

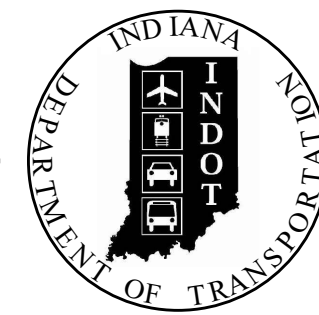
DESIGNATION	BRIDGE FILE
2401505 & 2401506	002-71-10841 & 10842
CONTRACT	
R-45760	

STRUCTURE INFORMATION				
STRUCTURE	TYPE	SPAN & SKEW	OVER	STATION
002-71-10841	PRESTRESSED COMPOSITE CONTINUOUS BULB-TEE BEAM BRIDGE	2 SPANS @ 94'-0" NO SKEW	SR 2	31+88.68 "S-1-NB"
002-71-10842	PRESTRESSED COMPOSITE CONTINUOUS BULB-TEE BEAM BRIDGE	2 SPANS @ 94'-0" NO SKEW	SR 2	32+69.95 "S-1-SB"

KIN PROJECT INFORMATION	
DESIGNATION	PROJECT DESCRIPTION
2401424 (LEAD)	NEW INTERCHANGE CONSTRUCTION - LARRISON BLVD. & STRAWBERRY RD.
2401505	NEW BRIDGE CONSTRUCTION - LARRISON BLVD. NB
2401506	NEW BRIDGE CONSTRUCTION - LARRISON BLVD. SB

The Environmental Assessment evaluates impacts based on the Preliminary Field Check (PFC) plans. These Stage 2 plans reflect the current design advancement by the Progressive Design-Build (PDB) team. While refinements have occurred, these changes do not result in new or substantially different environmental impacts. Design refinements and any associated environmental updates will be evaluated and documented prior to the final NEPA decision.

INDIANA DEPARTMENT OF TRANSPORTATION



BRIDGE PLANS

FOR SPANS OVER 20 FEET

ROUTE: LARRISON BLVD. OVER SR 2 AT: RP 74+45

DESIGNATION NO. 2401505 & 2401506

TRAFFIC DATA	SR 2	LARRISON BLVD.
A.A.D.T. (2027)	20,600 V.P.D.	6,500 V.P.D.
A.A.D.T. (2037)	40,700 V.P.D.	23,500 V.P.D.
A.A.D.T. (2037)	3,900 V.P.D.	3,880 V.P.D.
DIRECTIONAL DISTRIBUTION	50%	43%
TRUCKS	16% A.A.D.T. 4% D.H.V.	13% A.A.D.T. 5% D.H.V.

DESIGN DATA		
DESIGN SPEED	60 M.P.H.	30 M.P.H.
PROJECT DESIGN CRITERIA	3R	4R
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL	MAJOR COLLECTOR
RURAL/URBAN	RURAL	RURAL
TERRAIN	LEVEL	LEVEL
ACCESS CONTROL	LIMITED ACCESS	LIMITED ACCESS

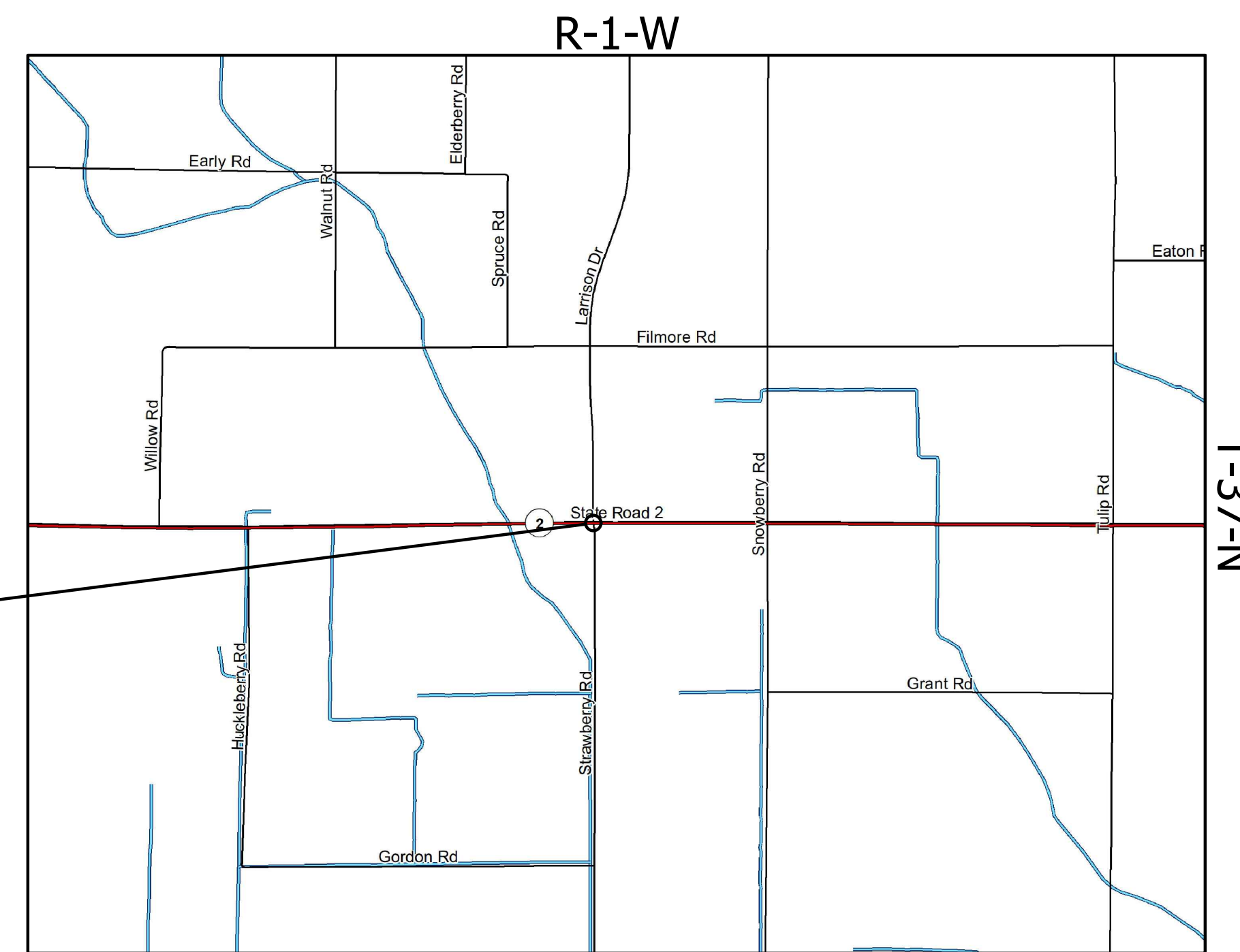


LATITUDE: 41°40'19"N LONGITUDE: 86°27'47"W

BRIDGE LENGTH:	0.037 MI.
ROADWAY LENGTH:	0.008 MI.
TOTAL LENGTH:	0.045 MI.
MAX. GRADE:	3.5 %

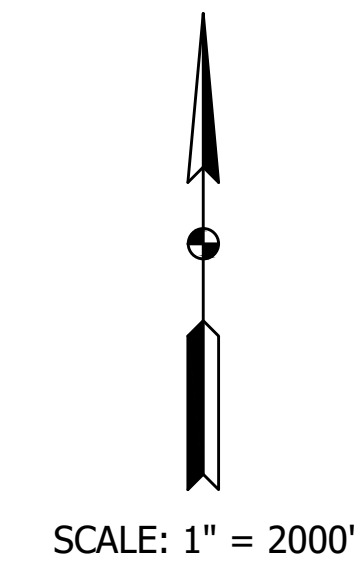
HUC: 071200010204

NEW BRIDGE CARRYING LARRISON BLVD. OVER SR 2
PROJECT IS LOCATED APPROXIMATELY 2.5 MILES SOUTH OF US 20 - EAST MICHIGAN STREET
SECTIONS 7 & 12, TOWNSHIP 37 NORTH, RANGE 1 WEST
OLIVE TOWNSHIP, ST. JOSEPH COUNTY, INDIANA



LOCATION MAP

BRIDGE FILE NO. 002-71-10841 & 10842
Sta. 31+88.68 LINE "S-1-NB" &
Sta. 32+69.95 LINE "S-1-SB"



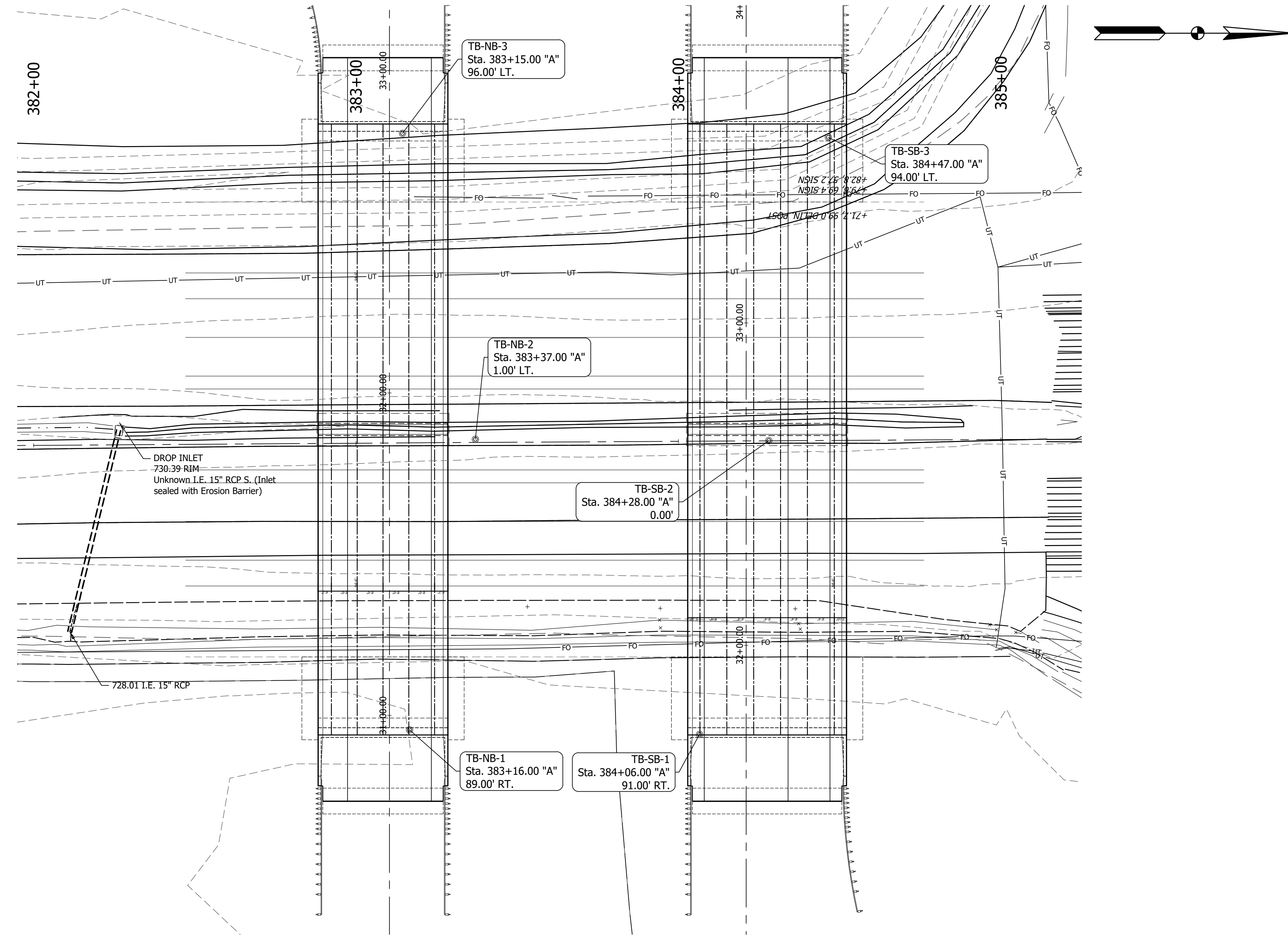
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES.

PLANS PREPARED BY: Butler Fairman and Seufert Inc. (317)713-4615
PHONE
CERTIFIED BY: DATE
APPROVED FOR LETTING: INDIANA DEPARTMENT OF TRANSPORTATION DATE

BRIDGE FILE	
002-71-10841 & 10842	
DESIGNATION	
2401505 & 2401506	
SHEET	
1	OF 12
CONTRACT	
R-45760	

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BORING LOCATION LOG
Scale: 1" = 20'

PILE LOADING FOR GEOTECHNICAL TESTING (MULTI-SPAN STRUCTURE)			
SUBSTRUCTURE	BENT NO. 1	PIER NO. 2	BENT NO. 3
PILE SIZE, TYPE AND GRADE	HP12x53	HP12x53	HP12x53
FACTORED DESIGN SOIL RESISTANCE, R_r (Kips)	115	185	185
RESISTANCE FACTOR, ϕ dyn	**	**	**
DOWNDRAW LOAD, DD (KIPS)	0	0	0
SCOUR ZONE FRICTION, R_s SCOUR (KIPS)	N/A	N/A	N/A
NOMINAL SOIL RESISTANCE - R_n max (kips)*	503	503	503
NOMINAL DRIVING RESISTANCE, R_{ndr} (KIPS)	503	503	503
PILE TIP ELEVATION	802	802	802

TESTING METHOD: INDOT STD. SPEC. SECTION 701.05 (a)

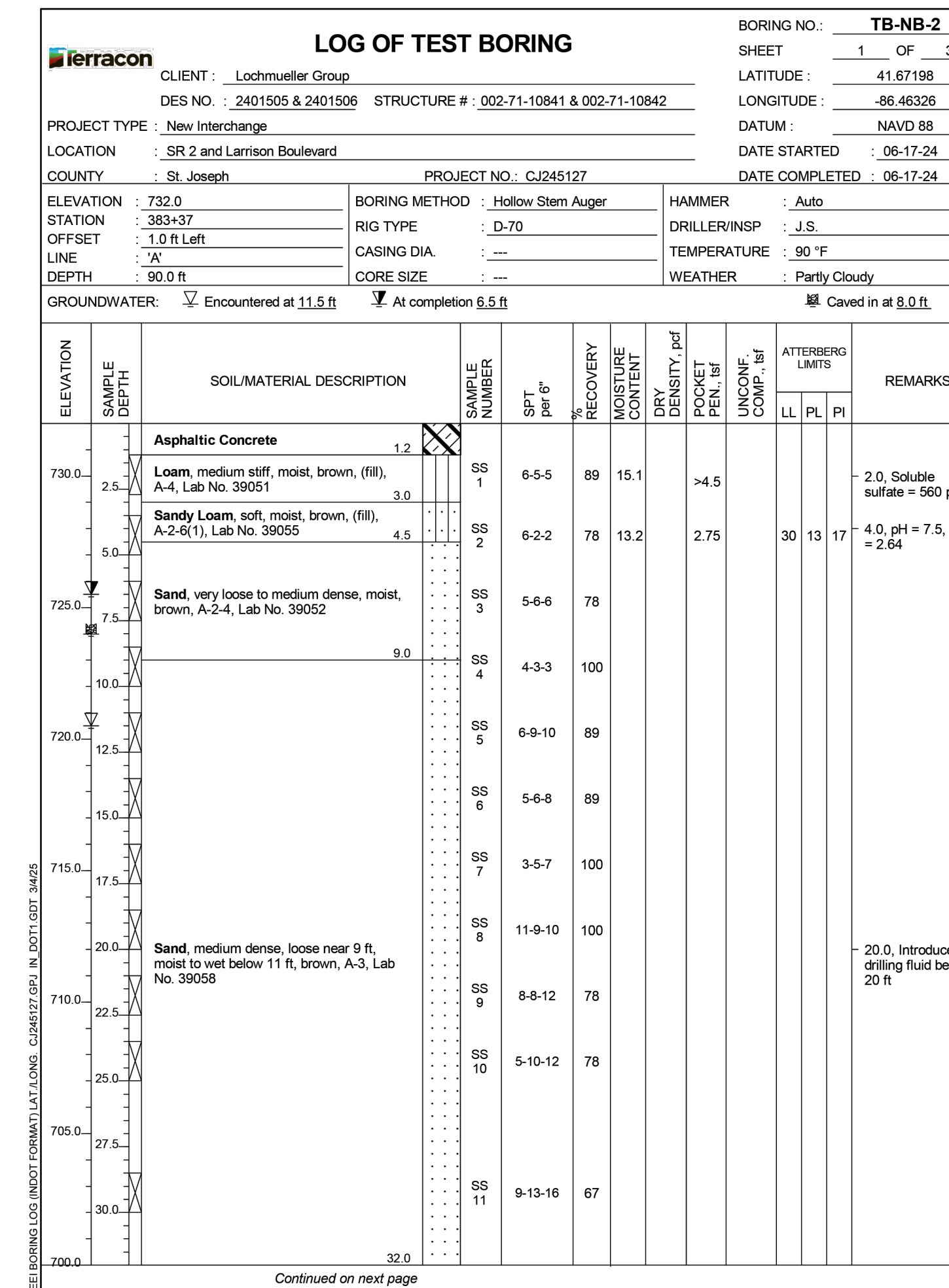
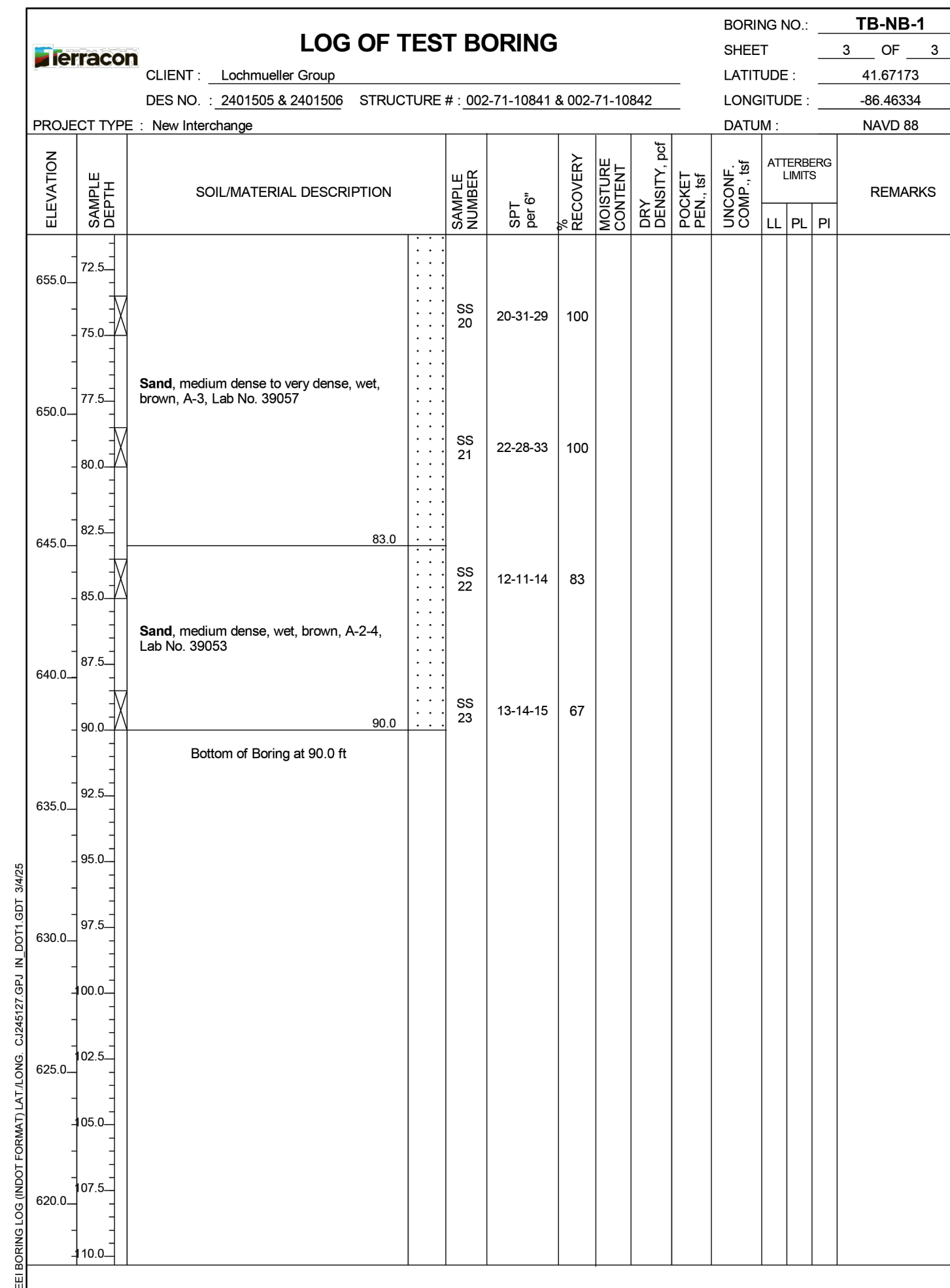
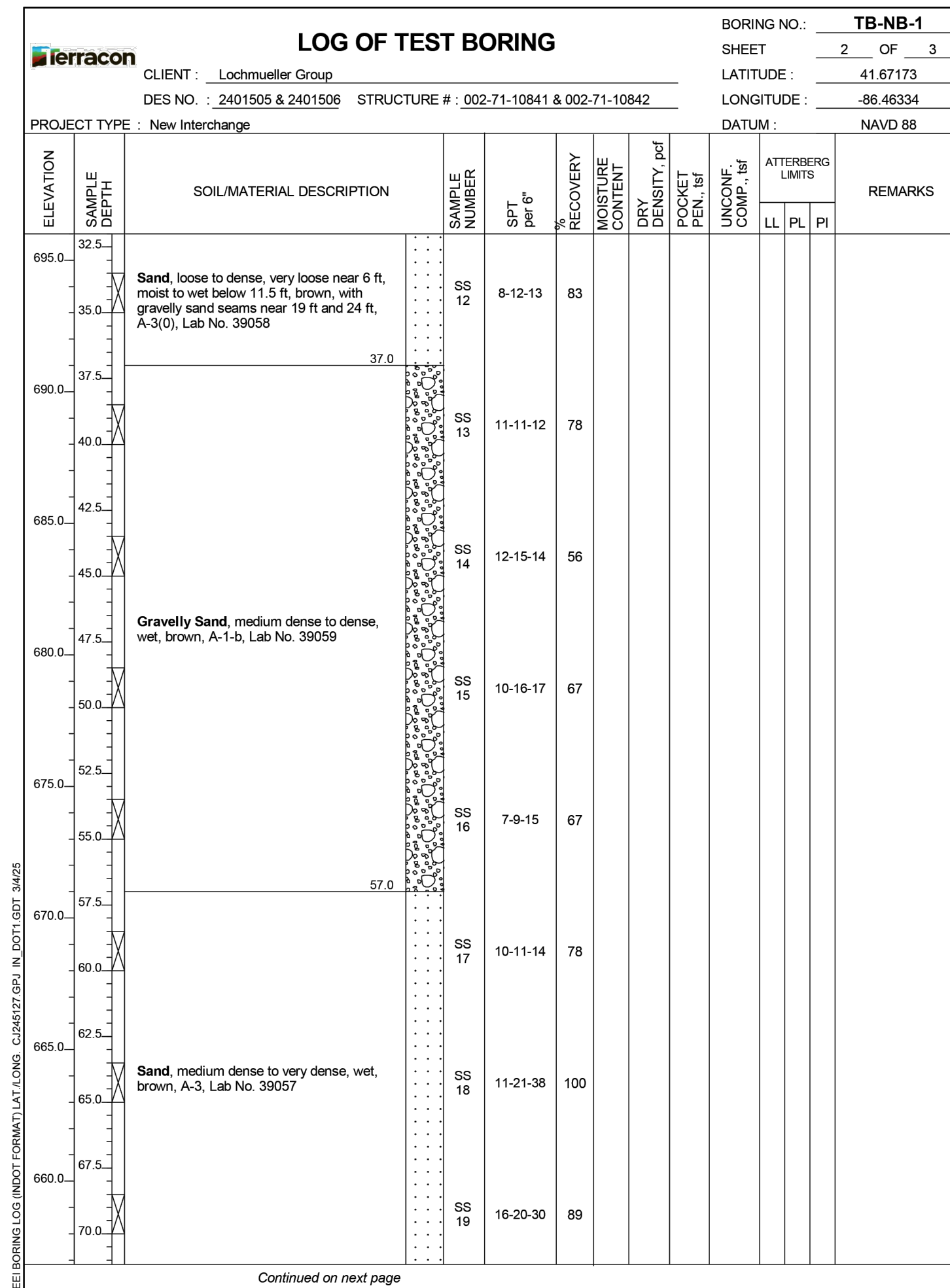
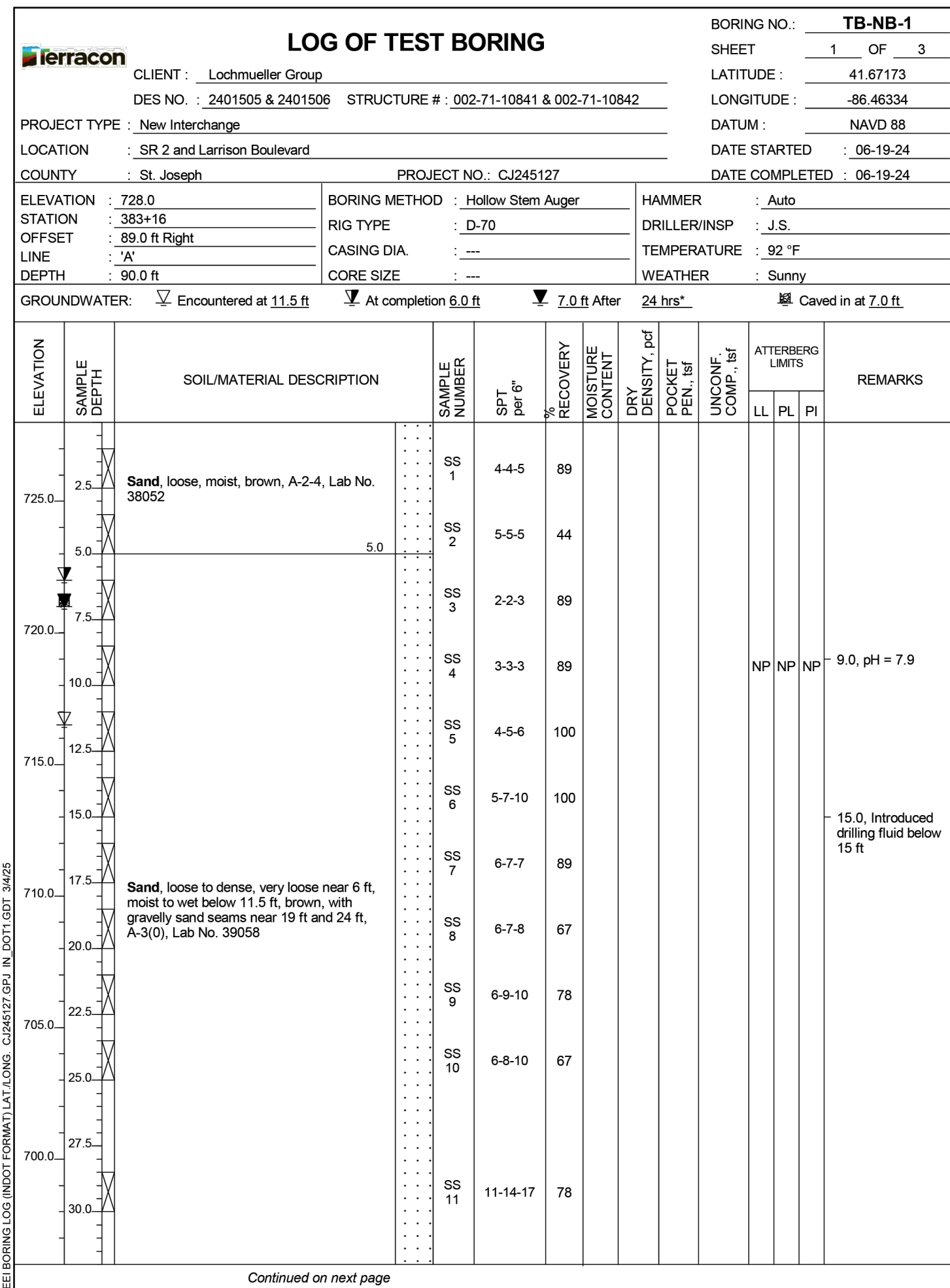
STANDARD PENETRATION TEST
Driving 2" O.D. Sampler 1'-6" with 140# Hammer falling 30". Count made at 6" intervals. First 6" for seating sampler. The Column SPT per 12", shown on the Test Boring Record, is the Sum of the Hammer Blows of the Second and Third 6" intervals of an 1'-6" Drive.

Note:
The entire Geotechnical Report developed by Terracon will be made available to the Contractor upon request, prior to construction.
See Sheets #-7 for Borings Logs.

RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE AS NOTED BRIDGE FILE 002-71-10841 & 10842
		VERTICAL SCALE N/A DESIGNATION 2401505 & 2401506
DESIGNED: B. ARPACI DRAWN: K. COFFMAN	SOIL BORINGS NORTHBOUND & SOUTHBOUND STRUCTURES	SHEET 3 OF 12
CHECKED: _____ CHECKED: _____		CONTRACT R-45760

7482

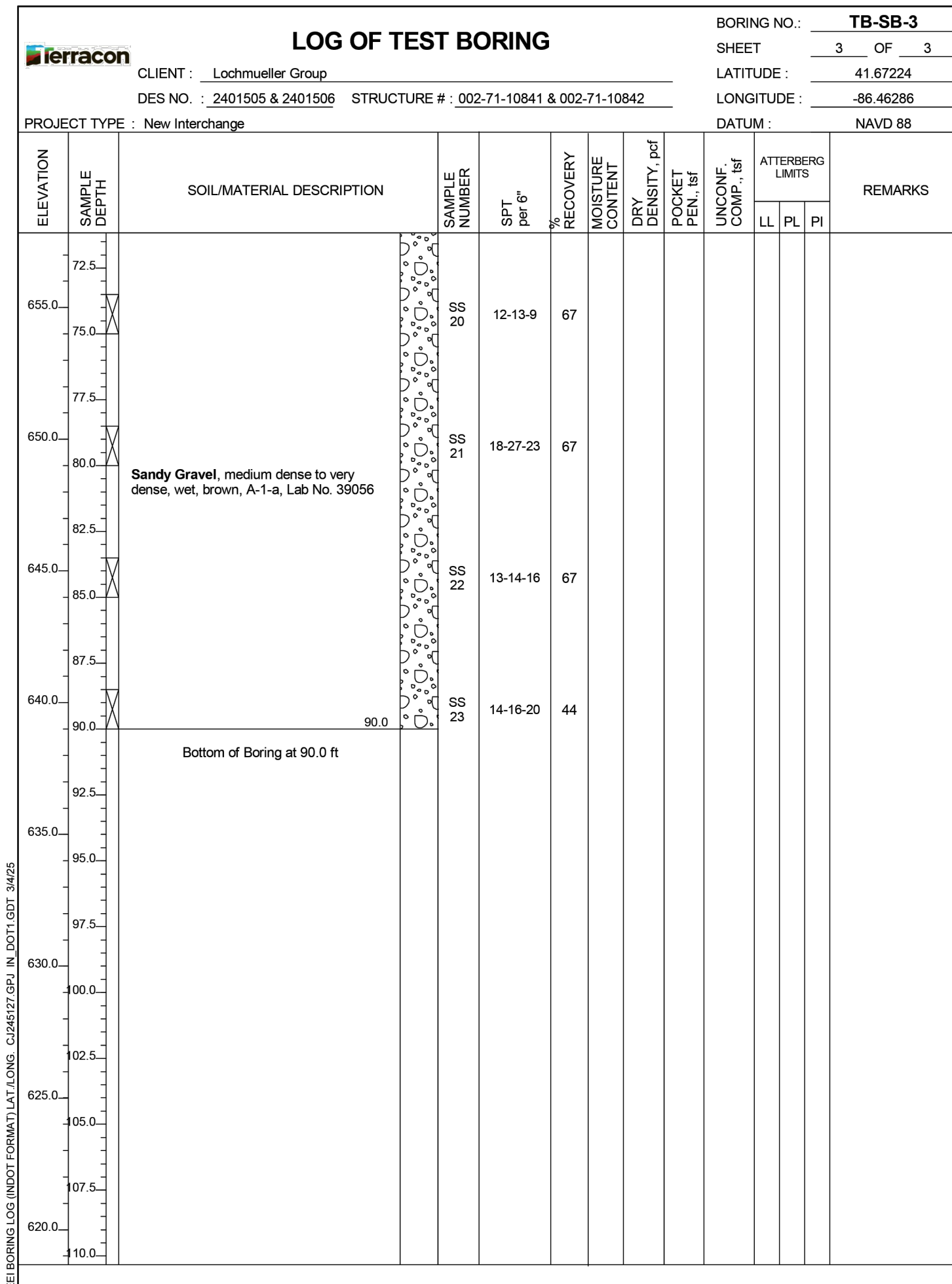
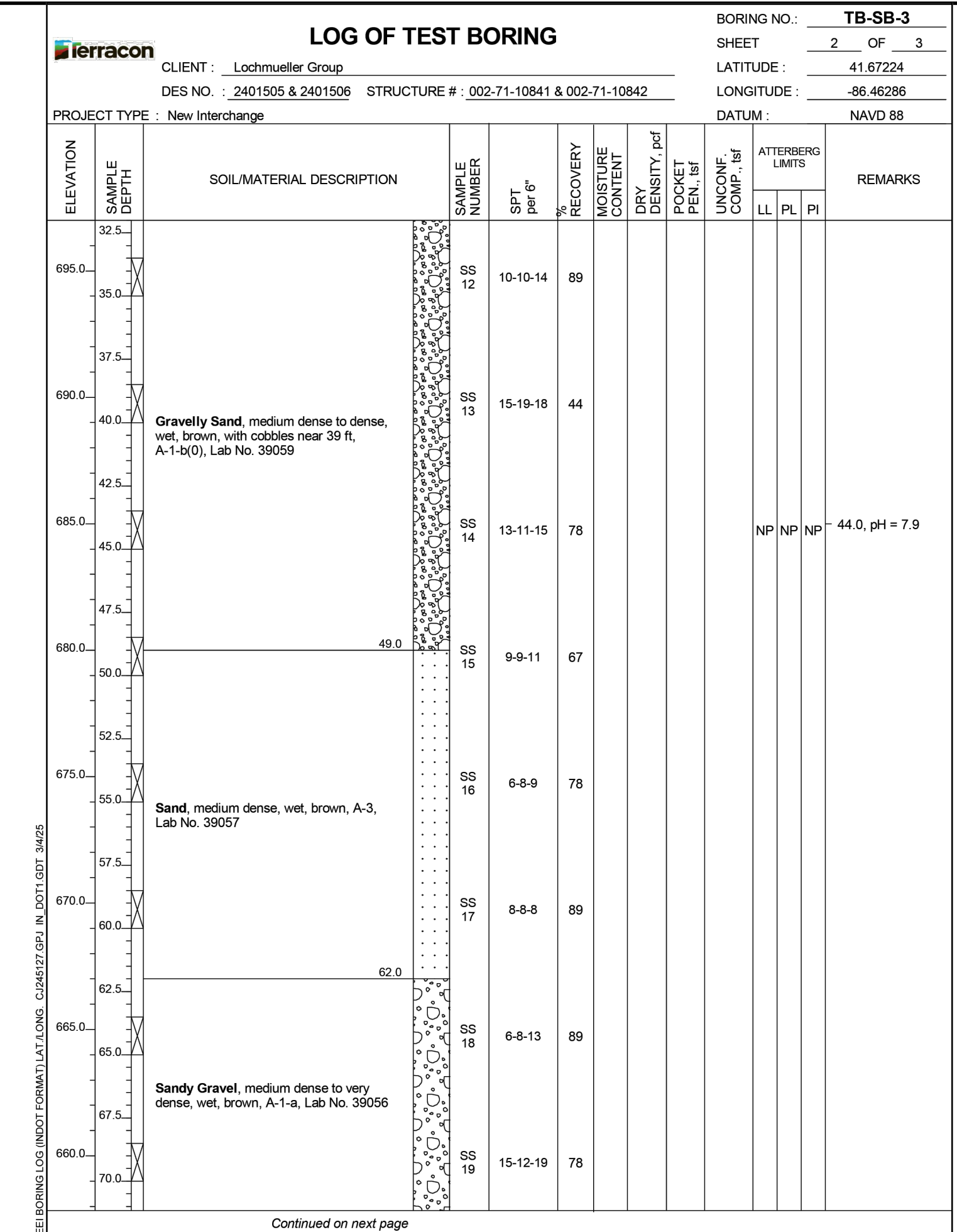
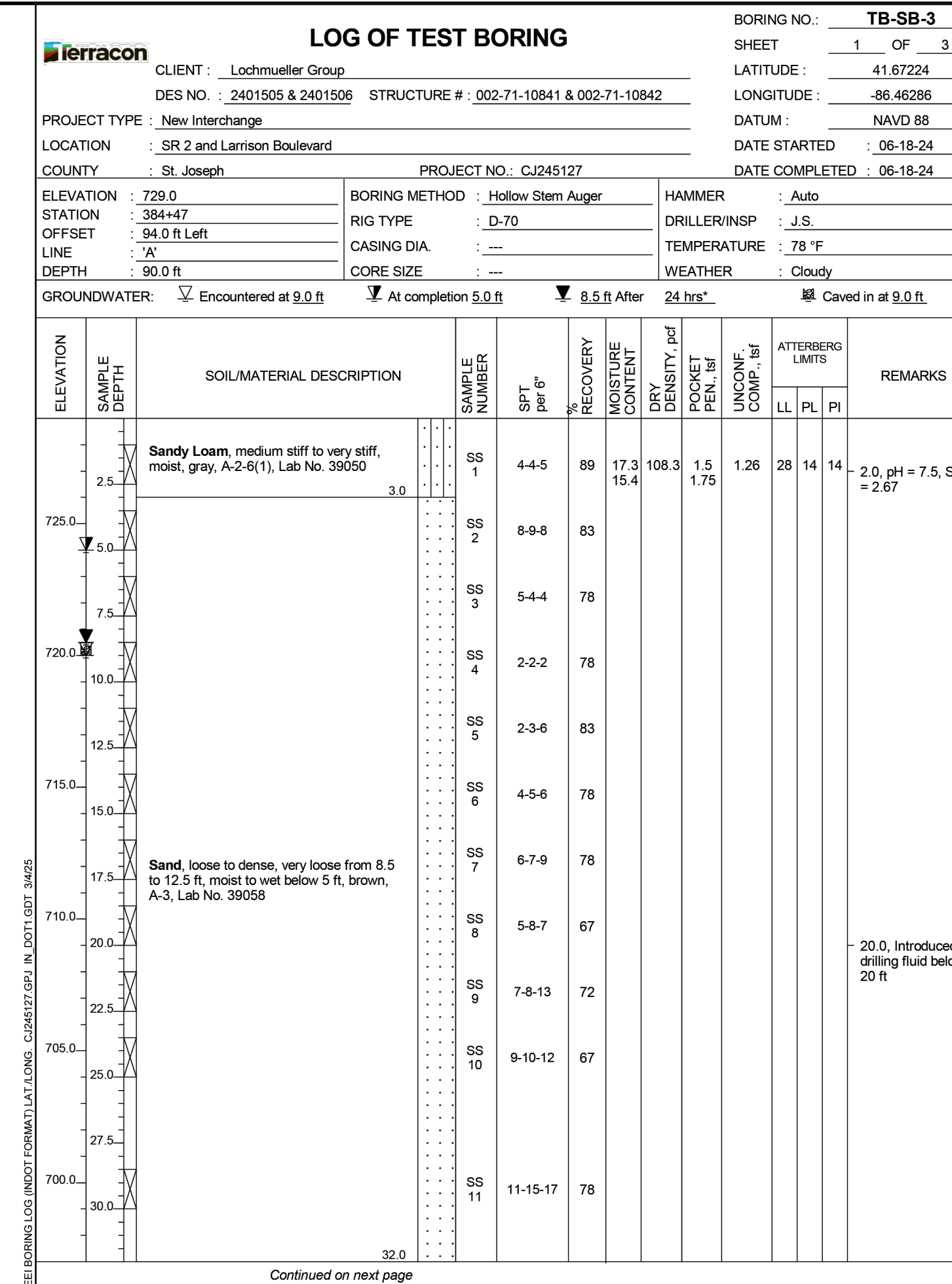
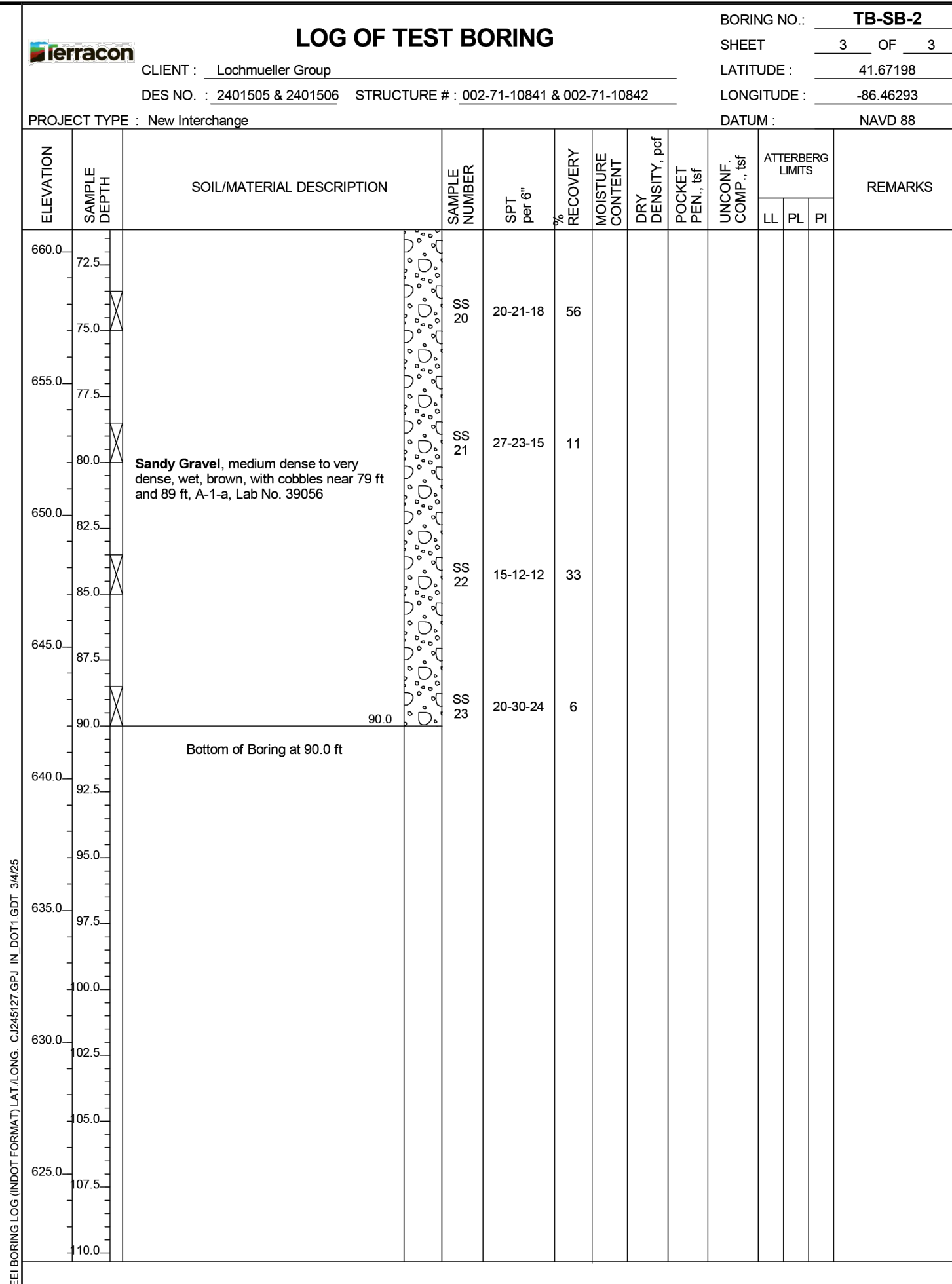
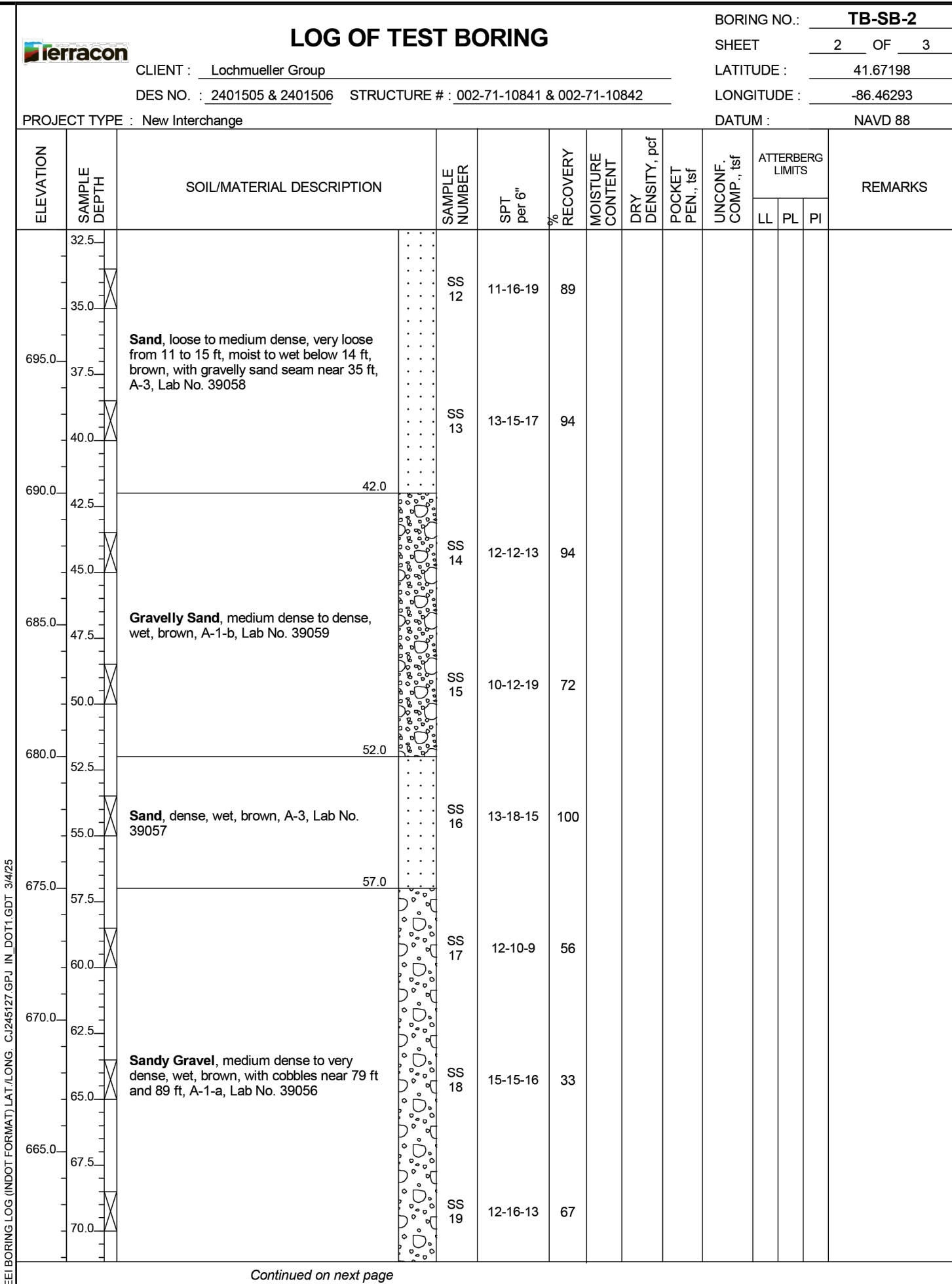
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Note:
The entire Geotechnical Report developed by Terracon will be made available to the Contractor upon request, prior to construction.
See Sheets 5-7 for additional Borings.

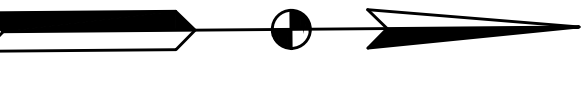
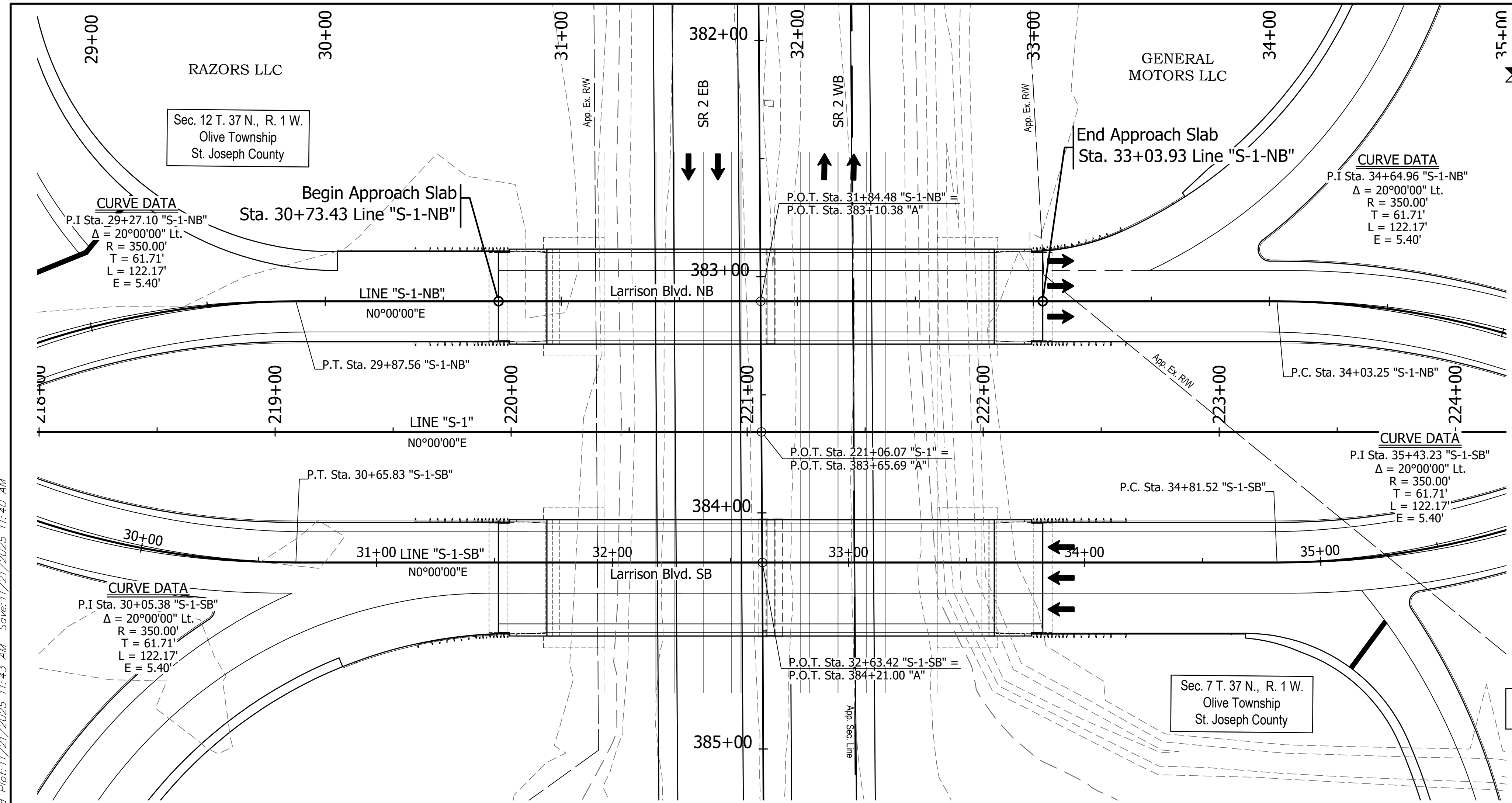
RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION SOIL BORINGS NORTHBOUND STRUCTURE	HORIZONTAL SCALE AS NOTED VERTICAL SCALE N/A	BRIDGE FILE 002-71-10841 & 10842 DESIGNATION 2401505 & 2401506 SHEET 4 OF 12 CONTRACT R-45760
DESIGNED: B. ARPACI DRAWN: K. COFFMAN CHECKED: _____ CHECKED: _____			7482

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Note:
The entire Geotechnical Report developed by Terracon will be made available to the Contractor upon request, prior to construction.

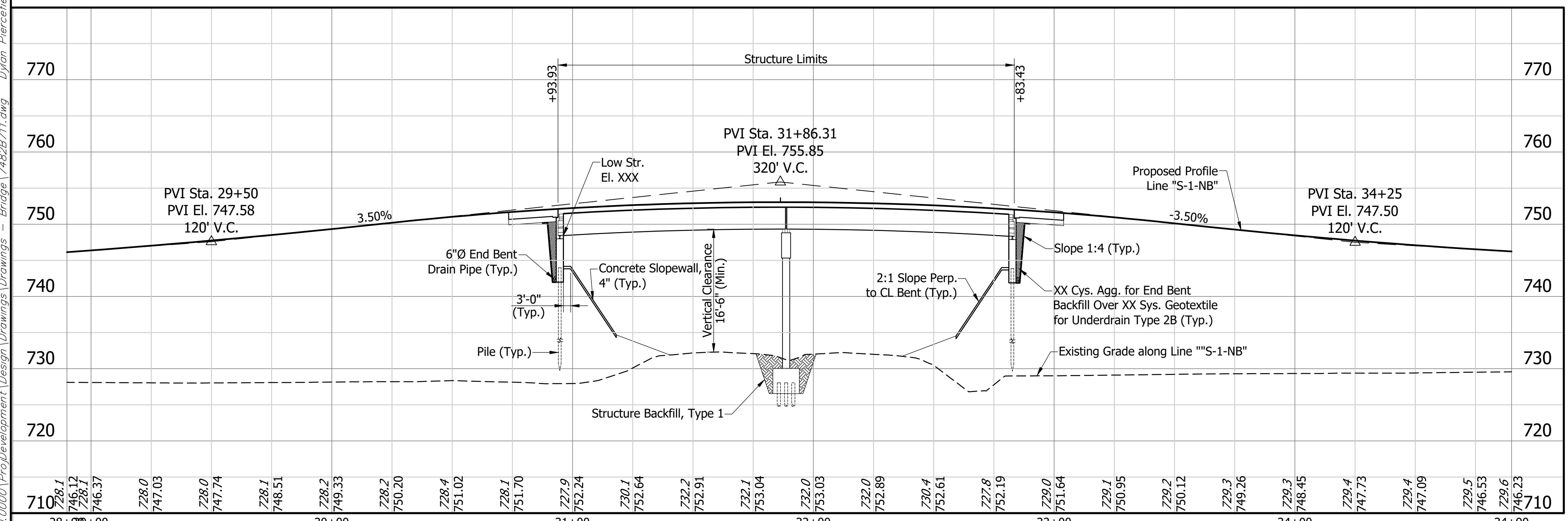
RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER _____ DATE _____	INDIANA DEPARTMENT OF TRANSPORTATION SOIL BORINGS SOUTHBOUND STRUCTURE	HORIZONTAL SCALE: AS NOTED VERTICAL SCALE: N/A	BRIDGE FILE: 002-71-10841 & 10842 DESIGNATION: 2401505 & 2401506 SHEET: 7 OF 12 CONTRACT: R-45760
DESIGNED: B. ARPACI DRAWN: K. COFFMAN CHECKED: _____ CHECKED: _____			



No Existing Structure.
EXISTING STRUCTURE
 Not To Scale

- LEGEND**
- (K) HMA Pavement
 - (O) Compacted Aggregate, No. 53
 - (MB) Mailbox Approach & Assembly (See Sheet X)
 - (26) Sodding
 - (29) Seed Mixture, R

NOTE: ALL TOPOGRAPHY INFORMATION REFERENCED TO LINE "A" UNLESS NOTED.



EARTHWORK	
ITEM	QUANTITY
FILL + 15%	Cys.
COMMON EXCAVATION	1,300 Cys.
USABLE WATERWAY EXCAVATION (30%)	Cys.
BORROW	Cys.

NOTE: Above Quantities Reflect Earthwork for Bridge Construction.

**PRESTRESSED COMPOSITE CONTINUOUS
 BULB-TEE BEAM BRIDGE**
 2 SPANS @ 94'-0"
 37'-4" CLEAR ROADWAY; NO SKEW
 LARRISON BLVD. OVER SR 2
 ST. JOSEPH COUNTY

NOTES
 See Sheet 2 For Utility Owners

RECOMMENDED FOR APPROVAL: _____	DESIGN ENGINEER _____	DATE _____
DESIGNED BY: B. WRIGHT	DRAWN BY: D. PIERCEFIELD	
CHECKED BY: _____	CHECKED BY: _____	

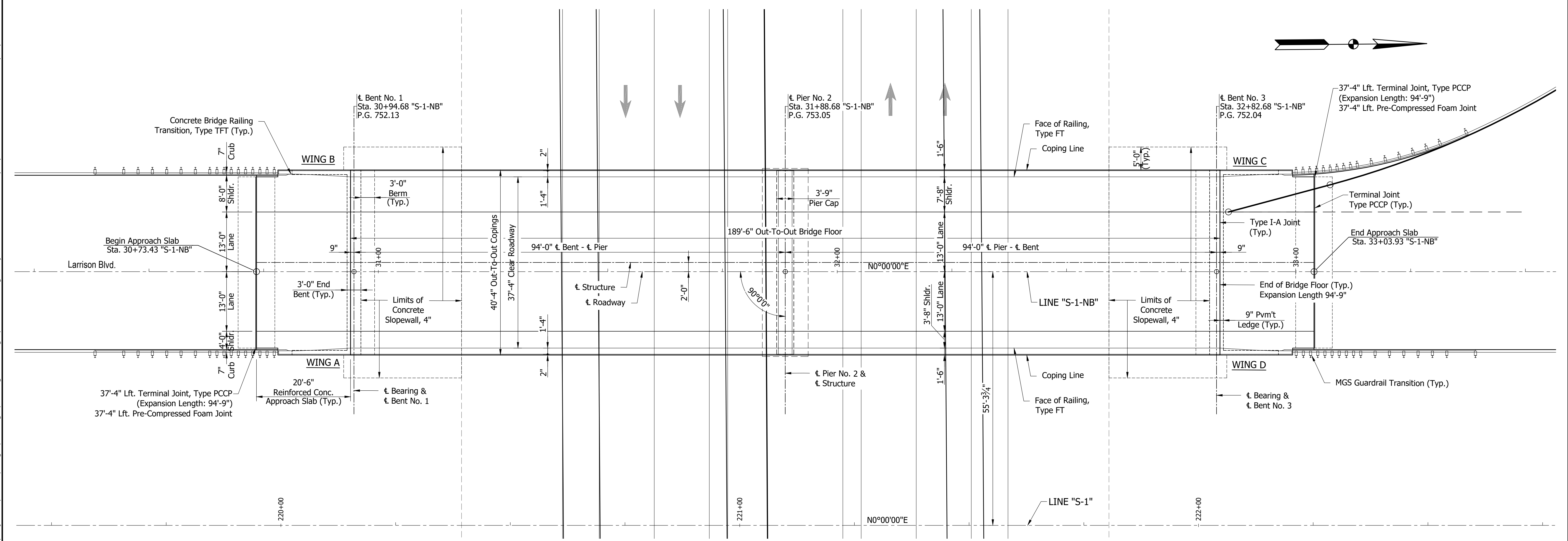
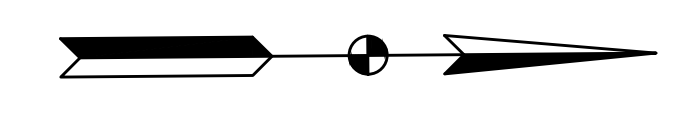
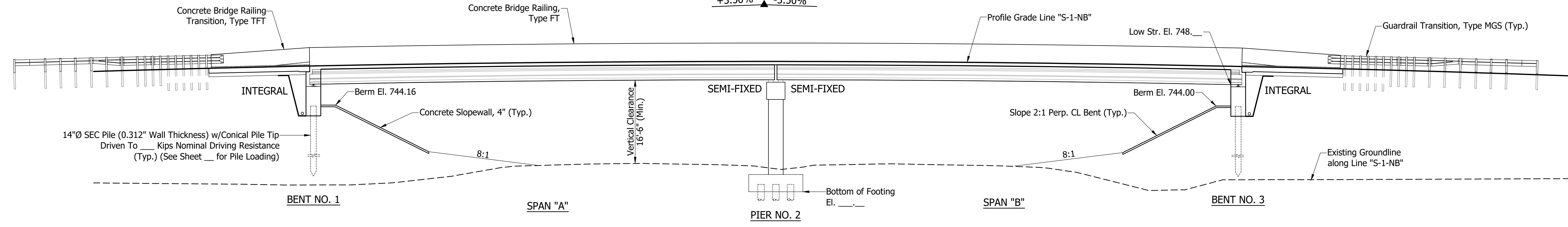
INDIANA
 DEPARTMENT OF TRANSPORTATION
 LAYOUT
 NORTHBOUND STRUCTURE

HORIZONTAL SCALE 1" = 30'-0"	BRIDGE FILE 002-71-10841 & 10842
VERTICAL SCALE 1" = 10'-0"	DESIGNATION 2401505 & 2401506
	SHEET 8 OF 12
	CONTRACT R-45760

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STRUCTURE TO BE BUILT ON A 320' VERTICAL CURVE
 PVI Sta. 31+86.31 "S-1-NB"
 PVI El. 755.85
 +3.50% ▲ -3.50%



RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER DATE DESIGNED: B. ARPACI DRAWN: D. PIERCEFIELD CHECKED: _____ CHECKED: _____	INDIANA DEPARTMENT OF TRANSPORTATION GENERAL PLAN - PLAN & ELEVATION NORTHBOUND STRUCTURE		HORIZONTAL SCALE AS NOTED	BRIDGE FILE 002-71-10841 & 10842
			VERTICAL SCALE N/A	DESIGNATION 2401505 & 2401506
			SHEET 10 OF 12	
			CONTRACT R-45760	

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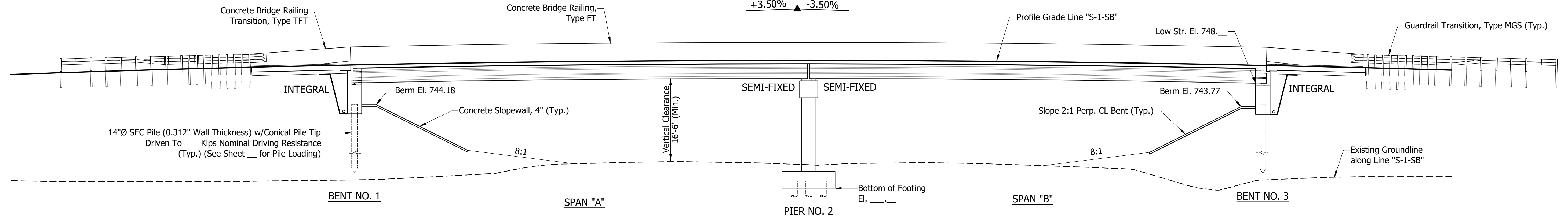
7482

STRUCTURE TO BE BUILT ON A 320' VERTICAL CURVE

PVI Sta. 32+64.58 "S-1-SB"

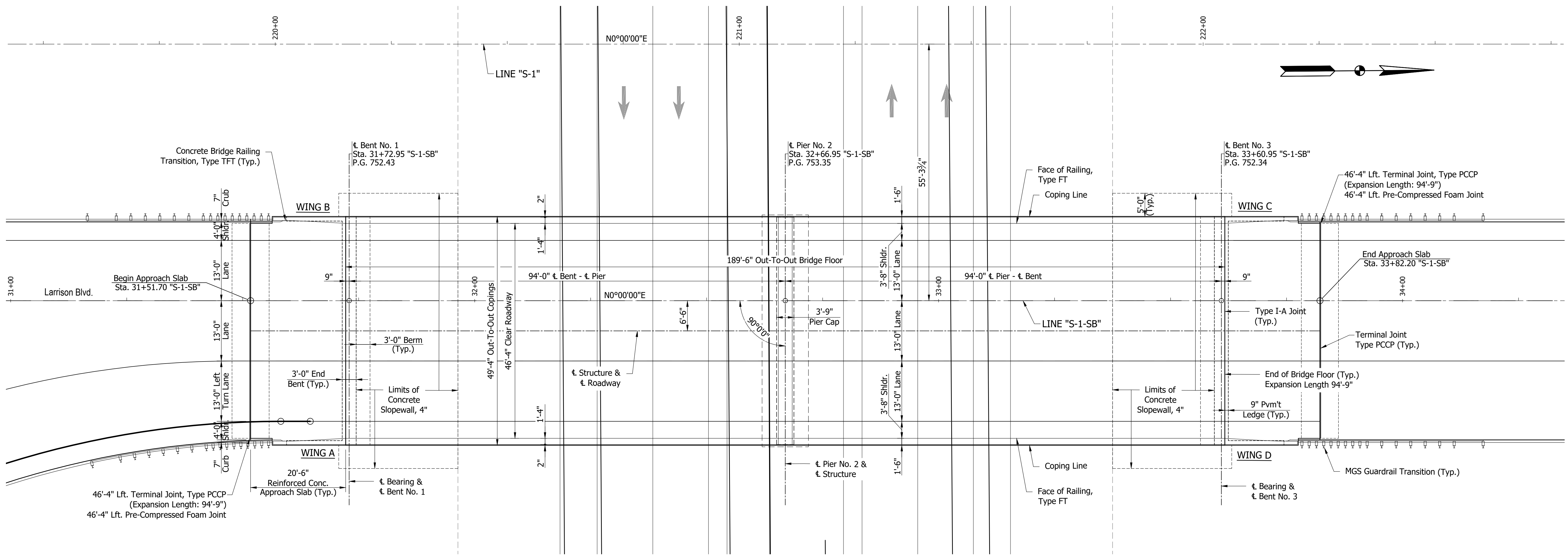
PVI El. 756.15

+3.50% -3.50%



ELEVATION

Scale: 3/32" = 1'-0"



PLAN

Scale: 3/32" = 1'-0"

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RECOMMENDED FOR APPROVAL:	DESIGN ENGINEER	DATE
DESIGNED:	B. ARPACI	DRAWN: D. PIERCEFIELD
CHECKED:		CHECKED:

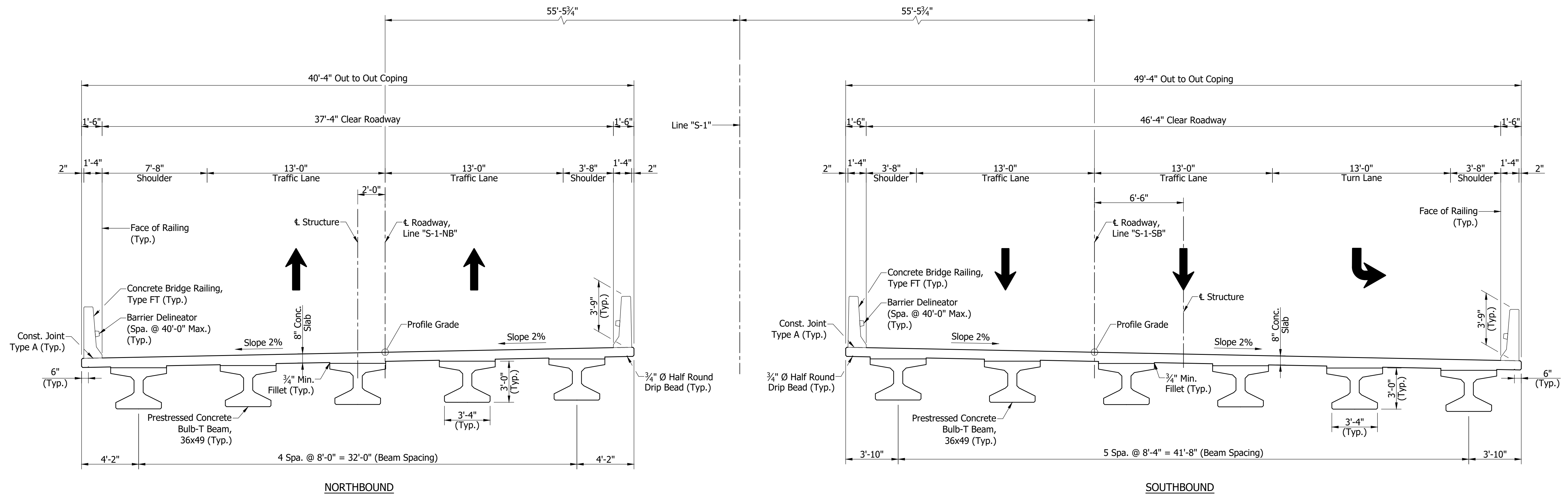
INDIANA
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN - PLAN & ELEVATION
SOUTHBOUND STRUCTURE

HORIZONTAL SCALE	BRIDGE FILE
AS NOTED	002-71-10841 & 10842
VERTICAL SCALE	DESIGNATION
N/A	2401505 & 2401506
SHEET	
11	OF 12
CONTRACT	
R-45760	

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TYPICAL SECTION
Scale: 1/4" = 1'-0"

GENERAL NOTES

The minimum pile tip elevation noted is the elevation that the piles must reach.

Epoxy coated reinforcing bars shall be required in various portions of the structure as shown.

Reinforcing bars covering shall be 2 1/2" in top and 1" in bottom of floor slabs, 2 1/2" in top of approach slabs, 3" in footings, except bottom steel which shall be 4", and 2" in all other areas unless noted.

Reinforcing bars shall be A.S.T.M. A615, Grade 60.

Concrete shall be Class C in end bents and floor slab.

Concrete shall be Class B in footing.

Concrete shall be Class A in all portions of the project not noted above.

Chamfer exposed corners of concrete 3/4" unless noted.

Surface seal shall be required on various areas of the structure as shown.

Estimated Quantities:
Surface Seal = XX Sft.

MATERIAL DESIGN STRENGTHS:

Class "C" Concrete F_c = 4,000 p.s.i.
 Class "B" Concrete F_c = 3,000 p.s.i.
 Class "A" Concrete F_c = 3,500 p.s.i.
 Reinforcing Steel (Grade 60) F_y = 60,000 p.s.i.

SEISMIC DESIGN DATA:

Seismic Performance Zone 1
 Acceleration Coefficient 0.074
 Seismic Soil Profile Type D

WIND LOAD:

Designed for 70 mph horizontal wind load in accordance with LRFD 3.8.1.

CONSTRUCTION LOADING:

The exterior beam has been checked for strength, deflection, and overturning using the construction loads shown. Cantilever overhang brackets were assumed for support of the deck overhang past the edge of the exterior beam. Finishing machine was assumed to be supported 6 in. outside the vertical coping form. The top overhang brackets were assumed to be located 6 in. past the edge of the vertical coping form. The bottom overhang brackets were assumed to be braced against the intersection of the beam bottom flange and web.

DESIGN STRESSES

DECK FALSEWORK LOADS:

Designed for 15 psf for permanent metal stay-in-place deck forms, removable deck forms at copings, and 2 ft. exterior walkway.

CONSTRUCTION LIVE LOAD:

Designed for 20 psf extending 2 ft. past the edge of coping and 75 lb/ft vertical force applied at a distance of 6 in. outside the face of coping over a 30 foot length of the deck centered with the finishing machine.

FINISHING-MACHINE LOAD:

4500 lb distributed over 10 ft. along the coping.

DESIGN DATA

LIVE LOAD:

Designed for HL-93 loading, in accordance with the AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017 and its subsequent revisions. Designed for 75 psf pedestrian loading for future sidewalks at each coping.

DEAD LOAD:

Actual plus 35 psf (composite) for future wearing surface and 15 psf for permanent metal deck forms. Designed for 925 plf for future sidewalks at each coping.

FLOOR SLAB:

Designed with a structural depth of 7 1/2" plus 1/2" sacrificial wearing surface.

PRESTRESSED COMPOSITE CONTINUOUS BULB-TEE
 BEAM BRIDGE
 2 SPANS @ 94'-0"
 37'-4" (NB), 46'-4" (SB) CLEAR ROADWAY; NO SKEW
 LARRISON BLVD. OVER SR 2
 ST. JOSEPH COUNTY

RECOMMENDED FOR APPROVAL: _____ DESIGN ENGINEER DATE	INDIANA DEPARTMENT OF TRANSPORTATION	HORIZONTAL SCALE	BRIDGE FILE
		AS NOTED	002-71-10841 & 10842
DESIGNED: B. ARPACI DRAWN: S. SEKAR CHECKED: _____ CHECKED: --	GENERAL PLAN - TYPICAL SECTIONS	VERTICAL SCALE	DESIGNATION
		N/A	2401505 & 2401506
		SHEET	
		12	OF 12
		CONTRACT	
		R-45760	

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