONTROL PLANS

EROSION AND SEDIMENT CONTROL ITEMS SHALL BE INSTALLED WITH EACH STAGE OF THE SEQUENCE OF CONSTRUCTION PHASING.

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PROJECT	SHEET NO.
U000-118-204	13(4)

PROJECT MANAGER STEVE_CAMPBELL,MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN_& CRAIG_(540)-345-9342
DESIGN SUPERVISED BY CITY OF_LYNCHBURG
DESIGN BY BANDI_DODSON,MATTERN_&_CRAIG

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	13(5)

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
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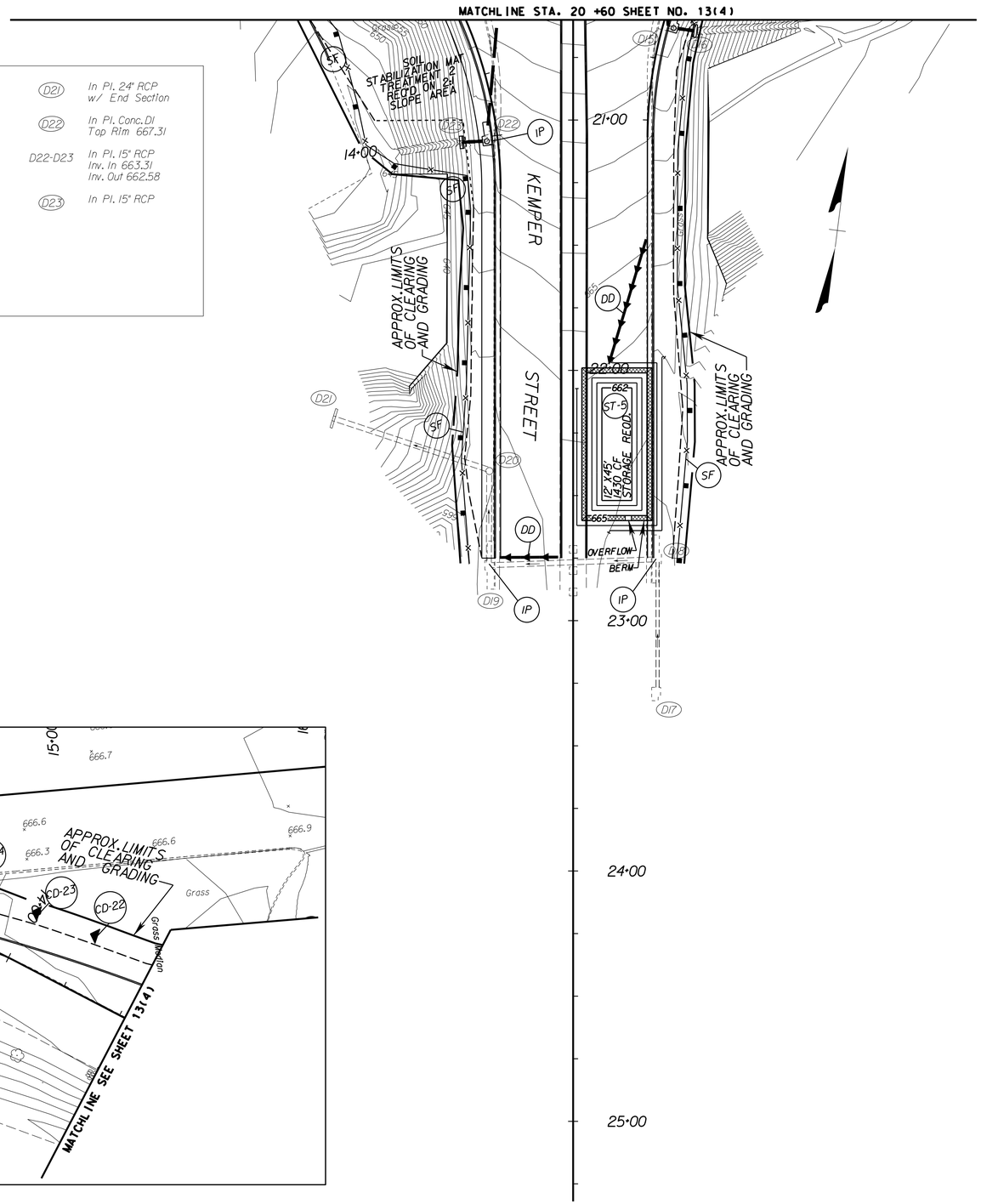
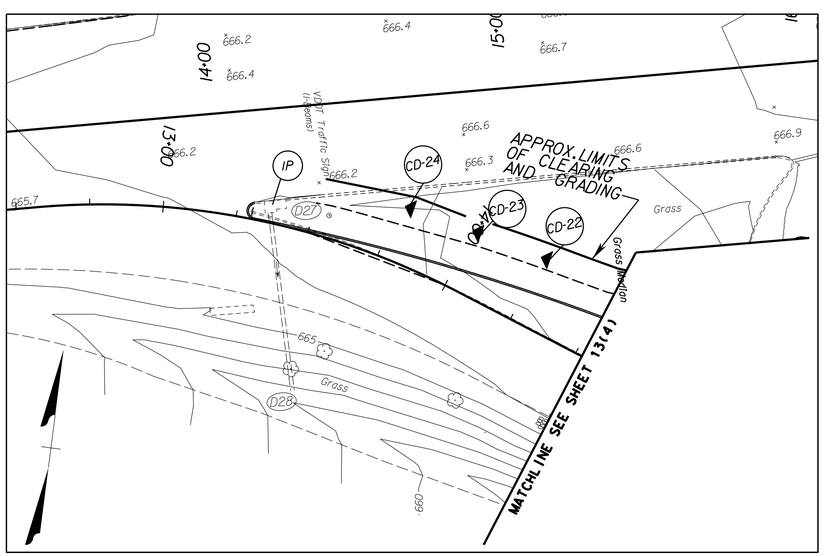
MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

DI4-DI5	In Pl. 15" RCP Inv. In 667.35 Inv. Out 665.45	DI8	In Pl. Conc. DI Top Rim 662.90	D21	In Pl. 24" RCP w/ End Section
DI5	In Pl. Conc. DI Top Rim 669.56	DI8-DI9	In Pl. 24" RCP Inv. In 657.57 Inv. Out 657.48	D22	In Pl. Conc. DI Top Rim 667.31
DI5-DI6	In Pl. 15" RCP Inv. In 665.45 Inv. Out 664.33	DI9	In Pl. Conc. DI Top Rim 662.78	D22-D23	In Pl. 15" RCP Inv. In 663.31 Inv. Out 662.58
DI6	In Pl. 15" RCP w/ End Section	DI9-D20	In Pl. 24" RCP Inv. In 656.04 Inv. Out 655.15	D23	In Pl. 15" RCP
DI7	In Pl. Conc. DI Top Rim 663.36	D20	In Pl. SSMH Top Rim 663.06		
DI7-DI8	In Pl. 15" RCP Inv. In 659.30 Inv. Out 658.30	D20-D21	In Pl. 24" RCP Inv. In 654.79 Inv. Out 643.85		





EROSION AND SEDIMENT CONTROL PLANS

LEGEND:

- SF — Denotes Temporary Silt Fence, Std and Spec 3.05
- DD — Denotes Temporary Diversion Dike, Std and Spec 3.09
- ST — Denotes Temporary Sediment Trap, Std and Spec 3.13
- IP — Denotes Inlet Protection; Std and Spec 3.07
- CD — Denotes Rock Check Dam, Std and Spec. 3.20

NOTES:

ROCK FOR CHECK DAMS, DROP INLET SILT TRAPS, EROSION CONTROL STONE AND RIPRAP SHALL BE IN ACCORDANCE WITH SECTION 203 AND SECTION 414 OF THE APPLICABLE VDOT ROAD AND BRIDGE SPECIFICATIONS.

TOPSOIL AND SEED ALL AREAS WITHIN THE PROJECT THAT ARE NOT PAVED.

ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE DE-WATERED PRIOR TO DECLARATION OF SUBSTANTIAL COMPLETION AND ALL TEMPORARY EROSION AND SEDMIENT CONTROL MEASURES MUST BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.

SOIL CLASSIFICATION FOR THIS PROJECT IS UL-URBAN LAND.

SEE SHEET 13(3) FOR EROSION AND SEDIMENT CONTROL MAINTENANCE.

SCALE
0 25' 50'

PROJECT	SHEET NO.
U000-118-204	13(5)

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL, MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE, MATTERN & CRAIG

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	13(6)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

EROSION AND SEDIMENT CONTROL DESIGN SUMMARY

Temporary Sediment Trap (Std. 3.13)					
ID	ST-1	ST-2	ST-3	ST-4	ST-5
Drainage Area (Ac.)	0.45	0.46	0.29	0.37	0.40
Dry Storage Volume (CF)	802.72	823.68	539.62	680.48	758.66
Wet Storage Volume (CF)	880.10	904.15	601.84	737.00	853.37
Excavation Depth	1.50	1.00	2.50	2.50	1.00
Bottom Elevation	694.00	687.00	668.00	667.00	662.00
Sediment Cleanout Elevation	694.70	687.70	668.75	667.65	662.80
Outlet Elevation	695.95	688.95	670.00	668.95	664.00
Embankment Elevation	697.00	690.00	671.00	670.00	665.00
Outlet Spillway Length (Ft.)	2.70	2.76	1.74	2.21	2.40
Embankment Top Width (Ft.)	2.50	2.50	2.50	2.50	2.50

Stormwater Conveyance Channel (Std. 3.17)						
ID	SCC-1	SCC-2	SCC-3	SCC-4	SCC-5	SCC-6
Design Flow (25 Yr.) (CFS)	0.94	0.75	0.89	1.27	2.21	1.28
Bottom Width (Ft.)	0.00	0.00	0.00	0.00	0.00	0.00
Channel Depth (Ft.)	1.40	1.50	1.50	1.50	1.50	1.50
Design Water Depth (Ft.)	0.40	0.34	0.33	0.42	0.53	0.41
Side Slopes (Z:1)	2.00	2.00	2.00	2.00	2.00	2.00
Channel Slope (Ft./Ft.)	0.102	0.050	0.090	0.050	0.043	0.057
Flow Velocity (fps)	2.99	3.20	4.13	3.62	3.93	3.81
Lining Material	EC-2	EARTH	EARTH	EARTH	EARTH	EARTH

Design Flow Summary											
	Unit										
Feature ID		SCC-1	SCC-2	SCC-3	SCC-4	SCC-5	SCC-6	OP-1	OP-2	OP-3	OP-4
Design Event Frequency		25	25	25	25	25	25	10	10	10	10
Rainfall Intensity	in/hr	6.52	6.52	6.52	6.52	6.52	6.52	5.61	5.61	5.61	5.61
POST DEVELOPMENT											
Drainage ID		DA-1	ST-1	DA-6	DA-4	DA-5	DA-6a	*	**	***	****
Drainage Area Size	Acre	0.332	0.127	0.196	0.216	0.377	0.281	*	0.05	0.19	0.12
time of concentration	Min.	5	5	5	5	5	5	5	5	5	5
Composite runoff factor		0.45	0.9	0.7	0.9	0.9	0.7	0.9	0.9	0.9	0.9
Design Flow	cfs	0.94	0.75	0.89	1.27	2.21	1.28	1.80	0.17	0.70	0.44
PRE DEVELOPMENT											
Drainage ID		DA-1	ST-1	DA-6	DA-4	DA-5	DA-6a	*	**	***	****
Drainage Area Size	Acre	0.332	0.127	0.196	0.216	0.377	0.281	*	0.05	0.19	0.12
time of concentration	Min.		5	5	5	5	5	5	5	5	5
Composite runoff factor		0.45	0.9	0.7	0.9	0.9	0.7	0.9	0.9	0.9	0.9
Design Flow	cfs	0.94	0.75	0.89	1.27	2.21	1.28	1.80	0.17	0.70	0.44

* SEE SH.3 STR.3-6, 2.2 TONS STD.EC-1 CL.1 REQ'D. INSTALL UPON INSTALLATION OF STORM PIPE NETWORK.
** SEE SH.4 STR.4-9 CALCULATIONS
*** SEE SH.4 STR.4-7.5 TONS RIPRAP CL.A1.T=20". INSTALL UPON INSTALLATION OF STORM PIPE NETWORK.
**** SEE SH.4 STR.4-4 CALCULATIONS

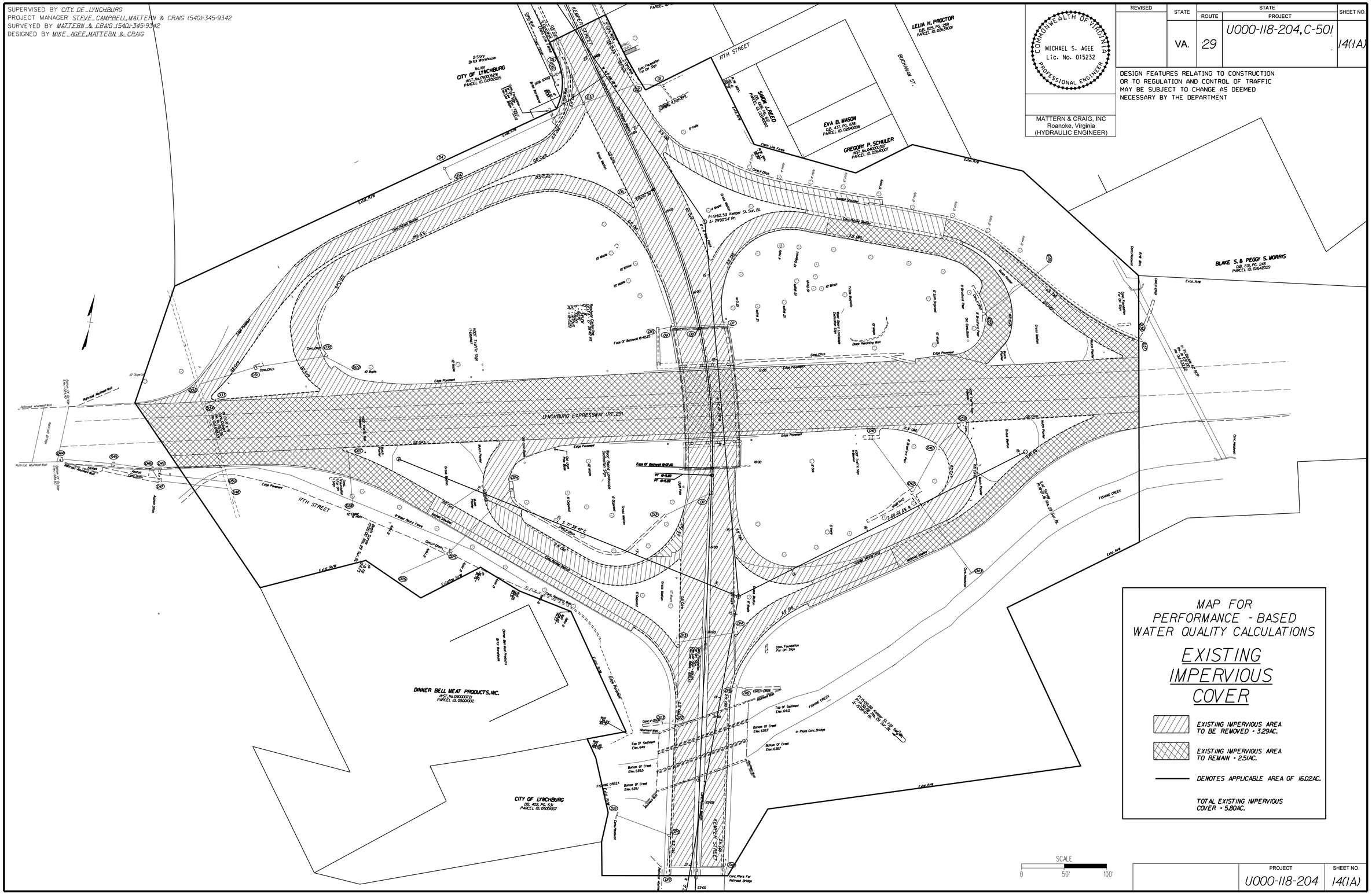
Rock Check Dams (Std. 3.20)																								
ID	CD-1	CD-2	CD-3	CD-4	CD-5	CD-6	CD-7	CD-8	CD-9	CD-10	CD-11	CD-12	CD-13	CD-14	CD-15	CD-16	CD-17	CD-18	CD-19	CD-20	CD-21	CD-22	CD-23	CD-24
Stone Gradation	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.
Height (Ft.)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Outlet Protection (Std. 3.18)				
ID	OP-1	OP-2	OP-3	OP-4
Design Flow (25 YR) (CFS)	1.8	0.17	0.70	0.44
Tailwater Depth (Ft.)	-	-	-	-
Discharge Velocity (fps)	3.51	8.00	6.64	4.68
Rip Rap Gradation	CL.1	CL.A1	CL.A1	CL.A1
Apron Length (Ft.)	EC-1	10	10	10
Apron Width (Ft.)	EC-1	3.75	3.75	3.75
Side Slopes	EC-1	2:1	2:1	2:1
Apron Depth (Ft.)	EC-1	1.5	1.5	1.5

Rock Check Dams (Std. 3.20)													
ID	CD-25	CD-26	CD-27	CD-28	CD-29	CD-30	CD-31	CD-32	CD-33	CD-34	CD-35	CD-36	CD-37
Stone Gradation	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.
Height (Ft.)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Rock Check Dams (Std. 3.20)													
ID	CD-38	CD-39	CD-40	CD-41	CD-42	CD-43	CD-44	CD-45	CD-46	CD-47	CD-48	CD-49	CD-50
Stone Gradation	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.	VDOT #1 Coarse Aggr.
Height (Ft.)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE MATTERN & CRAIG



COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

REVISED	STATE	STATE		SHEET NO.
		ROUTE	PROJECT	
	VA.	29	U000-118-204, C-501	14(1A)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

MAP FOR
PERFORMANCE - BASED
WATER QUALITY CALCULATIONS

EXISTING IMPERVIOUS COVER

EXISTING IMPERVIOUS AREA TO BE REMOVED = 3.29AC.

EXISTING IMPERVIOUS AREA TO REMAIN = 2.51AC.

DENOTES APPLICABLE AREA OF 16.02AC.

TOTAL EXISTING IMPERVIOUS COVER = 5.80AC.

SCALE
0 50' 100'

PROJECT	SHEET NO.
U000-118-204	14(1A)

FOR INFORMATION ONLY

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
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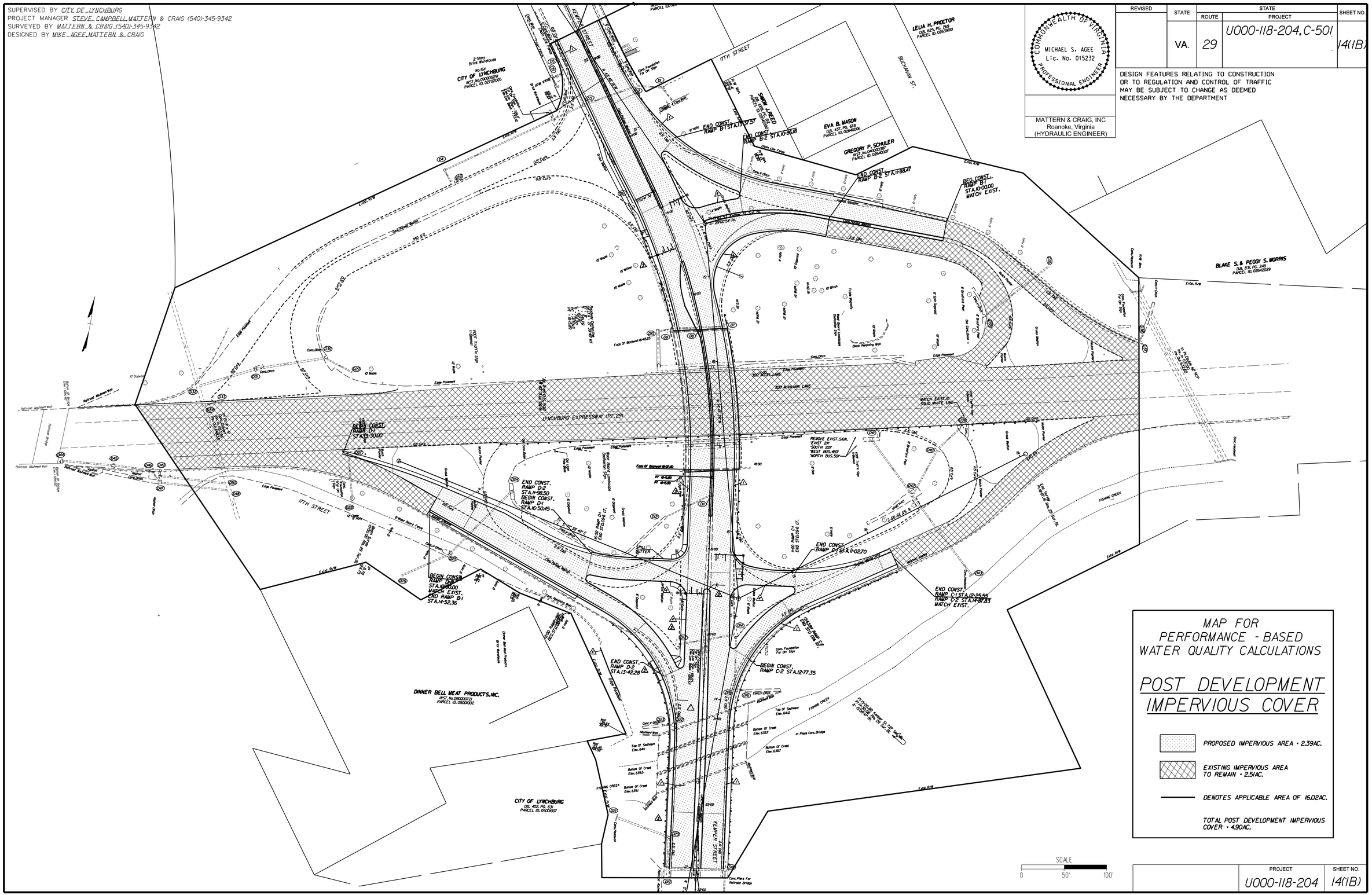

COMMONWEALTH OF VIRGINIA
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MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	14(1B)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

MAP FOR
PERFORMANCE - BASED
WATER QUALITY CALCULATIONS

POST DEVELOPMENT IMPERVIOUS COVER

PROPOSED IMPERVIOUS AREA - 2.39AC.

EXISTING IMPERVIOUS AREA TO REMAIN - 2.51AC.

DENOTES APPLICABLE AREA OF 16.02AC.

TOTAL POST DEVELOPMENT IMPERVIOUS COVER - 4.90AC.

SCALE
0 50' 100'

PROJECT	SHEET NO.
U000-118-204	14(1B)

FOR INFORMATION ONLY

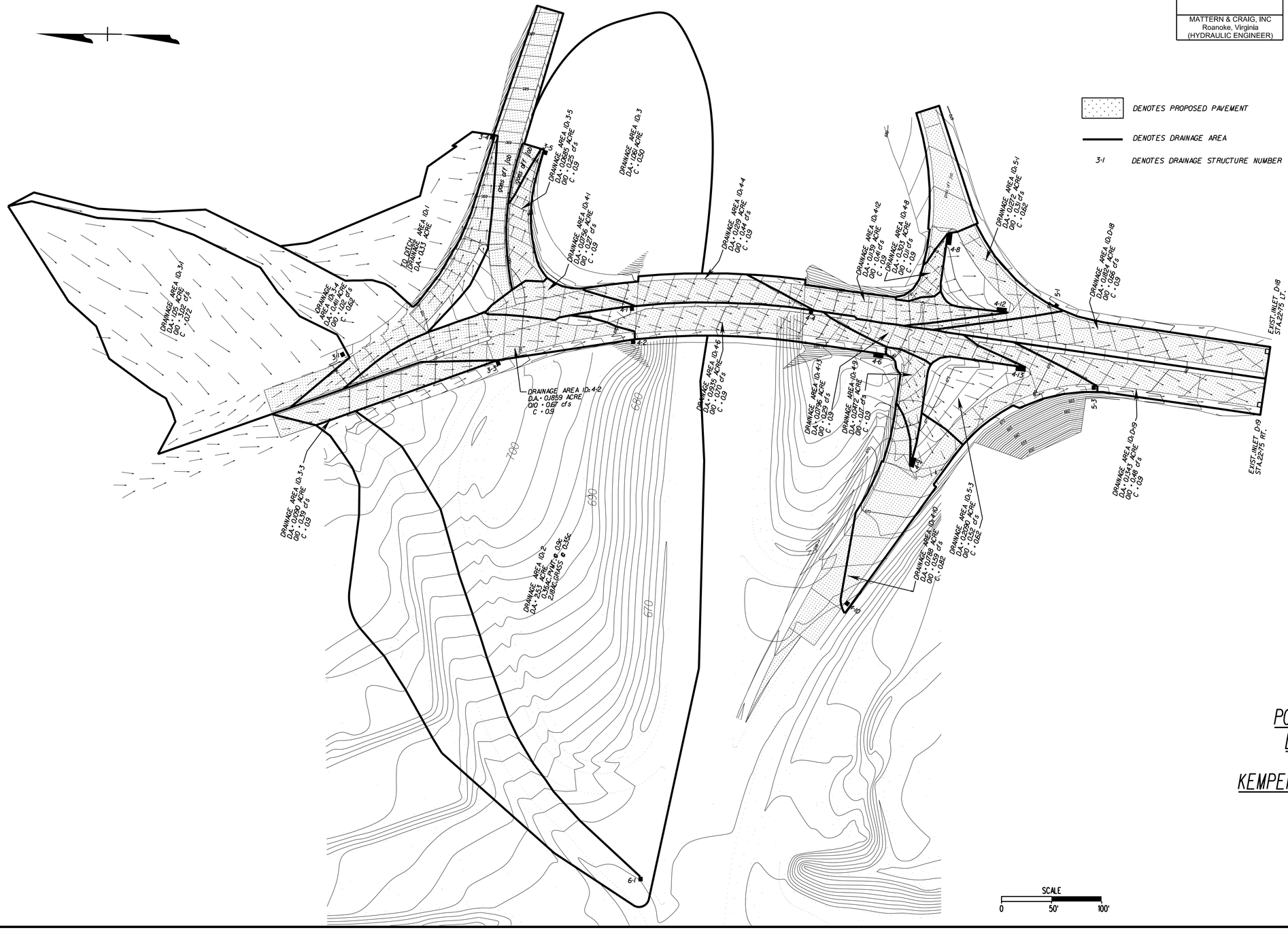
SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL, MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE, MATTERN & CRAIG

COMMONWEALTH OF VIRGINIA
MICHAEL S. AGEE
Lic. No. 015232
PROFESSIONAL ENGINEER

MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET ID:
	VA.	29	U000-118-204, C-501	14(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



POST DEVELOPED
DRAINAGE MAP
(FOR INLETS)
KEMPER STREET PROJECT

PROJECT	SHEET ID:
U000-118-204	14(2)

FOR INFORMATION ONLY

SUPERVISED BY CITY OF LYNCHBURG
PROJECT MANAGER STEVE CAMPBELL, MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGNED BY MIKE AGEE, MATTERN & CRAIG

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET ID:
	VA.	29	U000-118-204, C-501	14(2A)

COMMONWEALTH OF VIRGINIA
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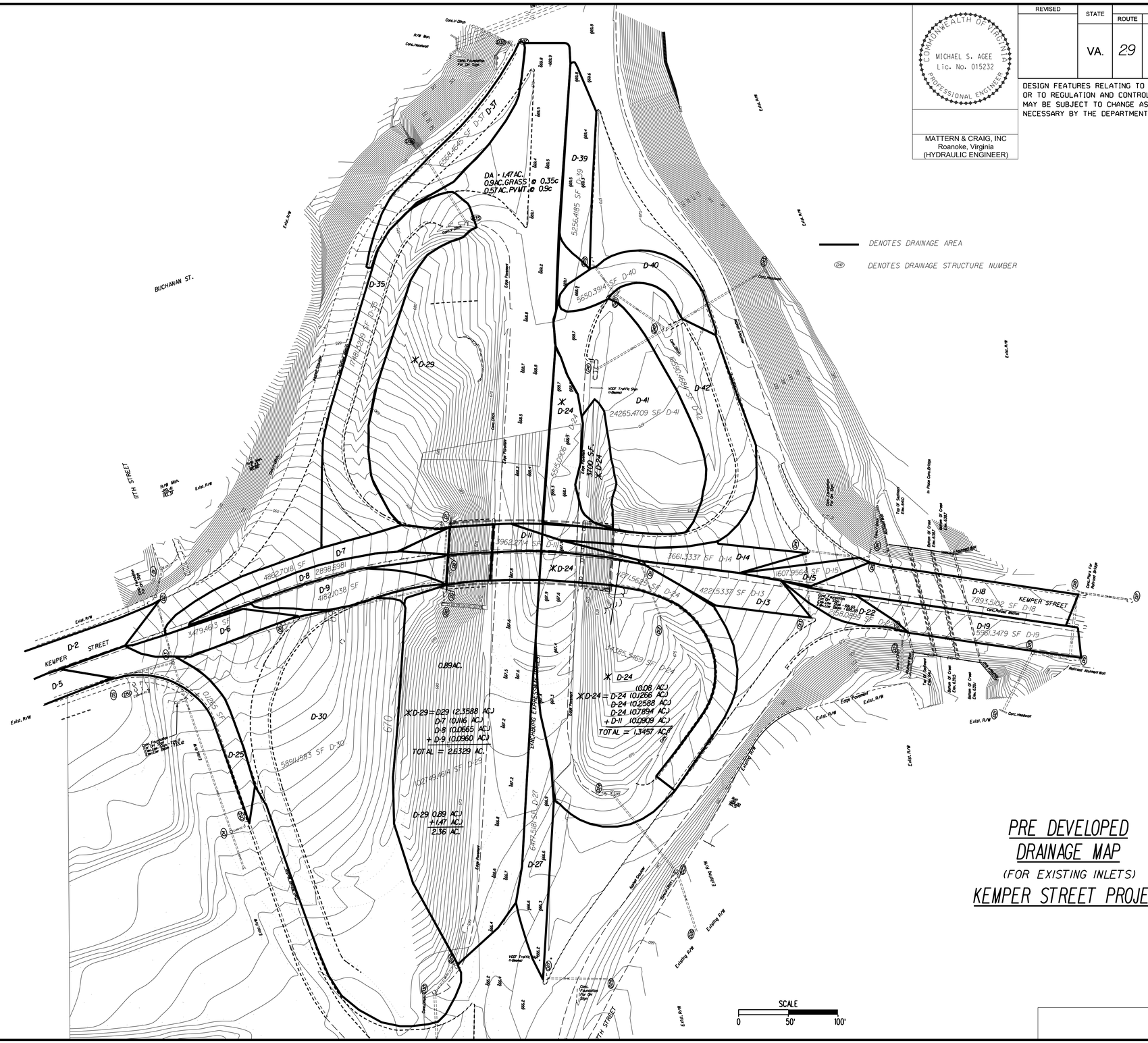
MATTERN & CRAIG, INC
Roanoke, Virginia
(HYDRAULIC ENGINEER)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



EXISTING DRAINAGE CHARACTERISTICS TO INLETS	
DRAINAGE AREA ID	D.A. (ACRE)
D-2	-----
D-5	-----
D-6	0.08
D-7	0.11
D8	0.07
D-9	0.10
D-11	0.09
D-13	0.10
D-14	0.08
D-15	0.04
D-18	0.18
D-19	0.14
D-22	0.05
* D-24	1.27
D-25	0.13
D-27	0.15
* D-29	2.63
D-30	1.35
D-35	0.40
D-37	0.15
D-39	0.12
D-40	0.13
D-41	0.56
D-42	0.38
TOTAL	8.31

PRE DEVELOPED DRAINAGE MAP

(FOR EXISTING INLETS)

KEMPER STREET PROJECT

PROJECT	SHEET ID:
U000-118-204	14(2A)

FOR INFORMATION ONLY

PROJECT MANAGER STEVE CAMPBELL, MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGN SUPERVISED BY CITY OF LYNCHBURG
DESIGN BY BANDY DODSON, MATTERN & CRAIG

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	14(3)

COMMONWEALTH OF VIRGINIA
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MATTERN & CRAIG, INC
Roanoke, Virginia
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Mainline Profile

Drainage Descr.

SCALE
0 25' 50'

PROJECT	SHEET NO.
U000-118-204	14(3)

FOR INFORMATION ONLY

PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGN SUPERVISED BY CITY OF LYNCHBURG
DESIGNED BY BANDY DODSON MATTERN & CRAIG

DI7	In Pl. Conc. DI Top Rim	DI10	In Pl. 15" RCP w/ End Section	DI4	In Pl. Conc. DI Top Rim 673.09	D39	In Pl. Conc. DI Top Grate 669.35	D42	In Pl. Grate Inlet Top Grate 666.60
D7-D8	In Pl. 15" RCP Inv. In 690.01 Inv. Out 689.58	DI1	In Pl. Conc. DI Top Rim	D24	In Pl. Conc. DI Top Rim 665.75	D39-D40	In Pl. 18" RCP Inv. In 664.48 Inv. Out 664.46	D42-D43	In Pl. 18" RCP Inv. In 660.70 Inv. Out 641.21
D8	In Pl. Conc. DI Top Rim	DI1-DI2	In Pl. 18" RCP Inv. In 678.37 Inv. Out 676.67	D24-D25	In Pl. 18" RCP Inv. In 662.25 Inv. Out 655.12	D40	In Pl. Conc. DI Top Rim 668.00	D43	In Pl. 18" RCP w/ End Section
D8-D9	In Pl. 15" RCP Inv. In 689.46 Inv. Out 689.15	DI2	In Pl. 18" RCP w/ End Section	D25	In Pl. Conc. DI Top Rim 657.80	D40-D42	In Pl. 18" RCP Inv. In 661.40 Inv. Out 660.76		
D9	In Pl. Conc. DI Top Rim	DI3	In Pl. Conc. DI Top Rim 677.41	D25-D26	In Pl. 18" RCP Inv. In 653.77 Inv. Out 651.26	D41	In Pl. Conc. DI Top Rim		
D9-DI0	In Pl. 15" RCP Inv. In 688.97 Inv. Out 688.51	DI3-DI4	In Pl. 15" RCP Inv. In 668.10 Inv. Out 667.53	D26	In Pl. 18" RCP w/ End Section	D41-D42	In Pl. 18" RCP Inv. In 661.50 Inv. Out 660.78		

COMMONWEALTH OF VIRGINIA
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Roanoke, Virginia
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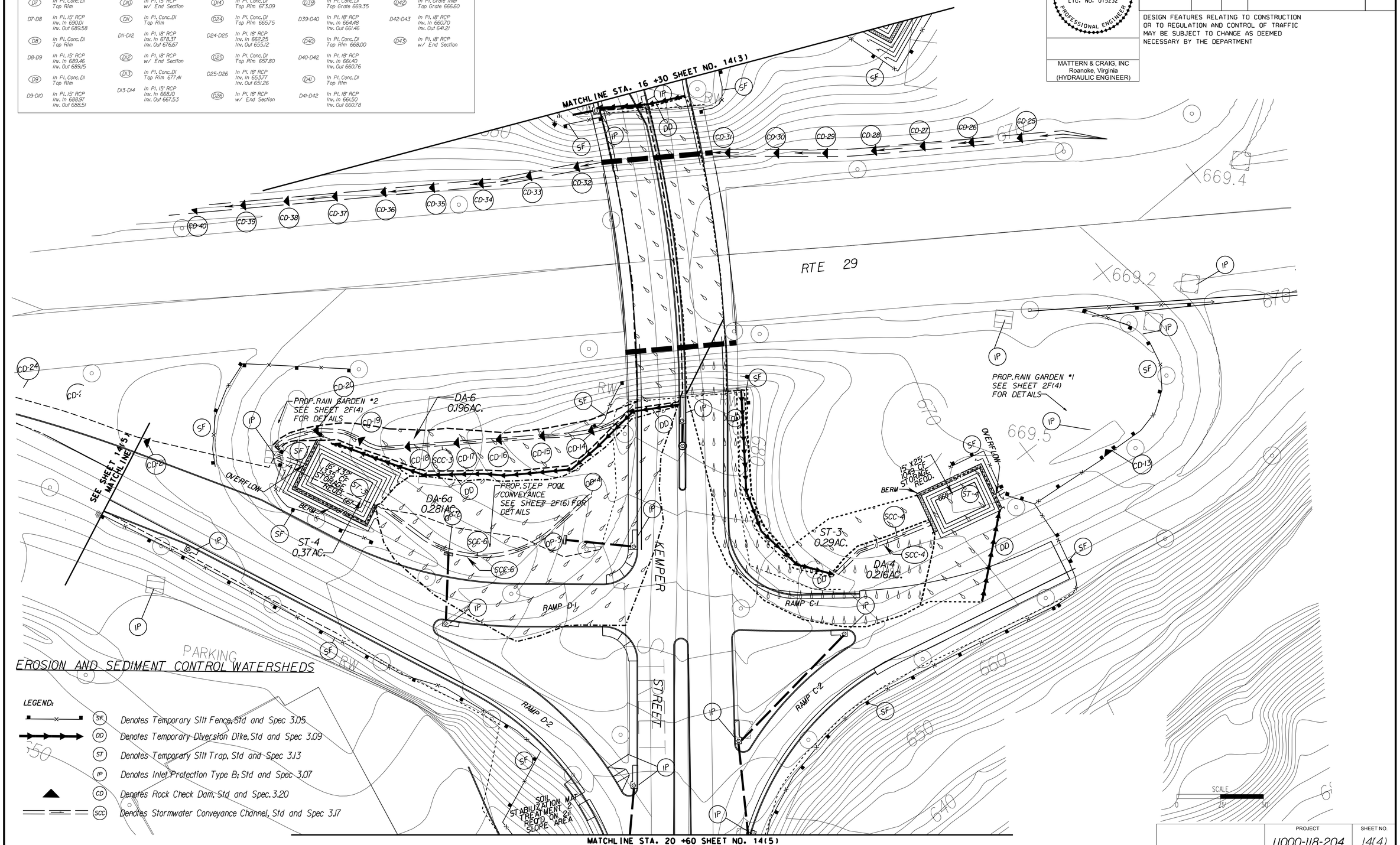
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	14(4)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



EROSION AND SEDIMENT CONTROL WATERSHEDS

LEGEND:

- SF — Denotes Temporary Silt Fence, Std and Spec 3.05
- DD — Denotes Temporary Diversion Dike, Std and Spec 3.09
- ST — Denotes Temporary Silt Trap, Std and Spec 3.13
- IP — Denotes Inlet Protection Type B; Std and Spec 3.07
- CD — Denotes Rock Check Dam, Std and Spec. 3.20
- SCC — Denotes Stormwater Conveyance Channel, Std and Spec 3.17

PROJECT	SHEET NO.
U000-118-204	14(4)

FOR INFORMATION ONLY

PROJECT MANAGER STEVE CAMPBELL MATTERN & CRAIG (540)-345-9342
SURVEYED BY MATTERN & CRAIG (540)-345-9342
DESIGN SUPERVISED BY CITY OF LYNCHBURG
DESIGNED BY BANDY DODSON MATTERN & CRAIG

COMMONWEALTH OF VIRGINIA
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MATTERN & CRAIG, INC
Roanoke, Virginia
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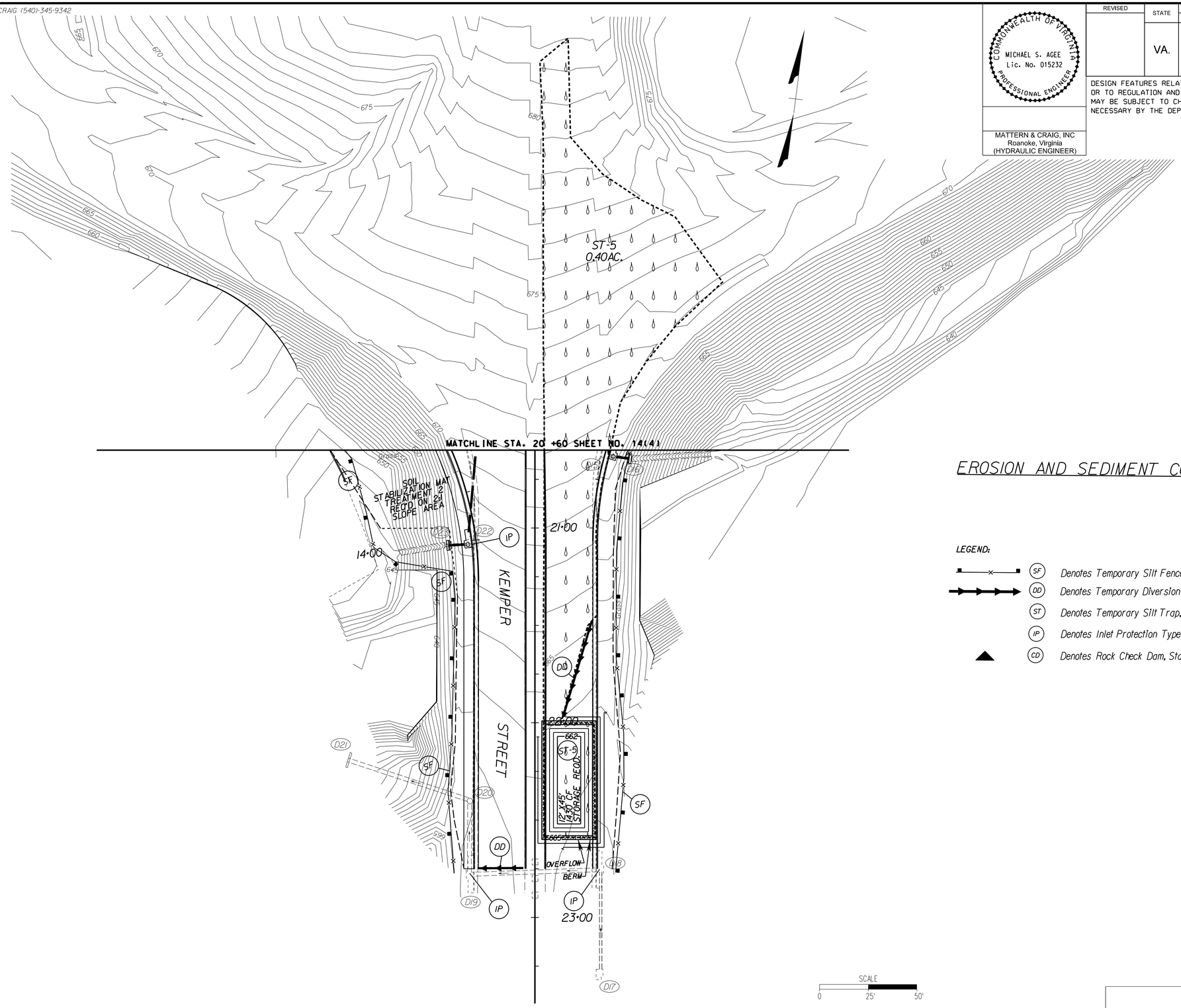
REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	29	U000-118-204, C-501	14(5)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



EROSION AND SEDIMENT CONTROL WATERSHEDS

LEGEND:

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- IP — Denotes Inlet Protection Type B; Std and Spec 3.07
- CD — Denotes Rock Check Dam, Std and Spec. 3.20

SCALE
0 25' 50'

PROJECT	SHEET NO.
U000-118-204	14(5)

FOR INFORMATION ONLY