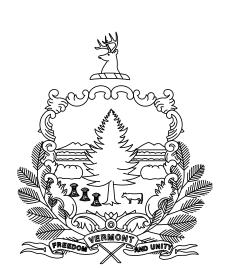
REVIEWER NOTES:

- I. TH 12 (OLD JERUSALEM ROAD) WILL BE CLOSED DURING CONSTRUCTION. TRAFFIC WILL BE MAINTAINED ON AN OFF-SITE DETOUR. THE DETOUR AND SIGNAGE WILL BE THE RESPONSIBILTY OF THE TOWN AS THE PROJECT IS ON A TOWN HIGHWAY.
- 2. ANY STRUCTURAL ELEMENTS SHOWN IN THE PLANS ARE CONCEPTUAL IN NATURE AND HAVE NOT BEEN FULLY DESIGNED.
- 3. ATTEMPTS TO MINIMIZE IMPACTS TO EXISTING RESOURCES HAVE BEEN MADE.

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF LEICESTER

COUNTY OF ADDISON

ROUTE NO: TH 12; (CLASS 3 TOWN HIGHWAY) BRIDGE NO: 4

PROJECT LOCATION: ON TH 12 (OLD JERUSALEM ROAD) BEGINNING APPROXIMATELY 0.73 MILE NORTH FROM ITS INTERSECTION

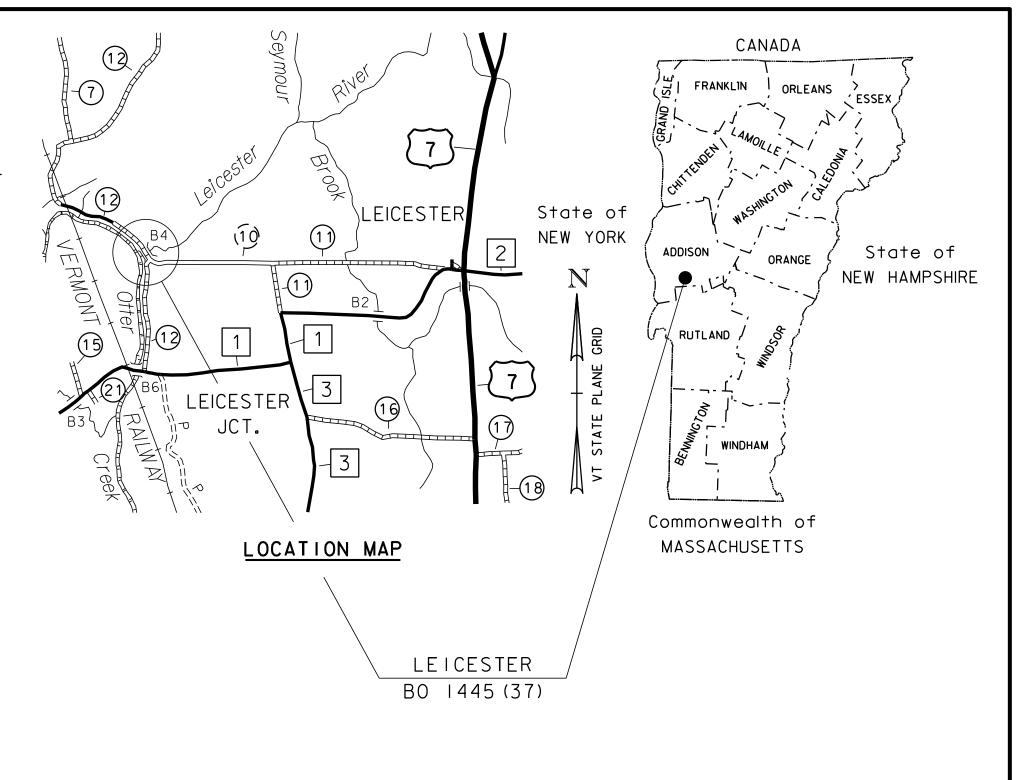
WITH TH I (LEICESTER-WHITING ROAD) AND EXTENDING NORTHWESTERLY APPROXIMATELY 0.062 MILE.

PROJECT DESCRIPTION: REPLACEMENT OF EXISTING CULVERT WITH A BRIDGE ALONG WITH RELATED APPROACH ROADWAY

AND CHANNEL WORK.

LENGTH OF STRUCTURE: 59.00 FEET LENGTH OF ROADWAY : 266.00 FEET LENGTH OF PROJECT :

OTTER CREEK -STA 12+29.50 STA 11+70.50 END BRIDGE BEGIN BRIDGE (LELAND RD) STA 10+50.00 BEGIN PROJECT STA 13+75.00 END PROJECT



CONCEPTUAL PLANS 27-FEB-2019

SCALE: I" = 40'-0"

HIGHWAY DIVISION, CHIEF ENGINEER APPROVED _ _ DATE . PROJECT MANAGER : CAROLYN CARLSON, PE PROJECT NAME : LEICESTER PROJECT NUMBER : BO 1445 (37)

SHEET I OF 24 SHEETS

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 2

SURVEYED BY : H. MCGOWAN SURVEYED DATE : 11/24/2015

DATUM

VERTICAL

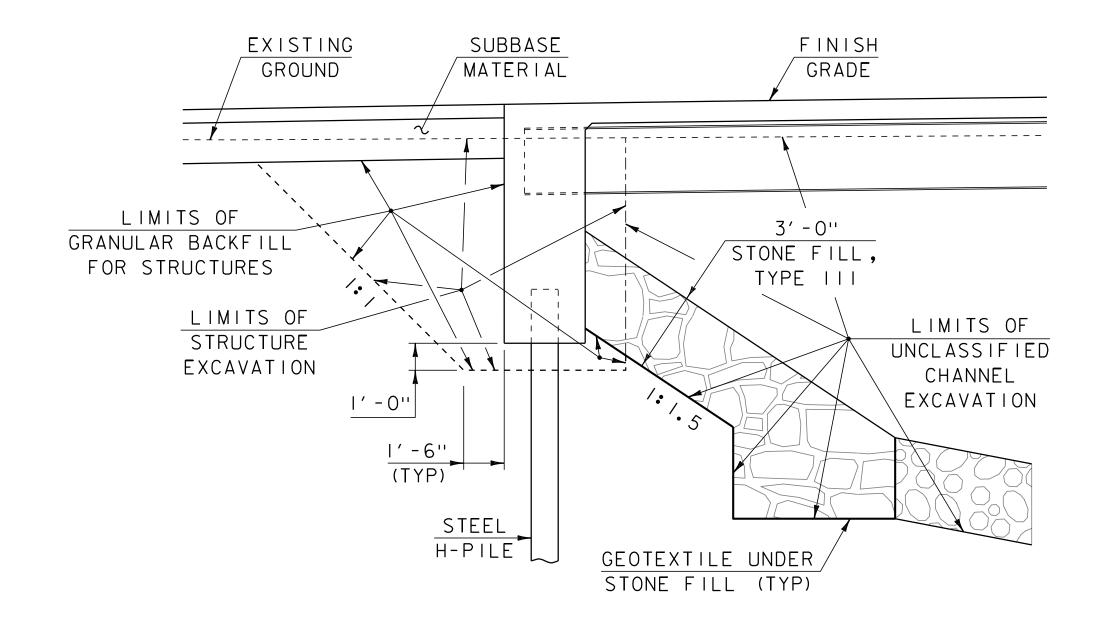
NAVD 88 HORIZONTAL NAD 83 (2011)

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	

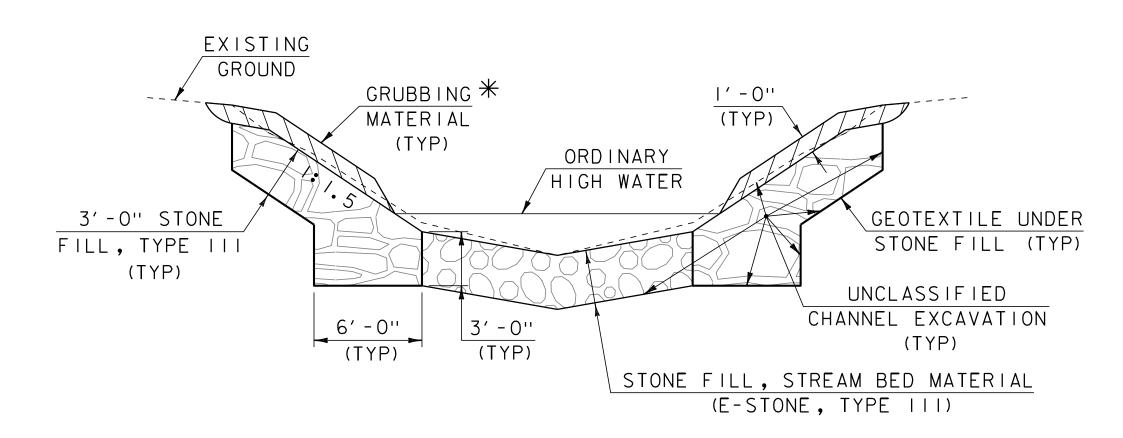
PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

AGENCI OF INANSIONIATION **INDEX OF SHEETS** FINAL HYDRAULIC REPORT **PLAN SHEETS** STANDARDS LIST TITLE SHEET PRELIMINARY INFORMATION SHEET TYPICAL SECTIONS CONVENTIONAL SYMBOLOGY LEGEND **ALIGNMENT** LAYOUT TH 12 PROFILE TH 10 PROFILE AND MATERIAL TRANSITION 10 BORING INFORMATION SHEET 11 - 12 **BORING LOGS 1-2** TH 12 CROSS SECTIONS 1-5 TH 12 BANKING AND MATERIAL TRANSITION 19 TH 10 CROSS SECTIONS 20 - 23 CHANNEL CROSS SECTIONS 1-4 EXISTING SITE CONDITIONS HIGHWAY SAFETY & STRUCTURES DETAIL SHEETS HSD-621.06 GUARDRAIL TERMINAL LABEL DETAILS 2/27/2017 SD-501.00 CONCRETE DETAILS AND NOTES 5/7/2010 SD-502.00 CONCRETE DETAILS AND NOTES 5/7/2010 SD-516.10 BRIDGE JOINT ASHPALTIC PLUG 8/29/2011 SD-601.00 STRUCTURAL STEEL DETAILS AND NOTES 5/7/2010 SD-602.00 STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES 5/7/2010 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 **d**p: 2.5 INCH 2. FUTURE PAVEMENT 3. DESIGN SPAN *L:* 56.00 FT 4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) 5. PRESTRESSING STRAND fy: ---f'c: ---6. PRESTRESSED CONCRETE STRENGTH **f**'ci: ---7. PRESTRESSED CONCRETE RELEASE STRENGTH 8. HIGH PERFORMANCE CONCRETE, CLASS PCD **f**'c: 4.0 KSI 9. HIGH PERFORMANCE CONCRETE, CLASS PCS **f**'c: 3.5 KSI **f**'c: 4.0 KSI 10. CONCRETE HIGH PERFORMANCE, CLASS PSS 11. CONCRETE, CLASS C f'c: 3.0 KSI 12. REINFORCING STEEL **f**y: 60 KSI **f**y: 50 KSI 13. STRUCTURAL STEEL AASHTO M270 (GALVANIZED) **q**n: 4.0 KSF 14. NOMINAL BEARING RESISTANCE OF SOIL 15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) φ: --**q**n: 10.0 KSF 16. NOMINAL BEARING RESISTANCE OF ROCK LRFR LOAD RATING FACTORS 17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) φ: ---LOADING LEVELS H-20 HL-93 3S2 6 AXLE 3A. STR. 4A. STR. 5A. SEMI 18. PILE RESISTANCE FACTOR 36 30 34.5 38 19. LATERAL PILE DEFLECTION Δ: ---TONNAGE 20. BASIC WIND SPEED **V**3s: ---INVENTORY 21. MINIMUM GROUND SNOW LOAD **p**g:_____ POSTING 22. SEISMIC DATA **S**s: ---OPERATING **S**1:____ **COMMENTS:** ------**LEICESTER** PROJECT NAME: AS BUILT "REBAR" DETAIL BO 1445(37) PROJECT NUMBER: TRAFFIC DATA LEVEL I LEVEL II LEVEL III PLOT DATE: 2/26/2019 FILE NAME: YEAR ADT 20 year ESAL for flexible pavement from 2018 to 2038 : 45000 s12j636pi.dgn % D TYPE: PROJECT LEADER: C. CARLSON DRAWN BY: G. ROY 11.6 2018 40 year ESAL for flexible pavement from 2018 to 2058 : 87000 GRADE: GRADE: GRADE: CHECKED BY: C.BURRALL DESIGNED BY: C. BURRALL Design Speed: 35 mph 2038 PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 24



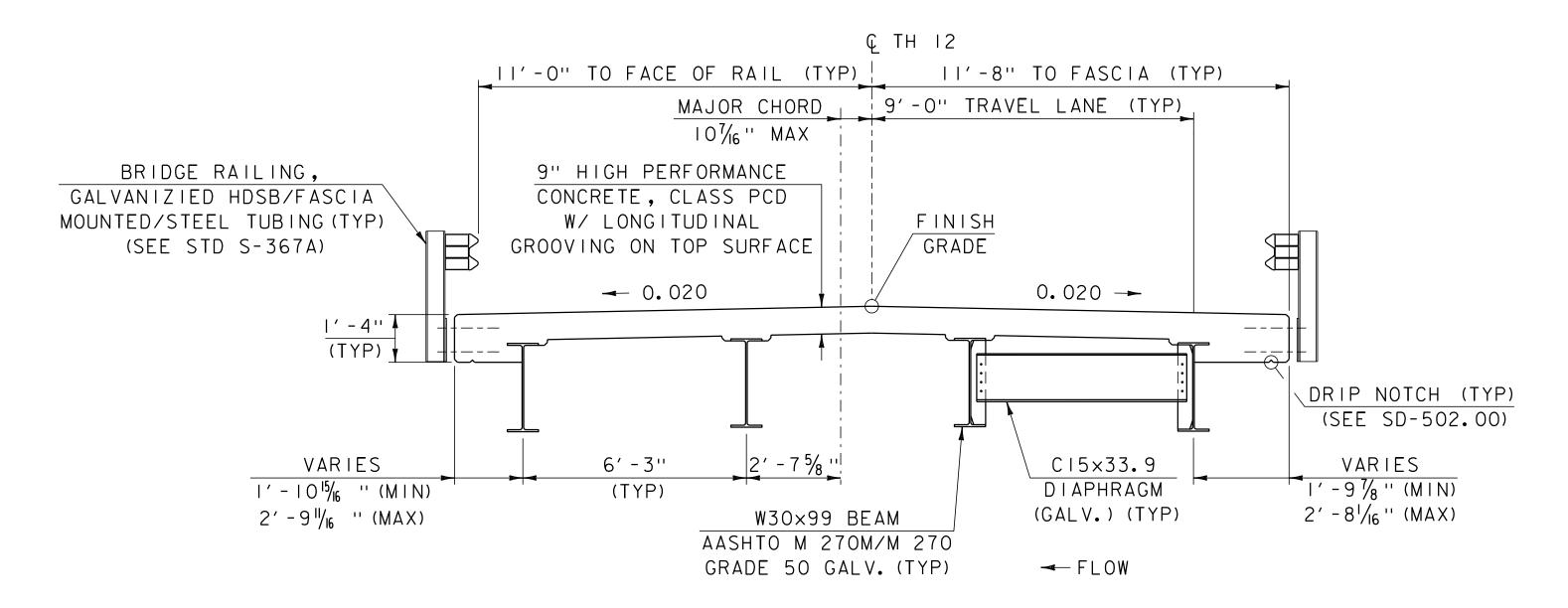
ABUTMENT TYPICAL SECTION (NOT TO SCALE)



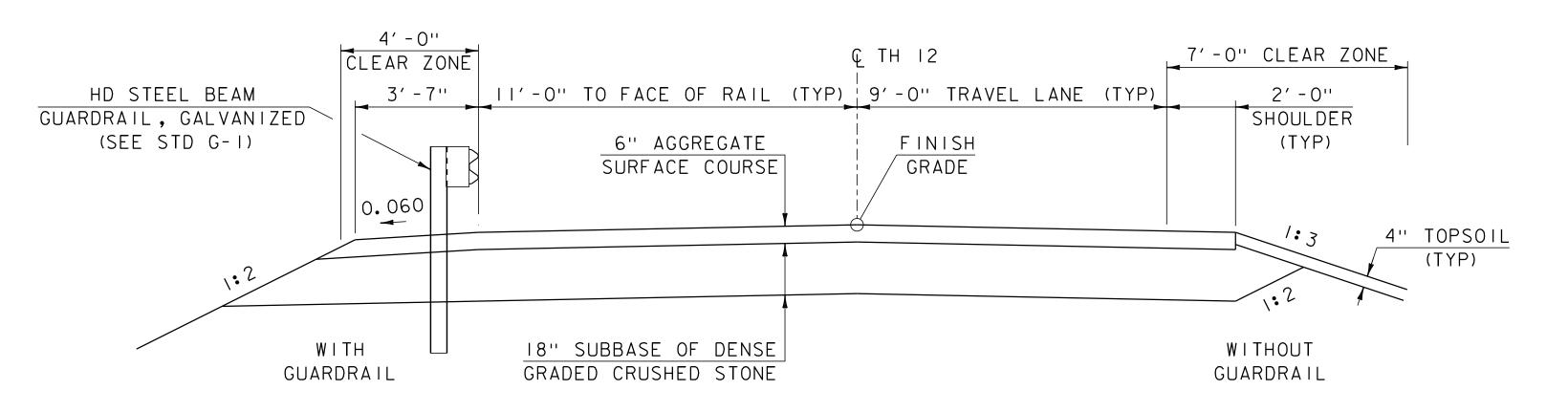
CHANNEL TYPICAL SECTION

(NOT TO SCALE)

*WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



BRIDGE TYPICAL SECTION SCALE: %" = 1'-0"



TH 12 (OLD JERUSALEM RD) ROADWAY TYPICAL SECTION SCALE: 38" = 1'-0"

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

PROJECT NAME:	LEICESTER	
PROJECT NUMBER:	BO 1445(37)	
FILE NAME: s12j636	typ.dgn	PLOT DATE: 27-FEB-2019
PROJECT LEADER:	C. CARLSON	DRAWN BY: C.BURRALL
DESIGNED BY:	C.BURRALL	CHECKED BY: G. ROY
TYPICAL SECTIONS		SHEET 3 OF 24

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY 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. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

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

K. U. W.	ADDREV	TATTUNS (CODES) & SIMBULS
POINT	CODE	DESCRIPTION
	СН	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
O	IPNF	IRON PIN FOUND
	IPNS	IRON PIN TO BE SET
\boxtimes	CALC	EXISTING ROW POINT
$\overline{\bigcirc}$	PROW	PROPOSED ROW POINT
TLENG	_	LENGTH CARRIED ON NEXT SHEET
	_	

COMMON TODOCDADUIC DOINT SYMPOLS

COMMON	N TOPOGE	RAPHIC POINT SYMBOLS
POINT	CODE	DESCRIPTION
4.3	APL	BOUND APPARENT LOCATION
0	ВМ	BENCHMARK
⊡	BND	BOUND
	СВ	CATCH BASIN
ф	COMB	COMBINATION POLE
	DITHR	DROP INLET THROATED DNC
,	EL	ELECTRIC POWER POLE
0	FPOLE	FLAGPOLE
\odot	GASFIL	GAS FILLER
\odot	GP	GUIDE POST
×	GSO	GAS SHUT OFF
•	GUY	GUY POLE
•	GUYW	GUY WIRE
×	GV	GATE VALVE
	Н	TREE HARDWOOD
\triangle	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
\odot	HYD	HYDRANT
(a)	IP	IRON PIN
⊚	IPIPE	IRON PIPE
¢ ′	LI	LIGHT - STREET OR YARD
o	MB	MAILBOX
0	MH	MANHOLE (MH)
•	MM	MILE MARKER
Θ	PM	PARKING METER
⊡	PMK	PROJECT MARKER
⊙ ▼ ▼	POST	POST STONE/WOOD
7	RRSIG	RAILROAD SIGNAL
↔	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
Э	SAT	SATELLITE DISH
	SHRUB	SHRUB
<u></u>	SIGN	SIGN
A	STUMP	STUMP
-⊙-	TEL	TELEPHONE POLE
0	TIE	TIE
0 · 0	TSIGN	SIGN W/DOUBLE POST
人	VCTRL	CONTROL VERTICAL
0	WELL	WELL
M	WSO	WATER SHUT OFF

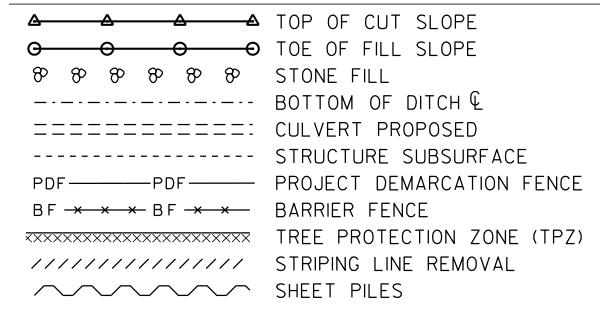
THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

1 1001 031	ID OLOMETICE 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
АН	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
СВ	CHORD BEARING

NDERGROUND UTILI]	ΓΙΕS
— UGU — · · · · -	UTILITY (GENERIC-UNKNOWN)
— <i>UT</i> — · · · –	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)
 T — · · · — · · - E — · · · — · · - C — · · · — · · - EC — · · · — · · - ET — · · · — · · — · AER E&T — · · · — · ECT — · · · — · · - ECT — · · · — · · - 	
ROJECT CONSTRUCT ROJECT DESIGN & L	AYOUT SYMBOLOGY

PROJECT CONSTRUCTION FEATURES

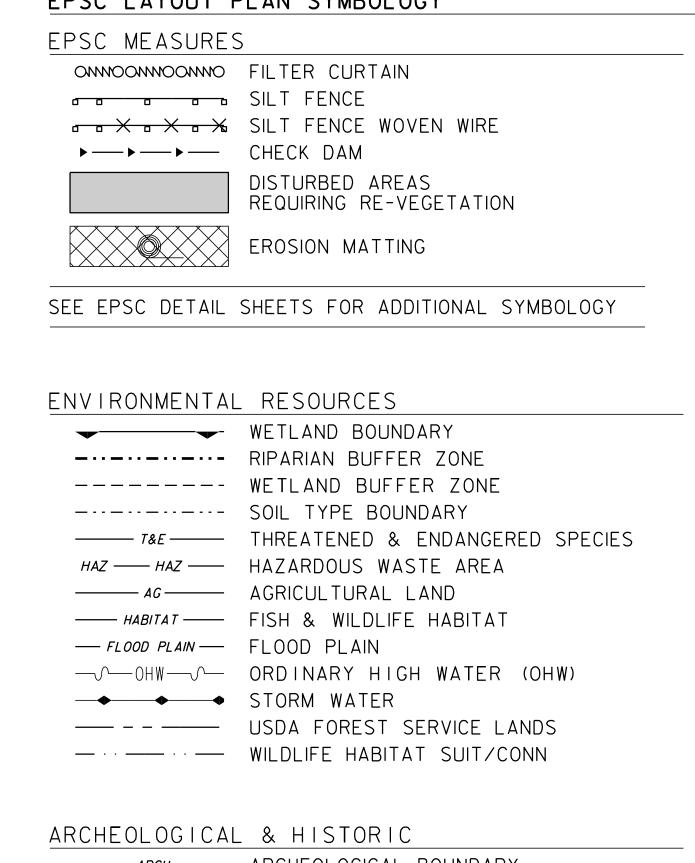


CONVENTIONAL BOUNDARY SYMBOLOGY

ROUNDARY LINES

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
$\frac{P}{L}$ $\frac{P}{L}$ $\frac{P}{L}$	PROPERTY LINE (P/L)
SR SR SR O	SLOPE RIGHTS
6f ————————————————————————————————————	6F PROPERTY BOUNDARY
4f 4f	4F PROPERTY BOUNDARY
HAZ HAZ	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY



——— ARCH ———	ARCHEOLOGICAL BOUNDARY
HISTORIC DIST	HISTORIC DISTRICT BOUNDARY
——— HISTORIC ———	HISTORIC AREA
\bigoplus	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

	ROAD EDGE PAVEMENT
	ROAD EDGE GRAVEL
	DRIVEWAY EDGE
	DITCH
	FOUNDATION
xxx	FENCE (EXISTING)
	FENCE WOOD POST
000	FENCE STEEL POST
······································	GARDEN
0 0 0 0 0	ROAD GUARDRAIL
	RAILROAD TRACKS
	CULVERT (EXISTING)
000000000000000000000000000000000000000	STONE WALL
	WALL
	WOOD LINE
	BRUSH LINE
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	HEDGE
	BODY OF WATER EDGE
	LEDGE EXPOSED

PROJECT NAME: LEICESTER PROJECT NUMBER: BO 1445 (37)

FILE NAME: sl2j636legend.dgn PROJECT LEADER: C. CARLSON DESIGNED BY: C. BURRALL CONVENTIONAL SYMBOLOGY-LEGEND

PLOT DATE: 27-FEB-2019 DRAWN BY: G.ROY CHECKED BY: C. BURRALL SHEET 4 OF 24

HVCTRL #99 HVCTRL #98 "LIECESTER AZ MK" ''DALE'' NORTH = 495384.1241 NORTH = 494001.6367  $\bigcirc$ EAST = 1475151.3443EAST = 1474747.4409ELEV. = 474.6300 ELEV. = 459.7760 TO REACH FROM THE MAIN CROSSROADS IN THE VILLAGE OF LEICESTER (INTERSECTION TO REACH FROM THE INTERSECTION OF US ROUTE 7 AND VT ROUTE 73 WEST AT THE NORTH END OF ____ OF U.S. ROUTE 7, THE LEICESTER-WHITING ROAD, AND FERN (LAKE ROAD) AT THE BRANDON VILLAGE, GO NORTH ALONG US ROUTE 7 FOR 4.7 MI (7.6 KM) TO THE INTERSECTION OF LEICESTER MEETING HOUSE AND CENTRAL SCHOOL GO WEST ALONG THE THE WHITING-LEICESTER ROAD LEFT AND FERN LAKE ROAD RIGHT. IN LEICESTER. TURN LEFT AND GO WEST ALONG THE LEICESTER-WHITING FOR 1.25 MI (2.01 KM) TO THE INTERSECTION LEICESTER-WHITING ROAD FOR 1.25 MI (2.01 KM) TO A T-INTERSECTION. TURN LEFT AND GO SOUTH ALONG THE MAIN TRAVELED ROAD FOR 0.3 MI (0.5 KM) TO A T-ROAD OF MEMOE ROAD RIGHT. CONTINUE AHEAD ON THE LEICESTER-WHITING ROAD FOR 0.2 MI (0.3 KM) RIGHT, CONTINUE STRAIGHT AHEAD (SOUTH) ALONG ARNOLD DISTRICT ROAD FOR 0.2 TO THE SITE OF THE MARK ON THE LEFT IN A PASTURE. IT IS ABOUT 100 M (328, 1 FT) MI(0.3 KM) TO TELEPHONE POLE NO. 174 AND AZIMUTH MARK ON THE LEFT. IT IS 0.2 NORTH OF THE INTERSECTION OF SWININGTON HILL ROAD. THE MARK IS SET IN THE TOP OF A 1.3 M (4.3 FT) X 0.9 M(3.0 FT) BOULDER WHICH PROJECTS ABOUT 0.5 M (1.6 FT) MI (0.3 KM) NORTH ALONG ARNOLD DISTRICT ROAD FROM NGS STATION LIECESTER. ABOVE GROUND SURFACE. IT IS 35.7 M (117.1 FT) EAST OF AND ABOUT LEVEL WITH THE STATION MARK IS SET IN THE TOP OF A 9 FT (2.7 M) X 6 FT (1.8 M) BOULDER WHICH PROJECTS 4 FT (1.2 M) ABOVE GROUND SURFACE. IT IS 135 FT (41.1 M) EAST OF THE CENTERLINE OF THE LEICESTER-WHITING ROAD, 45. I M (148.0 FT) SOUTH OF A WIRE FENCE CENTERLINE OF ARNOLD DISTRICT ROAD, 198 FT (60.4 M) SOUTHEAST OF TELEPHONE CORNER, 16.2 M (53.1 FT) SOUTH SOUTHEAST OF A 30 CM JUNIPER, 34.3 M (112.5 FT) POLE NO. 174, 165 FT (50.3 M) NORTHEAST OF THE TELEPHONE POLE NO. 173, 195 NORTHEAST OF A FIVE-TRUNKED MAPLE WITH TRIANGULAR BLAZE, AND 29.0 EAST OF A FIBERGLASS FT (59.4 M) SOUTH SOUTHEAST OF TRANSMISSION POLE NO. 50, 118 FT (36.0 M) WITNESS POST IN A NORTH-SOUTH WIRE FENCELINE. NOTE, MARK IS INTERVISIBLE WITH LEICESTER AZ MK. EAST OF A FIBERGLASS WITNESS POST IN A WIRE FENCELINE *CONTROL RECOVERED BY G. HITCHCOCK 11/02/2015 HVCTRL #8 HVCTRL #9 HVCRTL #22 NORTH = 497662.2153 NORTH = 498499.5734 NORTH = 498707.5800 NORTH = NORTH = EAST = 1469627.6121 EAST = 1469640.4833 EAST = 1469420.5866 EAST = EAST =  $\bigcirc$ ELEV. = 347.9930 ELEV. = 347.5820 ELEV. = 348.837 ELEV. = ELEV. = Ш BM9 M.BASSWOOD RRSIR L. MAPLE ____ ELEV: 347.49 BM8 RRSIR 5-M. MAPLE ELEV: 347. 14  $\bigcirc$ 2 M.ASH 6. 11 58.06  $\triangleleft$ AD. *TRAVERSE COMPLETED BY H. MCGOWAN PC. / T. CATTANEO 11/23/2015 NORTH = NORTH = NORTH = NORTH = NORTH = EAST = EAST = EAST = EAST = EAST =  $\bigcirc$ ELEV. = ELEV. = ELEV. = ELEV. = ELEV. = Z $\geq$  $\mathbb{Z}$  $\triangleleft$ PROJECT NAME: LEICESTER DATUM

VERTICAL NAVD 88

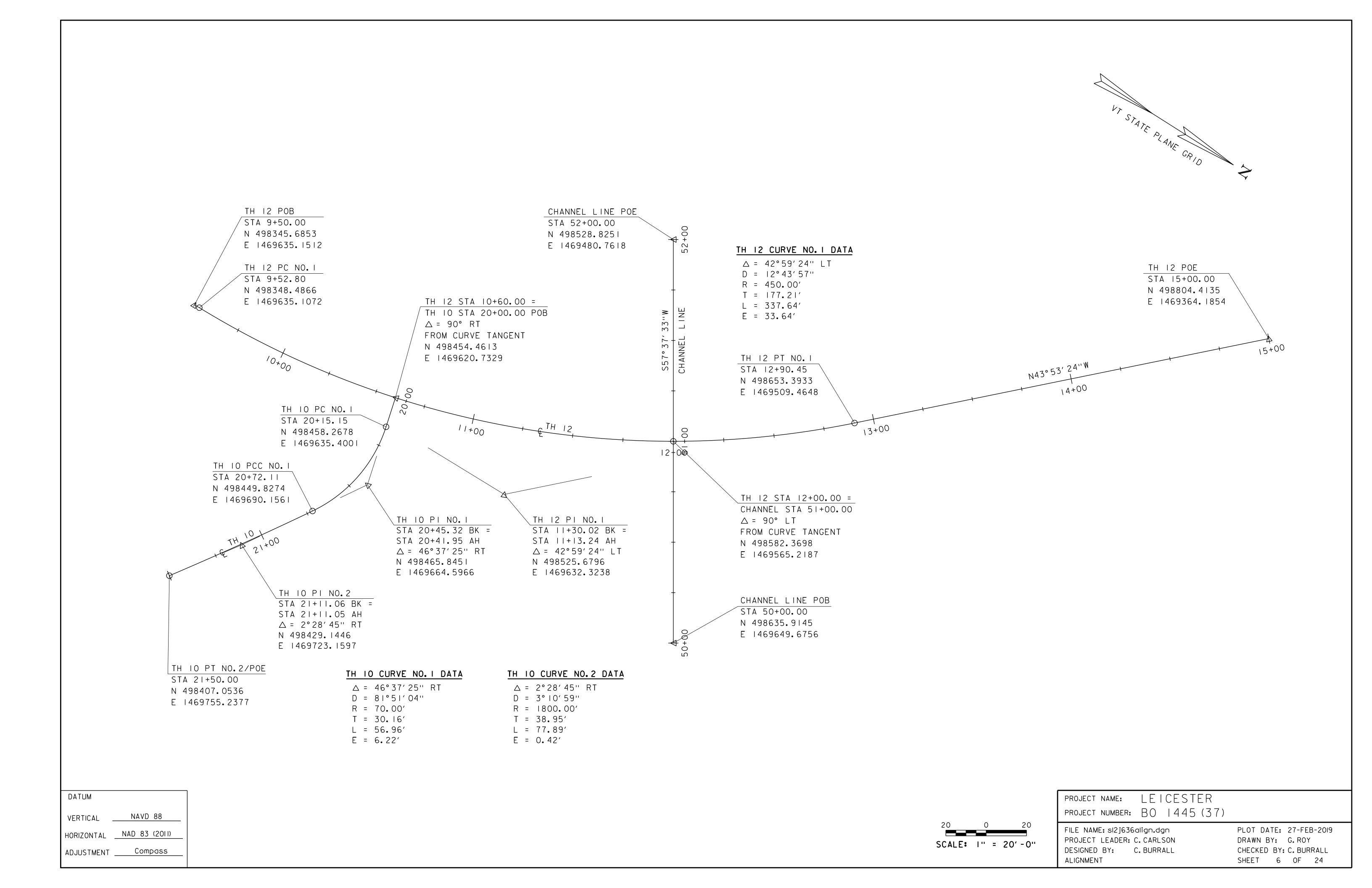
HORIZONTAL NAD 83 (2011)

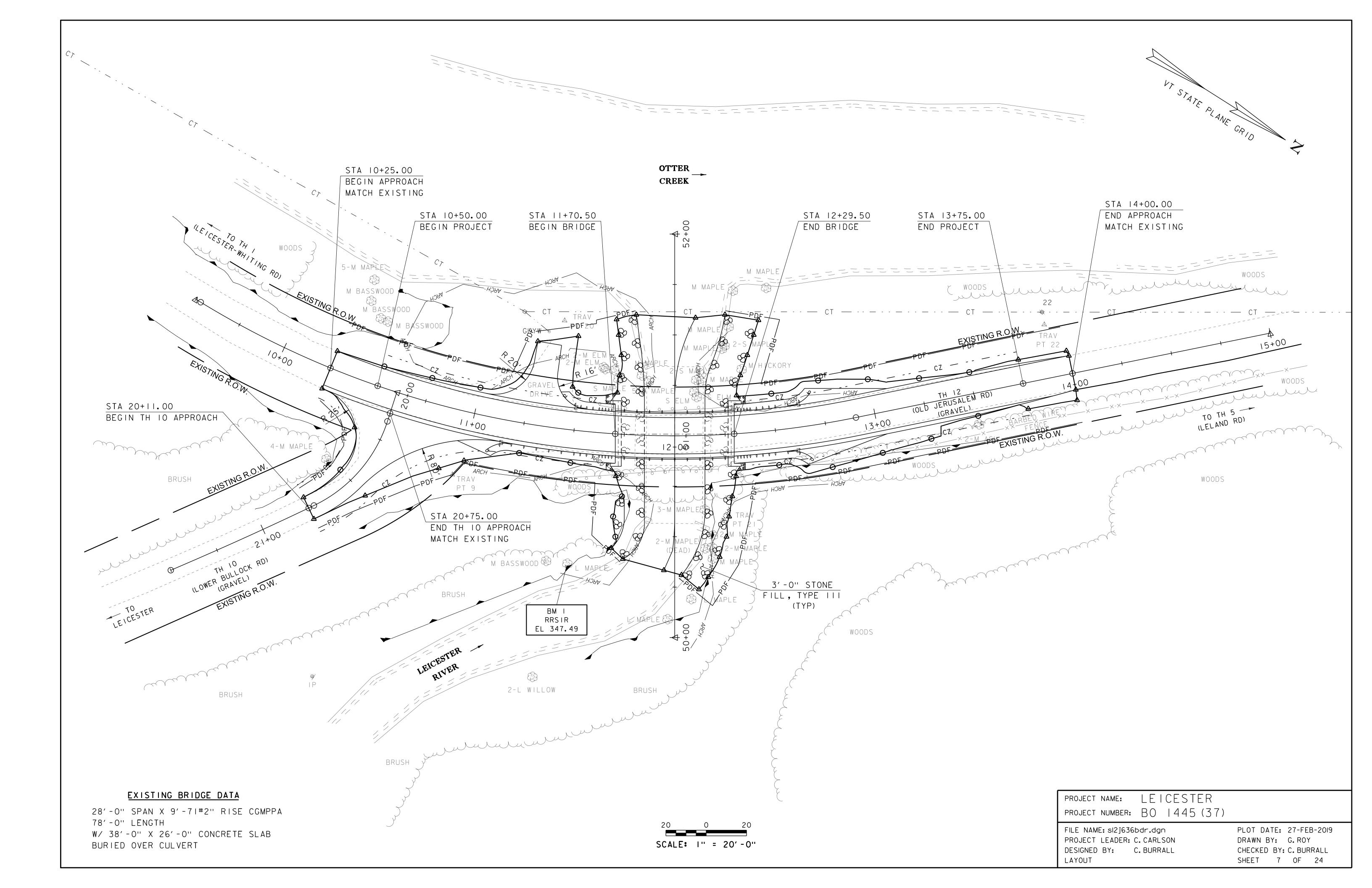
ADJUSTMENT COMPAS

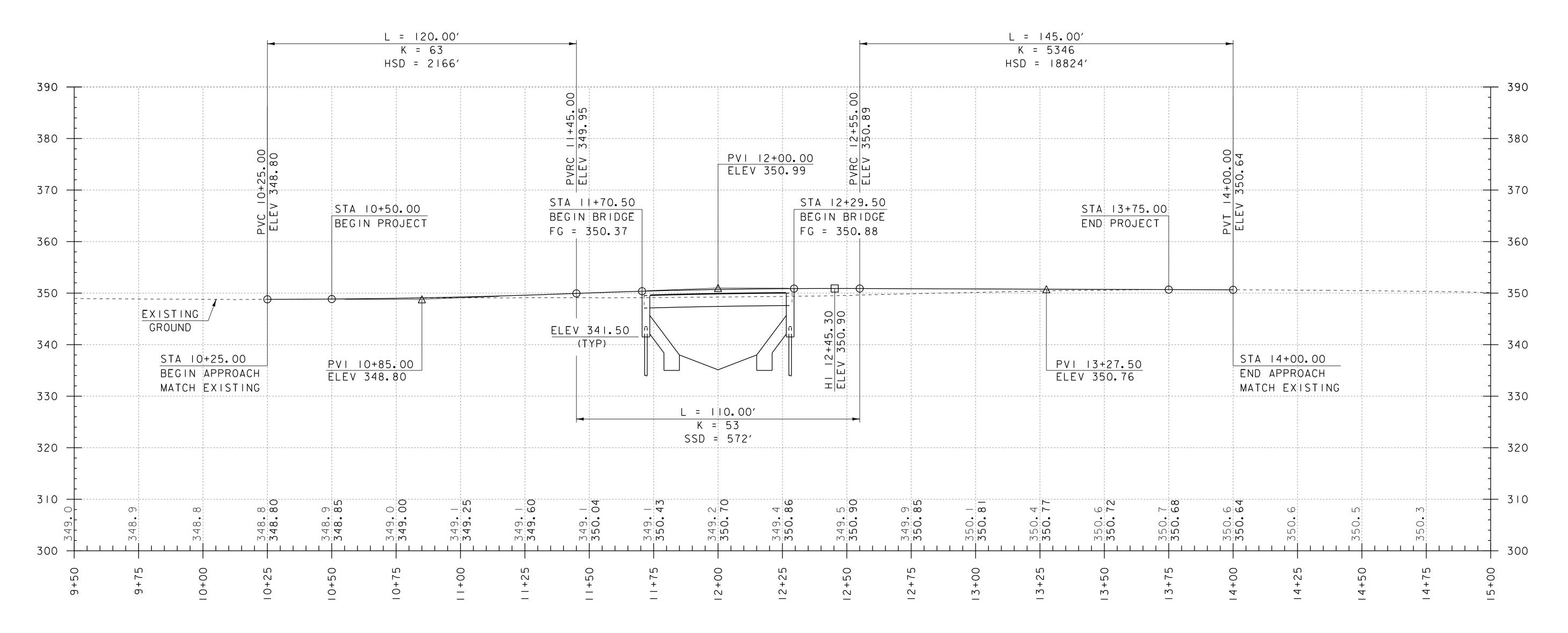
PROJECT NUMBER: BO 1445 (37)

FILE NAME: sl2j636tie.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. BURRALL
TIES

PLOT DATE: 27-FEB-2019
DRAWN BY: H. MCGOWAN
CHECKED BY: G. HITCHCOCK
SHEET 5 OF 24







### PROFILE ALONG TH 12

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

### NOTE:

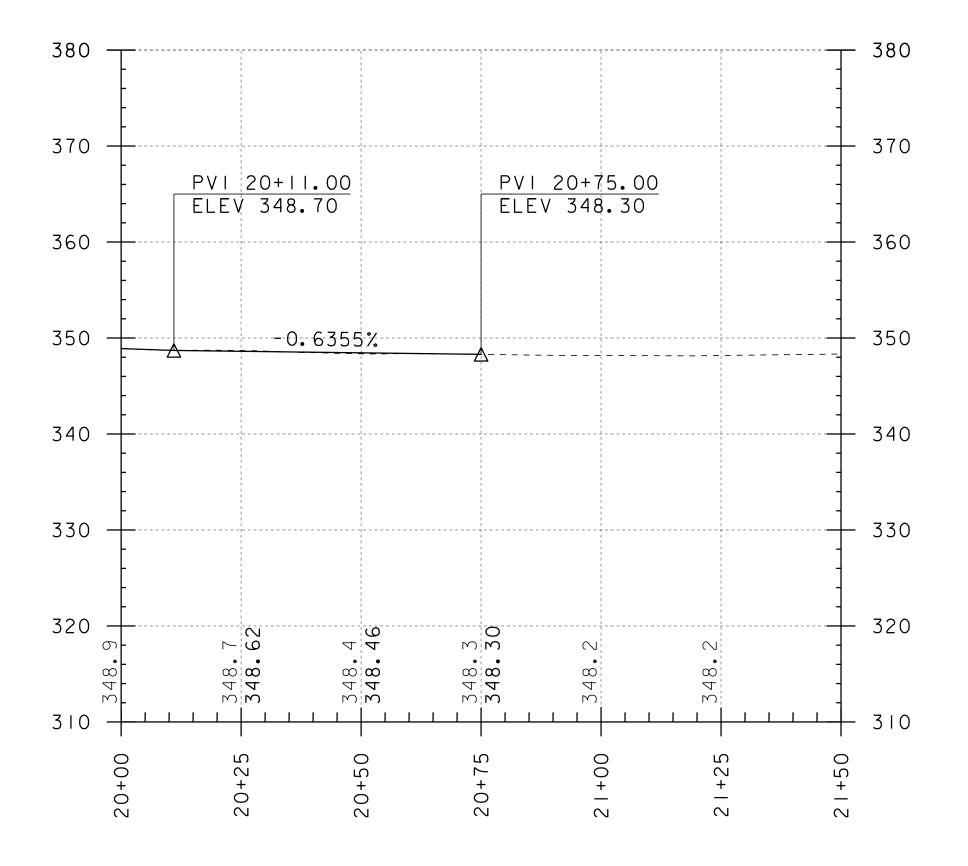
ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.

ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADES ALONG PROPOSED CENTERLINE.

PROJECT NAME: LEICESTER
PROJECT NUMBER: BO 1445 (37)

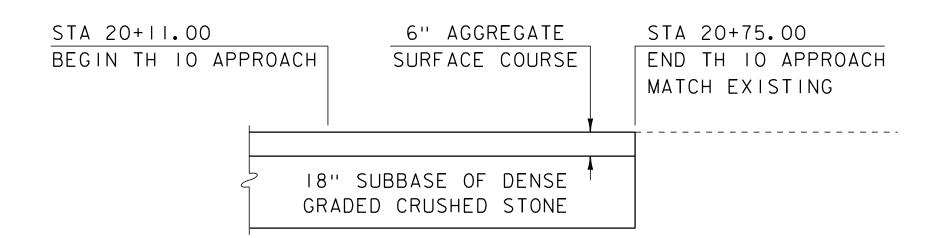
FILE NAME: sl2j636pro.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. BURRALL
TH I2 PROFILE

PLOT DATE: 27-FEB-2019
DRAWN BY: G. ROY
CHECKED BY: C. BURRALL
SHEET 8 OF 24



### PROFILE ALONG TH 10

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



### TH 10 MATERIAL TRANSITION

HORIZONTAL SCALE: I" = 20'-0" VERTICAL SCALE: I" = 2'-0"

### NOTE:

ELEVATIONS SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG PROPOSED CENTERLINE.

ELEVATIONS SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADES ALONG PROPOSED CENTERLINE.

PROJECT NAME: LEICESTER PROJECT NUMBER: BO 1445 (37)

FILE NAME: sI2j636pro.dgn PROJECT LEADER: C. CARLSON DESIGNED BY: C. BURRALL

PLOT DATE: 27-FEB-2019 DRAWN BY: G.ROY CHECKED BY: C. BURRALL TH IO PROFILE AND MATERIAL TRANSITION SHEET 9 OF 24

### SOIL CLASSIFICATION

#### AASHTO

Gravel and Sand Fine Sand

Silty or Clayey Gravel and Sand Silty Soil - Low Compressibility Silty Soil - Highly Compressible Clayey Soil - Low Compressibility Clayey Soil - Highly Compressible

### ROCK QUALITY DESIGNATION

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

### SHEAR STRENGTH

UNDRAINED
CHEAD CEDENATI

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

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

	DENSITY IULAR SOILS)		NSISTENCY ESIVE SOILS)
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
√5 5-10 II-24 25-50 >50	Very Loose Loose Med. Dense Dense Very Dense	<2 2-4 5-8 9-15 16-30 31-60 >60	Very Soft Soft Med. Stiff Stiff Very Stiff Hard Very Hard

### COMMONLY USED SYMBOLS

<b>▼</b>	Water Elevation Standard Penetration Boring
$\oplus$	Auger Boring
⊙ S	Rod Sounding Sample
N	Standard Penetration Test
	Blow Count Per Foot For:
	2"O.D. Sampler I ³ ⁄8"I.D. Sampler
	Hammer Weight Of 140 Lbs.
VC	Hammer Fall Of 30"
VS US	Field Vane Shear Test Undisturbed Soil Sample
В	Blast
DC MD	Diamond Core Mud Drill
WA	Wash Ahead
HSA AX	Hollow Stem Auger Core Size I½"
ВХ	Core Size I%"
NX M	Core Size 2 1/8" Double Tube Core Barrel Used
LL	Liquid Limit
PL Pl	Plastic Limit Plasticity Index
NP	Non Plastic
W D	Moisture Content (Dry Wgt.Basis) Dry
M	Moist
MTW W	Moist To Wet Wet
Sat	Saturated
Bo Gr	Boulder Gravel
Sa	Sand
Si Cl	Silt Clay
HP	Hardpan
Le NLTD	Ledge No Ledge To Depth
CNPF	·
TLOB NR	Top of Ledge Or Boulder No Recovery
Rec.	Recovery
%Rec.	
RQD CBR	Rock Quality Designation California Bearing Ratio
< >	Less Than
? R	Greater Than Refusal(N > 100)
—	

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

VTSPG NAD83 - See Note 7

### DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches. COBBLE - Rock fragments with an average dimension between 3 and

GRAVEL - Rounded particles of rock  $\langle 3" \text{ and } \rangle 0.0787" (*10 \text{ sieve}).$ 

12 inches.

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material. MOISTURE CONTENT - Weight of water

divided by dry weight of soil. FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction

of wash rod. STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

#### I. The subsurface explorations shown herein were made between 2/2/2017 and 2/14/2017 by the Agency.

2. 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.

3. 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.

### GENERAL NOTES

STA ||+70.50

BEGIN BRIDGE

4. 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.

5. 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.

**OTTER** 

CREEK

12+00

B-101

6. 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 Manualon Subsurface Investigations, 1988.

7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

### ART

HOLE NO.	STATION	OFFSET	GROUND ELEVATION	ELEV. TLOB
B-101	11+71.31	19.7' LT	347.7	289.0
B-104	12+34.16	14.7′ RT	348.5	284.7

LEICESTER PROJECT NAME: PROJECT NUMBER: BO 1445(37)

FILE NAME: sl2j636bor.dgn PROJECT LEADER: C. CARLSON DESIGNED BY: C. BURRALL BORING INFORMATION SHEET

PLOT DATE: 27-FEB-2019 DRAWN BY: G. ROY CHECKED BY: C. BURRALL SHEET IO OF 24

	BORING LAYOUT						
	SCALE I'' = 20'-0" 20 0 20			BORI	NG	СН	-
 F	5 Pictorial structure details sho	wp. 00	HOLE			_	_

/STA 12+29.50

&END BRIDGE

Boring Crew:	WIATENIALS BUNEAU												2	
Boring Crew		MATERIALS BUREAU CENTRAL LABORATORY			BO1445(37) TH 12					Pin No.: 12j636  Checked By: END				
	Judkins, Garrow, Olden			Ca	sing	Sam	pler	Gro	undwa	ater O	bserva	ations		
	/17 Date Finished: 2/06/17	Type: I.D.:			VB in	S		Date	Dep		No	otes		
	N 498548.53 ft E 1469562.96 ft	Hamme	er Wt:	N	I.A.	140	lb.	02/06/17	(ft)		√.T. be	fore d	 Irillina	
Station: 11+71.31	1_ Offset:19.70	Hamme Hamme			<u>Ι.Α.</u>	30 to/AW	<u>in.</u>							
Ground Elevation: _	347.7 ft	Rig: (					1.42							
Depth (ft) Strata (1)	CLASSIFICATION OF MATERIALS (Description)	6		Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	% TT	% Id	
0 0 A-1	-b, Gr, brn, Moist, Rec. = 1.1 ft				-		9-6-6 (11)		65.4	17.9	16.7			
Fiel	d Note:, NXDC, Cleaned out casing						, ,							
	ual Description:, Broken Rock, Rec. = 0.1 f k stuck in end of sampler	ft, Field No	ote:				3- R@2. (R)	5"						
	-a, Gr, brn, Moist, Rec. = 0.5 ft, Lab Note:	Broken ro	ock				17-10- 5		81.9	6.0	12.1			
5 0 was	s within sample						(16)	)						
- do Coronio de la companya del companya del companya de la compa	-a, Gr, brn, Moist, Rec. = 0.6 ft, Lab Note: within sample	Broken ro	ock				6-6-5 (11)		80.7	8.8	10.5			
	d Note:, NXDC, Cleaned out casing d Note:, No Recovery						8-4 <u>-</u> 3	-3						
10 Field	d Note:, NXDC, Cleaned out casing						(7)							
Field	d Note:, No Recovery						5-3-1 (4)	-2						
	d Note:, NXDC, Cleaned out casing						3-6-5	-3						
<del></del>	d Note:, No Recovery d Note:, NXDC, Cleaned out casing						(11)							
15 A-4,	, SaSi, gry-brn, Moist, Rec. = 0.7 ft						6-5-2 (7)	-1 44.1	12.9	32.9	54.2			
	d Note:, NXDC, Cleaned out casing						, ,	5 00 0	0.0	000	50.5			
Lab	, SaSi with trace organics, gry-brn, Moist, Note: Sample contained a trace (7%) orga SHTO T-267). Decomposing wood was no	anics					4-4-4 (8)			38.6				
sam	· · · · · · · · · · · · · · · · · · ·		_/				1-1-2 (3)	-4  179.9	16.1	45.0	38.9			
20 cont	tained 26.9% organics (AASHTO T-267) d Note:, NXDC, Cleaned out casing	Note. San					3-1-1 (2)	-1						
	d Note:, No Recovery													
A-7-	-6, Cl, gry, Moist, Rec. = 1.7 ft						1-1-2 (3)	-2   36.6	0.6	6.8	92.6	48	24	
A-7-	-6, CI													
A-7-	-6, CI, gry, Moist, Rec. = 2.1 ft						(WH	) 70.2		0.3	99.7	69	40	
Field	d Note:, NXDC, Cleaned out casing													
30	-6, Cl		-											
A-7-	-6, CI, gry, Moist, Rec. = 2.0 ft						(WH	) 64.1	0.1	0.3	99.6	50	27	
Fiel	d Note:, NXDC, Cleaned out casing													
	-6, Cl, gry, Wet, Rec. = 2.0 ft, Lab Note: Sallar Atterberg limits to 32-34 foot sample	ample had	d				(WR	) 75.7		0.1	99.9			
_{&gt;&lt;_{&gt;}}	represent approximate boundary between material type is the hammer energy correction factor. ngs have been made at times and under conditions state		-			er factors	s than tho	ose present a	it the tim	ne meas	urements	s were n	nade.	

ABUT I BTM ELEV 341.50

Irans Working to Get You There
Vermont Agency of Transportation 12j636 MATERIALS BUREAU BO1445(37) Pin No.: CENTRAL LABORATORY TH 12 END Checked By: Casing Sampler Groundwater Observations Boring Crew: Judkins, Garrow, Olden SS Type: Depth Date Started: 2/02/17 Date Finished: 2/06/17 I.D.: 4 in 1.5 in Hammer Wt: N.A. 140 lb. VTSPG NAD83: N 498548.53 ft E 1469562.96 ft 2.0 W.T. before drilling 02/06/17 Hammer Fall: N.A. 30 in. <u>-19.7</u>0 Offset: 11+71.31 Station: Hammer/Rod Type: ___Auto/AWJ Ground Elevation: 347.7 ft Rig: <u>CME 45C SKI</u>D CE= 1.42 Depth (ft) CLASSIFICATION OF MATERIALS (Description) A-7-6, CI, gry, Wet, Rec. = 2.0 ft, Lab Note: Sample had 0.2 | 99.8 | similar Atterberg limits to 32-34 foot sample LENGTH A-7-6, CI, gry, Wet, Rec. = 2.0 ft, Lab Note: Sample had similar Atterberg limits to 50-52 foot sample WR-WH | 74.1 | 0.1 | 99.9 | A-7-6, CI, gry, Wet, Rec. = 2.0 ft 49.7 | 3.3 | 0.8 | 95.9 | 43 | 22 55 A-4, SaSi, gry, Wet, Rec. = 1.1 ft 1-1-WH | 61.3 | 2.7 | 39.9 | 57.4 | EST PILE TIP 58.7 ft - 63.7 ft, Light gray, DOLOMITIC MARBLE, with red and beige dolomite beds. Brown staining and secondary calcite precipitation along joints. Hard, Very slightly weathered, Fair rock, NX, RMR=52 Top of Bedrock @ 58.7 ft (60) | (32) | 5 5 63.7 ft - 68.7 ft, Light gray, DOLOMITIC MARBLE, with red and beige dolomite beds. Sub-vertical joint from 64.15 feet to 64.7 feet. Brown and yellow staining with secondary calcite precipitation along joints. Hard, Slightly weathered, Fair rock, NX, RMR=49 5 3 Hole stopped @ 68.7 ft 70 Remarks: Hole collapsed at 1.2 feet. 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. <<SUB>><<SUB>> is the hammer energy correction factor.

STATE OF VERMONT AGENCY OF TRANSPORTATION

CONSTRUCTION AND

Notes: | 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.

LEICESTER PROJECT NAME: PROJECT NUMBER: BO 1445 (37)

**BORING LOG** 

Leicester

Boring No.:

Page No.:

B-101

2 of 2

FILE NAME: sl2j636bor.dgn PROJECT LEADER: C. CARLSON DESIGNED BY: C. BURRALL BORING LOGS (1)

PLOT DATE: 27-FEB-2019 DRAWN BY: G.ROY CHECKED BY: C. BURRALL SHEET II OF 24

		STATE OF VERMONT				BORI	NG L	.OG		Вс	oring N	lo.:	B-1	04	
V'	Trancu	AGENCY OF TRANSPORTAT  Orking to Get You There  CONSTRUCTION AND  MATERIAL SPUREAL	ION		Leicester						Page No.: 1 of 2				
	II allo ve	MATERIALS BUREAU CENTRAL LABORATORY			BO1445(37) TH 12						Pin No.: <u>12j636</u>				
					0					Checked By: <u>END</u> roundwater Observations					
Boring	g Crew: _	Emerson, Garrow, Olden	Type:			<u>VB</u>	S		Date		oth		otes		
	Started: _	<u>2/07/17</u> Date Finished: <u>2/14/17</u>	I.D.:	\ A / (		in_	1.5		Date	(f			JIGS		
	G NAD83:	N 498619.60 ft E 1469558.18 ft	Hamme Hamme			I.A. I.A.	<u>140</u> 30		02/08/1	7 8	3.2	N.T. be	fore d	rilling	
Statio	-	-34.16 Offset: 14.70	Hamme	er/Ro	d Type:	Aı	uto/AV	٧J	02/14/1	7 5	5.3	N.T. be	fore d	rilling	
Groun	nd Elevation	n: <u>348.5 ft</u>	Rig: _	CME	45C Sł			1.42				T			
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	3		Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6"	Moisture	Gravel %	Sand %	Fines %	% TT	% Id	
_	0 0 0 0	A-1-b, SaGr, brn, Dry, Rec. = 1.4 ft						9-10 19		1 51.9	29.9	18.2			
_			D 1					(17	')	04.0	00.0	40.4			
_	000	∖A-1-b, SaGr, gry, Dry, Rec. = 0.6 ft, Lab Note: √rock was within sample	Broken					15-13				16.4 54.8			
-		Field Note:, NXDC, Cleaned out casing A-4, SaSi, brn, Dry, Rec. = 0.9 ft, Lab Note: P	lant	_/_				(18 6-6-4	'			78.1			
5 -		material was within sample	iaiii					(10							
_		A-4, SaSi, brn, Moist, Rec. = 1.5 ft A-4, Si, gry, Moist, Rec. = 0.9 ft		_/				5-4-6 (10	6-4 27.9	0.9	17.9	81.2			
_								,							
_		Field Note:, No Recovery						4-3-4							
10 — -		Field Note:, No Recovery						1-2- (3)							
_		A-4, SaSi, gry, Moist, Rec. = 0.9 ft, Lab Note:						1-1-		0.2	30.6	69.2			
	00/00	$\sim$ contained trace (4.8%) organics (AASHTO T- $^{\prime}$						(2)	140	7 10.5	59.8	29.7			
15 –		Sample contained little (18.3%) organics (AAS T-267). Decomposing wood was noticeable in	SHTO					WH- (1)		1 0.1	19.1	80.8			
_		A-4, Si, gry, Moist, Rec. = 1.4 ft, Lab Note: A	ery smal	, ,				WH-	2-2   73.	1 3.3	17.7	79.0			
_		amount of clay and organic material was withi Sample tested non-plastic	n sample					(2)		1 0.0	''''	75.0			
	60/60	A-4, Si, gry, Moist, Rec. = 2.0 ft, Lab Note: Sa contained trace (7.2%) organics (AASHTO T-2						1-1-2 (3)	2-3 247	3 41.7	42.4	15.9			
20 -	% %	Decomposing wood and a thin layer of clay wannoticeable within sample. Sample tested non-	as												
_		A-8, Organic Si, brn, Moist, Rec. = 1.7 ft, Lab	Note:					WH-2	2-4  315 )   45.:			12.9 76.2			
_		Sample contained (44.0%) organics. Decomposition was noticeable in sample.	osing					   WH-2	2-2- 49.	1 0.1	1.2	98.7	69	40	
_		A-8, Organic Si, brn, Wet, Rec. = 0.5 ft, Lab N Sample contained (37.5%) organics. Decomp						4 (4)	)						
25 –		wood was noticeable in sample.													
_		A-7-6, Cl, gry, Moist, Rec. = 1.2 ft, Lab Note: S contained a very small amount of organic mat	erial.						77	0.4	0.4	00.5	C.F.	20	
_		Sample had similar Aterberg limits to 22-24 fo A-7-6, CI, gry, Moist, Rec. = 1.8 ft	ot sample	<del>2</del>				(Wł	H) 77.8	3 0.1	0.4	99.5	65	36	
_		Field Note:, NXDC, Cleaned out casing													
20		A-7-6, CI, gry, Moist A-7-6, CI, gry, Moist, Rec. = 2.0 ft		$-\parallel\parallel$											
30 -		A-7-6, CI, gry, Moist						(Wł	75. ⁽	5	0.1	99.9			
_		A-7-6, Cl, gry, Moist, Rec. = 2.0 ft, Lab Note: \$ had similar Atterberg limits to 26-28 foot samp.	•					(***	,						
_															
-															
35 –		A-7-6, CI, gry, Moist, Rec. = 2.0 ft, Lab Note:						(WF	80.	7	0.2	99.8			
		had similar Atterberg limits to 26-28 foot samp	ле					(441	7						
-															
		on lines represent approximate boundary between material type	es. Transitio	n may l	oe gradual	<u> </u>									
Notes:		SUB>> is the hammer energy correction factor.  el readings have been made at times and under conditions state	ed. Fluctuation	ons ma	y occur du	ie to oth	er factor	s than th	ose preser	t at the ti	me mea	surement	s were n	nade.	

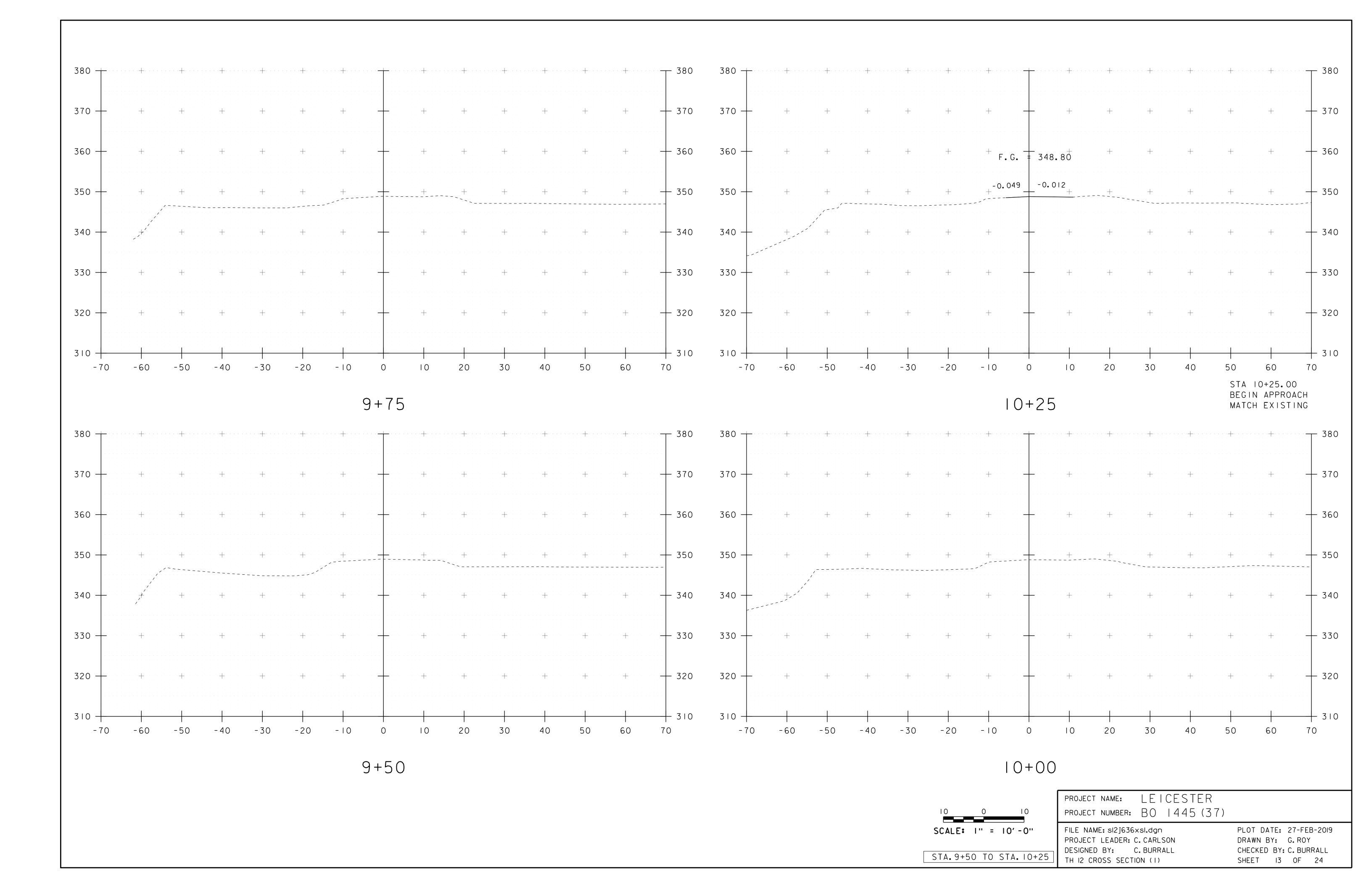
ABUT 2 BTM ELEV 341.50

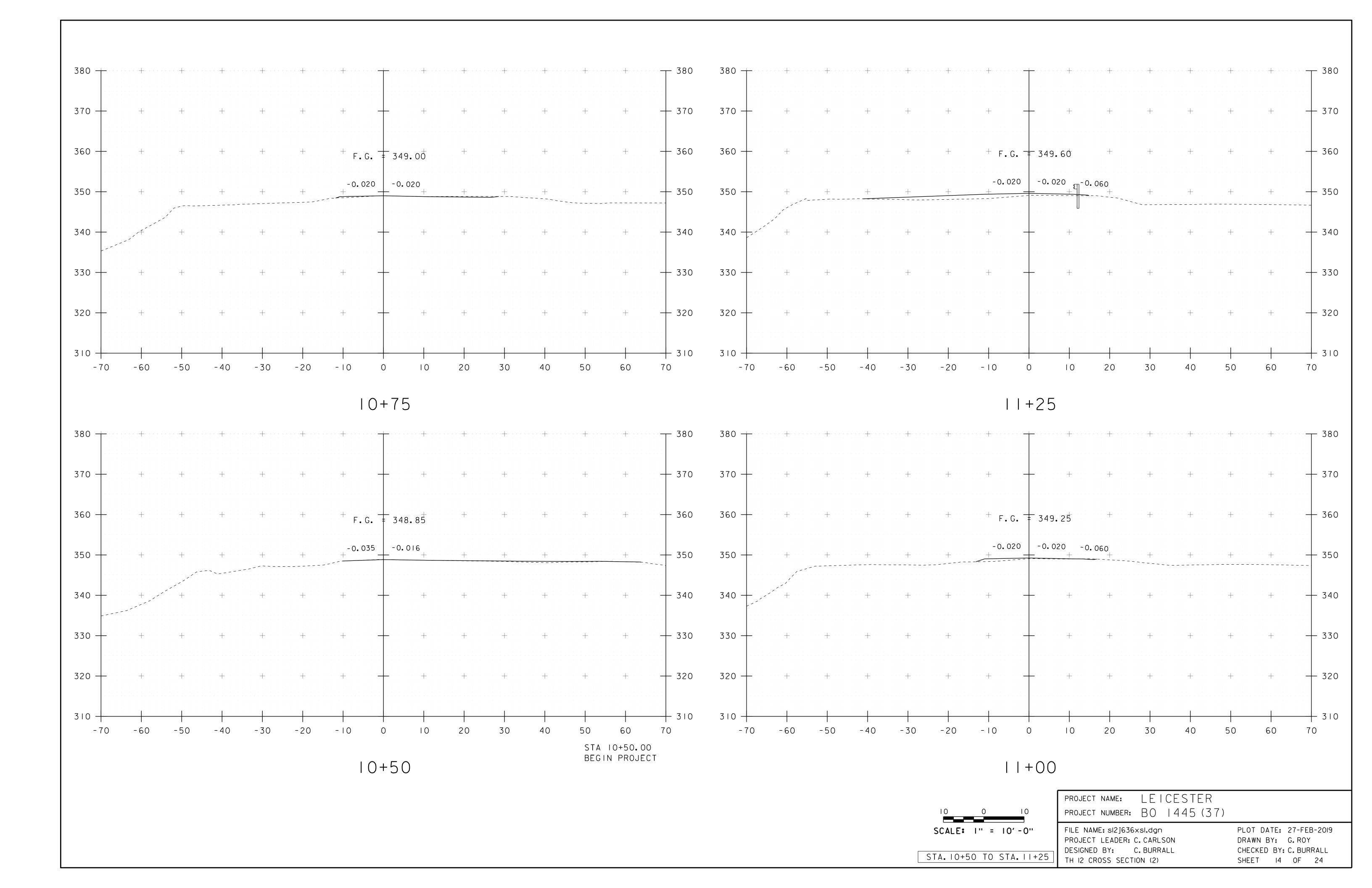
**BORING LOG** Boring No.: B-104 STATE OF VERMONT AGENCY OF TRANSPORTATION 2 of 2 Page No.: Leicester Irans Working to Get You There
Vermont Agency of Transportation CONSTRUCTION AND 12j636 MATERIALS BUREAU BO1445(37) Pin No.: CENTRAL LABORATORY TH 12 END Checked By: Casing Sampler Groundwater Observations Boring Crew: Emerson, Garrow, Olden Type: Date Depth Date Started: 2/07/17 Date Finished: 2/14/17 I.D.: 4 in 1.5 in Hammer Wt: N.A. VTSPG NAD83: N 498619.60 ft E 1469558.18 ft 8.2 W.T. before drilling N.A. <u>30 in.</u> Hammer Fall: <u> 14.70</u> Offset: 12+34.16 Station: Hammer/Rod Type: Auto/AWJ 02/14/17 5.3 W.T. before drilling ____<u>34</u>8.5 ft Ground Elevation: Rig: <u>CME 45C SKI</u>D CE = 1.42Depth (ft) CLASSIFICATION OF MATERIALS (Description) A-7-6, CI, gry, Moist, Rec. = 2.0 ft, Lab Note: Sample had similar Atterberg limits to 45-47 foot sample 0.3 | 99.7 | A-7-6, CI, gry, Moist, Rec. = 2.0 ft 73.1 | 0.1 | 1.0 | 98.9 | 63 | 35 LENGTH Field Note:, NXDC, Cleaned out casing 47.3 0.2 3.6 96.2 A-7-6, CI, gry, Moist, Lab Note: Sample had similar Atterberg limits to 45-47 foot sample 55 Field Note:, No Recovery (WH) Field Note:, No Recovery, Rec. = 1.0 ft EST PILE TIP 63.8 ft - 68.8 ft, Light gray, DOLOMITIC MARBLE, with red and beige dolomite beds. Sub-vertical joints from Top of Bedrock @ 63.8 ft 1 | 100 | 4 (50-60) (0) 6 63.8 feet to 64.45 feet and 65.4 feet to 65.9 feet. Orange and yellow staining with secondary calcite precipitation along joints. Hard, Slightly weathered, Poor rock, NX, 68.8 ft - 73.8 ft, Light gray, DOLOMITIC MARBLE, with 82 10 (20) | (46) | 11red and beige dolomite beds. Yellow and brown staining along joints. Some secondary calcite precipitation along joints. Silt coated sub-vertical joint noted from 70.05 feet 9 to 70.30 feet. Hard, Slightly weathered, Fair rock, NX, 8 RMR=54 9 Hole stopped @ 73.8 ft 75 -Remarks: Hole collapsed at 59.0 feet. 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. <<SUB>><<SUB>> is the hammer energy correction factor. Notes: 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.

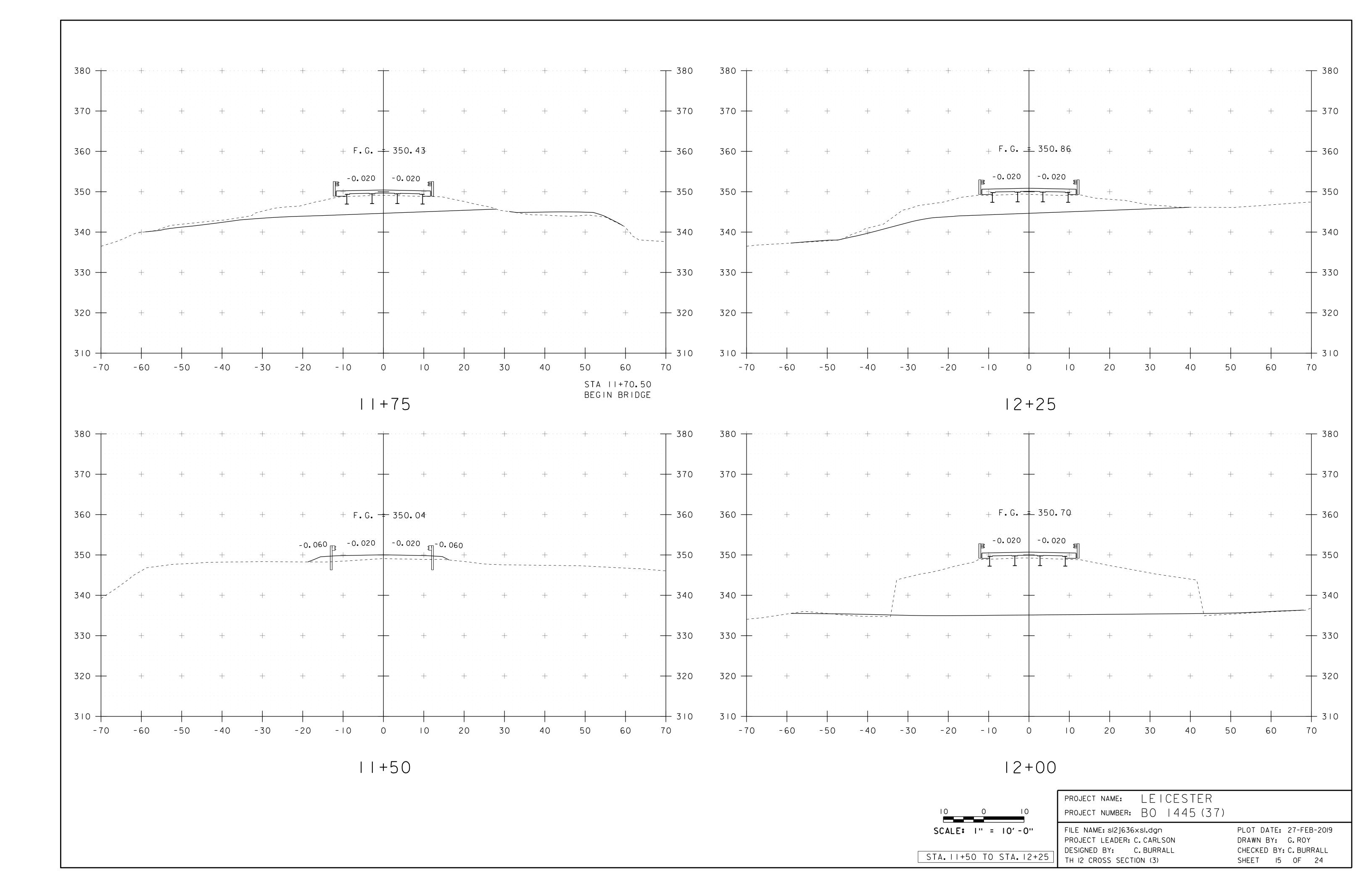
PROJECT NAME: LEICESTER
PROJECT NUMBER: BO 1445 (37)

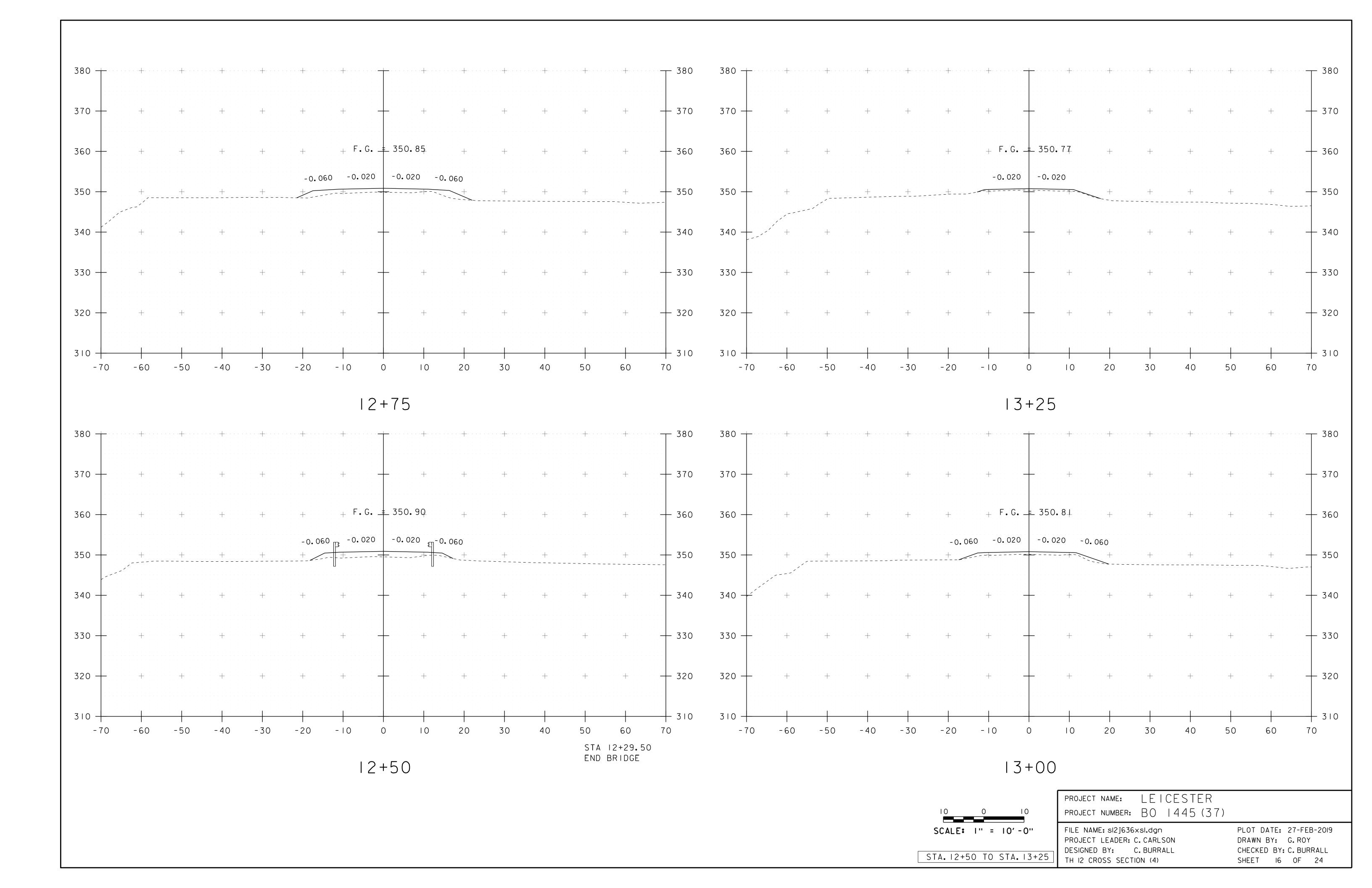
FILE NAME: sl2j636bor.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. BURRALL
BORING LOGS (2)

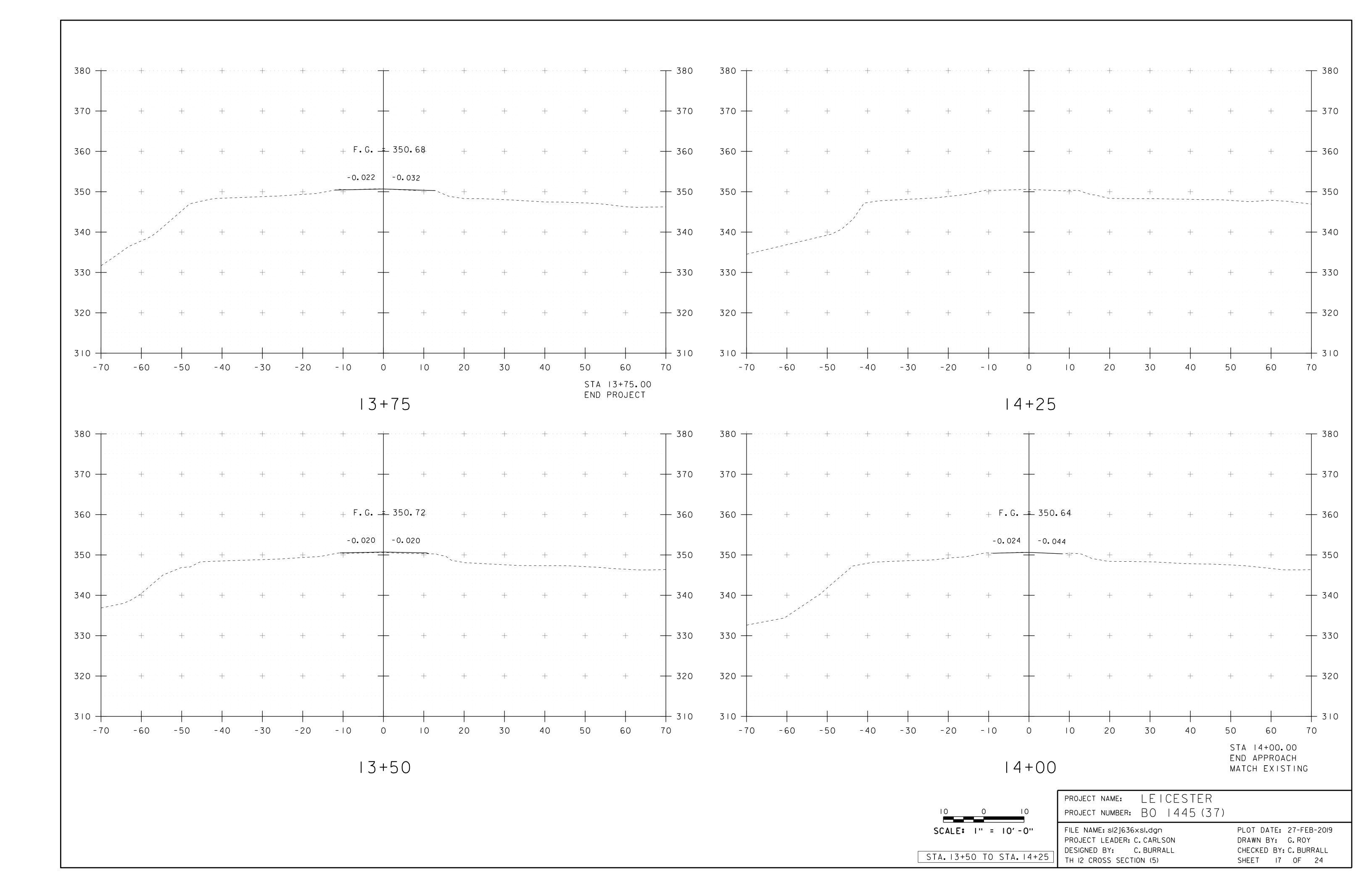
PLOT DATE: 27-FEB-2019
DRAWN BY: G. ROY
CHECKED BY: C. BURRALL
SHEET 12 OF 24

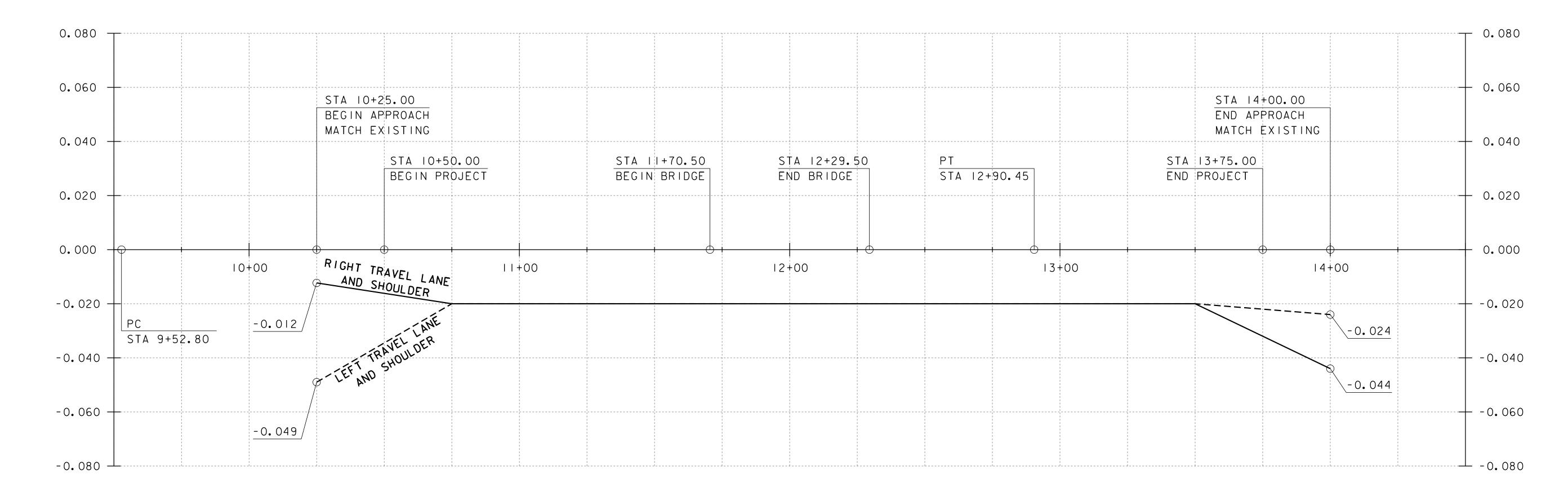






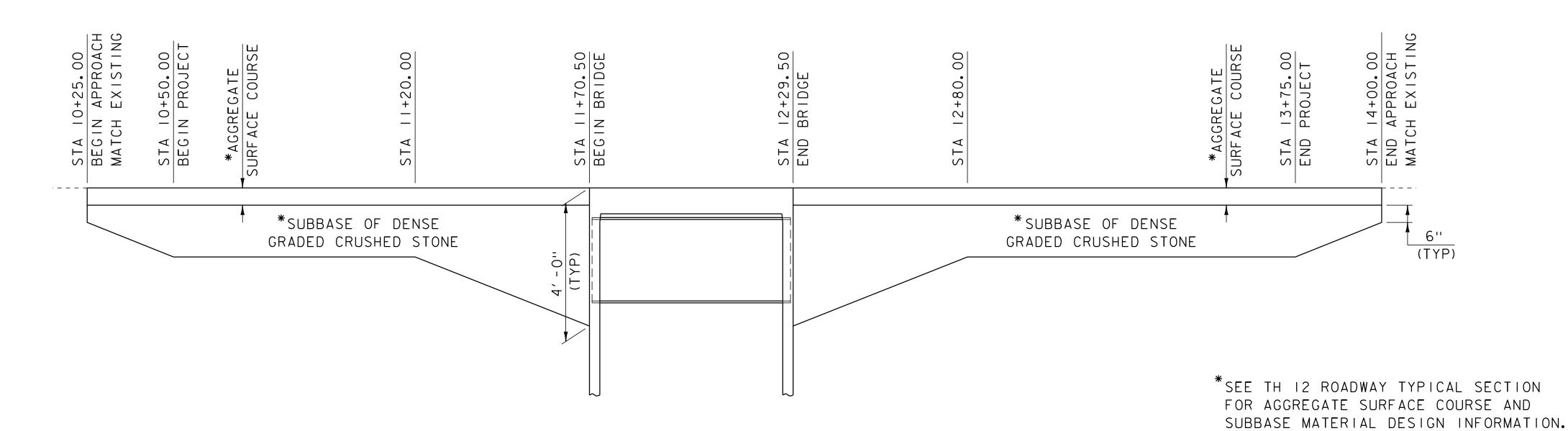






### TH 12 BANKING DIAGRAM

HORIZONTAL SCALE: I" = 20'-0" VERTICAL SCALE: I" = 0.020'/'



### TH 12 MATERIAL TRANSITION

HORIZONTAL SCALE: I" = 20'-0" VERTICAL SCALE: I" = 2'-0"

PROJECT NAM	ie: LE	ICESTI	ΞR
PROJECT NUM	BER: BO	1445	(37)

FILE NAME: sl2j636pro.dgn
PROJECT LEADER: C. CARLSON
DESIGNED BY: C. BURRALL
TH I2 BANKING AND MATERIAL TRANSITION

PLOT DATE: 27-FEB-2019
DRAWN BY: G.ROY
CHECKED BY: C.BURRALL
SHEET 18 OF 24

