

PROJECT INFORMATION

DOCUMENTS FOR REVIEW AND FILES LOCATION

TIME LINES

Proj. Name and Number: EDEN BO 1448(44)

EA No.: 1448044 PPMS: 16j176

Project Manager: ROB YOUNG

Program: Structure Phase: Preliminary

District: District 8 If Multiple Districts Specify

Traffic Signal: No

PLANS FILE LOCATION : M:\Projects\16j176\Structures\Plots\1 - Submittals\2 - Preliminary Plans\OLSR Submittal\16j176\_Plans\_Preliminary

ESTIMATE FILE LOCATION : M:\Projects\16j176\Structures\Plots\1 - Submittals\2 - Preliminary Plans\OLSR Submittal\16j176\_Estimate\_Preliminary

TMP FILE LOCATION : M:\Projects\16j176\Structures\Plots\1 - Submittals\2 - Preliminary Plans\OLSR Submittal\16j176\_TMP\_Preliminary

Other FILE LOCATION : M:\Projects\16j176\Structures\Plots\1 - Submittals\2 - Preliminary Plans\OLSR Submittal\16j176\_Risk Register\_Preliminary

FILE LOCATION :

SUBMITTED: 12-27-2018

DEADLINE: 01-23-2019

COMPLETED: 01-24-2019

INVITEES FOR REVIEW

<input checked="" type="checkbox"/> MOB Districts <b>REVIEWED</b> By Jim (jim.cota@vermont.gov) at 2:37 pm, Jan 04, 2019	<input checked="" type="checkbox"/> MAB Bicycle and Pedestrian Program Unit <b>REVIEWED</b> By Jon Kaplan (jon.kaplan@vermont.gov) at 12:14 pm, Jan 24, 2019	<input checked="" type="checkbox"/> PDB Utility Section <b>REVIEWED</b> By Melissa Rutter (melissa.rutter@vermont.gov) at 2:40 pm, Jan 08, 2019	<input checked="" type="checkbox"/> CMB Construction Section <b>REVIEWED</b> By Scott Wheatley (scott.wheatley@vermont.gov) at 1:05 pm, Jan 07, 2019 <b>REVIEWED</b> By Ryan Sengbush (ryan.sengbush@vermont.gov) at 1:39 pm, Jan 15, 2019 <b>REVIEWED</b> By Bob Klinefelter (robert.klinefelter@vermont.gov) at 10:14 am, Jan 17, 2019 <b>REVIEWED</b> By Jeff Cota (jeff.cota@vermont.gov) at 2:43 pm, Jan 22, 2019	<input checked="" type="checkbox"/> Integral Abutment <b>Didn't participate in On-line review.</b>	<input type="checkbox"/> Rail Bureau
<input type="checkbox"/> MOB TSMO Traffic Operations <b>REVIEWED</b> By Nancy Avery (nancy.avery@vermont.gov) at 12:05 pm, Dec 31, 2018 <b>REVIEWED</b> By Tyler Guazzoni (tyler.guazzoni@vermont.gov) at 11:21 am, Jan 23, 2019	<input checked="" type="checkbox"/> PDB Right-of-Way <b>REVIEWED</b> By Scott Patterson (scott.patterson@vermont.gov) at 9:07 am, Jan 03, 2019	<input checked="" type="checkbox"/> PDB Highway Safety & Design <b>Didn't participate in On-line review.</b>	<input checked="" type="checkbox"/> CMB Materials Testing and Certification Section <b>REVIEWED</b> By Aaron Schwartz (aaron.schwartz@vermont.gov) at 9:09 am, Jan 09, 2019 <b>REVIEWED</b> By Troy Lawson (troy.lawson@vermont.gov) at 3:01 pm, Jan 14, 2019	<input checked="" type="checkbox"/> Policy and Planning Bureau <b>REVIEWED</b> By Amy Bell (Amy.Bell@vermont.gov) at 11:25 am, Jan 02, 2019	<input type="checkbox"/> Civil Rights
<input type="checkbox"/> MOB Technical Services	<input checked="" type="checkbox"/> PDB Structural Section <b>Didn't participate in On-line review.</b>	<input checked="" type="checkbox"/> PDB Environmental Section <b>REVIEWED</b> By Glenn Gingras (glenn.gingras@vermont.gov) at 11:20 am, Jan 02, 2019 <b>REVIEWED</b> By Jonathan Armstrong (jon.armstrong@vermont.gov) at 11:00 am, Jan 22, 2019 <b>REVIEWED</b> By Jeff Ramsey (jeff.ramsey@vermont.gov) at 3:17 pm, Jan 07, 2019	<input checked="" type="checkbox"/> CMB Geotechnical Engineering Section <b>REVIEWED</b> By Ian Donovan (ian.donovan@vermont.gov) at 10:33 am, Jan 22, 2019	<input type="checkbox"/> FHWA Include on all PoDI and WCRS Projects	Others: Fianna.Barrows@vermont.gov Alexander.Flinn@vermont.gov Mike.Longstreet@vermont.gov
	<input checked="" type="checkbox"/> PDB Survey Section <b>Didn't participate in On-line review.</b>	<input checked="" type="checkbox"/> PDB Hydraulics Section <b>REVIEWED</b> By Keith Friedland (keith.friedland@vermont.gov) at 12:54 pm, Jan 22, 2019			

Review Focus Notes:

Print Form

Clear Form

Submit by Email

Online Shared Review

REVIEWER NOTES:

- 1) THE TOWN HIGHWAY IS CURRENTLY CLOSED AND WILL REMAIN CLOSED TO THROUGH TRAFFIC. THE TOWN WILL PROVIDE AN OFFSITE DETOUR.
- 2) IT IS ANTICIPATED THAT RIGHT-OF-WAY ACQUISITION WILL BE NECESSARY.
- 3) UTILITY RELOCATION WILL BE NEEDED.
- 4) THE TOWN HAS PLACED AN EARTH BERM BLOCKING VEHICLES FROM APPROACHING THE SITE. THE TOWN WILL REMOVE AND RETAIN THESE BERMS WHEN THE PROJECT BEGINS.
- 5) A SIMPLIFIED PAVEMENT DESIGN HAS BEEN COMPLETED FOR THIS PROJECT.
- 6) THIS PROJECT WILL UTILIZE THE VT DEC LOW RISK SITE HANDBOOK FOR EPSC. NO SITE-SPECIFIC EPSC PLAN IS INCLUDED. THE CONTRACTOR SHALL SUBMIT A SITE-SPECIFIC EPSC PLAN TO VTRANS UPON CONTRACT AWARD IN ACCORDANCE WITH THEIR MEANS AND METHODS.

The existing conditions are up to the town, signage is required during the construction duration

Is an off-site detour in place currently? If not why install one now if this road has been closed for a substantial amount of time?

When berms are removed the proper traffic control devices will be required to close the road from through traffic. Approach signs, Type 3 barricades, etc. Notification at the intersection of VT 100 and VT 118 the the bridge is closed.

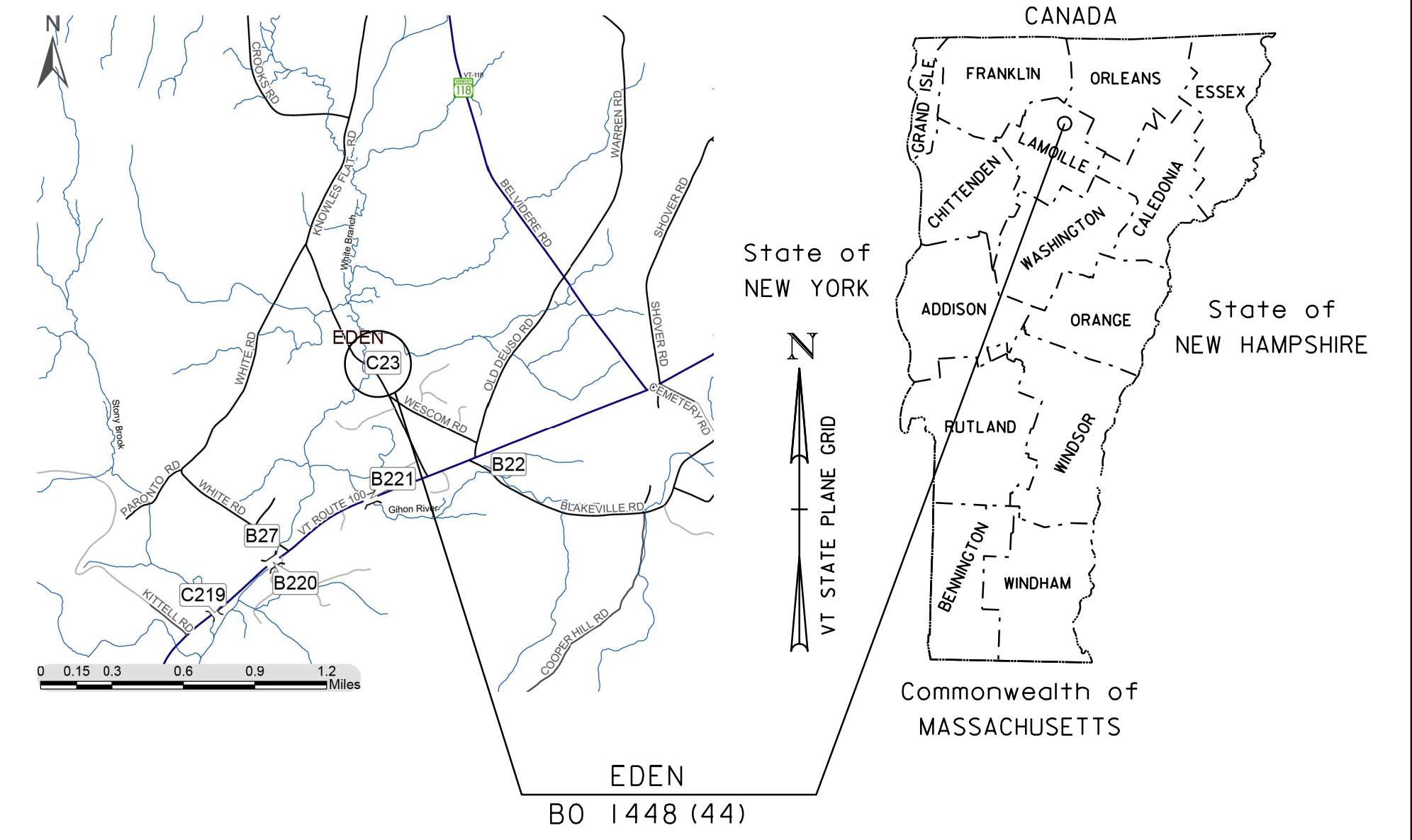
Note that this does not meet the current EPSC protocol. A revised protocol is currently under development to better deal with projects such as this that are below the 1-ac jurisdictional threshold, yet still warrant an EPSC plan. Ultimately, the revised approach may look similar to what is described here with the contractor being responsible for developing the EPSC plan. However the specifics have not been worked out and this project may need to be updated accordingly.

Understood, the new process is being vetted through environmental section

# STATE OF VERMONT AGENCY OF TRANSPORTATION



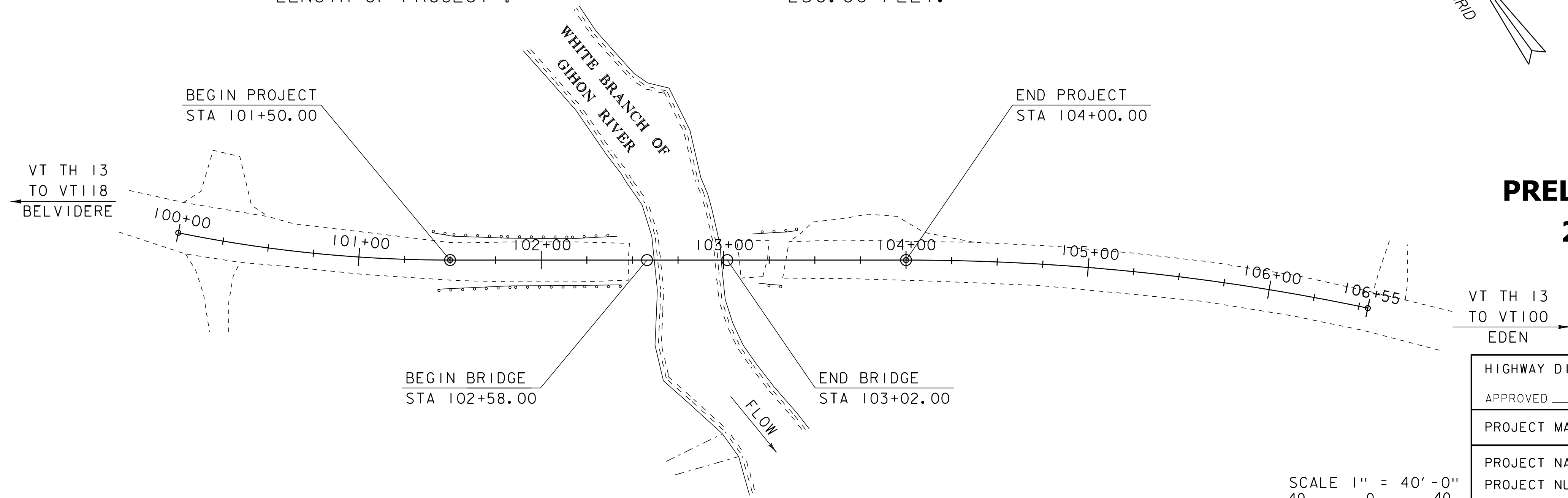
## PROPOSED IMPROVEMENT BRIDGE PROJECT TOWN OF EDEN COUNTY OF LAMOILLE



ROUTE NO : VT TH 13                      BRIDGE NO : 23  
PROJECT LOCATION : ON KNOWLES FLAT ROAD OVER THE WHITE BRANCH OF  
GIHON RIVER APPROXIMATELY 0.6 MILES NORTH OF THE JUNCTION WITH VT 100.

PROJECT DESCRIPTION : REPLACEMENT OF BRIDGE 23 ON THE SAME ALIGNMENT  
WITH RELATED APPROACH ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE : 44.00 FEET.  
LENGTH OF ROADWAY : 206.00 FEET.  
LENGTH OF PROJECT : 250.00 FEET.



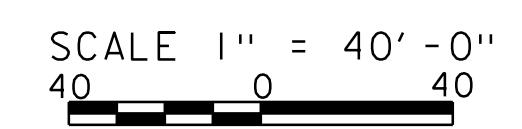
Any scope changes since NEPA?      Some slope changes in the approaches

### PRELIMINARY PLANS 24-DEC-2018

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 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 3
SURVEYED BY : R. GILMAN
SURVEYED DATE : 12-18-2017
DATUM
VERTICAL      NAVD88
HORIZONTAL    NAD 83 (2011)

HIGHWAY DIVISION, CHIEF ENGINEER
APPROVED _____ DATE _____
PROJECT MANAGER : ROBERT S. YOUNG, P.E.
PROJECT NAME : EDEN
PROJECT NUMBER : BO 1448 (44)
SHEET 1 OF 19 SHEETS



# PRELIMINARY INFORMATION SHEET (BRIDGE)

### INDEX OF SHEETS

#### PLAN SHEETS

- 1 TITLE SHEET
- 2 PRELIMINARY INFORMATION SHEET
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- 6 TIE SHEET
- 7 LAYOUT SHEET
- 8 PROFILE SHEET
- 9 BORING INFORMATION SHEET
- 10 - 11 BORING LOGS 1-2
- 12 - 13 CHANNEL CROSS SECTION 1-2
- 14 - 18 TH 13 CROSS SECTIONS 1-5
- 19 EXISTING CONDITIONS

Traffic Control at the site will be required

#### 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	$d_p$ : 2.5 INCH
3. DESIGN SPAN	$L$ : 42.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	$\Delta$ : ---
5. PRESTRESSING STRAND	$f_y$ : ---
6. PRESTRESSED CONCRETE STRENGTH	$f'_c$ : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	$f'_{cr}$ : ---
8.	$f'_c$ : ---
9. CONCRETE, HIGH PERFORMANCE CLASS PCD	$f'_c$ : 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS PCS	$f'_c$ : 3.5 KSI
11.	$f'_c$ : ---
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)	$\phi$ : ---
16. NOMINAL BEARING RESISTANCE OF ROCK	$q_n$ : 10.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	$\phi$ : ---

#### 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:							

#### TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2022	660	140	63	8.8	60
2042	720	150	63	11	85

20 year ESAL for flexible pavement from 2022 to 2042 : 162000
40 year ESAL for flexible pavement from 2022 to 2062 : 332000
Design Speed : 35 mph

#### AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

PROJECT NAME: **EDEN**

PROJECT NUMBER: **BO 1448(44)**

FILE NAME: **s16j176forms.dgn**

PROJECT LEADER: **R.YOUNG**

DESIGNED BY: **F.BARROWS**

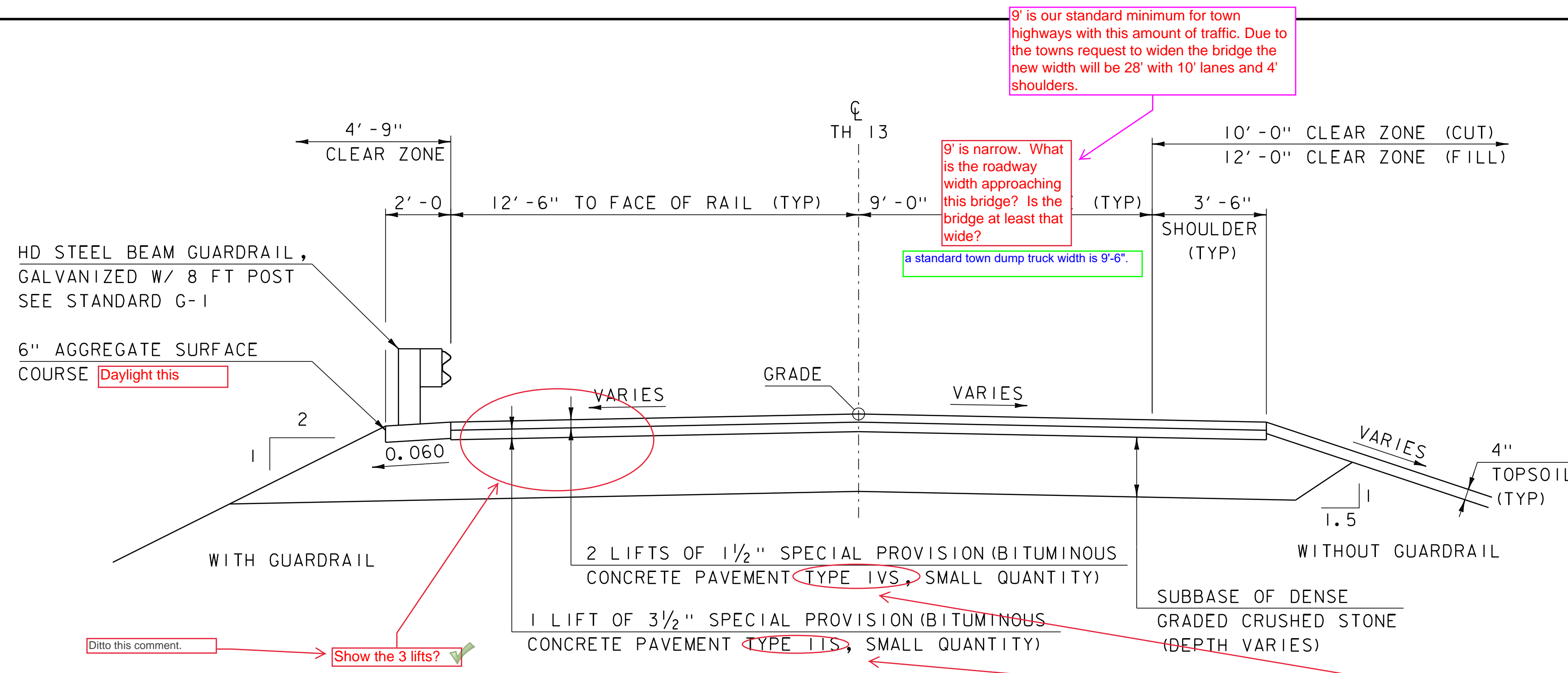
PRELIMINARY INFORMATION SHEET 1

PLOT DATE: 12/14/2018

DRAWN BY: **M.LONGSTREET**

CHECKED BY: **F.BARROWS**

SHEET 2 OF 19



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

EMULSION SHALL BE APPLIED PER THE APPLICATION RATES IN TABLE 406.12A OF THE STANDARD SPECIFICATIONS.

### ROADWAY TYPICAL SECTION

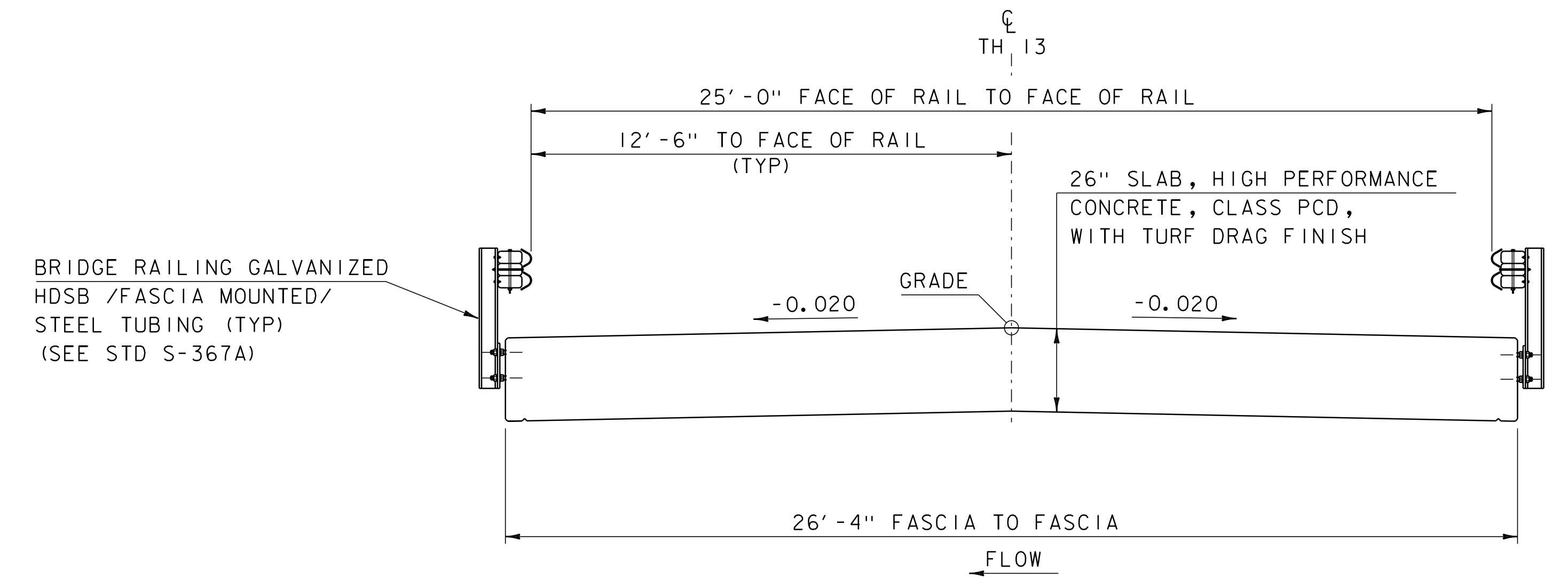
SCALE: 3/8" = 1' - 0"

Ditto this comment. → Show the 3 lifts? ✓

Shouldn't it just be one lift of Type IVS over two lifts of Type IIS?

The pavement was designed based on the Simplified Pavement Design for Small Projects and should stay as is.

Don't put the mix type within the name of the Special Provision pay item. Put it immediately after the lift thickness (1 1/2" Type IVS, for example). ✓



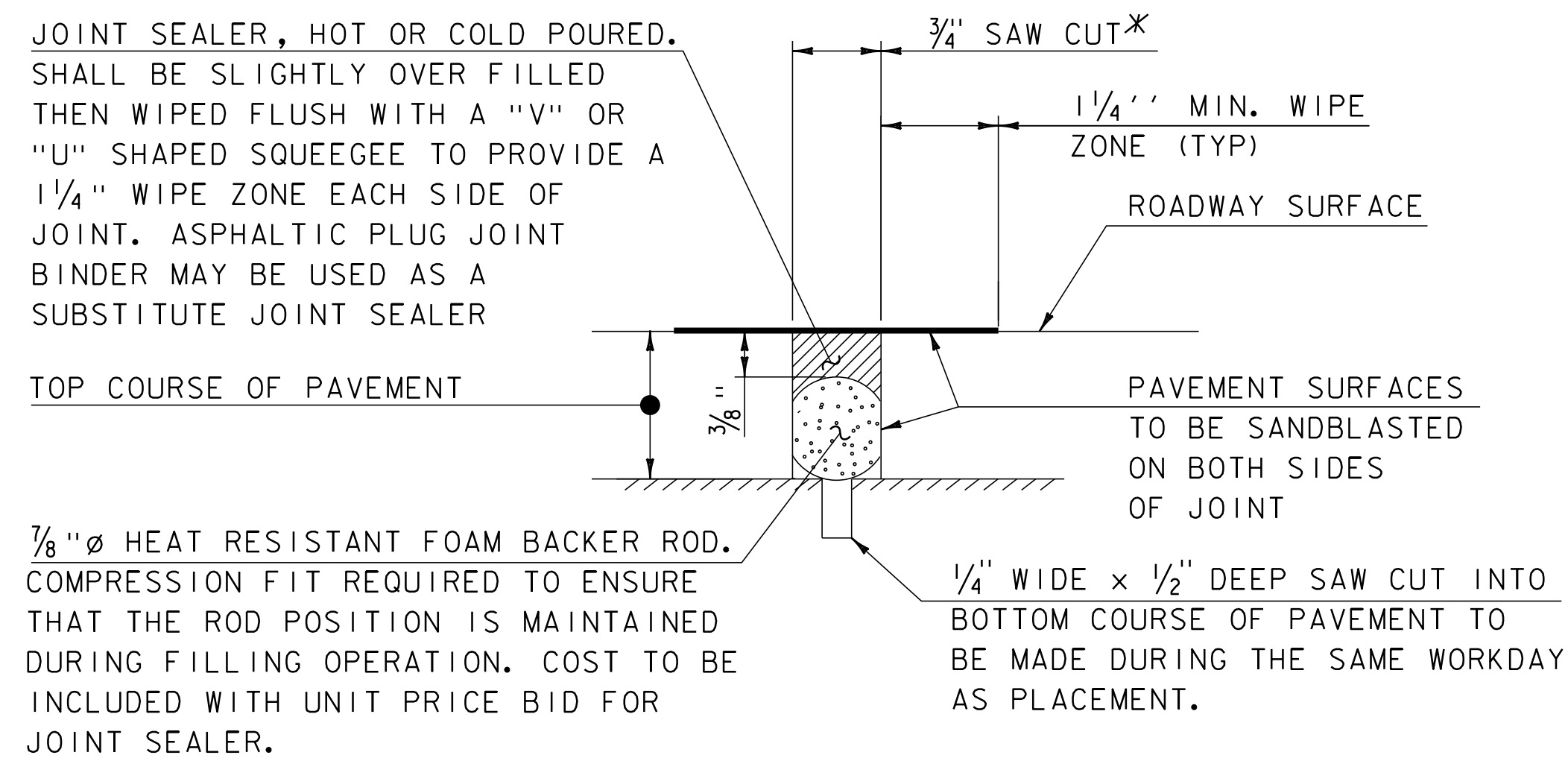
### PROPOSED BRIDGE TYPICAL SECTION

SCALE 3/8" = 1' - 0"

Excellent design! Bare concrete deck with approach slabs. Fascia mounted tube rail. Normal cross section and square abutments. Thank you

How are they going to support 26" of concrete? Support of the wet concrete will be up to the contractor, likely forms will be supported by the abutments.

PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M. LONGSTREET
FILE NAME: sl6j176typ.dgn	CHECKED BY: F.BARROWS
PROJECT LEADER: R.YOUNG	SHEET 3 OF 19
DESIGNED BY: F.BARROWS	TYPICAL SECTIONS I

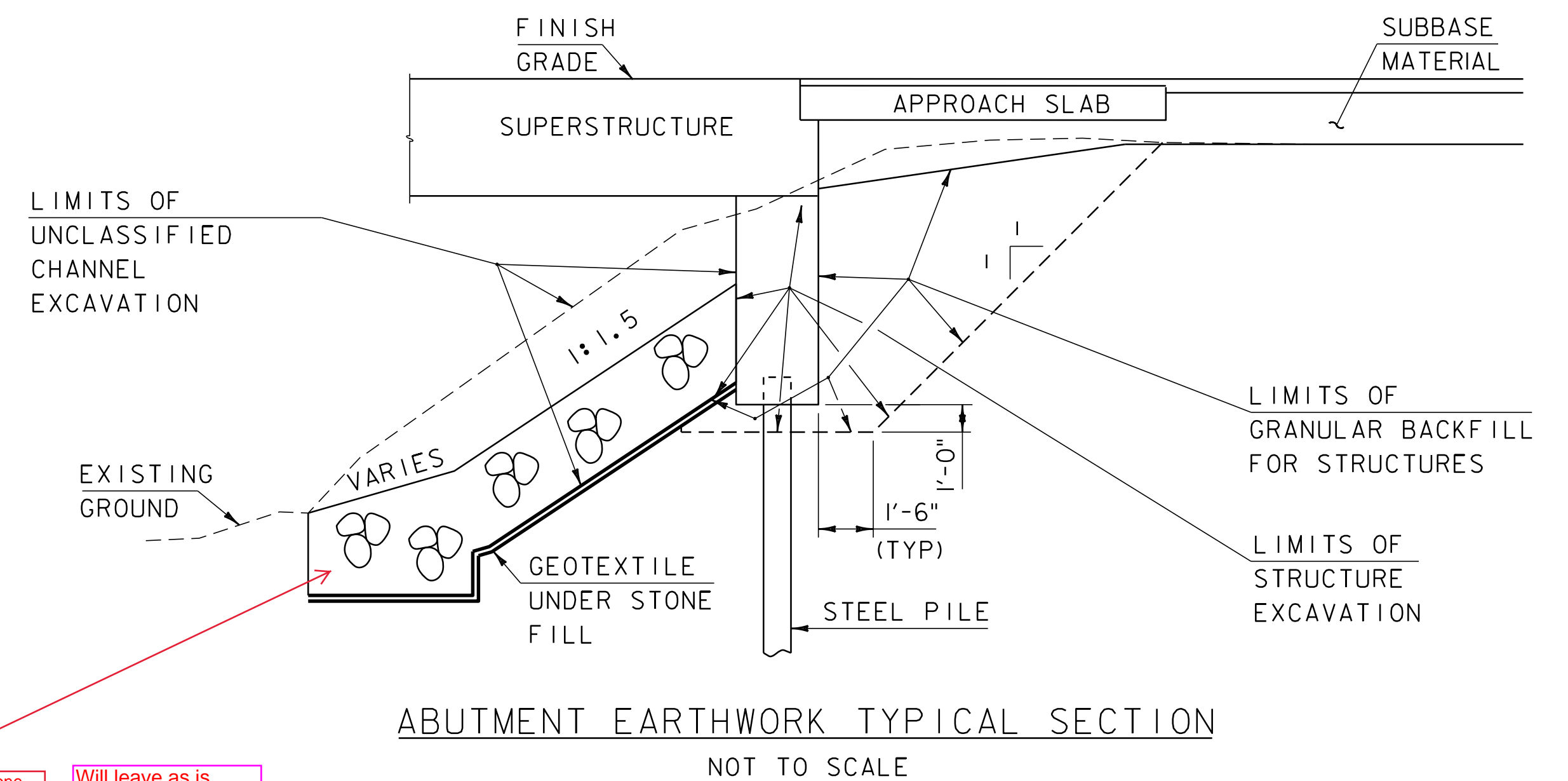


**SAWED PAVEMENT JOINT DETAIL**  
(NOT TO SCALE)

\* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.

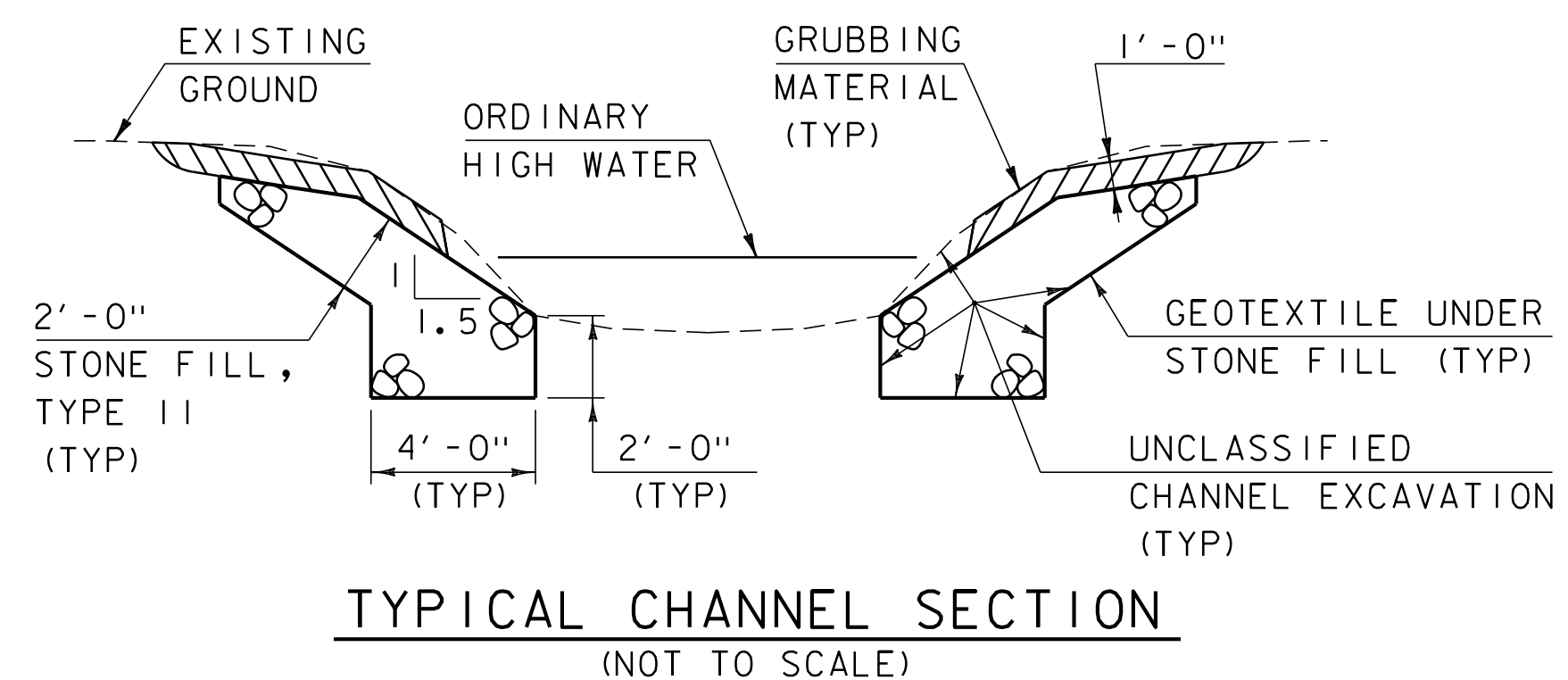
Should these joints be located at the leading edge of the approach slab, and not at the exposed deck/pavement interface, or both locations?

Actually this item shall be removed. Its only needed when bridge is also paved. Instead, at the leading end of the approach slab will be an asphaltic plug joint.



Should this be Stone Fill, Stream Bed Material below the OHW?

Will leave as is because we are not lining the channel bottom, just preventing erosion along abutment.



- 1) GRUBBING MATERIAL SHALL BE PLACED UNDERNEATH STRUCTURES WHERE THERE IS MORE THAN 6 FEET VERTICALLY FROM ORDINARY HIGH WATER (OHW) TO THE BOTTOM OF SUPERSTRUCTURE AND MORE THAN 6 FEET HORIZONTALLY FROM OHW LINE TO FRONT FACE OF ABUTMENT. THIS MATERIAL SHALL START JUST ABOVE THE OHW ELEVATION AND TERMINATE 3 FEET HORIZONTALLY FROM THE FRONT FACE OF THE ABUTMENT. THIS MATERIAL SHALL NOT BE PLACED UNDERNEATH DOWNSPOUTS. SEE THE CHANNEL SECTIONS FOR ADDITIONAL DETAILING.
- 2) WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

PROJECT NAME:	EDEN
PROJECT NUMBER:	BO 1448(44)
FILE NAME:	sl6J176+typ.dgn
PROJECT LEADER:	R. YOUNG
DESIGNED BY:	F. BARROWS
TYPICAL SECTIONS 2	
PLOT DATE:	24-DEC-2018
DRAWN BY:	A. FLINN
CHECKED BY:	F. BARROWS
SHEET	4 OF 19

**GENERAL INFORMATION**

**SYMBOLGY LEGEND NOTE**

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

**R.O.W. ABBREVIATIONS (CODES) & SYMBOLS**

POINT CODE	DESCRIPTION
CH	CHANNEL EASEMENT
CONST	CONSTRUCTION EASEMENT
CUL	CULVERT EASEMENT
D&C	DISCONNECT & CONNECT
DIT	DITCH EASEMENT
DR	DRAINAGE EASEMENT
DRIVE	DRIVEWAY EASEMENT
EC	EROSION CONTROL
HWY	HIGHWAY EASEMENT
I&M	INSTALL & MAINTAIN EASEMENT
LAND	LANDSCAPE EASEMENT
R&RES	REMOVE & RESET
R&REP	REMOVE & REPLACE
R.T.& I.	RIGHT, TITLE, AND INTEREST
SR	SLOPE RIGHT
UE	UTILITY EASEMENT
(P)	PERMANENT EASEMENT
(T)	TEMPORARY EASEMENT
■	BNDNS BOUND SET
□	BNDNS BOUND TO BE SET
⊙	IPNF IRON PIN FOUND
●	IPNS IRON PIN TO BE SET
⊠	CALC EXISTING ROW POINT
○	PROW PROPOSED ROW POINT
[LENGTH]	LENGTH CARRIED ON NEXT SHEET

**COMMON TOPOGRAPHIC POINT SYMBOLS**

POINT CODE	DESCRIPTION
⊕	APL BOUND APPARENT LOCATION
◻	BM BENCHMARK
◻	BND BOUND
⊞	CB CATCH BASIN
⊞	COMB COMBINATION POLE
⊞	DITHR DROP INLET THROATED DNC
⊞	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

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

**PROPOSED GEOMETRY CODES**

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
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 (100FT)
R	CURVE RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE
CB	CHORD BEARING

**UTILITY SYMBOLGY**

**UNDERGROUND UTILITIES**

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

**ABOVE GROUND UTILITIES (AERIAL)**

— 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+TELEPHONE
—	UTILITY POLE GUY WIRE

**PROJECT CONSTRUCTION SYMBOLGY**

**PROJECT DESIGN & LAYOUT SYMBOLGY**

— — — CZ — — —	CLEAR ZONE
—————	PLAN LAYOUT MATCHLINE

**PROJECT CONSTRUCTION FEATURES**

▲ —▲ —▲ —▲ —▲	TOP OF CUT SLOPE
○ —○ —○ —○ —○	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
-----	BOTTOM OF DITCH
-----	CULVERT PROPOSED
-----	STRUCTURE SUBSURFACE
PDF — PDF —	PROJECT DEMARCATION FENCE
BF — BF —	BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
//////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLGY**

**BOUNDARY LINES**

—————	TOWN BOUNDARY LINE
—————	COUNTY BOUNDARY 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
— P — P —	PROPERTY LINE (P/L)
— L — L —	PROPERTY LINE (P/L)
▲ — SR — SR — SR —	SLOPE RIGHTS
6f — 6f —	6F PROPERTY BOUNDARY
4f — 4f —	4F PROPERTY BOUNDARY
HAZ — HAZ —	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLGY**

**EPSC MEASURES**

ONNOONNOONNO	FILTER CURTAIN
— — — — —	SILT FENCE
— X — X — X — X —	SILT FENCE WOVEN WIRE
— — — — —	CHECK DAM
▬	DISTURBED AREAS REQUIRING RE-VEGETATION
⊞	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

**ENVIRONMENTAL RESOURCES**

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

**ARCHEOLOGICAL & HISTORIC**

— ARCH —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST —	HISTORIC DISTRICT BOUNDARY
— HISTORIC —	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

**CONVENTIONAL TOPOGRAPHIC SYMBOLGY**

**EXISTING FEATURES**

-----	ROAD EDGE PAVEMENT
-----	ROAD EDGE GRAVEL
-----	DRIVEWAY EDGE
-----	DITCH
-----	FOUNDATION
— X — X — X — X —	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

PROJECT NAME: EDEN  
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FILE NAME: sl6j176typ.dgn PLOT DATE: 24-DEC-2018  
PROJECT LEADER: R.YOUNG DRAWN BY: M.LONGSTREET  
DESIGNED BY: F.BARROWS CHECKED BY: F.BARROWS  
SYMBOLGY LEGEND SHEET 5 OF 19

PRIMARY CONTROL

HVCTRL #1  
 NORTH = 802742.3100  
 EAST = 1624090.7790  
 ELEV = 948.4090

GENERAL LOCATION EDEN VT.

TO REACH FROM THE INTERSECTION OF ROUTES 118 AND 100 IN EDEN GO SOUTH ALONG ROUTE 100 FOR 0.9 MI (1.4 KM) TO THE EDEN AUTO BODY AND COLLISION CENTER AND THE SITE OF THE MARK ON THE LEFT.

THE MARK IS A 3/4 INCH (19 MM) REBAR WITH RED PLASTIC CAP SET 0.2 FT (6 CM) BELOW GROUND SURFACE. IT IS 26.5 FT (8.1 M) SOUTH OF AND ABOUT 1 FT (0.3 M) LOWER THEN THE CENTERLINE OF ROUTE 100, 25.5 FT (7.8 M) NORTHEAST OF POLE 2/17X/212, 31.0 FT (9.4 M) NORTHEAST OF POST FOR MILE MARKER 1000/0803/0200 AND ROAD SIGN NANCY LANE PVT AND 59.5 FT (18.1 M) WEST OF THE NORTHERLY SIGN POST FOR THE EDEN AUTO BODY AND COLLISION CENTER SIGN.

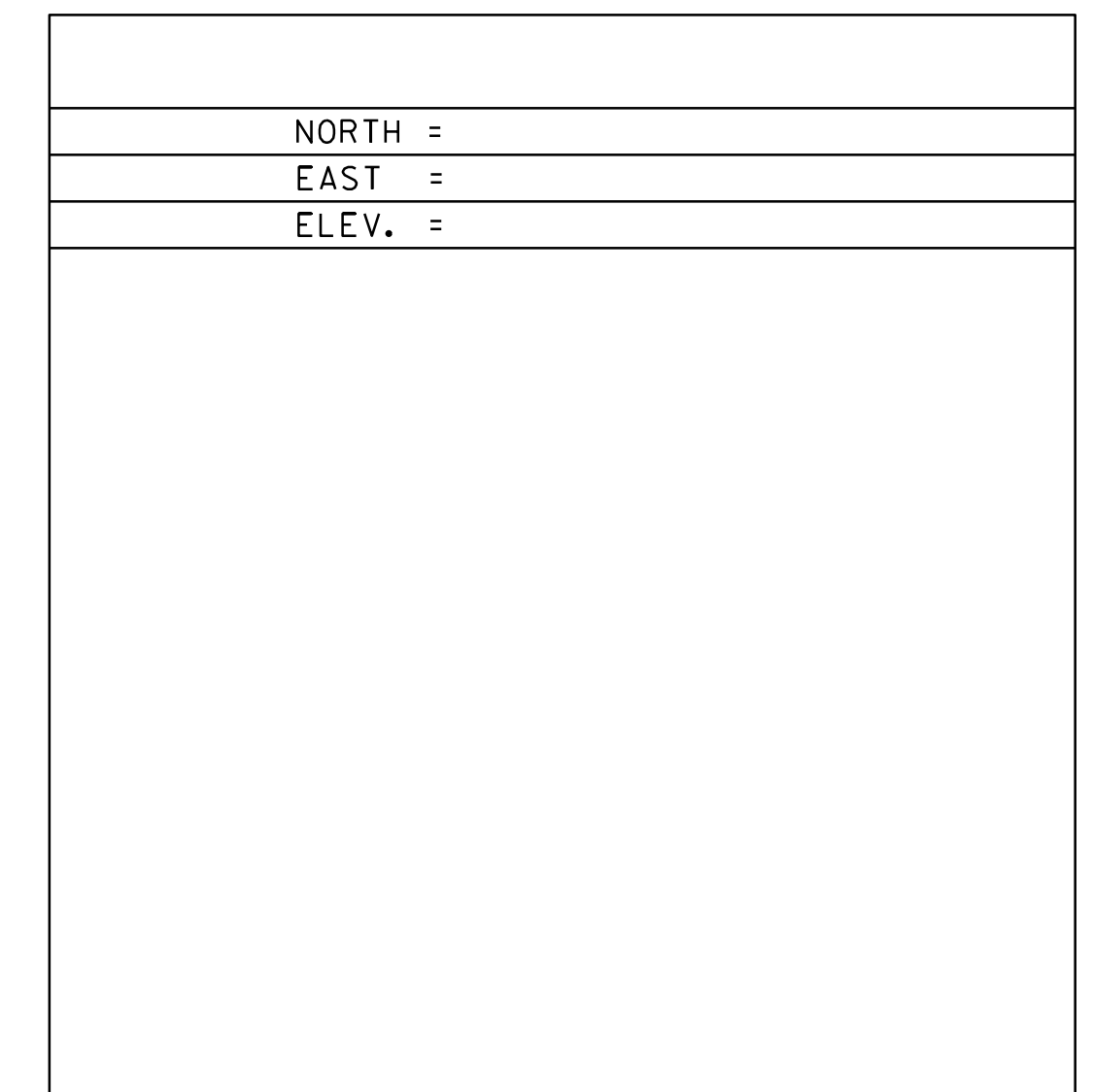
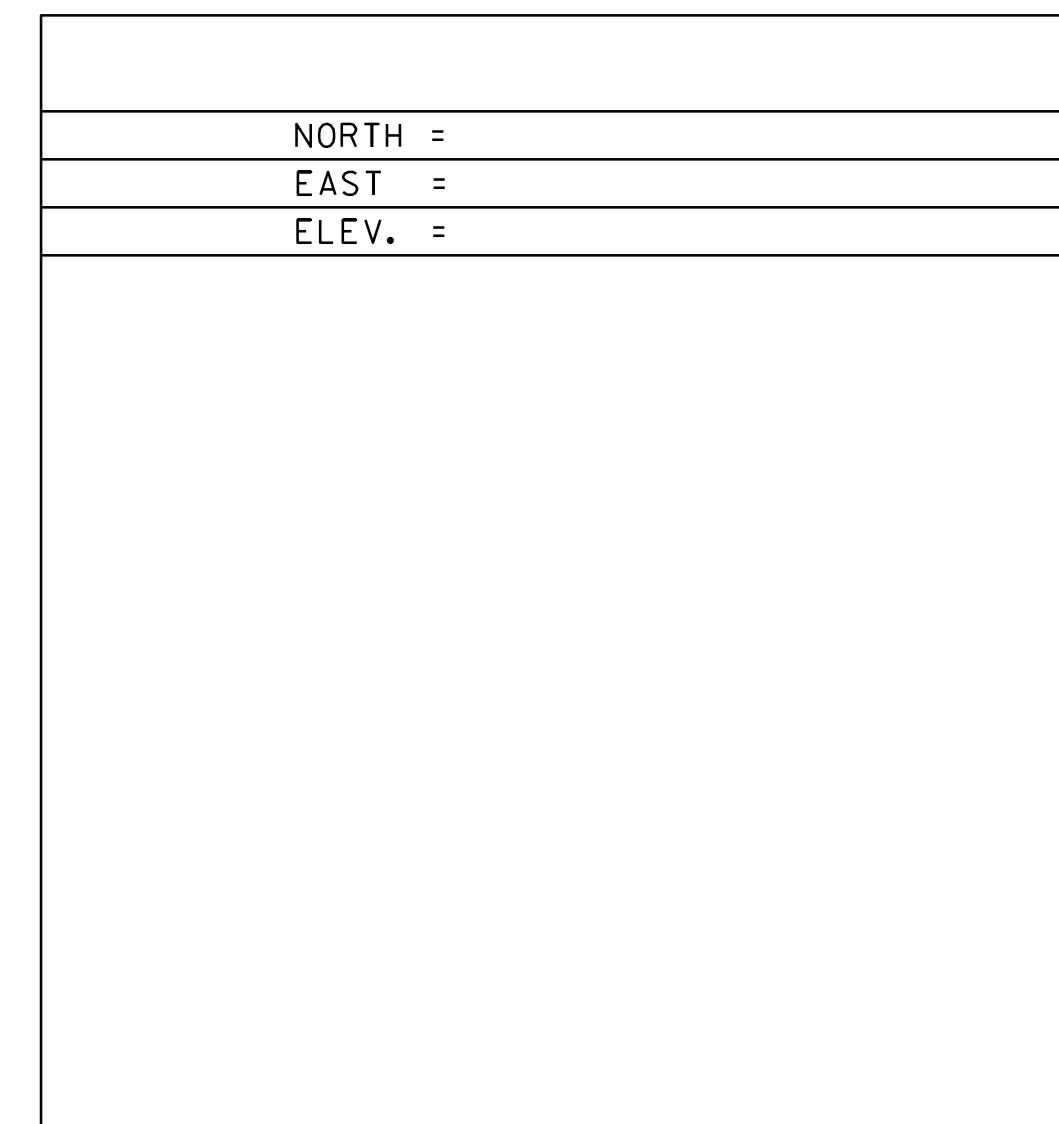
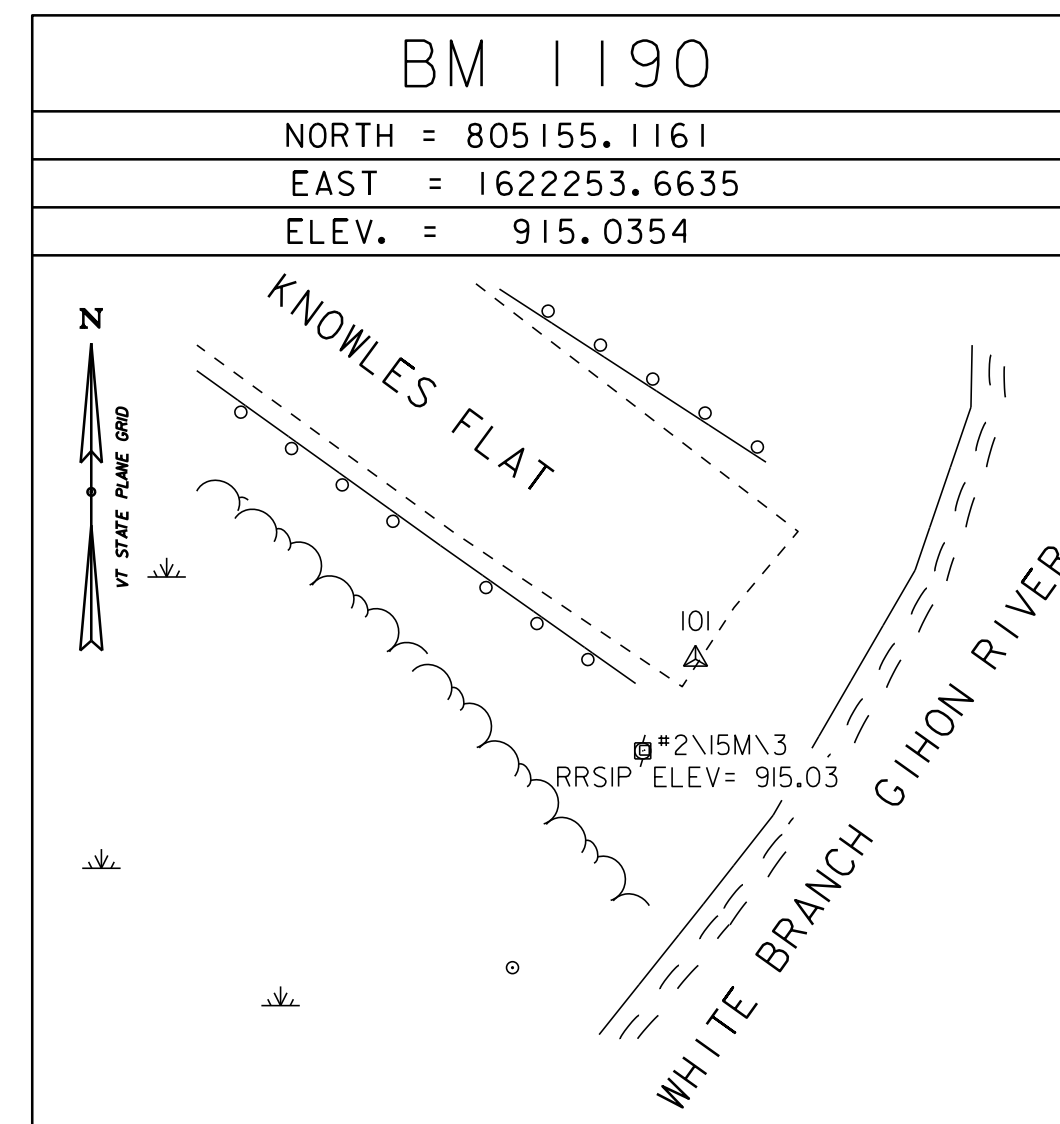
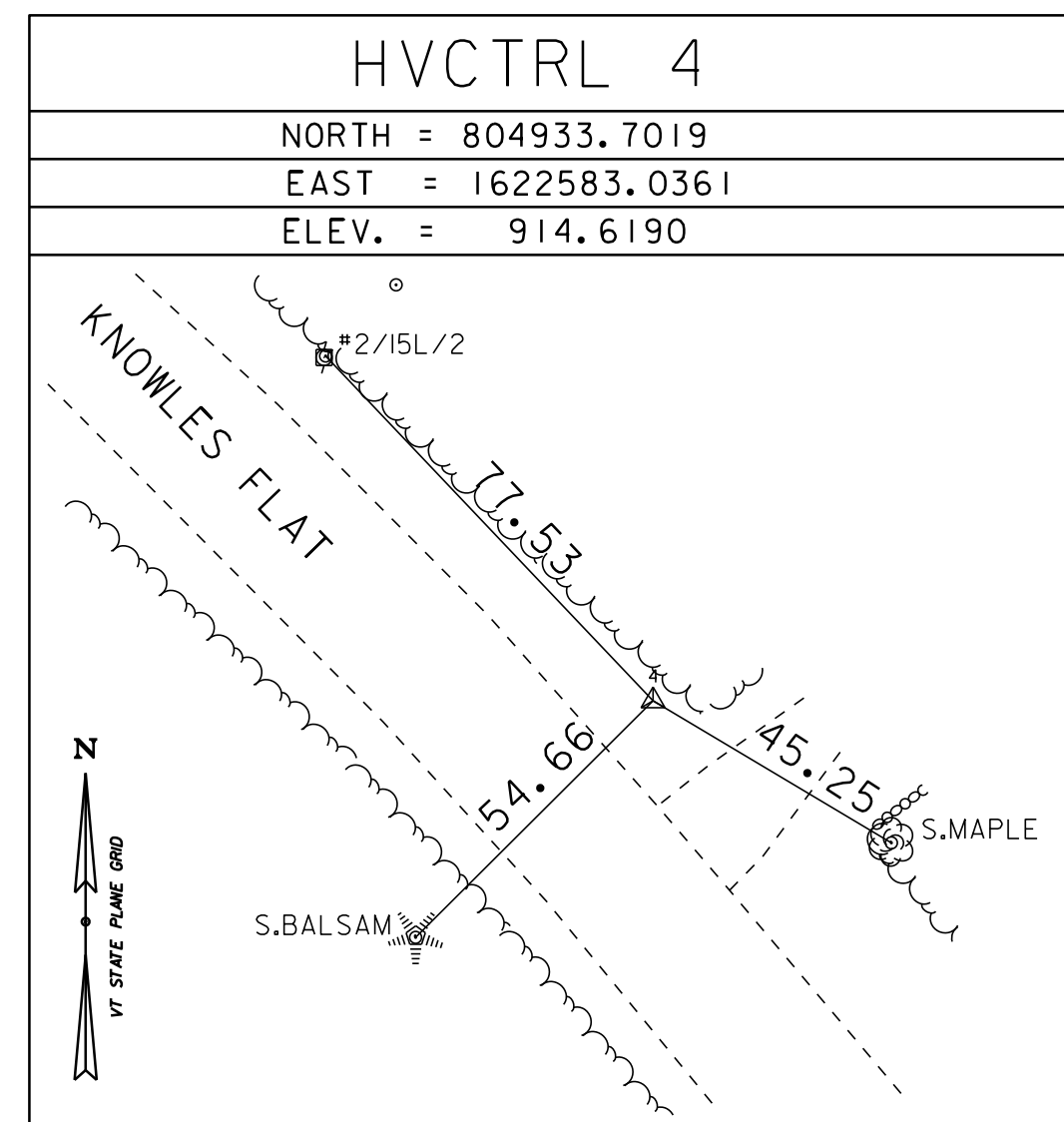
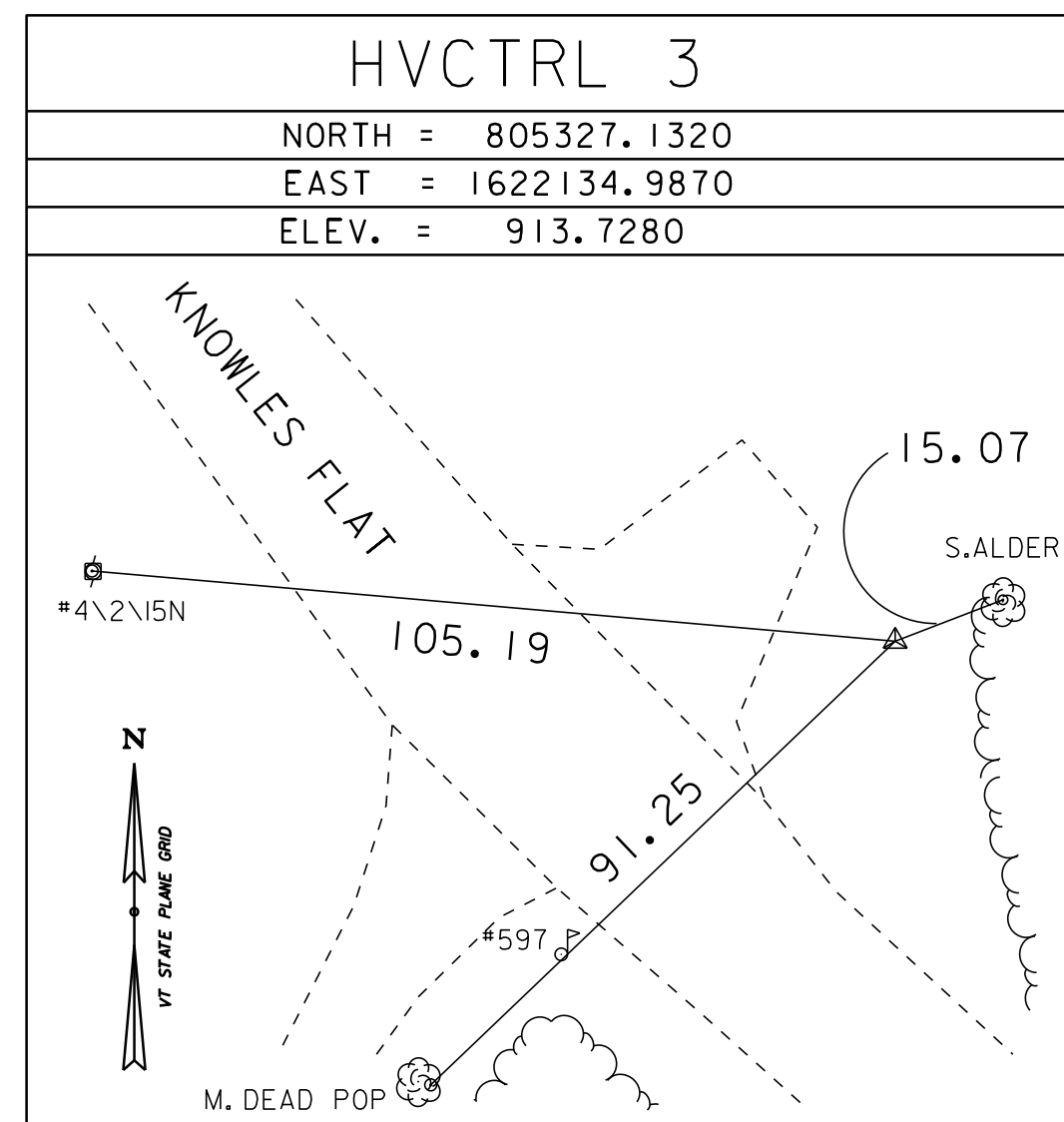
HVCTRL #2  
 NORTH = 806286.8750  
 EAST = 1621580.2440  
 ELEV = 919.6010

GENERAL LOCATION EDEN VT.

TO REACH FROM THE INTERSECTION OF ROUTES 118 AND 100 IN EDEN GO SOUTH ALONG ROUTE 100 FOR 1.7 MI (2.7 KM) TO THE INTERSECTION OF WHITE ROAD RIGHT. TURN RIGHT AND GO ALONG WHITE ROAD FOR 0.5 MI (0.8 KM) TO A T INTERSECTION WITH PARONTO ROAD LEFT AND WHITE ROAD RIGHT. TURN RIGHT AND CONTINUE ALONG WHITE ROAD FOR 1.1 MI (1.8 KM) TO A Y INTERSECTION WITH KNOWLES FLAT ROAD. TURN RIGHT ONTO KNOWLES FLAT ROAD AND GO 0.25 MI (0.4 KM) TO THE SITE OF THE MARK ON THE RIGHT JUST PAST A STREAM CROSSING.

THE MARK IS A 3/4 INCH (19 MM) REBAR WITH RED PLASTIC CAP SET FLUSH. IT IS 19.0 FT (5.8 M) WEST OF THE CENTERLINE OF KNOWLES FLAT ROAD, 11.5 FT (3.5 M) NORTH OF A HANDICAPPED SIGN, 95.0 FT (29.0 M) SOUTH OF THE CENTERLINE OF A WOOD ROAD AND 31.1 FT (9.5 M) SOUTHEAST OF THE WEST INLET END OF A 48 INCH (122 CM) PLASTIC CULVERT.

SECONDARY CONTROL



Point Type	Station	Northing	Easting	Radius	Length	Tangent
<b>Aligment Name:</b>		TH13prop				
<b>Description:</b>		EDEN BO 1448(44)				
PC	100+00.00	805327.99	1622072.94			
PI	100+75.25	805272.55	1622123.82	750.00	150.00	75.25
PT	101+50.00	805228.32	1622184.70			
PC	104+00.01	805081.36	1622386.96			
PI	105+27.97	805006.15	1622490.48	1230.00	255.00	127.96
PT	106+55.01	804911.24	1622576.30			

DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83(2011)
ADJUSTMENT	COMPASS

TRAVERSE COMPLETED BY R.GILMAN AND H.MCGOWAN ON 12/18/2017

PROJECT NAME:	EDEN
PROJECT NUMBER:	BO 1448(44)
FILE NAME:	x16j176+1
PROJECT LEADER:	N.WARK
DESIGNED BY:	VTRANS
TIE SHEET	
PLOT DATE:	24-DEC-2018
DRAWN BY:	H.MCGOWAN
CHECKED BY:	L.MACCORMACK
SHEET	6 OF 19

REMOVAL AND DISPOSAL OF GUARDRAIL

TH13 STA 101+40.06 - 102+41.42 LT  
TH13 STA 101+42.86 - 102+43.98 RT  
TH13 STA 103+15.67 - 103+40.71LT  
TH13 STA 103+19.18 - 103+32.05 RT

HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FT POSTS

TH13 STA 101+44.00 - 102+30.00 LT  
TH13 STA 101+44.00 - 102+30.00 RT  
TH13 STA 103+28.00 - 103+40.30 LT  
TH13 STA 103+28.00 - 103+40.30 RT

ANCHOR FOR STEEL BEAM GUARDRAIL

TH13 STA 101+52.12 LT  
TH13 STA 101+52.12 RT  
TH13 STA 103+32.88 LT  
TH13 STA 103+32.88 RT

GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM W/8 FT POSTS

TH13 STA 102+30.00 - 102+58.00 LT  
TH13 STA 102+30.00 - 102+58.00 RT  
TH13 STA 103+40.30 - 103+28.00 LT  
TH13 STA 103+40.30 - 103+28.00 RT

BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING

TH13 STA 102+58.00 TO 103+02.00 LT  
TH13 STA 102+58.00 TO 103+02.00 RT

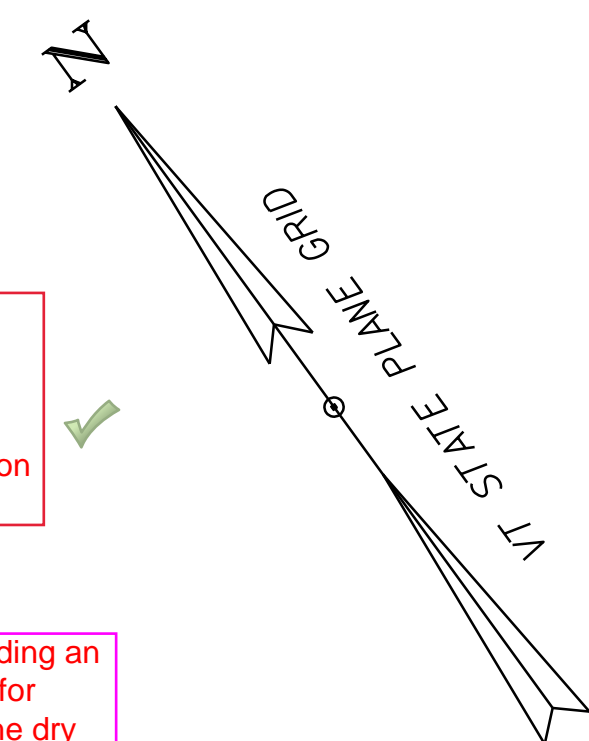
COLD PLANING, BITUMINOUS PAVEMENT

TH13 STA 101+00.00 - 102+58.00  
TH13 STA 103+02.00 - 104+75.00

5'-0 HAND-PLACED BITUMINOUS CONCRETE MATERIAL DRIVE (2 LIFTS OF 1 1/2" TYPE IVS)  
TH13 STA 103+28.01 - STA 104+36.87

4" YELLOW LINE (DOUBLE CL)  
TH13 STA 101+00.00 - STA 104+75.00

STONE FILL, TYPE II  
TH13 STA 101+40.00 - 102+30.00 LT



Should be: Coarse-Milling Bituminous Pavement  
TH31 STA 101+00.00 - 101+50.00  
TH31 STA 104+00.00 - 104+50.00  
no need to pay for milling where excavation will occur

Typically detailed as: Construct drives, paved  
TH31 STA 103+82.44 (5.0 ft wide) (108.86 ft long)  
This item is used for hand placed, likely for >100' they will use the paver, may want to detail as shoulder widening..  
Why are we paving a gravel pull off?

We're providing an apron here for access to the dry hydrant.

Do the wingwalls need to be turned back to make the grading work? I just ask since they are very short. Inline wingwalls will be easier/cheaper if the grading will work.

Plan to look into this

CURVE (2)  
DELTA = 11°52' 42"  
D = 4°39' 29"  
R = 1230.00'  
T = 127.96'  
L = 255.00'  
E = 6.64'

Plans & Titles will be required for proposed design features, construction limits (PDF) and utilities where they are outside of the existing right of way.

New Bisect Anchor needed

New Bisect anchor needed

Accommodations for access to the emergency hydrant next to this side of the bridge will need to be provided for the local fire department.

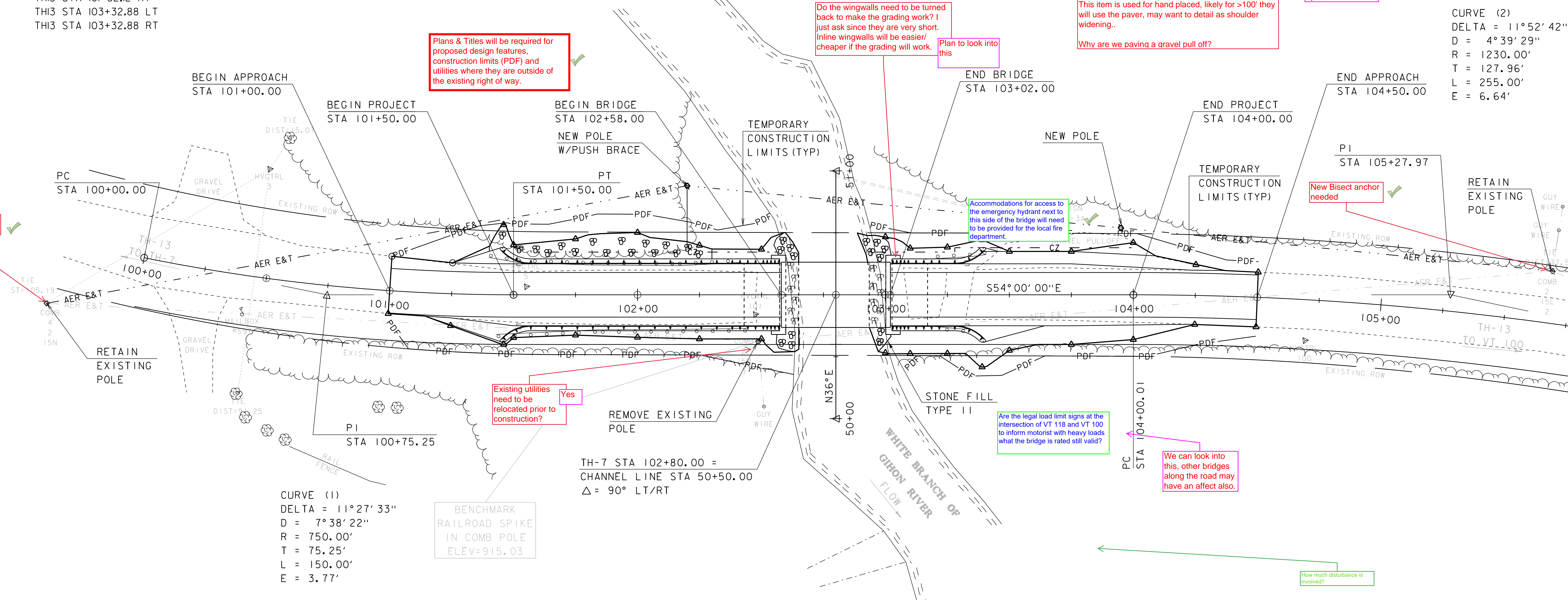
Existing utilities need to be relocated prior to construction? Yes

Are the legal load limit signs at the intersection of VT 118 and VT 100 to inform motorist with heavy loads what the bridge is rated still valid?

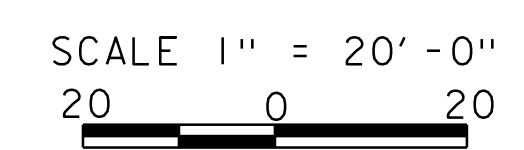
We can look into this, other bridges along the road may have an affect also.

How much disturbance is involved?

too be added

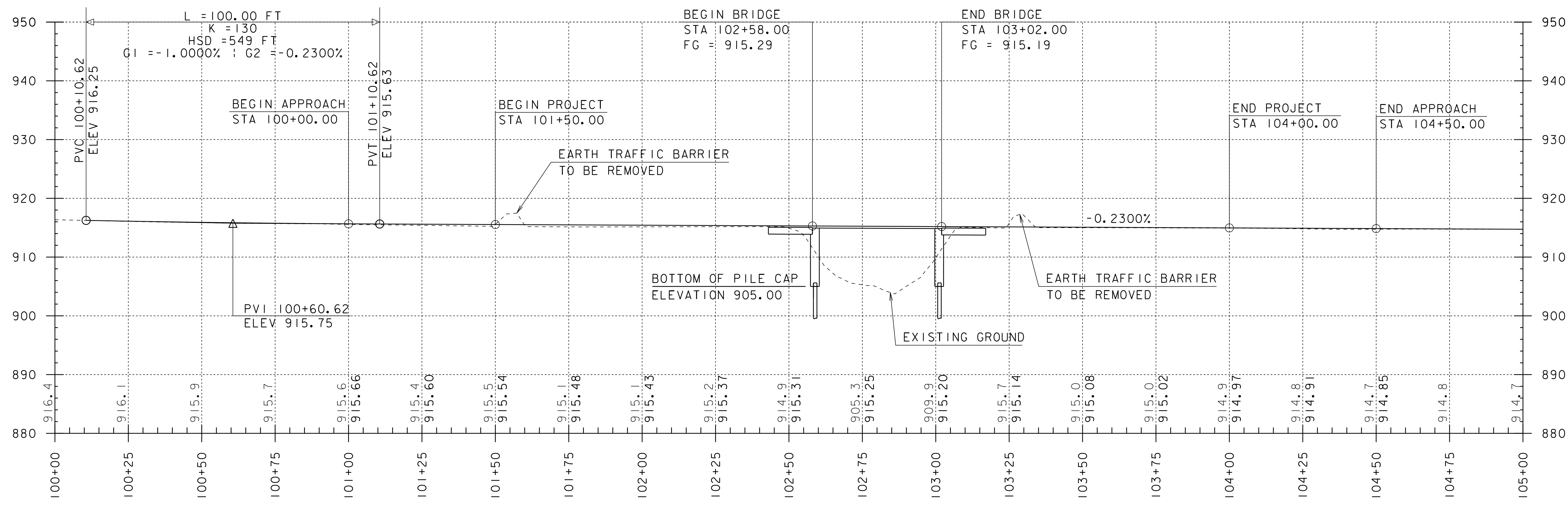


EXISTING BRIDGE INFORMATION  
TWIN CGMPA PIPES,  
12' SPAN, 26' LONG  
BRIDGE CLOSED 4/2017  
PIPES REMOVED 6/2017



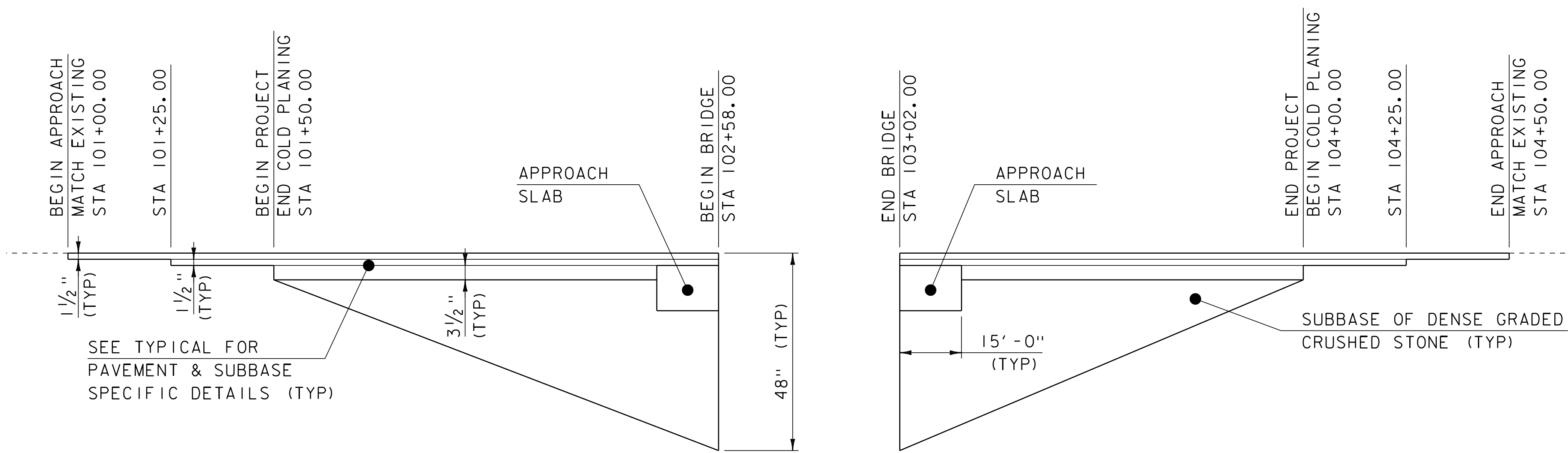
PROJECT NAME:	EDEN	PLOT DATE:	24-DEC-2018
PROJECT NUMBER:	BO 1448(44)	DRAWN BY:	M. LONGSTREET
FILE NAME:	sl6j176bdr.dgn	CHECKED BY:	F. BARROWS
PROJECT LEADER:	R. YOUNG	SHEET	7 OF 19
DESIGNED BY:	F. BARROWS		
LAYOUT SHEET			





**TH-13 (KNOWLES FLAT RD) PROFILE**

SCALE: HORIZONTAL 1"=20'-0"  
 VERTICAL 1"=10'-0"



**TH-13 MATERIAL TRANSITION DETAIL**

HORIZONTAL SCALE: 1" = 20'-0"  
 NO VERTICAL SCALE

NOTE:  
 GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG  $\phi$   
 GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG  $\phi$

PROJECT NAME:	EDEN
PROJECT NUMBER:	BO 1448(44)
FILE NAME:	I6J176/sl6j176pr of file.dgn
PROJECT LEADER:	R.YOUNG
DESIGNED BY:	F.BARROWS
PROFILE SHEET	
PLOT DATE:	24-DEC-2018
DRAWN BY:	M.LONGSTREET
CHECKED BY:	F.BARROWS
SHEET	8 OF 19

**SOIL CLASSIFICATION**

**AASHTO**

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

**ROCK QUALITY DESIGNATION**

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

**SHEAR STRENGTH**

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

**CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY**

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

**COMMONLY USED SYMBOLS**

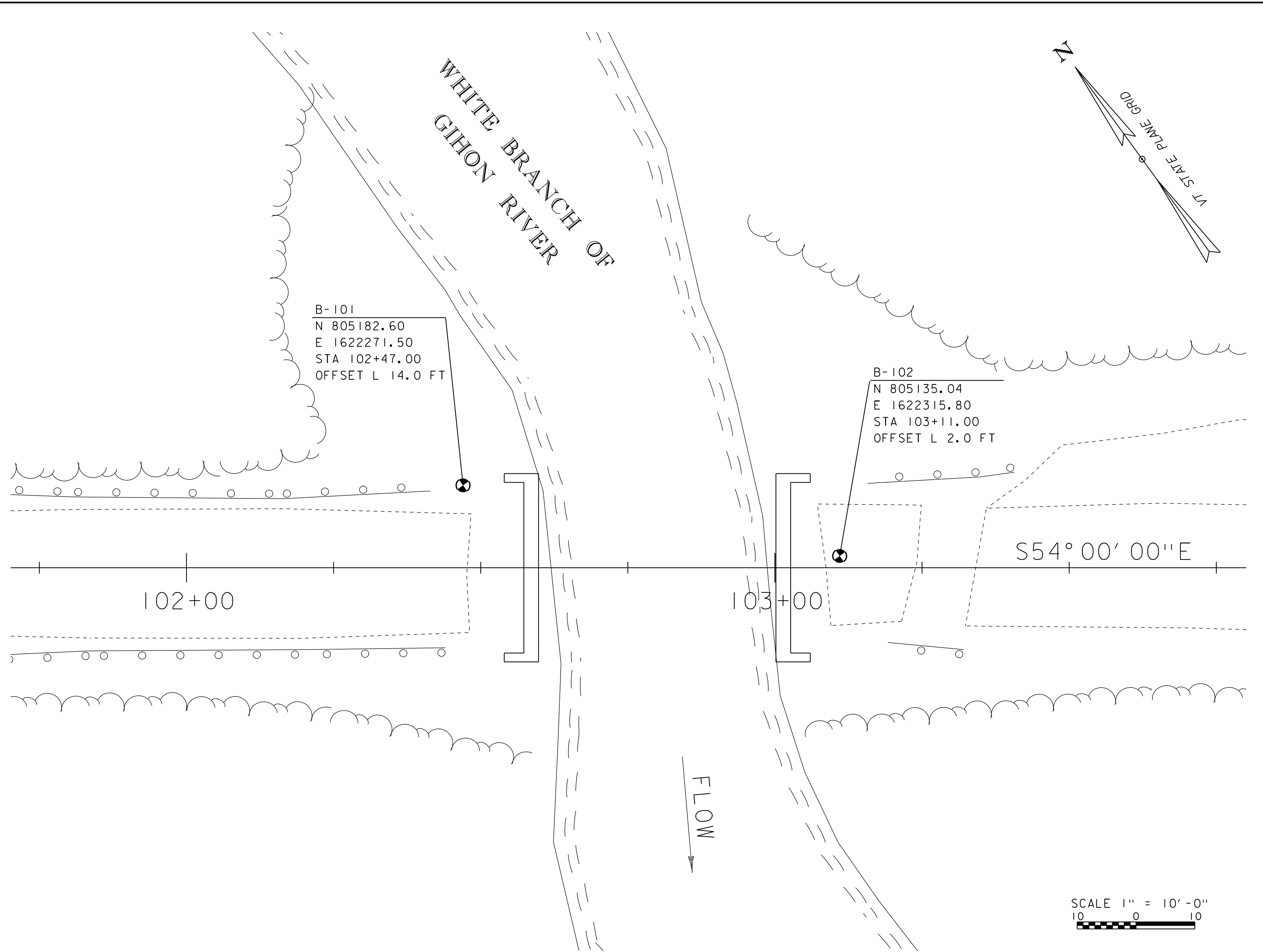
▼	Water Elevation
⊕	Standard Penetration Boring
⊗	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O. D. Sampler 1 3/8" I. D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 3/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
1/2 Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

**COLOR**

blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gr'y	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

**DEFINITIONS (AASHTO)**

<b>BEDROCK (LEDGE)</b> - Rock in its native location of indefinite thickness.	<b>VARVED</b> - Alternate layers of silt and clay.
<b>BOULDER</b> - A rock fragment with an average dimension > 12 inches.	<b>HARDPAN</b> - Extremely dense soil, cemented layer, not softened when wet.
<b>COBBLE</b> - Rock fragments with an average dimension between 3 and 12 inches.	<b>MUCK</b> - Soft organic soil (containing > 10% organic material).
<b>GRAVEL</b> - Rounded particles of rock < 3" and > 0.075" (#10 sieve).	<b>MOISTURE CONTENT</b> - Weight of water divided by dry weight of soil.
<b>SAND</b> - Particles of rock < 0.075" (#10 sieve) and > 0.0029" (#200 sieve).	<b>FLOWING SAND</b> - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.
<b>SILT</b> - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.	<b>STRIKE</b> - Angle from magnetic north to line of intersection of bed with a horizontal plane.
<b>CLAY</b> - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.	<b>DIP</b> - Inclination of bed with a horizontal plane.



**GENERAL NOTES**

- The subsurface explorations shown herein were made between 6/28/18 and 7/17/18 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

BORING POINT	STATION	OFFSET	GROUND ELEVATION	TOP OF LEDGE
B-101	102+47	LT 14 FT	914.7	814.7
B-102	103+11	LT 2 FT	915.1	815.1

PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M. LONGSTREET
FILE NAME: sl6j176bor.dgn	CHECKED BY: F. BARROWS
PROJECT LEADER: R. YOUNG	SHEET 9 OF 19
DESIGNED BY: F. BARROWS	
BORING INFORMATION SHEET	



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
CONSTRUCTION AND  
MATERIALS BUREAU  
CENTRAL LABORATORY

BORING LOG

Eden  
BO 1448 (44)  
Bride 23 - Knowles Flat Road

Boring No.: B-101  
Page No.: 1 of 2  
Pin No.: 16j176  
Checked By: CRG

Boring Crew: Judkins, Gonyaw, Emerson  
Date Started: 7/12/18 Date Finished: 7/17/18  
VTSPG NAD83: N 805182.60 ft E 1622271.50 ft  
Station: 102+47 Offset: 14.00  
Ground Elevation: 914.7 ft

Casing Sampler  
Type: WB SS  
I.D.: 4 in 1.5 in  
Hammer Wt: 140 lb. 140 lb.  
Hammer Fall: 30 in. 30 in.  
Hammer/Rod Type: Auto/AWJ  
Rig: CME 55 TRACK CE = 1.41

Groundwater Observations  
Date Depth Notes  
07/17/18 5.2 Before drilling

ABUTMENT I  
BOTTOM OF PILE CAP EL. 905.00

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, SaGr, brn, Moist, Rec. = 1.2 ft, NXDC				1-4-5-5 (9)	6.8	47.0	43.7	9.3
		A-1-b, SaGr, brn, Moist, Rec. = 1.3 ft, NXDC				9-13-8-5 (21)	7.0	49.2	40.4	10.4
		A-1-b, GrSa, brn, Moist, Rec. = 0.8 ft, NXDC				5-4-7-5 (11)	16.1	38.2	45.5	16.3
		A-2-4, SiGrSa, brn, Moist, Rec. = 1.4 ft, NXDC, Cleanout 7' - 8'				4-3-3-2 (6)	21.5	32.7	38.2	29.1
		A-1-b, GrSa, brn, Moist, Rec. = 0.9 ft, NXDC, Cleanout 9.5' - 10'				6-8-4-3 (12)	17.1	41.7	48.8	9.5
		A-1-b, SaGr, brn, Moist, Rec. = 1.0 ft, NXDC, Cleanout 11.5' - 12'				7-13-13-15 (26)	25.6	50.4	35.9	13.7
		A-1-b, SaGr, brn, Moist, Rec. = 0.9 ft, NXDC, Cleanout 13.2' - 14'				14-12-7-7 (19)	10.8	54.3	33.4	12.3
		A-4, SaSi, gry, Moist, Rec. = 1.2 ft, NXDC, Cleanout 19.5' - 20'				4-4-5-7 (9)	26.9	2.1	35.0	62.9
20		A-4, SiSa, gry, Moist, Rec. = 1.1 ft, NXDC				6-6-7-7 (13)	24.0	8.3	55.1	36.6
		A-4, SiSa, gry, Moist, Rec. = 1.4 ft, NXDC				4-5-8-9 (13)	23.8	0.2	56.6	43.2
30		A-3, Sa, gry, Moist, Rec. = 1.2 ft, NXDC				5-7-8-8 (15)	24.8	4.6	86.9	8.5
		A-4, SiSa, gry, Moist, Rec. = 1.4 ft, NXDC, Cleanout 39.5' - 40'				5-8-10-10 (18)	20.7	2.3	52.5	45.2
40		A-2-4, Sa, gry, Moist, Rec. = 1.0 ft, NXDC, Cleanout 49.4' - 50'				6-10-12-10 (22)	20.8	0.1	86.9	13.0
50		A-4, SaSi, gry, Moist, Rec. = 0.9 ft, NXDC				4-5-12-11 (17)	25.1		40.7	59.3
60		A-2-4, SiSa, gry, Moist, Rec. = 1.0 ft, NXDC, Cleanout 68.4' - 70'				4-8-11-11 (19)	23.9		77.4	22.6

Notes:  
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG EDEN BO 1448(44).CPJ VERMONT AOT.GDT 8/8/18



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
CONSTRUCTION AND  
MATERIALS BUREAU  
CENTRAL LABORATORY

BORING LOG

Eden  
BO 1448 (44)  
Bride 23 - Knowles Flat Road

Boring No.: B-101  
Page No.: 2 of 2  
Pin No.: 16j176  
Checked By: CRG

Boring Crew: Judkins, Gonyaw, Emerson  
Date Started: 7/12/18 Date Finished: 7/17/18  
VTSPG NAD83: N 805182.60 ft E 1622271.50 ft  
Station: 102+47 Offset: 14.00  
Ground Elevation: 914.7 ft

Casing Sampler  
Type: WB SS  
I.D.: 4 in 1.5 in  
Hammer Wt: 140 lb. 140 lb.  
Hammer Fall: 30 in. 30 in.  
Hammer/Rod Type: Auto/AWJ  
Rig: CME 55 TRACK CE = 1.41

Groundwater Observations  
Date Depth Notes  
07/17/18 5.2 Before drilling

ABUTMENT I  
EST. PILE TIP EL. 814.7

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
70		A-1-b, SaGr, blk, Moist, Rec. = 1.0 ft, NXDC				7-10-13-15 (23)	10.1	72.3	27.4	0.3
80		A-4, SaGrSi, gry, Moist, Rec. = 1.0 ft, NXDC				30-37-R-R (R)	15.0	23.1	20.5	56.4
90		A-4, Si, gry, Moist, Rec. = 0.9 ft, NXDC				35-R-R-R (R)	17.3	8.4	10.3	81.3
100		A-4, SaSi, gry, Moist, Rec. = 0.4 ft, NXDC				R-R-R-R (R)	11.7	14.6	36.4	49.0
110		107.3 ft - 112.3 ft, Silver-gray, vuggy, sulfidic and carbonaceous PHYLLITE, with quartz and plagioclase veins. Majority of run is vuggy with some rust staining. Soft, Slightly weathered, Poor rock, NXMDC, RMR=35	R-1 (85)	74 (38)	2					
		112.3 ft - 117.3 ft, Silver-gray, vuggy, sulfidic and carbonaceous PHYLLITE, with quartz and plagioclase veins. Faint rust staining on joints. Soft, Very slightly weathered, Fair rock, NXMDC, RMR=50	R-2 (80-85)	100 (86)	3					
		Hole stopped @ 117.3 ft								
120										

Notes:  
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG EDEN BO 1448(44).CPJ VERMONT AOT.GDT 8/8/18

PROJECT NAME: EDEN  
PROJECT NUMBER: BO 1448(44)

FILE NAME: S16J176BOR.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
BORING LOG I

PLOT DATE: 24-DEC-2018  
DRAWN BY: A.FLINN  
CHECKED BY: F. BARROWS  
SHEET 10 OF 19



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
CONSTRUCTION AND  
MATERIALS BUREAU  
CENTRAL LABORATORY

BORING LOG

Eden  
BO 1448 (44)  
Bride 23 - Knowles Flat Road

Boring No.: B-102  
Page No.: 1 of 2  
Pin No.: 16j176  
Checked By: CRG

Boring Crew: Gonyaw, Judkins, Emerson  
Date Started: 6/28/18 Date Finished: 7/11/18  
VTSPG NAD83: N 805135.04 ft E 1622315.80 ft  
Station: 103+11 Offset: 2.00  
Ground Elevation: 915.1 ft

Casing Type: WB  
Sampler Type: SS  
I.D.: 4 in 1.5 in  
Hammer Wt: 140 lb. 140 lb.  
Hammer Fall: 30 in. 30 in.  
Hammer/Rod Type: Auto/AWJ  
Rig: CME 55 TRACK CE = 1.41

Groundwater Observations		
Date	Depth (ft)	Notes
06/29/18	6.5	Before drilling
07/09/18	6.7	Before drilling

ABUTMENT 2  
BOTTOM OF PILE CAP EL. 905.00

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft, NXDC, Cleanout 2.3' - 3'				3-10-9-15	5.6	41.6	42.8	15.6
		A-1-b, GrSa, brn, Moist, Rec. = 1.3 ft, NXDC, Cleanout 4.7' - 5'				12-13-15-17	7.6	36.1	47.7	16.2
		A-1-b, SiGrSa, brn, Moist, Rec. = 1.2 ft, NXDC, Cleanout 6.2' - 7'				10-16-13-5	14.4	32.8	46.7	20.5
		No Recovery, Rec. = 0.0 ft, NXDC, 7.0 ft - 9.0 ft				12-11-11-8	16.9	23.6	60.5	15.9
10		A-2-4, GrSa, blk, Moist, Rec. = 0.7 ft, NXDC, Cleanout 10.4' - 11'				2-10-15-16	8.0	57.3	29.0	13.7
		A-1-b, SaGr, brn, Moist, Rec. = 1.2 ft, NXDC, Cleanout 12.2' - 13'				4-5-5-5	19.0	8.0	40.5	51.5
		A-4, SaSi, gry, Moist, Rec. = 0.9 ft, NXDC, Cleanout 14.6' - 15'				16-17-13-11	20.6	6.5	32.3	61.2
		A-4, SaSi, gry, Moist, Rec. = 1.2 ft, NXDC, Cleanout 17.4' - 20'				6-4-5-5	23.3	0.5	76.9	22.6
20		A-2-4, SiSa, gry, Moist, Rec. = 0.9 ft, NXDC, Cleanout 24.4' - 25'				4-4-4-6	46.4	5.5	64.4	30.1
		A-2-4, SiSa, gry, Moist, Rec. = 0.8 ft, NXDC				5-4-5-6	43.1	1.0	44.5	54.5
30		A-4, SaSi, gry, Moist, Rec. = 1.0 ft, NXDC				4-3-5-5	19.1	1.3	52.1	46.6
		A-4, SiSa, gry, MTW, Rec. = 1.3 ft, NXDC, Cleanout 38.1' - 40'				6-7-10-13	21.5	1.6	66.8	31.6
40		A-2-4, SiSa, gry, MTW, Rec. = 1.2 ft, NXDC				7-8-12-12	23.8	0.7	78.1	21.2
50		A-2-4, SiSa SiSa, gry, MTW, Rec. = 1.2 ft, NXDC, Cleanout 58' - 60'				2-5-6-8				
60		No Recovery, Rec. = 0.0 ft, NXDC, 60.0 ft - 62.0 ft, Cleanout (Rollercone) 69.1' - 70'								

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG EDEN BO 1448(44).GPJ VERMONT AOT.GDT 8/8/18



STATE OF VERMONT  
AGENCY OF TRANSPORTATION  
CONSTRUCTION AND  
MATERIALS BUREAU  
CENTRAL LABORATORY

BORING LOG

Eden  
BO 1448 (44)  
Bride 23 - Knowles Flat Road

Boring No.: B-102  
Page No.: 2 of 2  
Pin No.: 16j176  
Checked By: CRG

Boring Crew: Gonyaw, Judkins, Emerson  
Date Started: 6/28/18 Date Finished: 7/11/18  
VTSPG NAD83: N 805135.04 ft E 1622315.80 ft  
Station: 103+11 Offset: 2.00  
Ground Elevation: 915.1 ft

Casing Type: WB  
Sampler Type: SS  
I.D.: 4 in 1.5 in  
Hammer Wt: 140 lb. 140 lb.  
Hammer Fall: 30 in. 30 in.  
Hammer/Rod Type: Auto/AWJ  
Rig: CME 55 TRACK CE = 1.41

Groundwater Observations		
Date	Depth (ft)	Notes
06/29/18	6.5	Before drilling
07/09/18	6.7	Before drilling

ABUTMENT 2  
EST. PILE TIP EL. 815.1

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
70		A-1-b, SaGr, gry, MTW, Rec. = 1.0 ft, NXDC, Cleanout 77.3' - 80'				10-12-11-13	9.3	65.5	27.4	7.1
80		No Recovery, Rec. = 0.0 ft, NXDC, 80.0 ft - 82.0 ft, BXDC Cleanout 88.9' - 90'				3-8-8-11				
90		A-4, Si, gry, Moist, Rec. = 0.5 ft, NXDC, BXDC Cleanout 98.5' - 100'				18-R-R-R	19.9	6.1	14.2	79.7
100		A-4, Si, gry, Moist, Rec. = 0.8 ft, NXDC				22-R-R-R	16.6	0.4	6.3	93.3
110		104.5 ft - 109.5 ft, Gray/green, sulfidic GREENSCHIST, with quartz and plagioclase veins. Joints are fresh and unweathered. Moderately hard to hard, Unweathered, Good rock, BXMDC, RMR=64	1 (75)	96 (4.4)	4					
		109.5 ft - 114.5 ft, Gray/green, sulfidic GREENSCHIST, with quartz and plagioclase veins. Joints are fresh and unweathered. Moderately hard to hard, Unweathered, Good rock, BXMDC, RMR=74	2 (75)	82 (3.8)	4					
		Hole stopped @ 114.5 ft								
120		Remarks: DRILLER'S NOTES: Switched to 3" diameter casing @ 80'.								

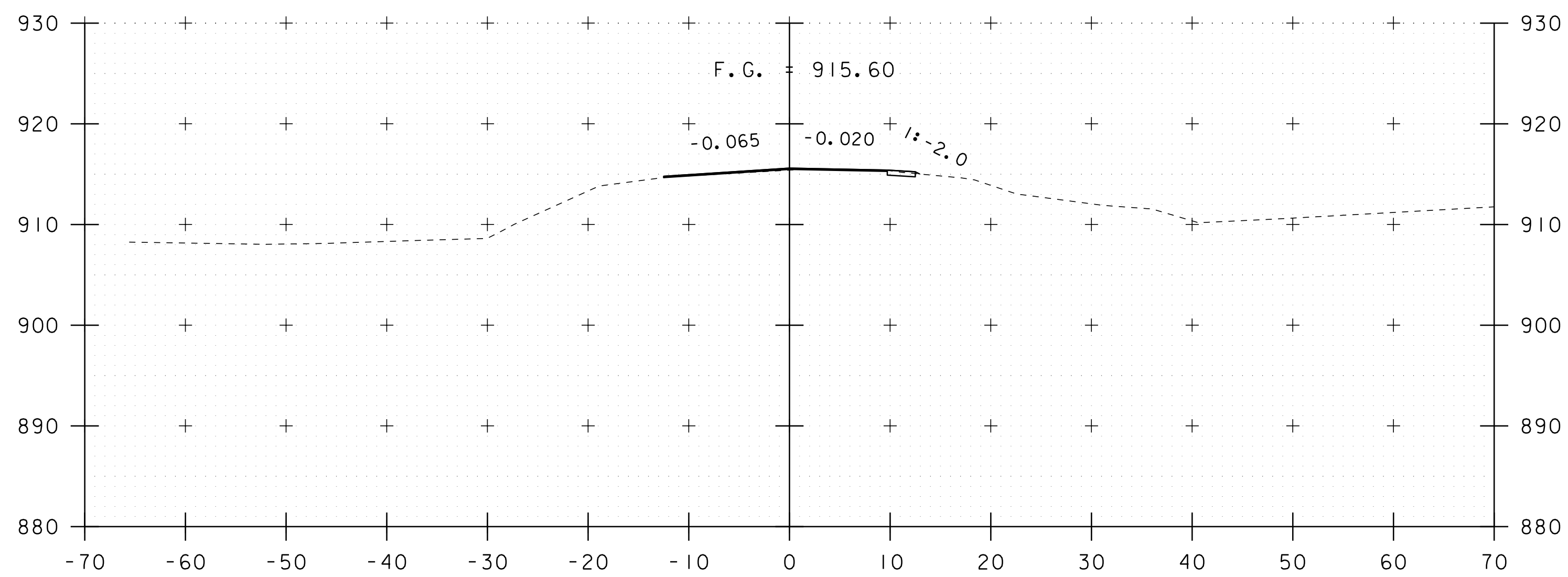
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.  
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.  
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG EDEN BO 1448(44).GPJ VERMONT AOT.GDT 8/8/18

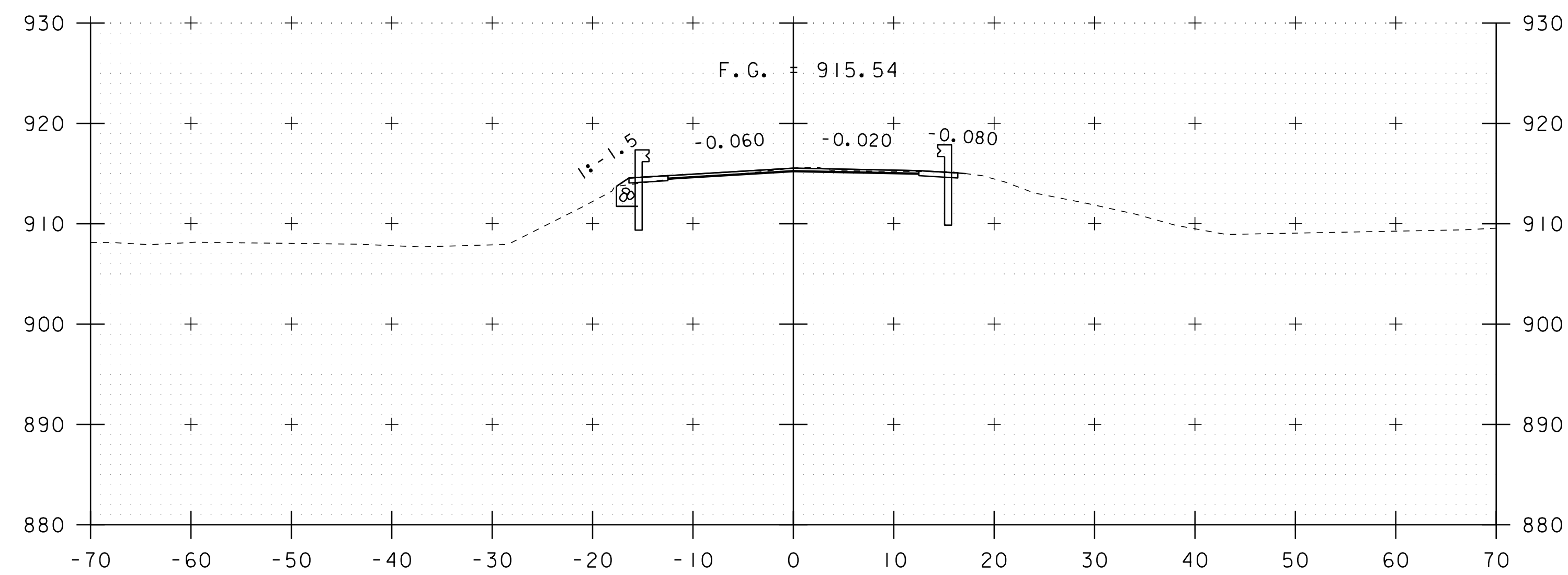
PROJECT NAME: EDEN  
PROJECT NUMBER: BO 1448(44)

FILE NAME: S16J176BOR.dgn  
PROJECT LEADER: R. YOUNG  
DESIGNED BY: F. BARROWS  
BORING LOG 2

PLOT DATE: 24-DEC-2018  
DRAWN BY: A.FLINN  
CHECKED BY: F. BARROWS  
SHEET II OF 19

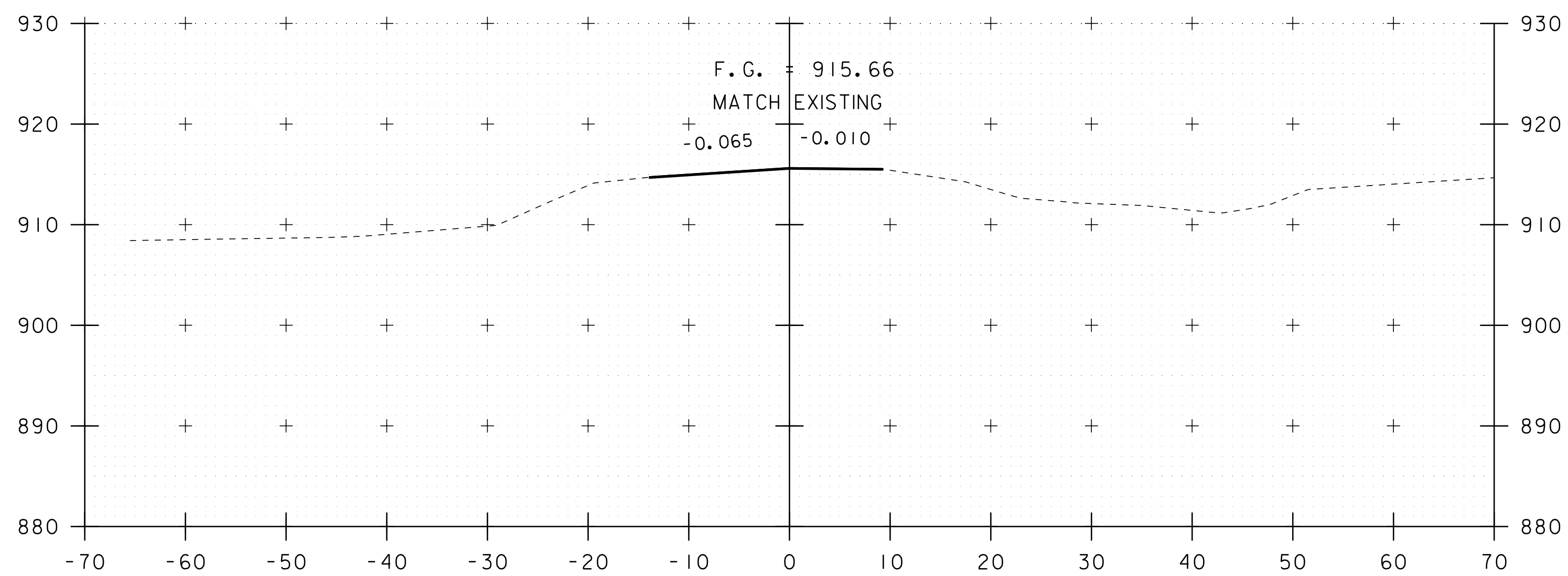


101+25



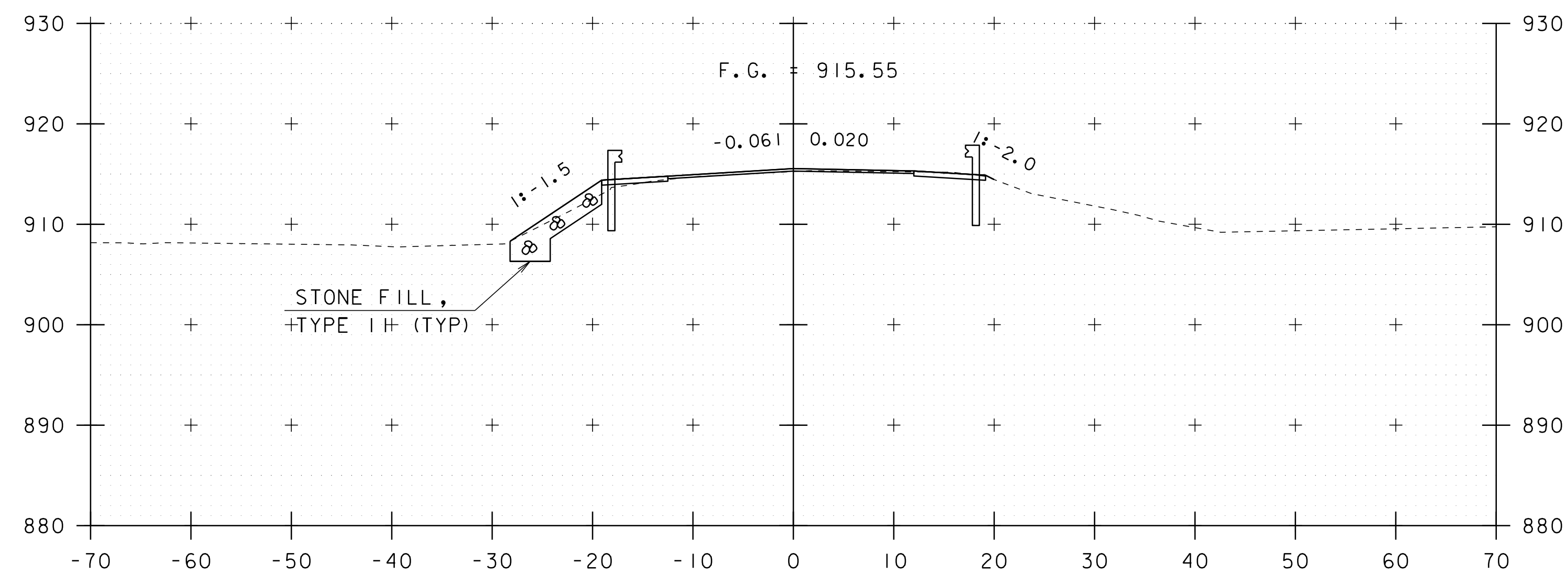
101+50

BEGIN PROJECT



101+00

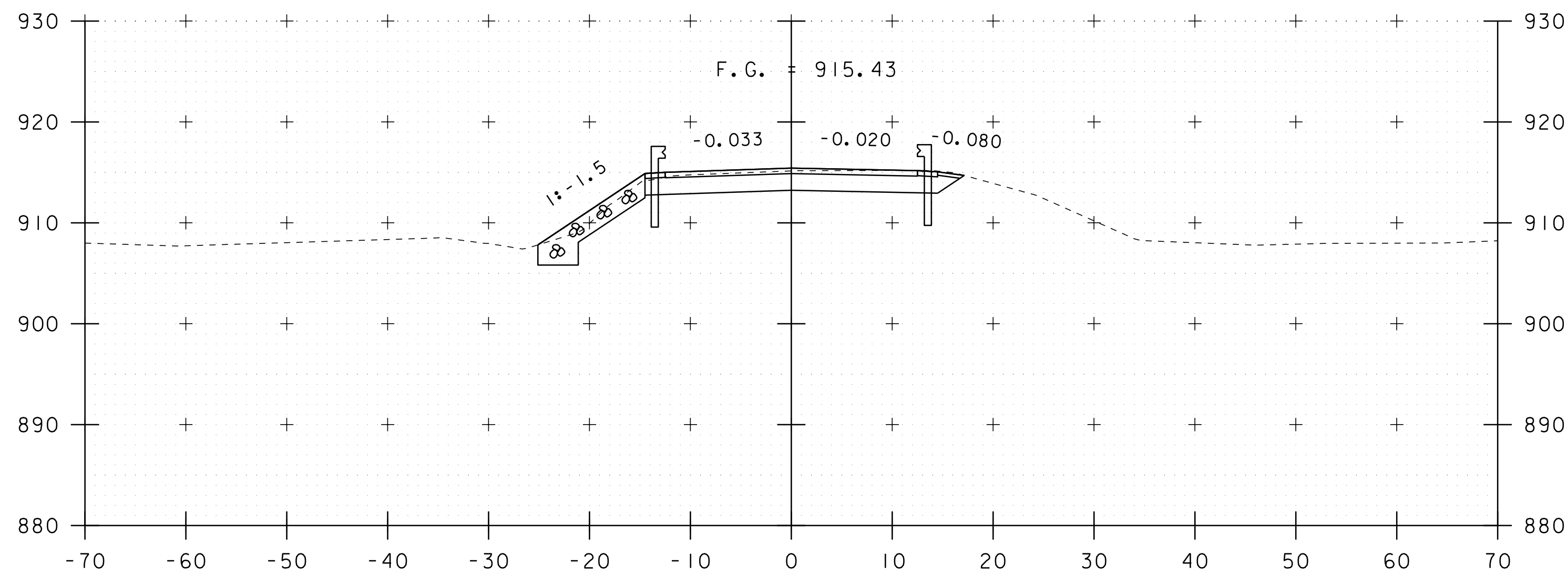
BEGIN APPROACH



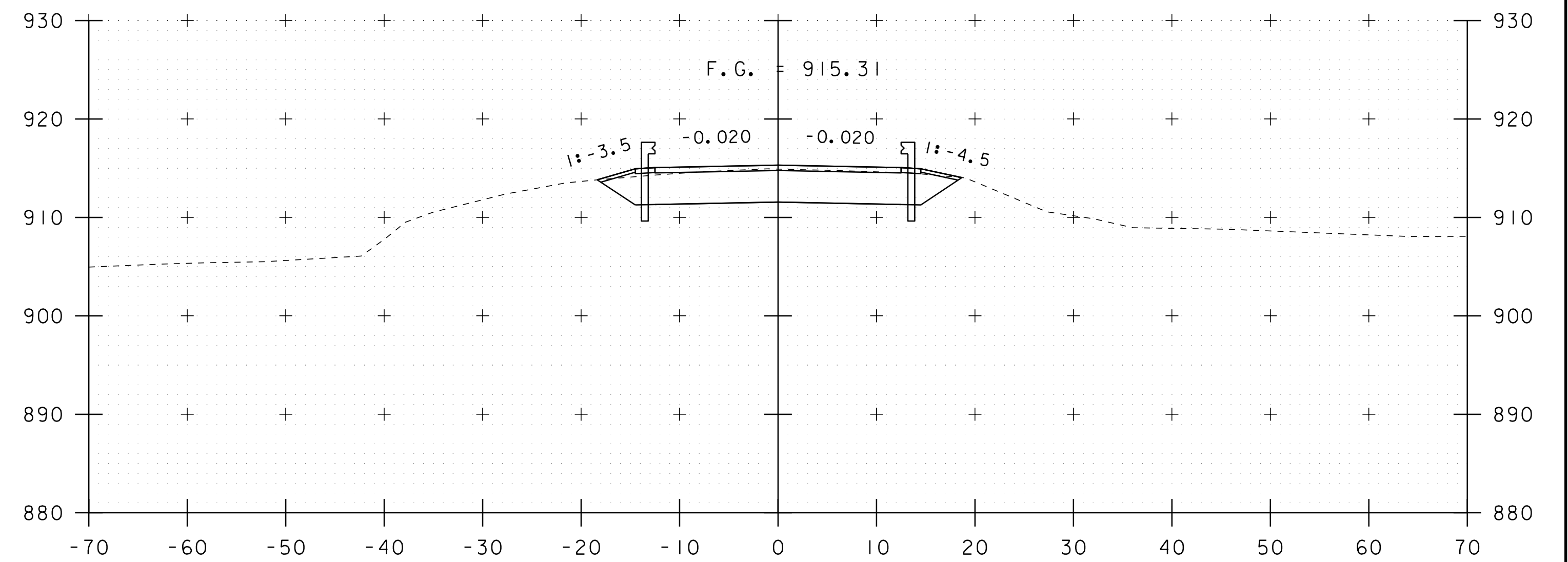
101+46

STA. 101+00 TO STA. 101+50

PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M. LONGSTREET
FILE NAME: sl6j176xs.dgn	DESIGNED BY: F.BARROWS
PROJECT LEADER: R.YOUNG	TH 13 CROSS SECTIONS 1
CHECKED BY: F.BARROWS	SHEET 12 OF 19

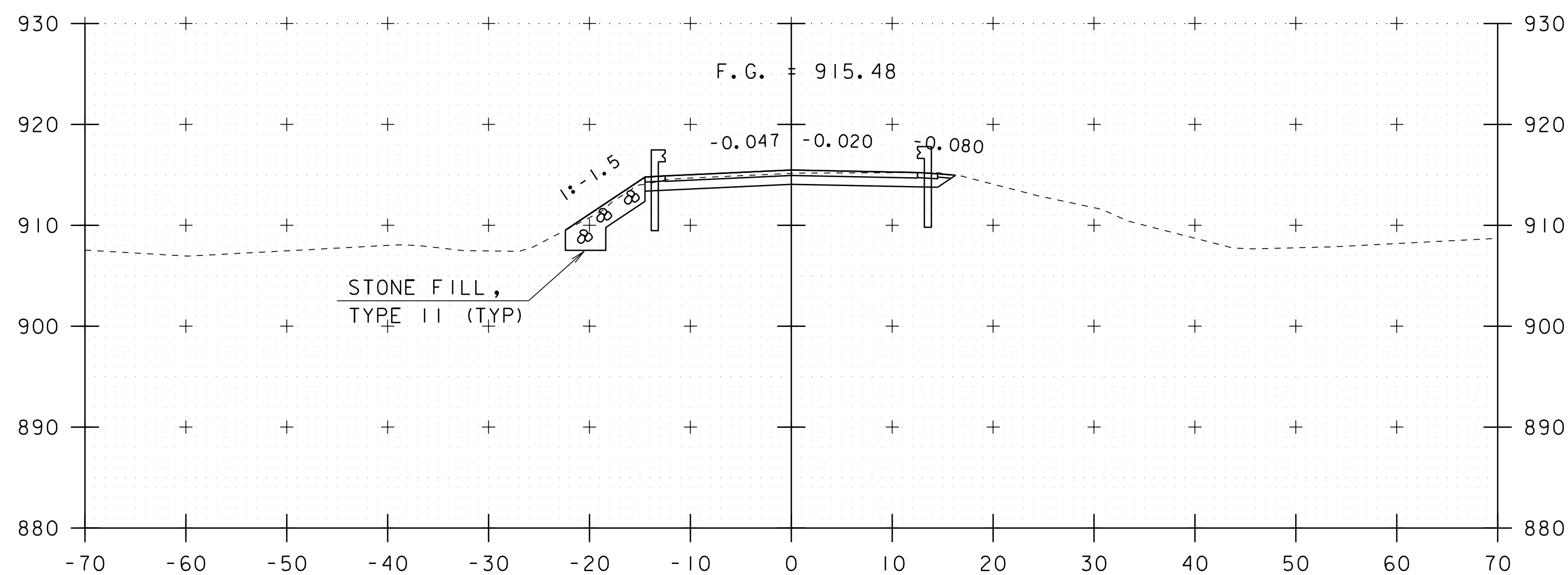


102+00



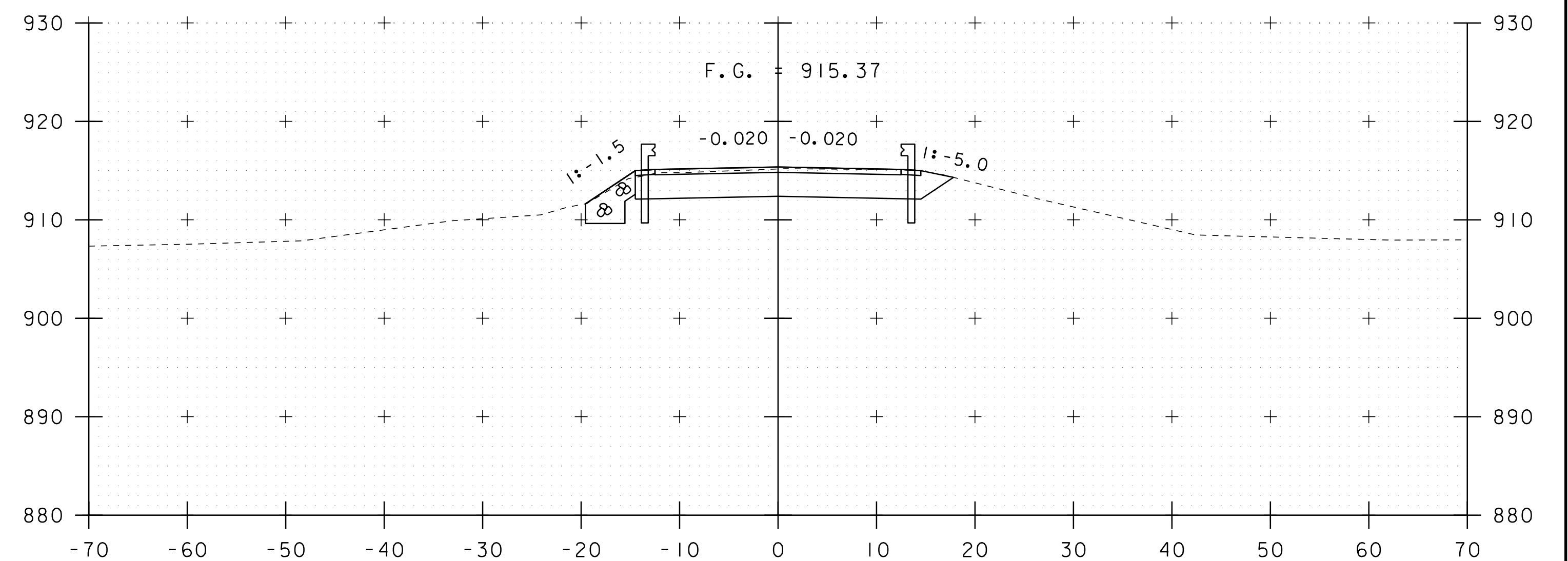
BEGIN BRIDGE STA 102+58.00

102+50



STONE FILL,  
TYPE II (TYP)

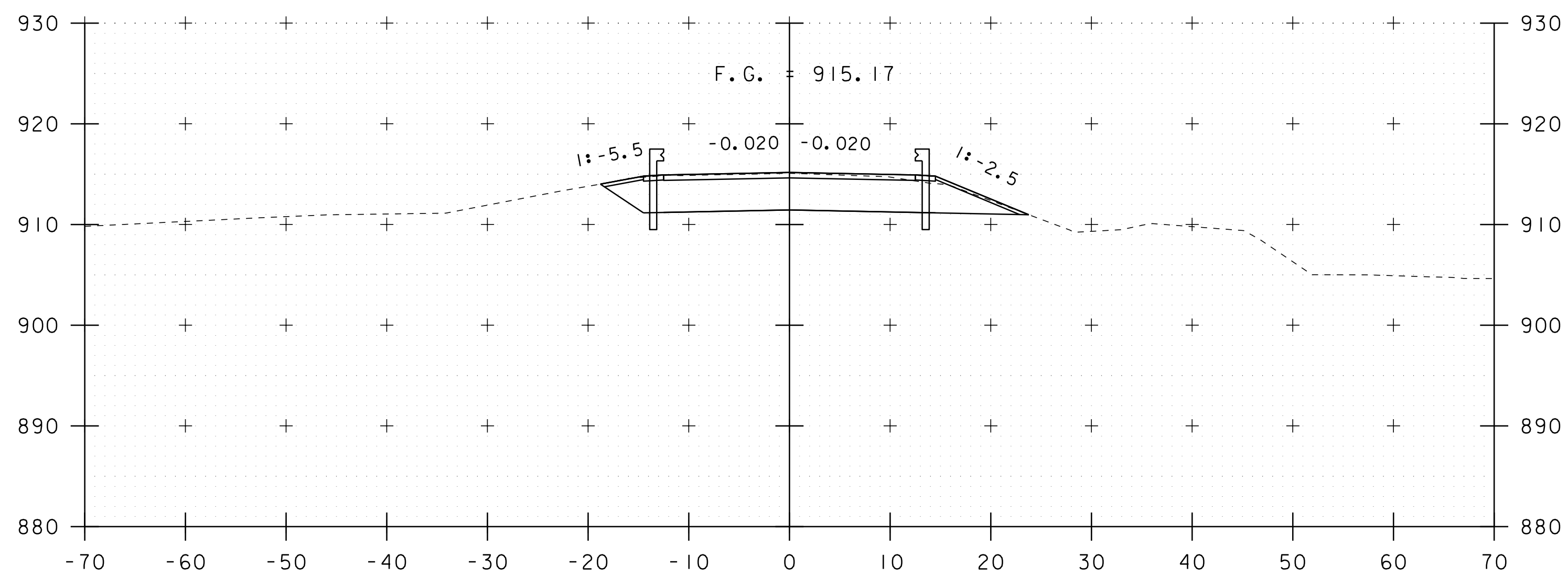
101+75



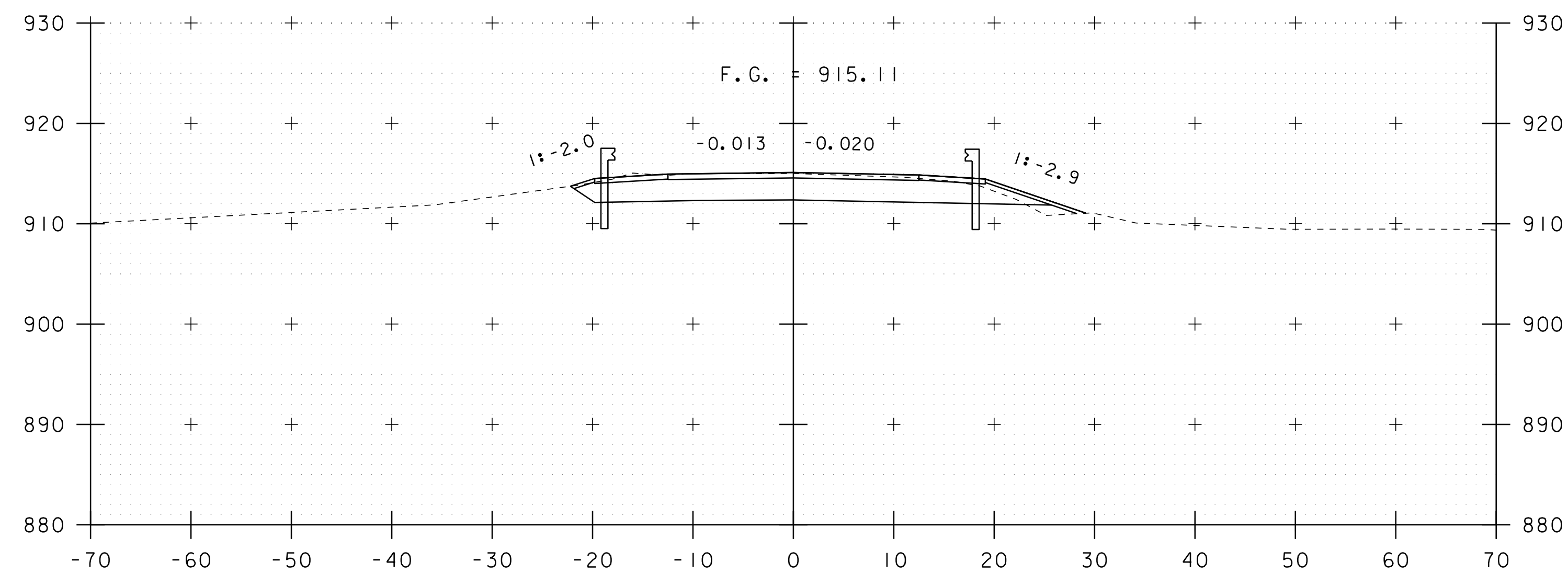
102+25

STA. 101+75 TO STA. 102+50

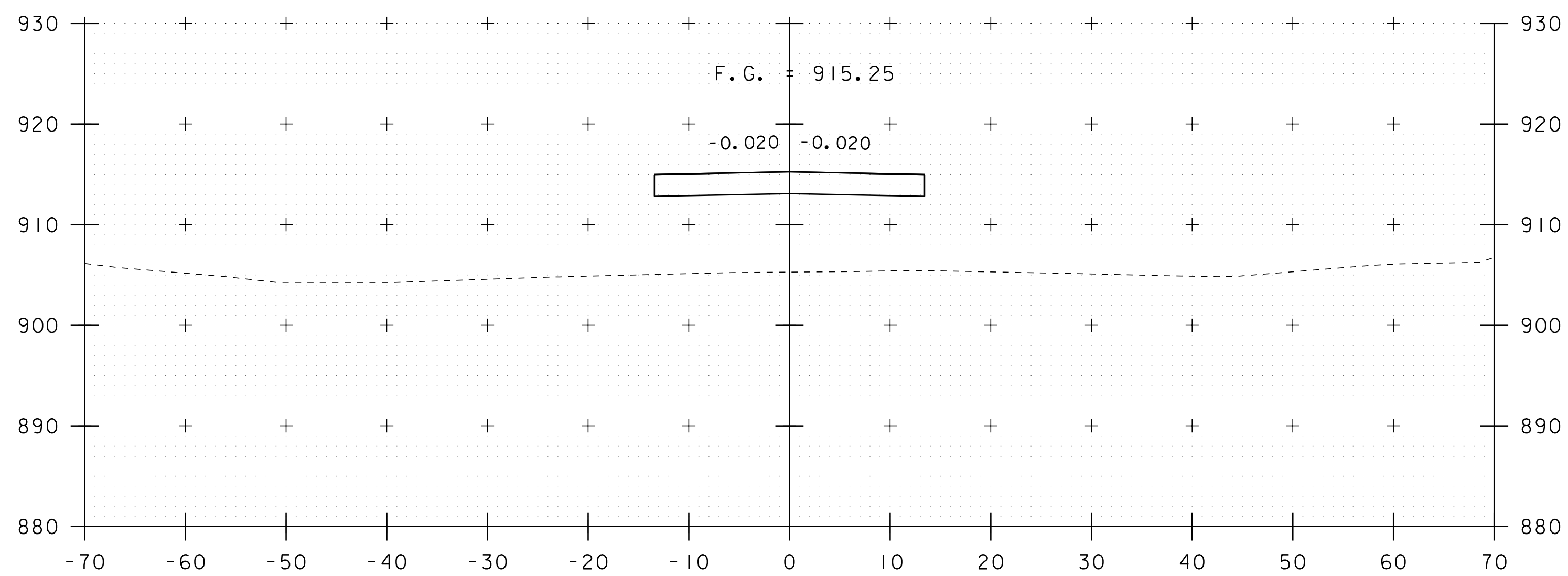
PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M. LONGSTREET
FILE NAME: sl6j176xs.dgn	CHECKED BY: F. BARROWS
PROJECT LEADER: R. YOUNG	SHEET 13 OF 19
DESIGNED BY: F. BARROWS	
TH 13 CROSS SECTIONS 2	



103+10

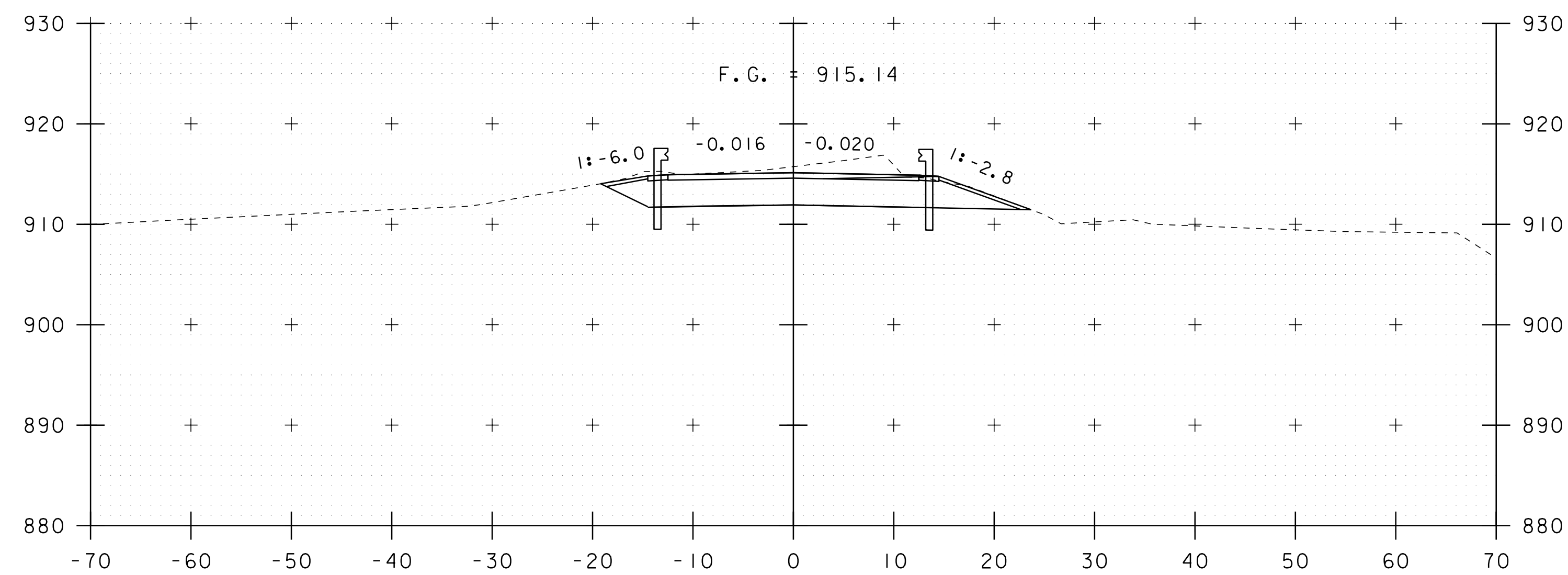


103+39



102+75

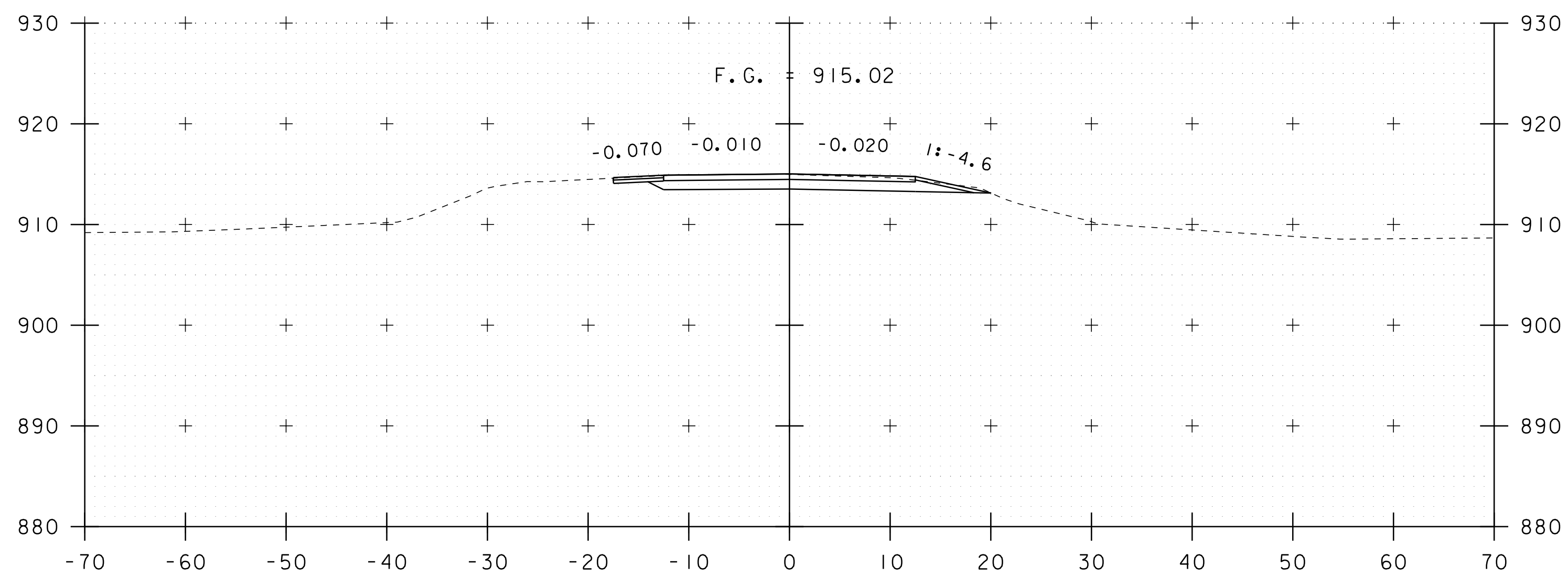
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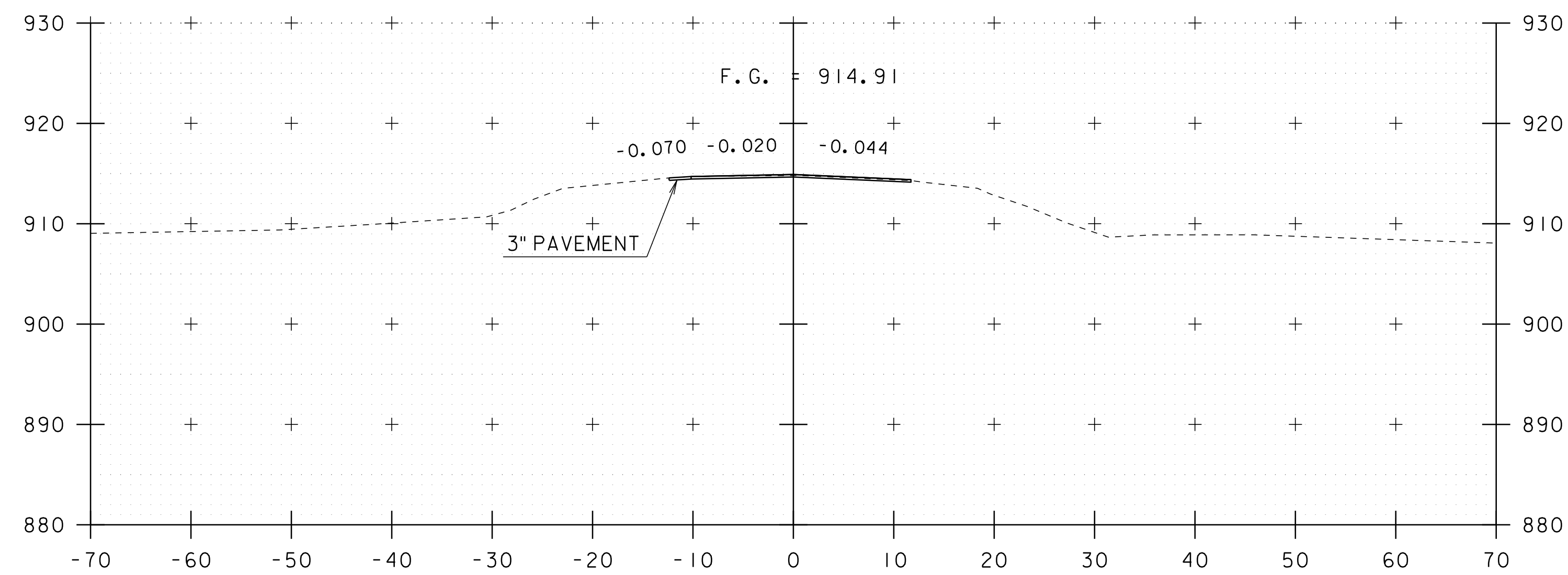
103+25

STA. 102+75 TO STA. 103+39

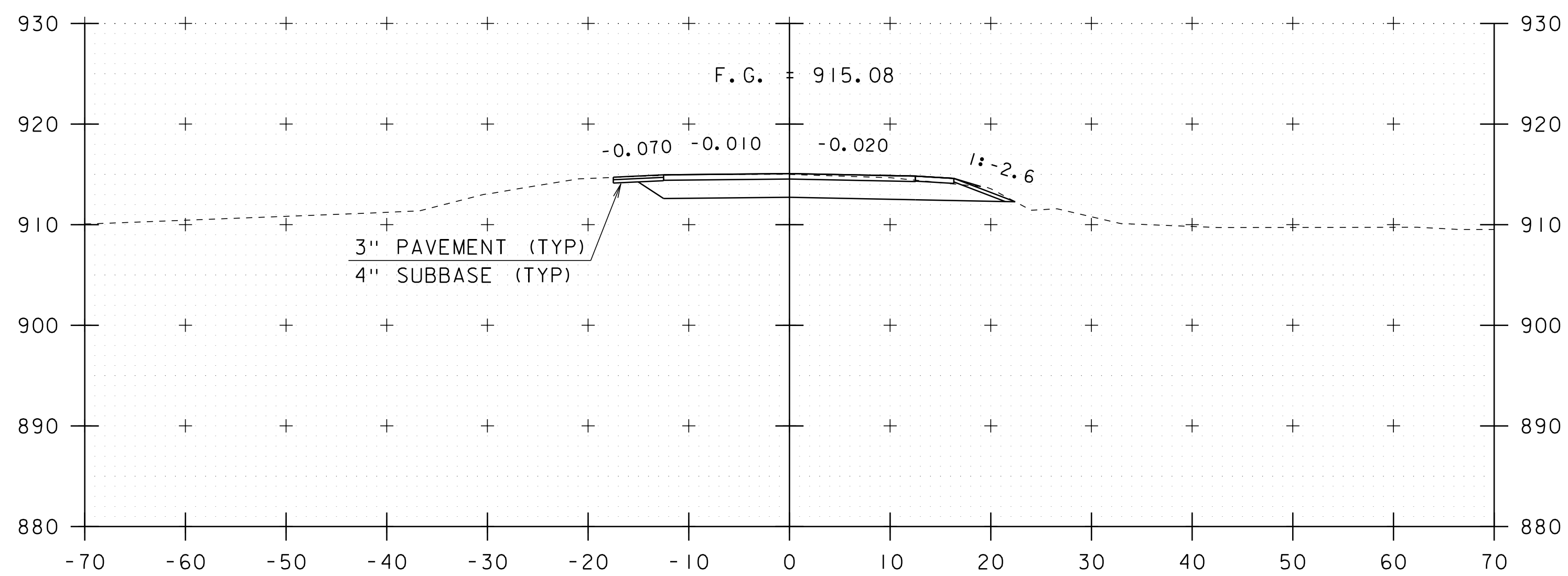
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PROJECT NUMBER: BO 1448(44)	DRAWN BY: M. LONGSTREET
FILE NAME: sl6j176xs.dgn	CHECKED BY: F.BARROWS
PROJECT LEADER: R.YOUNG	SHEET 14 OF 19
DESIGNED BY: F.BARROWS	
TH 13 CROSS SECTIONS 3	



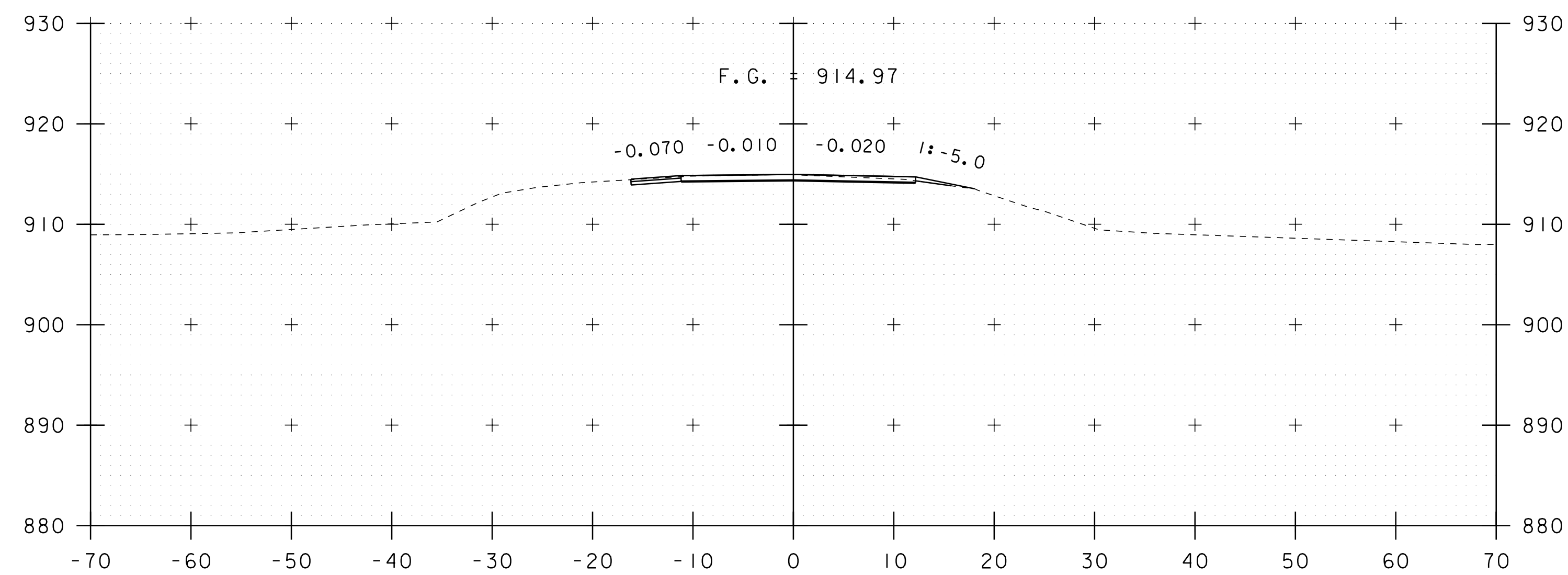
103+75



104+25



103+50



104+00

END PROJECT

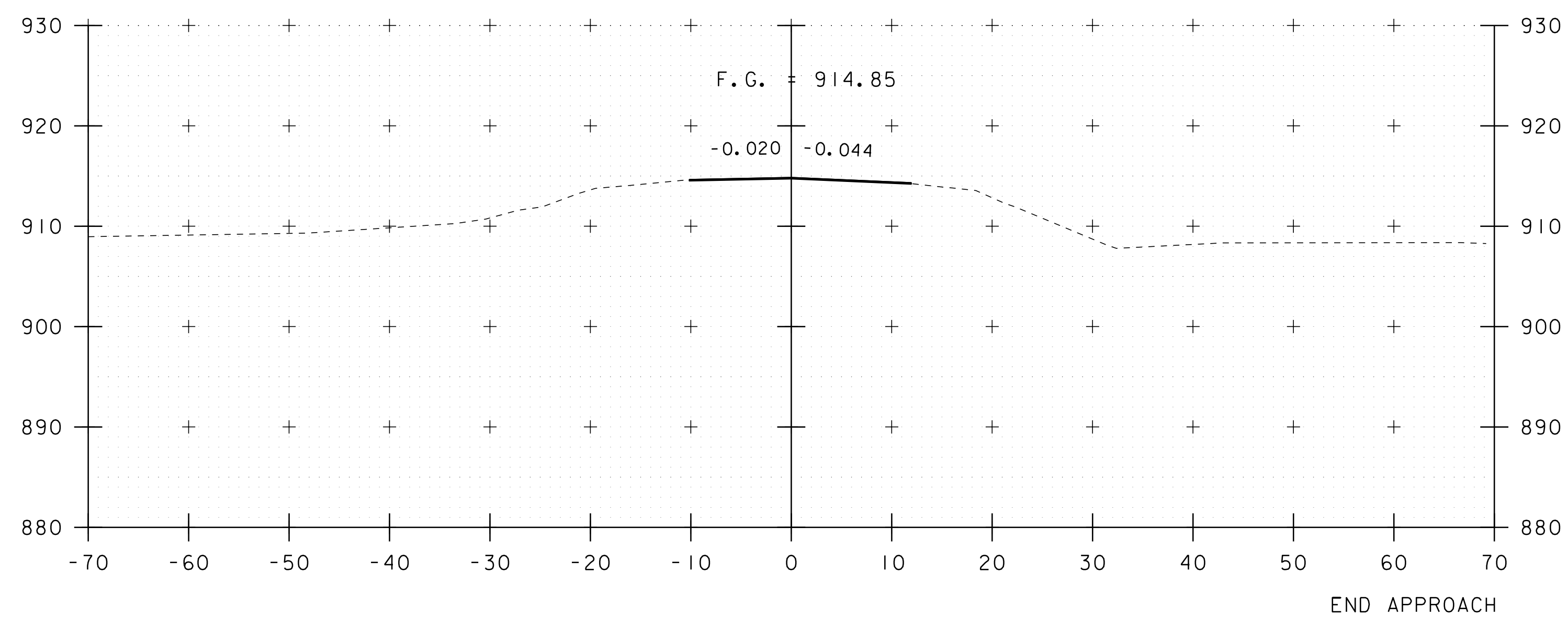
STA. 103+50 TO STA. 104+25

PROJECT NAME: EDEN  
PROJECT NUMBER: BO 1448(44)

FILE NAME: sl6j176xs.dgn  
PROJECT LEADER: R.YOUNG  
DESIGNED BY: F.BARROWS  
TH 13 CROSS SECTIONS 4

PLOT DATE: 24-DEC-2018  
DRAWN BY: M. LONGSTREET  
CHECKED BY: F.BARROWS  
SHEET 15 OF 19

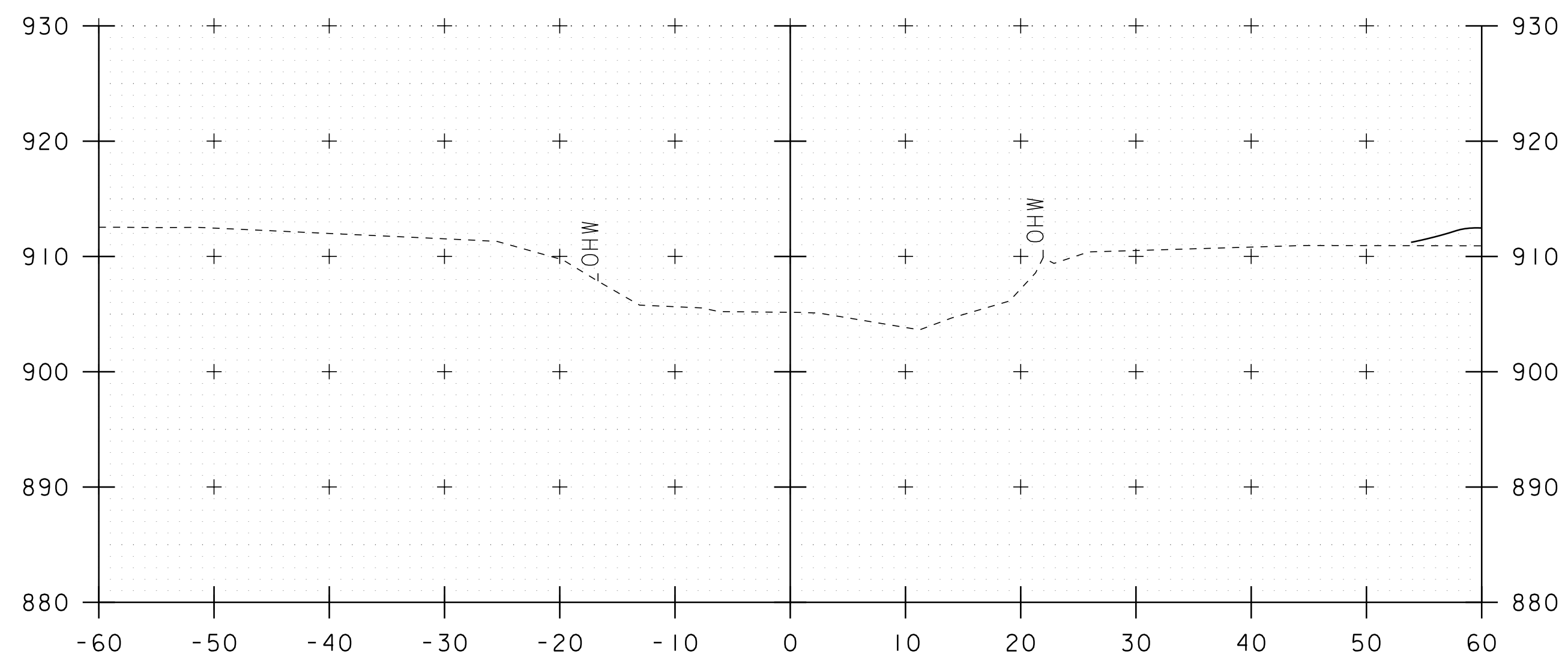




104+50

STA. 104+50 TO STA. 104+50

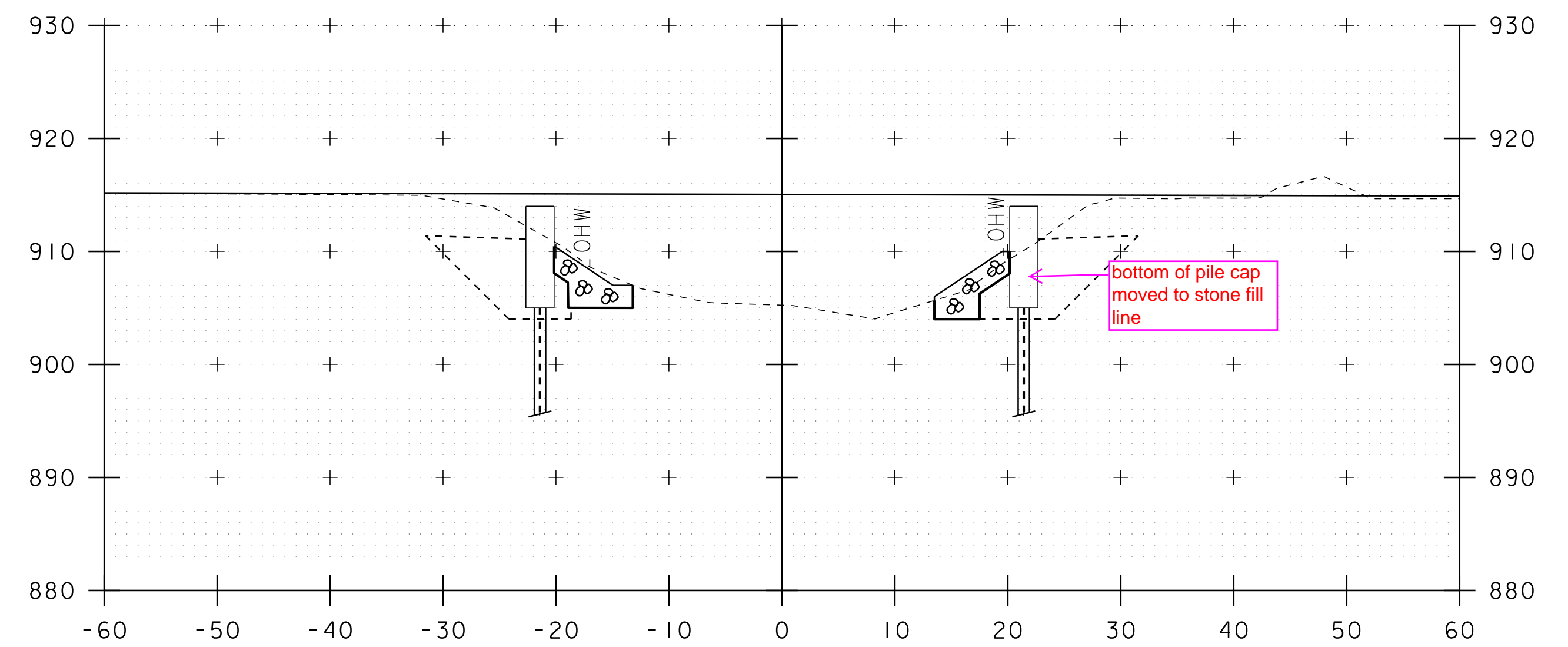
PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M. LONGSTREET
FILE NAME: sl6j176xs.dgn	CHECKED BY: F.BARROWS
PROJECT LEADER: R.YOUNG	SHEET 16 OF 19
DESIGNED BY: F.BARROWS	TH 13 CROSS SECTIONS 5



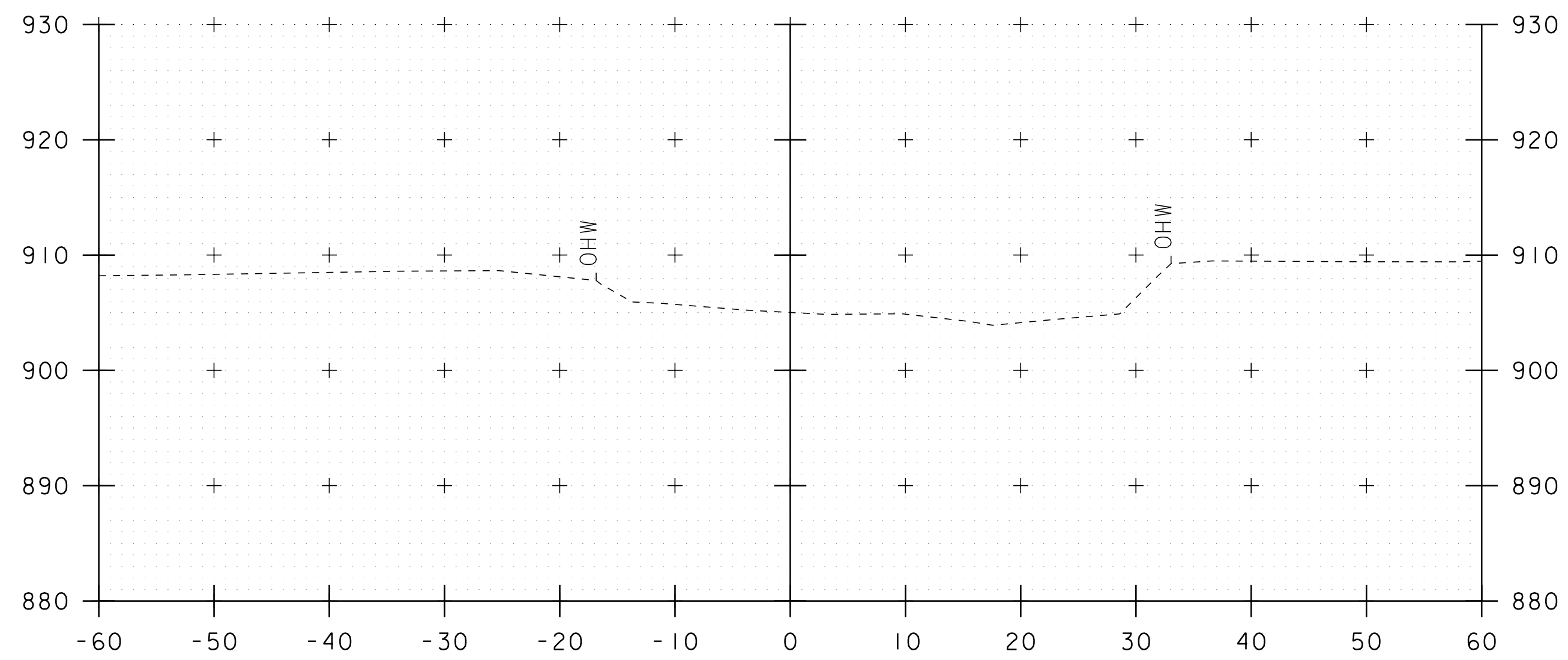
STA 50+26.51 LT  
 BEGIN STONE FILL, TYPE II  
 GEOTEXTILE UNDER STONE FILL  
 GRUBBING MATERIAL  
 UNCLASSIFIED CHANNEL EXCAVATION

50+25

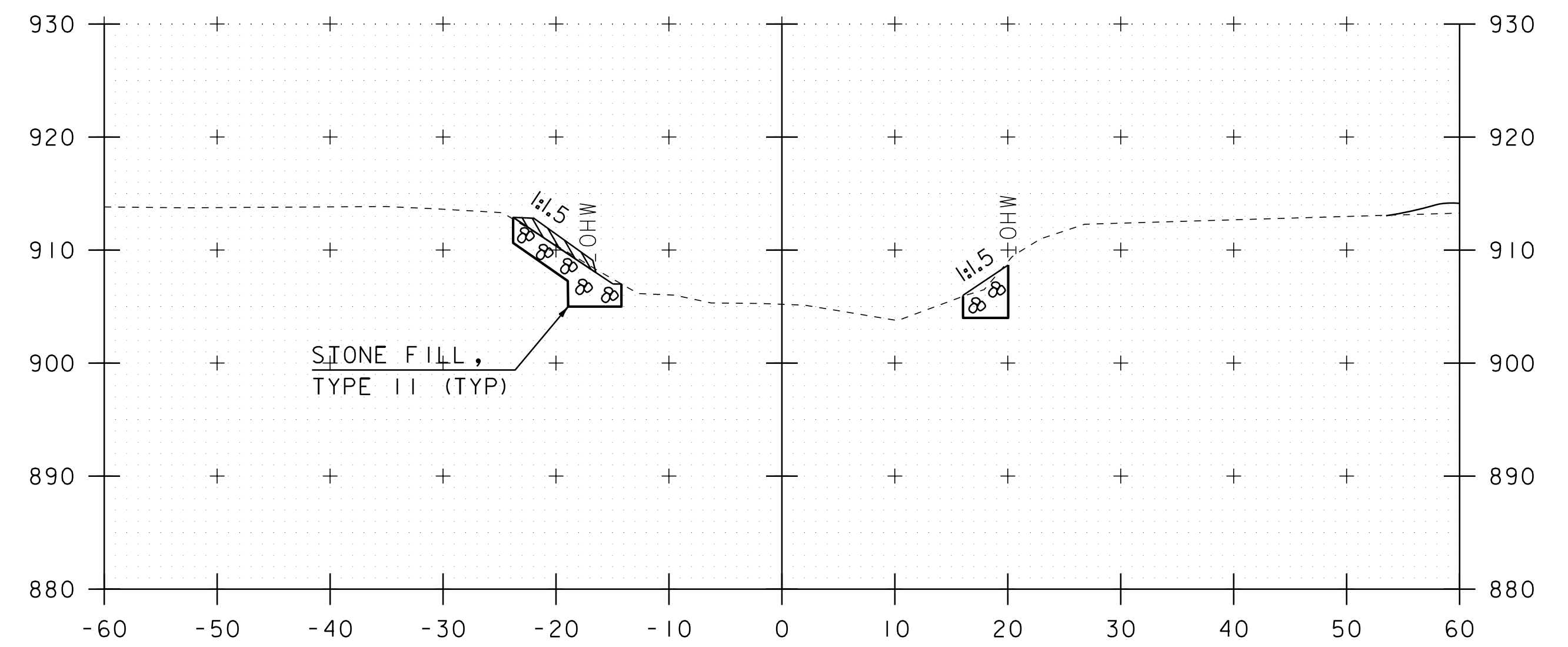
STA 50+26.26 RT  
 BEGIN STONE FILL, TYPE II  
 GEOTEXTILE UNDER STONE FILL  
 GRUBBING MATERIAL  
 UNCLASSIFIED CHANNEL EXCAVATION



50+40



50+00



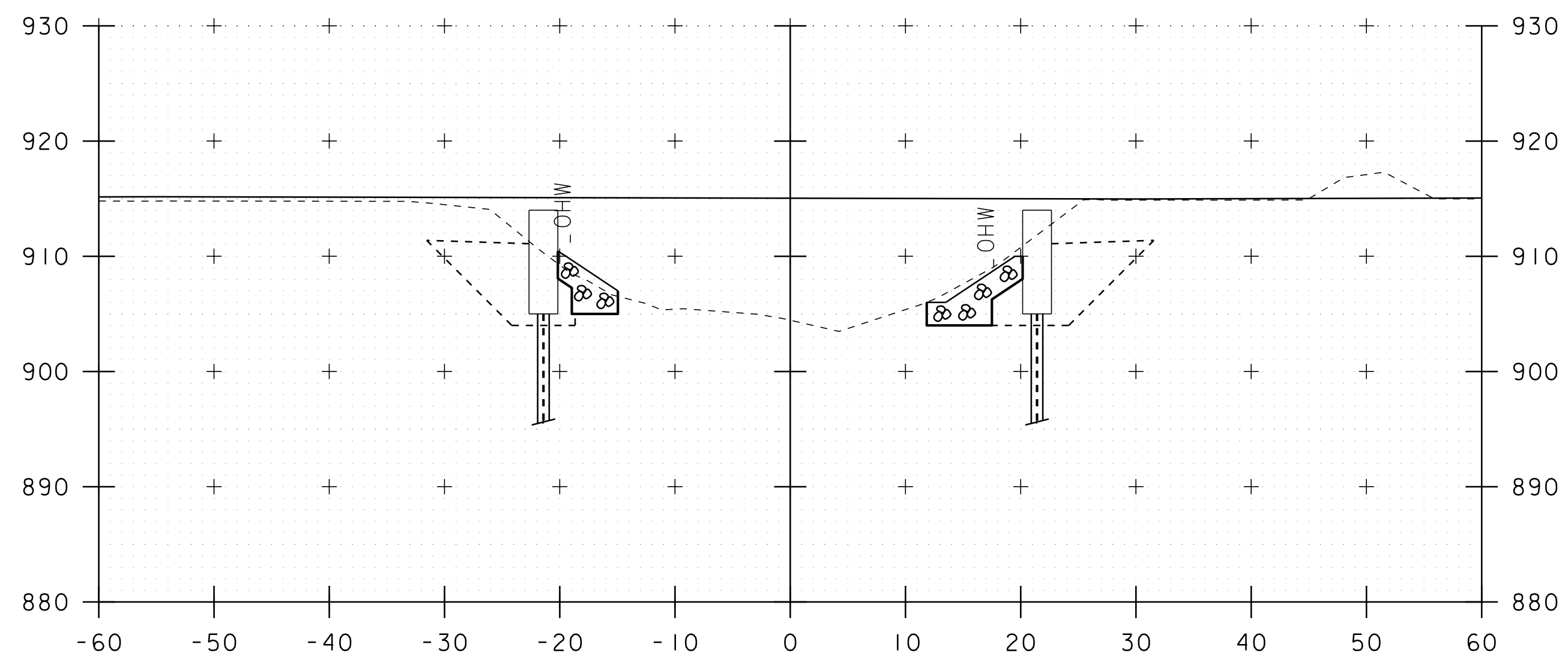
50+30

STA 50+36.83 LT  
 END GRUBBING MATERIAL

STA 50+36.83 RT  
 END GRUBBING MATERIAL

STA. 50+00 TO STA. 50+40

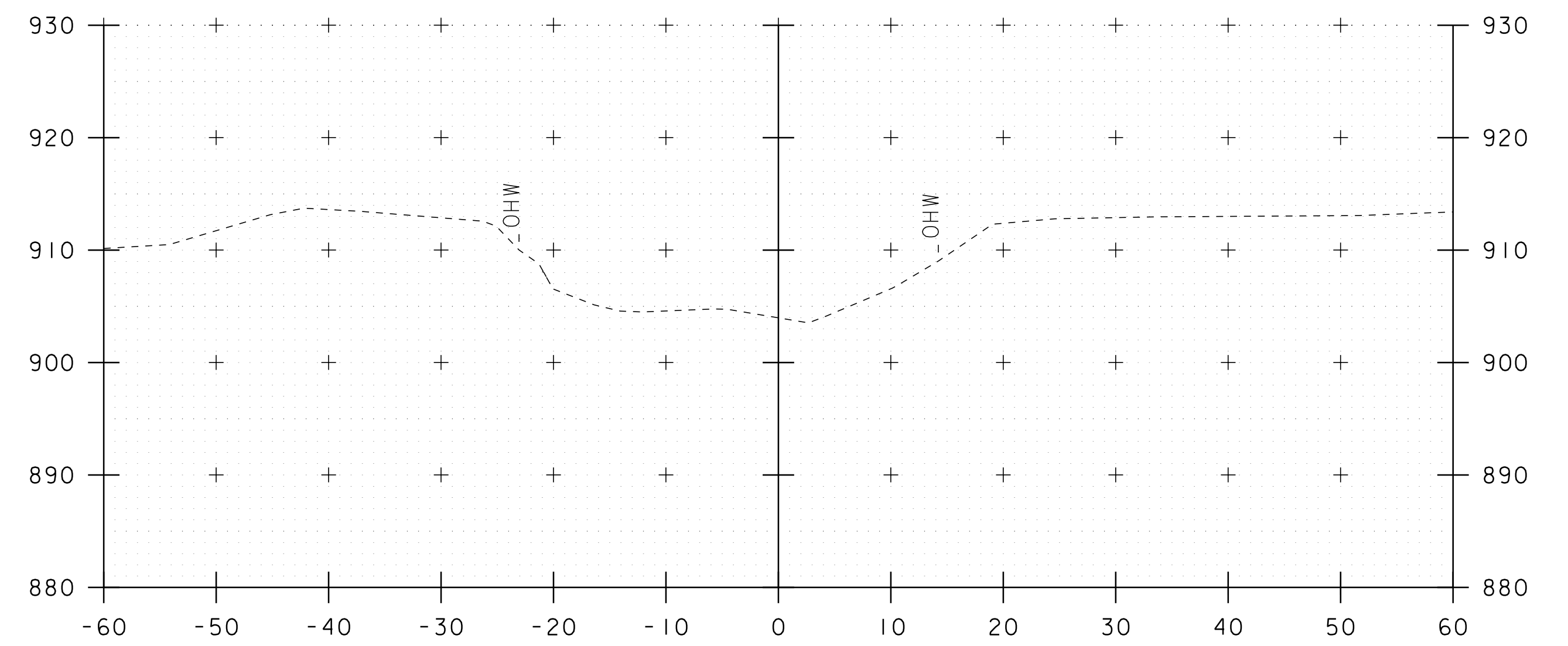
PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M.LONGSTREET
FILE NAME: sl6j176xs.dgn	CHECKED BY: F.BARROWS
PROJECT LEADER: R.YOUNG	SHEET 17 OF 19
DESIGNED BY: F.BARROWS	CHANNEL CROSS SECTIONS I



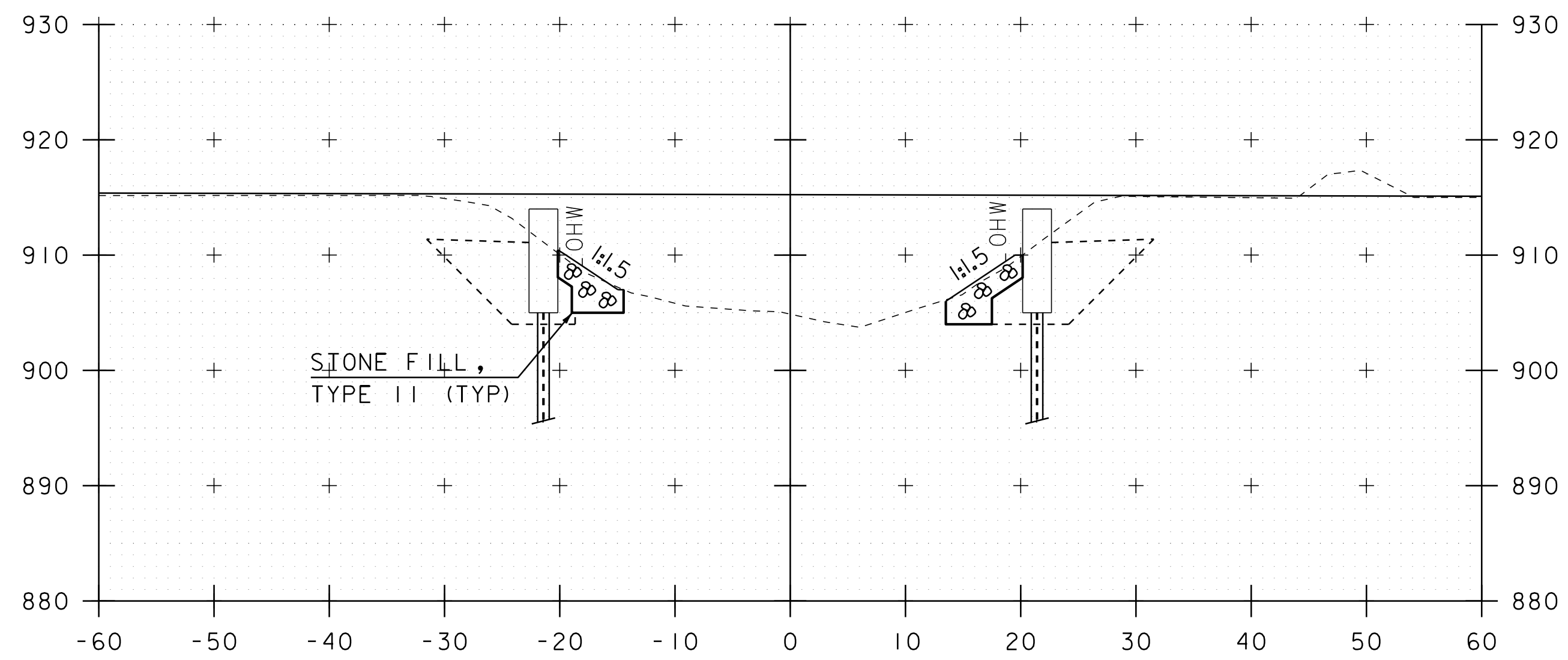
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BEGIN GRUBBING MATERIAL

STA 50+63.17 RT  
BEGIN GRUBBING MATERIAL

50+60

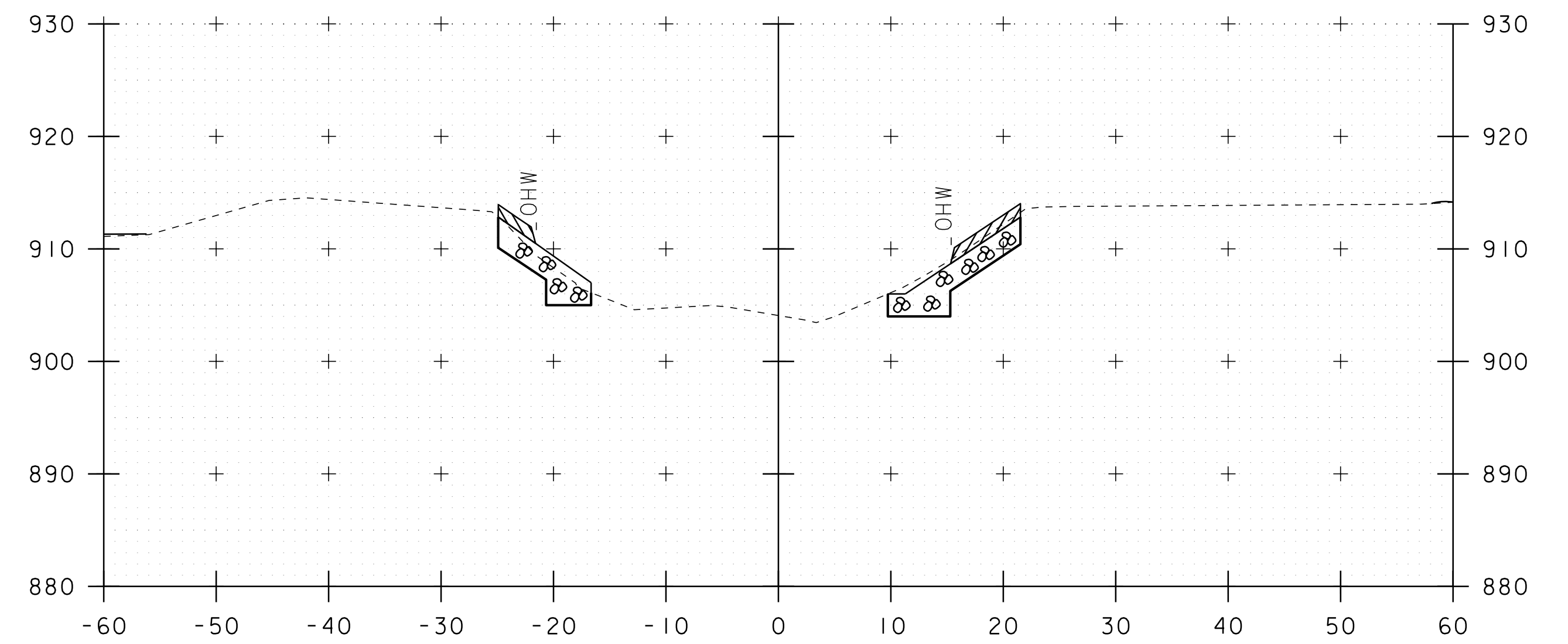


50+75



STONE FILL,  
TYPE II (TYP)

50+50



STA 50+75.08 LT  
END STONE FILL, TYPE II  
GEOTEXTILE UNDER STONE FILL  
GRUBBING MATERIAL  
UNCLASSIFIED CHANNEL EXCAVATION

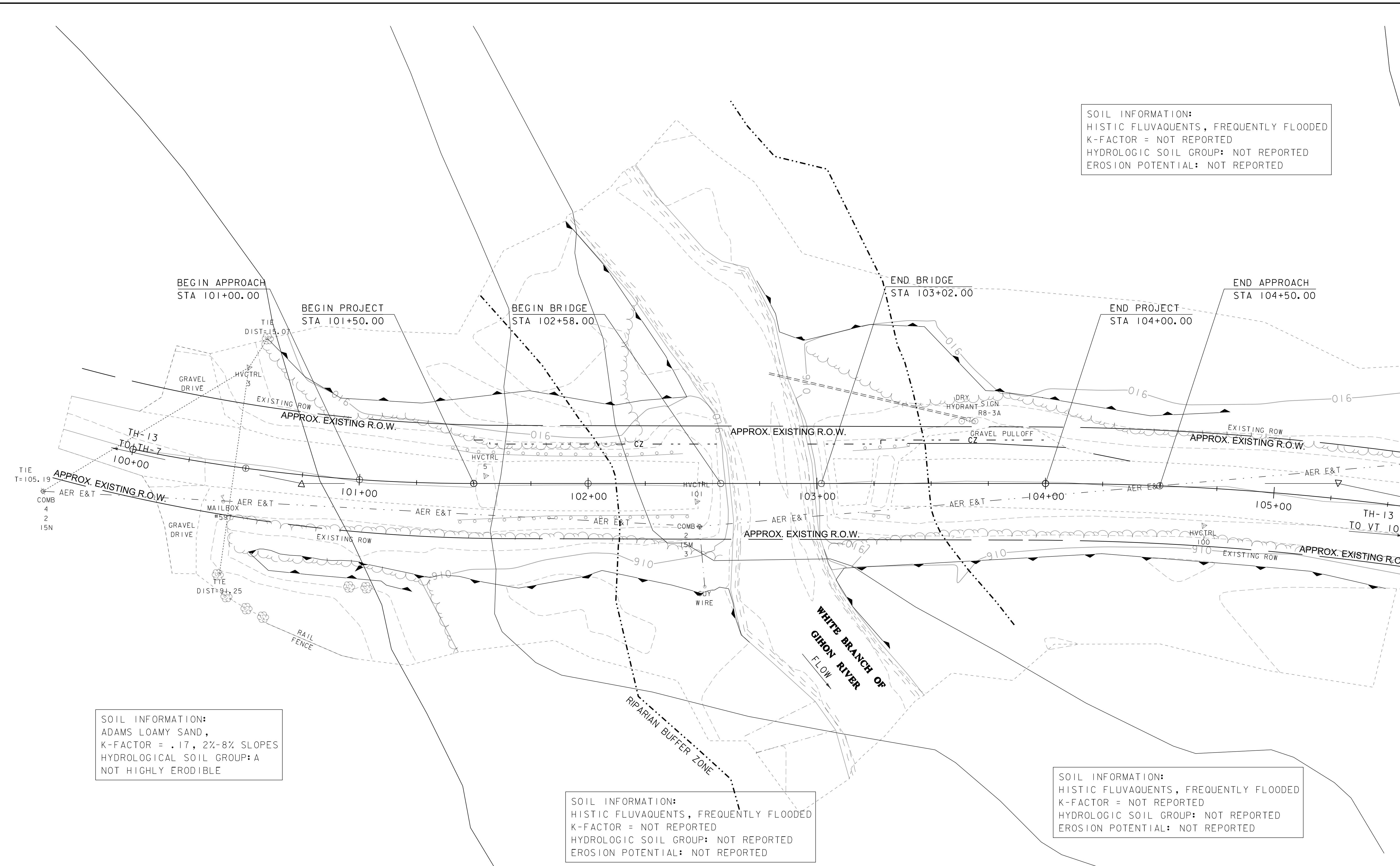
STA 50+74.28  
END STONE FILL, TYPE II  
GEOTEXTILE UNDER STONE FILL  
GRUBBING MATERIAL  
UNCLASSIFIED CHANNEL EXCAVATION

50+70

STA. 50+50 TO STA. 50+70

PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M.LONGSTREET
FILE NAME: sl6j176xs.dgn	CHECKED BY: F.BARROWS
PROJECT LEADER: R.YOUNG	SHEET 18 OF 19
DESIGNED BY: F.BARROWS	
CHANNEL CROSS SECTIONS 2	

SOIL INFORMATION:  
 HISTIC FLUVAQUENTS, FREQUENTLY FLOODED  
 K-FACTOR = NOT REPORTED  
 HYDROLOGIC SOIL GROUP: NOT REPORTED  
 EROSION POTENTIAL: NOT REPORTED



SOIL INFORMATION:  
 ADAMS LOAMY SAND,  
 K-FACTOR = .17, 2%-8% SLOPES  
 HYDROLOGICAL SOIL GROUP: A  
 NOT HIGHLY ERODIBLE

SOIL INFORMATION:  
 HISTIC FLUVAQUENTS, FREQUENTLY FLOODED  
 K-FACTOR = NOT REPORTED  
 HYDROLOGIC SOIL GROUP: NOT REPORTED  
 EROSION POTENTIAL: NOT REPORTED

SOIL INFORMATION:  
 HISTIC FLUVAQUENTS, FREQUENTLY FLOODED  
 K-FACTOR = NOT REPORTED  
 HYDROLOGIC SOIL GROUP: NOT REPORTED  
 EROSION POTENTIAL: NOT REPORTED

EXISTING BRIDGE INFORMATION  
 TWIN CGMPPA PIPES,  
 12' SPAN, 26' LONG  
 BRIDGE CLOSED 4/2017  
 PIPES REMOVED 6/2017

SCALE 1" = 20'-0"  
 20 0 20

PROJECT NAME: EDEN	PLOT DATE: 24-DEC-2018
PROJECT NUMBER: BO 1448(44)	DRAWN BY: M. LONGSTREET
FILE NAME: sl6jl76er.o.dgn	CHECKED BY: F. BARROWS
PROJECT LEADER: R. YOUNG	SHEET 19 OF 19
DESIGNED BY: F. BARROWS	
EXISTING CONDITIONS	

UPPER CASE 



## Estimate 16j176

Estimated Cost:\$682,695.42

Contingency: 0.00%

**Estimated Total: \$682,695.42**

REPLACEMENT OF BRIDGE 23 ON THE SAME ALIGNMENT WITH RELATED APPROACH ROADWAY AND CHANNEL WORK

**Base Date: 12/27/18**

Spec Year: 18

Unit System: E

Work Type: BRIDGE CONSTRUCTION

Highway Type: LOCAL

Urban/Rural Type: RURAL

Season: CONSTRUCTION (APRIL 15th - OCTOBER 15th)

County: EDEN

Latitude of Midpoint: 444232

Longitude of Midpoint: 723411

District: NW

Federal Project Number: EDEN BO 1448(44)

State Project Number:

PROJECT TYPE 



*Prepared by FBARROWS on 11/26/18*

*Checked by AFLINN on 12/07/18*

APPROVED BY: 

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					

Group 1011: ROADWAY

0005	201.10	1.000	LS	\$15,000.00000	\$15,000.00
CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS					
0010	203.15	630.000	CY	\$17.25011	\$10,867.57
COMMON EXCAVATION					
0015	203.30	10.000	CY	\$34.32818	\$343.28
EARTH BORROW					
0020	210.10	250.000	SY	\$19.18824	\$4,797.06
COARSE-MILLING, BITUMINOUS PAVEMENT					
0025	301.35	520.000	CY	\$47.06256	\$24,472.53
SUBBASE OF DENSE GRADED CRUSHED STONE					
0030	401.10	18.000	CY	\$40.52250	\$729.41
AGGREGATE SURFACE COURSE					
0040	406.38	20.000	SY	\$30.00000	\$600.00
HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES					
0045	406.50	1.000	LU	\$1.00000	\$1.00
PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)					
0050	609.15	0.250	TON	\$819.00000	\$204.75
DUST AND ICE CONTROL WITH CALCIUM CHLORIDE					
0052	613.11	63.000	CY	\$49.22175	\$3,100.97
STONE FILL, TYPE II					
0055	621.215	200.000	LF	\$25.45037	\$5,090.07
HD STEEL BEAM GUARDRAIL, GALVANIZED W/8 FEET POSTS					
0060	621.60	4.000	EACH	\$889.36364	\$3,557.45
ANCHOR FOR STEEL BEAM RAIL					
0065	621.738	4.000	EACH	\$1,249.91667	\$4,999.67
GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM W/ 8FT POSTS					
0070	621.80	246.000	LF	\$3.20726	\$788.99
REMOVAL AND DISPOSAL OF GUARDRAIL					
0080	635.11	1.000	LS	\$62,063.22000	\$62,063.22
MOBILIZATION/DEMobilIZATION					
0085	641.11	1.000	LS	\$25,000.00000	\$25,000.00
TRAFFIC CONTROL, ALL-INCLUSIVE					
0090	646.2111	700.000	LF	\$0.52293	\$366.05
4 INCH YELLOW LINE, WATERBORNE PAINT					
0095	649.11	770.000	SY	\$3.74684	\$2,885.07
GEOTEXTILE FOR ROADBED SEPARATOR					
0100	651.15	5.000	LB	\$16.16747	\$80.84
SEED					
0105	651.17	5.000	LB	\$22.89551	\$114.48
SEED, WINTER RYE					
0110	651.18	20.000	LB	\$8.26573	\$165.31
SEED, WINTER RYE					

I'd be happy to

Can we please add more than 5 lbs?

MOVE THESE ITEMS TO GROUP 1051

Why winter rye? What's the expected construction duration?

Can be removed

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<b>FERTILIZER</b>					
0115	651.20 AGRICULTURAL LIMESTONE	0.100	TON	\$915.76900	\$91.58
0120	651.35 TOPSOIL	11.000	CY	\$79.09738	\$870.07
0125	676.10 DELINEATOR WITH STEEL POST	4.000	EACH	\$76.83304	\$307.33
0130	690.50 PRICE ADJUSTMENT, FUEL (N.A.B.I.)	1.000	LU	\$1.00000	\$1.00
0135	900.650 SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	1.000	LU	\$1.00000	\$1.00
0140	900.680 SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	240.000	TON	\$188.00000	\$45,120.00

MOVE THESE ITEMS TO GROUP 1051

**Total for Group 1011:\$211,618.70**

**Group 1051: EROSION CONTROL**

0145	653.01 EPSC PLAN	1.000	LS		\$5,000.00
0150	653.02 MONITORING EPSC PLAN	100.000	HR	\$45.00000	\$4,500.00
0155	653.03 MAINTENANCE OF EPSC PLAN (N.A.B.I.)	1.000	LU	\$8,000.00000	\$8,000.00
0160	653.10 HAY MULCH	1.000	TON	\$800.00000	\$800.00
0165	653.20 ROLLED EROSION CONTROL PRODUCT, TYPE I	150.000	SY	\$3.92648	\$588.97
0170	653.35 STABILIZED CONSTRUCTION ENTRANCE	30.000	CY	\$59.79514	\$1,793.85
0175	653.475 SILT FENCE, TYPE I	580.000	LF	\$0.25000	\$145.00
0180	653.55 PROJECT DEMARCATION FENCE	680.000	LF	\$1.66548	\$1,132.53

Do you anticipate any dewatering needs? If so, consider including Filter Bags.

Filter curtain? I can't tell from these plans alone if that would be appropriate for the setting.

**Total for Group 1051:\$21,960.35**

**Group 1211: BRIDGE**

0185	203.27 UNCLASSIFIED CHANNEL EXCAVATION	70.000	CY	\$33.79868	\$2,365.91
0190	204.25 STRUCTURE EXCAVATION	175.000	CY	\$39.12859	\$6,847.50
0195	204.30 GRANULAR BACKFILL FOR STRUCTURES	110.000	CY	\$55.22295	\$6,074.52

<u>Line #</u>	<u>Item Number</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Extension</u>
<u>Description</u>					
<u>Supplemental Description</u>					
0210	501.37	98.000	CY	\$1,200.00000	\$117,600.00
HIGH PERFORMANCE CONCRETE, CLASS PCD					
0215	501.38	102.000	CY	\$800.00000	\$81,600.00
HIGH PERFORMANCE CONCRETE, CLASS PCS					
0220	504.10	1.000	LS	\$75,000.00000	\$75,000.00
FURNISHING EQUIPMENT FOR DRIVING PILING					
0225	505.165	1,100.000	LF	\$59.00000	\$64,900.00
STEEL PILING, HP 12 X 84					
0230	505.45	2.000	EACH	\$7,000.00000	\$14,000.00
DYNAMIC PILE LOADING TEST					
0235	507.11	22,000.000	LB	\$1.16112	\$25,544.64
REINFORCING STEEL, LEVEL I					
0237	516.10	50.000	LF	\$150.90929	\$7,545.46
BRIDGE EXPANSION JOINT, ASPHALTIC PLUG					
0240	514.10	20.000	GAL	\$80.36805	\$1,607.36
WATER REPELLENT, SILANE					
0250	525.44	92.000	LF	\$215.10000	\$19,789.20
BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING					
0255	613.11	70.000	CY	\$49.22175	\$3,445.52
STONE FILL, TYPE II					
0260	649.31	237.000	SY	\$3.92674	\$930.64
GEOTEXTILE UNDER STONE FILL					
0265	651.40	112.000	SY	\$16.65733	\$1,865.62
GRUBBING MATERIAL (12")					

Consider using as many FPQ items as possible.



Total for Group 1211:\$429,116.37

Group 1999: FULL C.E.

0270	631.10	1.000	LS	\$15,000.00000	\$15,000.00
FIELD OFFICE, ENGINEERS					
0275	631.16	1.000	LS	\$1,000.00000	\$1,000.00
TESTING EQUIPMENT, CONCRETE					
0280	631.17	1.000	LS	\$1,000.00000	\$1,000.00
TESTING EQUIPMENT, BITUMINOUS					
0285	631.26	3,000.000	DL	\$1.00000	\$3,000.00
FIELD OFFICE COMMUNICATIONS (N.A.B.I.)					

Total for Group 1999:\$20,000.00



STATE OF VERMONT  
AGENCY OF TRANSPORTATION

**Traffic Management Plan**

FOR

**Eden BO 1448(44)**

**TH13 (Knowles Flat Road) Bridge 23 over the Gihon River**

December 24, 2018



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## 1.0 Project Description

- Project Location
  - The Bridge is located approximately 0.5 miles north of intersection of TH13 (Knowles Flat Road) and VT100.
- Work zone limits (if possible, include a map showing the limits of the work).
  - Begin approach work at 101+00.00, end approach work at 104+50.00
- Project description/background information.
  - This project is to replace the twin culverts that comprised bridge 23, on TH13 (Knowles Flat Road). The twin culverts failed in October of 2016 and were removed by the town. They were 12' CGMPPA's. Traffic is currently detoured around via VT Route 118, or TH7 (White Road).
  - The new bridge will be comprised of a cast in place, concrete deck with integral abutments. The bridge will provide two, nine-foot lanes and four-foot shoulders on each side, which exceeds the Vermont State Design Standards due to town preference. The new bridge will be approximately 42 feet and be on the existing alignment.
- Project schedule.
  - Target Construction schedule: Construction activities will likely take place beginning in (June 2020) and last one construction season.
  - Traffic will be maintained on an offsite detour for the duration of the project

## 2.0 Work Zone Impact Assessment

### Preliminary Work Zone Impact Assessment:

Does the project include a long-term closure and/or extended weekend closure? Yes.

If Yes, what is/are the applicable type of facility(ies)?

- Local Road, Currently Closed.

Can traffic be detoured? Is currently detoured.

- Is the local alternate detour route in good condition? yes
- Will the detour route have a detrimental impact on emergency vehicles, school buses, or other sensitive traffic? Yes
- Are there load limit restrictions on the detour? Same as closed road
- Are there bridge/culvert height or width restrictions on the detour? No

Is the existing shoulder sufficient to support traffic during construction? No

Is additional width required on culverts or bridges to maintain traffic? No

Is there a pedestrian/bicycle facility that must be maintained? No

Would a temporary structure(s) be required? No

Would a median crossover be needed? No

Would there be a need to maintain railroad traffic? No

Could maintenance of traffic have an impact on existing or proposed utilities? No

Does it appear that maintenance of traffic will require additional right-of-way? No

Can the contractor restrict the roadway during the time periods listed? Road is currently closed

Will project timing (for example, start or end date) be affected by special events? No

Are there any projects to be considered along the corridor or in the region? No State projects known at this time.

- Roadwork in the immediate area that may affect traffic or the contractor's operations?
- Roadwork on other roads that may affect the use of alternate routes?

Is there other maintenance of traffic issues? If so, specify.

### Project Classification:

- Moderate

### Determining Factors:

- Typical bridge project with a modest number of commuters will be impacted
- Rural setting on Town Road
- Duration is one construction season
- No drives are blocked within project limits
- AADT in 2042 is projected to be 720 vehicles, 11% trucks
- No concurrent projects in the area
- Multiple short detour routes available

## 2.1. Temporary Traffic Control (TTC)

TH-13 (Knowles Flat Road) will be closed for the duration of the project. Temporary signs will be used to identify the detour and road closure.

## 3.0 Relevant Project Discussion

The culverts have currently failed, and have been removed. TH-13 has been closed by the town, and the town has set up a detour package. There are no plans at this time to change the existing detour package.

Meeting Notes:

- TBD

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## 4.0 TMP Review/Approvals

TMPs, and changes to TMPs, can be submitted for review by the Transportation Systems Management & Operations (TSMO) section at AOT before they are implemented. Review of the TMP by AOT prior to implementation is not mandatory, but is highly encouraged.

TSMO Contacts		
AOT - Transportation Systems Management & Operations (TSMO)		
Name/Title: Ian Degutis, PE\Traffic Operations Engineer		
Address: 2178 Airport Road, Berlin, VT 05641		
Phone: 802-371-8827		
Email: <a href="mailto:Ian.Degutis@vermont.gov">Ian.Degutis@vermont.gov</a>		
<b>Roles and Responsibilities:</b> Review of Traffic Management Plans		

The approval of the TMP should be based on conformance of the TMP with the Work Zone Safety and Mobility Guideline.

Regional Construction Engineer			Traffic Operations Engineer			Project Manager		
<b>All approvals must be obtained prior to the start of work</b>								
Signature:			Signature:			Signature:		
Name:			Name:			Name:		
Date:			Date:			Date:		
Revision#	Initials	Date	Revision#	Initials	Date	Revision #	Initials	Date
1			1			1		
2			2			2		

LEVEL 1 - RISK REGISTER				Project Name:	Eden BO 1448(44) TH 13, Bridge 23 over the White Branch of Gihon River			Bridge Replacement	Project Manager	Rob Young		
Risk Identification							Risk Rating		Risk Response			
Status	ID #	Type	Category	Title	Risk Statement	Current status/assumptions	Priority Rating	Rationale for Rating	Strategy	Response Actions	Risk Owner	Updated
Active	1	Threat	PM	Project Delivery	If the project takes too long to be delivered, the bridge may be closed longer than expected	The bridge has already been removed	Medium		Avoid		VTrans	12/24/2018
Active	2	Threat	Construction	Traffic Congestion	If traffic is detoured, then traffic congestion could occur at intersections along the detour	Traffic is already being detoured due to bridge failure	Low		Accept		VTrans	12/24/2018
Active	3	Threat	ROW	Right-of-Way	If ROW is needed, then Project Development time could be effected	Project Development time of 3 years	Medium		Accept		VTrans	12/24/2018
Active	4	Threat	Construction	Emergency Response During Closure	If the bridge is closed longer than expected, Emergency response time could be lengthened longer than expected	The bridge has been closed since 2016, short bypass lengths	Low		Avoid		VTrans	12/24/2018
Active	5	Threat	Construction	Emergency Red Cross Access	If there is a loss of service to VT Route 100, then access to the emergency red cross shelter would be limited	There is no reason to believe that VT 100 would be closed prior to bridge construction	Low		Avoid		VTrans	12/24/2018
Active	6	Threat	Environmental	Wetlands	If wetlands are impacted, permits will need to be aquaried	There will be minor impacts to wetlands	Low	Wetland construction should be accesable from road	Accept		VTrans	12/24/2018
Active	7	Threat	PM	Project Advertisement	If the project is not advertised on time, then construction year could be delayed	The bridge has already been closed to traffic	Medium		Avoid		VTrans	12/24/2018
Active	8	Threat	Design	Hydraulics	If the anticipated hydraulic opening is larger than expected, then a different structure type may be needed, and costs will be increased	A slab bridge is being recommneded at this point with the known information	Low	Preliminary hydraulics determined opening size is adequate.	Avoid	Final hydraulics will be complete prior to final design	VTrans	12/24/2018
Active	9	Threat	Design	MOB - Resident access during flood event	Currently two structures are closed on TH13 Bridge23 and another 1 mile North. In the case of the failure of a bridge on White road about 25 residents will lose access to their homes.	This should not be an issue unless the bridge fails during a large flood event.	Low		Avoid		VTrans	12/24/2018
Active	10	Threat	Construction	Abutment Excavation Dewatering	As a result of the bottom of pile cap's proximity to OHW and the channel, additional dewatering activies may be needed which would lead to higher bid prices and/or schedule delays.		Low		Transfer	The contractor is responsible for constructing the abutments in the dry.	Contractor	11/6/2018
Active	11	Threat	Construction	Dry Hydrant	As a result of the dry hydrant being in close proximity to the project, damages may occur, which would lead to repair or replacement	The dry hydrant is outside of construction limits but in close proximity.	Low	We assume work can be completed without interference with the dry hydrant.	Avoid	Dry hydrant is outside of project limits and Project Demarcation Fence will prevent access to the dry hydrant.	Contractor	12/24/2018