

## **Appendix 4.1-C**

### **Intersection Inventory Data Sheets**



# Computations Pictures II : 8-15

\* unsignalized



Project: SCR Project # 10111.00

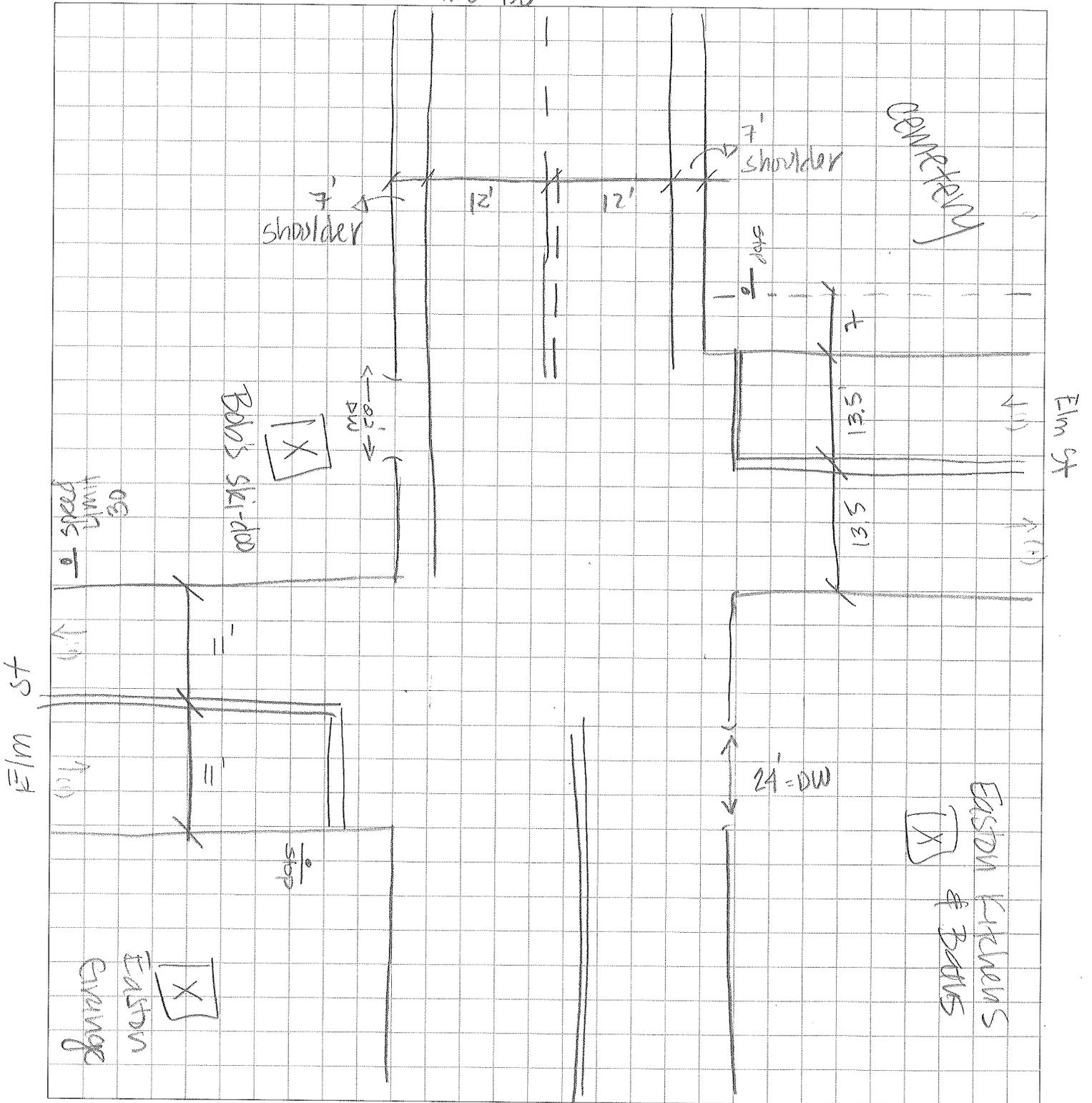
Location: Easton Sheet 1 of 1

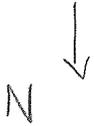
Calculated by: NL Date: 9-17-08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

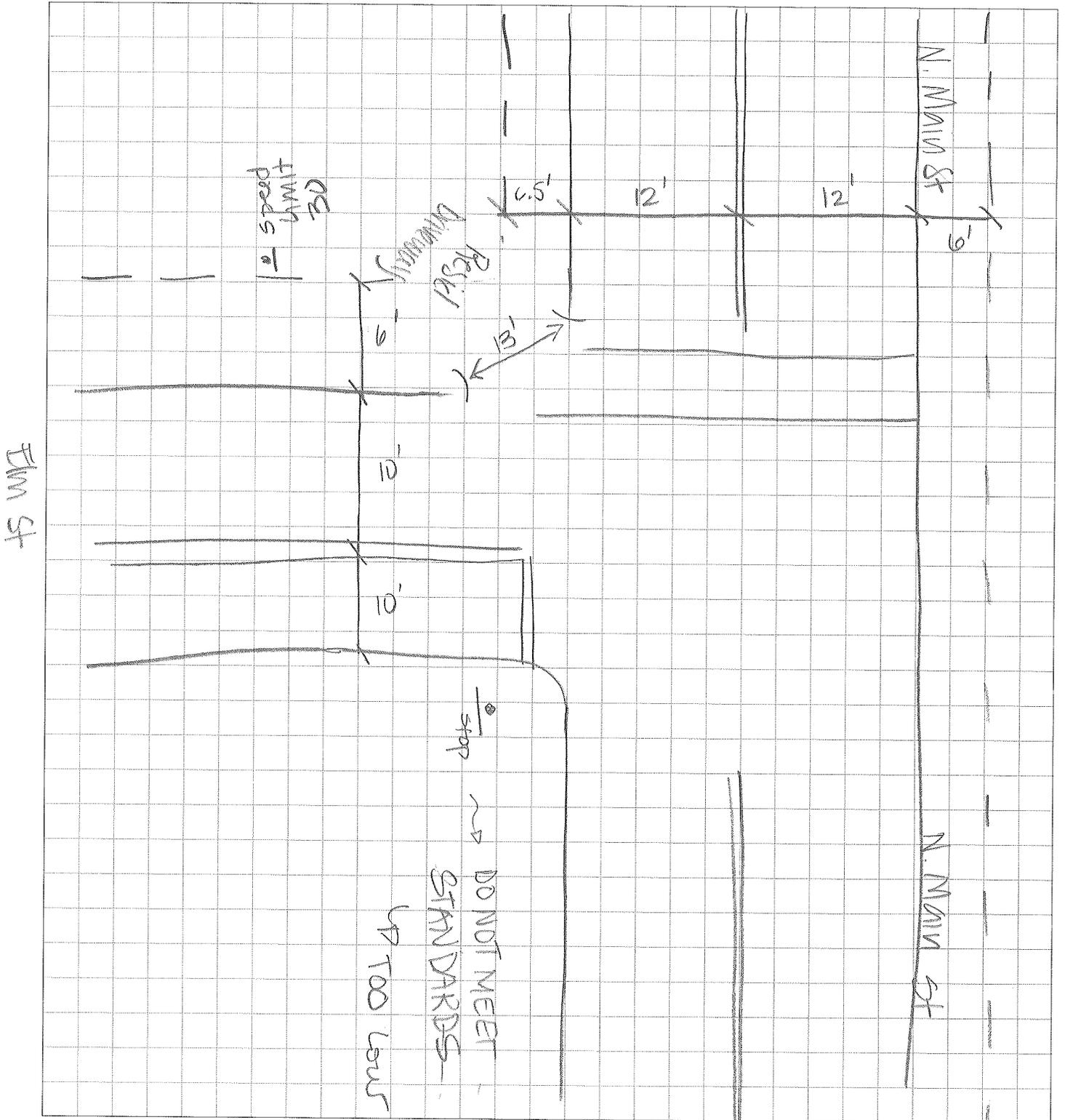
Title Elm St at Rte 138 / Washington St

Rte 138





Project: SCR Project # 10111.00  
 Location: EASTON Sheet 1 of 1  
 Calculated by: \_\_\_\_\_ Date: 9-17-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title ELM ST at N. Main St





\* unsig

Project: SCR

Project # 10111.00

Location: Easton

Sheet 1 of 1

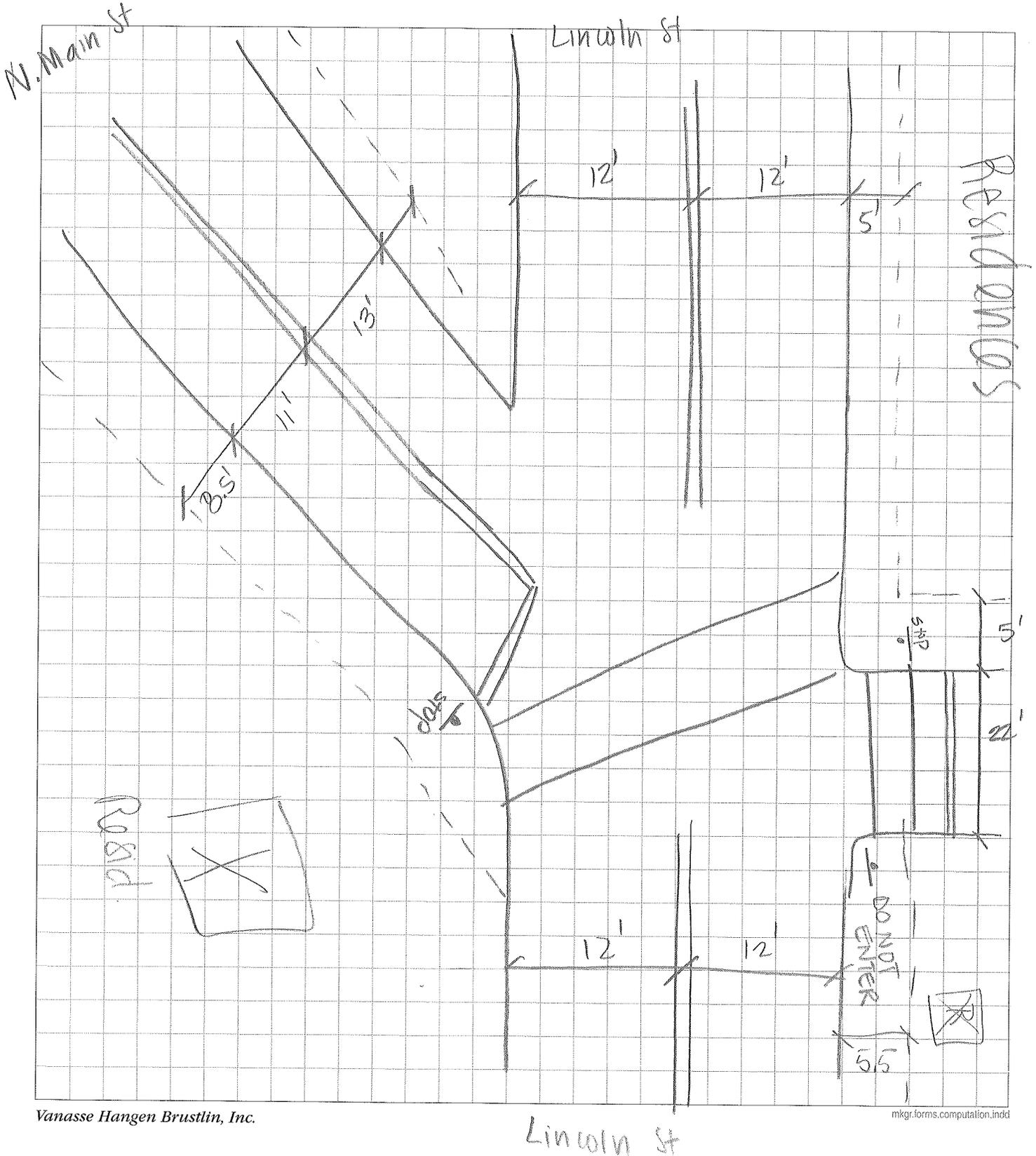
Calculated by: NL

Date: 9-17-08

Checked by:

Date:

Title Lincoln St at N. Main St.





\* UNSIG.

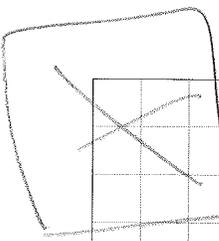
Project: SCR Project # 10111.00

Location: EASTON Sheet 1 of 1

Calculated by: NU Date: 9-17-08

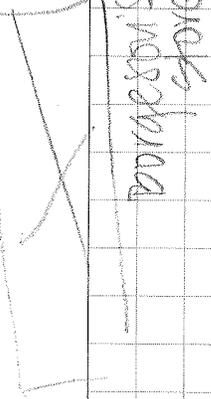
Checked by: Date:

Title Lincoln/Main St at Center St



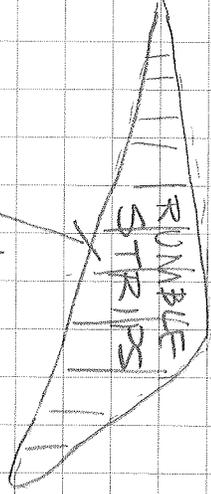
CITGO  
EAS STATION

4.5' 16' 13' 5' Speed Limit 20

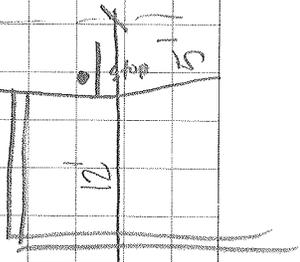


BURGESON'S CORNER STORE

4' shoulder



RUMBLE STRIPS



15'

12'

12'

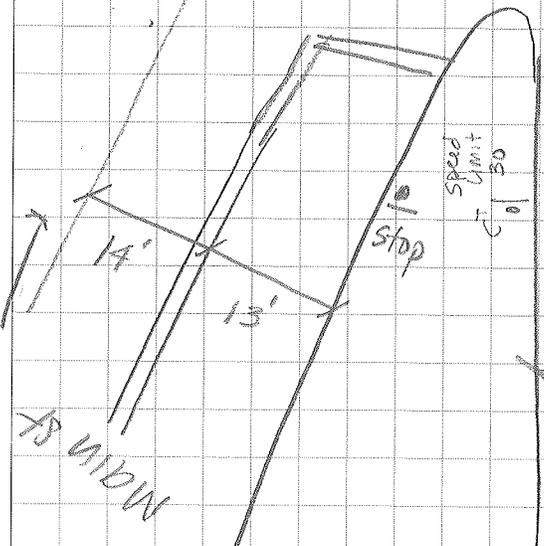
5'

Speed Limit 20

DW



Taylor



14'

13'

stop

Speed Limit 30

12' 12' 5'

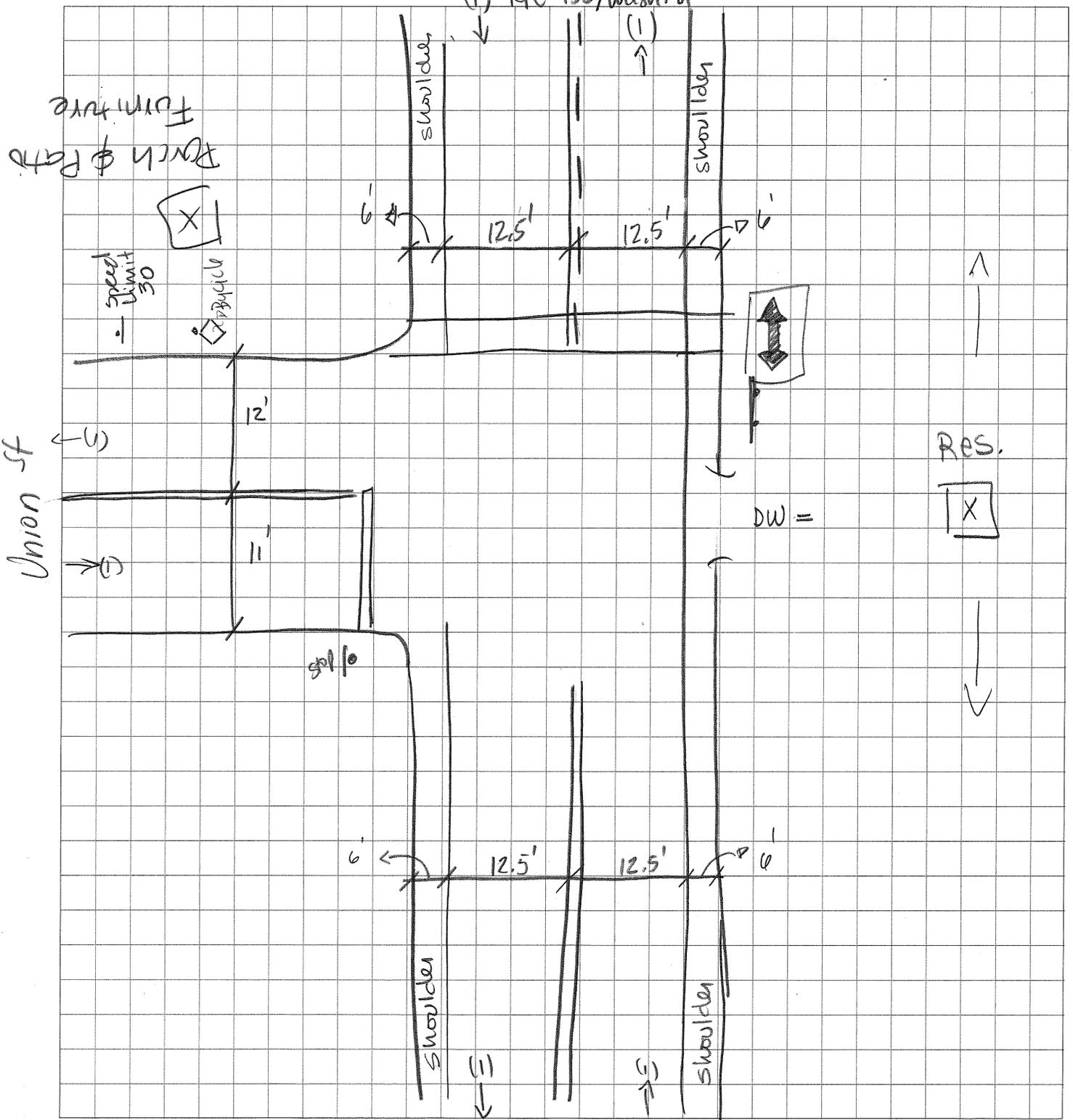


# Computations PICT cd I: 57-04

- \* unsignalized T-int
- \* No sidewalks on any approach
- \*

Project: SCR Project # 10111.00  
 Location: Easton, MA Sheet 1 of 1  
 Calculated by: NL Date: 9-29-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#5 Title Union St @ Rte 138/Washington St





# Computations pict ed J: 05-78

★ signalized int.  
 ★ NO sidewalk on any approach

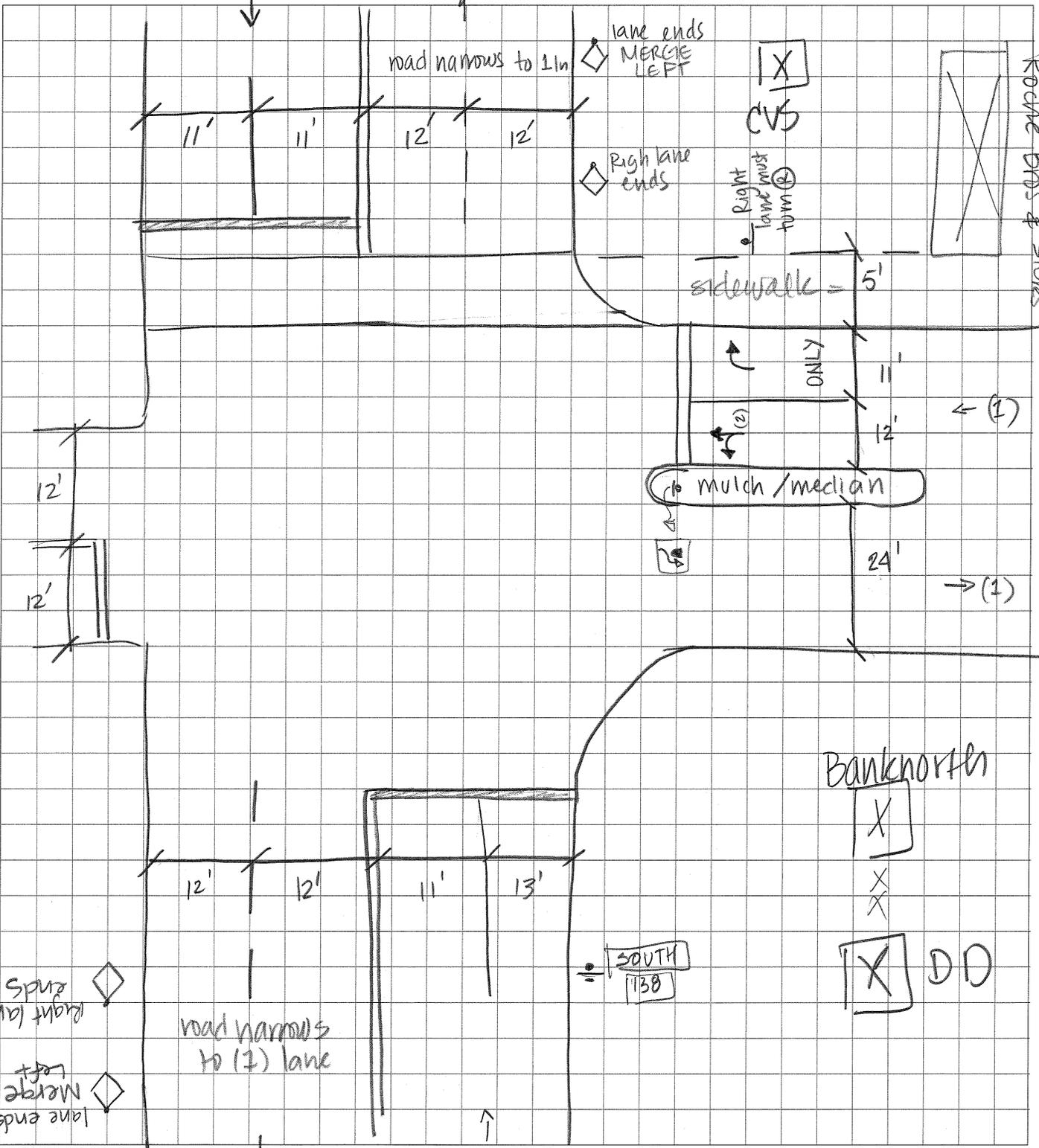
Project: SCR Project # 10111.00  
 Location: Easton, MA Sheet 1 of 1  
 Calculated by: NL Date: 9-29-09  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#5 Title Rte 138/Washington St @ Roche Bros. Way

46  
35  
24  
11

20 stone hedge  
village

36  
23  
13



of 11/17/09

Rte 138

Roche Bros # stores  
Other  
Roche Bros, WAY

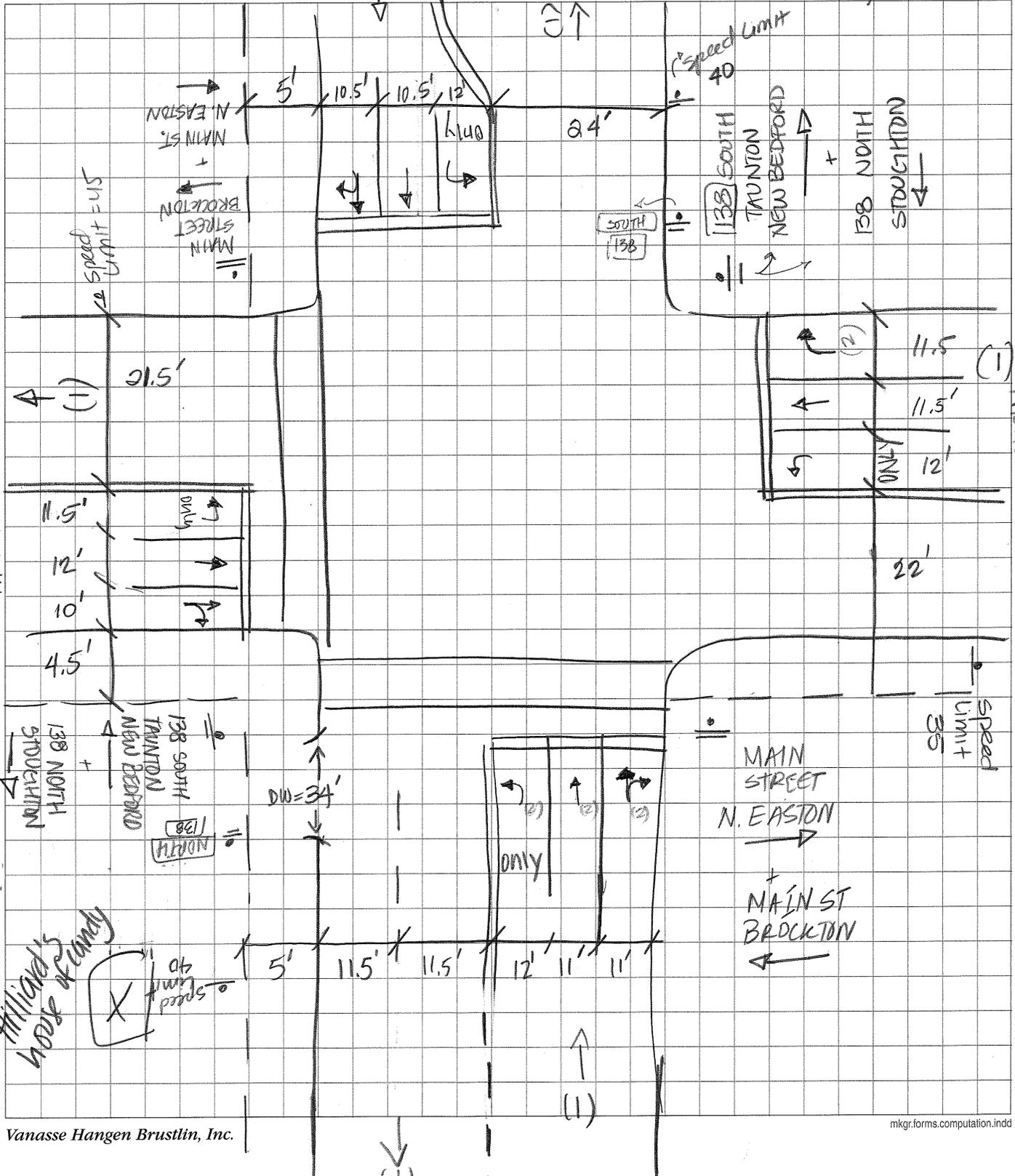


# Computations pict rd # 1-15

\* signalized int  
 \* stop bar at EBapp  
 1= set too close to int

Project: SCR Project # 10111.00  
 Location: Easton, MA Sheet 1 of 1  
 Calculated by: XL Date: 9-29-08  
 Checked by: Date:

#4 Title Rte 138/washington St @ Main St (Daley Corner)



12.5 33 45 55 12.8



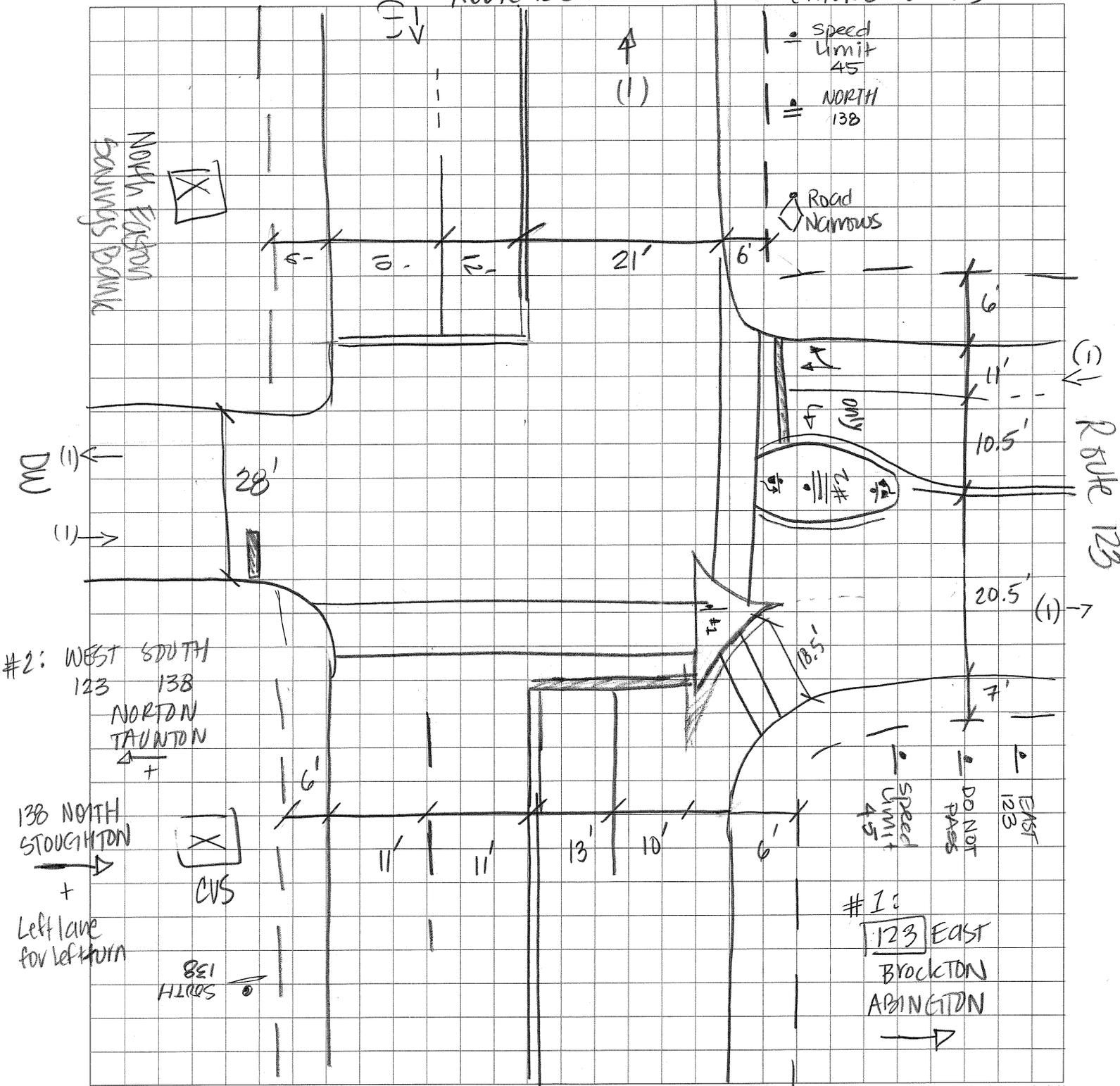
Computations plot cd II : 16-33

Project: SCR Project # 10111.00  
 Location: Easton, MA Sheet 1 of 1  
 Calculated by: NL Date: 9-29-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_



\* signalized int  
 \* median width  $\approx 3'-11"$

#3 Title Rte 138/washington St @ Rte 123/Belmont St  
Route 138 (Morse Corner)





Project: SCR Project # 10111.31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/29/08

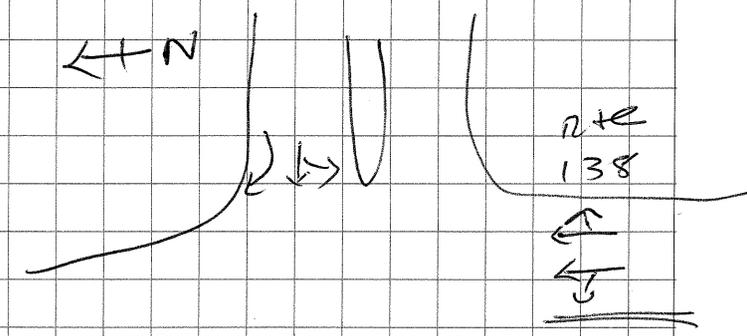
Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

Title Signal Timing & Phasing

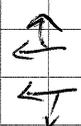
Rte 138 / 123 @ Depot St

$\phi_1$  Route 138

$\phi_2$  Depot St



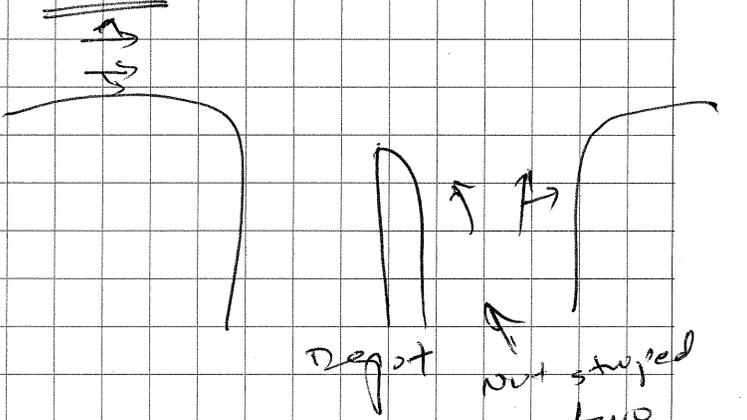
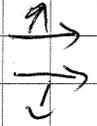
$\phi_1$



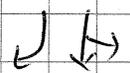
G = 29 18 30

Y = 4 4 4

R = 1 1 1



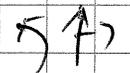
$\phi_2$



G = 40 35 30

Y = 4 4 4

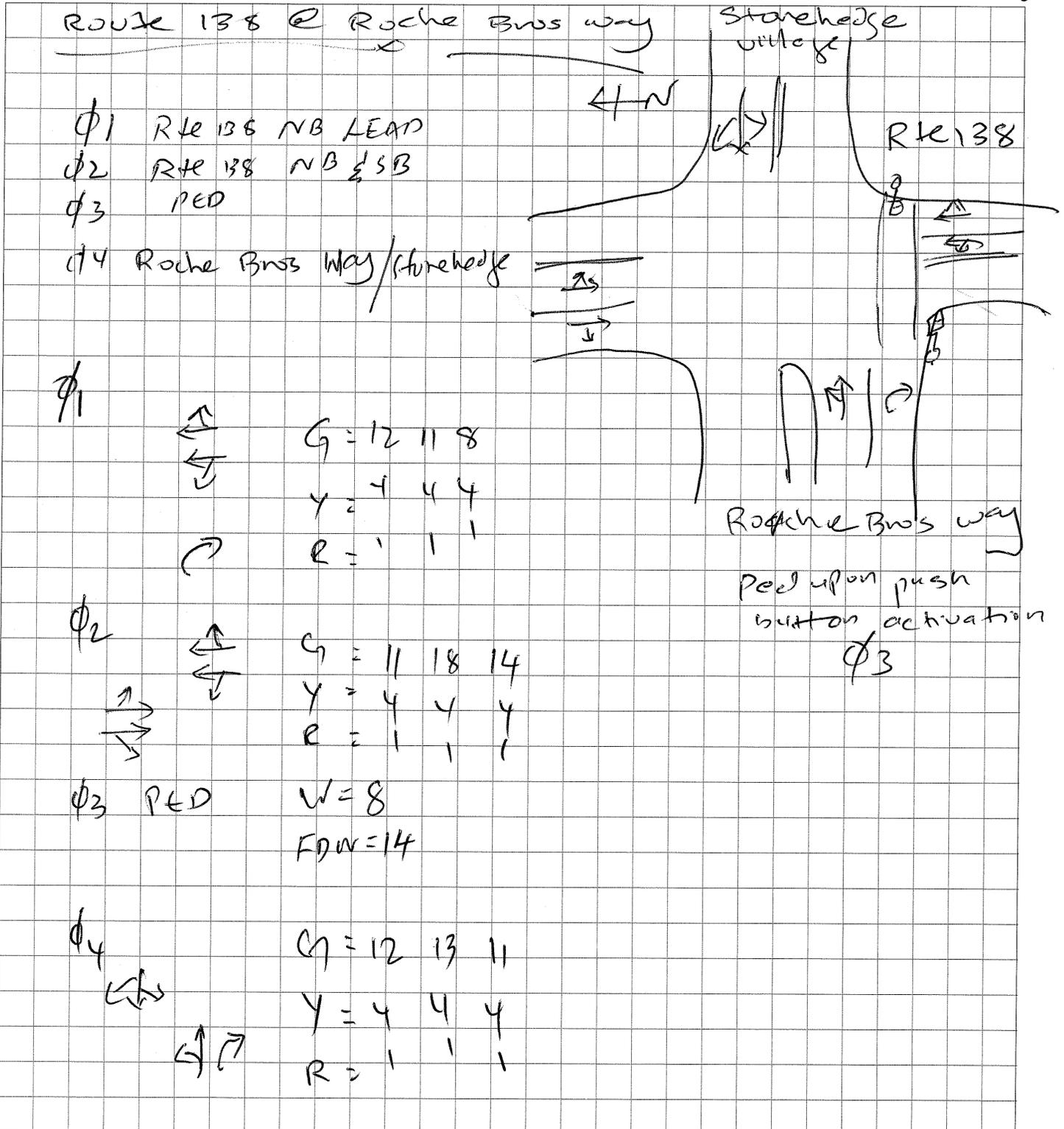
R = 1 1 1



Depot  
not striped  
as two  
lanes  
but operates  
as above  
  
CW present  
but no  
ped activation  
or push buttons



Project: SCR Project # 1011131  
 Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_  
 Calculated by: RNR Date: 7/29/08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title Signal Timing & Phasing





Project: SCR Project # 10111.31  
 Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_  
 Calculated by: RNR Date: 9/29/08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title Signal Timing & Phasing

Route 138 @ Main Street

$\phi_1$	RT 138 LTs	G = 10	8	8
$\phi_2$	RT 138 THs	Y = 3	4	4
$\phi_3$		R = 1	1	1
$\phi_3$	Main St LTs	G = 12	8	10
$\phi_4$	Main St THs	Y = 3	4	4
		R = 1	1	1
$\phi_1$		G = 8	20	14
		Y = 4	4	4
		R = 1	1	1

Full Quad Operation  
Concurrent Red



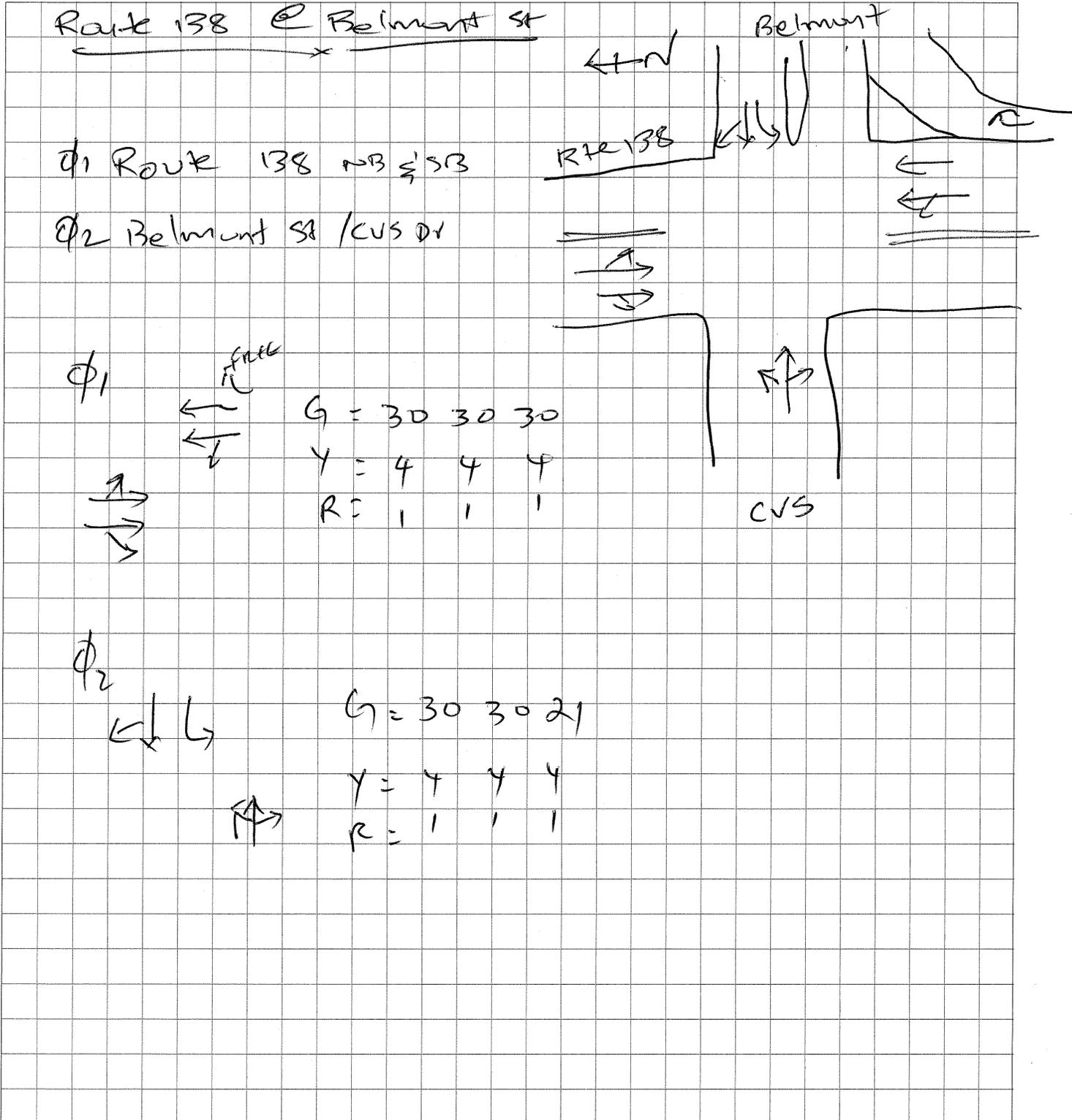
Project: SCR Project # 10111-31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/29/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

Title Signal Timing & Phasing



# THE COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT

## TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT RTE. 138 AT MAIN STREET (DAILEY'S CNR.)

IN THE TOWN OF  
**EASTON**  
BRISTOL COUNTY

<b>EASTON</b>				
RTE. 138 AT MAIN STREET (DAILEY'S CNR.)				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	0010	01	1	
TITLE SHEET				

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

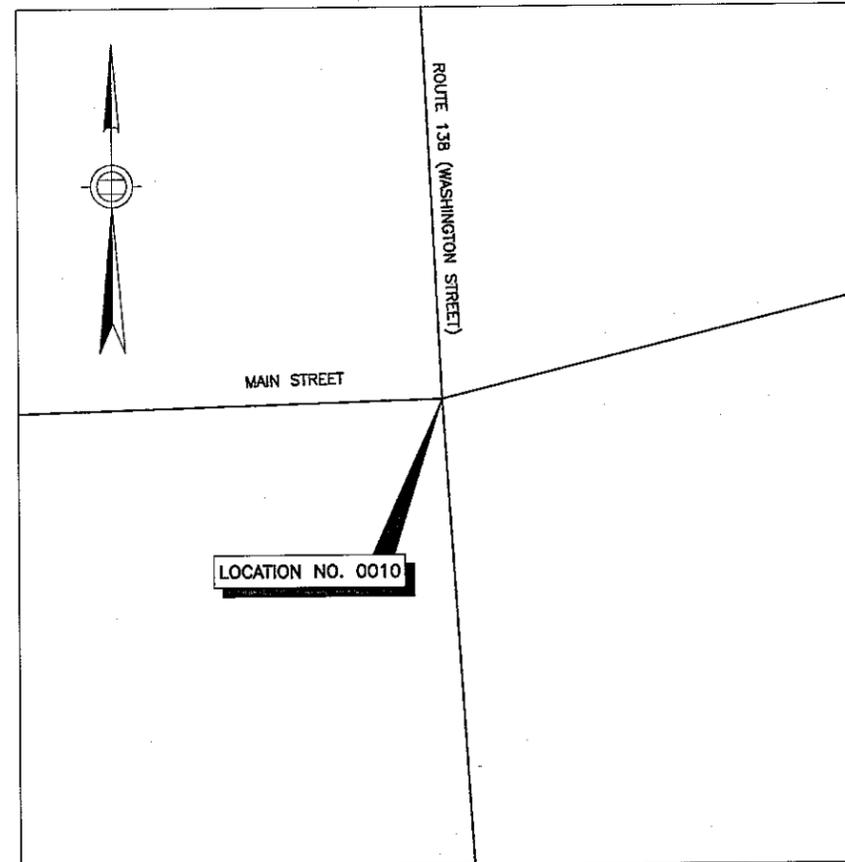
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued\* or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

**I. STANDARDS OF INSTALLATION**

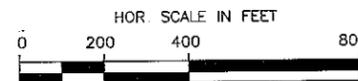
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

**II. OPERATION OF SIGNALS**

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: OPTICOM
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



**LOCUS MAP  
(SCALE AS SHOWN)**



REVISION NO 01  
 DATE: 11-26-01  
 INSERT BY: J.C.CONNOR  
 DATE: \_\_\_\_\_  
 FILE NAME: 0010T01.DWG

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



10 PARK PLAZA  
BOSTON, MA 02116

MASSACHUSETTS  
HIGHWAY DEPARTMENT

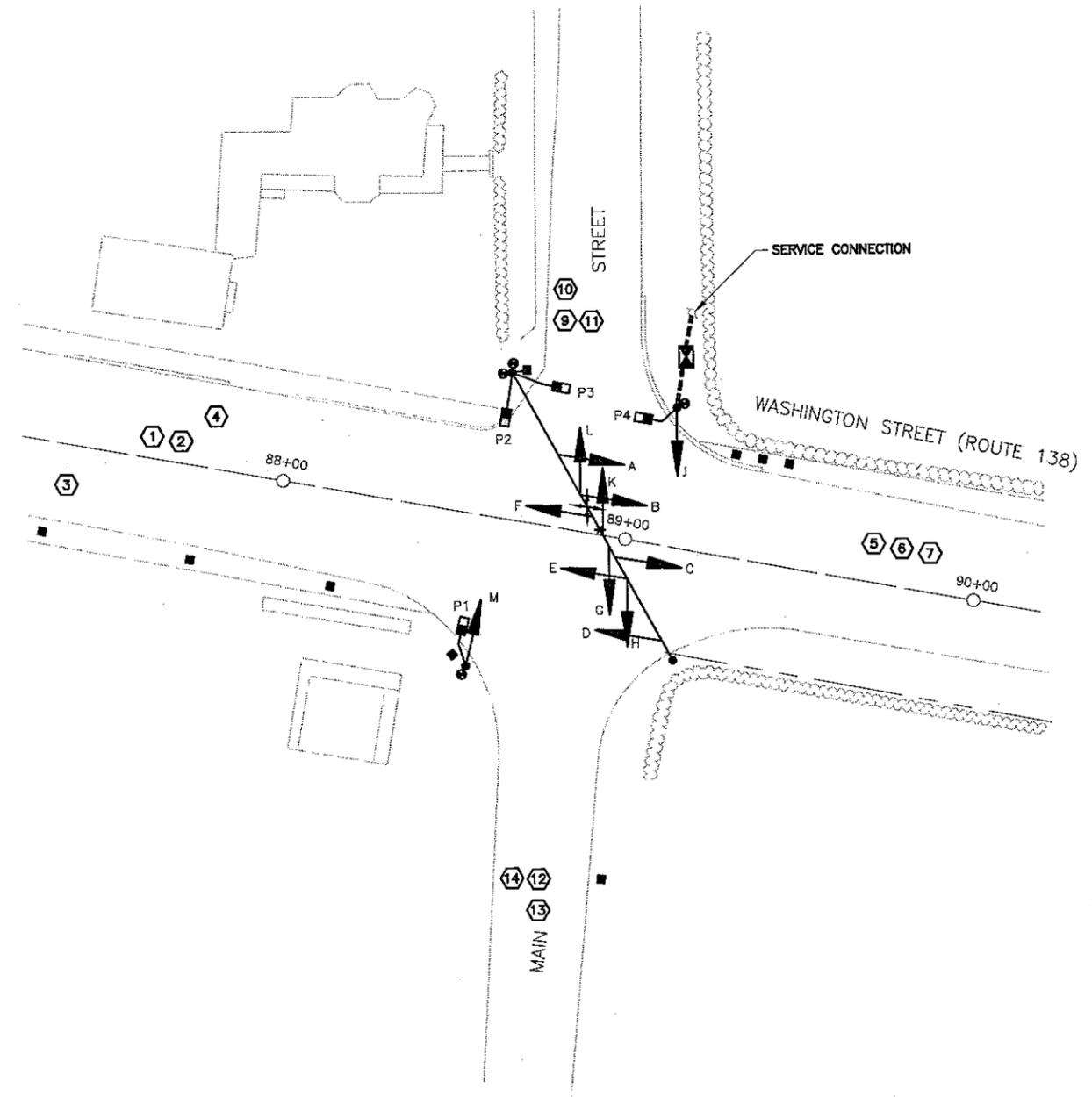
APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER \_\_\_\_\_ Date \_\_\_\_\_

**EASTON**  
**RTE. 138 AT MAIN STREET (DAILEY'S CNR.)**

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	0010	01	2	

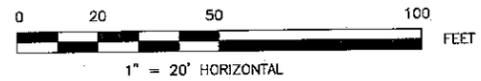
**TRAFFIC SIGNAL PLAN**



NOTE:  
 THIS INTERSECTION HAS BEEN COMPLETELY REDONE. NEW AS-BUILT PLANS WERE NOT RECEIVED. BOTH ROADWAYS HAVE BEEN WIDENED TO ACCOMMODATE LEFT TURN LANES. THIS PLAN, EXISTING FROM THE 1954 CONSTRUCTION, DOES NOT REFLECT THIS WIDENING. LOOP LOCATIONS COULD NOT BE VERIFIED.

**LEGEND**

	SIGNAL CONTROLLER
	VEHICULAR SIGNAL
	OPTICALLY PROGRAMMED VEHICULAR SIGNAL
	FIRE PRE-EMPTION RECEIVER
	FIRE PRE-EMPTION STROBE LIGHT
	PEDESTRIAN SIGNAL
	PEDESTRIAN PUSH BUTTON
	PULL BOX



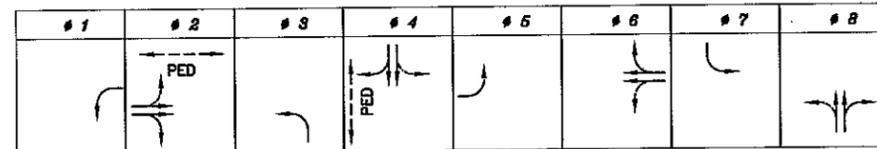
APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date \_\_\_\_\_

0010P01.DWG

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	0010	01	3	

TRAFFIC SIGNAL DATA

APPROX NORTH



SEQUENCE AND TIMING FOR FULLY-ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	PHASINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PHASE
ROUTE 138	NB	C	GL	YL	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	FY
ROUTE 138	NB	A,B	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
ROUTE 138	SB	F	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
ROUTE 138	SB	D,E	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
MAIN STREET	EB	G	R	R	R	R	R	R	GL	YL	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
MAIN STREET	EB	H,J	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
MAIN STREET	WB	K	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	GL	YL	R	R	FR
MAIN STREET	WB	L,M	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	FR
PEDESTRIAN	E-W	P1-P2	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	W	FDW	DW	OFF									
PEDESTRIAN	N-S	P3-P4	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OFF

TIMING IN SECONDS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	EMERGENCY ONLY		
MINIMUM GREEN (INITIAL)	7		15				7				7				7					7				7			
PASSAGE TIME (VEHICLE)	2		4				2				3				2					4			2		3		
MAXIMUM 1	10		28				9				30				10					28			9		30		
MAXIMUM 2	15		30				15				30				15					30			15		30		
YELLOW CLEARANCE			4			4				4			4			4				4			4		4		
RED CLEARANCE			1			1				1			1			1				1			1		1		
WALK (W)			6				6				6				6					6			6		6		
PEDESTRIAN CLEARANCE			17				17				17				17					17			17		17		
RECALL			OFF			MIN				OFF			OFF			OFF				MIN			OFF		OFF		
MEMORY			NON-LOCKING			LOCKING				NON-LOCKING			NON-LOCKING			NON-LOCKING				LOCKING			NON-LOCKING		NON-LOCKING		

MAJOR ITEMS REQUIRED

QUANTITY	ITEM
1	CONTROLLER TYPE 8DW, CAB. & FDN.
1	SERVICE CONNECTION (OVERHEAD)
2	10' SIGNAL POLE, BASE, & FDN.
4	1 WAY, 3 SECTION SIGNAL HOUSING (12" LENS)
4	1 WAY, 5 SECTION SIGNAL HOUSING (12" LENS)
2	2 WAY, 3 SECTION SIGNAL HOUSING (12" LENS)
4	PEDESTRIAN HOUSING
4	PEDESTRIAN PUSH BUTTON, SIGN & SADDLES
4	OPTICOM RECEIVERS
2	OPTICOM 4 CHANNEL PHASE SELECTOR
1	OPTICOM STROBE LIGHT
12	LOOP DETECTOR AMPLIFIER (DUAL CHANNEL)
13±	12" x 12" PULL BOX
	Necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.

NOTES:

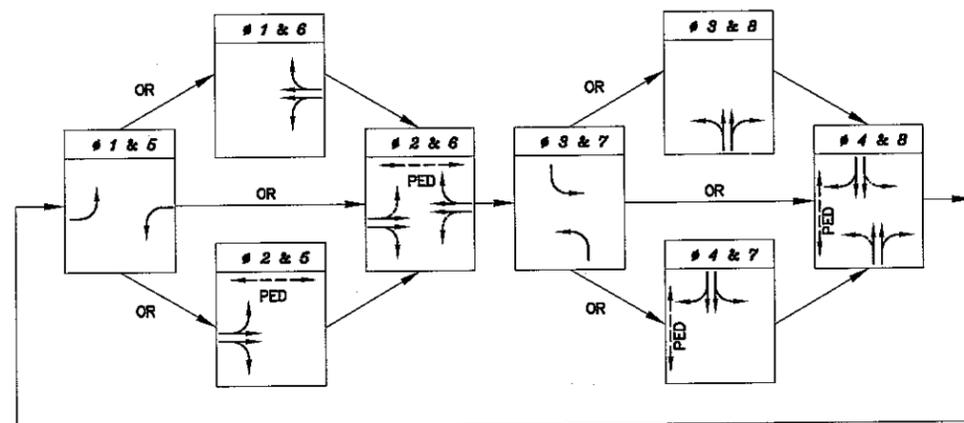
NEMA DUAL RING PHASING NOTES:

- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
- PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
- THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
- IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

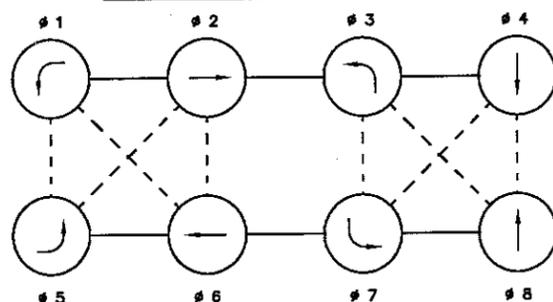
LOOP DETECTOR NOTES:

- SEE LOOP DETECTOR DETAIL SHEET FROM DESIGN DOCUMENT FOR SPLICE PATTERN AND OTHER INFORMATION.
- DELAY AND EXTENSION TIMES ARE IN SECONDS.
- DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR.
- LOOP DETECTORS WERE NOT VISIBLE IN THE PAVEMENT SURFACE DURING INVENTORY.

PREFERENTIAL PHASING SEQUENCE



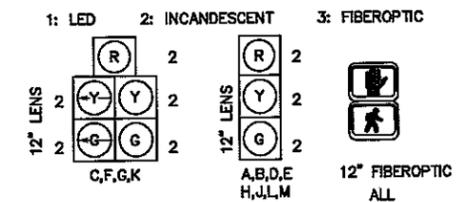
NEMA DUAL RING PHASING NOTES:



LOOP DETECTOR DATA

DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE	NUM. OF TURNS	# CALLED	# EXT.	MODE PULSE PRESENCE	DELAY TIME	EXT. TIME
1				#2	#2	PRESENCE		
2				#2	#2	PRESENCE		
3				#2	#2	PRESENCE		
4				#5	#5	PRESENCE		
5				#6	#6	PRESENCE		
6				#6	#6	PRESENCE		
7				#6	#6	PRESENCE		
8				#1	#1	PRESENCE		
9				#4	#4	PRESENCE		
10				#4	#4	PRESENCE		
11				#7	#7	PRESENCE		
12				#8	#8	PRESENCE		
13				#8	#8	PRESENCE		
14				#3	#3	PRESENCE		

SIGNAL IDENTIFICATION



CONTROLLER MAKE & MODEL: PEEK 3000 SERIES  
 UTILITY POLE No. E.E. CO. BR. #32  
 METER No. 17-595-194  
 EMERGENCY PRE-EMPTION (TYPE): OPTICOM

APPROVED BY:

STATE TRAFFIC ENGINEER

Date

# THE COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT

## TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT RTE. 138 (WASHINGTON ST) AT RTE. 123 (BELMONT ST)

IN THE TOWN OF  
**EASTON**  
 BRISTOL COUNTY

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

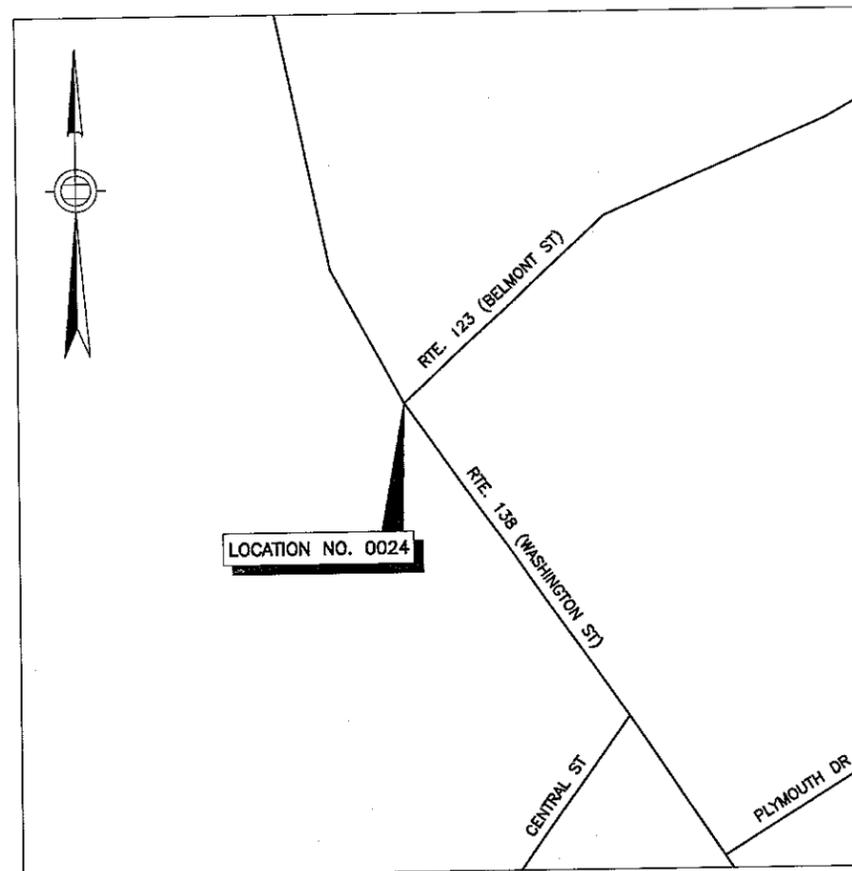
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

**I STANDARDS OF INSTALLATION**

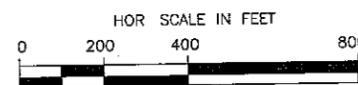
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

**II OPERATION OF SIGNALS**

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
 Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



**LOCUS MAP  
 (SCALE AS SHOWN)**



REVISION NO. 01  
 DATE: 11-27-01  
 INSERT BY: J.C.CONNOR  
 DATE: \_\_\_\_\_  
 FILE NAME: 0024T01.DWG

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**MASS HIGHWAY**

10 PARK PLAZA  
 BOSTON, MA 02116

MASSACHUSETTS  
 HIGHWAY DEPARTMENT

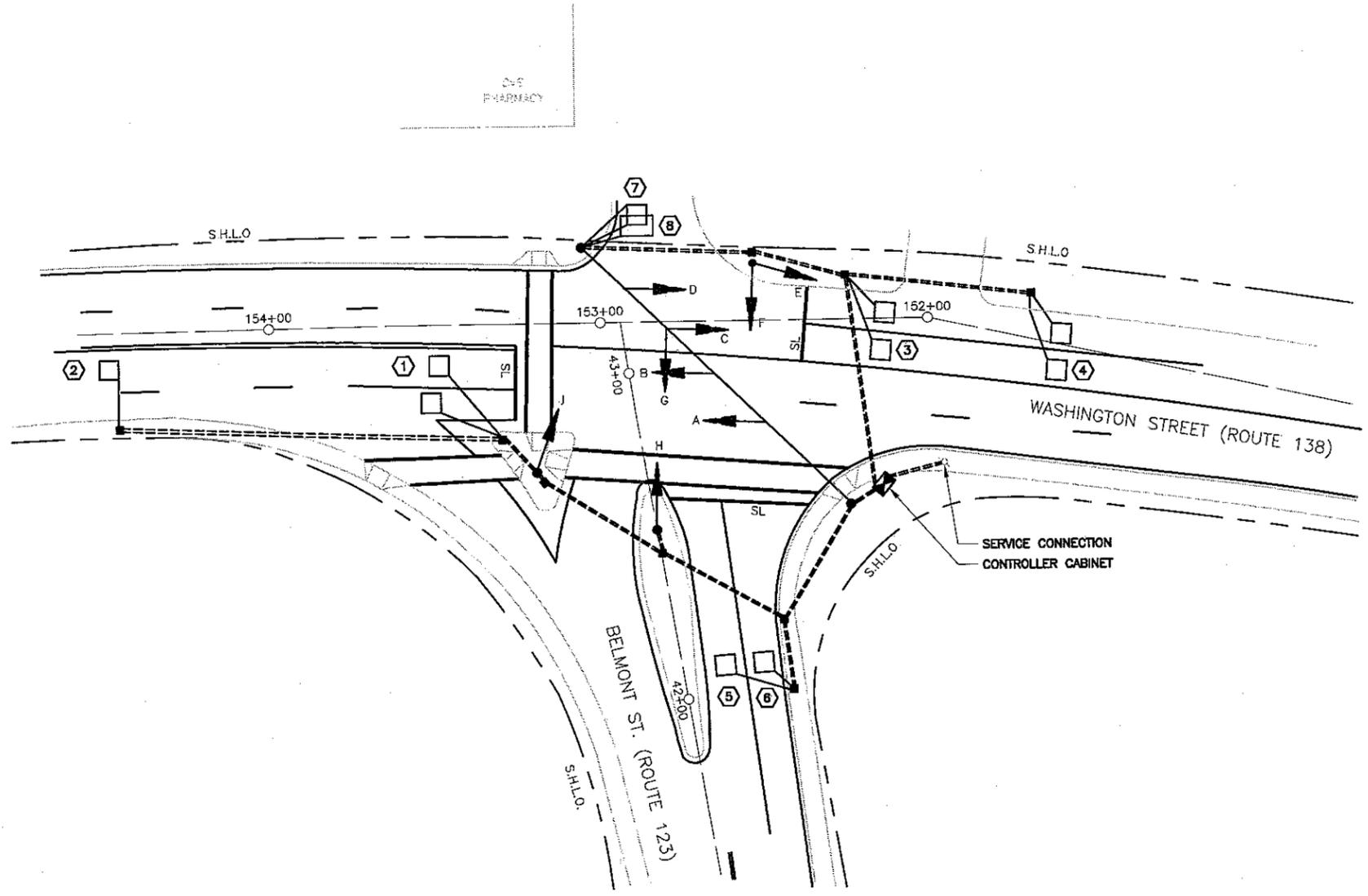
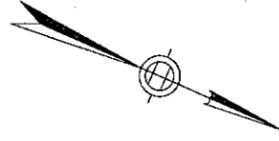
APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER      Date

**EASTON**  
**RTE. 138 (WASHINGTON ST)**  
**AT RTE. 123 (BELMONT ST)**

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	0024	01	2	

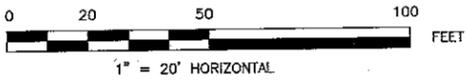
TRAFFIC SIGNAL PLAN



LEGEND

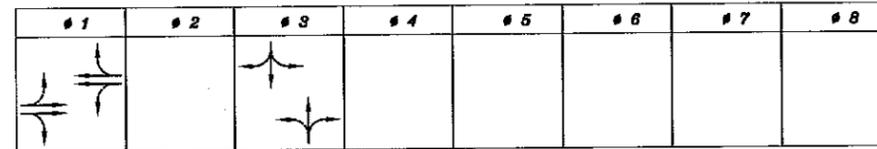
- SIGNAL CONTROLLER
- VEHICULAR SIGNAL
- OPTICALLY PROGRAMMED VEHICULAR SIGNAL
- FIRE PRE-EMPTION RECEIVER
- FIRE PRE-EMPTION STROBE LIGHT
- PEDESTRIAN SIGNAL
- PEDESTRIAN PUSH BUTTON
- PULL BOX

APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date \_\_\_\_\_



0024P0101.DWG

APPROX. NORTH



**SEQUENCE AND TIMING FOR FULLY-ACTUATED CONTROL (ISOLATED)**

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PHASE
WASHINGTON ST (ROUTE 138)	NB	A,B	G	Y	R				R	R	R															FY	
WASHINGTON ST (ROUTE 138)	SB	C,D,E	G	Y	R				R	R	R															FY	
BELMONT ST (ROUTE 123)	WB	F,G	R	R	R				G	Y	R															FR	
DRIVE	EB	H,J	R	R	R				G	Y	R															FR	

TIMING IN SECONDS		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
MINIMUM GREEN (INITIAL)		8							8																	
PASSAGE TIME (VEHICLE)		4							4																	
MAXIMUM 1		30							30																	
MAXIMUM 2		30							30																	
YELLOW CLEARANCE			4							4																
RED CLEARANCE				1							2															
WALK (W)																										
PEDESTRIAN CLEARANCE																										
RECALL			EXT				OFF																			
MEMORY			LOCKING				LOCKING																			

EMERGENCY ONLY

**EASTON**  
RTE. 138 (WASHINGTON ST)  
AT RTE. 123 (BELMONT ST)

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	0024	01	3	

TRAFFIC SIGNAL DATA

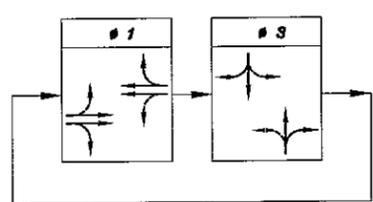
**MAJOR ITEMS REQUIRED**

QUANTITY	ITEM
1	CONTROLLER TYPE 4W, CAB. & FDN.
1	SERVICE CONNECTION (OVERHEAD)
1	SPANWIRE ASSEMBLY BASE & FDN.
3	10' SIGNAL POLE, BASE, & FDN.
5	1 WAY, 3 SECTION, SIGNAL HOUSING (12" LENS)
2	2 WAY, 3 SECTION SIGNAL HOUSING (12" LENS)
4	LOOP DETECTOR AMPLIFIER (DUAL CHANNEL)
11	ROADWAY LOOP DETECTOR
9	12" x 12" PULL BOX
	Necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.

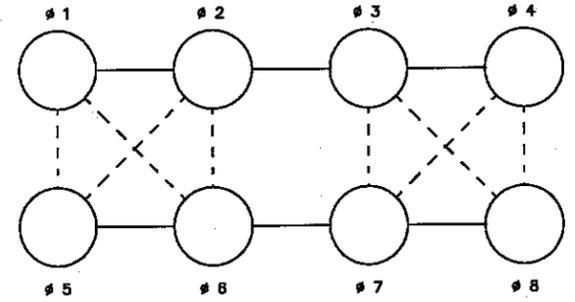
**NOTES:**

- SEQUENCE AND TIMING NOTES:**
- #2, #4, #5, #6, #7 AND #8 NOT USED.
- NEMA DUAL RING PHASING NOTES:**
- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
  - PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
  - THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
  - IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
- LOOP DETECTOR NOTES:**
- SEE LOOP DETECTOR DETAIL SHEET FROM DESIGN DOCUMENT FOR SPLICE PATTERN AND OTHER INFORMATION.
  - DELAY AND EXTENSION TIMES ARE IN SECONDS.
  - DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR.
  - LOOP DETECTORS WERE NOT VISIBLE DURING SIGNAL INVENTORY.

**PREFERENTIAL PHASING SEQUENCE**



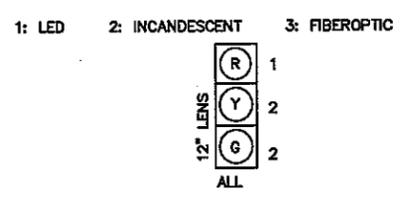
**NEMA DUAL RING PHASING NOTES:**



**LOOP DETECTOR DATA**

DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE	NUM. OF TURNS	# CALLED	# EXT.	MODE PULSE PRESENCE	DELAY TIME	EXT. TIME
①	2	6'x6'		#1	#1	PRESENCE		
②	1	6'x6'		#1	#1	PRESENCE		
③	2	6'x6'		#1	#1	PRESENCE		
④	2	6'x6'		#1	#1	PRESENCE		
⑤	1	6'x6'		#2	#2	PRESENCE		
⑥	1	6'x6'		#2	#2	PRESENCE		
⑦	1	6'x6'		#2	#2	PRESENCE		
⑧	1	6'x10'		#2	#2	PRESENCE		

**SIGNAL IDENTIFICATION**



CONTROLLER MAKE & MODEL: CROUSE-HINDS (PIN)  
 UTILITY POLE No. NET&T CO. / B.E. CO. #127  
 METER No. 11-819-138  
 EMERGENCY PRE-EMPTION (TYPE): NONE

**APPROVED BY:**

**STATE TRAFFIC ENGINEER**      Date

0024D01.DWG

EASTON				
RTE. 138 AT ROCHE BROTHERS DR				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	5-1287	01	1	3

TITLE SHEET

THE COMMONWEALTH OF MASSACHUSETTS  
 MASSACHUSETTS HIGHWAY DEPARTMENT  
 TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT  
 WASHINGTON STREET (ROUTE 138) AT ROCHE BROTHERS DRIVEWAY  
 IN THE TOWN OF  
 EASTON  
 BRISTOL COUNTY

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

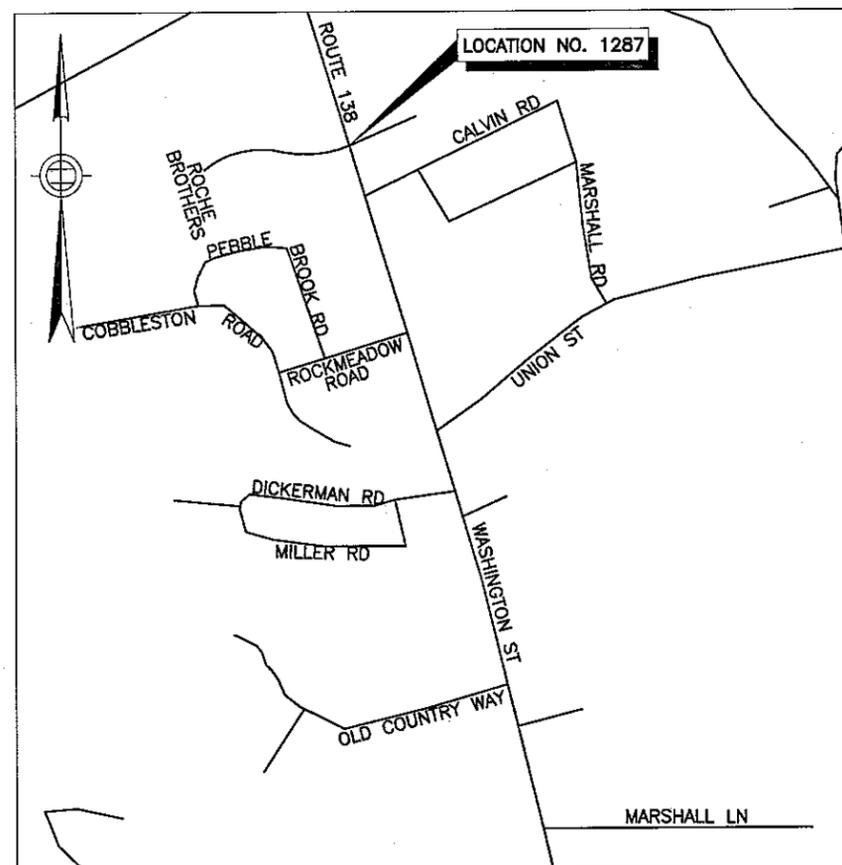
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued\* or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

I STANDARDS OF INSTALLATION

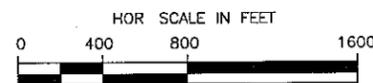
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

II OPERATION OF SIGNALS

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO 3
- (e) Hours for Automatic Operation: CONTINUOUS  
 Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
(SCALE AS SHOWN)



REVISION NO <u>01</u>	COMMENTS:
DATE: <u>12-22-2008</u>	
INSERT BY: <u>BG</u>	
DATE: _____	
FILE NAME: <u>1287T0101.DWG</u>	

**MASS HIGHWAY**

10 PARK PLAZA  
 BOSTON, MA 02116  
 MASSACHUSETTS  
 HIGHWAY DEPARTMENT

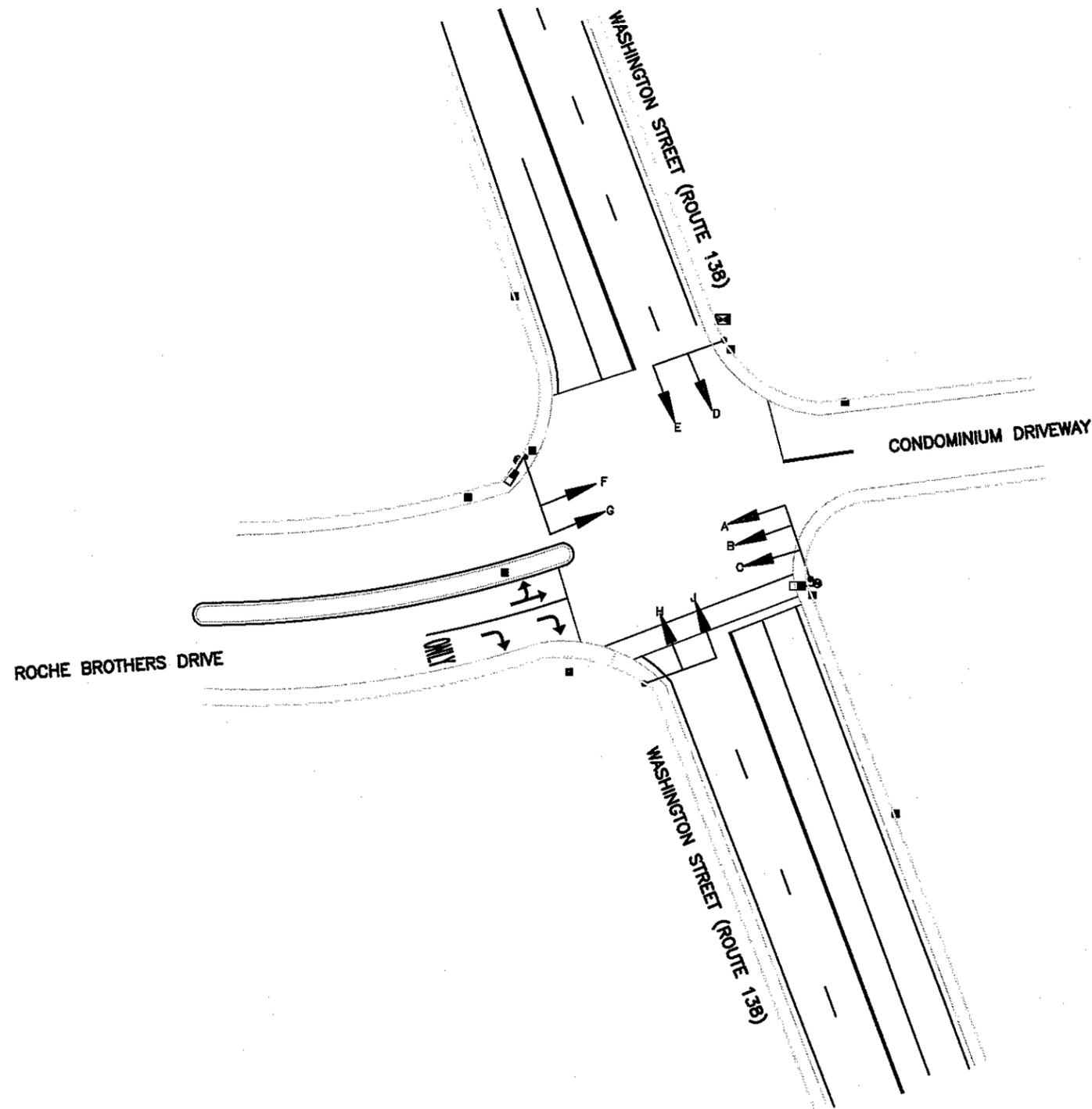
APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER      Date

**EASTON**  
**WASHINGTON STREET (ROUTE 138) AT**  
**ROCHE BROTHERS DRIVEWAY**

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	5-1287	01	2	3

LAYOUT PLAN



**LEGEND**

	SIGNAL CONTROLLER
	VEHICULAR SIGNAL
	OPTICALLY PROGRAMMED VEHICULAR SIGNAL
	FIRE PRE-EMPTION RECEIVER
	FIRE PRE-EMPTION STROBE LIGHT
	PEDESTRIAN SIGNAL
	PEDESTRIAN PUSH BUTTON
	FULL BOX

APPROVED BY:

STATE TRAFFIC ENGINEER

Date



STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1287	01	3	3

TRAFFIC SIGNAL DATA

**NOTES:**

**SEQUENCE AND TIMING NOTES:**

- #3, AND #7 NOT USED.
- EXCLUSIVE PEDESTRIAN TO BE ACTIVATED ONLY BY PEDESTRIAN ACTUATED PUSH BUTTON.

**NEMA DUAL RING PHASING NOTES:**

- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
- PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
- THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
- IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

**LOOP DETECTOR NOTES:**

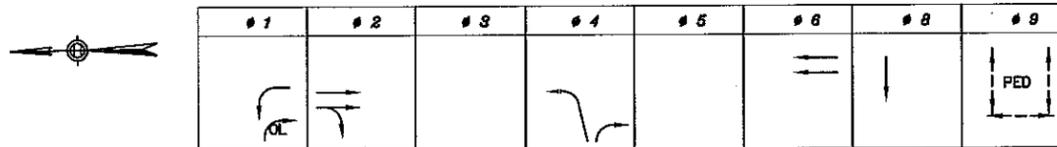
- SEE LOOP DETECTOR DETAIL SHEET FROM DESIGN DOCUMENT FOR SPLICE PATTERN AND OTHER INFORMATION.
- DELAY AND EXTENSION TIMES ARE IN SECONDS.
- DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR.

**SIGNAL IDENTIFICATION NOTES:**

- ALL SIGNAL HEADS DO HAVE 5" LOUVERED BACKPLATES
- ALL RED SIGNAL LENSES SHALL BE 12" DIA.
- ALL SIGNAL HEADS TO BE FIXED-MOUNTED.

**FIELD NOTE:**

- LOOP DETECTORS WERE NOT VISIBLE.



SEQUENCE AND TIMING FOR FULLY-ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	PHASINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PHASE
WASHINGTON ST (ROUTE 138)	NB-LT	E	GL	YL	RL	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	FRL
WASHINGTON ST (ROUTE 138)	NB	D	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	FY
WASHINGTON ST (ROUTE 138)	SB	H,J	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
ROCHE BROTHERS	EB-RT	C	R	GR	YR	R	R	R	R	R	R	R	GR	YR	R	R	R	R	R	R	R	R	R	R	R	R	FRR
ROCHE BROTHERS	EB	A,B	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	FR
CONDOMINIUM DRIVEWAY	WB	F,G	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	FR
PEDESTRIAN		ALL	DW	W	FDW	DW	OFF																				

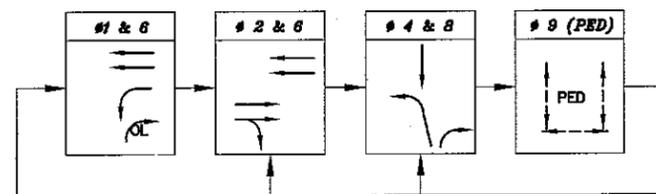
TIMING IN SECONDS

MINIMUM GREEN (INITIAL)	6			10								6						10			6					EMERGENCY ONLY
PASSAGE TIME (VEHICLE)	2			2								2						2			2					
MAXIMUM 1	14			50								20						50			20					
MAXIMUM 2	14			50								20						50			20					
YELLOW CLEARANCE			4			4						4						4			4					
RED CLEARANCE				1			2						1						2			1				
WALK (W)																								7		
PEDESTRIAN CLEARANCE																								15		
RECALL			NONE		NONE							NONE						NONE			NONE					
MEMORY			NON-LOCK		NON-LOCK							LOCKING						LOCKING			LOCKING					

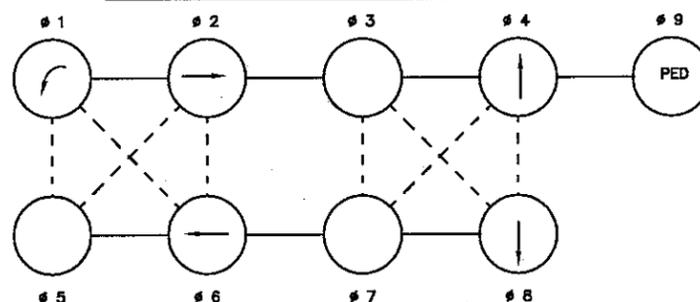
LOOP DETECTOR DATA

DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE	NUM. OF TURNS	# CALLED	# EXT.	MODE PULSE PRESENCE	DELAY TIME	EXT. TIME
①	X	XX		#6	#6	PRESENCE	0	0
②	X	XX		#6	#6	PRESENCE	0	0
③	X	XX		#6	#6	PRESENCE	0	0
④	X	XX		#1	#1	PRESENCE	0	0
⑤	X	XX		#2	#2	PRESENCE	0	0
⑥	X	XX		#2	#2	PRESENCE	0	0
⑦	X	XX		#2	#2	PRESENCE	0	0
⑧	X	XX		#8	#8	PRESENCE	0	0
⑨	X	XX		#4	#4	PRESENCE	6	0
⑩	X	XX		#4	#4	PRESENCE	6	0
⑪	X	XX		#1	#1	PRESENCE	6	0
⑫	X	XX		#6	#6	PRESENCE	6	0
⑬	X	XX		#2	#2	PRESENCE	0	0
⑭	X	XX		#2	#2	PRESENCE	0	0
⑮	X	XX						
⑯	X	XX		#4	#4	PRESENCE	0	0
⑰	X	XX		#4	#4	PRESENCE	0	0

PREFERENTIAL PHASING SEQUENCE

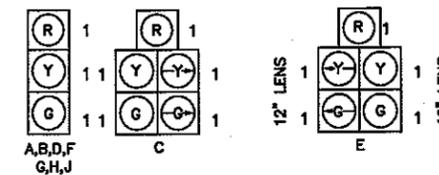


NEMA DUAL RING PHASING NOTES:



SIGNAL IDENTIFICATION

1: LED 2: INCANDESCENT 3: FIBEROPTIC



ONE SECTION  
DUAL DISPLAY  
12" LED/FIBER OPTIC  
ALL

CONTROLLER MAKE & MODEL: EPAC 300  
UTILITY POLE No. VERIZON 5  
METER No.  
EMERGENCY PRE-EMPTION (TYPE): NONE

APPROVED BY:

STATE TRAFFIC ENGINEER

Date







3



# Computations

street signs

Project: SCR  
 Location: Fall River  
 Calculated by: NL  
 Checked by:  
 Title: Central St @ Water St Inv.  
 central st

Project # 10111.31  
 Sheet of  
 Date:  
 Date:

planning  
roadway  
for road

db' am  
for  
UBS  
stop

DNV  
up to  
Driveway  
+ sign  
+ sign

from mo

no marking  
minimum on

Retaining wall

High on

stop sign  
for UBS app.  
+ one way  
sign

DO NOT  
ENTER

NO sidewalk

(1)

23'

Hydrant

(1)

20'

(1)

28'

(1)

DNV  
SB

Heritage  
Store Park

Paving list

one way

10' 10'

(1)

(1)

15'  
23'

14'-5"  
yellow  
sign

Brickway / Paved

Water / Central

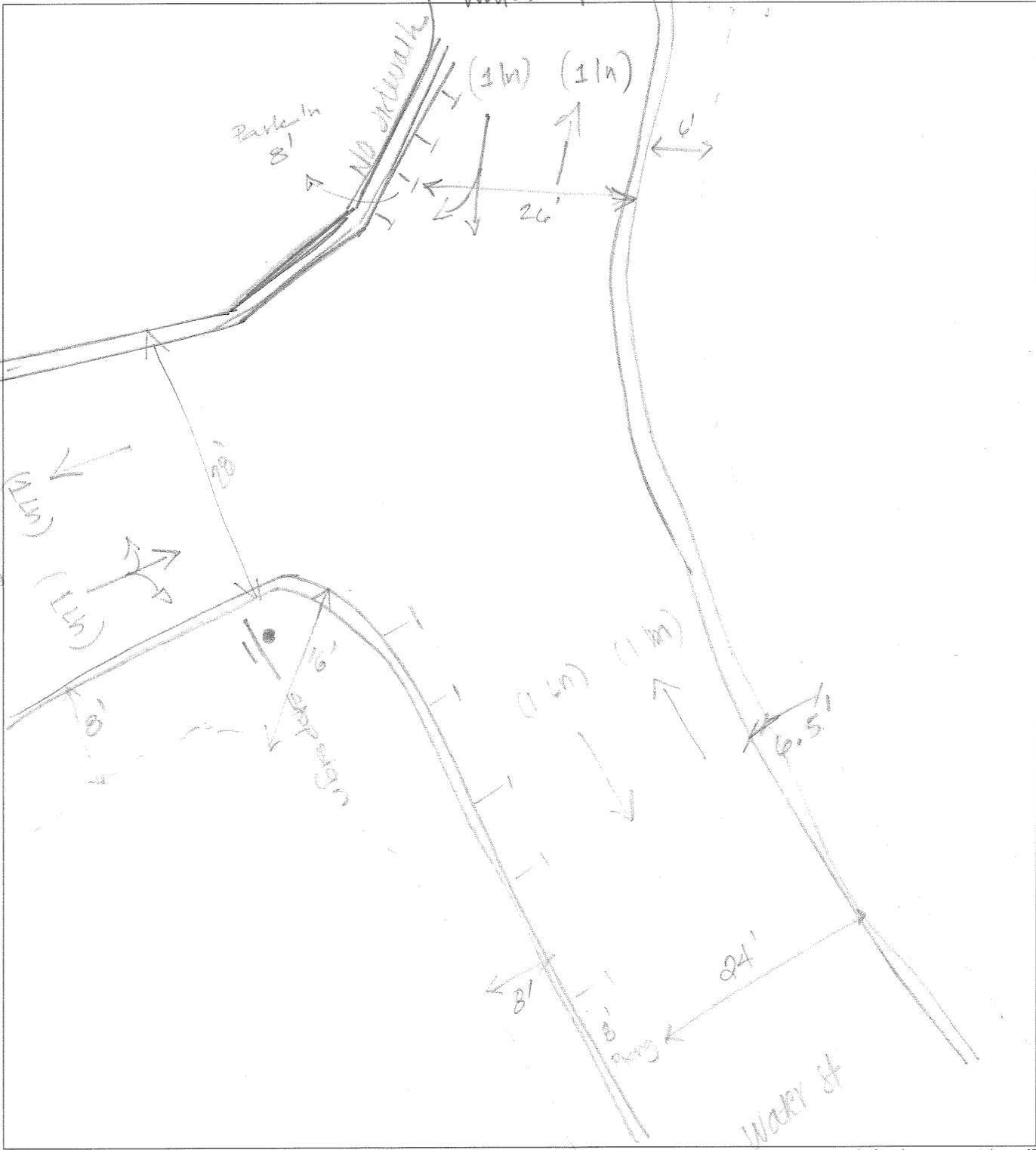
1



# Computations

Project: SCR  
 Location: Fall River  
 Calculated by: NL  
 Checked by:  
 Title: Water St @ Ferry St Inventory

Project # 1011131  
 Sheet 1 of  
 Date:  
 Date:



## 1. Intersection Location

PAUL ST. NB @ President Ave

Intersection Name

Fall River, MA

City or Town

N/A

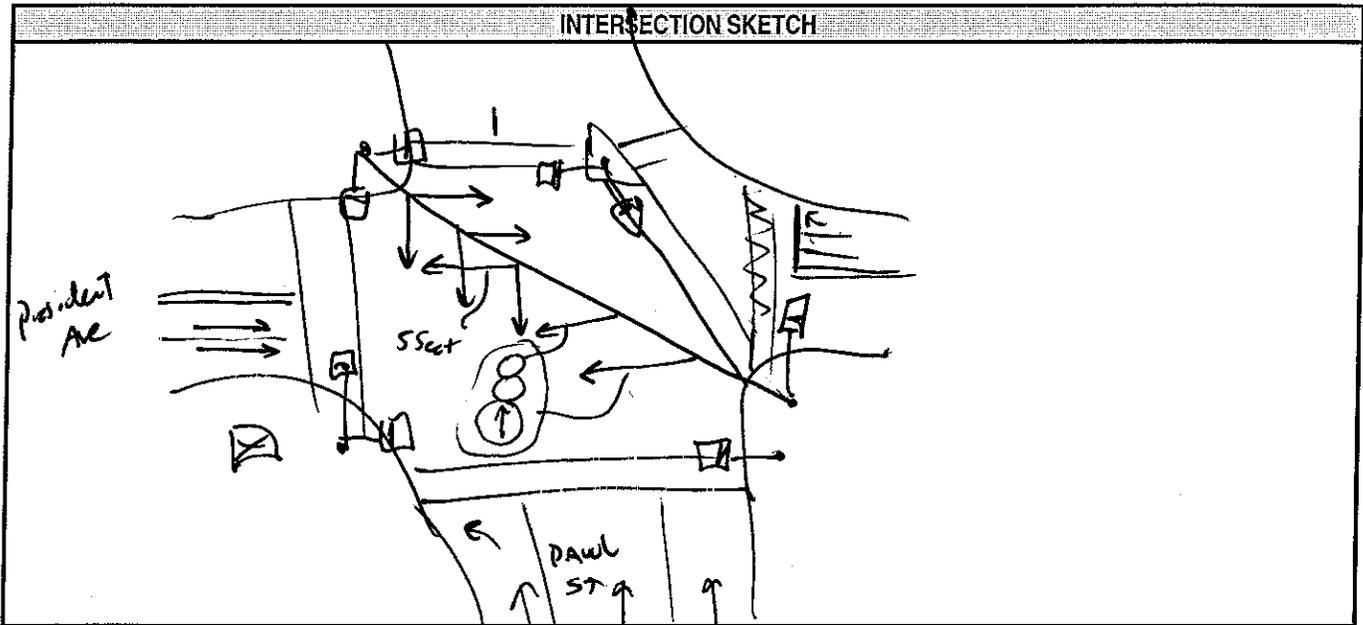
RIDOT Traffic Signal #

9/4/07

Date of Inventory

WBA

Inventory Conducted By



Showing Cabinet Location, Signal Poles, Signal and Pedestrian Signals

Equipment				
Mast Arms	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Strain Poles	Embedded <input type="checkbox"/>	Bolted <input checked="" type="checkbox"/>		
Tether Wire	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	
Overhead Signal Heads	Free Swinging <input type="checkbox"/>	Rigid <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	w/ TOWER
Signal Head Visor Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	
R10-12 Signs (prot/perm lefts)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	
LED Signal Heads	Some <input type="checkbox"/>	All <input checked="" type="checkbox"/>	None <input type="checkbox"/>	
Backplates	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Proper Signal Head Placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
ADA pedestrian pushbuttons (2")	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	
Pedestrian Signal Type	LED filled in <input type="checkbox"/>	LED <input checked="" type="checkbox"/>	Fiber <input type="checkbox"/>	Incand. <input type="checkbox"/>
Pedestrian Signal Displays	Overlapping Hand/Man <input checked="" type="checkbox"/>	Separate Hand/Man <input type="checkbox"/>	Words <input type="checkbox"/>	
Overall Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	

## 2. Cabinet

Cabinet - External				
Size	"P" <input checked="" type="checkbox"/>	"M" <input type="checkbox"/>	Other <input type="checkbox"/>	If "Other" Size:
Mounting	Ground <input checked="" type="checkbox"/>	Pole <input type="checkbox"/>	Other <input type="checkbox"/>	
Meter Socket	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Concrete Pad	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	
Manual Control	Yes <input type="checkbox"/>	No <input type="checkbox"/>		NOT CHECKED
Overall Cabinet Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	
Photo of Inside of Cabinet Taken	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		

Police Door Switches	NOT CHECKED
Documentation in Cabinet	Box 7200 only + 1 copy controller manual

## 3. Controller Data

SAGE

Manufacturer

ETAC

Model No.

67660

Serial No.

3.32d Sect 00

Software Rev. Level/Date

Controller				
Type	NEMA - keyboard <input checked="" type="checkbox"/>	NEMA - Modular <input type="checkbox"/>	Non-NEMA <input type="checkbox"/>	Electromechanical <input type="checkbox"/>
Platform	TS1 <input type="checkbox"/>	TS2 Type 1 <input checked="" type="checkbox"/>	TS2 Type 2 <input type="checkbox"/>	
Phase Capable Controlling Leg	2 Phase <input type="checkbox"/>	4 Phase <input type="checkbox"/>	8 Phase <input checked="" type="checkbox"/>	
Setting Type	Keyboard <input checked="" type="checkbox"/>	Thumbwheel <input type="checkbox"/>	Dial <input type="checkbox"/>	Pin <input type="checkbox"/>
Controller Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	

Misc.	
Backpanel Size	12 Pos.
Conflict Monitor/MMU	Manufacturer: EDI Model/Size: MMU-16E
Detector Relays	Manufacturer: EDI Quantity/Type: 3 - 2-channel
Detector Relay Channels Faulting (list channel numbers)	RELAYS NOT SHOWING ANY INDICATIONS (CALLS OR FAULTS) - BILL DOES HAVE POWER + IS TRANSMITTING?

## 4. Signal Timing Sheet

01	02 President Ave EB	03 Duval St NB
04	05 President Ave EB-LT	06 President Ave WB
07	08 <del>09</del> : PED-EXCLUSIVE	OLA
OLB	OLC	OLD

PHASE	01	02	03	04	05	06	07	08
Minimum Green (initial)		6	6		6	6		
Extension (passage) Vehicle Interval		3.0	3.0		3.0	3.0		
Yellow		3	3		3	3		
Red Clear		2	2		2	2		
Maximum Green I		15	33		27	27		
Maximum Green II		15	33		27	27		
Pedestrian Walk								
Pedestrian Clear								
Walk (flash/steady)								
Recall		SOFT				SOFT		
Memory								

09  
3  
7  
15  
EXT  
CALL =  
2

## Intersection Movements:

01	02	03	04	05	06	07	08

09  
X-X  
X-X

Coordination Data: *Coord = 1/1/0/2/0/0*  
 None → *22:00 GRSC*

Pattern	Days	Time Period	Cycle L.	Offset	SPLIT TIMES								
					01	02	03	04	05	06	07	08	
0/0/4	1	0:00-											
0/0/4	2-7	0:00 - 06:00											
1/1/1	2-7	06:00 - 22:00	75	0		30	35		12	18			
0/0/4	2-7	22:00 - 0:00											

09  
10

02 + 06 = coord 74

## 5. Notes

- ALL COOPERS NOT WORKING AT REAR (ALL GOING TO MAX)

- PH PED TIMES = 7/15

SPLIT = 10 SECONDS

∴ INTERSECTION PROBS OUT OF COORD W/ PED ACTIVATION

NOTE: FULL INSPECTION NOT PERFORMED

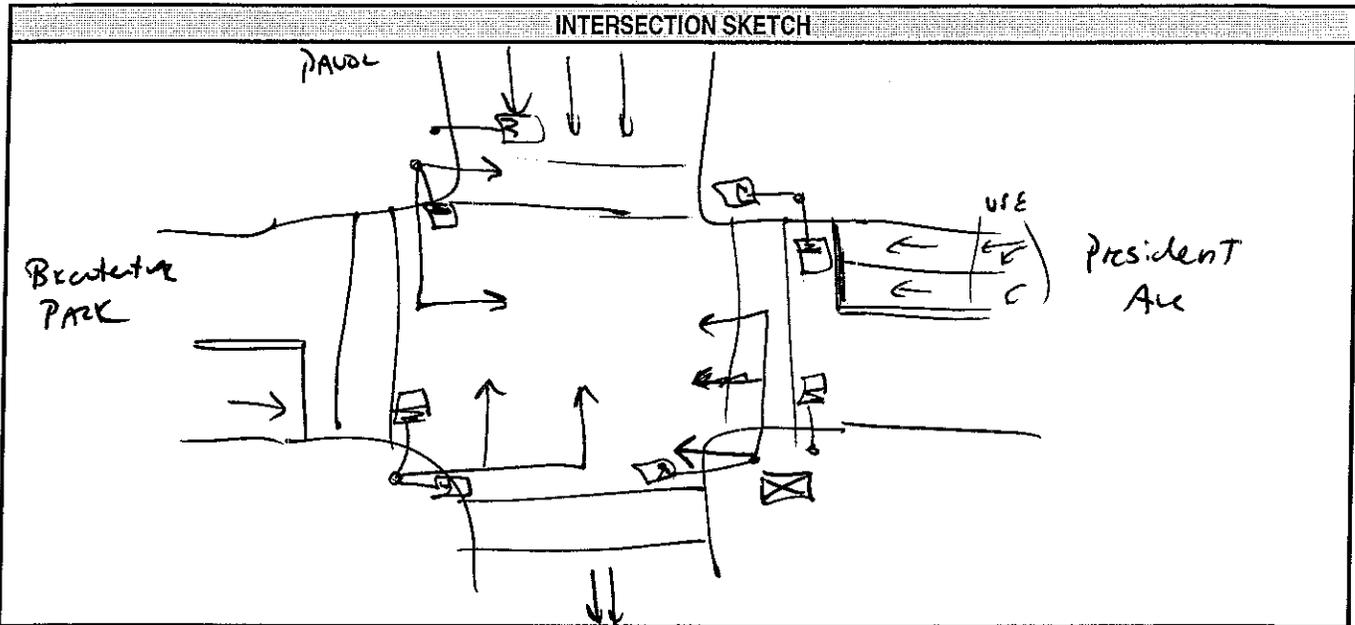
(INCLUDING OPERATION OF PED. BUTTONS + COOPERS)

## 6. Recommendations

## 1. Intersection Location

DAVOL ST. SB @ President Ave      Fall River, MA  
 Intersection Name      City or Town

N/A      9/4/07      WRJ  
 RIDOT Traffic Signal #      Date of Inventory      Inventory Conducted By



Showing Cabinet Location, Signal Poles, Signal and Pedestrian Signals

Equipment				
Mast Arms	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Strain Poles	Embedded <input type="checkbox"/>	Bolted <input type="checkbox"/>		
Tether Wire	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Overhead Signal Heads	Free Swinging <input type="checkbox"/>	Rigid <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	
Signal Head Visor Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	
R10-12 Signs (prot/perm lefts)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	
LED Signal Heads	Some <input type="checkbox"/>	All <input checked="" type="checkbox"/>	None <input type="checkbox"/>	
Backplates	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Proper Signal Head Placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
ADA pedestrian pushbuttons (2")	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>	
Pedestrian Signal Type	LED filled in <input type="checkbox"/>	LED <input checked="" type="checkbox"/>	Fiber <input type="checkbox"/>	Incand. <input type="checkbox"/>
Pedestrian Signal Displays	Overlapping Hand/Man <input checked="" type="checkbox"/>	Separate Hand/Man <input type="checkbox"/>	Words <input type="checkbox"/>	
Overall Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	

## 2. Cabinet

Cabinet - External				
Size	"P" <input checked="" type="checkbox"/>	"M" <input type="checkbox"/>	Other <input type="checkbox"/>	If "Other" Size:
Mounting	Ground <input checked="" type="checkbox"/>	Pole <input type="checkbox"/>	Other <input type="checkbox"/>	
Meter Socket	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Concrete Pad	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	IN BH AREA
Manual Control	Yes <input type="checkbox"/>	No <input type="checkbox"/>		NOT CHECKED
Overall Cabinet Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	
Photo of Inside of Cabinet Taken	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		

Police Door Switches	NOT CHECKED
Documentation in Cabinet	<del>ATC</del> Box Plots only

## 3. Controller Data

SAGE                      ETAC                      67659                      3.32d Sept 06  
 Manufacturer              Model No.                      Serial No.                      Software Rev. Level/Date

Controller				
Type	NEMA - keyboard <input checked="" type="checkbox"/>	NEMA - Modular <input type="checkbox"/>	Non-NEMA <input type="checkbox"/>	Electromechanical <input type="checkbox"/>
Platform	TS1 <input type="checkbox"/>	TS2 Type 1 <input checked="" type="checkbox"/>	TS2 Type 2 <input type="checkbox"/>	
Phase Capable Controlling Leg	2 Phase <input type="checkbox"/>	4 Phase <input type="checkbox"/>	8 Phase <input checked="" type="checkbox"/>	
Setting Type	Keyboard <input checked="" type="checkbox"/>	Thumbwheel <input type="checkbox"/>	Dial <input type="checkbox"/>	Pin <input type="checkbox"/>
Controller Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	

Misc:	
Backpanel Size	12 Pos.
Conflict Monitor/MMU	Manufacturer: EDI                      Model/Size: MMU-16E
Detector Relays	Manufacturer: EDI                      Quantity/Type: 2 - 2 channel
Detector Relay Channels Faulting (list channel numbers)	NONE

## 4. Signal Timing Sheet

01	02 PARK <del>EB</del>	03
04 DAVID ST SB	05	06 President AVE WB
07	08 <del>09</del> <sup>PED</sup> EXCLUSIVE	OLA
OLB	OLC	OLD

PHASE	01	02	03	04	05	06	07	08
Minimum Green (initial)		4		12		12		
Extension (passage) Vehicle Interval		3.0		3.0		3.0		
Yellow		4		4		4		
Red Clear		2		2		2		
Maximum Green I		12		36		30		
Maximum Green II		12		36		30		
Pedestrian Walk								
Pedestrian Clear								
Walk (flash/steady)								
Recall								
Memory								

09  
03  
7  
15  
EXT  
PCL = 2

(06 = SOFT RECALL)

## Intersection Movements:

01	02	03	04	05	06	07	08
	↔		↓ ↓ ↓		↖ ↗		

09  
X-X  
X-X  
(PED)

## Coordination Data:

DATA = 1/1/0/2/0/1  
None → 0 = BEGINNING GREEN

Pattern	Days	Time Period	Cycle L.	Offset	SPLIT TIMES								
					01	02	03	04	05	06	07	08	
0/0/4	1	0:00-											
0/0/4	2-7	0:00-06:00											
1/1/1	2-7	06:00-22:00	75	5		16		25		20			
0/0/4	2-7	22:00-0:00											

09  
14

04 = COORD PH  
06 = MIN RECALL

09 = 9/4/07 12:20:30

## 5. Notes

$\phi 9$  PED TIME = 7/15  
SPRT = 14 SECONDS

∴ INTERSECTION DROPS OUT OF COORDINATION w/ PED ACTUATIONS

- INTERSECTION APPEARS TO OPERATE CORRECTLY

NOTE: Full CIRCULATION NOT PERFORMED  
(INCLUDING OPERATION OF PED BUTTONS + LOOPS)

## 6. Recommendations

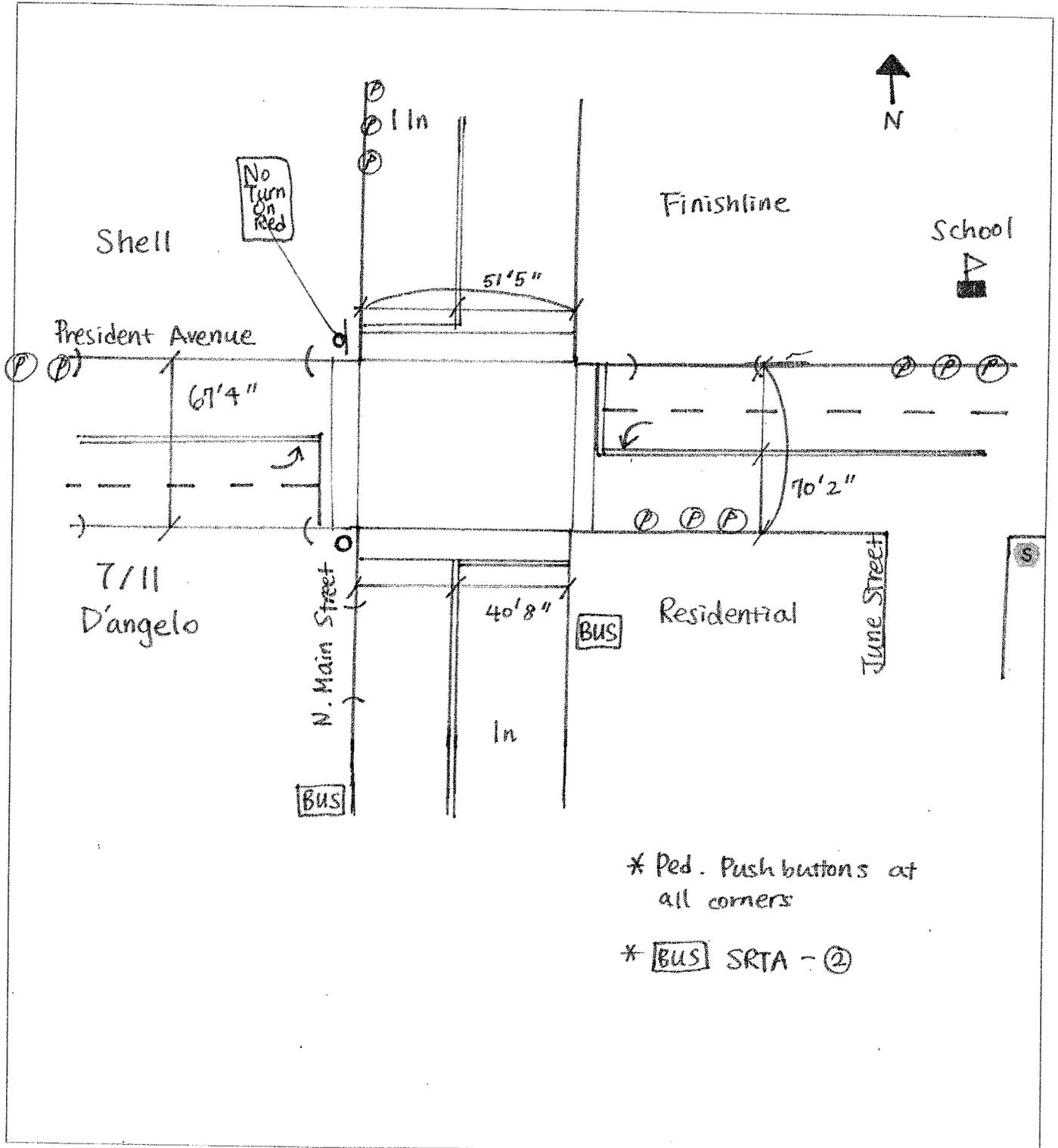


# Computations

Project: Rt. 79  
 Location: Fall River  
 Calculated by: GS  
 Checked by:

Project # 16137.00  
 Sheet 1 of 8  
 Date: Tues, 5/22, 2007  
 Date:

Title PI  
President Avenue @ N. Main Street



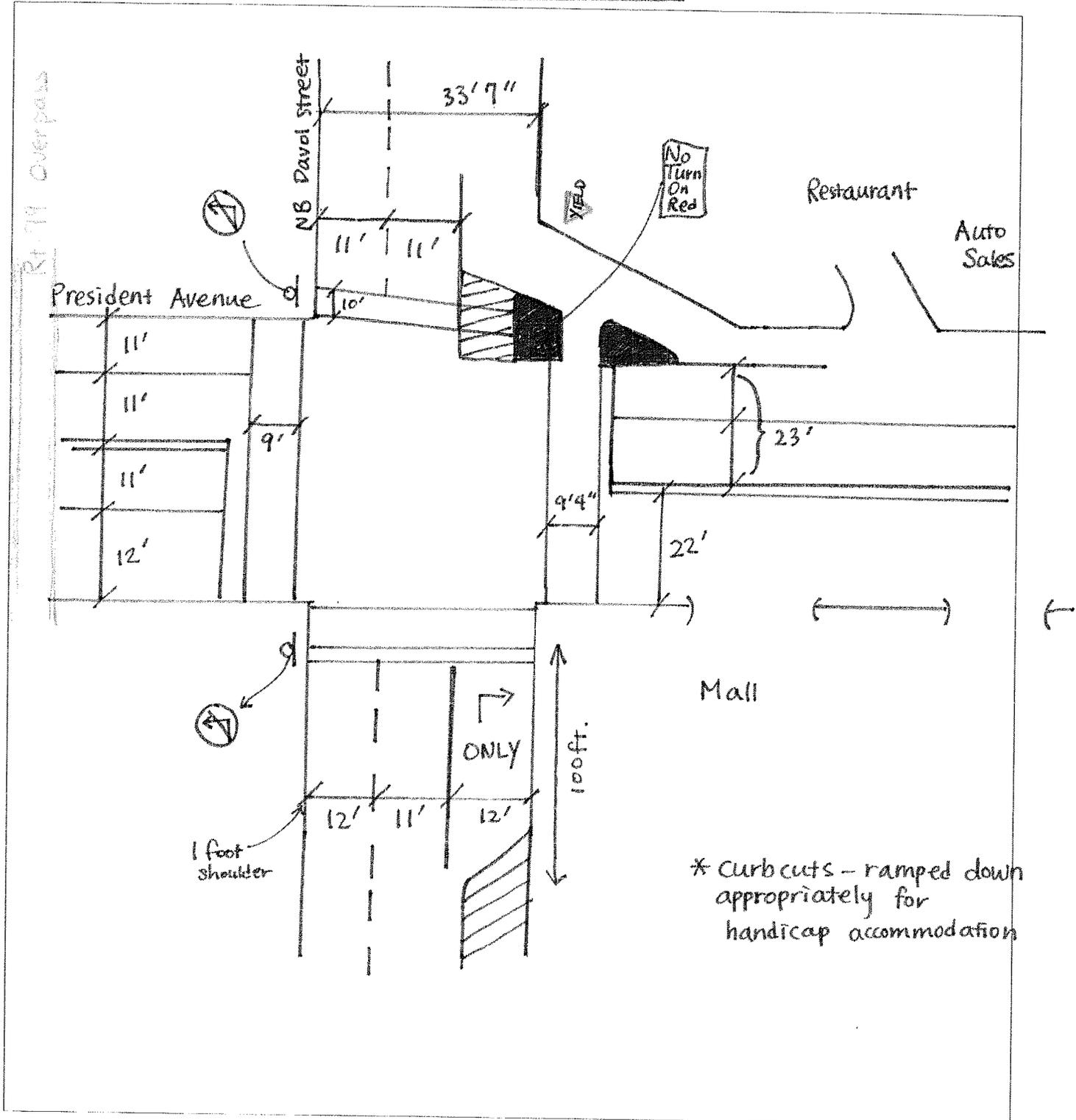


# Computations

Project: Rt. 79  
 Location: Fall River, MA  
 Calculated by: GS  
 Checked by:  
 Title: PI

Project # 10137.00  
 Sheet 5 of 8  
 Date: Tues, May 22, 2007  
 Date:

## Davol Street NB @ President Avenue (East)



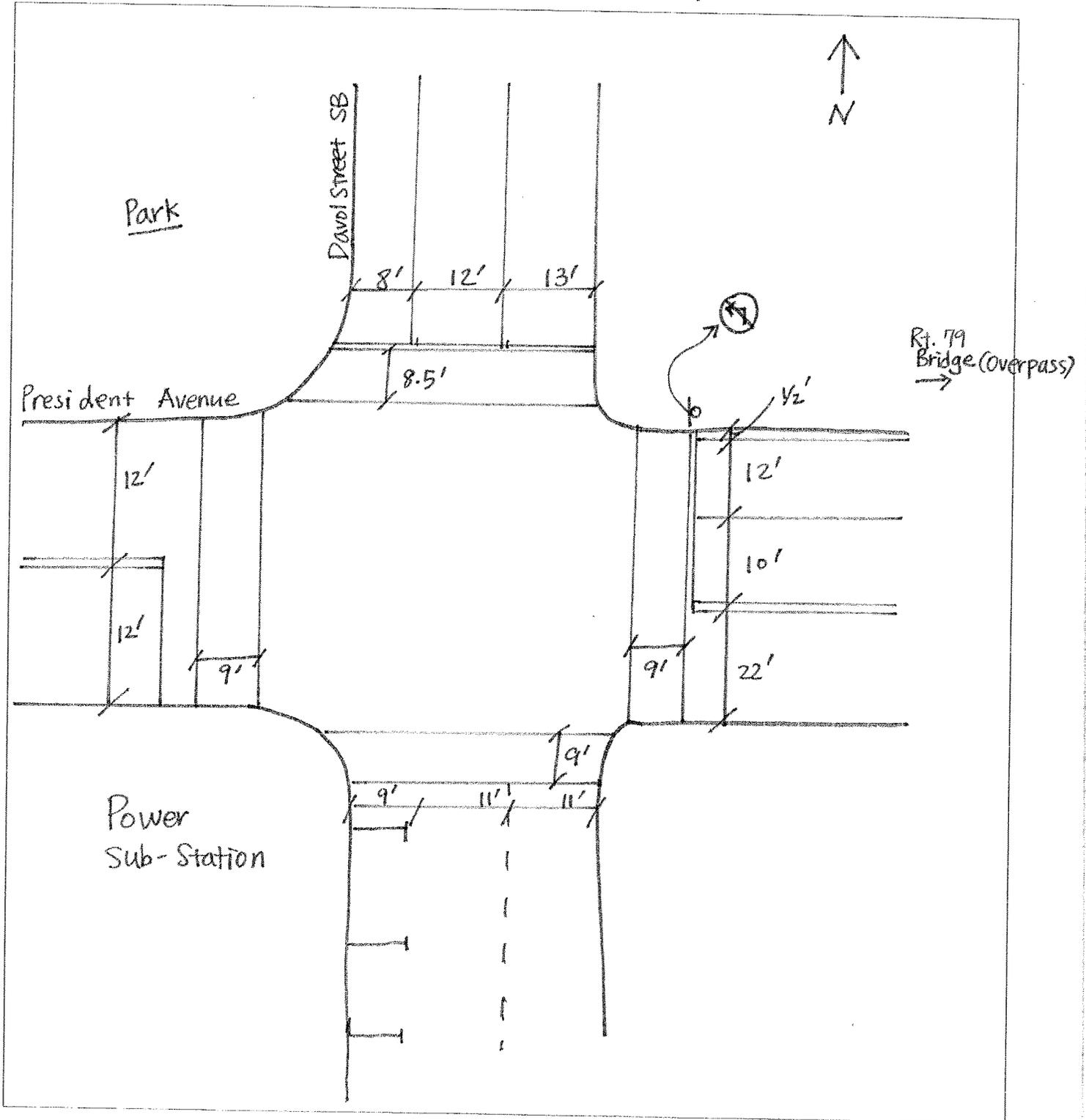


# Computations

Project: Rt. 79  
Location: Fall River, MA  
Calculated by: GS  
Checked by:  
Title: PI

Project # 10137.00  
Sheet 4 of 8  
Date: Tuesday, May 22, 2007  
Date:

## Davol Street SB @ President Avenue (West)



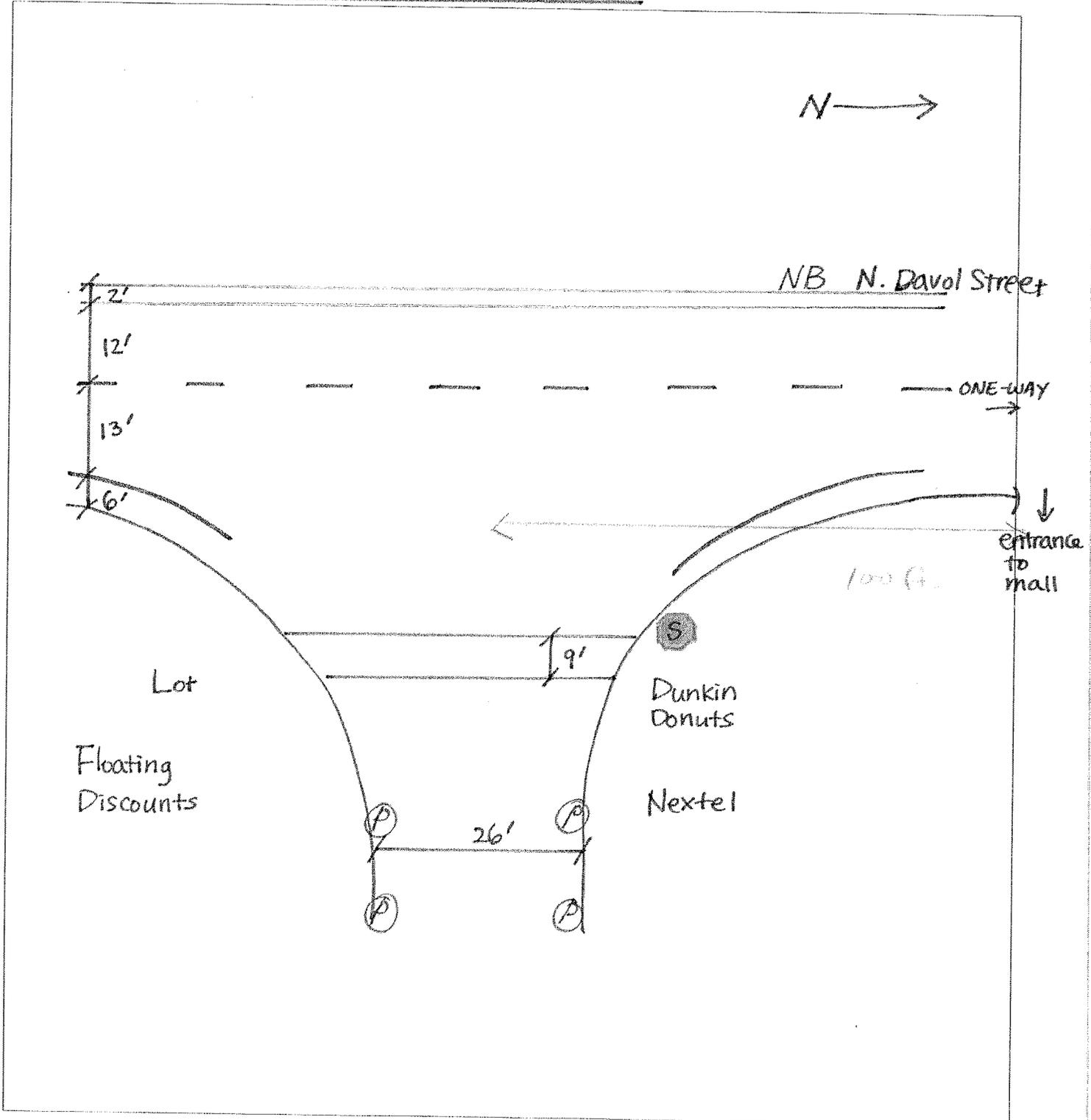


# Computations

Project: Rt. 179  
 Location: Fall River, MA  
 Calculated by: GS  
 Checked by:  
 Title: PI

Project # 10137.00  
 Sheet 6 of 8  
 Date: Tuesday, May 22, 2007  
 Date:

## Pearce Street @ NB. N. Davol Street





# Computations

Project: Rt. 79

Project # 10137.00

Location: Fall River, MA

Sheet 7 of 8

Calculated by: GS

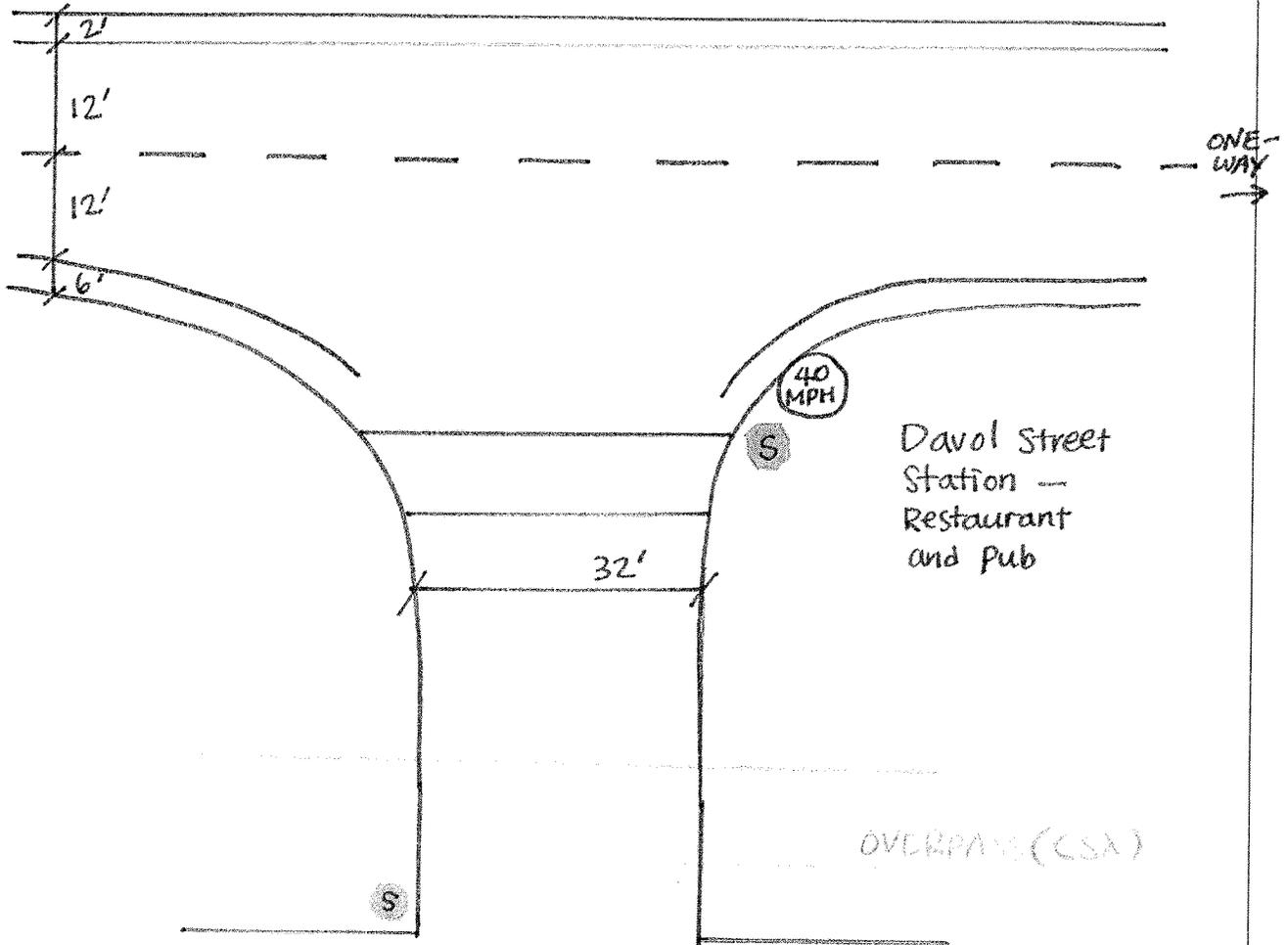
Date: May 22, 2007

Checked by:

Date:

Title PI

## Turner Street @ NB. N. Davol Street



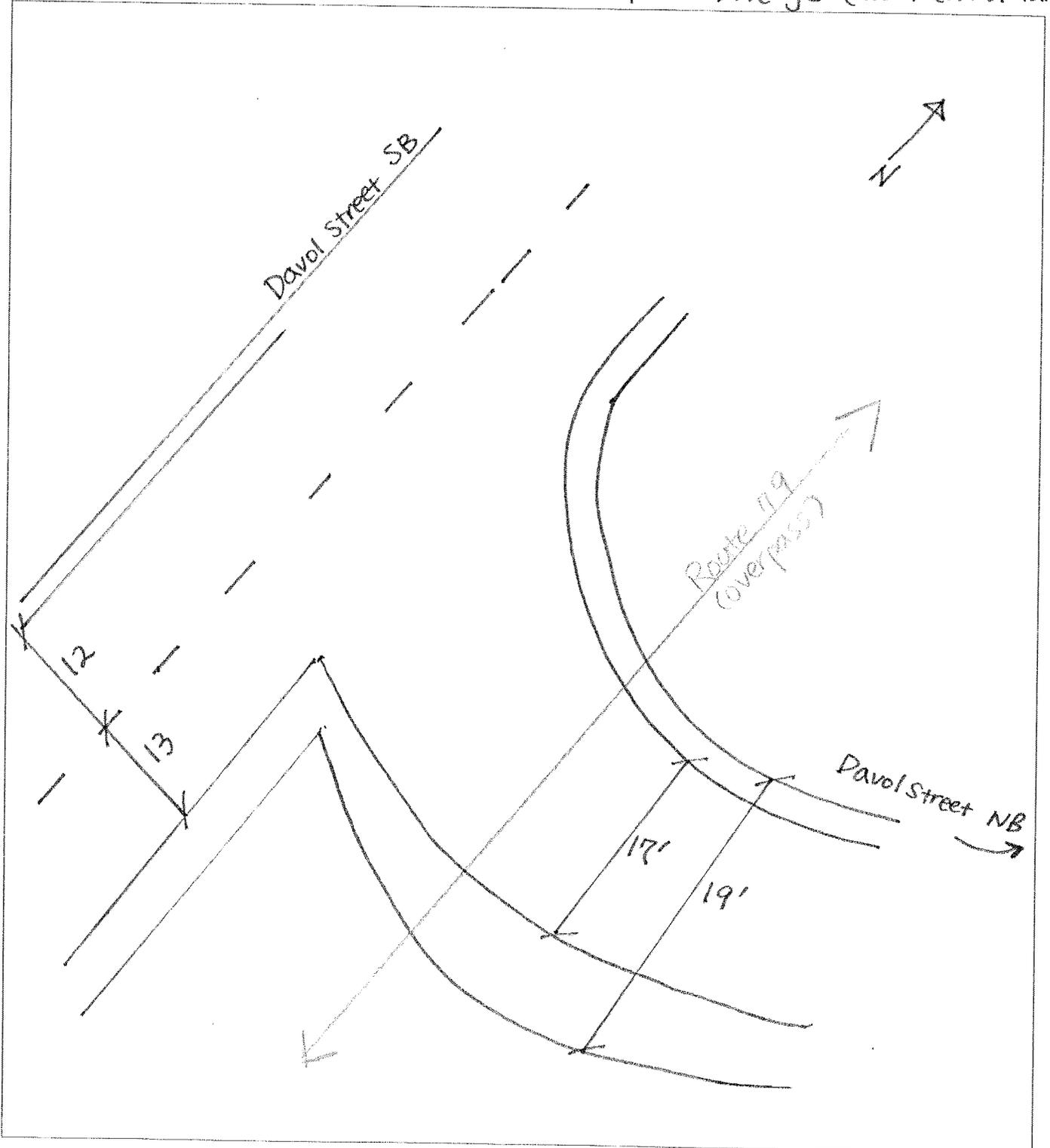


# Computations

Project: Rt. 79  
Location: Fall River, MA  
Calculated by: GS  
Checked by:  
Title: PI

Project # 10137.00  
Sheet 2 of 8  
Date: Tues, May 22, 2007  
Date:

## Davol Street SB U-turn @ Rt. 79 Overpass - Diverge (Northern U-turn)





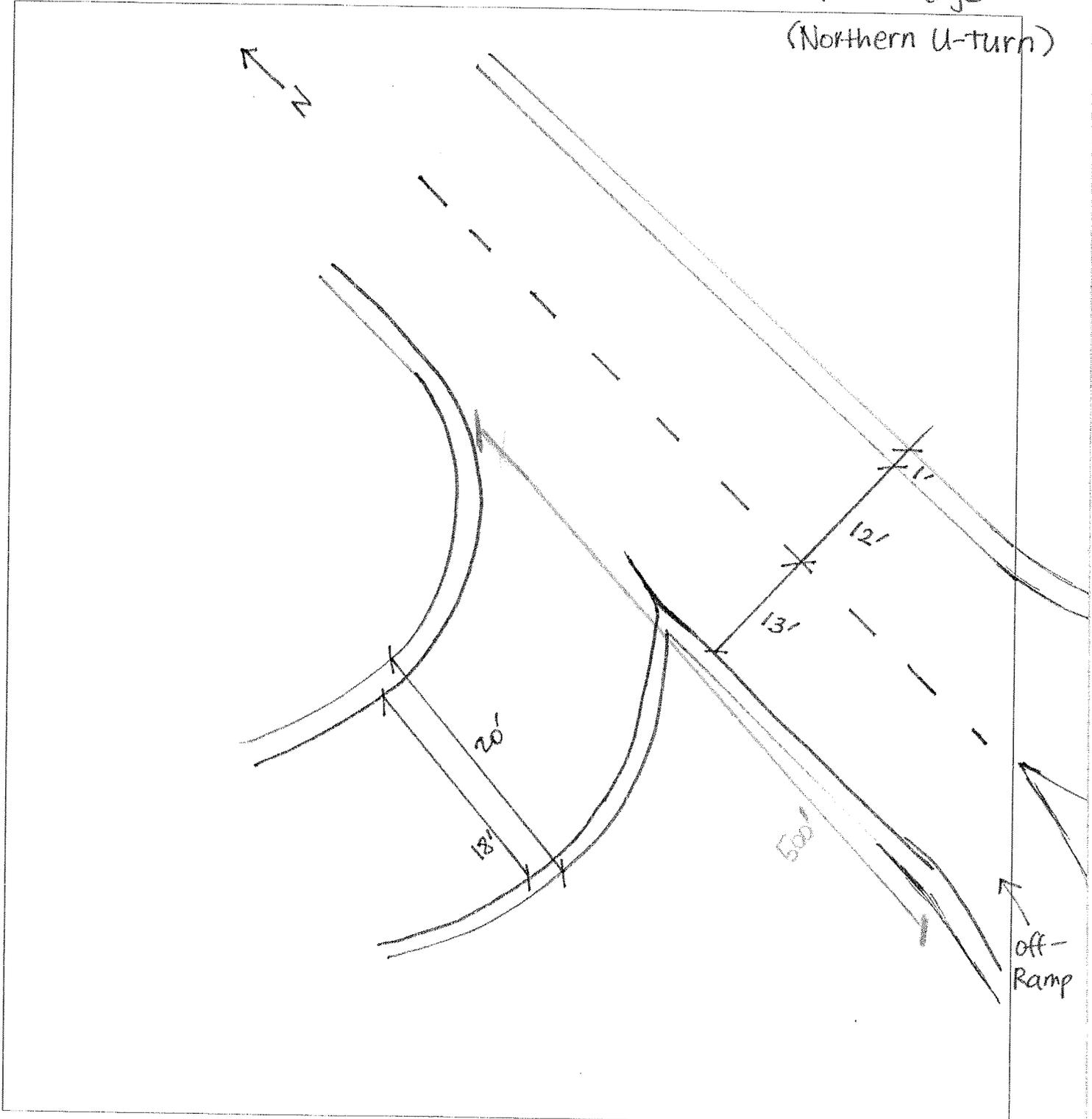
Computations

Project: Rt. 79  
Location: Fall River, MA  
Calculated by: GS  
Checked by:

Project # 10137.00  
Sheet 3 of 8  
Date: Tues, May 22, 2007  
Date:

Davol Street U-turn to NB Davol Street @ Rt. 79 Overpass - Merge  
Title PI

(Northern U-turn)





Project: Rt. 79

Project # 10137.00

Location: Fall River, MA

Sheet 8 of 8

Calculated by: GS

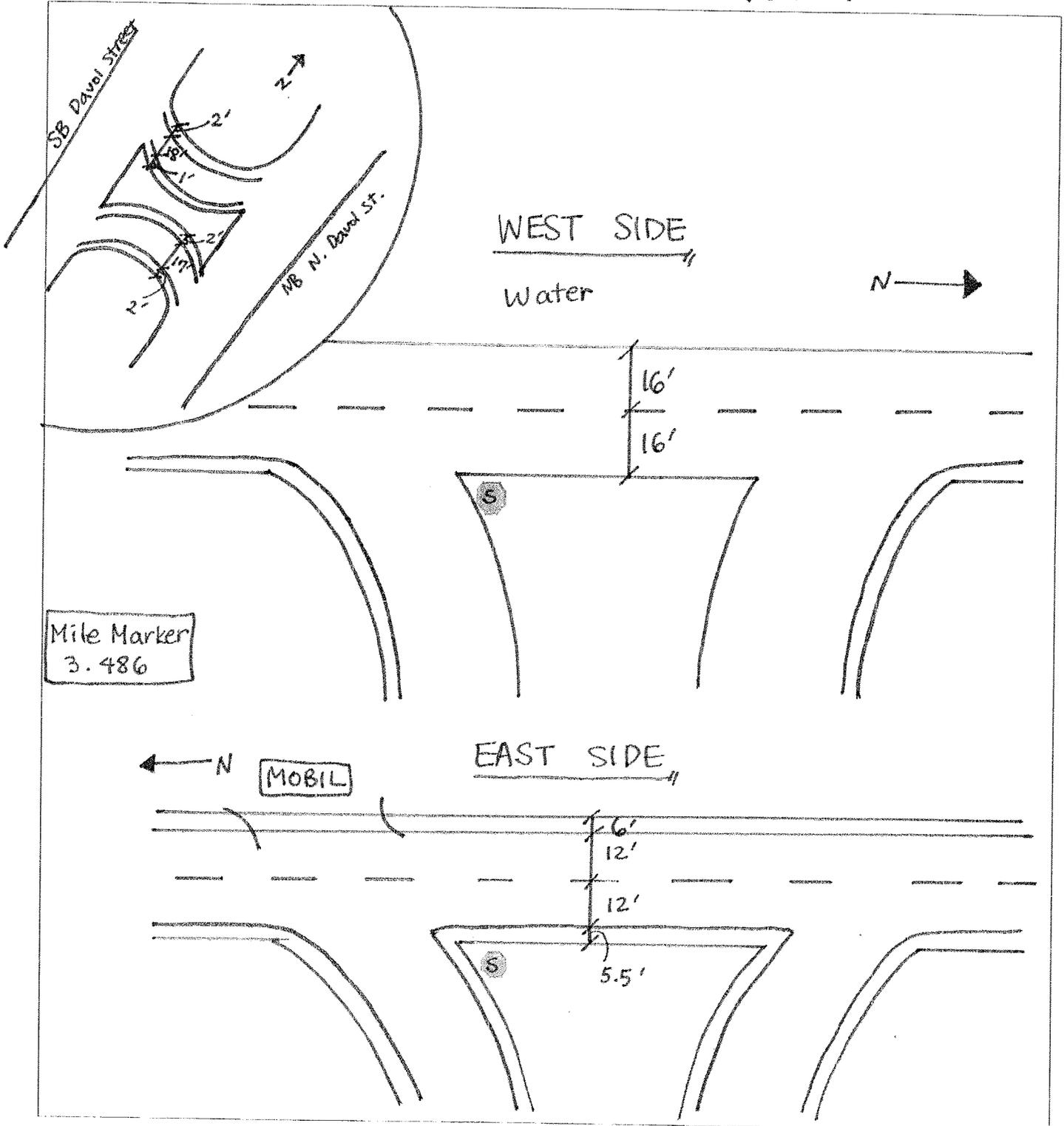
Date: Tuesday, May 22, 2007

Checked by:

Date:

Title: PE

### U-Turns between Davol Street NB + SB (South)



## 1. Intersection Location

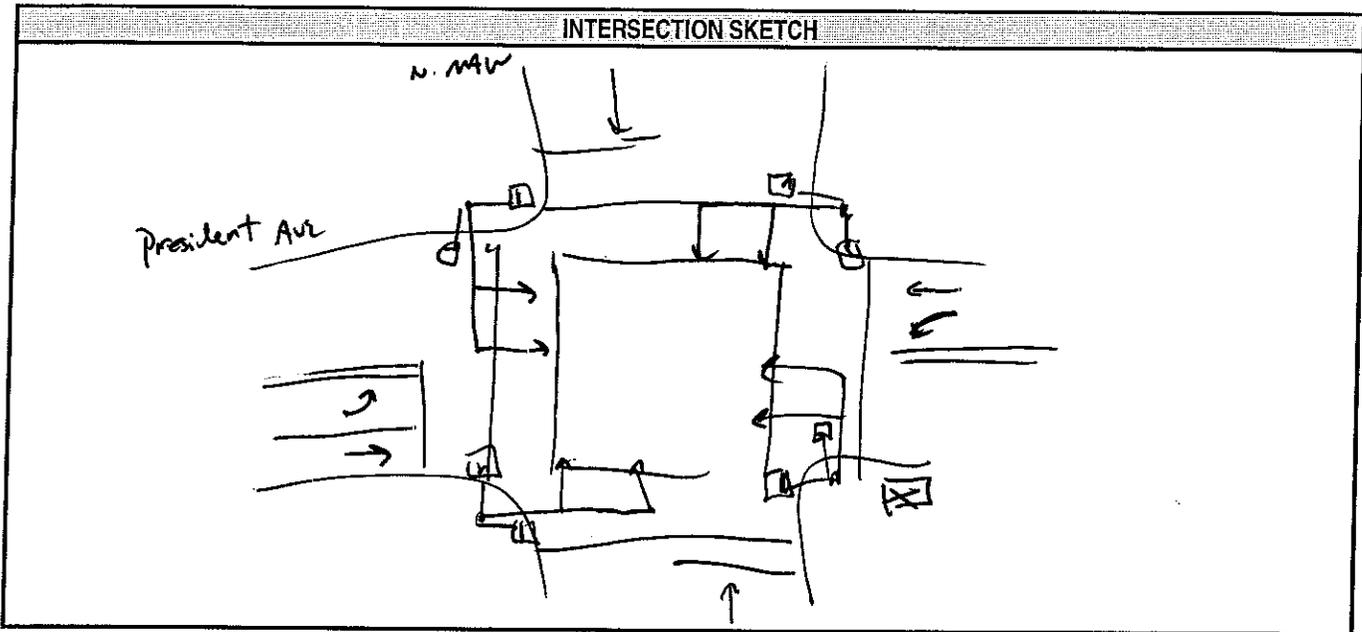
NORTH MAIN ST @ President Ave  
Intersection Name

Fall River, MA  
City or Town

N/A  
RIDOT Traffic Signal #

9/4/07  
Date of Inventory

WMA  
Inventory Conducted By



Showing Cabinet Location, Signal Poles, Signal and Pedestrian Signals

Equipment				
Mast Arms	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Strain Poles	Embedded <input type="checkbox"/>	Bolted <input type="checkbox"/>		NO
Tether Wire	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Overhead Signal Heads	Free Swinging <input checked="" type="checkbox"/>	Rigid <input type="checkbox"/>	N/A <input type="checkbox"/>	
Signal Head Visor Condition	Good <input type="checkbox"/>	Fair <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
R10-12 Signs (prot/perm lefts)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
LED Signal Heads	Some <input type="checkbox"/>	All <input checked="" type="checkbox"/>	None <input type="checkbox"/>	APPEAR TO BE - SOME NOT SUES
Backplates	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Proper Signal Head Placement	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
ADA pedestrian pushbuttons (2")	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>	OLD SMALL PUSH-
Pedestrian Signal Type	LED filled in <input type="checkbox"/>	LED <input type="checkbox"/>	Fiber <input type="checkbox"/>	Incand. <input checked="" type="checkbox"/>
Pedestrian Signal Displays	Overlapping Hand/Man <input type="checkbox"/>	Separate Hand/Man <input type="checkbox"/>	Words <input checked="" type="checkbox"/>	OVERLAPPING
Overall Condition	Good <input type="checkbox"/>	Fair <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	

## 2. Cabinet

Cabinet - External				
Size	"P" <input checked="" type="checkbox"/>	"M" <input type="checkbox"/>	Other <input type="checkbox"/>	If "Other" Size:
Mounting	Ground <input checked="" type="checkbox"/>	Pole <input type="checkbox"/>	Other <input type="checkbox"/>	
Meter Socket	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Concrete Pad	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	BACK OF SIDEWALK
Manual Control	Yes <input type="checkbox"/>	No <input type="checkbox"/>		NOT CHECKED
Overall Cabinet Condition	Good <input type="checkbox"/>	Fair <input checked="" type="checkbox"/>	Poor <input type="checkbox"/>	
Photo of Inside of Cabinet Taken	Yes <input type="checkbox"/>	No <input type="checkbox"/>		

Police Door Switches	NOT CHECKED
Documentation in Cabinet	NONE

## 3. Controller Data

<u>SAGE</u>	<u>SPAC</u>	<u>67900</u>	<u>3.32d (Sept 00)</u>
Manufacturer	Model No.	Serial No.	Software Rev. Level/Date

Controller				
Type	NEMA - keyboard <input checked="" type="checkbox"/>	NEMA - Modular <input type="checkbox"/>	Non-NEMA <input type="checkbox"/>	Electromechanical <input type="checkbox"/>
Platform	TS1 <input checked="" type="checkbox"/>	TS2 Type 1 <input type="checkbox"/>	TS2 Type 2 <input type="checkbox"/>	
Phase Capable Controlling Leg	2 Phase <input type="checkbox"/>	4 Phase <input type="checkbox"/>	8 Phase <input checked="" type="checkbox"/>	
Setting Type	Keyboard <input checked="" type="checkbox"/>	Thumbwheel <input type="checkbox"/>	Dial <input type="checkbox"/>	Pin <input type="checkbox"/>
Controller Condition	Good <input checked="" type="checkbox"/>	Fair <input type="checkbox"/>	Poor <input type="checkbox"/>	

Misc:	
Backpanel Size	12 POS
Conflict Monitor/MMU	Manufacturer: EDI Model/Size: NSM-12
Detector Relays	Manufacturer: SABASA SBT Quantity/Type: 4 - 2 CHANNEL
Detector Relay Channels Faulting (list channel numbers)	150A LABELED "President Ave 242" FAULTING  reset - OK File NOW by UCB

## 4. Signal Timing Sheet

01 <u>President Ave EB/WB</u>	02 <u>Ped (EXCL)</u>	03 <u>N. MAW ST NB/SB</u>
04 _____	05 _____	06 _____
07 _____	08 _____	OLA _____
OLB _____	OLC _____	OLD _____

PHASE	01	02	03	04	05	06	07	08
Minimum Green (initial)	8		8					
Extension (passage) Vehicle Interval	5.0		6.0					
Yellow	3	3	3					
Red Clear	1		1					
Maximum Green I	35		25					
Maximum Green II	45		35					
Pedestrian Walk		10						
Pedestrian Clear		12						
Walk (flash/steady)								
Recall	SOFT							
Memory	LOCK		LOCK					

WRT PL = 2

## Intersection Movements:

01	02	03	04	05	06	07	08

## Coordination Data:

~~X~~ None

Pattern	Days	Time Period	Cycle L.	Offset	SPLIT TIMES								
					01	02	03	04	05	06	07	08	

## 5. Notes

- POOR PAUSE + MARKINGS (EXCEPT SL, CW + ARROWS)

- #1 HAS PROPPING CALLS  
TRAFFIC TOO HEAVY TO VERIFY #3

- INTERVIEW APPENDED TO OPERATE TRAFFIC

NOTE: FULL INSPECTION NOT PERFORMED  
INCLUDING OPERATION OF PED. BUTTONS + COIPS

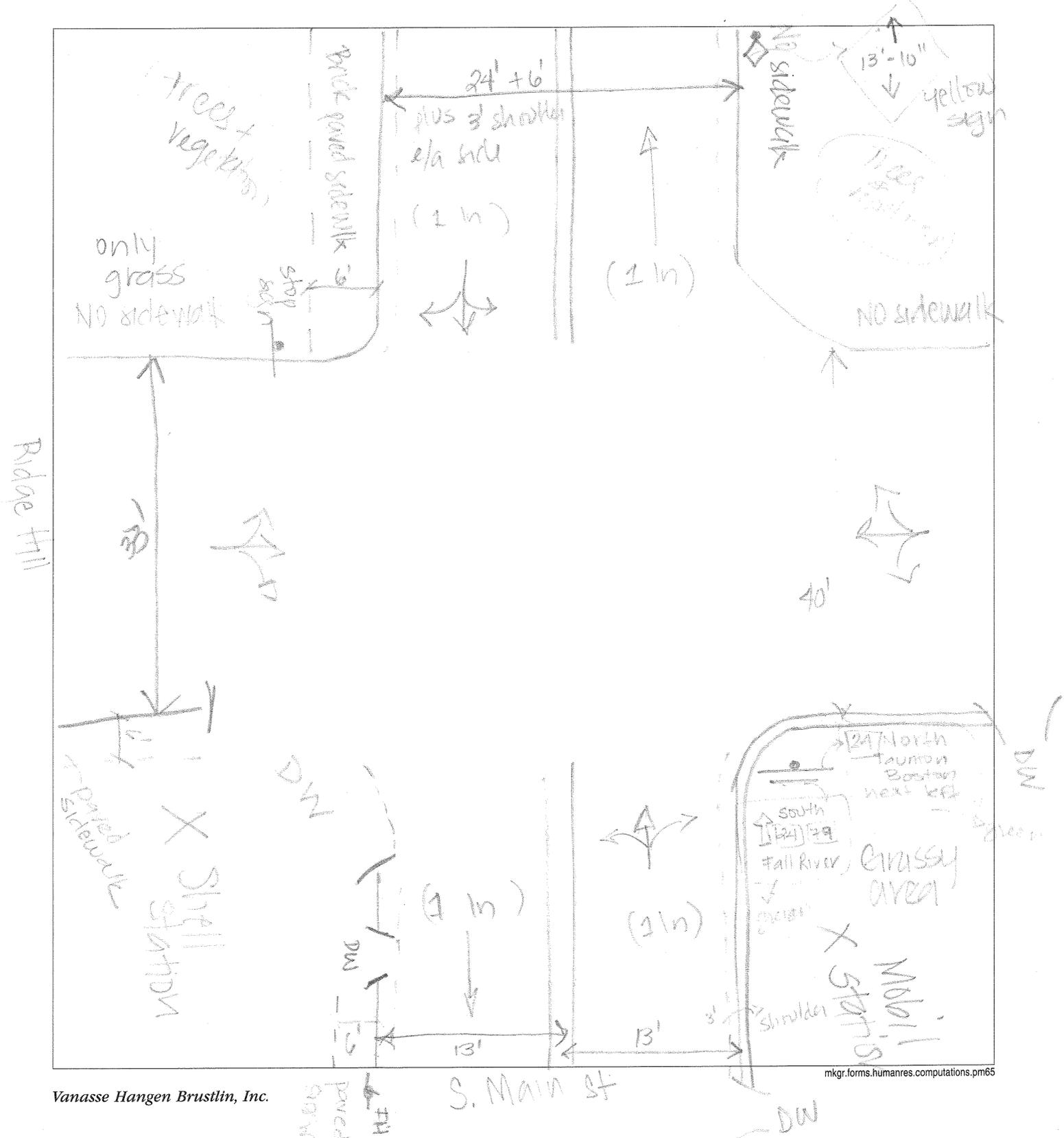
## 6. Recommendations



# Computations

★ 40 MPH ON S. Main St

Project: SCR Project # 10111.31  
 Location: FREETOWN Sheet of  
 Calculated by: NL Date: 9/10/08  
 Checked by: Date:  
 Title S. Main St @ Ridge Hill





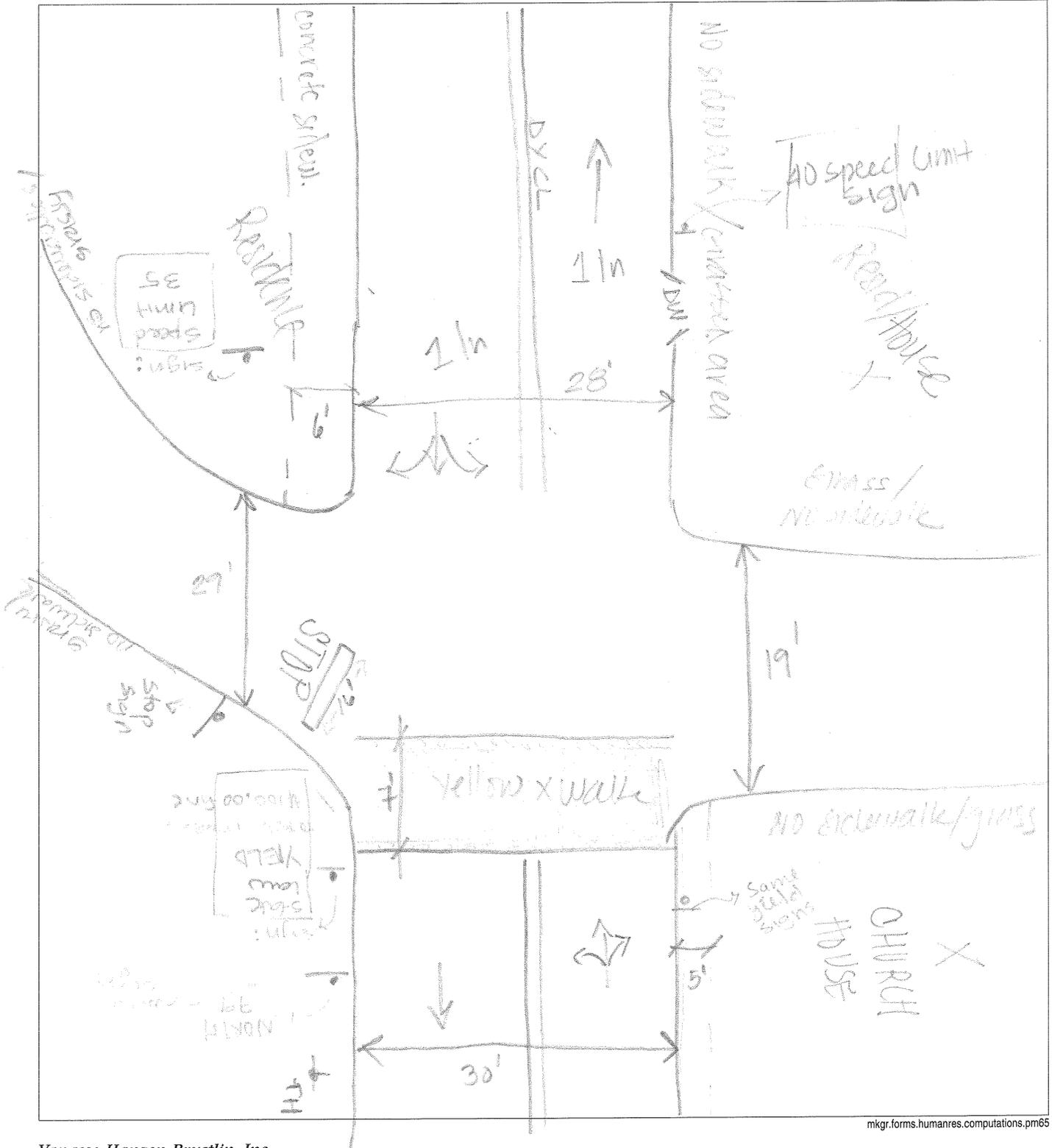
# Computations

pavem = fair/good



Project: SCR  
 Location: TREETOWN  
 Calculated by: NL  
 Checked by:  
 Title: 3. Main St @ High St.

Project # 10111.31  
 Sheet 1 of 1  
 Date: 9/10/08

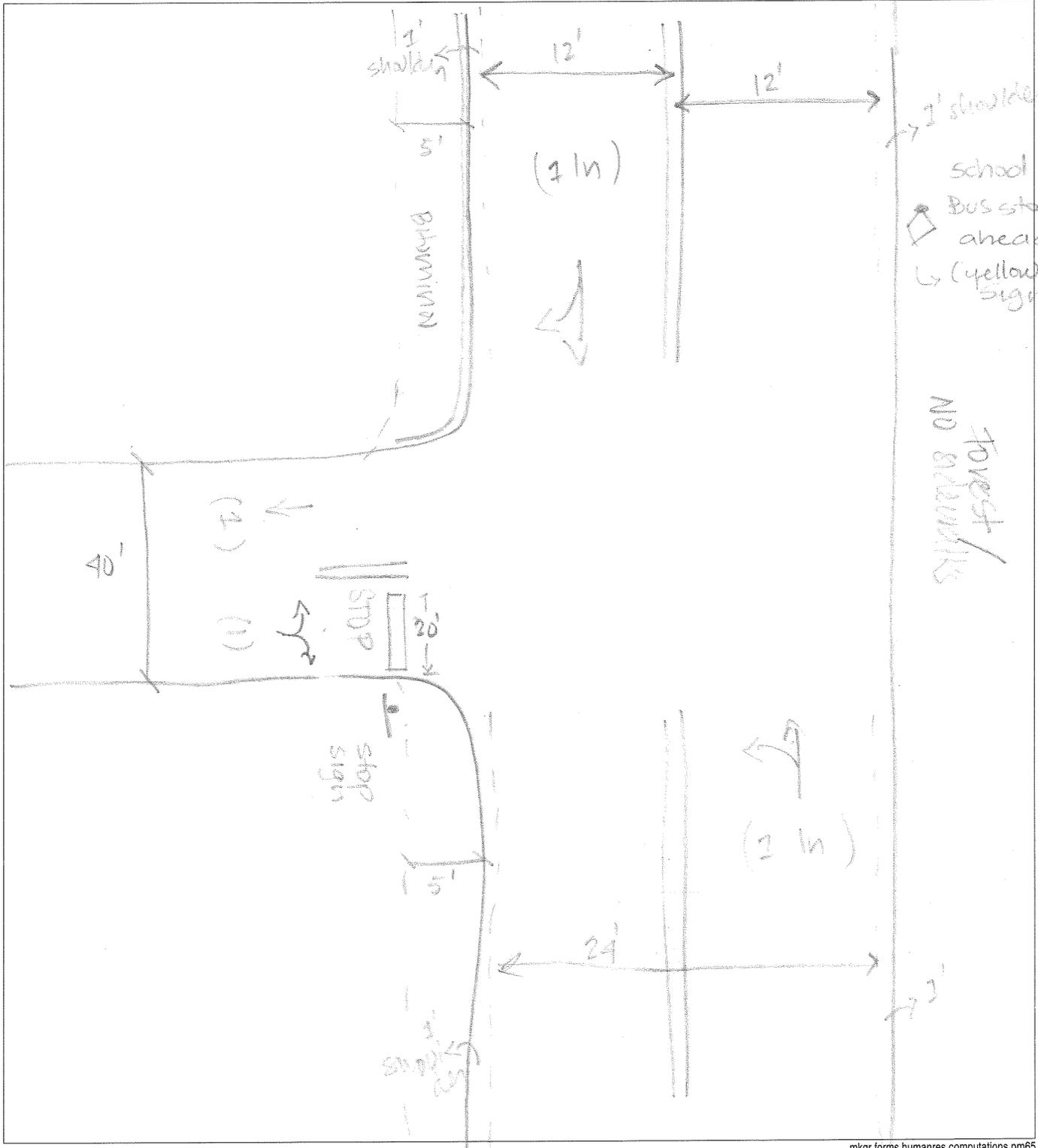




Computations

Project: SCR  
Location: FREETOWN  
Calculated by: NL  
Checked by:  
Title: S. Main St @ Copicut Pk / Rte 79

Project # 10111.31  
Sheet 1 of  
Date: 9/10/08  
Date:  
Date:

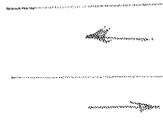


FREETOWN  
PROJECT 4474.10

RTE 79

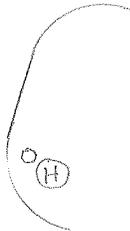
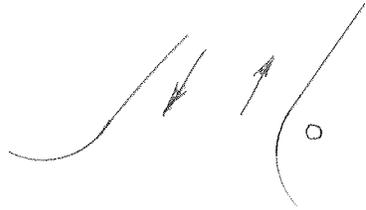


NARROW'S  
RD.

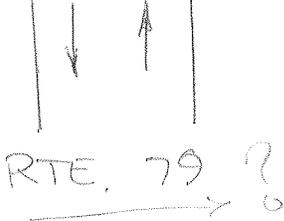


STOP

WOODS



RESIDENTIAL



(shouldn't it be  
S Main St.?)

RTE. 79



SOUTH  
← 24-79 →

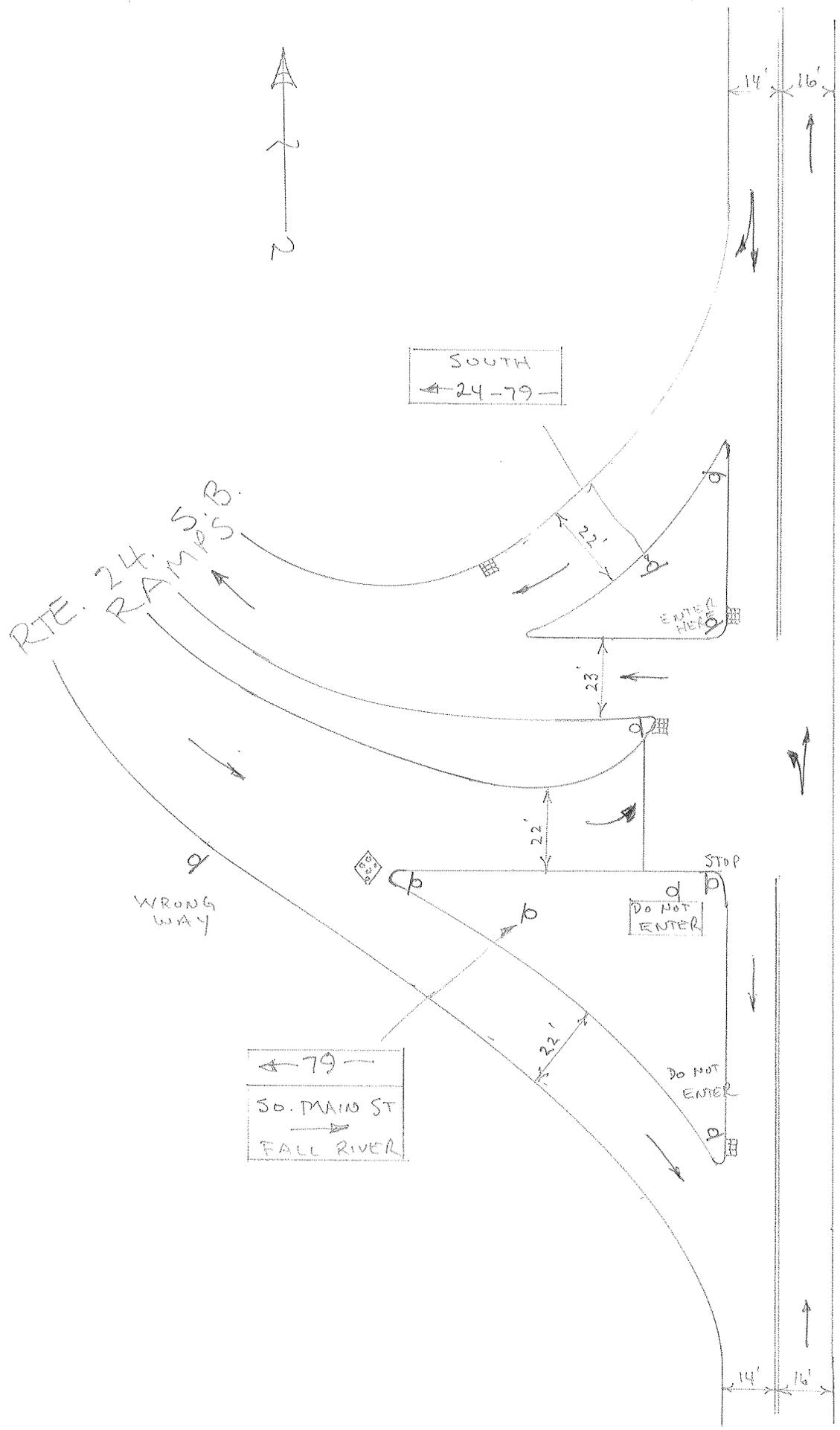
RTE. 24  
RAMPS  
S.B.

14'-2"

WRONG WAY

← 79 →  
So. MAIN ST  
→  
FALL RIVER

RTE. 79



FREETOWN PROJECT. 4474.10

RTE. 79

NORTH 79

TRUCKS ENTERING RIGHT



79  
ASSONET  
MIDDLEBORO  
SO. MAIN ST.  
FALL RIVER

DO NOT ENTER

DO NOT ENTER

15' 16'

22'



23'

STOP

WRONG WAY

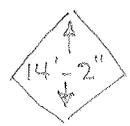
22'

ENTER HERE

ENTER HERE

22'

NORTH  
24



14' 16'

RTE. 79

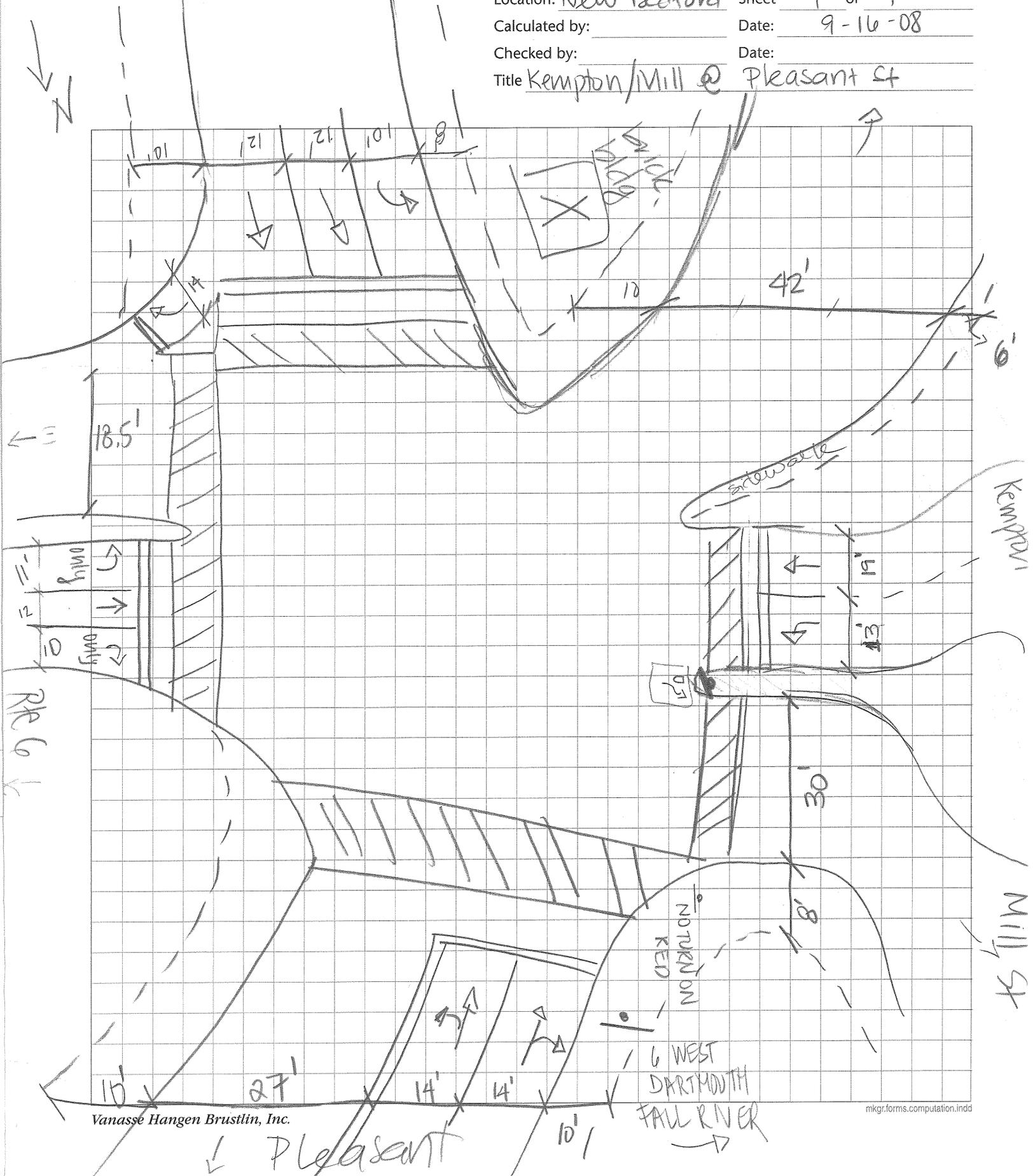
RTE. 24  
RAMPS N.B.



# Computations Pleasant

\*signalized

Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of 1  
 Calculated by: \_\_\_\_\_ Date: 9-16-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title Kempton/Mill @ Pleasant St

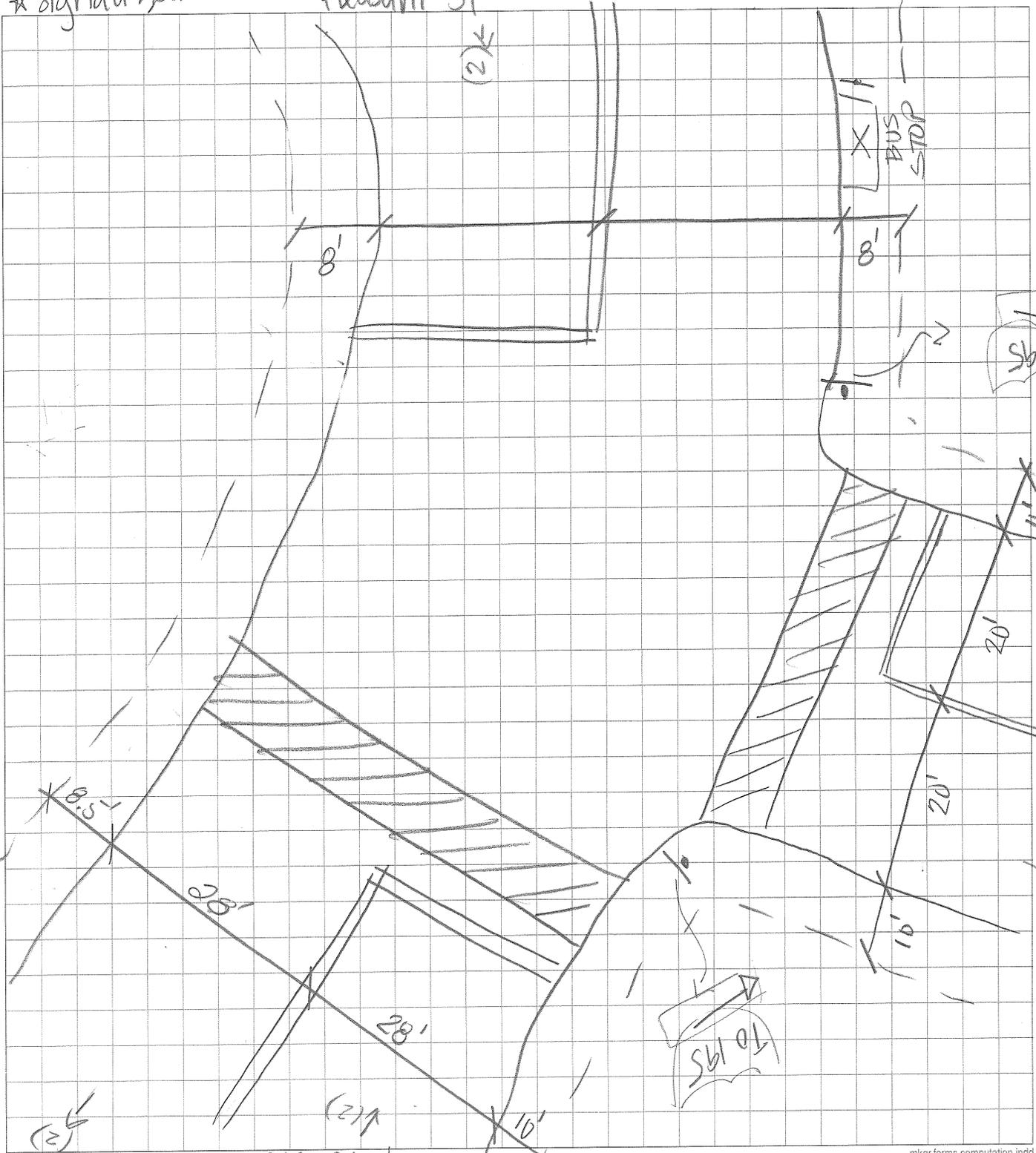




Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of 1  
 Calculated by: NL Date: 9-16-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: Hillman St @ Pleasant St/Purchase

\* signalized

Pleasant St



To 195

To 195

Hillman St

(2)

(2)

(1/2)

Purchase St



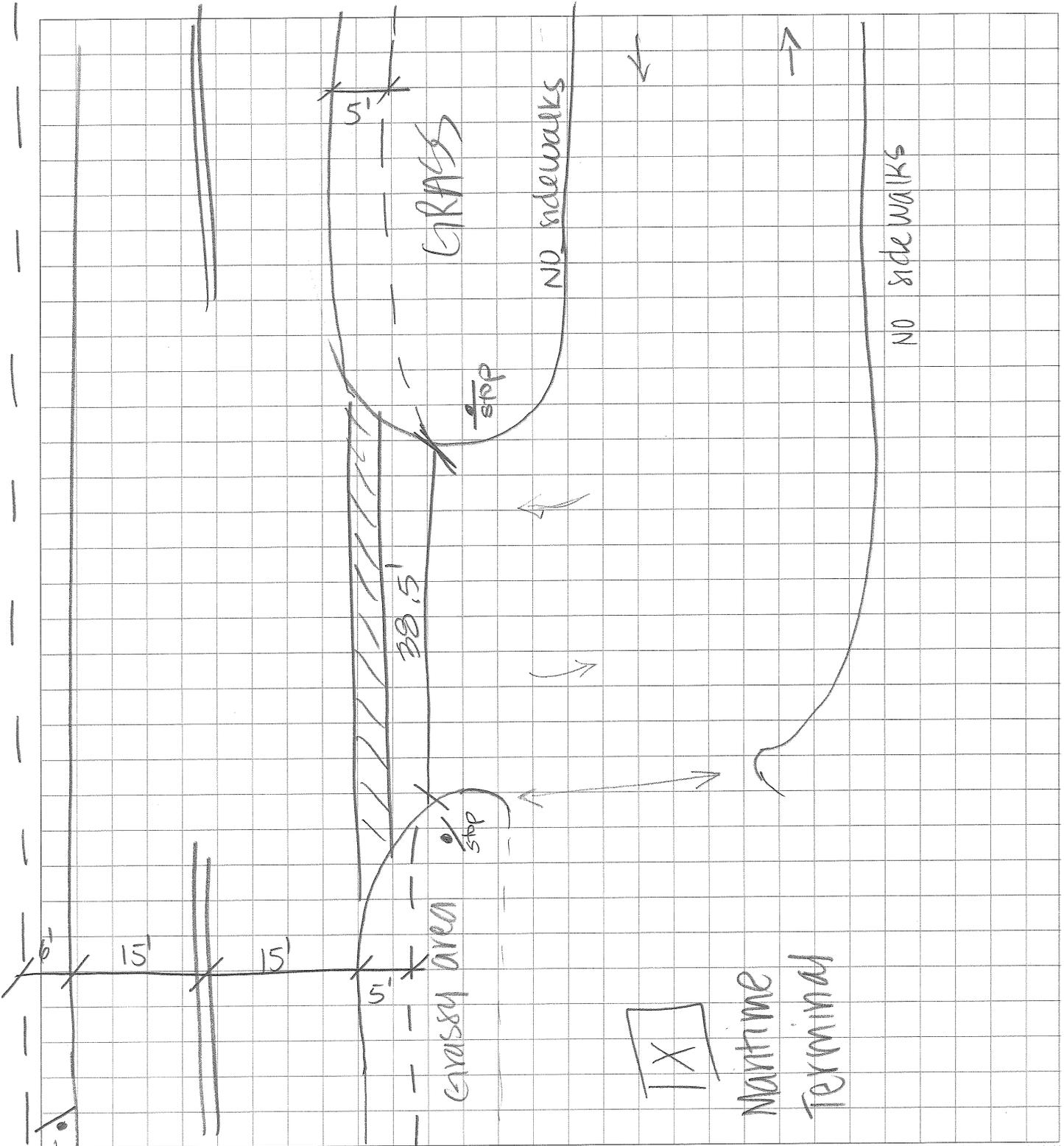


# Computations

\* NO MARKINGS

\* unSig

Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of 1  
 Calculated by: NL Date: 9-16-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title McArthur Dr @ Haman Melville Blvd







Project: SCR Project # 10111,31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

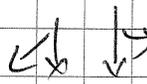
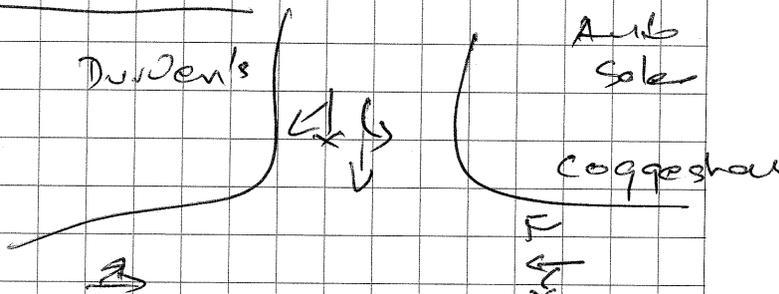
Calculated by: RNR Date: 9/16/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

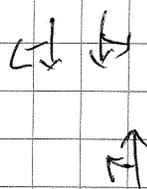
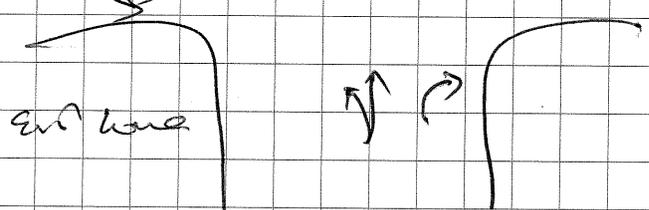
#5 Title Signal Timing & Phasing

Belleville @ Coggeshall st

$\phi 1$   
 $G = 9 \ 15$   
 $Y = 4 \ 4$   
 $R =$

$\phi 2$   
 $G = 12 \ 12 \ 14$   
 $Y = 4 \ 4 \ 4$   
 $R = 1 \ 1 \ 1$

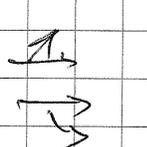



$\phi 3$   
 $W = 7$   
 $EDW = 17$

PEO

Auto Sales  
 owned curious  
 about when  
 the road will  
 come to new  
 Bedford  
 Do you think  
 it is worth  
 to come to new  
 Bedford - there are

$\phi 4$   
 $G = 21 \ 27$   
 $Y = 4 \ 4$   
 $R = 1 \ 1$





Project: SCR Project # 10M-31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

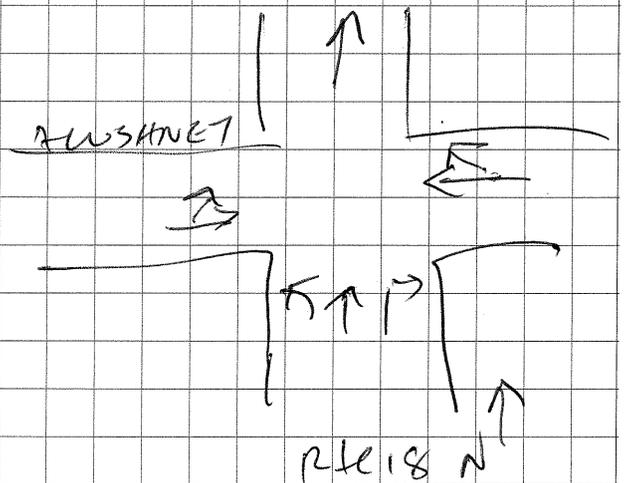
Calculated by: RNR Date: 9/16/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#2 Title Signal Timing & Phasing

Coggeshall  
~~Acushnet Ave~~ @ Rte 18 North

$\phi_1$  Rte 18 N  
 $\phi_2$  ACUSHNET AVE



$\phi_1$   
G = 33 33 33  
Y = 4 4 4  
R = 1 1 1

$\phi_2$   
G = 32 32 32  
Y = 7 7 4  
R = 1 1 1



Project: SCR Project # 10111.31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RWR Date: 9/16/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#3 Title Signal Timing & Phasing

(SD)  
Ashley Blvd @ Coggeshall

$\phi_1$  Ashley  
 $\phi_2$  Coggeshall

$\phi_1$		G = 29	29	29
<del>Y</del>	$\leftarrow$	Y = 43	43	31
<del>R</del>	$\leftarrow$	R = 1	1	



$\phi_2$		G = 25	25	25
<del>Y</del>	$\leftarrow$	Y = 43	43	43
<del>R</del>	$\leftarrow$	R = 1	1	1





# Computations

Project: SCR  
 Location: New Bedford  
 Calculated by: NL  
 Checked by:  
 Title: Coggeshall @ Rte 18 / Ashley Blvd (SB)

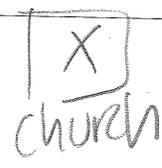
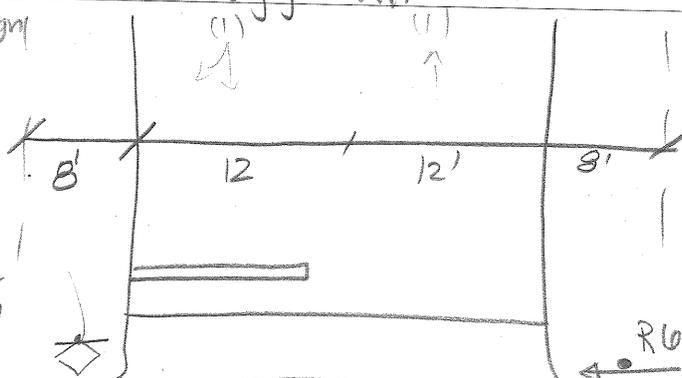
Project # 10111.31  
 Sheet 1 of 1  
 Date: 9/16/08  
 Date:

→ N

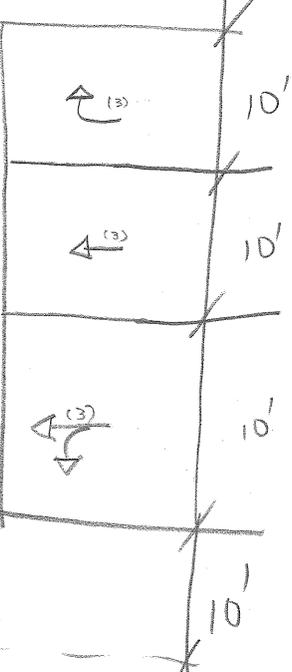
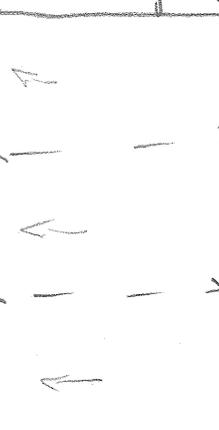
\*signalized

Coggeshall

yellow warn. sign  
Bridge ahead  
12' 2"



Ashley Blvd / Rte 18



one-way

NO sidewalk  
Grassy/barrier  
Coggeshall &  
Fairhaven  
Aushnet



18 South  
Downtown

Memorial Community Ctr





# Computations

Signalized  
↑ N

Project: SCR Project # 10111.00

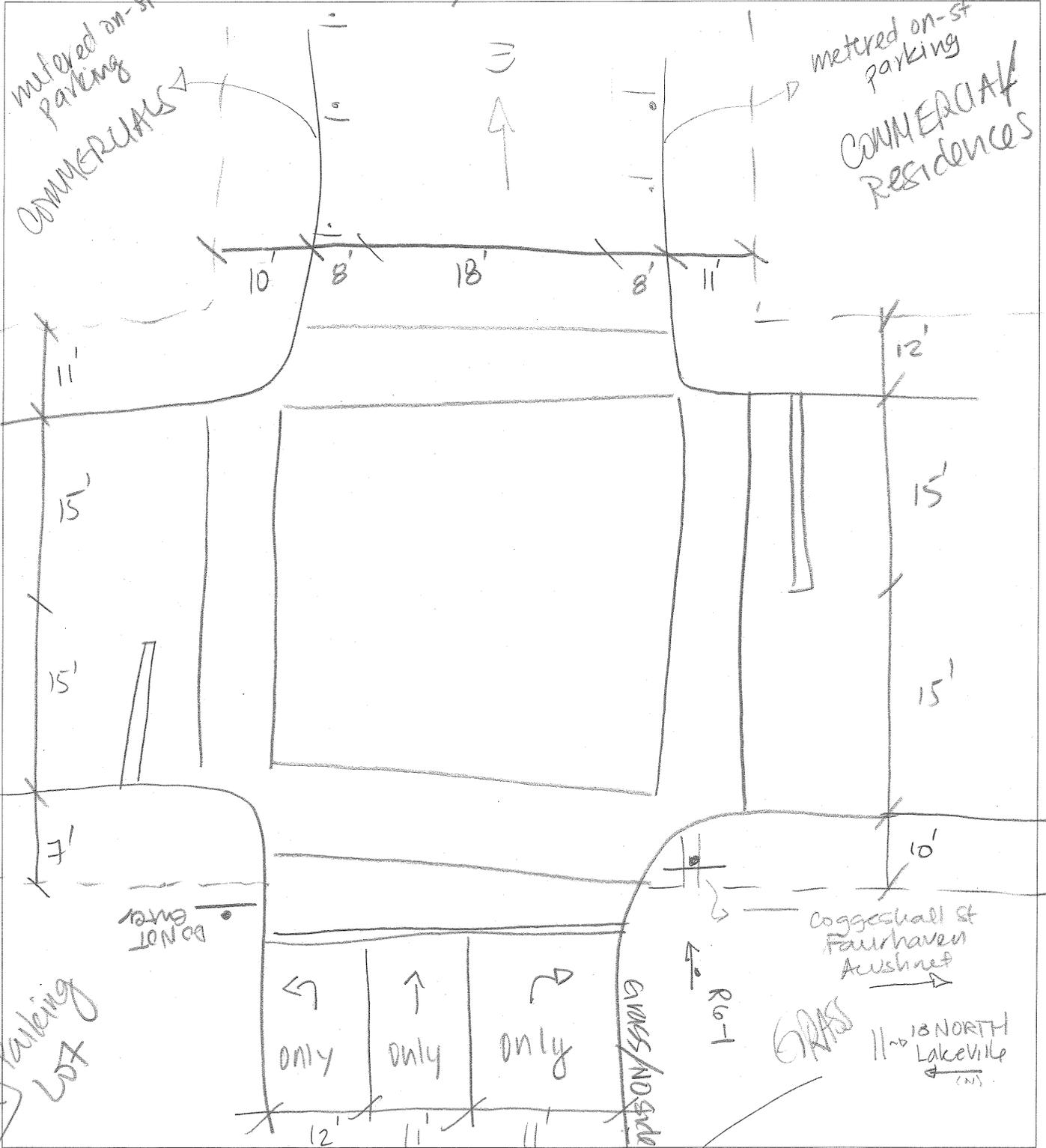
Location: New Bedford Sheet of

Calculated by: NL Date: 9/16/08

Checked by: Date:

Title: Acushnet Ave/18 NB @ Coggeshall St

Acushnet / RR 18 North



Coggeshall St

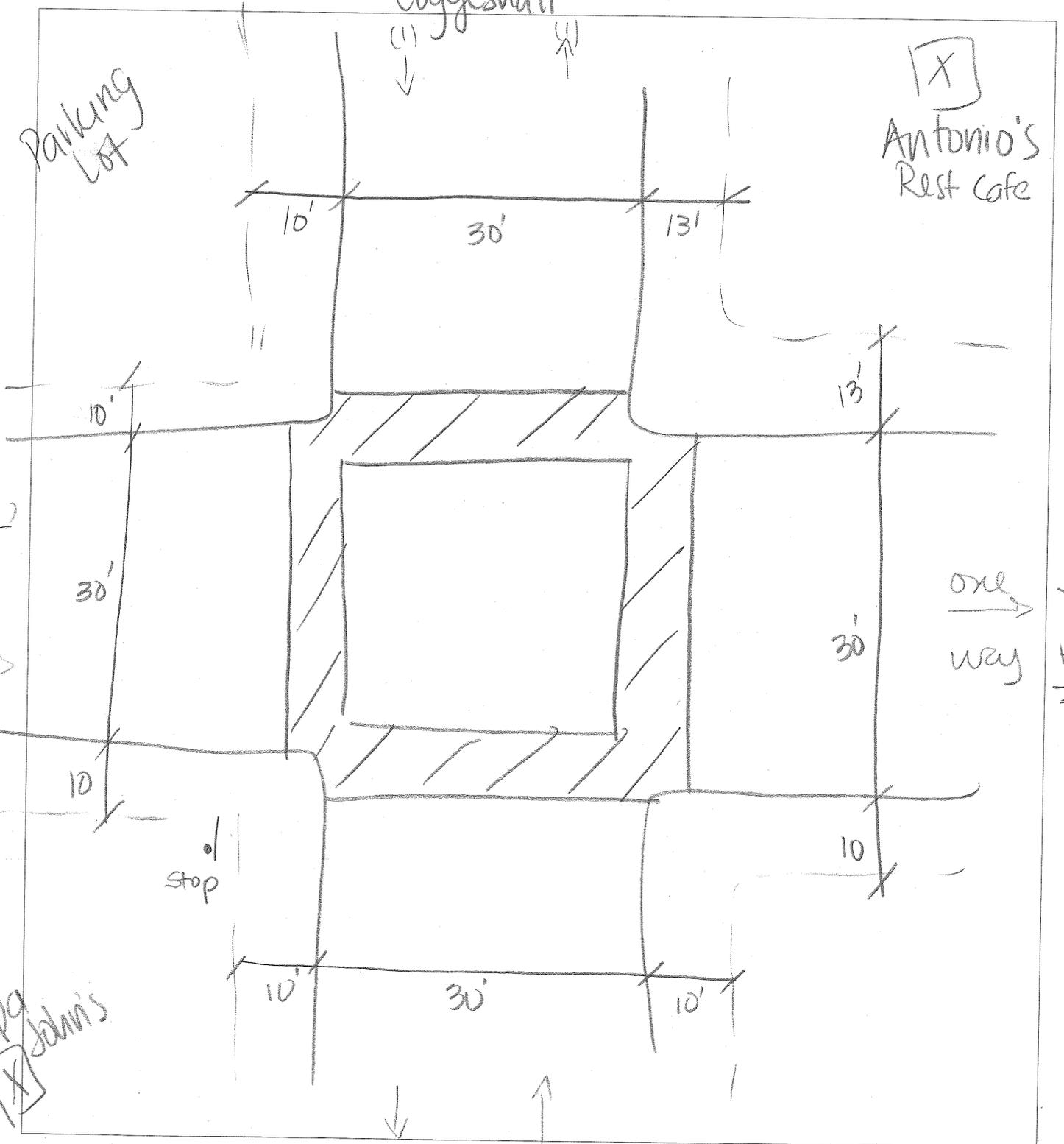


# Computations



Project: SCR  
 Location: New Bedford  
 Calculated by: NL  
 Checked by:  
 Title: North Front St @ Coggeshall St

Project # 10111.00  
 Sheet 1 of 1  
 Date: 9/10/08  
 Date:





# Computations

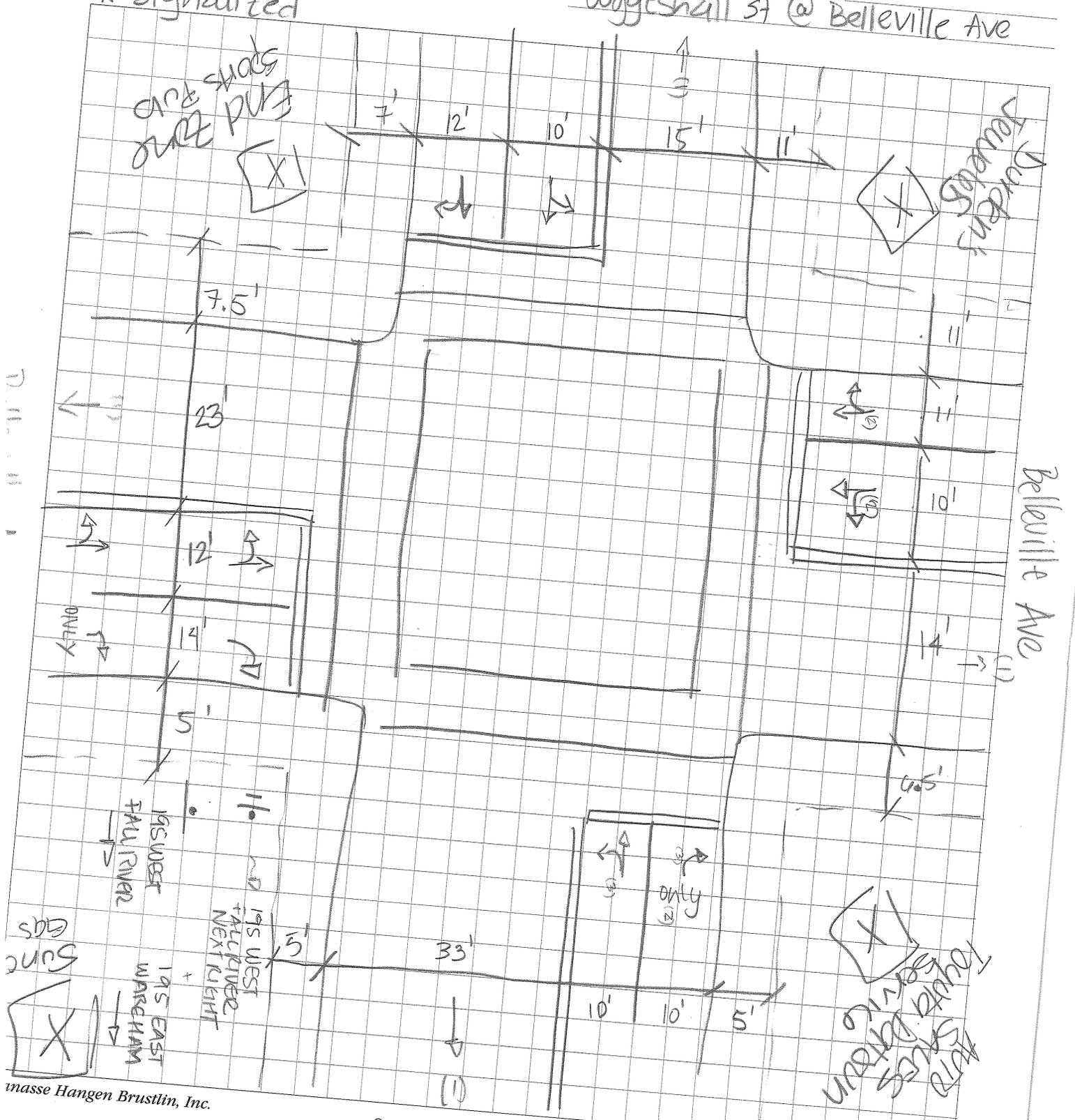
→ N

46  
- 32  
14

37  
- 22  
15

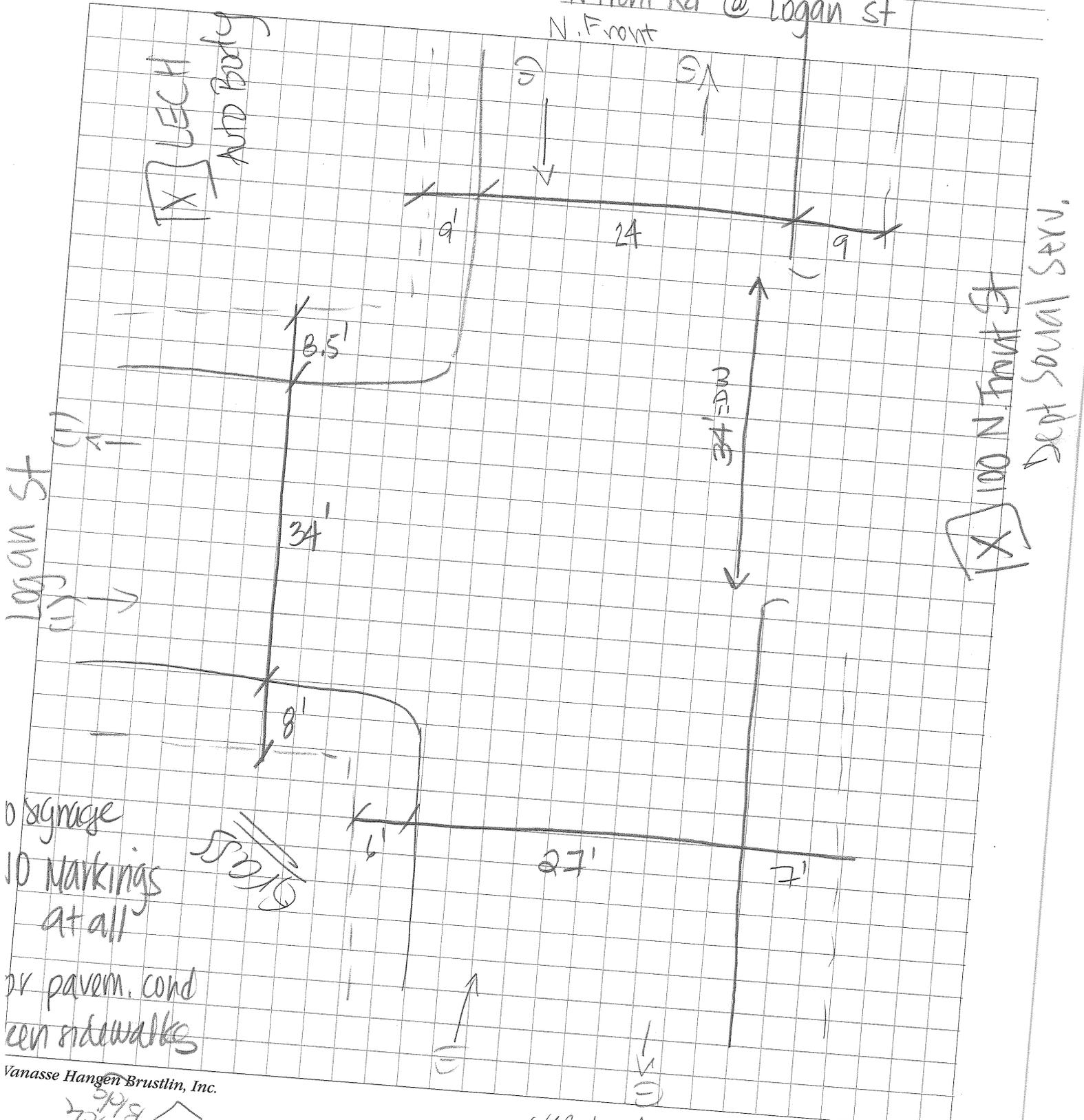
Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of 1  
 Calculated by: NL Date: 9/16/08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: Coggeshall St @ Belleville Ave

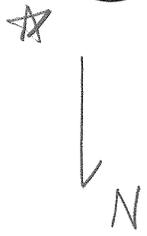
\* signalized



★ UNSIG. ↑ N

Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of 1  
 Calculated by: NL Date: 9/16/08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: N Front Rd @ Logan St

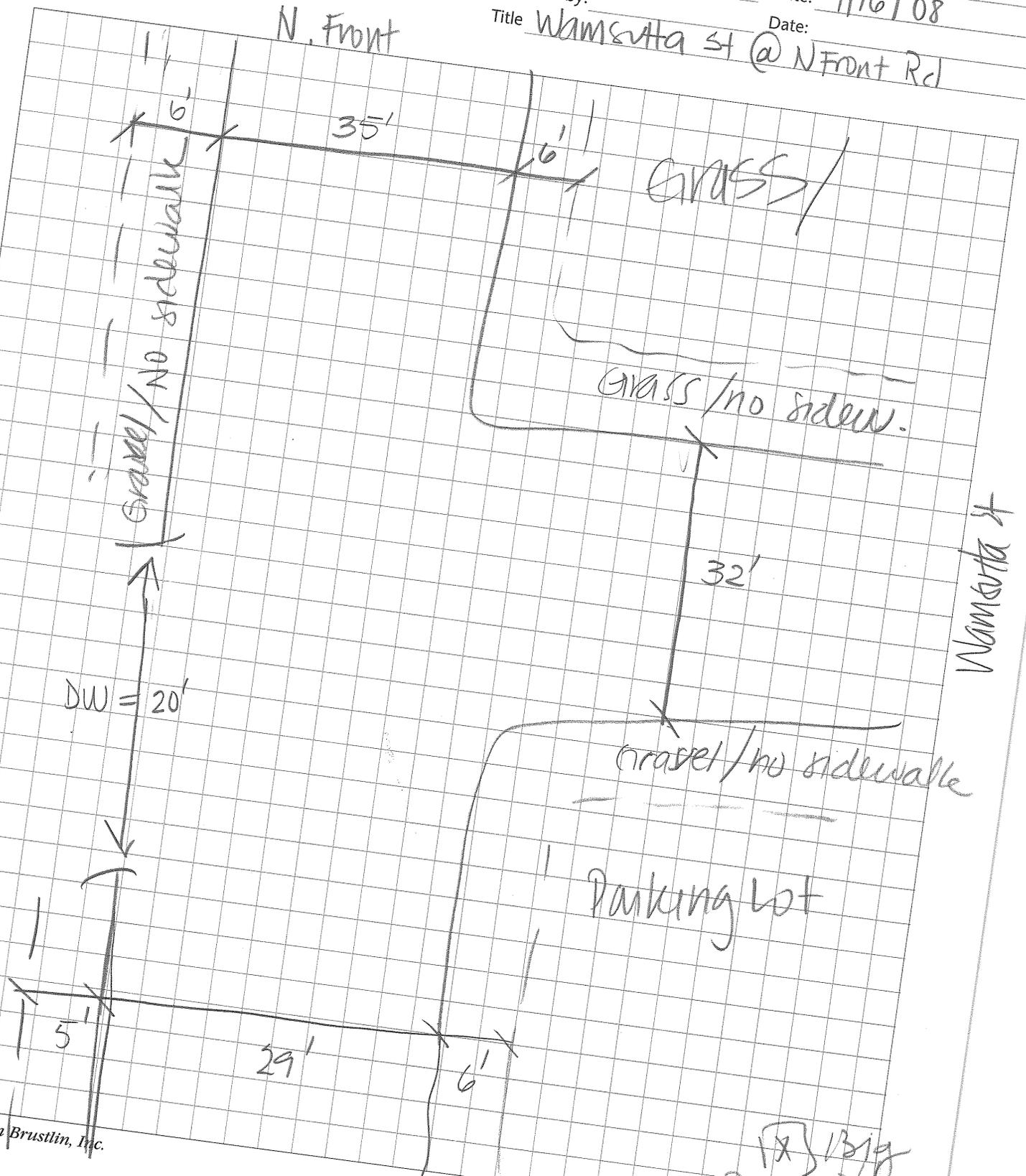




Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of 1  
 Calculated by: NL Date: 9/16/08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: Wamsutta St @ N Front Rd

5007

10 XI



18/13/18



# Computations

\* Bridge (RR) over intersection  
 \* its foundations lie on sidewalks @ mt.

\* markings faded

Project: SCR Project # 10111.00

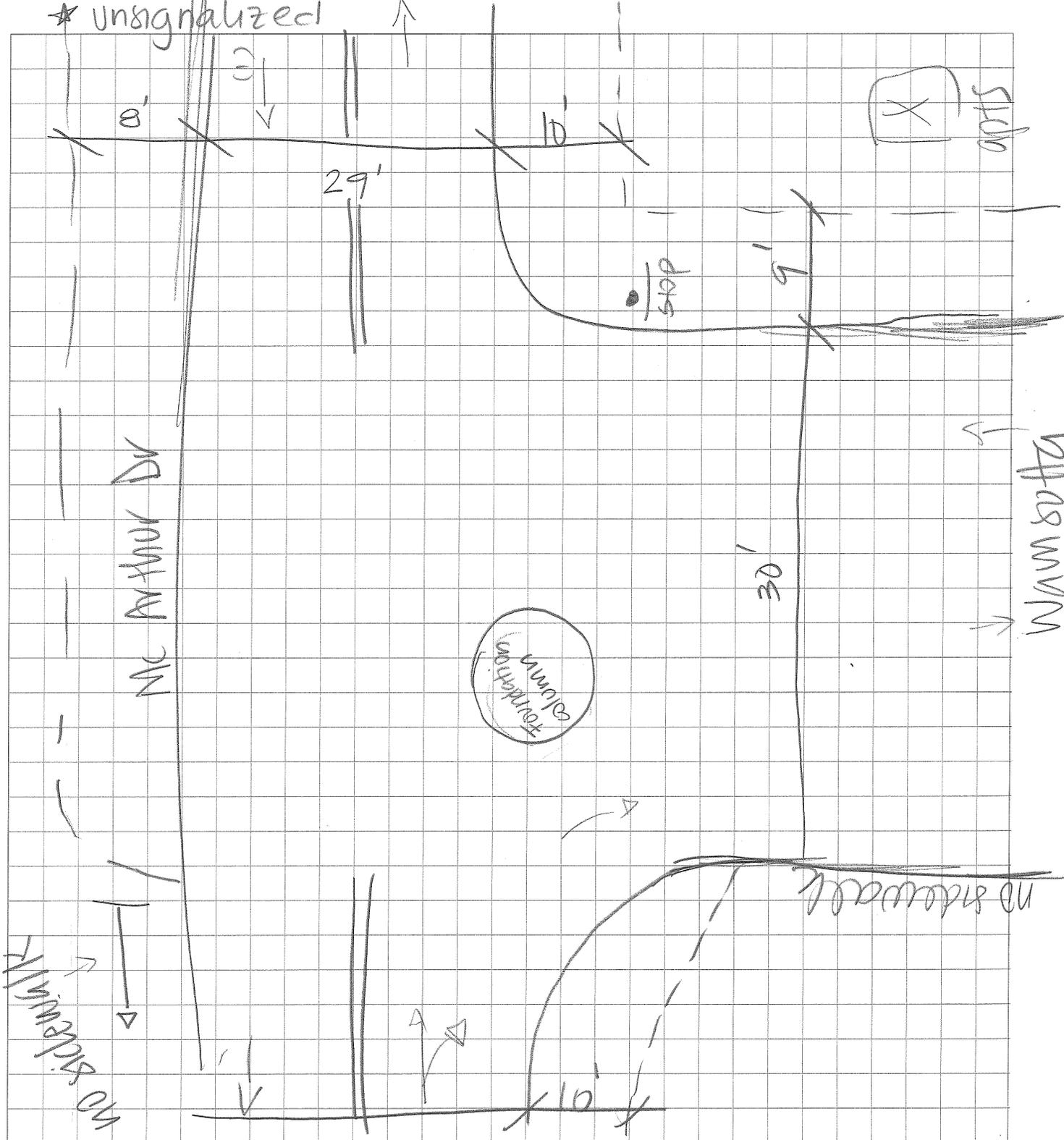
Location: New Bedford Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: \_\_\_\_\_ Date: 9/16/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

Title McArthur Drive @ Wamsutter St

\* unsignalized



\* Bridge clearance =



# Computations

- \* unsig
- \* markings faded
- \* Rte 1B goes over Logan (west side)



Project: SCR Project # 10111.00

Location: New Bedford Sheet          of         

Calculated by:          Date: 9-16-08

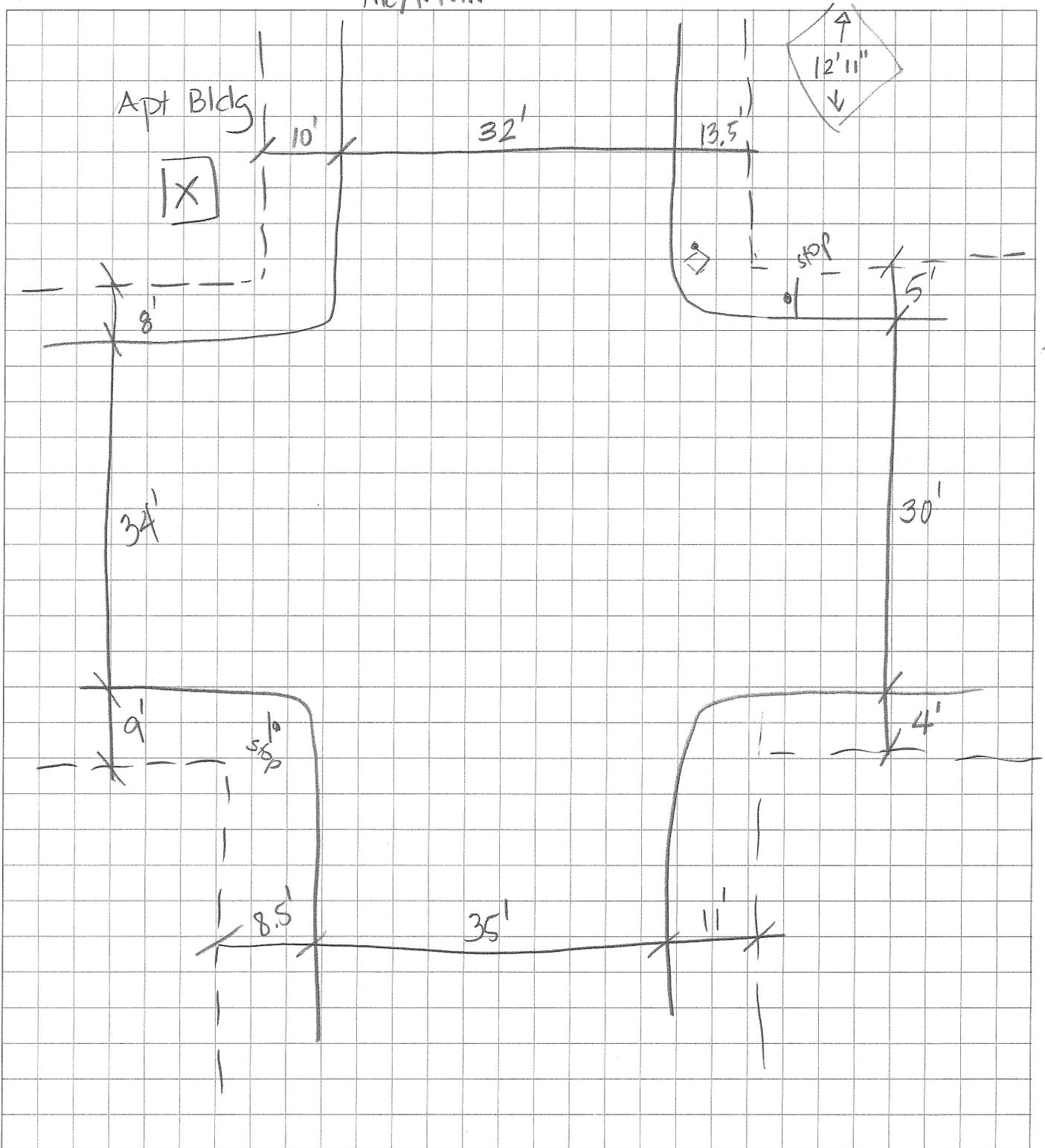
Checked by:          Date:         

Title McArthur Dr @ Logan St

McArthur

Logan St

Logan St (west)





# Computations

N  
↓

\* nb signage (stop)

Project: SCR Project # 10111.00

Location: New Bedford Sheet          of         

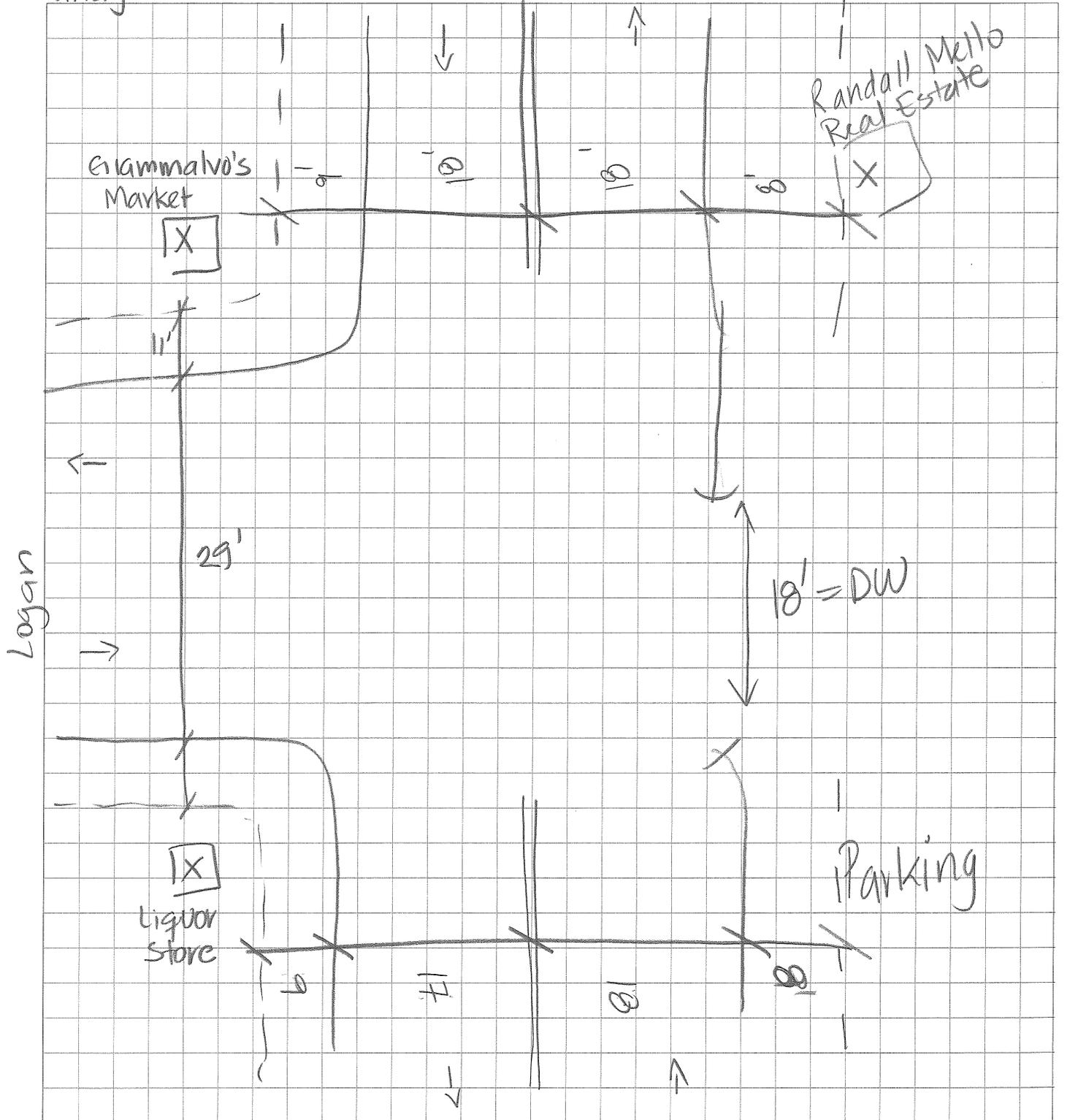
Calculated by: NL Date: 9-16-08

Checked by:          Date:         

Title Purchase St @ Logan

\* unsig

Purchase

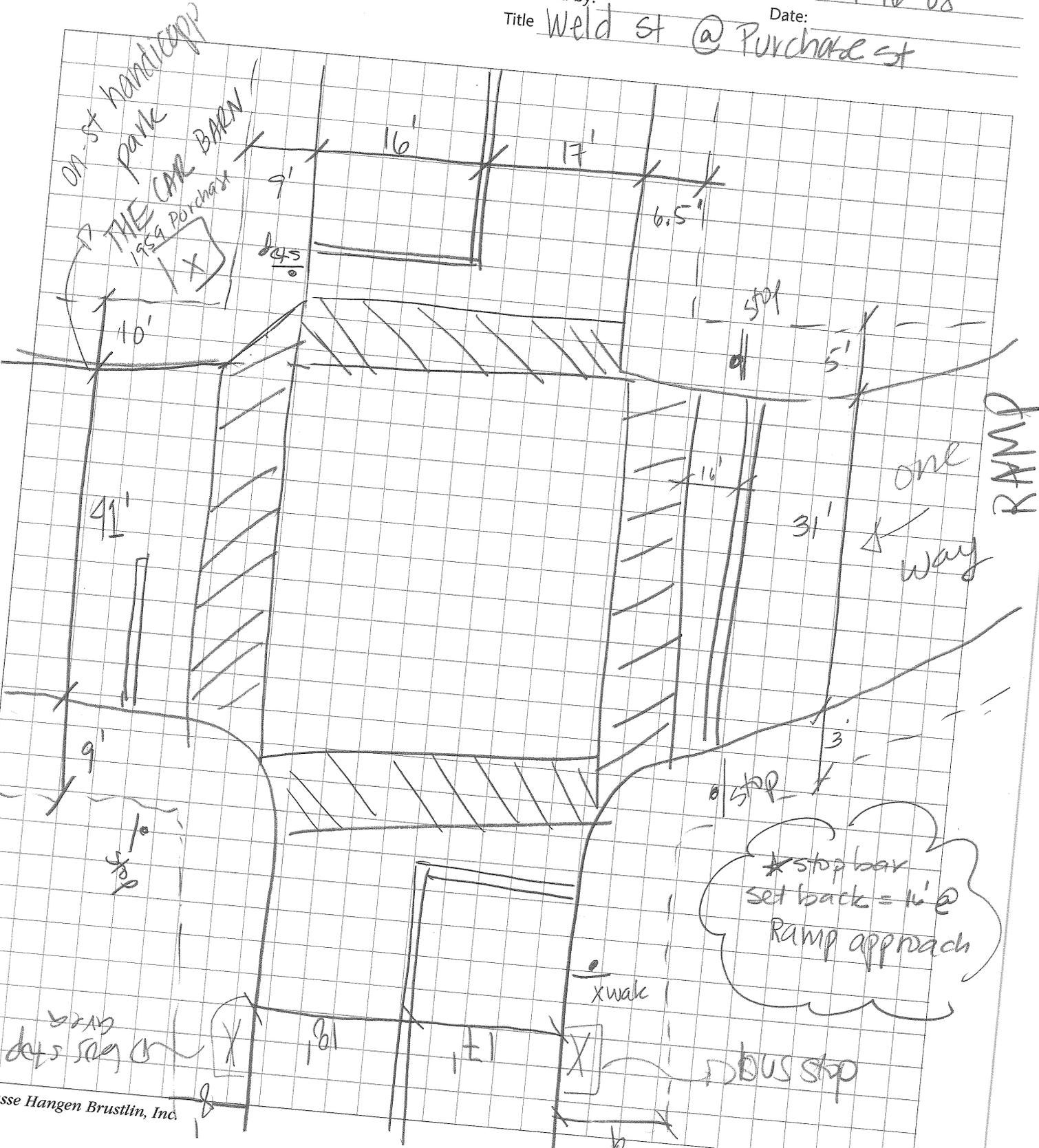




# Computations



Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of 1  
 Calculated by: NL Date: 9-16-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: Weld St @ Purchase St





# Computations

#1 140 South  
New Bedford  
Dartmouth  
←



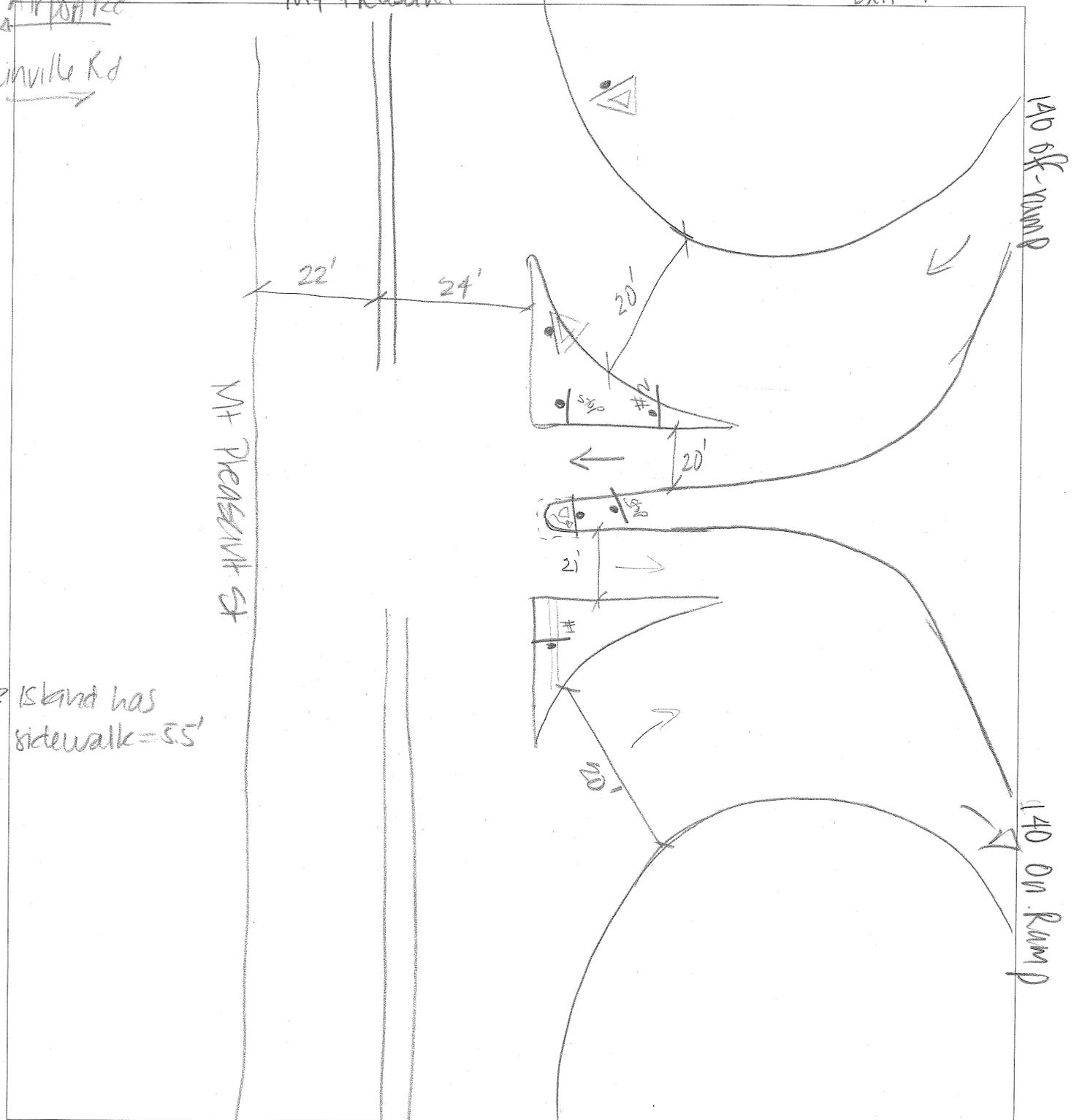
Project: SCR  
Location: New Bedford  
Calculated by: NL  
Checked by:  
Title Mt Pleasant St @ Rte 140 SB Off-Ramp

Project # 10111.00  
Sheet 1 of 1  
Date: 9/16/08  
Date:

#2 Mt Pleasant  
Airport Rd  
←  
Plainville Rd  
→

Mt Pleasant

Exit 4



\* Island has sidewalk = 55'



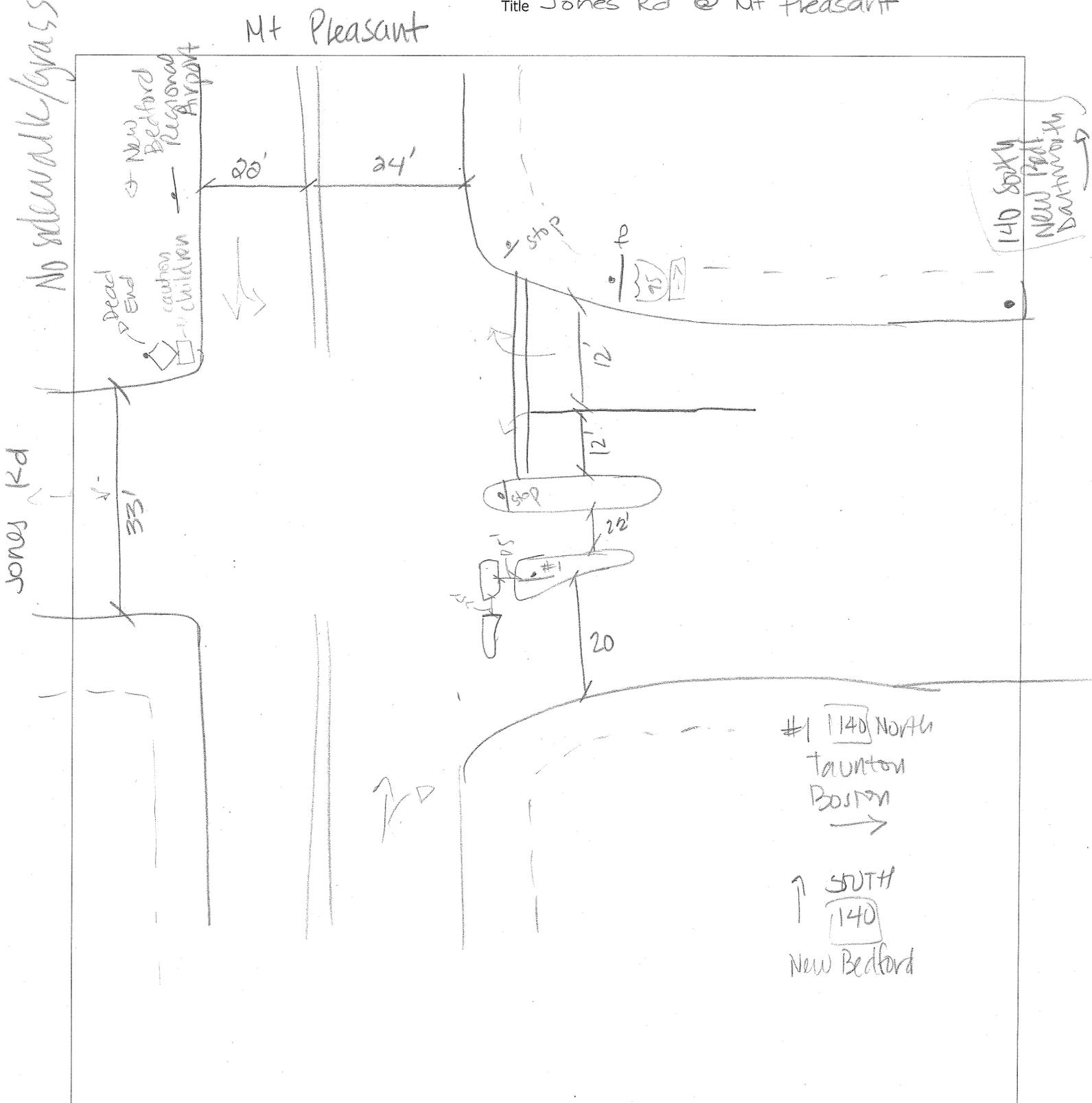
# Computations



#signalized under const.  
-signals not working yet

Project: SCR Project # 10111,00  
Location: New Bedford Sheet 1 of 1  
Calculated by: NL Date: 9/16/08  
Checked by: Date:  
Title Jones Rd @ Mt Pleasant

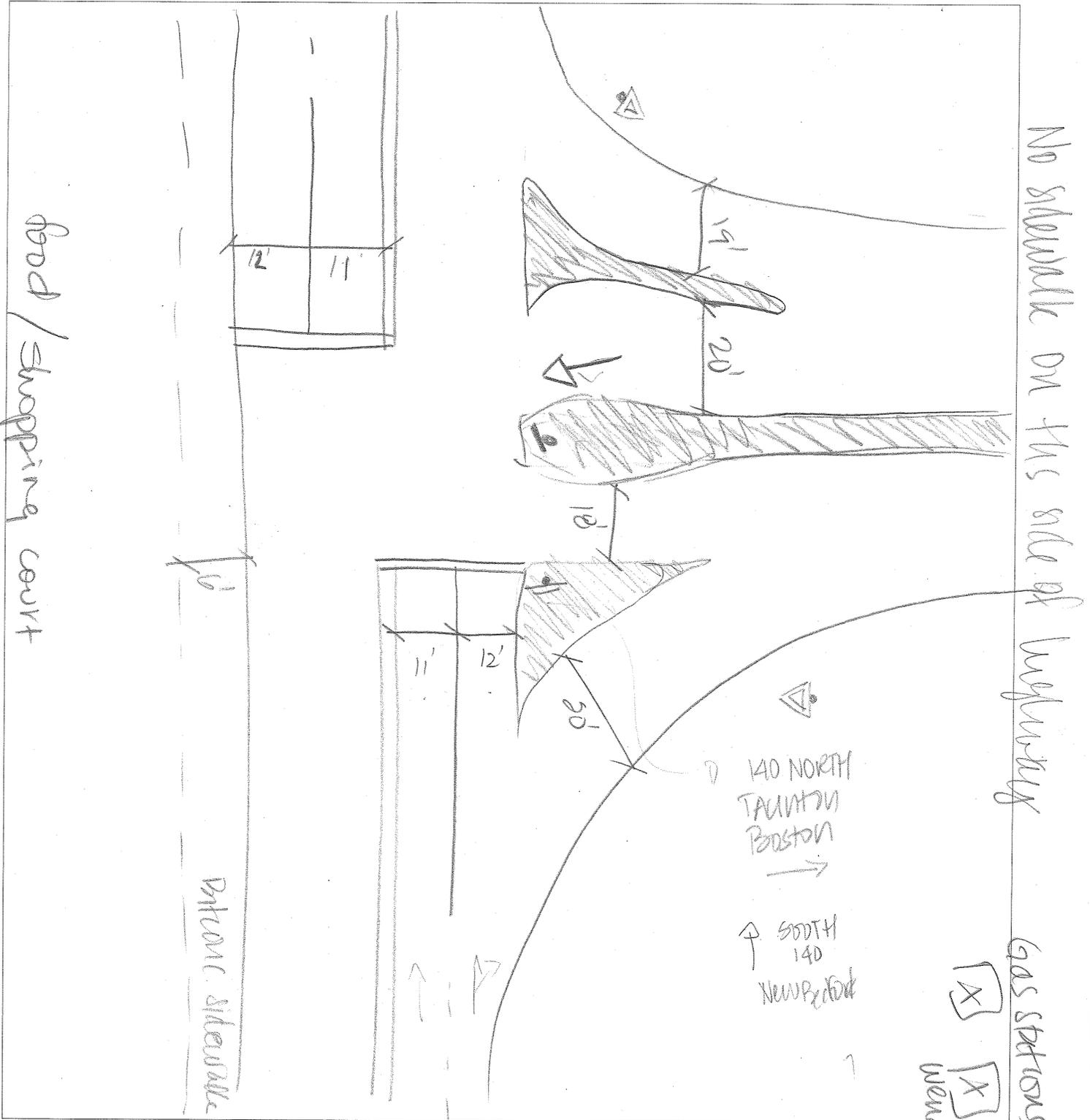
## Mt Pleasant





# Computations

Project: SCR Project # 10111.00  
 Location: New Bedford Sheet 1 of  
 Calculated by: Date: 9/16/08  
 Checked by: Date:  
 Title Kings Highway @ 140 ON-Ramps



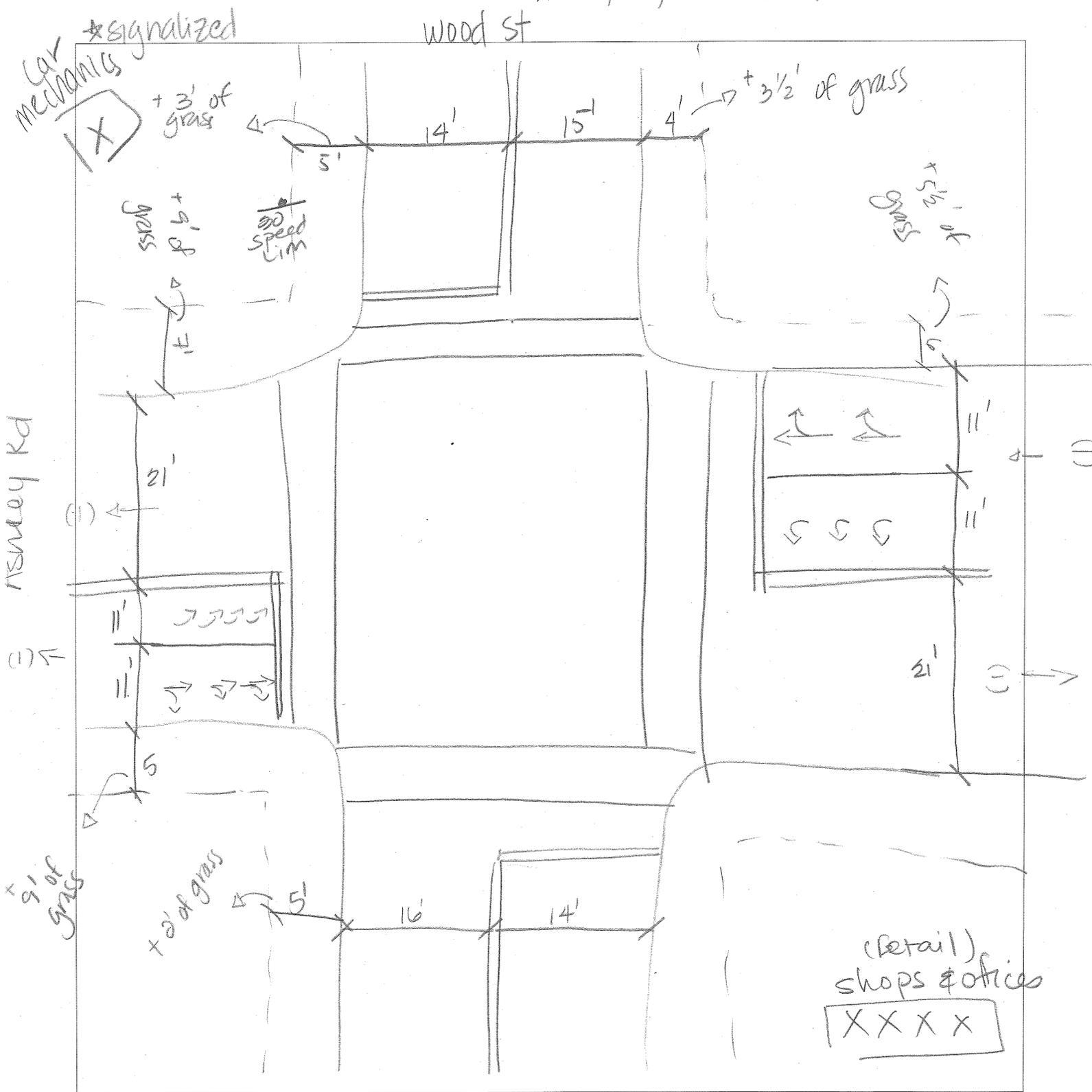




# Computations

Project: SCR  
 Location: New Bedford  
 Calculated by: NL  
 Checked by:  
 Title: Ashley Rd/Rte 1 @ Wood St

Project # 10111.00  
 Sheet 1 of 1  
 Date: 7/16/08  
 Date:



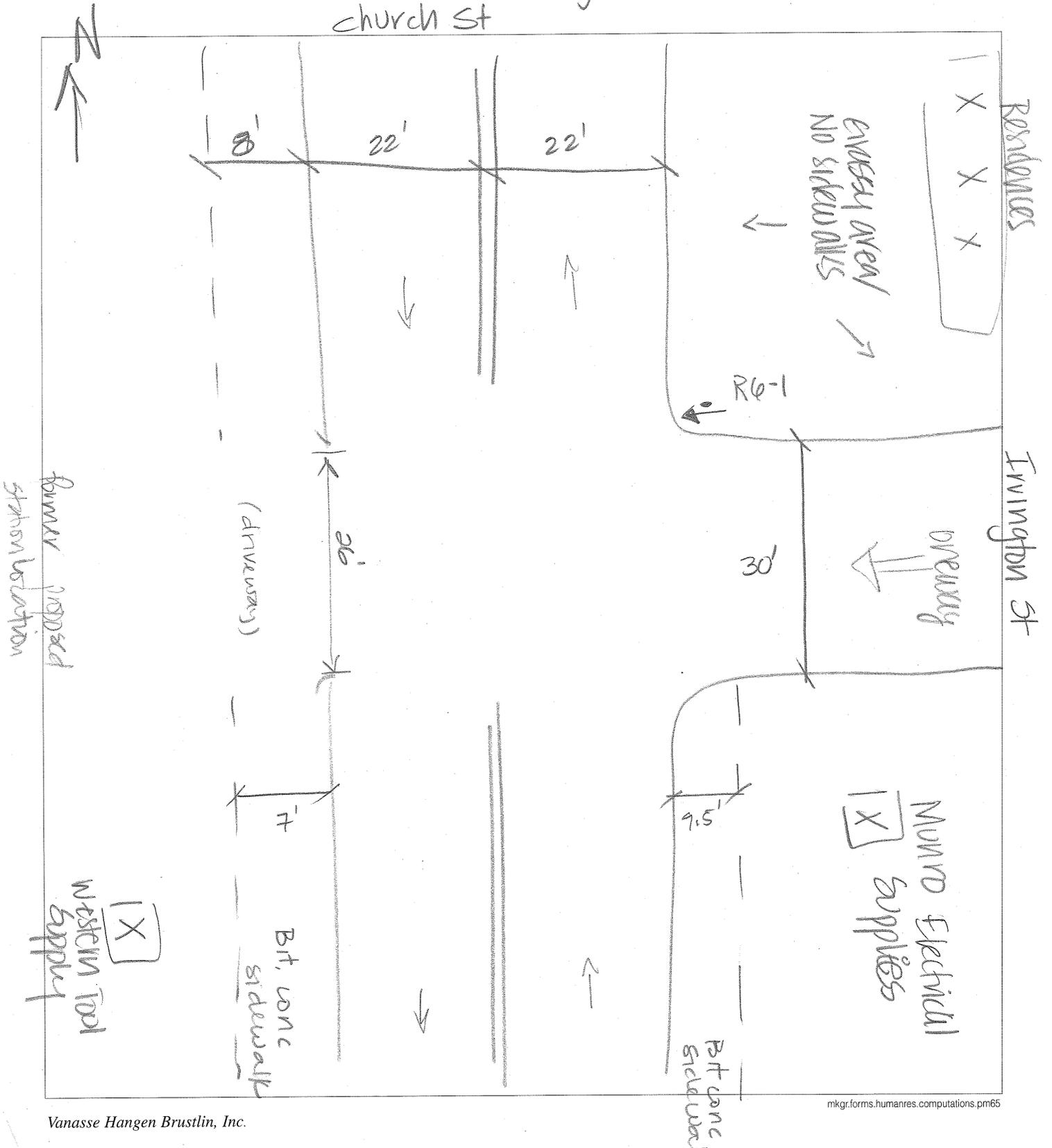


# Computations

Project: SCR  
 Location: New Bedford  
 Calculated by: NL  
 Checked by:  
 Title: Irvington St @ Church St

Project # 10111.00  
 Sheet 1 of 1  
 Date: 9/16/08  
 Date:

- \* Unsignalized
- no stop signs
- almost no mailings





# Computations

\* signalized  
↑ N

Project: SCL  
Location: New Bedford  
Calculated by: NL  
Checked by:  
Title: Nash Rd @ Church St

Project # 10111.00  
Sheet 1 of 1  
Date: 9/16/08  
Date:

Resid.

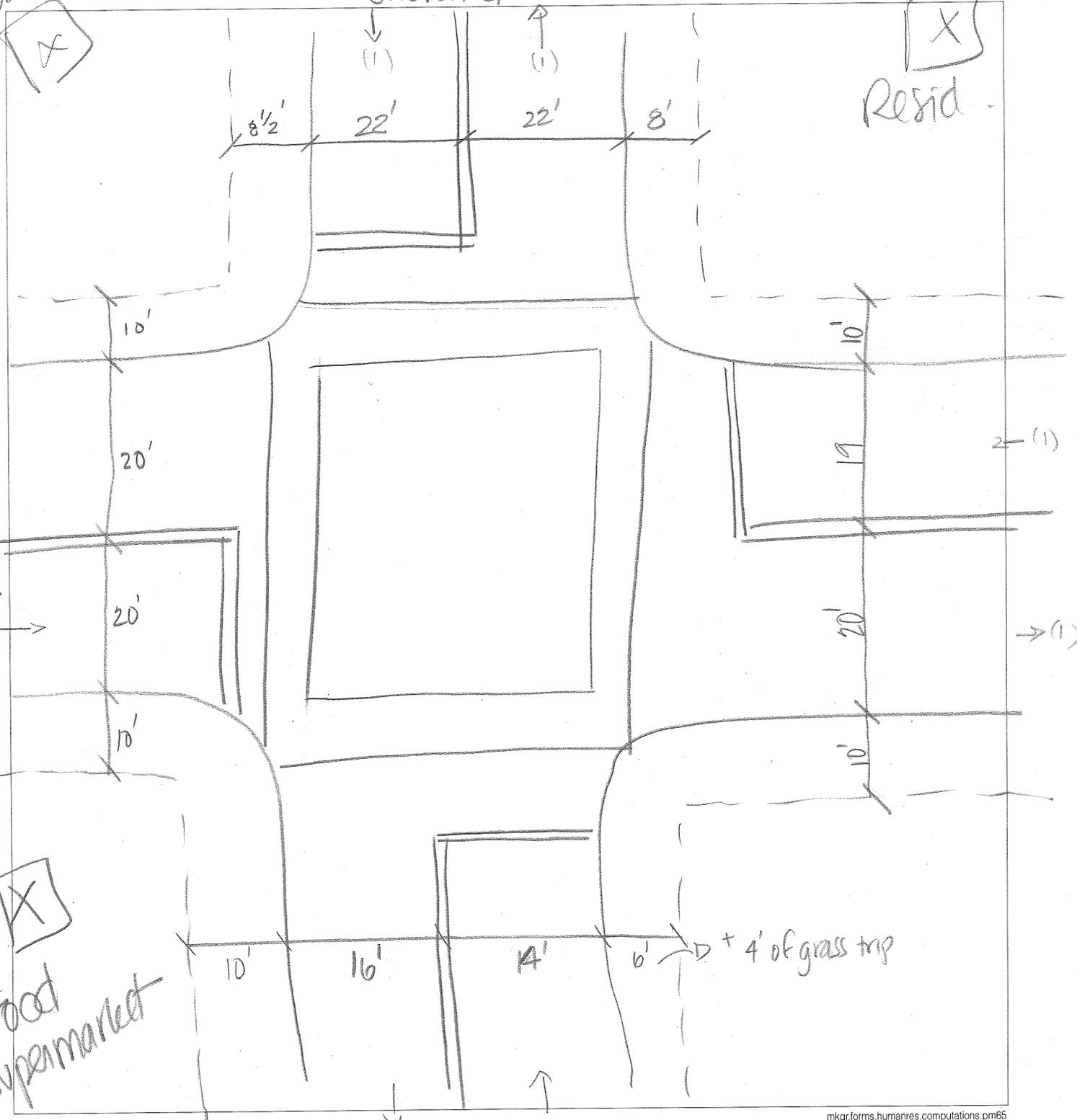
Church St

X

Resid.

Nash →

X  
Food  
Supermarket





Project: SCR Project # 10111.31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/16/08

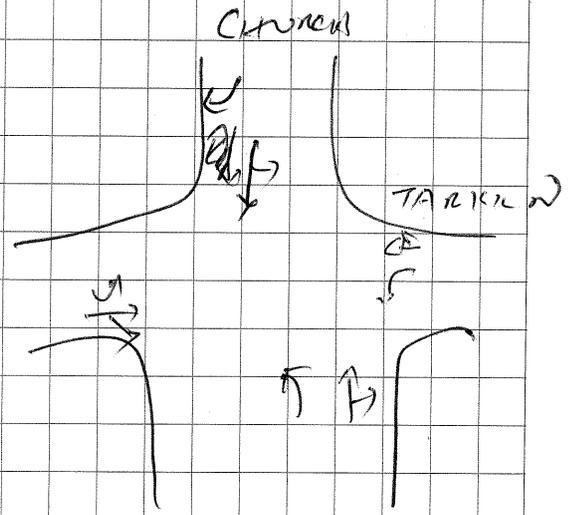
Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#0 Title Signal Timing & Phasing

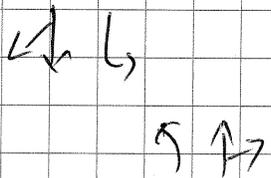
CHURCH ST / TARKILN RD

$\phi 1$   
TARKILN RD      dr  
church

d1      G = 28, 28  
          Y = 4, 4  
          R = 1, 1



$\phi 2$   
          G = 28, 28  
          Y = 4, 4  
          R = 1, 1





Project: SCR Project # 10111-31

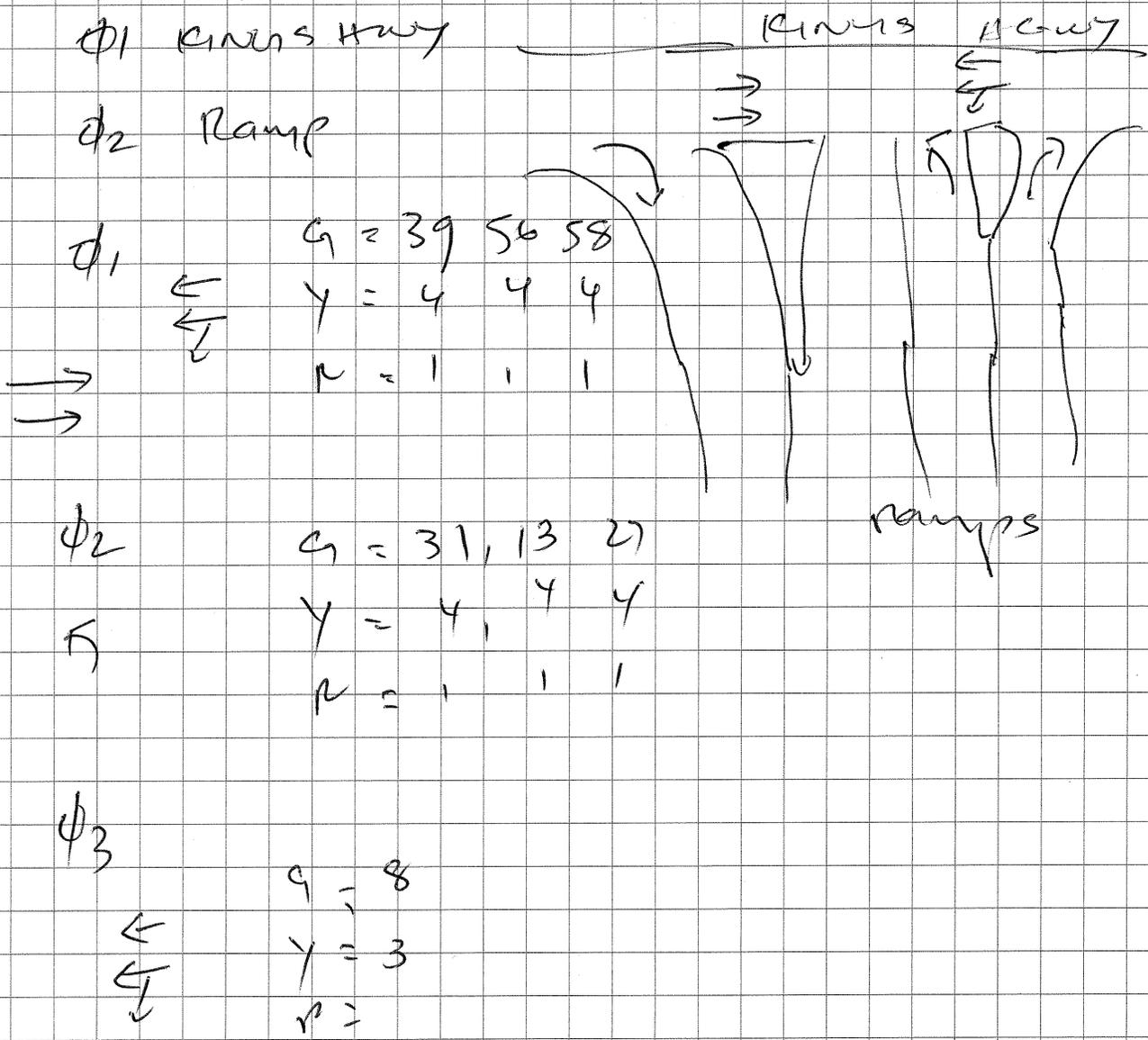
Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/16/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#2 Title Signal Timing & Phasing

Route 140 N ON/OFF RAMP @ KINGS HWY





Project: SCR

Project # 10111.31

Location: \_\_\_\_\_

Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RANK

Date: 9/16/08

Checked by: \_\_\_\_\_

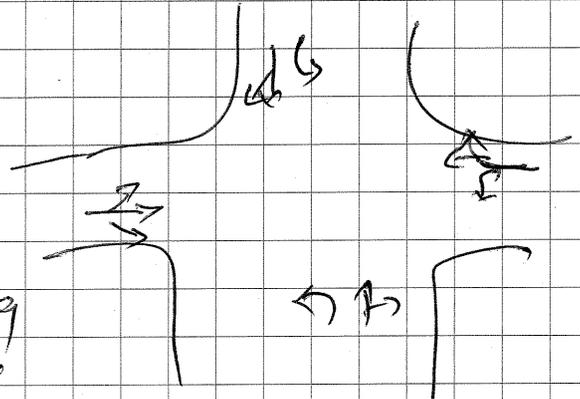
Date: \_\_\_\_\_

# Title Signal Timing & Phasing

Ashtley Blvd @ Wood St.

- φ1 ~~Ashtley~~
- φ2 PED ~~PUSH BUTTON~~
- φ3 wood

φ1	G =	38	28	29
↙ ↘	Y =	4	4	4
↗ ↖	R =	1	1	1



φ2 W = 7  
 PED HDW = 8

φ3	G =	8	6	7	12
↙ ↘	Y =	4	4	4	4
↗ ↖	R =	1	1	1	1



Project: SCR Project # 10111.31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: 12NR Date: 9/16/08

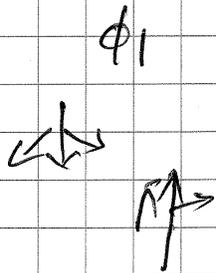
Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#7 Title Squall Timing & Phasing

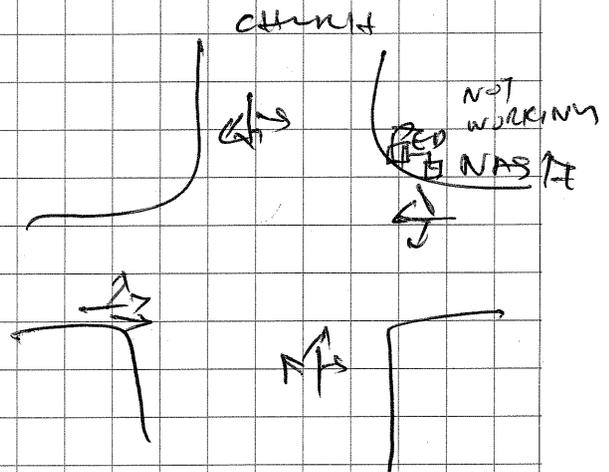
CHURCH ST @ NASH

$\phi_1$  ~~CHURCH ST~~

$\phi_2$  NASH



$G =$	22	22	22
$Y =$	4	4	4
$R =$	1	1	1



No Ped cross  
Push Buffer Act

$\phi_2$



$G =$	29	30	30
$Y =$	4	4	4
$R =$	1	1	1



Project: SCR

Project # 10111.31

Location: \_\_\_\_\_

Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR

Date: 9/16/08

Checked by: \_\_\_\_\_

Date: \_\_\_\_\_

#9 Title Signal Timing & Phasing

Compton Hill @ Pleasant



$\phi_1$  Compton

$\phi_2$  Routes

$\phi_3$  Red

$\phi_4$  Pleasant SB

$\phi_5$  Pleasant NB

$\phi_1$   $G = 30 \quad 23$   
 $Y = 4 \quad 4$   
 $R = 1 \quad 1$

$\phi_4$   $G = 31, 30$   
 $Y = 4 \quad 4$   
 $R = 1 \quad 1$

$\phi_2$   $G = 27 \quad 30$   
 $Y = 4 \quad 4$   
 $R = 1 \quad 1$

$\phi_5$   $G = 20 \quad 29$   
 $Y = 4 \quad 4$   
 $R = 1 \quad 1$

$\phi_3$   $W = 9$   
 $FDV = 11$



Project: SCR Project # 10111-37

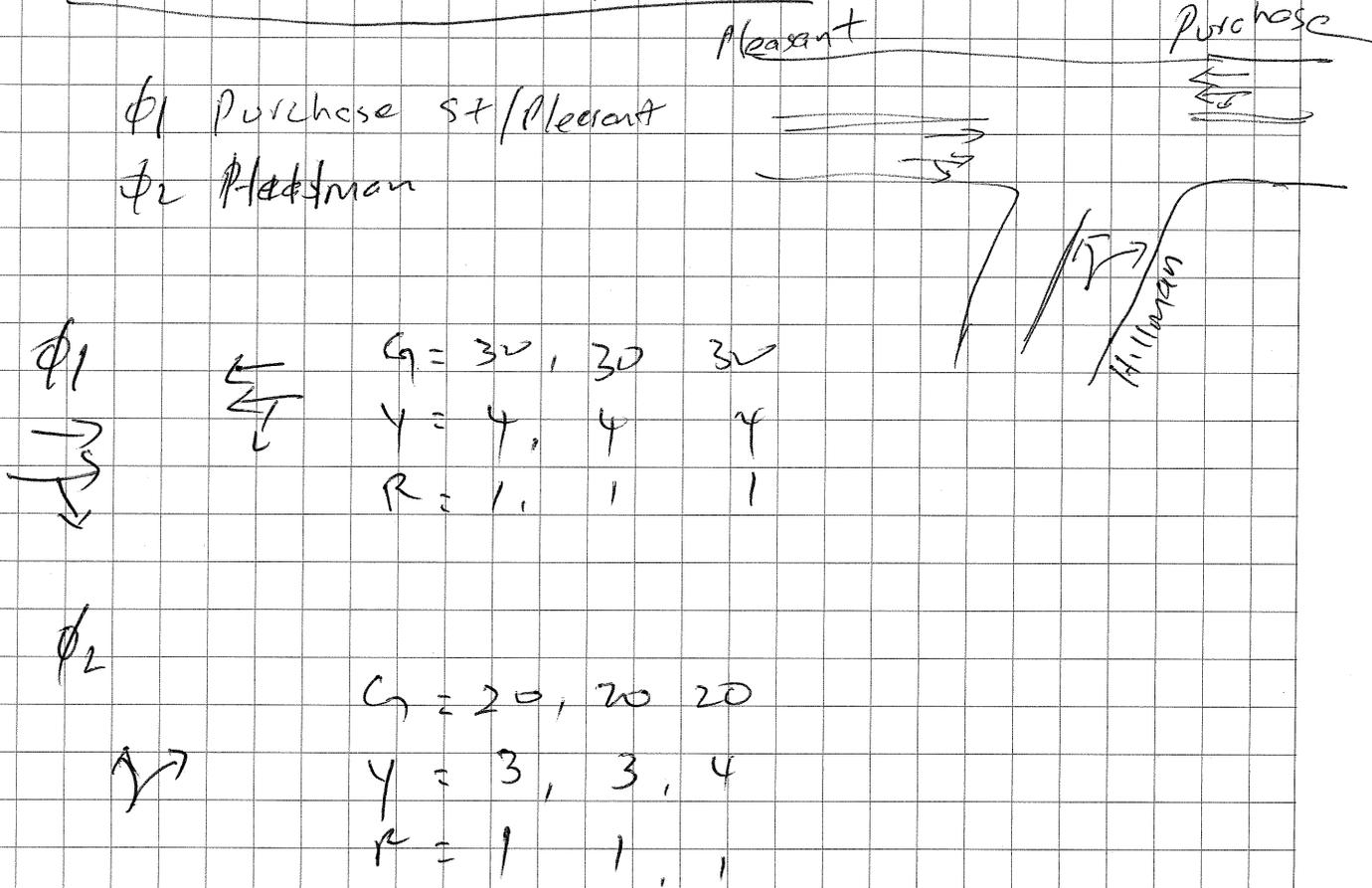
Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/16/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#1 Title Signal Timing & Phasing

Hillman @ Pleasant/Purchase





Project: SCR Project # 10111-31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 4/16/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

Title Signal Timing & Phasing

#7 + #6

Route 18 @ McCarther / Union Street

φ1 McCluske SB RT  
Rte 18 NB RT

φ2 Rte 18 NB & SB LT

φ3 McCarther & Rte 18  
THRU

φ4 LED

φ5 Union & Ferry

Ferry  
Toward

McCarther

Rte 18

φ1	G = 14	15
	Y = 2	2
	R = 1	1

φ4 LED	W = 17	} 30
	FDW = 13	

φ2	G = 12	11
	Y = 4	4
	R = 6	5

φ5	G = 22	27
	Y = 4	4
	R = 6	6

φ3	G = 42	42
	Y = 4	4
	R = 4	4

Long red  
6 sec



# THE COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT

## TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT KING'S HIGHWAY AT RTE 140 NB RAMPS

IN THE TOWN OF  
**NEW BEDFORD**  
BRISTOL COUNTY

NEW BEDFORD				
KING'S HIGHWAY AT RTE 140 NB RAMPS				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1319	01	1	1
TITLE SHEET				

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

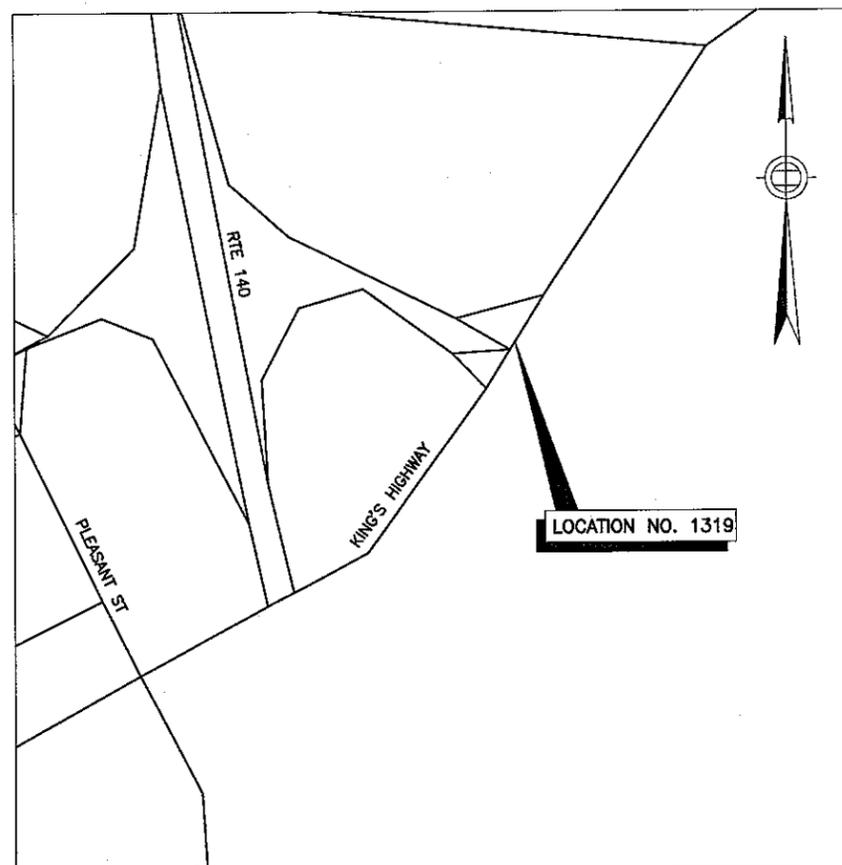
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

### I. STANDARDS OF INSTALLATION

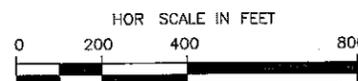
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

### II. OPERATION OF SIGNALS

- (a) Type of control:                   AUTOMATIC
  - (b) Coordination:                   COORDINATED
  - (c) Special connection:           TIME-BASED
  - (d) Timing for automatic operation: SEE SHEET NO. 3
  - (e) Hours for Automatic Operation: CONTINUOUS
- Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
  - (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
  - (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
(SCALE AS SHOWN)



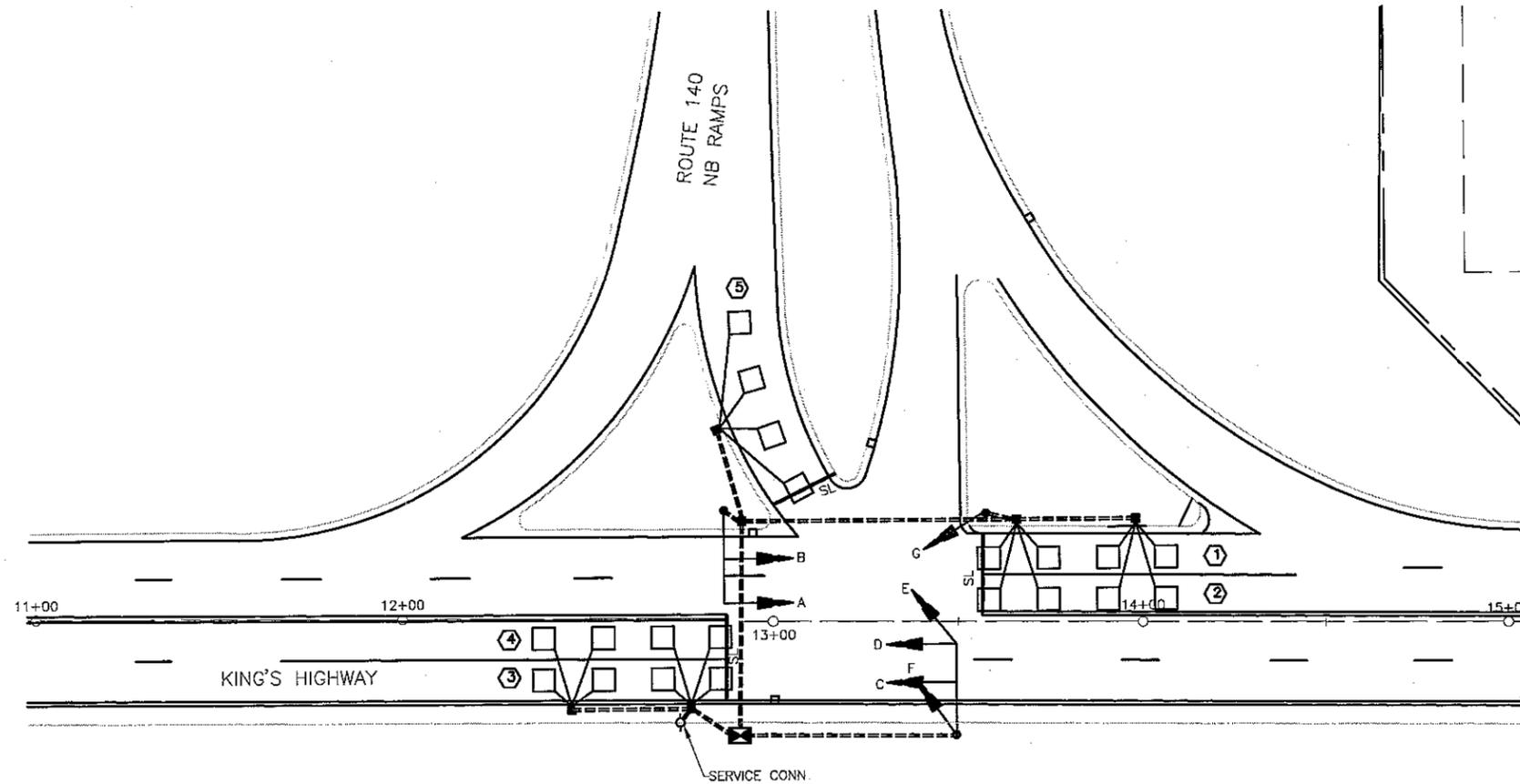
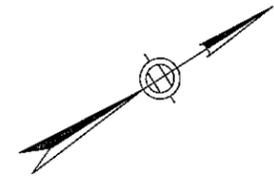
REVISION NO <u>01</u>	COMMENTS:
DATE: <u>01-18-02</u>	
INSERT BY: <u>I. TETER</u>	
DATE: _____	
FILE NAME: <u>1319T0101.DWG</u>	

<b>MASS HIGHWAY</b>	
10 PARK PLAZA BOSTON, MA 02116	
MASSACHUSETTS HIGHWAY DEPARTMENT	
APPROVED BY: _____	
STATE TRAFFIC ENGINEER	Date

NEW BEDFORD  
KING'S HIGHWAY AT RTE 140 NB RAMPS

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1319	01	2	

TRAFFIC SIGNAL PLAN



LEGEND

	SIGNAL CONTROLLER
	VEHICULAR SIGNAL
	OPTICALLY PROGRAMMED VEHICULAR SIGNAL
	FIRE PRE-EMPTION RECEIVER
	FIRE PRE-EMPTION STROBE LIGHT
	PEDESTRIAN SIGNAL
	PEDESTRIAN PUSH BUTTON
	PULL BOX

APPROVED BY:

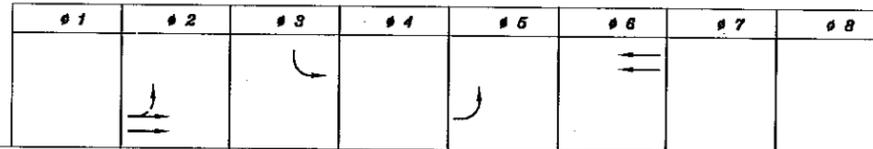
STATE TRAFFIC ENGINEER

Date



1319PD101.DWG

APPROX. NORTH



SEQUENCE AND TIMING FOR FULLY-ACTUATED CONTROL (COORDINATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PHASE
KING'S HIGHWAY	WB	A,B				R	R	R	R	R	R					R	R	R	G	Y	R						FY
KING'S HIGHWAY	EB	D,G				G	Y	R	R	R	R				GL/R/L/R	R	R	R	R	R	R						FY
KING'S HIGHWAY	EB	C				G	Y	R	R	R	R				R	R	R	R	R	R	R						FY
FIELDSTONE MARKETPLACE	SB	E,F				R	R	R	G	Y	R				R	R	R	R	R	R	R						FR
PEDESTRIAN																											

TIMING IN SECONDS

MINIMUM GREEN (INITIAL)				8			8								5			8								
PASSAGE TIME (VEHICLE)				3			3								3			3								
MAXIMUM 1				30			35								10			30								
MAXIMUM 2				25			15								25			25								
YELLOW CLEARANCE							4								4			4								
RED CLEARANCE								1								1				1						
WALK (W)																										
PEDESTRIAN CLEARANCE																										
RECALL							OFF			OFF					OFF			OFF			OFF					
MEMORY							NON-LOCKING			NON-LOCKING					NON-LOCKING			NON-LOCKING			NON-LOCKING					

EMERGENCY ONLY

QUANTITY	ITEM
1	CONTROLLER TYPE 8DW, CAB. & FDN.
1	SERVICE CONNECTION (OVERHEAD)
1	10' SIGNAL POLE, BASE, & FDN.
2	MAST ARM ASSEMBLY, BASE, & FDN.
5	1 WAY, 3 SECTION SIGNAL HOUSING (12" LENS)
1	1 WAY, 5 SECTION SIGNAL HOUSING (12" LENS)
1	2 WAY, 3&5 SECTION SIGNAL HOUSING (12" LENS)
3	LOOP DETECTOR AMPLIFIER (DUAL CHANNEL)
20	ROADWAY LOOP DETECTOR
6	12" x 12" PULL BOX

Necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.

NOTES:

- SEQUENCE AND TIMING NOTES:
- #1, #4, #7 AND #8 NOT USED.
- NEMA DUAL RING PHASING NOTES:
- 1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
  - 2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
  - 3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
  - 4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
- LOOP DETECTOR NOTES:
- 1. SEE LOOP DETECTOR DETAIL SHEET FROM DESIGN DOCUMENT FOR SPLICE PATTERN AND OTHER INFORMATION.
  - 2. DELAY AND EXTENSION TIMES ARE IN SECONDS.
  - 3. DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR

COORDINATION DATA  
(ALL ENTRIES IN SECONDS)

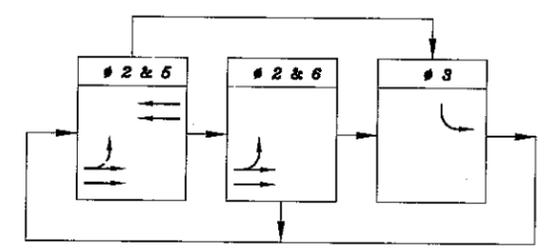
CYCLE	TIME PERIOD	OFFSET	CYCLE LENGTH
CYCLE 1	ALL DAY MONDAY-FRIDAY ALL DAY SATURDAY AND SUNDAY	0	80
CYCLE 2			
CYCLE 3			
CYCLE 4			

SPLIT	#1	#2	#3	#4	#5	#6	#7	#8
SPLIT 1		80	30		15	35		
SPLIT 2								
SPLIT 3								
SPLIT 4								

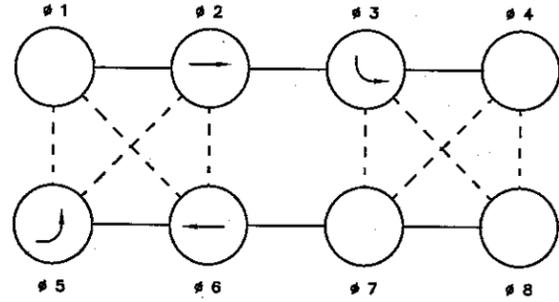
LOOP DETECTOR DATA

DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE	NUM. OF TURNS	# CALLED	# EXT.	MODE PULSE PRESENCE	DELAY TIME	EXT. TIME
①	4	6'x6'		#6	#6	PRESENCE		
②	4	6'x6'		#6	#6	PRESENCE		
③	4	6'x6'		#2	#2	PRESENCE		
④	4	6'x6'		#2&5	#2&5	PRESENCE		
⑤	4	6'x6'		#3	#3	PRESENCE		

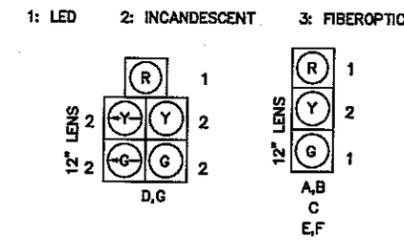
PREFERENTIAL PHASING SEQUENCE



NEMA DUAL RING PHASING NOTES:



SIGNAL IDENTIFICATION



CONTROLLER MAKE & MODEL: EPAC 300  
UTILITY POLE No. COM. ELEC. # 382/9  
METER No. 97-028-673 (7526257)  
EMERGENCY PRE-EMPTION (TYPE): NONE

APPROVED BY:

STATE TRAFFIC ENGINEER Date



1

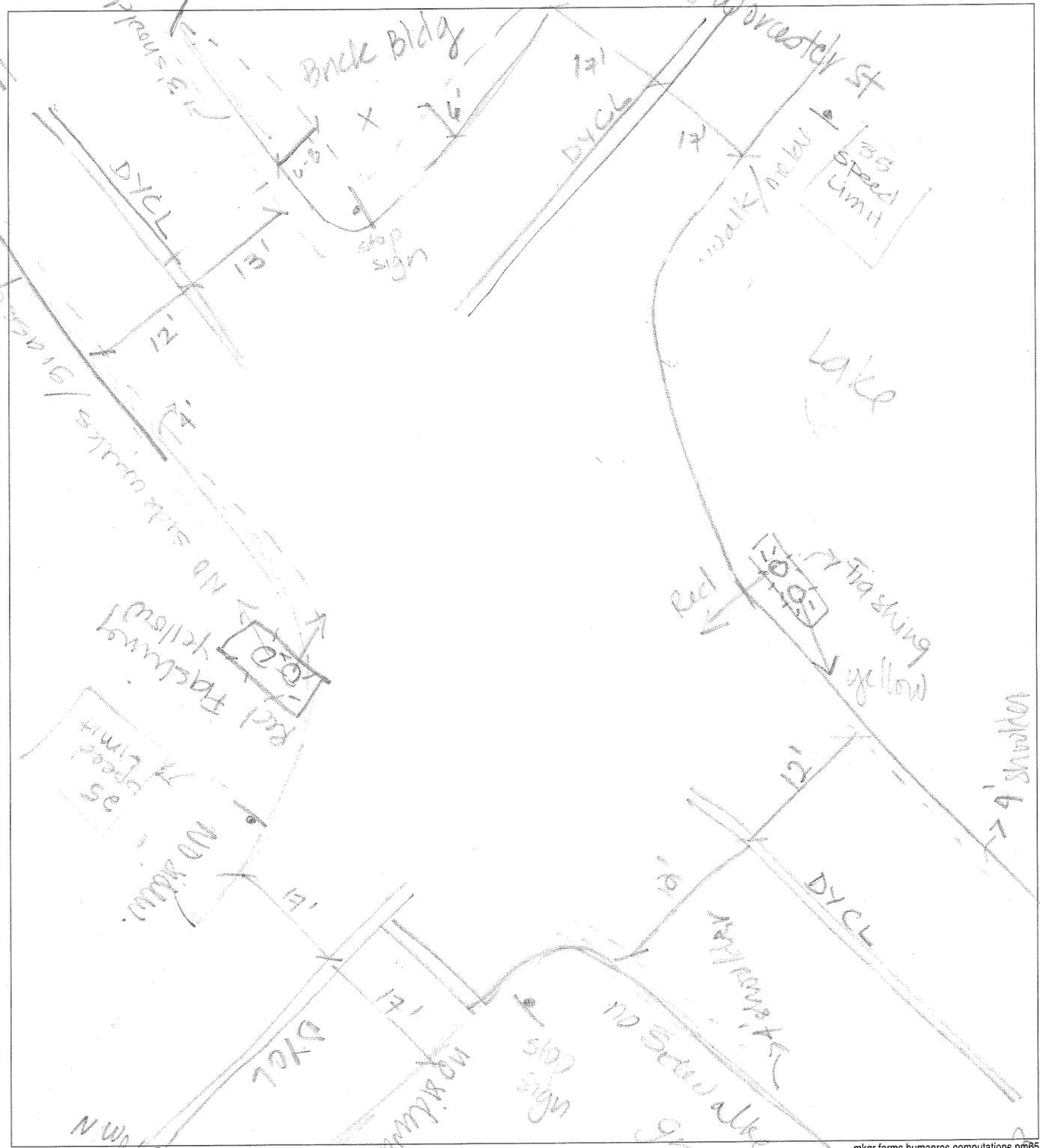


# Computations

Project: SCR  
 Location: NORION  
 Calculated by: NL  
 Checked by:  
 Title: W Main / Old Colony @ N/S Worcester St

Project # 1011131  
 Sheet 1 of 1  
 Date: 9/10/08  
 Date:

Rte 123 / Main St





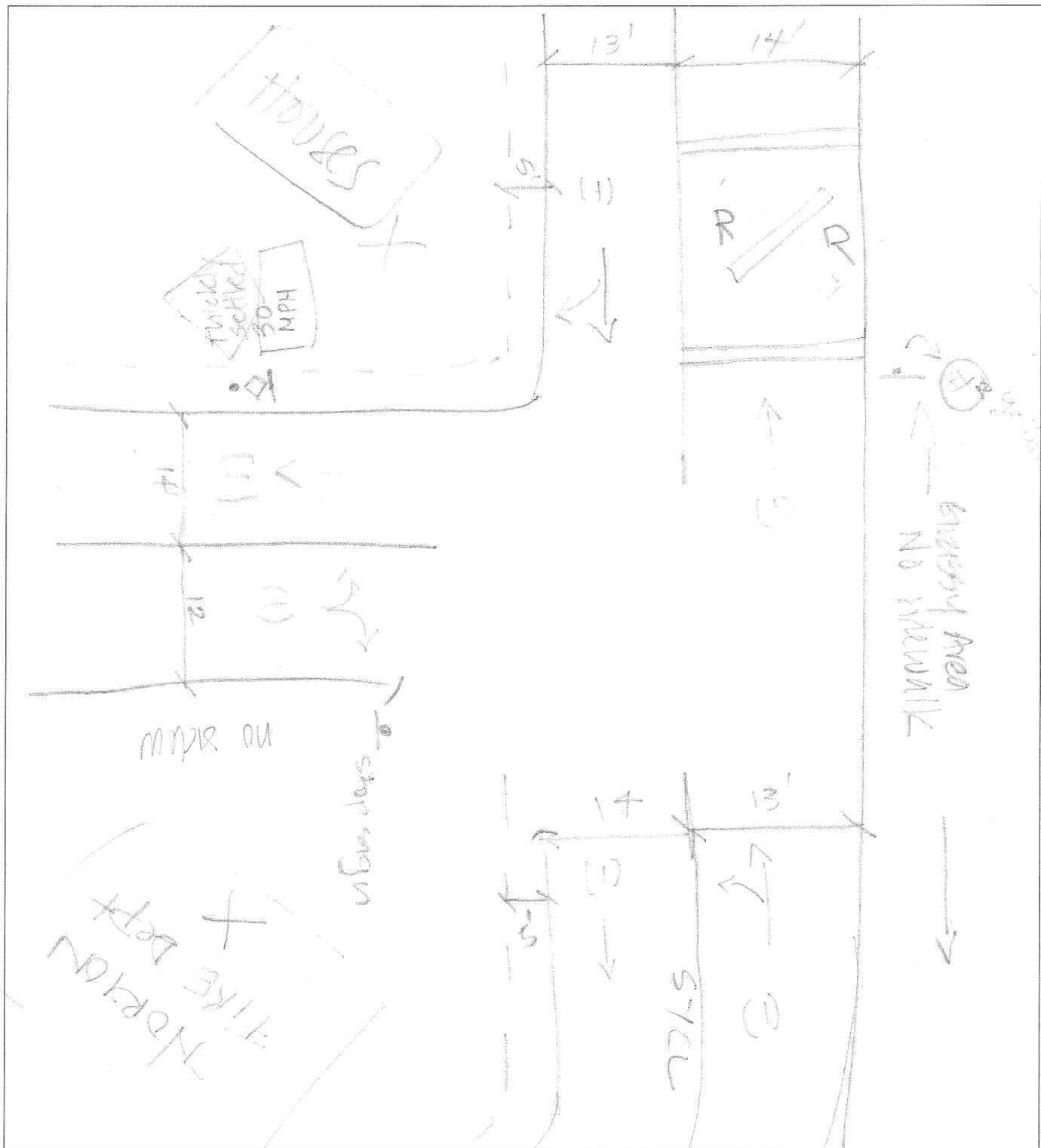
3



# Computations

\$ shipping very fast

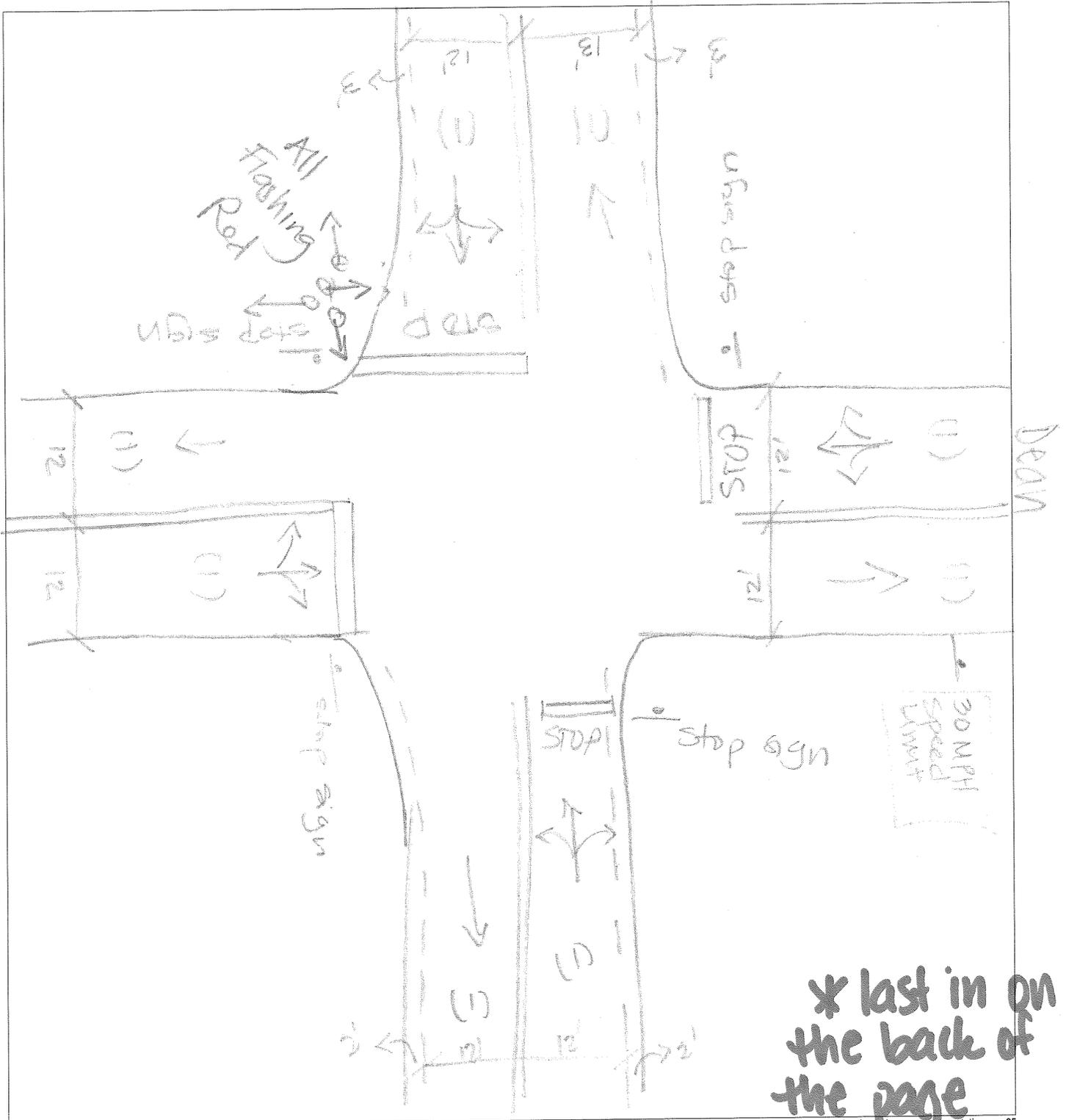
Project: SCR Project # 10111.31  
 Location: Norton Sheet of  
 Calculated by: XL Date: 9/10/08  
 Checked by: Date:  
 Title: Banows St @ Dean St/S. Worcester St



\* No sidewalk on any approach

Project: SCR  
Location: Norton  
Calculated by: NL  
Checked by: John B Scott @ Dean St

Project # 10111.31  
Sheet 1 of 9/10/08  
Date: 9/10/08  
Date:



\* last in on the back of the page (Harvey St)

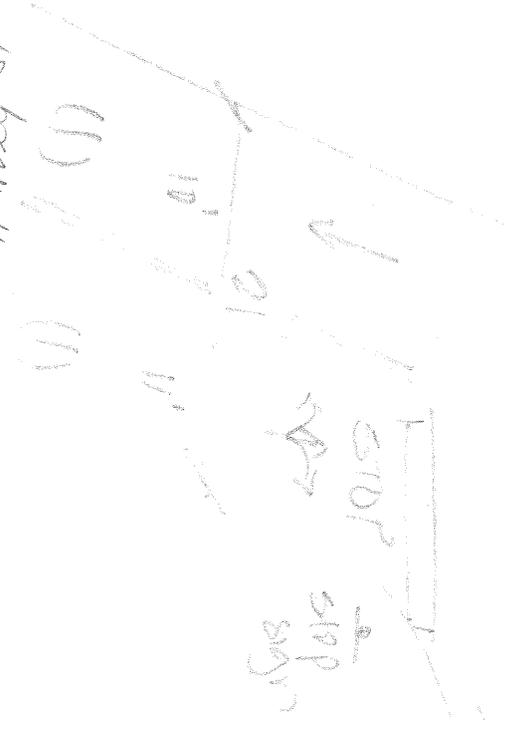
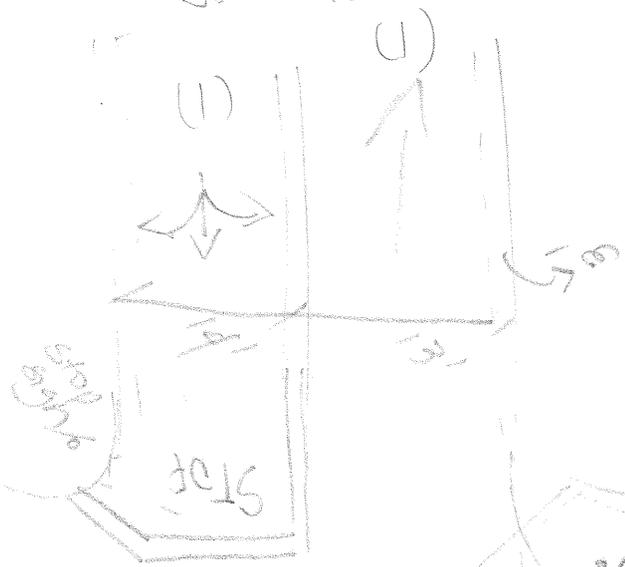
South Coast Rail  
10111.00

9-10-08  
Int: John B Scott @  
Harvey St

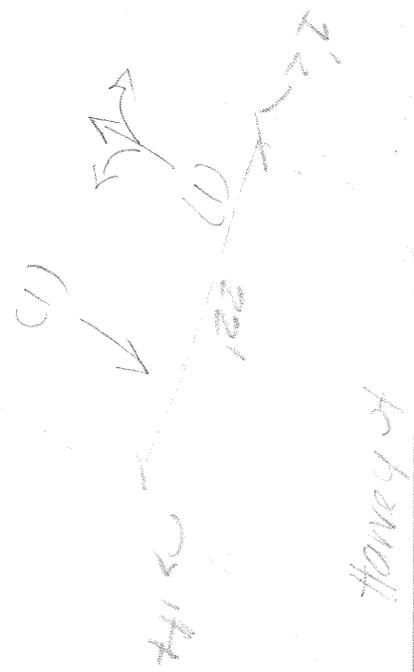
\* 4 way stop  
intersection

Harvey St

John B. Scott



of Harvey St  
of John B. Scott



Harvey St

NO IN RAIL \*  
NO WOOD SIGN  
SPACE SIGN  
(N. DIVISION)

John B. Scott

1



Project: SCR Project # 10111.00

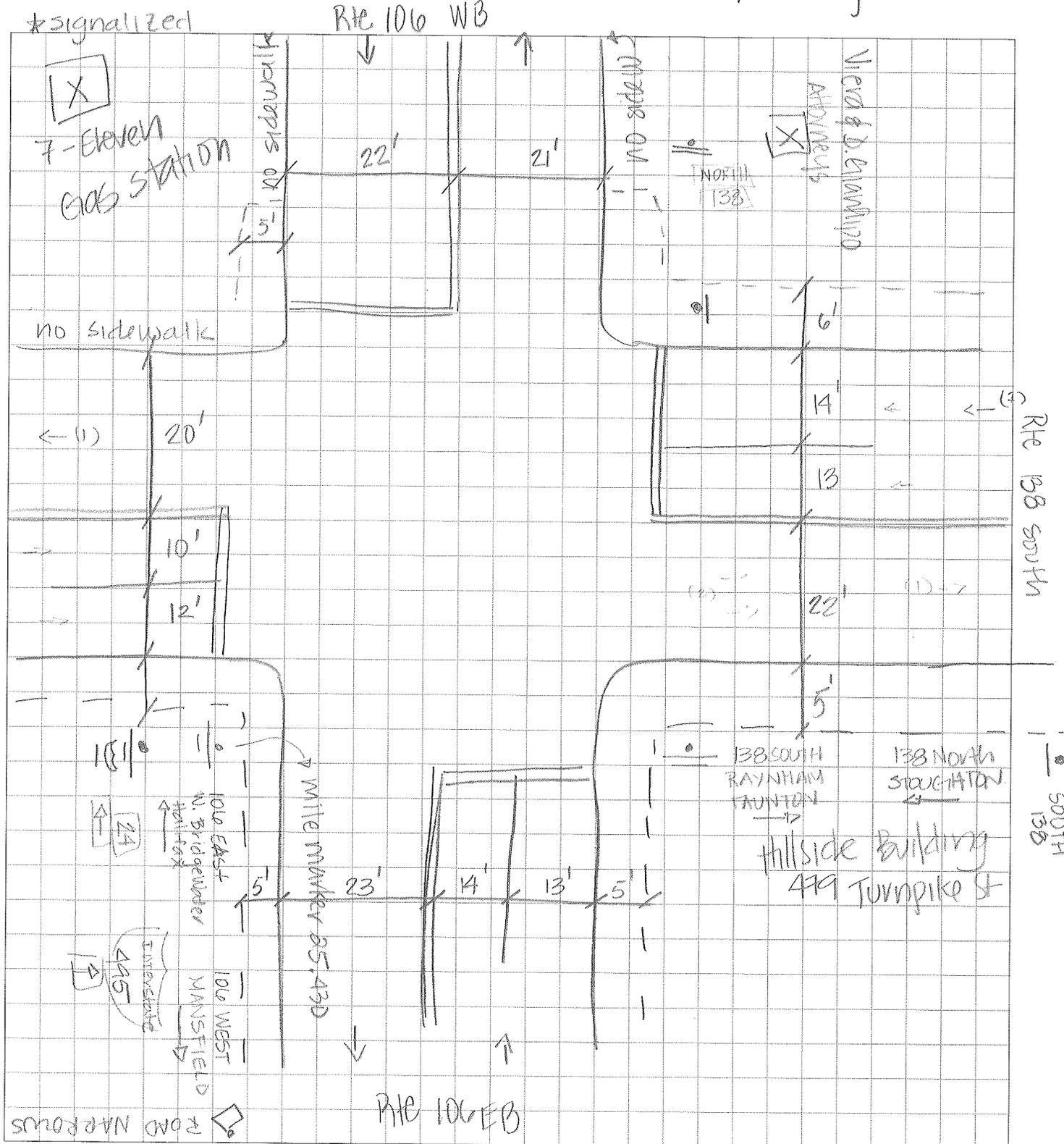
Location: Raynham Sheet 1 of 1

Calculated by: NL Date: 9-17-08

Checked by: Date:

Title RTE 138 at RTE 106/Foundry St

N ←



2



# Computations

pictures 13-19

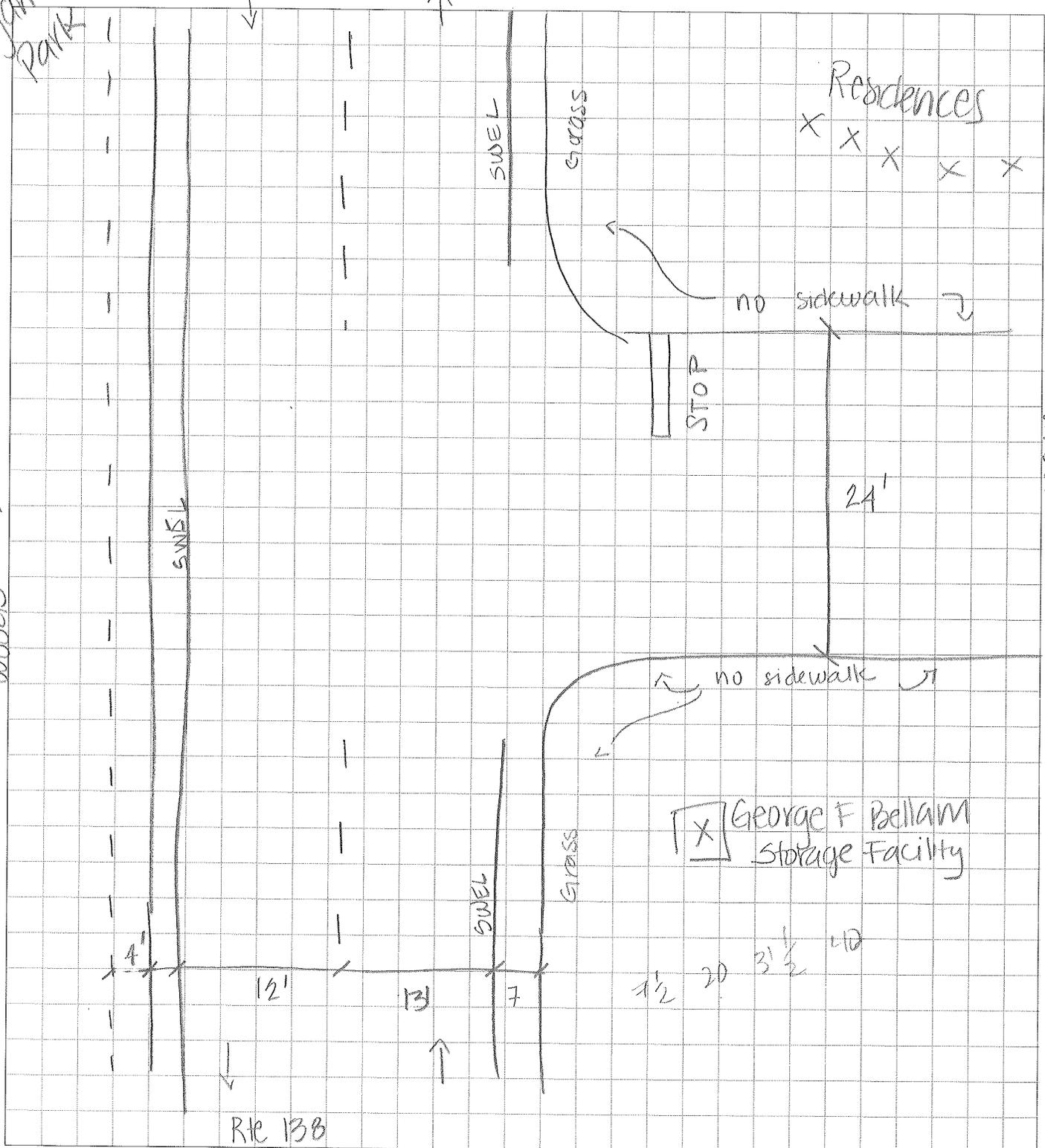
- \* unsignalized
- \* good pavement cond.
- \* good markings
- \* NO STOP SIGN!

Project: SCR Project # 10111.00  
 Location: Raynham Sheet 1 of 1  
 Calculated by: NL Date: 9-17-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: Wilbur St at Rte 138

X Ryan Industrial Park

Residences  
 X X X X X

X George F Bellam Storage Facility

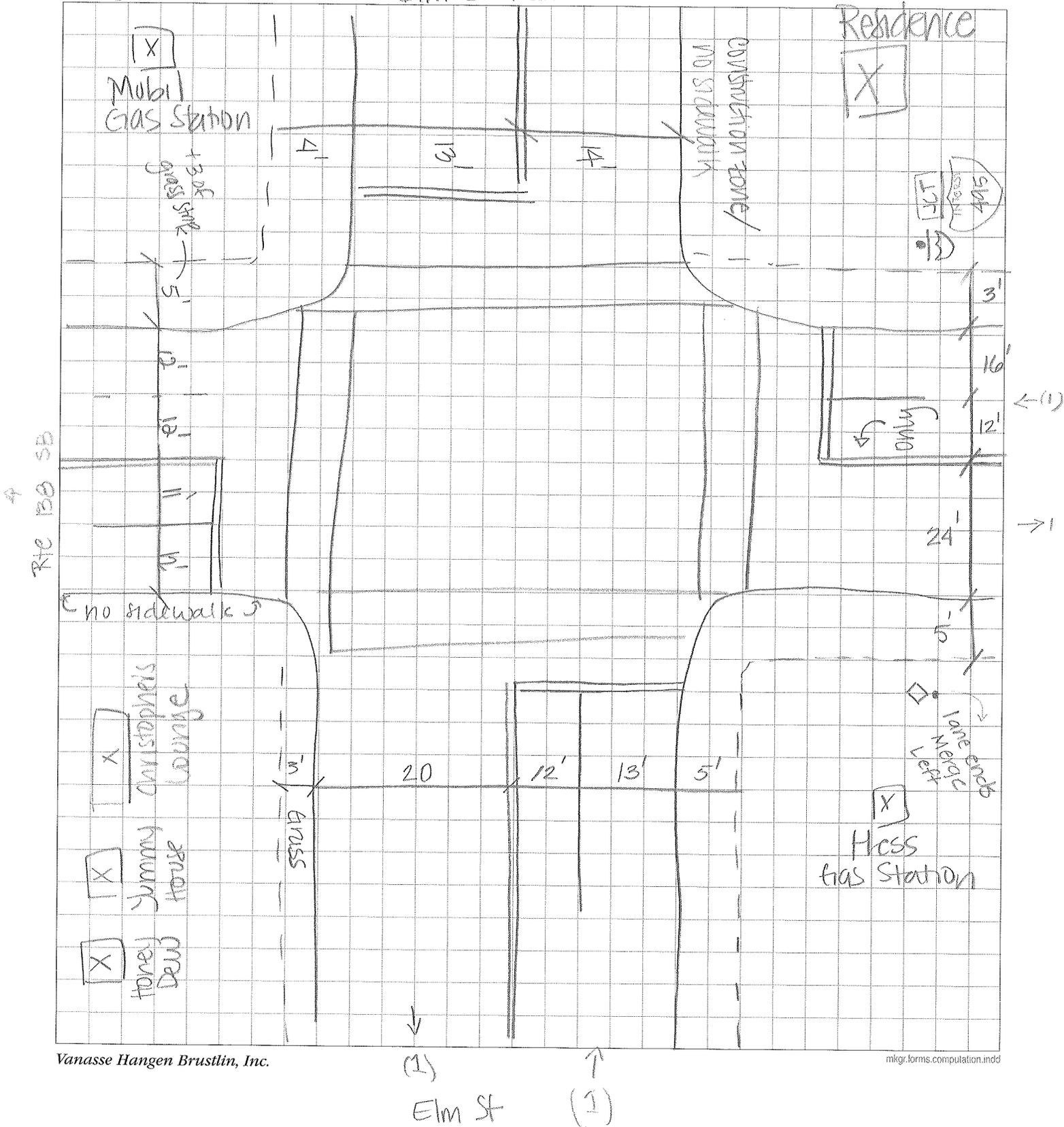




Project: SCR Project # 10111.00  
 Location: Raynham Sheet 1 of 1  
 Calculated by: Date: 9-17-08  
 Checked by: Date:  
 Title Elm St at Rte 138

- \* construction zone @ Elm St West
- \* good marking cond.
- \* good pavem cond
- \* signalized

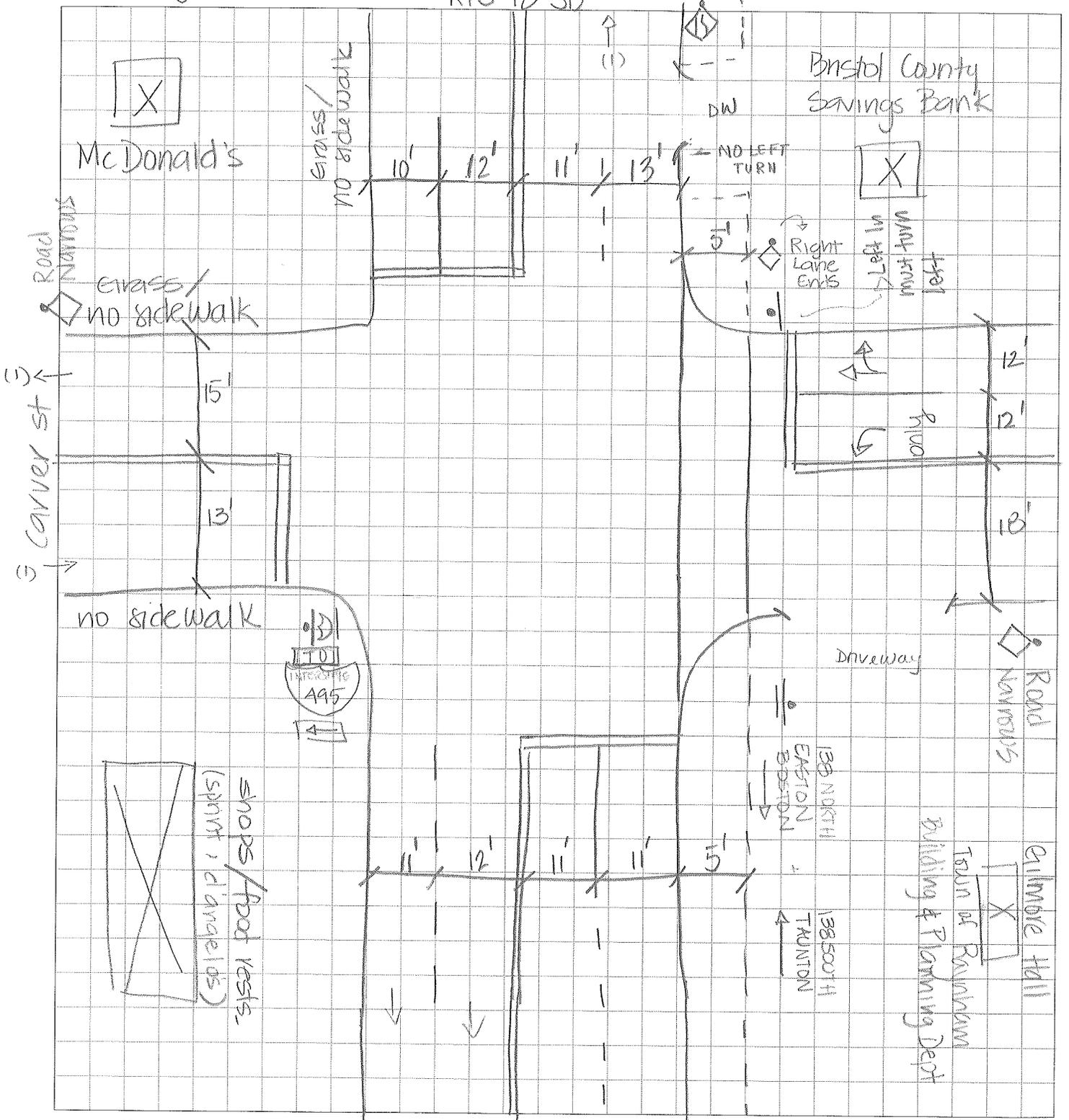
Elm St West





\* good pavem. cond  
 \* good markings  
 \* BUSY INT. DURING PM HRS  
 \* signalized

Project: SCR Project # 10111.00  
 Location: Raynham Sheet 1 of 1  
 Calculated by: NL Date: 9-17-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title Carver St @ Rte 138/Broadway St





# Computations

pictures 42 - 46

- \* unsignalized
- \* pavem. fair to good
- \* good markings
- \* LOTS OF TRAFFIC (NOON)

Project: SCR Project # 10111.00

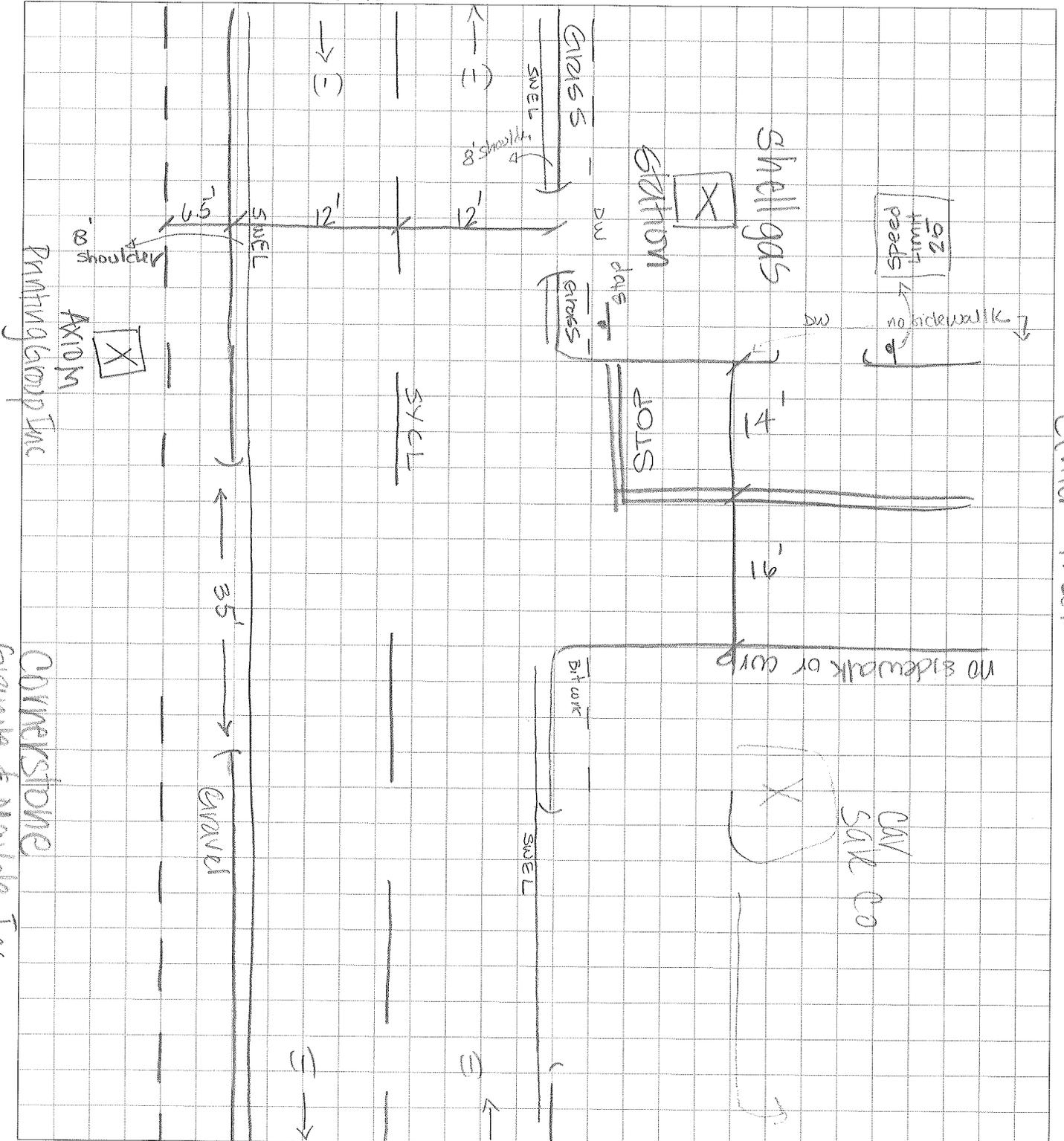
Location: Raynham Sheet 1 of 1

Calculated by: NL Date: 9-17-08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

Title Rte 138/Broadway St at Center St

Rte 138



Rte 138

Center Street

Cornerstone  
Granite & Marble, Inc  
# 770 Rte 138

AXION  
Printing Group Inc

STATION  
Shell gas

Speed Limit 20

STOP

CAY  
SARE CO



\* offset intersection

Project: SCR Project # 10111.00

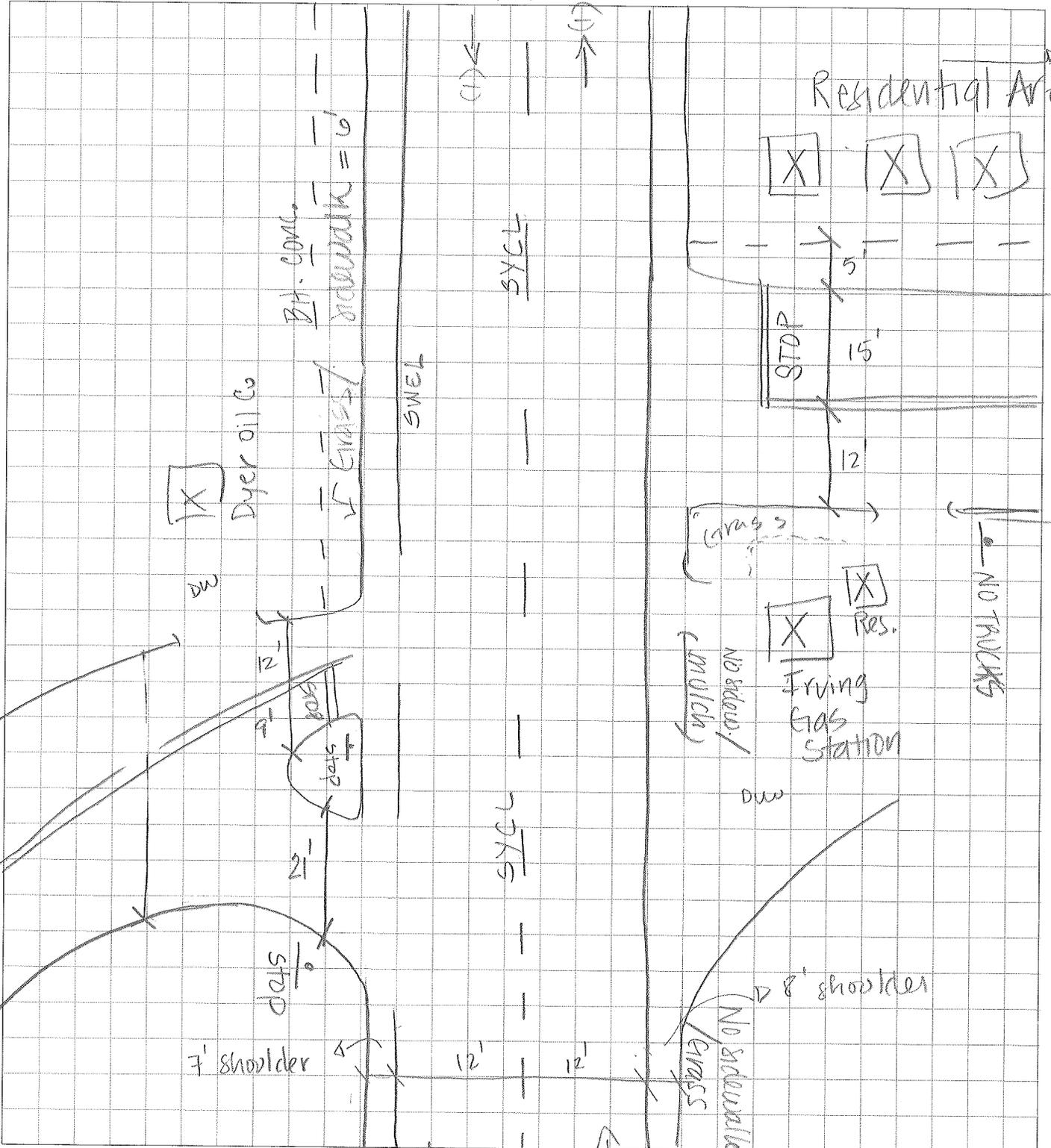
Location: Raynham Sheet 1 of 1

Calculated by: NL Date: 9-17-08

Checked by: Date:

Title Rte 138/Broadway St at Britton St

Rte 138





- \* Unsignalized
- \* 4a = 495 off-ramp (left)
- \* 4b = 495 on-ramp (right)

Project: SCR Project # 10111.00

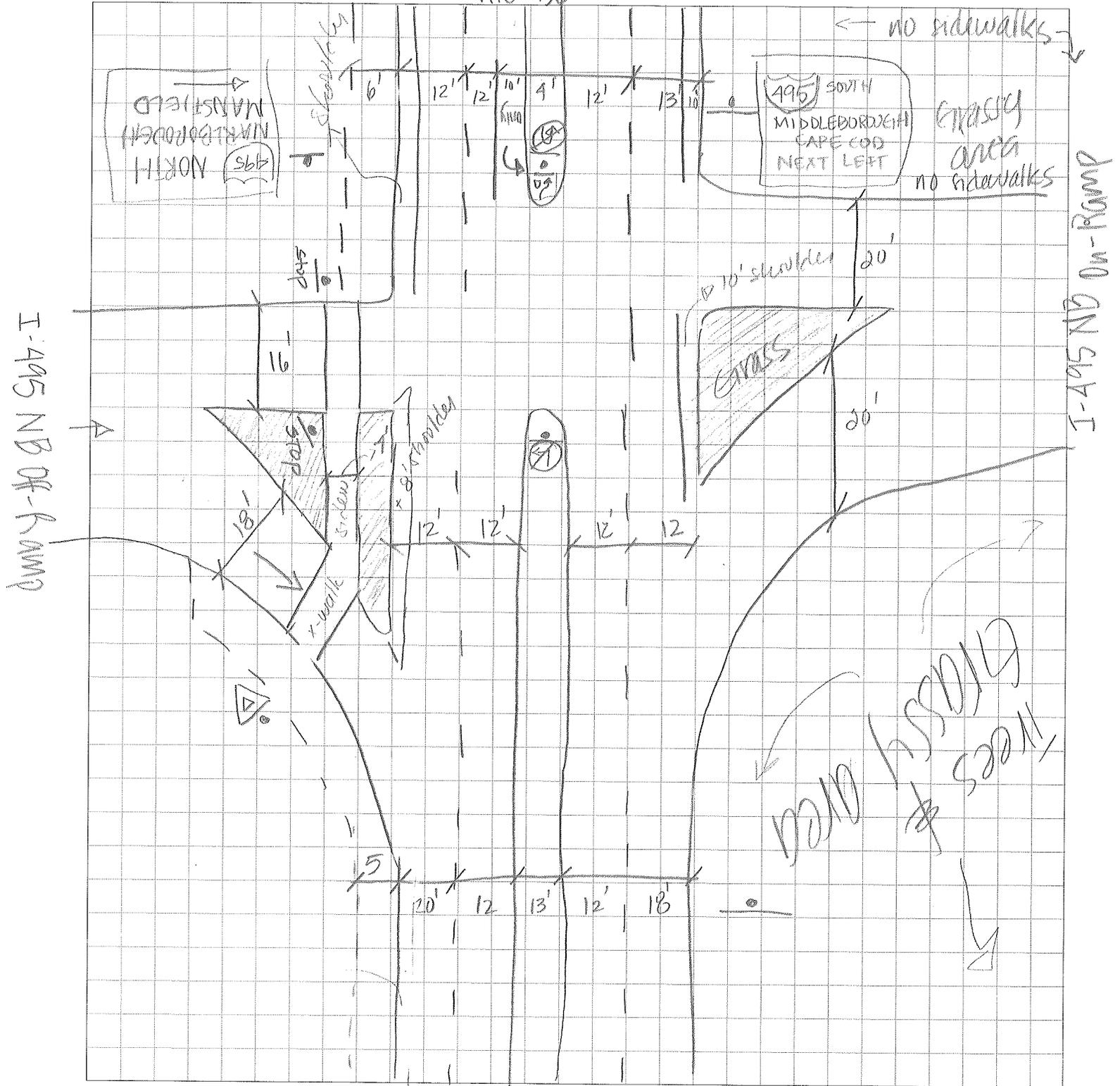
Location: Raynham Sheet 1 of 1

Calculated by: NL Date: 9-17-08

Checked by: Date:

Title: Rte 130 at I-495 ON-OFF RAMPs (4a & 4b)

Rte 130







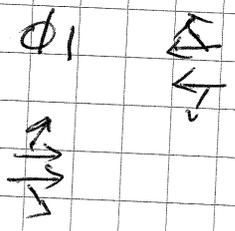
Project: SER Project # 10111-31  
 Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_  
 Calculated by: RNR Date: 9/18/08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: Signal Timing & Phasing

1-12

RAYNAM/ERSSON #1

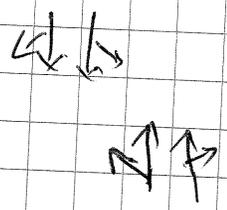
Route 106 @ Route 138

$\phi_1$  Route 106  
 $\phi_2$  Route 138

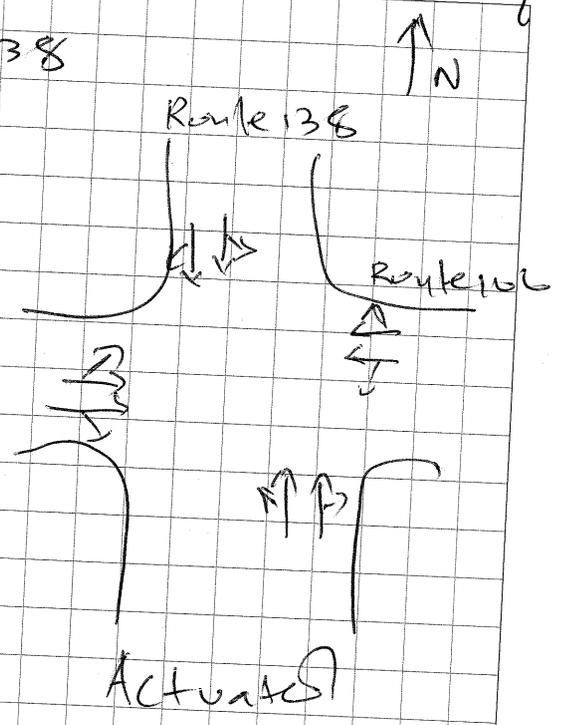


G	= 11	24	30
Y	= 4	4	4
R	= 1	1	1

$\phi_2$



G	= 30	30	30
Y	= 4	4	4
R	= 1	1	1





Project: SCR

Project # 1011131

Location:

Sheet of

Calculated by: RWR

Date: 9/18/08

Checked by:

Date:

#3

Title Signal Timing & Phasing

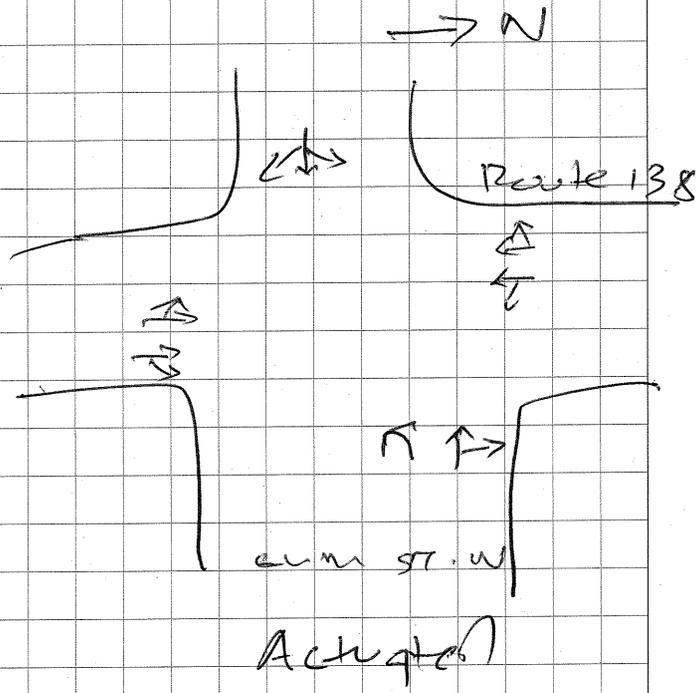
20-20

Route 138 @ Elm St. West

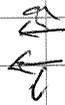
φ1 Route 138

φ2 acm st. WB LEAD

φ3 Elm St. BOTH



φ1



$$G = 25 \quad 44 \quad 18$$

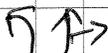
$$Y = 4 \quad 4 \quad 4$$

$$R = 1 \quad 1 \quad 1$$

acm st. w

Accepted

φ2

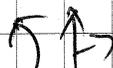


$$G = 8 \quad 11 \quad 12$$

$$Y = 3 \quad 3 \quad 4$$

$$R = 1 \quad 1 \quad 1$$

φ3



$$G = 20 \quad 11 \quad 12$$

$$Y = 4 \quad 4 \quad 4$$

$$R = 1 \quad 1 \quad 1$$



HEAVY LEFTS  
DIFFICULT TO MAKE  
TURN - TOWN OFFICIAL (STWEN  
OPPI)  
INTERSECTION  
IN A MESS DURING  
EVENING PEAK  
SEVEN

Project: 3ER Project # 10111.31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RWR Date: 9/18/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

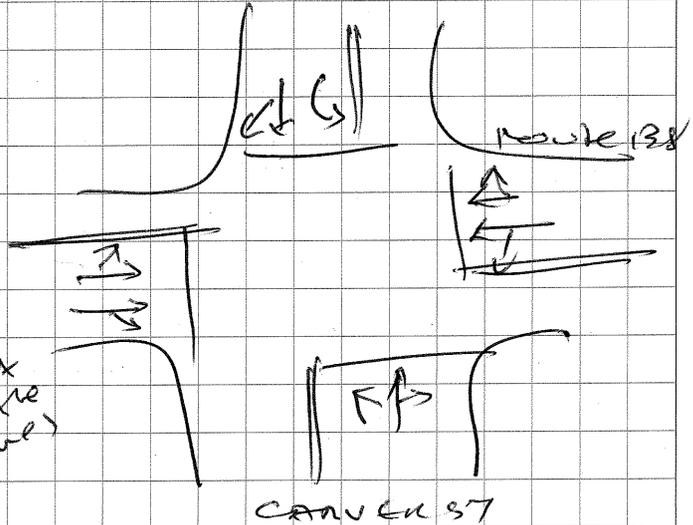
Title Signal Timing & Phasing

31-41

Route 138 @ CARVER ST

→ N

- Φ1 RTE 138 NB
- Φ2 RTE 138 SB
- Φ3 CARVER ST



These did not  
work out  
any during  
field visit  
(not at the  
time)

Φ1

↔	G = 6
↔	Y = 3
↔	R =

Φ2

↔	Δ				
↔	↔	G = 25	16	55	37
↔		Y = 4	4	4	4
↔		R = 1	1	1	1

Rest on Green

Φ3

↔	G = 7	10	15	12
↔	Y = 4	4	4	4
↔	R = 1	1	1	1

# THE COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT

## TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT BROADWAY (ROUTE 138) AT ELM STREET

IN THE TOWN OF  
**RAYNHAM**  
BRISTOL COUNTY

RAYNHAM RTE. 138 AT ELM STREET				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1338	01	1	1
TITLE SHEET				

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

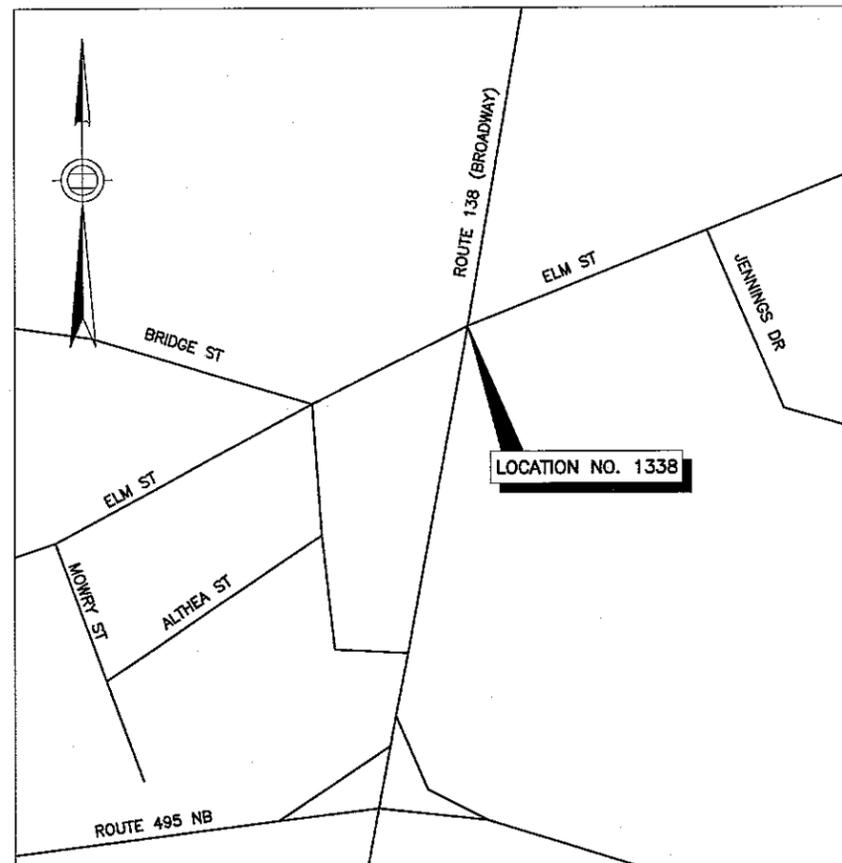
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

### I STANDARDS OF INSTALLATION

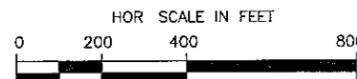
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

### II OPERATION OF SIGNALS

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO 3
- (e) Hours for Automatic Operation: CONTINUOUS  
Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
(SCALE AS SHOWN)



REVISION NO. 01  
DATE: 12-12-01  
INSERT BY: J.C.CONNOR  
DATE: \_\_\_\_\_  
FILE NAME: 1338T0101.DWG

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



10 PARK PLAZA  
BOSTON, MA 02116

MASSACHUSETTS  
HIGHWAY DEPARTMENT

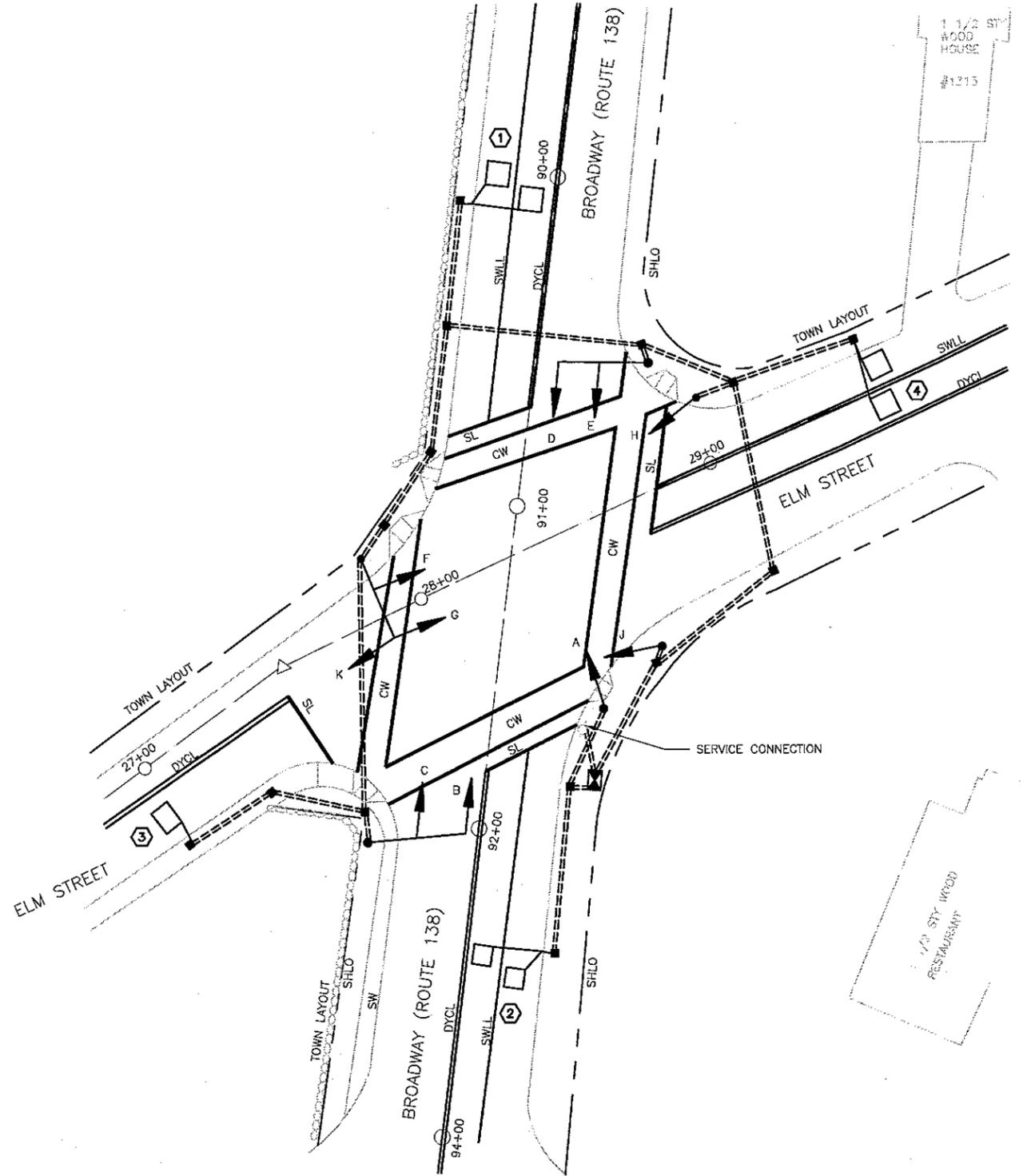
APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER \_\_\_\_\_ Date \_\_\_\_\_

**RAYNHAM**  
**RTE. 138 AT ELM STREET**

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1338	01	2	3

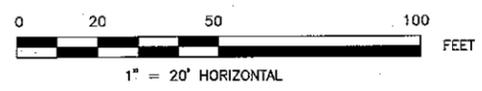
**TRAFFIC SIGNAL PLAN**



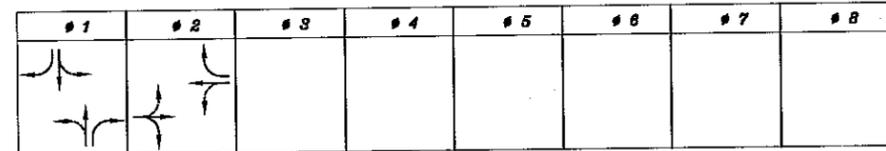
-  SIGNAL CONTROLLER
-  VEHICULAR SIGNAL
-  OPTICALLY PROGRAMMED VEHICULAR SIGNAL
-  FIRE PRE-EMPTION RECEIVER
-  FIRE PRE-EMPTION STROBE LIGHT
-  PEDESTRIAN SIGNAL
-  PEDESTRIAN PUSH BUTTON
-  PULL BOX

APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER Date



1338P01.01.DWG



**SEQUENCE AND TIMING FOR FULLY-ACTUATED CONTROL (ISOLATED)**

STREET	DIRECTION	PHASINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PHASE
BROADWAY (ROUTE 138)	NB	D,E	G	Y	R	R	R	R																			FY
BROADWAY (ROUTE 138)	SB	A,B,C	G	Y	R	R	R	R																			FY
ELM STREET	EB	K,H,J	R	R	R	G	Y	R																			FR
ELM STREET	WB	F,G	R	R	R	G	Y	R																			FR

		TIMING IN SECONDS																								EMERGENCY ONLY		
MINIMUM GREEN (INITIAL)		9																										
PASSAGE TIME (VEHICLE)		4																										
MAXIMUM 1		35																										
MAXIMUM 2		35																										
YELLOW CLEARANCE			4				4																					
RED CLEARANCE					1				1																			
WALK (W)																												
PEDESTRIAN CLEARANCE																												
RECALL					EXT				OFF																			
MEMORY					LOCKING				LOCKING																			

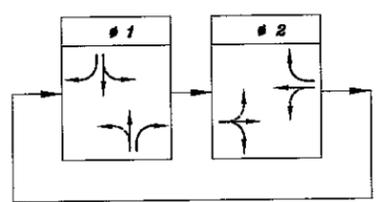
**MAJOR ITEMS REQUIRED**

QUANTITY	ITEM
1	CONTROLLER TYPE 8DW, CAB. & FDN.
1	SERVICE CONNECTION (OVERHEAD)
3	10' SIGNAL POLE, BASE, & FDN.
1	25' MAST ARM ASSEMBLY, BASE, & FDN.
2	30' MAST ARM ASSEMBLY, BASE, & FDN.
8	1 WAY, 3 SECTION, SIGNAL HOUSING (12" LENS)
1	2 WAY, 3 SECTION SIGNAL HOUSING (12" LENS)
7	ROADWAY LOOP DETECTOR
14	12" x 12" PULL BOX

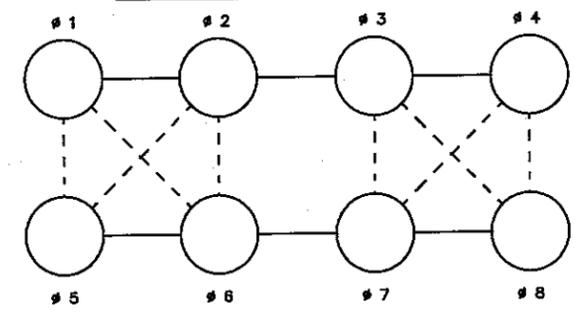
*Necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.*

- NOTES:**
- SEQUENCE AND TIMING NOTES:**
- #4, #5, #6, #7 AND #8 NOT USED.
- NEMA DUAL RING PHASING NOTES:**
- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
  - PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
  - THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
  - IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
- LOOP DETECTOR NOTES:**
- SEE LOOP DETECTOR DETAIL SHEET FROM DESIGN DOCUMENT FOR SPLICE PATTERN AND OTHER INFORMATION.
  - DELAY AND EXTENSION TIMES ARE IN SECONDS.
  - DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR.

**PREFERENTIAL PHASING SEQUENCE**



**NEMA DUAL RING PHASING NOTES:**



**LOOP DETECTOR DATA**

DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE	NUM. OF TURNS	# CALLED	# EXT.	MODE PULSE PRESENCE	DELAY TIME	EXT. TIME
①	2	6'x6'		#1	#1	PRESENCE		
②	2	6'x6'		#1	#1	PRESENCE		
③	1	6'x9'		#2	#2	PRESENCE		
④	2	6'x6'		#2	#2	PRESENCE		

**SIGNAL IDENTIFICATION**

- 1: LED    2: INCANDESCENT    3: FIBEROPTIC
- |          |     |   |
|----------|-----|---|
| 12" LENS | (R) | 1 |
|          | (Y) | 2 |
|          | (G) | 2 |
|          | ALL |   |

CONTROLLER MAKE & MODEL: TCT LMD  
 UTILITY POLE No. TMLP #210  
 METER No. 57-888-285  
 EMERGENCY PRE-EMPTION (TYPE): NONE

**APPROVED BY:** \_\_\_\_\_

**STATE TRAFFIC ENGINEER**      Date

RAYNHAM				
BROADWAY (RTE 138) AT CARVER ST				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	5-1339	01	1	3
TITLE SHEET				

THE COMMONWEALTH OF MASSACHUSETTS  
 MASSACHUSETTS HIGHWAY DEPARTMENT

TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT  
 BROADWAY (ROUTE 138) AT CARVER STREET

IN THE TOWN OF

RAYNHAM

BRISTOL COUNTY

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

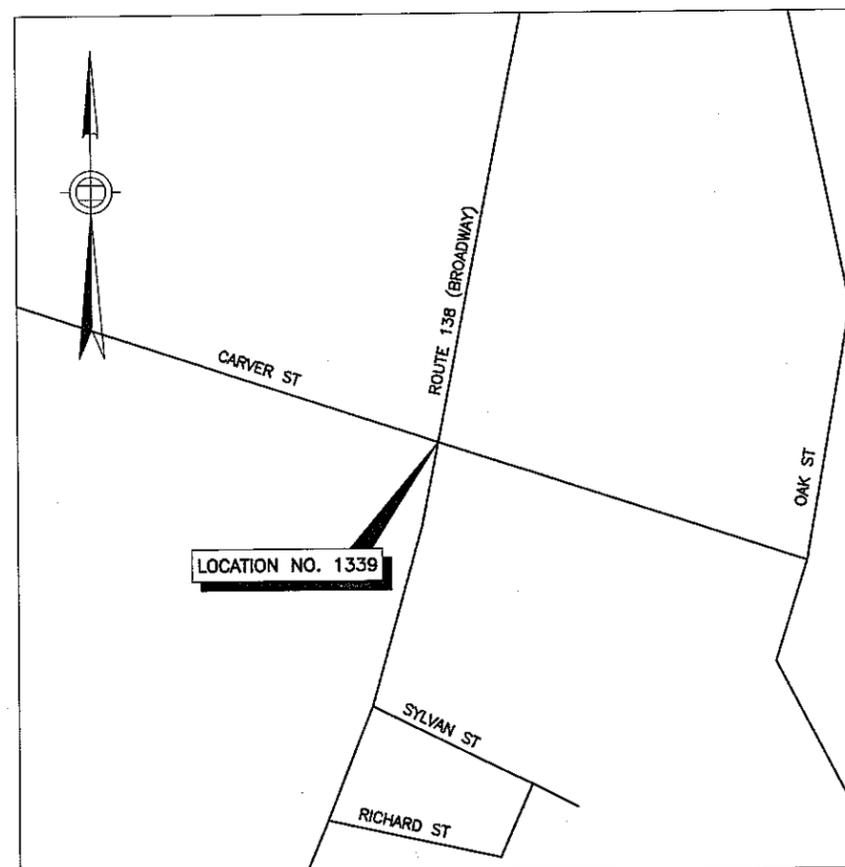
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

I. STANDARDS OF INSTALLATION

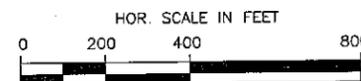
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II. OPERATION OF SIGNALS

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
 Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
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- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
 (SCALE AS SHOWN)



REVISION NO. 01  
 DATE: 12-12-01  
 INSERT BY: J.C. CONNOR  
 DATE:  
 FILE NAME: 1339T0101.DWG

COMMENTS:



10 PARK PLAZA  
 BOSTON, MA 02116

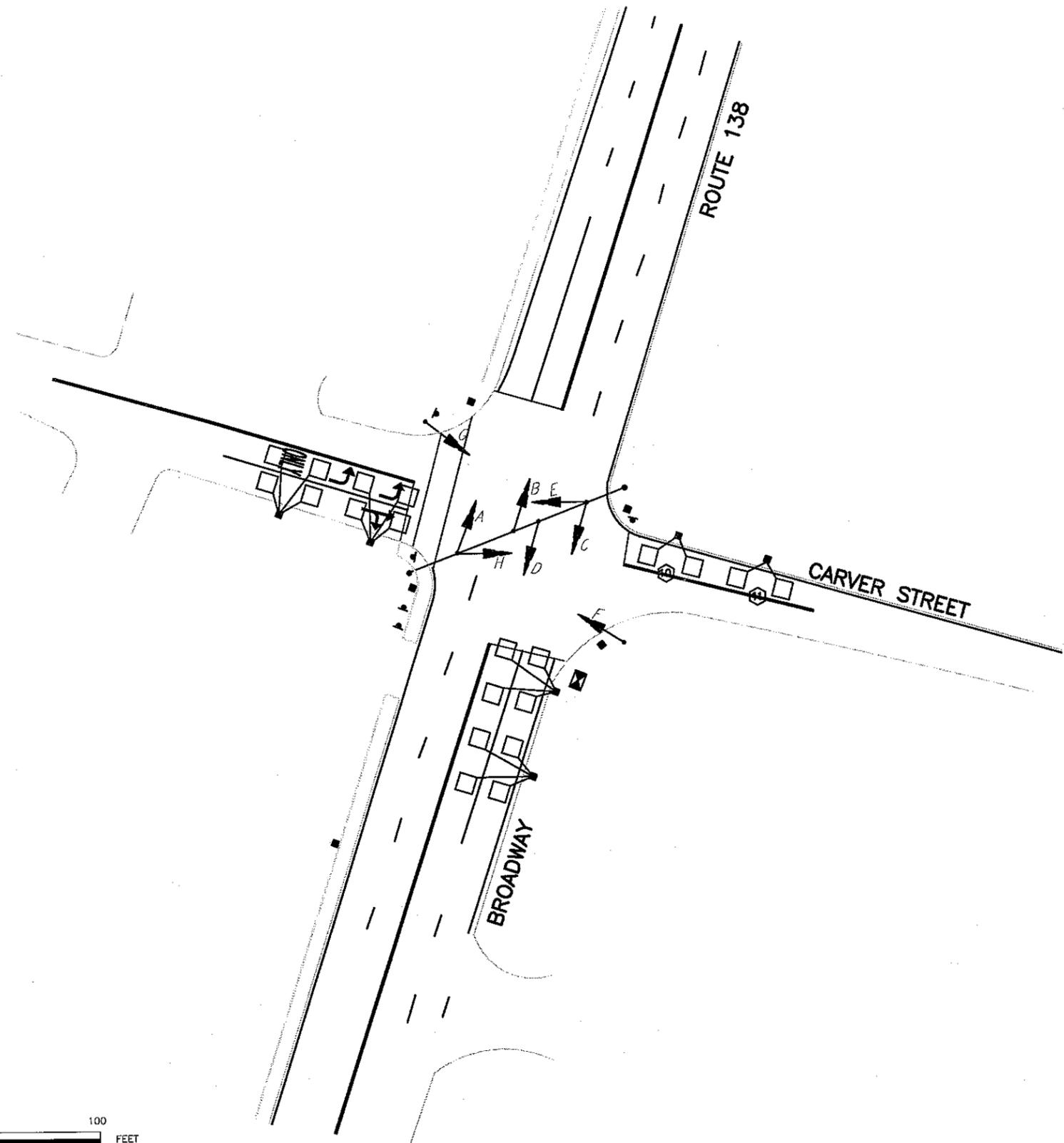
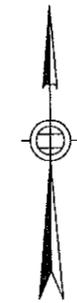
MASSACHUSETTS  
 HIGHWAY DEPARTMENT

APPROVED BY:

STATE TRAFFIC ENGINEER Date

RAYNHAM				
BROADWAY (RTE 138) AT CARVER ST				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	5-1339	01	2	3

TRAFFIC SIGNAL PLAN



1339P0101.DWG

LEGEND

-  SIGNAL CONTROLLER
-  VEHICULAR SIGNAL
-  OPTICALLY PROGRAMMED VEHICULAR SIGNAL
-  FIRE PRE-EMPTION RECEIVER
-  FIRE PRE-EMPTION STROBE LIGHT
-  PEDESTRIAN SIGNAL
-  PEDESTRIAN PUSH BUTTON
-  PULL BOX

APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date \_\_\_\_\_





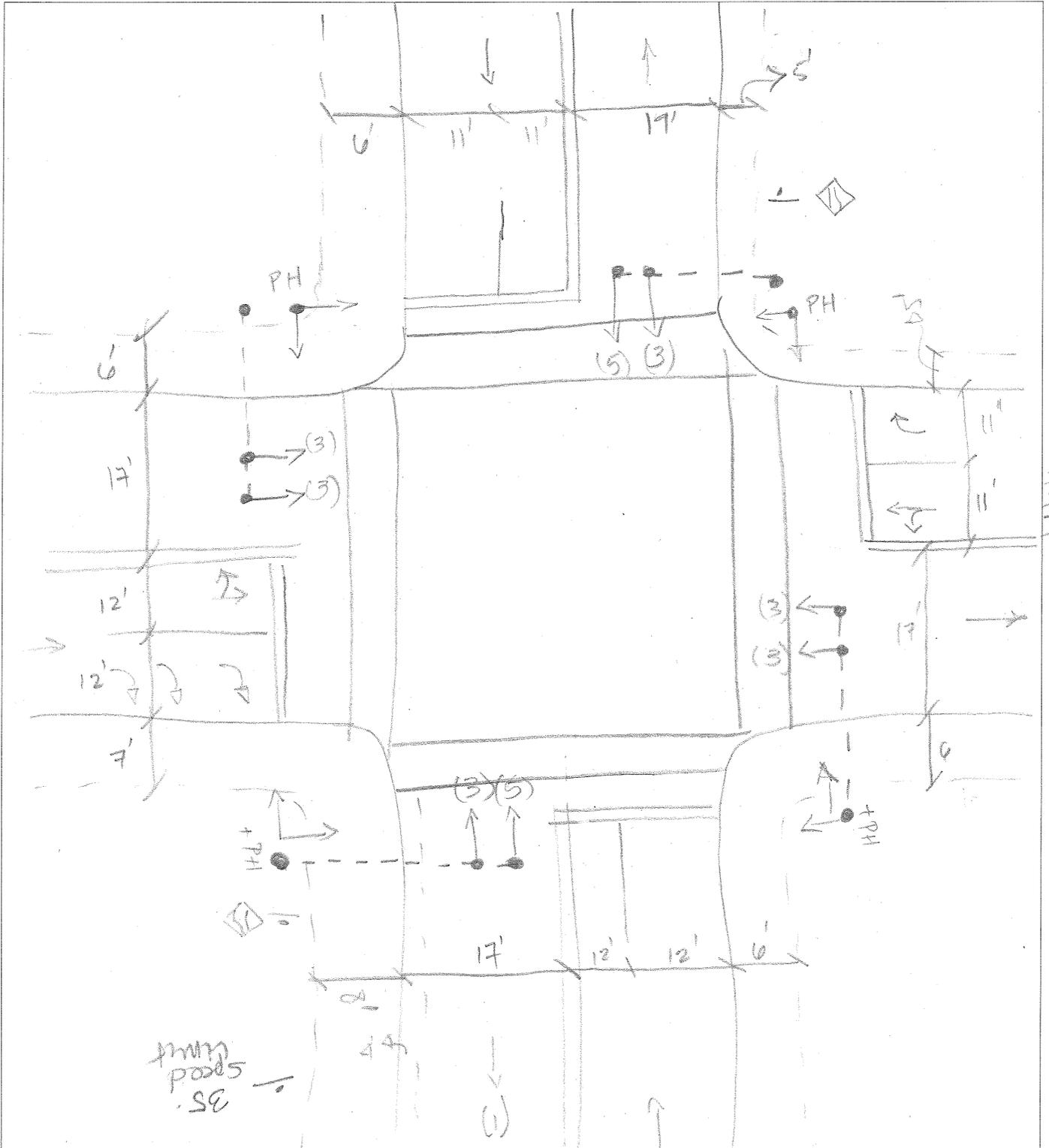
# Computations

Project: SCR  
 Location: Taunton  
 Calculated by: NL  
 Checked by:  
 Title: Hart St @ Rte 140

Project # 10111.31  
 Sheet of  
 Date: 9/11/08  
 Date:



Rte 140



PH  
 H2O  
 SE

Hart St

Rte 140



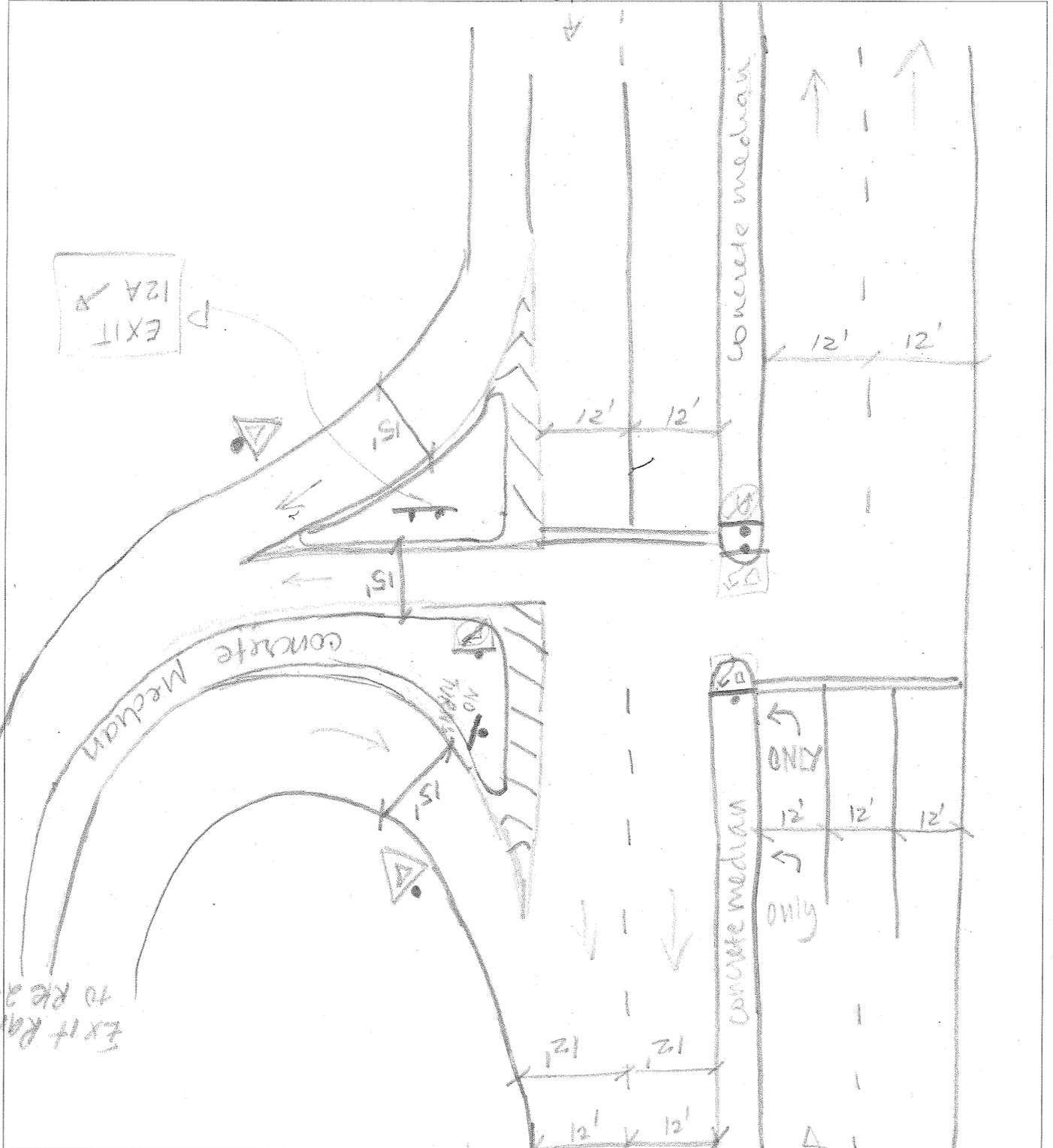


\* signalized

Project: SCR  
Location: Taunton, MA  
Calculated by:  
Checked by:

Project # 10111.31  
Sheet 1 of  
Date: 9/11/08  
Date:

#2 Title Rte 140 @ Exit 12A NORTH RAMP  
Rte 140 NB





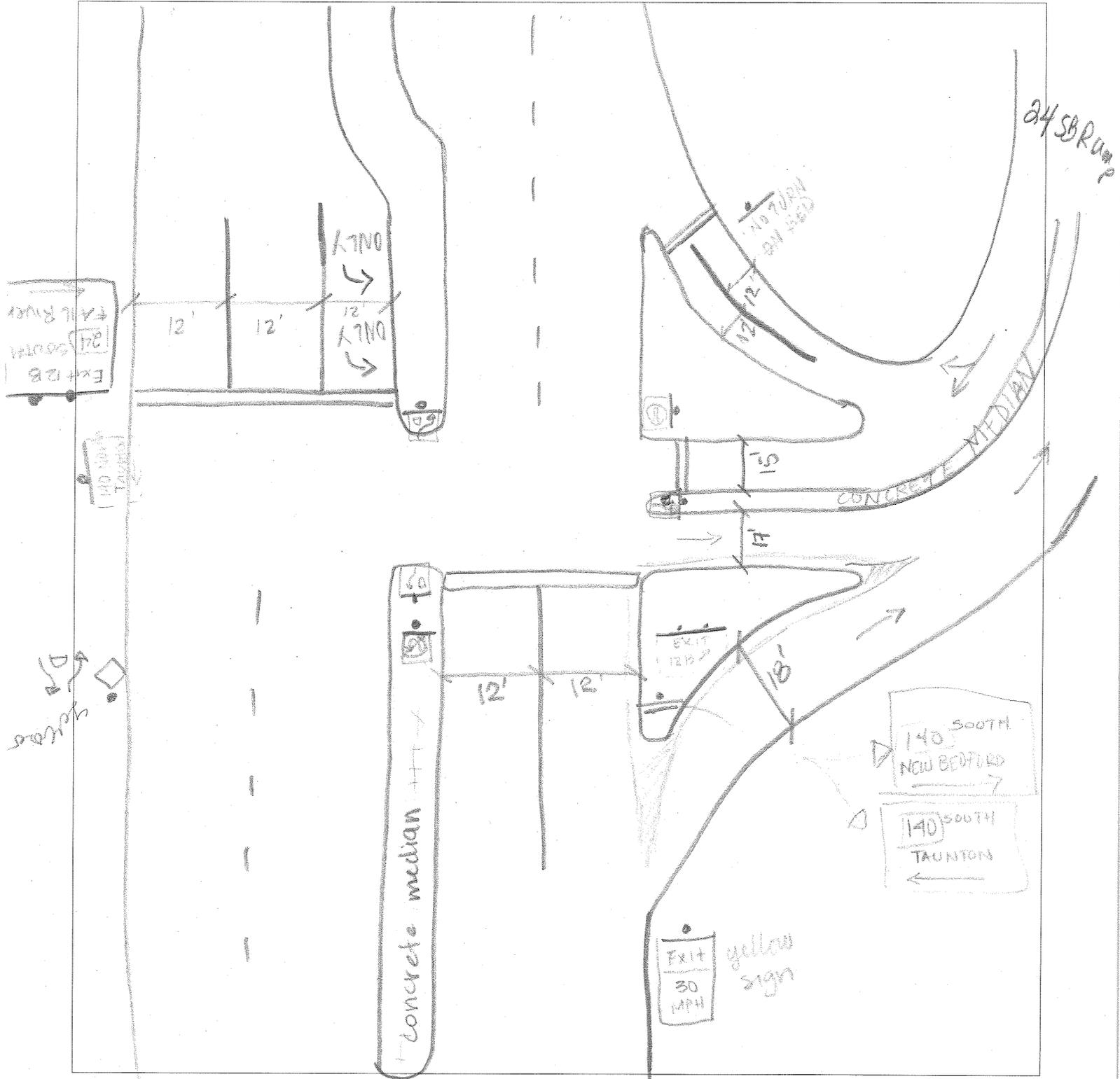
# Computations

*A signalized*



#3

Project: SCR Project # 10111.31  
 Location: Taunton, MA Sheet of  
 Calculated by: Date:  
 Checked by: Date:  
 Title: Rte 140 @ Exit 12B Route 24 South



Rte. 140



# Computations

\* Signalized



county st

SCR

Project:

Project #

10111.31

Location:

Taunton

Sheet

of

Calculated by:

Date:

9/11/08

Checked by:

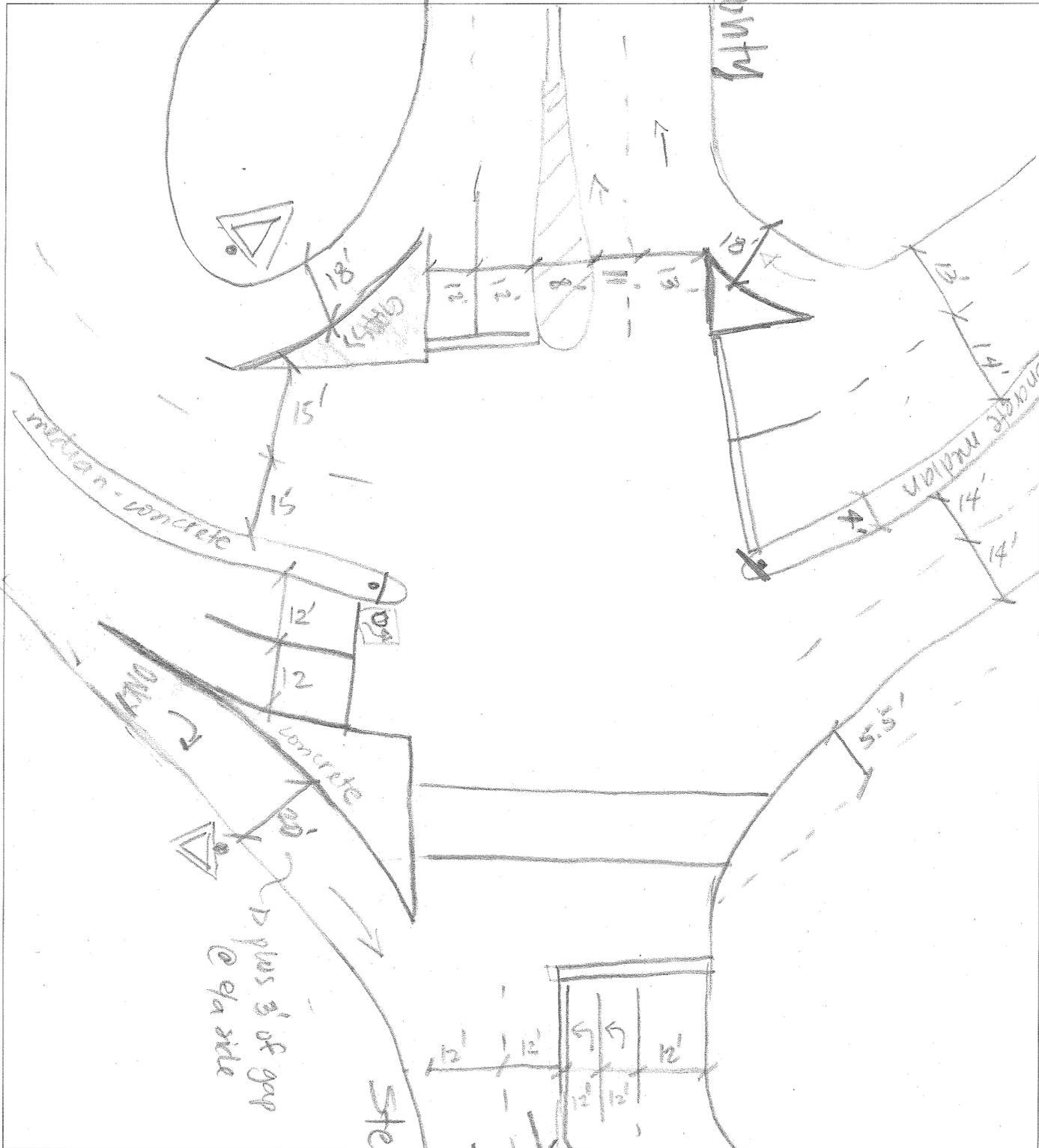
Date:

Title

Stevens St @ Rte 140 NB Off / on Ramps

#6

county





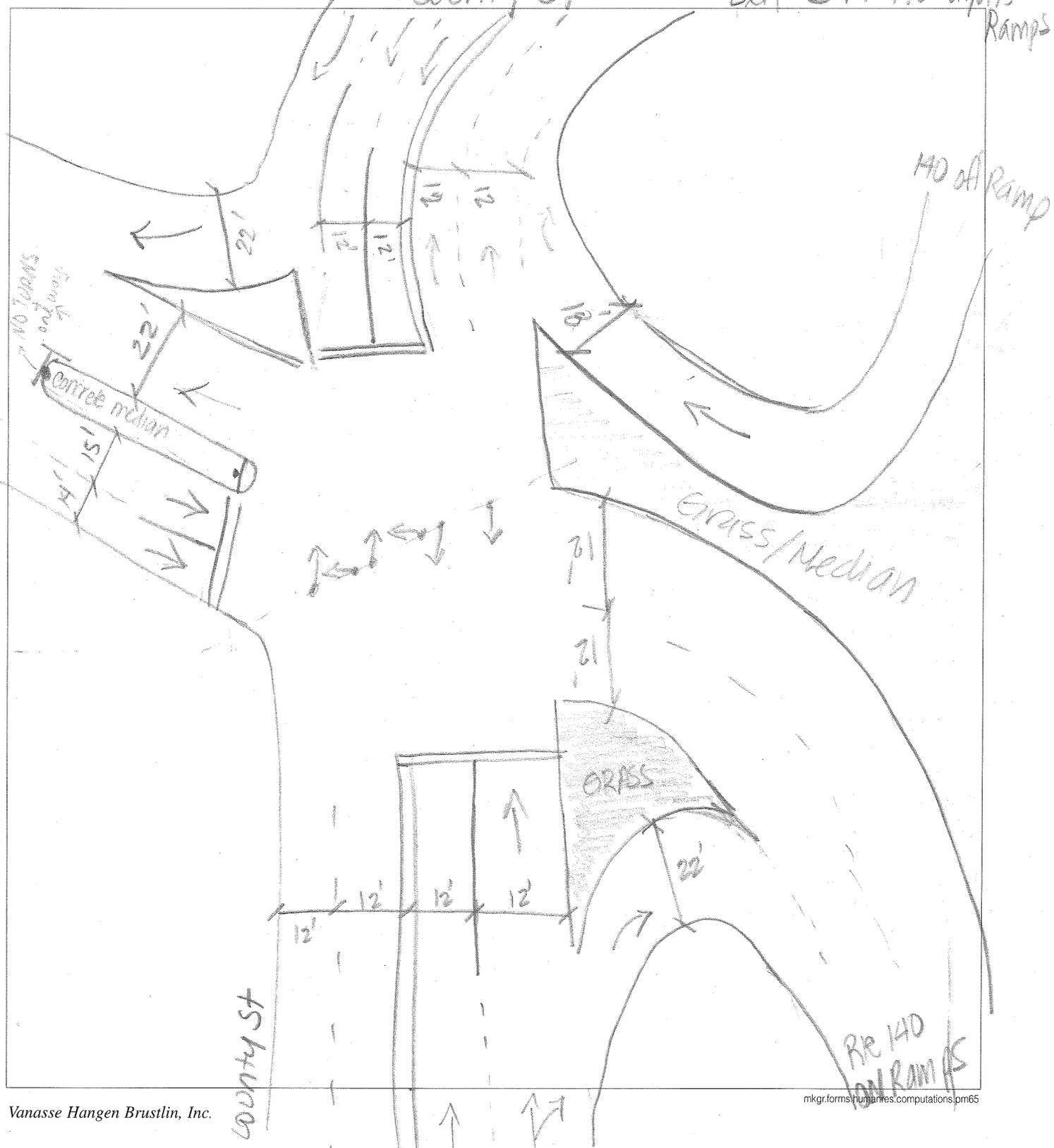
# Computations

↑ N

Project: SCR Project # 10111.31  
 Location: TAUNTON, MA Sheet 1 of 1  
 Calculated by: NL Date: 9/11/08  
 Checked by: Date:

#7 Title County St @ Galleria Mall SE entrance/  
 county St Exit @ RR 140 ON/OFF Ramps

RR 140 RAMP





Project: SCR Project # 10111-31

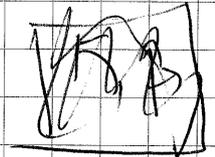
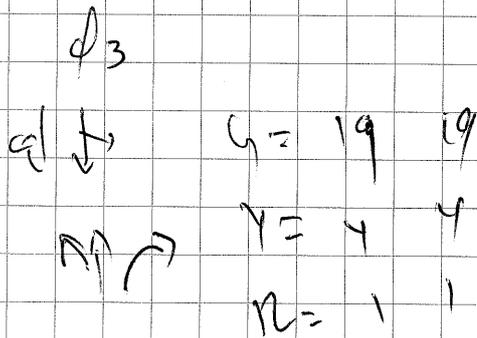
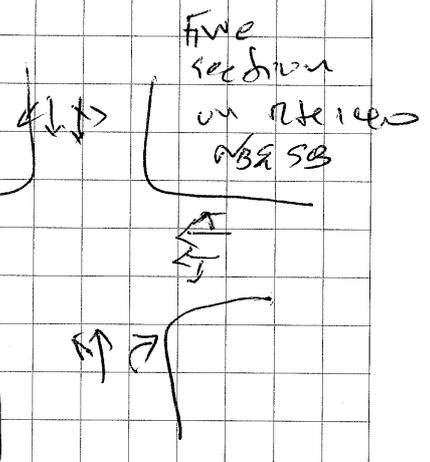
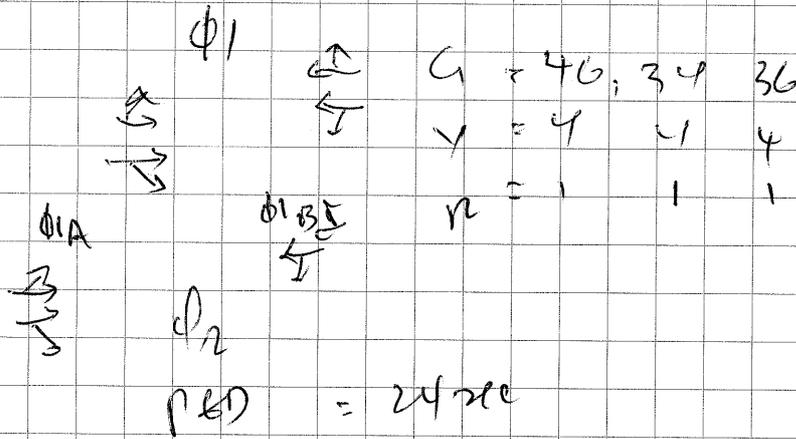
Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/11/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#1 Title Signal Timing & Phasing

Route 140 @ Hot Street



$\phi_{1A}$  or  $\phi_{1B}$   
is 2000 S.



Project: SCR Project # 10111.31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/11/08

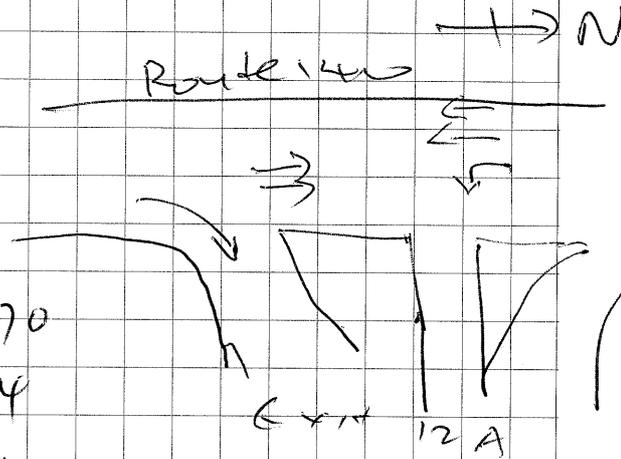
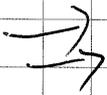
Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#<sup>N</sup> Title Signal Timing & Phasing

Route 140 @ Exit 12 A to Route 24 NB

$\phi 1$      $C_n = 17 \ 10 \ 17 \ 18$   
 $\leftarrow$      $\gamma = 4 \ 4 \ 4 \ 4$   
 $\downarrow$      $\rho = 1 \ 1 \ 1 \ 1$

$\phi 2$      $C_n = 69 \ 65 \ 85 \ 70$   
 $\leftarrow$      $\gamma = 4 \ 4 \ 4 \ 4$   
 $\downarrow$      $\rho = 1 \ 1 \ 1 \ 1$





Project: SCR

Project # 10111.31

Location:

Sheet of

Calculated by: RNR

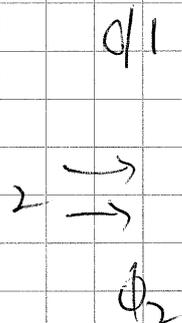
Date: 7/11/08

Checked by:

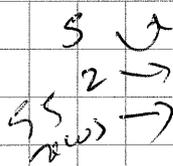
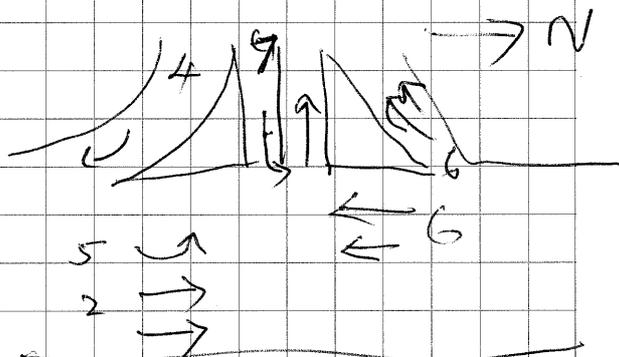
Date:

Title: Signal Timing & Phasing

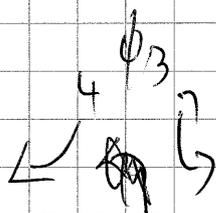
Route 140 @ 2nd 12B to Route 245B



$G = 35, 27$   
 $\gamma = 4, 4$   
 $\rho = 4, 1$



$G = 10, 12, 20$   
 $\gamma = 4, 4, 4$   
 $\rho = 1, 1, 1$



$G = 13, 23, 42, 60$   
 $\gamma = 4, 4, 4, 4$   
 $\rho = 1, 1, 1, 1$



Project: SCR Project # 10171-31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

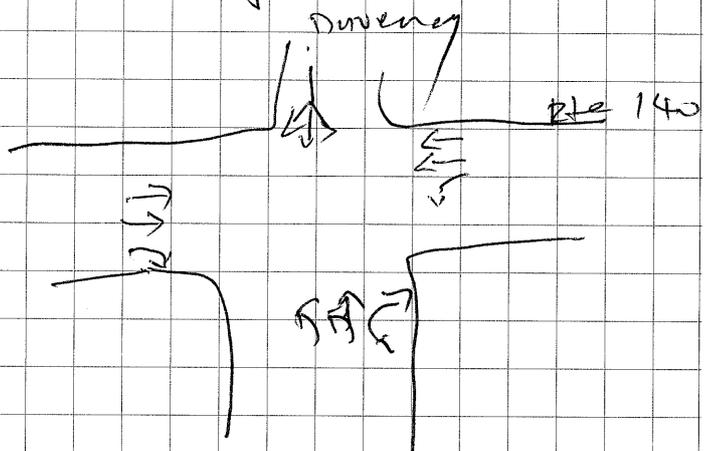
Calculated by: RNR Date: 9/11/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

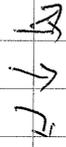
#5 Title Signal Timing & Phasing

Ramp 140 @ Taunton Depot Drive

$\phi_1$   
 $G = 15 \ 16 \ 12$   
 $Y = 4 \ 4 \ 4$   
 $R = 1 \ 1 \ 1$



$\phi_2$   
 $G = 31 \ 40 \ 34$   
 $Y = 4 \ 4 \ 4$   
 $R = 1 \ 1 \ 1$



$\phi_3$  Ped 25' 7  
 upon push button activation

$G = 8 \ 17$   
 $Y = 4 \ 4$   
 $R = 1 \ 1$



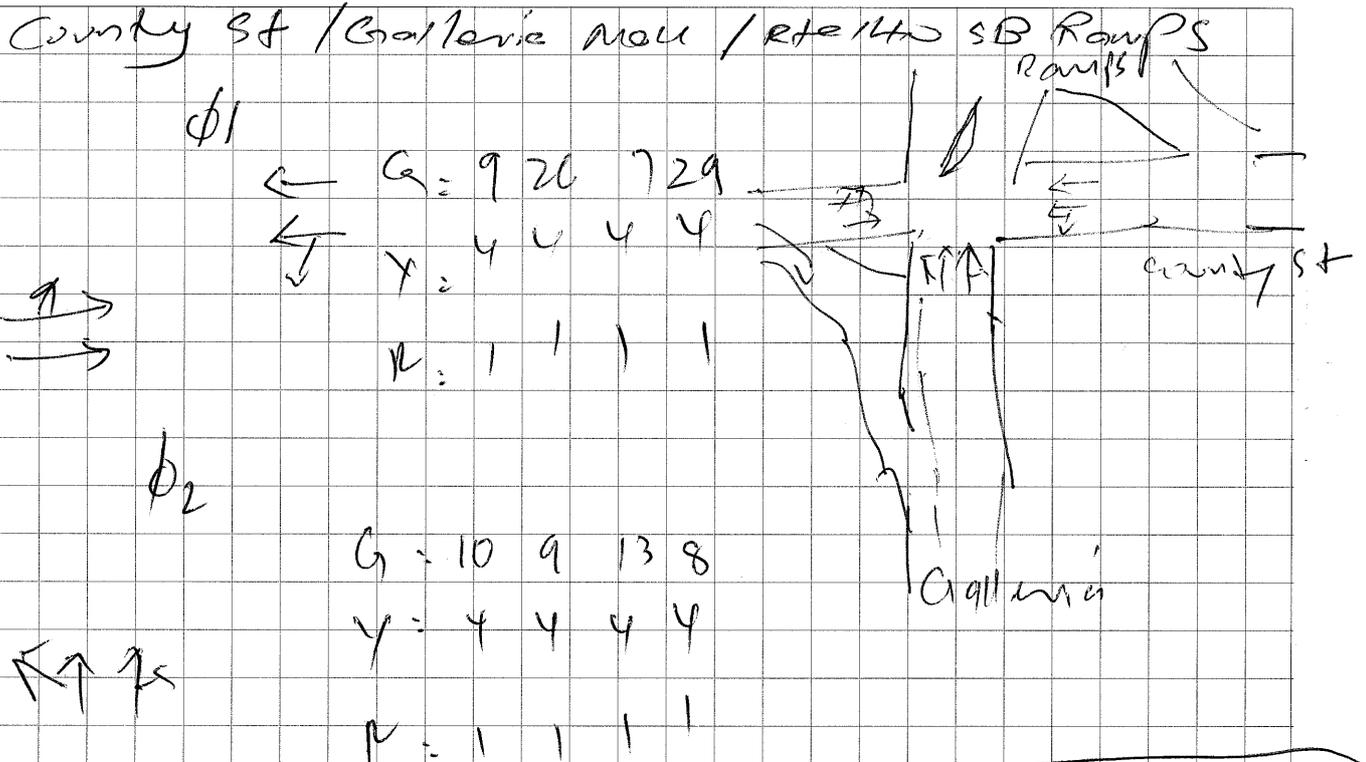
Project: SCR Project # 10111.51

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

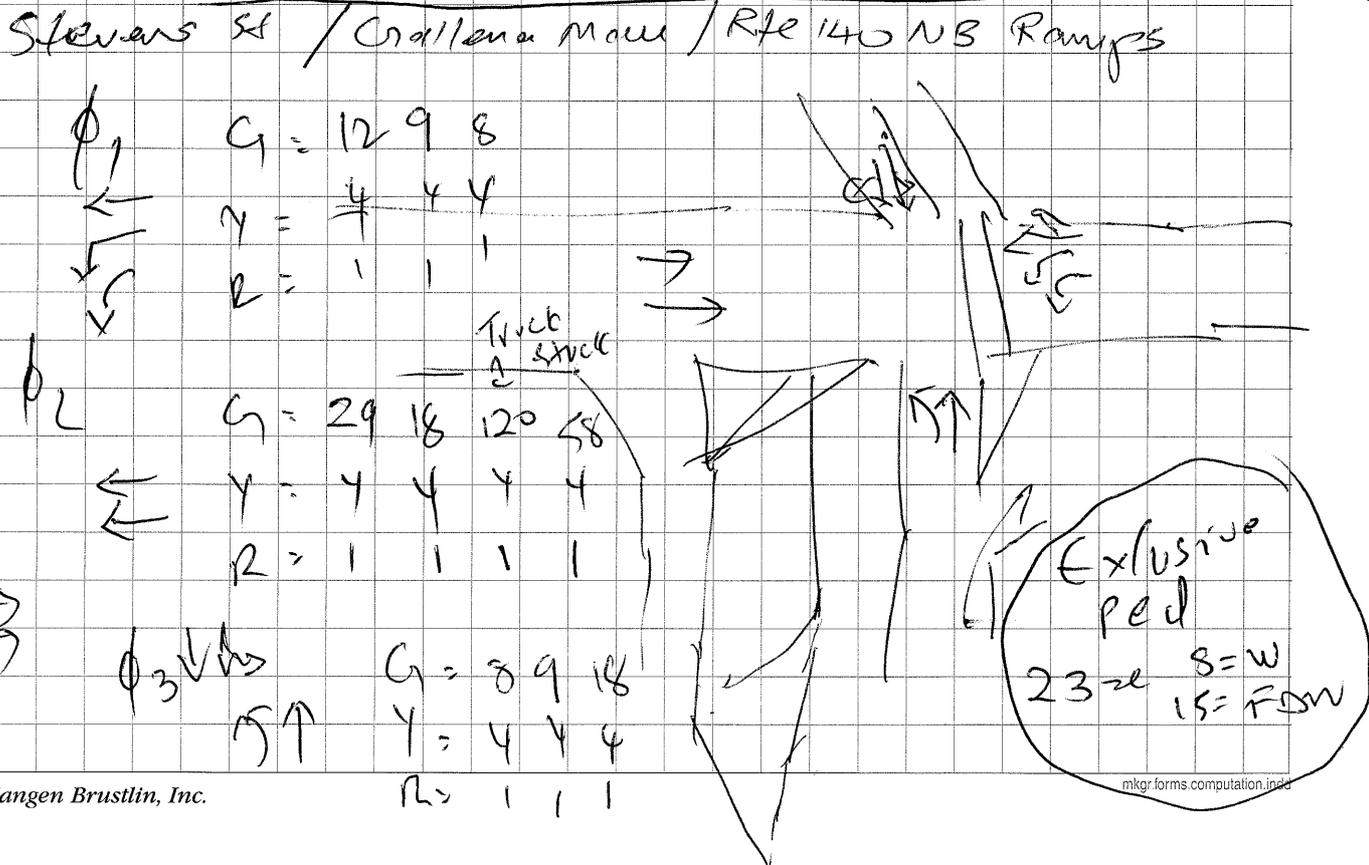
Calculated by: RNR Date: 9/11/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#X Title Signal Timing & Phasing

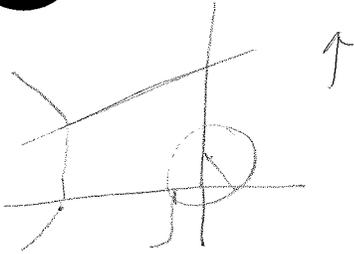


#6





# Computations



Project:

Project # 71914.06

Location:

Sheet of

Calculated by: TU

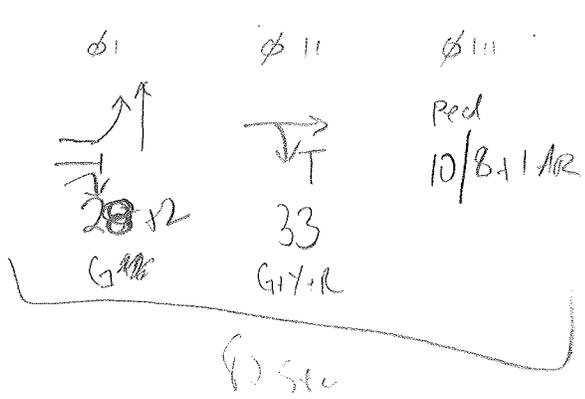
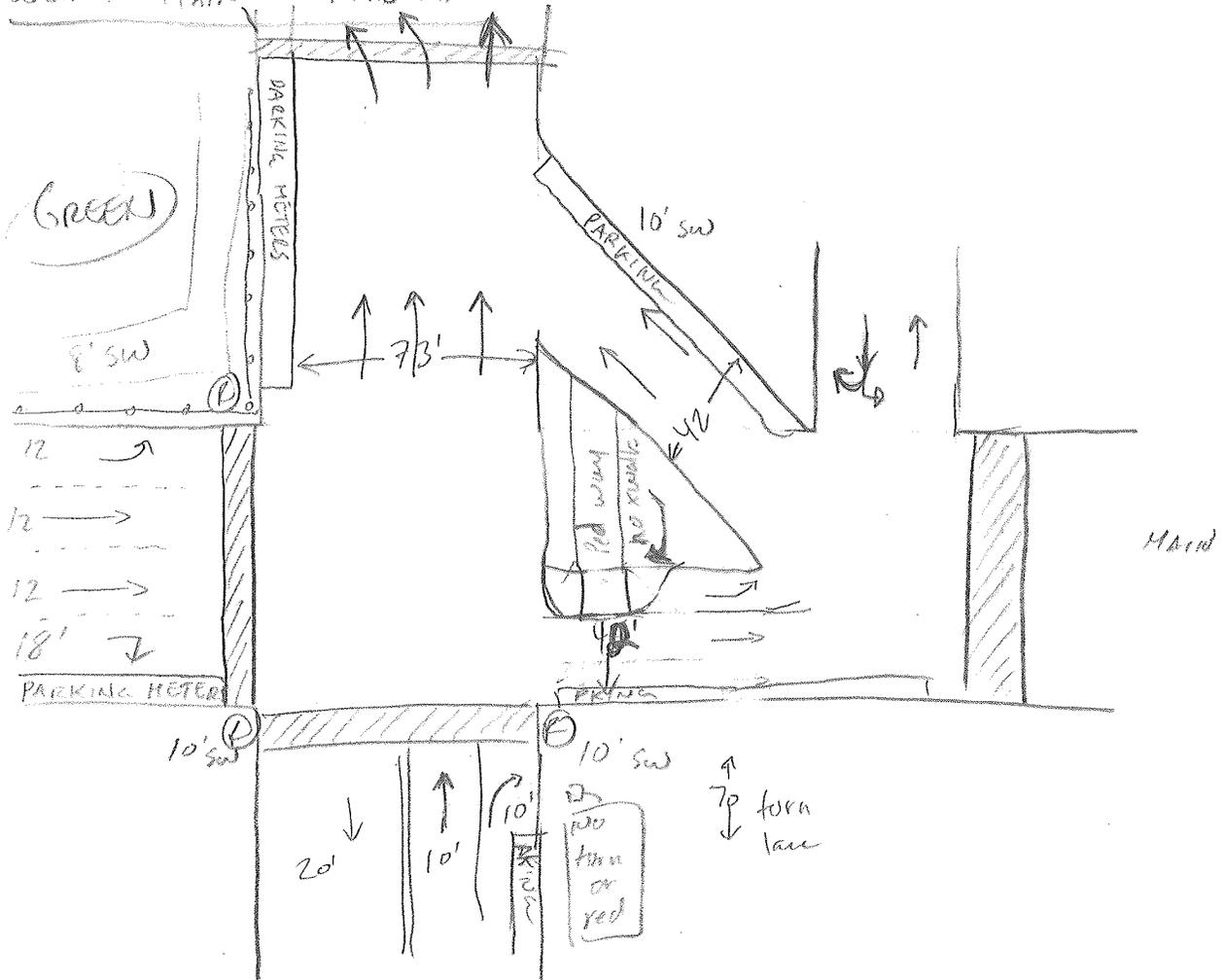
Date: July 20, 2006

Checked by:

Date:

Title

## 12 Weir + MAIN + BROADWAY





# Computations

Project:

Project # 71714-02

Location:

Sheet of

Calculated by: TV

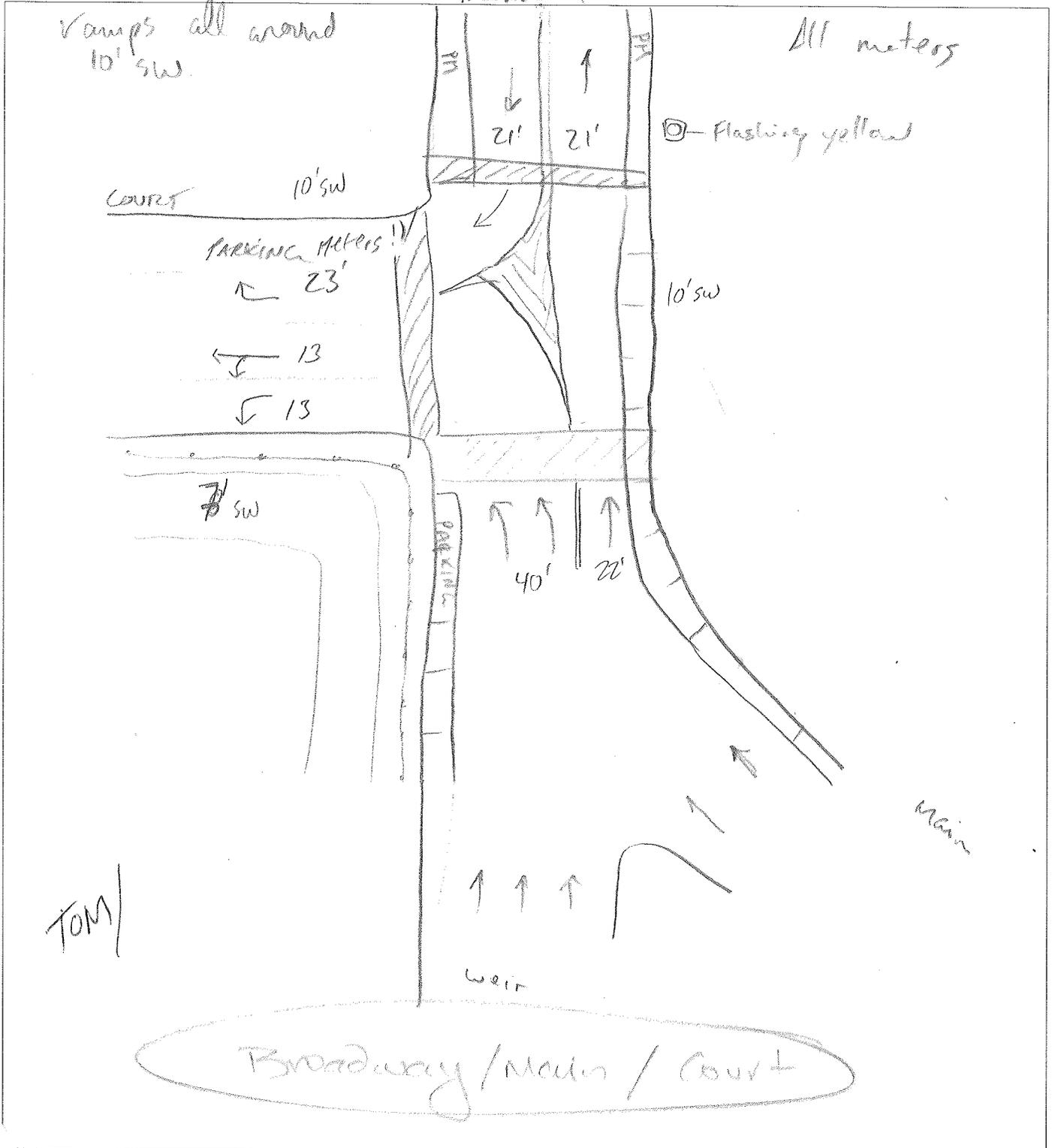
Date: July 2006

Checked by:

Date:

Title

BROADWAY





# Computations

Project:

Project #

71914.02

Location:

Sheet of

Calculated by:

TU

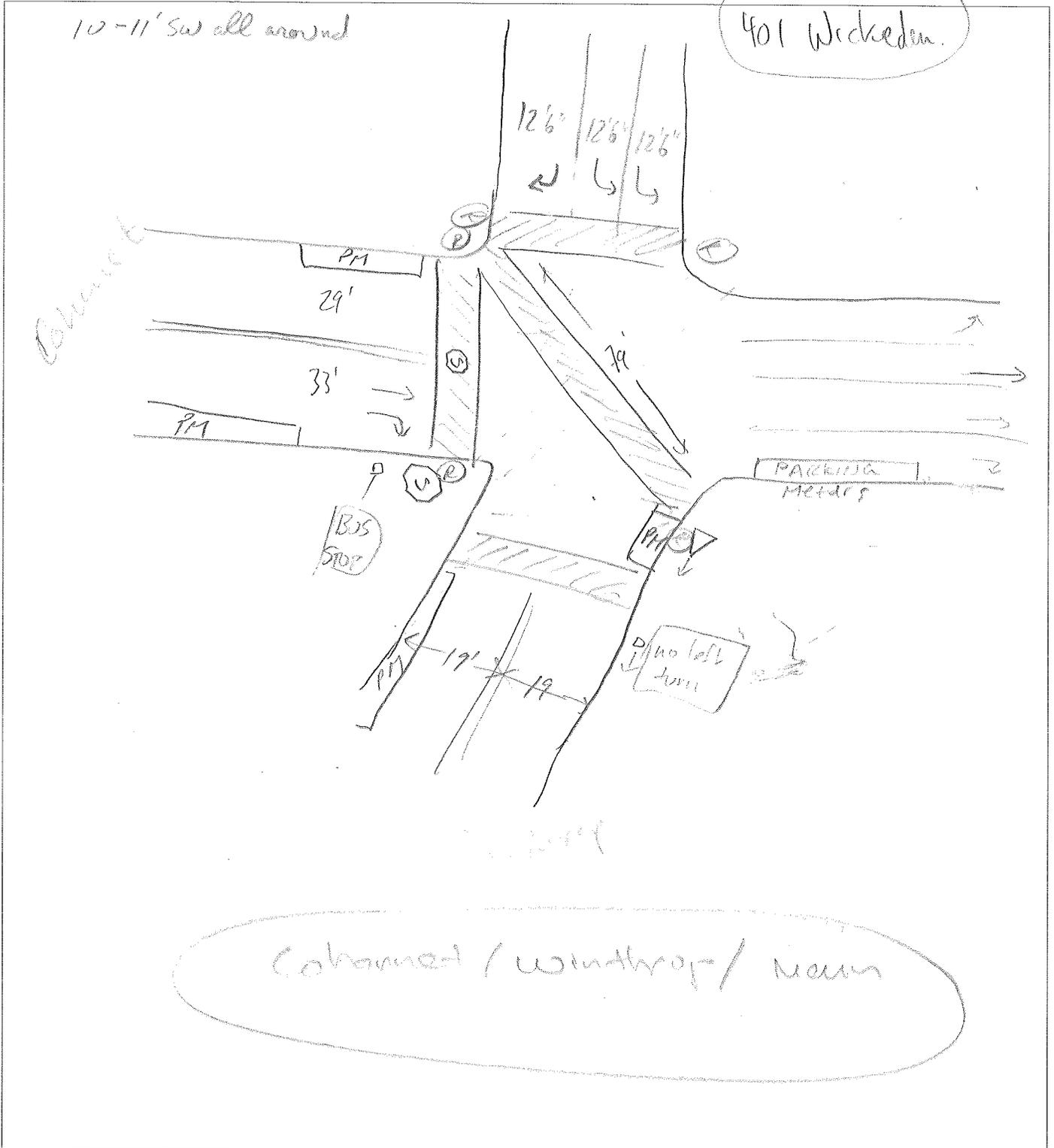
Date:

July 2006

Checked by:

Date:

Title



Cohamed / windtrap / main





# Computations

Project:

Project # 71914-02

Location:

Sheet of

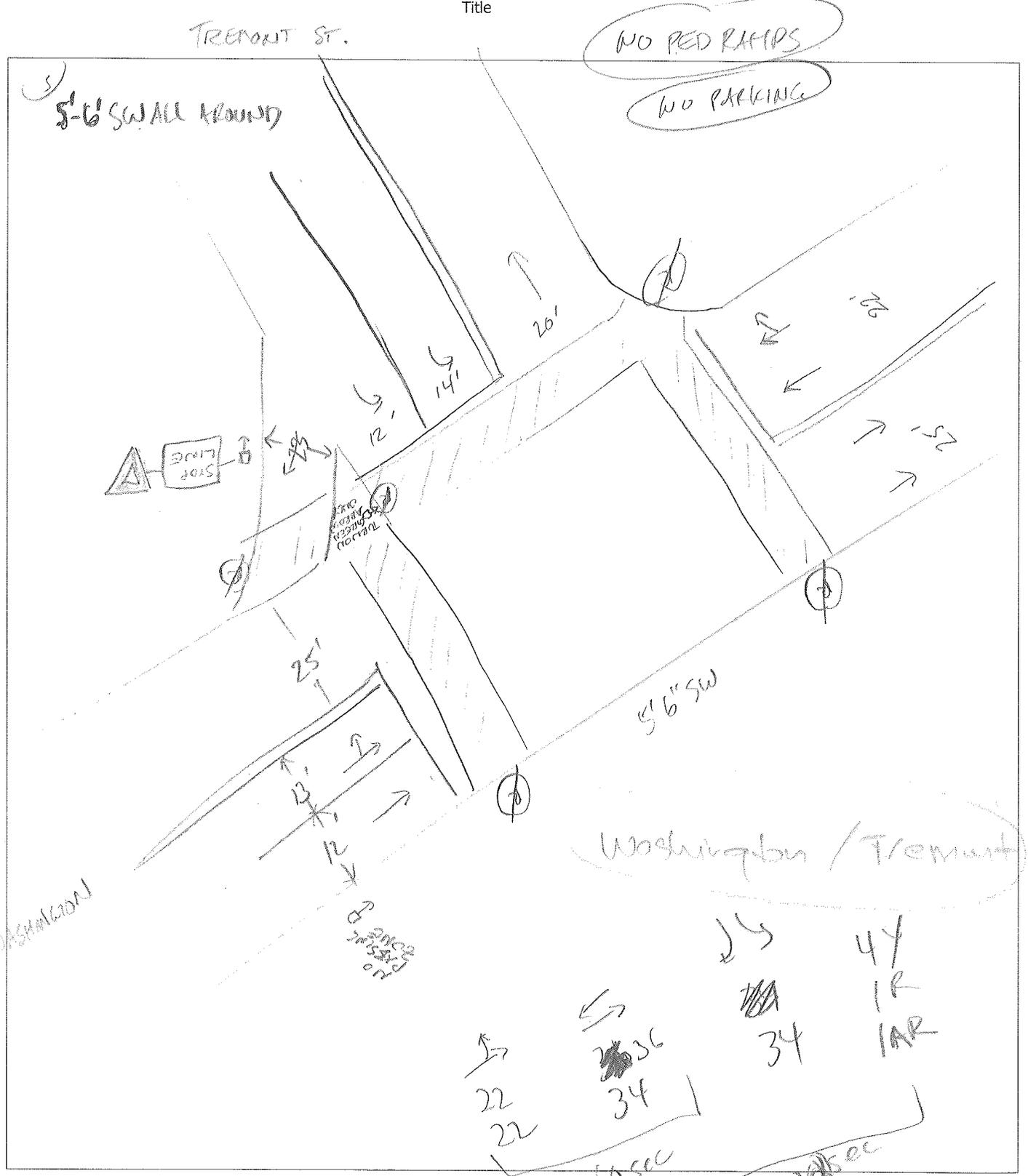
Calculated by: TU

Date: July 2006

Checked by:

Date:

Title





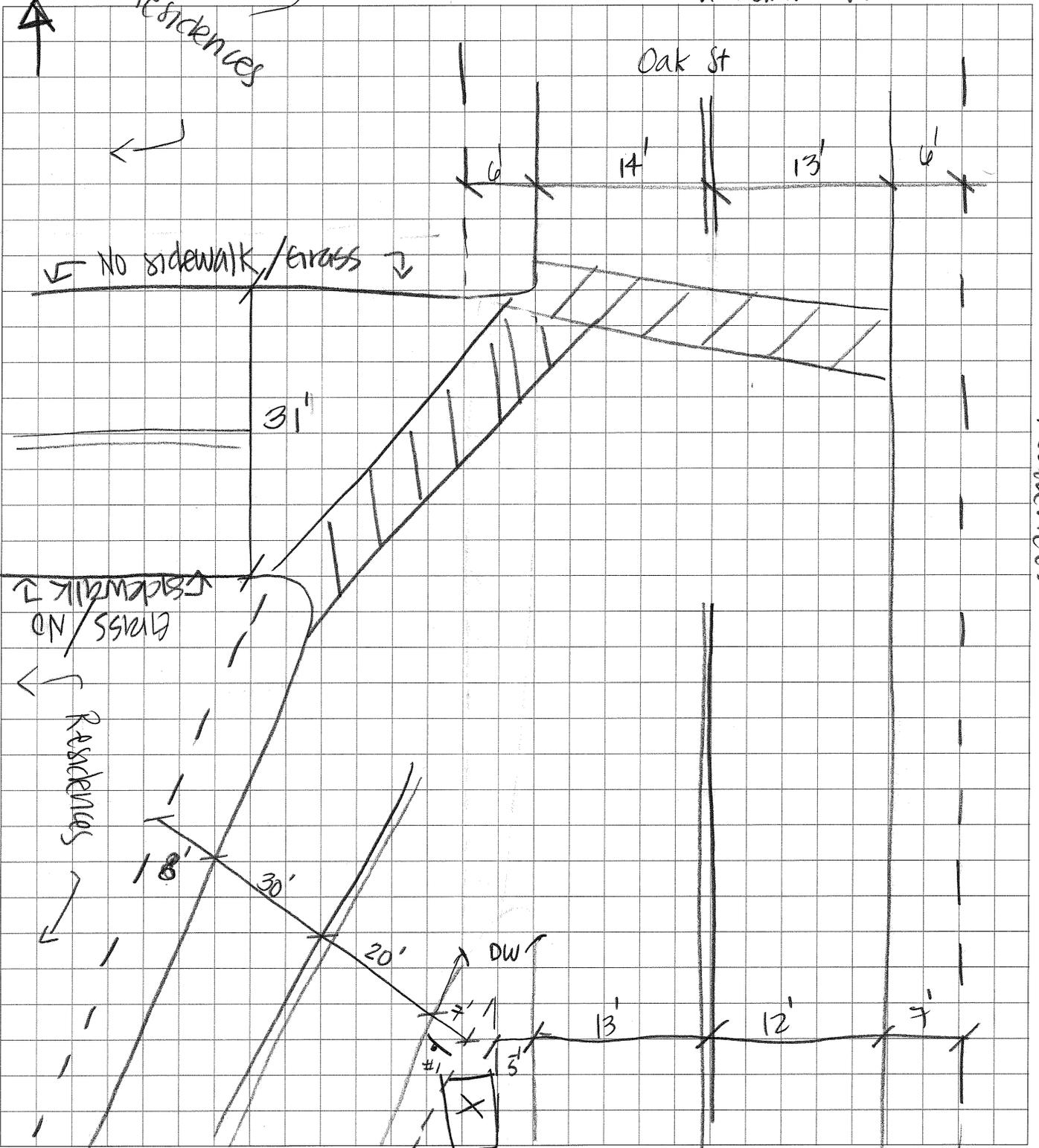


# Computations pictures I: 1-9

#1 Handicap Parking  
Fine \$900

- \* unsignalized
- \* NO SIGNAGE
- \* faded markings
- \* flashing beacon on Oak St app.

Project: SCR Project # 10111.00  
 Location: TAUNTON Sheet 1 of 1  
 Calculated by: NL Date: 9-24-08  
 Checked by: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title Lowell St @ Kilmer St @ Oak St  
#7 in Extra Station





Project: SCR Project # 10M-31

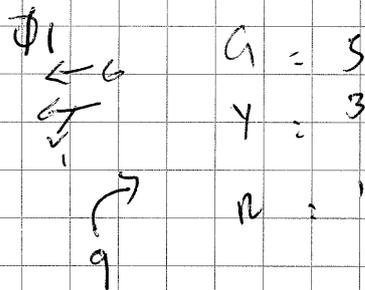
Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RWR Date: 9/11/08

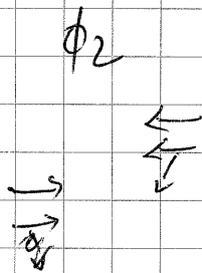
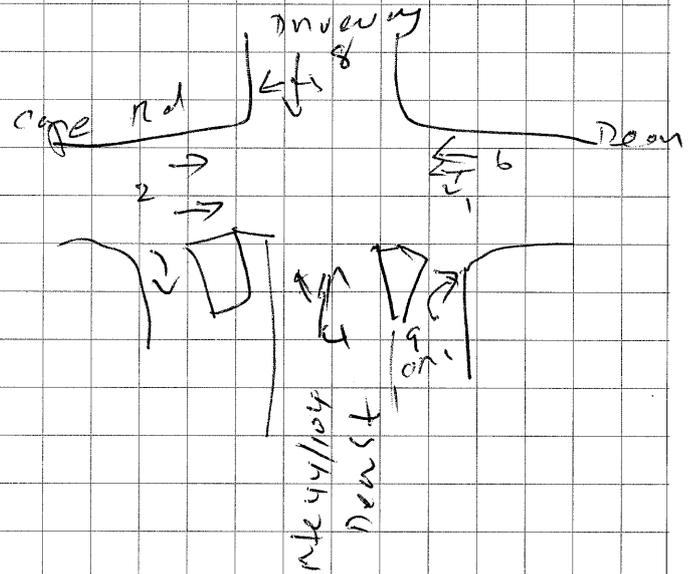
Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#44 Title Signal Timing & Phasing

Deon Street / Cape Rd / South main Street



G = 5  
Y = 3  
R = 1



G = 57, 33  
Y = 4, 4  
R = 1, 1

$\phi 3$



G = 13, 13  
Y = 4, 4  
R = 1, 1





Project: SCR

Project # 10111-31

Location: \_\_\_\_\_

Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR

Date: 9/11/08

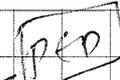
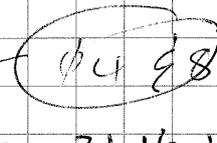
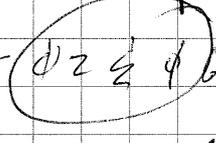
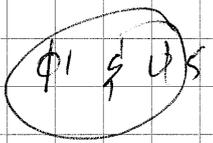
Checked by: \_\_\_\_\_

Date: \_\_\_\_\_

Title Signal Timing & Phasing

15

Down st @ Longmeadow rd

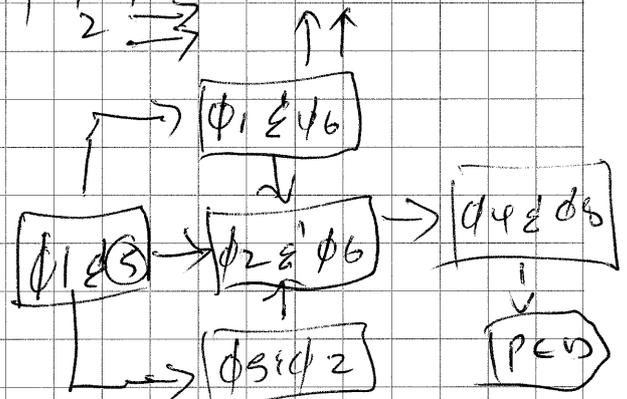


$C_1 = 27, 36, 34$   $C_2 = 21, 16, 19$

$C_1 = 3, 14, 13$   
 $Y = 4, 4, 4$   
 $R = 1, 1, 1$

$Y = 4, 4, 4$   
 $R = 1, 1, 1$

ped = 8 WALK  
11 FDN



peds are served  
after side street (Longmeadow)



Project: SCR Project # 10111-31

Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 4/11/08

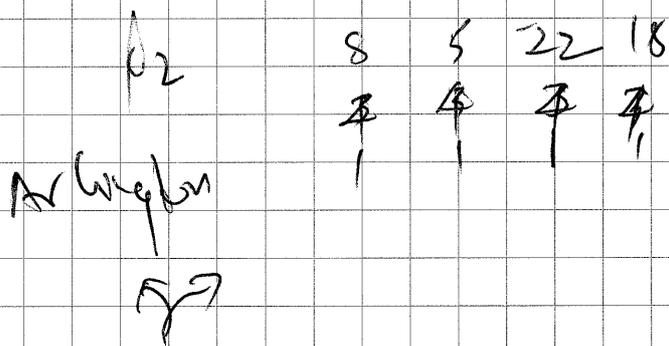
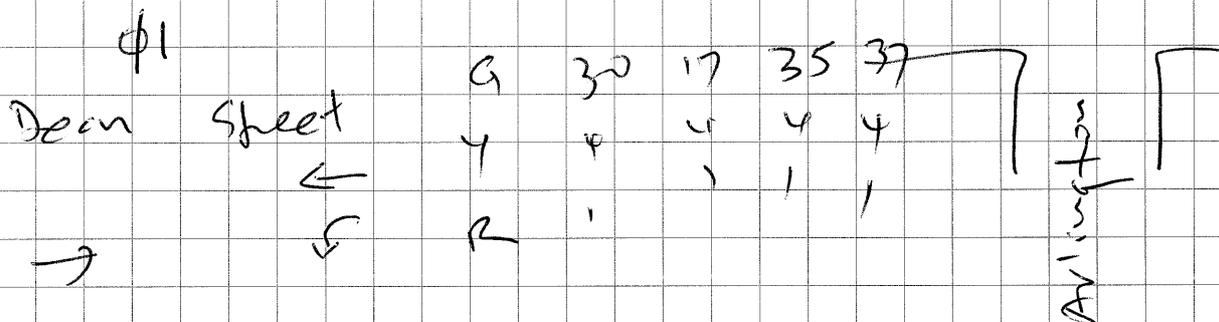
Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

# Title Signal Timing & Phasing

TAUNTON

Dean ST @ ARINGTON

Dean ST



Push Button's not working.



Project: SCR Project # 10111-31

Location: Sheet of

Calculated by: RNR Date: 4/11/08

Checked by: Date:

Title Signal Timing & Phasing

TAUNTON

#8

Summer / Spring / Church Green

25 13 / 12

φ1 G 22 22

Summer Street Y A A

R 1 1

φ2 13 15  
PED

φ3 G 23 23

Y A A

R 1 1

Church Green  
50 / 23

Summer

12/13



Project: SER Project # 10111-31

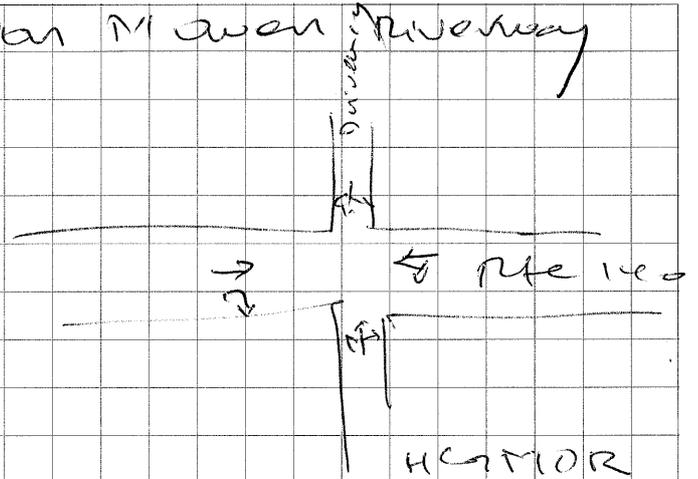
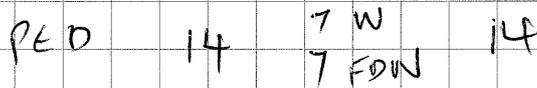
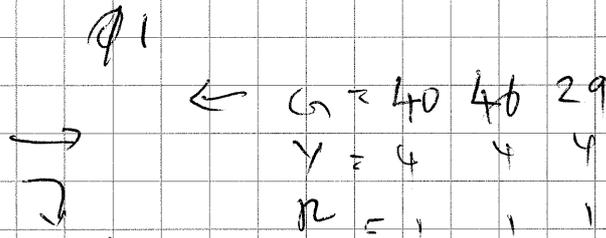
Location: \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Calculated by: RNR Date: 9/11/08

Checked by: \_\_\_\_\_ Date: \_\_\_\_\_

#9 Title Signal Timing & Phasing

Route 140 / Hon Gordon M Owen Riverway



VIDEO DETECTION

1



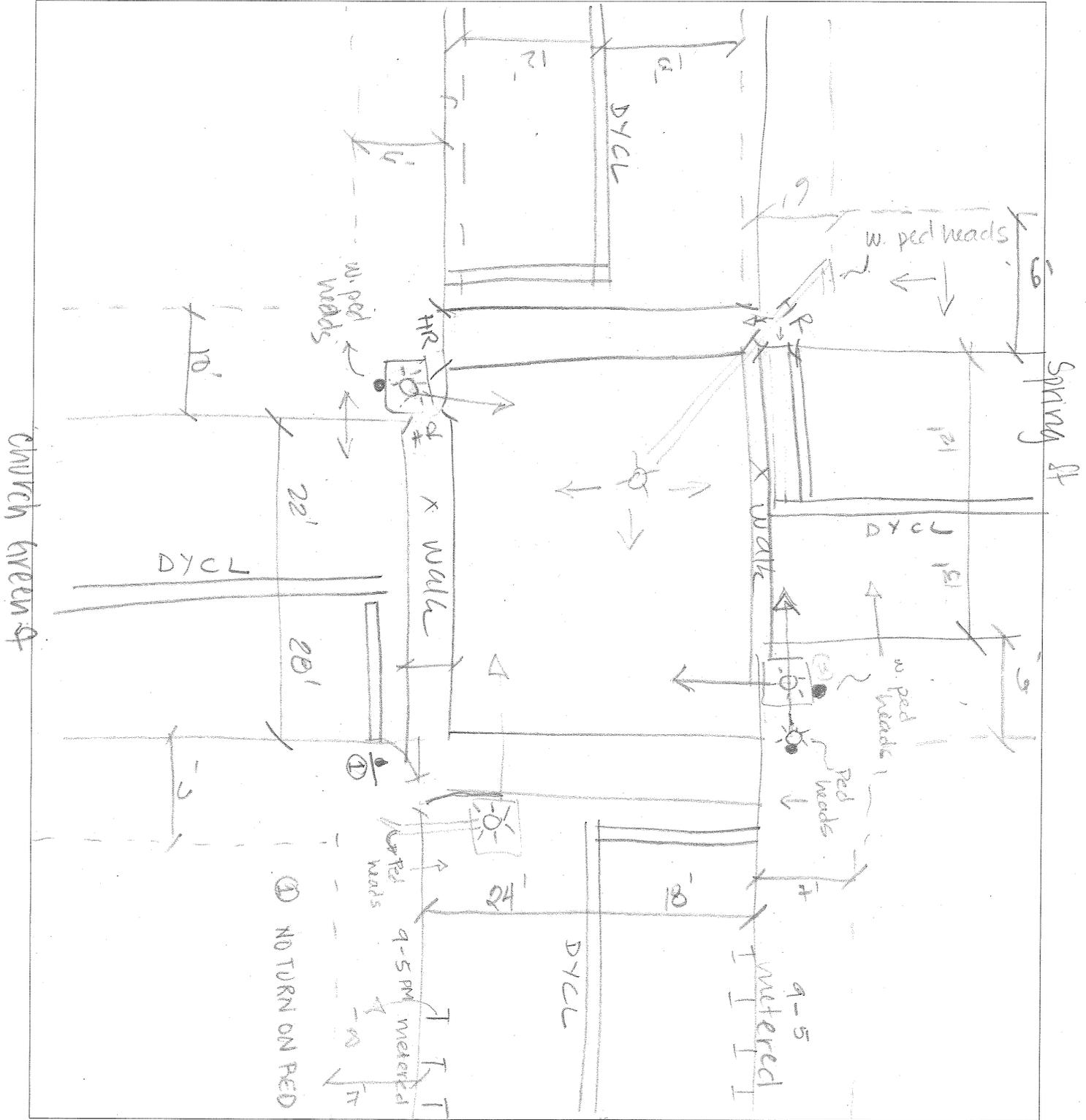
# Computations

# Dean St, Rte 44 Station

CFE  
Center for  
Ecl.

- \* bit skewed
- \* signalized w. ped phase
- \* push button (thin little one)

Project: SCR Project # 10111  
 Location: TAUNTON Sheet of  
 Calculated by: NL Date: 9/11/08  
 Checked by: Date:  
 Title Spring St / Church Green St @ Summer St





# Computations

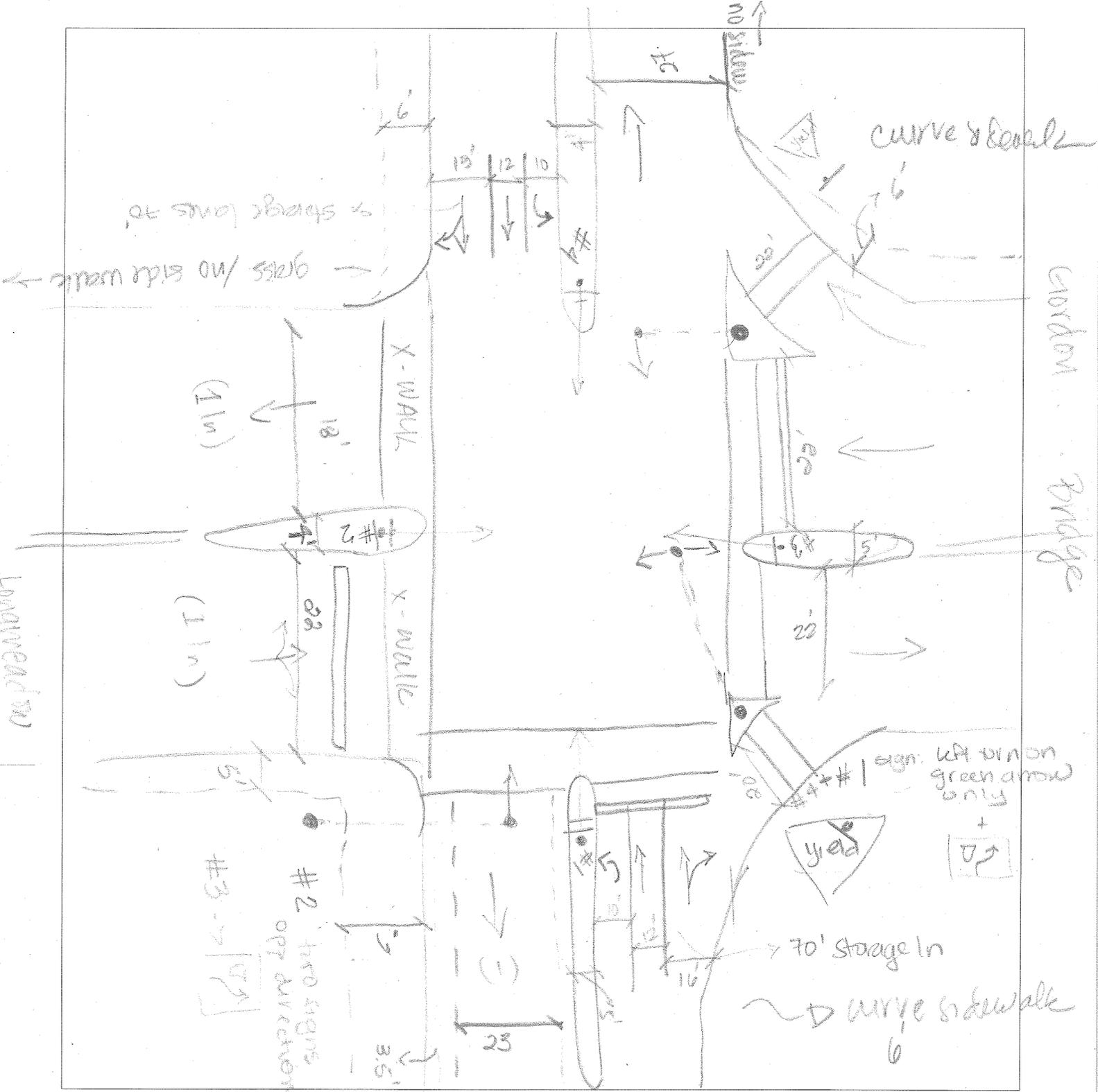
# signal heads  
incl w long signs

\* mast arms include ped heads  
for 2 directions

Project: SCR  
Location: Taunton  
Calculated by: JL  
Checked by:

Project # 10111.31  
Sheet 1 of 1  
Date:  
Date:

Title Dean St @ Longmeadow St.



3



# Computations

R6-1 = oneway

R1-1 = stop sign

R1-2 = yield

R4-7 = ⚡

R3-7R = Right Turn must turn right

R3-7L = left " " left

Project: SCR  
Location: Taunton

Project # 10111.31

Sheet 1 of

Date: 9/11/08

Calculated by:

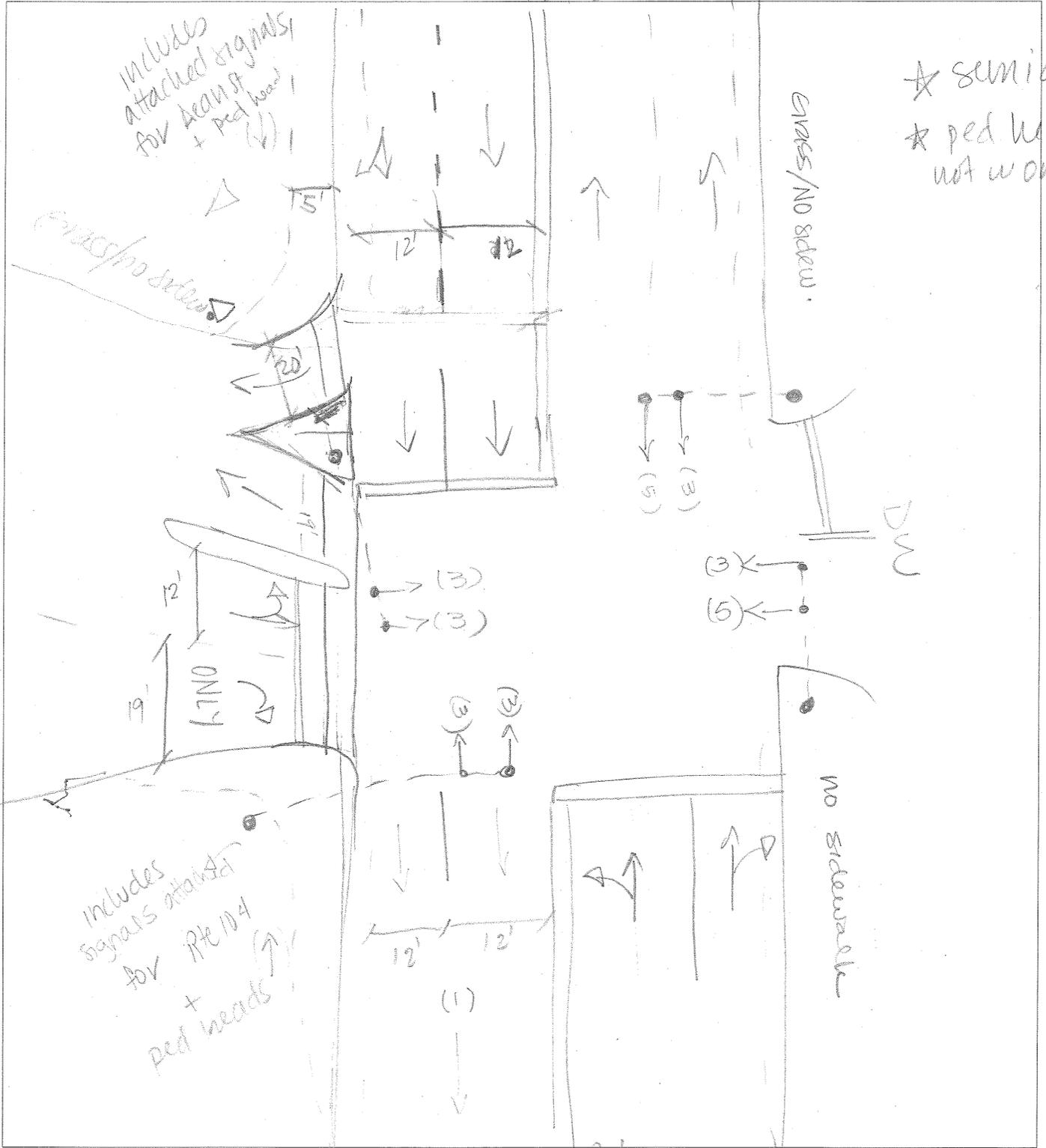
Date:

Checked by:

Title Cape Rd @ Rte 104  
CAPERD

R4-7

Route 104

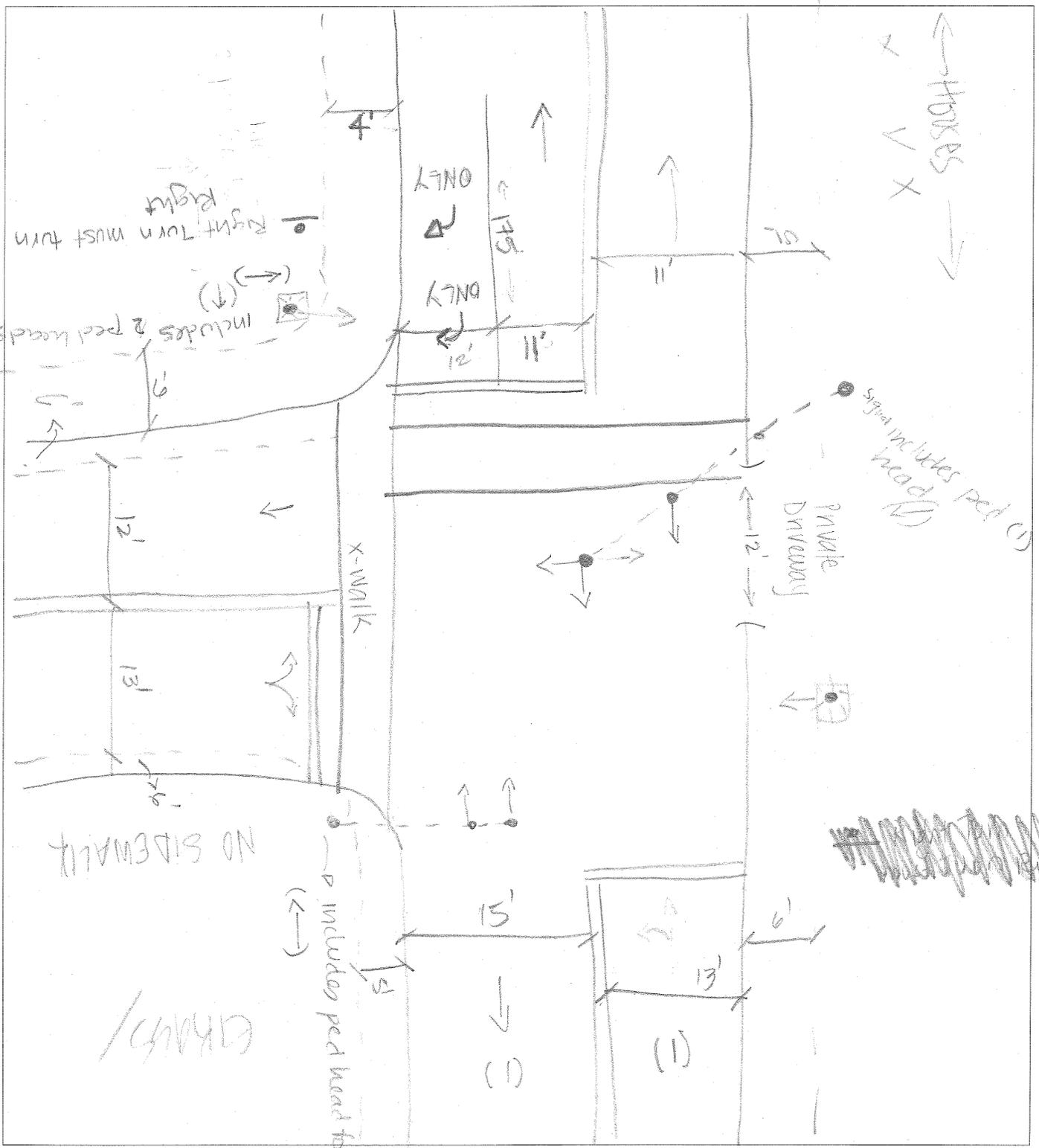


Cape Rd



# Computations

Project: SCR Project # 10111.31  
 Location: Taunton Sheet of  
 Calculated by: NL Date:  
 Checked by: Date:  
 Title: Hon Gordon M Owen @ Rte 140



Hon Gordon Owen

X-WALK

PRIVATE DRIVEWAY

HORSES

Signal includes Ped (1) head

NO SIDEWALK

includes ped head for

Rte 140

semi-actuated

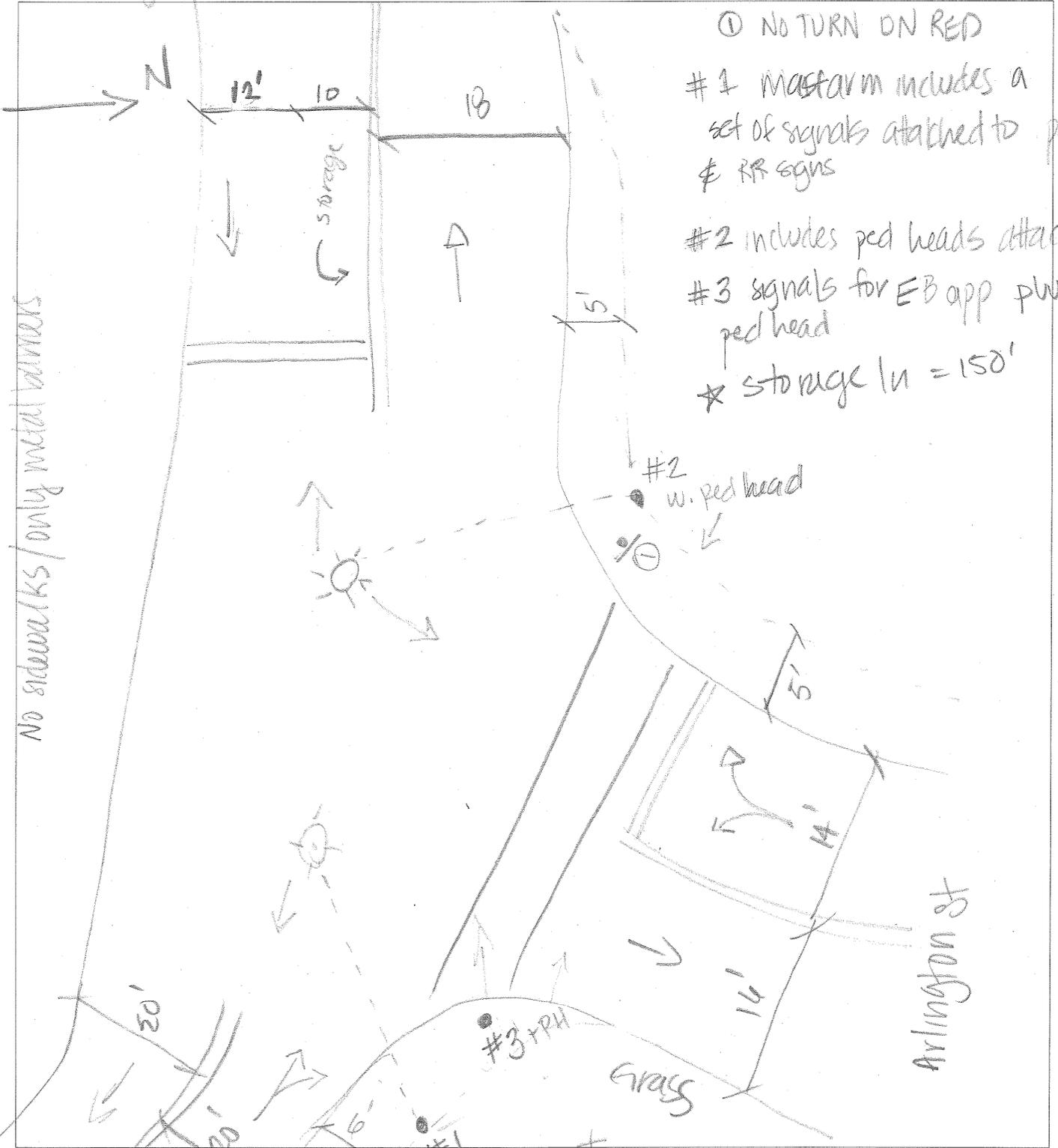


Computations

- \* signalized w. ped phases  
- push buttons
- \* NO X-walk on Dean St.
- \* NO Handicap ramps
- \* mast arms signals Dean St

Project: SCR  
 Location: Taunton  
 Calculated by: NL  
 Checked by:  
 Title: Arlington St @ Dean St

Project # 10/11/31  
 Sheet of  
 Date: 9/10/08  
 Date:



- ① NO TURN ON RED
- #1 mast arm includes a set of signals attached to pole & RR signs
- #2 includes ped heads attached
- #3 signals for EB app plus ped head
- \* storage ln = 150'

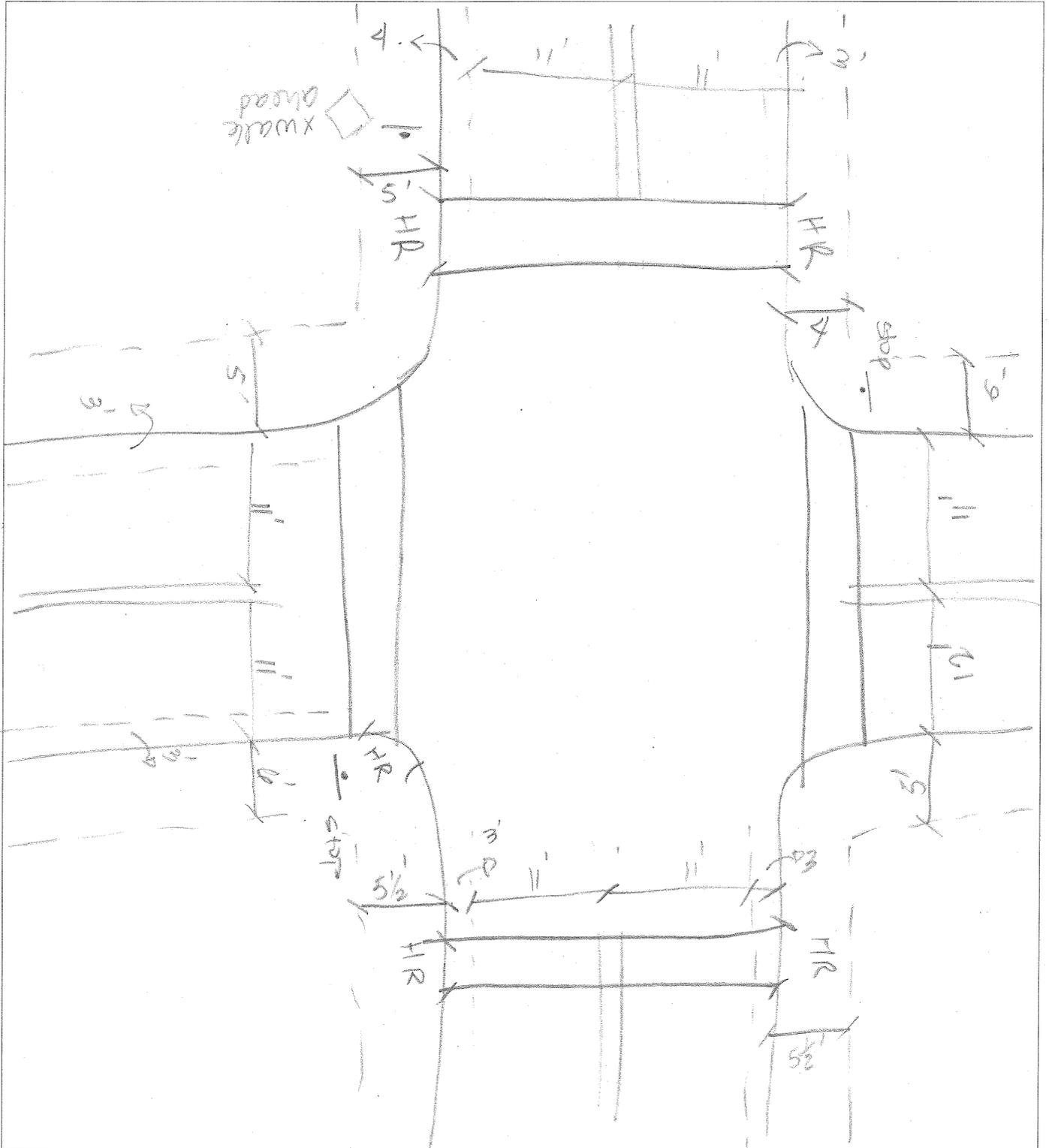


# Computations



Project: SCR  
 Location: Taunton  
 Calculated by:  
 Checked by:  
 Title: Washington St @ Purchase St

Project # 10111.31  
 Sheet of  
 Date: 9/11/08  
 Date:





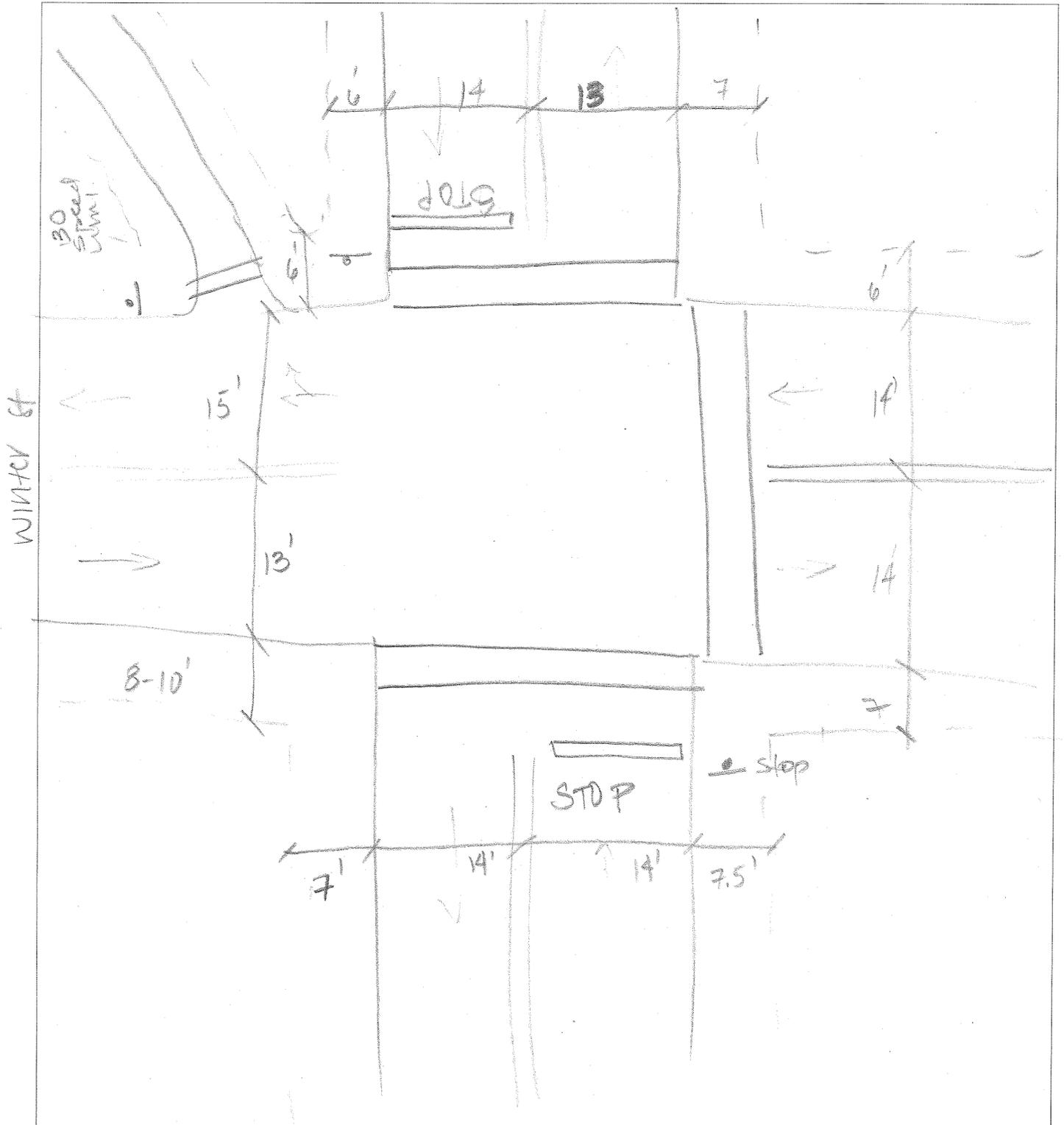


# Computations



Project: SCA  
 Location: TAUNTON  
 Calculated by: NL  
 Checked by:  
 Title: Winter St @ School St

Project # 10111.31  
 Sheet of  
 Date: 9/11/08  
 Date:

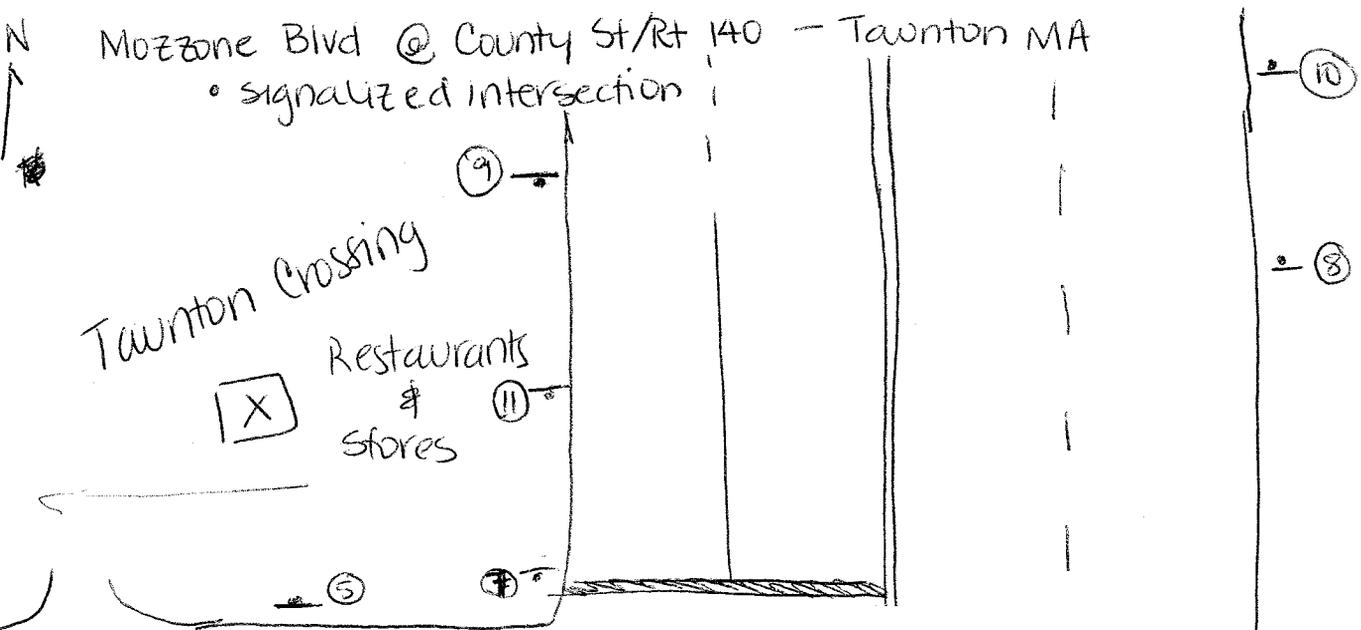






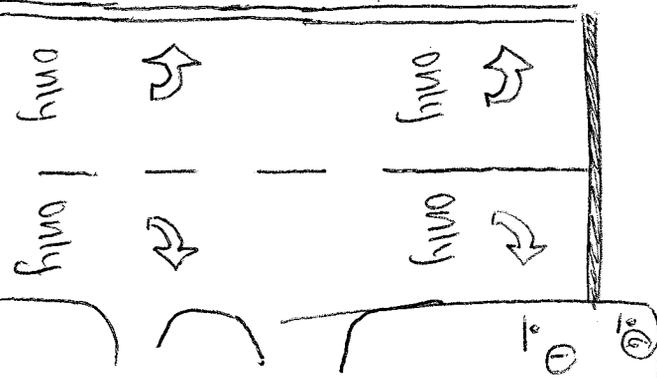
Mozzone Blvd @ County St/Rt 140 - Taunton MA

• signalized intersection

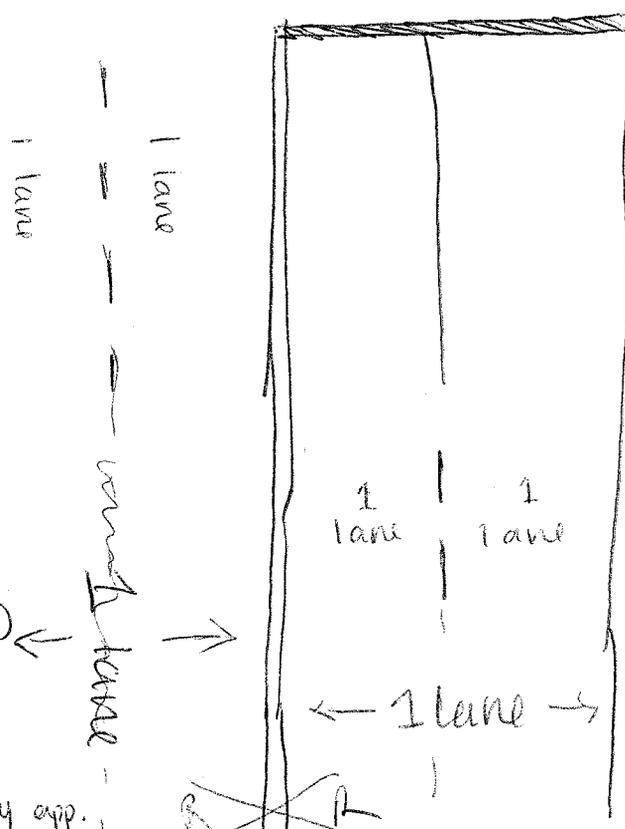


1 lane

undeveloped areas (vegetation)



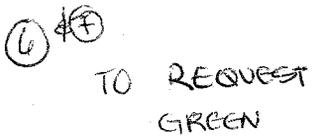
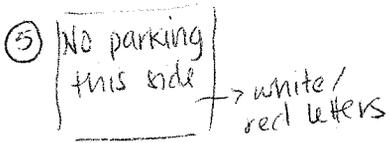
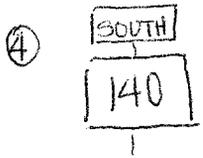
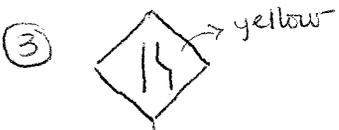
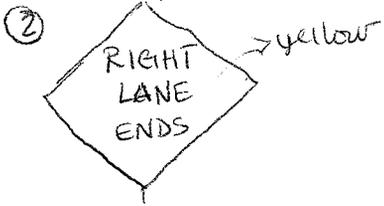
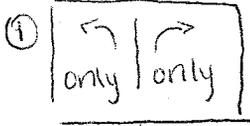
TEI Fridays



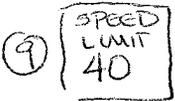
Notes:

- \* 2-signal heads for Rt 140 NB
  - (1) → 3 lights down (normal)
  - (1) → (left side) 5 lights (one on top,
    - two on center
    - two on bottom
- \* 2-signal heads for Rt. 140 SB
  - (both are 3 lights - normal/standard)
- \* 2-signal heads for EB app
  - Left side - stand.
  - Rights
  - \* no shoulder on any app.

# Sign Inventory



WAIT ON 070





THE COMMONWEALTH OF MASSACHUSETTS  
 MASSACHUSETTS HIGHWAY DEPARTMENT  
 TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT  
 DEAN STREET (ROUTE 44) AT LONGMEADOW ROAD & GORDON M. OWEN PKY  
 IN THE TOWN OF  
 TAUNTON  
 BRISTOL COUNTY

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

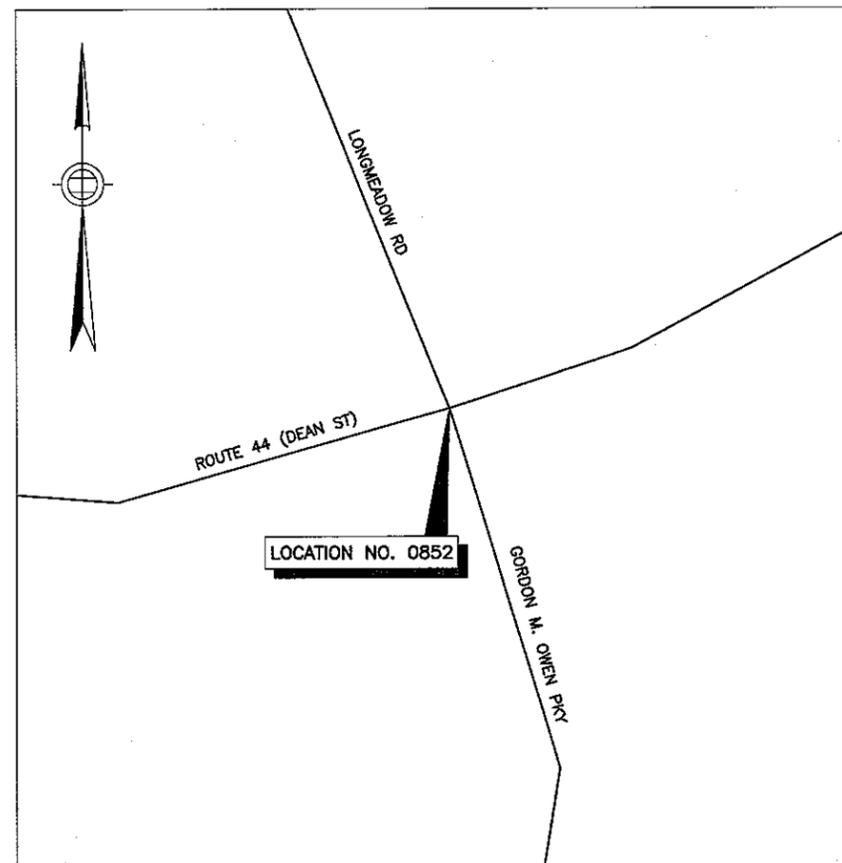
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

I STANDARDS OF INSTALLATION

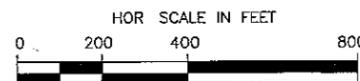
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

II. OPERATION OF SIGNALS

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
 Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
 (SCALE AS SHOWN)



REVISION NO. 01  
 DATE: 12-06-01  
 INSERT BY: J.C.CONNOR  
 DATE: \_\_\_\_\_  
 FILE NAME: 0852T01.DWG

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



10 PARK PLAZA  
 BOSTON, MA 02116

MASSACHUSETTS  
 HIGHWAY DEPARTMENT

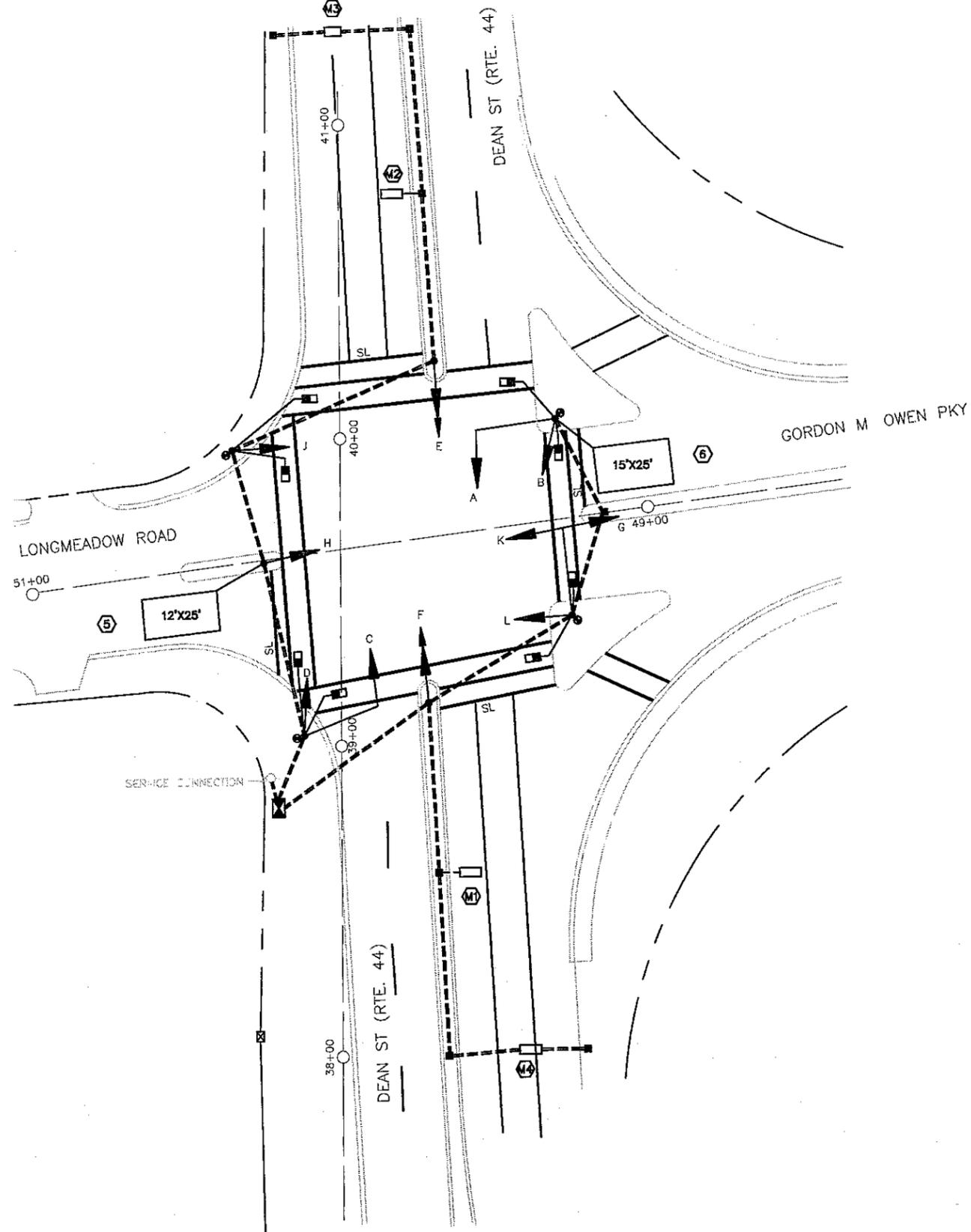
APPROVED BY:

STATE TRAFFIC ENGINEER \_\_\_\_\_ Date \_\_\_\_\_

TAUNTON  
 RTE. 44 AT LONGMEADOW RD & GORDON M. OWEN PKY

STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	0852	01	2	

TRAFFIC SIGNAL PLAN



LEGEND

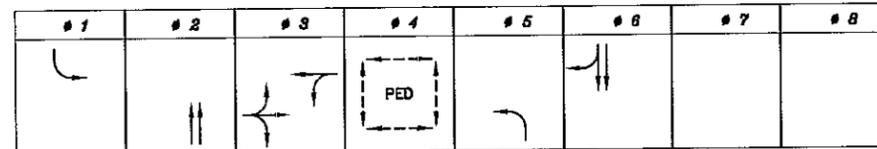
	SIGNAL CONTROLLER
	VEHICULAR SIGNAL
	OPTICALLY PROGRAMMED VEHICULAR SIGNAL
	FIRE PRE-EMPTION RECEIVER
	FIRE PRE-EMPTION STROBE LIGHT
	PEDESTRIAN SIGNAL
	PEDESTRIAN PUSH BUTTON
	PULL BOX

APPROVED BY:

STATE TRAFFIC ENGINEER

Date

APPROX NORTH



SEQUENCE AND TIMING FOR FULLY-ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	PHASINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	PHASE
DEAN STREET (ROUTE 44)	EB	E	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	GL	YL	RL	RL	RL	RL							FRL
DEAN STREET (ROUTE 44)	EB	A,B	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R							FY
DEAN STREET (ROUTE 44)	WB	F	GL	YL	RL	RL	RL	RL							FRL												
DEAN STREET (ROUTE 44)	WB	C,D	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R								FY
GORDON M. OWEN PKY	NB	J,H,G	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R							FR
LONGMEADOW ROAD	SB	K,L	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R							FR
PEDESTRIAN	ALL	ALL	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW		DW	DW	DW	DW	DW	DW								OFF
			TIMING IN SECONDS																								
MINIMUM GREEN (INITIAL)			9			12			9						9			12									
PASSAGE TIME (VEHICLE)			4			5			4						4			5									
MAXIMUM 1			18			35			25						18			35									
MAXIMUM 2			18			35			25						18			35									
YELLOW CLEARANCE				4			4			4						4			4								
RED CLEARANCE					1			1			1					1			1								
WALK (W)												8															
PEDESTRIAN CLEARANCE												10															
RECALL			OFF			ON			OFF			OFF			OFF			ON									
MEMORY			LOCKING			LOCKING			LOCKING			LOCKING			LOCKING			LOCKING									

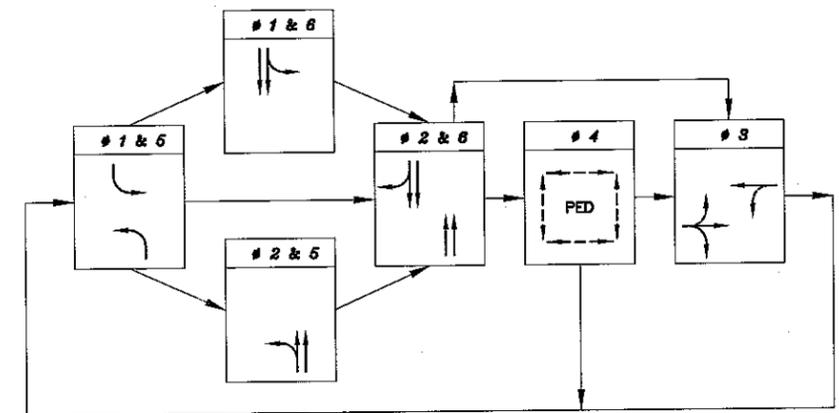
**MAJOR ITEMS REQUIRED**

QUANTITY	ITEM
1	CONTROLLER TYPE 8DW, CAB. & FDN.
1	SERVICE CONNECTION (OVERHEAD)
4	10' SIGNAL POLE, BASE, & FDN.
3	MAST ARM ASSEMBLY, BASE, & FDN.
8	1 WAY, 3 SECTION, SIGNAL HOUSING (12" LENS)
1	1 WAY, 4 SECTION, SIGNAL HOUSING (12" LENS)
1	2 WAY, 3 SECTION, SIGNAL HOUSING (12" LENS)
8	PEDESTRIAN HOUSING
4	PEDESTRIAN PUSH BUTTON, SIGN, & SADDLES
1	LOOP DETECTOR AMPLIFIER
2	ROADWAY LOOP DETECTOR
4	MAGNETIC AMPLIFIERS
4	MAGNETIC DETECTOR
7	12" x 12" PULL BOX

Necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.

- NOTES:**
- SEQUENCE AND TIMING NOTES:**
- #7 AND #8 NOT USED.
- NEMA DUAL RING PHASING NOTES:**
- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
  - PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
  - THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
  - IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
- LOOP DETECTOR NOTES:**
- SEE LOOP DETECTOR DETAIL SHEET FROM DESIGN DOCUMENT FOR SPLICE PATTERN AND OTHER INFORMATION.
  - DELAY AND EXTENSION TIMES ARE IN SECONDS.
  - DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR.
  - LOOP DETECTORS WERE NOT VISIBLE DURING SIGNAL INVENTORY.

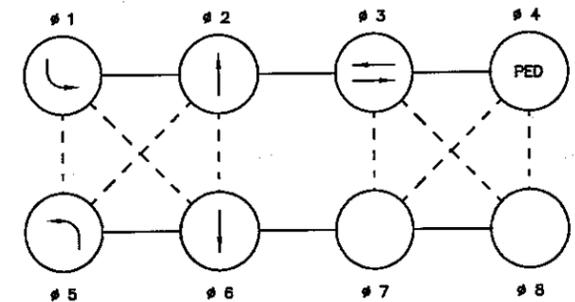
PREFERENTIAL PHASING SEQUENCE



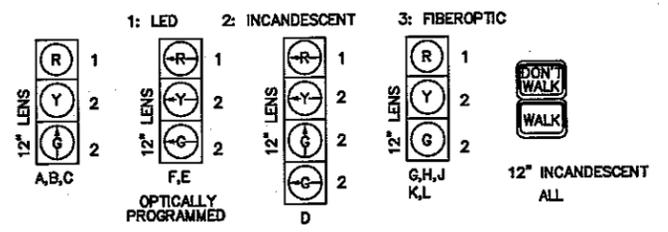
LOOP DETECTOR DATA

DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE	NUM. OF TURNS	# CALLED	# EXT.	MODE PULSE PRESENCE	DELAY TIME	EXT. TIME
M1	1	MAGNETIC		#5	#5	PRESENCE		
M2	1	MAGNETIC		#1	#1	PRESENCE		
M3	1	MAGNETIC		#6	#6	PRESENCE		
M4	1	MAGNETIC		#2	#2	PRESENCE		
5	1	12'x25'		#3	#3	PRESENCE		
6	1	15'x25'		#3	#3	PRESENCE		

NEMA DUAL RING PHASING NOTES:



SIGNAL IDENTIFICATION



CONTROLLER MAKE & MODEL: EPAC 300  
 UTILITY POLE No. NO #  
 METER No. 60-371-881 (231 72 5)  
 EMERGENCY PRE-EMPTION (TYPE): NONE  
**APPROVED BY:** \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date

0852001.DWG

# THE COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT

## TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT

### CAPE HIGHWAY (ROUTE 44) & DEAN ST (ROUTE 44) AT DEAN STREET (ROUTE 104)

IN THE TOWN OF

TAUNTON

BRISTOL COUNTY

<b>TAUNTON</b>				
<b>ROUTE 44 AT ROUTE 104</b>				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1365	01	1	
TITLE SHEET				

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

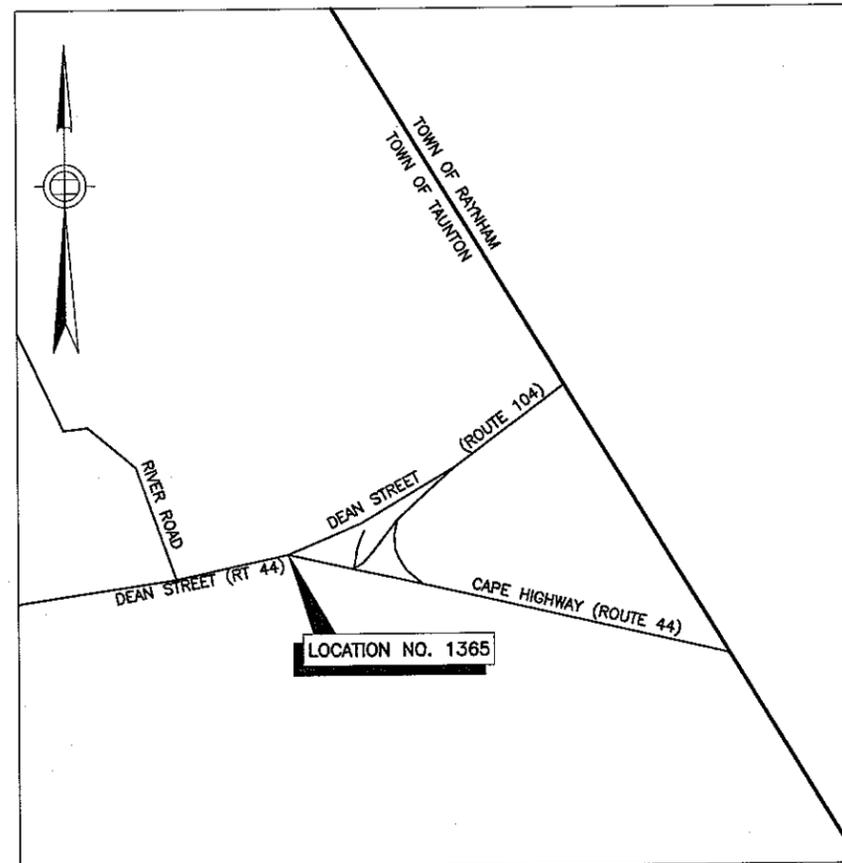
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

**I. STANDARDS OF INSTALLATION**

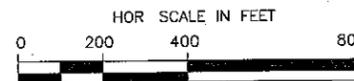
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

**II. OPERATION OF SIGNALS**

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
(SCALE AS SHOWN)

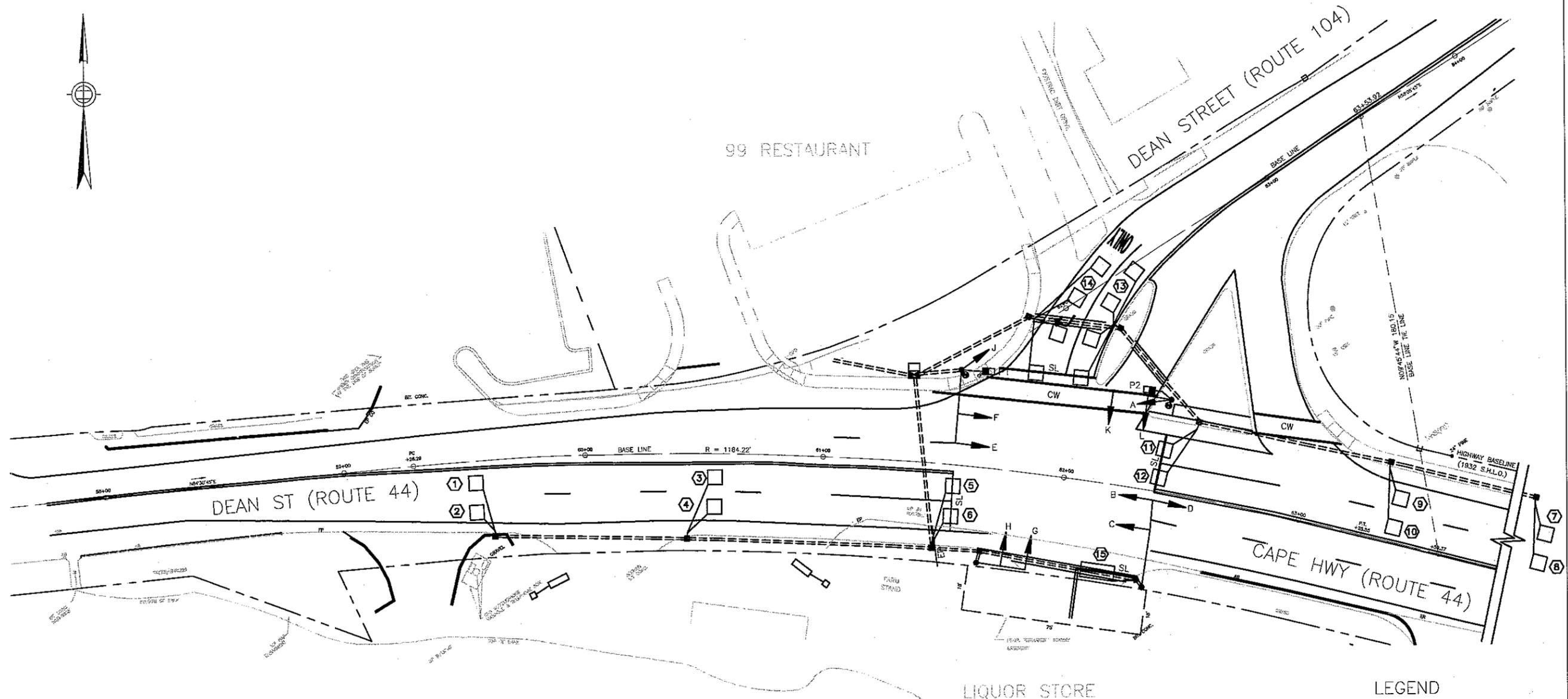


REVISION NO <u>01</u>	COMMENTS: _____ _____ _____
DATE: <u>12-06-01</u>	
INSERT BY: <u>J.C.CONNOR</u>	
DATE: _____	
FILE NAME: <u>1365T0101.DWG</u>	

<b>MASS HIGHWAY</b>	
10 PARK PLAZA BOSTON, MA 02116	
MASSACHUSETTS HIGHWAY DEPARTMENT	
APPROVED BY: _____	
STATE TRAFFIC ENGINEER	Date

TAUNTON				
ROUTE 44 AT ROUTE 104				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1365	01	2	

TRAFFIC SIGNAL PLAN



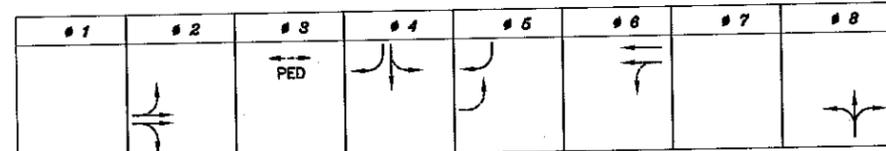
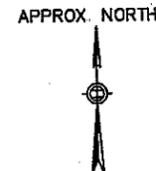
LEGEND

- SIGNAL CONTROLLER
- VEHICULAR SIGNAL
- OPTICALLY PROGRAMMED VEHICULAR SIGNAL
- FIRE PRE-EMPTION RECEIVER
- FIRE PRE-EMPTION STROBE LIGHT
- PEDESTRIAN SIGNAL
- PEDESTRIAN PUSH BUTTON
- PULL BOX

APPROVED BY:

STATE TRAFFIC ENGINEER Date

1365P0101.DWG



SEQUENCE AND TIMING FOR FULLY-ACTUATED CONTROL (ISOLATED)

STREET	DIRECTION	PHASING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
DEAN STREET (ROUTE 44)	EB	A,B				G	Y	R	R	R	R	R	R	R	GL	YL	R	R	R	R					R	R	R	FY
DEAN STREET (ROUTE 44)	EB	C				G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R					R	R	R	FY
CAPE HWY (ROUTE 44)	WB	D,E,F				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R					R	R	R	FR
DEAN ST (ROUTE 104)	SB	H,J				R	R	R	R	R	R	G	Y	R	GR	YR	R	R	R	R					R	R	R	FR
DEAN ST (ROUTE 104)	SB	G				R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R					R	R	R	FR
DRIVEWAY	NB	K,L				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R					G	Y	R	FR
PEDESTRIAN		P1-P2				DW	DW	DW	W	FDW	DW					DW	DW	DW	OFF									

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
MINIMUM GREEN (INITIAL)				14						6			6		14									6		
PASSAGE TIME (VEHICLE)				2						2			2		2									2		
MAXIMUM 1				60						20			15		60									20		
MAXIMUM 2				60						25			15		60									20		
YELLOW CLEARANCE				4							4			4			4							4		
RED CLEARANCE						1						1			1			1								1
WALK (W)							6																			
PEDESTRIAN CLEARANCE									13	2																
RECALL						MIN		OFF		OFF		OFF		OFF		MIN										OFF
MEMORY						LOCKING		LOCKING		NON-LOCKING		NON-LOCKING		LOCKING												NON-LOCKING

MAJOR ITEMS REQUIRED

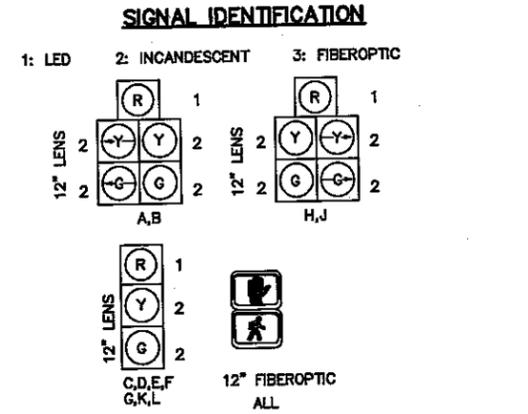
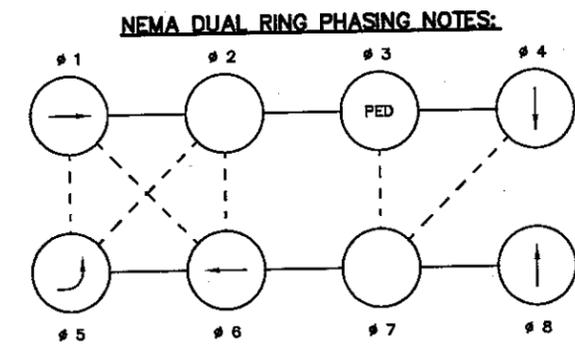
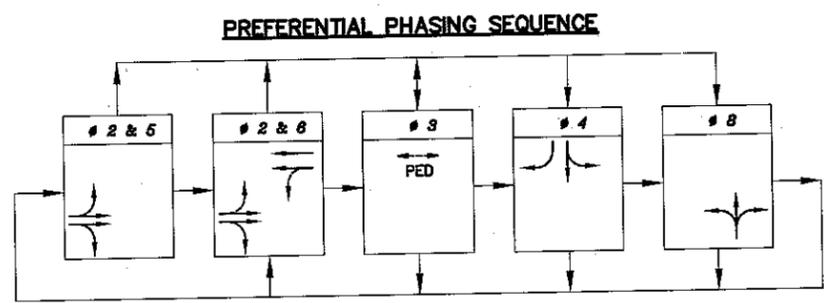
QUANTITY	ITEM
1	CONTROLLER TYPE 8DW, CAB. & FDN.
1	SERVICE CONNECTION (OVERHEAD)
4	MAST ARM ASSEMBLY, BASE, & FDN.
4	8' SIGNAL POLE, BASE, & FDN.
7	1 WAY, 3 SECTION, SIGNAL HOUSING (12" LENS)
4	1 WAY, 5 SECTION SIGNAL HOUSING (12" LENS)
2	PEDESTRIAN HOUSING
2	PEDESTRIAN PUSH BUTTON, SIGN, & SADDLES
8	LOOP DETECTOR AMPLIFIER (DUAL CHANNEL)
21	ROADWAY LOOP DETECTOR
10	12" x 12" PULL BOX

Necessary duct, cable, labor, miscellaneous material and equipment to complete the installation.

- NOTES:
- SEQUENCE AND TIMING NOTES:
- #1 AND #7 NOT USED.
- NEMA DUAL RING PHASING NOTES:
- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
  - PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
  - THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
  - IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
- LOOP DETECTOR NOTES:
- SEE LOOP DETECTOR DETAIL SHEET FROM DESIGN DOCUMENT FOR SPLICE PATTERN AND OTHER INFORMATION.
  - DELAY AND EXTENSION TIMES ARE IN SECONDS.
  - DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR.
  - LOOP DETECTORS WERE NOT VISIBLE DURING SIGNAL INVENTORY.

LOOP DETECTOR DATA

DETECTOR NUMBER	NUMBER OF SEGMENTS	LOOP SIZE	NUM. OF TURNS	# CALLED	# EXT.	MODE PULSE PRESENCE	DELAY TIME	EXT. TIME
1	1	6'x6'		#2	#2	PULSE		
2	1	6'x6'		#2	#2	PRESENCE		
3	1	6'x6'		#2	#2	PRESENCE		
4	1	6'x6'		#2	#2	PRESENCE		
5	1	6'x6'		#5	#5	PRESENCE		
6	1	6'x6'		#2	#2	PRESENCE		
7	1	6'x6'		#6	#6	PRESENCE		
8	1	6'x6'		#6	#6	PRESENCE		
9	1	6'x6'		#6	#6	PRESENCE		
10	1	6'x6'		#6	#6	PRESENCE		
11	1	6'x6'		#6	#6	PRESENCE		
12	1	6'x6'		#6	#6	PRESENCE		
13	4	6'x6'		#4	#4	PRESENCE		
14	4	6'x15'		#4	#4	PRESENCE		
15	1	6'x6'		#8	#8	PRESENCE		



CONTROLLER MAKE & MODEL: EPAC 300  
 UTILITY POLE No. TMLP #15  
 METER No. CPM2MN2182  
 EMERGENCY PRE-EMPTION (TYPE): NONE

APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date

# THE COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT

## TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT

### GALLERIA MALL ENTRANCE NEAR COUNTY ROAD (ROUTE 140) AND ROUTE 24

IN THE TOWN OF  
**TAUNTON**  
 BRISTOL COUNTY

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

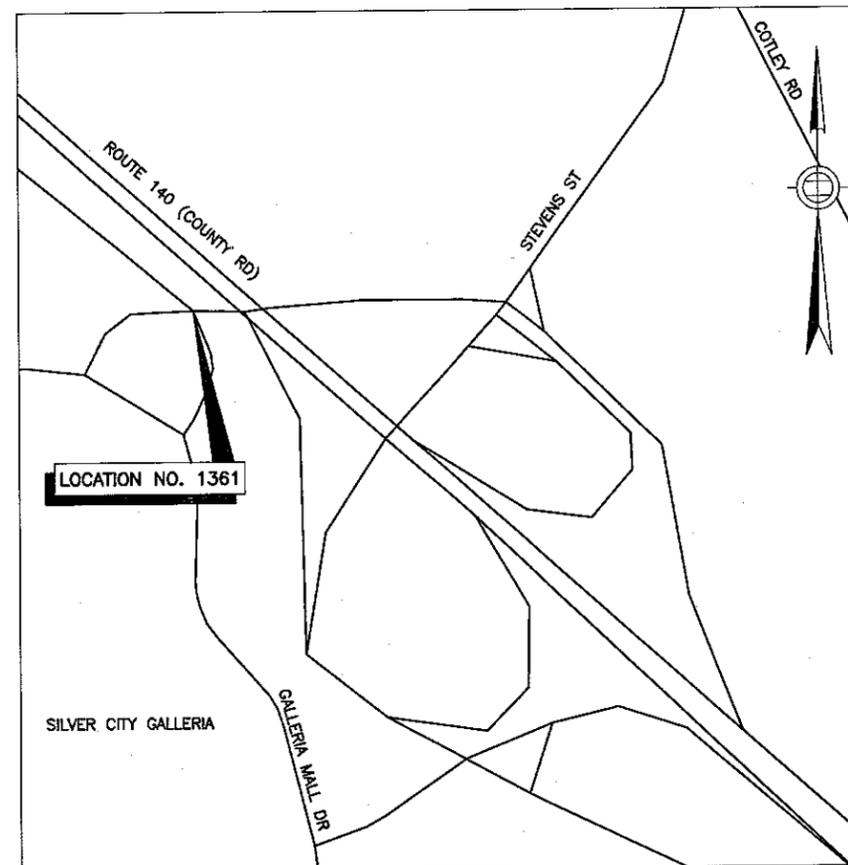
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued\* or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

**I. STANDARDS OF INSTALLATION**

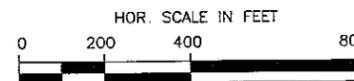
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

**II. OPERATION OF SIGNALS**

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
 Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



**LOCUS MAP**  
 (SCALE AS SHOWN)



REVISION NO. 01  
 DATE: 12-05-01  
 INSERT BY: J.C.CONNOR  
 DATE: \_\_\_\_\_  
 FILE NAME: 1361T0101.DWG

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

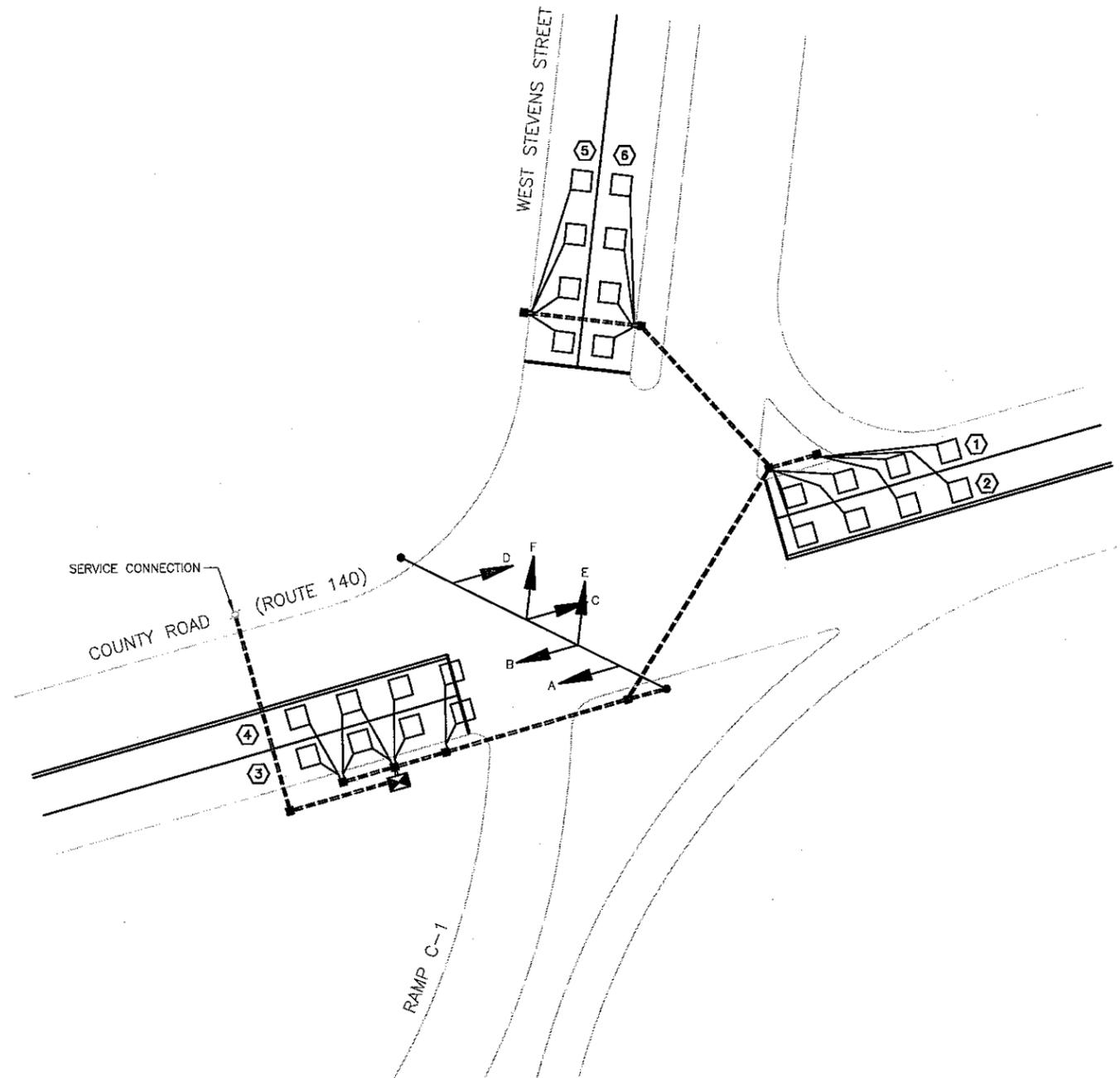
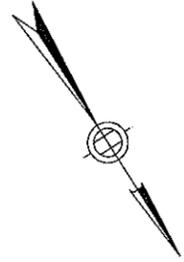


10 PARK PLAZA  
 BOSTON, MA 02116

MASSACHUSETTS  
 HIGHWAY DEPARTMENT

APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER Date



**LEGEND**

[Symbol: Square with diagonal line]	SIGNAL CONTROLLER
[Symbol: Arrow with vertical line]	VEHICULAR SIGNAL
[Symbol: Arrow with vertical line and horizontal bar]	OPTICALLY PROGRAMMED VEHICULAR SIGNAL
[Symbol: Vertical line]	FIRE PRE-EMPTION RECEIVER
[Symbol: Asterisk]	FIRE PRE-EMPTION STROBE LIGHT
[Symbol: Square with vertical line]	PEDESTRIAN SIGNAL
[Symbol: Circle]	PEDESTRIAN PUSH BUTTON
[Symbol: Square]	PULL BOX

APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER      Date \_\_\_\_\_

1361PO101.DWG



THE COMMONWEALTH OF MASSACHUSETTS  
 MASSACHUSETTS HIGHWAY DEPARTMENT  
 TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT  
 STEVENS STREET AT ROUTE 140 OFF RAMP & GALLERIA MALL DR.  
 IN THE TOWN OF  
 TAUNTON  
 BRISTOL COUNTY

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

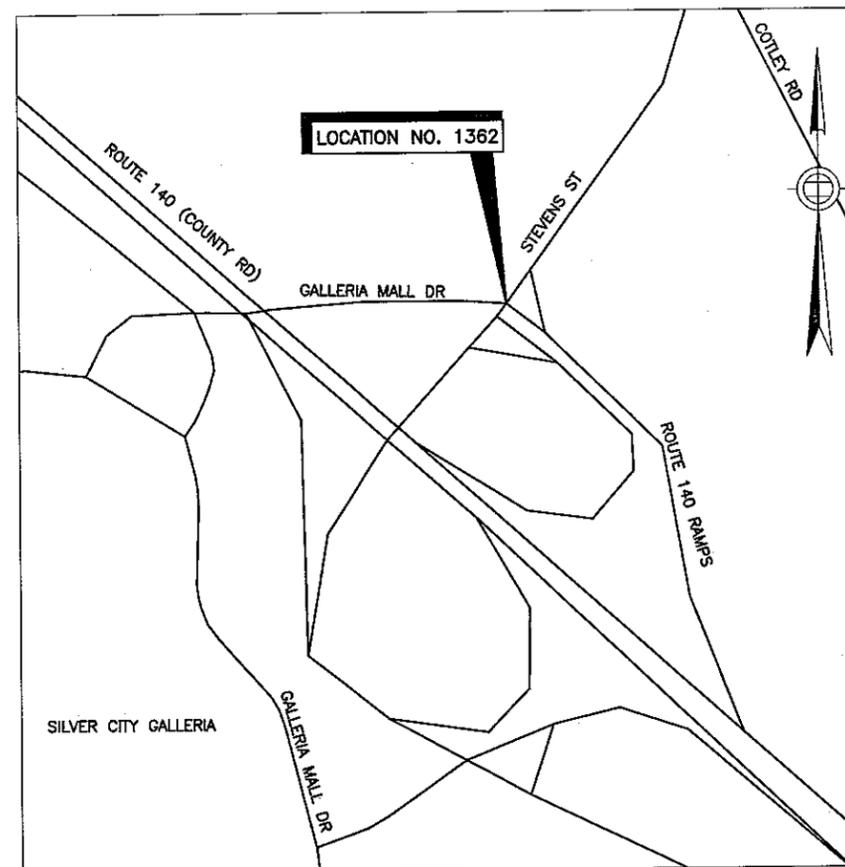
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

I STANDARDS OF INSTALLATION

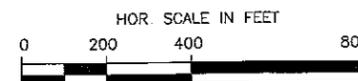
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

II OPERATION OF SIGNALS

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
 Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
 (SCALE AS SHOWN)

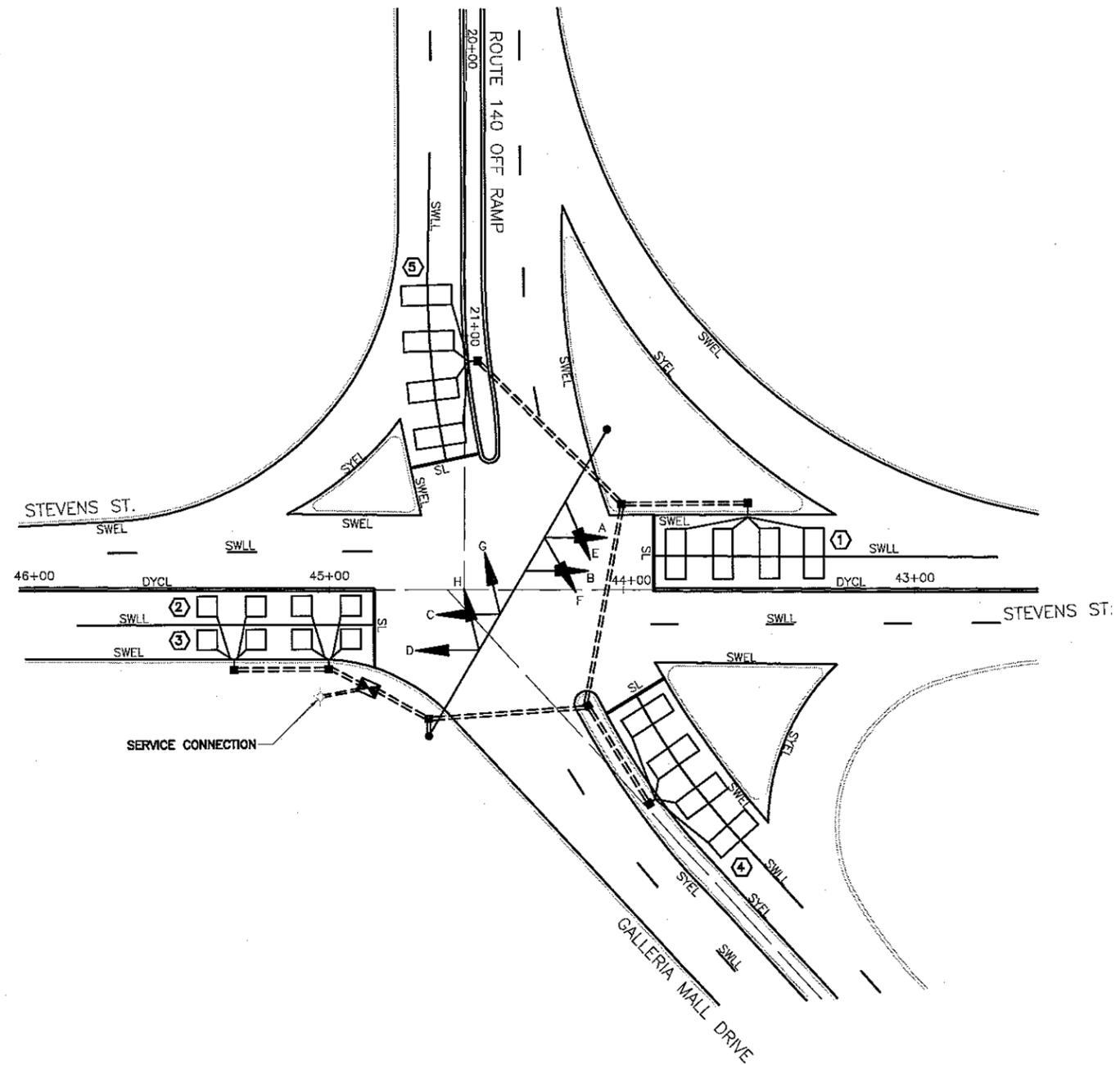
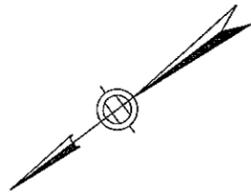


REVISION NO. 01  
 DATE: 12-05-01  
 INSERT BY: J.C.CONNOR  
 DATE: \_\_\_\_\_  
 FILE NAME: 1362T0101.DWG

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**MASS HIGHWAY**  
 10 PARK PLAZA  
 BOSTON, MA 02116  
 MASSACHUSETTS  
 HIGHWAY DEPARTMENT

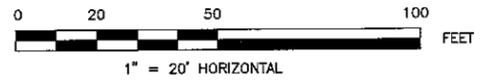
APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date



LEGEND

	SIGNAL CONTROLLER
	VEHICULAR SIGNAL
	OPTICALLY PROGRAMMED VEHICULAR SIGNAL
	FIRE PRE-EMPTION RECEIVER
	FIRE PRE-EMPTION STROBE LIGHT
	PEDESTRIAN SIGNAL
	PEDESTRIAN PUSH BUTTON
	PULL BOX

APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date \_\_\_\_\_



1362P0101.DWG



TAUNTON				
RTE. 140 AT 24. NB. RAMP				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1363	01	1	
TITLE SHEET				

THE COMMONWEALTH OF MASSACHUSETTS  
 MASSACHUSETTS HIGHWAY DEPARTMENT

TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT

COUNTY STREET (ROUTE 140) AT AMERICAN VETERANS MEMORIAL HIGHWAY (ROUTE 24) NORTHBOUND RAMP

IN THE TOWN OF

TAUNTON

BRISTOL COUNTY

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

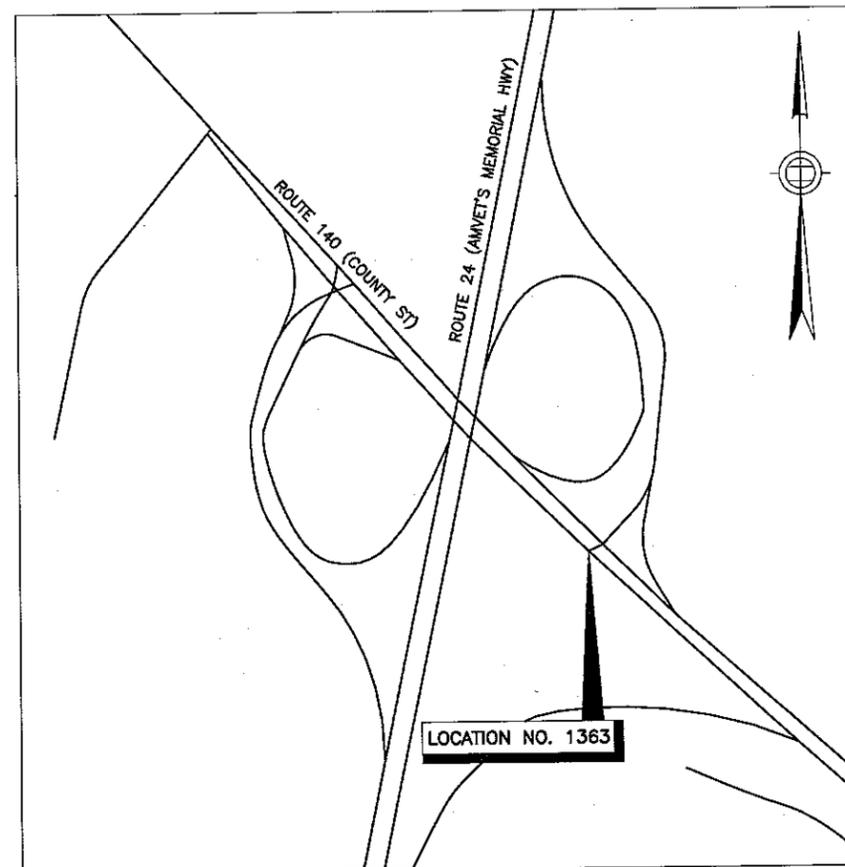
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

I STANDARDS OF INSTALLATION

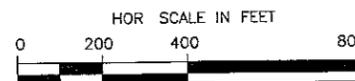
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

II OPERATION OF SIGNALS

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
 Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
- (h) Discontinuance: Signals may be discontinued at any time. When this is done signal faces must be turned away from traffic, taken down or hooded, and the District Highway Engineer notified.



LOCUS MAP  
 (SCALE AS SHOWN)

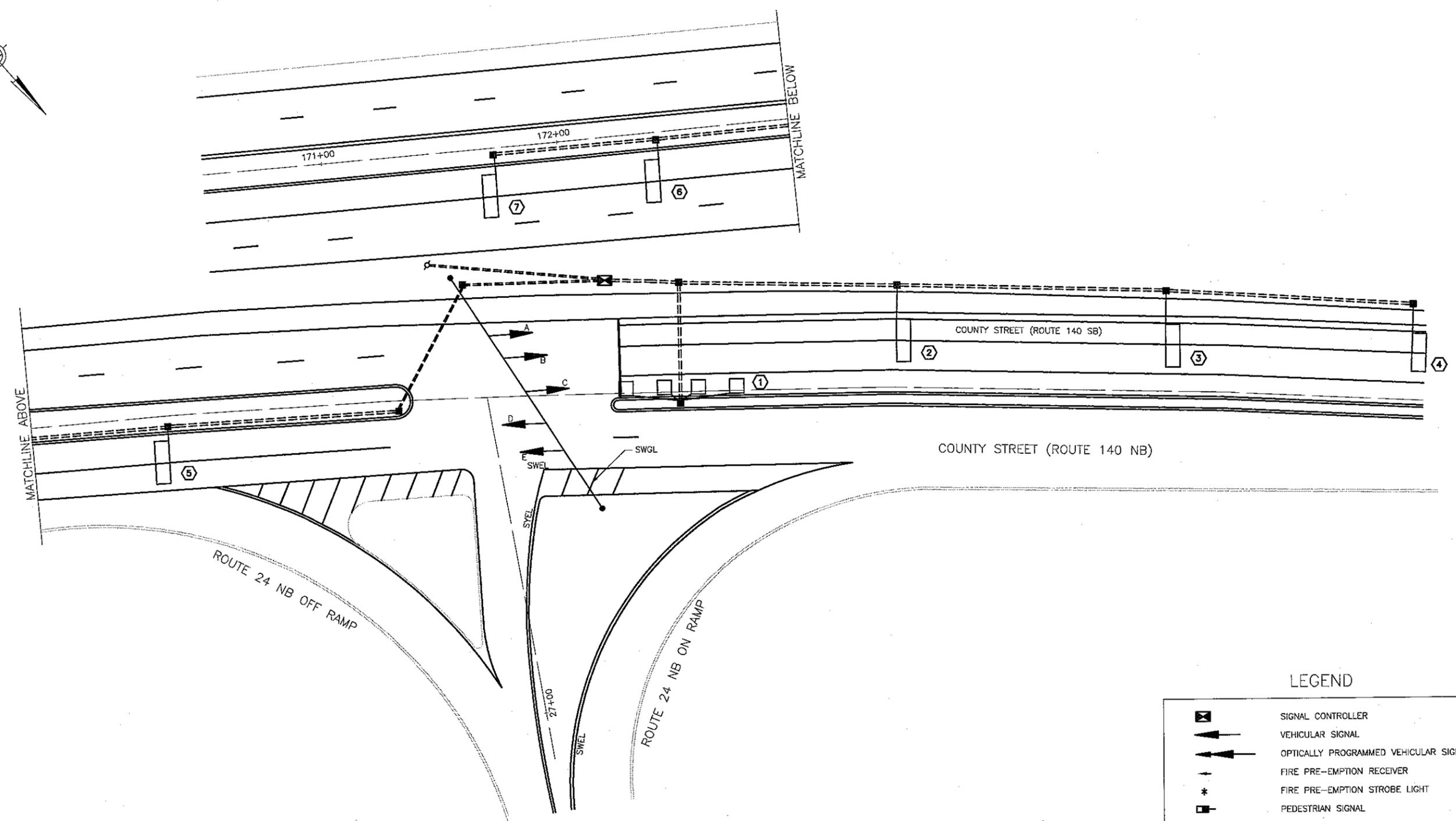
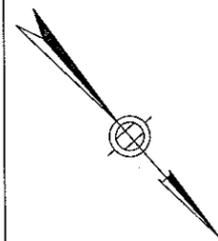


REVISION NO 01  
 DATE: 12-05-01  
 INSERT BY: J.C.CONNOR  
 DATE:  
 FILE NAME: 1363T0101.DWG

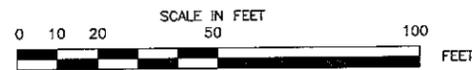
COMMENTS:  
 \_\_\_\_\_  
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**MASS HIGHWAY**  
 10 PARK PLAZA  
 BOSTON, MA 02116  
 MASSACHUSETTS  
 HIGHWAY DEPARTMENT

APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date



1363P0101.DWG



**LEGEND**

- SIGNAL CONTROLLER
- VEHICULAR SIGNAL
- OPTICALLY PROGRAMMED VEHICULAR SIGNAL
- FIRE PRE-EMPTION RECEIVER
- FIRE PRE-EMPTION STROBE LIGHT
- PEDESTRIAN SIGNAL
- PEDESTRIAN PUSH BUTTON
- PULL BOX

APPROVED BY: \_\_\_\_\_

STATE TRAFFIC ENGINEER      Date



# THE COMMONWEALTH OF MASSACHUSETTS MASSACHUSETTS HIGHWAY DEPARTMENT

## TRAFFIC SIGNAL LAYOUT PLAN AND PERMIT

### COUNTY STREET (ROUTE 140) AT AMERICAN VETERANS HIGHWAY (ROUTE 24) SOUTHBOUND RAMP

IN THE TOWN OF

TAUNTON

BRISTOL COUNTY

TAUNTON				
RTE. 140 AT 24. SB. RAMP				
STATE	SIGNAL ID NO.	REVISION NO.	SHEET NO.	TOTAL SHEETS
MASS	1364	01	1	1
TITLE SHEET				

Under authority of Chapter 89, Sec. 8 General Laws, Tercentenary Edition, the Massachusetts Highway Department hereby approves the following described traffic control signal installation, and auxiliary signs and surface markings, for the above location, provided that a permit for the opening of the road and the placing of structures thereon shall be received from the board or officer in charge of the road.

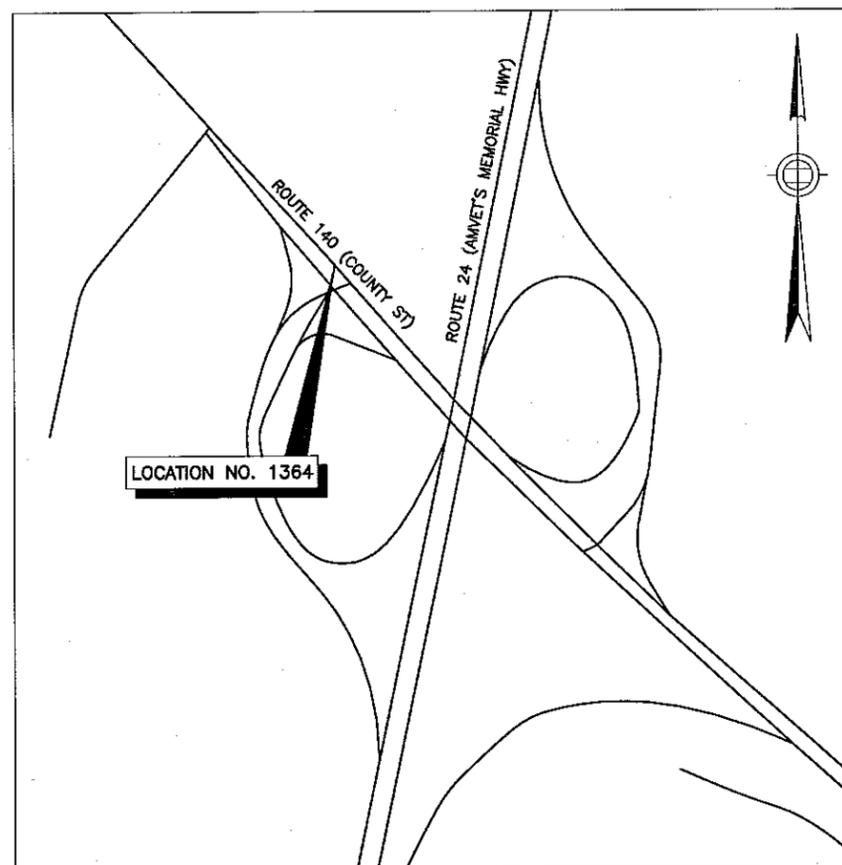
This permit is granted for the specific signal installation described herein and for its operation in accordance with the conditions set forth below and with the requirements of the Massachusetts Highway Department. The details for any material alterations or any continued or substantial departure from the provisions of this permit must be submitted to the department for approval with data sufficient to justify such modification. Failure to comply with these requirements automatically voids this permit during such time as non-compliance exists.

#### I STANDARDS OF INSTALLATION

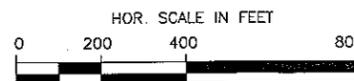
The traffic control signal installation and all auxiliary signs and surface markings which are used in connection with such installation shall conform with the requirements of the Massachusetts Highway Department and with the sketch which is attached.

#### II OPERATION OF SIGNALS

- (a) Type of control: AUTOMATIC
- (b) Coordination: NONE
- (c) Special connection: NONE
- (d) Timing for automatic operation: SEE SHEET NO. 3
- (e) Hours for Automatic Operation: CONTINUOUS  
Signals may be operated automatically for a shorter period of time but not for a greater length of time than is here indicated except when unusual conditions arise which temporarily justify longer operation.
- (f) Flashing Operation: Whenever a signal is not operating as a control device (stop and go), it must Flash Yellow or Flash Red as set forth in the signal sequence and at the rate of 50-60 flashes per minute unless otherwise specified in Part II(e) of this Permit.
- (g) Manual Operation: Signals may be operated manually at any time irrespective of the hours designated in Part II(3) of this permit
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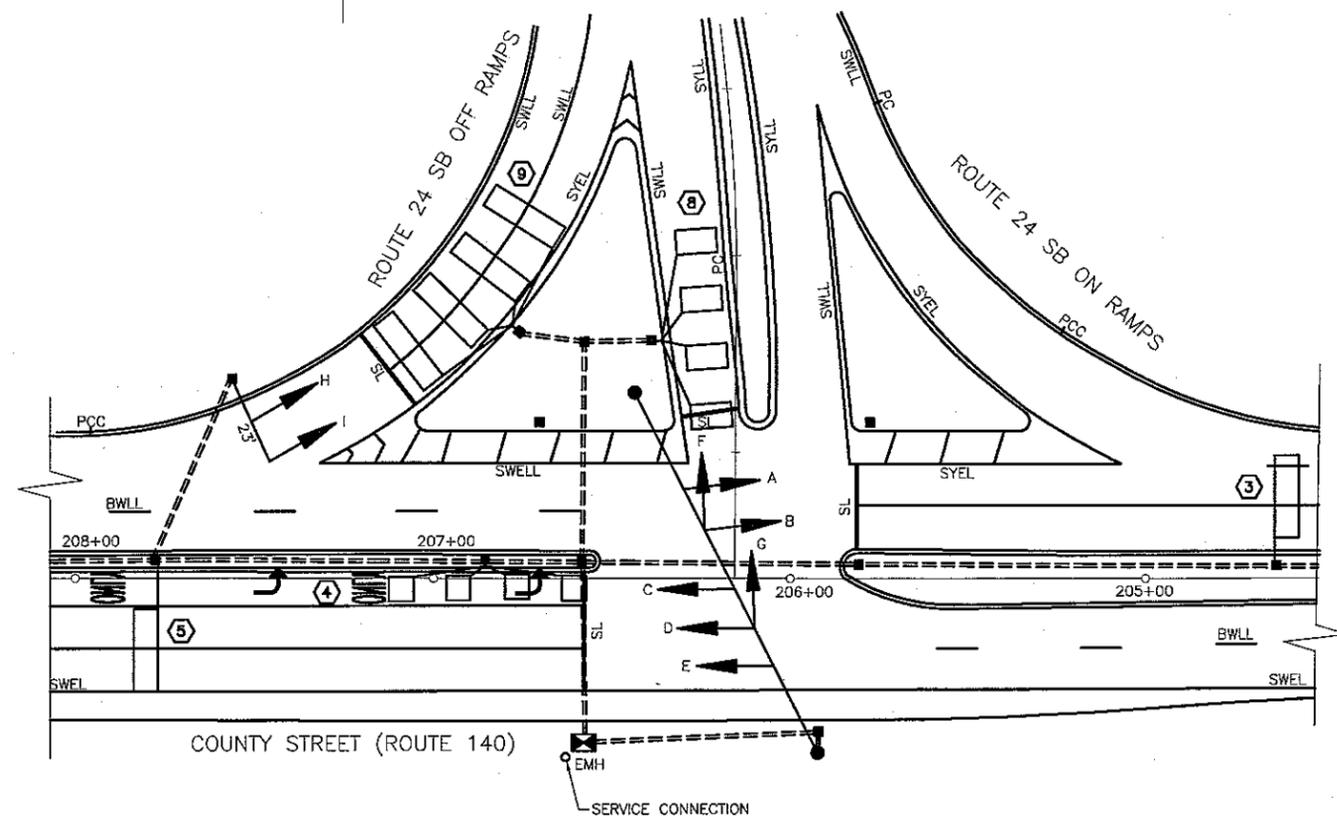
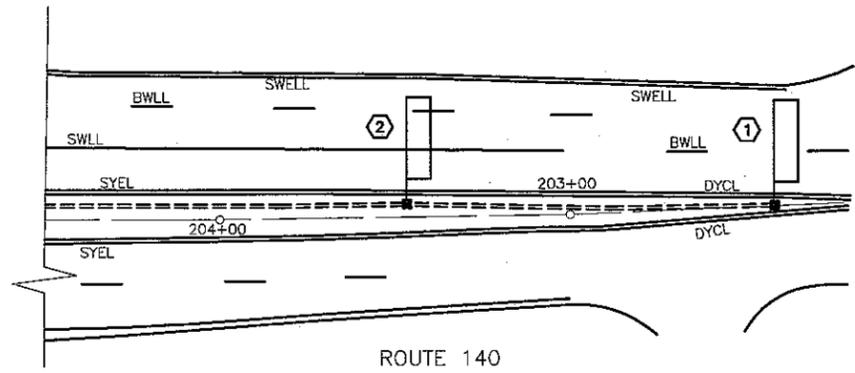
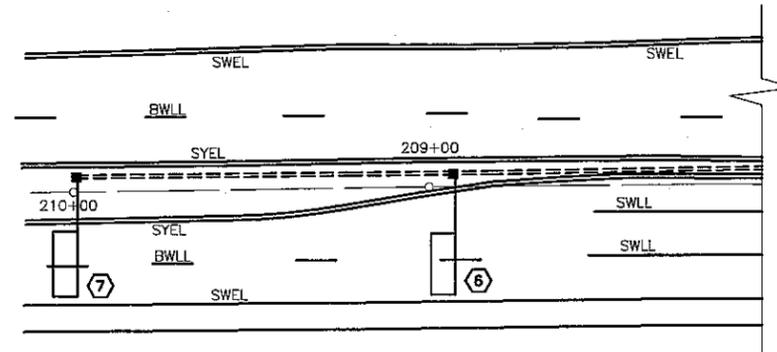
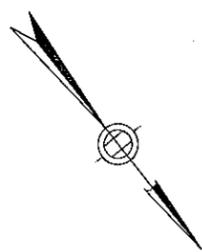
LOCUS MAP  
(SCALE AS SHOWN)



REVISION NO. <u>01</u>
DATE: <u>12-05-01</u>
INSERT BY: <u>J.C.CONNOR</u>
DATE: _____
FILE NAME: <u>1364T0101.DWG</u>

COMMENTS: _____
_____
_____

<b>MASS HIGHWAY</b>	
10 PARK PLAZA BOSTON, MA 02116	
MASSACHUSETTS HIGHWAY DEPARTMENT	
APPROVED BY: _____	
STATE TRAFFIC ENGINEER	Date

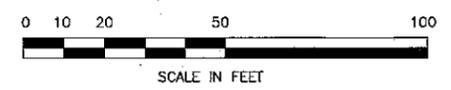


ROUTE 140

**LEGEND**

- SIGNAL CONTROLLER
- VEHICULAR SIGNAL
- OPTICALLY PROGRAMMED VEHICULAR SIGNAL
- FIRE PRE-EMPTION RECEIVER
- FIRE PRE-EMPTION STROBE LIGHT
- PEDESTRIAN SIGNAL
- PEDESTRIAN PUSH BUTTON
- PULL BOX

APPROVED BY: \_\_\_\_\_  
 STATE TRAFFIC ENGINEER Date \_\_\_\_\_



1364P0101.DWG

