STATE OF VERMONT
AGENCY OF TRANSPORTATION

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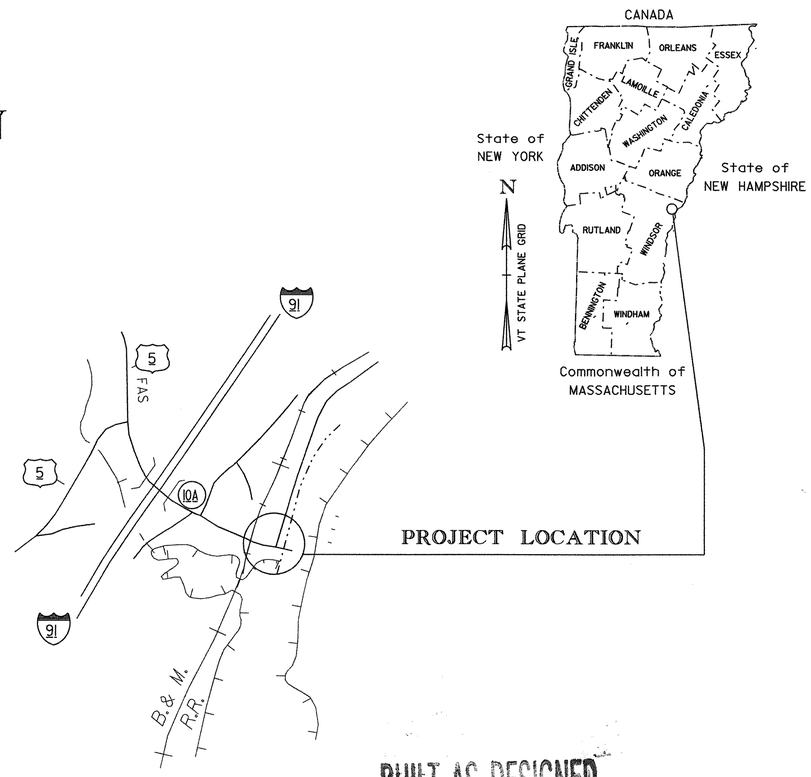
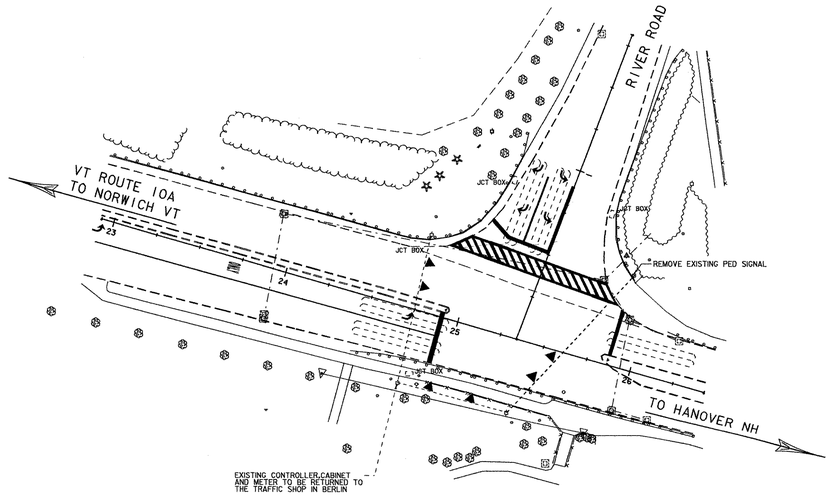
PROPOSED IMPROVEMENT

VERMONT ROUTE 10A
TOWN: NORWICH
COUNTY: WINDSOR

NORWICH, VT ROUTE 10A, AT THE INTERSECTION OF VT ROUTE 10A AND RIVER ROAD.

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACING WOOD POLES & SPANWIRE WITH NEW STRAINPOLES AND MAST ARMS. REPLACING SIGNAL HEADS, CONTROLLER, CABINET & PEDESTRIAN HEADS.





N
VT STATE PLANE GRID

0 40 80
SCALE IN FEET

BUILT AS DESIGNED

RECORD PLANS

CONTRACTOR: MOULISON NORTH CORP. – BIDDEFORD, ME

RESIDENT ENGINEER: TOM CHASE

CONSTRUCTION BEGAN: SEPTEMBER 21, 2006

CONSTRUCTION COMPLETE: MAY 7, 2007

RECORD PLANS BY: TOM CHASE

I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY Thomas A. Chase RESIDENT ENGINEER

DATE 08/09/07

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS (SR SR SR)
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : R. GILMAN
SURVEYED DATE : 01-30-2001

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DIRECTOR OF PROGRAM DEVELOPMENT

APPROVED _____ DATE _____

PROJECT MANAGER : BRUCE T. NYQUIST

PROJECT NAME : NORWICH
PROJECT NUMBER : STPG 0170(3)S

SHEET 1 OF 9 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
VERMONT ROUTE 10A
TOWN: NORWICH
COUNTY: WINDSOR

NORWICH, VT ROUTE 10A, AT THE INTERSECTION OF VT ROUTE 10A AND RIVER ROAD.

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACING WOOD POLES & SPANWIRE WITH NEW STRAINPOLES AND MAST ARMS. REPLACING SIGNAL HEADS, CONTROLLER, CABINET & PEDESTRIAN HEADS.

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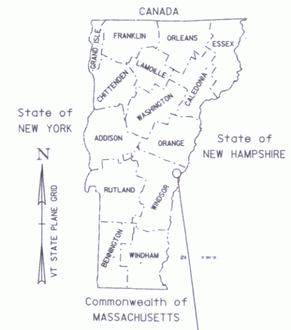
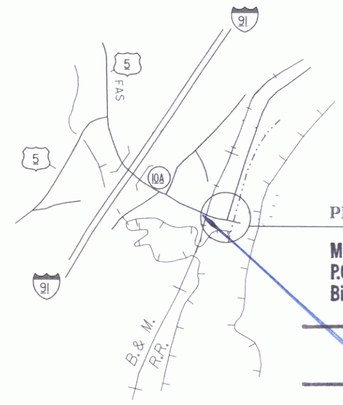




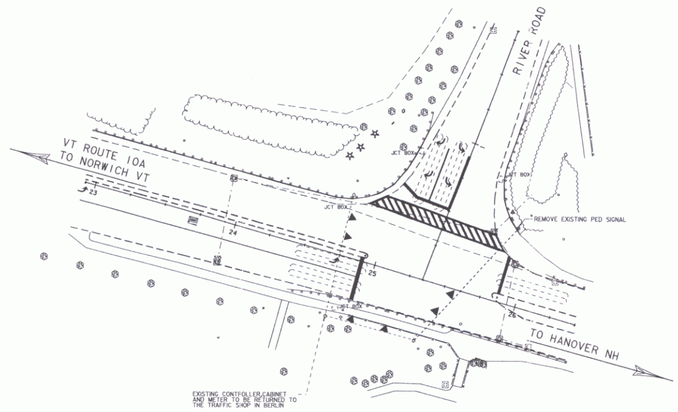
PROJECT LOCATION

Moulison North Corporation
P.O. Box 348
Biddeford, ME 04005

Contractor

Signature

Title



0 40 80
SCALE IN FEET

Secretary of Transportation
or Duly Authorized Agent

2/15/06
Date

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
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SURVEYED BY : R. GILMAN
SURVEYED DATE : 01-30-2001

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DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 12-1-05

PROJECT MANAGER : BRUCE T. NYQUIST

PROJECT NAME : NORWICH
PROJECT NUMBER : STPG 0170(3)S

SHEET 1 OF 9 SHEETS

QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

SUMMARY OF ESTIMATED QUANTITIES

EROSION CONTROL	E & C ITEMS	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
		80	80	HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST.
		80	80	HR	FLAGGERS	630.15	EST.
	1		1	LS	TESTING EQUIPMENT - CONCRETE	631.16	-
		1	1	LS	MOBILIZATION / DEMOBILIZATION	635.11	-
5			5	LB	SEED	651.15	-
0.35			0.35	TON	HAY MULCH	651.25	-
		1	1	EA	TRAFFIC CONTROL SIGNAL SYSTEM - INTERSECTION (MOD.)	678.15	-
		264	264	LF	WIRED CONDUIT (2") (PVC)	678.23	-
		40	40	LF	ELECTRICAL WIRING	678.24	-

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: NORWICH
PROJECT NUMBER: STPG 0170(3)S

FILE NAME: traf/00c224/dc224wrk.dgn
PROJECT LEADER: B. T. NYQUIST
DESIGNED BY: W. GRAY
dc224tqs.1

PLOT DATE: 12-DEC-2008
DRAWN BY: W. GRAY
CHECKED BY:

TRAFFIC SIGNAL NOTES

A. NEW SIGNAL EQUIPMENT

1. ALL SIGNAL HEADS SHALL BE POLYCARBONATE AND HAVE A FLAT BLACK FINISH.
2. THE SIGNAL CONTROLLER SHALL BE ECONOLITE ASC-2S BRAND & THE CABINET WILL ALSO BE ECONOLITE BRAND AND HAVE A FLAT BLACK FINISH.
3. ALL SIGNAL HEADS SHALL HAVE RED, YELLOW, & GREEN, L.E.D. SIGNALS WITH A VISIBLE BEAM SPREAD OF 80 DEGREES OFF AXIS.
4. ALL SIGNAL HEADS FACING EAST/WEST DIRECTION SHALL HAVE BLACK LOUVERED BACK PLATES.
5. ALL SIGNAL STRAIN POLES, MAST ARMS, AND PED. EQUIPMENT SHALL HAVE A FLAT BLACK FINISH.
6. THE SIGNAL CONTROLLER SHALL MEET NEMA TS2, TYPE 2 STANDARDS.

B. SIGNAL OPERATION

1. SWITCH-OVER FROM EXISTING TO REPLACEMENT SIGNALS SHALL NOT BE DONE DURING PERIODS OF PEAK TRAFFIC. UNIFORMED TRAFFIC OFFICERS SHALL CONTROL TRAFFIC DURING SWITCH-OVER.
2. ALL NEW PED. SIGNALS SHALL HAVE AUDIBLES INSTALLED WITH THEM, BUT THEY SHALL NOT BE TURNED ON.
3. ALL SIGNALS SHALL DWELL ON THE VT 10A THRU MOVEMENT.
4. THE VT ROUTE 10A THRU PHASE SHALL BE USED FOR THE START-UP PHASE FOLLOWING FLASHING OPERATION.

C. PULLBOXES AND JUNCTION BOXES

1. PULLBOXES AND JUNCTION BOXES ARE DETAILED ON STANDARD E-173. IF A NEW JUCTION BOX NEEDS TO BE INSTALLED MINIMUM JUNCTION BOX SIZE SHALL BE 18" X 12" X 12", OR LARGER AS REQUIRED BY THE ELLECTRICAL CODE.
2. THE LOGO ON NEW PULL BOXES / JUNCTION BOXES SHALL BE "TRAFFIC SIGNALS".

D. TRAFFIC SIGNAL CONDUIT

1. ALL TRAFFIC SIGNAL CONDUIT SHALL BE PVC. ALL EXPOSED CONDUIT SHALL BE SCHEDULE 80, PVC.

E. VEHICLE DETECTOR LOOPS

1. SEE STANDARD E-172

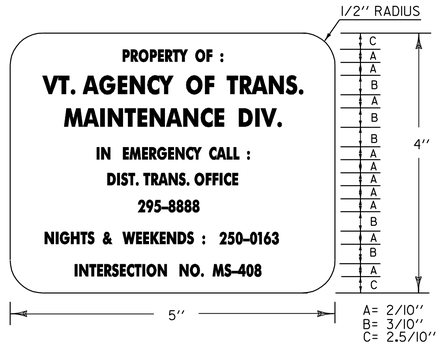
F. STREET LIGHTING

1. EXISTING TO REMAIN.

G. GENERAL

1. EXISTING STRAIN POLES, SIGNAL HEADS & ALL SIGNAL EQUIPMENT SHALL BE SALVAGED AND DELIVERED TO STATE OF VERMONT TRAFFIC SHOP ON THE BARRE MONTPELIER RD. IN BERLIN VT.
2. EXISTING PAVEMENT MARKINGS, JUCTION BOXS, AS WELL AS LOOP DETECTORS ARE TO BE UTILIZED.
3. A UNIFORMED TRAFFIC OFFICER SHALL DIRECT TRAFFIC WHEN ONE-WAY TRAFFIC EXISTS ON ANY APPROACH.
4. THE CONTRACTOR SHALL ACQUIRE ALL THE NECESSARY PERMITS AND MAKE ALL NECESSARY ARRANGEMENTS WITH THE UTILITY COMPANY TO PROVIDE A PERMANENT POWER SUPPLY TO THE SIGNAL AND STREET LIGHTING EQUIPMENT, IF APPLICABLE. THE ROUTING OF POWER TO THE INTERSECTION SHALL BE SUCH THAT THE STATE HAS FULL RESPONSIBILITY FROM THE METER DISCONNECT THROUGH THE SIGNAL. NO INTERVENING OWNERSHIP/ RESPONSIBILITY SHALL BE ALLOWED.

CONTROLLER IDENTIFICATION PLAQUE



LEGEND: - BLACK (NON-REFL.) - STAMPED PRIOR TO PAINTING
BACKGROUND: NATURAL ALUMINUM OR BRASS SURFACE

NOTES:

1.) THE PLAQUE SHALL BE MOUNTED ON ALL TRAFFIC SIGNAL CONTROLLER CABINETS. IT SHALL BE FASTENED TO THE CONTROLLER CABINET IN SUCH A MANNER AS TO BE NOT EASILY REMOVED, SUCH AS WELDED, RIVETED OR BOLTED WITH VANDAL PROOF BOLTS.

2.) THE LETTERS SHALL BE PUNCHED OR STAMPED, SUCH STAMPING SHALL PENETRATE AT LEAST ½ THE BASE MATERIAL THICKNESS.

3.) THE BASE MATERIAL FOR THE PLAQUE SHALL BE BRASS OR ALUMINUM WITH A MINIMUM THICKNESS OF 0.100 INCHES.

LIST OF MAJOR EQUIPMENT	
EQUIPMENT ITEM # 678.15 (MOD.)	QUANTITY
STRAIN POLES	2
PEDESTRIAN POLES	1
POWER DROP STANCHION	1
NEW 12" TRAFFIC SIGNAL HEADS W/ TUNNEL VISORS, DISCONNECT HANGERS & MOUNTING HARDWARE	
A. ONE-WAY 3 SECTION	5
B. ONE-WAY 5 SECTION	2
GROUND CABINET/CONTROLLER	1
MAST ARM	3
BACKPLATES	5
NEW PED SIGNALS W/ AUDIBLES	2
REMOVAL OF EXIST. SIGNAL SYSTEM	1

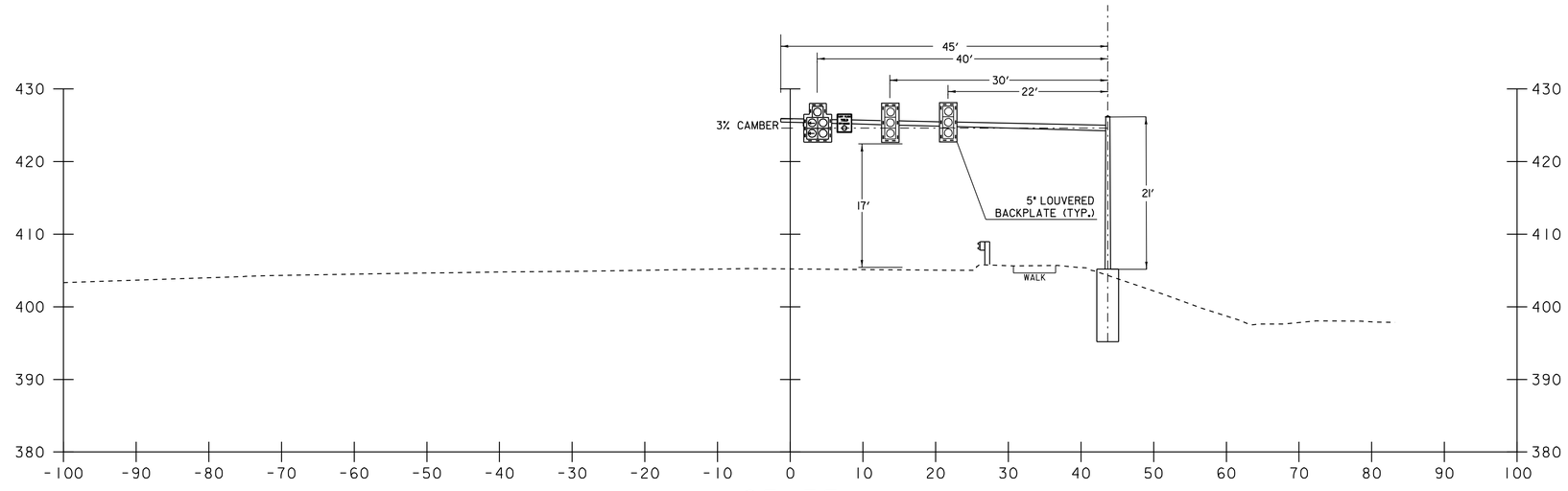
TRAFFIC SIGNAL NOTES

PROJECT: NORWICH

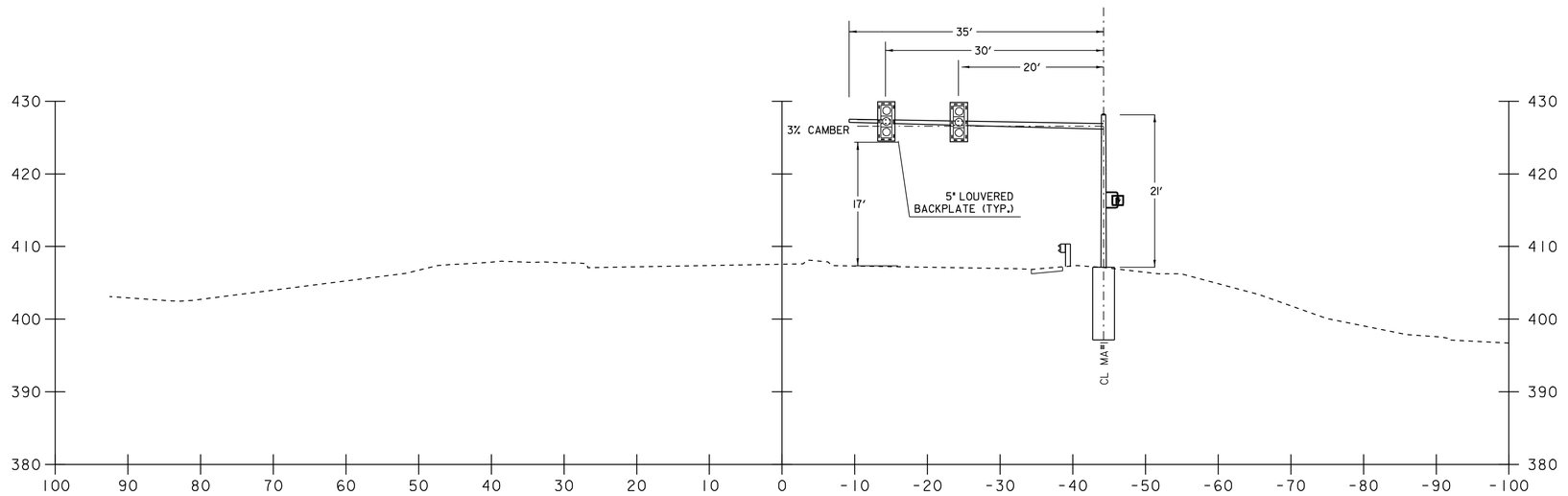
PROJECT NO.: STPG 0170(3)S

DESIGN FILE NAME: /traf/00c224/dc224.dgn
IPARM FILE NAME: dc224not.i
SURVEYED BY:
SQUAD LEADER: BTN

PLOT DATE: 12-DEC-2008
SURVEY DATE:
DRAWN BY: WLG
SHEET: 3 OF 9

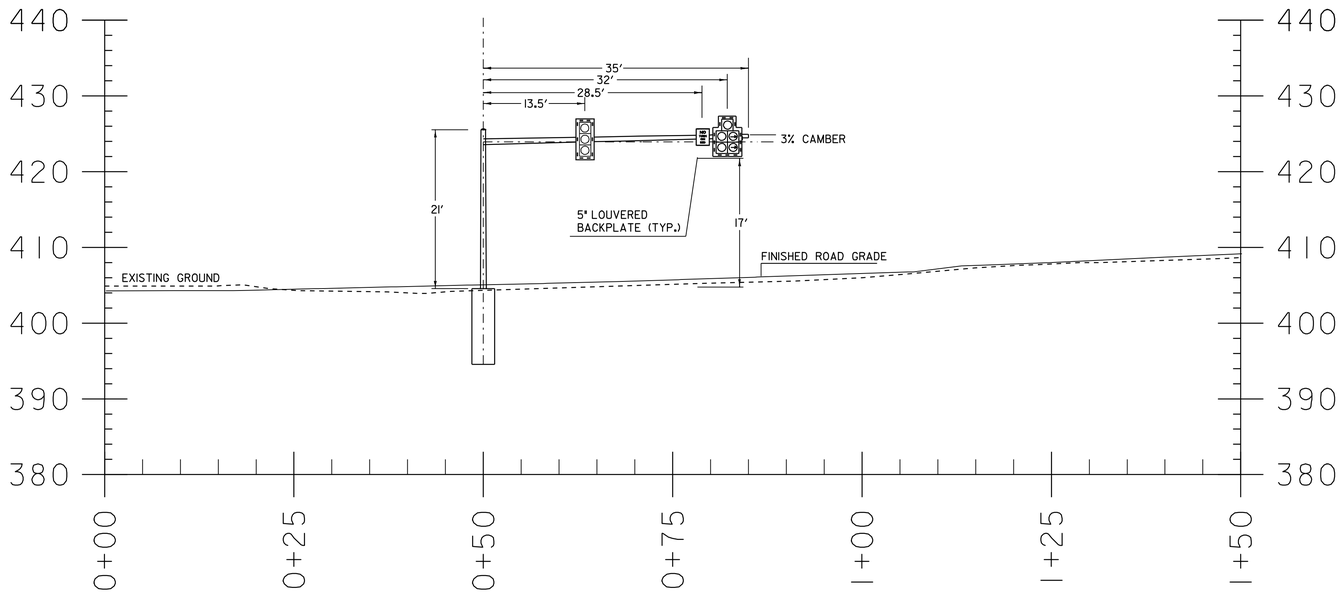


25+35
Looking East



24+68
Looking West

PROJECT NAME:	NORWICH
PROJECT NUMBER:	STPG 0107(3)S
FILE NAME: /traf/00c224/dc224wrk.dgn	PLOT DATE: 12-DEC-2008
PROJECT LEADER: Nyquist	DRAWN BY: .
DESIGNED BY: jfg/kas	CHECKED BY:
dc224xsl.i	SHEET 4 OF 9

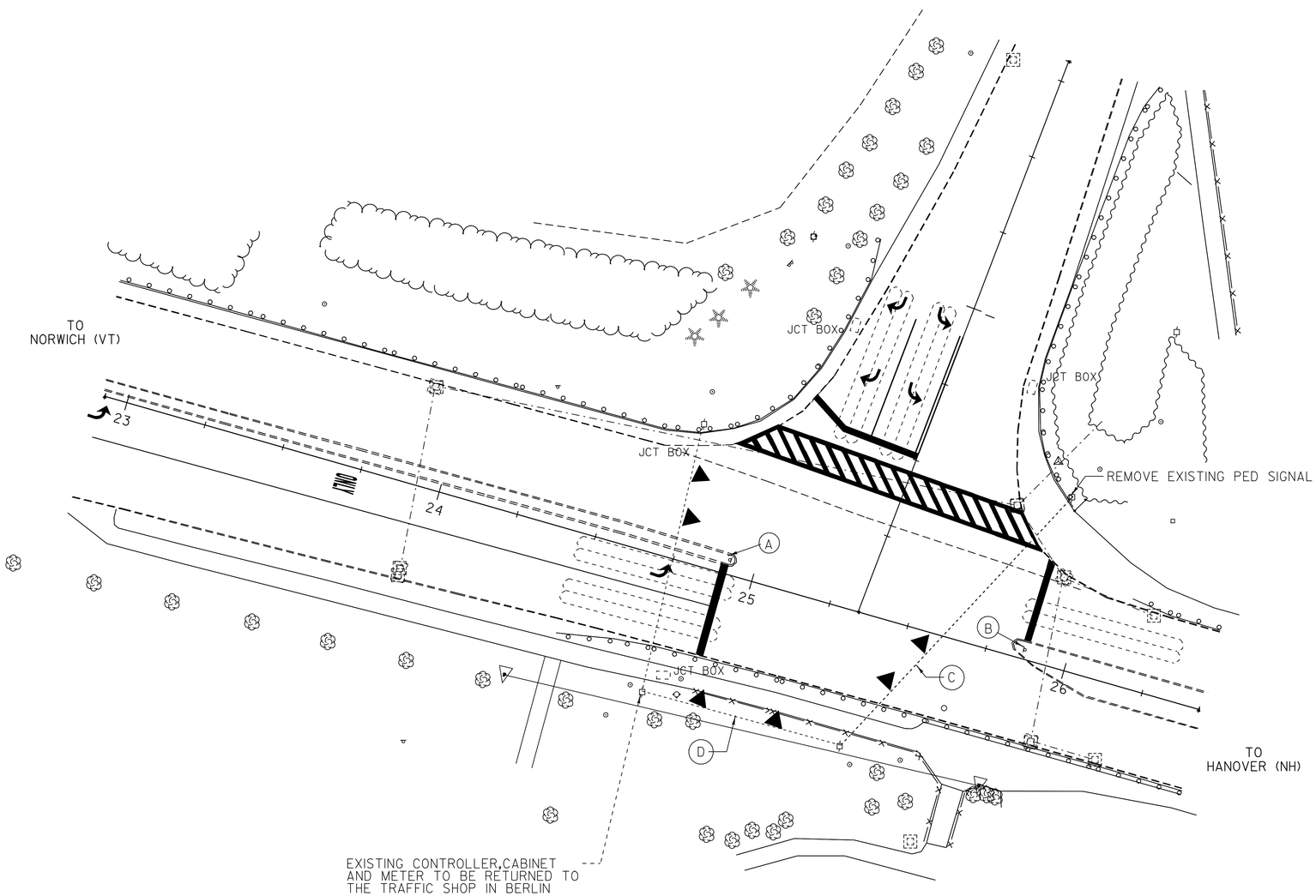


SECTION – RIVER RD. LOOKING SOUTH

PROJECT NAME:	NORWICH
PROJECT NUMBER:	STPG 0107(3)S
FILE NAME: /traf/00c224/dc224wrk.dgn	PLOT DATE: 12-DEC-2008
PROJECT LEADER: Nyquist	DRAWN BY: .
DESIGNED BY: jfg/kas	CHECKED BY:
dc224xs2.i	SHEET 5 OF 9

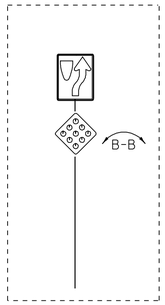
N

VT STATE PLANE GRID



A

RETAIN



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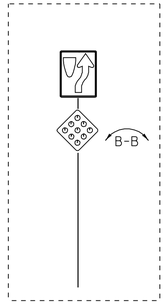
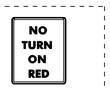
RETAIN



NOTE: ALL SIGNS AND SIGN WORK WILL BE PAID FOR AS A INCIDENTAL TO THE TRAFFIC CONTROL SYSTEM, ITEM 678.15

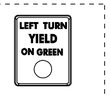
D

REMOVE



C

REMOVE AND RESET



0 20 40

SCALE IN FEET

PROJECT NAME: NORWICH

PROJECT NUMBER: STPG 0107(3)S

FILE NAME: /traf/00c224/dc224tsl.dgn
PROJECT LEADER: Nyquist
DESIGNED BY: W.GRAY
dc224tse.1

PLOT DATE: 12-DEC-2008
DRAWN BY: WG & KS
CHECKED BY:
SHEET 6 OF 9

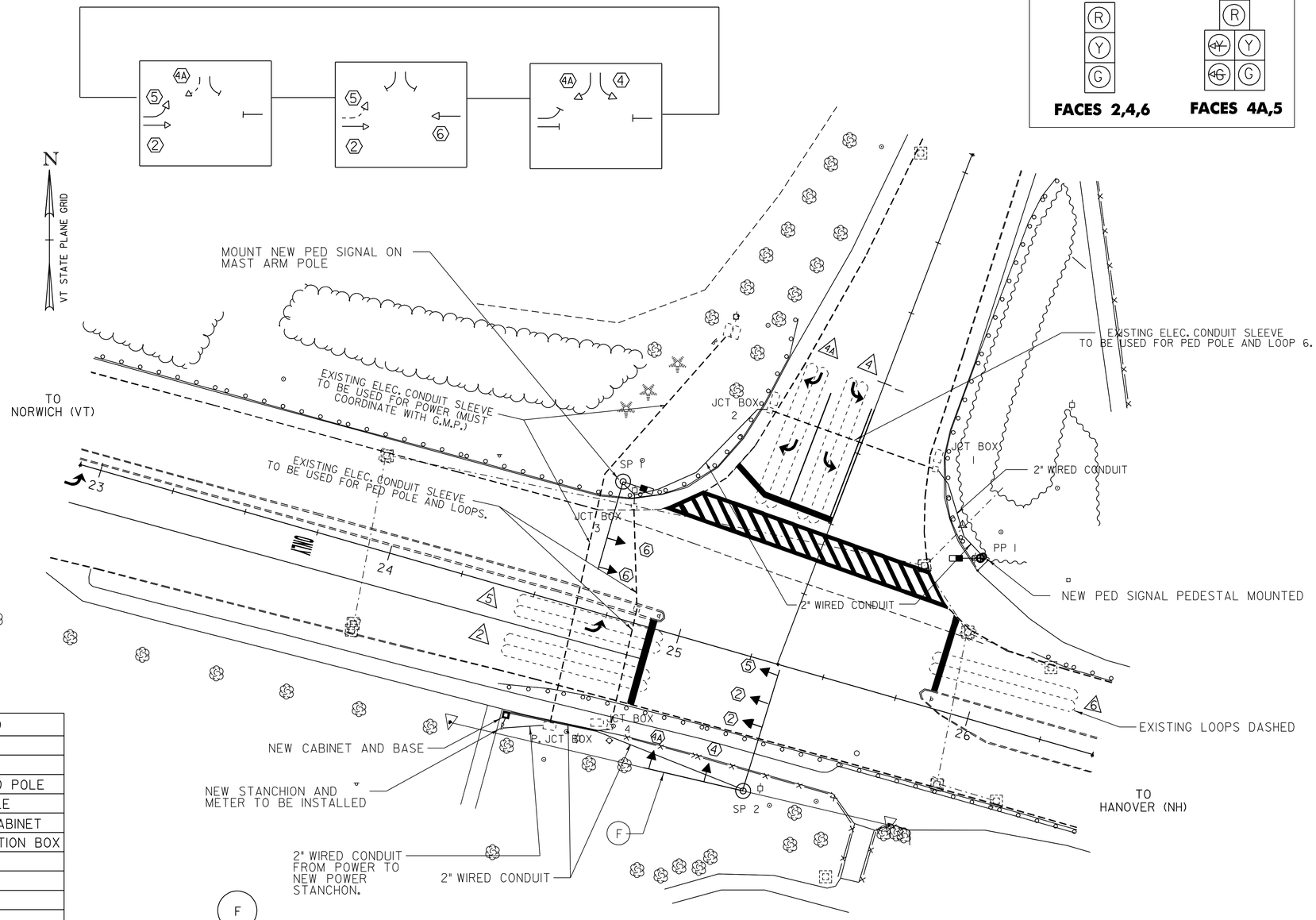
CONTROLLER TIMING CHART								
VT ROUTE 10A & RIVER ROAD								
		VT 10A		RIVER ROAD	VT 10A	VT 10A		
PHASE	1	2	3	4	5	6	7	8
TRAFFIC MOVEMENT		->		↓	↗	<-		
MINIMUM GREEN		8		8	5	8		
MAXIMUM 1 GREEN		37		16	5	26		
MAXIMUM 2 GREEN		72		16	5	61		
MAXIMUM 3 GREEN		37		16	5	26		
YELLOW CLEARANCE		4		4	4	4		
ALL RED CLEARANCE		2		2	2	2		
VEH. EXTENSION		2		2		2		

CONTROLLER TO OPERATE MAXIMUM 1 GREEN TIMINGS FROM 6:00AM-9:00AM
CONTROLLER TO OPERATE MAXIMUM 2 GREEN TIMINGS FROM 3:00PM-6:00PM
CONTROLLER TO OPERATE MAXIMUM 3 GREEN TIMINGS FROM 9:00AM-3:00PM & 6:00PM-6:00AM

WIRED CONDUIT RUNS	2" CONDUIT LENGTH
PP 1TO JCT. BOX 1	38'
JCT. BOX 2 TO JCT. BOX 3	63'
SP 1TO JCT. BOX 3	14'
JCT. BOX 4 TO CABINET	39'
SP 2 TO CABINET	87'
P. JCT. BOX TO CABINET	23'

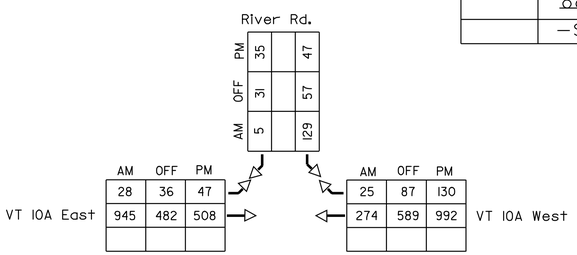
* ALL CONDUIT RUNS ARE FOR POWER

PHASING DIAGRAM



SIGNAL FACE ARRANGEMENT

EXISTING	NEW	LEGEND
		UTILITY POLE
		LUMINAIRE
		LIGHT OR WOOD POLE
		MAST ARM POLE
		CONTROLLER CABINET
		PULLBOX/JUNCTION BOX
		SIGNAL HEAD
EX		CONDUIT
		VEHICLE LOOPS
		STANCHION
	S	SWEEP



F
NEW

NO TURN ON RED

NOTE: ALL SIGNS AND SIGN WORK WILL BE PAID FOR AS A INCIDENTAL TO THE TRAFFIC CONTROL SYSTEM, ITEM 678.15

NEW
(LED)

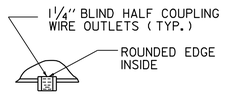
PEDESTRIAN FACE

0 20 40
SCALE IN FEET

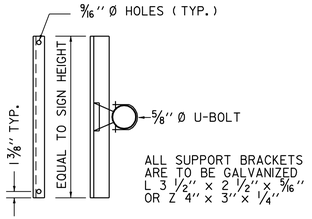
PROJECT NAME: NORWICH
PROJECT NUMBER: STPG 0107(3)S

FILE NAME: /traf/00c224/dc224tsl.dgn
PROJECT LEADER: Nyquist
DESIGNED BY: W.GRAY
dc224tsn.i

PLOT DATE: 12-DEC-2008
DRAWN BY: WG & KS
CHECKED BY:
SHEET 7 OF 9

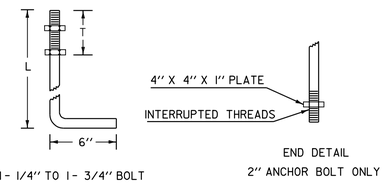


DETAIL A

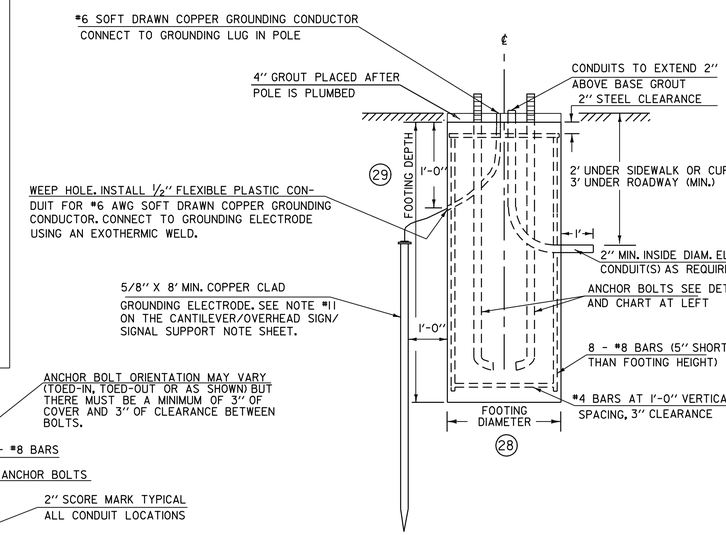


SIGN BRACKET DETAILS

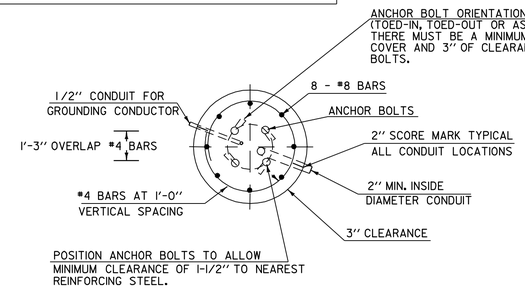
ANCHOR BOLT DETAIL		
SIZE	L(IN)	T(IN)
1- 1/4" X 48"	42	8
1- 1/2" X 60"	54	9
1- 3/4" X 90"	84	9
2" X 96"	96	9



ANCHOR BOLT DETAIL



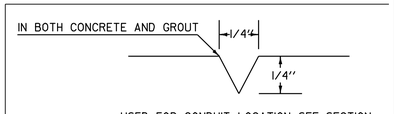
ELEVATION



SECTION

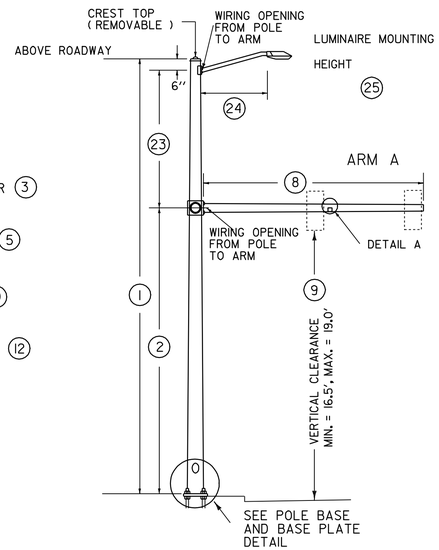
CANTILEVER FOOTING DETAIL

(SPREAD FOOTINGS OR PILES ARE OPTIONAL)



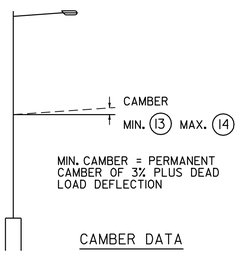
2" SCORE MARK DETAIL

* DISREGARD ANY REFERENCE TO LUMINAIRES. THEY ARE NOT PART OF THIS PROJECT.

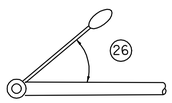


POLE BASE DIAMETER (3)
POLE GAUGE (4)
POLE TAPER RATE (5)

ARM A DIAMETER (10)
ARM A GAUGE (11)
ARM A TAPER RATE (12)

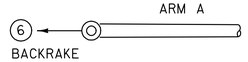


CAMBER DATA



LUMINAIRE ORIENTATION
FROM ARM A

LUMINAIRE ARM RISE

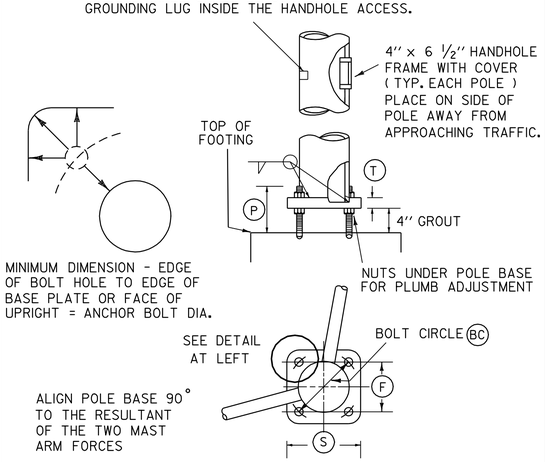


BACKRAKE DATA

SEE CANTILEVER / OVERHEAD SIGN / SIGNAL SUPPORTS
NOTE SHEET FOR ADDITIONAL INFORMATION

STRUCTURE DIMENSIONS

	POLE DATA							ARM DATA												LIGHTING DATA					FOOTING DATA		BASE PLATE / BOLT DATA					
POLE	(1)	(2)	(3)	(4)	(5)	(6)						(8)	(9)	(10)	(11)	(12)	(13)	(14)			(23)	(24)	(25)	(26)	(27)	(28)	(29)	(BC)	(F)	(S)	(T)	(P)	ANCHOR BOLT SIZE
MA1																															
MA2																															
MA3																															



POLE BASE AND BASE PLATE DETAIL

NOTE: DETAILS NOT TO SCALE

MAST ARM CANTILEVER WITH LIGHTING / FOOTING DETAIL SHEET

traf/00c224/dc224fds.i
LAST REVISED 8/15/95

PREPARED BY BRM DATE
CHECKED BY DATE
DESIGN SUPERVISOR BTN DATE
PROJ. **NORWICH**
STPG 0107(3)S

SHEET 8 OF 9 SHEETS

PLOTTED: 12-DEC-2008

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S ''STANDARD SPECIFICATIONS FOR CONSTRUCTION'', DATED 2001, WITH CURRENT MODIFICATIONS.

2. OVERHEAD SIGN/SIGNAL SUPPORTS SHALL CONFORM TO AASHTO'S PUBLICATION ENTITLED ''STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS'', DATED 1985 OR ITS LATEST REVISION.

3. ADDITIONAL DESIGN CRITERIA ARE AS FOLLOWS:

   CONCRETE f_c = 1400 PSI f'_c = 3500 PSI
   REINFORCING f_s = 24000 PSI (GRADE 60)
   FOOTING SOIL PRESSURE : 3000 PSF (MAXIMUM)

   WIND LOAD AND ICE LOAD PER AASHTO ''STANDARD SPECIFICATIONS''

4. ANCHOR BOLTS

   FOUR STAINLESS STEEL ANCHOR BOLTS WITH TWO HEXAGON NUTS, ONE WASHER AND ONE LOCK WASHER PER BOLT SHALL BE FURNISHED WITH EACH POLE. ANCHOR BOLT PLATES, WHEN USED, SHALL ALSO BE STAINLESS STEEL. SEE SUB-SECTION 714.09.

5. FLANGE BOLTS

   ALL FLANGE BOLTS AND HEX NUTS SHALL BE HIGH STRENGTH STEEL AND SHALL CONFORM TO ASTM A325. THE FLANGE BOLTS SHALL BE CAPABLE OF RESISTING 133% OF THE FULL DESIGN STRESS OF THE TUBE AT ITS YIELD STRENGTH STRESS.

6. HORIZONTAL AND VERTICAL MEMBERS

   STEEL TUBES SHALL BE FORMED AND WELDED WITH ONE CONTINUOUS LONGITUDINAL WELD ONLY. AFTER FORMING AND WELDING THEY SHALL BE COLD ROLLED TO ENSURE UNIFORMITY OF SIZE AND SMOOTHNESS OF WELD. THEY SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI. THERE SHALL BE NO TRANSVERSE WELDING EXCEPT AT THE FLANGE CONNECTIONS AND POLE BASE PLATES, WHERE THE TUBES SHALL TELESCOPE THE FLANGES AND PLATES AND BE CONTINUOUSLY WELDED BOTH SIDES INSIDE AND OUT TO WITHSTAND THE FULL TRANSFER OF THE BENDING STRENGTH TO THE BOLTS. OPTIONALLY, THE MEMBERS MAY BE A SERIES OF TWO OR THREE DIFFERENT DIAMETER PIPES WELDED TOGETHER.

7. GALVANIZING

   ALL STEEL COMPONENTS, EXCEPT CONCRETE REINFORCING AND STAINLESS STEEL HARDWARE, ARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION. THE ASSEMBLIES SHALL BE DESIGNED AND FABRICATED TO PERMIT GALVANIZING ON ALL INTERIOR AND EXTERIOR SURFACES AND SHALL BE FREE OF POCKETS AND OTHER STRUCTURAL OBSTRUCTIONS THAT WILL NOT PERMIT PROPER DEPOSITION OF ZINC COATING. GALVANIZING SHALL BE IN ACCORDANCE WITH ASTM A123 AND A153.

8. WELDING

   A. ALL DESIGN DETAILS, WORKMANSHIP, PROCEDURES AND INSPECTION SHALL CONFORM WITH SUB-SECTION 506.10.

   B. ALL WELDS SHALL BE AT LEAST AS STRONG AS THE MATERIAL(S) BEING WELDED.

9. FOOTINGS

   A. FOOTINGS SHALL BE DESIGNED TO RESIST LOADS EQUAL TO, OR GREATER THAN, THE MAXIMUM LOADS THAT THE POLE IS DESIGNED FOR.

   B. THREE TYPES OF FOUNDATIONS, AS OUTLINED IN AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2) SECTION 1.8.2 (C) SHALL BE ALLOWED.

      1. DRILLED SHAFTS
      2. SPREAD FOOTINGS
      3. PILES.

   C. DRILLED SHAFT FOOTINGS SHALL BE POURED IN DRILLED SHAFTS AGAINST UNDISTURBED MATERIAL. THE TOP TWO FEET OF SOIL SHALL BE NEGLECTED FOR DESIGN PURPOSES. THE MAXIMUM FOOTING DIAMETER SHALL BE THREE FEET AND THE MAXIMUM DEPTH SHALL BE TWELVE FEET. IF THESE LIMITS ARE EXCEEDED OR IF THE SOIL IS NOT CAPABLE OF A BEARING PRESSURE OF 3000 PSF, A SPREAD FOOTING SHALL BE USED.

   D. AS AN ALTERNATIVE TO THE DRILLED HOLES, FOOTINGS MAY BE POURED IN EXCAVATED HOLES USING THE PROPER FORMS, WHICH MUST BE REMOVED. THE EXCAVATED HOLES SHALL BE AT LEAST TWO FEET CLEAR OF THE FOOTING SIDES AND ONE FOOT DEEPER THAN THE FOOTING. CARE SHALL BE TAKEN TO AVOID EXCAVATING AROUND THE TOP OF THE FOOTING. THE BACKFILL MATERIAL SHALL BE COMPACTED AS DESCRIBED IN SUB-SECTION 204.12. DESIGN LIMITS AS FOR AUGERED FOOTING APPLY.

   E. WHEN THE DESIGN DEPTH OF A FOOTING CANNOT BE OBTAINED DUE TO UNFORSEEN FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OBTAIN A REVISED FOOTING DETAIL FROM THE ENGINEER.

   F. ANY BACKFILL PLACED ADJACENT TO THE FOOTING SHALL BE GRANULAR MATERIAL MEETING THE REQUIREMENTS FOR GRANULAR BACKFILL FOR STRUCTURES, SUB-SECTION 704.08. CONCRETE FOR FOOTING SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE, CLASS B, SECTION 501, STRUCTURAL CONCRETE. GROUT MATERIAL SHALL BE NON-SHRINKING MORTAR CONFORMING TO SUB-SECTION 707.03 (MORTAR TYPE IV).

   G. SIGNALS/SIGNS SHALL BE INSTALLED AND LEVELED AND POLES SHALL BE PLUMB PRIOR TO PLACING GROUT UNDER POLE BASE.

10. SHOP DRAWINGS (6 COPIES OF EACH) SHALL BE SUBMITTED TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STRUCTURES DIVISION FOR APPROVAL PRIOR TO FABRICATION. THE SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION:

    A. DETAILED DRAWING OF EACH COMPONENT OF THE STRUCTURE.

    B. MATERIAL SPECIFICATION FOR EACH COMPONENT OF THE STRUCTURE, EITHER BY COMPLETE SPECIFICATION OR REFERENCE TO APPLICABLE ASTM STANDARDS.

    C. NOTATION OF PROJECT NAME, PROJECT NUMBER, ROUTE NUMBER, AND STRUCTURE STATIONING (TO BE INCLUDED ON EACH SHEET).

    D. DETAILS FOR LOCATION OF SIGNS/SIGNALS AND ATTACHMENT HARDWARE FOR THE SUPPORT STRUCTURE.

    E. ALL ELEVATIONS AND DIMENSIONS NECESSARY TO PROVIDE A COMPLETE SET OF RECORD PLANS.

    F. DEAD LOAD DEFLECTION AND CAMBER INFORMATION.

    G. WELDING DETAILS AND PROCEDURES ARE REQUIRED FOR ALL WELDS. PROCEDURES SHALL BE SUBMITTED FOR APPROVAL WITH REFERENCE TO EACH WELD IDENTIFIED ON THE SHOP DRAWINGS. (SEE SUB-SECTION 506.10)

11. EACH OVERHEAD TRAFFIC SIGNAL/SIGN SUPPORT SHALL BE GROUNDED. THE GROUND SHALL CONSIST OF:
    A) AN INTERNAL GROUND LUG OPPOSITE THE HAND HOLE.
    B) A #6 (MIN.) SOFT DRAWN COPPER GROUNDING ELECTRODE CONDUCTOR.
    C) A 5/8'' X 8' (MIN.) COPPER CLAD GROUNDING ELECTRODE.
    THE RESISTANCE TO GROUND SHALL BE 25 OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES MAY BE REQUIRED (MINIMUM SPACING SHALL BE 6').
    WHEN A POWER SERVICE, METER AND DISCONNECT ARE ATTACHED TO A POLE, THERE SHALL BE A CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE METER AND DISCONNECT WHICH MAY RUN INTERNAL TO THE UPRIGHT, THROUGH THE 1/2'' FLEXIBLE TUBING IN THE CONCRETE BASE TO THE REQUIRED GROUNDING ELECTRODE(S). THE GROUNDING ELECTRODE CONDUCTOR FROM THE POLE GROUNDING LUG, CONTROLLER CABINET AND/OR LUMINAIRE MAY ATTACH TO THIS CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT. THE CONTRACTOR SHALL PERFORM A RESISTANCE TO GROUND TEST ON THE CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT AND PROVIDE A WRITTEN STATEMENT TO THE AREA ELECTRICAL INSPECTOR THAT THE GROUNDING ELECTRODE CONDUCTOR IS CONTINUOUS FROM THE SERVICE METER AND DISCONNECT AND THE RESISTANCE TO GROUND IS 25 OHMS OR LESS.

12. THE COST OF SIGNAL/SIGN SUPPORTS, INCLUDING ALL HARDWARE, SIGN BRACKETS, FOOTINGS AND LUMINAIRE ARMS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 677.12, 677.13 OR 678.15, WHICHEVER IS APPLICABLE. THESE COMPONENTS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF SECTIONS 677, 678, AND 679.

13. HORIZONTAL MEMBERS SHALL BE CAMBERED AND THE VERTICAL POLES BACK-RAKED (WHERE APPLICABLE) TO THE ANTICIPATED DEAD LOAD DEFLECTION PLUS THE CAMBER, IF ANY, SPECIFIED ON THE PLANS.

14. AN EQUIVALENT ALTERNATE DESIGN MAY BE SUBSTITUTED FOR THE DETAILS AND MATERIALS SHOWN.

15. THE DETAILS OF DESIGN FOR THE STRUCTURE AND FOOTINGS ARE TO BE SUPPLIED BY THE CONTRACTOR AND/OR BY THE MANUFACTURER. THE STRUCTURE SHALL BE DESIGNED TO RESIST THE MAXIMUM LOADING AS OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2). ALL DETAILS OF THE STRUCTURE AND THE FOOTING SHALL BE CHECKED AND STAMPED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF VERMONT PRIOR TO SUBMITTAL OF THE SHOP DRAWINGS TO THE VERMONT AGENCY OF TRANSPORTATION.

16. IN ADDITION TO THE SHOP DRAWINGS OUTLINED IN NOTE 10 THE CONTRACTOR SHALL SUBMIT ALL DESIGN CALCULATIONS TO THE VERMONT AGENCY OF TRANSPORTATION, STRUCTURES DIVISION, SHOWING THE FOLLOWING INFORMATION FOR EACH OF THE VERTICAL AND HORIZONTAL COMPONENTS OF THE STRUCTURE AND FOOTING:

    A. THE DESIGN AXIAL AND SHEAR FORCES AND BENDING AND TORSIONAL MOMENTS.

    B. THE DESIGN AXIAL, BENDING AND SHEAR STRESSES AND THE COMBINED STRESS RATIO.

    C. VIBRATION AND FATIGUE CALCULATIONS AS SET FORTH IN SECTION 9 OF THE AASHTO PUBLICATION REFERENCED IN NOTE 2.

    D. THE ALLOWABLE AXIAL, BENDING, AND SHEAR STRESSES.

    E. ITEMS A, B, D - SHALL BE SHOWN FOR EACH OF THE GROUP LOADINGS (I, II, III) AND FOR THE BASIC WIND LOAD APPLIED TO THE TWO CASES OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2) SECTION 1.2.5 (D)(4).

    F. FAILURE TO SUPPLY THE PROPER DESIGN INFORMATION SHALL BE CAUSE FOR REJECTION OF THE STRUCTURE.

    G. A MINIMUM OF FOUR (4) WEEKS SHALL BE REQUIRED FOR REVIEW BY THE VERMONT AGENCY OF TRANSPORTATION, STRUCTURES DIVISION.

17. THE CONTRACTOR/MANUFACTURER SHALL BE RESPONSIBLE FOR COMPLETION OF THE STRUCTURE AND FOOTING DATA ON THE DETAIL SHEET(S).

18. FOR INSTALLATIONS WHERE BOTH ''EXISTING'' AND ''FUTURE'' CONDITIONS ARE SHOWN, THE SUPPORTS SHALL BE DESIGNED FOR THE MORE SEVERE OF THE TWO LOADING CONDITIONS. THE INFORMATION OUTLINED IN NOTE 16 ABOVE SHALL BE PROVIDED FOR BOTH THE LOADING CONDITIONS.

19. THE TRAFFIC SIGNALS SHALL BE MOUNTED TO THE ARM OR POLE USING A FIXED MOUNT SYSTEM AS SHOWN ON STANDARD E-171C, UNLESS OTHERWISE NOTED ON THE CROSS SECTION SHEET.

20. BASE PLATES SHALL BE STAMPED WITH THE VERTICAL POLE DIAMETER, HEIGHT, YIELD STRENGTH, GAUGE AND THE HORZONTAL MEMBER DIAMETER, LENGTH, YIELD STRENGTH, GAUGE. ALTERNATELY, THE INFORMATION MAY BE STAMPED ON A METAL TAG RIVETED TO THE POLE NEAR THE HANDHOLE.

21. SEE STANDARD E-171A FOR ADDITIONAL NOTES.

22. SEE SHEET 7 FOR INTERSECTION LAYOUT.

LAST REVISED 8/23/94

CANTILEVER / OVERHEAD SIGN / SIGNAL SUPPORT NOTES

traf/00c224/dc224csn.1

PREPARED BY brm DATE 3/2001
CHECKED BY _____ DATE _____
DESIGN SUPERVISOR btn DATE _____
PROJ. **NORWICH STPG 0107(3)S**

SHEET 9 OF 9 SHEETS

PLOTTED: 12-DEC-2008