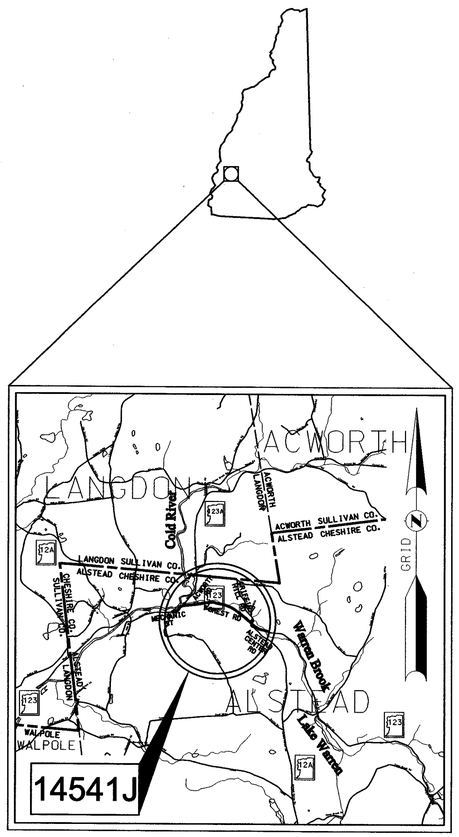
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS
FEDERAL AID PROJECT

X-A000(473)
N.H. PROJECT NO. 14541J
N.H. ROUTE 123

DESIGN DATA

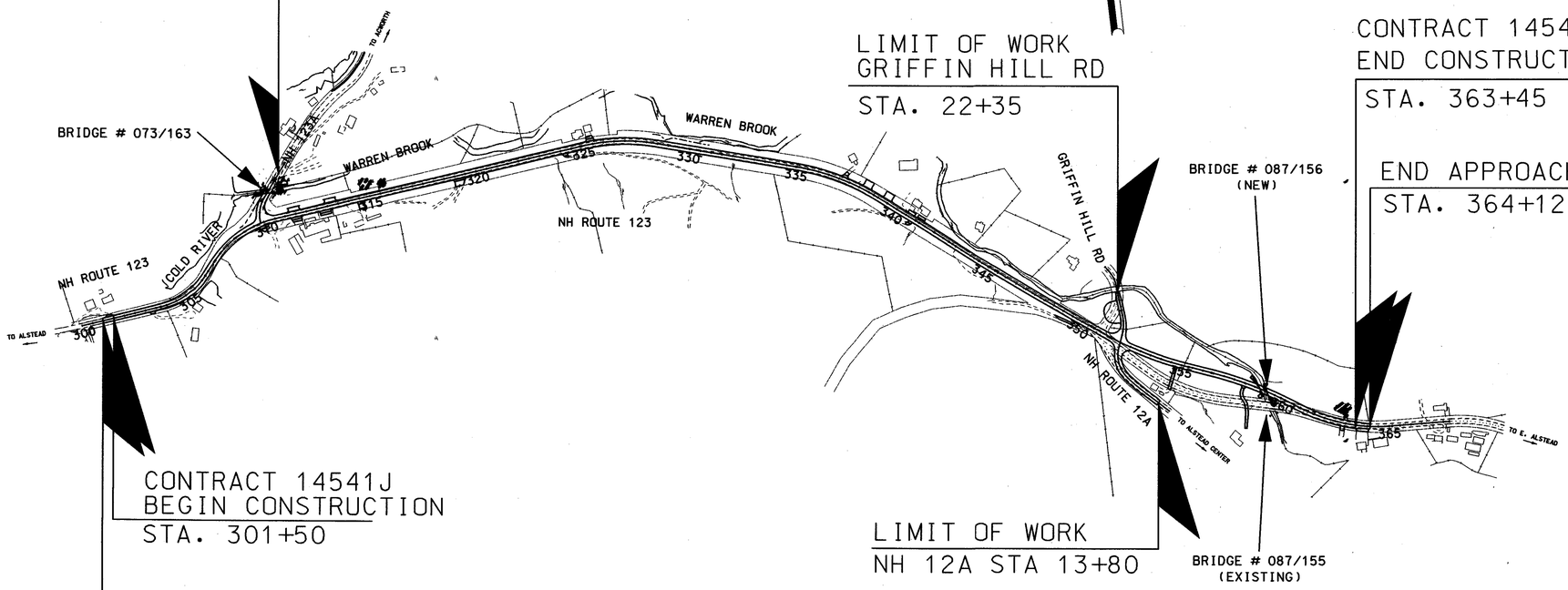
AVERAGE DAILY TRAFFIC 20 06	2000
AVERAGE DAILY TRAFFIC 20 26	2400
PERCENT OF TRUCKS	8.1%
DESIGN SPEED	35 mph
LENGTH OF PROJECT	6195 ft



LOCATION MAP

1 ½ 0 1 2 mi.

GRAPHIC SCALE



TOWN OF ALSTEAD
COUNTY OF CHESHIRE
SCALE: 1" = 300'

THE STATE OF NEW HAMPSHIRE
CRAIG A. GREEN
No. 5059
REGISTERED PROFESSIONAL ENGINEER

NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL:
James A. Moore — DIRECTOR OF PROJECT DEVELOPMENT — May 18, 2007 DATE

APPROVED: — ASSISTANT COMMISSIONER AND CHIEF ENGINEER — 5/18/07 DATE

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:
DIVISION ADMINISTRATOR — DATE

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
X-A000(473)	14541J	1	156

DRAWN BY DRH	DATE 2006
CHECKED BY CAC	DATE 5/2007

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INDEX OF SHEETS

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2	INDEX OF SHEETS AND GENERAL NOTES
3,4	STANDARD SYMBOLS
5-7	TYPICAL SECTIONS OF IMPROVEMENT
8-11	SUMMARY OF QUANTITIES
	SPECIAL USE PLANS
12	PAVEMENT AND BASE MATCH DETAILS
13	DRIVEWAY DETAILS
14	DRIVEWAY AND DRAINAGE DETAILS
15	SIGN TEXT LAYOUT (PERMANENT)
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153-156	NH ROUTE 123A

GENERAL NOTES

1. FOR STANDARD PLANS, SEE "STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION" DATED 2001 (A BOUND BOOK).
2. HIGH TENSION OVERHEAD TRANSMISSION LINES ARE LOCATED THROUGHOUT THE PROJECT WITH CROSSINGS AT VARIOUS LOCATIONS AND RUNNING ALONG THE ROAD THROUGHOUT THE PROJECT EVEN ON REGULAR POLES. THE CONTRACTOR IS ADVISED THAT EXTREME CAUTION WILL BE REQUIRED IN THE OPERATION OF EQUIPMENT, ESPECIALLY CRANES AND PILE DRIVING EQUIPMENT.
3. REMOVE TOPSOIL FOR ITS TOTAL DEPTH WITHIN THE LIMITS OF THE SLOPE LINES. UNLESS OTHERWISE DIRECTED, STOCKPILE TOPSOIL AND USE IT ON THIS PROJECT AS NEEDED UNDER SECTION 641 - LOAM AND/OR SECTION 647 - HUMUS.
4. REMOVAL OF EXISTING CONCRETE PAVEMENT WILL BE PAID UNDER ITEM 203.2 - ROCK EXCAVATION. THE BITUMINOUS PAVEMENT ABOVE THE CONCRETE WILL NOT BE PAID UNDER ITEM 203.2.
5. MODIFY SUPERELEVATION ON EXISTING CURVES BY THE USE OF A LEVELING COURSE TO THE RATES INDICATED ON THE PLANS OR AS ORDERED.
6. EXISTING DELINEATORS AND WITNESS MARKERS THAT ARE REMOVED AND DETERMINED BY THE ENGINEER TO BE IN ACCEPTABLE CONDITION SHALL BE RESET (SUBSIDIARY). ADDITIONAL DELINEATORS AND WITNESS MARKERS ORDERED WILL BE PAID UNDER THE APPROPRIATE ITEMS OF THE CONTRACT.
7. NO EXISTING MONUMENTS, BOUNDS, OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
8. PERFORM ALL WORK WITHIN THE EXISTING RIGHT-OF-WAY, UNLESS OTHERWISE SHOWN ON THE PLANS OR AS ORDERED BY THE ENGINEER.
9. REMOVE UNPROTECTED PROJECT MARKERS (SUBSIDIARY).
10. SURVEY DATA FOR THIS PROJECT WAS COLLECTED BY SDR AND THE FIELD NOTES CAN BE FOUND IN THE FIELD BOOK(S) 13222 & 13248. COORDINATES ARE NEW HAMPSHIRE STATE PLANE COORDINATES OF N.A.D. 1983 AND THE BEARINGS ARE GRID. ELEVATIONS ARE REFERENCED TO N.G.V.D. 1929.
11. QUANTITIES FOR EMBANKMENT AND EXCAVATION FOR SLOPE ROUNDINGS AS SHOWN ON THE TYPICALS HAVE NOT BEEN CALCULATED AND ARE NOT INCLUDED IN THE QUANTITY SUMMARIES, AND ARE CONSIDERED SUBSIDIARY TO THE APPROPRIATE 203 ITEMS.

THE FOLLOWING GENERAL NOTES WILL BE USED ON THIS PROJECT:

1	2	3			6	7	8		10	11	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED DATE
NEW DESIGN CAC DATE 5/2007
SHEET CHECKED WAC DATE 5/2007
AS BUILT DETAILS DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

INDEX OF SHEETS AND GENERAL NOTES

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EDGE OF PAVEMENT — PROPOSED ROADWAY

TRAVELED WAY — existing roadway

(pavement removed outside slope lines)

DRIVEWAYS — (label surface type)

BUILDINGS — (porch) — (building to be removed) — (label house or type of building)

FOUNDATION — (label type)

GUARDRAIL (LABEL TYPE) — (PROPOSED) — (existing) bgr cgr

CURB — (PROPOSED) — (existing) — (label type)

STEPS AND WALK — (label type)

INTERMITTENT WATER COURSE

SHORE LINE — river/stream — pond — (label name of water body)

BRUSH OR WOODS LINE

TREES (PLANS) — (deciduous) (coniferous) (stump)

TREES (CROSS-SECTIONS) — (show circumference in mm or feet & type)

HEDGE — (label type)

WELL

FLAG POLE — fp

GENERAL CULTURE

LEACH FIELD — leach field

GAS PUMP — gp

FUEL TANK (ABOVE GROUND) — ft (label size & type)

SEPTIC TANK

GRAVE — gr

BRIDGE CROSSING STREAM

HIGHWAY OVERPASS

ROCK OUTCROP

ORIGINAL GROUND (TYPICALS)

ROCK LINE (TYPICALS & SECTIONS ONLY)

STONE WALL — (existing) — (PROPOSED)

RETAINING WALL (LABEL TYPE) — (existing) — (PROPOSED) — (points toward retained ground)

FENCE (BARBED WIRE)

FENCE (OTHER) — (existing) — (PROPOSED) — (label fence type)

SIGNS — (single post) (double post)

MAILBOX — mb

SATELLITE DISH ANTENNA — da

WETLANDS

WETLAND DESIGNATION NUMBER — 17 PUB2E

DELINEATED WETLAND — DW

POTENTIAL WET AREA SYMBOL

ENGINEERING

CONSTRUCTION BASELINE — 30 31 32

PC, PT, POT (ON CONST BASELINE)

PI (IN CONSTRUCTION BASELINES)

INTERSECTION OR EQUATION OF TWO LINES

ORIGINAL GROUND LINE (PROFILES AND CROSS-SECTIONS)

PROFILE GRADE LINE (PROFILES AND CROSS-SECTIONS)

SLOPE LINE
CLEARING LINE — SLOPE LINE — CLEARING LINE

SLOPE LINE (FILL)

SLOPE LINE (CUT)

PROFILES AND CROSS SECTIONS:
ORIGINAL GROUND ELEVATION (LEFT) — 22.10 (metric) — 72.5 (english)
FINISHED GRADE ELEVATION (RIGHT) — 24.123 (metric) — 79.14 (english)

INTERSTATE NUMBERED HIGHWAY — 93

UNITED STATES NUMBERED HIGHWAY — 4

STATE NUMBERED HIGHWAY — 175

BORING LOCATION — B1

TEST PIT — TP1

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED — DATE
NEW DESIGN — DATE
SHEET CHECKED — DATE
AS BUILT DETAILS — DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10/25/04	Std Symbol Sheets	14541J	3	156

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DRAINAGE

MANHOLE ⊙mh
CATCH BASIN ⊡cb
DROP INLET ⊡di
(existing)

MANHOLE ●
CATCH BASIN ■
DROP INLET ■
(PROPOSED)

DRAINAGE PIPE (existing) (label size & type)
DRAINAGE PIPE (PROPOSED)
UNDERDRAIN (existing) (label size & type)
UNDERDRAIN (PROPOSED)
show direction of flow
HEADER (existing & PROPOSED)
END SECTION (existing & PROPOSED) METAL RCP
OPEN DITCH (PROPOSED)
EROSION CONTROL/ STONE SLOPE PROTECTION

FLOODPLAIN / FLOODWAY

500 YEAR FLOODPLAIN BOUNDARY —FP500—
100 YEAR FLOODPLAIN BOUNDARY —FP100—
FLOODWAY —FW—

BOUNDARIES / RIGHT-OF-WAY

RIGHT-OF-WAY LINE (label type)
PROPERTY LINE HATFIELD / McCOY
TOWN LINE BOW / CONCORD
COUNTY LINE COOS / GRAFTON
STATE LINE MAINE / NEW HAMPSHIRE
BOUND ⊡Bnd ⊡NH BND
STATE LINE/ TOWN LINE MONUMENT ⊡S/L ⊡T/L
NHDOT PROJECT MARKER △
IRON PIPE OR PIN ⊙ip ⊙IP
DRILL HOLE IN ROCK ⊙dh
NATIONAL FOREST
PROPERTY PARCEL NUMBER (12)
HISTORIC PROPERTY Ⓗ

UTILITIES

TELEPHONE POLE ●
POWER POLE ■
JOINT OCCUPANCY ○
MISCELLANEOUS/UNKNOWN POLE ▲
GUY POLE OR STUB ◒
(plot point at face not center of symbol)

POLE STATUS:
REMOVE, LEAVE, PROPOSED, OR TEMPORARY AS APPLICABLE e.g.:
R L
P+22.0 / 4.80 (metric) T+22.0 / 4.80
P+35 / 29.1' (english) T+35 / 29.1'

LIGHT POLE
LIGHT ON POWER POLE
LIGHT ON JOINT POLE
existing (PROPOSED)

RAILROAD (label ownership)
RAILROAD SIGN
RAILROAD SIGNAL
GROUND LIGHT/LAMP POST gl lp

UNDERGROUND UTILITIES

WATER (existing) W
WATER (PROPOSED) PW
SEWER (existing) S
SEWER (PROPOSED) PS
TELEPHONE (existing) T
TELEPHONE (PROPOSED) PT
ELECTRIC (existing) E
ELECTRIC (PROPOSED) PE
GAS (existing) G
GAS (PROPOSED) PG
LIGHTING (existing) L
LIGHTING (PROPOSED) PL
OVERHEAD ELECTRIC TRANSMISSION LINE OE
(label size, type and, on existing lines, note if abandoned)

UTILITY JUNCTION BOX ⊠jb (existing) ⊠JB (PROPOSED)

WATER GATE
WATER SHUT OFF
GAS SHUT OFF
MANHOLE
SEWER
TELEPHONE
ELECTRICAL
GAS
HYDRANT
(existing) (PROPOSED) MH-S MH-T MH-E MH-G

TRAFFIC SIGNALS

MAST ARM (existing)
MAST-ARM (PROPOSED) (WITH TRAFFIC SIGNAL HEADS) (metric) 9.0 MA (note angle from ⊥ to arm) (english) 30' MA
OPTICOM RECEIVER
OPTICOM STROBE
TRAFFIC SIGNAL (existing) (existing) (PROPOSED)
PEDESTAL WITH PEDESTRIAN SIGNAL HEADS AND PUSH BUTTON UNIT
STEEL SPAN WIRE POLES
SIGNAL CONDUIT (existing)
SIGNAL CONDUIT (PROPOSED)
CONTROLLER CABINET (existing) cc (PROPOSED) CC
METER PEDESTAL ⊠mp ⊠MP
PULL BOX □pb □PB
HAND HOLE □hh □HH
LOOP DETECTOR (QUADRUPOLE) (existing) (PROPOSED) (label size)
LOOP DETECTOR (RECTANGULAR) (existing) (PROPOSED) (label size)

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	DATE	
NEW DESIGN	DATE	
SHEET CHECKED	DATE	
AS BUILT DETAILS	DATE	

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
10/25/04	Std Symbol Sheets	14541J	4	156

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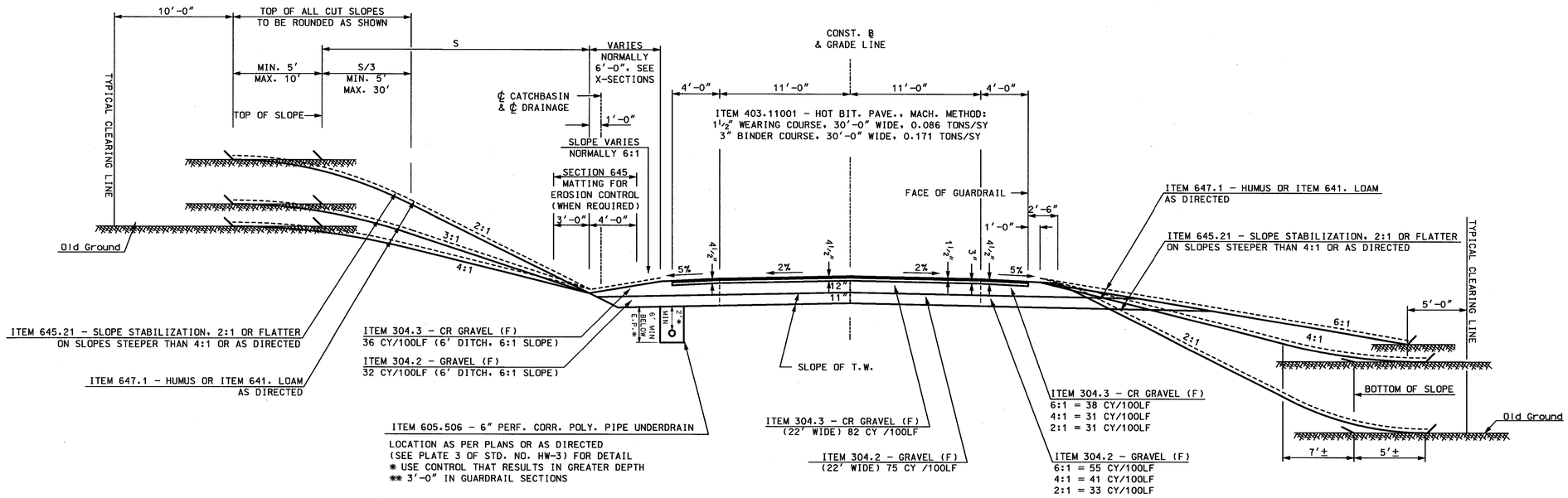


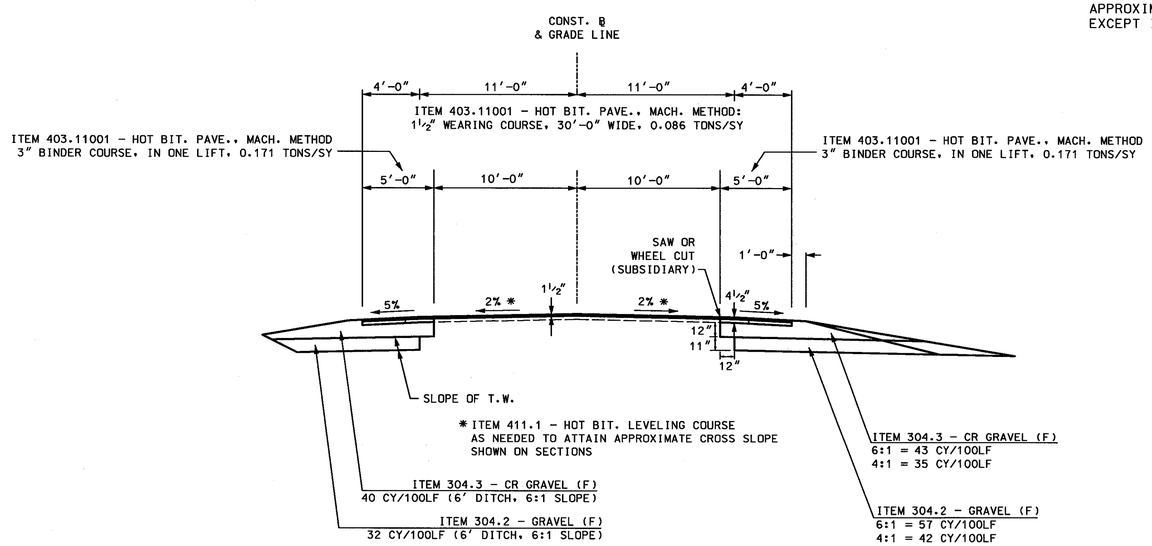
N.H. ROUTES 123, 123A & 12A

PAVEMENT WIDTHS VARY FOR N.H. 123A & 12A

(SEE PAVEMENT LAYOUT PLANS)

GENERAL NOTES

1. EXISTING ROADWAY IN EMERGENCY RECONSTRUCTION AREAS IS APPROXIMATELY 3.5" HOT BIT. PAVEMENT OVER 12" CRUSHED GRAVEL. EXCEPT IN STEP WIDENING AREA BASE IS 8" OF RECLAIMED MATERIAL.



N.H. ROUTE 123, STEP WIDENING

STA 311+00 TO STA 324+00

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CZR	DATE OCT 2006
NEW DESIGN	DRH/CAC/WED	DATE 2006/07
SHEET CHECKED	WAC	DATE MAY 2007
		DATE

AS BUILT DETAILS

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

TYPICAL SECTIONS
SHEET #1
N.H. ROUTE 123

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jtyp123	14541J	5	156

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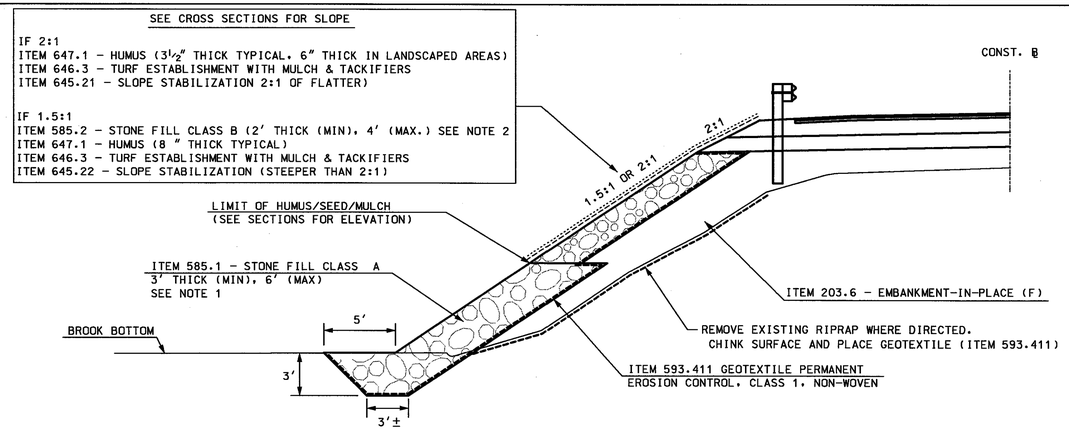
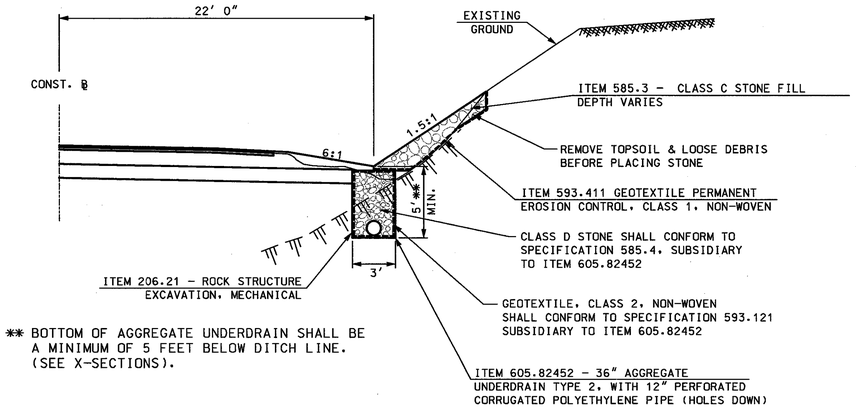


RIVER BANK SLOPE PROTECTION

STA. 304+50± TO 306+00± LT
STA. 328+75± TO 335+00± LT
STA. 342+00± TO 349+00± LT

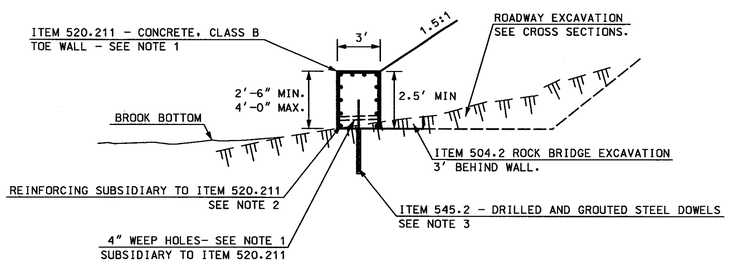
1. IN CLASS A STONE AREAS WHERE THE DISTANCE BETWEEN EXISTING GROUND AND THE FINISH SLOPE IS 6' OR MORE, THE THICKNESS OF CLASS A STONE SHALL BE 3', WITH THE REMAINDER OF THE DIFFERENCE BEING CONSTRUCTED OF EMBANKMENT-IN-PLACE (ITEM 203.6). WHEN THE DISTANCE IS LESS THAN 6', CLASS A STONE WILL BE USED FOR THE ENTIRE DEPTH (3' MIN).
2. IN CLASS B STONE AREAS WHERE THE DISTANCE BETWEEN EXISTING GROUND AND THE FINISH SLOPE IS 4' OR MORE, THE THICKNESS OF CLASS B STONE SHALL BE 2', WITH THE REMAINDER OF THE DIFFERENCE BEING CONSTRUCTED OF EMBANKMENT-IN-PLACE (ITEM 203.6). WHEN THE DISTANCE IS LESS THAN 4', CLASS B STONE WILL BE USED FOR THE ENTIRE DEPTH (2' MIN).
3. DO NOT PLACE STONE IN AREAS THAT WILL HINDER THE INSTALLATION OF GUARDRAIL.



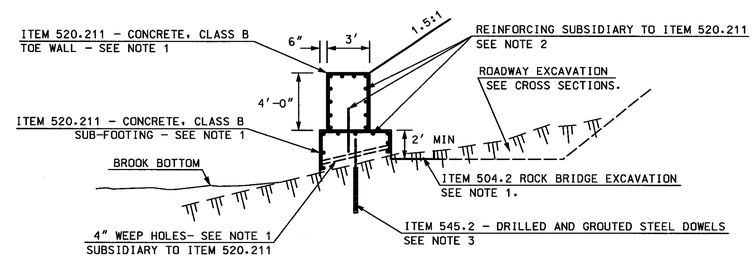
N.H. RTE. 123

STONE FILL & AGGR. UNDERDRAIN TYPICAL

AGGR. UND. LIMITS	CLASS C STONE LIMITS
STA. 320+00 RT TO 349+60 RT	STA. 322+00 TO 323+68 RT
	STA. 325+00 TO 330+25 RT
	STA. 332+75 TO 333+50 RT
	STA. 341+20 TO 342+75 RT
	STA. 346+00 TO 348+25 RT
	STA. 349+75 TO 351+65 RT



CASE 1 - WALL ONLY



CASE 2 - WALL AND SUB-FOOTING

CONCRETE TOE WALL DETAIL

STA. 328+00± TO 330+50± LT

1. FACE OF WALL SHALL BE 43' LEFT OF NH 123 CENTERLINE. TOP ELEVATION OF WALL SHALL BE SET TO MATCH ROADWAY SLOPES AS SHOWN ON SECTIONS. CASE 1 SHALL APPLY WHEN THE DISTANCE FROM TOP OF WALL TO BEDROCK ON THE BROOK SIDE IS 4' OR LESS. MINIMUM WALL HEIGHT ON FILL SIDE SHALL BE 2.5'. CASE 2 SHALL APPLY WHEN THE DISTANCE FROM TOP OF WALL TO BEDROCK ON THE BROOK SIDE IS MORE THAN 4'. MINIMUM HEIGHT OF SUB-FOOTER SHALL BE 2'. ITEM 504.2 - ROCK BRIDGE EXCAVATION SHALL BE USED AS NEEDED TO PROVIDE MINIMUM HEIGHT OF WALL OR SUB-FOOTER. LATERAL LIMITS SHALL BE 3' OUTSIDE NEAT LINES OF WALL OR SUB-FOOTER. BASE WIDTH OF SUB-FOOTER SHALL BE GREATER THAN OR EQUAL TO 0.65 TIMES THE COMBINED HEIGHT OF WALL AND SUB-FOOTER ON THE BROOK SIDE. 4" DIAMETER WEEP HOLES SHALL BE PROVIDED AT 20' INTERVALS, APPROXIMATELY 9" ABOVE BEDROCK, SUBSIDIARY TO ITEM 520.211.
2. REINFORCING SHALL BE SUBSIDIARY TO ITEM 520.211. REINFORCING SHALL CONFORM TO SECTION 544 OF THE STANDARD SPECIFICATIONS. ALL BARS SHALL BE #5 PLAIN REINFORCING, EXCEPT THE DOWELS CONNECTING THE WALL TO SUB-FOOTER SHALL BE #9. WALL SHALL CONTAIN 12 LONGITUDINAL BARS SPACED EQUALLY ALONG THE SIDES AND TOP. SUB-FOOTER SHALL CONTAIN 9 LONGITUDINAL BARS SPACED EQUALLY ALONG THE SIDES AND TOP. WALL AND SUB-FOOTER SHALL HAVE #5 HOOPS SPACED 12" APART. DOWELS CONNECTING WALL TO SUB-FOOTER SHALL BE SPACED EVERY 4' AND SHALL SHALL EXTEND 18" INTO WALL AND 18" INTO SUB-FOOTER. THE CONCRETE COVER ON EXPOSED FACES SHALL BE 2.5". THE CONCRETE COVER SHALL BE 3" ELSEWHERE. LAP SPLICES SHALL BE 16" OR AS APPROVED.
3. DOWELS USED TO CONNECT WALL OR SUB-FOOTER TO BEDROCK WILL BE PAID UNDER ITEM 545.2 - DRILLED AND GROUTED STEEL DOWELS. DOWELS SHALL BE 1⅛" MIN. DIAMETER, EPOXY COATED, AND SHALL CONFORM TO SECTION 544 OF THE STANDARD SPECIFICATIONS, EXCEPT STEEL SHALL BE GRADE 75. DOWELS SHALL BE SPACED EVERY 4' AND SHALL BE EMBEDDED 25" INTO WALL AND 36" INTO BEDROCK. DRILL HOLES SHALL BE MIN. 3" IN DIAMETER. THE BOTTOM OF THE DRILL HOLES SHALL BE AT LEAST 2" BELOW THE BOTTOM OF THE DOWELS. DOWELS SHALL BE HELD IN PLACE BY A SINGLE BAR CENTRALIZER. GROUT SHALL BE NON-SHRINKING, CONFORMING TO SECTION 529.1 OF THE NHDOT QUALIFIED PRODUCTS LIST. MINIMUM GROUT COVER SHALL BE ⅞". GROUT SHALL SHALL BE ALLOWED TO CURE FOR 24 HOURS BEFORE PLACING FORMS OR REINFORCING.

REVISIONS AFTER PROPOSAL			
STATION	STATION	DESCRIPTION	

NUMBER	DATE

SDR PROCESSED	XX	DATE	XX
NEW DESIGN	DRH/CAC/WED	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

TYPICAL SECTIONS
SHEET #2
N.H. ROUTE 123

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jtyp123	14541J	6	156

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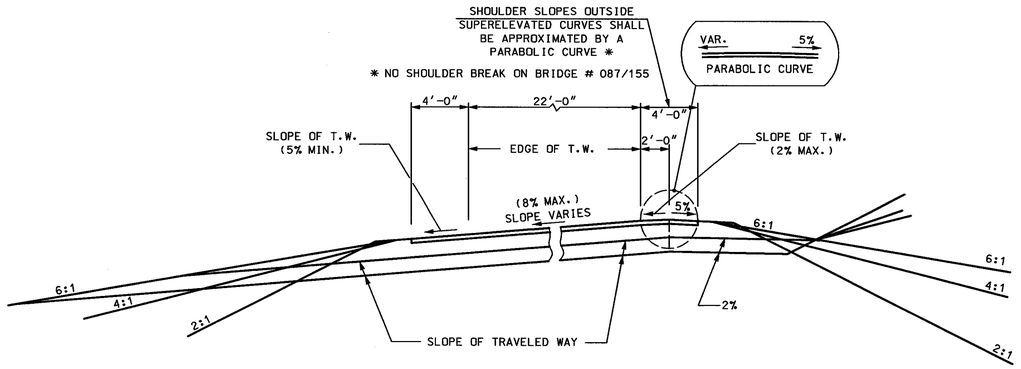
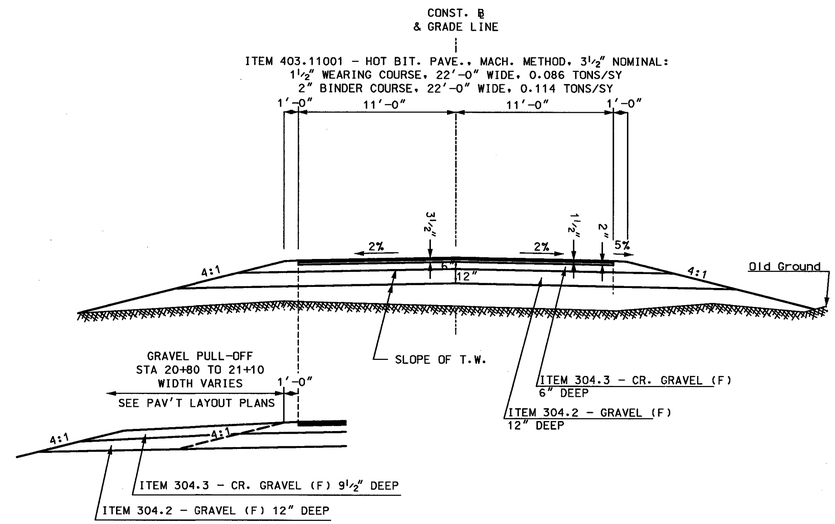


SUPERELEVATED SECTION



GRIFFIN HILL RD.

SDR PROCESSED	CZR	DATE	OCT 2006
NEW DESIGN	DRH/CAC/WED	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

TYPICAL SECTIONS
SHEET #3

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jtyp123	14541J	7	156

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DRAINAGE SUMMARY

ITEM NO.	202.41	206.1	206.2	206.21	209.1	520.1	544.1	585.2	585.3	593.411	603.00324	603.34118	603.34124	603.34130	603.82215	603.82218	603.82224	603.82230	604.0007	604.12	604.16	604.19	604.22	604.32	605.506	605.79	605.82451	
DESCRIPTION	REMOVAL OF EXISTING PIPE 0-24" DIAMETER	COMMON STRUCTURE EXCAVATION	ROCK STRUCTURE EXCAVATION	ROCK STRUCTURE EX., MECHANICAL	GRANULAR BACKFILL	CONCRETE CLASS A	REINFORCING STEEL (ROADWAY)	STONE FILL CLASS B	STONE FILL CLASS C	GEOTEXTILE PERM. CONTROL CL. 1, NON-WOVEN	24" R.C. PIPE, 3000D	18" STEEL END SECTIONS	24" STEEL END SECTIONS	30" STEEL END SECTIONS	15" CORRUGATED PE PIPE (TYPE S)	18" CORRUGATED PE PIPE (TYPE S)	24" CORRUGATED PE PIPE (TYPE S)	30" CORRUGATED PE PIPE (TYPE S)	POLYETHYLENE LINER	CATCH BASINS TYPE B	CATCH BASINS TYPE F	SPECIAL CATCH BASINS	DROP INLETS TYPE B	DRAINAGE MANHOLES	6" PERF. CORR. POLYETHYLENE PIPE UNDERDRAIN	UNDERDRAIN FLUSHING BASINS	36" AGGREGATE UND. TYPE 2 W/ P.C. POLY. PIPE	REMARKS
NOTE NO.	LF	CY	CY	CY	CY	CY	LB	CY	CY	CY	LF	EA	EA	EA	LF	LF	LF	LF	EA	U	U	U	U	U	LF	EA	LF	
1		4.8											1				22.7		1	1.6								
2																	43.4					1						
3															67.5				1				1.0					
4		9.9			4.7	1.8	20.0						1				78.4											
5		8.6										1				28.0								1.7				
6															53.0				1				1.0					
7		22.9														44.5				1.0								
8		2.2														32.4				1.2								
9															126.0					1.0								
10																54.0				1.1								
11															146.0					1.0								
12															141.0					1.0								
13		3.1			5.6	2.3	23.0		19.1	67.3						63.8								1.0				
14		5.3			4.1	1.5	17.0									10.0												
15															209.0					1.0								
16		4.0	10.8		13.7	7.0	59.0	4.6		12.9				1				104.1										
16A															37.0													
17			8.5									1				62.3					1.0							
18			9.6									1				54.5					1.0							
19												1				67.6						1						
20											32.0			1								1						
21		7.0	4.0		5.1	2.0	22.0		10.9	40.4			1				67.2											
22		20.5			17.9	12.7	73.0	65.5		126.7								111.2										
23		32.5			9.9	5.2	41.0		11.1	41.4			1				103.5											
24		18.7			10.4	4.2	44.0		2.1	10.1							97.3											
U1			47.7																						250.0	1		
U2				58.4																							400.0	
U3				88.5																							467.3	
U4				50.9																							192.0	
U5				0.2																							138.7	
U6				23.4																							211.1	
U7																											667.7	
U8				82.5																							425.3	
U9				44.0																							421.2	
U10																									350.0	1		
R1	11.0																											
R2	52.0																											
R3	42.1																											
R4	42.0																											
R5	91.0																											
R6	43.8																											
R7	33.3		1.3																									
R8	19.8																											
R9	40.2																											
R10	40.5																											
SUBTOTAL	415.7	139.5	81.9	347.9	71.4	36.7	299.0	70.1	43.2	298.8	32.0	4.0	4.0	2.0	779.5	417.1	412.5	215.3	3.0	8.9	2.0	3.0	2.0	2.7	600.0	2.0	2923.3	
ROUNDING	4.3	10.5			3.6	0.3	1.0				0.0	0.0	0.0	0.0	20.5	22.9	7.5	4.7	0.0	1.1	0.0	0.0	0.0	0.3	10.0	0.0	16.7	
TOTAL	420.0	150.0	**	**	75.0	37.0	300.0	*	*	*	32.0	4.0	4.0	2.0	800.0	440.0	420.0	220.0	3.0	10.0	2.0	3.0	2.0	3.0	610.0	2.0	2940.0	

** INCLUDED IN EARTHWORK SUMMARY

* TRANSFER TO SLOPE PROTECTION SUMMARY

REVISIONS AFTER PROPOSAL

STATION	STATION	DATE	NUMBER	DESCRIPTION

SDR PROCESSED DATE

NEW DESIGN DRH/CAC DATE 2007

SHEET CHECKED WAC DATE MAY 2007

AS BUILT DETAILS DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

SUMMARY OF QUANTITIES

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jsumm	14541J	8	156

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CLEARING AND GRUBBING

ITEM NO.	201.1
DESCRIPTION	CLEARING AND GRUBBING (F)
UNIT	Ac
LOCATION	
304+15 - 304+60 RT	0.005
306+25 - 308+00 RT	0.300
316+75 - 319+00 LT	0.042
317+95 - 318+90 RT	0.016
325+65 - 327+00 RT	0.012
335+40 - 335+95 LT	0.004
336+10 - 336+45 LT	0.004
350+90 - 351+07 RT	0.001
11+00 - 12+90 RT	0.140
SUB-TOTAL	0.524
ROUNDING	0.016
TOTAL	0.54

TREE WORK

ITEM NO.	201.21
ITEM	REMOVING SMALL TREES
UNIT	EA
LOCATION	
313+83 LT	1
314+49 LT	1
314+60 LT	1
315+00 LT	1
12+70 LT	1
SUBTOTAL	5
ROUNDING	0
TOTAL	5

EARTHWORK

DESCRIPTION		CY	TOTAL
COMMON EXCAVATION IN SECTIONS (Excluding Boulders)		17554.1	
COMMON EXCAVATION NOT IN SECTIONS (Bituminous pavement)		403.0	
DRIVE AND APPROACH EXCAVATION (Excluding Boulders)		283.6	
TOPSOIL REMOVED BENEATH FILL SECTIONS		660.8	
UNSUITABLE MATERIAL REMOVED BENEATH FILL SECTIONS (Existing Rip-Rap)		485.2	
COMMON EXCAVATION FOR ESTIMATE	ITEM 203.1		19500
ROCK EXCAVATION IN SECTIONS (Solid)		4752.9	
BOULDERS IN SECTIONS		358.2	
BOULDERS IN DRIVE AND APPROACH EXCAVATION		5.8	
ROCK EXCAVATION FOR ESTIMATE	ITEM 203.2		5120
ROCK STRUCTURE EXCAVATION	ITEM 206.2		85
ROCK STRUCTURE EXCAVATION, MECHANICAL	ITEM 206.21		350
SECTIONS FILL		17758.7	
TOPSOIL REPLACEMENT		660.8	
UNSUITABLE MATERIAL REPLACEMENT		888.2	
DRIVE AND APPROACH FILL		1167.5	
EMBANKMENT - IN - PLACE FOR ESTIMATE (F)	ITEM 203.6		20600

RETAINING WALL

ITEM NO.	504.2	520.211	545.2	
ITEM	ROCK BRIDGE EXCAVATION	CONCRETE CLASS B, FOOTINGS (ON ROCK)	DRILLED & GROUTED STEEL DOWELS	REMARKS
UNIT	CY	CY	EA	
LOCATION				
STA 328+00 LT - 330+50 LT	55.0	125.2	65	
SUBTOTAL	55.0	125.2	65	
ROUNDING	0.0	4.8	0	
TOTAL	55	130	65	

NON-PARTICIPATING BUILDING REMOVAL

ITEM NO.	DESCRIPTION	PARCEL	OWNER	UNIT	QUANTITY
202.201	DEMOLISHING BUILDINGS	87	STATE OF N.H. FORMERLY KMIEC, STANLEY & ROBIN	U	1
202.202	DEMOLISHING BUILDINGS	66	STATE OF N.H. FORMERLY GRYSZKO, JOSEPH & MILDRED	U	1
202.203	DEMOLISHING BUILDINGS	41	STATE OF N.H. FORMERLY RAU, JURGEN & HARRIETTE	U	1
202.205	DEMOLISHING BUILDINGS	1009	STATE OF N.H. FORMERLY WHITBREAD, FRASER & SUSAN	U	1
202.301	BUILDING ASBESTOS ABATEMENT	87	STATE OF N.H. FORMERLY KMIEC, STANLEY & ROBIN	$	1
202.305	BUILDING ASBESTOS ABATEMENT	1009	STATE OF N.H. FORMERLY WHITBREAD, FRASER & SUSAN	$	1
645.531	SILT FENCE	ALL	-	LF	500
646.3	TURF ESTABLISHMENT WITH MULCH AND TACKIFIERS **	ALL	-	A	0.58
647.1	HUMUS	ALL	-	CY	275
662.281	DECOMMISSION DRILLED WELL	87		LF	240

** HUMUS AREAS SHALL BE SEEDED WITH SLOPE SEED TYPE 44

SUBSIDIARY ITEMS

DESCRIPTION
REMOVAL OF EXISTING DRAINAGE STRUCTURES AND PIPES (WHERE INDICATED ON PLANS)
REMOVAL OF TYPE B & C TRAFFIC SIGNS

NOTE: THIS LIST SHOULD NOT BE CONSIDERED TO BE THE COMPLETE LIST OF SUBSIDIARY WORK PRESENT IN THE PROJECT. REFER ALSO TO THE PLANS, PROPOSAL, SPECIAL PROVISIONS, AND TO THE STANDARD SPECIFICATIONS.

NON-PARTICIPATING WORK

ITEM NO.	DESCRIPTION	UNIT	TOTAL
	NH 123A		
202.7	REMOVAL OF GUARDRAIL (F)	LF	70
203.5555	GUARDRAIL 25' EAGRT PLATFORM	U	2
606.1455	BEAM GUARDRAIL (TERMINAL UNIT EAGRT 25')	U	2
646.3	TURF ESTABLISHMENT WITH MULCH & TACKIFIERS	A	0.05
647.1	HUMUS	CY	23

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED DATE
NEW DESIGN DRH/CAC DATE 2007
SHEET CHECKED WAC DATE MAY 2007
AS BUILT DETAILS DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SUMMARY OF QUANTITIES

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jsumm	14541J	9	156

...\14541Jsumm.dgn 05/24/2007 03:36:15 PM n34cnc

GUARDRAIL

	ITEM NO.	202.7	203.5555	606.140	606.1455	606.91	621.2	
	ITEM	REMOVAL OF GUARDRAIL (F)	GUARDRAIL 25' EAGRT PLATFORM	BEAM GUARDRAIL (STANDARD SECTION - WOOD POSTS)	BEAM GUARDRAIL (TERMINAL UNIT EAGRT 25')	SETTING OR RESETTING GUARDRAIL	RETROREFLECTIVE BEAM GUARDRAIL DELINEATOR	REMARKS
NOTE #	LOCATION	LF	U	LF	U	LF	EA	
1	30385.3 LT - (31+07.4 LT)	191.0	1	650.0	1	28	14	RESET BRIDGE APPROACH UNIT
2	31+01.3 - 31+28.4 RT	52.0	1		1		1	
3	326+77.2 - 336+96.2 LT		2	975.0	2		11	
4	341+90.6 - 350+91.3 LT		2	850.0	2		9	
5	356+21.5 - 358+20.0 LT		1	175.0	1		2	
6	359+28.5 - 360+53.0 LT		1	100.0	1		2	
7	303+60.8 - 306+49.5 RT		2	250.0	2		8	
8	358+27.2 - 358+52.4 RT		1		1			
9	359+64.8 - 359+90.0 RT		1		1			
10	11+21.9 - 13+79.4 LT	261.0	1	225.0	1		4	
11	31+91.0 - 32+24.2 LT	* 40	* 1		* 1			
12	32+14.5 - 32+34.0 RT	* 30	* 1		* 1			
13	22+09.9 - 22+35.0 LT		1		1			
14	22+09.4 - 22+34.6 RT		1		1			
R1	317+15.0 - 318+67.0 LT	152.0						
R2	359+50.0 - 359+80.5 RT	156.0						
	SUBTOTAL	812.0	15	3225.0	15	28	51	
	ROUNDING	13.0	0	25.0	0	0	4	
	TOTAL	825.0	15	3250	15	28	55	

PAVEMENT MARKINGS

ITEM NO.	632.0104	632.0118	632.3118
DESCRIPTION	RETROREFLECTIVE PAINT PAVEMENT MARKING, 4" LINE	RETROREFLECTIVE PAINT PAVEMENT MARKING, 18" LINE	RETROREFLECTIVE THERMOPLASTIC PAVEMENT MARKING, 18" LINE
UNIT	LF	LF	LF
LOCATION			
NH 123	51506.6		
NH 123A	765.0	17.3	17.3
NH 12A	2618.8	45.2	45.2
GRIFFIN HILL RD.	649.4	47.1	47.1
SUB-TOTAL	55539.8	109.6	109.6
ROUNDING	460.2	0.4	0.4
TOTAL	56000	110	110

CURBING

ITEM NO.		609.811
DESCRIPTION		BITUMINOUS CURB, TYPE B (4" REVEAL)
UNIT		
B-1	STA 304+25 LT - 306+50 LT	225.0
B-2	STA 31+00 LT - 31+30 LT	30.0
B-3	STA 11+20 LT - 13+50 LT	230.0
	SUBTOTAL	485.0
	ROUNDING	15.0
	TOTAL	500

PERMANENT CONSTRUCTION SIGNS

(INCLUDED IN ITEM NO. 619.1)

SIGN NO.	DESCRIPTION	SIZE (ft) W	SIZE (ft) H	S.F.	NO. REQ.	TOTAL AREA	PORTABLE MOUNTS	LOCATION
G20-2a	"END ROAD WORK"	1.5	3	4.5	5	22.5		NH Route 123, 123A, Forest Rd and 12A
R50-1	"WORK ZONE SPEED"	4	6	24	4	96		NH Route 123, 123A, 12A
W20-1b	"ROAD WORK 500 FT"	4	4	16	1	16		Forest Road
W20-1C	"ROAD WORK 1000 FT"	4	4	16	4	64		NH Route 123, 123A and 12A
W20-1c	"ROAD WORK 1/2 MILE"	4	4	16	4	64		NH Route 123, 123A and 12A

The estimated quantities of "Permanent Controls" are hereby listed. The Contractor is responsible for all "Operational Controls" required under section 619 of the NHDOT Specifications and the Manual of Uniform Traffic Control Devices (MUTCD), Part VI.

SURFACING MATERIALS

ITEM NO.	304.2	304.3	304.35	403.11001	403.12	411.1	417
DESCRIPTION	GRAVEL (F)	CRUSHED GRAVEL (F)	CRUSHED GRAVEL FOR DRIVES	HOT BITUMINOUS PAVEMENT MACH. METHOD (QC/QA TIER 1)	HOT BITUMINOUS PAVEMENT, HAND METHOD	HOT BITUMINOUS CONCRETE LEVELING COURSE	COLD PLANING BITUMINOUS SURFACES
	CY	CY	CY	T	T	T	SY
LOCATION							
NH ROUTE 123	8172.36	8408.65		4796.30		96.50	290.70
NH 123A	178.06	182.77		138.00			
NH 12A	437.05	408.41		305.60			26.80
GRIFFIN HILL RD.	506.84	315.02		132.50			
DRIVES			515.99		202.50		
SUB-TOTAL	9294.31	9314.85	515.99	5372.40	202.50	96.50	317.50
ROUNDING	105.69	110.15	9.01	52.60	2.50	3.50	32.50
TOTAL	9400	9425	525	5425	205	100	350

SIGNING

ITEM NO	ITEM	UNIT	TOTAL
615.03	TRAFFIC SIGN TYPE C (F)	SF	31
615.034	RELOCATING TRAFFIC SIGN TYPE C	U	11
615.054	RELOCATING TRAFFIC SIGN TYPE BB	U	11
615.064	RELOCATING TRAFFIC SIGN TYPE CC	U	6

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

SUMMARY OF QUANTITIES

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jsumm	14541J	10	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED		DATE
NEW DESIGN	DRH/CAC	DATE 2007
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE

LANDSCAPING AND SLOPE PROTECTION

	585.1	585.2	585.3	593.411	641	645.21	645.22	645.23	645.3	645.531	646.3	647.1	650.2					
DESCRIPTION	STONE FILL, CLASS A	STONE FILL, CLASS B	STONE FILL, CLASS C	GEOTEXTILE PERMANENT CONTROL CLASS 1, NON-WOVEN	LOAM	SLOPE STABILIZATION (2:1 OR FLATTER)	SLOPE STABILIZATION (STEEPER THAN 2:1)	CHANNEL STABILIZATION (LOW VELOCITY)	EROSION STONE	SILT FENCE	TURF ESTABLISHMENT WITH MULCH & TACKIFIERS	HUMUS	*ARONIA ARBUTIFOLA* RED CHOKEBERRY 2 FT 1 YR POT CONT	*CORNUS RACEMOSA* GRAY DOGWOOD 2 FT 1 YR POT CONT	*SALIX DISCOLOR* PUSSY WILLOW 2 FT 1 YR POT CONT	*VIBURNUM DENTATUM* ARROWWOOD 2 FT 1 YR POT CONT	*PICEA GLAUCA* WHITE SPRUCE 5' B&B	REMARKS
UNIT	CY	CY	CY	SY	CY	SY	SY	SY	TON	LF	A	CY	UNIT					
NH 123	3120.6	823.3	908.1	9953.8	418.3	6126.3	1284.5	2123.0	1200.0	5660.0	6.9	3234.5	59	59	59	59	14	
FROM DRAINAGE SUMMARY		70.1	43.2	298.8														
SUBTOTAL	3120.6	893.4	951.3	10252.6	418.3	6126.3	1284.5	2123.0	1200.0	5660.0	6.9	3234.5	59.0	59.0	59.0	59.0	14.0	
ROUNDING	29.4	31.6	48.7	47.4	6.7	73.7	15.5	27.0	0.0	40.0	0.1	15.5						
TOTAL	3150	925	1000	10300	425	6200	1300	2150	1200	5700	7	3250	1					

BOUNDS

ITEM NO.	622.2	
LOCATION	CONCRETE BOUNDS	NOTES
301+00 LT	1	
301+00 RT	1	
303+72 LT	1	
303+72 RT	1	
306+26 LT	1	
306+26 RT	1	
307+08 LT	1	
307+08 RT	1	
309+00 RT	1	
310+51 RT	1	
310+51 LT	1	
310+51 LT	1	
313+25 RT	1	
348+75 LT	1	
349+50 LT	1	
349+50 LT	1	
352+75 RT	1	
352+75 RT	1	
352+50 LT	1	
355+32 LT	1	
355+32 RT	1	
356+40 LT	1	
356+40 RT	1	
359+81 LT	1	
359+81 RT	1	
360+80 LT	1	
360+80 RT	1	
363+10 RT	1	
364+00 LT	1	
11+00 RT	1	
11+77 LT	1	
11+77 RT	1	
12+92 LT	1	
12+92 RT	1	
13+65 LT	1	
13+65 RT	1	
22+30 LT	1	
22+30 RT	1	
TOTAL	38	

INCIDENTAL ITEMS

ITEM NO.	DESCRIPTION	UNIT	TOTAL
214	FINE GRADING	U	1
304.399	TEMPORARY CRUSHED GRAVEL	CY	1000
403.99	TEMPORARY BITUMINOUS PAVEMENT	T	75
403.6	PAVEMENT JOINT ADHESIVE	LF	7006
503.101	WATER DIVERSION STRUCTURES	U	1
606.417	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL	LF	2800
606.9522	TEMP. IMPACT ATTENUATION DEVICE (NON-REDIRECTIVE) TEST LEVEL 2	U	6
616.171	TRAFFIC SIGNALS (TEMPORARY)	U	1
618.7	FLAGGERS	HR	7800
618.71	AUTOMATED FLAGGER ASSISTANCE DEVICES	MON	6
619.1	MAINTENANCE OF TRAFFIC	U	1
619.253	PORTABLE CHANGEABLE MESSAGE SIGN	UWK	16
621.31	SINGLE DELINEATIOR WITH POST	EA	110
622.1	STEEL WITNESS MARKERS	EA	35
628.2	SAWED BITUMINOUS PAVEMENT	LF	325
645.12	TEMPORARY MULCH	AC	10
645.7	STORMWATER POLLUTION PREVENTION PLAN	U	1
645.71	MONITORING SWPPP AND EROSION AND SEDIMENT CONTROL	HR	210
670.066	MAILBOX SUPPORT ASSEMBLIES	EA	6
692	MOBILIZATION	U	1
698.13	FIELD OFFICE TYPE C	MON	24
698.2	PHYSICAL TESTING LABORATORY	MON	12
699	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL	$	1
1008.1	ALTERATIONS AND ADDITIONS AS NEEDED - TEMPORARY LIGHTING	$	1
1008.6	ALTERATIONS AND ADDITIONS AS NEEDED - IMPROVEMENTS TO EXIST. RET. WALL	$	1
1008.9	ALTERATIONS AND ADDITIONS AS NEEDED - DIFFERING SITE CONDITIONS	$	1
1010.15	FUEL ADJUSTMENT	$	1
1010.2	ASPHALT CEMENT ADJUSTMENT	$	1
1010.3	QUALITY CONTROL QUALITY ASSURANCE (QC/QA) ASPHALT	$	1

SALVAGE OF MATERIALS

SEE PROSECUTION OF WORK FOR FULL DETAILS.

TO HIGHWAY MAINTENANCE DIST. 4:

DRAINAGE BASIN GRATES AND FRAMES
DRAINAGE PIPE AND END SECTIONS
STEEL BEAM FROM BEAM GUARDRAIL REMOVED

TO BUREAU OF BRIDGE MAINTENANCE:

BRIDGE POSTS, W2 RAIL, AND RADIUS RAIL FROM BR #087/155
TEMPORARY TRAFFIC SIGNALS, SIGNAL FRAMES AND BASES

FORCE ACCOUNT WORK

STATE OF NEW HAMPSHIRE (BUREAU OF TRAFFIC)
SIGNS, SIGNALS AND PAVEMENT MARKINGS

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

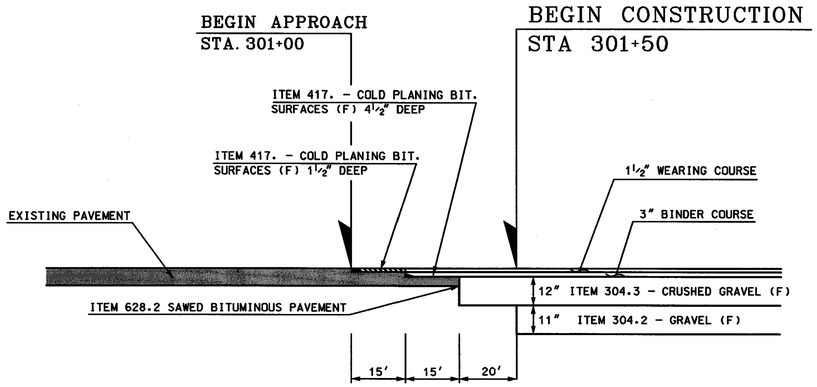
SDR PROCESSED DATE
NEW DESIGN DRH/CAC DATE 2007
SHEET CHECKED WAC DATE MAY 2007
AS BUILT DETAILS DATE

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

SUMMARY OF QUANTITIES

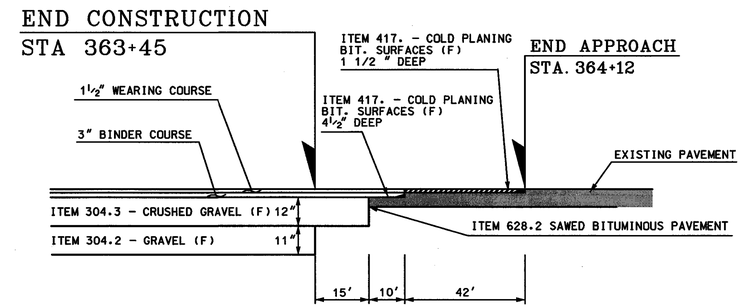
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jsumm	14541J	11	156

..\14541Jsumm.dgn 05/24/2007 03:36:35 PM n34cnc



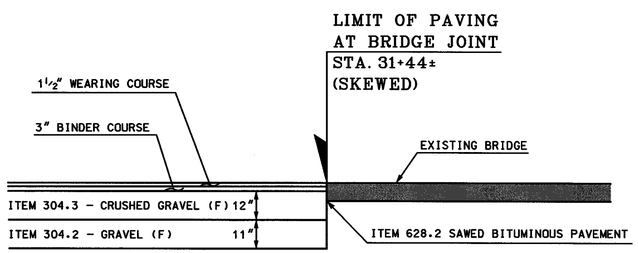
N.H. ROUTE 123
PAVEMENT MATCH DETAIL

NOT TO SCALE



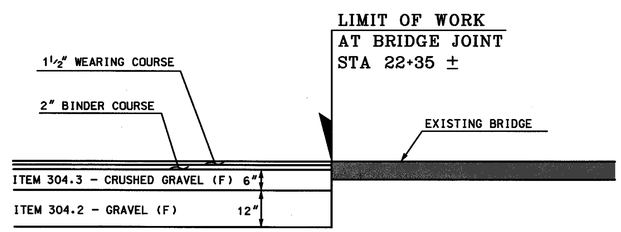
N.H. ROUTE 123
PAVEMENT MATCH DETAIL

NOT TO SCALE



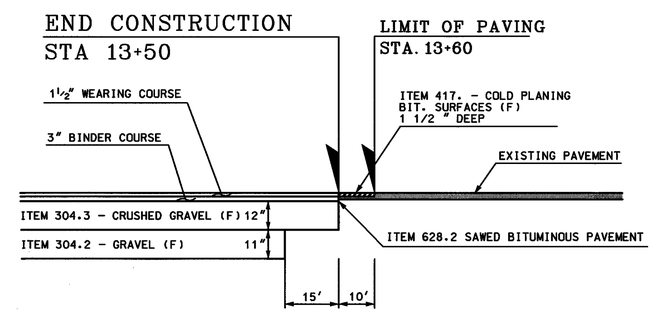
N.H. ROUTE 123A
PAVEMENT MATCH DETAIL

NOT TO SCALE



GRIFFIN HILL RD
PAVEMENT MATCH DETAIL

NOT TO SCALE



N.H. ROUTE 12A
PAVEMENT MATCH DETAIL

NOT TO SCALE

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED		DATE
NEW DESIGN	CZR/CAC	DATE 2006/2007
SHEET CHECKED	WAC	DATE 5/2007
		DATE

AS BUILT DETAILS

STATE OF NEW HAMPSHIRE

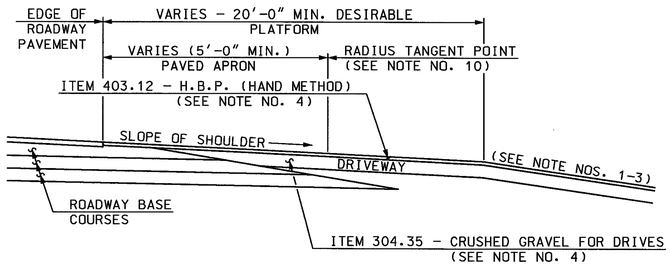
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PAVEMENT AND BASE MATCH DETAILS

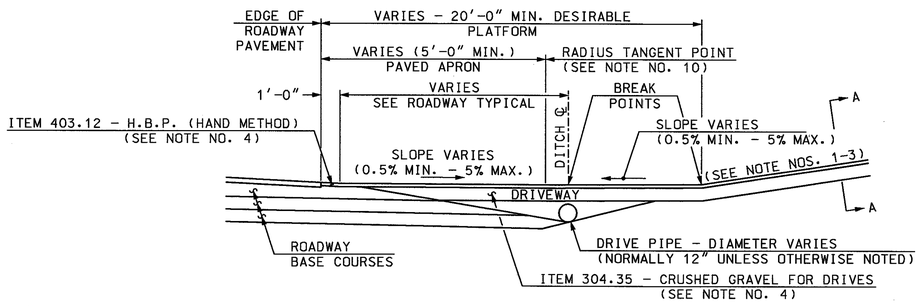
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JPAVE	14541J	12	156

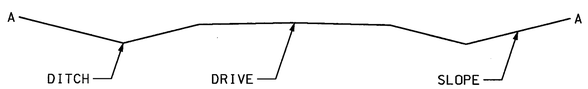
...\14541JPAVE.dgn 05/23/2007 04:18:19 PM n34cnc

NOTE: REFER TO PAVEMENT LAYOUT PLANS AND CROSS-SECTIONS FOR DRIVEWAY LENGTHS, WIDTHS, RADII, CURB CUTS, GRADES AND PAVEMENT & BASE COURSE DEPTHS



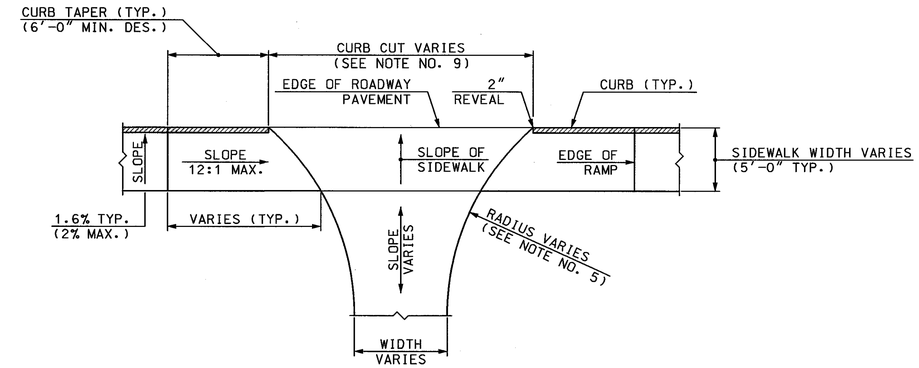
TYPICAL UNCURBED DRIVE IN FILL SECTION



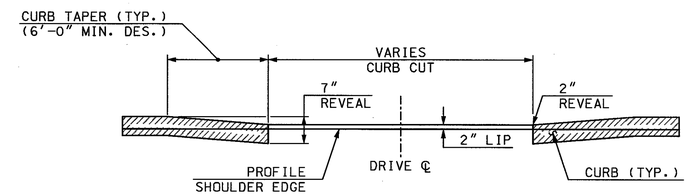


A-A DRIVEWAY CROSS-SECTION

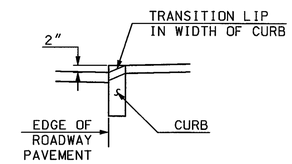
TYPICAL UNCURBED DRIVE IN CUT SECTION



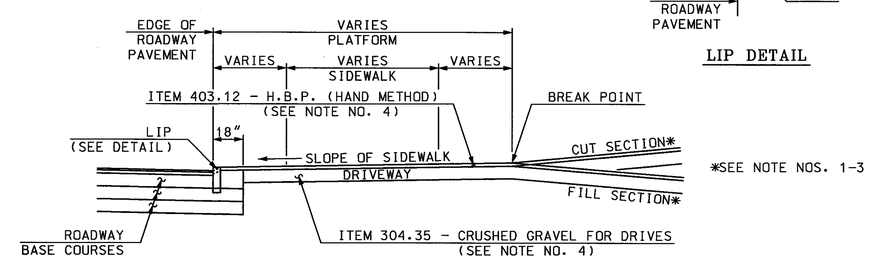
PLAN VIEW WITH SIDEWALK RAMP



END VIEW



LIP DETAIL



TYPICAL URBAN CURBED DRIVE IN CUT/FILL SECTION

GENERAL NOTES

1. GRADES OF MAJOR ENTRANCES BEYOND THE PLATFORM SHOULD NOT EXCEED 8%.
2. GRADES OF OTHER DRIVES BEYOND THE PLATFORM SHOULD NOT EXCEED 15%.
3. THE ALGEBRAIC DIFFERENCE BETWEEN TWO ADJACENT GRADES SHOULD NOT EXCEED 10%.
4. PAVEMENT AND BASE COURSE DEPTHS FOR RESIDENTIAL DRIVES ARE TYPICALLY 8" CRUSHED GRAVEL WITH 3" H.B.P. (HAND METHOD) DOUBLE COURSE. FOR COMMERCIAL/INDUSTRIAL DRIVES WITH FREQUENT HEAVY TRUCK TRAFFIC, 1'-0" CRUSHED GRAVEL WITH 3" H.B.P. (PLACED IN 2 COURSES) SHOULD BE USED.
5. FOR DESIGN CRITERIA AND OTHER ADDITIONAL INFORMATION, REFER TO THE NHDOT DRIVEWAY MANUAL.
6. DITCHES ARE RECOMMENDED FOR UNCURBED DRIVEWAYS IN CUT SLOPES.
7. USE SLOPED END SECTIONS ON DRIVE PIPES FOR UNCURBED DRIVEWAYS.
8. CURBING CAN BE FLARED TO FIT DRIVE RADII IF APPROPRIATE OR ENDED AS DETAILED ABOVE.
9. CURB CUTS FOR RESIDENTIAL DRIVES WITH ANGLES OF ENTRY OF 75°-90° ARE TYPICALLY 25'-0".
10. FOR UNPAVED DRIVES, THE PAVED APRON NORMALLY ENDS AT THE RADIUS TANGENT POINT. SEE PAVEMENT LAYOUT PLANS.

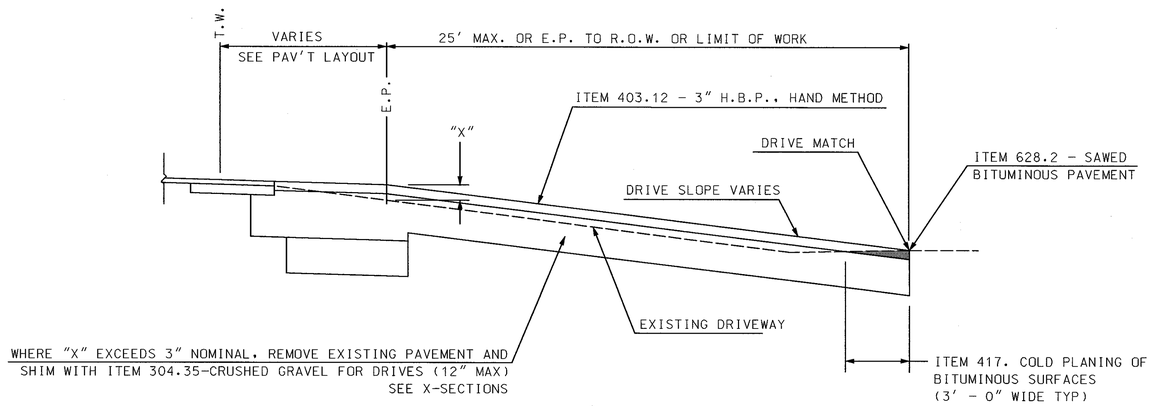
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

DRIVEWAYS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
SEPT-27-02	14541JDRIVE	14541J	13	156

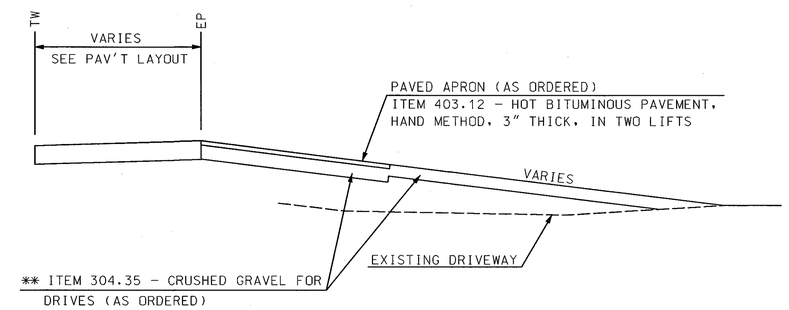
NOTE: REFER TO PAVEMENT LAYOUT PLANS AND CROSS-SECTIONS FOR DRIVEWAY LENGTHS, WIDTHS, RADII, CURB CUTS, GRADES AND PAVEMENT & BASE COURSE DEPTHS



NOTE: OVERLAY EXISTING DRIVE TO PAVEMENT MATCH WHERE POSSIBLE

PAVED APRONS AND PAVED DRIVE MATCHES

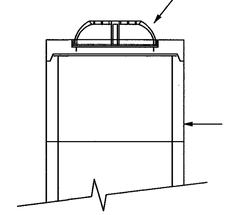
NOT TO SCALE



** 8" FOR RESIDENTIAL DRIVES
12" FOR COMMERICAL/INDUSTRIAL DRIVES

DRIVEWAY APRON DETAIL FOR UNPAVED DRIVES

NOT TO SCALE



HIGH CAPACITY GRATE (NEENAH R-4349D OR APPROVED EQUAL)
SET INTO SLAB TOP.

HOLE IN SLAB SHALL BE CAST TO ACCEPT FRAME AND GRATE

STANDARD 4' DIAMETER CATCH BASIN WITH SLAB TOP

STRUCTURE SHALL COMPLY WITH ALL APPLICABLE PARTS
OF STANDARD NO. DR-5.

SEE DRAINAGE NOTES FOR ELEVATIONS AND
PIPE SIZES.

CATCH BASIN - SPECIAL

NOT TO SCALE

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED		DATE
NEW DESIGN	CZR/CAC	DATE 2006/2007
SHEET CHECKED	WAC	DATE 5/2007
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

DRIVEWAY AND DRAINAGE DETAILS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JDRIVE2	14541J	14	156

...\14541JDRIVE2.dgn 05/23/2007 04:57:44 PM n34cnc

ITEM #	IDENT #	SIGN SIZE WIDTH (inch)	SIGN SIZE HEIGHT (inch)	TEXT	TEXT DIMENSIONS LETTER HEIGHT (inch) UC	LC	CAPS	SHIELD SIZE (inch)	ARROW (inch)	NUMERAL (inch)	# SIGNS REQ'D	SIGN AREA (SQ. FT.) NOM AREA	TOTAL AREA	POSTS PER SIGN BREAKAWAY	STEEL I-BEAM	CONCRETE BASE	4" OD ALUMINUM	U-CHANNEL-GALV.	REMARKS
615.03	R1-1	30	30				10C				2	6.25	12.50					1	WHITE/RED
615.03	W1-2R	30	30								1	6.25	6.25					1	BLACK/YELLOW
615.03	W1-8L	18	24								2	3.00	6.00					1	BLACK/YELLOW
615.03	W3-1	30	30								1	6.25	6.25					1	RED/BLACK/YELLOW

ITEM #	IDENT#	SIGN SIZE WIDTH (inch)	SIGN SIZE HEIGHT (inch)	TEXT	TEXT DIMENSIONS LETTER HEIGHT (inch) UC	LC	CAPS	SHIELD SIZE (inch)	ARROW (inch)	NUMERAL (inch)	# SIGNS REQ'D	SIGN AREA (SQ. FT.) NOM AREA	TOTAL AREA	POSTS PER SIGN BREAKAWAY	STEEL I-BEAM	CONCRETE BASE	4" OD ALUMINUM	U-CHANNEL-GALV	REMARKS

GENERAL NOTES

1. REFER TO THE 2006 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION PUBLISHED BY THE NHDOT.
2. NOTE NEW REFLECTIVITY REQUIREMENTS IN THE 2006 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 718 PUBLISHED BY THE NHDOT.
3. REFER TO THE LATEST EDITION OF THE STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AS PUBLISHED BY THE NHDOT FOR EXACT DETAILS OF PERMANENT SIGNING STANDARDS and NHDOT specific signs.
4. REFER TO THE LATEST EDITION OF THE STANDARD HIGHWAY SIGNS MANUAL AS PUBLISHED BY THE USDOT-FHWA FOR EXACT DETAILS OF BORDERS, ETC.

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED DATE
NEW DESIGN BUREAU OF TRAFFIC DATE 1/2007
SHEET CHECKED DATE
AS BUILT DETAILS DATE

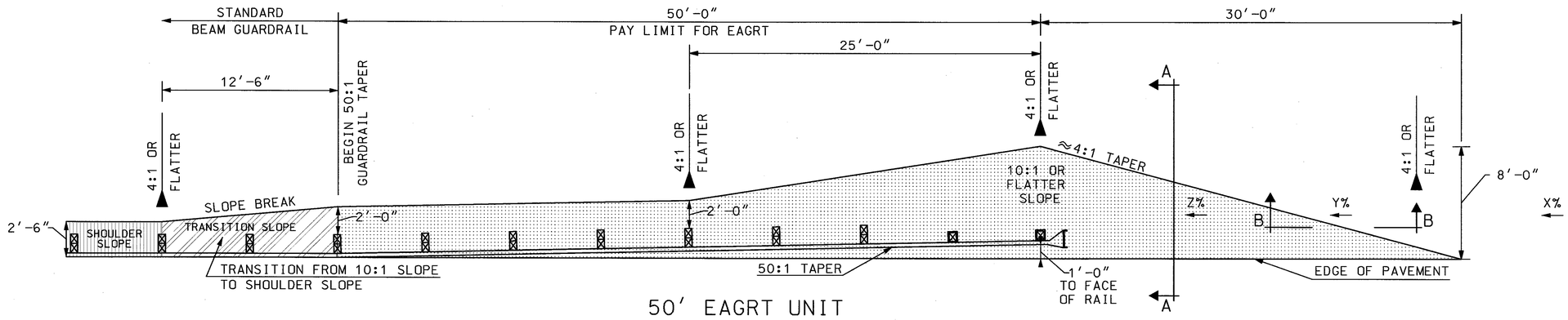
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DESIGN

SIGN TEXT LAYOUT

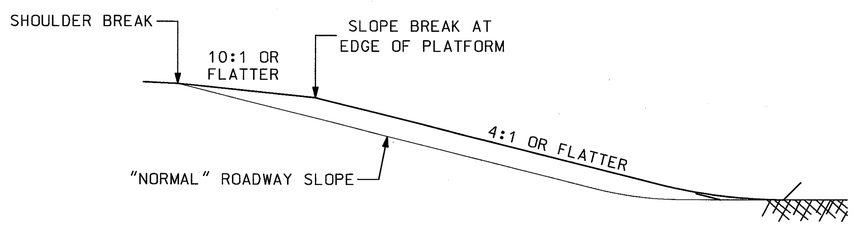
EXCEL FILE NAME	STATE PROJECT NO.	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
BT\ALSTEAD\14541J\CADD\PRF\14541J SGNTXT	14541J	X-A000(473)	15	156

...\14541J Sign Txt.dgn 05/23/2007 05:04:02 PM n34cnc

PREFERRED PLATFORM FOR ENERGY ABSORBING GUARDRAIL TERMINAL (EAGRT)

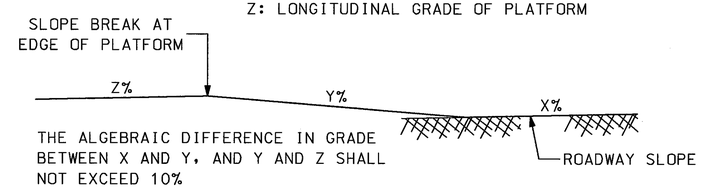


50′ EAGRT UNIT

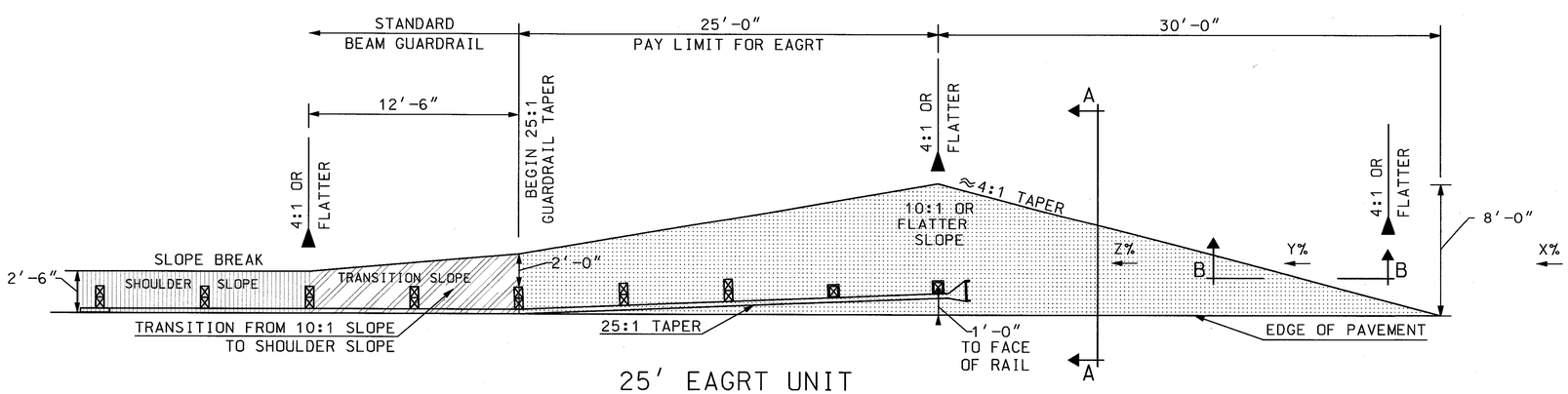


SECTION A–A
PLATFORM SLOPE GRADING

X: LONGITUDINAL GRADE OF ROADWAY SLOPE IN ADVANCE OF PLATFORM
Y: LONGITUDINAL GRADE OF PLATFORM APPROACH
Z: LONGITUDINAL GRADE OF PLATFORM



SECTION B–B
PLATFORM APPROACH GRADING



25′ EAGRT UNIT

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCCESSED	XX	DATE XX
NEW DESIGN	TEAM REYNOLDS	DATE 01/07
SHEET CHECKED	XX	DATE XX
AS BUILT DETAILS		DATE

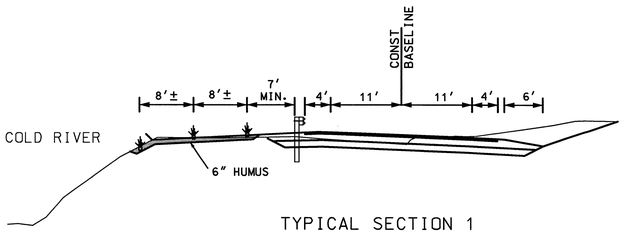
STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

REVISION DATES: 6-7-05

EAGRT PREFERRED PLATFORM GRADING

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JEAGRT	14541J	16	156

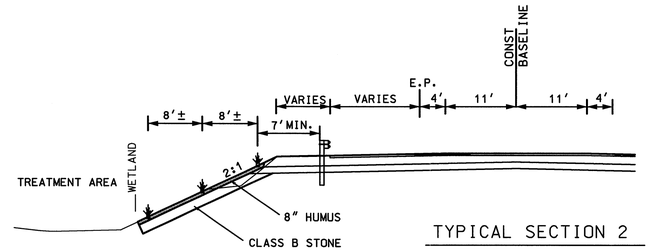
...\14541JEAGRT.dgn 05/21/2007 10:32:03 AM n34drh



TYPICAL SECTION 1

STA 306+15 LT TO 309+00 LT

NOT TO SCALE



TYPICAL SECTION 2

STA 309+00 LT TO 30+80 LT

NOT TO SCALE

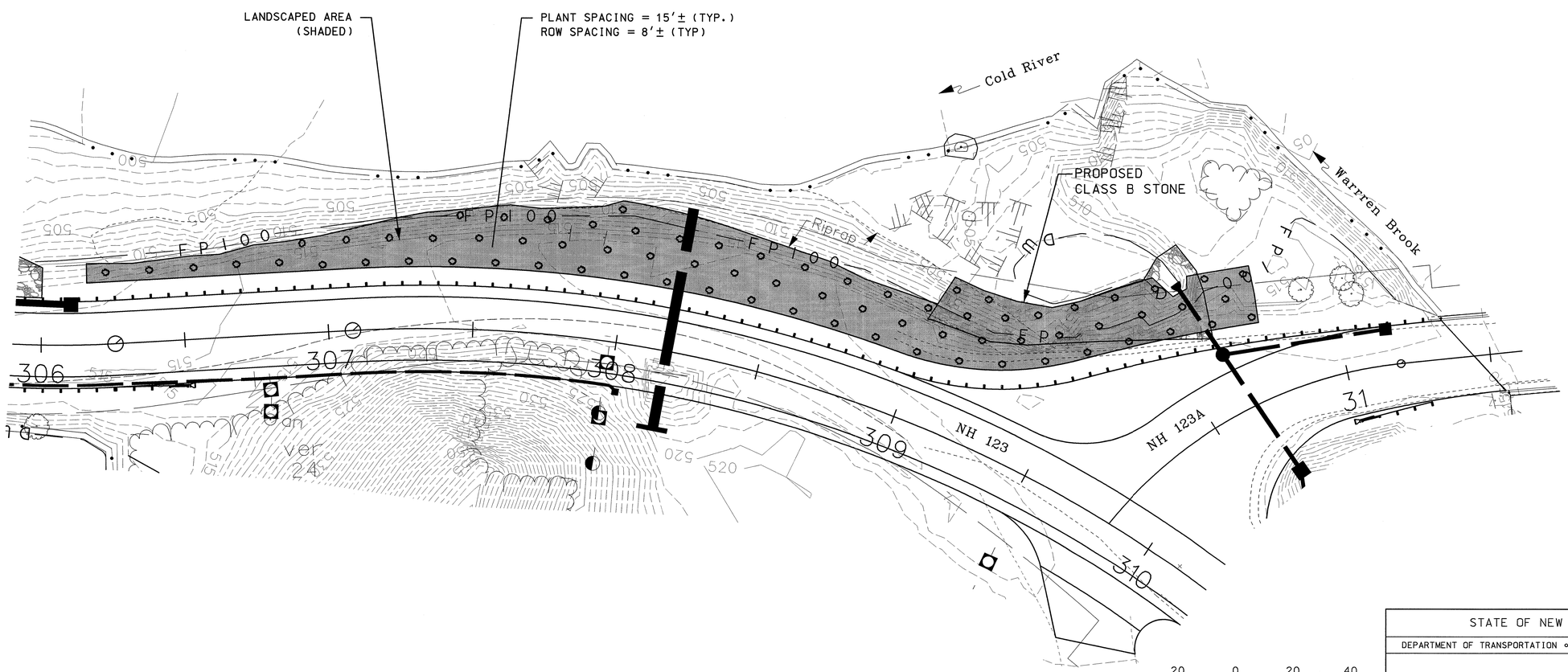
NOTES

1. OVERALL GOAL OF LANDSCAPE PLANTINGS IS TO CREATE A NATURAL SLOPE GROUNDCOVER. PLANTS SHALL NOT BE PLANTED TO CREATE THE APPEARANCE OF ROWS OR OTHER FORMAL ARCHITECTURAL FEATURES.
2. USING THE APROXIMATE SPACING SHOWN ON THE DETAIL, PLANTS SHALL BE CLUSTERED IN GROUPS OF EIGHT TO TEN INDIVIDUAL PLANTS OF THE SAME SPECIES TO CREATE A LESS FORMAL APPEARANCE.
4. CLUSTERS OF PLANTS COMPRISED OF THE SAME SPECIES SHALL NOT BE PLANTED ADJACENT TO ANOTHER CLUSTER OF PLANTS OF THE SAME SPECIES.
5. USE SLOPE SEED (WF) TYPE 45 CONFORMING TO ITEM 644.2.3 OF THE STANDARD SPECIFICATIONS EXCEPT THAT CREEPING GRASSES SHALL BE ELIMINATED FROM THE MIX.
6. USE 6" OF HUMUS IN LANDSCAPED AREA, EXCEPT OVER CLASS B STONE USE 8" OF HUMUS.
7. HUMUS COVERAGE SHALL EXTEND 2' BEYOND PLANTINGS IN ALL DIRECTIONS.

LOCATION 1

(ITEM 650.2)

DESCRIPTION	QUANTITY
ARONIA ARBUTIFOLIA, "RED CHOKEBERRY"	18 EA
SALIX DISCOLOR "PUSSY WILLOW"	19 EA
CORNUS RACEMOSA, "GRAY DOGWOOD"	18 EA
VIBURNUM DENTATUM "ARROWWOOD"	19 EA



REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED		DATE
NEW DESIGN	CAC	DATE 2006/07
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE

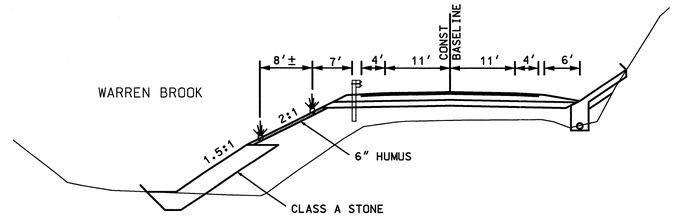
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

LANDSCAPE

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JLND1	14541J	17	156

...\14541JLND1.dgn 05/24/2007 11:16:08 AM n34cnc



TYPICAL SECTION

STA 341+92 LT TO 348+00 LT
NOT TO SCALE

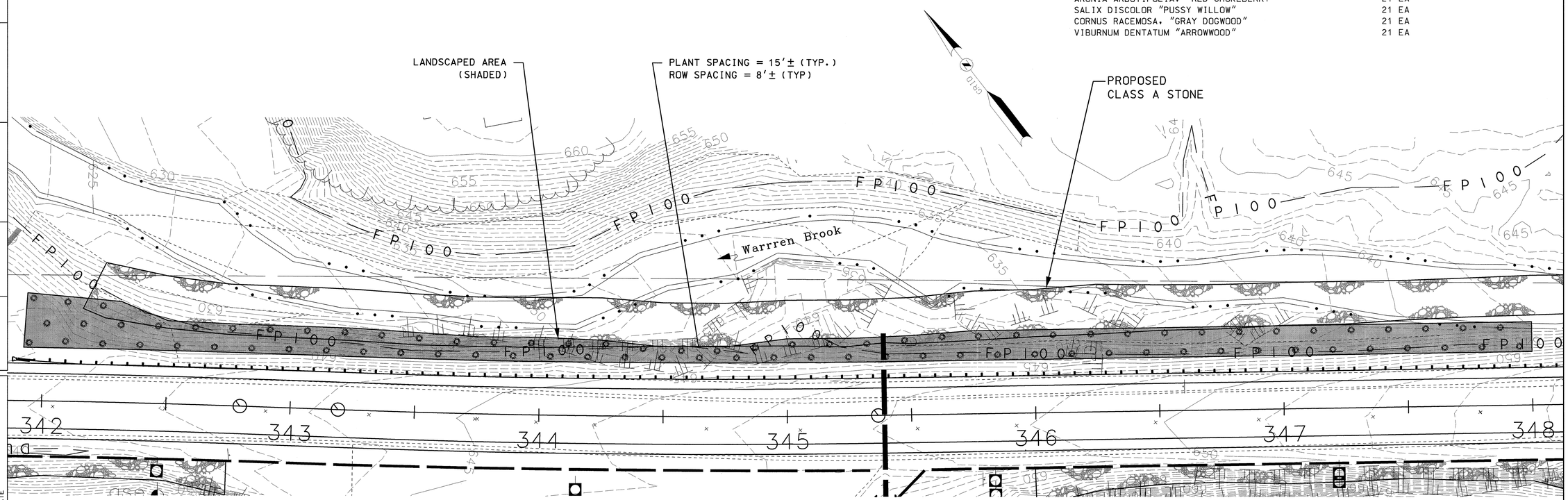
NOTES

1. OVERALL GOAL OF LANDSCAPE PLANTINGS IS TO CREATE A NATURAL SLOPE GROUNDCOVER. PLANTS SHALL NOT BE PLANTED TO CREATE THE APPEARANCE OF ROWS OR OTHER FORMAL ARCHITECTURAL FEATURES.
2. USING THE APROXIMATE SPACING SHOWN ON THE DETAIL, PLANTS SHALL BE CLUSTERED IN GROUPS OF EIGHT TO TEN INDIVIDUAL PLANTS OF THE SAME SPECIES TO CREATE A LESS FORMAL APPEARANCE.
4. CLUSTERS OF PLANTS COMPRISED OF THE SAME SPECIES SHALL NOT BE PLANTED ADJACENT TO ANOTHER CLUSTER OF PLANTS OF THE SAME SPECIES.
5. USE SLOPE SEED (WF) TYPE 45 CONFORMING TO ITEM 644.2.3 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT CREEPING GRASSES SHALL BE ELIMINATED FROM THE MIX.
6. USE 6" OF HUMUS IN LANDSCAPED AREA, EXCEPT OVER CLASS B STONE USE 8" OF HUMUS.
7. HUMUS COVERAGE SHALL EXTEND 2' BEYOND PLANTINGS IN ALL DIRECTIONS.

LOCATION 2

(ITEM 650.2)

DESCRIPTION	QUANTITY
ARONIA ARBUTIFOLIA, "RED CHOKEBERRY"	21 EA
SALIX DISCOLOR "PUSSY WILLOW"	21 EA
CORNUS RACEMOSA, "GRAY DOGWOOD"	21 EA
VIBURNUM DENTATUM "ARROWWOOD"	21 EA



20 0 20 40
SCALE IN FEET

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE 2006/07
NEW DESIGN		DATE
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

LANDSCAPE

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JLND2	14541J	18	156

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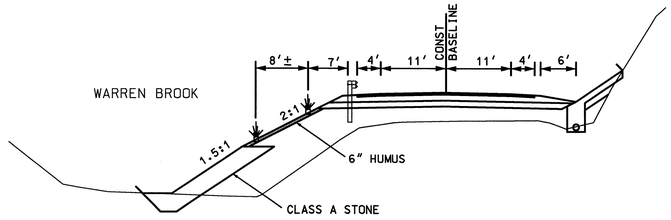


TYPICAL SECTION 1

STA 348+00 LT TO 350+50 LT

NOT TO SCALE

TYPICAL SECTION 2

STA 350+50 LT TO 22+10 LT

NOT TO SCALE

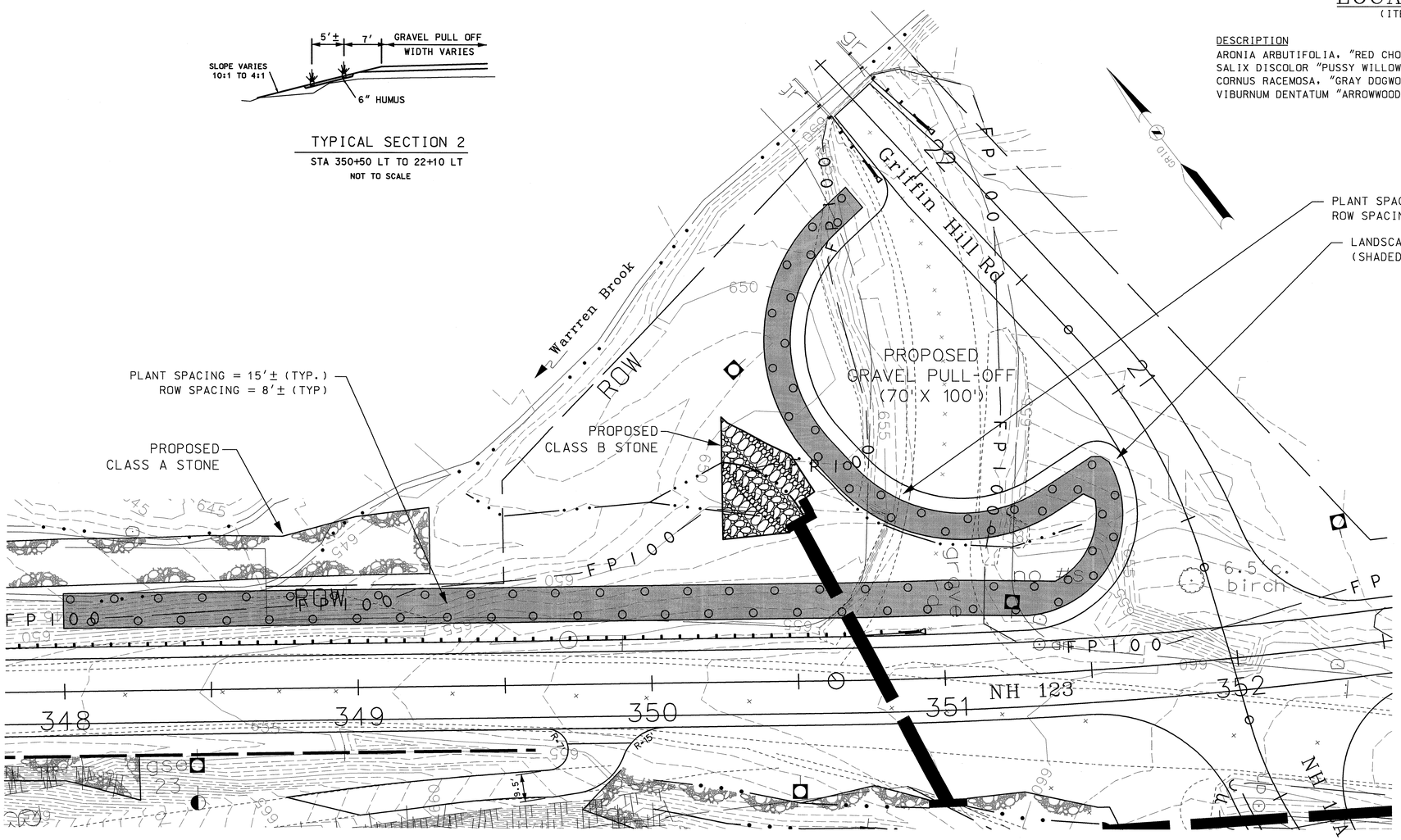
NOTES

1. OVERALL GOAL OF LANDSCAPE PLANTINGS IS TO CREATE A NATURAL SLOPE GROUNDCOVER. PLANTS SHALL NOT BE PLANTED TO CREATE THE APPEARANCE OF ROWS OR OTHER FORMAL ARCHITECTURAL FEATURES.
2. USING THE APROXIMATE SPACING SHOWN ON THE DETAIL, PLANTS SHALL BE CLUSTERED IN GROUPS OF EIGHT TO TEN INDIVIDUAL PLANTS OF THE SAME SPECIES TO CREATE A LESS FORMAL APPEARANCE.
4. CLUSTERS OF PLANTS COMPRISED OF THE SAME SPECIES SHALL NOT BE PLANTED ADJACENT TO ANOTHER CLUSTER OF PLANTS OF THE SAME SPECIES.
5. USE SLOPE SEED (WF) TYPE 45 CONFORMING TO ITEM 644.2.3 OF THE STANDARD SPECIFICATIONS, EXCEPT THAT CREEPING GRASSES SHALL BE ELIMINATED FROM THE MIX.
6. USE 6" OF HUMUS IN LANDSCAPED AREA, EXCEPT OVER CLASS B STONE USE 8" OF HUMUS.
7. HUMUS COVERAGE SHALL EXTEND 2' BEYOND PLANTINGS IN ALL DIRECTIONS.

LOCATION 3

(ITEM 650.2)

DESCRIPTION	QUANTITY
ARONIA ARBUTIFOLIA, "RED CHOKEBERRY"	20 EA
SALIX DISCOLOR "PUSSY WILLOW"	19 EA
CORNUS RACEMOSA, "GRAY DOGWOOD"	20 EA
VIBURNUM DENTATUM "ARROWWOOD"	19 EA



20 0 20 40

SCALE IN FEET

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

		DATE
SDR PROCESSED		
NEW DESIGN	CAC	DATE 2006/07
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE

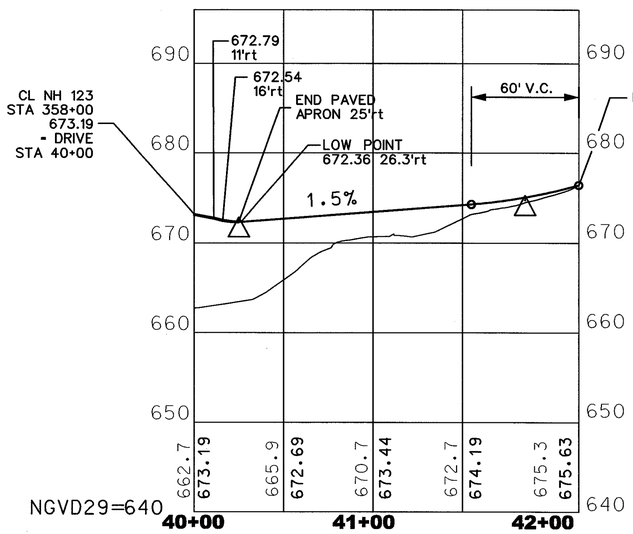
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

LANDSCAPE

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JLND3	14541J	19	156

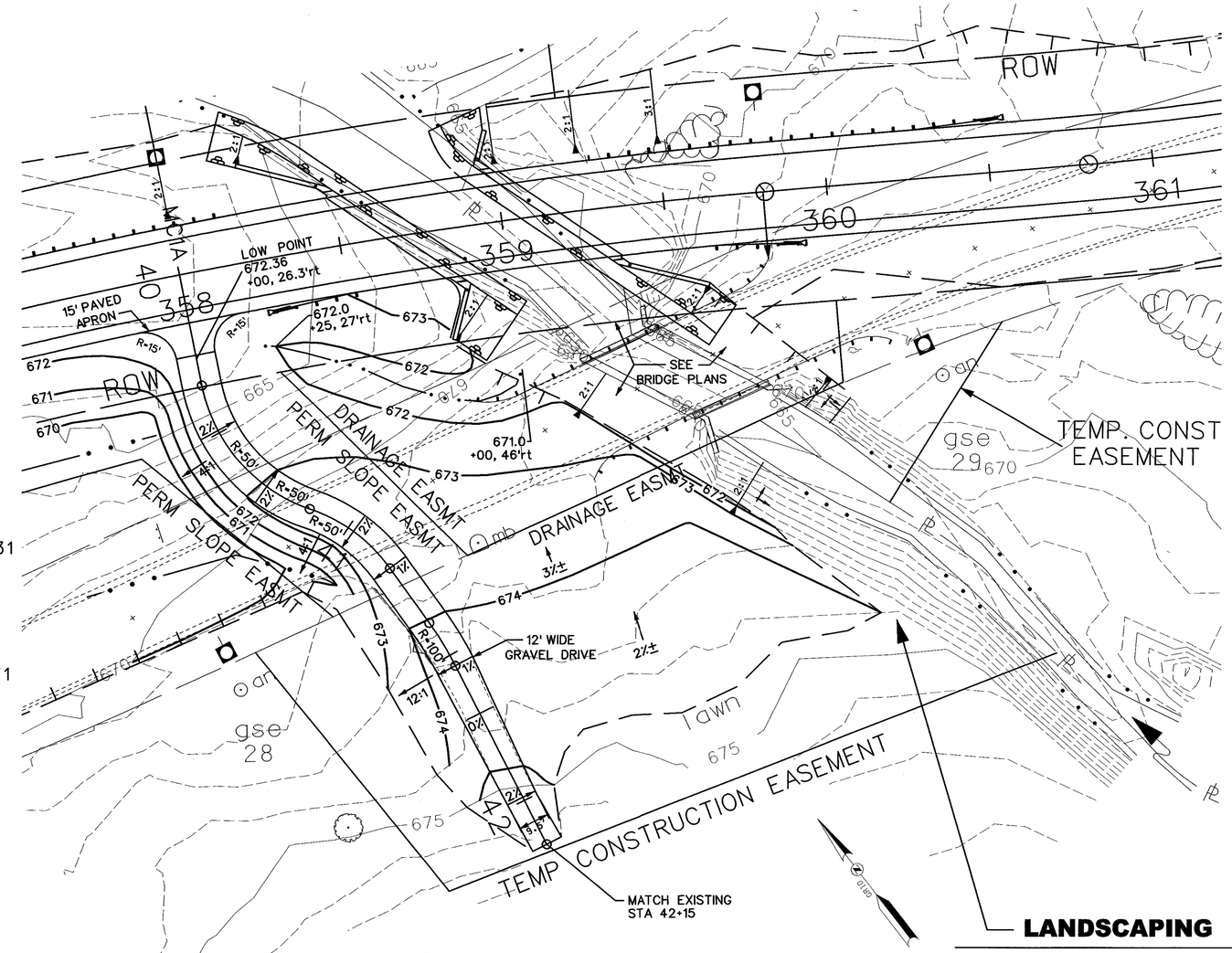
...\14541JLND3.dgn 05/24/2007 11:16:30 AM n34cnc

ALSTEAD 14541J
Drive Profile - Parcel 68



PI = 40+25.0
ELEV. = 672.31
VC = 10'

PI = 41+85.0
ELEV. = 674.71
VC = 60'



DRIVEWAY ALIGNMENT - PARCEL 68

Beginning Point	Curve No. 1	Curve No. 2	Curve No. 3	Ending Point
Sta 40+00.00	PC = 40+34.56	PRC = 40+86.85	PC = 41+38.31	Sta 42+15.00
N = 236910.35	PRC = 40+86.85	PT = 41+17.80	PT = 41+53.64	N = 236704.29
E = 806215.44				E = 806197.04
	PI= 40+63.38	PI= 41+02.84	PI= 41+45.99	
	N = 236853.66	N = 236816.23	N = 236772.08	
	E = 806187.09	E = 806211.72	E = 806210.09	
	Δ = 59°-55'-07.2" LT	Δ = 35°-27'-34.4" RT	Δ = 8°-47'-13.2" RT	
	T = 28.82'	T = 15.99'	T = 7.68'	
	R = 50.00'	R = 50.00'	R = 100.00'	
	L = 52.29'	L = 30.94'	L = 15.34'	
	E = 7.71'	E = 2.49'	E = 0.29'	

PARCEL 68 - CRUMP

LANDSCAPING

(ITEM 650.2 - LOCATION 4)

14 WHITE SPRUCE, 5' B&B
(PICEA GLAUCA)
SPACED 15' APART
2 ROWS 7' APART
LOCATION AS DIRECTED
BY THE ENGINEER

20 0 20 40
SCALE IN FEET

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN
LANDSCAPING AND GRADING PLAN

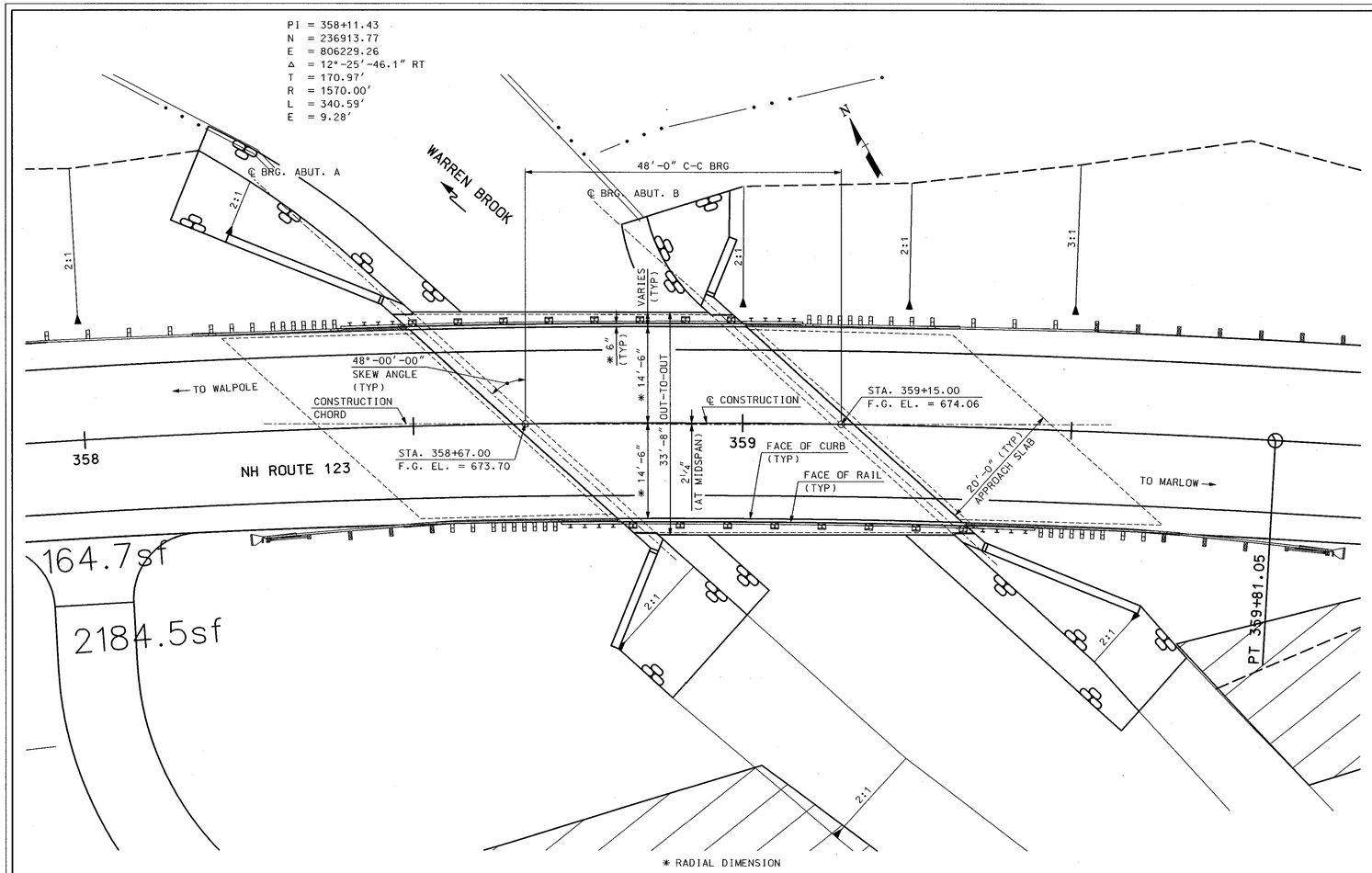
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JGRA1	14541J	20	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	DESCRIPTION	STATION	STATION

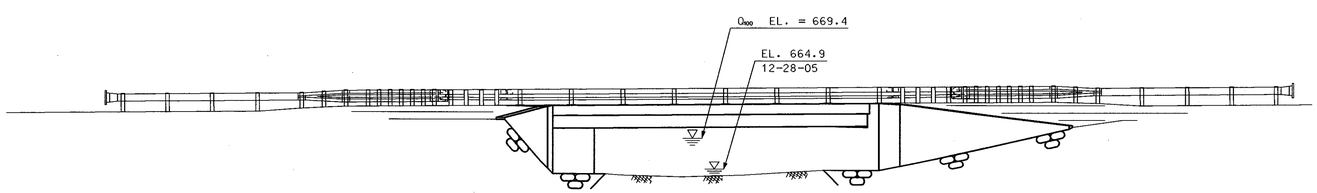
SDR PROCESSED DATE
NEW DESIGN CAC DATE 2006/07
SHEET CHECKED WAC DATE MAY 2007
AS BUILT DETAILS DATE

...\14541JGRA1.dgn 05/24/2007 11:16:00 AM n34cnc



PLAN

SCALE: 1" = 10'-0"



ELEVATION

SCALE: 1" = 10'-0"

SUMMARY OF BRIDGE QUANTITIES

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
207.3	UNCLASSIFIED CHANNEL EXCAVATION	542	CY
209.201	GRANULAR BACKFILL (BRIDGE) (F)	360	CY
403.911	HOT BITUMINOUS BRIDGE PAVEMENT, 1" BASE COURSE (F)	9	T
502.0	REMOVAL OF EXISTING BRIDGE STRUCTURE	1	U
503.201	COFFERDAMS	1	U
504.1	COMMON BRIDGE EXCAVATION (F)	580	CY
508.	STRUCTURAL FILL	80	CY
520.0102	CONCRETE CLASS AA (QC/QA) (F)	39	CY
520.0302	CONCRETE CLASS AA, APPROACH SLABS (QC/QA) (F)	85	CY
520.12	CONCRETE CLASS A, ABOVE FOOTINGS (F)	181	CY
520.213	CONCRETE CLASS B, FOOTINGS (ON SOIL) (F)	130	CY
528.3121	PRESTRESSED CONCRETE BRIDGE DECK, BUTTED DECK BEAMS (F)	1640	SF
534.3	WATER REPELLENT (SILANE-SILOXANE)	25	GAL
538.2	BARRIER MEMBRANE, VERTICAL SURFACES (F)	18	SY
538.6	BARRIER MEMBRANE, WELDED BY TORCH-MACHINE METHOD (F)	200	SY
541.4	PVC WATERSTOPS, NH TYPE 4 (F)	60	LF
544.	REINFORCING STEEL (F)	22807	LB
544.2	REINFORCING STEEL, EPOXY COATED (F)	17623	LB
548.11	ELASTOMERIC BEARING PADS (F)	33	EA
559.41	MODIFIED ELASTOMERIC PLUG TYPE FLEXIBLE JOINT, 6" WIDE (F)	87	LF
559.5	SILICONE JOINT SEALANT (F)	110	LF
563.22	BRIDGE RAIL T2 (F)	105	LF
565.22	BRIDGE APPROACH RAIL T2 (F)	117	LF
585.21	STONE FILL, CLASS B (BRIDGE)	140	CY
593.311	GEOTEXTILE, STABILIZATION, CLASS I, NON-WOVEN	240	SY
593.411	GEOTEXTILE, PERMANENT CONTROL, CLASS I, NON-WOVEN	180	SY
645.22	SLOPE STABILIZATION (STEEPER THAN 2:1)	280	SY
646.41	TURF ESTABLISHMENT WITH MULCH, TACKIFIERS AND HUMUS	280	SY
1010.4	QUALITY CONTROL QUALITY ASSURANCE (QC/QA) FOR CONCRETE	1	U

HYDRAULIC DATA

1. DRAINAGE AREA: 11.7 SQ. MI.
2. DESIGN FLOOD: Q_{100} = 1650 cfs
3. DESIGN FLOOD ELEVATION: 669.4 FEET
4. DESIGN VELOCITY: 11.0 fps
5. BRIDGE FULL WATERWAY OPENING ⊥ TO BROOK: 220 SQ. FT.

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/BR-SITE	14541JGen	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

GENERAL PLAN AND ELEVATION

BRIDGE SHEET 1 OF 22

REVISIONS AFTER PROPOSAL

	BY	DATE		BY	DATE
DESIGNED	SDF	9/06	CHECKED	JWP	1/07
DRAWN	SMG	9/06	CHECKED	SDF	10/06
QUANTITIES	SDF	12/06	CHECKED	PJP	12/06

FILE NUMBER 105-3-1

ISSUE DATE

REV. DATE

FEDERAL PROJECT NO. ----------

SHEET NO. 21

TOTAL SHEETS 156

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DESIGN LOADS, MATERIALS AND SPECIFICATIONS

(1) DESIGN LIVE LOADING: HL-93

(2) DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

(3) SPECIFICATIONS: 2004 LRFD BRIDGE DESIGN SPECIFICATIONS WITH 2006 INTERIM REVISIONS
NHDOT 2006 STANDARD SPECIFICATIONS

(4) FOUNDATION DATA: ABUTMENTS AND WINGS - SPREAD FOOTINGS SUPPORTED ON STRUCTURAL FILL
(ULTIMATE BEARING CAPACITY = 6.2 TSF, IN COMBINATION WITH A PHI FACTOR OF 0.45.)

(5) REINFORCING STEEL: AASHTO M31 (ASTM A615) GRADE 60
ALL DECK, PRECAST BEAM, APPROACH SLAB REINFORCEMENT
AND SPECIFIED ABUTMENT REINFORCEMENT
SHALL BE EPOXY COATED

(6) SUPERSTRUCTURE: PRECAST PRESTRESSED VOIDED SLABS WITH CAST-IN-PLACE
CONCRETE BRIDGE DECK (COMPOSITE) AND CURB

(7) CONCRETE: ABUTMENTS, WINGS, AND FOOTINGS: f'c = 3 ksi
BRIDGE DECK OVERLAY, CURBS, AND APPROACH SLABS: f'c = 4 ksi
PRESTRESSED VOIDED SLABS: f'c = 6 ksi, f'ci = 4.8 ksi
FOOTINGS:
ITEM 520.213, CONCRETE CLASS B, FOOTINGS (ON SOIL) (F)
ABUTMENTS AND WINGWALLS:
ITEM 520.12, CONCRETE CLASS A, ABOVE FOOTINGS (F)
DECK SLAB AND BRUSH CURBS:
ITEM 520.0102, CONCRETE CLASS AA (QC/QA) (F)
APPROACH SLABS:
ITEM 520.0302, CONCRETE CLASS AA, APPROACH SLABS (QC/QA) (F)

(8) PRESTRESSING/POST-TENSIONING STEEL: 1/2" Φ SEVEN-WIRE STRAND
CONFORMING TO AASHTO M203-05 (ASTM A 416/A)
GRADE 270, LOW RELAXATION.

(9) SEISMIC ZONE 1, A = 0.09

GENERAL NOTES

(1) THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO INSURE THAT DEBRIS DOES NOT FALL INTO THE WATERWAY BELOW THE EXISTING STRUCTURE. ALL COSTS SHALL BE PAID UNDER ITEM 502 AND SHALL INCLUDE ERECTION, MAINTENANCE AND REMOVAL OF TEMPORARY STRUCTURES OR OTHER SUCH METHODS AS APPROVED.

(2) NO SCAFFOLDS SHALL BE ERECTED OR OPERATIONS CONDUCTED IN THE WATERWAY, UNLESS APPROVED BY THE CONTRACT ADMINISTRATOR.

(3) ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4", UNLESS OTHERWISE NOTED.

(4) MAINTAIN TRAFFIC ON EXISTING NH 123 DURING CONSTRUCTION OF THE NEW BRIDGE AND APPROACH ROADWAYS.

BRIDGE REMOVAL NOTES

(1) THE CONTRACTOR SHALL SUBMIT, FOR DOCUMENTATION IN ACCORDANCE WITH SECTION 105.02, A DETAILED OUTLINE OR PLAN OF THE PROPOSED METHOD FOR REMOVAL OF THE EXISTING BRIDGE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

(2) ITEM 502, REMOVAL OF EXISTING BRIDGE STRUCTURE, SHALL INCLUDE THE COMPLETE REMOVAL OF THE EXISTING SUPERSTRUCTURE (CONCRETE DECK ON STEEL GIRDERS).

(3) ALL PORTIONS OF EXISTING SUBSTRUCTURE OUTSIDE THE LIMITS OF BRIDGE EXCAVATION SHALL BE REMOVED TO 1' BELOW FINISHED GRADE. ALL COSTS TO BE PAID UNDER ITEM 207.3, UNCLASSIFIED CHANNEL EXCAVATION.

(4) PLAN OF EXISTING BRIDGE SUPERSTRUCTURE (DECK ONLY) IS LOCATED IN FILE 1-12-2-3. NO OTHER PLANS ARE KNOWN TO EXIST FOR THIS STRUCTURE.

REINFORCEMENT NOTES

(1) REINFORCEMENT IN THE BOTTOM OF FOOTINGS AND APPROACH SLABS SHALL HAVE 3" MINIMUM CLEAR COVER. ALL OTHER REINFORCEMENT SHALL HAVE 2 1/2" MINIMUM CLEAR COVER, UNLESS OTHERWISE NOTED.

(2) PLACE REINFORCING STEEL TO AVOID RAIL POST ANCHOR ASSEMBLIES AND ANCHOR BOLTS.

(3) ANY EPOXY COATED REBARS CUT TO FIT SHALL BE TOUCHED UP WITH AN APPROVED EPOXY COATING MATERIAL. ALL COSTS SHALL BE INCLUDED IN ITEM 544.2.

(4) REINFORCING LEGEND: SP = SPACE, SPL = SPLICE, FS = FAR SIDE, NS = NEAR SIDE,
MID = MIDDLE, BOT = BOTTOM, ALT = ALTERNATING.

(5) REINFORCING BAR MARKS APPENDED WITH AN (E), INDICATE EPOXY COATED BARS.

(6) THE PRECAST BEAM REINFORCING STEEL SHALL HAVE A MINIMUM CLEAR COVER OF 1 1/4" UNLESS OTHERWISE NOTED.

APPROACH SLAB NOTES

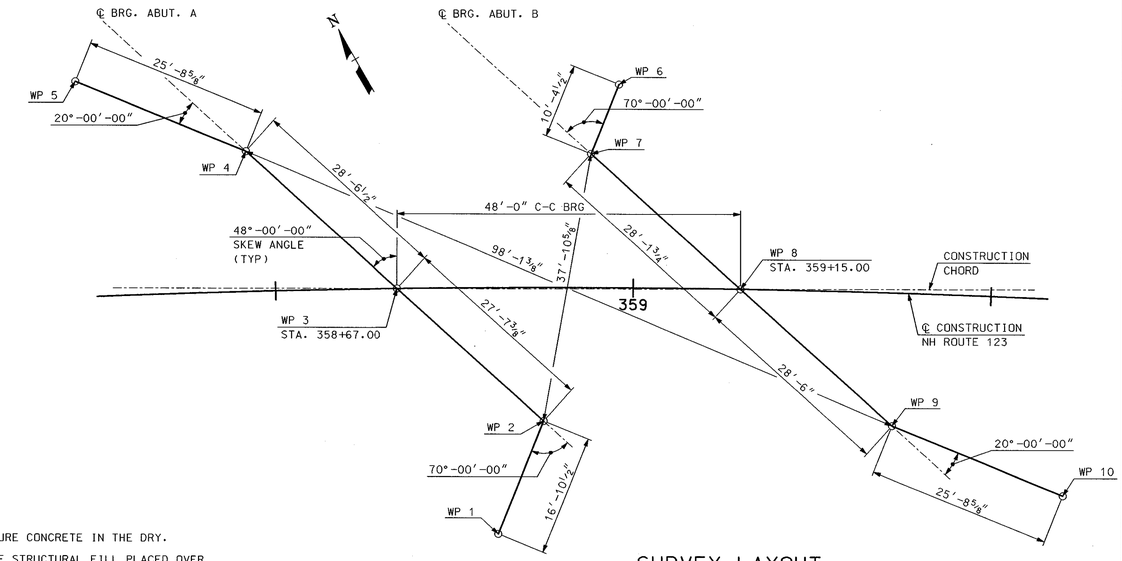
(1) FILL SPACE BETWEEN SLAB AND ROADWAY CURB WITH ITEM 520.0302, CONCRETE CLASS AA, APPROACH SLABS (QC/QA) (F) (6" MIN DEPTH) EXTEND CONCRETE FROM ABUTMENT END OF APPROACH SLAB 12' ALONG SLAB, OR AS DIRECTED BY ENGINEER. (QC/QA TESTING REQUIREMENTS WAIVED.)

(2) CONCRETE CLASS AA, APPROACH SLABS (QC/QA) (F), ITEM 520.0302, SHALL BE FORMED INTO 1'-0" x 2'-0" BLOCKS ON APPROACH SLAB SEATS TO SUPPORT APPROACH CURBS. THE QC/QA REQUIREMENTS SHALL BE WAIVED.

(3) APPROACH SLABS SHALL BE POURED AFTER THE CONCRETE DECK OVERPOUR HAD BEEN CONSTRUCTED.

(4) APPROACH SLABS FOR BOTH ABUTMENTS SHALL BE CAST 2 1/2" BELOW FINISHED GRADE AT THE APPROACH SLAB SEATS.

WORKING POINT COORDINATES		
WP	NORTH	EAST
1	236842.440	806270.015
2	236852.854	806283.293
3	236879.106	806274.709
4	236906.233	806265.839
5	236926.472	806249.966
6	236888.341	806315.738
7	236881.938	806307.574
8	236855.185	806316.321
9	236828.097	806325.179
10	236807.858	806341.052



SURVEY LAYOUT

SCALE: 1" = 10'-0"

FOUNDATION NOTES

(1) THE CONTRACTOR IS REQUIRED TO POUR ALL SUBSTRUCTURE CONCRETE IN THE DRY.

(2) FOOTINGS SHALL BE FOUNDED ON A 12" THICK LAYER OF STRUCTURAL FILL PLACED OVER UNDISTURBED LACUSTRINE MATERIAL. ANY UNSUITABLE MATERIALS THAT EXTEND BELOW THE RECOMMENDED STRUCTURAL FILL DEPTH SHALL BE REMOVED WITHIN THE LIMITS DEFINED BY A 1H:2V LINE PROJECTED DOWNWARD AND OUTWARD TO THE REQUIRED DEPTHS FROM POINTS LOCATED 1' BEYOND THE EDGES OF THE FOOTING AND REPLACED WITH STRUCTURAL FILL. BOULDERS SHALL BE REMOVED TO 12" BELOW BOTTOM OF FOOTING.

(3) CONTROL OF WATER WITHIN THE EXCAVATION SHALL BE CONDUCTED IN SUCH A MANNER AS TO PREVENT DISTURBANCE OF THE BEARING SOIL. PUMPING AREAS SHALL BE LOCATED OUTSIDE THE FOOTING SUPPORT LIMITS AND PROPERLY FILTERED TO PREVENT PUMPING OF FINES.

(4) DEWATERING AT THE ABUTMENTS SHALL BE CONTINUOUS UNTIL ABUTMENTS ARE BACKFILLED TO THE ELEVATION OF THE SURROUNDING WATER TABLE, UNLESS OTHERWISE DIRECTED.

(5) ANY FOUNDATION MATERIALS WEAKENED AS A RESULT OF INSUFFICIENT CARE TAKEN IN MAINTAINING A DEWATERED CONDITION SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL AT THE EXPENSE OF THE CONTRACTOR.

(6) CLEAN STONE FILL, MEETING THE REQUIREMENTS OF SECTION 508.2.1.3, MAY BE SUBSTITUTED FOR STRUCTURAL FILL IF THE MAXIMUM DEPTH IS LESS THAN 12" AND AS DIRECTED BY THE ENGINEER.

SUPERSTRUCTURE NOTES

(1) PRESTRESSING STEEL SHALL BE 1/2" Φ UNCOATED SEVEN-WIRE STRAND CONFORMING TO AASHTO M203-05 (ASTM A 416/A) GRADE 270 LOW RELAXATION. PRESTRESSING FORCE PER STRAND = 202.5 KSI (75% INITIAL PULL)

(2) POST-TENSIONING STRANDS SHALL BE 1/2" Φ SEVEN WIRE STRAND CONFORMING TO AASHTO M203-05 (ASTM A 416/A) GRADE 270 LOW RELAXATION. POST-TENSIONING STRANDS SHALL BE COMPLETELY COATED WITH A CORROSION PREVENTATIVE COATING. POST-TENSIONING ANCHORAGE SYSTEM SHALL USE A CORROSION PROTECTION SYSTEM.

(3) ALL REINFORCING STEEL FOR THE SUPERSTRUCTURE SHALL CONFORM TO AASHTO M31 (ASTM A615) GRADE 60 AND SHALL BE EPOXY COATED.

(4) THE COST OF PRESTRESSING STRANDS, POST-TENSIONING STRANDS AND ANCHORAGES, AND REINFORCING STEEL CAST INTO THE PRECAST SLAB UNIT SHALL BE PAID UNDER ITEM 528.3121. ALL OTHER STEEL IN THE SUPERSTRUCTURE SHALL BE PAID UNDER ITEM 544.2.

(5) LIFTING DEVICES SHALL BE WITHIN 24" OF EACH END OF THE PRECAST SLAB UNITS. COST SHALL BE PAID UNDER ITEM 528.3121.

(6) TRANSVERSE POST-TENSIONING OF THE PRECAST SLABS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIAL PROVISION 528.0.

(7) 1" Φ DRAINS SHALL BE PROVIDED AT THE LOW END OF ALL SLAB VOIDS.

(8) THE VOIDED SLAB SHEAR KEYS SHALL BE BLAST CLEANED PRIOR TO SHIPPING.

(9) THE TOP SURFACE OF THE VOIDED SLABS SHALL BE RAKED TRANSVERSELY TO A 1/4" AMPLITUDE.

(10) DRILLING INTO THE VOIDED SLABS SHALL NOT BE ALLOWED.

(11) VOIDED SLAB MEMBERS SHALL NOT BE STACKED.

(12) ALTERNATE STRAND PATTERNS SHALL BE BASED ON THE DESIGN SERVICE LOAD LISTED BELOW IN ADDITION TO THE VOIDED SLAB DEAD LOAD. TENSION IN THE PRECOMPRESSED TENSILE ZONE SHALL BE LIMITED TO ZERO TENSION.

NON-COMPOSITE SERVICE LOAD = 0.350 KIP/FT

(13) THE PRECAST BEAM UNITS SHALL HAVE AN UPWARD CAMBER OF +0.9" FOR BEAM UNITS 1 AND 11, AND +0.5" FOR BEAM UNITS 2 THROUGH 10 AT RELEASE.

SUBSTRUCTURE NOTES

(1) THE ABUTMENT SEATS SHALL BE POURED TO WITHIN 1/4"± OF THE PLAN ELEVATIONS.

(2) ITEM 534.3, WATER REPELLENT (SILANE-SILOXANE), SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES OF THE ABUTMENTS AND WINGWALLS TO 12" BELOW FILL LINES.

(3) WEEPERS SHALL BE PLACED SYMMETRICALLY 10' APART AND 1' ABOVE THE TOP OF FOOTINGS. WEEPERS SHALL BE 4"Φ AND SLOPED TO DRAIN (SUBSIDIARY TO ITEM 520.12).

(4) A 2' WIDE STRIP OF ITEM 538.2, BARRIER MEMBRANE, VERTICAL SURFACES (F), SHALL BE CENTERED OVER (A) THE BACK FACE OF THE PILASTER/WING JOINT AND (B) THE HORIZONTAL JOINT BETWEEN THE ABUTMENT AND THE VOIDED SLAB OVERPOUR, OUTSIDE OF THE LIMITS OF THE APPROACH SLAB.

(5) ITEM 585.21, STONE FILL, CLASS B (BRIDGE), SHALL BE 2'-0" THICK, UNLESS OTHERWISE NOTED.

(6) SHEAR KEYS SHALL BE 3" HIGH AND CENTERED WITH A WIDTH OF ONE-THIRD THE WIDTH OF THE WALL.

COFFERDAM NOTES

(1) COFFERDAMS ARE REQUIRED AT EACH ABUTMENT LOCATION TO CONTROL THE RIVER INFLOW AND ADEQUATELY DEWATER THE FOOTING EXCAVATION. STEEL SHEETING MAY BE REQUIRED DEPENDING ON THE AVERAGE RIVER LEVEL CONDITIONS AT THE TIME OF CONSTRUCTION AND THE CONTRACTOR'S METHOD OF DEWATERING. ALL COSTS FOR MATERIALS, INSTALLATION, MAINTENANCE AND REMOVAL SHALL BE INCLUDED IN ITEM 503.201, COFFERDAMS. ALL WORK REQUIRED TO MAINTAIN A DEWATERED CONDITION SHALL BE INCLUDED IN ITEM 503.201.

(2) THE EAST ABUTMENT COFFERDAM SHALL BE DESIGNED AND CONSTRUCTED TO SAFELY MAINTAIN TRAFFIC ON THE EXISTING BRIDGE AND APPROACH ROADWAY FOR THE DURATION OF CONSTRUCTION.

(3) EXCAVATION TO FINAL GRADE AND THE CONTROL OF WATER WITHIN THE COFFERDAM(S) SHALL BE PROVIDED IN A MANNER THAT PREVENTS DISTURBANCE OF THE LACUSTRINE SUPPORT MATERIALS. SUMP AREAS SHOULD BE LOCATED OUTSIDE OF THE STRUCTURE LIMITS AND PUMPING EQUIPMENT SHOULD BE PROPERLY FILTERED TO PREVENT THE LOSS OF FINES. THE EXCAVATION DEWATERING SHOULD BE COMPLETED IN A MANNER THAT DRAWS THE WATER LEVEL DOWN BELOW THE PROPOSED BOTTOM OF EXCAVATION PRIOR TO REMOVING THE FINAL FEW FEET OF MATERIAL.

(4) ALL ITEMS COVERED UNDER SECTION 503 OF THE SPECIFICATIONS SHALL BE DESIGNED BY A NH LICENSED PROFESSIONAL ENGINEER. THE CONTRACTOR SHALL SUBMIT STAMPED WORKING DRAWINGS AND CALCULATIONS FOR REVIEW AND DOCUMENTATION IN ACCORDANCE WITH 105.02 PRIOR TO CONSTRUCTION.

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/BR-SITE	14541JNotes	XX

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD | BRIDGE NO. 087\156 | STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

NOTES AND SURVEY LAYOUT

REVISIONS AFTER PROPOSAL

	BY	DATE		BY	DATE
DESIGNED	SDF	9/06	CHECKED	JWP	1/07
DRAWN	SMG	9/06	CHECKED	SDF	10/06
QUANTITIES	SDF	12/06	CHECKED	PJP	12/06

ISSUE DATE
REV. DATE
FEDERAL PROJECT NO. ----------
SHEET NO. 22

BRIDGE SHEET 2 OF 22
FILE NUMBER 105-3-1
TOTAL SHEETS 156

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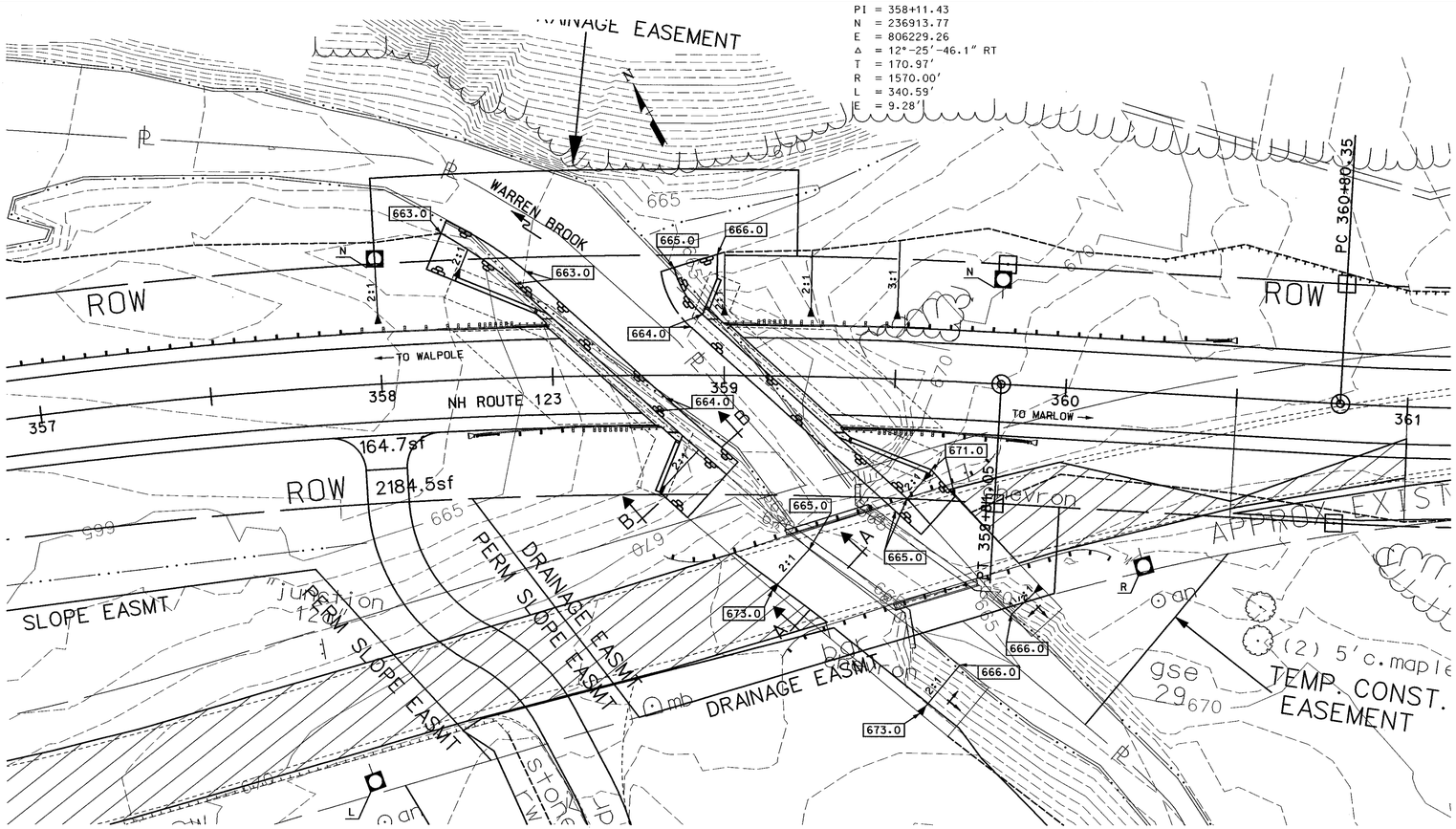
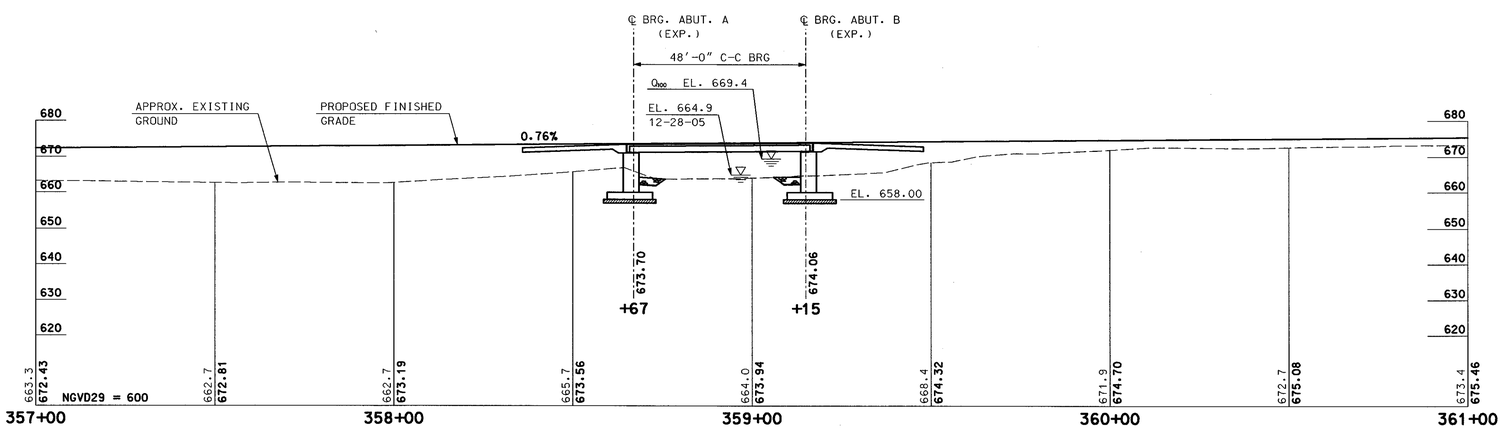
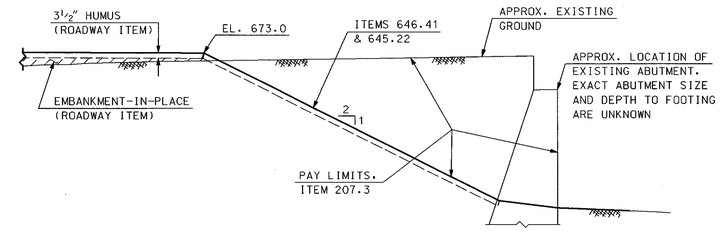


PLAN
SCALE: 1" = 20'-0"

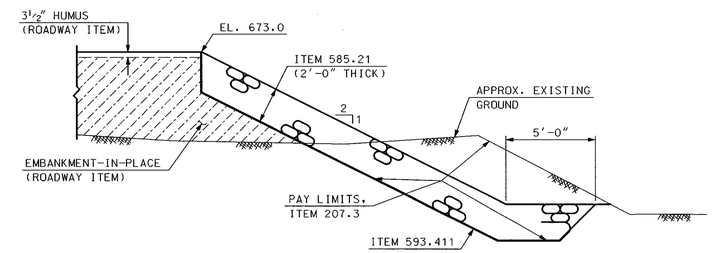


PROFILE
SCALE: 1" = 20'-0"

NOTE: REMOVE EXISTING SUBSTRUCTURE TO 1' BELOW FINISHED GRADE AND FILL VOID WITH SUITABLE EXCAVATED CHANNEL MATERIAL.



SECTION A-A
SCALE: ¼" = 1'-0"



SECTION B-B
SCALE: ¼" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/BR-SITE	14541JSite	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

SITE PLAN AND PROFILE

BRIDGE SHEET 3 OF 22

REVISIONS AFTER PROPOSAL

	BY	DATE		BY	DATE
DESIGNED	SDF	9/06	CHECKED	JWP	1/07
DRAWN	SMG	9/06	CHECKED	SDF	10/06
QUANTITIES	SDF	12/06	CHECKED	PJP	12/06

ISSUE DATE
REV. DATE

FEDERAL PROJECT NO. ----------

SHEET NO. 23

TOTAL SHEETS 156

FILE NUMBER 105-3-1

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ABUTMENT A

B901

TEST BORING REPORT
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14541J BRIDGE NO. 087/155
DESCRIPTION Bridge No. 087/155 Over Warren Brook

GROUNDWATER						EQUIPMENT	SAMPLER	CASING	CORE
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE:	S	NW	
8/29/06	10:00 am	6.1	662.7	0	26	SIZE I.D. (in):	1.375	3	
						HAMMER WT. (lb):	140	DRILL RIG	
						HAMMER FALL (in):	30	CME 45 Truck	
						HAMMER TYPE:	Automatic		

BORING NO. B901
SHEET NO. 1 OF 1
STA. 385+84 OFF. RT 23
BASELINE NH Rte 123
ELEVATION (ft) 667.8
START/END 8/23/06 / 8/23/06
DRILLER P. Huckins (NHDOT)
INSPECTOR John Soper
CLASSIFIER JKS
NORTHEAST (ft) 236850/806279

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft.	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS	STRATUM SYMBOL
0							Small boulder from 0.5 to 1.9 feet. -FILL-	
	1.9	665.9	3 2 7 13	S1	1.3 [65]	2.0	Loose, olive brown, FINE SAND, some silt, little medium sand. -ALLUVIUM-	
5			12 16 19 8	S2	1.0 [50]	4.0 6.0	Dense, olive brown, FINE and COARSE GRAVEL, some fine and medium sand, little silt, trace coarse sand, occasional cobble.	
	8.8	661.0					-LACUSTRINE DEPOSIT-	
10 (BF, BSF)			5 5 6 6	S3	1.3 [65]	8.0 11.0	Medium dense, gray, SILT, trace fine sand.	
	13.4	654.4						
15			10 11 15 14	S4	1.7 [85]	14.0 16.0	Dense, olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine gravel. -GLACIAL TILL-	
20			8 11 13 12	S5	1.8 [90]	19.0 21.0	Medium dense, dark olive gray, SILT, little to trace fine sand, trace medium to coarse sand, trace fine gravel.	
25			10 11 19 15	S6	1.6 [80]	24.0 26.0	Dense, dark olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine and coarse gravel.	
							Bottom of Exploration @ 26.0 ft (El. 641.8)	

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WOH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

B902

TEST BORING REPORT
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14541J BRIDGE NO. 087/155
DESCRIPTION Bridge No. 087/155 Over Warren Brook

GROUNDWATER						EQUIPMENT	SAMPLER	CASING	CORE
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE:	S	NW	
8/29/06	8:00 am	4.7	662.3	0	31.5	SIZE I.D. (in):	1.375	3	
						HAMMER WT. (lb):	140	DRILL RIG	
						HAMMER FALL (in):	30	CME 45 Truck	
						HAMMER TYPE:	Automatic		

BORING NO. B902
SHEET NO. 1 OF 2
STA. 358+60 OFF. RT 03
BASELINE NH Rte 123
ELEVATION (ft) 667.0
START/END 8/29/06 / 8/29/06
DRILLER P. Huckins (NHDOT)
INSPECTOR John Soper
CLASSIFIER JKS
NORTHEAST (ft) 236880/806267

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS	STRATUM SYMBOL
0			3 5 5 3	S1	1.0 [50]	0.0 2.0	Loose, grayish brown, FINE SAND, some to little medium and coarse sand, little fine gravel, little to trace coarse gravel, trace silt. -FILL-	
	3.5	663.5	14 50 8 4	S2	1.1 [55]	2.0 4.0	Very dense, grayish brown, FINE SAND, some to little medium and coarse sand, little fine gravel, little to trace coarse gravel, trace silt, with occasional cobble.	
5			14 15 18 9	S3	1.2 [60]	4.0 6.0	Dense, olive brown, FINE and COARSE GRAVEL, some fine and medium sand, little silt, trace coarse sand, with occasional cobble. -ALLUVIUM-	
10 (BF, BSF)	9.3	657.7	12 6 6 8	S4	1.8 [90]	6.0 11.0	Medium dense, olive gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt. -LACUSTRINE DEPOSIT-	
15			5 6 8 7	S5	1.8 [90]	14.0 16.0	Medium dense, olive gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.	
20			7 7 9 9	S6	1.4 [70]	19.0 21.0	Medium dense, olive gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.	
25	22.3	644.7	15 23 38 30	S7	1.7 [85]	24.0 26.0	Very dense, dark olive gray, FINE SAND and SILT, trace medium and coarse sand, trace fine gravel, trace coarse gravel. -GLACIAL TILL-	
			50/0.3	S8	0.2 [80]	28.0 28.3	Very dense, dark olive gray, FINE SAND and SILT, trace medium and coarse sand, trace fine gravel, trace coarse gravel. Small boulder from 28.3 to 29.4 feet.	
30			13 17 18 10	S9	1.5 [75]	30.5 31.5	Dense, dark olive gray, FINE SAND and SILT, trace medium and coarse sand, trace fine gravel, trace coarse gravel, with occasional cobble and boulder.	
							Bottom of Exploration @ 31.5 ft (El. 635.5)	

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WOH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

B903

TEST BORING REPORT
STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14541J BRIDGE NO. 087/155
DESCRIPTION Bridge No. 087/155 Over Warren Brook

GROUNDWATER						EQUIPMENT	SAMPLER	CASING	CORE
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE:	S	NW	
8/30/06	8:00 am	2.3	661.6	0	20	SIZE I.D. (in):	1.375	3	
						HAMMER WT. (lb):	140	DRILL RIG	
						HAMMER FALL (in):	30	CME 45 Truck	
						HAMMER TYPE:	Automatic		

BORING NO. B903
SHEET NO. 1 OF 1
STA. 358+30 OFF. LT 18
BASELINE NH Rte 123
ELEVATION (ft) 664.1
START/END 8/29/06 / 8/29/06
DRILLER P. Huckins (NHDOT)
INSPECTOR John Soper
CLASSIFIER JKS
NORTHEAST (ft) 236913/806250

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS	STRATUM SYMBOL
0			2 3 3 3 10	S1	0.7 [35]	0.0 2.0	Loose, grayish brown, FINE SAND, some medium sand, little coarse sand, little fine gravel, trace silt, trace coarse gravel, with occasional cobble and small boulder. -FILL-	
	3.3	660.8	5 6 7 15	S2	1.1 [55]	2.0 4.0	Grayish brown, FINE SAND, some medium sand, little coarse sand, little fine gravel, trace silt, trace coarse gravel, with occasional cobble and small boulder.	
5			16 12 10 12	S3	1.2 [60]	4.0 6.0	Grayish brown, FINE to MEDIUM SAND, some coarse sand, little fine gravel, little to trace silt, trace coarse gravel, with occasional cobble. -ALLUVIUM- Medium dense, grayish brown, FINE SAND, some medium sand, little coarse sand, little fine gravel, trace silt, trace coarse gravel, with occasional cobble and small boulder.	
	5.8	658.3					Olive gray, SILT, trace fine sand. -LACUSTRINE DEPOSIT-	
10 (BF, BSF)			7 8 8 8	S4	1.6 [80]	9.0 11.0	Medium dense, olive gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.	
15			5 5 7 5	S5	2.0 [100]	14.0 16.0	Medium dense, olive gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.	
20	18.2	645.9	18 17 66 34	S6	1.1 [55]	19.0 21.0	Very dense, dark olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine and coarse gravel, with occasional cobble. -GLACIAL TILL-	
25			10 10 14 15	S7	1.3 [65]	24.0 26.0	Medium dense, dark olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine and coarse gravel, with occasional cobble.	
							Bottom of Exploration @ 26.0 ft (El. 638.1)	

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

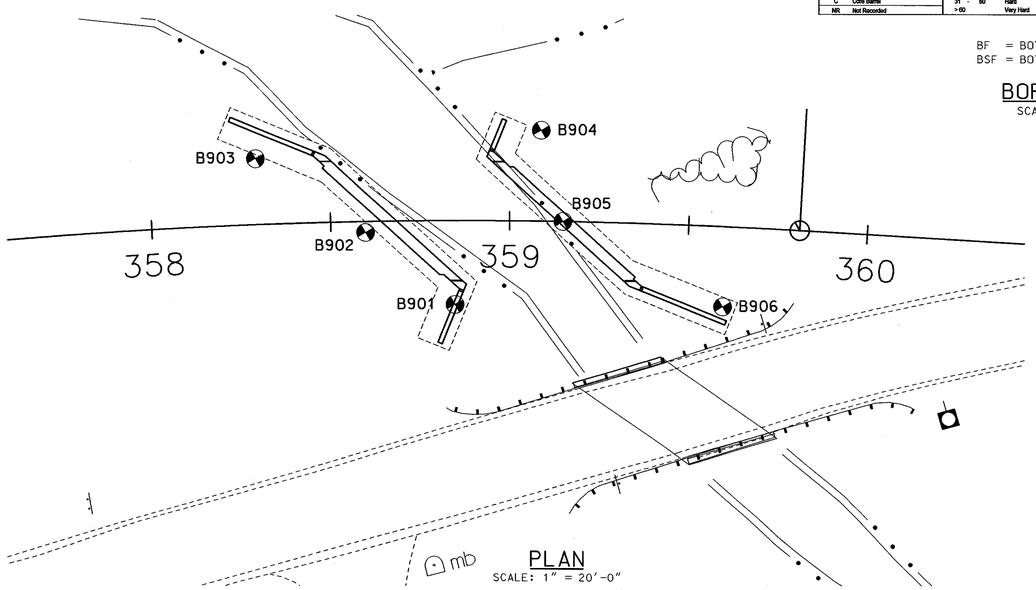
WOR - Weight of Rod
WOH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

BF = BOTTOM OF FOOTING
BSF = BOTTOM OF STRUCTURAL FILL

BORING LOGS
SCALE: 1/4" = 1'-0"



PLAN
SCALE: 1" = 20'-0"

PI = 358+11.43
N = 236913.77
E = 806229.26
Δ = 12°-25'-46.1" RT
T = 170.97'
R = 1570.00'
L = 340.59'
E = 9.28'

BORING LOCATIONS		
NO.	NORTHING	EASTING
B901	236850	806279
B902	236880	806267
B903	236913	806250
B904	236880	806324
B905	236855	806316
B906	236812	806343

BORING NOTES

1. BORINGS INDICATED THUS ◔ WERE MADE BY THE NHDOT FROM AUGUST TO SEPTEMBER 2006. FIGURES IN THE 'BLOWS PER 0.5 FT' COLUMN INDICATE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. STANDARD SPLIT SPOON SAMPLER 6 INCHES, USING A 140 LB. WEIGHT FALLING 30 INCHES.
2. BORINGS ARE FOR DESIGN PURPOSES SHOWING CONDITIONS AT BORING POINTS ONLY AND DO NOT NECESSARILY INDICATE MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.
3. THE SOILS REPORT IS AVAILABLE IN THE NHDOT BUREAU OF MATERIALS AND RESEARCH OFFICE. SEE PROSECUTION OF WORK FOR MORE INFORMATION.
4. WATER LEVELS INDICATED THUS ▼ WERE MEASURED AT THE TIME OF EXPLORATION. THE WATER LEVELS ENCOUNTERED DURING CONSTRUCTION MAY VARY CONSIDERABLY DUE TO PREVAILING CLIMATE, RAINFALL, OR OTHER FACTORS.

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/BR-SITE	14541JBORLOG	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J
LOCATION NH ROUTE 123 over WARREN BROOK

BORING LOG (1 OF 2)

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	NHDOT	9/06	CHECKED	JWP	1/07
	DRAWN	SMG	9/06	CHECKED	SDF	9/06
	QUANTITIES	SDF	12/06	CHECKED	PJP	12/06

ISSUE DATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
REV. DATE	----------	24	156

BRIDGE SHEET 4 OF 22
FILE NUMBER 105-3-1

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ABUTMENT B

680 675 670 665 660 655 650 645 640 635 630

BF
BSF

B904

TEST BORING REPORT

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14541J BRIDGE NO. 087/155
DESCRIPTION Bridge No. 087/155 Over Warren Brook

GROUNDWATER					EQUIPMENT	SAMPLER	CASING	CORE
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE:	S	NW	
8/31/06	2:00 pm	4.3	664.2	0	30	SIZE I.D. (in):	1.375	3	
						HAMMER WT. (lb):	140	DRILL RIG	
						HAMMER FALL (in):	30	CME 45 Truck	
						HAMMER TYPE:	Automatic		

BORING NO. B904
SHEET NO. 1 OF 2
STA. 359+09 OFF. LT 25
BASELINE NH Rte 123
ELEVATION (ft) 668.5
START/END 8/30/06 / 8/31/06
DRILLER P. Huckins (NHDOT)
INSPECTOR John Soper
CLASSIFIER JKS
NORTHEAST (ft) 236860/806324

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS
0			1 3 4	S1	1.1 [55]	0.0 – 2.0	Very loose, dark grayish brown, FINE and MEDIUM SAND, some coarse sand, little fine gravel, trace silt. -FILL-
			2 10 13 8	S2	0.5 [25]	2.0 – 4.0	Medium dense, dark grayish brown, FINE and MEDIUM SAND, some coarse sand, little fine gravel, trace silt.
5	4.5	664.0	11 7 11 10	S3	1.7 [85]	4.0 – 6.0	Medium dense, dark yellowish brown, FINE GRAVEL, some fine to coarse sand, little coarse sand, little to trace silt. -ALLUVIUM-
	6.5	662.0					
10			6 4 7 7	S4	2.0 [100]	9.0 – 11.0	Medium dense, gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt. -LACUSTRINE DEPOSIT-
15			5 6 6 9	S5	0.3 [15]	14.0 – 16.0	Medium dense, gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.
20			3 4 4 5	S6	2.0 [100]	19.0 – 21.0	Loose, gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.
						21.0 – 23.0	Gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.
25	24.3	644.2	3 4 15 15	S7	1.0 [50]	23.0 – 25.0	Dark olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine gravel. -GLACIAL TILL-
30			18 25 26 25	S8	2.0 [100]	28.0 – 30.0	Very dense, dark olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine gravel.
							Bottom of Exploration @ 30.0 ft (El. 638.5)

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WCH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

B905

TEST BORING REPORT

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14541J BRIDGE NO. 087/155
DESCRIPTION Bridge No. 087/155 Over Warren Brook

GROUNDWATER					EQUIPMENT	SAMPLER	CASING	CORE
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE:	S	NW	
9/7/06	8:00 am	0.9	664.1	0	30	SIZE I.D. (in):	1.375	3	
						HAMMER WT. (lb):	140	DRILL RIG	
						HAMMER FALL (in):	30	CME 45-C Track rig	
						HAMMER TYPE:	Automatic		

BORING NO. B905
SHEET NO. 1 OF 2
STA. 359+15 OFF. CL
BASELINE NH Rte 123
ELEVATION (ft) 665.0
START/END 9/6/06 / 9/6/06
DRILLER J. Kibbee (NHDOT)
INSPECTOR John Soper
CLASSIFIER JKS
NORTHEAST (ft) 236855/806316

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS
0			1 3 7 2	S1	1.3 [65]	0.0 – 2.0	Loose, dark olive gray, FINE to MEDIUM SAND, some coarse sand, little fine gravel, trace silt. -ALLUVIUM-
			2 5 7 7	S2	1.2 [60]	2.0 – 4.0	Medium dense, dark olive gray, FINE to MEDIUM SAND, some coarse sand, little fine gravel, trace silt.
5	4.3	660.7	7 4 4 7	S3	1.4 [70]	4.0 – 6.0	Loose, gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt. -LACUSTRINE DEPOSIT-
	13.5	651.5	4 4 5 5	S4	2.0 [100]	10.0 – 12.0	Loose, gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt.
15			8 7 7 9	S5	1.4 [70]	15.0 – 17.0	Medium dense, dark olive gray, FINE SAND and SILT, trace medium to coarse sand, trace fine gravel. -GLACIAL TILL-
20			8 7 9 14	S6	1.4 [70]	20.0 – 22.0	Medium dense, dark olive gray, FINE SAND and SILT, trace medium to coarse sand, trace fine gravel, trace coarse gravel, with occasional cobble.
25			5 7 9 16	S7	1.2 [60]	25.0 – 27.0	Medium dense, dark olive gray, FINE SAND and SILT, trace medium to coarse sand, trace fine gravel, trace coarse gravel, with occasional cobble.
30			6 10 12 17	S8	1.5 [75]	28.0 – 30.0	Medium dense, dark olive gray, FINE SAND and SILT, trace medium to coarse sand, trace fine gravel, trace coarse gravel, with occasional cobble.
							Bottom of Exploration @ 30.0 ft (El. 635.0)

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WCH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

B906

TEST BORING REPORT

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14541J BRIDGE NO. 087/155
DESCRIPTION Bridge No. 087/155 Over Warren Brook

GROUNDWATER					EQUIPMENT	SAMPLER	CASING	CORE
DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE:	S	NW	
8/31/06	9:00 am	4.4	665.7	0	28	SIZE I.D. (in):	1.375	3	
						HAMMER WT. (lb):	140	DRILL RIG	
						HAMMER FALL (in):	30	CME 45 Truck	
						HAMMER TYPE:	Automatic		

BORING NO. B906
SHEET NO. 1 OF 2
STA. 359+60 OFF. RT 22
BASELINE NH Rte 123
ELEVATION (ft) 670.1
START/END 8/30/06 / 8/30/06
DRILLER P. Huckins (NHDOT)
INSPECTOR John Soper
CLASSIFIER JKS
NORTHEAST (ft) 236812/806343

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS
0			1 2 2	S1	0.4 [20]	0.0 – 2.0	Very loose, olive gray, FINE SAND, some medium and coarse sand, little fine gravel, little to trace coarse sand, trace silt, with occasional cobble. Some of the gravel size pieces were asphalt -FILL-
			1 S2 50/0.2	S2	1.0 [83]	2.0 – 3.2	Very dense, olive gray, FINE SAND, some medium and coarse sand, little fine gravel, little to trace coarse sand, trace silt, with occasional cobble. Some of the gravel size pieces were asphalt Small boulder from 3.2 to 4.8 feet.
5	4.8	665.3	7 4 6 7	S3	1.7 [85]	5.0 – 7.0	Loose, grayish brown to gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt, with dark yellowish brown mottles. -LACUSTRINE DEPOSIT-
			6 6 7 8	S4	1.2 [60]	7.0 – 9.0	Medium dense, grayish brown to gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt, with dark yellowish brown mottles.
10							
15			4 5 7 6	S5	1.3 [65]	13.0 – 15.0	Medium dense, grayish brown to gray, SILT, trace fine sand, with frequent partings of fine sand, trace silt, with dark yellowish brown mottles.
20			4 5 7 5	S6	2.0 [100]	18.0 – 20.0	Medium dense, grayish brown to gray, SILT, trace fine sand, with frequent partings and seams of fine sand, trace silt.
	22.8	647.3	22 40 36 37	S7	0.7 [35]	23.0 – 25.0	Very dense, dark olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine gravel, trace coarse gravel. -GLACIAL TILL-
25			40 42 35 39	S8	1.3 [65]	26.0 – 28.0	Very dense, dark olive gray, SILT and FINE SAND, trace medium to coarse sand, trace fine gravel, trace coarse gravel.
							Bottom of Exploration @ 28.0 ft (El. 642.1)

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WCH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

BF = BOTTOM OF FOOTING
BSF = BOTTOM OF STRUCTURAL FILL

BORING LOGS

SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/BR-SITE	14541JBORLOG	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J
LOCATION NH ROUTE 123 over WARREN BROOK

BORING LOG (2 OF 2)

BRIDGE SHEET 5 OF 22

REVISIONS AFTER PROPOSAL	BY	DATE		BY	DATE
DESIGNED	NHDOT	9/06	CHECKED	JWP	1/07
DRAWN	SMG	9/06	CHECKED	SDF	9/06
QUANTITIES	SDF	12/06	CHECKED	PJP	12/06

ISSUE DATE
REV. DATE
FEDERAL PROJECT NO. ----------
SHEET NO. 25
TOTAL SHEETS 156
FILE NUMBER 105-3-1

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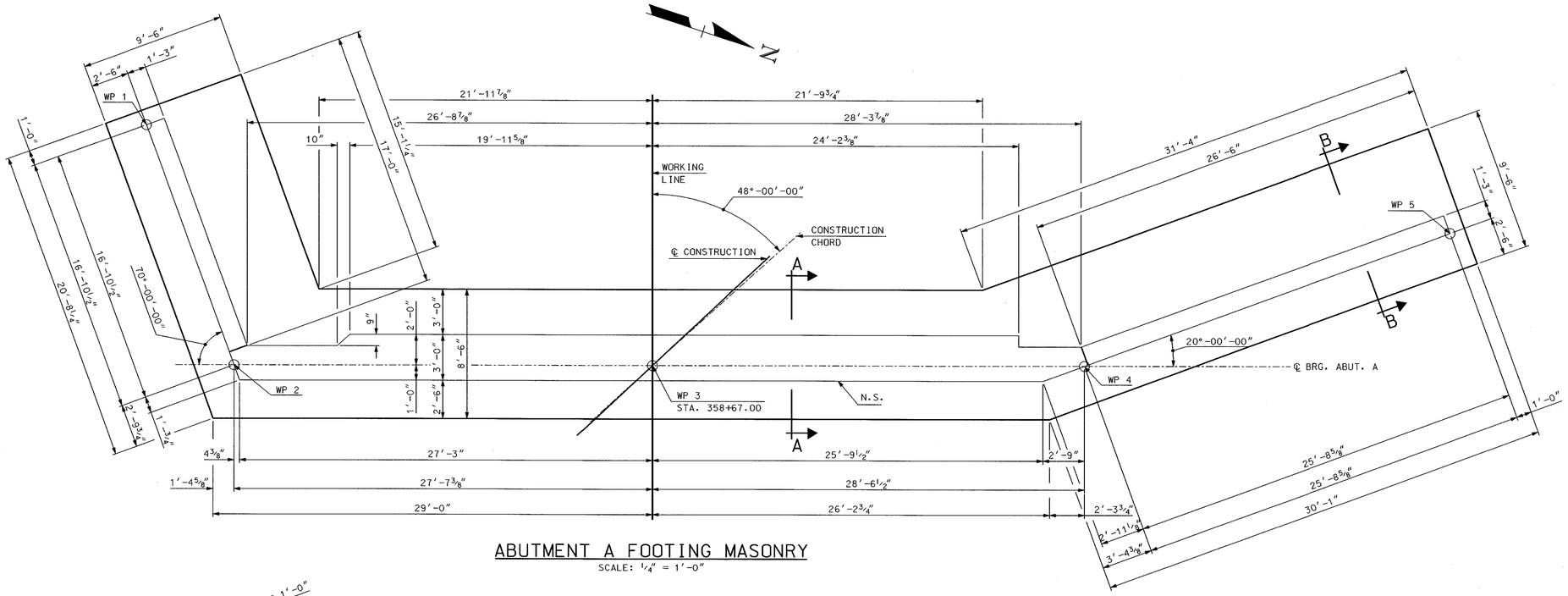
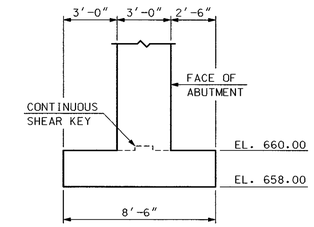


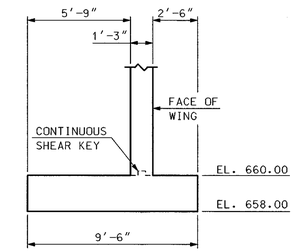
ABUTMENT A FOOTING MASONRY

SCALE: ¼" = 1'-0"



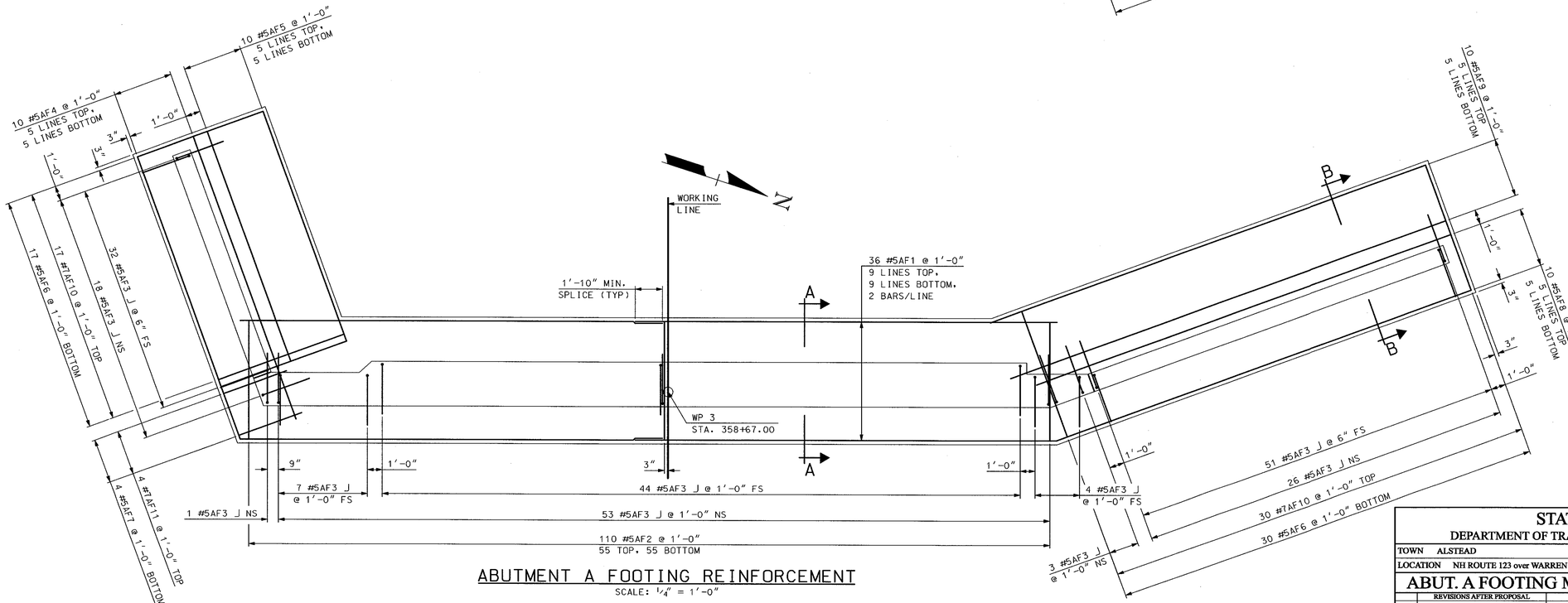
SECTION A-A MASONRY

SCALE: ¼" = 1'-0"



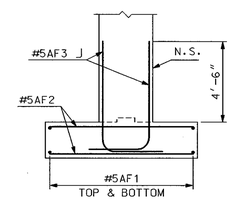
SECTION B-B MASONRY

SCALE: ¼" = 1'-0"



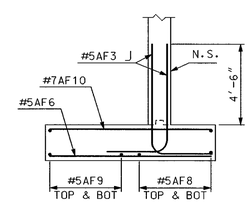
ABUTMENT A FOOTING REINFORCEMENT

SCALE: ¼" = 1'-0"



SECTION A-A REINFORCEMENT

SCALE: ¼" = 1'-0"



SECTION B-B REINFORCEMENT

SCALE: ¼" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTA	14541JAFoot	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD — BRIDGE NO. 087\156 — STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUT. A FOOTING MASONRY & REINFORCEMENT

REVISIONS AFTER PROPOSAL

	BY	DATE		BY	DATE
DESIGNED	SDF	9/06	CHECKED	JWP	1/07
DRAWN	SMG	9/06	CHECKED	SDF	10/06
QUANTITIES	SDF	12/06	CHECKED	PJP	3/07

ISSUE DATE

REV. DATE

FEDERAL PROJECT NO. ----------

SHEET NO. 26

BRIDGE SHEET 6 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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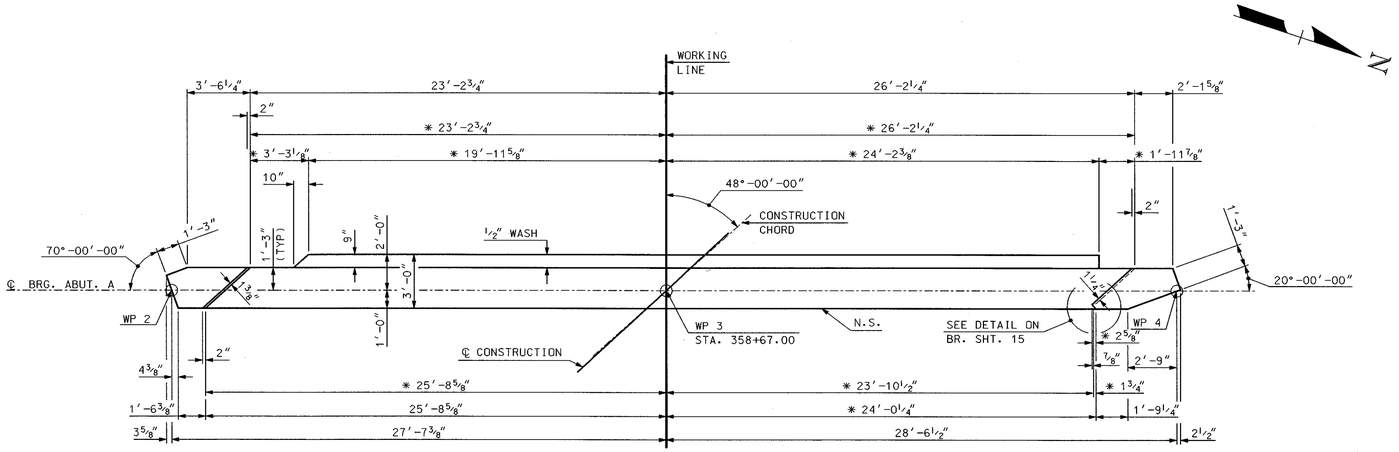
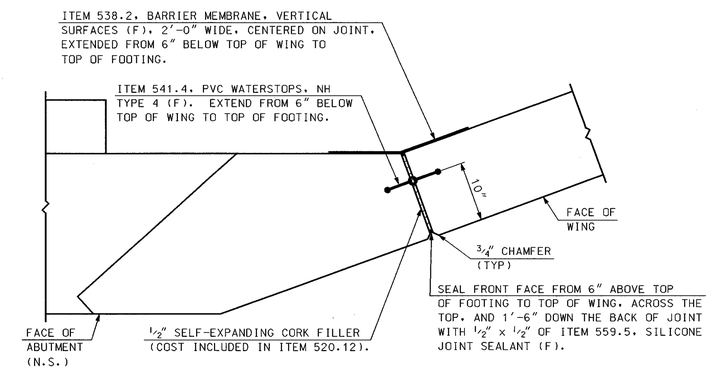


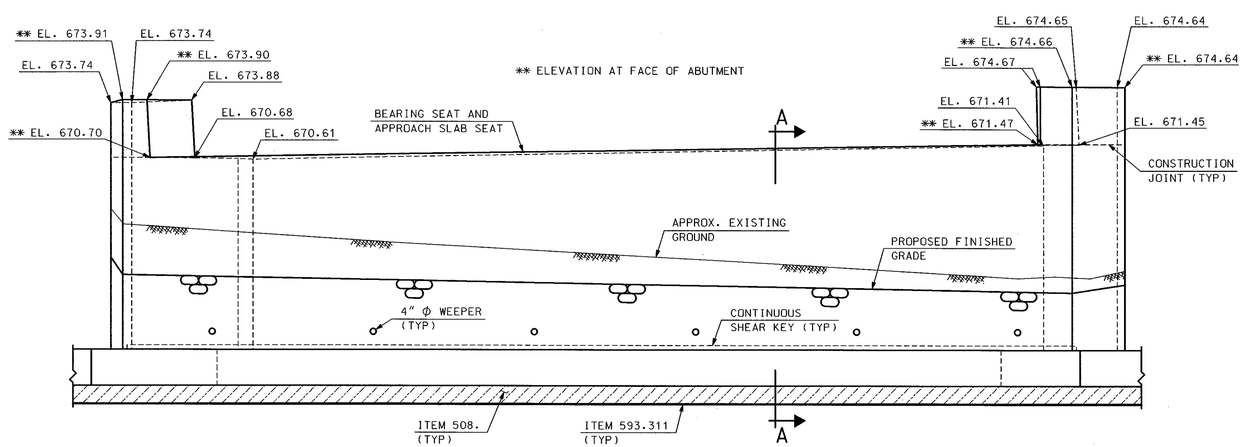
ABUTMENT A PLAN

SCALE: ¼" = 1'-0"



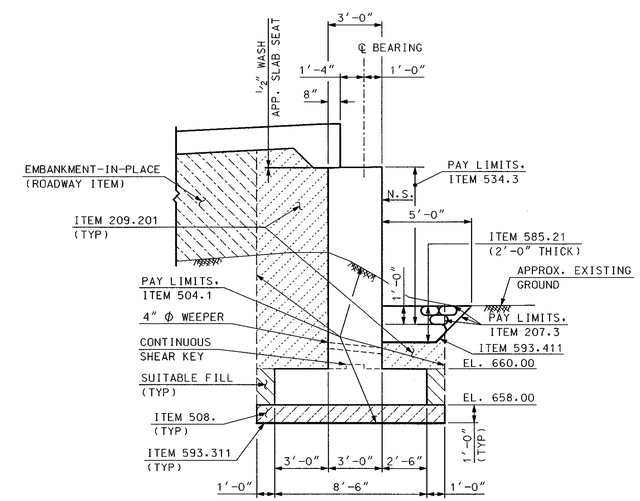
TYPICAL WING JOINT

SCALE: 1" = 1'-0"



ABUTMENT A ELEVATION

SCALE: ¼" = 1'-0"



SECTION A-A

SCALE: ¼" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTA	14541JAAbut	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUTMENT A MASONRY

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	SDF	9/06	CHECKED	JWP	1/07
	DRAWN	SMG	9/06	CHECKED	SDF	10/06
	QUANTITIES	SDF	12/06	CHECKED	PJP	3/07
	ISSUE DATE			FEDERAL PROJECT NO.		
	REV. DATE			----------		

BRIDGE SHEET 7 OF 22

FILE NUMBER 105-3-1

SHEET NO. 27

TOTAL SHEETS 156

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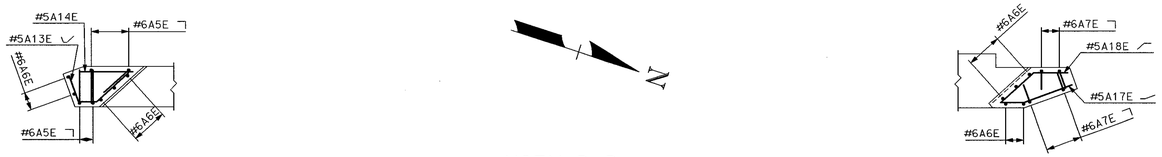
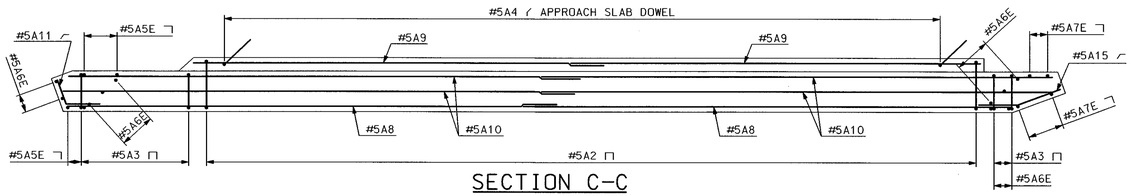


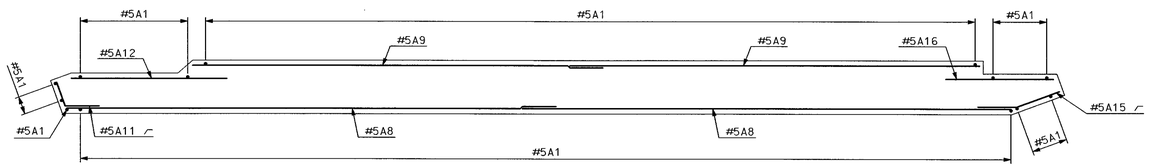
VIEW D-D

SCALE: 1/4" = 1'-0"



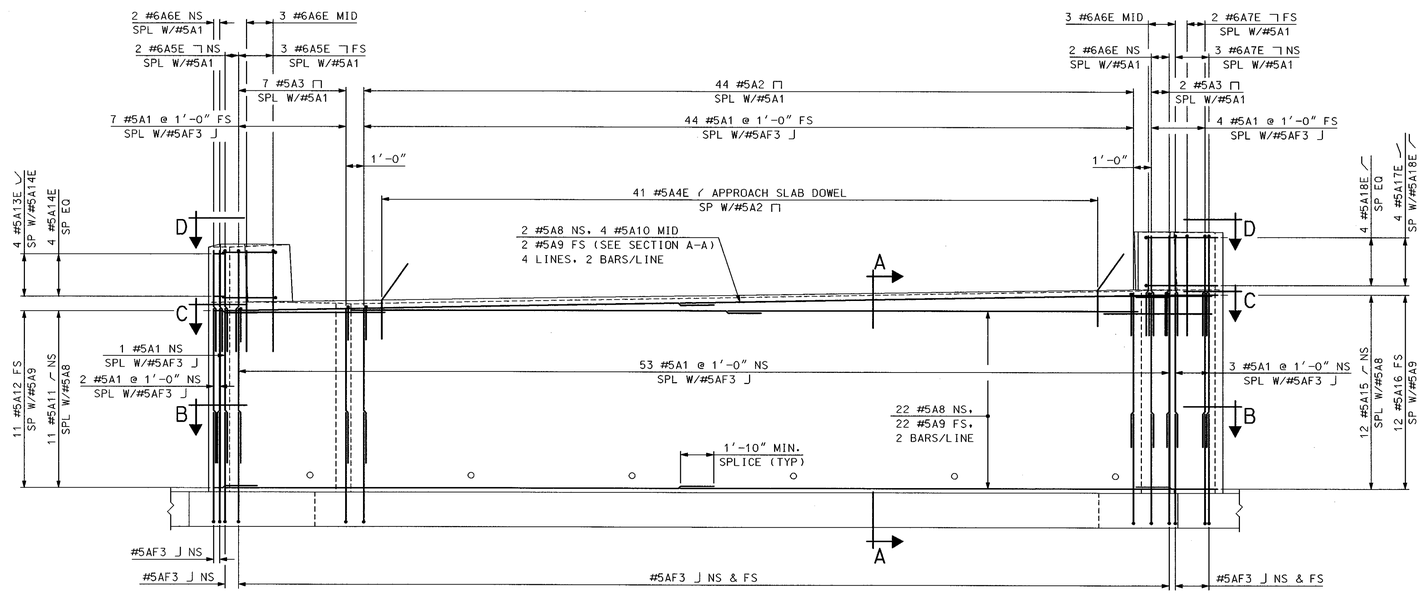
SECTION C-C

SCALE: 1/4" = 1'-0"



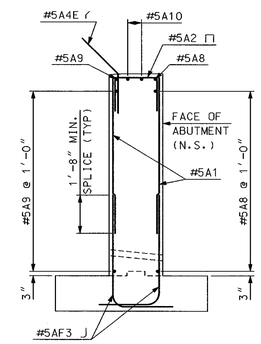
SECTION B-B

SCALE: 1/4" = 1'-0"



ABUTMENT A REINFORCEMENT

SCALE: 1/4" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTA	14541JARebar	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUTMENT A REINFORCEMENT

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	SDF	10/06	CHECKED	JWP	1/07
	DRAWN	SMG	10/06	CHECKED	SDF	11/06
	QUANTITIES	SDF	12/06	CHECKED	PJP	3/07
	ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	
	REV. DATE		----------		28	

BRIDGE SHEET 8 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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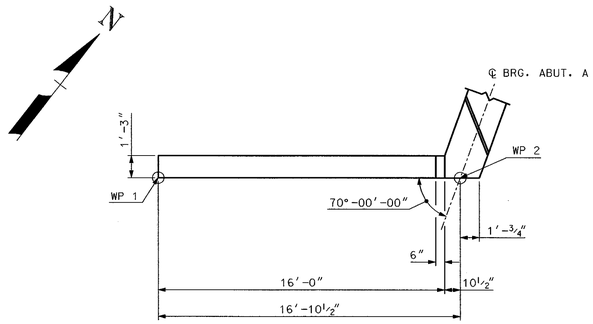
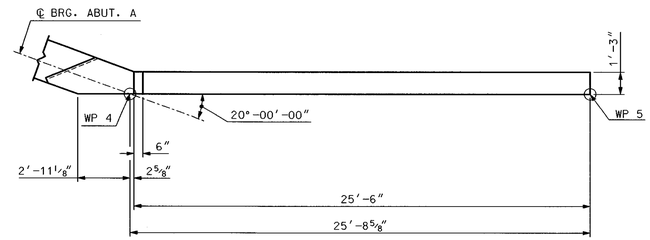


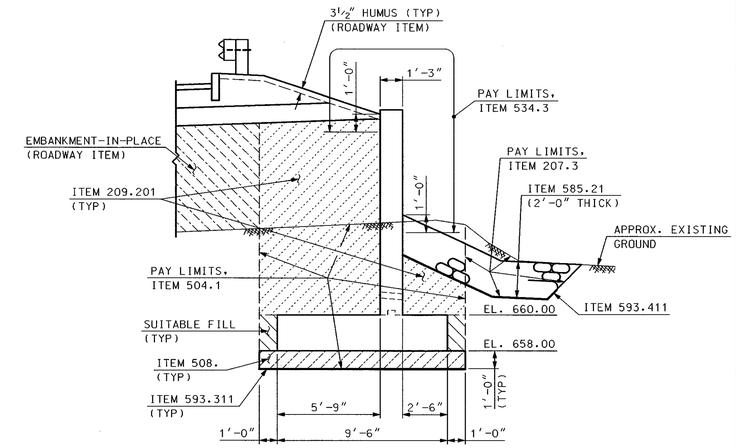
SW WING PLAN

SCALE: 1/4" = 1'-0"



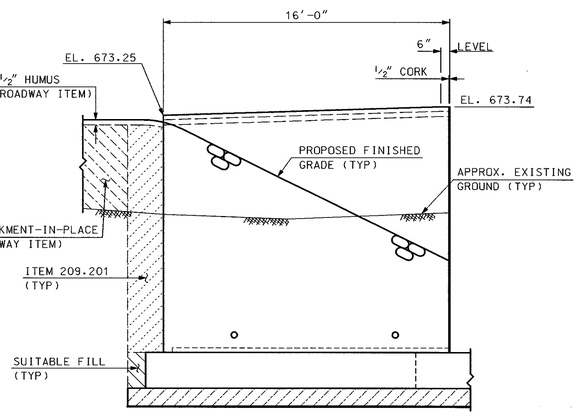
NW WING PLAN

SCALE: 1/4" = 1'-0"



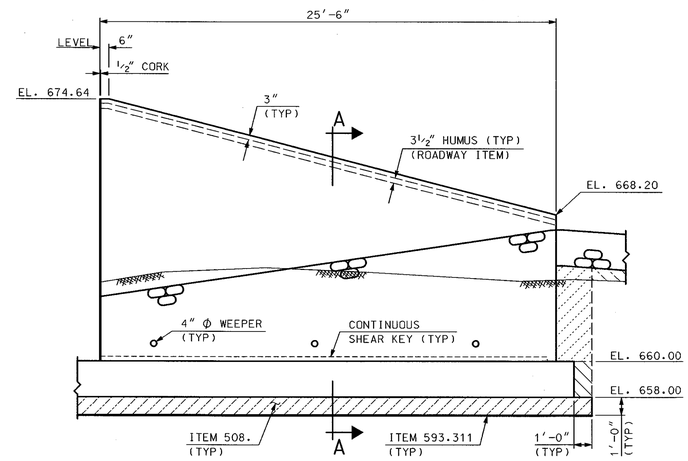
SECTION A-A MASONRY

SCALE: 1/4" = 1'-0"



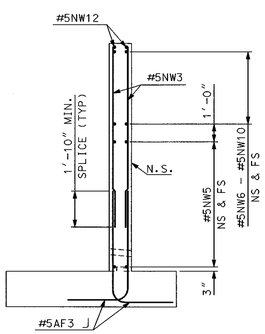
SW WING MASONRY

SCALE: 1/4" = 1'-0"



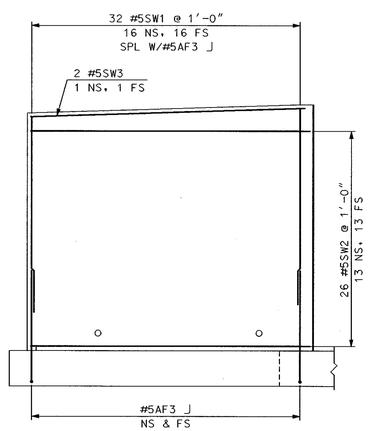
NW WING MASONRY

SCALE: 1/4" = 1'-0"



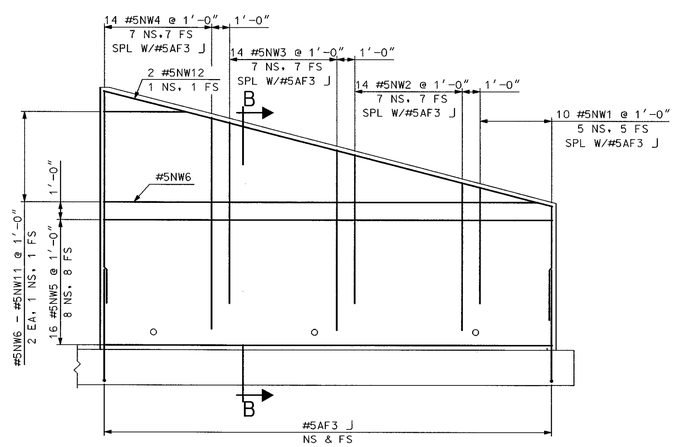
SECTION B-B REINFORCEMENT

SCALE: 1/4" = 1'-0"



SW WING REINFORCEMENT

SCALE: 1/4" = 1'-0"



NW WING REINFORCEMENT

SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTA	14541JAwings	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUTMENT A WINGS MASONRY & REINFORCEMENT

REVISIONS AFTER PROPOSAL			BY	DATE		BY	DATE
		DESIGNED	SDF	10/06	CHECKED	JWP	1/07
		DRAWN	SMG	10/06	CHECKED	SDF	11/06
		QUANTITIES	SDF	12/06	CHECKED	PJP	3/07
		ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	
		REV. DATE		----------		29	

BRIDGE SHEET 9 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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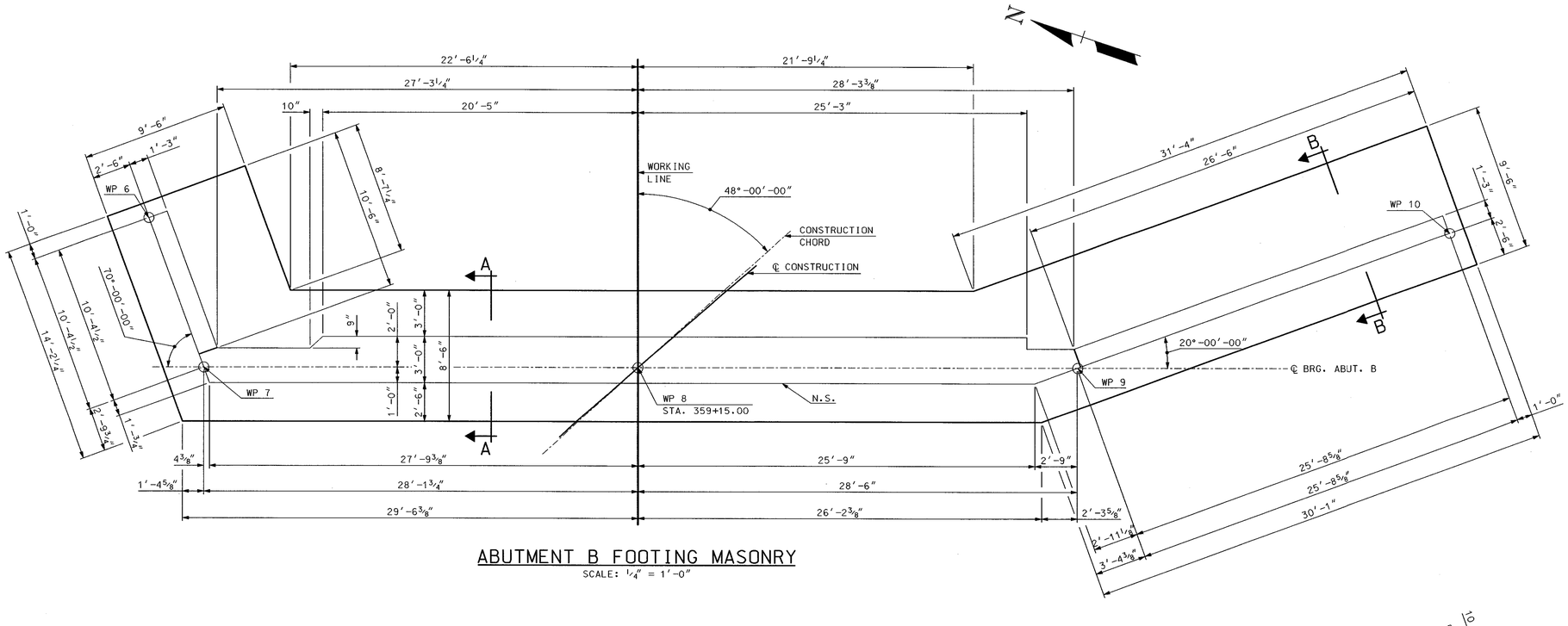
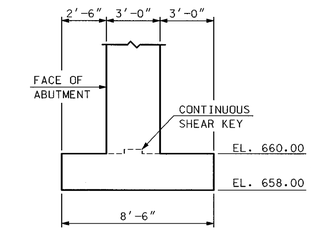


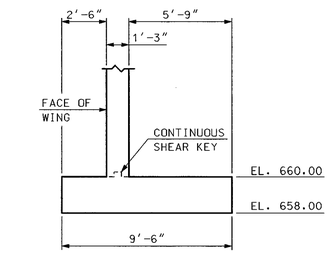
ABUTMENT B FOOTING MASONRY

SCALE: ¼″ = 1′-0″



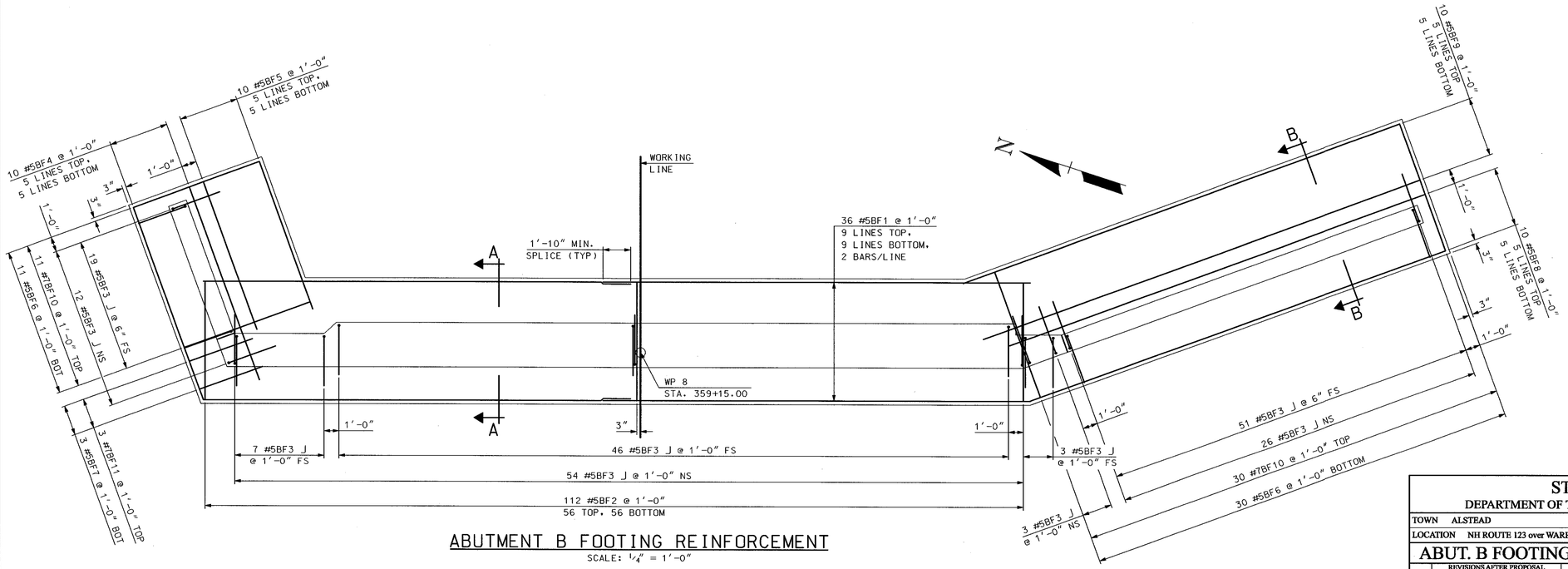
SECTION A-A MASONRY

SCALE: ¼″ = 1′-0″



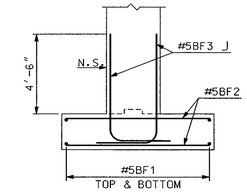
SECTION B-B MASONRY

SCALE: ¼″ = 1′-0″



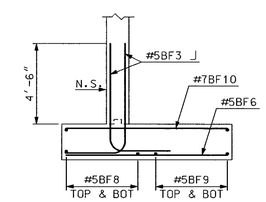
ABUTMENT B FOOTING REINFORCEMENT

SCALE: ¼″ = 1′-0″



SECTION A-A REINFORCEMENT

SCALE: ¼″ = 1′-0″



SECTION B-B REINFORCEMENT

SCALE: ¼″ = 1′-0″

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTB	14541JBFoot	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUT. B FOOTING MASONRY & REINFORCEMENT

REVISIONS AFTER PROPOSAL

	BY	DATE		BY	DATE
DESIGNED	SDF	9/06	CHECKED	JWP	1/07
DRAWN	SMG	9/06	CHECKED	SDF	10/06
QUANTITIES	SDF	12/06	CHECKED	PJP	12/06

ISSUE DATE

REV. DATE

FEDERAL PROJECT NO. ----------

SHEET NO. 30

BRIDGE SHEET 10 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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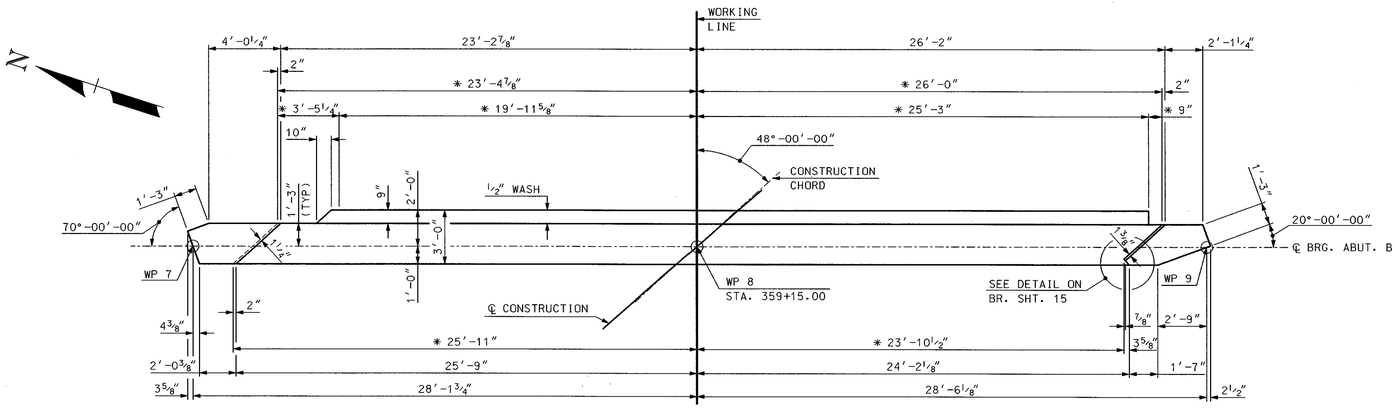
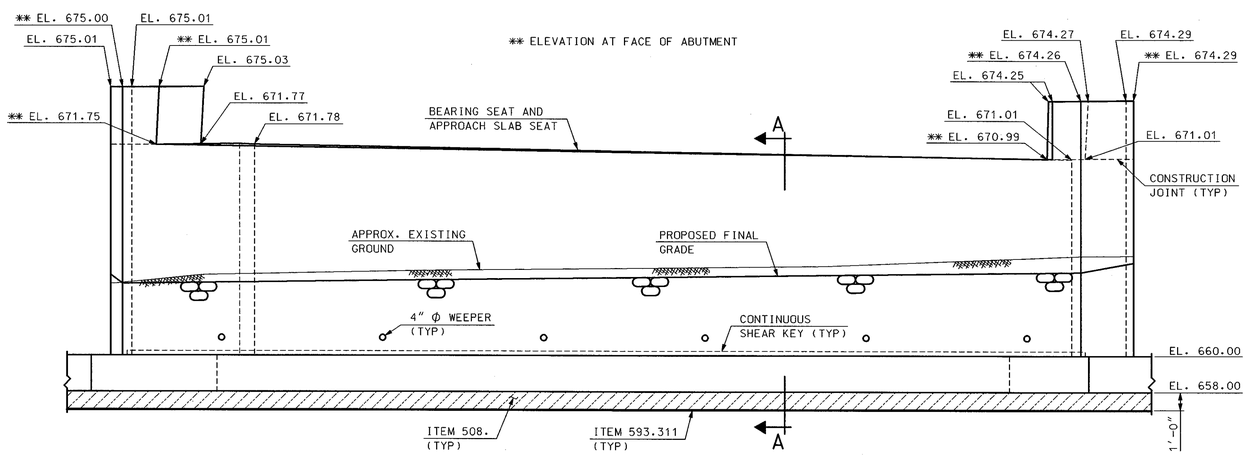


* DIMENSION AT BEARING SEAT

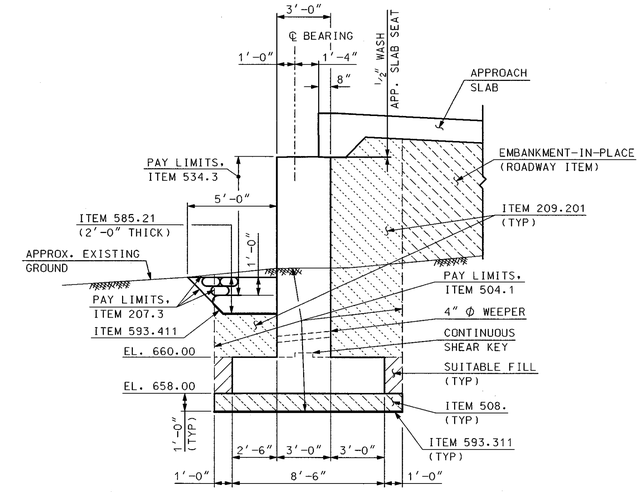
ABUTMENT B PLAN

SCALE: 1/4" = 1'-0"



ABUTMENT B ELEVATION

SCALE: 1/4" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTB	14541JBAbut	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUTMENT B MASONRY

REVISIONS AFTER PROPOSAL			BY	DATE		BY	DATE
		DESIGNED	SDF	10/06	CHECKED	JWP	1/07
		DRAWN	SMG	10/06	CHECKED	SDF	11/06
		QUANTITIES	SDF	12/06	CHECKED	PJP	12/06
		ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	
		REV. DATE		----------		31	

BRIDGE SHEET 11 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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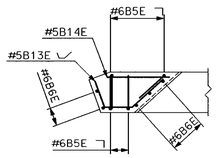
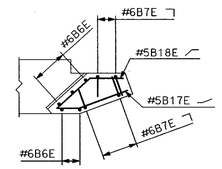
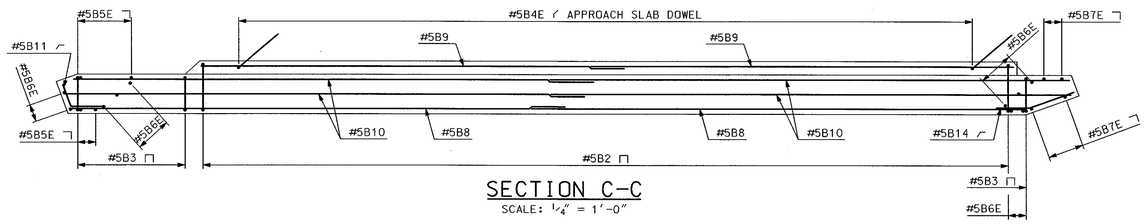




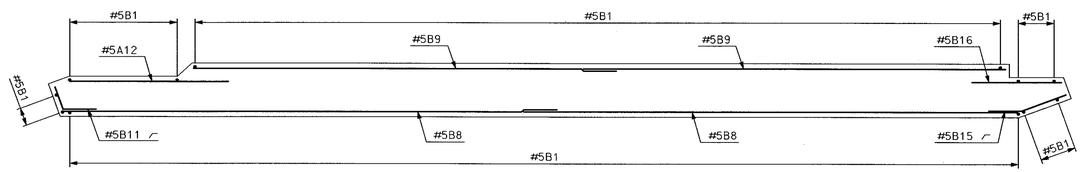
VIEW D-D

SCALE: 1/4" = 1'-0"



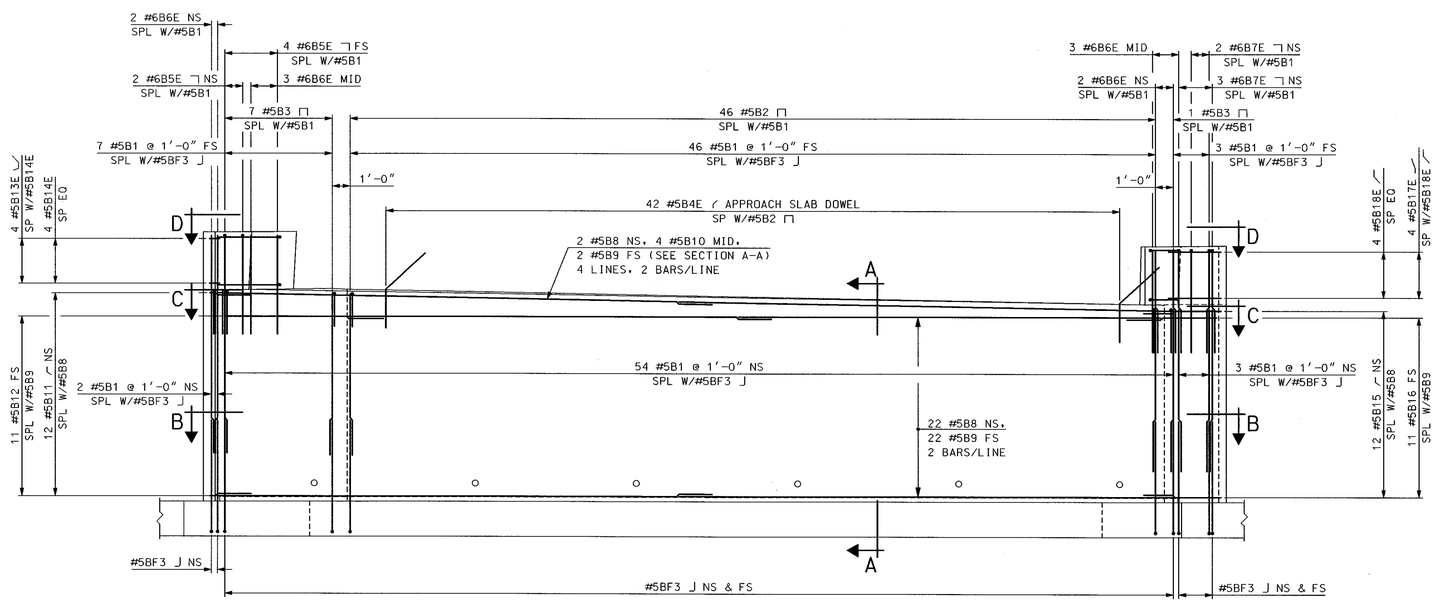
SECTION C-C

SCALE: 1/4" = 1'-0"



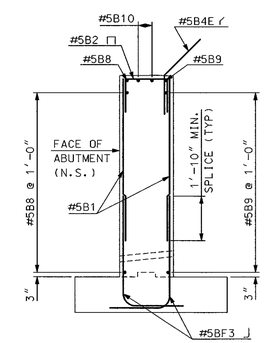
SECTION B-B

SCALE: 1/4" = 1'-0"



ABUTMENT B REINFORCEMENT

SCALE: 1/4" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTB	14541JBRebar	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD — BRIDGE NO. 087\156 — STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUTMENT B REINFORCEMENT

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	SDF	10/06	CHECKED	JWP	1/07
	DRAWN	SMG	10/06	CHECKED	SDF	11/07
	QUANTITIES	SDF	12/06	CHECKED	PJP	12/06
	ISSUE DATE					
	REV. DATE					

FEDERAL PROJECT NO. ----------

SHEET NO. 32

BRIDGE SHEET 12 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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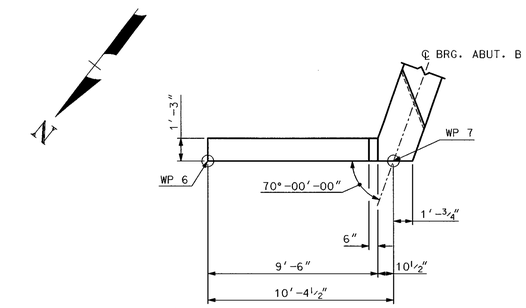
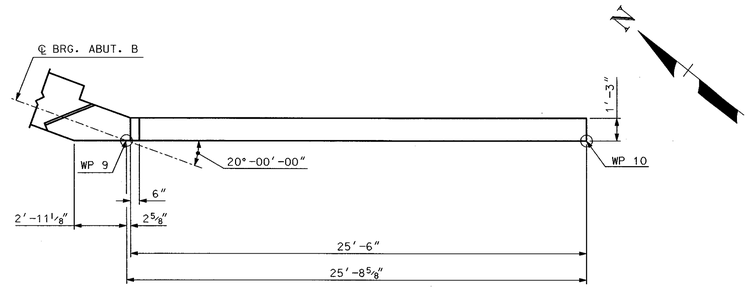
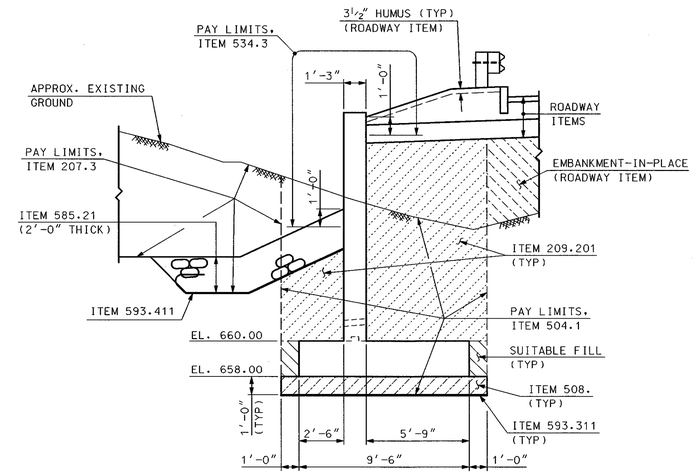


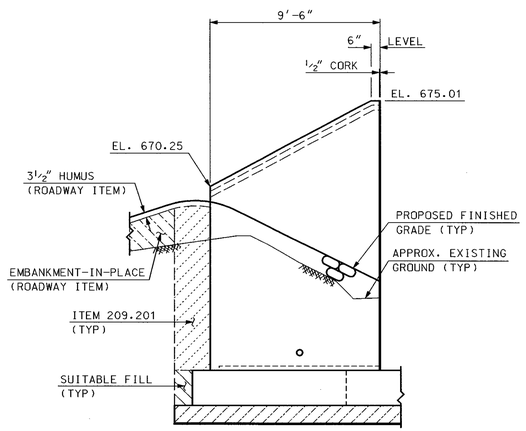
NE WING PLAN
SCALE: 1/4" = 1'-0"



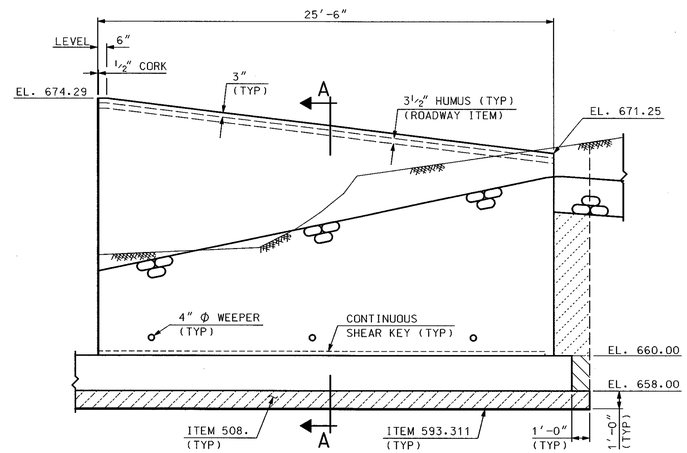
SE WING PLAN
SCALE: 1/4" = 1'-0"



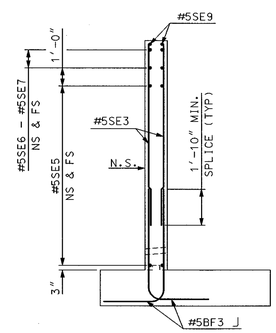
SECTION A-A MASONRY
SCALE: 1/4" = 1'-0"



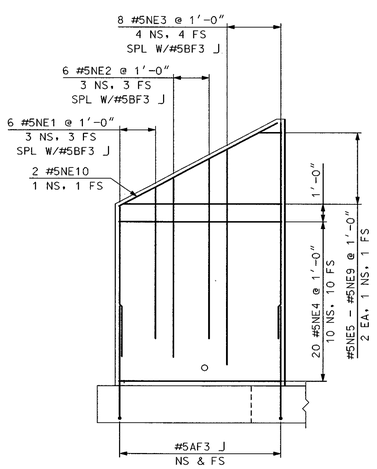
NE WING MASONRY
SCALE: 1/4" = 1'-0"



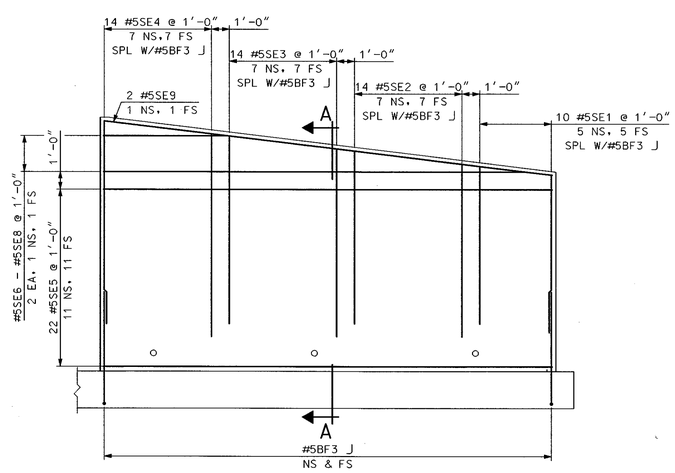
SE WING MASONRY
SCALE: 1/4" = 1'-0"



SECTION A-A REINFORCEMENT
SCALE: 1/4" = 1'-0"



NE WING REINFORCEMENT
SCALE: 1/4" = 1'-0"



SE WING REINFORCEMENT
SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/ABUTA	14541JBWings	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

ABUTMENT B WINGS MASONRY & REINFORCEMENT

REVISIONS AFTER PROPOSAL									

		BY	DATE		BY	DATE
DESIGNED	SDF	10/06		CHECKED	JWP	1/07
DRAWN	SMG	10/06		CHECKED	SDF	11/06
QUANTITIES	SDF	12/06		CHECKED	PJP	12/06

ISSUE DATE		FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
REV. DATE		----------	33	156

BRIDGE SHEET 13 OF 22

FILE NUMBER 105-3-1

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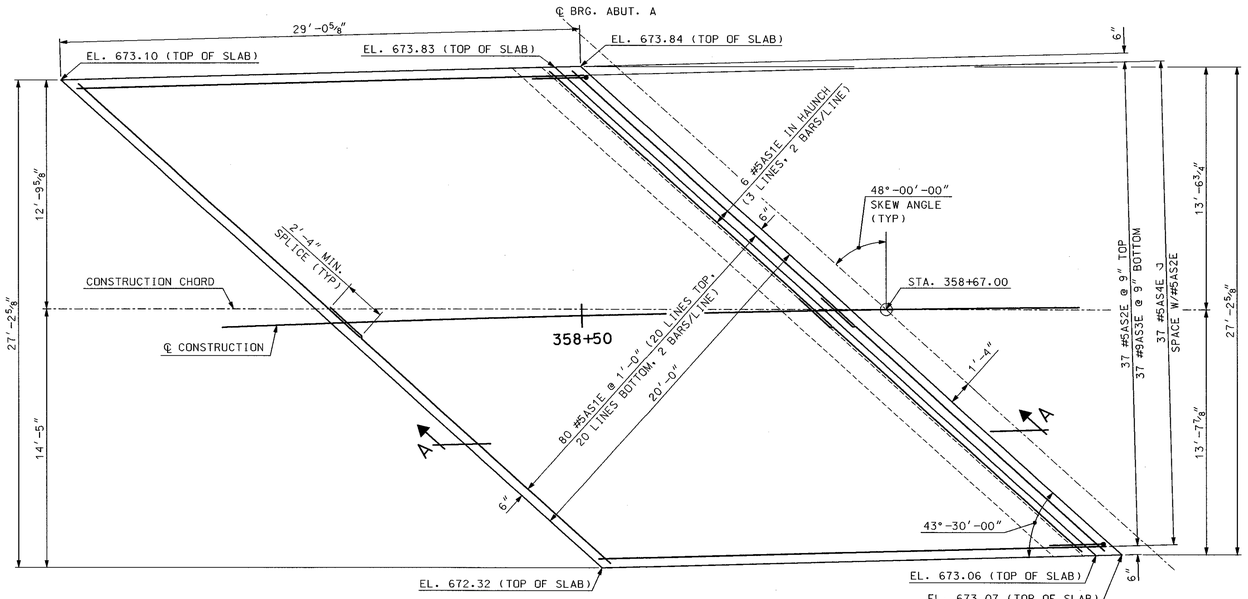
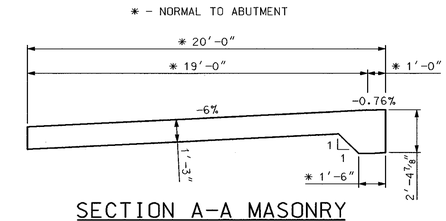


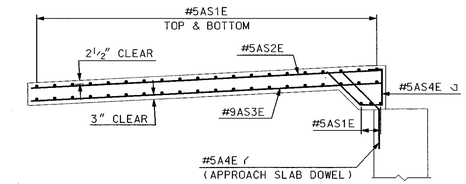
WEST APPROACH SLAB PLAN

SCALE: 1/4" = 1'-0"



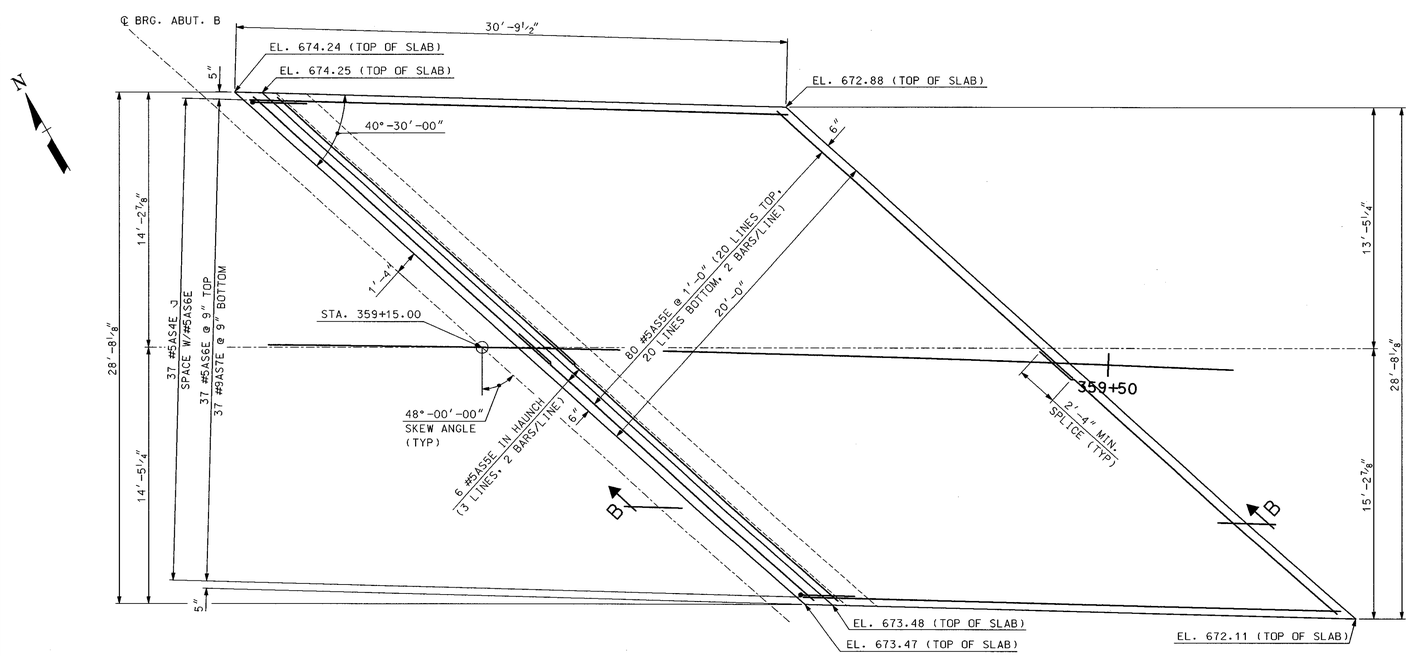
SECTION A-A MASONRY

SCALE: 1/4" = 1'-0"



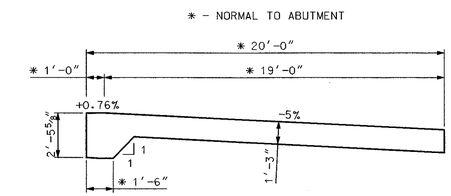
SECTION A-A REINFORCEMENT

SCALE: 1/4" = 1'-0"



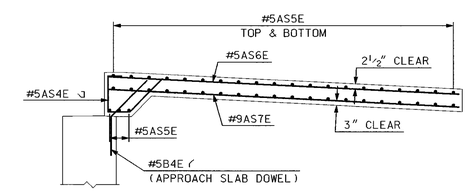
EAST APPROACH SLAB PLAN

SCALE: 1/4" = 1'-0"



SECTION B-B MASONRY

SCALE: 1/4" = 1'-0"



SECTION B-B REINFORCEMENT

SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/SUPER	14541JAppSlab	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

APPROACH SLABS

REVISIONS AFTER PROPOSAL

	BY	DATE		BY	DATE
DESIGNED	SDF	9/06	CHECKED	JWP	1/07
DRAWN	SMG	9/06	CHECKED	SDF	10/06
QUANTITIES	SDF	12/06	CHECKED	PJP	12/06

ISSUE DATE

REV. DATE

FEDERAL PROJECT NO. ----------

SHEET NO. 34

BRIDGE SHEET 14 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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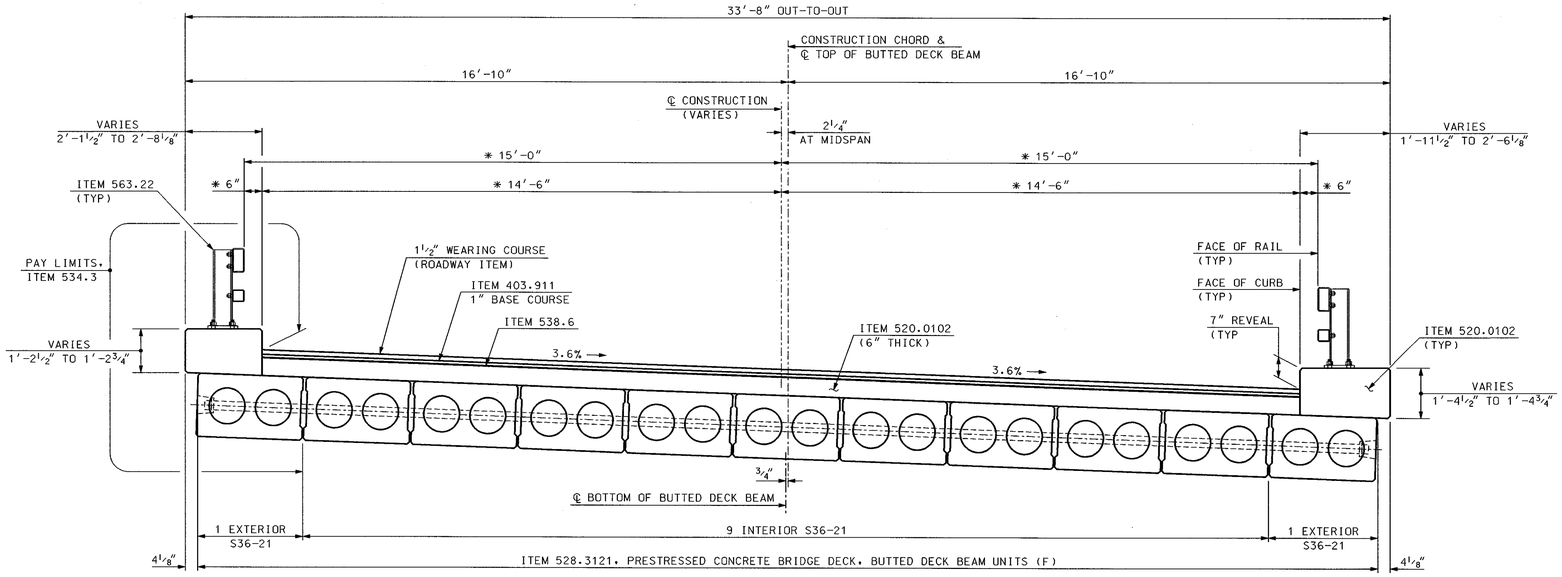
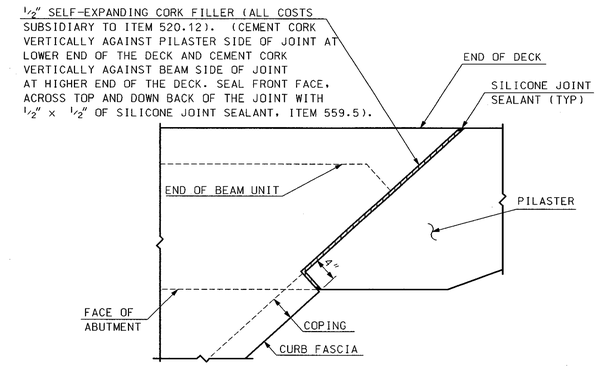


* RADIAL DIMENSION

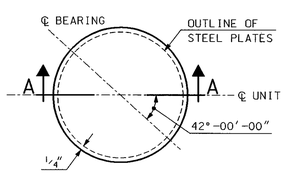
TYPICAL DECK SECTION

SCALE: 1/2" = 1'-0"

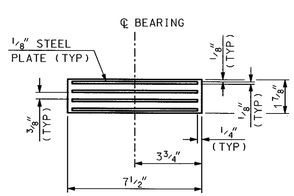


TYPICAL DECK THROUGH PILASTER JOINT

SCALE: 1" = 1'-0"



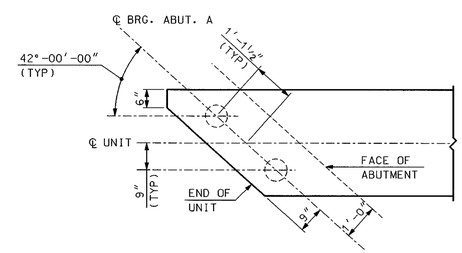
PLAN



SECTION A-A

ELASTOMERIC BEARING - ABUT. A

SCALE: 3" = 1'-0"



ABUTMENT A - BEARING LAYOUT

SCALE: 1/2" = 1'-0"

BEARING NOTES

(1) ELASTOMERIC BEARING PADS SHALL BE VIRGIN NATURAL RUBBER, HARDNESS (SHORE "A" DUROMETER) OF 50, GRADE 3.

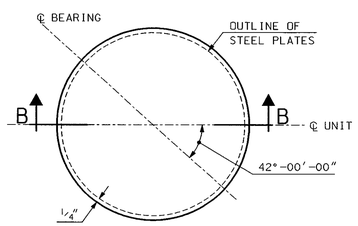
(2) STEEL PLATE REINFORCEMENT SHALL CONFORM TO AASHTO M270, ASTM A709M) GRADE 36

(3) ELASTOMERIC BEARINGS, INCLUDING STEEL PLATES, SHALL BE PAID FOR AS ITEM 548.11, ELASTOMERIC BEARING PADS (F).

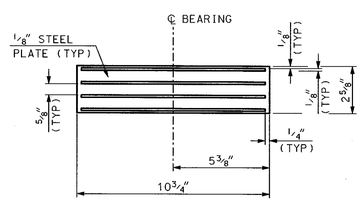
(4) DESIGN SERVICE LOADS PER BEARING: (DESIGN METHOD = A)
MAX DEAD LOAD: 9.3K ABUT A, 18.59 K ABUT B
MAX SUPERIMPOSED DEAD LOAD: 1.78 K ABUT A, 3.56 K ABUT B
MAX LIVE LOAD: 5.62 K ABUT A, 11.25 K ABUT B
MAX BREAKING LOAD: 1.61 K ABUT A, 3.21 K ABUT B

(5) FOLLOWING THE MANUFCTURE OF THE ELASTOMERIC BEARINGS AND VERIFICATION OF THE INTERNAL STELL LAMINATES, THE PIN GROOVE OPENING SHALL BE COATED WITH AN APPROVED ASPHALTIC SEALER AND THE SPACE FILLED WITH SILICONE CAULKING

(6) THE MANUFACTURER SHALL CLEARLY MARK THE FRONT OF THE BEARING TO INSURE PROPER ORIENTATION IN THE FIELD.



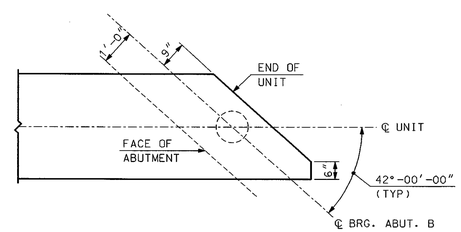
PLAN



SECTION B-B

ELASTOMERIC BEARING - ABUT. B

SCALE: 3" = 1'-0"



ABUTMENT B - BEARING LAYOUT

SCALE: 1/2" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/SUPER	14541JDecksect	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

DECK SECTION AND BEARINGS

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	SDF	9/06	CHECKED	JWP	1/07
	DRAWN	SMG	9/06	CHECKED	SDF	10/06
	QUANTITIES	SDF	12/06	CHECKED	PJP	12/06
	ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	
	REV. DATE		----------		35	

BRIDGE SHEET 15 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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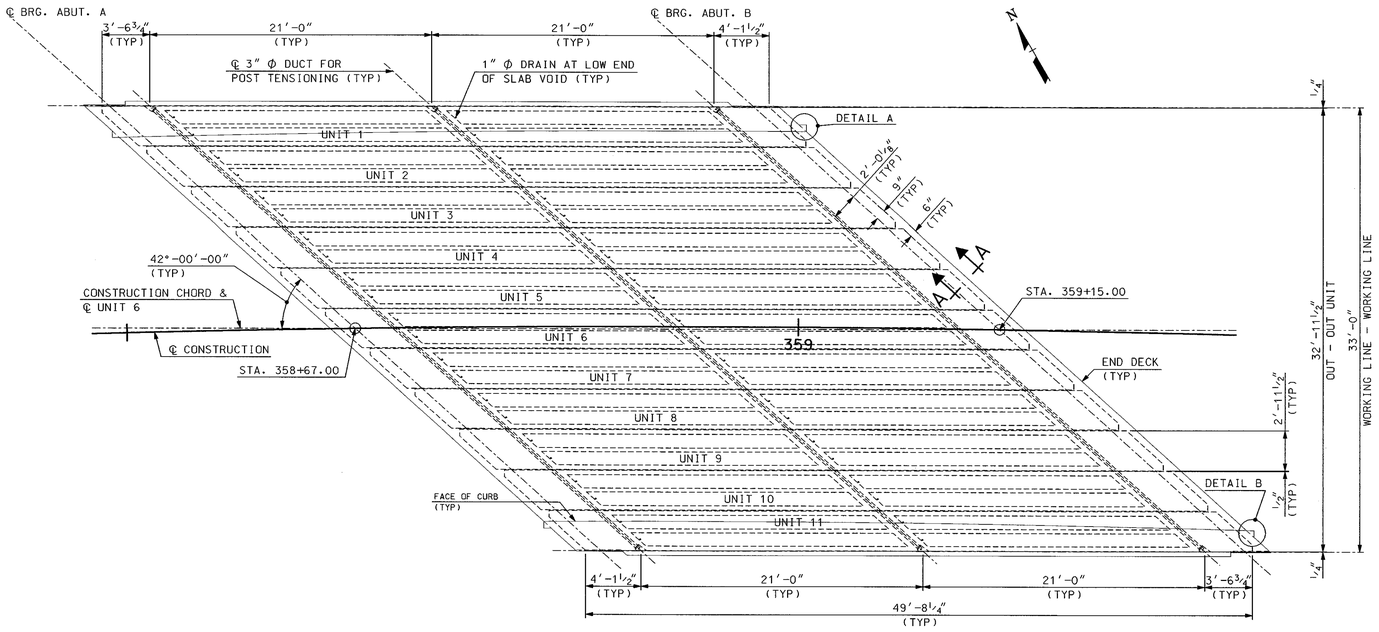
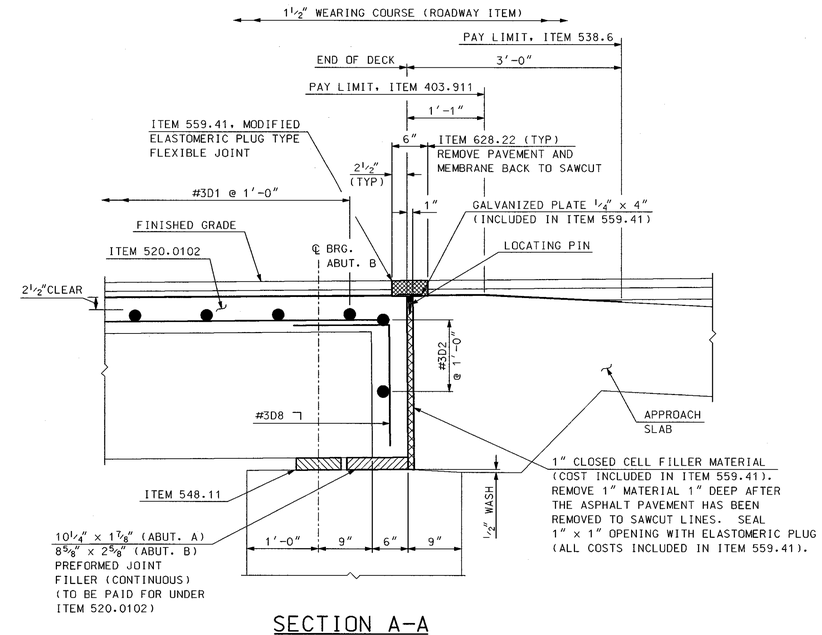


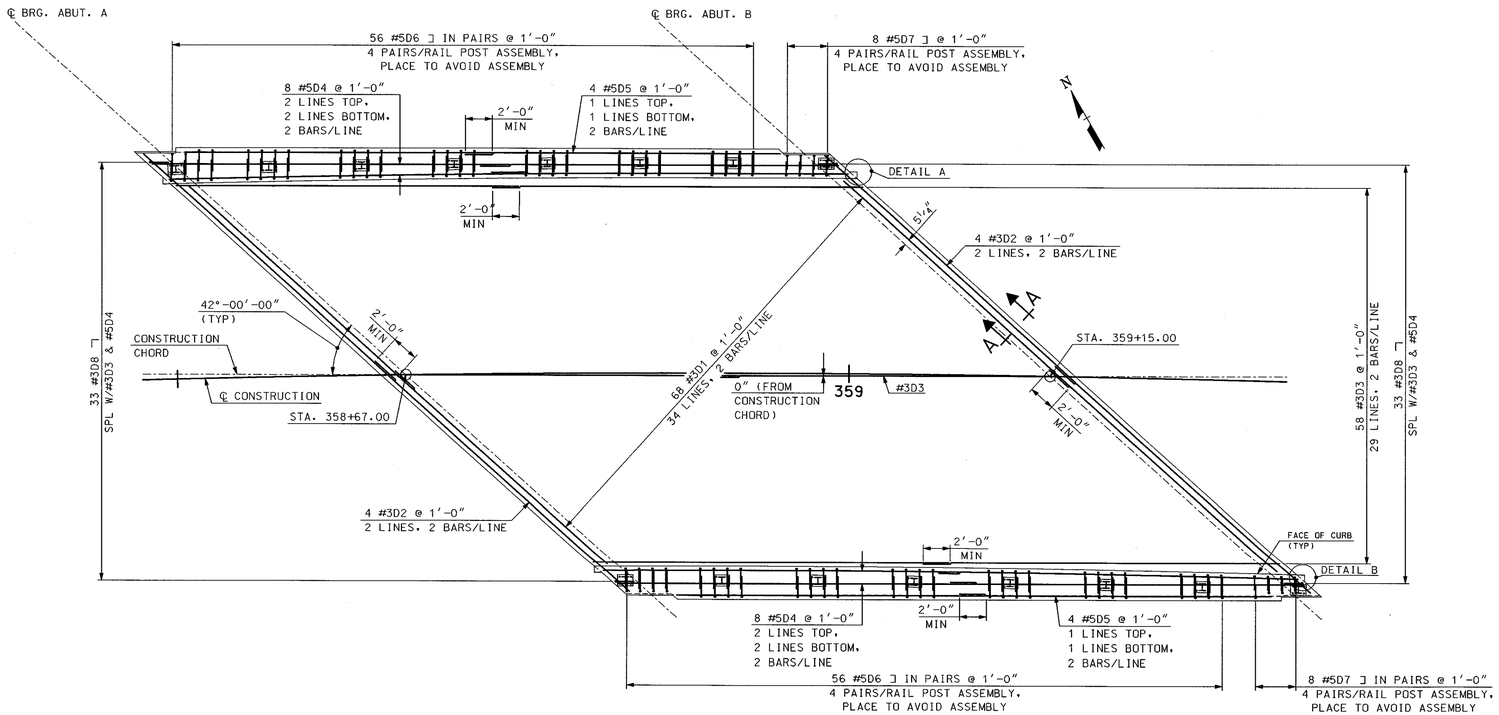
PRECAST VOIDED SLAB LAYOUT

SCALE: 3/16″ = 1′-0″



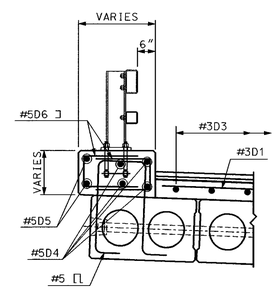
SECTION A-A

(ABUT. B SHOWN, ABUT. A SIMILAR)
SCALE: 1″ = 1′-0″



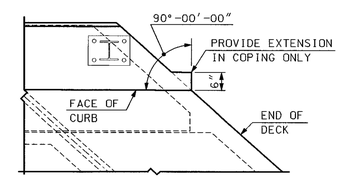
DECK REINFORCEMENT

SCALE: 3/16″ = 1′-0″



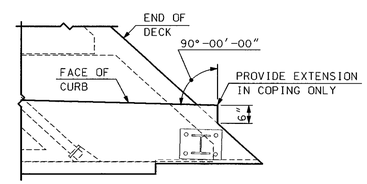
COPING DETAIL

(NORTH COPING SHOWN, SOUTH COPING SIMILAR)
SCALE: ½″ = 1′-0″



DETAIL A

(SW CORNER SIMILAR)
SCALE: ½″ = 1′-0″



DETAIL B

(NW CORNER SIMILAR)
SCALE: ½″ = 1′-0″

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/SUPER	14541JBeam	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD — BRIDGE NO. 087\156 — STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

SUPERSTRUCTURE DETAILS

REVISIONS AFTER PROPOSAL				BY	DATE		BY	DATE
			DESIGNED	SDF	11/06	CHECKED	JWP	1/07
			DRAWN	SMG	11/06	CHECKED	SDF	12/06
			QUANTITIES	SDF	12/06	CHECKED	PJP	12/06
			ISSUE DATE			FEDERAL PROJECT NO.		
			REV. DATE			----------		

BRIDGE SHEET 16 OF 22 — FILE NUMBER 105-3-1 — SHEET NO. 36 — TOTAL SHEETS 156

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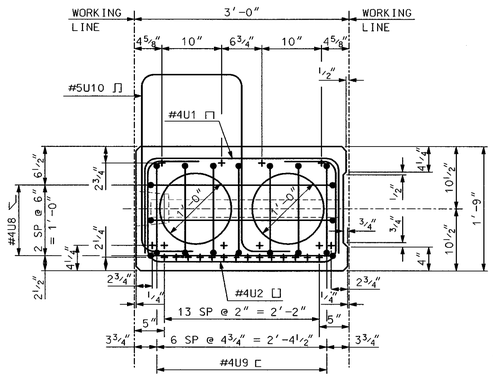
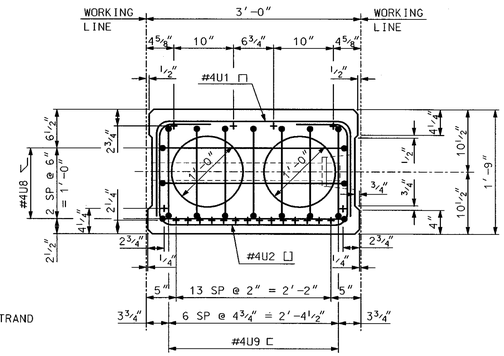


EXTERIOR UNIT – END

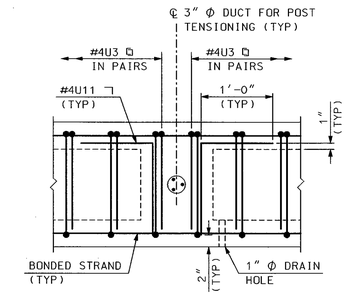
SCALE: 1" = 1'-0"

+ = BONDED STRAND



INTERIOR UNIT – END

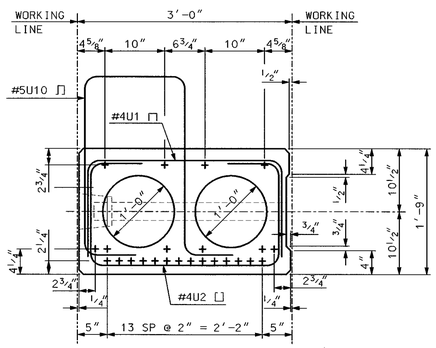
SCALE: 1" = 1'-0"



SECTION B-B

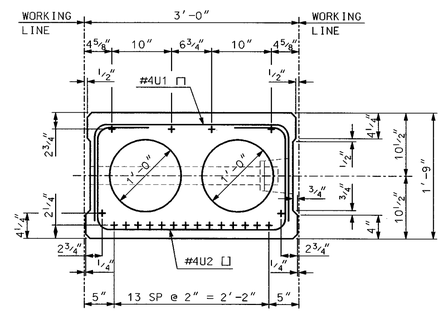
(FOR LOCATION SEE BRIDGE SHEET 18)

SCALE: 1" = 1'-0"



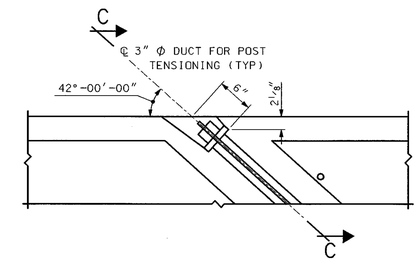
EXTERIOR UNIT – MIDSPAN

SCALE: 1" = 1'-0"



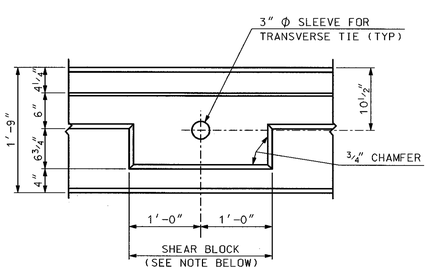
INTERIOR UNIT – MIDSPAN

SCALE: 1" = 1'-0"



LATERAL STRAND ANCHORAGE PLAN

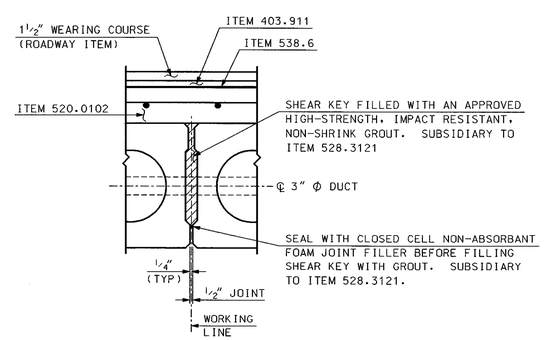
SCALE: 1" = 1'-0"



TYPICAL BEAM ELEVATION AT TRANSVERSE TIE LOCATIONS

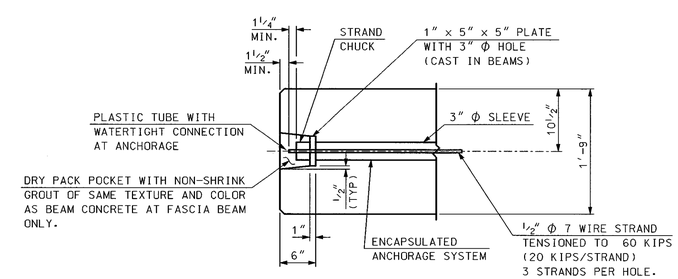
SCALE: 1" = 1'-0"

NOTE:
WHERE TWO SETS OF TIES ARE USED FOR STAGE CONSTRUCTION, THE WIDTH OF THE SHEAR BLOCK SHALL BE INCREASED BY THE LONGITUDINAL SKEW SPACING OF THE TWO SLEEVES. MAINTAIN 1'-0" CLEARANCE FROM THE CENTER OF THE SLEEVE TO THE EDGE OF THE SHEAR BLOCK.



JOINT DETAIL

SCALE: 1" = 1'-0"



SECTION C-C

SCALE: 1" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/SUPER	14541JBeam	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

VOIDED SLAB DETAILS

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	SDF	11/06	CHECKED	JWP	1/06
	DRAWN	SMG	11/06	CHECKED	SDF	12/06
	QUANTITIES	SDF	12/06	CHECKED	PJP	12/06
	ISSUE DATE			FEDERAL PROJECT NO.		
	REV. DATE			----------		

BRIDGE SHEET 17 OF 22

FILE NUMBER 105-3-1

SHEET NO. 37

TOTAL SHEETS 156

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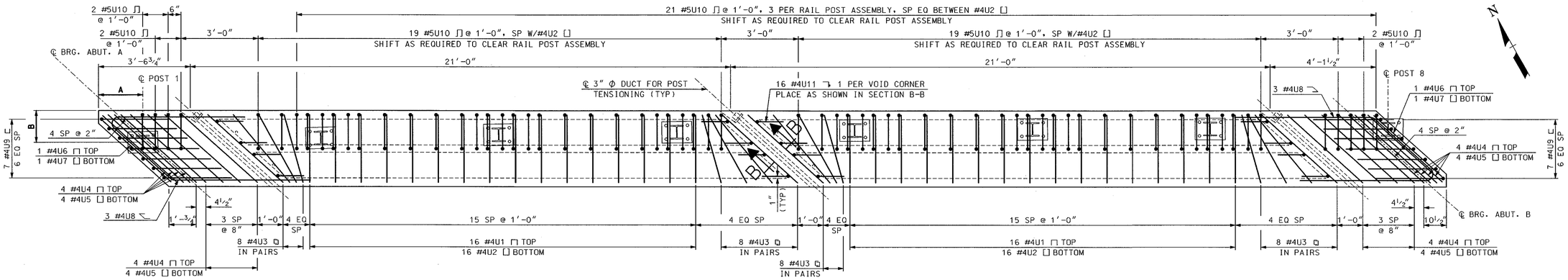
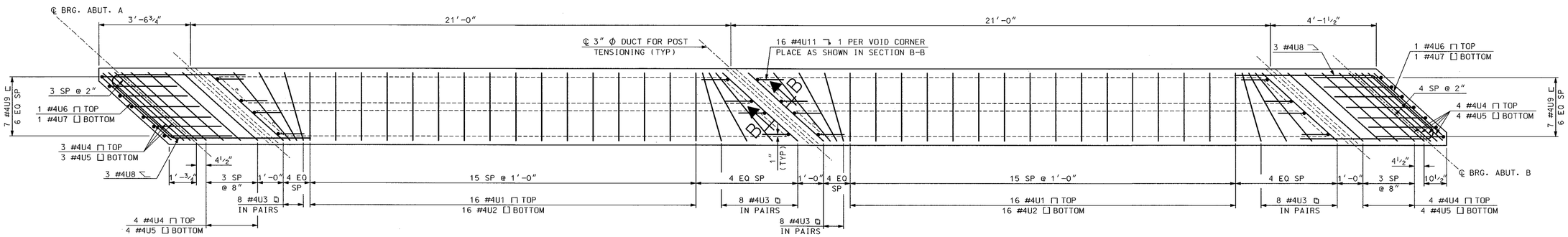


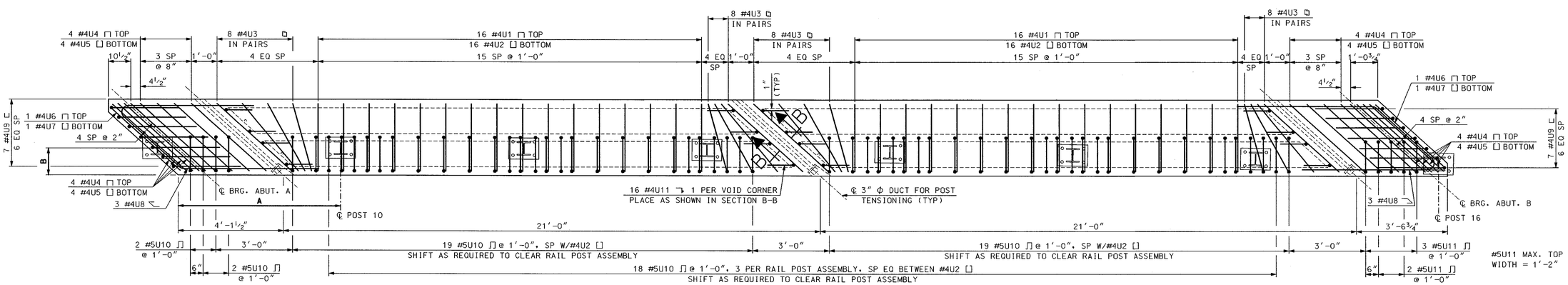
PRESTRESSED UNIT 1

SCALE: ½" = 1'-0"



PRESTRESSED UNITS 2 - 10

SCALE: ½" = 1'-0"



PRESTRESSED UNIT 11

SCALE: ½" = 1'-0"

RAIL POST LOCATIONS					
POST	A	B	POST	A	B
1	1'-8⅝"	1'-2¾"	9	-9¾"	1'-0½"
2	8'-7⅝"	1'-0¾"	10	6'-4¼"	1'-0¾"
3	15'-6⅝"	11¼"	11	13'-6¼"	1'-0⅝"
4	22'-5¾"	9⅞"	12	20'-8⅛"	1'-0"
5	29'-4¾"	9"	13	27'-10⅛"	11"
6	36'-3¾"	8½"	14	35'-0⅛"	9¾"
7	43'-2¾"	8⅜"	15	42'-2"	8"
8	50'-1⅞"	8½"	16	49'-4"	5¾"

FOR SECTION B-B SEE BRIDGE SHEET 17.

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/SUPER	14541JBeam	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

VOIDED SLAB LAYOUT AND REINFORCEMENT

REVISIONS AFTER PROPOSAL				BY	DATE	BY	DATE
			DESIGNED	SDF	11/06	CHECKED	JWP 1/07
			DRAWN	SMG	11/06	CHECKED	SDF 12/06
			QUANTITIES	SDF	12/06	CHECKED	PJP 12/06
			ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.
			REV. DATE		----------		38

BRIDGE SHEET 18 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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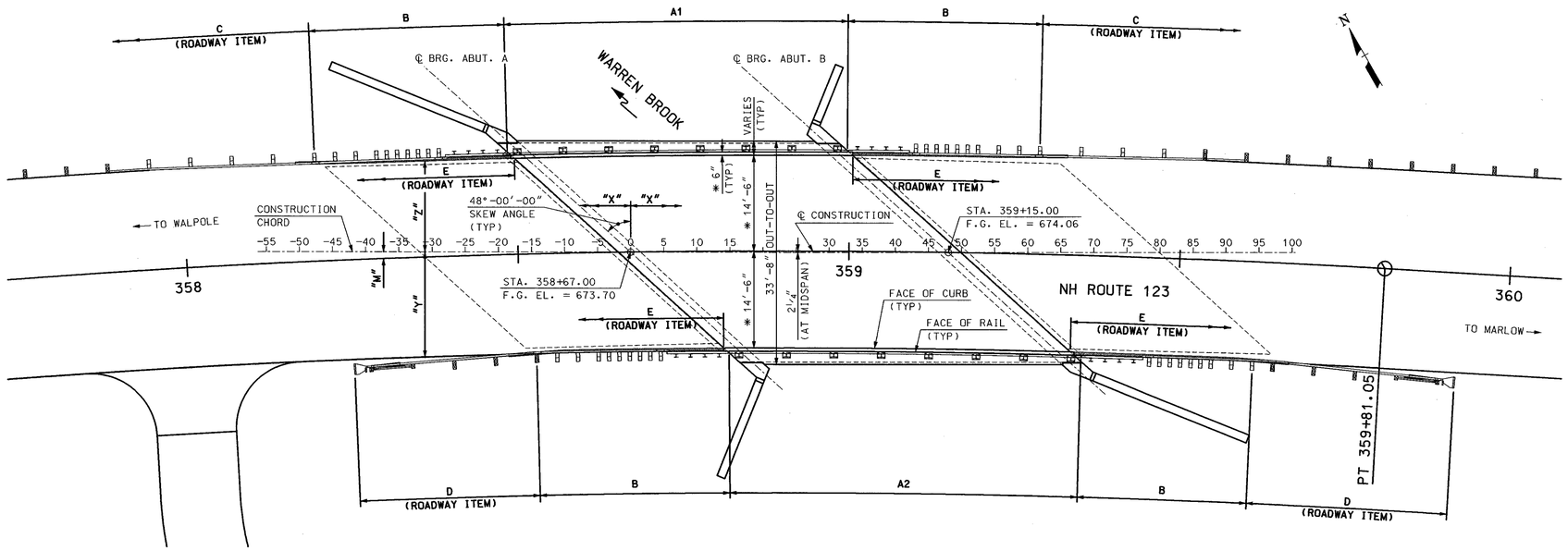

RAIL AND CURB LAYOUT

SCALE: 1" = 10'-0"

CURB OFFSETS											
"X"	"Y"	"Z"	"M"	"X"	"Y"	"Z"	"M"	"X"	"Y"	"Z"	"M"
-55	16'-9 7/8"	12'-11 3/8"	1'-9 5/8"	0	14'-6"	14'-6"	0"	55	14'-7 1/2"	14'-4 1/2"	1 1/2"
-50	16'-7"	13'-1 7/8"	1'-6 3/4"	5	14'-5 1/4"	14'-6 7/8"	-7/8"	60	14'-8 3/4"	14'-4 1/4"	2 3/4"
-45	16'-4 1/8"	13'-3 3/8"	1'-4"	10	14'-4 1/2"	14'-7 1/2"	-1 1/2"	65	14'-10 1/4"	14'-4"	4 1/4"
-40	16'-1 5/8"	13'-4 5/8"	1'-1 1/2"	15	14'-4 1/8"	14'-7 7/8"	-1 7/8"	70	15'-0"	14'-3 1/8"	5 7/8"
-35	15'-11 1/4"	13'-7"	11 1/8"	20	14'-3 7/8"	14'-8 1/8"	-2 1/8"	75	15'-1 7/8"	14'-2"	7 3/4"
-30	15'-9"	13'-9 1/8"	9"	25	14'-3 3/4"	14'-8 1/4"	-2 1/4"	80	15'-3 7/8"	14'-0 7/8"	9 3/4"
-25	15'-7 1/8"	13'-11 1/8"	7"	30	14'-4"	14'-8 1/8"	-2 1/8"	85	15'-6 1/8"	13'-11 5/8"	1'-0"
-20	15'-5 3/8"	14'-0 7/8"	5 1/4"	35	14'-4 1/4"	14'-7 3/4"	-1 3/4"	90	15'-8 5/8"	13'-9 3/8"	1'-2 1/2"
-15	15'-0 5/8"	14'-2 1/2"	3 5/8"	40	14'-4 3/4"	14'-7 1/4"	-1 1/4"	95	16'-1"	13'-6 5/8"	1'-5 1/8"
-10	14'-8 1/4"	14'-3 7/8"	2 1/4"	45	14'-5 1/2"	14'-6 1/2"	-1/2"	100	16'-6 1/8"	13'-3 3/4"	1'-7 7/8"
-5	14'-7"	14'-5"	1"	50	14'-6 3/8"	14'-5 5/8"	3/8"				

GUARDRAIL AND CURB NOTES

A. ITEM 563.22, BRIDGE RAIL T2 (F)
SEE BRIDGE SHEET 20 FOR DETAILS
A1 = 51'-5"
A2 = 53'-2"
TOTAL ITEM PAY LENGTH = 105 LF

B. ITEM 565.22, BRIDGE APPROACH RAIL T2 (F)
SEE BRIDGE SHEET 21 FOR DETAILS
B = 29'-1" (PER UNIT)
4 UNITS REQUIRED
TOTAL ITEM PAY LENGTH = 117 LF

C. BEAM GUARDRAIL
(ROADWAY ITEM)

D. BEAM GUARDRAIL (TERM. UNIT EAGRT 25 FT.)
(ROADWAY ITEM)

E. STRAIGHT GRANITE CURB
(ROADWAY ITEM)

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/BR-SITE	14541jRCLayout	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087\156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

RAIL AND CURB LAYOUT

REVISIONS AFTER PROPOSAL			BY	DATE		BY	DATE
		DESIGNED	SDF	12/06	CHECKED	JWP	1/07
		DRAWN	SMG	12/06	CHECKED	SDF	12/06
		QUANTITIES	SDF	12/06	CHECKED	PJP	12/06
		ISSUE DATE					
		REV. DATE					

FEDERAL PROJECT NO. ----------

BRIDGE SHEET 19 OF 22

FILE NUMBER 105-3-1

SHEET NO. 39

TOTAL SHEETS 156

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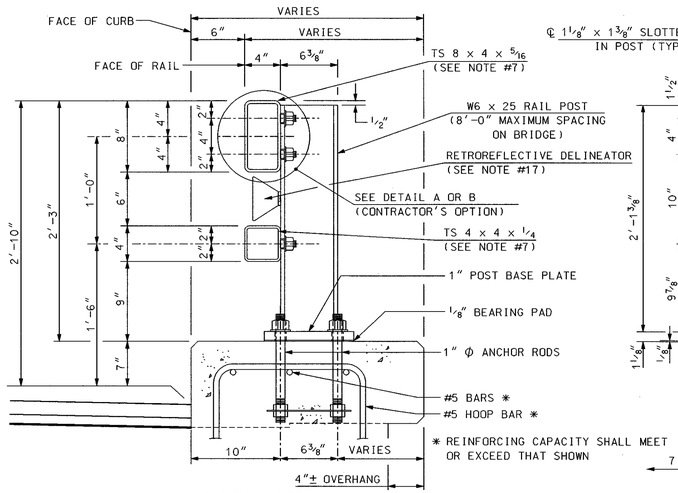
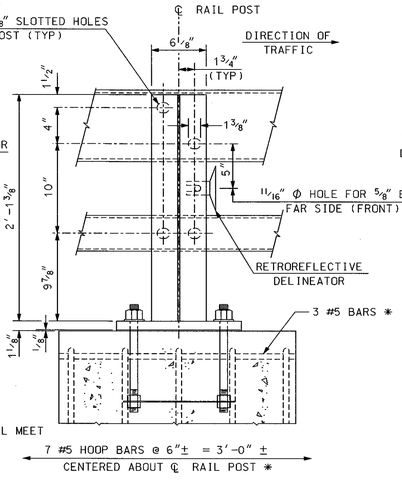


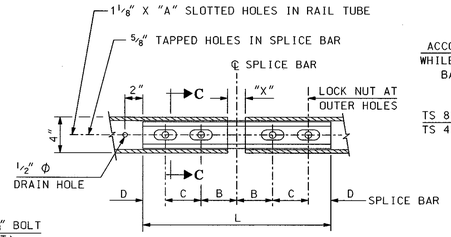
SECTION VIEW



BACK ELEVATION VIEW

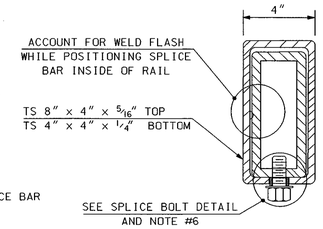
POST ASSEMBLY

SCALE: 1 1/2" = 1'-0"

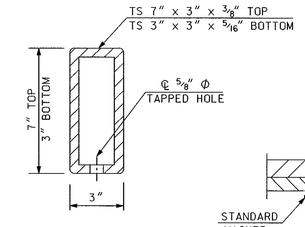


RAIL SPLICE (BOTTOM VIEW)

SCALE: 1 1/2" = 1'-0"



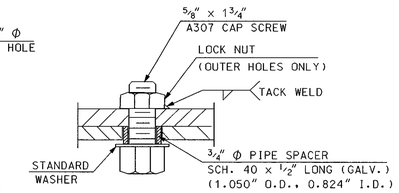
SECTION C-C



SPLICE BAR SECTION

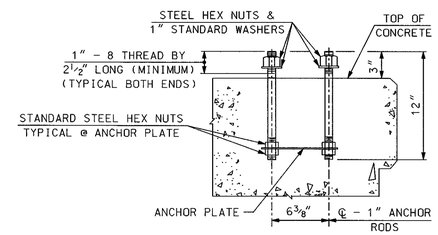
RAIL SPLICE DETAILS

SCALE: 3" = 1'-0"



SPLICE BOLT DETAIL

SCALE: 6" = 1'-0"



POST ANCHOR ASSEMBLY

SCALE: 1 1/2" = 1'-0"

RAIL NOTES

(1) ITEM 563.22, BRIDGE RAIL T2 (F), SHALL INCLUDE POSTS, BASE PLATES, ANCHOR PLATES, ANCHOR RODS, PREFORMED PADS, RAIL ASSEMBLY BOLTS, NUTS, WASHERS, STUDS, STRUCTURAL TUBING, SPLICE BARS, PIPE SPACERS, ALL APPURTENANCES, AND GALVANIZING.

(2) BRIDGE RAIL POSTS SHALL BE SET NORMAL (90 DEGREES) TO THE PROFILE GRADE, EXCEPT ON GRADES OVER 5% WHERE POSTS SHALL BE SET VERTICAL.

(3) ENDS OF RAIL TUBE SECTIONS SHALL BE SAWED OR MILLED AND SHALL BE TRUE AND SMOOTH. ALL CUT EDGES OF ALL MATERIAL SHALL BE GROUND SMOOTH.

(4) EACH PIECE OF RAIL TUBING SHALL BE ATTACHED TO A MINIMUM OF THREE (3) POSTS.

(5) BOLT HOLES SHALL BE DRILLED OR PUNCHED. FLAME CUTTING MAY BE USED TO FINISH SLOTTED HOLES IF MECHANICALLY GUIDED.

(6) AT INTERIOR SPLICES, PIPE SPACERS SHALL BE USED ON ONLY ONE SIDE OF THE SPLICE TO ALLOW MOVEMENT ON THAT SIDE. THE TOP AND BOTTOM RAIL SHALL RECEIVE THE SAME TREATMENT. AT END SPLICES PIPE SPACERS SHALL BE USED ON BOTH SIDES OF THE SPLICE TO ALLOW MOVEMENT ON EACH SIDE.

(7) MILL OR SHOP TRANSVERSE WELDS SHALL NOT BE PERMITTED ON ANY RAIL ELEMENT. RAIL ELEMENTS USED ON CURVES SHALL USE 3/8" WALL TUBES AND SHALL BE SHOP FORMED TO THE REQUIRED CURVATURE.

(8) NO PUNCHING, DRILLING, CUTTING OR WELDING SHALL BE PERMITTED AFTER GALVANIZING, EXCEPT AS ALLOWED IN DETAILS A AND B, AND FOR INSTALLATION OF DELINEATORS. DAMAGED AREAS OF GALVANIZING SHALL BE THOROUGHLY CLEANED, PRETREATED, AND PAINTED WITH TWO COATS OF ORGANIC ZINC-RICH GALVANIZING REPAIR PAINT, HAVING A MINIMUM 94% ZINC BY WEIGHT, TO A THICKNESS EQUAL TO THE ORIGINAL COATING ACCORDING TO THE STANDARD SPECIFICATIONS AND ASTM A780.

(9) NUTS FOR 1" Φ THREADED ANCHOR RODS CONNECTING THE BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.

(10) THREADS FOR ANCHOR RODS MAY BE ROLLED OR CUT. IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, ROD DIAMETER SHALL NOT BE LESS THAN ROOT DIAMETER OF THREADS.

MATERIAL NOTES

(11) STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500, GRADE B, STRUCTURAL STEEL TUBING. RAIL TUBING SHALL MEET THE LONGITUDINAL CHARPY V-NOTCH REQUIREMENTS OF 15 FT. LBS. AT 0°F. FOR ASTM A500, GRADE B, THE TEST SAMPLES SHALL BE TAKEN AFTER FORMING THE TUBES. CHARPY V-NOTCH IS NOT REQUIRED FOR SPLICE TUBES.

(12) RAIL POSTS AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A572 GR 50, EXCEPT ANCHOR PLATES MAY BE ASTM A36.

(13) THREADED STUDS AND MATCHING NUTS FOR RAIL-TO-POST ATTACHMENT (DETAIL A) SHALL CONFORM TO ASTM A276 TYPE 304, STAINLESS STEEL, AND SHALL BE TORQUE TESTED PER AWS D1.5, 7.7.1. DETAIL B BOLTS SHALL BE ASTM A325 OR A449. ALL OTHER BOLTS AND NUTS SHALL CONFORM TO ASTM A307 AND ASTM 563 GRADE A RESPECTIVELY OR BETTER, EXCEPT THAT ASTM A307 NUTS MAY BE USED ON THE BOTTOM OF ANCHOR ASSEMBLY. WASHERS SHALL BE HARDENED STEEL COMMERCIAL TYPE A PLAIN WIDE WASHERS AND SHALL MEET THE DIMENSIONAL REQUIREMENTS OF A.N.S.I. B18.22. ANCHOR RODS SHALL CONFORM TO ASTM A449.

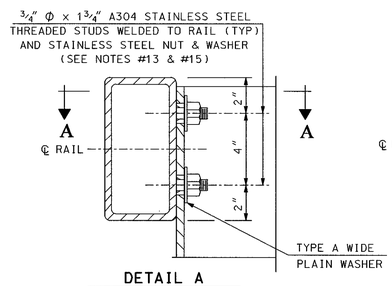
(14) ALL STEEL COMPONENTS (EXCEPT STAINLESS) SHALL BE GALVANIZED AFTER FABRICATION IN CONFORMANCE TO AASHTO M232 (ASTM A153) AND AASHTO M111 (ASTM A123). THE GALVANIZING KETTLE SHALL HAVE 0.05 TO 0.09 PERCENT NICKEL. GALVANIZED SURFACES SHALL HAVE A UNIFORM APPEARANCE AND GALVANIZED MATERIAL SHALL BE PROPERLY STORED. IF PAINTING IS REQUIRED SEE SPECIAL PROVISIONS FOR 708.

(15) DETAIL A STUDS SHALL BE WELDED ON AFTER TUBES ARE GALVANIZED BY SPOT GRINDING OFF GALVANIZING, WELDING ON STUDS, THEN TOUCH UP GALVANING PER NOTE #8 ABOVE.

(16) PREFORMED BEARING PADS (1/8" THICK) SHALL CONFORM TO AASHTO M251.

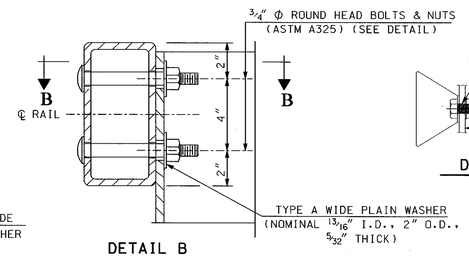
(17) RETROREFLECTIVE DELINEATORS, BOLTS, NUTS, WASHERS AND FIELD DRILLING OF POSTS, INCLUDING GALVANIZING TOUCH-UP, SHALL BE SUBSIDIARY TO ITEM 563.22. SEE STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION (DL-1) FOR ADDITIONAL DETAILS AND SPACING.

(18) THIS BRIDGE RAIL SYSTEM WAS SUCCESSFULLY CRASH TESTED FOR AASHTO PL2 IN 1994 BY THE NEW ENGLAND TRANSPORTATION CONSORTIUM.



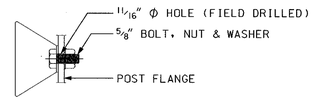
DETAIL A

SCALE: 3" = 1'-0"



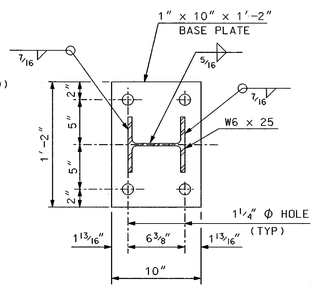
DETAIL B

SCALE: 3" = 1'-0"



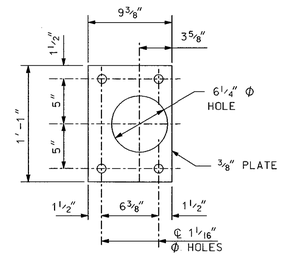
DELINEATOR MOUNTING

N.T.S.



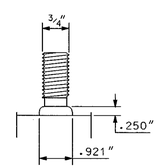
POST BASE PLATE

SCALE: 1 1/2" = 1'-0"



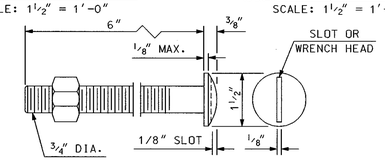
ANCHOR PLATE

SCALE: 1 1/2" = 1'-0"



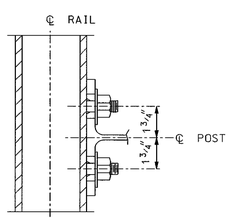
STUD WELD DETAIL

SCALE: 6" = 1'-0"



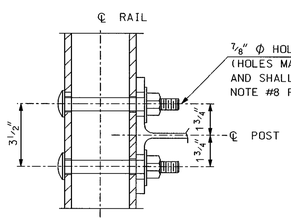
A325 ROUND HEAD BOLT DETAIL

SCALE: 6" = 1'-0"



SECTION A-A

SCALE: 3" = 1'-0"

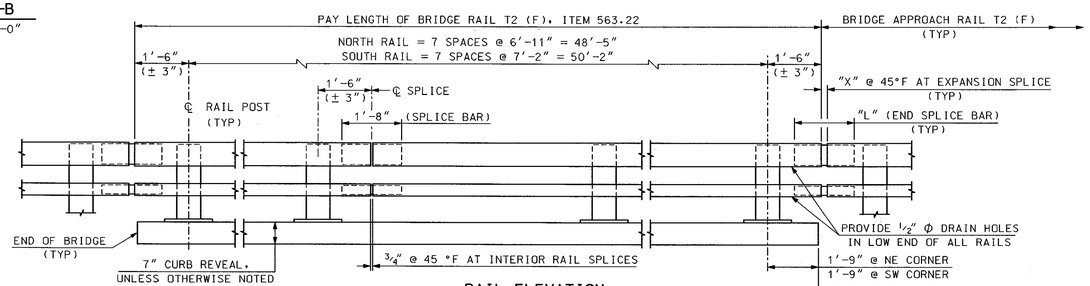


SECTION B-B

SCALE: 3" = 1'-0"

SPLICE BAR DIMENSION TABLE							
	T	A	B	C	D	X	L
	INTERIOR	2 1/2"	4"	4"	2"	3/4"	1'-8"
*	≤ 3 1/4"	2 1/2"	4"	4"	2"	2"	1'-8"
*	3 1/4" <T≤ 5 1/4"	3 1/2"	5"	5"	2 1/2"	3"	2'-1"

T = TOTAL MOVEMENT OF BRIDGE
* = END SPLICE BAR



RAIL ELEVATION

SCALE: 1/2" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/STANDARDS	T2_BR-RAIL	AS NOTED

STATE OF NEW HAMPHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087/156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

T2 STEEL BRIDGE RAIL (PL2)

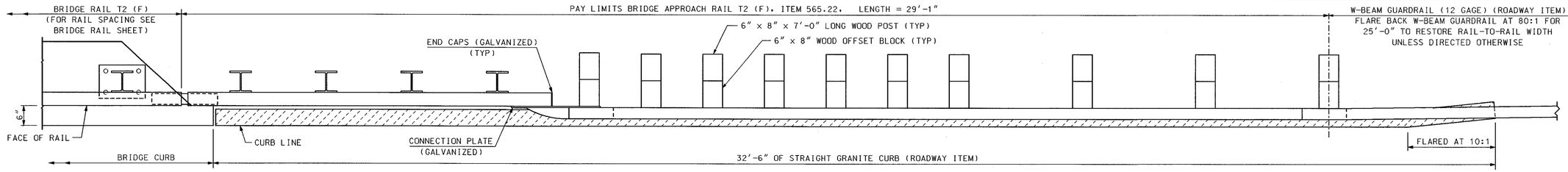
REVISIONS AFTER PROPOSAL	BY	DATE		BY	DATE
DESIGNED	NETC/JSZ	3/02	CHECKED	NHDOT	
DRAWN	PJP	10/05	CHECKED	JSZ	10/05
QUANTITIES			CHECKED		

ISSUE DATE	11/15/05	FEDERAL PROJECT NO.	SHEET NO.
REV. DATE	8/30/06	----------	40

BRIDGE SHEET 20 OF 22

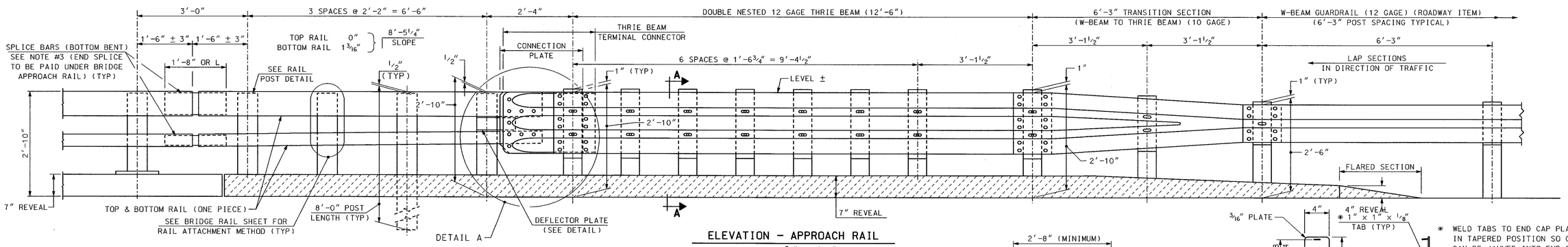
FILE NUMBER 105-3-1

TOTAL SHEETS 156



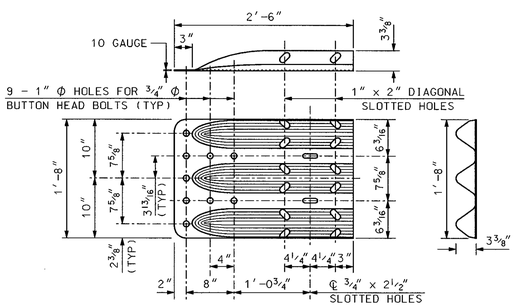
PLAN VIEW – APPROACH RAIL

SCALE: 3/4" = 1'-0"



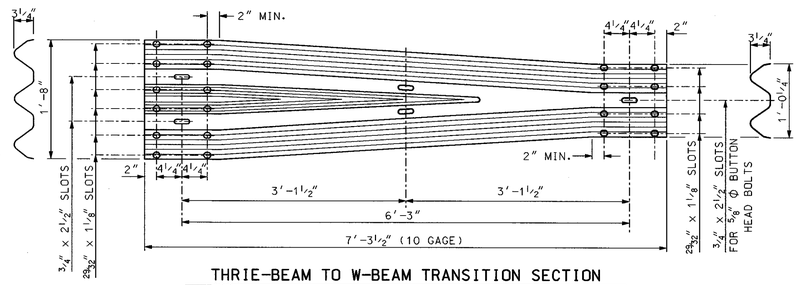
ELEVATION – APPROACH RAIL

SCALE: 3/4" = 1'-0"



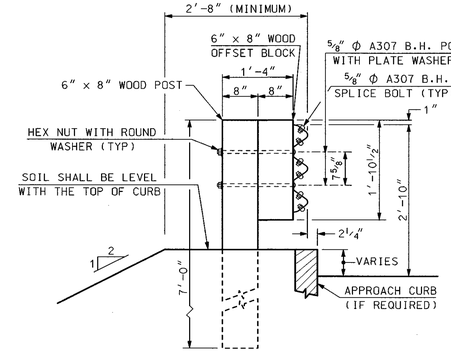
THRIE-BEAM TERMINAL CONNECTOR

SCALE: 1" = 1'-0"



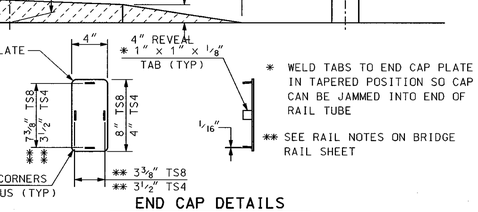
THRIE-BEAM TO W-BEAM TRANSITION SECTION

SCALE: 1" = 1'-0"



SECTION A-A (POST RAIL ASSEMBLY)

SCALE: 3/4" = 1'-0"

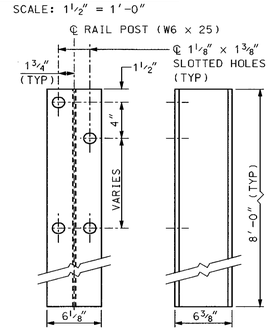


* WELD TABS TO END CAP PLATE IN TAPERED POSITION SO CAP CAN BE JAMMED INTO END OF RAIL TUBE

** SEE RAIL NOTES ON BRIDGE RAIL SHEET

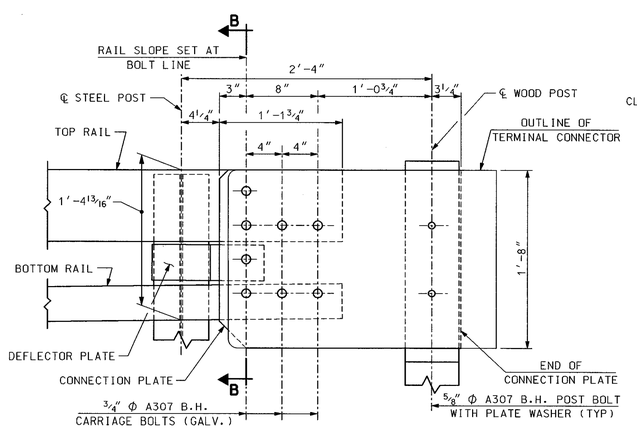
END CAP DETAILS

SCALE: 1 1/2" = 1'-0"



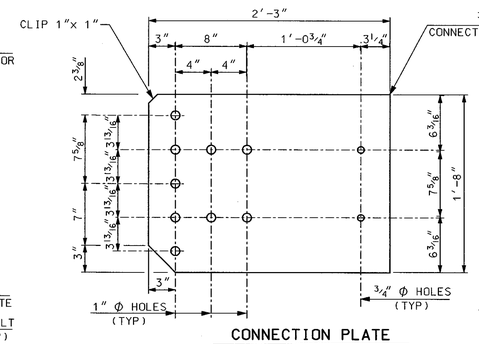
RAIL POST

SCALE: 1 1/2" = 1'-0"



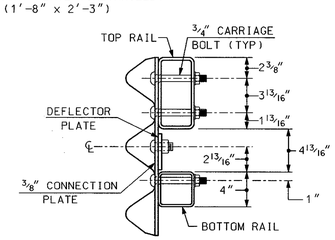
DETAIL A

SCALE: 1 1/2" = 1'-0"



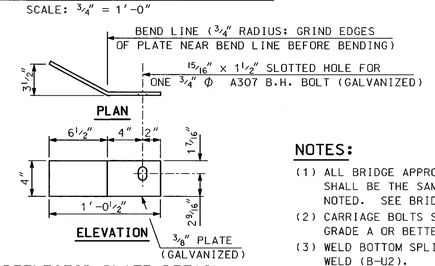
CONNECTION PLATE

SCALE: 1 1/2" = 1'-0"



SECTION B-B (CONNECTION PLATE)

SCALE: 1 1/2" = 1'-0"



DEFLECTOR PLATE DETAIL

SCALE: 1 1/2" = 1'-0"

NOTES:

(1) ALL BRIDGE APPROACH RAIL MATERIALS, DIMENSIONS, SIZES, AND NOTES SHALL BE THE SAME AS THOSE OF THE BRIDGE RAIL, UNLESS OTHERWISE NOTED. SEE BRIDGE RAIL SHEET FOR NOTES AND ADDITIONAL INFORMATION.

(2) CARRIAGE BOLTS SHALL BE ASTM A307, AND NUTS SHALL BE ASTM A563 GRADE A OR BETTER (GALVANIZED).

(3) WELD BOTTOM SPLICE BAR TO FIT BEND. USE COMPLETE JOINT PENETRATION WELD (B-U2).

(4) THIS BRIDGE RAIL TRANSITION SYSTEM WAS SUCCESSFULLY CRASH TESTED TO NCHRP350 TL3 IN APRIL 2005 BY THE NEW ENGLAND TRANSPORTATION CONSORTIUM.

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRD/STANDARDS	T2-APPRAIL	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 087/156 STATE PROJECT 14541J

LOCATION NH ROUTE 123 over WARREN BROOK

T2 STEEL BRIDGE APPROACH RAIL

REVISIONS AFTER PROPOSAL	BY	DATE		BY	DATE
DESIGNED NETC/JSZ	3/02		CHECKED NHDOT		
DRAWN PJP	10/05		CHECKED JSZ	10/05	
QUANTITIES			CHECKED		
ISSUE DATE 11/15/05	FEDERAL PROJECT NO. ----------		SHEET NO. 41		
REV. DATE 8/30/06					

BRIDGE SHEET 21 OF 22

FILE NUMBER 105-3-1

TOTAL SHEETS 156

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Abutment A Footing — BRIDGE SHEET 6 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
AF1	#5	28.50	36	—												
AF2	#5	8.00	110	—												
AF3	#5	9.30	239	N3		2.67	1.13	5.50						0.00	0.67	
AF4	#5	20.33	10	—												
AF5	#5	16.50	10	—												
AF6	#5	9.00	47	—												
AF7	#5	4.50	4	—												
AF8	#5	29.75	10	—												
AF9	#5	31.25	10	—												
AF10	#7	9.00	47	—												
AF11	#7	4.50	4	—												

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	5787	0	901	0	0	0	0	0	0	6688
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	0	0	0	0	0	0	0	0	0	0	0	0
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

Abutment A — BRIDGE SHEET 8 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
A1	#5	8.50	114	—												
A2	#5	6.58	44	17		2.00	2.58	2.00								
A3	#5	5.75	9	17		2.00	1.75	2.00								
A4E	#5	5.33	41	N7			2.83	2.50				2.00		2.00		EPOXY
A5E	#6	7.50	5	N8		5.67	1.83									EPOXY
A6E	#6	5.67	10	—												EPOXY
A7E	#6	6.67	5	N8		5.67	1.00									EPOXY
A8	#5	27.50	24	—												
A9	#5	23.00	24	—												
A10	#5	28.58	4	—												
A11	#5	3.50	11	N7			1.50	2.00				0.54	1.41			
A12	#5	8.75	11	—												
A13E	#5	5.33	4	N10		2.75	1.00	1.58				1.84	1.49	2.04	0.54	EPOXY
A14E	#5	3.00	4	—												EPOXY
A15	#5	4.75	12	N7			2.25	2.50				0.77		2.20		
A16	#5	6.00	12	—												
A17E	#5	4.25	4	N7			2.92	1.33				0.99		2.71		EPOXY
A18E	#5	4.42	4	N7			2.50	1.92				1.68		1.85		EPOXY

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	3025	0	0	0	0	0	0	0	0	3025
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	0	0	299	192	0	0	0	0	0	0	0	490
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

Abutment A Wings — BRIDGE SHEET 9 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
SW1	#5	11.00	32	—												
SW2	#5	15.58	26	—												
SW3	#5	15.33	2	—												
NW1	#5	6.75	10	—												
NW2	#5	8.50	14	—												
NW3	#5	10.25	14	—												
NW4	#5	12.00	14	—												
NW5	#5	25.08	16	—												
NW6	#5	24.25	2	—												
NW7	#5	20.33	2	—												
NW8	#5	16.42	2	—												
NW9	#5	12.50	2	—												
NW10	#5	8.58	2	—												
NW11	#5	4.67	2	—												
NW12	#5	25.92	2	—												

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	1995	0	0	0	0	0	0	0	0	1995
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	0	0	0	0	0	0	0	0	0	0	0	0
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

Abutment B Footing — BRIDGE SHEET 10 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
BF1	#5	28.75	36	—												
BF2	#5	8.00	112	—												
BF3	#5	9.30	221	N3		2.67	1.13	5.50						0.00	0.67	
BF4	#5	13.75	10	—												
BF5	#5	10.50	10	—												
BF6	#5	9.00	41	—												
BF7	#5	4.50	3	—												
BF8	#5	29.75	10	—												
BF9	#5	31.25	10	—												
BF10	#7	9.00	41	—												
BF11	#7	4.50	3	—												

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	5446	0	782	0	0	0	0	0	0	6228
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	0	0	0	0	0	0	0	0	0	0	0	0
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

Abutment B — BRIDGE SHEET 12 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
B1	#5	9.00	115													
B2	#5	6.58	46	17		2.00	2.58	2.00								
B3	#5	5.83	8	17		2.00	1.83	2.00								
B4E	#5	5.33	42	N7			2.83	2.50				2.00		2.00		EPOXY
B5E	#6	7.58	6	N8		5.75	1.83									EPOXY
B6E	#6	5.75	10	—												EPOXY
B7E	#6	6.83	5	N8		5.75	1.08									EPOXY
B8	#5	27.67	24	—												
B9	#5	23.67	24	—												
B10	#5	29.00	4	—												
B11	#5	3.16	12	N7		1.33	1.83					1.25		0.46		
B12	#5	8.83	11	—												
B13E	#6	5.58	4	N10		2.50	1.50	1.58				1.67	1.49	1.86	0.54	EPOXY
B14E	#6	3.25	4	—												EPOXY
B15	#5	4.67	12	N7		2.67	2.00					0.92		2.51		
B16	#5	5.00	11	—												
B17E	#6	4.17	4	N7			2.92	1.25				1.00		2.74		EPOXY
B18E	#6	4.42	4	N7			2.50	1.92				1.67		1.86		EPOXY

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	3107	0	0	0	0	0	0	0	0	3107
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	0	0	233	311	0	0	0	0	0	0	0	544
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

Abutment B Wings — BRIDGE SHEET 13 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
NE1	#5	8.67	6	—												
NE2	#5	10.17	6	—												
NE3	#5	12.17	8	—												
NE4	#5	9.083	20	—												
NE5	#5	8.83	2	—												
NE6	#5	7	2	—												
NE7	#5	5.083	2	—												
NE8	#5	3.25	2	—												
NE9	#5	1.33	2	—												
NE10	#5	10	2	—												
SE1	#5	8.92	10	—												
SE2	#5	9.75	14	—												
SE3	#5	10.58	14	—												
SE4	#5	11.42	14	—												
SE5	#5	25.083	22	—												
SE6	#5	23.58	2	—												
SE7	#5	15.33	2	—												
SE8	#5	7	2	—												
SE9	#5	25.25	2	—												

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	1764	0	0	0	0	0	0	0	0	1764
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	0	0	0	0	0	0	0	0	0	0	0	0
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

DECK/BRUSH CURB — BRIDGE SHEET 16 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
D1	#3	22.75	68	—												EPOXY
D2	#3	25.50	8	—												EPOXY
D3	#3	26.67	58	—												EPOXY
D4	#5	27.00	16	—												EPOXY
D5	#5	23.25	8	—												EPOXY
D6	#5	3.83	112	17		1.50	0.83	1.50								EPOXY
D7	#5	2.83	16	17		1.00	0.83	1.00								EPOXY
D8	#3	3.50	66	N8		2.00	1.50									EPOXY

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	0	0	0	0	0	0	0	0	0	0
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	1327	0	1139	0	0	0	0	0	0	0	0	2466
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

Approach Slabs — BRIDGE SHEET 14 OF 22

Mark	Size	Length	# Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
AS1E	#5	21.33	86	—												EPOXY
AS2E	#5	28.67	37	—												EPOXY
AS3E	#9	28.67	37	—												EPOXY
AS4E	#5	6.58	74	N2		0.75	2.00	1.25	2.58				1.84		1.81	EPOXY
AS5E	#5	22.33	86	—												EPOXY
AS6E	#5	30.33	37	—												EPOXY
AS7E	#9	30.33	37	—												EPOXY

SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	0	0	0	0	0	0	0	0	0	0
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	0	0	6701	0	0	0	7422	0	0	0	0	14123
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

GRAND SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL	0	0	21124	0	1683	0	0	0	0	0	0	22807
544.11	MECH. CONNECTOR	0	0	0	0	0	0	0	0	0	0	0	0
544.2	EPOXY COATED	1327	0	8372	503	0	0	7422	0	0	0	0	17623
544.21	EPOXY MECH. CON.	0	0	0	0	0	0	0	0	0	0	0	0

STANDARD INDUSTRY BENDS, STIRRUPS, & TIES

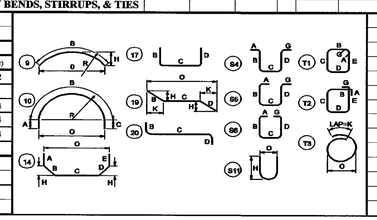
RECOMMENDED END HOOKS
ALL GRADES (in.)

BAR SIZE	D(②)	180° HOOKS A or G	180° HOOKS J	90° HOOKS A or G
#3	2 1/4	5	3	6
#4	3	6	4	8
#5	3 3/4	7	5	10
#6	4 1/2	8	6	12
#7	5 1/4	10	7	14
#8	6	11	8	16
#9	9 1/2	15	11 3/4	19
#10	10 3/4	17	13 1/4	22
#11	12	19	14 3/4	24
#14	18 1/4	27	21 3/4	31

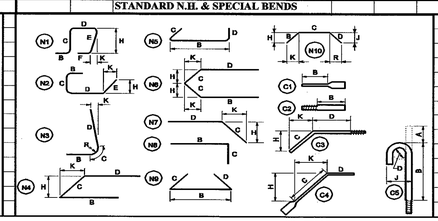
STIRRUP & TIE HOOK DIMENSIONS
GRADES 40-50-60 ksi

BAR SIZE	D(②) (in.)	90° HOOKS A or G	135° HOOKS A or G	135° HOOKS H(approx)
#3	1 1/2	4	4	2 1/2
#4	2	4 1/2	4 1/2	3
#5	2 1/2	6	5 1/2	3 3/4
#6	4 1/2	12	7 3/4	4 1/4
#7	5 1/4	14	9	5 1/4
#8	6	16	10 1/4	6

NOTE: D = finished inside bend d of hook.
See 1997 CRSI Manual p6-3&4.
For additional data on standard bar bends not shown on this sheet see 1997 CRSI Manual p6-3&4.



STANDARD N.H. & SPECIAL BENDS



NOTES:
1. FIGURES IN CIRCLE SHOW TYPE OF BEND.
2. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET - STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31-94 (ASTM A615).
3. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS AND OTHER STANDARD PRACTICE SEE CURRENT (1990) CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE", P. 6-4.
4. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
5. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180° AND 135° HOOKS.
6. "J" DIMENSION ON 180 ° HOOKS TO BE SHOWN ONLY WHEN NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE TO BE USED.
7. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
8. WHERE SLOPE DIFFERS FROM 45° DIMENSIONS "H" AND "K" MUST BE SHOWN.

▲ DENOTES BARS TO BE CUT IN FIELD, AS REQUIRED.
Δ DENOTES BARS TO BE BENT IN FIELD.

ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT LBS. PER FOOT	NOM. DIMEN. DIAM. in	NOM. DIMEN. CROSS SECT. AREA in²
#3	0.376	0.375	0.11
#4	0.668	0.500	0.20
#5	1.043	0.625	0.31
#6	1.502	0.750	0.44
#7	2.044	0.875	0.60
#8	2.670	1.000	0.79
#9	3.400	1.128	1.00
#10	4.303	1.270	1.27
#11	5.313	1.410	1.56
#14	7.650	1.693	2.25
#18	13.600	2.257	4.00

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGE DESIGN

TOWN: ALSTEAD | BRIDGE NO. 087/156 | STATE PROJECT 14540J
LOCATION:
REINFORCING SCHEDULE (SHEET 1 OF 1)

	BY	DATE		BY	DATE	REVISIONS AFTER PROPOSAL
DESIGNED	SDF	11/06	CHECKED	JWP	01/07	
DRAWN	SMG	11/06	CHECKED	SDF	12/06	
TRACED			CHECKED			FEDERAL PROJECT NUMBER
QUANTITIES	SDF	12/06	CHECKED	PJP	12/06	------

BRIDGE SHEET 22 of 22
FILE NO. 105-3-1
SHEET 42 of 156

DESIGN LOADS, MATERIALS, AND SPECIFICATIONS

1. DESIGN METHOD: ALLOWABLE STRESS DESIGN
2. SPECIFICATIONS: AASHTO 2002 AS AMENDED
   NHDOT 2006 STANDARD SPECIFICATIONS AS AMENDED
3. FOUNDATION DATA: NE WINGWALL EXTENSION - SPREAD FOOTING ON UNDISTURBED GLACIAL OUTWASH: ALLOWABLE SOIL PRESSURE = 2.7 TSF
4. REINFORCING STEEL: AASHTO M31 (ASTM A615) GRADE 60
5. CONCRETE: WINGS AND FOOTING: f'c = 3000 PSI
   WING FOOTING: ITEM 520.213, CONCRETE CLASS B, FOOTINGS (ON SOIL) (F)
   WINGWALL: ITEM 520.12, CONCRETE CLASS A, ABOVE FOOTINGS (F)

GENERAL NOTES

1. DIMENSIONS AND ELEVATIONS OF THE EXISTING CONCRETE WINGWALL ARE BASED ON EXISTING PLAN INFORMATION AND SOME FIELD MEASUREMENTS.
2. THE ELEVATION OF THE TOP OF THE NEW WING FOOTING SHALL BE CONSTRUCTED TO THE SAME ELEVATION AS THE EXISTING FOOTING AND BE 2'-0" THICK.
3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
4. WEEPERS SHALL BE PLACED SYMMETRICALLY 10'-0" APART AND CENTERED AT 12" ABOVE THE TOP OF FOOTINGS. WEEPERS SHALL BE 4" Φ AND SLOPED TO DRAIN WITH A 12:1 SLOPE. ALL COSTS SHALL BE SUBSIDIARY TO ITEM 520.12.
5. ITEM 538.2, BARRIER MEMBRANE, VERTICAL SURFACES (F), 2'-0" WIDE SHALL BE PLACED SYMMETRICALLY ABOUT THE JOINT BETWEEN EXISTING AND NEW CONCRETE.
6. ITEM 534.3, WATER REPELLENT (SILANE-SILOXANE) SHALL BE APPLIED TO ALL EXPOSED SURFACES OF THE NEW WINGWALL TO 1'-0" BELOW FILL LINES.
7. ITEM 585.21, STONE FILL, CLASS B (BRIDGE), SHALL BE 2'-0" THICK UNLESS NOTED OTHERWISE.
8. ITEM 593.411, GEOTEXTILE, PERMANENT CONTROL, CLASS I, NON-WOVEN SHALL BE INSTALLED BELOW ALL STONE FILL SHOWN ON SITE PLAN.
9. SHEAR KEYS SHALL BE 3" HIGH AND CENTERED WITH A WIDTH OF ONE-THIRD THE WIDTH OF THE WALL.
10. EXISTING BRIDGE PLANS MAY BE VIEWED AT THE NHDOT BUREAU OF BRIDGE DESIGN OFFICE DURING THE BIDDING PERIOD (FILE NO. T-1). AFTER THE CONTRACT HAS BEEN AWARDED, A SET OF PLANS WILL BE FORWARDED TO THE CONTRACTOR UPON REQUEST.
11. THE CONTRACTOR IS ADVISED THAT CHANGES TO THE EXISTING NE WING LAYOUT MAY HAVE BEEN MADE DURING CONSTRUCTION (i.e. WING ANGLED SLIGHTLY, NOT IN LINE WITH ABUTMENT. BRIDGE MAINTENANCE FORCES CAPPED AND RAISED THE ELEVATION OF THE WING TIP APPROXIMATELY 2 FEET. THERE ARE NO PLANS FOR THE BRIDGE MAINTENANCE WORK.
12. REPAIRS AND/OR MODIFICATIONS TO THE EXISTING CONCRETE WING AS REQUIRED AND DIRECTED BY THE ENGINEER SHALL BE PAID UNDER ITEM 1002.1, REPAIRS OR REPLACEMENTS AS NEEDED. A 1" DEEP SAWCUT AT THE SURFACE OF THE FRONT FACE OF THE WING TO PROVIDE A CONSTRUCTION JOINT UNIFORM IN APPEARANCE MAY BE REQUIRED AND WILL BE PAID UNDER THIS ITEM.

COFFERDAM AND WATER DIVERSION NOTES

1. A COFFERDAM WILL BE REQUIRED FOR THE CONSTRUCTION OF THE WING TO CONTROL THE BROOK INFLOW AND ADEQUATELY DEWATER THE FOOTING EXCAVATION. ALL COSTS FOR MATERIALS, INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE INCLUDED IN ITEM 503.202, COFFERDAMS. ALL WORK REQUIRED TO MAINTAIN A DEWATERED CONDITION SHALL BE INCLUDED IN ITEM 503.202
2. A TEMPORARY SUPPORT SYSTEM SHALL BE REQUIRED TO MAINTAIN TWO-WAY TRAFFIC ON NH ROUTE 123A DURING THE EXCAVATION FOR AND THE CONSTRUCTION OF THE PROPOSED WING AND FOOTING. ALL COSTS FOR THE DESIGN, INSTALLATION, MAINTENANCE, AND REMOVAL SHALL BE INCLUDED IN ITEM 503.202, COFFERDAMS.
3. A WATER DIVERSION STRUCTURE WILL BE REQUIRED FOR WORK DONE IN AND ADJACENT TO WARREN BROOK TO CONSTRUCT STONE FILL ON THE CHANNEL BOTTOM AND EMBANKMENTS. ALL COSTS FOR MATERIALS, INSTALLATION, MAINTENANCE, AND REMOVEL SHALL BE INCLUDED IN ITEM 503.102, WATER DIVERSION STRUCTURES.
4. ALL ITEMS COVERED UNDER SECTION 503 OF THE SPECIFICATIONS SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER. THE CONTRACTOR SHALL SUBMIT STAMPED WORKING DRAWINGS AND CALCULATIONS FOR REVIEW AND DOCUMENTATION IN ACCORDANCE WITH 105.02 PRIOR TO CONSTRUCTION.

FOUNDATION NOTES

1. THE CONTRACTOR IS REQUIRED TO PLACE ALL SUBSTRUCTURE CONCRETE IN THE DRY.
2. WING FOOTING SHALL BE FOUNDED ON UNDISTURBED GLACIAL OUTWASH. ANY UNSUITABLE MATERIALS THAT EXTEND BELOW THE BOTTOM OF FOOTING GRADE SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL. BOULDERS SHALL BE REMOVED TO 1'-0" BELOW BOTTOM OF FOOTING.
3. CONTROL OF WATER WITHIN THE EXCAVATION SHALL BE CONDUCTED IN SUCH A MANNER AS TO PREVENT DISTURBANCE OF THE BEARING SOIL. PUMPING AREAS SHALL BE LOCATED OUTSIDE THE FOOTING SUPPORT LIMITS AND PROPERLY FILTERED TO PREVENT PUMPING OF FINES.
4. DEWATERING SHALL BE CONTINUOUS UNTIL THE WING IS BACKFILLED TO THE ELEVATION OF THE SURROUNDING WATER TABLE.
5. ANY FOUNDATION MATERIALS WEAKENED AS A RESULT OF INSUFFICIENT CARE TAKEN IN MAINTAINING A DEWATERED CONDITION SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL AT THE EXPENSE OF THE CONTRACTOR.

REINFORCEMENT NOTES

1. REINFORCEMENT IN THE FOOTING SHALL HAVE 3" MINIMUM CLEAR COVER. REINFORCEMENT IN THE WING SHALL HAVE 2 1/2" MINIMUM CLEAR COVER, UNLESS NOTED OTHERWISE.
2. REINFORCING LEGEND: SP = SPACE, SPL = SPLICE, NS = NEAR SIDE, FS = FAR SIDE, BOT = BOTTOM.

REINFORCING SCHEDULE

Mark	Size	Length	#Pieces	Type	A	B	C	D	E	F	G	H	J	K	R	O
W1	#5	16'-4"	14													
W2	#5	6'-0"	32													
W3	#6	6'-3"	30	N3		1'-1 1/2"	1'-0 1/2"	4'-1"						---	8"	
W4	#5	3'-5"	4													
W5	#5	5'-2"	4													
W6	#5	6'-3"	5	N3		1'-1 1/2"	1'-0 1/2"	4'-1"						---	8"	
W7	#5	9'-6"	35													
W8	#5	14'-3"	22													
W9	#5	3'-7 1/2"	11	N7			1'-7 1/2"	2'-0"				1'-1 7/8"		1'-1 7/8"		
W10	#5	3'-2 3/4"	11	N7			1'-2 3/4"	2'-0"				10 1/2"		10 1/2"		
W11	#5	3'-0"	5													

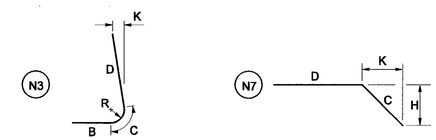
SECTION SUMMARY TOTAL WEIGHT (lbs):

ITEM #	DESCRIPTION	#3	#4	#5	#6	#7	#8	#9	#10	#11	#14	#18	TOTAL
544	REINFORCING STEEL			1279	282								1561
544.11	MECH. CONNECTOR												
544.2	EPOXY COATED												
544.21	EPOXY MECH. CON.												

SUMMARY OF BRIDGE QUANTITIES

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT
207.3	UNCLASSIFIED CHANNEL EXCAVATION	300	CY
209.201	GRANULAR BACKFILL (BRIDGE) (F)	40	CY
503.102	WATER DIVERSION STRUCTURES	1	U
503.202	COFFERDAMS	1	U
504.1	COMMON BRIDGE EXCAVATION (F)	70	CY
520.12	CONCRETE CLASS A, ABOVE FOOTINGS (F)	8	CY
520.213	CONCRETE CLASS B, FOOTINGS (ON SOIL) (F)	8	CY
534.3	WATER REPELLENT (SILANE-SILOXANE)	2	GAL
538.2	BARRIER MEMBRANE, VERTICAL SURFACES (F)	3	SY
544.	REINFORCING STEEL (F)	1561	LB
585.21	STONE FILL, CLASS B (BRIDGE)	200	CY
593.411	GEOTEXTILE, PERMANENT CONTROL, CLASS I, NON-WOVEN	370	SY
645.22	SLOPE STABILIZATION (STEEPER THAN 2:1)	50	SY
646.41	TURF ESTABLISHMENT WITH MULCH, TACKIFIERS AND HUMUS	50	SY
1002.1	REPAIRS OR REPLACEMENTS AS NEEDED	*	$

* NOT A BID ITEM



RECOMMENDED END HOOKS ALL GRADES (in.)

BAR SIZE	180° HOOKS D(Φ)	180° HOOKS A or G	180° HOOKS J	90° HOOKS A or G
#3	2 1/4	5	3	6
#4	3	6	4	8
#5	3 3/4	7	5	10
#6	4 1/2	8	6	12
#7	5 1/4	10	7	14
#8	6	11	8	16
#9	9 1/2	15	11 3/4	19
#10	10 3/4	17	13 1/4	22
#11	12	19	14 3/4	24
#14	18 1/4	27	21 3/4	31

STIRRUP & TIE HOOK DIMENSIONS GRADES 40-50-60 ksi

BAR SIZE	D(Φ) (in.)	90° HOOKS A or G	135° HOOKS A or G	135° HOOKS H (appr)
#3	1 1/2	4	4	2 1/2
#4	2	4 1/2	4 1/2	3
#5	2 1/2	6	5 1/2	7
#6	4 1/2	12	7 3/4	8
#7	5 1/4	14	9	10
#8	6	16	10 1/4	11

NOTE: D = finished bend d of hook.
see 1997 CRSI Manual p6-3&4.

For additional data on standard bar bends not shown on this sheet see 1997 CRSI Manual p6-3&4.

ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT LBS. PER FOOT	NOM. DIMEN. DIAM. in.	NOM. DIMEN. CROSS SECT. AREA in²
#3	0.376	0.375	0.11
#4	0.668	0.500	0.20
#5	1.043	0.625	0.31
#6	1.502	0.750	0.44
#7	2.044	0.875	0.60
#8	2.670	1.000	0.79
#9	3.400	1.128	1.00
#10	4.303	1.270	1.27
#11	5.313	1.410	1.56
#14	7.650	1.693	2.25
#18	13.600	2.257	4.00

NOTES:

1. FIGURES IN CIRCLE SHOW TYPE OF BEND.
2. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET - STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31-94 (ASTM A615).
3. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS AND OTHER STANDARD PRACTICE SEE CURRENT (1990) CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE", P. 6-4.
4. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
5. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180° AND 135° HOOKS.
6. "J" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHEN NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE STANDARD HOOKS ARE TO BE USED.
7. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
8. WHERE SLOPE DIFFERS FROM 45° DIMENSIONS "H" AND "K" MUST BE SHOWN.

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 073/163 STATE PROJECT 14541J
LOCATION NH ROUTE 123A over WARREN BROOK

NOTES AND QUANTITY BOX

BRIDGE SHEET A1 OF A4

REVISIONS AFTER PROPOSAL	BY	DATE		BY	DATE
DESIGNED	RRA	2/07	CHECKED	JAS	3/07
DRAWN	SMG	2/07	CHECKED	JAS	3/07
QUANTITIES	SMG	2/07	CHECKED	WPS	2/07

FILE NUMBER T-1

ISSUE DATE
REV. DATE
FEDERAL PROJECT NO. ----------
SHEET NO. 43
TOTAL SHEETS 156

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRC/073-163NH123A/	073-163Notes	AS NOTED

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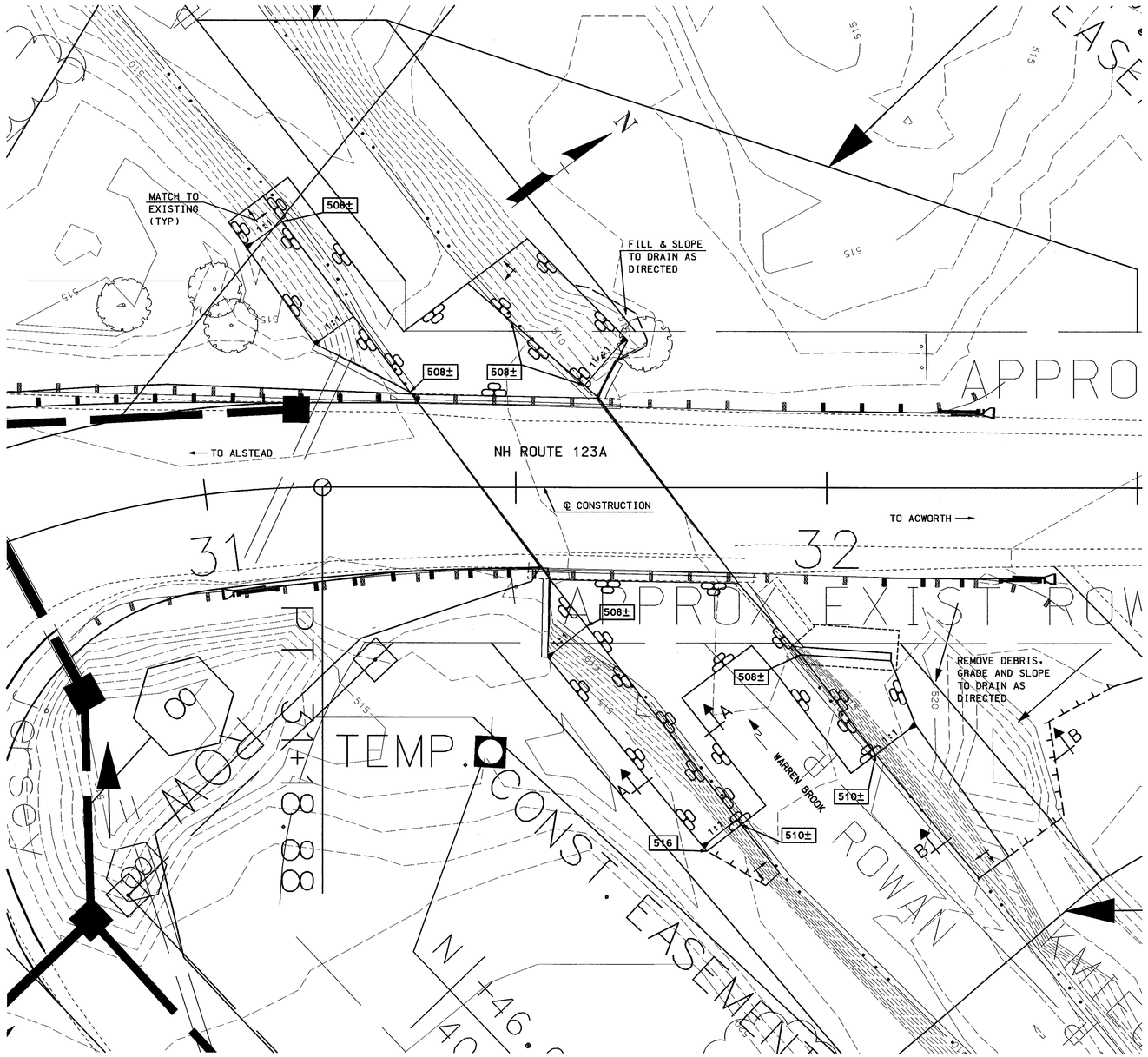
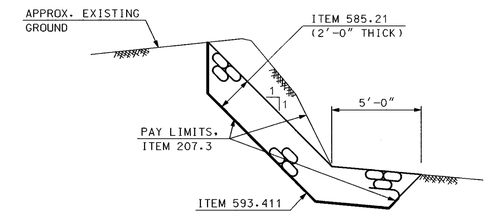
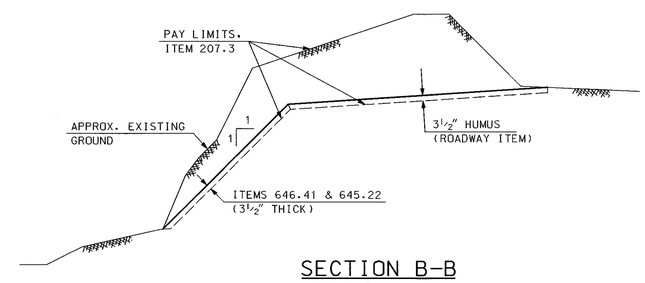


PLAN
SCALE: 1" = 10'-0"



SECTION A-A
SCALE: 1/4" = 1'-0"



SECTION B-B
SCALE: 1/4" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRC/073-163NH123A/	073-163BrSite	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 073/163 STATE PROJECT 14541J

LOCATION NH ROUTE 123A over WARREN BROOK

SITEPLAN AND SECTIONS

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	RRA	2/07	CHECKED	JAS	3/07
	DRAWN	SMG	2/07	CHECKED	JAS	3/07
	QUANTITIES	SMG	2/07	CHECKED	WPS	2/07
	ISSUE DATE			FEDERAL PROJECT NO.		
	REV. DATE			----------		

BRIDGE SHEET A2 OF A4
FILE NUMBER T-1
SHEET NO. 44
TOTAL SHEETS 156

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TEST BORING REPORT

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14540W BRIDGE NUMBER 073/163
DESCRIPTION Upstream Wingwalls for Bridge Over Warren Brook

BORING NO.	B1001
SHEET NO.	1 OF 2
STA.	401+86 OFF. RT 38
BASELINE	NH Rte 123A
ELEVATION (ft)	514.3
START/END	10/30/06 / 10/31/06
DRILLER	J. Woodward (NHDOT)
INSPECTOR	John Soper
CLASSIFIER	JKS
NORTHEAST (ft)	238275/801893

GROUNDWATER

DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE
10/31/06	1:00 pm	5.4	508.9	0	30

EQUIPMENT	SAMPLER	CASING	CORE
TYPE:	S	NW	
SIZE I.D. (in):	1.375	3	
HAMMER WT. (lb):	140	DRILL RIG	
HAMMER FALL (in):	30	CME 45-C Track rig	
HAMMER TYPE:	Automatic		

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS	STRATUM SYMBOL
0			1 3 5 5	S1	1.0 [50]	0.0 - 2.0	Loose, dark gray, FINE SAND, some medium to coarse sand, little to trace fine and coarse gravel, trace silt, with cobbles. -FILL-	
			4 4 7 10	S2	1.3 [65]	2.0 - 4.0	Medium dense, dark gray, FINE SAND, some medium to coarse sand, little to trace fine and coarse gravel, trace silt, with cobbles.	
5	5.5	508.8	41	S3	0.6 [0]	4.0 - 4.5	No recovery, small boulder from 4.0 to 5.5 feet.	
			12 11 15 12	S4	0.5 [25]	6.0 - 6.5	Dense, grayish brown, gravelly SAND, trace silt, with cobbles. -GLACIAL OUTWASH-	
			7 7 9 16	S5	0.6 [30]	8.0 - 8.5	Cobble.	
10						10.0	Small boulder from 9.5 to 10.8 feet.	
			8 17 20 20	S6	1.3 [65]	12.0 - 14.0	Dense, olive gray, FINE SAND, some silt.	
15			10 11 15 15	S7	1.3 [65]	14.0 - 16.0	Dense, olive gray, FINE SAND, some silt.	
			6 7 11 15	S8	1.7 [85]	16.0 - 18.0	Medium dense, olive gray, silty FINE SAND.	
			WOR 5 8 10	S9	1.7 [85]	18.0 - 20.0	Medium dense, olive gray, fine sandy SILT.	
20	21.8	492.5	5 7 10 17	S10	1.6 [80]	20.0 - 22.0	Medium dense, dark olive gray, SILT, trace fine sand, with frequent seams of fine sand, trace silt.	
			12 20 21 25	S11	1.3 [65]	22.0 - 24.0	Dense, dark olive gray, FINE SAND and SILT, trace medium to coarse sand, trace fine gravel. -GLACIAL TILL-	
25			13 9 12 15	S12	1.9 [95]	24.0 - 26.0	Medium dense, dark olive gray, FINE SAND and SILT, trace medium to coarse sand, trace fine gravel.	
			33 32 32 25	S13	1.0 [50]	28.0 - 30.0	Very dense, dark olive gray, FINE SAND and SILT, trace medium to coarse sand, trace fine gravel.	
30							Bottom of Exploration @ 30.0 ft (El. 484.3)	

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS

Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS

Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WOH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

TEST BORING REPORT

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14540W BRIDGE NUMBER 073/163
DESCRIPTION Upstream Wingwalls for Bridge Over Warren Brook

BORING NO.	B1002
SHEET NO.	1 OF 2
STA.	402+14 OFF. RT 71
BASELINE	NH Rte 123A
ELEVATION (ft)	516.2
START/END	10/31/06 / 11/1/06
DRILLER	J. Woodward (NHDOT)
INSPECTOR	John Soper
CLASSIFIER	JKS
NORTHEAST (ft)	238321/801906

GROUNDWATER

DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE
11/1/06	7:30 am	0.3	515.9	14	14

EQUIPMENT	SAMPLER	CASING	CORE
TYPE:	S	NW	
SIZE I.D. (in):	1.375	3	
HAMMER WT. (lb):	140	DRILL RIG	
HAMMER FALL (in):	30	CME 45-C Track rig	
HAMMER TYPE:	Automatic		

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS	STRATUM SYMBOL
0			1 50/0.1	S1	0.5 [83]	0.0 - 0.6	Yellowish brown, FINE SAND, little silt. -FILL-	
			25 27 17 32	S2	0.9 [45]	4.0 - 5.5	Boulder from .5 to 3.5 feet. Dense, olive gray, FINE SAND, some silt, little fine and coarse gravel, little to trace medium to coarse sand, with cobbles.	
5	6.3	509.9	15 23 17 18	S3	1.0 [50]	6.0 - 8.0	Dense, grayish brown, gravelly SAND, little silt, with cobbles.	
			11 11 12 10	S4	1.0 [50]	8.0 - 10.0	Medium dense, grayish brown, gravelly SAND, little silt. -GLACIAL OUTWASH-	
10			75/0.3	S5	0.0 [0]	10.0 - 10.3	No recovery, small boulder from 10.3 to 11.8 feet.	
			11 10 11 13	S6	1.0 [50]	12.0 - 14.0	Medium dense, olive gray, FINE to MEDIUM SAND, little silt.	
			8 11 12 16	S7	1.4 [70]	14.0 - 16.0	Medium dense, olive gray, SILT, some fine sand, with frequent seams of fine and medium sand, trace silt.	
			7 8 15 12	S8	1.4 [70]	16.0 - 18.0	Medium dense, olive gray, FINE SAND, some silt.	
			8 10 13 13	S9	1.2 [60]	18.0 - 20.0	Medium dense, olive gray, FINE SAND and SILT, with frequent seams and partings of fine sand, little silt.	
			3 8 11 18	S10	1.3 [65]	20.0 - 22.0	Medium dense, olive gray, FINE SAND and SILT, with frequent seams and partings of fine sand, little silt.	
			5 7 6 11	S11	1.7 [85]	22.0 - 24.0	Medium dense, olive gray, FINE SAND and SILT, with frequent seams and partings of fine sand, little silt.	
25			7 11 15 15	S12	1.8 [90]	24.0 - 26.0	Medium dense, olive gray, FINE SAND and SILT, with frequent seams and partings of fine sand, little silt.	
			6 11 13 13	S13	2.0 [100]	26.0 - 28.0	Medium dense, olive gray, FINE SAND and SILT, with frequent seams and partings of fine sand, little silt.	
			5 8 14 16	S14	2.0 [100]	28.0 - 30.0	Medium dense, olive gray, FINE SAND and SILT, with frequent seams and partings of fine sand, little silt.	
30							Bottom of Exploration @ 30.0 ft (El. 486.2)	

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS

Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS

Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WOH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

TEST BORING REPORT

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14540W BRIDGE NUMBER 073/163
DESCRIPTION Upstream Wingwalls for Bridge Over Warren Brook

BORING NO.	B1003
SHEET NO.	1 OF 2
STA.	402+31 OFF. RT 21
BASELINE	NH Rte 123A
ELEVATION (ft)	518.6
START/END	11/1/06 / 11/3/06
DRILLER	J. Woodward (NHDOT)
INSPECTOR	John Soper
CLASSIFIER	JKS
NORTHEAST (ft)	238321/801906

GROUNDWATER

DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE
11/3/06	7:30 am	8.5	510.1	24	29

EQUIPMENT	SAMPLER	CASING	CORE
TYPE:	S	NW	
SIZE I.D. (in):	1.375	3	
HAMMER WT. (lb):	140	DRILL RIG	
HAMMER FALL (in):	30	CME 45-C Track rig	
HAMMER TYPE:	Automatic		

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS	STRATUM SYMBOL
0			1 3 45 34	S1	0.6 [30]	0.0 - 2.0	Dense, olive gray, FINE SAND, some silt, trace medium to coarse sand, trace fine and coarse gravel, with cobbles and boulders. Boulder from 1.5 to 3.9 feet. -FILL-	
5	7.8	510.8	65 23 14 17	S2	1.3 [65]	4.0 - 6.0	Weathered boulder.	
			10 11 8 9	S3	1.2 [60]	6.0 - 8.0	Medium dense, olive gray, FINE SAND, some silt, trace medium to coarse sand, trace fine and coarse gravel, with cobbles and boulders.	
			14 17 18 24	S4	1.0 [50]	8.0 - 10.0	Dense, grayish brown, fine sandy GRAVEL, little silt, little medium to coarse sand, with cobbles. -GLACIAL OUTWASH-	
10			34 26 86 86	S5	0.0 [0]	10.0 - 11.6	No recovery. Cobble.	
			8 7 16 75/0.3	S6	0.9 [33]	12.0 - 13.6	Medium dense, grayish brown, fine sandy GRAVEL, little silt, little medium to coarse sand, with cobbles, and occasional boulder.	
15							Boulder from 13.8 to 16.3 feet.	
			11 11 17 17	S7	1.8 [85]	17.0 - 18.5	Dense, grayish brown, fine sandy GRAVEL, little silt, little medium to coarse sand, with cobbles.	
			8 12 13 14	S8	2.0 [100]	20.0 - 22.0	Dense, olive gray, silty FINE SAND, with frequent partings and seams of fine to medium sand, trace silt.	
			7 7 10 14	S9	1.5 [75]	22.0 - 24.0	Medium dense, olive gray, silty FINE SAND, with frequent partings and seams of fine to medium sand, trace silt.	
			7 7 10 8	S10	2.0 [100]	24.0 - 26.0	Medium dense, olive gray, silty FINE SAND, with frequent partings and seams of fine to medium sand, trace silt.	
			5 5 8 10	S11	2.0 [100]	26.0 - 28.0	Medium dense, dark olive gray, silty FINE SAND, occasional seam and parting of silt.	
25			7 9 10 14	S12	1.5 [75]	28.0 - 30.0	Medium dense, dark olive gray, silty FINE SAND, occasional seam and parting of silt.	
30							Bottom of Exploration @ 30.0 ft (El. 488.6)	

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS

Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS

Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WOH - Weight of Hammer

Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

TEST BORING REPORT

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION
MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

PROJECT ALSTEAD 14540W BRIDGE NUMBER 073/163
DESCRIPTION Upstream Wingwalls for Bridge Over Warren Brook

BORING NO.	B1004
SHEET NO.	1 OF 2
STA.	402+77 OFF. RT 58
BASELINE	NH Rte 123A
ELEVATION (ft)	518.7
START/END	11/3/06 / 11/6/06
DRILLER	J. Woodward (NHDOT)
INSPECTOR	John Soper
CLASSIFIER	JKS
NORTHEAST (ft)	238336/801962

GROUNDWATER

DATE	TIME	DEPTH (ft)	ELEV. (ft)	BOTTOM OF CASING	BOTTOM OF HOLE
11/6/06	8:00 am	6.5	510.2	15	15

EQUIPMENT	SAMPLER	CASING	CORE
TYPE:	S	NW	
SIZE I.D. (in):	1.375	3	
HAMMER WT. (lb):	140	DRILL RIG	
HAMMER FALL (in):	30	CME 45-C Track rig	
HAMMER TYPE:	Automatic		

DEPTH (ft)	STRATUM CHANGE (ft) DEPTH	ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)	FIELD CLASSIFICATION AND REMARKS	STRATUM SYMBOL
0			3 50/0.1	S1	0.3 [50]	0.0 - 0.6	Olive gray, FINE to MEDIUM SAND, little coarse sand, trace silt, trace fine and coarse gravel, with cobbles and boulders. Small boulder from .6 to 2.5 feet. -FILL-	
5	7.1	511.6	9 4 5 6	S2	0.5 [25]	3.0 - 5.0	Medium dense, olive gray, fine sandy GRAVEL, little medium to coarse sand, little silt, with cobbles.	
			9 13 9 14	S3	0.3 [15]	5.0 - 7.0	Rock fragments. There were small voids from 5.0 to 7.0 feet.	
			11 11 19 44	S4	1.2 [60]	7.0 - 9.0	Medium dense, grayish brown, FINE to MEDIUM SAND, some coarse sand, little to trace silt, trace fine gravel. -GLACIAL OUTWASH-	
10			40 21 10 7	S5	1.0 [50]	9.0 - 11.0	Very dense, grayish brown, FINE to MEDIUM SAND, some coarse sand, little to trace silt, trace fine gravel, trace coarse gravel, with occasional cobble.	
			4 11 9 13	S6	0.4 [20]	11.0 - 13.0	Rock fragments.	
			13 17 12 15	S7	1.7 [85]	13.0 - 15.0	Medium dense, grayish brown, FINE to MEDIUM SAND, trace silt.	
15			8 14 14 17	S8	1.6 [80]	15.0 - 17.0	Dense, olive gray, FINE SAND, some silt.	
			11 11 12 16	S9	1.2 [60]	17.0 - 19.0	Dense, olive gray, silty FINE SAND, with frequent partings and seams of silt.	
			8 6 10 15	S10	1.5 [75]	19.0 - 21.0	Medium dense, olive gray, silty FINE SAND, with frequent partings and seams of silt.	
20			8 6 8 9	S11	1.7 [85]	22.0 - 24.0	Medium dense, olive gray, silty FINE SAND, frequent partings of fine sand, trace silt, and occasional parting of silt.	
			5 6 9 13	S12	1.7 [85]	24.0 - 26.0	Medium dense, olive gray, silty FINE SAND, frequent partings of fine sand, trace silt, and occasional parting of silt.	
25			8 14 13 15	S13	1.9 [95]	26.0 - 28.0	Medium dense, olive gray, silty FINE SAND, frequent partings of fine sand, trace silt, and occasional parting of silt.	
				S14	1.9 [95]	28.0 - 30.0	Dense, olive gray, silty FINE SAND, frequent partings of fine sand, trace silt, and occasional parting of silt.	
30							Bottom of Exploration @ 30.0 ft (El. 488.7)	

Sampler	Identification
S	Standard Split Spoon
SL	Large Spoon (O.D.= 3 in)
T	Thin Wall Tube
U	Undisturbed Piston
O	Open End Rod
A	Auger Flight
C	Core Barrel
NR	Not Recorded

COHESIVE SOILS

Blows/foot	Consistency
0 - 1	Very Soft
2 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
31 - 60	Hard
> 60	Very Hard

NON-COHESIVE SOILS

Blows/foot	Density
0 - 4	Very Loose
5 - 10	Loose
11 - 24	Medium Dense
25 - 50	Dense
> 50	Very Dense

WOR - Weight of Rod
WOH - Weight of Hammer

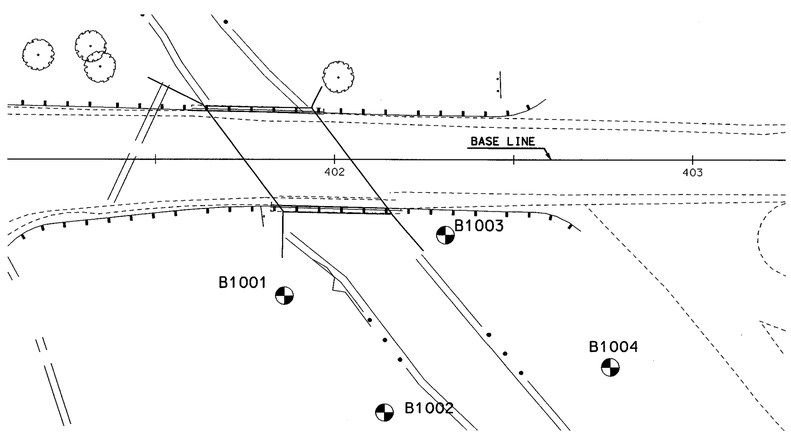
Soil Descriptions	Proportion
Capitalized Soil Name	Major Component
Lower Case Adjective	35% - 50%
Some	20% - 35%
Little	10% - 20%
Trace	1% - 10%

ENGLISH

TF = TOP OF FOOTING
BF = BOTTOM OF FOOTING

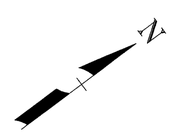
BORING LOGS

SCALE: 1/4" = 1'-0"



PLAN

SCALE: 1" = 20'-0"



BORING LOCATIONS		
NO.	NORTHING	EASTING
B1001	238275	801893
B1002	238278	801936
B1003	238321	801906
B1004	238336	801962

BORING NOTES

1. BORINGS INDICATED THUS ◔ WERE MADE BY THE NHDOT IN NOVEMBER 2006. FIGURES IN THE 'BLOWS PER 0.5 FT' COLUMN INDICATE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. STANDARD SPLIT SPOON SAMPLER 6 INCHES, USING A 140 LB. WEIGHT FALLING 30 INCHES.
2. BORINGS ARE FOR DESIGN PURPOSES SHOWING CONDITIONS AT BORING POINTS ONLY AND DO NOT NECESSARILY INDICATE MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.
3. THE SOILS REPORT IS AVAILABLE IN THE NHDOT BUREAU OF MATERIALS AND RESEARCH OFFICE. SEE PROSECUTION OF WORK FOR MORE INFORMATION.
4. WATER LEVELS INDICATED THUS ▼ WERE MEASURED AT THE TIME OF EXPLORATION. THE WATER LEVELS ENCOUNTERED DURING CONSTRUCTION MAY VARY CONSIDERABLY DUE TO PREVAILING CLIMATE, RAINFALL, OR OTHER FACTORS.

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRC/073-163NH123A/	073-163Borings	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 073/163 STATE PROJECT 14541J
LOCATION NH ROUTE 123A over WARREN BROOK

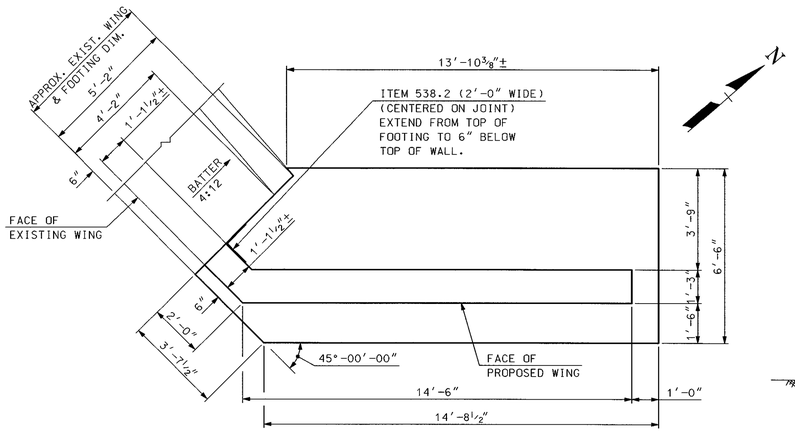
BORING LOGS

BRIDGE SHEET A3 OF A4

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	RRA	2/07	CHECKED	JAS	3/07
	DRAWN	SMG	2/07	CHECKED	JAS	3/07
	QUANTITIES	SMG	2/07	CHECKED	WPS	2/07

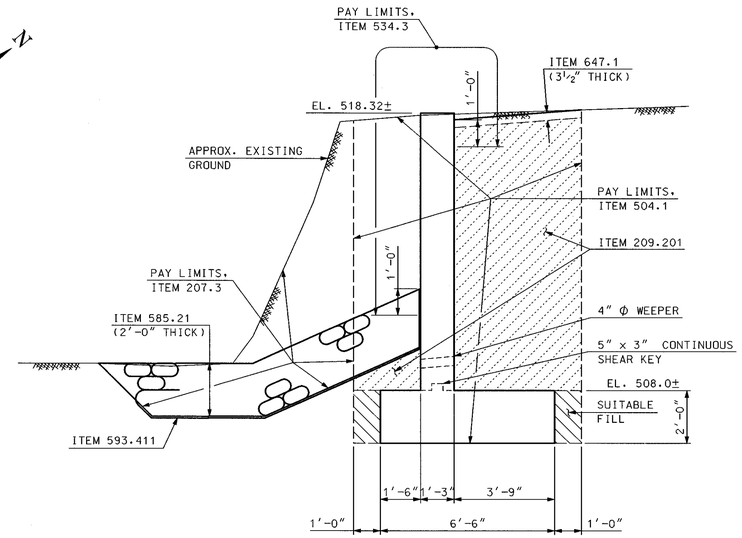
ISSUE DATE
REV. DATE
FEDERAL PROJECT NO. ----------
SHEET NO. 45
FILE NUMBER T-1
TOTAL SHEETS 156

...\073-163Borings.dgn 05/03/2007 01:06:46 PM n18sdf



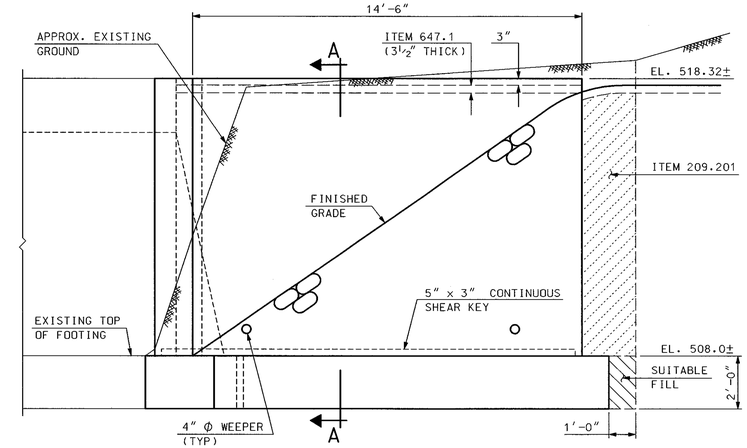
PROPOSED WING MASONRY

SCALE: ⅜" = 1'-0"



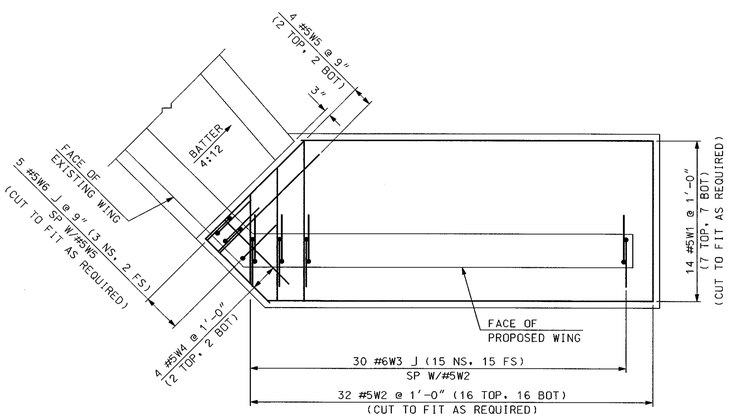
SECTION A-A

SCALE: ⅜" = 1'-0"



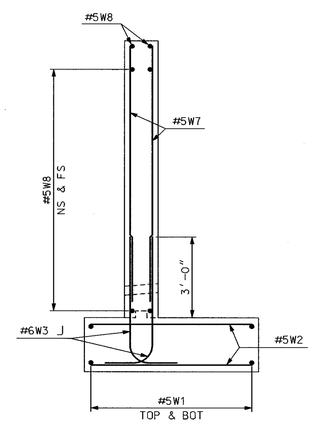
PROPOSED WING ELEVATION

SCALE: ⅜" = 1'-0"



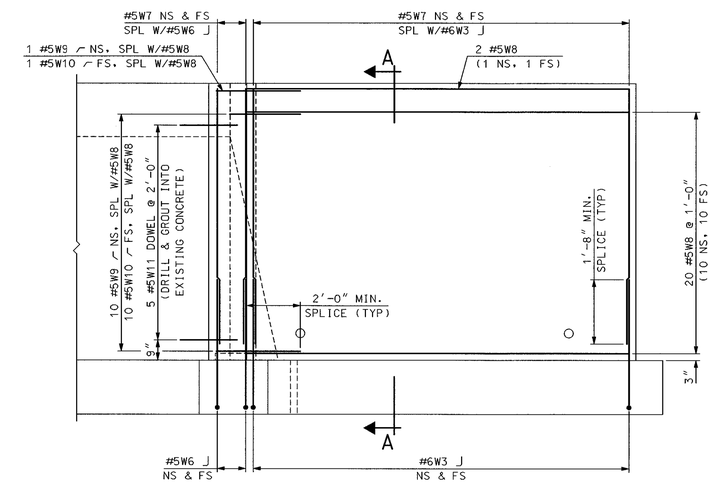
PROPOSED FOOTING REINFORCEMENT

SCALE: ⅜" = 1'-0"



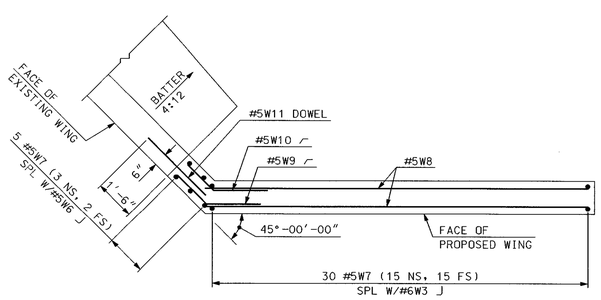
SECTION A-A REINFORCEMENT

SCALE: ⅜" = 1'-0"



WING REINFORCEMENT ELEVATION

SCALE: ⅜" = 1'-0"



PROPOSED WING REINFORCEMENT

SCALE: ⅜" = 1'-0"

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
BRC/073-163NH123A/	073-163Wing	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN ALSTEAD BRIDGE NO. 073/163 STATE PROJECT 14541J

LOCATION NH ROUTE 123A over WARREN BROOK

WING AND FOOTING DETAILS

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	RRA	2/07	CHECKED	JAS	3/07
	DRAWN	SMG	2/07	CHECKED	JAS	3/07
	QUANTITIES	SMG	2/07	CHECKED	WPS	2/07
	ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	
	REV. DATE		----------		46	

BRIDGE SHEET A4 OF A4

FILE NUMBER T-1

TOTAL SHEETS 156

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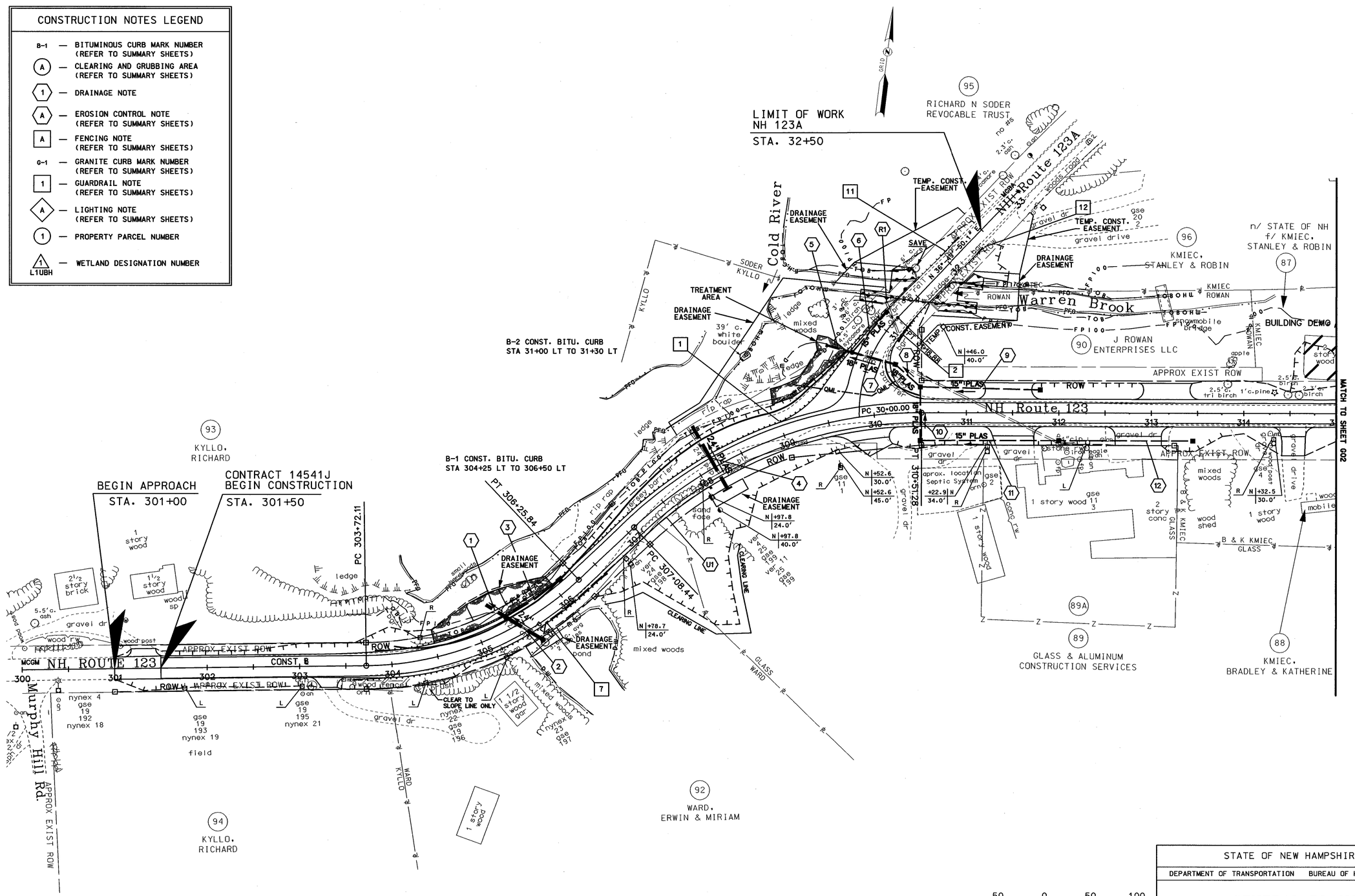
CONSTRUCTION NOTES LEGEND

- B-1 — BITUMINOUS CURB MARK NUMBER (REFER TO SUMMARY SHEETS)
- (A) — CLEARING AND GRUBBING AREA (REFER TO SUMMARY SHEETS)
- (1) — DRAINAGE NOTE
- (A) — EROSION CONTROL NOTE (REFER TO SUMMARY SHEETS)
- [A] — FENCING NOTE (REFER TO SUMMARY SHEETS)
- G-1 — GRANITE CURB MARK NUMBER (REFER TO SUMMARY SHEETS)
- [1] — GUARDRAIL NOTE (REFER TO SUMMARY SHEETS)
- (A) — LIGHTING NOTE (REFER TO SUMMARY SHEETS)
- (1) — PROPERTY PARCEL NUMBER
- (1 L1UBH) — WETLAND DESIGNATION NUMBER



REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CZR	DATE AUGUST 2006
NEW DESIGN	DRH/CAC	DATE 2006/07
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION — BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jg01	14541J	47	156

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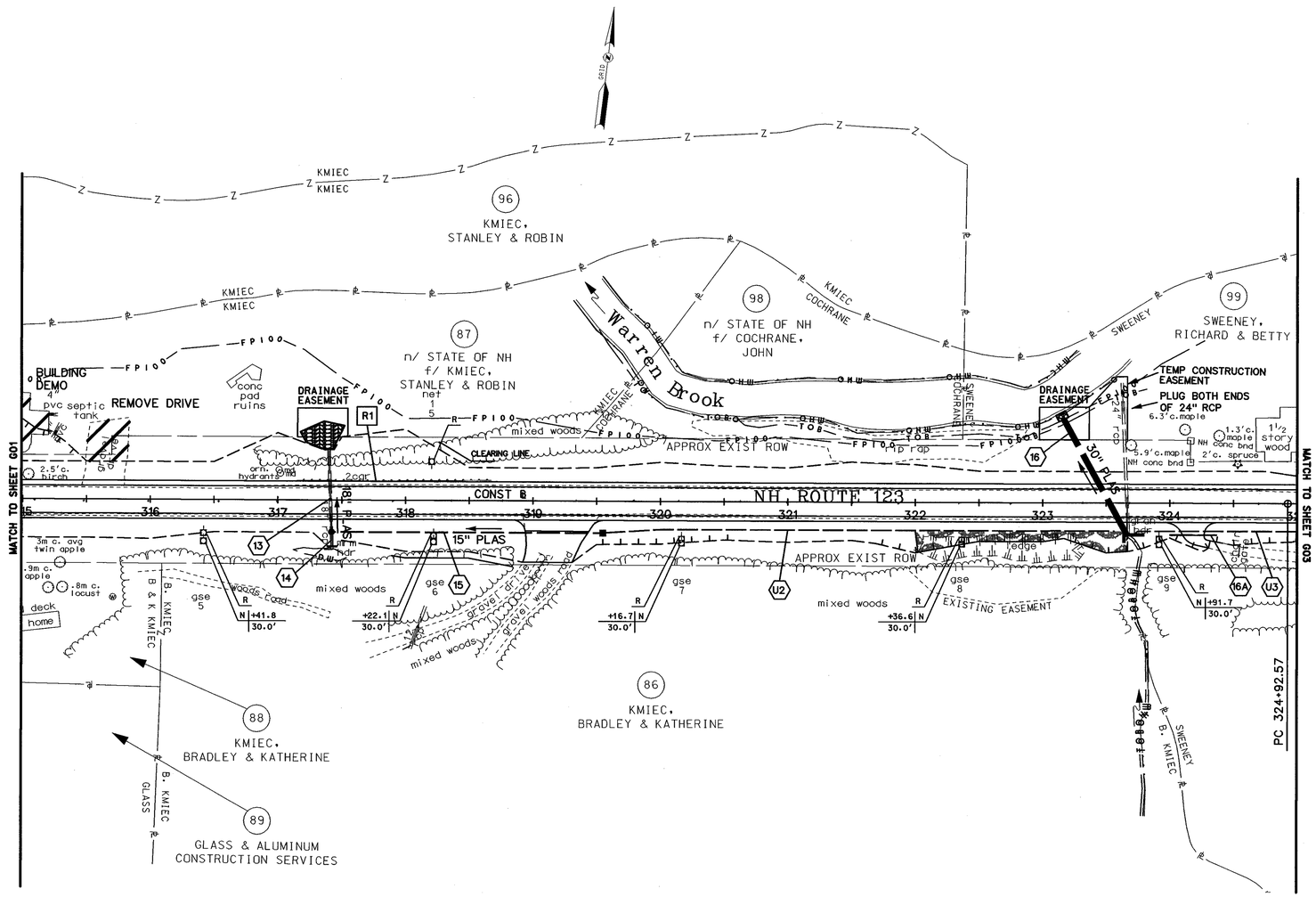

50 0 50 100
SCALE IN FEET

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	CZR	DATE	AUGUST 2006
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jg02	14541J	48	156

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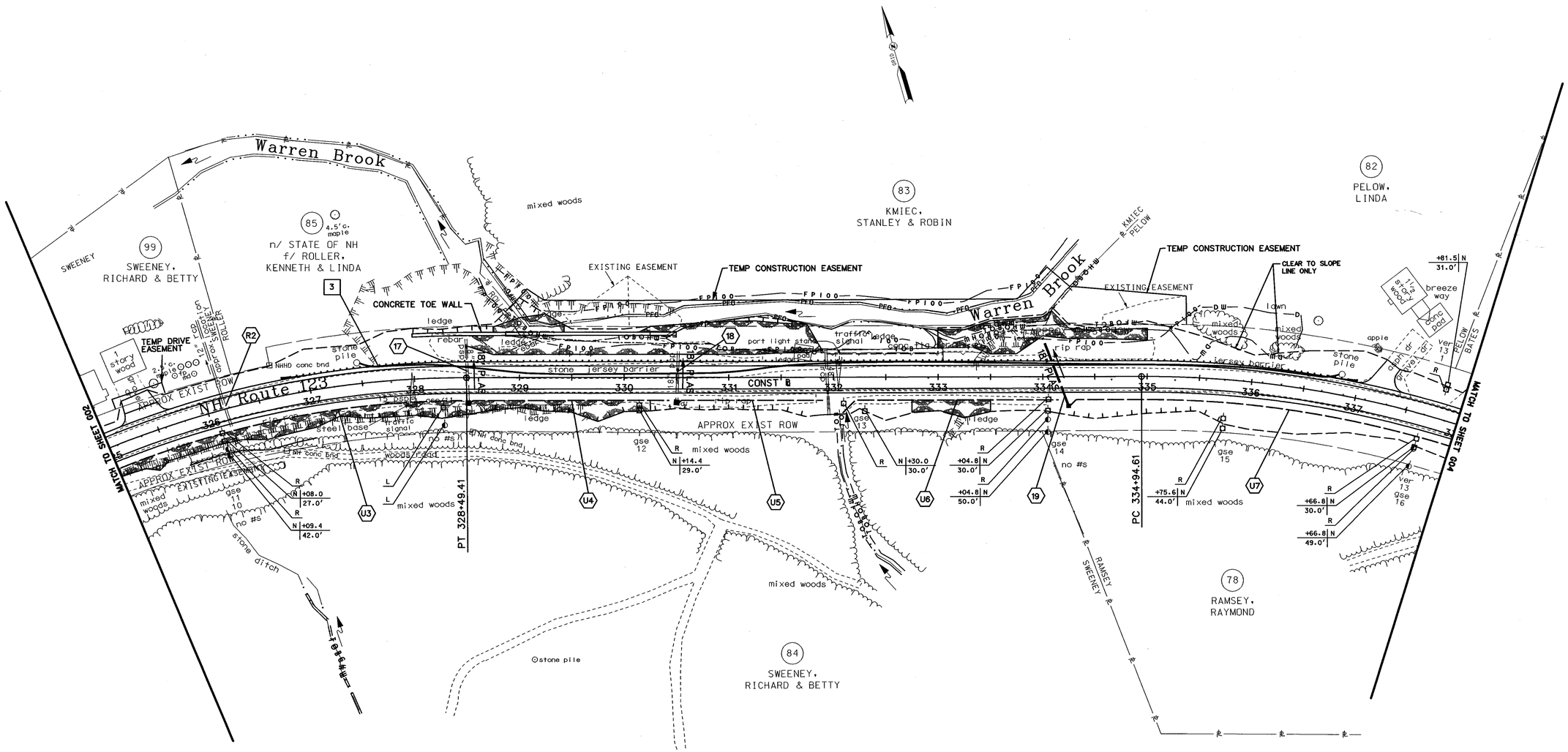

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	CZR	DATE	AUGUST 2006
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jg03	14541J	49	156

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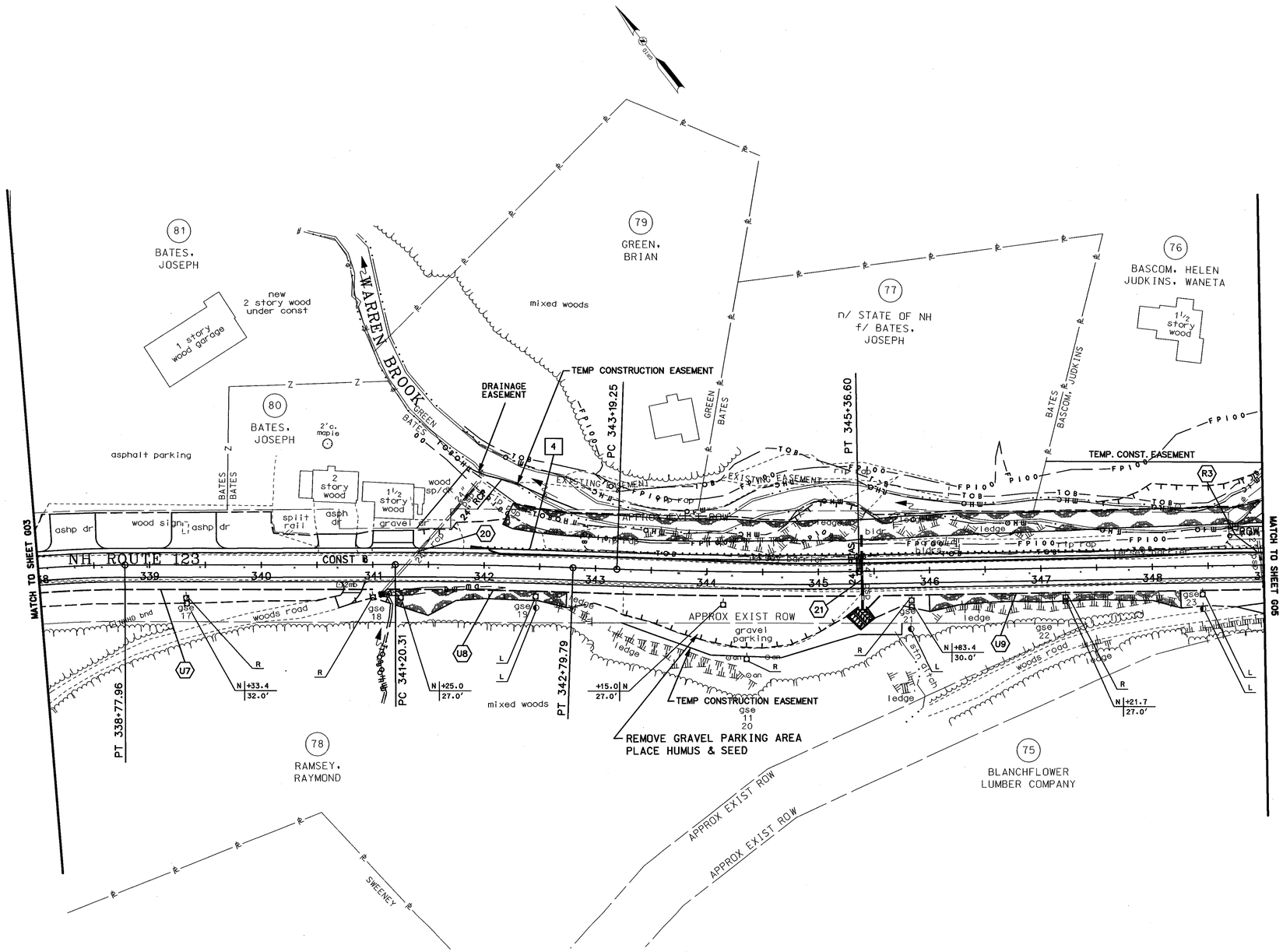
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CZR	DATE AUGUST 2006
NEW DESIGN	DRH/CAC	DATE 2006/07
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE



50 0 50 100

SCALE IN FEET

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jg04	14541J	50	156

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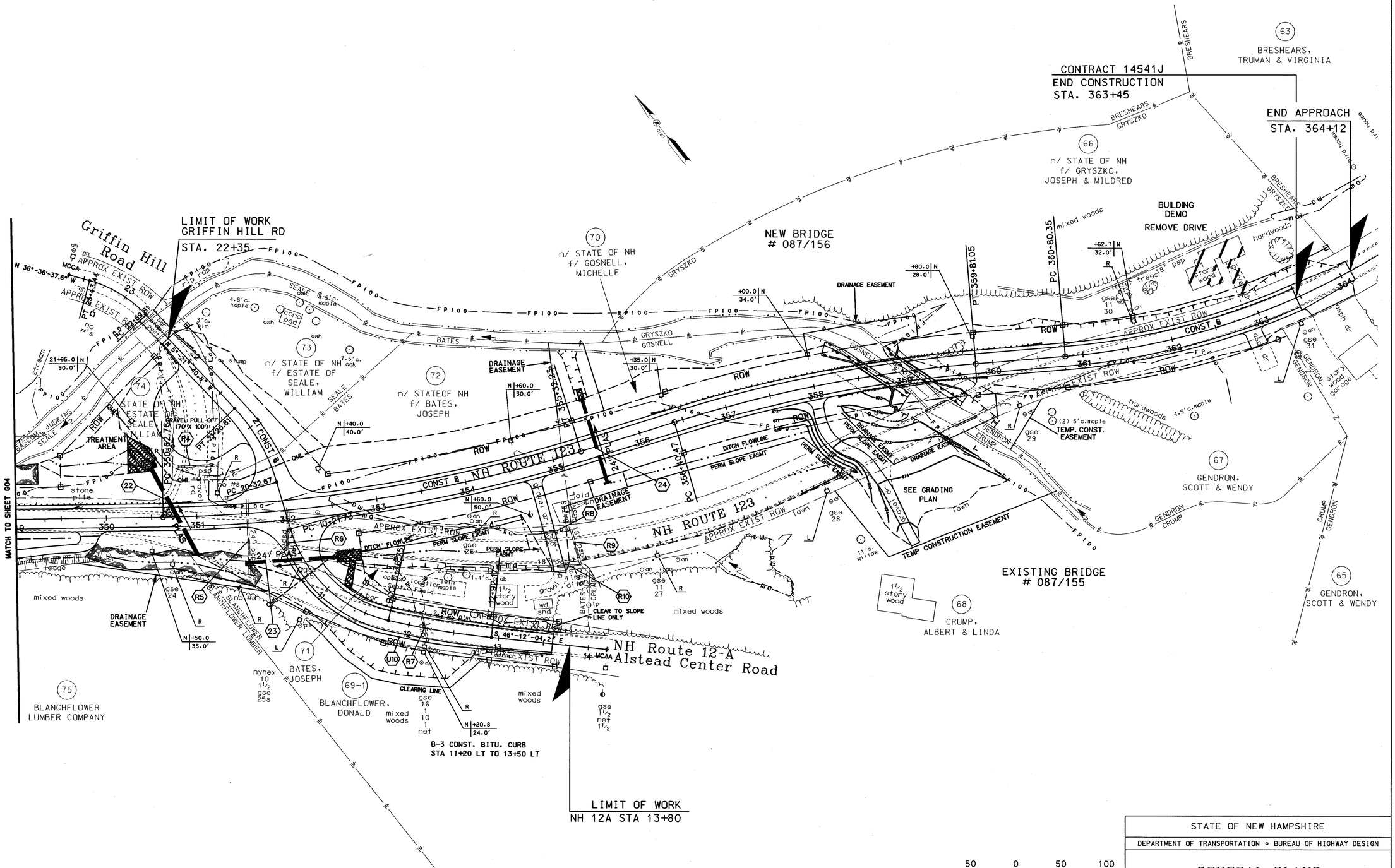

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	CZR	DATE	AUGUST 2006
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

GENERAL PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jg05	14541J	51	156

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1
STA. 305+21.8 LT 35.0' - 305+35.7 LT 14.0'
CONST. 22.7 LF 24" PLASTIC PIPE
CONST. 24" STEEL END SECTION @ +21.8
24" OUTFALL EL = 504.5
CONST. CB-B @ +35.7
24" INV. OUT = 505.05
24" INV. IN = 505.15
15" INV. IN = 508.30
GRATE ELEV. = 515.15

2
STA. 305+35.7 LT 14.0' - 305+58.0 RT 27.6'
REMOVE 60.2 LF EXISTING 12" CMP (SUBSID.)
CONST. 43.4 LF 24" PLASTIC PIPE
CONST. CB-SPECIAL @ +58.0
SPECIAL = 4' DIAMETER CB, SLAB TOP
HOLE IN SLAB TOP MODIFIED TO ACCEPT
HIGH CAPACITY FRAME AND GRATE
(NEENAH R-4349D OR APPROVED EQUAL)
6" UNDERDRAIN INV. IN = 509.0 ±
24" INV. OUT = 506.00
12" HOLE (IN FROM SOUTHEAST) INV. = 508.16
GRATE INVERT (TOP OF SLAB) ELEV. = 511.33

3
STA. 305+35.7 LT 14.0' - 306+10.5 LT 14.0'
CONST. 67.5 LF 15" PLASTIC PIPE
CONST. DI-B @ +10.5
15" INV. OUT = 509.30
GRATE ELEV. = 514.5

4
STA. 308+18.0 LT 50.5' - 308+18.0 RT 28.0'
REMOVE 60.3 LF EXISTING 24" PSP (SUBSID.)
CONST. 78.4 LF 24" PLASTIC PIPE
CONST. 24" STEEL END SECTION @ +18.0, LT
24" OUTFALL EL = 510.00
CONST. PC-1 HEADER @ +18.0, RT
24" INV. AT HDR = 511.50

5
STA. 30+61.1 LT 50.2' - 30+63.8 LT 20.8'
REMOVE 29.6 LF EXISTING 48" CMP (SUBSID.)
CONST. 28 LF 18" PLASTIC PIPE
CONST. 18" STEEL END SECTION @ +61.1
18" OUTFALL ELEV = 506.40
CONST. MH @ +63.8
18" INV. IN = 507.20
15" INV. IN = 511.70
18" INV. OUT = 507.10
COVER ELEV. = 517.35

6
STA. 30+63.8 LT 20.8' - 31+15.0 LT 12.5'
CONST. 53 LF 15" PLASTIC PIPE
CONST. DI-B @ +15
15" INV. OUT = 512.50
GRATE ELEV. = 517.6

7
STA. 30+63.8 LT 20.8' - 30+71.3 RT 27.1'
REMOVE 48.5 LF EXISTING 48" CMP (SUBSID.)
CONST. 44.5 LF 18" PLASTIC PIPE
CONST. CB-B @ +71.3
18" INV. OUT = 507.50
18" INV. IN = 508.60
GRATE ELEV. = 516.5

8
30+71.3 RT 271.' - 310+50.0 LT 28.0'
CONST. 32.4 LF 18" PLASTIC PIPE
CONST. CB-B @ +50.0
15" INV. IN = 509.80
18" INV. IN = 509.50
18" INV. OUT = 509.40
GRATE ELEV. = 517.0

9
310+50.0 LT 28.0' - 311+80.0 LT 25.0'
CONST. 126.0 LF 15" PLASTIC PIPE
CONST. CB-B @ +80.0
15" INV. OUT = 514.20
GRATE ELEV. = 519.6

10
STA. 310+50.0 LT 28.0' - 310+50.0 RT 30.0'
CONST. 54.0 LF 18" PLASTIC PIPE
CONST. CB-B @ +50, RT 30.0'
15" INV. IN = 511.20
18" INV. OUT = 510.90
GRATE ELEV. = 517.0

11
310+50.1 RT 30.0' - 312+00.0 RT 30.0'
REM. EXIST. CB-C @ 311+99.4 RT 33.7' (SUBSID.)
PLUG EXIST. 15" RCP (SUBSID.)
CONST. 146.0 LF 15" PLASTIC PIPE
CONST. CB-B @ +00.0
15" INV. IN = 516.10
15" INV. OUT = 516.00
GRATE ELEV. = 521.3

12
STA. 312+00.0 RT 30.0' - 313+45.0 RT 30.0'
CONST. 141.0 LF 15" PLASTIC PIPE
CONST. CB-B @ +45.0
15" INV. OUT = 519.60
GRATE ELEV. = 524.5

13
STA. 317+39.9 LT 40.8' - 317+42.0 RT 25.0'
REMOVE 78.5 LF EXISTING 18" RCP (SUBSID.)
CONST. CLASS C STONE APRON @ +39.9
CONST. PC-1 MODIFIED HEADER @ +39.9
MODIFIED H = 6.1'
18" INV @ HDR = 528.50
CONST. 63.8 LF 18" PLASTIC PIPE
CONST. MH @ +42.0
15" INV. IN = 531.20
18" INV. IN = 531.00
18" INV. OUT = 530.80
COVER ELEV. = 536.7

14
STA. 317+42.0 RT 25.0' - 317+42.4 RT 37.0'
CONST. 10.0 LF 18" PLASTIC PIPE
CONST. PC-1 HEADER @ +42.4, RT 37.0'
18" INV. @ HDR = 531.30

15
STA. 317+42.0 RT 37.0' - 319+55.0 RT 25.0'
CONST. 209.0 LF 15" PLASTIC PIPE
CONST. CB-B @ +55.0
12" UND. INV. IN = 536.25
15" INV. OUT = 536.00
GRATE ELEV. = 541.00

16
STA.323+17.0 LT 65.5' - 323+66.9 RT 25.8'
REMOVE 8 LF OF EXIST. 24" RCP (SUBSID.)
PLUG BOTH ENDS OF EXISTING 24" RCP (SUBSID.)
CONST. CLASS B STONE APRON @ +17.0
CONST. 30" STEEL END SECTION @ +17.0
30" OUTFALL EL = 542.00
CONST. 104.1 LF 30" PLASTIC PIPE
CONST. PC-1 L-SHAPE MODIFIED HEADER @ +66.9
MODIFIED H = 5.4', L1 = 5', L2 = 15'
30" INV @ HDR = 547.40

16A
STA. 324+00.0 RT 25.0' - 324+37.0 RT 25.0'
CONST. 37.0 LF 15" PLASTIC PIPE
15" INV. IN @ +37 = 533.00
15" INV. OUT @+00 = 552.50

17
STA. 328+49.0 LT 37.9' - 328+51.2 RT 24.4'
REMOVE CONCRETE BLOCK HEADER, RT (SUBSID.)
REMOVE 63.3 LF EXIST. 18" PCP (SUBSID.)
CONST. 18" STEEL END SECTION @ +49.0
18" OUTFALL ELEV = 506.40
CONST. 62.3 LF 18" PLASTIC PIPE
CONST. CB-F @ +51.2
12" UND. INV. IN = 580.4
18" INV. OUT = 579.40
GRATE ELEV. = 585.4

18
STA. 330+52.2 LT 32.5' - 330+50.2 RT 24.0'
REMOVE 48.1 LF EXISTING 18" PCP (SUBSID.)
REMOVE EXISTING DI @ +50.2 (SUBSID.)
CONST. 18" STEEL END SECTION @+52.2
18" OUTFALL ELEV = 590.75
CONST. 54.5 LF 18" PLASTIC PIPE
CONST. CB-F @ +50.2
12" UND. INV. IN = 594.2
18" INV. OUT = 593.50
GRATE ELEV. = 599.0

19
STA. 334+00.0 LT 37.0' - 334+25.0 RT 28.0'
CONST. 18" STEEL END SECTION @ +00.0
18" OUTFALL EL = 603.00
CONST. 67.6 LF 18" PLASTIC PIPE
CONST. CB-SPECIAL @ +25.0
SPECIAL = 4' DIAMETER CB, SLAB TOP
HOLE IN SLAB TOP MODIFIED TO ACCEPT
HIGH CAPACITY FRAME AND GRATE
(NEENAH R-4349D OR APPROVED EQUAL)
12" UNDERDRAIN INV. IN = 605.5
18" INV. OUT = 605.50
GRATE INVERT (TOP OF SLAB) ELEV. = 610.5

20
STA. 341+90.3 LT 69.2' - 341+08.0 RT 26.3'
REMOVE 38.4 LF EXISTING 24" PSP (SUBSID.)
REMOVE EXISTING CB @ +08.0 (SUBSID.)
CONST. 30" STEEL END SECTION @ +90.3
24" OUTFALL EL = 633.00
CONST. 32.0 LF 24" RCP
CONST. CB-SPECIAL @ +08.0
SPECIAL = 4' DIAMETER CB, SLAB TOP
HOLE IN SLAB TOP MODIFIED TO ACCEPT
HIGH CAPACITY FRAME AND GRATE
(NEENAH R-4349D OR APPROVED EQUAL)
24" INV OUT = 634.3 (MATCH EXISTING INV.)
12" UND. INV. IN = 634.3
GRATE INVERT (TOP OF SLAB) ELEV. = 637.8

21
STA. 345+39.2 LT 33.0' - 345+39.2 RT 34.2'
REMOVE 40.4 LF EXISTING 24" PSP (SUBSID.)
CONST. 24" STEEL END SECTION @ +9.2, LT
24" OUTFALL EL = 641.00
CONST. 67.2 LF 24" PLASTIC PIPE
CONST. PC-1 MODIFIED HEADER @ +39.5, RT
MODIFIED H = 5.0"
24" INV @ HDR = 642.00
CONST. CLASS C STONE APRON @ +39.5 RT

22
STA. 350+51.3 LT 55.3' - 351+00.0 RT 44.0'
CONST. PC-1 L-SHAPE MODIFIED HEADER @ +51.3
MODIFIED H = 7.5', L1 = 5', L2 = 8'
30" INV @ HDR = 650.60
CONST. CLASS B STONE APRON @ +51.3
CONST. 111.2 LF 30" PLASTIC PIPE
CONST. PC-1 MODIFIED HEADER @ +00.0
MODIFIED H = 6.0', L = 13'
30" INV @ HDR = 656.50

23
STA. 351+50.0 RT 54.8' - 352+50.0 RT 58.0'
CONST. 24" STEEL END SECTION @ 351+50.0
24" OUTFALL EL = 657.65
CONST. CLASS C STONE APRON @352+50.0
CONST. 103.5 LF 24" PLASTIC PIPE
CONST. PC-1 MODIFIED HEADER @ 352+50.0
MODIFIED H = 6.7', L = 12'
24" INV @ HDR = 660.30

24
STA.355+50 LT 54.3' - 355+50 RT 43.0'
CONST. PC-1 HEADER @ +50, LT 54.3'
24" INV @ HDR = 658.70
CONST. OUTLET DITCH @ +50, LT
CONST CLASS C STONE APRON @ +50, LT
CONST. 97.3 LF 24" PLASTIC PIPE
CONST. PC-1 HEADER @ +50, RT 43.0'
24" INV @ HDR = 662.00

U1
STA. 305+58.0 RT 27.6' - 308+02.2 RT 16.9'
CONST. 250.0 LF 6" PERF. UNDERDRAIN
6" INV. OUT @ +58 = 509.0
CONST. UND. FLUSHING BASIN @ +02.2

U2
STA. 319+55.0 RT 25.0' - 323+56.5 RT 22'
CONST 400.0 LF 12" AGGREGATE UND.
12" INV. OUT @ +55 = 536.25

U3
STA. 323+71.0 RT 25.8' - 328+45.1 RT 22'
CONST 467.3 LF 12" AGGREGATE UND.
12" INV. OUT @ +71.0 = 547.50

U4
STA. 328+51.2 RT 24.4' - 330+43.1 RT 22'
CONST 192.0 LF 12" AGGREGATE UND.
12" INV. OUT @ +51.2 = 580.4

U5
STA.330+50.2 RT 24.0' - 331+90.0 RT 22'
CONST 138.7 LF 12" AGGREGATE UND.
12" INV. OUT @ +50.2 = 594.2

U6
STA.332+09.0 RT 34.1' - 334+15.0 RT 22'
CONST 211.1 LF 12" AGGREGATE UND.
12" OUTFALL EL = 601.00 @ +09

U7
STA. 334+25.0 RT 28.0' - 341+00.0 RT 22'
CONST 667.7 LF 12" AGGREGATE UND.
12" INV. OUT @ +25 = 605.5

U8
STA. 341+08.0 RT 26.3' - 345+33.0 RT 22.0'
CONST 425.3 LF 12" AGGREGATE UND.
12" INV. OUT @ 08.0 = 634.3

U9
STA. 345+43.8 RT 33.6' - 349+60.0 RT 22.0'
CONST 421.2 LF 12" AGGREGATE UND.
12" OUTFALL EL = 642.5 @ +43.8

U10
STA. 351+50.0 RT 58.0' - 13+50.0 RT 14.2'
CONST. 350.0 LF 6" PERF. UNDERDRAIN
CONST. UND. FLUSHING BASIN @ +50.0

R1
STA. 31+22 LT 19' - 31+18 LT 10"
REMOVE 11 LF EXISTING 15" RCP

R2
STA. 326+16 LT 30' - 326+18 RT 22'
REMOVE 52 LF EXISTING 12" RCP
PLUG END AT ROW LINE , LT (SUBSID.)

R3
STA. 348+90.2 LT 24.0' - 349+00.0 RT 17.9'
REMOVE 42.1 LF EXISTING 12" PSP

R4
STA. 350+80.2 LT 55.4' - 351+23.5 LT 55.6'
REMOVE 42.0 LF EXISTING 18" PSP

R5
STA. 351+56.8 LT 15.4' - 356+53.9 RT 75.5'
REMOVE 91.0 LF EXISTING 24" PCP

R6
STA. 352+01.0 RT 4.1' - 351+97.1 RT 43.6'
REMOVE 43.8 LF EXISTING 24" PSP

R7
STA. 12+10.6 LT 15.6' - 10+24.2 RT 14.9'
REMOVE EXIST. HEADER @ +10.6
REMOVE 33.3 LF EXISTING 12" CMP

R8
STA. 354+65.0 RT 74.0' - 354+84.4 RT 78.2'
REMOVE 19.8 LF EXISTING 24" PCP

R9
STA. 355+00.0 RT 79.7' - 355+00.5 RT 119.9'
REMOVE 40.2 LF EXISTING 18" PSP

R10
STA. 354+54.0 RT 110.0' - 354+93.5 RT 119.6'
REMOVE 40.5 LF EXISTING 18" PSP

REVISIONS AFTER PROPOSAL			
STATION	STATION	DATE	NUMBER	DESCRIPTION

SDR PROCESSED	XX	DATE XX
NEW DESIGN	CAC/WED	DATE 2007
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE

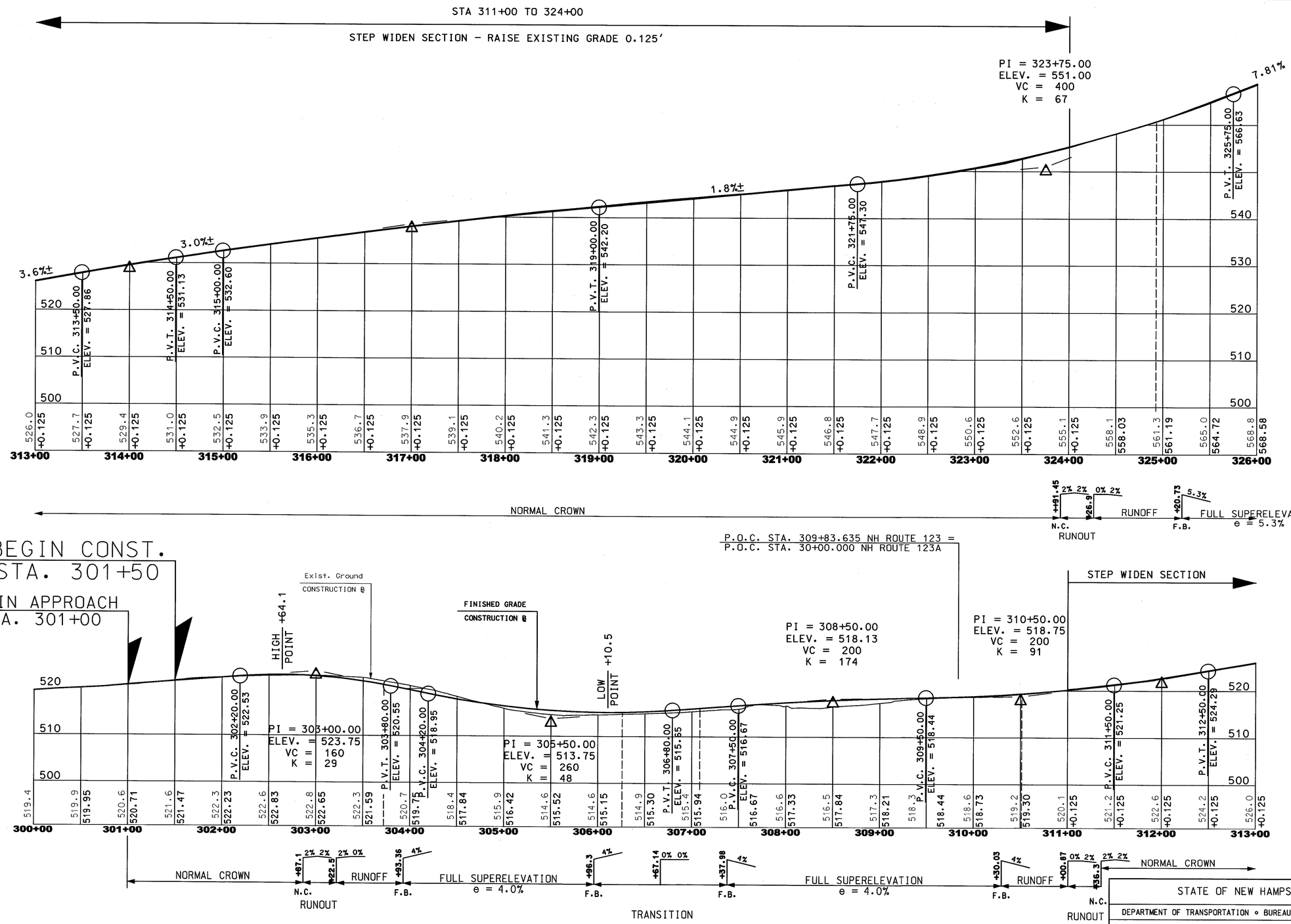
STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

DRAINAGE NOTES

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541J Drain Notes	14541J	52	156

...\14541J Drain Notes.dgn 05/24/2007 01:58:37 PM n34cnc



NUMBER	DATE	STATION	DESCRIPTION

REVISIONS AFTER PROPOSAL

SDR PROCESSED	XX	DATE	XX
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PROFILES
NH 123

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jpro_1	14541J	53	156

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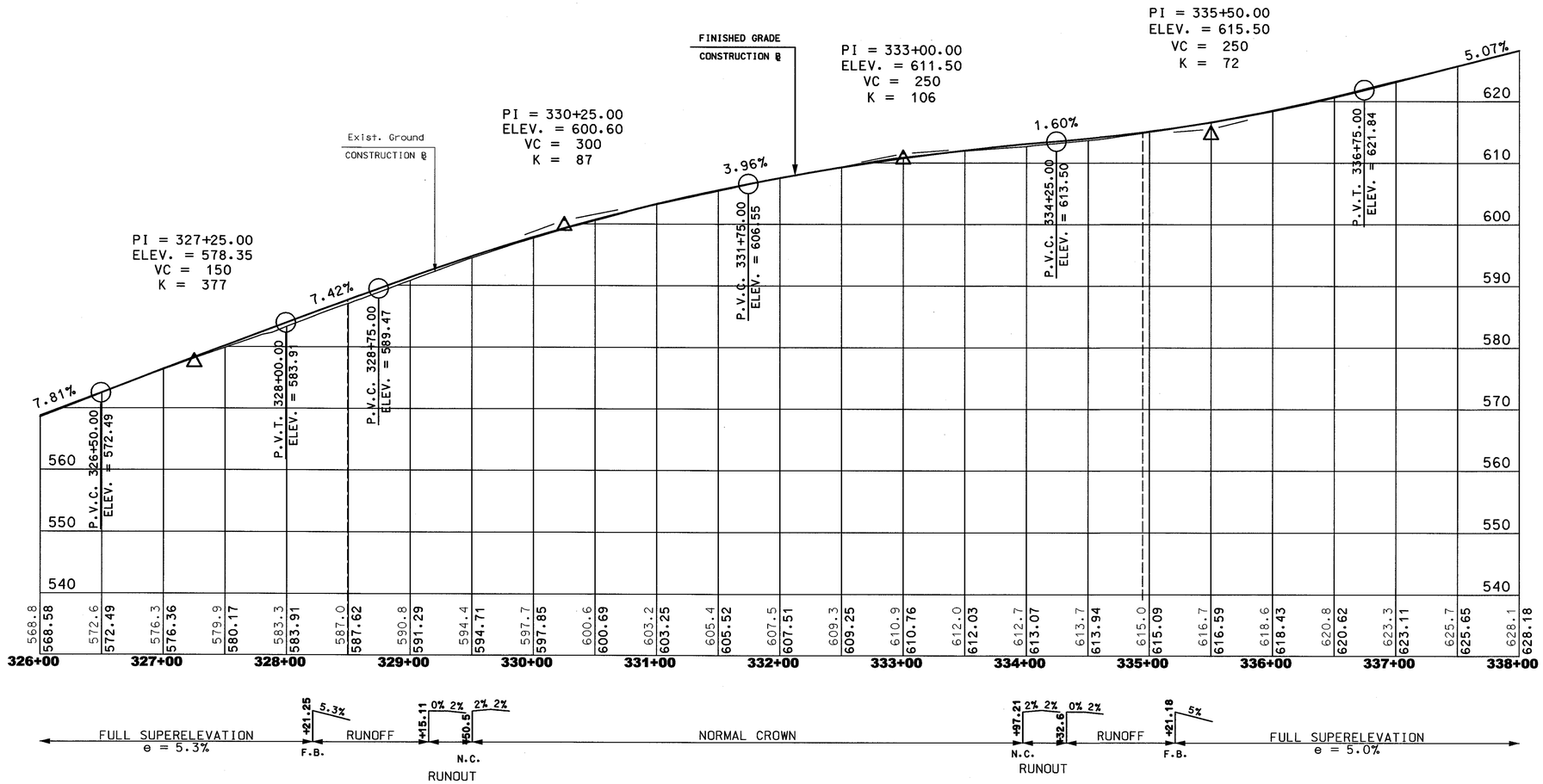


SCALE
HORIZ 1″ = 50′
VERT 1″ = 10′

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PROFILES
NH 123

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jpro_2	14541J	54	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

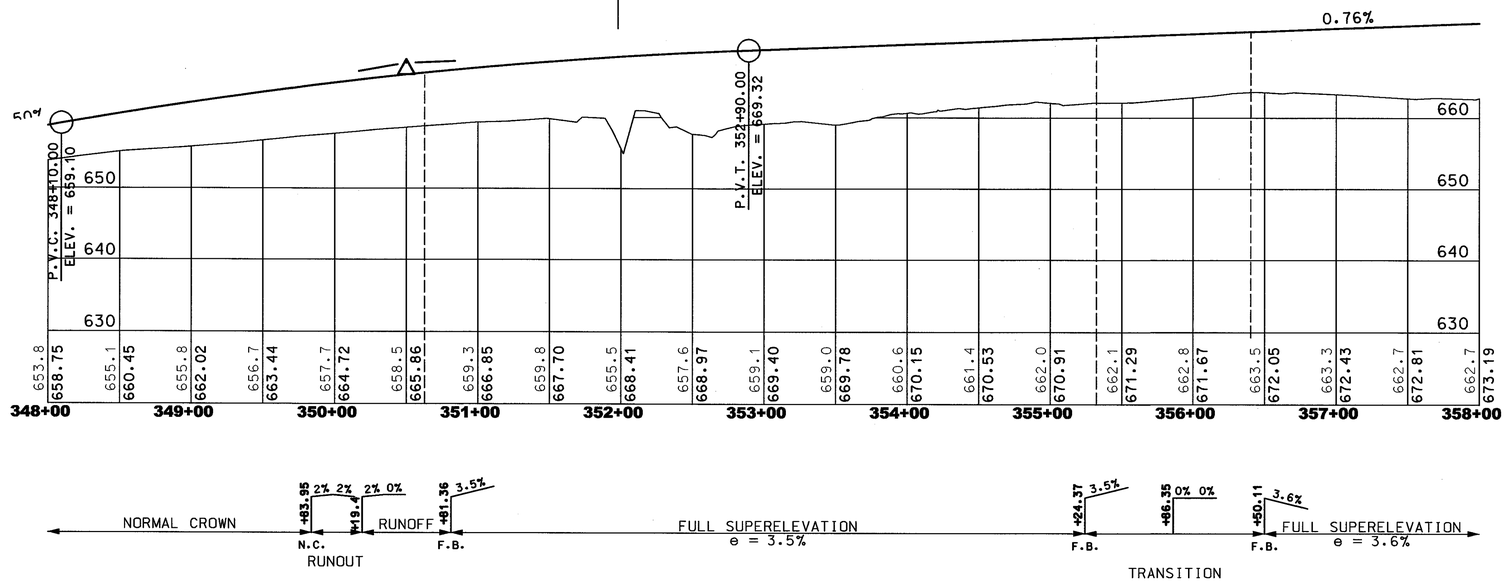
SDR PROCESSED XX DATE XX
NEW DESIGN XX DATE XX
SHEET CHECKED XX DATE XX

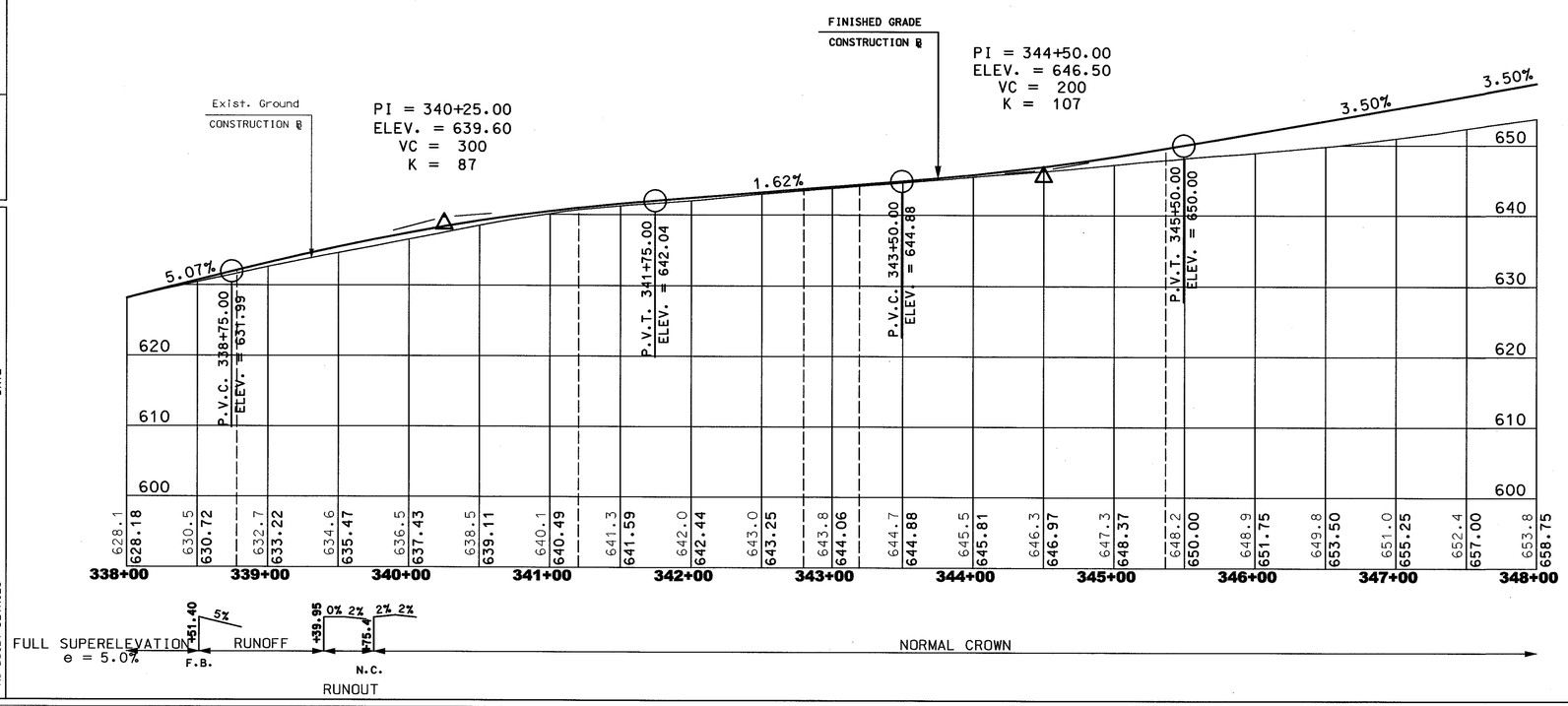
AS BUILT DETAILS DATE

...\Profiles\14541Jpro_2.dgn 05/21/2007 10:36:07 AM n34drh

P.O.C. STA. 351+97.879 NH ROUTE 123 =
P.O.T. STA. 10+00.000 NH ROUTE 12A
P.O.T. STA. 20+00.000 GRIFFIN HILL RD

PI = 350+50.00
ELEV. = 667.50
VC = 480
K = 175





SCALE
HORIZ 1″ = 50′
VERT 1″ = 10′

NUMBER	DATE	STATION	STATION	DESCRIPTION

REVISIONS AFTER PROPOSAL

SDR PROCESSED	XX	DATE XX
NEW DESIGN	XX	DATE XX
SHEET CHECKED	XX	DATE XX

AS BUILT DETAILS DATE

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PROFILES
NH 123

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jpro_3	14541J	55	156

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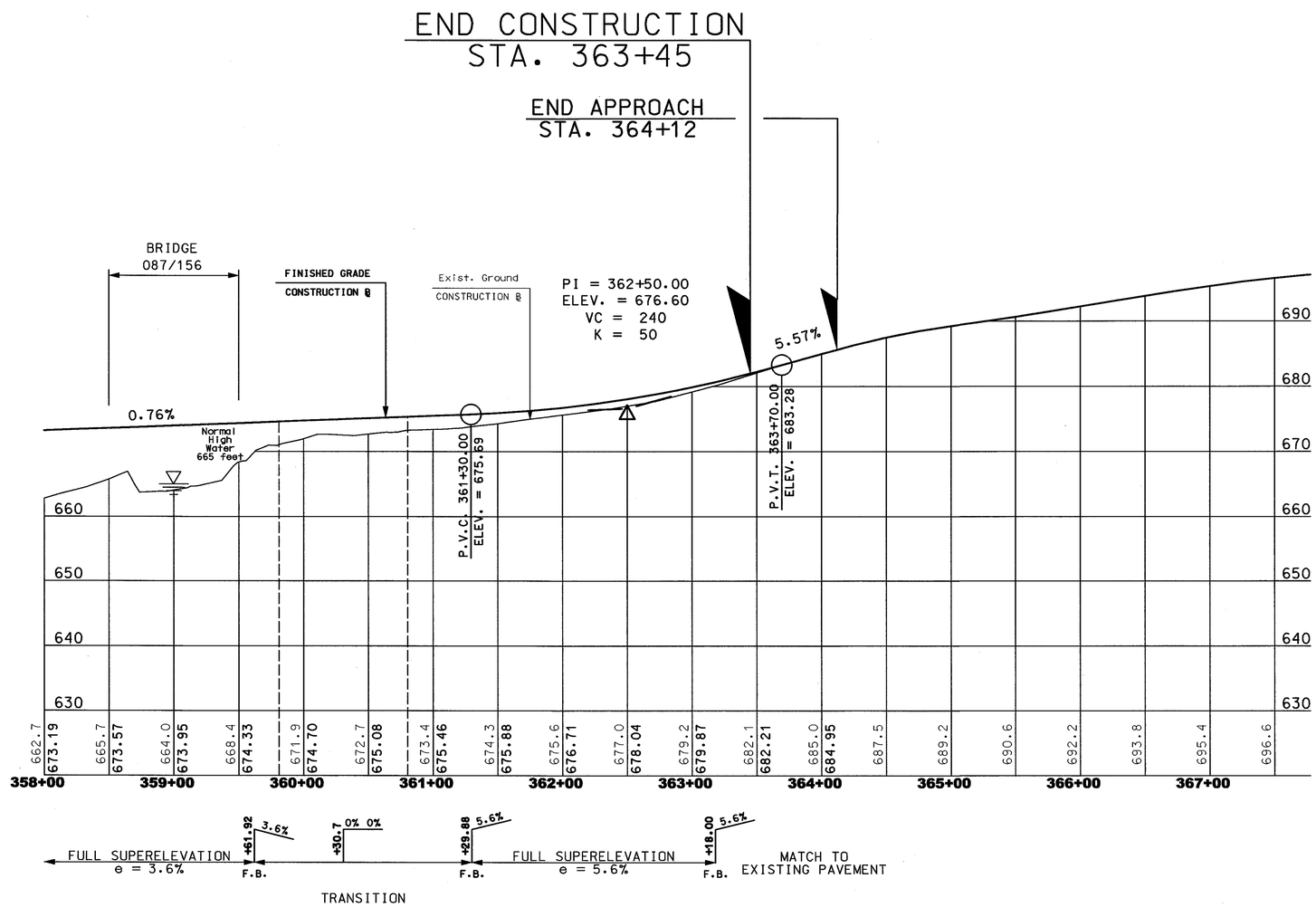

SCALE
HORIZ 1″ = 50′
VERT 1″ = 10′

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PROFILES
NH 123

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jpro_4	14541J	56	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED XX DATE XX
NEW DESIGN DRH/CAC DATE 2006/07
SHEET CHECKED WAC DATE MAY 2007

AS BUILT DETAILS DATE

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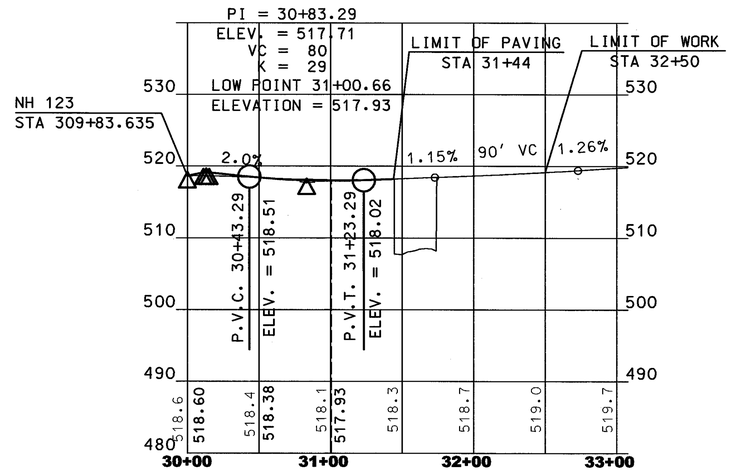
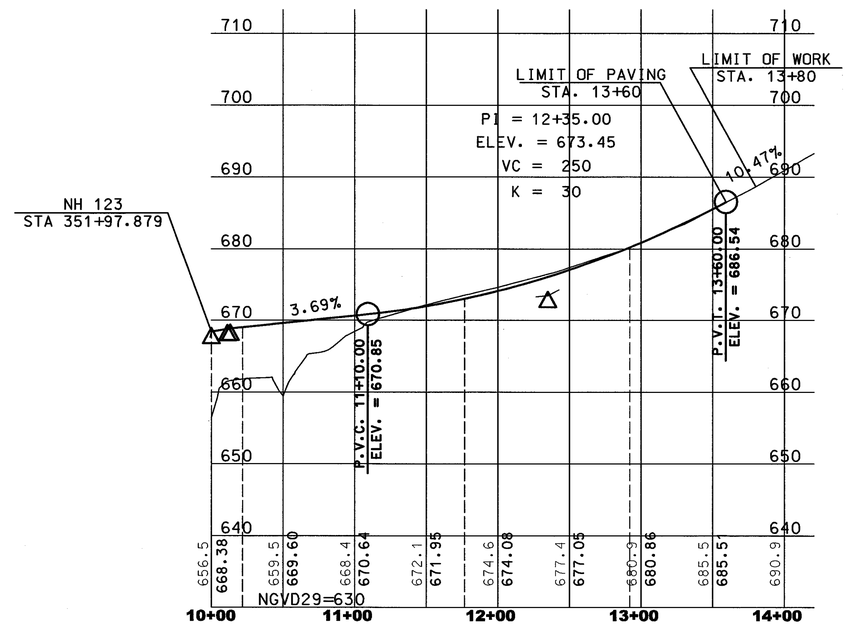
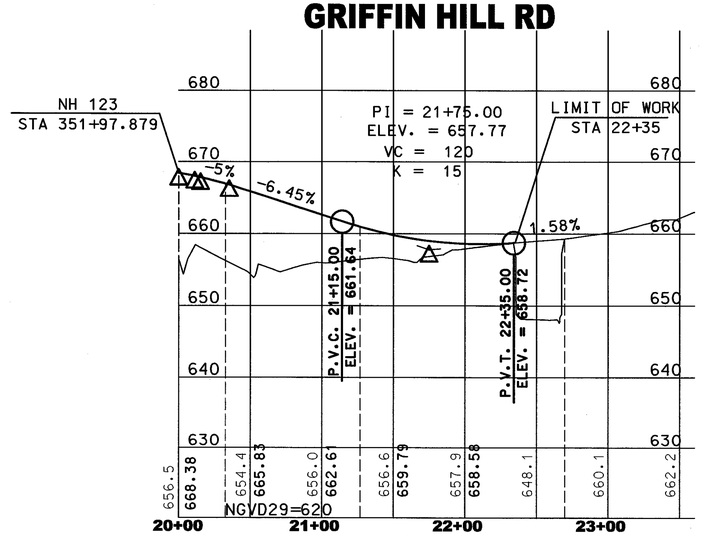
14541J ALSTEAD
NH 123A



14541J ALSTEAD
NH 12A



14541J ALSTEAD
GRIFFIN HILL RD



SCALE
HORIZ 1" = 50'
VERT 1" = 10'

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED XX	DATE XX
NEW DESIGN DRH/CAC	DATE 2006/07
SHEET CHECKED WAC	DATE MAY 2007
AS BUILT DETAILS	DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PROFILES

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jpro_s	14541J	57	156

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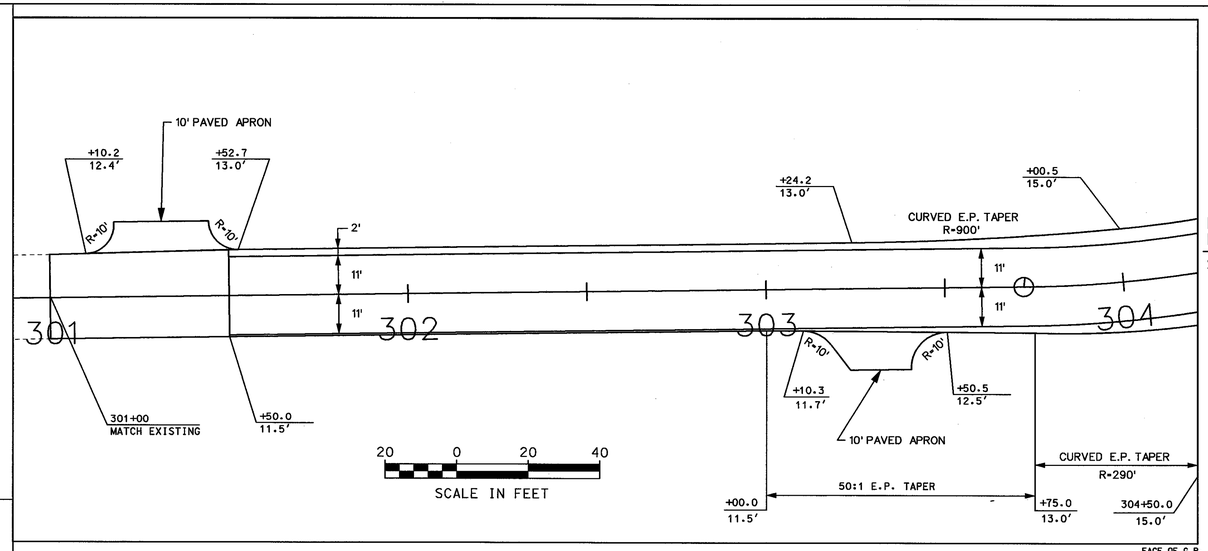

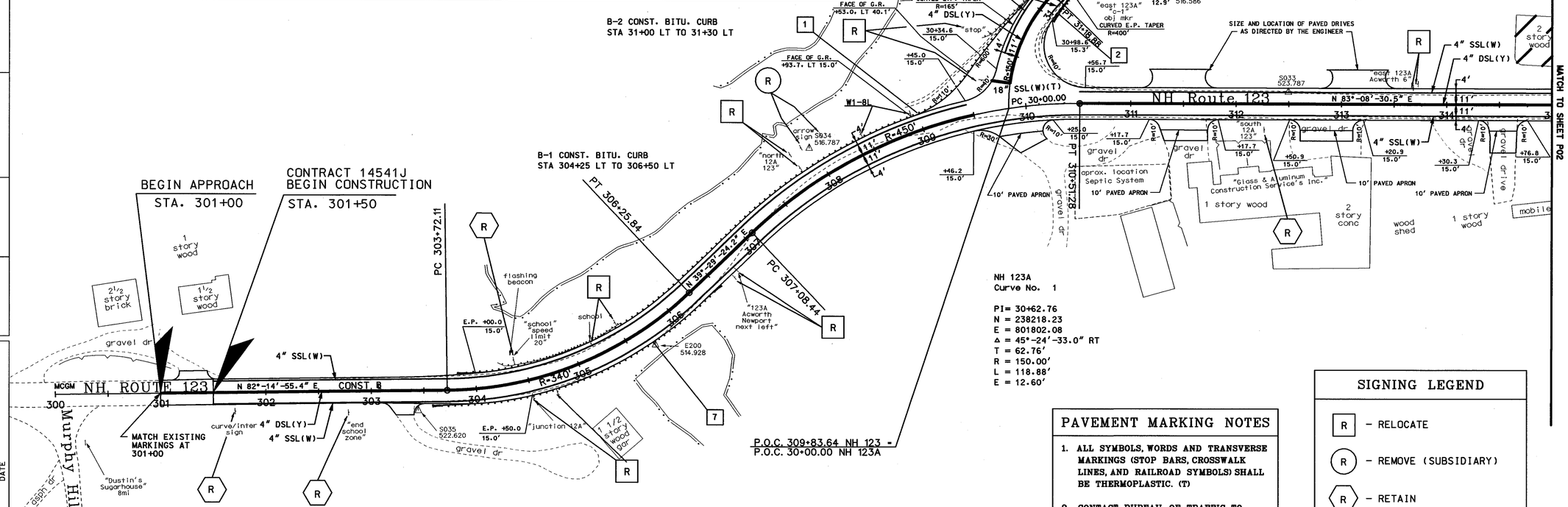

PAVEMENT MARKING NOTES

1. ALL SYMBOLS, WORDS AND TRANSVERSE MARKINGS (STOP BARS, CROSSWALK LINES, AND RAILROAD SYMBOLS) SHALL BE THERMOPLASTIC. (T)
2. CONTACT BUREAU OF TRAFFIC TO REVIEW ALL PASSING ZONES PRIOR TO STRIPING OR INSTALLING W14-3 SIGNS.

SIGNING LEGEND

- R – RELOCATE
- (R) – REMOVE (SUBSIDIARY)
- R – RETAIN
- P – PRIVATE SIGNS (OWNER'S JURISDICTION)

REVISIONS AFTER PROPOSAL			
DESCRIPTION	STATION	STATION	DATE

SDR PROCESSED	CZR	DATE	AUGUST 2006
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DESIGN

PAVEMENT LAYOUT, PERMANENT SIGNING AND MARKING PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jp01	14541J	58	156

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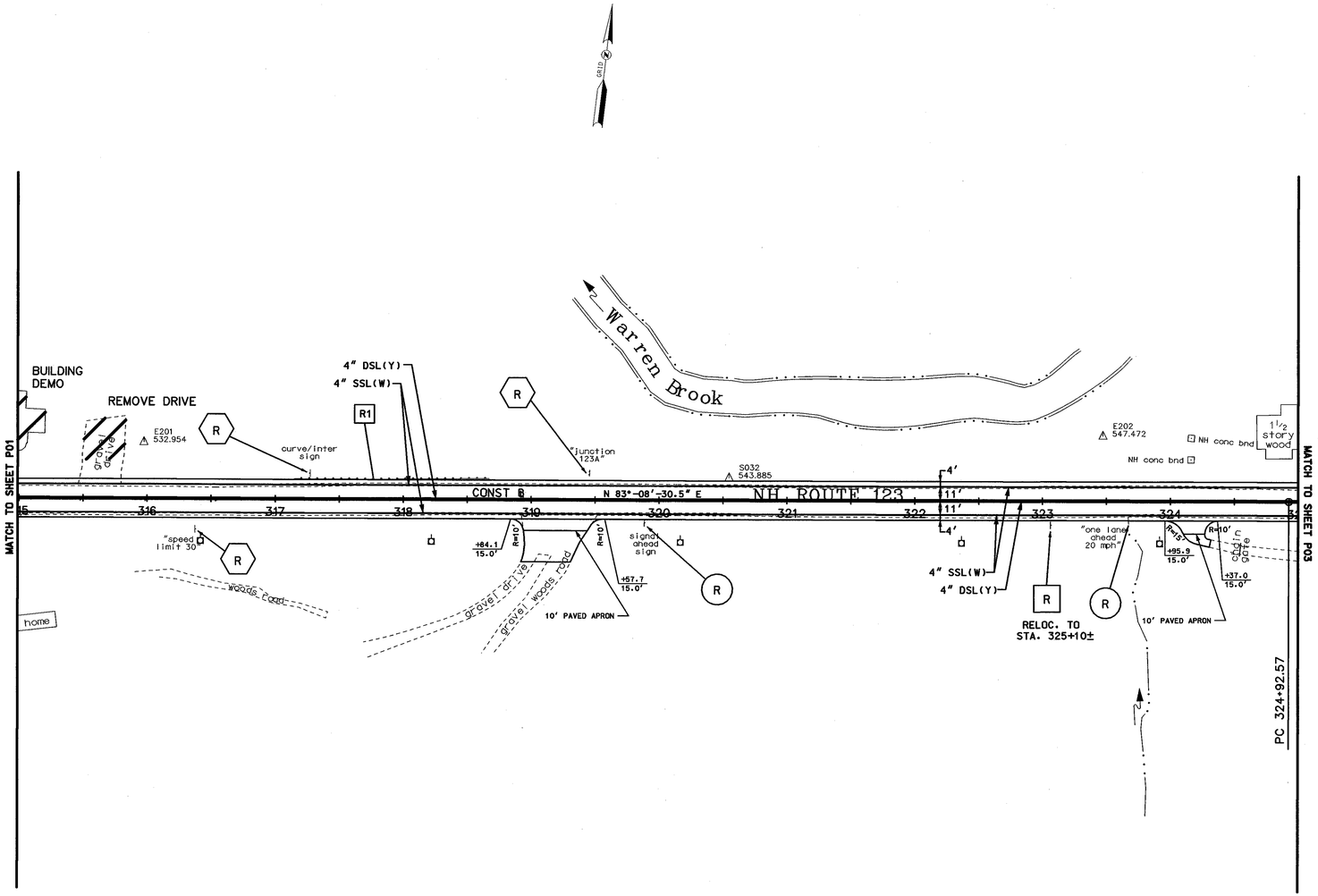


SIGNING LEGEND

- R — RELOCATE
- (R) — REMOVE (SUBSIDIARY)
- ⟨R⟩ — RETAIN
- (P) — PRIVATE SIGNS (OWNER'S JURISDICTION)

50 0 50 100

SCALE IN FEET

REVISIONS AFTER PROPOSAL			
STATION	STATION	DATE	DESCRIPTION

SDR PROCESSED	CZR	DATE	AUGUST 2006
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	

NUMBER	DATE

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PAVEMENT LAYOUT, PERMANENT SIGNING AND MARKING PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jp02	14541J	59	156

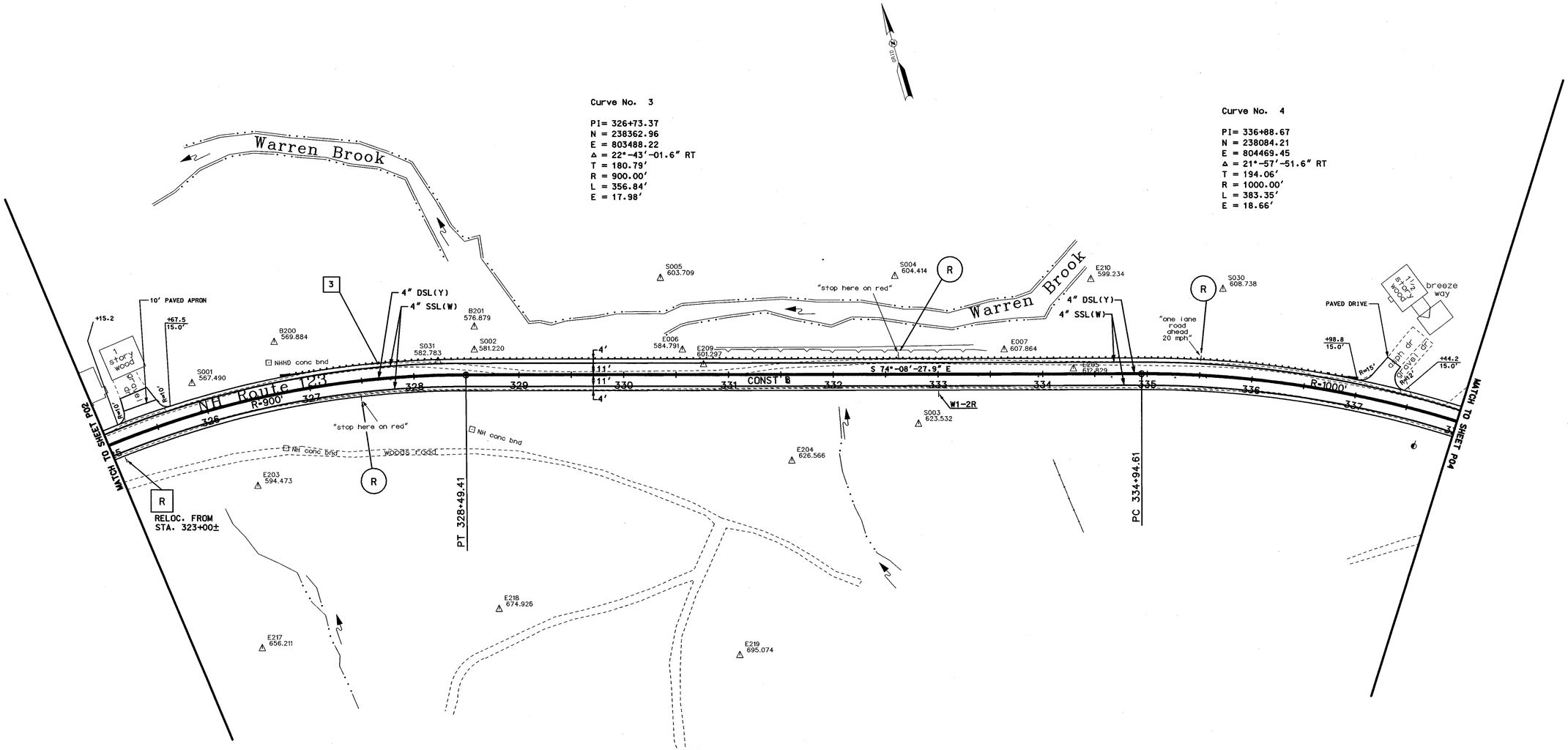
...\Pave Layout\14541Jp02.dgn 05/25/2007 01:24:13 PM n34cnc

Curve No. 3

PI= 326+73.37
N = 238362.96
E = 803488.22
Δ = 22°-43'-01.6" RT
T = 180.79'
R = 900.00'
L = 356.84'
E = 17.98'

Curve No. 4

PI= 336+88.67
N = 238084.21
E = 804469.45
Δ = 21°-57'-51.6" RT
T = 194.06'
R = 1000.00'
L = 383.35'
E = 18.66'



SIGNING LEGEND

- R – RELOCATE
- (R) – REMOVE (SUBSIDIARY)
- (R) – RETAIN
- (P) – PRIVATE SIGNS (OWNER'S JURISDICTION)

50 0 50 100
SCALE IN FEET

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

PAVEMENT LAYOUT, PERMANENT SIGNING AND MARKING PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jp03	14541J	60	156

SDR PROCESSED	CZR	DATE AUGUST 2006
NEW DESIGN	DRH/CAC	DATE 2006/07
SHEET CHECKED	WAC	DATE MAY 2007
AS BUILT DETAILS		DATE

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

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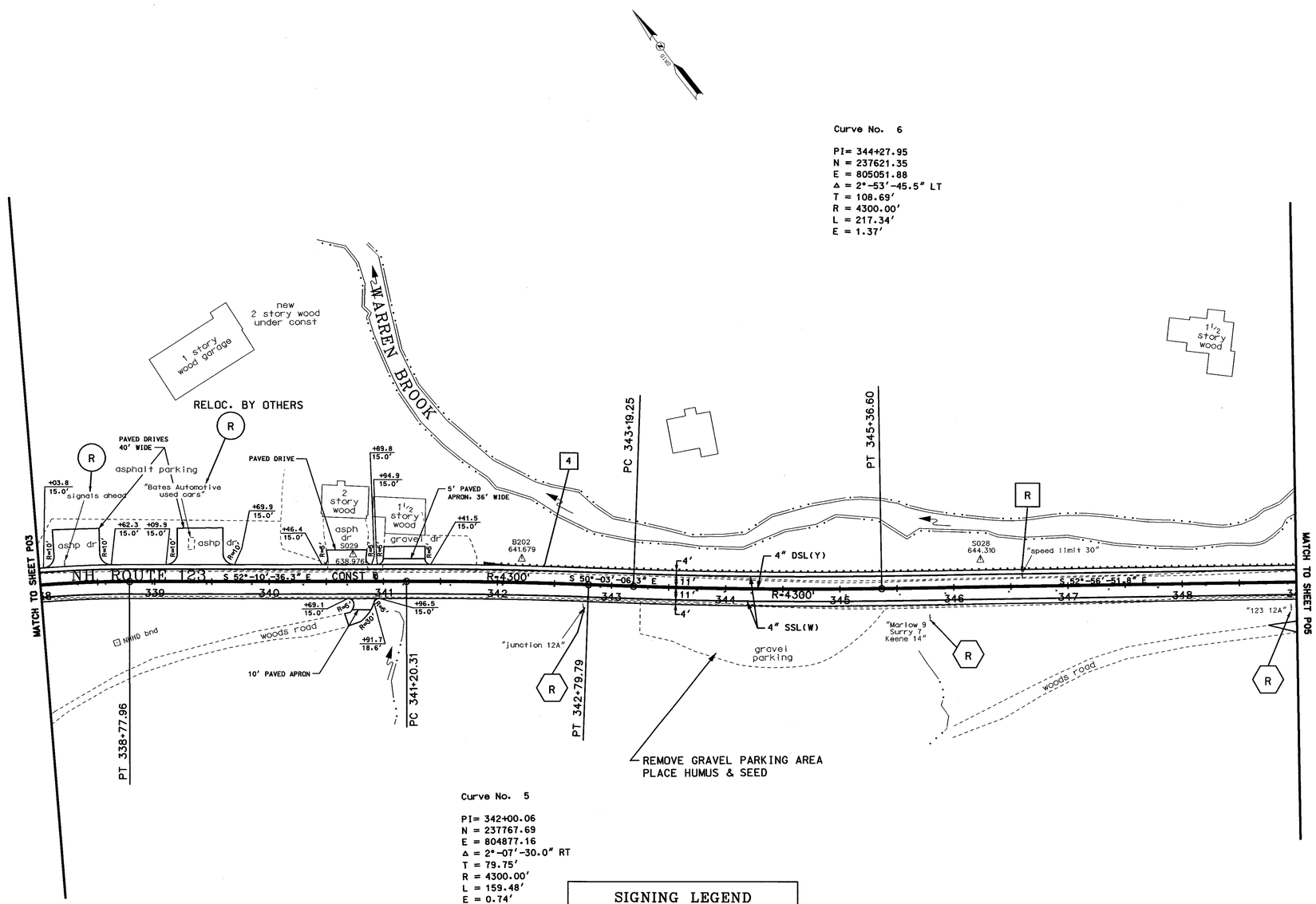
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	CZR	DATE	AUGUST 2006
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	



Curve No. 5

PI= 342+00.06
N = 237767.69
E = 804877.16
Δ = 2°-07'-30.0" RT
T = 79.75'
R = 4300.00'
L = 159.48'
E = 0.74'

SIGNING LEGEND

- R – RELOCATE
- R – REMOVE (SUBSIDIARY)
- R – RETAIN
- P – PRIVATE SIGNS (OWNER'S JURISDICTION)

50 0 50 100
SCALE IN FEET

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PAVEMENT LAYOUT, PERMANENT SIGNING AND MARKING PLANS

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jp04	14541J	61	156

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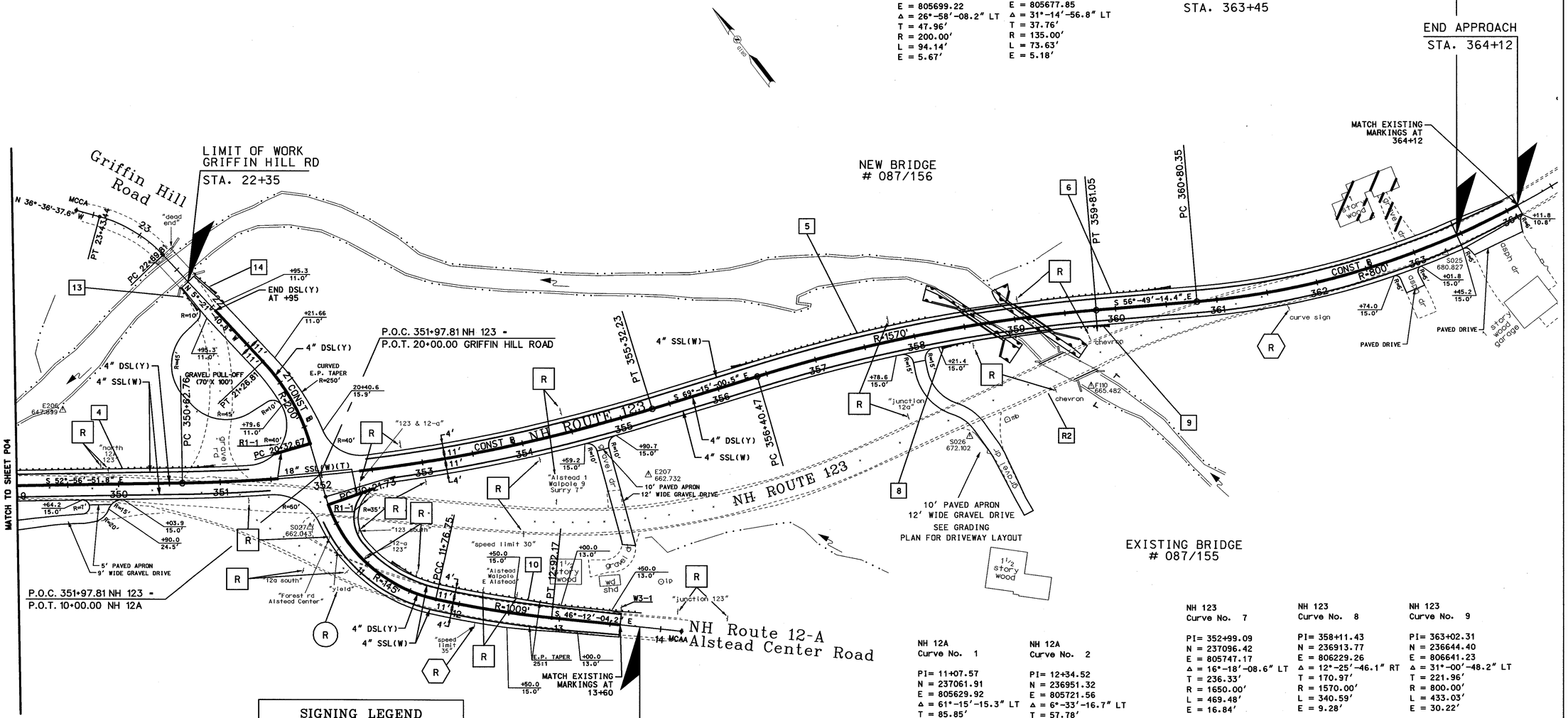
REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	C2R	DATE	AUGUST 2006
NEW DESIGN	DRH/CAC	DATE	2006/07
SHEET CHECKED	WAC	DATE	MAY 2007
AS BUILT DETAILS		DATE	



NH 12A
Curve No. 1

PI= 11+07.57
N = 237061.91
E = 805629.92
Δ = 61°-15'-15.3" LT
T = 85.85'
R = 145.00'
L = 155.02'
E = 23.51'

NH 12A
Curve No. 2

PI= 12+34.52
N = 236951.32
E = 805721.56
Δ = 6°-33'-16.7" LT
T = 57.78'
R = 1009.00'
L = 115.43'
E = 1.65'

NH 123
Curve No. 7

PI= 352+99.09
N = 237096.42
E = 805747.17
Δ = 16°-18'-08.6" LT
T = 236.33'
R = 1650.00'
L = 469.48'
E = 16.84'

NH 123
Curve No. 8

PI= 358+11.43
N = 236913.77
E = 806229.26
Δ = 12°-25'-46.1" RT
T = 170.97'
R = 1570.00'
L = 340.59'
E = 9.28'

NH 123
Curve No. 9

PI= 363+02.31
N = 236644.40
E = 806641.23
Δ = 31°-00'-48.2" LT
T = 221.96'
R = 800.00'
L = 433.03'
E = 30.22'

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

PAVEMENT LAYOUT, PERMANENT SIGNING AND MARKING PLANS

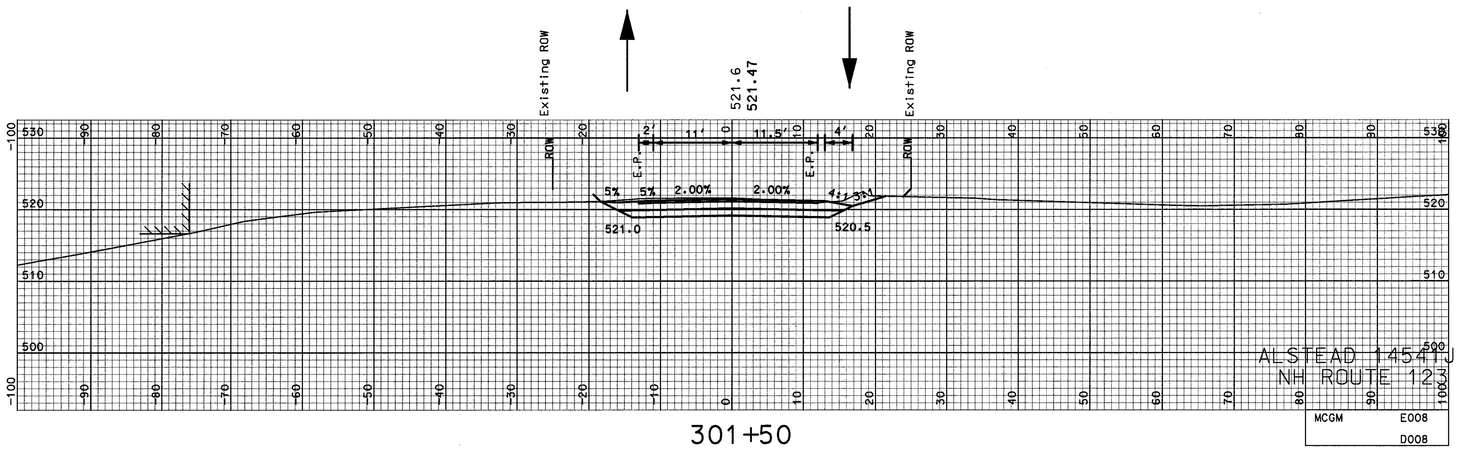
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jp05	14541J	62	156

...\Pave Layout\14541Jp05.dgn 05/25/2007 02:32:09 PM n34cnc

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

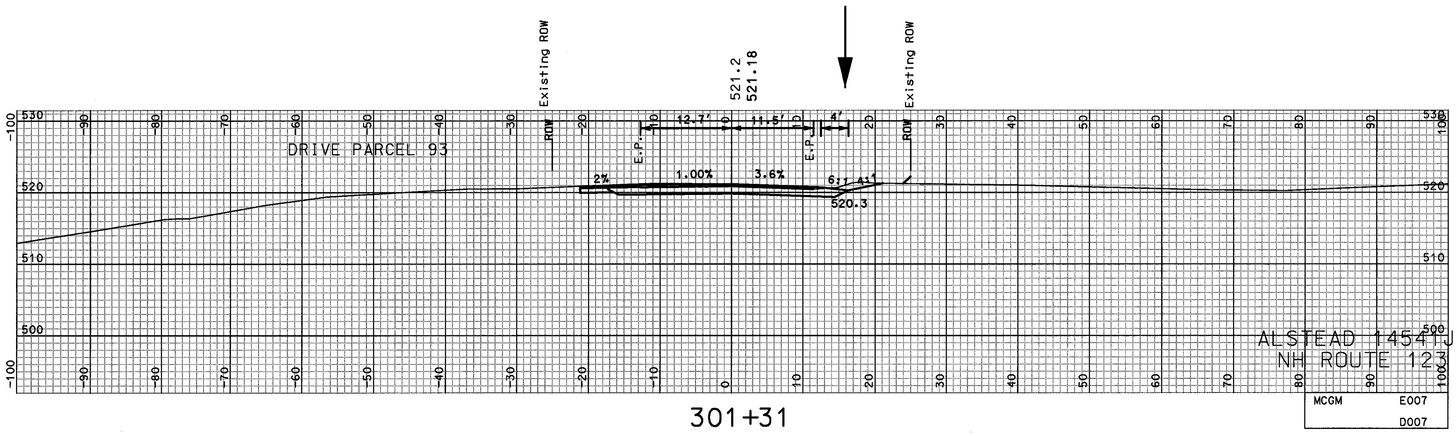
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

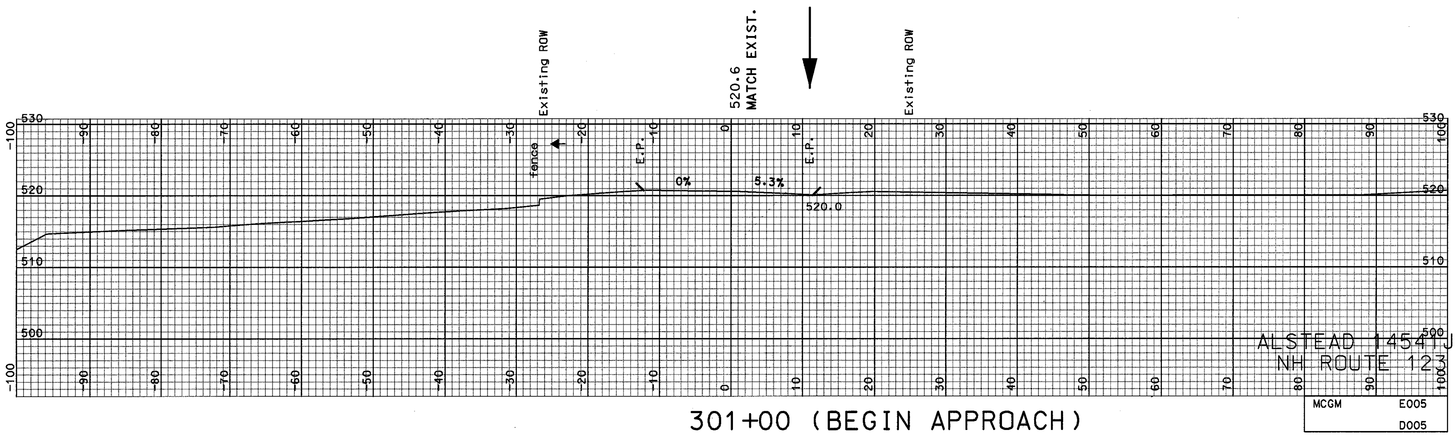


301+50

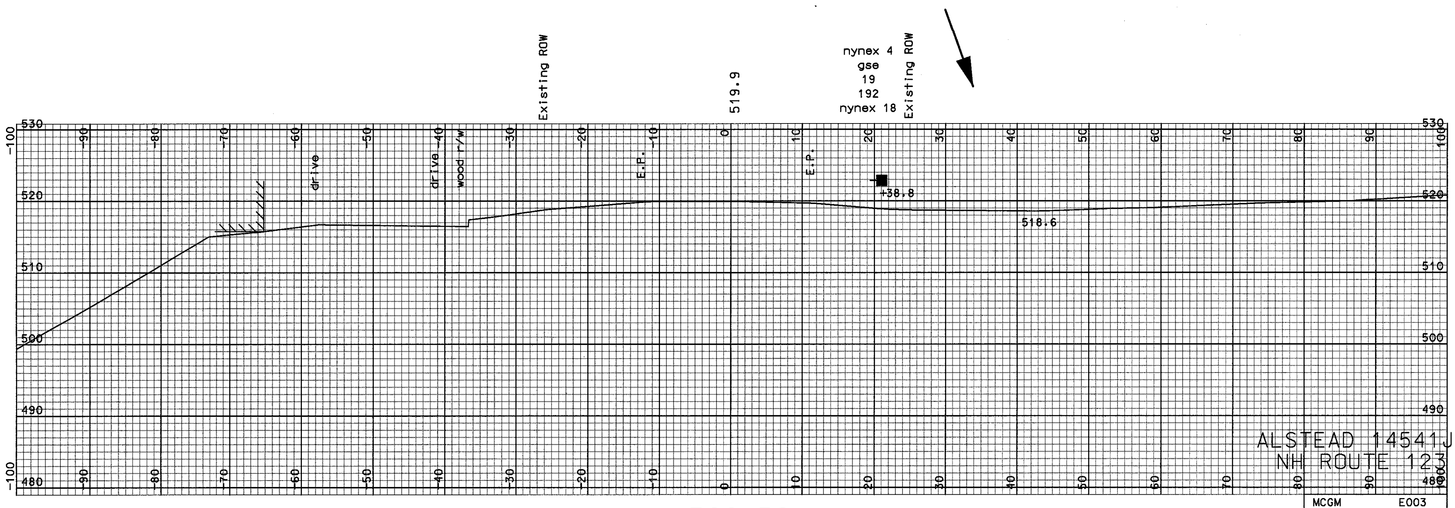
BEGIN CONSTRUCTION STA 301+50



301+31



301+00 (BEGIN APPROACH)



300+50

SHEET TOTALS

COMMON EXCAV. 222.0 C.Y. ROCK EXCAV. – C.Y.

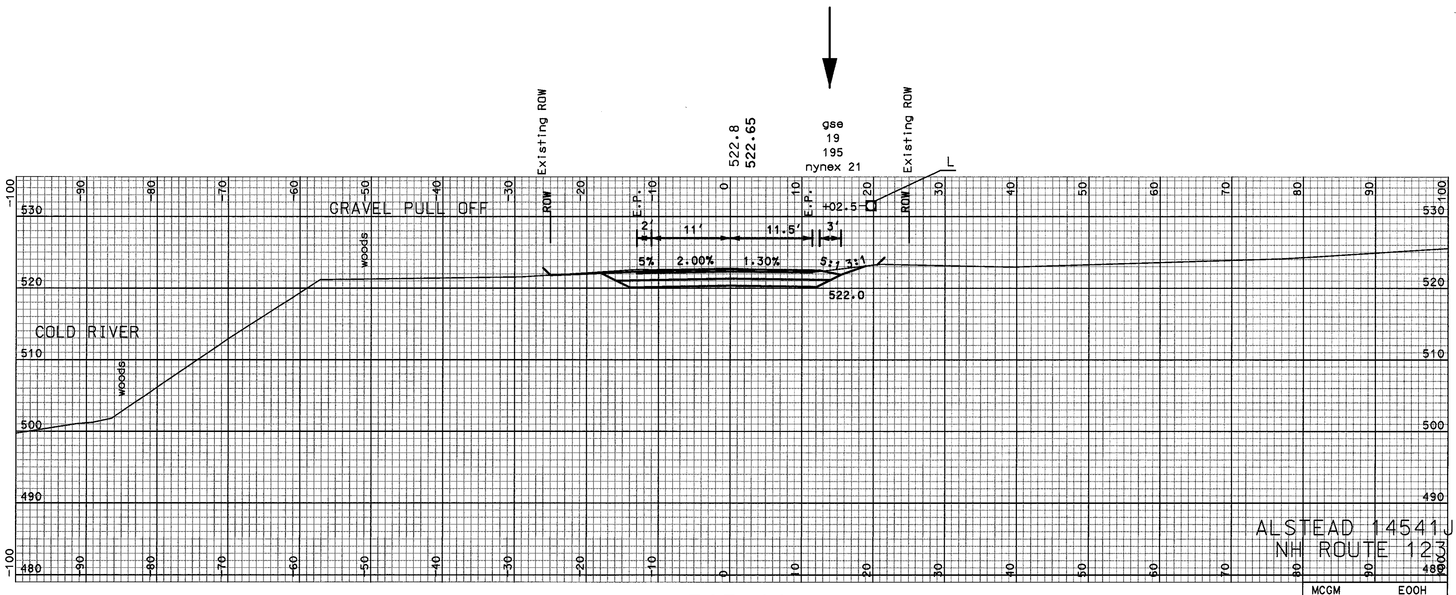
FILL – C.Y. MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	63	156

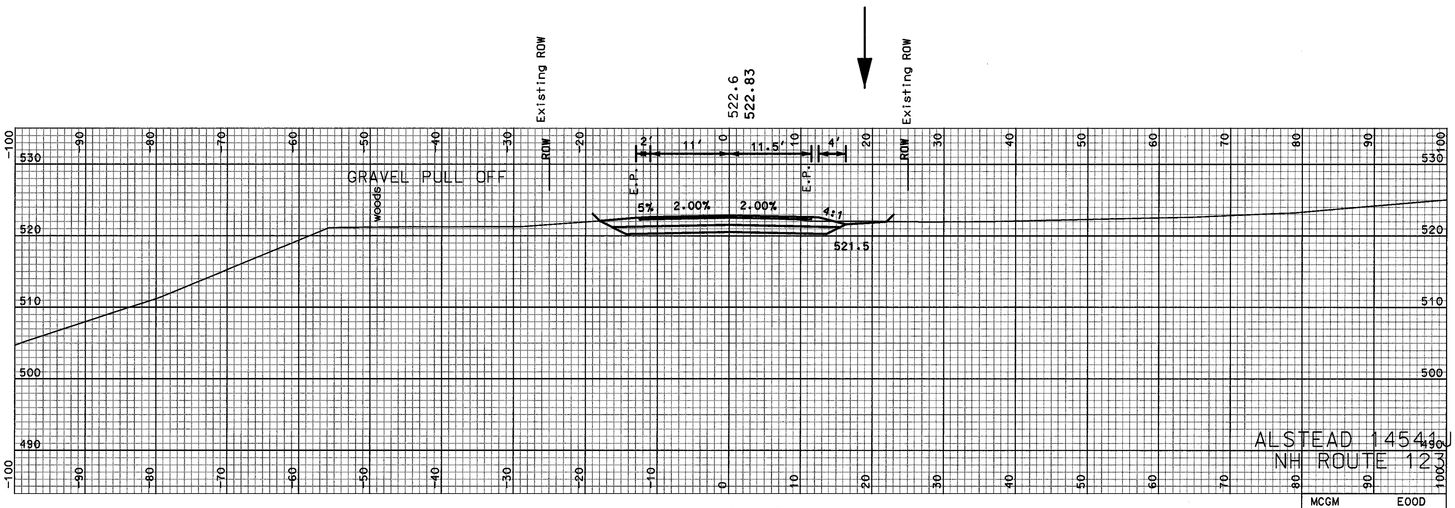
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

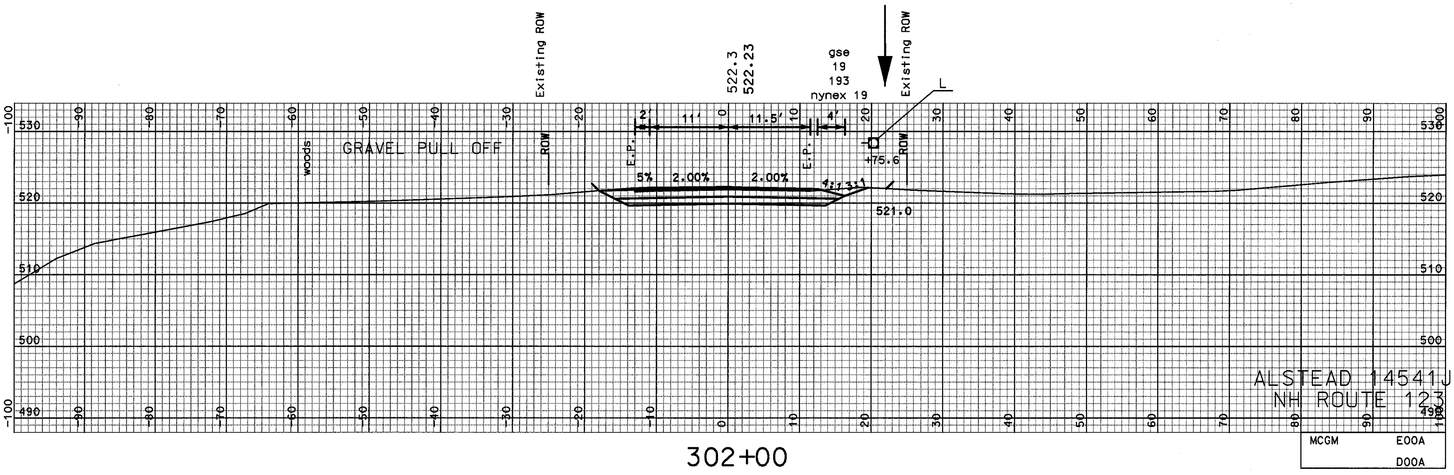
NUMBER	DATE	STATION	STATION	DESCRIPTION



303+00



302+50



302+00

SHEET TOTALS

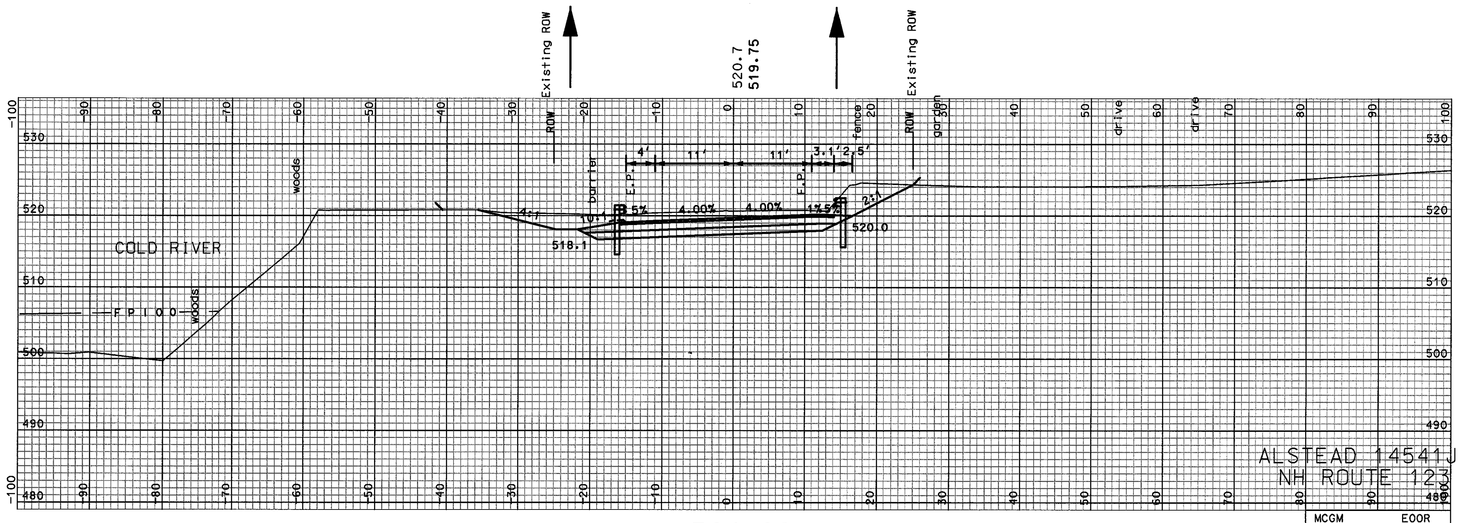
COMMON EXCAV.	339.5 C.Y.	ROCK EXCAV.	– C.Y.
FILL	– C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	64	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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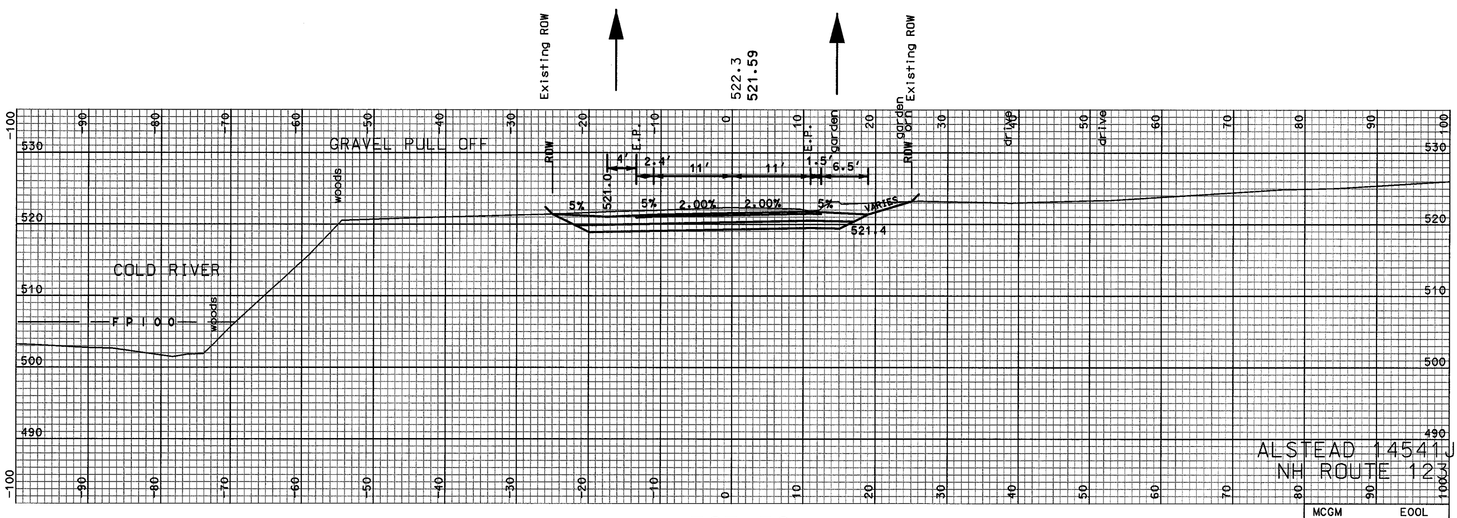
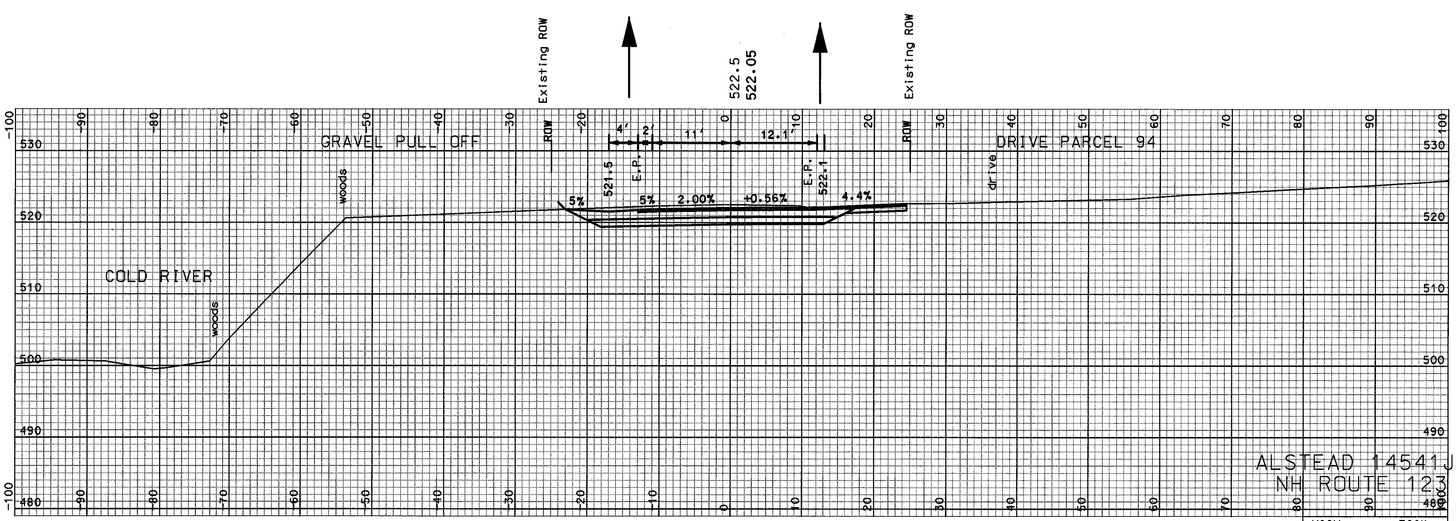


303+50



303+33

SHEET TOTALS			
COMMON EXCAV. 603.3 C.Y.		ROCK EXCAV. – C.Y.	
FILL – C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	65	156

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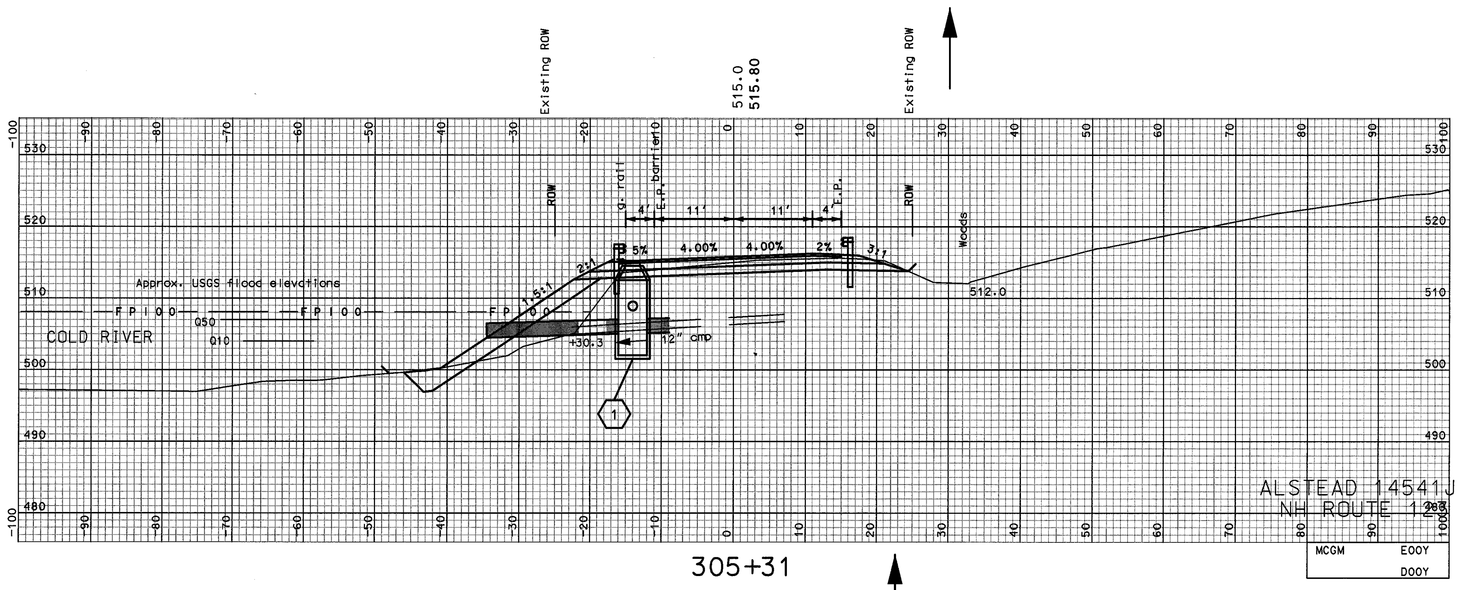
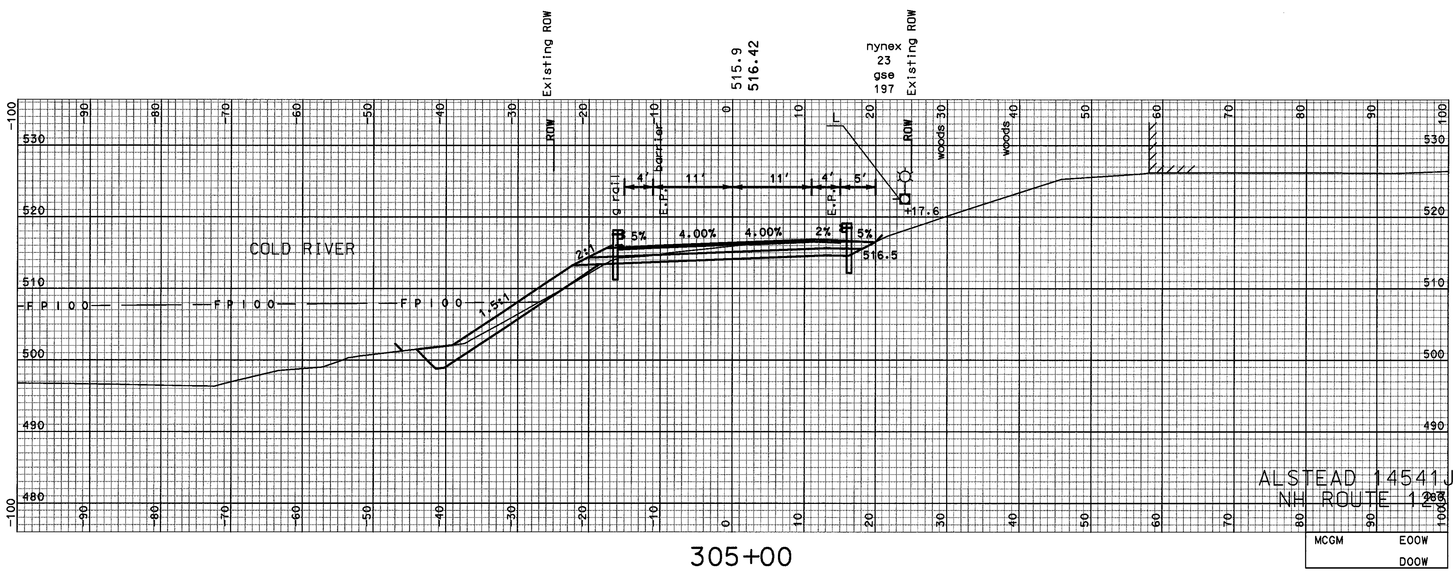
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

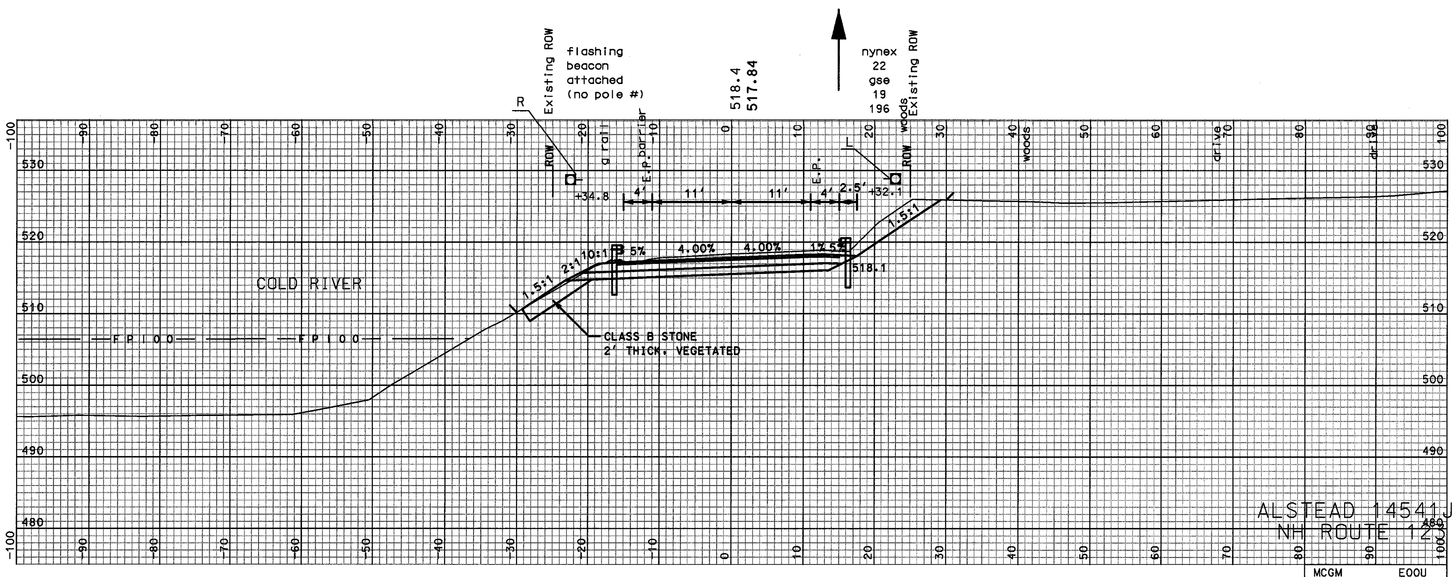
NUMBER	DATE	STATION	STATION	DESCRIPTION



305+31



305+00



304+50

SHEET TOTALS

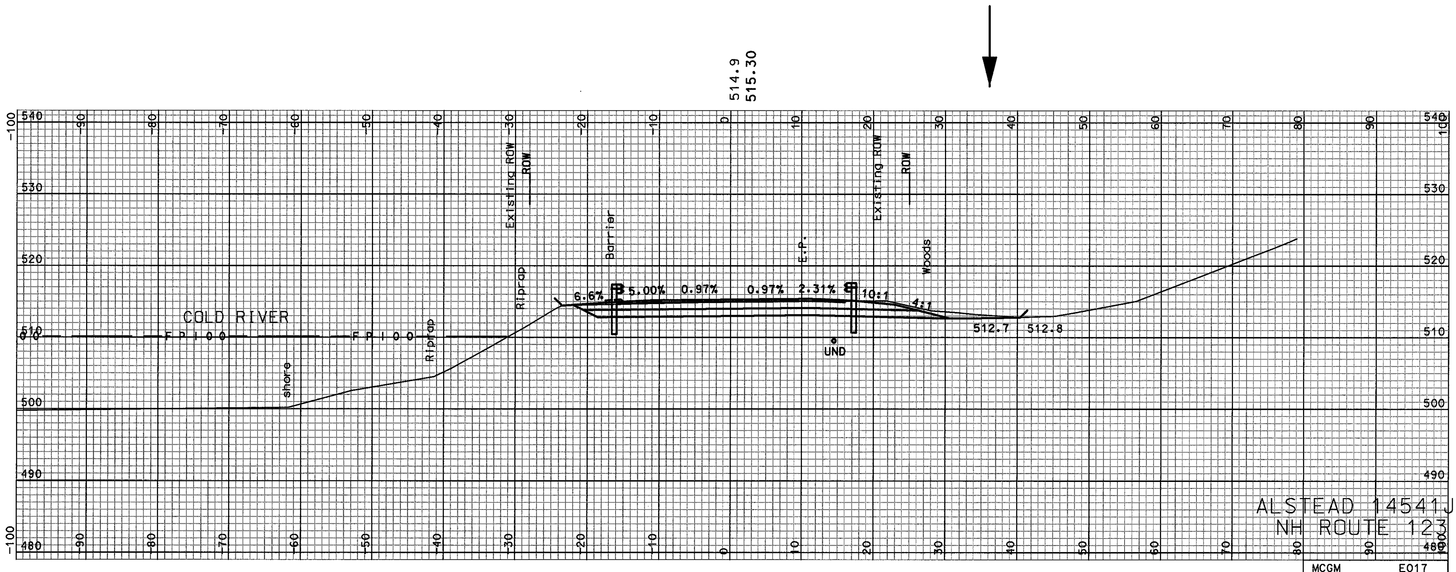
COMMON EXCAV.	343.5 C.Y.	ROCK EXCAV.	- C.Y.
FILL	52.1 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	66	156

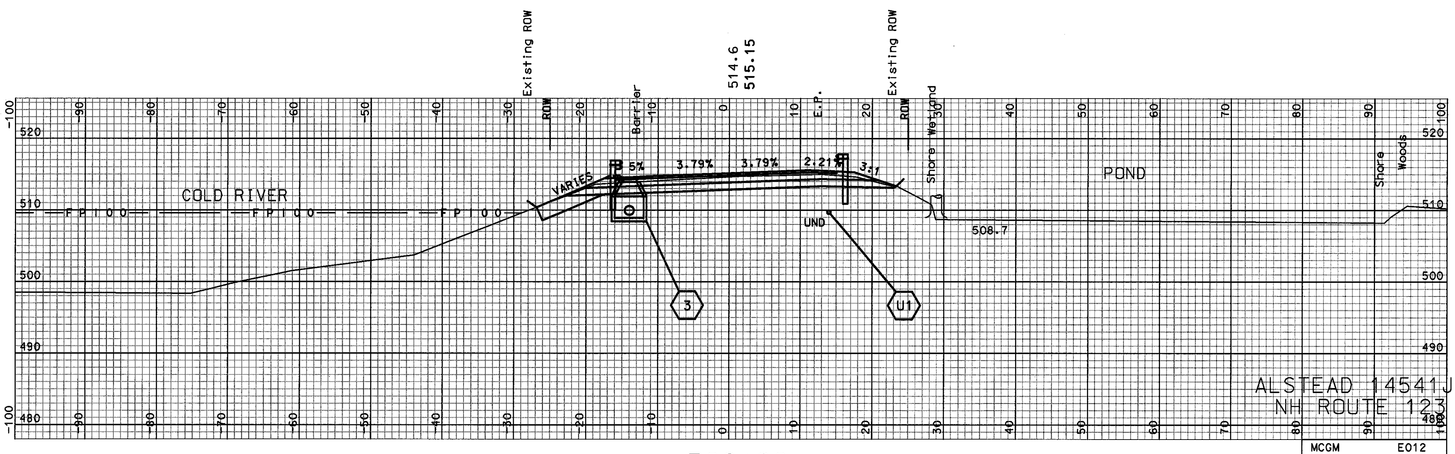
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

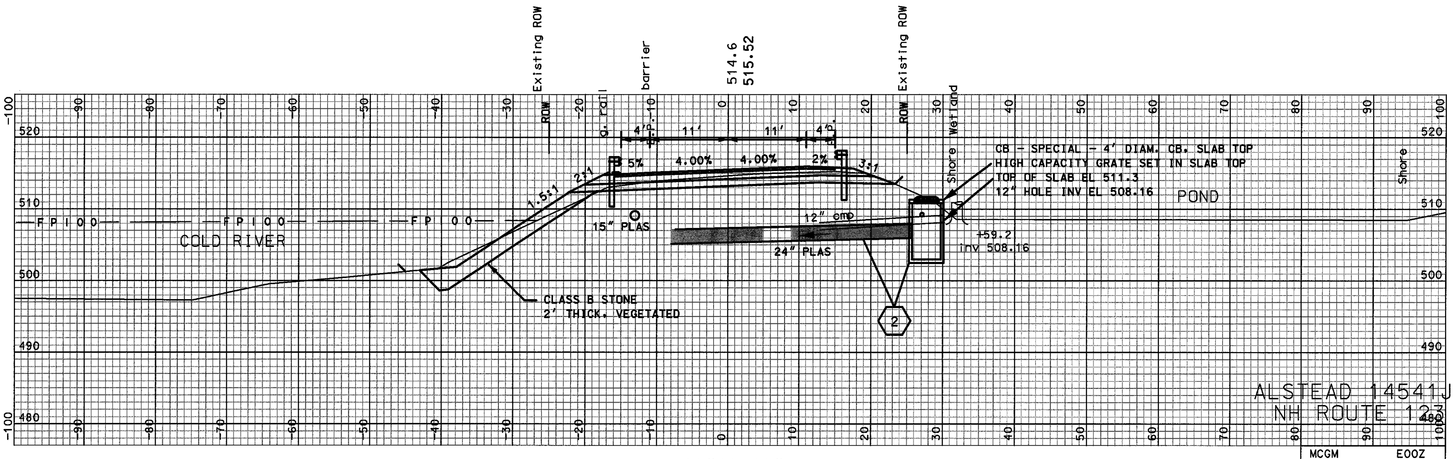
NUMBER	DATE	STATION	STATION	DESCRIPTION



306+50



306+00



305+50

SHEET TOTALS			
COMMON EXCAV. 409.1 C.Y.		ROCK EXCAV. – C.Y.	
FILL 0.3 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	67	156

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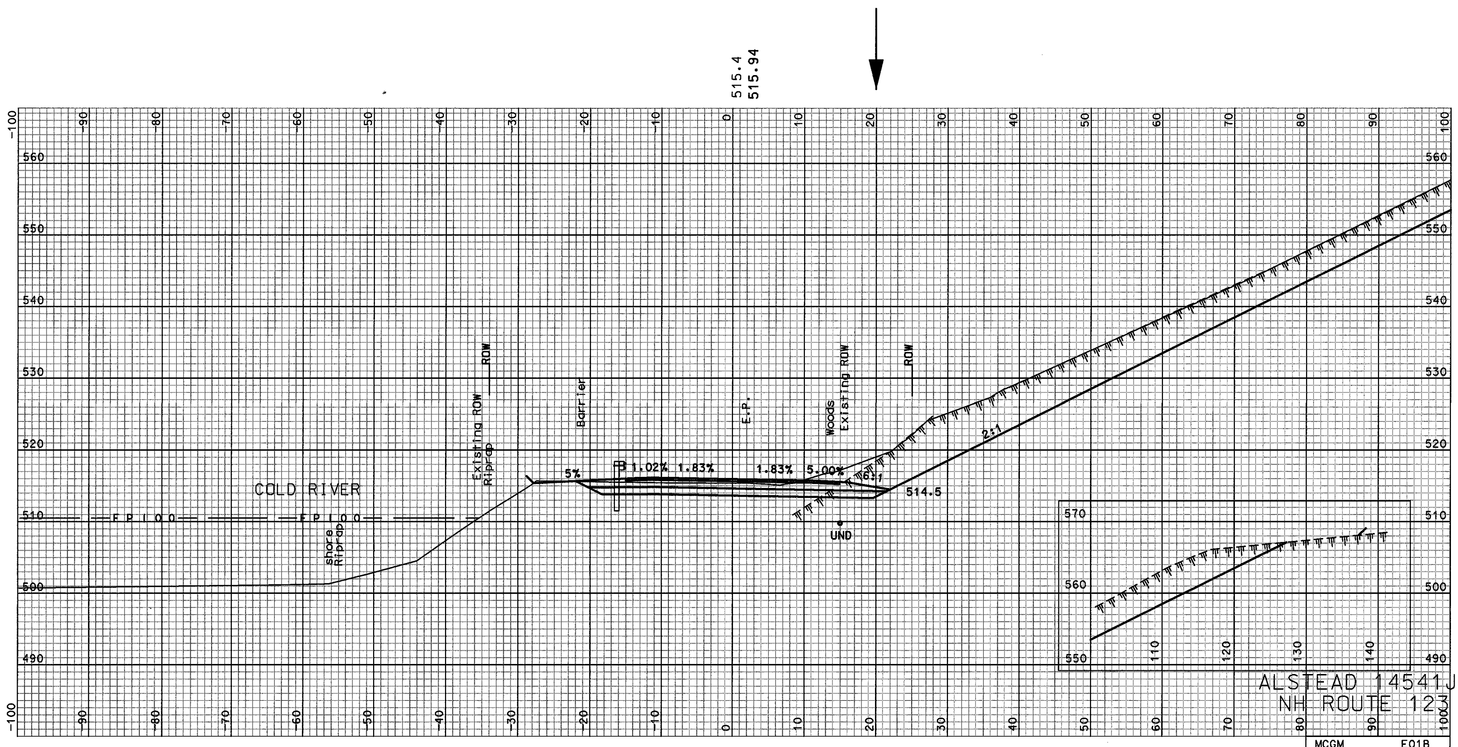
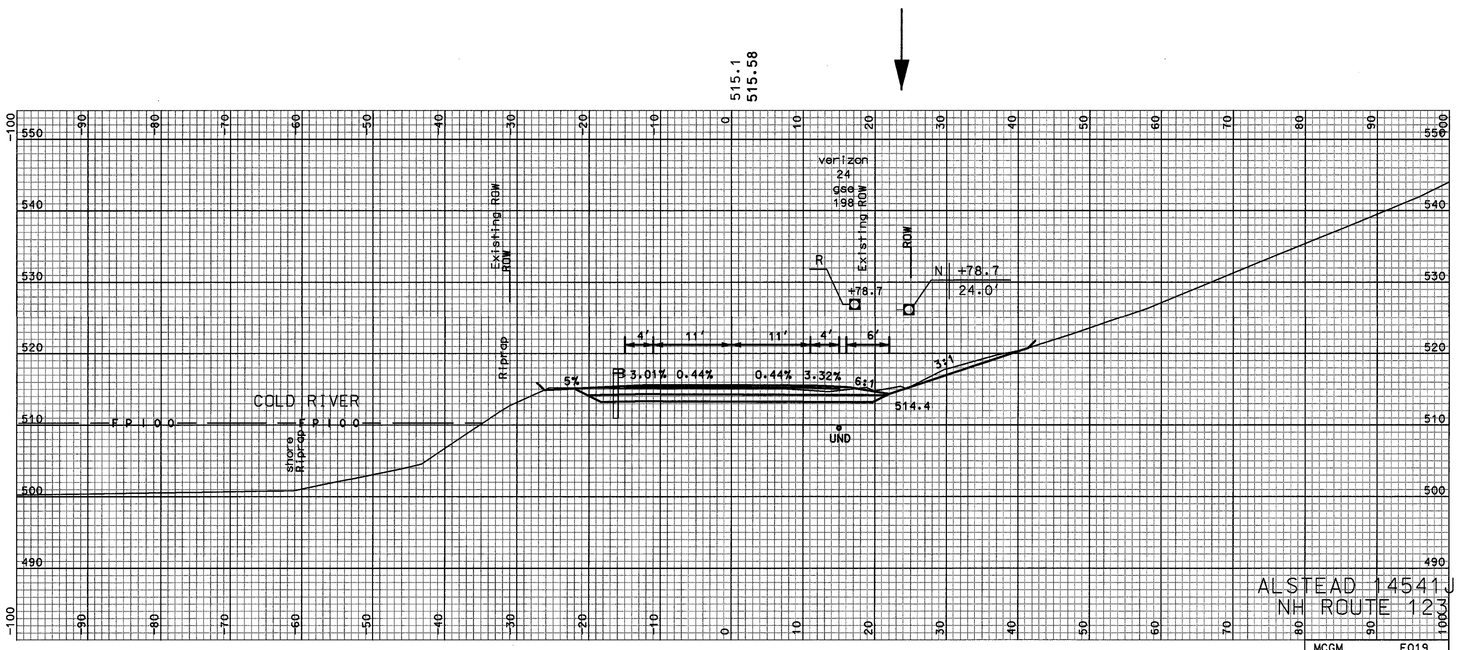
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



307+00



306+75

SHEET TOTALS

COMMON EXCAV.	313.1 C.Y.	ROCK EXCAV.	1204.2 C.Y.
FILL	0.7 C.Y.	MUCK EXCAV.	– C.Y.

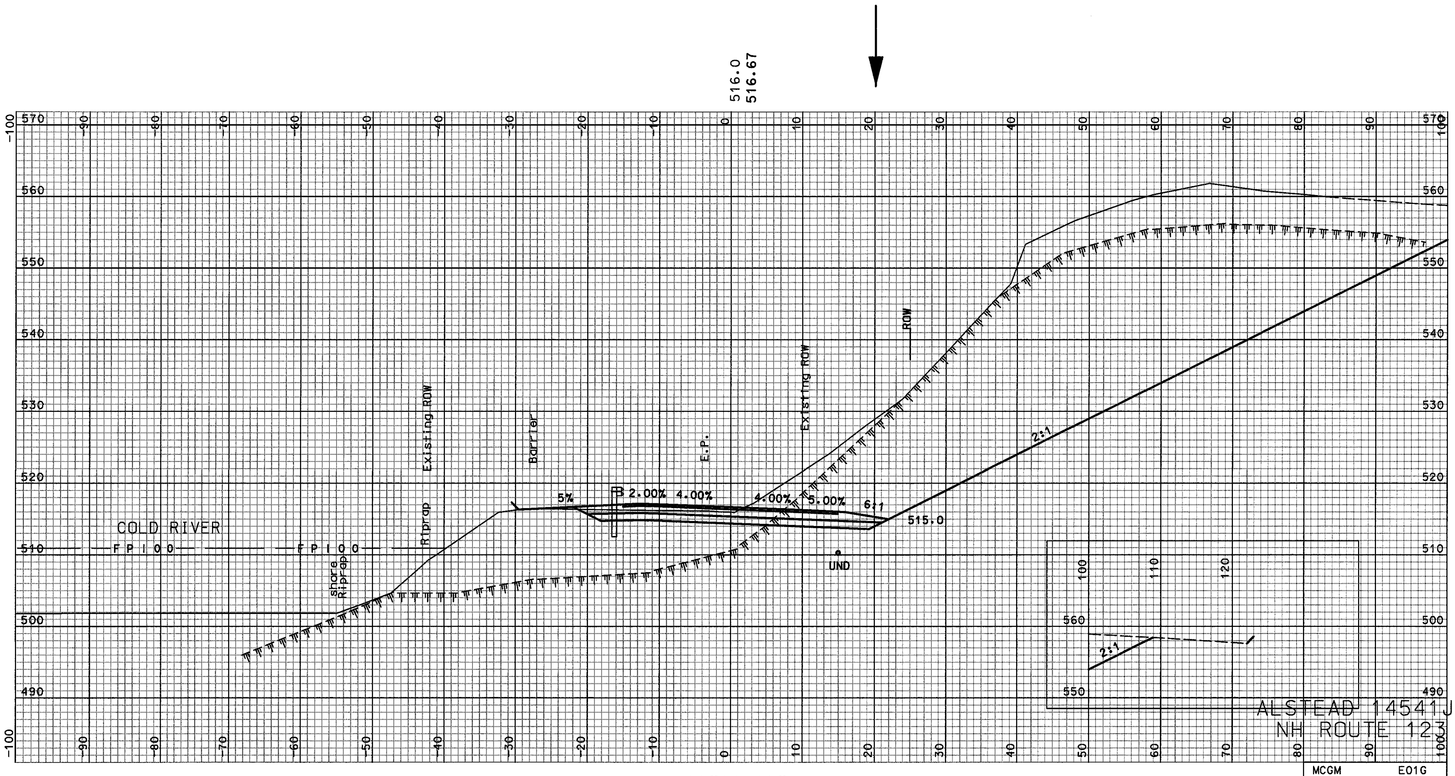
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	68	156

...\14541J\dgn\14541xs_1.dgn 05/24/2007 10:42:53 AM

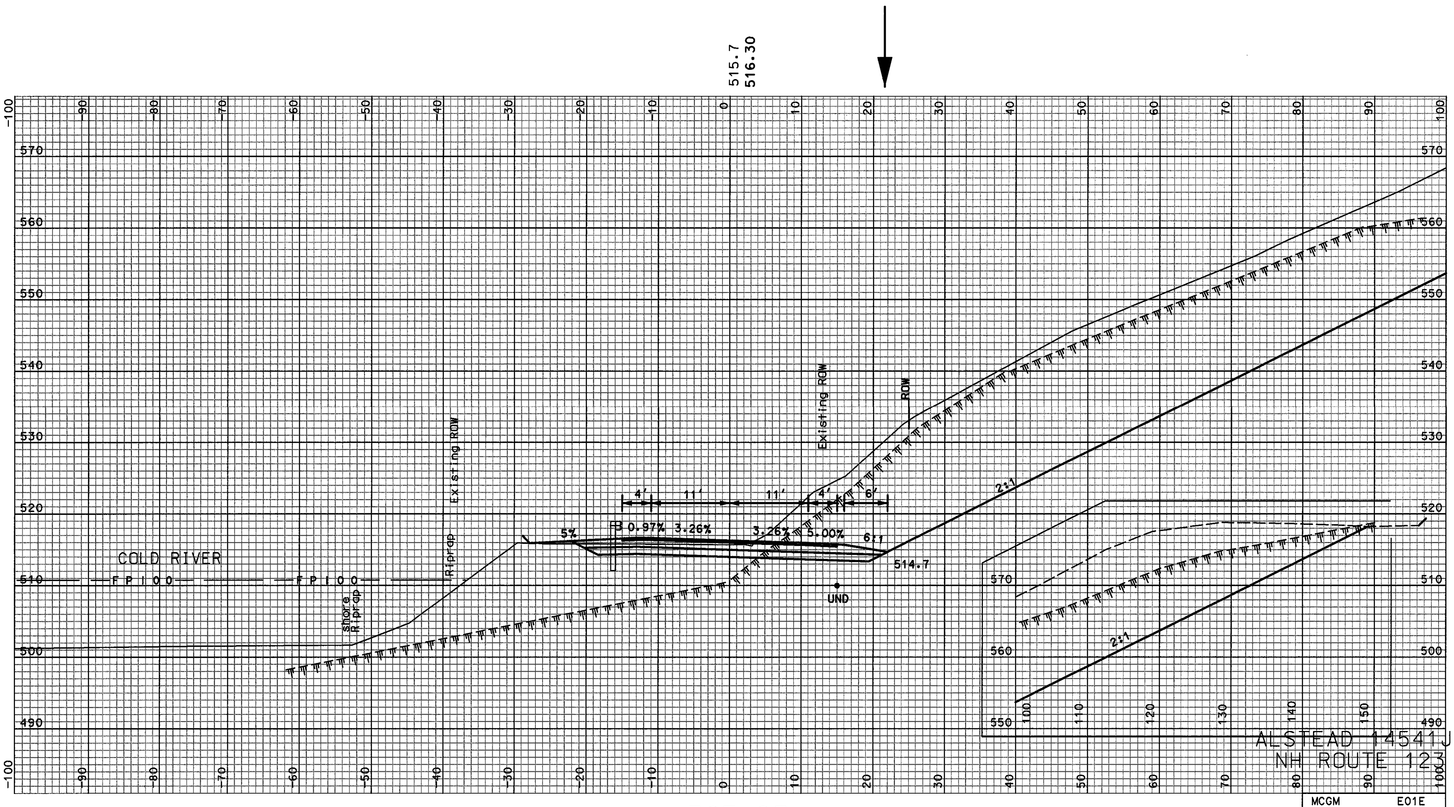
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



307+50



307+25

SHEET TOTALS

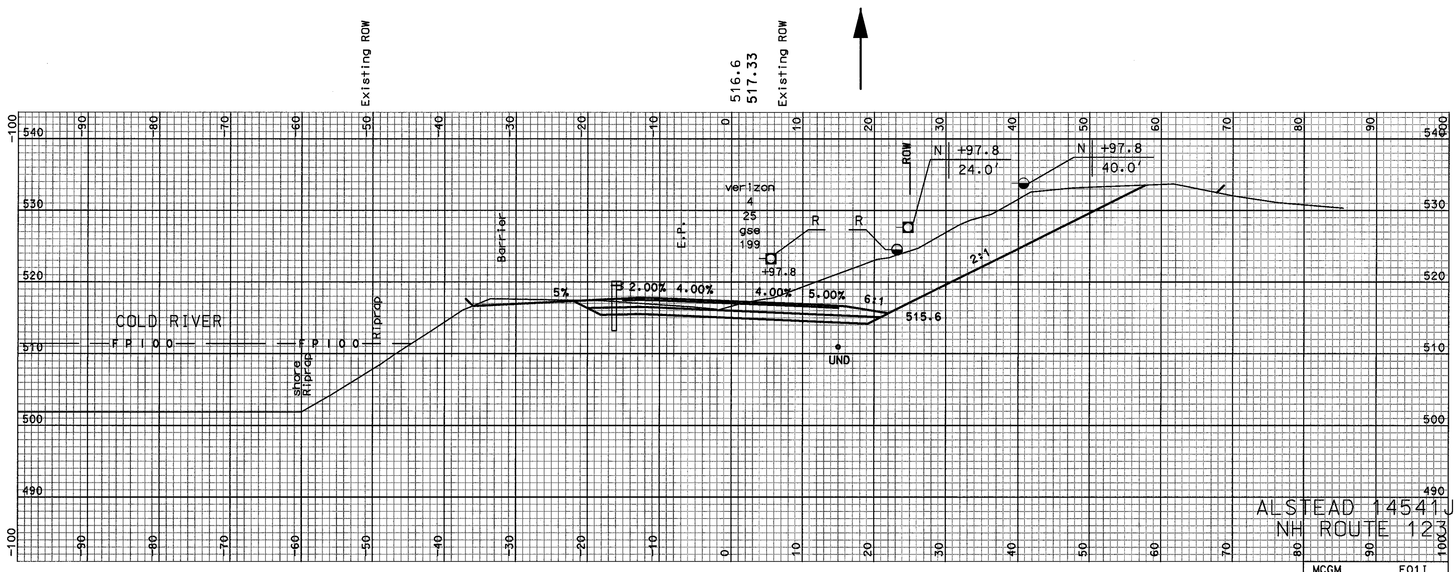
COMMON EXCAV.	681.7 C.Y.	ROCK EXCAV.	2375.1 C.Y.
FILL	1.6 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	69	156

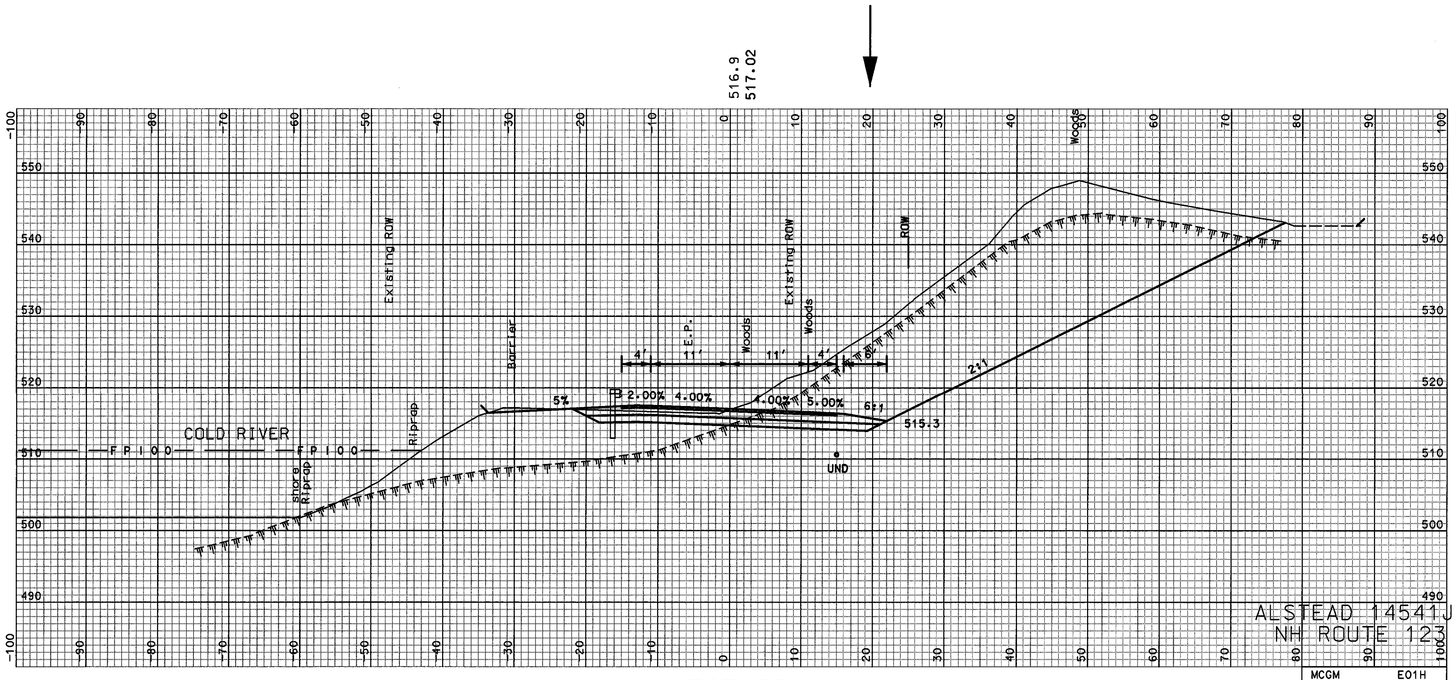
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



308+00



307+75

SHEET TOTALS

COMMON EXCAV.	479.1 C.Y.	ROCK EXCAV.	341.9 C.Y.
FILL	7.9 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	70	156

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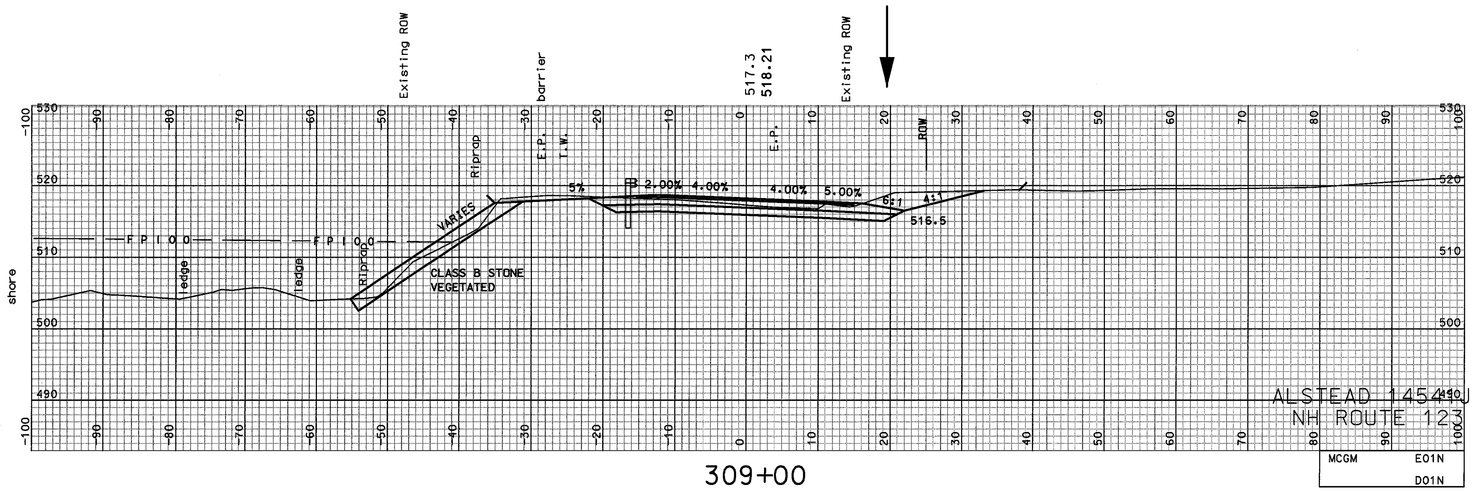
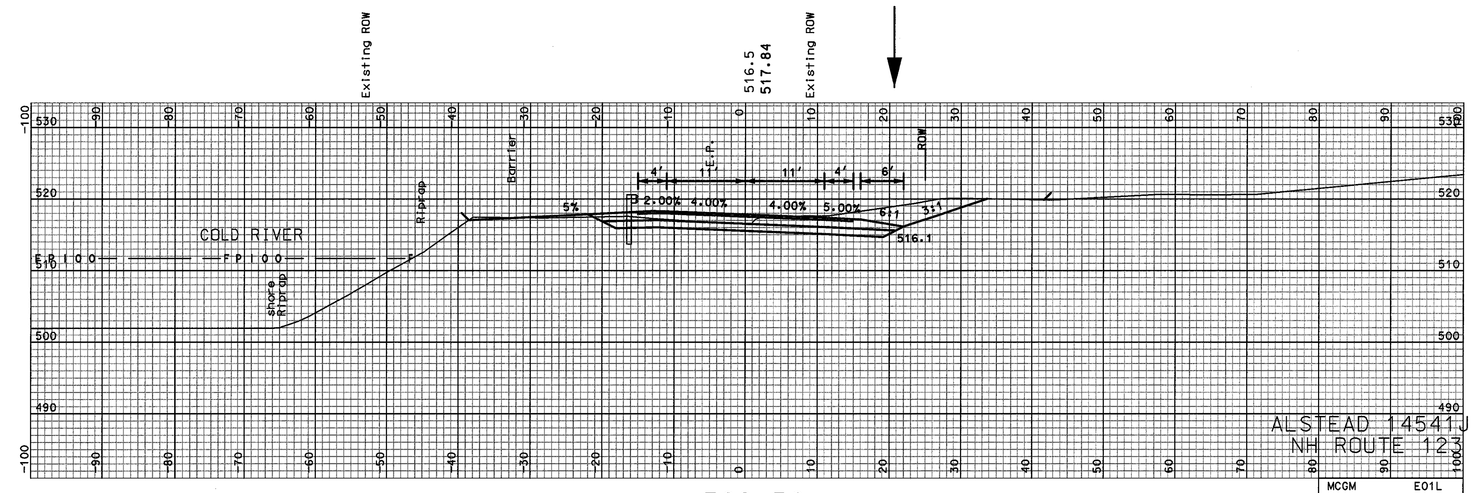
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

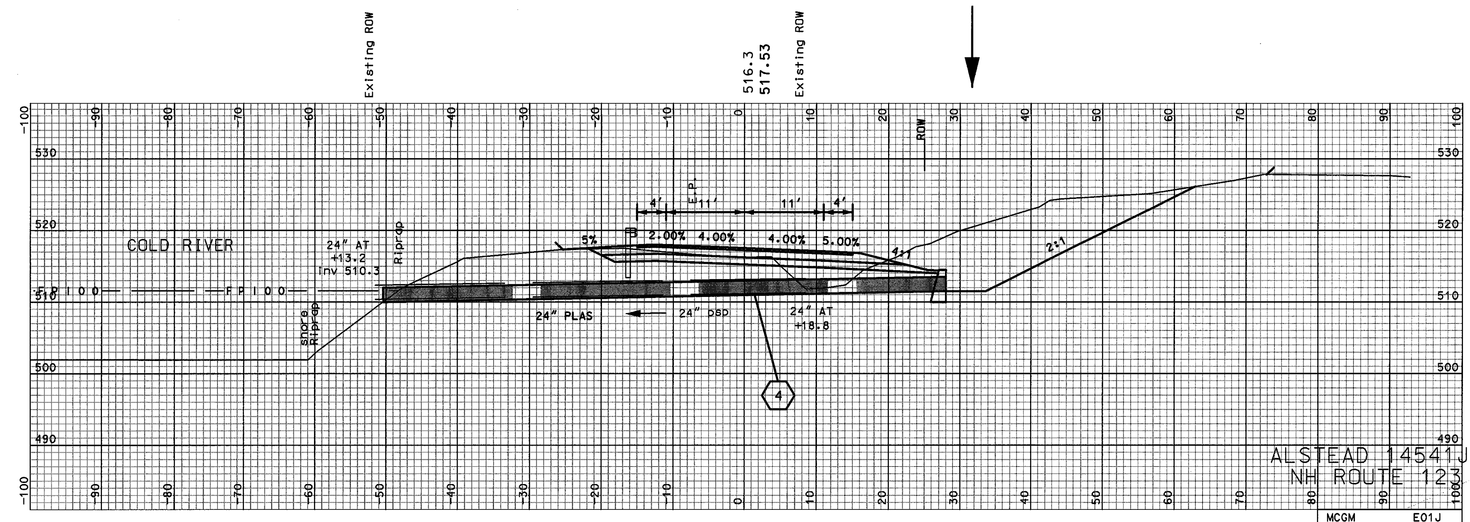
NUMBER	DATE	STATION	STATION	DESCRIPTION



309+00



308+50



308+18

SHEET TOTALS

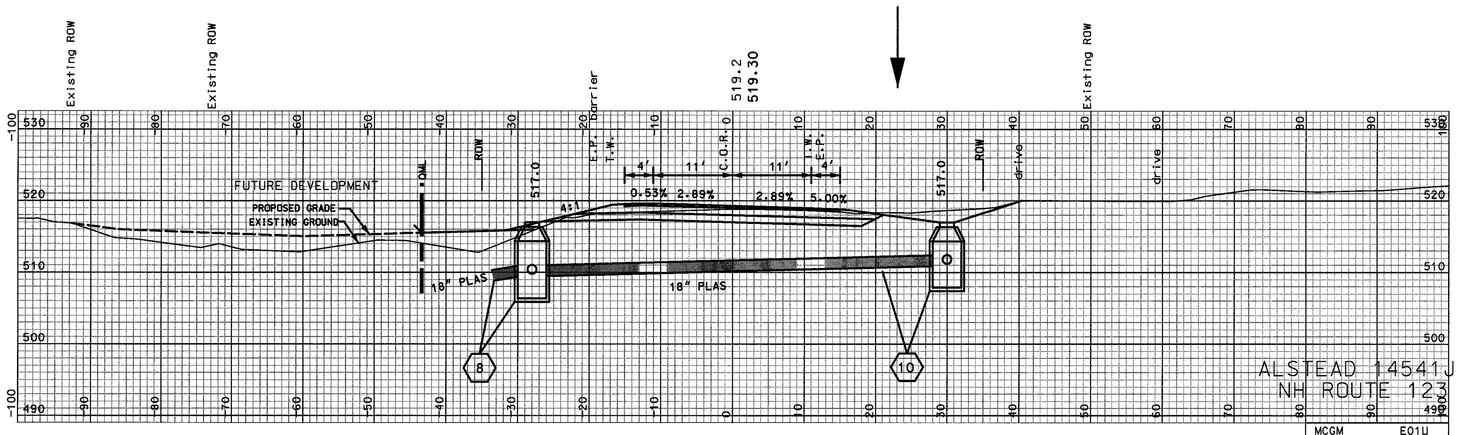
COMMON EXCAV.	636.9 C.Y.	ROCK EXCAV.	- C.Y.
FILL	15.5 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	71	156

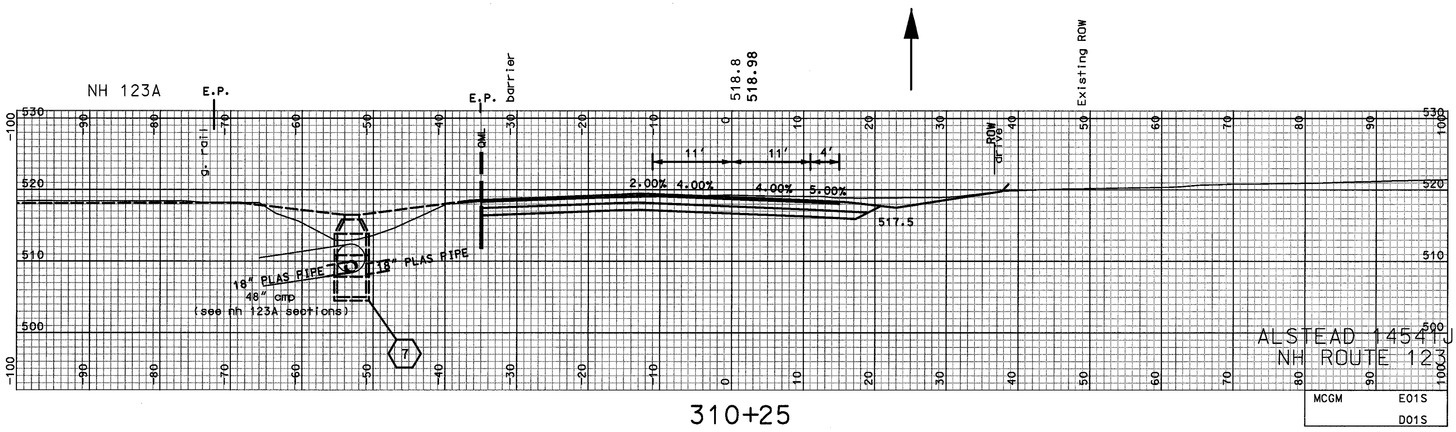
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

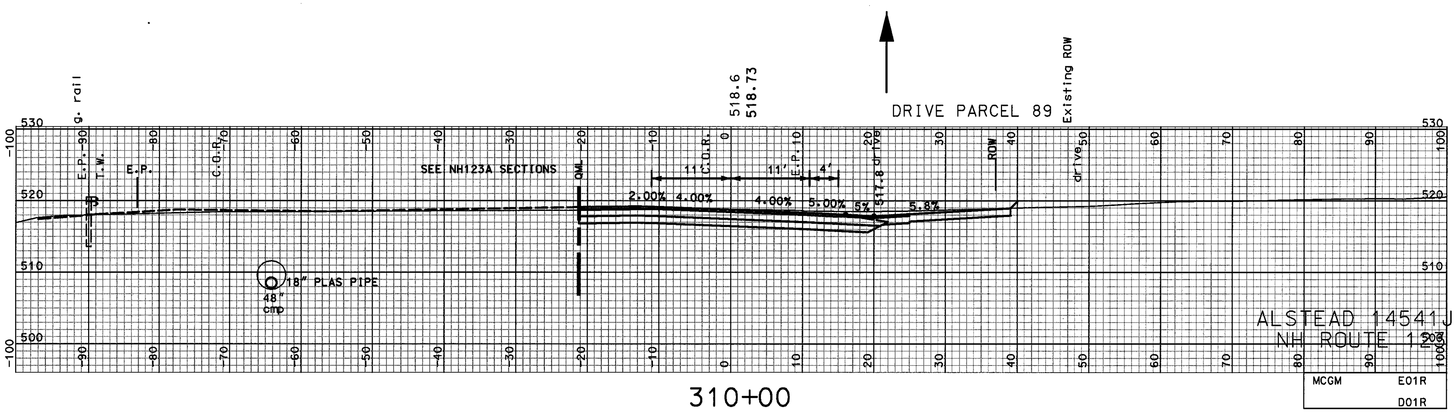
NUMBER	DATE	STATION	STATION	DESCRIPTION



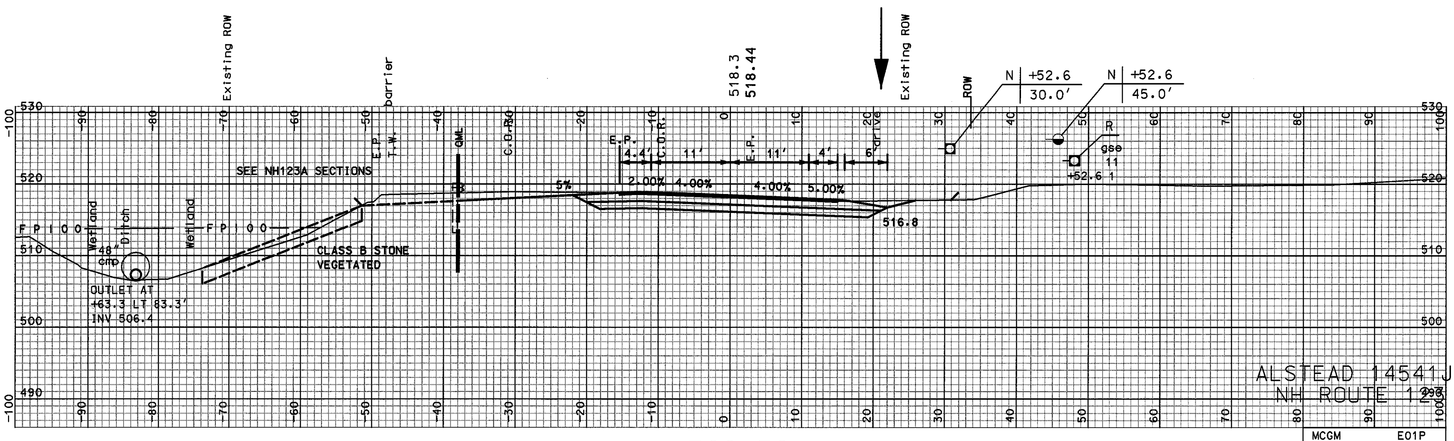
310+50



310+25



310+00



309+50

SHEET TOTALS

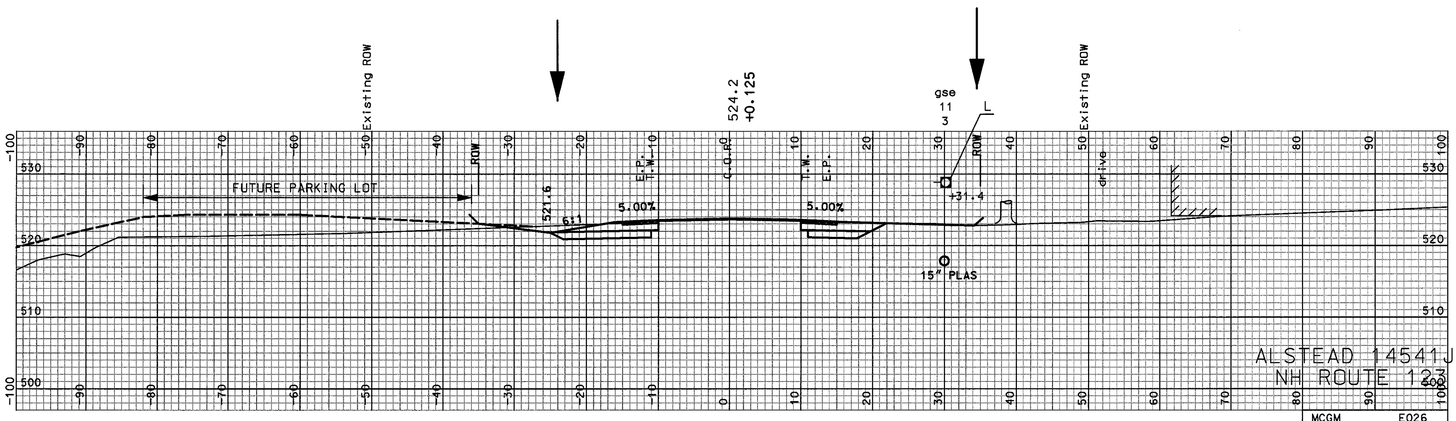
COMMON EXCAV.	508.8 C.Y.	ROCK EXCAV.	- C.Y.
FILL	46.2 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	72	156

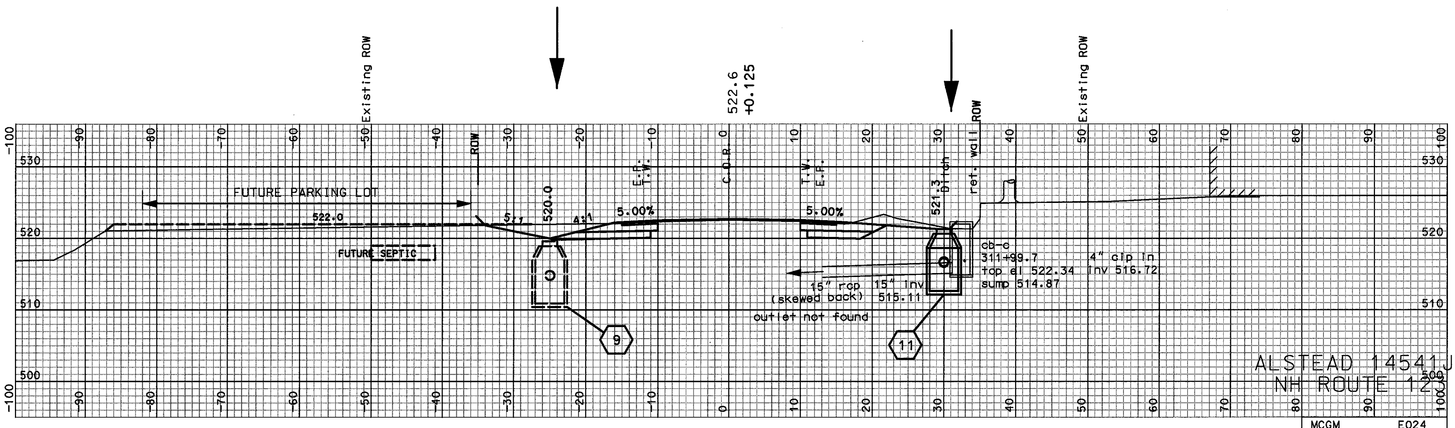
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

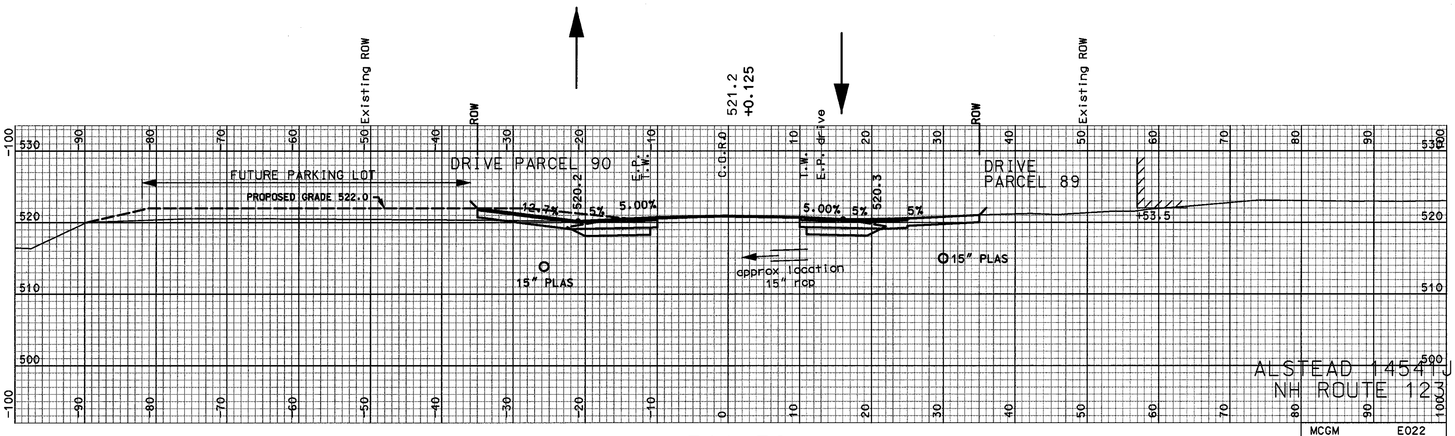
NUMBER	DATE	STATION	STATION	DESCRIPTION



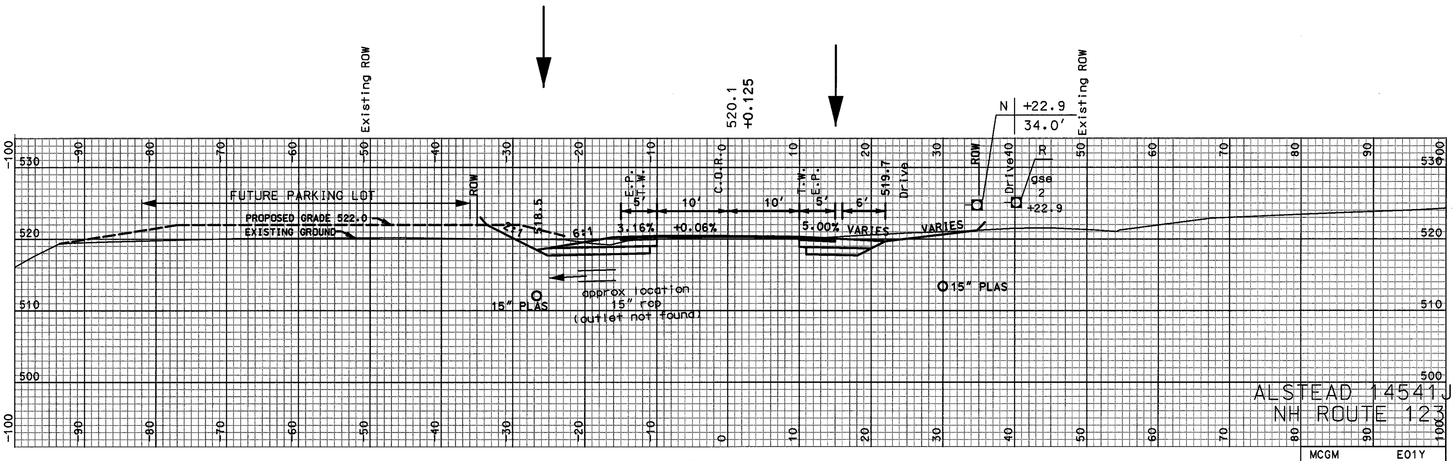
312+50



312+00



311+50



311+00

SHEET TOTALS			
COMMON EXCAV. 382.8 C.Y.		ROCK EXCAV. – C.Y.	
FILL – C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	73	156

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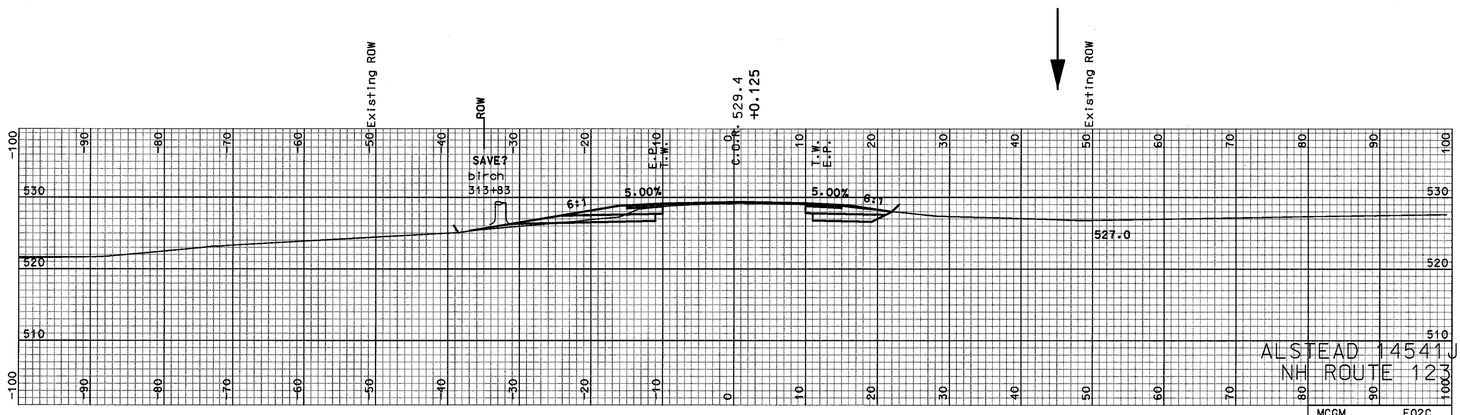
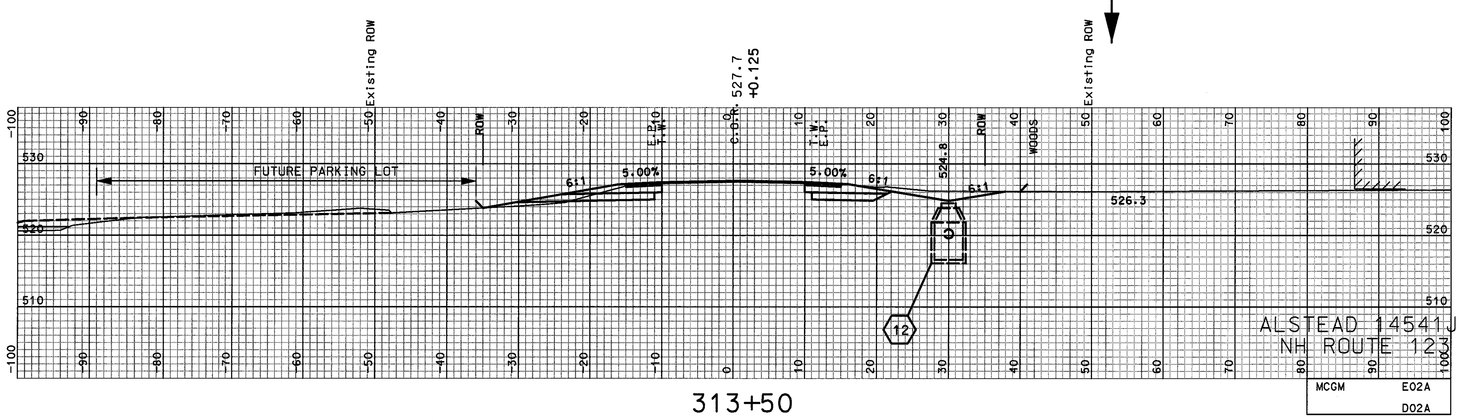
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

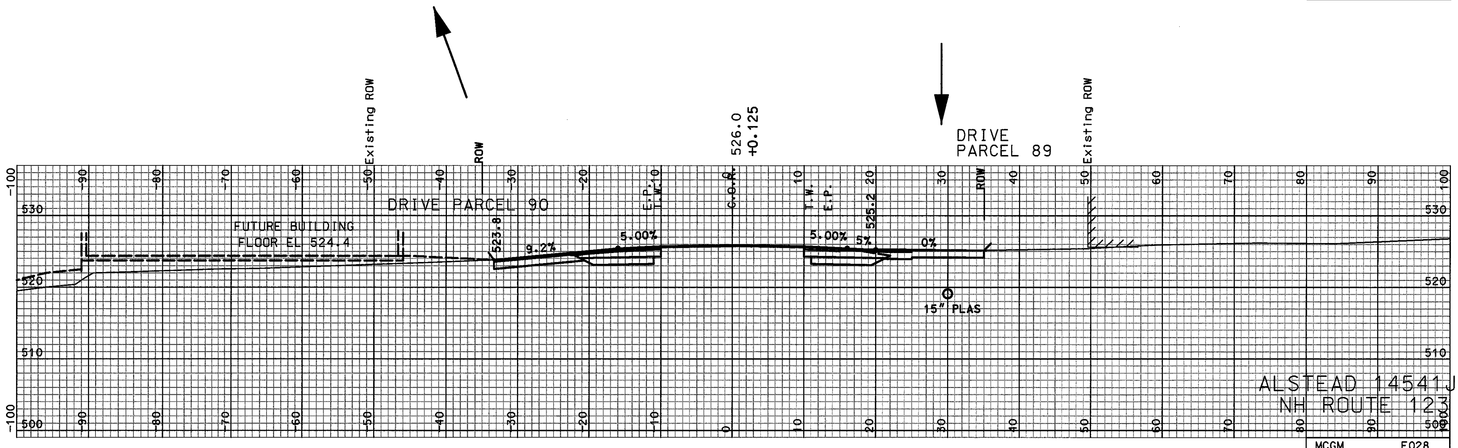
NUMBER	DATE	STATION	STATION	DESCRIPTION



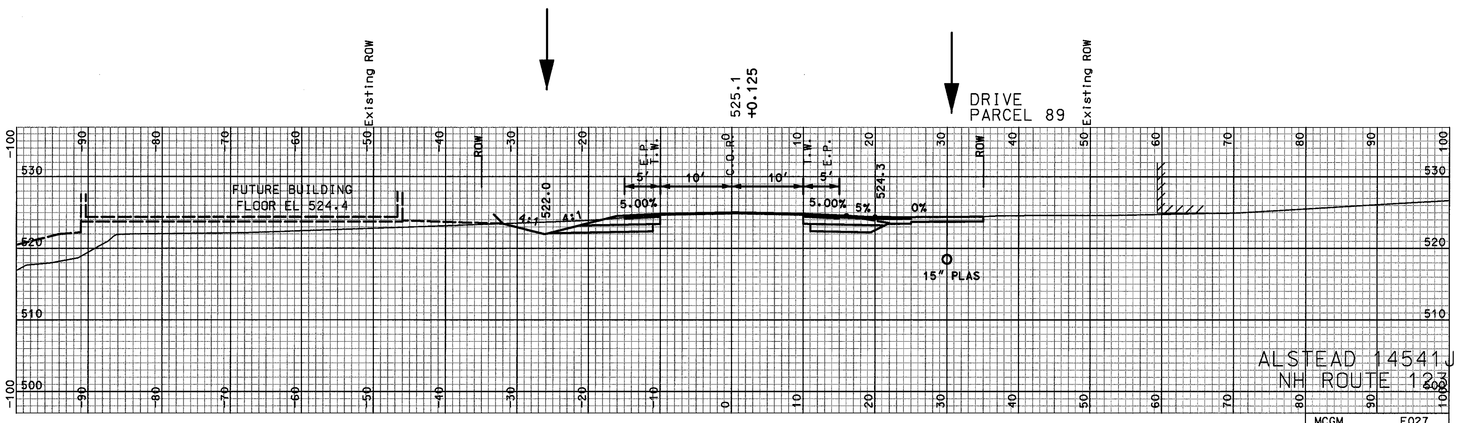
314+00



313+50



313+00



312+75

SHEET TOTALS			
COMMON EXCAV. 249.5 C.Y.		ROCK EXCAV. – C.Y.	
FILL 12.7 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	74	156

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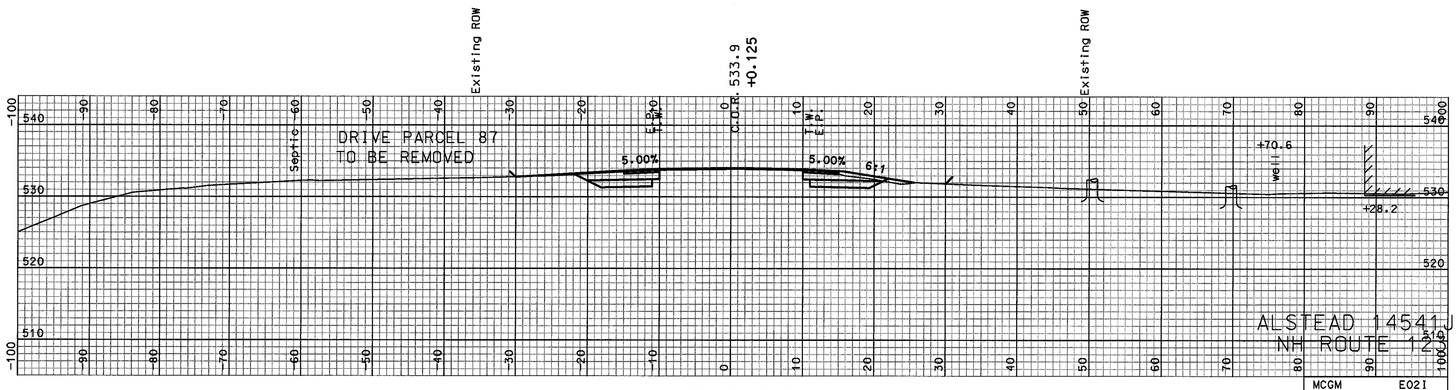
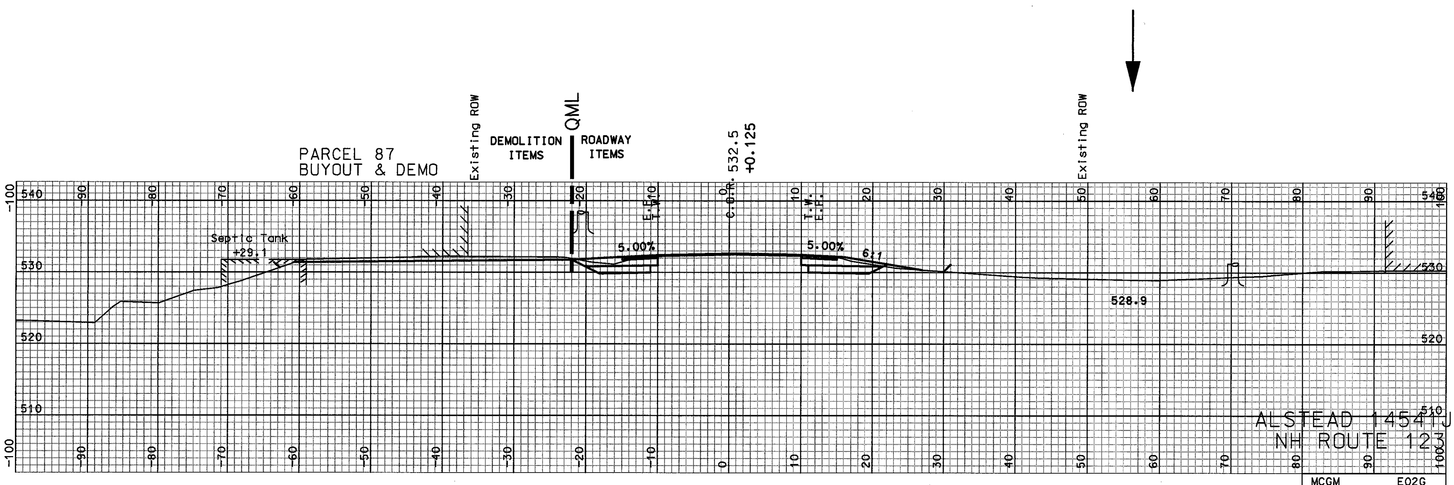
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

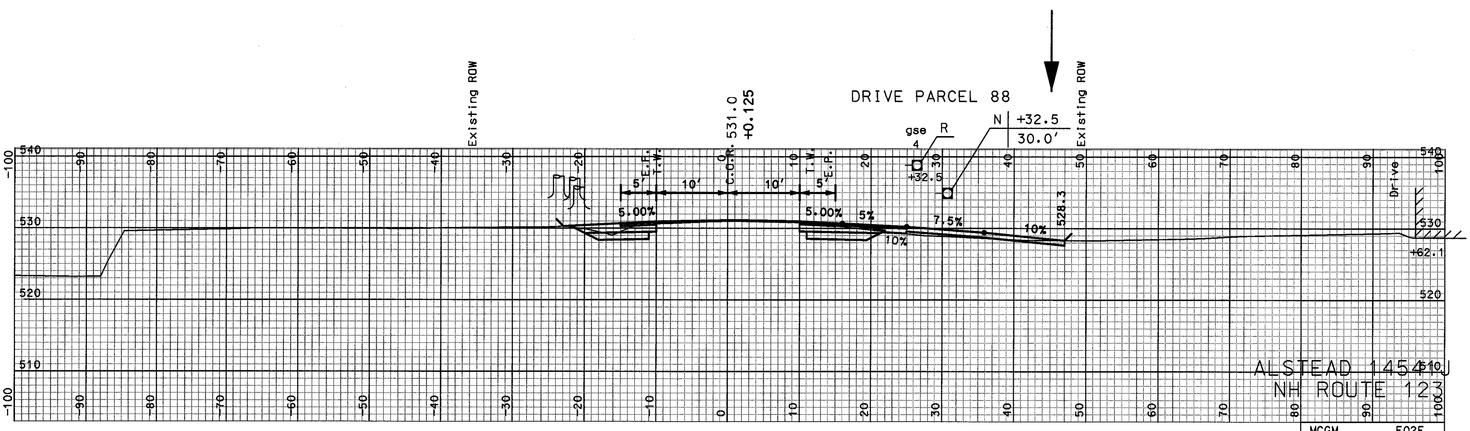
NUMBER	DATE	STATION	STATION	DESCRIPTION



315+50



315+00



314+50

SHEET TOTALS

COMMON EXCAV.	195.1 C.Y.	ROCK EXCAV.	– C.Y.
FILL	8.9 C.Y.	MUCK EXCAV.	– C.Y.

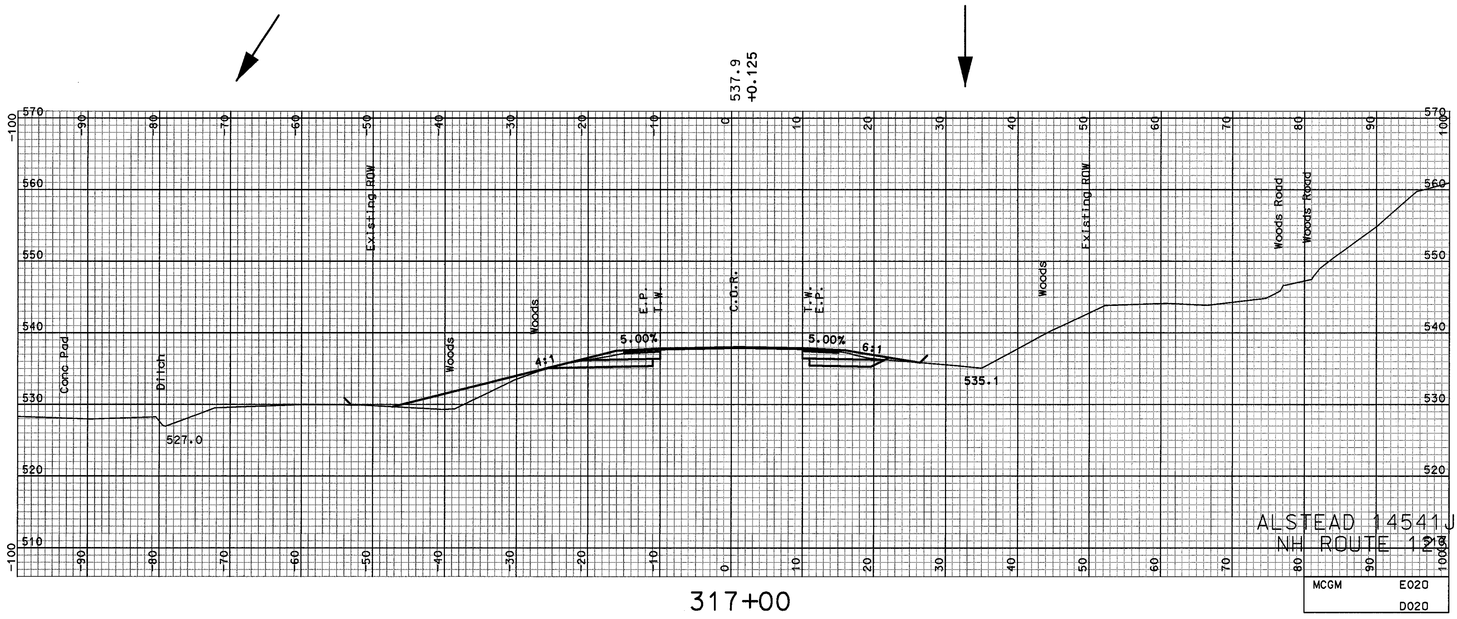
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	75	156

...\14541J\Cad\Vr\14541xs_1.dgn 05/24/2007 10:43:58 AM n3acnc

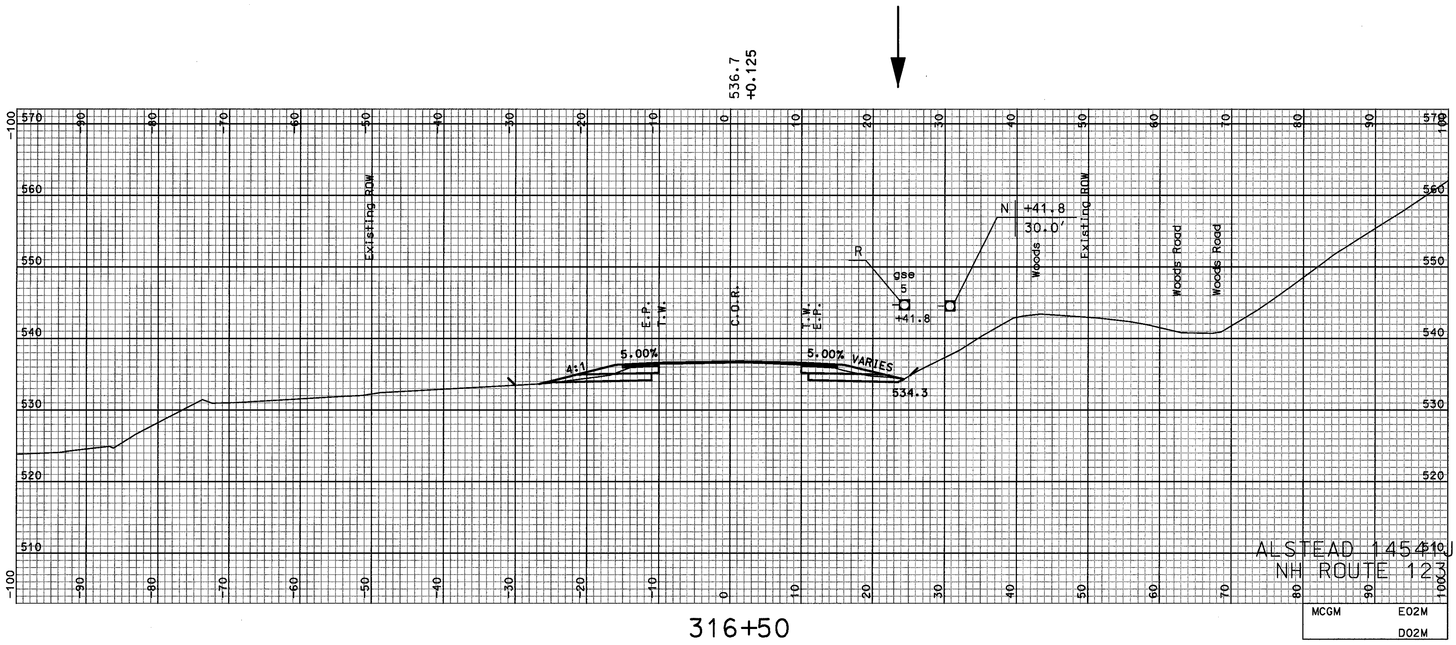
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

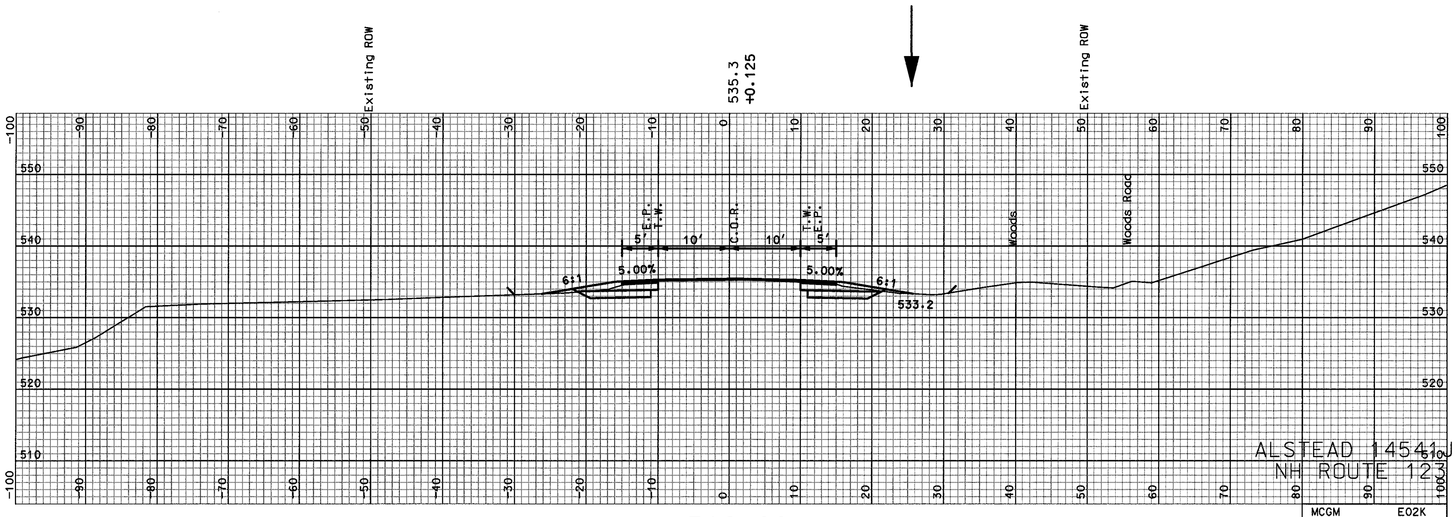
NUMBER	DATE	STATION	STATION	DESCRIPTION



317+00



316+50



316+00

SHEET TOTALS			
COMMON EXCAV. 192.8 C.Y.		ROCK EXCAV. – C.Y.	
FILL 88.3 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	76	156

...\14541J\DGN\14541Jxs_1.dgn 05/24/2007 10:43:59 AM RJSCC

SHEET TOTALS			
COMMON EXCAV.	169.3 C.Y.	ROCK EXCAV.	— C.Y.
FILL	126.7 C.Y.	MUCK EXCAV.	— C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JXS_1	14541J	77	156

REVISIONS AFTER PROPOSAL			
STATION	STATION	DESCRIPTION	

NUMBER	DATE

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

...\14541J\C&D\PF1\14541JXS_1.dgn 05/24/2007 10:46:59 AM h34cnc

COMMON EXCAV. 135.3 C.Y.	SHEET TOTALS ROCK EXCAV. — C.Y.
FILL 12.1 C.Y.	MUCK EXCAV. — C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	78	156

REVISIONS AFTER PROPOSAL			
STATION	STATION	DESCRIPTION	

NUMBER	DATE

SDR PROCESSED	CAC	DATE 2006
NEW DESIGN	TEAM CLIFFORD	DATE 2006/2007
SHEET CHECKED	WAC	DATE 5/2007
AS BUILT DETAILS		DATE

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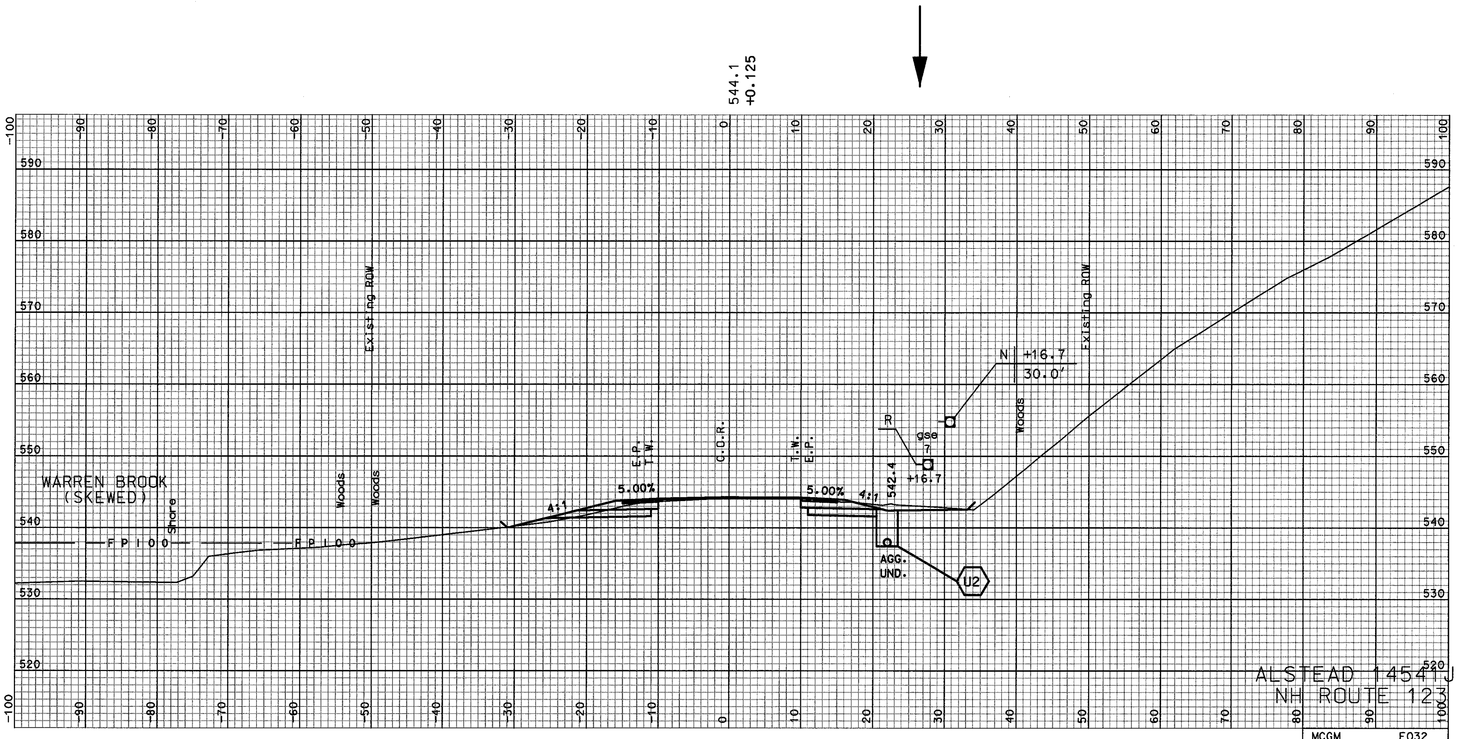
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

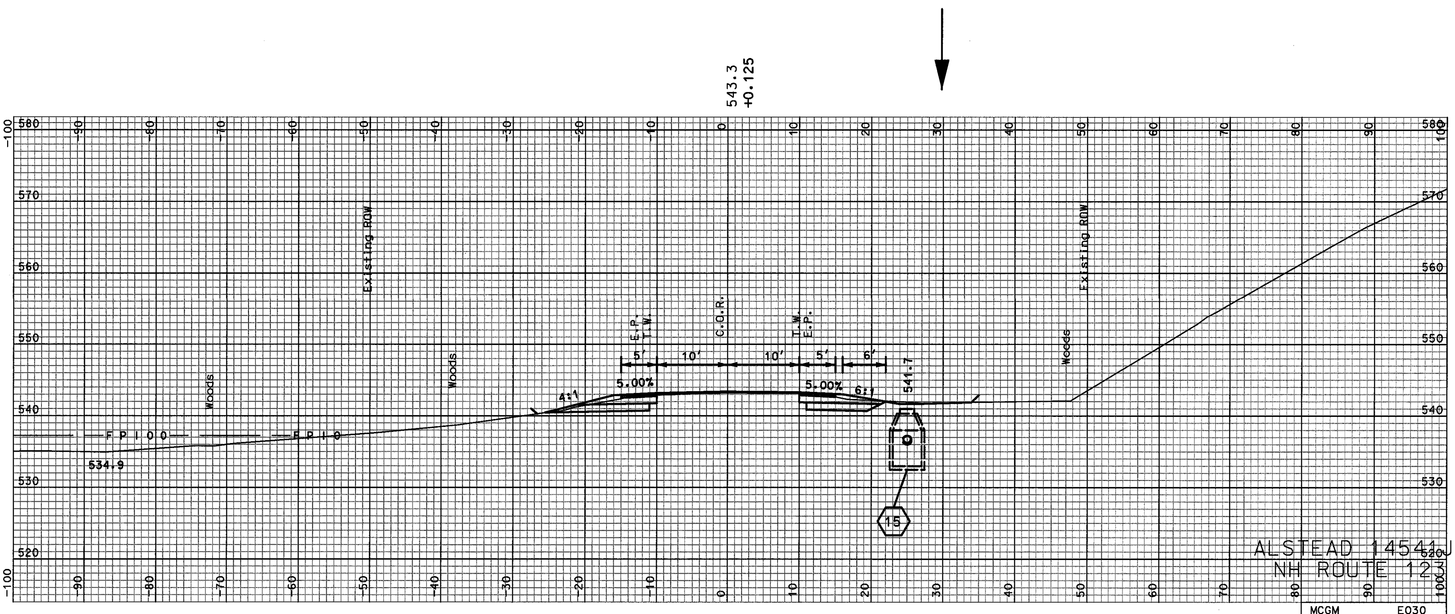
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



MCGM E032
D032

320+00



MCGM E030
D030

319+50

SHEET TOTALS

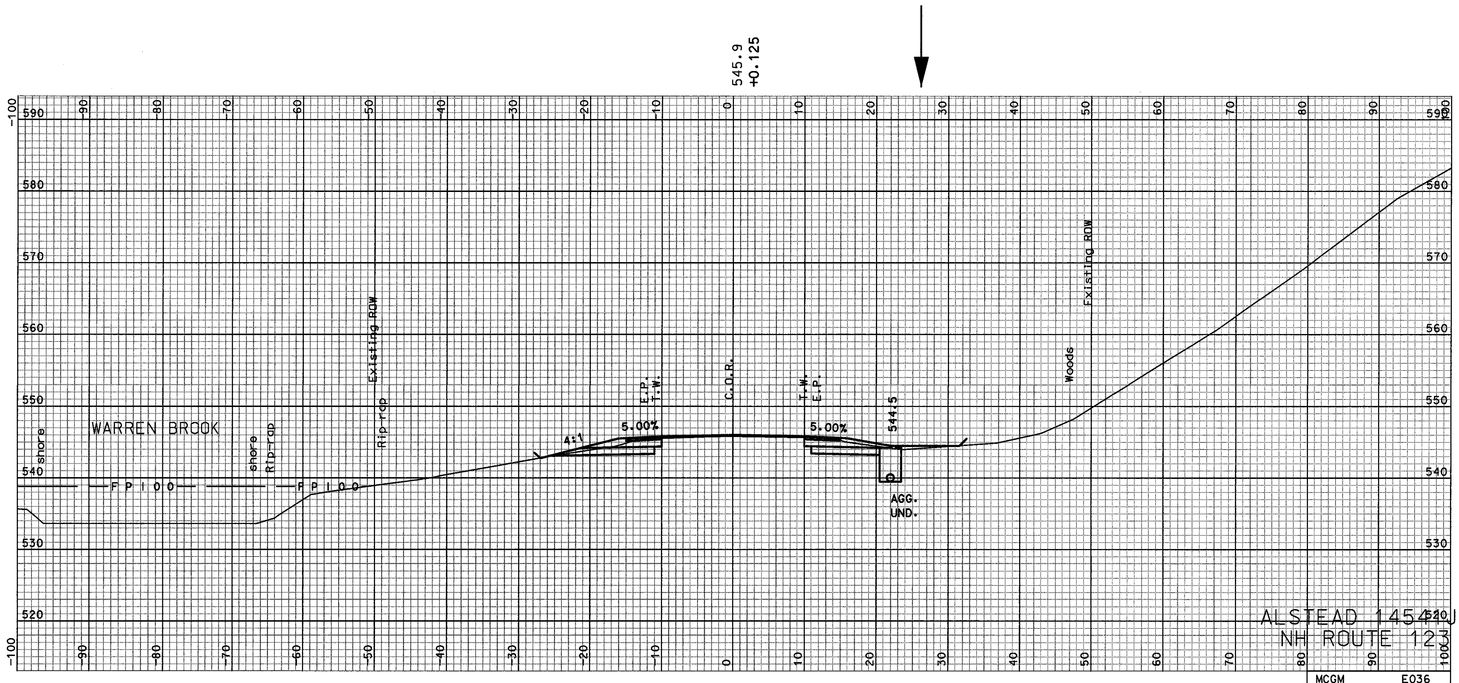
COMMON EXCAV. 141.4 C.Y. ROCK EXCAV. – C.Y.
FILL 4.8 C.Y. MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	79	156

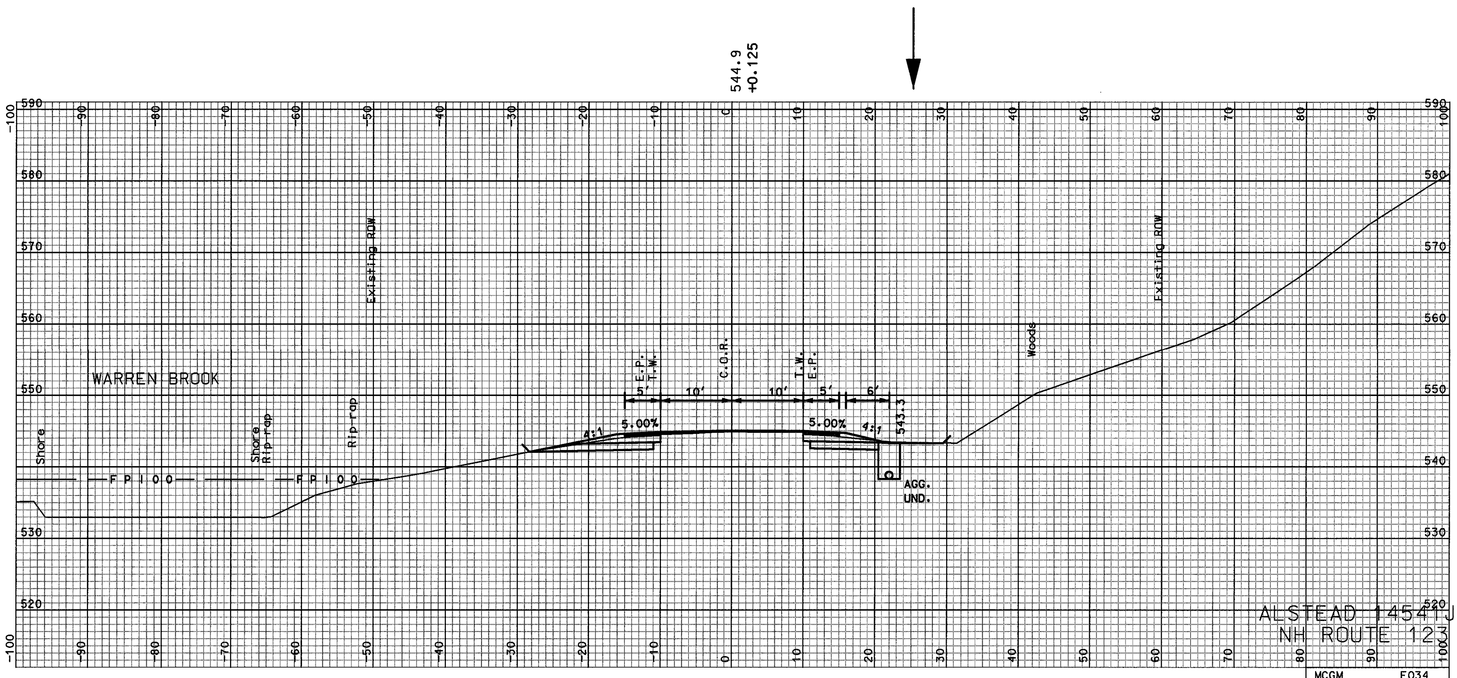
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



321+00



320+50

SHEET TOTALS

COMMON EXCAV.	132.6 C.Y.	ROCK EXCAV.	- C.Y.
FILL	8.9 C.Y.	MUCK EXCAV.	- C.Y.

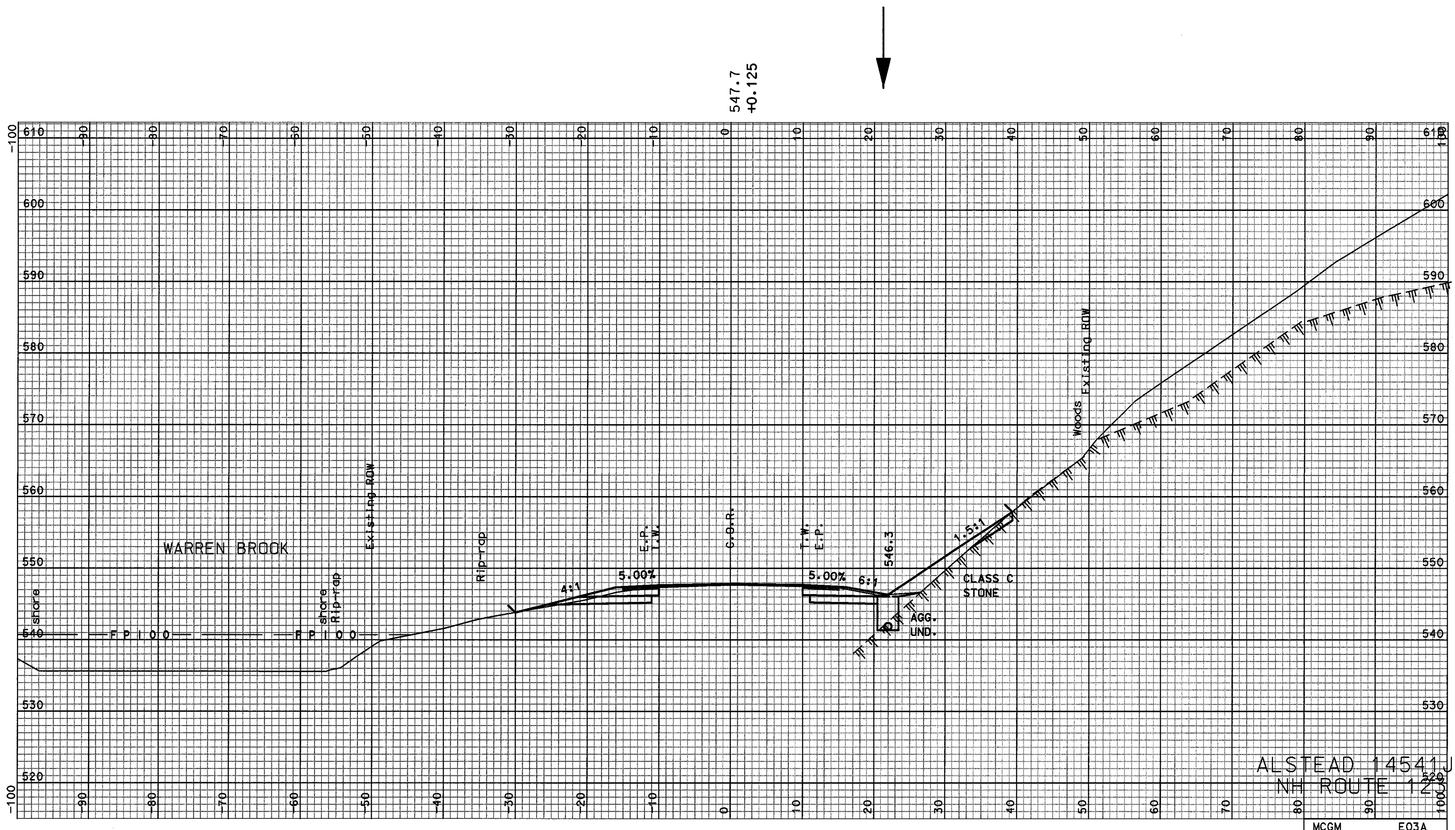
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	80	156

...\14541J\Cadd\Prj\14541Jxs_1.dgn 05/24/2007 10:44:01 AM m34cmc

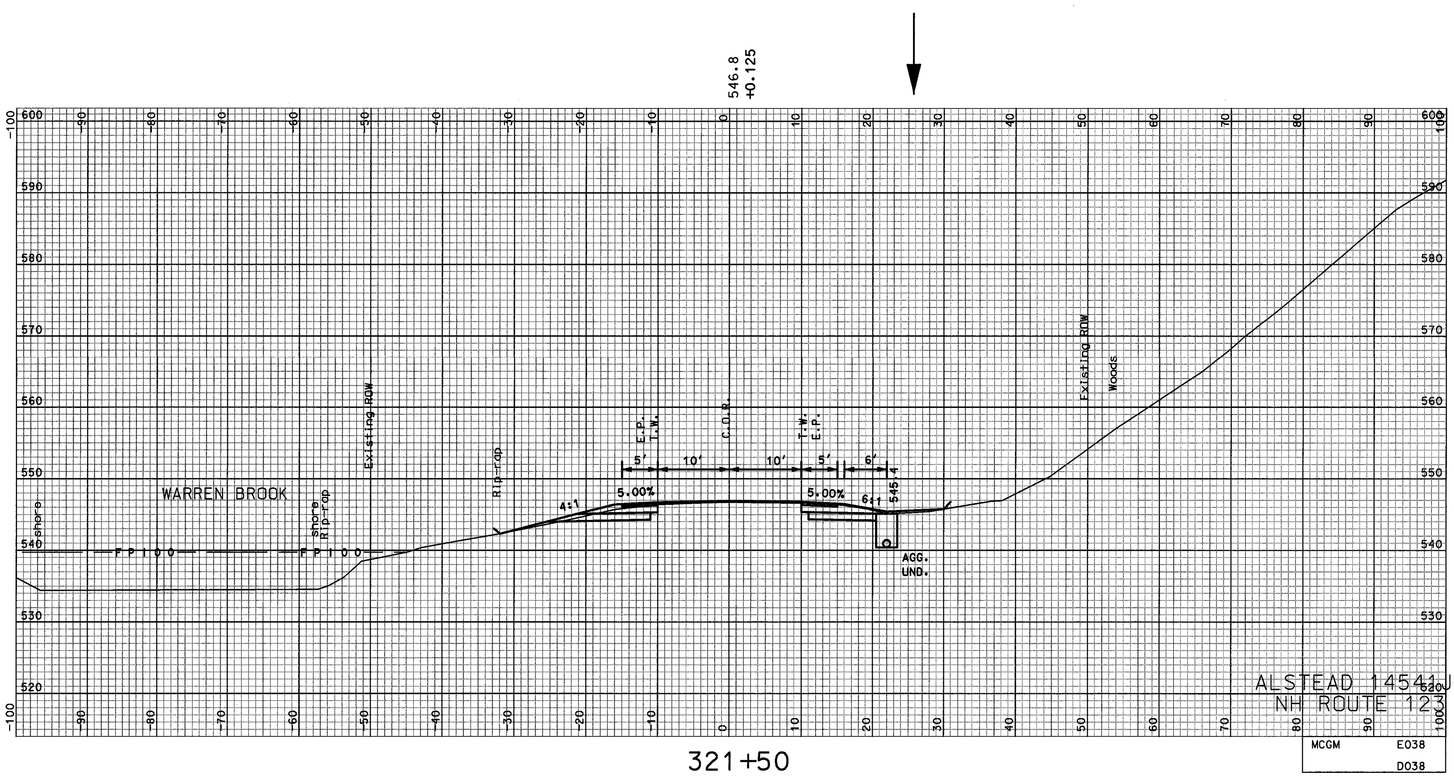
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



322+00



321+50

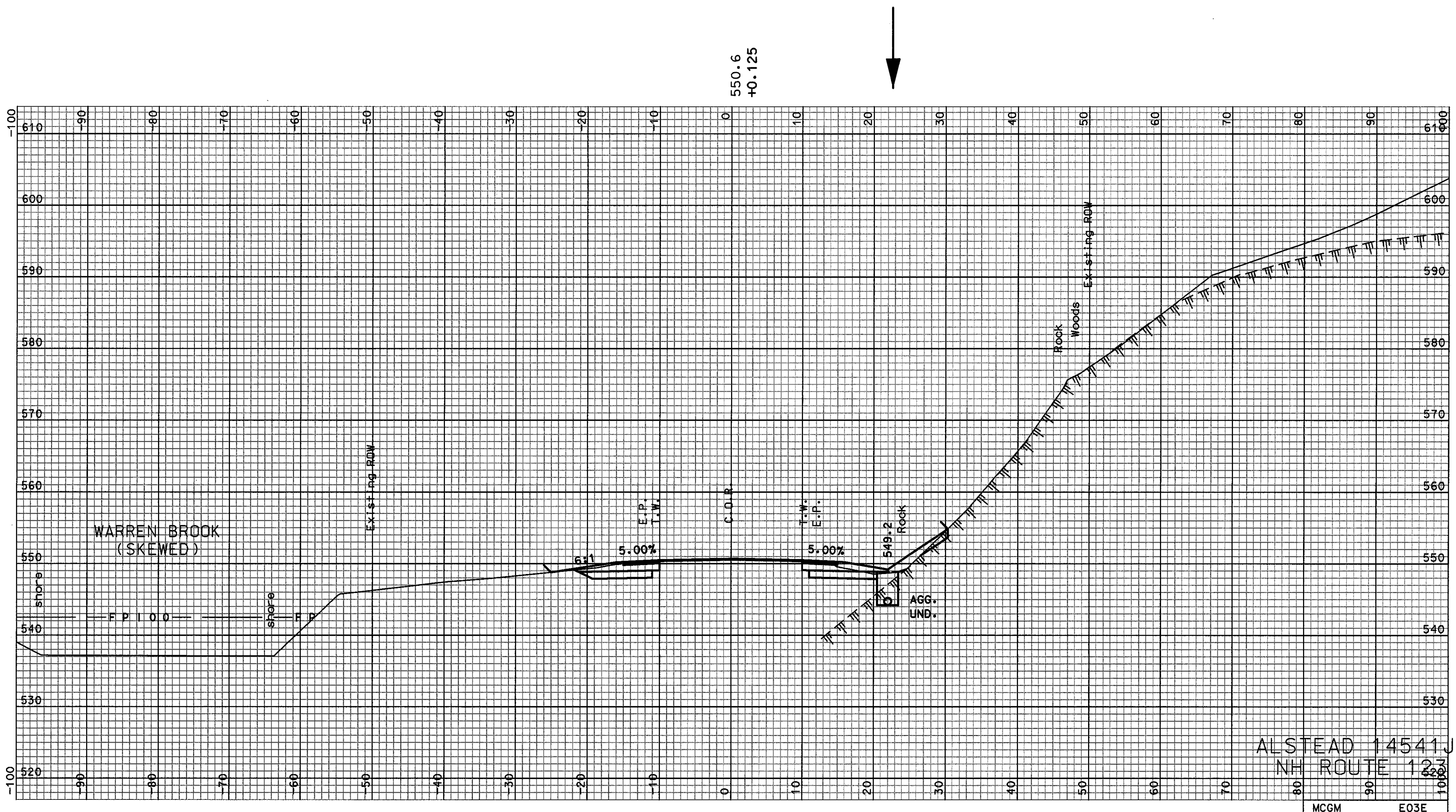
SHEET TOTALS			
COMMON EXCAV. 135.2 C.Y.		ROCK EXCAV. – C.Y.	
FILL 5.2 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	81	156

...\14541J\Cad\Dgn\14541Jxs_1.dgn 05/24/2007 10:44:02 AM nbacric

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

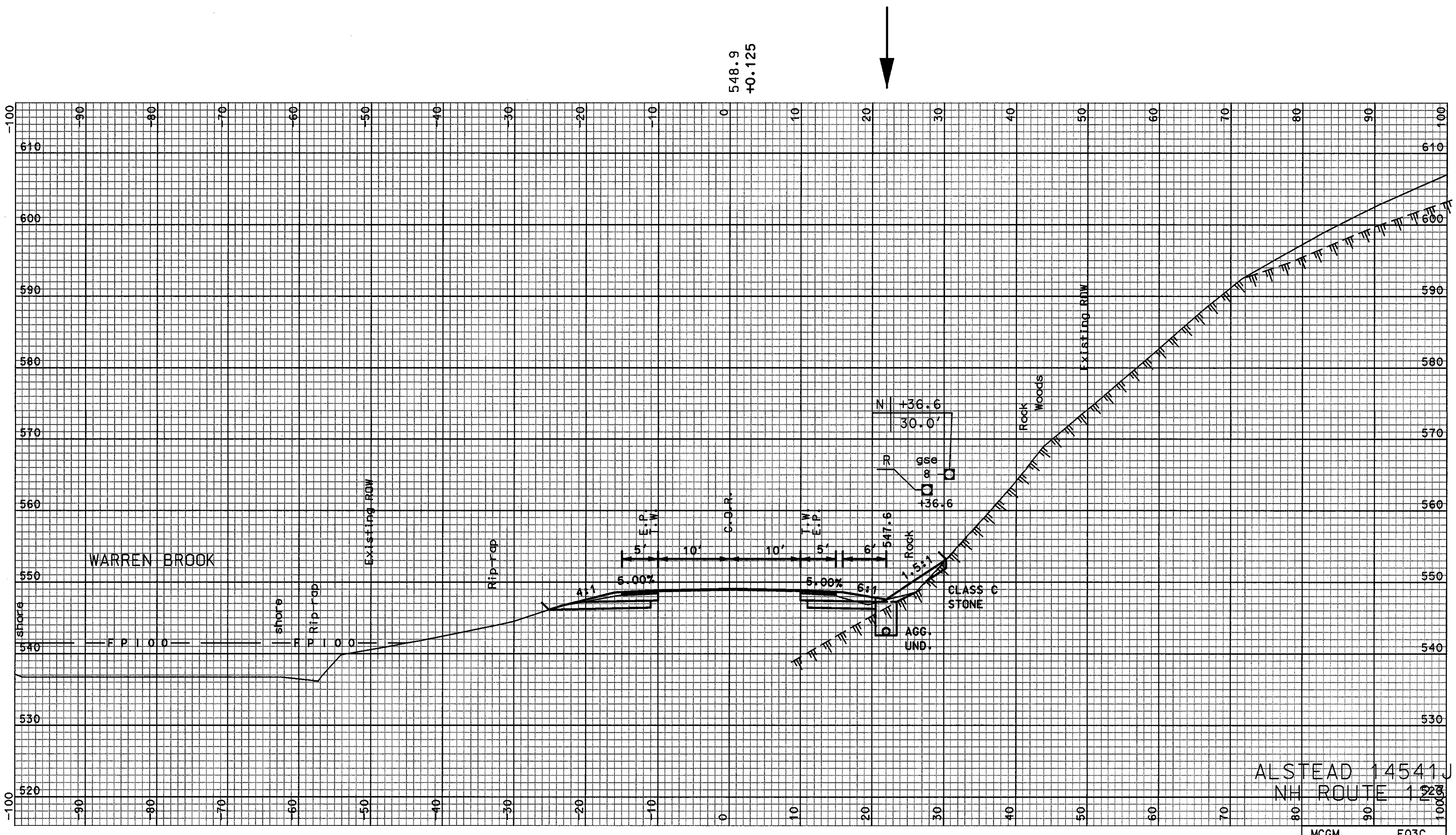
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



323+00

MCGM E03E D03E



322+50

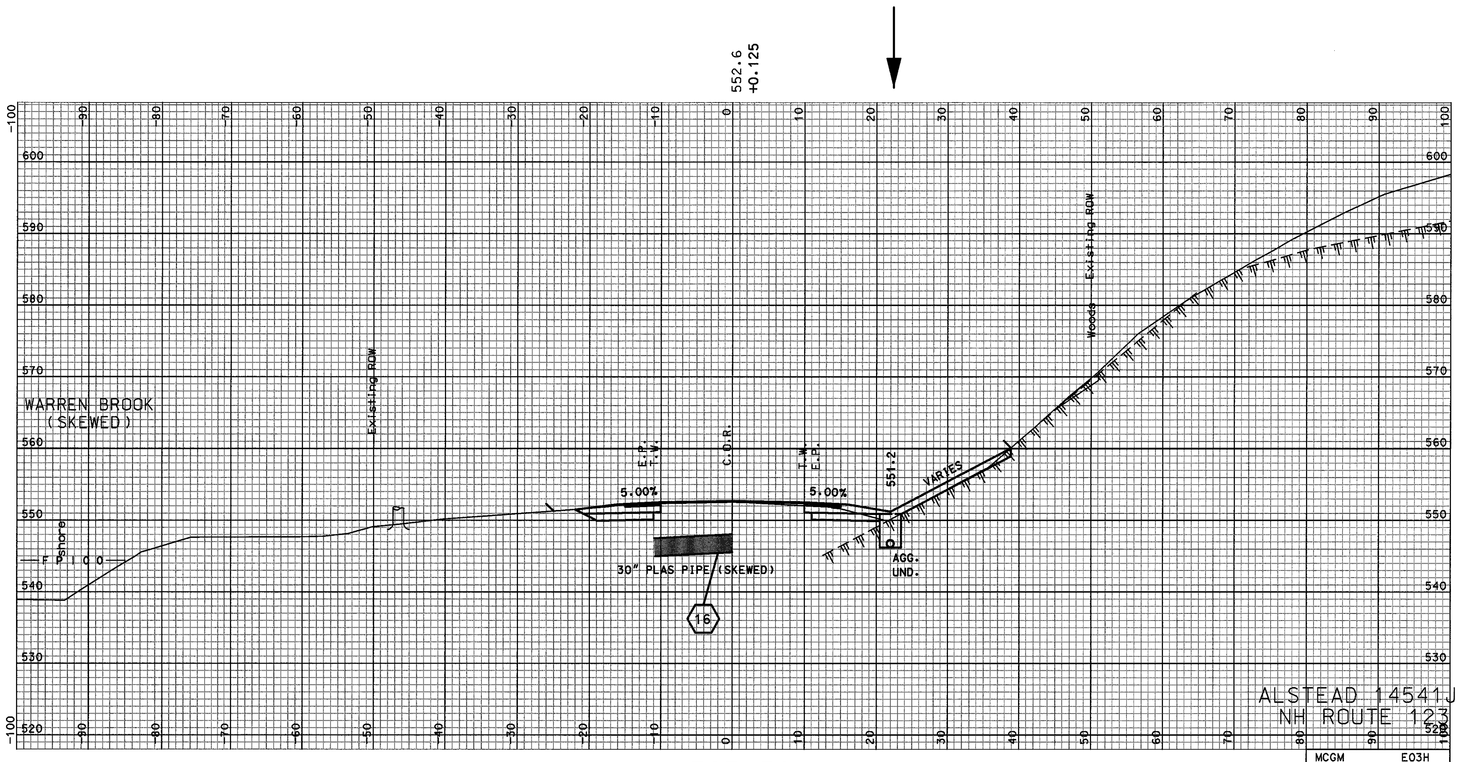
MCGM E03C D03C

SHEET TOTALS			
COMMON EXCAV. 88.6 C.Y.		ROCK EXCAV. – C.Y.	
FILL 0.3 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	82	156

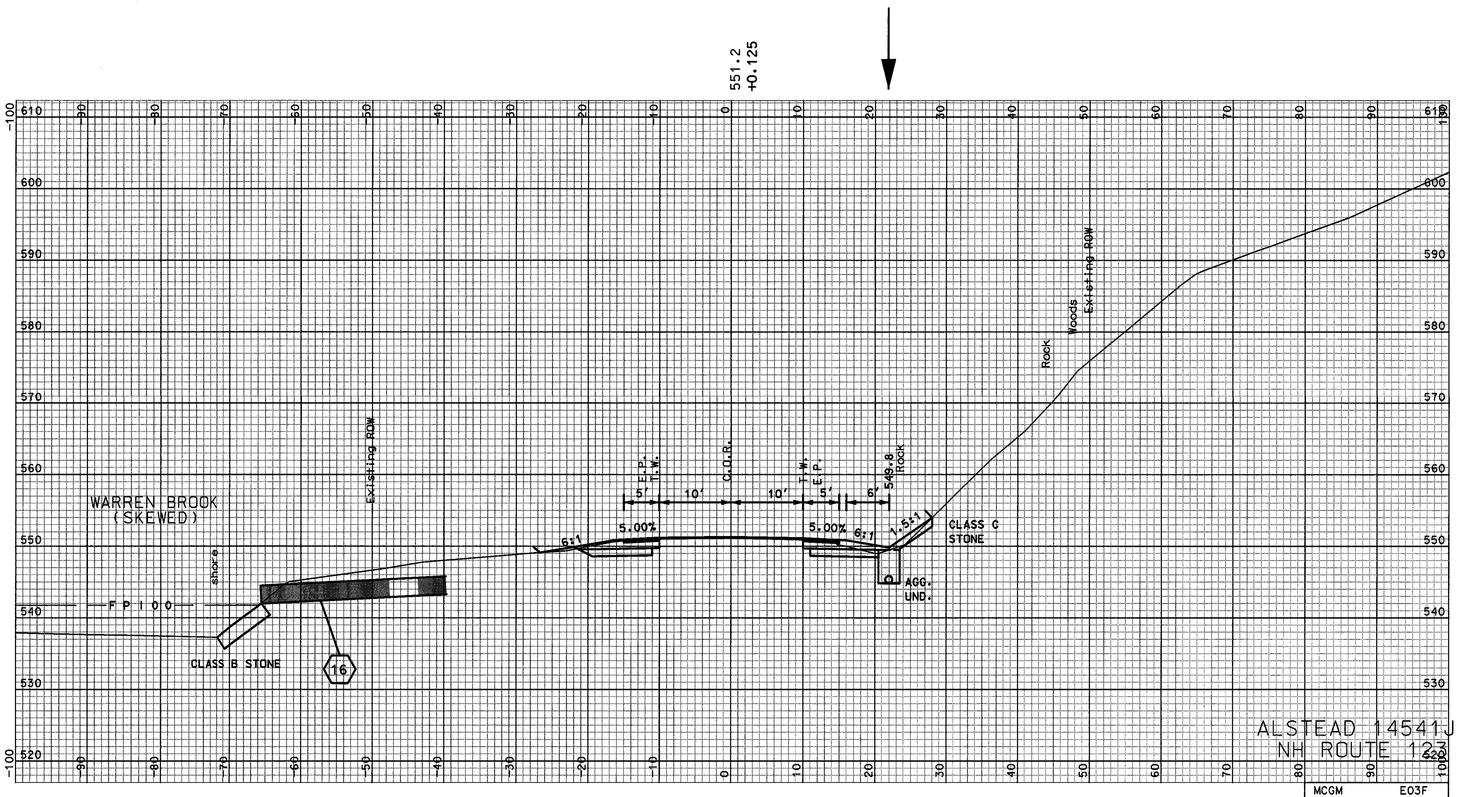
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



323+50



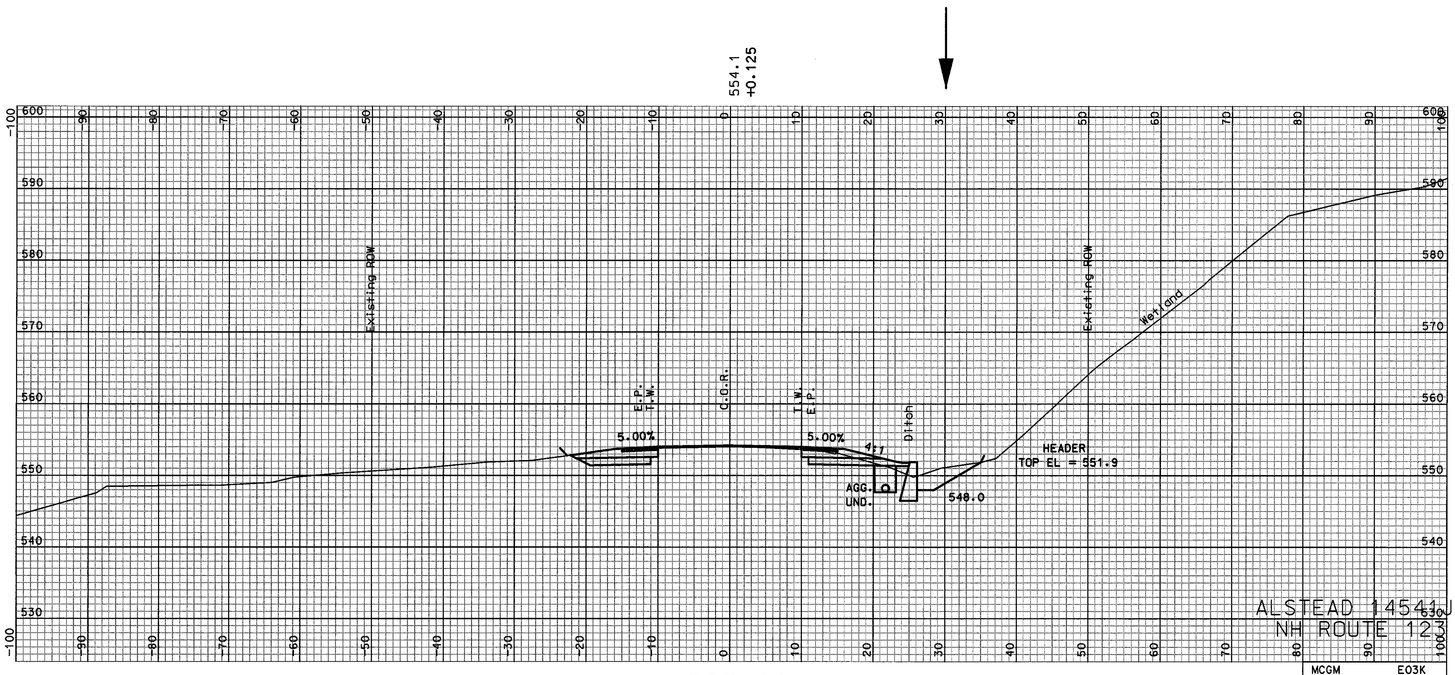
323+17

SHEET TOTALS			
COMMON EXCAV. 64.0 C.Y.		ROCK EXCAV. – C.Y.	
FILL 2.0 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	83	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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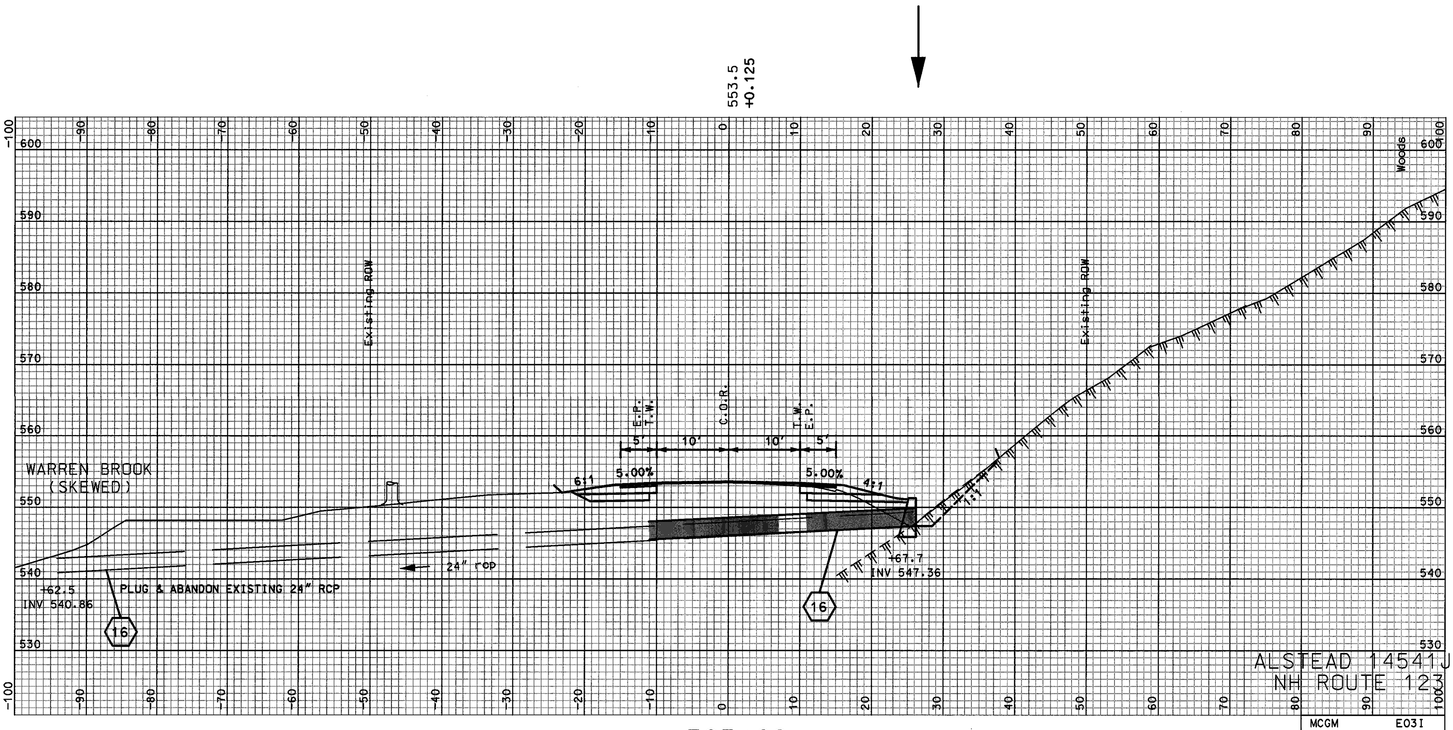


323+68

SHEET TOTALS

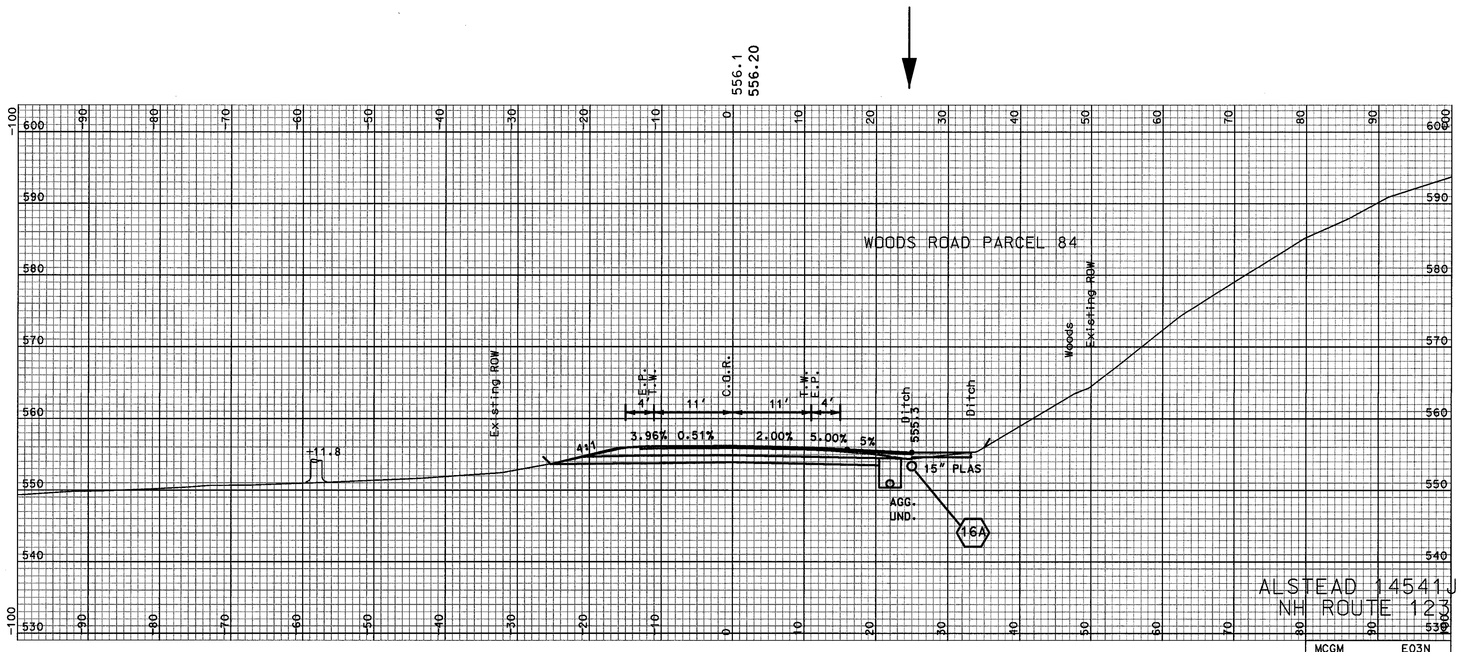
COMMON EXCAV.	48.8 C.Y.	ROCK EXCAV.	- C.Y.
FILL	2.0 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	84	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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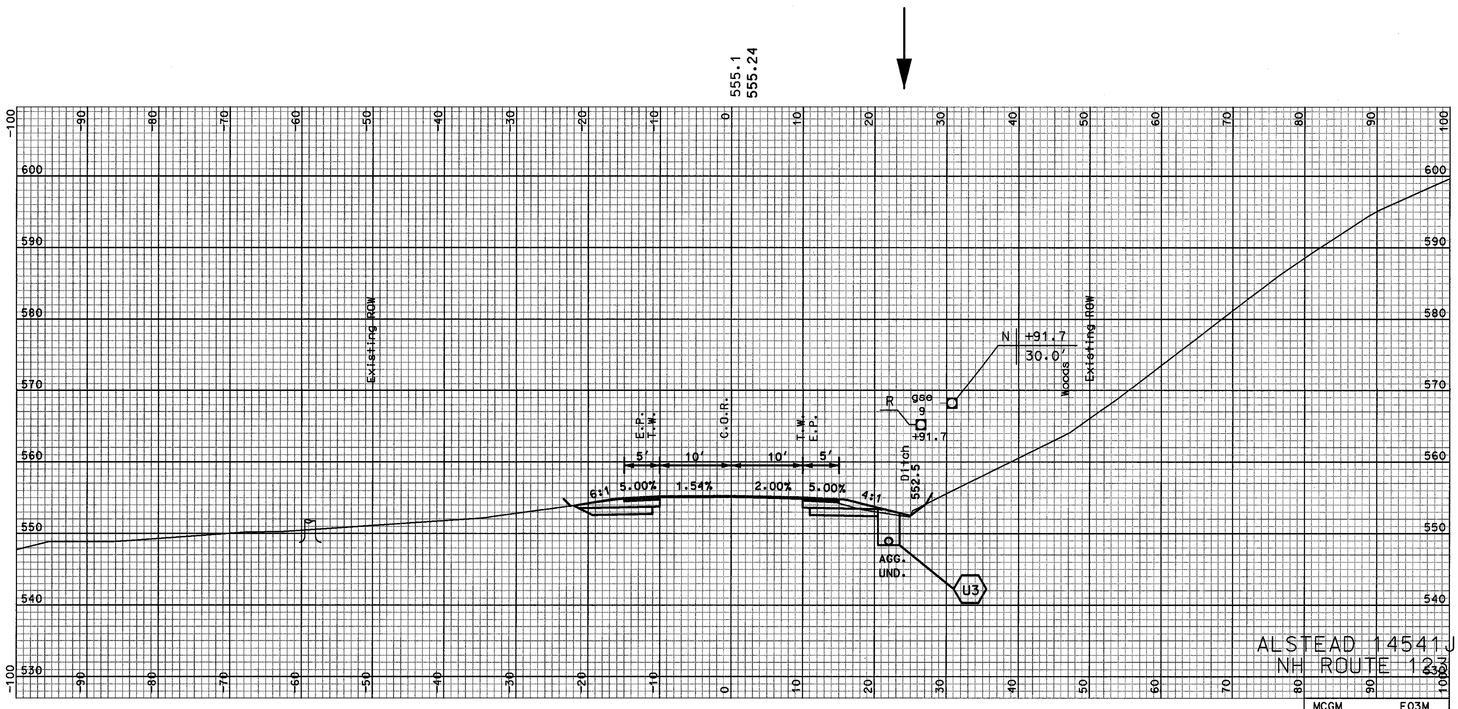


324+00

SHEET TOTALS

COMMON EXCAV. 144.6 C.Y. ROCK EXCAV. - C.Y.

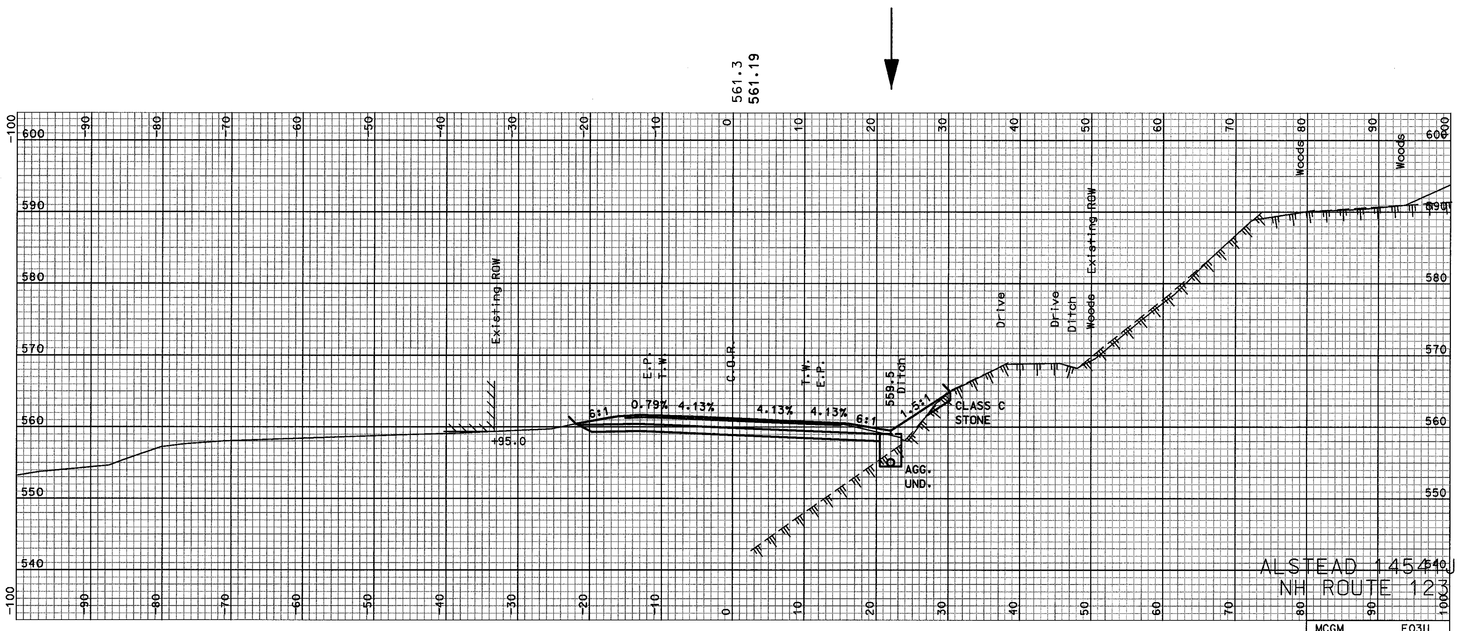
FILL - C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	85	156

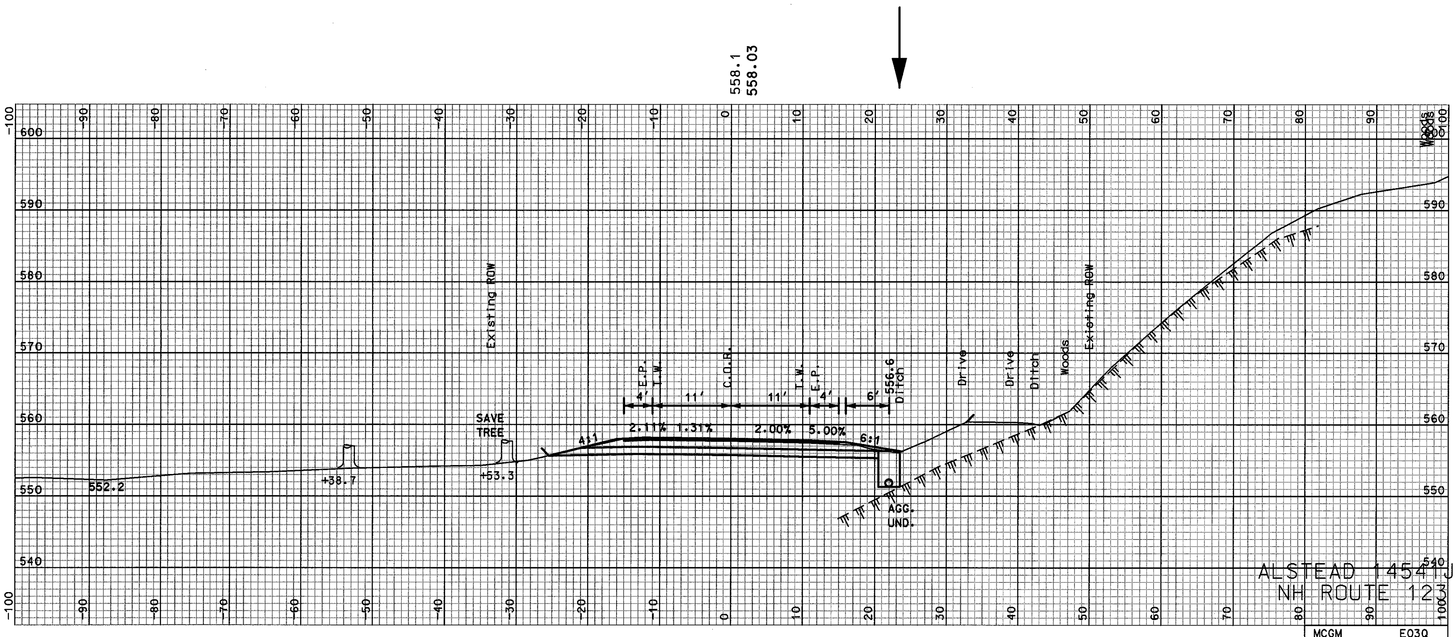
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



325+00



324+50

SHEET TOTALS

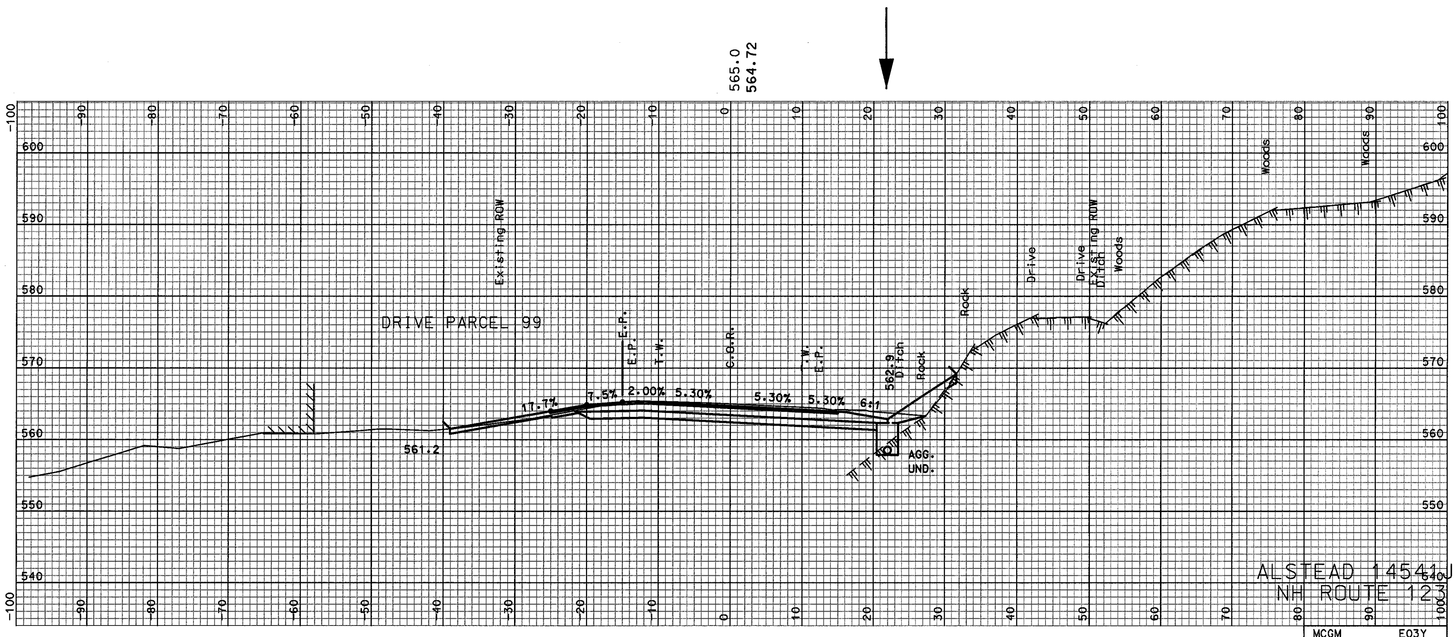
COMMON EXCAV.	299.8 C.Y.	ROCK EXCAV.	- C.Y.
FILL	3.0 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	86	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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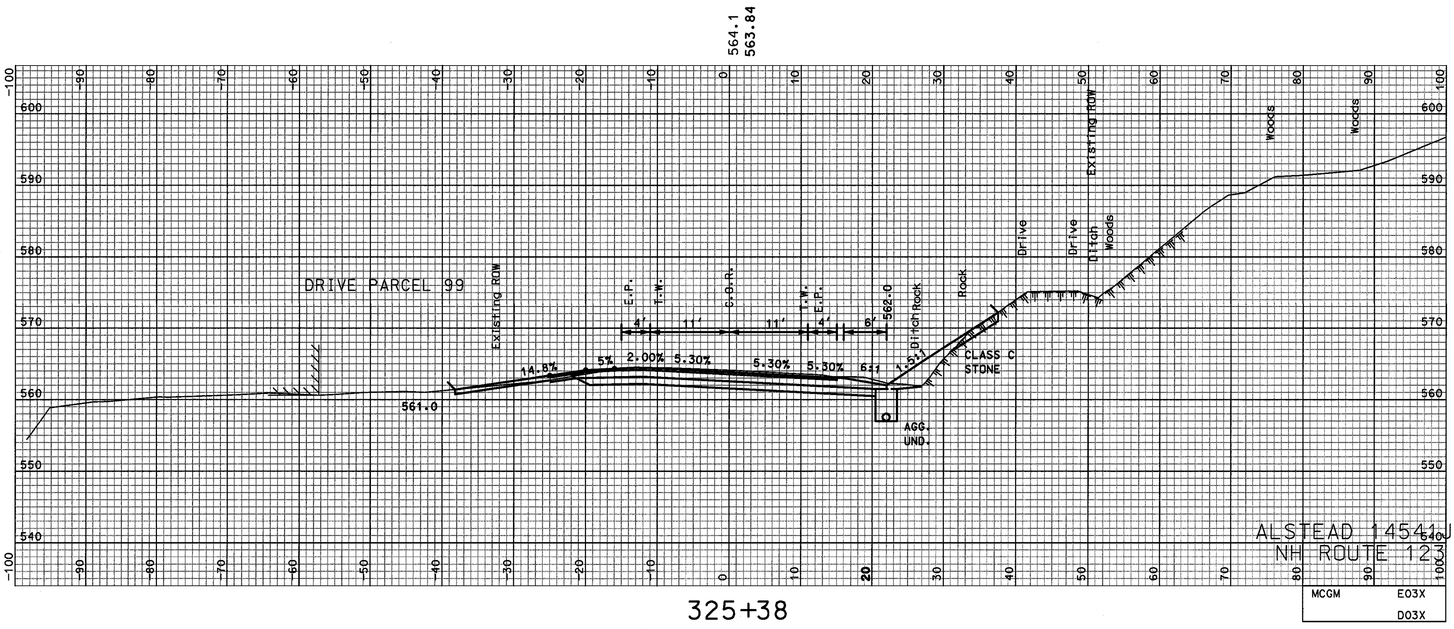


325+38

SHEET TOTALS

COMMON EXCAV.	244.4 C.Y.	ROCK EXCAV.	- C.Y.
FILL	0.4 C.Y.	MUCK EXCAV.	- C.Y.

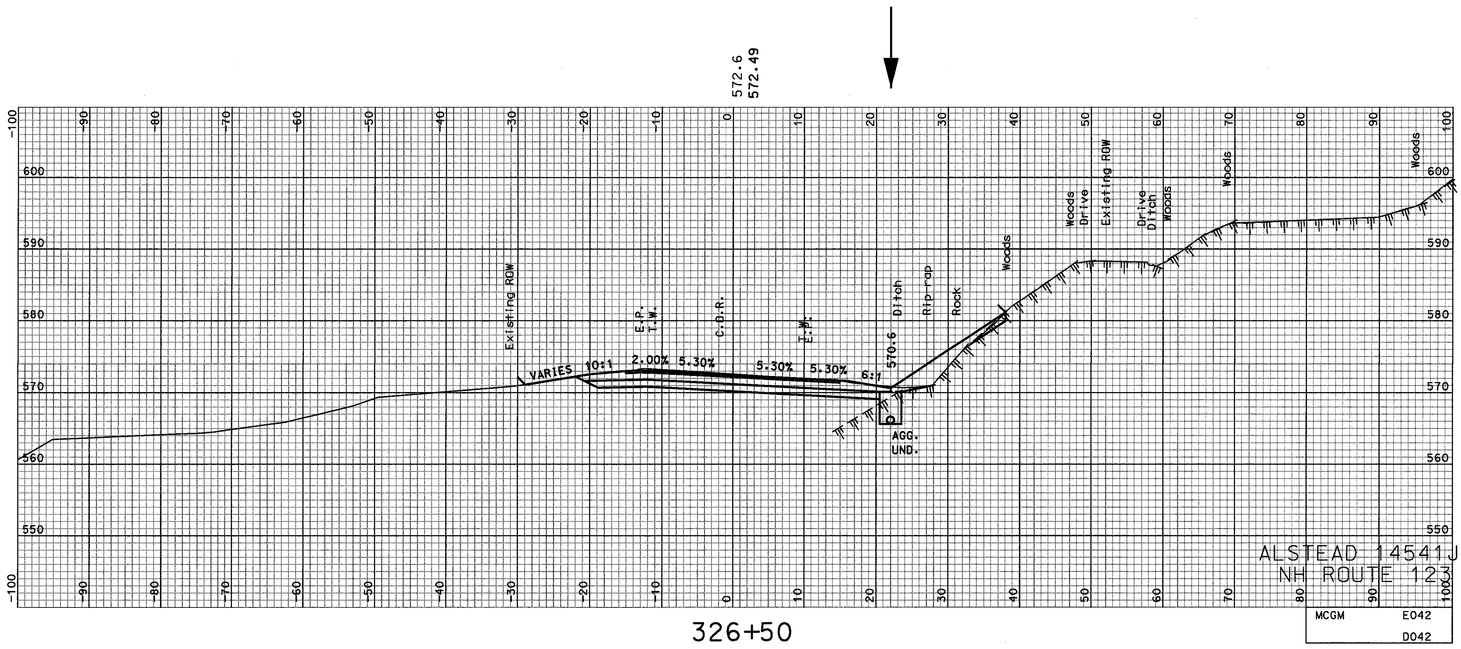
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	87	156

...\14541J\Cadd\Dr\14541Jxs_1.dgn 05/24/2007 10:44:06 AM n34cnc

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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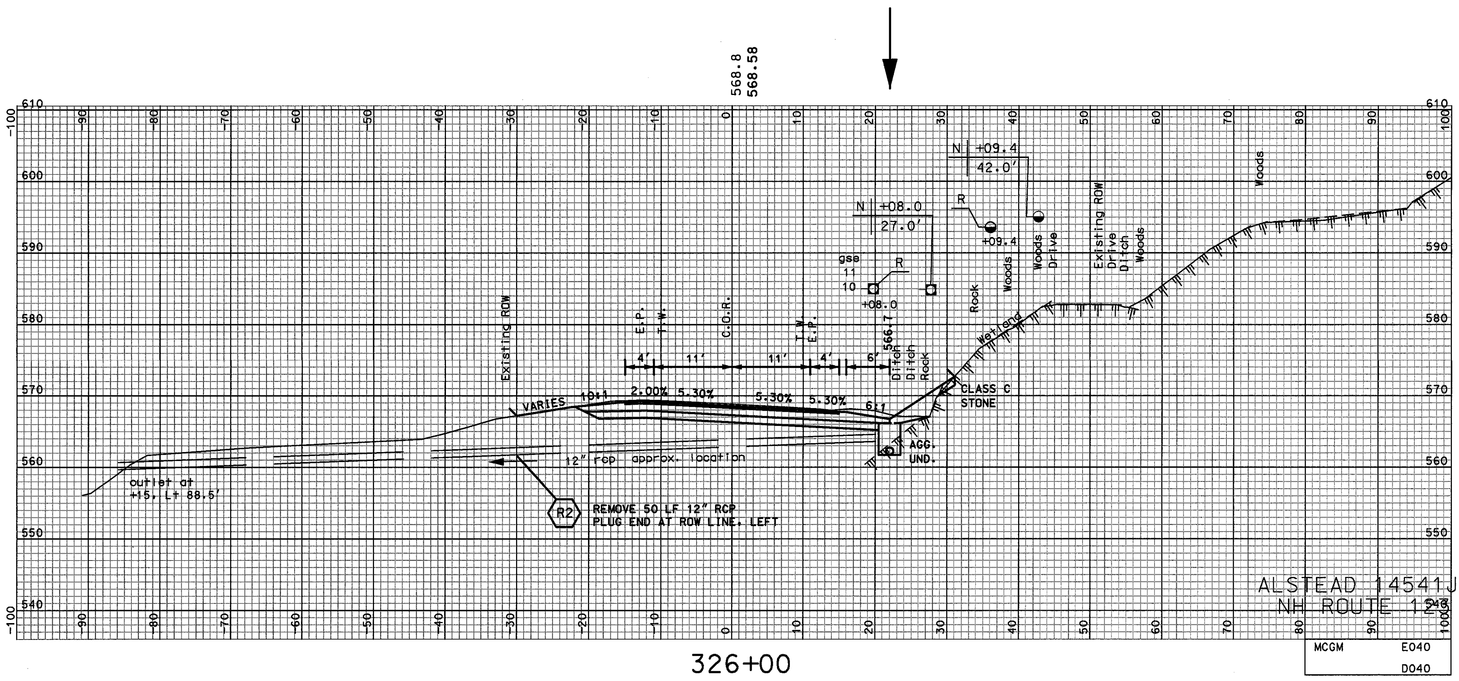


326+00

SHEET TOTALS

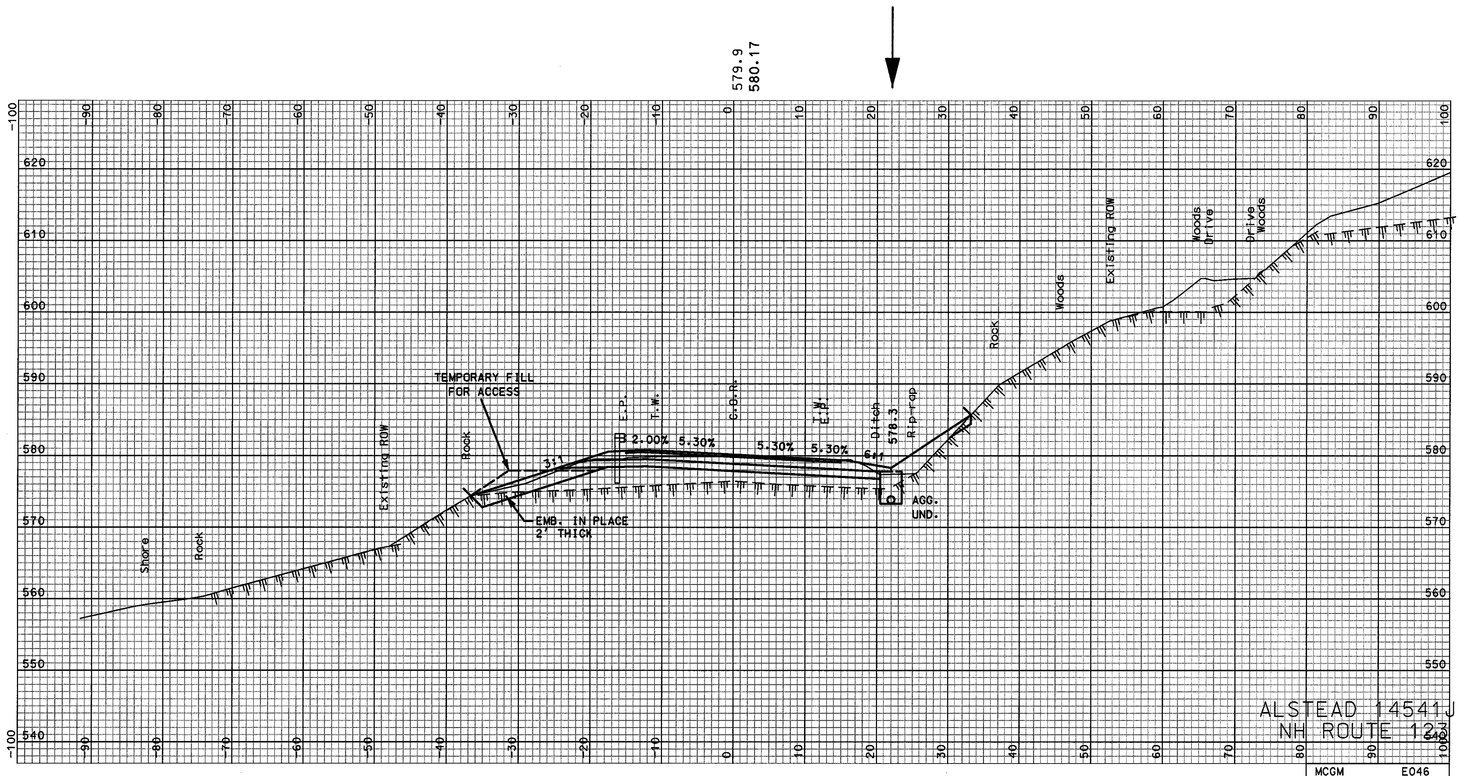
COMMON EXCAV.	397.8 C.Y.	ROCK EXCAV.	- C.Y.
FILL	41.8 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	88	156

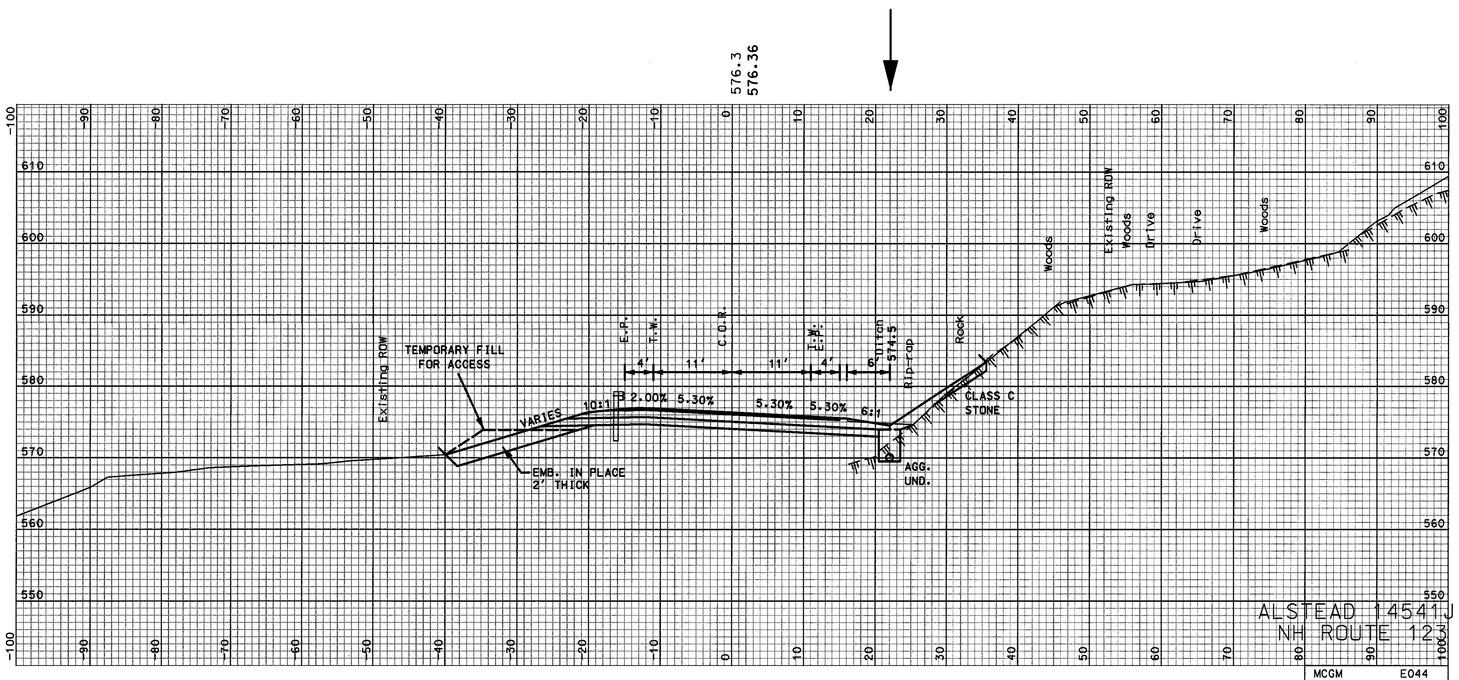
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



327+50



327+00

SHEET TOTALS

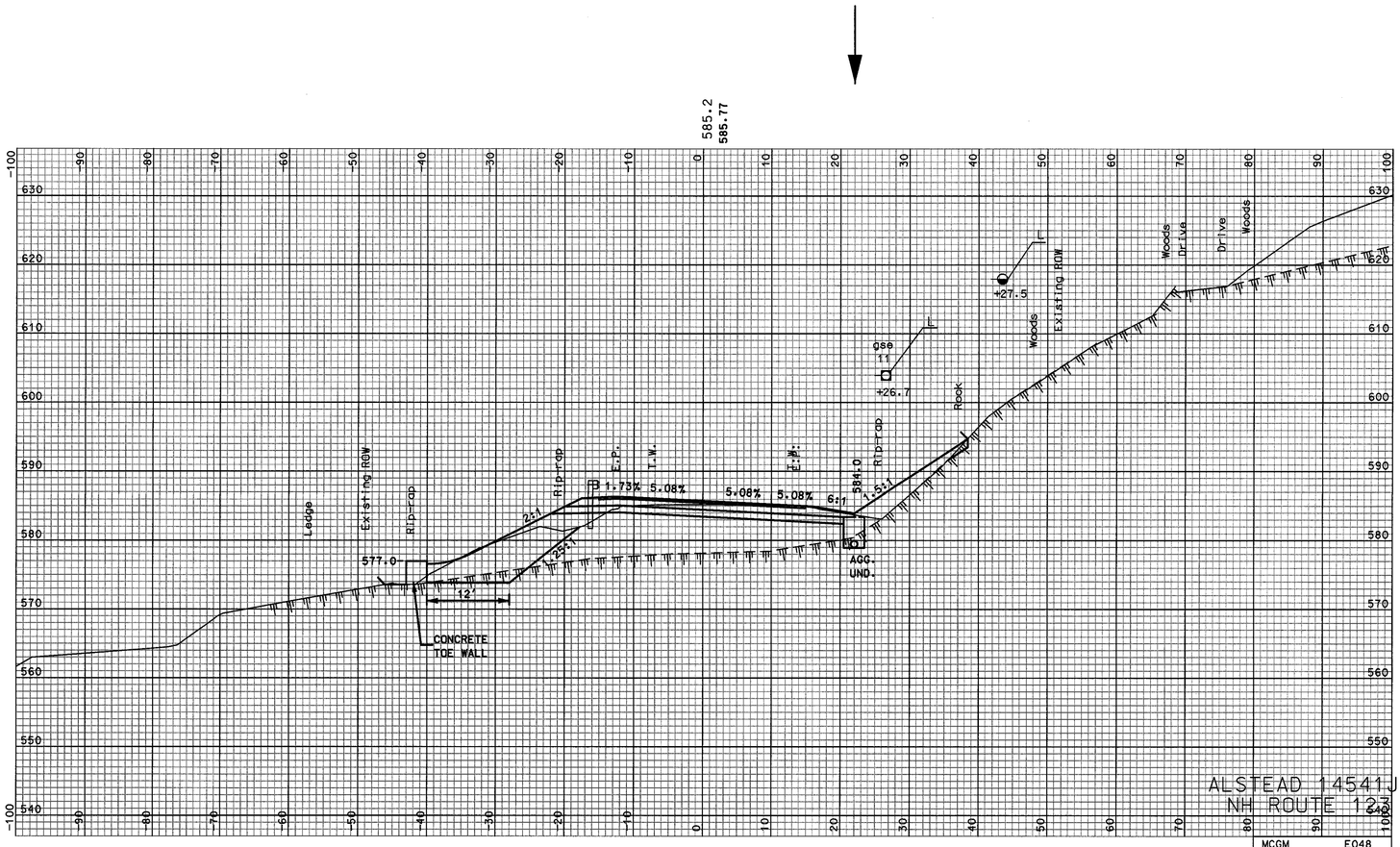
COMMON EXCAV.	440.8 C.Y.	ROCK EXCAV.	22.6 C.Y.
FILL	205.6 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	89	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

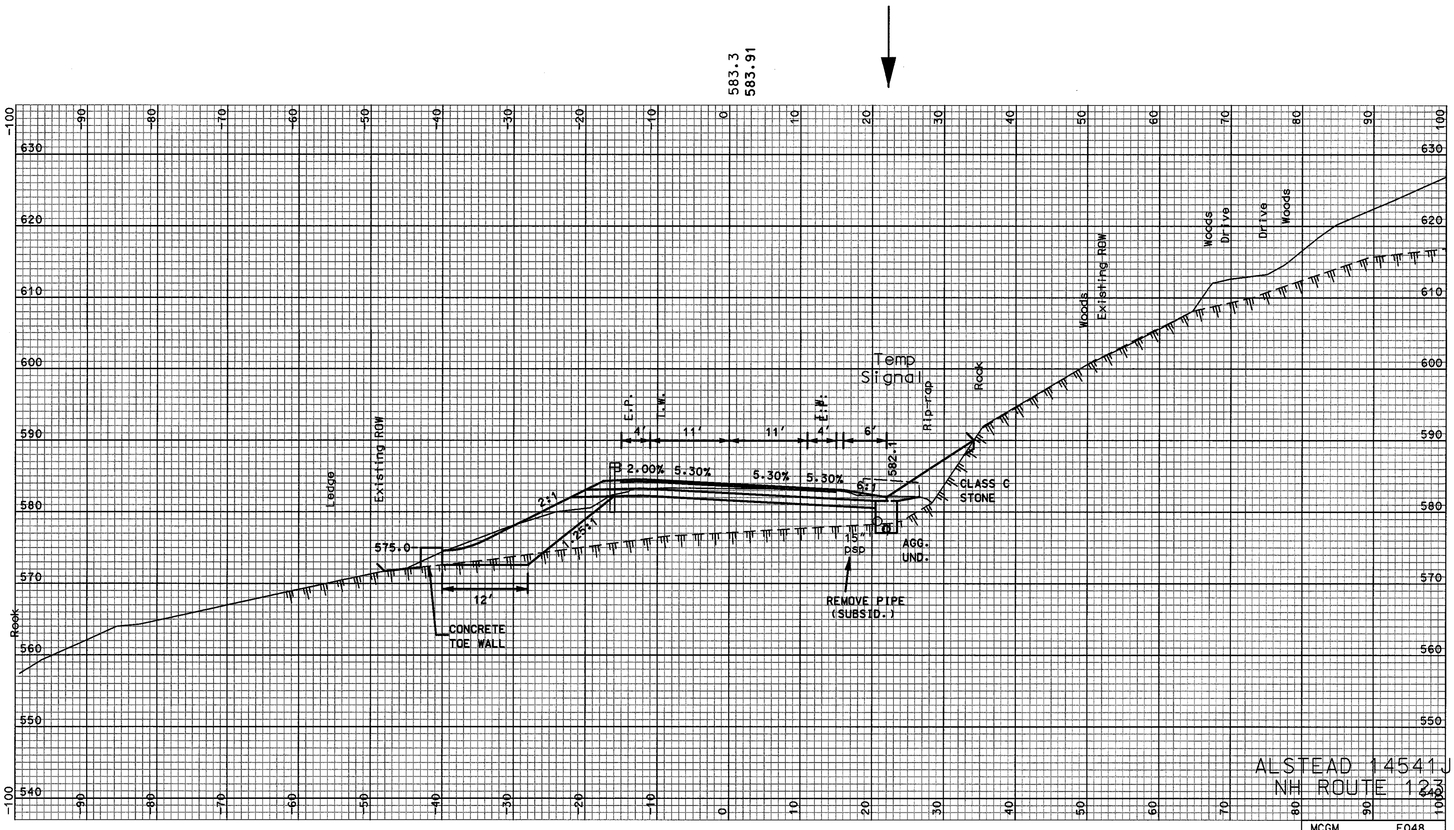
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



MCGM E048 D048

328+25



MCGM E048 D048

328+00

SHEET TOTALS

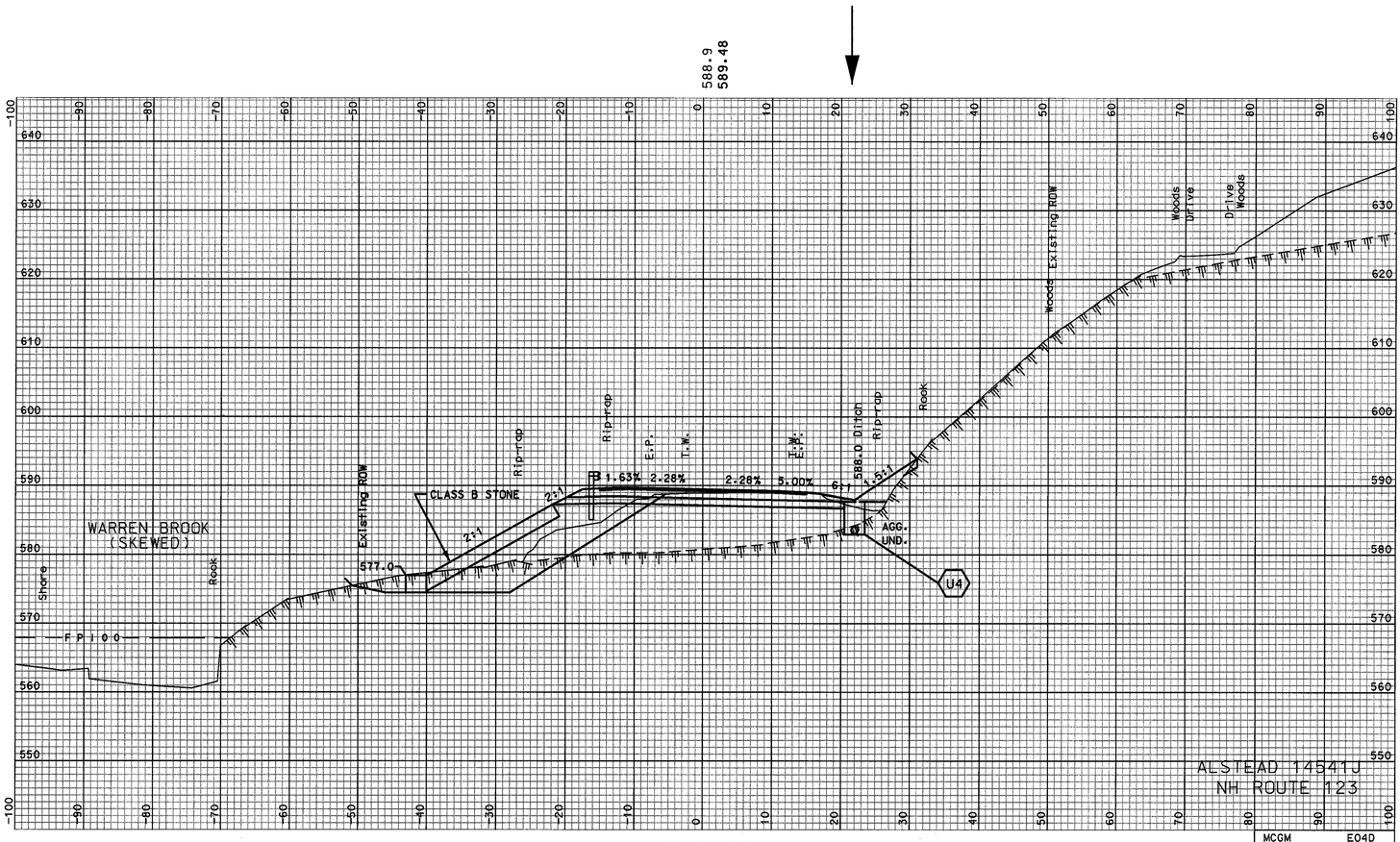
COMMON EXCAV.	230.2 C.Y.	ROCK EXCAV.	31.1 C.Y.
FILL	204.7 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_1	14541J	90	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

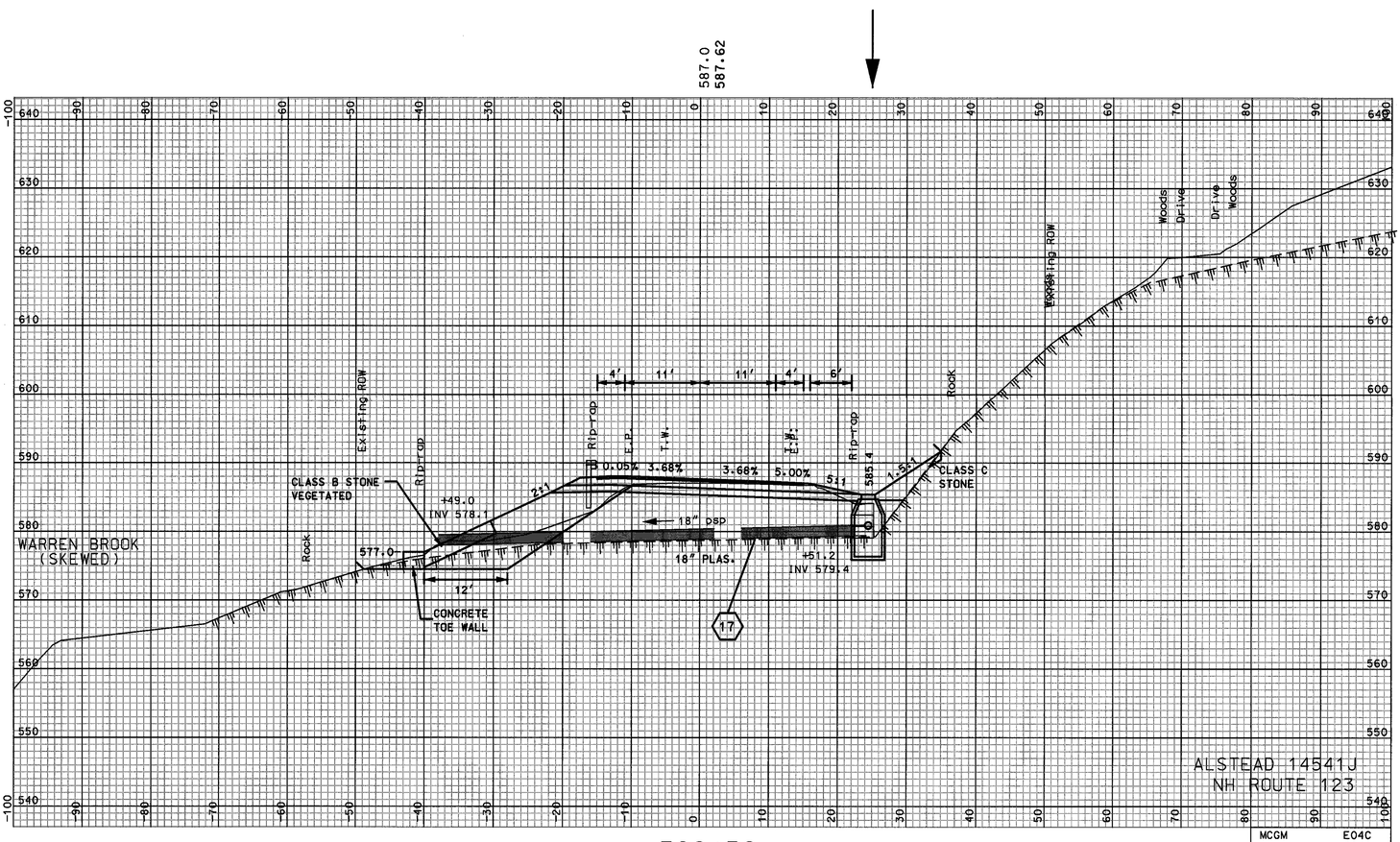
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



328+75

MCGM E04D D04D



328+50

MCGM E04C D04C

SHEET TOTALS

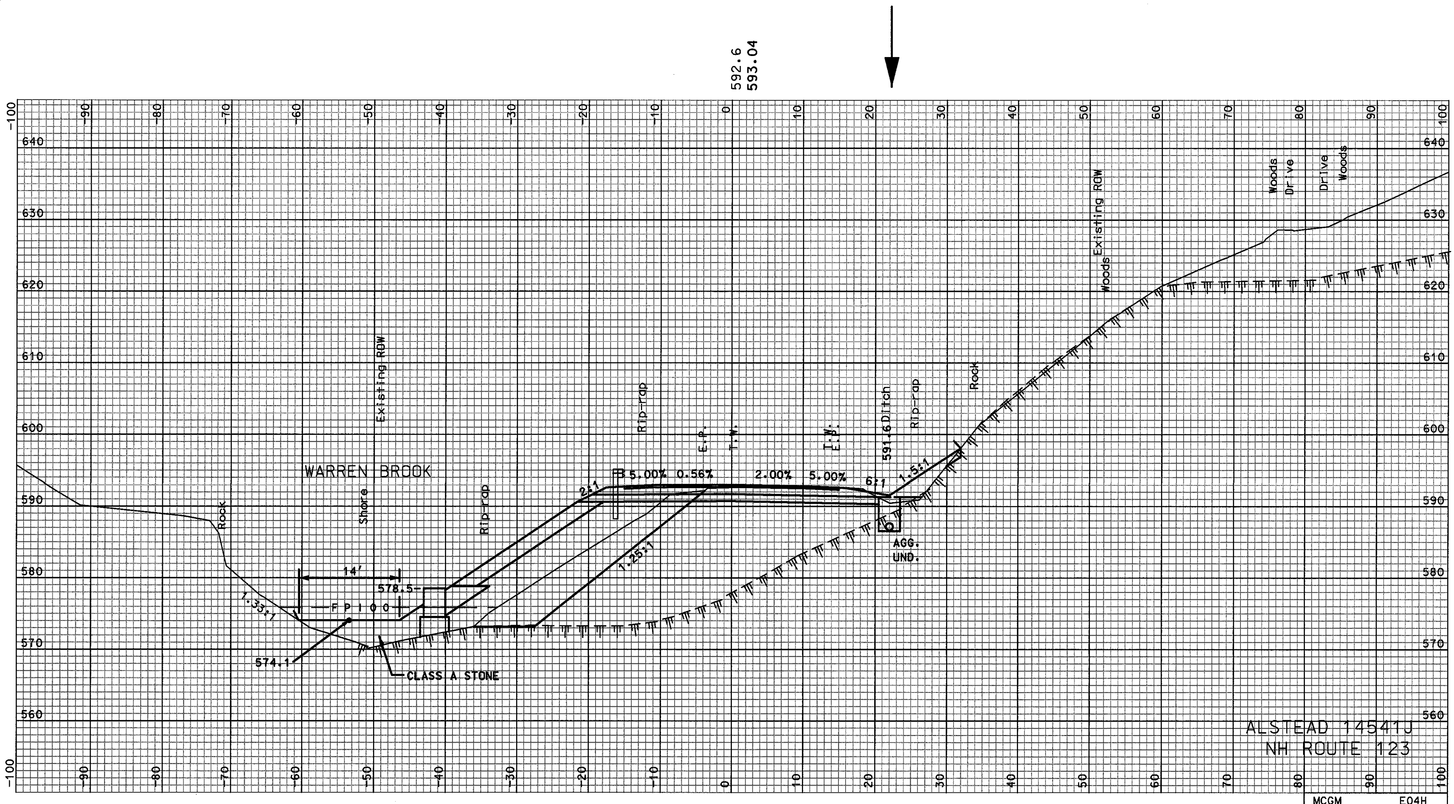
COMMON EXCAV.	202.9 C.Y.	ROCK EXCAV.	78.8 C.Y.
FILL	339.5 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	91	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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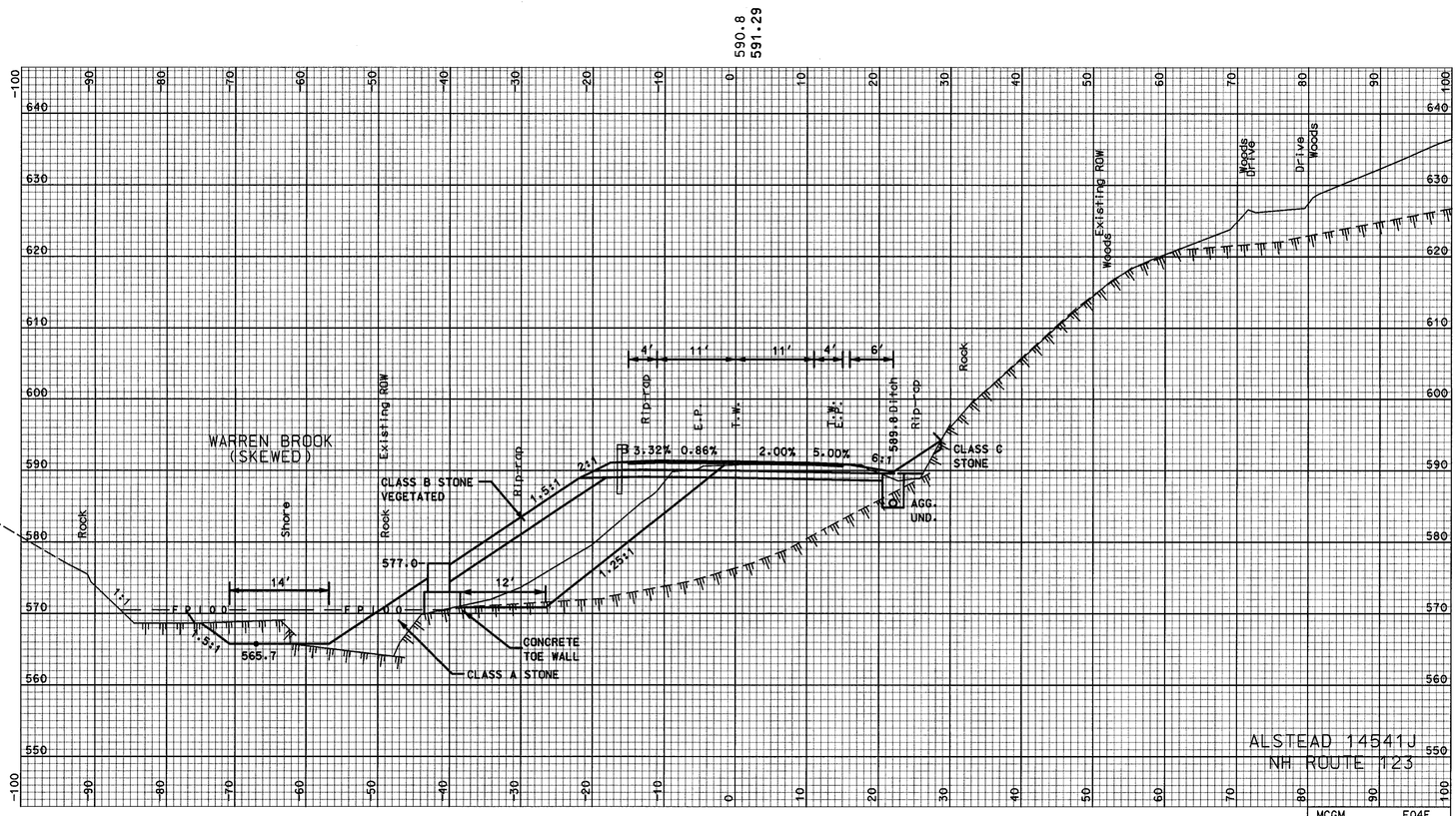

329+00

MCGM E04F D04F

SHEET TOTALS			
COMMON EXCAV. 290.5 C.Y.		ROCK EXCAV. 19.4 C.Y.	
FILL 427.2 C.Y.		MUCK EXCAV. - C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	92	156

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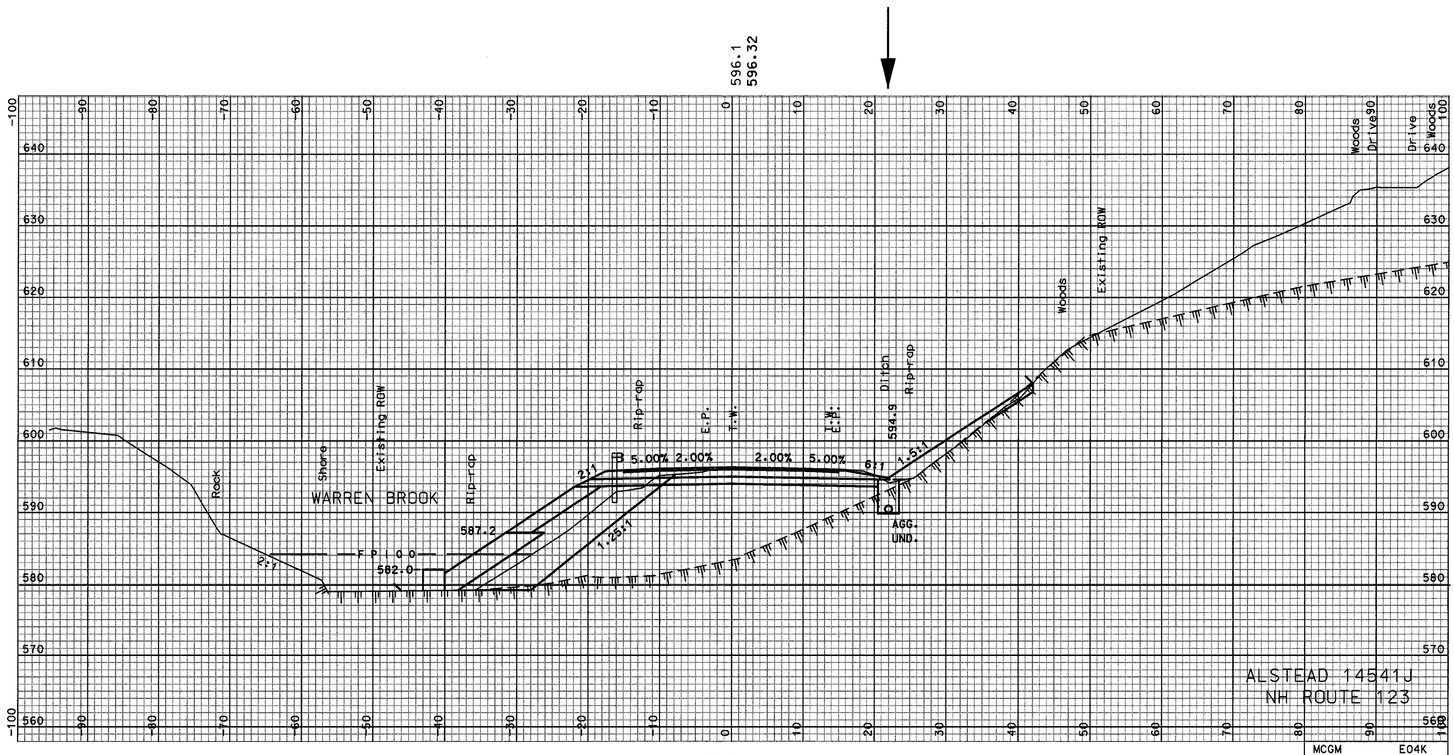
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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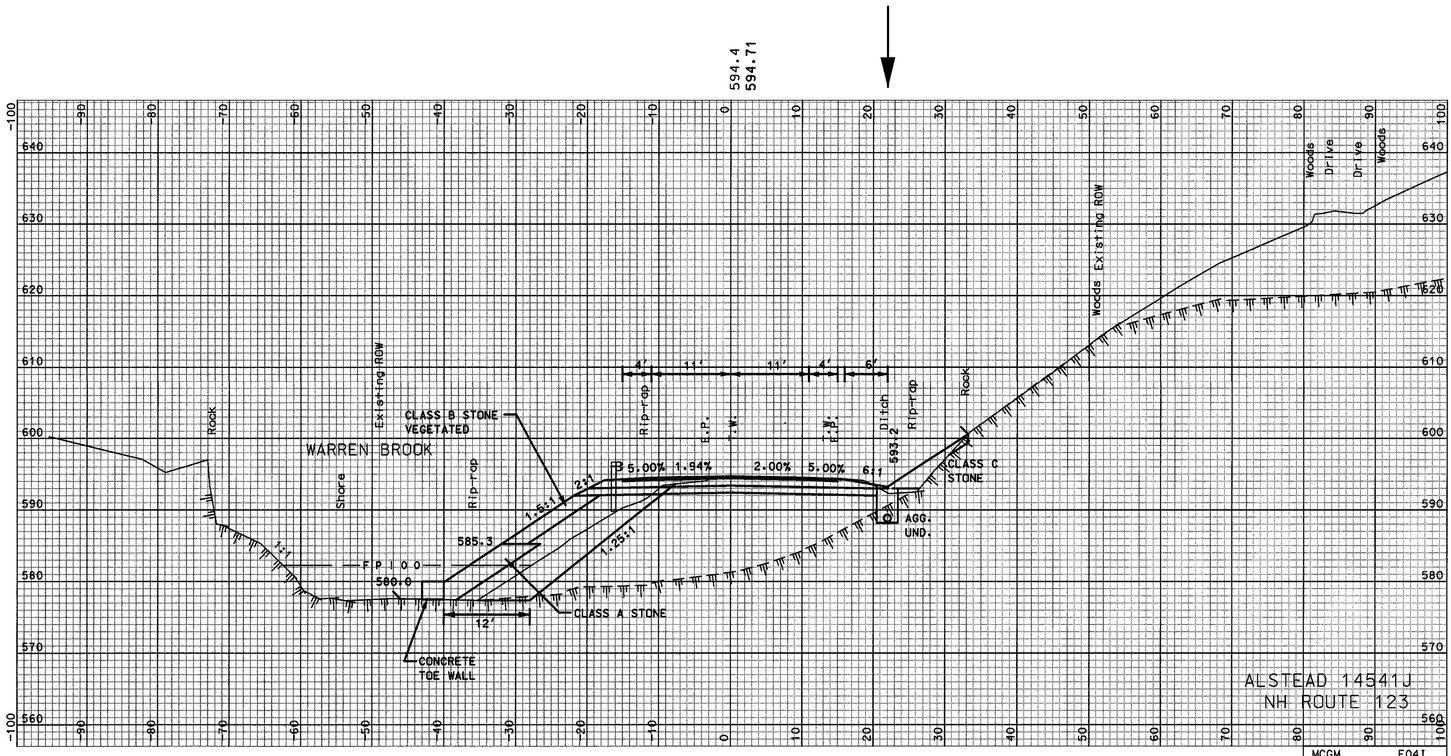


329+50

SHEET TOTALS

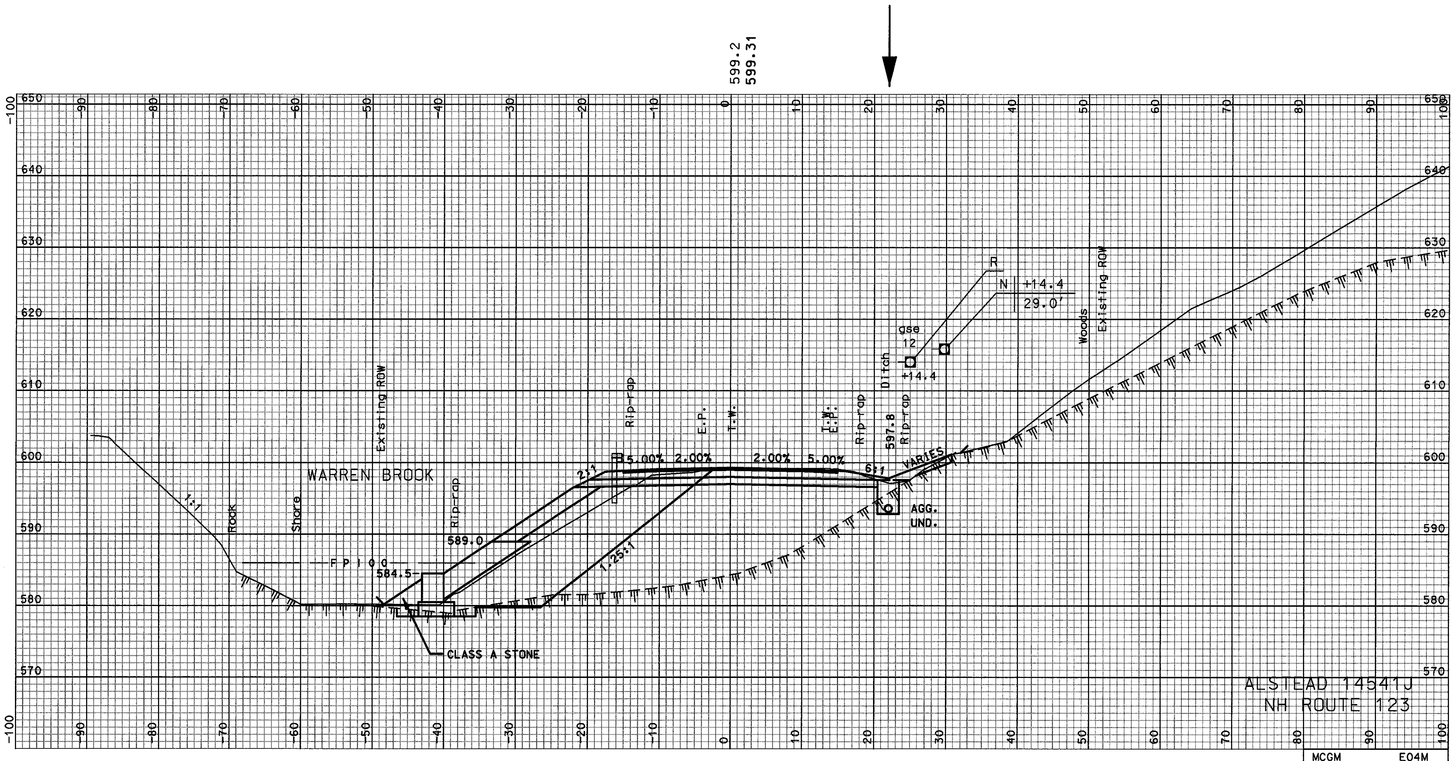
COMMON EXCAV.	283.1 C.Y.	ROCK EXCAV.	4.8 C.Y.
FILL	258.6 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	93	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

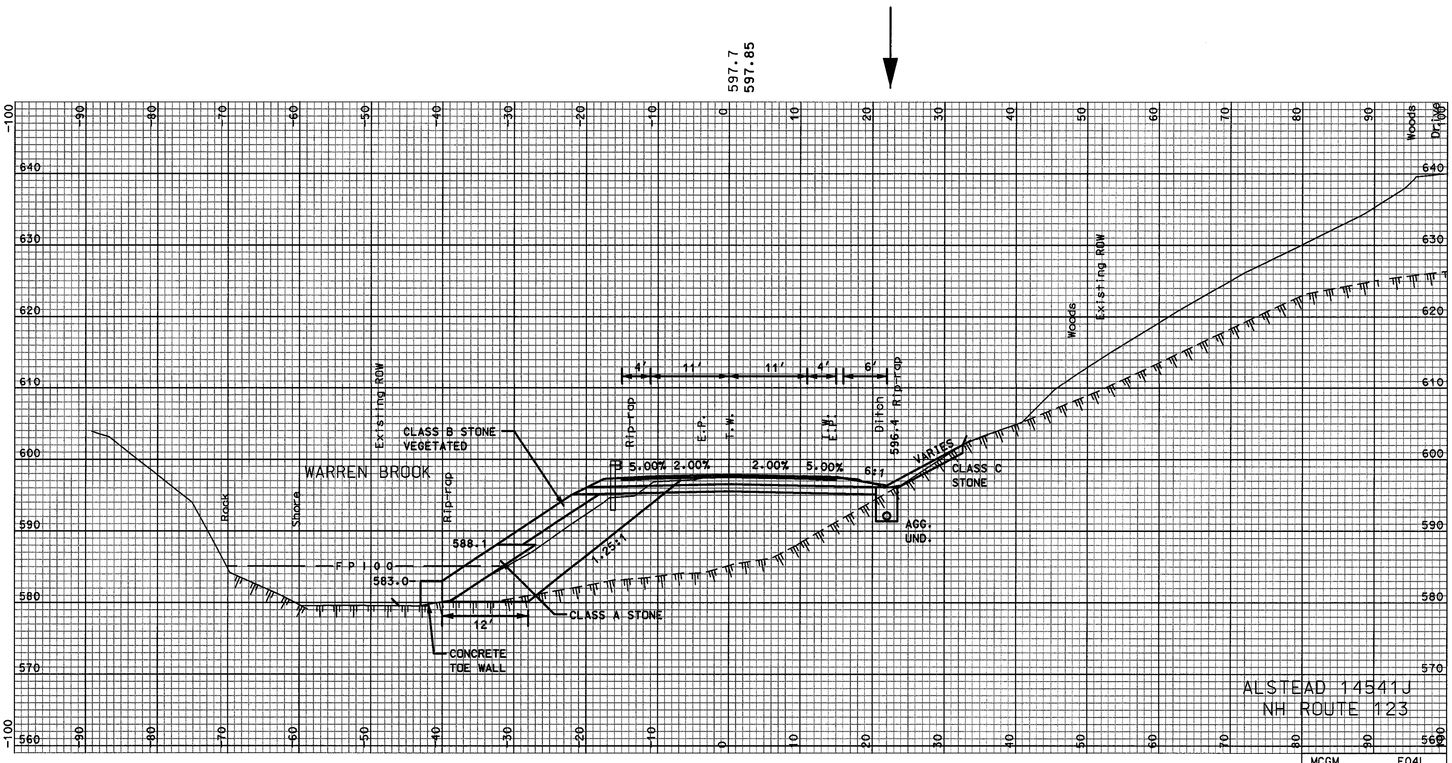
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



330+25

MCGM E04M D04M



330+00

MCGM E04L D04L

SHEET TOTALS

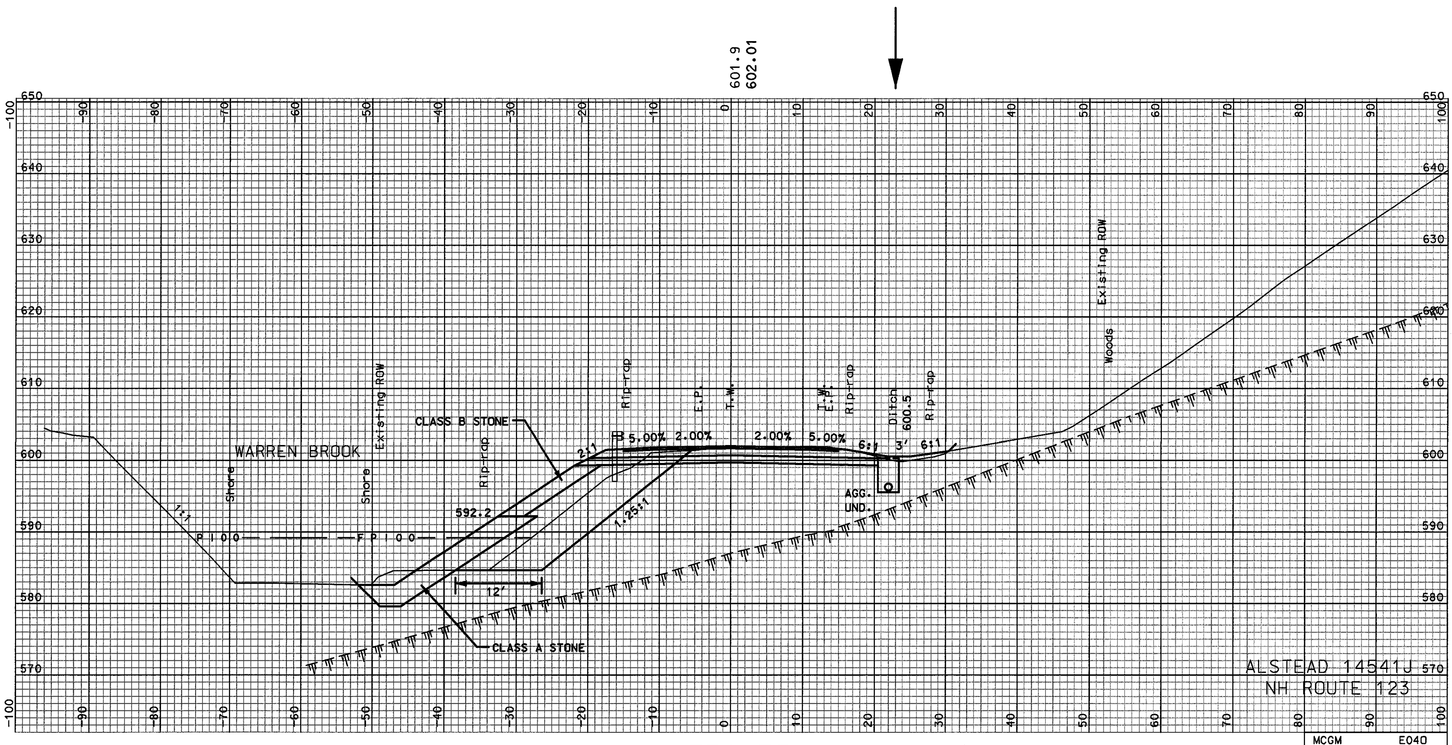
COMMON EXCAV.	469.6 C.Y.	ROCK EXCAV.	12.1 C.Y.
FILL	411.5 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	94	156

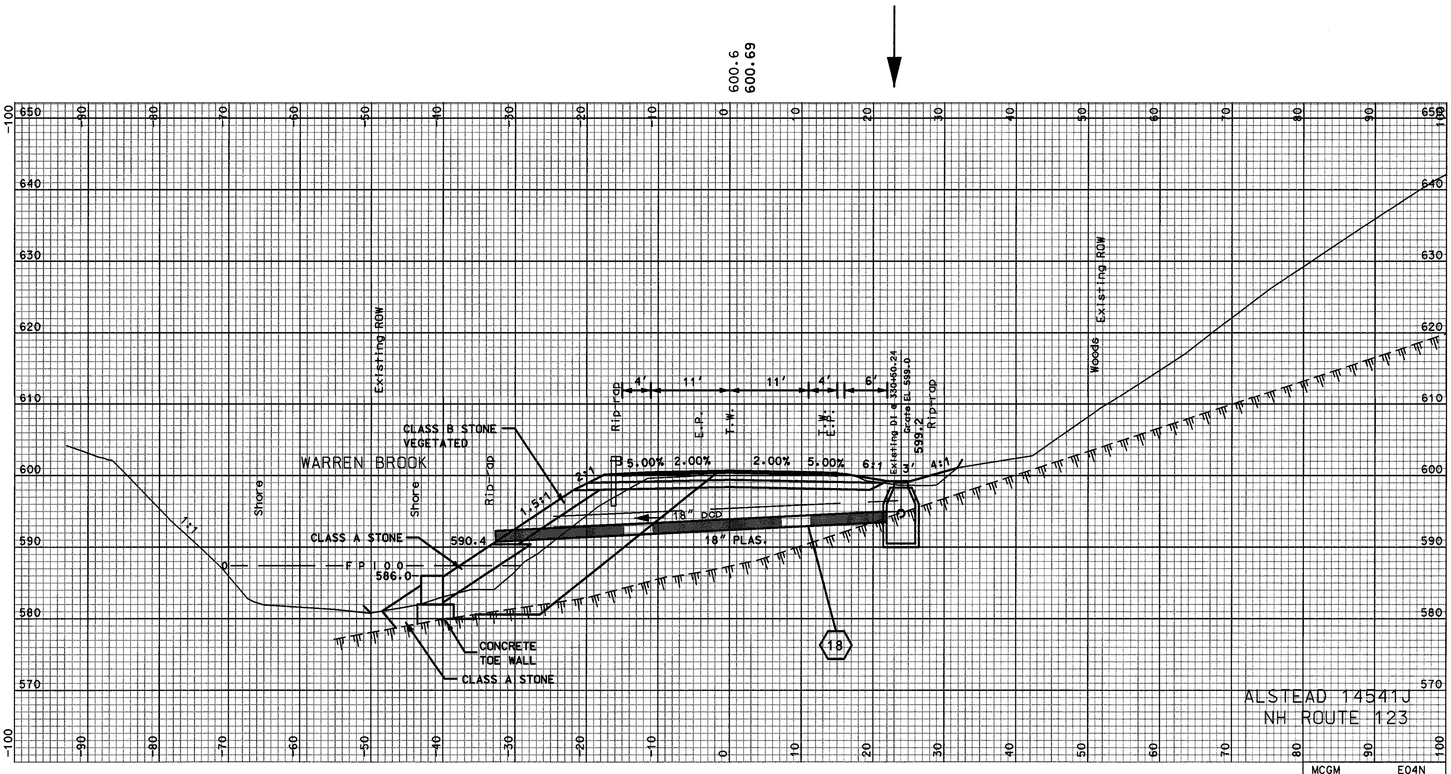
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



330+75



330+50

SHEET TOTALS

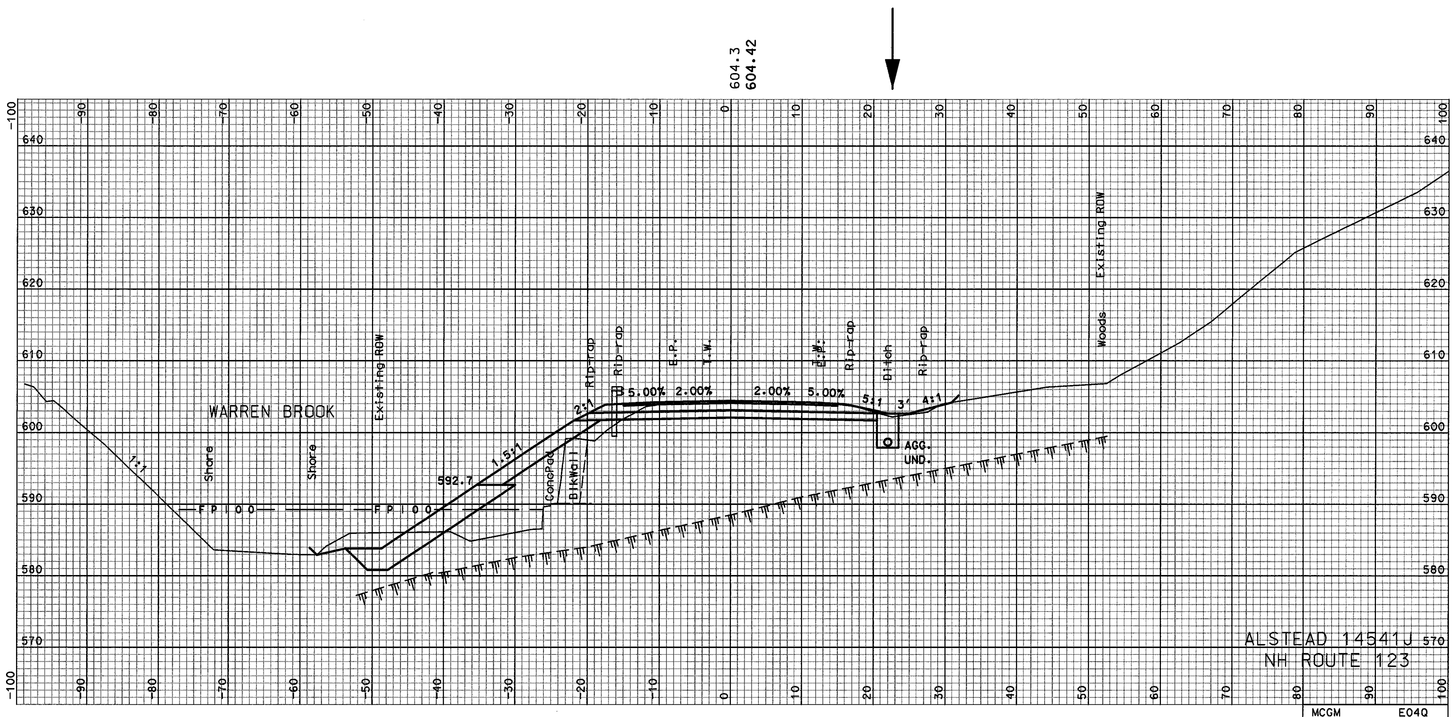
COMMON EXCAV.	380.3 C.Y.	ROCK EXCAV.	3.5 C.Y.
FILL	326.1 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	95	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

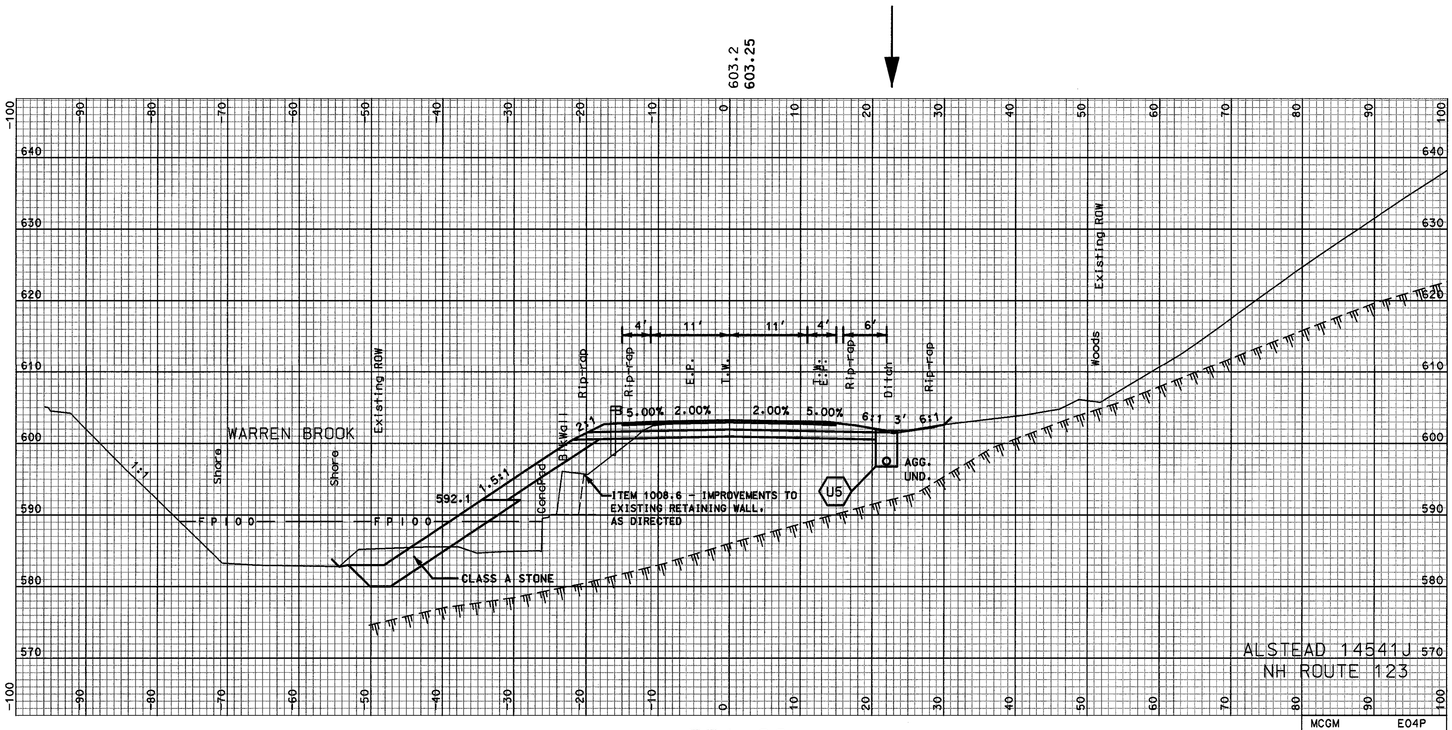
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



331+25

MCGM E04Q D04Q



331+00

MCGM E04P D04P

SHEET TOTALS

COMMON EXCAV.	228.9 C.Y.	ROCK EXCAV.	- C.Y.
FILL	180.5 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	96	156

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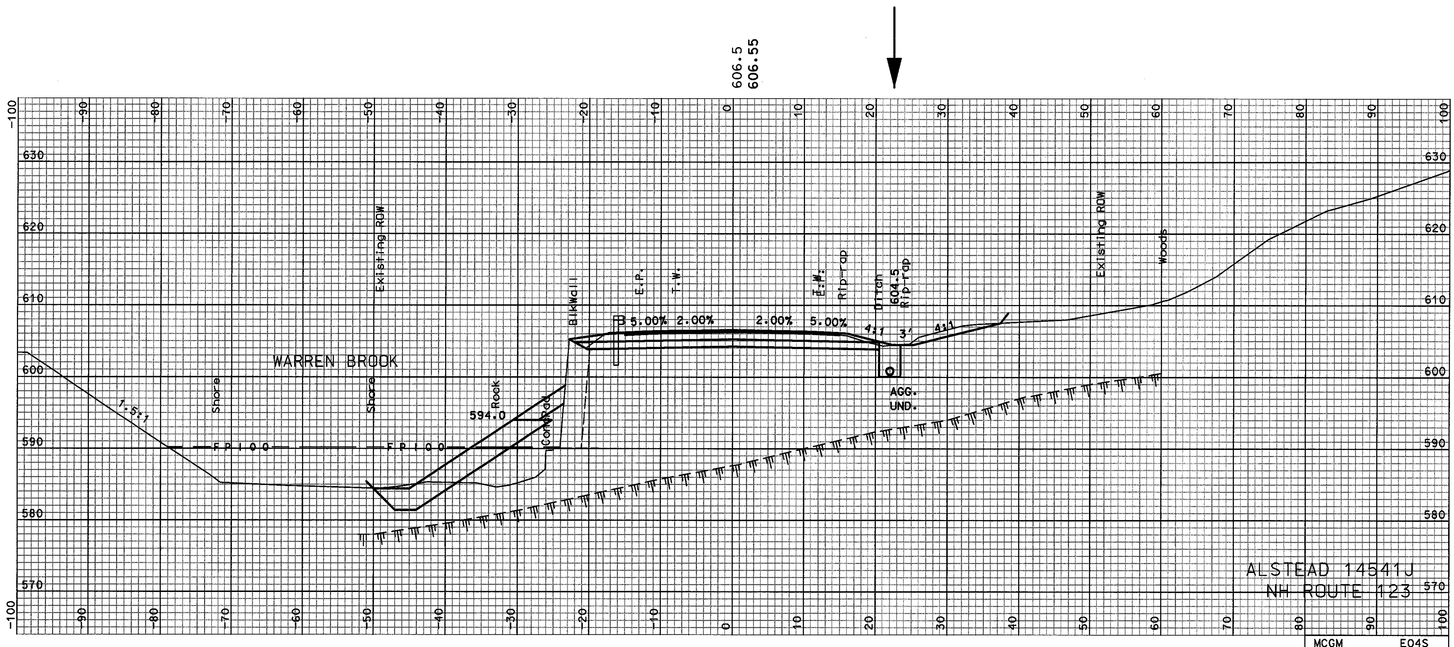
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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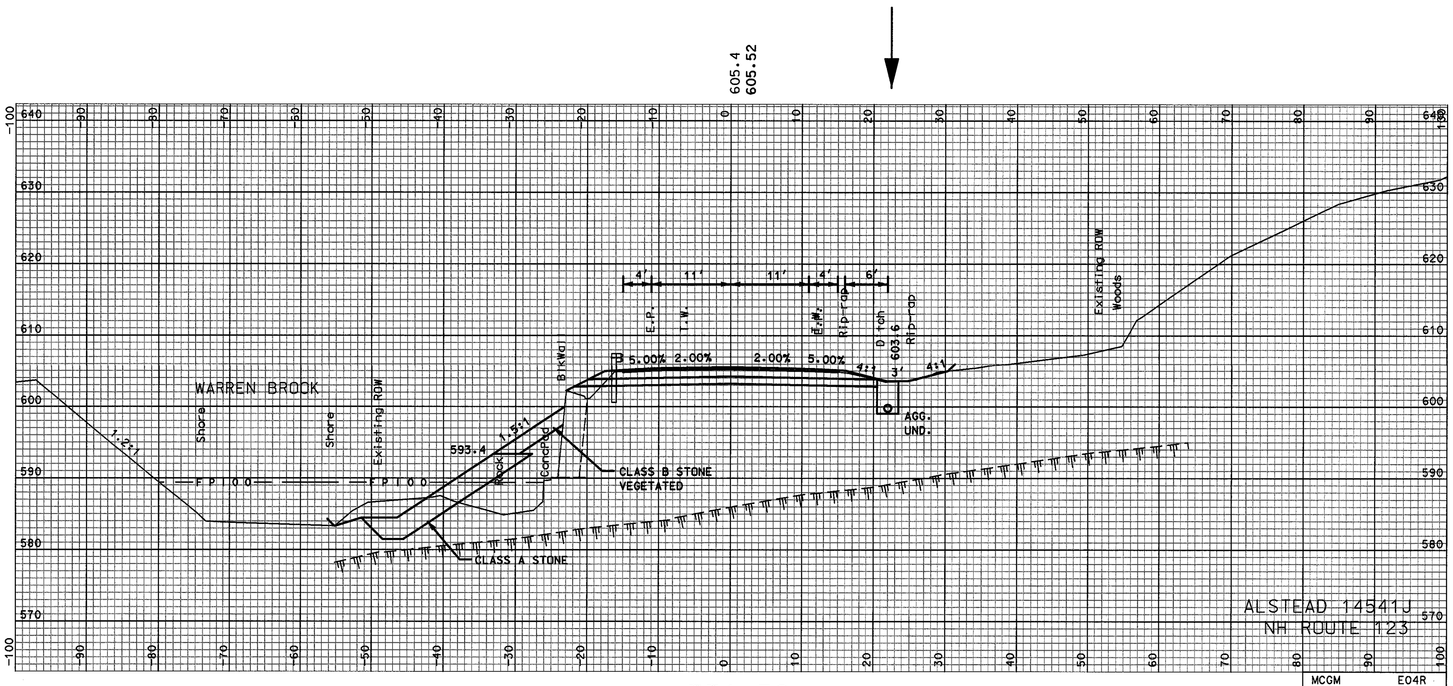

331+50

SHEET TOTALS

COMMON EXCAV.	193.9 C.Y.	ROCK EXCAV.	- C.Y.
FILL	89.3 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	97	156

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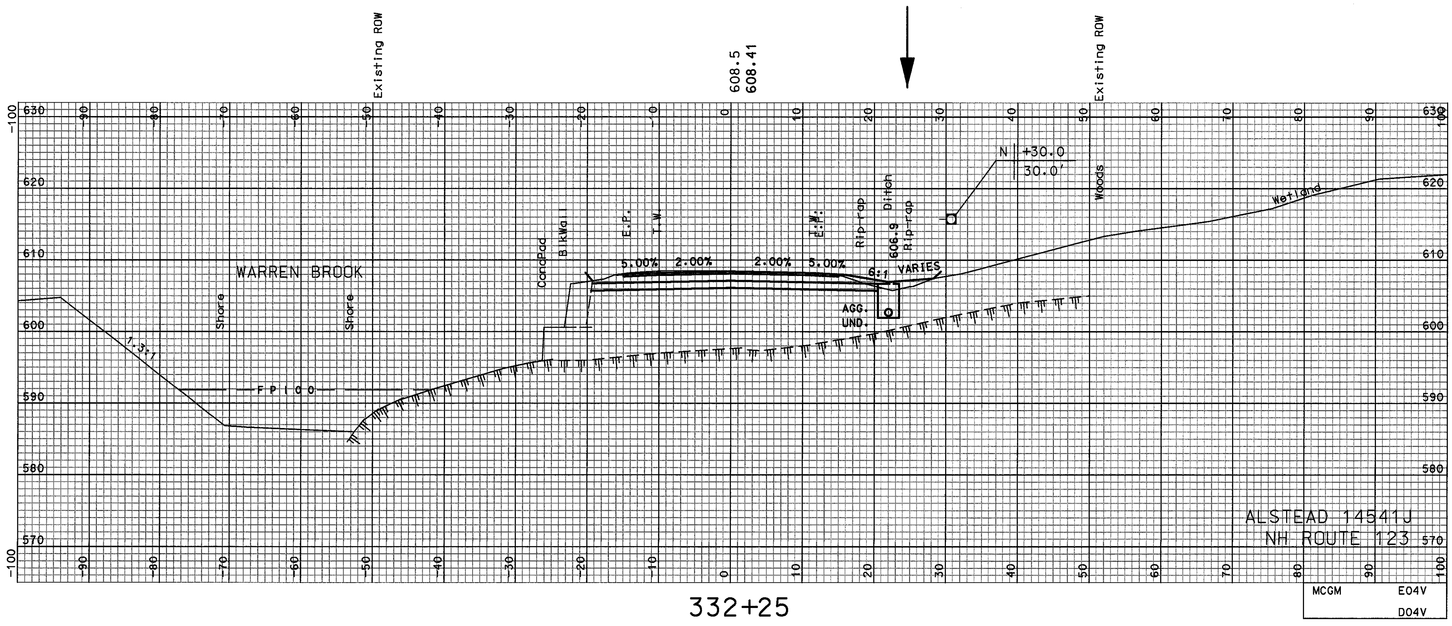
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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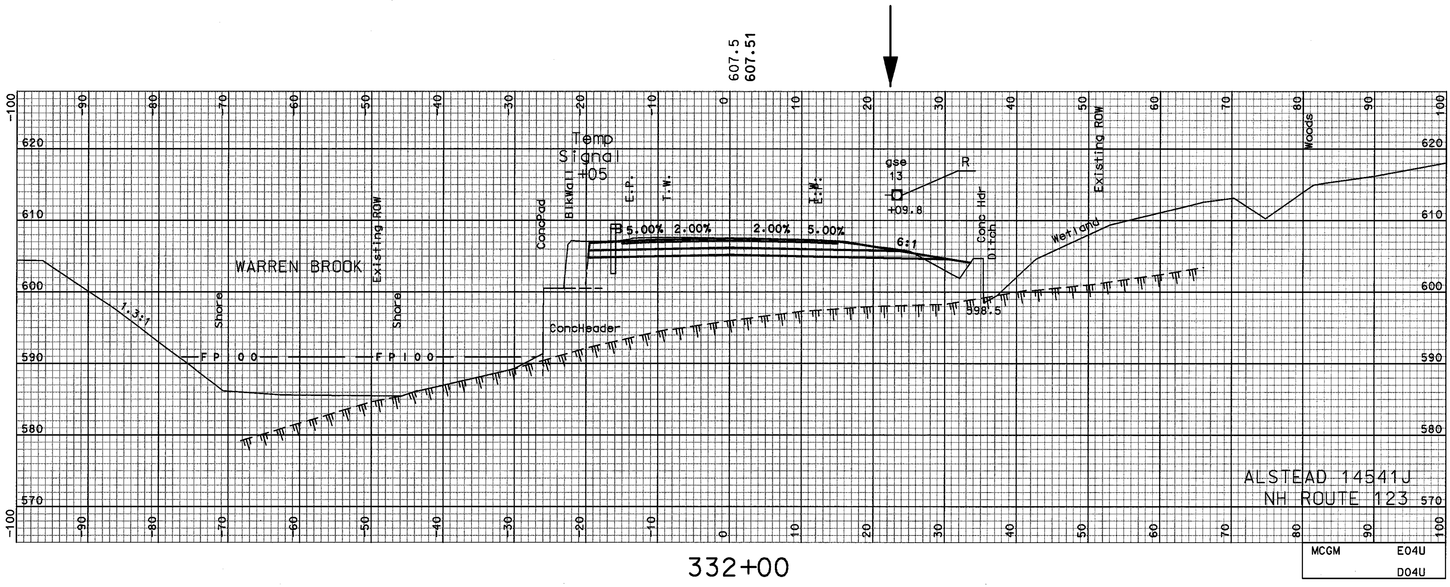

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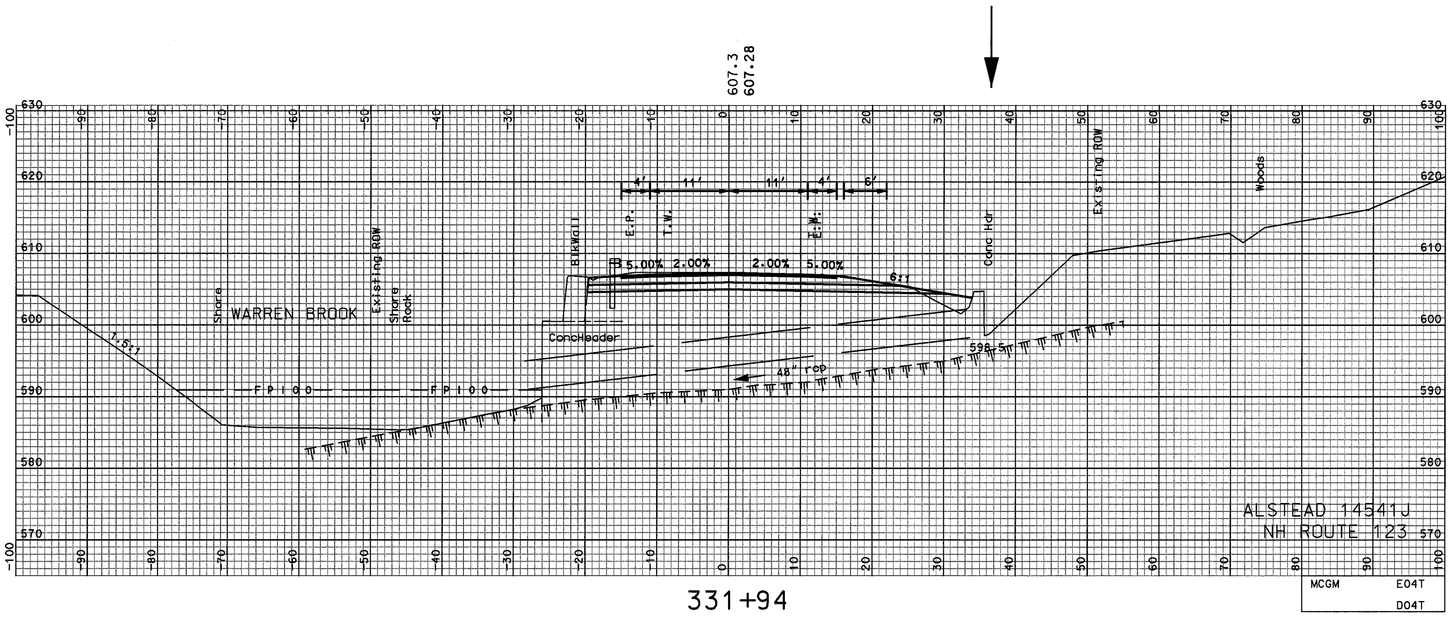


331+94

SHEET TOTALS

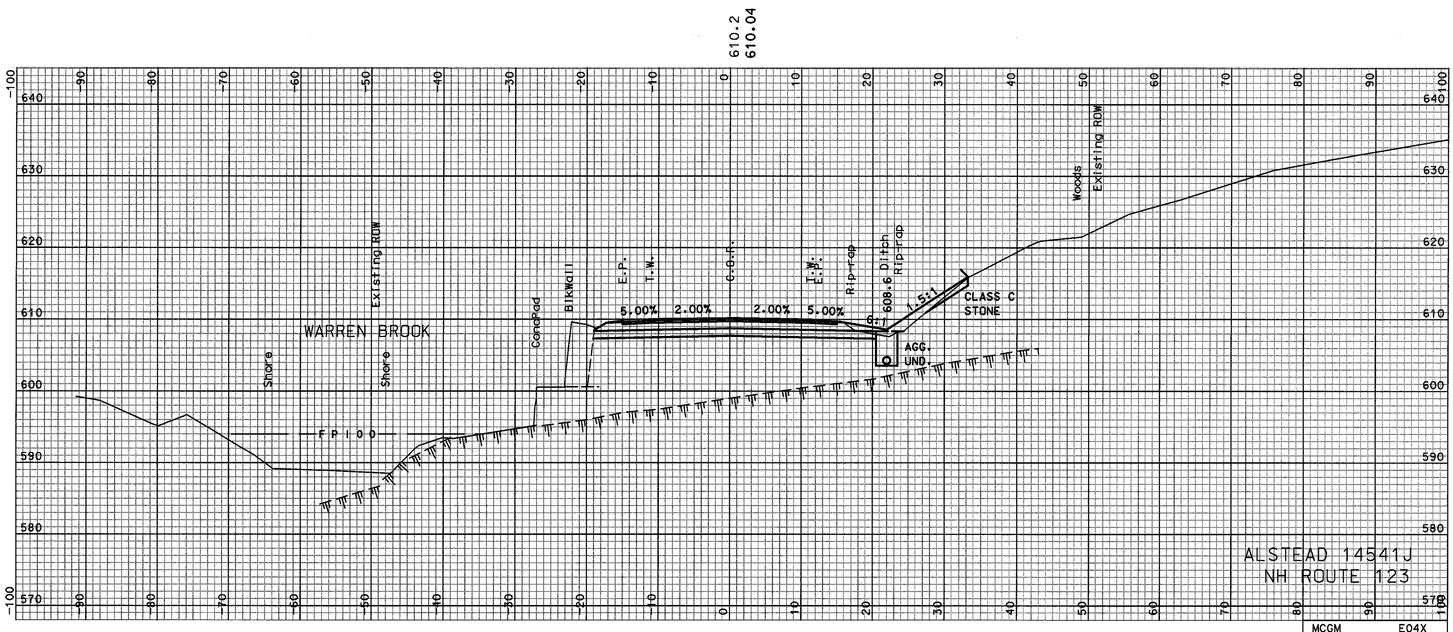
COMMON EXCAV.	189.2 C.Y.	ROCK EXCAV.	- C.Y.
FILL	18.0 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	98	156

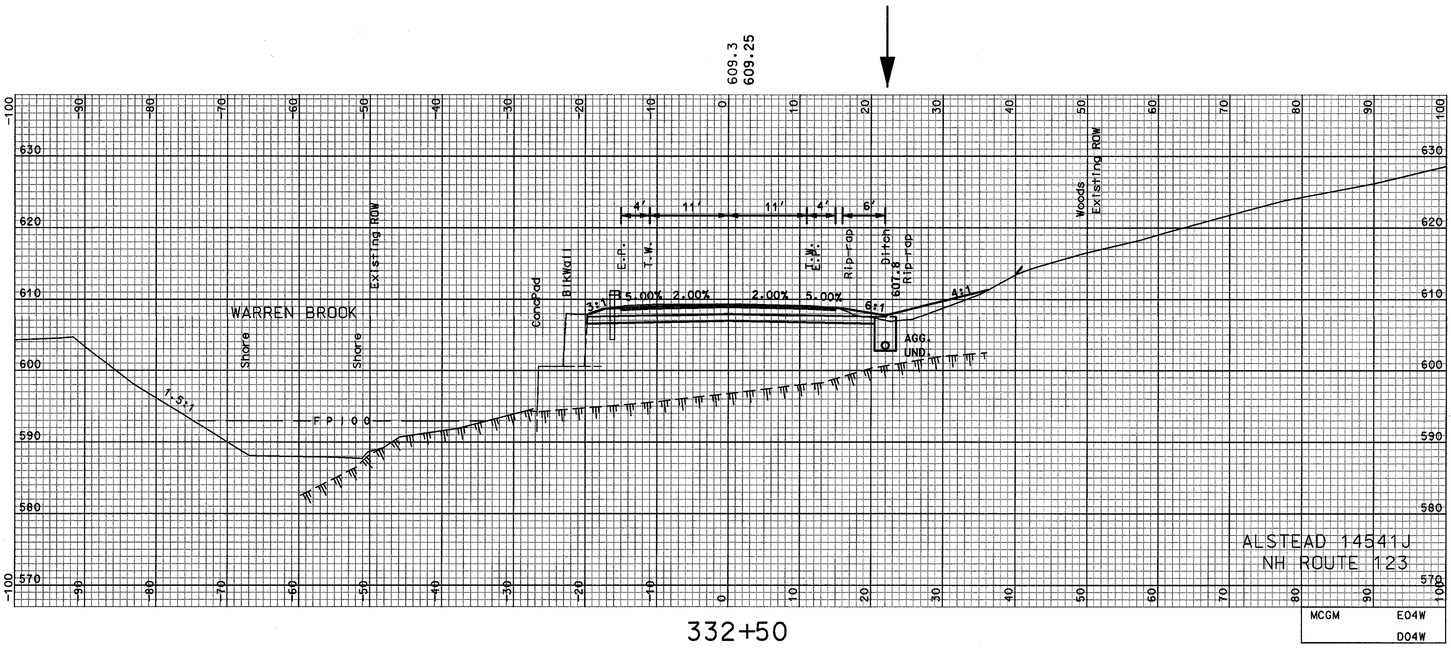
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



332+75



332+50

SHEET TOTALS

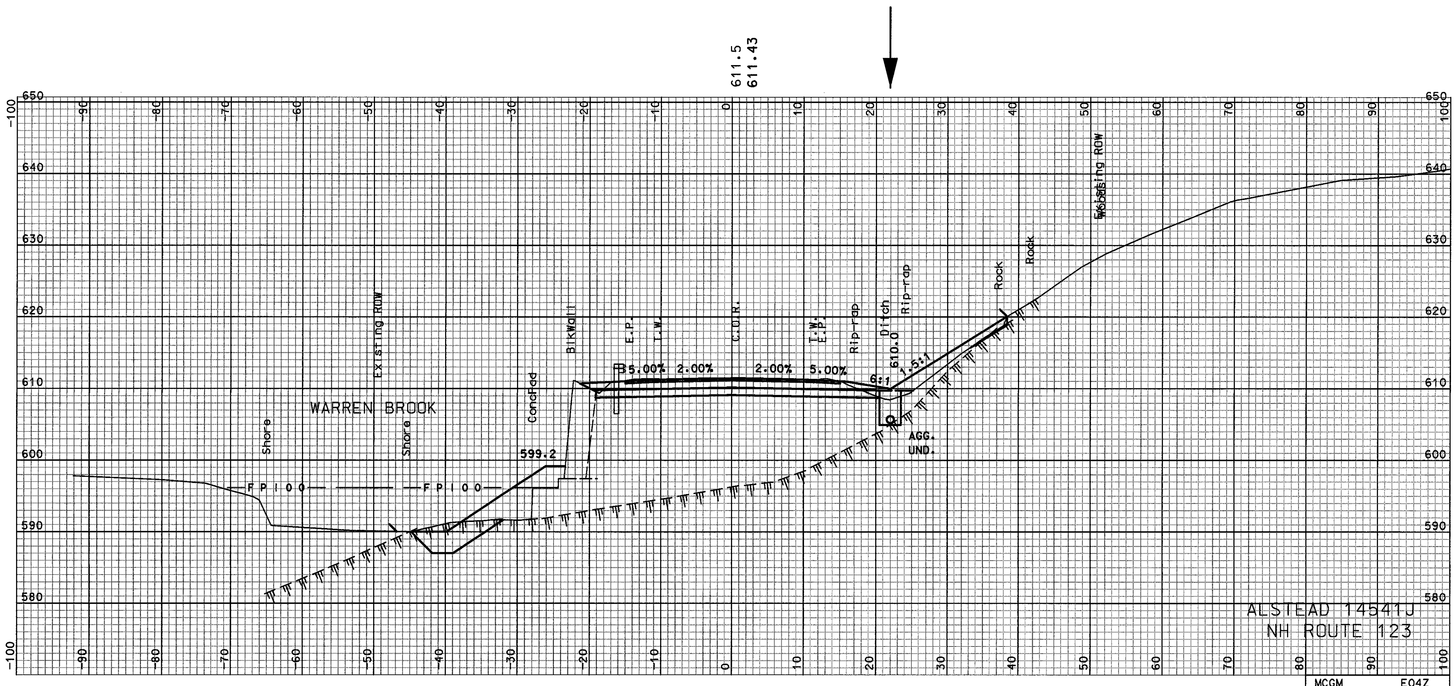
COMMON EXCAV.	171.1 C.Y.	ROCK EXCAV.	75.5 C.Y.
FILL	9.1 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	99	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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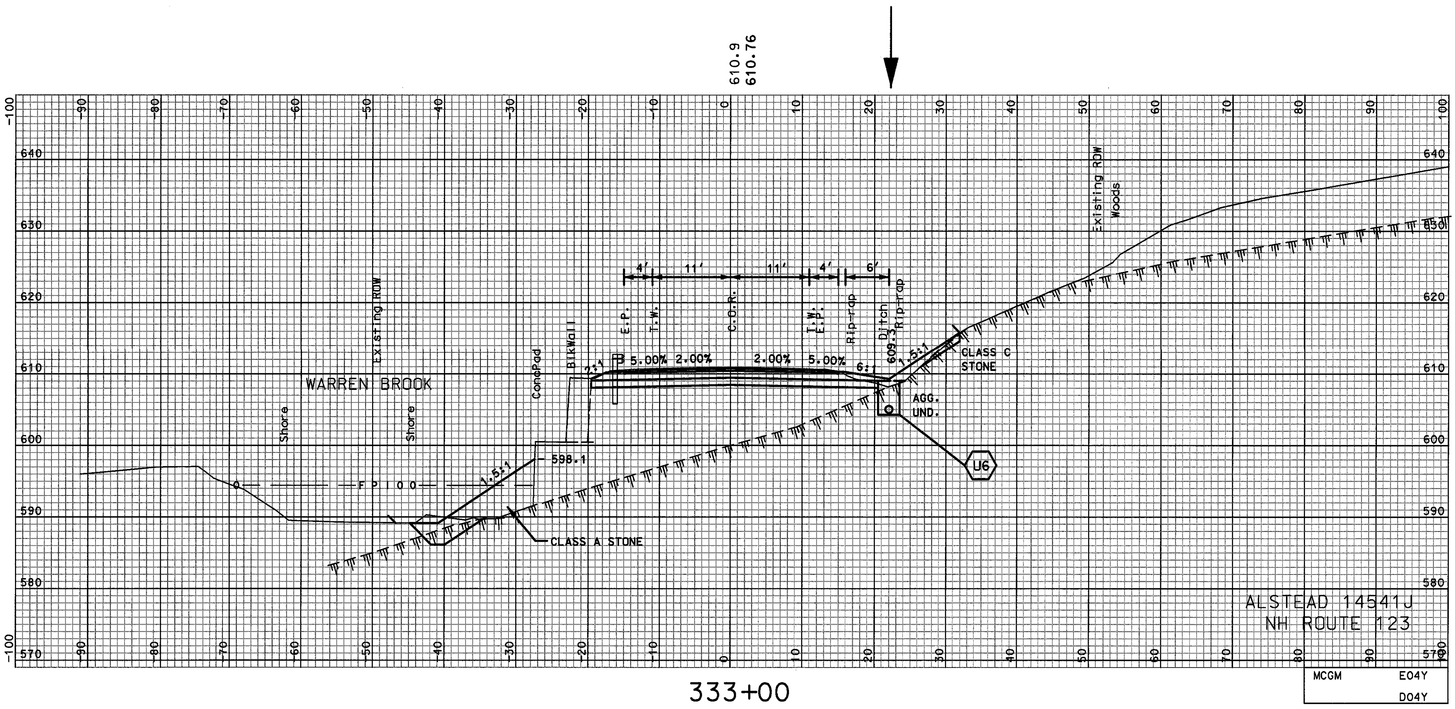

333+00

SHEET TOTALS

COMMON EXCAV.	169.5 C.Y.	ROCK EXCAV.	49.9 C.Y.
FILL	7.5 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	100	156

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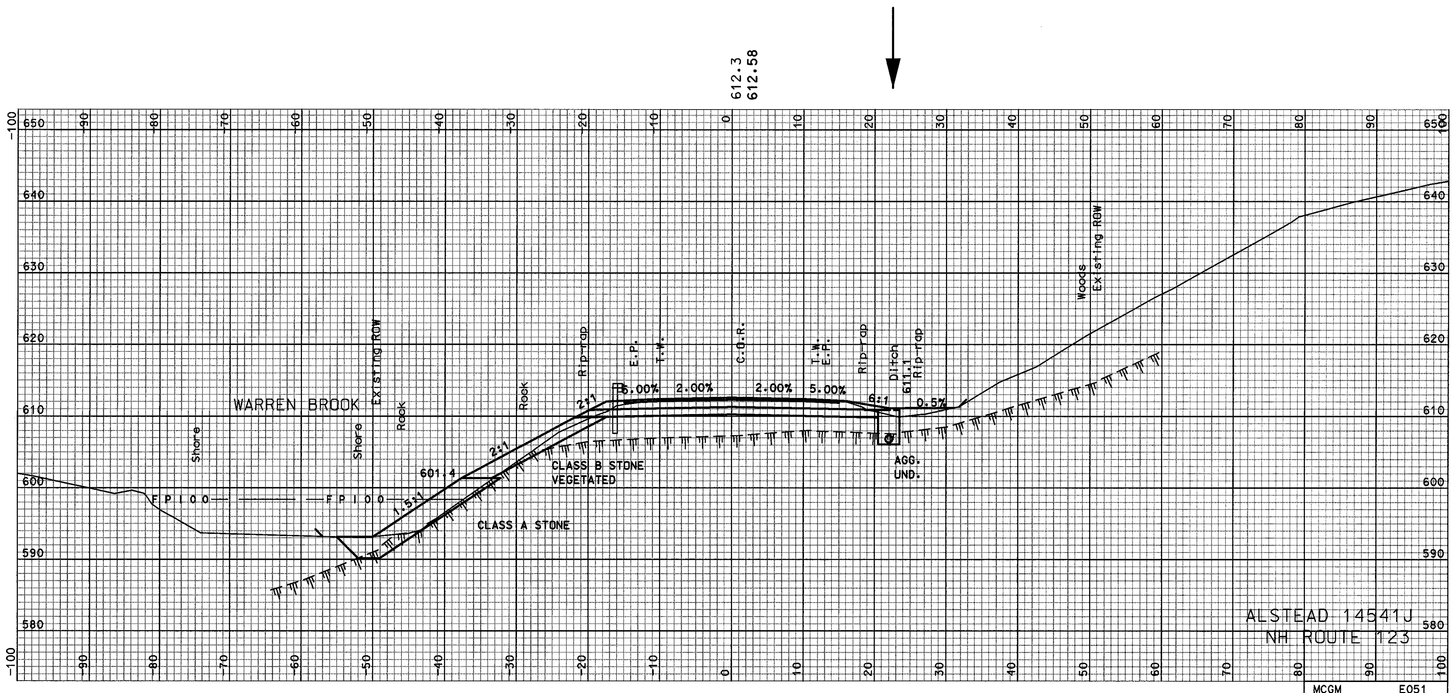
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

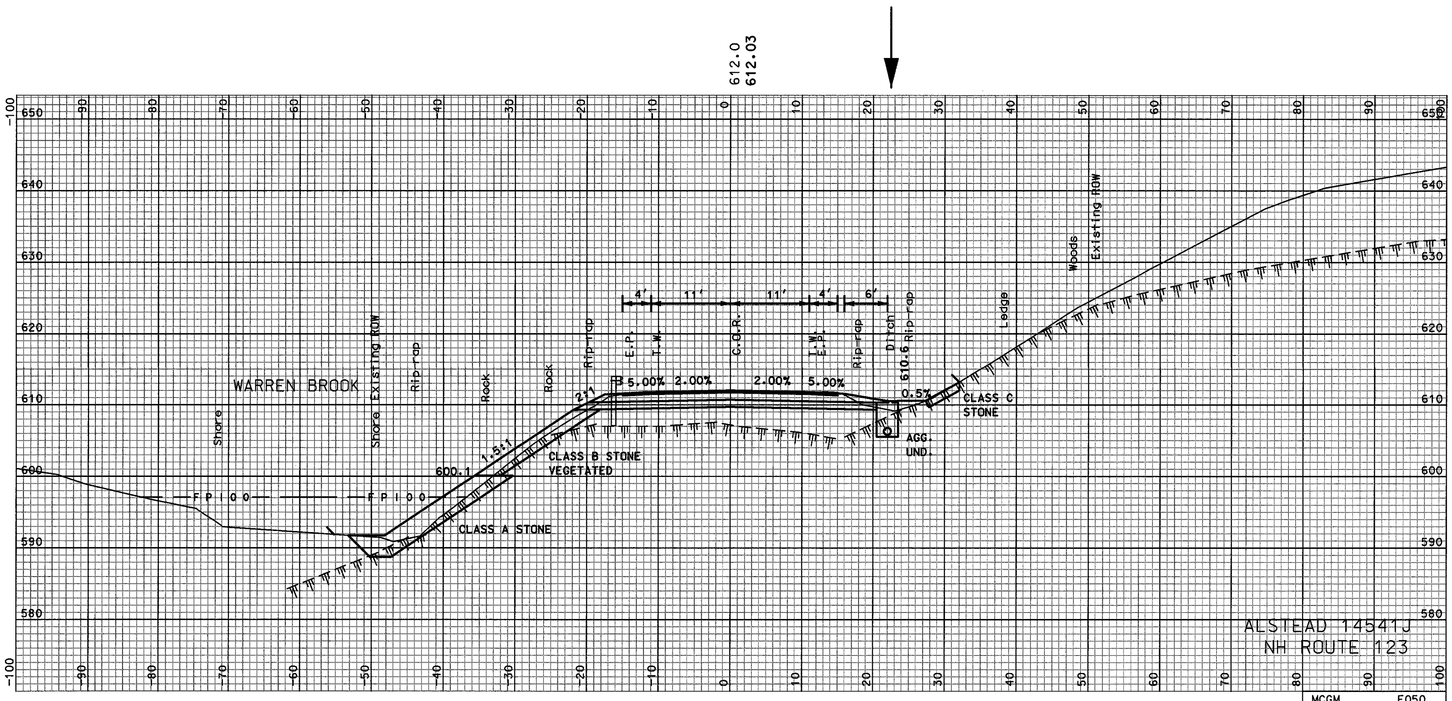
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



MCGM E051
D051

333+75



MCGM E050
D050

333+50

SHEET TOTALS

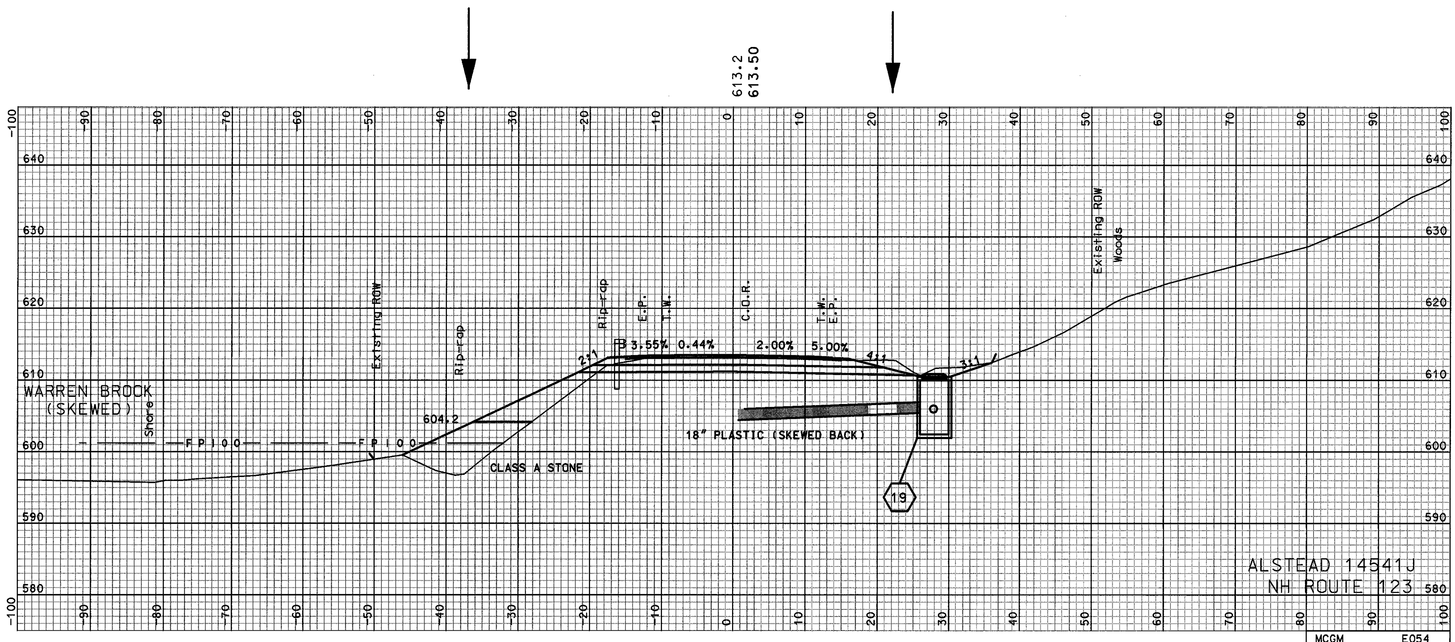
COMMON EXCAV.	176.7 C.Y.	ROCK EXCAV.	30.2 C.Y.
FILL	28.0 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	101	156

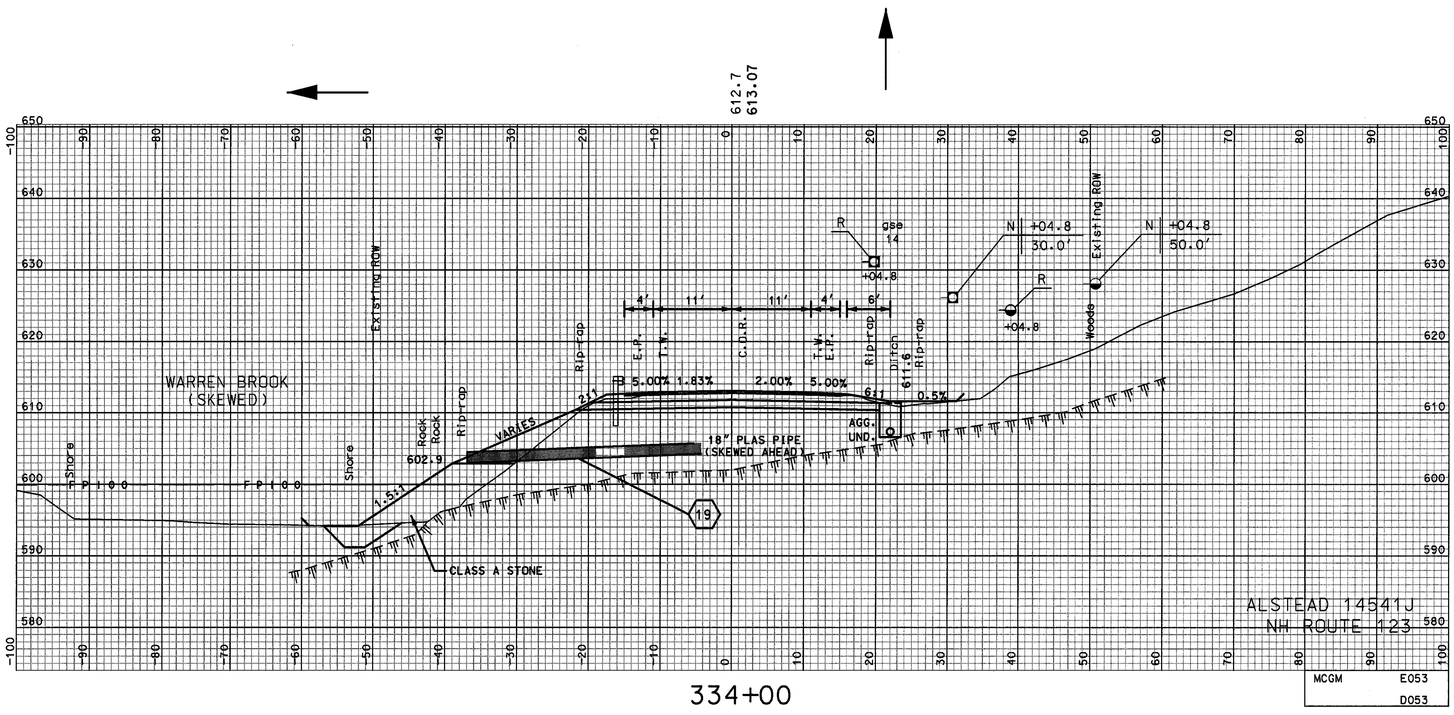
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



334+25



334+00

SHEET TOTALS			
COMMON EXCAV. 159.5 C.Y.		ROCK EXCAV. — C.Y.	
FILL 72.2 C.Y.		MUCK EXCAV. — C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	102	156

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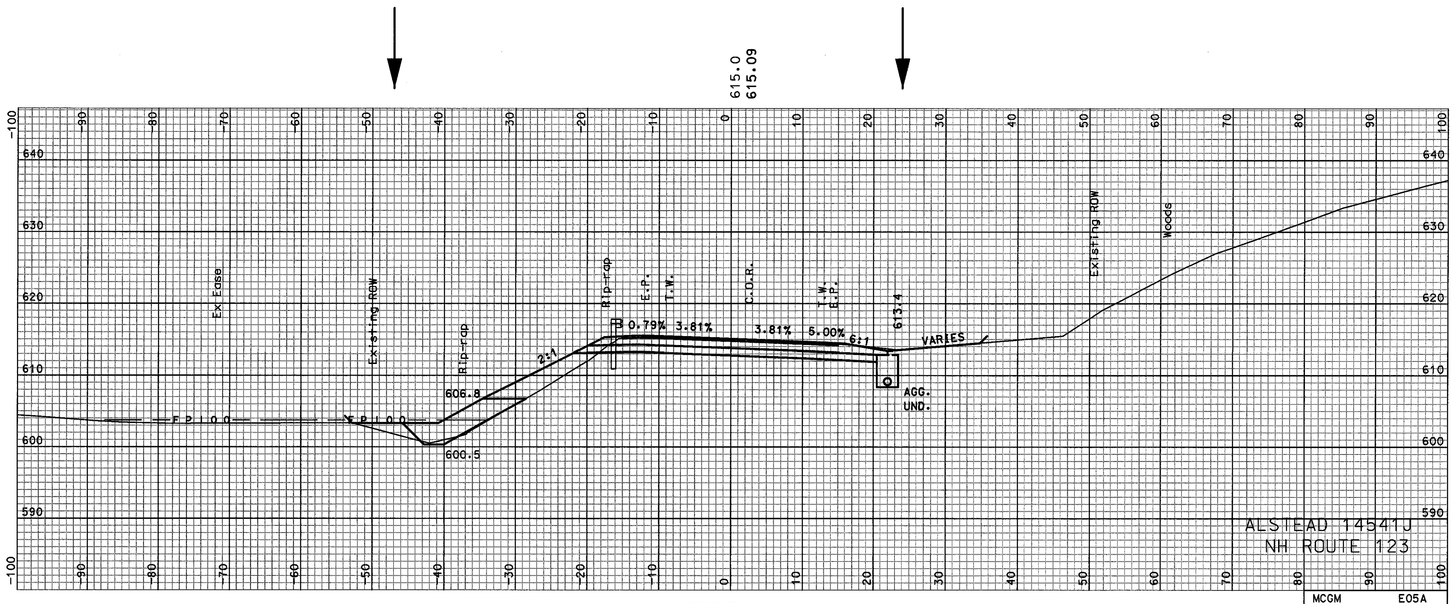
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

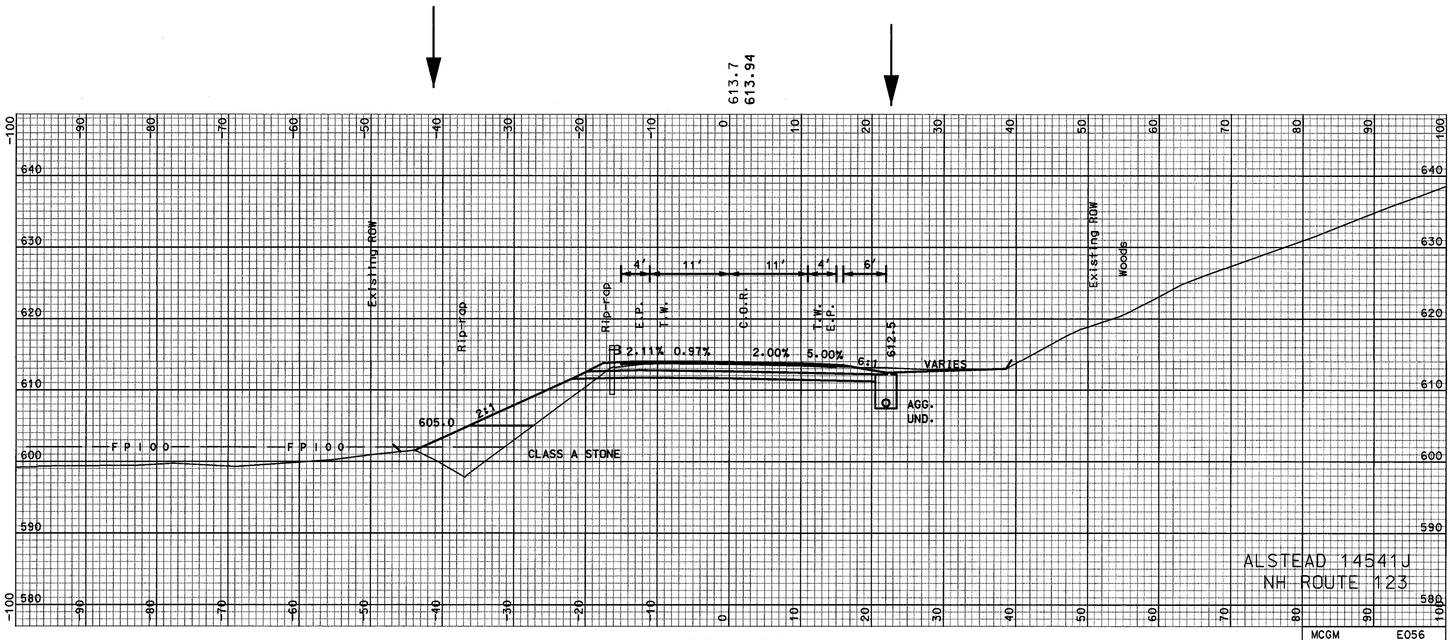
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



335+00

MCGM E05A D05A



334+50

MCGM E056 D056

SHEET TOTALS

COMMON EXCAV. 308.0 C.Y. ROCK EXCAV. – C.Y.

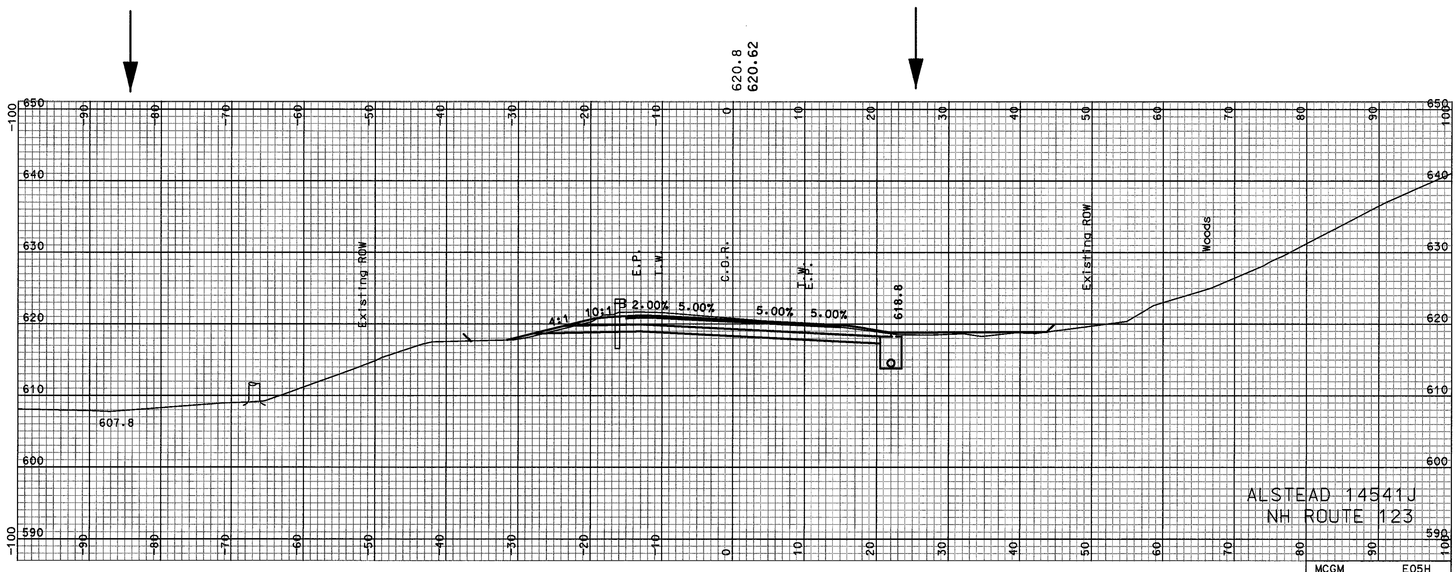
FILL 124.1 C.Y. MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	103	156

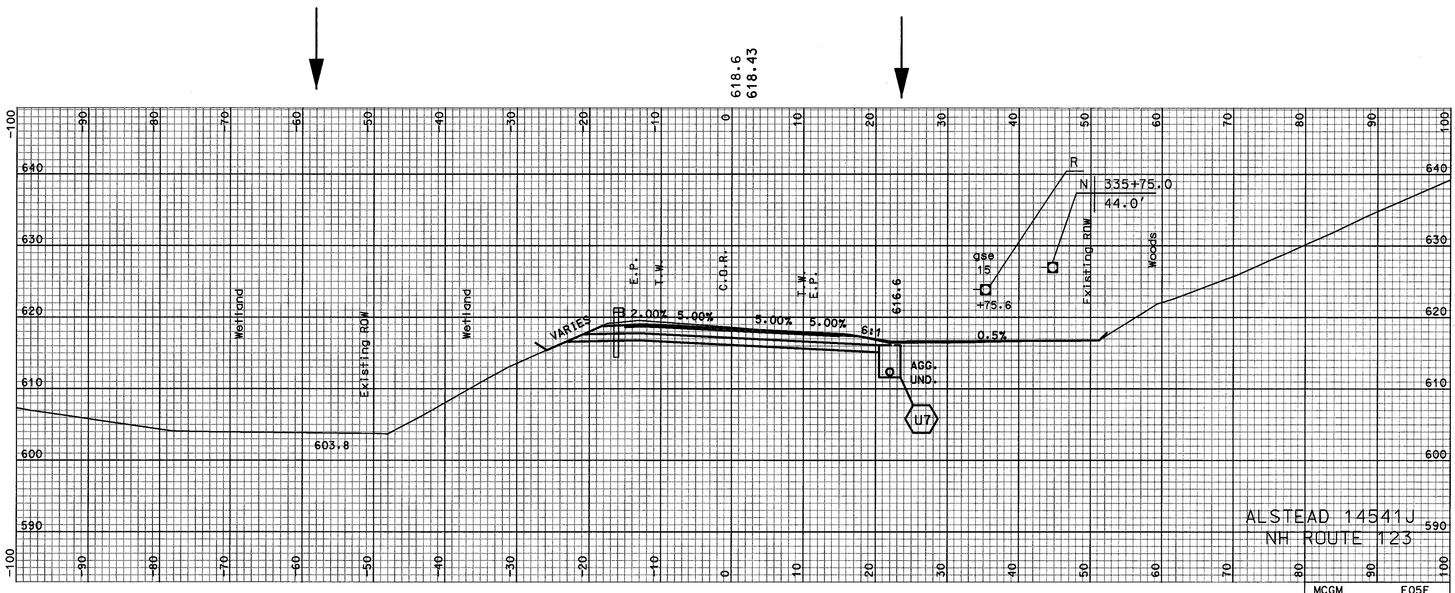
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

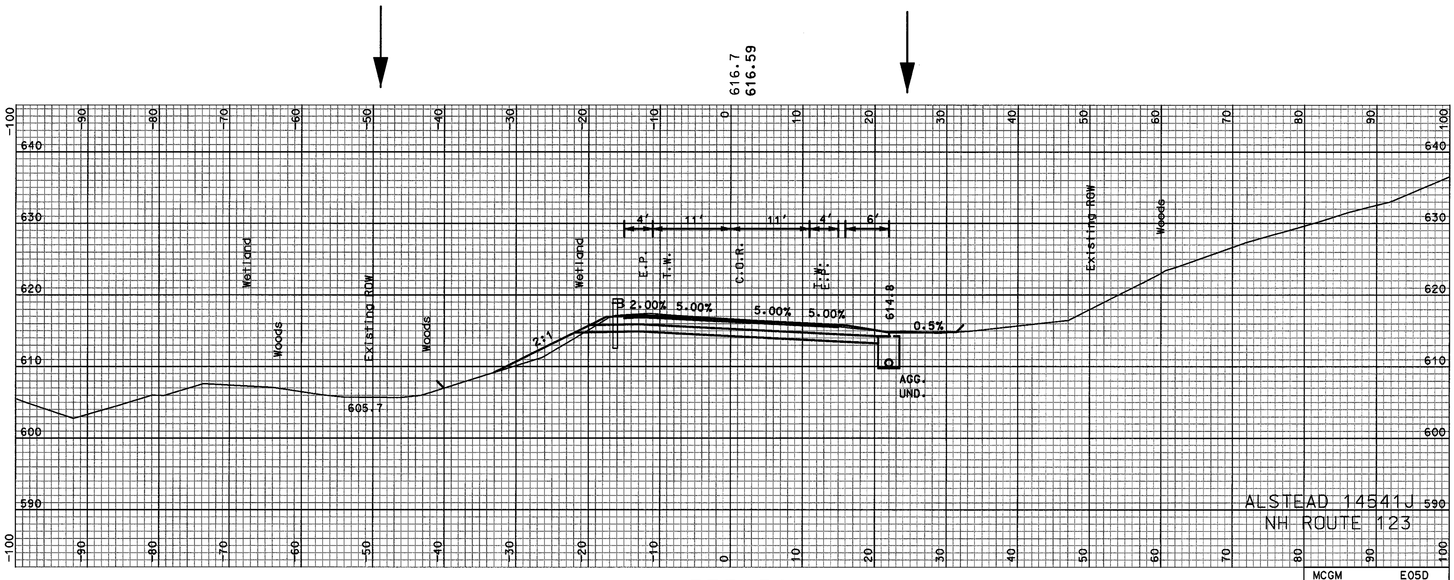
NUMBER	DATE	STATION	STATION	DESCRIPTION



336+50



336+00



335+50

SHEET TOTALS

COMMON EXCAV. 554.7 C.Y. ROCK EXCAV. - C.Y.

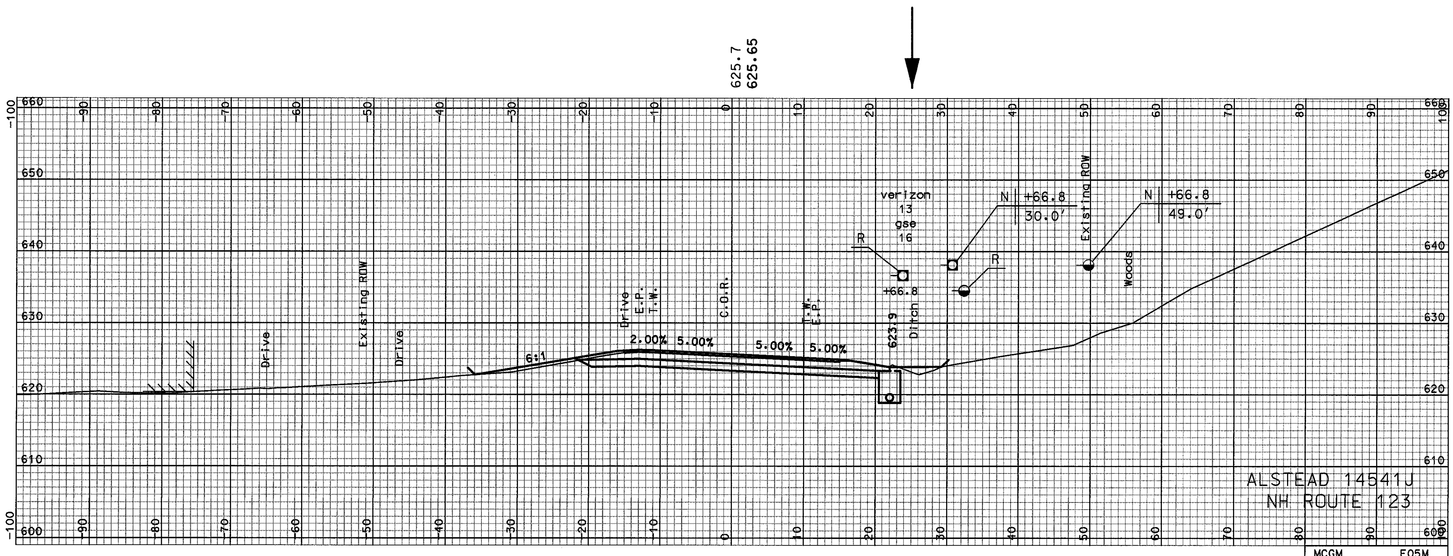
FILL 44.3 C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	104	156

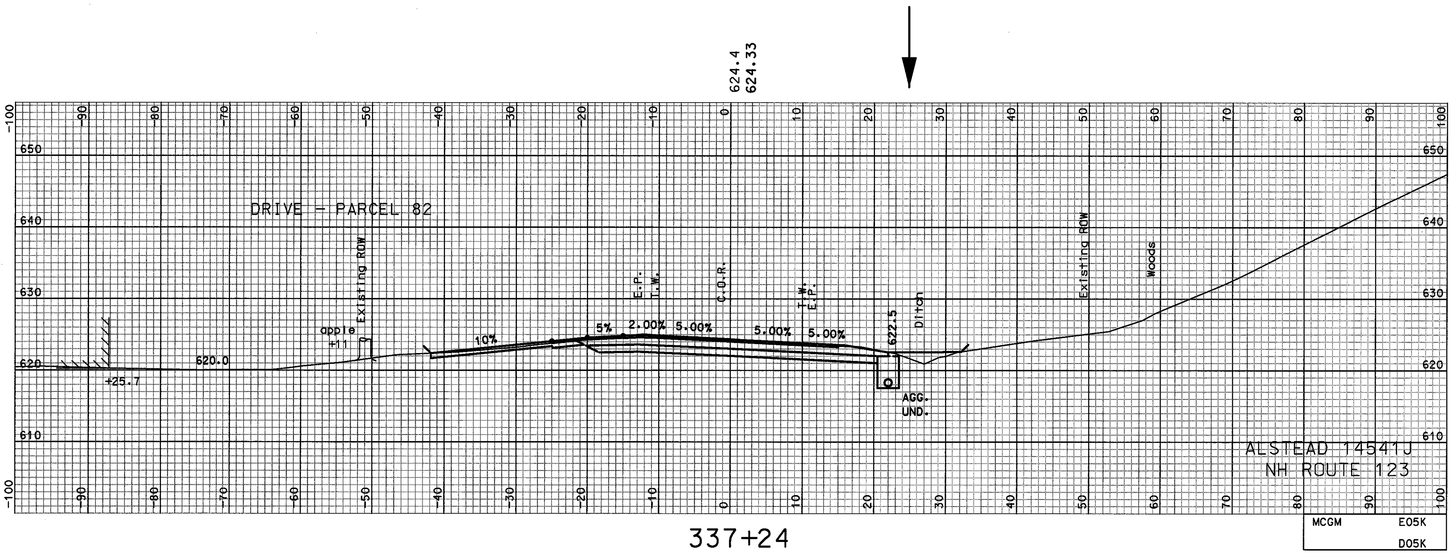
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

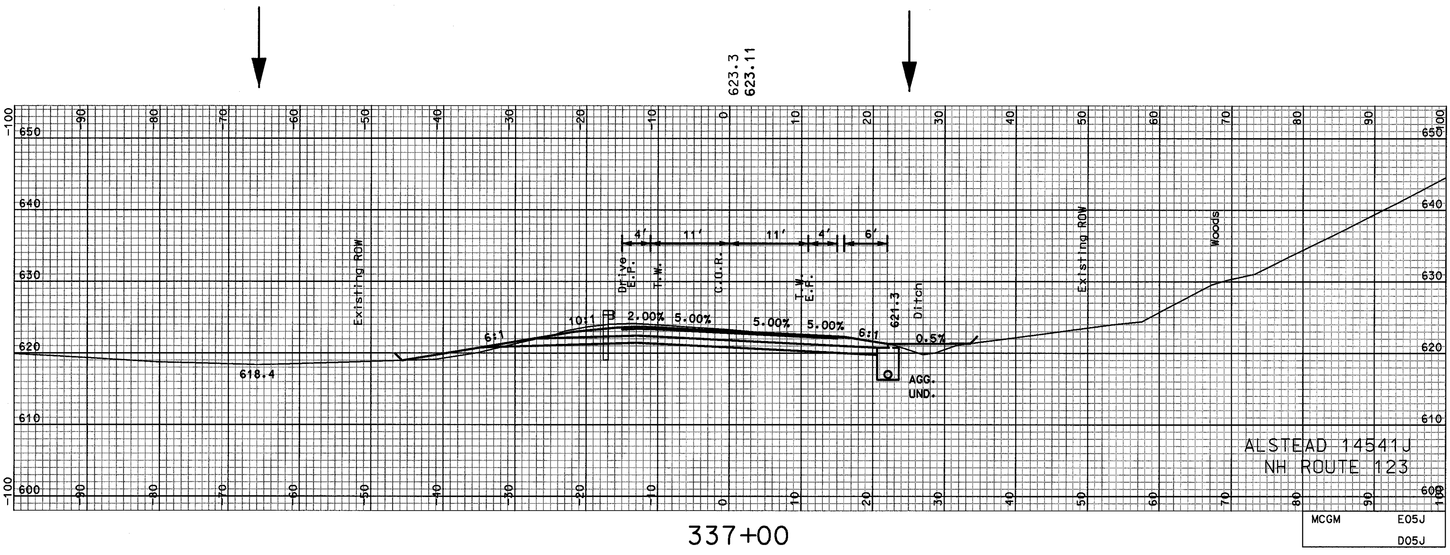
NUMBER	DATE	STATION	STATION	DESCRIPTION



337+50



337+24



337+00

SHEET TOTALS			
COMMON EXCAV. 336.9 C.Y.		ROCK EXCAV. – C.Y.	
FILL 37.3 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	105	156

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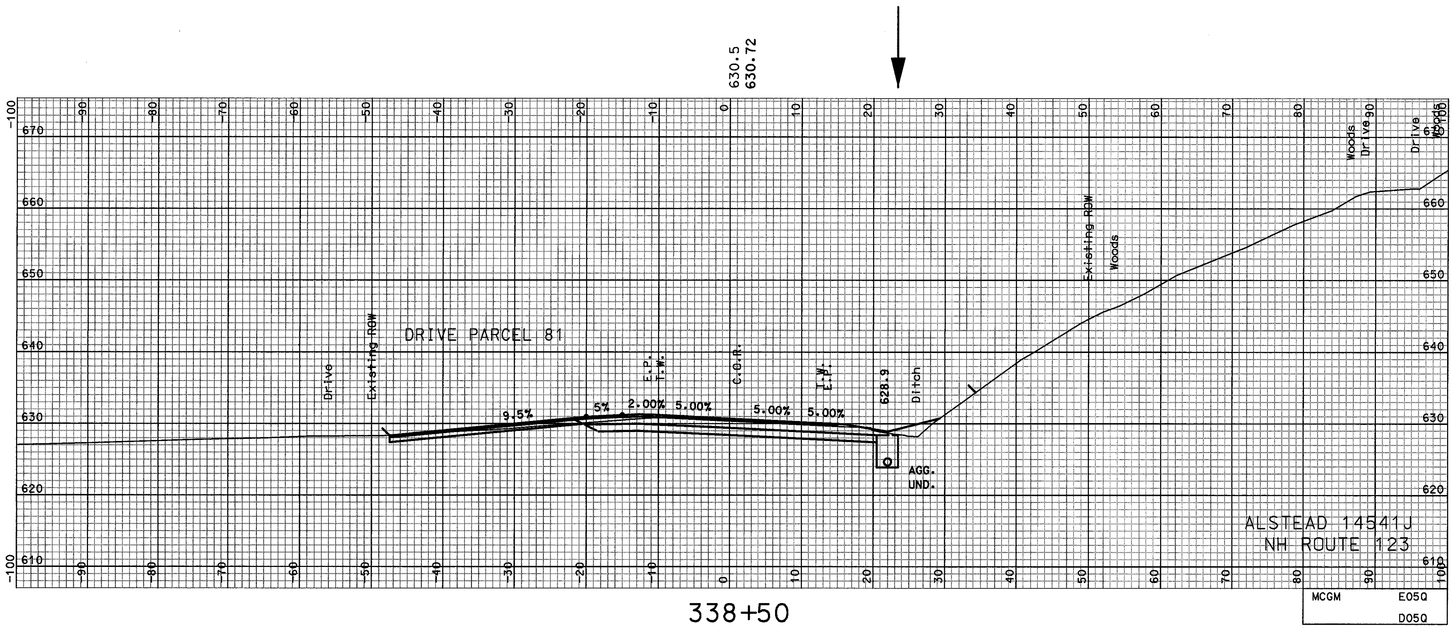
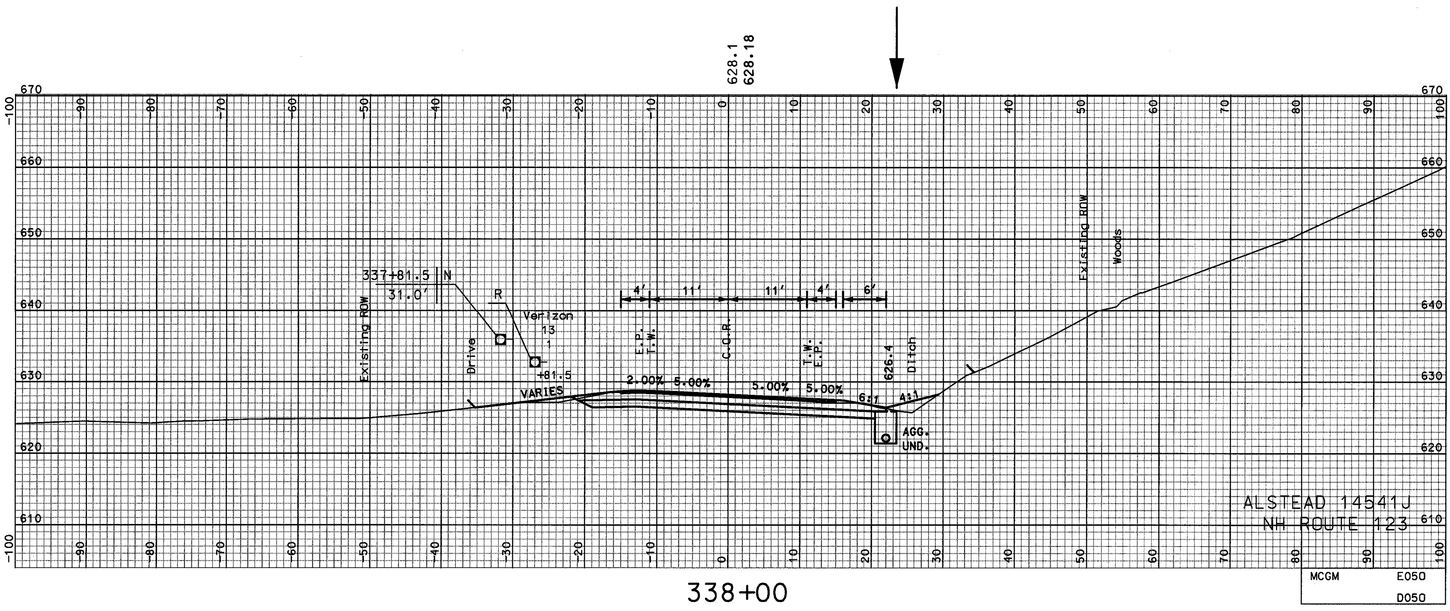
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



338+50



338+00

SHEET TOTALS

COMMON EXCAV. 280.3 C.Y. ROCK EXCAV. - C.Y.

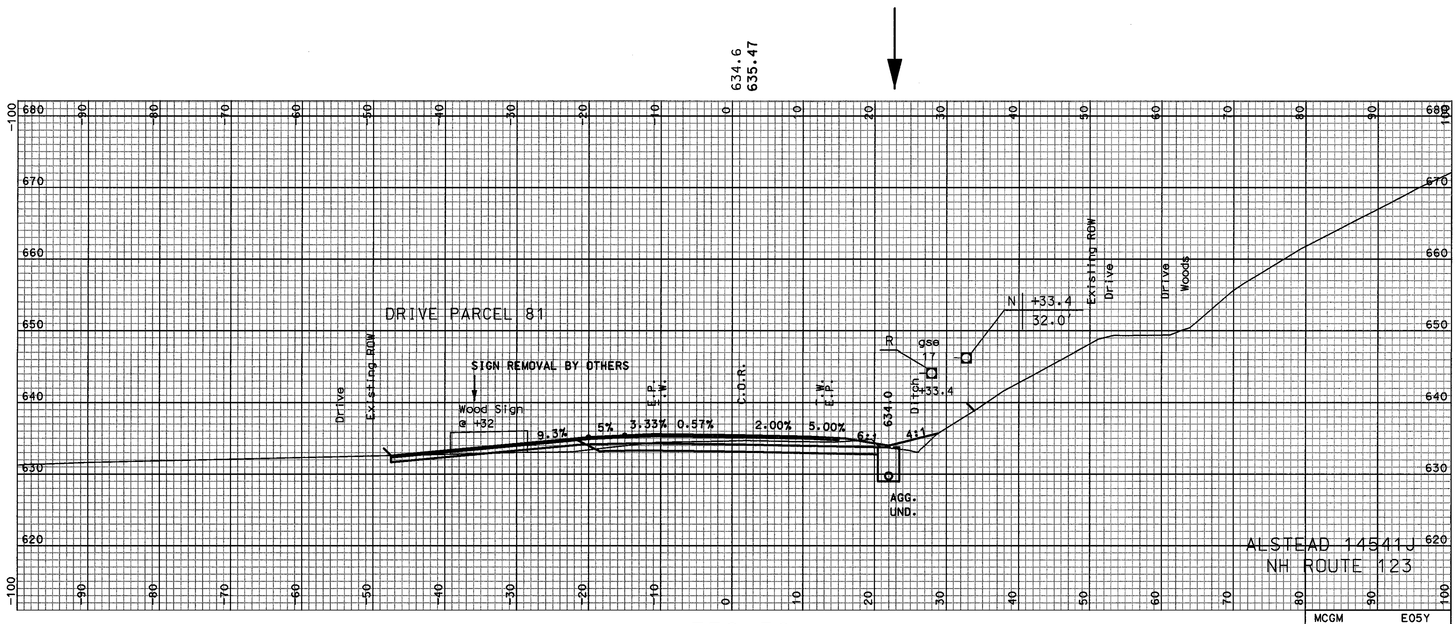
FILL 43.6 C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	106	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

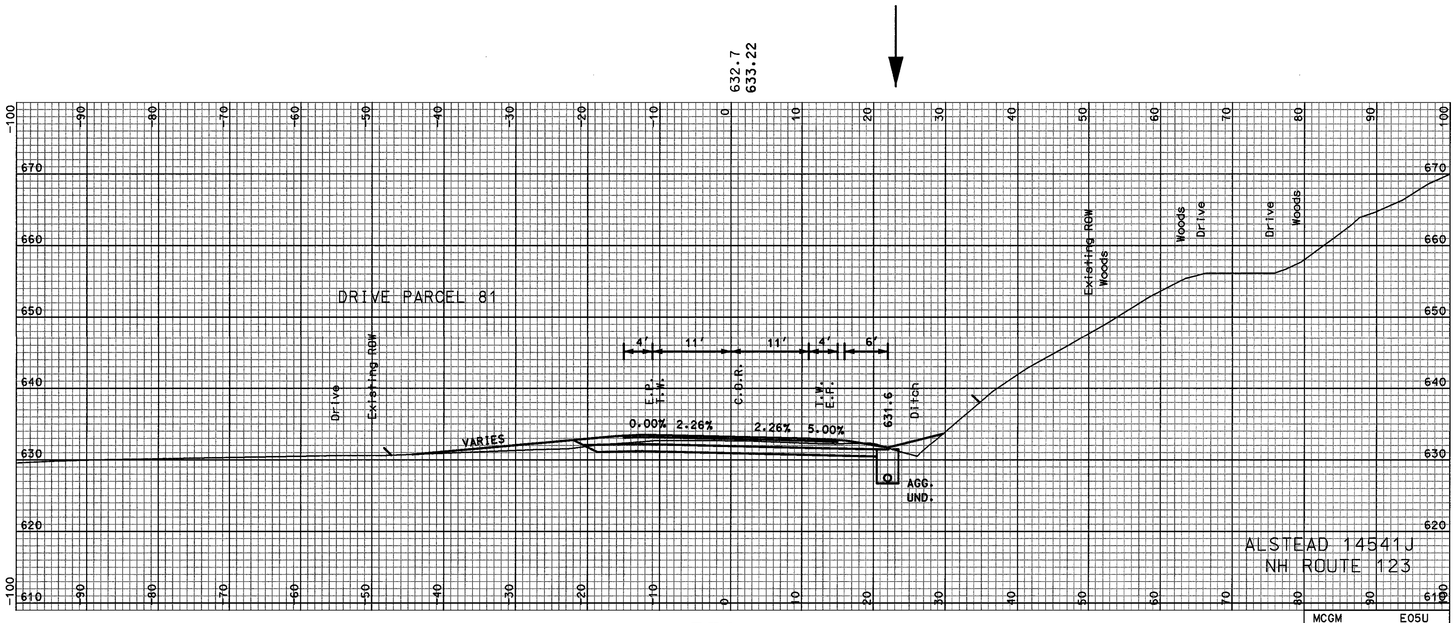
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



339+50

MCGM E05Y D05Y



339+00

MCGM E05U D05U

SHEET TOTALS

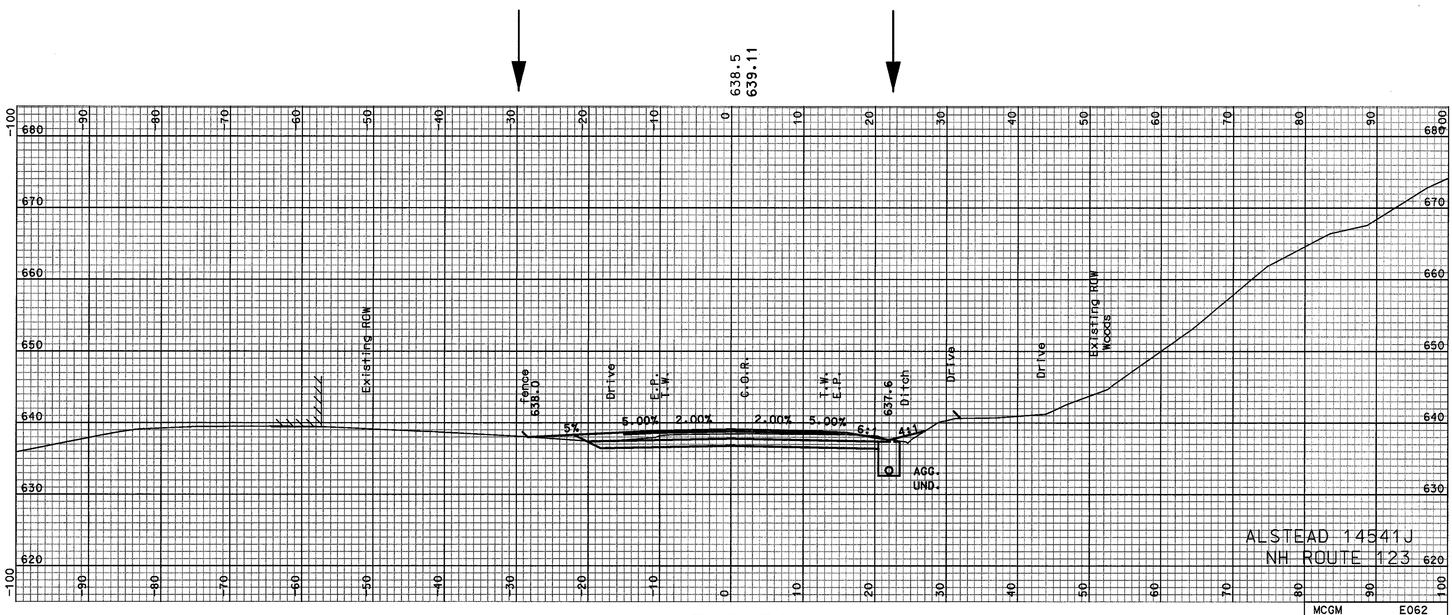
COMMON EXCAV.	209.1 C.Y.	ROCK EXCAV.	- C.Y.
FILL	55.0 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	107	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

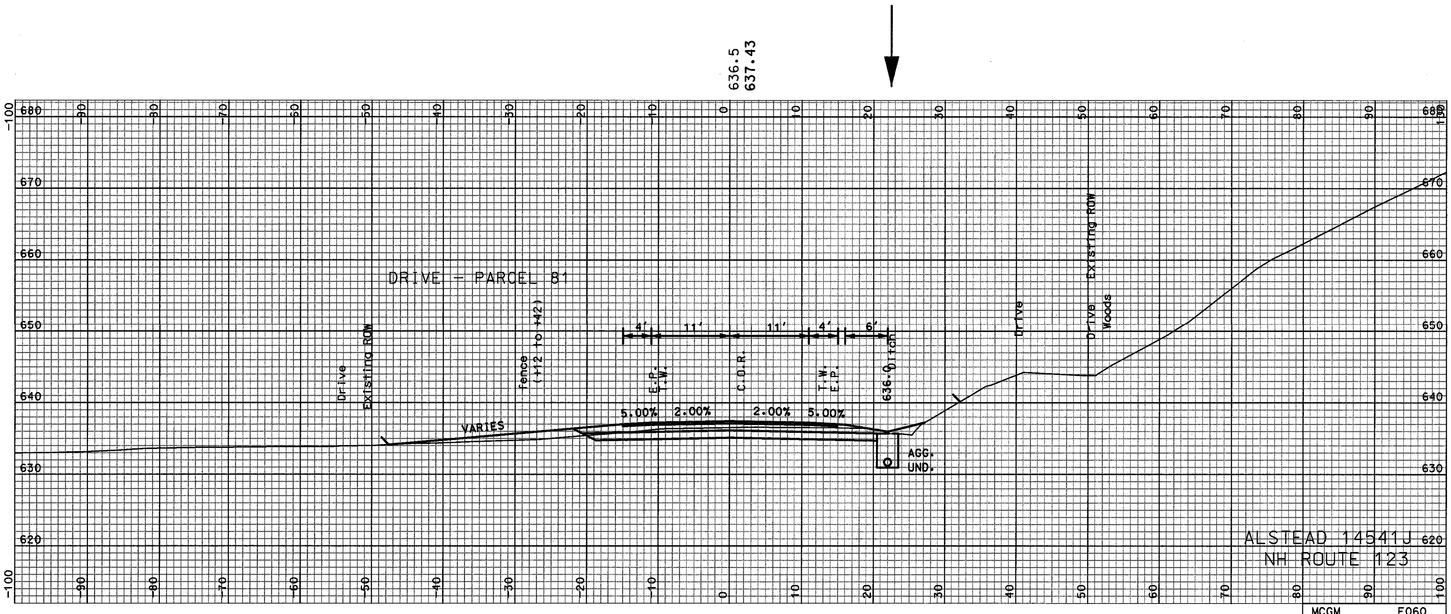
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



340+50

MCGM E062 D062



340+00

MCGM E060 D060

SHEET TOTALS

COMMON EXCAV. 176.2 C.Y. ROCK EXCAV. - C.Y.

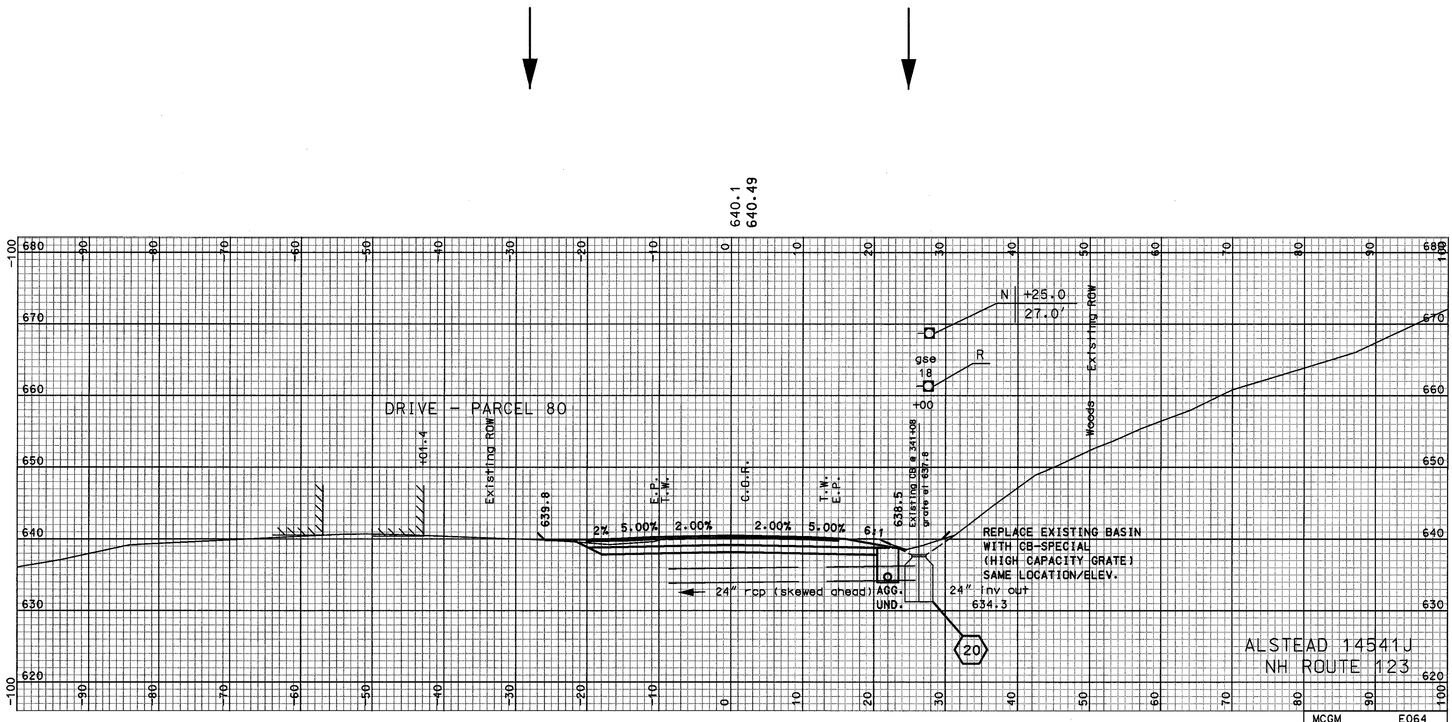
FILL 28.5 C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	108	156

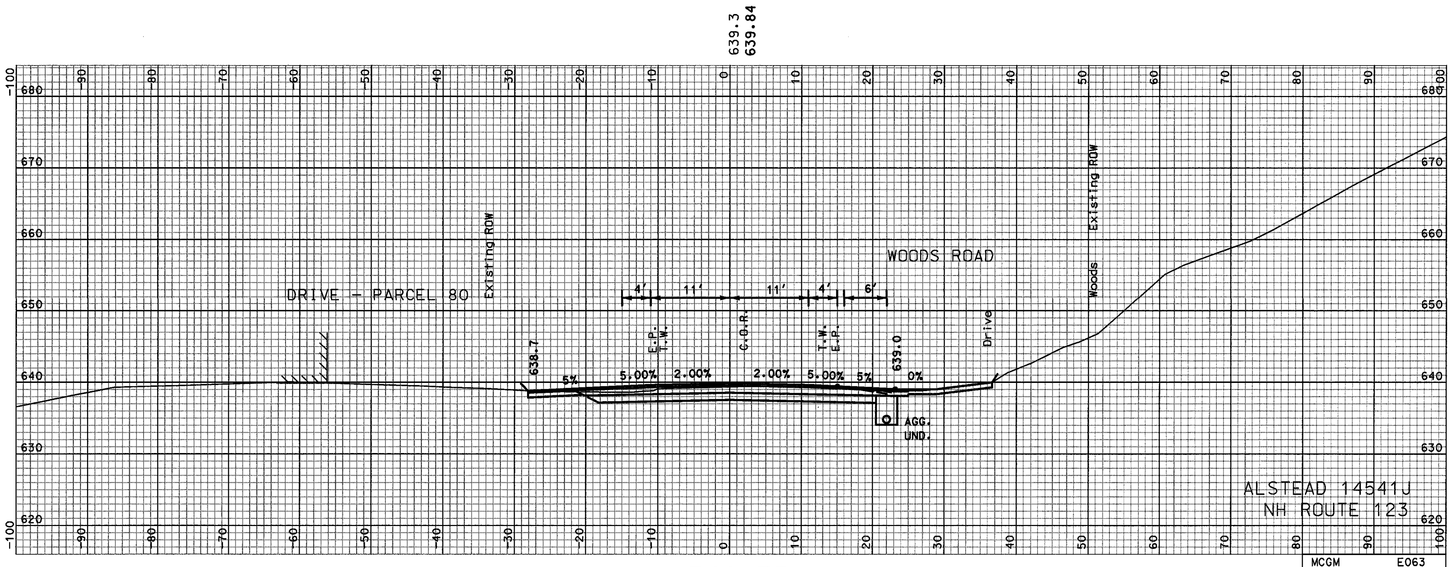
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



341+00



340+75

SHEET TOTALS

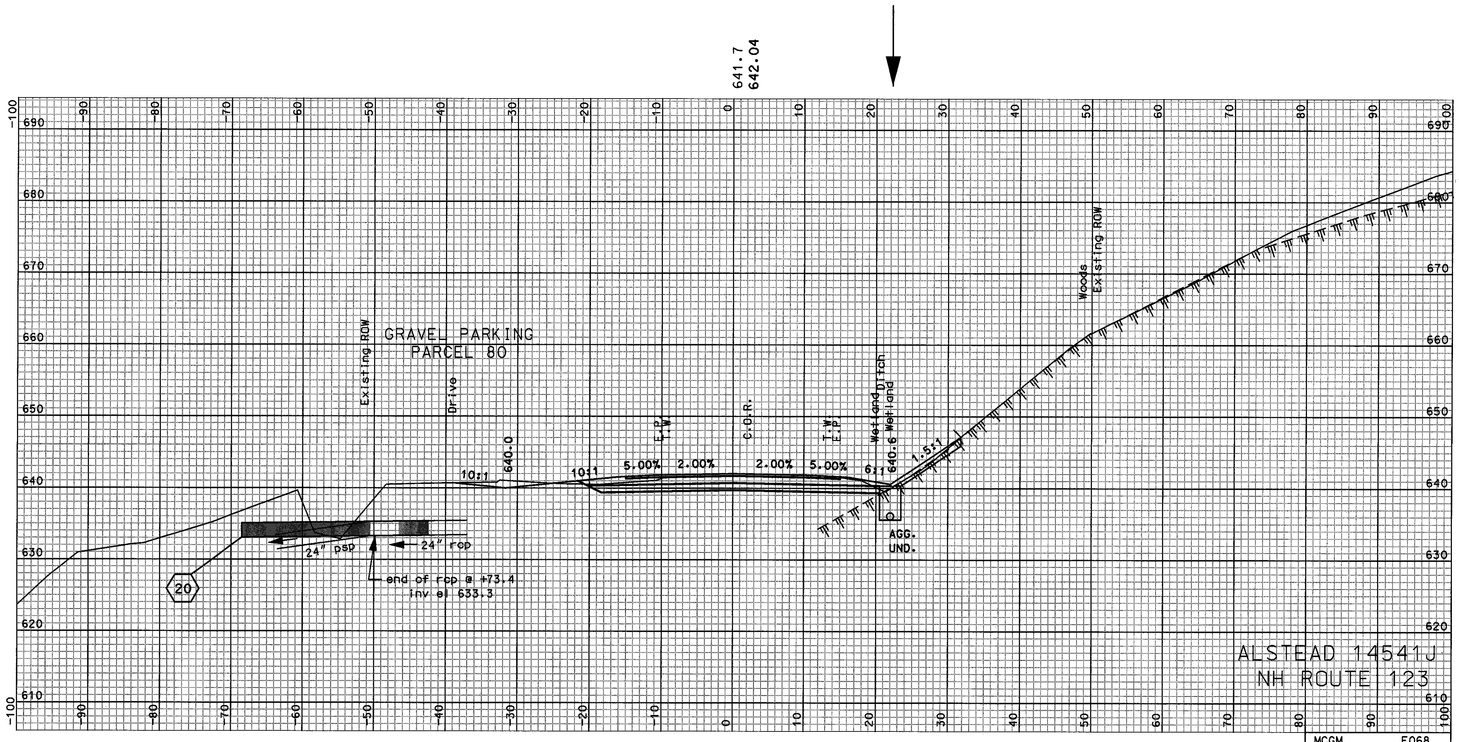
COMMON EXCAV.	213.8 C.Y.	ROCK EXCAV.	- C.Y.
FILL	2.4 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_2	14541J	109	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

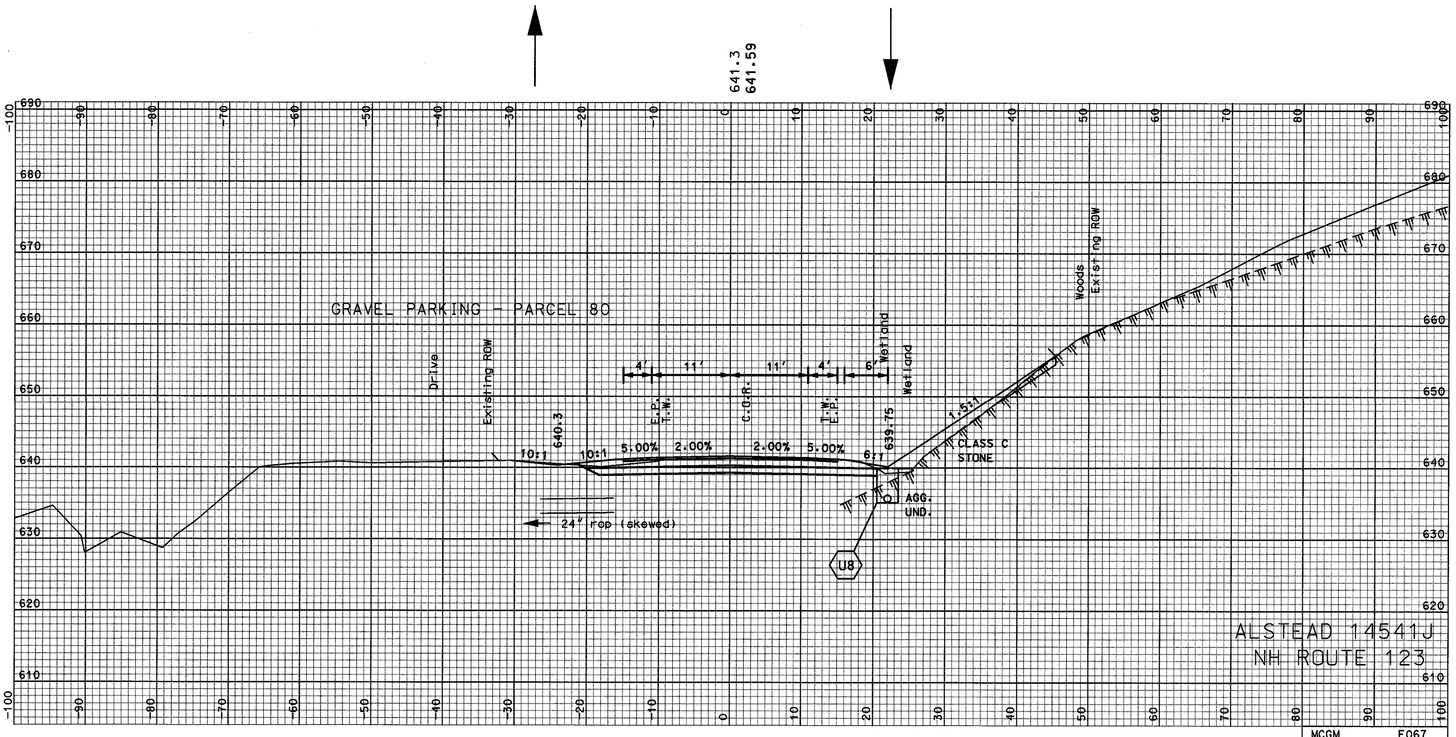
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



341+75

MCGM E068 D068



341+50

MCGM E067 D067

SHEET TOTALS

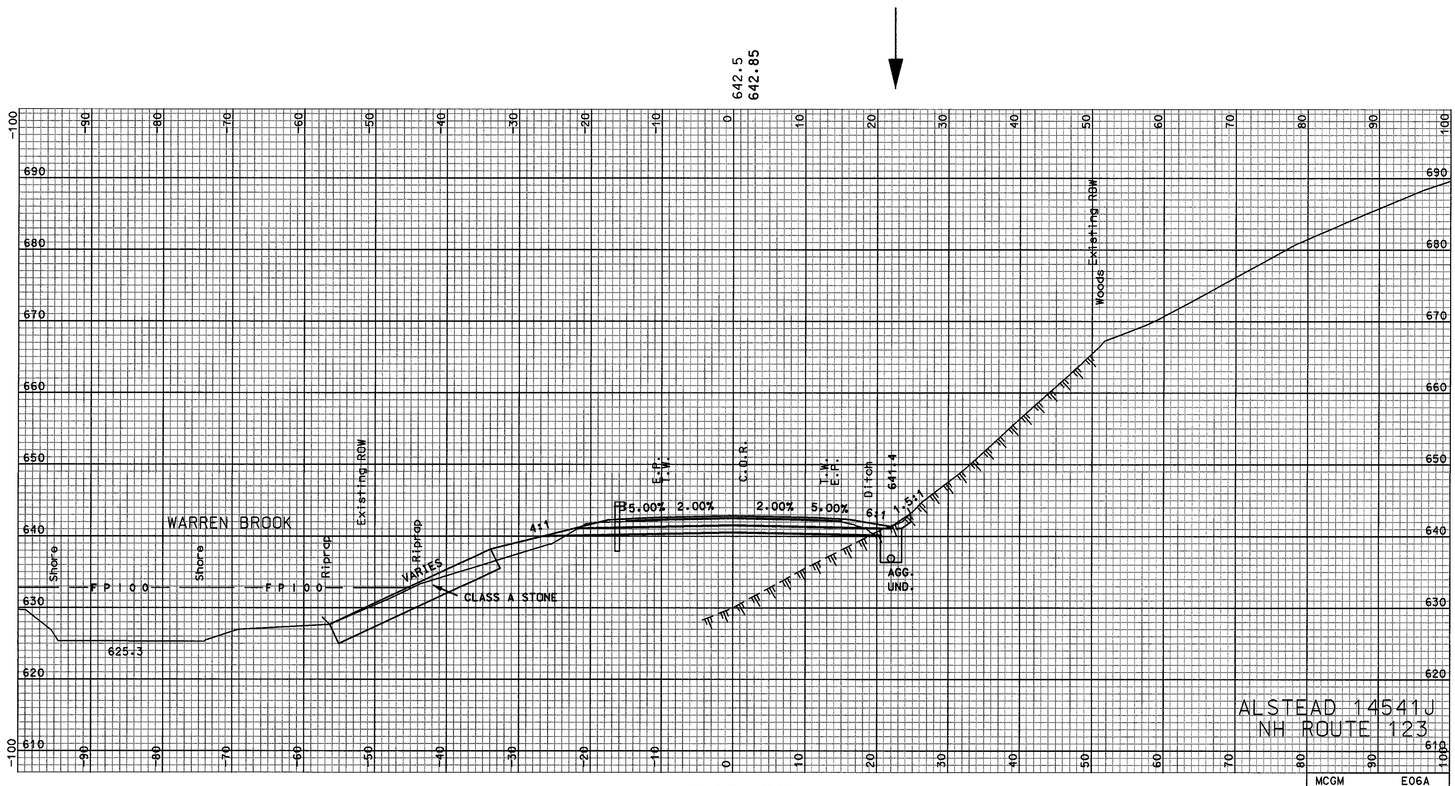
COMMON EXCAV.	140.7 C.Y.	ROCK EXCAV.	- C.Y.
FILL	2.2 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	110	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

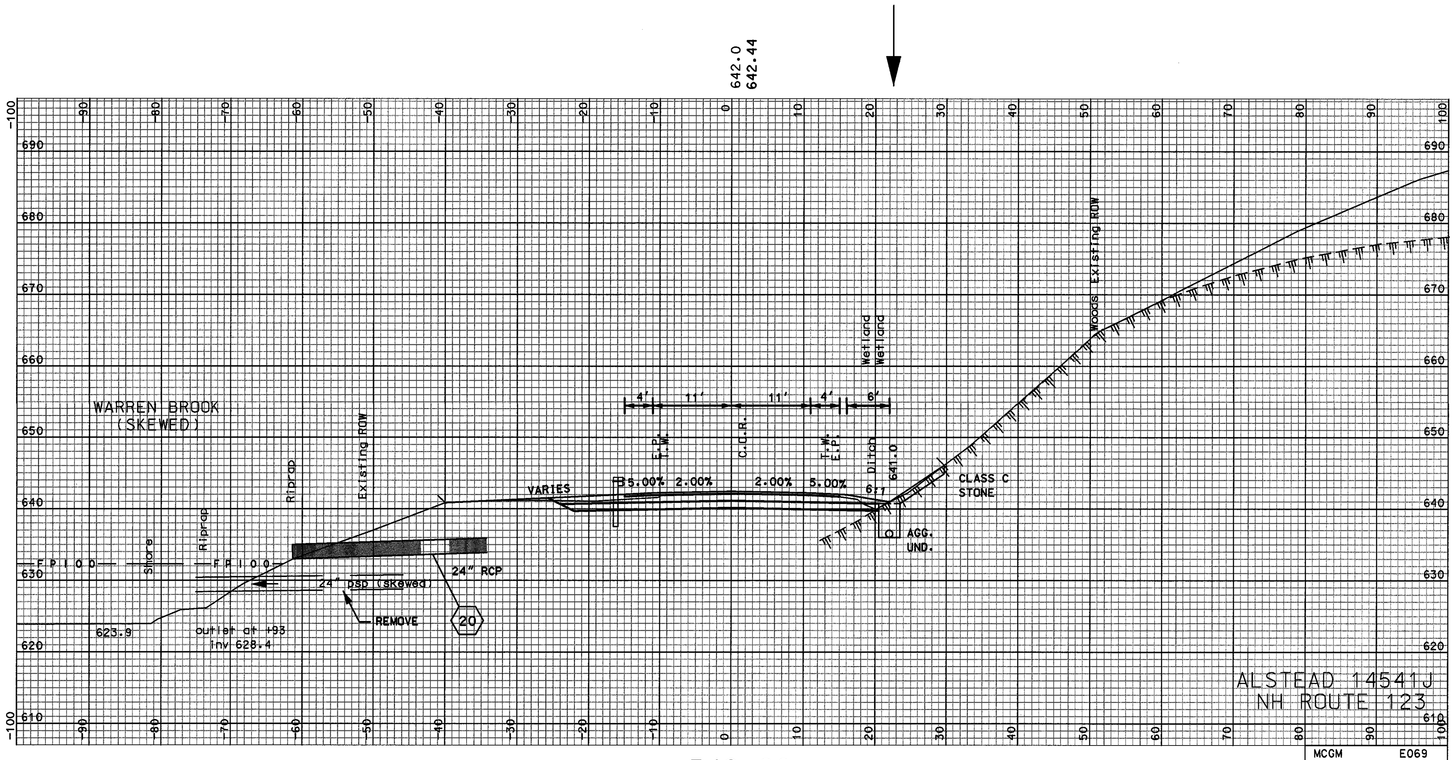
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



MCGM E06A D06A

342+25



MCGM E069 D069

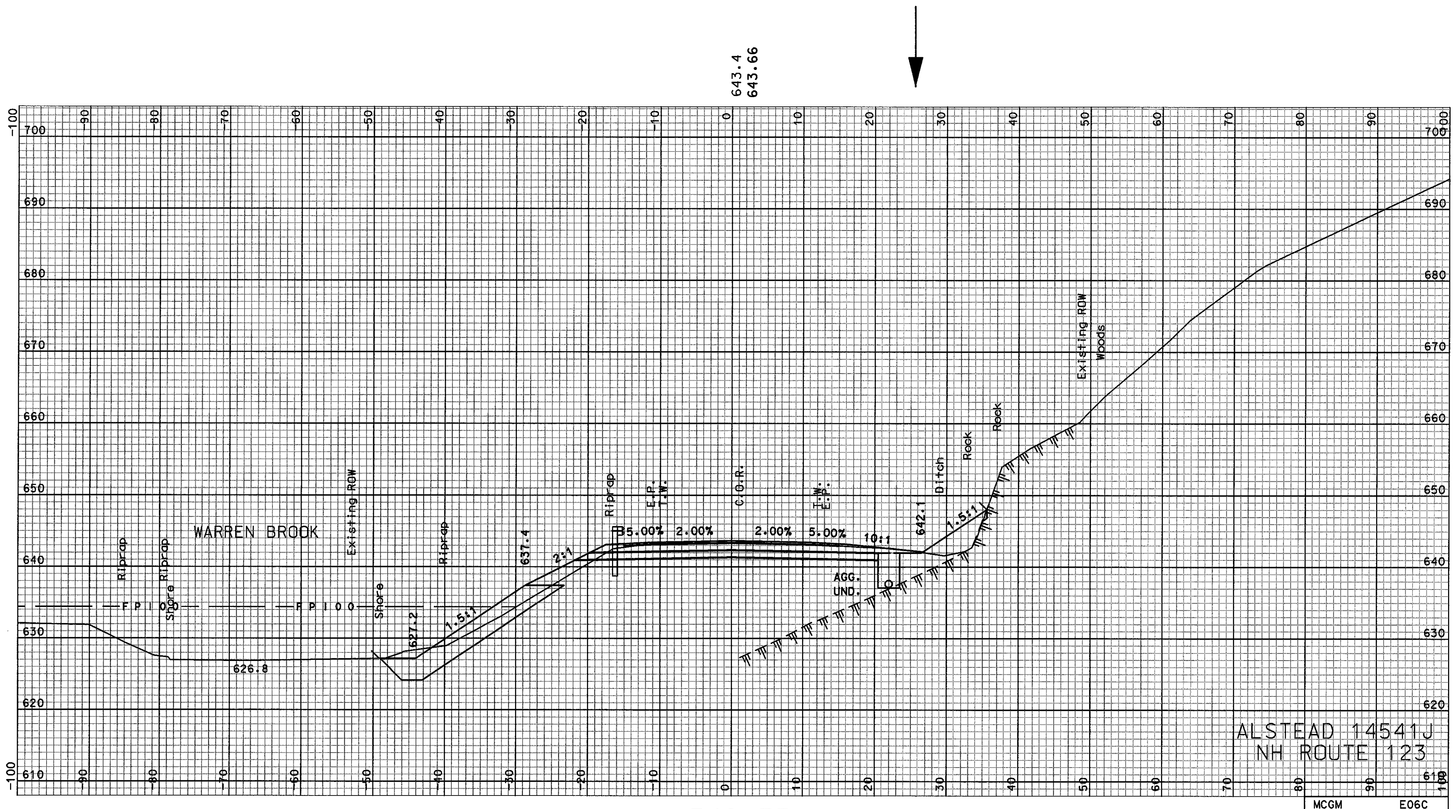
342+00

SHEET TOTALS			
COMMON EXCAV. 225.3 C.Y.		ROCK EXCAV. – C.Y.	
FILL 21.7 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	111	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

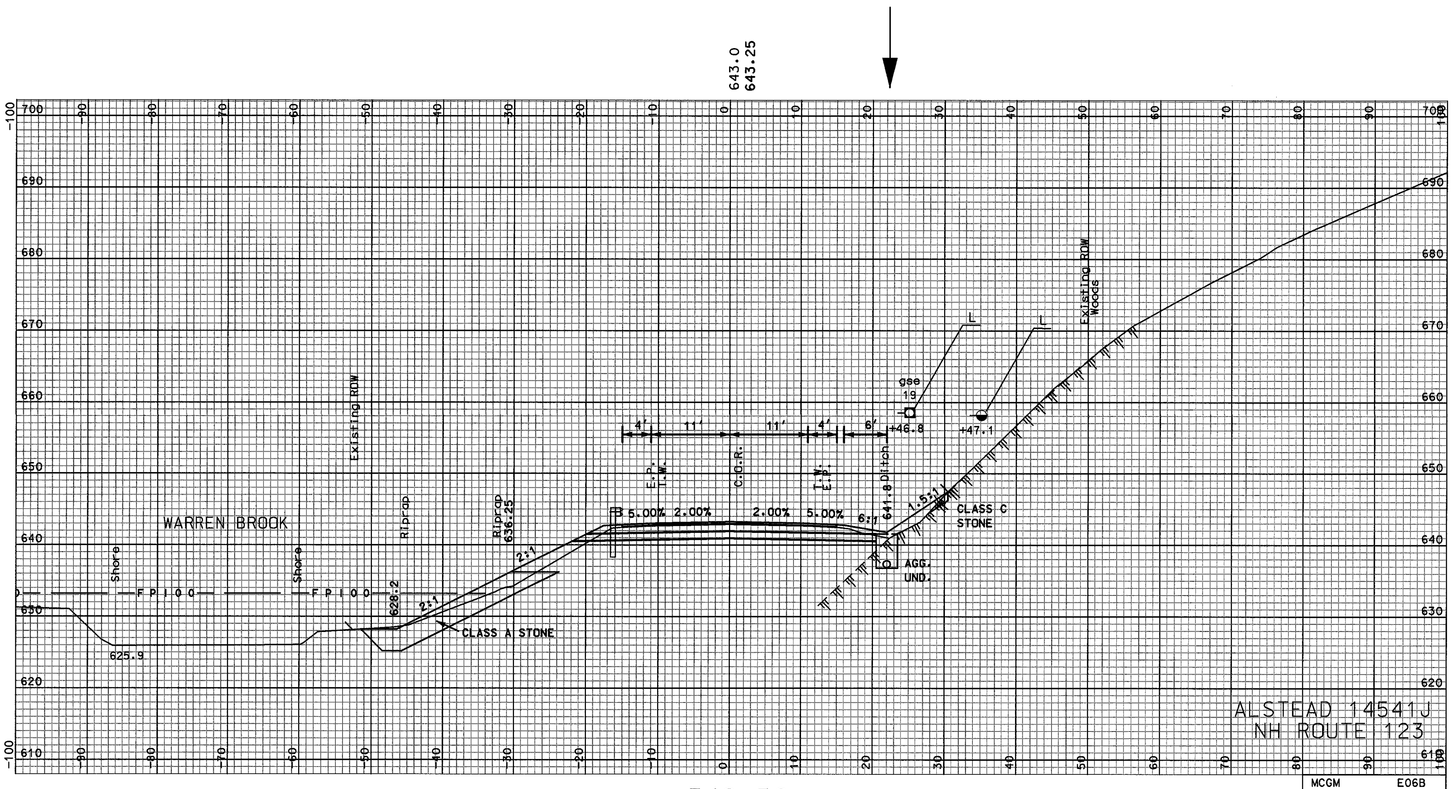
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



342+75

MCGM E06C
D06C



342+50

MCGM E06B
D06B

SHEET TOTALS	
COMMON EXCAV. 240.6 C.Y.	ROCK EXCAV. – C.Y.
FILL 28.5 C.Y.	MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	112	156

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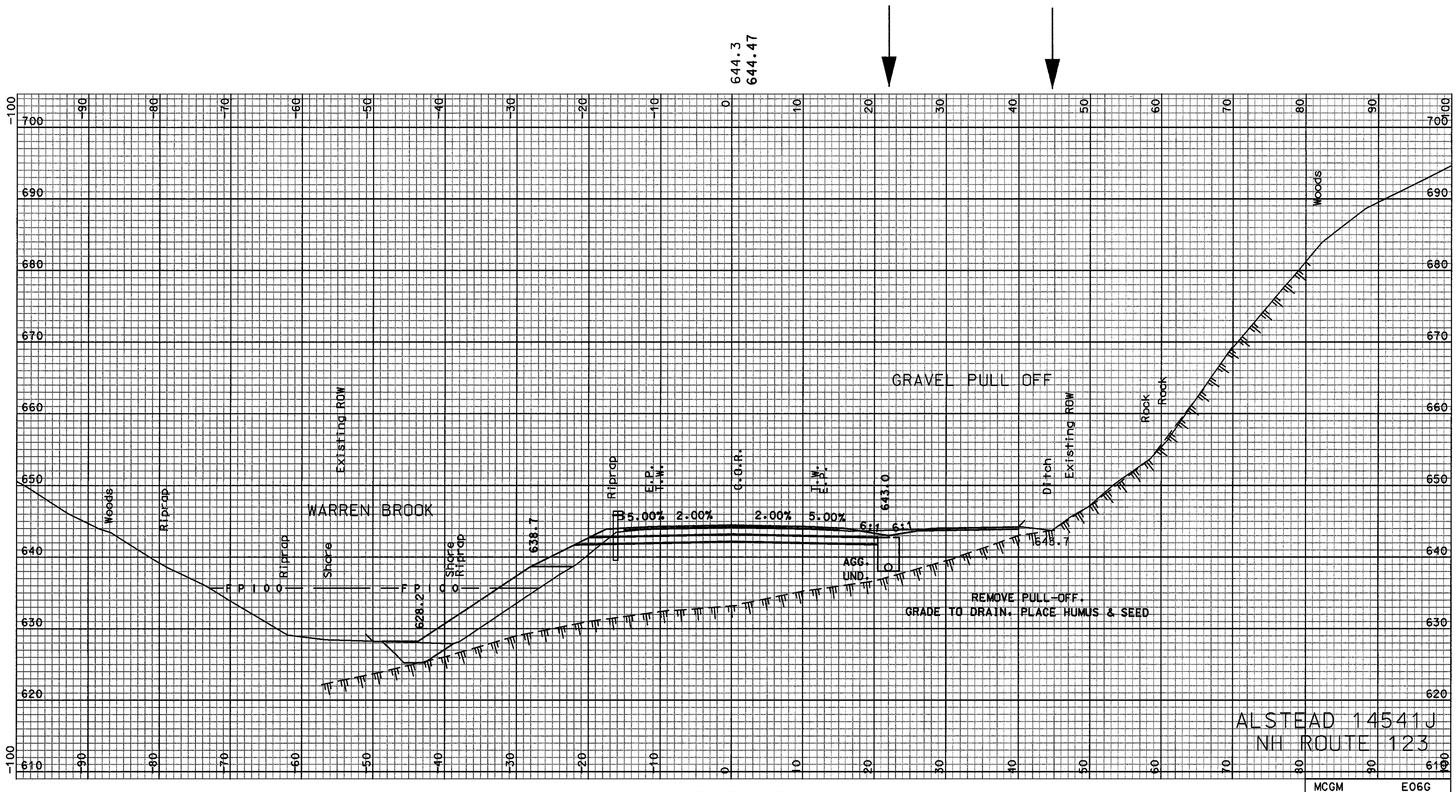
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

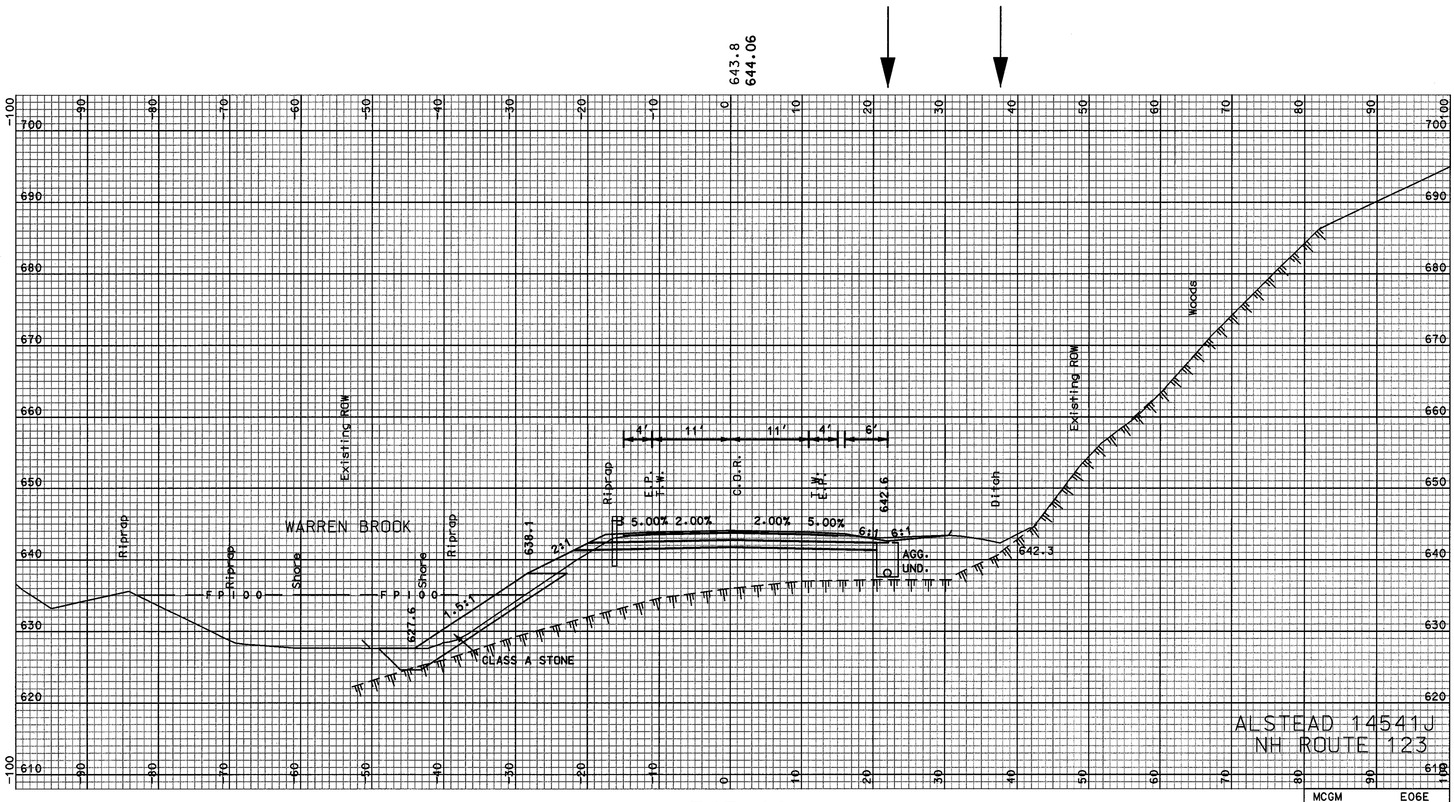
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



MCGM E06G D06G

343+25



MCGM E06E D06E

343+00

SHEET TOTALS

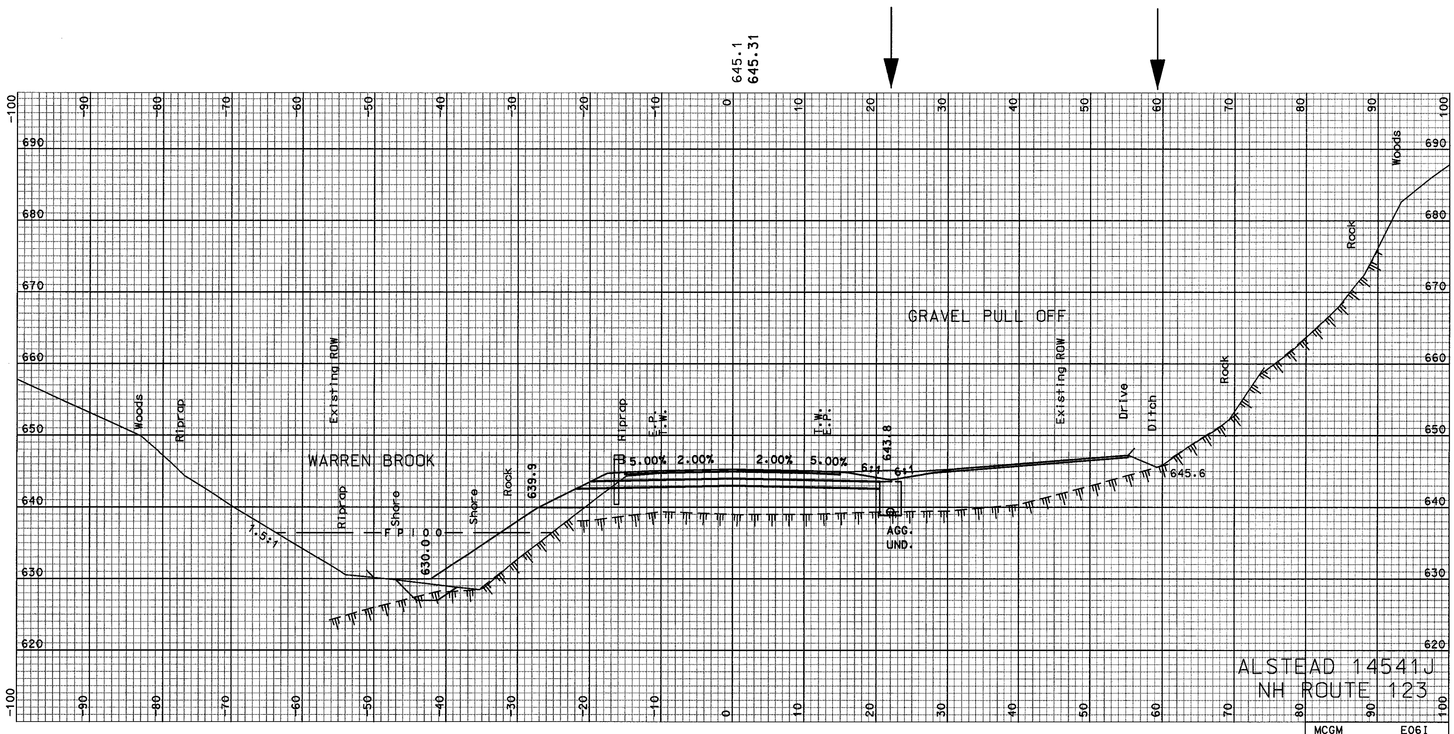
COMMON EXCAV.	194.0 C.Y.	ROCK EXCAV.	- C.Y.
FILL	26.3 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	113	156

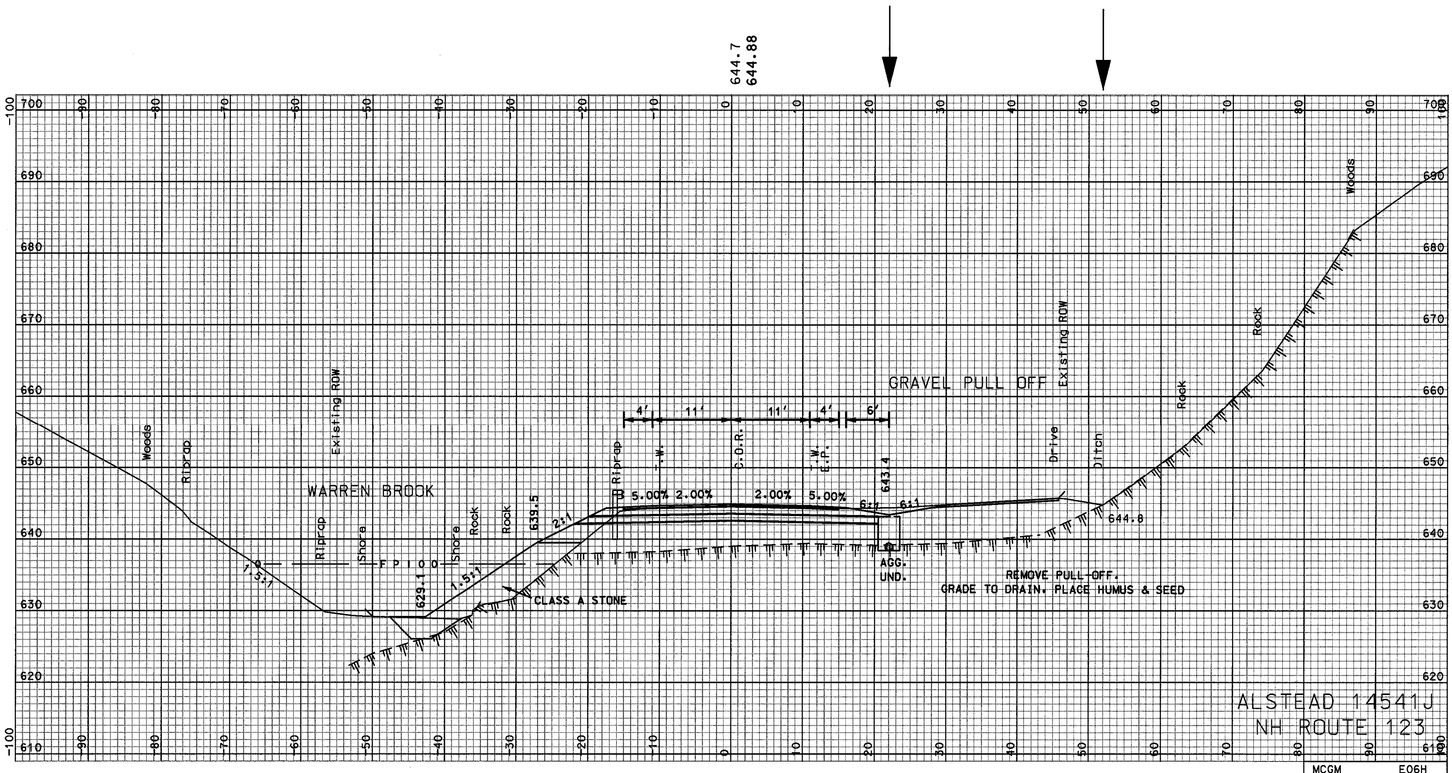
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



343+75



343+50

SHEET TOTALS

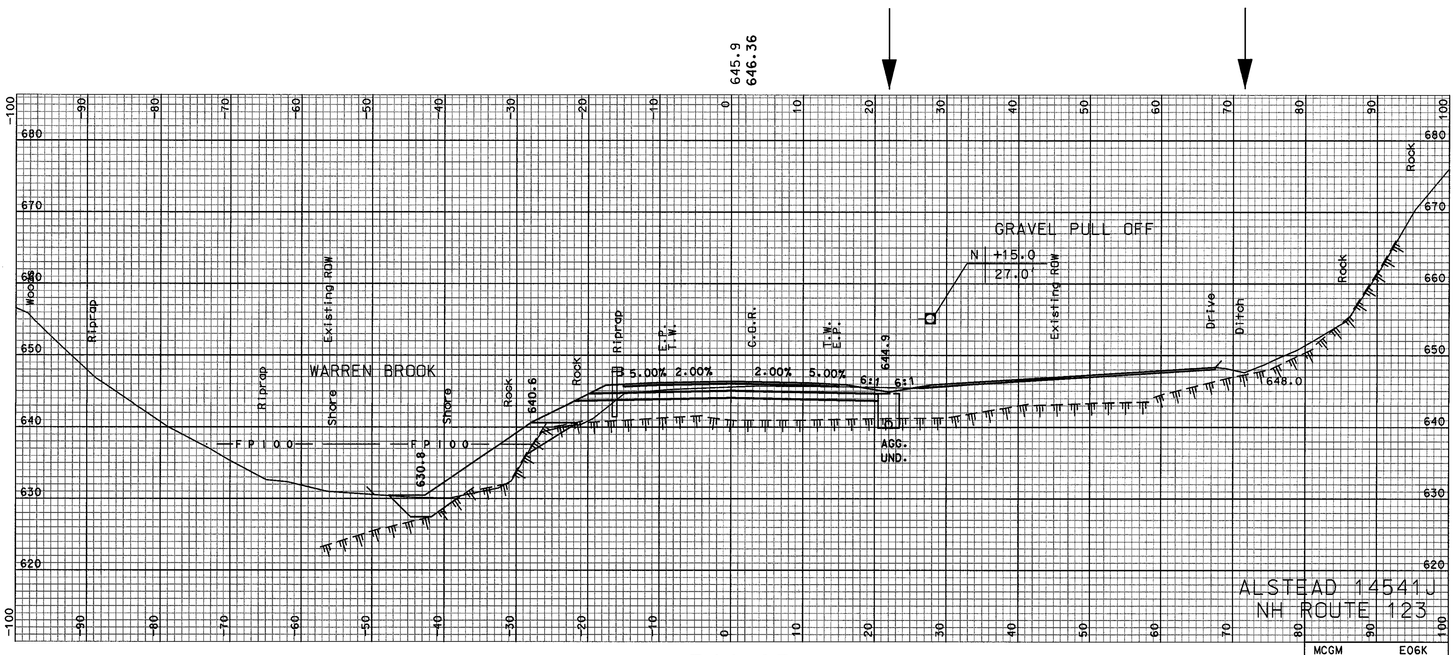
COMMON EXCAV.	192.7 C.Y.	ROCK EXCAV.	8.9 C.Y.
FILL	27.3 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	114	156

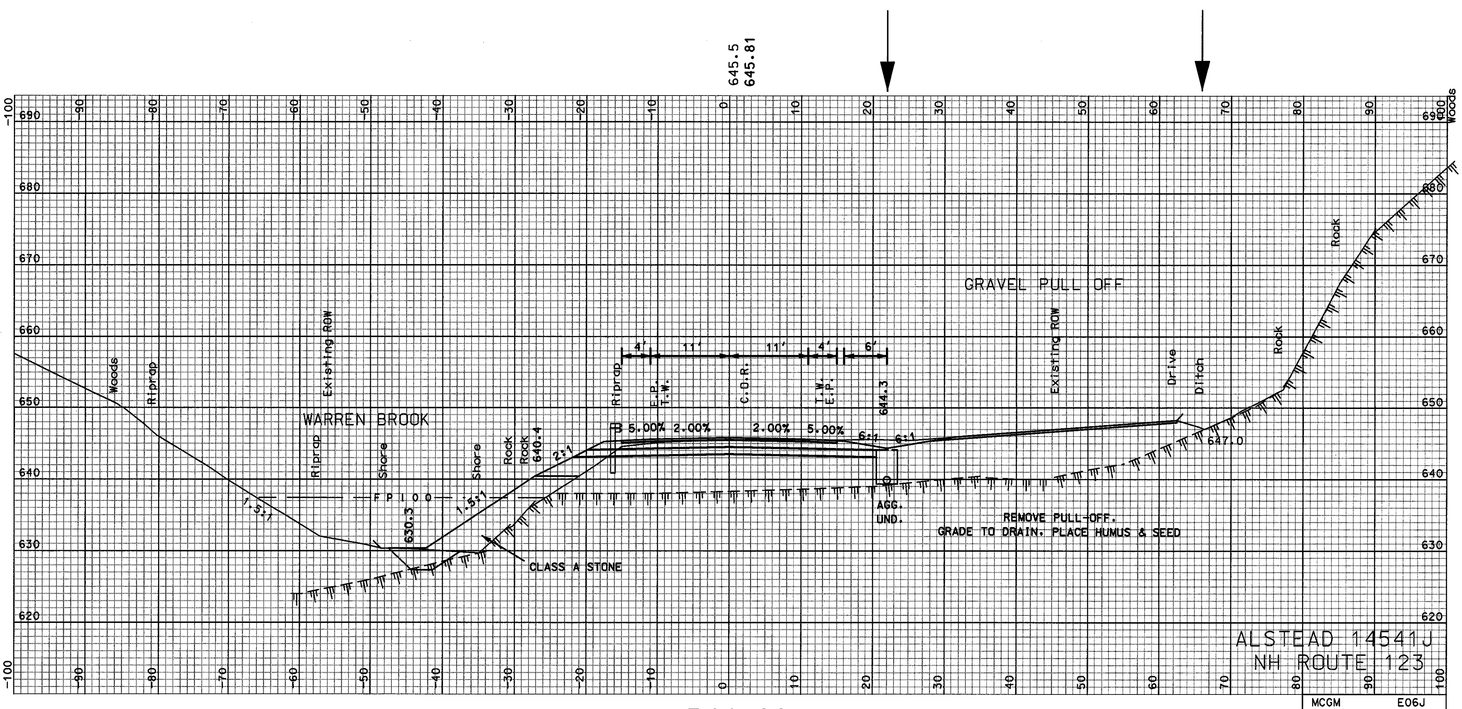
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



344+25



344+00

SHEET TOTALS

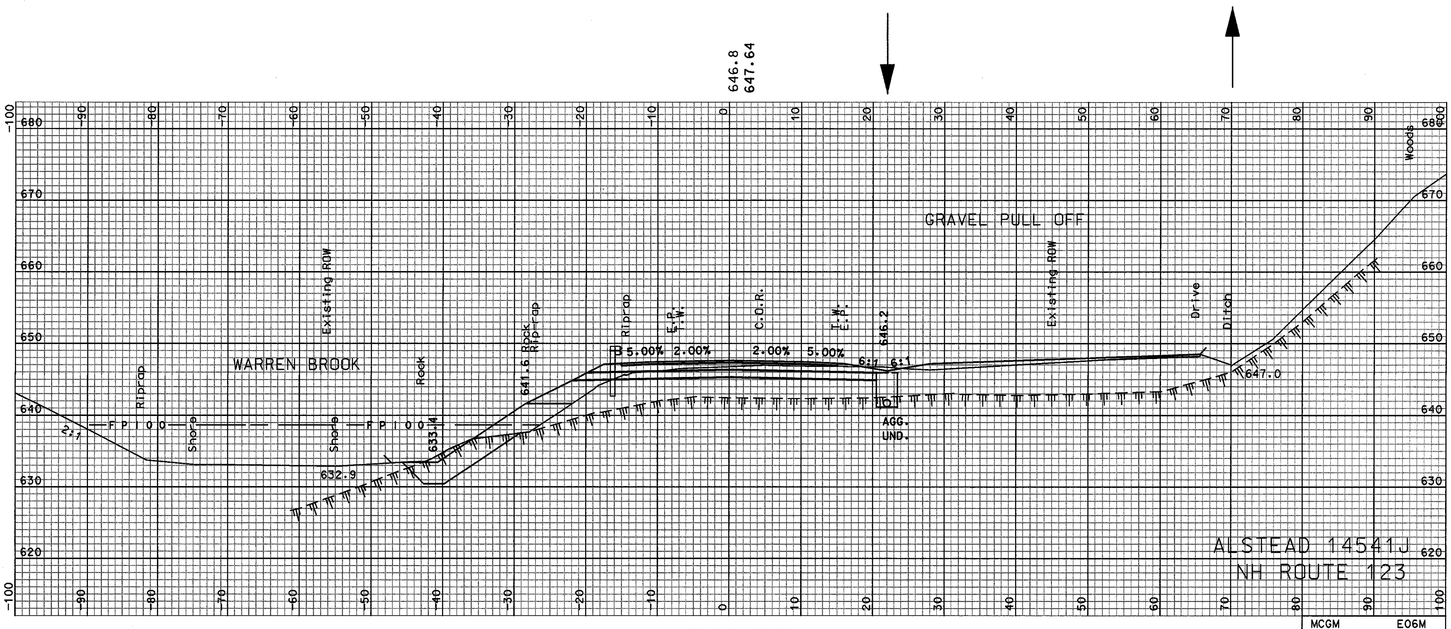
COMMON EXCAV.	164.5 C.Y.	ROCK EXCAV.	20.9 C.Y.
FILL	35.7 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	115	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

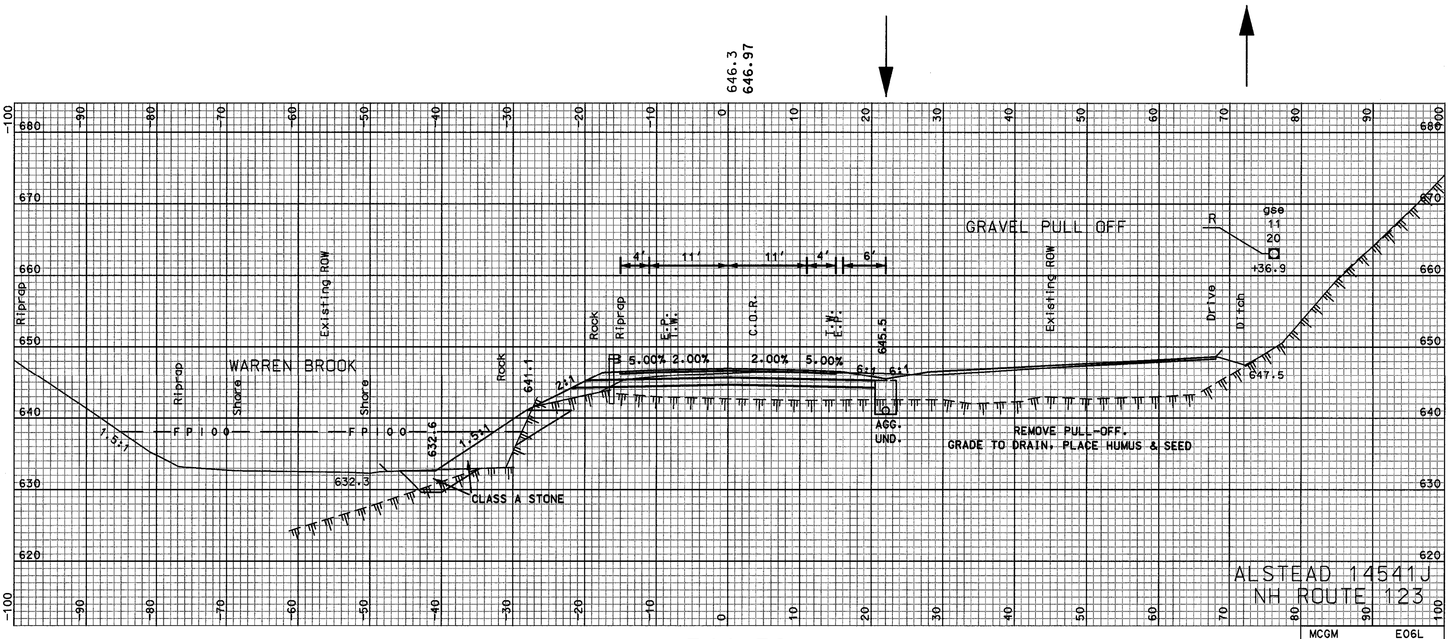
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



MCGM E06M D06M

344+75



MCGM E06L D06L

344+50

SHEET TOTALS

COMMON EXCAV. 114.9 C.Y. ROCK EXCAV. 133.6 C.Y.

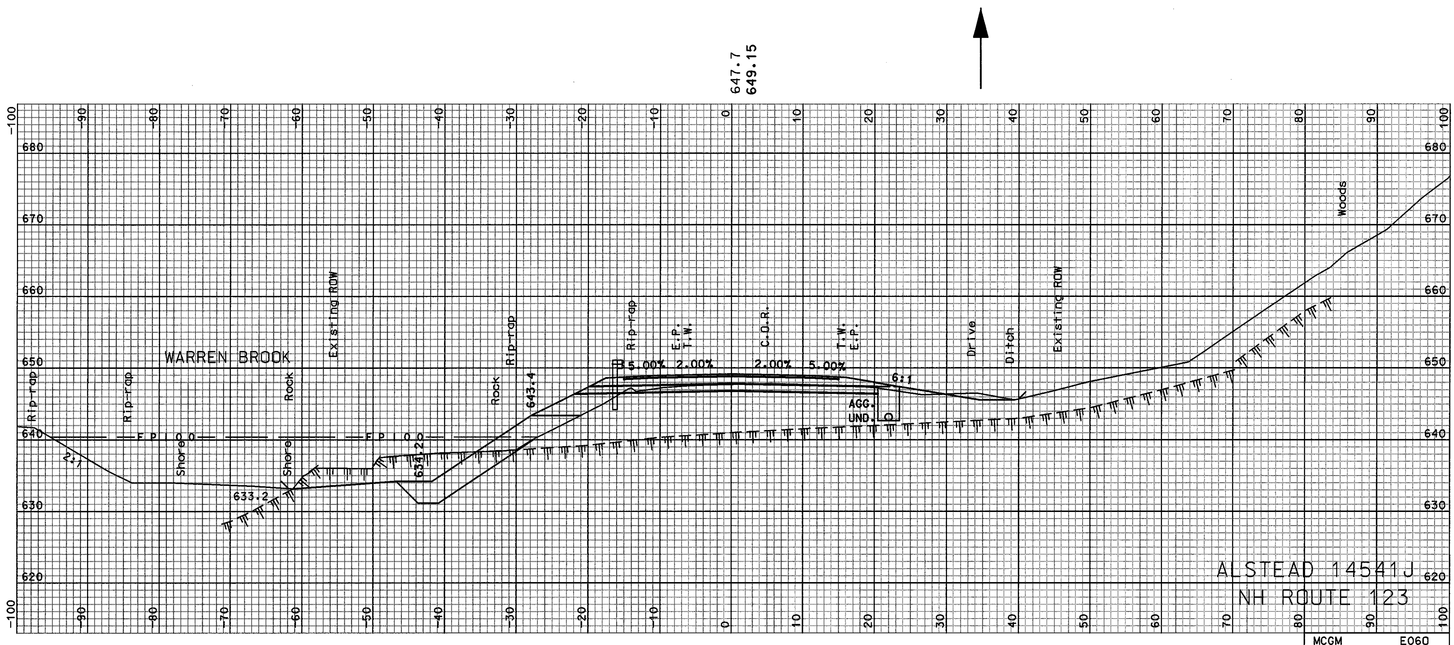
FILL 43.9 C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	116	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

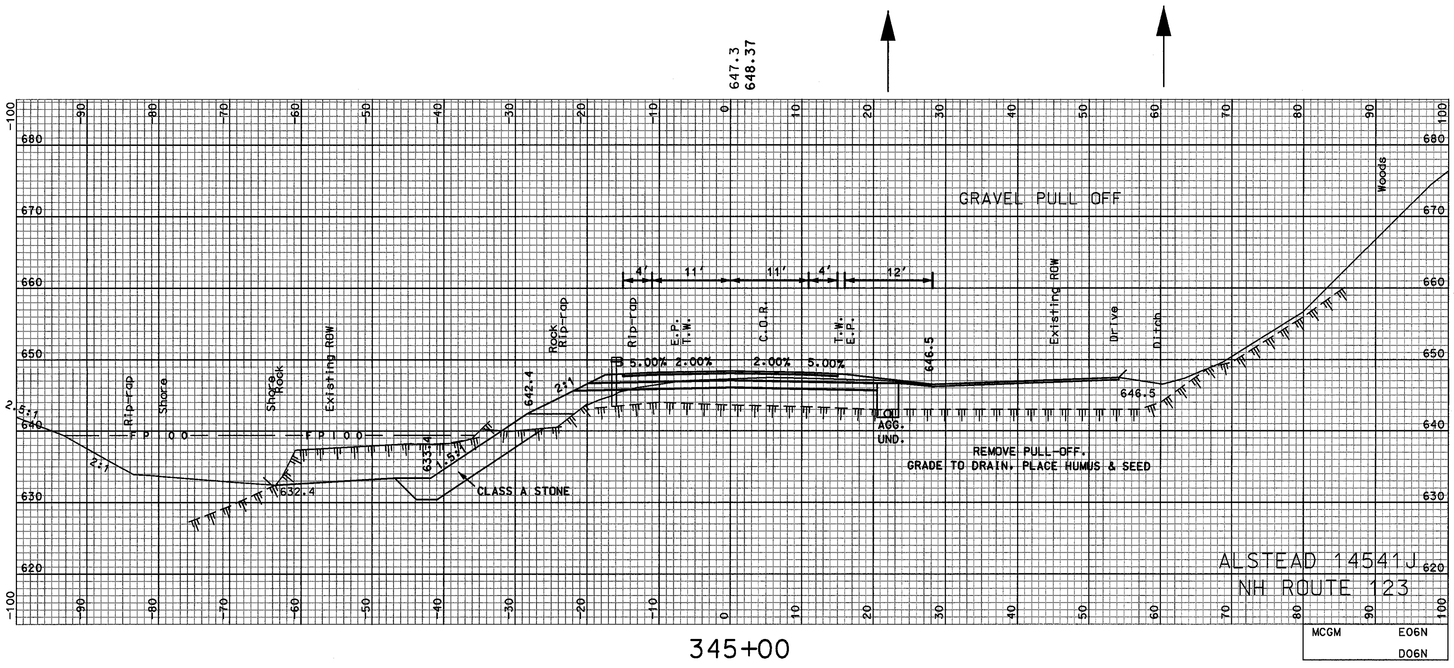
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



345+25

MCGM E060 D060



345+00

MCGM E06N D06N

SHEET TOTALS

COMMON EXCAV. 78.0 C.Y. ROCK EXCAV. 176.3 C.Y.

FILL 38.4 C.Y. MUCK EXCAV. – C.Y.

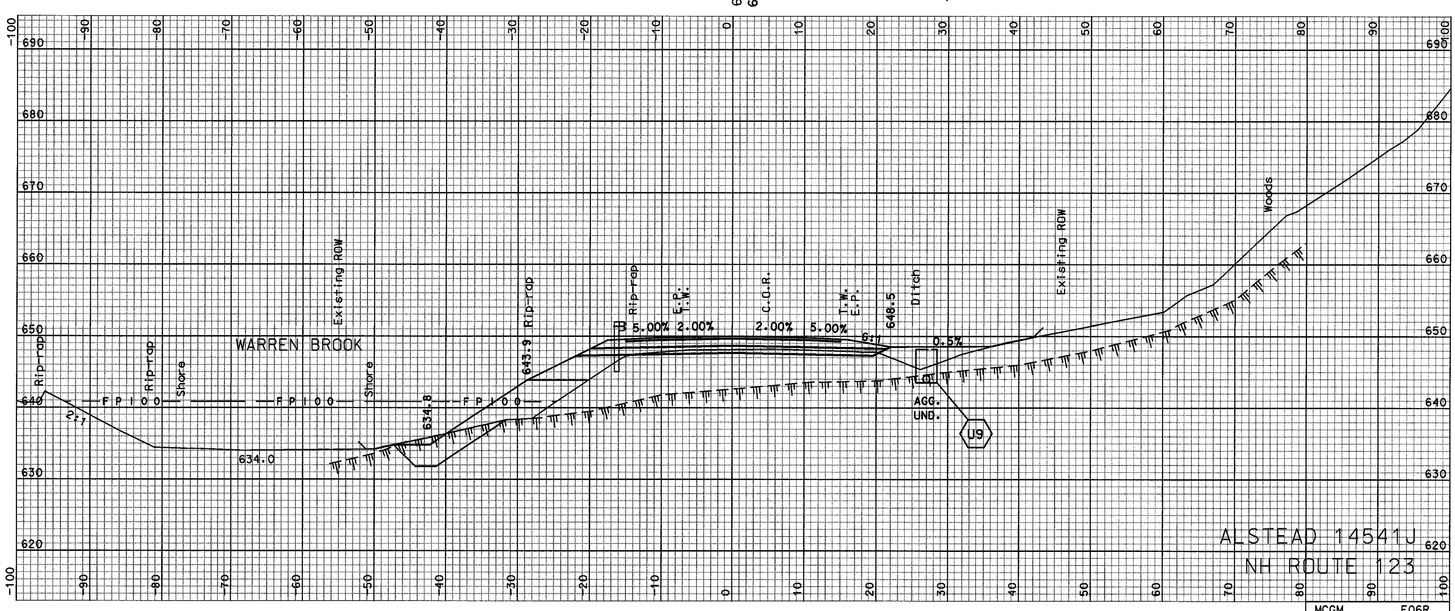
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	117	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

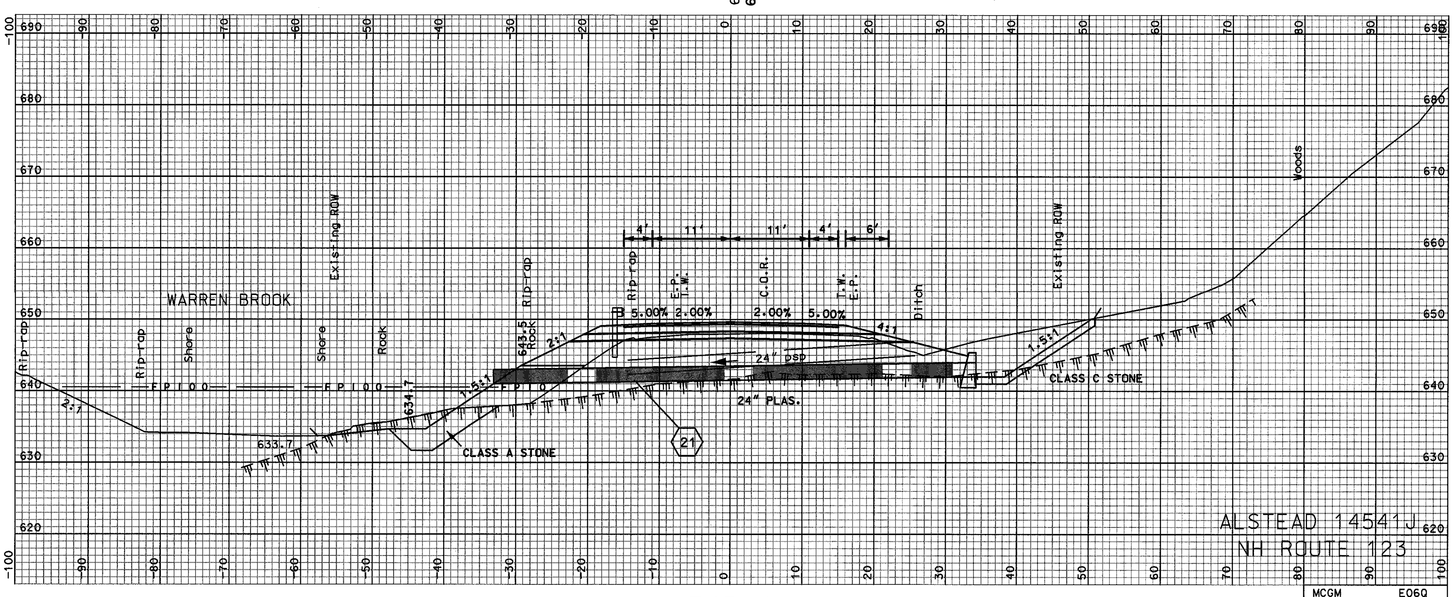
648.2
650.00



345+50

MCGM E06R D06R

648.0
649.65



345+40

MCGM E06Q D06Q

SHEET TOTALS

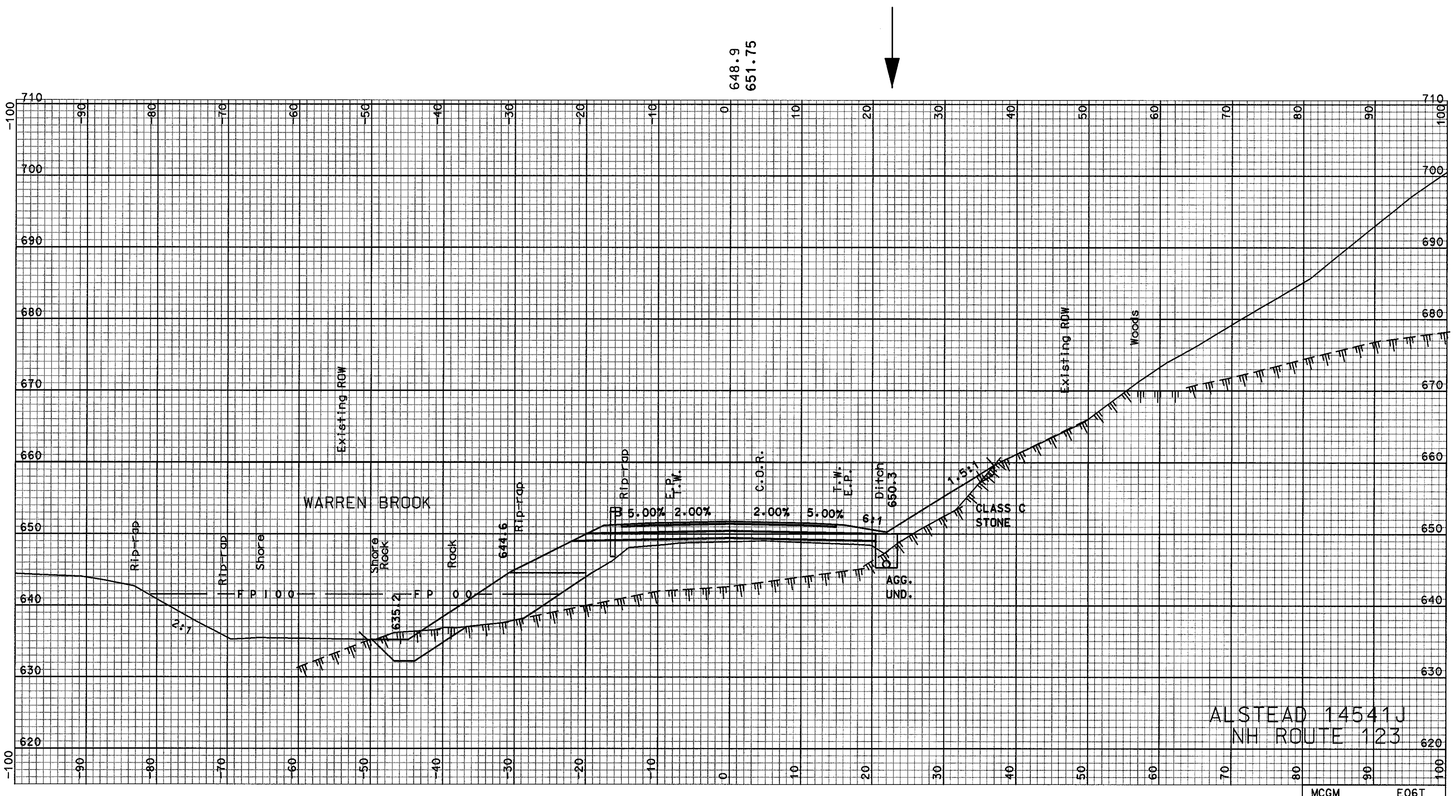
COMMON EXCAV.	29.7 C.Y.	ROCK EXCAV.	57.7 C.Y.
FILL	65.0 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	118	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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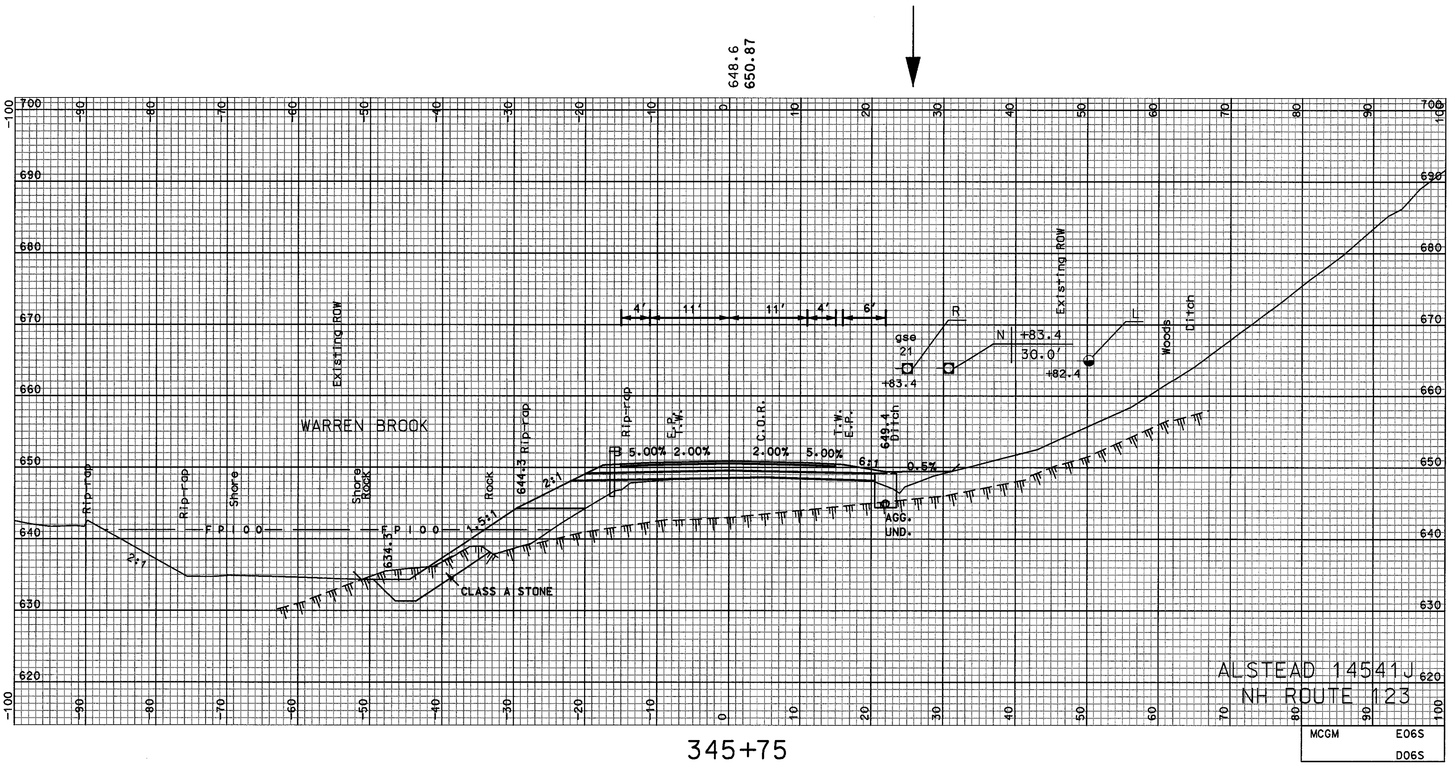


345+75

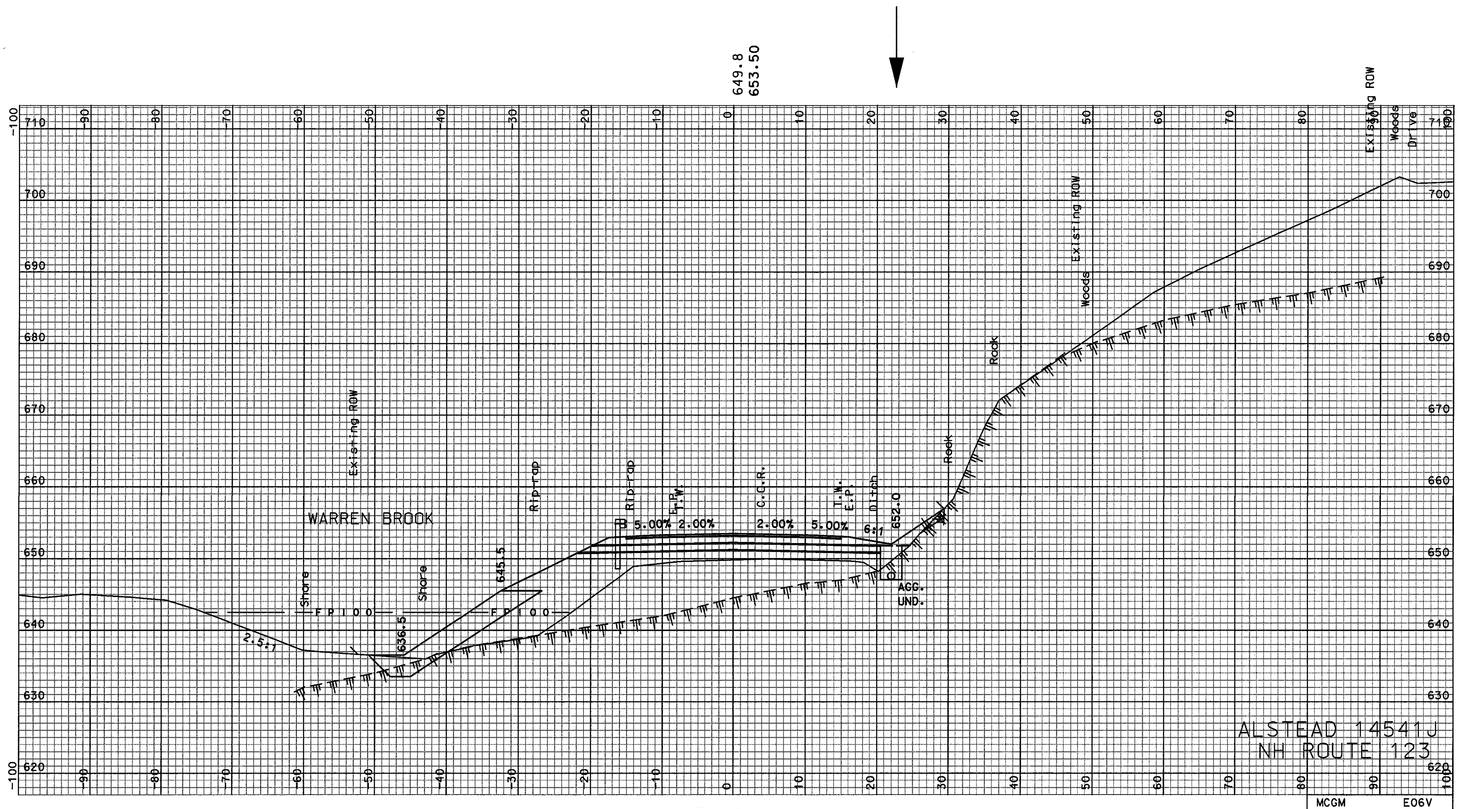
SHEET TOTALS

COMMON EXCAV. 0.8 C.Y.		ROCK EXCAV. 64.2 C.Y.	
FILL 136.2 C.Y.		MUCK EXCAV. - C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	119	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

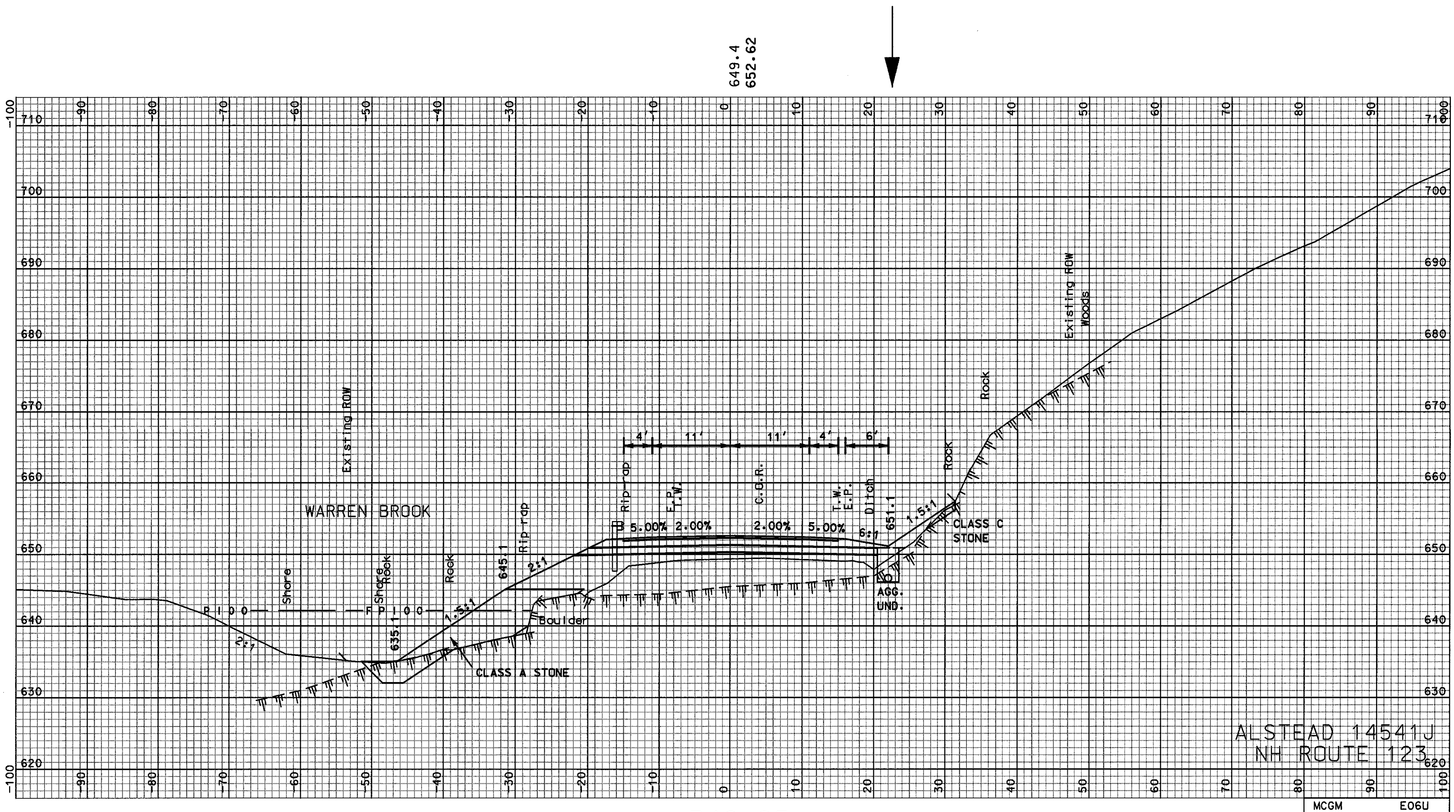
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



346+50

MCGM E06V D06V



346+25

MCGM E06U D06U

SHEET TOTALS

COMMON EXCAV.	12.5 C.Y.	ROCK EXCAV.	24.7 C.Y.
FILL	302.2 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	120	156

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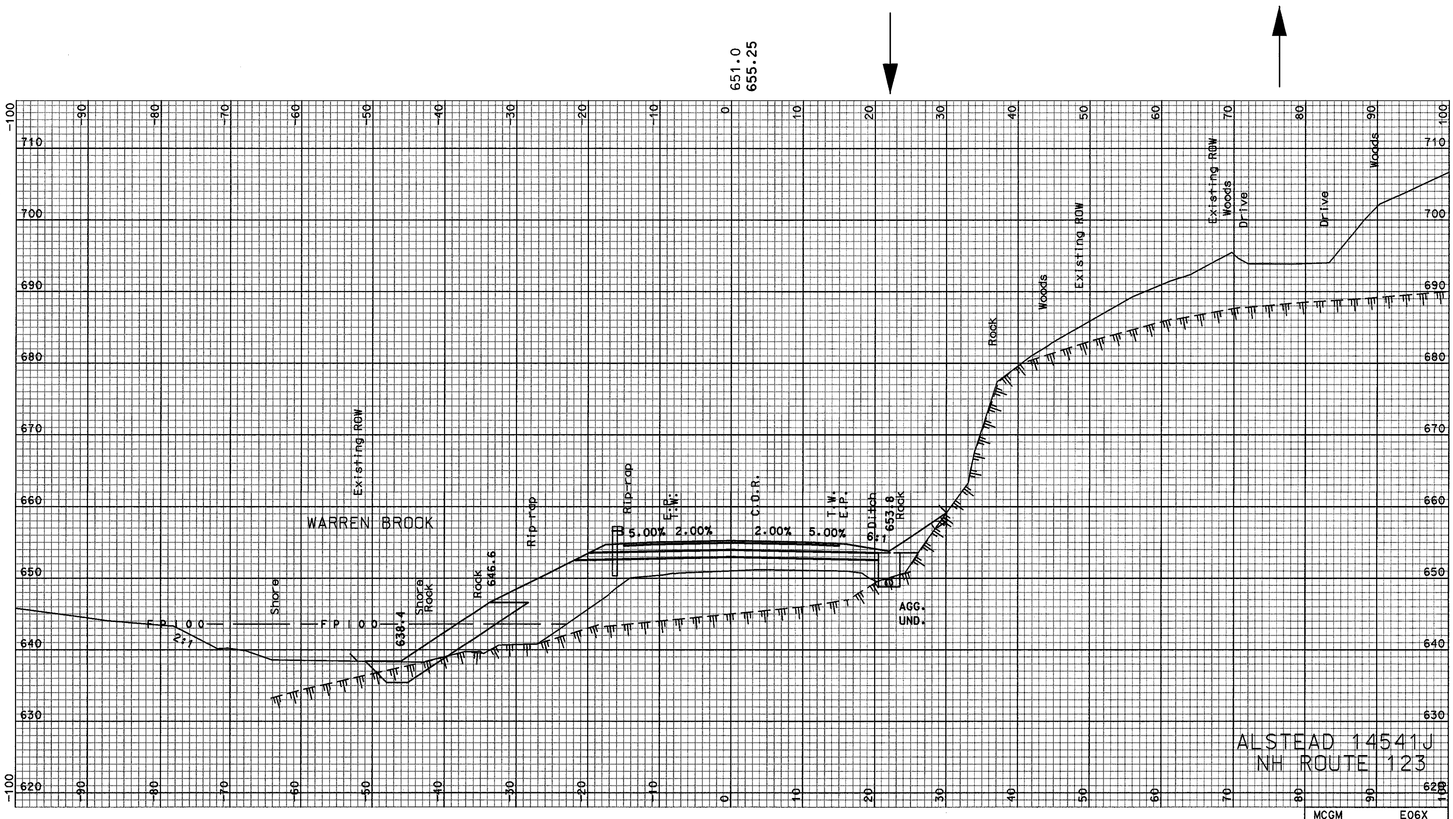
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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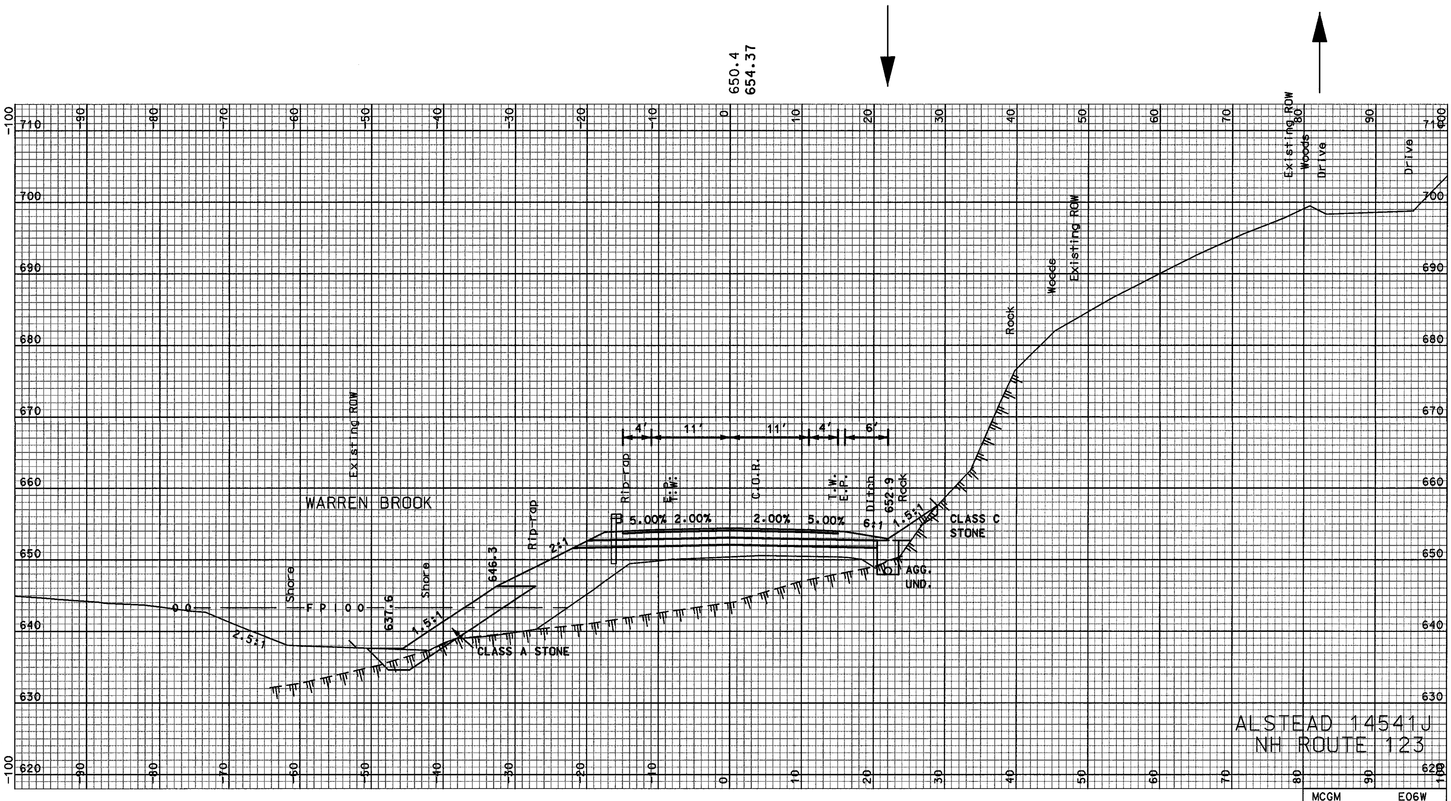


346+75

SHEET TOTALS

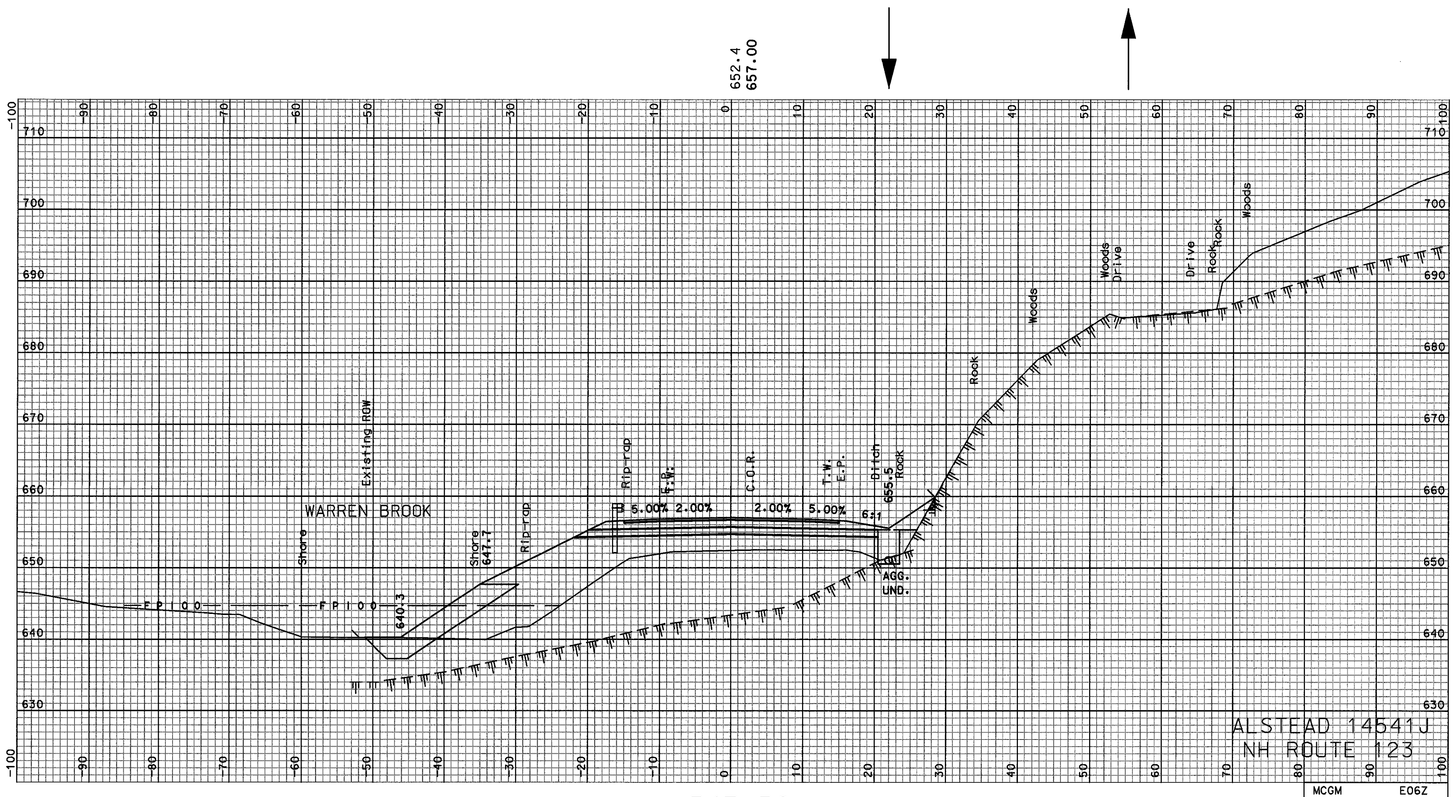
COMMON EXCAV.	19.6 C.Y.	ROCK EXCAV.	17.8 C.Y.
FILL	405.0 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	121	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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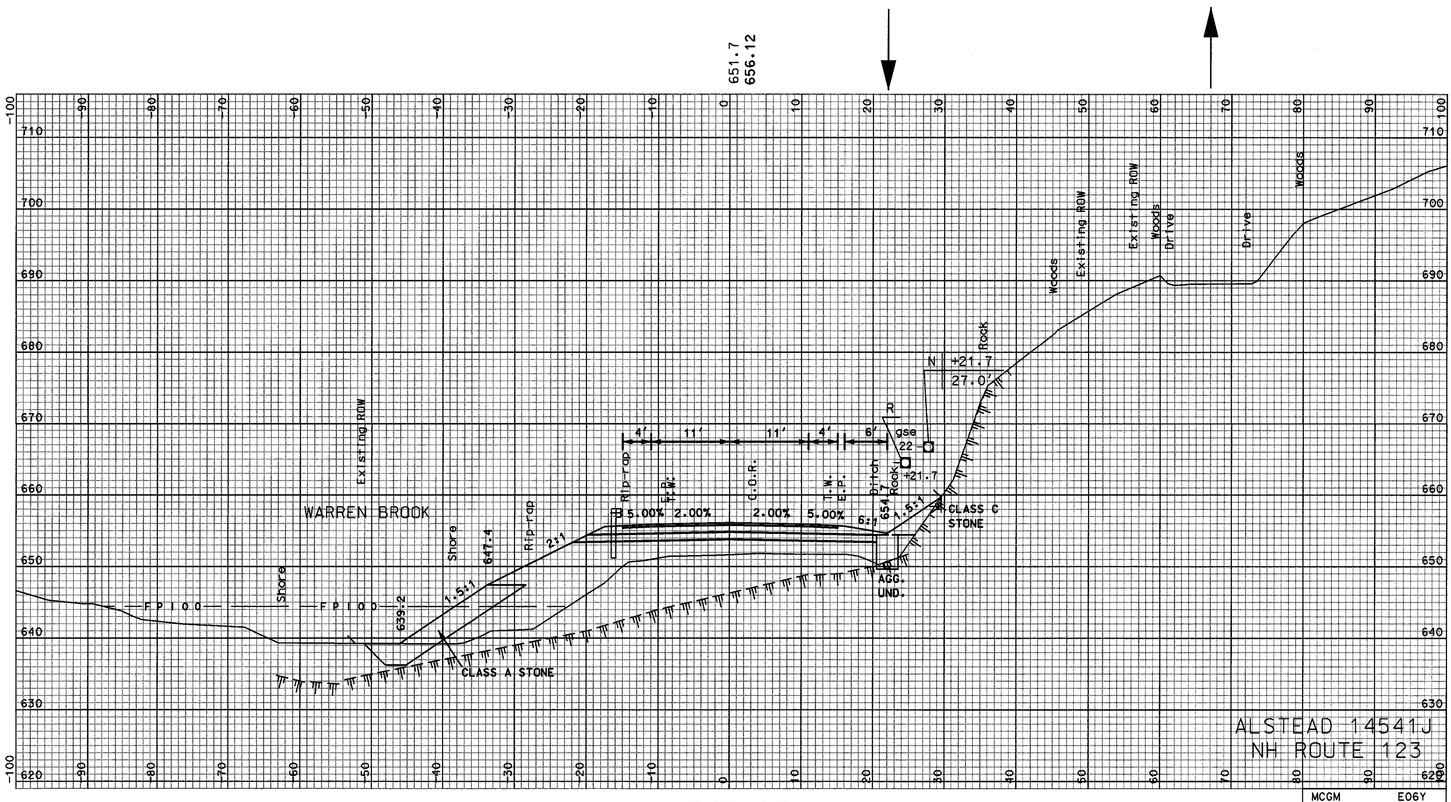


347+25

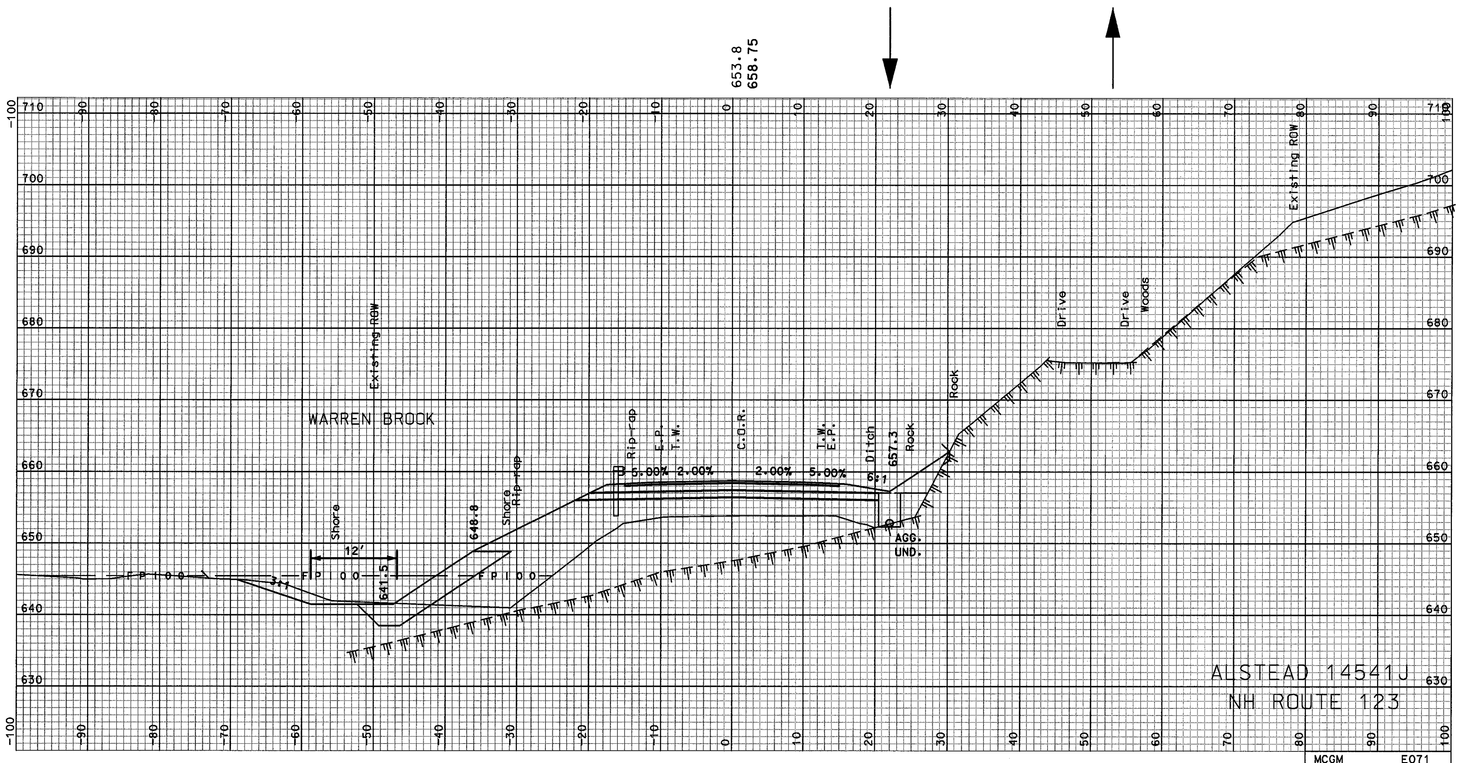
SHEET TOTALS			
COMMON EXCAV. 35.4 C.Y.		ROCK EXCAV. – C.Y.	
FILL 471.9 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	122	156

...\14541\Cad\Dgn\14541Jxs_3.dgn 05/24/2007 10:22:31 AM m3acnc

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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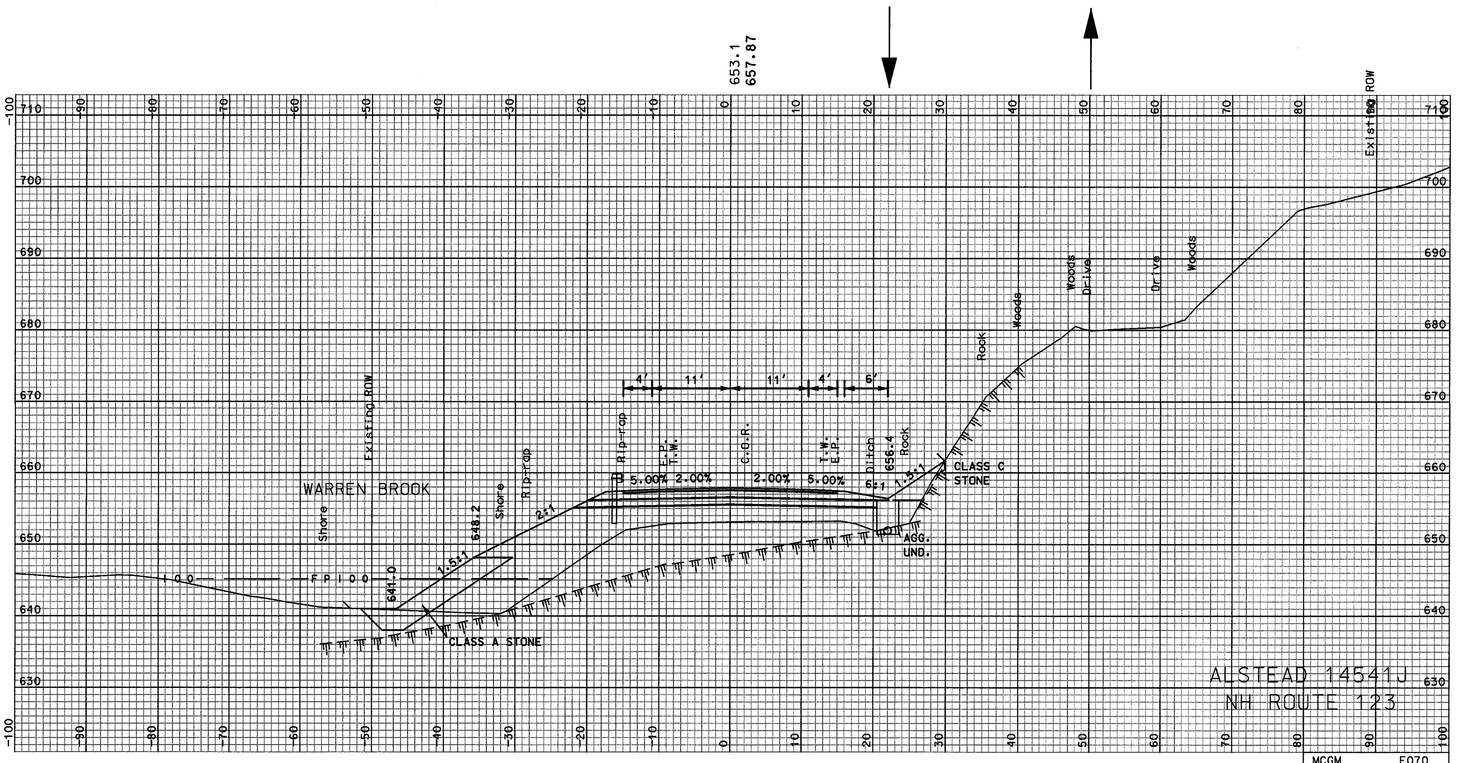

347+75

SHEET TOTALS

COMMON EXCAV.	59.5 C.Y.	ROCK EXCAV.	- C.Y.
FILL	530.3 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	123	156

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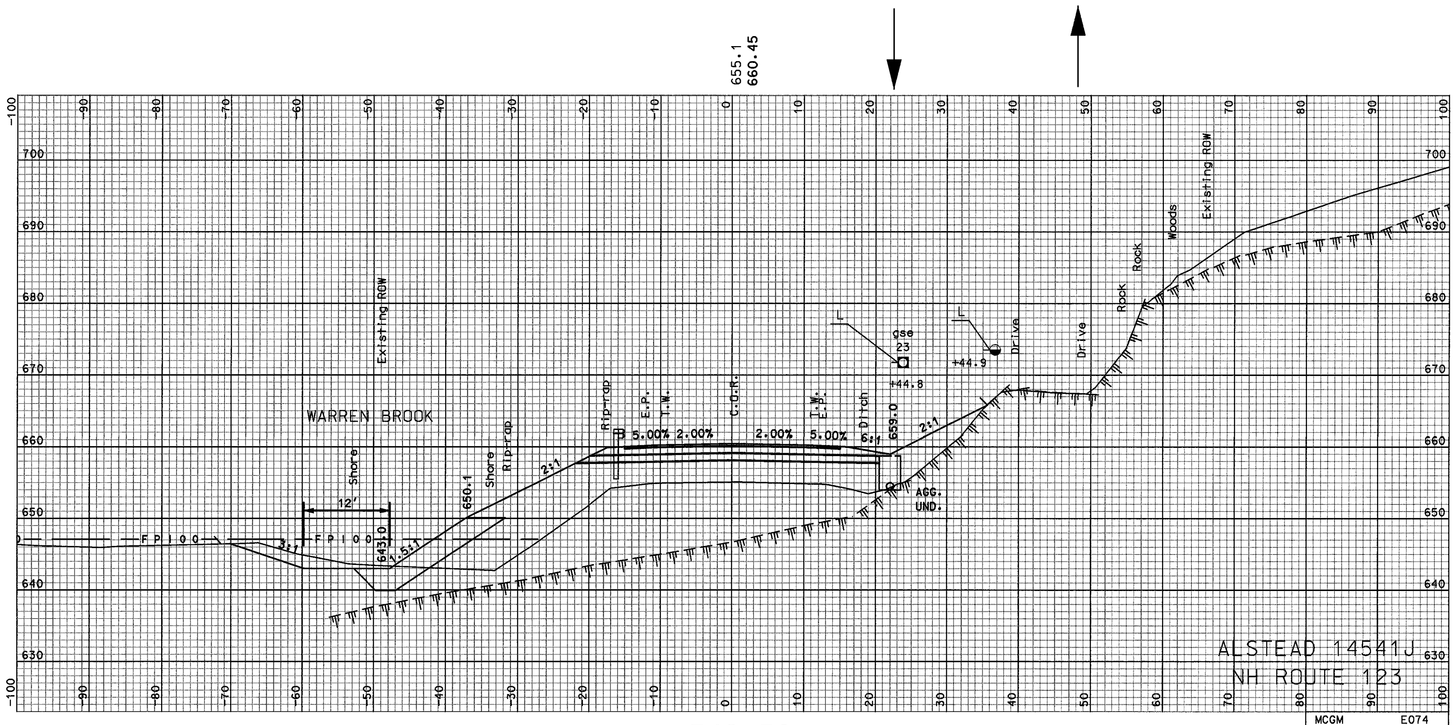
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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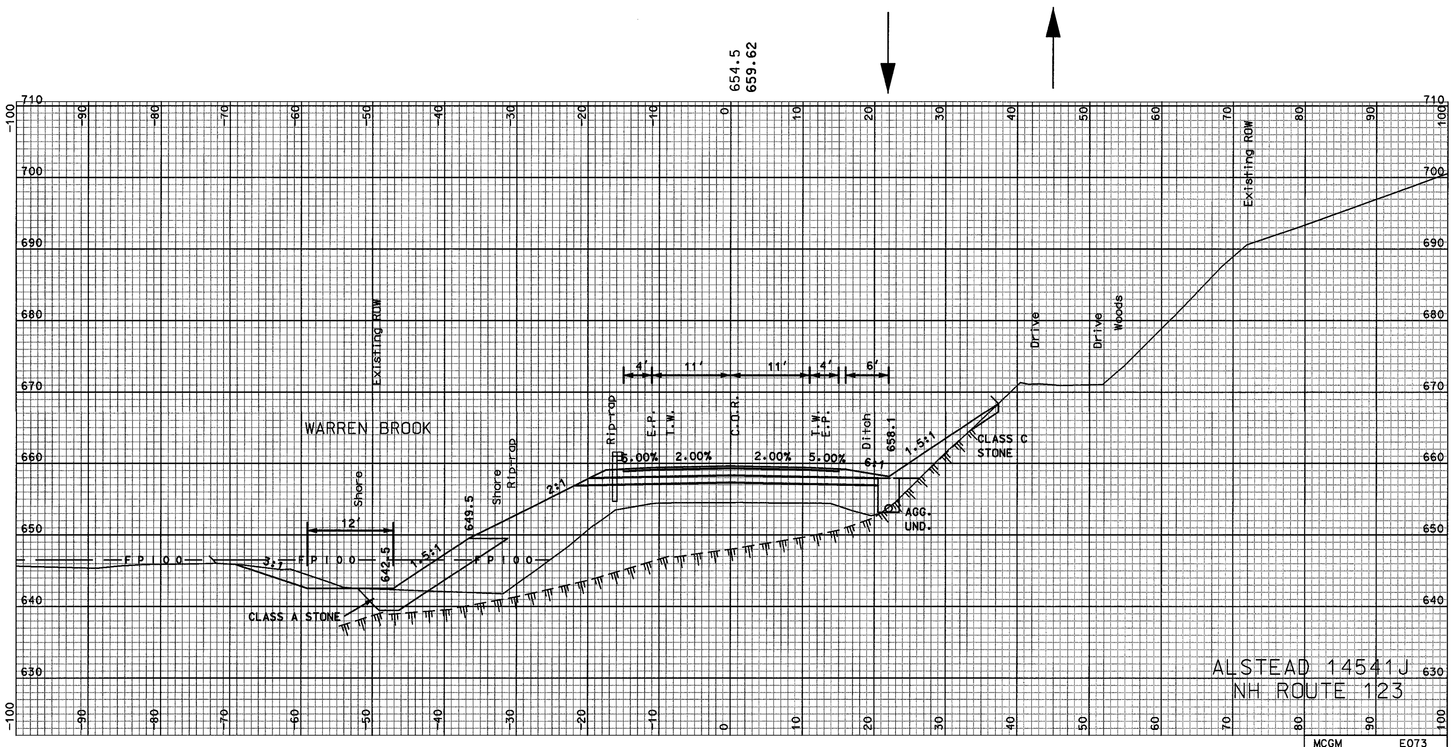

348+25

SHEET TOTALS			
COMMON EXCAV. 67.4 C.Y.		ROCK EXCAV. – C.Y.	
FILL 589.1 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	124	156

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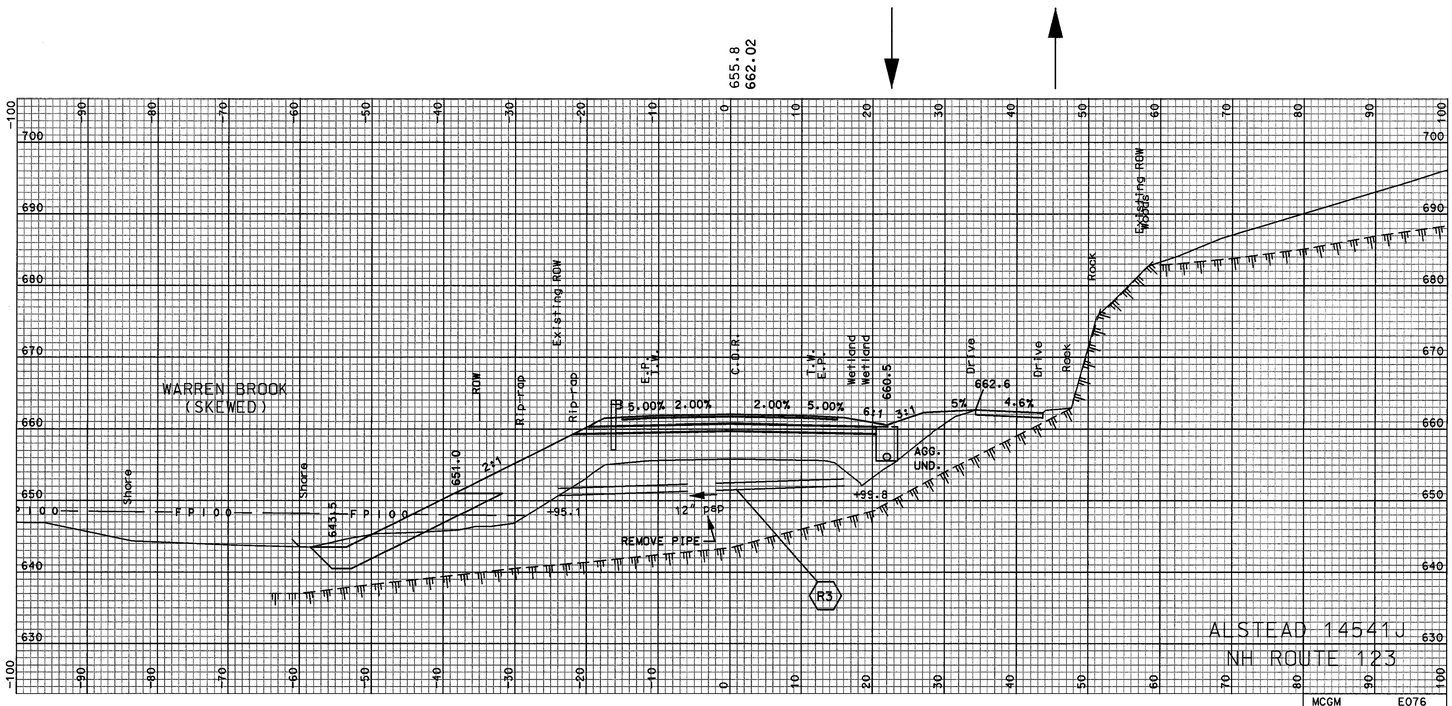
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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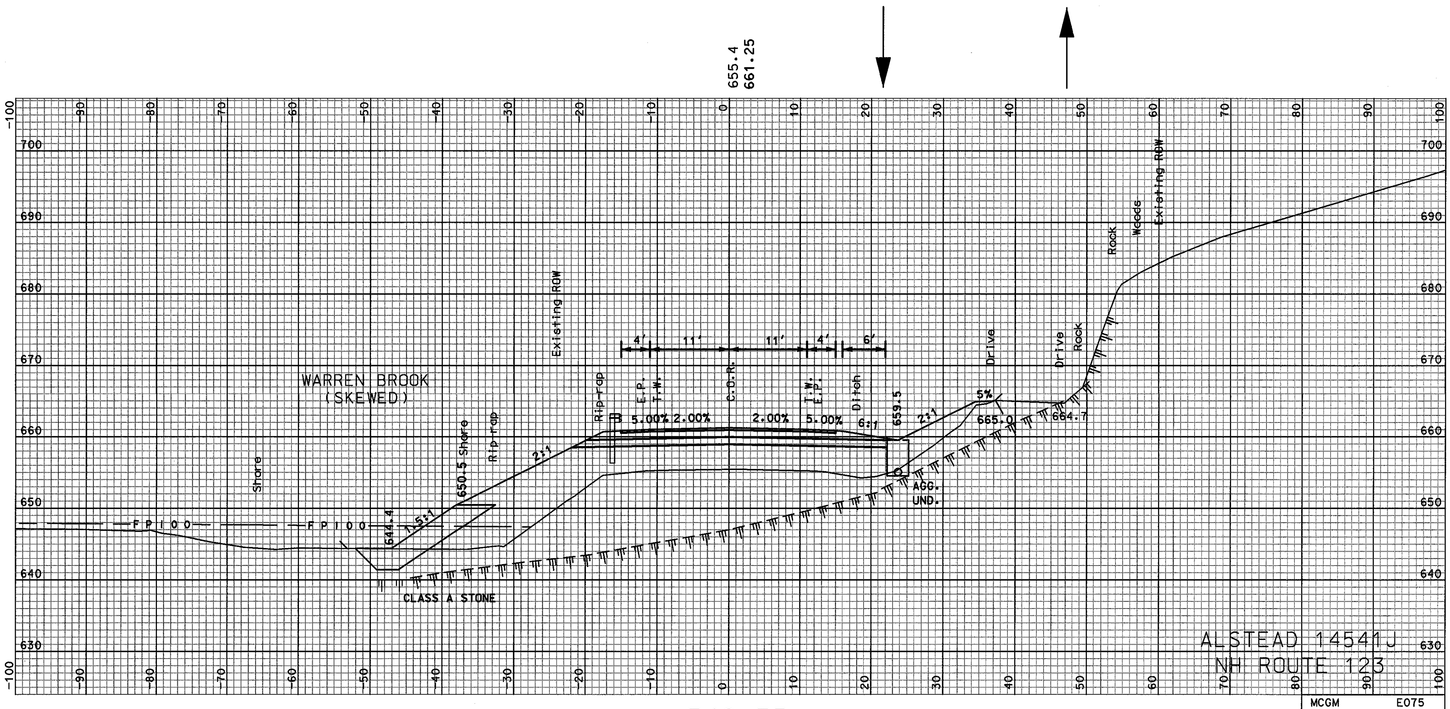

348+75

SHEET TOTALS

COMMON EXCAV.	58.5 C.Y.	ROCK EXCAV.	- C.Y.
FILL	611.3 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	125	156

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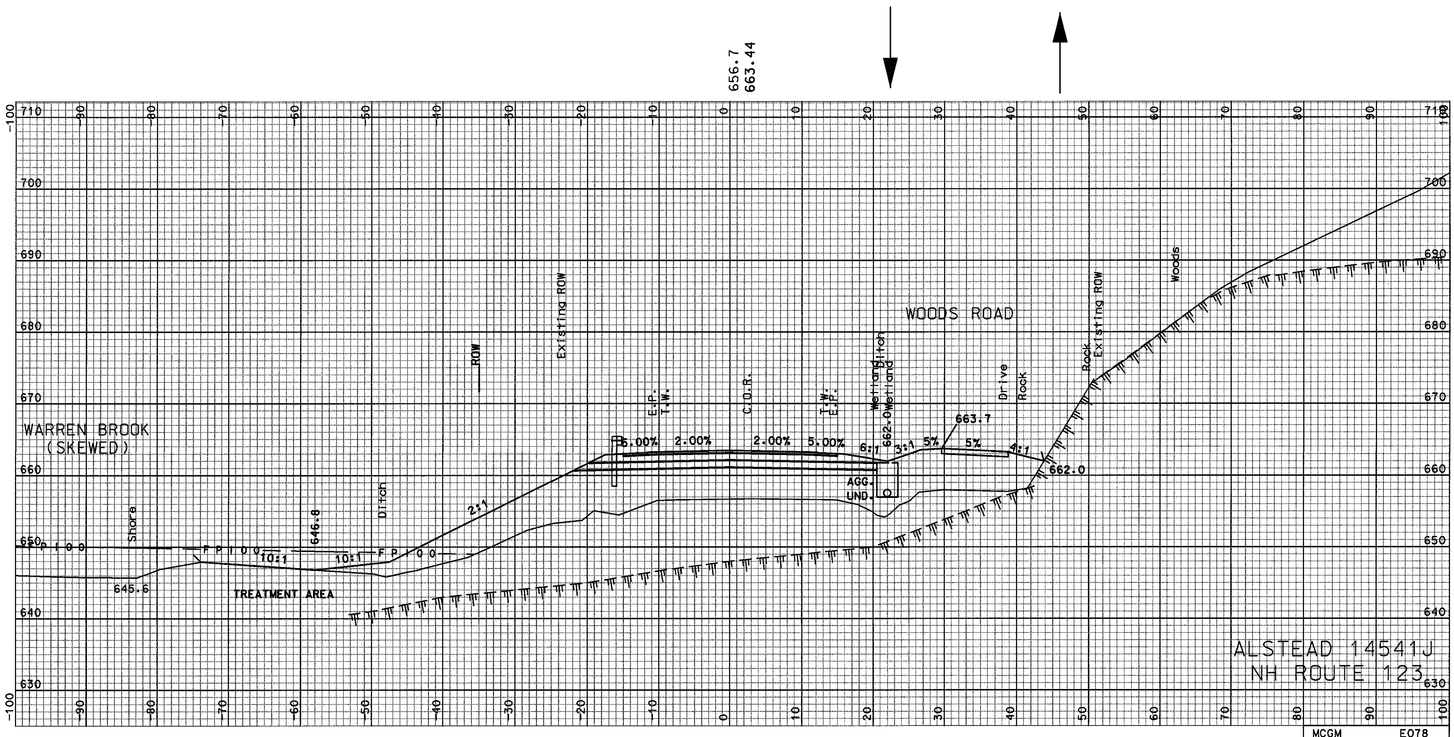
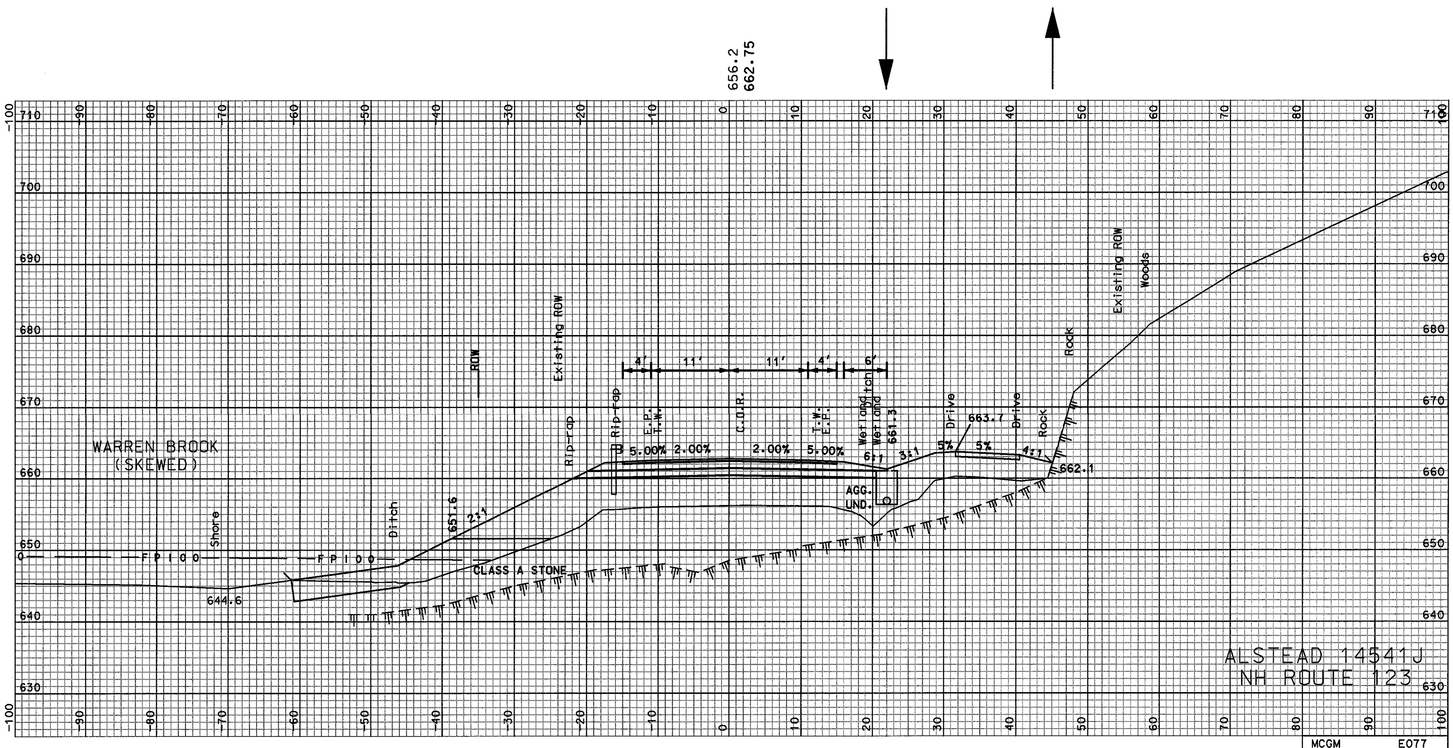
SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



349+50



349+25

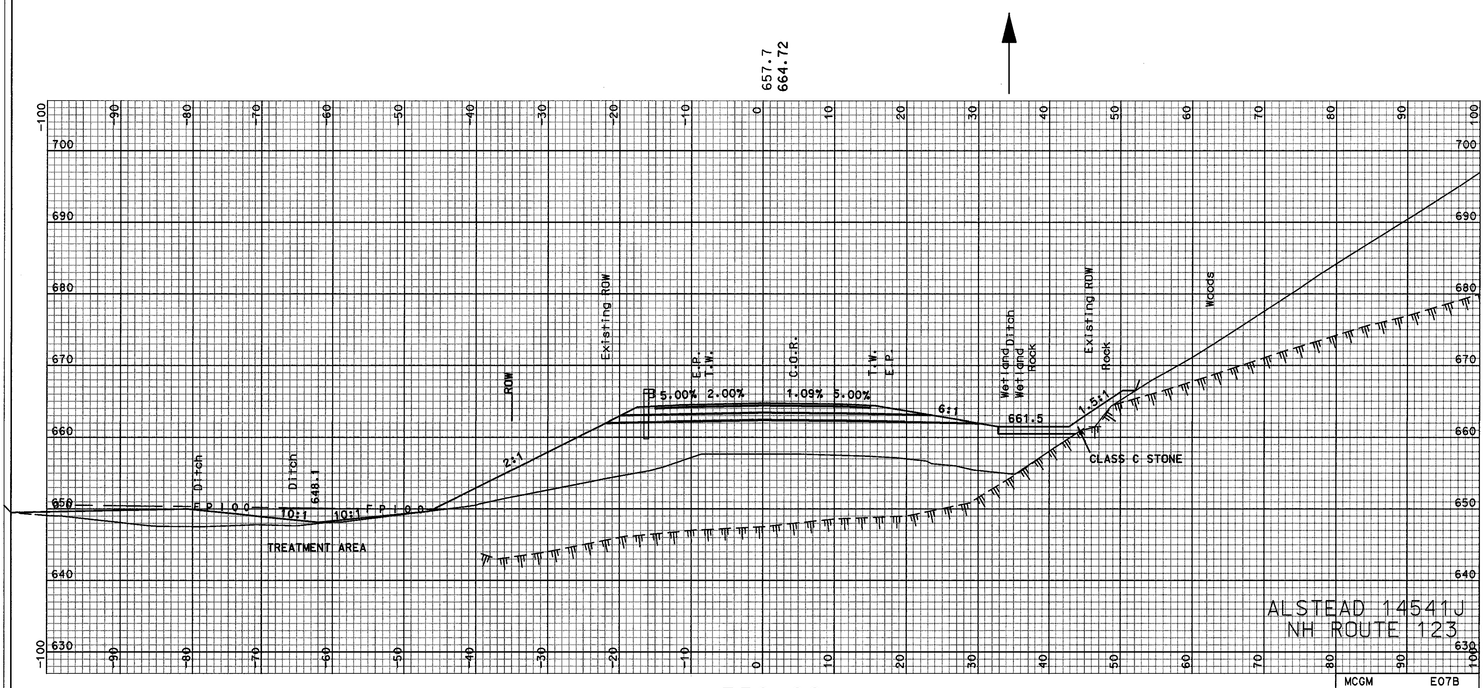
SHEET TOTALS			
COMMON EXCAV. 12.8 C.Y.		ROCK EXCAV. – C.Y.	
FILL 730.0 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	126	156

2007/2/28 at 8:32:31 wac

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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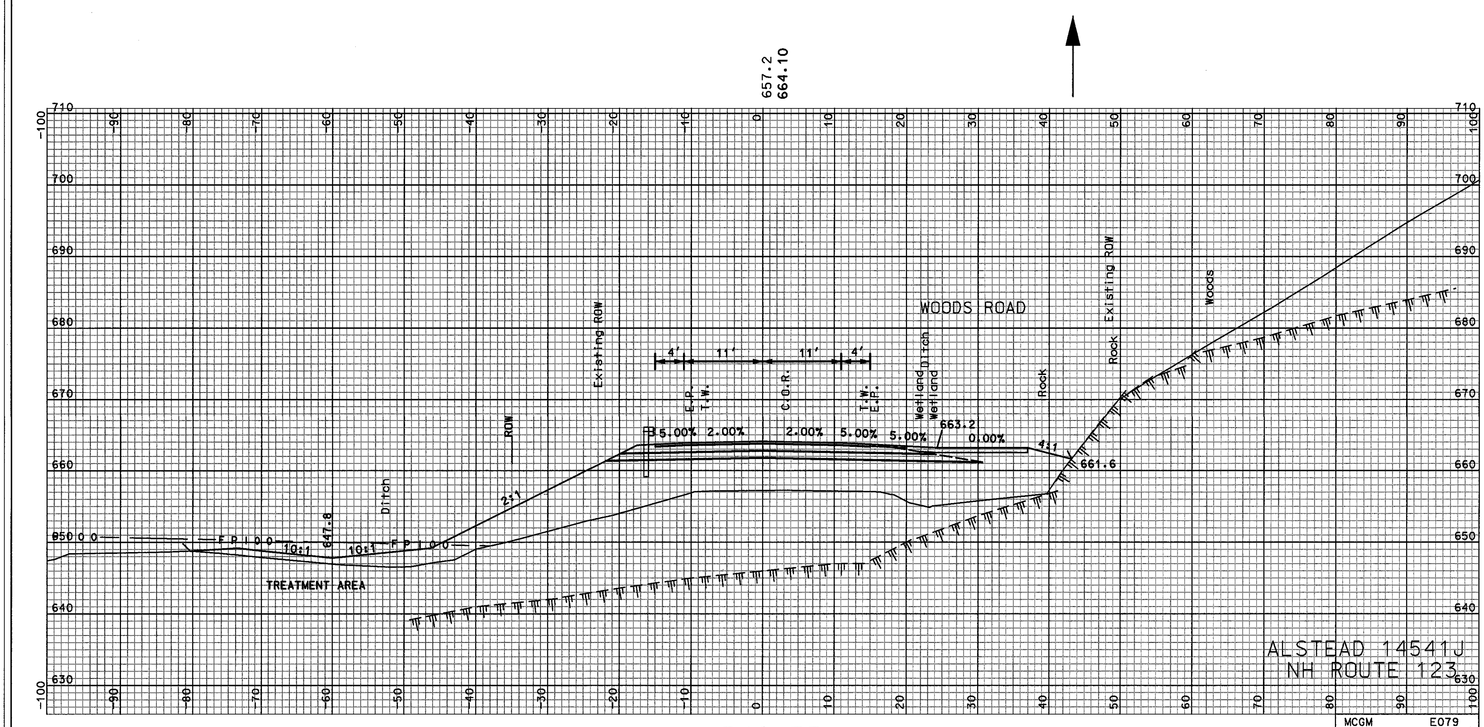


349+75

SHEET TOTALS

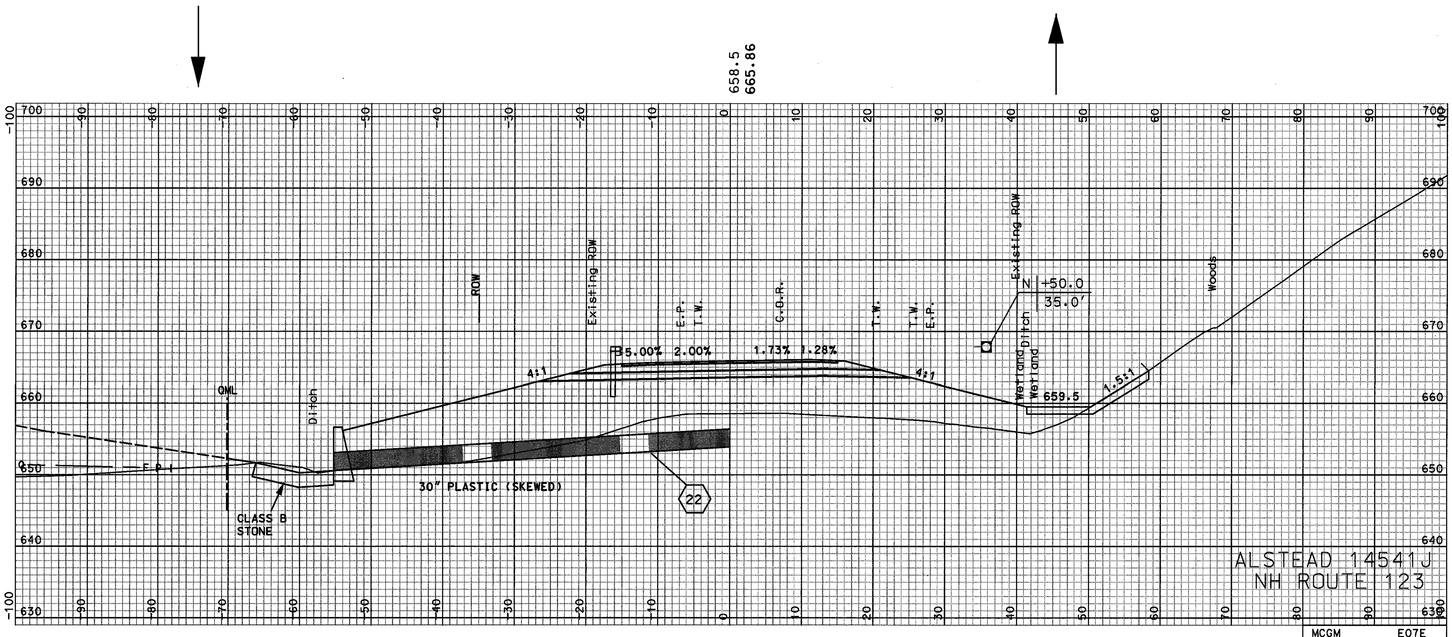
COMMON EXCAV.	- C.Y.	ROCK EXCAV.	- C.Y.
FILL	829.9 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	127	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

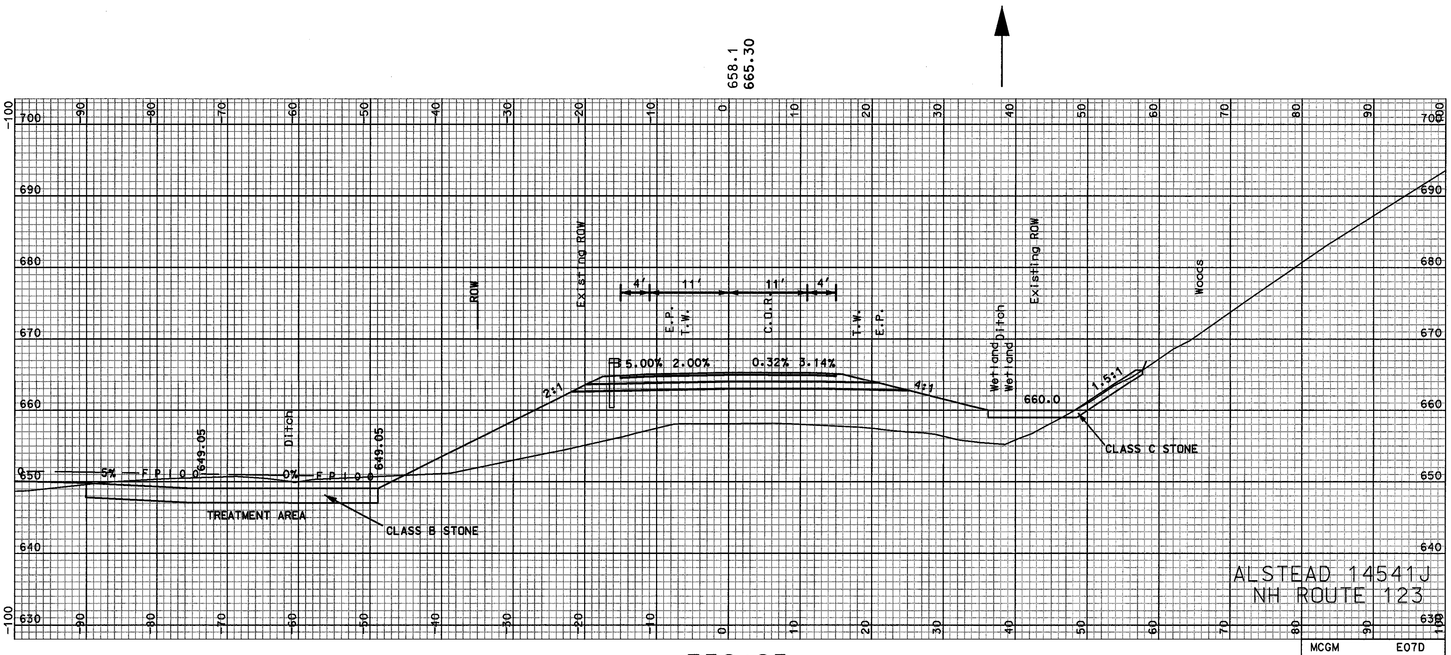
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



350+50

MCGM E07E D07E



350+25

MCGM E07D D07D

SHEET TOTALS

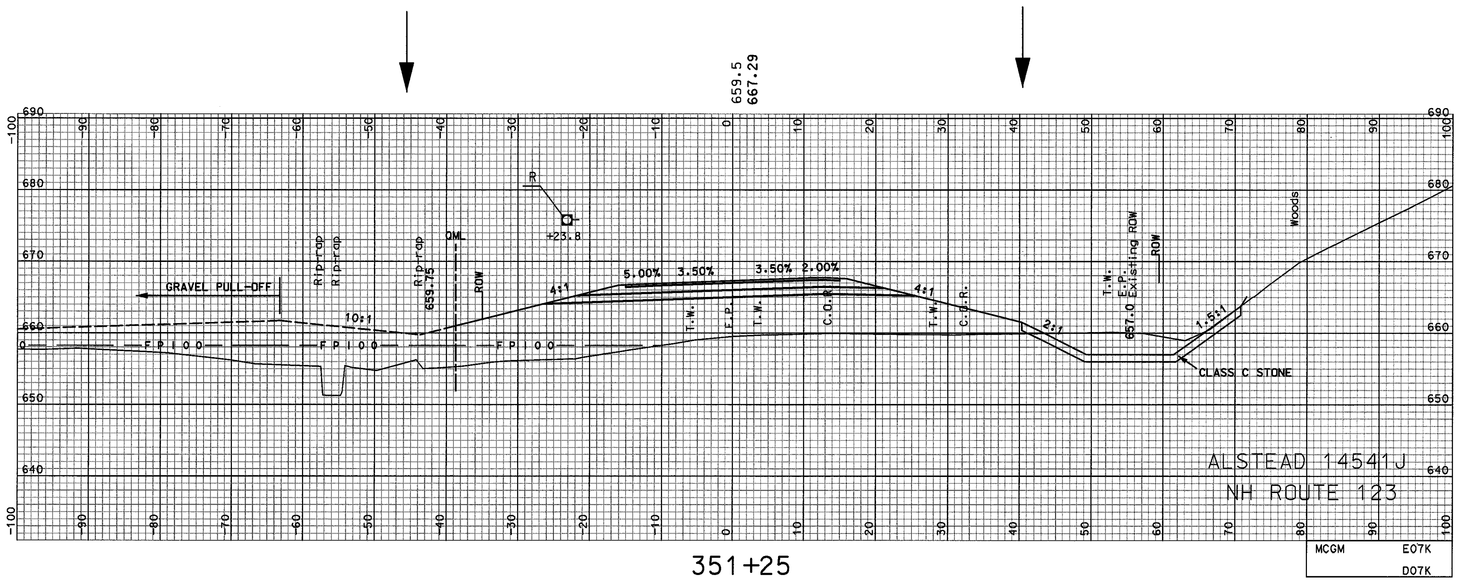
COMMON EXCAV.	104.9 C.Y.	ROCK EXCAV.	- C.Y.
FILL	960.5 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	128	156

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



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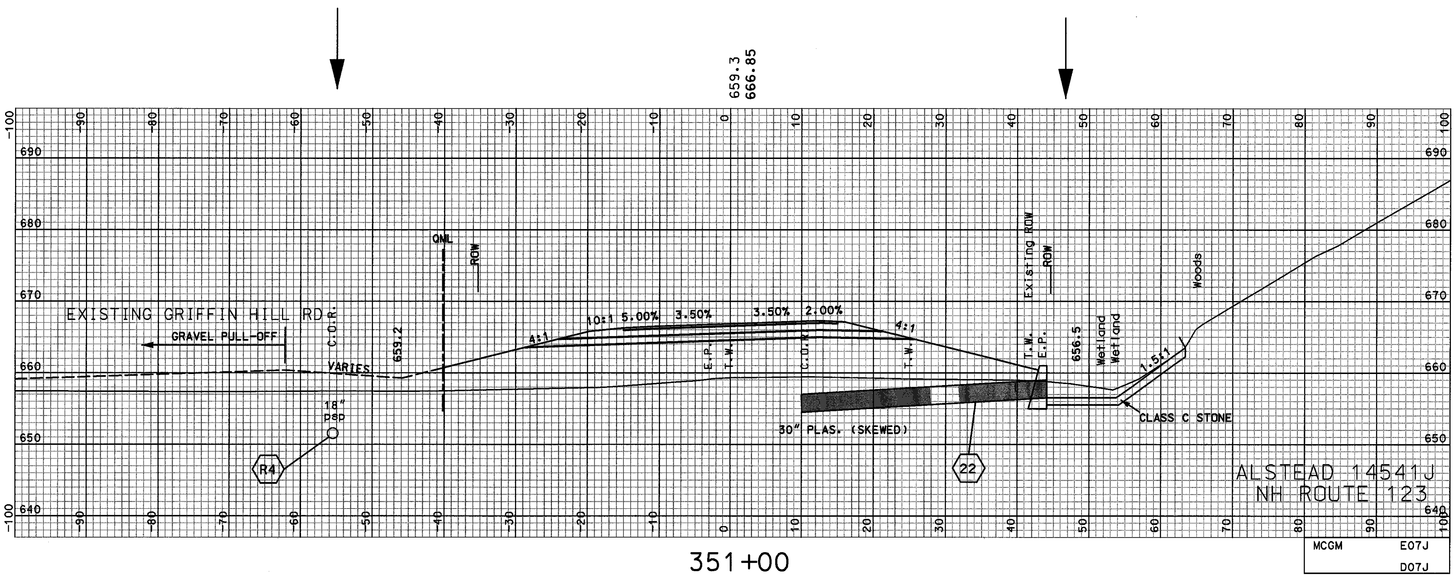
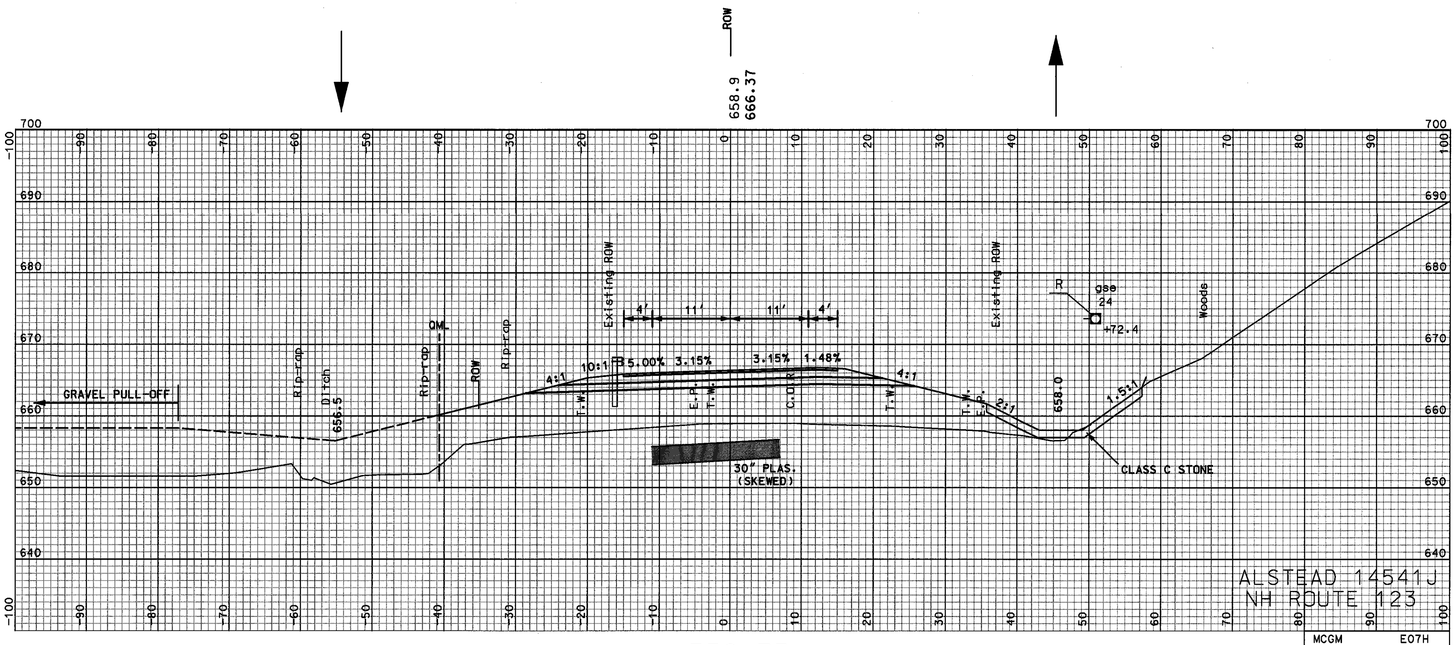


351+00

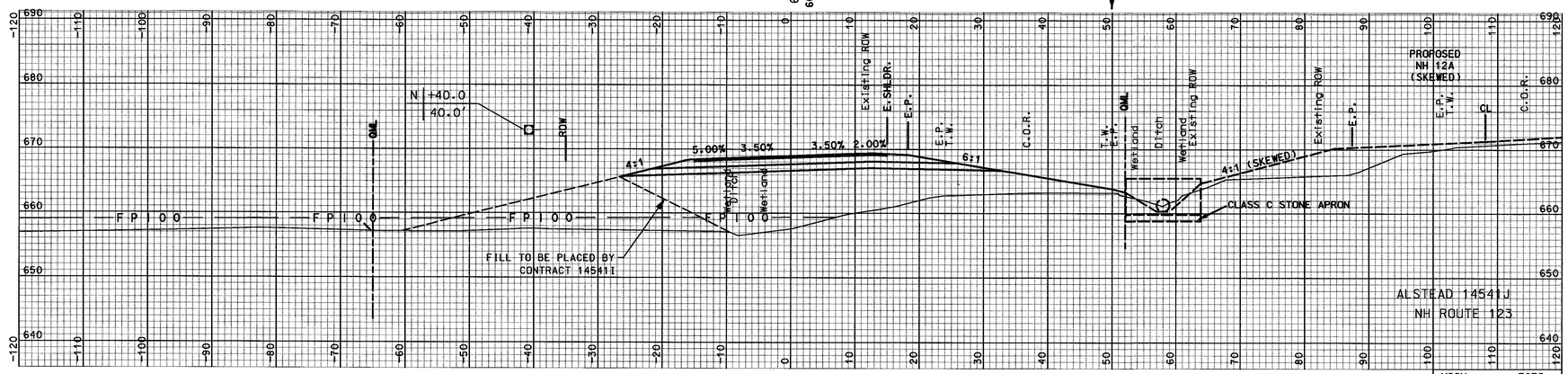


350+75

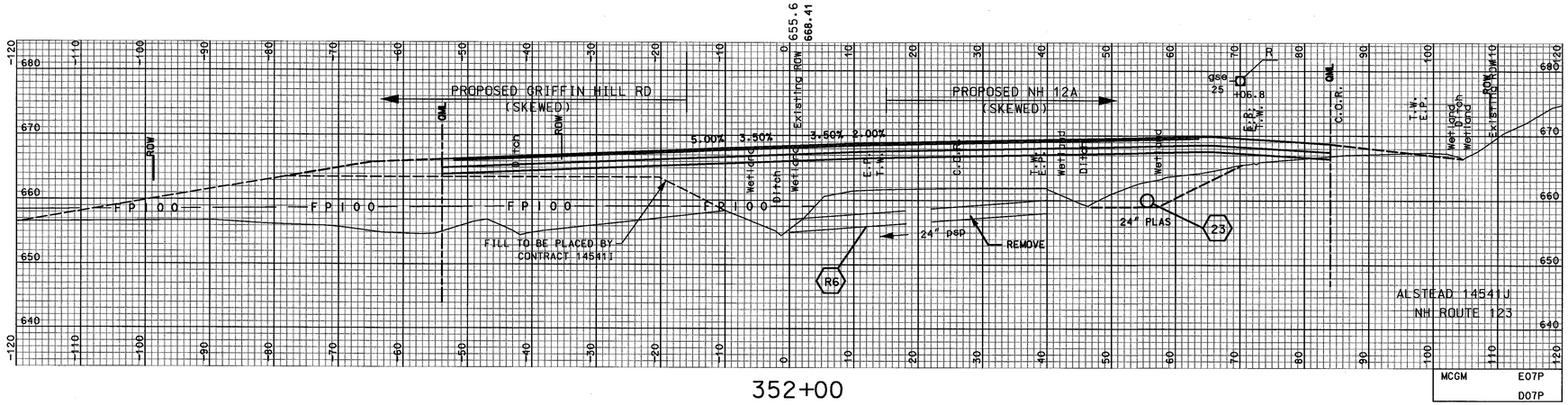
SHEET TOTALS

COMMON EXCAV.	205.7 C.Y.	ROCK EXCAV.	- C.Y.
FILL	1226.7 C.Y.	MUCK EXCAV.	- C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_3	14541J	129	156



352+50



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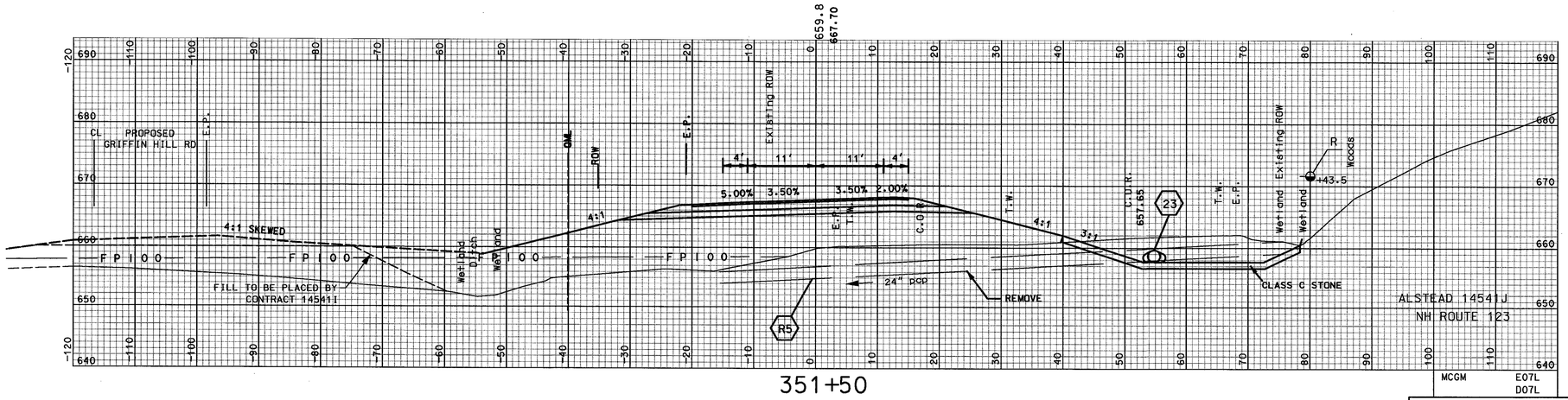

351+50

SHEET TOTALS			
COMMON EXCAV. 164.5 C.Y.	ROCK EXCAV. – C.Y.		
FILL 2312.3 C.Y.	MUCK EXCAV. – C.Y.		
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	130	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

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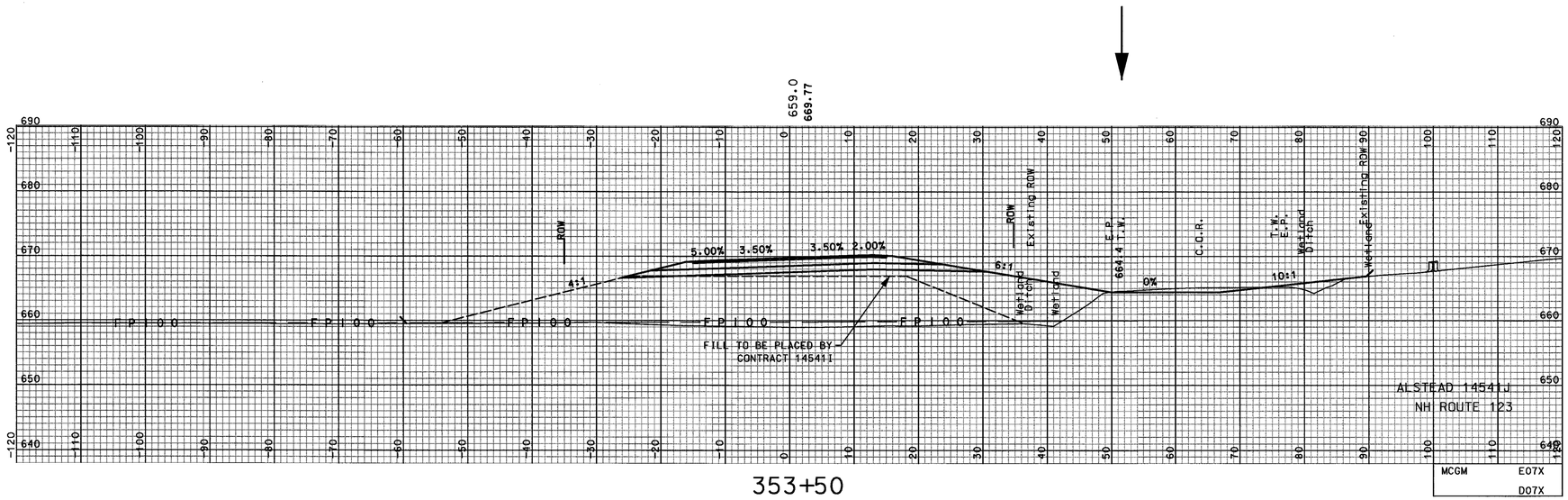
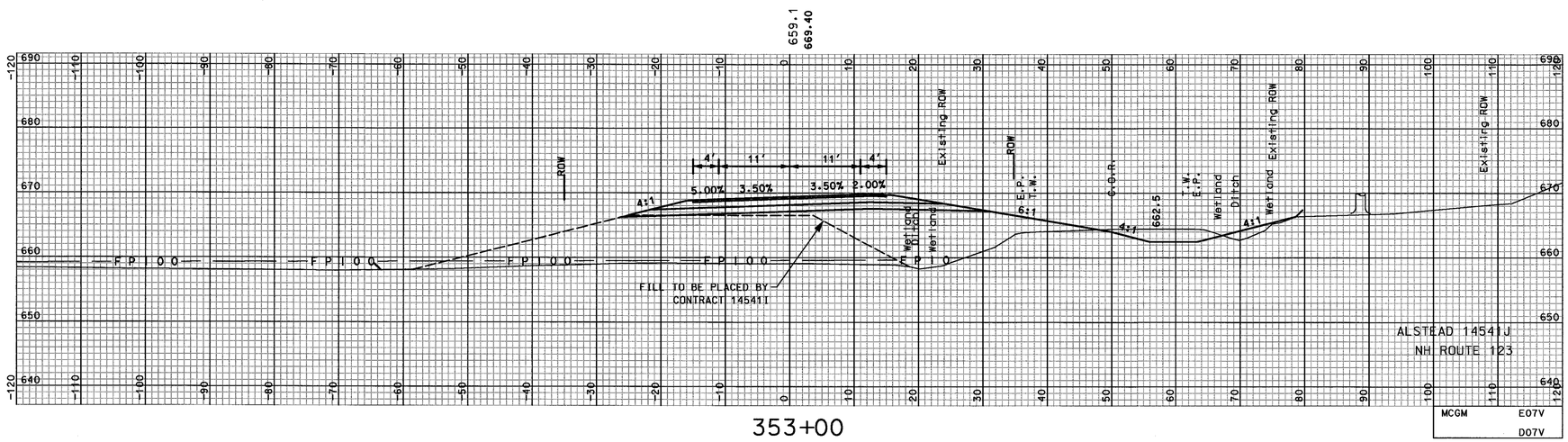


353+50



353+00

SHEET TOTALS			
COMMON EXCAV. 43.8 C.Y.		ROCK EXCAV. – C.Y.	
FILL 661.5 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	131	156

REVISIONS AFTER PROPOSAL

STATION	STATION	NUMBER	DATE	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

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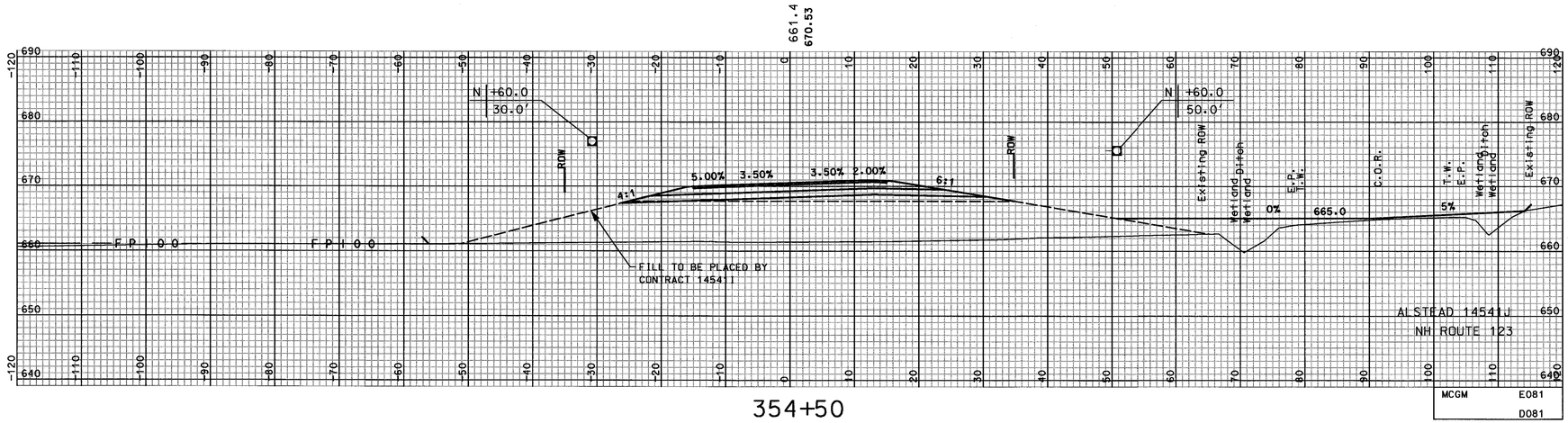
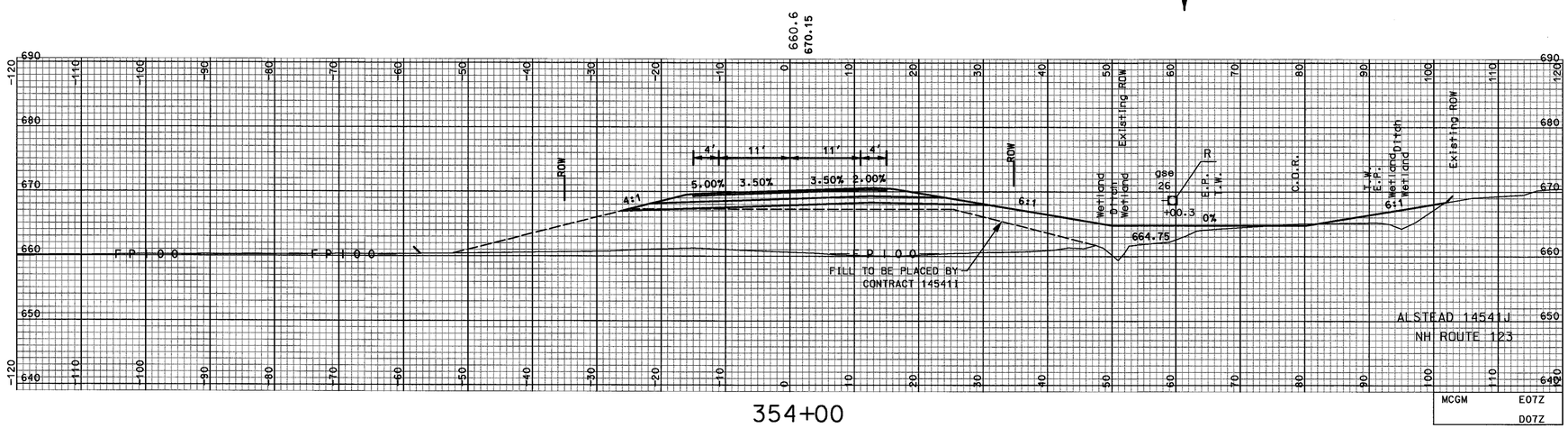


354+50



354+00

SHEET TOTALS			
COMMON EXCAV.	– C.Y.	ROCK EXCAV.	– C.Y.
FILL	327.3 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	132	156

REVISIONS AFTER PROPOSAL

STATION	STATION	NUMBER	DATE	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

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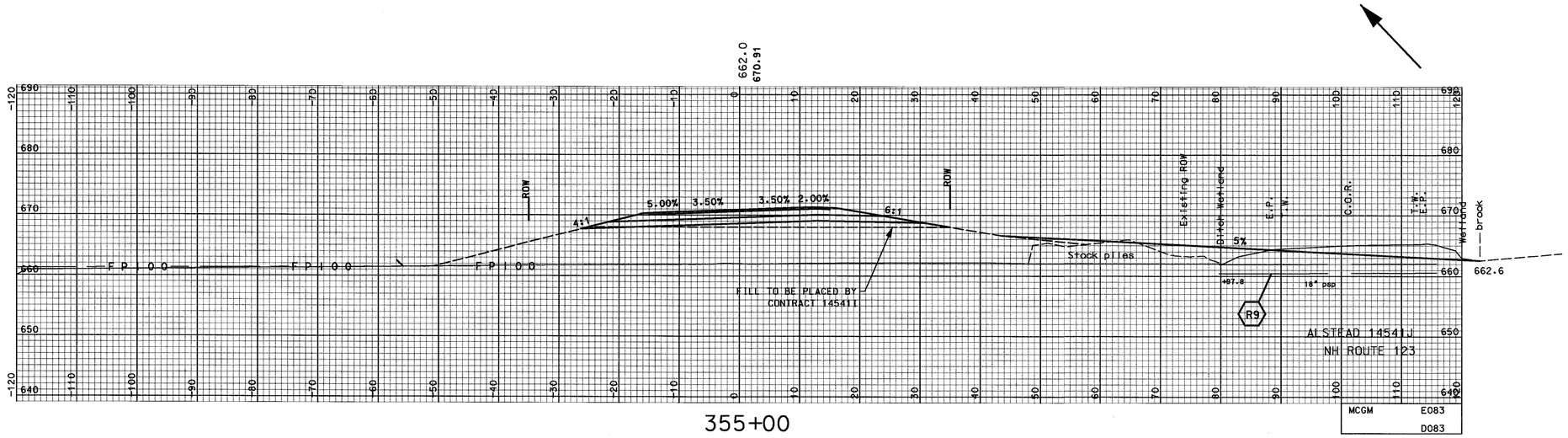
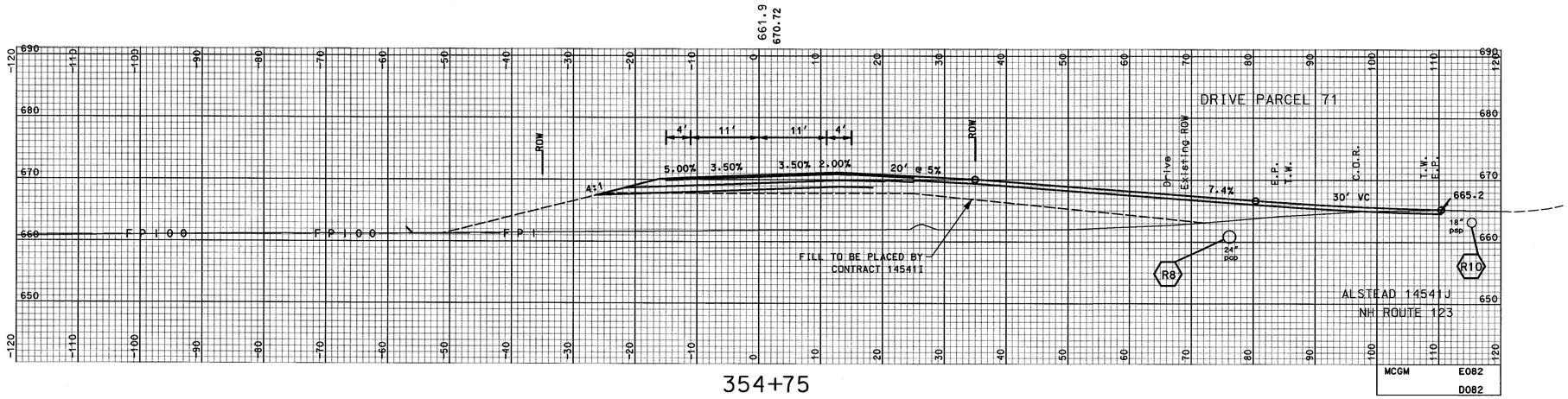


355+00



354+75

SHEET TOTALS			
COMMON EXCAV. 276.1 C.Y.		ROCK EXCAV. – C.Y.	
FILL 246.1 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	133	156

REVISIONS AFTER PROPOSAL

STATION	STATION	DESCRIPTION	NUMBER	DATE

SDR PROCESSED	CAC	DATE 2006
NEW DESIGN	TEAM CLIFFORD	DATE 2006/2007
SHEET CHECKED	WAC	DATE 5/2007
AS BUILT DETAILS		DATE

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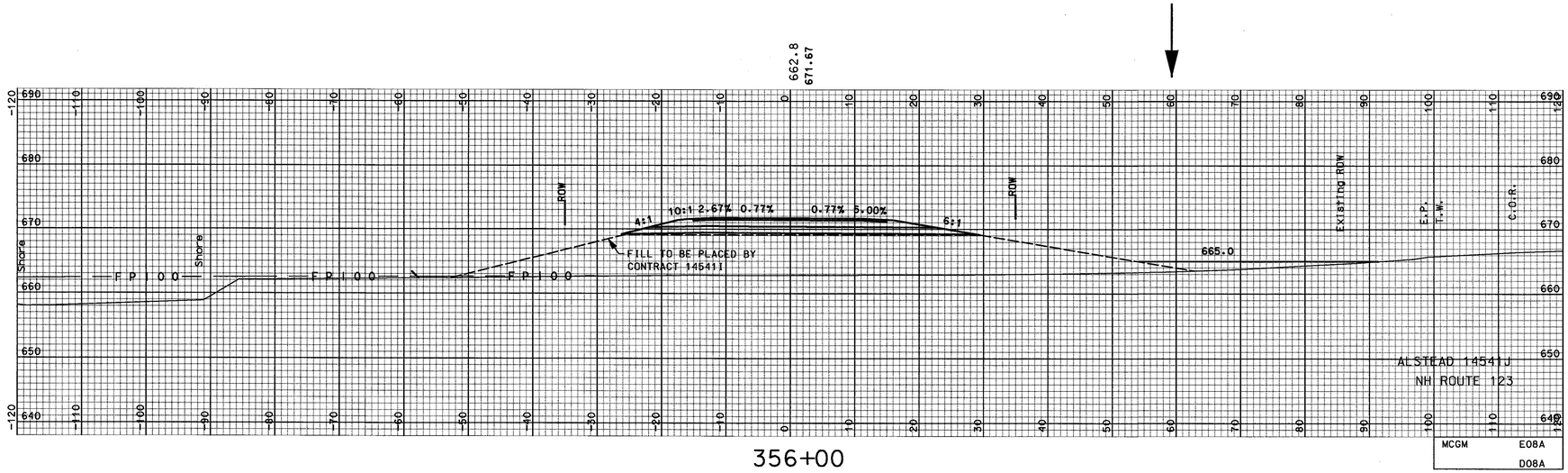

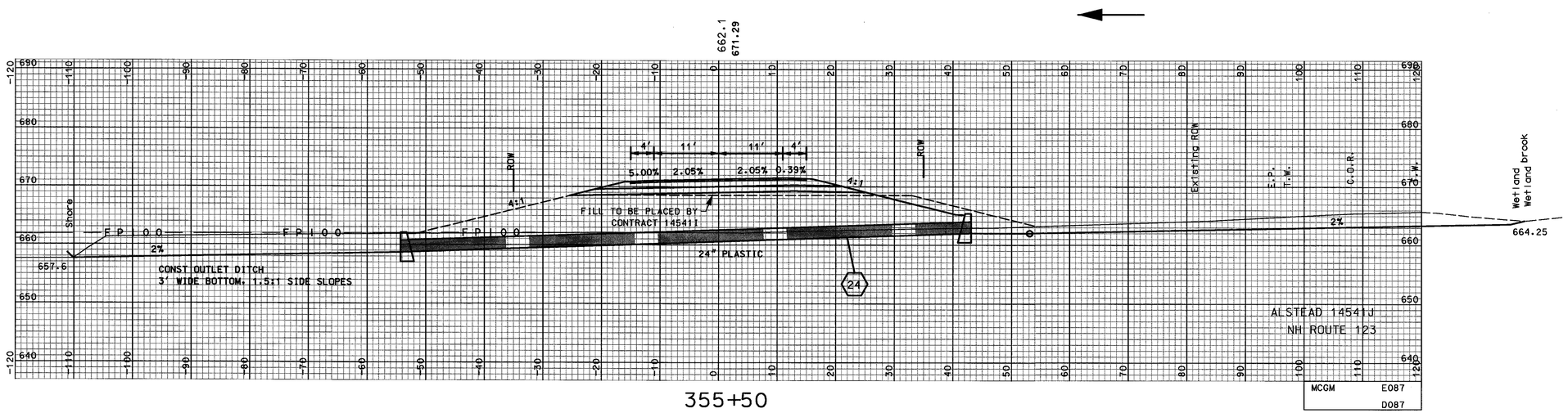

REVISIONS AFTER PROPOSAL			
STATION	STATION	DATE	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

SHEET TOTALS			
COMMON EXCAV.	176.2 C.Y.	ROCK EXCAV.	– C.Y.
FILL	168.3 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	134	156

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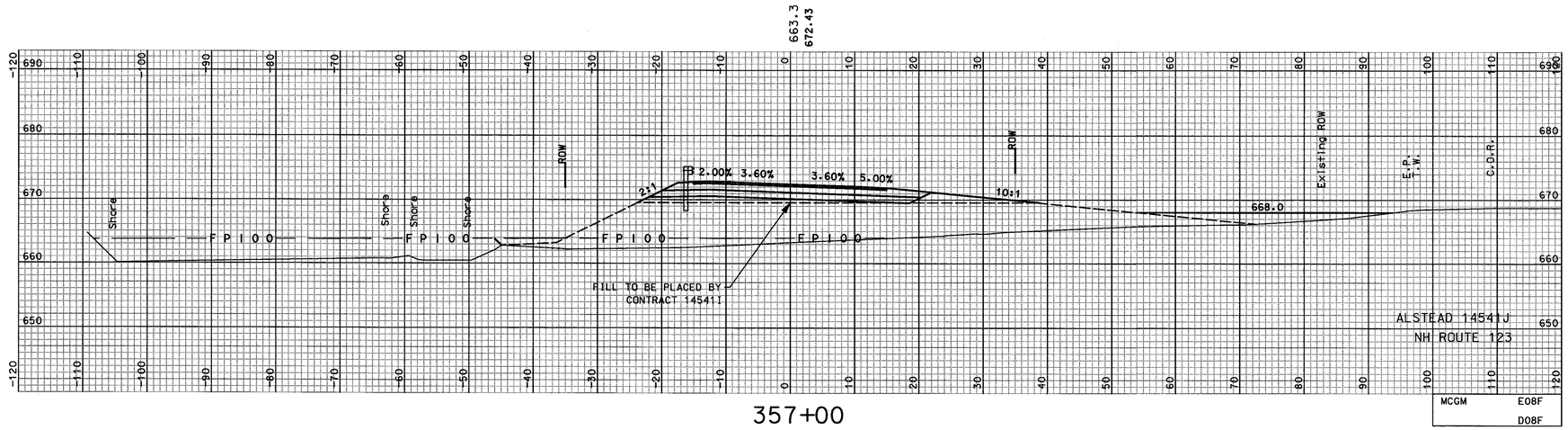
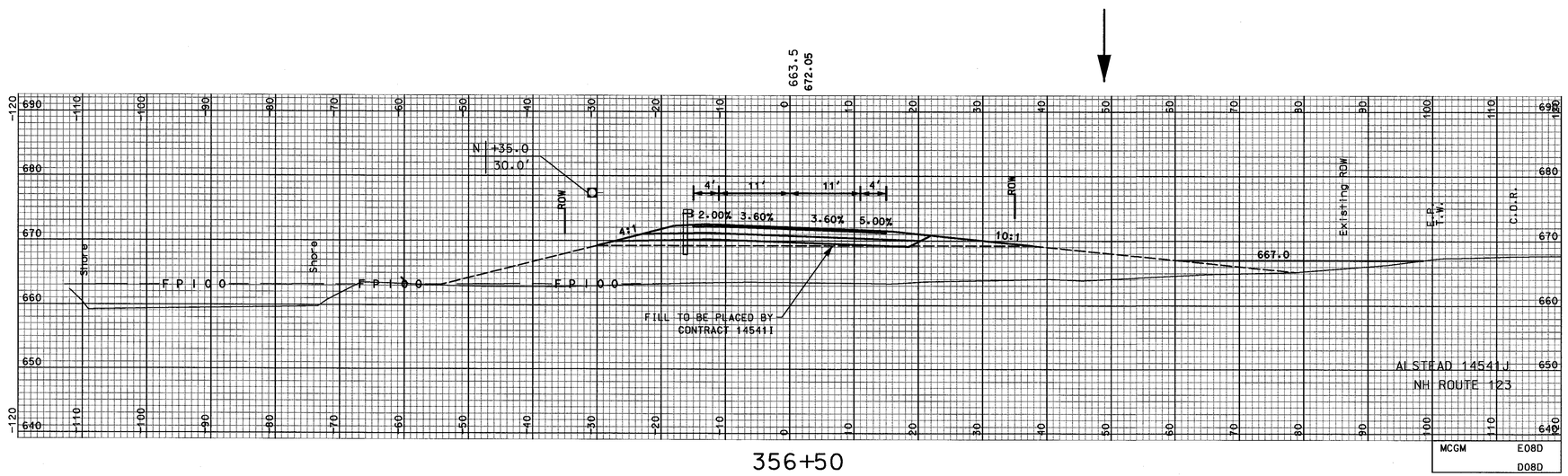


357+00



356+50

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	STATION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

SHEET TOTALS			
COMMON EXCAV.	– C.Y.	ROCK EXCAV.	– C.Y.
FILL	286.6 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	135	156

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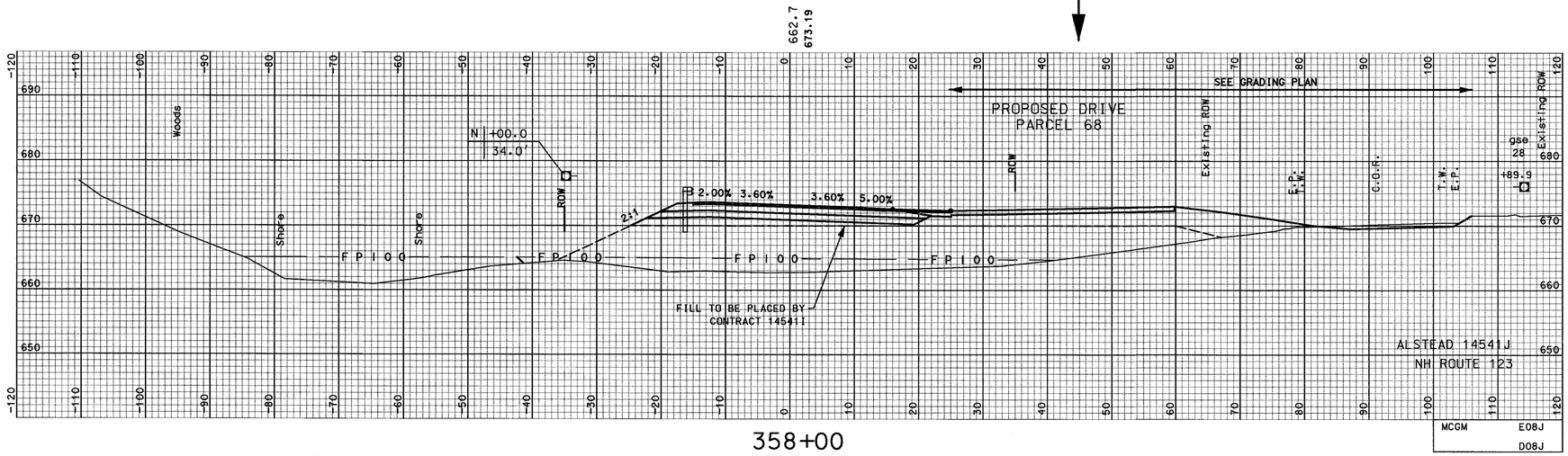

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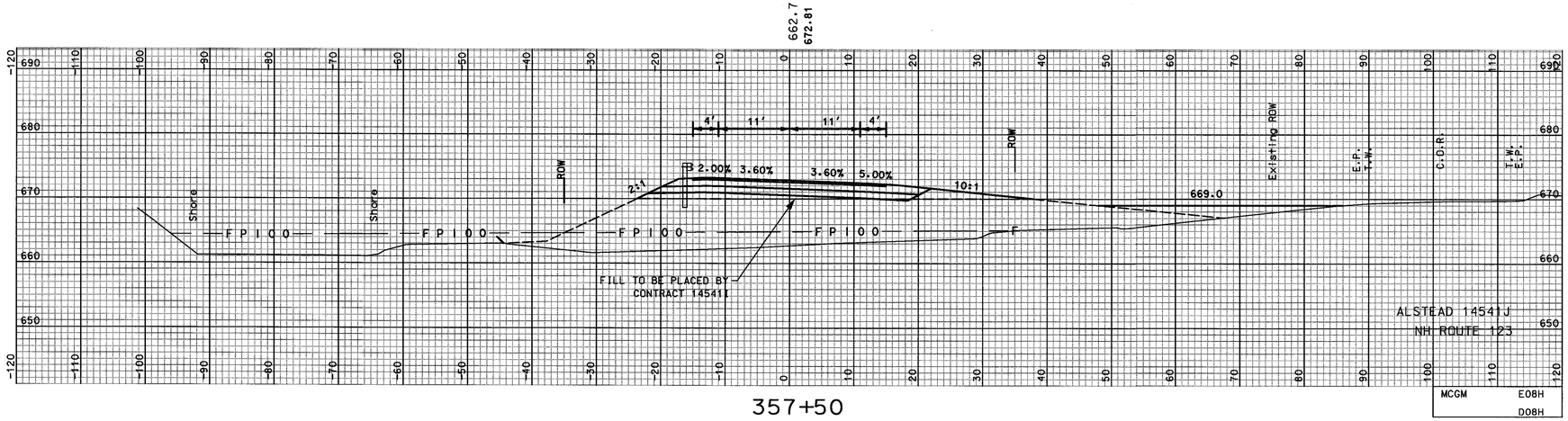

357+50

REVISIONS AFTER PROPOSAL			
STATION	STATION	DESCRIPTION	

NUMBER	DATE

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

SHEET TOTALS

COMMON EXCAV.	– C.Y.	ROCK EXCAV.	– C.Y.
FILL	318.4 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	136	156

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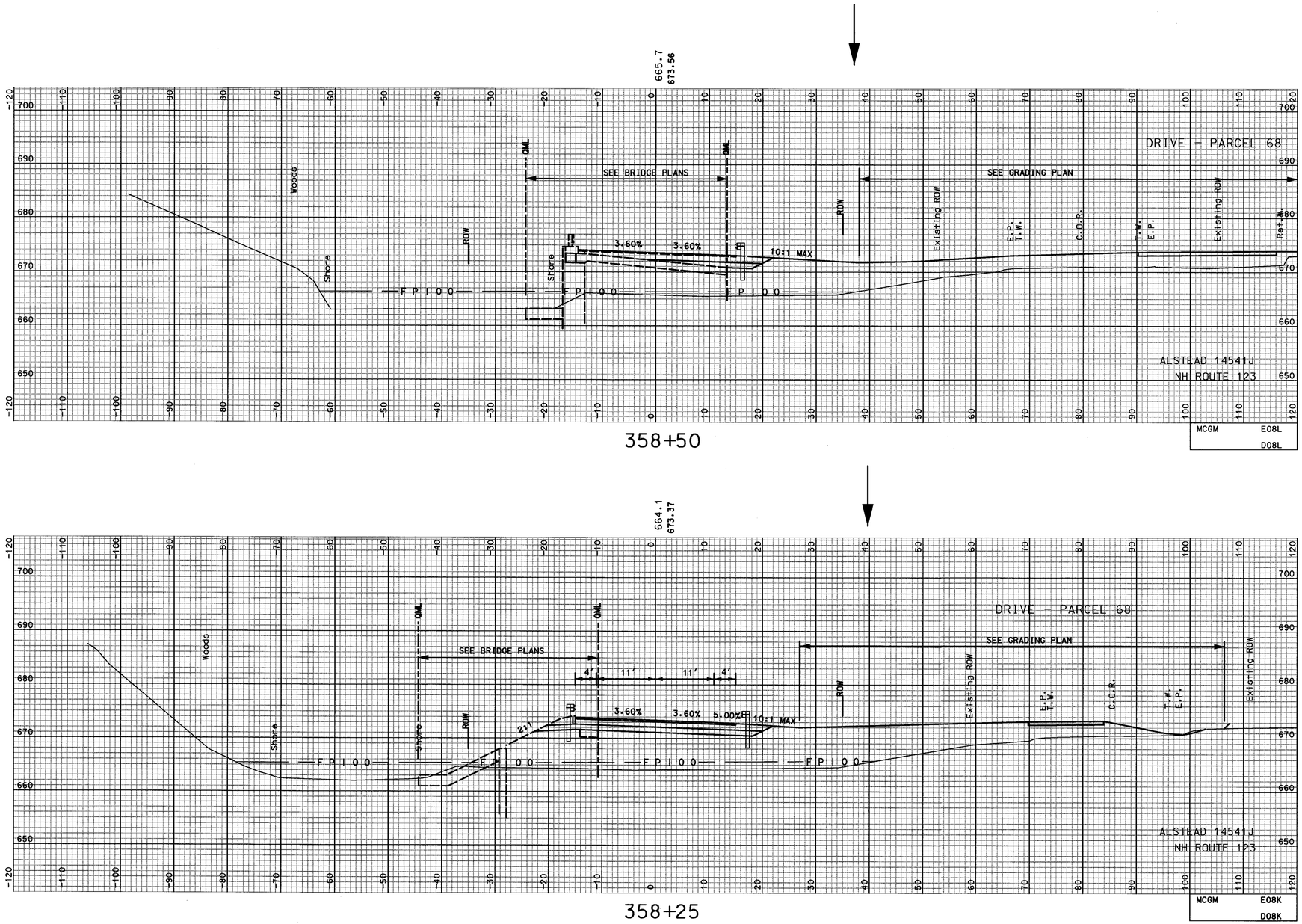

SHEET TOTALS			
COMMON EXCAV.	– C.Y.	ROCK EXCAV.	– C.Y.
FILL	434.2 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	137	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

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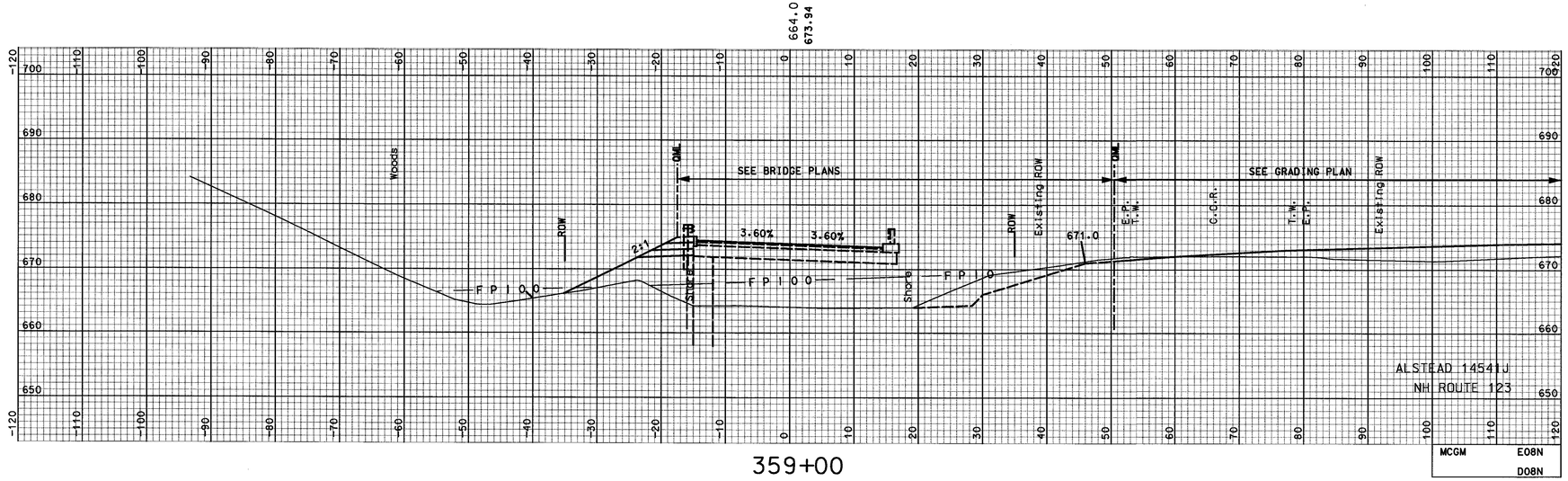
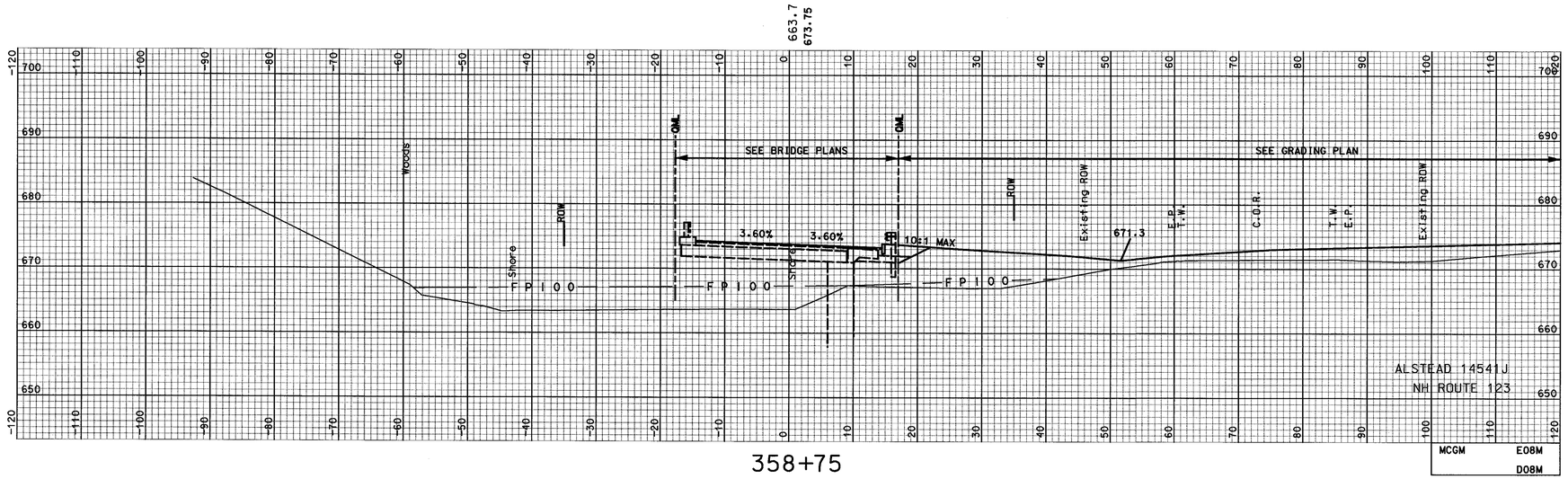


359+00



358+75

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

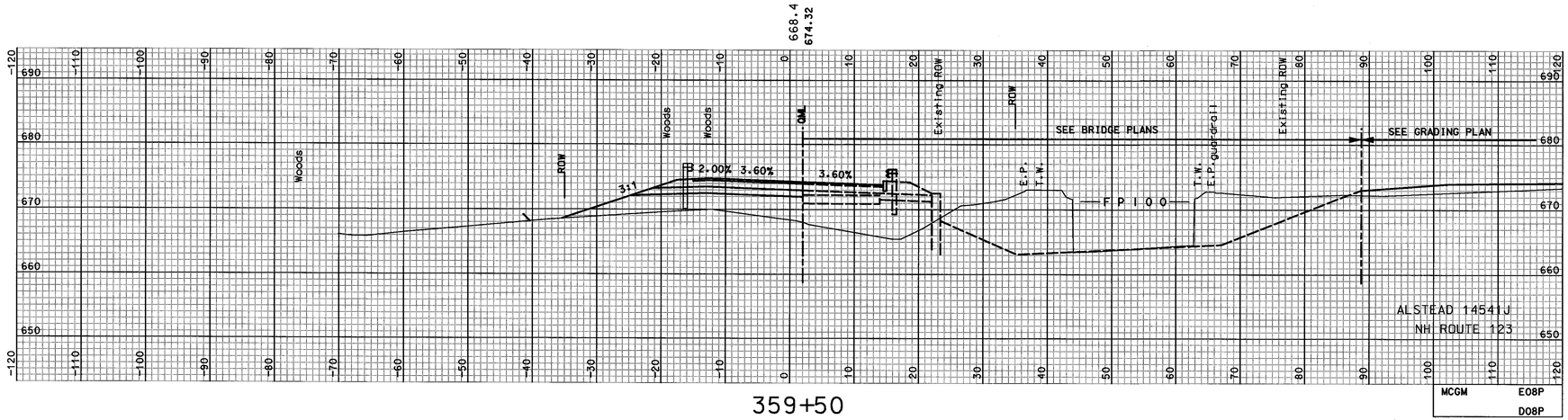
SHEET TOTALS

COMMON EXCAV. 4.7 C.Y. ROCK EXCAV. – C.Y.

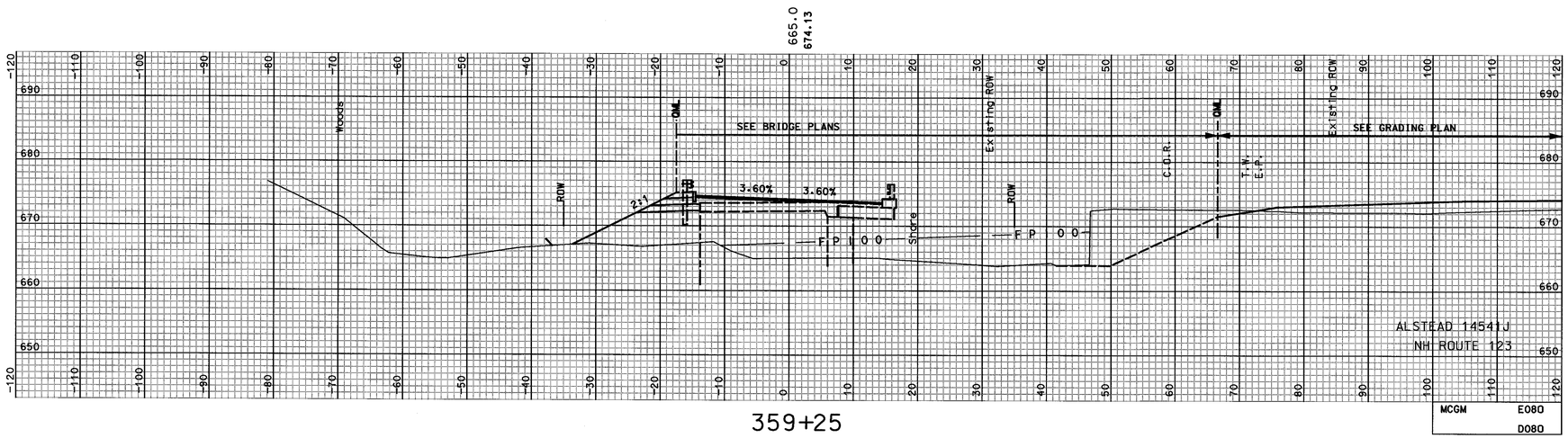
FILL 166.3 C.Y. MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	138	156

...\14541J\Cadd\Prj\14541Jxs_4.dgn 05/24/2007 09:45:42 AM n34cnc



359+50



359+25

REVISIONS AFTER PROPOSAL			
STATION	STATION	DESCRIPTION	

NUMBER	DATE

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

SHEET TOTALS

COMMON EXCAV.	4.8 C.Y.	ROCK EXCAV.	– C.Y.
FILL	167.0 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	139	156

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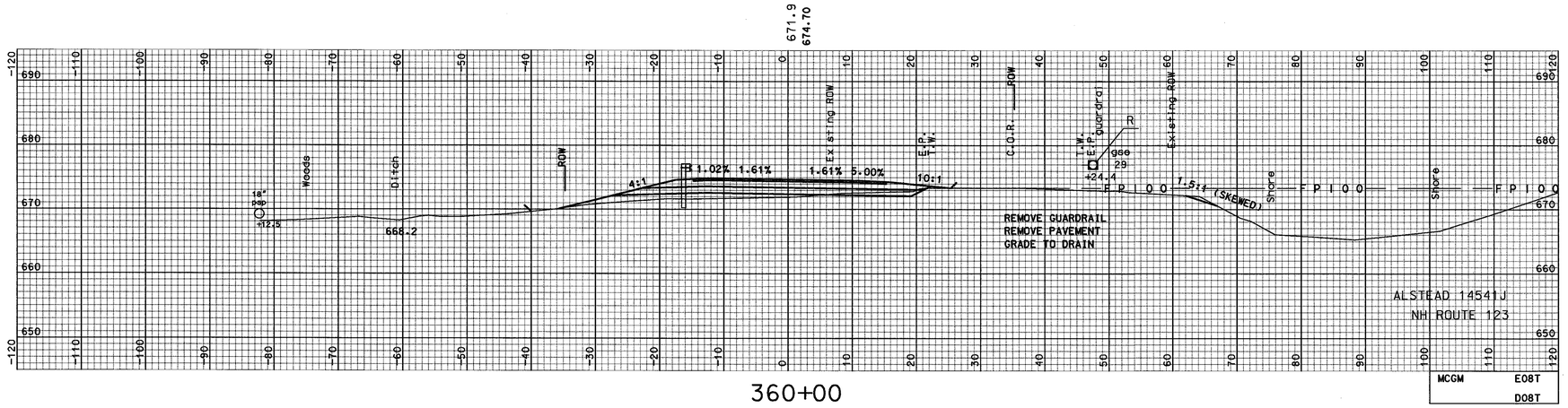
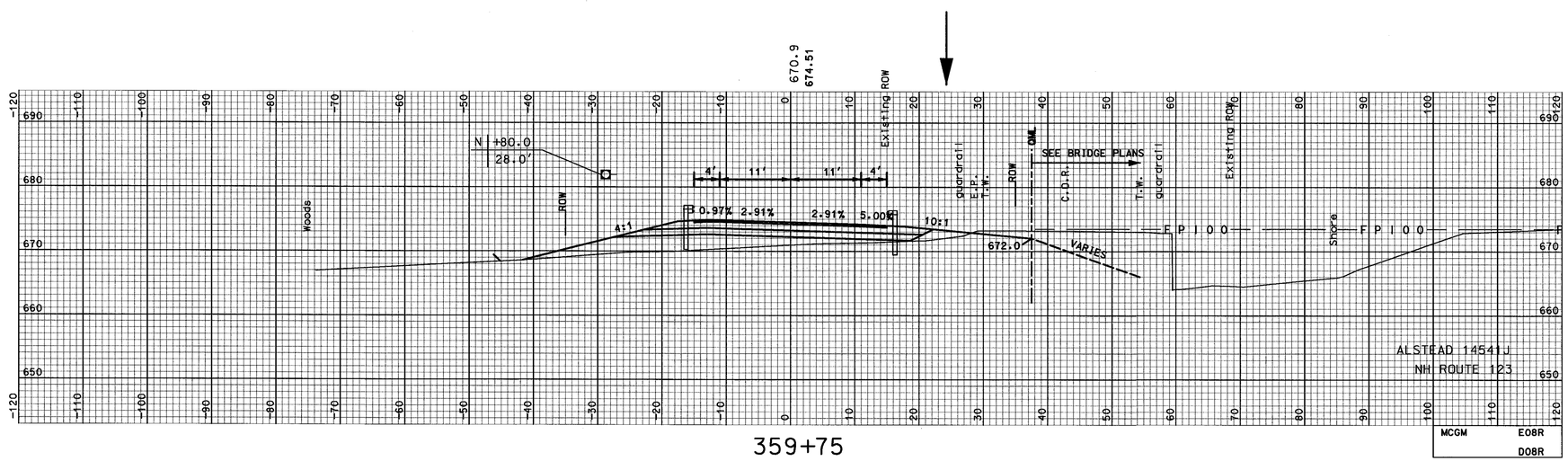


360+00



359+75

SHEET TOTALS			
COMMON EXCAV. 23.9 C.Y.	ROCK EXCAV. – C.Y.		
FILL 103.5 C.Y.	MUCK EXCAV. – C.Y.		
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	140	156

NUMBER	DATE	STATION	STATION	DESCRIPTION

REVISIONS AFTER PROPOSAL

SDR PROCESSED	CAC	DATE 2006
NEW DESIGN	TEAM CLIFFORD	DATE 2006/2007
SHEET CHECKED	WAC	DATE 5/2007
AS BUILT DETAILS		DATE

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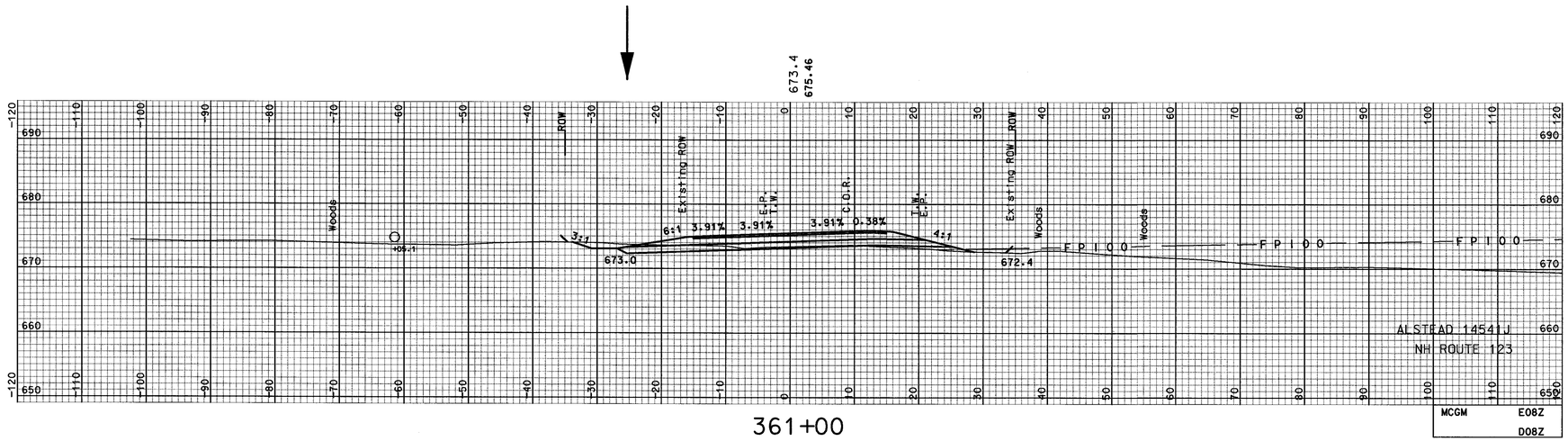
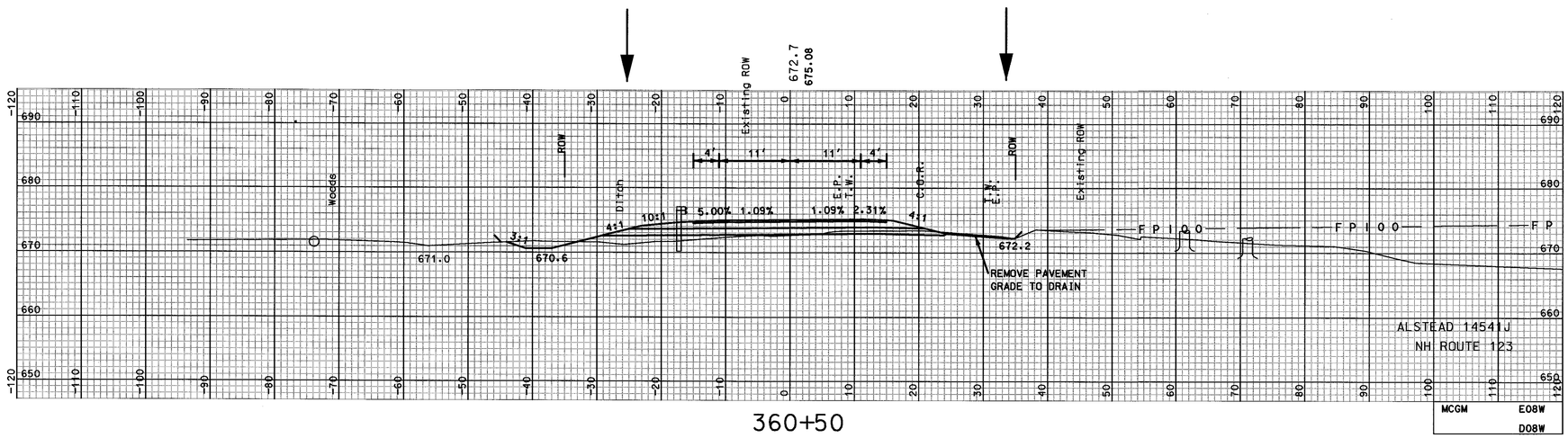


361+00



360+50

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

SHEET TOTALS

COMMON EXCAV. 95.1 C.Y. ROCK EXCAV. – C.Y.

FILL 32.0 C.Y. MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	141	156

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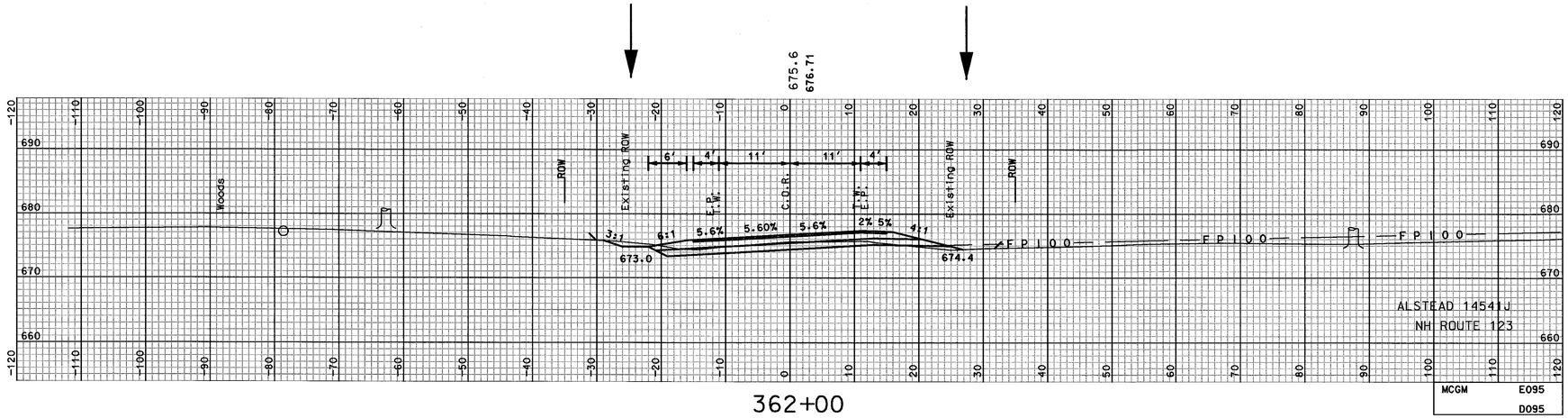
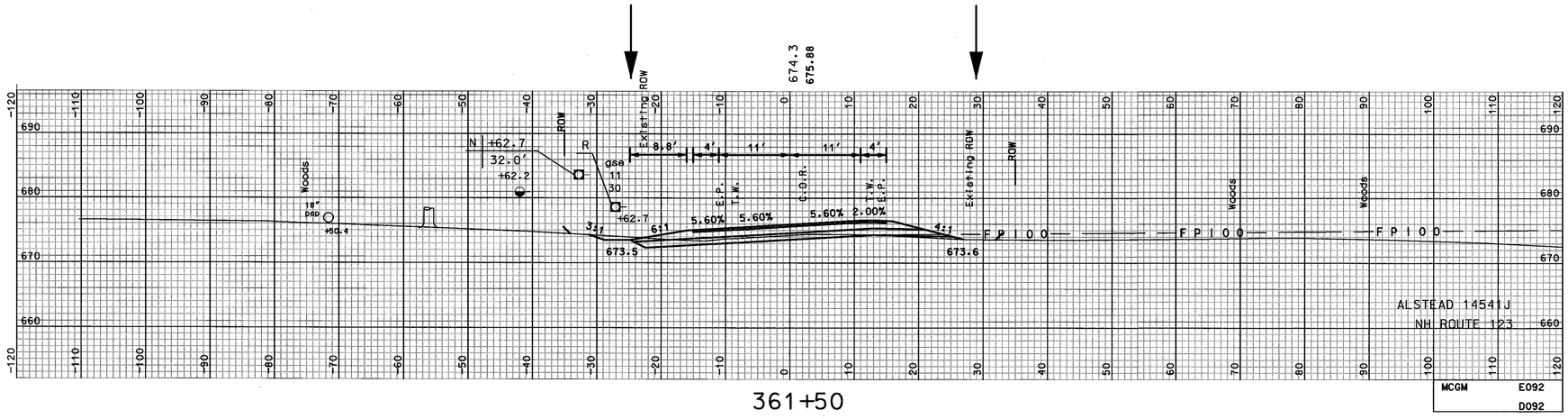


362+00



361+50

SHEET TOTALS			
COMMON EXCAV. 138.1 C.Y.	ROCK EXCAV. – C.Y.		
FILL 8.5 C.Y.	MUCK EXCAV. – C.Y.		
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	142	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

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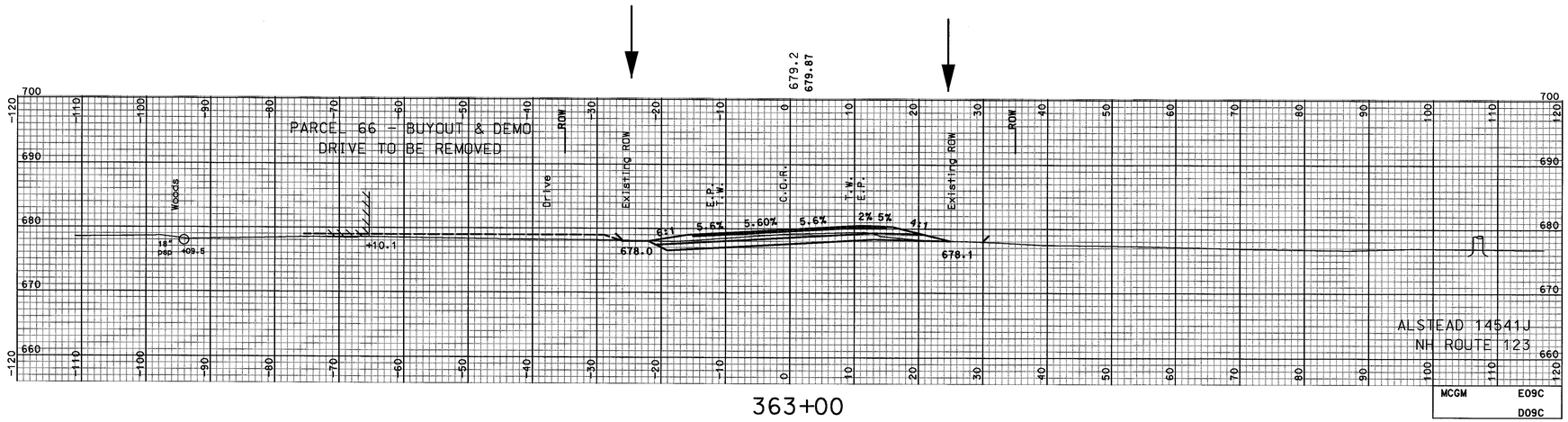
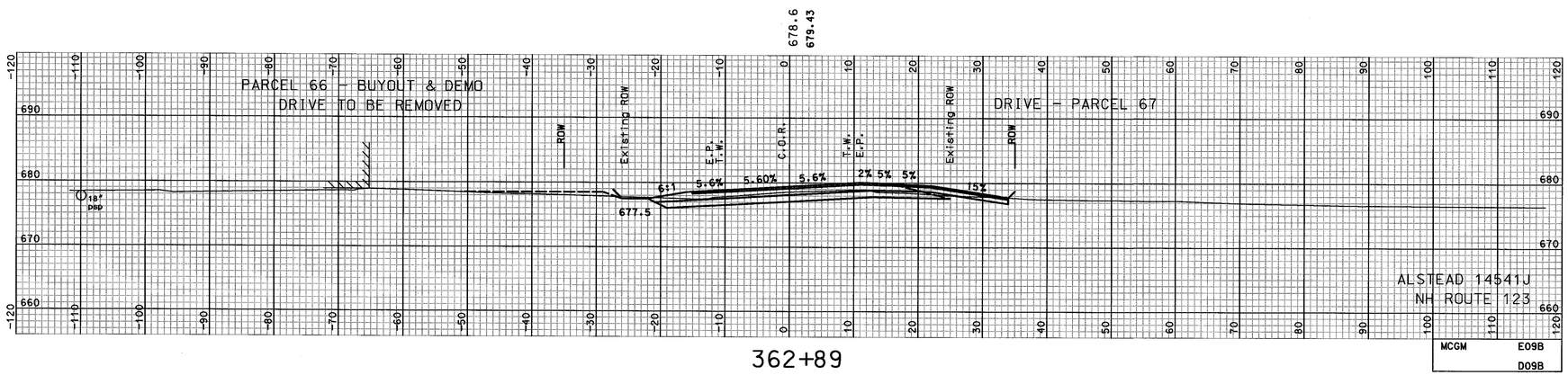


363+00



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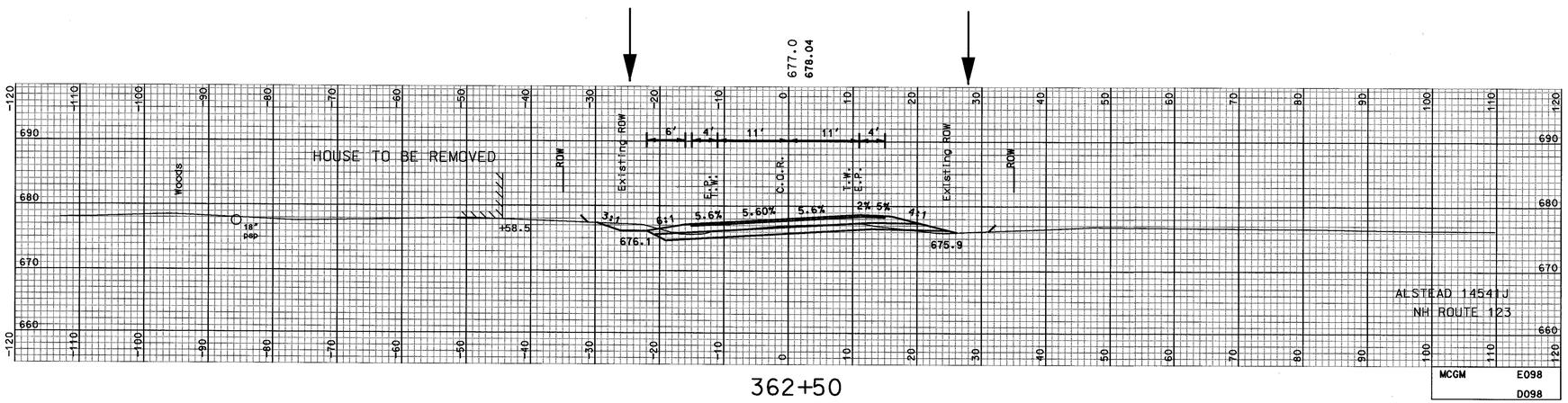

362+50

REVISIONS AFTER PROPOSAL			
NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

SHEET TOTALS

COMMON EXCAV.	205.2 C.Y.	ROCK EXCAV.	– C.Y.
FILL	2.2 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	143	156

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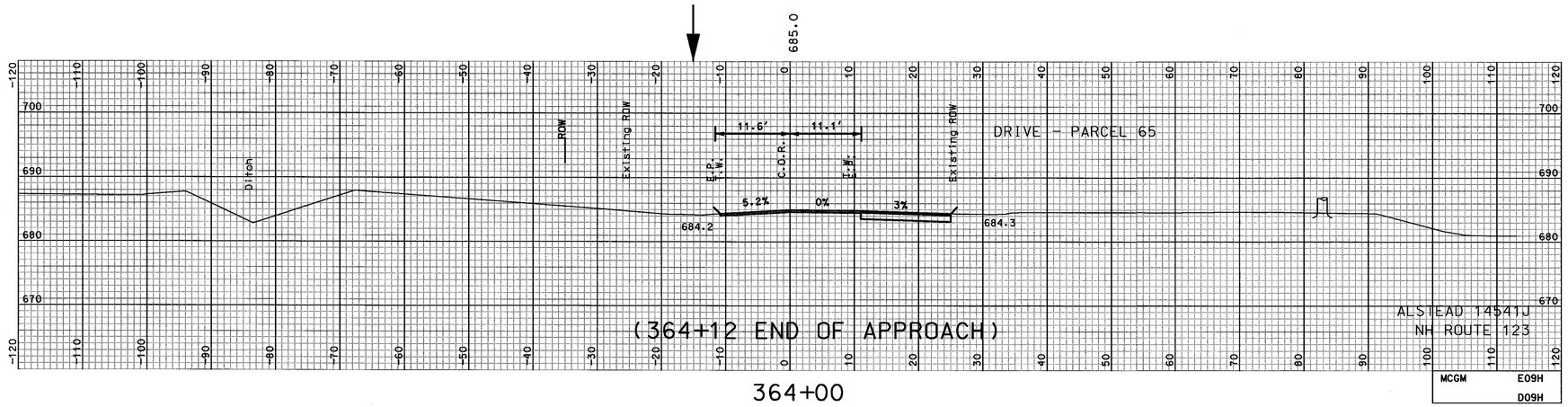

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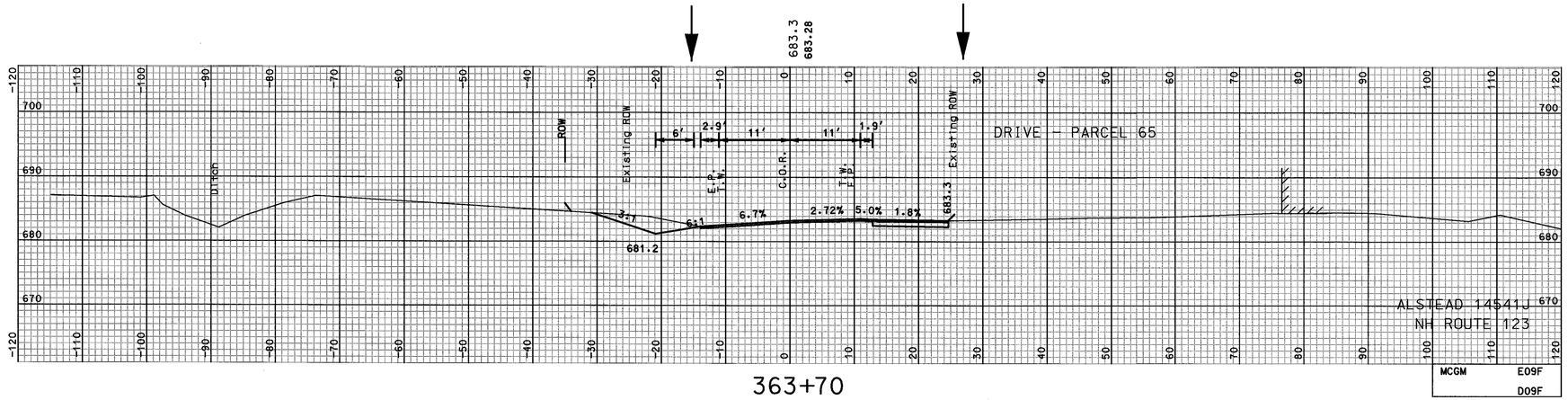

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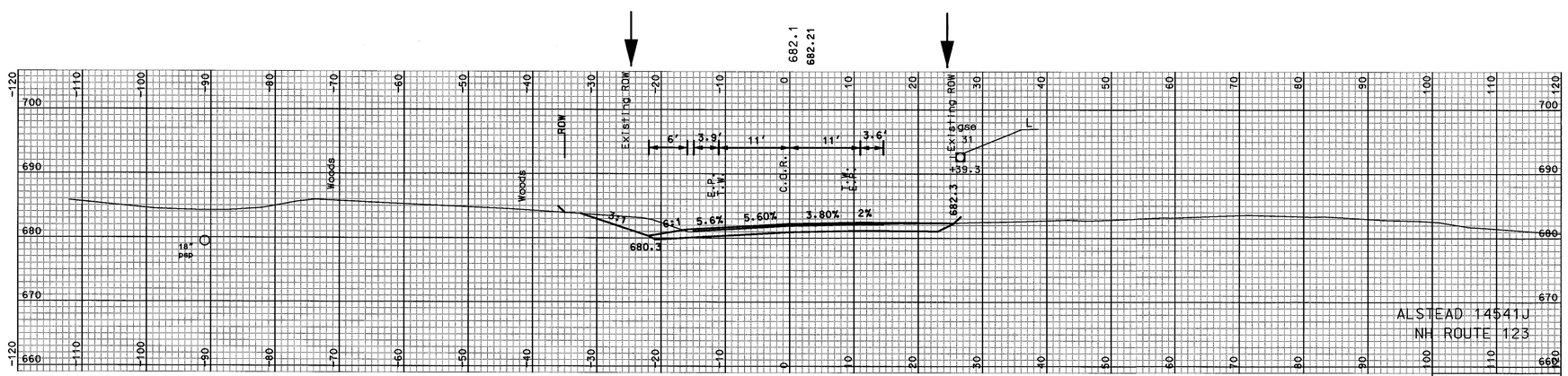

363+50

(363+45 END OF CONSTRUCTION)

SHEET TOTALS			
COMMON EXCAV. 59.3 C.Y.		ROCK EXCAV. – C.Y.	
FILL – C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_4	14541J	144	156

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

SDR PROCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

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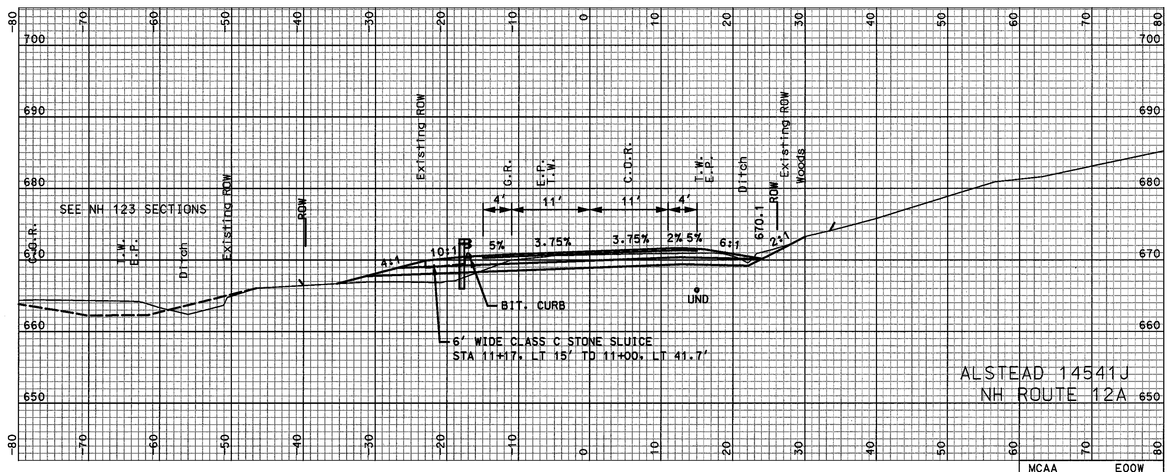
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

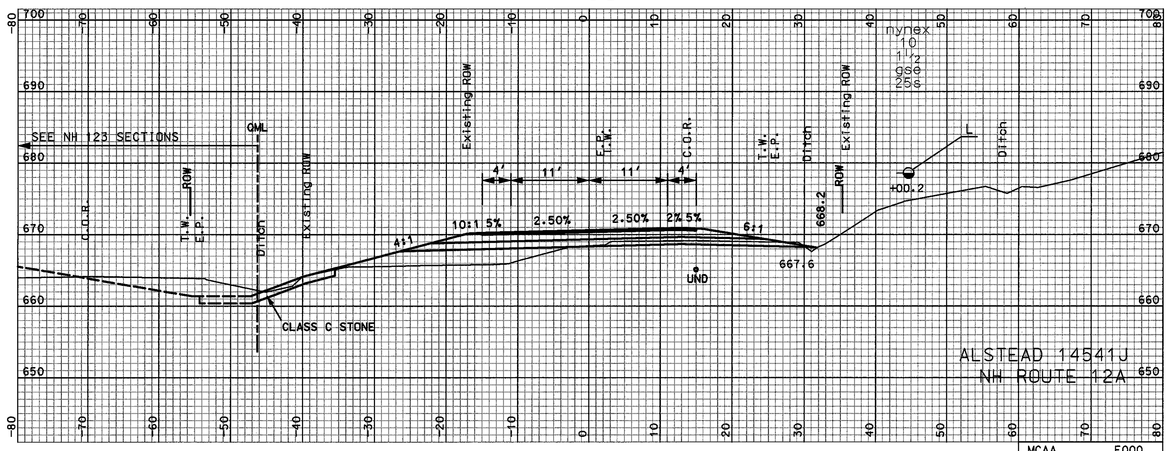
670.7
671.20



MCAA E00W D00W

11+25

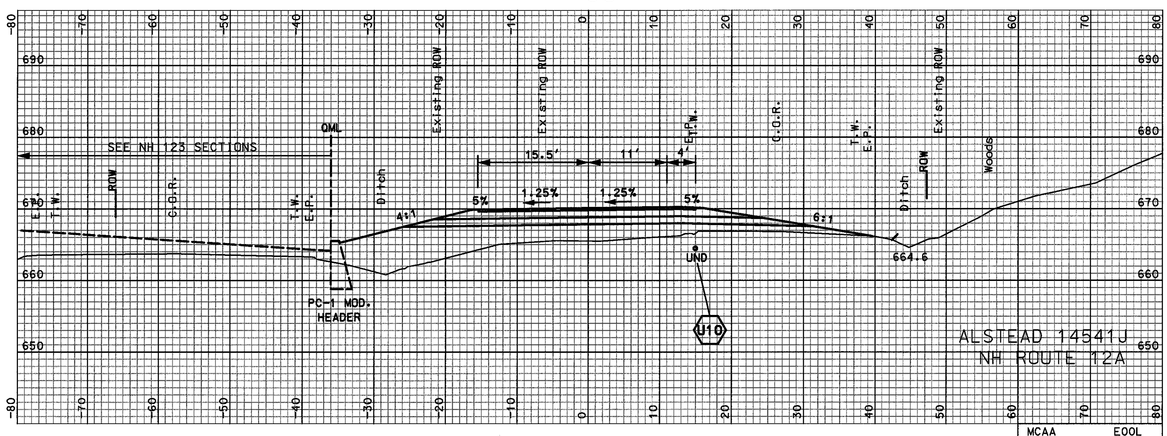
668.4
670.64



MCAA E00Q D00Q

11+00

665.5
670.12



MCAA E00L D00L

10+75
QML

SHEET TOTALS

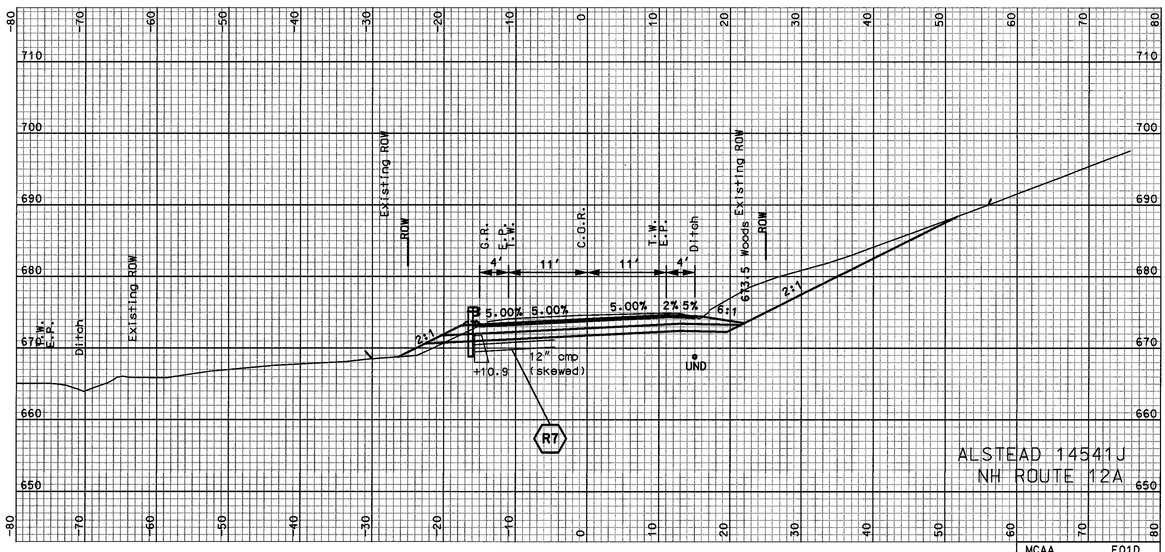
COMMON EXCAV. 45.0 C.Y.		ROCK EXCAV. – C.Y.	
FILL 156.4 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcaa	14541J	145	156

SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

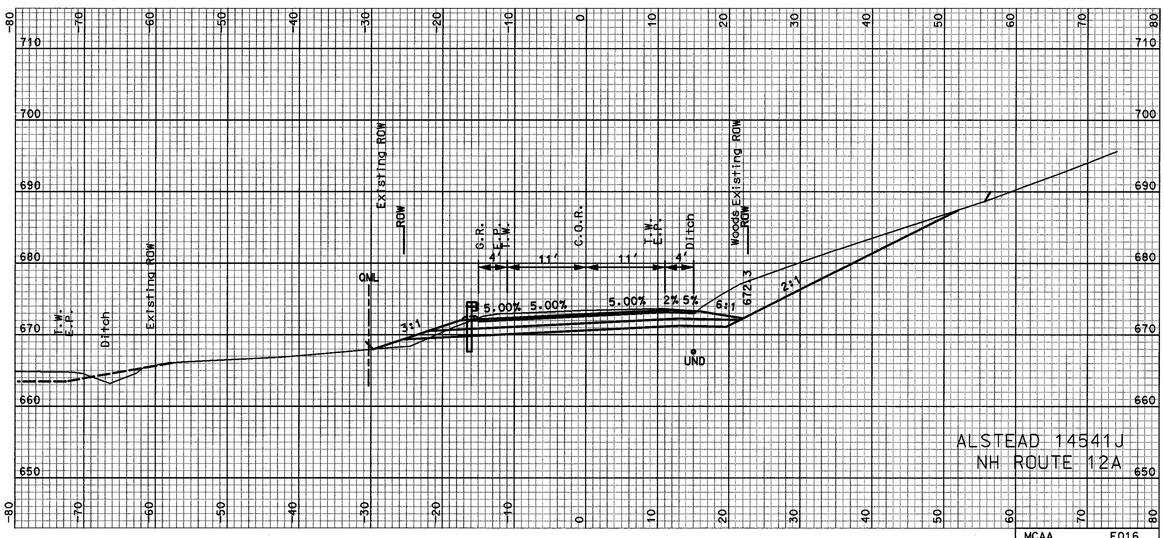
674.6
674.08



MCAA E01D
D01D

12+00

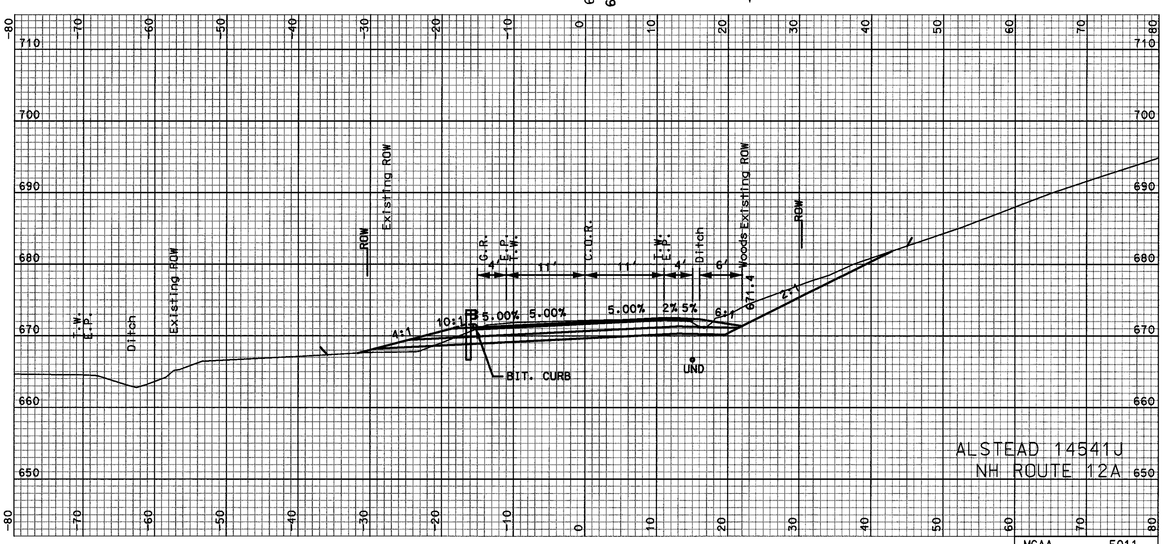
673.4
672.91



MCAA E016
D016

11+75

672.1
671.95



MCAA E011
D011

11+50

SHEET TOTALS			
COMMON EXCAV. 399.5 C.Y.		ROCK EXCAV. – C.Y.	
FILL 8.5 C.Y.		MUCK EXCAV. – C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcaa	14541J	146	156

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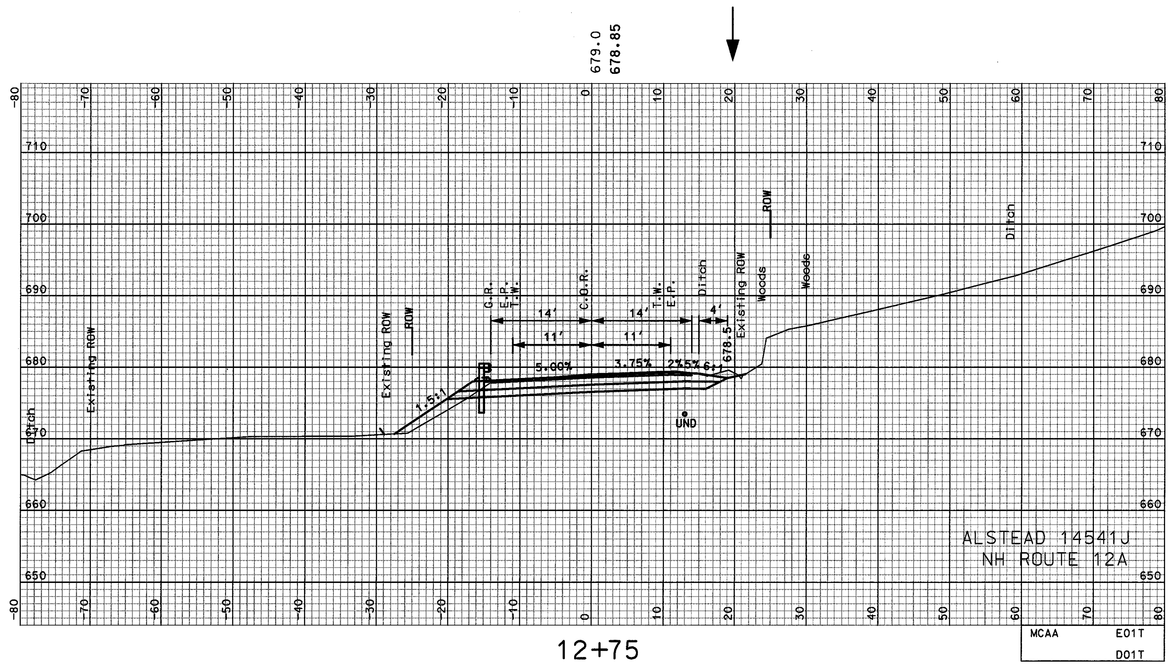
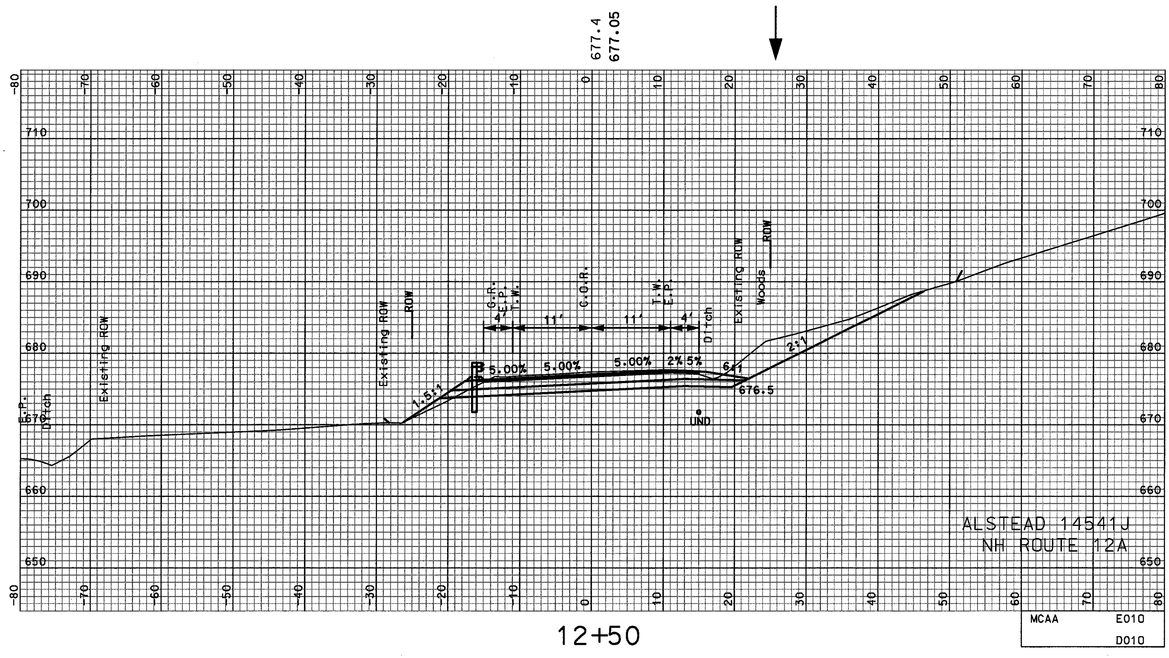
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

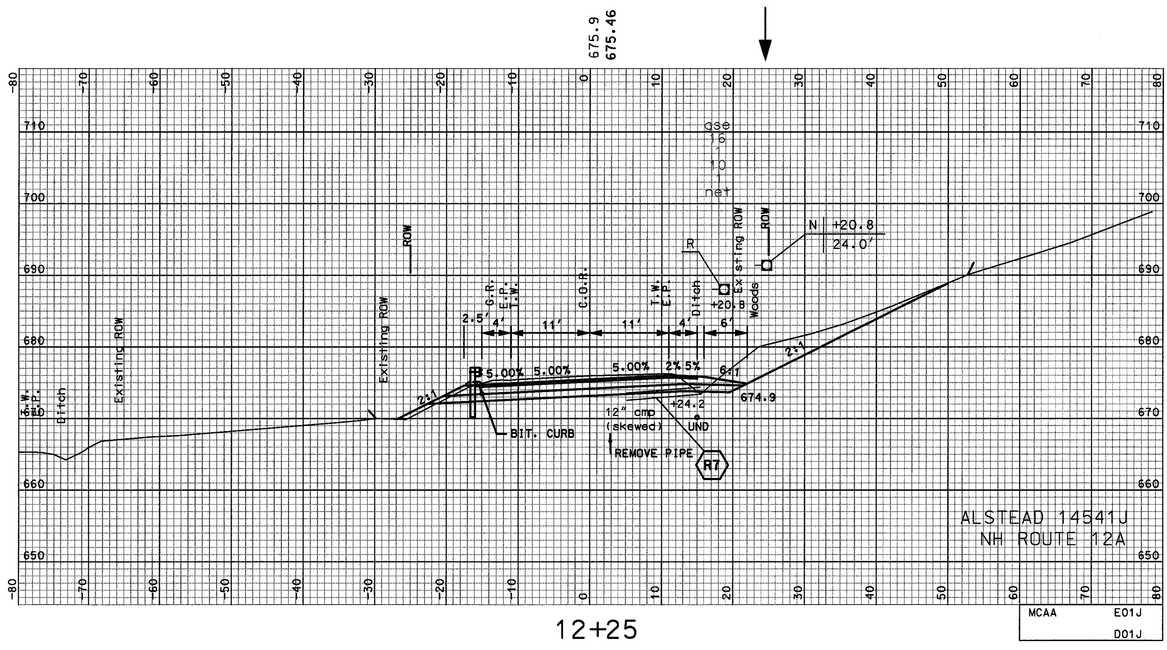
NUMBER	DATE	STATION	STATION	DESCRIPTION



12+75



12+50



12+25

SHEET TOTALS

COMMON EXCAV. 385.9 C.Y. ROCK EXCAV. - C.Y.

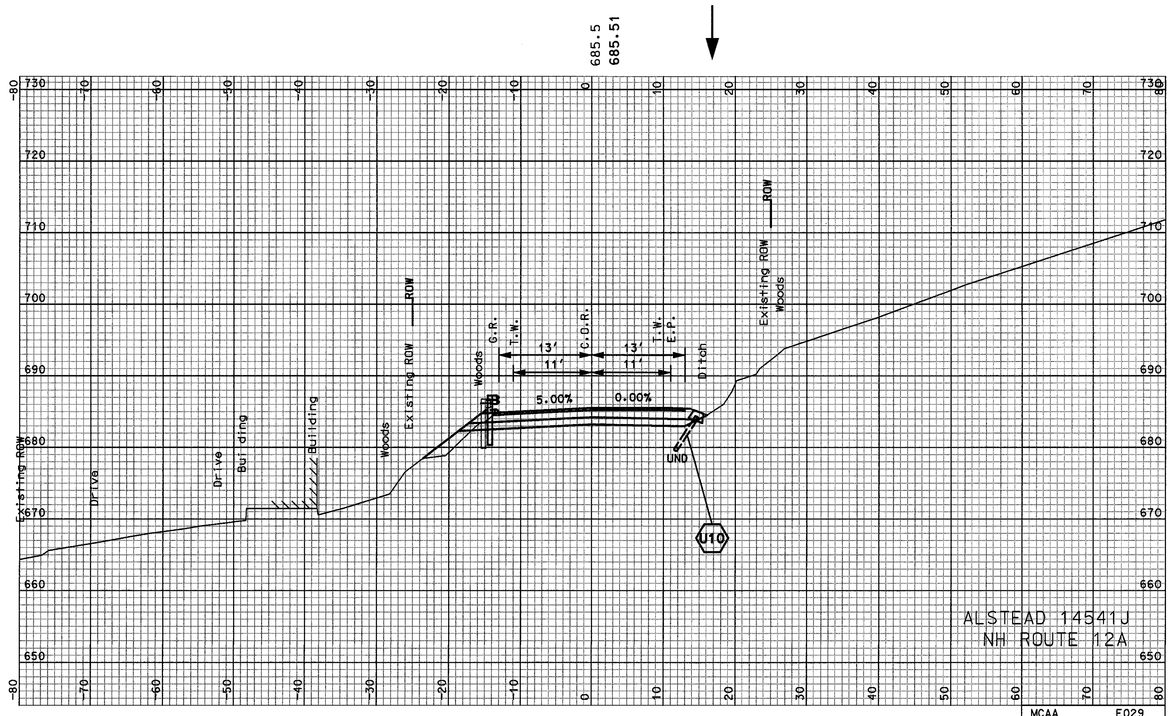
FILL 13.0 C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcaa	14541J	147	156

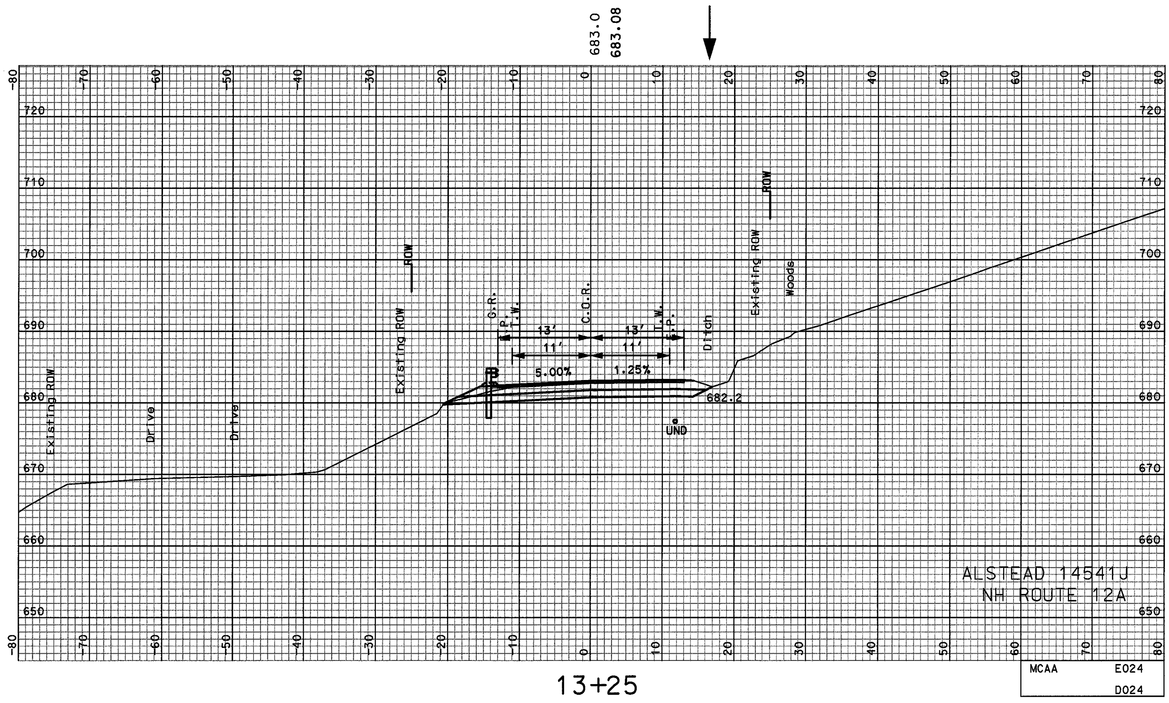
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

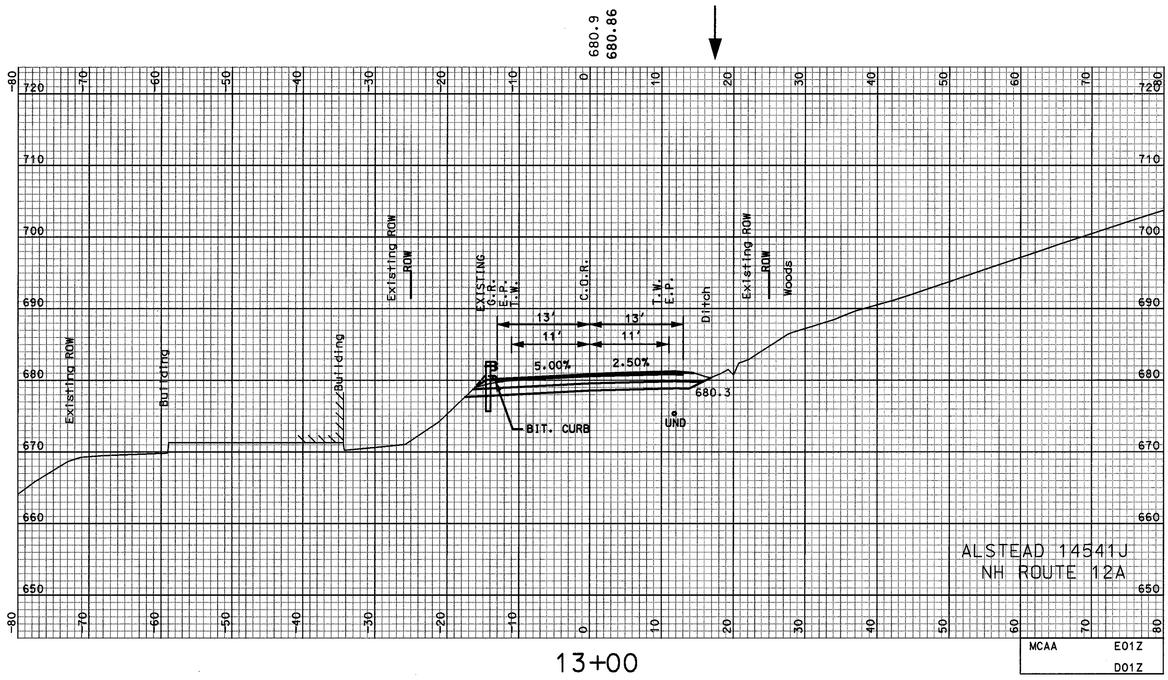
NUMBER	DATE	STATION	STATION	DESCRIPTION



13+50



13+25



13+00

SHEET TOTALS			
COMMON EXCAV.	197.4 C.Y.	ROCK EXCAV.	– C.Y.
FILL	8.8 C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcaa	14541J	148	156

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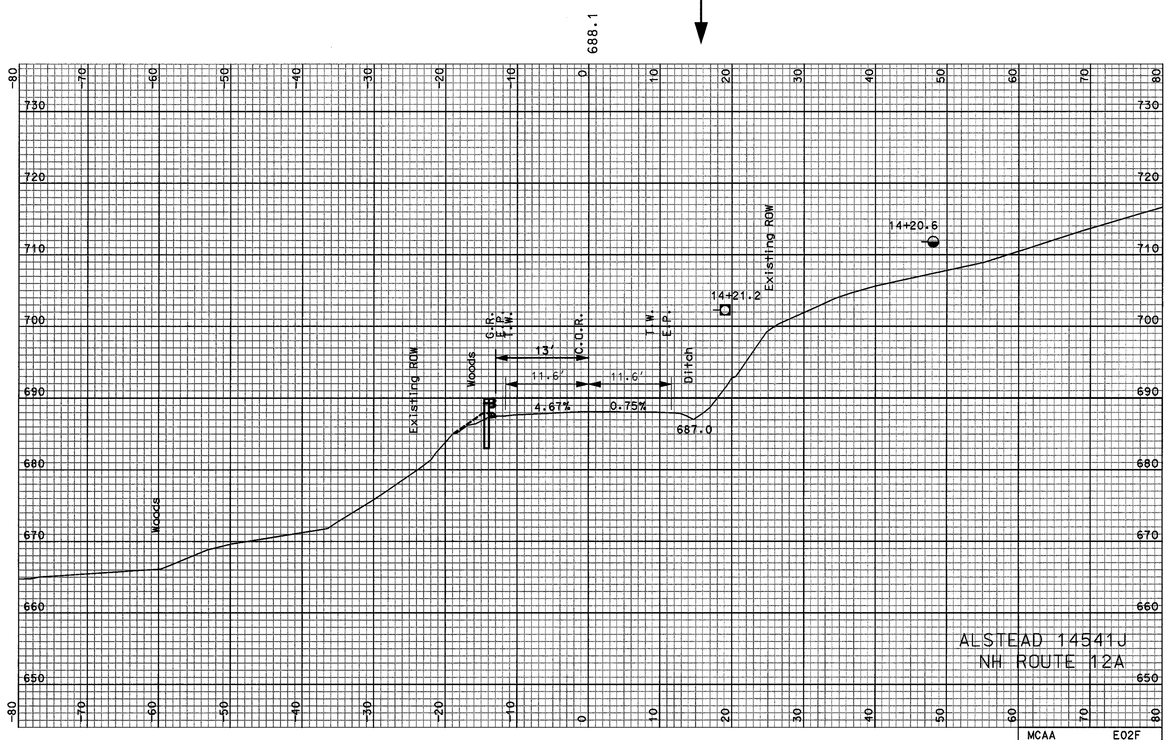
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

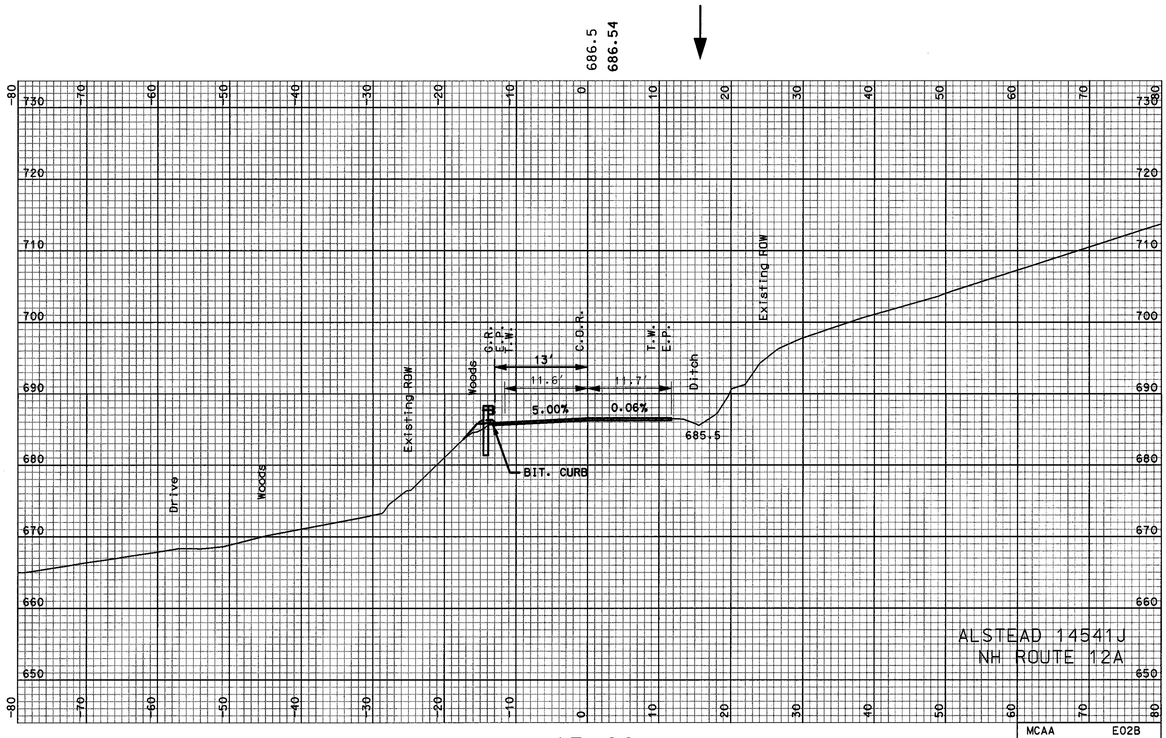
REVISIONS AFTER PROPOSAL				
NUMBER	DATE	STATION	STATION	DESCRIPTION

LIMIT OF WORK
STA. 13+80



13+75

MCAA E02F D02F



13+60

MCAA E02B D02B

SHEET TOTALS			
COMMON EXCAV. 14.1 C.Y.		ROCK EXCAV. - C.Y.	
FILL 1.5 C.Y.		MUCK EXCAV. - C.Y.	
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcaa	14541J	149	156

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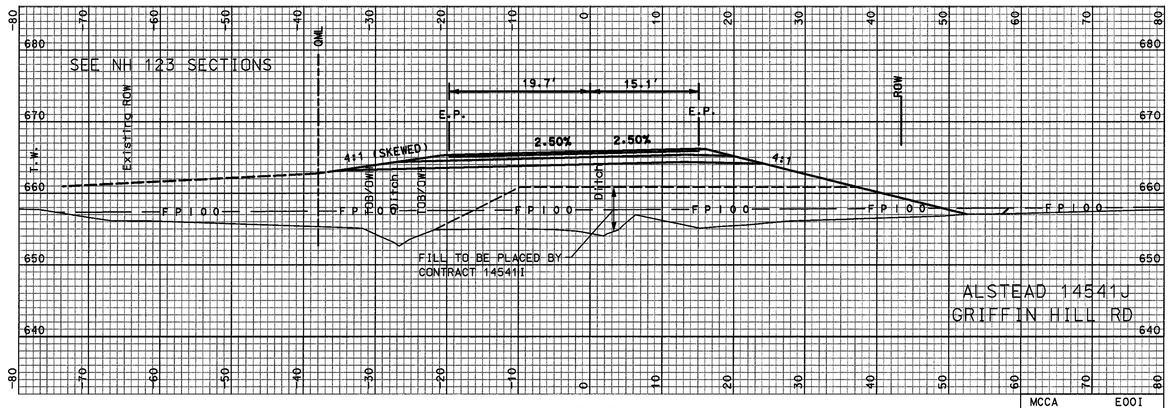
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

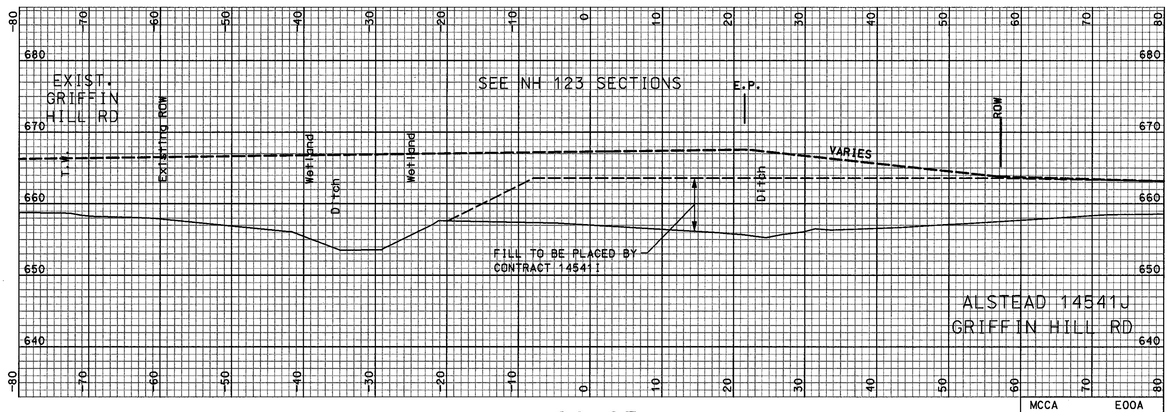
654.4
665.83



MCCA E00I D00I

(QML) 20+50

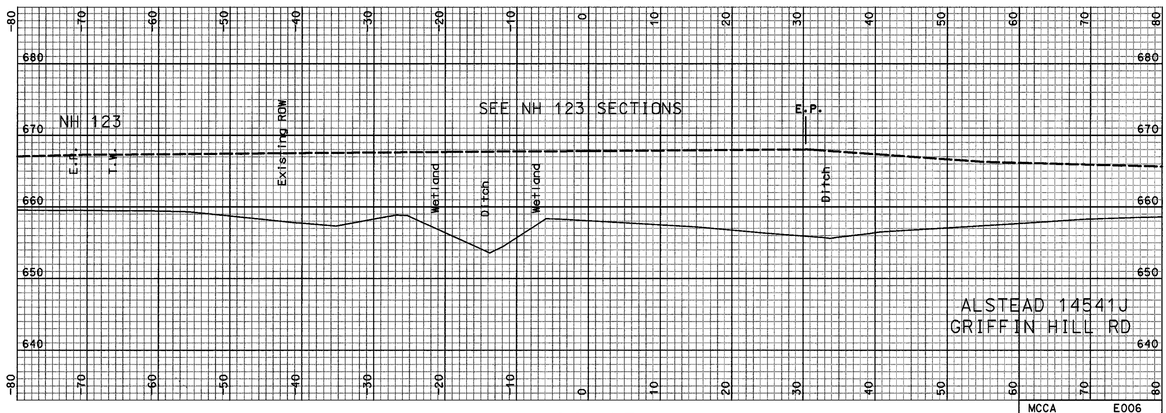
657.0
667.28



MCCA E00A D00A

20+25

658.0
667.75



MCCA E006 D006

20+15

SHEET TOTALS

COMMON EXCAV. - C.Y. ROCK EXCAV. - C.Y.
FILL 620.2 C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcca	14541J	150	156

...\Cadd\Proj\14541Jxs_mcca.dgn 05/24/2007 10:43:34 AM n34drh

SHEET TOTALS			
COMMON EXCAV. 84.3 C.Y.	ROCK EXCAV. — C.Y.		
FILL 963.3 C.Y.	MUCK EXCAV. — C.Y.		
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541JXS_MCCQ	14541J	151	156

REVISIONS AFTER PROPOSAL

STATION	STATION	DESCRIPTION

NUMBER	DATE

SDR PROCESSED CAC	DATE 2006	
NEW DESIGN TEAM CLIFFORD	DATE 2006/2007	
SHEET CHECKED WAC	DATE 5/2007	
AS BUILT DETAILS	DATE	

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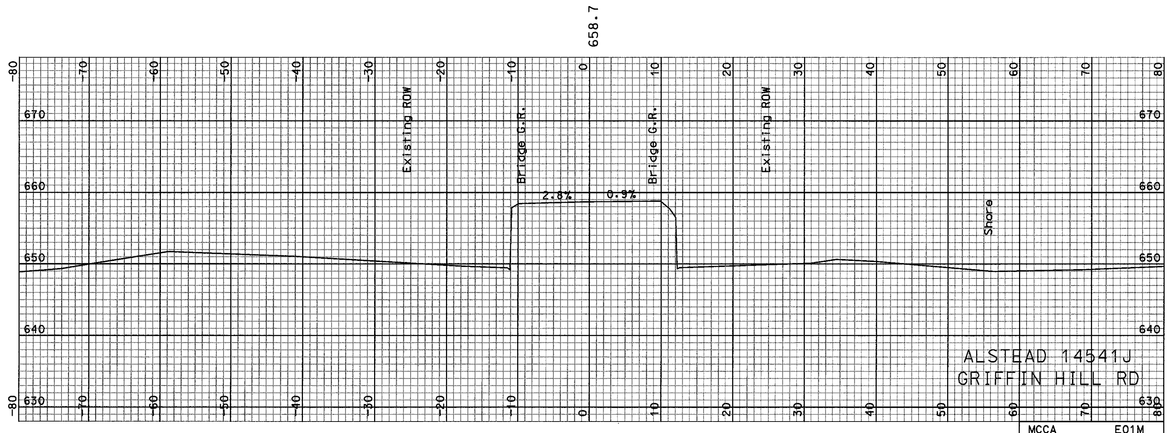
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

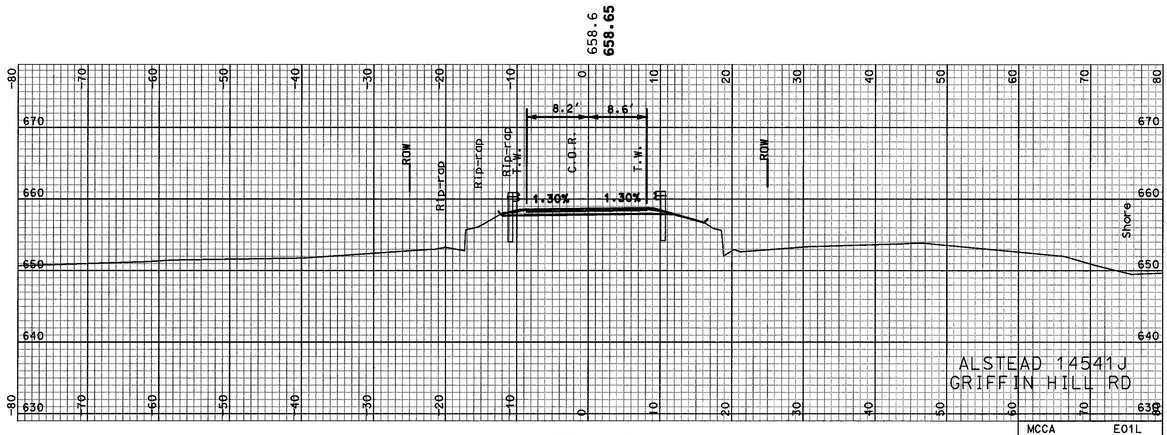
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION

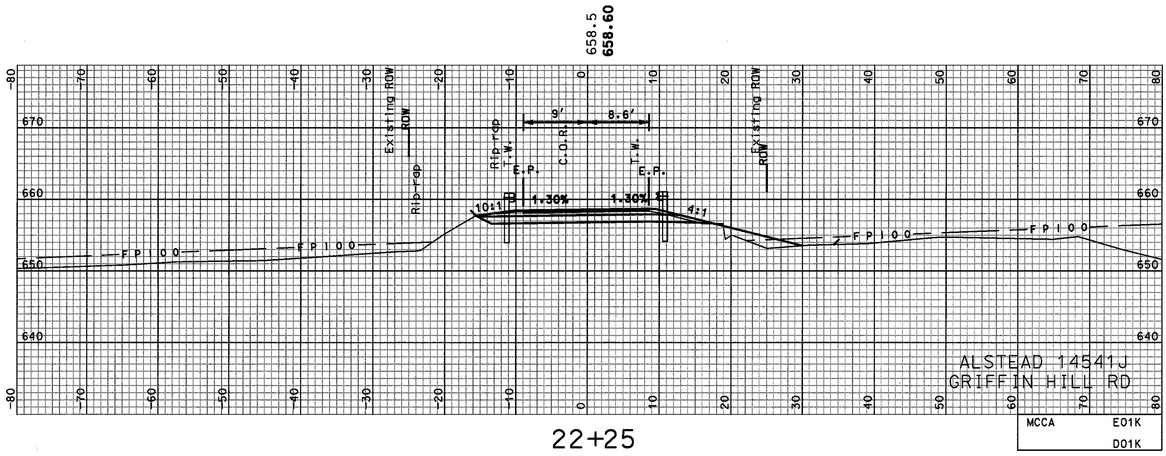


22+35

LIMIT OF WORK



22+30



22+25

SHEET TOTALS

COMMON EXCAV. 8.7 C.Y. ROCK EXCAV. - C.Y.

FILL 1.2 C.Y. MUCK EXCAV. - C.Y.

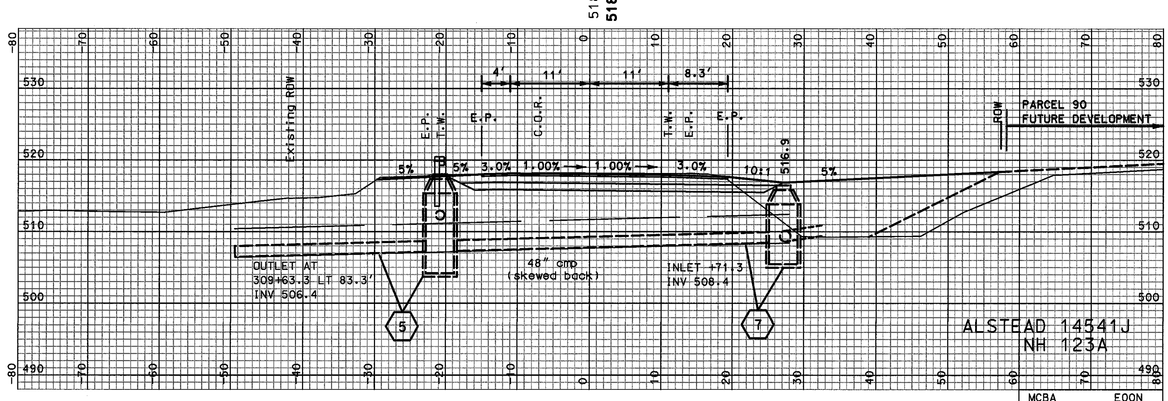
DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcca	14541J	152	156

SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

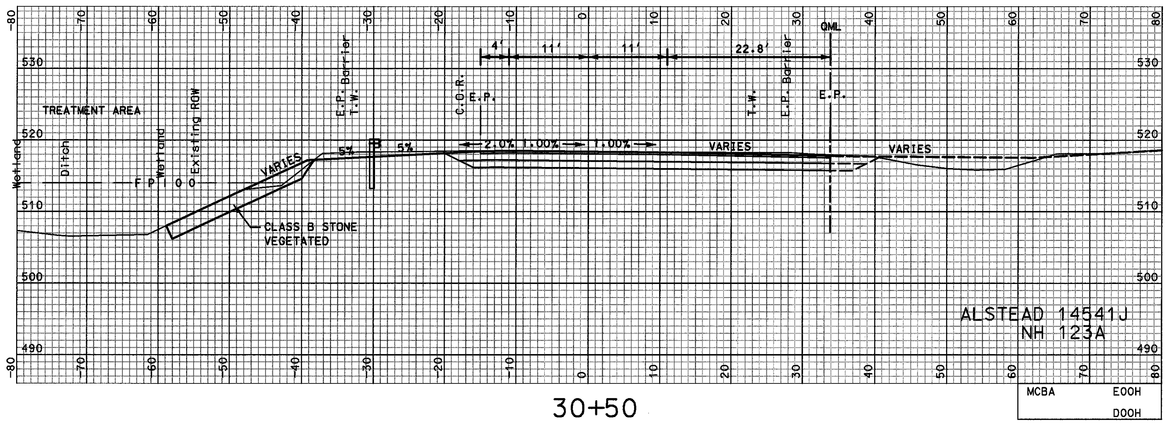
NUMBER	DATE	STATION	STATION	DESCRIPTION

518.2
518.05



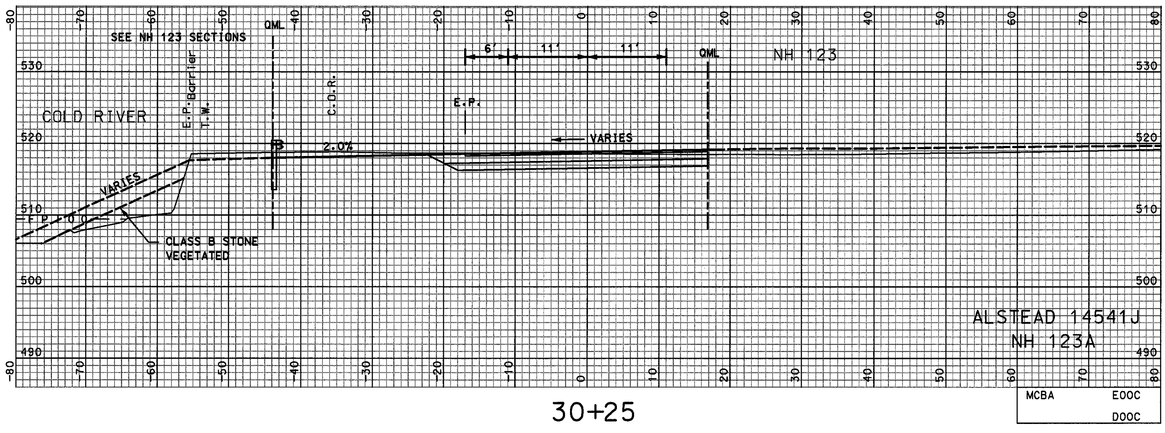
30+75

518.4
518.38



30+50

518.6
518.87



30+25

SHEET TOTALS

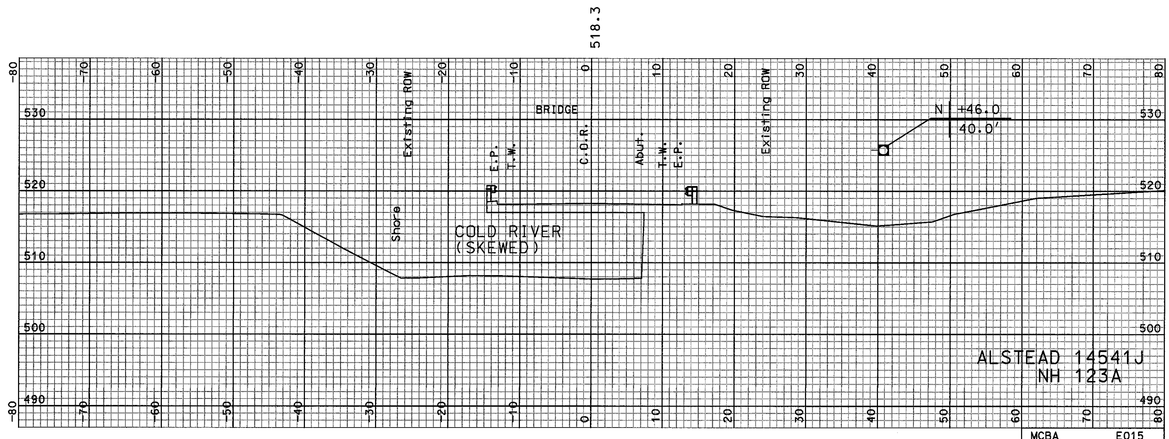
COMMON EXCAV. – C.Y. ROCK EXCAV. – C.Y.
FILL – C.Y. MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcba	14541J	153	156

SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

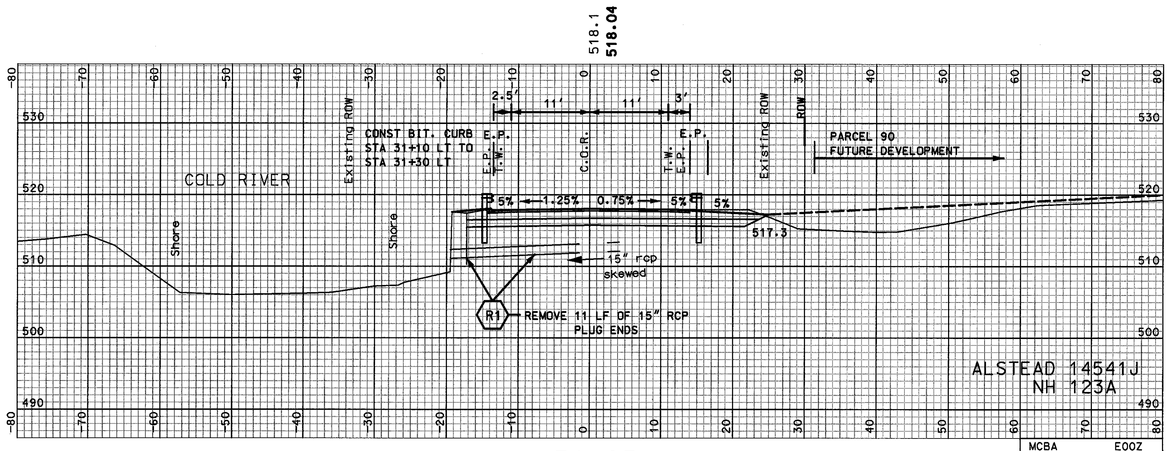
REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



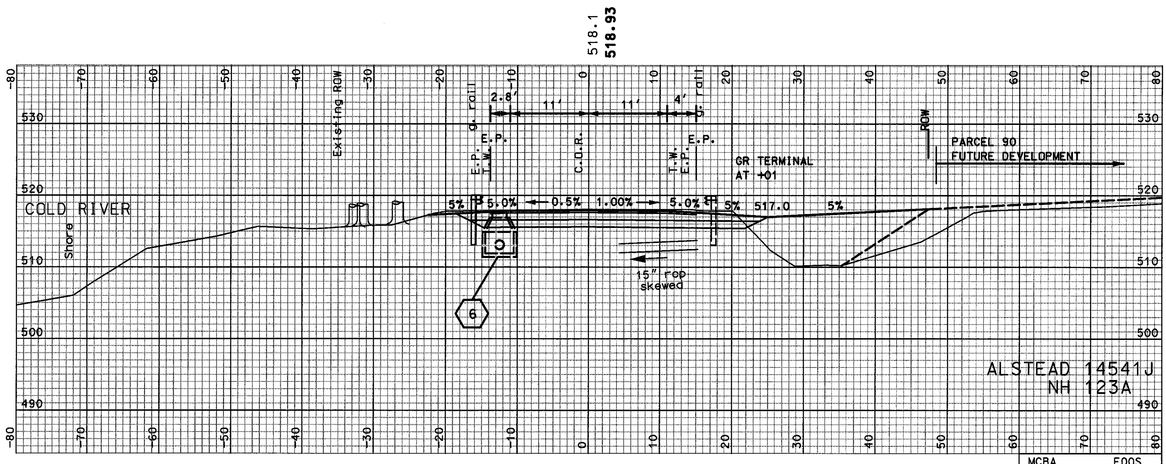
31+50

MCBA E015
D015



31+25

MCBA E00Z
D00Z



31+00

MCBA E00S
D00S

SHEET TOTALS

COMMON EXCAV.	– C.Y.	ROCK EXCAV.	– C.Y.
FILL	– C.Y.	MUCK EXCAV.	– C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcba	14541J	154	156

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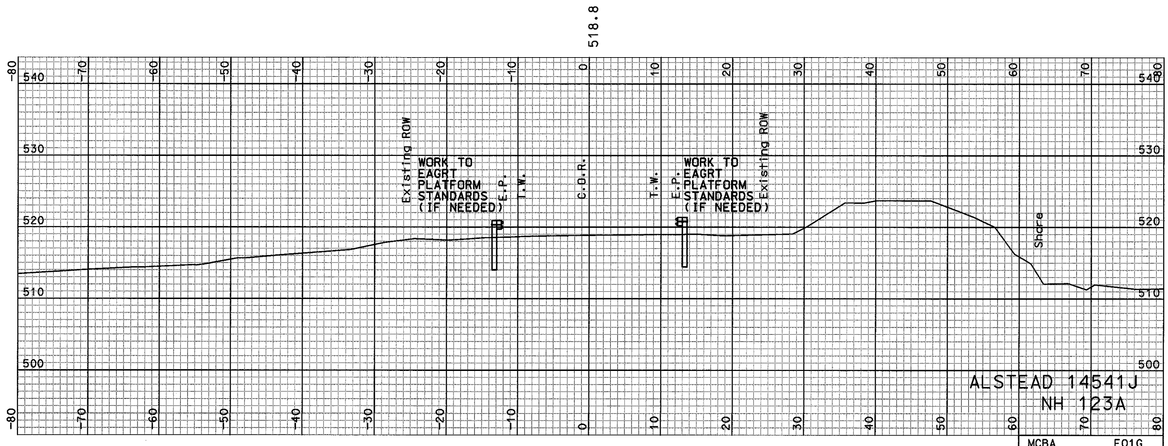
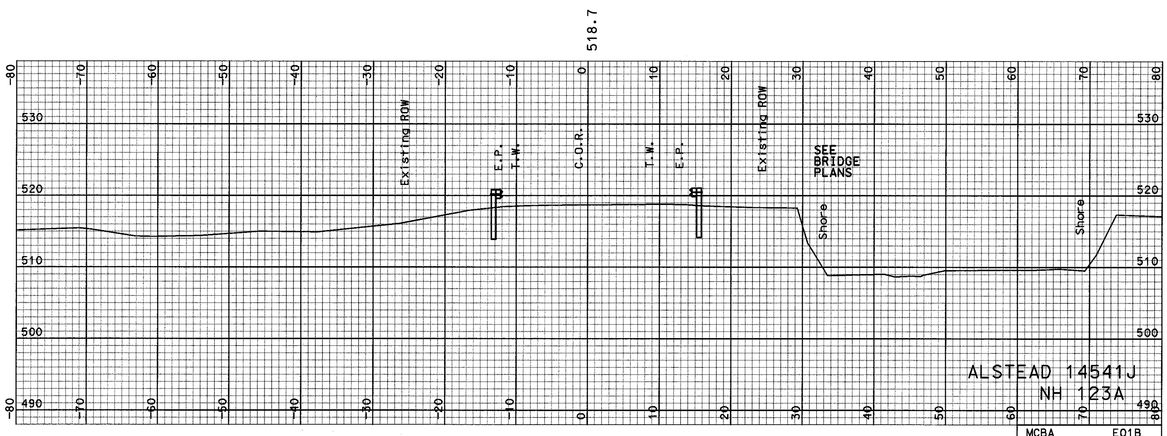
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

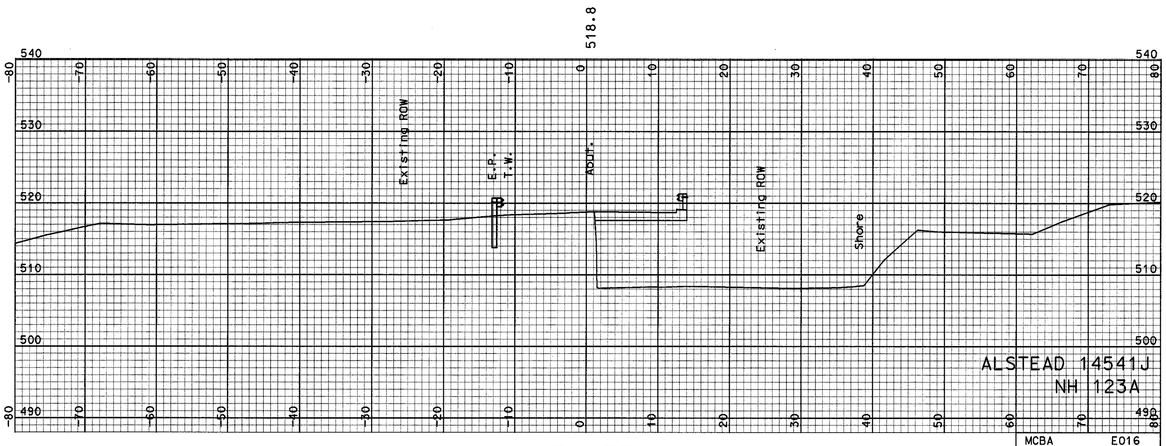
NUMBER	DATE	STATION	STATION	DESCRIPTION



32+25



32+00



31+75

SHEET TOTALS

COMMON EXCAV. – C.Y. ROCK EXCAV. – C.Y.

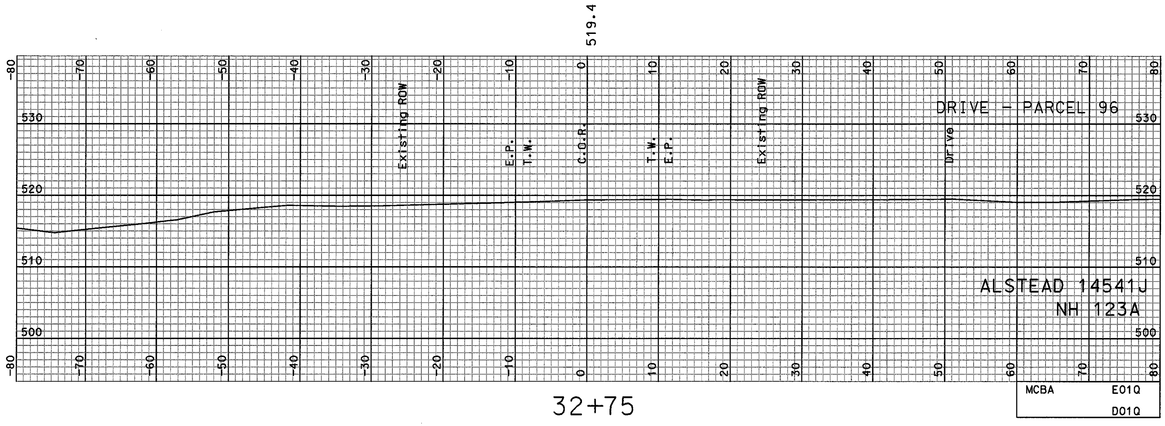
FILL – C.Y. MUCK EXCAV. – C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcba	14541J	155	156

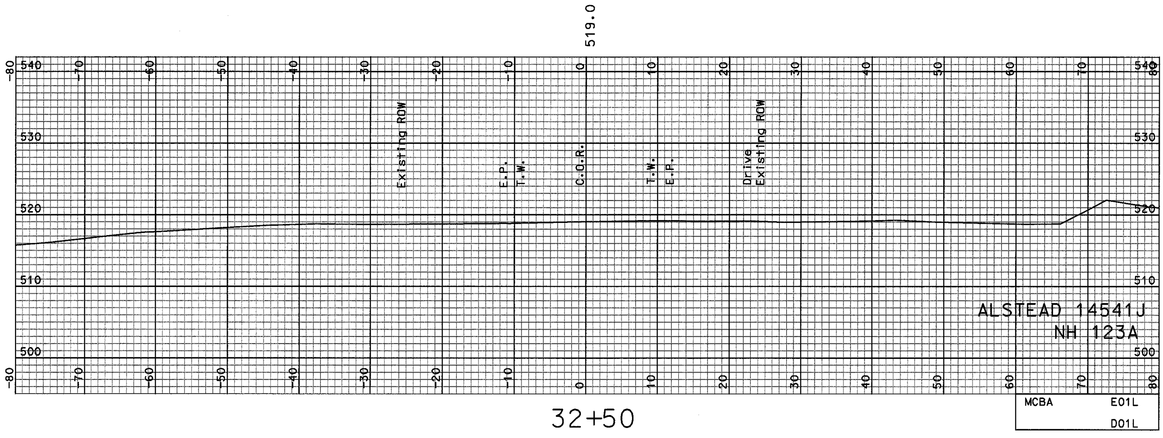
SDR PROCCESSED	CAC	DATE	2006
NEW DESIGN	TEAM CLIFFORD	DATE	2006/2007
SHEET CHECKED	WAC	DATE	5/2007
AS BUILT DETAILS		DATE	

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	STATION	DESCRIPTION



32+75



32+50

LIMIT OF WORK

SHEET TOTALS

COMMON EXCAV. - C.Y. ROCK EXCAV. - C.Y.

FILL - C.Y. MUCK EXCAV. - C.Y.

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
14541Jxs_mcba	14541J	156	156