



FHWA SHRP 2 – R26 Preservation of High Traffic Volume Highways

Newark DE April 28-30 2015



FOUR TREATMENTS SELECTED

RUBBER/POLYMER MODIFIED CRACK SEAL WITH FIBERS – I 95

20 % RUBBER MODIFIED ASPHALT 3/8"CHIP SEAL (RACS) – RI 102

POLYMER MODIFIED HOT MIX THIN OVERLAY (PPEST) – RI 114

PPEST ON RACS - STRESS ABSORBING MEMBRANE INTERLAYER (SAMI) – RI 3

CRACK SEAL - I 95

TEST SECTION - I 95

- **TOWNS** - HOPKINTON/RICHMOND
- **LIMITS** - EXIT 4 TO CT STATE LINE (9.4 MILES)
- **LAST PAVED** - MILLED 2", 1 ¼" POLYMER MODIFIED GAP GRADED FRICTION COURSE 2010
- **PAVEMENT STRUCTURE**- 9.25" HMA, 8" PORTLAND CEMENT CONCRETE
- **SPEED LIMIT** - 65 MPH
- **ADT** – 23,100, HT - 4.9%, CLASSIFICATION– URBAN INTERSTATE, 4 LANES
- **TREATMENT** – 2.5" WIDE OVERBANDING, RUBBER/POLYMER ASPHALT WITH FIBERS

PAVEMENT DATA - CRACK SEAL - I 95

2013 PAVEMENT STRUCTURAL HEALTH INDEX (PSHI) – 93.7,

PSHI BREAKDOWN

	Northbound	Southbound
IRI:	100	100
Rutting:	100	100
Longitudinal cracking:	80	100
Transverse cracking:	80	75
Alligator cracking:	100	100
Block cracking:	100	100
Patching:	100	100

PRIMARY DISTRESS – RIGID BASE REFLECTIVE TRANSVERSE CRACKING

I 95 CRACK SEAL



I 95 CRACK SEAL – SPRING 2015



20% RUBBER ASPHALT CHIP SEAL – RI 102

TEST SECTION – RI 102

- **TOWN** - EXETER
- **LIMITS** - FOREST HILL RD TO SUDERLAND RD (2.8 MILES)
- **LAST PAVED** – 2” MILL AND FILL IN 1994. 20% RUBBER ASPHALT CHIP SEALED IN 2004
- **PAVEMENT STRUCTURE**– 3/8” RUBBER ASPHALT CHIP SEAL, 5” HMA, 8” FDR.
- **ADT** – 10,200, HT - 2.8%, SPEED LIMIT – 40 MPH
- **CLASSIFICATION** – RURAL COLLECTOR, 2 LANES
- **TREATMENT** – 20% RUBBER ASPHALT CHIP SEAL
100% PRECOATED 3/8” AGGREGATE
PRIOR TO TREATMENT THE PAVEMENT IS CRACK SEALED
AND SPOT LEVELED TO RESTORE ORIGINAL PROFILE

2013 PSHI – 84.3,

PSHI BREAKDOWN

IRI:	72
Rutting:	100
Longitudinal cracking:	70
Transverse cracking:	74
Alligator cracking:	100
Block cracking:	100
Patching:	86.5

DISTRESSES - MEDIUM SEVERITY LONGITUDINAL AND TRANSVERSE CRACKING, AND LOW SEVERITY FLUSHING

RI 102 – BEFORE CHIP SEAL

RT 102 BEFORE CHIP SEAL



RI 102 RACS - SPRING 2015



POLYMER MODIFIED 1" THIN OVERLAY – RI 114

TEST SECTION – RI 114

- CITY - EAST PROVIDENCE
- LIMITS – NEWMAN AVE (RT 152) to RT 1A (.53 miles)
- LAST PAVED – 3” MILL AND FILL IN 1985
- PAVEMENT MAKEUP - 7” HMA
- ADT – 10,900, HT - 4.8%, SPEED LIMIT – 35 MPH
- CLASSIFICATION – URBAN ARTERIAL, 4 LANES
- TREATMENT – MILL 1” DEEP
1” THICK POLYMER MODIFIED ASPHALT THIN OVERLAY

2013 PSHI – 62.9

PSHI BREAKDOWN

IRI:	62.5
Rutting:	82.5
Longitudinal cracking:	70
Transverse cracking:	25
Alligator cracking:	70
Block cracking:	25
Patching:	77.5

PRIMARY DISTRESSES - SEVERE BLOCK AND TRANSVERSE CRACKING

ROUTE 114 – PRIOR TO PPEST



RI 114 PPEST - SPRING 2015



RI 3 SAMI

TEST SECTION – RI. 3

- **TOWN** - COVENTRY
- **LIMITS** - I 95 to RI 118 (1.2 miles)
- **LAST PAVED** – 1993, 2 “ OVERLAY
- **PAVEMENT STRUCTURE** - 6.5 “ HMA, 8” CONCRETE
- **ADT** – 16,200, HT - 2.8%, SPEED LIMIT – 45 MPH
- **CLASSIFICATION** – RURAL COLLECTOR, FIVE LANES
- **TREATMENT** - MILL 1.5”, 20% RUBBER ASPHALT 3/8” CHIP SEAL, 1” POLYMER MODIFIED THIN OVERLAY

2013 PSHI – 63.5

PSHI BREAKDOWN

IRI:	71
Rutting:	100
Longitudinal cracking:	50
Transverse cracking:	25
Alligator cracking:	70
Block cracking:	25
Patching:	74

DISTRESSES - SEVERE BLOCK AND TRANSVERSE CRACKING, MEDIUM SEVERITY ALLIGATOR CRACKING

ROUTE 3 – BEFORE SAMI



RI 3 AFTER MILLING



RI 3 RUBBER ASPHALT CHIP SEAL



RI 3 FINAL SURFACE



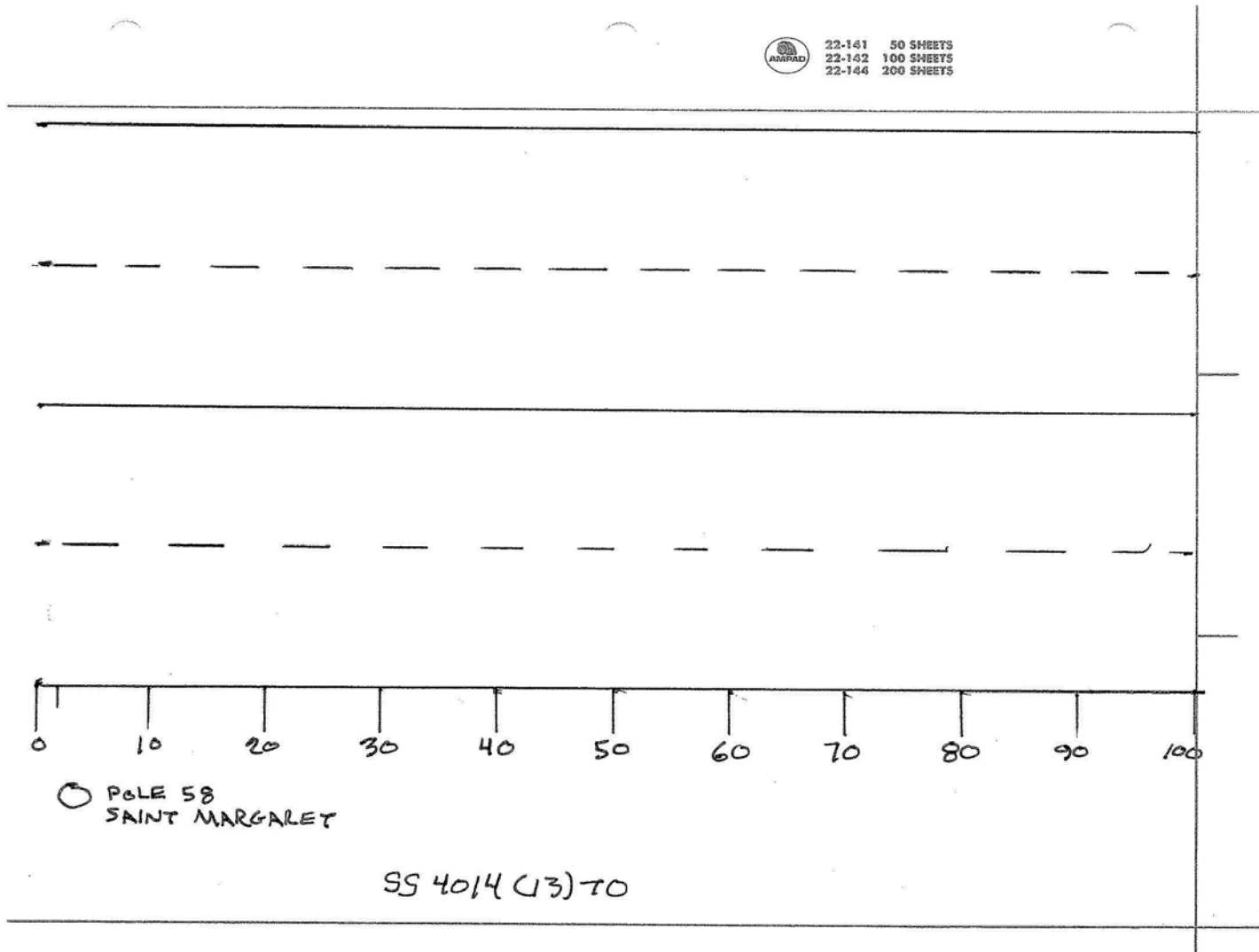
- AUTOMATED DISTRESS DATA COLLECTION
IRI, CRACKING DATA, RUTTING,
- FWD
- 4 - 100' MONITORING SECTIONS

MANUAL DATA COLLECTION

MONITORING SECTION



22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



MONITORING SECTION DATA

RIDOT - PAVEMENT PRESERVATION ROADWAY MONITORING INSPECTION SHEET

ROADWAY NAME: RI-114 PROJECT NUMBER: SS4014(13)TO

FROM: RT 152 TO: RI-1A

SAMPLE UNIT NUMBER: 1

LOCATION OF SAMPLE UNIT (POLE NUMBER, BRIDGE NUMBER, ETC.):

Pole 58 - Southern Limit

SAMPLE UNIT LENGTH: 100 FT. WIDTH (FT.) SHOULDER 1 1

SHOULDER 2 .1

SURFACE SEAL TYPE: Thin Overlay

CONSTRUCTION DATE MONTH: May YEAR: 2014

NUMBER OF LANES: 4 PHOTOGRAPHS: Y/N

WEATHER: CLEAR CLOUDY RAINY

LANE DIR.	LANE NO.	LANE WIDTH (FT.)	JOINT OPENING (FT.)	LONG. CR. (FT.)	TOTAL LONG. (INCL. BLOCKS)	TRANS. CR. (FT.)	TOTAL TRANS. (INCL. BLOCKS)	EDGE CR. (FT.)	ALLIG. CR. (SF)	BLOCK CR. (SF)	REFL. CR. (CONC. OL) (FT.)
N	1	11									
N	2	11									
S	1	11									
S	2	11									
			MANHOLE DISTRESS (SF)	POTHOLE # SF	PATCHES # SF	RUT DEPTH (in.)	SHOVING (SF)	RAVEL/ STONE LOSS (SF)	BLEEDING (SF)	POLISHED AGG. (SF)	
N	1	11									
N	2	11									
S	1	11									
S	2	11									

STRIPING: TYPE: CONDITION:

COMMENTS: At Saint Margaret School
No cracks

LEGEND:

LANE NUMBER: 2 LANE ROADS: 1
4 LANE ROADS: 1 = HIGH SPEED LANE
2 = LOW SPEED LANE

PROJECT NUMBER: NUMBER ASSIGNED IN CONTRACT (E.G., RCS1240)

SURVEYOR NAME: Woodrow Albin SURVEY DATE: 7-Oct-14

GROUP "E"

- 6 MILLION DOLLAR/ YEAR PROGRAM

- TREATMENTS

 - \$2 MIL – ULTRA THIN POLYMER MODIFIED HMA – 20 LANE MILES

 - \$2 MIL – 20% ASPHALT CHIP SEAL – 50+ LANE MILES

 - \$2 MIL – CRACK SEAL – 120+ LANE MILES

FUTURE CONSIDERATIONS – MICROSURFACING, HIP AND CIP RECYCLING, FOG SEALS