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STATE OF VERMONT  
AGENCY OF TRANSPORTATION



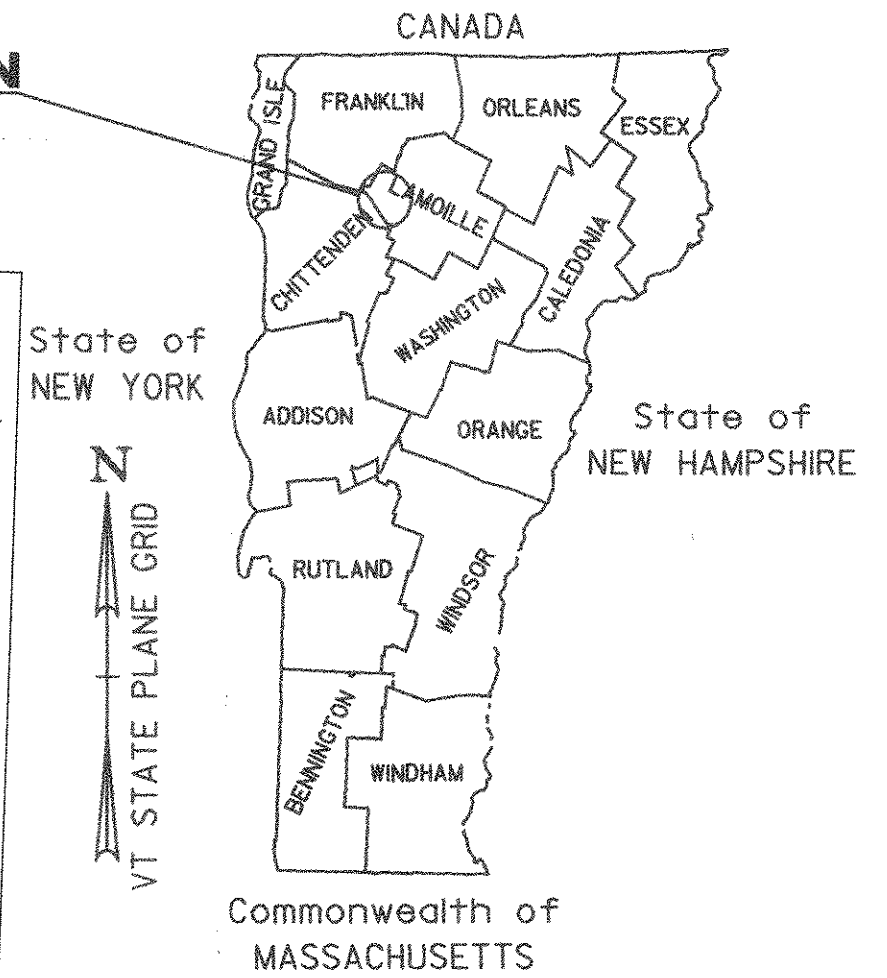
PROPOSED IMPROVEMENT  
TOWNS OF UNDERHILL, WESTFORD  
AND CAMBRIDGE  
COUNTIES OF CHITTENDEN AND LAMOILLE  
VT ROUTE 15

BEGINNING IN THE TOWN OF UNDERHILL ON VT ROUTE 15 AT STA. 7+056.97 (MM 4.385) AND EXTENDING EASTERLY ALONG VT ROUTE 15 FOR A DISTANCE OF 8885.20 M (5.521 MILES) TO STA. 3+444.00 (MM 2.140) IN THE TOWN OF CAMBRIDGE.

PROJECT DATA	LENGTH (M)	LENGTH (MILES)
TOWN OF UNDERHILL, VT ROUTE 15 STA. 7+056.97 TO STA. 7+956.60 MM 4.385 TO MM 4.944	= 899.63	0.559
TOWN OF WESTFORD, VT ROUTE 15 STA. 0+000.00 TO STA. 4+541.57 MM 0.000 TO MM 2.822	= 4541.57	2.822
TOWN OF CAMBRIDGE, VT ROUTE 15 STA. 0+000.00 TO STA. 3+444.00 MM 0.000 TO MM 2.140	= 3444.00	2.140
TOTAL LENGTH OF PROJECT	= 8885.20	5.521
TOTAL LENGTH OF ROADWAY	= 8885.20	5.521

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES COLD PLANING, LEVELING AND RESURFACING OF THE EXISTING HIGHWAY, NEW PAVEMENT MARKINGS, GUARD RAIL, DITCHING AND INCIDENTAL ITEMS.

**PROJECT LOCATION STP 2212(1)S**



**RECORD PLANS**

CONTRACTOR: PIKE INDUSTRIES - BERLIN, VT

RESIDENT ENGINEER: D. WARNER

CONSTRUCTION BEGAN: JUNE 21, 2002

CONSTRUCTION COMPLETE: NOVEMBER 6, 2002

RECORD PLANS BY: D. WARNER

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

BY: *D. Warner* RESIDENT ENGINEER

DATE: 07/23/03

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

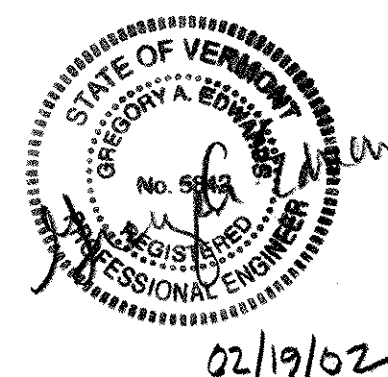
**TRAFFIC DATA**  
VT ROUTE 15

LOCATION	ADT		DHV		ESALS (2002- 2012)
	2002	2012	2002	2012	
BEGINNING OF PROJECT TO VT ROUTE 104	5400	6300	720	820	1,343,000
VT ROUTE 104 TO END OF PROJECT	7500	8800	930	1000	1,740,000

**BITUMINOUS CONCRETE PAVEMENT SUPERPAVE MIXTURE DESIGN CRITERIA**

DESIGN LANE / DESIGN LIFE ESAL	2,108,000
DESIGN NUMBER OF GYRATIONS	75
PERFORMANCE GRADED ASPHALT BINDER	58-34

NOTE:  
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 PURPOSES.  
UNLESS OTHERWISE NOTED, ALL DRAWINGS AND DETAILS ON THESE PLANS ARE DRAWN "NOT TO SCALE".



**CONVENTIONAL SYMBOLS**

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

**UTILITY LEGEND**

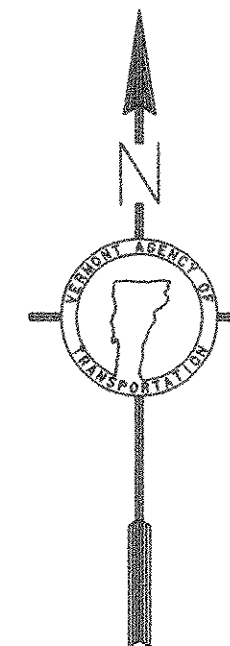
- = EXISTING HYDRANT
- = EXISTING DI
- = EXISTING MANHOLE
- TEL = EXISTING TELEPHONE MANHOLE
- ELEC = EXISTING ELECTRIC MANHOLE
- SMH = EXISTING SEWER MANHOLE
- W S O = EXISTING WATER SHUTOFF
- G S O = EXISTING GAS SHUTOFF
- ♯ = EXISTING MAILBOX

**SIGN LEGEND**

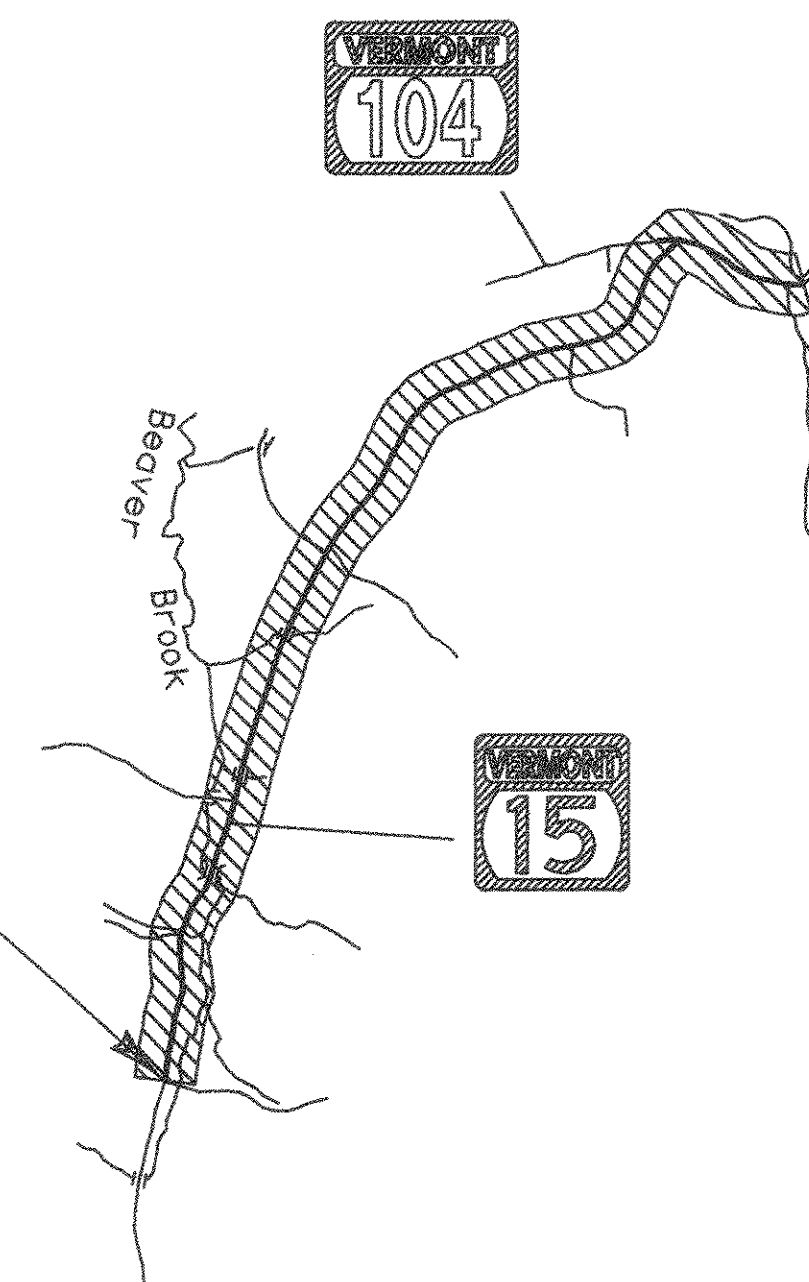
- N = NEW
- R = REMOVE
- R&S = REMOVE & SALVAGE
- S = SALVAGE SIGN
- RET = RETAIN
- B-B = BACK TO BACK

SURVEYED BY : D-H  
SURVEYED DATE : MAY 2000

**DATUM**  
VERTICAL: N/A  
HORIZONTAL: N/A



**BEGIN STP 2212(1)S  
VT ROUTE 15  
UNDERHILL  
STA. 7+056.97 (MM 4.385)**



**END STP 2212(1)S  
VT ROUTE 15  
CAMBRIDGE  
STA. 3+444.00 (MM 2.140)**

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

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATOR

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

DIRECTOR OF PROJECT DEVELOPMENT

APPROVED *D. Warner* DATE 7/23/03

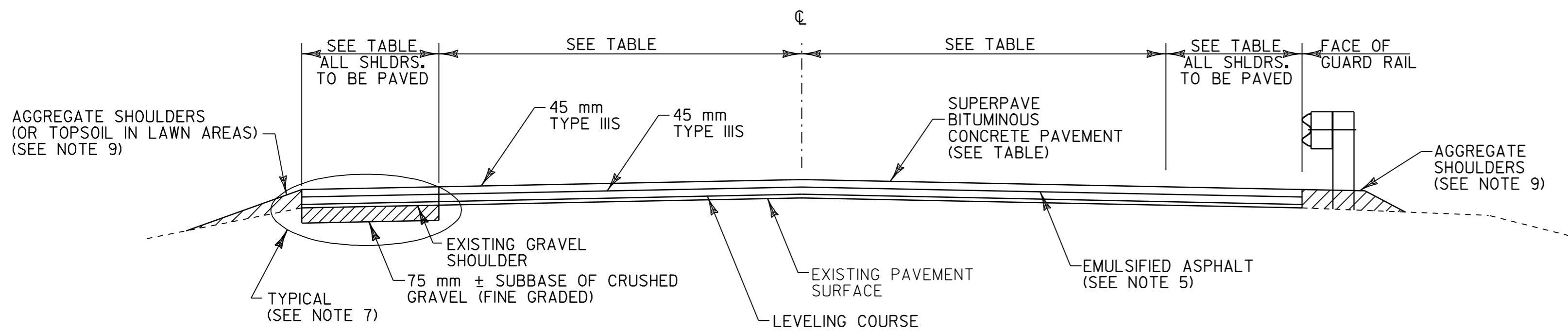
PROJECT MANAGER *D. Warner*

PROJECT NAME : UNDERHILL - CAMBRIDGE  
PROJECT NUMBER : STP 2212(1)S

SHEET 1 OF 36 SHEETS

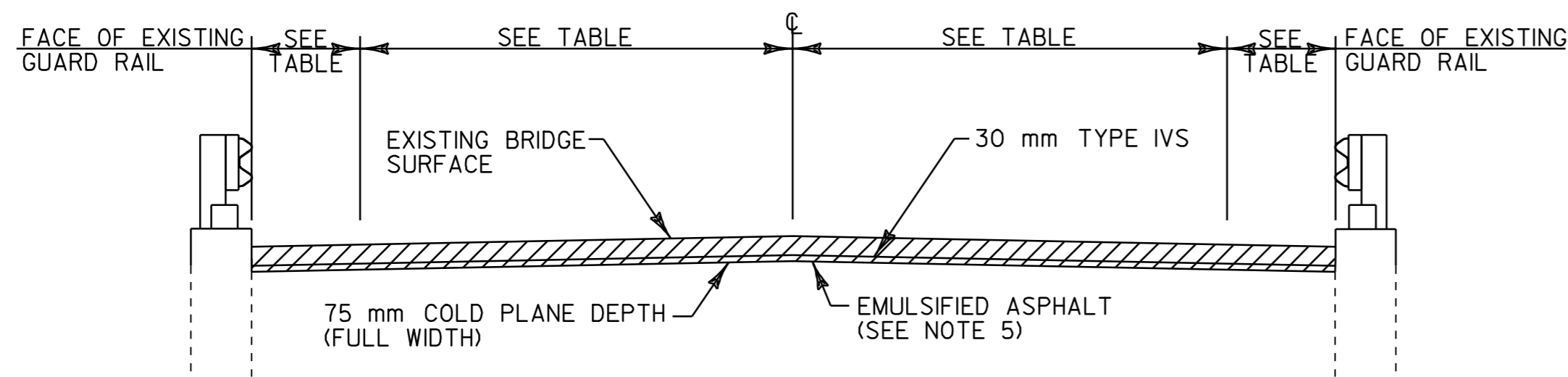
**NOTES**

1. THE SUPERPAVE BITUMINOUS CONCRETE PAVEMENT WEARING COURSE ON THE ROADWAY SHALL BE TYPE III'S AND THE LEVELING COURSE SHALL BE TYPE IV'S, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE TYPE IV'S LEVELING COURSE QUANTITY IS ESTIMATED AT 25 mm. THE 30 mm WEARING COURSE ON BRIDGE NO. 17 SHALL BE TYPE IV'S. ALL ASPHALT CEMENT USED IN THE SUPERPAVE BITUMINOUS CONCRETE PAVEMENT SHALL BE PG 58-34.
2. SUPERPAVE BITUMINOUS CONCRETE PAVEMENT TOLERANCE = ± 5 mm. (TOTAL THICKNESS EXCLUDING LEVELING)
3. GRASS GROWING ADJACENT TO PAVEMENT OR THROUGH CRACKS IN THE PAVEMENT WHICH MAY HAMPER THE PLACEMENT OF NEW BITUMINOUS CONCRETE SHALL BE REMOVED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK WILL NOT BE MADE DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO ITEM 490.30 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT.
4. THE COLD PLANING AND PAVING SHALL MATCH THE EXISTING CONDITIONS AT THE BEGINNING AND END OF THE PROJECT AS WELL AS ON THE TOWN HIGHWAYS BY THE USE OF A VERTICAL BUTT JOINT. SEE DETAIL ON SHEET 3.
5. EMULSIFIED ASPHALT TO BE APPLIED ON EXISTING PAVEMENT, BETWEEN ALL COURSES OF PAVEMENT AND ON COLD PLANED SURFACES, AT THE RATE OF 0.12 L/m<sup>2</sup> OR AS DIRECTED BY THE ENGINEER.
6. THE SURFACE OF THE EXISTING PARK AND RIDE SHALL BE PREPARED PRIOR TO PAVING. THERE IS AN ESTIMATED QUANTITY OF POWER GRADER RENTAL INCLUDED TO COVER THE COST OF THIS WORK.
7. EXISTING SHOULDER MATERIAL DEEMED UNSUITABLE BY THE RESIDENT ENGINEER, SHALL BE EXCAVATED TO A DEPTH OF 75 mm OR AS DIRECTED BY THE ENGINEER.  
  
EXCAVATION WILL BE PAID FOR AS ALL PURPOSE EXCAVATOR OR GRADER RENTAL.  
  
MATERIAL REMOVED SHALL BE REPLACED WITH SUBBASE OF CRUSHED GRAVEL (FINE GRADED) OR COLD PLANE GRINDINGS (402.12 MOD.) AS DIRECTED BY THE RESIDENT ENGINEER.  
  
EXCAVATED MATERIAL SHALL BE SPREAD ON THE ADJACENT SLOPES OR REMOVED FROM PROJECT, AS DIRECTED BY THE ENGINEER.
8. ITEM 203.99 IS APPROPRIATE ONLY IN AREAS OF RETAINED GUARD RAIL.
9. COLD PLANE GRINDINGS SHALL REMAIN THE PROPERTY OF THE STATE OF VERMONT AND SHALL BE USED INSTEAD OF AGGREGATE SHOULDERS TO BACK UP THE NEW PAVEMENT OVERLAY AND TO BACK UP GUARD RAIL IN ALL GUARD RAIL AREAS AS DIRECTED BY THE RESIDENT ENGINEER. THIS WILL BE PAID UNDER ITEM 402.12 (MOD.)
10. AN ESTIMATED QUANTITY OF EARTH BORROW HAS BEEN INCLUDED FOR THE PROVISION OF CONSTRUCTING GUARD RAIL TERMINAL FLARES WHICH SHALL BE CAPPED WITH AN ESTIMATED 75 mm DEPTH OF AGGREGATE SHOULDER MATERIAL AS DIRECTED BY THE RESIDENT ENGINEER. THE QUANTITIES INCLUDED REFLECT 20 CUBIC METERS OF EARTH BORROW AND 5 TONS OF AGGREGATE SHOULDER MATERIAL FOR EACH GUARD RAIL TERMINAL, ALTHOUGH THERE APPEARS TO BE EXCESS MATERIAL AVAILABLE FROM DITCHING WHICH CAN BE USED TO CONSTRUCT THE TERMINAL FLARES.
11. ITEM 616.47, BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS WILL BE PAID ONLY WHERE SPECIFIED IN THE ITEM DETAIL SUMMARY SHEET. ALL OTHER BITUMINOUS CONCRETE PAVEMENT WORK, WHICH COULD INVOLVE SOME HAND-WORK (SUCH AS DRIVES AND AROUND DRAINAGE/UTILITY STRUCTURES) SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR ITEM 490.30 SUPERPAVE BITUMINOUS CONCRETE PAVEMENT.



**OVERLAY TYPICAL SECTION - ROADWAY**

UNDERHILL STA. 7+056.97 TO STA. 7+956.60  
 WESTFORD STA. 0+000.00 TO STA. 0+782.0  
 WESTFORD STA. 0+789.6 TO STA. 4+541.57  
 CAMBRIDGE STA. 0+000.00 TO STA. 3+444.00



**COLD PLANE TYPICAL SECTION - BRIDGE NO. 17**

VT ROUTE 15

BRIDGE NO. 17 - WESTFORD STA. 0+782.0 TO 0+789.6

NOTE: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.

**PROJECT PAVING LIMITS**

TOWN & ROUTE	BEGIN STATION	END STATION	LANE TYPICAL	WEARING DEPTH	LEVELING TONS	NOTES
UNDERHILL, VT ROUTE 15	7+056.97	7+956.6	1.2 M - 3.3 M - 3.3 M - 1.2 M	45 mm	480	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
WESTFORD, VT ROUTE 15	0+000.0	0+578.0	1.2 M - 3.3 M - 3.3 M - 1.2 M	45 mm	308	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
WESTFORD, VT ROUTE 15	0+578.0	0+638.0	VARIABLES - SEE LAYOUT SHEETS	45 mm	37	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
WESTFORD, VT ROUTE 15	0+638.0	0+763.0	3.9 M - 3.3 M - 3.3 M - 1.5 M	45 mm	89	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
WESTFORD, VT ROUTE 15	0+763.0	0+782.0	VARIABLES - SEE LAYOUT SHEETS	45 mm	11	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
WESTFORD, VT ROUTE 15	0+782.0	0+789.6	1.2 M - 3.3 M - 3.3 M - 1.2 M	30 mm	-	BRIDGE NO. 17; COLD PLANE 75 mm, THEN OVERLAY WITH 30 mm TYPE IV
WESTFORD, VT ROUTE 15	0+789.6	4+250.0	1.2 M - 3.3 M - 3.3 M - 1.2 M	45 mm	1859	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
WESTFORD, VT ROUTE 15	4+250.0	4+541.57	2.7 M - 3.3 M - 3.3 M - 1.2 M	45 mm	181	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
CAMBRIDGE, VT ROUTE 15	0+000.0	0+320.0	2.7 M - 3.3 M - 3.3 M - 1.2 M	45 mm	185	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
CAMBRIDGE, VT ROUTE 15	0+320.0	2+922.0	1.2 M - 3.3 M - 3.3 M - 1.2 M	45 mm	1482	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
CAMBRIDGE, VT ROUTE 15	2+922.0	3+096.0	VARIABLES - SEE LAYOUT SHEETS	45 mm	121	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S
CAMBRIDGE, VT ROUTE 15	3+096.0	3+444.0	1.2 M - 3.3 M - 3.3 M - 1.2 M	45 mm	186	LEVEL, THEN OVERLAY WITH TWO 45 mm LIFTS OF TYPE III'S

**RURAL AREAS - SEED MIXTURE**

% WT	KG/HA	NAME	PUR %	GERM %
37.1	26.0	CREeping RED FESCUE	98	85
37.1	26.0	TALL FESCUE	95	90
5.7	4.0	RED TOP	95	90
14.4	10.0	BIRD'SFOOT TREFoil	98	85
5.7	4.0	ANNUAL RYE GRASS	95	85
100.0	70.0			

SEED MIXTURE:  
 SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

SEED:  
 TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

FERTILIZER:  
 FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 560 KG/HA. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA.)

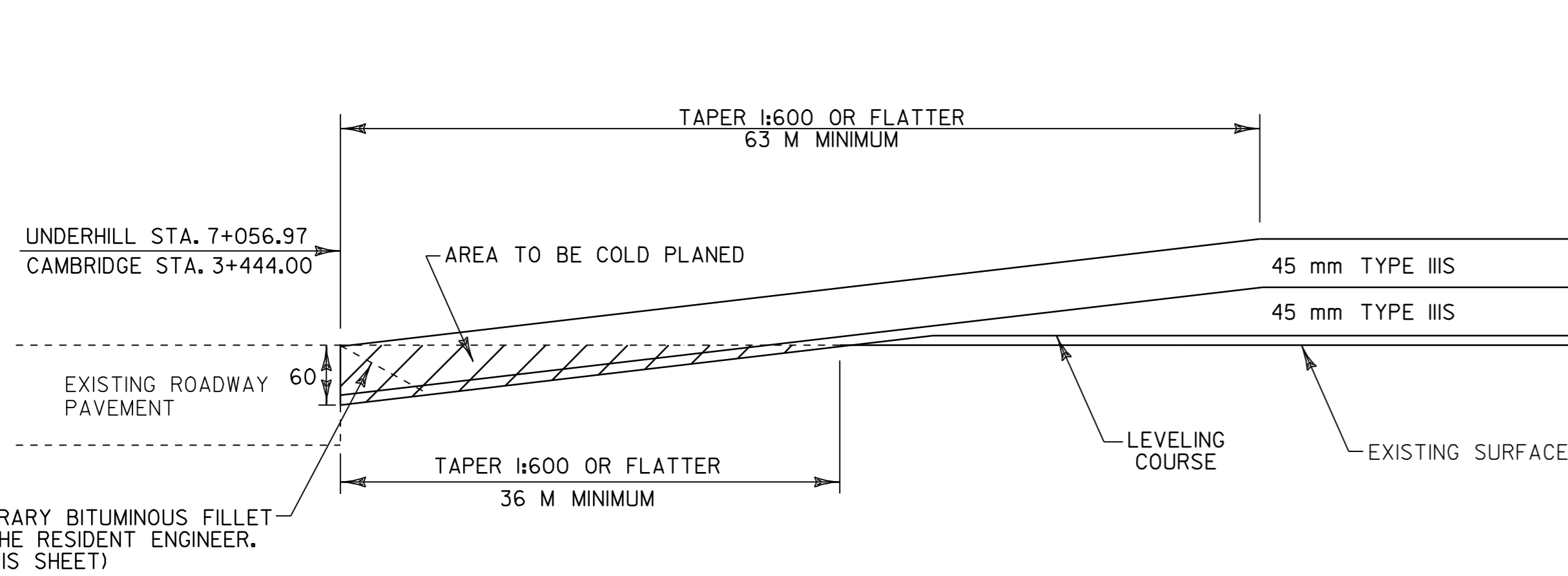
AGRICULTURAL LIMESTONE:  
 TO BE APPLIED AT THE RATE OF 4500 KG/HA, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH:  
 TO BE PLACED ON EARTH SLOPES AT THE RATE OF 4500 KG/HA, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL:  
 TO BE USED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

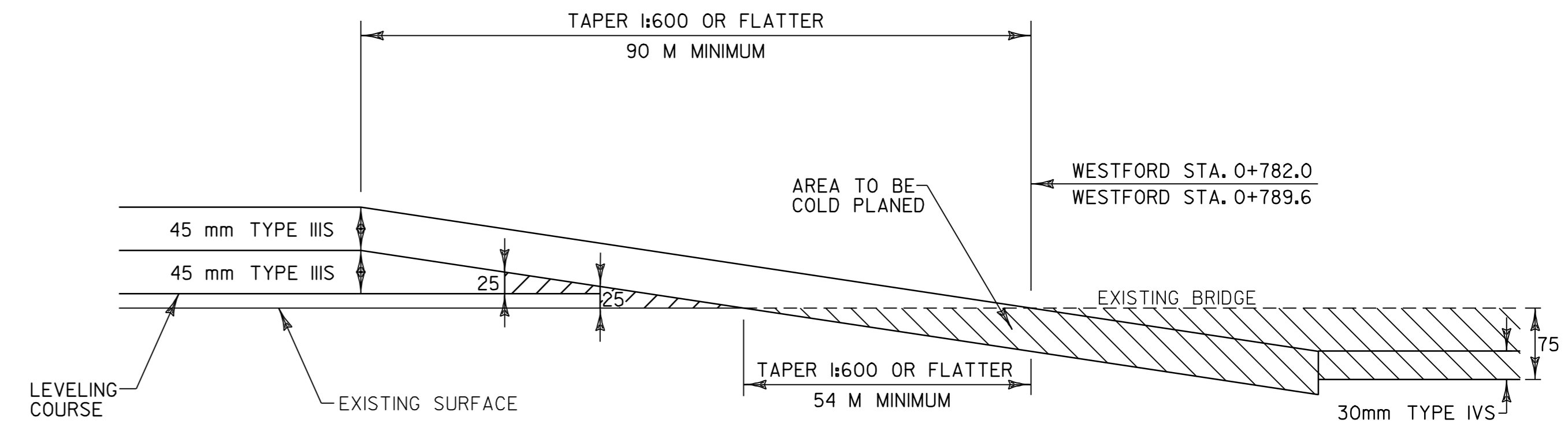
**ARCHIVED  
IN DPR**

<b>PROJECT TYPICALS &amp; PAVING LIMITS</b>	PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: /pave/99b176/pbl76.dgn	PLOT DATE: 26-JAN-2006 11:00
	PROJECT NUMBER: SIP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:	
	IPARM FILE NAME: pbl76ty.j		SHEET 2 OF 36



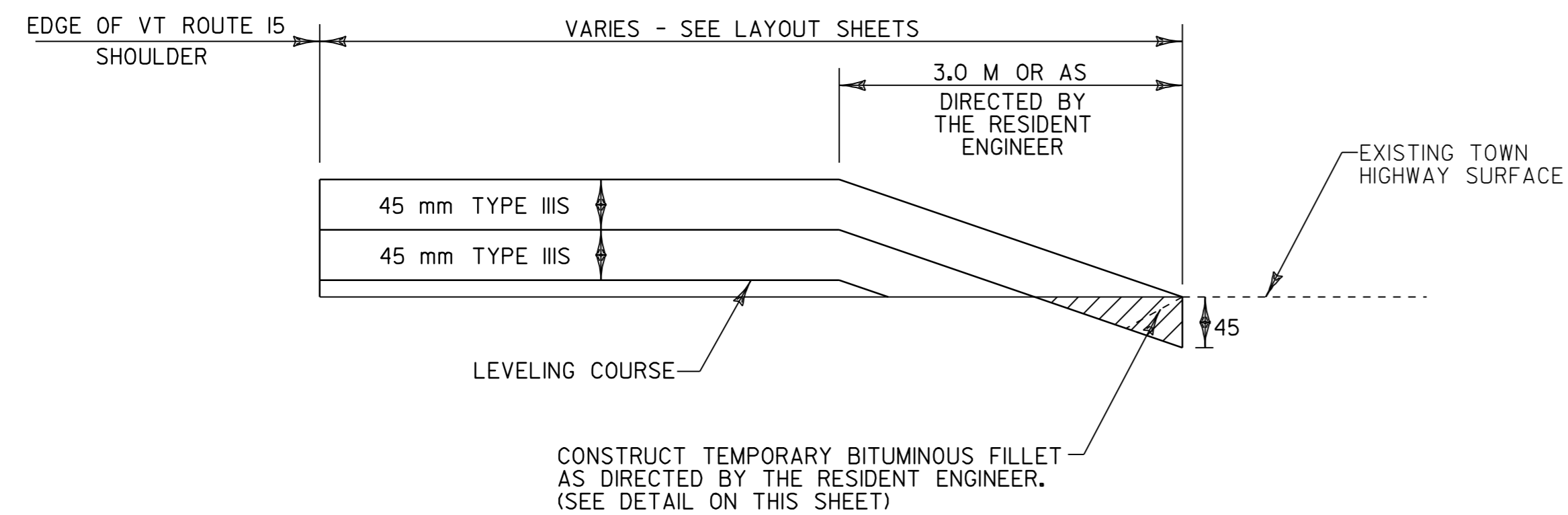
**APPROACH AREA DETAIL - VT ROUTE 15**  
FULL ROADWAY WIDTH

(BEGIN AND END LEVEL AND OVERLAY)  
UNDERHILL STA. 7+056.97 TO 7+119.97  
CAMBRIDGE STA. 3+381.00 TO 3+444.00



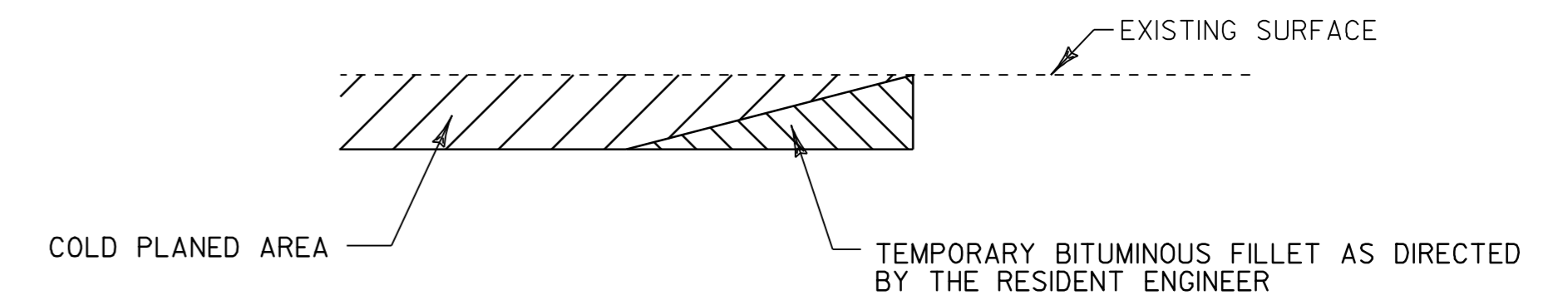
**TRANSITION AREA DETAIL - VT ROUTE 15**  
FULL ROADWAY WIDTH

(END LEVEL AND OVERLAY, BEGIN COLD PLANING ON BRIDGE NO. 17)  
WESTFORD STA. 0+692.0 TO 0+782.0  
WESTFORD STA. 0+789.6 TO 0+879.6

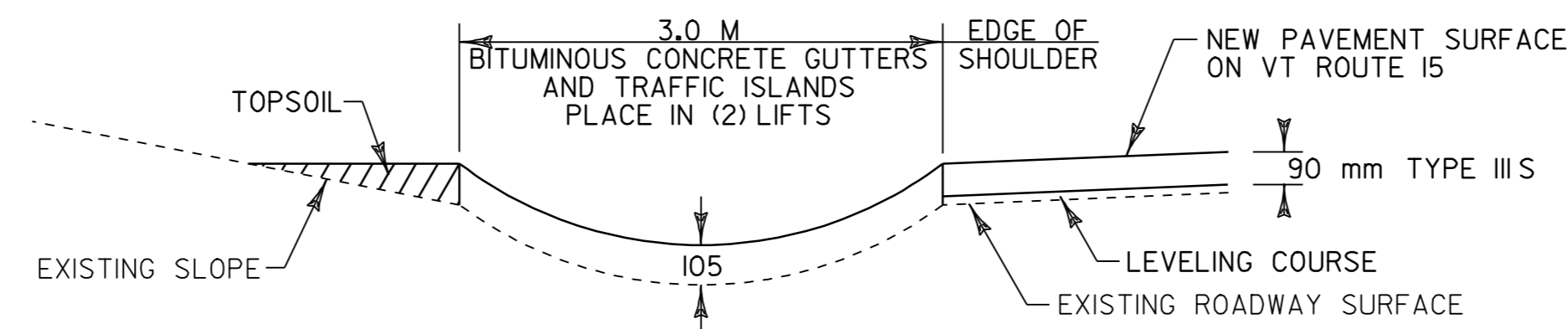


**APPROACH AREA DETAIL - TOWN HIGHWAYS**  
(LEVEL & OVERLAY AREA)  
FULL WIDTH OF TOWN HIGHWAY

THIS DETAIL WILL BE FOLLOWED FOR TOWN HIGHWAYS IN OVERLAY AREAS AS DESIGNATED BY THE RESIDENT ENGINEER



**DETAIL AT VERTICAL COLD PLANE JOINTS**



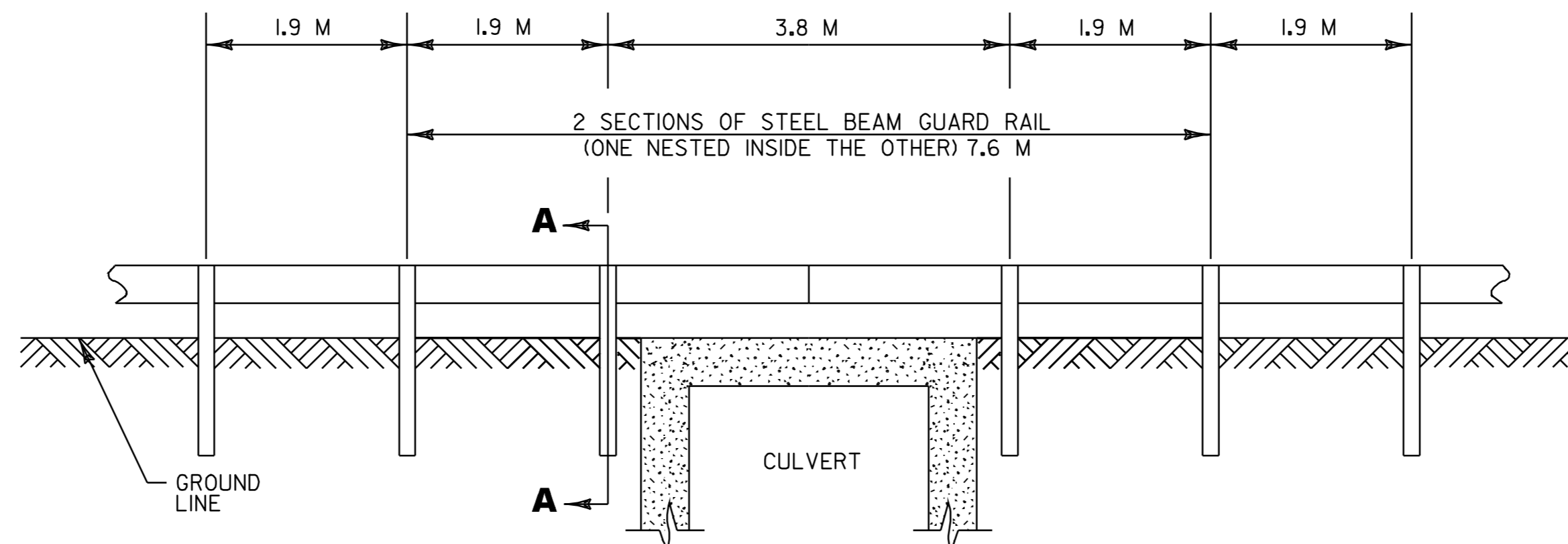
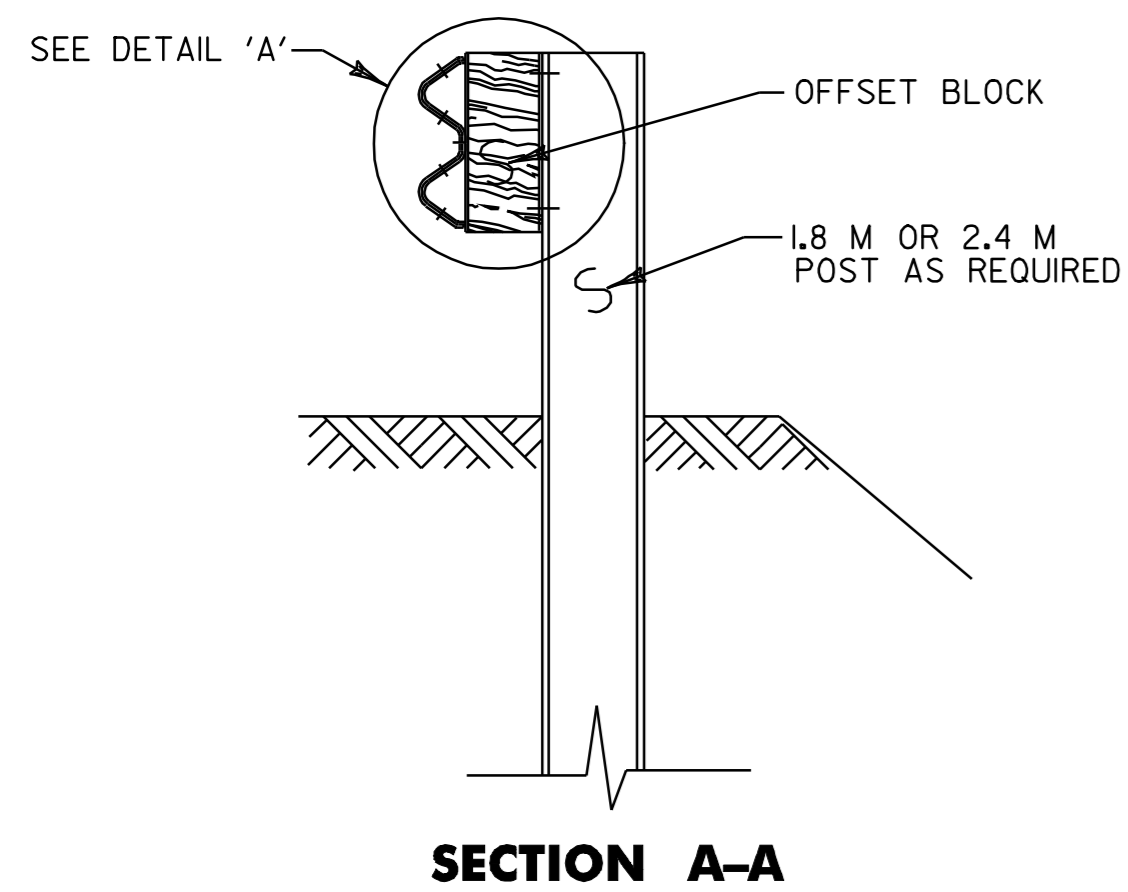
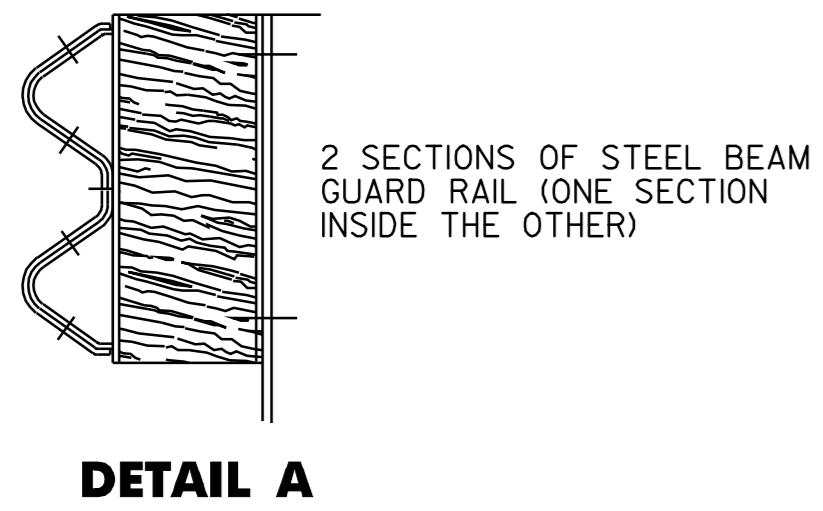
**BITUMINOUS CONCRETE GUTTER DETAIL**  
WESTFORD STA. 0+593.8 TO 0+774.J, LT.

**ARCHIVED  
IN DPR**

**DH**  
Dufresne-Henry

NOTE: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.

<b>PAVING AND BITUMINOUS GUTTER DETAIL SHEET</b>	PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: /pave/99b176/pbl76.dgn	PLOT DATE: 26-JAN-2006 11:0
	PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:	
	IPARM FILE NAME: pbl76pd1		SHEET 3 OF 36



**SPAN DETAIL FOR STEEL BEAM GUARD RAIL AT BRIDGE NO. 16**

VT ROUTE 15, WESTFORD STA. 0+297.5 (BRIDGE #16)

**NOTES:**

1. SEE VTrans STANDARDS G-1M & G-1dM FOR STEEL BEAM GUARD RAIL DETAILS
2. THIS WORK SHALL BE PAID UNDER ITEM 62L20, STEEL BEAM GUARD RAIL OR 62L20, STEEL BEAM GUARD RAIL W/2.4 M POSTS (MOD.) USING A PAY FACTOR OF 1.0.
3. THIS DETAIL TO BE USED AS INDICATED ON THE ITEM DETAIL SUMMARY SHEET OR AS DIRECTED BY THE RESIDENT ENGINEER.

**ARCHIVED  
IN DPR**



NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.

<b>GUARD RAIL DETAILS</b>	PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76Zbb176.dgn	PLOT DATE: 26-JAN-2006 11:00
	PROJECT NUMBER: STP 2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:	
	IPARM FILE NAME: pbl76gtd1		SHEET 4 OF 36

### BRIDGE QUANTITY SHEET

STATION	POS.	BRIDGE NUMBER	OFFSET BLOCK (mm)	402.12 (MOD.) (T)	525.40 (M)	525.40 (MOD. 3) (M)	621.20 (MOD.) (M)	621.21 (M)	621.505 FLARED (EA)	621.60 (EA)	621.80 (M)	621.81 (M)	REMARKS
<b>WESTFORD</b>													
0+745.9 TO 0+814.3	RT	17	150	10		11.4	30.4	19.8	1	1	61		INSTALL NEW MTS (FLARED) AT STA. 0+745.9 RT. AND ANCHOR AT STA. 0+810.5 RT. ITEM 621.21 IS PAID FOR AT A FACTORED RATE AS SHOWN IN THE TABLE FOR SCHEDULE I ON THIS SHEET
0+764.9 TO 0+814.3	LT	17	150	10		11.4	11.4	19.8	1	1	45		INSTALL NEW ANCHOR AT STA. 0+764.9 LT AND MTS (FLARED) AT STA. 0+802.9 LT. ITEM 621.21 IS PAID FOR AT A FACTORED RATE AS SHOWN IN THE TABLE FOR SCHEDULE I ON THIS SHEET
<b>SUBTOTALS</b>				20		22.8	41.8	39.6	2	2	106		

SCHEDULE I		
POST NO.	SPACING	PAYMENT FACTOR
1		
2	0.95 M	1.4 x 3.8 M
3	0.95 M	
4	0.95 M	
5	0.95 M	
6	1.27 M	1.2 x 3.8 M
7	1.27 M	
8	1.27 M	
9	1.90 M (TYP.)	1.0 (TYP.)

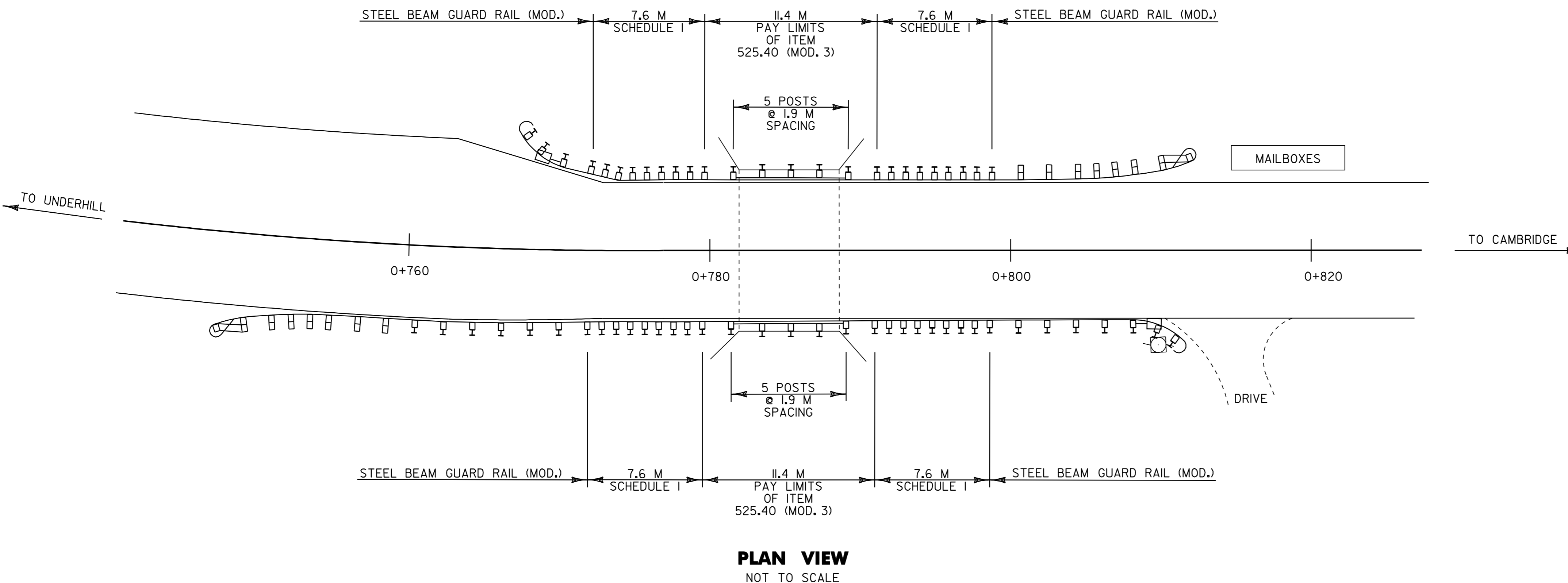
SCHEDULE II		
POST NO.	SPACING	PAYMENT FACTOR
1		
2	0.95 M	1.4 x 5.7 M
3	0.95 M	
4	0.95 M	
5	0.95 M	
6	0.95 M	
7	0.95 M	1.2 x 3.8 M
8	1.27 M	
9	1.27 M	
10	1.27 M	1.0 (TYP.)
11	1.90 M (TYP.)	

### BRIDGE APPROACH RAILING

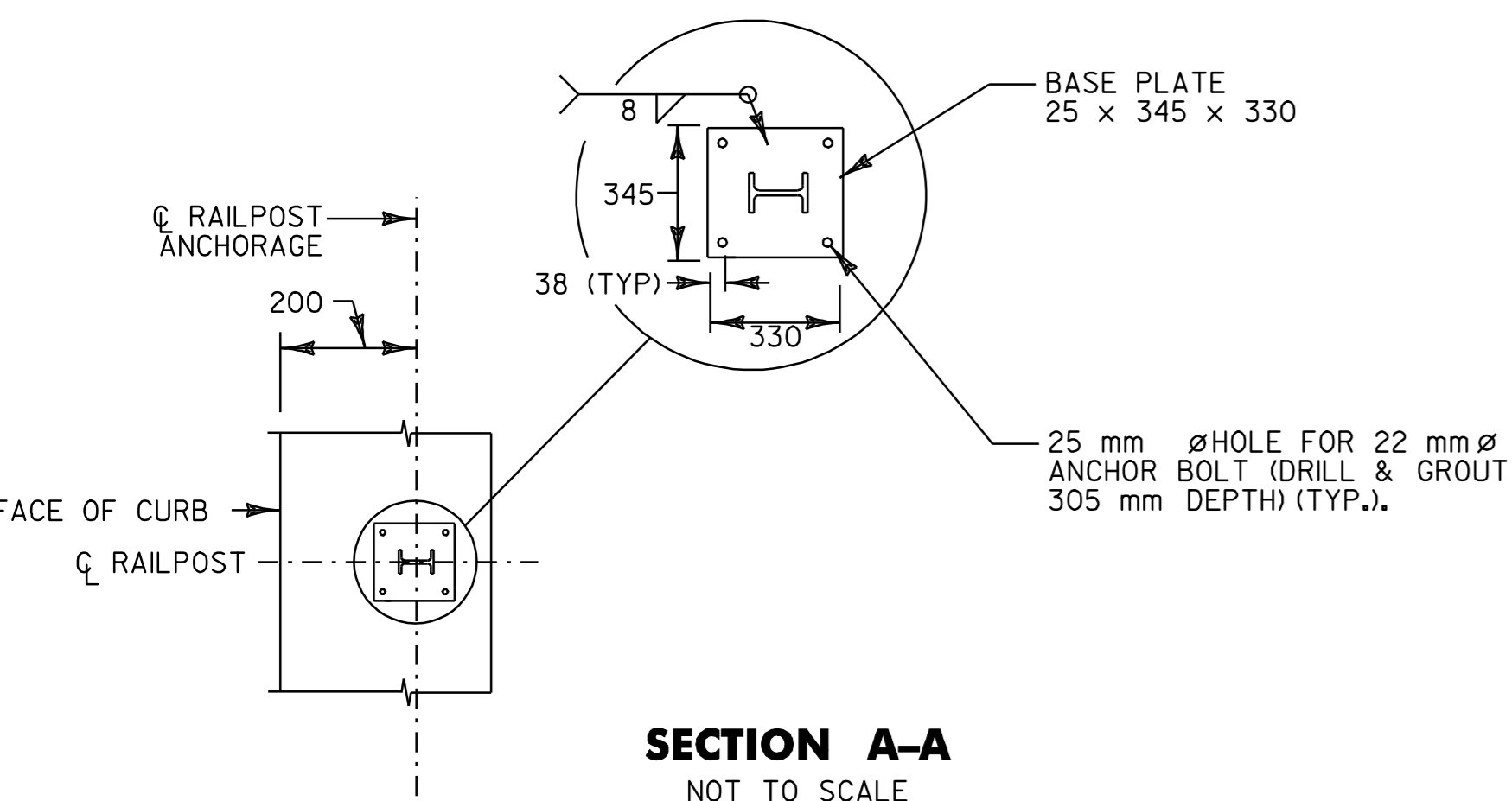
WHEN A RAIL PANEL SPLICE OCCURS AT POST NO. 1 USE SCHEDULE I FOR APPROACH RAILING. WHEN A RAIL PANEL SPLICE OCCURS AT THE BRIDGE END POST USE SCHEDULE II FOR APPROACH RAILING.

### NOTES

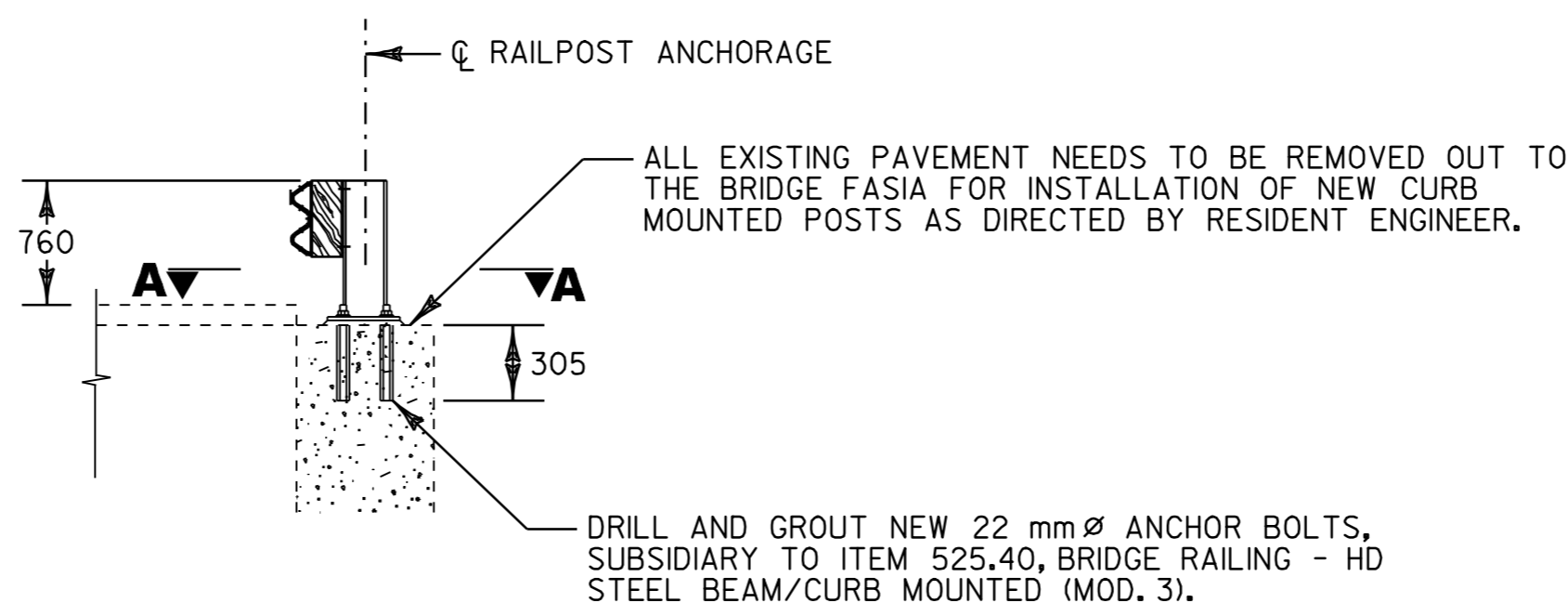
- SEE VTrans STANDARDS G-IM, G-IDM AND SB-R6-82M FOR ADDITIONAL DETAILS.
- ALL HEAVY DUTY STEEL BEAM BRIDGE RAIL, OFFSET BLOCKS AND RELATED HARDWARE SHALL BE PAID FOR UNDER THE ITEM 525.40, BRIDGE RAILING - HD STEEL BEAM/CURB MOUNTED (MOD. 3)
- ALL OFFSET BLOCKS, POSTS, BASE PLATES AND FIXTURES SHALL BE ASTM A-36 EXCEPT AS OTHERWISE NOTED, AND SHALL BE GALVANIZED AFTER FABRICATION TO CONFORM TO M11M/M11L.
- SEE STANDARD SHEETS G-IM AND SB-R6-82M FOR CONNECTION OF STEEL BEAM TO OFFSET BLOCK AND OFFSET BLOCK TO BRIDGE POST.
- RIDGE RAIL SHALL BE HEAVY DUTY STEEL BEAM RAIL.
- BRIDGE APPROACH RAIL HEIGHT SHALL BE TRANSITIONED TO NORMAL ROADWAY RAIL HEIGHT IN 7.6 M.
- FOR BRIDGE RAILING, THE TRANSITION POST SHALL HAVE AN OFFSET BLOCK AND BE LOCATED AS CLOSE AS POSSIBLE TO THE MID-POINT BETWEEN THE BRIDGE END POST AND APPROACH POST 1.
- APPROACH RAILING SHALL BE HEAVY DUTY STEEL BEAM FOR 7.6 M FROM THE ENDS OF THE BRIDGE.
- SPLICES SHALL LAP IN DIRECTION OF TRAFFIC FLOW.
- NEW BRIDGE RAILING POSTS SHALL BE SET NORMAL TO GRADE.
- ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
- NEW ASTM A-449 22 mm DIAMETER ANCHOR BOLTS TO BE GROUTED IN PLACE WITH EPOXY MORTAR PER SECTION 530 OF THE VTrans STANDARD SPECIFICATIONS FOR CONSTRUCTION. EACH BOLT SHALL BE FURNISHED WITH TWO NUTS AND WASHERS FOR LEVELING THE ANCHOR PLATE. ANCHOR PLATES SHALL BE PLACED ON A TYPE IV MORTAR PAD. BOLTS, NUTS AND WASHERS SHALL BE FURNISHED UNDER BRIDGE RAILING - HD STEEL BEAM/CURB MOUNTED (MOD. 3)
- GROUT NEW BOLTS WITH A TWO COMPONENT ADHESIVE MORTAR. DRILLING AND GROUTING NEW ANCHOR BOLTS SHALL BE SUBSIDIARY TO BRIDGE RAILING - HD STEEL BEAM/CURB MOUNTED (MOD. 3)
- A MINIMUM PULLOUT STRENGTH OF 13,600 kN SHALL BE ATTAINED ON ALL NEW BOLTS THAT ARE GROUTED IN PLACE. A SAMPLE GROUTED BOLT WILL BE TESTED BEFORE MATERIALS ARE APPROVED FOR USE, AND THEN RANDOM BOLTS WILL BE FIELD TESTED BY THE STATE OF VERMONT TO ENSURE THIS STRENGTH IS BEING ATTAINED. 48-HOURS ADVANCE NOTICE IS REQUIRED TO ALERT VTrans AS TO WHEN THE CONTRACTOR WILL BE READY FOR THIS TESTING.
- SEE STANDARD SHEET G-IM FOR DELINEATION DETAILS AND PLACEMENT.
- ERECT DELINEATORS ON EVERY FIFTH POST OR APPROXIMATELY 9 M APART. PAYMENT SHALL BE SUBSIDIARY TO OTHER ITEMS.



**PLAN VIEW**  
NOT TO SCALE



**SECTION A-A**  
NOT TO SCALE



**ELEVATION VIEW**  
NOT TO SCALE

### PROPOSED BRIDGE RAIL MOUNTING DETAILS FOR BRIDGE BR17

NOT TO SCALE  
WESTFORD  
STA. 0+785.77 = MM 0.488

NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.

### GUARD RAIL DETAILS AT BR17

PROJECT NAME:	UNDERHILL - CAMBRIDGE
PROJECT NUMBER:	STP_2212(1)S
FILE NAME:	
PROJECT LEADER:	JLL
DESIGNED BY:	D-H
IPARM FILE NAME:	pb17gcrd2.i
PLOT DATE:	26-JAN-2006 11:00
DRAWN BY:	D-H
CHECKED BY:	
SHEET	_5_ OF _36_

**ARCHIVED  
IN DPR**

**DH**  
Dufresne-Henry







# ITEM DETAIL SUMMARY SHEET

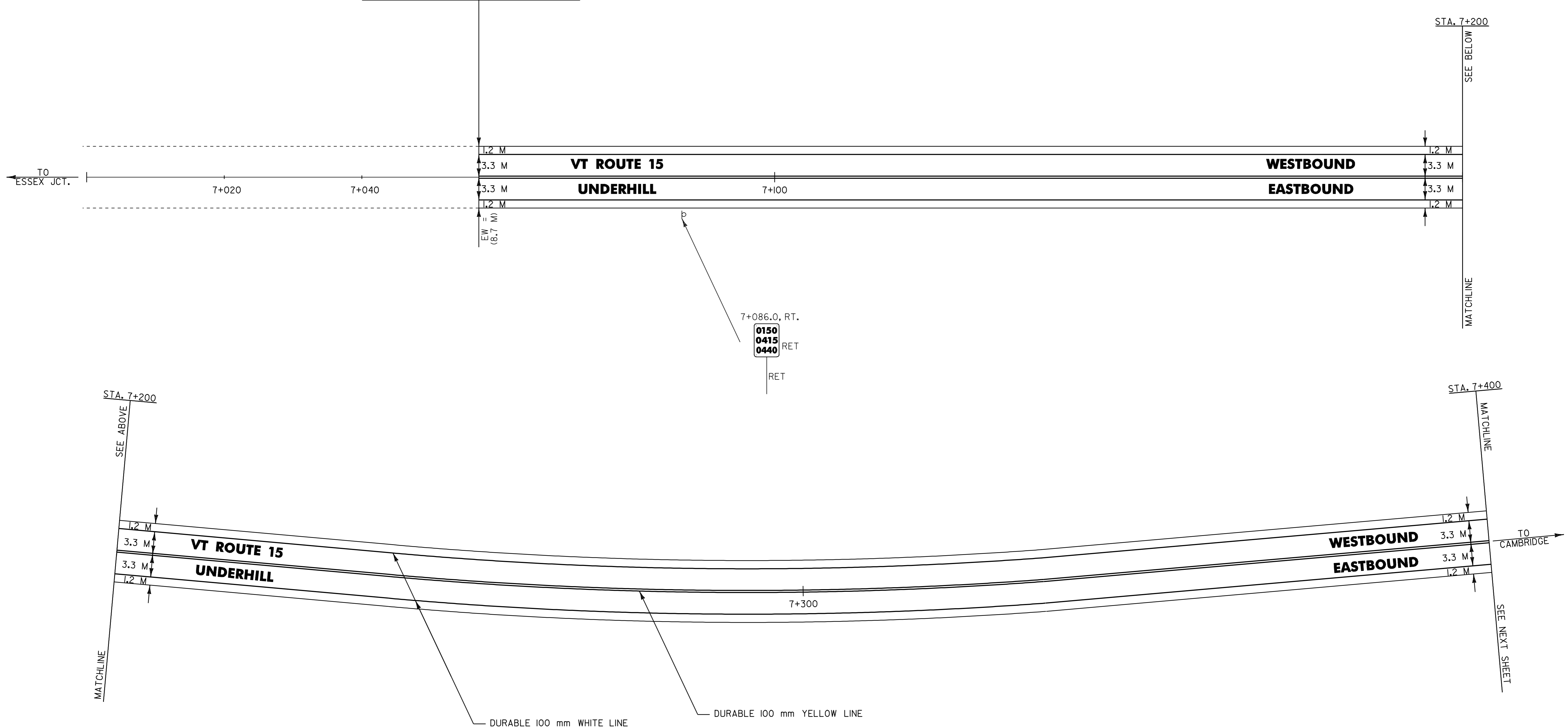


STATION		POS.	203.30	203.99	301.28	402.12	402.12	501.22	507.15	525.40	604.40	604.412	616.47	621.20	621.20	621.21	621.505	621.60	621.76	621.77	621.80	REMARKS	
BEGIN	END		EARTH BORROW m <sup>3</sup>	SHOULDER BERM REMOVAL M	SUBBASE OF CR. GRAVEL T	AGGREGATE SHOULDERS T	AGGREGATE SHOULDERS (MOD.) T	CONC. CLASS A m <sup>3</sup>	REINFORCING STEEL KG	BRIDGE RAILING-H.D. STEEL BEAM/CURB MNT. (MOD. 3) M	CHAN ELEV EA	REHAB DI CLASS I EA	BIT. CONC. GUTTERS T	STEEL BEAM G.R. M	STEEL BEAM G.R. W/2.4 POSTS (MOD.) M	HEAVY DUTY STEEL BEAM G.R. M	MAN. TERMINAL SECTION (FLARED) EA	ANCHOR FOR STEEL BEAM RAIL EA	REPLACE G.R. POST ASSEMBLY EA	REPLACE G.R. BEAM UNIT EA	REMOVAL AND DISPOSAL OF G.R. M		
<b>UNDERHILL - CAMBRIDGE</b>																							
7+056.87	3+444.00	LT & RT			415	3992	296				I	I										THE QUANTITIES LISTED ARE PROVIDED FOR USE AS DIRECTED BY THE RESIDENT ENGINEER	
<b>WESTFORD</b>																							
0+002.1	0+093.3	RT	*			10								68.4		2					88	INSTALL NEW MTS (FLARED) AT STA. 0+002.1 & 0+081.9, RT.	
0+198.7	0+324.1	RT	*			10								102.6		2					115	INSTALL NEW MTS (FLARED) AT STA. 0+198.7 & 0+312.7, RT. ; FOR SPAN DETAILS SEE SHEET 4.	
0+297.5		LT & RT					I	100														BRIDGE #16 CONCRETE REPAIR AS DIRECTED BY THE RESIDENT ENGINEER	
0+594.0	0+774.1	LT										134.5										FOR BITUMINOUS GUTTER DETAIL SEE SHEET 3.	
0+745.9	0+814.3	RT	*			10				11.4				30.4	19.8	I	I				61	INSTALL NEW MTS (FLARED) AT STA. 0+745.9, RT. AND ANCHOR AT STA. 0+810.5, RT. FOR DETAILS SEE SHEET 5.	
0+764.8	0+814.3	LT	*			10				11.4				11.4	19.8	I	I				45	INSTALL NEW ANCHOR AT STA. 0+764.9, RT. AND MTS (FLARED) AT STA. 0+802.9, LT. FOR DETAILS SEE SHEET 5.	
<b>CAMBRIDGE</b>																							
3+084.8	3+468.6	LT	*			10							362.6									382.2	INSTALL NEW MTS (FLARED) AT STA. 3+084.8 & 3+457.2, LT.
* THERE IS EXCESS MATERIAL AVAILABLE FROM DITCHING WHICH CAN BE USED TO BUILD THE GUARD RAIL FLARE BULB-OUTS.																							
SUBTOTALS			-		415	3992	346	I	100	22.8	I	I	134.5	361	212.8	39.5	8	2				691.2	
ROUNDING			-		5	78	-	-	-	0.2	-	-	3.5	4	2.2	0.5	-	-				8.8	
TOTALS			*		420	4070	346	I	100	23	I	I	138	365	215	40	8	2				700	

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PROJECT NAME: UNDERHILL - CAMBRIDGE  
 PROJECT NUMBER: STP-2212(4)S  
 FILE NAME: /pave/99bl76/pbl76.dgn PLOT DATE: 26-JAN-2006 11:03  
 PROJECT LEADER: JLL DRAWN BY: D-H  
 DESIGNED BY: DEB CHECKED BY:  
 IPARM\_FILE\_NAME: pbl76id1 SHEET 9 OF 36

**BEGIN STP 2212(1)S  
 VT ROUTE 15  
 UNDERHILL  
 STA. 7+056.97 = MM 4.385**



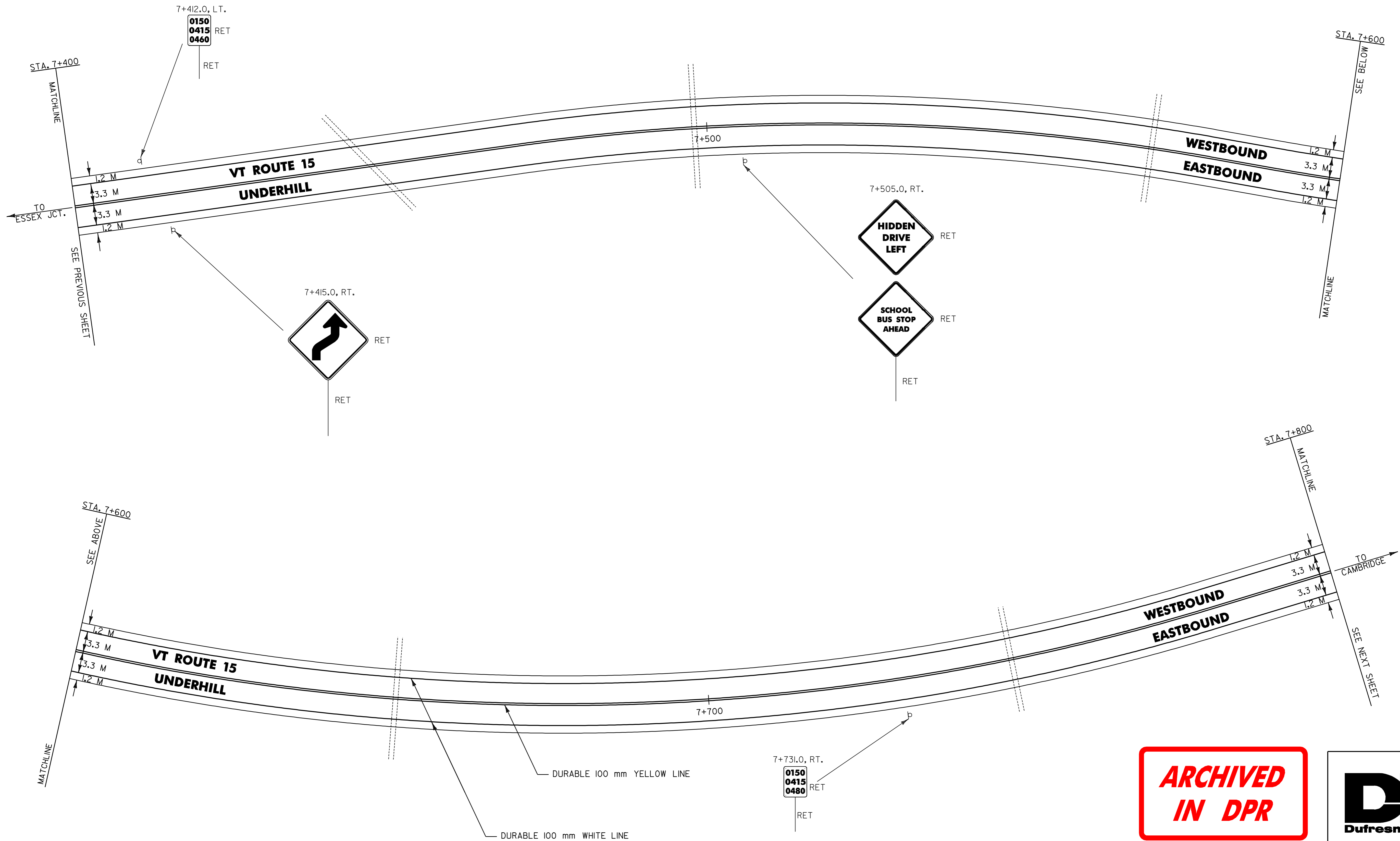
**ARCHIVED  
 IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #1**

PROJECT NAME:	UNDERHILL - CAMBRIDGE
PROJECT NUMBER:	STP_2212(1)S
FILE NAME:	ZpqveZ99bl76Zpb176.dgn
PROJECT LEADER:	JLL
DESIGNED BY:	D-H
IPARM FILE NAME:	pb1761.i
PLOT DATE:	26-JAN-2006 11:0
DRAWN BY:	D-H
CHECKED BY:	
SHEET	_10_ OF _36_



**ARCHIVED  
IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #2**

PROJECT NAME: UNDERHILL - CAMBRIDGE	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	DRAWN BY: D-H
FILE NAME: Zpqve299bl76Zpb176.dgn	CHECKED BY:
DESIGNED BY: D-H	SHEET 11 OF 36
IPARM FILE NAME: pb17612.i	

TEMPORARY & DURABLE 100 mm WHITE LINE  
 UNDERHILL STA. 7+800.0 TO 7+956.6, SOLID LT. & RT.  
 WESTFORD STA. 0+000.0 TO 0+260.0, SOLID LT. & RT.

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 UNDERHILL STA. 7+800.0 TO 7+956.6, SOLID LT. & RT.  
 WESTFORD STA. 0+000.0 TO 0+260.0, SOLID LT. & RT.

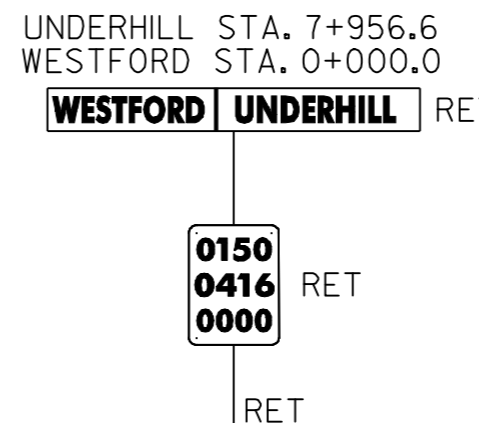
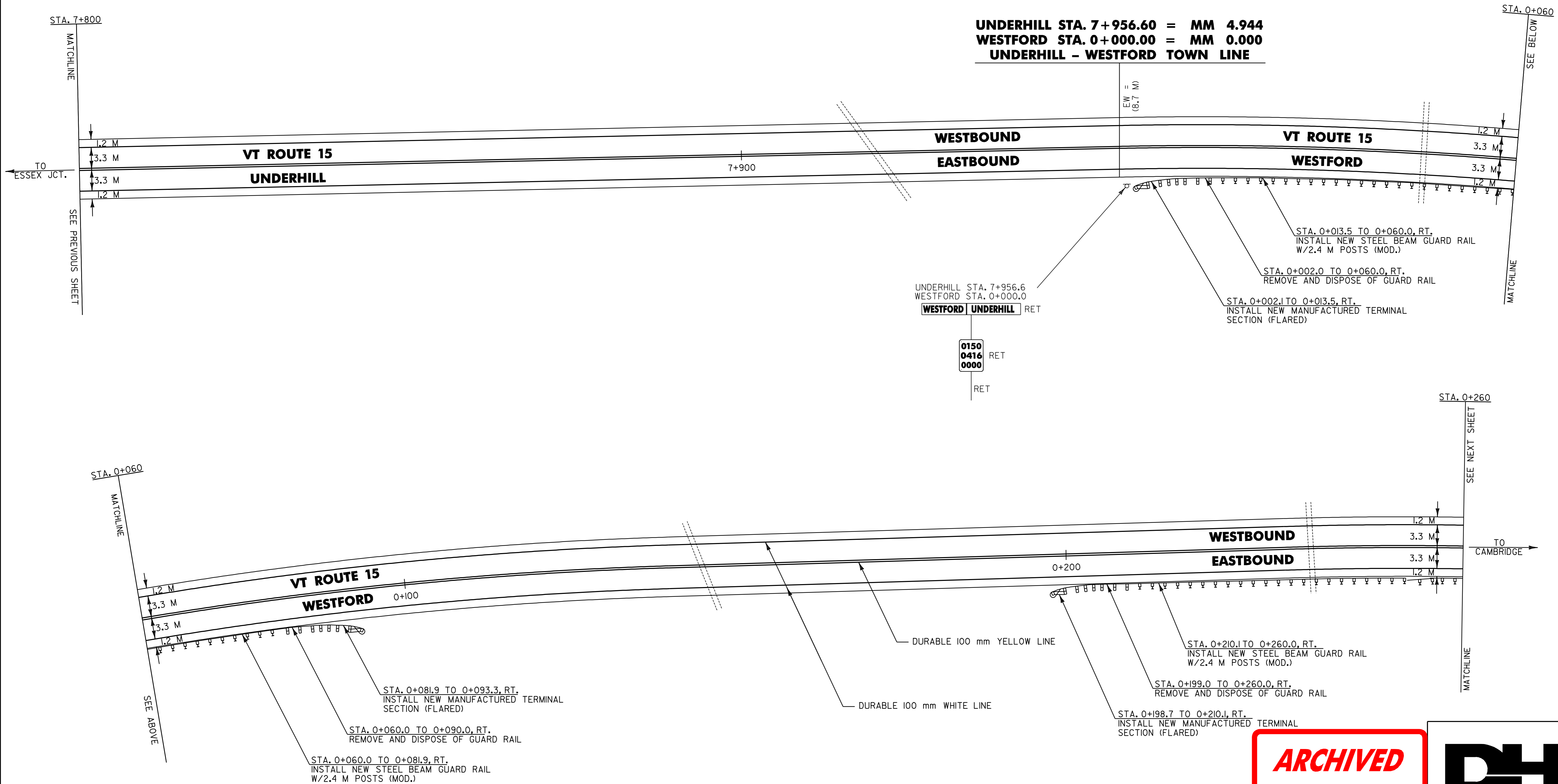
MANUFACTURED TERMINAL SECTION (FLARED)  
 STA. 0+002.1 TO 0+013.5, RT.  
 STA. 0+081.9 TO 0+093.3, RT.  
 STA. 0+198.7 TO 0+210.1, RT.

STEEL BEAM GUARD RAIL W/2.4 METER POSTS (MOD.)  
 STA. 0+013.5 TO 0+060.0, RT.  
 STA. 0+060.0 TO 0+081.9, RT.  
 STA. 0+210.1 TO 0+260.0, RT.

REMOVAL AND DISPOSAL OF GUARD RAIL  
 STA. 0+002.0 TO 0+060.0, RT.  
 STA. 0+060.0 TO 0+090.0, RT.  
 STA. 0+199.0 TO 0+260.0, RT.



**UNDERHILL STA. 7+956.60 = MM 4.944**  
**WESTFORD STA. 0+000.00 = MM 0.000**  
**UNDERHILL - WESTFORD TOWN LINE**



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 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTTRANS STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #3**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76/pbl76.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pbl7613.1	SHEET 12 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. 0+260.0 TO 0+680.0, SOLID LT. & RT.  
 (WITH EDGELINE BREAKS FOR COWIE ROAD)

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. 0+280.0 TO 0+627.6, SOLID LT. & RT.  
 (WITH CENTERLINE BREAK FOR COWIE ROAD)  
 STA. 0+627.6 TO 0+680.0, SOLID LT./DASHED RT.

REMOVING SIGNS  
 AS SHOWN - 4

MANUFACTURED TERMINAL SECTION (FLARED)  
 STA. 0+312.7 TO 0+324.1, RT.

STEEL BEAM GUARD RAIL W/2.4 METER POSTS (MOD.)  
 STA. 0+260.0 TO 0+312.7, RT.

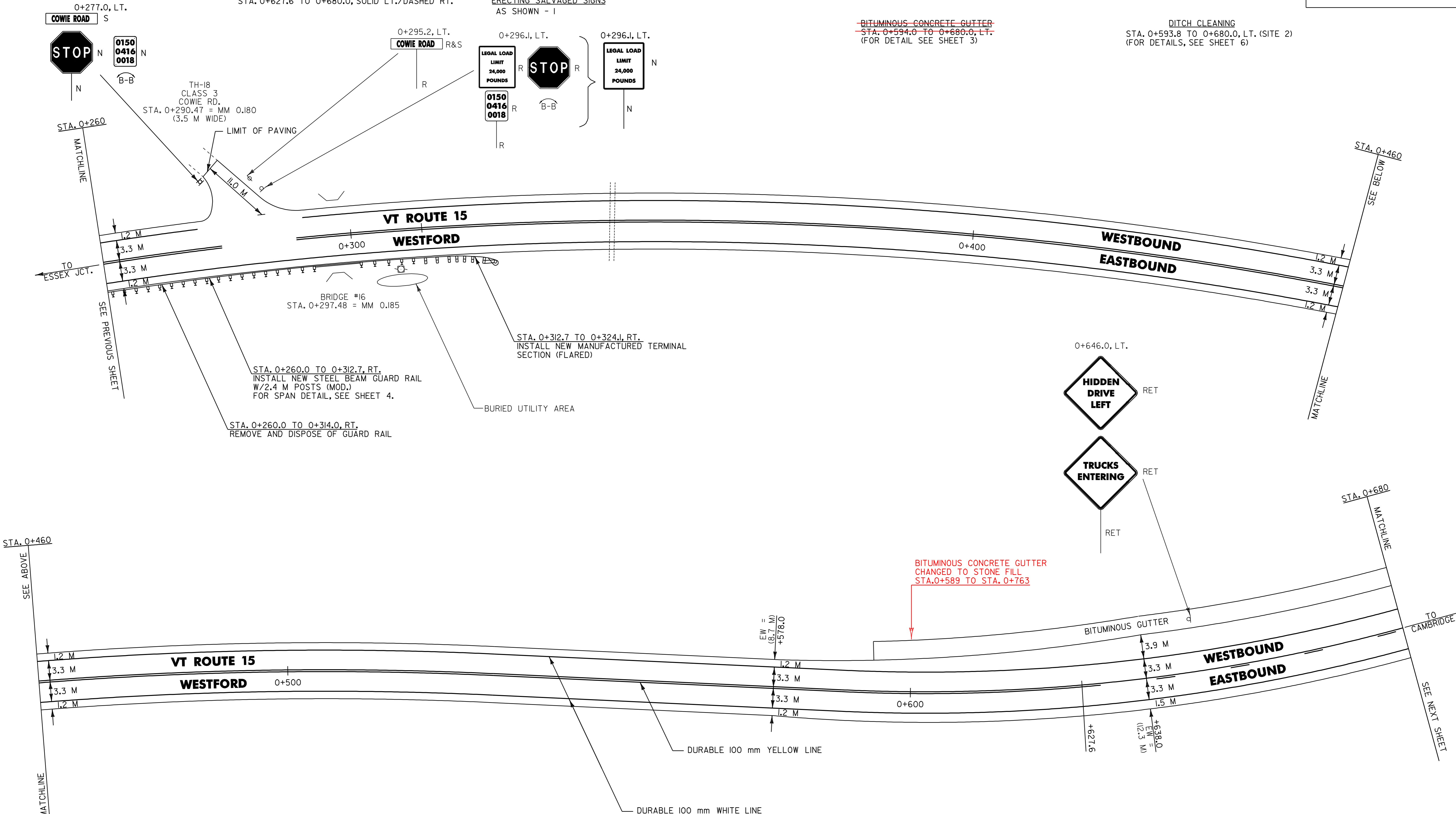
REMOVAL AND DISPOSAL OF GUARD RAIL  
 STA. 0+260.0 TO 0+314.0, RT.



ERECTING SALVAGED SIGNS  
 AS SHOWN - 1

~~BITUMINOUS CONCRETE GUTTER~~  
~~STA. 0+594.0 TO 0+680.0, LT.~~  
 (FOR DETAIL SEE SHEET 3)

DITCH CLEANING  
 STA. 0+593.8 TO 0+680.0, LT. (SITE 2)  
 (FOR DETAILS, SEE SHEET 6)



**ARCHIVED  
 IN DPR**



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 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTTRANS STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #4**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Z:\pave\99\bl76\bl76.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: bl7614.i	SHEET 13 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
STA. 0+680.0 TO 1+100.0, SOLID LT. & RT.

TEMPORARY & DURABLE 100 mm YELLOW LINE  
STA. 0+680.0 TO 0+853.0, SOLID LT./DASHED RT.  
STA. 0+853.0 TO 0+981.7, DASHED CENTERLINE  
STA. 0+981.7 TO 1+100.0, DASHED LT./SOLID RT.

MANUFACTURED TERMINAL SECTION (FLARED)  
STA. 0+745.9 TO 0+757.3, RT.  
STA. 0+802.9 TO 0+814.3, LT.

STEEL BEAM GUARD RAIL W/2.4 METER POSTS (MOD.)  
STA. 0+764.9 TO 0+772.5, LT.  
STA. 0+799.1 TO 0+802.9, LT.  
STA. 0+799.1 TO 0+814.3, RT.  
STA. 0+757.3 TO 0+772.5, RT.

REMOVAL AND DISPOSAL OF GUARD RAIL  
STA. 0+745.0 TO 0+806.0, RT.  
STA. 0+767.0 TO 0+812.0, LT.

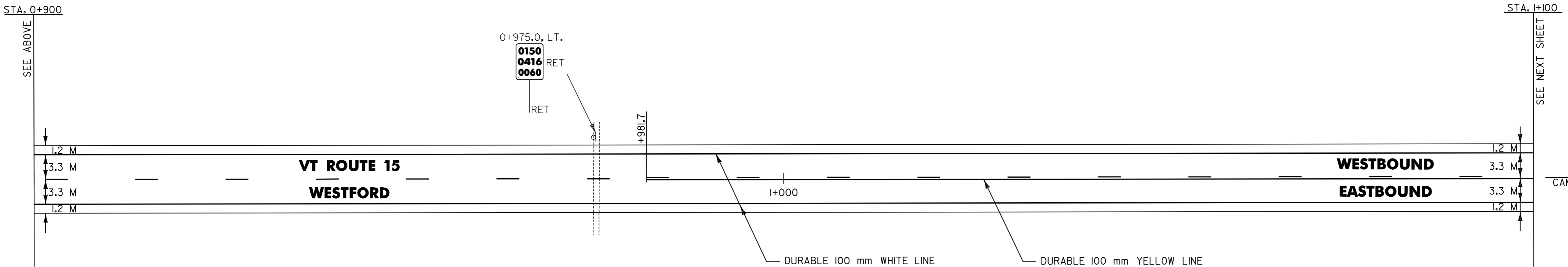
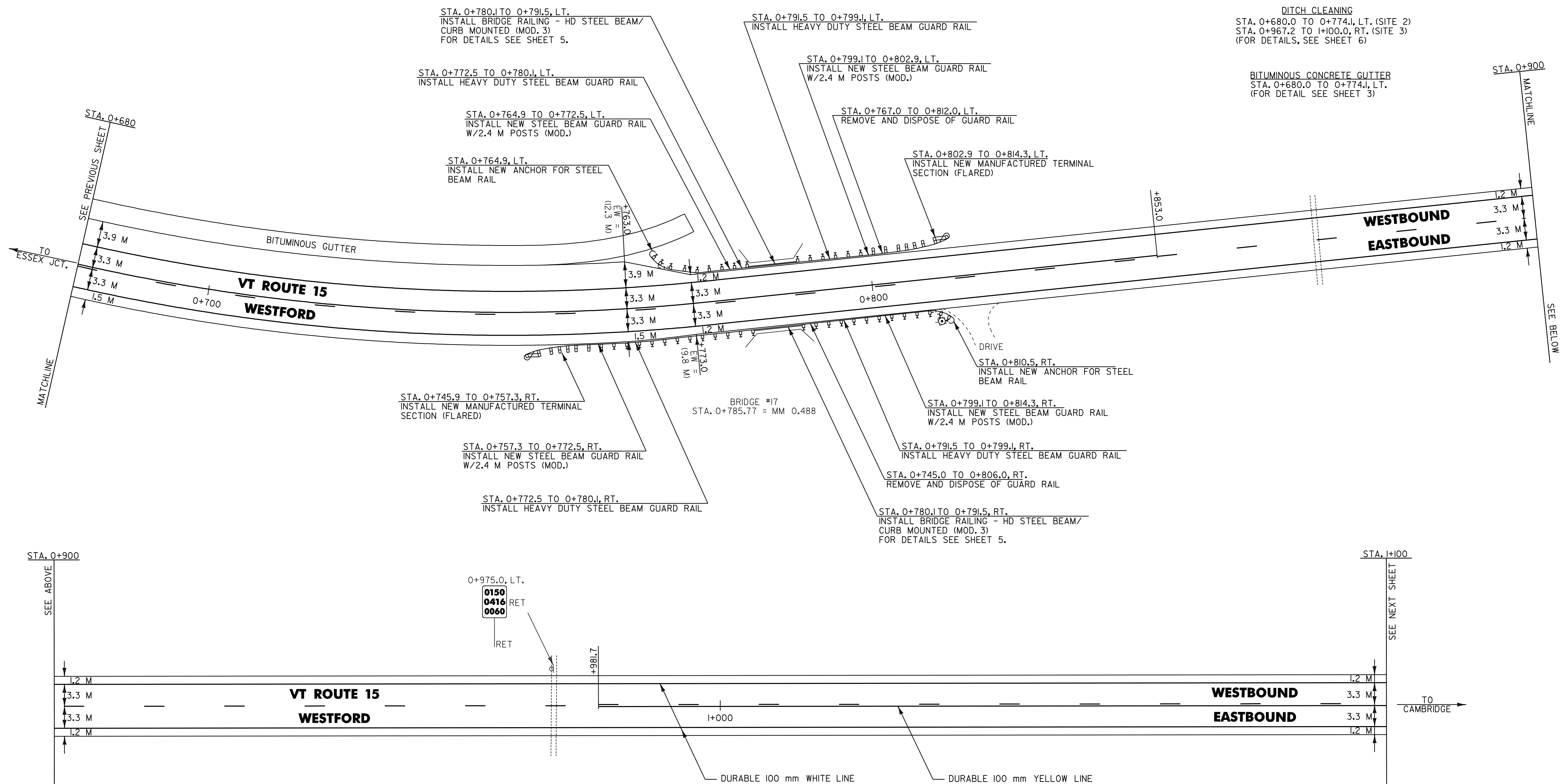
ANCHOR FOR STEEL BEAM RAIL  
STA. 0+764.9, LT.  
STA. 0+810.5, RT.

BRIDGE RAILING - H.D. STEEL BEAM/CURB MOUNTED (MOD. 3)  
STA. 0+780.1 TO 0+791.5, LT. & RT.

HEAVY DUTY STEEL BEAM GUARD RAIL  
STA. 0+772.5 TO 0+780.1, LT. & RT.  
STA. 0+791.5 TO 0+799.1, LT. & RT.

DITCH CLEANING  
STA. 0+680.0 TO 0+774.1, LT. (SITE 2)  
STA. 0+967.2 TO 1+100.0, RT. (SITE 3)  
(FOR DETAILS, SEE SHEET 6)

BITUMINOUS CONCRETE GUTTER  
STA. 0+680.0 TO 0+774.1, LT.  
(FOR DETAIL SEE SHEET 3)



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- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTRANS STANDARD E-193M.  
3) EW = EXISTING ROADWAY WIDTH

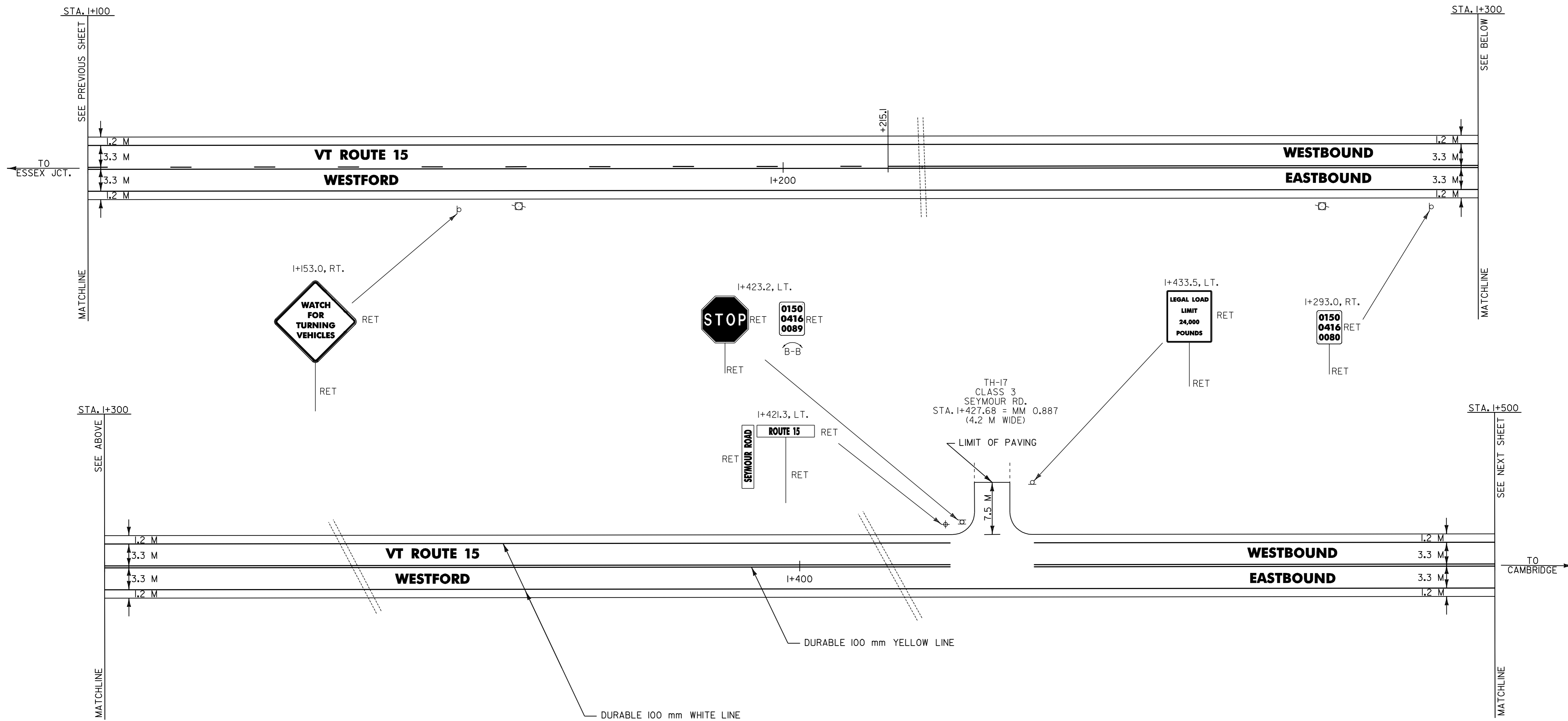
**LAYOUT SHEET #5**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76/pbl76.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pbl7615.i	SHEET 14 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. I+100.0 TO I+500.0, SOLID LT. & RT.  
 (WITH EDGELINE BREAK FOR SEYMOUR ROAD)

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. I+100.0 TO I+215.1, DASHED LT./SOLID RT.  
 STA. I+215.1 TO I+500.0, SOLID LT. & RT.  
 (WITH CENTERLINE BREAK FOR SEYMOUR ROAD)

DITCH CLEANING  
 STA. I+100.0 TO I+142.6, RT. (SITE 3)  
 (FOR DETAILS, SEE SHEET 6)



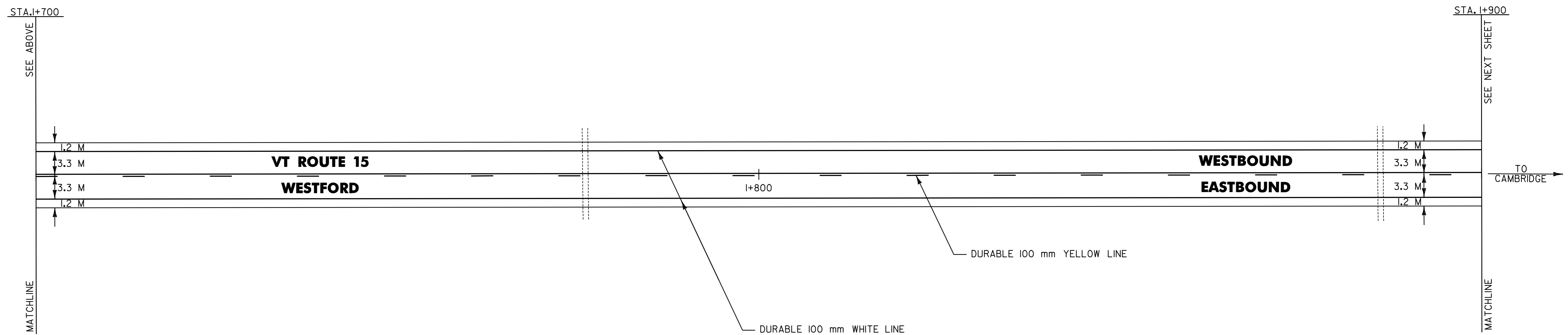
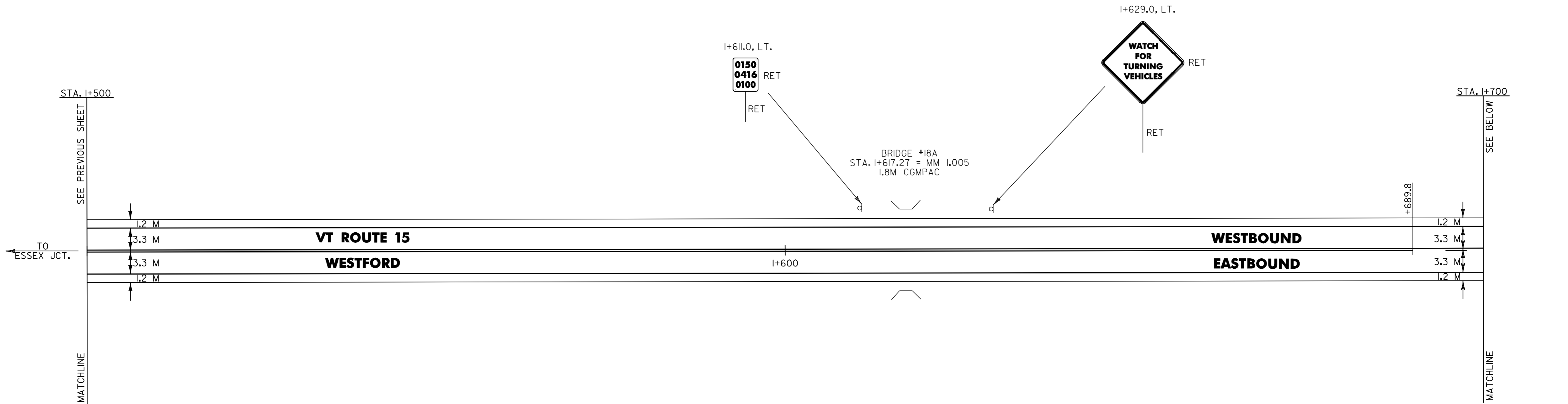
**ARCHIVED  
IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #6**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: ZpqveZ99bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pb17616.i	SHEET 15 OF 36



**ARCHIVED  
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- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

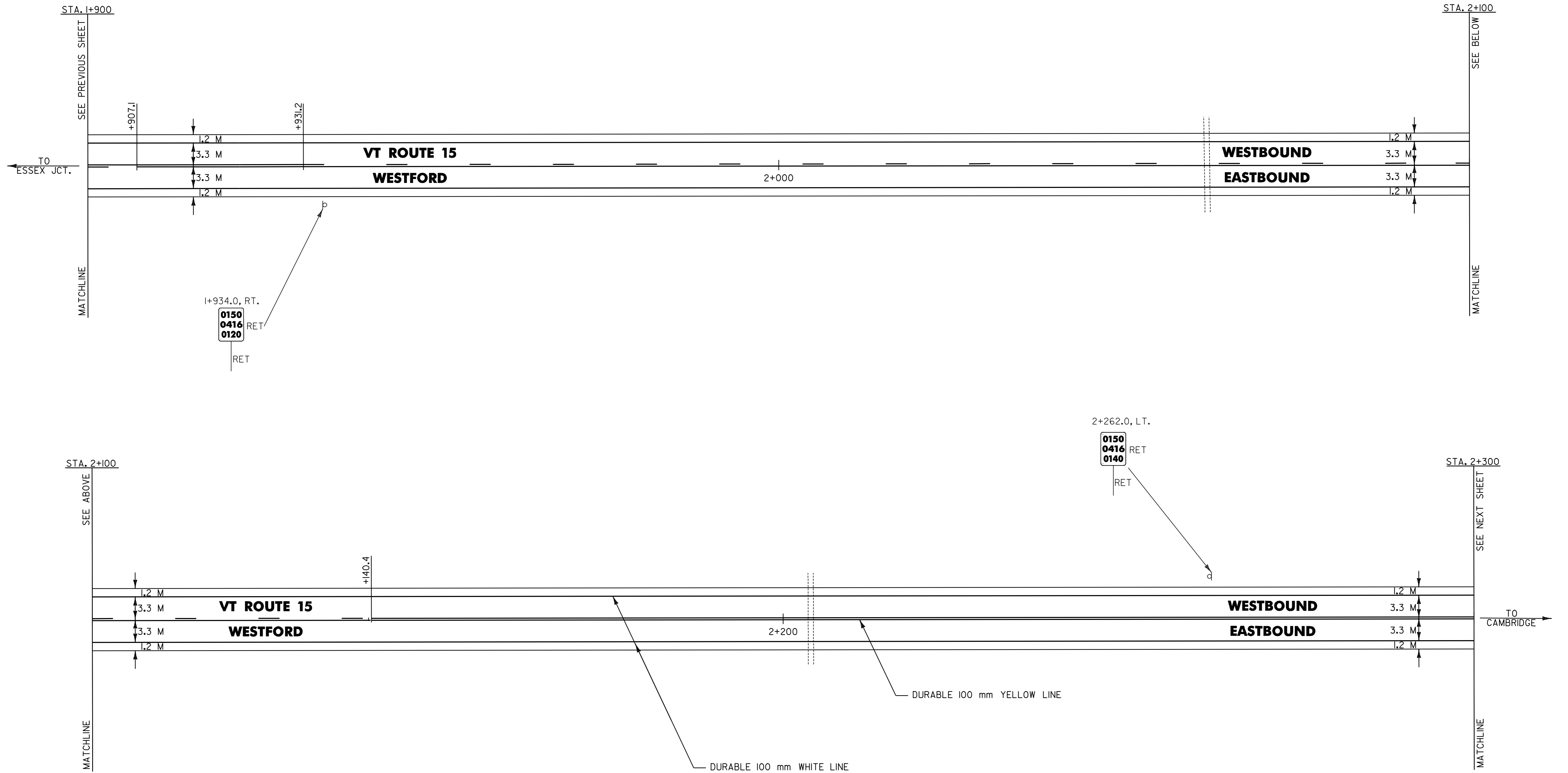
**LAYOUT SHEET #7**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: ZpqveZ99bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pb17617.i	SHEET 16 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. 1+900.0 TO 2+300.0, SOLID LT. & RT.

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. 1+900.0 TO 1+907.1, SOLID LT./DASHED RT.  
 STA. 1+907.1 TO 1+931.2, SOLID LT. & RT.  
 STA. 1+931.2 TO 2+140.4, DASHED LT./SOLID RT.  
 STA. 2+140.4 TO 2+300.0, SOLID LT. & RT.

DITCH CLEANING  
 STA. 1+899.0 TO 2+300.0, RT. (SITE 4)  
 (FOR DETAILS, SEE SHEET 6)



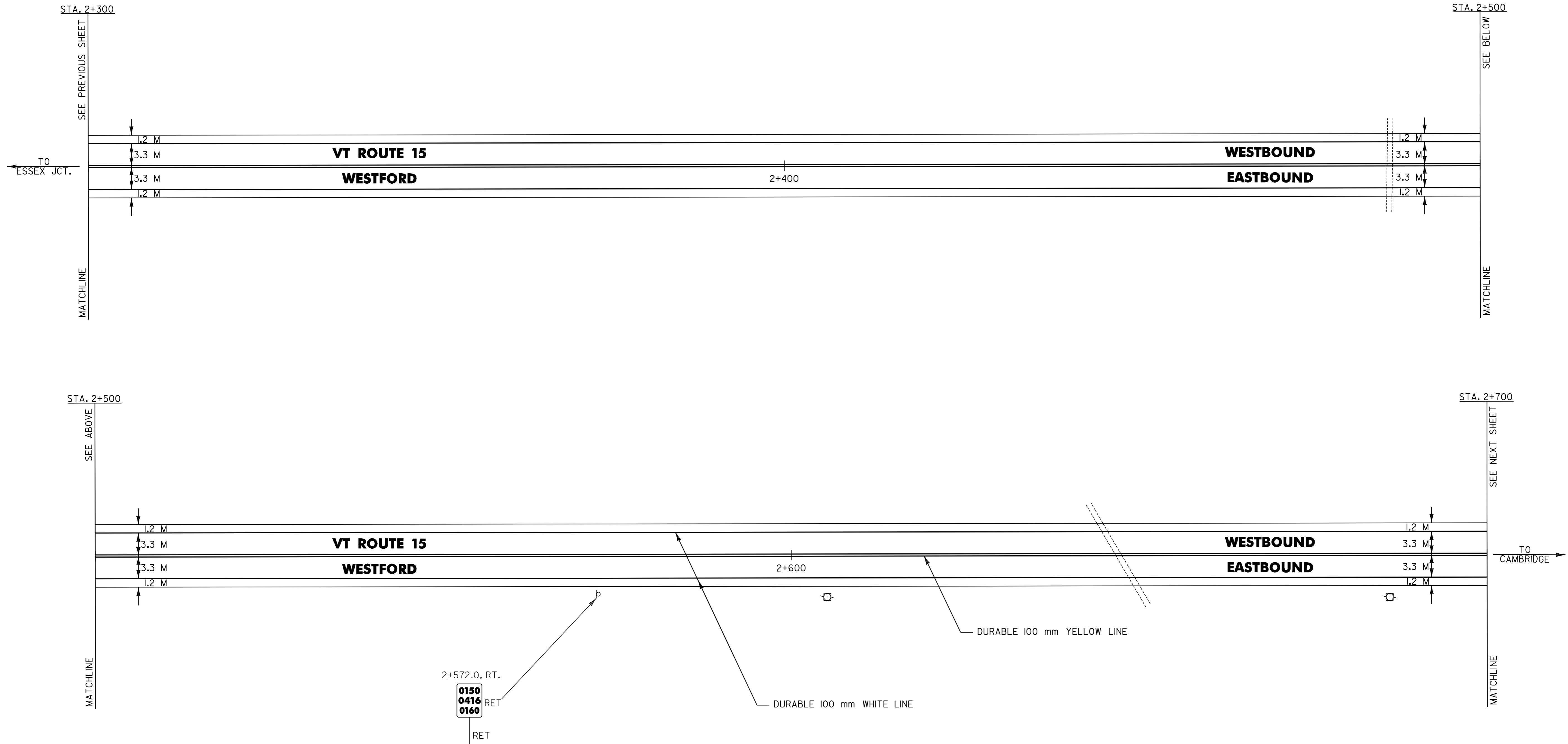
**ARCHIVED  
 IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #8**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: ZpqveZ99bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:00
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pb17618.i	SHEET 17 OF 36



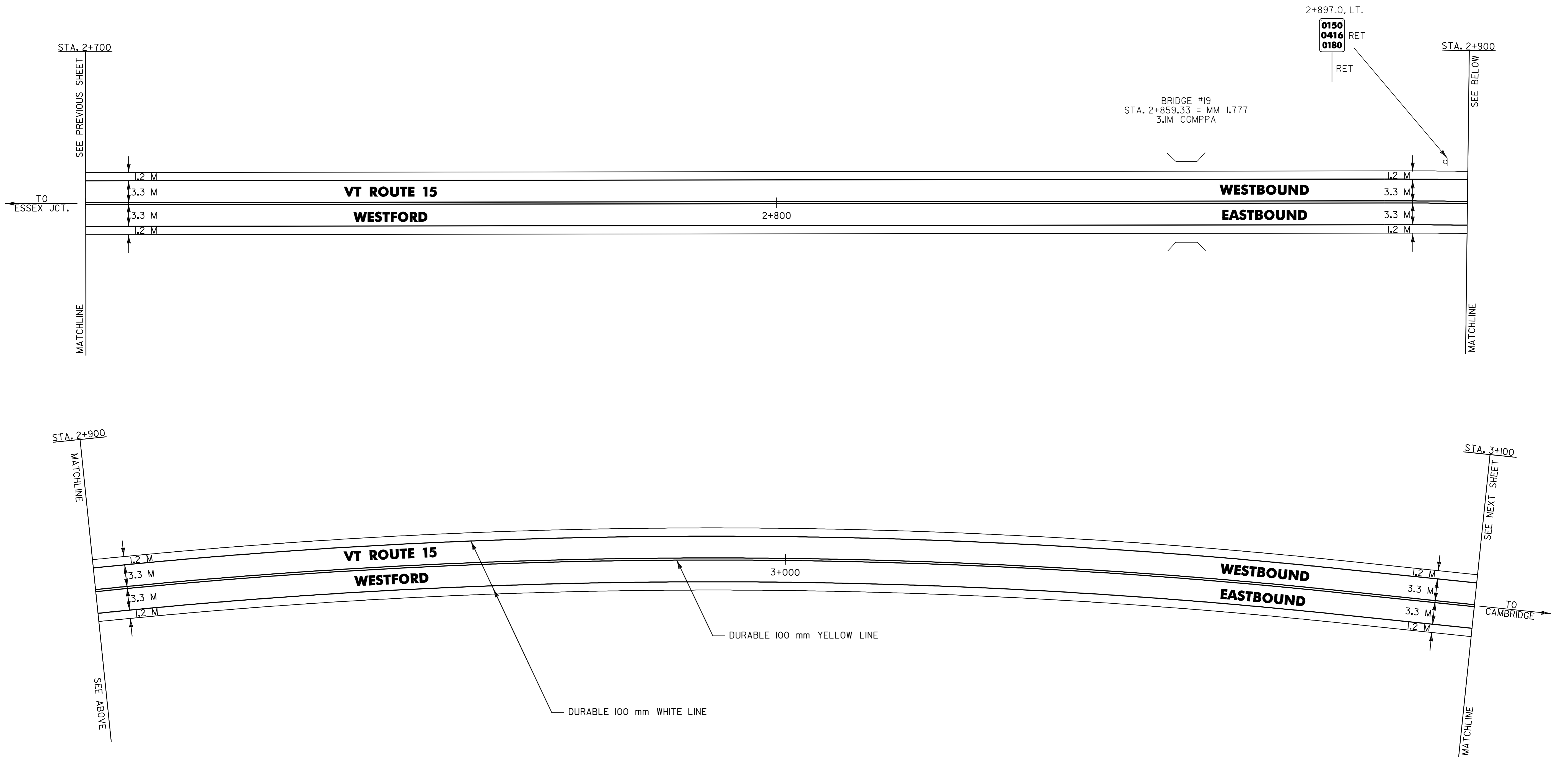
**ARCHIVED  
 IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTTRANS STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #9**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: ZpqveZ99bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pb17619.i	SHEET 18 OF 36



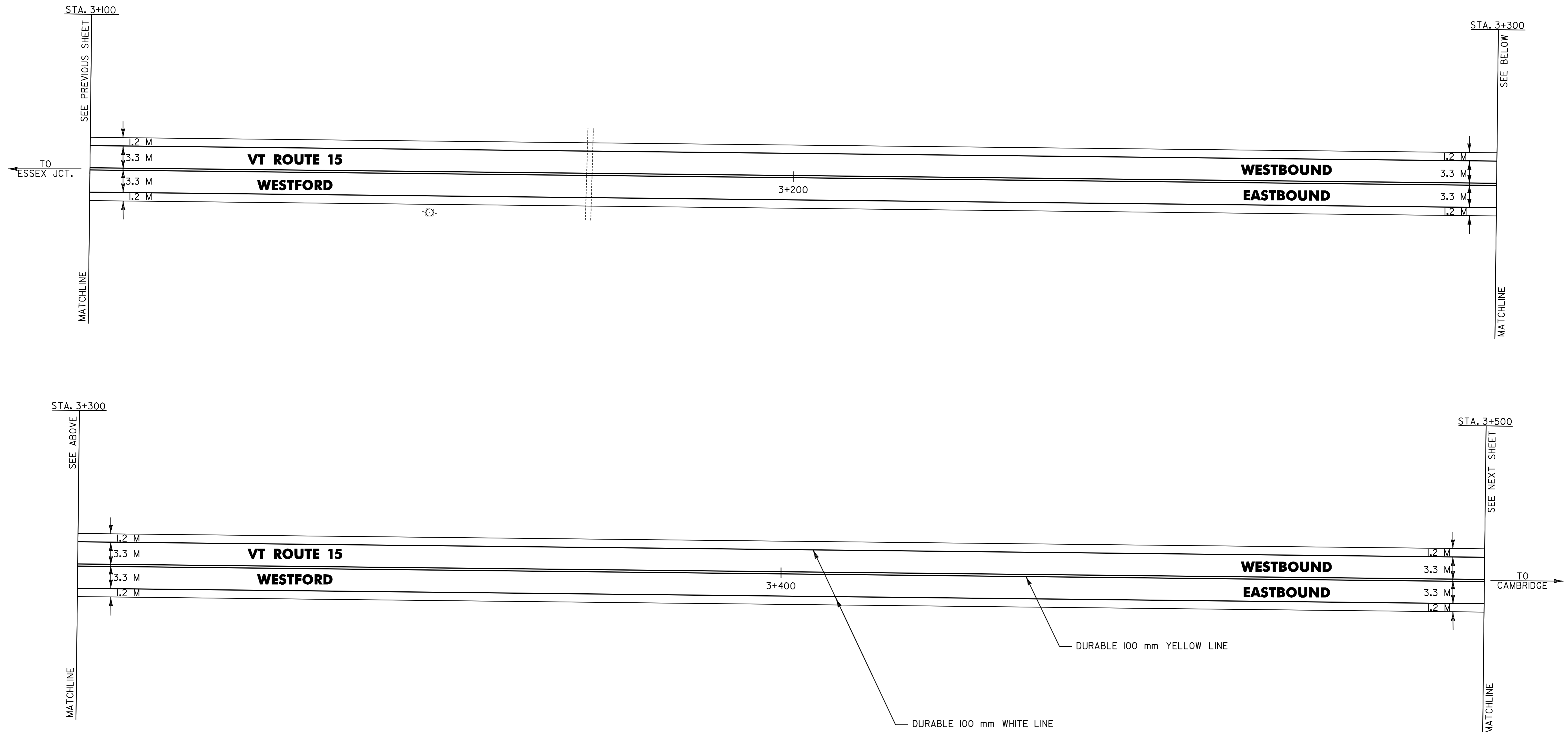
**ARCHIVED  
 IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT  
 SHEET #10**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: ZpqveZ99bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pb176110.i	SHEET 19 OF 36



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 IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTTRANS STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #11**

PROJECT NAME: UNDERHILL - CAMBRIDGE	PLOT DATE: 26-JAN-2006 11:00
PROJECT NUMBER: STP_2212(1)S	DRAWN BY: D-H
FILE NAME: ZpqveZ99bI76ZpbI76.dgn	CHECKED BY:
DESIGNED BY: D-H	SHEET 20 OF 36
IPARM FILE NAME: pbI76III.I	

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. 3+500.0 TO 3+900.0, SOLID LT. & RT.  
 (WITH EDGELINE BREAKS FOR ALLEN IRISH ROAD  
 & BILL COOK ROAD)  
 STA. 3+613.7, LT. (ALLEN IRISH ROAD EDGELINES)  
 STA. 3+626.5, RT. (BILL COOK ROAD EDGELINES)

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. 3+500.0 TO 3+900.0, SOLID LT. & RT.  
 (WITH CENTERLINE BREAKS FOR ALLEN IRISH ROAD  
 & BILL COOK ROAD)  
 STA. 3+613.7, LT. (ALLEN IRISH ROAD CENTERLINES)  
 STA. 3+626.5, RT. (BILL COOK ROAD CENTERLINES)

TEMPORARY & DURABLE 600 mm STOP BAR  
 STA. 3+610.6, LT.  
 STA. 3+628.6, RT

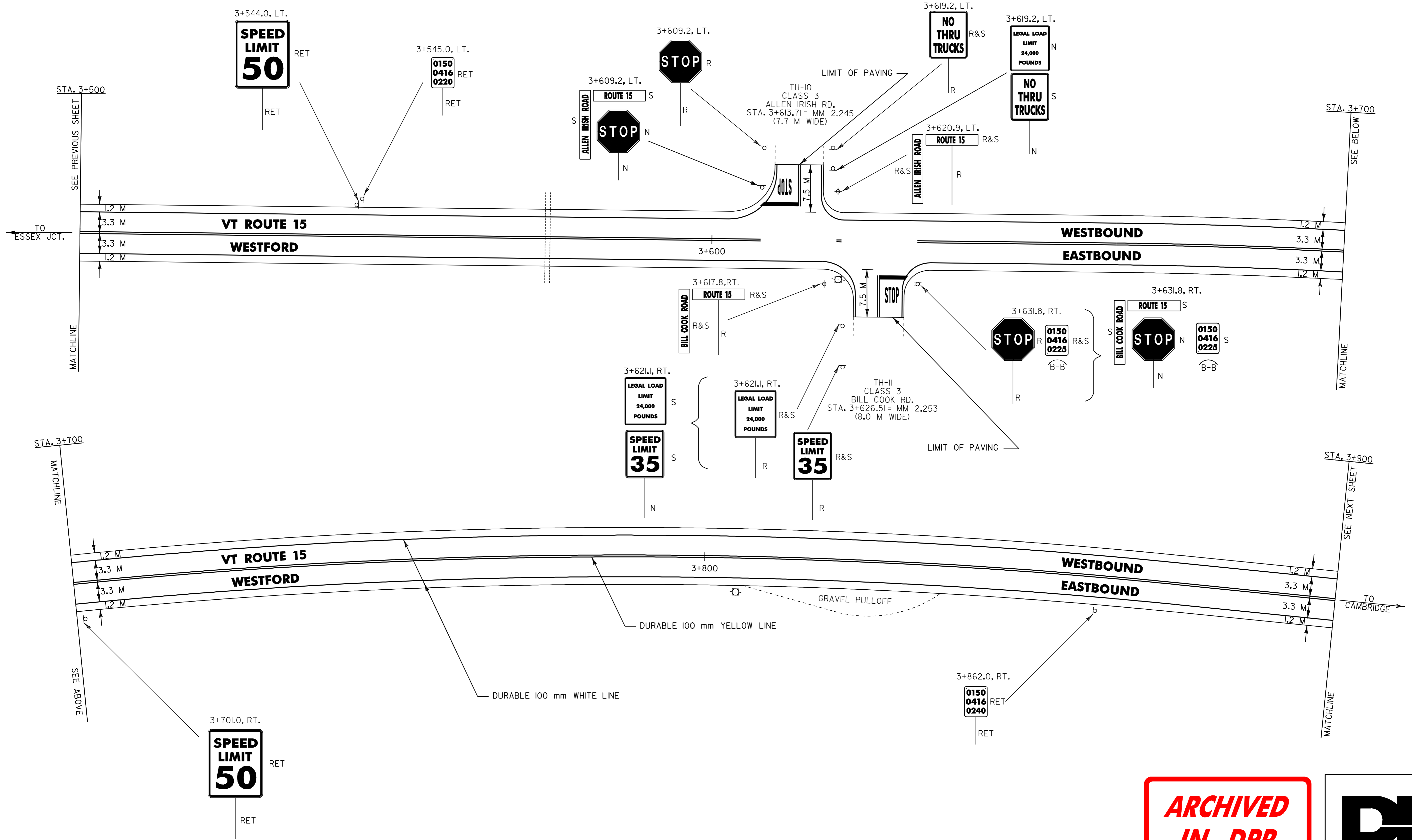
TEMPORARY & DURABLE LETTER OR SYMBOL  
 STA. 3+610.6, LT. - "STOP"  
 STA. 3+628.6, RT. - "STOP"

REMOVING SIGNS  
 AS SHOWN - 10

ERECTING SALVAGED SIGNS  
 AS SHOWN - 8



DITCH CLEANING  
 STA. 3+620.0 TO 3+778.7, RT. (SITE 6)  
 (FOR DETAILS, SEE SHEET 6)



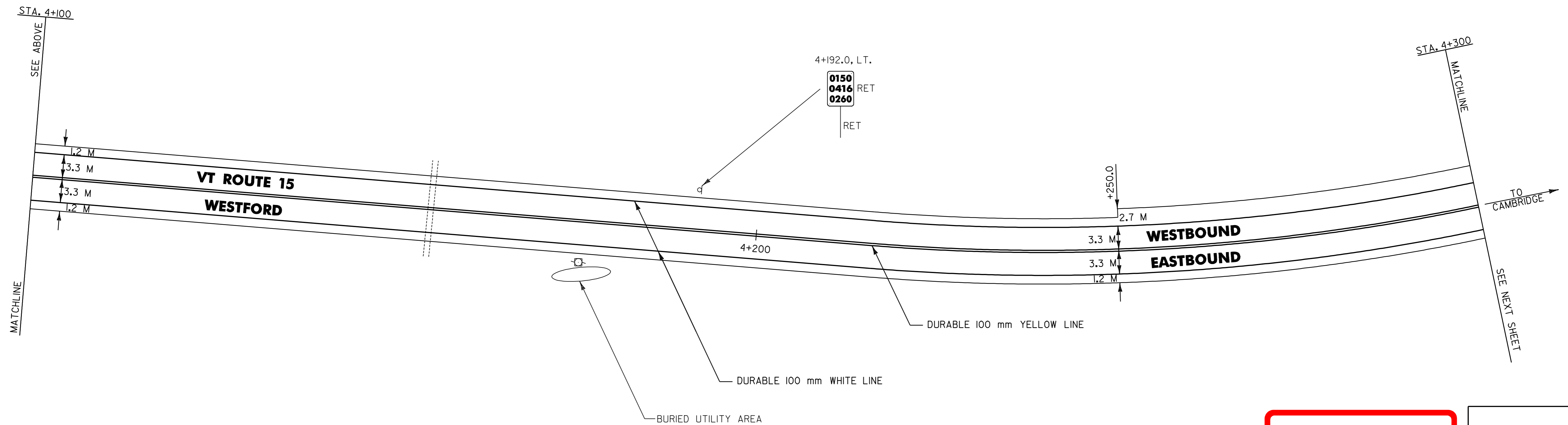
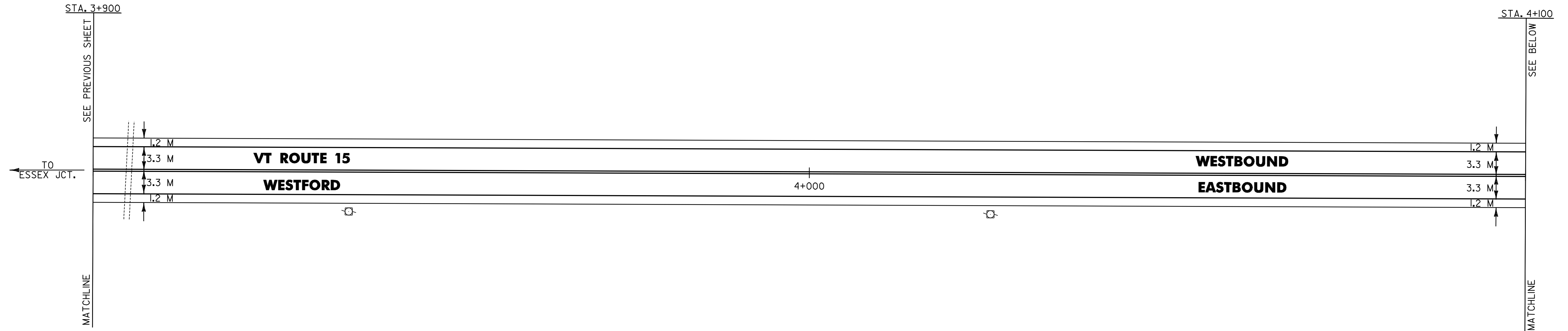
**ARCHIVED  
 IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTTRANS STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #12**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
DESIGNED BY: D-H	CHECKED BY:	
IPARM FILE NAME: pb17612.i		SHEET 21 OF 36



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IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #13**

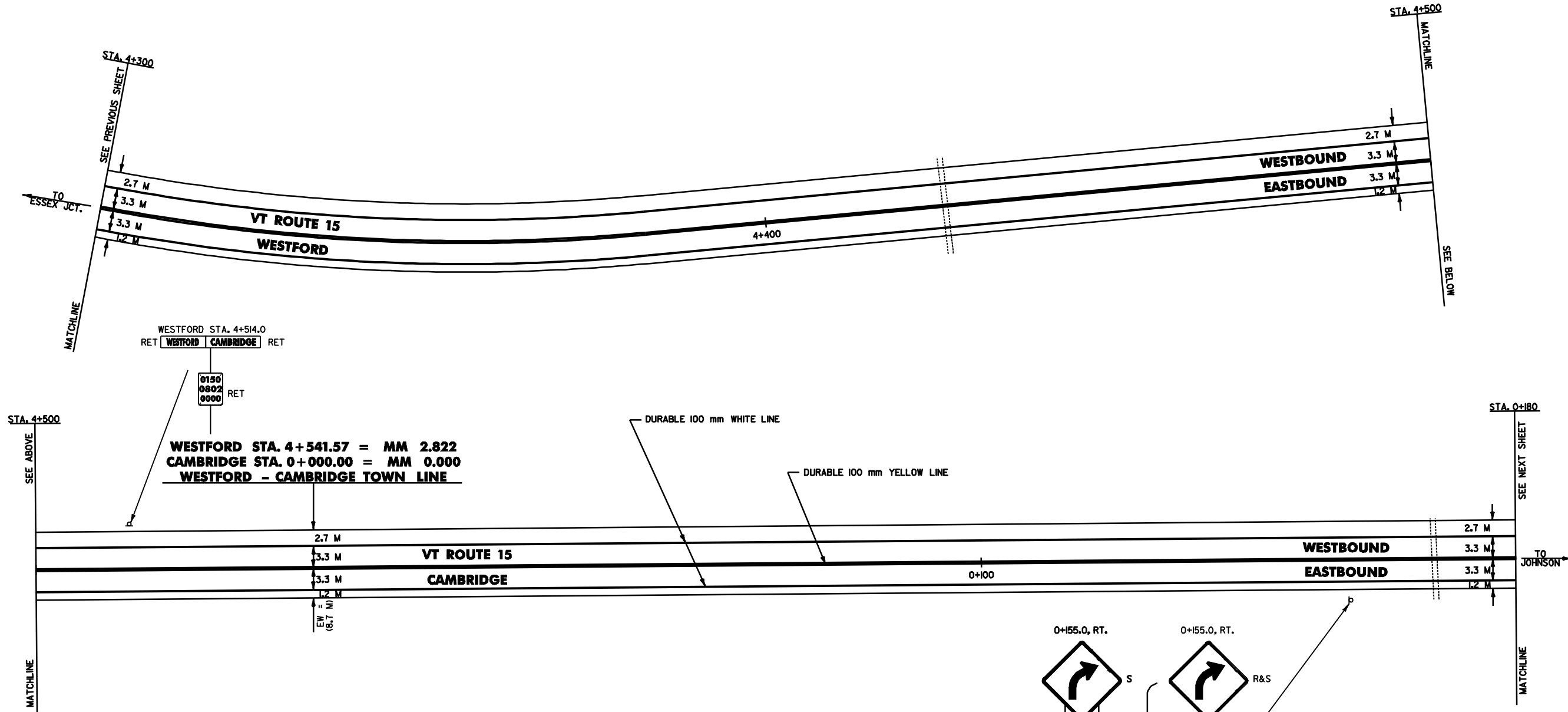
PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: ZpqveZ99biZ6ZpbI76.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pbI76I3,1	SHEET 22 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
 WESTFORD STA. 4+300.0 TO 4+541.57, SOLID LT. & RT.  
 CAMBRIDGE STA. 0+000.0 TO 0+180.0, SOLID LT. & RT.

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 WESTFORD STA. 4+300.0 TO 4+541.57, SOLID LT. & RT.  
 CAMBRIDGE STA. 0+000.0 TO 0+180.0, SOLID LT. & RT.

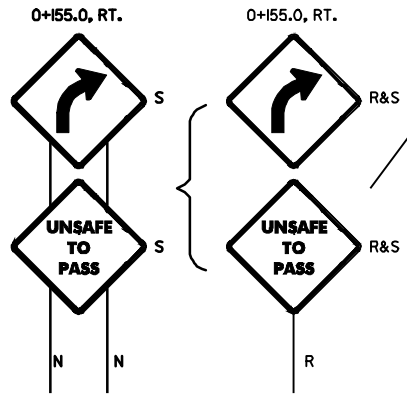
REMOVING SIGNS  
 AS SHOWN - 2

ERECTING SALVAGED SIGNS  
 AS SHOWN - 2



WESTFORD STA. 4+514.0  
 RET WESTFORD CAMBRIDGE RET  
 0150  
 0802  
 0000 RET  
**WESTFORD STA. 4+541.57 = MM 2.822**  
**CAMBRIDGE STA. 0+000.00 = MM 0.000**  
**WESTFORD - CAMBRIDGE TOWN LINE**

**ARCHIVED  
 IN DPR**

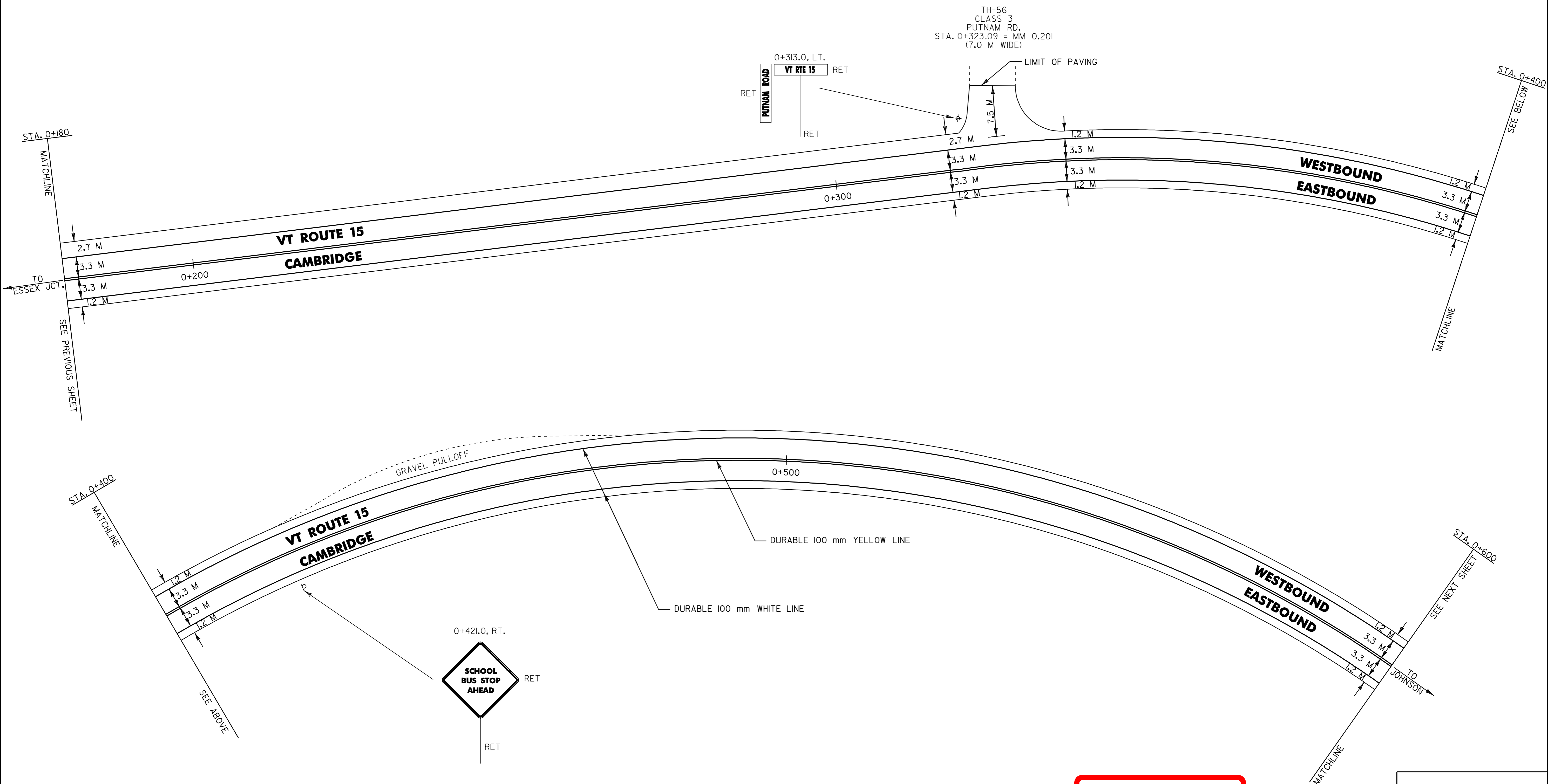


- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #14**

PROJECT NAME: UNDERHILL - CAMBRIDGE	PLOT DATE: 26-JAN-2006 11:00
PROJECT NUMBER: SIP_2212(1)S	DRAWN BY: D-H
FILE NAME: Z:\pva\99b\16\qb176.dgn	CHECKED BY:
PROJECT LEADER: JLL	SHEET 23 OF 36
DESIGNED BY: D-H	
IPARM FILE NAME: qb176(14).j	





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- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

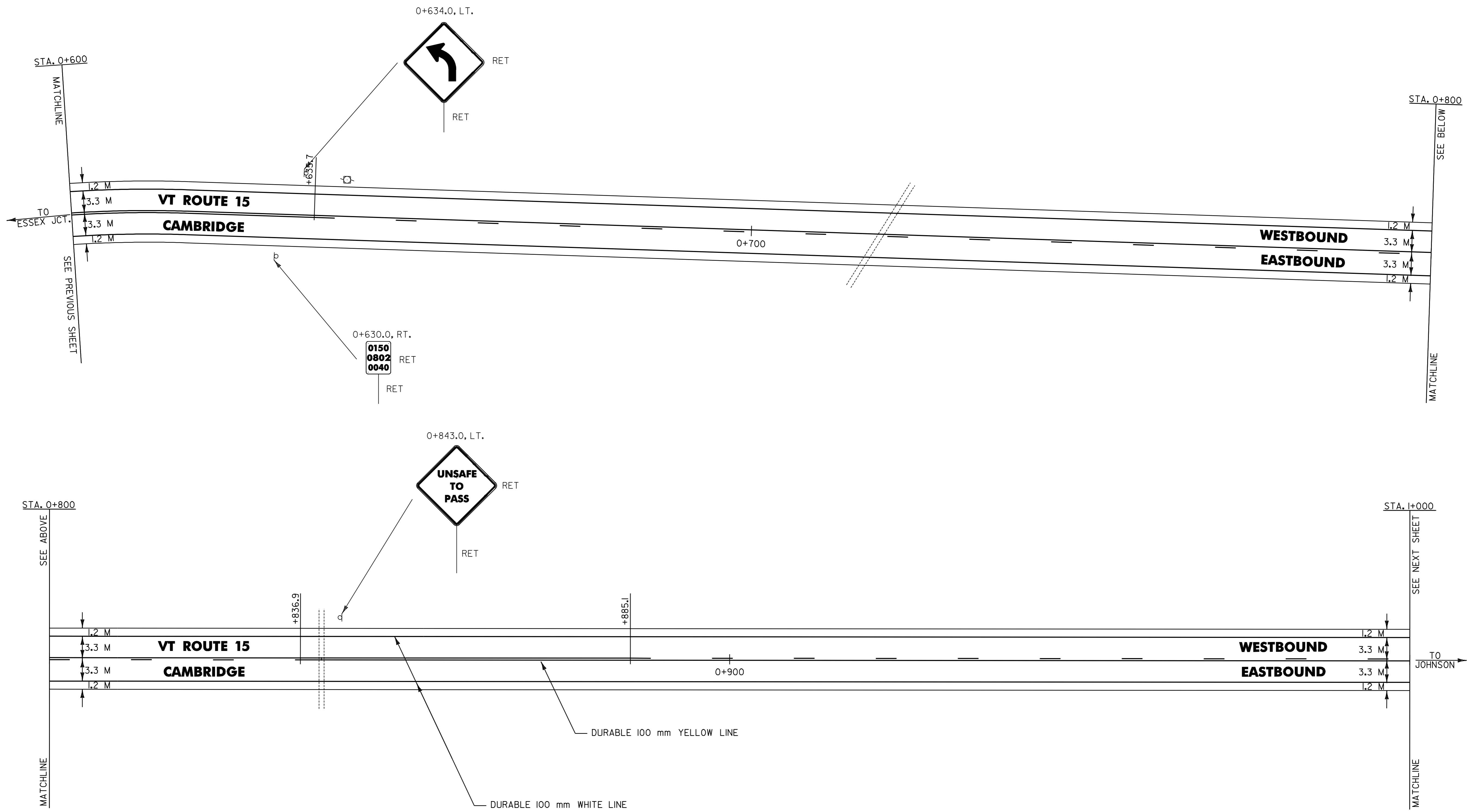
**LAYOUT SHEET #15**

PROJECT NAME:	UNDERHILL - CAMBRIDGE
PROJECT NUMBER:	STP_2212(1)S
FILE NAME:	zpgve299bl76/pbl76.dgn
PROJECT LEADER:	JLL
DESIGNED BY:	D-H
IPARM FILE NAME:	pbl76115.i
PLOT DATE:	26-JAN-2006 11:0
DRAWN BY:	D-H
CHECKED BY:	
SHEET	24 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. 0+600.0 TO 1+000.0, SOLID LT. & RT.

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. 0+600.0 TO 0+635.7, SOLID LT. & RT.  
 STA. 0+635.7 TO 0+836.9, SOLID LT./DASHED RT.  
 STA. 0+836.9 TO 0+885.1, SOLID LT. & RT.  
 STA. 0+885.1 TO 1+000.0, DASHED LT./SOLID RT.

DITCH CLEANING  
 STA. 0+664.7 TO 1+000.0, RT. (SITE 7)  
 (FOR DETAILS, SEE SHEET 6)



**ARCHIVED  
IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTtrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

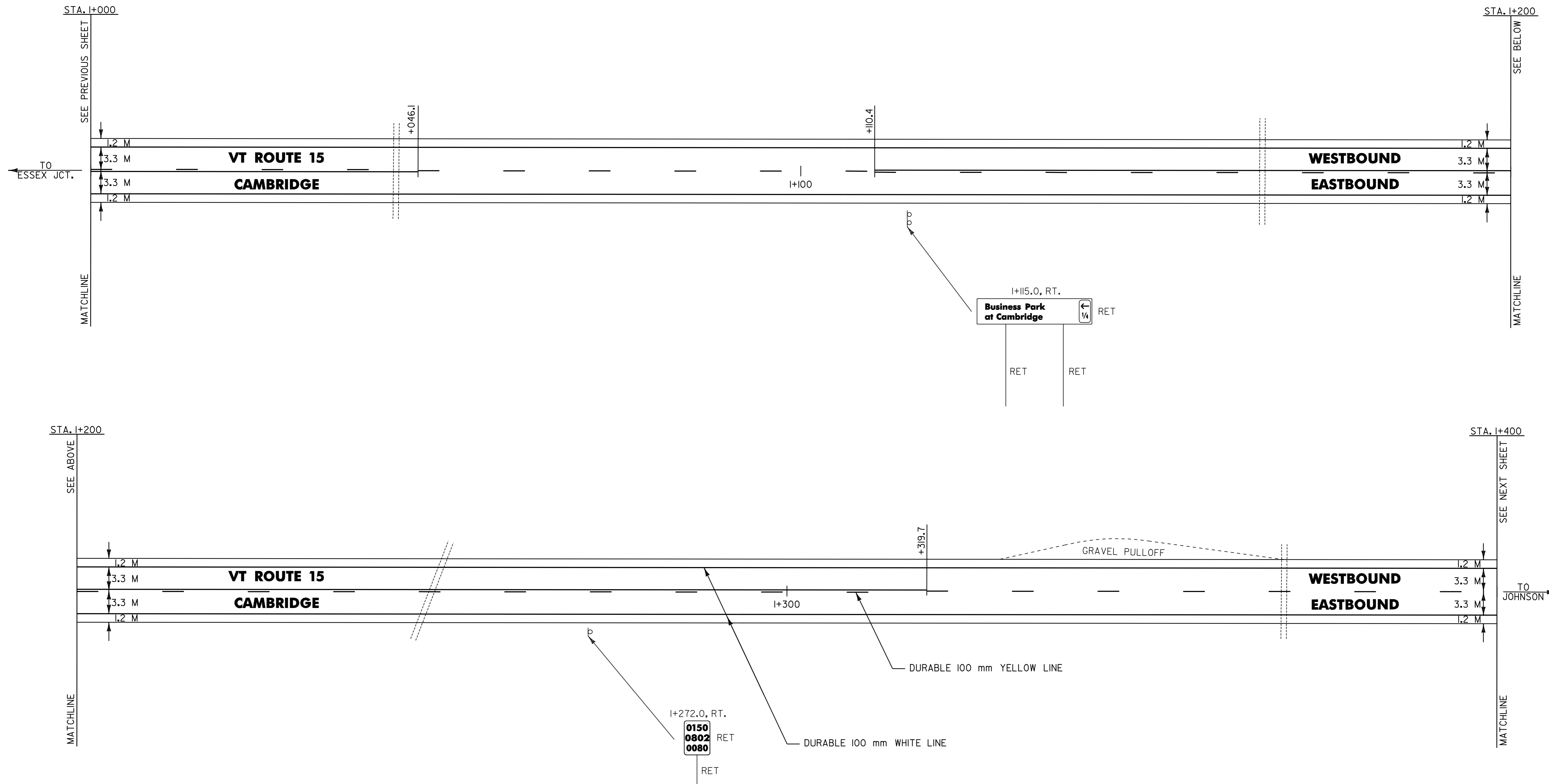
**LAYOUT SHEET #16**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pb17616.i	SHEET 25 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. I+000.0 TO I+400.0, SOLID LT. & RT.

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. I+000.0 TO I+046.1, DASHED LT./SOLID RT.  
 STA. I+046.1 TO I+10.4, DASHED CENTERLINE  
 STA. I+10.4 TO I+319.7, SOLID LT./DASHED RT.  
 STA. I+319.7 TO I+400.0, DASHED CENTERLINE

DITCH CLEANING  
 STA. I+000.0 TO I+400.0, RT. (SITE 7)  
 (FOR DETAILS, SEE SHEET 6)



**ARCHIVED  
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- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTTRANS STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #17**

PROJECT NAME:	UNDERHILL - CAMBRIDGE
PROJECT NUMBER:	STP_2212(1)S
FILE NAME:	2pave299b176/pb176.dgn
PROJECT LEADER:	JLL
DESIGNED BY:	D-H
IPARM FILE NAME:	pb17617.i
PLOT DATE:	26-JAN-2006 11:00
DRAWN BY:	D-H
CHECKED BY:	
SHEET	26 OF 36

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. I+400.0 TO I+820.0, SOLID LT. & RT.  
 (WITH EDGELINE BREAKS FOR JOHN PUTNAM  
 MEMORIAL DRIVE & CADY HILL ROAD)  
 STA. I+514.0, SOLID LT. (JOHN PUTNAM  
 MEMORIAL DRIVE EDGELINES)

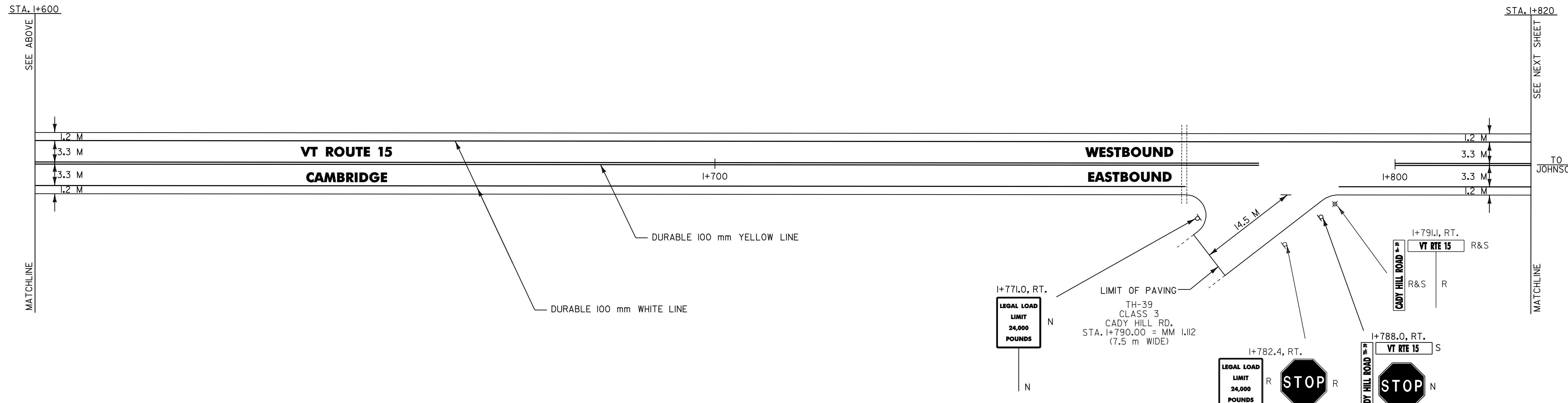
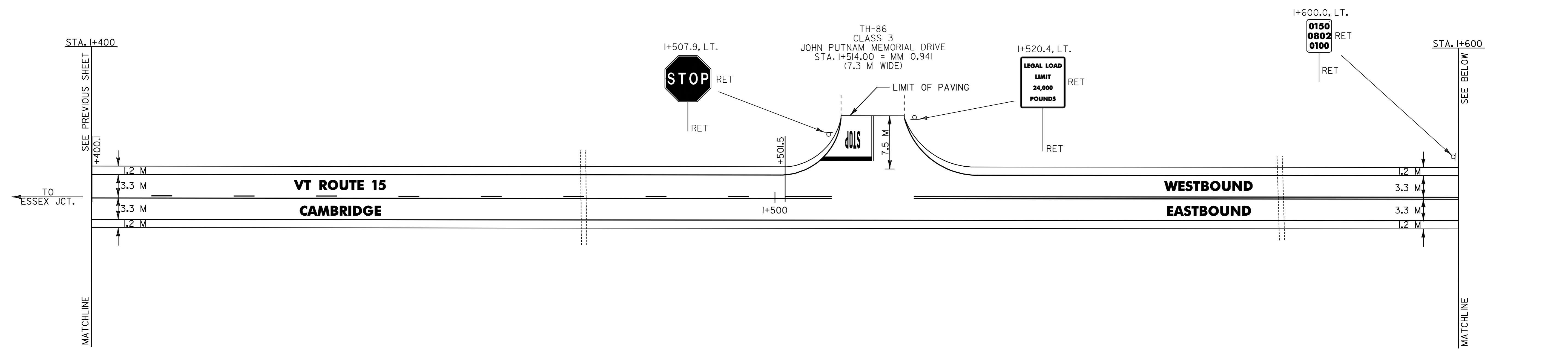
TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. I+400.0 TO I+400.1, DASHED CENTERLINE  
 STA. I+400.1 TO I+501.5, DASHED LT./SOLID RT.  
 STA. I+501.5 TO I+820.0, SOLID LT. & RT.  
 (WITH CENTERLINE BREAKS FOR JOHN PUTNAM  
 MEMORIAL DRIVE & CADY HILL ROAD)  
 STA. I+514.0, DOUBLE SOLID LT. (JOHN PUTNAM  
 MEMORIAL DRIVE CENTERLINE)

TEMPORARY & DURABLE 600 mm STOP BAR  
 STA. I+510.7, LT.  
 ERECTING SALVAGED SIGNS  
 AS SHOWN - 2

TEMPORARY & DURABLE LETTER OR SYMBOL  
 STA. I+510.7, LT. - 'STOP'

REMOVING SIGNS  
 AS SHOWN - 4

DITCH CLEANING  
 STA. I+400.0 TO I+820.0, RT. (SITE 7)  
 (FOR DETAILS, SEE SHEET 6)



**ARCHIVED  
IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT  
SHEET #18**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76Zpb176.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP 2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
DESIGNED BY: D-H	CHECKED BY:	
IPARM FILE NAME: db176118.i		SHEET 27 OF 36

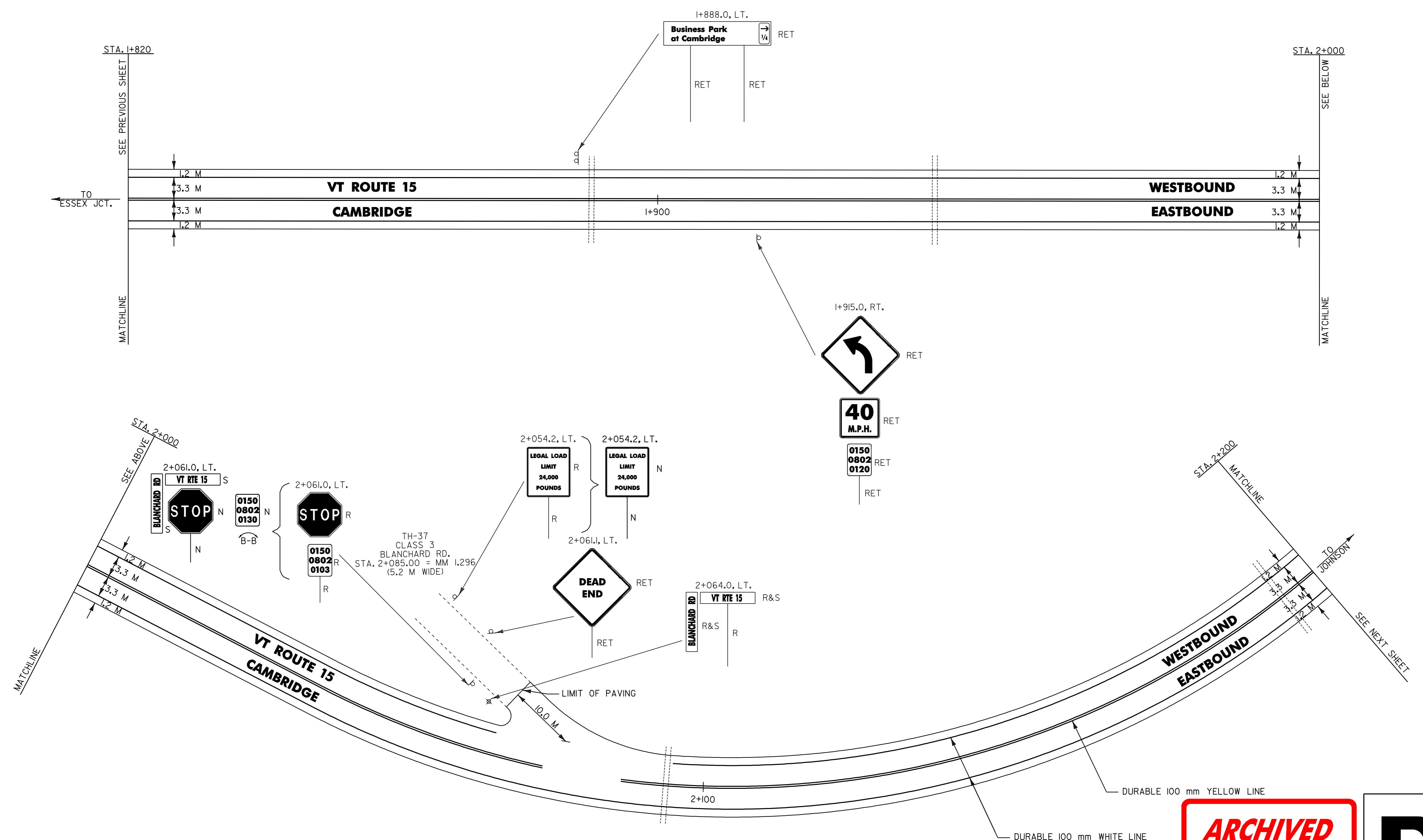
TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. 1+820.0 TO 2+200.0, SOLID LT. & RT.  
 (WITH EDGELINE BREAK FOR BLANCHARD ROAD)

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. 1+820.0 TO 2+200.0, SOLID LT. & RT.  
 (WITH CENTERLINE BREAK FOR BLANCHARD ROAD)

REMOVING SIGNS  
 AS SHOWN - 5

ERECTING SALVAGED SIGNS  
 AS SHOWN - 2

DITCH CLEANING  
 STA. 1+820.0 TO 2+132.4, RT. (SITE 7)  
 (FOR DETAILS, SEE SHEET 6)



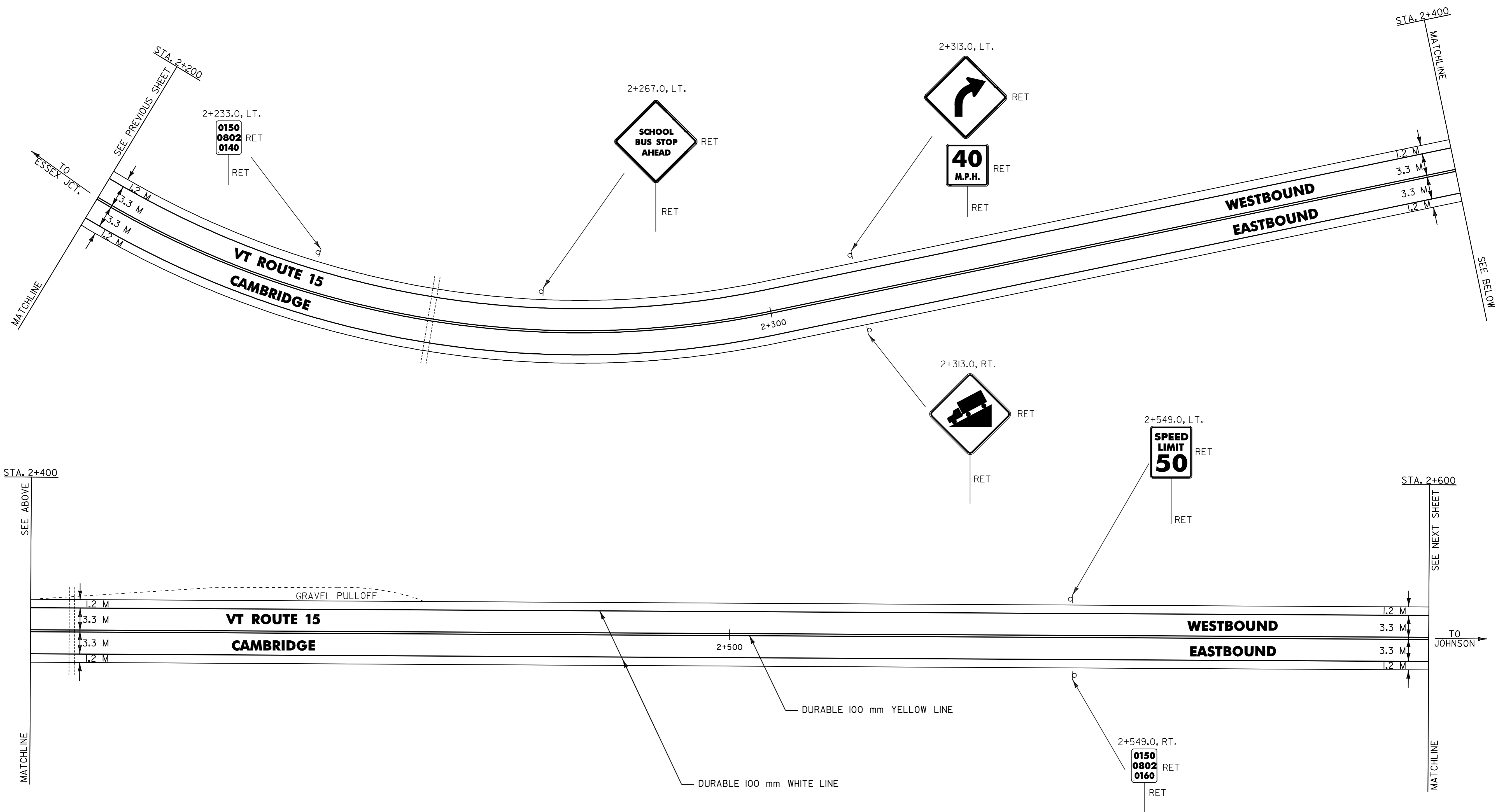
**ARCHIVED  
 IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #19**

PROJECT NAME: UNDERHILL - CAMBRIDGE	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP 2212(1)S	DRAWN BY: D-H
FILE NAME: Z:\pave\99bl76\pb176.dgn	CHECKED BY:
DESIGNED BY: D-H	SHEET 28 OF 36
IPARM FILE NAME: pb17619.i	



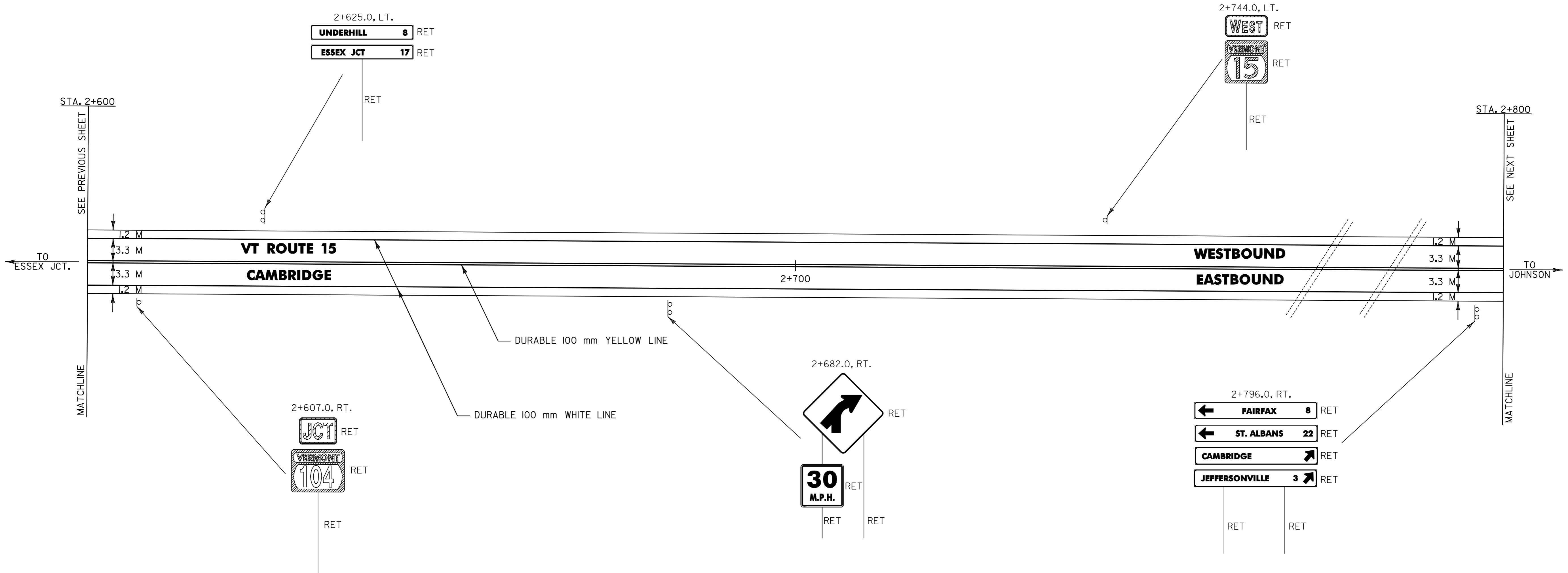
**ARCHIVED  
IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #20**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76Zpbl76.dgn	PLOT DATE: 26-JAN-2006 11:0
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pbl76120.i	SHEET 29 OF 36



**ARCHIVED  
IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #21**

PROJECT NAME: UNDERHILL - CAMBRIDGE	PLOT DATE: 26-JAN-2006 11:00
PROJECT NUMBER: STP_2212(1)S	DRAWN BY: D-H
FILE NAME: Zpqve299bl76Zpb176.dgn	CHECKED BY:
DESIGNED BY: D-H	SHEET 30 OF 36
IPARM FILE NAME: pb176121	

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. 2+800.0 TO 3+000.0, SOLID LT. & RT.  
 (WITH EDGELINE BREAK FOR VT ROUTE 104)  
 STA. 2+949.0, SOLID LT. (VT ROUTE 104 EDGELINES)  
 STA. 2+952.7 TO 3+000.0, SOLID LT. (LANE LINE)  
 STA. 2+962.0, SOLID LT. (TH-66 EDGELINES)

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. 2+800.0 TO 3+000.0, SOLID LT. & RT.  
 (WITH CENTERLINE BREAKS FOR VT ROUTE 104 AND TH-65)  
 STA. 2+949.0, DOUBLE SOLID LT. (VT ROUTE 104 CENTERLINE)  
 STA. 2+962.0, DOUBLE SOLID RT. (TH-66 CENTERLINE)

TEMPORARY & DURABLE 600 mm STOP BAR  
 STA. 2+938.2, LT.  
 STA. 2+962.0, RT.

DURABLE LETTER OR SYMBOL  
 STA. 2+938.2, LT. - "STOP"  
 STA. 2+958.1, LT. - "ONLY"  
 STA. 2+961.8, LT. - "ONLY"  
 STA. 2+962.0, RT. - "STOP"  
 STA. 2+997.8, LT. - "P"

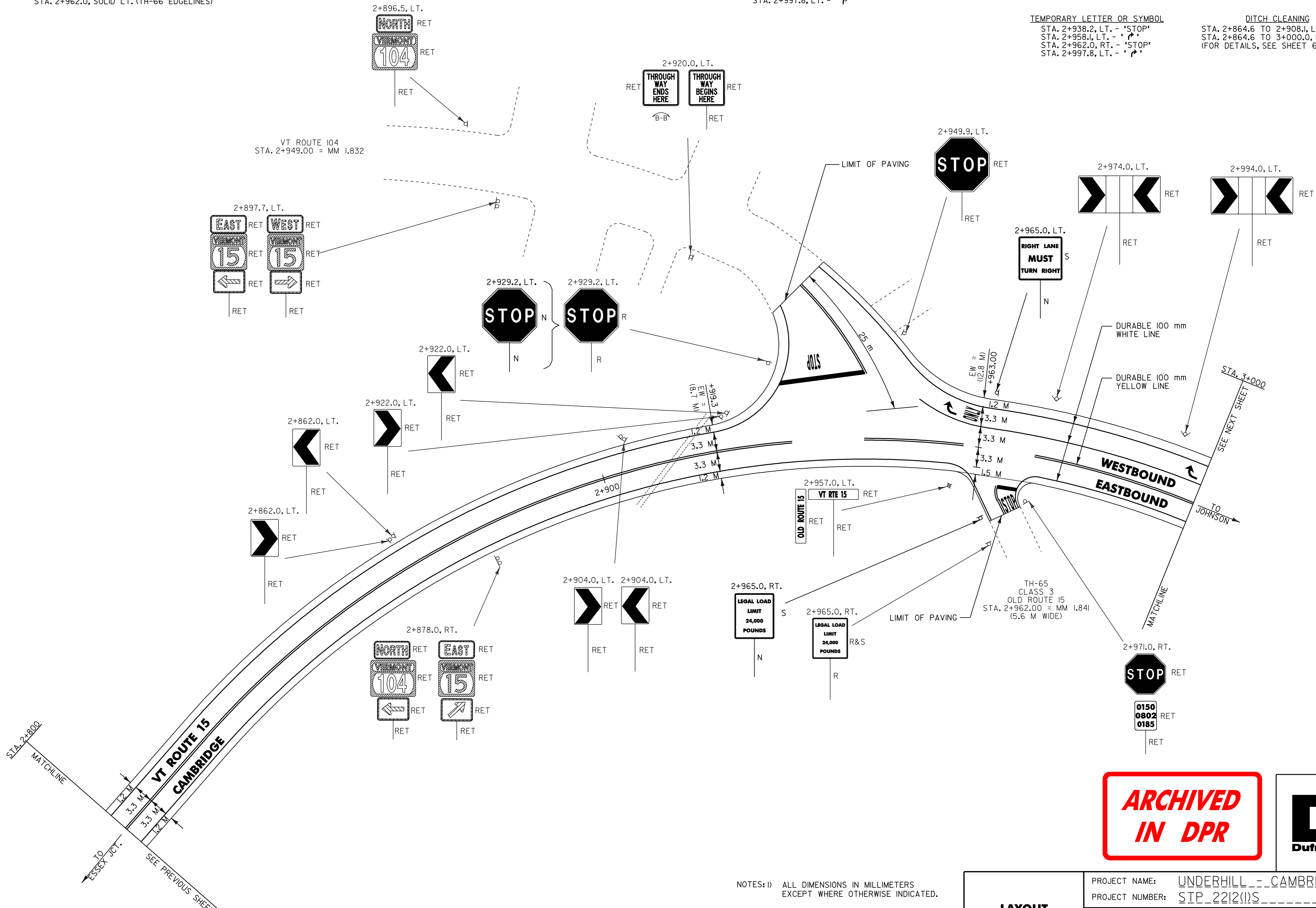
REMOVING SIGNS  
 AS SHOWN - 2

ERECTING SALVAGED SIGNS  
 AS SHOWN - 2



TEMPORARY LETTER OR SYMBOL  
 STA. 2+938.2, LT. - "STOP"  
 STA. 2+958.1, LT. - "ONLY"  
 STA. 2+962.0, RT. - "STOP"  
 STA. 2+997.8, LT. - "P"

DITCH CLEANING  
 STA. 2+864.6 TO 2+908.1, LT. (SITE 10)  
 STA. 2+864.6 TO 3+000.0, RT. (SITE 11)  
 (FOR DETAILS, SEE SHEET 6)



**ARCHIVED  
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- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTRANS STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #22**

PROJECT NAME: UNDERHILL - CAMBRIDGE	PLOT DATE: 26-JAN-2006 11:00
PROJECT NUMBER: STP_2212(1)S	DRAWN BY: D-H
FILE NAME: Z:\pave\99\bl76\bl76.dgn	CHECKED BY:
DESIGNED BY: D-H	SHEET 31 OF 36
IPARM FILE NAME: bl76122.i	

TEMPORARY & DURABLE 100 mm WHITE LINE  
 STA. 3+000.0 TO 3+200.0, SOLID LT. & RT.  
 STA. 3+000.0 TO 3+036.0, SOLID LT. (LANE LINE)  
 STA. 3+036.0 TO 3+096.0, DOTTED LT.

TEMPORARY & DURABLE 100 mm YELLOW LINE  
 STA. 3+000.0 TO 3+200.0, SOLID LT. & RT.

TEMPORARY & DURABLE LETTER OR SYMBOL  
 STA. 3+001.5, LT. - "ONLY"  
 STA. 3+031.1, LT. - "P"  
 STA. 3+034.8, LT. - "ONLY"

TEMPORARY LETTER OR SYMBOL  
 STA. 3+031.1, LT. - "P"

REMOVING SIGNS  
 AS SHOWN - 8

ERECTING SALVAGED SIGNS  
 AS SHOWN - 7

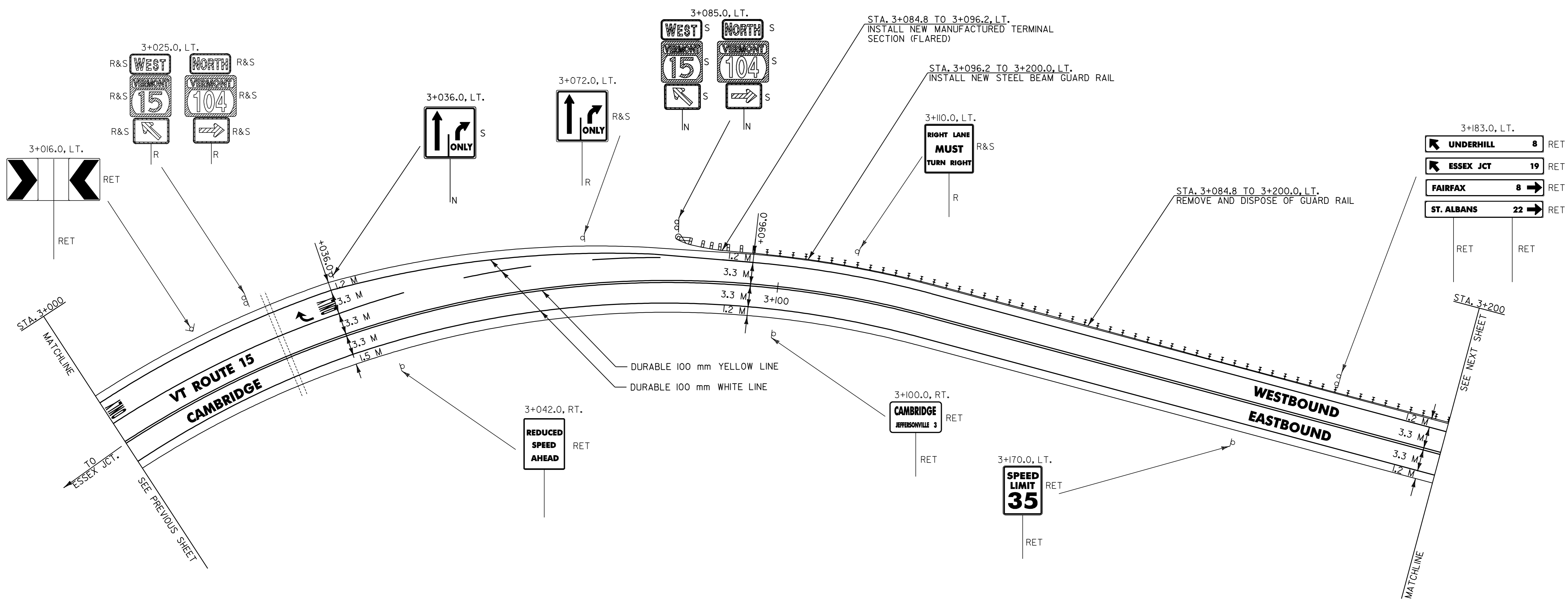
DITCH CLEANING  
 STA. 3+000.0 TO 3+057.8, RT. (SITE II)  
 (FOR DETAILS, SEE SHEET 6)



MANUFACTURED TERMINAL SECTION (FLARED)  
 STA. 3+084.8 TO 3+096.2, LT.

STEEL BEAM GUARD RAIL  
 STA. 3+096.2 TO 3+200.0, LT.

REMOVAL AND DISPOSAL OF GUARD RAIL  
 STA. 3+084.8 TO 3+200.0, LT.



3+183.0, LT.	UNDERHILL	8	RET
	ESSEX JCT	19	RET
	FAIRFAX	8	RET
	ST. ALBANS	22	RET

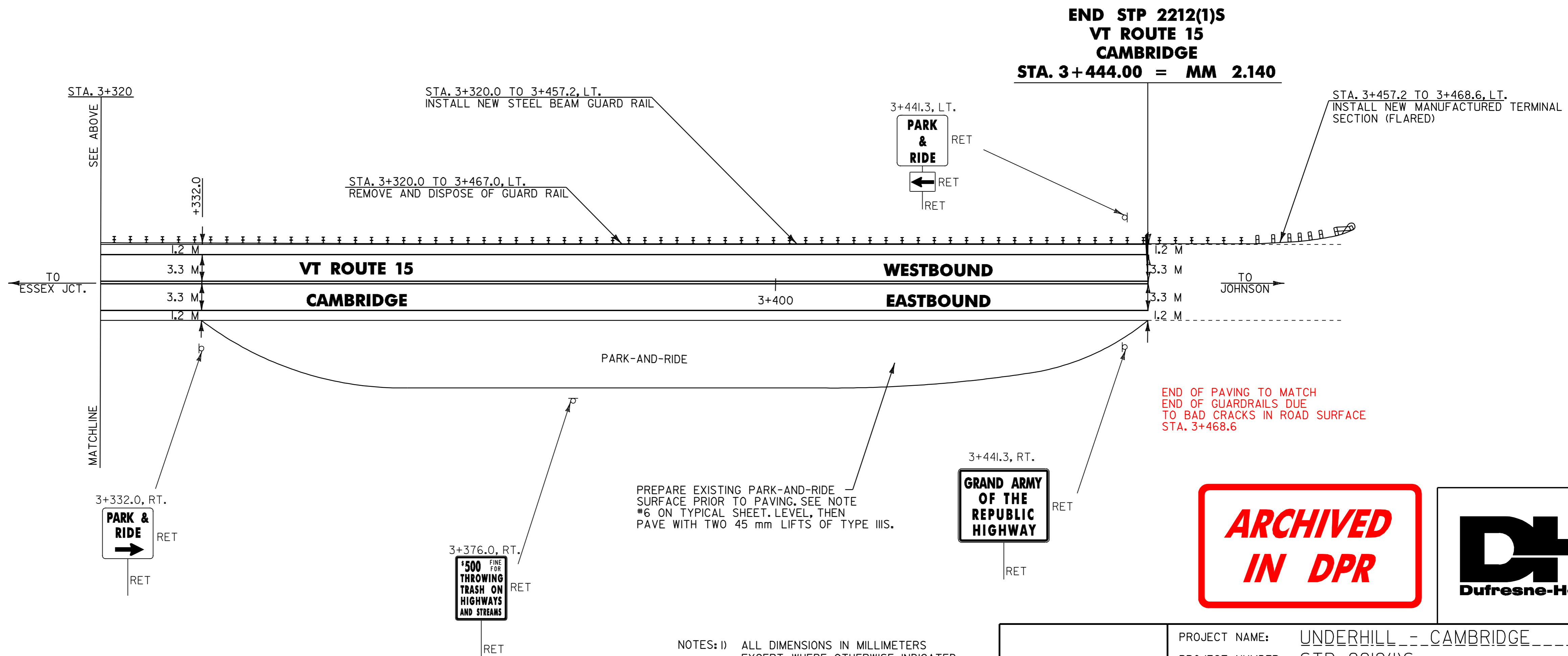
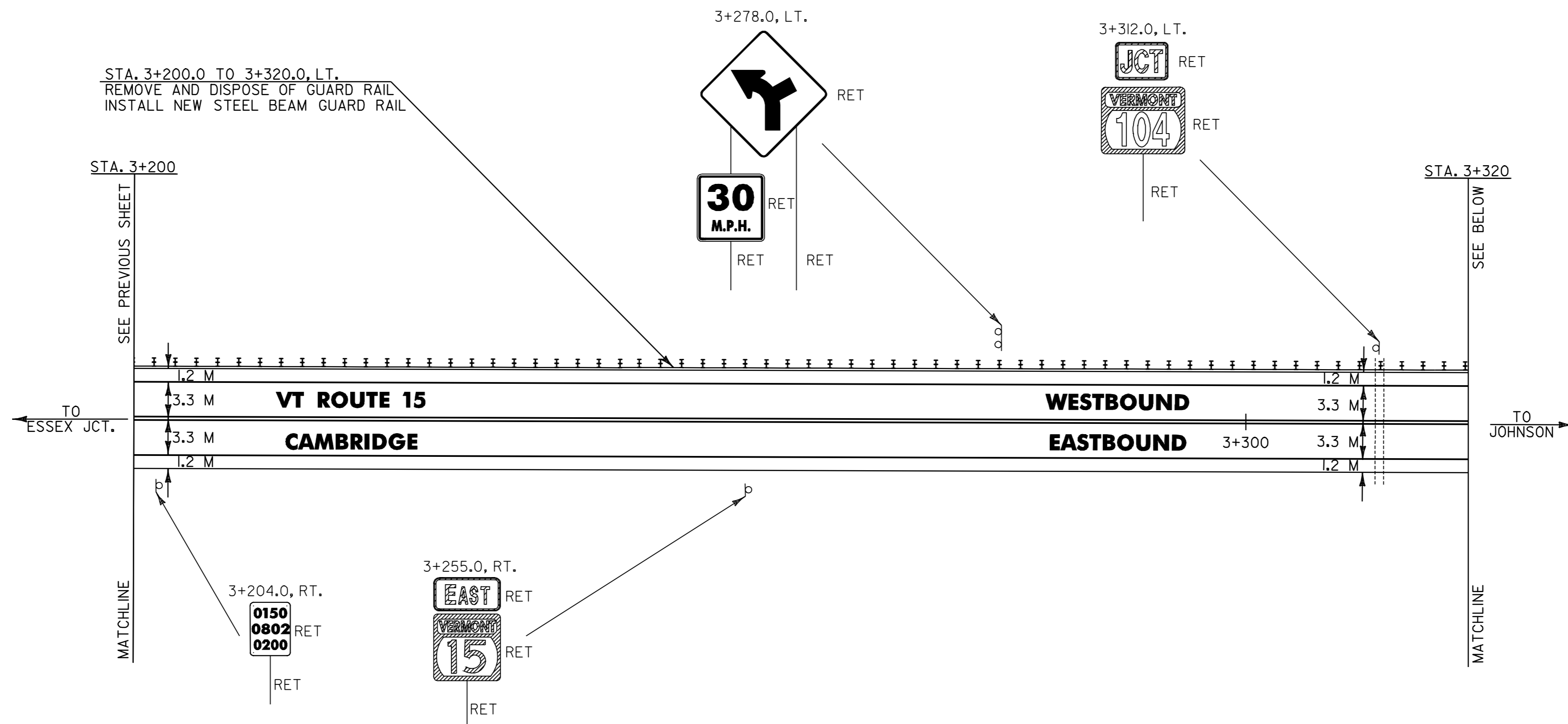
**ARCHIVED  
IN DPR**



- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
 2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
 3) EW = EXISTING ROADWAY WIDTH

**LAYOUT SHEET #23**

PROJECT NAME: UNDERHILL - CAMBRIDGE	FILE NAME: Zpqve299bl76/pbl76.dgn	PLOT DATE: 26-JAN-2006 11:00
PROJECT NUMBER: STP_2212(1)S	PROJECT LEADER: JLL	DRAWN BY: D-H
	DESIGNED BY: D-H	CHECKED BY:
	IPARM FILE NAME: pbl76123.i	SHEET 32 OF 36



PREPARE EXISTING PARK-AND-RIDE SURFACE PRIOR TO PAVING. SEE NOTE #6 ON TYPICAL SHEET. LEVEL, THEN PAVE WITH TWO 45 mm LIFTS OF TYPE III.

- NOTES: 1) ALL DIMENSIONS IN MILLIMETERS EXCEPT WHERE OTHERWISE INDICATED.  
2) FOR ANY TOWN HIGHWAY OR STREET DETAILS, SEE VTrans STANDARD E-193M.  
3) EW = EXISTING ROADWAY WIDTH

<b>LAYOUT SHEET #24</b>	PROJECT NAME: UNDERHILL - CAMBRIDGE	PLOT DATE: 26-JAN-2006 11:00
	PROJECT NUMBER: STP_2212(1)S	DRAWN BY: D-H
	FILE NAME: Zpqve299bl76Zpb176.dgn	CHECKED BY:
	DESIGNED BY: D-H	SHEET 33 OF 36



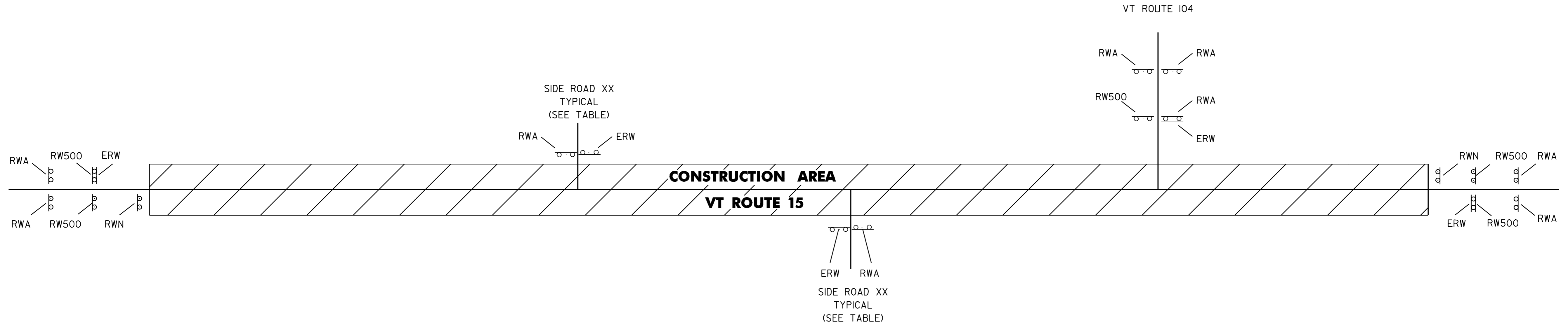




**CONSTRUCTION APPROACH SIGNING**

NOT TO SCALE

SEE VTrans STANDARD E-100M FOR SIGN PLACEMENT.



**LEGEND**

- ERW = END ROAD WORK
- RW500 = ROAD WORK 500 FT
- RWA = ROAD WORK AHEAD
- RWN = ROAD WORK NEXT 5 1/4 MILES

LOCATION	ERW	RW500	RWA	RWN
<b>VT ROUTE 15</b>				
BEGIN PROJECT	1	2	2	1
TH-18 (COWIE RD.)	1		1	
TH-17	1		1	
TH-10 (ALLEN IRISH RD.)	1		1	
TH-11 (BILL COOK RD.)	1		1	
TH-56 (PUTNAM RD.)	1		1	
TH-86	1		1	
TH-39 (CADY HILL RD.)	1		1	
TH-37	1		1	
TH-36 (CONNECTOR TO VT ROUTE 104)	1		1	
TH-65	1		1	
VT ROUTE 104	1	2	2	
END PROJECT	1	2	2	1
TOTALS	13	6	16	2

ARCHIVED  
IN DPR



<b>CONSTRUCTION APPROACH SIGNING</b>	PROJECT NAME: UNDERHILL - CAMBRIDGE
	PROJECT NUMBER: STP 2212(1)S
	FILE NAME: Zpqve299bl76Zpb176.dgn
	DESIGNED BY: D-H
	PLOT DATE: 26-JAN-2006 11:11
	DRAWN BY: D-H
	CHECKED BY:
	IPARM FILE NAME: pb176cs1
	SHEET 36 OF 36