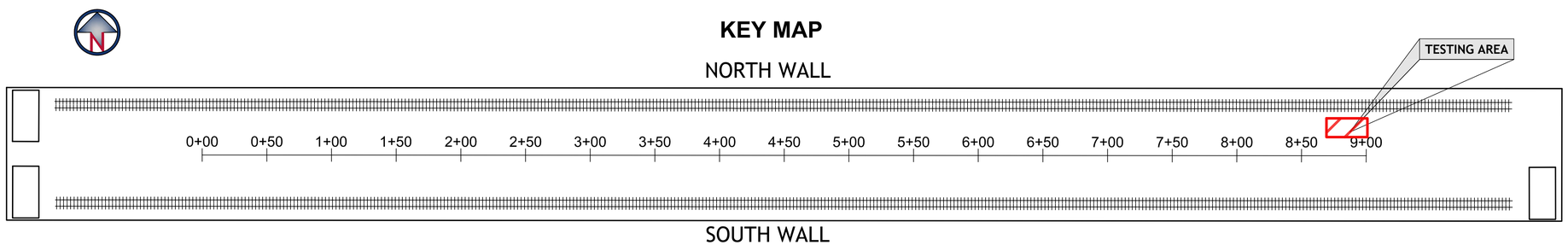
REFLECTIVE CRACKING PHASE 4

NATIONAL AIRPORT PAVEMENT TESTING FACILITY
WILLIAM J. HUGHES TECHNICAL CENTER
ATLANTIC CITY AIRPORT, NEW JERSEY

02/25/2015

KEY MAP



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PREPARED BY:

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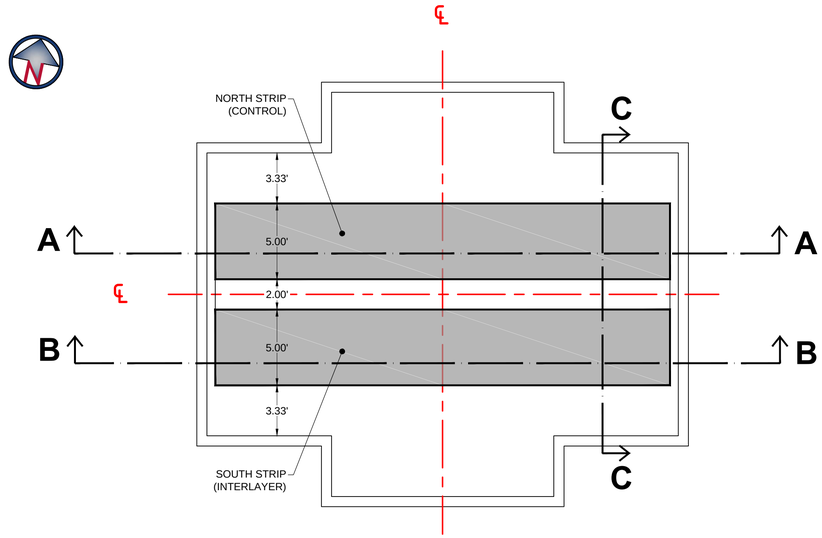
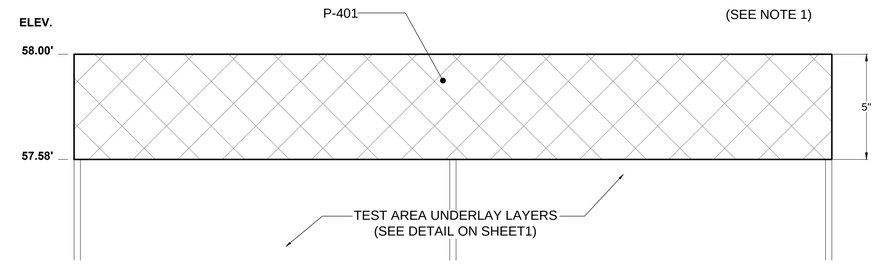


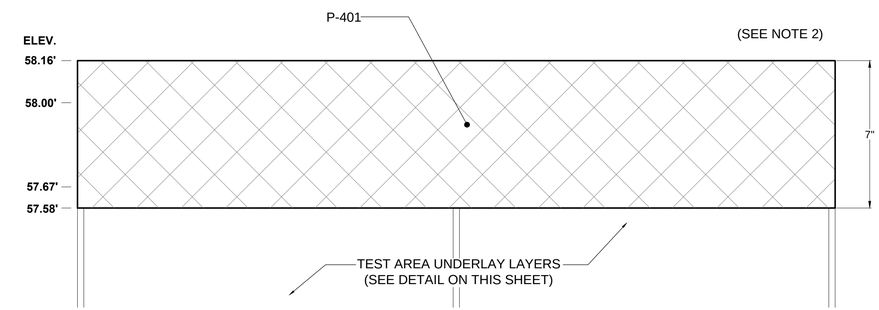
PLAN VIEW

SCALE: 1"=5'



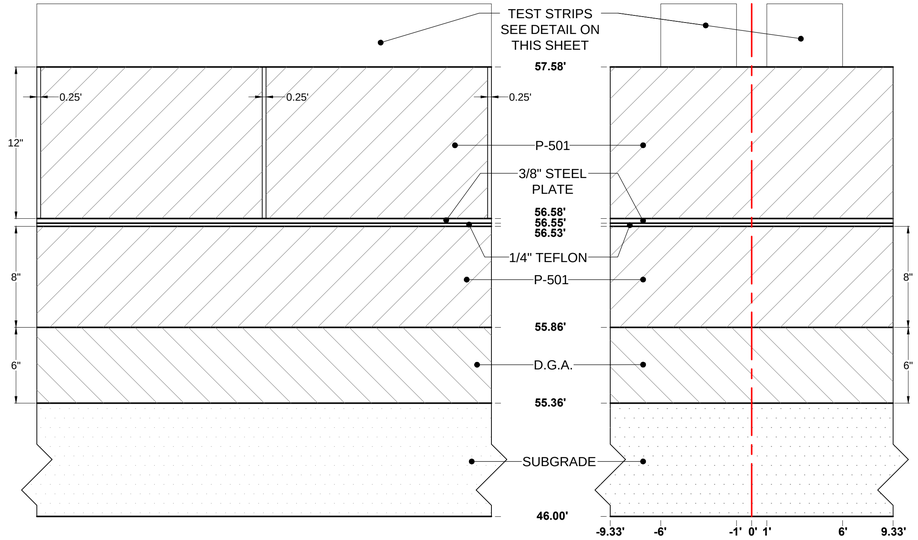
SECTION A-A (NORTH STRIP)

HORIZONTAL SCALE: 1"=3'
VERTICAL SCALE: 1"=0.3'



SECTION B-B (SOUTH STRIP)

HORIZONTAL SCALE: 1"=3'
VERTICAL SCALE: 1"=0.3'

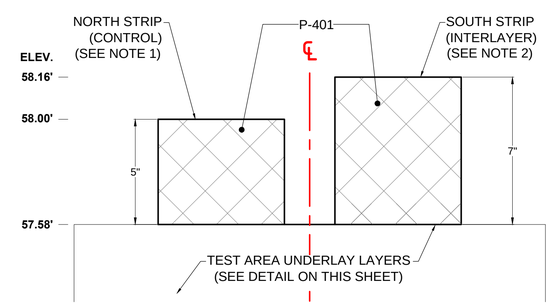


SECTION A-A

SECTION C-C

TEST AREA UNDERLAY DETAIL

HORIZONTAL SCALE: 1"=5'
VERTICAL SCALE: 1"=0.5'



SECTION C-C

HORIZONTAL SCALE: 1"=3'
VERTICAL SCALE: 1"=0.3'

NOTES:

1. PLACE THE NORTH SIDE TEST IN TWO (2) $2\frac{1}{2}$" LIFTS.
2. PLACE THE SOUTH SIDE TEST IN THREE (3) LIFTS - TWO (2) $2\frac{1}{2}$" AND ONE (1) 2".

LEGEND:

- P-401 PLANT MIX BITUMINOUS PAVEMENT
- P-501 PORTLAND CEMENT CONCRETE PAVEMENT
- DENSE GRADED AGGREGATE
- SUBGRADE

NO.	REVISIONS	DATE	BY	CHK	APR

SRA INTERNATIONAL
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PHONE: (609) 601-6800

FOR

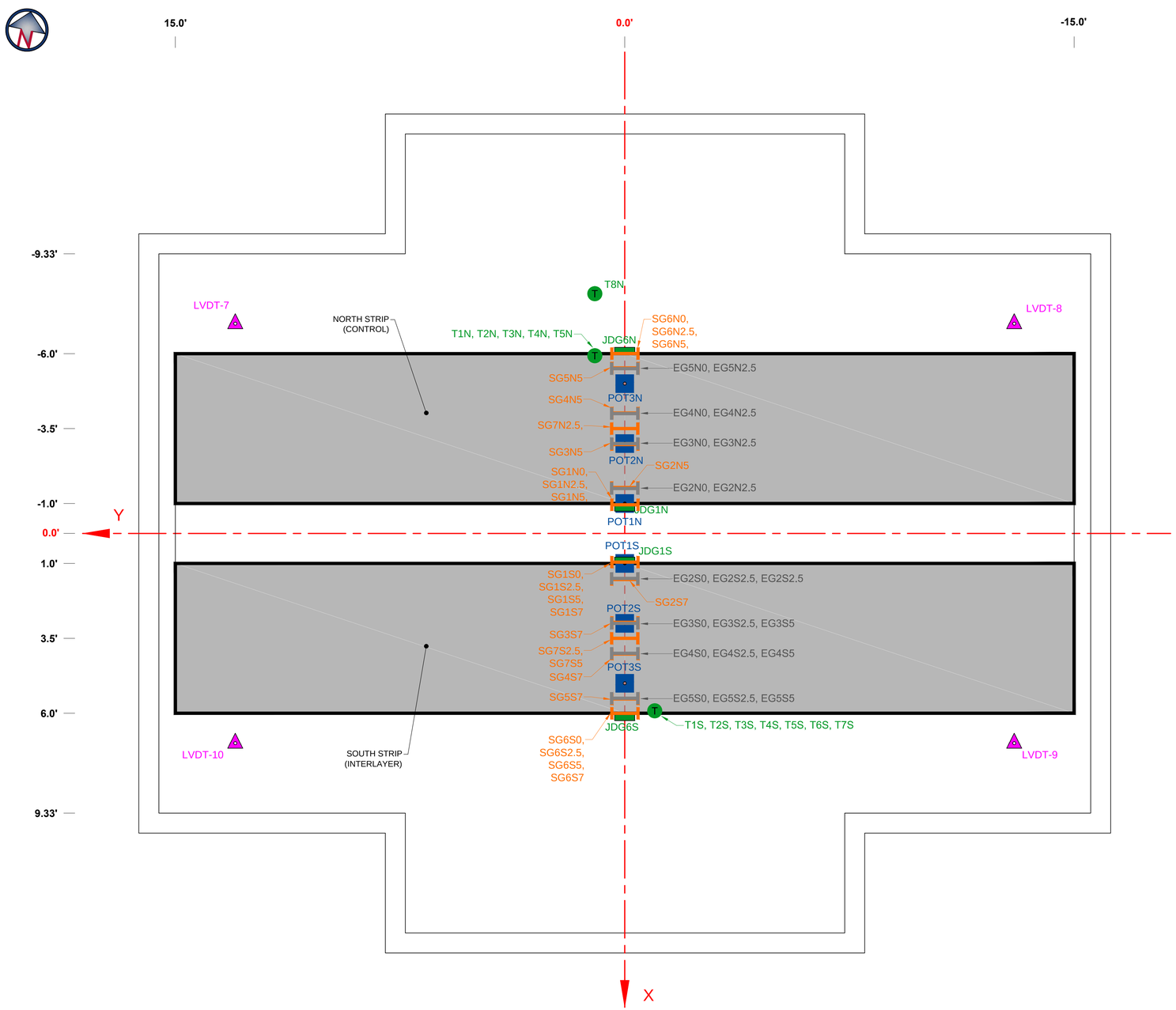
NATIONAL AIRPORT PAVEMENT TEST FACILITY

	NAME	DATE
DRAWN	M.M.	02/02/2015
CHECKED	H.YIN	
FAA APPROVAL DATE:		

NAPTF REFLECTIVE CRACKING
CONSTRUCTION PLAN
PHASE 4

PROJECT NO: | SIZE: ANSI D | SCALE: AS NOTED | SHEET 2 OF 6

CAD FILE: REFL.CRACK.PH4-CONST.DWG



PLAN VIEW

SCALE: 1"=2'

PROPOSED INSTRUMENTATION

SENSOR	X (FT)	Y (FT)	Z (INCH)	NORTH	SOUTH	SENSOR LOCATION DESCRIPTION	SENSOR INSTALLATION PHASE
SG1S0	1.00	0	0.25		X	Lower inner edge	POST-CONSTRUCTION
SG1S2.5	1.00	0	2.50		X	Midsection inner edge	POST-CONSTRUCTION
SG1S5	1.00	0	5.00		X	Midsection inner edge	POST-CONSTRUCTION
SG1S7	1.02	0	7.00		X	Top inner edge	POST-CONSTRUCTION
SG2S7	1.50	0	7.00		X	On surface, 6 inch from inner edge	POST-CONSTRUCTION
SG3S7	3.00	0	7.00		X	On surface, 2 feet from inner edge.	POST-CONSTRUCTION
SG4S7	4.00	0	7.00		X	On surface, 2 feet from outer edge.	POST-CONSTRUCTION
SG5S7	5.50	0	7.00		X	On surface, 6 inch from outer edge.	POST-CONSTRUCTION
SG6S7	5.98	0	7.00		X	Top outer edge.	POST-CONSTRUCTION
SG6S5	6.00	0	5.00		X	Midsection outer edge	POST-CONSTRUCTION
SG6S2.5	6.00	0	2.50		X	Midsection outer edge	POST-CONSTRUCTION
SG6S0	6.00	0	0.25		X	Lower outer edge	POST-CONSTRUCTION
SG1N0	-1.00	0	0.25	X		Lower inner edge	POST-CONSTRUCTION
SG1N2.5	-1.00	0	2.50	X		Middle inner edge.	POST-CONSTRUCTION
SG1N5	-0.98	0	5.00	X		Top inner edge.	POST-CONSTRUCTION
SG2N5	-1.50	0	5.00	X		On surface, 6 inch from inner edge	POST-CONSTRUCTION
SG3N5	-3.00	0	5.00	X		On surface, 2 feet from inner edge.	POST-CONSTRUCTION
SG4N5	-4.00	0	5.00	X		On surface, 2 feet from outer edge.	POST-CONSTRUCTION
SG5N5	-5.50	0	5.00	X		On surface, 6 inch from outer edge.	POST-CONSTRUCTION
SG6N5	-5.98	0	5.00	X		Top outer edge.	POST-CONSTRUCTION
SG6N2.5	-6.00	0	2.50	X		Middle outer edge.	POST-CONSTRUCTION
SG6N0	-6.00	0	0.25	X		Lower outer edge	POST-CONSTRUCTION
EG2S0	1.50	0	0.25		X	Underneath 1st layer	PRE-CONSTRUCTION
EG2S2.5	1.50	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG2S5	1.50	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG3S0	3.00	0	0.25		X	Underneath 1st layer.	PRE-CONSTRUCTION
EG3S2.5	3.00	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG3S5	3.00	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG4S0	4.00	0	0.25		X	Underneath 1st layer.	PRE-CONSTRUCTION
EG4S2.5	4.00	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG4S5	4.00	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG5S0	5.50	0	0.25		X	Underneath 1st layer.	PRE-CONSTRUCTION
EG5S2.5	5.50	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG5S5	5.50	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG2N0	-1.50	0	0.25	X		Underneath 1st layer	PRE-CONSTRUCTION
EG2N2.5	-1.50	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
EG3N0	-3.00	0	0.25	X		Underneath 1st layer.	PRE-CONSTRUCTION
EG3N2.5	-3.00	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
EG4N0	-4.00	0	0.25	X		Underneath 1st layer.	PRE-CONSTRUCTION
EG4N2.5	-4.00	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
EG5N0	-5.50	0	0.25	X		Underneath 1st layer.	PRE-CONSTRUCTION
EG5N2.5	-5.50	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
T7S	5.92	-1	7.00		X	Surface, East side	POST-CONSTRUCTION
T6S	5.92	-1	6.00		X	Upper section, East side	POST-CONSTRUCTION
T5S	5.92	-1	5.00		X	Midsection, East side	POST-CONSTRUCTION
T4S	5.92	-1	4.00		X	Midsection, East side	POST-CONSTRUCTION
T3S	5.92	-1	3.00		X	Midsection, East side	POST-CONSTRUCTION
T2S	5.92	-1	1.50		X	Lower section, East side	POST-CONSTRUCTION
T1S	5.92	-1	0.00		X	Bottom, East side	PRE-CONSTRUCTION
T5N	-5.92	1	5.00	X		Surface, West side	POST-CONSTRUCTION
T4N	-5.92	1	4.00	X		Upper section, West side	POST-CONSTRUCTION
T3N	-5.92	1	3.00	X		Middle section, West side	POST-CONSTRUCTION
T2N	-5.92	1	1.50	X		Lower section, West side	POST-CONSTRUCTION
T1N	-5.92	1	0.00	X		Bottom, West side	PRE-CONSTRUCTION
T8N	-8.00	1	12.00	X		Ambient temperature	PRE-CONSTRUCTION
JDG1S	1.00	0	0		X	Inner edge	POST-CONSTRUCTION
JDG6S	6.00	0	0		X	Outer edge	POST-CONSTRUCTION
JDG1N	-1.00	0	0	X		Inner edge	POST-CONSTRUCTION
JDG6N	-6.00	0	0	X		Outer edge	POST-CONSTRUCTION
POT1S	1.00	0	-1.88		X	Below joint	PRE-CONSTRUCTION
POT2S	3.00	0	-1.88		X	Below joint	PRE-CONSTRUCTION
POT3S	5.00	0	-1.88		X	Below joint	PRE-CONSTRUCTION
POT1N	-1.00	0	-1.88	X		Below joint	PRE-CONSTRUCTION
POT2N	-3.00	0	-1.88	X		Below joint	PRE-CONSTRUCTION
POT3N	-5.00	0	-1.88	X		Below joint	PRE-CONSTRUCTION
LVDT-7	-7.00	13	-5.00	X		On North/West corner	PRE-CONSTRUCTION
LVDT-8	-7.00	-13	-5.00	X		On North/East corner	PRE-CONSTRUCTION
LVDT-9	7.00	-13	-5.00		X	On South/East corner	PRE-CONSTRUCTION
LVDT-10	7.00	13	-5.00		X	On South/West corner	PRE-CONSTRUCTION
SG7S2.5	3.50	0	2.50		X	Center of slab width between layer 1 and 2	DURING CONSTRUCTION
SG7S5	3.50	0	5.00		X	Center of slab width between layer 2 and 3	DURING CONSTRUCTION
SG7N2.5	-3.50	0	2.50	X		Center of slab width between layer 1 and 2	DURING CONSTRUCTION

NOTE:

Z - VERTICAL DISTANCE IN INCHES MEASURED FROM BOTTOM OF ASPHALT LAYER IN UPWARD DIRECTION.

INSTRUMENT KEY

EG	EMBEDDED DYNATEST STRAIN GAUGE		LVDT	LINEAR VARIABLE DISPLACEMENT TRANSDUCER
FG	FIBER OPTIC STRAIN SENSOR		SG	SURFACE STRAIN GAUGE
JDG	JOINT DISPLACEMENT GAUGE		T	THERMOCOUPLE
POT	POTENTIOMETER			

NO.	REVISIONS	DATE	BY	CHK	APR

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FOR

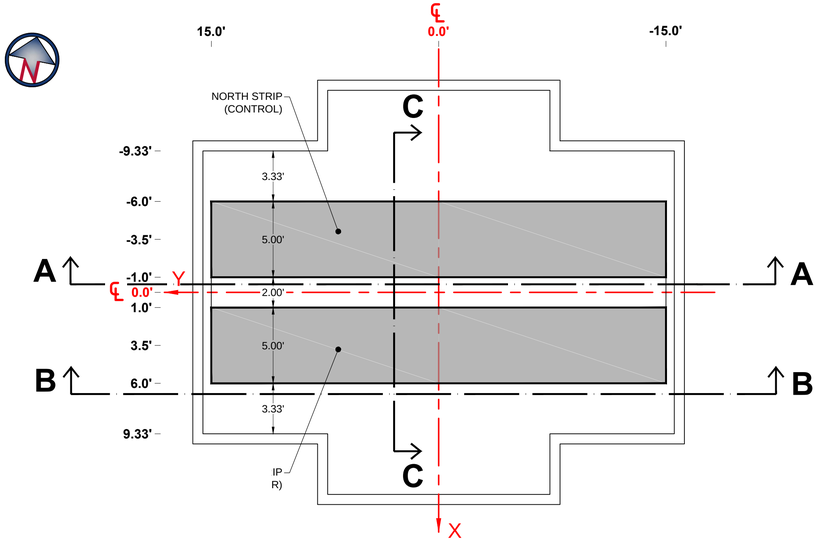
NATIONAL AIRPORT PAVEMENT TEST FACILITY

	NAME	DATE
DRAWN	M.M.	02/03/2015
CHECKED	H.YIN	
FAA APPROVAL DATE:		

NAPTF REFLECTIVE CRACKING
PHASE X INSTRUMENTATION PLAN

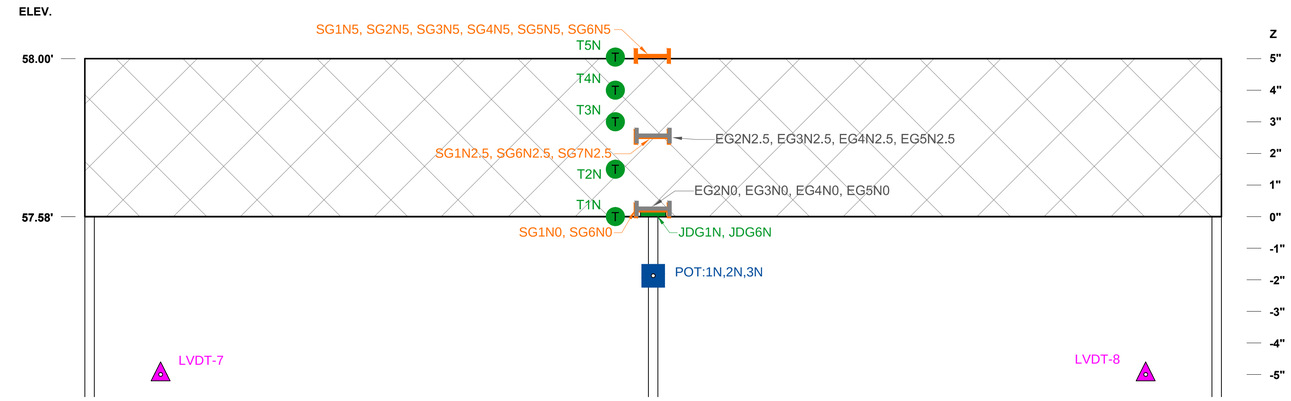
PROJECT NO: | SIZE: ANSI D | SCALE: AS NOTED | SHEET 3 OF 6

CAD FILE: REFL.CRACK.PH4-INSTR.DWG



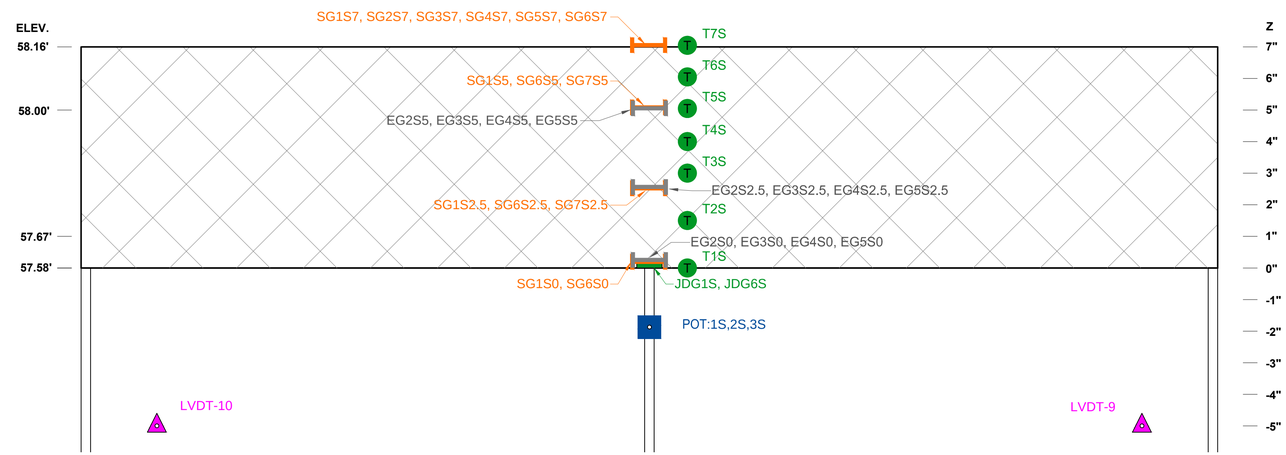
PLAN VIEW

SCALE: 1"=5'



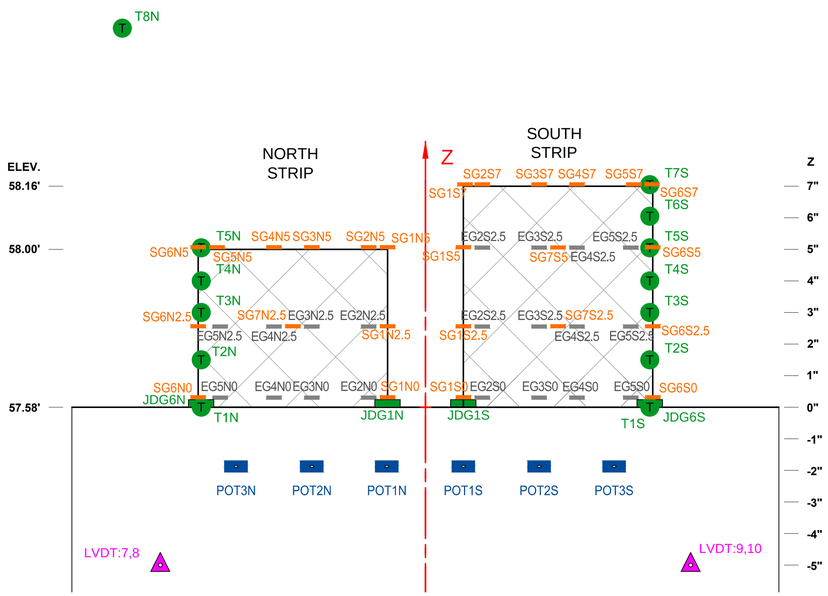
SIDE VIEW A-A (NORTH STRIP)

HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=0.2'



SIDE VIEW B-B (SOUTH STRIP)

HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=0.2'



SIDE VIEW C-C

HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=0.2'

LEGEND:

- P-401 PLANT MIX BITUMINOUS PAVEMENT
- P-401 PLANT MIX BITUMINOUS PAVEMENT (STRAIN RELIEVING INTER LAYER)

INSTRUMENT KEY		
	EG	EMBEDDED DYNATEST STRAIN GAUGE
	FG	FIBER OPTIC STRAIN SENSOR
	JDG	JOINT DISPLACEMENT GAUGE
	POT	POTENTIOMETER
	LVDT	LINEAR VARIABLE DISPLACEMENT TRANSDUCER
	SG	SURFACE STRAIN GAUGE
	T	THERMOCOUPLE

NO.	REVISIONS	DATE	BY	CHK	APR

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FOR

NATIONAL AIRPORT PAVEMENT TEST FACILITY

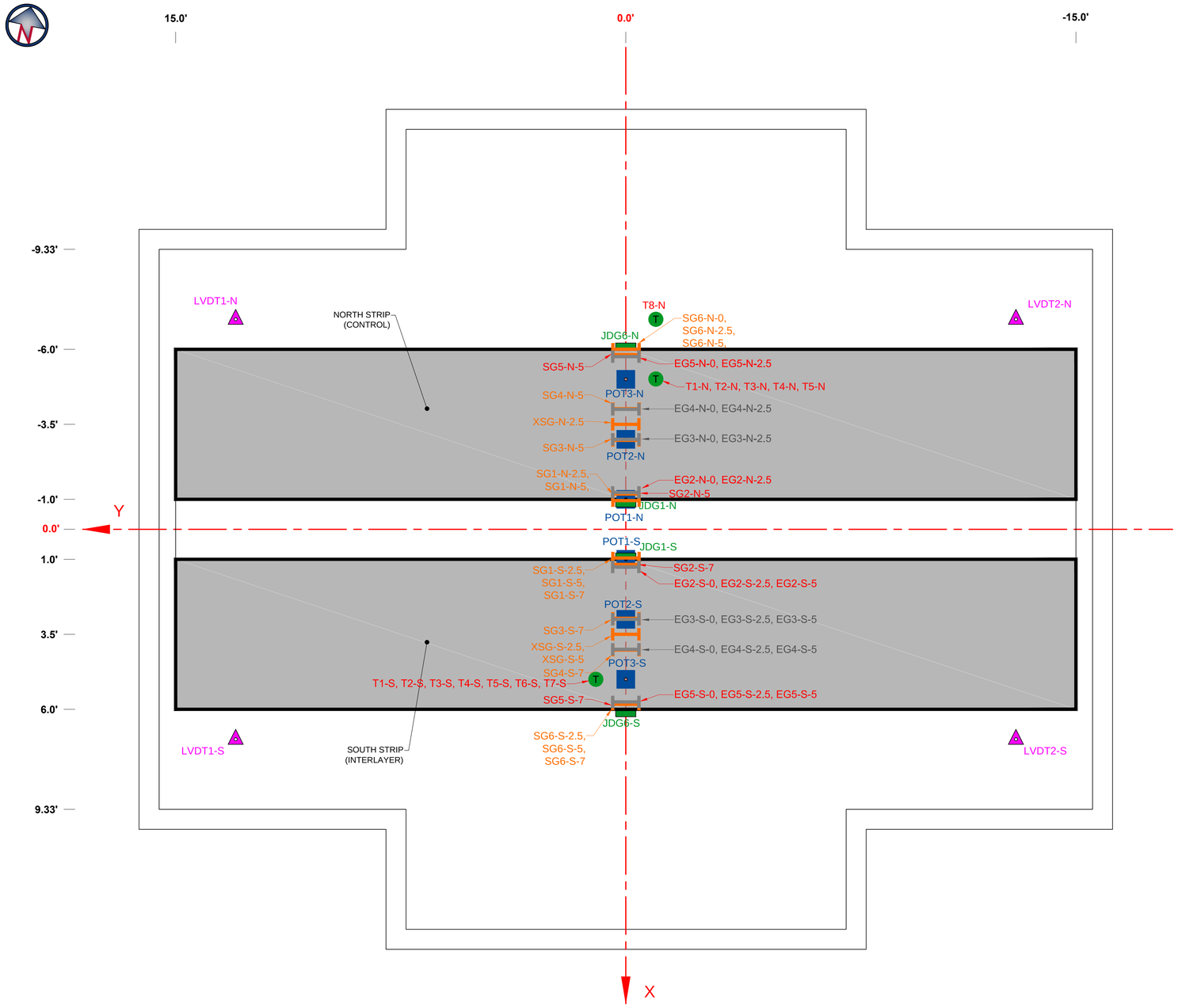
	NAME	DATE
DRAWN	M.M.	02/10/2015
CHECKED	H.YIN	
FAA APPROVAL DATE:		

NAPTF REFLECTIVE CRACKING

PHASE X INSTRUMENTATION PLAN SIDE VIEWS

PROJECT NO: | SIZE: ANSI D | SCALE: AS NOTED | SHEET 4 OF 6

CAD FILE: REFL.CRACK.PH4-INSTR.DWG



PLAN VIEW

SCALE: 1"=2'

AS-BUILT INSTRUMENTATION

SENSOR	X (FT)	Y (FT)	Z (INCH)	NORTH	SOUTH	SENSOR LOCATION DESCRIPTION	SENSOR INSTALLATION PHASE
SG1-S-0	-	-	-		-	-	-
SG1-S-2.5	1.00	0	2.50		X	Midsection inner edge	POST-CONSTRUCTION
SG1-S-5	1.00	0	5.00		X	Midsection inner edge	POST-CONSTRUCTION
SG1-S-7	1.02	0	7.00		X	Top inner edge	POST-CONSTRUCTION
SG2-S-7	1.17	0	7.00		X	On surface, 2 inch from inner edge	POST-CONSTRUCTION
SG3-S-7	3.00	0	7.00		X	On surface, 2 feet from inner edge.	POST-CONSTRUCTION
SG4-S-7	4.00	0	7.00		X	On surface, 2 feet from outer edge.	POST-CONSTRUCTION
SG5-S-7	5.83	0	7.00		X	On surface, 2 inch from outer edge.	POST-CONSTRUCTION
SG6-S-7	5.98	0	7.00		X	Top outer edge.	POST-CONSTRUCTION
SG6-S-5	6.00	0	5.00		X	Midsection outer edge	POST-CONSTRUCTION
SG6-S-2.5	6.00	0	2.50		X	Midsection outer edge	POST-CONSTRUCTION
SG6-S-0	-	-	-		-	-	-
SG1-N-0	-	-	-	-		-	-
SG1-N-2.5	-1.00	0	2.50	X		Middle inner edge.	POST-CONSTRUCTION
SG1-N-5	-0.98	0	5.00	X		Top inner edge.	POST-CONSTRUCTION
SG2-N-5	-1.17	0	5.00	X		On surface, 2 inch from inner edge	POST-CONSTRUCTION
SG3-N-5	-3.00	0	5.00	X		On surface, 2 feet from inner edge.	POST-CONSTRUCTION
SG4-N-5	-4.00	0	5.00	X		On surface, 2 feet from outer edge.	POST-CONSTRUCTION
SG5-N-5	-5.83	0	5.00	X		On surface, 2 inch from outer edge.	POST-CONSTRUCTION
SG6-N-5	-5.98	0	5.00	X		Top outer edge.	POST-CONSTRUCTION
SG6-N-2.5	-6.00	0	2.50	X		Middle outer edge.	POST-CONSTRUCTION
SG6-N-0	-6.00	0	0.25	X		Lower outer edge	POST-CONSTRUCTION
EG2-S-0	1.17	0	0.00		X	Underneath 1st layer	PRE-CONSTRUCTION
EG2-S-2.5	1.17	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG2-S-5	1.17	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG3-S-0	3.00	0	0.00		X	Underneath 1st layer.	PRE-CONSTRUCTION
EG3-S-2.5	3.00	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG3-S-5	3.00	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG4-S-0	4.00	0	0.00		X	Underneath 1st layer.	PRE-CONSTRUCTION
EG4-S-2.5	4.00	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG4-S-5	4.00	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG5-S-0	5.83	0	0.00		X	Underneath 1st layer.	PRE-CONSTRUCTION
EG5-S-2.5	5.83	0	2.50		X	Between 1st & 2nd layer.	DURING CONSTRUCTION
EG5-S-5	5.83	0	5.00		X	Between 2nd &3rd layer	DURING CONSTRUCTION
EG2-N-0	-1.17	0	0.00	X		Underneath 1st layer	PRE-CONSTRUCTION
EG2-N-2.5	-1.17	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
EG3-N-0	-3.00	0	0.00	X		Underneath 1st layer.	PRE-CONSTRUCTION
EG3-N-2.5	-3.00	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
EG4-N-0	-4.00	0	0.00	X		Underneath 1st layer.	PRE-CONSTRUCTION
EG4-N-2.5	-4.00	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
EG5-N-0	-5.83	0	0.00	X		Underneath 1st layer.	PRE-CONSTRUCTION
EG5-N-2.5	-5.83	0	2.50	X		Between 1st & 2nd layer.	DURING CONSTRUCTION
T7-S	5.00	1	7.00		X	Surface, East side	POST-CONSTRUCTION
T6-S	5.00	1	6.00		X	Upper section, East side	POST-CONSTRUCTION
T5-S	5.00	1	5.00		X	Midsection, East side	POST-CONSTRUCTION
T4-S	5.00	1	4.00		X	Midsection, East side	POST-CONSTRUCTION
T3-S	5.00	1	3.00		X	Midsection, East side	POST-CONSTRUCTION
T2-S	5.00	1	1.50		X	Lower section, East side	POST-CONSTRUCTION
T1-S	5.00	1	0.00		X	Bottom, East side	PRE-CONSTRUCTION
T5-N	-5.00	-1	5.00	X		Surface, West side	POST-CONSTRUCTION
T4-N	-5.00	-1	4.00	X		Upper section, West side	POST-CONSTRUCTION
T3-N	-5.00	-1	3.00	X		Middle section, West side	POST-CONSTRUCTION
T2-N	-5.00	-1	1.50	X		Lower section, West side	POST-CONSTRUCTION
T1-N	-5.00	-1	0.00	X		Bottom, West side	PRE-CONSTRUCTION
T8-N	-7.00	-1	12.00	X		Ambient temperature	PRE-CONSTRUCTION
JDG-1-S	0.83	0	0		X	Inner edge	POST-CONSTRUCTION
JDG-6-S	6.17	0	0		X	Outer edge	POST-CONSTRUCTION
JDG-1-N	-0.83	0	0	X		Inner edge	POST-CONSTRUCTION
JDG-6-N	-6.17	0	0	X		Outer edge	POST-CONSTRUCTION
POT1-S	1.00	0	-1.88		X	Below joint	PRE-CONSTRUCTION
POT2-S	3.00	0	-1.88		X	Below joint	PRE-CONSTRUCTION
POT3-S	5.00	0	-1.88		X	Below joint	PRE-CONSTRUCTION
POT1-N	-1.00	0	-1.88	X		Below joint	PRE-CONSTRUCTION
POT2-N	-3.00	0	-1.88	X		Below joint	PRE-CONSTRUCTION
POT3-N	-5.00	0	-1.88	X		Below joint	PRE-CONSTRUCTION
LVDT1-N	-7.00	13	-5.00	X		On North/West corner	PRE-CONSTRUCTION
LVDT2-N	-7.00	-13	-5.00	X		On North/East corner	PRE-CONSTRUCTION
LVDT1-S	7.00	13	-5.00		X	On South/West corner	PRE-CONSTRUCTION
LVDT2-S	7.00	-13	-5.00		X	On South/East corner	PRE-CONSTRUCTION
XSG-S-2.5	3.50	0	2.50		X	Center of slab width between layer 1 and 2	DURING CONSTRUCTION
XSG-S-5	3.50	0	5.00		X	Center of slab width between layer 2 and 3	DURING CONSTRUCTION
XSG-N-2.5	-3.50	0	2.50	X		Center of slab width between layer 1 and 2	DURING CONSTRUCTION

NOTE:

1. Z - VERTICAL DISTANCE IN INCHES MEASURED FROM BOTTOM OF ASPHALT LAYER IN UPWARD DIRECTION.
2. RED FONT INDICATES AS-BUILT VALUES DIFFERENT FROM PROPOSED.

INSTRUMENT KEY

	EG	EMBEDDED DYNATEST STRAIN GAGE		LVDT	LINEAR VARIABLE DISPLACEMENT TRANSDUCER
	FG	FIBER OPTIC STRAIN SENSOR		SG	SURFACE STRAIN GAGE
	JDG	JOINT DISPLACEMENT GAGE		XSG	TML ASPHALT STRAIN GAGE
	POT	POTENTIOMETER		T	THERMOCOUPLE

NO.	REVISIONS	DATE	BY	CHK	APR

SRA INTERNATIONAL
1201 NEW ROAD, SUITE 242
LINWOOD, NEW JERSEY 08221
PHONE: (609) 601-6800

FOR

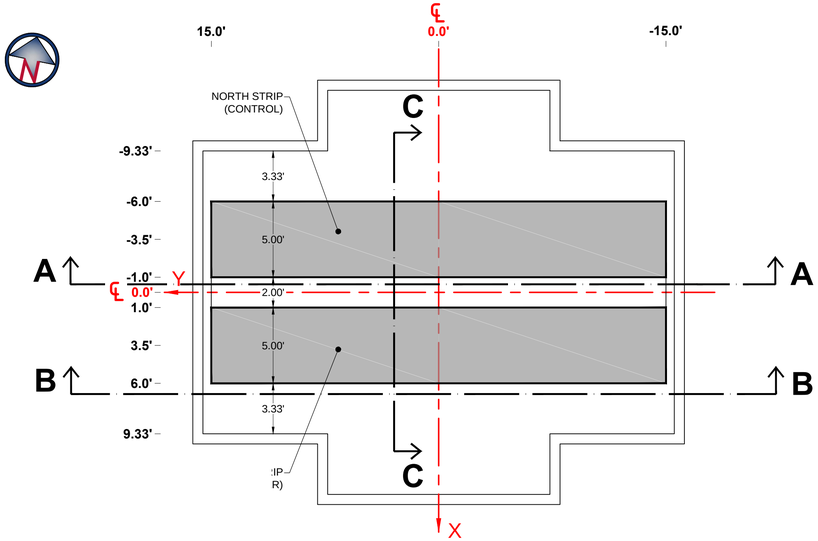
NATIONAL AIRPORT PAVEMENT TEST FACILITY

	NAME	DATE
DRAWN	M.M.	02/25/2015
CHECKED		
FAA APPROVAL DATE:		

NAPTF REFLECTIVE CRACKING
PHASE 4 INSTRUMENTATION AS-BUILT PLAN

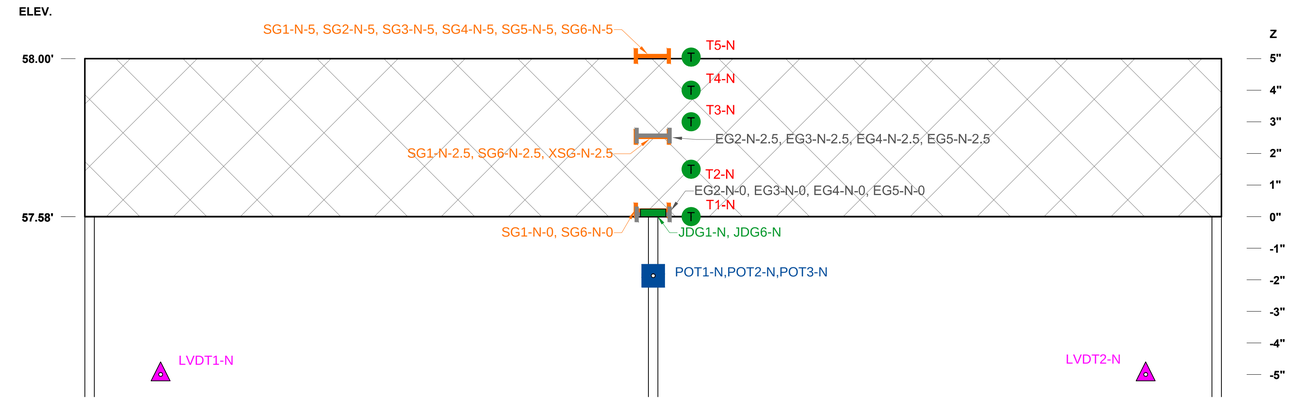
PROJECT NO: | SIZE: ANSI D | SCALE: AS NOTED | SHEET 5 OF 6

CAD FILE: REFL.CRACK.PH4-AS-BUILT.DWG



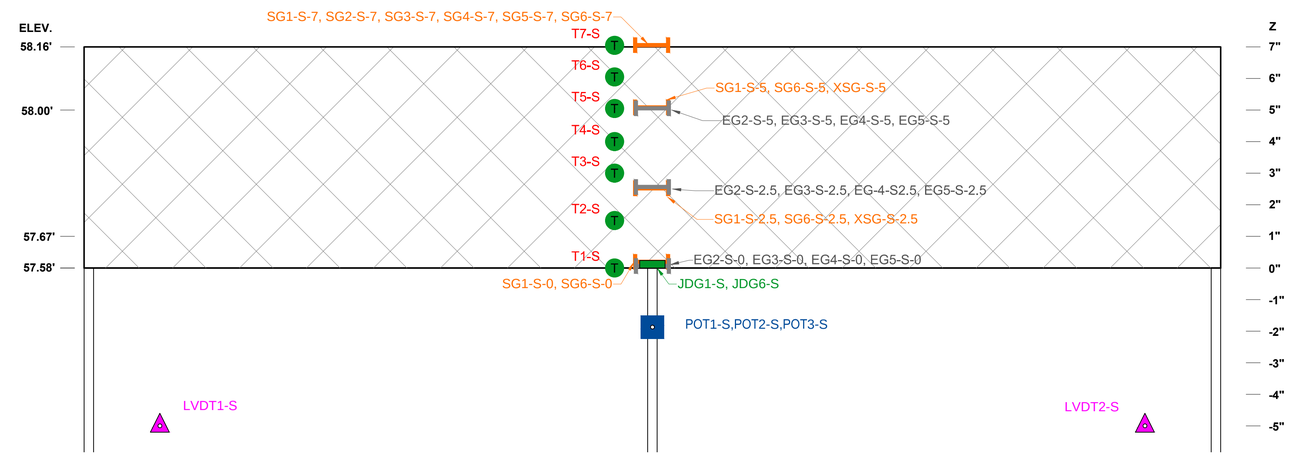
PLAN VIEW

SCALE: 1"=5'



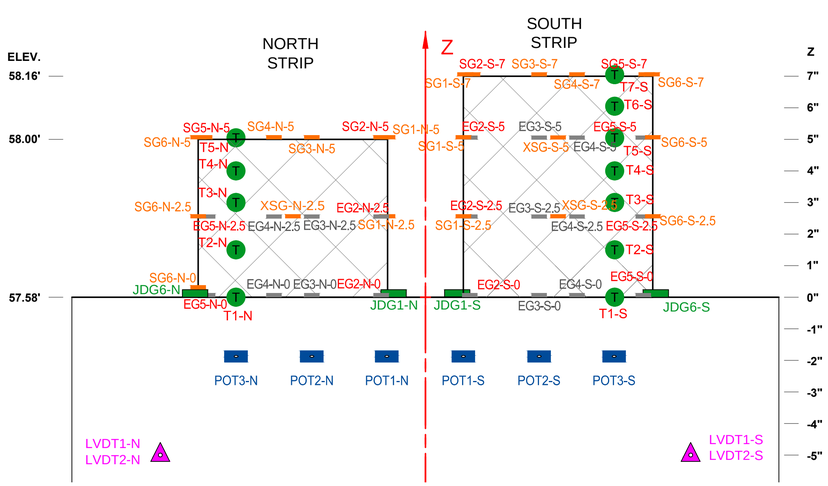
SIDE VIEW A-A (NORTH STRIP)

HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=0.2'



SIDE VIEW B-B (SOUTH STRIP)

HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=0.2'



SIDE VIEW C-C

HORIZONTAL SCALE: 1"=2'
VERTICAL SCALE: 1"=0.2'

LEGEND:

- P-401 PLANT MIX BITUMINOUS PAVEMENT
- P-401 PLANT MIX BITUMINOUS PAVEMENT (STRAIN RELIEVING INTER LAYER)

INSTRUMENT KEY		
	EG	EMBEDDED DYNATEST STRAIN GAGE
	FG	FIBER OPTIC STRAIN SENSOR
	JDG	JOINT DISPLACEMENT GAGE
	POT	POTENTIOMETER
	LVDT	LINEAR VARIABLE DISPLACEMENT TRANSDUCER
	SG	SURFACE STRAIN GAGE
	XSG	TML ASPHALT STRAIN GAGE
	T	THERMOCOUPLE

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NAPTF REFLECTIVE CRACKING

PHASE 4 INSTRUMENTATION AS-BUILT PLAN SIDE VIEWS

PROJECT NO: | SIZE: ANSI D | SCALE: AS NOTED | SHEET 6 OF 6

CAD FILE: REFL.CRACK.PH4-AS-BUILT.DWG