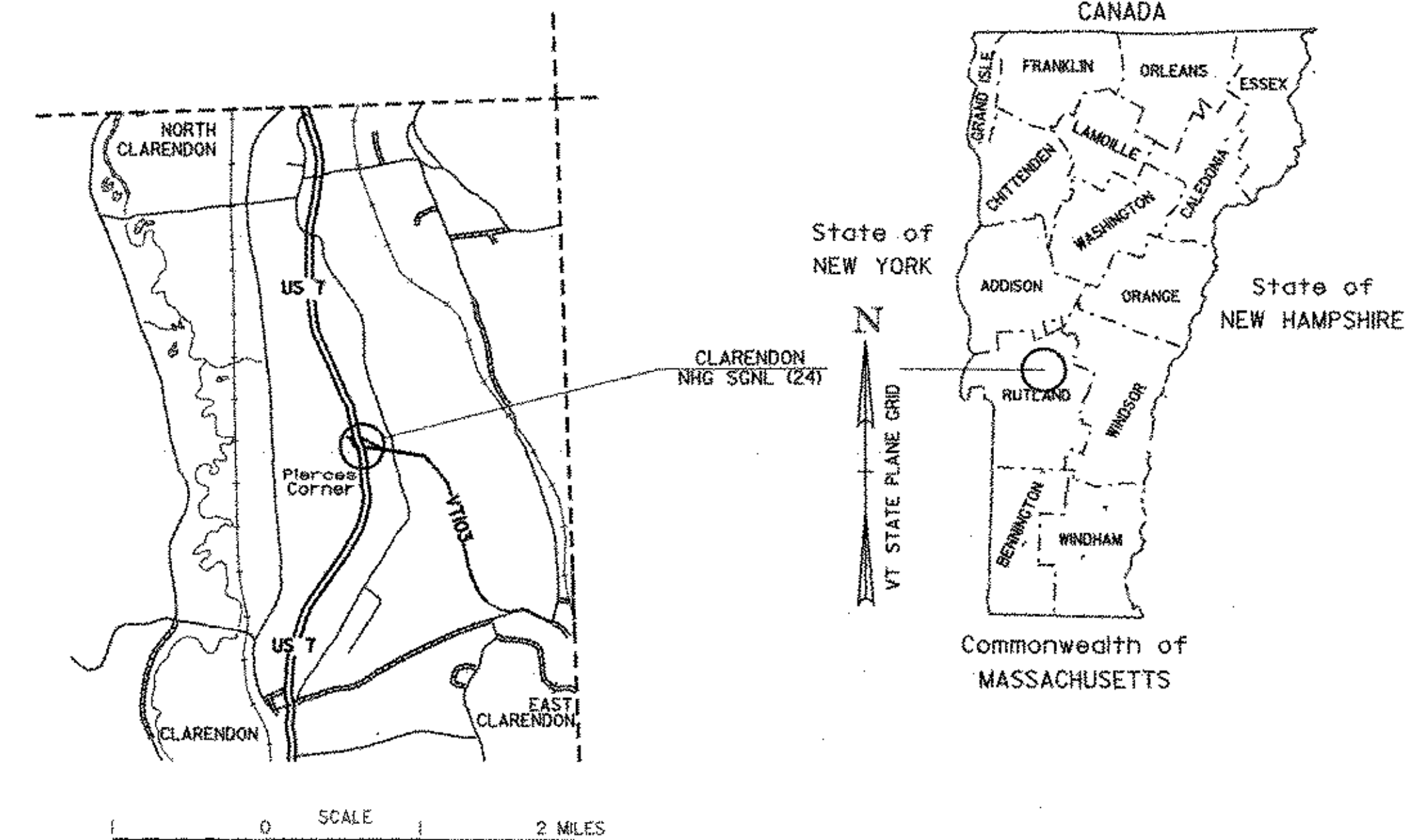


1 TITLE SHEET
2 INDEX OF SHEETS

FUNCTIONAL CLASSIFICATION - PRINCIPAL ARTERIAL

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE CONSTRUCTION OF A NORTHBOUND LEFT TURN LANE, AND INSTALLING A SIGNALIZED TRAFFIC SYSTEM, WITH RELATED PAVEMENT MARKINGS AND SIGNS.

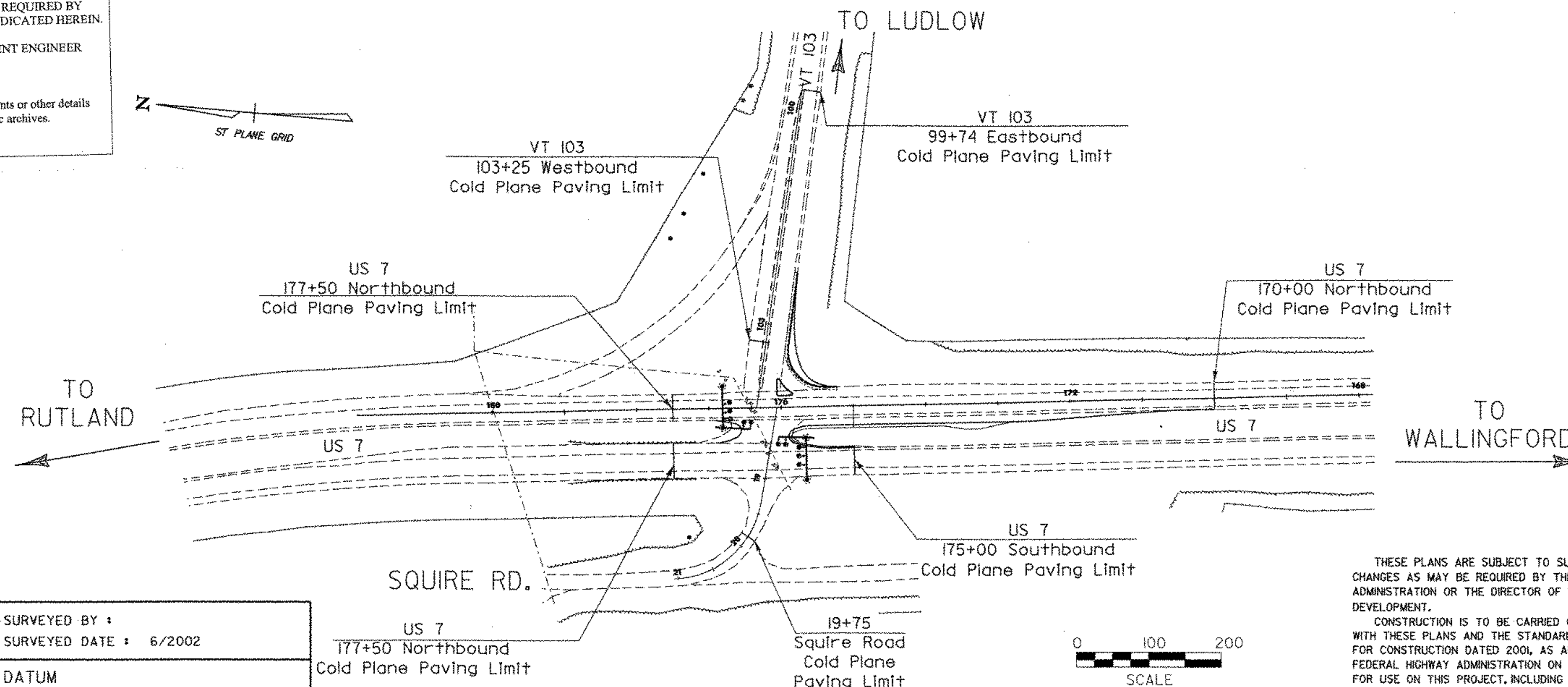


CONTRACTOR: ENGINEERS CONSTRUCTION, INC. - SO. BURLINGTON, VT
RESIDENT ENGINEER: T. POCKETTE
CONSTRUCTION BEGAN: JULY 5, 2005
CONSTRUCTION COMPLETE: NOVEMBER 13, 2005
RECORD PLANS BY: T. POCKETTE & N. GARBACIK

BY Anthony Hockett RESIDENT ENGINEER
DATE 06-12-06

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

DATUM
VERTICAL NAVD88
HORIZONTAL NAD83 (1992)



US 7 NORTH LEG	US 7 SOUTH LEG
ADT - 14,050 (YR 1999)	ADT - 16,740 (YR 1999)
ADT - 15,050 (YR 2004)	ADT - 17,950 (YR 2004)
DHV - 1,525 (YR 1999)	DHV - 1,795 (YR 1999)
DHV - 1,630 (YR 2004)	DHV - 1,940 (YR 2004)
60% (DISTRIBUTION)	58% (DISTRIBUTION)
1.5% (TRUCKS)	1.5% (TRUCKS)
50 MPH (V) POSTED	50 MPH (V) POSTED

US 7 (NB)	2000 - 2020 -	7,573,000
US 7 (NB)	2000 - 2040 -	20,526,000
US 7 (SB)	2000 - 2020 -	7,530,000
US 7 (SB)	2000 - 2040 -	20,378,000

DESIGN LIFE ESAL'S	4,545,000
DESIGN # OF GYRATIONS	75
PERFORMANCE GRADED ASPHALT	64-28

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS. 17-FEB-2005

APPROVED Richard F. Hume DATE 2-24-05

PROJECT NAME : **CLARENDON**
PROJECT NUMBER : **NHG SGNL (24)**

SHEET 1 OF SHEETS 37

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13	SIGNAL TIMING AND SEQUENCE
14-15	SIGNAL BRIDGE/MASTARM CROSS SECTIONS
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17	TRAFFIC SIGNAL NOTES
18	GENERAL NOTES
19	LUMINAIRE PHOTOMETRICS
20	PAVEMENT MARKING SHEET
21	SIGN LAYOUT SHEET (EXISTING AND NEW)
22	SIGN SUMMARY SHEET
23	(BLANK)
24	MATERIAL DEPTH TRANSITION
25	ISLAND DETAIL SHEET
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B-71	RESIDENTIAL AND COMMERCIAL DRIVES	02/01/2004
C-1	CURBS, GRANITE SLOPE EDGING	01/03/2000
D-20	HIGHWAY CROSSING SLEEVES FOR UNDERGROUND UTILITIES	03/03/2003
E-100	CONSTRUCTION APPROACH SIGNS	01/02/2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01/02/2004
E-101	CONSTRUCTION SIGN DETAILS	05/30/2003
E-102	CONSTRUCTION SIGN DETAILS	06/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	05/01/2004
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E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	08/08/1995
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E-141	REGULATORY SIGN DETAILS	09/20/1995
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E-143	REGULATORY SIGN DETAILS	06/15/2004

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E-144	REGULATORY SIGN DETAILS	03/29/1999
E-145A	REGULATORY SIGN DETAILS - LANE USE CONTROL SIGNS	12/23/1994
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E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS	08/09/1995
E-171B	TRAFFIC CONTROL SIGNALS MISC. DETAILS	08/09/1995
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E-191	PAVEMENT MARKING DETAILS	02/01/1999
E-192	PAVEMENT MARKING DETAILS	10/12/2000
E-193	PAVEMENT MARKING DETAILS	08/18/1995
E-197	DELINEATOR PLACEMENT TYPICAL	08/18/1995
E-198	DELINEATORS AND MILEPOSTS	04/14/1997
G-1	STEEL BEAM GUARDRAIL (50MPH & OVER) HEAVY DUTY STEEL BEAM GUARDRAIL ANCHOR FOR STEEL BEAM RAIL	01/03/2000
G-1D	STEEL BEAM GUARDRAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	01/03/2000
G-15	BREAKAWAY CABLE TERMINAL WITH STEEL POSTS	06/01/1994
G-17A	MODIFIED ECCENTRIC LOADER TERMINAL (MELT)	09/27/2002
G-17B	MODIFIED ECCENTRIC LOADER TERMINAL (MELT)	09/27/2004
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	06/01/1994
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11/15/2002

PROJECT NAME:	Clarendon		
PROJECT NUMBER:	NHG SGNL (24)		
FILE NAME:	0	PLOT DATE:	12/9/98
PROJECT LEADER:	btn	DRAWN BY:	jfg
DESIGNED BY:	0	CHECKED BY:	0
INDEX OF SHEETS #1		SHEET	2 OF 37

TYPICAL SECTIONS US ROUTE 7

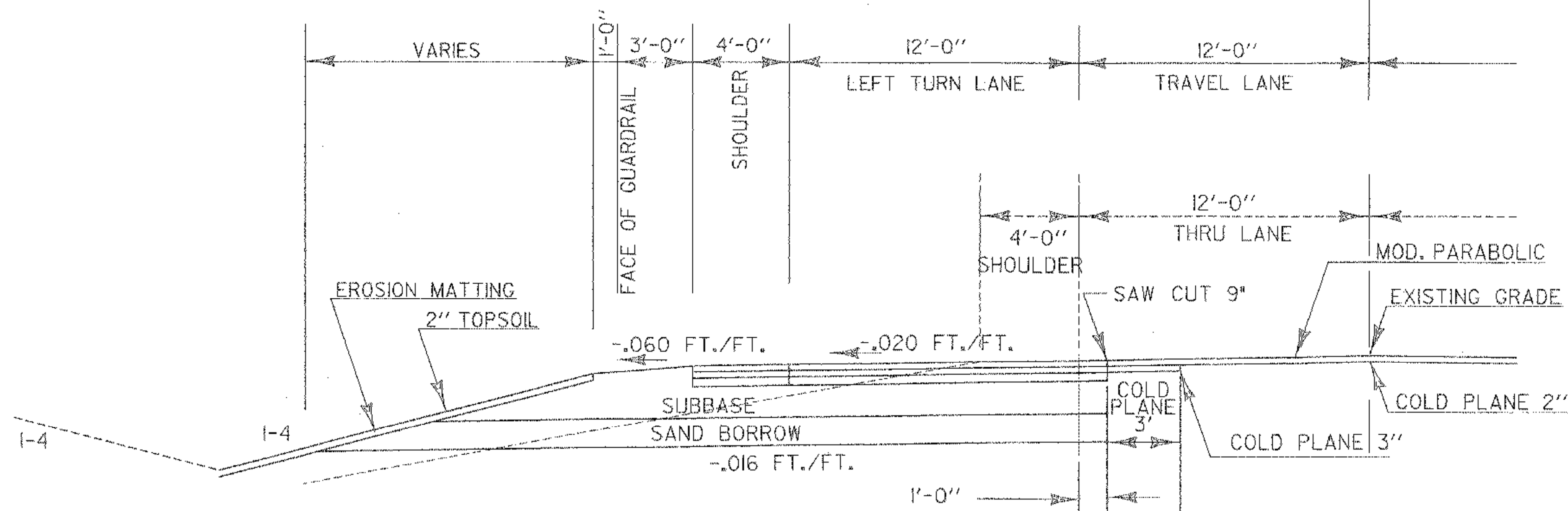
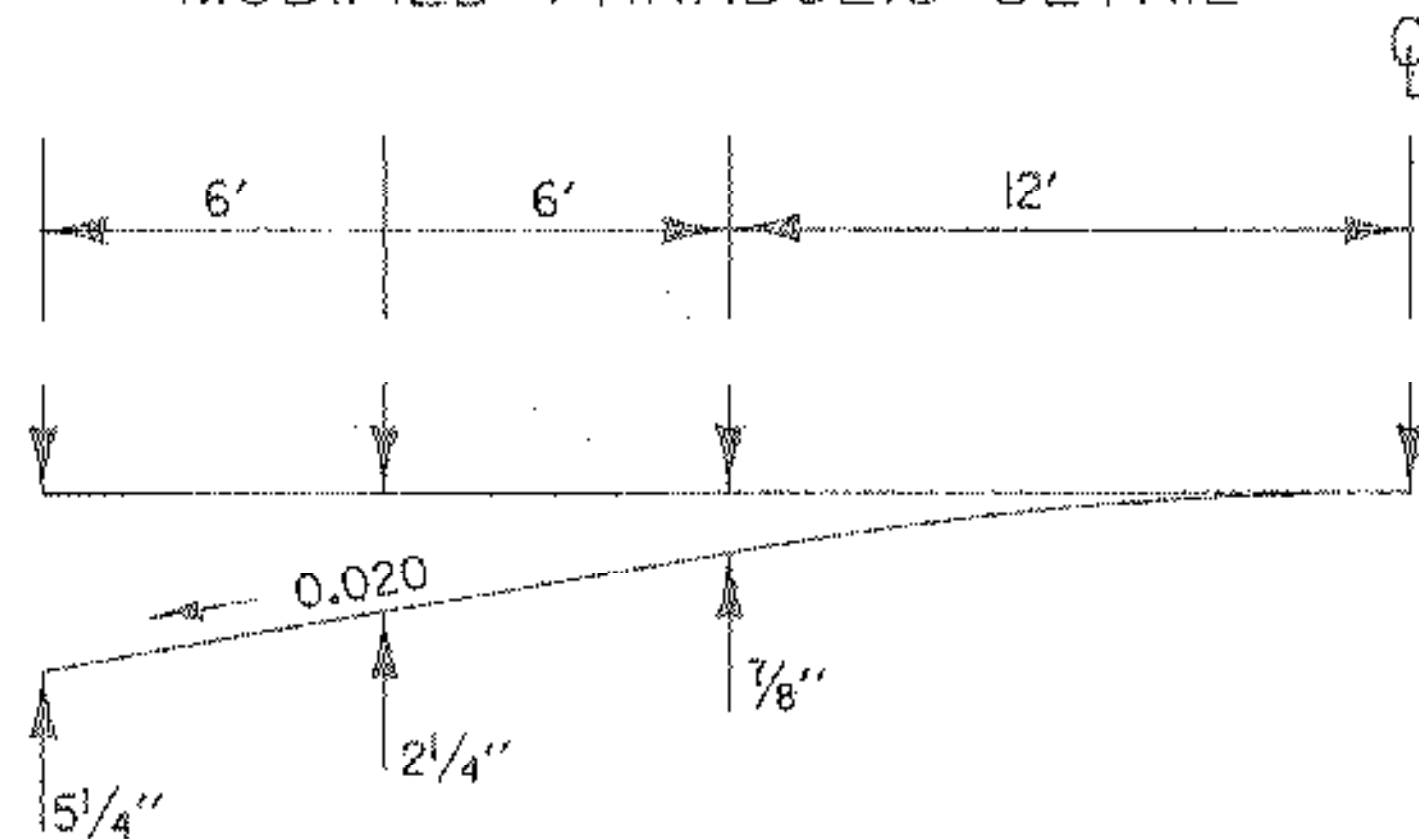
MATERIAL TOLERANCES: TOTAL DEPTH	
PAVEMENT	$\pm \frac{1}{4}"$
SUBBASE	$\pm 1"$
SAND	$\pm 1"$

2" BITUMINOUS CONCRETE PAVEMENT (TYPE III)-S
 3" BITUMINOUS CONCRETE PAVEMENT (TYPE II)-S
 4" BITUMINOUS CONCRETE PAVEMENT (TYPE I)-S (2 LIFTS OF 2")
 24" SUBBASE OF DENSE GRADED CRUSHED STONE
 * 18" SAND BORROW (OPTIONAL OR AS DIRECTED BY ENGINEER)

SHOULDERS : FULL DEPTH BITUMINOUS CONCRETE PAVEMENT
 SAW CUT INCIDENTAL TO COMMON EXCAVATION

* EXCAVATED DOWN TO EXISTING SAND BORROW LEVEL,
 APPROXIMATELY 3' - 5' DEEPER THAN 24" INDICATED FOR
 SUBBASE OF DENSE GRADED CRUSHED STONE.
 NEW SAND BORROW NOT NEEDED.

MODIFIED PARABOLIC DETAIL



SEEDING FORMULA RURAL AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
37.5	22.5	CREeping RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYEGRASS	95	85
100.0	60.0			

GENERAL NOTES

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

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

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

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

MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.

SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B - 5.

PAY LIMITS OF SAND BORROW: WHEN USED IN CONJUNCTION WITH UNDERDRAIN - SEE STANDARD SHEET D - 2.

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.015 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

TYPICAL SECTIONS NOT TO SCALE

STA. 172+50 - STA. 175+50

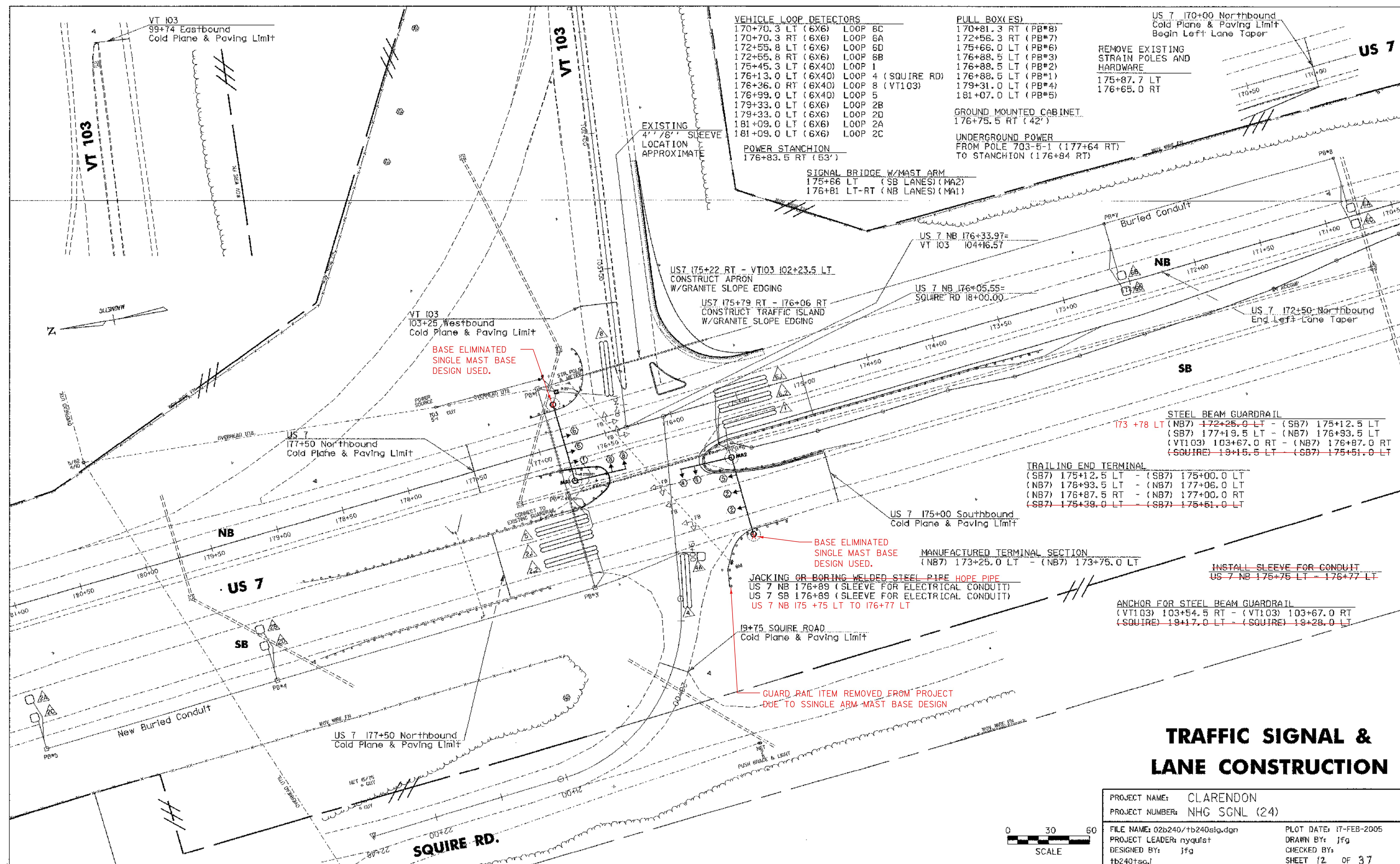
NOTE: SAW CUT ALL VERTICAL CONSTRUCTION EDGES.

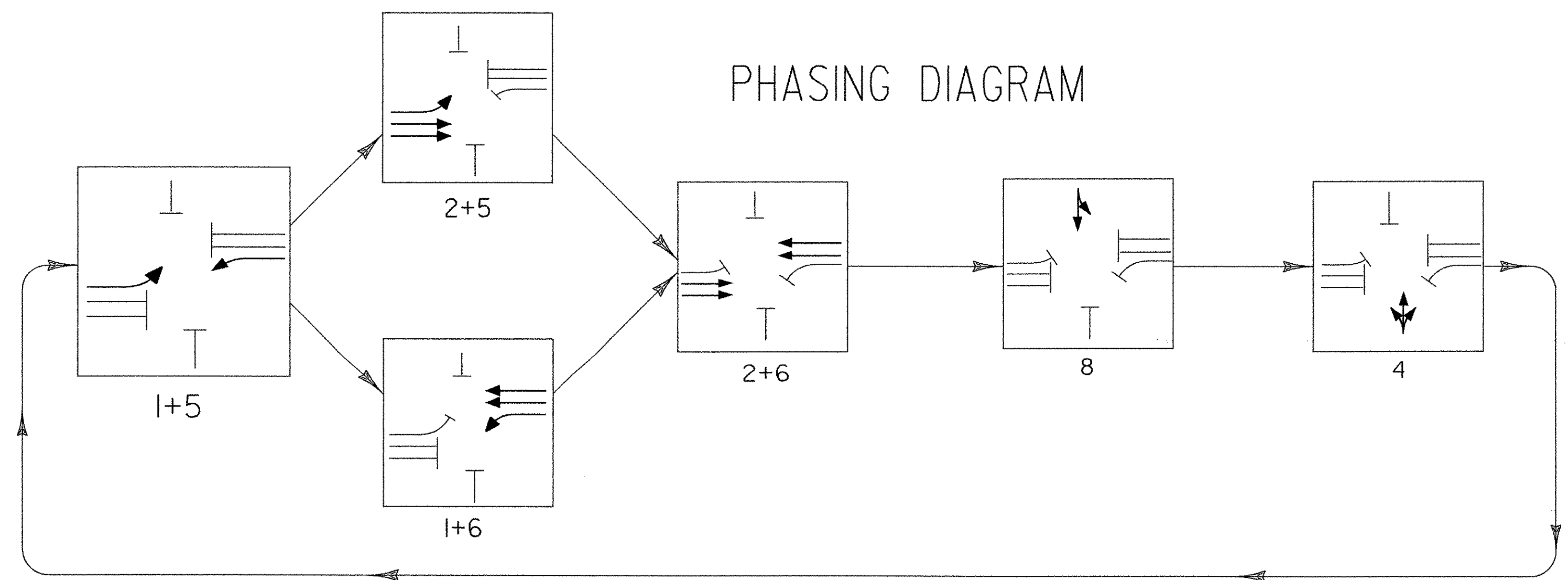
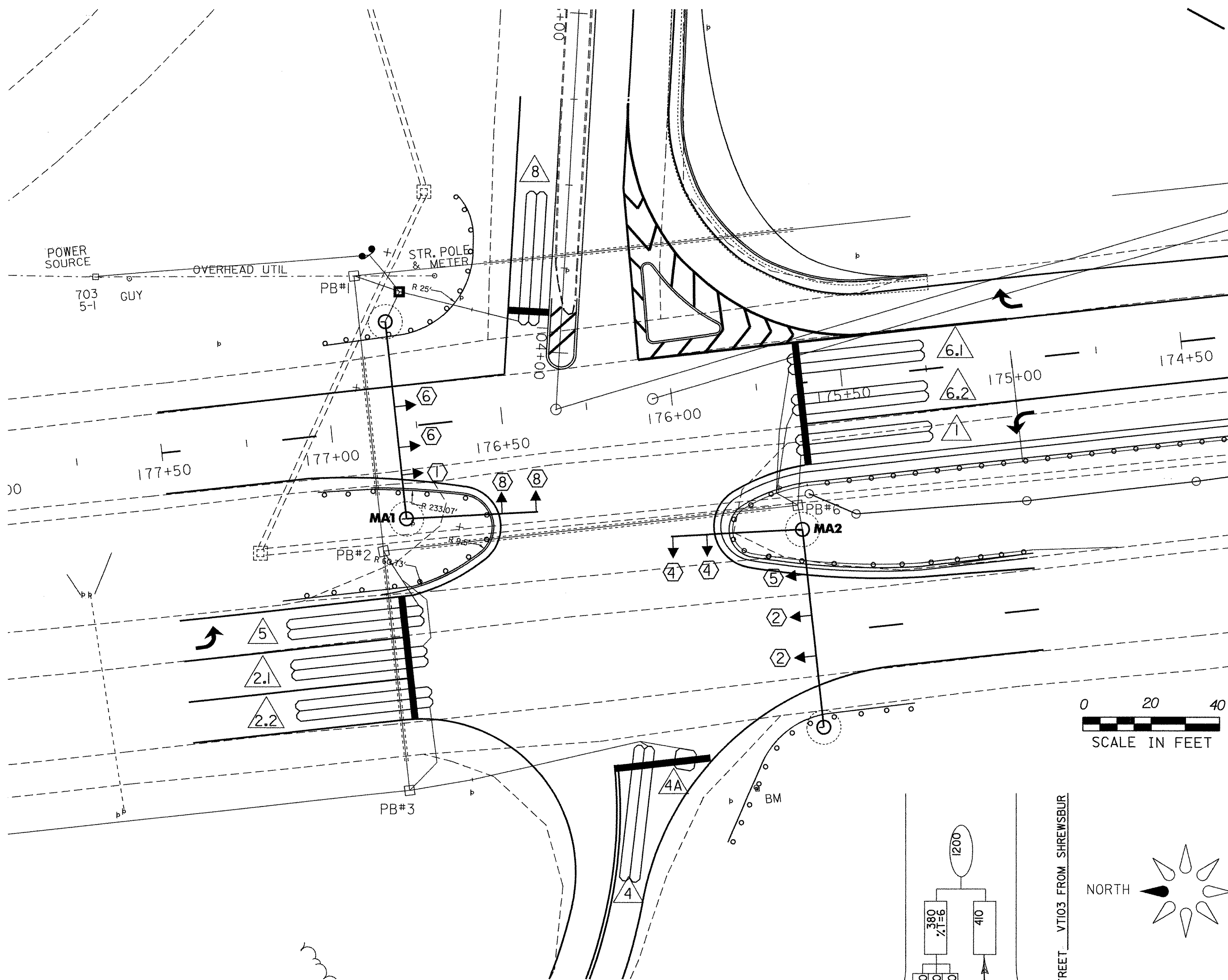
PROJECT NAME: CLARENDON	
PROJECT NUMBER: NHG SGNL (24)	
FILE NAME: /trac/02b240/tb240sf.dgn	PLOT DATE: 28-FEB-2005
PROJECT LEADER: Nyquist	DRAWN BY: JFG
DESIGNED BY: JFG	CHECKED BY: JFG
tb240fyp.l	SHEET 3 OF 37

STATE OF VERMONT AGENCY OF TRANSPORTATION															QUANTITY SHEET													
SUMMARY OF ESTIMATED QUANTITIES																TOTALS			DESCRIPTIONS					DETAILED SUMMARY OF QUANTITIES				
												Erosion Control	FULL E&C		Roadway	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS			
															625		25	650		CY	COMMON EXCAVATION	203.15	131	TON	4" Type I			
															410		15	425		CY	SAND BORROW	203.31	171	TON	3" Type II			
															1229		21	1250		SY	FINE GRADING-SUBGRADE	203.40	813	TON	2" Type III			
															7303		22	7325		SY	COLD PLANING-BIT.PAVEMENT	210.10	20	TON	Mountable Apron			
															668		32	700		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	6	TON	Traffic Island			
															30			30		CWT	EMULSIFIED ASPHALT	404.65	1141	TON	Subtotal			
															1141		9	1150		TON	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG-64-28)	490.30	9	TON	Rounding			
															25			25		HR	BULLDOZER RENTAL, TYPE I	608.10	1150	TON	TOTAL			
															25			25		HR	POWER BROOM RENTAL	608.30						
															25			25		HR	TRUCK RENTAL	608.37						
															25			25		HR	LOADER RENTAL, TYPE I	608.40						
															50			50		MGAL	DUST CONTROL WITH WATER	609.10						
												2						2		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15						
												20						20		CY	STONE FILL, TYPE I (MOD. - CHECK DAM)	613.10						
												15						15		CY	STONE FILL, TYPE I (MOD. - INLET PROTECTION)	613.10						
															206		4	210		LF	GRANITE SLOPE EDGING	616.20						
															4			4		TON	BIT. CONC. GUTTERS & TRAFFIC ISLANDS	616.47						
															638			638		LF	STEEL BEAM GUARD RAIL (GALVANIZED)	621.20						
															1			1		EACH	MANUFACTURED TERMINAL SECTION (TANGENT)	621.505						
															4			4		EACH	TRAILING END TERMINAL	621.52						
															2			2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60						
															1000			1000		HR	UNIFORMED TRAFFIC OFFICERS	630.10						
															1000			1000		HR	FLAGGERS	630.15						
													1					1		LS	TESTING EQUIPMENT - BITUMINOUS (MOD.)	631.17						
															1			1		LS	MOBILIZATION / DEMOBILIZATION	635.11						
															1			1		LS	TRAFFIC CONTROL	641.10						
															3			3		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15						
															2382		18	2400		LF	DURABLE 4" WHITE LINE (THERMOPLASTIC)	646.40						
															1368		32	1400		LF	DURABLE 4" YELLOW LINE (THERMOPLASTIC)	646.41						
															274		26	300		LF	DURABLE 8" YELLOW LINE (THERMOPLASTIC)	646.43						
															210		40	250		LF	DURABLE 12" WHITE LINE (THERMOPLASTIC)	646.44						
															112		8	120		LF	DURABLE 24" STOP BAR (THERMOPLASTIC)	646.46						
															25			25		EACH	DURABLE LETTER OR SYMBOL (THERMOPLASTIC)	646.50						
															2382		18	2400		LF	TEMPORARY 4" WHITE LINE (PAINT)	646.60						
															1368		32	1400		LF	TEMPORARY 4" YELLOW LINE (PAINT)	646.61						
															210		40	250		LF	TEMPORARY 8" YELLOW LINE (PAINT)	646.63						
															274		26	300		LF	TEMPORARY 12" WHITE LINE (PAINT)	646.64						
															112		8	120		LF	TEMPORARY 24" STOP BAR (PAINT)	646.66						
															25			25		EACH	TEMPORARY LETTERS OR SYMBOLS (PAINT)	646.70						
															100			100		EACH	LINE STRIPING TARGETS	646.76						
																							PROJECT NAME: Clarendon					
																							PROJECT NUMBER: NHG SGNL (24)					
																							FILE NAME:					
																							PROJECT MANAGER: nyquist					
																							DESIGNED BY: gruchacz					
																							CHECKED BY:					
																							QUANTITY SHEET #1					
																							PLOT DATE: 02/28/2005					
																							DRAWN BY:					
																							SHEET 4 OF 37					

QUANTITY SHEET

QUANTITY SHEET





CONTROLLER TIMING CHART									
LOCAL PROGRAMMING	PHASE								
	1	2	3	4	5	6	7	8	
MINIMUM GREEN	8.0	8.0		8.0	8.0	8.0		8.0	
EXTENSION	1.5	1.5		1.5	1.5	1.5		1.5	
YELLOW CLEARANCE	4.0	4.0		4.0	4.0	4.0		4.0	
ALL RED CLEARANCE	2.0	3.0		2.5	2.0	3.0		2.5	
MAX. GREEN I (AM PEAK)	16.0	28.0		16.0	28.0	16.0		16.0	
MAX. GREEN II (OFF PEAK)	16.0	28.0		16.0	28.0	16.0		16.0	
MAX. GREEN III (PM PEAK)	16.0	28.0		16.0	28.0	16.0		16.0	
WALK	-	-		-	-	-		-	
FLASHING DON'T WALK	-	-		-	-	-		-	

WEEKDAY TIMINGS	
AM PEAK PERIOD	6:00 AM - 9:00 AM
OFF PEAK PERIOD	9:00 AM - 3:45 PM
PM PEAK PERIOD	3:45 PM - 6:00 PM

VEHICLE DETECTOR LOOPS											
LOOP NO.	LANE	CALL Ø	SIZE	TYPE & NO. TURNS	DELAY OR PRESENCE	DELAY TIME (SEC.)	INDUCTANCE CALC. ACT.	RESISTANCE CALC. ACT.	LEAKAGE TO GROUND	LOCKING MEMORY	
1	NB	1	6X40	QUAD/2-TURN	PRESENCE		398			NON LOCK	
4	EB	4	6X40	QUAD/2-TURN	PRESENCE		400	1.36		NON LOCK	
5	SB	5	6X40	QUAD/2-TURN	PRESENCE		368	0.94		NON LOCK	
8	WB	8	6X40	QUAD/2-TURN	PRESENCE		348	0.68		NON LOCK	
2.1	SB	2	6X40	QUAD/2-TURN	PRESENCE		398	1.33		NON LOCK	
2.2	SB	2	6X40	QUAD/2-TURN	PRESENCE		400	1.36		NON LOCK	
6.1	NB	6	6X40	QUAD/2-TURN	PRESENCE		415	0.94		NON LOCK	
6.2	NB	6	6X40	QUAD/2-TURN	PRESENCE		420	0.68		NON LOCK	
2A	SB	-	6X6	REC 3-TURN	PULSE		238	2.14		LOCK	
2B	SB	2	6X6	REC 3-TURN	PULSE		195	1.58		LOCK	
2C	SB	-	6X6	REC 3-TURN	PULSE		235	2.10		LOCK	
2D	SB	2	6X6	REC 3-TURN	PULSE		192	1.54		LOCK	
6A	NB	-	6X6	REC 3-TURN	PULSE		248	2.26		LOCK	
6B	NB	6	6X6	REC 3-TURN	PULSE		204	1.70		LOCK	
6C	NB	-	6X6	REC 3-TURN	PULSE		251	2.31		LOCK	
6D	NB	6	6X6	REC 3-TURN	PULSE		207	1.74		LOCK	

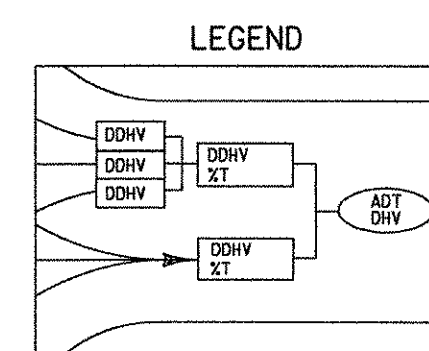
EXISTING	NEW	LEGEND
		UTILITY POLE
		LUMINAIRE
		LIGHT OR WOOD POLE
		STRAIN POLE
		CONTROLLER CABINET
		PULLBOX/JUNCTION BOX
		SIGNAL HEAD
		CONDUIT
		VEHICLE LOOPS
		STANCHION

SIGNAL FACE ARRANGEMENT

FACES 2, 4
FACES 6, 8

FACE 1
FACE 5

NOTE: BACK PLATES TO BE INSTALLED ON ALL HEADS



TRAFFIC SIGNAL PLAN

PROJECT: Clarendon

DESIGN FILE NAME: /traf/02b240/tb240trs.dgn

IPARM FILE NAME: /traf/02b240/tb240tim.i

SURVEYED BY: nyquist

SQUAD LEADER: nyquist

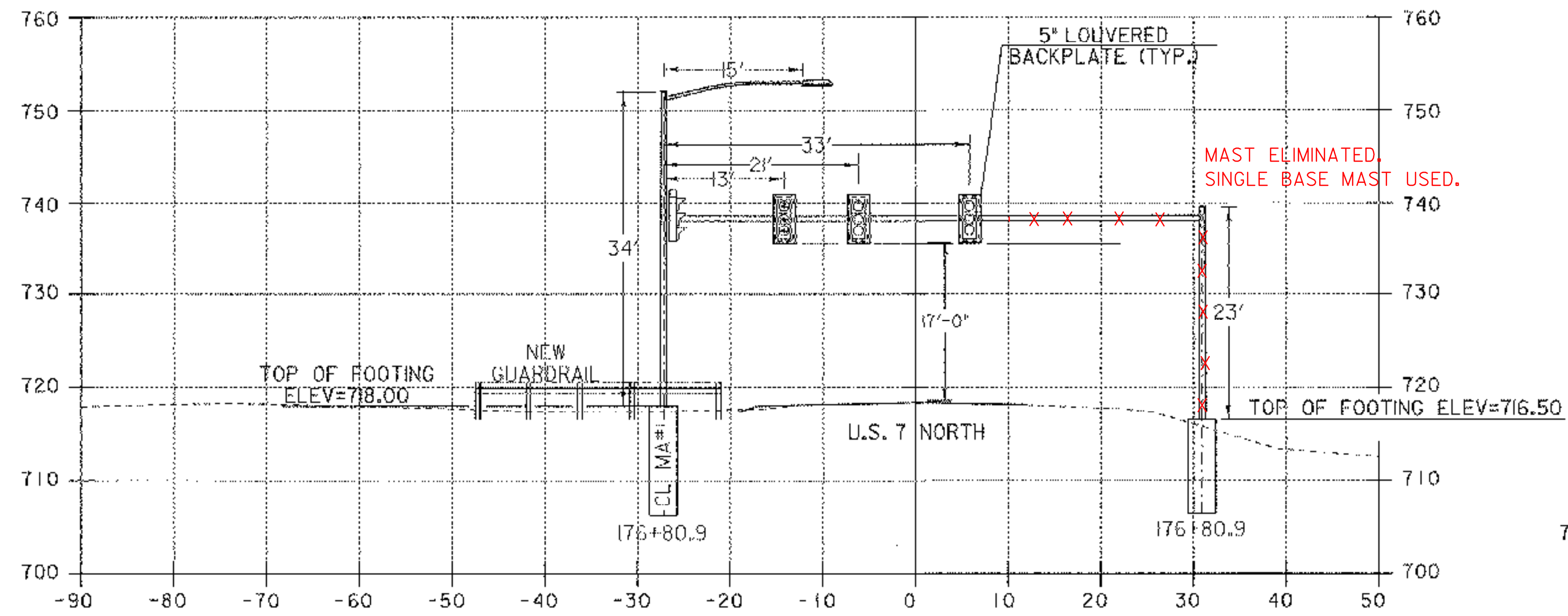
PROJECT NO.: NHG SGNL (24)

PLOT DATE: 15-NOV-2004

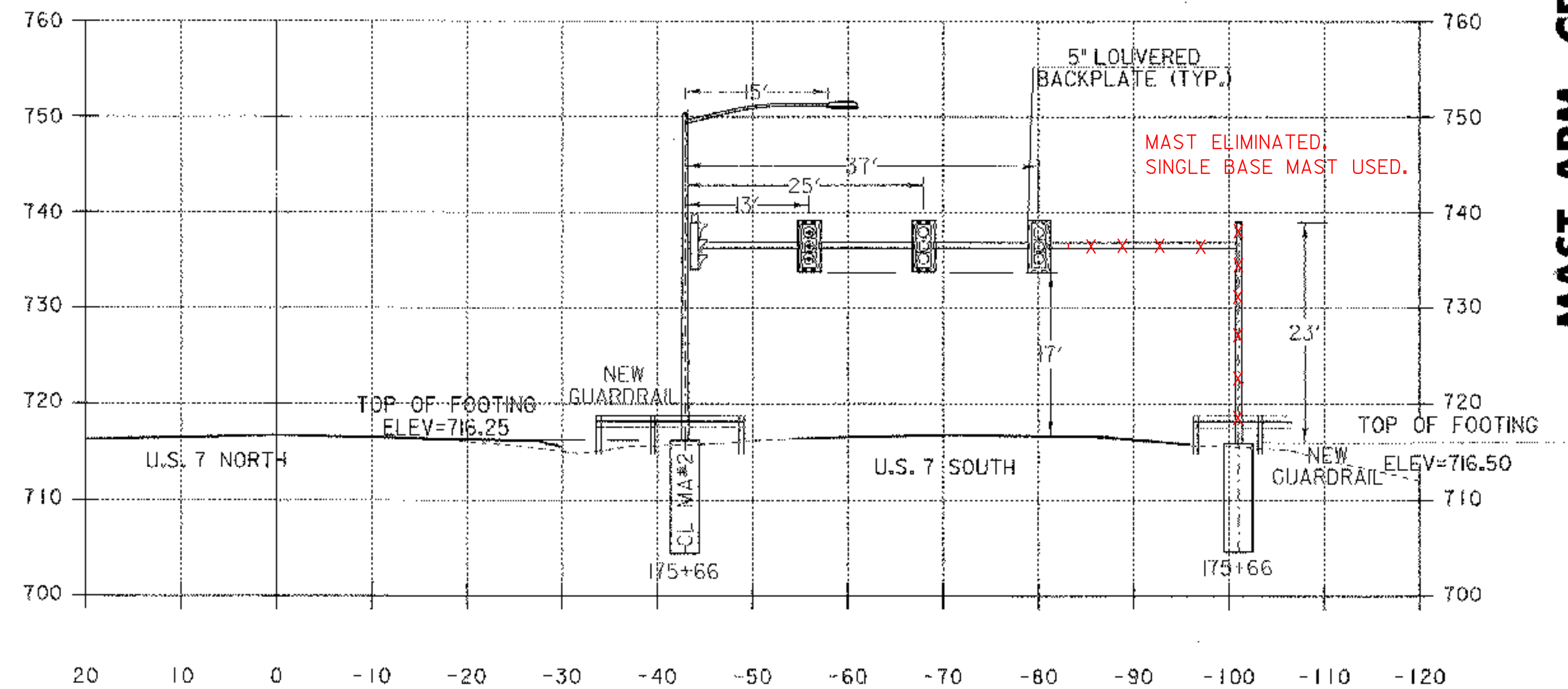
SURVEY DATE: 15-NOV-2004

DRAWN BY: Jfg

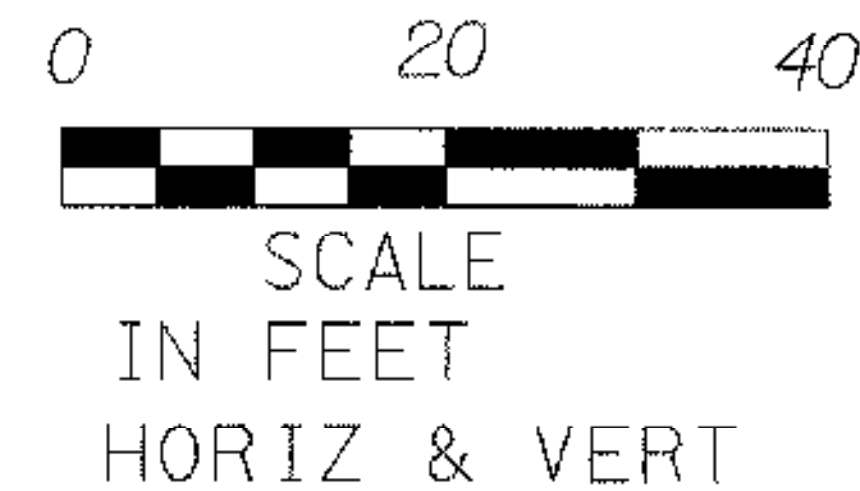
SHEET: 13 OF 37



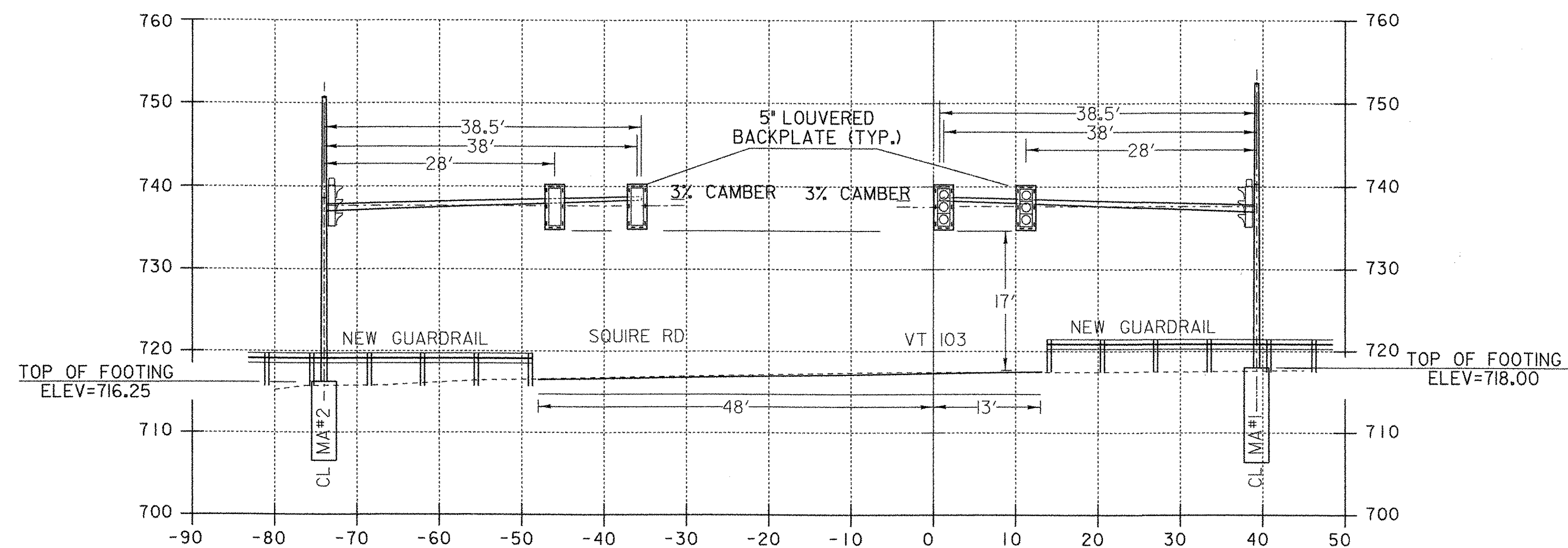
176+81 US 7
NORTHBOUND LANES



175+66 US 7
SOUTHBOUND LANES



PROJECT NAME:	CLARENDON	FILE NAME:	/trac/02b240/tb240slg.dgn	PLOT DATE:	01-NOV-2004
PROJECT NUMBER:	SGNL 024	PROJECT LEADER:	nyquist	DRAWN BY:	JFG
		DESIGNED BY:		CHECKED BY:	
			/trac/02b240/tb240xml	SHEET	14 OF 37



104+45
VT 103
LOOKING WEST



SCALE
IN FEET
HORIZ & VERT

MAST ARM MOUNTING DETAILS FOR FIXED MOUNT TRAFFIC SIGNALS (PREFERRED METHOD)

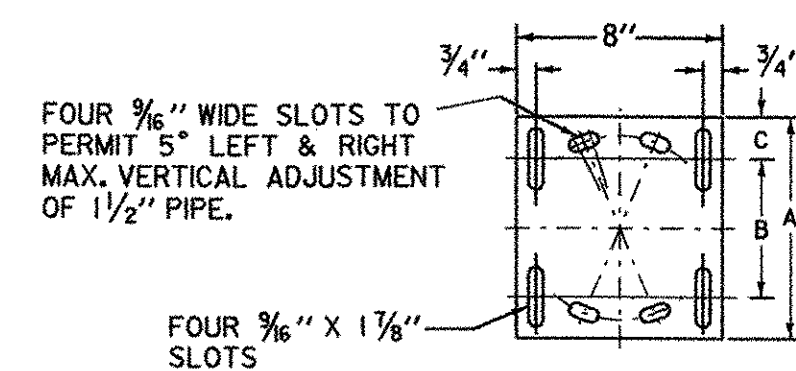
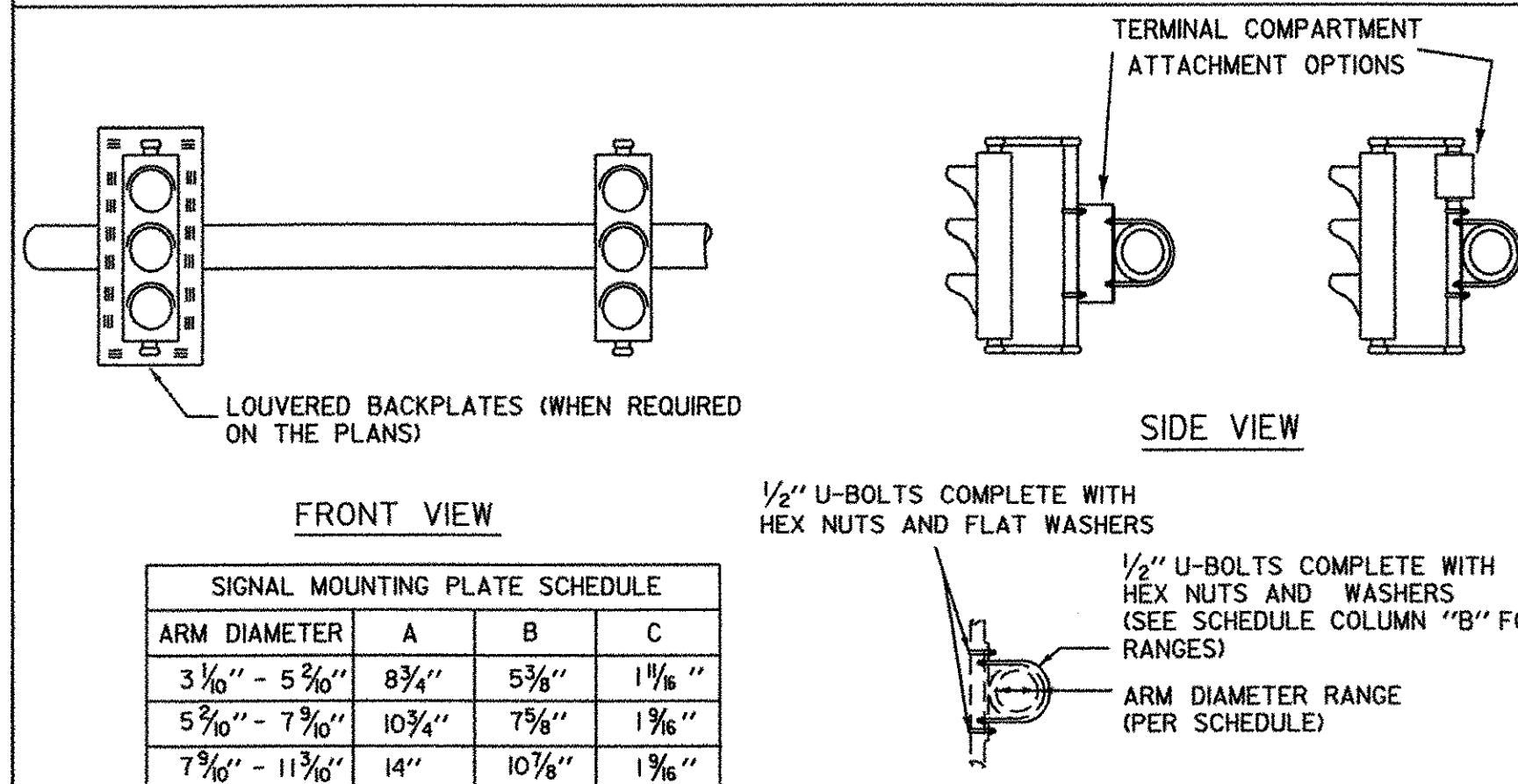
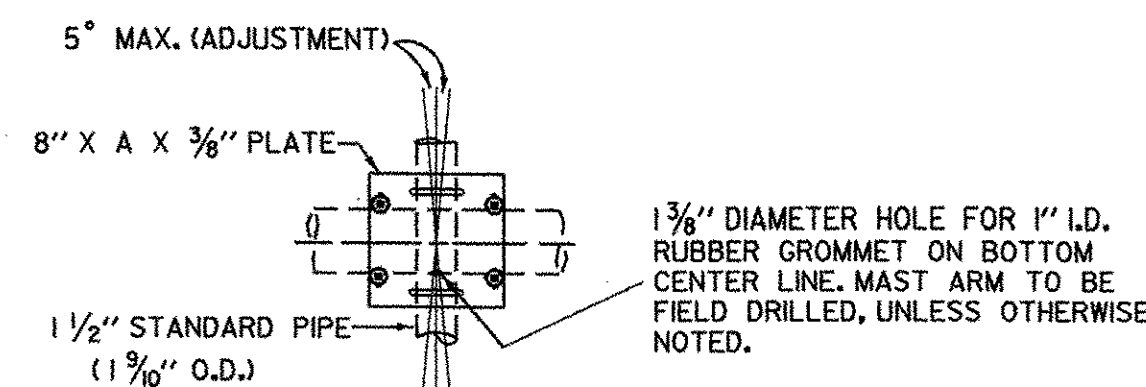


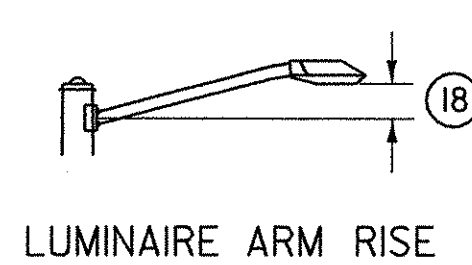
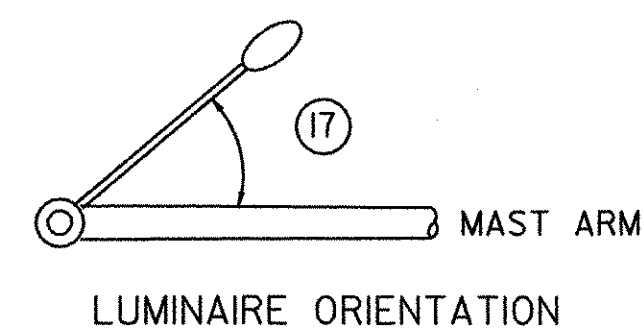
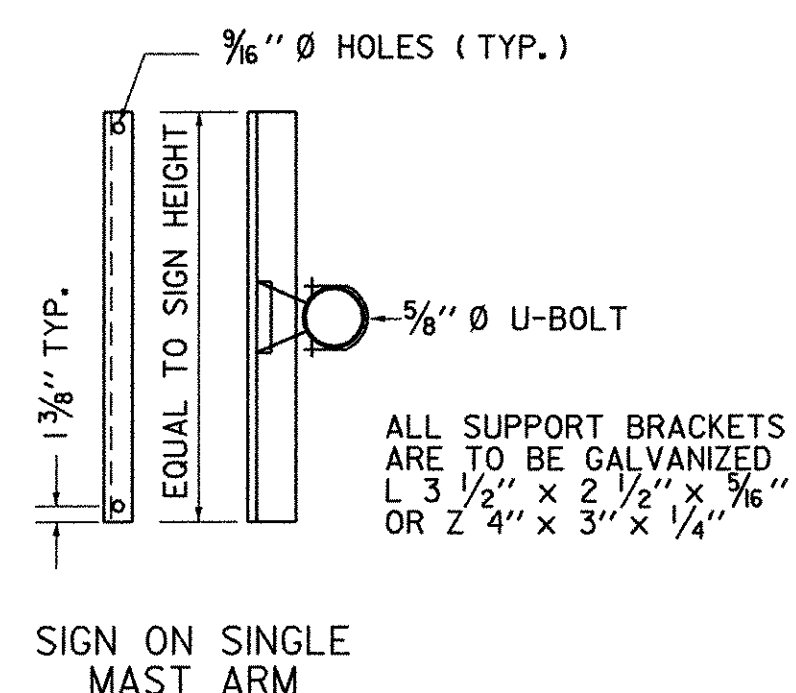
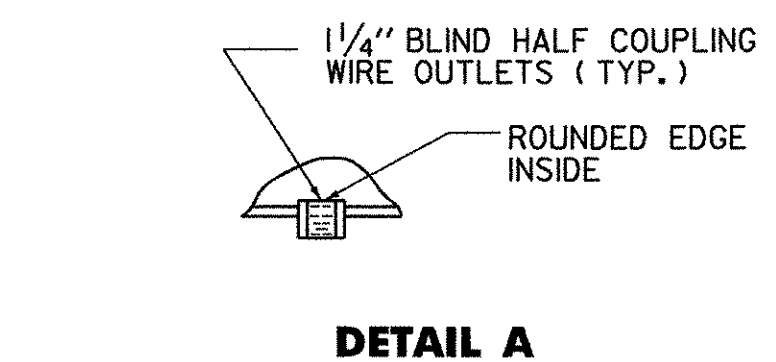
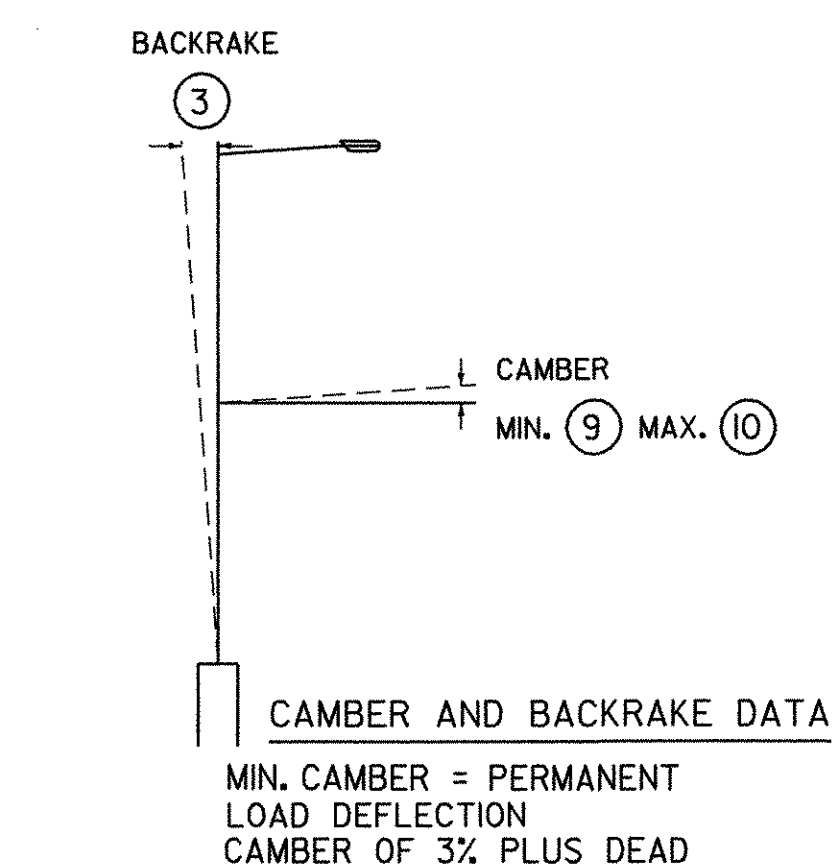
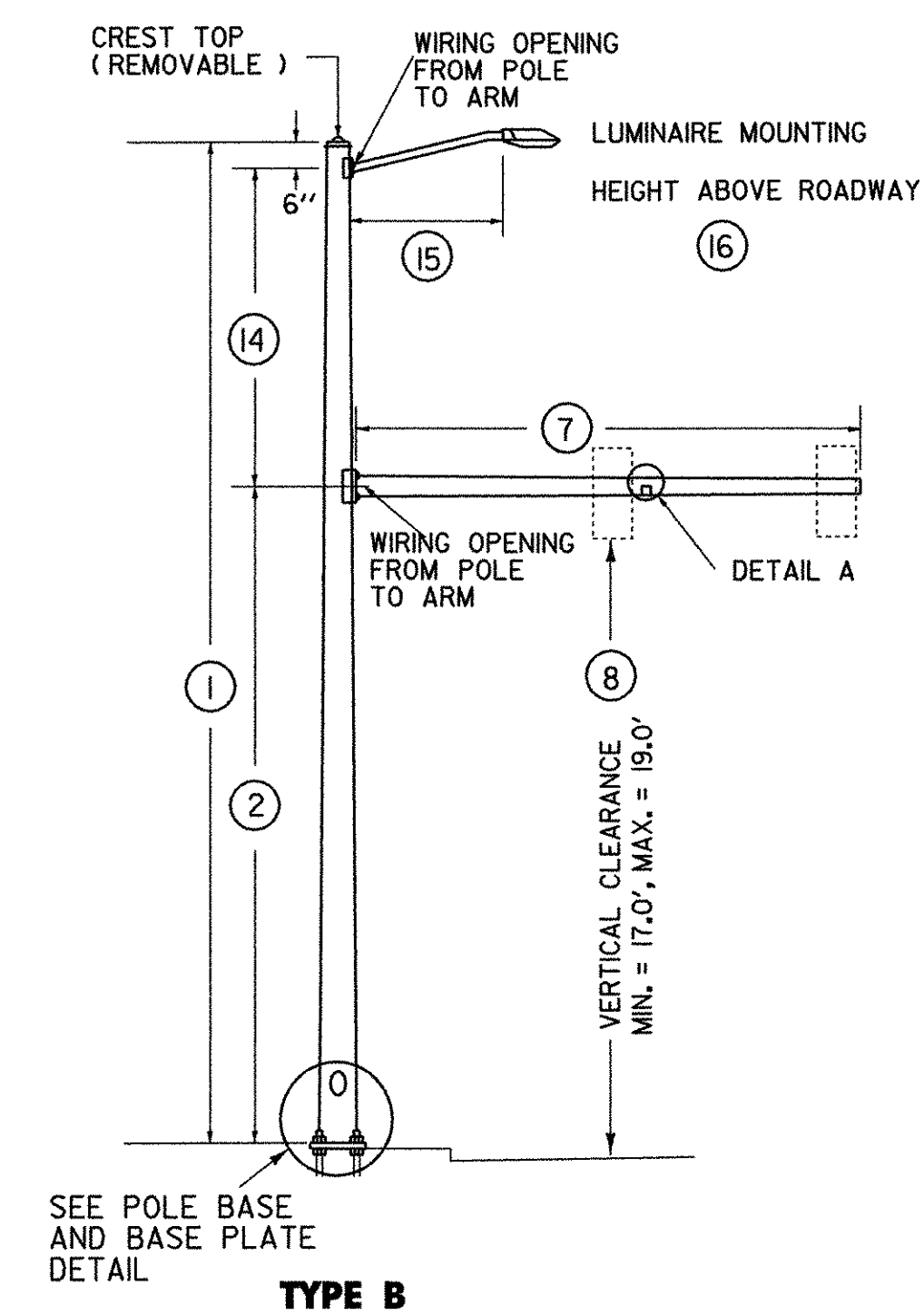
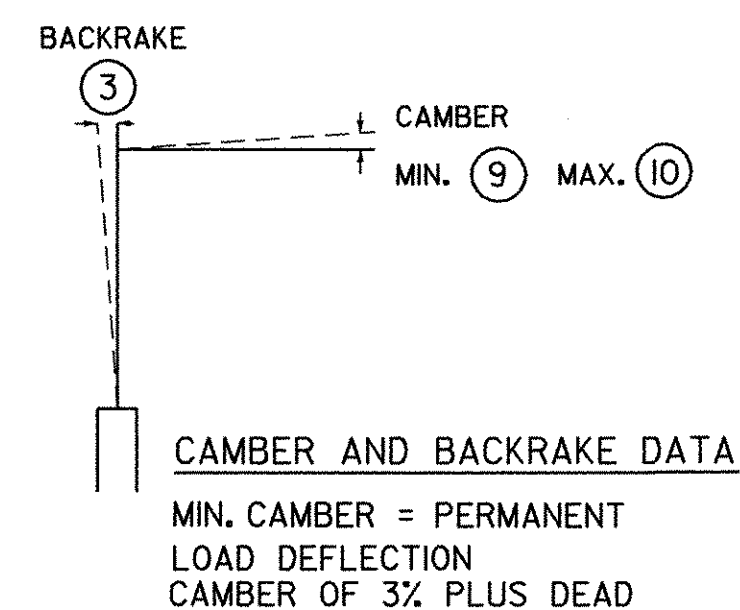
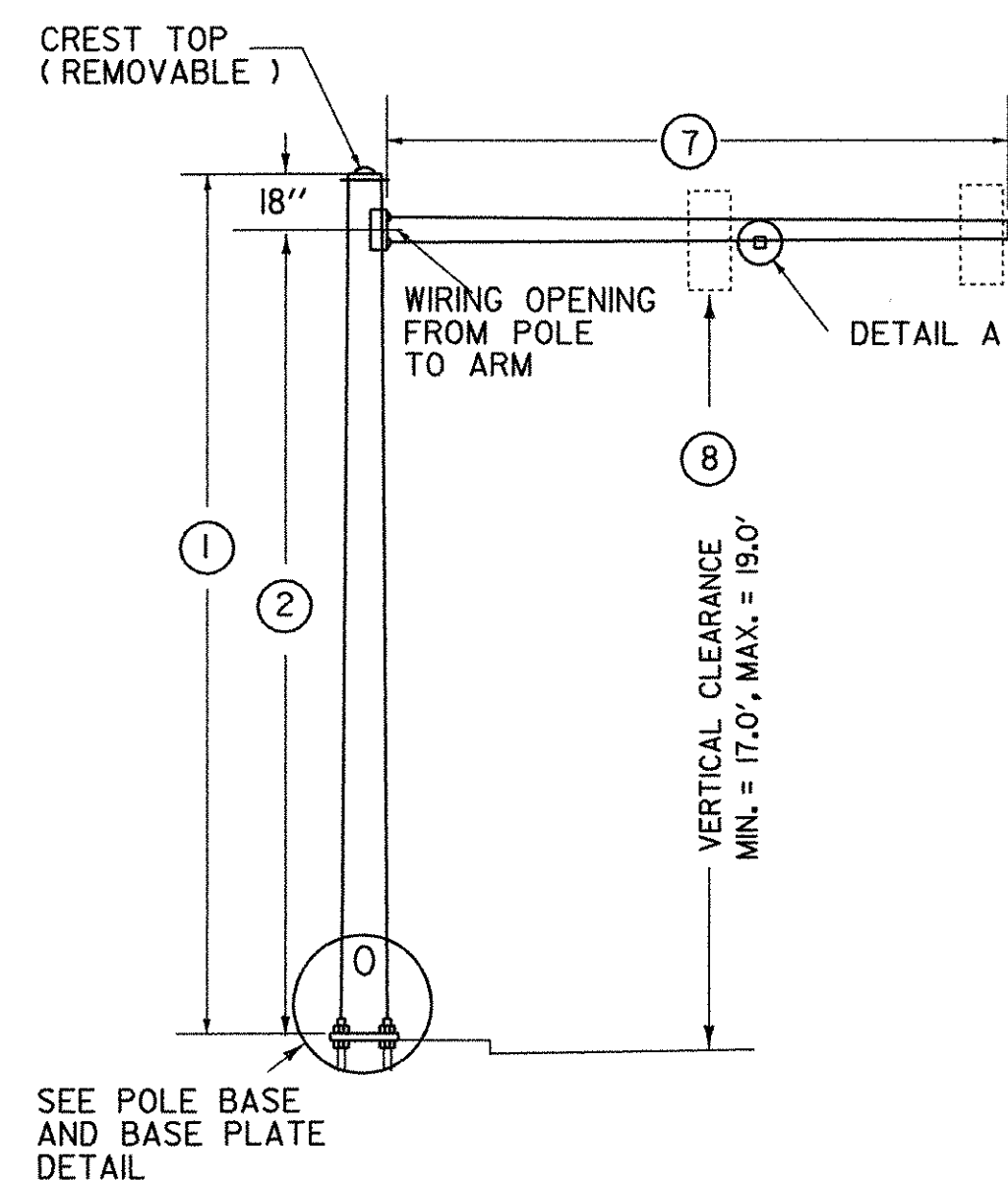
PLATE DETAIL



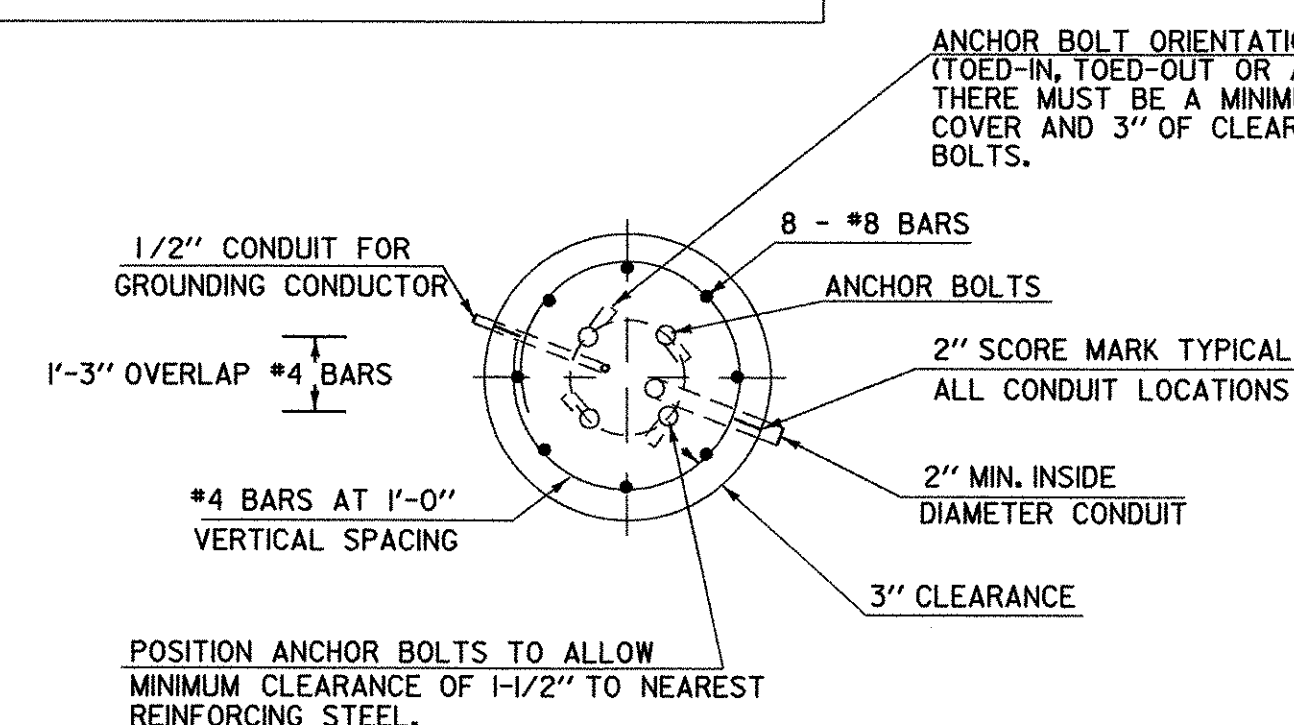
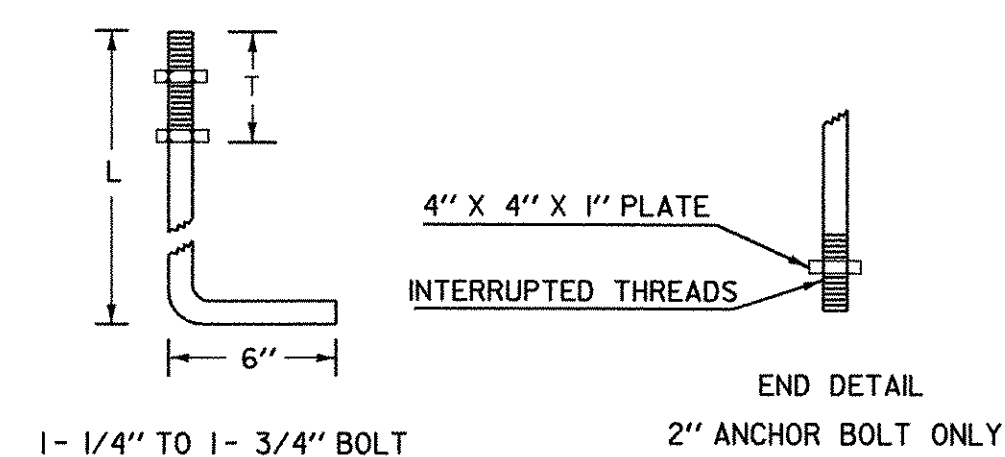
1. ALTERNATE METHODS FOR RIGID MOUNTING OF SIGNALS TO MAST ARMS MAY BE USED. SHOP DRAWINGS FOR THE ALTERNATE METHOD HARDWARE SHALL BE SUBMITTED TO THE TRAFFIC DESIGN SECTION VIA THE RESIDENT ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
2. ALL RIGIDLY MOUNTED TRAFFIC AND PEDESTRIAN SIGNALS SHALL BE PROVIDED WITH REINFORCEMENT PLATES AT THE ATTACHMENT POINTS.
3. ALL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL.
4. ALL OTHER MOUNTING BRACKET MATERIALS SHALL BE GALVANIZED STEEL.

PROJECT NAME: CLARENDON
PROJECT NUMBER: SGNL 024

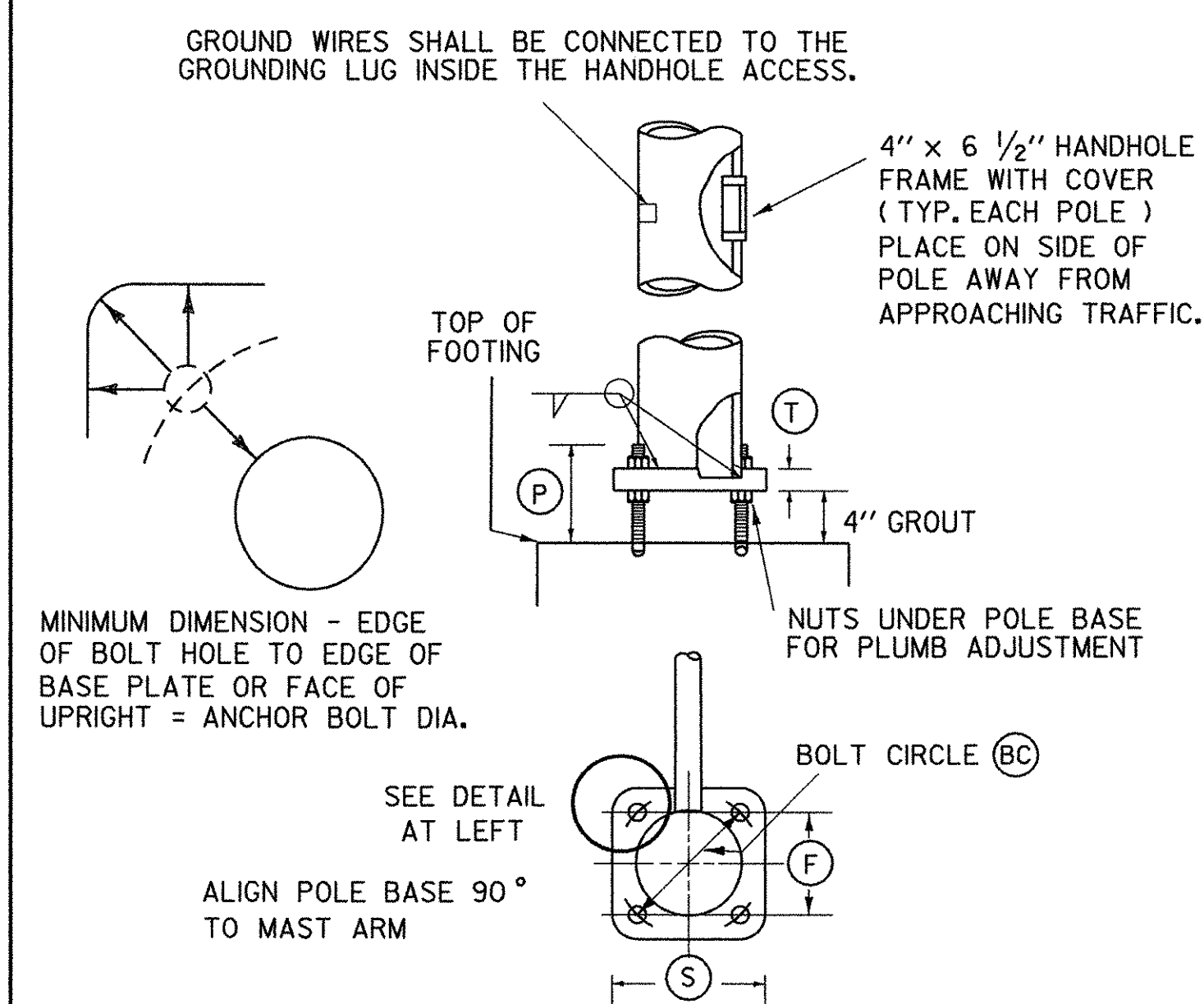
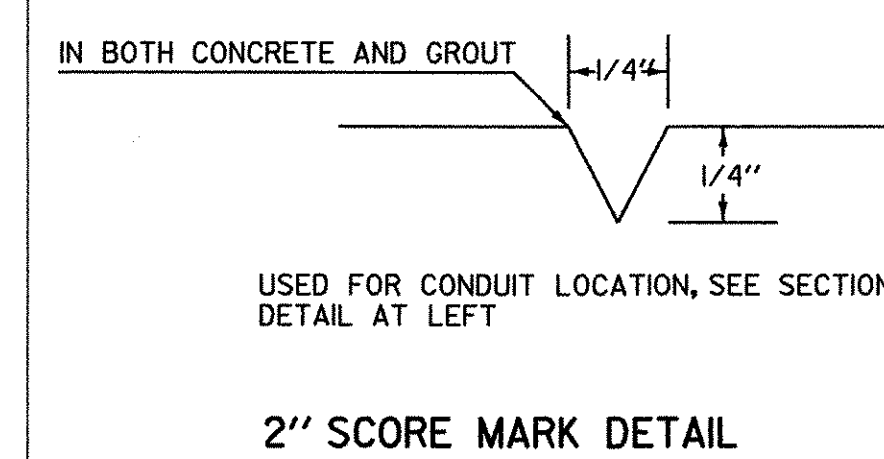
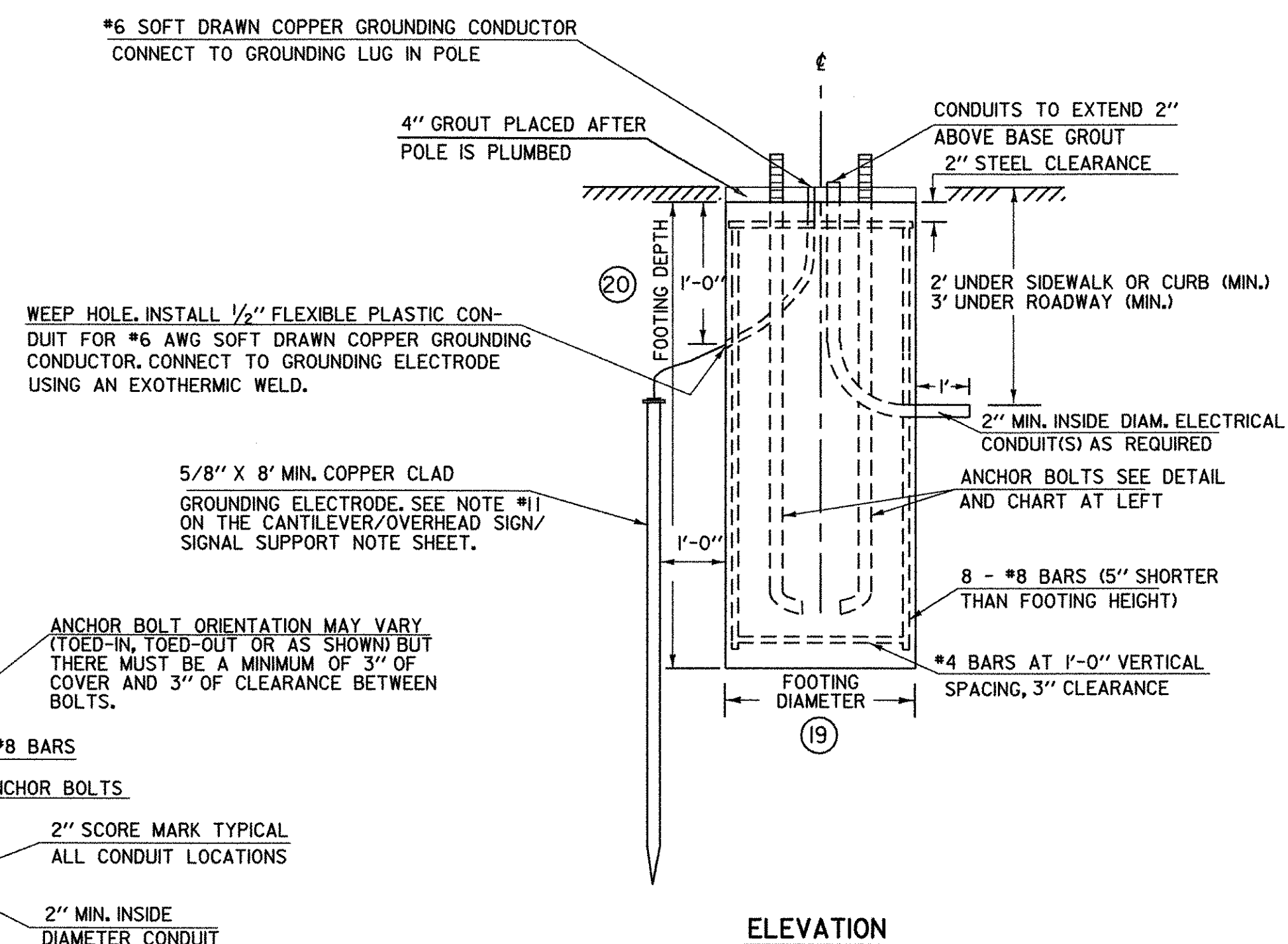
FILE NAME: /traf/02b240/tb240sig.dgn PLOT DATE: 02-NOV-2004
PROJECT LEADER: nyquist DRAWN BY: JFG
DESIGNED BY: CHECKED BY:
/traf/02b240/tb240xm2.1 SHEET 15 OF 37



ANCHOR BOLT DETAIL		
SIZE	L(IN)	T(IN)
1- 1/4" X 48"	42	8
1- 1/2" X 60"	54	9
1- 3/4" X 90"	84	9
2" X 96"	96	9



CANTILEVER FOOTING DETAIL
(SPREAD FOOTINGS OR PILES ARE OPTIONAL)

[illegible]

NOTE:
DETAILS
NTS

SINGLE MAST ARM CANTILEVER / FOOTING DETAIL SHEET

PLOTTED: 06-AUG-2004
LAST REVISED 8/15/95

PREPARED BY lfg DATE JAN '04
CHECKED BY _____ DATE _____
DESIGN SUPERVISOR nyquist DATE _____
PROJ.

CLARENDON
NHG SGNL (24)

TRAFFIC SHEET NO. _____ OF _____
SHEET 16 OF 37 SHEETS

Scan fids

TRAFFIC SIGNAL NOTES

A. NEW EQUIPMENT

- ALL SIGNAL HEADS SHALL BE RIGIDLY MOUNTED ON CANTILEVER ARMS AND SHALL BE BLACK POLYCARBONATE. ALL LENSES SHALL BE LED'S WITH A VISIBLE BEAM SPREAD OF EIGHTY DEGREES OFF-AXIS. ALL SIGNAL HEADS SHALL INCLUDE DISCONNECT HANGERS (WHERE NEEDED), AND BACKPLATES SHALL BE INCLUDED AS SPECIFIED ON THE PLANS.
- THE CONTROLLER SHALL BE ECONOLITE BRAND, MODEL ASC/2S-2100 (TS-2 TYPE 2). THE ECONOLITE GROUND MOUNTED CABINET SHALL BE TYPE P44 WITH A BASE EXTENSION.
- A DISCONNECT BREAKER FOR EACH CIRCUIT SHALL BE INSTALLED IN A RAINPROOF (NEMA 3R) LOCKED CABINET ON A STANCHION. CONSIDER USING OPTION *2 ON STD. E-175.
- THE CONTROLLER CABINET SHALL BE EQUIPPED WITH A PULL-OUT SHELF CAPABLE OF SUPPORTING A LAPTOP COMPUTER.

B. SIGNAL OPERATION

- SWITCH-OVER FROM EXISTING TO REPLACEMENT SIGNALS SHALL NOT BE DONE DURING PEAK TRAFFIC PERIODS. UNIFORMED TRAFFIC OFFICERS SHALL CONTROL TRAFFIC DURING SWITCH-OVER.
- THE SIGNAL SHALL DWELL ON THE US 7 MOVEMENT (PHASE 2 & 6).
- THE US 7 PHASE (2 & 6) SHALL BE USED FOR THE START-UP PHASE FOLLOWING A FLASH OPERATION, IF USED. ALL PHASES WILL START ON ALL RED INDICATION FOR FIVE SECONDS.

C. JUNCTION /PULL BOXES

- JUNCTION/PULL BOXES ARE DETAILED ON STD E-173. MINIMUM JUNCTION BOX SIZE SHALL BE 18'' X 12'', OR LARGER AS REQUIRED BY THE ELECTRICAL CODE.
- THE LOGO ON PULLBOXES/JUNCTION BOXES SHALL BE "SIGNAL".
- POLYMER CONCRETE & REINFORCED FIBERGLASS UL LISTED PULL BOXES SHALL BE INSTALLED WITH HEAVY DUTY COVERS.

D. TRAFFIC SIGNAL CONDUIT

- ALL TRAFFIC SIGNAL CONDUIT SHALL BE PVC.
- MINIMUM CONDUIT SIZE SHALL BE:
1-1/2'' FOR INTERCONNECT CABLE AND LOOP WIRE.
2'' FOR SHIELDED LEAD-IN CABLE, SIGNAL CABLE, POWER CABLE AND ALL OTHERS, UNLESS SPECIFIED OTHERWISE ON THE PLANS.
SEE CHART ON STD E-172 FOR DESIGN VALUES.
- THE OPEN CUT FOR BITUMINOUS CONCRETE PAVEMENT AT 175+75 LT - 176+77 LT REQUIRED TO PLACE THE 8' ELECTRICAL CONDUIT SLEEVE SHALL BE PERFORMED USING THE VERMONT STANDARD SHEET D-20. A SAWCUT SHALL BE PERFORMED IN THE EXISTING PAVEMENT SURFACE PRIOR TO EXCAVATION. PAYMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 490.30. THE BITUMINOUS CONCRETE PAVEMENT SHALL BE PLACED SUBSEQUENT TO THE INSTALLATION OF THE 8' ELECTRICAL SLEEVE AND BACKFILL.

1-1/2 '' WEARING COURSE, TYPE III-S; LEVELING COURSE, TYPE III-S OR IV-S (AS DIRECTED BY RESIDENT ENGINEER)
4'' BINDER COURSE, TYPE III-S OR IV-S (AS DIRECTED BY RESIDENT ENGINEER)
3'' BASE COURSE TYPE I-S
- WHEN CONDUIT IS PLACED BELOW THE ROADWAY OR ACROSS SIDE ROADS, IT SHALL BE PLACED IN A PVC ELECTRICAL CONDUIT SLEEVE, SIZE AS SHOWN ON THE PLANS (8' MINIMUM).

E. STREET LIGHTING

- MAST ARMS *1 AND *2 SHALL HAVE A 250 WATT HIGH PRESSURE SODIUM LUMINAIRE AS SHOWN ON THE PLANS, INSTALLED WITH A 34' +/- MOUNTING HEIGHT ABOVE THE EDGE OF PAVEMENT WITH 15' ARM. THE LUMINAIRE SHALL HAVE THE MEDIUM CUTOFF DISTRIBUTION SHOWN SHEET 19. ARM ORIENTATION IS SHOWN ON SHEET 18.
- PAYMENT IS INCIDENTAL TO ITEM #678.15

F. VEHICLE LOOP DETECTORS

- SEE STANDARD E-172. LOOPS SHALL EXTEND 5 FEET AHEAD OF STOP BAR UNLESS OTHERWISE NOTED ON THE PLANS.

G. GENERAL

- THE CONTRACTORS SHALL ACQUIRE ALL NECESSARY PERMITS AND MAKE ALL NECESSARY ARRANGEMENTS WITH THE UTILITY COMPANY TO PROVIDE A PERMANENT POWER SUPPLY TO THE SIGNAL AND STREET LIGHTING EQUIPMENT. IF APPLICABLE, THE ROUTING OF POWER TO THE INTERSECTION SHALL BE SUCH THAT THE STATE HAS FULL RESPONSIBILITY FROM THE TRANSFORMER THROUGH THE SIGNAL. NO INTERVENING OWNERSHIP/RESPONSIBILITY SHALL BE ALLOWED.
- AN ID PLAQUE AS DETAILED ON SHEET 19 SHALL BE AFFIXED TO THE CONTROLLER.
- THE CONTRACTOR SHALL COORDINATE WITH THE TELEPHONE COMPANY TO PROVIDE A PHONE DROP AT THE CONTROLLER LOCATION. COST OF PHONE DROP HOOKUP TO BE COVERED UNDER ITEM 678.15.

G. REMOVAL OF EXISTING EQUIPMENT

- EXISTING SIGNAL EQUIPMENT CONSISTING OF SIGNAL HEADS, THE CABINET AND ALL CONTROLLER COMPONENTS WITHIN, SHALL BE RETURNED BY THE CONTRACTOR TO THE TRAFFIC SHOP FACILITY ON THE BARRE/MONTPELIER ROAD WITHIN 48 HOURS OF REMOVAL. PAYMENT IS INCIDENTAL TO ITEM # 678.15.

LOCATION	WIRED CONDUIT				ELECTRICAL CONDUIT	DESCRIPTION
	1/2"	2"	2 1/2"	2"	2 1/2"	
POLE 703/5-1 TO STANCHION	-	105	-	-	-	POWER *
STANCHION - CONTROLLER	-	25	-	-	-	POWER *
ER - PB5	7	-	-	-	-	LOOPS 2A 2C
PB5 - PB4	176	-	-	-	-	LOOPS 2A 2C
ER - PB4	7	-	-	-	-	LOOPS 2B 2D
PB4 - PB3	-	243	-	-	-	LOOPS 2A 2B 2C 2D
ER - PB3	19	-	-	-	-	LOOP 4
PB3 - PB2	-	70	-	-	-	LOOPS 2A 2B 2C 2D 4
ER - PB6	6	-	-	-	-	LOOP 1
MA2 - PB6	7	-	-	-	-	POWER-SIGNAL
PB6 - PB2	122	-	-	-	-	POWER-SIGNAL LOOP 1
PB2 - PBI	15	81	-	-	-	POWER-SIGNAL, LOOPS 2A 2B 2C 2D 4
ER - PB8	19	-	-	-	-	LOOPS 6A 6C
PB8 - PB7	175	-	-	-	-	LOOPS 6A 6C
ER - PB7	16	-	-	-	-	LOOPS 6B 6D
PB7 - PBI	-	432	-	-	-	LOOPS 6A 6B 6C 6D
PBI - CONTROLLER	-	15	-	-	-	LOOPS 6A 6B 6C 6D POWER-SIGNAL LOOPS 2A 2B 2C 2D 4
ER - CONTROLLER	25	-	-	-	-	LOOP 8
SIGNAL BRDG/MAI - CONTROLLER	15	-	-	-	-	POWER - SIGNAL
SUBTOTALS	609	971	-			
ROUNDING	41	29	-			
TOTALS	650	1000	-	-		
NOTE: ER=EDGE OF ROAD PB= PULL BOX						

EQUIPMENT	ITEM NO.	UNIT	QUANTITY	
ELECTRICAL CONDUIT (2''), PVC	678.21	FT	50	EST.
VEHICLE LOOP DETECTORS	678.22	FT	1620	
WIRED CONDUIT (1-1/2''), PVC	678.23	FT	650	
WIRED CONDUIT (2''), PVC	678.23	FT	1000	
WIRED CONDUIT (2-1/2''), PVC	678.23	FT	100	EST.
ELECTRICAL WIRING	678.24	FT	100	
PULLBOX (SINGLE)	678.25	EA	8	
ELECTRICAL CONDUIT SLEEVE (8'')	678.30	FT	255	

LIST OF MAJOR EQUIPMENT	
EQUIPMENT ITEM - 678.15	QUANTITY
SIGNAL BRIDGE W/MAST ARM	2
POWER DROP STANCHION	1
NEW 12" TRAFFIC SIGNAL HEADS W/ TUNNEL VISORS, MOUNTING HARDWARE	
A. TWO-WAY 3-SEC./5.SEC	-
B. TWO-WAY 3-SEC.	-
C. ONE-WAY 5-SEC.	-
D. ONE-WAY 3-SEC.	10
D. THREE-WAY 3-SEC.	-
INTERSECTION CONTROLLER/CABINET	1
LUMINAIRE & BRACKET ARM (EACH)	2
REMOVAL OF EXISTING FLASHING BEACON	1

NOTE: Back plates to be installed on all heads

TRAFFIC SIGNAL NOTES

PROJECT:	Clarendon	PROJECT NO.:	SGNL 024
DESIGN FILE NAME: /traf/02b240/tb240sig.dgn		PLOT DATE: 05-APR-2005	
IPARM FILE NAME: /traf/02b240/tb240not.i		SURVEY DATE:	
SURVEYED BY:		DRAWN BY: Jfg	
SQUAD LEADER: nyquist		SHEET: 17 OF 37	

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S ''STANDARD SPECIFICATIONS FOR CONSTRUCTION'', DATED 2001, WITH CURRENT MODIFICATIONS.
2. OVERHEAD SIGN/SIGNAL SUPPORTS SHALL CONFORM TO AASHTO'S PUBLICATION ENTITLED ''STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS'', DATED 2001 OR ITS LATEST REVISION.
3. ADDITIONAL DESIGN CRITERIA ARE AS FOLLOWS:

CONCRETE $f_c = 1400$ PSI $f'_c = 3500$ PSI
REINFORCING $f_s = 24000$ PSI (GRADE 60)
FOOTING SOIL PRESSURE : 3000 PSF (MAXIMUM)
WIND LOAD (BASED ON PEAK 3-SECOND GUSTS) AND ICE LOAD PER 2001 AASHTO ''STANDARD SPECIFICATIONS''

2001 AASHTO SPECIFICATIONS	
CATEGORY 1	
CATEGORY 2	
CATEGORY 3	X
GALLOPING	
VORTEX SHEDDING	X
NATURAL WIND GUST	X
TRUCK INDUCED GUSTS	X

(X) DENOTES CATAGORIES TO BE USED

4. ANCHOR BOLTS

FOUR STAINLESS STEEL ANCHOR BOLTS WITH TWO HEXAGON NUTS, ONE WASHER AND ONE LOCK WASHER PER BOLT SHALL BE FURNISHED WITH EACH POLE. ANCHOR BOLT PLATES, WHEN USED, SHALL ALSO BE STAINLESS STEEL. SEE SUB-SECTION 714.09.
5. FLANGE BOLTS

ALL FLANGE BOLTS AND HEX NUTS SHALL BE HIGH STRENGTH STEEL AND SHALL CONFORM TO AASHTO M 164, TYPE I, GALVANIZED IN ACCORDANCE W AASHTO M 232M/M 232.
THE FLANGE BOLTS SHALL BE CAPABLE OF RESISTING 133% OF THE FULL DESIGN STRESS OF THE TUBE AT ITS YIELD STRENGTH STRESS.
6. HORIZONTAL AND VERTICAL MEMBERS

STEEL TUBES SHALL BE FORMED AND WELDED WITH ONE CONTINUOUS LONGITUDINAL WELD ONLY. AFTER FORMING AND WELDING THEY SHALL BE COLD ROLLED TO ENSURE UNIFORMITY OF SIZE AND SMOOTHNESS OF WELD. THEY SHALL HAVE A MINIMUM YIELD STRENGTH OF 48,000 PSI. THERE SHALL BE NO TRANSVERSE WELDING EXCEPT AT THE FLANGE CONNECTIONS AND POLE BASE PLATES, WHERE THE TUBES SHALL TELESCOPE THE FLANGES AND PLATES AND BE CONTINUOUSLY WELDED BOTH SIDES INSIDE AND OUT TO WITHSTAND THE FULL TRANSFER OF THE BENDING STRENGTH TO THE BOLTS. OPTIONALLY, THE MEMBERS MAY BE A SERIES OF TWO OR THREE DIFFERENT DIAMETER PIPES WELDED TOGETHER.
7. GALVANIZING

ALL STEEL COMPONENTS, EXCEPT CONCRETE REINFORCING AND STAINLESS STEEL HARDWARE, ARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION. THE ASSEMBLIES SHALL BE DESIGNED AND FABRICATED TO PERMIT GALVANIZING ON ALL INTERIOR AND EXTERIOR SURFACES AND SHALL BE FREE OF POCKETS AND OTHER STRUCTURAL OBSTRUCTIONS THAT WILL NOT PERMIT PROPER DEPOSITION OF ZINC COATING. GALVANIZING SHALL BE IN ACCORDANCE WITH ASSHTO M IIIM/MIII AND M232M/M232.
8. WELDING

A. ALL DESIGN DETAILS, WORKMANSHIP, PROCEDURES AND INSPECTION SHALL CONFORM WITH SUB-SECTION 506.10.

B. ALL WELDS SHALL BE AT LEAST AS STRONG AS THE MATERIAL(S) BEING WELDED.
9. FOOTINGS

A. FOOTINGS SHALL BE DESIGNED TO RESIST LOADS EQUAL TO, OR GREATER THAN, THE MAXIMUM LOADS THAT THE POLE IS DESIGNED FOR.

B. THREE TYPES OF FOUNDATIONS, AS OUTLINED IN AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2) SECTION 13 SHALL BE ALLOWED

1. DRILLED SHAFTS
2. SPREAD FOOTINGS
3. PILES.

- C. DRILLED SHAFT FOOTINGS SHALL BE POURED IN DRILLED SHAFTS AGAINST UNDISTURBED MATERIAL. THE TOP TWO FEET OF SOIL SHALL BE NEGLECTED FOR DESIGN PURPOSES. THE MAXIMUM FOOTING DIAMETER SHALL BE THREE FEET AND THE MAXIMUM DEPTH SHALL BE TWELVE FEET. IF THESE LIMITS ARE EXCEEDED OR IF THE SOIL IS NOT CAPABLE OF A BEARING PRESSURE OF 3000 PSF, A SPREAD FOOTING SHALL BE USED.
- D. AS AN ALTERNATIVE TO THE DRILLED HOLES, FOOTINGS MAY BE POURED IN EXCAVATED HOLES USING THE PROPER FORMS, WHICH MUST BE REMOVED. THE EXCAVATED HOLES SHALL BE AT LEAST TWO FEET CLEAR OF THE FOOTING SIDES AND ONE FOOT DEEPER THAN THE FOOTING. CARE SHALL BE TAKEN TO AVOID EXCAVATING AROUND THE TOP OF THE FOOTING. THE BACKFILL MATERIAL SHALL BE COMPACTED AS DESCRIBED IN SUB-SECTION 204.12. DESIGN LIMITS AS FOR AUGERED FOOTING APPLY.
- E. WHEN THE DESIGN DEPTH OF A FOOTING CANNOT BE OBTAINED DUE TO UNFORSEEN FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OBTAIN A REVISED FOOTING DETAIL FROM THE ENGINEER.
- F. ANY BACKFILL PLACED ADJACENT TO THE FOOTING SHALL BE GRANULAR MATERIAL MEETING THE REQUIREMENTS FOR GRANULAR BACKFILL FOR STRUCTURES, SUB-SECTION 704.08. CONCRETE FOR FOOTING SHALL CONFORM TO THE REQUIREMENTS OF CONCRETE, CLASS B, SECTION 501, STRUCTURAL CONCRETE. GROUT MATERIAL SHALL BE NON-SHRINKING MORTAR CONFORMING TO SUB-SECTION 707.03 (MORTAR TYPE IV).
- G. SIGNALS/SIGNS SHALL BE INSTALLED AND LEVELED AND POLES SHALL BE PLUMB PRIOR TO PLACING GROUT UNDER POLE BASE.
10. SHOP DRAWINGS (6 COPIES OF EACH) SHALL BE SUBMITTED TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STRUCTURES DIVISION FOR APPROVAL PRIOR TO FABRICATION. THE SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION:

A. DETAILED DRAWING OF EACH COMPONENT OF THE STRUCTURE.

B. MATERIAL SPECIFICATION FOR EACH COMPONENT OF THE STRUCTURE, EITHER BY COMPLETE SPECIFICATION OR REFERENCE TO APPLICABLE AASHTO AND ASTM STANDARDS.

C. NOTATION OF PROJECT NAME, PROJECT NUMBER, ROUTE NUMBER, AND STRUCTURE STATIONING (TO BE INCLUDED ON EACH SHEET).

D. DETAILS FOR LOCATION OF SIGNS/SIGNALS AND ATTACHMENT HARDWARE FOR THE SUPPORT STRUCTURE.

E. ALL ELEVATIONS AND DIMENSIONS NECESSARY TO PROVIDE A COMPLETE SET OF RECORD PLANS.

F. DEAD LOAD DEFLECTION AND CAMBER INFORMATION.

G. WELDING DETAILS AND PROCEDURES ARE REQUIRED FOR ALL WELDS. PROCEDURES SHALL BE SUBMITTED FOR APPROVAL WITH REFERENCE TO EACH WELD IDENTIFIED ON THE SHOP DRAWINGS. (SEE SUB-SECTION 506.10)
11. EACH OVERHEAD TRAFFIC SIGNAL/SIGN SUPPORT SHALL BE GROUNDED. THE GROUND SHALL CONSIST OF:

A) AN INTERNAL GROUND LUG OPPOSITE THE HAND HOLE.

B) A #6 (MIN.) SOFT DRAWN COPPER GROUNDING ELECTRODE CONDUCTOR.

C) A 5/8' X 8' (MIN.) COPPER CLAD GROUNDING ELECTRODE. THE RESISTANCE TO GROUND SHALL BE 25 OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES MAY BE REQUIRED (MINIMUM SPACING SHALL BE 6').

WHEN A POWER SERVICE, METER AND DISCONNECT ARE ATTACHED TO A POLE, THERE SHALL BE A CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE METER AND DISCONNECT WHICH MAY RUN INTERNAL TO THE UPRIGHT, THROUGH THE 1/2" FLEXIBLE TUBING IN THE CONCRETE BASE TO THE REQUIRED GROUNDING ELECTRODE(S). THE GROUNDING ELECTRODE CONDUCTOR FROM THE POLE GROUNDING LUG, CONTROLLER CABINET AND/OR LUMINAIRE MAY ATTACH TO THIS CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT. THE CONTRACTOR SHALL PERFORM A RESISTANCE TO GROUND TEST ON THE CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT AND PROVIDE A WRITTEN STATEMENT TO THE AREA ELECTRICAL INSPECTOR THAT THE GROUNDING ELECTRODE CONDUCTOR IS CONTINUOUS FROM THE SERVICE METER AND DISCONNECT AND THE RESISTANCE TO GROUND IS 25 OHMS OR LESS.

12. THE COST OF SIGNAL/SIGN SUPPORTS, INCLUDING ALL HARDWARE, SIGN BRACKETS, FOOTINGS AND LUMINAIRE ARMS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 677.12, 677.13 OR 678.15, WHICHEVER IS APPLICABLE. THESE COMPONENTS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF SECTIONS 677, 678, AND 679.
13. HORIZONTAL MEMBERS SHALL BE CAMBERED AND THE VERTICAL POLES BACKRAKED (WHERE APPLICABLE) TO THE ANTICIPATED DEAD LOAD DEFLECTION PLUS THE CAMBER, IF ANY, SPECIFIED ON THE PLANS.
14. AN EQUIVALENT ALTERNATE DESIGN MAY BE SUBSTITUTED FOR THE DETAILS AND MATERIALS SHOWN.
15. THE DETAILS OF DESIGN FOR THE STRUCTURE AND FOOTINGS ARE TO BE SUPPLIED BY THE CONTRACTOR AND/OR BY THE MANUFACTURER. THE STRUCTURE SHALL BE DESIGNED TO RESIST THE MAXIMUM LOADING AS OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2). ALL DETAILS OF THE STRUCTURE AND THE FOOTING SHALL BE CHECKED AND STAMPED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF VERMONT PRIOR TO SUBMITTAL OF THE SHOP DRAWINGS TO THE VERMONT AGENCY OF TRANSPORTATION.
16. IN ADDITION TO THE SHOP DRAWINGS OUTLINED IN NOTE 10 THE CONTRACTOR SHALL SUBMIT ALL DESIGN CALCULATIONS TO THE VERMONT AGENCY OF TRANSPORTATION, STRUCTURES DIVISION, SHOWING THE FOLLOWING INFORMATION FOR EACH OF THE VERTICAL AND HORIZONTAL COMPONENTS OF THE STRUCTURE AND FOOTING:

A. THE DESIGN AXIAL AND SHEAR FORCES AND BENDING AND TORSIONAL MOMENTS.

B. THE DESIGN AXIAL, BENDING AND SHEAR STRESSES AND THE COMBINED STRESS RATIO.

C. VIBRATION AND FATIGUE CALCULATIONS AS SET FORTH IN SECTION 11 OF THE AASHTO PUBLICATION REFERENCED IN NOTE 2.

D. THE ALLOWABLE AXIAL, BENDING, AND SHEAR STRESSES.

E. ITEMS A,B,D - SHALL BE SHOWN FOR EACH OF THE GROUP LOADINGS (I, II, III) AND FOR THE BASIC WIND LOAD APPLIED TO THE TWO CASES OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2) SECTION 3.

F. FAILURE TO SUPPLY THE PROPER DESIGN INFORMATION SHALL BE CAUSE FOR REJECTION OF THE STRUCTURE.

G. A MINIMUM OF FOUR (4) WEEKS SHALL BE REQUIRED FOR REVIEW BY THE VERMONT AGENCY OF TRANSPORTATION, STRUCTURES DIVISION.
17. THE CONTRACTOR/MANUFACTURER SHALL BE RESPONSIBLE FOR COMPLETION OF THE STRUCTURE AND FOOTING DATA ON THE DETAIL SHEET(S).
18. FOR INSTALLATIONS WHERE BOTH ''EXISTING'' AND ''FUTURE'' CONDITIONS ARE SHOWN, THE SUPPORTS SHALL BE DESIGNED FOR THE MORE SEVERE OF THE TWO LOADING CONDITIONS. THE INFORMATION OUTLINED IN NOTE 16 ABOVE SHALL BE PROVIDED FOR BOTH THE LOADING CONDITIONS.
19. THE TRAFFIC SIGNALS SHALL BE MOUNTED TO THE ARM OR POLE USING A FIXED MOUNT SYSTEM AS SHOWN ON THE MAST ARM CROSS SECTION SHEET.
20. BASE PLATES SHALL BE STAMPED WITH THE VERTICAL POLE DIAMETER, HEIGHT, YIELD STRENGTH, GAUGE AND THE HORIZONTAL MEMBER DIAMETER, LENGTH, YIELD STRENGTH, GAUGE. ALTERNATELY, THE INFORMATION MAY BE STAMPED ON A METAL TAG RIVETED TO THE POLE NEAR THE HANDHOLE.

CANTILEVER / OVERHEAD
SIGN / SIGNAL
SUPPORT NOTES

02-MAR-2005 tb240sig.dgn tb240gtr.d

PREPARED BY jfg DATE 1/2004
CHECKED BY DATE
DESIGN SUPERVISOR xyquist DATE
PROJ. **Clarendon
SGNL 024**

SHEET 18 OF 37 SHEETS

GENERAL ELECTRIC
PHOTOMETRIC DATA
LIGHTING SYSTEMS BUSINESS DEPARTMENT
HENDERSONVILLE, N. C. U.S.A. 28739

PER 1000 LAMP LUMENS

LUMINAIRE

M-400R2 CUTOFF
REFLECTOR 35-232563-01
REFRACTOR FLAT GLASS
SOCKET POSITION 1A

LAMP

200-400 WATT HPS
LUP200, 250, 310 OR 400
S86, S50, S67 OR S51

ANSI/IES TYPE 1972

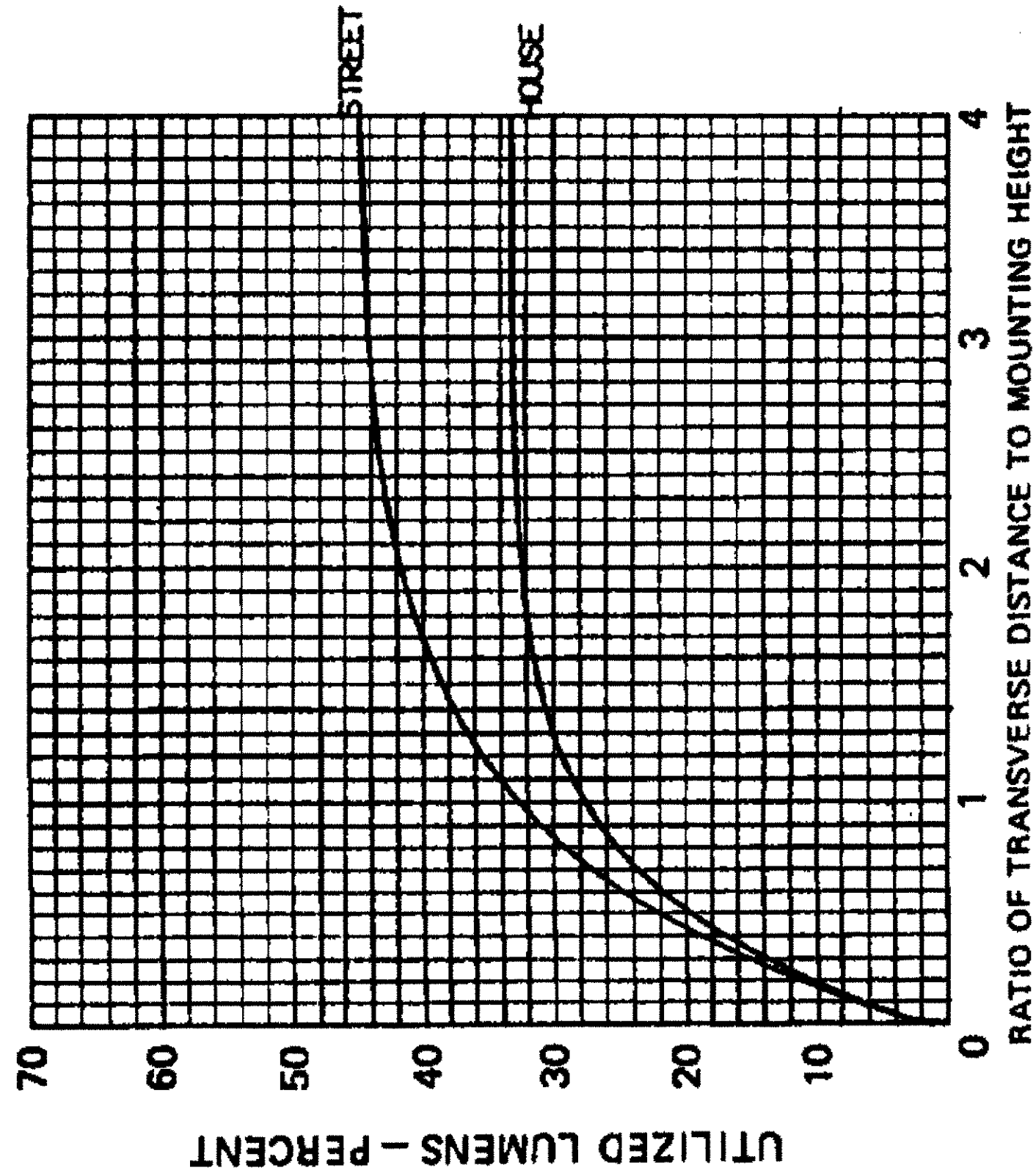
MEDIUM CUT-OFF III

CIE TYPE

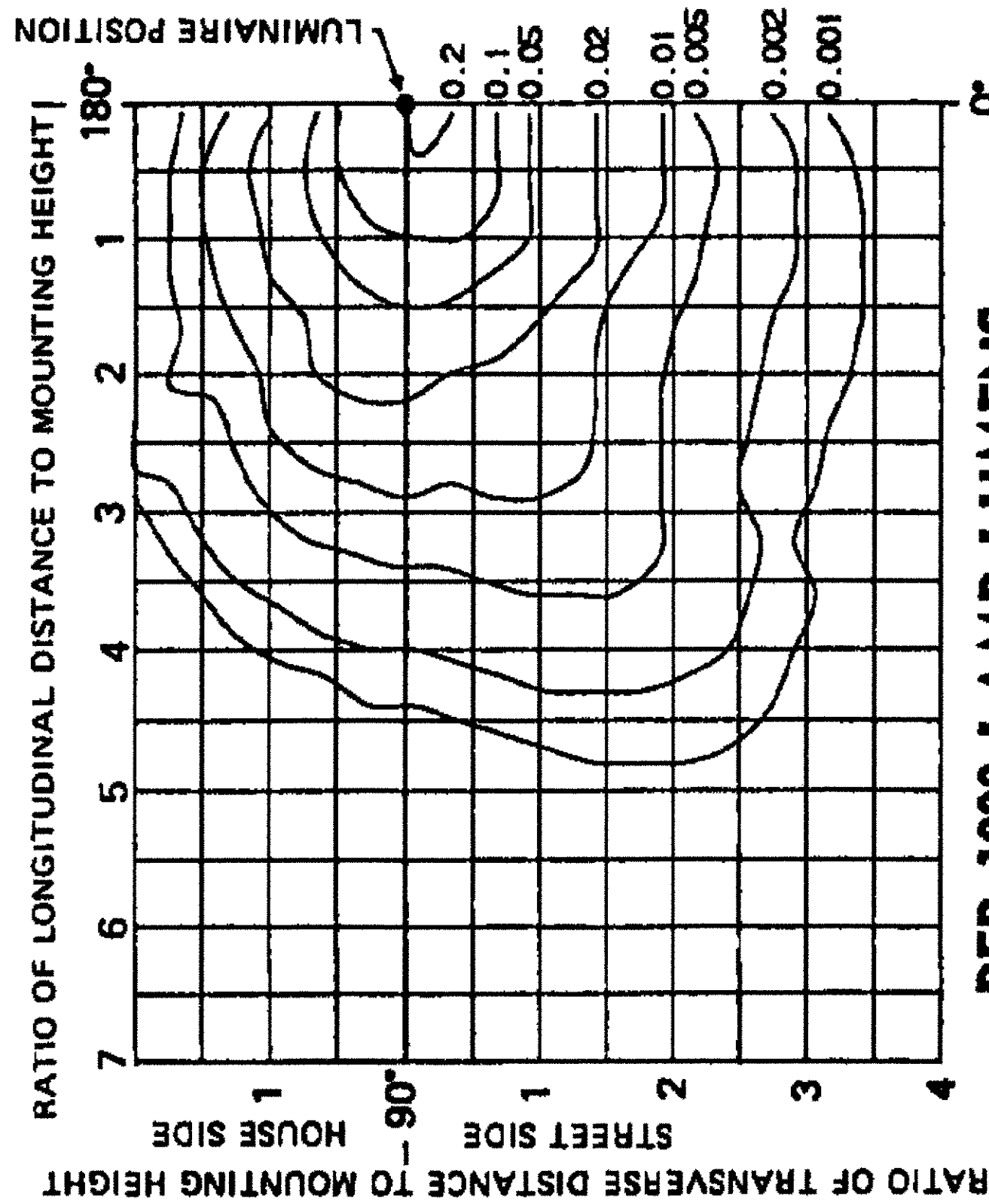
SEMI CUT-OFF



UTILIZATION CURVE



ISOFOOTCANDLE CURVES



PER 1000 LAMP LUMENS

NOTE: 1 FOOTCANDLE = 10.76 LUX

MOUNTING HEIGHT CORRECTION FACTORS FOR OTHER THAN 30 FEET

USE TABLE BELOW OR FACTOR = (ACTUAL MH)² / 900

MOUNTING HEIGHT - FEET	20	25	30	35	40	45	50
FACTOR	0.25	0.44	1.00	0.73	0.56	0.44	0.36

GENERAL INFORMATION

TEST DISTANCE	25.0 FEET
MAX CANDELA	311.2
MAX CONE	72.5
MAX VERTICAL PLANE	67.5/ 282.5
MAX CANDELA AT 90°	4.1
MAX CANDELA AT 80°	83.6
NADIR FOOTCANDLES	0.2232
NADIR CANDELA	200.9

MULTIPLY ALL LUMEN, CANDELA, AND FOOTCANDLE VALUES BY THIS RATIO

RATIO = ACTUAL LAMP LUMENS / 1000

PHOTOMETRIC TEST IN ACCORDANCE WITH IES GUIDE

LIGHT FLUX VALUES

	LUMENS	PERCENT OF LAMP
DOWNWARD STREET SIDE	444	44.4
UPWARD STREET SIDE	0	0.0
DOWNWARD HOUSE SIDE	330	33.0
UPWARD HOUSE SIDE	0	0.0
TOTAL	774	77.4

TESTED	DATE
APPROVED	DATE

DRAWING NO.	SHEET	REVISION
35-177356	1	

PROPERTY OF :
VT. AGENCY OF TRANS.
MAINTENANCE DIV.

IN EMERGENCY CALL :
DIST. TRANS. OFFICE

802-786-5826

NIGHTS & WEEKENDS : 802-250-0163

INTERSECTION NO. MS-302

PROJECT NAME: CLARENDON
PROJECT NUMBER: NHG SGNL (24)

FILE NAME: tb240stg.dgn
PROJECT LEADER: nyquist
DESIGNED BY: jfg
soan tb240 fl
PLOT DATE: 28-OCT-2004
DRAWN BY:
CHECKED BY:
SHEET 19 OF 37

4" WHITE LINE			
NB 7	170+00.0	RT	VT 103 99+74.0 LT (SOLID EDGE LINE)
NB 7	170+50.0	RT	NB 7 172+50.0 RT (DOTTED)
NB 7	172+50.0	RT	NB 7 174+00.0 RT (DASHED)
NB 7	174+00.0	RT	NB 7 175+00.0 RT (SOLID)
NB 7	170+00.0	CL	NB 7 175+62.5 CL (DASHED)
NB 7	170+00.0	LT	NB 7 172+50.0 LT (DOTTED)
NB 7	172+50.0	LT	NB 7 174+00.0 LT (DASHED)
NB 7	174+00.0	LT	NB 7 175+62.5 LT (SOLID)
NB 7	176+48.0	RT	NB 7 177+50.0 RT (SOLID EDGE LINE)
NB 7	176+64.0	CL	NB 7 177+50.0 CL (DASHED)
NB 7	175+00.0	LT	NB 7 175+50.0 LT (DASHED)
NB 7	175+00.0	LT	SQUIRE 19+84.5 LT (SOLID EDGE LINE)
SQUIRE	19+84.5	RT	NB 7 177+50.0 LT (SOLID EDGE LINE)
NB 7	176+85.0	LT	NB 7 177+50.0 LT (DASHED)
NB 7	176+85.0	LT	NB 7 177+50.0 LT (SOLID)
VT103	102+50.0	LT	VT103 103+23.0 LT (SOLID)
VT103	101+75.0	LT	VT103 102+50.0 LT (DASHED)
VT103	103+25.0	RT	VT103 104+07.0 RT (SOLID)

US 7 NB 176+33.97=
VT 103 104+16.57

US 7 NB 176+05.55=
SQUIRE 18+00.00

4" YELLOW LINE			
NB 7	170+00.0	LT	NB 7 175+00.0 LT (SOLID)
NB 7	177+50.0	LT	NB 7 177+50.0 LT (SOLID)
VT103	103+25.0	RT	VT103 103+84.0 RT (SOLID)
VT103	103+84.0	RT	VT103 103+84.0 LT (SOLID-DBL)
VT103	103+84.0	LT	VT103 99+75.0 LT (SOLID)

12" WHITE LINE			
NB 7	175+39.0	RT	NB 7 175+78.0 RT (SOLID)
NB 7	175+78.0	RT	NB 7 175+83.0 RT (SOLID)
NB 7	175+00.0	RT	NB 7 176+10.0 RT (ISLAND DIAGONALS)

6" WHITE LINE			
NB 7	175+83.0	RT	NB 7 176+08.0 RT (SOLID)
VT103	103+25.0	LT	VT103 104+00.0 LT (SOLID)

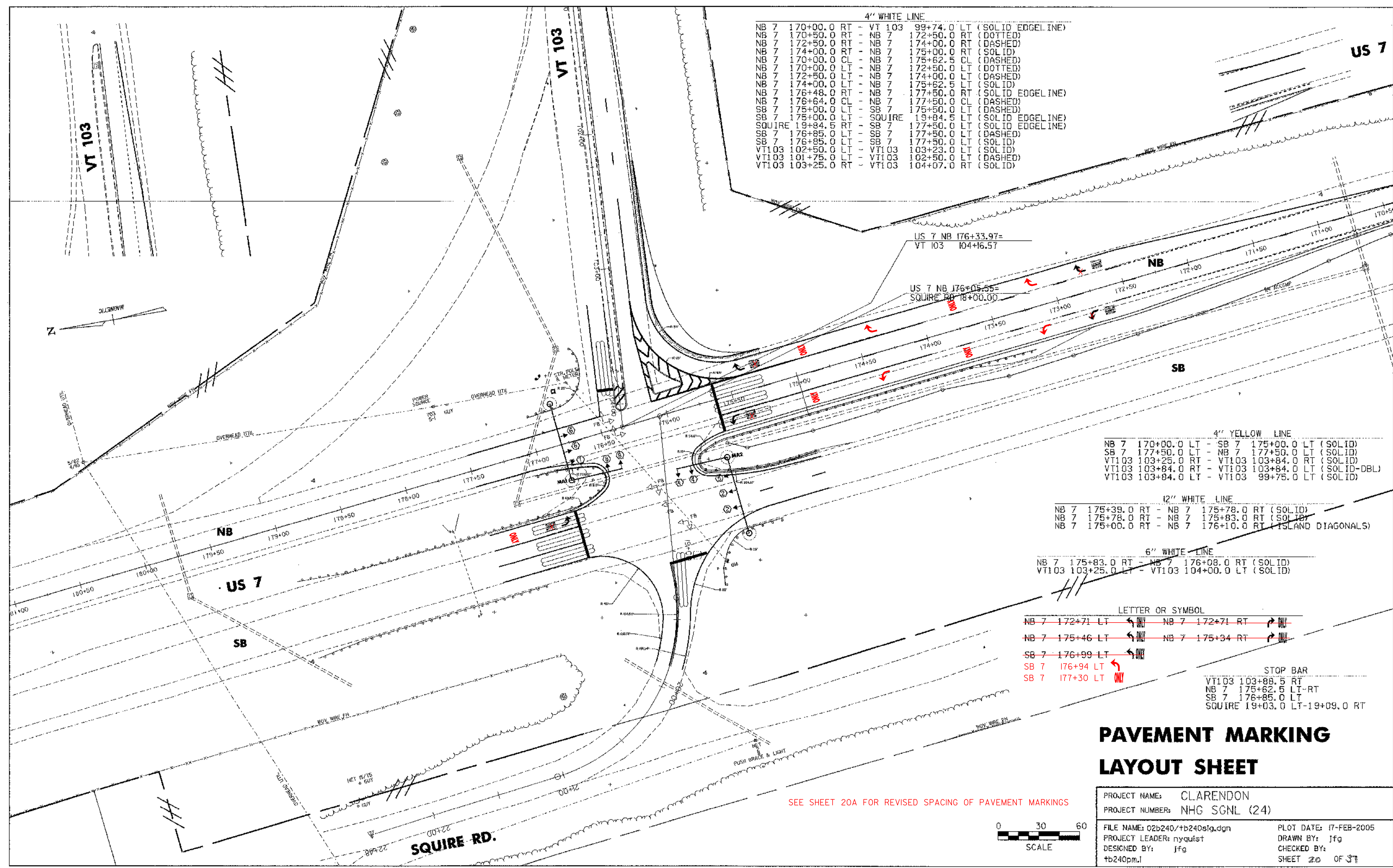
LETTER OR SYMBOL			
NB 7	172+71	LT	NB 7 172+71 RT
NB 7	175+46	LT	NB 7 175+34 RT
NB 7	176+99	LT	
NB 7	176+94	LT	
NB 7	177+30	LT	

STOP BAR	
VT103	103+88.5 RT
NB 7	175+62.5 LT-RT
NB 7	176+85.0 LT
SQUIRE	19+03.0 LT-19+09.0 RT

PAVEMENT MARKING LAYOUT SHEET

PROJECT NAME:	CLARENDON	PLOT DATE:	17-FEB-2005
PROJECT NUMBER:	NHG SGNL (24)	DRAWN BY:	Jfg
FILE NAME:	02b240/tb240slg.dgn	CHECKED BY:	
PROJECT LEADER:	nyquist	SHEET	20 OF 37
DESIGNED BY:	Jfg		
	tb240pm.l		

SEE SHEET 20A FOR REVISED SPACING OF PAVEMENT MARKINGS



CLARENDON NHG SGNL (24)
WRITE ORDER #11 ATTACHMENT

STOP BAR
NB 175+62.5 LT-RT

LETTER OR SYMBOL

NB 7 172+51 LT "ONLY"
NB 7 173+13 LT
NB 7 173+74 LT "ONLY"
NB 7 174+33 LT
NB 7 174+94 LT "ONLY"
NB 7 175+53 LT
NB 7 172+54 RT "ONLY"
NB 7 173+13 RT
NB 7 173+74 RT "ONLY"
NB 7 174+33 RT
NB 7 174+86 RT "ONLY"
NB 7 175+41 RT

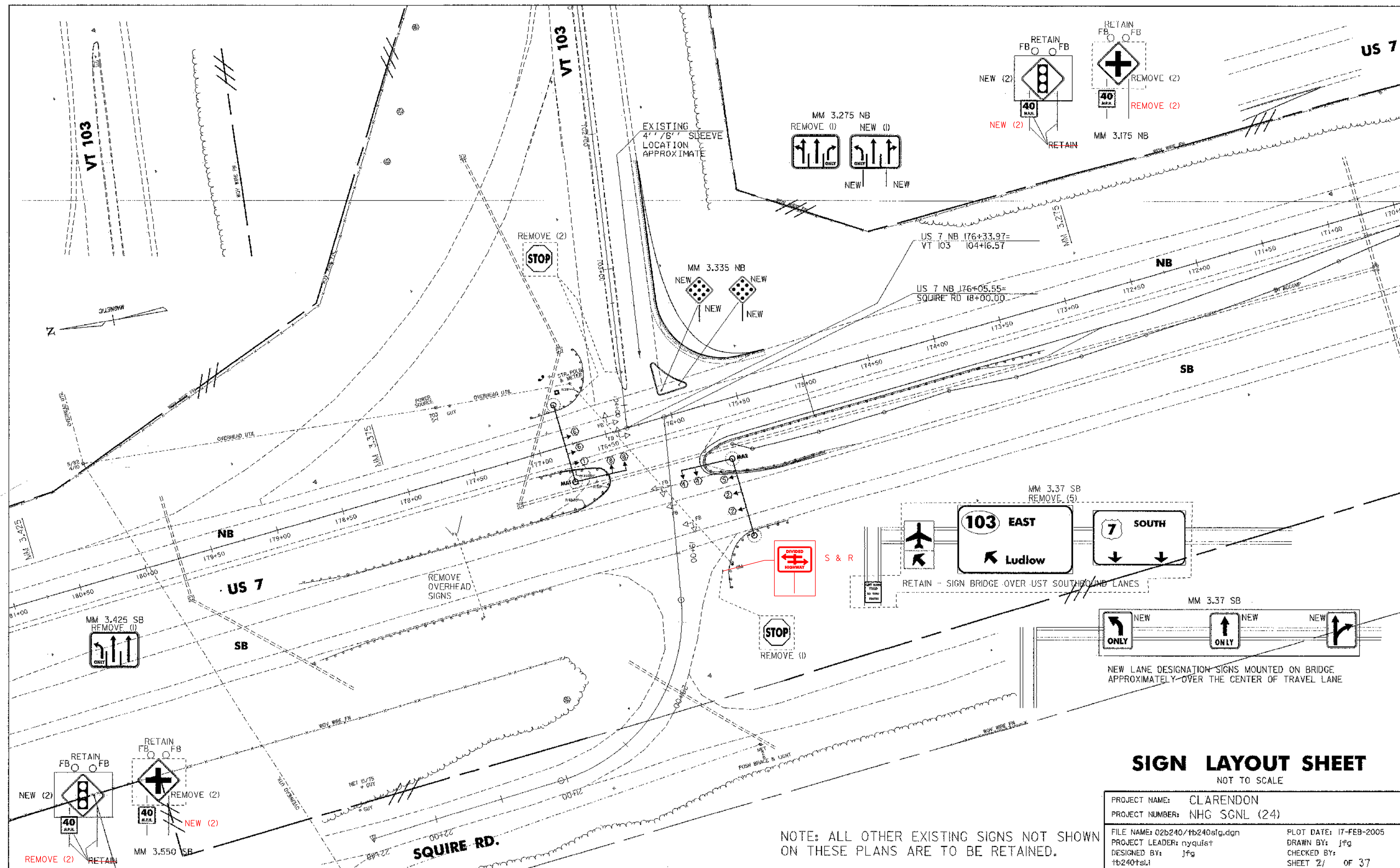
4" WHITE LINE
NB 7 172+50 - 175+00 RT (SOLID)
NB 7 172+50 - 175+62.5 LT (SOLID)

Changes Per WO #11
09-07-03
7D

← FULL WIDTH LANE AT 172+50 RT & LT

Changes Per
WO #11 (14) 09-07-05





STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST POST REMARKS		NO. OF POSTS	FLANGED CHANNEL			SQUARE STEEL (In)			TUBULAR ALUMINUM Ø (In)			TUBULAR STEEL Ø (In)			W-SHAPE STEEL				REMARKS	SIGN DETAIL		
		E A	WIDTH (In)	HEIGHT (In)	"A"	"B"	SALV SIGN	SALV TIS	1.12		2.0	3.0	1.75	2.0	2.5	3.0	4.0	4.0 MOD	FOUND- ATION	3.0	3.5	4.0	5.0	FTG. SIZE		WEIGHT		POST SIZE	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
																								24"	30"					
OPTION ITEMS																														
MM 3.550 SB LT & RT		X 2	48	48	16.0 32.0																							MOUNT ON EXISTING POST ASSEMBLY		E-152
MM 3.37 SB		3	36	48	36.0																							NEW LANE DESIGNATION SIGNS MOUNTED ON BRIDGE APPROXIMATELY OVER THE CENTER OF TRAVEL LANE		E-144
MM 3.335 NB		2	18	18	4.5					2	10 X 10	*																OPTION POST(S)		E-150
MM 3.275 NB		1	30	48	10.0					2	X	*																OPTION POST(S)		E-145B
MM 3.275 NB		1	30	60	12.5					2	14 14																			
MM 3.175 NB LT & RT		X 2	48	48	16.0 32.0																							MOUNT ON EXISTING POST ASSEMBLY		E-152
VT 103 102+50 LT		1	36	36	9.0					2	16 16																			
MM 3.550 SB LT & RT		2	24	24	8																									
MM 3.175 NB LT & RT		2	24	24	8																									
SQUIRE RD STA 19+00 LT																														
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."																														
TOTALS																														

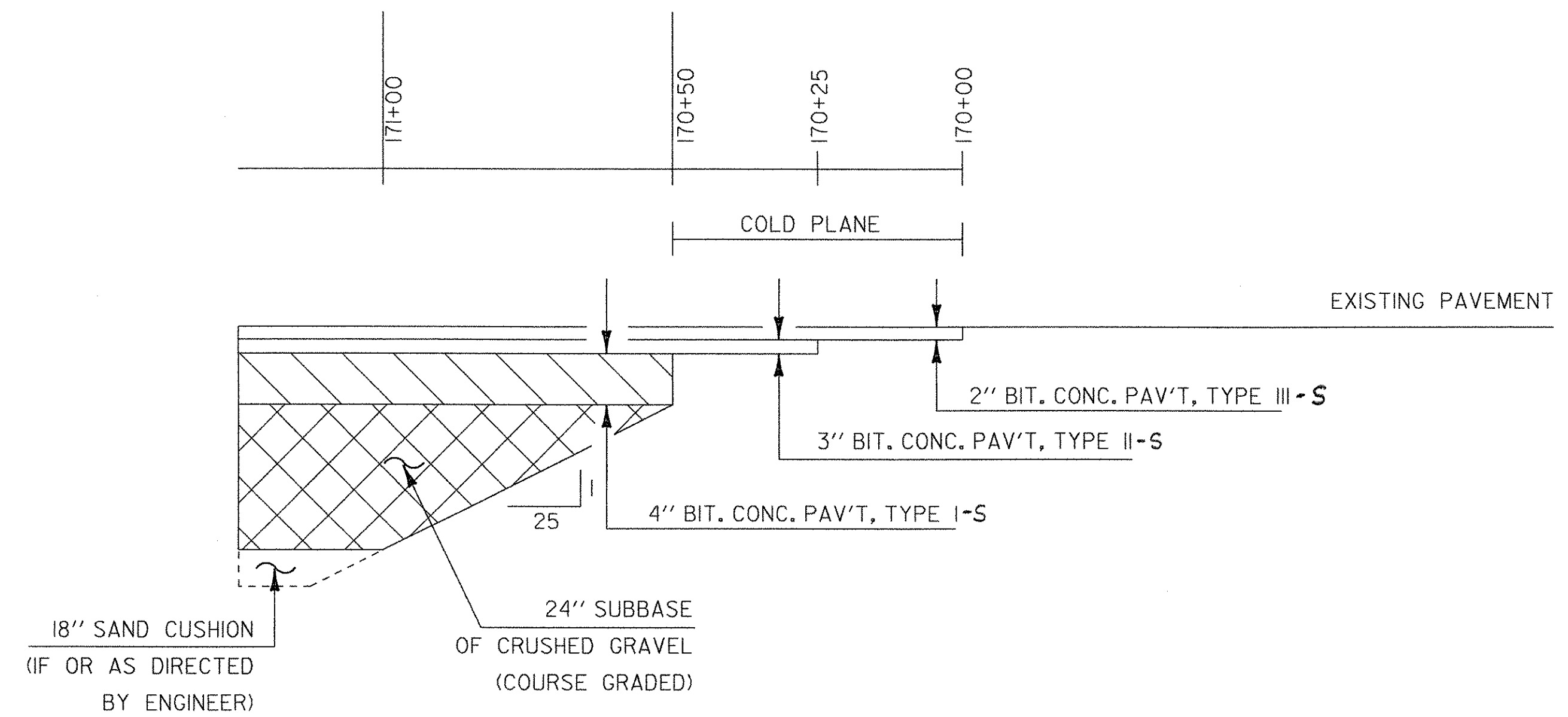
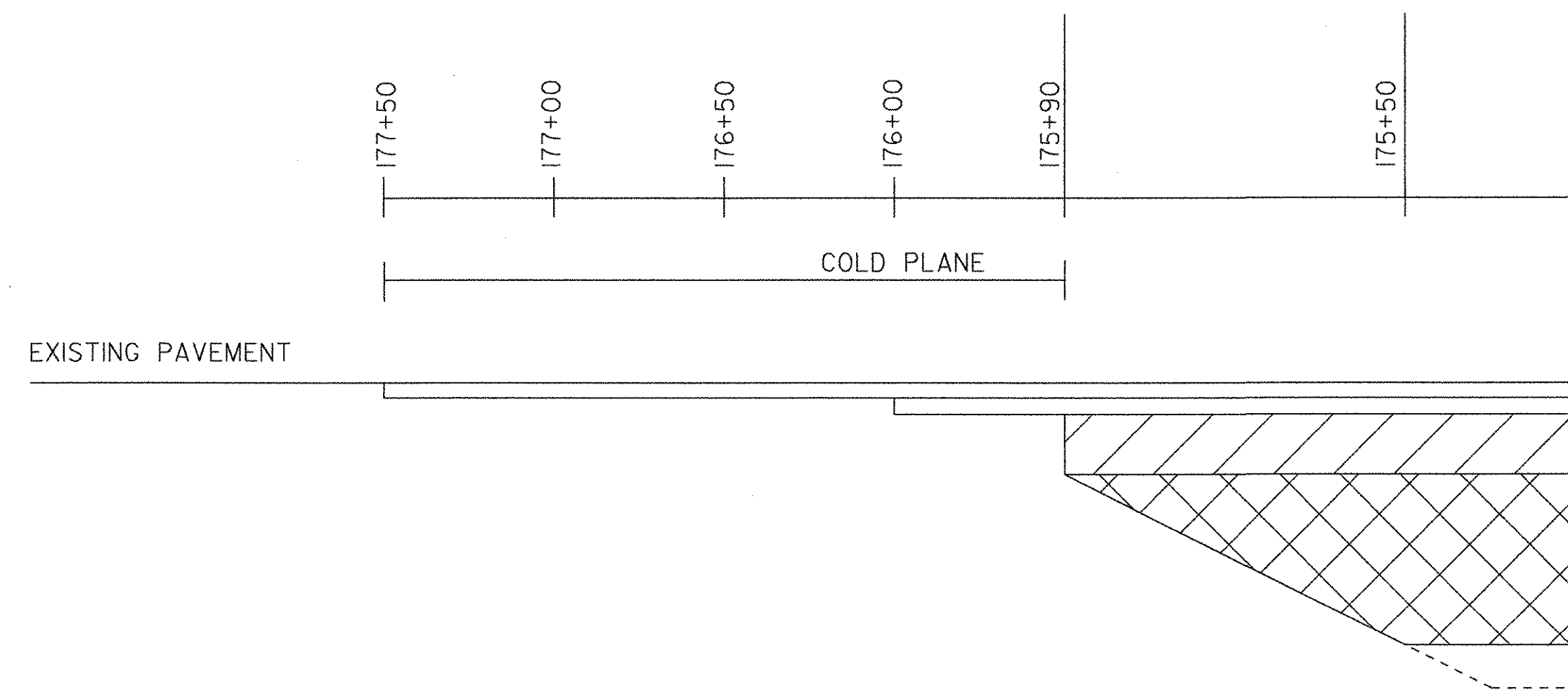
PROJECT NAME: CLARENDON
PROJECT NUMBER: NHG SGNL (24)

FILE NAME: 02b240\traff\fb240slg.dgn
PROJECT LEADER: NYQUIST
DESIGNED BY: J GRUCHACZ

PLOT DATE: 28-FEB-2005
DRAWN BY: J GRUCHACZ
CHECKED BY:
SHEET 22 OF 37

MATERIAL TRANSITION DIAGRAM

FOR SHOULDERS AND TURNING LANES



US 7

MATERIAL TRANSITION DIAGRAM

NOT TO SCALE

PROJECT NAME: CLARENDON	
PROJECT NUMBER: NHG SGNL (24)	
FILE NAME: 02b240/traffic/tb240slg.dgn	PLOT DATE: 06-AUG-2004
PROJECT LEADER: Nyquist	DRAWN BY: JFG
DESIGNED BY: JFG	CHECKED BY: JFG
tb240mtd.l	SHEET 24 OF 37

Scan.mgt

APPROXIMATE ELEVATION

VT 103 WESTBOUND

175+22 RT - 102+23.5 LT
CONSTRUCT APRON
W/MOUNTABLE CURB

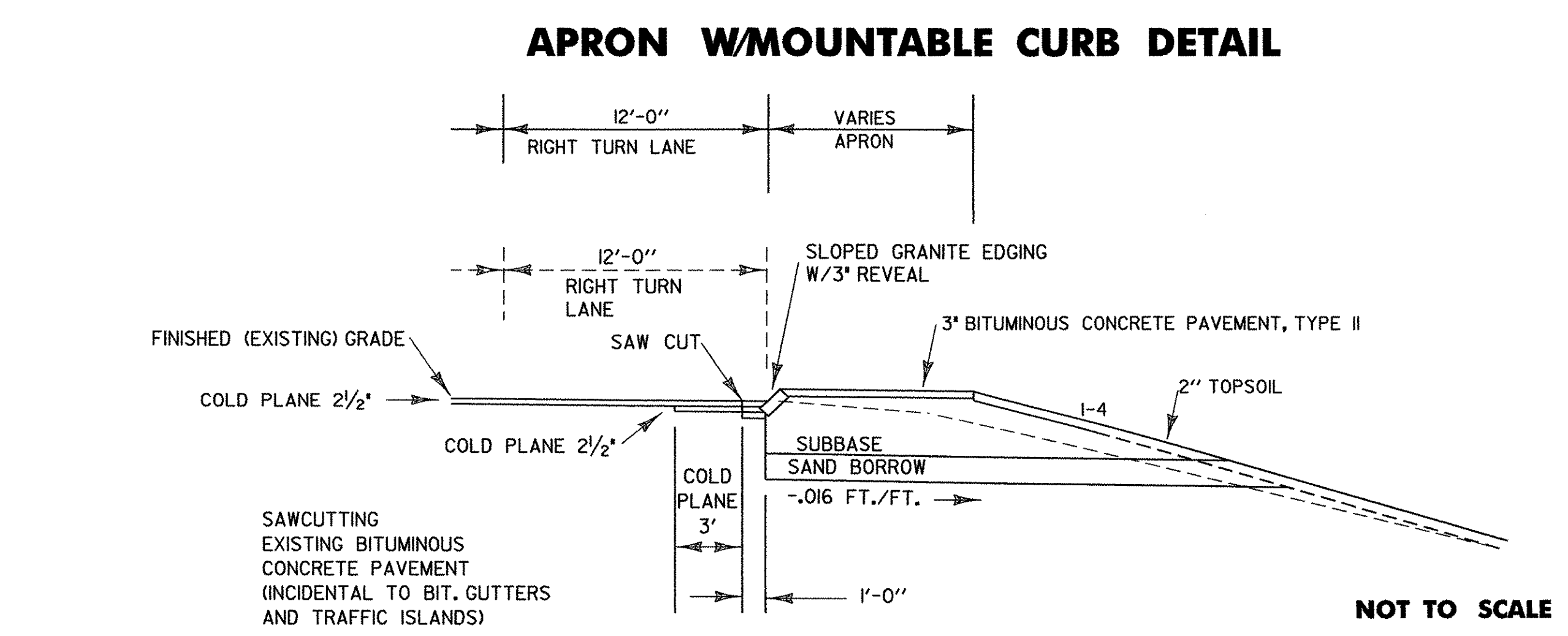
176+00 RT
CONSTRUCT TRAFFIC ISLAND
W/GRANITE SLOPE EDGING
(SEE STD C-1)

SAWCUT
COLD PLANE FOR MOUNTABLE CURB

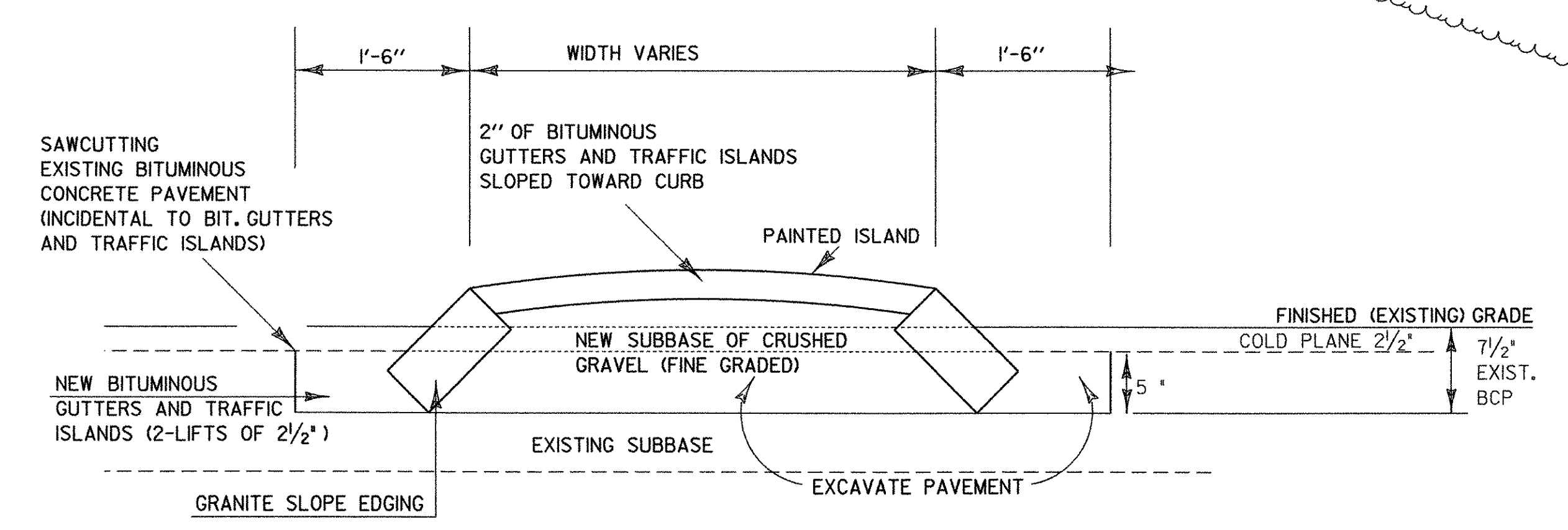
R 48.9' +
X=19045.991
Y=19694.306

R 51.13' +
X=19030.278
Y=19709.181

TRAFFIC ISLAND



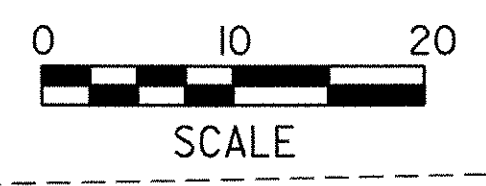
STA. 172+22 RT - STA. 102+23.5 LT
NOTE: SAW CUT ALL VERTICAL CONSTRUCTION EDGES.



TRAFFIC ISLAND - PAVED (NTS)

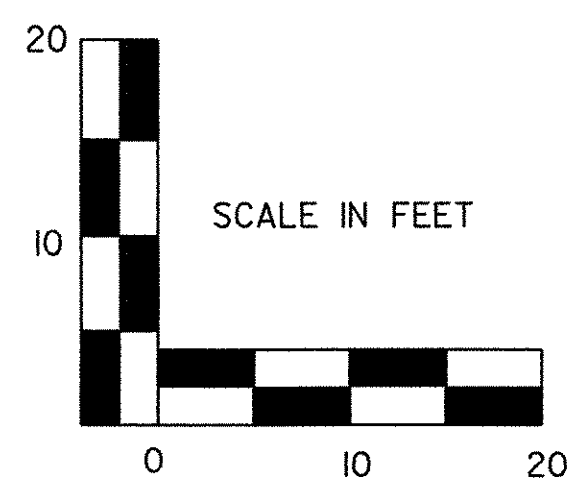
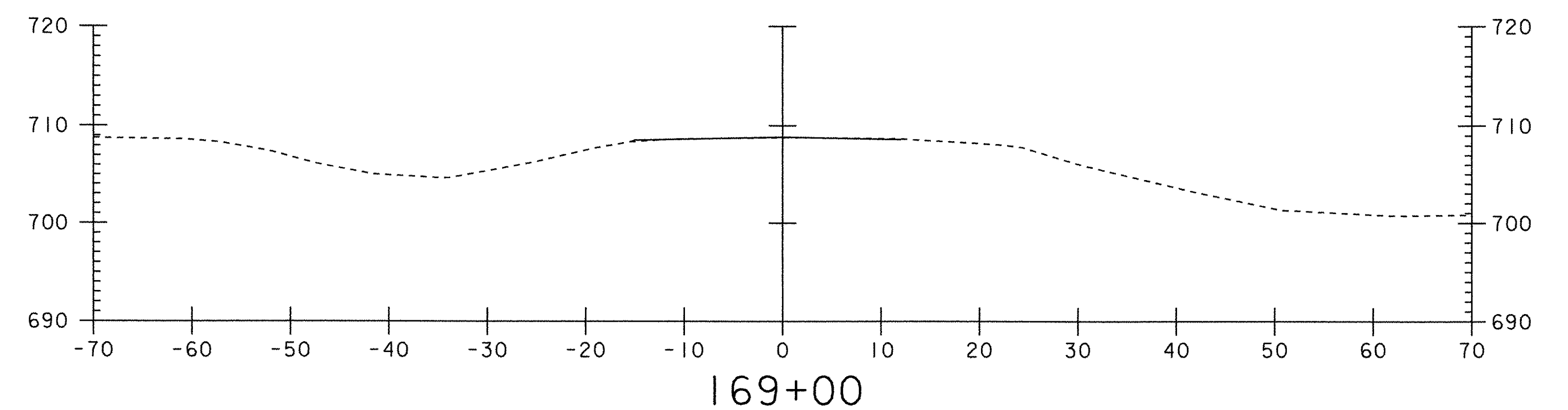
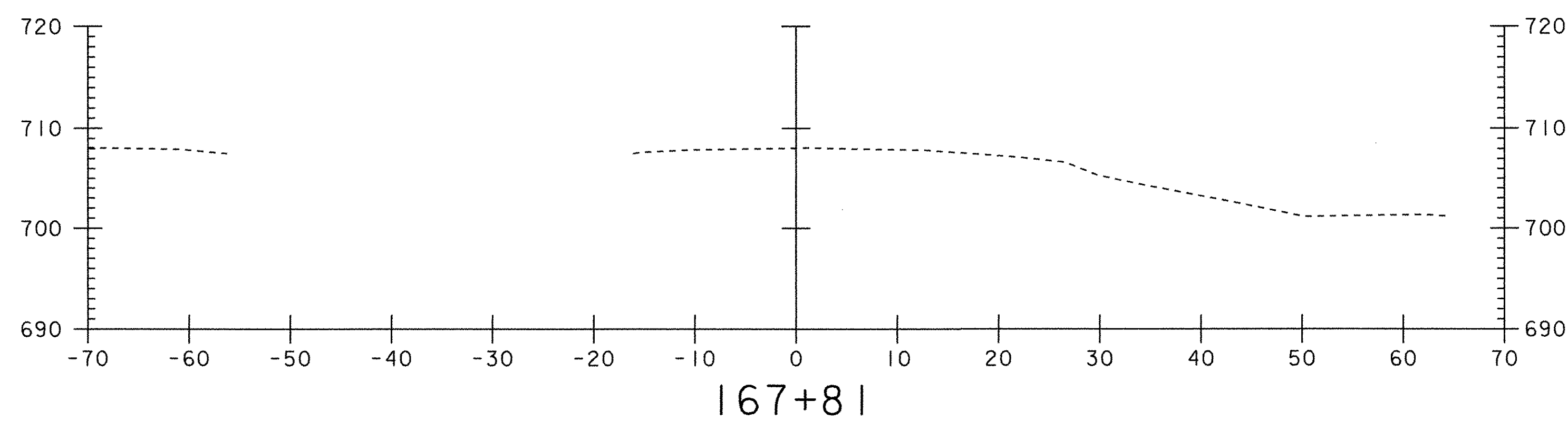
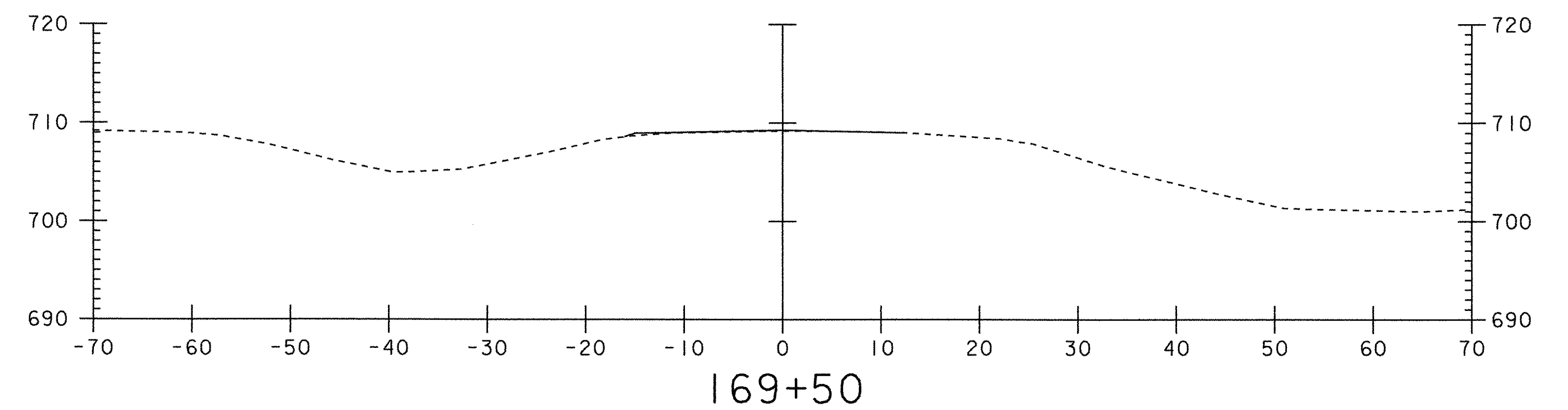
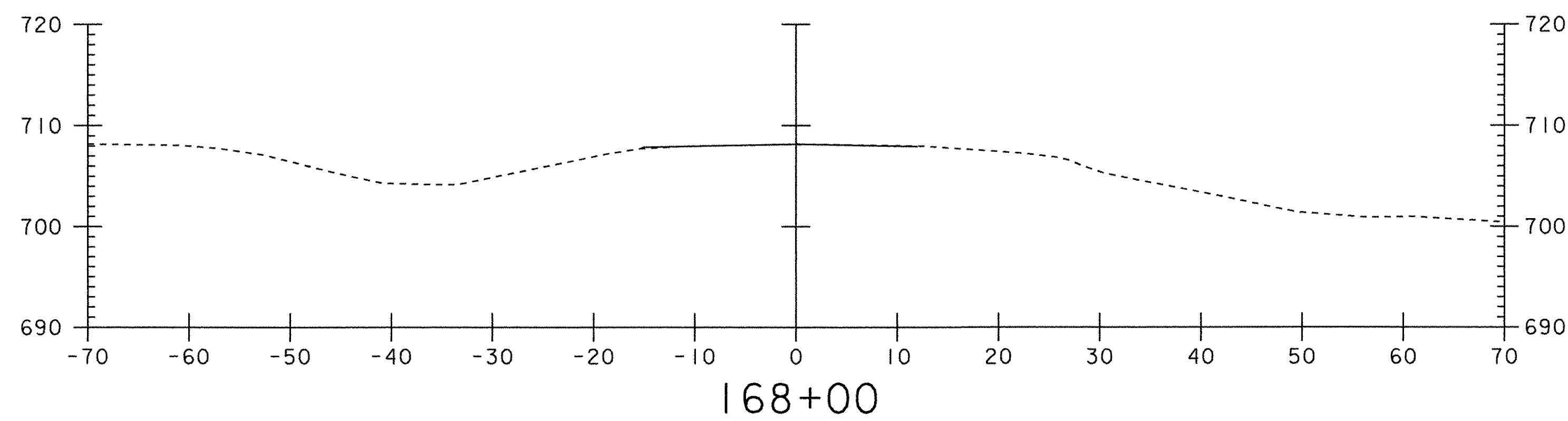
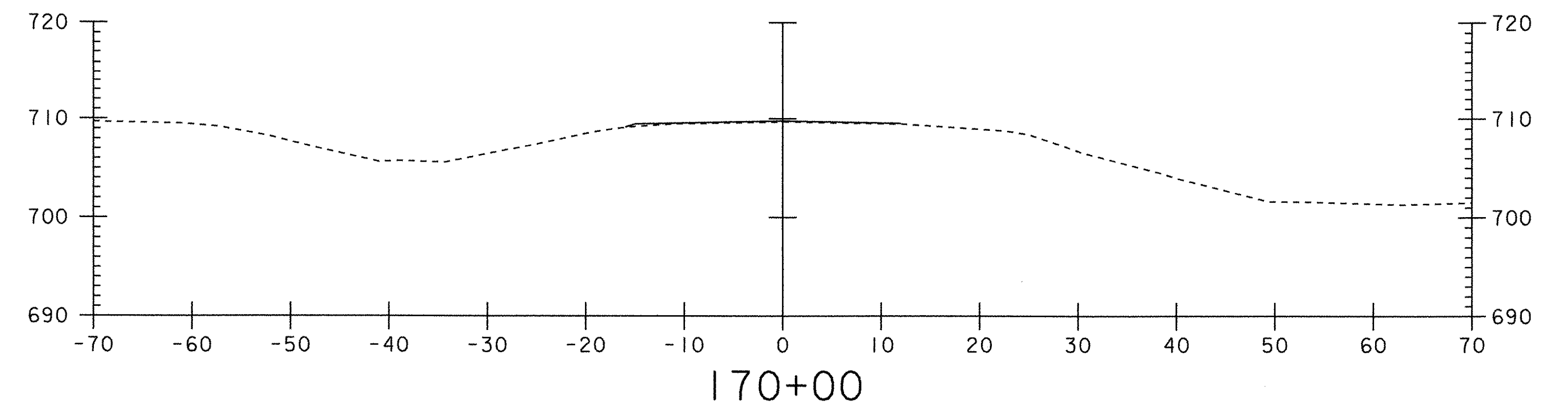
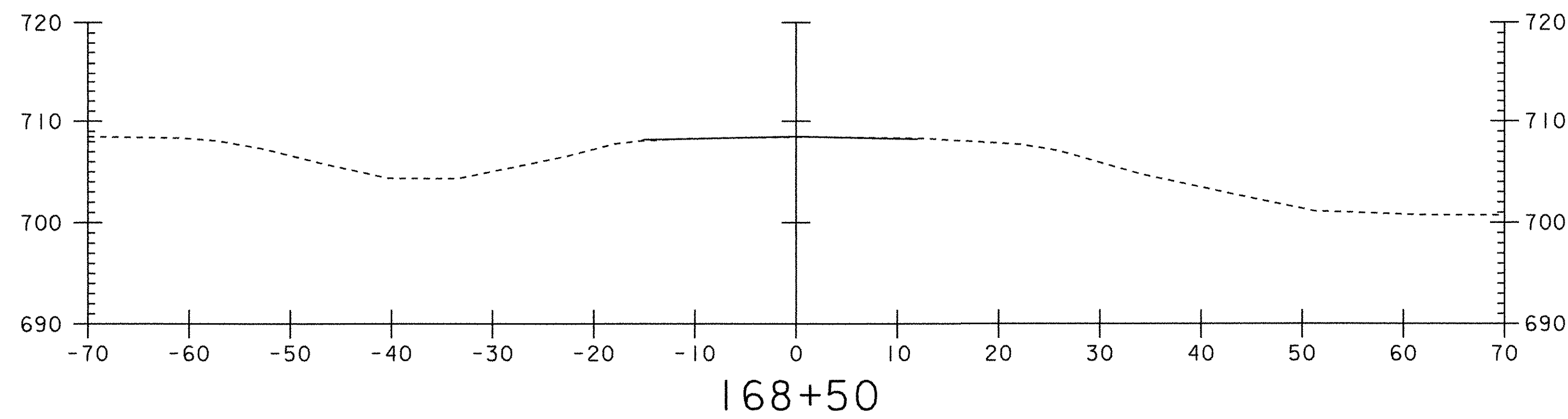
TRAFFIC ISLAND
AND
APRON CONSTRUCTION DETAILS

US 7 NORTHBOUND



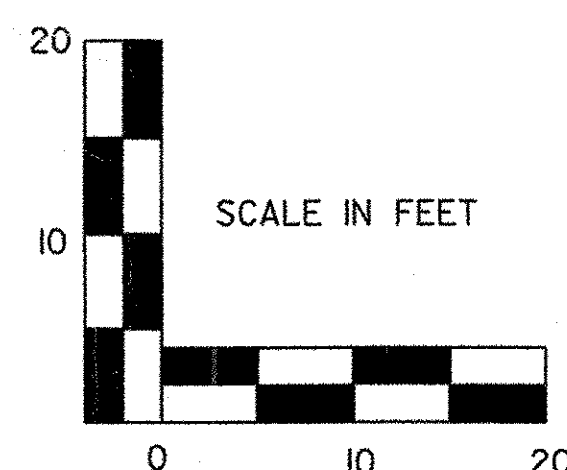
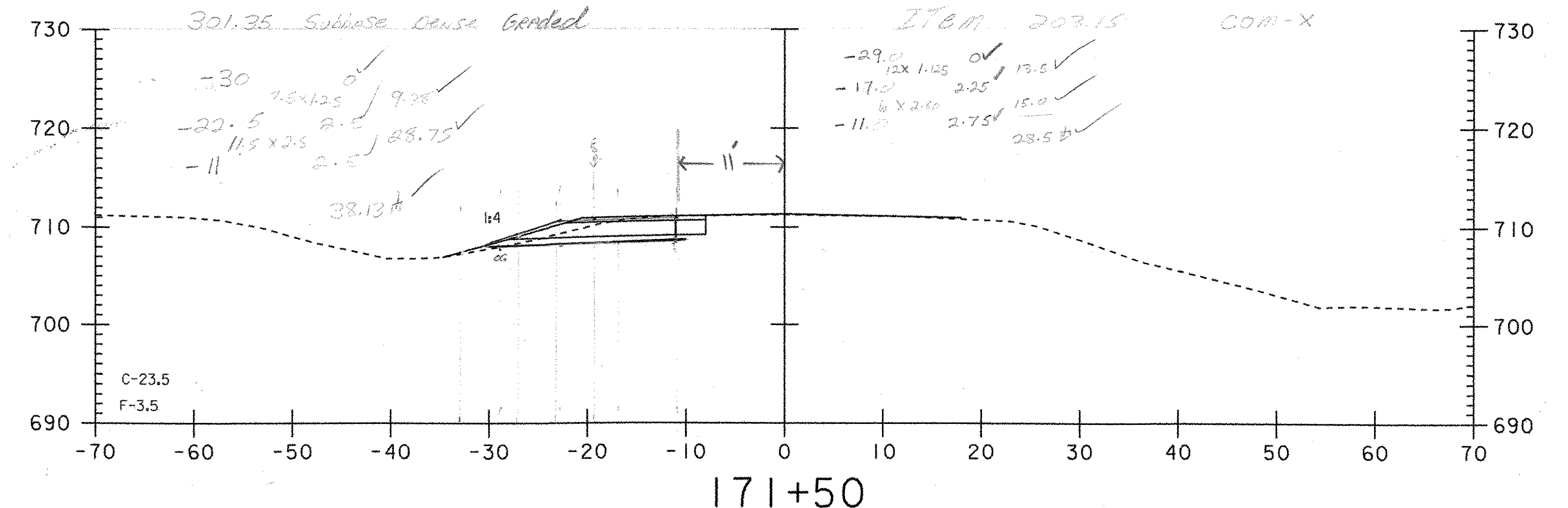
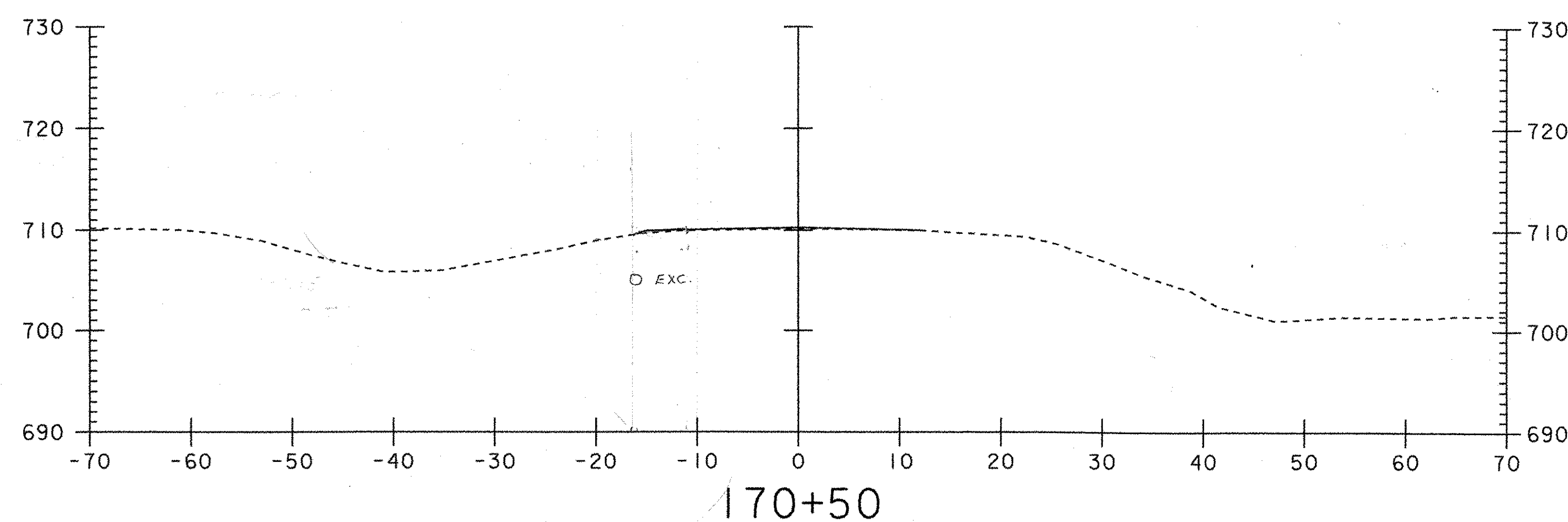
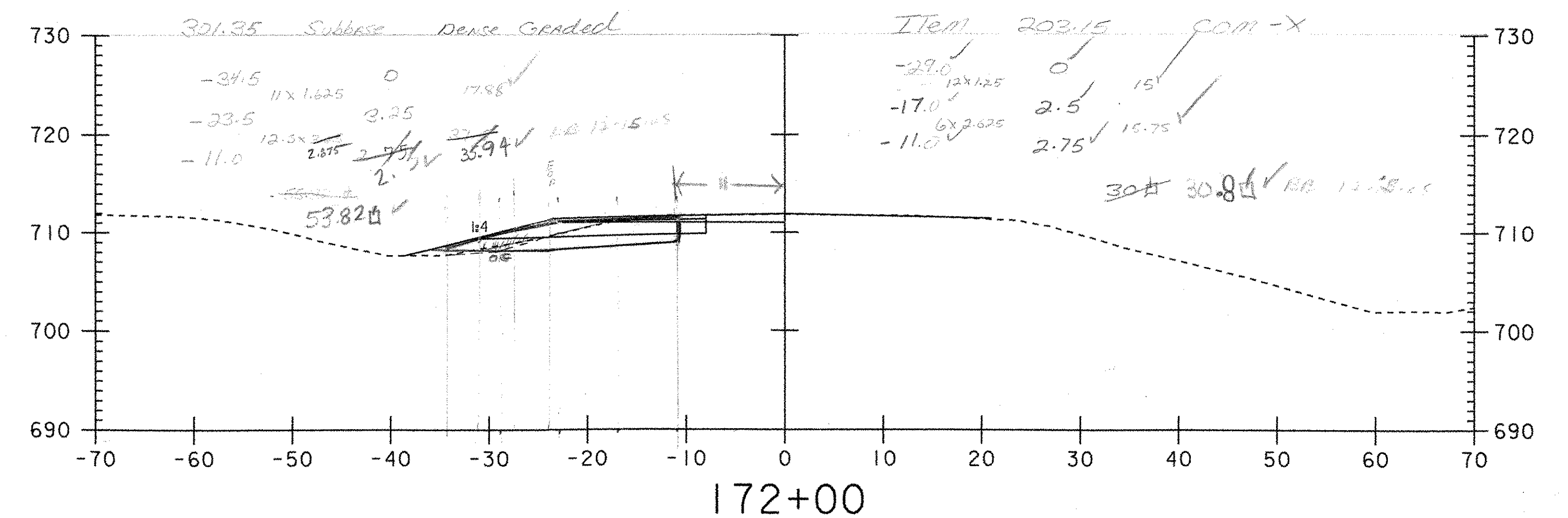
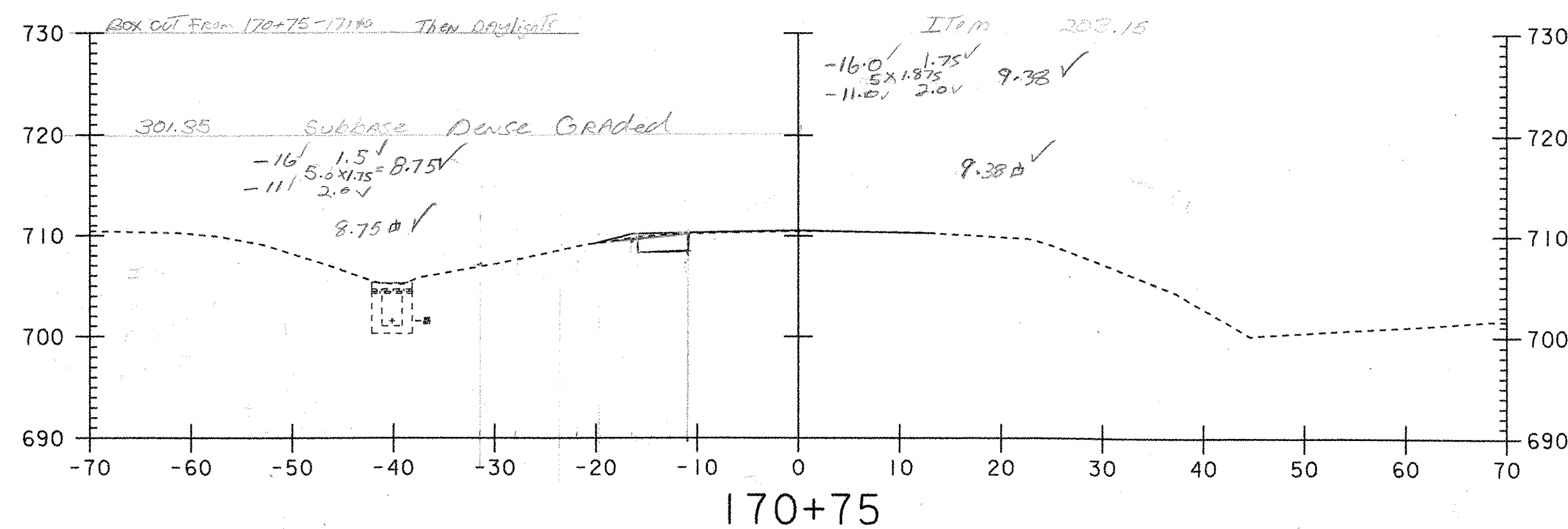
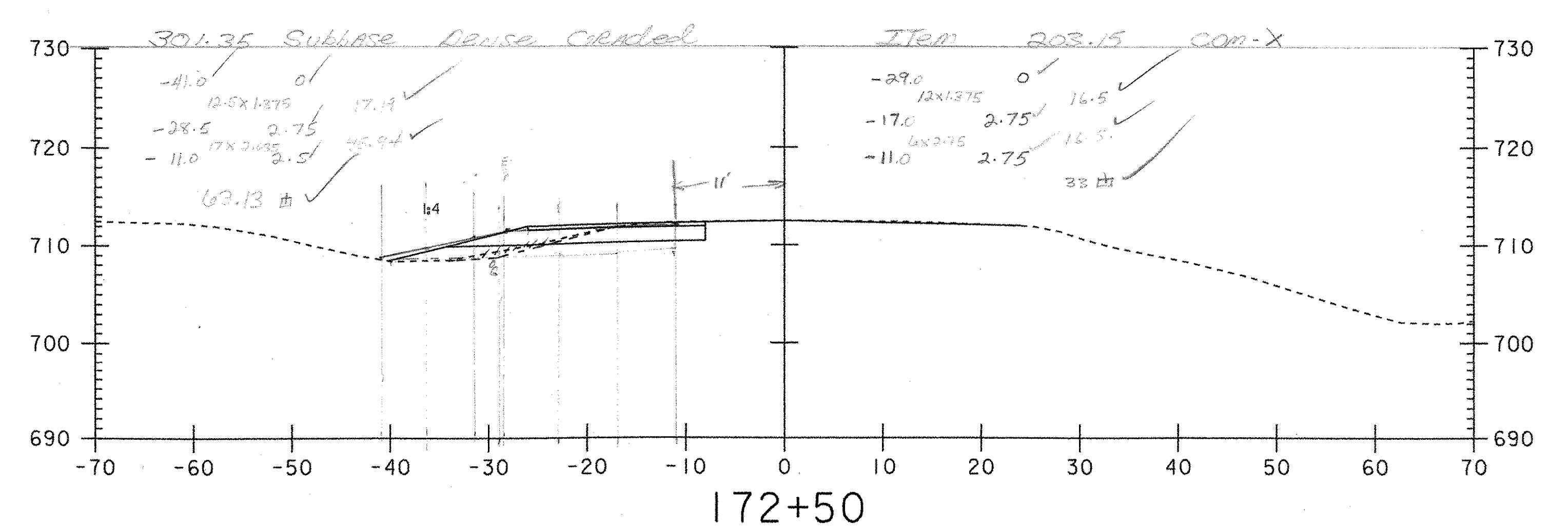
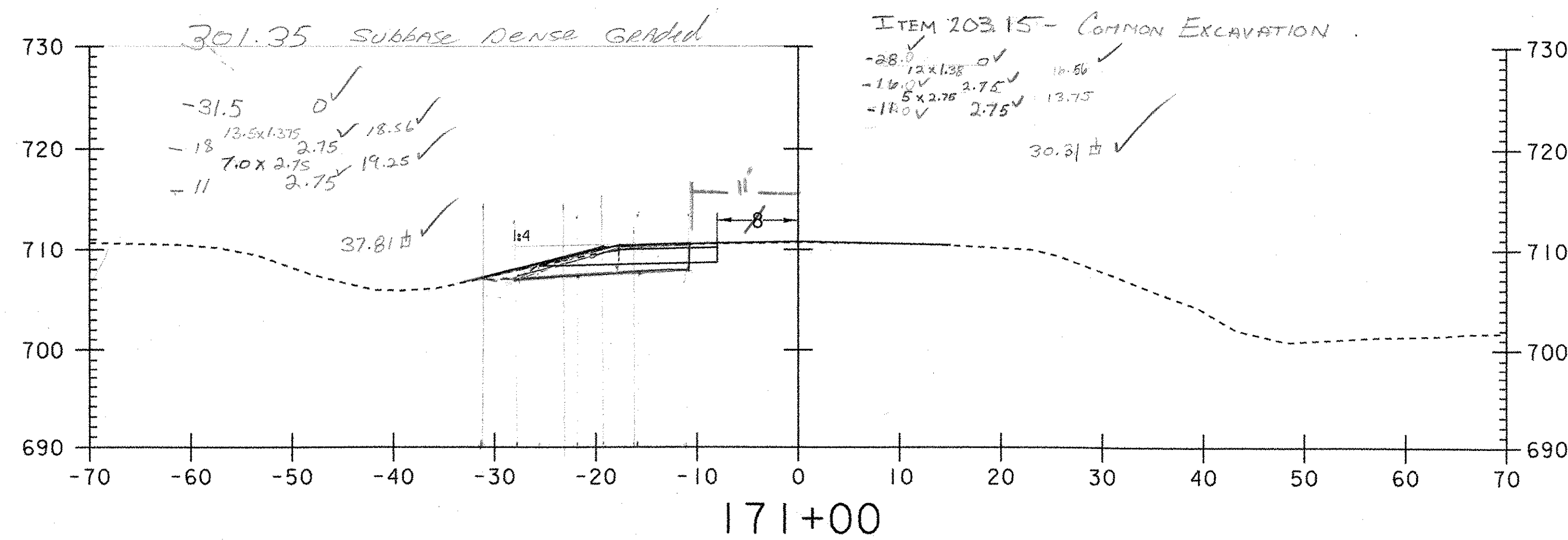
PROJECT NAME:	CLARENDON
PROJECT NUMBER:	NHG SGNL (24)
FILE NAME:	tb240isl.dgn
PROJECT LEADER:	nyquist
DESIGNED BY:	gruchacz
tb240iac.i	
PLOT DATE:	06-AUG-2004
DRAWN BY:	
CHECKED BY:	
SHEET 25	OF 37

SC449 - 1/51



PROJECT NAME:	CLARENDON	
PROJECT NUMBER:	NHG_SGNL (24)	
FILE NAME:	m:\trcf\02b240\tb240wrk.dg	PLOT DATE: 16-DEC-2004
PROJECT LEADER:	aygulst	DRAWN BY:
DESIGNED BY:	lf_grucbacz	CHECKED BY:
		SHEET 26 OF 37

Scan- x61

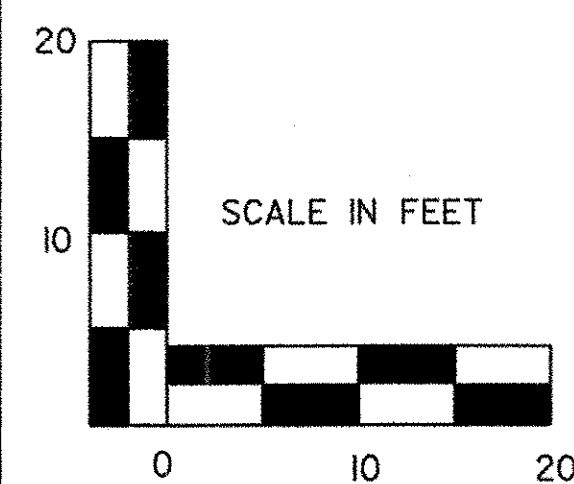
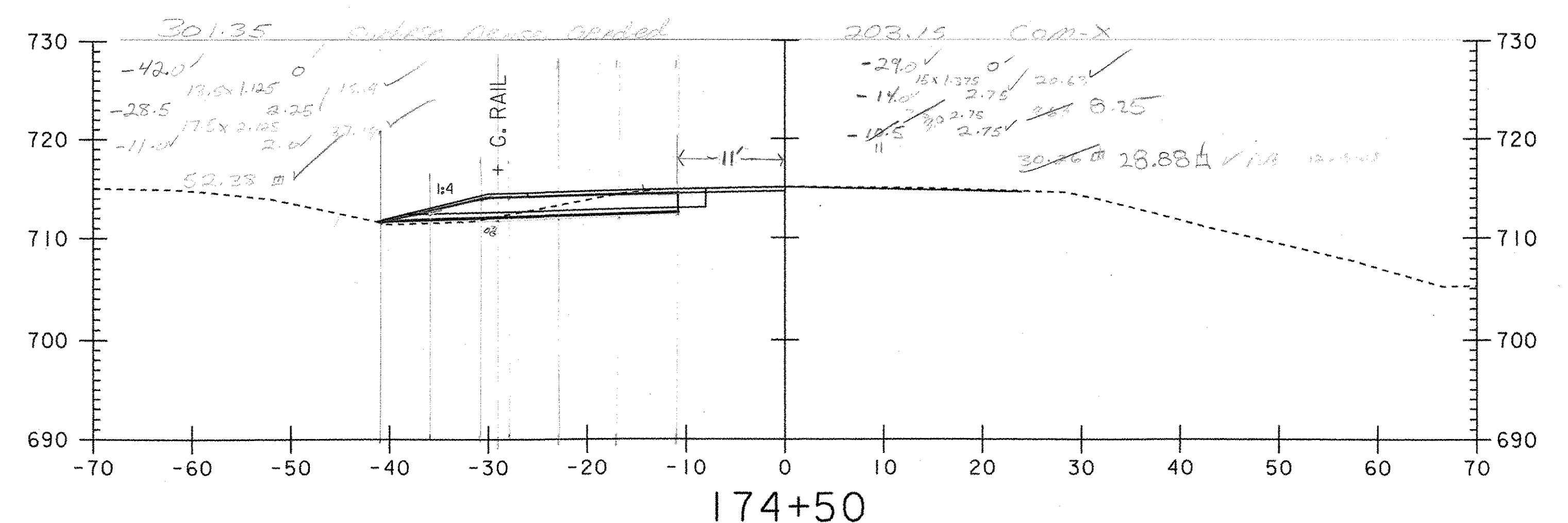
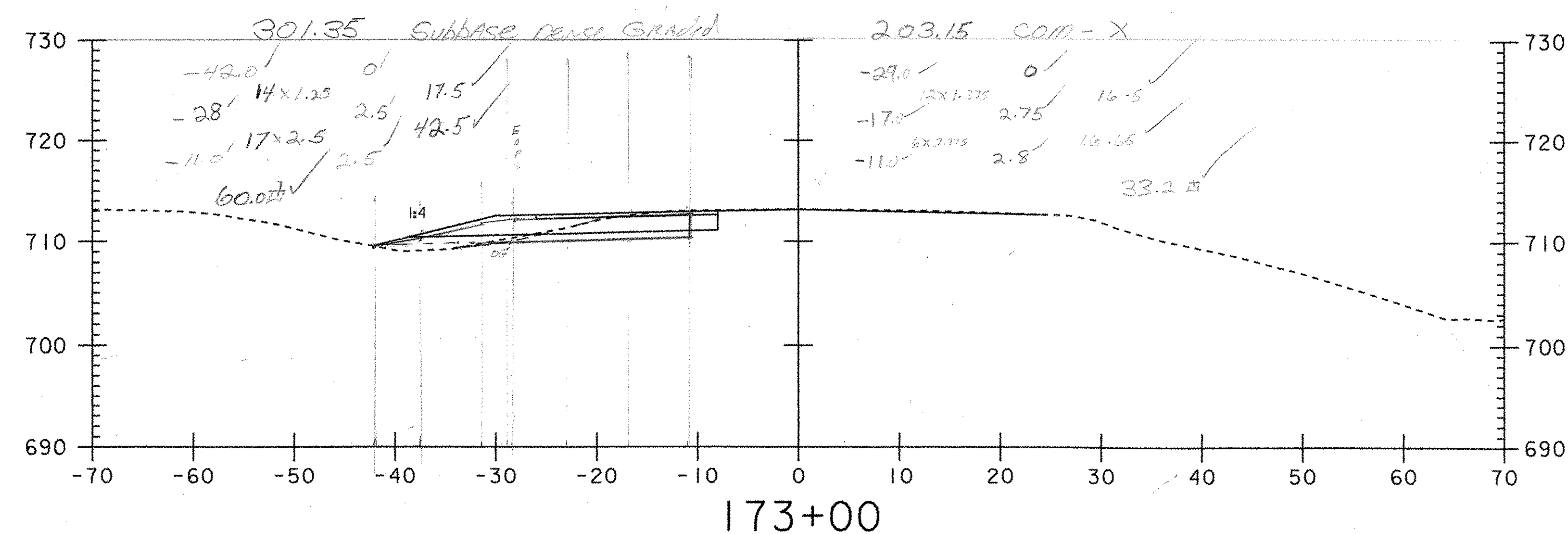
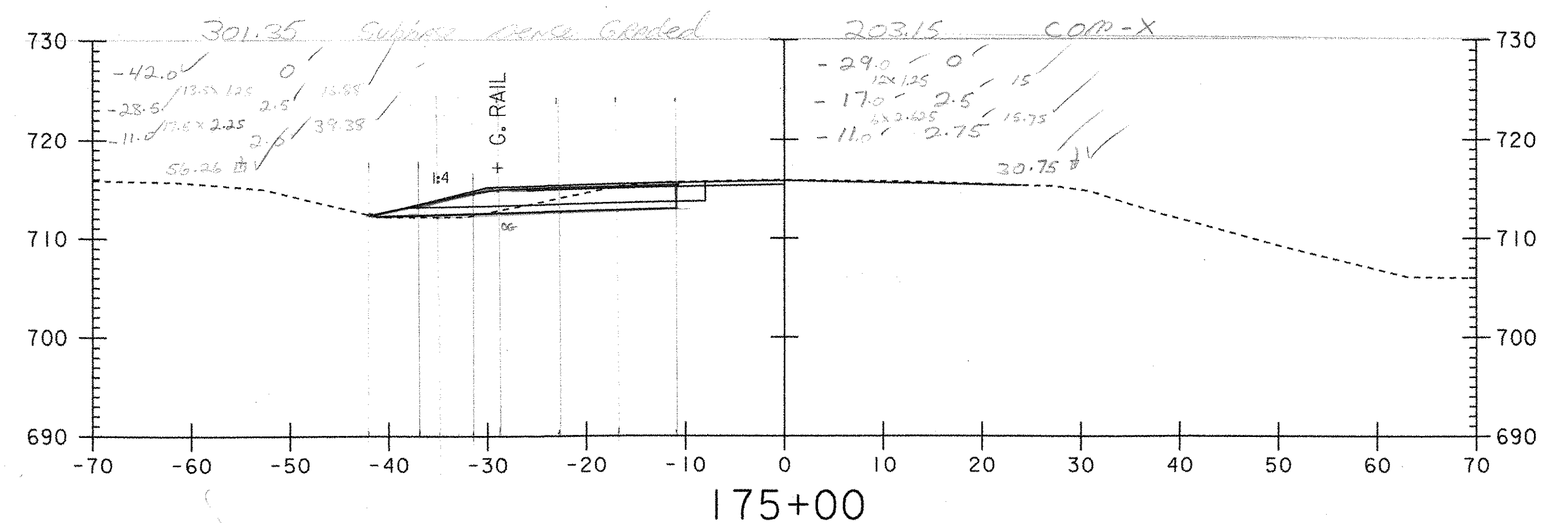
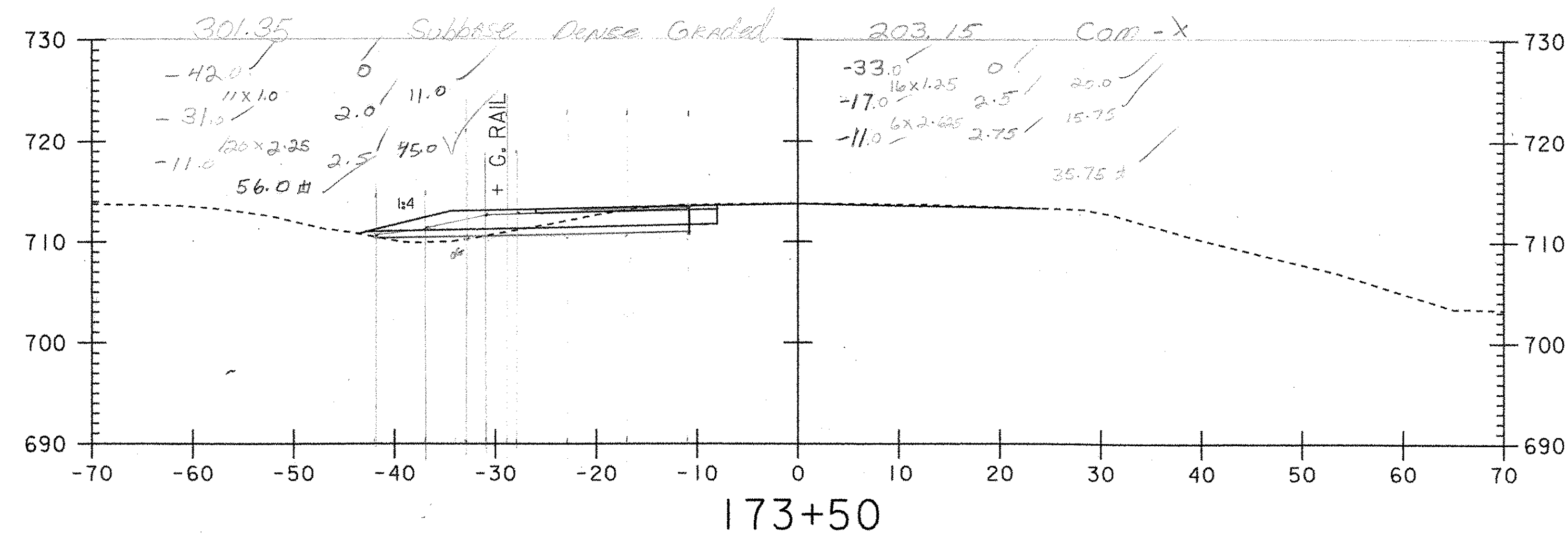
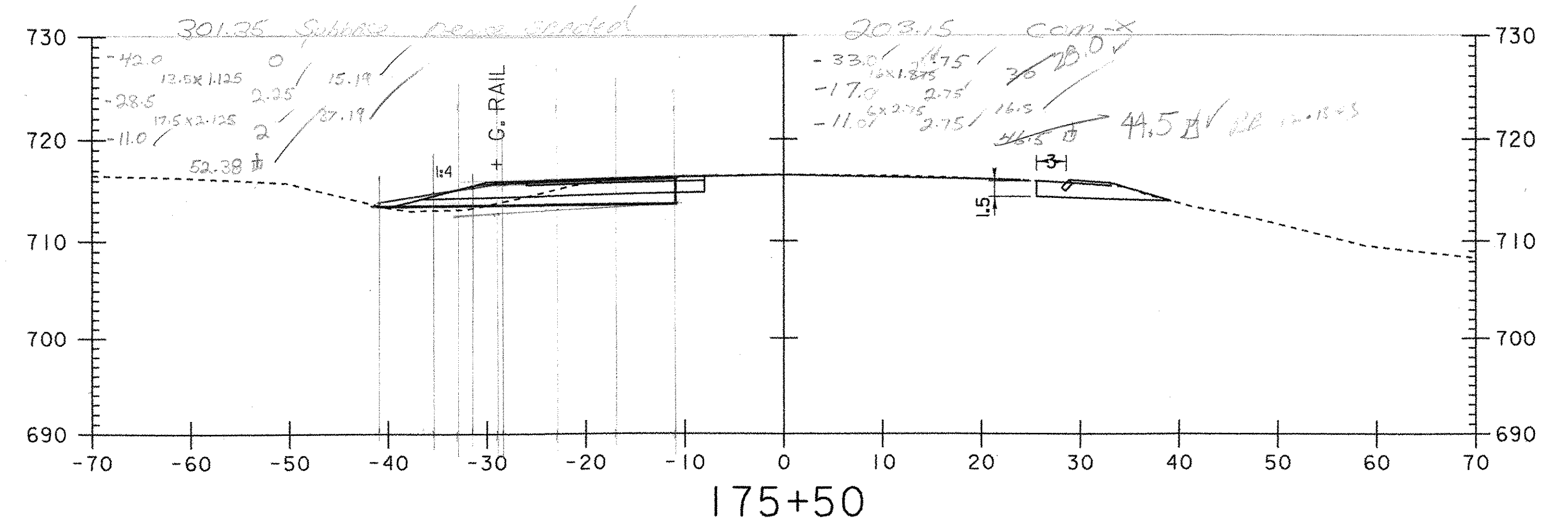
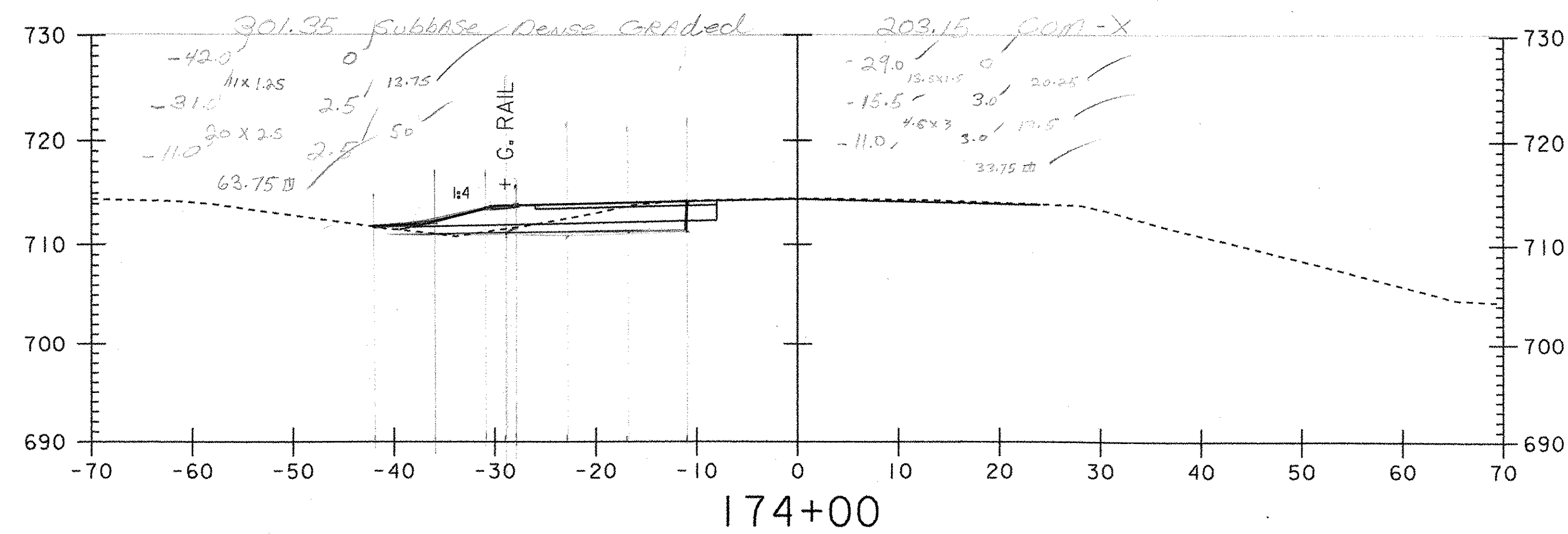


ITEM 203.15 - Common Excavation
 Quantities sent to Spreadsheet for
 final Quantities. See Sheets
 203.15-1 to 203.15-2 for details. (TP)

ITEM 301.35 - Subbase of Dense Graded Crushed Stone
 Quantities sent to Spreadsheet for
 final Quantities. See Sheets
 301.35-1 to 301.35-2 for details. (TP)

DRAWN BY BRUCE BOYLE
 CHECKED BY TIM BUCKLETT (TP) 12-15-05

PROJECT NAME: CLARENDON
 PROJECT NUMBER: NHG_SGNL (24)
 FILE NAME: m:\tcd\02b240\tb240wrk.dg
 PROJECT LEADER: dyquist
 DESIGNED BY: lf_gweborg
 PLOT DATE: 16-DEC-2004
 DRAWN BY:
 CHECKED BY:
 SHEET 27 OF 37



Item 301.35 - Subbase or Dense Graded
Crushed Stone

Quantities to Spreadsheet for calculation
of Final Quantities. See Calculation Binder
Sheets 203.5-1 to 203.5-2
for details.

Item 203.15 - Common Excavation

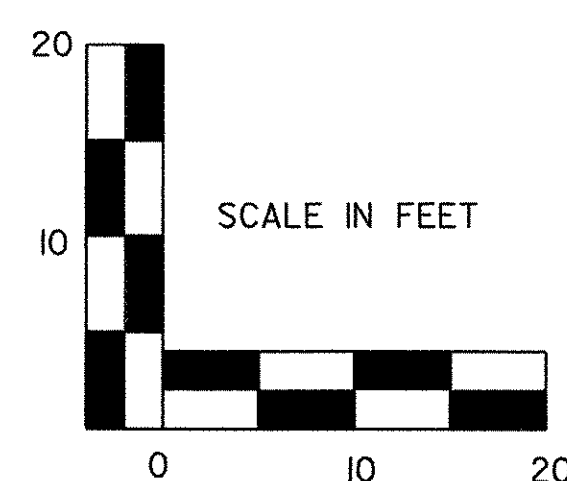
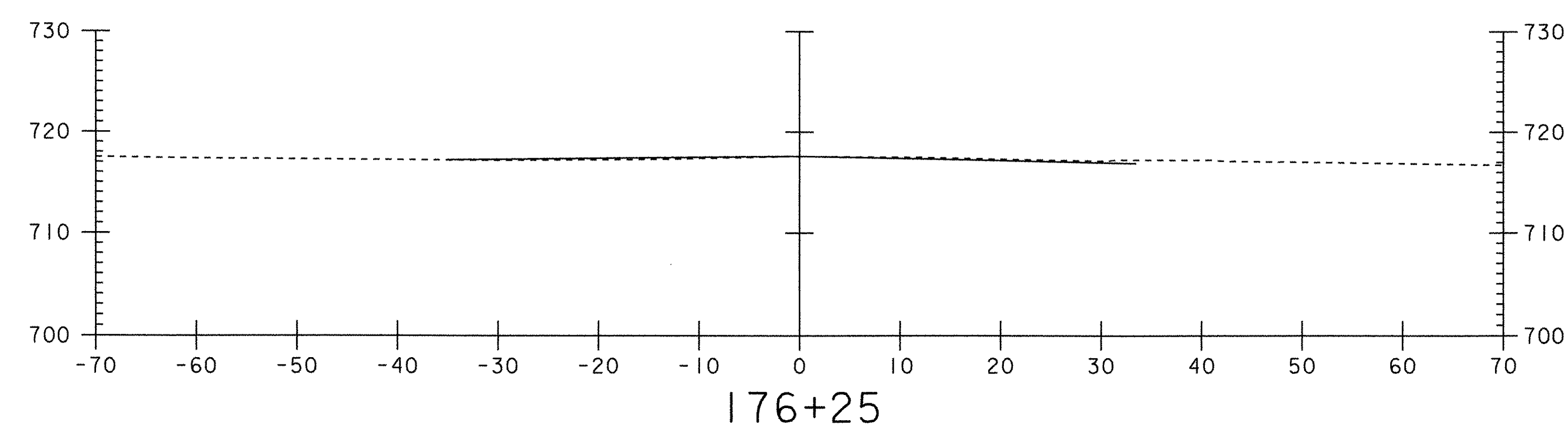
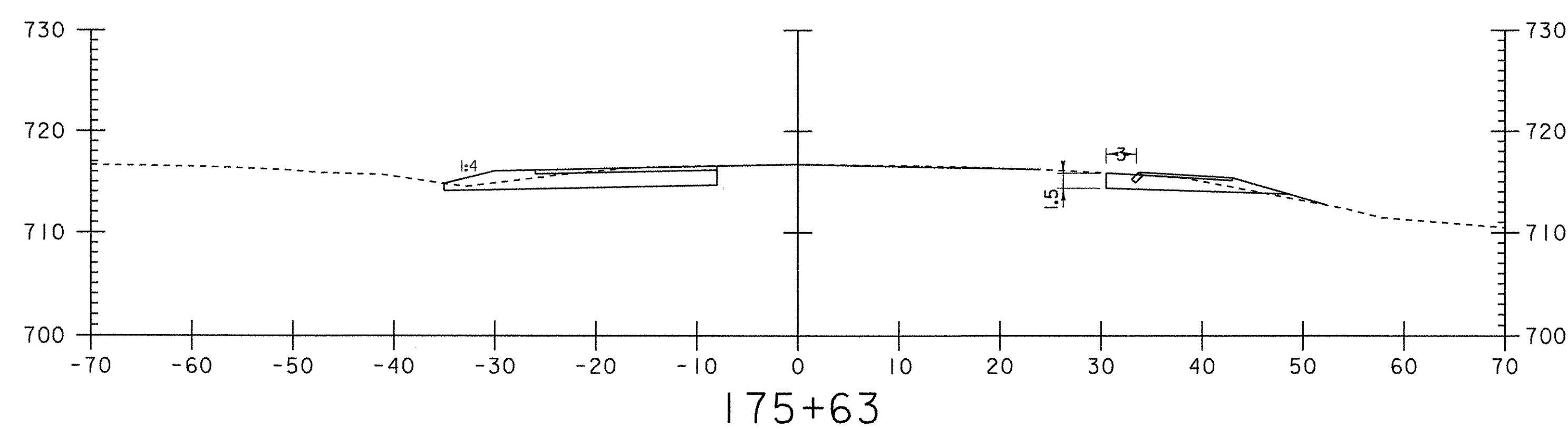
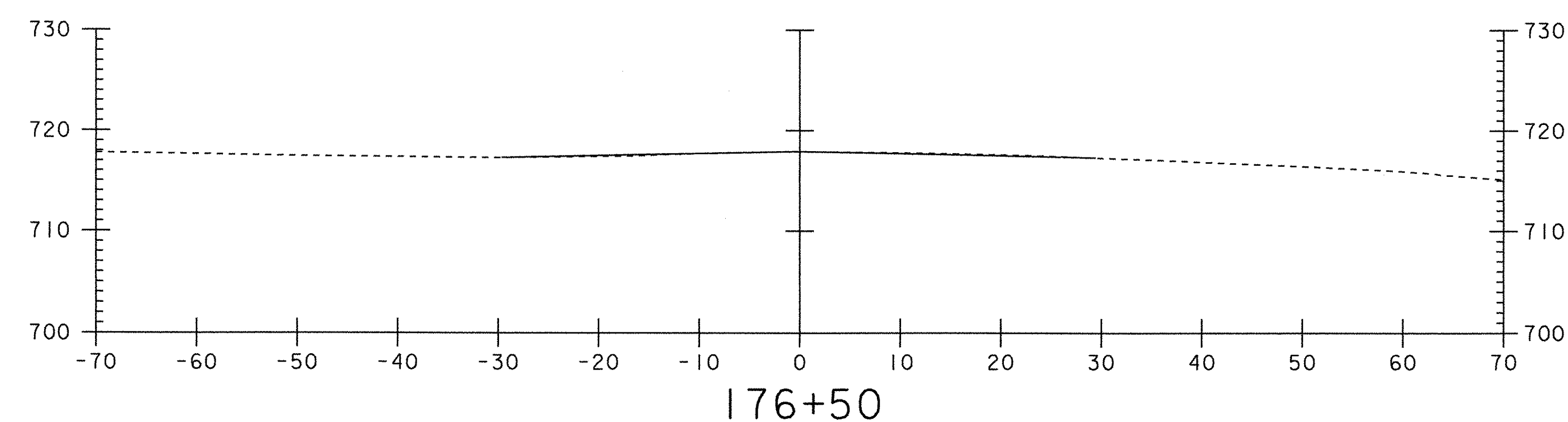
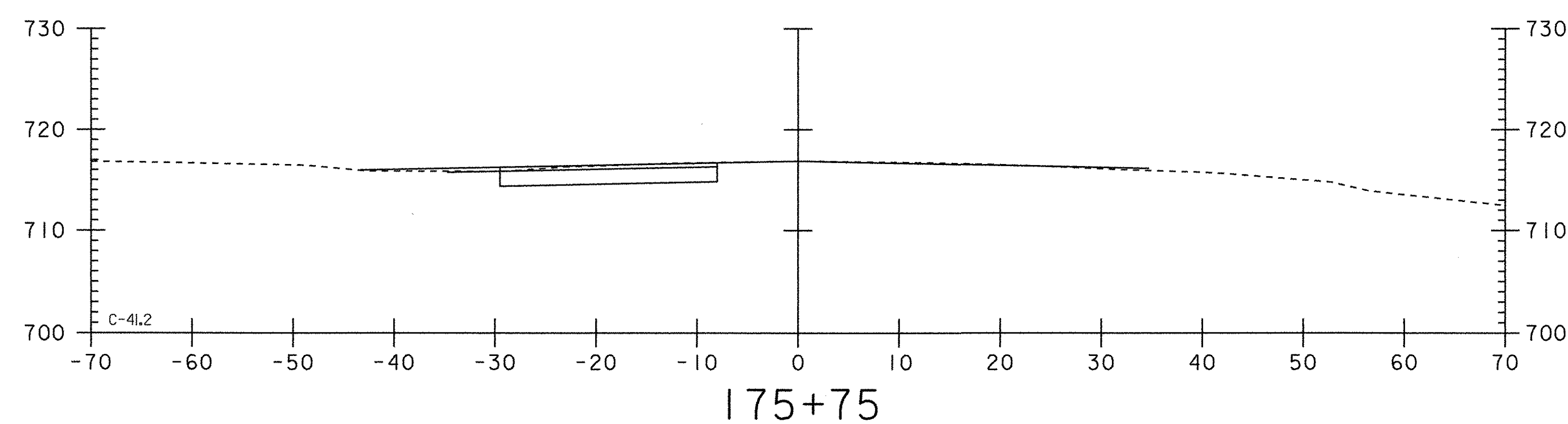
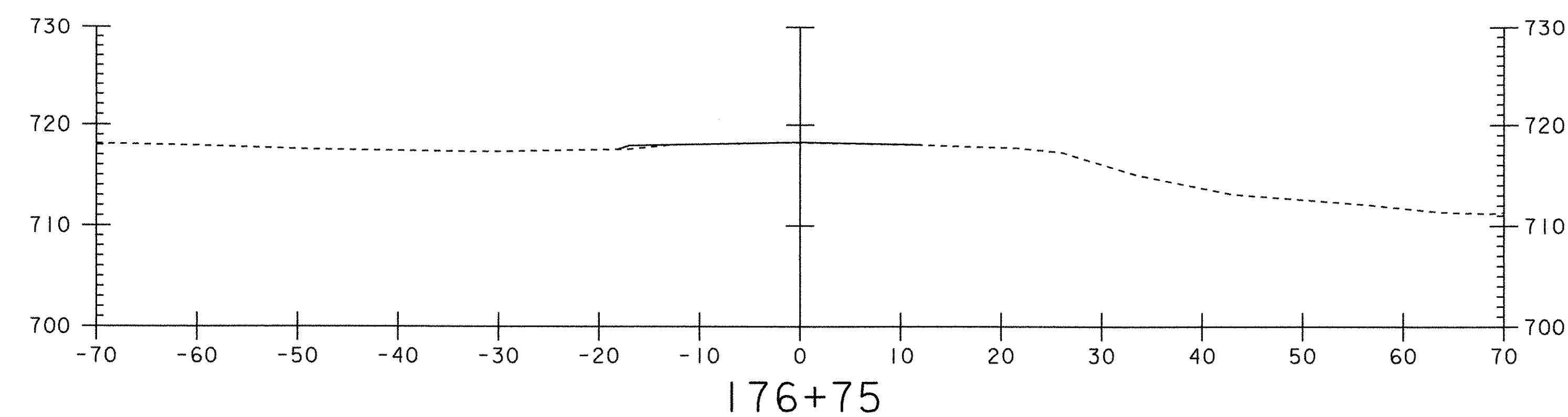
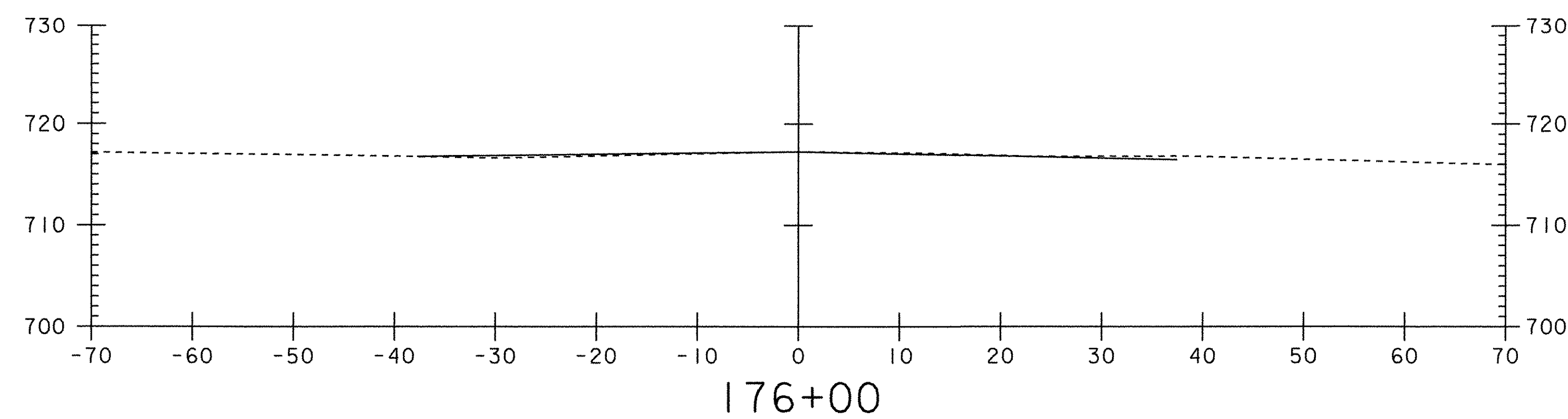
Quantities to Spreadsheet for
calculation of Final Quantities.
See calculation binder
Sheets 203.15-1 to 203.15-2
for details.

Drawn By Bruce Bogle

Checked By Tim Fockette

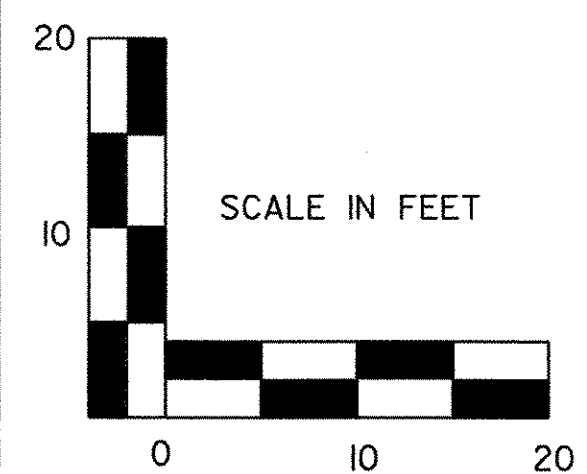
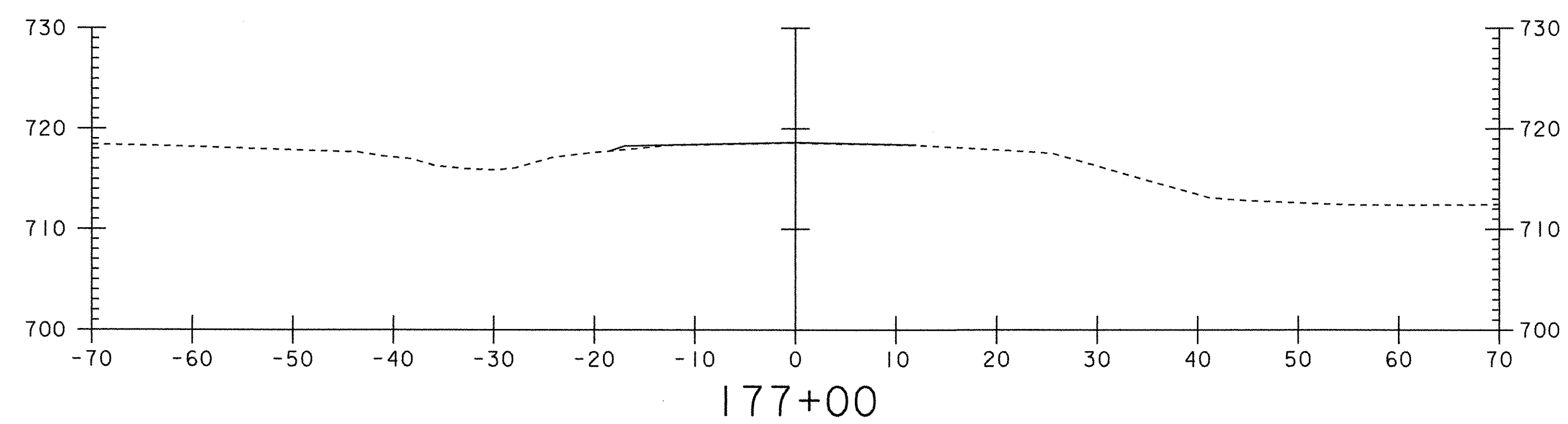
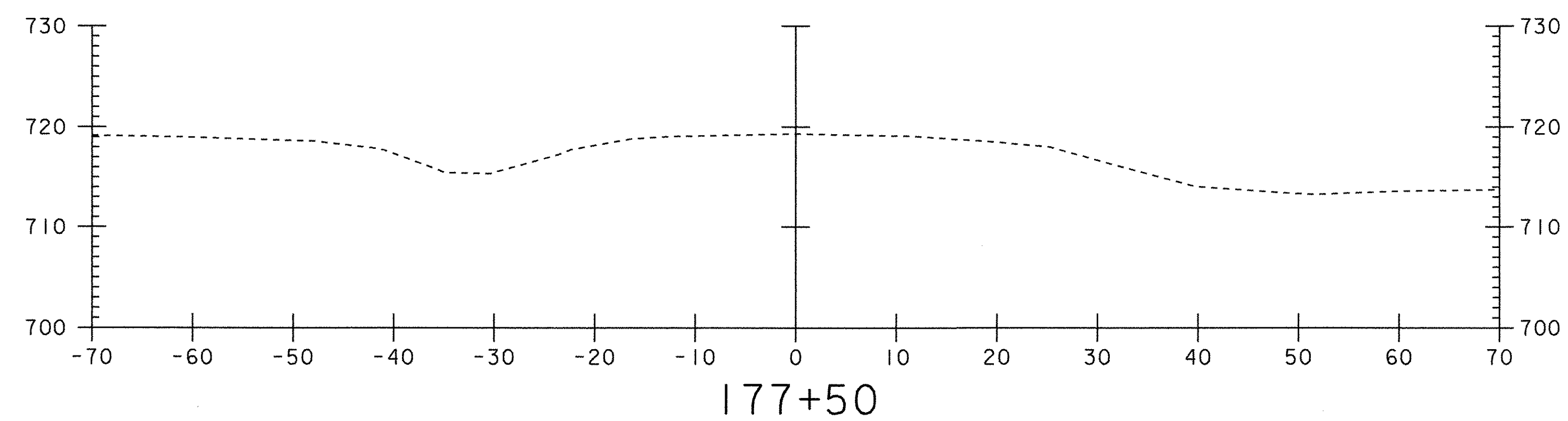
PROJECT NAME:	CLARENDON	PLOT DATE:	16-DEC-2004
PROJECT NUMBER:	NHG_SGNL (24)	DRAWN BY:	
FILE NAME:	m:\trcf\02b240\tb240wck.dg	CHECKED BY:	
PROJECT LEADER:	nyquist	SHEET	28 OF 37
DESIGNED BY:	jf_grushacz		

Sheet 28 of 37



PROJECT NAME:	CLARENDON
PROJECT NUMBER:	NHG_SGNL_(24)
FILE NAME:	m:\tcgf\02b240\tb240wrk.dg
PROJECT LEADER:	nyquist
DESIGNED BY:	lf_grushgez
PLOT DATE:	16-DEC-2004
DRAWN BY:	
CHECKED BY:	
SHEET	27 OF 37

Scanned by xdy



PROJECT NAME:	CLARENDON	
PROJECT NUMBER:	NHG_SGNL (24)	
FILE NAME:	m:\tcgf\02b240\1b240\wk.dg	PLOT DATE: 16-DEC-2004
PROJECT LEADER:	nyquist	DRAWN BY:
DESIGNED BY:	lf_gcrubgez	CHECKED BY:
		SHEET 30 OF 37

3047-X05

DESCRIPTION OF PROJECT

THIS PROJECT INVOLVES THE CONSTRUCTION OF A TRAFFIC SIGNAL SYSTEM LOCATED AT THE INTERSECTIONS OF US 7 AND VT 103 IN THE TOWN OF CLARENDON. A NEW LEFT TURN LANE WILL BE CONSTRUCTED ON THE NORTH BOUND SEGMENT OF US 7.

IT IS ANTICIPATED THIS PROJECT WILL LAST ONE SEASON.

TOTAL DISTURBED AREA IS 14250 SQUARE FEET OR 0.33 ACRES.

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:
INSIDE OF THE STATE RIGHT-OF-WAY AND THE PROPERTIES SURROUNDING THE PROJECT CONSIST OF ESTABLISHED VEGETATION OF GRASSES AND WOODED AREAS.

DRAINAGE, WATERWAYS, BODIES OF WATER:
AREA DRAINAGE IS CONVEYED VIA GRASS SURFACE OR INTO DI'S AND CULVERTS TO THE SOUTHERN END OF THE PROJECT AREA. THE CULVERT SYSTEM CONNECTS TO A PIPE THAT CROSSES US 7 FROM EAST TO WEST. THIS DRAINAGE FOLLOWS A WATER COURSE OUTSIDE OF THE STATE RIGHT-OF-WAY AND INTO A WOODED AREA 700 YARDS THEN INTO A STREAMLET FOR 1000 YARDS,EMPTYING INTO OTTER CREEK. ONSITE,NO WETLANDS ARE IDENTIFIED OR IMPACTED.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:
THE GENERAL TOPOGRAPHY IN THE AREA OF THE SITE DISPLAYS A GRADUAL SLOPE TOWARDS THE WESTERLY DIRECTION. THERE ARE NO DEFINED STREAMS OR WATERWAYS. THE ONLY BUILDING IN THE AREA,OUTSIDE OF R.O.W AND PROJECT LIMITS,HOUSES AN AUTO DEALERSHIP. THERE ARE OVERHEAD UTILITIES THAT IN MOST PART ARE NOT AFFECTED. A NEW CONNECTION FOR POWER SUPPLY FOR A NEW TRAFFIC SIGNAL CONTROLLER WILL BE REQUIRED. THIS IS IN THE VICINITY OF A PRESENT POWER SOURCE FOR AN OVERHEAD FLASHING BEACON SYSTEM.

EXISTING ROADS: US 7,VT 103,SLIP RAMP AND SQUIRE ROAD ARE BITUMINOUS SURFACED. THERE IS A GRAVEL PRIVATE ROAD OFF OF SQUIRE ROAD AND DEAD ENDS.

VEGETATION:
VEGETATION ALONG ALL OF THE ROADWAYS CONSISTS OF A VARIETY OF CREEPING RED FESCUE, TALL FESCUE, RED TOP,BIRDSFOOT TREEFOIL AND ANNUAL RYEGRASS AND WEEDS.

SOILS:
NO DESCRIPTION OF THE SOIL TYPES EXPECTED TO BE ENCOUNTERED IN THE PROJECT AREA IS INCLUDED IN THE PROJECT PLAN.

THE MAJORITY OF THIS PROJECT IS CONSIDERED TO BE "IN A FILL TYPICAL",MEANING THE ROADWAY IS HIGHER THAN THE SURROUNDING MEAN GROUND ELEVATION.DUE TO ENGINEERING REQUIREMENTS FOR SELECTIVE FILL MATERIAL DEPTHS,MUCH OF THIS FILL MATERIAL WILL NEED TO BE BROUGHT IN FROM AN OUTSIDE SOURCE. SINCE WE DO NOT KNOW WHERE THIS SOURCE PIT WILL BE,WE CAN NOT PROVIDE ITS ERODABILITY PROPERTIES.

SENSITIVE RESOURCE AREAS:
NO "THREATENED & ENDANGERED SPECIES" HAVE BEEN IDENTIFIED WITHIN THE PROJECT LIMITS AND THERE WILL BE NO ADVERSE EFFECT TO HISTORIC OR ARCHAEOLOGICAL FEATURES. THERE ARE NO IDENTIFIED WETLANDS WITHIN THE VICINITY OF THE PROJECT.

PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES:
FOUR FOOTINGS FOR SIGNAL MAST ARMS WILL BE INSTALLED WITH TWO OF THESE FOOTINGS BEING IN THE PROXIMITY OF DROP INLETS. THE DROP INLETS ARE ABOUT 40 FEET FROM THE FOOTING LOCATIONS. ON THE SOUTHERN END OF THE PROJECT, SIDE SLOPE CONSTRUCTION WILL BE WITHIN 15 FEET OF A DROP INLET.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

GENERAL EROSION CONTROL PLANS ARE INTENDED AS A GUIDE FOR PREVENTING SOIL EROSION AND CONTROLLING SEDIMENT.THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE DURATION OF THE PROJECT TO CONTROL EROSION AND MINIMIZE THE SEDIMENTATION OF THE RECEIVING WATERS.

AN ALTERNATE TEMPORARY EROSION CONTROL PLAN WILL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE AGENCY OF TRANSPORTATION.

THE CONTRACTOR WILL USE OTHER TEMPORARY OR PERMANENT EROSION CONTROL DEVICES AS NECESSITATED BY THE SEQUENCE OF CONTRUCTION AND AS DIRECTED BY THE RESIDENT ENGINEER.SEE SECTION 105.23 OF THE 2001 VERMONT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

THE CONTRACTOR SHALL COORDINATE THE INSTALLATION,USE,AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WITH CONSTRUCTION ACTIVITIES TO ASSURE ECONOMICAL,EFFECTIVE,AND CONTINUOUS EROSION AND SEDIMENT CONTROL.THE CONTRACTOR SHALL EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION ACTIVITIES PROCEED.

THE RESIDENT ENGINEER MAY DIRECT THE INSTALLATION OF CERTAIN EROSION CONTROL MEASURES IN ORDER TO AVOID POTENTIAL EROSION PROBLEMS,OR TO RESPOND TO STORM EVENTS OR DAMAGE BY CONSTRUCTION OPERATIONS.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES (CONTINUED)

THE CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL MEASURES AS SEQUENCED IN THE "SPECIFIC GUIDELINES",OR AS DIRECTED BY THE RESIDENT ENGINEER.THE TYPE,SIZE,AND LOCATION OF ANY EROSION CONTROL DEVICES SHALL NOT BE CHANGED UNLESS PRIOR APPROVAL IS OBTAINED FROM THE RESIDENT ENGINEER. ANY APPROVED CHANGES SHALL BE NOTED ON THE EROSION CONTROL PLANS AND DISCUSSED IN THE WEEKLY REPORT. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES DAILY AND AFTER EACH RAINFALL EVENT. THE CONTRACTOR SHALL REPAIR ALL DAMAGED EROSION CONTROL MEASURES IMMEDIATELY. ALL EROSION CONTROL MEASURES THAT TRAP SEDIMENT,SUCH AS SEDIMENT BASINS,SHALL BE CLEANED OUT WHEN THEIR CAPACITY REACHES 50%.

THE RESIDENT ENGINEER'S APPROVAL SHALL BE OBTAINED PRIOR TO INSTALLING ANY EROSION CONTROL NOT SPECIFIED IN THE EROSION CONTROL PLANS.HOWEVER,IN EMERGENCY SITUATIONS WHERE THE RESIDENT ENGINEER IS NOT IMMEDIATELY AVAILABLE,THE CONTRACTOR SHOULD REPAIR OR INSTALL THE EROSION CONTROLS AS HE/SHE DEEMS NECESSARY AND REPORT THE INCIDENT TO THE RESIDENT ENGINEER AS SOON AS PRACTICAL.

THE CONTRACTOR SHALL CONTROL ALL SEDIMENT-LADEN RUNOFF GENERATED WITHIN THE PROJECT SITE.

IN GENERAL,PRESERVE EXISTING VEGETATION,SHRUBS,AND TREES WHENEVER POSSIBLE.

IF USED,SILT FENCE SHALL BE PLACED AT THE TOES OF ALL FILL SLOPES AND SHALL BE CONSTRUCTED SO THAT FLOWS CANNOT BYPASS THE ENDS.AREAS DIRECTLY BELOW (DOWNHILL) OF THE SILT FENCES MUST BE UNDISTURBED AND VEGETATED.

STRAW MATTING WILL BE INSTALLED AS SOON AS PRACTICAL ON ALL CUT & FILL SLOPES.

AS CONSTRUCTION PROGRESSES,IMPLEMENTATION OF ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY THE ON-SITE COORDINATOR AND AS APPROVED BY THE RESIDENT ENGINEER.

THE PROJECT COMPLETION DATE HAS BEEN SET FOR MID-OCTOBER TO ENSURE THAT THE ESTABLISHMENT OF PERMANENT VEGETATION WILL OCCUR DURING THE GROWING SEASON.THEREFORE,WINTER STABILIZATION METHODS WILL NOT BE SHOWN ON THE PLANS OR DESCRIBED IN THE NARRATIVE.

INFORMATION REQUIRED BY THE CONTRACTOR PRIOR TO CONSTRUCTION

MUCH OF THE INFORMATION SHOWN ON THE EROSION CONTROL PLANS AND DESCRIBED IN THIS NARRATIVE IS GENERAL IN NATURE.MORE SITE SPECIFIC INFORMATION IS NOT YET AVAILABLE AS A CONTRACTOR HAS NOT YET BEEN SELECTED.THE FOLLOWING LIST OUTLINES SOME OF THE SPECIFIC INFORMATION THAT IS NOT INCLUDED IN THE EROSION CONTROL PLANS AND DESCRIBED IN THIS NARRATIVE;

LOCATION OF WASTE,BORROW AND STAGING AREAS,MATERIAL STOCKPILES,REFUELING AND MAINTENANCE AREAS (ATTACH MAP IF NECESSARY)

DISCUSSION AND ADDITIONAL DETAILS NEEDED FOR PROTECTION AND STABILIZATION OF ABOVE PROPOSED MODIFICATIONS AS/ IF REQUIRED TO THESE EROSION AND SEDIMENT CONTROL PLANS

PROPOSED DATES ASSOCIATED WITH JOB MILESTONES AS INDICATED ON THE SEQUENCE CONSISTENT WITH PROJECT CPM SCHEDULE

NARRATIVE (RE: TEMPORARY SEEDING AND MULCHING / STABILIZATION)

NAME, ADDRESS,PHONE NUMBER AND BASIC QUALIFICATIONS OF "ON-SITE COORDINATOR"

EROSION CONTROL NARRATIVE

PROJECT NAME: CLARENDON	
PROJECT NUMBER: NHG SGNL (24)	
FILE NAME: traffic/02b240/tb240ec.dgn	PLOT DATE: 30-DEC-2004
PROJECT LEADER: b.nyquist	DRAWN BY: j gruchacz
DESIGNED BY: j. gruchacz	CHECKED BY:
tb240ec.l	SHEET 32 OF 37

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MAINTENANCE PLAN FOR EROSION AND SEDIMENT CONTROLS

I. AN ON-SITE COORDINATOR SHALL MONITOR THE CONSTRUCTION SITE.

GUIDELINES

PERIMETER EROSION CONTROLS

ALL CONSTRUCTION IS WITHIN THE STATE RIGHT-OF-WAY AND NO DEMARCATION FENCING WILL BE USED.

PRIOR TO ANY CONSTRUCTION OR STAGING, THE CONTRACTOR WILL INSTALL STABILIZED CONSTRUCTION ENTRANCES LEADING TO STAGING AREAS AND THE PROJECT SITE TO PREVENT THE TRACKING OF SILTS AND SEDIMENTS OFFSITE. COARSE STONE FILL OVER FILTER FABRIC SHOULD BE UTILIZED WHERE AN ALREADY ESTABLISHED STABLE ENTRANCE DOES NOT EXIST. THE CRUSHED STONE PRODUCT USED FOR THE CONSTRUCTION OF THE STABILIZED ENTRANCES SHALL BE MONITORED FOR SEDIMENT ACCUMULATION AND REPLACED AS NECESSARY AS DIRECTED BY THE RESIDENT ENGINEER. STABILIZED CONSTRUCTION ENTRANCES SHALL ALSO BE ESTABLISHED AND MAINTAINED AT ALL OFFSITE WASTE AND BORROW AREAS. THE MINIMUM SIZE OF A STABILIZED CONSTRUCTION ENTRANCE SHALL BE 13 FEET WIDE BY 50 FEET LONG.

PRIOR TO ANY GRUBBING AND EXCAVATION, CONSTRUCT PERIMETER CONTROLS TO ENSURE THAT ANY DISTURBED SEDIMENT DOES NOT LEAVE THE SITE. SEDIMENT TRAPS/BASINS, WHERE WATER HAS BEEN ADEQUATELY TREATED, MAY BE DIRECTED TO NEARBY UNDISTURBED STREAMS OR SWALES.

DURING GRUBBING OPERATIONS, STONE CHECK DAM BARRIERS SHALL BE INSTALLED AT ANY OBVIOUS CONCENTRATED FLOW DISCHARGE POINTS, OR AS DIRECTED BY THE RESIDENT ENGINEER.

ALL AREAS OF EXPOSED SOILS AFTER THE GRUBBING ACTIVITY SHALL BE TEMPORARILY STABILIZED WITH MULCHING & SEEDING, EROSION MATTING, OR STRAW MATTING AS SOON AS PRACTICABLE AND BEFORE ANY PREDICTED RAINFALL EVENT. THESE TEMPORARY EROSION MEASURES CAN BE PLACED IN ANY COMBINATION IN AREAS OF POTENTIAL EROSION AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

PRIOR TO GRADING OPERATIONS, CONSTRUCT TEMPORARY ONSITE SEDIMENT TRAPS WHERE NECESSARY. GRADE DISTURBED AREAS TO DRAIN TOWARDS SEDIMENT TRAP WHERE POSSIBLE.

ANY MATERIAL STOCKPILES, INCLUDING BUT NOT LIMITED TO, GRUBBING MATERIAL, SAND BORROW, EARTH BORROW, GRANULAR BORROW, TOPSOIL, AND ANY EXCAVATED WASTE PILES SHALL BE MULCHED AND SHALL ALSO HAVE SILT FENCE INSTALLED AROUND THE BASE OF THE STOCKPILE.

ANY OFF-SITE AREAS WHERE BORROW OR EXCAVATED MATERIALS WILL BE STOCKPILED WILL HAVE A DOUBLE INSTALLATION OF SILT FENCE AROUND THE BASE OF EACH STOCKPILE. WASTE DISPOSAL SITES WILL ALSO HAVE A DOUBLE INSTALLATION OF SILT FENCE AROUND THE BASE OF EACH STOCKPILE, AND IMMEDIATELY AFTER FINAL GRADING, SHALL BE SEEDED AND MULCHED. REMOVAL OF THE SILT FENCES AROUND THE WASTE AREAS SHALL BE PERFORMED ONLY AFTER THE APPROVAL OF THE RESIDENT ENGINEER.

ROADWAY EROSION CONTROLS

ON ANY PARTIALLY COMPLETED PERMANENT CUT AND FILL SLOPES, ALL EXPOSED SOILS WILL BE STABILIZED WITH STRAW MATTING OR SEEDED AND MULCHED. IN AREAS OF CONCENTRATED RUNOFF ABOVE NEWLY CONSTRUCTED FILL SLOPES, FLEXIBLE SLOPE PIPES OR OTHER APPROVED DIVERSION METHODS WILL BE USED TO TRANSPORT RUNOFF DOWN THE FILL SLOPES TO SEDIMENT TRAPS OR SETTLING BASINS.

THE SUBBASE MATERIAL SHOULD BE PLACED AS SOON AS THE SUBGRADE HAS REACHED ITS FINAL GRADE AND SLOPE. THE TEMPORARY TRAVELING SURFACE WILL BE GRADED TO PROMOTE SHEET FLOW OFF THE SURFACE ONTO SLOPES, OR FLOWS WILL BE DIRECTED TO COLLECTION AREAS AND SHALL BE TRANSPORTED DOWN THE FILL SLOPES TO SEDIMENT TRAPS OR SETTLING BASINS.

ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED FOLLOWING FINAL GRADING ACTIVITIES. ALL AREAS THAT ARE GRADED OUTSIDE OF THE GROWING SEASON SHALL BE TREATED WITH SLOPE STABILIZATION UNTIL SEEDING & MULCHING CAN BE PERFORMED.

REMOVAL & FINAL EROSION CONTROLS

REMOVE TEMPORARY FILL MATERIAL (IF ANY) TO ORIGINAL GROUND.

ON PARTIALLY REMOVED TEMPORARY FILL SLOPES, ALL EXPOSED WILL BE STABILIZED AT THE END OF EACH WORK DAY.

AS THE TEMPORARY DETOUR FILLS ARE REMOVED, ALL EXPOSED SOIL SURFACES WILL BE STABILIZED WITH STRAW MATTING AND/OR SEED & MULCH.

ANY NEWLY PLACED GRUBBING MATERIAL SHALL BE STABILIZED WITH STRAW MATTING AND/OR SEED & MULCH AS DIRECTED BY THE RESIDENT ENGINEER.

REMOVE ANY SEDIMENT TRAPS ONLY AFTER ANY TOE-OF-FILL DITCHES HAVE BEEN STABILIZED AND VEGETATION IS WELL ESTABLISHED.

REMOVE ALL REMAINING TEMPORARY EROSION CONTROL MEASURES, REGRADE ANY AREAS IF NECESSARY, TREAT ALL REGRADED AREAS WITH STRAW MATTING AND/OR MULCH & SEED, AND ESTABLISH ANY FINAL EROSION CONTROL DEVICES AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

EROSION CONTROL NARRATIVE

PROJECT NAME: CLARENDON	
PROJECT NUMBER: NHG SGNL (24)	
FILE NAME: traffic/02b240/tb240ec.dgn	PLOT DATE: 30-DEC-2004
PROJECT LEADER: b.nyquist	DRAWN BY: j.gruchacz
DESIGNED BY: j.gruchacz	CHECKED BY:
tb240ec.d	SHEET 33 OF 37

SGNL-ERO 2

SILT FENCE

APPLICATION NOTES:

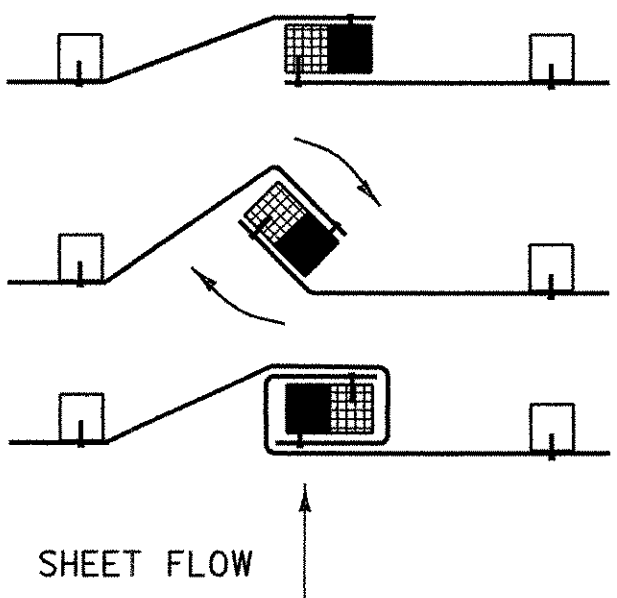
- A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.
- B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.
- C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

- 1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE, 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
- 2. ALL ENDS SHALL BE 'J' HOOKED TO TRAP SEDIMENT.
- 3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
- 4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
- 5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRES.
- 6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

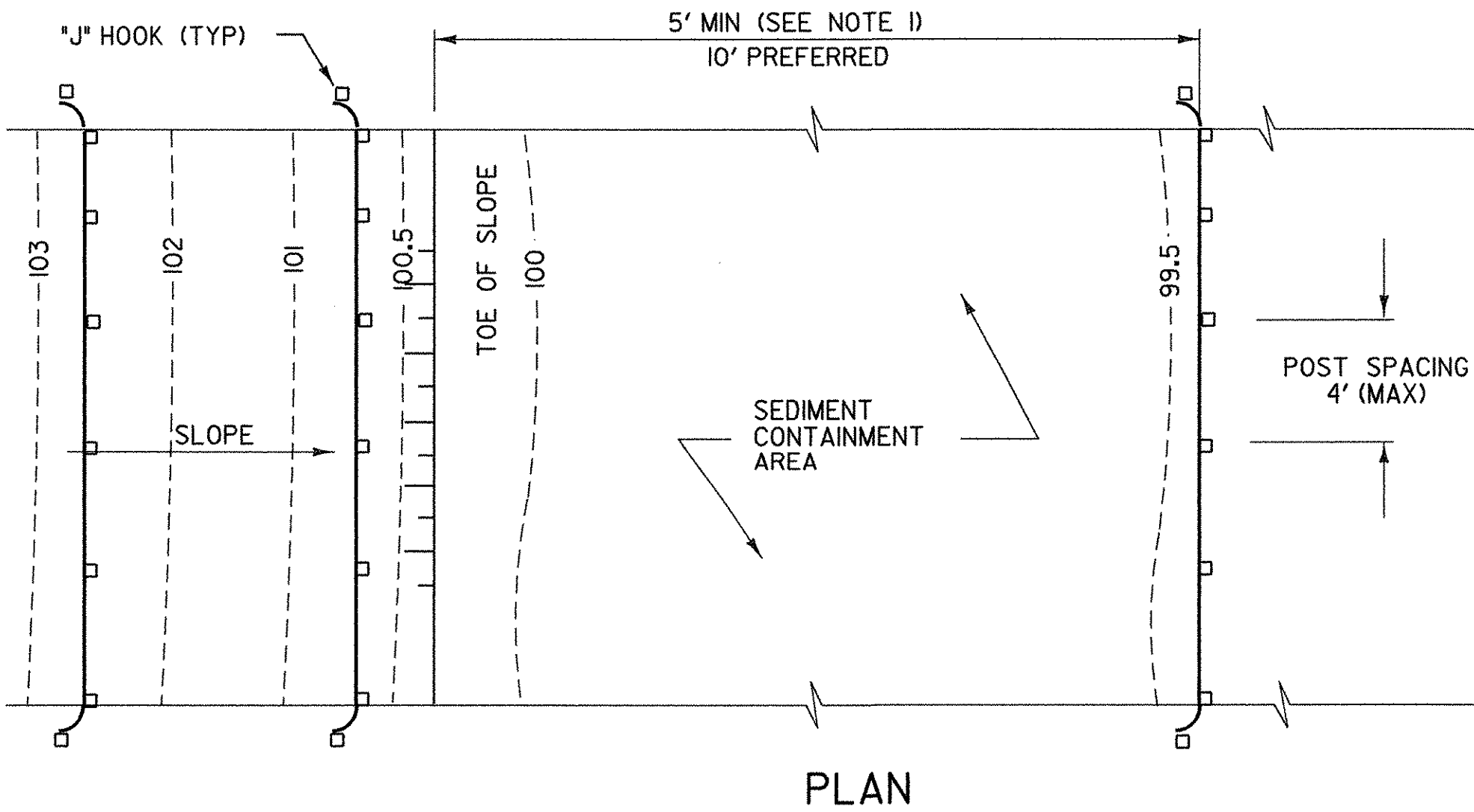
CONSTRUCTED SLOPE	SLOPE LENGTH (LS) FT	HORIZONTAL LENGTH (LH) FT
3 : 1	80	75
4 : 1	130	125
5 : 1	200	200
> 5 : 1	250	250

- 7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- 8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
- 9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
- 10. PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
- 11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- 12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

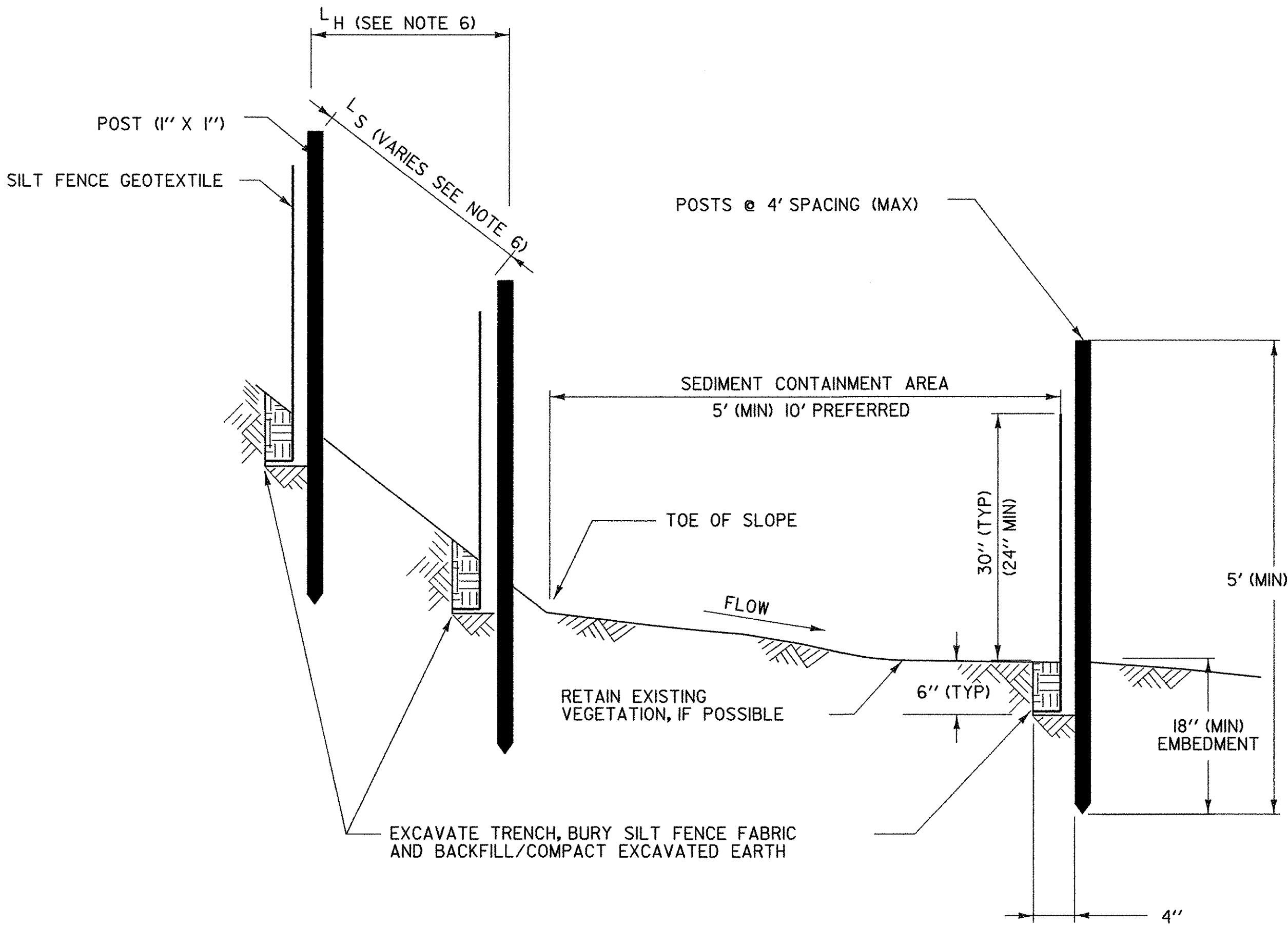


- 1. PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
- 2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
- 3. DRIVE BOTH POSTS 18 INCHES INTO THE GROUND AND BURY THE FLAP IN THE TRENCH.

SPLICING DETAIL



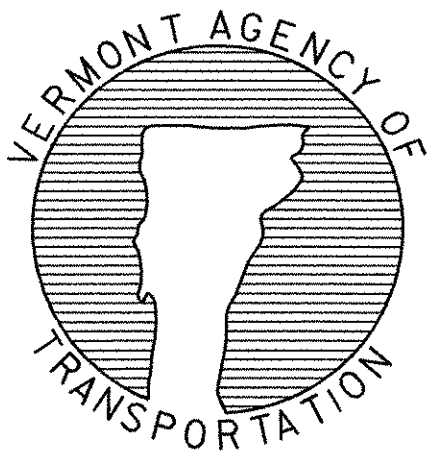
PLAN



SECTION
SILT FENCE - TEMPORARY

REVISIONS AND CORRECTIONS
MAY 18, 2004 N. GARBACIK

EROSION PREVENTION &
SEDIMENT CONTROL DETAILS
SILT FENCE



DETAIL
EPSC-1

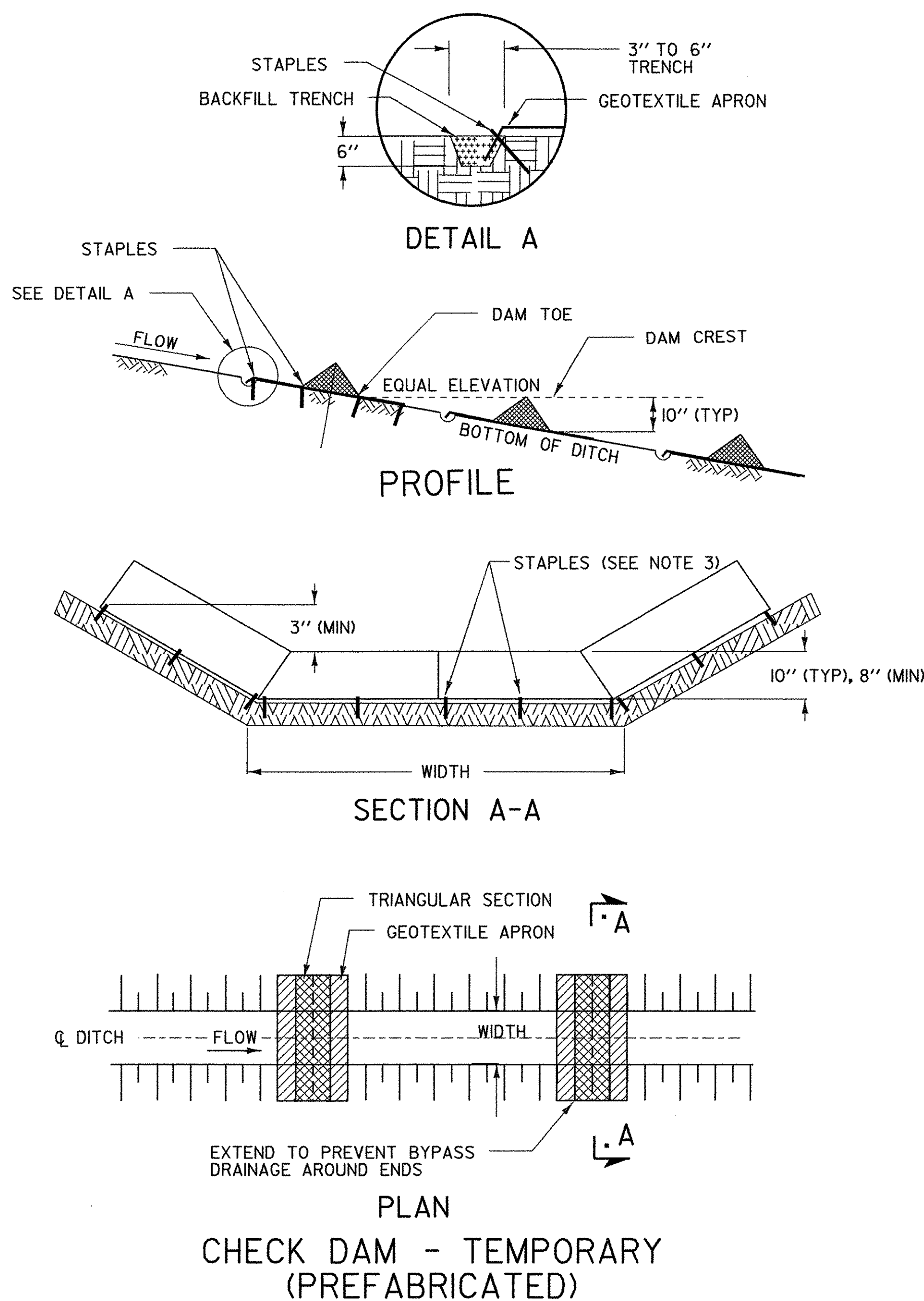
CHECK DAMS

APPLICATION NOTES:

- THE PRIMARY PURPOSE OF A CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY.
- CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.
- CHECK DAMS ARE NOT INTENDED TO FILTER SEDIMENT FROM TURBID WATER.
- DETAILS SHOWN SHALL BE USED FOR TEMPORARY INSTALLATION ONLY.
- PREFABRICATED DAMS ARE NOT TO BE USED ON SLOPES GREATER THAN 5% OR PER MANUFACTURER'S SPECIFICATIONS.
- PREFABRICATED DAM SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

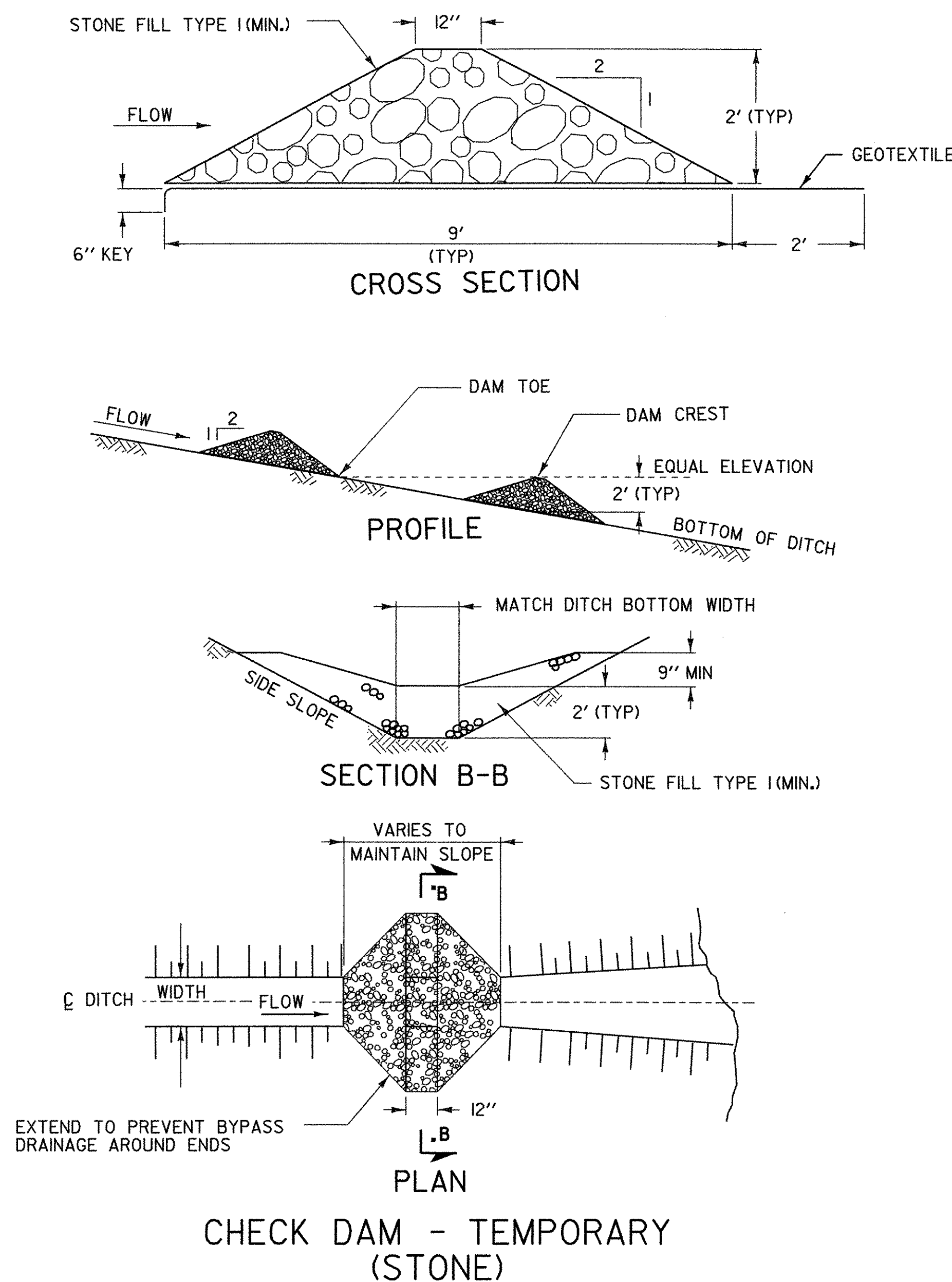
GENERAL NOTES:

- GEOTEXTILE SHALL BE INSTALLED UNDER STONE FILL. IT SHALL BE KEYED IN ON THE UP HILL END AND SHALL EXTEND 2 FEET BEYOND THE STONE ON THE DOWN HILL END.
- CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF STONE FILL TYPE I (MIN.). STONE SIZE SHOULD BE INCREASED WITH INCREASED SLOPE AND VELOCITY.
- THE UPHILL END OF THE APRON FOR THE PREFABRICATED CHECK DAM SHALL BE STAPLED AND BURIED AS SHOWN IN DETAIL 'A' OR AS RECOMMENDED BY THE MANUFACTURER'S LITERATURE.
- MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
- AT TIME OF REMOVAL OF THE CHECK DAMS, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
- PAYMENT FOR INSTALLATION AND REMOVAL OF CHECK DAMS SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MONITORING CHECK DAMS SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MAINTAINING CHECK DAMS SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



PREFABRICATED CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1 %	50 FT
2 %	40 FT
3 %	25 FT
4 %	20 FT
5 %	15 FT

** BASED ON 10" TYPICAL HEIGHT



STONE CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1 %	200 FT
2 %	100 FT
3 %	65 FT
4 %	50 FT
5 %	40 FT
6 %	30 FT
8 %	25 FT
10 %	20 FT

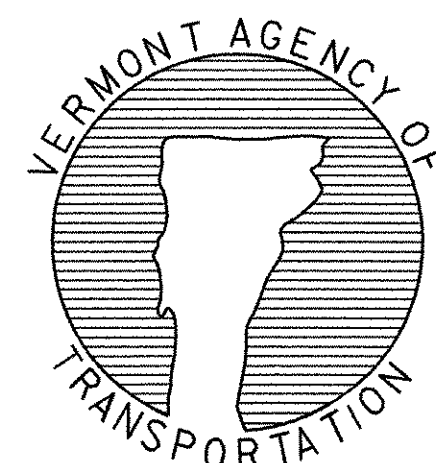
** BASED ON 2' TYPICAL HEIGHT

REVISIONS AND CORRECTIONS

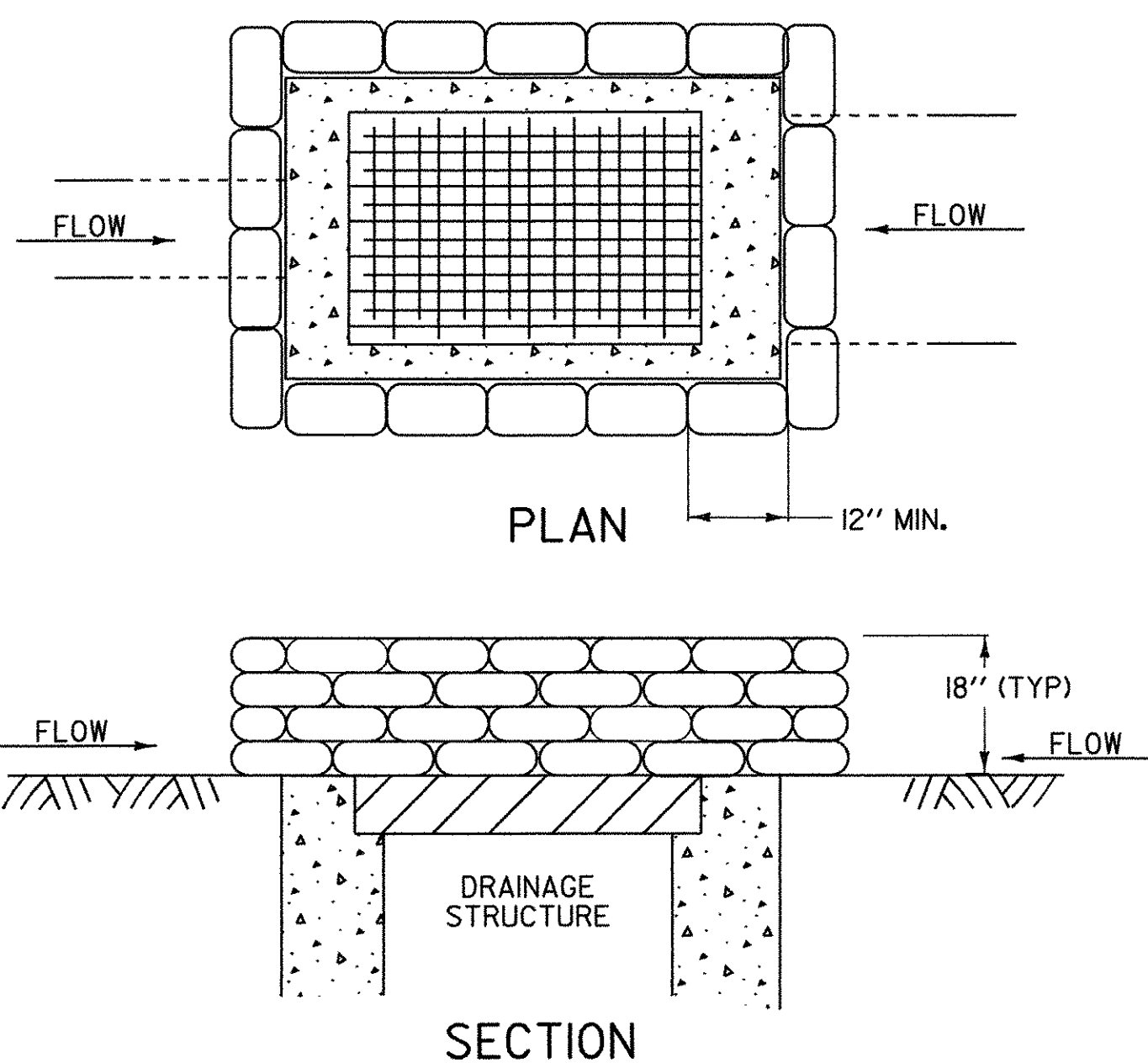
MAY 18, 2004

N. GARBACIK

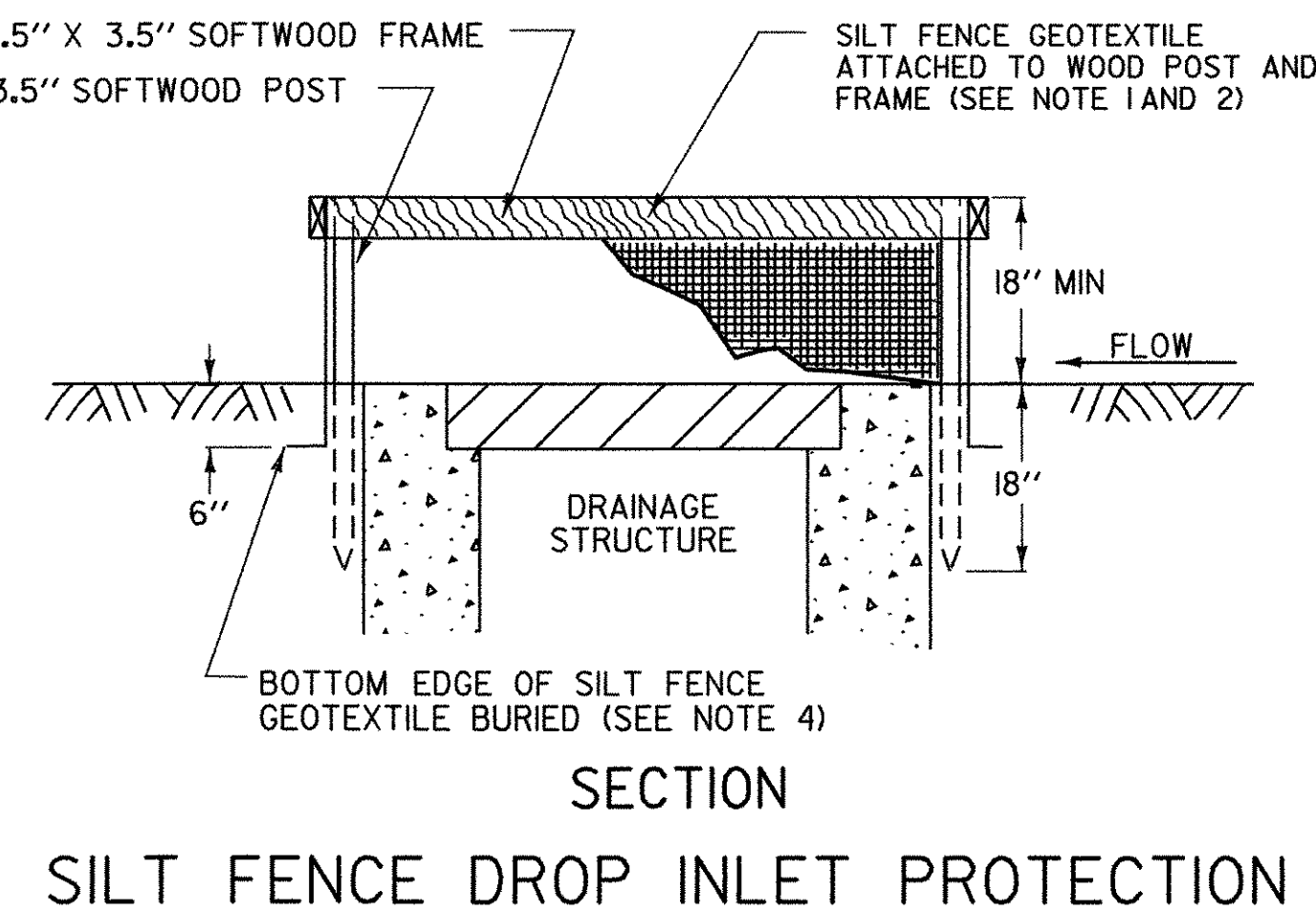
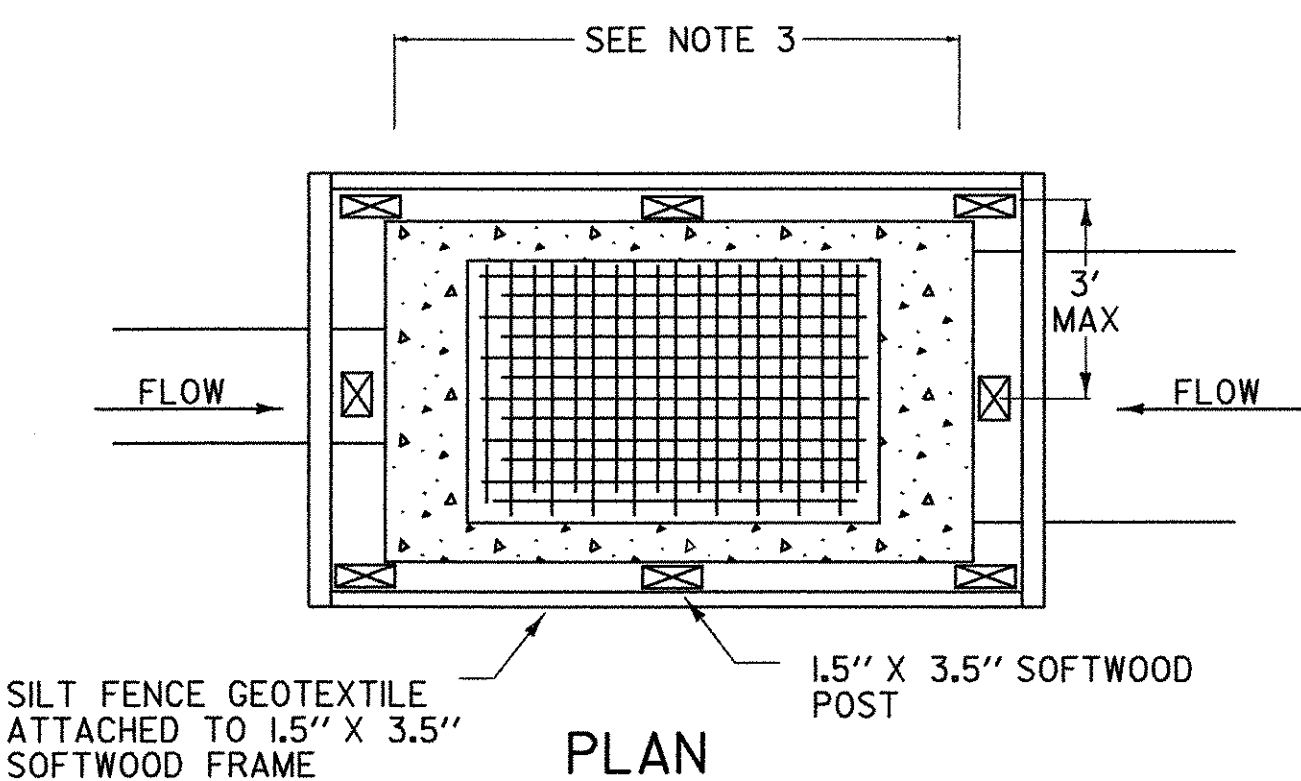
EROSION PREVENTION & SEDIMENT CONTROL DETAILS CHECK DAMS



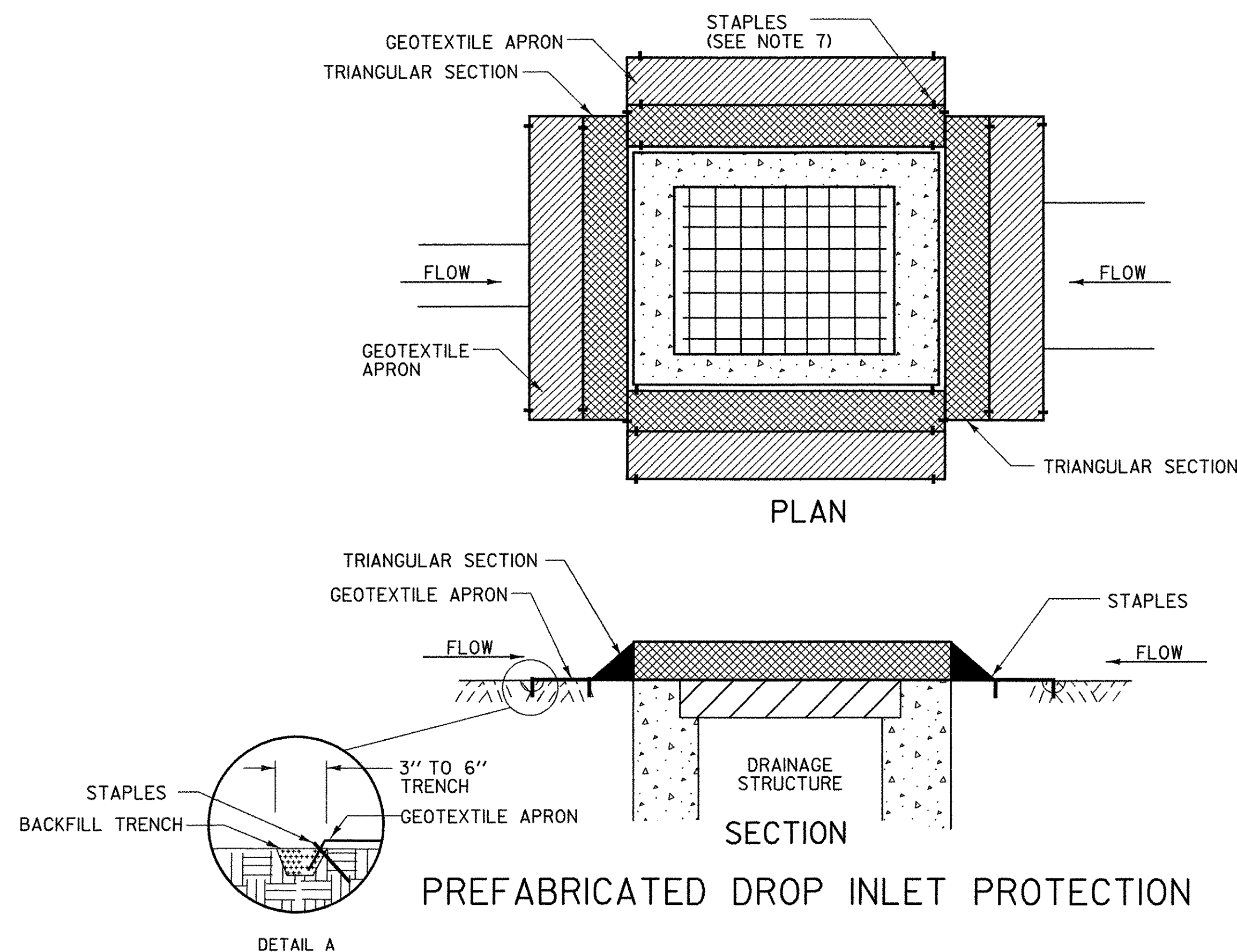
DETAIL EPSC-2



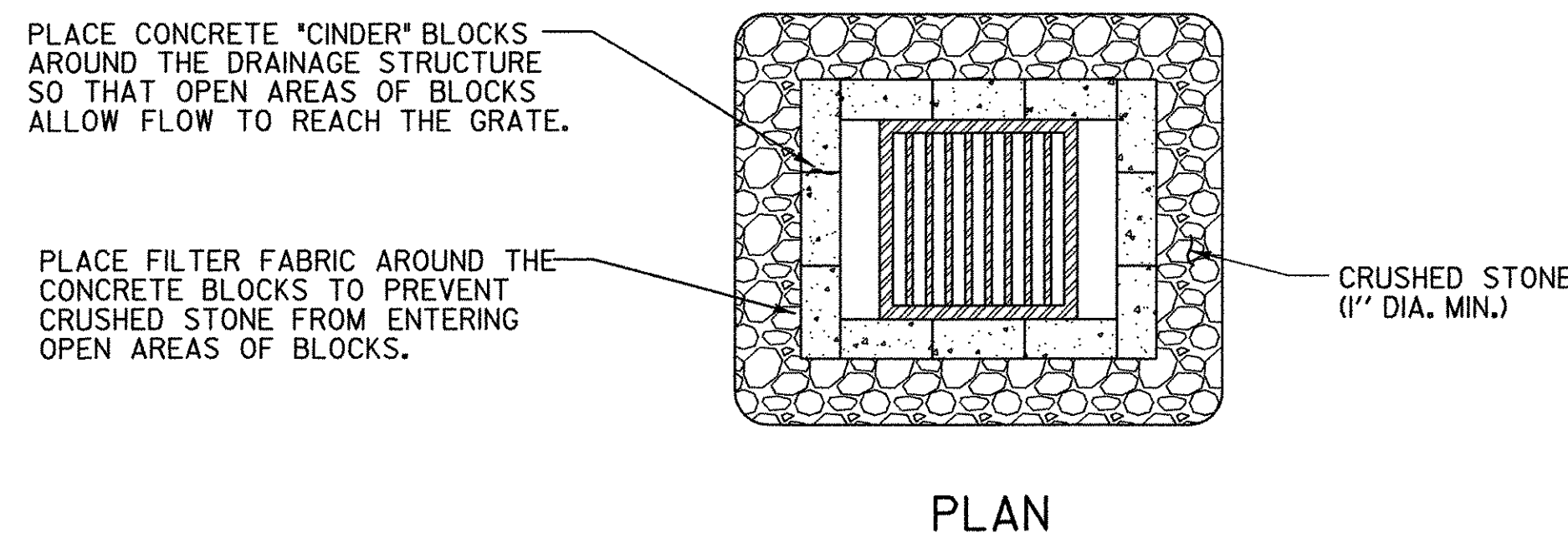
GRAVEL BAG DROP INLET PROTECTION



SILT FENCE DROP INLET PROTECTION



PREFABRICATED DROP INLET PROTECTION



ROCK BARRIER DROP INLET PROTECTION
TEMPORARY PAVED AREAS

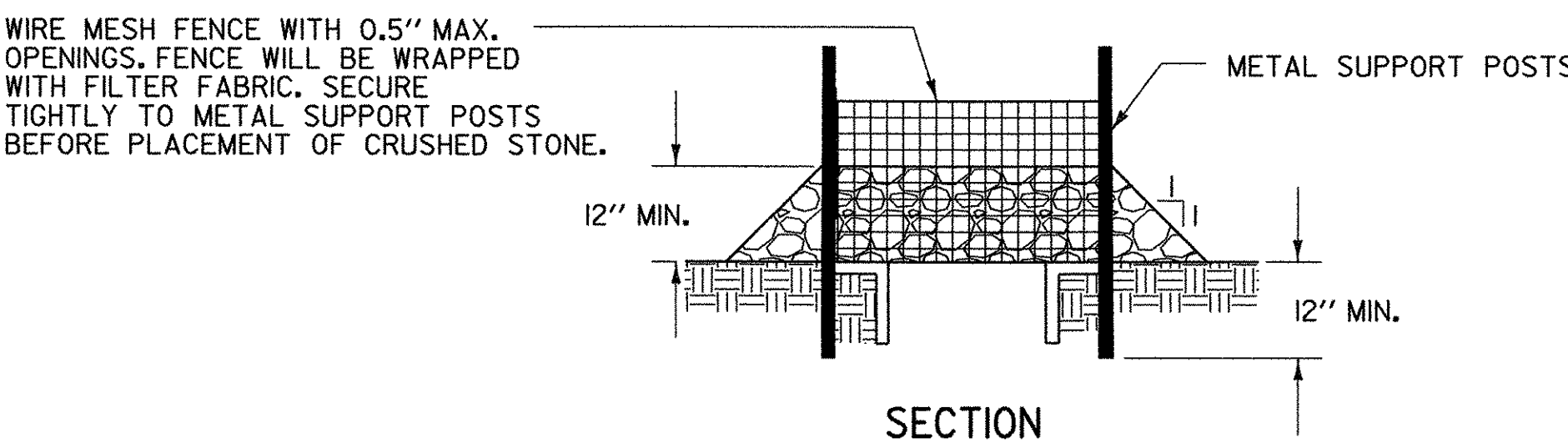
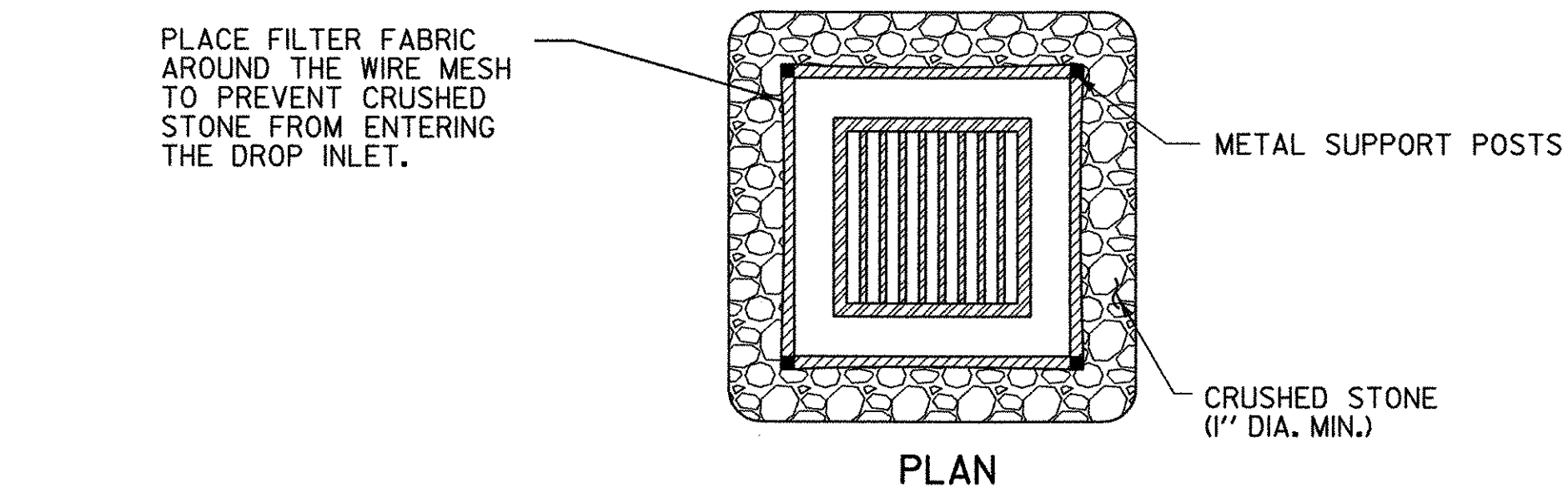
DROP INLET PROTECTION

APPLICATION NOTES:

- A. THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.
- B. THESE EXAMPLES OF DROP INLET PROTECTION ARE NOT INTENDED FOR USE ON GRADES. ON GRADE THEY MAY CAUSE WATER TO BYPASS THE STRUCTURE, CREATING ADDITIONAL EROSION OR FLOODING.
- C. POSSIBLE MODIFICATIONS FOR USE ON GRADE INCLUDE ADDING A BERM DOWNSTREAM OF THE INLET TO CREATE PONDING. CHECK DAMS MAY ALSO BE USED UPSTREAM OF THE INLET TO SLOW VELOCITIES.
- D. PREFABRICATED DROP INLET PROTECTION SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

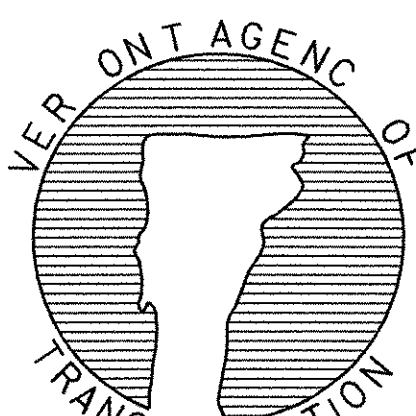
1. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL, BASED ON FIELD LOCATION AND CONDITIONS.
2. SILT FENCE GEOTEXTILE SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
3. SPACE SILT FENCE POSTS EVENLY AROUND INLET WITH A MAXIMUM SPACING OF 3 FEET. DRIVE POSTS A MINIMUM OF 18 INCHES INTO GROUND. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.
4. SILT FENCE GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 6 INCHES AND BACKFILLED. GEOTEXTILE SHALL BE SECURELY FASTENED TO POSTS AND FRAME.
5. GRAVEL BAGS SHALL BE FILLED WITH CLEAN STONE, RATHER THAN SAND, TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM IF BAGS ARE DAMAGED DURING USE.
6. GRAVEL BAGS SHALL BE INDIVIDUALLY TIED, DOUBLE BAGGED AND INVERSELY INSERTED. GRAVEL BAGS SHALL LAP THE JOINTS BETWEEN THE BAGS IN THE LAYER BELOW.
7. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION WITH STAPLES AS DETAILED IN THE PLAN VIEW OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
10. PAYMENT OF INLET PROTECTION SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING INLET PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



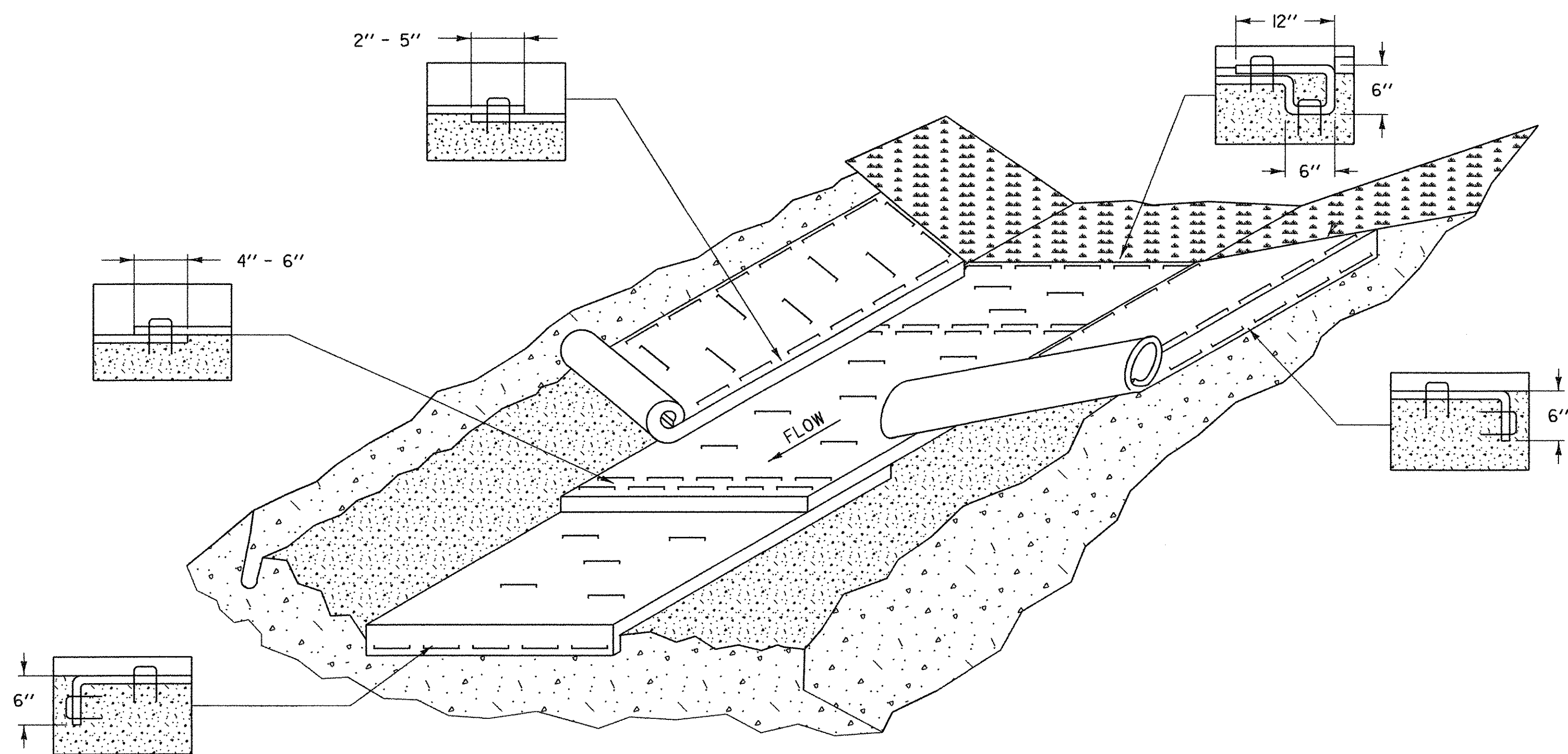
ROCK BARRIER INLET PROTECTION
TEMPORARY UNPAVED AREAS

REVISIONS AND CORRECTIONS
MAY 18, 2004 N. GARBACIK

EROSION PREVENTION & SEDIMENT CONTROL DETAILS DROP INLET PROTECTION



DETAIL
EPSC-3



EROSION PROTECTION FOR DITCHES

APPLICATION NOTES:

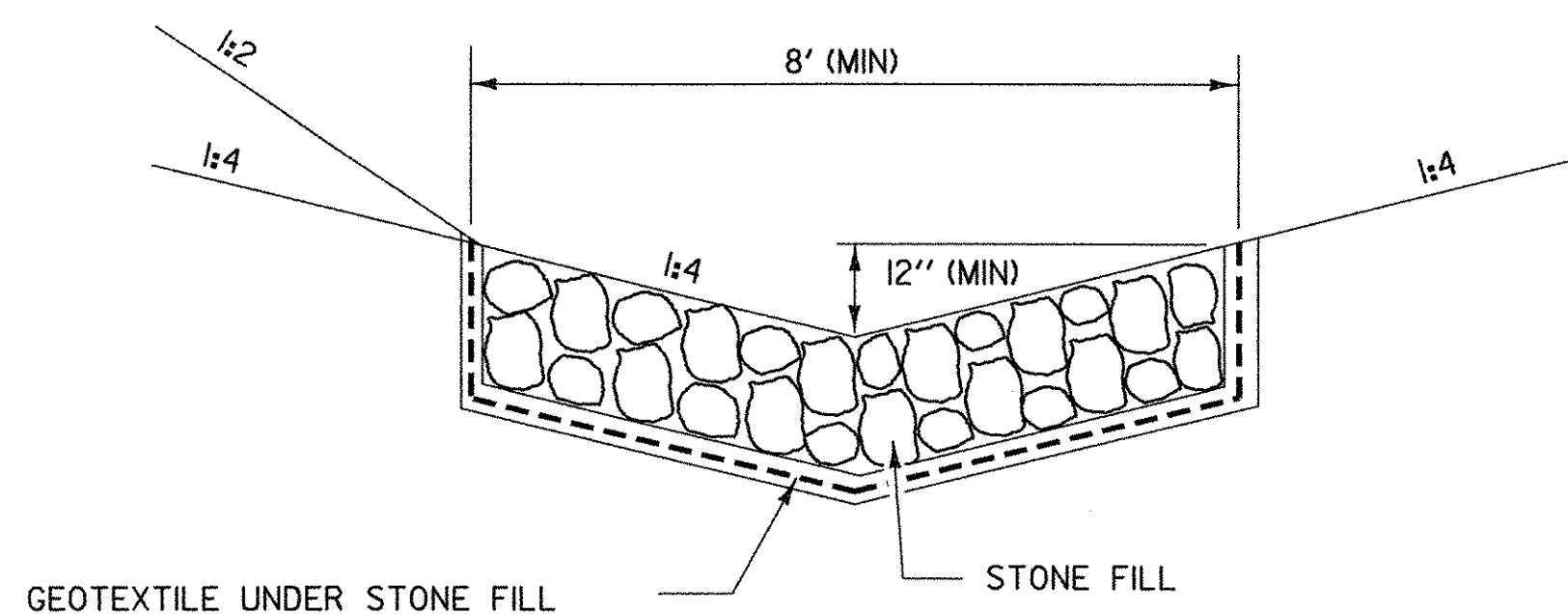
- THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.
- THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

DITCH AND CHANNEL PROTECTION	
SLOPE	LINING
< 1%	GRASS
1% TO 4 %	EROSION MATTING
4 % TO 10 %	STONE FILL, TYPE I
> 10 %	STONE FILL, TYPE II

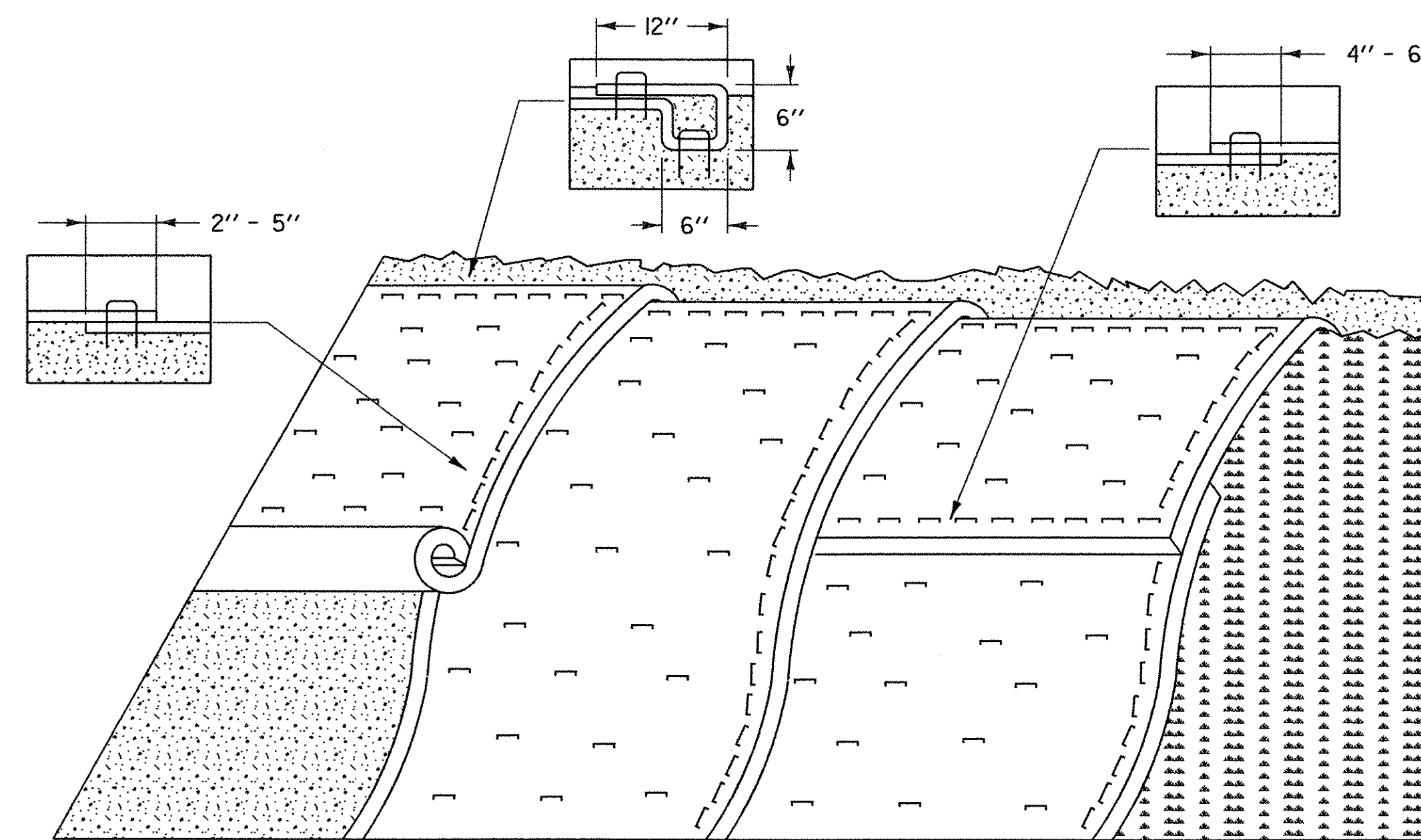
STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	1 FT
TYPE II	2 FT

GENERAL NOTES:

- WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
- GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
- APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
- INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
- INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
- ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- MEASURES SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
- PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
- PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MAINTAINING DITCH PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TEMPORARY STONE LINED DITCH



EROSION PREVENTION FOR SIDE SLOPES

APPLICATION NOTES:

- THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND AID THE STABLISHMENT OF VEGETATION
- EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:
 - SIDE SLOPES > 3:1 (H:V)
 - AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
 - WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

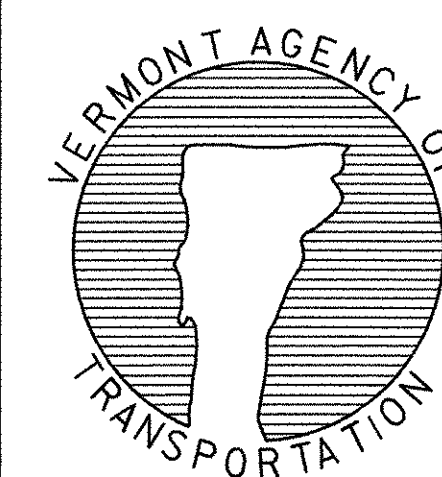
GENERAL NOTES:

- GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
- APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
- ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
- OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
- OVERLAP ADJACENT MATTING AS SHOWN.
- CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
- MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
- MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
- PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
- PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
- PAYMENT FOR MAINTAINING SLOPE PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

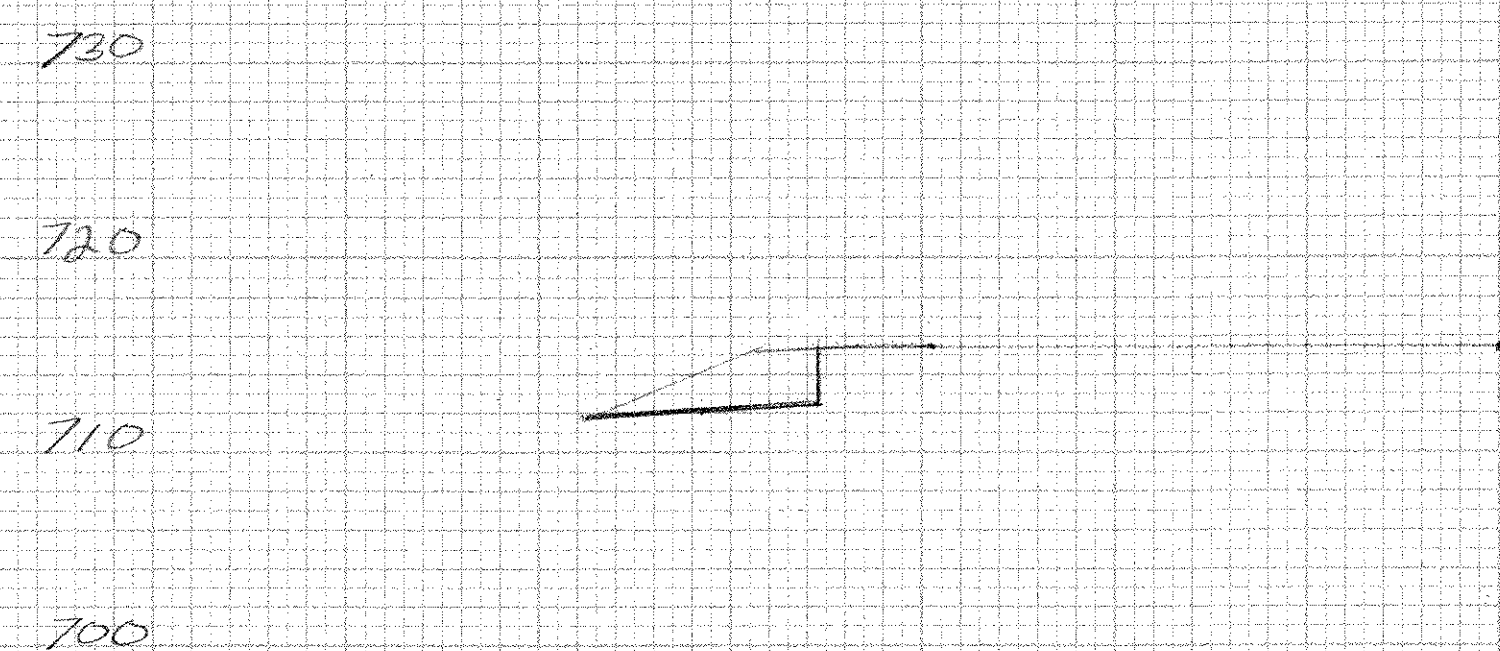
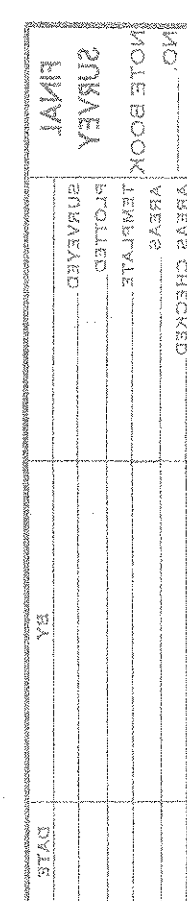
REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

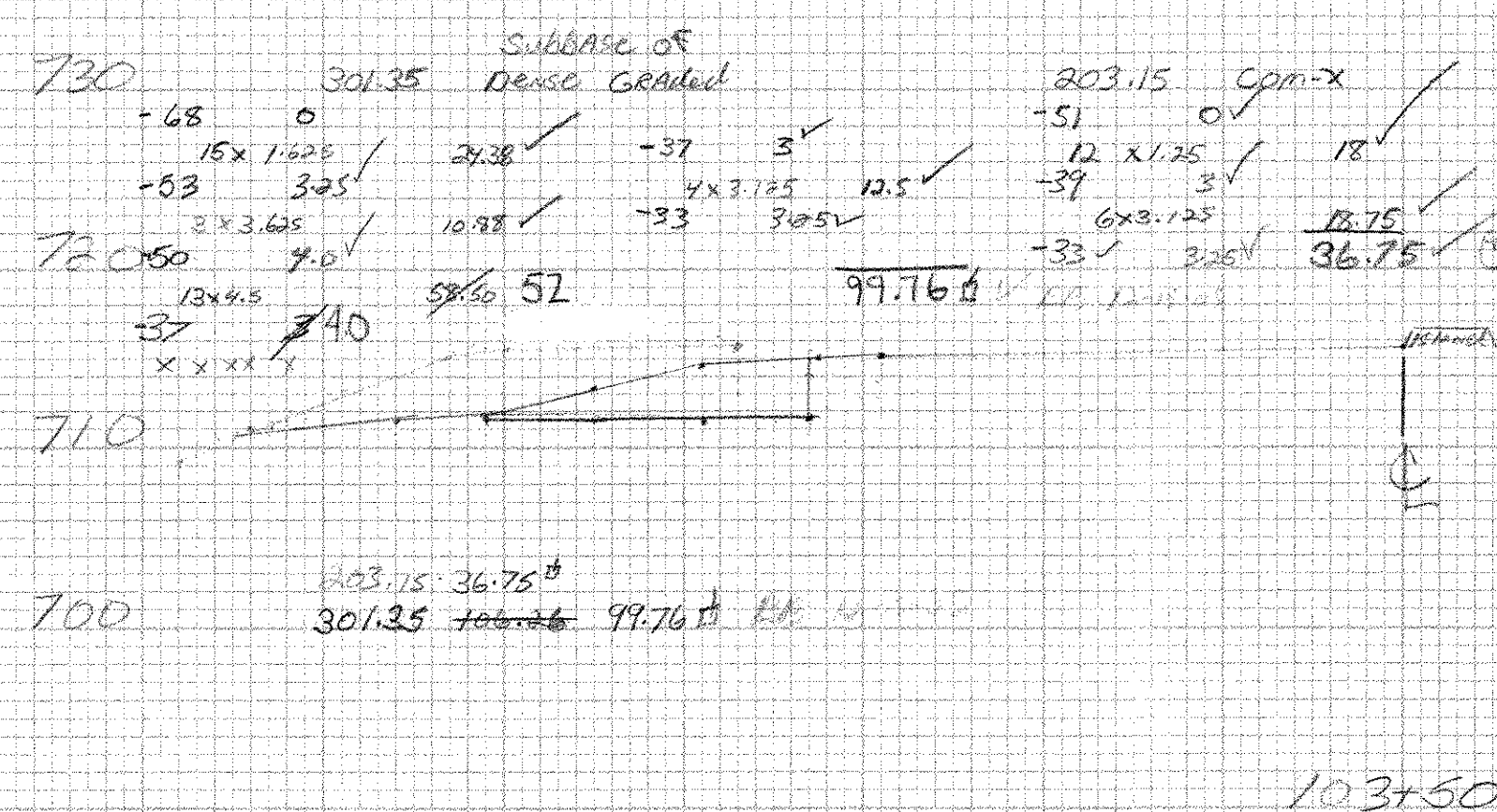
EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SLOPE PROTECTION



DETAIL EPSC-5

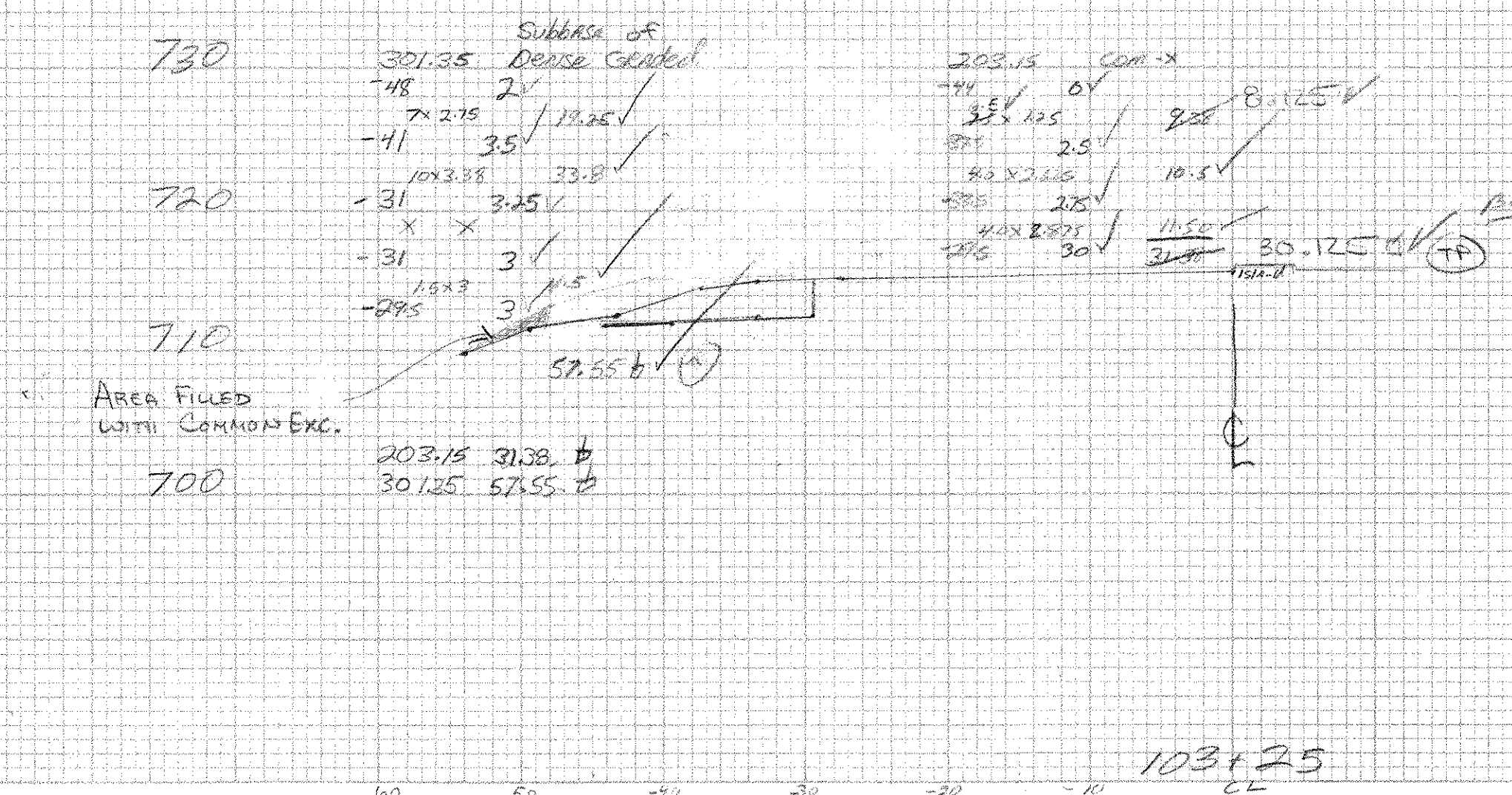


ITEM 203.15 - COMMON EXCAVATION
QUANTITIES TO SPREADSHEET FOR
CALCULATIONS OF FINAL QUANTITIES.
SEE SHEETS 203.15-1 TO 203.15-2
OF CALCULATION BINDER FOR DETAILS (TP)



ITEM 301.35- SUBBASE OF DENSE GRADED
CRUSHED STONE

QUANTITIES TO SPREADSHEET FOR
CALCULATION OF FINAL QUANTITIES
SEE SHEETS 301.35-1 TO 301.35-2
OF CALCULATION BINDER FOR DETAILS



DRAWN BY
BRUCE BOYLE

CHECKED BY
TIM FOLETT

CLARENDON NHG SGNL (24)

038

NO.	DATE	BY
2003.15	12-13-2005	TP
2003.15		
2003.15		

NO.	DATE	BY
2003.15	12-13-2005	TP
2003.15		
2003.15		

730

720

710

700

175+75

ITEM 203.15 - COMMON EXCAVATION
QUANTITIES TO SPREADSHEET FOR
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SEE SHEETS 203.15-1 TO
203.15-2
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TP

ITEM 301.35 - SUBBASE OF DENSE GRADED CRUSHED STONE

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SEE SHEETS 301.35-1 TO 301.35-2
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TP

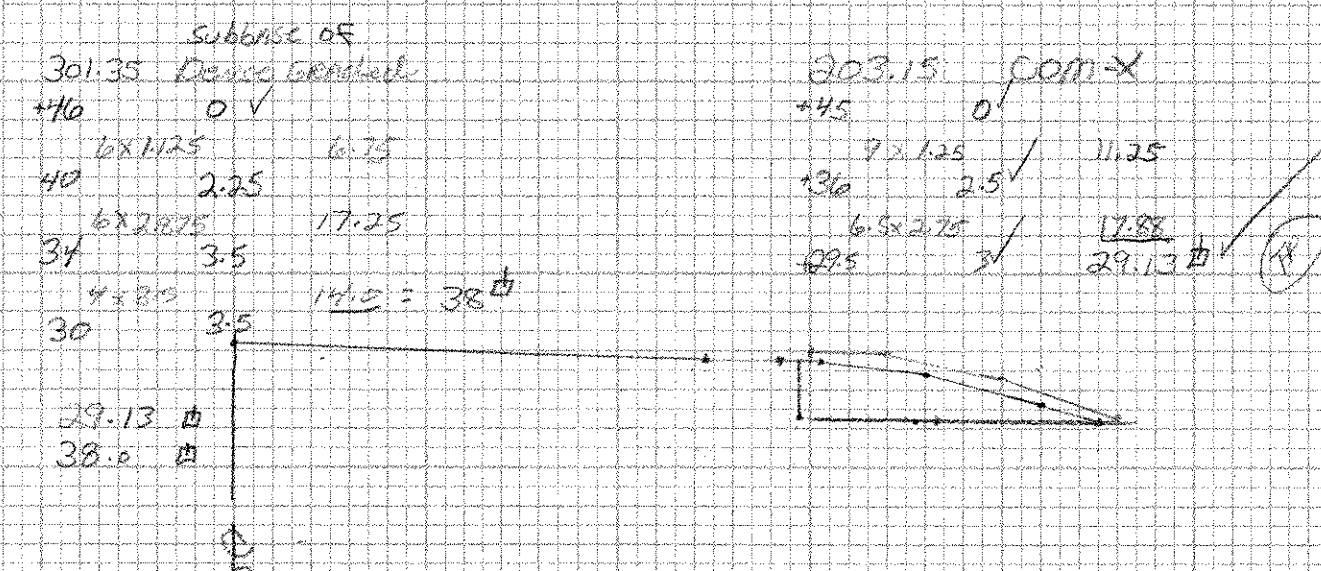
730

720

710

700

175+50



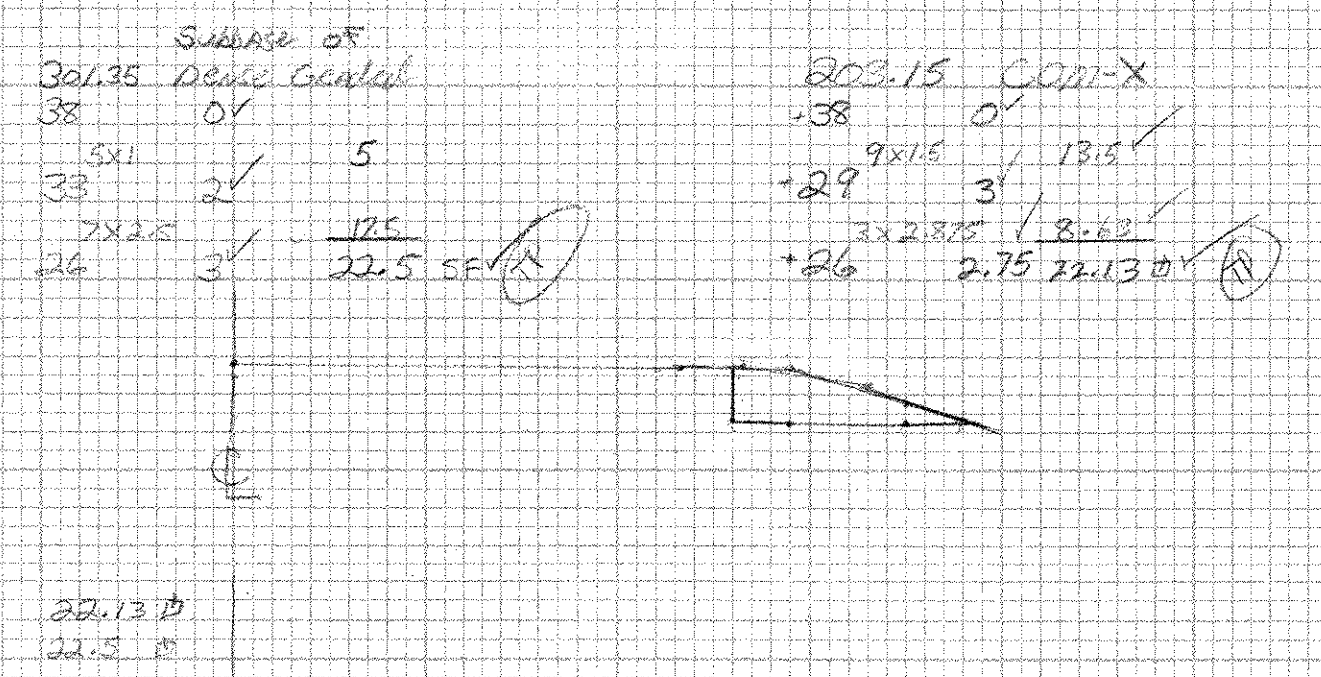
730

720

710

700

175+22



DRAWN BY BRUCE BOYLE

CHECKED BY TIM FOLKETT

TP 12-13-2005

CLARENDON NHG SGNL(24)

039