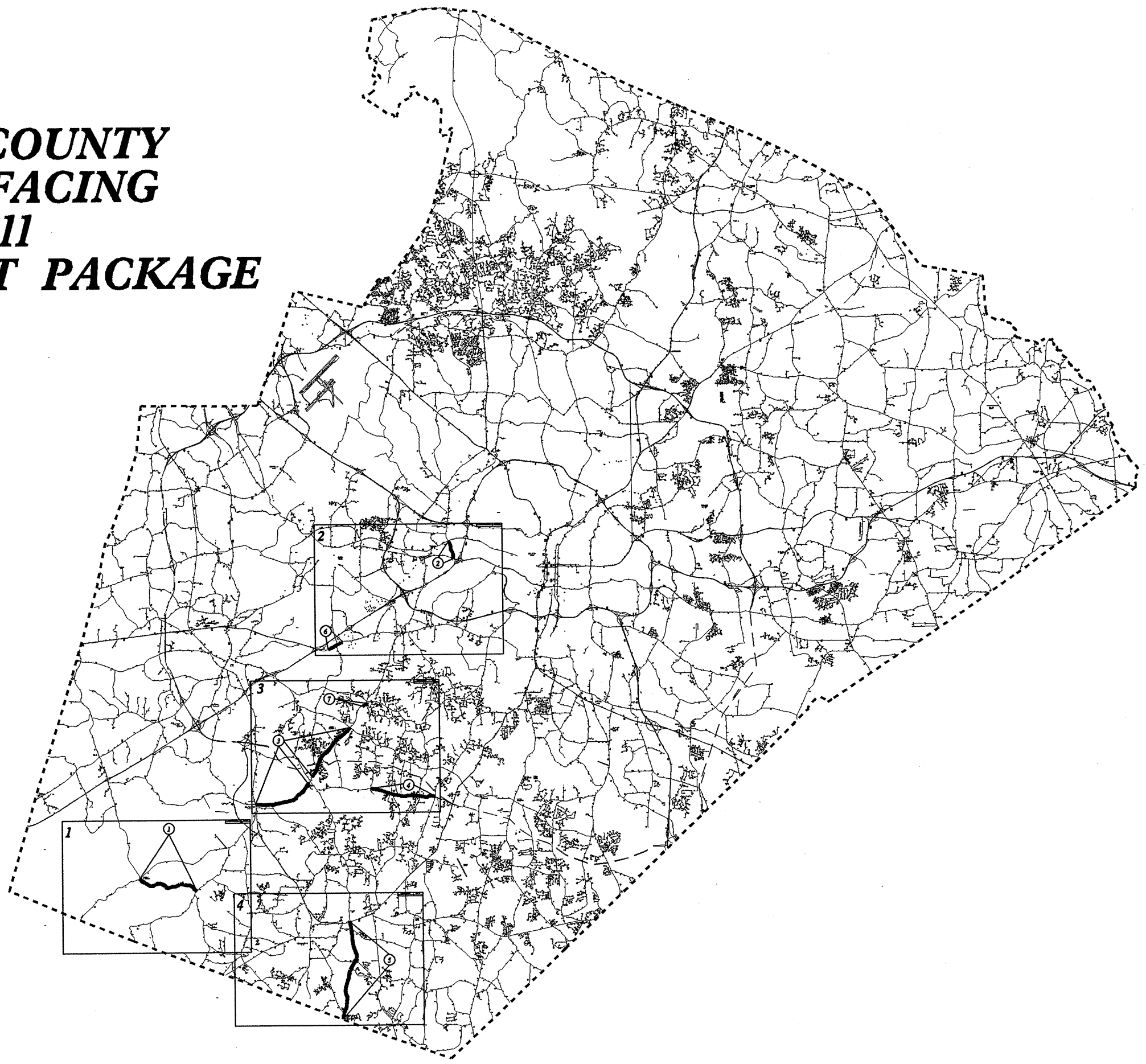


**WAKE COUNTY
RESURFACING
2011
SOUTHWEST PACKAGE**



1

1



6/2/99

2

CARY
POP. 118,244

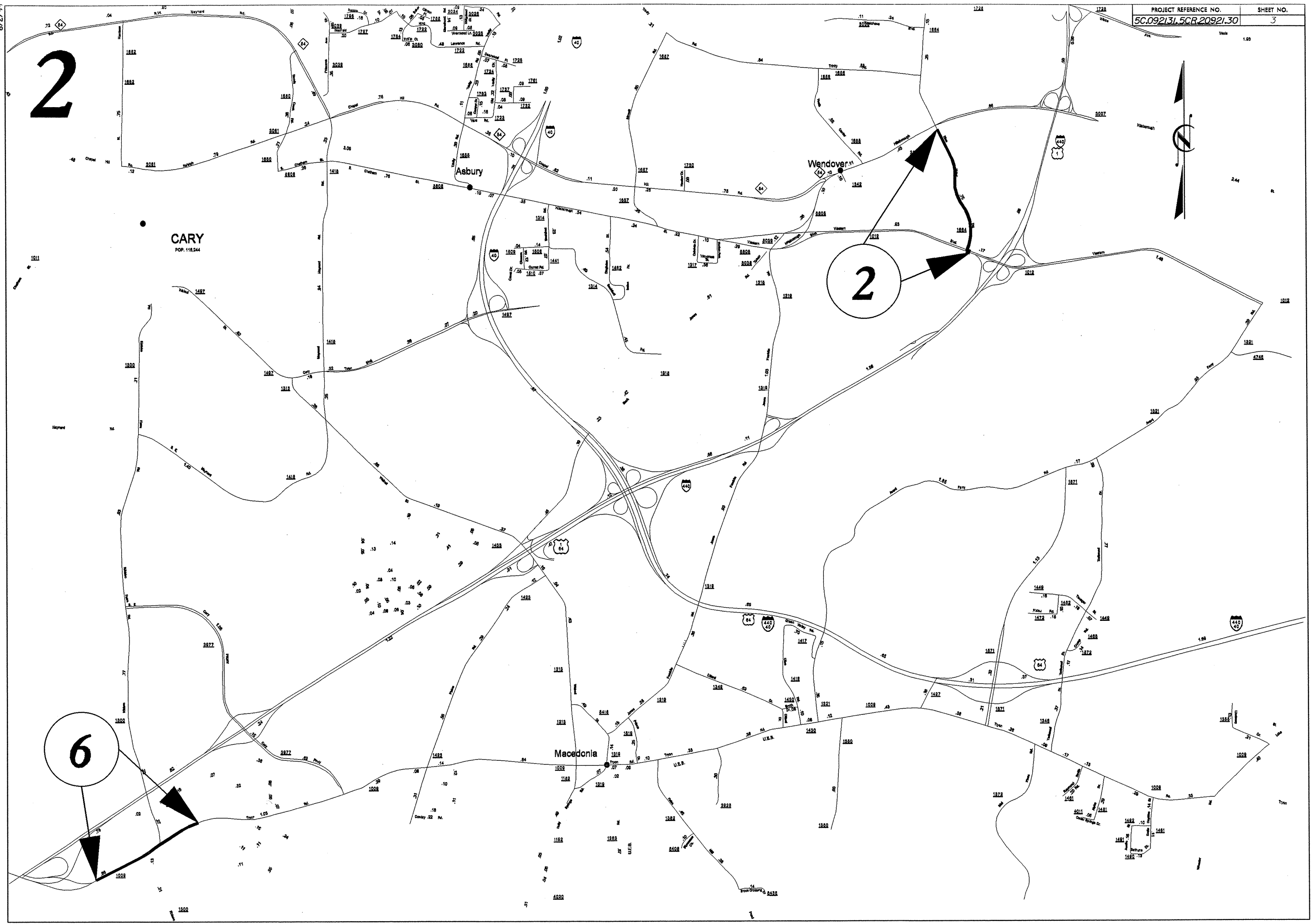
Asbury

Wendover

2

Macedonia

6



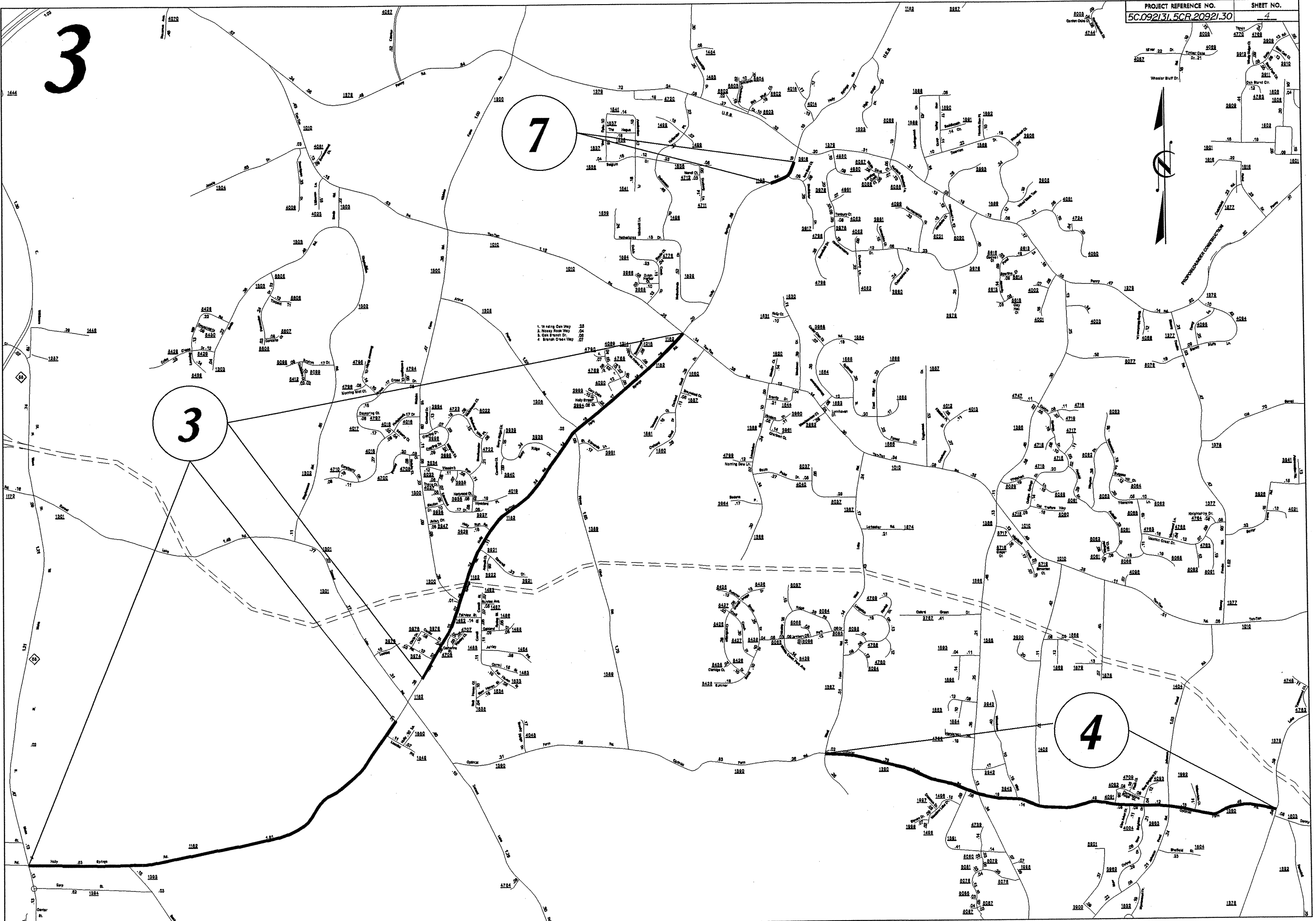
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7

3

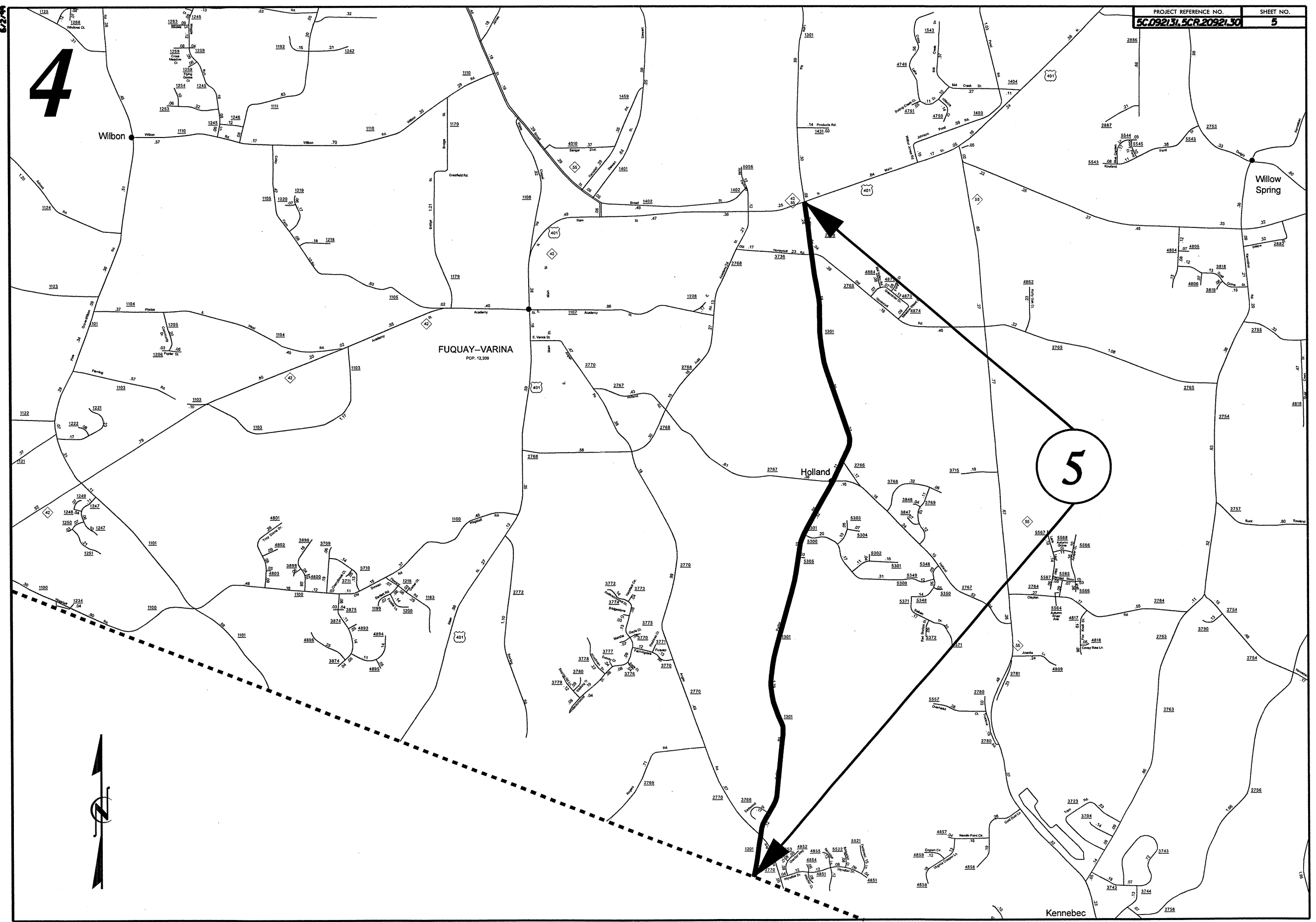
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- 1. Welling Oak Way .28
- 2. Neely Road Way .04
- 3. Oak Branch Cr. .07
- 4. Branch Creek Way .07



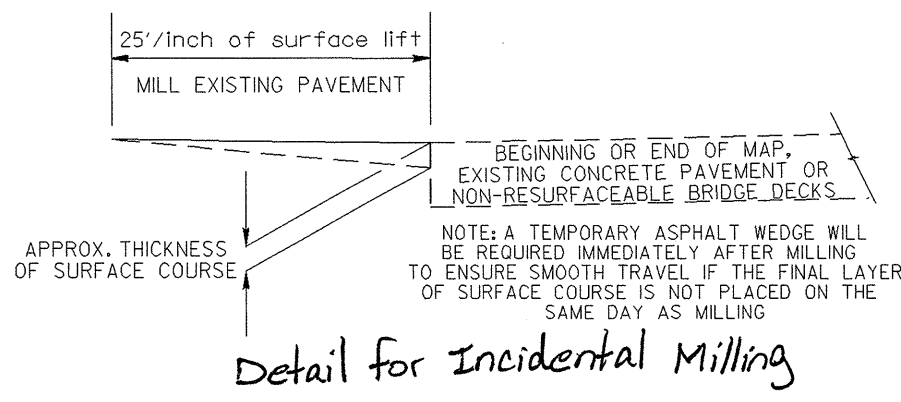
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5



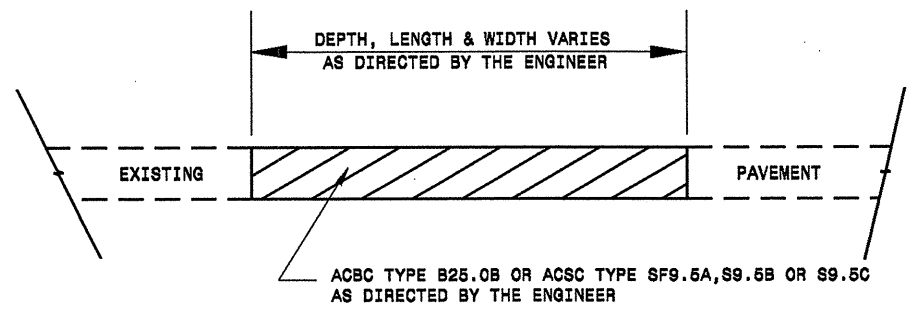
PAVEMENT SCHEDULE

C	1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D	2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
E	5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	1 1/2" MILLING

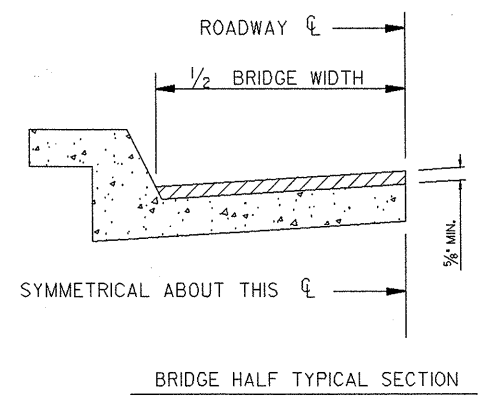


NOTES

ALL UNPAVED S.R. ROADS TO BE RESURFACED 50' FROM EDGE OF PAVEMENT OF MAIN PROJECT
 ALL PAVED S.R. ROADS TO BE RESURFACED TO THE ENDS OF THE RADII, OR AS DIRECTED BY THE ENGINEER.
 EDGES, PAVEMENT WIDENING, INTERSECTIONS AND BRIDGE FLARES ARE INCLUDED IN THE TABLE OF QUANTITIES.
 BRIDGES TO BE RESURFACED AT LOCATIONS AND TO DEPTH AS DIRECTED BY THE ENGINEER.

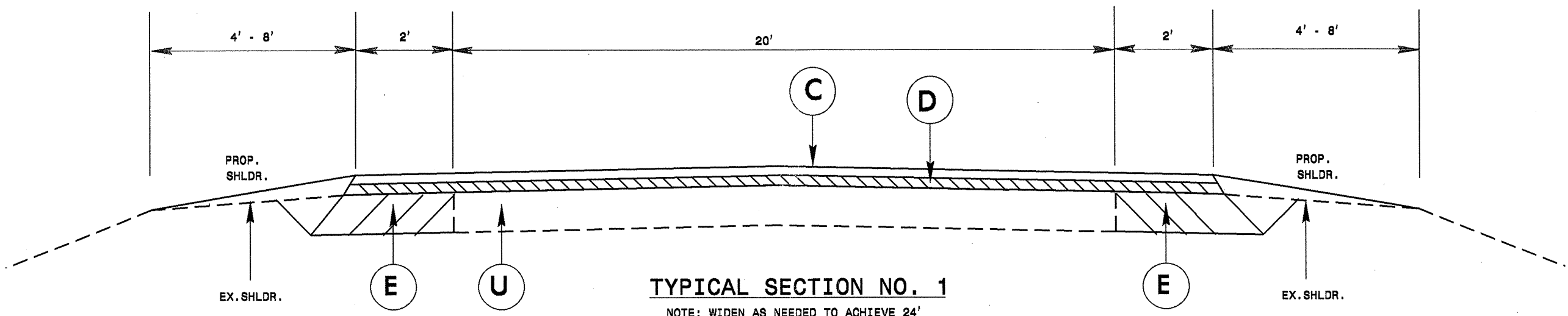


PATCHING EXISTING PAVEMENT
 PATCHING TO BE PERFORMED PRIOR TO MILL AND FILL OPERATION



FOR BRIDGES WITH FLOOR DRAINS, CARE SHALL BE EXERCISED IN PLACING THE WEARING SURFACE AROUND FLOOR DRAINS SO AS NOT TO HINDER EFFECTIVE DRAINAGE. ALL DRAINS SHALL BE LEFT OPEN.

THE PROPOSED WEARING SURFACE SHALL VARY IN THICKNESS AS OF NOT LESS THAN 5/8" SHALL BE PROVIDED. THE MAXIMUM THICKNESS SHALL PREFERABLY BE 1 1/2" UNLESS IT IS IMPRACTICAL TO PROVIDE A SMOOTH RIDING SURFACE OTHERWISE.



PAVEMENT SCHEDULE

C	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
E	5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 684 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	1½" MILLING

MINIMUM TIE IN ON CITY STREETS AND COMMERCIAL DRIVES AS DIRECTED BY THE ENGINEER

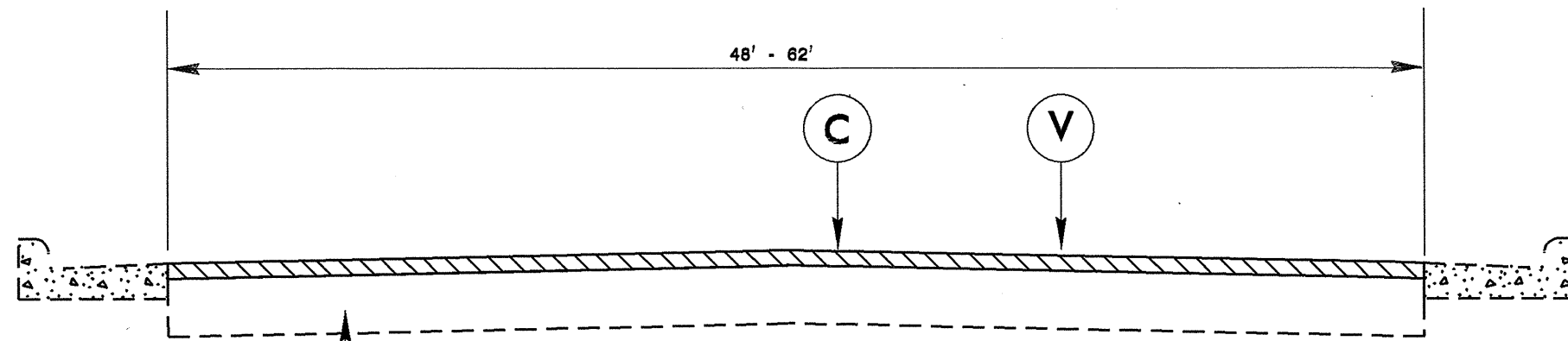
EXTEND LIMITS TO BACK OF SIGNAL LOOPS ON STATE MAINTAINED ROADS AS DIRECTED BY THE ENGINEER

MINIMUM TIE IN ON CITY STREETS AND COMMERCIAL DRIVES AS DIRECTED BY THE ENGINEER

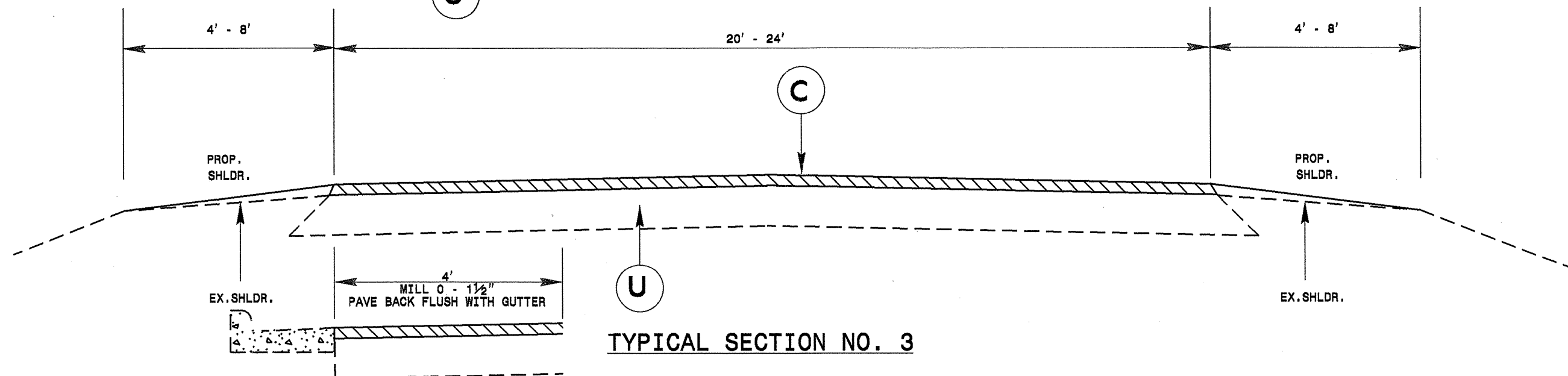
EXTEND LIMITS TO BACK OF RADIUS ON STATE MAINTAINED ROADS AS DIRECTED BY THE ENGINEER

DETAIL OF PROJECT LIMITS AT SIGNALIZED Y LINES

DETAIL OF PROJECT LIMITS AT UNSIGNALIZED Y LINES



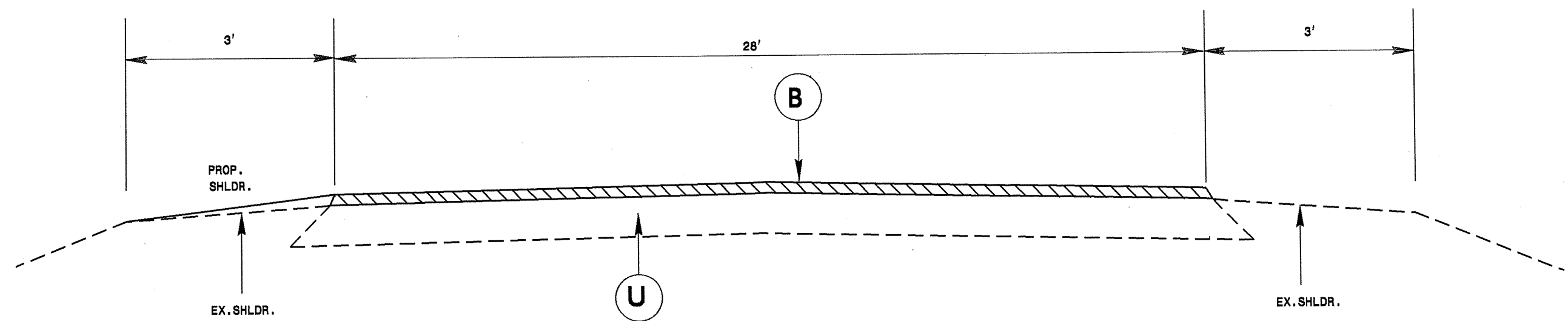
TYPICAL SECTION NO. 2



TYPICAL SECTION NO. 3

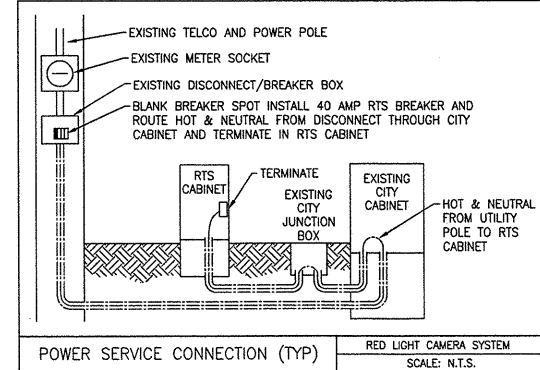
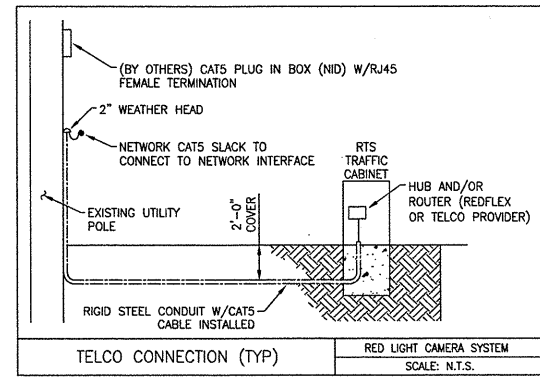
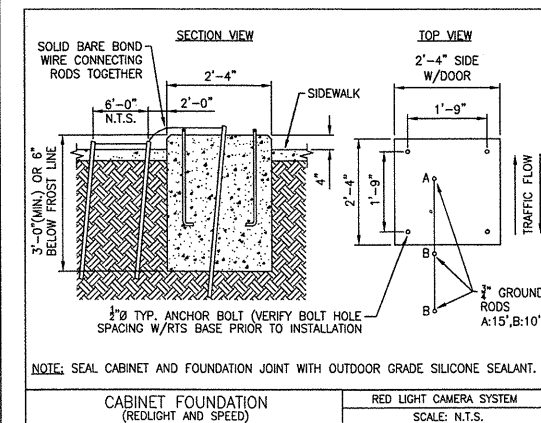
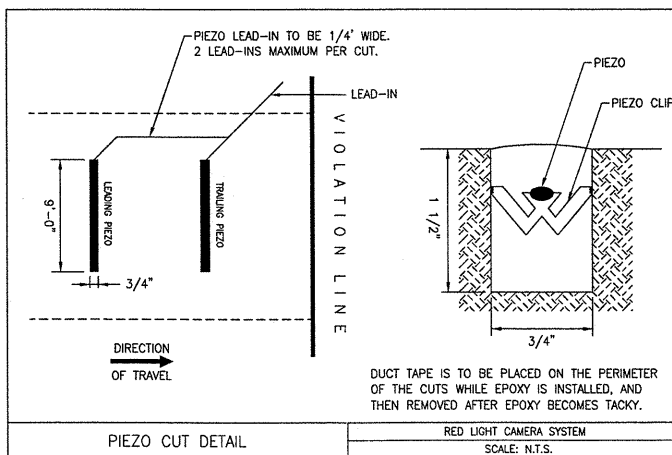
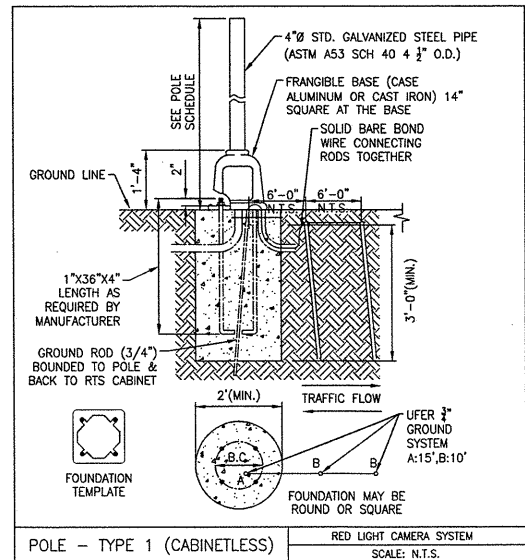
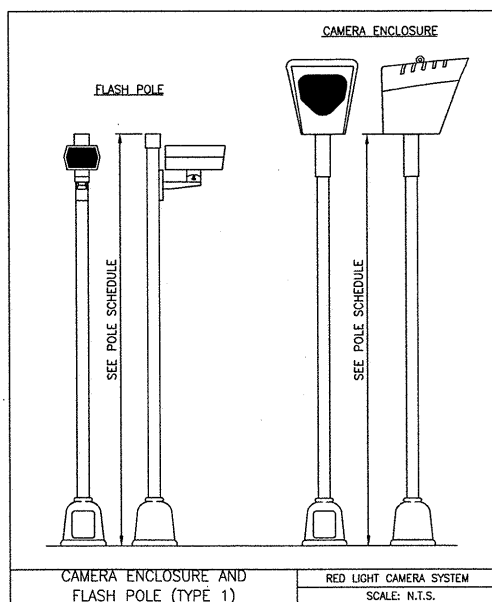
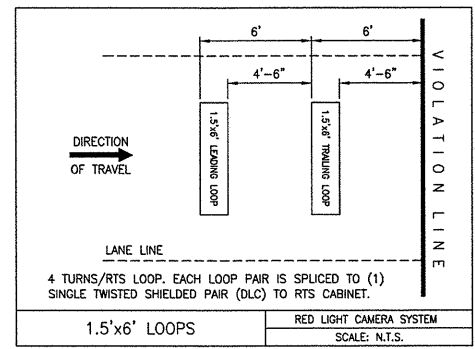
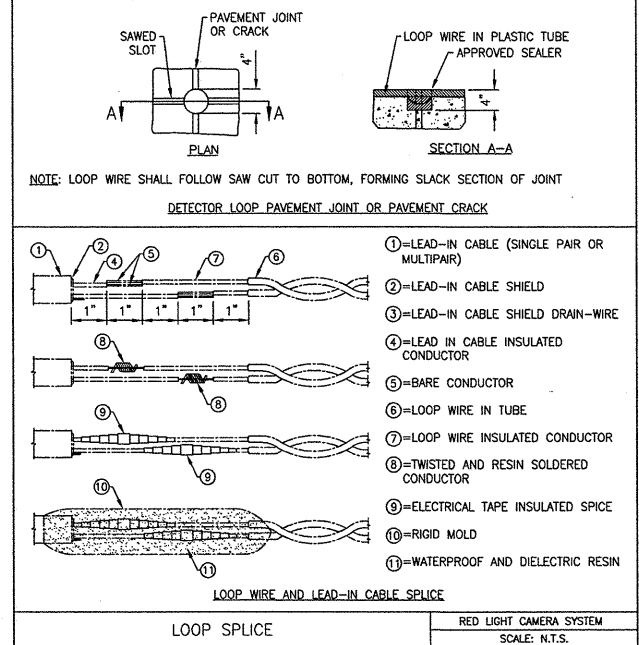
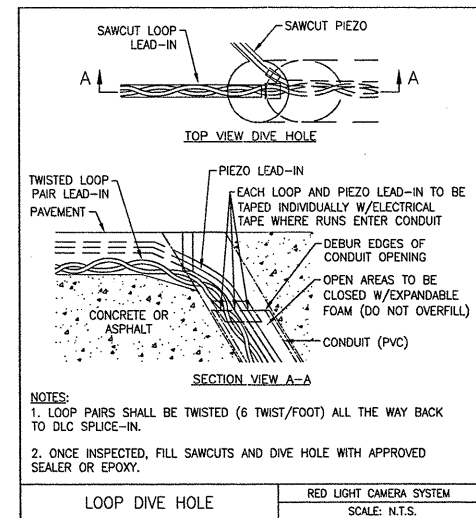
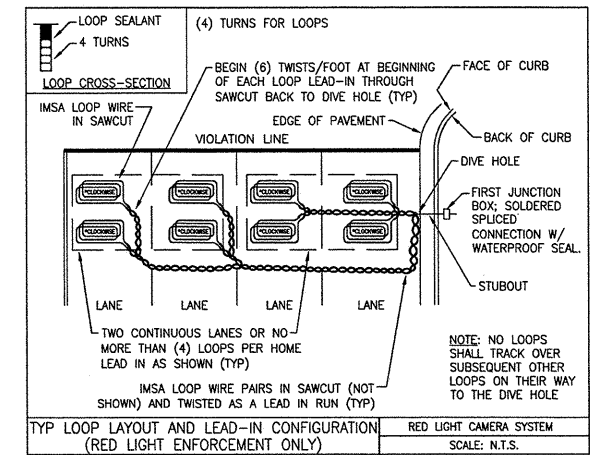
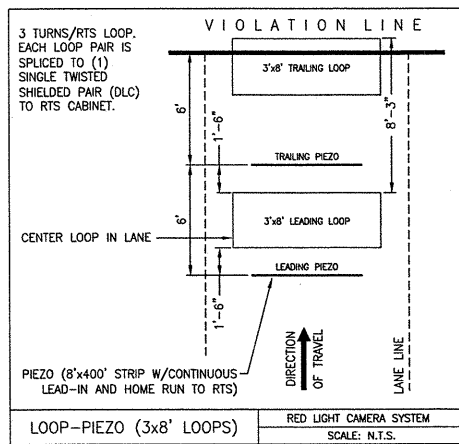
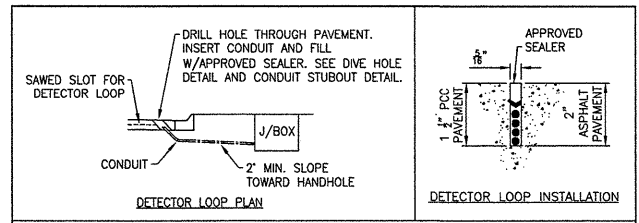
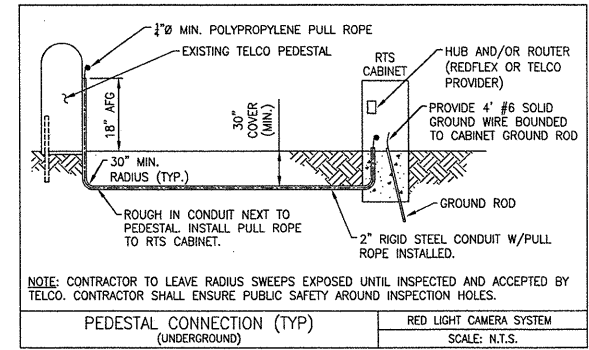
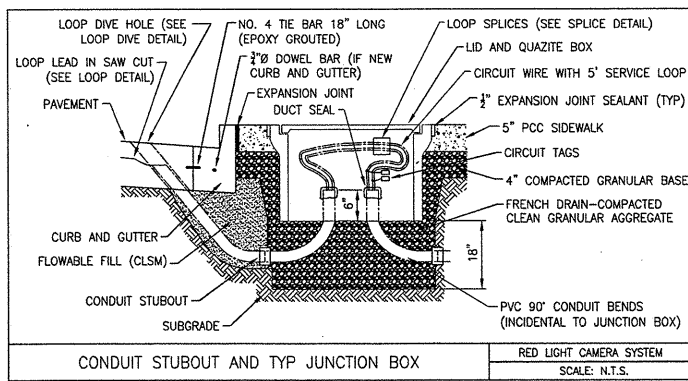
PAVEMENT SCHEDULE

B	PROP. OPEN-GRADED ASPHALT FRICTION COURSE, TYPE FC-1, AT AN AVERAGE RATE OF 70 LBS. PER SQ. YD.
C	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
D	1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
E	5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 684 LBS. PER SQ. YD.
U	EXISTING PAVEMENT
V	1½" MILLING



TYPICAL SECTION NO. 4

NOTE:
 START OPEN-GRADED ASPHALT FRICTION COURSE AT STATION 11+25,
 END OPEN-GRADED ASPHALT FRICTION COURSE AT STATION 19+60.



NOT TO SCALE

REVISIONS				
VER	DATE (YYMMDD)	INITIALS	DESCRIPTION	
1.0	080212	JPM	INITIAL RELEASE	

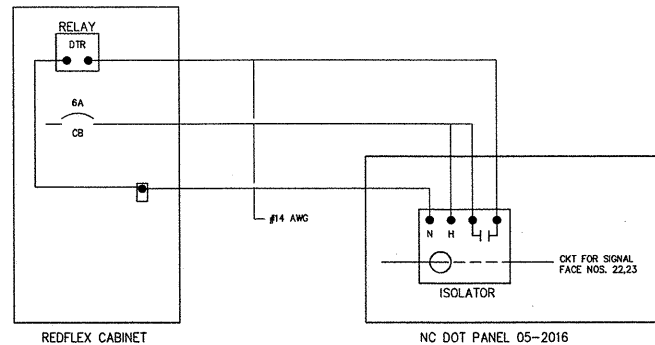


DRAWN BY: JPM	REVIEWED BY TOWN STAFF	APPROVED BY:	TOWN OF:
DESIGNED BY: CB	DEPARTMENT: PUBLIC WORKS (OPER.)	PUBLIC WORKS DIRECTOR / TOWN ENGINEER	CARY
CHECKED BY: -	PUBLIC WORKS (ENV.)	DATE:	REDLIGHT PHOTO ENFORCEMENT
RECOMMENDED BY:	PUBLIC WORKS (WATER)	RECOMMENDED BY:	DETAIL(S)
FIRE DEPT.	PUBLIC WORKS (TRAF.)	DEVELOPMENT SERVICES	

SEAL	DRAWING NO. 1136
	-102

GENERAL NOTES:

- REFER TO THE PROJECT DOCUMENT FOR DETAILED SCOPE OF WORK, SEQUENCE OF WORK, EQUIPMENT AND INSTALLATION SPECIFICATIONS.
- ALL WORK AND MATERIALS SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES INCLUDING OSHA, THE (NCDOT) 2002 STANDARD SPECIFICATIONS FOR ROAD & STRUCTURES, AND SIGNALS & TRAFFIC MANAGEMENT SYSTEMS SHALL BE THE MINIMUM STANDARD ACCEPTANCE.
- NCDOT WILL BE RESPONSIBLE TO MAINTAIN ALL TRAFFIC SIGNAL EQUIPMENT. REDFLEX TRAFFIC SYSTEMS SHALL BE RESPONSIBLE TO MAINTAIN THE RED LIGHT CAMERAS AND MISCELLANEOUS EQUIPMENT. CONTACT THE APPROPRIATE PARTIES PRIOR TO ANY WORK AT THE INTERSECTION.
- LOCATE ALL UNDERGROUND UTILITIES PRIOR TO DRILLING AND CONDUIT TRENCHING.
- LOCATE PROPOSED POLES A MINIMUM OF 6 FEET BEHIND FACE OF CURB OR 10 FEET FROM EDGE OF TRAVEL WAY UNLESS OTHERWISE SHOWN ON PLANS.
- PROVIDE ONE 5/8" X 10" GROUND ROD AT EACH POLE LOCATION.
- SET ALL DETECTOR UNITS TO PRESENCE MODE.
- WHEN IN FLASH MODE, ALL SIGNAL FACES FOR SAME APPROACH SHALL FLASH CONCURRENTLY.
- PLACE CABINET SO AS NOT TO OBSTRUCT SIGHT DISTANCE OF VEHICLES TURNING RIGHT ON RED.
- REFER TO DRAWING NC-ED001 FOR INSTALLATION SECTIONS AND DETAILS.



- NOTES:
- CHECK REDFLEX WIRING DIAGRAM FOR TERMINATIONS.
 - CHECK NC DOT WIRING DIAGRAMS FOR TERMINATIONS.

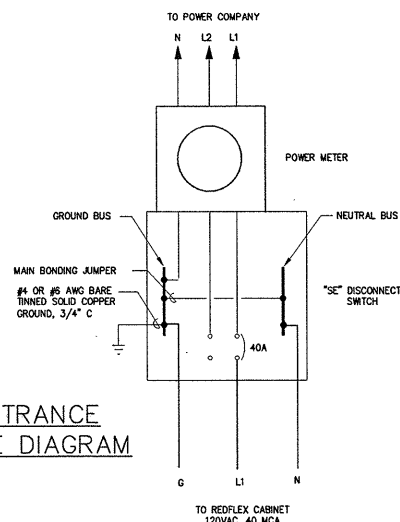
WIRING DIAGRAM

CONDUCTORS	SOURCE	AWG#	CONDUITS																	TERMINATION	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
POLE 1	CAT5																				REDFLEX CABINET
POLE 1	#18	1																			POLE 2 FLASH UNIT
TRAFFIC SIGNAL RED PHASE-EB (TRYON ROAD)	#14																				REDFLEX CABINET
CITY POWER PEDESTAL (120V)	#8							2	2												REDFLEX CABINET
REDFLEX LOOP LEAD-IN	DLC																				REDFLEX CABINET
POWER CIRCUIT 1 (REDFLEX CABINET)	#10	2	2	2	2	2	2	2	2												POLE 1
POWER CIRCUIT 2 (REDFLEX CABINET)	#10																				POLE 2
SOLID BARE BOND	#8	1	1	1	1	1	1	1	1												ALL REDFLEX EQUIPMENT
TELCO POINT OF SERVICE	CAT5																				REDFLEX CABINET
TOTAL NEW CONDUCTORS		6	7	13	13	13	12	12	4	1											
CONDUIT SIZE (INCHES)																					
NEW/EXISTING CONDUIT		N	N	N	N	N	N	N	N	E	N										

CONSTRUCTION NOTES

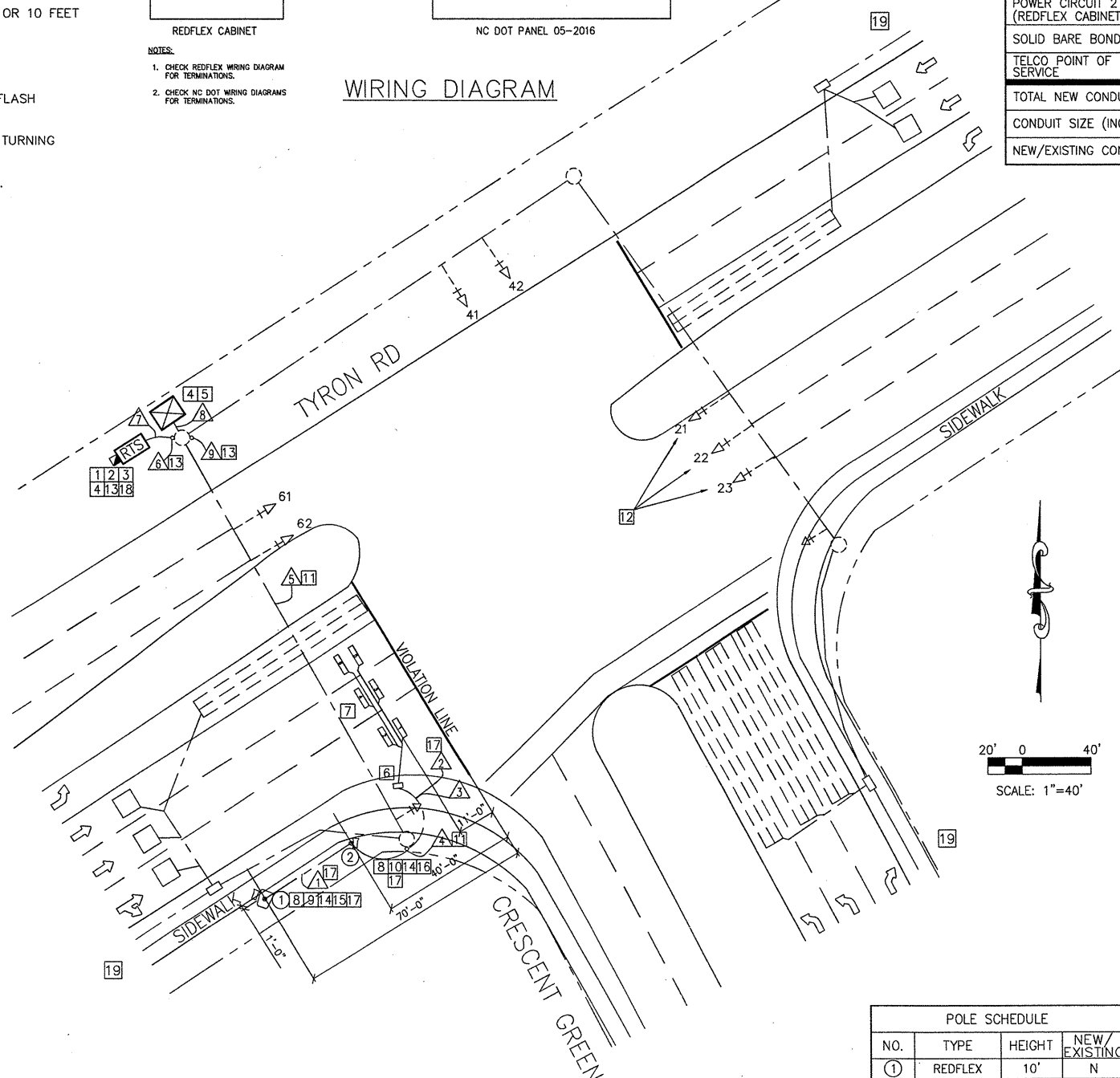
- INSTALL REDFLEX CONTROL CABINET. INSTALL 5/8"X8' GROUND ROD AND BOND TO CABINET WITH #8 BARE Cu.
- CONTRACTOR SHALL TERMINATE ALL POWER CIRCUITS INTO REDFLEX CABINET.
- INSTALL INLINE FUSE HOLDER ON RED PHASE CONDUCTOR WITH 5 AMP FUSE INSIDE REDFLEX CABINET, TO PROTECT NCDOT EQUIPMENT. INSTALL ISOLATION DEVICE.
- INSTALL A NEW METER SERVICE FOR 120V SUPPLY TO REDFLEX CABINET. COORDINATE FOR POWER SERVICE.
- TERMINATE #14 RED PHASE AND NEUTRAL INTO AN ISOLATED RED PHASE AND NEUTRAL IN THE TRAFFIC SIGNAL BLOCK. SEE CONDUCTOR SCHEDULE FOR APPROACHES.
- INSTALL JUNCTION BOX.
- INSTALL LOOPS AND CONDUIT STUBOUT FOR REDFLEX DETECTION. EACH LOOP MUST HAVE A SEPARATE HOME RUN AND LOOP LEAD IN CABLE. MAXIMUM 2 LOOPS PER SAWCUT. REDFLEX LOOPS TO BE LABELED AT REDFLEX CABINET. REPLACE NCDOT LOOPS IF REQUIRED, TO NCDOT STANDARDS. SEE LOOP DETAIL AND DRAWING FOR QUANTITY AND LOOP ID#.
- INSTALL POLE 1 40' OF VIOLATION LINE AND MIN. 10' FROM FACE OF CURB. INSTALL POLE 2 70' OF VIOLATION LINE AND MIN. 6'-0 BEHIND FACE OF CURB. COORDINATE THE EXACT LOCATIONS WITH THE OWNER'S REPRESENTATIVE.
- INSTALL CAMERA AND FLASH ENCLOSURE ON REDFLEX POLE, AIM AT SIGNAL HEAD
- INSTALL FLASH UNIT ON REDFLEX POLE, AIM AT VIOLATION LINE.
- ROUTE LEAD IN CABLE INSIDE THE EXISTING POLE THEN OUT OF THE TOP TO SIGNAL SPAN TO CROSS ROAD TO REDFLEX CABINET.
- INSTALL AMBER AND RED LED'S SO SIGNAL HEAD IS VISIBLE TO REDFLEX CAMERA
- INSTALL 2" CONDUIT RISER ON TELCO POLE, UP TO RISING 10' AS NECESSARY, TO MATE WITH TELCO INTERFACE. INSTALL DUCT SEAL TO PREVENT MOISTURE.
- CONNECT POLE TO SOLID BARE BOND GROUND, CREATING ONE SYSTEM GROUND.
- TERMINATE POLE TO REDFLEX CABINET POWER CIRCUIT #1 (HOT & NEUTRAL)
- TERMINATE POLE TO REDFLEX CABINET POWER CIRCUIT #2 (HOT & NEUTRAL)
- ROUTE THE NEW CONDUIT AND PREVENT INTERFERENCE WITH THE EXISTING U/G WIRING.
- COORDINATE FOR INTERNET CABLE/DSL SERVICE.
- INSTALL "RED LIGHT PHOTO ENFORCED" SIGNS AT ALL FOUR ENTRANCES TO INTERSECTION, BETWEEN 150 AND 300 FEET AWAY FROM THE VIOLATION LINE. TOWN OF CARY TO PROVIDE SIGNS.

SERVICE ENTRANCE SINGLE LINE DIAGRAM



LEGEND

TRAFFIC SIGNAL HEADS	⬇
MODIFIED TRAFFIC SIGNAL HEAD	⬇
SIGNAL POLE WITH GUY	⊙
SIGNAL POLE WITH SIDEWALK GUY	⊙
INDUCTIVE LOOP DETECTOR	⊓
LOOP DETECTOR PULL BOX	■
2" UNDERGROUND CONDUIT	---
INTERCONNECT CABLE (HARDWARE)	⊕
RIGHT OF WAY WITH MARKER	⊕
DIRECTIONAL ARROW	→
PAVEMENT MARKING ARROW	↔
CONTROLLER & CABINET	⊠
STOP BAR	⊠
TRAFFIC CONTROL CABINET	⊠
POWER CABINET	⊠
REDFLEX CONTROL CABINET	RTS
CAMERA W/FLASH	⊠
PLATE FLASH	⊠



POLE SCHEDULE

NO.	TYPE	HEIGHT	NEW/EXISTING
①	REDFLEX	10'	N
②	REDFLEX	10'	N

REVISIONS

MARK	DATE	INITIAL	DESCRIPTION	DATE	APP'VD
0	02/03/04	HBT	RELEASED FOR CONSTRUCTION	02/03/04	HBT

Thio
408 LIVINGSTONE DRIVE, SUITE 101
CARY, NC 27513
TEL: 919-460-9888 FAX: 919-460-3963

DRAWN BY: TI
DESIGNED BY: TI
CHECKED BY: HBT
RECOMMENDED BY:

REDFLEX TRAFFIC SYSTEMS
15020 N. 74TH STREET
SCOTTSDALE, AZ 85260
PH: 480 607 0705

TOWN OF CARY
REDLIGHT PHOTO ENFORCEMENT
TRYON ROAD AND CRESCENT GREEN
1599 CRESCENT GREEN, CARY, NC 27511

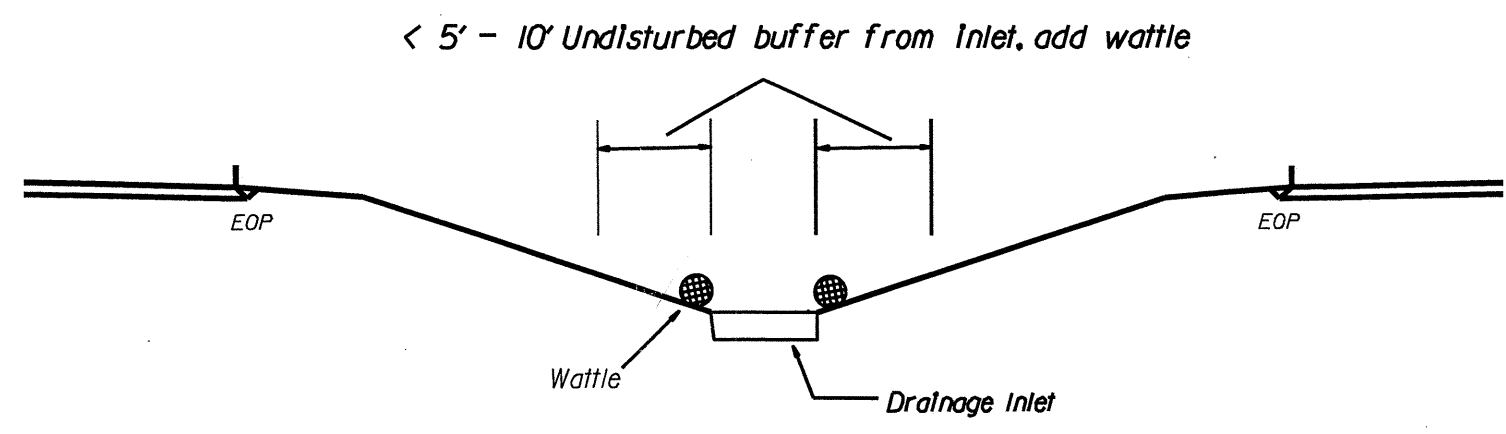
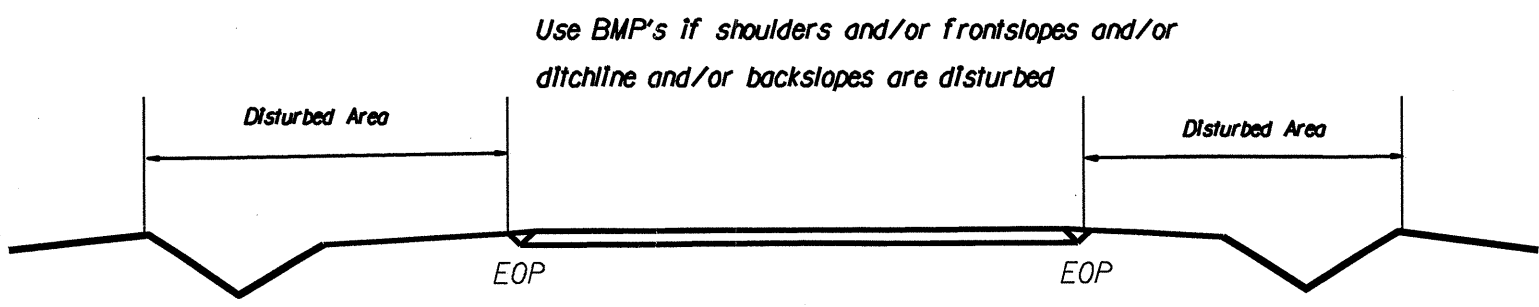
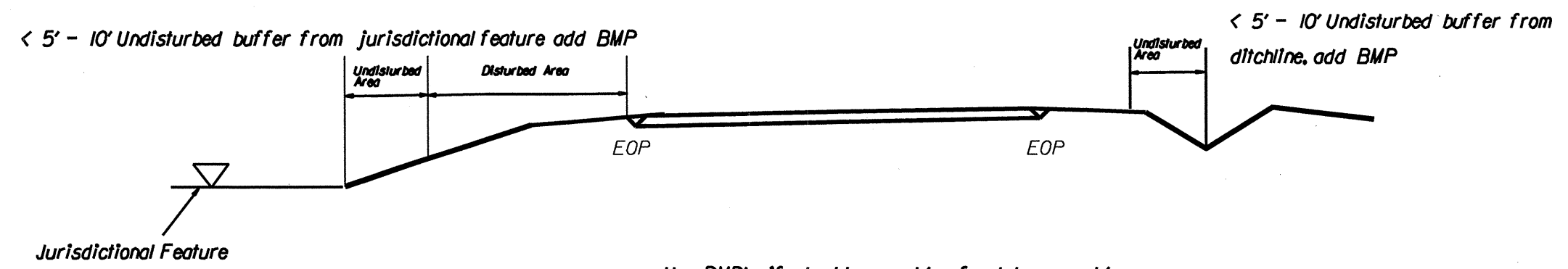
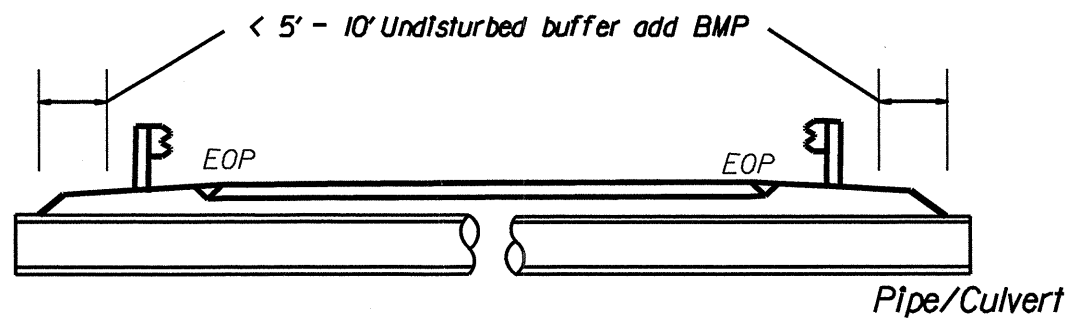
SHEET 1
OF 1 SHEETS
DRAWING NO. NC-EP003

NOTES: Less than 5' - 10' undisturbed buffer from ROW, ditchline, water feature, or drainage inlet, add BMP.

BMP Options: Wattle, Silt Fence, or Hardened Aggregate.

EROSION CONTROL DETAIL

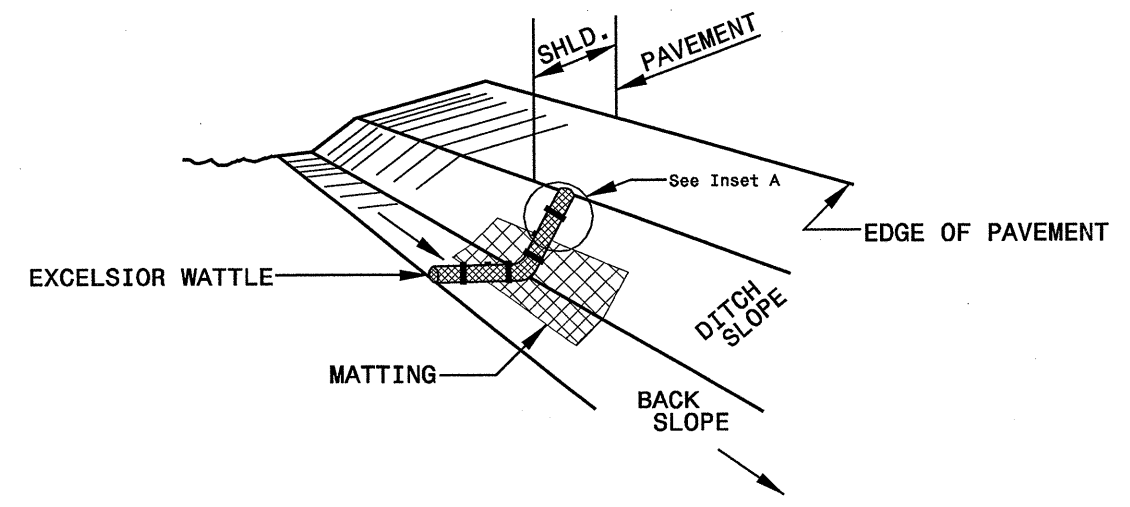
DATE	BY



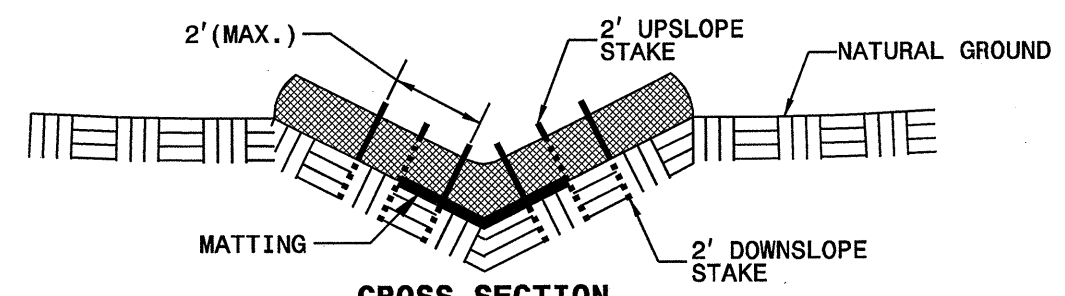
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

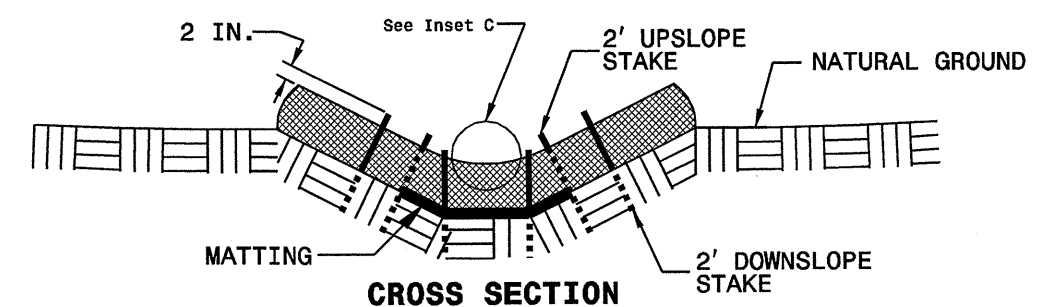
WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW

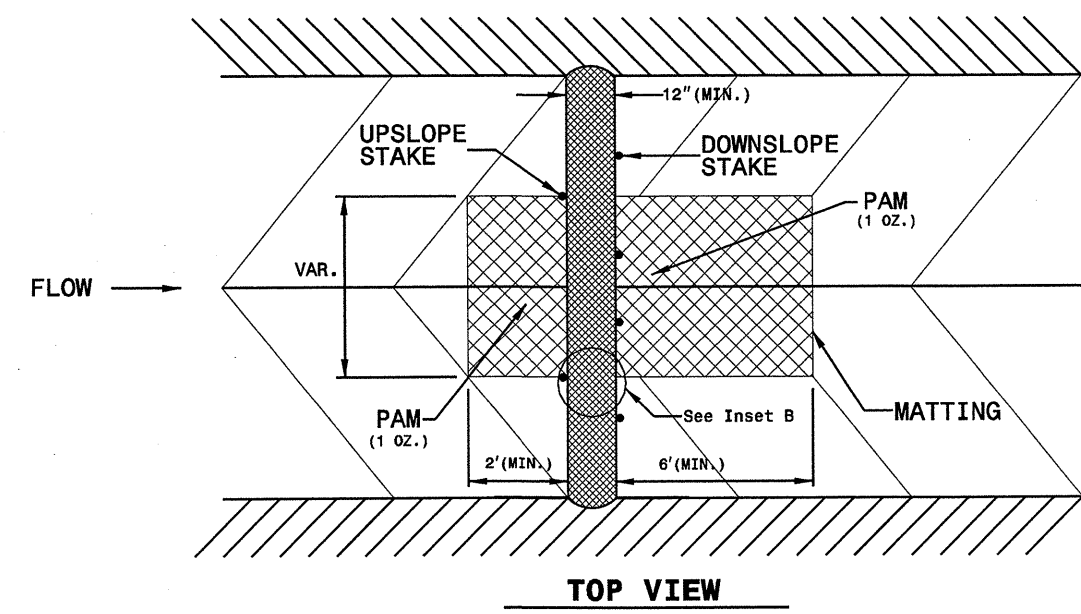
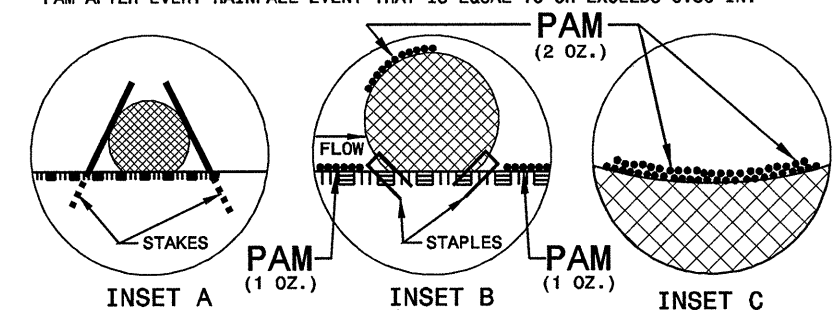


CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

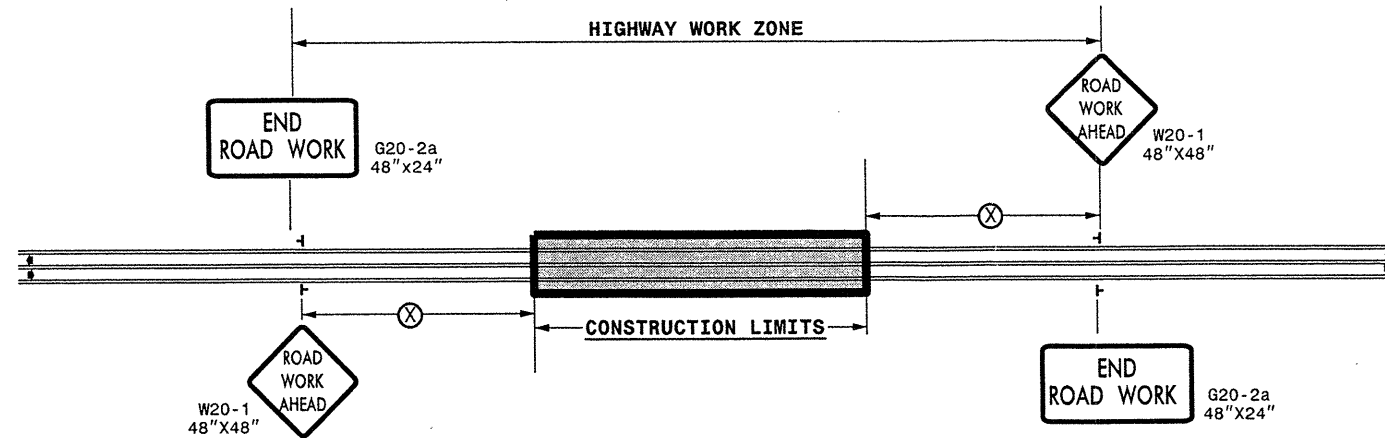
- NOTES:
- USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.
 - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
 - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
 - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
 - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
 - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
 - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
 - PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
 - INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



Q3-JAN-2010-09-30
 C:\DC\DESIGN\GROUPS-WZTCC\ResurFacing\2010\Central\2010-Div05\C202707A-B-5C.092131x2-Woke-Southwest.m6\C202707A-B-5C.092131x2-Woke-Southwest.m6\Stationary.dgn
 poschoenbauer AT T244737

PROJ. REFERENCE NO.	SHEET NO.
5C.092131	TCP-1
5C.20921.30	

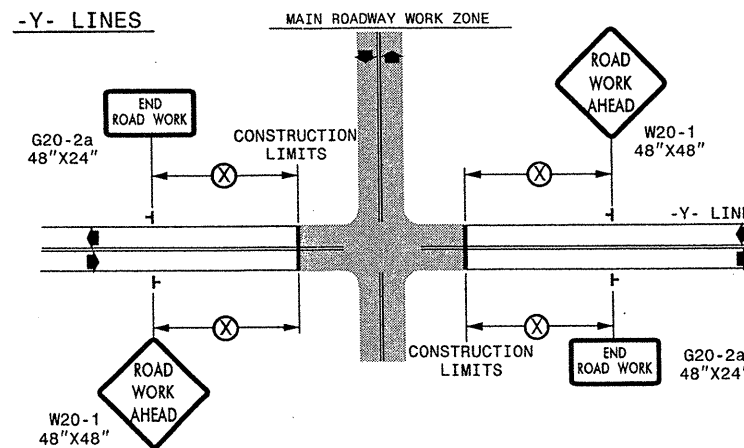
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

- ┆ STATIONARY SIGN
- ◀ DIRECTION OF TRAFFIC FLOW

SHEET 1 OF 1

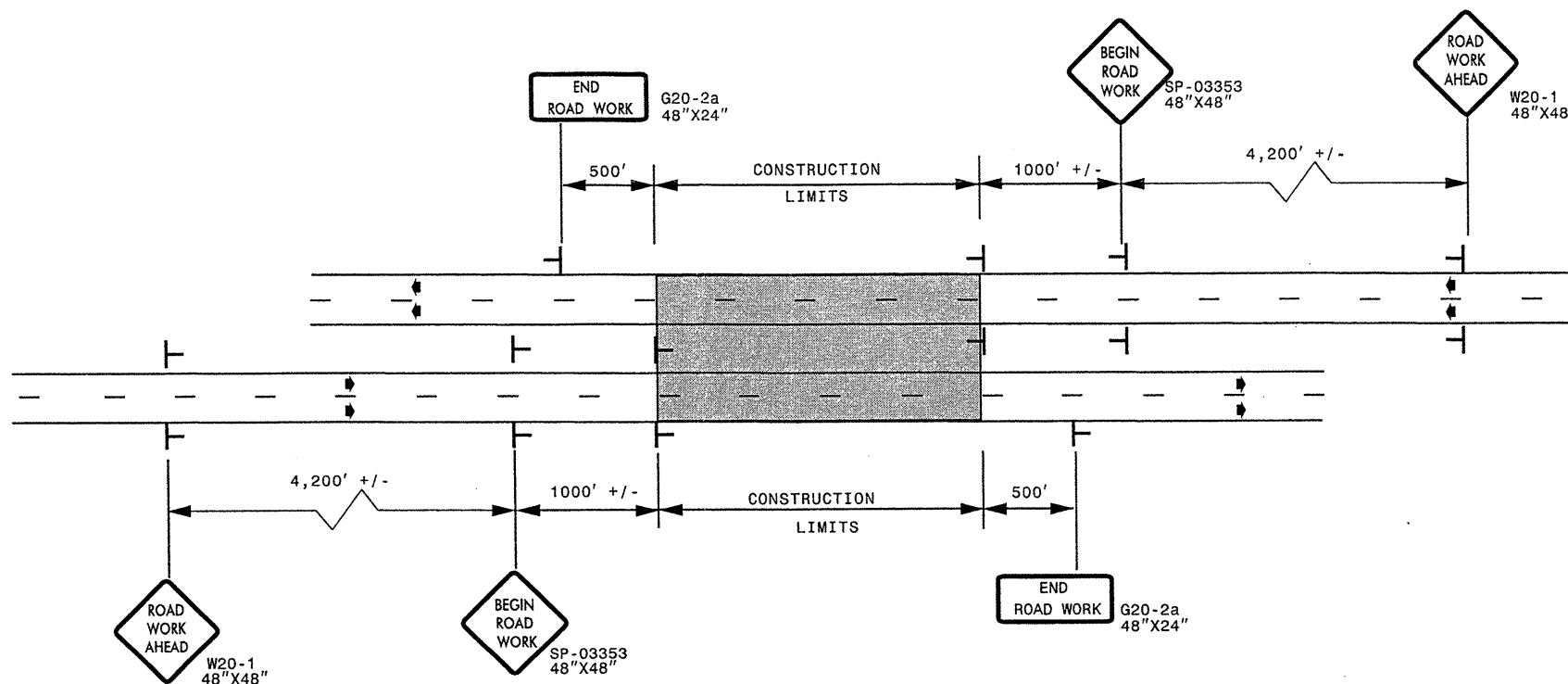
**DETAIL DRAWING FOR
 TWO-WAY UNDIVIDED
 WORK ZONE WARNING SIGNS**

APPROVED: _____ DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
SEAL		
SCALE: NONE		REVISIONS
DATE: _____		7-98 10/01
DWG. BY: _____		10-98 03/04
DESIGN BY: _____		01/01 11/04
REVIEWED BY: _____	CAD FILE	

ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS (4 LANES OR GREATER)

PROJ. REFERENCE NO.	SHEET NO.
5C.092131	TCP-2
5C.20921.30	

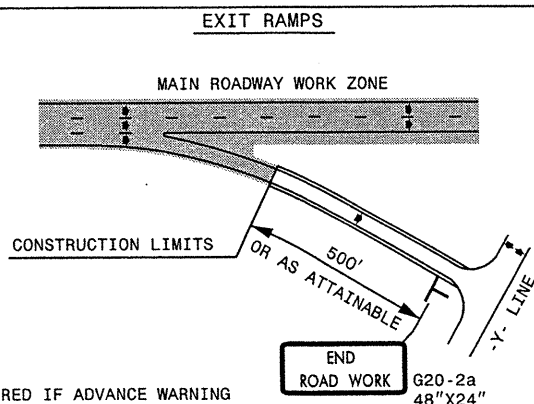
DETAIL A



LEGEND	
T	STATIONARY SIGN
→	DIRECTION OF TRAFFIC FLOW

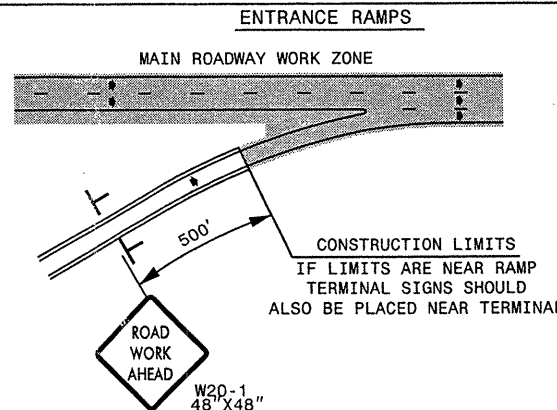
* USE THE "\$250 SPEEDING PENALTY" SIGN, SPEED LIMIT SIGN, AND ORANGE PANEL; ONLY WHEN A "\$250 SPEEDING PENALTY" ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER.

DETAIL B

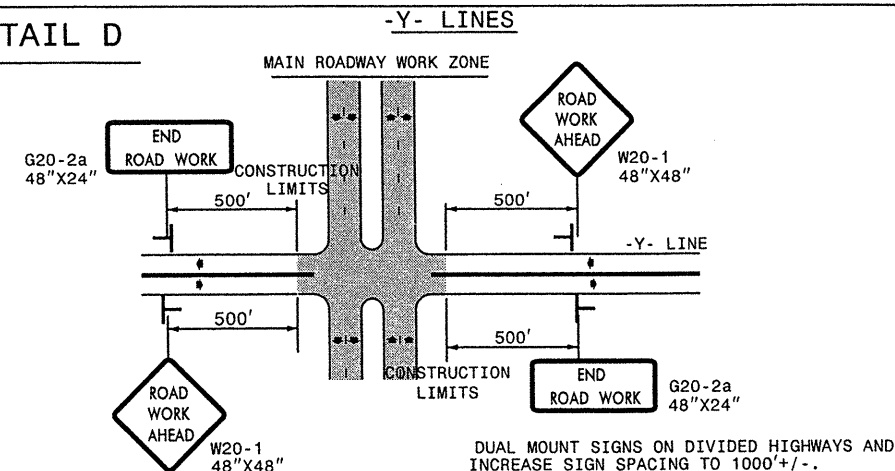


NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

DETAIL C



DETAIL D



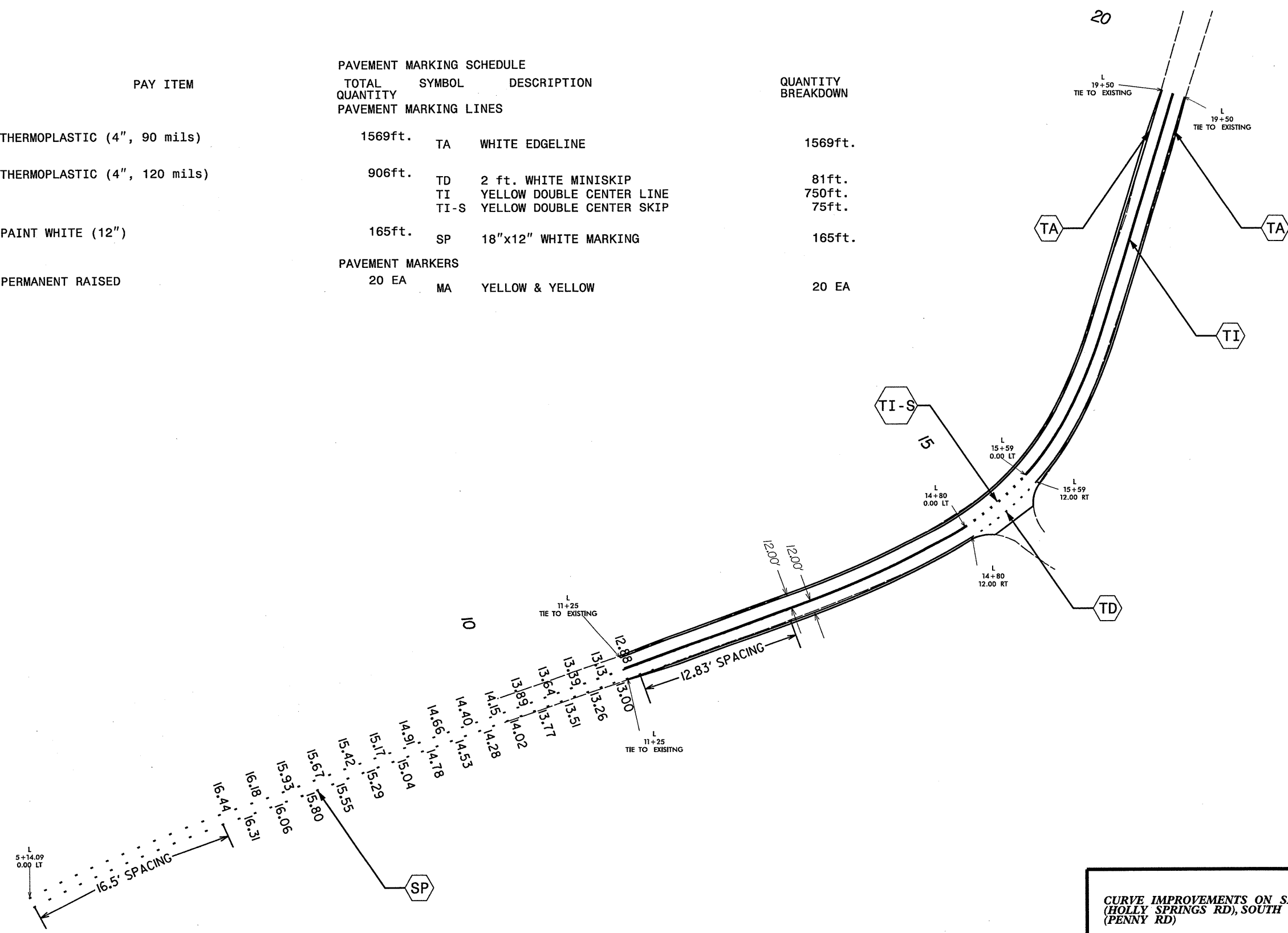
GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
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- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.

APPROVED: _____	DATE: _____	ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)	
SEAL	SCALE: NONE		REVISIONS
	DATE: 8/03		03/04
	DWG. BY: JI		
	DESIGN BY: JI		
	REVIEWED BY: _____		CARD FILE

03-JAN-2010 09:42 \\DOT\DFSROOT\GROUPS\WZTC\CC\TMU\WZTC\Resurfacing\2010\Centra\2010\Resurfacing\2010\Centra\2010\Div05\C202707A-B-5C.092131x2.Wake_Southwest_freeways_4lanes_or_greater_stationary.dwg bpschoenbauer AT 12/24/13

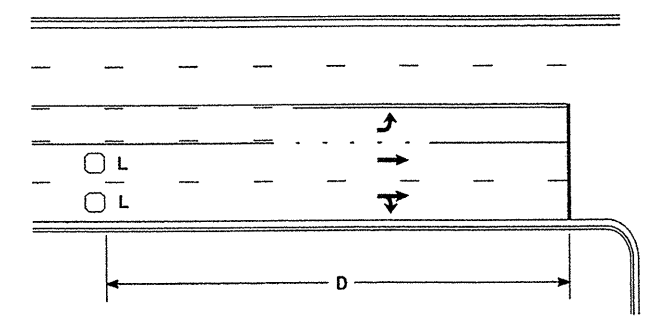
PAY ITEM	PAVEMENT MARKING SCHEDULE			QUANTITY BREAKDOWN
	TOTAL QUANTITY	SYMBOL	DESCRIPTION	
THERMOPLASTIC (4", 90 mils)	1569ft.	TA	WHITE EDGELINE	1569ft.
THERMOPLASTIC (4", 120 mils)	906ft.	TD	2 ft. WHITE MINISKIP	81ft.
		TI	YELLOW DOUBLE CENTER LINE	750ft.
		TI-S	YELLOW DOUBLE CENTER SKIP	75ft.
PAINT WHITE (12")	165ft.	SP	18"x12" WHITE MARKING	165ft.
PERMANENT RAISED	20 EA	MA	YELLOW & YELLOW	20 EA



NAD 83

CURVE IMPROVEMENTS ON SR 1152 (HOLLY SPRINGS RD), SOUTH OF SR 1379 (PENNY RD)		
DIVISION 05 WAKE COUNTY		
REVISIONS	BY	DATE
SCALE: 1"=100' DATE: 3/15/2010		PREPARED BY: CAH REVIEWED BY: BJU
N.C. DEPARTMENT of TRANSPORTATION DIVISION of HIGHWAYS DIVISION FIVE DESIGN UNIT		REVIEWED BY:

High Speed Detection [≥40 mph (64 km/hr)]

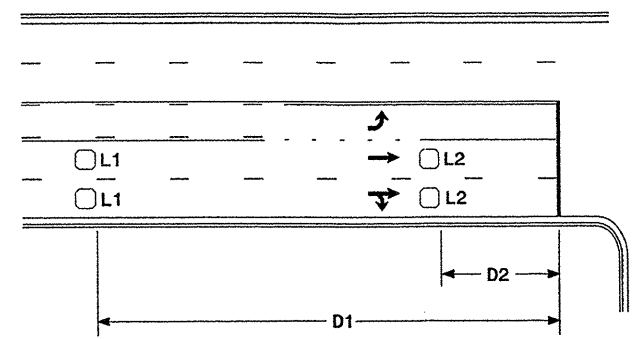


Speed Limit mph (km/hr)	D ft (m)
40 (64)	250 (75)
45 (72)	300 (90)
50 (80)	355 (110)
55 (88)	420 (130)

L = 6ft X 6ft (1.8m X 1.8m)
 Wired in series for TS1
 Controllers
 Wired separately for TS2,
 170, and 2070L Controllers

Volume Density Operation

OR

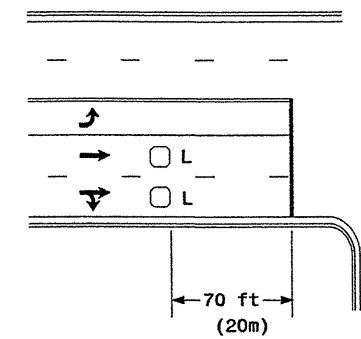


Speed Limit mph (km/hr)	D1 ft (m)	D2 ft (m)
40 (64)	250 (75)	80 (25)
45 (72)	300 (90)	90 (27)
50 (80)	355 (110)	100 (30)
55 (88)	420 (130)	110 (35)

L1 = 6ft X 6ft
 (1.8m X 1.8m)
 Wired in series
 L2 = 6ft X 6ft
 (1.8m X 1.8m)
 Wired in series

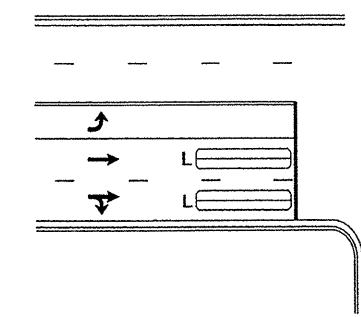
"Stretch" Operation

Low Speed Detection [≤35 mph (56 km/hr)]



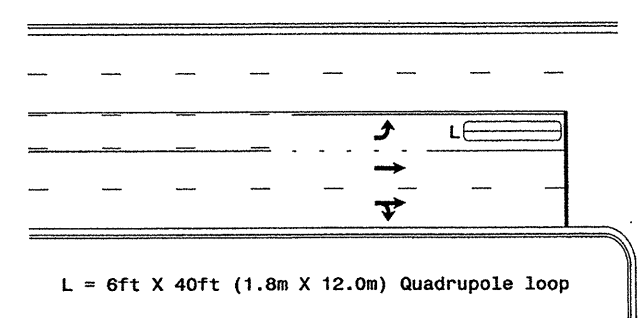
L = 6ft X 6ft (1.8m X 1.8m)
 Wired in series

OR



L = 6ft X 40ft (1.8m X 12.0m)
 Quadropole loop, wired separately

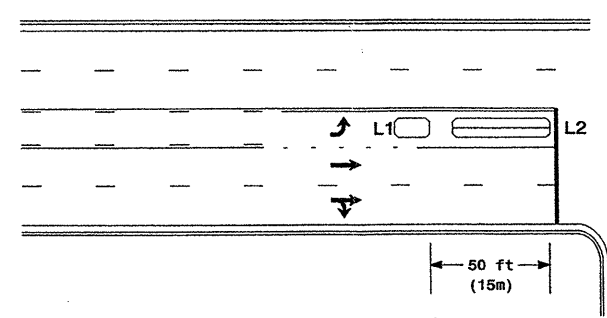
Left Turn Lane Detection



L = 6ft X 40ft (1.8m X 12.0m) Quadropole loop

Presence Loop Detection

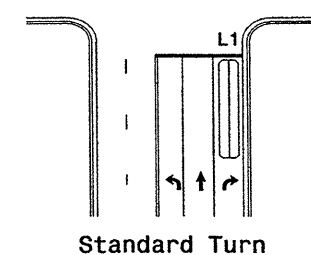
OR



L1 = 6ft X 15ft (1.8m X 4.6m) Queue detector
 L2 = 6ft X 40ft (1.8m X 12.0m) Quadropole loop

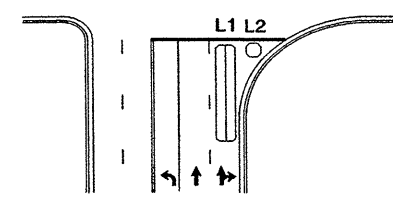
Queue Loop Detection

Right Turn Lane Detection

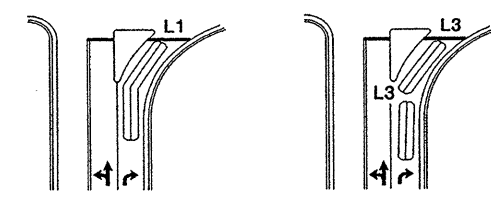


Standard Turn

L1 = 6ft X 40ft (1.8m X 12.0m) Quadropole loop
 L2 = 6ft X 6ft (1.8m X 1.8m) [Minimum] Presence loop
 Wired separately
 L3 = 6ft X 20ft (1.8m X 6.0m) Quadropole loop
 Wired in series

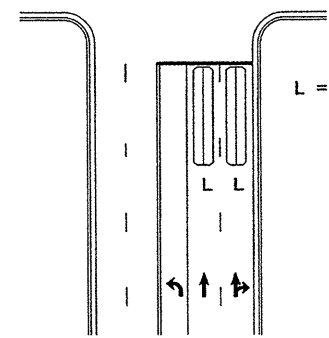


Wide Radius Turn



Channelized Turn

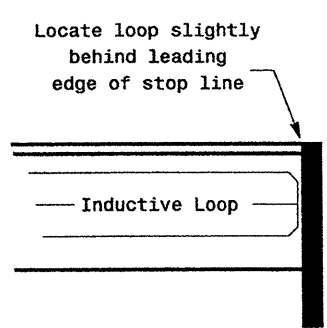
Side Street Detection



L = 6ft X 40ft (1.8m X 12.0m)
 Quadropole loop
 Wired to separate
 detectors/channels

Presence Loop Detection

Presence Loop Placement at Stop Lines



Locate loop slightly
 behind leading
 edge of stop line

Note:
 Loop may be located in advance
 of stop line when stop line is
 greater than 15' (4.5m) from edge
 of intersecting roadway; or, when
 loop detects a permissive or
 protected/permissive left turn.

Recommended Number of Turns

Single 6' X 6' (1.8m X 1.8m)
 loop (wired separately):

Length of Lead-in ft (m)	Number of Turns
< 250 (75)	3
250-375 (75-115)	4
375-525 (115-160)	5
> 525 (160)	6

Quadropole loops: Use 2-4-2 turns
 6' X 15' (1.8m X 4.6m) Loops:
 Lead-in < 150' (45 m), use 2 turns
 Lead-in > 150' (45 m), use 3 turns

Prepared in the Office of

 122 N. McDowell St., Raleigh, NC 27603

SCALE: N/A

Typical Loop Locations

PLAN DATE: June 2006	REVIEWED BY:
PREPARED BY: P. L. Alexander	REVIEWED BY:
REVISIONS	INIT. DATE
1. Revise pavement markings	PA 12/17/06

SIGNATURE: P. L. Alexander
 DATE: 12/17/06
 SEAL: 35498
 STATE OF NORTH CAROLINA
 PROFESSIONAL ENGINEER
 SIG. INVENTORY NO.

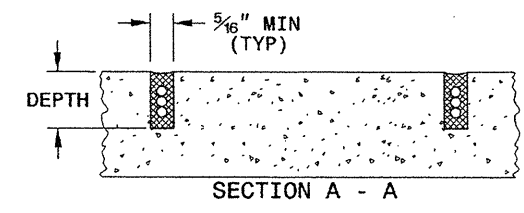
STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

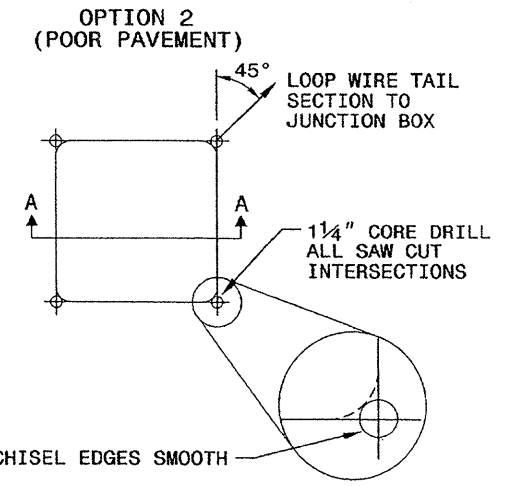
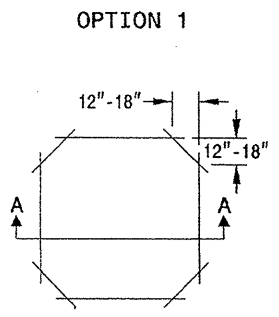
SAW SLOT DEPTH CHART

DEPTH (IN)	NO. OF WIRE TURNS				
	2	3	4	5	6
CONCRETE	2.0	2.0	2.5	2.5	3.0
ASPHALT	2.0	2.5	3.0	3.0	3.0

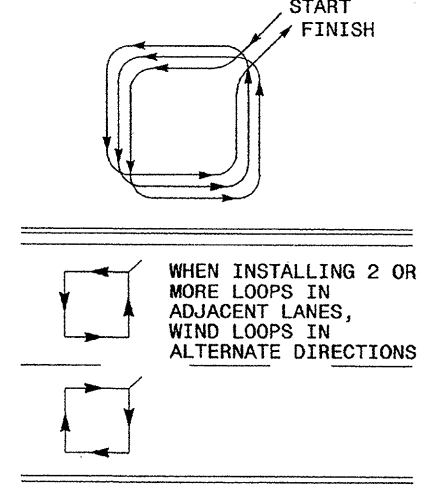


CONVENTIONAL 4-SIDED LOOP

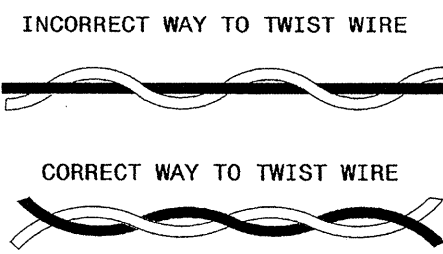
SAW CUT OPTIONS



LOOP WINDING METHOD



LOOP WIRE TWISTING METHOD

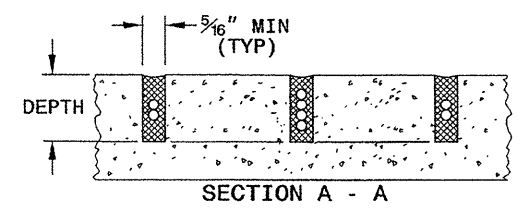
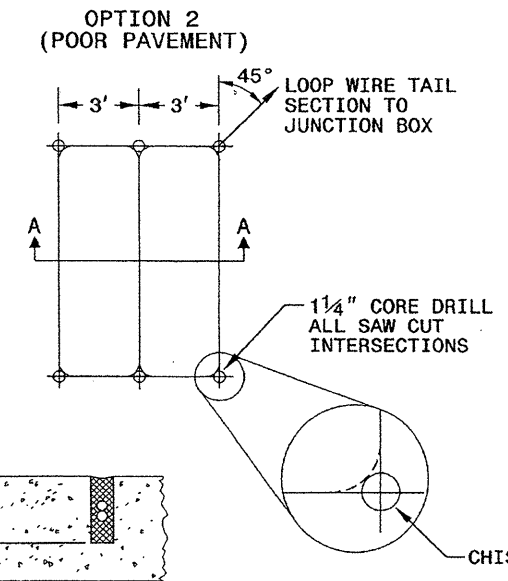
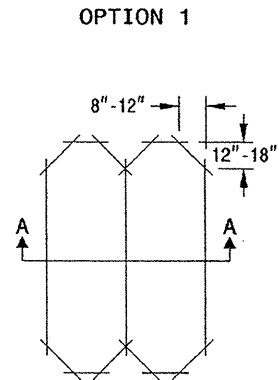


NOTES

- OVERLAP SAW CUTS AT CORNERS AND INTERSECTION POINTS TO ENSURE UNIFORM SAW SLOT DEPTH.
- MAINTAIN 12" SPACING BETWEEN LOOP WIRE TAIL SECTIONS.
- WIRE LOOPS CONNECTED TO THE SAME DETECTOR CHANNEL IN SERIES.
- LOCATE LOOPS IN CENTER OF LANES UNLESS OTHERWISE SHOWN ON PLANS OR APPROVED BY ENGINEER.

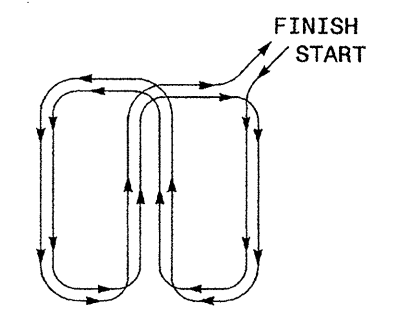
QUADRUPOLE LOOP

SAW CUT OPTIONS



DEPTH IS 2.5" FOR CONCRETE AND 3.0" FOR ASPHALT

LOOP WINDING METHOD

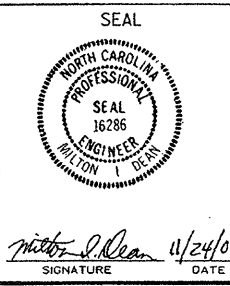
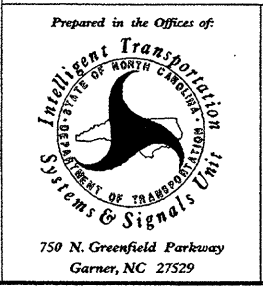


STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS

SHEET 1 OF 3
1725D01

See Plate for Title



STATE OF NORTH CAROLINA
 DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

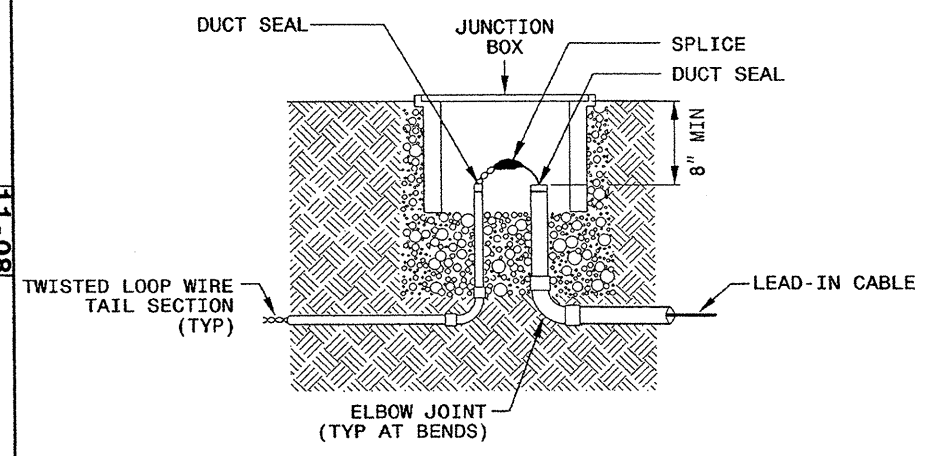
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

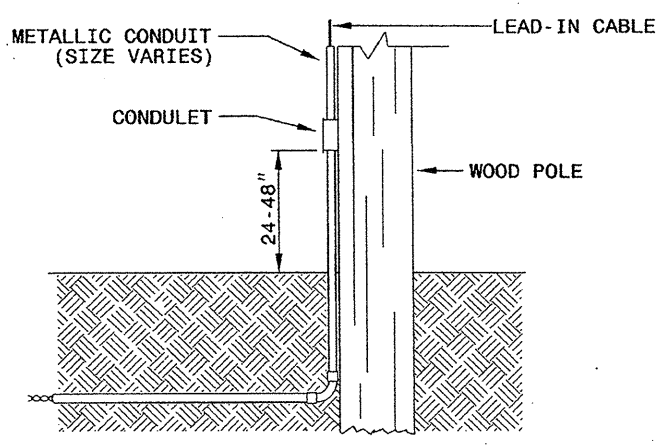
SHEET 2 OF 3
1725D01

LOOP WIRE SPLICE POINT DETAILS

LOOP WIRE AT JUNCTION BOX



LOOP WIRE AT POLE

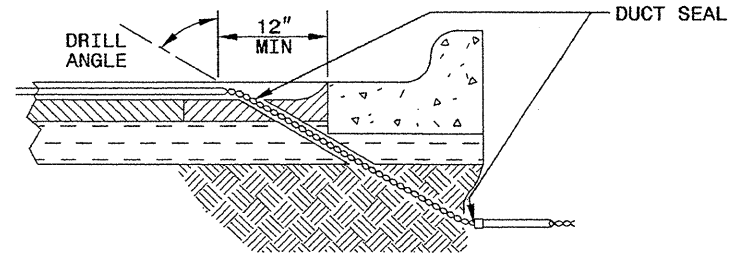


NOTE

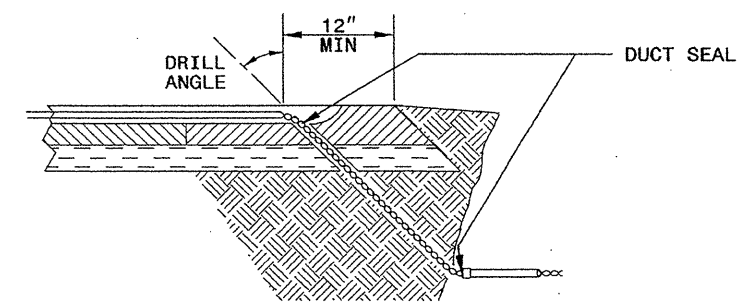
SPLICE ALL LOOP WIRE TAIL SECTIONS/LEAD-IN CABLE IN JUNCTION BOXES OR APPROVED CONDULETS.

LOOP WIRE PAVEMENT EDGE DETAILS

LOOP WIRE AT CURB & GUTTER SECTION



LOOP WIRE AT PAVEMENT SECTION



NOTES

1. DO NOT EXCAVATE UNDER CURB AND GUTTER SECTIONS FOR CONDUIT INSTALLATION.
2. TWIST LOOP WIRE TAIL SECTIONS FROM WHERE LOOP WIRE TAIL LEAVES SAW CUT TO JUNCTION BOX, INCLUDING THROUGH CONDUIT.
3. BEFORE SEALING LOOPS, INSTALL DUCT SEAL WHERE LOOP WIRE TAIL SECTION LEAVES SAW CUT IN PAVEMENT AND AT ENTRANCE OF CONDUIT TO JUNCTION BOX.

STATE OF NORTH CAROLINA
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 RALEIGH, N.C.

11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
 LOOP WIRE DETAILS

SHEET 2 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
 Garner, NC 27529

SEAL

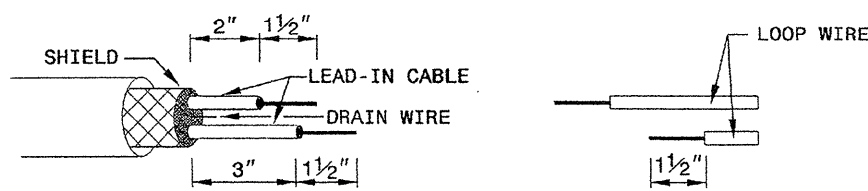
Milton A. Bean 11/24/08
 SIGNATURE DATE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
11-08

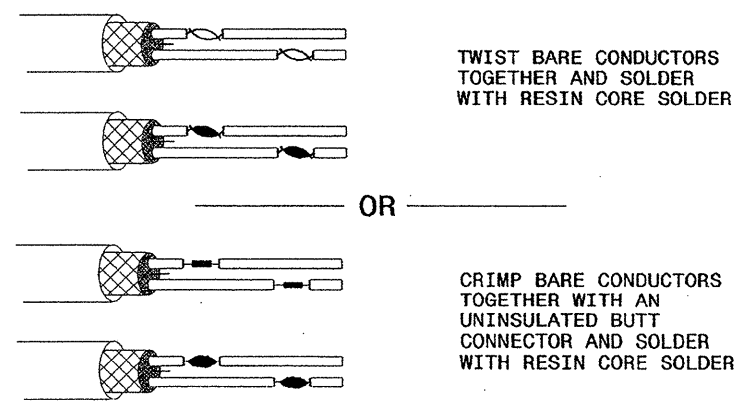
ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

STEP 1. STRIP LOOP WIRE AND LEAD-IN CABLE

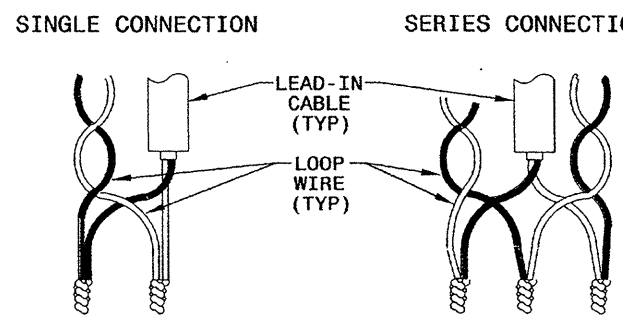


STEP 2. CONNECT AND SOLDER

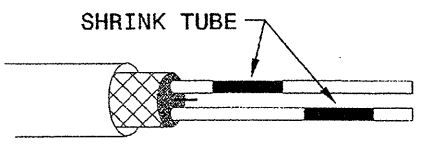


BOND SHIELD DRAIN WIRE AT SPLICE SECTIONS (DO NOT GROUND)

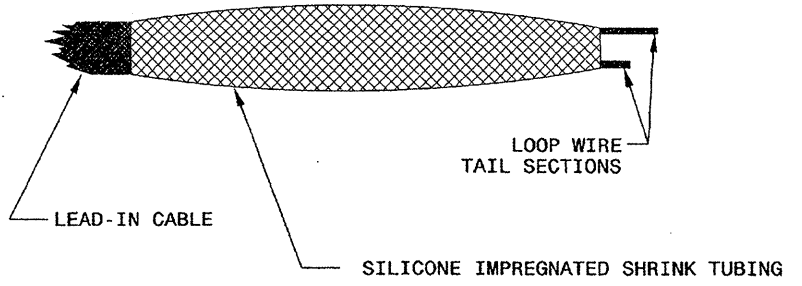
LOOP WIRE AND LEAD-IN CABLE CONNECTION DETAILS



STEP 3. INSULATE EACH SOLDER JOINT SEPARATELY



STEP 4. ENVIRONMENTALLY PROTECT SPLICE



STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
11-08

ENGLISH DETAIL DRAWING FOR
INDUCTIVE DETECTION LOOPS
SPlicing FOR LEAD-IN CABLE AND LOOP WIRE

SHEET 3 OF 3
1725D01

See Plate for Title

Prepared in the Offices of:

750 N. Greenfield Parkway
Garner, NC 27529

SEAL

Milton Dean 11/24/08
SIGNATURE DATE

24-Nov-2008 09:35 1725D01.dwg 1725D01.dwg 1725D01.dwg 1725D01.dwg 1725D01.dwg