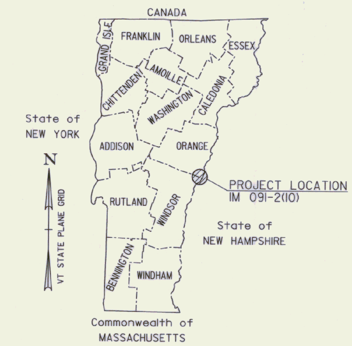
# STATE OF VERMONT
# AGENCY OF TRANSPORTATION

## INDEX OF SHEETS



# PROPOSED IMPROVEMENT
# TOWNS OF HARTFORD, NORWICH, THETFORD & FAIRLEE
# COUNTIES OF WINDSOR & ORANGE
# INTERSTATE ROUTE 91




## STANDARDS

| | | |
|---|---|---|
| D-15M | PRECAST REINF CONC CB W/ CI GRATE PRECAST REINF MH W/ CI COVER CI GRATE W/ FRAME, TYPES D & E | 06/13/97 |
| D-16M | PRECAST CURB DI W/GRATE, CI GRATE, TYPES B & C | 06/13/97 |
| E-10M | TRAFFIC SIGNS, MINOR MAINTENANCE OPERATION APPROACH SIGNS | 06/13/97 |
| E-100M | CONSTRUCTION APPROACH SIGNS | 06/13/97 |
| E-101M | CONSTRUCTION SIGN DETAILS | 06/13/97 |
| E-102M | CONSTRUCTION SIGN DETAILS | 06/13/97 |
| E-102AM | CONSTRUCTION SIGN DETAILS | 06/13/97 |
| E-103M | MAINLINE TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED | 06/13/97 |
| E-105M | TRAFFIC CONTROL FOR CONSTRUCTION VEHICLE U-TURNS ON DIVIDED HIGHWAY | 06/13/97 |
| E-106M | TRAFFIC CONTROL - MISCELLANEOUS DETAILS | 06/13/97 |
| E-107M | DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS | 06/13/97 |
| E-107AM | BREAKAWAY BARRICADE DETAILS | 06/13/97 |
| E-108M | CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS | 06/13/97 |
| E-110M | MAJOR MAINTENANCE OPERATION LANE CLOSURE | 06/13/97 |
| E-120M | STANDARD SIGN PLACEMENT - EXPRESSWAY & FREEWAY | 06/13/97 |
| E-121M | STANDARD SIGN PLACEMENT CONVENTIONAL ROAD | 06/13/97 |
| E-150M | WARNING SIGN DETAILS | 06/13/97 |
| E-160M | FLANGED CHANNEL STEEL SIGN POST DETAIL | 06/13/97 |
| E-164M | SQUARE STEEL SIGN POST DETAIL | 06/13/97 |
| E-172M | VEHICLE DETECTOR LOOP DETAILS | 06/13/97 |
| E-191M | PAVEMENT MARKING DETAILS | 06/13/97 |
| E-192M | PAVEMENT MARKING DETAILS | 06/13/97 |
| E-193M | PAVEMENT MARKING DETAILS | 06/13/97 |

BEGINNING AT STATION 118+431.62 (MM 73.590) ON THE NORTHBOUND LANE IN THE TOWN OF HARTFORD AND EXTENDING NORTHERLY ALONG INTERSTATE 91, A DISTANCE OF 30 400.51 METERS (18.890 MILES) TO STATION 148+832.13 (MM 92.480) IN THE TOWN OF FAIRLEE.

### PROJECT DATA

| FROM | TO |
|---|---|
| STA 118+~~431.62~~ 537.00 (MM 73.590) | STA 148+832.13 (MM 92.480) |

LENGTH OF ROADWAY 30 400.51 METERS (18.890 MILES)
LENGTH OF PROJECT 30 400.51 METERS (18.890 MILES)

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES COLD PLANING AND RESURFACING OF THE NORTHBOUND LANE AND ALL NORTHBOUND INTERCHANGE RAMPS WITH A LEVELING COURSE, WEARING COURSE, AND NEW PAVEMENT MARKINGS.

| BITUMINOUS CONCRETE PAVEMENT SUPERPAVE MIXTURE DESIGN CRITERIA | |
|---|---|
| DESIGN LANE/DESIGN LIFE ESAL | 3,420,000 |
| DESIGN NUMBER OF GYRATIONS | 96 |
| PERFORMANCE GRADED ASPHALT BINDER | PG 58-34 |

### TRAFFIC DATA

BETWEEN EXITS 12 & 13

| | | | |
|---|---|---|---|
| 1999 | ADT | = | 9190 |
| 1999 | DHV | = | 1285 |
| 2009 | ADT | = | 11400 |
| 2009 | DHV | = | 1520 |
| 1999-2009 | ESALS | = | 2,569,000 |

BETWEEN EXITS 13 & 14

| | | | |
|---|---|---|---|
| 1999 | ADT | = | 6130 |
| 1999 | DHV | = | 725 |
| 2009 | ADT | = | 7810 |
| 2009 | DHV | = | 920 |
| 1999-2009 | ESALS | = | 3,420,000 |

BETWEEN EXITS 14 & 15

| | | | |
|---|---|---|---|
| 1999 | ADT | = | 4440 |
| 1999 | DHV | = | 555 |
| 2009 | ADT | = | 5660 |
| 2009 | DHV | = | 710 |
| 1999-2009 | ESALS | = | 3,401,000 |

BETWEEN EXITS 15 & 16

| | | | |
|---|---|---|---|
| 1999 | ADT | = | 3260 |
| 1999 | DHV | = | 410 |
| 2009 | ADT | = | 4160 |
| 2009 | DHV | = | 520 |
| 1999-2009 | ESALS | = | 2,454,000 |

RECORD PLANS

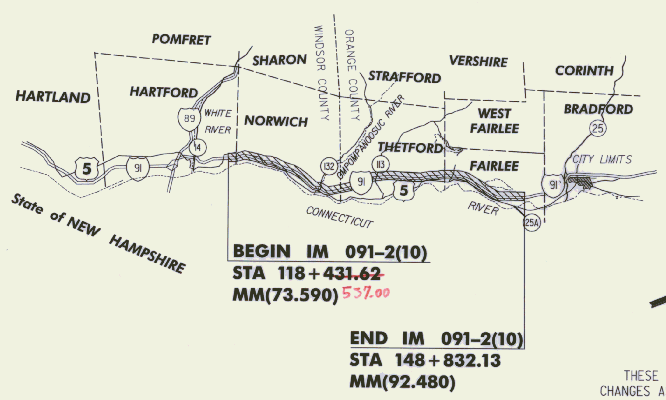
CONTRACTOR: PIKE INDUSTRIES, BELMONT, N.H.
RESIDENT ENGINEER: STODDARD, WILLIS
CONSTRUCTION BEGAN: April 20, 1999
CONSTRUCTION COMPLETED: NOV 2, 1999
RECORD PLANS BY: CADD

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

BY [signature]
RESIDENT ENGINEER
DATE 11-29-00

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

VAOT Metric




RIGHT-OF-WAY LIMITS, IF APPLICABLE, ARE PROVIDED SOLELY FOR THE CONVENIENCE OF THE STATE AND ITS CONTRACTOR DURING THE COURSE OF THIS PAVING PROJECT. ANY REFERENCES TO OFFSETS ON THESE PLANS ARE APPROXIMATE AND SHOULD NOT BE RELIED UPON FOR ANY OTHER PURPOSES.

### CONVENTIONAL SIGNS

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

UNLESS OTHERWISE INDICATED, THE DRAWINGS AND DETAILS OF THESE PLANS ARE NOT TO SCALE.

DATUM
VERTICAL N/A
HORIZONTAL N/A

HORIZONTAL CONTROL (STATIONS) WAS SET BY HOLDING THE ROUTE LOG STATIONING AT PROJECT CONTROL POINTS.


METRIC PLANS PREPARED BY:
CLD CONSULTING ENGINEERS
540 COMMERCIAL ST.
MANCHESTER, NH 03101
PH: (603) 668-8223
FAX: (603) 668-8802
E-MAIL: CLD@CLDENGINEERS.COM


STATE OF VERMONT REGISTERED PROFESSIONAL ENGINEER [seal and signature]

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1995, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON AUGUST 21, 1995 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

APPROVED [signature] DATE 9/8/98
DIRECTOR OF PROJECT DEVELOPMENT

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED Mark D. Muller for DATE 11-06-98
DIVISION ADMINISTRATOR

PROJECT HARTFORD-FAIRLEE IM 091-2(10)

SHEET 1 OF 12 SHEETS

# NOTES

1. THE PAVEMENT WEARING COURSE SHALL BE TYPE IIIS, ALL LIQUID ASPHALT USED IN SUPERPAVE BITUMINOUS CONCRETE PAVEMENT SHALL BE PG 58-34.
2. EMULSIFIED ASPHALT SHALL BE APPLIED ON ALL EXISTING PAVEMENT SURFACES, ON COLD PLANED SURFACES AND BETWEEN ALL COURSES OF PAVEMENT AT THE RATE OF 0.07 L/m2 OR AS DIRECTED BY THE RESIDENT ENGINEER.
3. SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TOLERANCE = 5 mm +/- (TOTAL THICKNESS).
4. COLD PLANING SHALL BE COMPLETED ACCORDING TO TYPICAL OR AS DENOTED OTHERWISE ON THE PLANS.
5. AGGREGATE SHOULDERS OR COLD PLANE GRINDINGS SHALL BE USED TO BACK UP THE EDGE OF PAVEMENT. A QUANTITY OF 52 TONS PER KILOMETER HAS BEEN ESTIMATED FOR THIS PURPOSE.
6. THIS PROJECT HAS BEEN DESIGNED TO TAKE INTO ACCOUNT THE DISTRESSED CONDITION OF THE PAVEMENT. FROM STATION 122+145.87 TO STATION 148+823.13, CORES REVEAL THAT INTERIOR LAYERS OF PAVEMENT (AT A DEPTH OF 50 mm TO 100 mm) TO BE DISTRESSED/UNSTABLE. THESE INTERIOR LAYERS OF PAVEMENT MAY NOT BE CAPABLE OF PROVIDING A STABLE SURFACE AFTER COLD PLANING. THE CONTRACTOR SHALL, AT ALL TIMES, PROVIDE A STABLE RIDING SURFACE FOR THE TRAVELING PUBLIC. THE CONTRACTOR SHALL PLAN THE PROJECT BY TAKING THIS INFORMATION INTO ACCOUNT AND PHASE/PERFORM CONSTRUCTION ACTIVITIES ACCORDINGLY SUCH THAT A SOUND RIDING SURFACE IS EXPOSED AT ALL TIMES.

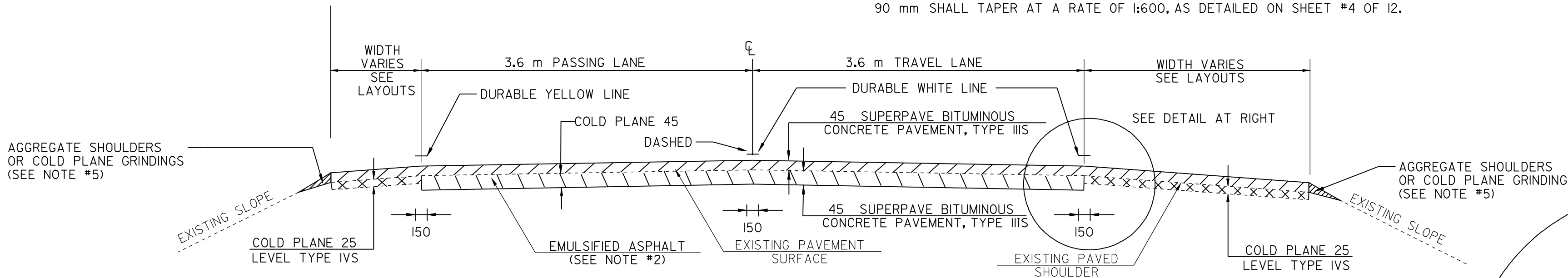
   THE CORES FROM THE ROADWAY CAN BE INSPECTED BY APPOINTMENT. PLEASE CALL DUANE STEVENS, AT (802) 828-3527 TO SCHEDULE AN INSPECTION. ALL BIDDERS ARE ENCOURAGED TO INSPECT THE CORES.
7. THERE ARE TWO (2) WEIGH-IN-MOTION (WIM) SITES ON THIS PROJECT AT STATION 146+540 +/-. THESE WIM STATIONS SHALL BE REMOVED PRIOR TO COLD PLANING. FOR DETAILS, SEE THE SPECIAL PROVISIONS, SECTION 678.13.
8. PRIOR TO COLD PLANING, VEHICLE DETECTOR LOOPS SHALL BE DISCONNECTED IN THE CONTROLLER CABINET AND CUT AT THE CURB OR SHOULDER.

   ONCE THE LOOP IS DISCONNECTED, THE SIGNAL PHASE THAT IT WAS CALLING SHALL BE PUT ON MAXIMUM RECALL OR THE SIGNAL PUT ON FLASH AND TRAFFIC CONTROLLED BY UTO.

   ALL AREAS TO RECEIVE NEW VEHICLE DETECTOR LOOPS SHALL BE LEVELED WITH SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TYPE IV AS DIRECTED BY THE RESIDENT ENGINEER PRIOR TO THE INSTALLATION OF THE NEW DETECTOR LOOPS.

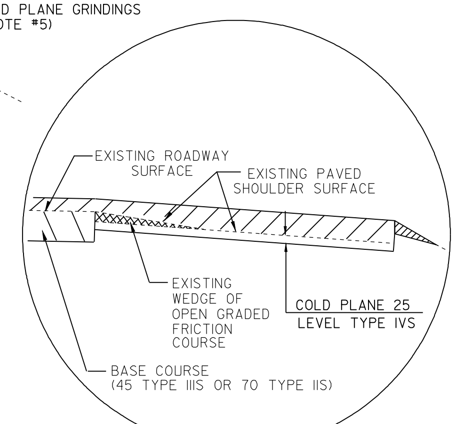
   AFTER THE NEW LOOP IS INSTALLED THE INDUCTANCE, RESISTANCE AND LEAKAGE TO THE GROUND SHALL BE TESTED USING PROPERLY CALIBRATED EQUIPMENT. THE TEST RESULTS SHALL BE COMPARED WITH THE CALCULATED VALUES AND BE RECORDED ON THE PLANS. ALL LOAD TESTING SHALL BE PERFORMED AS PER STD E-172M.

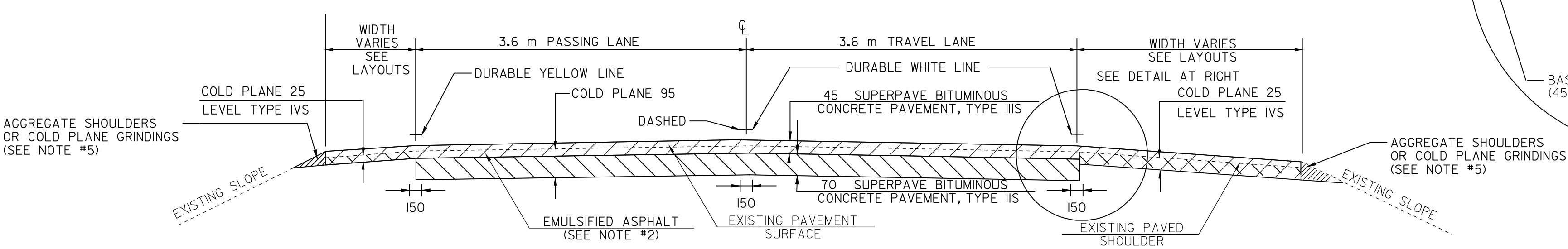
   AFTER ACCEPTANCE OF THE LOOP INSTALLATION BY THE RESIDENT ENGINEER, RETURN THE SIGNAL TO NORMAL OPERATION. ALL WORK REQUIRED SHALL BE SUBSIDIARY TO ITEM 678.22, VEHICLE DETECTOR LOOP.
9. DUE TO THE LOW VERTICAL CLEARANCE AT BRIDGE 52-N (STA 133+889; MM 83.195), WHERE I-91 PASSES UNDER TH-58, THE FINISH GRADE ELEVATION OF THE TRAVEL LANE, PASSING LANE AND SHOULDERS SHALL NOT BE RAISED ABOVE EXISTING GRADE. BEGINNING 100 METERS SOUTH OF THIS BRIDGE (STA 133+789) EXTENDING NORTHERLY 200 METERS (TO STA 133+989) THE COLD PLANE DEPTH SHALL BE REDUCED TO 90 mm AND BE REPLACED WITH TWO 45 mm LIFTS OF SUPERPAVE BITUMINOUS CONCRETE PAVEMENT, TYPE IIIS. THE COLD PLANE DEPTH TRANSITION FROM THE 95 mm TO 90 mm SHALL TAPER AT A RATE OF 1:600, AS DETAILED ON SHEET #4 OF 12.




**MAINLINE TYPICAL SECTION**

STA 118+432 TO STA 122+146




**MAINLINE TYPICAL SECTION**

STA 122+146 TO STA 148+832 (SEE NOTE # 9)

REVISED 11/02/98 LFW
REVISED 12/14/98 LFW
REVISED 12/18/98 LFW

NOTE: ALL DIMENSIONS IN MILLIMETERS EXCEPT AS INDICATED

DATUM
VERTICAL ______
HORIZONTAL ______

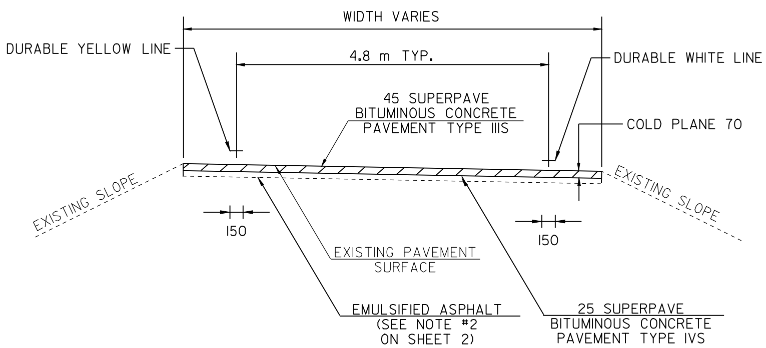
NOT TO SCALE

ARCHIVED ON CADD

**PROJECT TYPICAL SHEET**

| | |
|---|---|
| PROJECT: HARTFORD - FAIRLEE | PROJECT NO.: IM 091-2(10) |
| DESIGN FILE NAME: /pave/97q062/pq062.dgn | |
| IPARM FILE NAME: pq062tyl.l | PLOT DATE: 21-FEB-2001 |
| SURVEYED BY: CLD Inc | SURVEY DATE: 11/97 |
| SQUAD LEADER: JAW | DRAWN BY: TTS |
| | SHEET: 2 OF 12 |

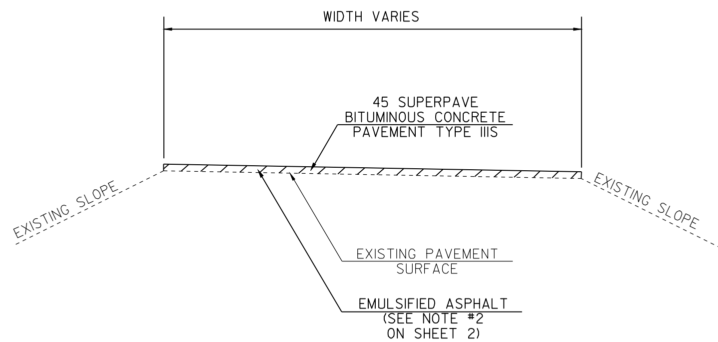
Metric




**RAMP PAVEMENT TYPICAL**

LOCATION

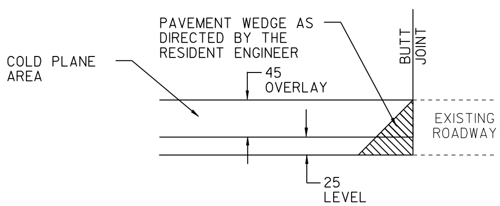
EXIT 13 ON & OFF RAMPS - SEE SHEET # 8 FOR DETAILS
EXIT 14 ON & OFF RAMPS - SEE SHEET # 9 FOR DETAILS
EXIT 15 ON & OFF RAMPS - SEE SHEET # 10 FOR DETAILS




**U-TURN TYPICAL**

LOCATION

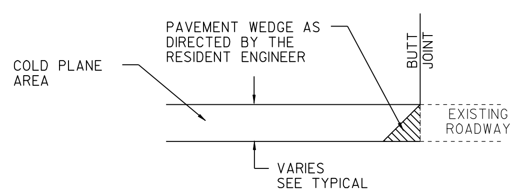
STA 119+884
STA 121+073
STA 126+011
STA 129+215
STA 132+601
STA 134+923
STA 136+228
STA 140+323
STA 143+531
STA 146+607
STA 148+052




**RAMP APPROACH AREA DETAIL**

LOCATION

EXIT 13 - END OF ON & OFF RAMPS (@ PAVEMENT MATCH)
EXIT 14 - END OF ON & OFF RAMPS (@ PAVEMENT MATCH)
EXIT 15 - END OF ON & OFF RAMPS (@ PAVEMENT MATCH)




**MAINLINE APPROACH AREA DETAIL**

LOCATION

STA 118+432 - BEGIN COLD PLANING
STA 148+832 - END COLD PLANING

REV 12/14/98 LFW

NOTE: ALL DIMENSIONS IN MILLIMETERS EXCEPT AS INDICATED

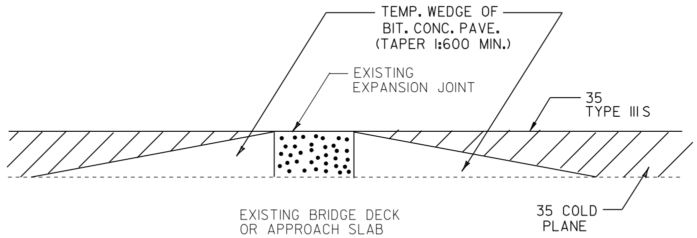
DATUM
VERTICAL
HORIZONTAL

ARCHIVED ON CADD

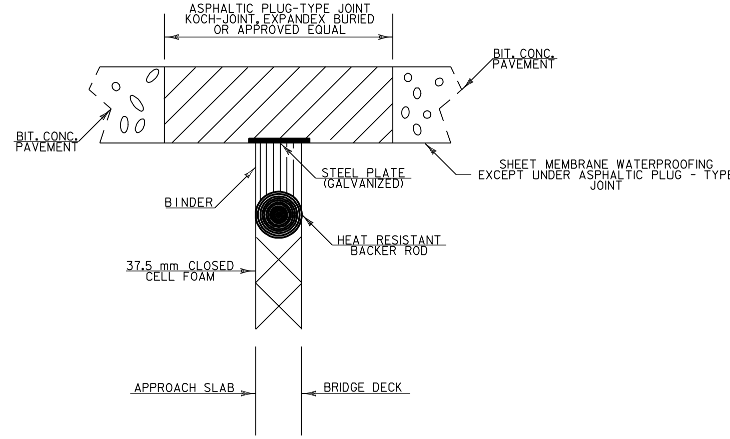
**PROJECT TYPICAL SHEET**

PROJECT: HARTFORD - FAIRLEE
PROJECT NO.: IM 091-2(10)
DESIGN FILE NAME: /pave/97a062/pa062.dgn
IPARM FILE NAME: pa062ty2.l
PLOT DATE: 21-FEB-2001
SURVEYED BY: CLD Inc
SURVEY DATE: 11/97
SQUAD LEADER: JAW
DRAWN BY: TTS
SHEET: 3 OF 12

* REFER TO SPECIAL PROVISIONS FOR BASIS OF PAYMENT



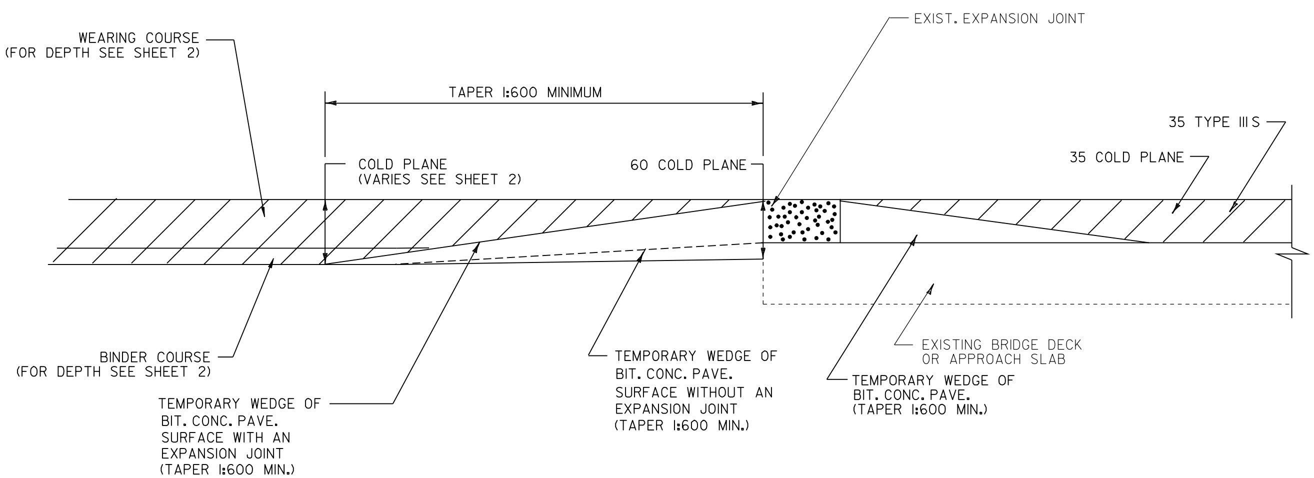

**DETAIL OF EXPANSION JOINT ON BRIDGE**




LOCATION

| | | | |
|---|---|---|---|
| BRIDGE # 48-N | (11.5 M) | @ STA 120+444 | (@ EXPANSION JOINT) |
| BRIDGE # 49-N | (11.4 M) | @ STA 122+079 | (@ EXPANSION JOINT) |
| BRIDGE # 51-N | (12.2 M) | @ STA 129+088 | (@ EXPANSION JOINT) |
| BRIDGE # 55-N | (12.1 M) | @ STA 143+671 | (@ EXPANSION JOINT) |
| BRIDGE # 56-N | (12.2 M) | @ STA 147+342 | (@ EXPANSION JOINT) |

**WIDE BAND PAVEMENT JOINT DETAIL**




**BRIDGE APPROACH DETAIL**

| | | | | |
|---|---|---|---|---|
| BR # 48-N | STA 120+410, | (MM 74.819) | STA 120+477 | (MM 74.861) |
| BR # 49-N | STA 122+058, | (MM 75.843) | STA 122+099 | (MM 74.626) |
| BR # 51-N | STA 129+050, | (MM 80.188) | STA 129+126 | (MM 80.235) |
| BR # 55-N | STA 143+634, | (MM 89.250) | STA 143+708 | (MM 89.296) |
| BR # 56-N | STA 147+327, | (MM 91.545) | STA 147+357 | (MM 91.563) |

REV 11/02/98 LFW

NOTE: ALL DIMENSIONS IN MILLIMETERS EXCEPT AS INDICATED

DATUM
VERTICAL ____
HORIZONTAL ____

NOT TO SCALE

ARCHIVED ON CADD

**PROJECT TYPICAL SHEET**

PROJECT: HARTFORD - FAIRLEE
PROJECT NO.: IM 091-2(10)
DESIGN FILE NAME: /pave/97a062/pa062.dgn
IPARM FILE NAME: pa062ty3.1
PLOT DATE: 21-FEB-2001
SURVEYED BY: CLD Inc
SURVEY DATE: 11/97
SQUAD LEADER: JAW
DRAWN BY: TTS
SHEET: 4 OF 12

# QUANTITY SHEET

Metric

## SUMMARY OF ESTIMATED QUANTITIES

| | | | | | BRIDGE | ROADWAY | GRAND TOTAL | UNIT | ITEMS | ITEM NUMBER | RND |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 210.10 | |
| | | | | | | | | kg | EMULSIFIED ASPHALT | 404.65 | |
| | | | | | | | | HR | | 608.30 | |
| | | | | | | 2000 | 2000 | HR | | 630.10 | |
| | | | | | | 2920 | 2920 | HR | | 630.15 | |
| | | | | | | | | LS | | 631.16 | |
| | | | | | | | | LS | MOBILIZATION | 635.10 | |

## DETAILED SUMMARY OF QUANTITIES

## DETAILED SUMMARY OF QUANTITIES

| | UNIT | ITEMS |
|---|---|---|

PROJECT :

PROJECT NO.:

DESIGN FILE NAME:
IPARM FILE NAME:
SURVEYED BY: CLD
SQUAD LEADER:

PLOT DATE:
SURVEY DATE:
DRAWN BY: TTS
SHEET: OF