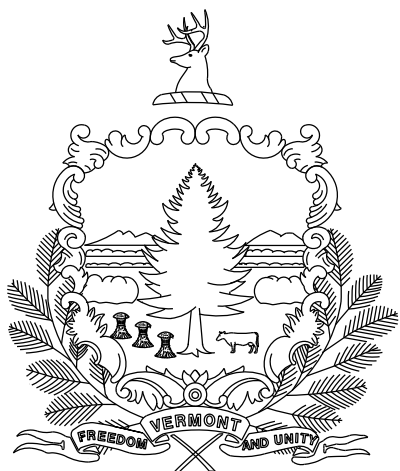


REVIEWER NOTES:

1. THE BRIDGE WAS CLOSED DUE TO STRUCTURAL DEFICIENCIES ON 12/23/2015.
2. THERE IS AN 8" MUNICIPAL SEWER MAIN (GRAVITY) ON THE EASTERLY SIDE OF THE EXISTING BRIDGE, AND AN 8" INSULATED WATER MAIN ON THE WESTERLY SIDE. 3 PHASE TRANSMISSION AND COMMUNICATION CABLES RUN ALONG AND ACROSS TH 1 NEXT TO THE EXISTING BRIDGE. THESE UTILITIES WILL NEED TO BE RELOCATED FOR THIS PROJECT.
3. EXISTING RIGHT-OF-WAY IS CLOSE TO THE EXISTING BRIDGE AND WINGWALLS. IT IS ANTICIPATED THAT ADDITIONAL RIGHT-OF-WAY WILL BE NEEDED FOR CONSTRUCTION.
4. SUPERSTRUCTURE AND SUBSTRUCTURES SHOWN ARE CONCEPTUAL IN NATURE AND WILL BE DESIGNED AT A LATER TIME.
5. PROPOSED BRIDGE FINAL GRADE RAISED 3" TO ACCOUNT FOR MINIMUM LOW BEAM ELEVATION. IN ACCORDANCE WITH A SITE FLOOD INSURANCE SURVEY, THE ROADWAY AND BRIDGE CANNOT BE RAISED HIGHER THAN 0.3'.

STATE OF VERMONT

AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT

BRIDGE PROJECT

TOWN OF CAVENDISH

COUNTY OF WINDSOR

ROUTE NO: TH 1 (CLASS 2) , LOCAL TOWN ROAD BRIDGE: 58

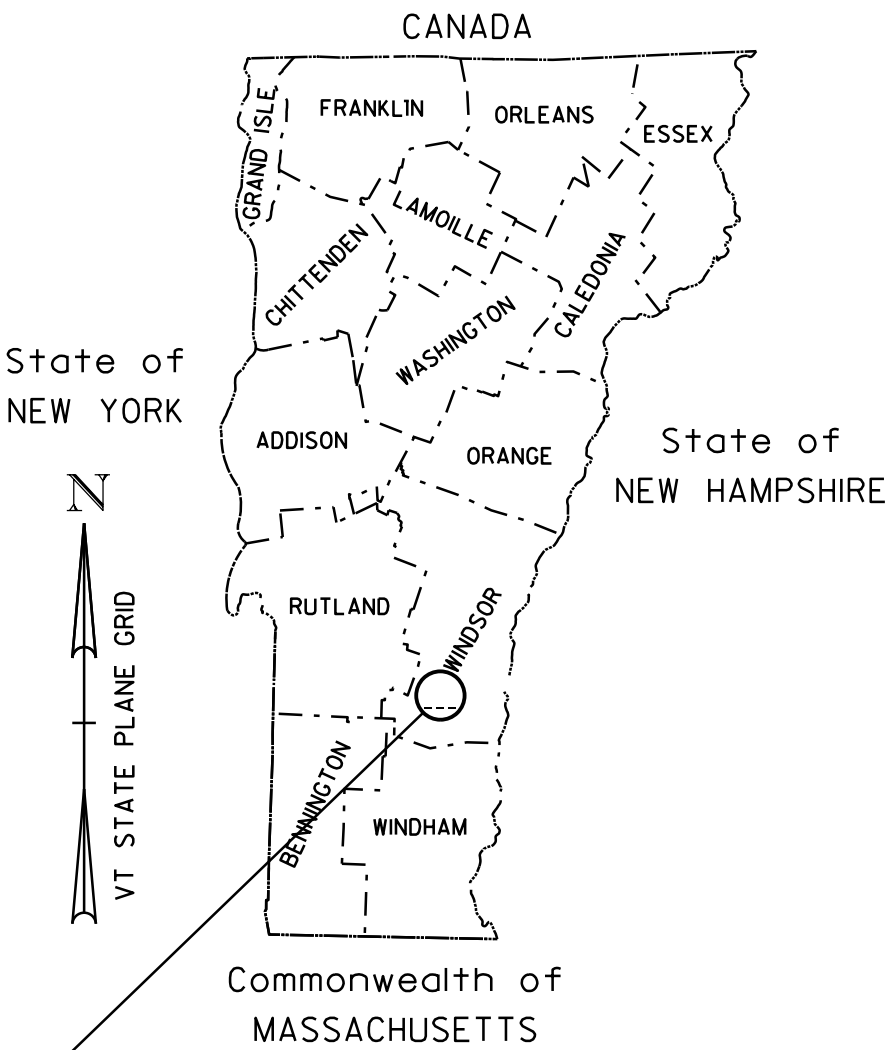
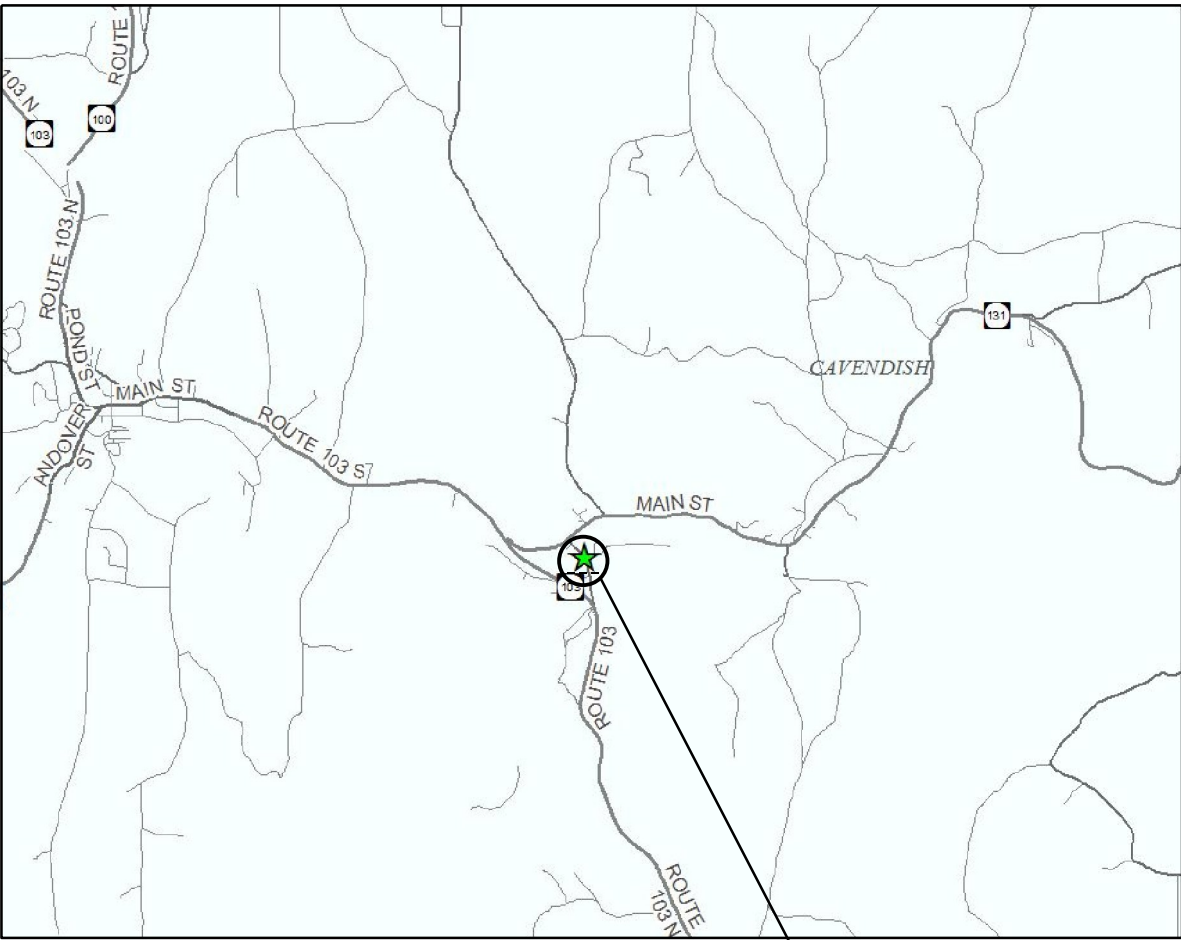
PROJECT LOCATION: ON TH 1 (DEPOT STREET) , BRIDGE 58
OVER THE BLACK RIVER APPROXIMATELY 0.1 MILES SOUTHEAST
OF THE JUNCTION WITH VT 131.

PROJECT DESCRIPTION: FULL REPLACEMENT OF EXISTING BRIDGE
WITH NECESSARY ROADWAY APPROACH AND CHANNEL WORK

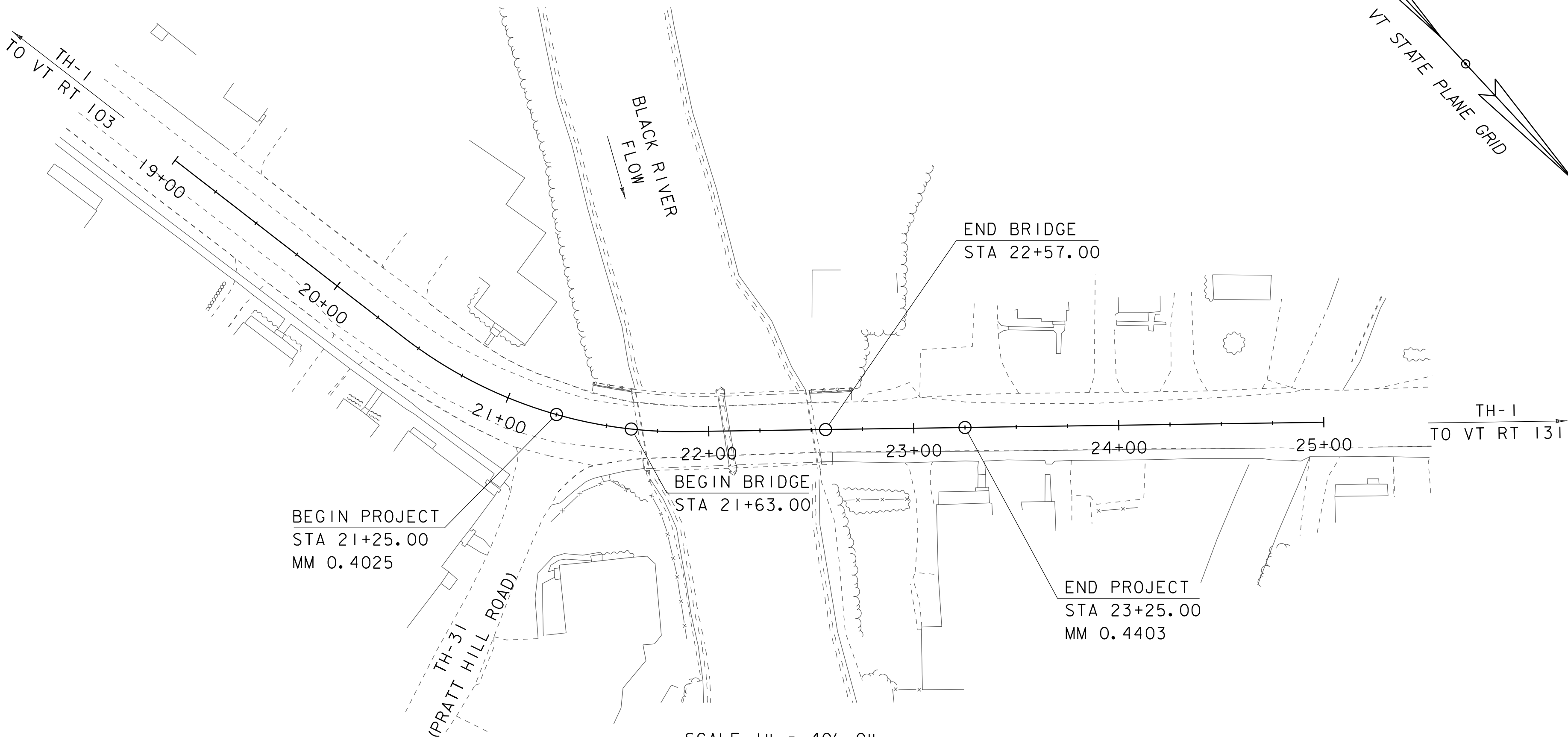
LENGTH OF STRUCTURE: 94 FEET

LENGTH OF ROAD: 106 FEET

LENGTH OF PROJECT: 200 FEET



CAVENDISH
BO 1442 (38)



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : RG

SURVEYED DATE : 6-13-2014

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 1983 (96)

CONCEPTUAL PLANS

28-JAN-2016

DIRECTOR OF PROJECT DELIVERY

APPROVED _____ DATE _____

PROJECT MANAGER : ROB YOUNG , P.E.

PROJECT NAME : CAVENDISH

PROJECT NUMBER : BO 1442 (38)

SHEET 1 OF 16 SHEETS

INDEX OF SHEETS

PLAN SHEETS

1 TITLE SHEET
2 PRELIMINARY INFORMATION SHEET
3 LEGEND SHEET
4 TYPICAL SECTIONS
5 EXISTING CONDITIONS
6 LAYOUT SHEET
7 MAINLINE PROFILE
8 EXISTING UTILITY LAYOUT
9 - 12 MAINLINE CROSS SECTIONS
13 - 16 CHANNEL CROSS SECTIONS

STRUCTURES DETAIL SHEETS

STANDARDS LIST

FINAL HYDRAULIC REPORT

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD HL-93
2. FUTURE PAVEMENT d_p : 3.0 INCH
3. DESIGN SPAN L : 94.00 FT

4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) Δ : - - -
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX) f_y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH f'_{ci} : 6.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH f'_{ci} : 5.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA f'_{ci} : 4.0 KSI
9. CONCRETE, HIGH PERFORMANCE CLASS A f'_{ci} : 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B f'_{ci} : 3.5 KSI
11. CONCRETE, CLASS C f'_{ci} : 3.0 KSI
12. REINFORCING STEEL f_y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270 f_y : - - -

14. NOMINAL BEARING RESISTANCE OF SOIL q_n : 4.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : - - -
16. NOMINAL BEARING RESISTANCE OF ROCK q_n : 10.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : - - -

18. PILE RESISTANCE FACTOR ϕ : - - -
19. LATERAL PILE DEFLECTION Δ : - - -
20. BASIC WIND SPEED V_{3s} : - - -
21. MINIMUM GROUND SNOW LOAD p_g : - - -
22. SEISMIC DATA PGA : 0 S_s : - - -
 S_1 : - - -

23. - - -
24. - - -
25. - - -
26. - - -

PROJECT NAME: **CAVENDISH**
PROJECT NUMBER: **BR 1442(38)**

FILE NAME: **s13j302.Pl.dgn** PLOT DATE: 1/20/2016
PROJECT LEADER: **R. YOUNG** DRAWN BY: **T. MATTHEWS**
DESIGNED BY: **T. MATTHEWS** CHECKED BY: **J. GRIGAS**
PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 16

LRFR LOAD RATING FACTORS

LOADING LEVELS

TRUCK

H-20 HL-93 3S2 6 AXLE 3A. STR. 4A. STR. 5A. SEM

TONNAGE 20 36 36 66 30 34.5 38

INVENTORY

POSTING

OPERATING

COMMENTS:

AS BUILT "REBAR" DETAIL

LEVEL I

LEVEL II

LEVEL III

TYPE:

TYPE:

TYPE:

GRADE:

GRADE:

GRADE:

TRAFFIC DATA

YEAR ADT DHV % D % T ADTT

2017 1000 140 54 5.5 50

2037 1100 170 54 7.2 70

20 year ESAL for flexible pavement from 2017 to 2037 : 128000
40 year ESAL for flexible pavement from 2017 to 2057 : 270000
Design Speed : 25 mph

SYMBOL OGY LEGEND NOTE

POINT	CODE	DESCRIPTION
-------	------	-------------

	BDNDS	BOUND SET
	BDNDS	BOUND TO BE SET
	IPNS	IRON PIN SET
	IPNS	IRON PIN TO BE SET
	CALC	EXISTING ROW POINT
	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

POINT	CODE	DESCRIPTION
-------	------	-------------

	EL	ELECTRIC POWER POLE
	FPOLE	FLAGPOLE
	GASFIL	GAS FILLER
	GP	GUIDE POST
	GSO	GAS SHUT OFF
	GUY	GUY POLE
	GUYW	GUY WIRE
	GV	GATE VALVE
	H	TREE HARDWOOD
	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
	HYD	HYDRANT
	IP	IRON PIN
	IPIPE	IRON PIPE
	LI	LIGHT - STREET OR YARD
	MB	MAILBOX
	MH	MANHOLE (MH)
	MM	MILE MARKER
	PM	PARKING METER
	PMK	PROJECT MARKER
	POST	POST STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
------	-------------

PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100 FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UNDERGROUND UTILITIES

—	<i>UGU</i>	—	.	.	.	.	.	UTILITY (GENERIC-UNKNOWN)
—	<i>UT</i>	—	.	.	.	.	.	TELEPHONE
—	<i>UE</i>	—	.	.	.	.	.	ELECTRIC
—	<i>UC</i>	—	.	.	.	.	.	CABLE (TV)
—	<i>UEC</i>	—	.	.	.	.	.	ELECTRIC+CABLE
—	<i>UET</i>	—	.	.	.	.	.	ELECTRIC+TELEPHONE
—	<i>UCT</i>	—	.	.	.	.	.	CABLE+TELEPHONE
—	<i>UECT</i>	—	.	.	.	.	.	ELECTRIC+CABLE+TELEP.
—	<i>G</i>	—	.	.	.	.	.	GAS LINE
—	<i>W</i>	—	.	.	.	.	.	WATER LINE
—	<i>S</i>	—	.	.	.	.	.	SANITARY SEWER (SEPTIC)

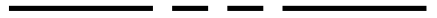
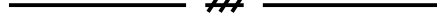
—	AGU	—	UTILITY (GENERIC-UNKNOWN)
—	T	—	TELEPHONE
—	E	—	ELECTRIC
—	C	—	CABLE (TV)
—	EC	—	ELECTRIC+CABLE
—	ET	—	ELECTRIC+TELEPHONE
—	AER E&T	—	ELECTRIC+TELEPHONE
—	CT	—	CABLE+TELEPHONE
—	ECT	—	ELECTRIC+CABLE+TELEP.
—		—	UTILITY POLE GUY WIRE

PROJECT DESIGN & LAYOUT SYMBOLOLOGY

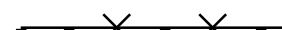
— - - CZ — - - CLEAR ZONE
 _____ PLAN LAYOUT MATCHLINE

	TOP OF CUT SLOPE
	TOE OF FILL SLOPE
	STONE FILL
	BOTTOM OF DITCH
	CULVERT PROPOSED
	STRUCTURE SUBSURFACE
	PROJECT DEMARCATION FENCE
	BARRIER FENCE
	TREE PROTECTION ZONE (TPZ)
	STRIPING LINE REMOVAL
	SHEET PILES

BOUNDARY LINES

	TOWN LINE	TOWN BOUNDARY LINE
	COUNTY LINE	COUNTY BOUNDARY LINE
	STATE LINE	STATE BOUNDARY LINE
		PROPOSED STATE R.O.W. (LIMITED ACCESS)
		PROPOSED STATE R.O.W.
		STATE ROW (LIMITED ACCESS)
		STATE ROW
		TOWN ROW
		PERMANENT EASEMENT LINE (P)
		TEMPORARY EASEMENT LINE (T)
		SURVEY LINE
		PROPERTY LINE (P/L)
		SLOPE RIGHTS
		6F PROPERTY BOUNDARY
		4F PROPERTY BOUNDARY
		HAZARDOUS WASTE

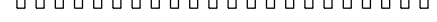
EPSC MEASURES

	FILTER CURTAIN
	SILT FENCE
	SILT FENCE WOVEN WIRE
	CHECK DAM
	DISTURBED AREAS REQUIRING RE-VEGETATION
	EROSION MATTING

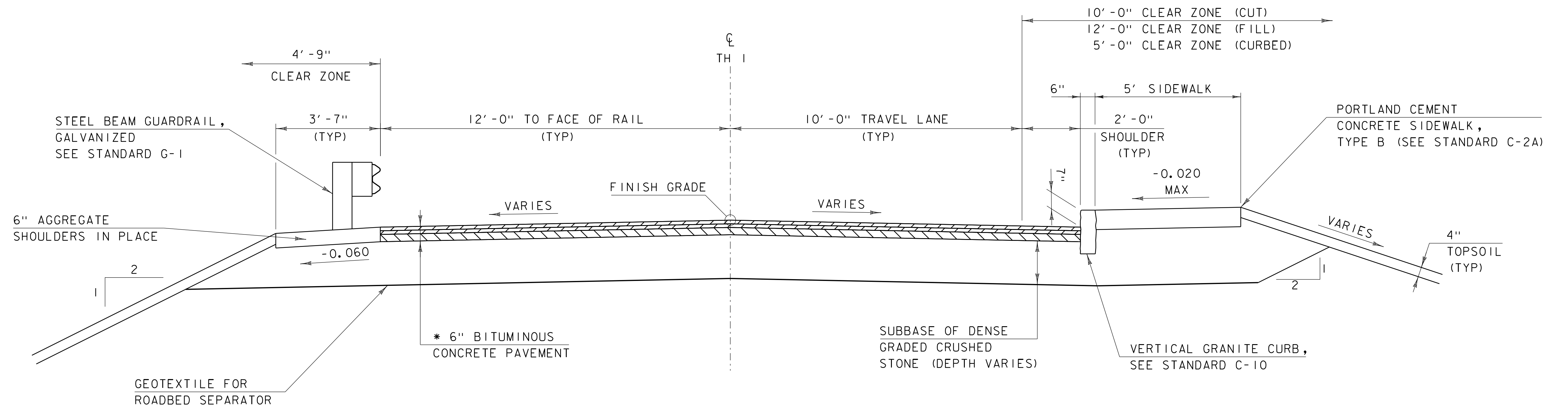
	WETLAND BOUNDARY
	RIPARIAN BUFFER ZONE
	WETLAND BUFFER ZONE
	SOIL TYPE BOUNDARY
	THREATENED & ENDANGERED SPECIES
	HAZARDOUS WASTE AREA
	AGRICULTURAL LAND
	FISH & WILDLIFE HABITAT
	FLOOD PLAIN
	ORDINARY HIGH WATER (OHW)
	STORM WATER
	USDA FOREST SERVICE LANDS
	WILDLIFE HABITAT SUIT/CONN

——— ARCH ——— ARCHEOLOGICAL BOUNDARY
 — HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
 ——— HISTORIC ——— HISTORIC AREA
 (H) HISTORIC STRUCTURE

EXISTING FEATURES

	ROAD EDGE PAVEMENT
	ROAD EDGE GRAVEL
	DRIVEWAY EDGE
	DITCH
	FOUNDATION
	FENCE (EXISTING)
	FENCE WOOD POST
	FENCE STEEL POST
	GARDEN
	ROAD GUARDRAIL
	RAILROAD TRACKS
	CULVERT (EXISTING)
	STONE WALL
	WALL
	WOOD LINE
	BRUSH LINE
	HEDGE
	BODY OF WATER EDGE
	LEDGE EXPOSED

FILE NAME: sl3j302leg.dgn	PLOT DATE: 28-JAN-2016
PROJECT LEADER: R. YOUNG	DRAWN BY: T. MATTHEWS
DESIGNED BY: T. MATTHEWS	CHECKED BY: J. GRIGAS
LEGEND SHEET	SHEET 3 OF 16



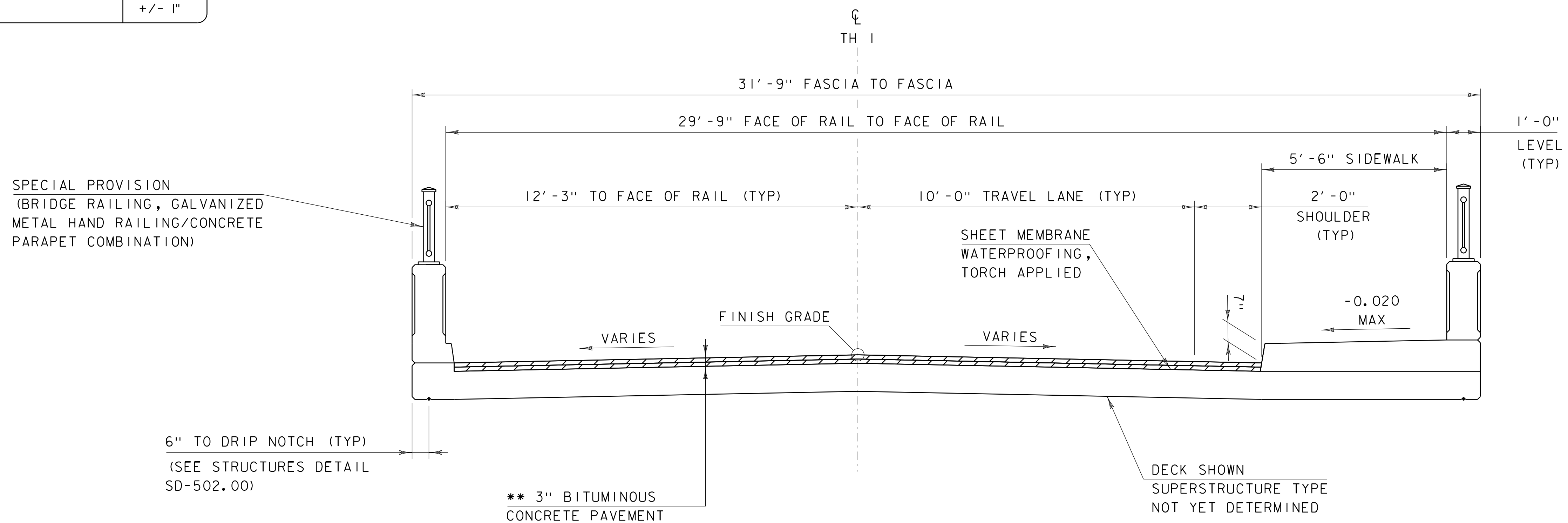
ROADWAY TYPICAL SECTION

SCALE 1/2" = 1'-0"

* 1 1/2" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS, OVER
1 1/2" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS, OVER
3" BITUMINOUS CONCRETE PAVEMENT TYPE I OR IIS

** 1 1/2" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS, OVER
1 1/2" BITUMINOUS CONCRETE PAVEMENT TYPE III OR IVS

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROWS	+/- 1"



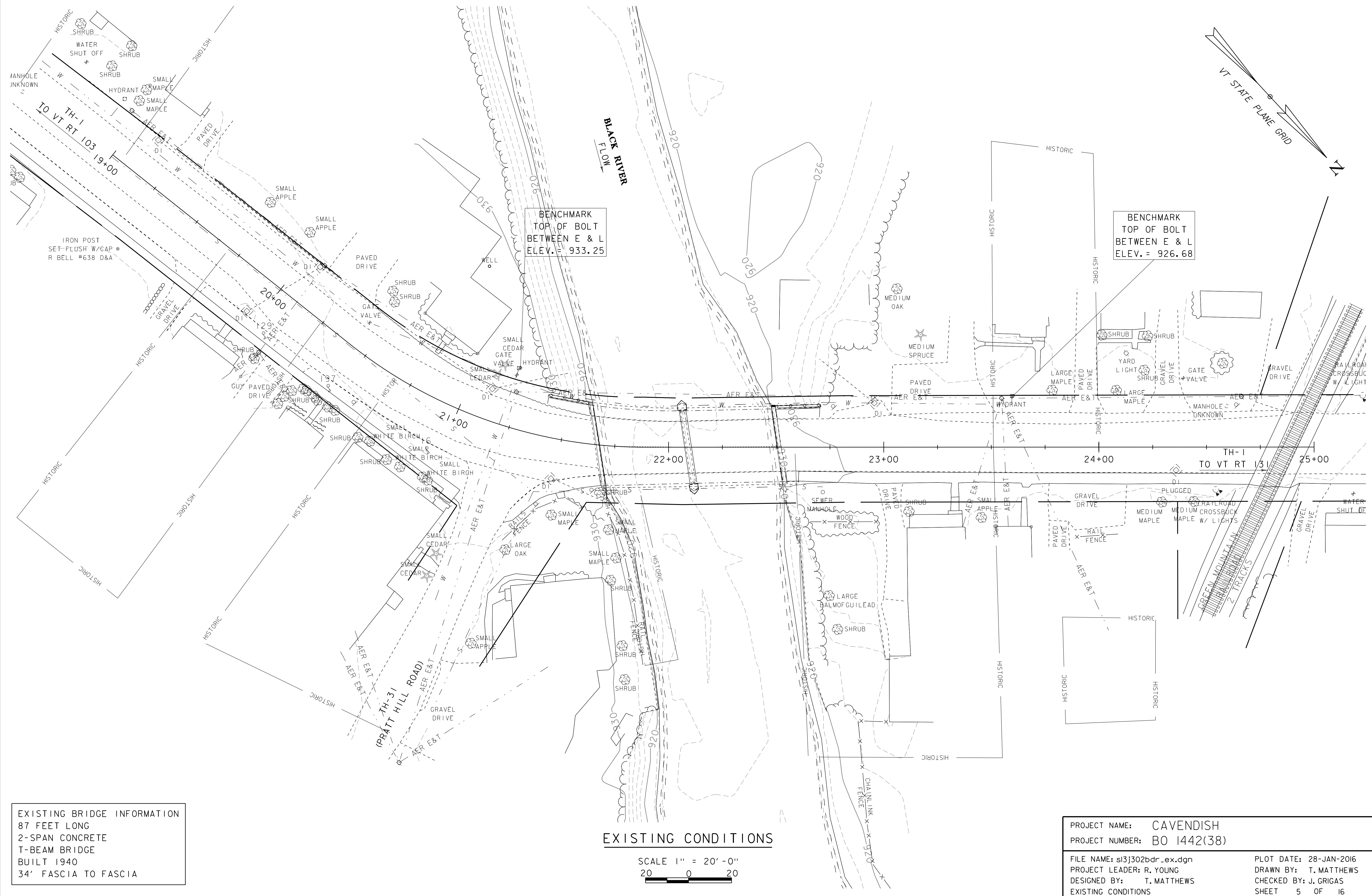
BRIDGE TYPICAL SECTION

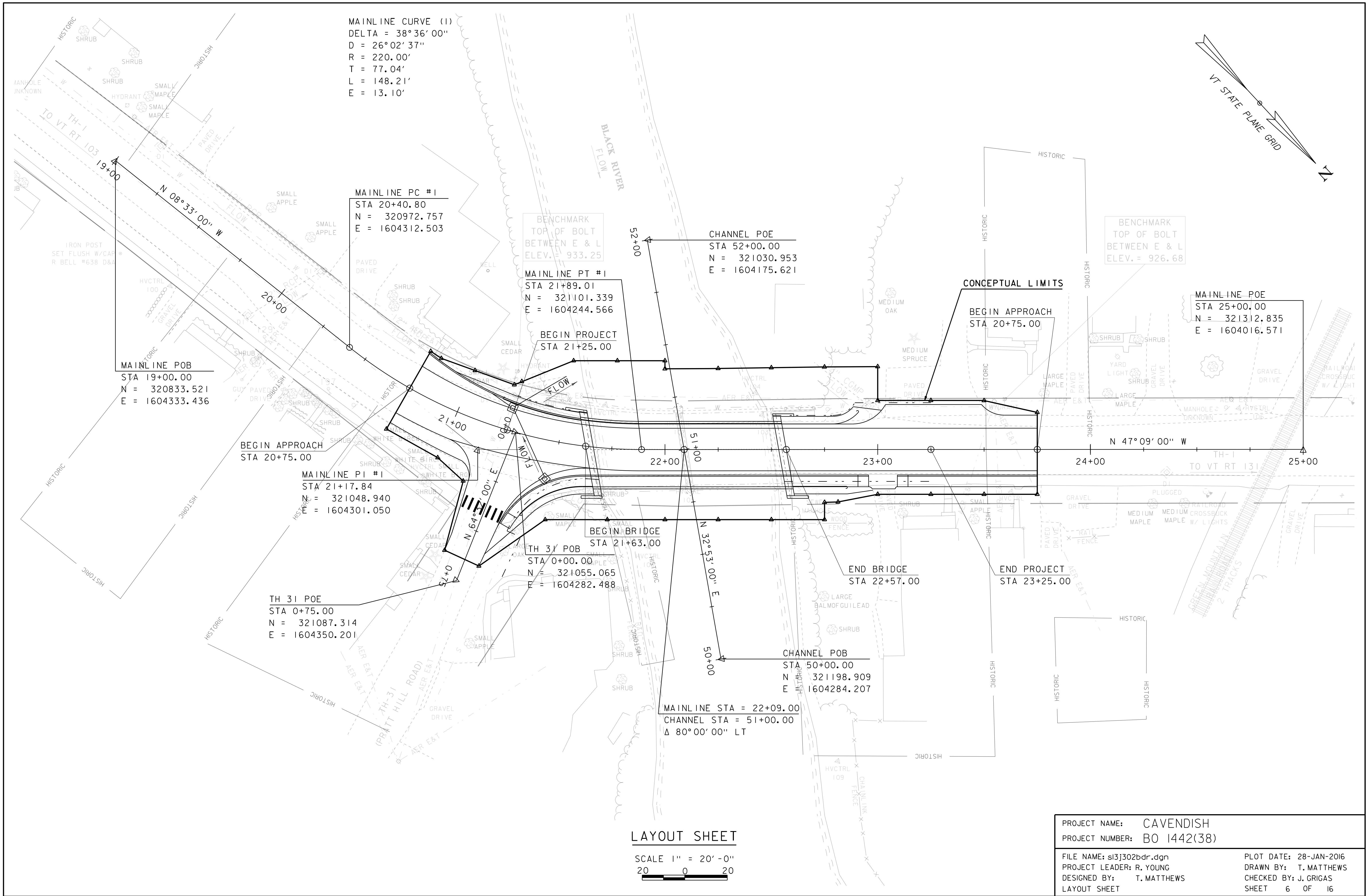
SCALE 1/2" = 1'-0"

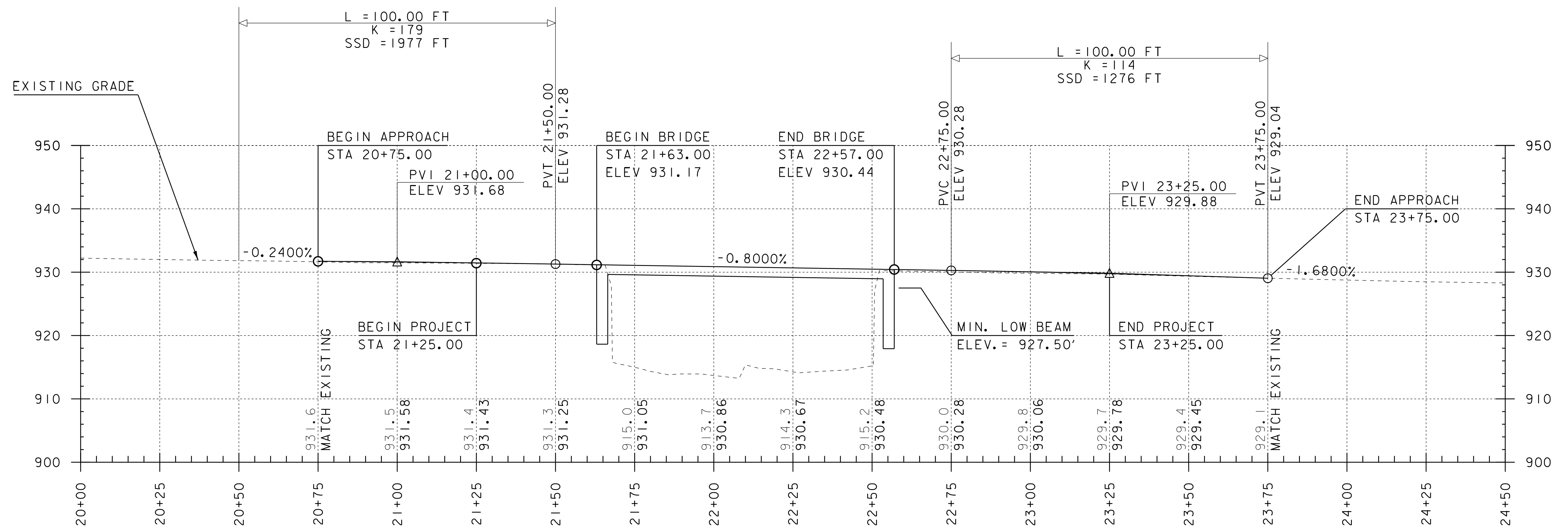
PROJECT NAME: CAVENDISH
PROJECT NUMBER: BO 1442(38)

FILE NAME: sl3j302typ.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: T. MATTHEWS
TYPICAL SECTIONS

PLOT DATE: 28-JAN-2016
DRAWN BY: T. MATTHEWS
CHECKED BY: J. GRIGAS
SHEET 4 OF 16







MAINLINE PROFILE

HOR. SCALE 1" = 20' - 0"
VER. SCALE 1" = 10' - 0"

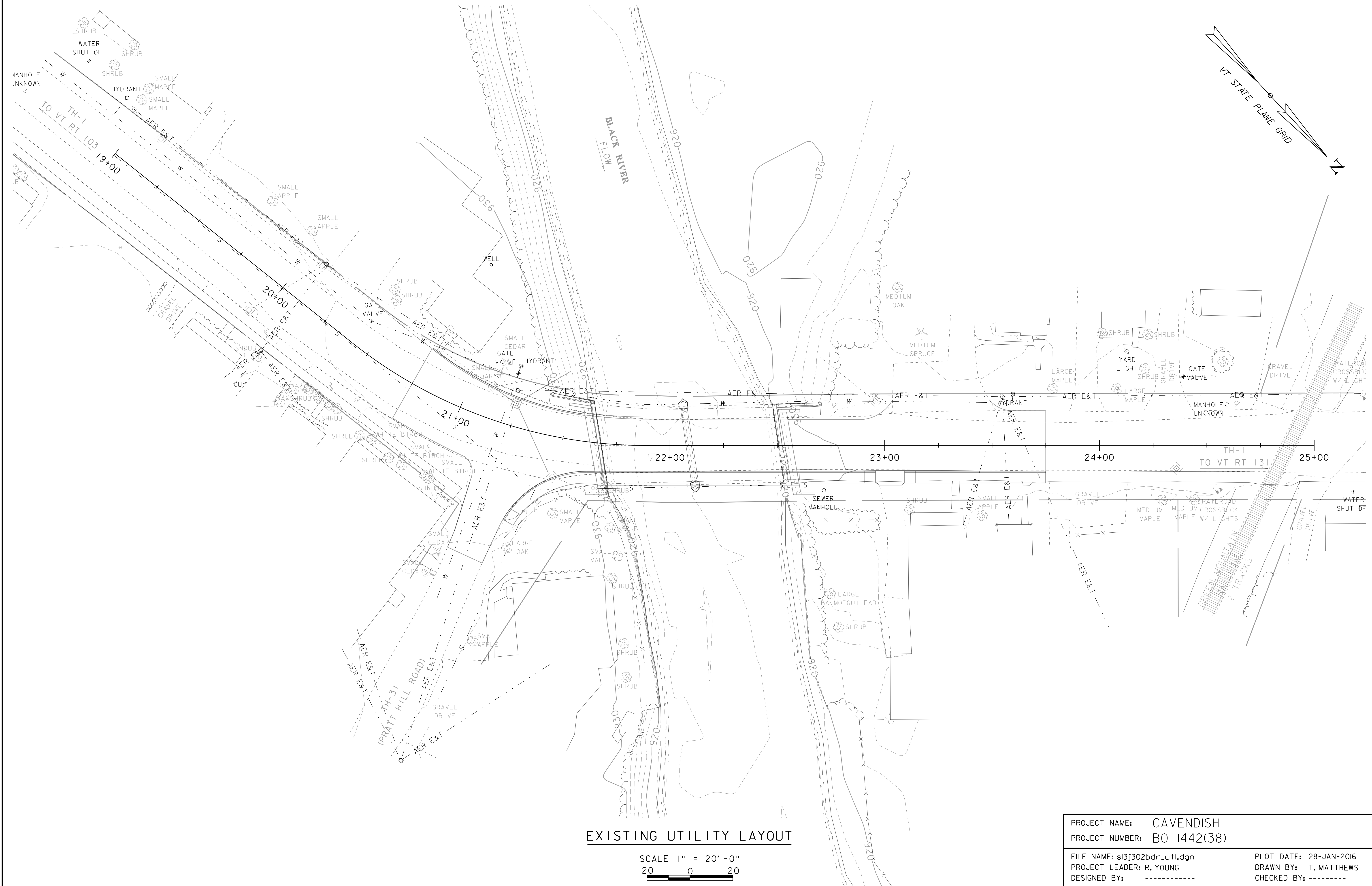
THE GRADES SHOWN TO THE TENTH ARE THE EXISTING GROUND ELEVATIONS ALONG THE PROPOSED ALIGNMENT

THE GRADES SHOWN TO THE NEAREST HUNDREDTH ARE THE FINISH GRADES ALONG THE PROPOSED ALIGNMENT

PROJECT NAME: CAVENDISH
PROJECT NUMBER: BO 1442(38)

FILE NAME: sl3j302pro.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: T. MATTHEWS
MAINLINE PROFILE

PLOT DATE: 28-JAN-2016
DRAWN BY: T. MATTHEWS
CHECKED BY: J. GRIGAS
SHEET 7 OF 16



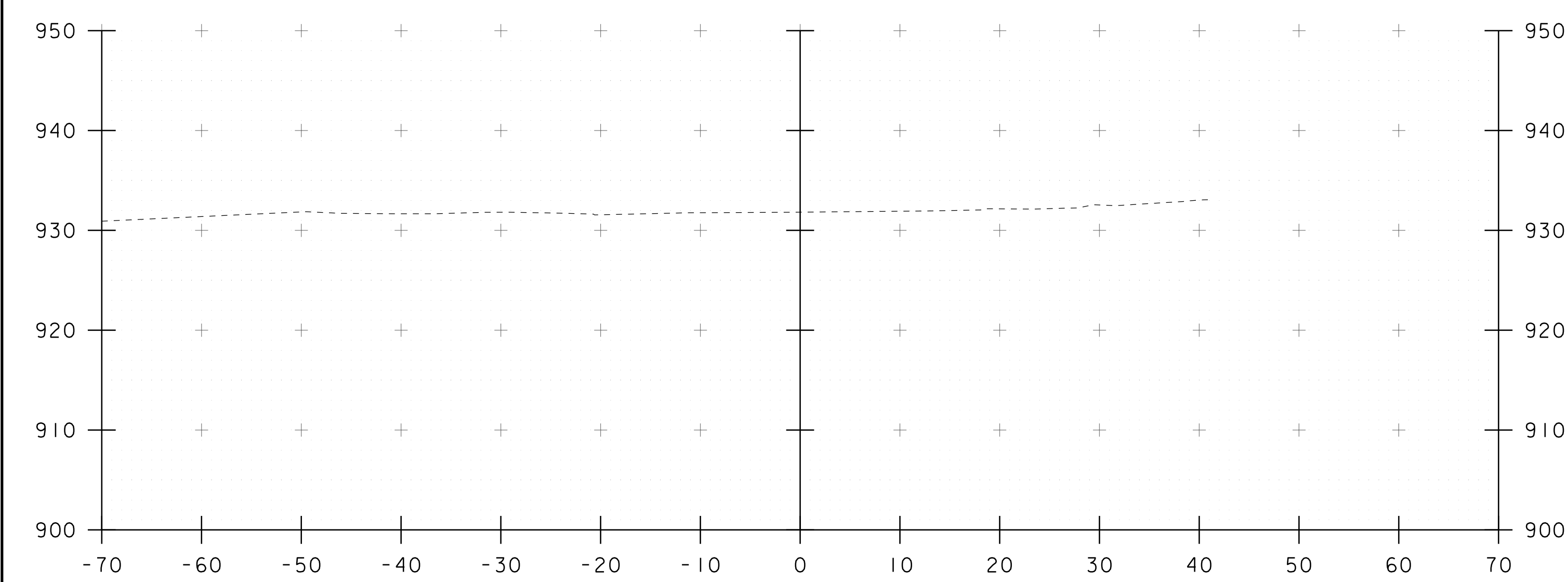
EXISTING UTILITY LAYOUT

SCALE 1" = 20'-0"

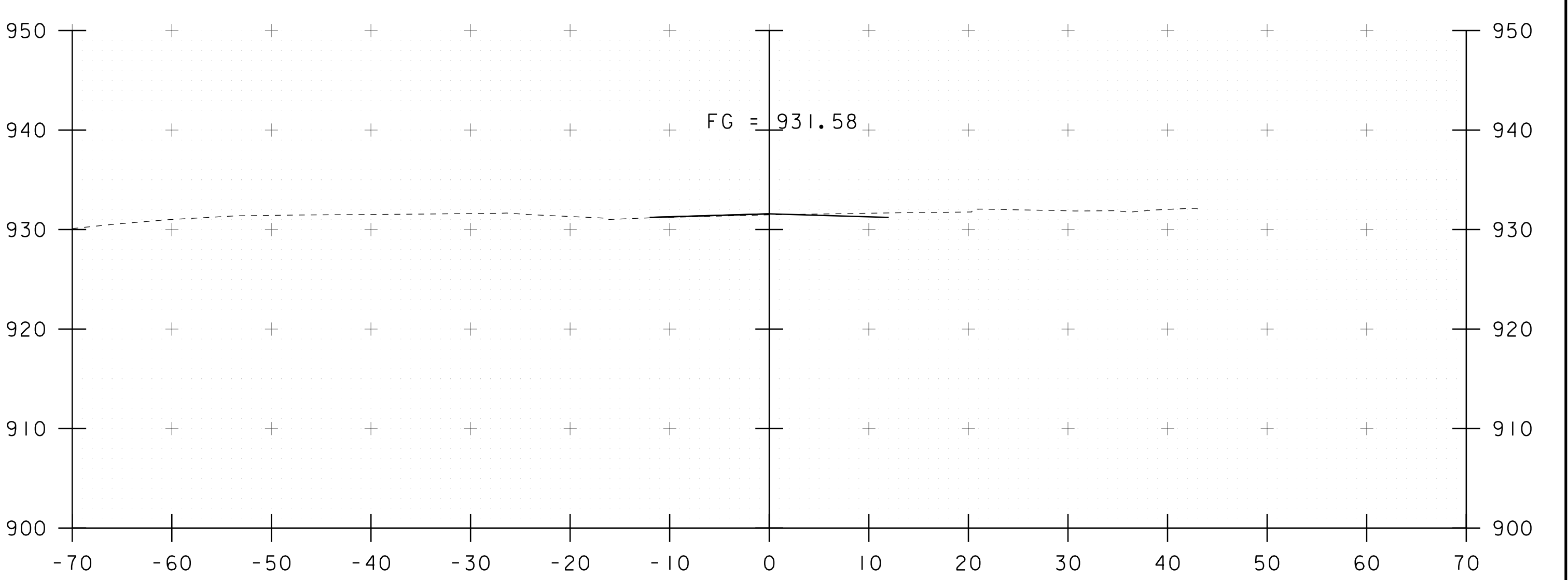
PROJECT NAME: CAVENDISH
PROJECT NUMBER: BO 1442(38)

FILE NAME: sl3j302bdr_utl.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: -----
EXISTING UTILITY LAYOUT

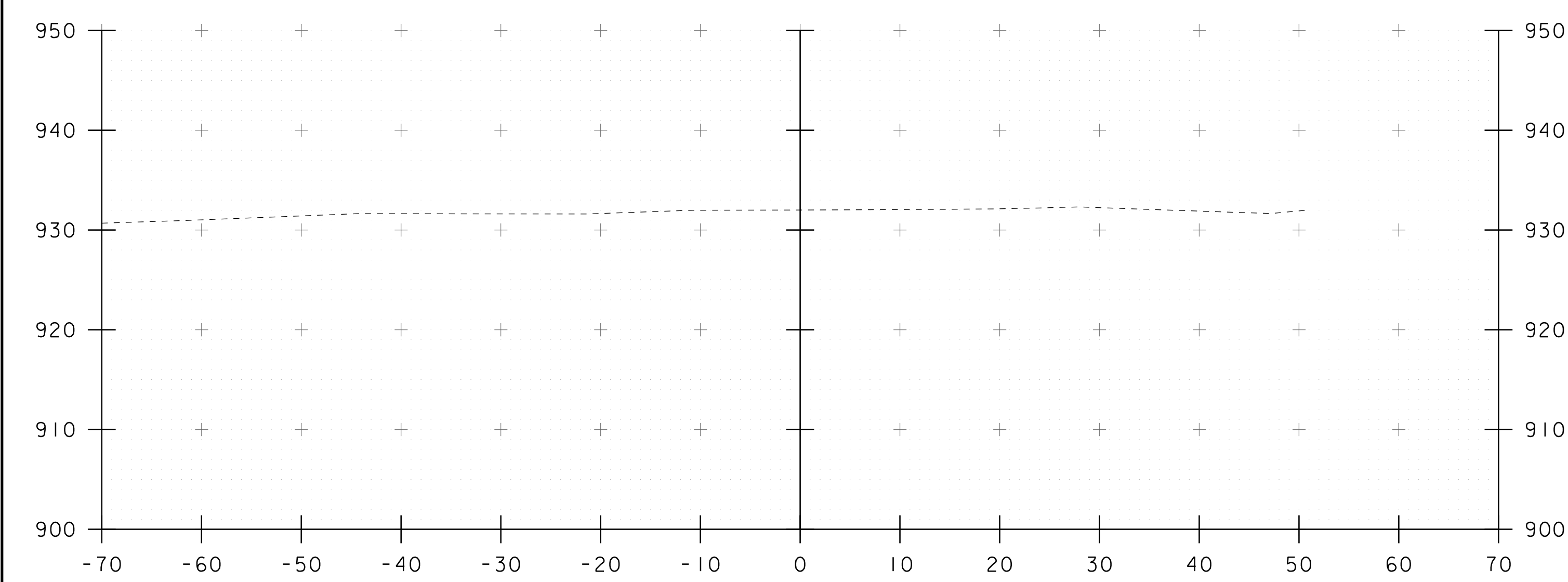
PLOT DATE: 28-JAN-2016
DRAWN BY: T. MATTHEWS
CHECKED BY: -----
SHEET 8 OF 16



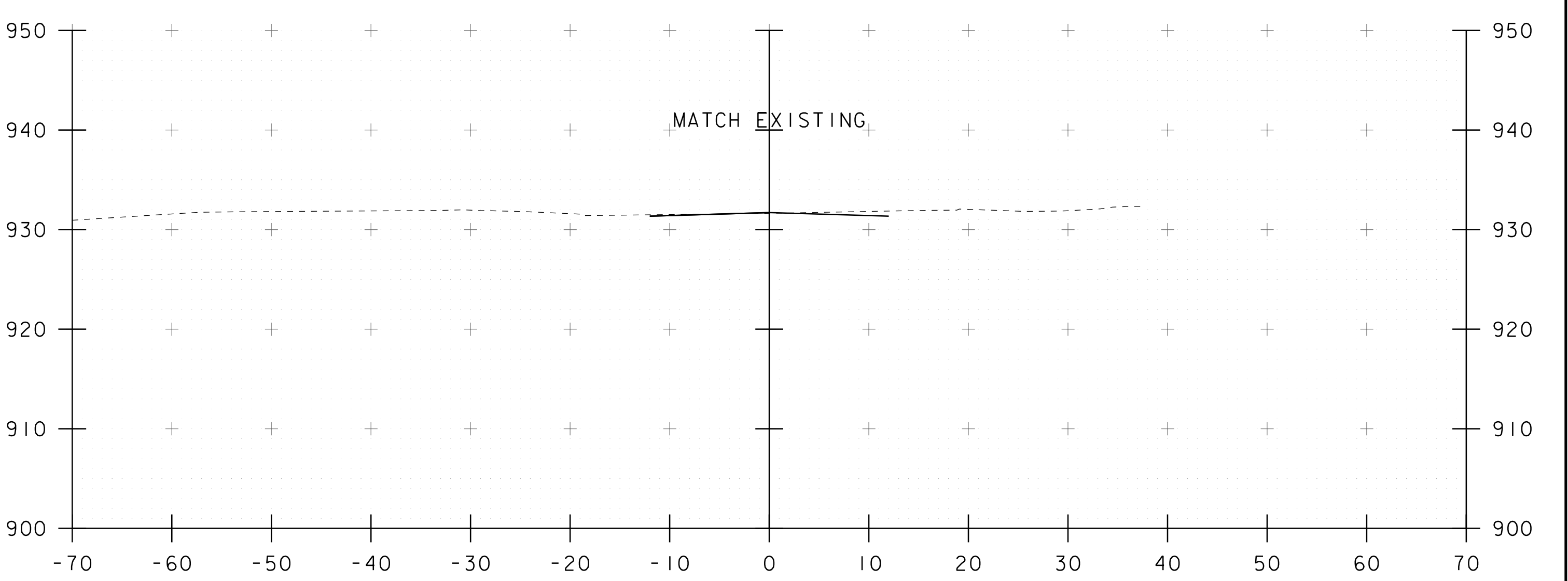
20+50



21+00



20+25



20+75

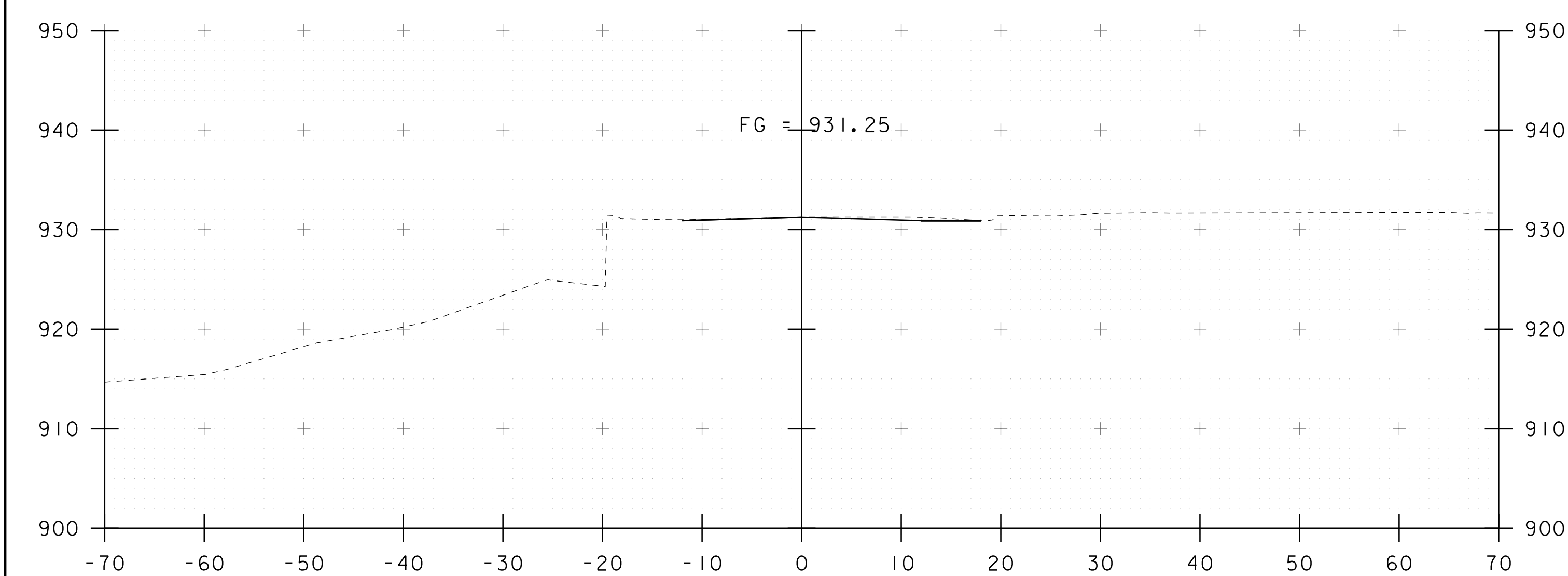
BEGIN APPROACH

STA. 20+25 TO STA. 21+00

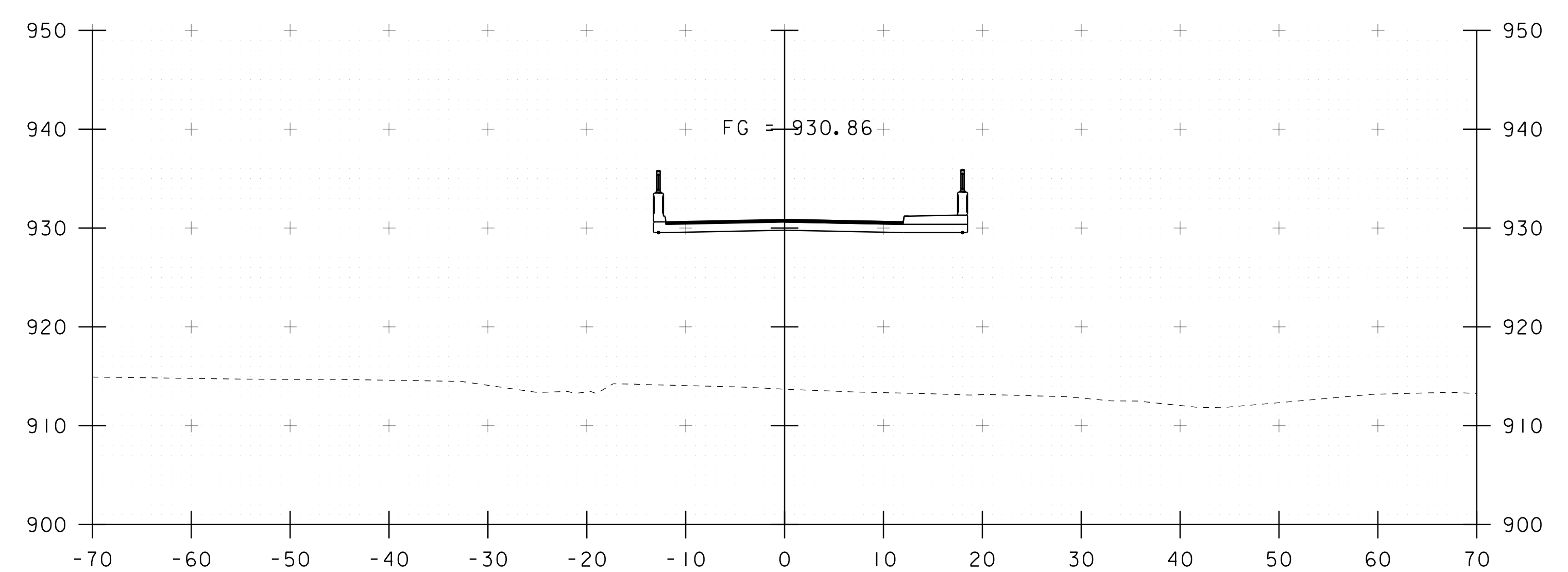
PROJECT NAME: CAVENDISH
PROJECT NUMBER: BO 1442(38)

FILE NAME: sl3j302xs.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: T. MATTHEWS
MAINLINE CROSS SECTIONS I

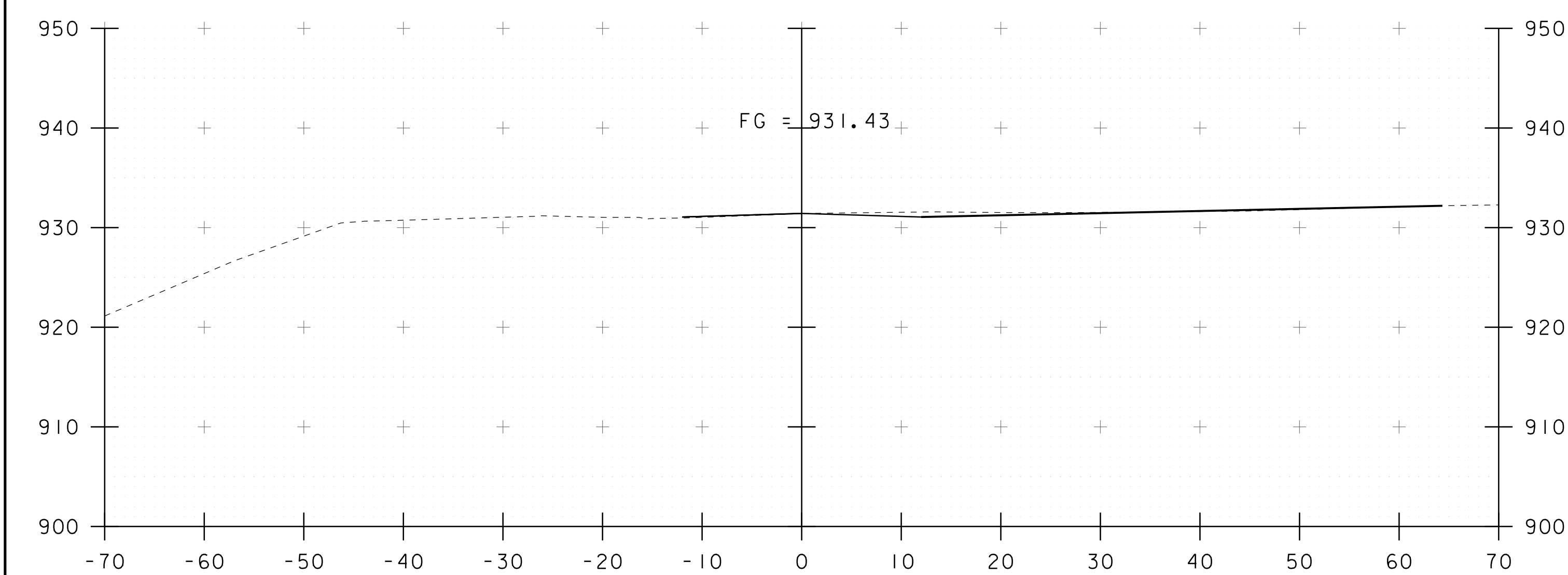
PLOT DATE: 28-JAN-2016
DRAWN BY: T. MATTHEWS
CHECKED BY: J. GRIGAS
SHEET 9 OF 16



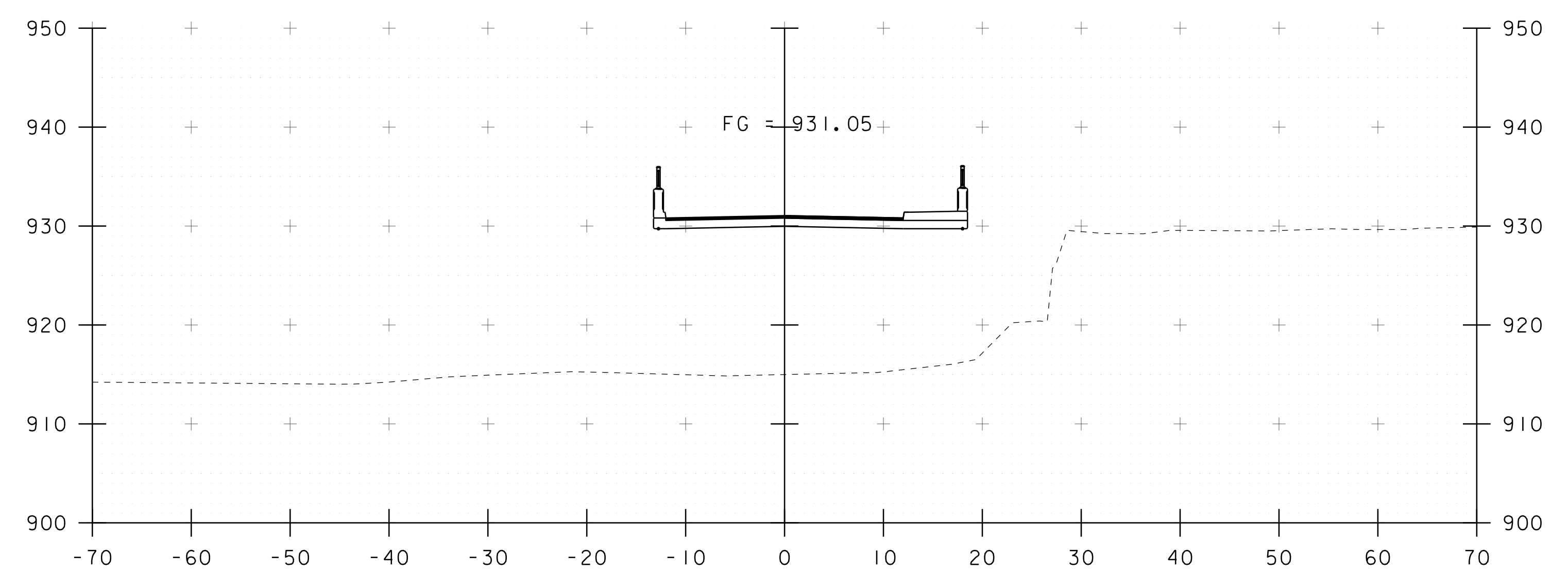
21+50



22+00



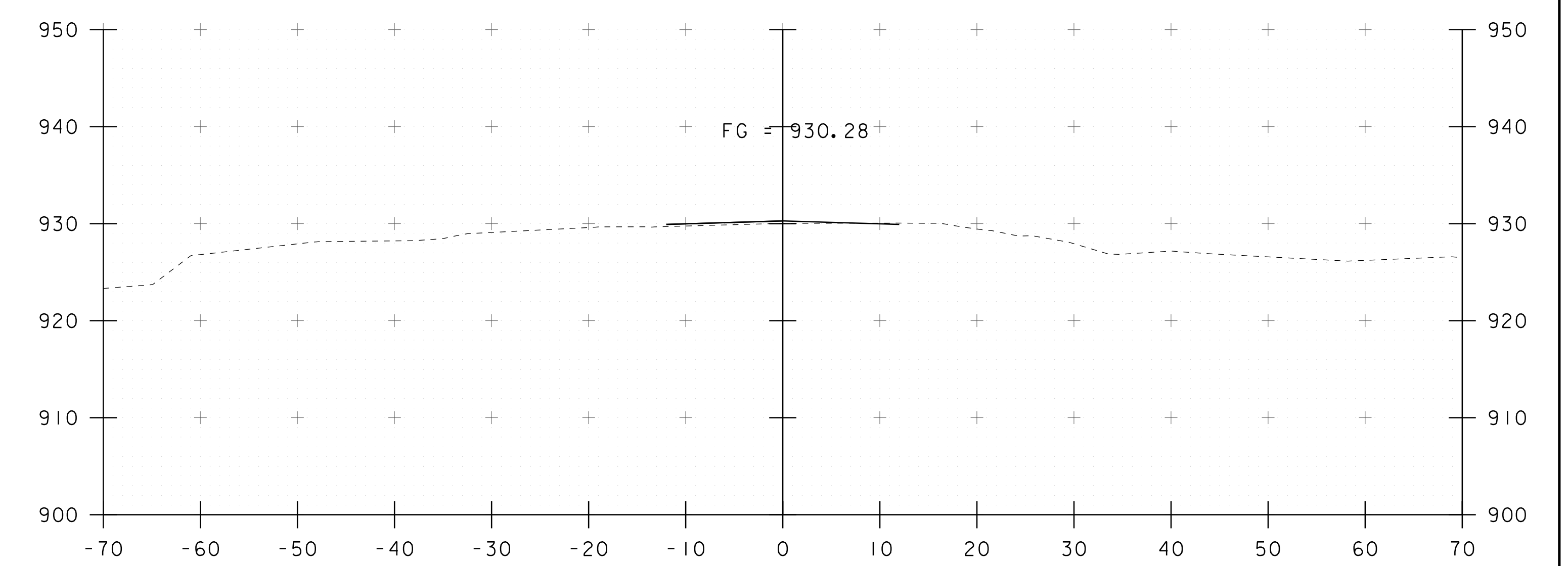
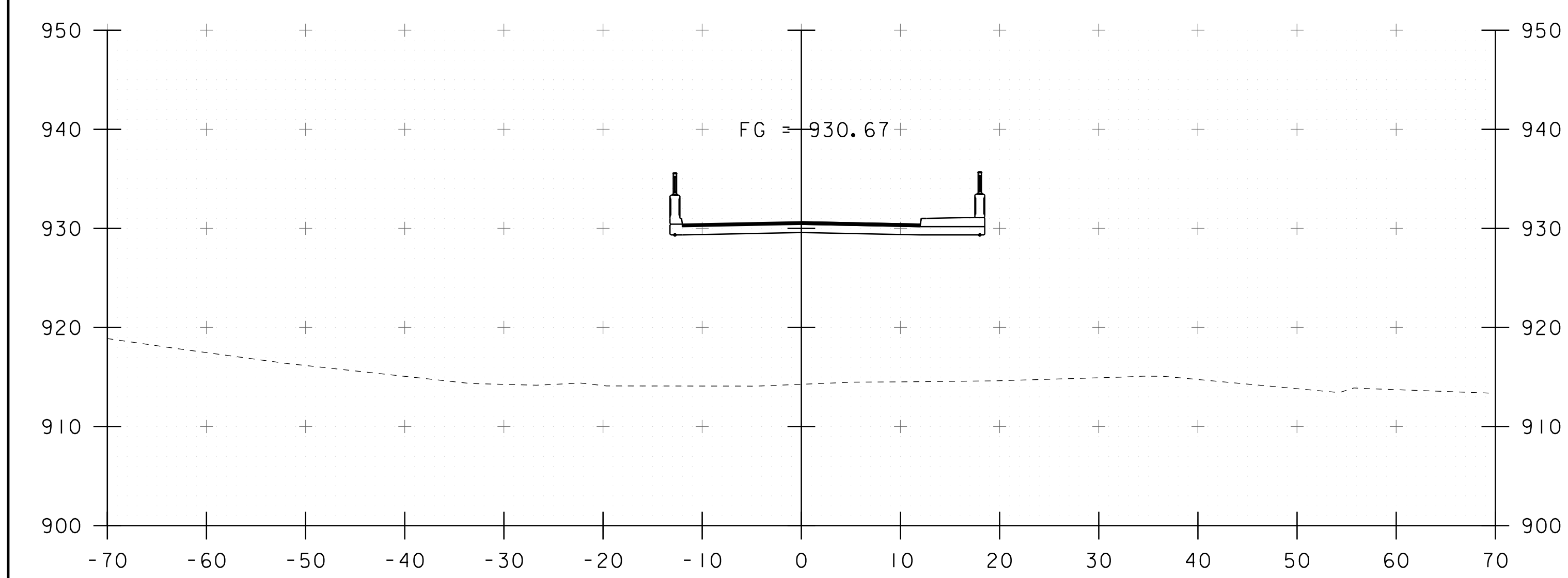
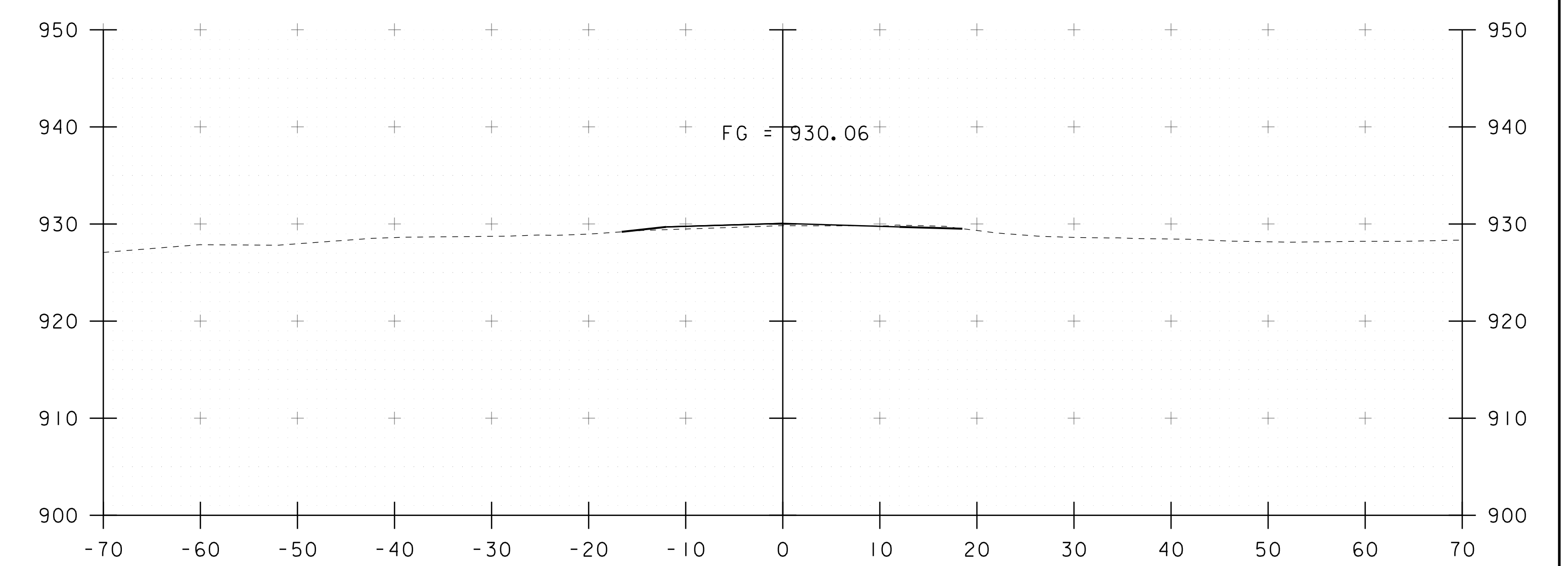
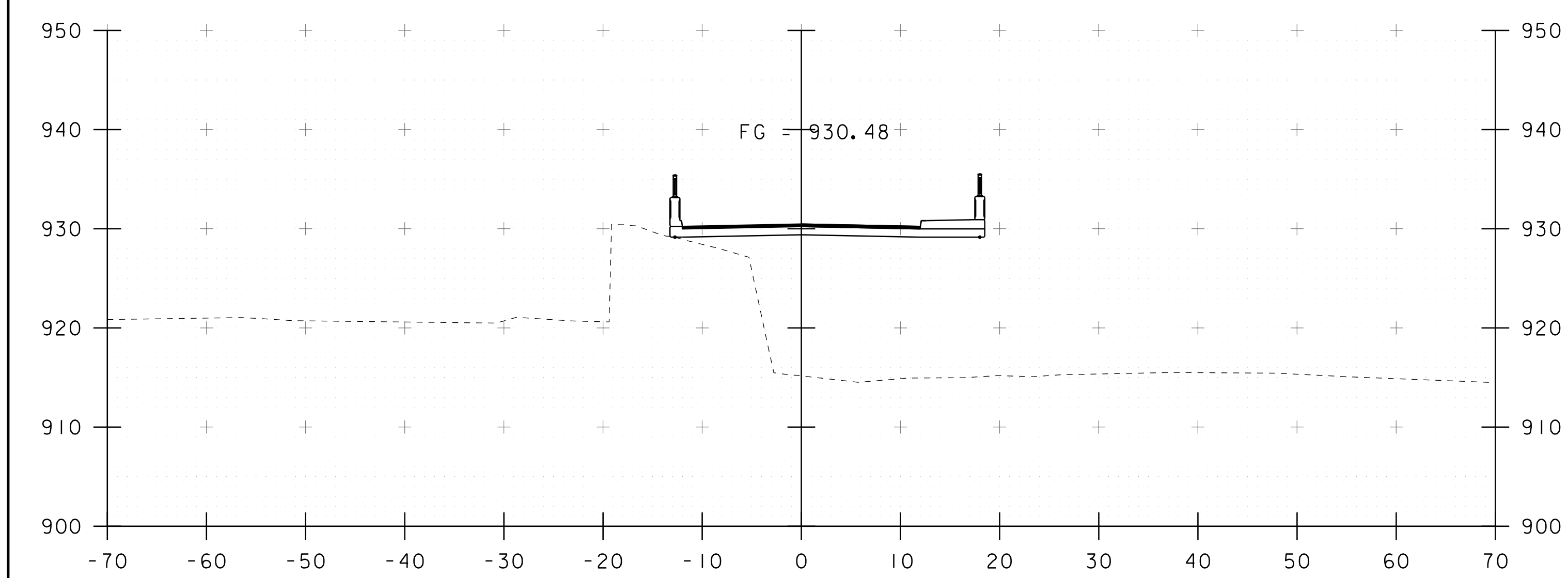
21+25
BEGIN PROJECT



21+75
BEGIN BRIDGE @ 21+63

STA. 21+25 TO STA. 22+00

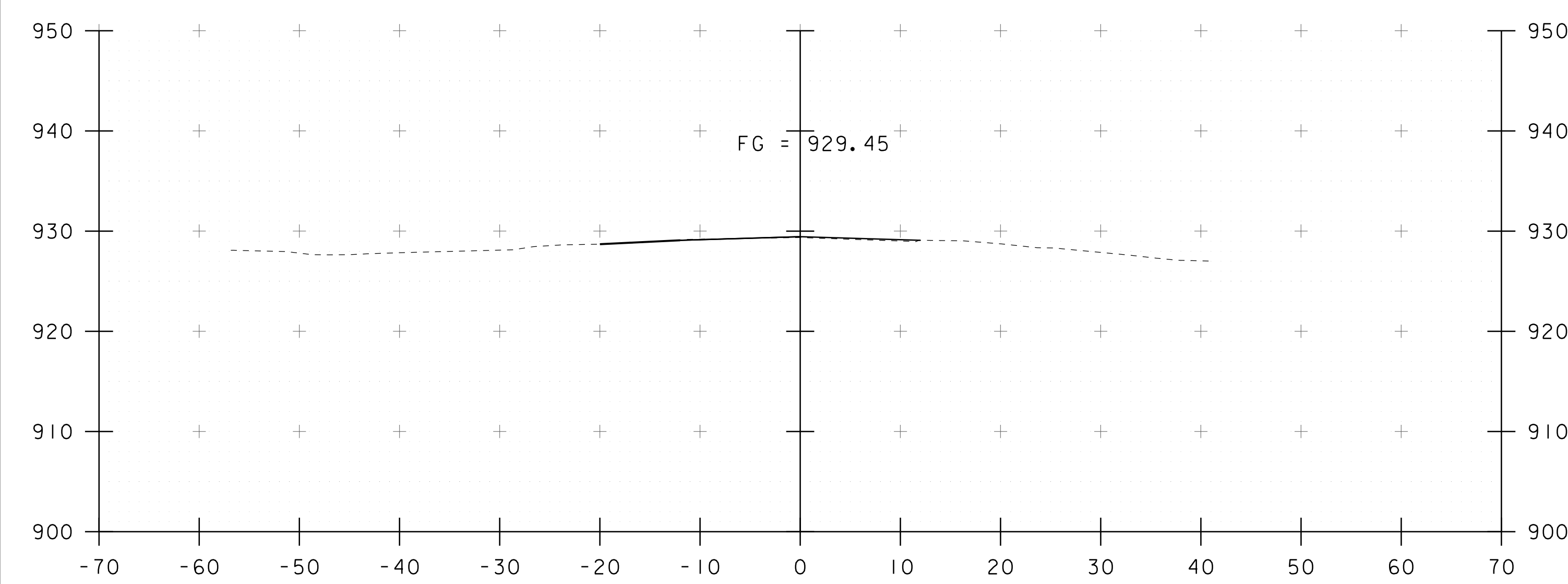
PROJECT NAME: CAVENDISH	
PROJECT NUMBER: BO 1442(38)	
FILE NAME: sl3j302xs.dgn	PLOT DATE: 28-JAN-2016
PROJECT LEADER: R. YOUNG	DRAWN BY: T. MATTHEWS
DESIGNED BY: T. MATTHEWS	CHECKED BY: J. GRIGAS
MAINLINE CROSS SECTIONS 2	SHEET 10 OF 16



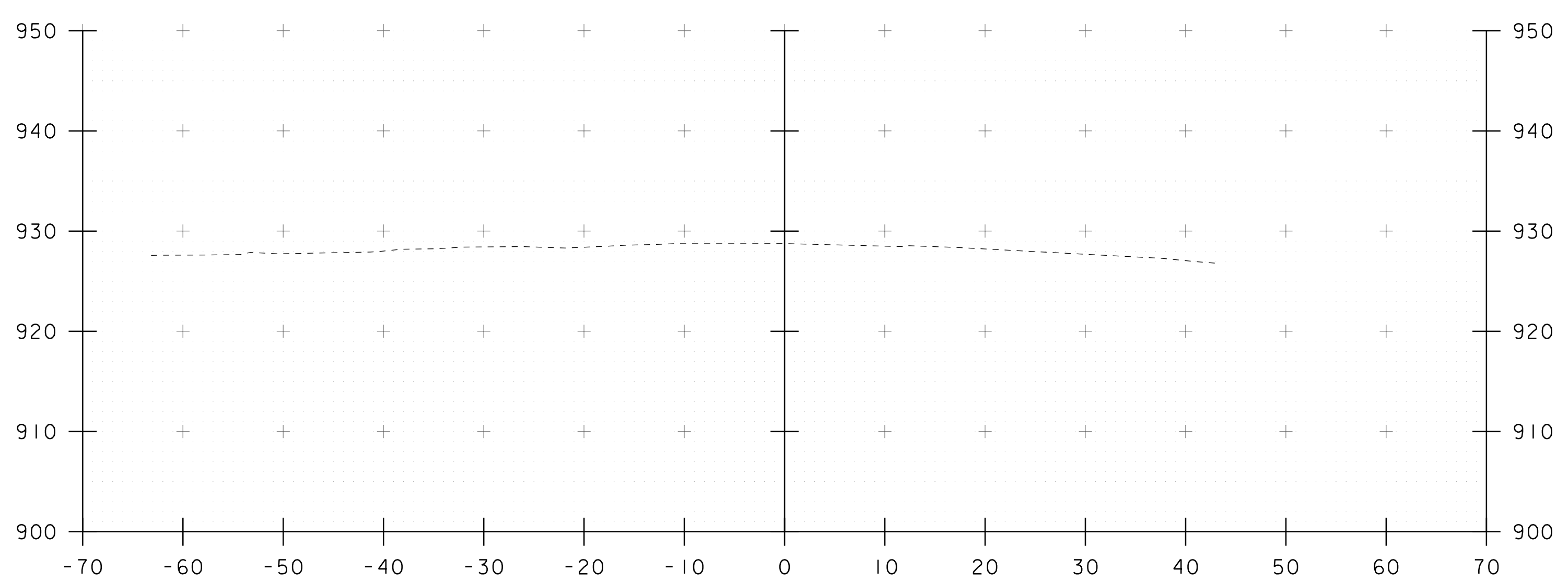
END BRIDGE @ 22+57

STA. 22+25 TO STA. 23+00

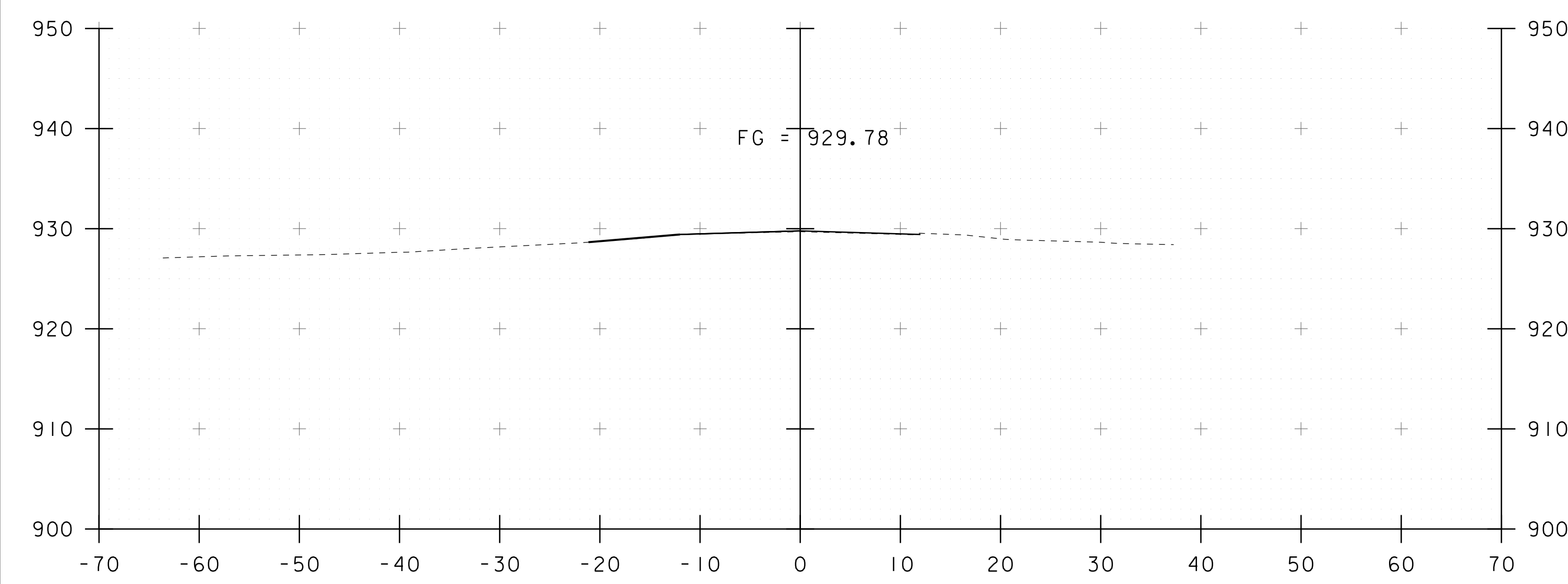
PROJECT NAME: CAVENDISH	
PROJECT NUMBER: BO 1442(38)	
FILE NAME: sl3j302xs.dgn	PLOT DATE: 28-JAN-2016
PROJECT LEADER: R. YOUNG	DRAWN BY: T. MATTHEWS
DESIGNED BY: T. MATTHEWS	CHECKED BY: J. GRIGAS
MAINLINE CROSS SECTIONS 3	SHEET II OF 16



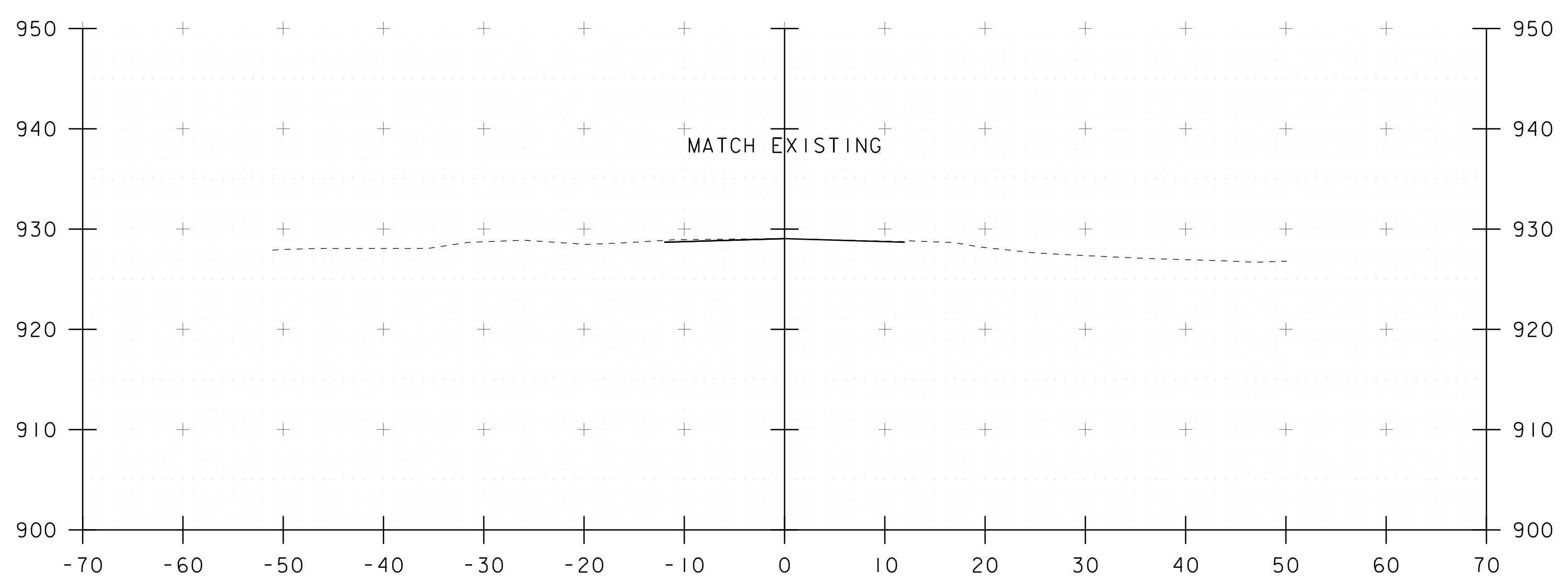
23+50



24+00



23+25
END PROJECT



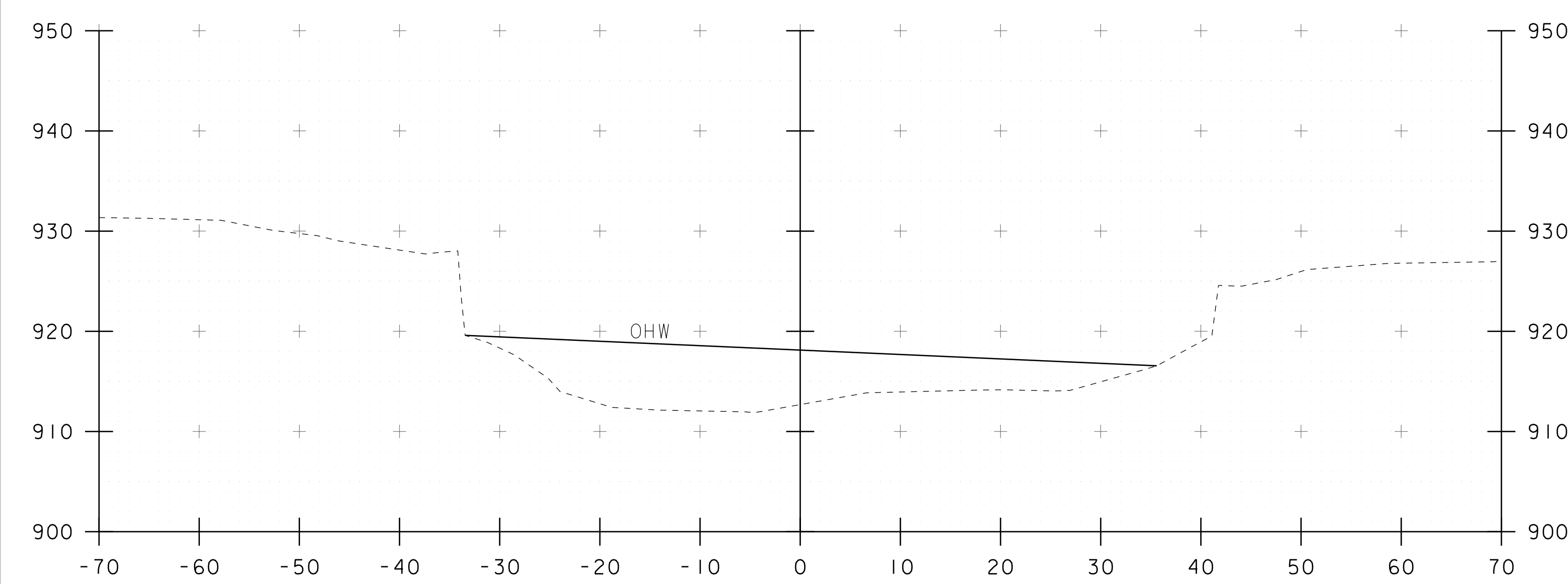
23+75
END APPROACH

STA. 23+25 TO STA. 24+00

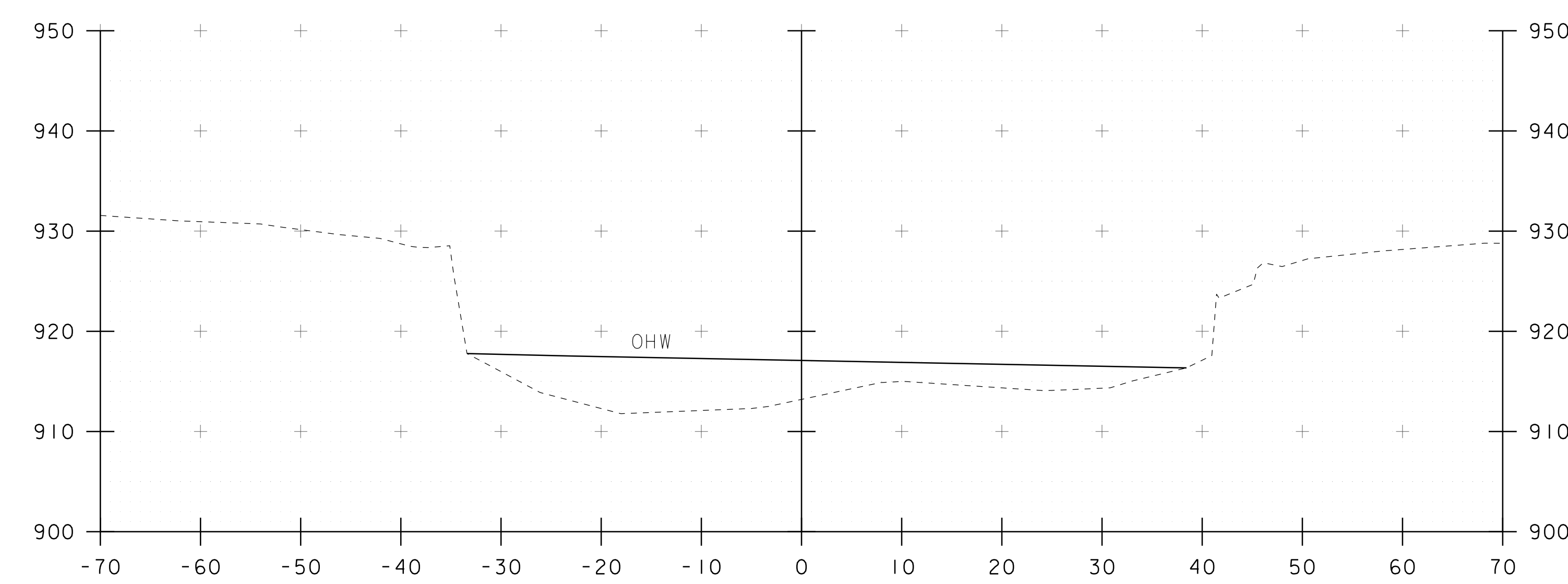
PROJECT NAME: CAVENDISH
PROJECT NUMBER: BO 1442(38)

FILE NAME: sl3j302xs.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: T. MATTHEWS
MAINLINE CROSS SECTIONS 4

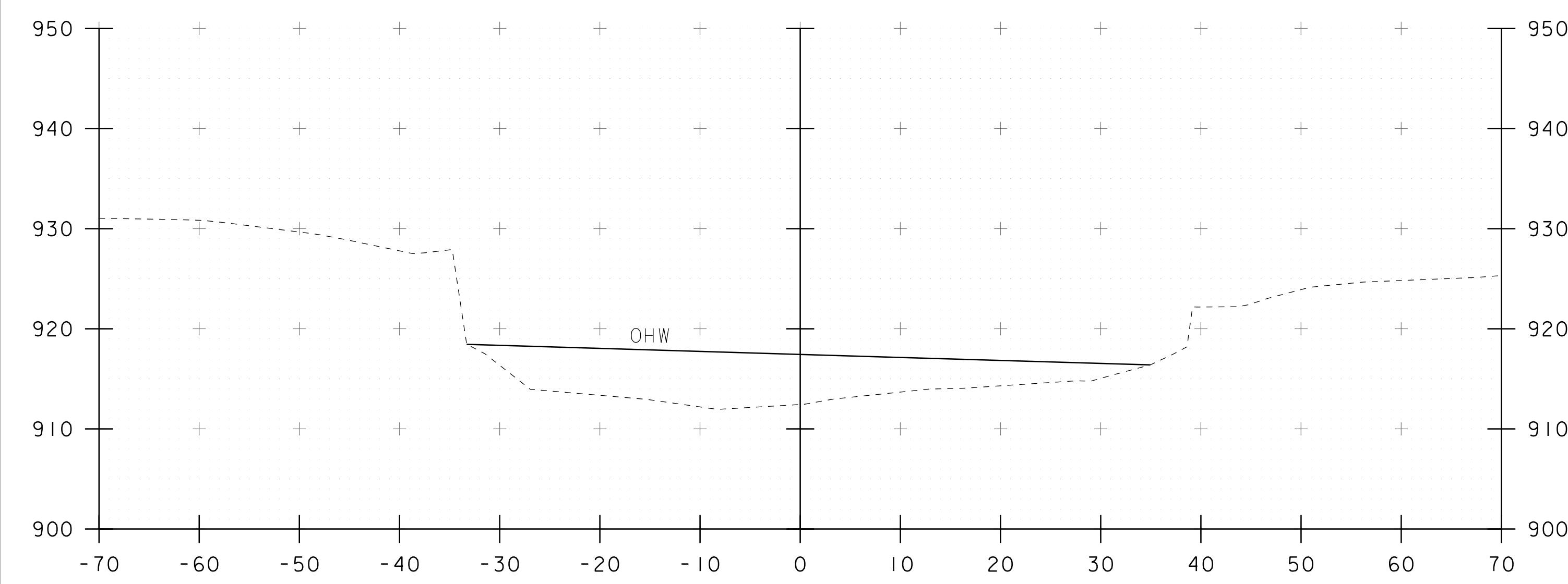
PLOT DATE: 28-JAN-2016
DRAWN BY: T. MATTHEWS
CHECKED BY: J. GRIGAS
SHEET 12 OF 16



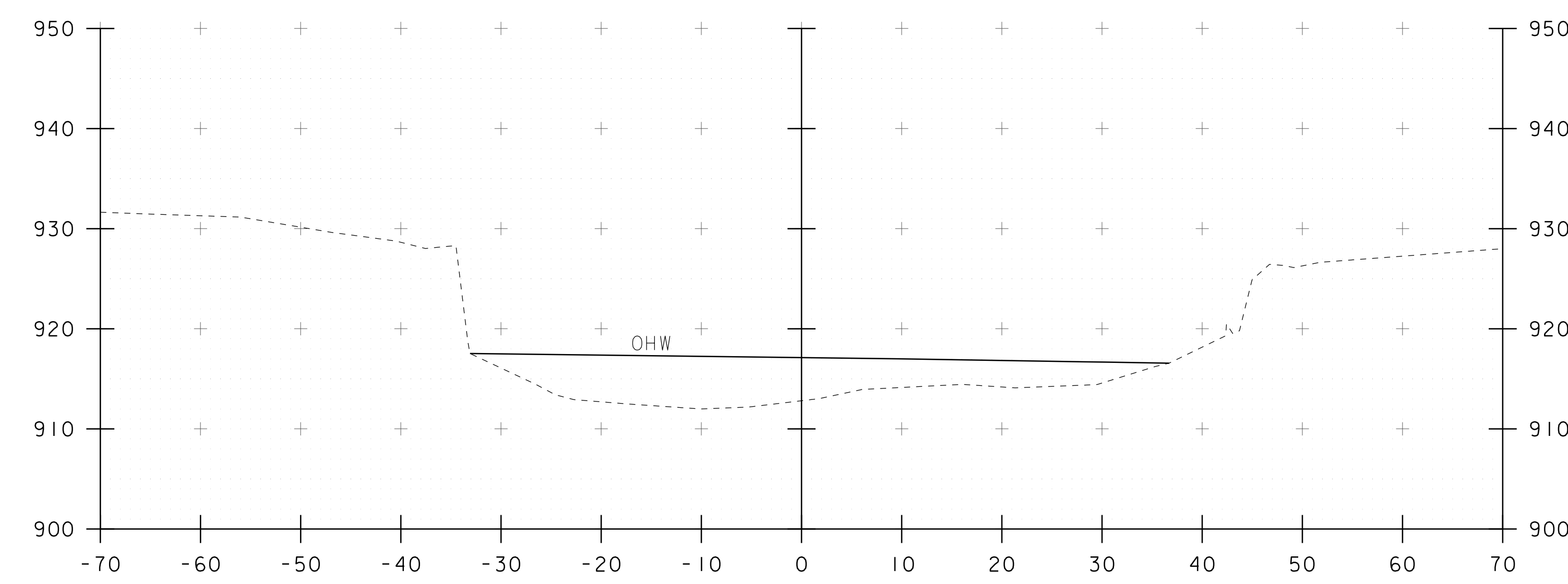
50+25



50+60



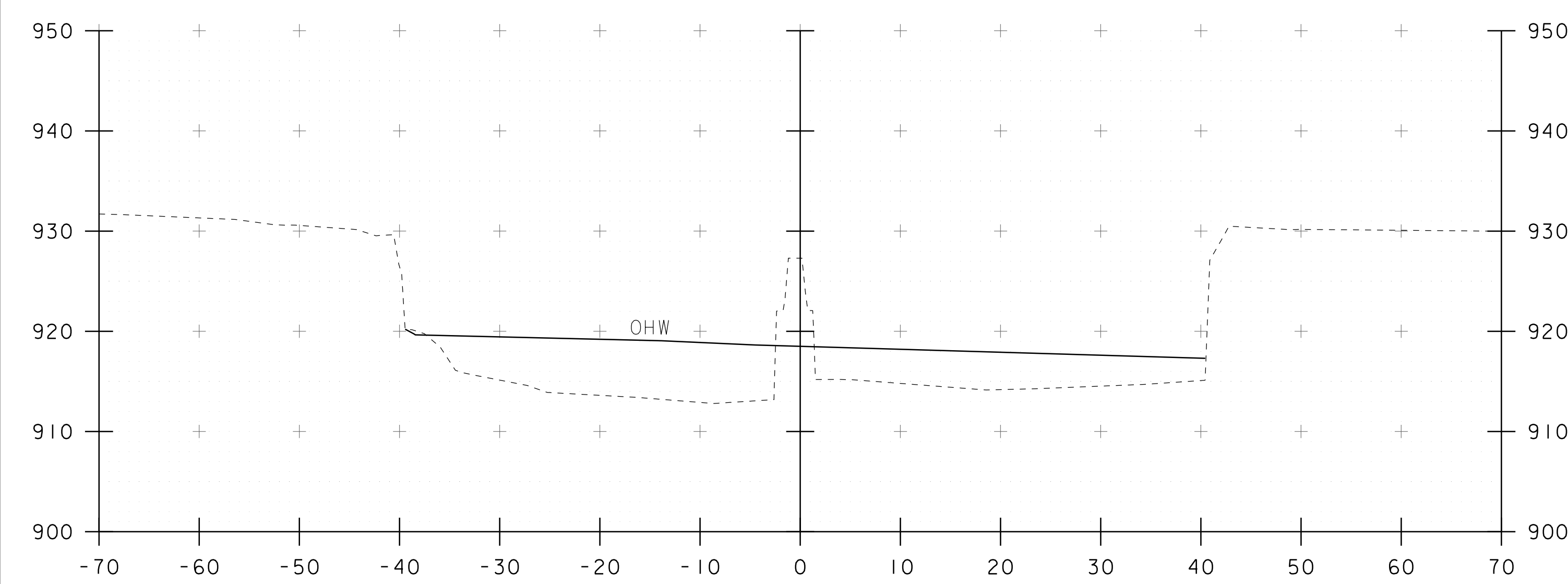
50+00



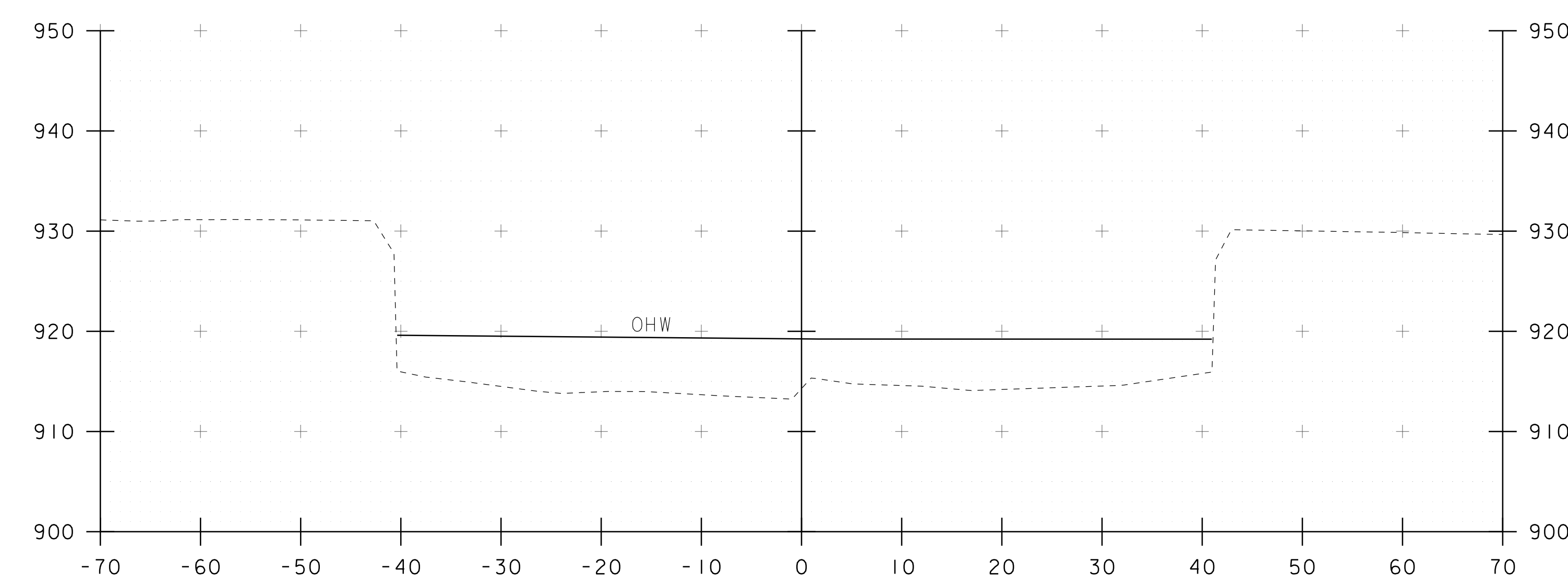
50+50

STA. 50+00 TO STA. 50+60

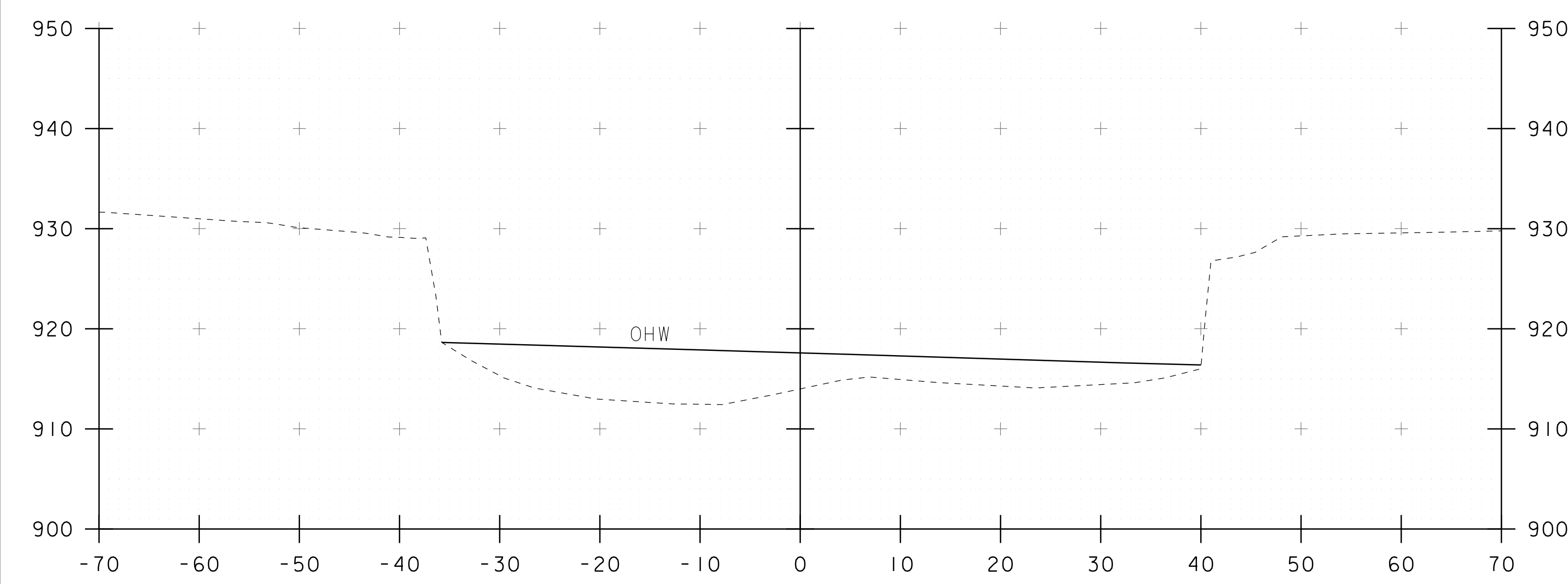
PROJECT NAME: CAVENDISH	
PROJECT NUMBER: BO 1442(38)	
FILE NAME: sl3j302xs.dgn	PLOT DATE: 28-JAN-2016
PROJECT LEADER: R. YOUNG	DRAWN BY: T. MATTHEWS
DESIGNED BY: T. MATTHEWS	CHECKED BY: J. GRIGAS
CHANNEL CROSS SECTIONS I	SHEET 13 OF 16



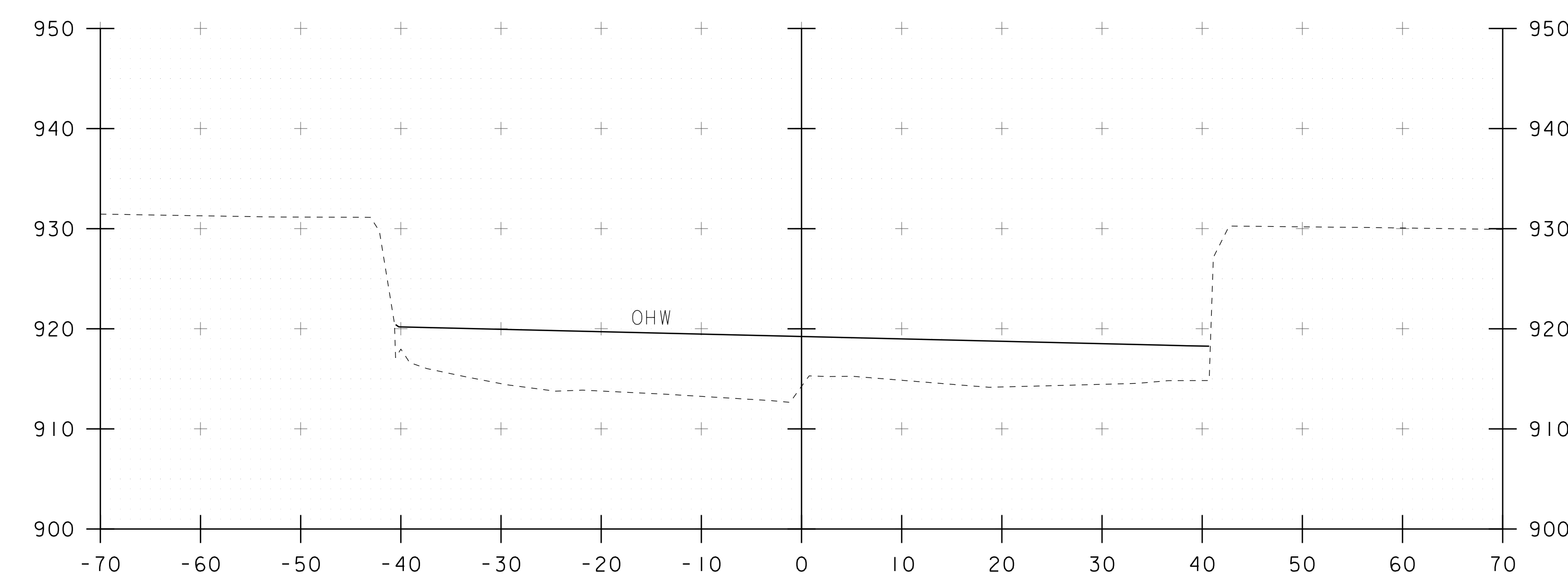
50+80



51+00



50+70



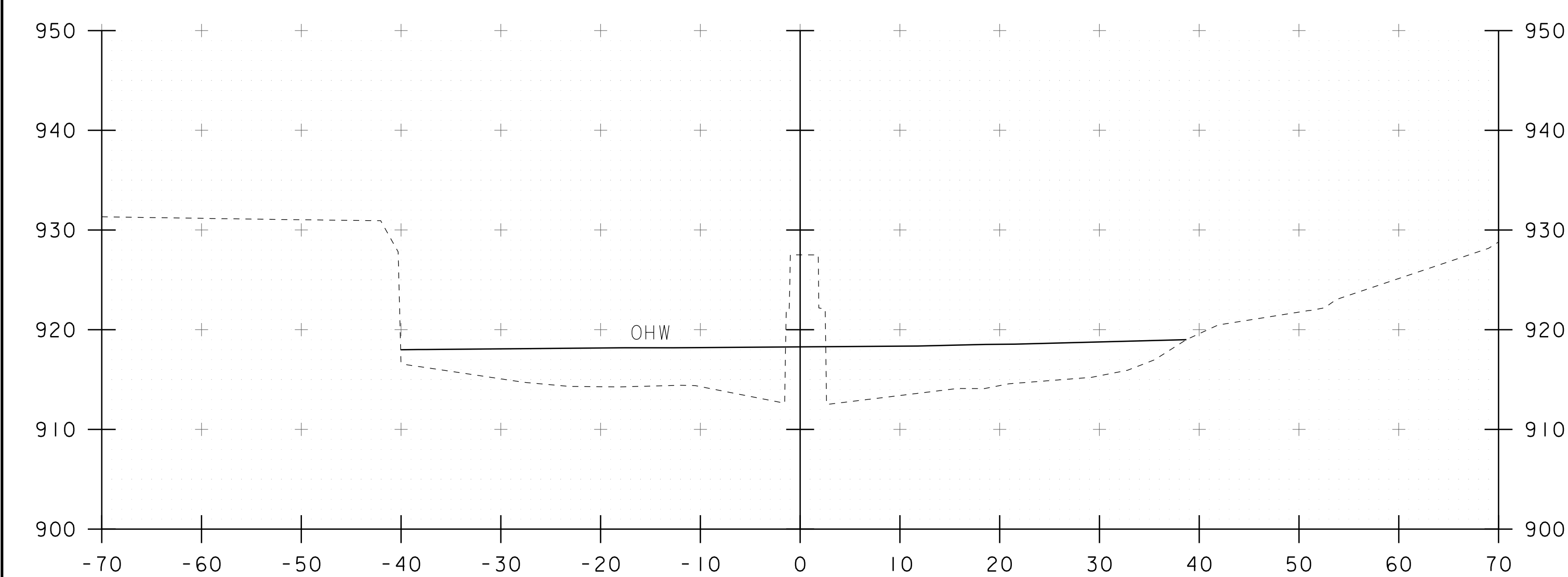
50+90

STA. 50+70 TO STA. 51+00

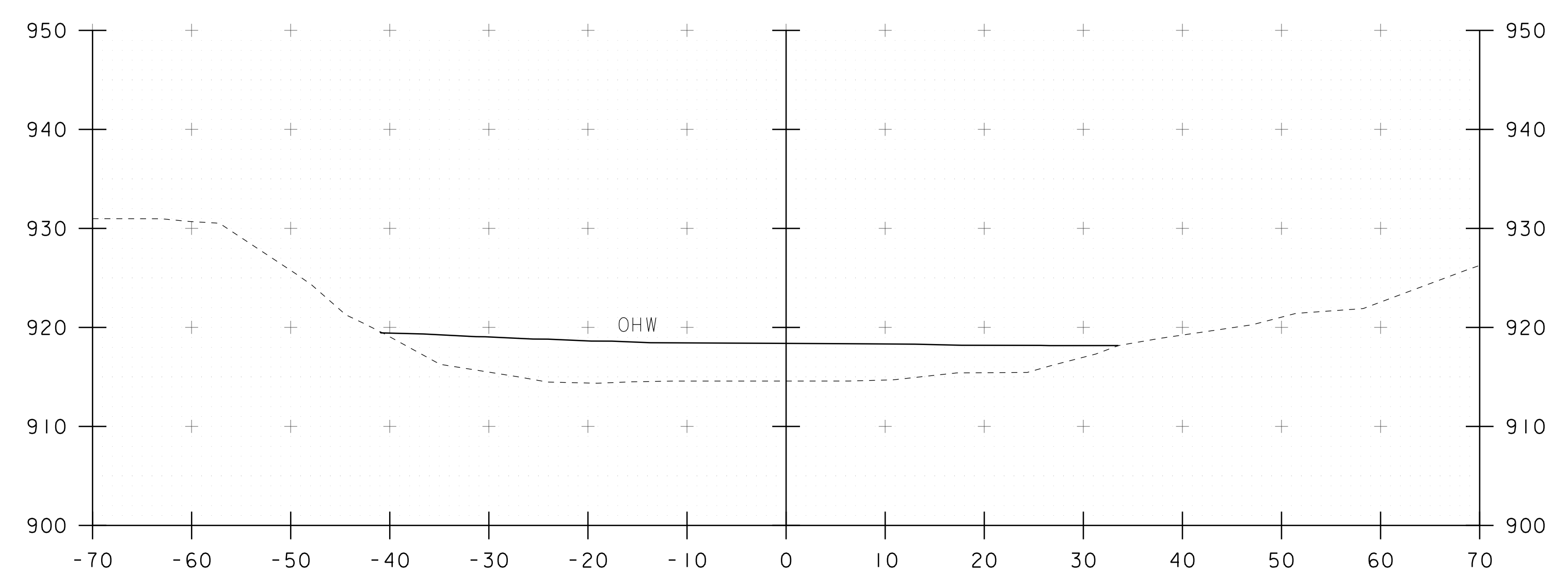
PROJECT NAME: CAVENDISH
PROJECT NUMBER: BO 1442(38)

FILE NAME: sl3j302xs.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: T. MATTHEWS
CHANNEL CROSS SECTIONS 2

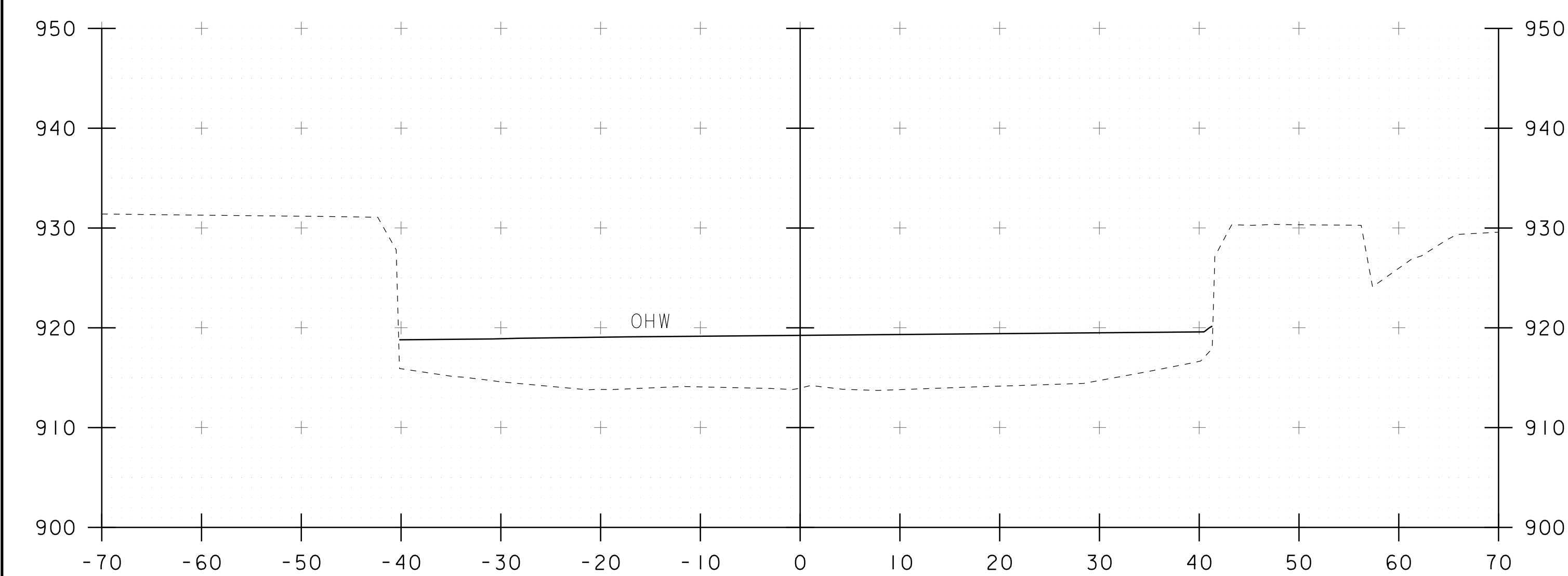
PLOT DATE: 28-JAN-2016
DRAWN BY: T. MATTHEWS
CHECKED BY: J. GRIGAS
SHEET 14 OF 16



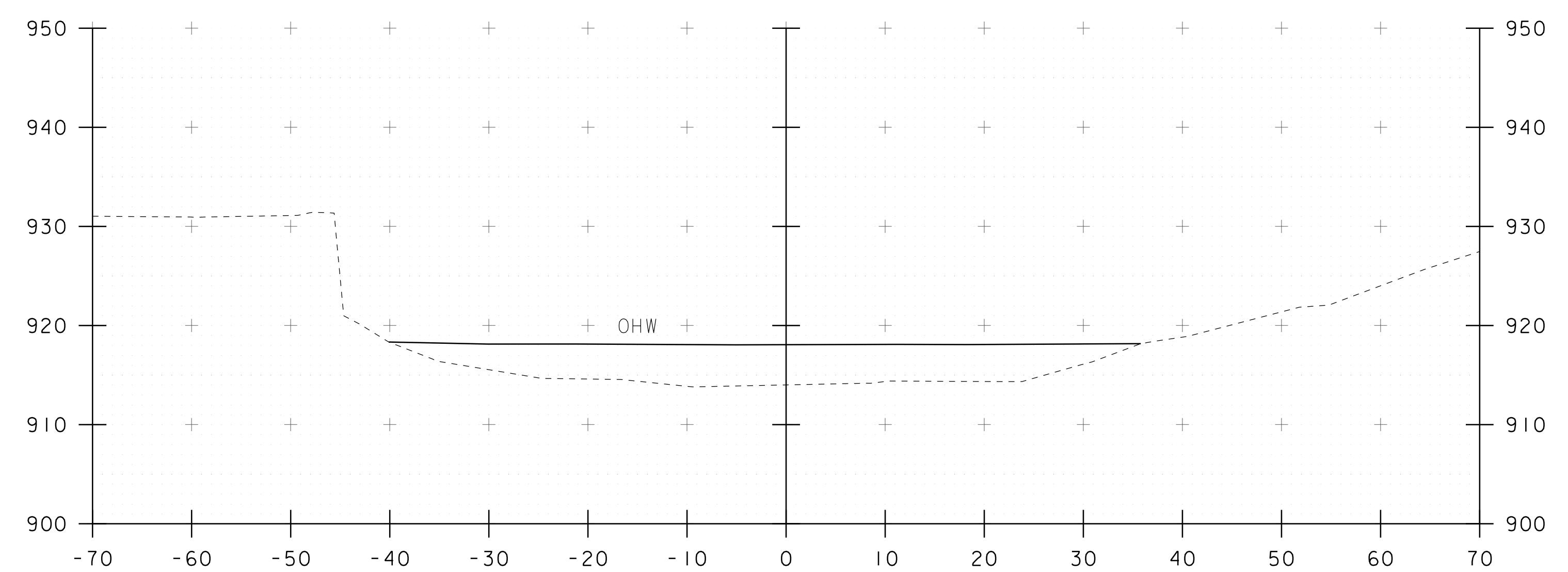
51+20



51+40



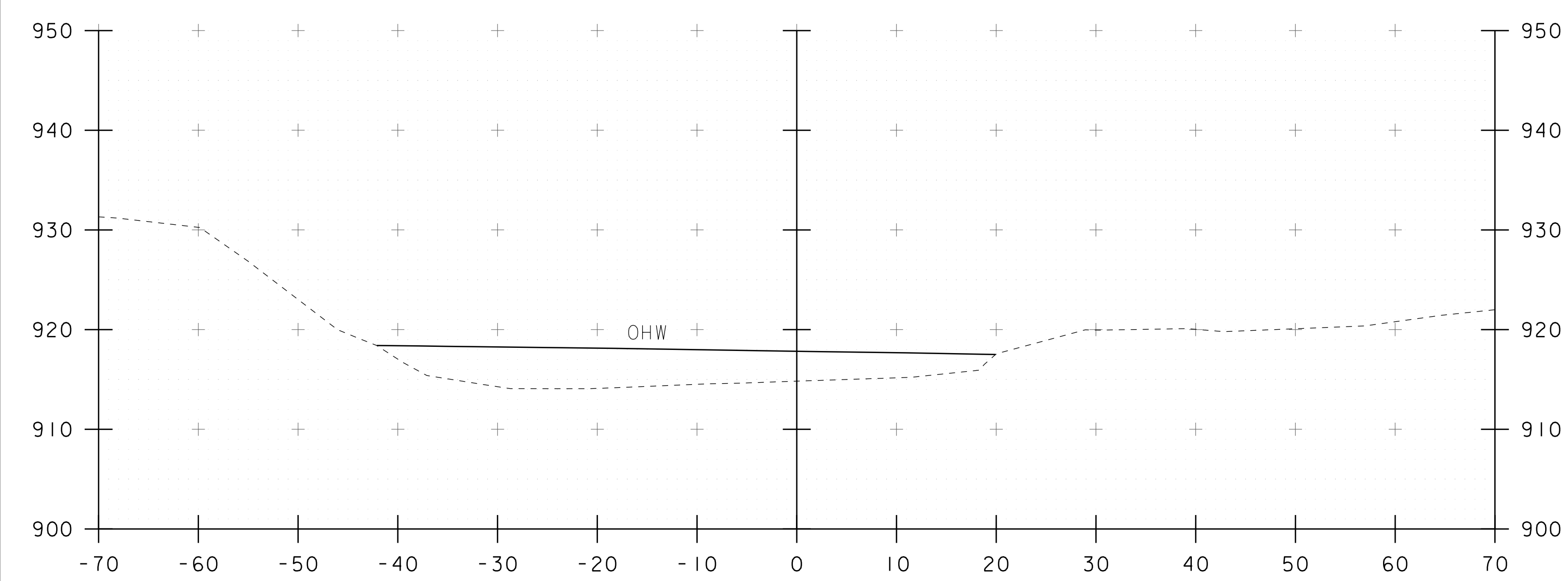
51+10



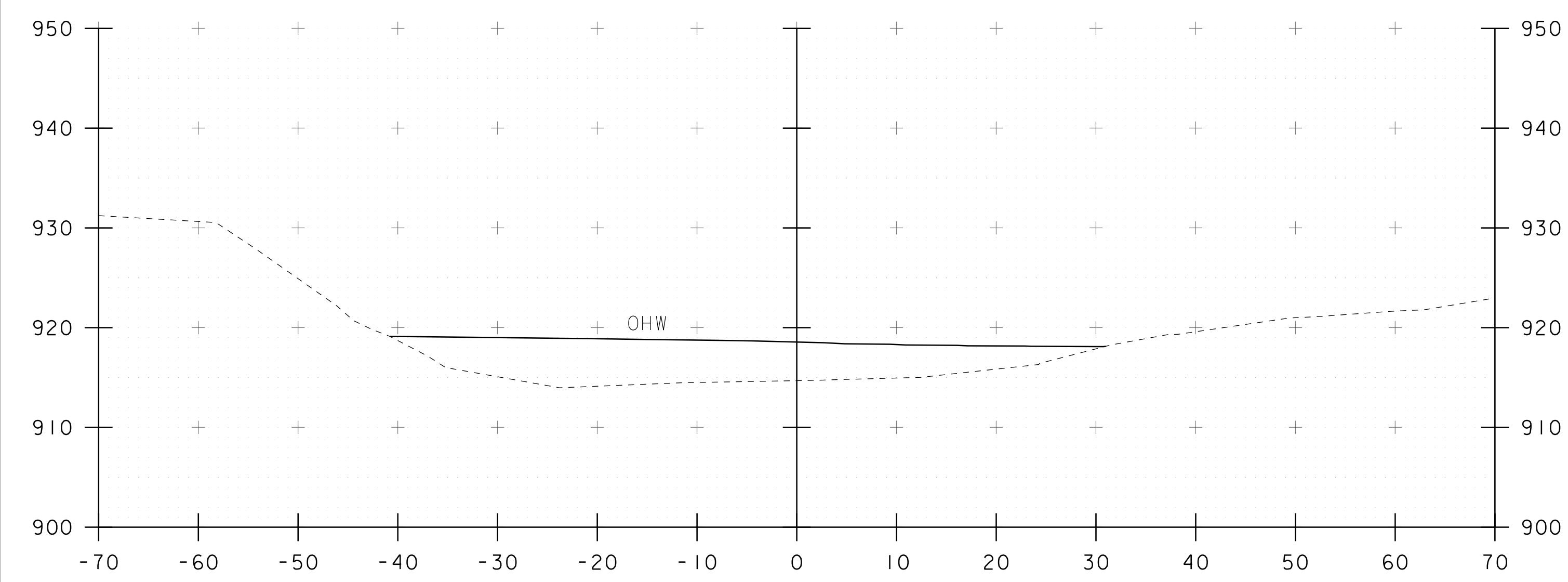
51+30

STA. 51+10 TO STA. 51+40

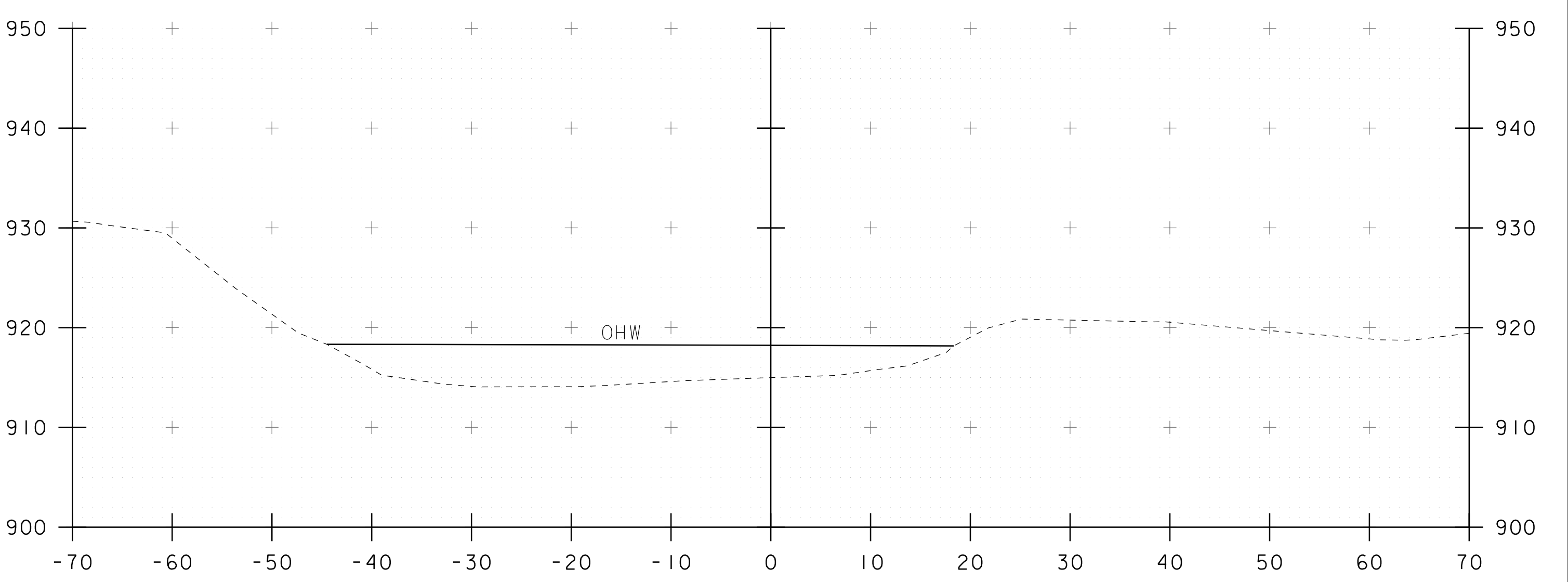
PROJECT NAME: CAVENDISH	
PROJECT NUMBER: BO 1442(38)	
FILE NAME: sl3j302xs.dgn	PLOT DATE: 28-JAN-2016
PROJECT LEADER: R. YOUNG	DRAWN BY: T. MATTHEWS
DESIGNED BY: T. MATTHEWS	CHECKED BY: J. GRIGAS
CHANNEL CROSS SECTIONS 3	SHEET 15 OF 16



51+75



51+50



52+00

STA. 51+50 TO STA. 52+00

PROJECT NAME: CAVENDISH
PROJECT NUMBER: BO 1442(38)

FILE NAME: sl3j302xs.dgn
PROJECT LEADER: R. YOUNG
DESIGNED BY: T. MATTHEWS
CHANNEL CROSS SECTIONS 4

PLOT DATE: 28-JAN-2016
DRAWN BY: T. MATTHEWS
CHECKED BY: J. GRIGAS
SHEET 16 OF 16