

INDEX OF SHEETS
SEE SHEET 2

STATE OF VERMONT AGENCY OF TRANSPORTATION

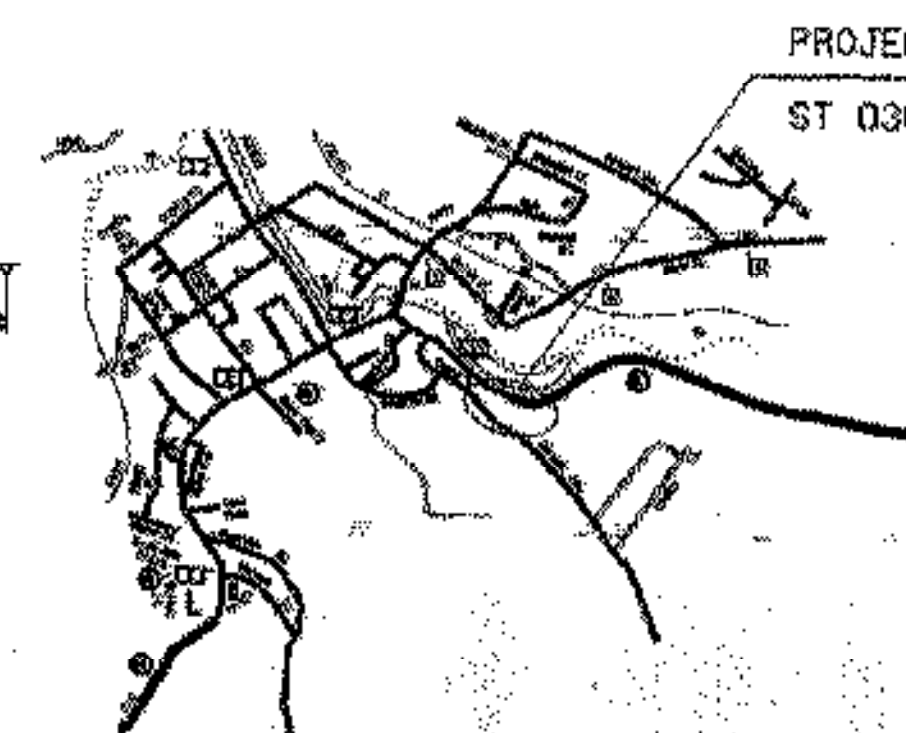
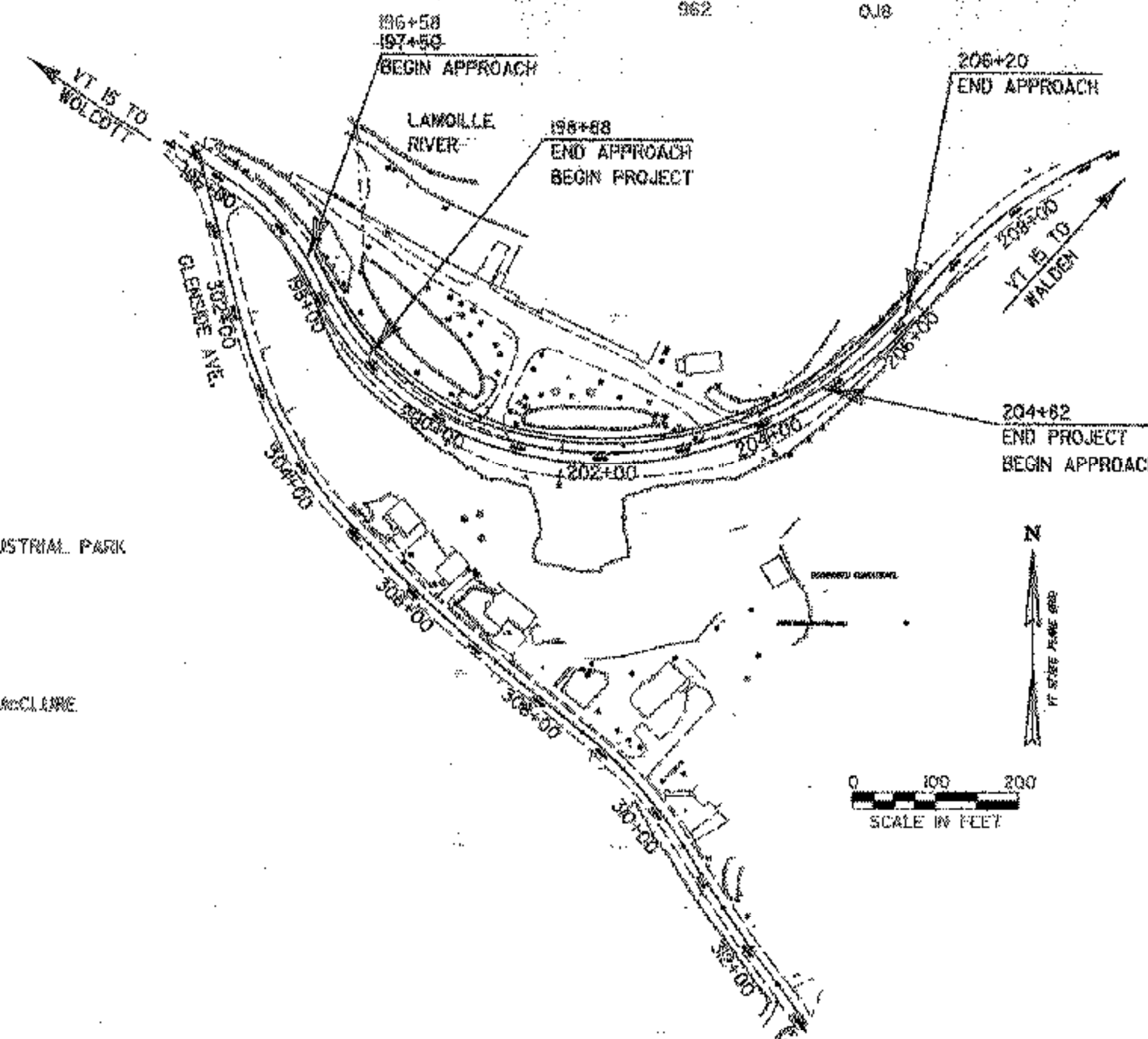


PROPOSED IMPROVEMENT TOWN OF HARDWICK COUNTY OF CALEDONIA VT. ROUTE 15 (MINOR ARTERIAL)

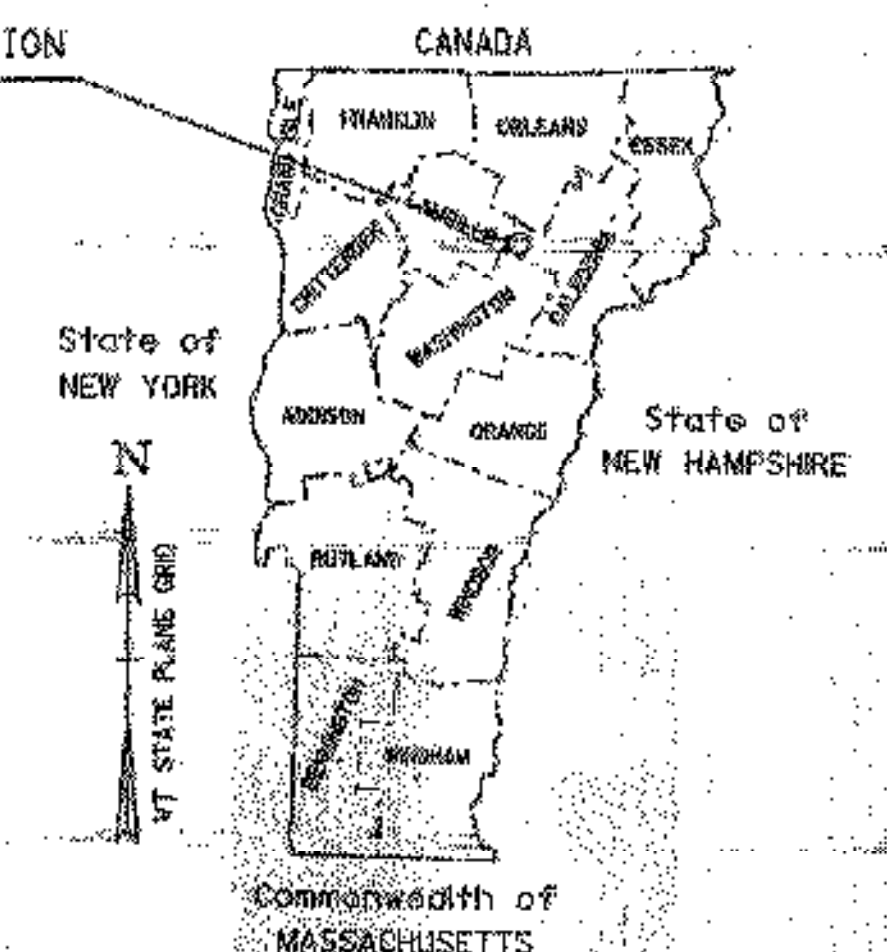
BEGINNING AT A POINT ON VT. ROUTE 15, EAST OF THE INTERSECTION OF GLENSIDE AVE. AT
MILEMARKER 3.63, IN THE TOWN OF HARDWICK, AND EXTENDING EASTERLY 0.11 MILES TO MILEMARKER 3.74

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES MINOR RE-ALIGNMENT OF VT. 15, INSTALLING A COUNTERBERM FOR
SLOPE STABILIZATION, DRAINAGE, GUARDRAIL, PAVEMENT AND OTHER RELATED ROADWAY ITEMS.

LENGTH OF ROADWAY 594 FT = 0.11 MI
LENGTH OF PROJECT 594 FT = 0.11 MI
962 0.8



SCALE



RECORD PLANS

CONTRACTOR: E.E. PACKARD ENTERPRISES, INC., EAST MONTPELIER, VT.
RESIDENT ENGINEER: KEVIN MCCLURE
CONSTRUCTION BEGAN: JUNE 15, 2006
CONSTRUCTION COMPLETE: APRIL 15, 2009
RECORD PLANS BY: K. MCCLURE, L. NOYES, & CUP PERCE
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY
THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.
BY: *Kevin McClure* RESIDENT ENGINEER
DATE: 5-15-07
NOTE: Any further information concerning final quantities, amounts or other details
relative to this project may be found at Central Files in the electronic archives.

CONVENTIONAL SYMBOLS

COUNTY LINE	---
TOWN LINE	---
LIMITS OF ACCESS	---
POINT OF ACCESS	X
FENCE LINE	X-X-X-X-X-X-X-X-X-X
STONE WALL	---o---o---o---o---o---o---o---o---o---o---
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	---

CONTRACT START: 4-10-06
SUBSTANTIAL COMPLETE: 10-05-06
CONTRACTOR: E.E. PACKARD ENTERPRISES, INC.
ROUTE 2 LOT 3 PACKARD INDUSTRIAL PARK
P.O. BOX 70
EAST MONTPELIER, VT 05651
RESIDENT ENGINEER: KEVIN MCCLURE

RECORD PLANS COMPLETED BY LYLE NOYES & KEVIN MCCLURE

SURVEYED BY: R. GILMAN
SURVEYED DATE: DEC. 2004

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (96)

TRAFFIC DATA

2005 ADT	=	4,600
2025 ADT	=	5,900
2025 ADTT	=	820
2025 DHV	=	670
D %	=	59
2025 I %	=	13
TOTAL ESALS (2005-2025)	=	2,956,000
TOTAL ESALS (2005-2045)	=	7,537,000

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING
CHANGES AS MAY BE REQUIRED BY THE DIRECTOR OF
PROGRAM DEVELOPMENT.
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE
WITH THESE PLANS AND THE STANDARD SPECIFICATIONS
FOR CONSTRUCTION DATED 2003 AS APPROVED BY THE
FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2004.
FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT
REVISIONS AND SUCH REVISED SPECIFICATIONS AND
SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE
PLANS.
FILE NAME: d040e060bdr.dgn
IPARM NAME: d040e060bdr.dgn

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATOR

APPROVED: _____ DATE: _____

DIRECTOR OF PROGRAM DEVELOPMENT

APPROVED: *Richard F. Boudreau* DATE: 5-2-05

PROJECT MANAGER: A. BOMBARDIER

PROJECT NAME: HARDWICK

PROJECT NUMBER: STP ST 030-3(4)

SHEET 1 OF 63 SHEETS

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STANDARDS

B-1	BANKING TABLES	6/1/1994
B-5	SLOPE GRADING, EMBANKMENTS, MUCK	6/1/1994
B-11	UNDERDRAIN - ROCK SUBGRADE, SLOPE STABILIZ.	6/1/1994
B-71	RESIDENTIAL AND COMMERCIAL DRIVES	2/1/2004
D-2	C.R.M. HEADWALLS, UNDERDRAIN	6/1/1994
	C.R.M. HEADWALLS & RETAINING WALLS	
	RIPRAP LIGHT TYPE SLOPE HEADWALL	
	REINFORCED CONCRETE HEADWALL,	
	UNDERDRAIN & CARRIER PIPE CONSTRUCTION DETAILS	
D-3	TREATED GUTTERS	6/1/1994
D-4	FLUSHING BASINS, END SECTION, ELBOWS	6/1/1994
	TYPICAL WATERFALL FOR CULVERTS UP TO AND	
	INCLUDING 48" DIA	
	EXTENSION SERVICE BOX AND CURB STOP	
	CORRUGATED PIPE ELBOW	
	GRANULAR BORROW AT CULVERT LOCATIONS	
	UNDERDRAIN FLUSHING BASIN	
	CORRUGATED STEEL PIPE END SECTION	
	CORRUGATED STEEL PIPE ARCH END SECTION	
D-6	REINF. CONCRETE DROP INLET W/GRATE (DITCHES)	6/1/1994
D-11	GRATES & COVERS (TYPE A)	6/1/1994
D-13	CONCRETE CATCH BASIN	1/3/2000
D-16	PRECAST CURB DI, GRATE, RCP END SECTION, ETC.	6/1/1994
	CAST IRON GRATE, TYPE B	
	CAST IRON GRATE, TYPE C	
	UNDERDRAIN RISER	
	REINFORCED CONCRETE PIPE END SECTION	
	ENERGY DISSIPATOR FOR CULVERT	
E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	1/2/2004
E-101	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	5/1/2004
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	3/1/2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR	6/30/2003
	CONSTRUCTION AREAS	
E-107A	BREAKAWAY BARRICADE DETAILS	8/8/1995
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	8/10/1995
E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	8/8/1995
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	3/16/2004
E-128A	DETAILING VILLAGE SIGNS (A-M)	8/8/1995
E-136	MILEMARKER DETAILS - STATE & TOWN HIGHWAYS	5/30/2003
E-141	REGULATORY SIGN DETAILS	9/20/1995
E-142	REGULATORY SIGN DETAILS	9/20/1995
E-152	WARNING SIGN DETAILS	5/1/2004
E-155	WARNING SIGN DETAILS	5/1/2004
E-160	FLANGED CHANNEL STEEL SIGN POST	5/20/1999
E-193	PAVEMENT MARKING DETAILS	8/18/1995
E-198	FREEWAY - EXPRESSWAY DELINEATORS AND MILEPOSTS	4/1/2005
F-4	CHAIN-LINK FENCE, TYPE II	6/1/1994
	DRIVE GATE FOR CHAIN-LINK FENCE, TYPE II	
	WALK GATE FOR CHAIN-LINK FENCE, TYPE II	
G-1	STEEL BEAM GUARDRAIL (50MPH & OVER)	1/3/2000
	HEAVY DUTY STEEL BEAM GUARDRAIL	
	TWISTED END TERMINAL	
	ANCHOR FOR STEEL BEAM RAIL	

G-1D	STEEL BEAM GUARDRAIL (40MPH & LESS)	1/3/2000
	HEAVY DUTY STEEL BEAM GUARDRAIL	
	STEEL BEAM MEDIAN BARRIER	
	ANCHOR FOR STEEL BEAM RAIL	
J-3	MAILBOX SUPPORT DETAIL (SINGLE & MULTIPLE SUPPORT)	8/7/1995
L-2	GEOTECHNICAL INSTRUMENTATION	7/24/1995

44A, 45A, 46A, 47A, 47B, 48A, 48B, 49A, 49B, & 50A FINAL SECTIONS PLOT DATE 11-20-06.

PROJECT NAME:	HARDWICK		
PROJECT NUMBER:	STP ST 030-3(4)		
FILE NAME:	d04e080xcel	PLOT DATE:	3/23/05
PROJECT LEADER:	A. BOMBARDIER	DRAWN BY:	M. NUTTER
DESIGNED BY:	M. NUTTER	CHECKED BY:	A. BOMBARDIER
INDEX OF SHEETS #1		SHEET 2	OF 43

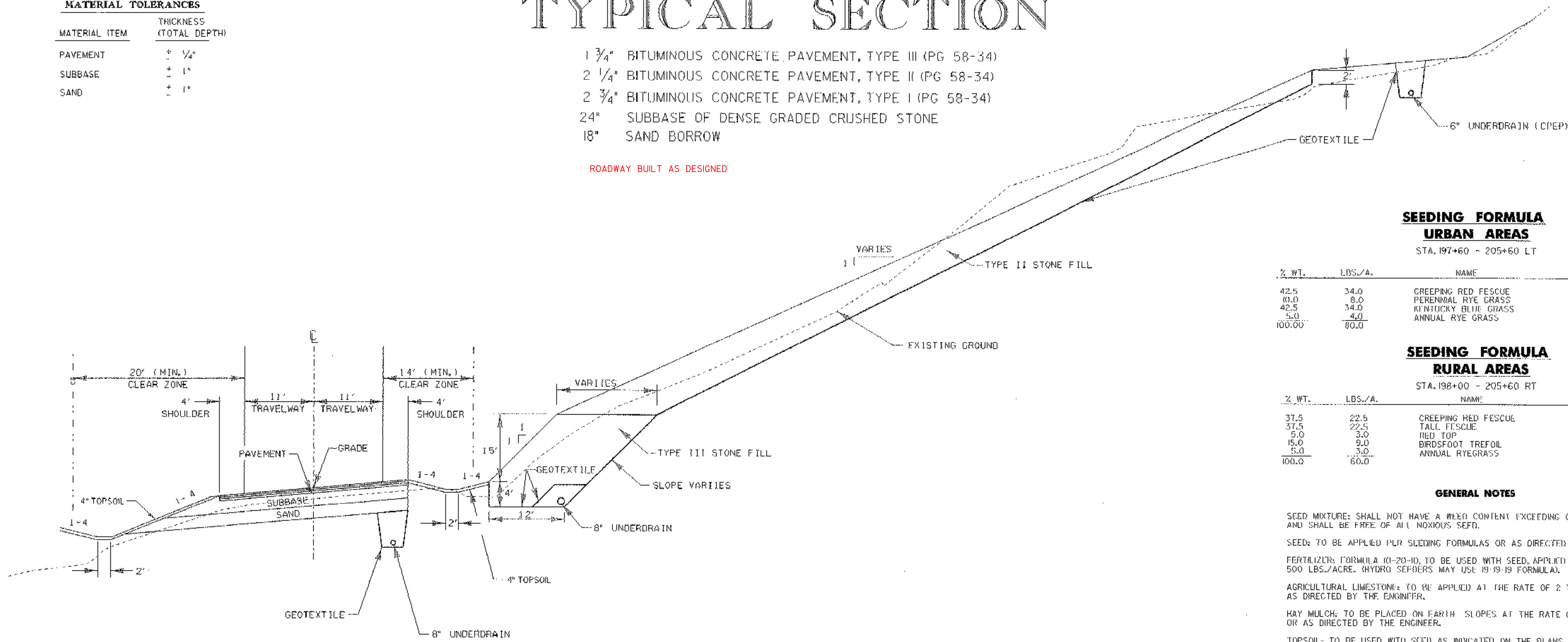
MATERIAL TOLERANCES

MATERIAL ITEM	THICKNESS (TOTAL DEPTH)
PAVEMENT	+ 1/4"
SUBBASE	+ 1"
SAND	+ 1"

TYPICAL SECTION

- 1 3/4" BITUMINOUS CONCRETE PAVEMENT, TYPE III (PG 58-34)
- 2 1/4" BITUMINOUS CONCRETE PAVEMENT, TYPE II (PG 58-34)
- 2 3/4" BITUMINOUS CONCRETE PAVEMENT, TYPE I (PG 58-34)
- 24" SUBBASE OF DENSE GRADED CRUSHED STONE
- 18" SAND BORROW

ROADWAY BUILT AS DESIGNED



MAXIMUM 0.080 BANKED SECTION

**SEEDING FORMULA
URBAN AREAS**

STA. 197+60 ~ 205+60 LT

% WT.	LBS./A.	NAME	PUR %	GERM %
42.5	34.0	CREEPING RED FESCUE	98	85
40.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.00	80.0			

**SEEDING FORMULA
RURAL AREAS**

STA. 198+00 ~ 205+60 RT

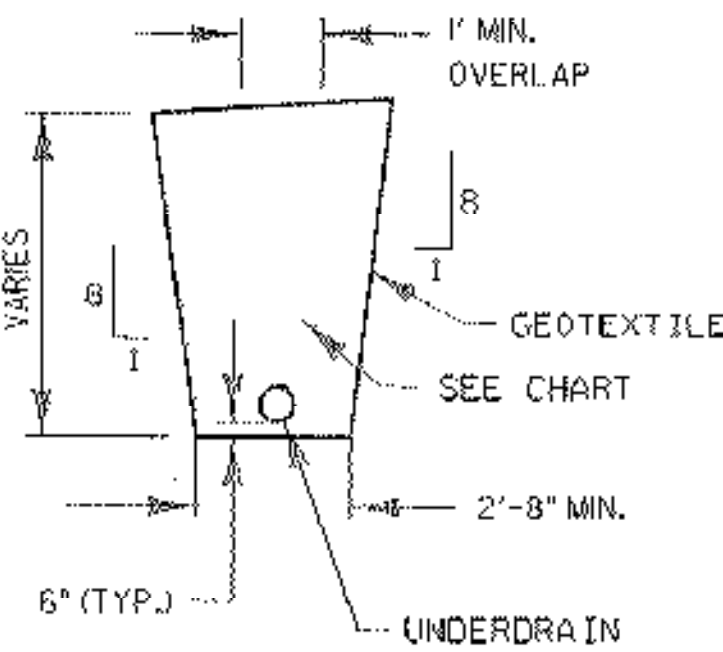
% WT.	LBS./A.	NAME	PUR %	GERM %
37.5	22.5	CREEPING RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYEGRASS	95	85
100.0	60.0			

GENERAL NOTES

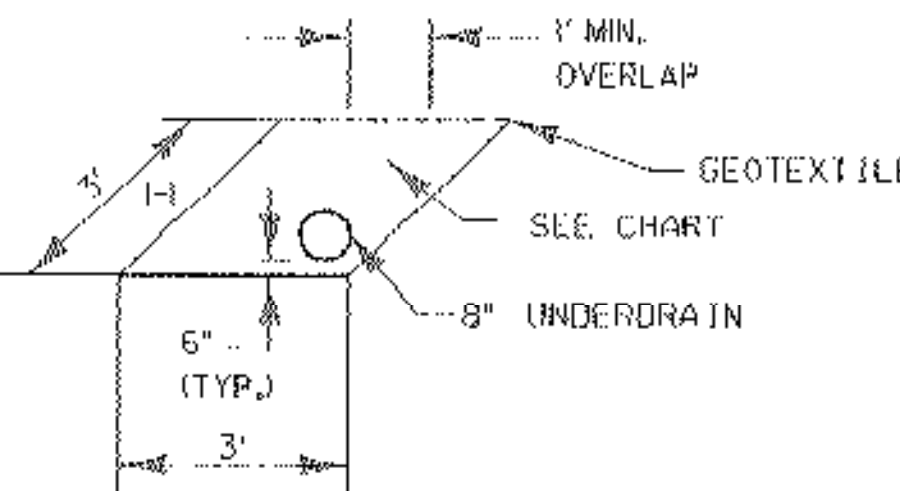
- SEED MIXTURE: SHALL NOT HAVE A WEEO CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- SEED: TO BE APPLIED PLR SLEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.
- FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 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.
- TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.015 GAL./SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT OR AS DIRECTED BY THE ENGINEER.

3/4" WASHED STONE USED
AS UNDERDRAIN BACKFILL

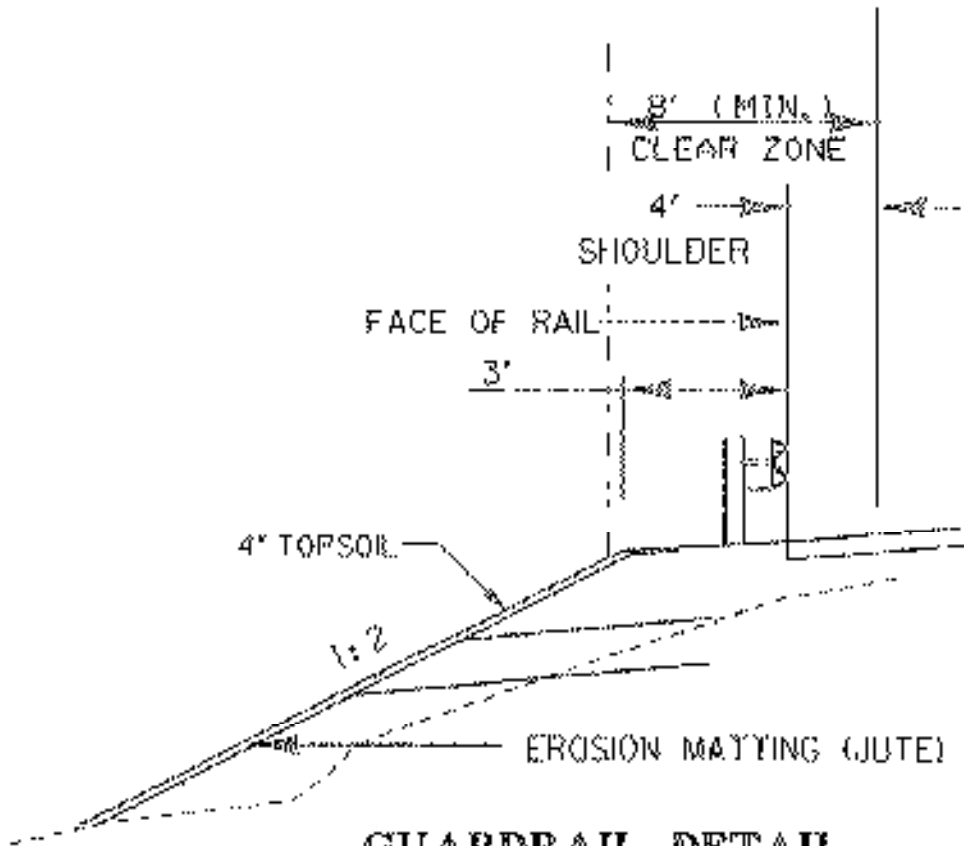
CHART FOR UNDERDRAIN BACKFILL	
BACKFILL FOR UNDERDRAIN, SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:	
SIEVE SIZE	PERCENT BY WT. PASSING THE SQUARE MESH SIEVES
3.5 "	100
1.0 "	95-100
0.5 "	60-80
NO. 4	40-55
NO. 8	5-25
NO. 16	0-12
NO. 50	0-5



UNDERDRAIN DETAIL.



UNDERDRAIN DETAIL
FOR STONE FILL, TYPE III



GUARDRAIL DETAIL

N.T.S.

PROJECT NAME: HARDWICK	PROJECT NUMBER: STP ST 030-3(4)
FILE NAME: d04e060frm.dgn	PLGT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: d04e060typ.i	SHEET 3 OF 63

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

[illegible]

STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET													
SUMMARY OF ESTIMATED QUANTITIES														TOTALS			DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES							
														FULL E&C ITEMS	EROSION CONTROL	LAND- SCAPING	ROADWAY	BRIDGE QUANTITY	ROUND	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
															20				EST	20		CY	STONE FILL, TYPE I (MOD.-INLET PROTECTION)	613.10			
															60				EST	60		CY	STONE FILL, TYPE I (MOD.-CONSTRUCTION ENTRANCE)	613.10			
															5250				69	5250		CY	STONE FILL, TYPE II	613.11			
															2650				69	2650		CY	STONE FILL, TYPE II	613.12			
																	35		2	35		TON	BITUMINOUS CONCRETE GUTTERS AND TRAFFIC ISLANDS	616.47			
																	1			1		EACH	RELOCATE MAIL BOX, SINGLE SUPPORT	617.10			
																	13			13		EACH	YIELDING MARKER POSTS	619.17			
																	12			12		LF	GATE FOR CHAIN-LINK FENCE, 4 FEET (VINYL - GREEN)	620.15			
																	900		EST	900		LF	SNOW FENCE (MOD.-ARCH)	620.70			
																	1800		EST	1800		LF	SNOW FENCE (MOD.-PDF)	620.70			
																	325			325		LF	STEEL BEAM GUARDRAIL (GALVANIZED)	621.20			
																	1			1		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60			
																	62.5			62.5		LF	REMOVL AND DISP OF GUARDRAIL	621.80			
																	2			2		EACH	REMOVL AND DISP OF GUIDE POSTS	621.81			
																	500		EST	500		LF	TEMPORARY TRAFFIC BARRIER	621.90			
																	100		EST	100		LF	INCLINOMETER	623.30			
																	60		EST	60		LF	GROUND WATER OBSERVATION WELL	623.50			
																	20		EST	20		LF	PIPE INSULATION (3/4 " DIA.)	629.44			
																	20		EST	20		LF	PIPE INSULATION (2 " DIA.)	629.44			
																	300		EST	300		HR	UNIFORMED TRAFFIC OFFICERS	630.10			
																	600		EST	600		HR	FLAGGERS	630.15			
														1						1		LS	FIELD OFFICE-ENGINEERS	631.10			
														1						1		LS	TESTING EQUIPMENT - CONCRETE	631.16			
														1						1		LS	TESTING EQUIPMENT - BITUMINOUS	631.17			
														1						1		LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25			
																	1			1		LS	MOBILIZATION / DEMOBILIZATION	635.11			
																	1			1		LS	UTILITY SYSTEM (MOD. - MOVE PROPANE TANK)	636.15			
																	1			1		LS	TRAFFIC CONTROL	641.10			
																	3			3		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15			
																	1750		10	1750		LF	4" WHITE LINE	646.20			
																	1750		10	1750		LF	4" YELLOW LINE	646.21			
																	1750		10	1750		LF	TEMPORARY 4" WHITE LINE (PAINT)	646.60			
																	1750		10	1750		LF	TEMPORARY 4" WHITE LINE (TAPE, TYPE II)	646.60			
																	1750		10	1750		LF	TEMPORARY 4" YELLOW LINE (PAINT)	646.61			
																	1750		10	1750		LF	TEMPORARY 4" YELLOW LINE (TAPE, TYPE II)	646.61			
																	50			50		EACH	LINE STRIPING TARGETS	646.76			
															4450				2	4450		SY	GEOTEXTILE UNDER STONE FILL	649.31			
																	3500		30	3500		SY	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41			
															500				EST	500		SY	GEOTEXTILE FOR SILT FENCE	649.51			
															250				13	250		LB	SEED	651.15			
PROJECT NAME: HARDWICK																											
PROJECT NUMBER: STP ST 030-3(4)																											
FILE NAME: D04e060qty.dgn PLOT DATE: 3/2/05																											
PROJECT MANAGER: A. BOMBARDIER DRAWN BY: M. NUTTER																											
DESIGNED BY: M. NUTTER CHECKED BY: A. BOMBARDIER																											
QUANTITY SHEET #2 SHEET 5 OF 63																											

QUANTITY SHEET

PROJECT NAME:	HARDWICK		
PROJECT NUMBER:	STP ST 030-3(4)		
FILE NAME:	D04e060qty.dgn	PLOT DATE:	3/2/05
PROJECT MANAGER:	A. BOMBARDIER	DRAWN BY:	M. NUTTER
DESIGNED BY:	M. NUTTER	CHECKED BY:	A. BOMBARDIER
QUANTITY SHEET #3		SHEET	6 OF 63

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ITEM DETAIL AND DRAINAGE SHEET

STATION	STATION	POS.	ASKEW NO DEG	INLET/OUTLET TYPE	PIPE		ALLOWABLE OPTIONS			PIPE ELBOW NO DEG	RISING DL CB OR MH	CB OR PROJ	DEPTH DI FT	COWC (CLASS & CY	CONC CLASS (MIN)	RCINF STEEL	DI CRATE	CIAN ELEV	CRM	TRENCH EXCAVATION EARTH	ROCK	GRWR HIGH-IL STRUCT	F-HON MATT	STONE FILL		MARKER POSTS		REMARKS	BEGIN STATION	END STATION	POSITION		END TREATMENT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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SEE BOOK #I AND #IA AND CALCULATION FOLDER FOR EARTHWORKS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EARTHWORKS

TOTAL EXCAVATION EARTH AND ROCK				ROCK		EXCAVATION		EMBANKMENT		TYPE II STONE		TYPE III STONE		TOTAL EXCAVATION EARTH AND ROCK				ROCK		EXCAVATION		EMBANKMENT		TYPE II STONE		TYPE III STONE		SUMMARY AND BALANCES							
STATION	DIST	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	STATION	DIST	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	STATION TO STATION	TOYEXC. BANKY & ROCK C.Y.	ROCK EXCAV C.Y.	EMBANK C.Y.	EXCESSES		ACUMULATIVE EXCESSES	
	FT.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.		FT.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.					CUT	FILL	CUT	FILL		
MAINLINE - 110' LT TO THE PTH LINE @ 60' RT												204+60	20	59	49	82	53	187+50	200+00	834	1879	1327	1170												
MAINLINE - 110' LT TO THE PTH LINE @ 60' RT												204+60	20	73	54	82	41	200+20	205+00	3923	1720	1945	668												
197+50	10	0	0	0	0	0	0	205+00	20	72	50	205+00	20	72	50	49	28	205+20	206+20	132	42	84	952												
197+60	20	0	0	2	54	205+20	20	82	42	27	12	205+40	20	52	30	0	2	200+80	203+00	4679	141	4517	5468												
197+80	20	0	0	145	144	205+40	20	52	30	0	2	205+60	20	28	10	0	0	200+80	203+00	4679	141	4517	5468												
198+00	20	0	6	243	183	205+60	20	28	10	0	0	205+80	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
198+20	20	15	23	252	186	205+80	20	0	0	0	0	206+00	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
198+40	20	48	48	251	186	206+00	20	0	0	0	0	206+20	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
198+60	20	83	76	251	184	206+20	20	0	0	0	0	206+40	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
198+80	20	121	96	192	163	206+40	20	0	0	0	0	206+60	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
199+00	20	139	106	240	179	206+60	20	0	0	0	0	206+80	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
199+20	20	146	111	235	165	206+80	20	0	0	0	0	207+00	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
199+40	20	154	118	211	148	207+00	20	0	0	0	0	207+20	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
199+60	20	164	124	189	149	207+20	20	0	0	0	0	207+40	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
199+80	20	171	128	212	156	207+40	20	0	0	0	0	207+60	20	0	0	0	0	200+80	203+00	4679	141	4517	5468												
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200+80	20	322	226	0	25	61	43	308	221	208+40	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
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201+20	20	285	210	109	87	54	40	288	222	208+80	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
201+40	20	262	211	126	97	53	37	312	233	209+00	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
201+60	20	288	233	136	118	46	34	316	237	209+20	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
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202+60	20	347	250	118	99	50	38	283	210	210+20	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
202+80	20	329	228	40	17	52	39	283	210	210+40	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
203+00	20	287	167	2	4	54	20	283	105	210+60	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
203+20	20	164	120	8	10	0	0	0	0	210+80	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
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203+80	20	54	33	112	105	0	0	0	0	211+40	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
204+00	20	36	27	172	109	0	0	0	0	211+60	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												
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204+60	20	59	48	82	62	0	0	0	0	212+20	20	0	0	0	0	0	0	200+80	203+00	4679	141	4517	5468												

RIGHT - OF - WAY DETAIL SHEET

[illegible]

PLOT DATE: Date
DRAWN BY: MR
CHECKED BY: FM
SHEET 9 OF 62

OCT 05 2005

BEGIN R.O.W. PROJECT

ST 030-3(4) 197+50.00

24.65' LT.

HAY'S
SERVICE STATION

197+50

BEGIN APPROACH
ROW TO Z CORP.

LA MOILLE
RIVER

REMOVE AND RESETT
LIGHT POLE (MOD.)
200+33 - 200+49 LT (3 EA)

○ = SAVE EXISTING TREES
198+88

END APPROACH
BEGIN PROJECT

CONSTRUCT DRIVE
200+60 LT 24' PAVED
YIELDING MARKER POSTS
10 EA

STEEL BEAM GUARDRAIL
203+00 - 206+25 LT 325'
ANCHOR FOR STEEL BEAM GUARDRAIL
1 EA
REMOVAL AND DISPOSAL OF GUARDRAIL
205+60 - 206+25 LT

STONE FILL, TYPE II FOR
SLOPE STABILIZATION
200+60 - 203+20 RT
STONE FILL, TYPE III FOR
SLOPE STABILIZATION
200+60 - 203+20 RT
206+20 +/- LT 130' +/-
PLUG EXISTING 4" STEEL PIPE

LEGEND:
INCLINOMETER (EXISTING) - INCL (E) ○
INCLINOMETER (NEW) - INCL (N) ○ (50' EA)
MONITORING WELL (EXISTING) - MW (E) ○
MONITORING WELL (NEW) - MW (N) ○ (20' EA)

END R.O.W. PROJECT

ST 030-3(4) 205+44.66

38.13' LT.

CURVE DATA

Δ = 28°19'56.45" RT
D = 28°19'56.42"
R = 285.00
T = 71.94
L = 140.93
E = 8.94
BANK = 0.080 FT / FT

HILL,
WILLIAM

THIBAUT,
LARRY

GOUDREAU,
RAYMOND &
MARTHA E. CADY

McLEAN,
SUSAN G.
STATE OF
VERMONT

HOLMES, SUSAN L.
TODD W.

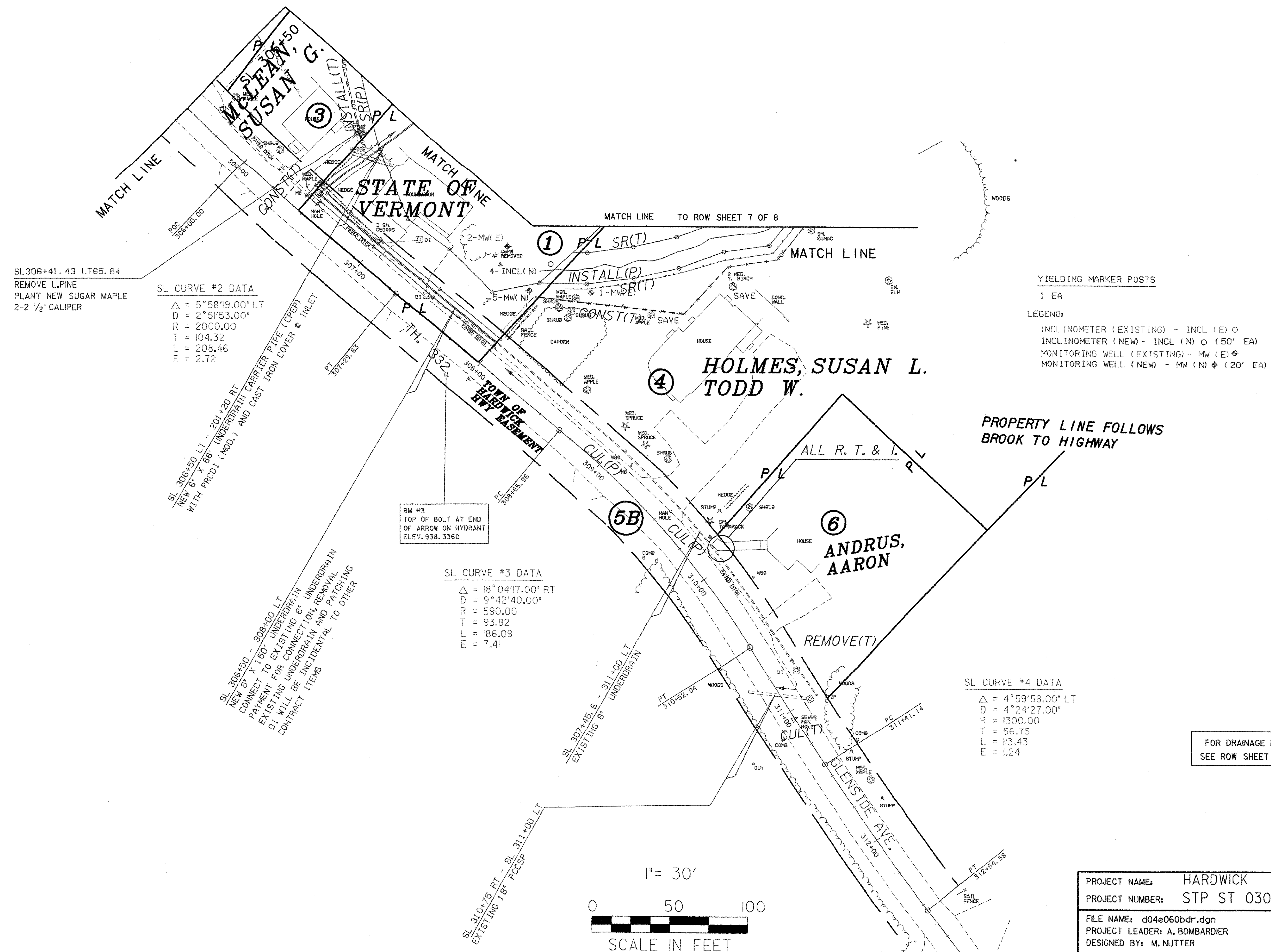
FOR DRAINAGE DETAILS
SEE ROW SHEET 4 OF 8

0 50 100
SCALE IN FEET
1" = 30'

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060bdr.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
ROW SHEET 7 OF 8 SHEETS

PLOT DATE: 05-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 10 OF 63



PROJECT NAME:	HARDWICK
PROJECT NUMBER:	STP ST 030-3(4)

FILE NAME: d04e060bdr.dgn	PLOT DATE: 05-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
ROW SHEET 8 OF 8 SHEETS	SHEET 11 OF 63

HVCTRL #1

STANDARD DISC STAMPED

"TF18"

N = 731358.8400

E = 1674319.6600

ELEV. = 812.8300

GENERAL LOCATION, HARDWICK, VT TO REACH FROM THE JUNCTION OF VT ROUTE'S 14 AND 15 IN HARDWICK VILLAGE (BLINKING LIGHT) , GO WEST ON VT ROUTE 15 FOR 0.15 MI (0.24 KM) TO THE MARK ON THE RIGHT. THE MARK IS SET ON THE SOUTHEAST BRIDGE ABUTMENT ON THE WEST CHURCH STREET BRIDGE OVER THE LAMOILLE RIVER. IT IS 31 FT (9.4 M) NORTH OF THE CENTERLINE OF VT ROUTE 15, 16 FT (4.9 M) EAST OF THE CENTERLINE OF WEST CHURCH STREET, AND 5 FT (1.5 M) NORTH OF POWER AND TELEPHONE POLE NUMBER 3.

HVCTRL #2

STANDARD DISC STAMPED

"TF 18 AZ MK"

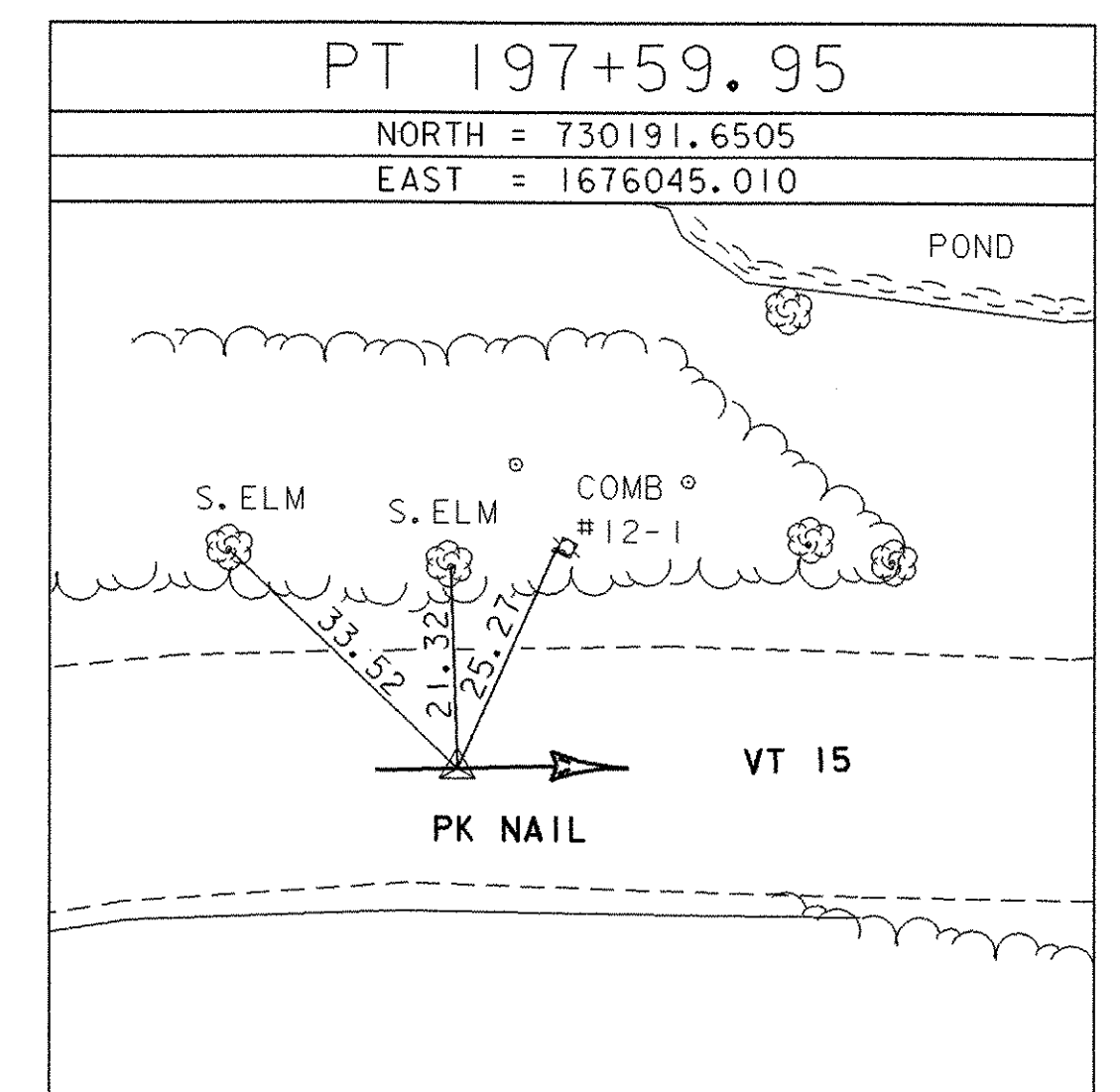
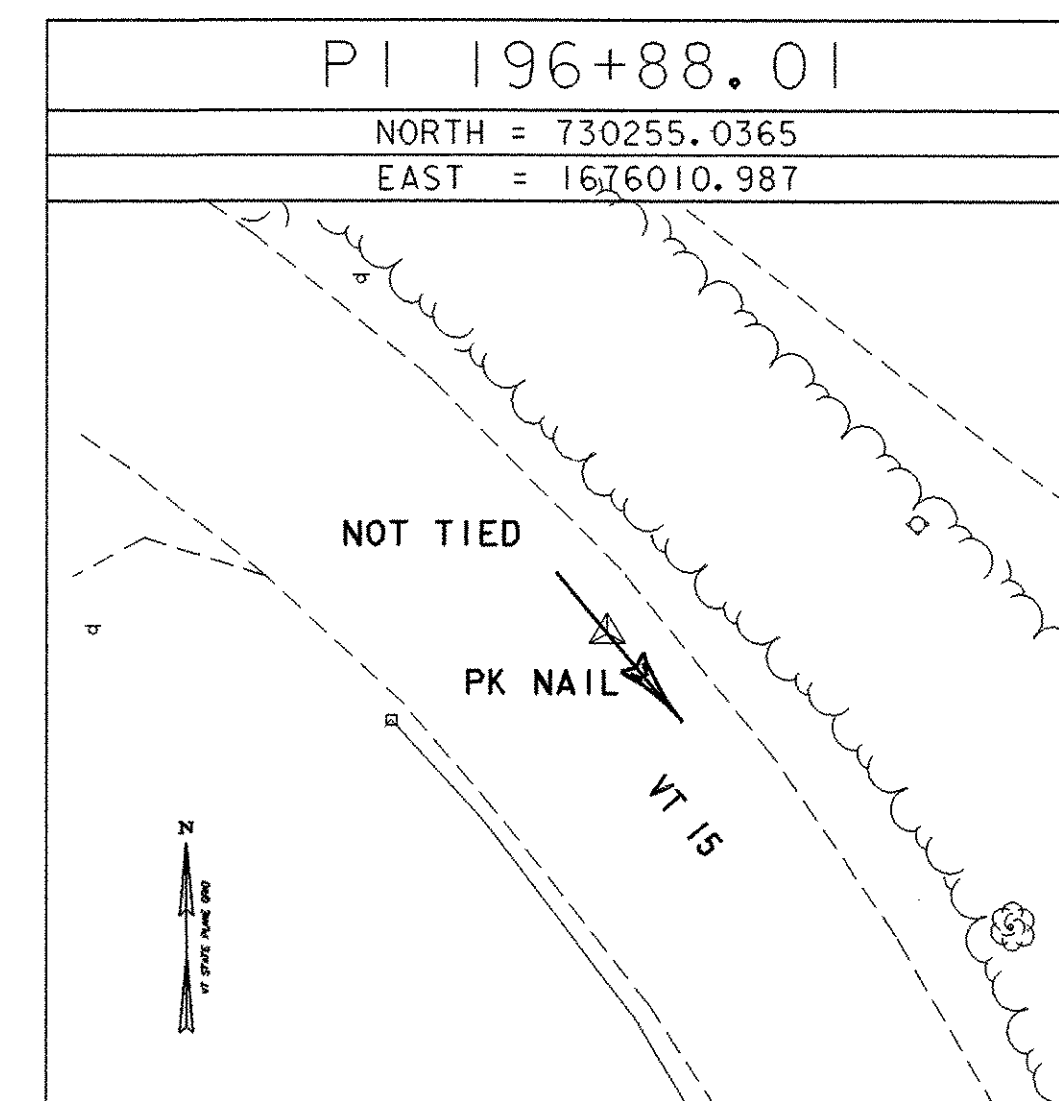
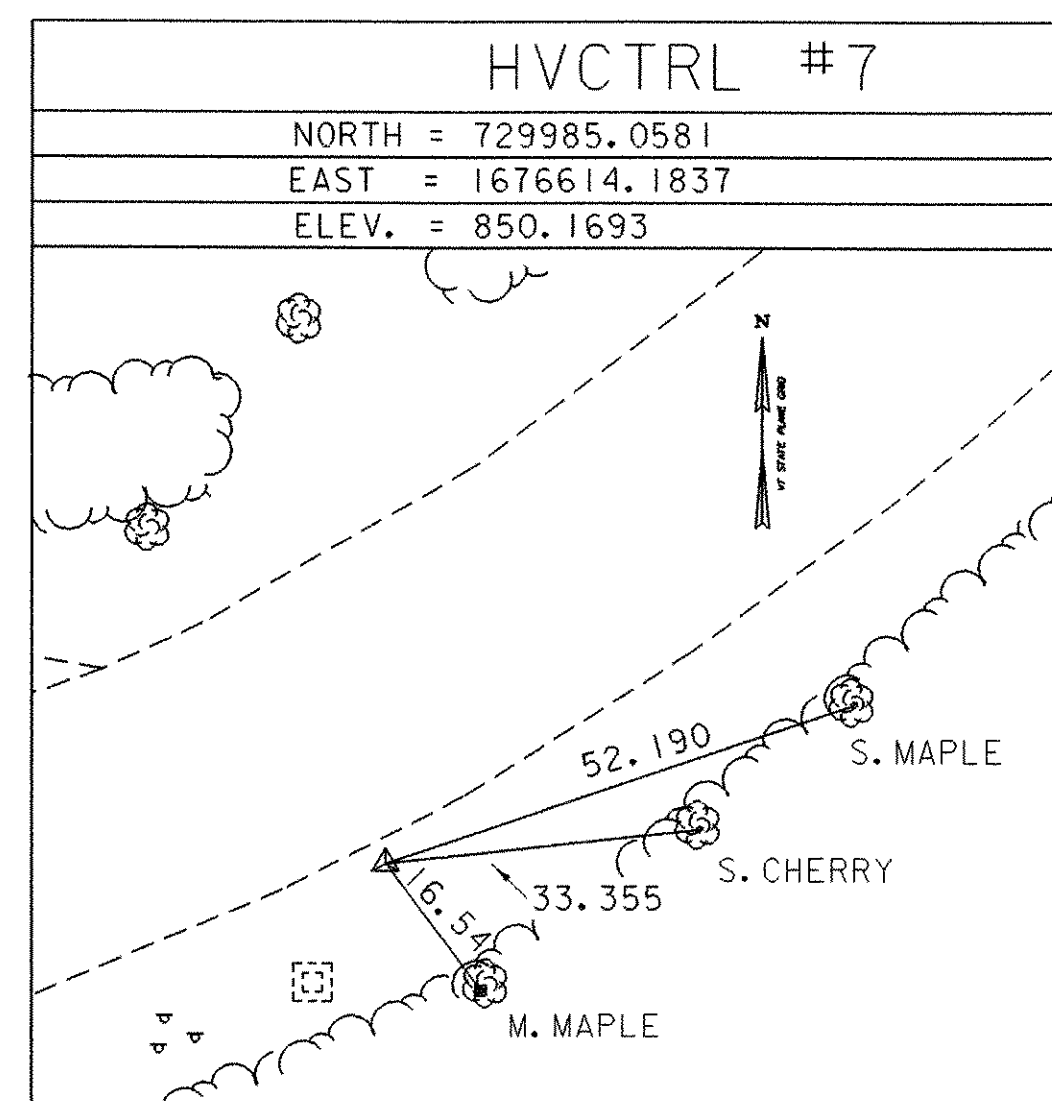
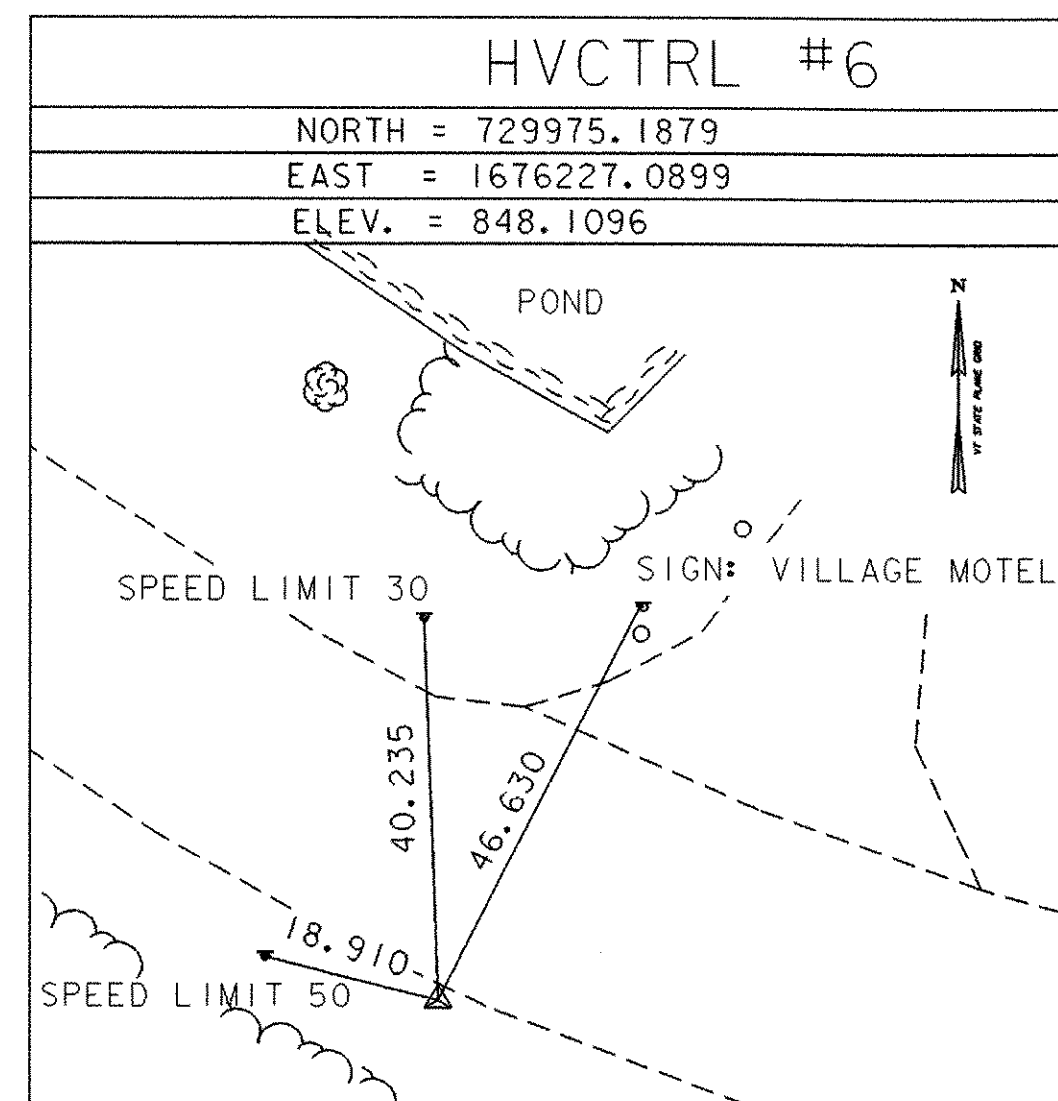
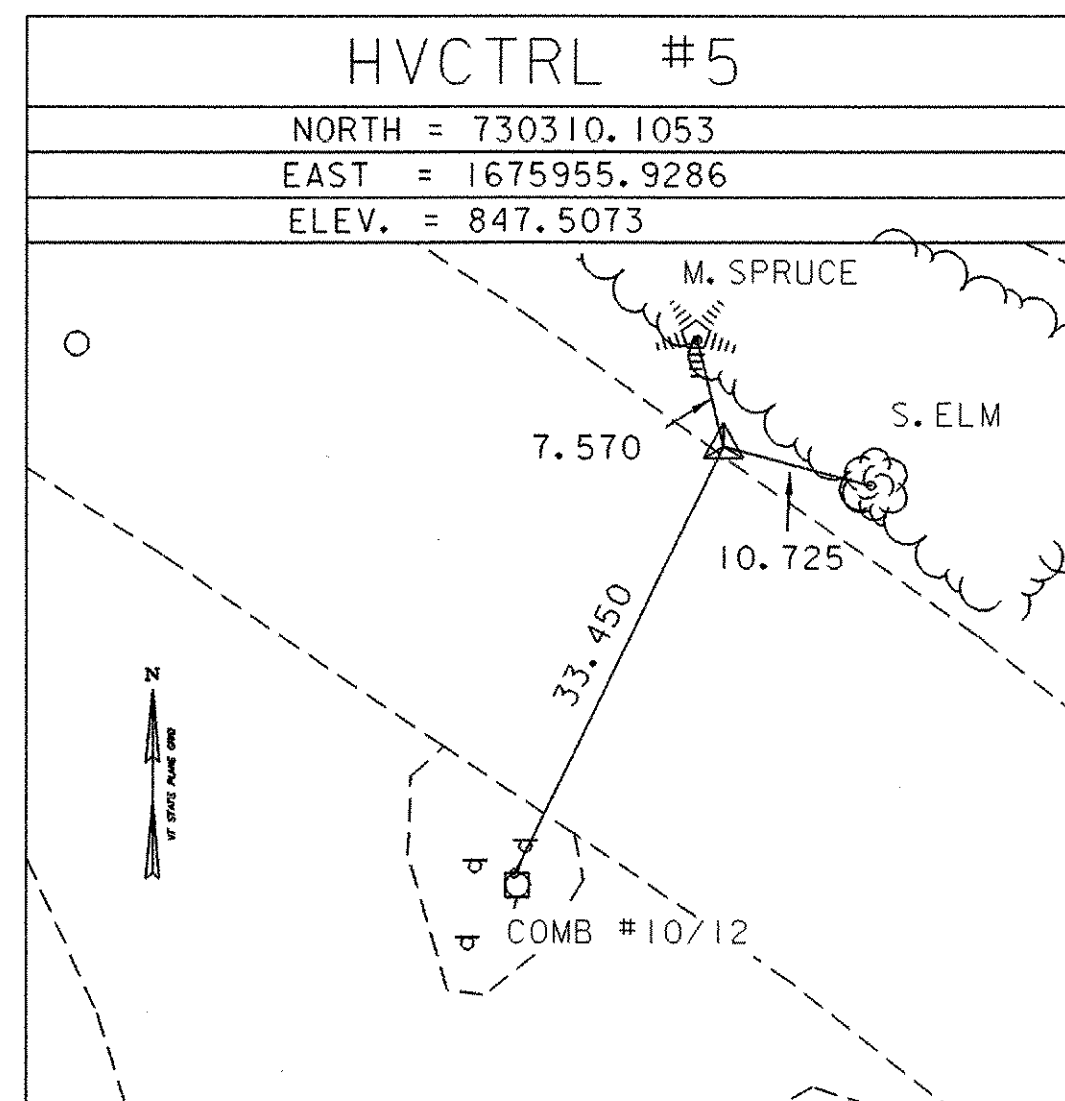
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E = 1673595.0300

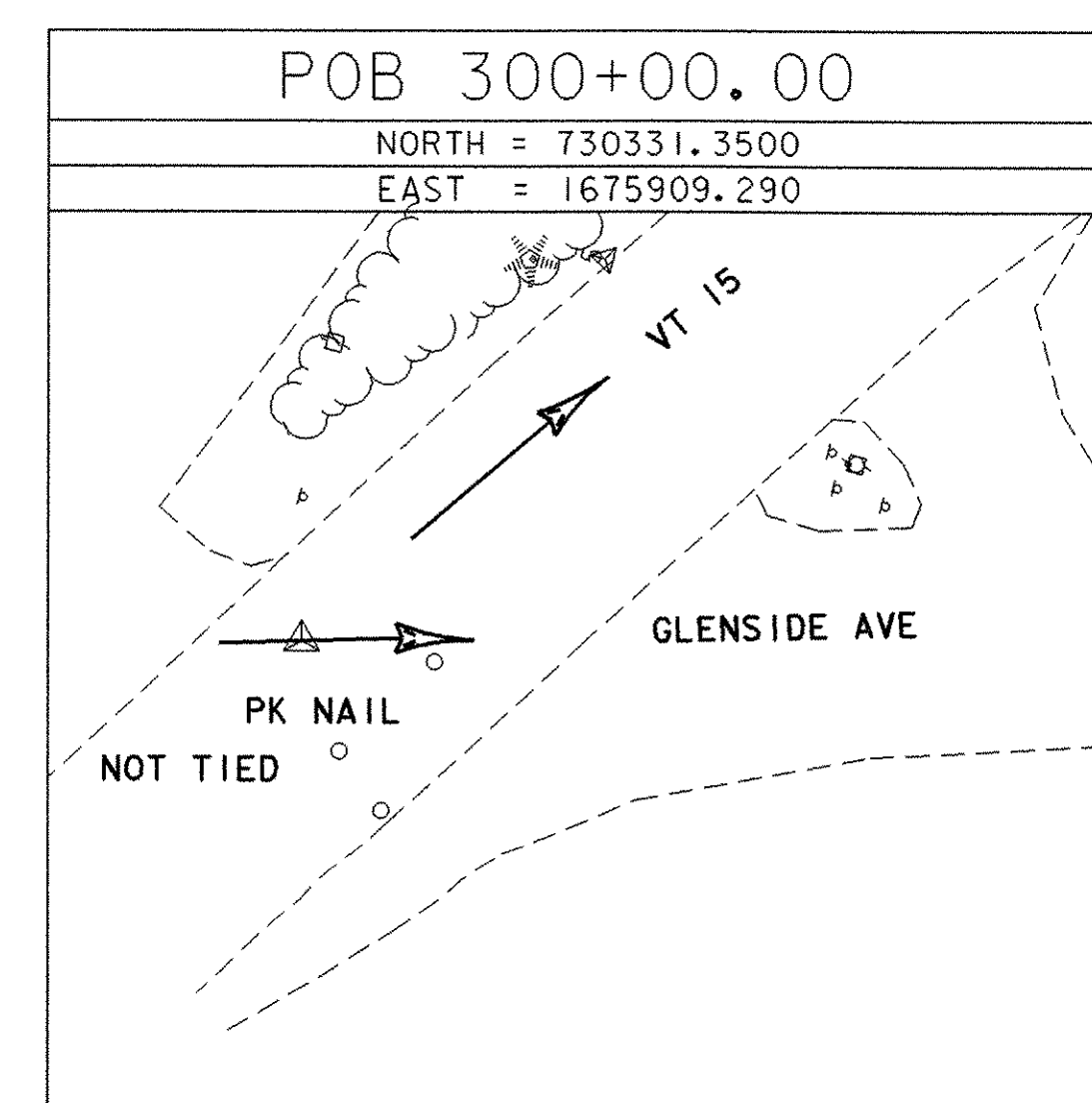
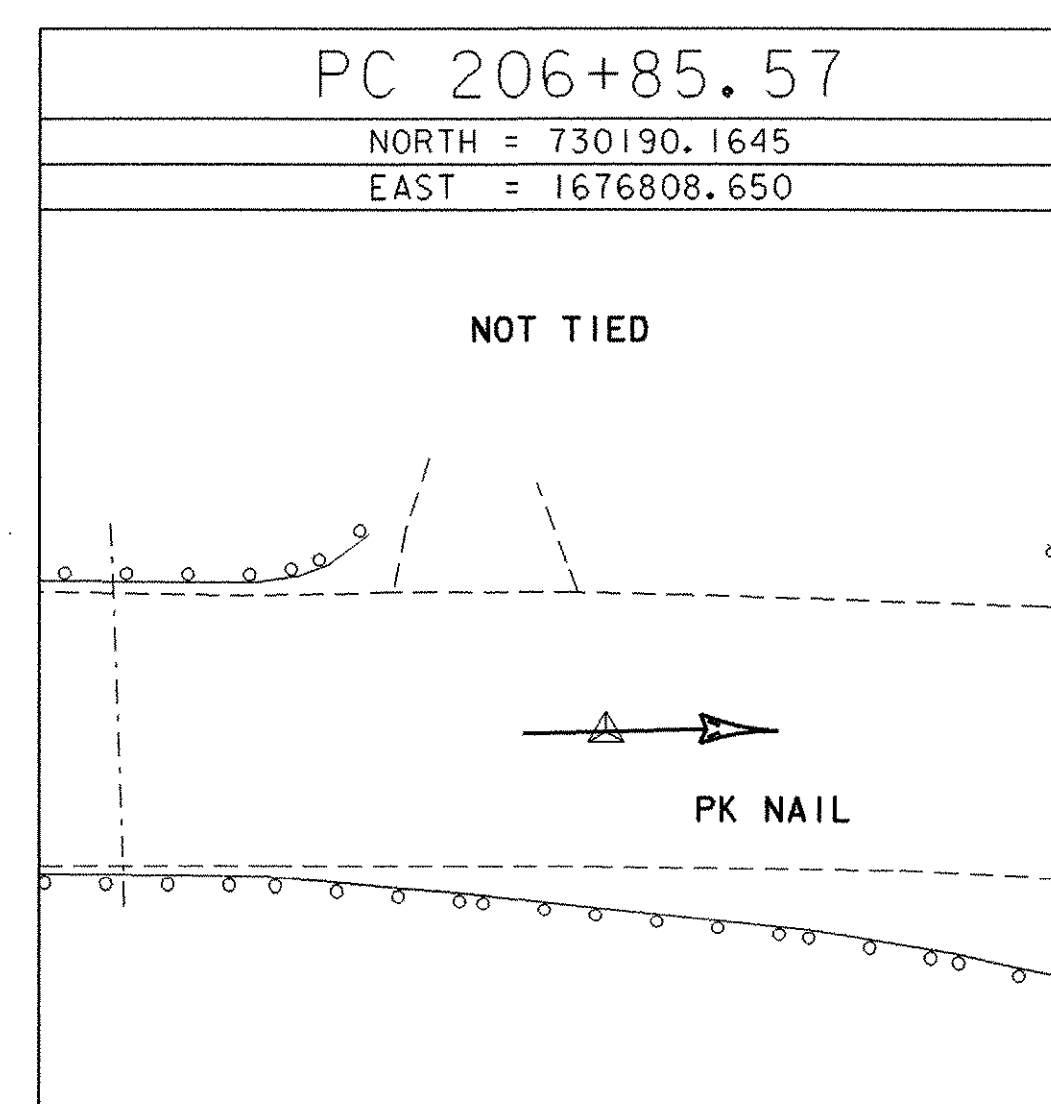
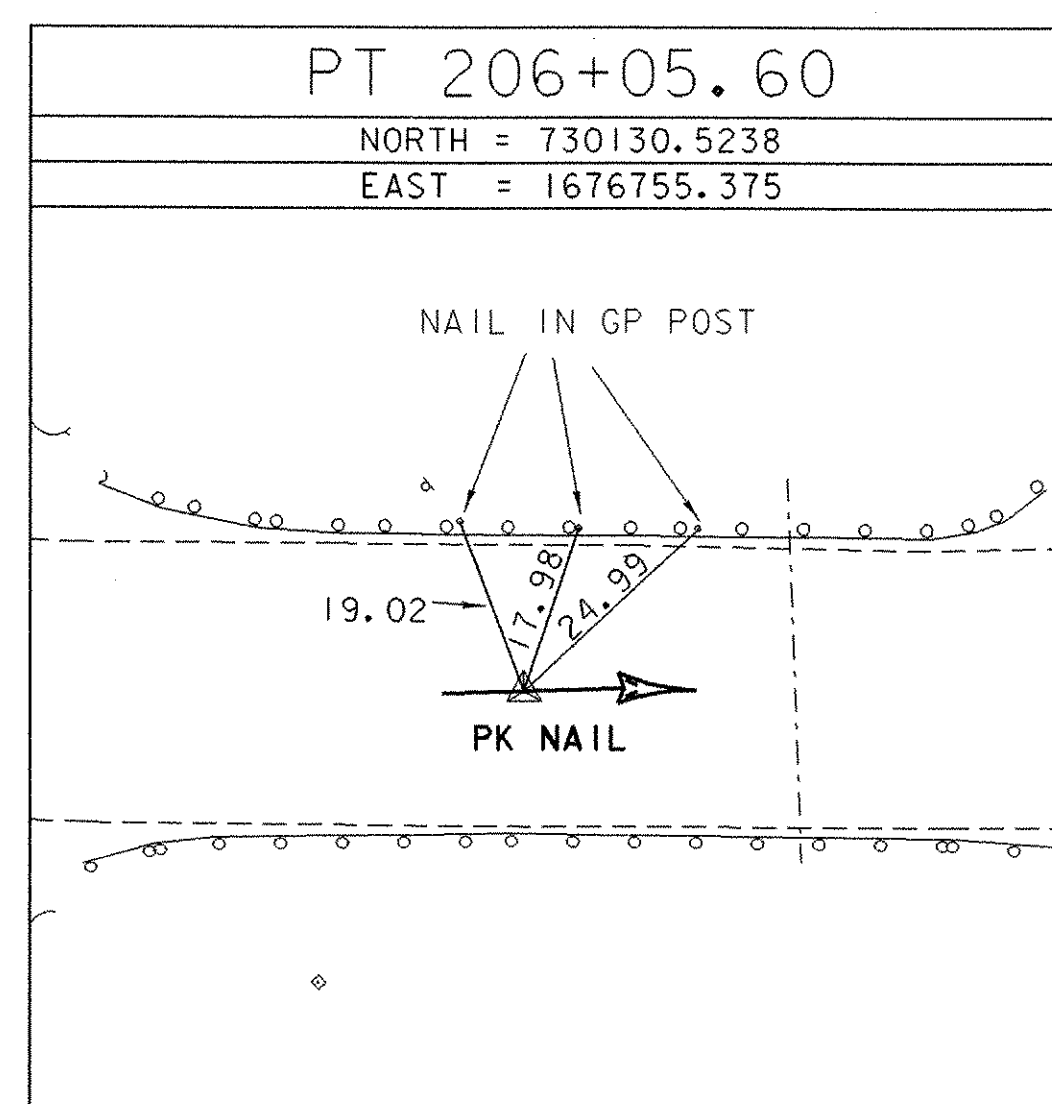
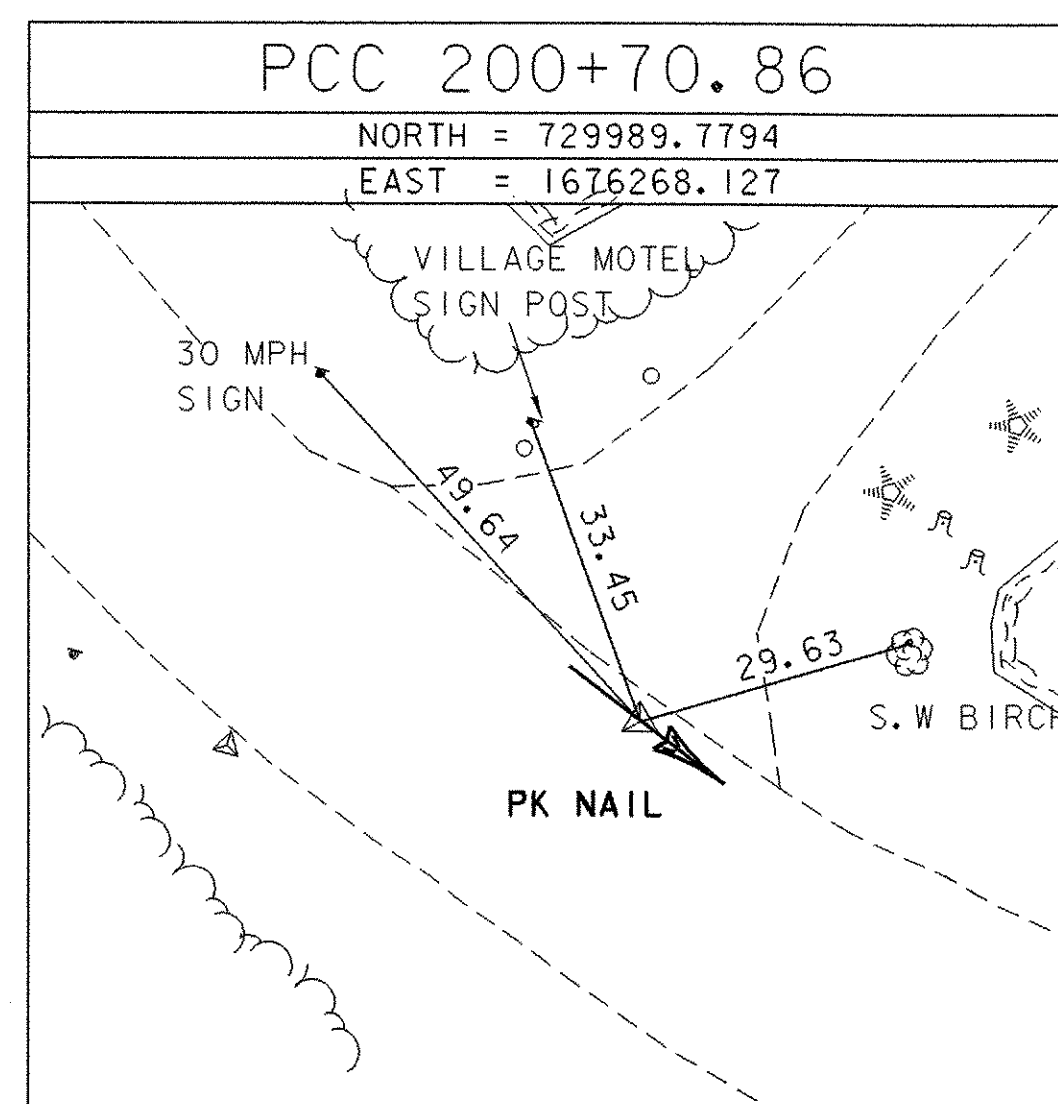
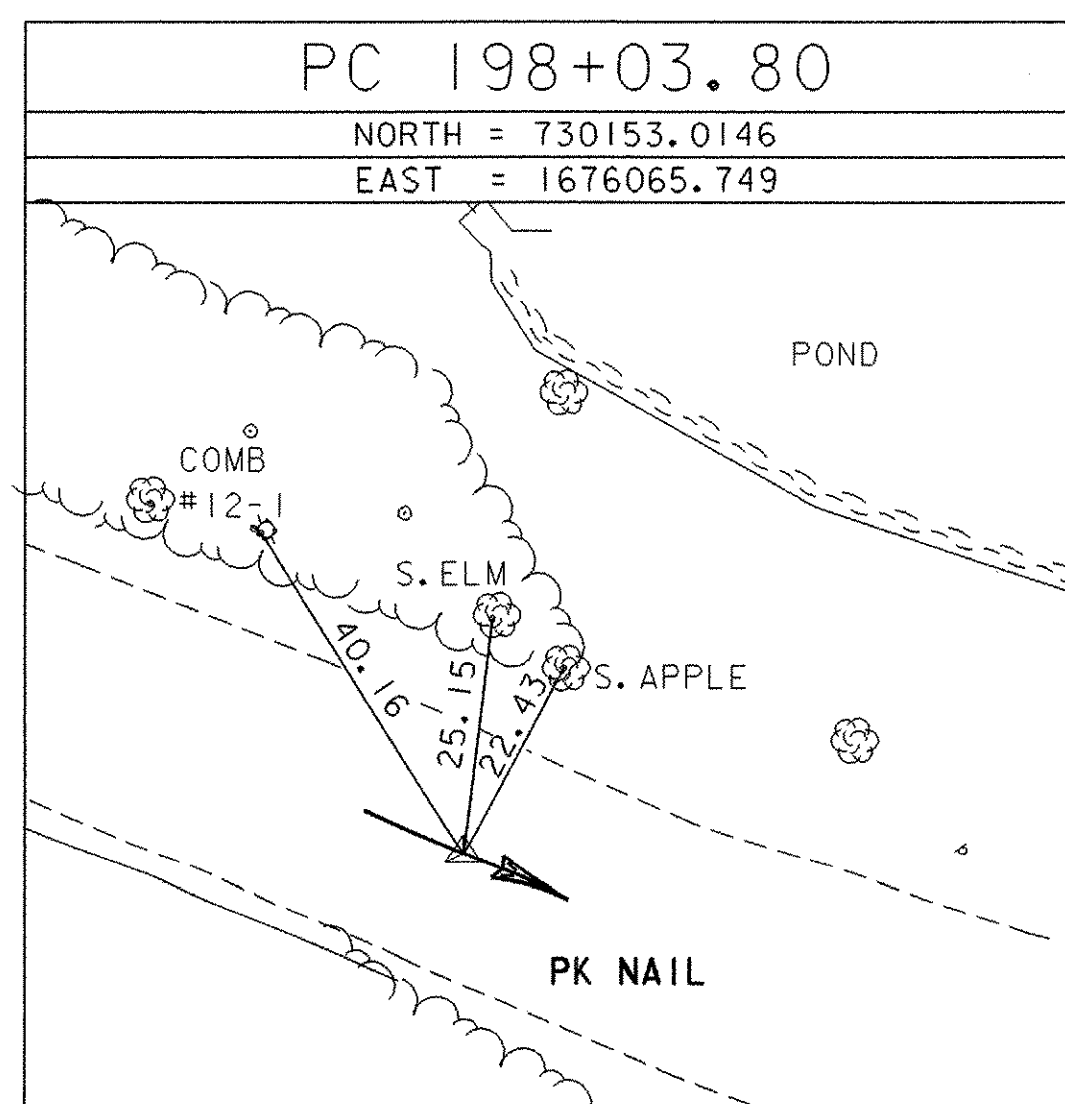
ELEV. = 808.0400

GENERAL LOCATION, HARDWICK, VT. OWNERSHIP, MRS BROCHU OR THE VILLAGE OF HARDWICK. TO REACH FROM THE JUNCTION OF VT ROUTE'S 14 AND 15 IN HARDWICK VILLAGE (BLINKING LIGHT) , GO WEST ON VT ROUTE 15 FOR 0.45 MI (0.72 KM) TO THE MARK ON THE LEFT. THE MARK IS A STATE OF VERMONT SURVEY DISK SET IN A 12 IN CONCRETE MONUMENT EVEN WITH THE GROUND SURFACE. IT IS 68 FT (20.7 M) NORTHWEST OF POWER AND TELEPHONE POLE L 8-1/8/1H, 39 FT (11.9 M) NORTH OF UNION STREET CENTERLINE, 31 FT (9.4 M) WEST OF VT ROUTE 15 CENTERLINE, 9 FT (2.7 M) NORTH OF A FIRE HYDRANT, AND 4.5 FT (1.4 M) WEST OF THE FACE OF A GRANITE WALL.

* DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT



* MAIN TRAVERSE COMPLETED: MAY 2, 2004 BY R.GILMAN PC, P.WINTERS



DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83(96)

ADJUSTMENT COMPASS

* ALIGNMENT STAKED: MARCH 30, 2005 BY: R.GILMAN, P.WINTERS & D.BREER

PROJECT NAME: HARDWICK

PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: x04e060t1.dgn

PROJECT LEADER:

DESIGNED BY:

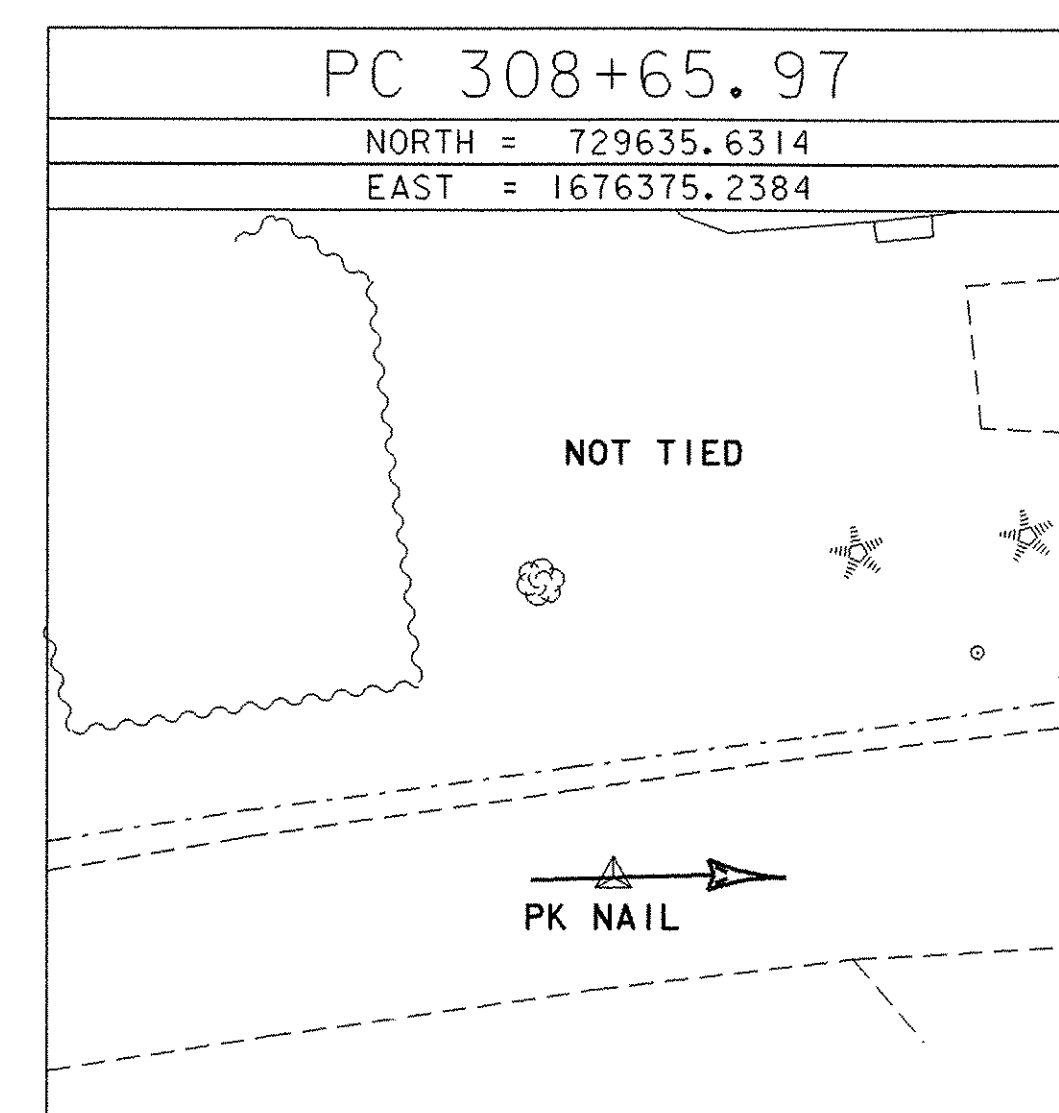
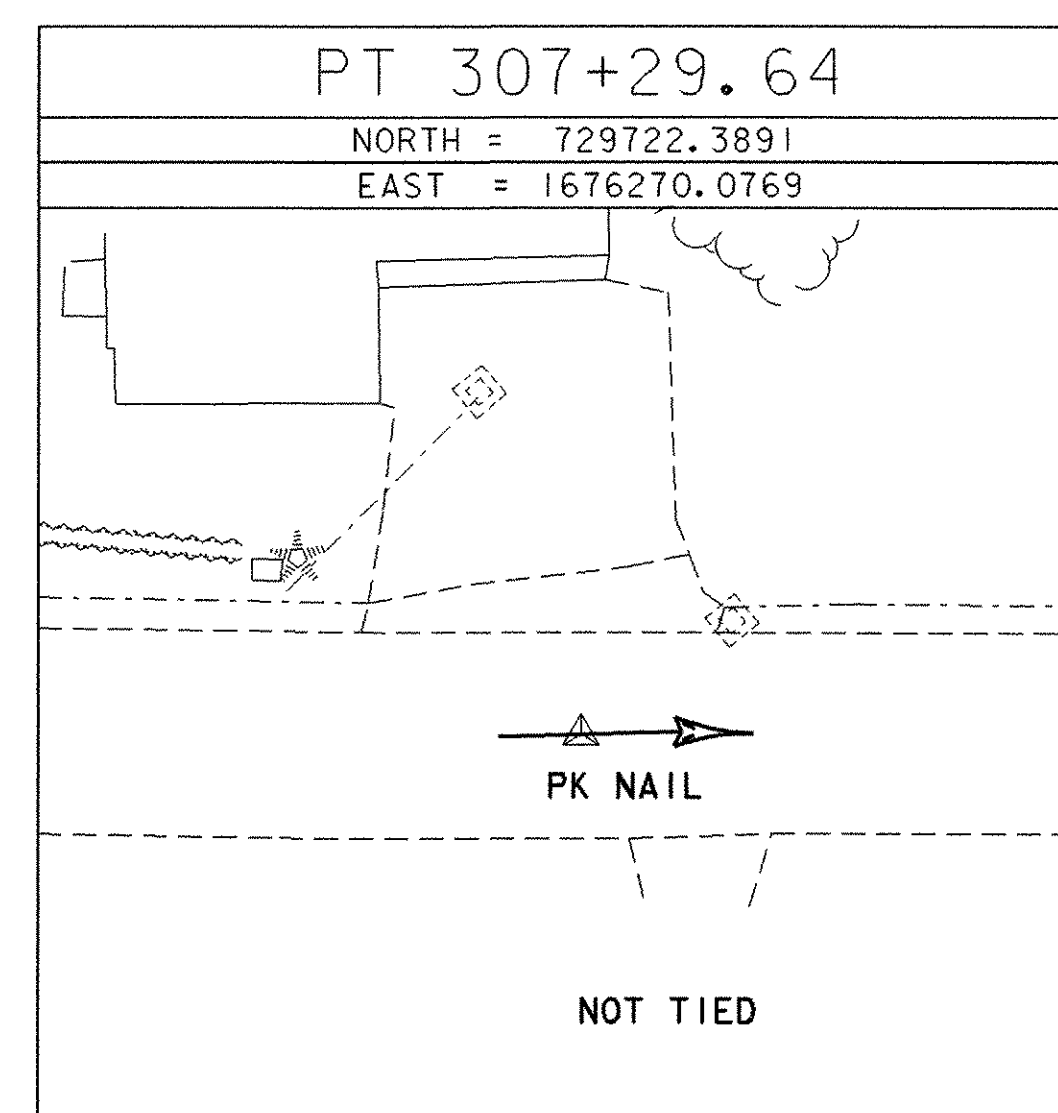
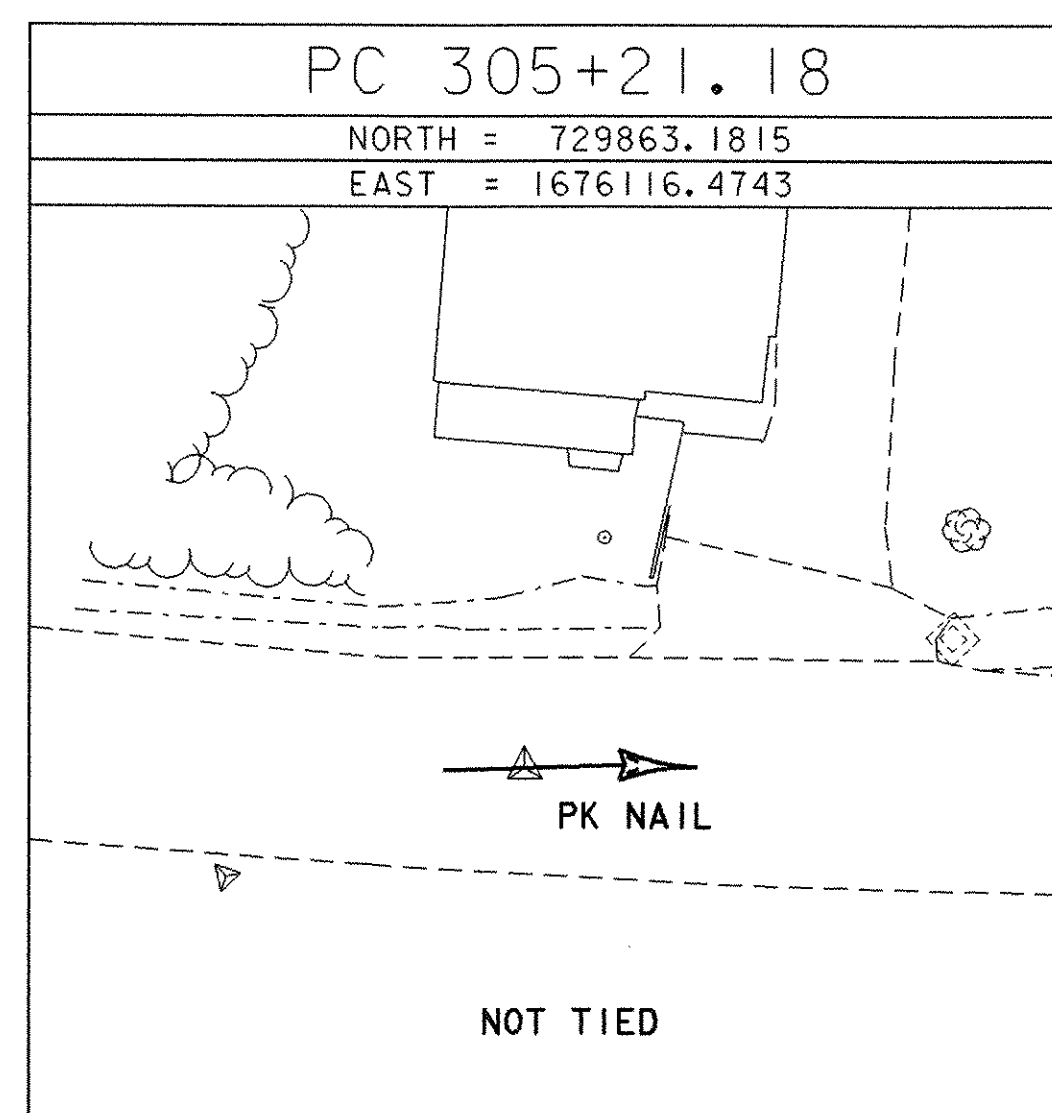
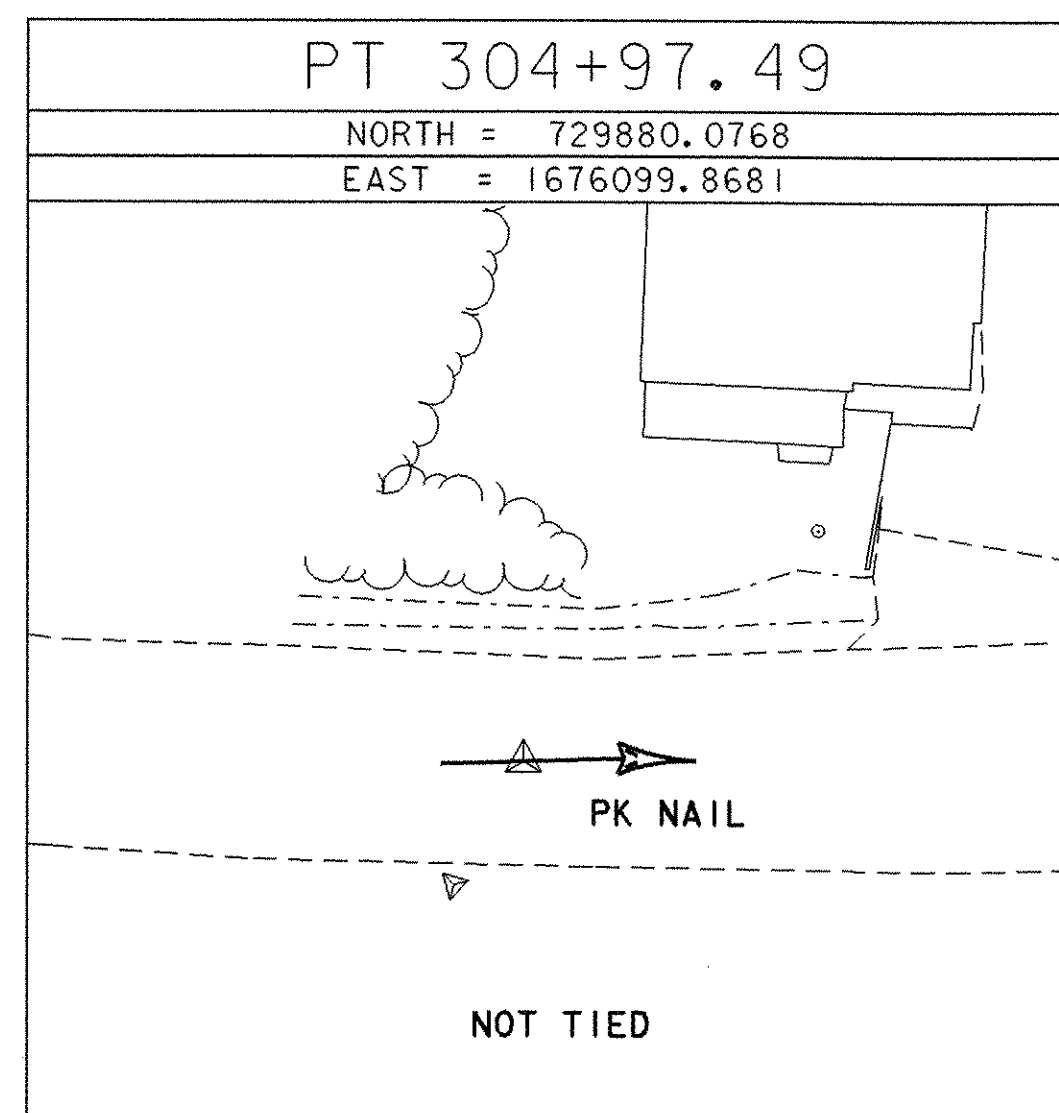
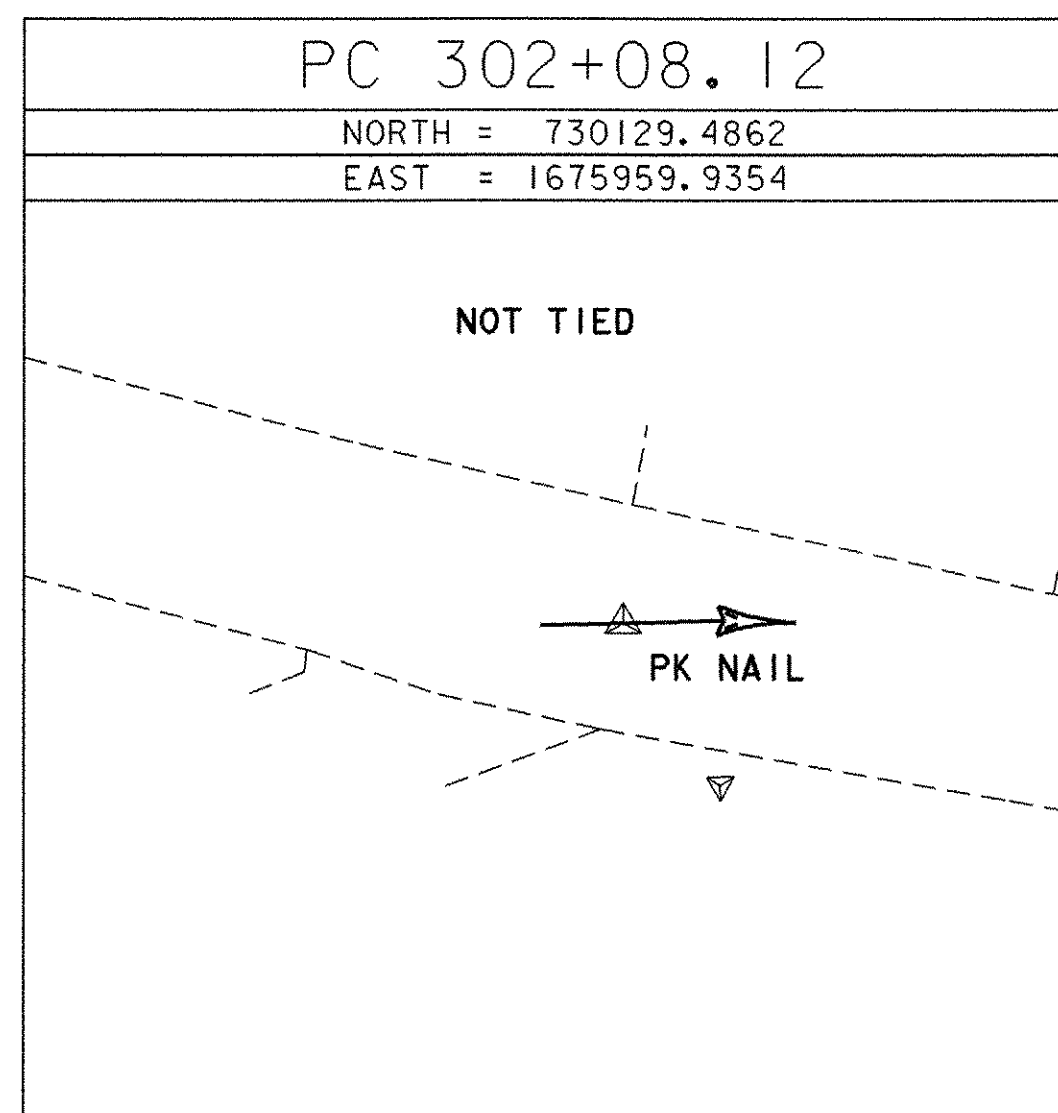
PLOT DATE: 18-OCT-2005

DRAWN BY: J.HULETT

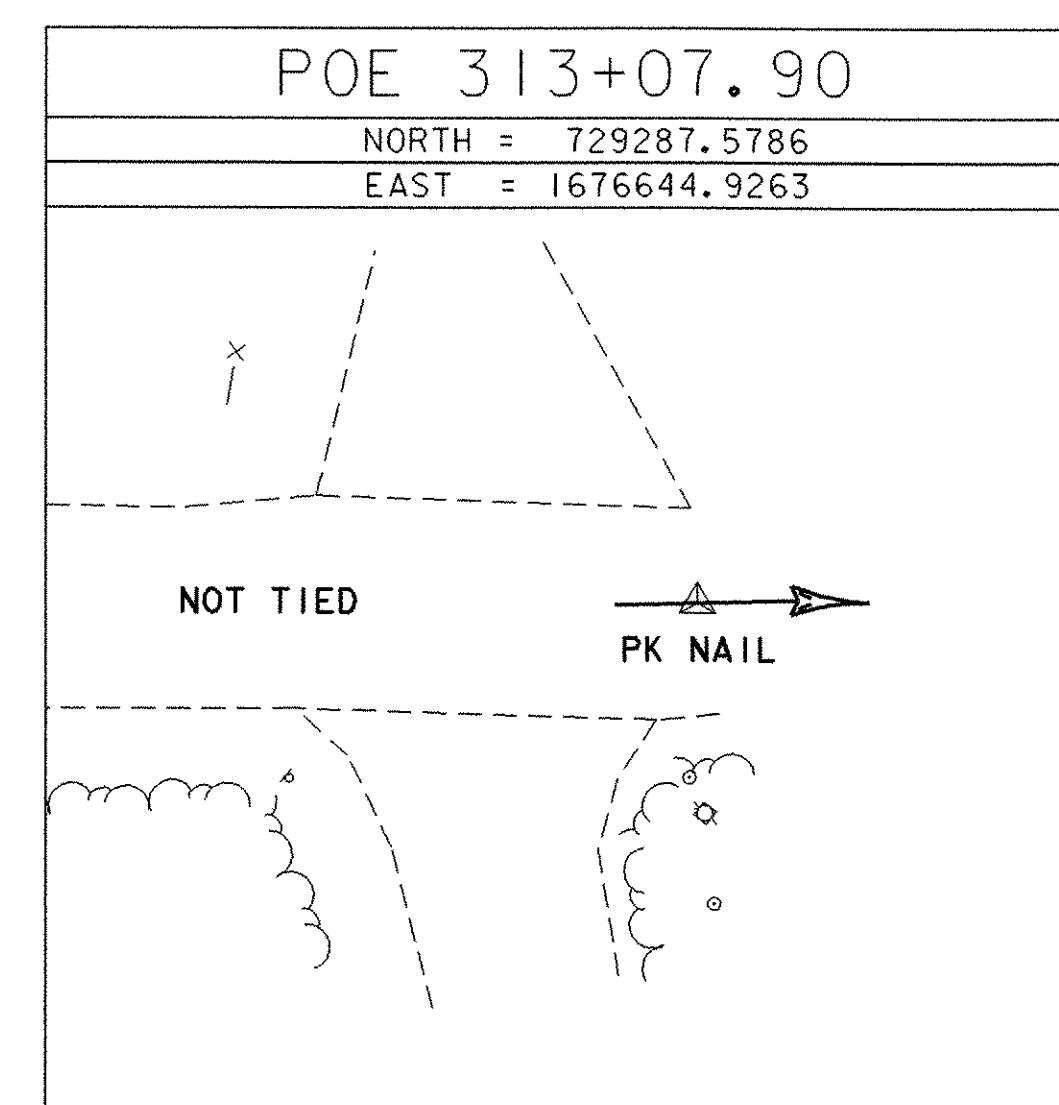
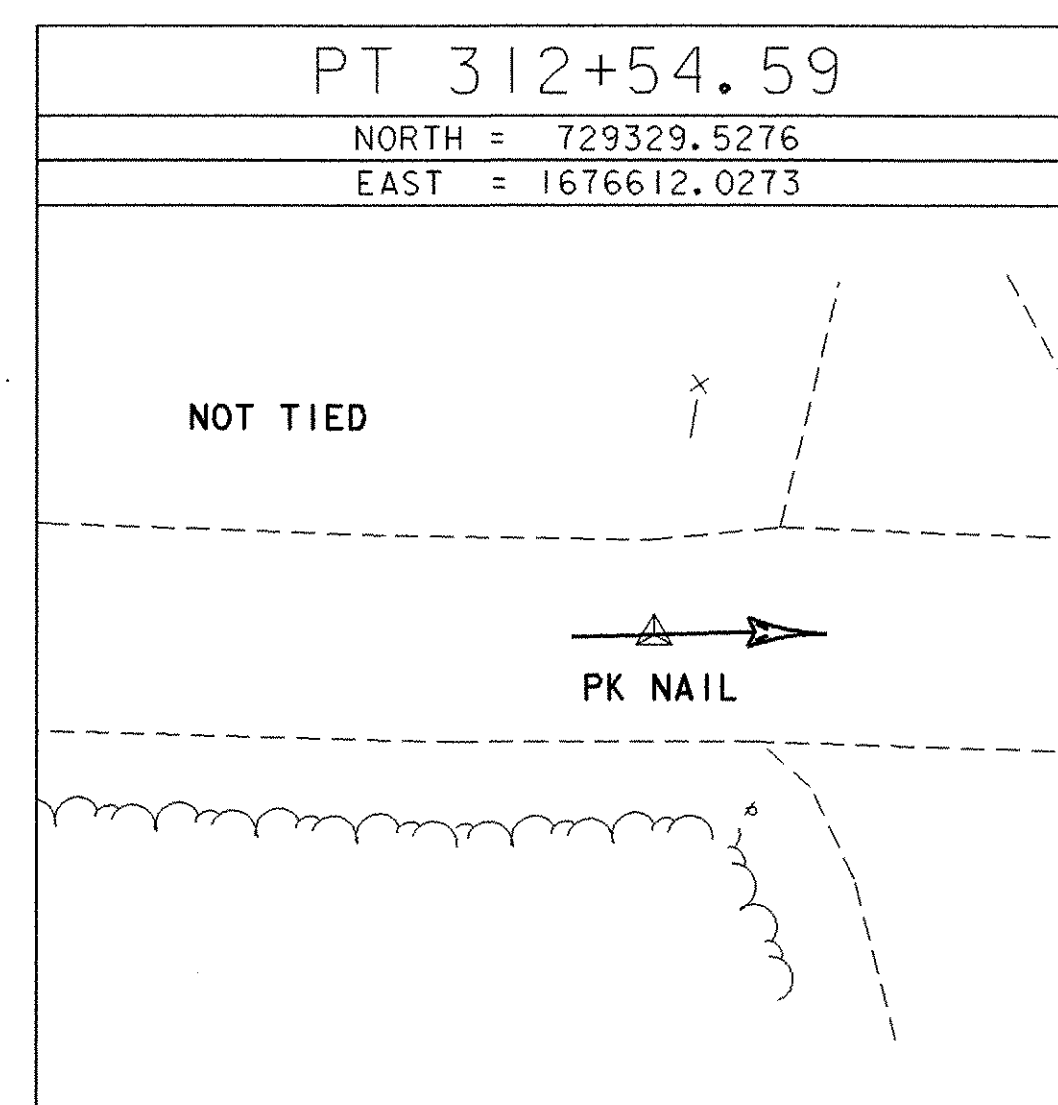
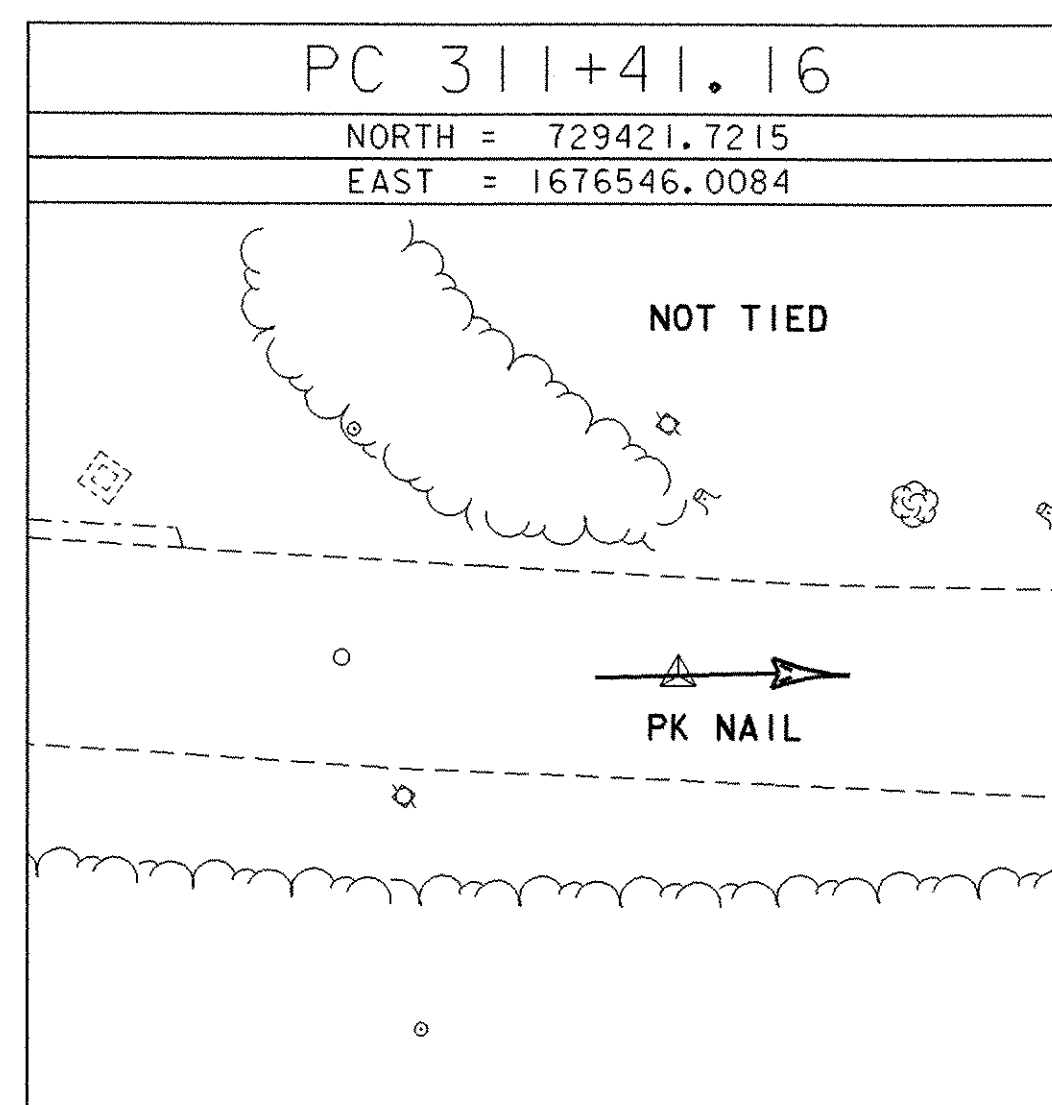
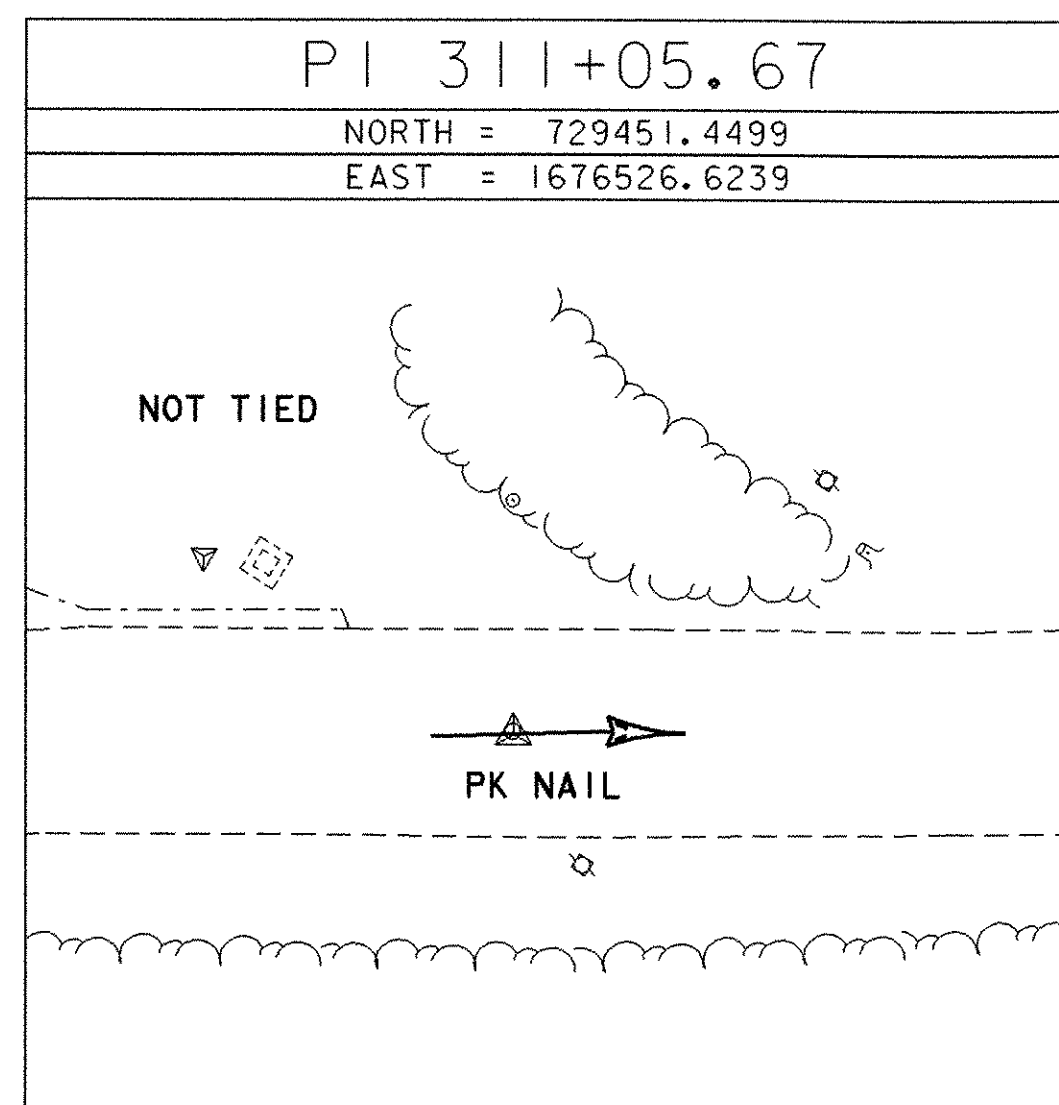
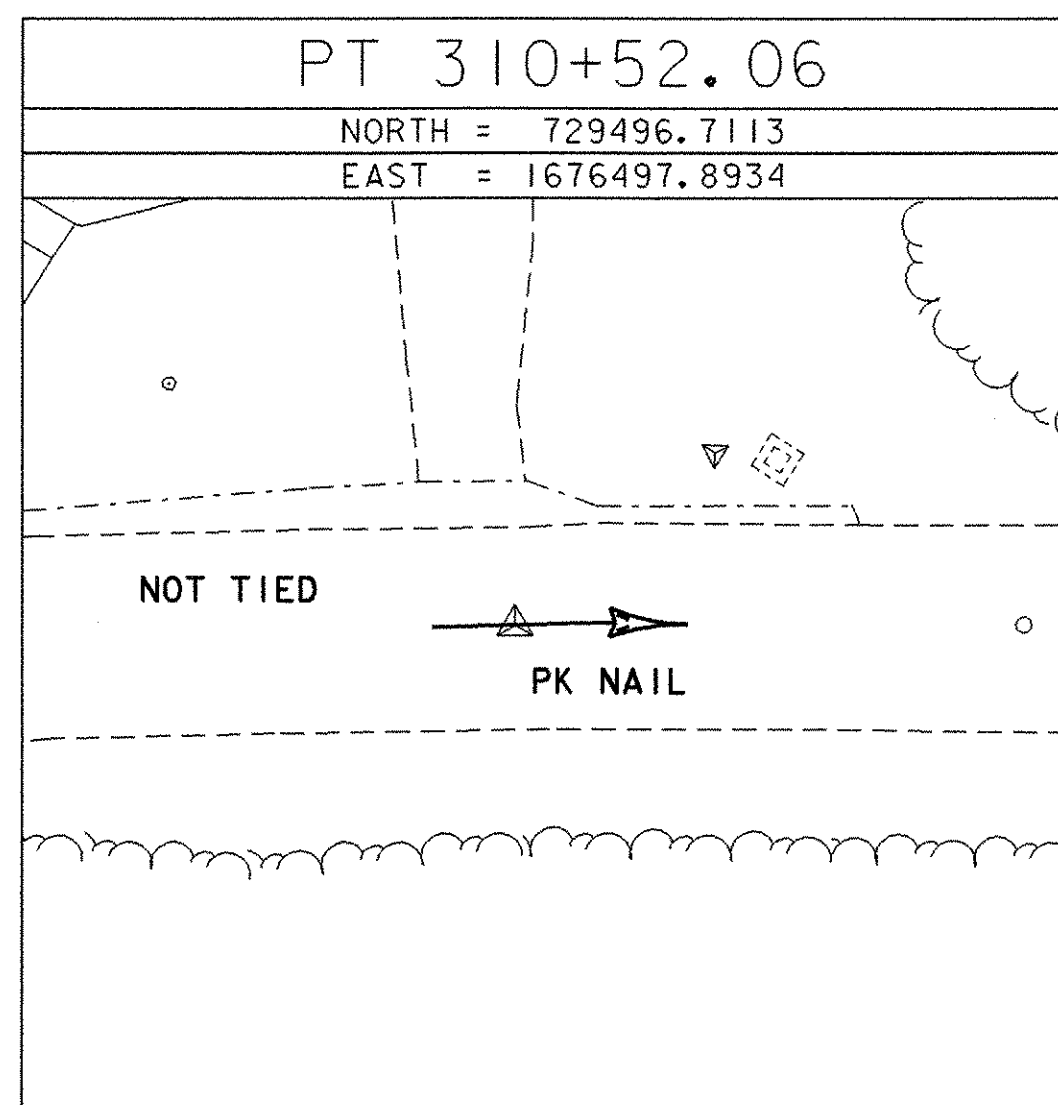
CHECKED BY: P.BEYOR

SHEET 12 OF 63

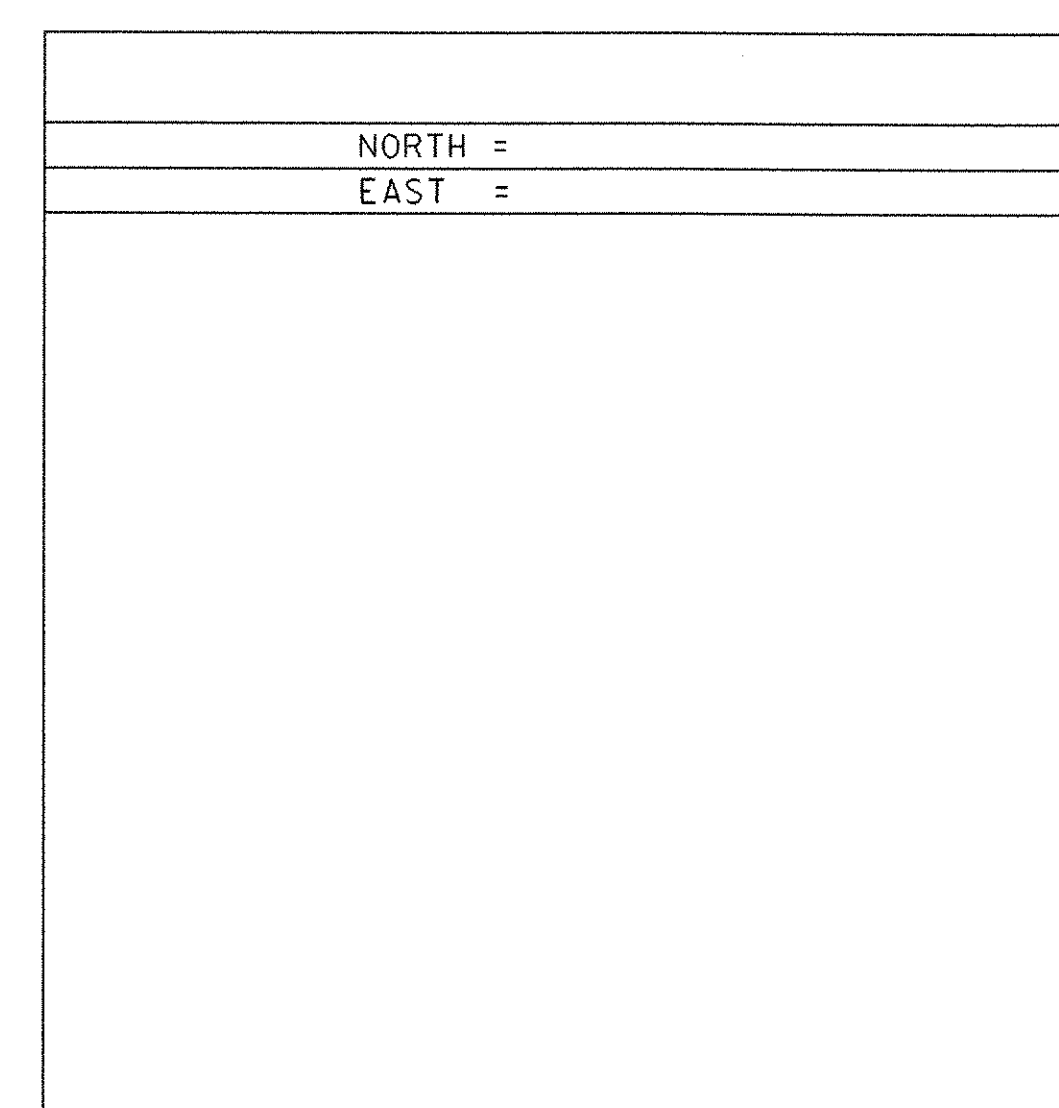
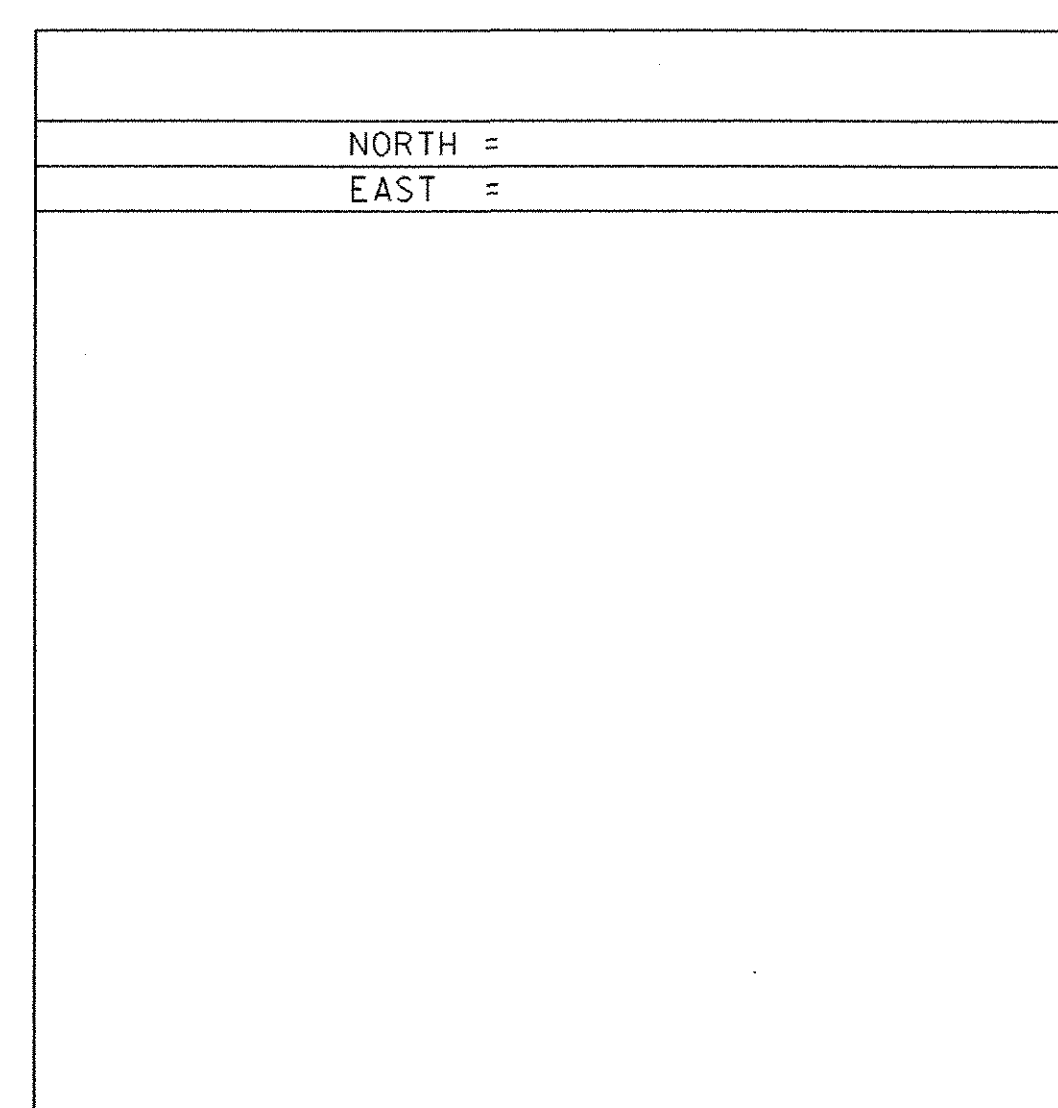
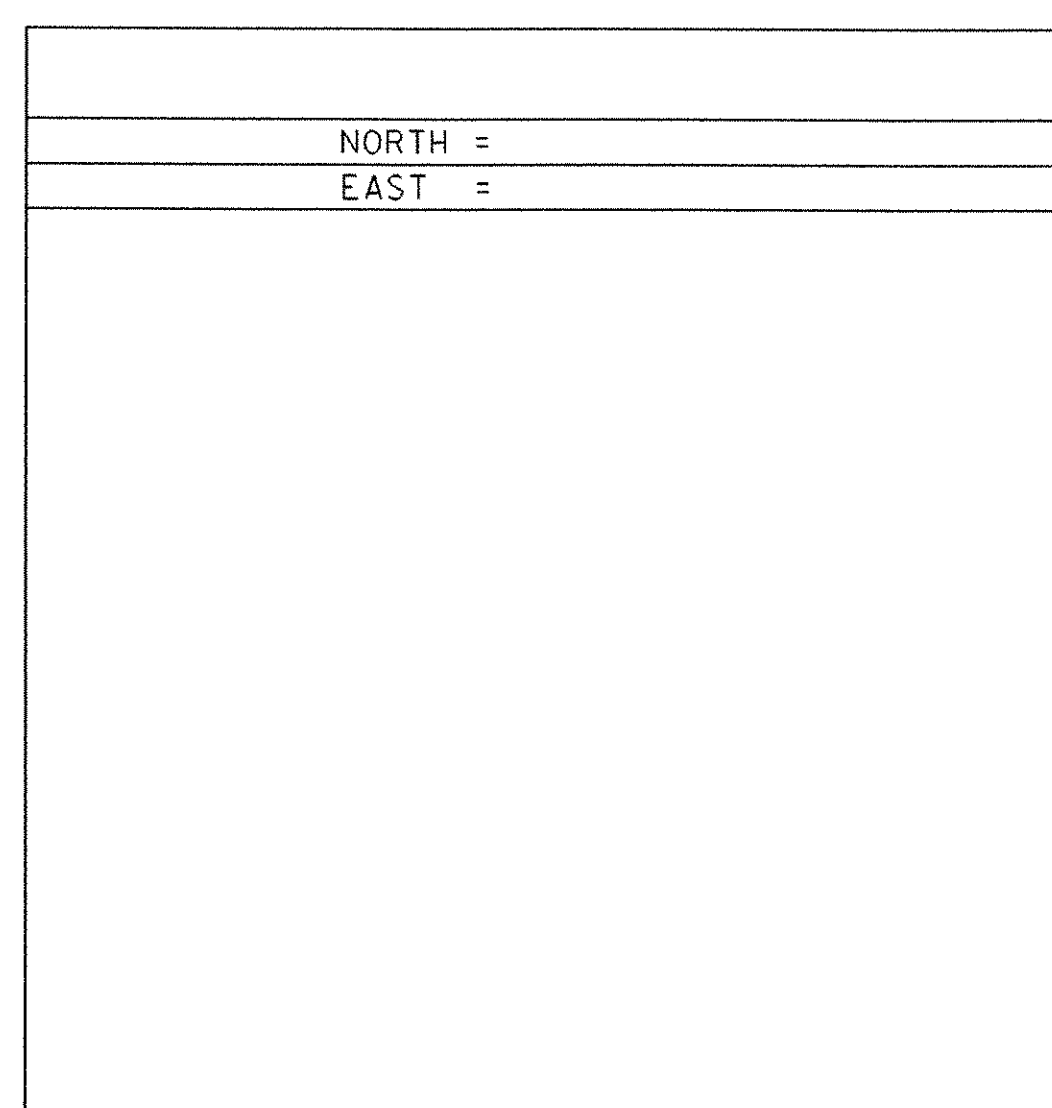
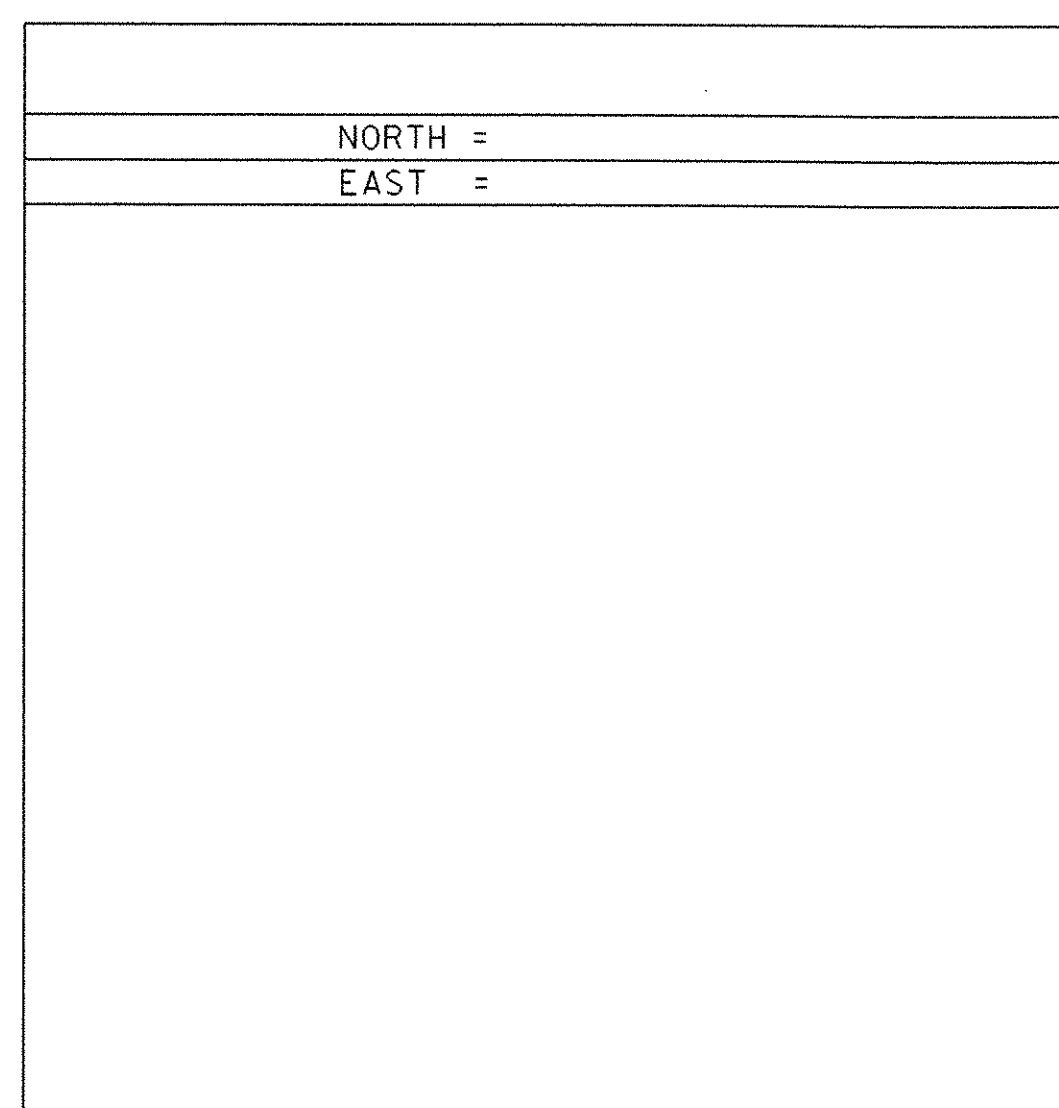
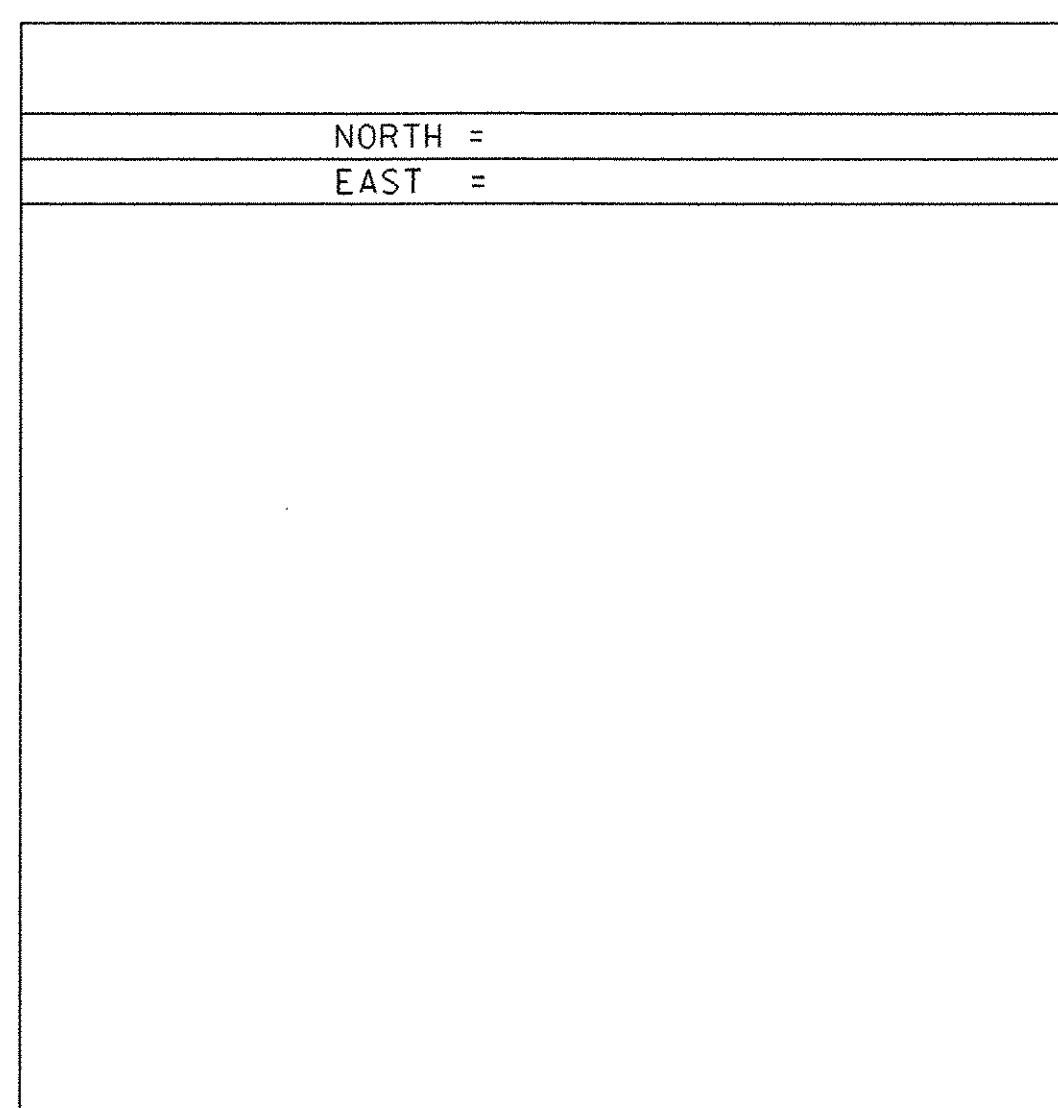
ALIGNMENT TIES



ALIGNMENT TIES



ALIGNMENT TIES



DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83(96)
 ADJUSTMENT COMPASS

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: x04e060+1.dgn PLOT DATE: 18-OCT-2005
 PROJECT LEADER: J.HULETT
 DESIGNED BY: P.BEYOR CHECKED BY: P.BEYOR
 SHEET 13 OF 63

DELINEATORS W/ STEEL POSTS

199+00 LT & RT 2
200+00 LT & RT 2
201+00 LT & RT 2
202+00 LT & RT 2
203+00 LT & RT 2
204+00 LT & RT 2
205+00 LT & RT 2
14 EA

LAMOILLE RIVER

REMOVE AND RESET LIGHT POLE (MOD. - FLAG POLE)
200+33 - 200+49 LT (3 EA)

CONSTRUCT DRIVE
200+60 LT 24' PAVED
YIELDING MARKER POSTS
TO EA

STEEL BEAM GUARDRAIL
203+00 - 206+25 LT 325'
80 00 214.5
ANCHOR FOR STEEL BEAM GUARDRAIL
1 EA
REMOVAL AND DISPOSAL OF GUARDRAIL
205+60 - 206+25 LT
00

STONE FILL, TYPE II FOR
SLOPE STABILIZATION
200+60 - 203+20 RT
STONE FILL, TYPE III FOR
SLOPE STABILIZATION
200+60 - 203+20 RT
206+20 +/- LT 130' +/-
PLUG EXISTING 4" STEEL PIPE

198+88
END APPROACH
BEGIN PROJECT

STONE OUTLET PAD

ML CURVE #2 DATA
 $\Delta = 45^\circ 46' 18.45''$ LT
 $D = 17^\circ 08' 21.43''$
 $R = 334.29$
 $T = 141.11$
 $L = 267.06$
 $E = 28.56$
BANK = 0.080 FT / FT

REMOVAL AND DISPOSAL OF GUIDE POSTS
2 EA
0
LEGEND:
INCLINOMETER (EXISTING) - INCL (E) O
INCLINOMETER (NEW) - INCL (N) O (50' EA)
MONITORING WELL (EXISTING) - MW (E) +
MONITORING WELL (NEW) - MW (N) + (20' EA)

ML CURVE #1 DATA
 $\Delta = 28^\circ 19' 56.42''$ RT
 $D = 20^\circ 06' 13.62''$
 $R = 285.00$
 $T = 71.94$
 $L = 140.93$
 $E = 8.94$
BANK = 0.080 FT / FT

STA 204+10 - 55' - 176' LT
ADDED 8" UD X 12 LF
8" UD (55' - 136' LT)
40' CARRIER (136' - 176' LT)
DIW/ GRATE

ML CURVE #3 DATA
 $\Delta = 64^\circ 13' 49.22''$ LT
 $D = 12^\circ 00' 42.10''$
 $R = 477.00$
 $T = 299.40$
 $L = 534.73$
 $E = 86.18$
BANK = 0.080 FT / FT

206+20
END APPROACH

204+82
END PROJECT
BEGIN APPROACH

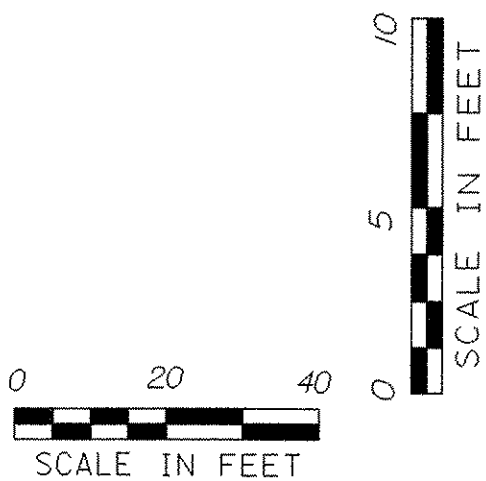
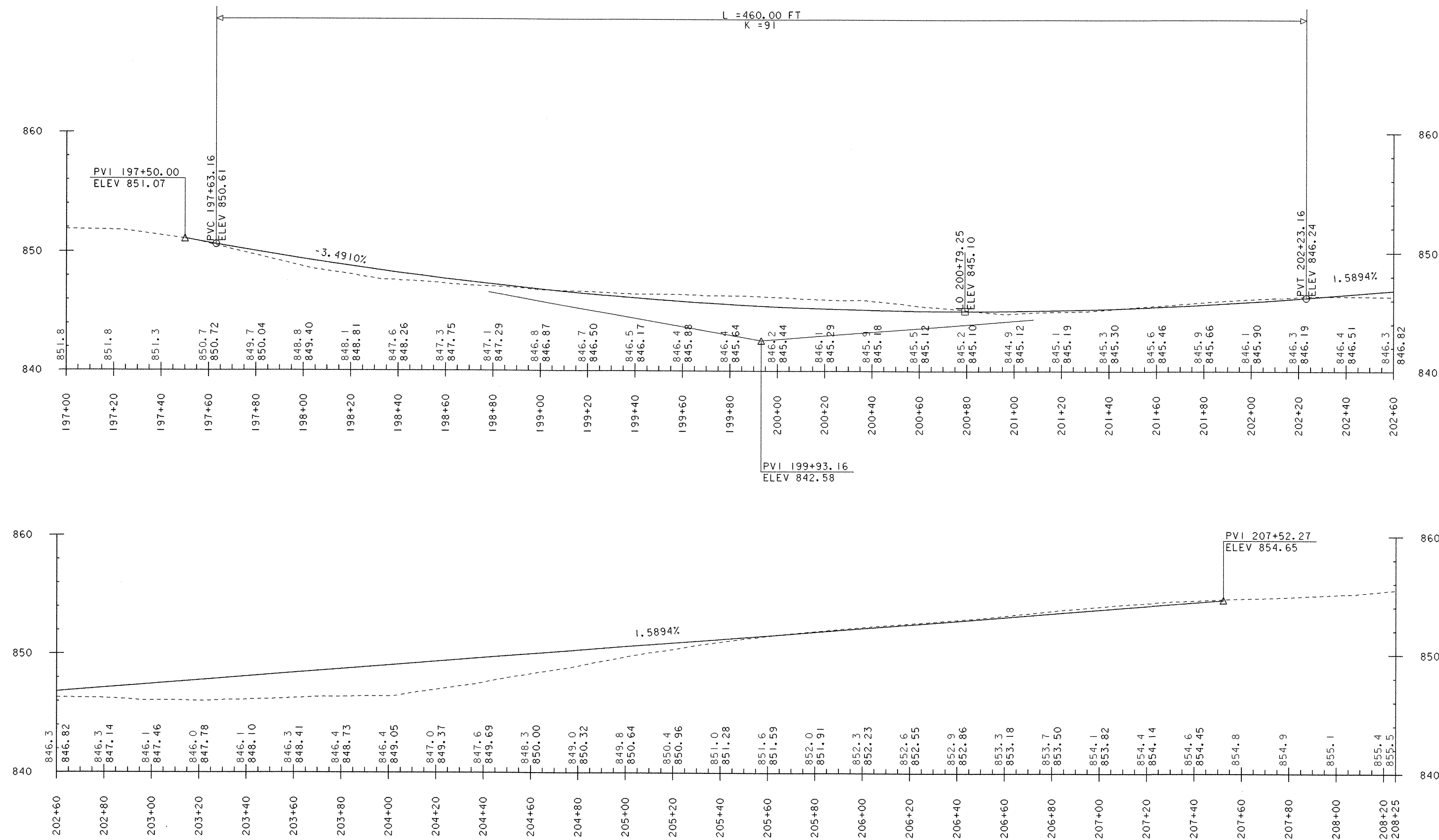
0 50 100
SCALE IN FEET

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

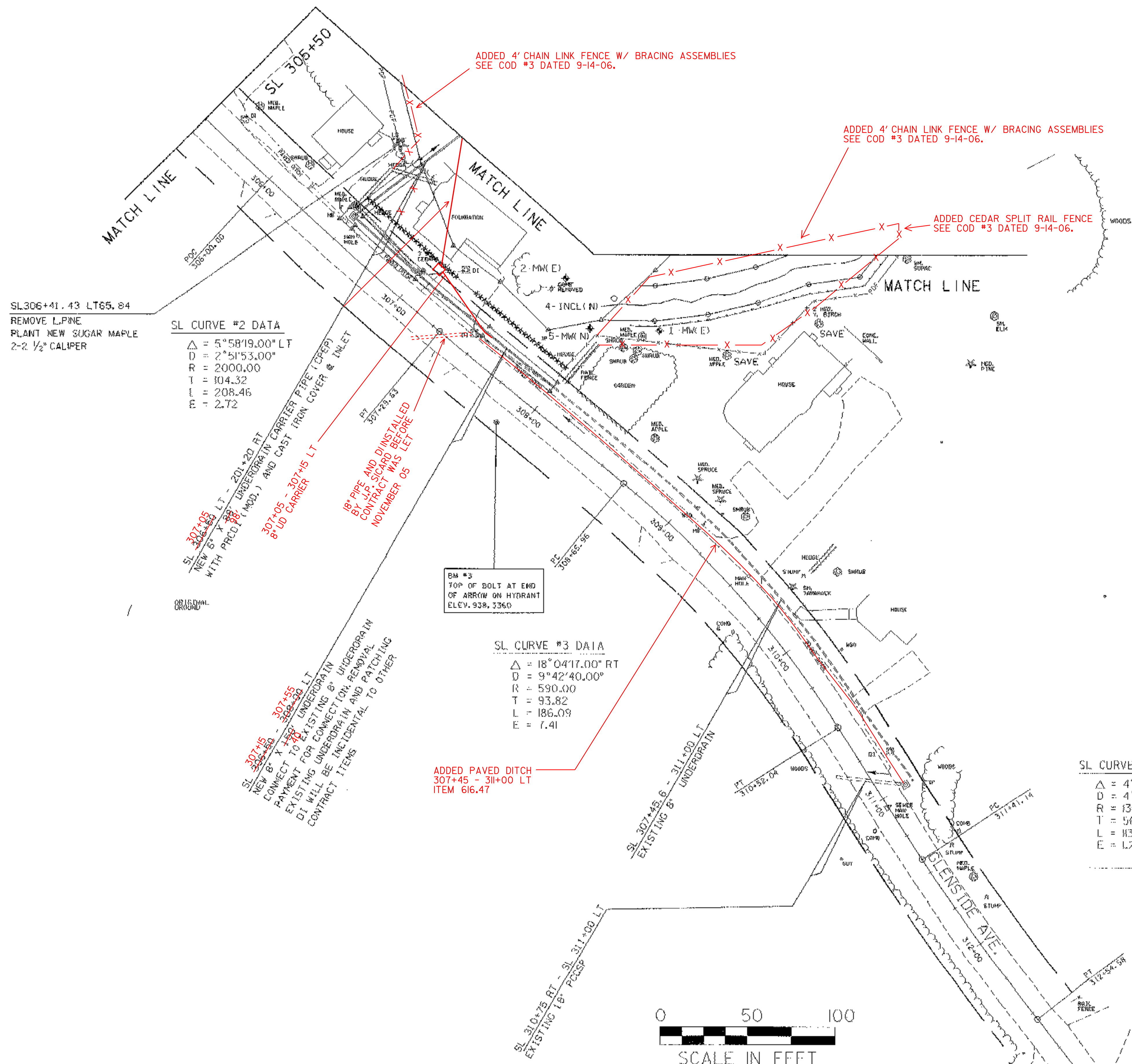
FILE NAME: d04e060bdr.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: d04e060bdr.dgn
PLOT DATE: 18-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 14 OF 63

3MW ELIMINATED 3 - INCL (N) MOVED TO 202+40 208' RT

MAIN LINE PROFILE



PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060pro01.i	SHEET 15 OF 63

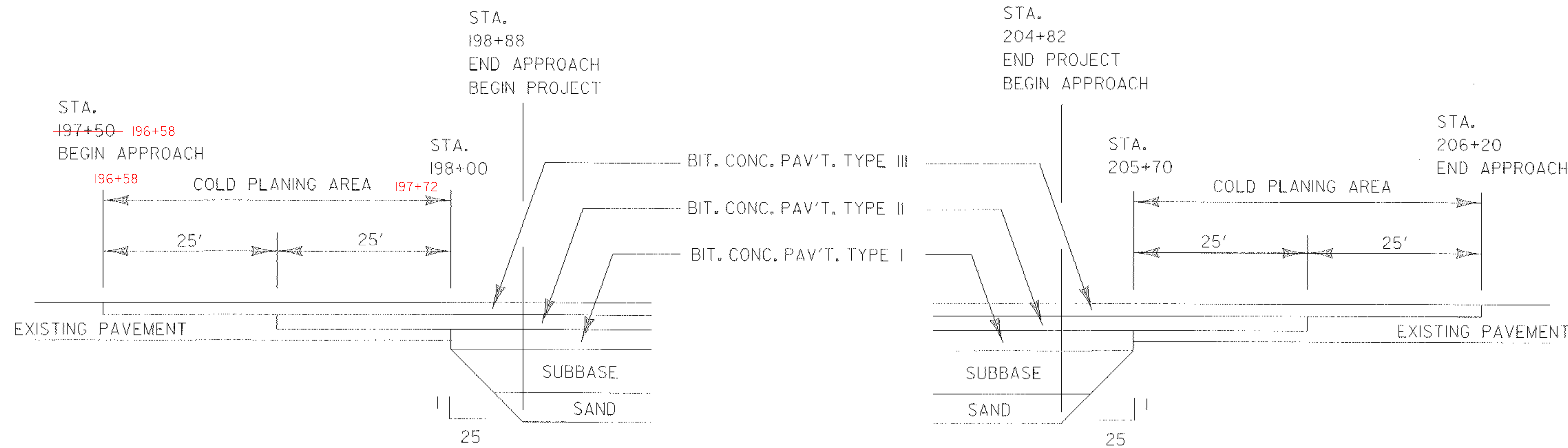


YIELDING MARKER POSTS
1 EA

LEGEND:
INCLINOMETER (EXISTING) - INCL (E) ○
INCLINOMETER (NEW) - INCL (N) ○ (50' EA)
MONITORING WELL (EXISTING) - MW (E) ♦
MONITORING WELL (NEW) - MW (N) ♦ (20' EA)

PROJECT NAME:	HARDWICK
PROJECT NUMBER:	STP ST 030-3(4)
FILE NAME:	d04e060bdr.dgn
PROJECT LEADER:	A. BOMBARDIER
DESIGNED BY:	M. NUTTER
IPARM NAME:	d04e0600021
PLOT DATE:	18-OCT-2005
DRAWN BY:	M. NUTTER
CHECKED BY:	A. BOMBARDIER
SHEET	16 OF 63

MATERIAL TRANSITION DETAIL



N.T.S.

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060frim.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: d04e060mts.t	SHEET 17 OF 63

EROSION PREVENTION AND SEDIMENT CONTROL PLAN NARRATIVE

PROJECT DESCRIPTION

THE PURPOSE OF THE PROJECT IS TO STABILIZE A SLIDE THAT FORMED ON A ROAD CUT SOUTH OF VT 15. WORK TO BE PREFORMED UNDER THE PROJECT INCLUDES MINOR RE- ALIGNMENT OF VT 15, INSTALLING A COUNTERBERM, WITH ASSOCIATED EARTHWORK, DRAINAGE, GUARDRAIL, PAVEMENT AND OTHER RELATED ROADWAY ITEMS. THERE ARE 3.06 ACRES OF DISTURBED AREA.

SITE INVENTORY AND ANALYSIS

OFF-SITE DRAINAGE CHARACTERISTICS AND VEGETATION

SOUTHEAST OF THE SLIDE AREA AND AT THE TOP OF THE SLOPE ARE RESIDENTIAL LAWNS THAT DRAIN TOWARD THE SLIDE. SOUTH AND SOUTHWEST AND UP SLOPE OF THE SLIDE, THE STORMWATER RUNOFF DRAINS TO A PAVED ROADSIDE DITCH ON GLENSIDE AVE. AND WEST AWAY FROM THE SLIDE. WEST AND EAST OF THE PROJECT ARE FORESTS. NORTH OF THE PROJECT THE STORMWATER RUNOFF DRAINS TO EITHER THE LAMOILLE RIVER OR TWO EXISTING ORNAMENTAL PONDS THAT DRAIN INTO THE LAMOILLE RIVER.

DRAINAGE, WATERWAYS, BODIES OF WATER AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THERE ARE TWO ORNAMENTAL PONDS WITHIN THE PROJECT AREA. THERE ARE NO OTHER WATER BODIES WITHIN THE PROJECT. ALL STORMWATER RUNOFF EITHER INFILTRATES OR DRAINS TO THE LAMOILLE RIVER. THE LAMOILLE RIVER IS 190' NORTH OF THE MAJORITY OF THE PROJECT. HOWEVER THE INSTALLATION OF A NEW DRAINAGE CULVERT WILL INVOLVE EXCAVATION AT THE TOP OF THE BANK OF THE LAMOILLE RIVER.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS AND UTILITIES

THE PROJECT IS THE STABILIZATION OF A SLOPE THAT IS SLIDING ONTO VT 15. VT 15 BISECTS THE PROJECT AND WILL BE REALIGNED. THERE IS A MOTEL NORTH OF THE PROJECT WHICH HAS TWO EXISTING DRIVES THAT ENTER THE PROJECT. SOUTH OF THE PROJECT AT THE TOP OF THE SLOPE IS A TOWN OWNED HIGHWAY, GLENSIDE AVE. AND A RESIDENTIAL NEIGHBORHOOD.

SOILS

THE CALEDONIA COUNTY SOIL SURVEY IDENTIFIES THE SOILS AS " URBAN LAND-ADAMS-NICHOLVILLE COMPLEX". THIS SOIL IS HIGHLY ERODIBLE. BECAUSE OF THE TYPE OF PROJECT, EXISTING EXPOSED SOILS, AND OTHER EXISTING FEATURES OF THE PROJECT AREA, SEDIMENT CONTROL SHOULD BE EMPHASIZED.

SENSITIVE RESOURCE AREAS

THE LAMOILLE RIVER IS THE ONLY SENSITIVE RESOURCE WHICH IS LOCATED 190' NORTH OF THE MAJORITY OF THE PROJECT.

HOWEVER THE INSTALLATION OF A NEW DRAINAGE CULVERT WILL INVOLVE EXCAVATION AT THE TOP OF BANK OF THE LAMOILLE RIVER.

INSTALLATION OF THE DRAINAGE CULVERT THAT OUTLETS INTO THE LAMOILLE RIVER; THIS WORK MUST BE DONE IN A WAY THAT DOES NOT RESULT IN A DISCHARGE OF SEDIMENT INTO THE LAMOILLE RIVER. THE PDF SHOULD BE PLACED AT THE TOP OF THE RIVER BANK. CONSTRUCTION EQUIPMENT SHOULD NOT TRAVEL PASSED THE PDF. WORK SHOULD TAKE PLACE DURING CLEAR WEATHER.

TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL PLAN

"PROJECT DEMARCATION FENCE" LABELED AS PDF ON THE PLANS DELINEATES THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED.

THE PROJECT WILL INVOLVE THE DEWATERING OF THE TWO ORNAMENTAL PONDS AND BACK FILLING WITH MATERIAL. THIS SHALL BE DONE IN A WAY THAT DOES NOT RESULT IN A DISCHARGE OF SEDIMENT INTO THE LAMOILLE RIVER. THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN WILL SPECIFY HOW THIS WILL BE ACCOMPLISHED. PAYMENT FOR THIS WORK SHALL NOT BE PAID FOR DIRECTLY BUT WILL BE INCIDENTAL TO ALL EROSION CONTROL ITEMS.

SILT FENCE DETAIL SHEET 24 WILL BE USED AS A GUIDE FOR INSTALLATION OF SILT FENCE AT THE LOCATIONS AS SHOWN ON THE PLAN SHEETS OR AT OTHER LOCATIONS THAT HAVE BEEN IDENTIFIED IN THE CONTRACTOR'S EROSION PREVENTION AND SEDIMENT CONTROL PLAN/ ON SITE COORDINATOR OR RESIDENT ENGINEER.

DROP INLET PROTECTION DETAIL SHEET 25 OR COMPARABLE MEASURES WILL BE USED AT ALL EXISTING AND NEW DI'S, CB'S, OR MH'S UNTIL THE SOILS SURROUNDING THEM HAVE BEEN STABILIZED. THE PURPOSE OF DRAINAGE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING THE CLOSED DRAINAGE SYSTEMS.

STABILIZED CONSTRUCTION ENTRANCE DETAIL SHEET 26 OR A COMPARABLE MEASURE WILL BE USED AT ALL ENTRANCES WHERE TRUCKS AND OTHER CONSTRUCTION EQUIPMENT EXIT AREAS OF EXPOSED SOILS ONTO PUBLIC ROADWAYS. THE PURPOSE IS TO REDUCE THE TRACKING OF SEDIMENT ONTO PUBLIC ROADWAYS.

PERMANENT EROSION CONTROL MEASURES

GRASS OR OTHER SUITABLE GROUND COVER WILL BE ESTABLISHED OUTSIDE OF THE ROADWAY LIMITS WHERE STONE FILL HAS NOT BEEN SPECIFIED. ALL OTHER SLOPES SHALL BE SEEDED AND MULCHED WITHIN 48 HOURS UPON ACHIEVING FINAL GRADE. ALL SLOPES SHALL RECEIVE EROSION CONTROL MATTING USING DITCH & SLOPE PROTECTION DETAIL SHEET 27 AS A GUIDE.

FOR ADDITIONAL INFORMATION SEE EROSION PREVENTION AND SEDIMENT CONTROL GENERAL NOTES.

FINAL CONDITIONS SITE PLAN

FINAL CONTOURS ARE TO BE TAKEN FROM CROSS SECTIONS.

SHEET NAME: EROSION CONTROL NARRATIVE

PROJECT NAME: HARDWICK

PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: PW/04e060/design/d04e060frm PLOT DATE: 18-OCT-2005

PROJECT LEADER: A. BOMBARDIER

DRAWN BY: M. NUTTER

DESIGNED BY: M. NUTTER

CHECKED BY: A. BOMBARDIER

IPARM NAME: d04e060ernarr.1

SHEET 18 OF 63

EROSION PREVENTION AND SEDIMENT CONTROL PLAN GENERAL NOTES

1. CONTRACTOR’S RESPONSIBILITIES FOR EROSION PREVENTION AND SEDIMENT CONTROL

- A. THE CONTRACTOR SHALL PROVIDE A NARRATIVE AND PLAN SHEETS THAT ADDRESSES ALL ITEMS ON THE VTRANS CONTRACTOR’S CHECK LIST FOR EROSION PREVENTION AND SEDIMENT CONTROL
- B. PREVENT OR MINIMIZE SOIL EROSION OF DISTURBED LAND AND PREVENT THE DISCHARGE OF SEDIMENT AND OTHER CONSTRUCTION RELATED POLLUTANTS TO WATERS OF THE STATE.
- C. FURNISH, INSTALL, INSPECT AND MAINTAIN EROSION AND SEDIMENT CONTROL MATERIALS IN CONJUNCTION WITH THE GENERAL CLEARING, GRADING AND EXCAVATION OF THE SITE.
- D. ESTABLISH LIMITS OF SOIL DISTURBANCE; LOCATION(S) OF TOPSOIL STOCKPILES; CONSTRUCTION STAGING AREAS; STORAGE AREAS; REFUELING AND MAINTENANCE AREAS.
- E. ESTABLISH AND MARK BOUNDARIES FOR ANY UNDISTURBED RIPARIAN BUFFER ZONES AND MAINTAIN ALL EXISTING STREAMS AND RIPARIAN BUFFER ZONES IN THEIR NATURAL CONDITION, EXCEPT IN THE AREA OF STREAM WORK.
- F. SEQUENCE CONSTRUCTION ACTIVITIES TO MINIMIZE THE EXTENT OF DISTURBED SOILS LEFT OPEN TO EROSION AT ANY GIVEN TIME AS DETAILED IN THE CONSTRUCTION PHASING AND EROSION AND SEDIMENT CONTROL PLANS.
- G. MAINTAIN AND PRESERVE TO THE EXTENT POSSIBLE THE SITE’S NATURAL DRAINAGE WAYS THAT CONVEY STORMWATER TO STREAMS, RIVERS, LAKES, PONDS AND WETLANDS.
- H. PREVENT OFF-SITE STORMWATER FROM ENTERING AREAS OF DISTURBED SOIL ON-SITE.
- I. PREVENT THE OFF-SITE DISCHARGE OF SEDIMENT MOBILIZED ON THE CONSTRUCTION SITE, INCLUDING OFF-SITE TRACKING OF SEDIMENT ONTO PAVED PUBLIC OR PRIVATE ROADWAYS BY CONSTRUCTION VEHICLES.
- J. DISPOSE OF SEDIMENTS AND OTHER POLLUTANTS WHICH HAVE BEEN COLLECTED AND REMOVED IN THE COURSE OF STORMWATER TREATMENT IN A MANNER THAT WILL NOT RESULT IN THE SEDIMENTS AND POLLUTANTS ENTERING WATERS OF THE STATE. DISPOSAL SITES REQUIRE RELATIVELY LEVEL TERRAIN WITH AN ISOLATION DISTANCE OF AT LEAST 100 FEET FROM ANY SURFACE WATERS, INCLUDING WETLANDS.

2. LIMITATIONS AND PROHIBITIONS

- A. ANY PROPOSED SOIL DISTURBANCE AND EARTHWORKS BETWEEN OCTOBER 15 AND MAY 1 WILL REQUIRE DEVELOPMENT OF A SPECIAL WINTER EROSION AND SEDIMENT CONTROL PLAN ADDRESSING THE SPECIFIC CONCERNS OF WINTER CONSTRUCTION.
- B. DISCHARGES OF ANY MATERIAL OTHER THAN STORM WATER, SUCH AS VEHICLE AND EQUIPMENT MAINTENANCE SPILLS, FUELS, WASH WATER, CONSTRUCTION DEBRIS, OIL, WET CONCRETE (INCLUDING WASHOUT WATER FROM CONCRETE BATCH TRUCKS OR EQUIPMENT USED TO MIX CONCRETE), AND OTHER SUBSTANCES, ARE PROHIBITED.
- C. DISPOSAL OF SEDIMENT IN A WETLAND OR ANY CORRECTIVE ACTION UNDERTAKEN TO REMOVE SEDIMENT FROM A WETLAND IS PROHIBITED.
- D. THE FAILURE TO PROMPTLY ABATE THE DISCHARGE OF SEDIMENT OR ANY OTHER WASTE WHICH CAUSES A VISIBLE DISCOLORATION OF SURFACE WATERS (INCLUDING WETLANDS), OR IS FOUND TO BE EXCEEDING WATER QUALITY STANDARDS BASED ON MONITORING, IS PROHIBITED.

3. GENERAL CONSTRUCTION NOTES

- A. VEHICLE AND EQUIPMENT STORAGE AREAS OR AREAS ADJACENT TO CONSTRUCTION TRAILER OR OTHER HIGH TRAFFIC AREAS SHALL BE COVERED WITH GEOTEXTILE FABRIC AND 12 INCHES OF GRAVEL. FOLLOWING COMPLETION OF CONSTRUCTION, ALL NON-NATIVE MATERIALS SHALL BE REMOVED FROM THE STAGING AREA. COMPACTED, RUTTED, OR OTHERWISE DISTURBED SOILS SHALL BE TILLED, RAKED, SEEDED AND MULCHED.
- B. ERODIBLE MATERIALS STOCKPILED WITHIN THE MATERIAL STORAGE AREAS SHALL BE ISOLATED WITH FILTER FABRIC. SOIL STOCKPILED ON THE SITE SHALL BE SEEDED AND MULCHED.
- C. ALL EXPOSED AREAS WHICH WILL NOT RECEIVE FURTHER DISTURBANCE FOR A PERIOD OF 7 DAYS OR MORE SHALL BE TEMPORARILY STABILIZED WITH MULCH.
- D. ALL EXPOSED AREAS SHALL BE PERMANENTLY STABILIZED WITH EROSION CONTROL MATTING WITHIN 48 HOURS OF REACHING FINAL GRADE.

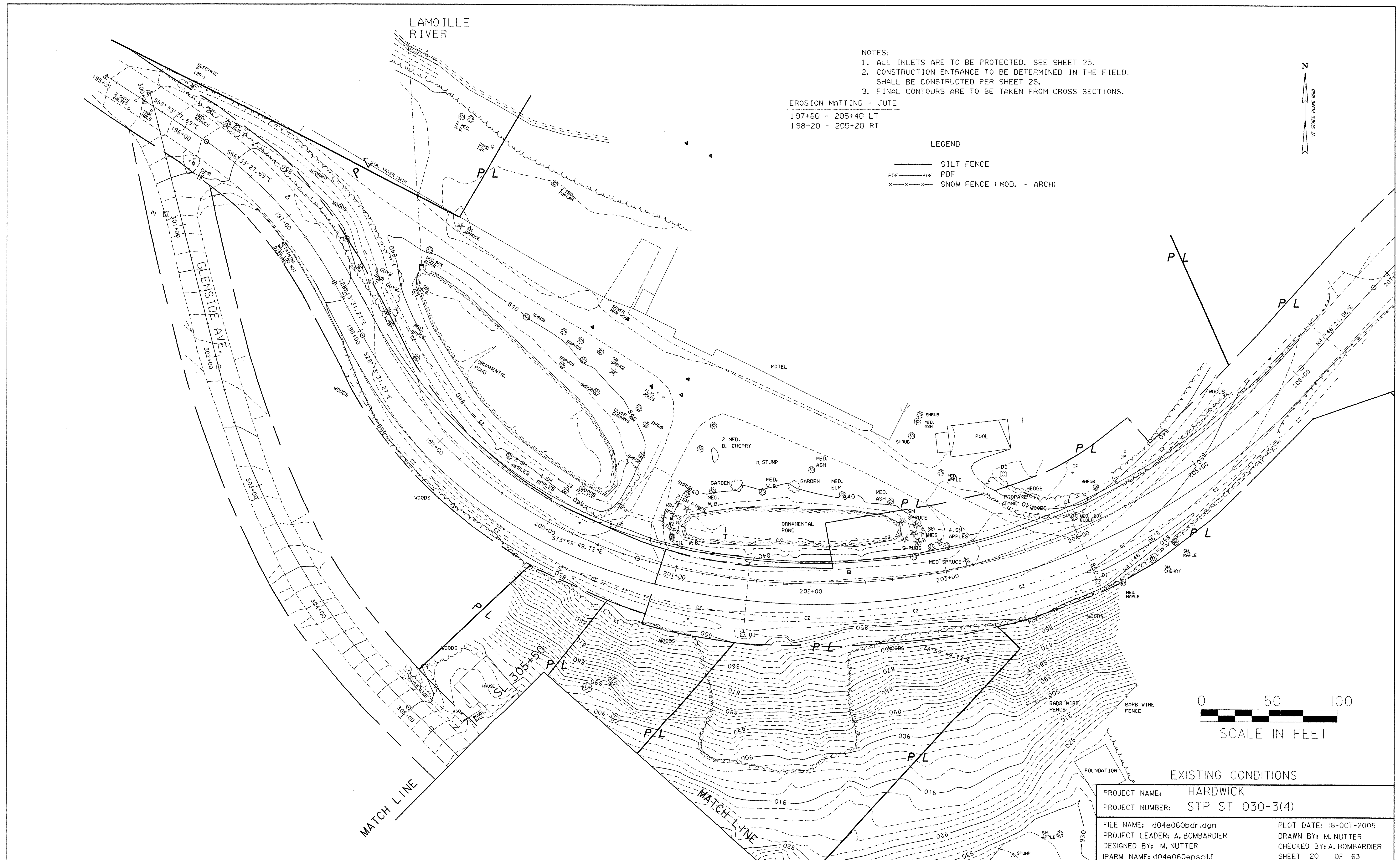
4. MONITORING EROSION PREVENTION AND SEDIMENT CONTROL PLAN

- A. THE CONTRACTOR SHALL DESIGNATE A PERSON, ON - SITE PLAN COORDINATOR (OPC), WHO IS DIRECTLY RESPONSIBLE FOR THE ON-SITE IMPLEMENTATION OF THE PLAN. THIS PERSON SHALL GENERALLY BE ON - SITE ON A DAILY BASIS DURING ACTIVE CONSTRUCTION AND HAVE THE AUTHORITY TO HALT CONSTRUCTION ACTIVITIES IF NECESSARY. THE QUALIFICATIONS OF THE OPC SHALL BE INCLUDED IN AND ACCEPTED UPON APPROVAL OF THE PLAN. HOWEVER, THE ENGINEER, IF NOT SATISFIED WITH THE PERFORMANCE MAY AT ANY TIME REQUEST A REPLACEMENT.
- B. THE OPC SHALL BE RESPONSIBLE FOR INSPECTIONS AND REPORTING. THE AGENCY’S EROSION PREVENTION AND SEDIMENT CONTROL WEEKLY PLAN REVIEW SHALL BE COMPLETED TO INFORM THE AGENCY OF THE STATUS OF THE PROJECT WITH REGARD TO EROSION PREVENTION AND SEDIMENT CONTROL. THE AGENCY’S STORM EVENT MONITORING REPORT SHALL BE COMPLETED TO PROVIDE INFORMATION REGARDING THE EFFECTIVENESS OF THE PLAN DURING A STORM EVENT. SHEET 1 OF THE REPORT SHALL BE COMPLETED WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE STORMWATER TO LEAVE THE CONSTRUCTION SITE. BOTH SHEETS 1 AND 2 OF THE REPORT SHALL BE COMPLETED IF THERE IS EVIDENCE OF SEDIMENT OR SEDIMENT LADEN WATER LEAVING THE CONSTRUCTION SITE OR ENTERING SURFACE WATERS (INCLUDING WETLANDS). IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE DISCHARGE OF SEDIMENT, INCLUDING HALTING OR REDUCING CONSTRUCTION ACTIVITIES AS NECESSARY UNTIL THE DISCHARGE AND/OR THE CONDITION IS FULLY CORRECTED. CORRECTIVE ACTIONS SHALL BE RECORDED ON MONITORING REPORTS AND SHOWN ON THE PLAN. EACH REPORT SHALL BE SIGNED BY THE OPC.
- C. MONITORING OF EROSION PREVENTION AND SEDIMENT CONTROL MEASURES FOR MULTI YEAR PROJECTS AND PROJECTS THAT HAVE NOT BEEN ACCEPTED DUE TO INSUFFICIENT ESTABLISHMENT OF VEGETATION SHALL BE CONDUCTED THROUGHOUT THE WINTER SEASON. THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO CONDUCTING ANY REVIEWS, AND THE REVIEWS SHALL BE CONDUCTED AT LEAST ONCE EVERY OTHER WEEK, AND AFTER ANY MAJOR STORM EVENT GREATER THAN 1/2 INCH OF RAIN IN A 24 HOUR PERIOD OR A SIGNIFICANT SNOW MELT EVENT. COPIES OF THE INSPECTION REPORTS SHALL BE SUBMITTED TO THE ENGINEER AS COMPLETED TO BE KEPT IN THE PROJECT FILES.

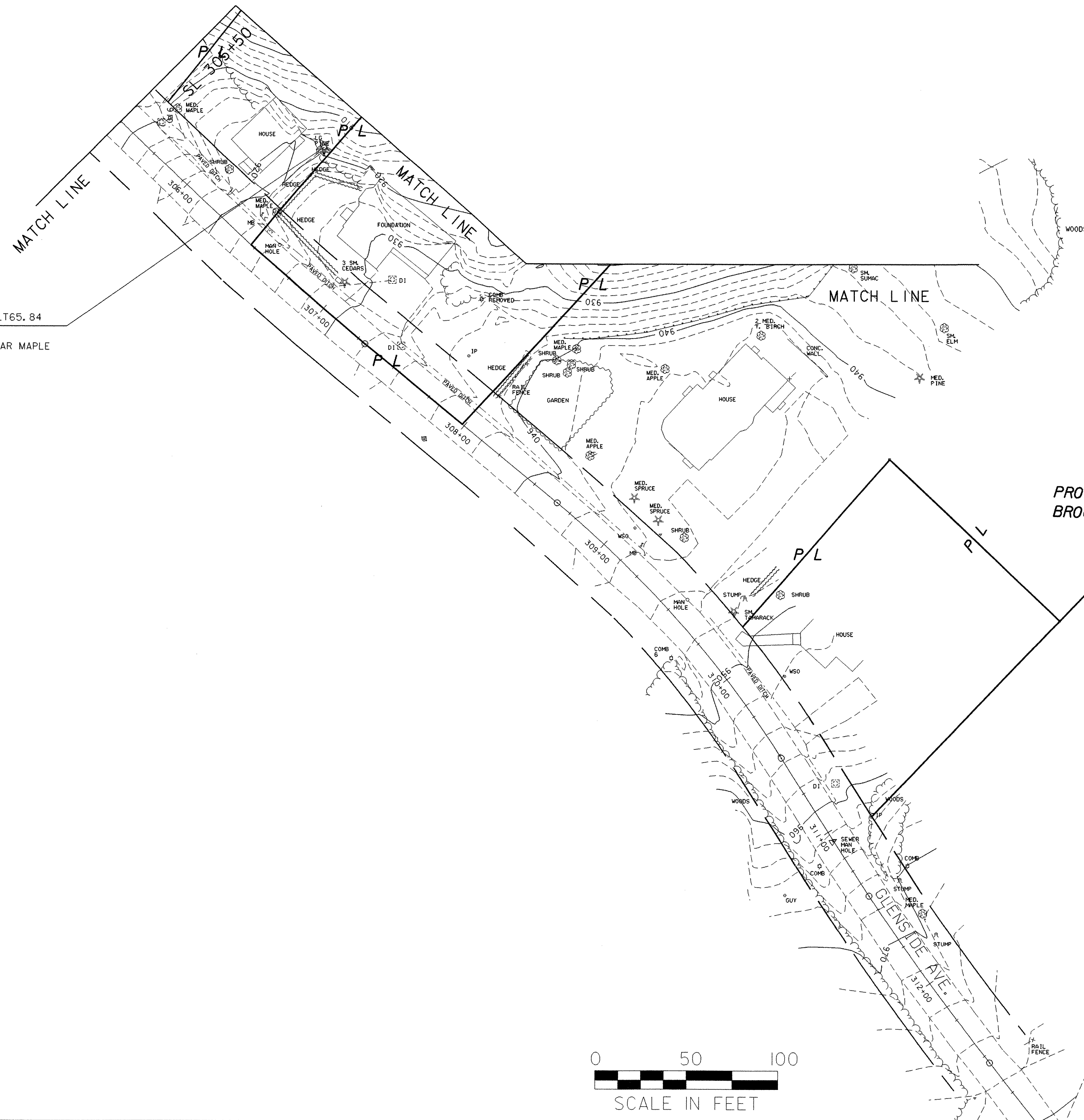
5. MAINTENANCE

- A. THE CONTRACTOR SHALL REPAIR ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND MEASURES THAT ARE DETERMINED TO BE FAILING, OR NOT FUNCTIONING AS DESIGNED, WITHIN 24 HOURS OF INSPECTION.
- B. THE CONTRACTOR SHALL REMOVE ACCUMULATED SEDIMENT FROM CONTAINMENT SYSTEMS AND OTHER SEDIMENT CONTROL STRUCTURES AS REQUIRED, SUCH THAT PERFORMANCE OF THESE SYSTEMS IS NOT COMPROMISED OR IN ANY WAY IMPAIRED.
- C. THE CONTRACTOR SHALL REMOVE ALL DEBRIS AND REPAIR ALL DAMAGES CAUSED BY SOIL EROSION OR CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY.

SHEET NAME: EROSION CONTROL GENERAL NOTES	
PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: PW\04e060\design\04e060frmPLOT	DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060eronotes.i	SHEET 19 OF 63



SL306+41.43 LT65.84
REMOVE L.PINE
PLANT NEW SUGAR MAPLE
2-2 1/2" CALIPER

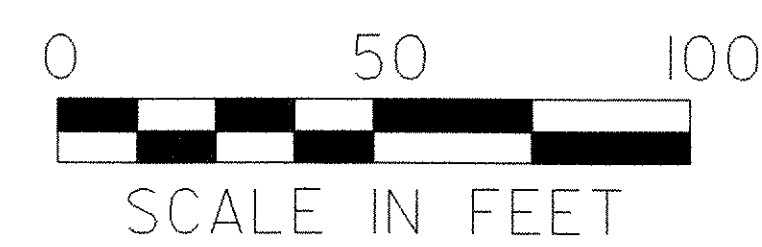


PROPERTY LINE FOLLOWS
BROOK TO HIGHWAY

- NOTES:
1. ALL INLETS ARE TO BE PROTECTED. SEE SHEET 25.
 2. CONSTRUCTION ENTRANCE TO BE DETERMINED IN THE FIELD. SHALL BE CONSTRUCTED PER SHEET 26.
 3. FINAL CONTOURS ARE TO BE TAKEN FROM CROSS SECTIONS.

LEGEND

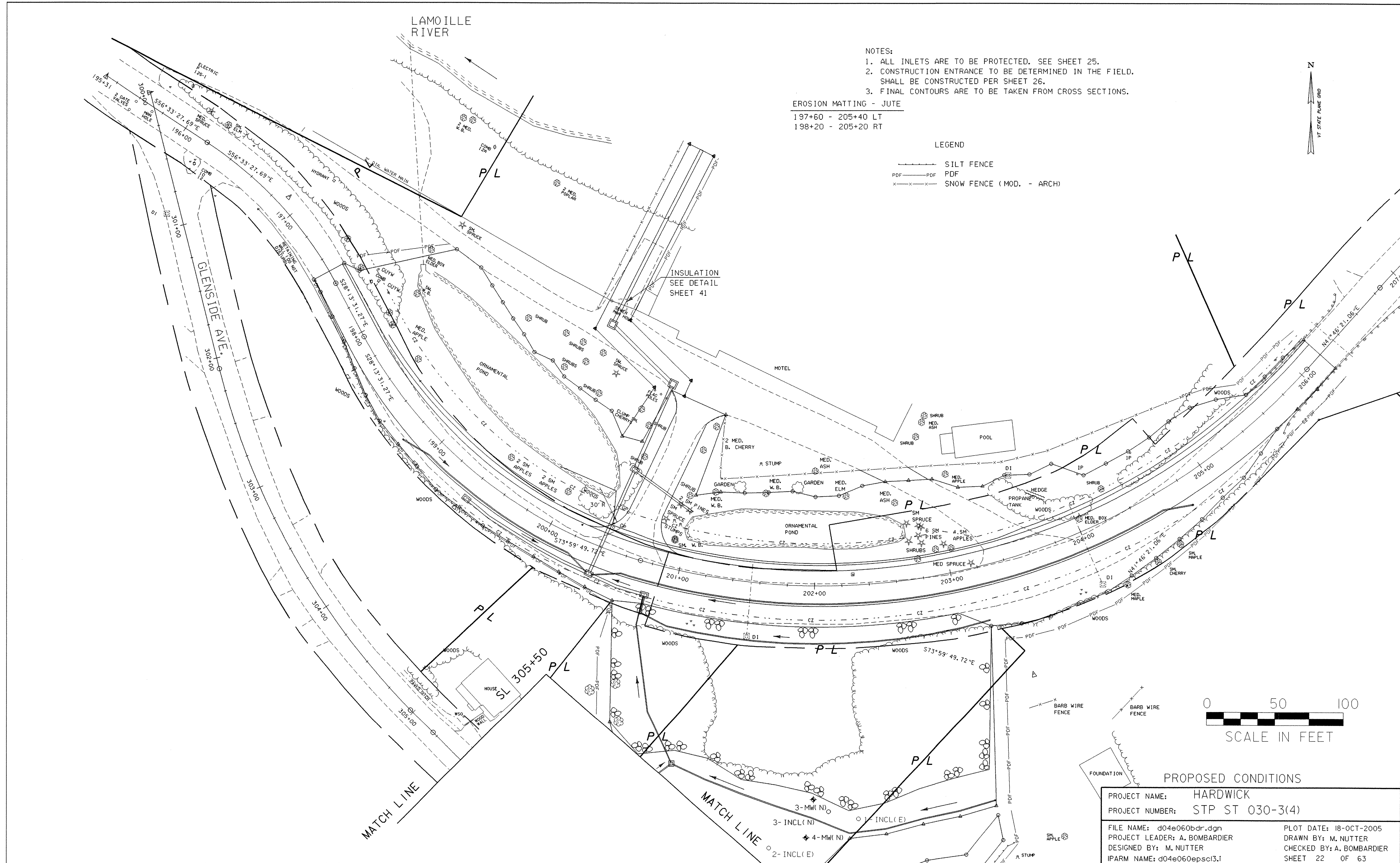
- SILT FENCE
PDF — PDF
x — x — x SNOW FENCE (MOD. - ARCH)

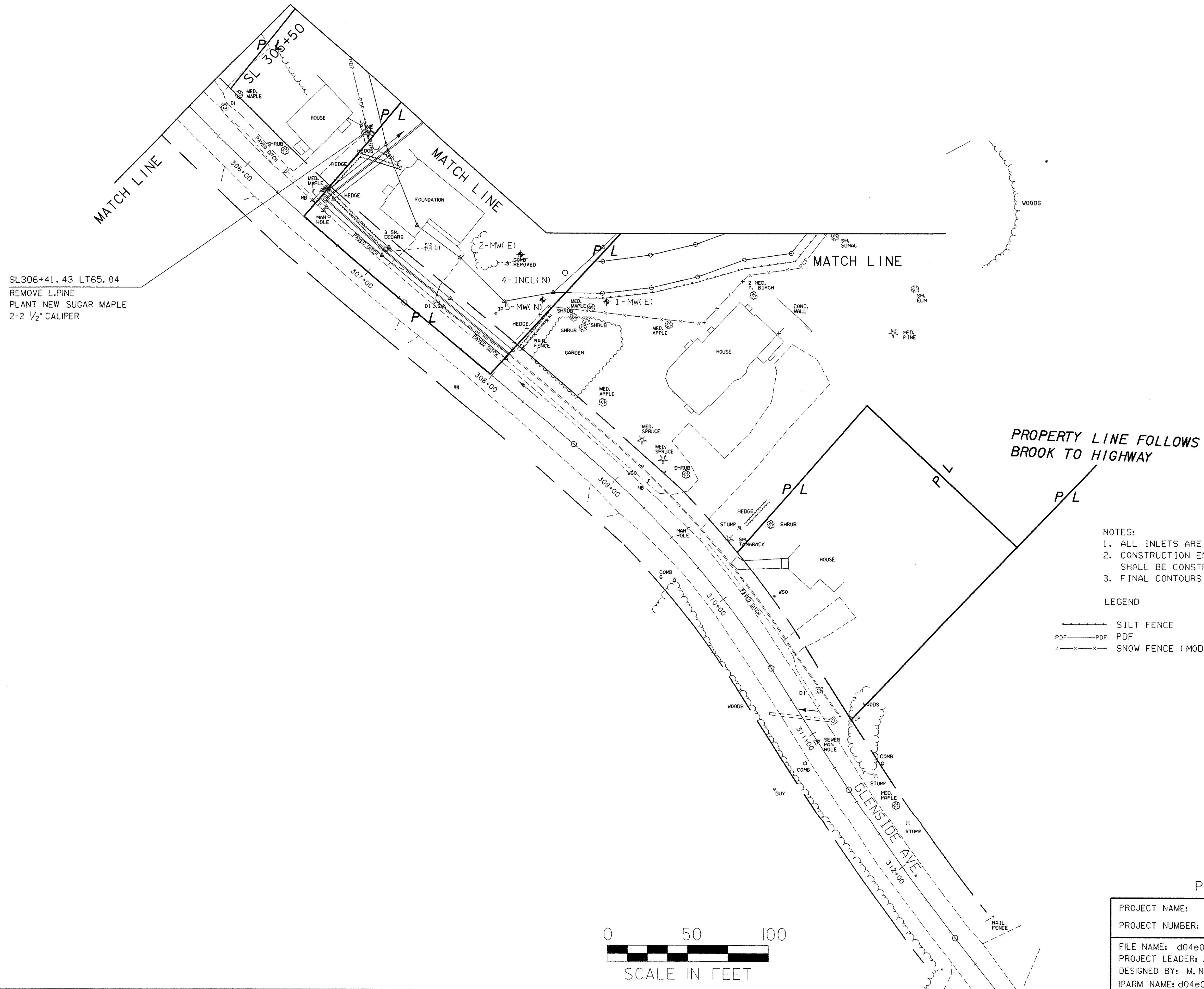


EXISTING CONDITIONS

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060bdr.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: d04e060epscl2.1	SHEET 21 OF 63





- NOTES:
1. ALL INLETS ARE TO BE PROTECTED. SEE SHEET 25.
 2. CONSTRUCTION ENTRANCE TO BE DETERMINED IN THE FIELD. SHALL BE CONSTRUCTED PER SHEET 26.
 3. FINAL CONTOURS ARE TO BE TAKEN FROM CROSS SECTIONS.

LEGEND

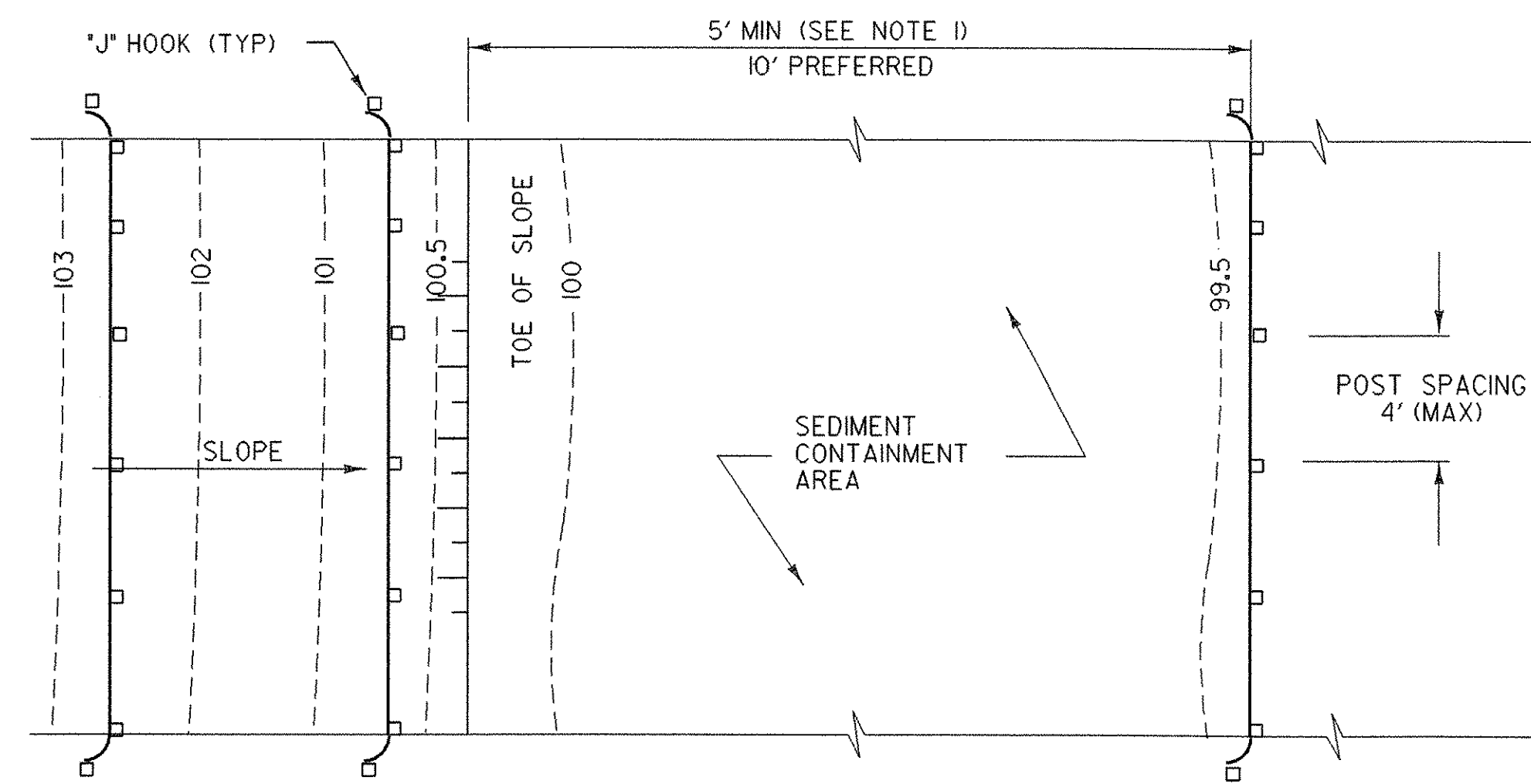
- SILT FENCE
PDF PDF
x-x-x SNOW FENCE (MOD. - ARCH)

PROPOSED CONDITIONS

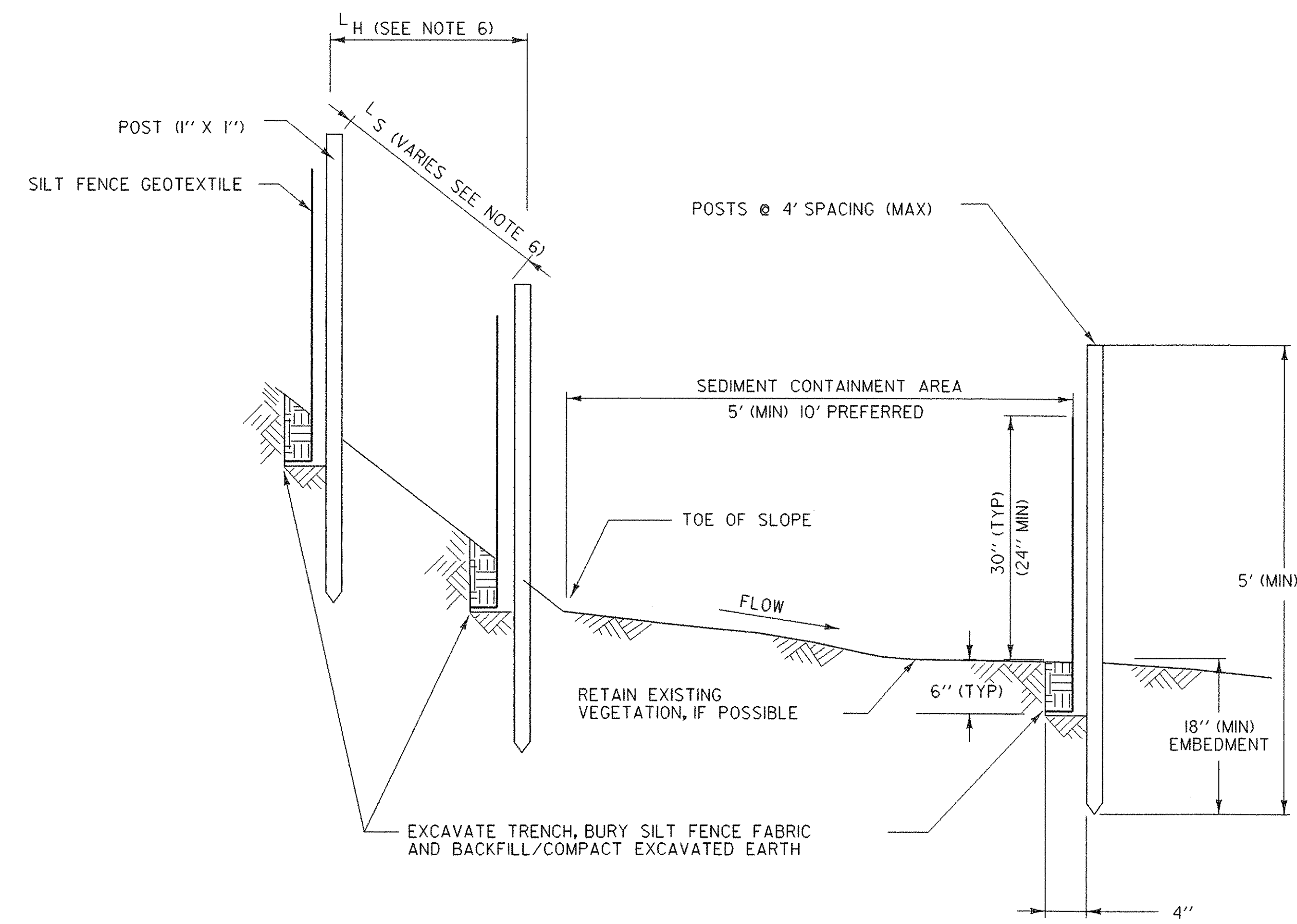
PROJECT NAME:	HARDWICK
PROJECT NUMBER:	STP ST 030-3(4)
FILE NAME:	d04e060bdr.dgn
PROJECT LEADER:	A. BOMBARDIER
DESIGNED BY:	M. NUTTER
IPARM NAME:	d04e060epscl4.1
PLOT DATE:	18-OCT-2005
DRAWN BY:	M. NUTTER
CHECKED BY:	A. BOMBARDIER
SHEET	23 OF 63

EROSION PREVENTION & SEDIMENT CONTROL DETAILS

SILT FENCE



PLAN



SECTION
SILT FENCE - TEMPORARY

APPLICATION NOTES:

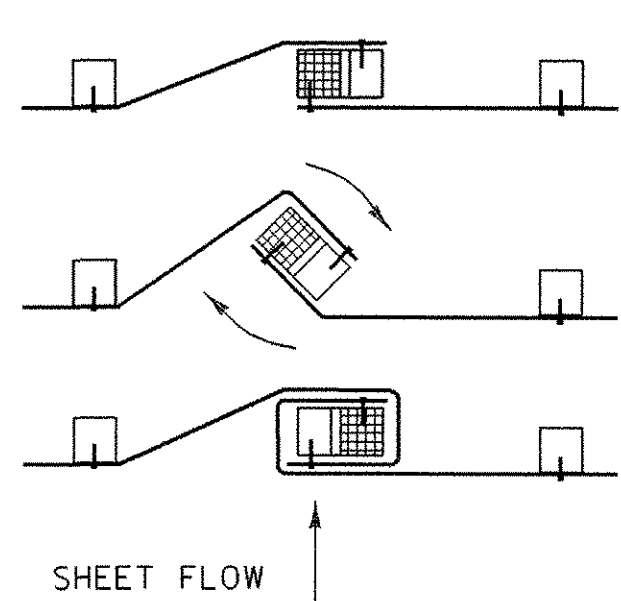
- A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.
- B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS 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 PREVENTION & SEDIMENT CONTROL PLAN ITEM.



SPLICING DETAIL

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060frm.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME : d04e060epscl.i	SHEET 24 OF 63

N.T.S.

EROSION PREVENTION & SEDIMENT CONTROL DETAILS

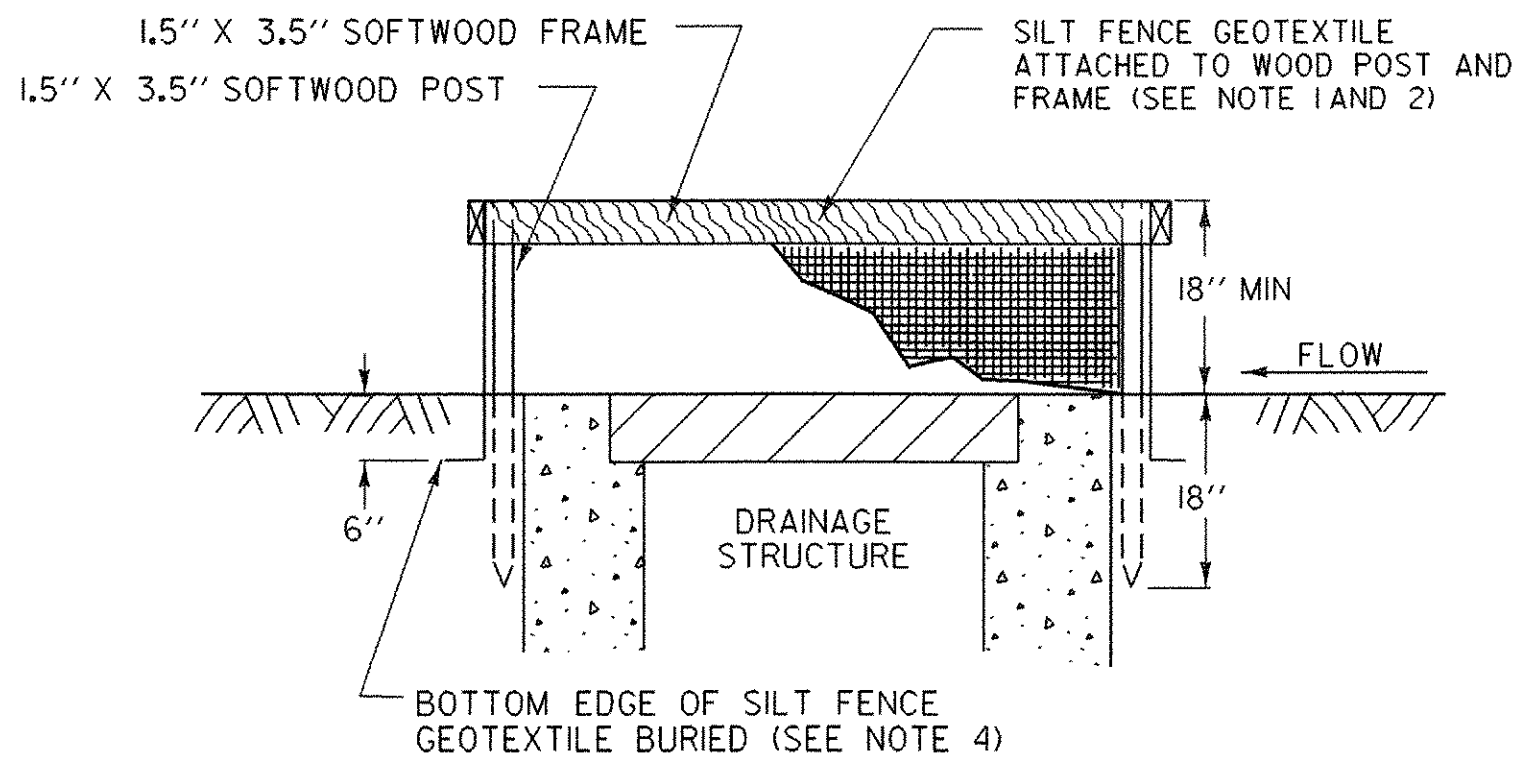
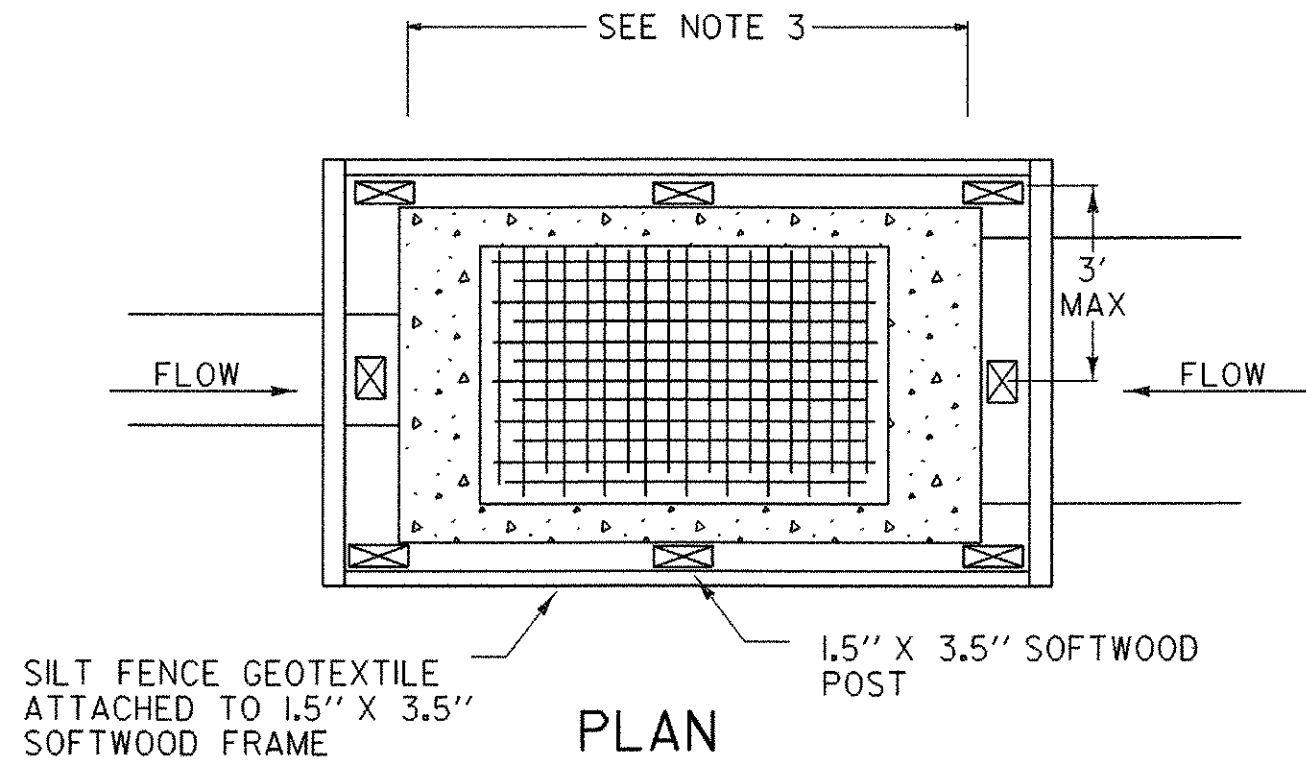
DROP INLET PROTECTION

APPLICATION NOTES:

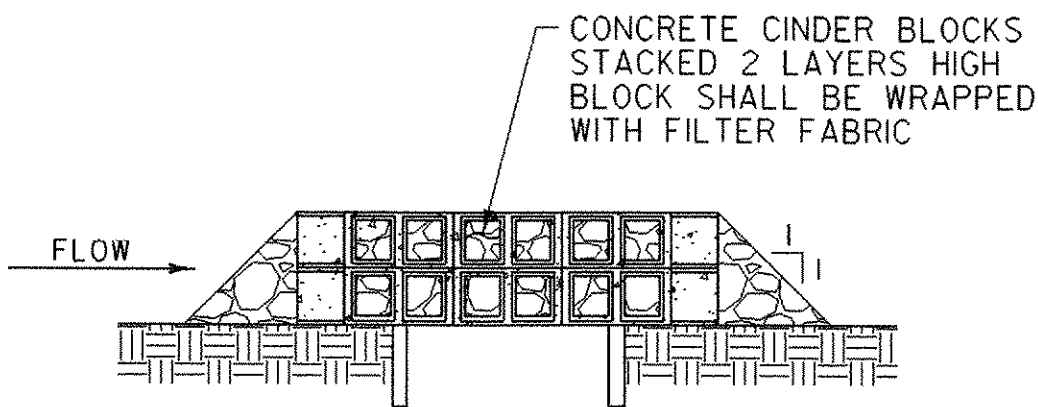
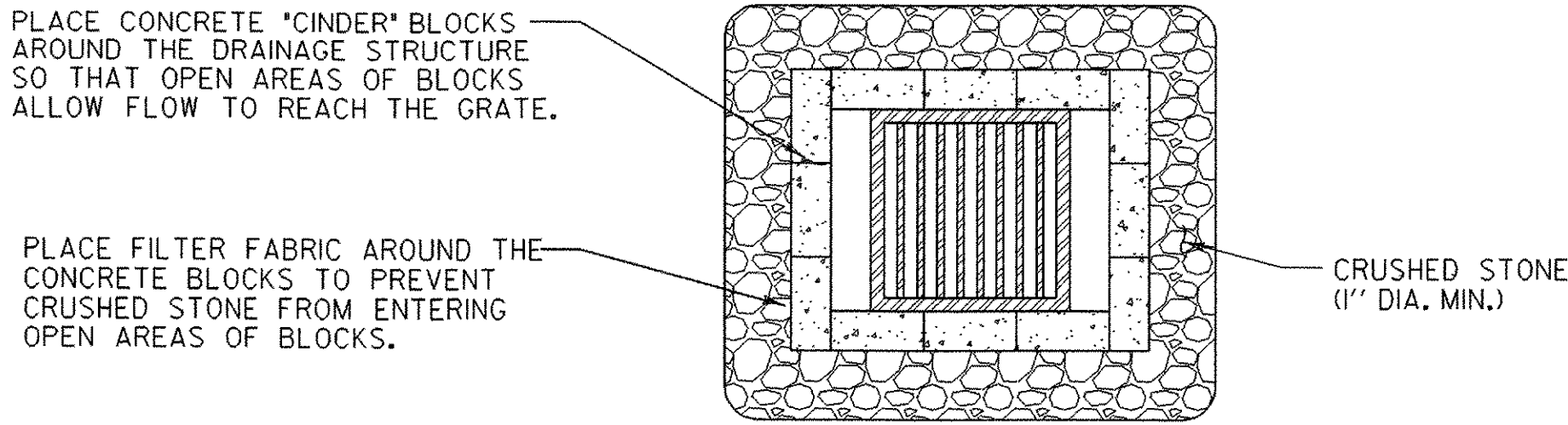
- THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.
- THESE EXAMPLES OF DROP INLET PROTECTION ARE NOT INTENDED FOR USE ON GRADES. ON GRADE THEY MAY CAUSE WATER TO BYPASS THE STRUCTURE, CREATING ADDITIONAL EROSION OR FLOODING.
- 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.
- PREFABRICATED DROP INLET PROTECTION SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

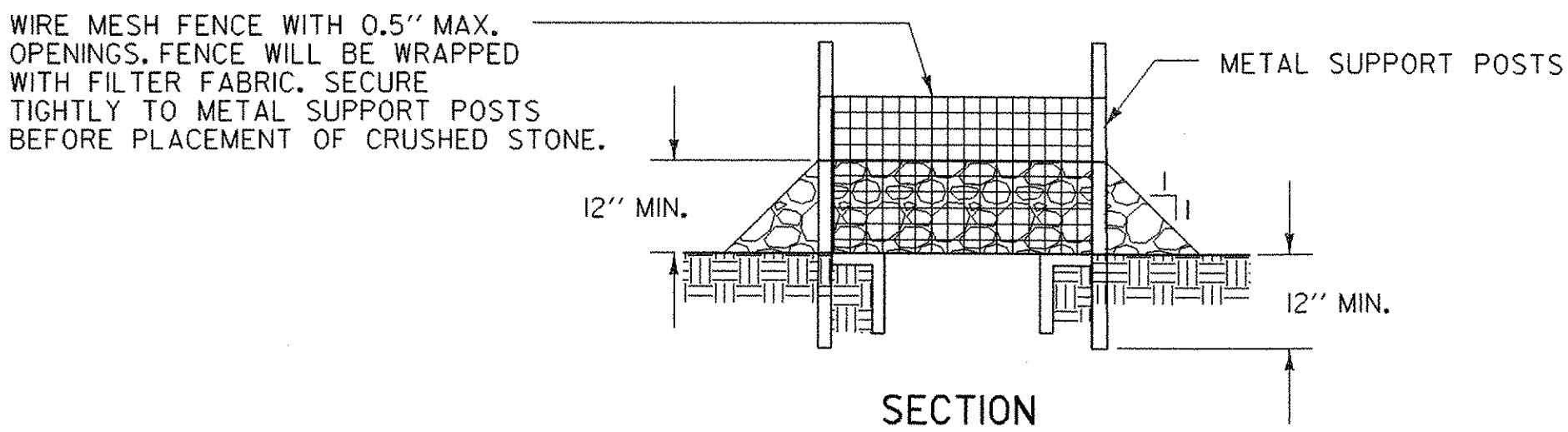
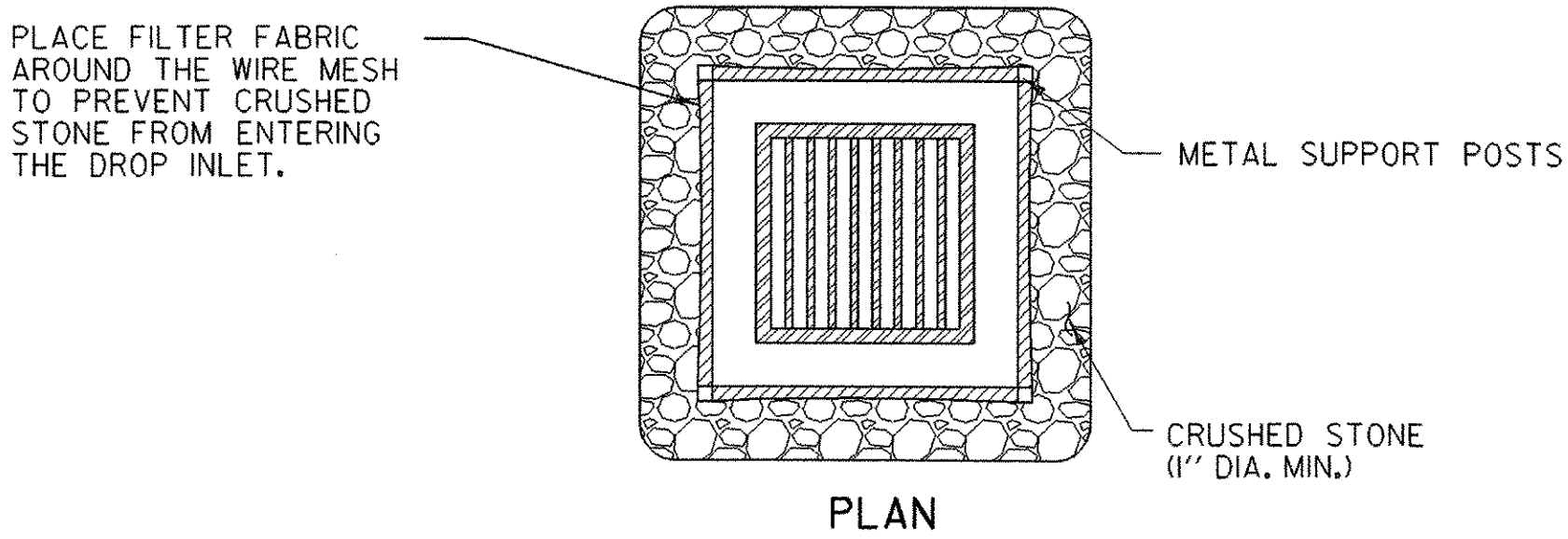
- THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL, BASED ON FIELD LOCATION AND CONDITIONS.
- SILT FENCE GEOTEXTILE SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
- SPACE SILT FENCE POSTS EVENLY AROUND INLET WITH A MAXIMUM SPACING OF 3 FEET. DRIVE POSTS A MINIMUM OF 18 INCHES INTO GROUND. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.
- SILT FENCE GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 6 INCHES AND BACKFILLED. GEOTEXTILE SHALL BE SECURELY FASTENED TO POSTS AND FRAME.
- 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.
- PAYMENT FOR SILT FENCE DROP INLET PROTECTION SHALL BE MADE UNDER GEOTEXTILE FOR SILT FENCE. PAYMENT FOR ROCK BARRIER DROP INLET PROTECTION SHALL BE MADE UNDER STONE FILL, TYPE I(MOD - INLET PROTECTION).
- PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM..



SECTION
SILT FENCE DROP INLET PROTECTION



SECTION
ROCK BARRIER DROP INLET PROTECTION
TEMPORARY PAVED AREAS



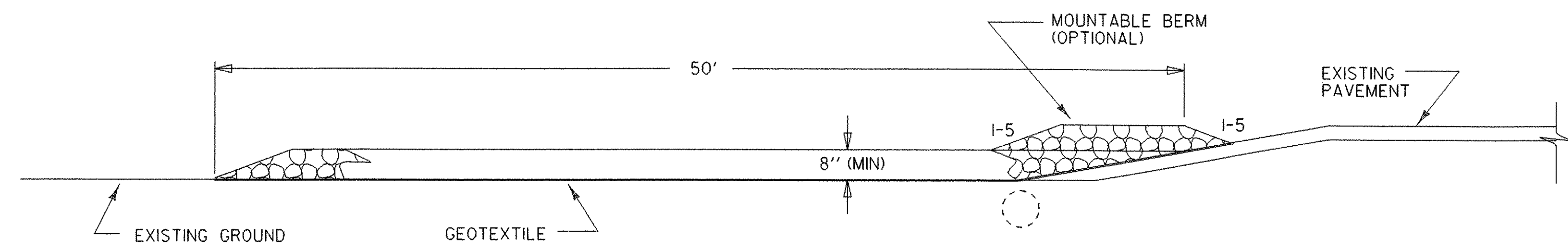
SECTION
ROCK BARRIER INLET PROTECTION
TEMPORARY UNPAVED AREAS

N.T.S.

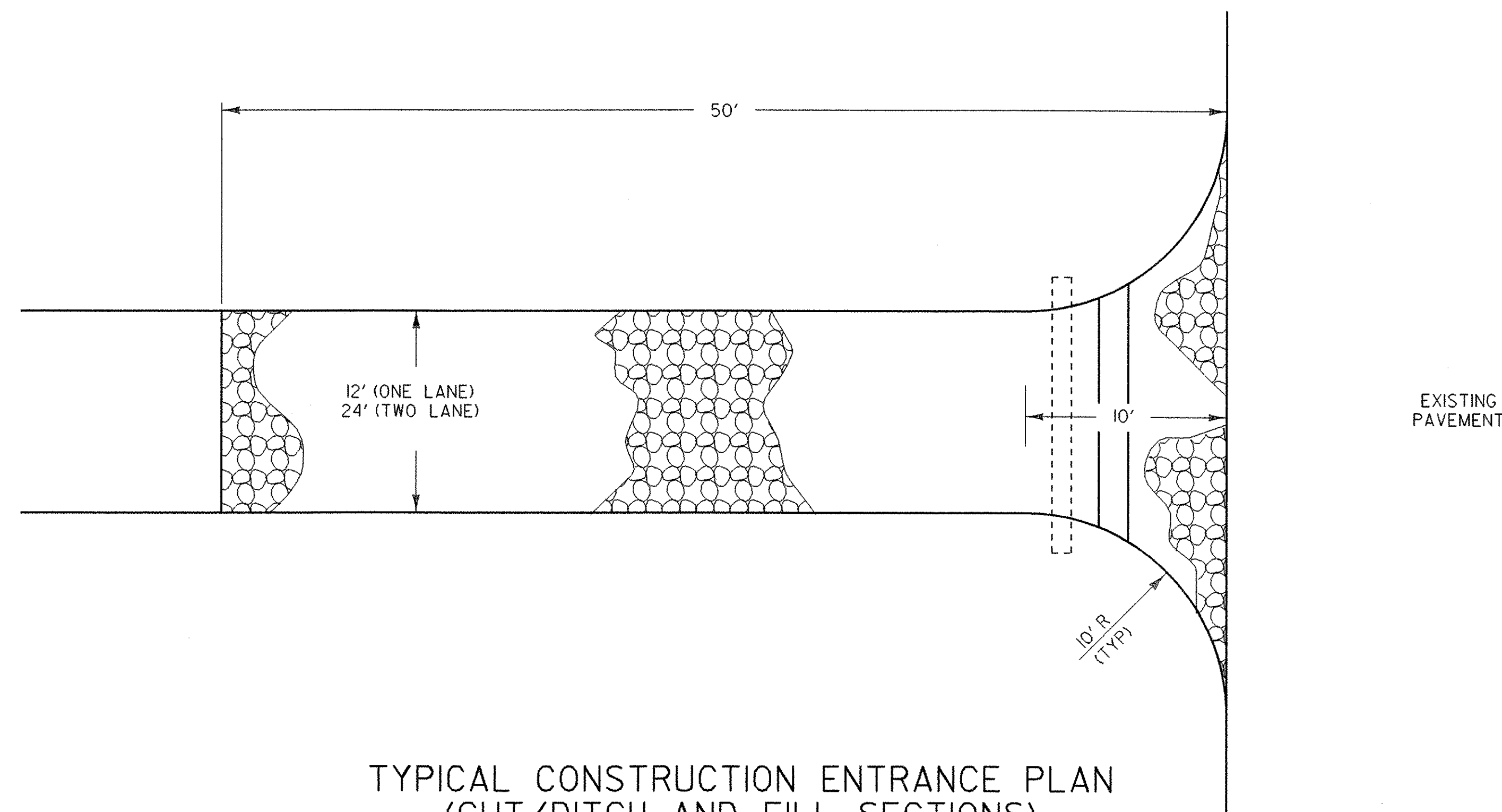
PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060frm.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME : d04e060epsc3.i	SHEET 25 OF 63

EROSION PREVENTION & SEDIMENT CONTROL DETAILS

CONSTRUCTION ENTRANCE



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



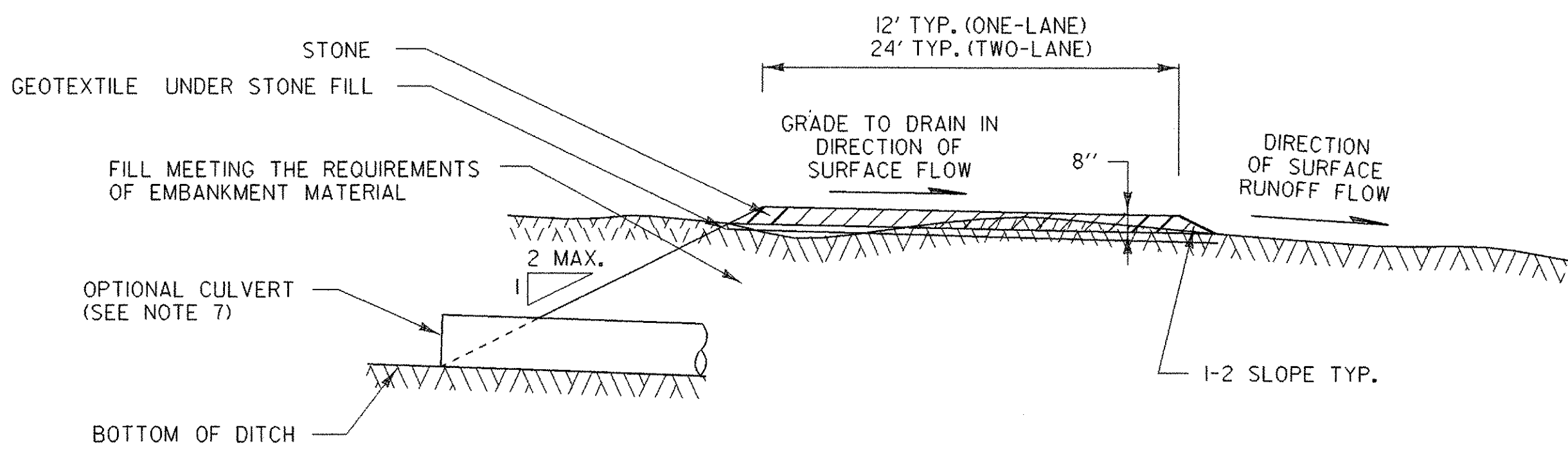
TYPICAL CONSTRUCTION ENTRANCE PLAN
(CUT/DITCH AND FILL SECTIONS)

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

GENERAL NOTES:

1. STONE SIZE - USE CLEAN STONE WITH GRADATION BETWEEN 2 INCHES AND 4 INCHES .
2. LENGTH - 50 FEET (MIN)
3. THICKNESS - 8 INCHES (MIN)
4. WIDTH - 12 FEET (MIN)
5. GEOTEXTILE UNDER STONE WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE AS DIRECTED BY THE ENGINEER. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 1-5 SLOPES WILL BE PERMITTED.
7. PROPOSED DRAINAGE PIPE SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
8. WHEN WASHING OF VEHICLE IS NECESSARY, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. 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.
10. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
11. AT THE TIME OF REMOVAL OF THE STABILIZED CONSTRUCTION ENTRANCE THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
12. PAYMENT OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MADE UNDER STONE FILL, TYPE I (MOD - CONSTRUCTION ENTRANCE).
13. PAYMENT FOR MONITORING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.



TYPICAL CONSTRUCTION ENTRANCE SECTION

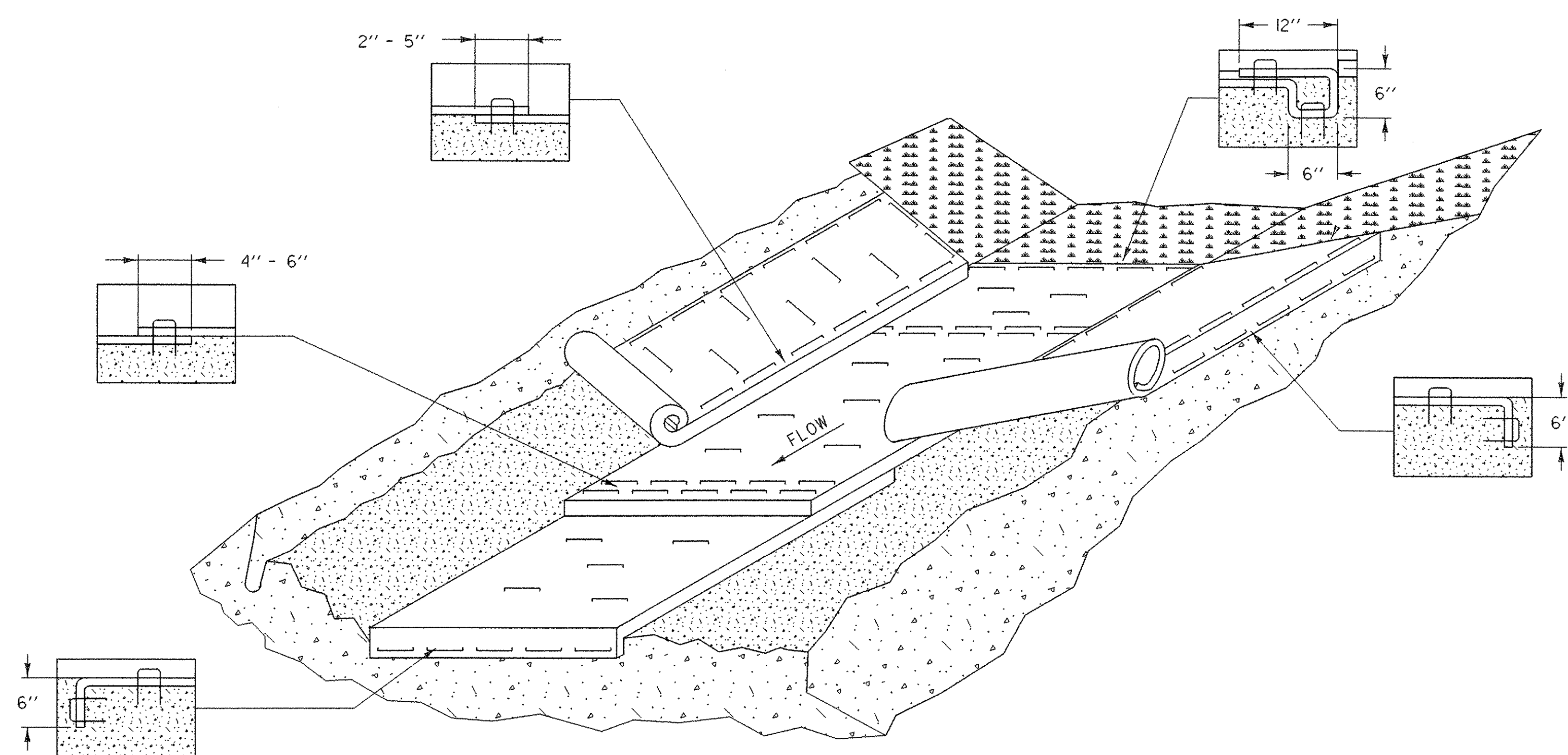
N.T.S.

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)
FILE NAME: d04e060frm.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: d04e060epsc4.i

PLOT DATE: 18-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 26 OF 63

EROSION PREVENTION & SEDIMENT CONTROL DETAILS

DITCH & SLOPE PROTECTION



EROSION PROTECTION FOR DITCHES

APPLICATION NOTES:

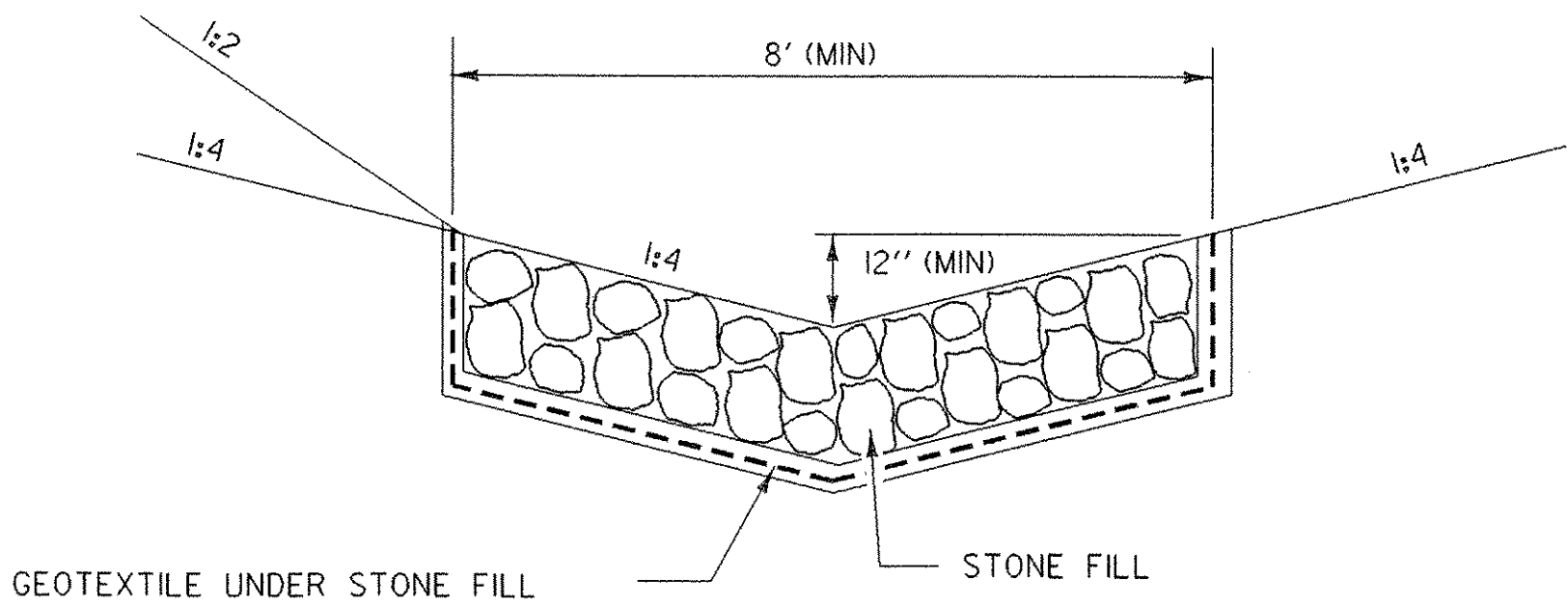
- A. THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.
- B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

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

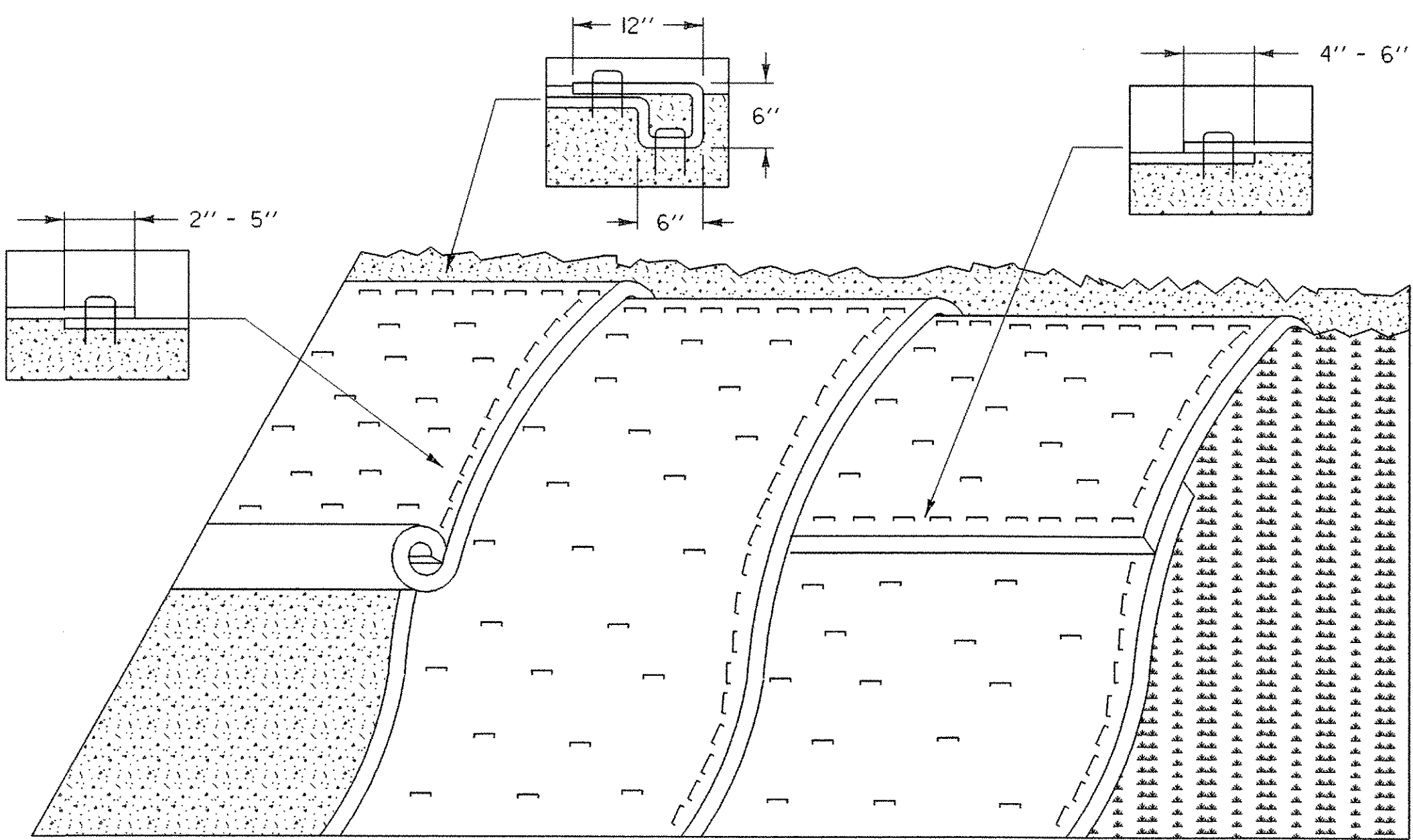
STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	1 FT
TYPE II	2 FT

GENERAL NOTES:

1. WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
2. GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
3. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
4. INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
5. INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
6. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
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 REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
9. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
10. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.



TEMPORARY STONE LINED DITCH



EROSION PREVENTION FOR SIDE SLOPES

APPLICATION NOTES:

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

GENERAL NOTES:

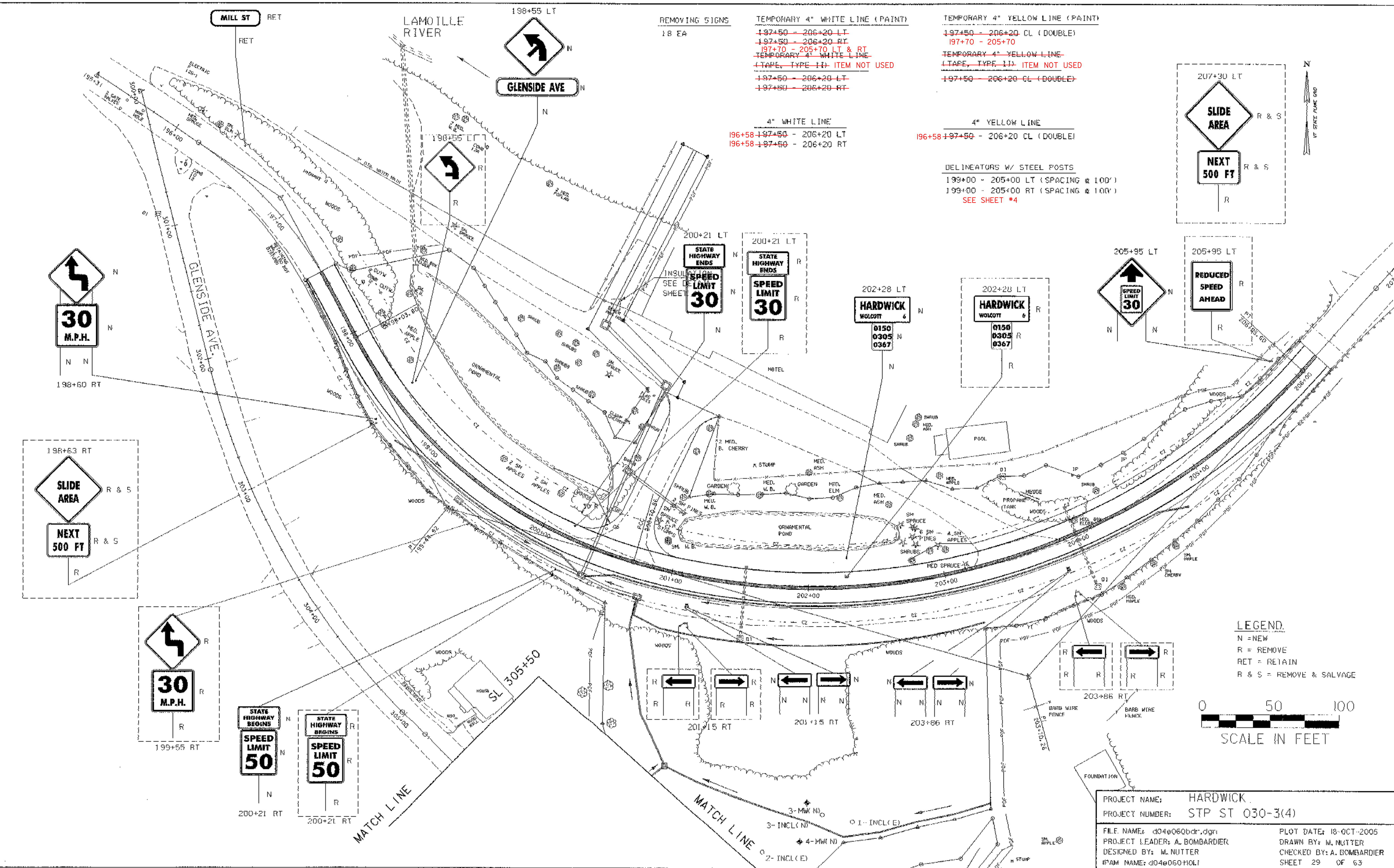
1. GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
2. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
3. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
5. OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
6. OVERLAP ADJACENT MATTING AS SHOWN.
7. CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
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. MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
10. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
11. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.

N.T.S.

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: D04e060frm.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: D04e060epsc5.i

PLOT DATE: 18-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 27 OF 63



REMOVING SIGNS
18 EA

TEMPORARY 4" WHITE LINE (PAINT)
~~197+50 - 206+20 LT~~
~~197+50 - 206+20 RT~~
~~197+70 - 205+70 LT & RT~~
~~TEMPORARY 4" WHITE LINE~~
~~(TAPE, TYPE 11) ITEM NOT USED~~
~~197+50 - 206+20 LT~~
~~197+50 - 206+20 RT~~

TEMPORARY 4" YELLOW LINE (PAINT)
~~197+50 - 206+20 CL (DOUBLE)~~
~~197+70 - 205+70~~

TEMPORARY 4" YELLOW LINE
~~(TAPE, TYPE 11) ITEM NOT USED~~
~~197+50 - 206+20 CL (DOUBLE)~~

4" WHITE LINE
196+58 - 197+50 - 206+20 LT
196+58 - 197+50 - 206+20 RT

4" YELLOW LINE
196+58 - 197+50 - 206+20 CL (DOUBLE)

DELINEATORS W/ STEEL POSTS
199+00 - 205+00 LT (SPACING @ 100')
199+00 - 205+00 RT (SPACING @ 100')
SEE SHEET #4

207+30 LT
SLIDE AREA
R & S
NEXT 500 FT
R & S
R

205+95 LT
SPEED LIMIT 30
N
205+95 LT
REDUCED SPEED AHEAD
R

STATE HIGHWAY BEGINS
SPEED LIMIT 30
N
SEE SHEET

STATE HIGHWAY BEGINS
SPEED LIMIT 30
R

202+28 LT
HARDWICK
WOLCOTT
0150
0305
0367
N

202+28 LT
HARDWICK
WOLCOTT
0150
0305
0367
R

30 M.P.H.
N
N
198+60 RT

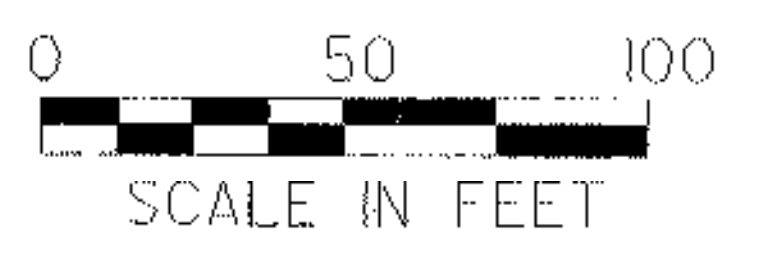
198+63 RT
SLIDE AREA
R & S
NEXT 500 FT
R & S
R

30 M.P.H.
R
199+55 RT

STATE HIGHWAY BEGINS
SPEED LIMIT 50
N
200+21 RT

STATE HIGHWAY BEGINS
SPEED LIMIT 50
R
200+21 RT

LEGEND:
N = NEW
R = REMOVE
RET = RETAIN
R & S = REMOVE & SALVAGE



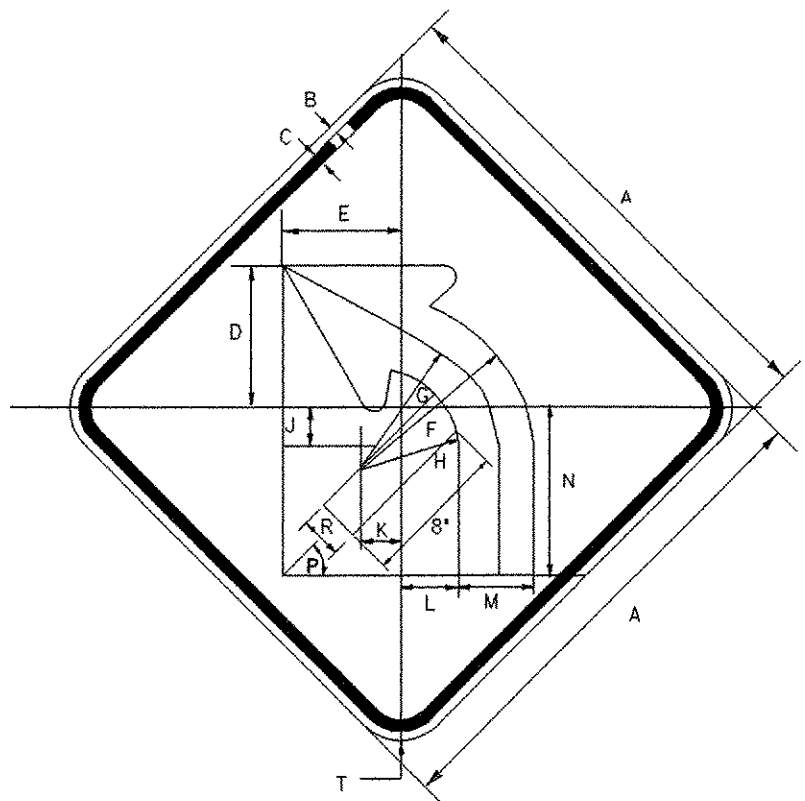
PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)
FILE NAME: d04e060bdr.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
PLOT DATE: 18-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 29 OF 63

TRAFFIC SIGN SUMMARY SHEET

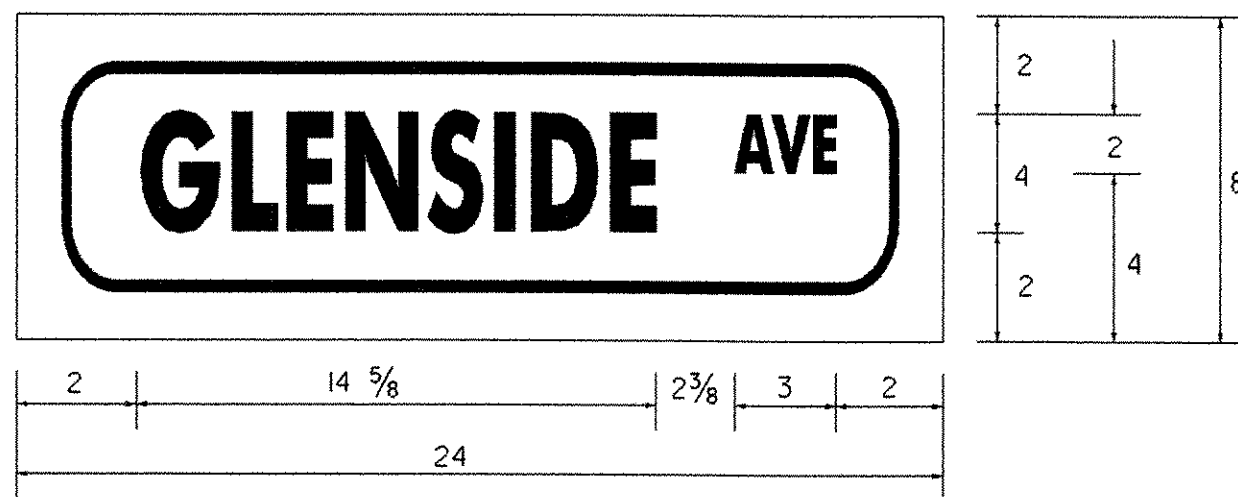
PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060frm.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME : d04e060ts01.i	SHEET 30 OF 63

TRAFFIC SIGN SUMMARY SHEET

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST RE TAIN E	S A L V A G E	NO. OF POSTS	NEW SIGN POSTS																				REMARKS	SIGN DETAIL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
												FLANGED CHANNEL			SQUARE STEEL				TUBULAR ALUMINUM			TUBULAR STEEL				W-SHAPE STEEL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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		E A	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS				1.12	2.0	3.0	1.88	2.16	3.35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			



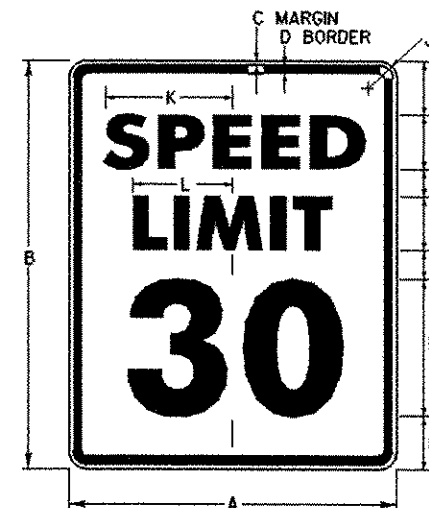
WI-2MB L



1 1/2 RADIUS
3/8 BORDER INDENT

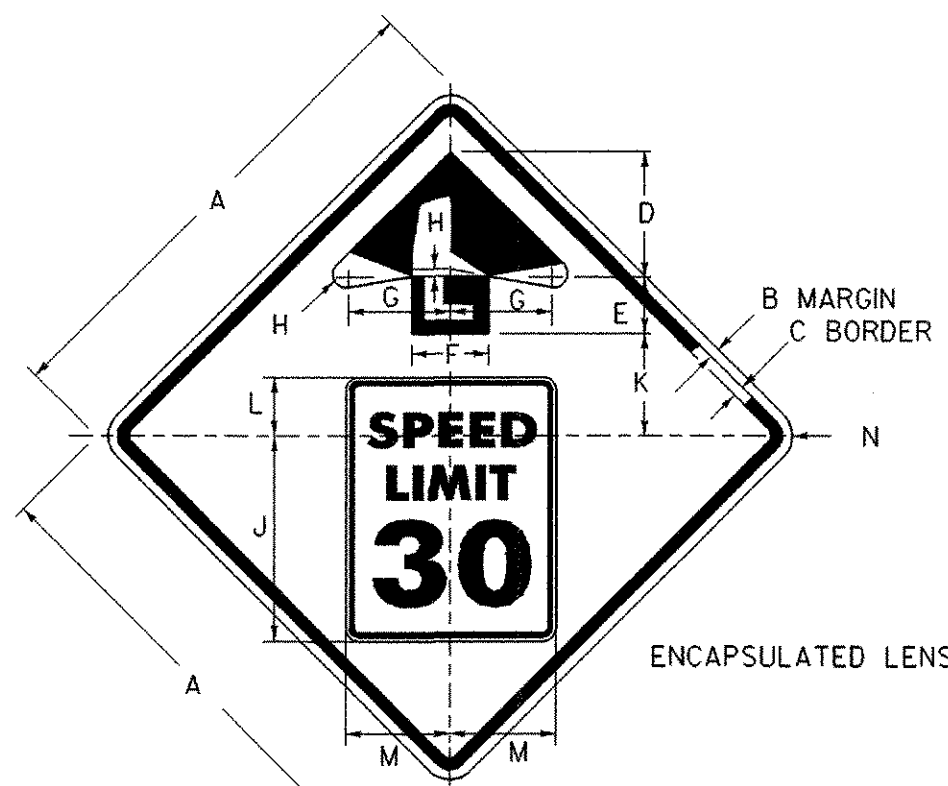
W16-8

DIMENSIONS (INCHES)



* OPTICALLY SPACE NUMERALS ABOUT VERTICAL CENTERLINE.
R2-1

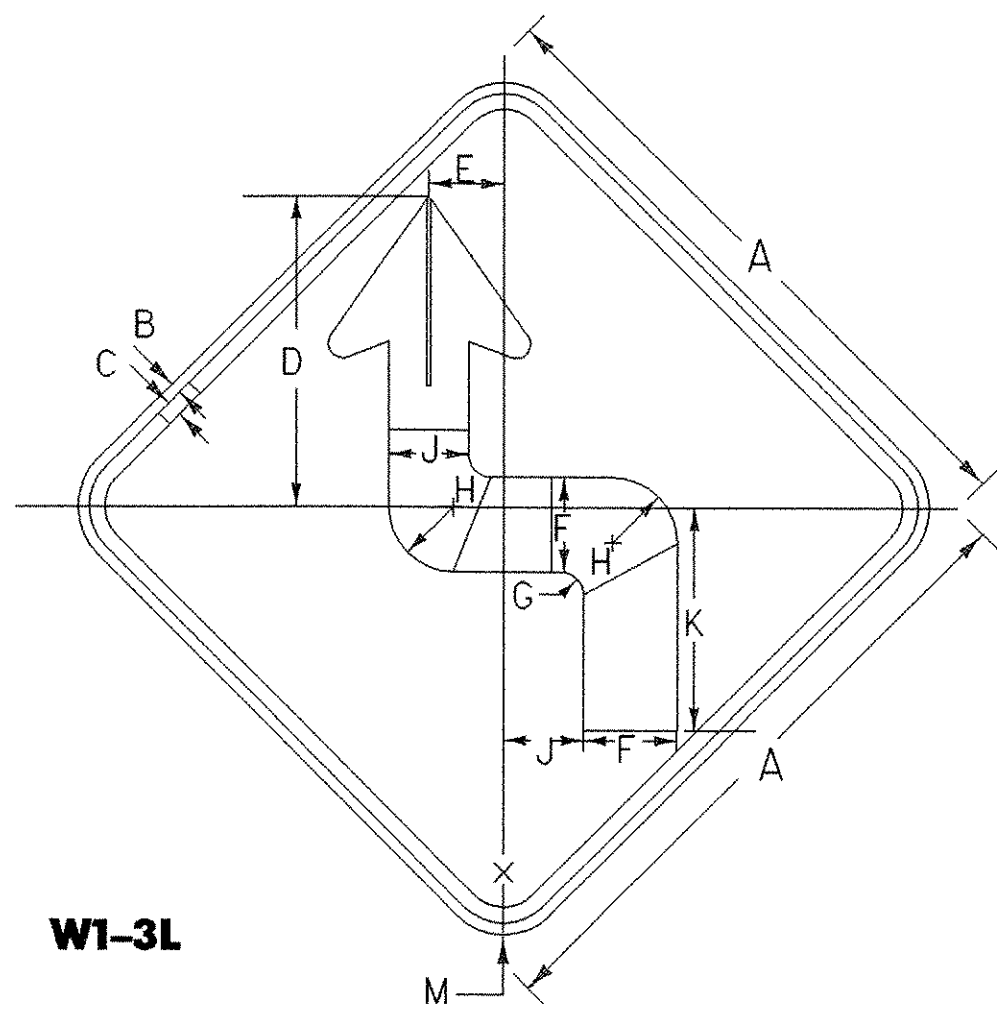
SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
	18	24	3/8	3/8	3	3E	2	8E	1 1/2	7 3/8	5 1/2



W3-5

COLORS
BORDER AND ARROW - BLACK
SYMBOL - R2-1
SYMBOL - WHITE BORDER ON RED BACKGROUND (RETROREFLECTIVE)

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	J	K	L	M	N
	36	5/8	7/8	9	3	6 1/2	8	3/4	15	10	9	9	2 1/4



W1-3L

SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
	36	5/8	7/8	17 7/16	4 7/32	5 1/4	1 1/4	3 5/8	4 1/2	12 15/32	1 21/32

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
SHT 1 & 2

SF 77.25

SF

EA.

SF

FT FT FT FT FT FT

FT 224

FT

LB

EA.

LB

EA.

EA.

LB

PROJECT NAME: HARDWICK

PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060frm.dgn

PROJECT LEADER: A. BOMBARDIER

DESIGNED BY: M. NUTTER

IPARM NAME : d04e060tsh.i

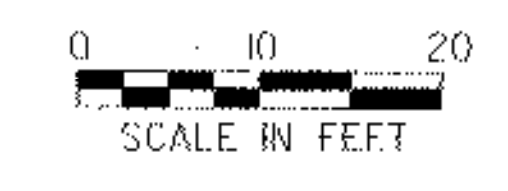
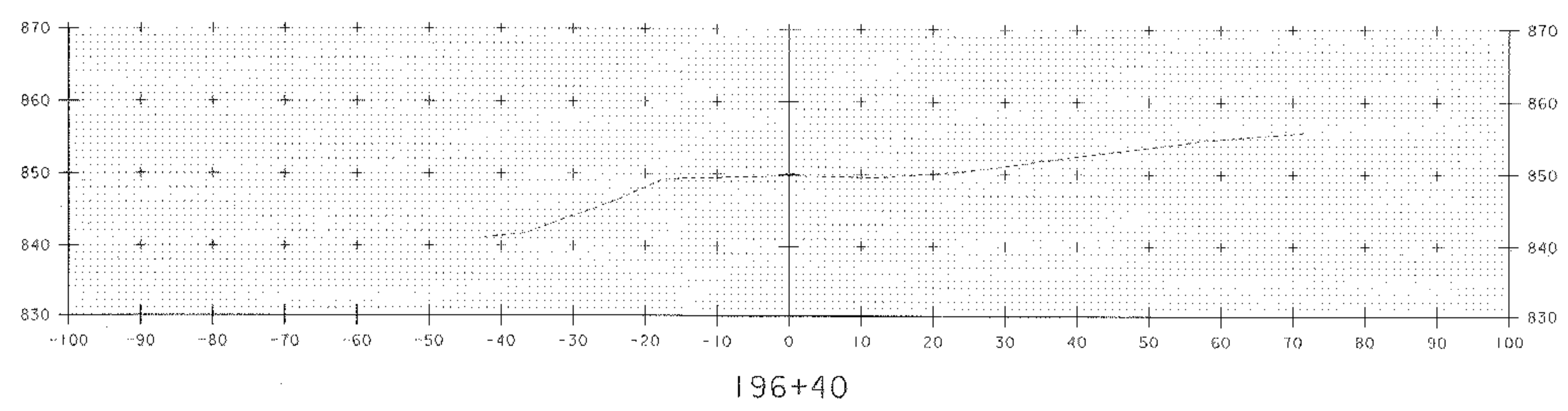
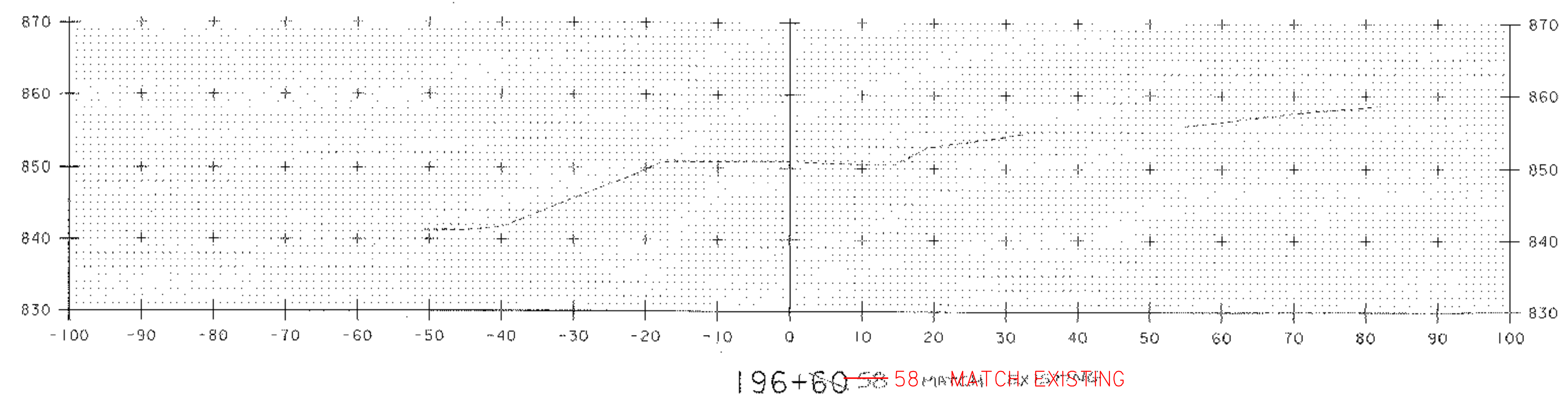
PLOT DATE: 18-OCT-2005

DRAWN BY: M. NUTTER

CHECKED BY: A. BOMBARDIER

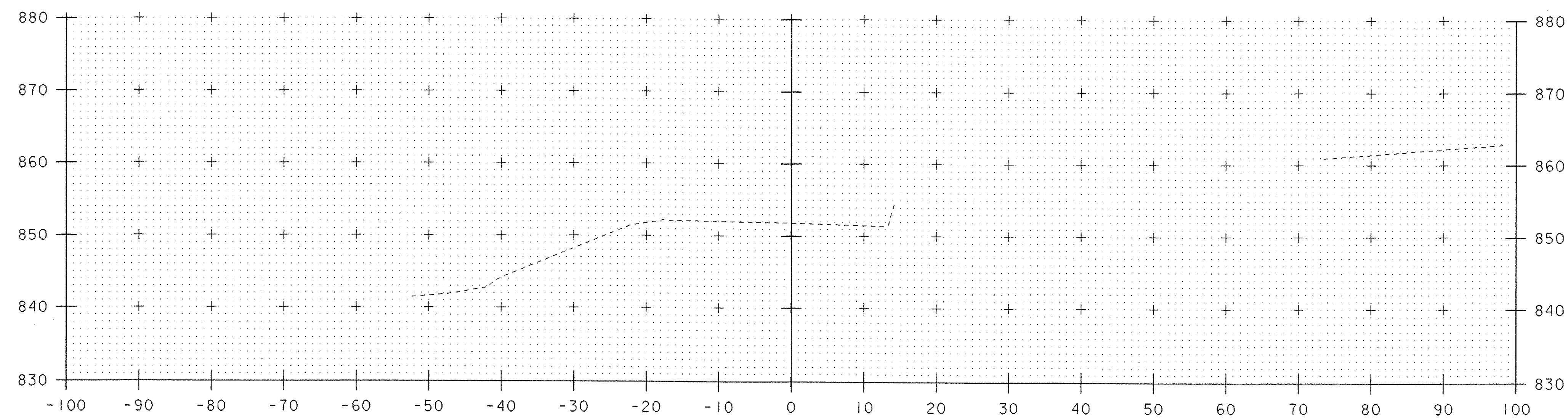
SHEET 31 OF 63

CADD
CWP
28 OCT

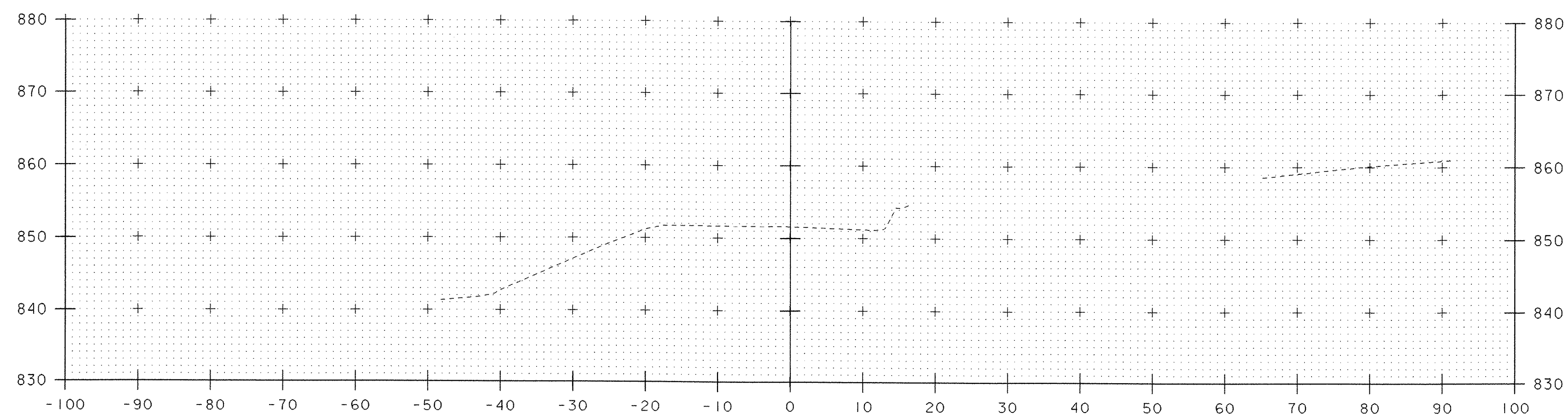


STA. 196+40 TO STA. 196+60

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xslx.dgn	SHEET 32 OF 63



197+00

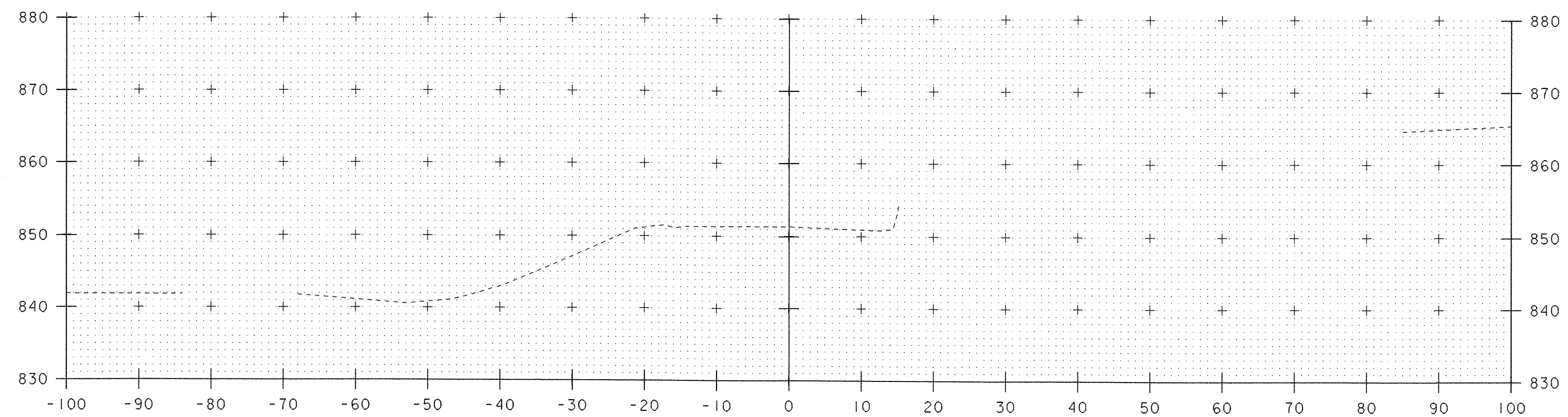


196+80

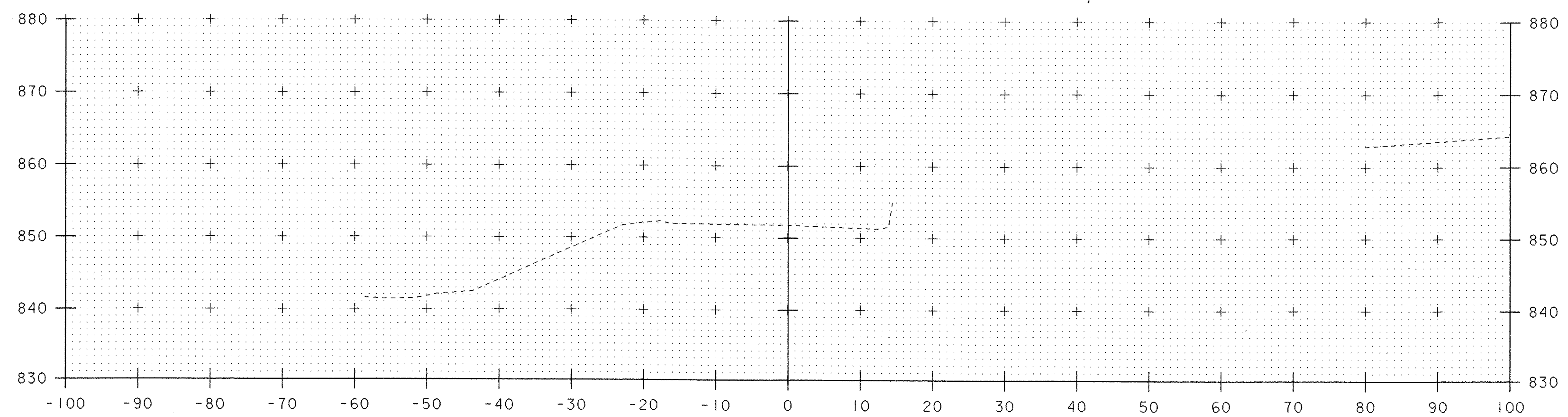


STA. 196+80 TO STA. 197+00

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xs02.i	SHEET 33 OF 63



197+40



197+20



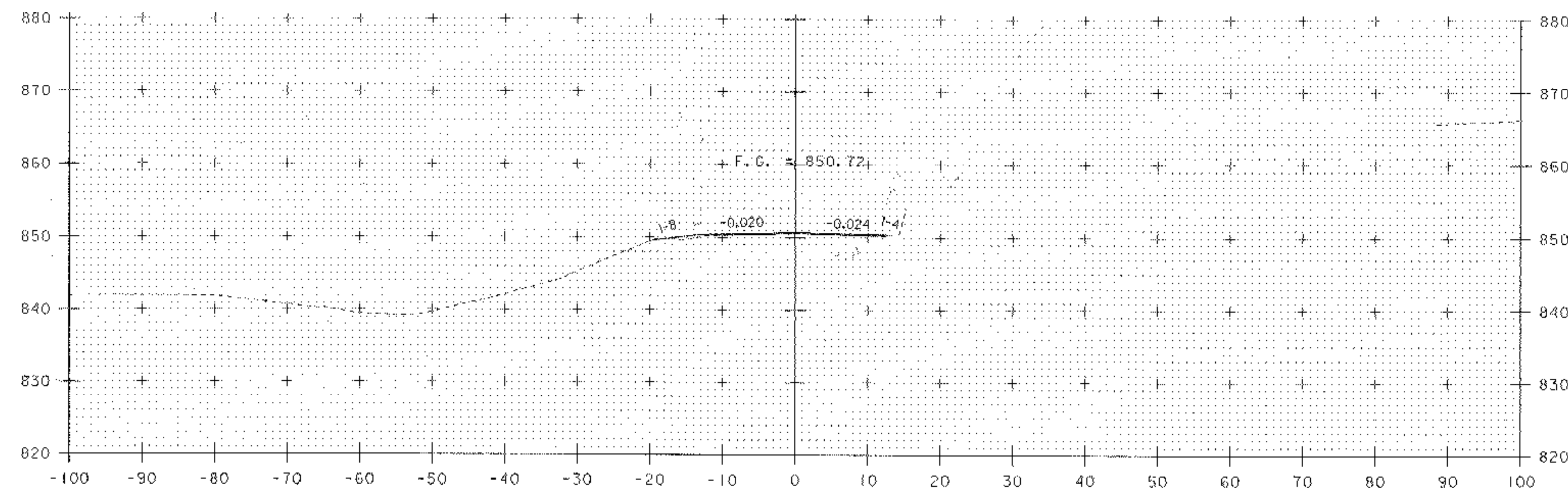
STA. 197+20 TO STA. 197+40

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

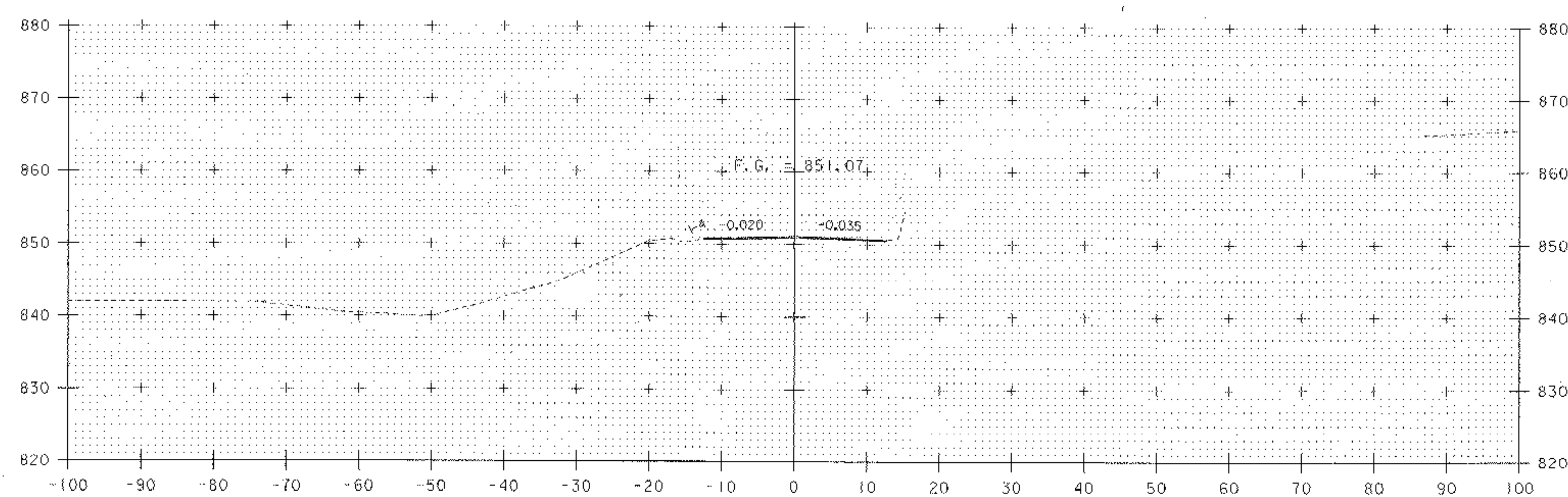
FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xs03.i

PLOT DATE: 18-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 34 OF 63

2-2-07

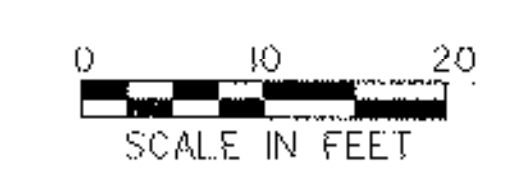


197+60



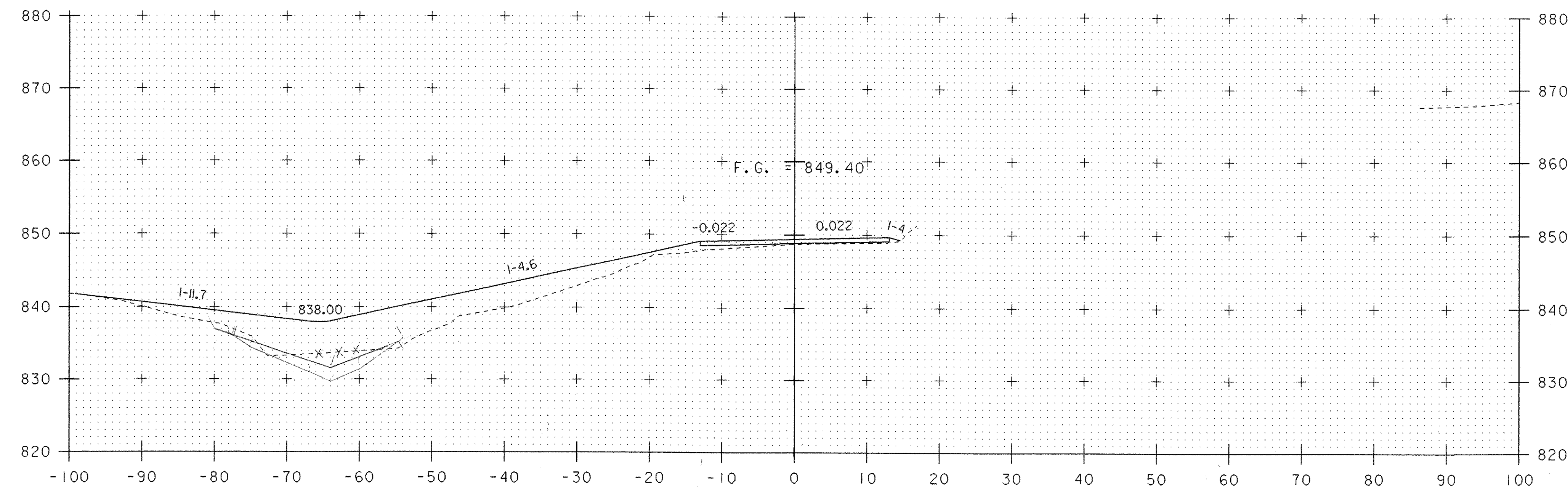
197+50

~~MATCH EXISTING~~
SEE SHEET 32

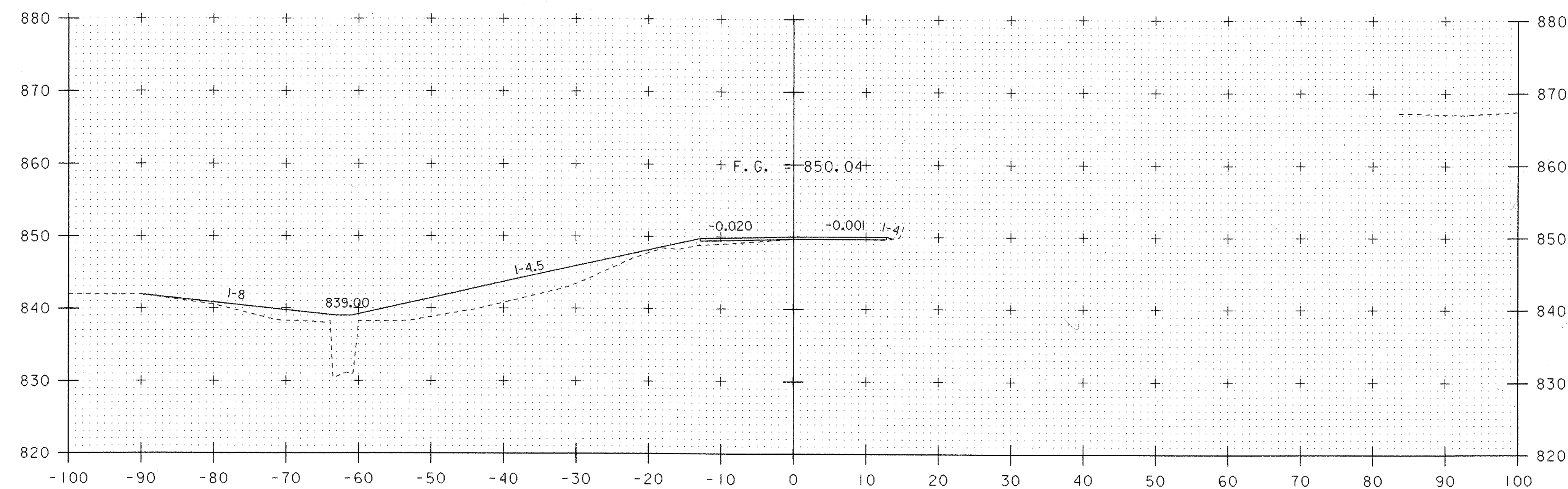


STA. 197+50 TO STA. 197+60

PROJECT NAME: HARDWICK	PLOT DATE: 18-OCT-2005
PROJECT NUMBER: STP ST 030-3(4)	DRAWN BY: M. NUTTER
FILE NAME: d04e060xslx.dgn	CHECKED BY: A. BOMBARDIER
PROJECT LEADER: A. BOMBARDIER	SHEET 35 OF 63
DESIGNED BY: M. NUTTER	
IPARM NAME: d060xslx.dgn	



198+00



197+80



STA. 197+80 TO STA. 198+00

Nut (11)

22
40

16
34

20
39

20
38

19.5

19

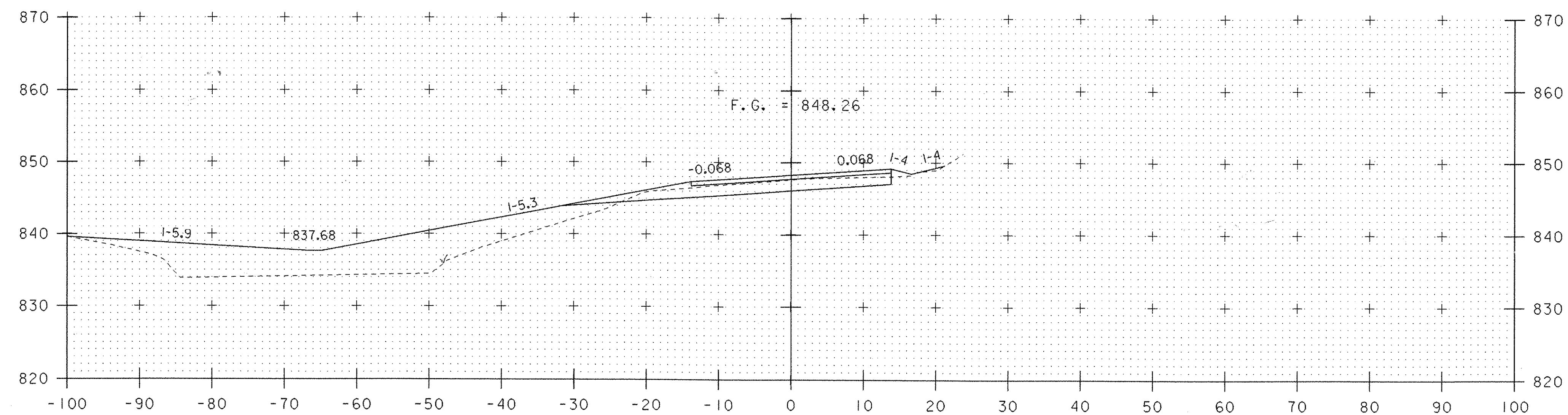
19.25 / 0.04 - 30.08 ft 2

KRM 1-10-07

COMMON KRM 12-12-06

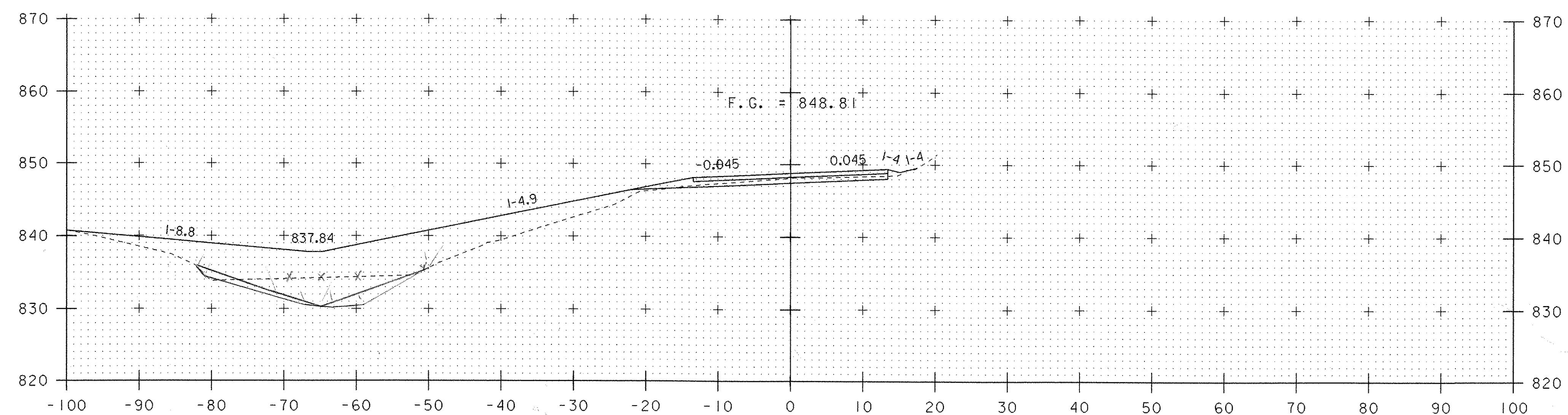
12-29-06

PROJECT NAME: HARDWICK	PLOT DATE: 18-OCT-2005
PROJECT NUMBER: STP ST 030-3(4)	DRAWN BY: M. NUTTER
FILE NAME: d04e060xslx.dgn	CHECKED BY: A. BOMBARDIER
PROJECT LEADER: A. BOMBARDIER	SHEET 36 OF 63
DESIGNED BY: M. NUTTER	
IPARM NAME: de060xs05.i	



198+40

Common KRM 12-12-06
 33 33.5
 67 32.5
 32 32.5
 65 32.5
 $\frac{33.0}{0.64} = 51.56 \text{ FT}^2$



198+20

Muck 635
 16 16
 32 16
 17 16.5
 33 16.5
 $\frac{16.25}{0.64} = 25.39 \text{ FT}^2$
 LTN
 KRM 1-10-07
 Common KRM 12-12-06
 9 9.5
 19 9.5
 10 10
 20 10
 $\frac{9.5}{0.64} = 15.23 \text{ FT}^2$

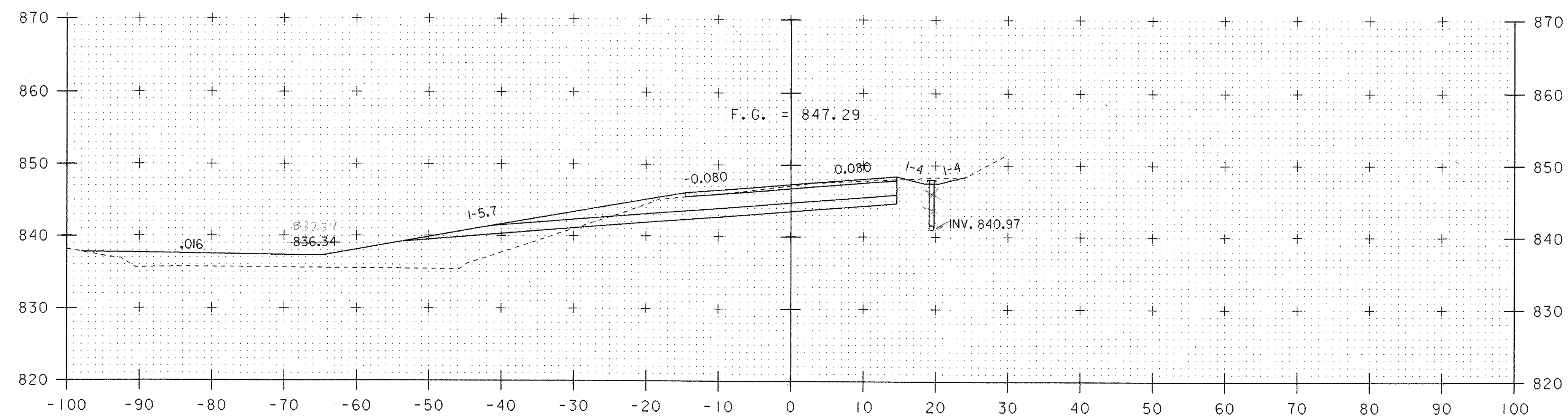


STA. 198+20 TO STA. 198+40

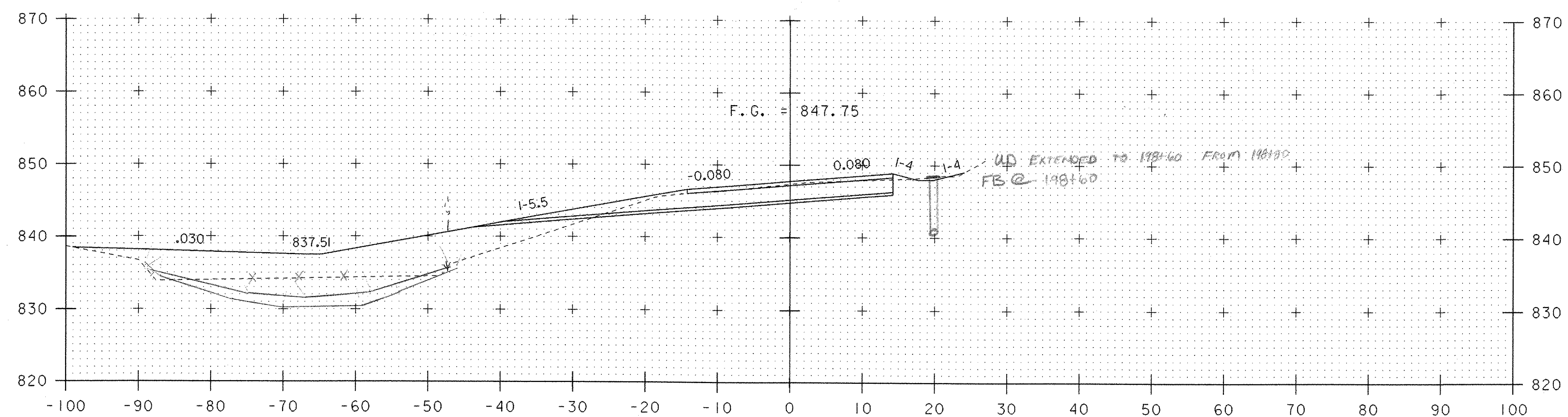
PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs06.i

PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 37 OF 63



198+80



198+60

Common KRM 12-12-06
 84 170 85
 84 84 84.5 0.64 = 132.03 ft²
 168 84

Mux 55

29 29

58 29

31 29

63 29

28 29

55 29

28 29

58 29

29

29

29

29

29

29

29

29

29

Common KRM 12-12-06
 55 56
 112 56
 55 54.5 55.25 0.64 = 86.33 ft²
 109

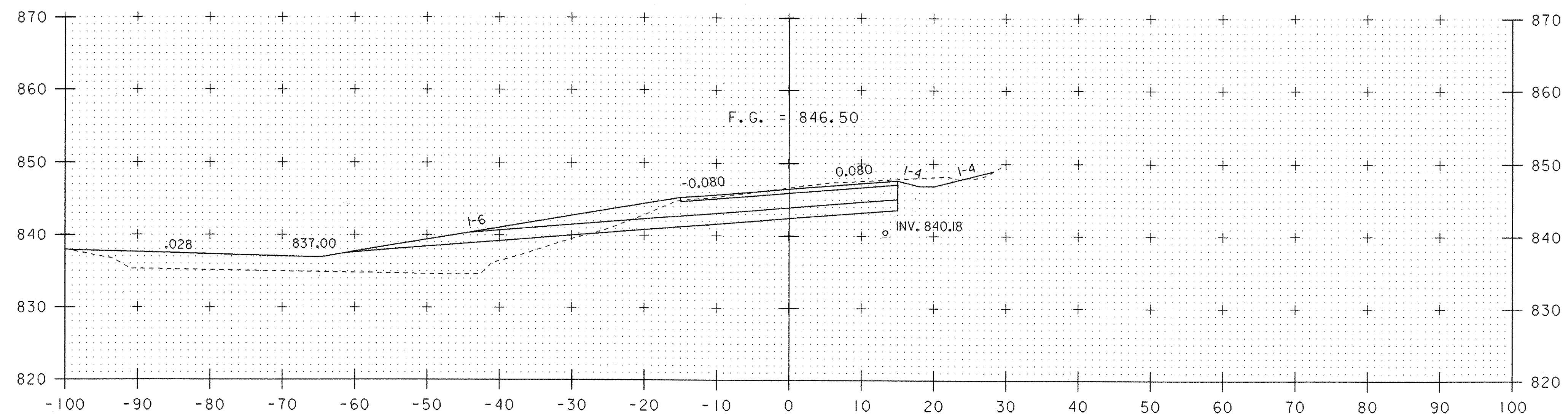
29.25 0.64 = 45.7 ft²
 LTN

KRM
 1-10-07

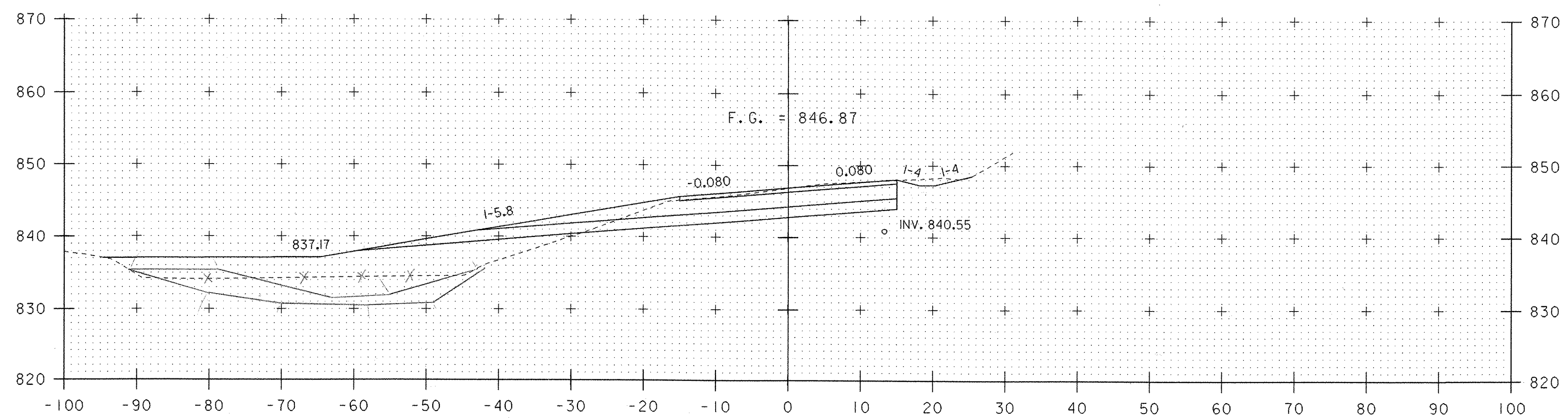


STA. 198+60 TO STA. 198+80

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)
 FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs07.i
 PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 38 OF 63



199+20



199+00

Common KRM 12-12-06
 94 95
 190 95
 $\frac{95.75}{0.64} = 149.61 \text{ FT}^2$
 96 96.5
 193

Muck (M)
 60 61
 122 61
 $\frac{60.5}{0.64} = 94.53 \text{ FT}^2$
 61 60
 120 60
 KRM 1-10-07

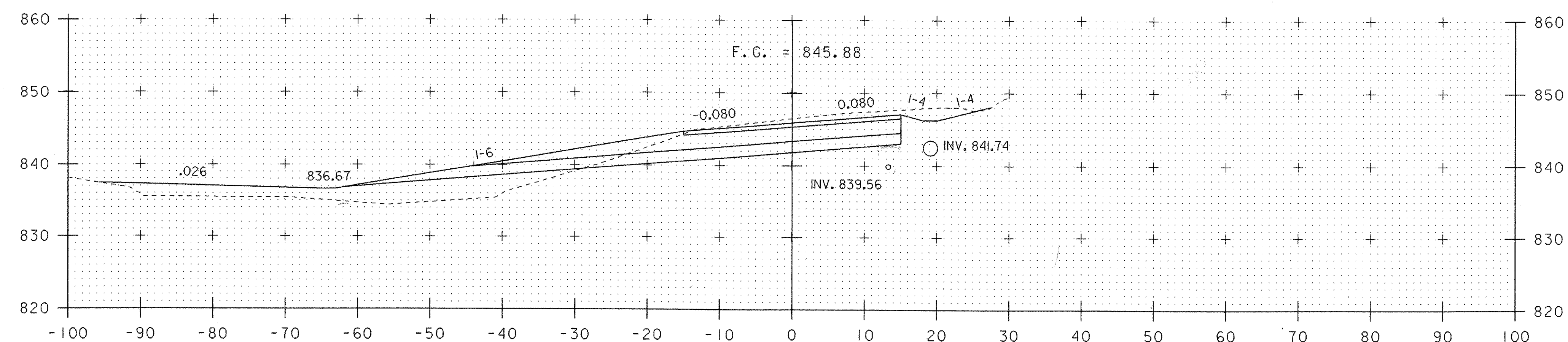
Common KRM 12-12-06
 93 94
 188 94
 $\frac{94}{0.64} = 146.88 \text{ FT}^2$
 93 94
 188 94

0 10 20
 SCALE IN FEET

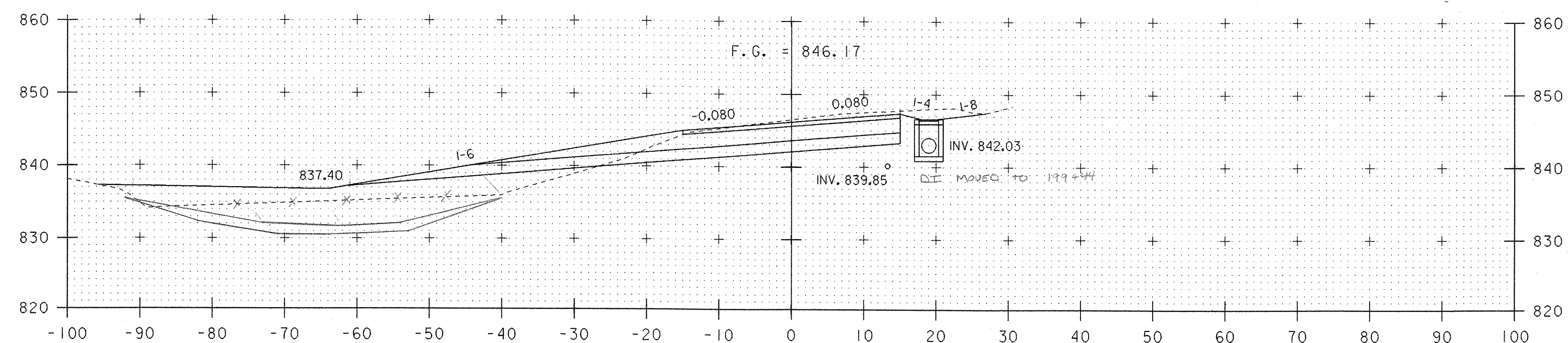
STA. 199+00 TO STA. 199+20

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs08.i
 PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 39 OF 63



199+60



199+40

COMMON 12-14-06
 108 108
 216 108
 110 109
 218 109
 $\frac{108.6}{0.64} = 169.53 \text{ FT}^2$

MUCK 031

COMMON KRM 12-12-06
 99 98.5
 197 98.5
 100 99.5
 199 99.5
 $\frac{99}{0.64} = 154.69 \text{ FT}^2$

34.35 54.30 FT²
 35 35
 70 35
 KRM 1-10-07

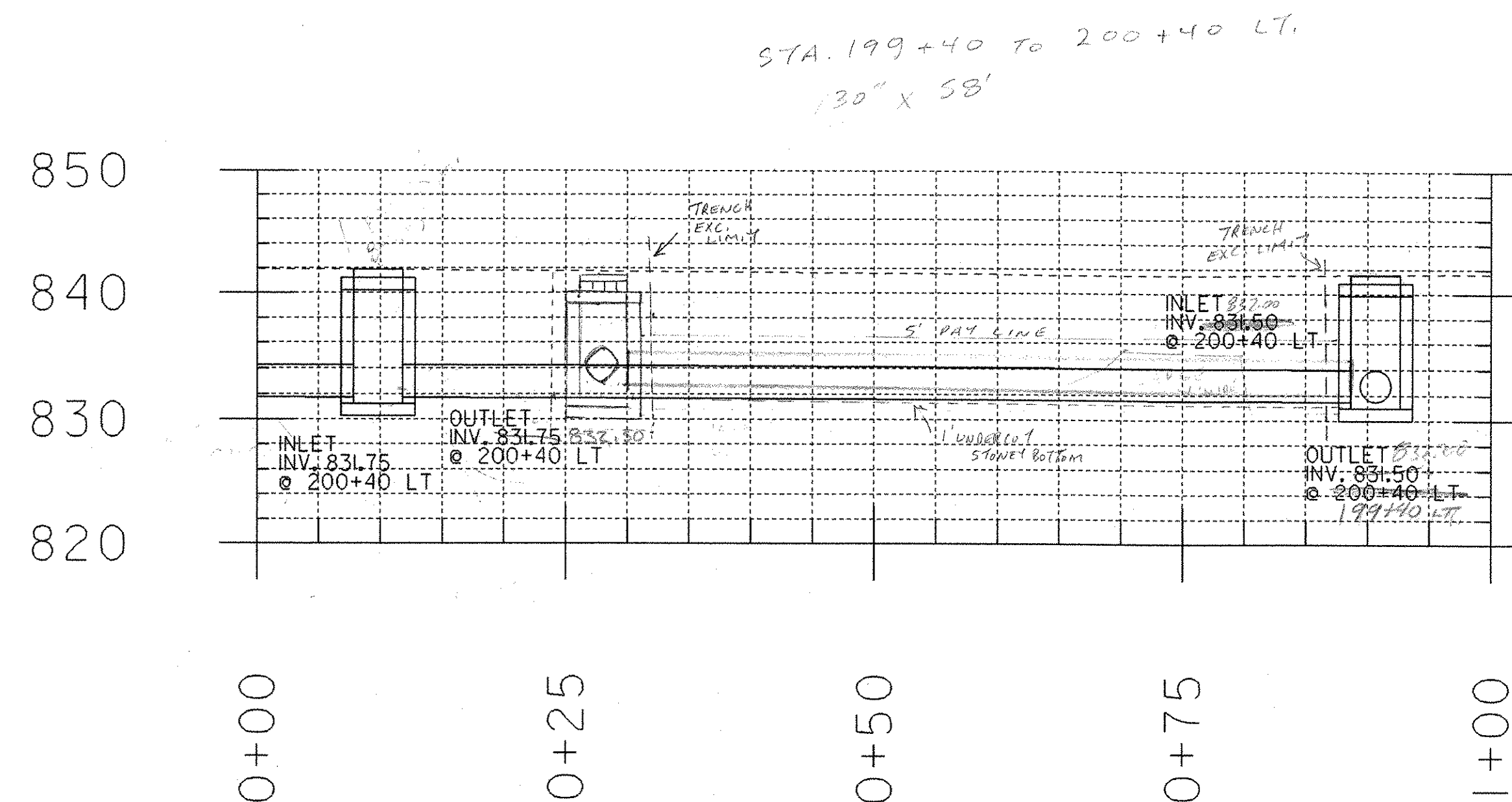
0 10 20
 SCALE IN FEET

STA. 199+40 TO STA. 199+60

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs09.1

PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 40 OF 63



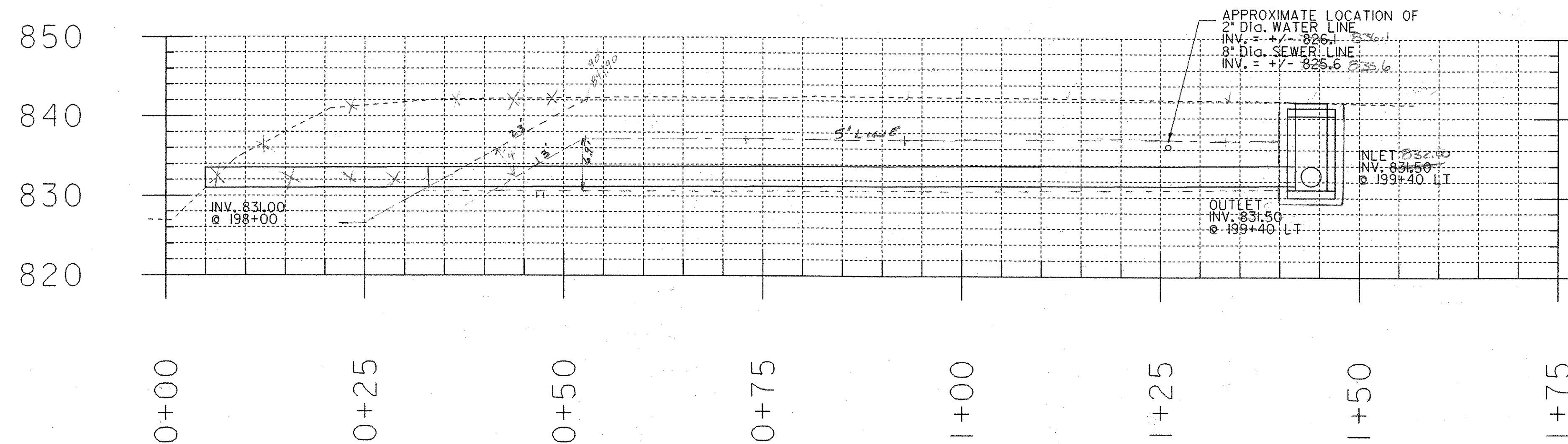
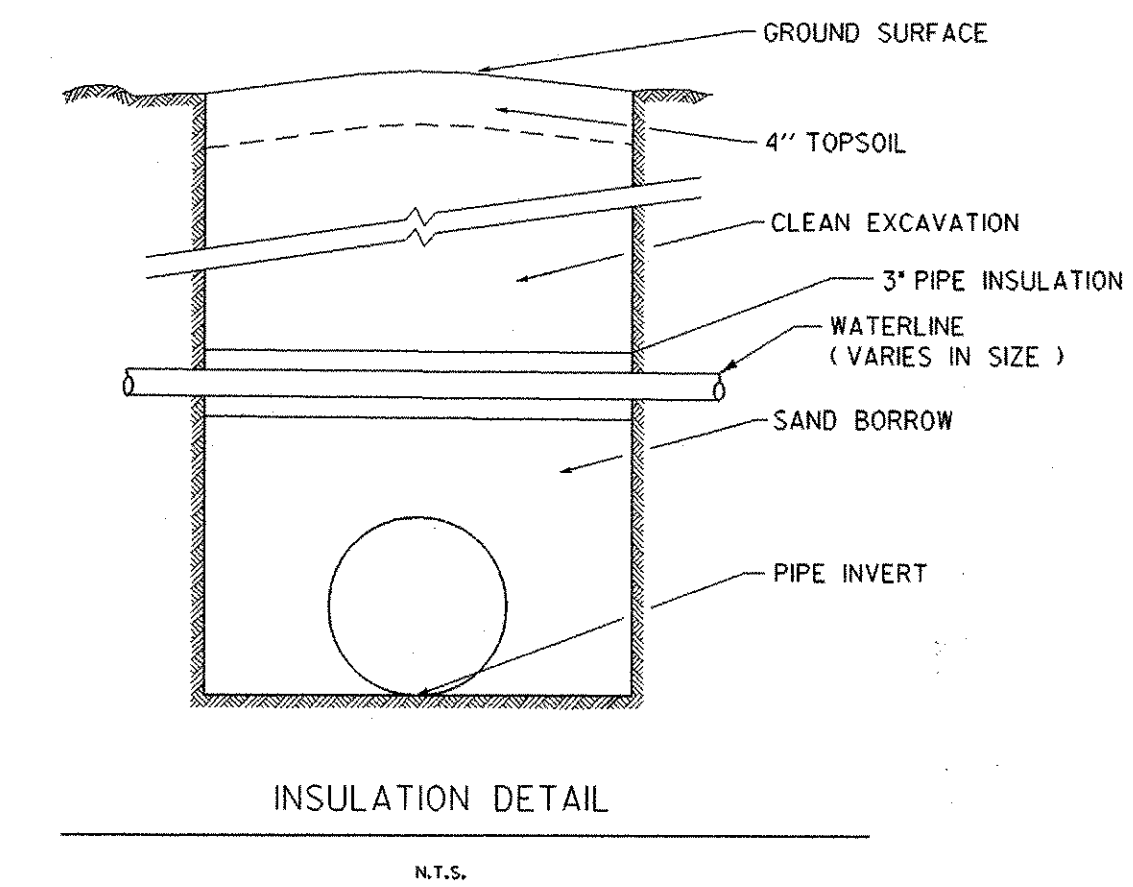
TRENCH ROCK
 $4 \times 4 \times 10 \div 27 = 6.2$
 $\frac{3}{8} \times 4 \times 4 \div 27 = 2.5$
 $\frac{3}{8} \times 4 \times 4 \div 27 = 8.7 \text{ CY}$

TRENCH EARTH
 $12 \times 30 \times 58 \div 27 = 45$
 $0-5' \quad 54 \times 5 \times 58 \div 27 = 55 \text{ CY}$
 $OVERS' \quad 1.5 (54 \times 5 \times 58) \div 27 = 82.5 \text{ CY}$
 $55 \text{ CY} + 82.5 \text{ CY} = 137.5 \text{ CY}$
 $137.5 \text{ CY} - 8.7 \text{ CY} = 128.8 \text{ CY}$
 $128.8 \text{ CY} + 28.8 \text{ CY} = 157.6 \text{ CY}$

CB TRENCHER
 $0-5' \quad 8 \times 8 \times 5 \div 27 = 11.3$
 $OVERS' \quad 8 \times 8 \times 5 \div 27 = 22.6 \text{ CY}$
 $22.6 \text{ CY} + 11.3 \text{ CY} = 33.9 \text{ CY}$
 $33.9 \text{ CY} + 14.1 \text{ CY} = 48 \text{ CY}$

GRANULAR BACKFILL FOR STRUCTURES
 $PIPE \quad 54 \times 1 \times 58 \div 27 = 11.6 \text{ CY}$
 $8 \times 8 \times 1 \div 27 = 2.4 \text{ CY}$
 $TOT. \text{ GBF} = 14 \text{ CY}$

5. 01.06
LJN



STA. 198+00 TO 199+40 LT.
 30" X 142" PCCSP w/
 6'x6' C.B. WITH COVER AS IN SET

TRENCH EARTH
 $12 \times 30 \times 142 \div 27 = 171$
 $0-5' \quad 86 \times 5 \times 142 \div 27 = 276 \text{ CY}$
 $OVERS' \quad 1.5 (86 \times 5 \times 142) \div 27 = 463 \text{ CY}$
 $276 \text{ CY} + 463 \text{ CY} = 739 \text{ CY}$
 $739 \text{ CY} - 11.6 \text{ CY} = 727 \text{ CY}$
 $727 \text{ CY} + 24.6 \text{ CY} = 751 \text{ CY}$

6'x6' CB
 $0-5' \quad 8 \times 8 \times 5 \div 27 = 11.3 \text{ CY}$
 $OVERS' \quad 8 \times 8 \times 5 \div 27 = 22.6 \text{ CY}$
 $22.6 \text{ CY} + 11.3 \text{ CY} = 33.9 \text{ CY}$
 $33.9 \text{ CY} + 14.1 \text{ CY} = 48 \text{ CY}$

TOT. TR. EARTH = 751 CY
 GRANULAR BKF. FOR STRUCTURES
 $PIPE \quad 86 \times 1 \times 142 \div 27 = 45.6 \text{ CY}$
 $8 \times 8 \times 1 \div 27 = 2.4 \text{ CY}$
 $TOT. \text{ GBF} = 48 \text{ CY}$

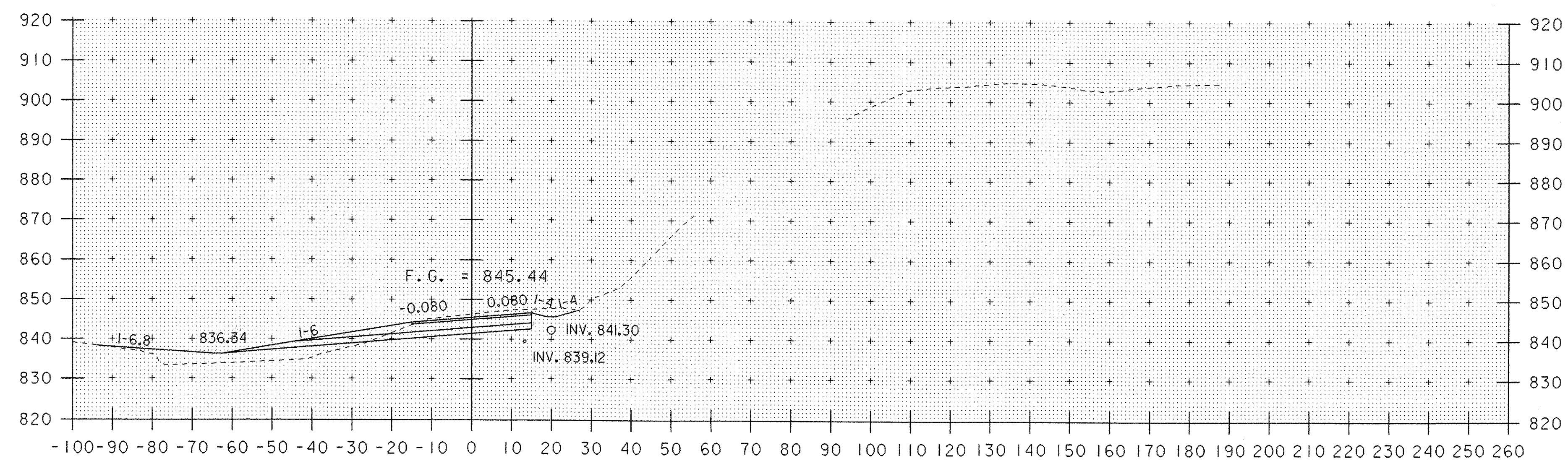
CB 199+40
 $106 \times 5 \times 142 \div 27 = 276 \text{ CY}$
 $276 \text{ CY} + 463 \text{ CY} = 739 \text{ CY}$
 $739 \text{ CY} - 11.6 \text{ CY} = 727 \text{ CY}$
 $727 \text{ CY} + 24.6 \text{ CY} = 751 \text{ CY}$

CB 199+40
 DEPTH = 11.2'
 $(8 \times 8 \times 11.2) - (6 \times 6 \times 11.2) \div 27 = 11.4 \text{ CY}$
 $11.4 \text{ CY} + 11.6 \text{ CY} = 23 \text{ CY}$

2.4
11.7
11.4
23.5 CY



PROJECT NAME: HARDWICK	PLOT DATE: 18-OCT-2005
PROJECT NUMBER: STP ST 030-3(4)	DRAWN BY: M. NUTTER
FILE NAME: d04e060xsix.dgn	CHECKED BY: A. BOMBARDIER
PROJECT LEADER: A. BOMBARDIER	SHEET 41 OF 63
DESIGNED BY: M. NUTTER	
IPARM NAME: de060xs32.i	

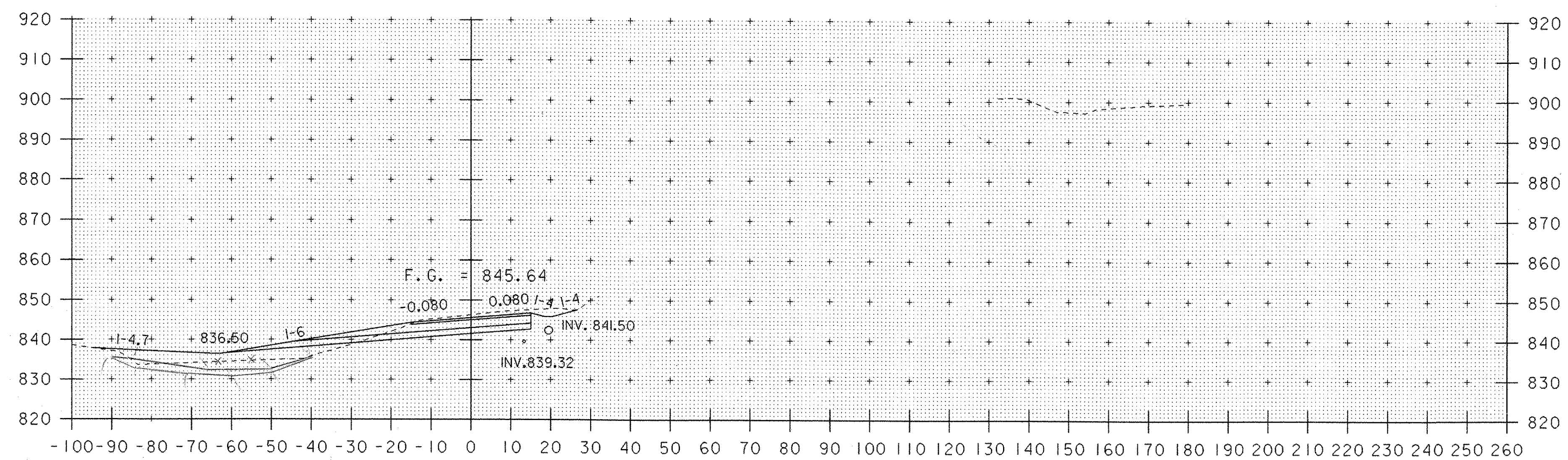


200+00

COMMON KRM 12-14-00
CL 12-01-00

28 28.5
57 28.5
27 28
56 28

$\frac{28.5}{0.16} = 176.56 \text{ FT}^2$



199+80

Muck (CL)

10 10.5
21 10.5

$\frac{10.75}{16} = 67.19 \text{ FT}^2$

10 11
22 11

COMMON KRM 12-14-00
CL 12-01-00

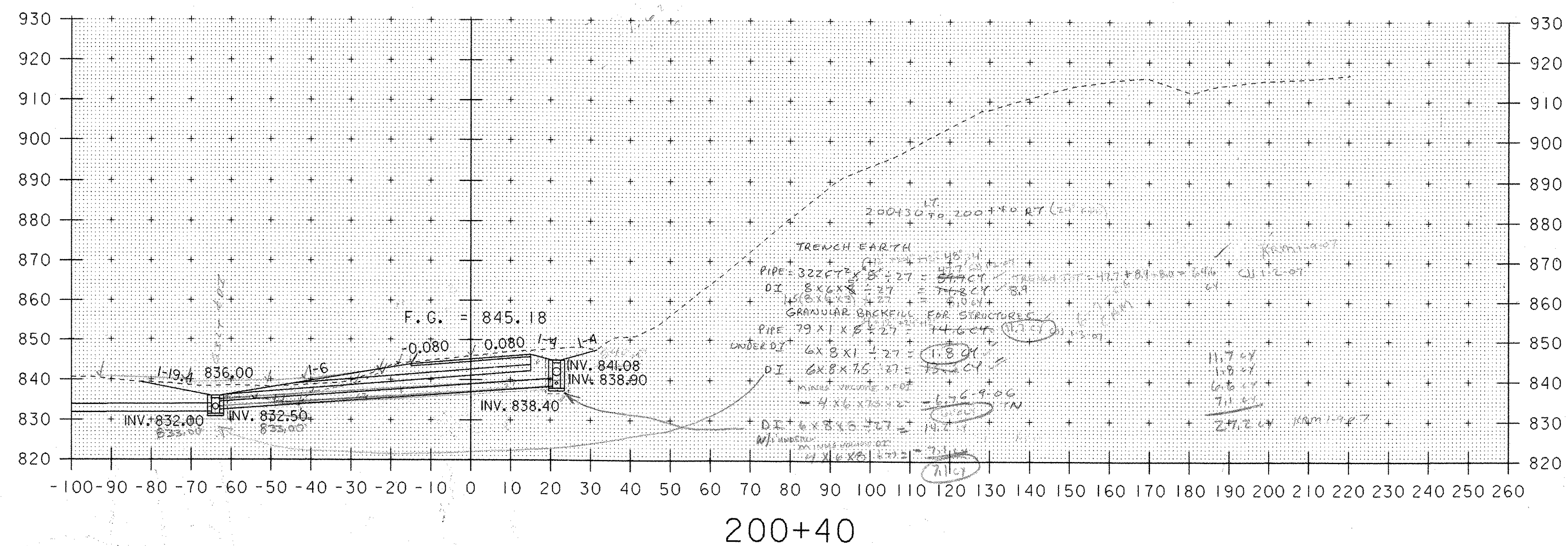
28 28
56 28
28 28
56 28

$\frac{28}{0.16} = 175.00 \text{ FT}^2$

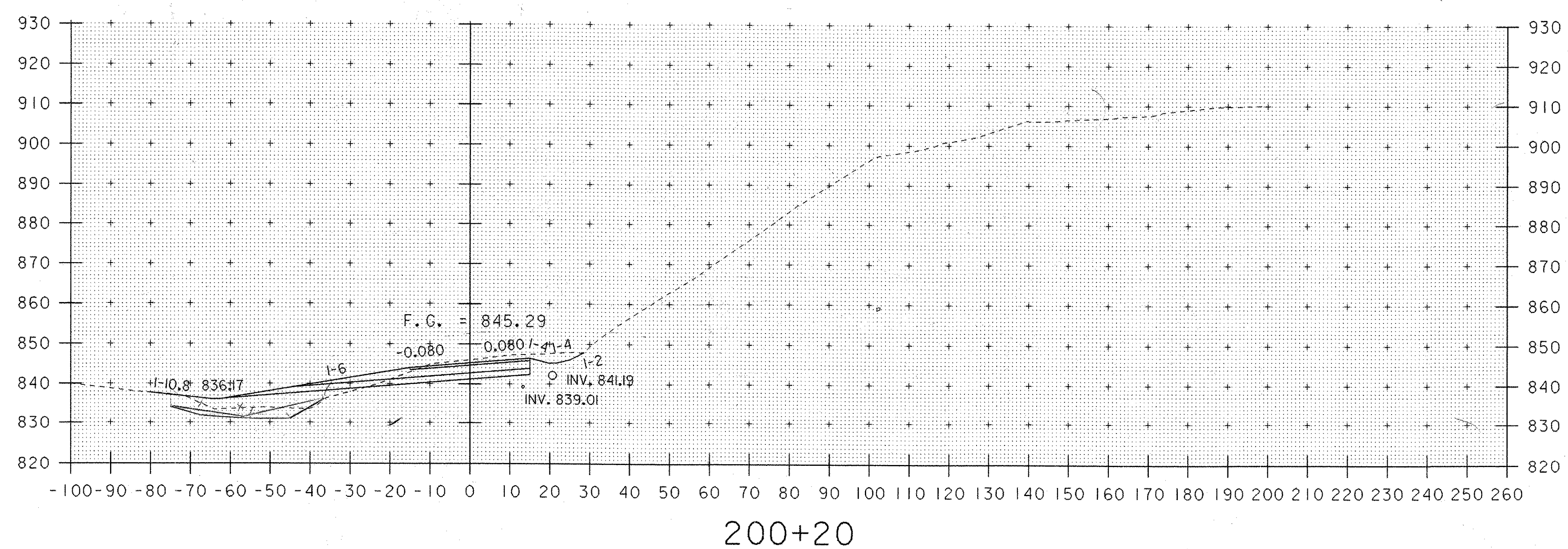
0 20 40
SCALE IN FEET

STA. 199+80 TO STA. 200+00

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xsl0.1	SHEET 42 OF 63



COMMON KRM 12-14-06
 38 38.5
 77
 $\frac{38.25}{0.16} = 239.06 \text{ FT}^2$
 39 38.0
 76

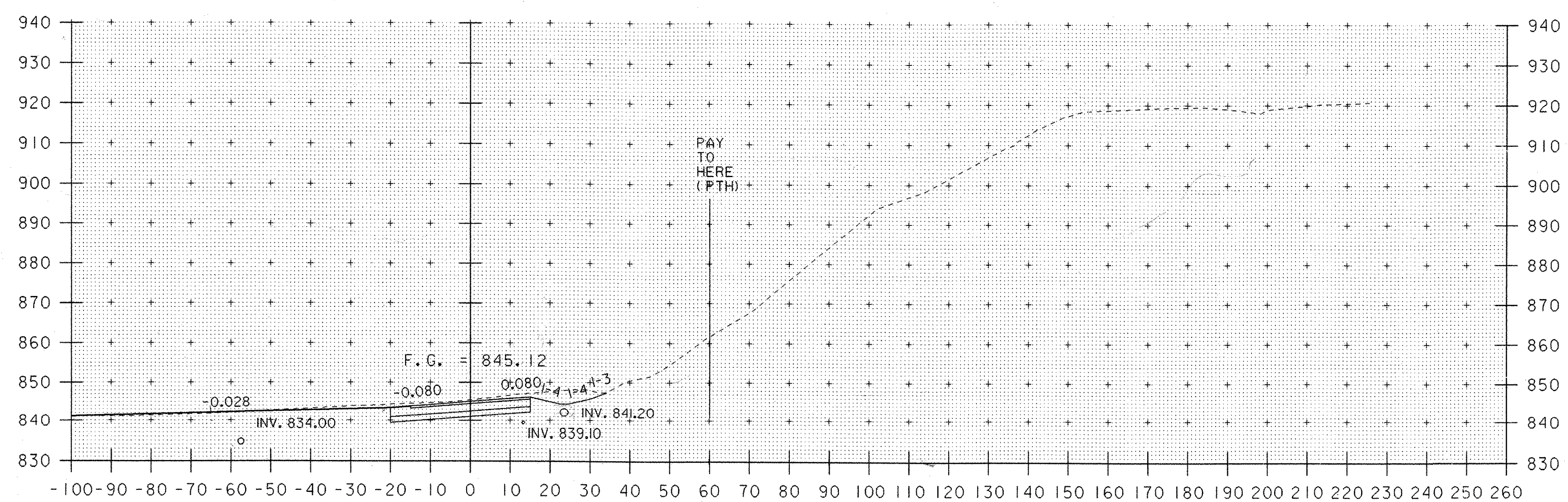
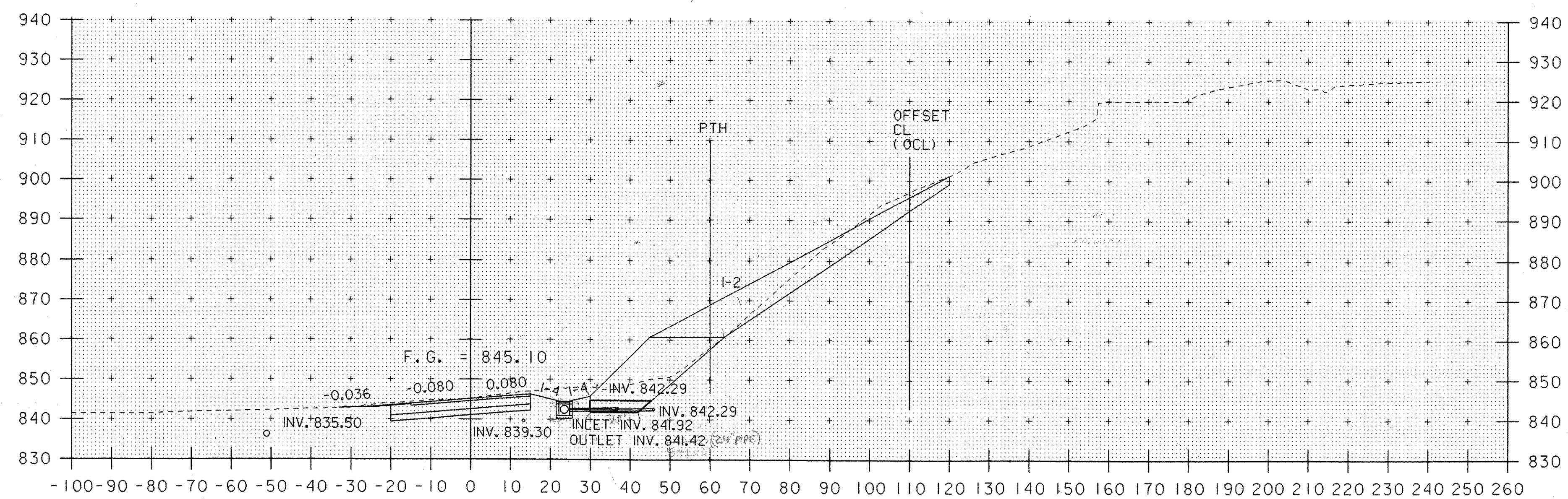


MULL (4)
 8
 16
 $\frac{8}{16} = 50 \text{ SF}$
 8
 16
 L TN
 COMMON KRM 12-14-06
 30 29
 58
 $\frac{29}{0.16} = 181.25 \text{ FT}^2$
 29 29
 58

0 20 40
 SCALE IN FEET

STA. 200+20 TO STA. 200+40

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)
 FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xslx.dgn
 PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 43 OF 63



SEE FINAL SECTIONS PLOT DATE 11-20-06
 FOR PLANIMETERED AREAS, STATIONS 200+60 ~ 203+00,
 (COMMON EXCAVATION, STONE FILL TYPE III AND STONE FILL TYPE II)

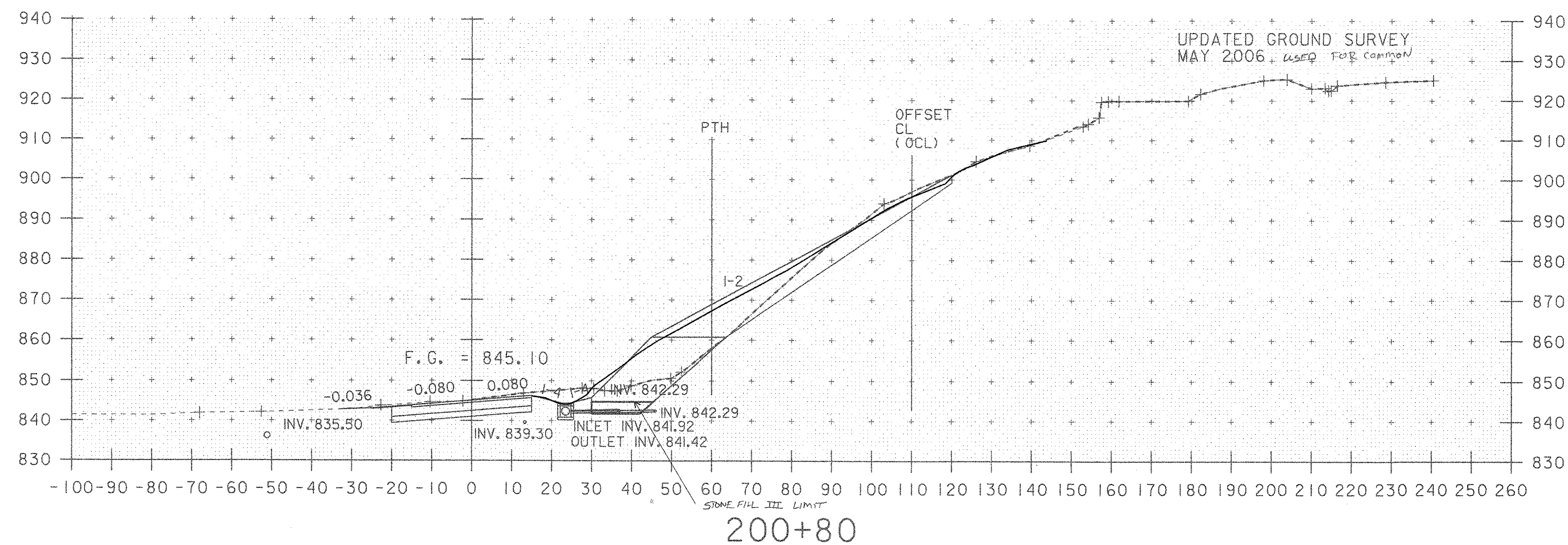
0 20 40
 SCALE IN FEET

STA. 200+60 TO STA. 200+80

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xsl2.1

PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 44 OF 63



COMMON KRM 12-14-06
MAINLINE 110' LT TO THE PTH LINE @ 60' RT

50 51
102 51
53 52
104 52

$\frac{51.5}{0.16} = 321.88 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

39 39
78 39
39 40
90 40

$\frac{39.5}{0.16} = 246.88 \text{ FT}^2$

STONE FILL TYPE III KRM 1-2-07
MAINLINE 110' LT TO PTH LINE @ 60' RT

48 48
96 48
48 48
96 48

$\frac{48}{0.16} = 300.88 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

1 1
2 1
1 1
2 1

$\frac{1}{0.16} = 6.25 \text{ FT}^2$

STONE FILL TYPE II KRM 1-2-07
MAINLINE 110' LT TO PTH @ 60' RT

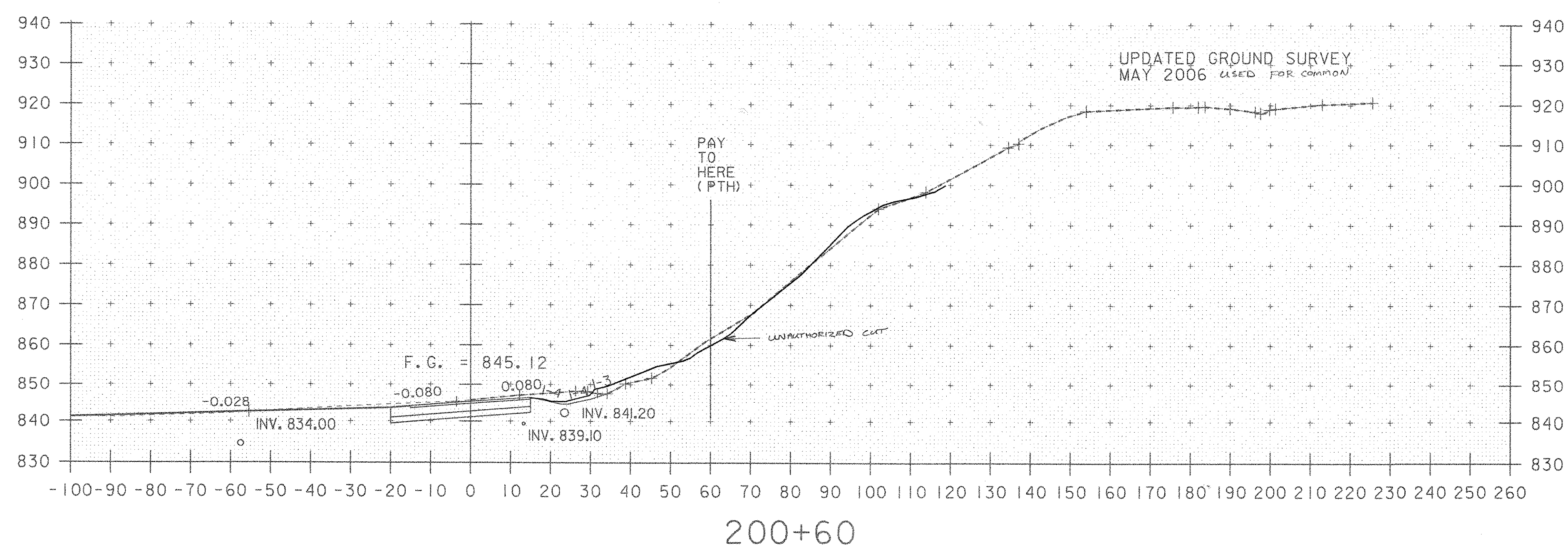
7 7.5
15 7.5
8 7.5
15 7.5

$\frac{7.5}{0.16} = 46.88 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

57 56.5
113 56.5
55 56.0
112 56.0

$\frac{56.25}{0.16} = 351.56 \text{ FT}^2$



COMMON KRM 12-14-06

34 34.5
69 34.5
34 34
68 34

$\frac{34.25}{0.16} = 214.06 \text{ FT}^2$

STONE FILL TYPE II & III KRM 1-2-07
SEE PLAN SHEET 14 OF 63

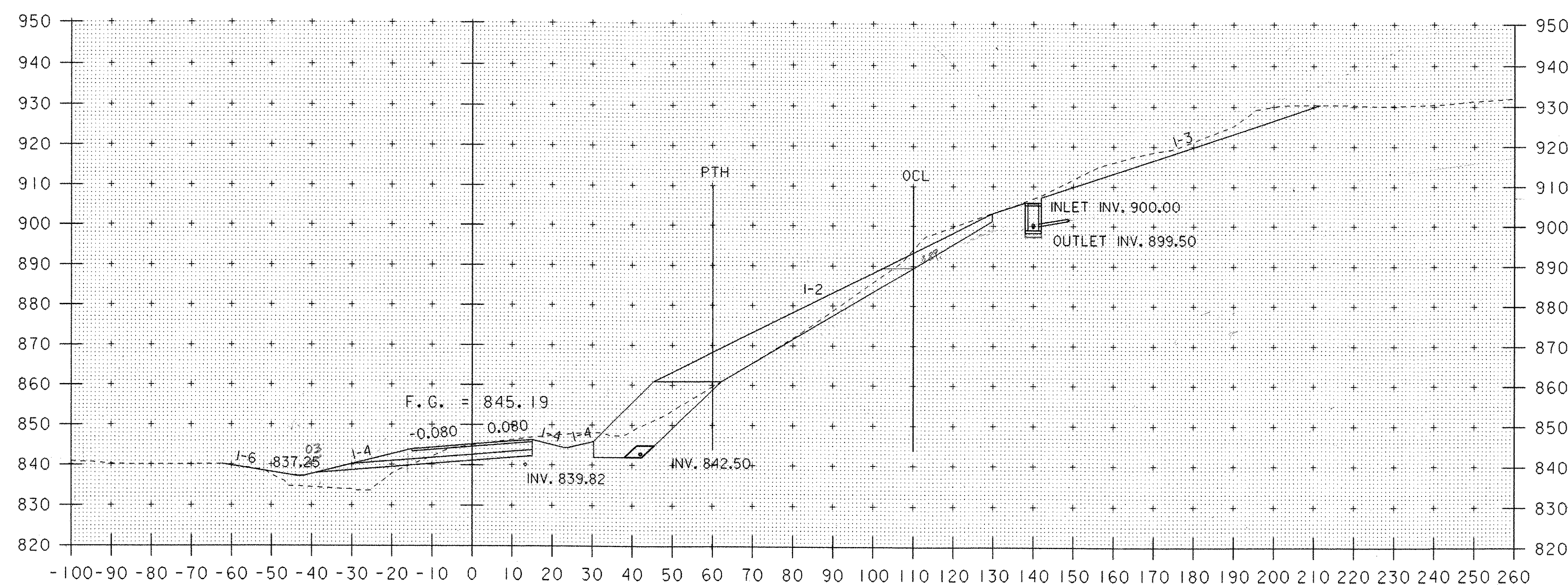
0 FT²

0 20 40
SCALE IN FEET

STA. 200+60 TO STA. 200+80

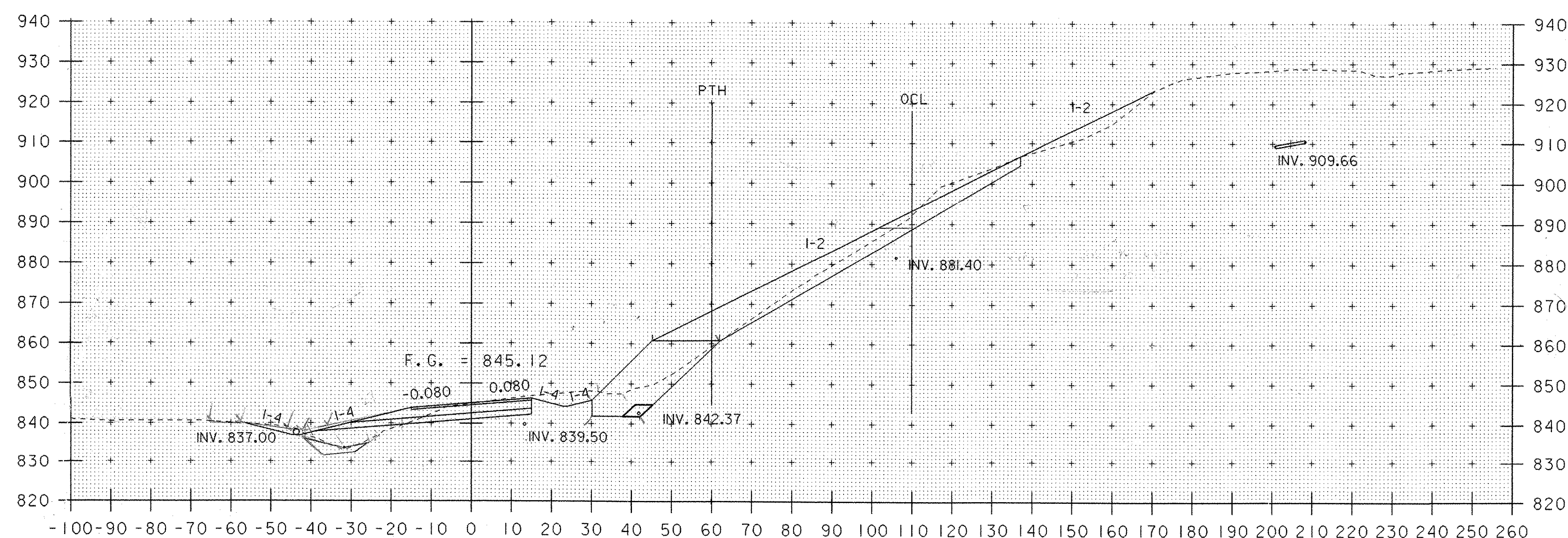
PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)
FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xsl2.i
PLOT DATE: 20-NOV-2006
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 44A OF 63

SEE FINAL SECTIONS PLOT DATE 11-20-06



201+20

TRENCH EARTH - DI @ 140 AT 11-20-07
 6' W x 6' L x 5' DEEP = 6.67 CY
 15' (6' W x 6' L x 4.5' DEEP) = 9.0 CY
 15.67 CY / 1.8 RM = 8.71



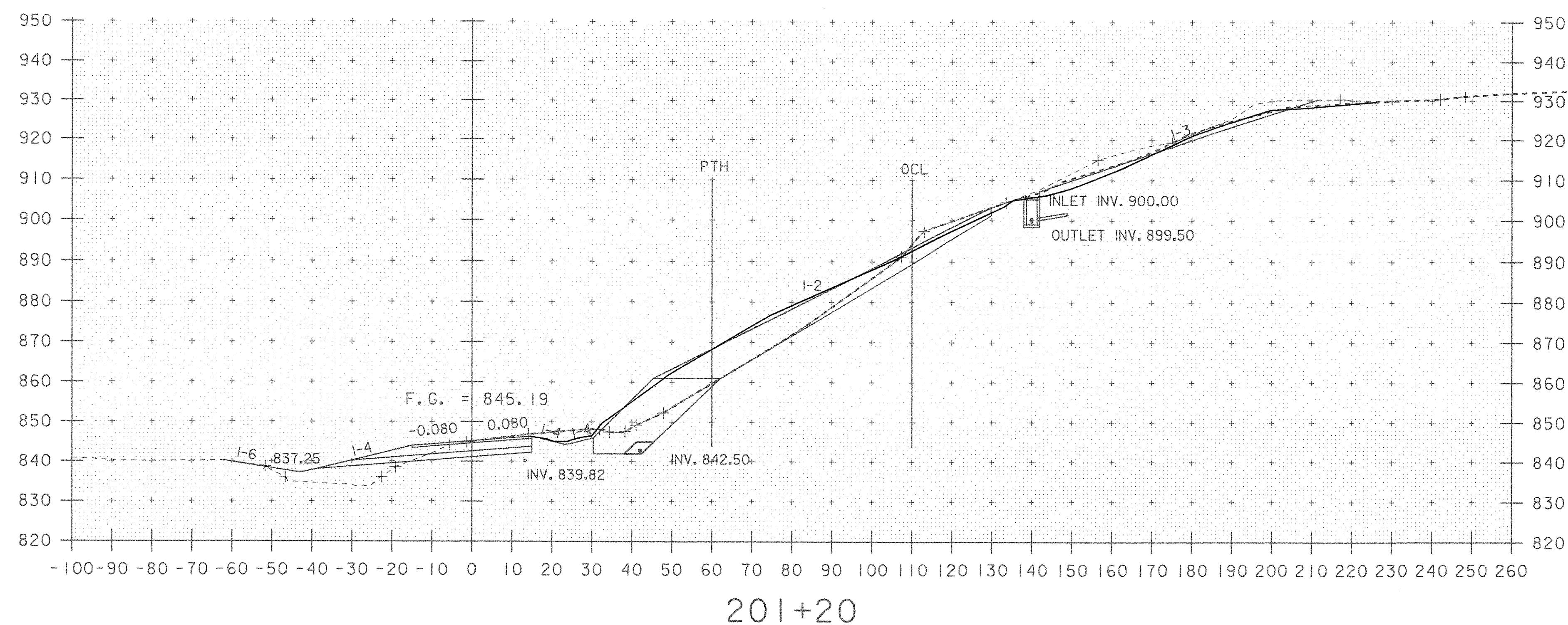
201+00

MUCK FILL
 4.5' x 4.5' = 20.25 FT²
 20.25 / 0.10 = 202.5
 202.5 / 1.8 RM = 112.5

0 20 40
 SCALE IN FEET

STA. 201+00 TO STA. 201+20

PROJECT NAME: HARDWICK	PLOT DATE: 18-OCT-2005
PROJECT NUMBER: STP ST 030-3(4)	DRAWN BY: M. NUTTER
FILE NAME: d04e060xslx.dgn	CHECKED BY: A. BOMBARDIER
DESIGNED BY: M. NUTTER	SHEET 45 OF 63
IPARM NAME: de060xsl3.1	



UPDATED GROUND SURVEY
MAY 2006 USED FOR COMMON

COMMON KRM 12-14-06
MAINLINE 110' LT TO THE PTH LINE @ 60' RT

45' 45
90 45
46 46.5
93 46.5

$\frac{45.75}{0.16} = 285.94 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

37 37.5
75 37.5
38 37.5
75 37.5

$\frac{37.5}{0.16} = 234.38 \text{ FT}^2$

STONE FILL TYPE II KRM 1-2-07
MAINLINE 110' LT TO THE PTH @ 60' RT

46 47
94 47
46 46
92 46

$\frac{46.5}{0.16} = 290.63 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

SCALED $\frac{1}{2}(Z' \times Z') = Z \text{ FT}^2$

STONE FILL TYPE II KRM 1-2-07
MAINLINE 110' LT TO PTH @ 60' RT

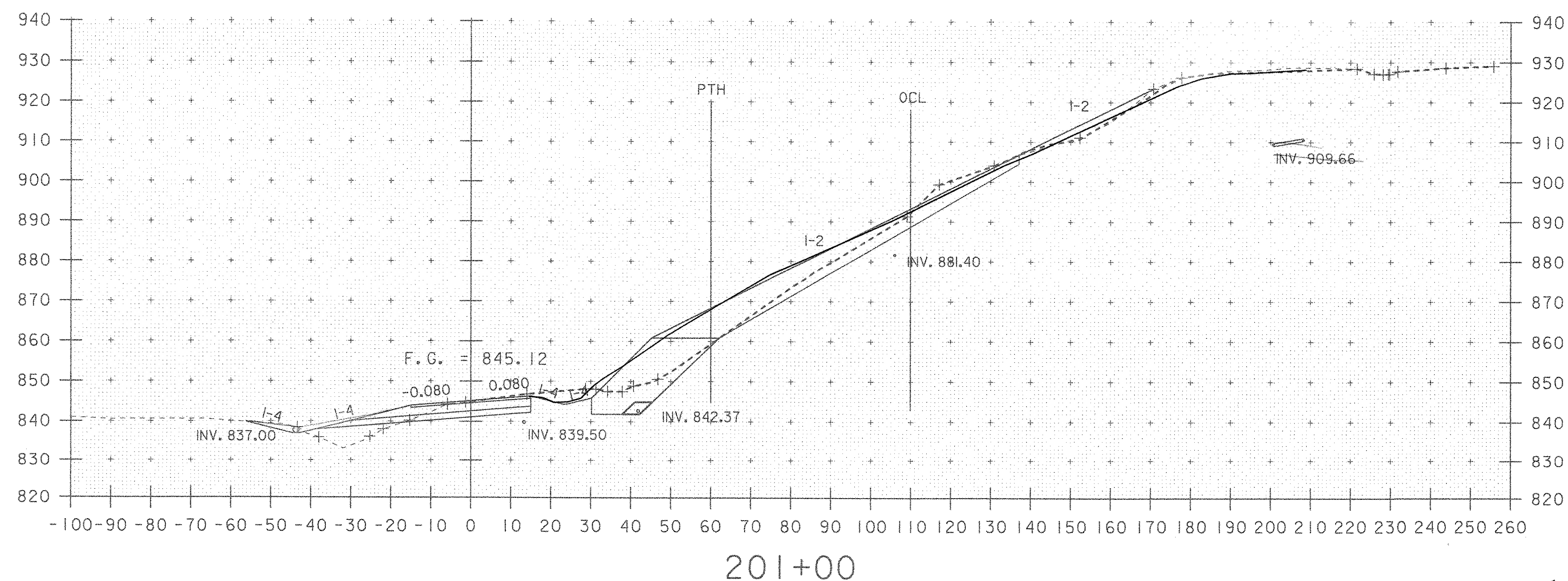
8 8
16 8
7 8
16 8

$\frac{8}{0.16} = 50.0 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

62 62
124 62
61 61.5
123 61.5

$\frac{61.75}{0.16} = 385.94 \text{ FT}^2$



UPDATED GROUND SURVEY
MAY 2006 USED FOR COMMON

COMMON KRM 12-14-06
MAINLINE 110' LT TO THE PTH LINE @ 60' RT

45 45.5
91 45.5
46 46.5
93 46.5

$\frac{46.0}{0.16} = 287.50 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

38 38
76 38
37 38
76 38

$\frac{38}{0.16} = 237.50 \text{ FT}^2$

STONE FILL TYPE III KRM 1-2-07
MAINLINE 110' LT TO PTH @ 60' RT

48 48
96 48
48 48
96 48

$\frac{48}{0.16} = 300.00 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

SCALED $\frac{1}{2}(Z' \times Z') = Z \text{ FT}^2$

STONE FILL TYPE II KRM 1-2-07
MAINLINE 110' LT TO PTH @ 60' RT

7 7
14 7
6 7
14 7

$\frac{7}{0.16} = 43.75 \text{ FT}^2$

PTH @ 60' RT TO 260' RT

68 67.5
135 67.5
67 67
134 67

$\frac{67.25}{0.16} = 420.31 \text{ FT}^2$

SCALED TO CHECK
 $\frac{1}{2}(Z' \times Z') = 43.2 \text{ FT}^2$

0 20 40
SCALE IN FEET

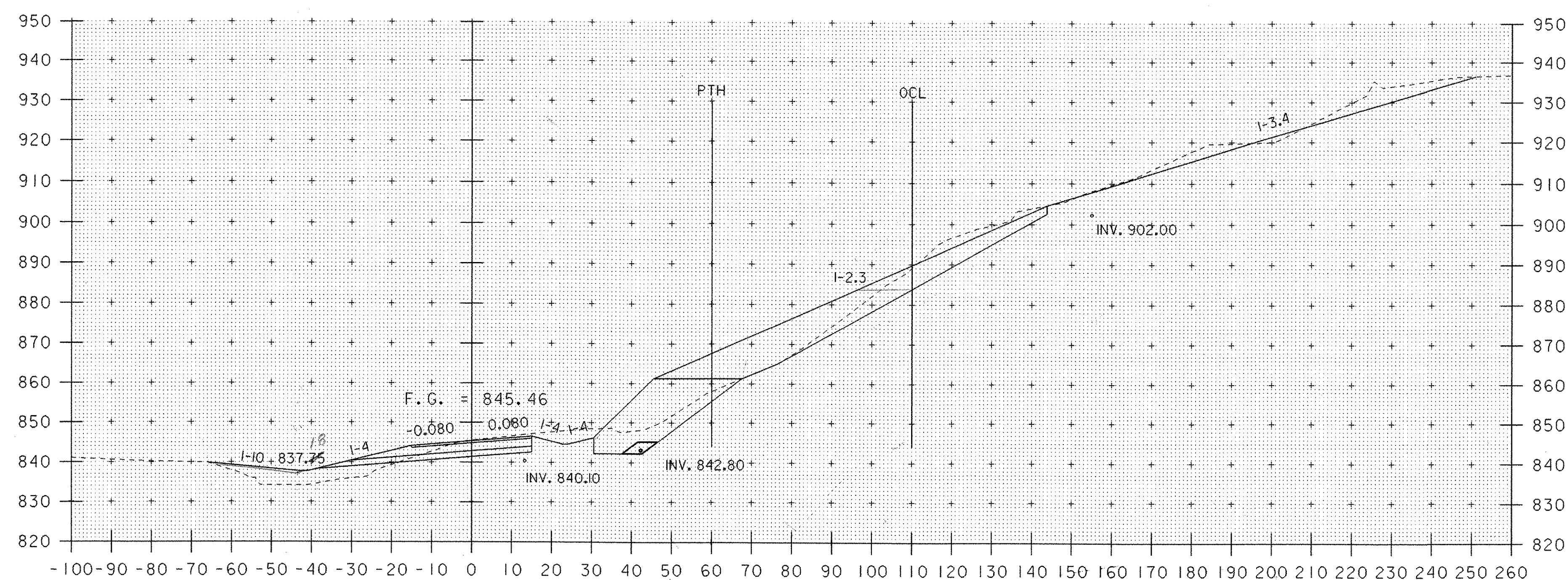
STA. 201+00 TO STA. 201+20

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

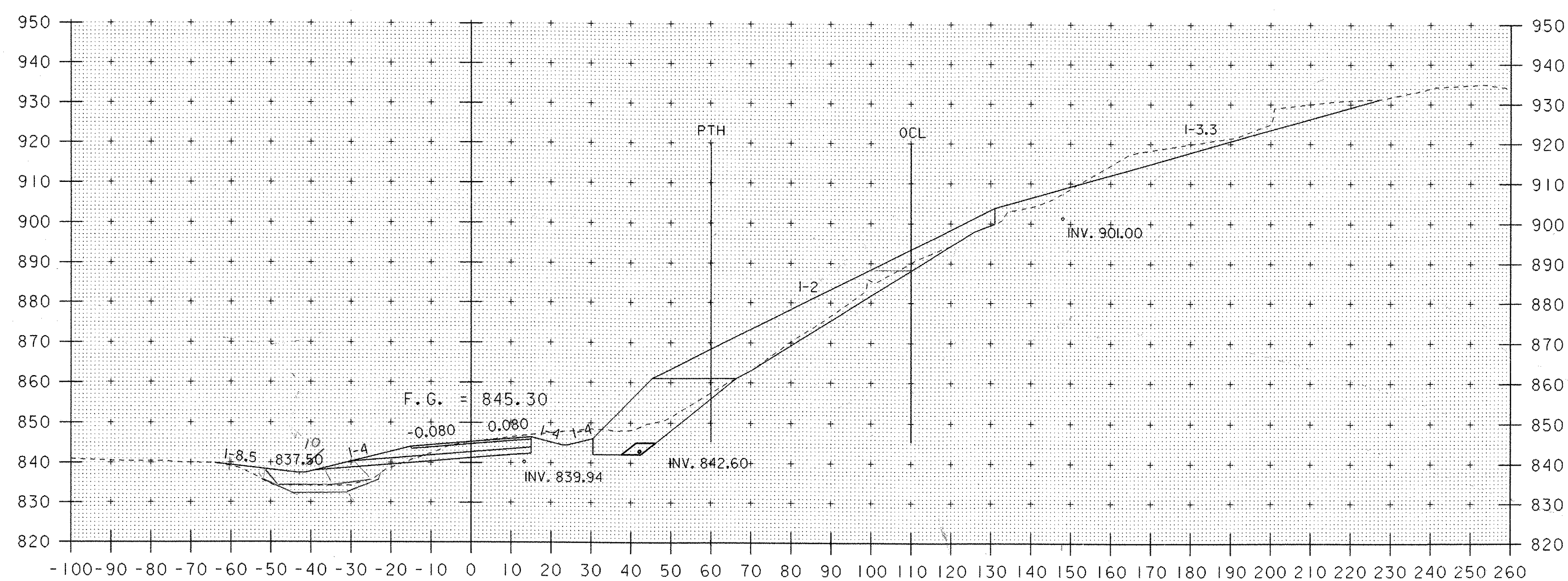
FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xsl3.1

PLOT DATE: 20-NOV-2006
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 45A OF 63

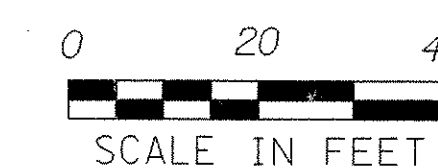
SEE FINAL SECTIONS PLOT DATE 11-20-06



201+60

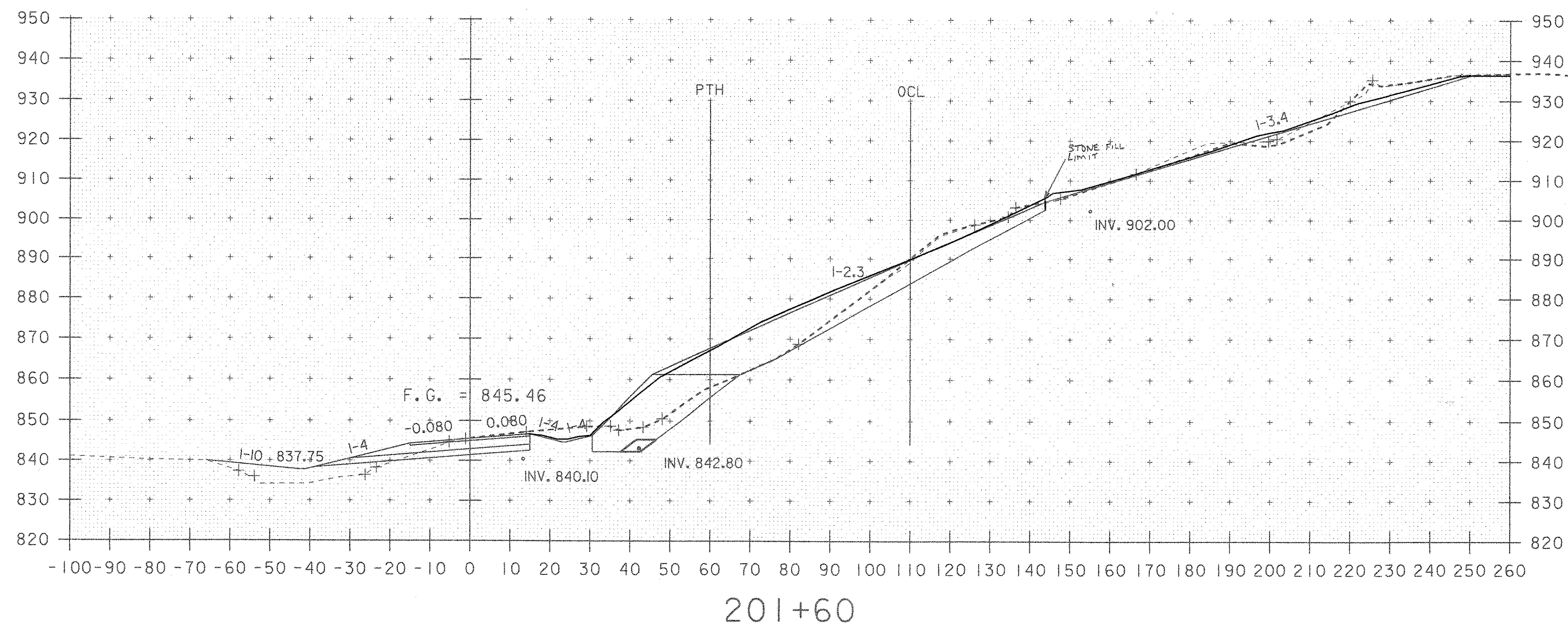


201+40



STA. 201+40 TO STA. 201+60

PROJECT NAME: HARDWICK	PLOT DATE: 18-OCT-2005
PROJECT NUMBER: STP ST 030-3(4)	DRAWN BY: M. NUTTER
FILE NAME: d04e060xslx.dgn	CHECKED BY: A. BOMBARDIER
DESIGNED BY: M. NUTTER	SHEET 46 OF 63
IPARM NAME: de060xsl4.1	



UPDATED GROUND SURVEY
MAY 2006 USED FOR COMMON

COMMON EXCAVATION KRM 12-18-06
MAINLINE 110' LT TO THE PTH @ 60' RT

47' 47.5
95 47.25
46 47 0.16 = 295.31 FT²
94

STONE FILL TYPE III KRM 1-3-07
MAINLINE 110' LT TO PTH @ 60' RT

50 50.5
101 50 0.16 = 312.59 FT²
50 49.5
99

STONE FILL TYPE II KRM 1-3-07
MAINLINE 110' LT TO PTH @ 60' RT

6 6
12 6 0.16 = 37.5 FT²
5 6
12

PTH @ 60' RT TO 260' RT

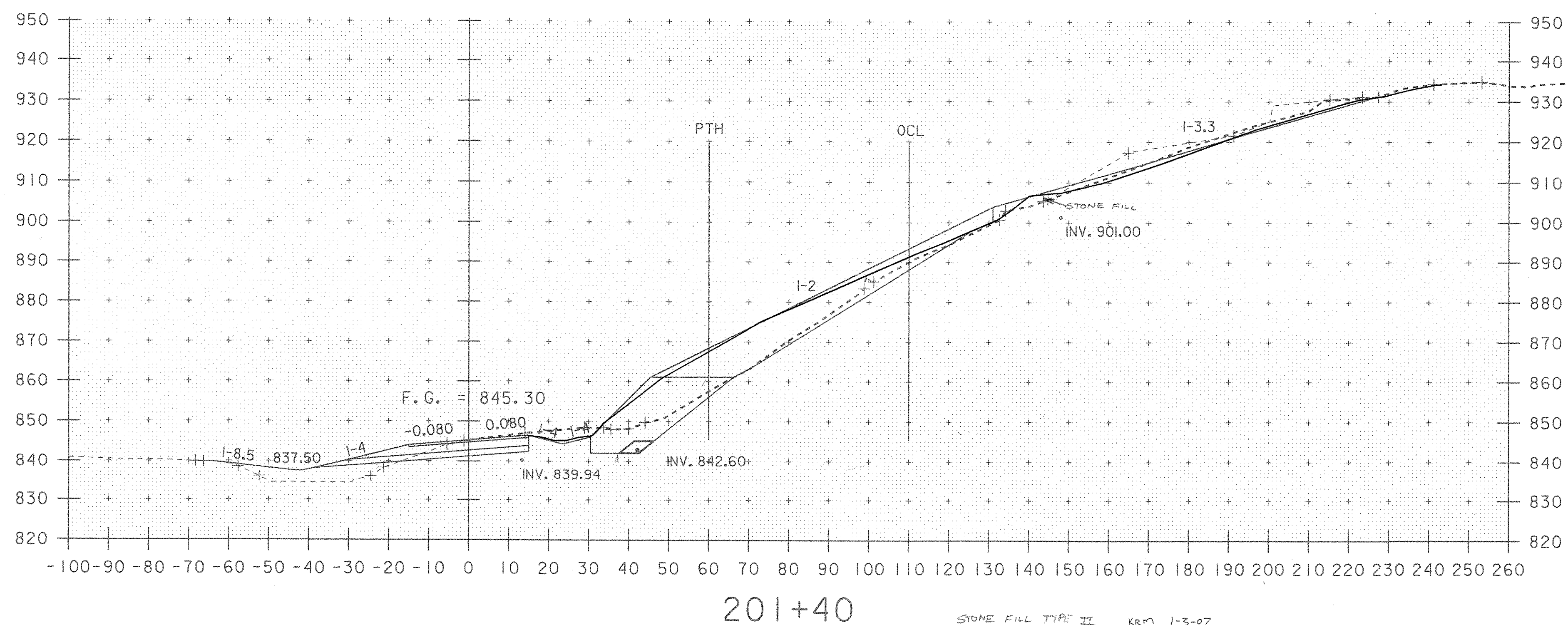
65 66
132 67.25 = 420.31 FT²
67 68.5
137

PTH @ 60' RT TO 260' RT

3 3
6 3 35 = 21.88
4 4 0.16 = 24.87 FT²
8

PTH @ 60' RT TO 260' RT

96 96
192 95.5 = 596.88 FT²
95 95
190 95



UPDATED GROUND SURVEY
MAY 2006 USED FOR COMMON

COMMON EXCAVATION KRM 12-18-06
MAINLINE 110' LT TO THE PTH @ 60' RT

45 45
90 45.25
45 45.5 0.16 = 282.81 FT²
91

STONE FILL TYPE III KRM 1-3-07
MAINLINE 110' LT TO PTH @ 60' RT

48 48
96 48 0.16 = 300.00 FT²
49 49
96

PTH 60' RT TO 260' RT
BROKE INTO TWO PARTS
(PTH 60' RT TO 120' RT)

15 15.5
31 15.50 = 96.88 FT²
16 15.5
31

(120' RT TO 260' RT)

19 20
40 20 20.0 = 125.00 FT²
20 20 0.16
40

221.88 FT²
(1-3-07)

PTH 60' RT TO 260' RT

SCALE
1/2 (6.5' x 5') = 16.25 FT²

STONE FILL TYPE II KRM 1-3-07
MAINLINE 110' LT TO PTH @ 60' RT

6 6
14 7 7 0.16 = 43.75 FT²
6 69.5
14 7

PTH 60' RT TO 260' RT

69 68.5
137 69 69.25 = 431.25 FT²
69 69.5
139

0 20 40
SCALE IN FEET

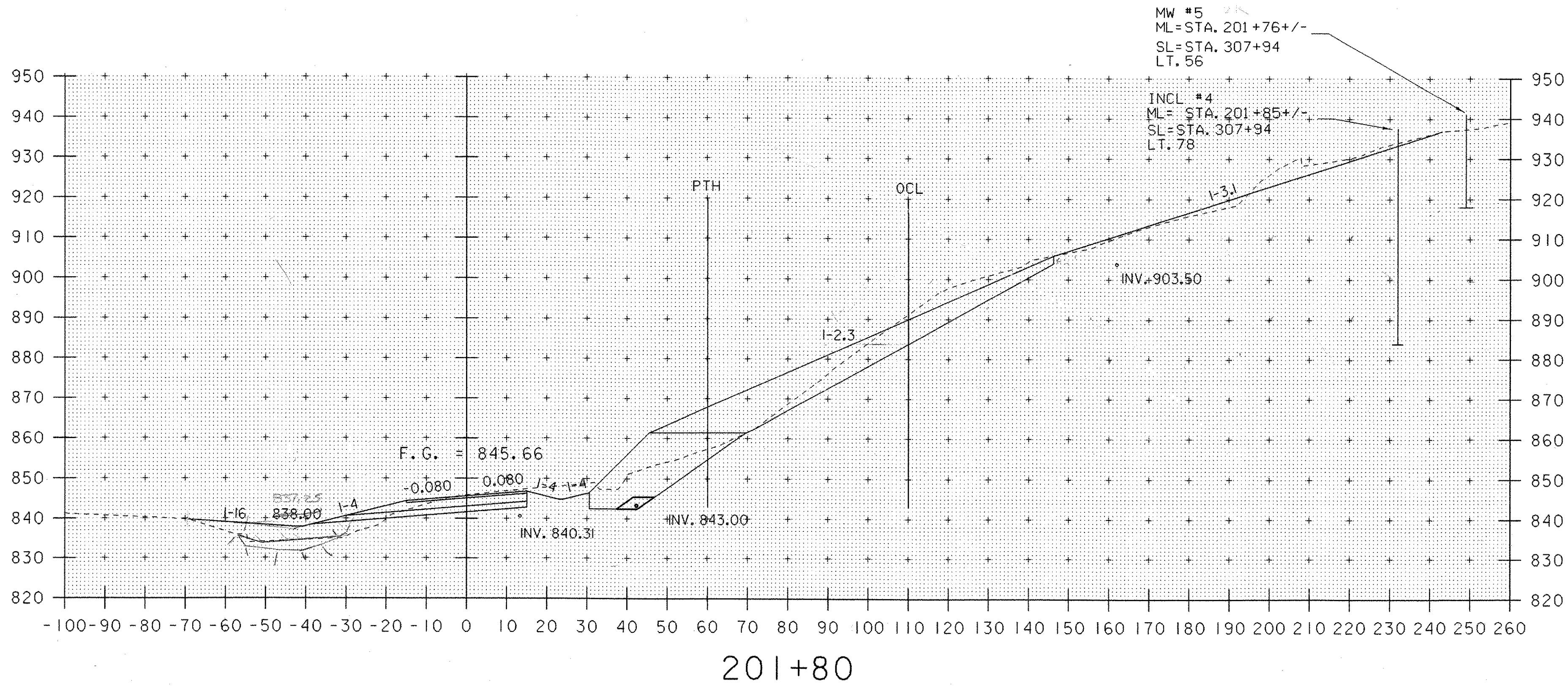
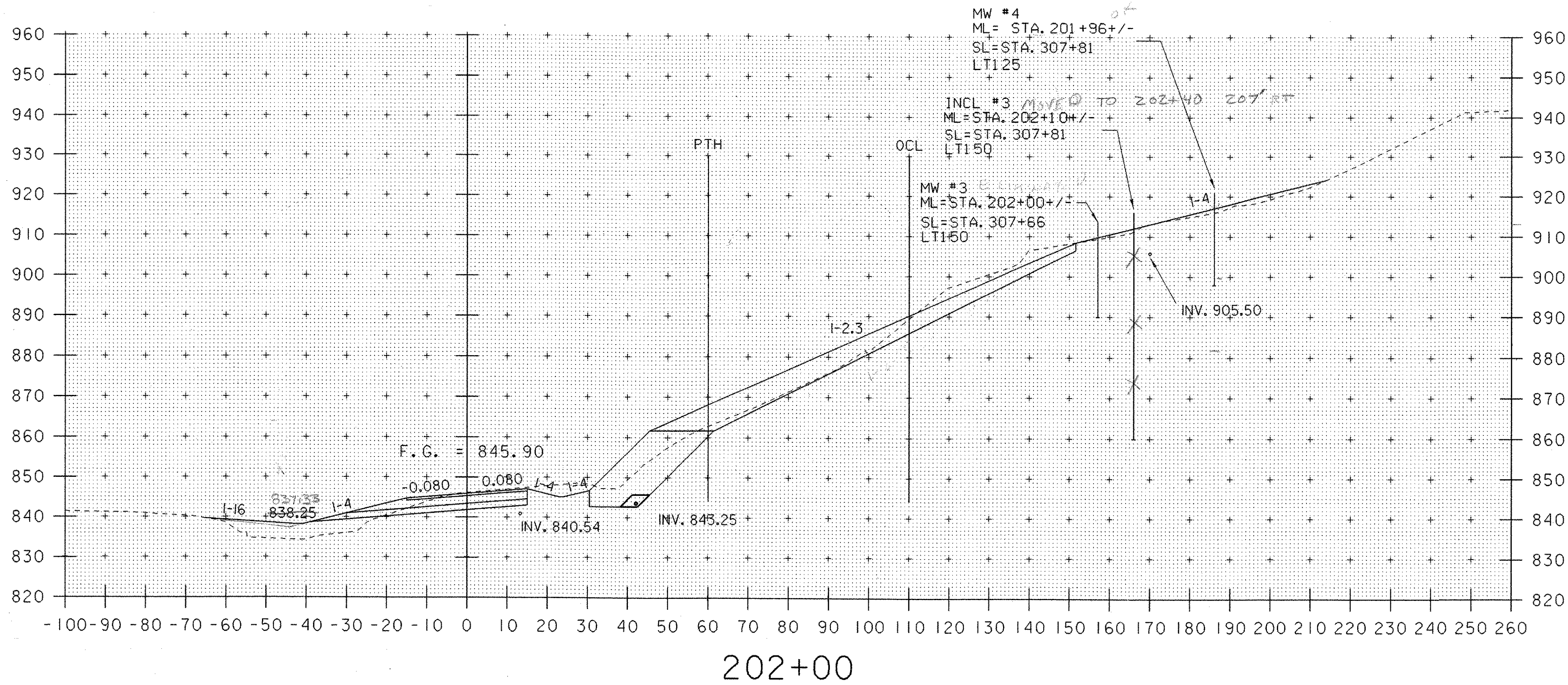
STA. 201+40 TO STA. 201+60

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: d060xsl4.1

PLOT DATE: 20-NOV-2006
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 46 A OF 63

SEE FINAL SECTIONS PLOT DATE 11-20-06

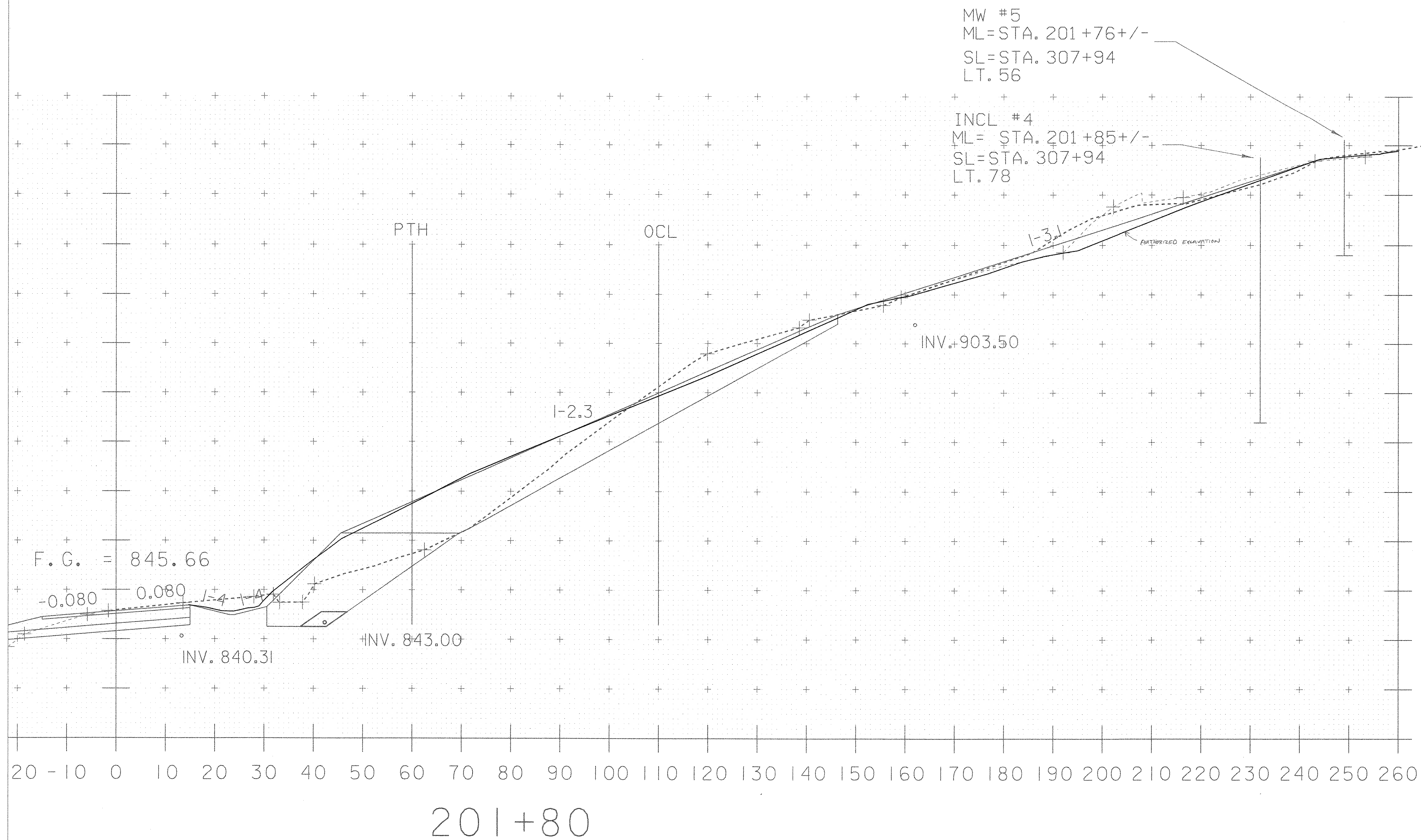


0 20 40
SCALE IN FEET

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4

FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xsl5.l	SHEET 47 OF 63

STA. 201+80 TO STA. 202+00



UPDATED
GROUND SURVEY
MAY 2006

COMMON KRM 12-18-00
MAINTENANCE 110' LT TO THE PTH @ 60' RT

219 218.5
437 219
219 220
440 220
 $\frac{219.25}{0.64} = 342.58 \text{ FT}^2$
CS 1-2-07

PTH @ 60' RT TO 260' RT
BROKE INTO TWO PARTS
(PTH @ 60' RT TO 150' RT)
CS 1-2-07
255 254
508 253.5
253 253.5
507 253.5
 $\frac{253.25}{0.64} = 396.48 \text{ FT}^2$

(150' RT TO 260' RT)
+
97 96.5
193 96.5
96 96.5
193 96.5
 $\frac{96.5}{0.64} = 150.78 \text{ FT}^2$
CS 1-2-07
 547.26 FT^2

STONE TYPE III KRM 12-18-00
CS 1-4-07
110' LT TO THE PTH @ 60' RT
215 213.5
427 213.5
214 213
426 213
 $\frac{213.25}{0.64} = 333.20 \text{ FT}^2$

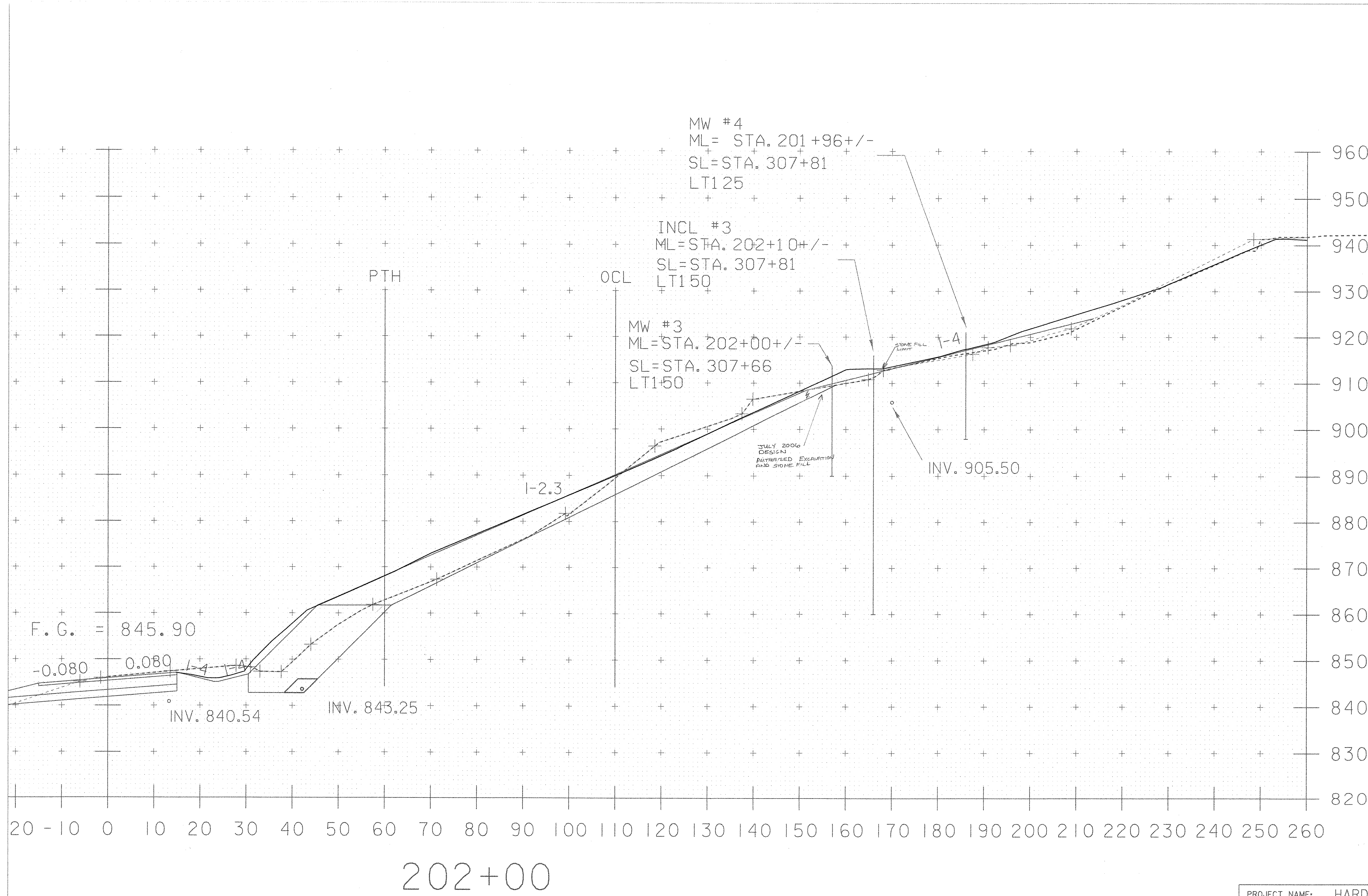
PTH @ 60' RT TO 260' RT
21 21
42 21
21 21
42 21
 $\frac{21}{0.64} = 32.81 \text{ FT}^2$

STONE TYPE II KRM 12-18-00
CS 1-1-07
110' LT TO THE PTH @ 60' RT
25 24.5
49 24.5
24 24.5
50 24.5
 $\frac{24.75}{0.64} = 38.67 \text{ FT}^2$

PTH @ 60' RT TO 260' RT
355 355.5
711 355.5
356 356.5
713 356.5
 $\frac{356.00}{0.64} = 556.25 \text{ FT}^2$

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xsl5.1
PLOT DATE: 20-NOV-2006
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 47A OF 63



UPDATED
GROUND SURVEY
MAY 2006
USED FOR COMMON

COMMON EXCAVATION KRM 12-18-06
MAINLINE 110' LT TO THE PTH @ 60' RT
210 211
422 212
212 420
210 420
 $\frac{210.50}{0.64} = 328.91 \text{ FT}^2$
CJ 12-19-07

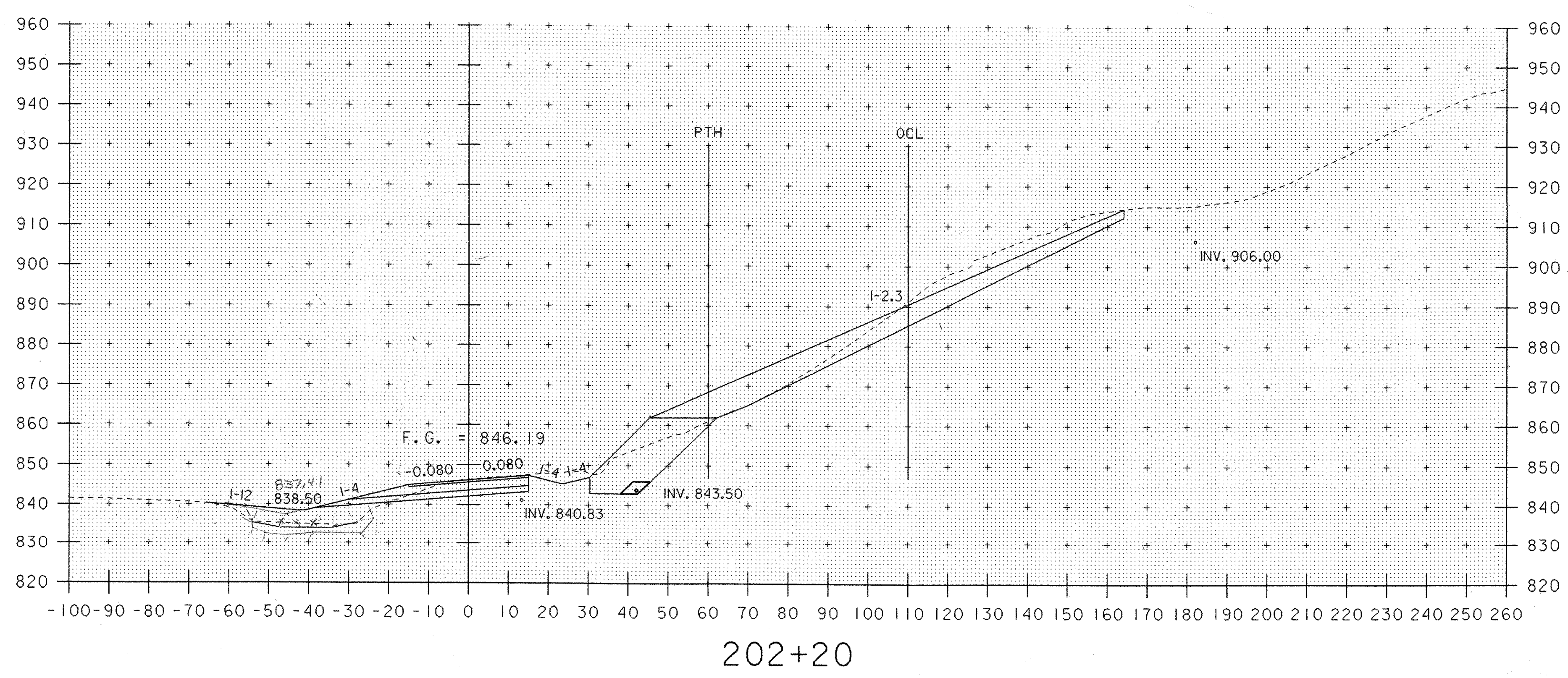
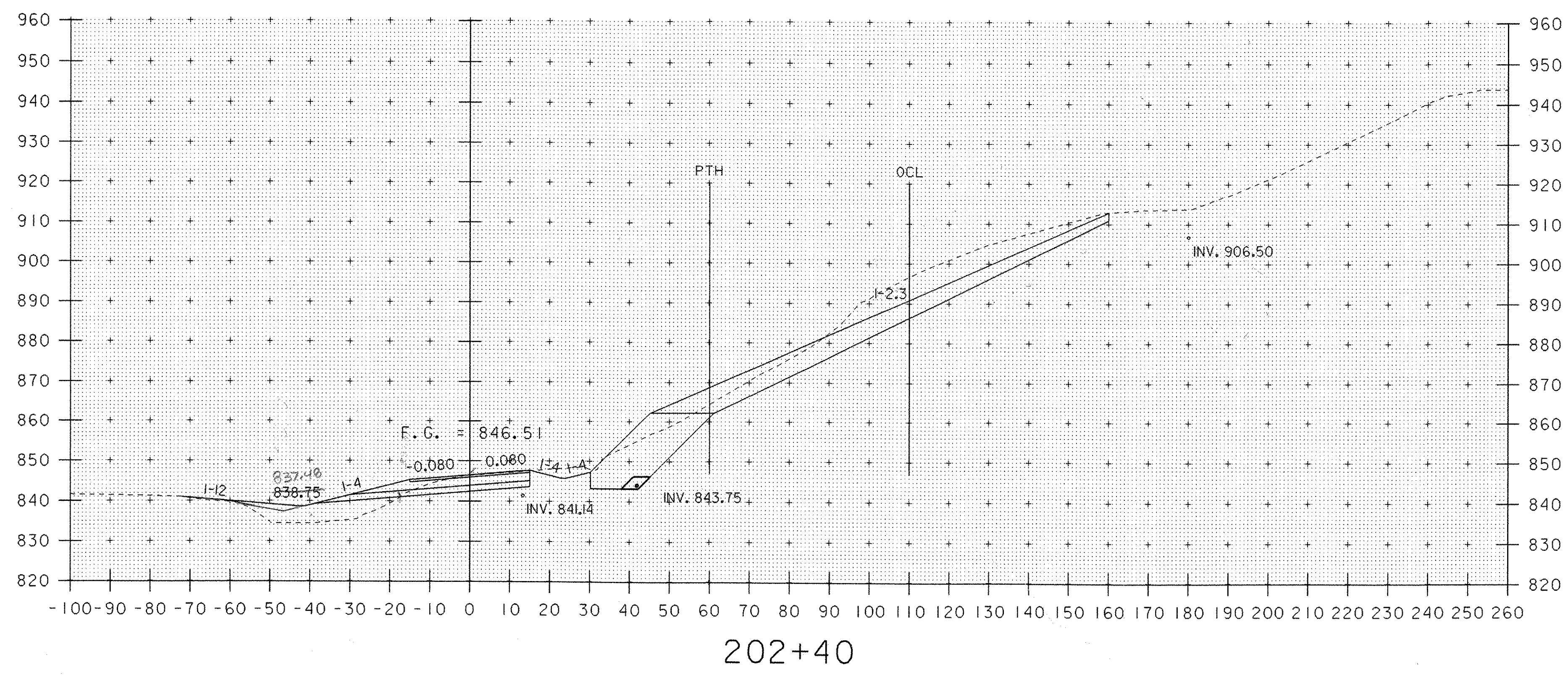
PTH @ 60' RT TO 260' RT
BROKE INTO TWO PARTS
(PTH @ 60' RT TO 150' RT)
175 348
176 349
 $\frac{174.25}{0.64} = 272.27 \text{ FT}^2$
(150' RT TO 260' RT)
3 6
3 6
 $\frac{3}{0.64} = 4.69 \text{ FT}^2$
276.96 FT²

STONE FILL TYPE III KRM 12-19-06
110' LT TO PTH @ 60' RT
202 404
202 404
 $\frac{202}{0.64} = 315.63 \text{ FT}^2$
PTH @ 60' RT TO 260' RT
SCALED
 $\frac{1}{2}(15' \times 15') = 1.13 \text{ FT}^2$

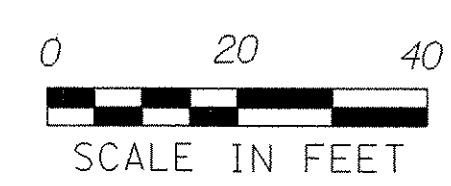
STONE FILL TYPE II KRM 12-19-06
110' LT TO PTH @ 60' RT
30 61
30 61
 $\frac{30.5}{0.64} = 47.66 \text{ FT}^2$
PTH
306 610
304 606
 $\frac{304}{0.64} = 475.00 \text{ FT}^2$

PROJECT NAME:	HARDWICK	FILE NAME:	d04e060xslx.dgn	PLOT DATE:	20-NOV-2006
PROJECT NUMBER:	STP ST 030-3(4)	PROJECT LEADER:	A. BOMBARDIER	DRAWN BY:	M. NUTTER
		DESIGNED BY:	M. NUTTER	CHECKED BY:	A. BOMBARDIER
		IPARM NAME:	de060xsl5.l	SHEET	47B OF 63

SEE FINAL SECTIONS plot DATE 11-20-06.



Mux 40
9 9.5'
9.25/0.16 = 57.81 ft
L3W
KRP 1-10-05



STA. 202+20 TO STA. 202+40

PROJECT NAME:	HARDWICK	PLOT DATE:	18-OCT-2005
PROJECT NUMBER:	STP ST 030-3(4)	DRAWN BY:	M. NUTTER
FILE NAME:	d04e060xslx.dgn	CHECKED BY:	A. BOMBARDIER
PROJECT LEADER:	A. BOMBARDIER	SHEET	48 OF 63
DESIGNED BY:	M. NUTTER		
IPARM NAME:	de060xsl6.i		

GEOTEXTILE UNDER STONE FILL - ITEM 649.31
TO EXTEND TO UPPER LIMITS OF
STONE FILL TYPE II (MODIFIED)

ADDITIONAL
STONE FILL
TYPE II
239 SF

202+20 - 165.95'
N 729805.6945
E 1676421.0756

202+20 - 172.72'
N 729798.9283
E 1676421.3013

202+20 - 213.28'
N 729758.4876
E 1676422.6505

EARTH BORROW
ROUNDING

UPDATED
GROUND SURVEY
MAY 2006
USED FOR COMMON

COMMON KRM 12-22-06
MAINLINE 110' LT TO PTH @ 60' RT
221 220.5
441 220.5
218 220
440 220
 $\frac{220.25}{0.164} = 344.14 \text{ FT}^2$
(12.07)

PTH @ 60' RT TO 200' RT
286 285
570 285
284 284
500 284
 $\frac{284.5}{0.164} = 444.53 \text{ FT}^2$
(12.07)

STONE FILL TYPE III KRM 12-22-06
MAINLINE 110' LT TO PTH @ 60' RT
200 200.5
401 200.5
200 199.5
299 199.5
 $\frac{200}{0.164} = 312.50 \text{ FT}^2$

PTH @ 60' RT TO 200' RT
SCALED
 $\frac{1}{2} (2' \times 2') = 2.00 \text{ FT}^2$

STONE FILL TYPE II KRM 12-22-06
MAINLINE 110' LT TO PTH @ 60' RT
32 32
64 32
64 32
 $\frac{32}{0.164} = 50.00 \text{ FT}^2$

PTH @ 60' RT TO 200' RT
648 648.5
1297 648.5
650 648.5
1297 648.5
 $\frac{648.5}{0.164} = 1013.28 \text{ FT}^2$

ADDITIONAL
STONE FILL
TYPE I+
366 SF

INV. 906.00

175"
OFFSET
LINE

STONE FILL TYPE II (MODIFIED) - C.O. #
TRANSITION FROM
202+10 (ORIGINAL DESIGN)
TO 202+20 (JULY 2006 DESIGN)

PTH

OCL

1-2.3

F.G. = 846.19

-0.080 0.080

1-4 1-4

INV. 840.83

INV. 843.50

202+20

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xsl5.1

PLOT DATE: 20-NOV-2006
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 48 A OF 63

GEOTEXTILE UNDER STONE FILL - ITEM 649.31
TO EXTEND TO UPPER LIMITS OF
STONE FILL TYPE II (MODIFIED)

ADDITIONAL
STONE FILL
TYPE II
262 SF

202+40 - 164.74'
N 729808.3705
E 1676447.9007

202+40 - 169.89'
N 729803.1828
E 1676448.2920

202+40 - 205.08
N 729768.1447
E 1676450.9346

EARTH BORROW
ROUNDING

UPDATED
GROUND SURVEY
MAY 2006
USED FOR COMMON

COMMON KRM 12-22-06
MAINLINE 110' LT TO PTH @ 60' RT
231 230
460 229 $\frac{229.5}{0.64} = 358.59 \text{ FT}^2$
458

PTH @ 60' RT TO 260' RT
(BROKE INTO TWO PARTS)
(PTH @ 60' RT TO 165' RT)
450 449 $\frac{450.5}{0.64} = 703.91 \text{ FT}^2$
453 452
904

(165' RT TO 260' RT)
9 8.5
10 9 $\frac{8.75}{0.64} = 13.67 \text{ FT}^2$
18 717.58 FT^2
CJ 12-07

STONE FILL TYPE III KRM 12-22-06
MAINLINE 110' LT TO PTH @ 60' RT
197 196
392 $\frac{196.5}{0.64} = 307.03 \text{ FT}^2$
198 197
394

PTH @ 60' RT TO 260' RT
 $\frac{1}{2}(1.5' \times 1.3') = 0.98 \text{ FT}^2$

STONE FILL TYPE II KRM 12-22-06
MAINLINE 110' LT TO PTH @ 60' RT
36 36
72 35 $\frac{35.75}{0.64} = 55.86 \text{ FT}^2$
35 35.5
71

PTH @ 60' RT TO 260' RT
649 649.5
1299 $\frac{649.25}{0.64} = 1014.45 \text{ FT}^2$
652 649
1298

INV. 906.50

ADDITIONAL
STONE FILL
TYPE II
304 SF

INCL # 3 202+40 207' RT
SEE SHEET 14 & 17

75'
OFFSET
LINE

F.G. = 846.51

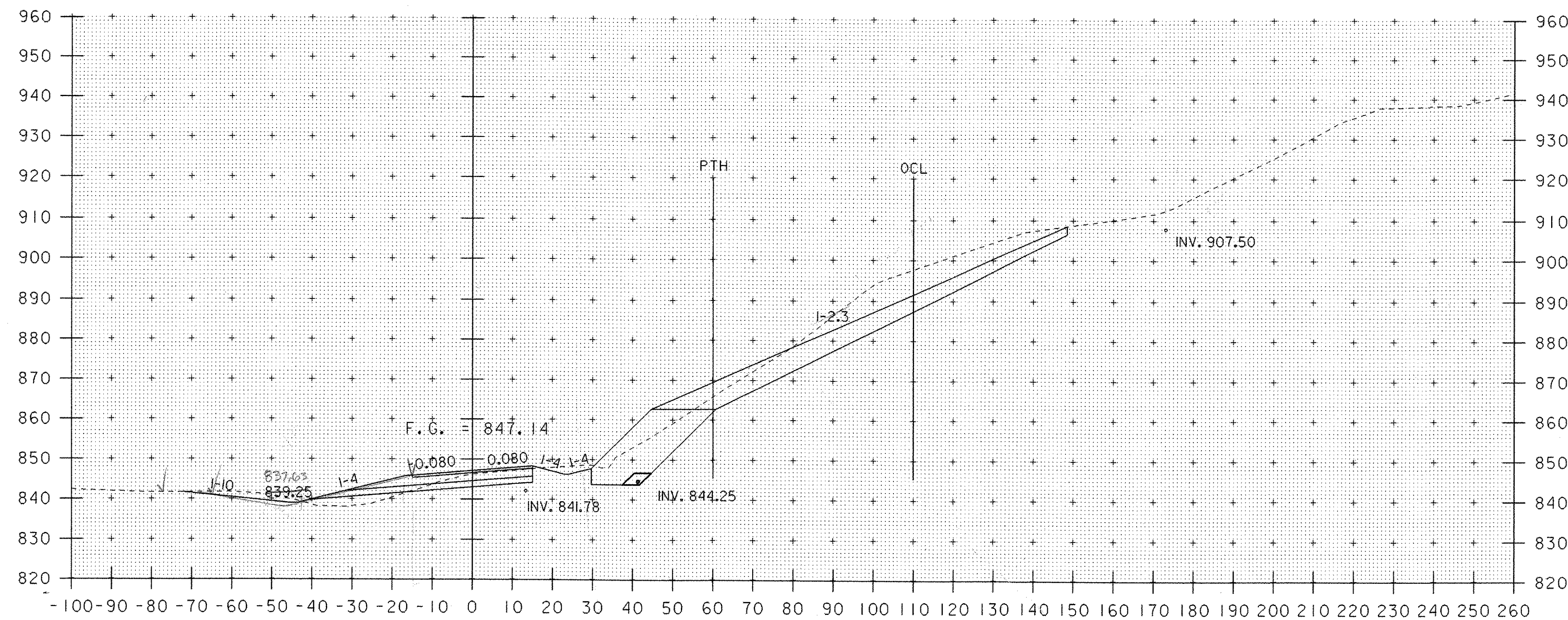
-0.080 0.080

INV. 841.14

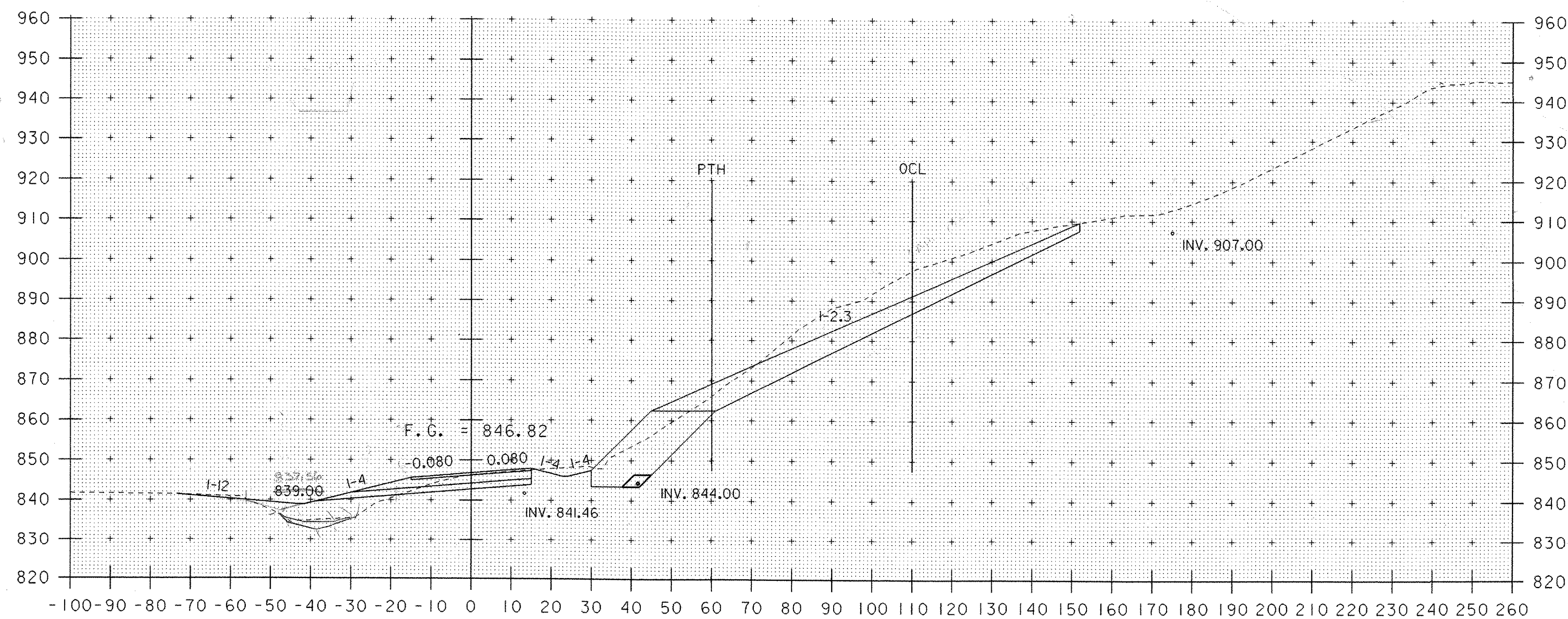
INV. 843.75

202+40

PROJECT NAME:	HARDWICK	FILE NAME:	d04e060xslx.dgn	PLOT DATE:	20-NOV-2006
PROJECT NUMBER:	STP ST 030-3(4)	PROJECT LEADER:	A. BOMBARDIER	DRAWN BY:	M. NUTTER
		DESIGNED BY:	M. NUTTER	CHECKED BY:	A. BOMBARDIER
		IPARM NAME:	de060xsl5.1		SHEET 43 B OF 63



202+80



202+60

SEE FINAL SECTIONS PLOT DATE 11-20-06
FOR COMMON, STONE FILL III & II,
COMMON AREA FOR 42' LT TO 70' LT KRM 12-27-06
8 7.5
15 7.75
8 0.16 = 48.44 FT²
16

MCH 31
3 3
3 35
325 / 0.16 = 2031 FT²
25

SEE FINAL SECTIONS PLOT DATE 11-20-06
FOR COMMON, STONE FILL III & II,
COMMON AREA FOR 58' LT TO 72' LT KRM 12-27-06
CJ 12-09
1 1
2 1 1/0.16 = 6.25 FT²
1 2

0 20 40
SCALE IN FEET

STA. 202+60 TO STA. 202+80

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xsl7.1	SHEET 49 OF 63

STONE FILL TYPE II (MODIFIED) - C.O. #
 TRANSITION FROM
 202+65 (JULY 2006 DESIGN)
 TO 202+75 (ORIGINAL DESIGN)

ADDITIONAL
 STONE FILL
 TYPE I
 244 SF

202+60 - 157.39'
 N 729818.2555
 E 1676473.8221

202+60 - 162.97'
 N 729812.6617
 E 1676474.4807

202+60 - 196.82'
 N 729779.0960
 E 1676478.4330

EARTH BORROW
 ROUNDING

UPDATED
 GROUND SURVEY
 MAY 2006
 USED FOR COMMON

COMMON KRM 12-27-06
 110' LT TO PTH @ 60' RT
 SEE PLAN SHEET 49 OF 63
 COMMON FOR SS' LT - 72' LT 61.25 FT

PTH @ 60' RT TO 260' RT
 218 217.5
 435 218.25
 218 219
 438 219
 $\frac{218.25}{0.64} = 341.02 \text{ FT}^2$
 $\frac{341.02}{\sqrt{0.5 \times 0.5}} = 397.27 \text{ FT}^2$

PTH @ 60' RT TO 260' RT
 496 494.5
 989 495.5
 498 496.5
 993 496.5
 $\frac{495.5}{0.64} = 774.22 \text{ FT}^2$
 $\frac{774.22}{\sqrt{0.5 \times 0.5}} = 1100.00 \text{ FT}^2$

STONE FILL TYPE III KRM 12-27-06
 110' LT TO PTH @ 60' RT 63 1-1-07

110' LT TO PTH @ 60' RT
 207 206
 412 206
 206 204.5
 409 204.5
 $\frac{205.25}{0.64} = 320.70 \text{ FT}^2$
 PTH @ 60' RT TO 260' RT

$\frac{1}{2} (1' \times 1') = 0.50 \text{ FT}^2$

STONE FILL TYPE III KRM 12-27-06
 110' LT TO PTH @ 60' RT 63 1-1-07
 42 42
 84 42
 $\frac{42}{0.64} = 65.63 \text{ FT}^2$

PTH @ 60' RT TO 260' RT
 494 494
 988 494.5
 496 495
 990 495
 $\frac{494.5}{0.64} = 772.66 \text{ FT}^2$

ADDITIONAL
 STONE FILL
 TYPE II
 289 SF

175'
 OFFSET
 LINE

GEOTEXTILE UNDER STONE FILL - ITEM 649.31
 TO EXTEND TO UPPER LIMITS OF
 STONE FILL TYPE II (MODIFIED)

F.G. = 846.82

-0.080 0.080

INV. 841.46

INV. 844.00

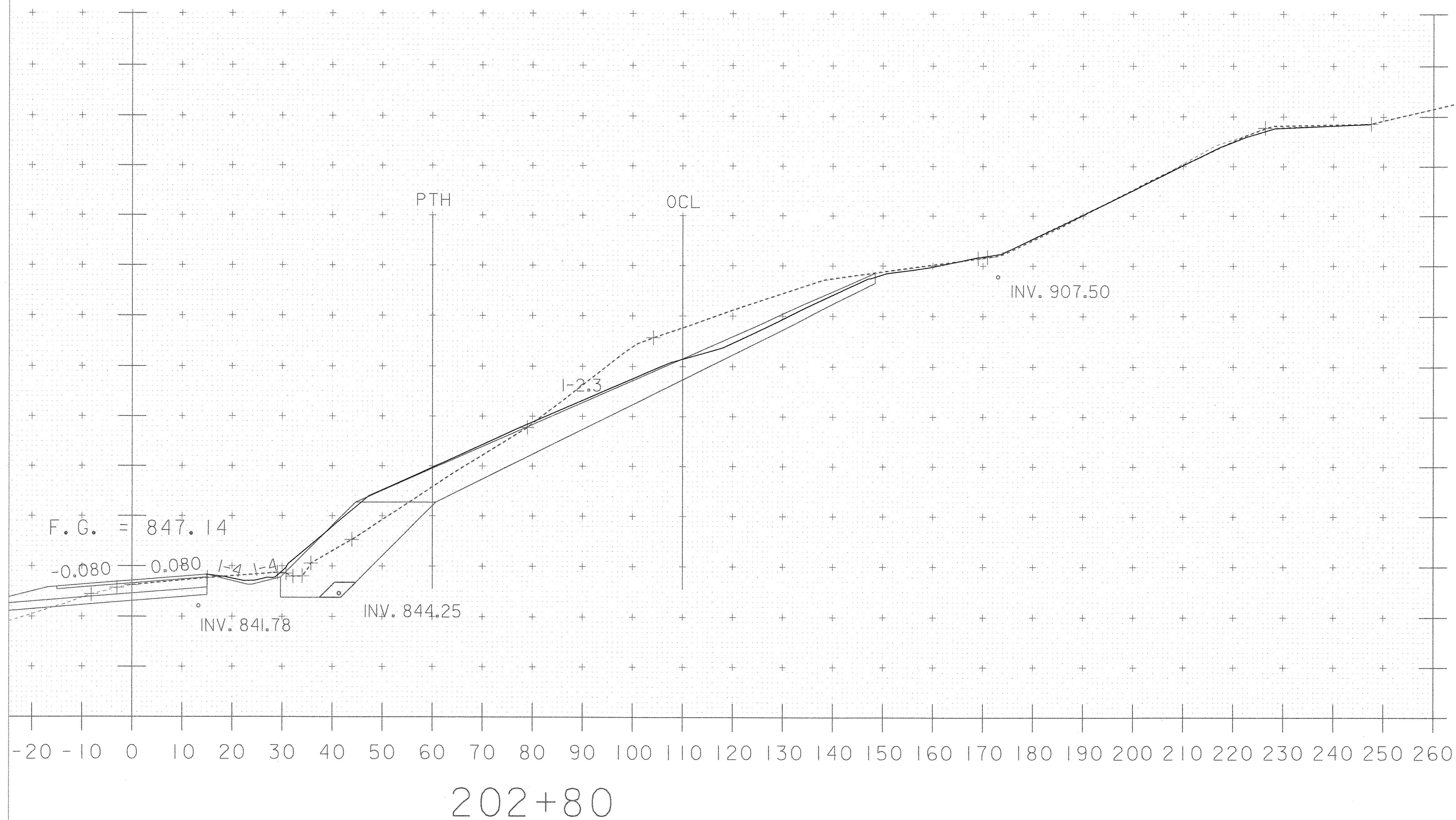
INV. 907.00

PTH

OCL

202+60

PROJECT NAME:	HARDWICK	FILE NAME:	d04e060xslx.dgn	PLOT DATE:	20-NOV-2006
PROJECT NUMBER:	STP ST 030-3(4)	PROJECT LEADER:	A. BOMBARDIER	DRAWN BY:	M. NUTTER
		DESIGNED BY:	M. NUTTER	CHECKED BY:	A. BOMBARDIER
		IPARM NAME:	de060xsl5.1	SHEET	49A OF 63



UPDATED GROUND SURVEY MAY 2006

USED FOR COMMON

COMMON KRM 12-27-06
MAINLINE 110' LT TO PTH @ 60' RT
SEE PLAN SHEET 49 OF 63
COMMON 42' LT TO 70' LT 48.44 FT²

COMMON 20' LT TO PTH @ 60' RT

188 189

378 189

187 188

376 188

$$\frac{188.5}{0.64} = 294.53 \text{ FT}^2$$

$$342.97 \text{ FT}^2$$

PTH @ 60' RT TO 260' RT

429 429.5

859 429.5

428 430

860 430

$$\frac{429.75}{0.64} = 671.48 \text{ FT}^2$$

$$1/2 (1.2 \times 2.9)$$

STONE FILL TYPE III KRM 12-27-06
MAINLINE 110' LT TO PTH @ 60' RT

186 186

372 186

186 185

370 185

$$\frac{185.5}{0.64} = 289.84 \text{ FT}^2$$

PTH @ 60' RT TO 260' RT

SCALED

$$1/2 (0.7' \times 0.7') = 0.25 \text{ FT}^2$$

STONE FILL TYPE II KRM 12-27-06
MAINLINE 110' LT TO PTH @ 60' RT

34 34

68 34

34 34

68 34

$$\frac{34}{0.64} = 53.13 \text{ FT}^2$$

PTH @ 60' RT TO 260' RT

254 259

508 259

255 254.5

509 254.5

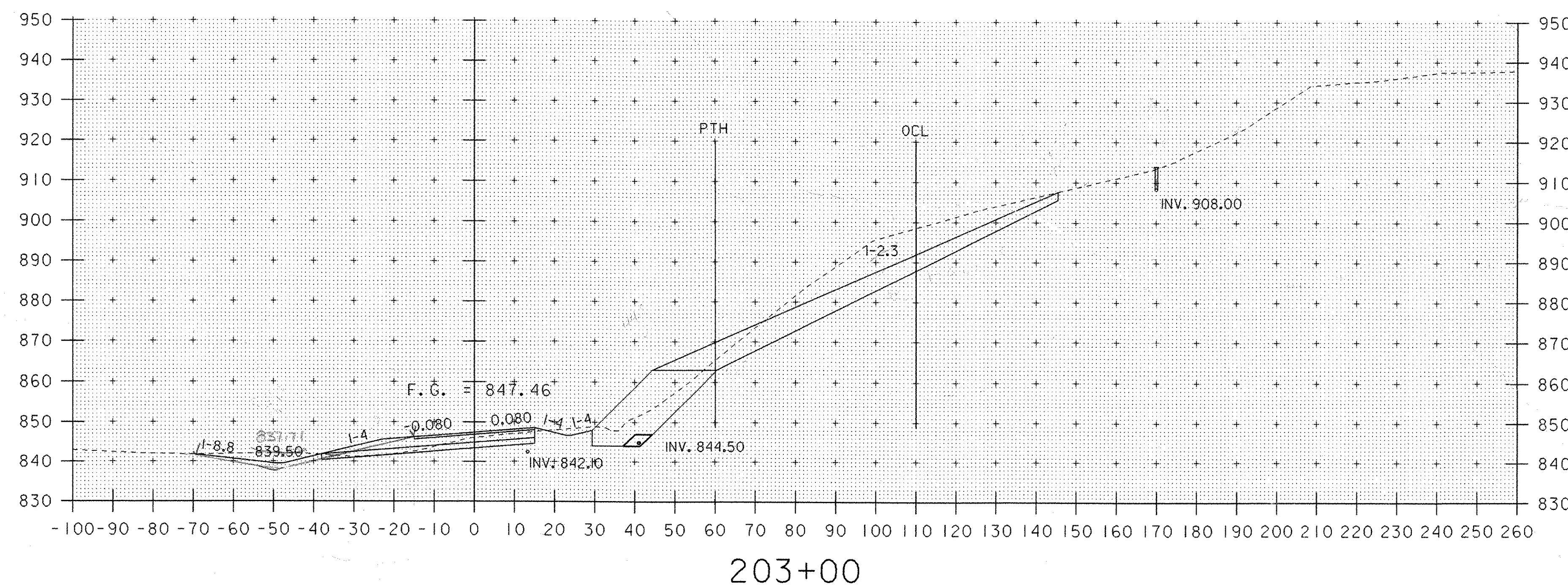
$$\frac{254.25}{0.64} = 397.26 \text{ FT}^2$$

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xsl5.l

PLOT DATE: 20-NOV-2006
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 49 IS OF 63

SEE FINAL SECTIONS PLOT DATE 11-20-06



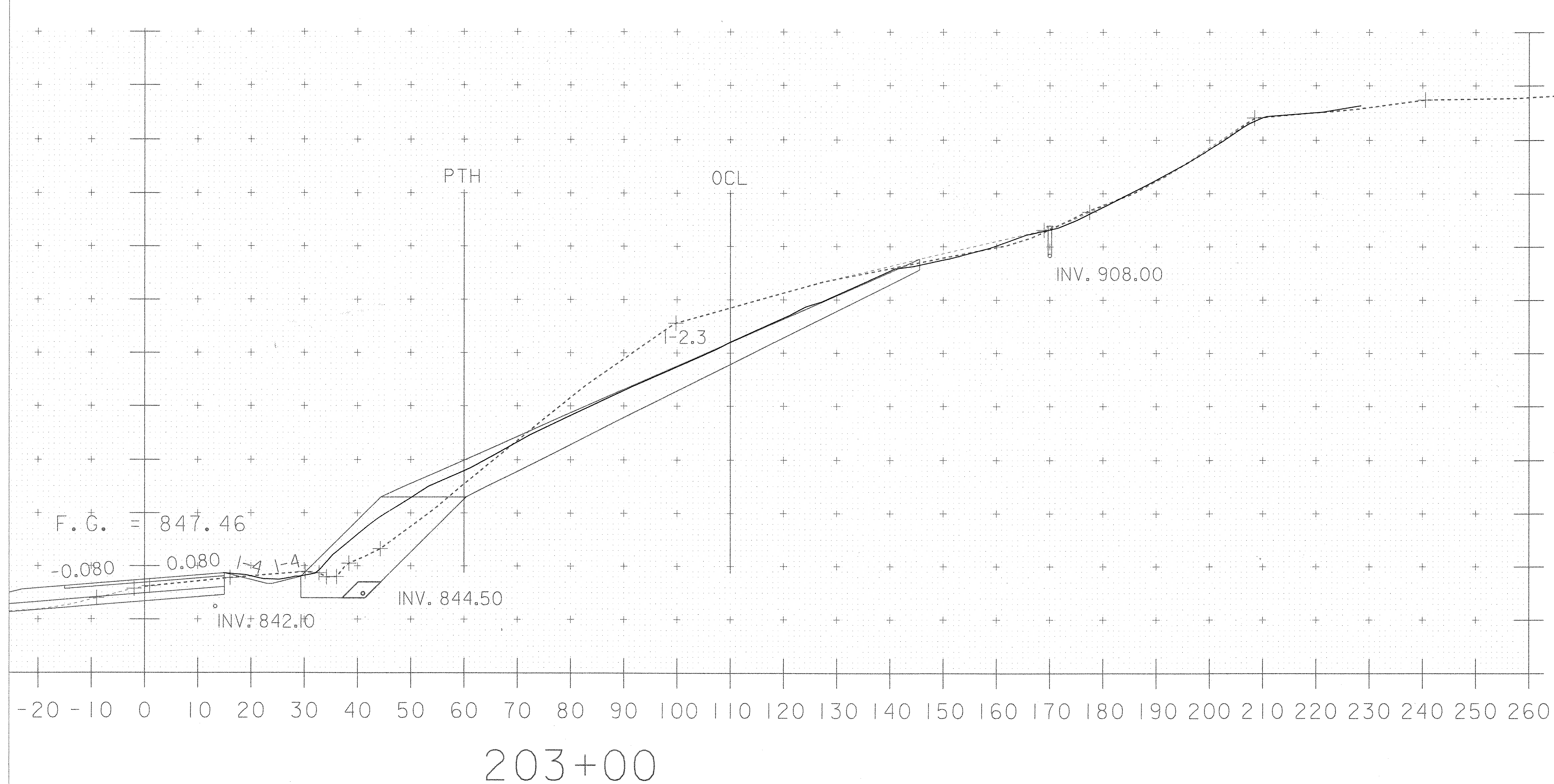
SEE FINAL SECTIONS PLOT DATE 11-20-06 FOR COMMON, STONE FILL III & II
 PLANIMETERED AREAS,
 COMMON AREA FOR 20' LT TO 70' LT. REM 12-27-06
 (J) 1-2-07

11	10	
20	10	
10	10	$\frac{10}{0.16} = 62.50 \text{ FT}^2$
20	10	

0 20 40
 SCALE IN FEET

STA. 203+00 TO STA. 203+00

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xsl8.1	SHEET 50 OF 63



UPDATED
GROUND SURVEY
MAY 2006
USED FOR COMMON

COMMON KRM 12-27-06
MAINLINE 110' LT TO PTH @ 60' RT
SEE PLAN SHEET 50 OF 63
COMMON 20' LT - 70' LT 62.50 FT²
20' LT TO PTH @ 60' RT
151 150
300 150
148 149.5 $\frac{149.75}{0.64} = 233.98 \text{ FT}^2$
299 299 $\frac{299.75}{0.64} = 296.48 \text{ FT}^2$
CS 1-4-07

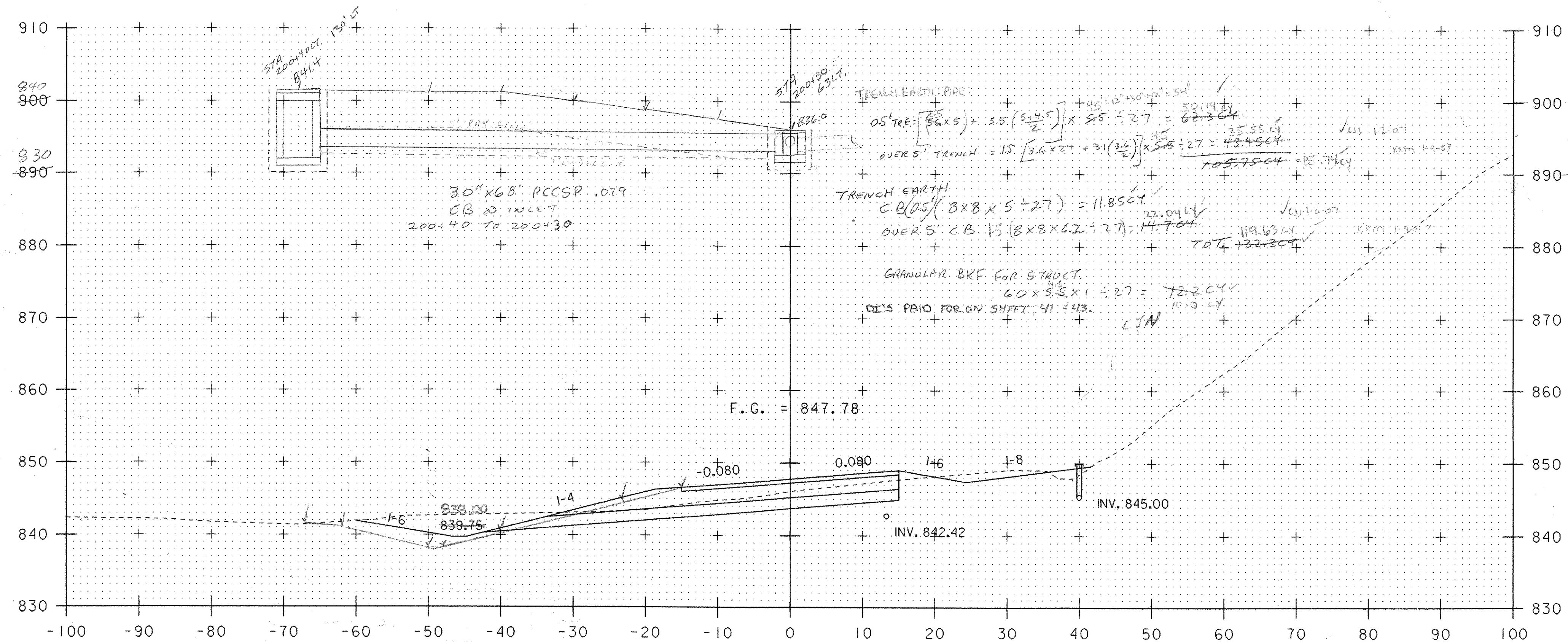
PTH 60' RT TO 260' RT
443 443
889 444.5 $\frac{443.25}{0.64} = 692.58 \text{ FT}^2$
440 442 $\frac{441.5}{0.64} = 690.00 \text{ FT}^2$
884 884 CS 1-4-07

STONE FILL TYPE III KRM 12-27-06
110' LT TO PTH @ 60' RT CS 1-4-07
157 157
314 157
156 156 $\frac{156.5}{0.64} = 244.53 \text{ FT}^2$
312 312

STONE FILL TYPE II KRM 12-27-06
110' LT TO PTH @ 60' RT CS 1-4-07
18 18
36 18
18 18 $\frac{18.5}{0.64} = 28.13 \text{ FT}^2$
36 36

PTH @ 60' RT TO 260' RT
241 239.5 $\frac{239.5}{0.64} = 374.22 \text{ FT}^2$
479 479
239 239.5 $\frac{239.5}{0.64} = 374.22 \text{ FT}^2$
479 479

PROJECT NAME:	HARDWICK	FILE NAME:	d04e060xsix.dgn	PLOT DATE:	20-NOV-2006
PROJECT NUMBER:	STP ST 030-3(4)	PROJECT LEADER:	A. BOMBARDIER	DRAWN BY:	M. NUTTER
		DESIGNED BY:	M. NUTTER	CHECKED BY:	A. BOMBARDIER
		IPARM NAME:	de060xsl5.1	SHEET	50 A OF 63



203+20



Common KRM 12-27-06

132 131
262
131
262

$\frac{131}{0.04} = 204.69 \text{ FT}$

Common KRM 12-28-06

PTH @ 60' RT TO 260' RT

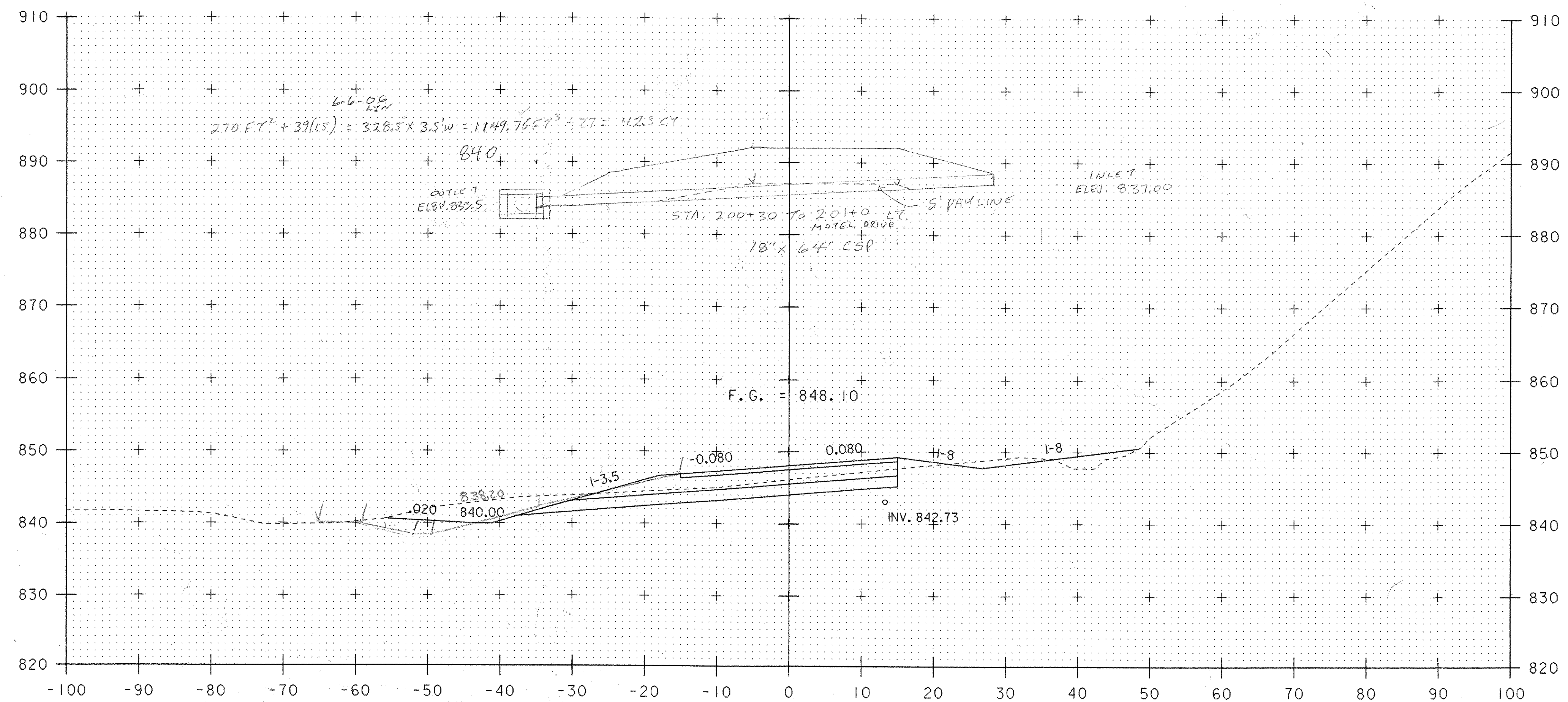
STONE FILL TYPE II, III KRM 1-3-07
SEE PLAN SHEET 14 OF 63

PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xsl9.1

PLOT DATE: 18-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 51 OF 63

STA. 203+20 TO STA. 203+20

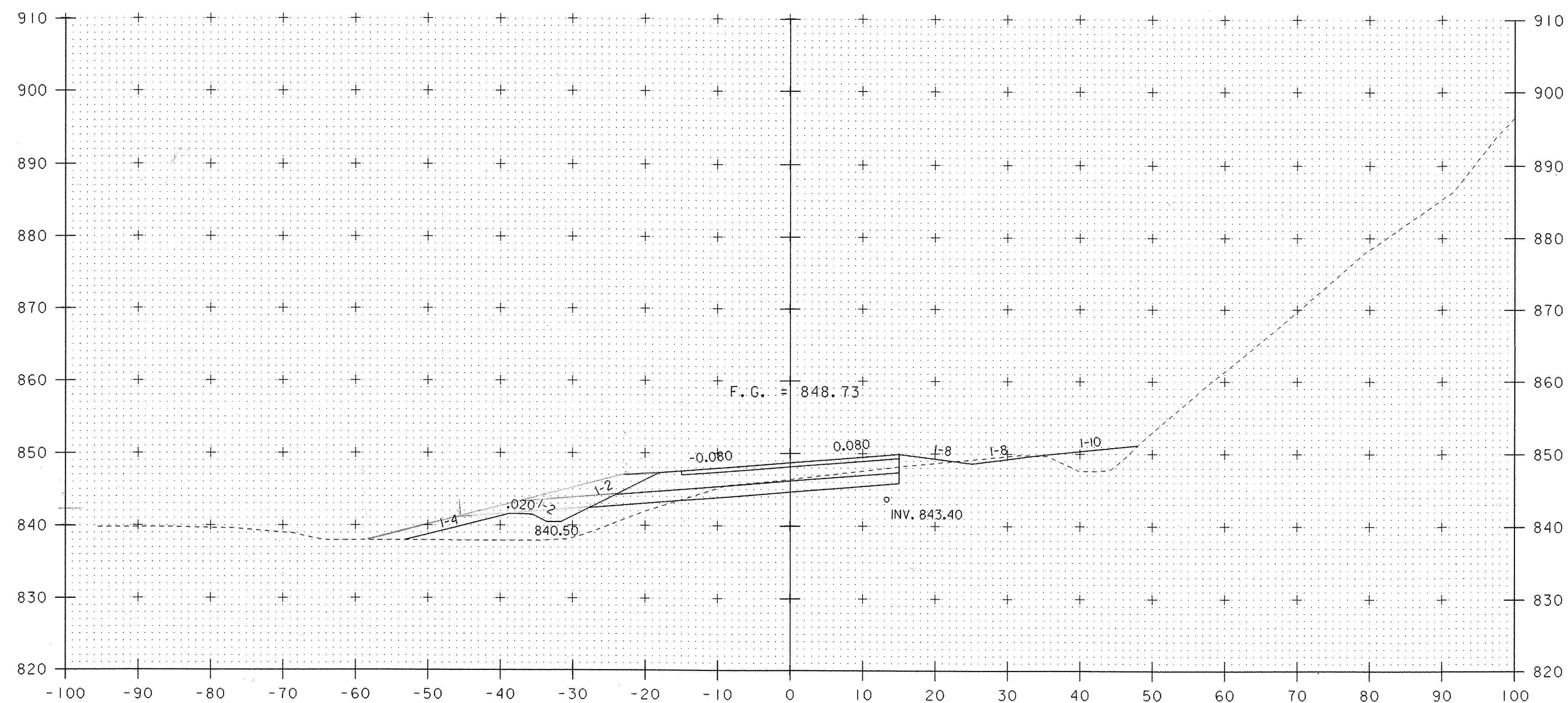


Common KRM 12-27-06
 WJ 1-2-07
 122 120
 240 120
 118 118
 236 118
 $\frac{119}{0.64} = 185.94 \text{ FT}^2$

0 10 20
 SCALE IN FEET

STA. 203+40 TO STA. 203+40

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xs20.i	SHEET 52 OF 63



Common Rm 12-28-06
 35 35
 70 35
 36 35
 70 35
 $\frac{35}{0.69} = 54.69 \text{ FT}^2$

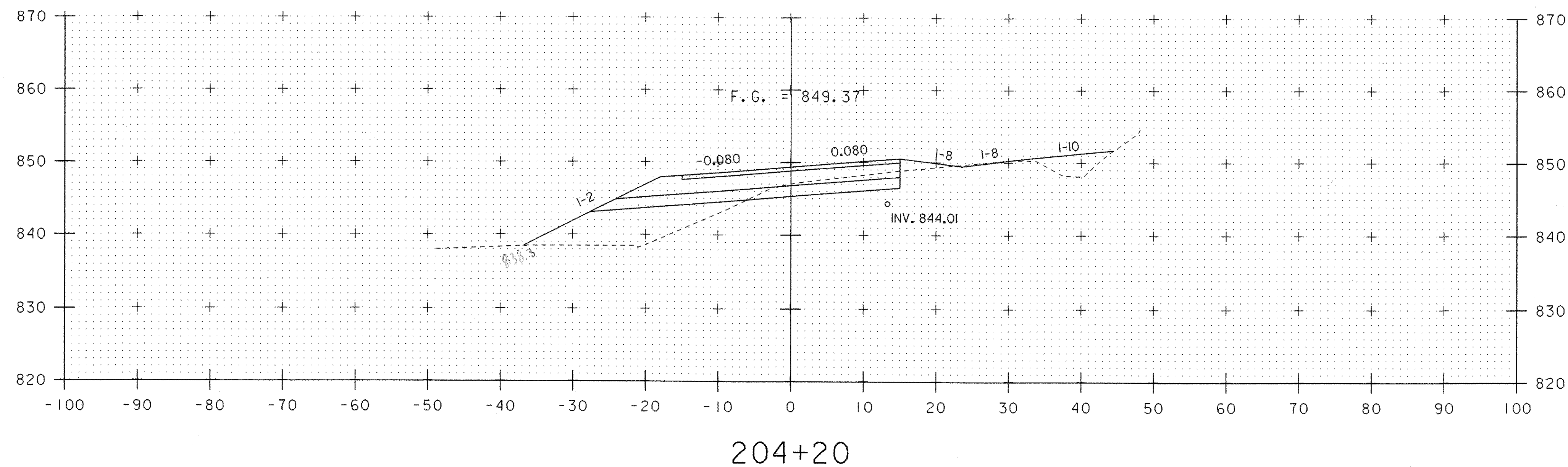
0 10 20
 SCALE IN FEET

STA. 203+80 TO STA. 203+80

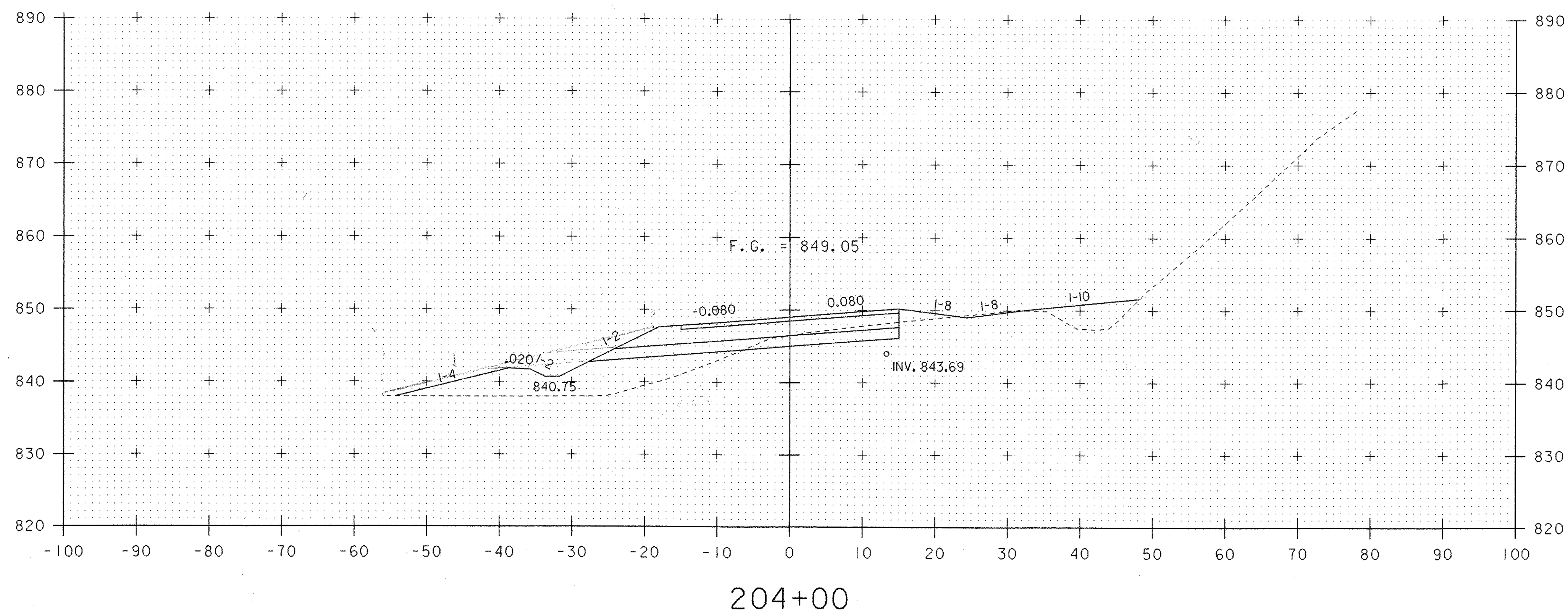
PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs22.i

PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 54 OF 63



Common KRM 12-28-06
 24 25
 50
 23 24
 48
 $\frac{24.5}{0.64} = 38.28 \text{ FT}^2$



Common KRM 12-28-06
 23 24
 48
 24 24
 48
 $\frac{24}{0.64} = 37.50 \text{ FT}^2$

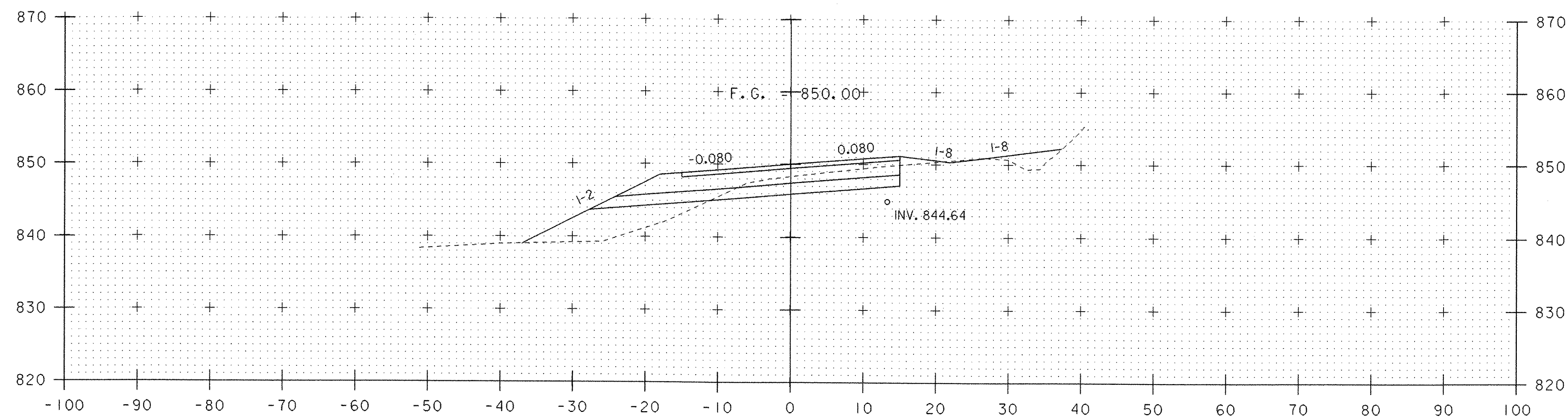
0 10 20
 SCALE IN FEET

STA. 204+00 TO STA. 204+20

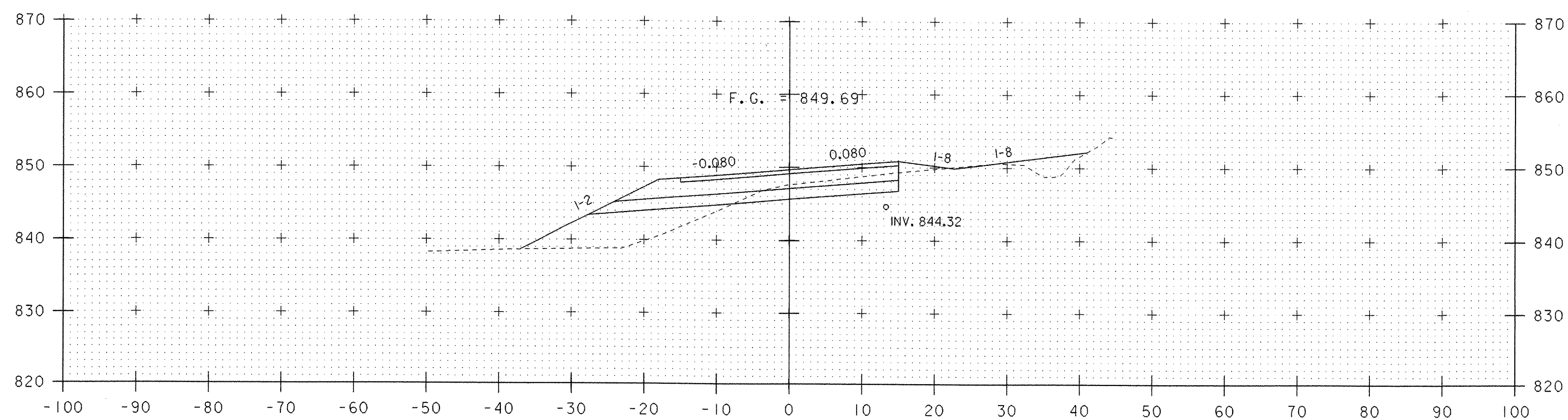
PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs23.i

PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 55 OF 63



204+60



204+40

COMMON KRM 12-28-00
 38 38
 76 38
 $\frac{38}{0.64} = 59.38 \text{ FT}^2$

COMMON KRM 12-28-00
 29 28.5
 57 28.5
 $\frac{28.5}{0.64} = 44.92 \text{ FT}^2$

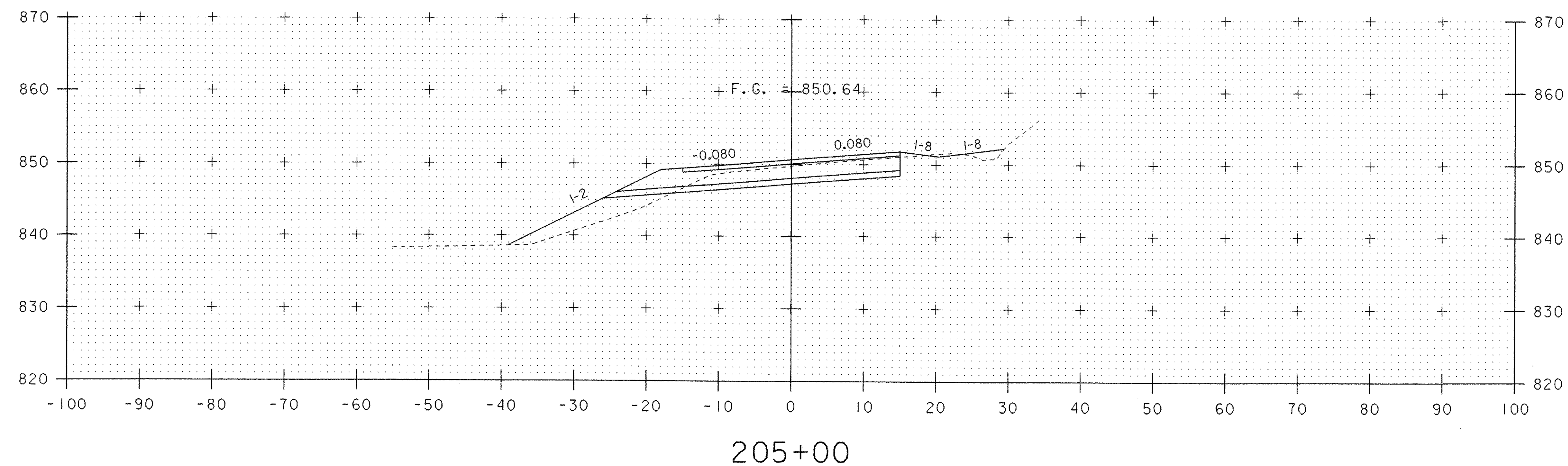
0 10 20
 SCALE IN FEET

STA. 204+40 TO STA. 204+60

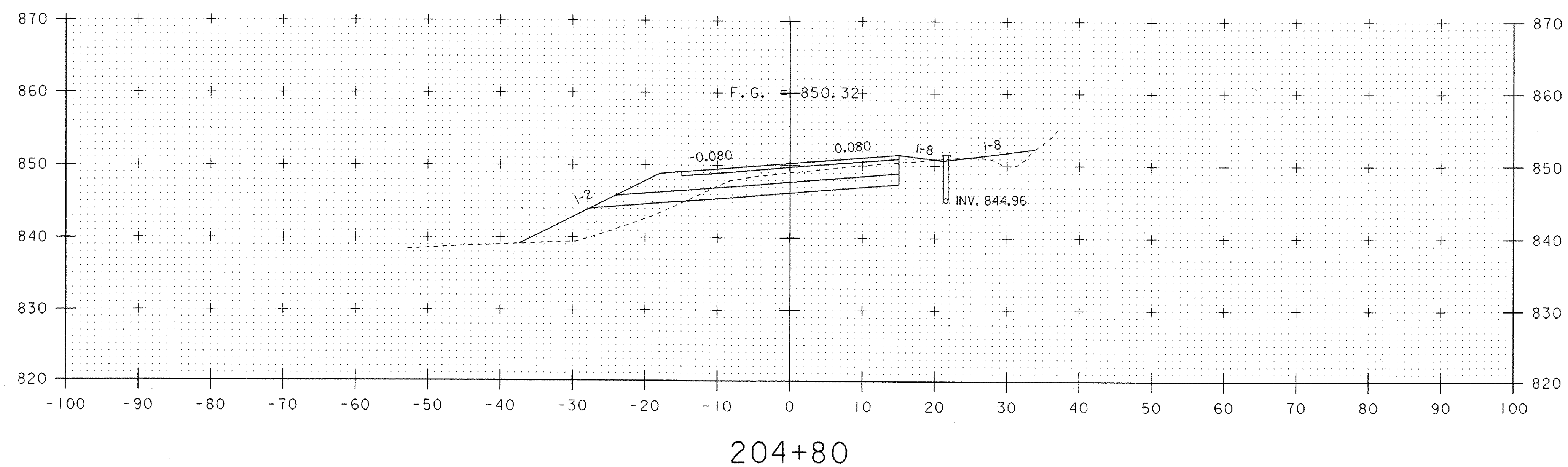
PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 PARM NAME: de060xs24.i

PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 56 OF 63



COMMON KRM 12-28-06
 47 46.5
 93 46.75
 47 47.0
 94 47.0
 $\frac{46.75}{2.64} = 73.05 \text{ FT}^2$



COMMON KRM 12-28-06
 48 47.5
 95 47.5
 47 47.5
 95 47.5
 $\frac{47.5}{2.64} = 74.22 \text{ FT}^2$

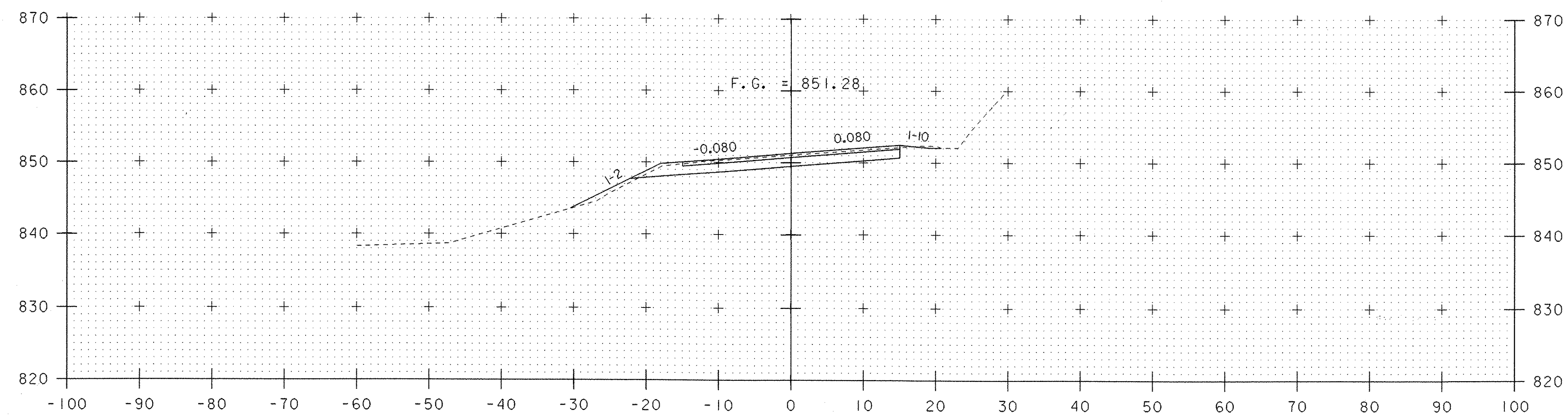
0 10 20
 SCALE IN FEET

STA. 204+80 TO STA. 205+00

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

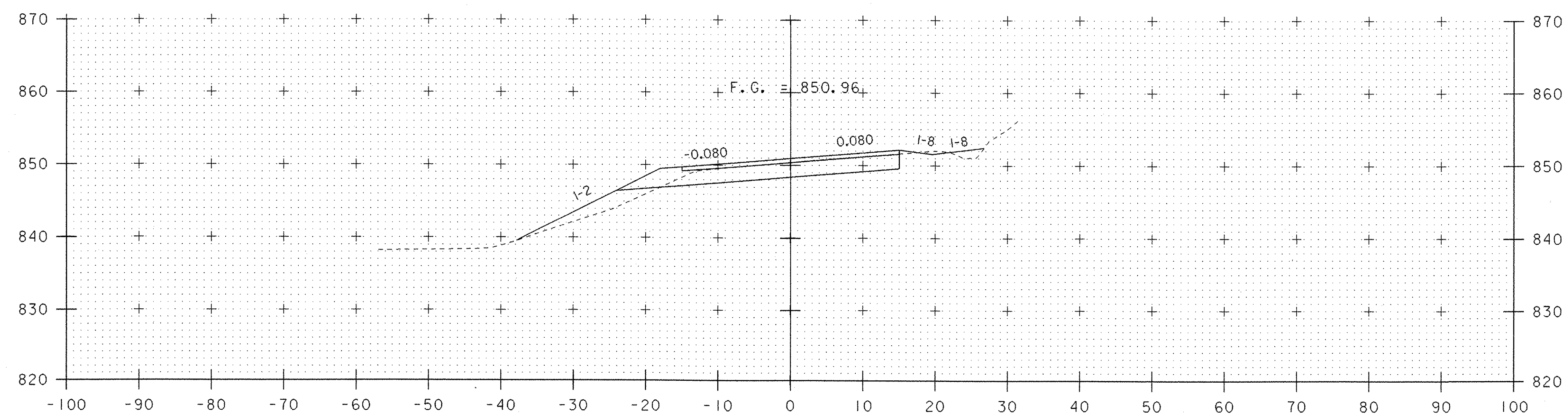
FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs25.i

PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 57 OF 63



205+40

Common KRM 12-28-00
 35 71 35.5
 33 69 34.5
 $\frac{35.0}{0.64} = 54.69 \text{ FT}^2$



205+20

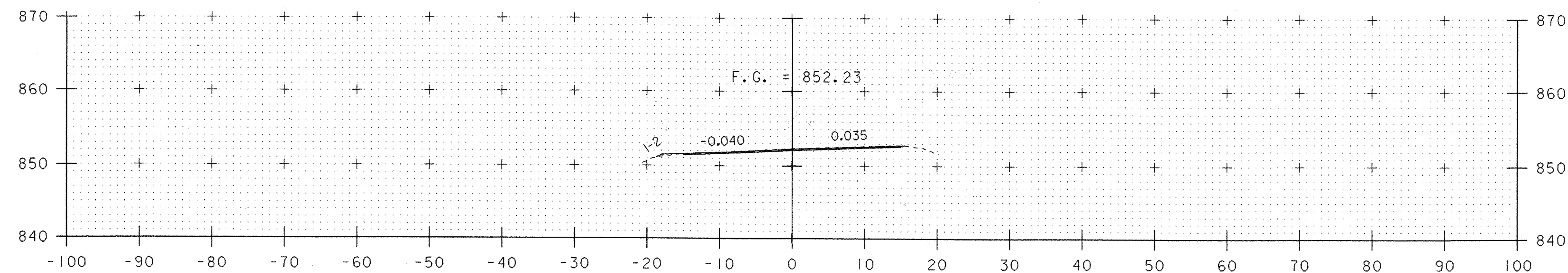
Common KRM 12-28-00
 40 80 40
 39 80 40
 $\frac{40}{0.64} = 62.50 \text{ FT}^2$

0 10 20
 SCALE IN FEET

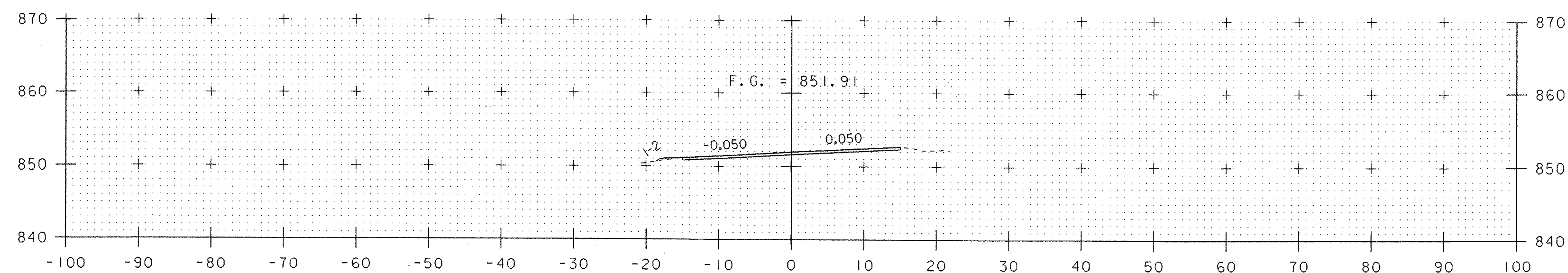
STA. 205+20 TO STA. 205+40

PROJECT NAME: HARDWICK
 PROJECT NUMBER: STP ST 030-3(4)

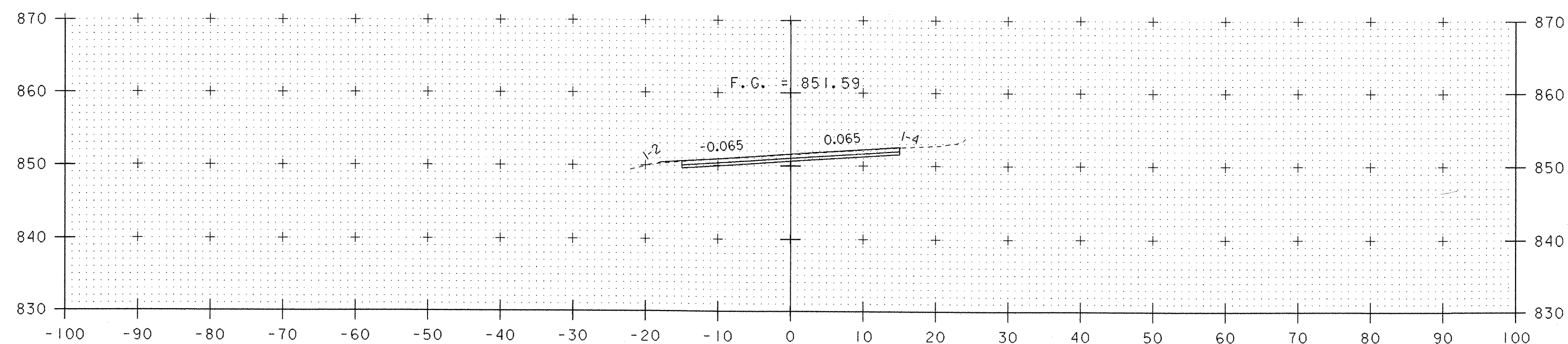
FILE NAME: d04e060xslx.dgn
 PROJECT LEADER: A. BOMBARDIER
 DESIGNED BY: M. NUTTER
 IPARM NAME: de060xs26.i
 PLOT DATE: 18-OCT-2005
 DRAWN BY: M. NUTTER
 CHECKED BY: A. BOMBARDIER
 SHEET 58 OF 63



206+00



205+80



205+60

COMMON KRM 12-28-06
C11 12-29-06

COMMON KRM 12-28-06
C11 12-29-06

18
36 18
18
36 18
 $\frac{18}{0.64} = 28.13 \text{ FTS}$

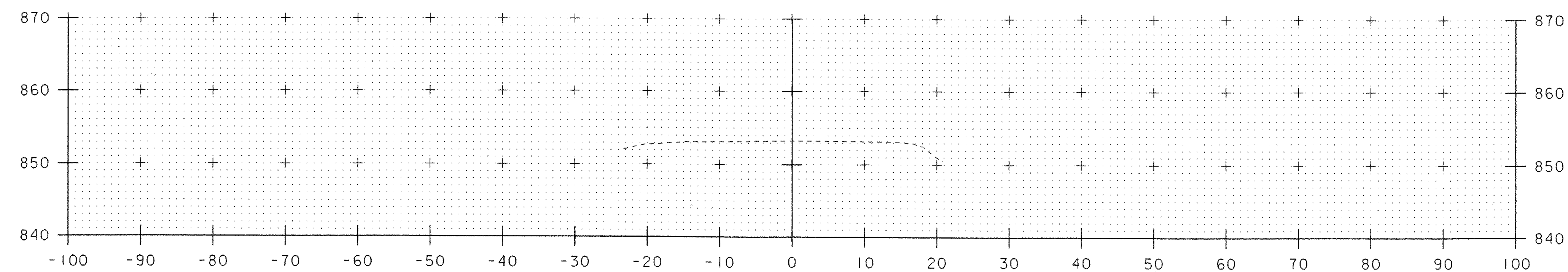
0 10 20
SCALE IN FEET

STA. 205+60 TO STA. 206+00

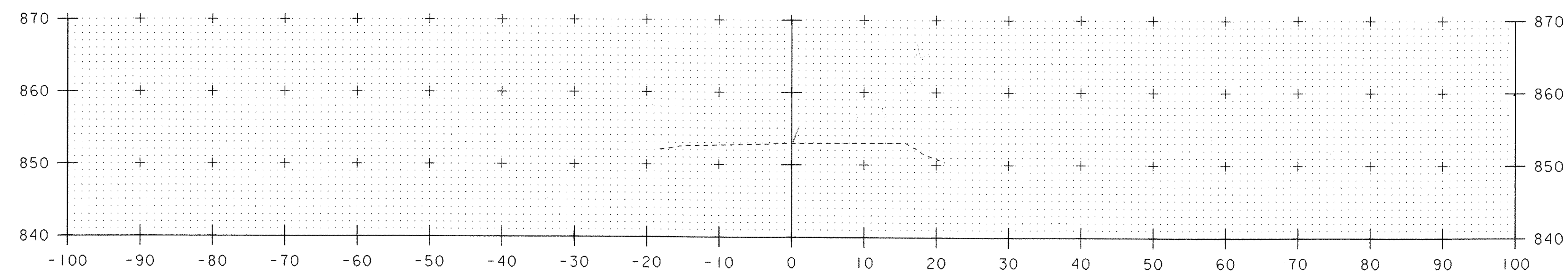
PROJECT NAME: HARDWICK
PROJECT NUMBER: STP ST 030-3(4)

FILE NAME: d04e060xslx.dgn
PROJECT LEADER: A. BOMBARDIER
DESIGNED BY: M. NUTTER
IPARM NAME: de060xs27.i

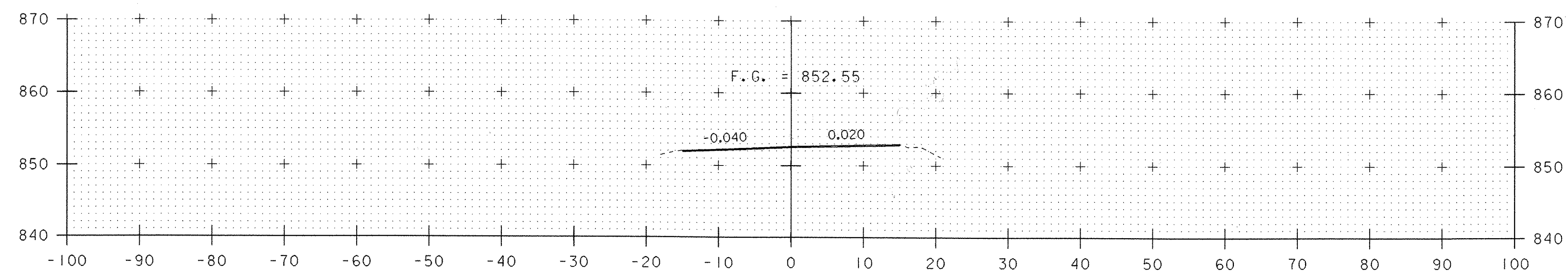
PLOT DATE: 18-OCT-2005
DRAWN BY: M. NUTTER
CHECKED BY: A. BOMBARDIER
SHEET 59 OF 63



206+60



206+40

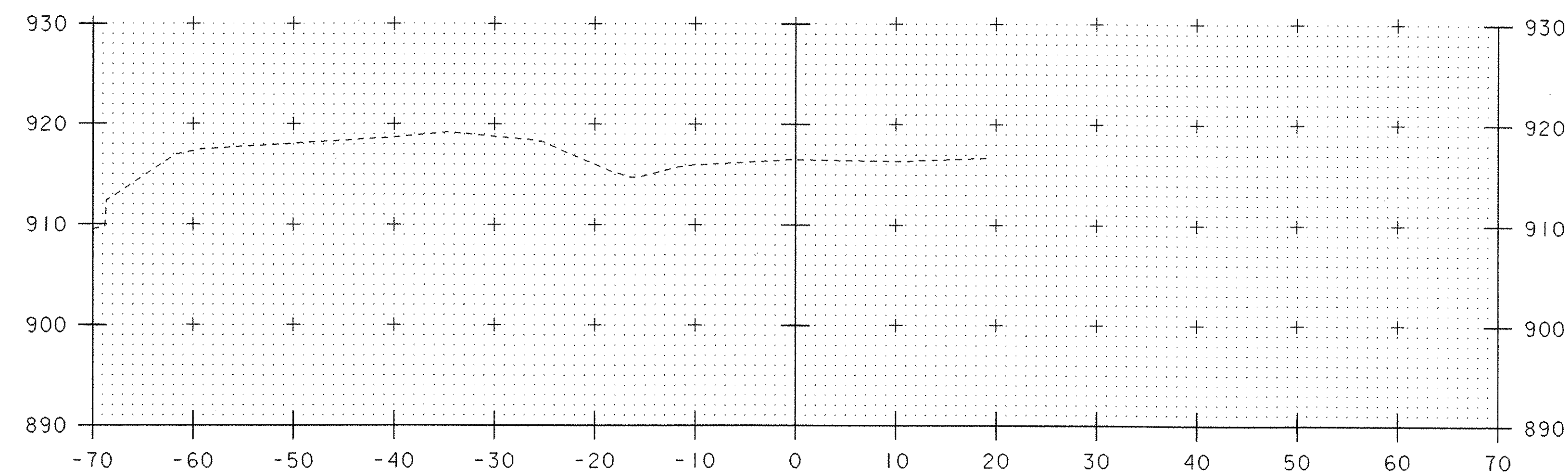


206+20
MATCH EXISTING

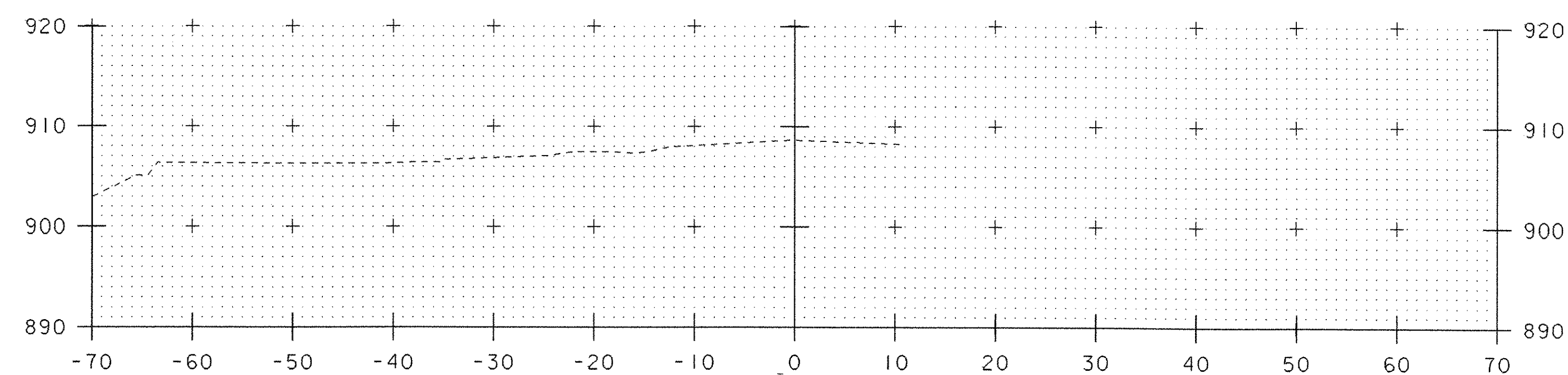


STA. 206+20 TO STA. 206+60

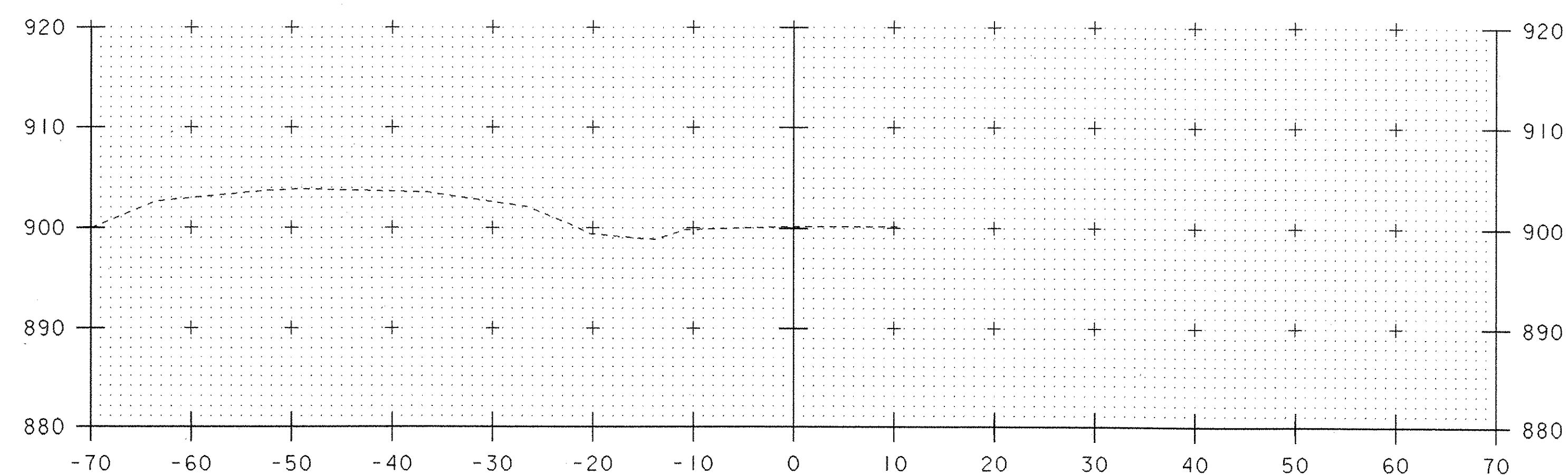
PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xs28.i	SHEET 60 OF 63



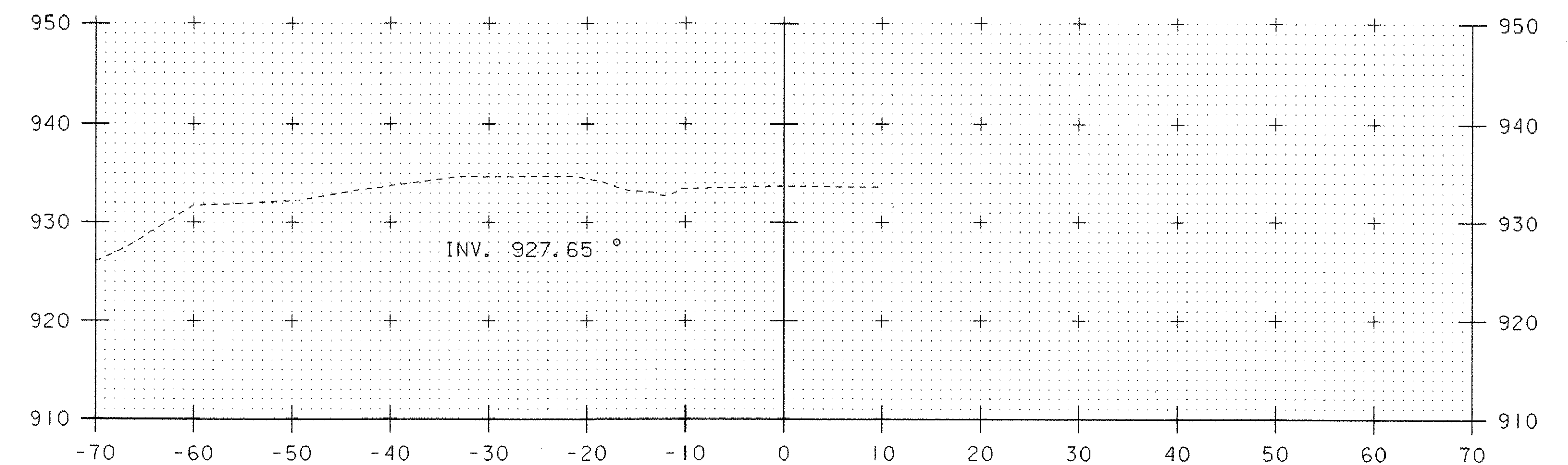
306+00



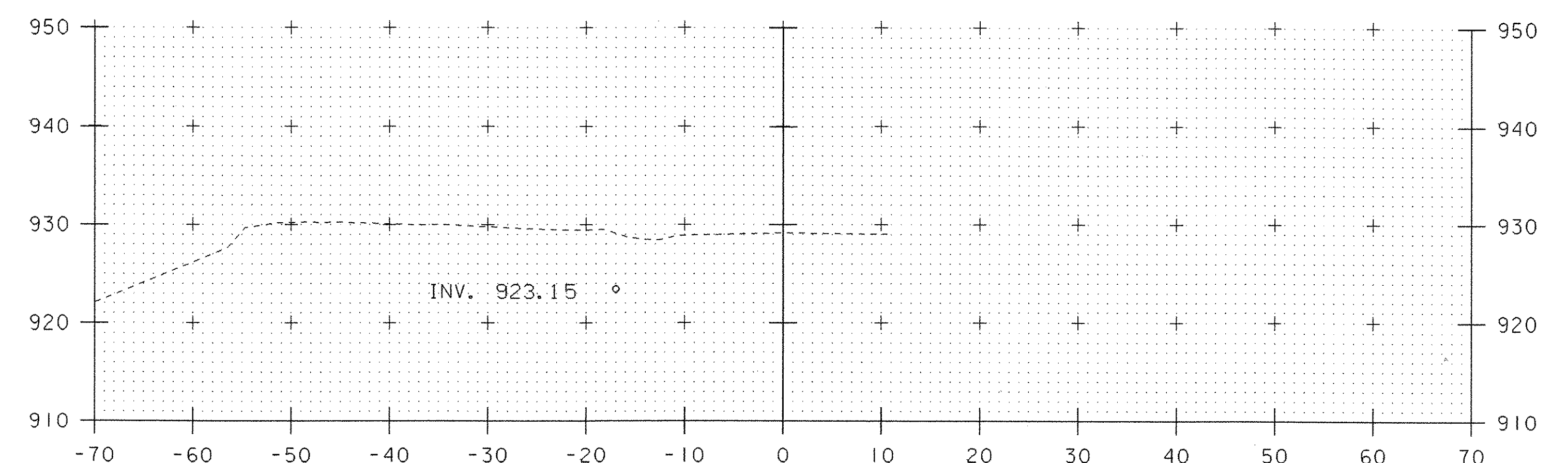
305+50



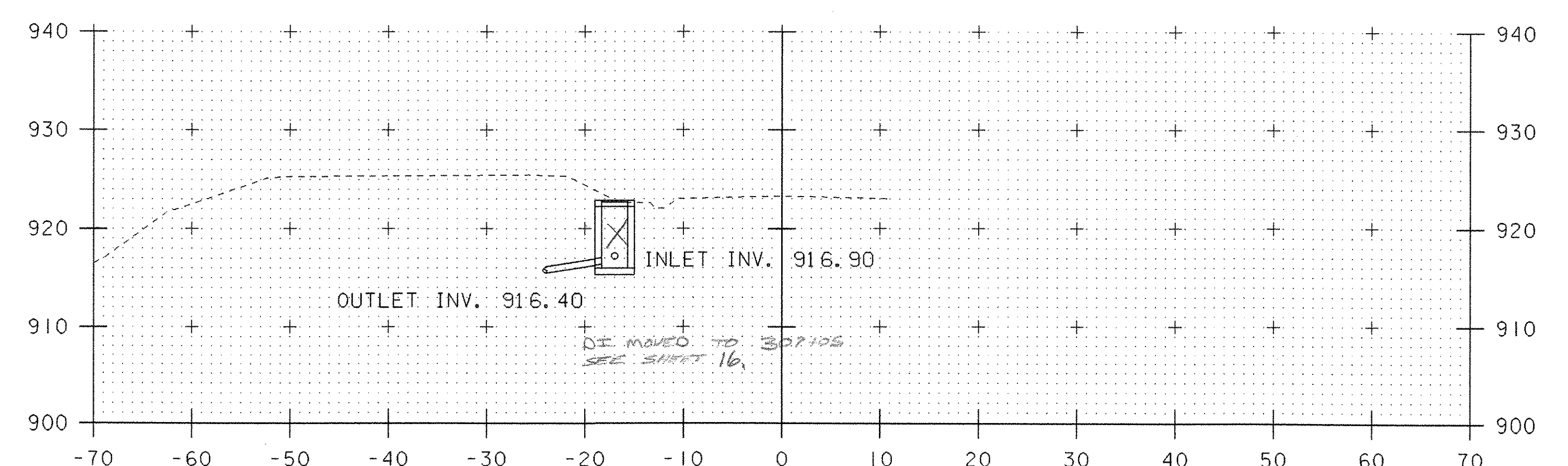
305+00



307+50



307+00

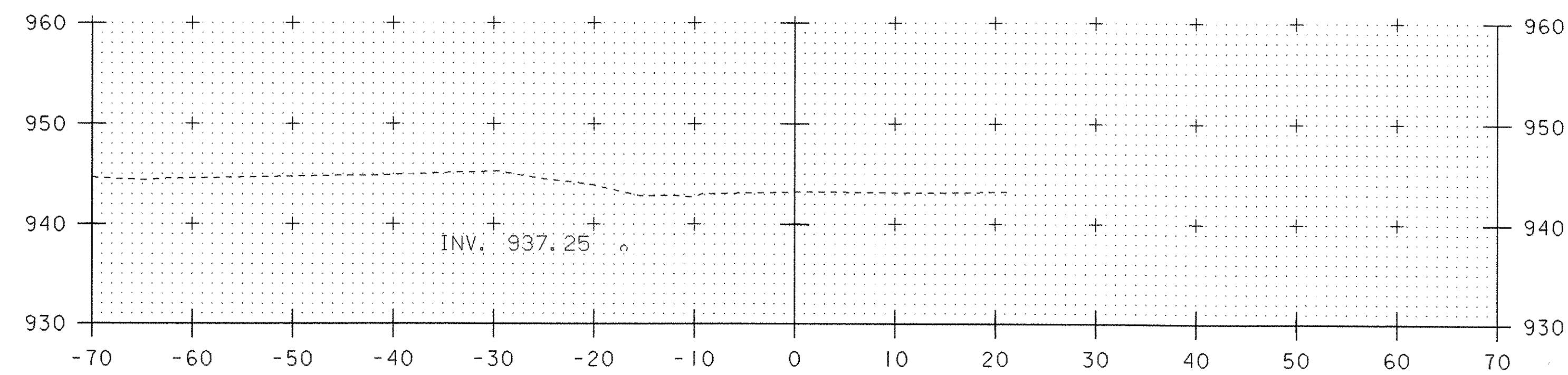


306+50

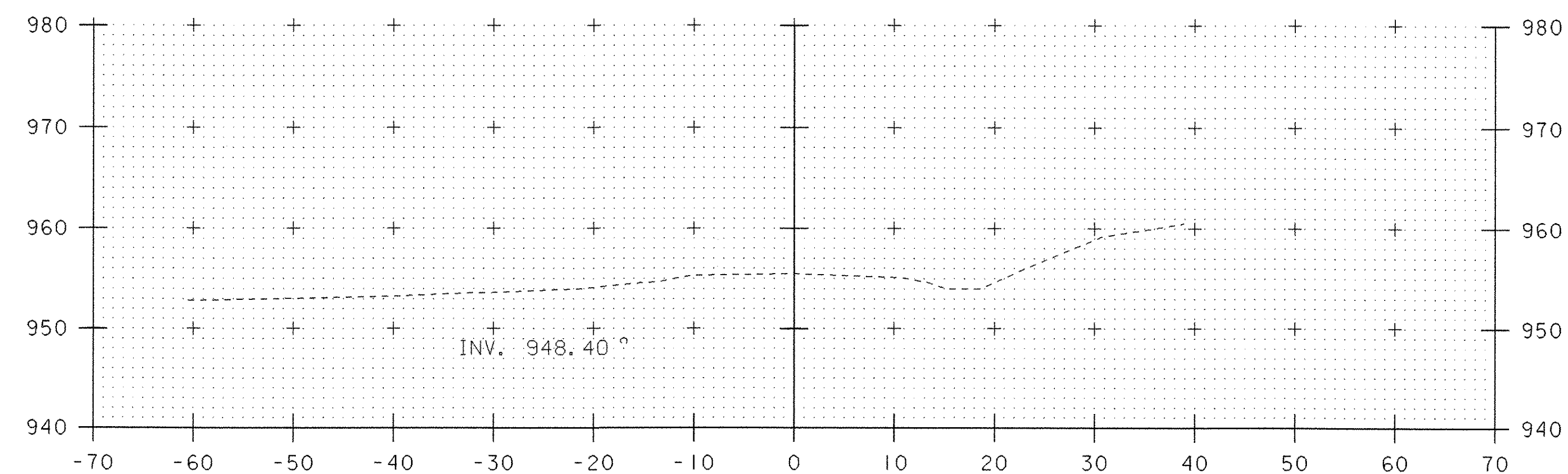


STA. 305+00 TO STA. 307+50

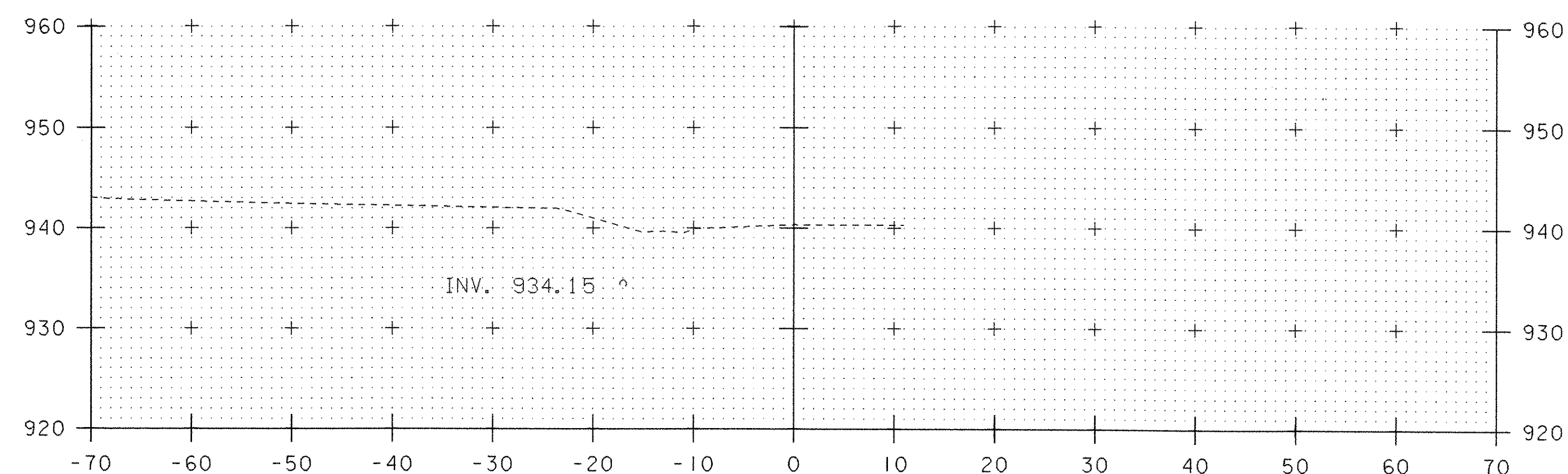
PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xs29.i	SHEET 61 OF 63



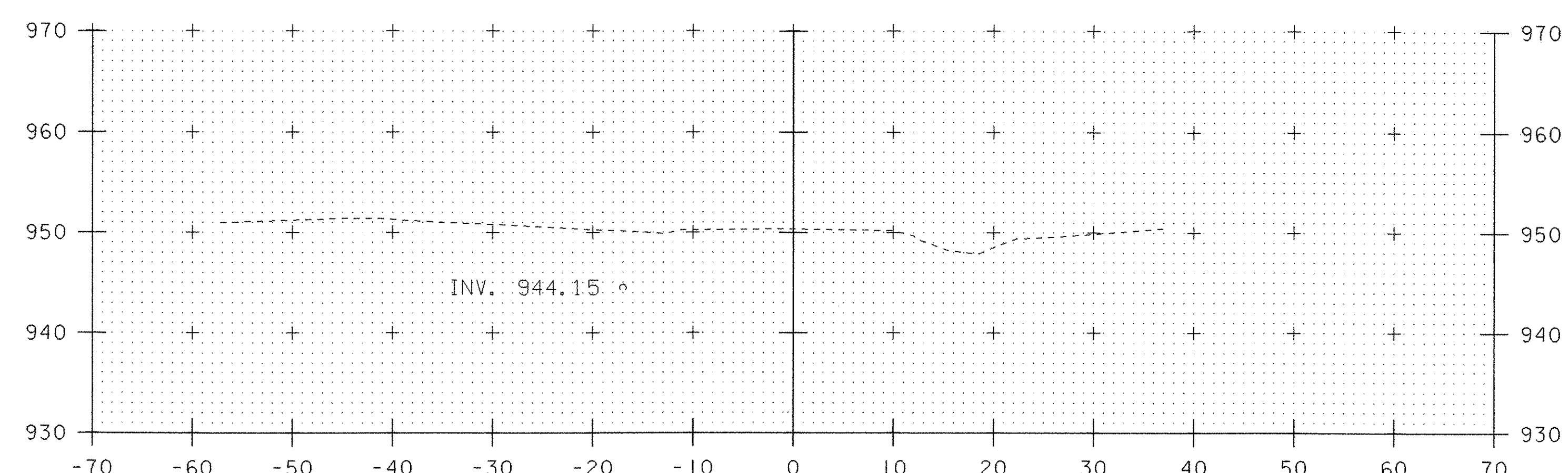
309+00



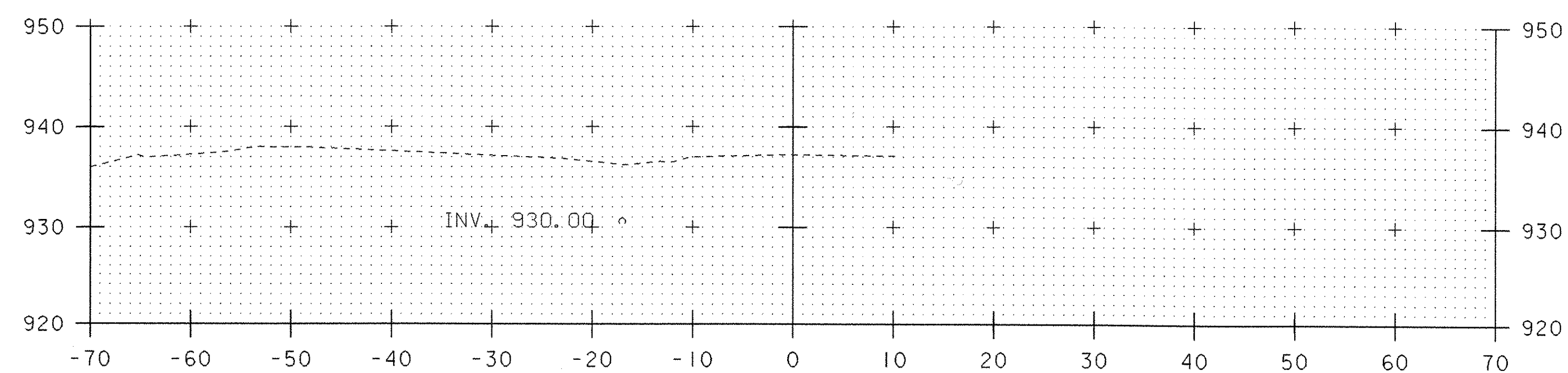
310+50



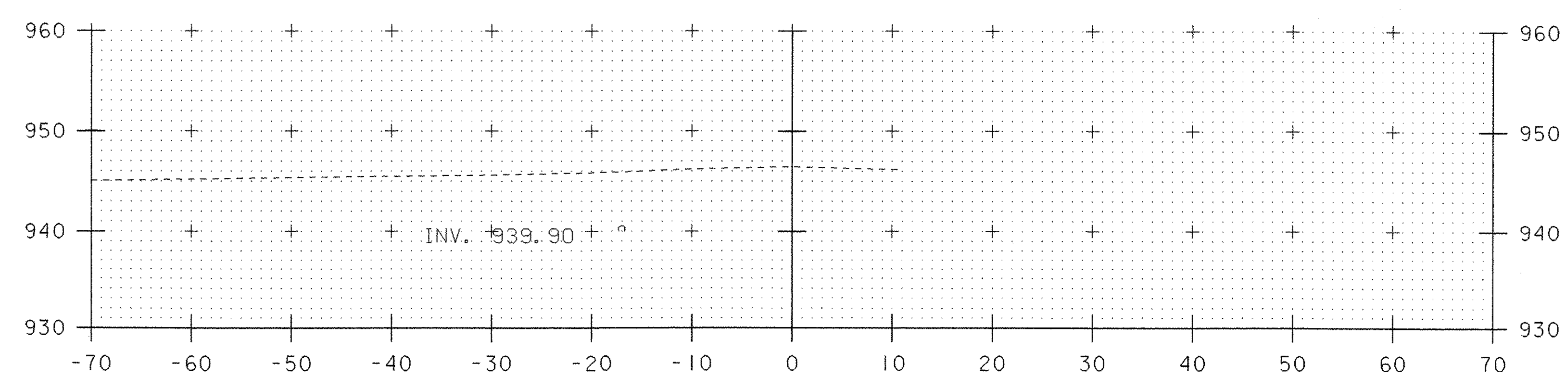
308+50



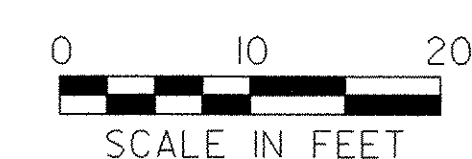
310+00



308+00

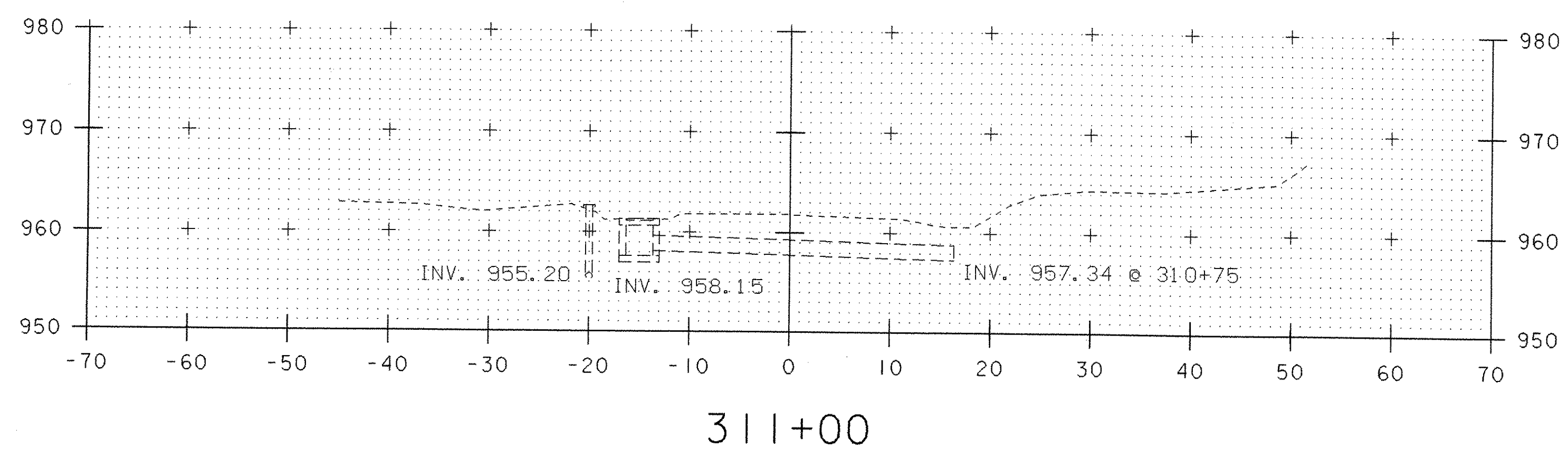
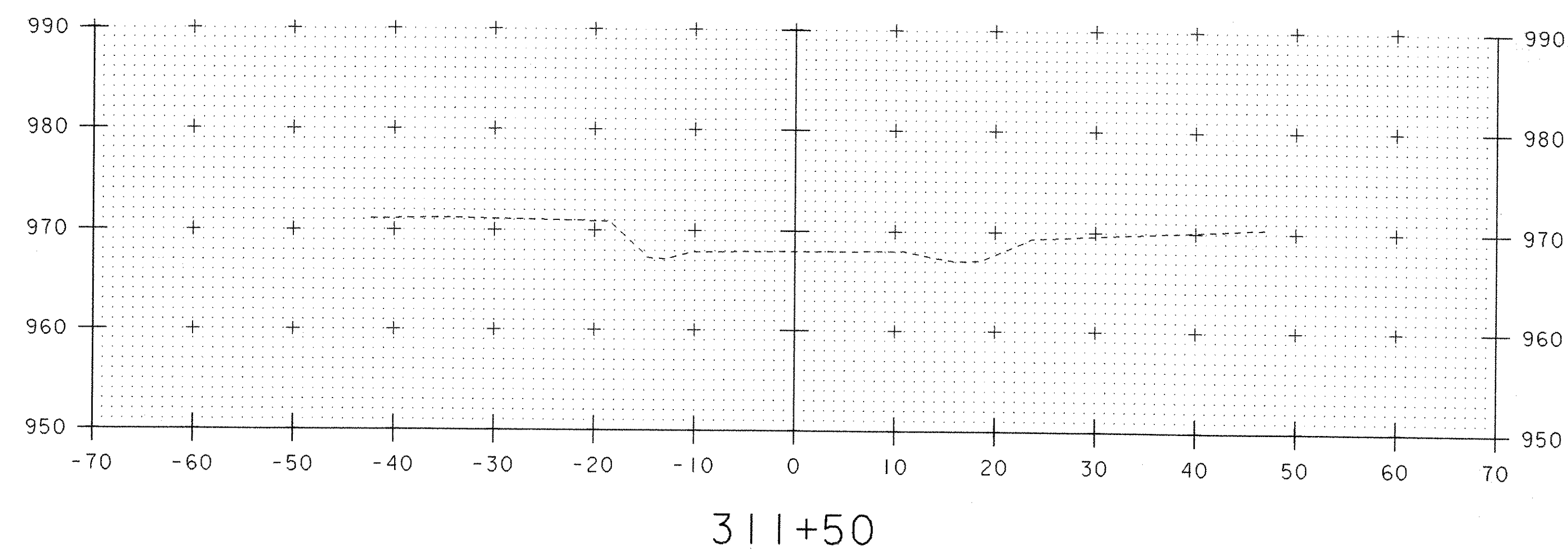


309+50



STA. 308+00 TO STA. 310+50

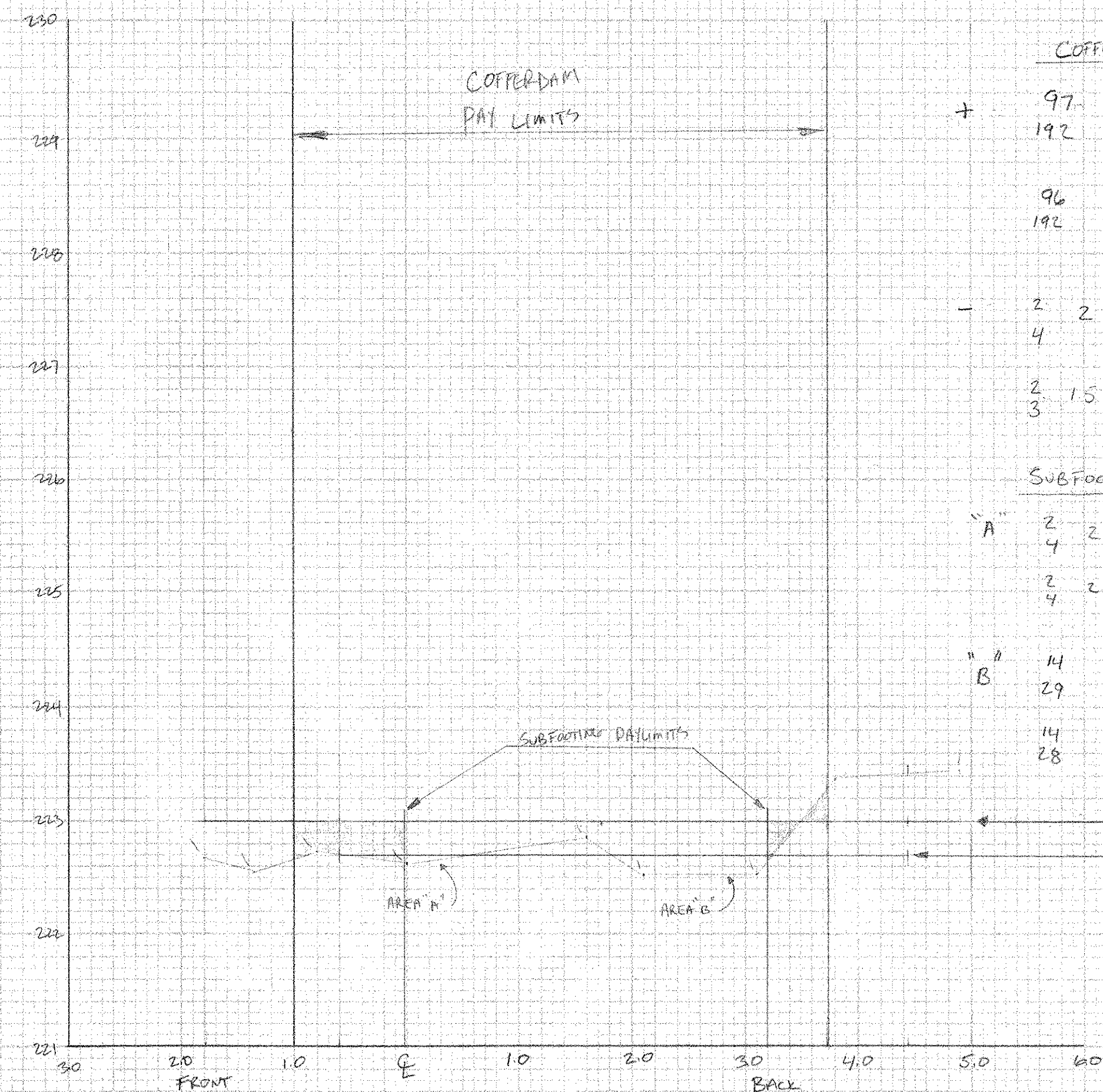
PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xs30.i	SHEET 62 OF 63



0 10 20
SCALE IN FEET

STA. 311+00 TO STA. 311+50

PROJECT NAME: HARDWICK	
PROJECT NUMBER: STP ST 030-3(4)	
FILE NAME: d04e060xslx.dgn	PLOT DATE: 18-OCT-2005
PROJECT LEADER: A. BOMBARDIER	DRAWN BY: M. NUTTER
DESIGNED BY: M. NUTTER	CHECKED BY: A. BOMBARDIER
IPARM NAME: de060xs31.i	SHEET 63 OF 63



COFFERDAM PAI LIMITS

+ 97 96
192 96

(96)

- 96 96
192 96

$$96 - 1.75 = 94.25 \div 64 = 1.47 \text{ m}^2$$

+ 2 2
4 4

(1.75)

- 2 1.5
3 3

SUBFOOTING

"A" 2 2
4 4

(2)

- 2 2
4 4

"B" 14 14.5
29 29

(14.25)

- 14 14
28 28

$$14.25 + 2 = 16.25 \div 64 = 0.25 \text{ m}^2$$

GRANULAR BACKFILL

+ 20 20
40 40

(20.5)

- 20 20.5
41 41

+ 3 2.5
5 5

(2.5)

- 2 2.5
5 5

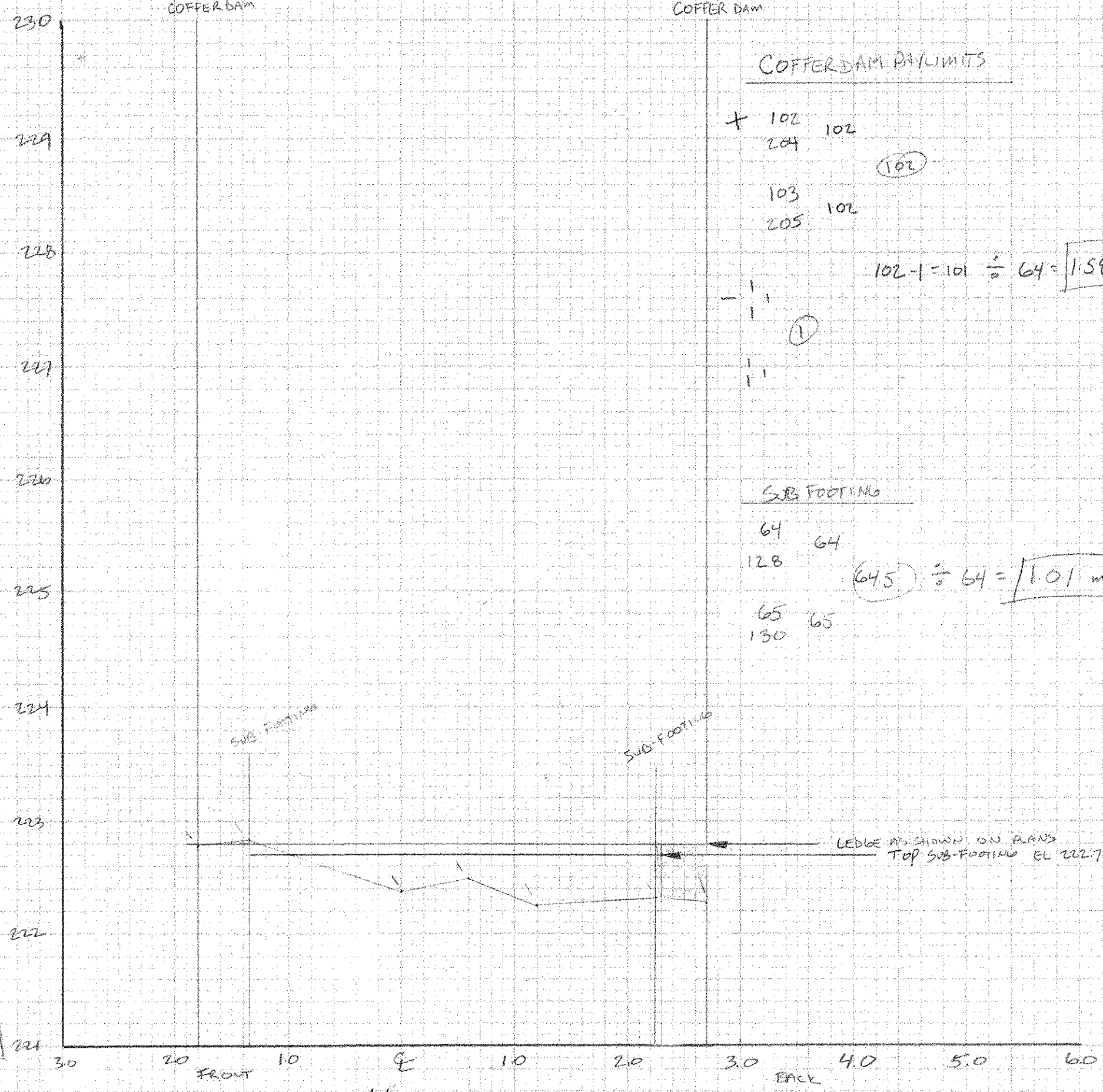
$$20.5 + 2.5 = 23$$

$$23 \div 64 = 0.36 \text{ m}^2$$

+ 2 2
4 4

(2.25)

- 2 2.5
5 5



COFFERDAM PAI LIMITS

+ 102 102
204 204

(102)

- 102 102
204 204

$$102 - 1 = 101 \div 64 = 1.58 \text{ m}^2$$

SUBFOOTING

+ 64 64
128 128

(64.5)

- 64 65
130 130

$$64.5 \div 64 = 1.01 \text{ m}^2$$

GRANULAR BACKFILL

+ 14 15
30 30

(14.75)

- 14 14.5
29 29

$$14.75 \div 64 = 0.23 \text{ m}^2$$

COFFERDAM EX. PAI LIMITS FOR

4.0 LT - 4.0 RT

FRONT: $\frac{1}{2}(6) + .9 + .6 = 1.8 \text{ m}$

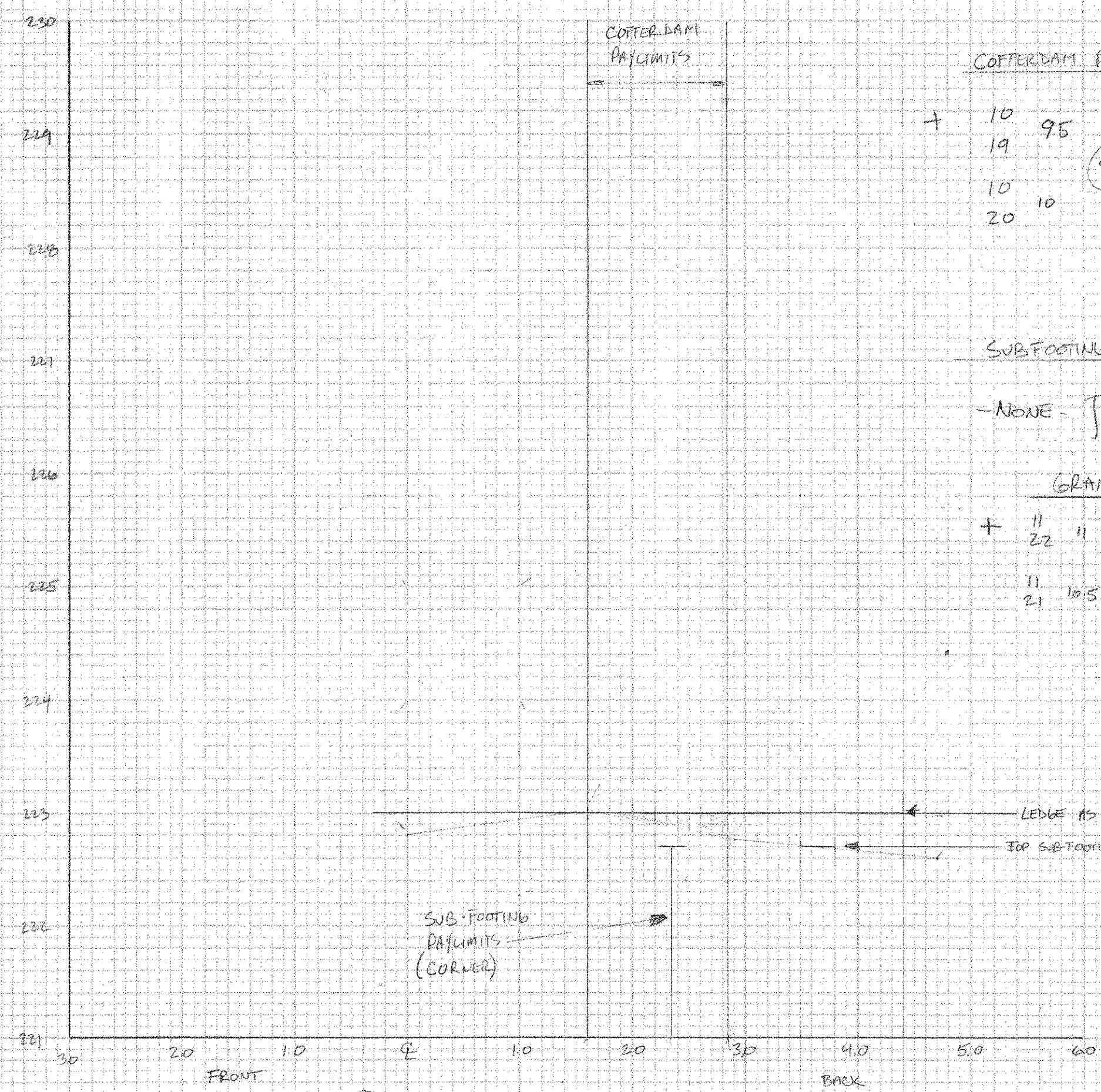
BACK: $\frac{1}{2}(6) + 1.8 + .6 = 2.7 \text{ m}$

SUB FOOTING PAI LIMITS FOR

4.0 LT - 4.0 RT

FRONT: $\frac{1}{2}(6) + .9 + 1.5 = 1.35 \text{ m}$

BACK: $\frac{1}{2}(6) + 1.8 + 1.5 = 2.25 \text{ m}$



COFFERDAM PAI LIMITS

+ 10 9.5
19 19

(9.75)

- 10 10
20 20

$$9.75 \div 64 = 0.15 \text{ m}^2$$

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

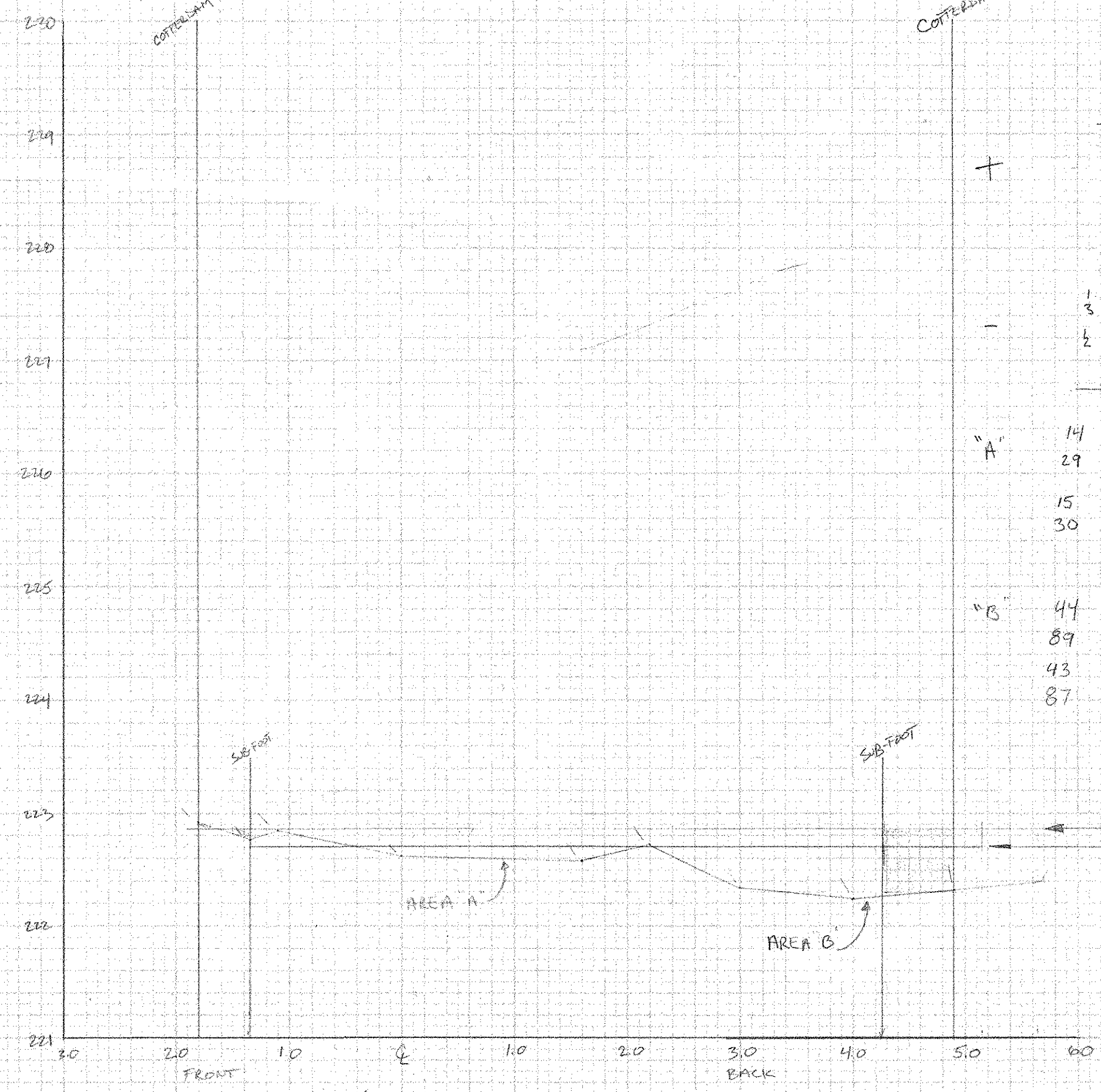
+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20

- 10 10
20 20

+ 10 10
20 20



COFFERDAM PAI LIMITS

+ 136 135
270 270

(135.75)

- 136 136.5
273 273

$$135.75 - 1.25 = 134.5 \div 64$$

$$= 2.10 \text{ m}^2$$

+ 136 136.5
273 273

- 136 137
274 274

+ 136 137
274 274

- 136 137.5
275 275

+ 136 137.5
275 275

- 136 138
276 276

+ 136 138
276 276

- 136 138.5
277 277

+ 136 138.5
277 277

- 136 139
278 278

+ 136 139
278 278

- 136 139.5
279 279

+ 136 139.5
279 279

- 136 140
280 280

+ 136 140
280 280

- 136 140.5
281 281

+ 136 140.5
281 281

- 136 141
282 282

+ 136 141
282 282

- 136 141.5
283 283

+ 136 141.5
283 283

- 136 142
284 284

+ 136 142
284 284

- 136 142.5
285 285

+ 136 142.5
285 285

- 136 143
286 286

+ 136 143
286 286

- 136 143.5
287 287

+ 136 143.5
287 287

- 136 144
288 288

+ 136 144
288 288

- 136 144.5
289 289

+ 136 144.5
289 289

- 136 145
290 290

+ 136 145
290 290

- 136 145.5
291 291

+ 136 145.5
291 291

- 136 146
292 292

+ 136 146
292 292

- 136 146.5
293 293

+ 136 146.5
293 293

- 136 147
294 294

+ 136 147
294 294

- 136 147.5
295 295

+ 136 147.5
295 295

- 136 148
296 296

+ 136 148
296 296

- 136 148.5
297 297

+ 136 148.5
297 297

- 136 149
298 298

+ 136 149
298 298

- 136 149.5
299 299

+ 136 149.5
299 299

- 136 150
300 300

+ 136 150
300 300

- 136 150.5
301 301

+ 136 150.5
301 301

- 136 151
302 302

+ 136 151
302 302

- 136 151.5
303 303

+ 136 151.5
303 303

- 136 152
304 304

+ 136 152
304 304

- 136 152.5
305 305

+ 136 152.5
305 305

- 136 153
306 306

+ 136 153
306 306

- 136 153.5
307 307

+ 136 153.5
307 307

- 136 154
308 308

+ 136 154
308 308

- 136 154.5
309 309

+ 136 154.5
309 309

- 136 155
310 310

+ 136 155
310 310

- 136 155.5
311 311

+ 136 155.5
311 311

- 136 156
312 312

+ 136 156
312 312

- 136 156.5
313 313

+ 136 156.5
313 313

- 136 157
314 314

+ 136 157
314 314

- 136 157.5
315 315

+ 136 157.5
315 315

- 136 158
316 316

+ 136 158
316 316

- 136 158.5
317 317

+ 136 158.5
317 317

- 136 159
318 318

+ 136 159
318 318

- 136 159.5
319 319

+ 136 159.5
319 319

- 136 160
320 320

+ 136 160
320 320

- 136 160.5
321 321

+ 136 160.5
321 321

- 136 161
322 322

+ 136 161
322 322

- 136 161.5
323 323

+ 136 161.5
323 323

- 136 162
324 324

+ 136 162
324 324

- 136 162.5
325 325

+ 136 162.5
325 325

- 136 163
326 326

+ 136 163
326 326

- 136 163.5
327 327

+ 136 163.5
327 327

- 136 164
328 328

+ 136 164
328 328

- 136 164.5
329 329

+ 136 164.5
329 329

- 136 165
330 330

+ 136 165
330 330

- 136 165.5
331 331

+ 136 165.5
331 331

- 136 166
332 332

+ 136 166
332 332

- 136 166.5
333 333

+ 136 166.5
333 333

- 136 167
334 334

+ 136 167
334 334

- 136 167.5
335 335

+ 136 167.5
335 335

- 136 168
336 336

+ 136 168
336 336

- 136 168.5
337 337

+ 136 168.5
337 337

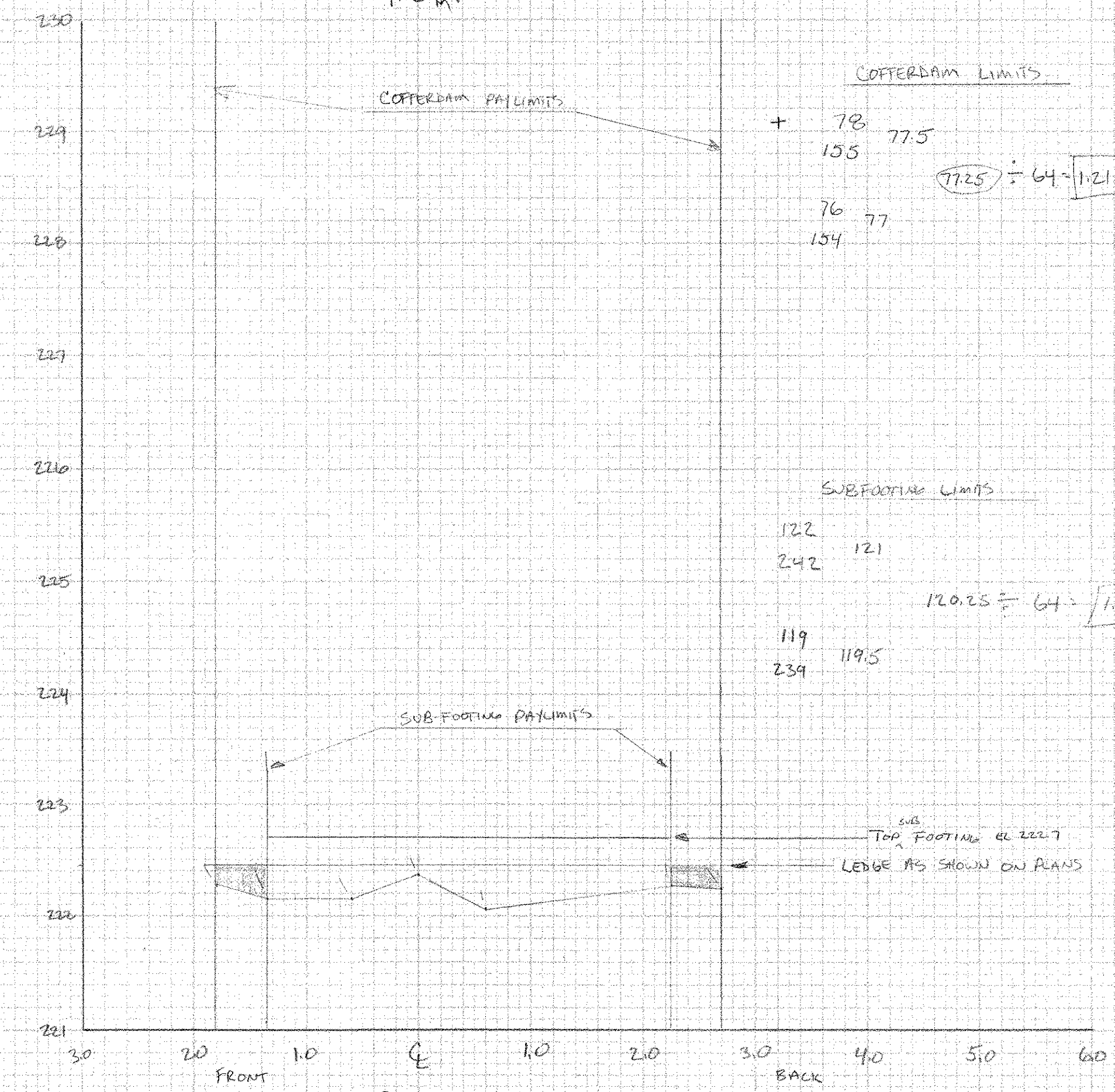
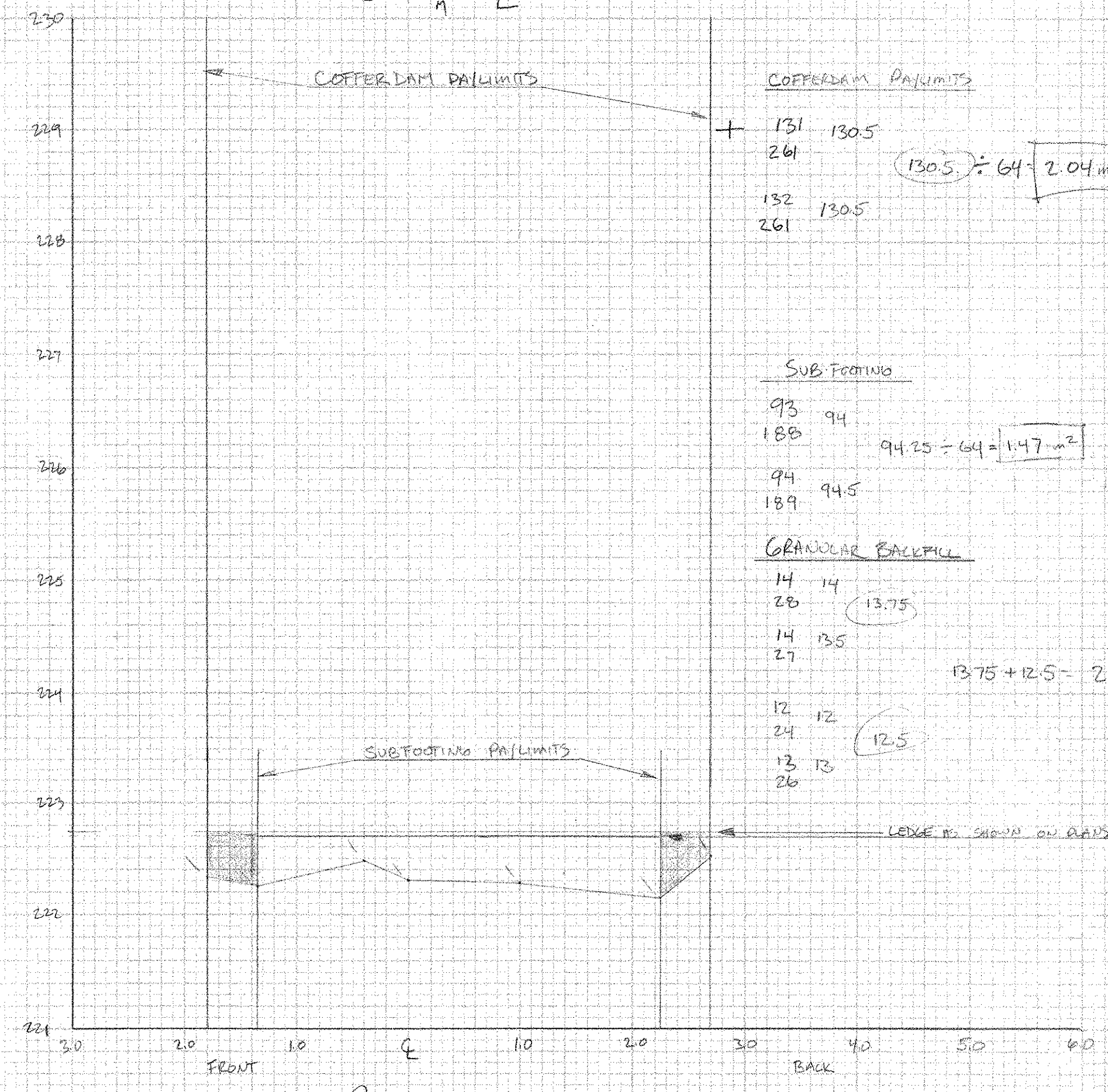
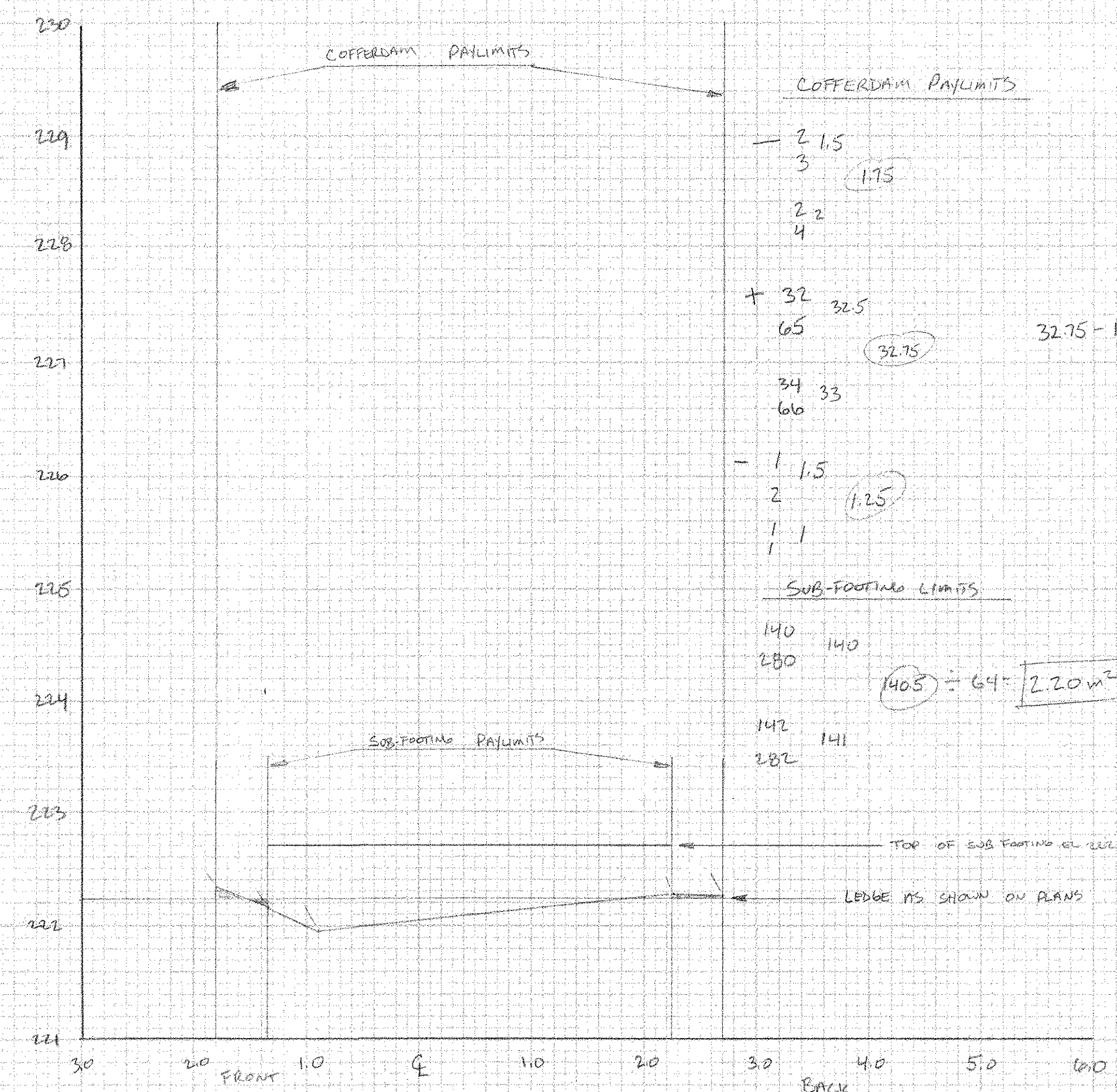
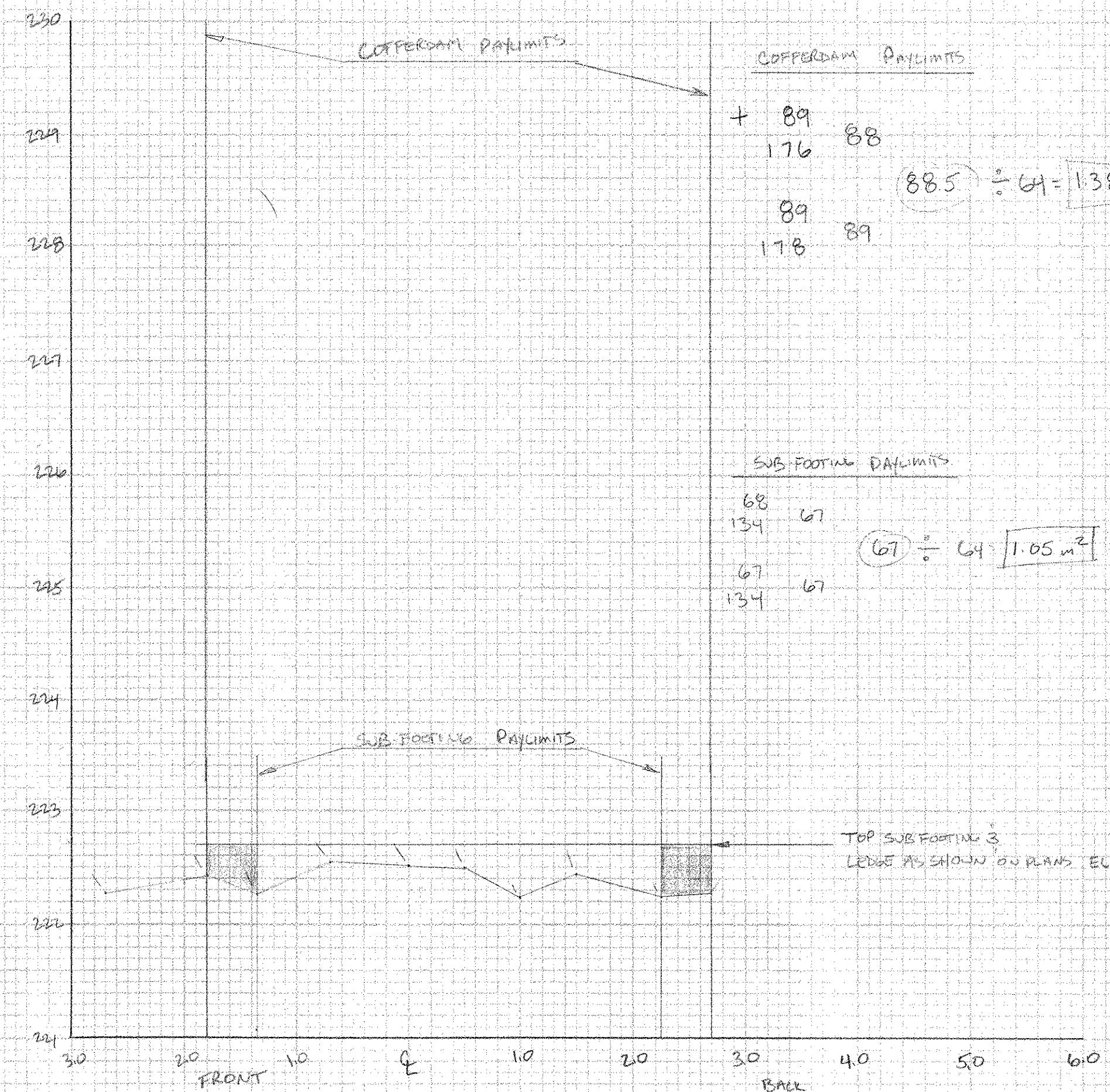
- 136 169
338 338

+ 136 169
338 338

- 136 169.5
339 339

+ 136 169.5
3

LYNDON BRS 0269 (B)S
LEDGE SECTIONS @ ABOUT 401
CSS 8-2-00

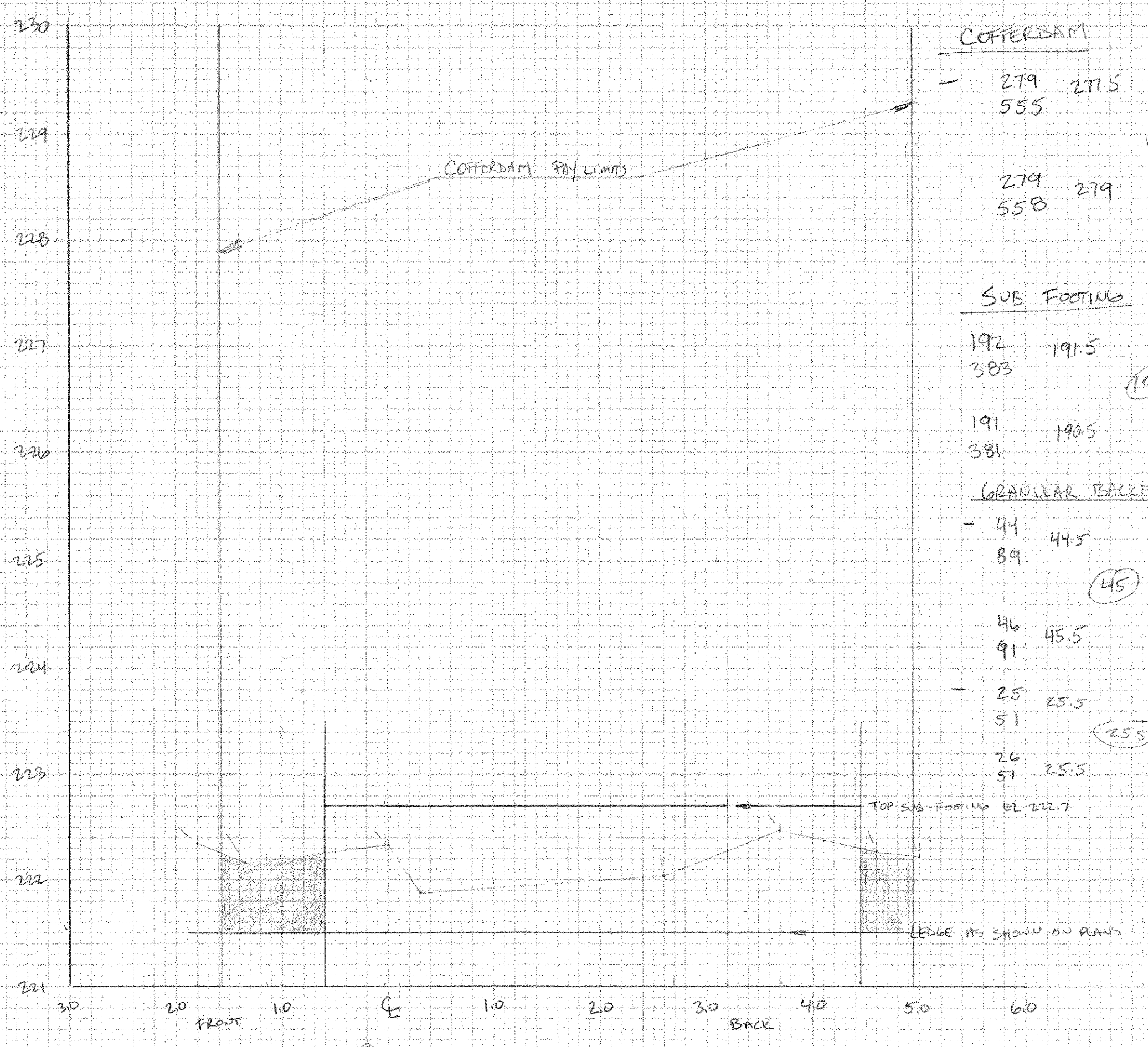


FINAL SURVEY
DATE: 11/11/00
BY: J. L. BROWN
CHECKED: J. L. BROWN
APPROVED: J. L. BROWN

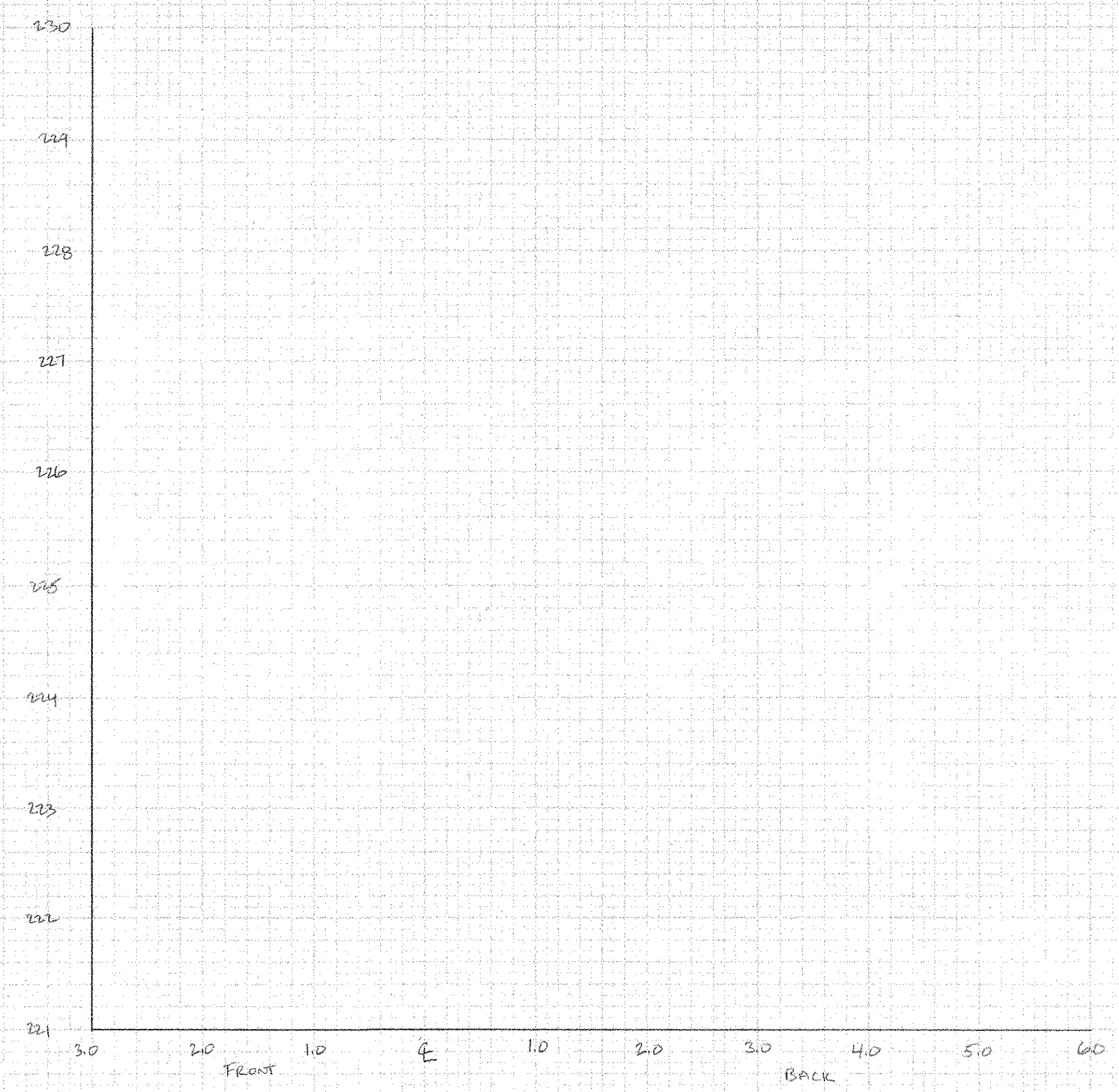
ORIGINAL SURVEY
DATE: 11/11/00
BY: J. L. BROWN
CHECKED: J. L. BROWN
APPROVED: J. L. BROWN

SHEET 2 OF 7

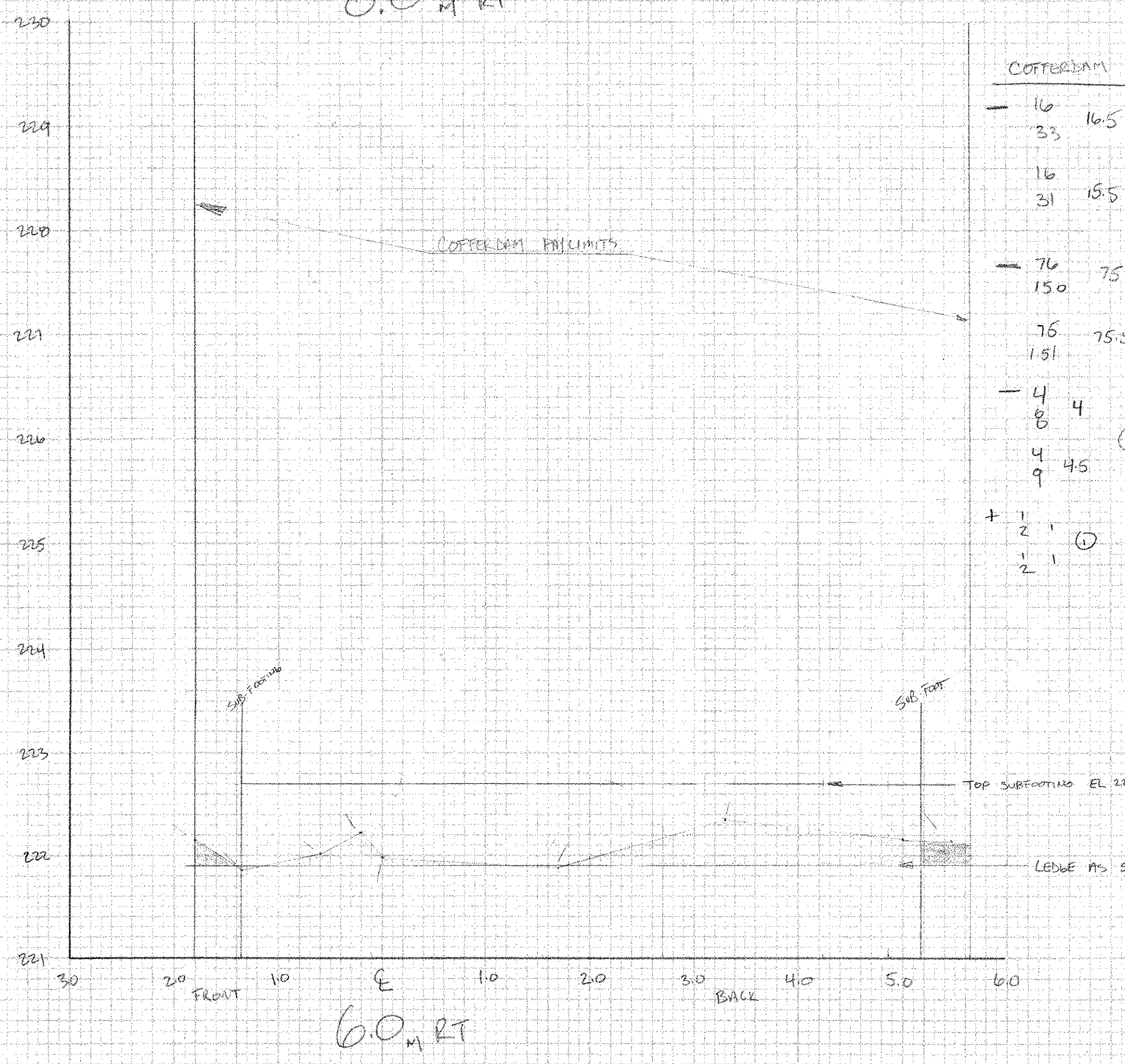
FINAL
SURVEY
NOTES
DATE: 8-2-06
BY: [Signature]



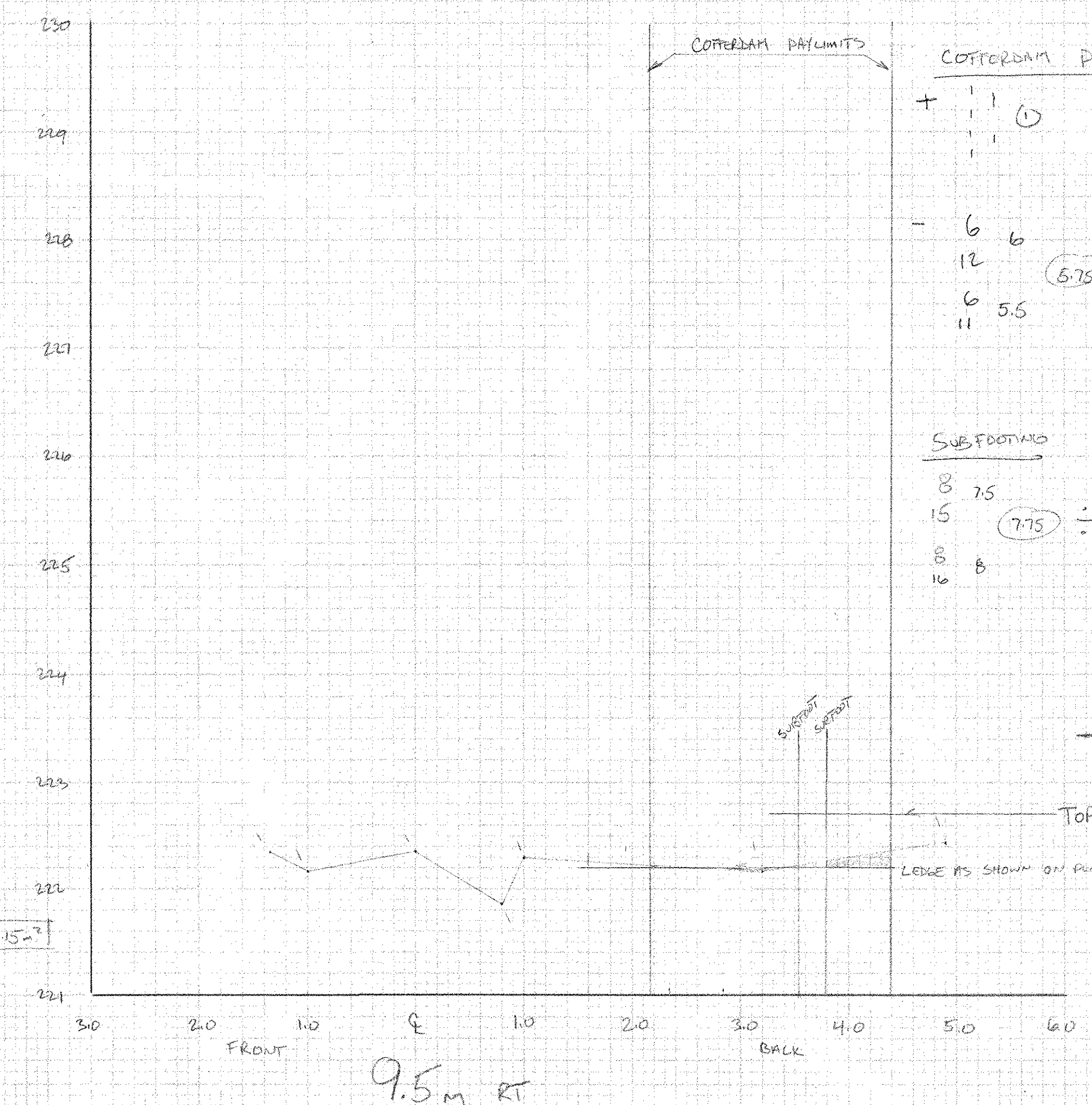
PLANNING CALIBRATION:
1 m² = 64 SQUARES
4 m² = 256 SQUARES



ORIGINAL SURVEY
NOTES
DATE: 8-2-06
BY: [Signature]

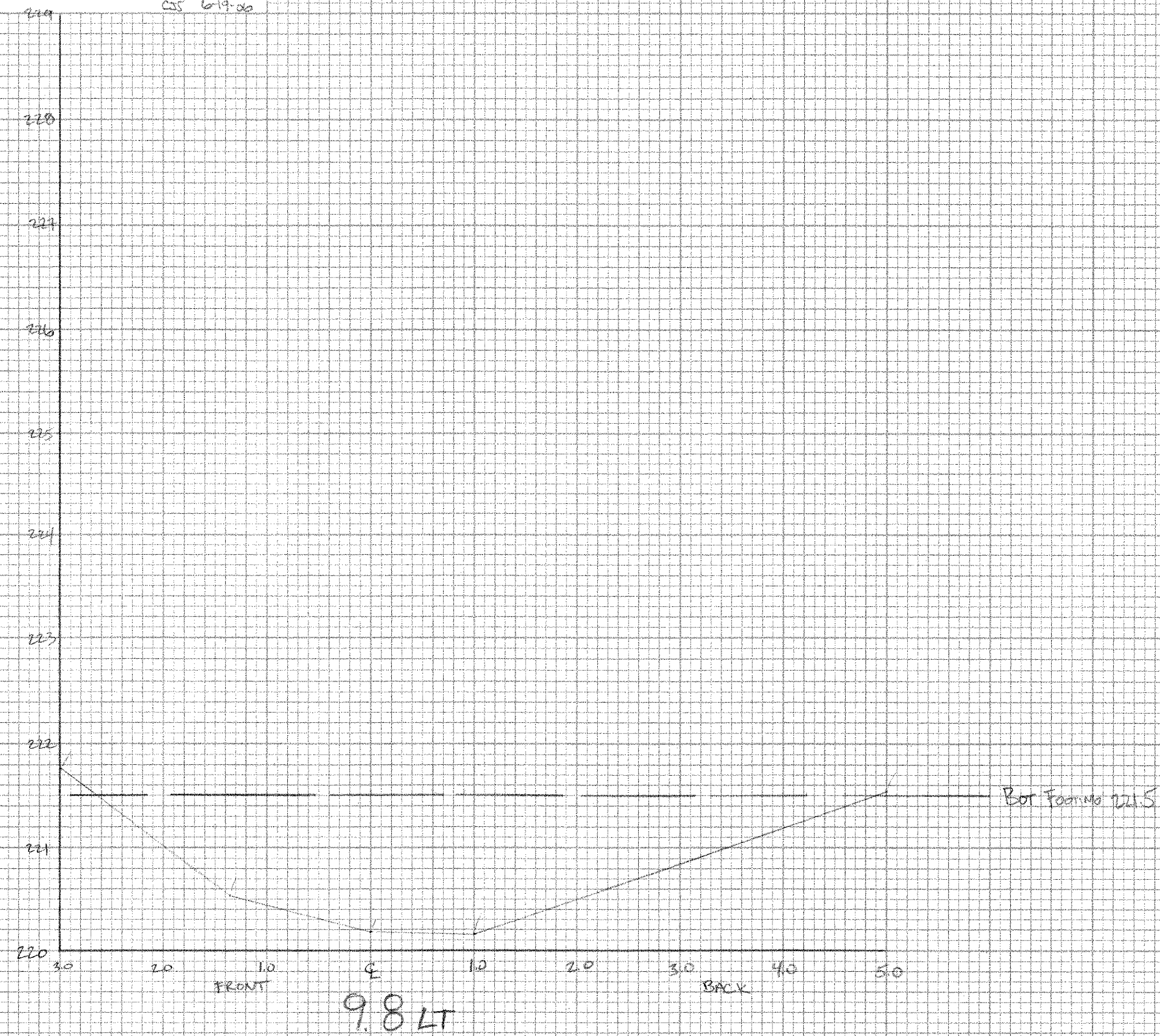


PLANNING CALIBRATION:
1 m² = 64 SQUARES
4 m² = 256 SQUARES



LYNDON BRS 0269(8)

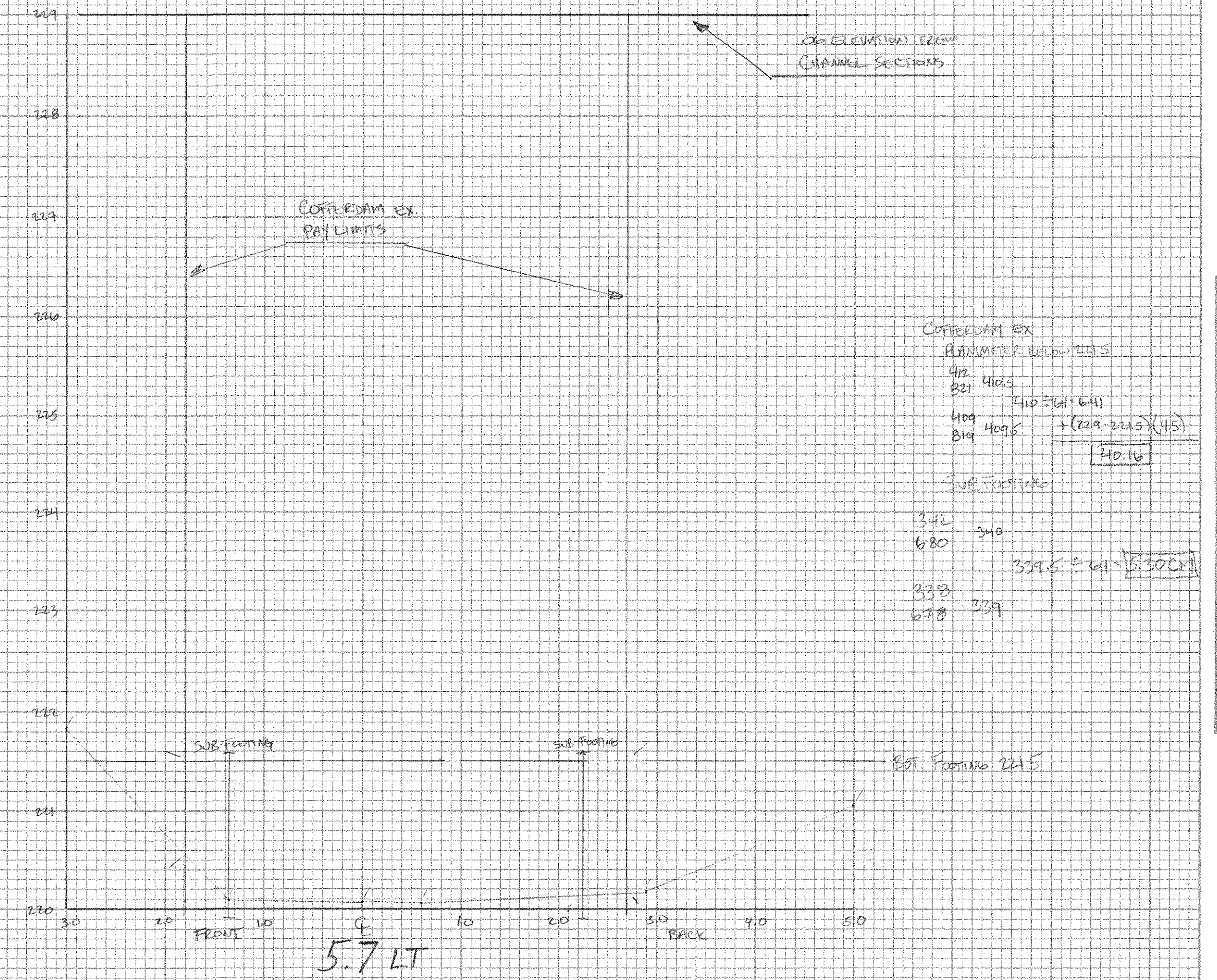
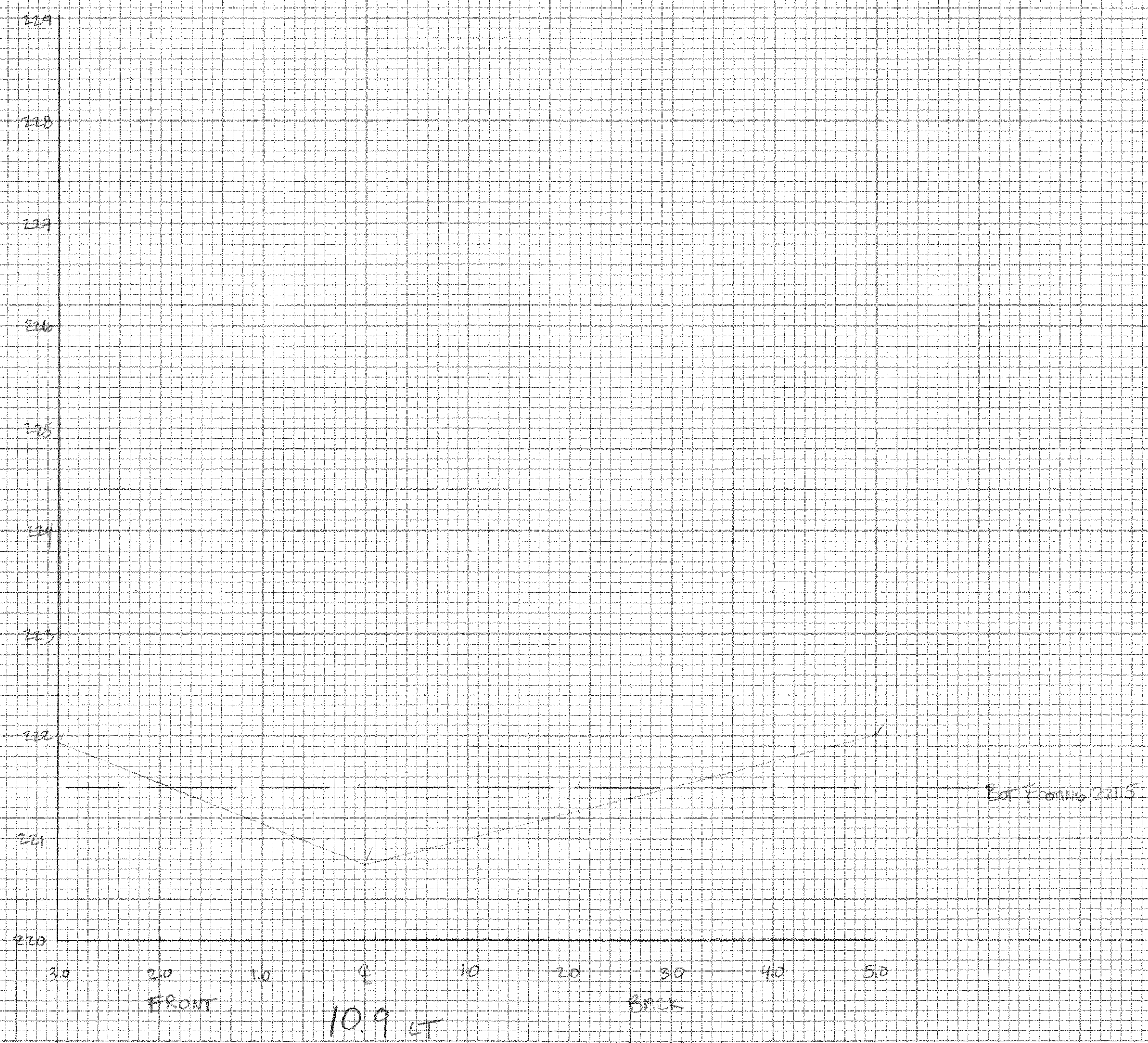
SECTIONS ALONG E BRG ABUT #2
CS 6/19/00



PLANIMETER CALIBRATION:

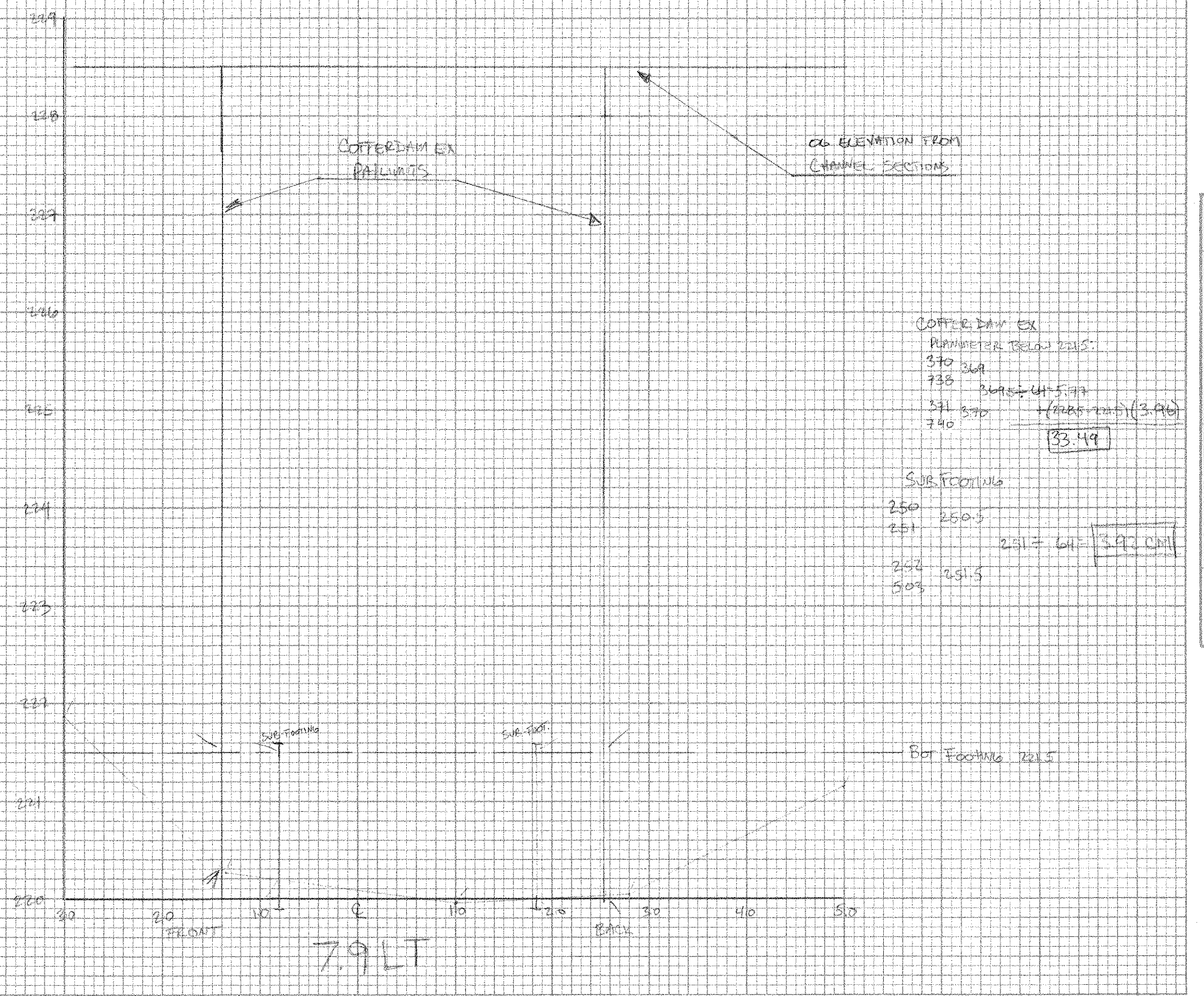
1 SM = 64 sq

4 SM = 256 sq



CORRECTION EX.
PLANIMETER BELOW 221.5
342 400.5
621 410.5
409 410.5
819 409.5
+ (221.5 - 221.5) (4.5)
410.16

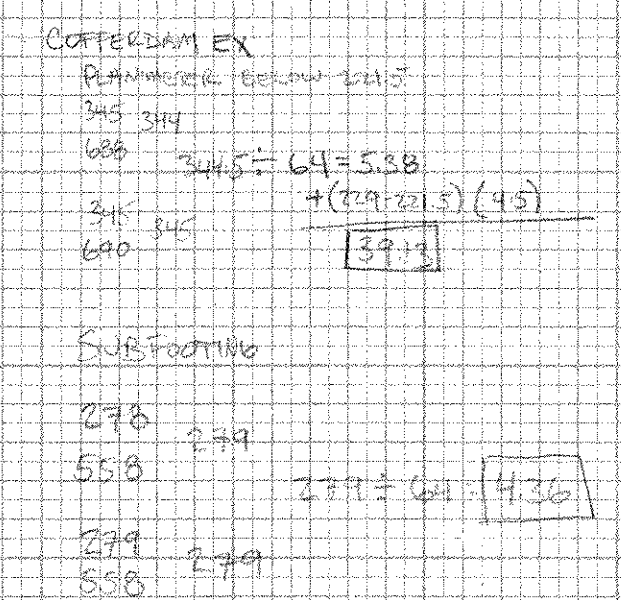
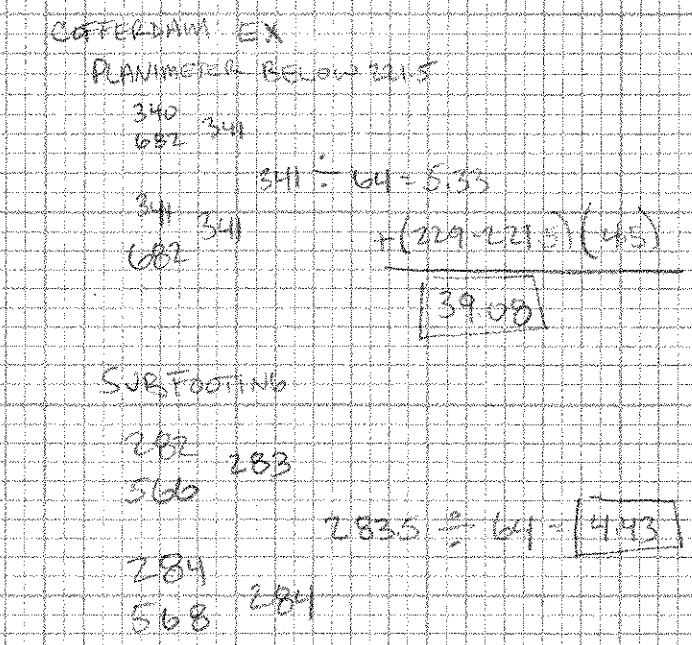
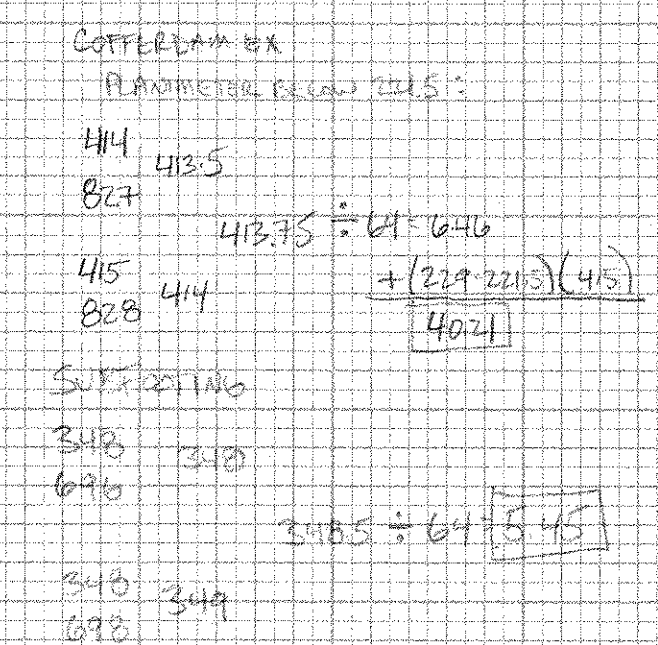
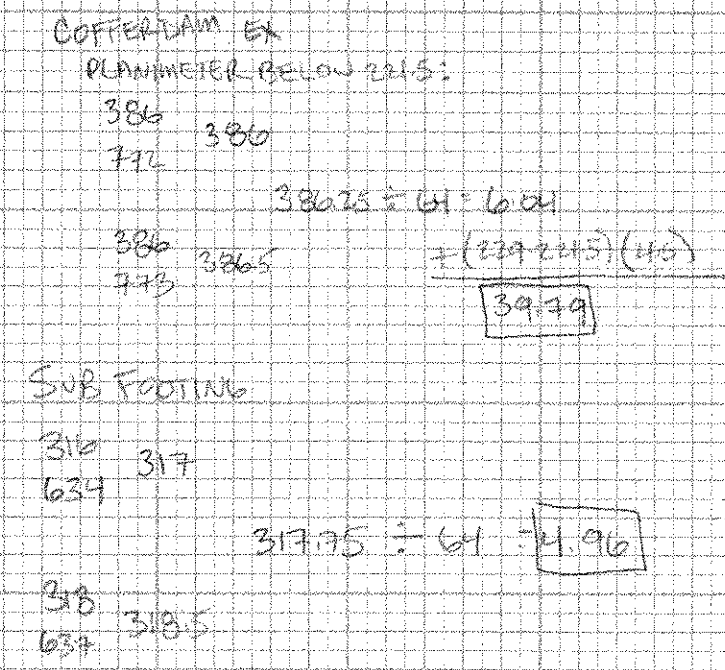
SUB FOOTING
342 340
621 620
349 349
620 620
349.5 - 641 = 349.5



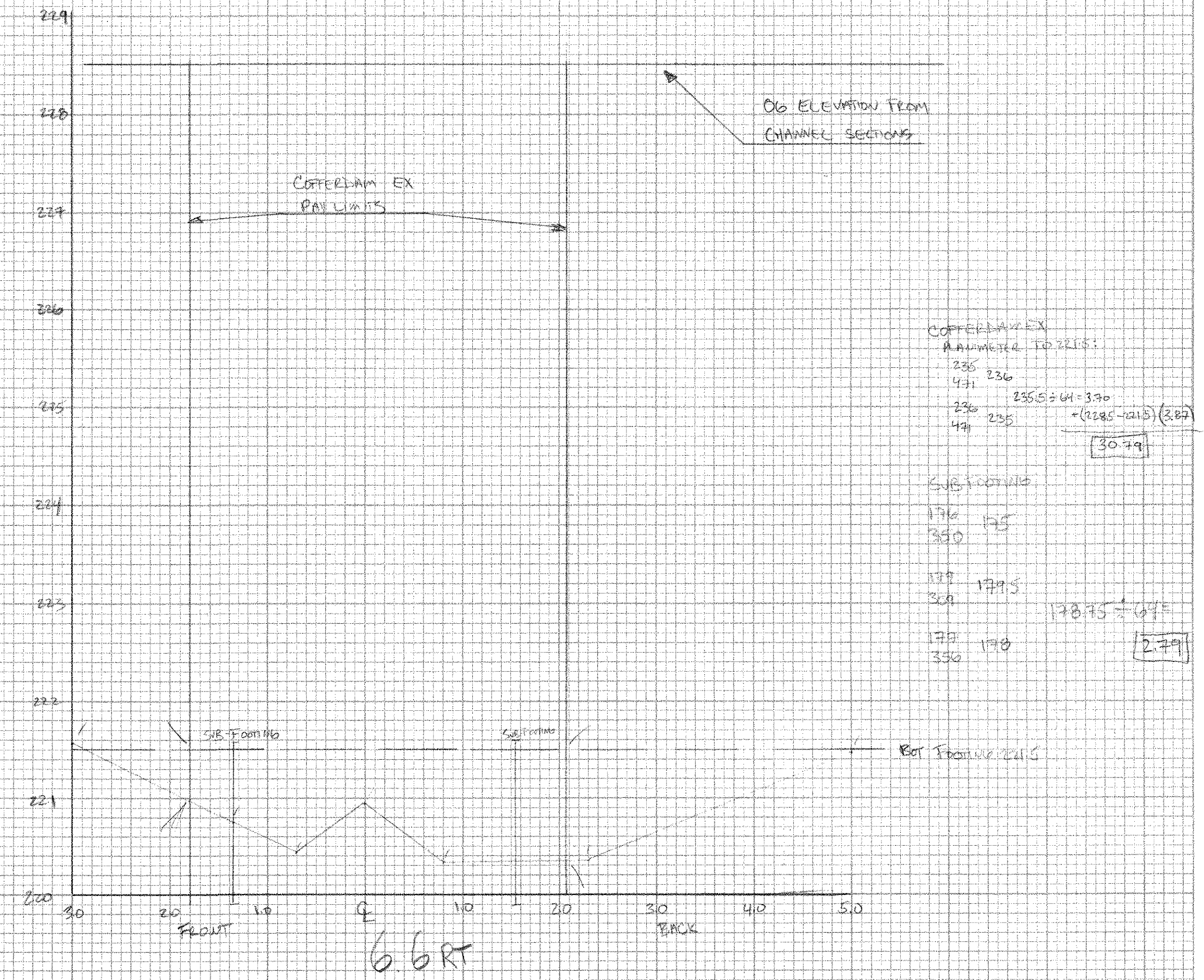
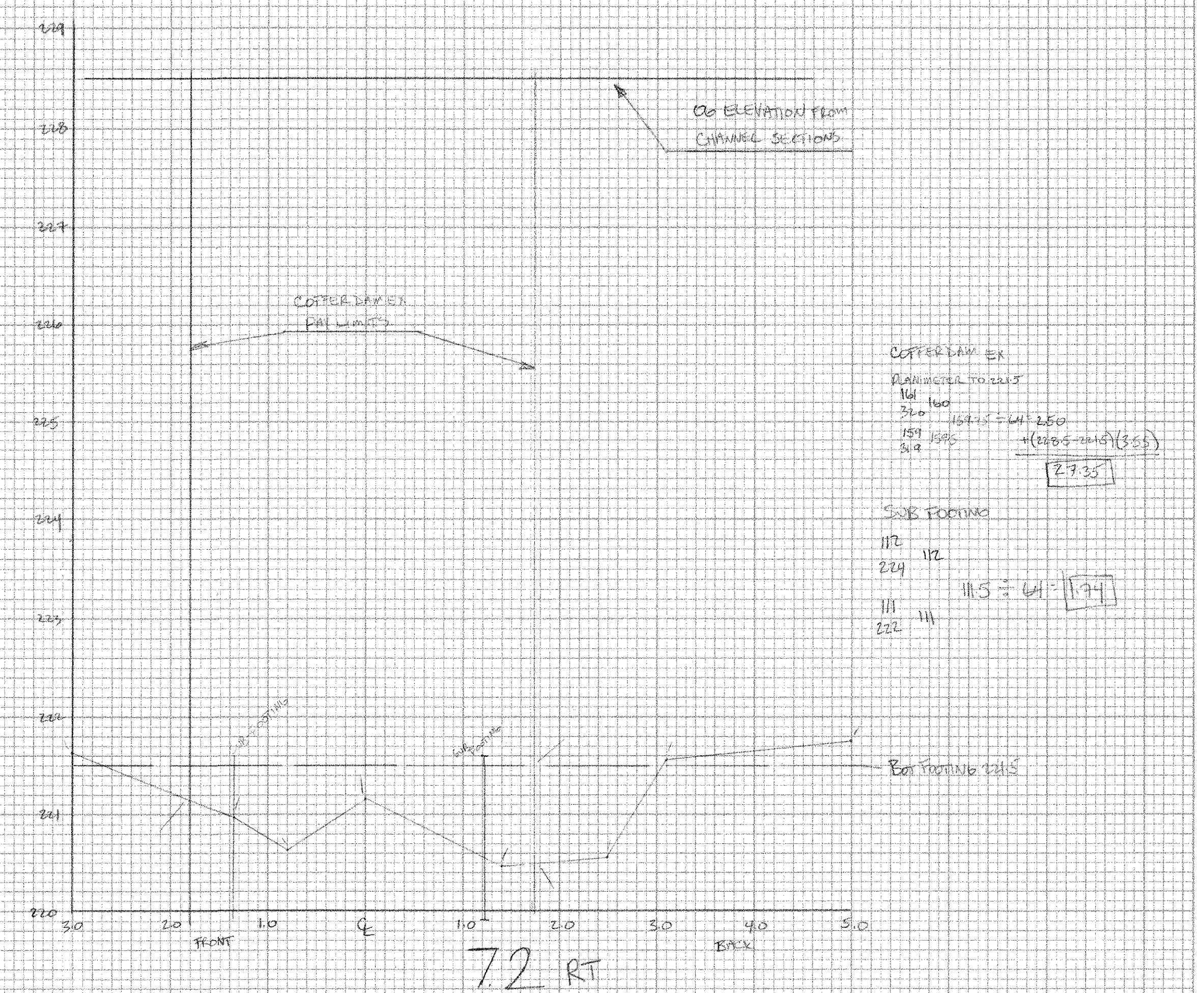
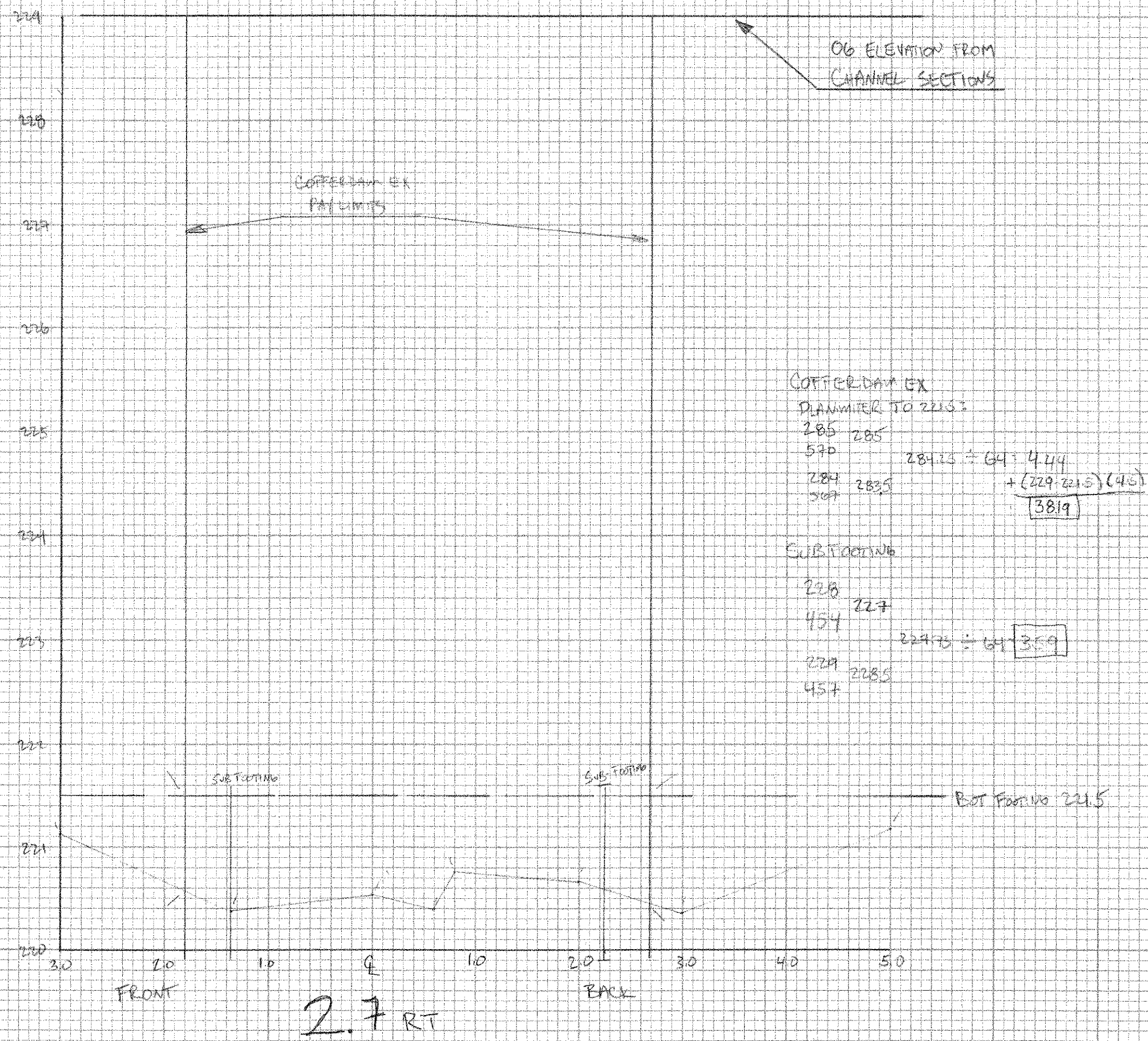
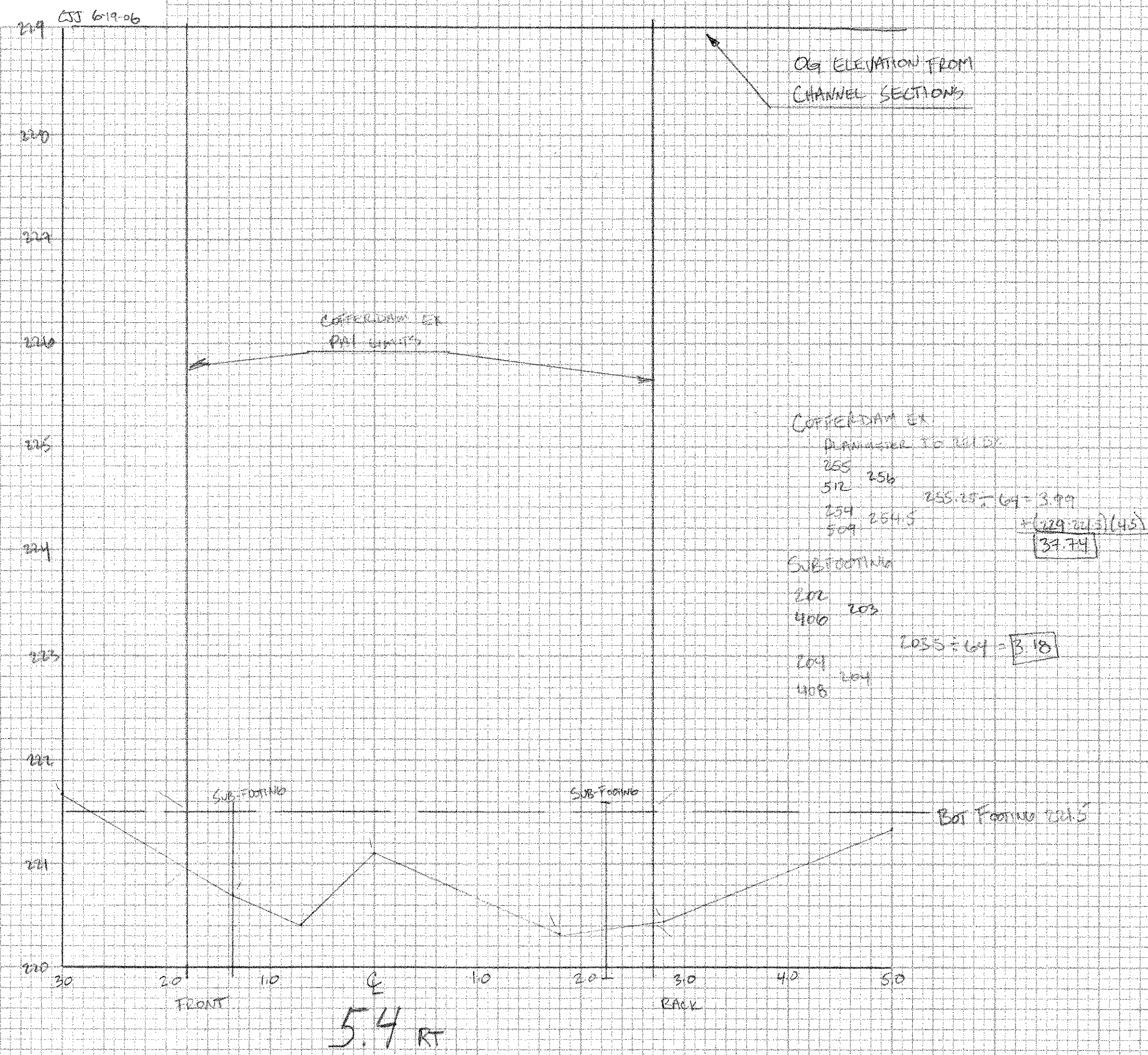
CORRECTION EX.
PLANIMETER BELOW 221.5
340 340
620 620
341 341
740 740
+ (221.5 - 221.5) (3.96)
341.49

SUB FOOTING
250 250.5
251 251
252 251.5
503 503
251.5 - 641 = 251.5

OSJ 6-19.



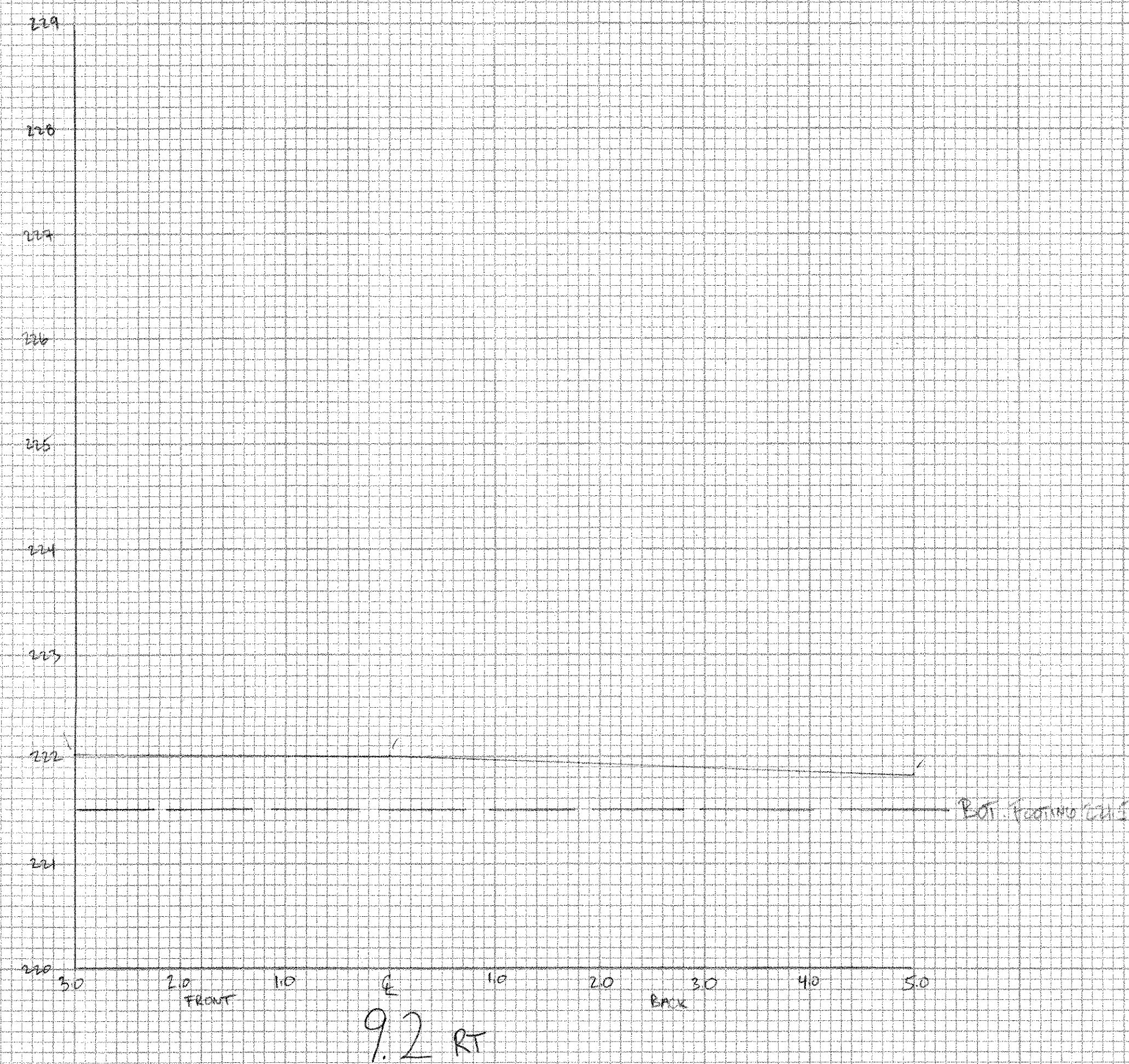
LYNDON BRS 0269(8)S
SECTIONS ALONG E ERL ABT #2



NO.	VIEW	DATE
1	FRONT	1/1/11
2	BACK	1/1/11
3	RIGHT	1/1/11
4	LEFT	1/1/11

NO.	VIEW	DATE
1	FRONT	1/1/11
2	BACK	1/1/11
3	RIGHT	1/1/11
4	LEFT	1/1/11

LYNDON BRS 0269(B)
SECTIONS ALONG & BR6 ABT #2
CJ 6-19-06

[illegible]

NO.	WEAR CHECKED
MOLE BOOK	2888B
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