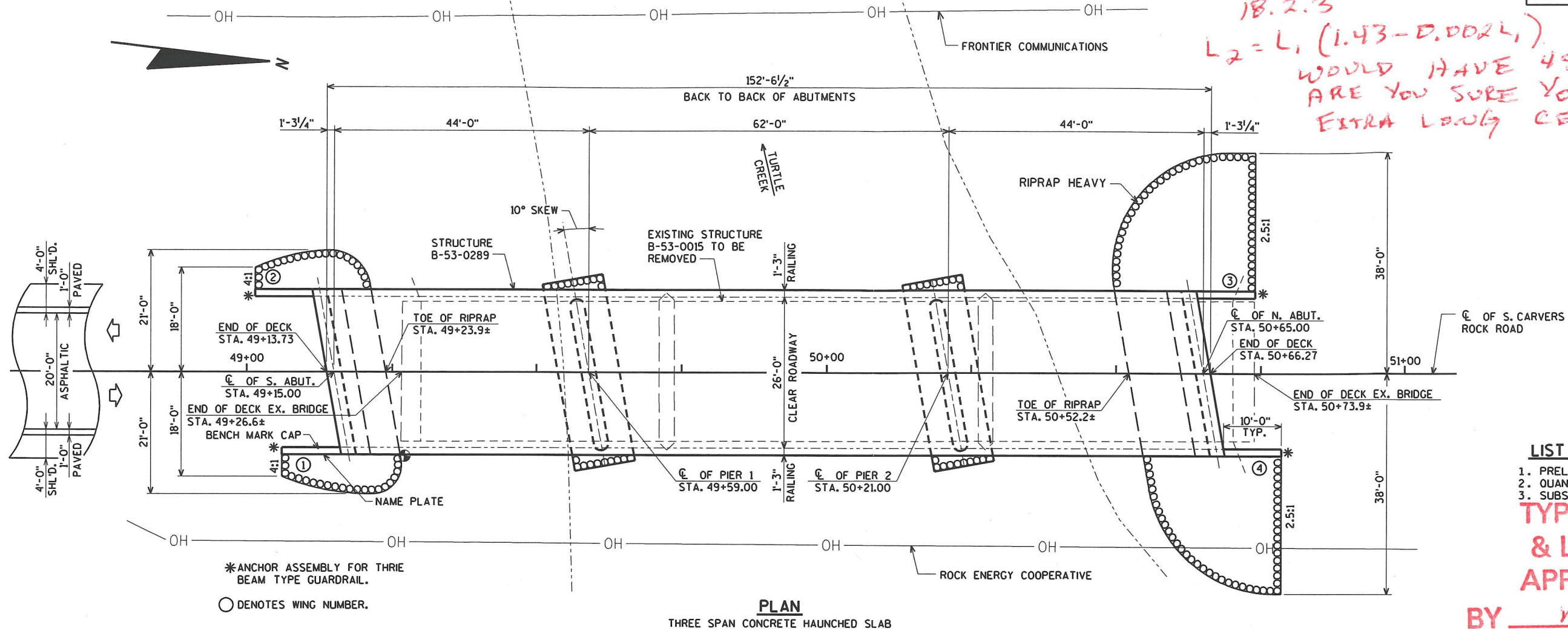


BRIDGE MANUAL
18.2.3

$L_2 = L_1 (1.43 - 0.002L_1)$
WOULD HAVE 45', 60', 45'
ARE YOU SURE YOU WANT
EXTRA LONG CENTER SPAN?



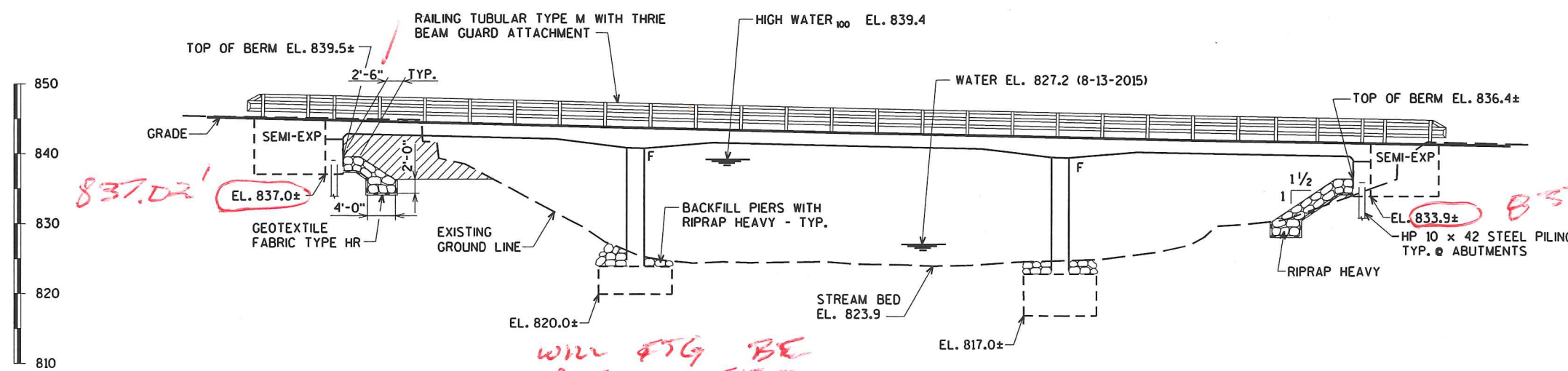
LIST OF DRAWINGS

1. PRELIMINARY PLAN
2. QUANTITIES AND NOTES
3. SUBSURFACE EXPLORATION

TYPE, SIZE
& LOCATION
APPROVED

BY MLH
DATE 4-9-2016

FOR TYPICAL SECTION, DESIGN
DATA AND GENERAL NOTES
SEE SHEET 2



ELEVATION
(NORMAL TO C OF CREEK)

COST OF EXCAVATION IN THE HATCHED AREAS
SHALL BE INCLUDED IN THE CONTRACT LUMP
SUM PRICE FOR "EXCAVATION FOR STRUCTURES
BRIDGES B-53-289".

WILL FTG BE
CUT INTO FIRM
MATERIAL?

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489
CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-53-289			
S. CARVERS ROCK ROAD OVER TURTLE CREEK			
COUNTY	ROCK	TOWN/CITY/VILLAGE	BRADFORD
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	CBM	DESIGN CK'D.	PLANS CK'D.
PRELIMINARY PLAN			
SHEET 1 OF 3			

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	S. ABUT.	PIER 1	PIER 2	N. ABUT.	SUPER.	TOTAL
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STATION 50+00	LS	-----	-----	-----	-----	-----	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-53-289	LS	-----	-----	-----	-----	-----	1
206.5000	COFFERDAMS B-53-289	LS	-----	-----	-----	-----	-----	1
210.0100	BACKFILL STRUCTURE	CY	-----	-----	-----	-----	-----	
502.0100	CONCRETE MASONRY BRIDGES	CY	-----	-----	-----	-----	-----	
502.3200	PROTECTIVE SURFACE TREATMENT	SY	-----	-----	-----	-----	-----	
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	-----	-----	-----	-----	-----	
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	-----	-----	-----	-----	-----	
513.4061	RAILING TUBULAR TYPE M B-53-289	LF	-----	-----	-----	-----	-----	
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	-----	-----	-----	-----	-----	
550.0020	PRE-BORING ROCK	LF	-----	-----	-----	-----	-----	
550.0500	PILE POINTS	EACH	-----	-----	-----	-----	-----	
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF	-----	-----	-----	-----	-----	
606.0300	RIPRAP HEAVY	CY	-----	-----	-----	-----	-----	
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	-----	-----	-----	-----	-----	
645.0120	GEOTEXTILE FABRIC TYPE HR	SY	-----	-----	-----	-----	-----	
NON-BID ITEMS								
FILLER		SIZE	-----	-----	-----	-----	-----	1/2" & 3/4"

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR:
OPERATING RATING FACTOR:
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV) = KIPS

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20" S.F.

MATERIAL PROPERTIES:

CONCRETE MASONRY { SUPERSTRUCTURE f'c = 4,000 p.s.i.
ALL OTHER f'c = 3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) fy = 60,000 p.s.i.

HYDRAULIC DATA:

100 YEAR FLOOD

DRAINAGE AREA = 189.5 sq. mi.
WATERWAY AREA = 1,262 sq. ft.
V = 8.6 f.p.s.

Q100 = 12,036 c.f.s. { BRIDGE = 10,900 c.f.s.
OVERFLOW = 1,136 c.f.s.

HIGH WATER100 EL. 839.4
HIGH WATER2 EL. 832.2
SCOUR CRITICAL CODE = 5
DATUM = NAVD 88 (2012)

FREQUENCY OF OVERTOPPING

Q30 = 9,800 c.f.s.
WATER SURFACE EL. 838.4

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 STEEL PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS + PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 15'-0" FOR SOUTH ABUTMENT, 25'-0" NORTH ABUTMENT. PRE-BORE SOUTH ABUTMENT PILING A MINIMUM OF 10'-0".

PIERS TO BE SUPPORTED ON SPREAD FOOTINGS ON SOUND MATERIAL WITH REQUIRED FACTORED BEARING RESISTANCE OF 10 TONS PER SQ. FT.

*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC DATA:

A.D.T. = 225 (2017)
A.D.T. = 250 (2037)
R.D.S. = 60 M.P.H.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

THE FIRST DIGIT OF A THREE DIGIT BAR NO. AND THE FIRST TWO DIGITS OF A FOUR DIGIT BAR NO. SIGNIFIES THE BAR SIZE. JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH RIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE HR TO THE EXTENT SHOWN ON THE GENERAL PLAN SHEET AND IN THE ABUTMENT DETAILS.

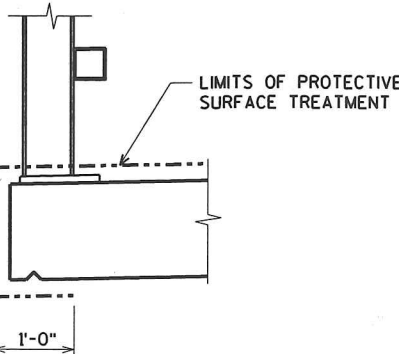
SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURES UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE EXISTING GROUND LINE SHALL BE THE UPPER LIMIT FOR EXCAVATION FOR STRUCTURES.

THE EXISTING STRUCTURE, B-53-0015, TO BE REMOVED, IS A THREE SPAN STEEL DECK GIRDER BRIDGE, 148 FT. LONG WITH A 24 FT. CLEAR ROADWAY WIDTH.

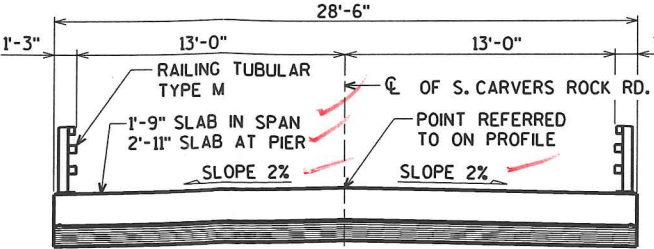
AT BACKFACE OF ABUTMENTS ALL EXCAVATED VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

PROTECTIVE SURFACE TREATMENT IS TO BE APPLIED AS SHOWN IN DETAIL ON THIS SHEET.

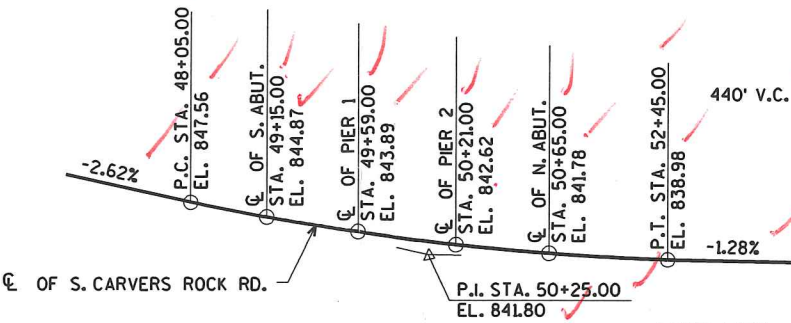
BEVEL EXPOSED EDGES OF CONCRETE 3/4" UNLESS NOTED OTHERWISE.



PROTECTIVE SURFACE TREATMENT DETAIL

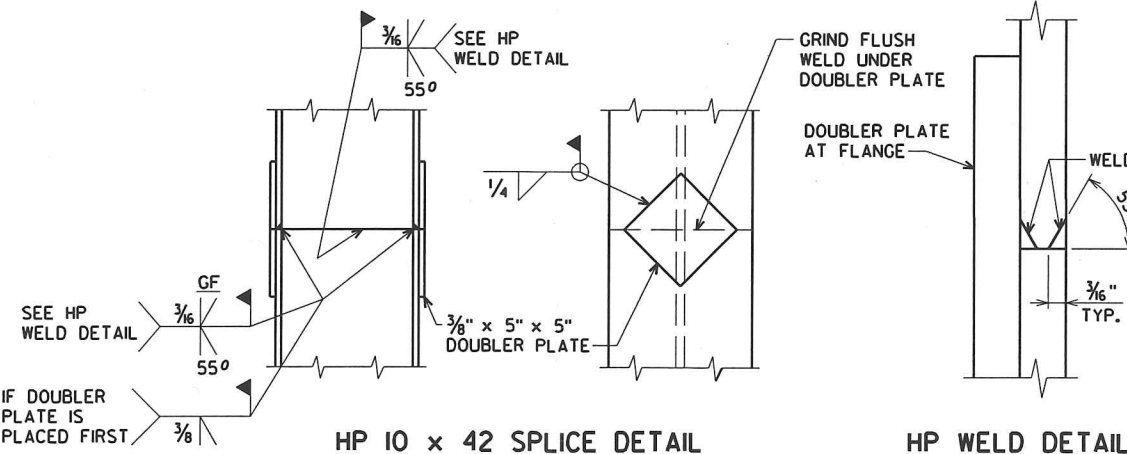


TYPICAL SECTION THRU BRIDGE



PROFILE GRADE LINE
(S. CARVERS ROCK ROAD)

BENCH MARK:
CHIS. SO. ON WINGWALL
STA. 49+27, 14.4' RT.
EL. 845.42



HP 10 x 42 SPLICE DETAIL

HP WELD DETAIL

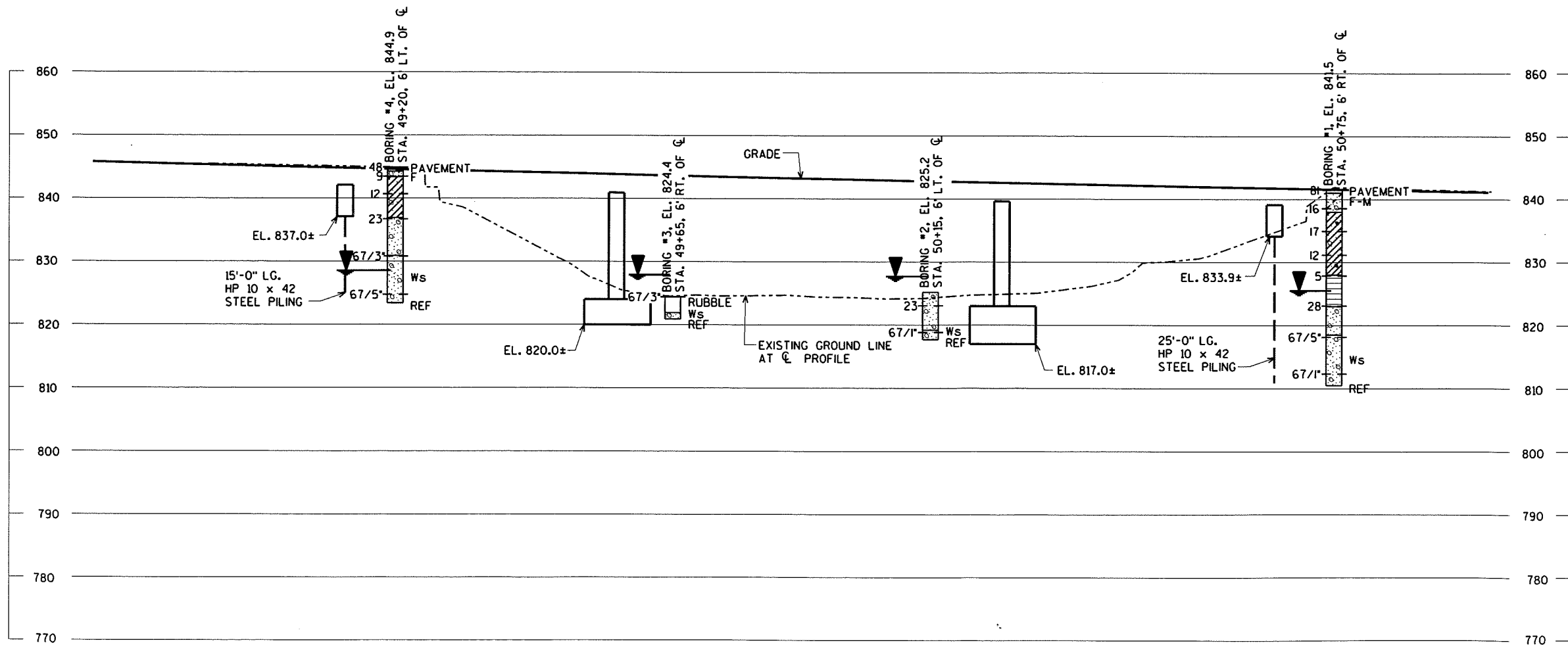
FLANGE SHOWN, WEB SIMILAR

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-53-289			
DRAWN BY CJM/CLS		PLANS CK'D.	
QUANTITIES AND NOTES		SHEET 2 OF 3	

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

\$PRNAME\$
U:\41-0711.00 - Rock Co - Tn Bradford - S Carvers Rock Rd+BRIDGE+410711 soils.dgn

8



BORINGS TAKEN BY:
NUMMELIN TESTING SERVICES, INC.
WAUNAKEE, WI
JANUARY 22 & 25, 2016



TURTLE
CREEK

STATE PROJECT NUMBER

3614-00-76

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL SILT SANDSTONE
SAND PEAT LIMESTONE
GRAVEL CLAY IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
95/6=95 BLOWS FOR 6"
PENETRATION
PROBING TAKEN WITH
A 350# WT.
FALLING 18" ON A 2"
O.D. POINT.
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

LEGEND OF BORING

BORING NO.
STA.
ELEV.
UNCONFINED
STRENGTH → 7.7
BLOWS PER FT.
USING 140# WT.
FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER
ELEVATION
NO GROUND WATER
OBSERVED ABOVE
THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR
COBBLES
SAND
SILTY CLAY
SO
LIMESTONE

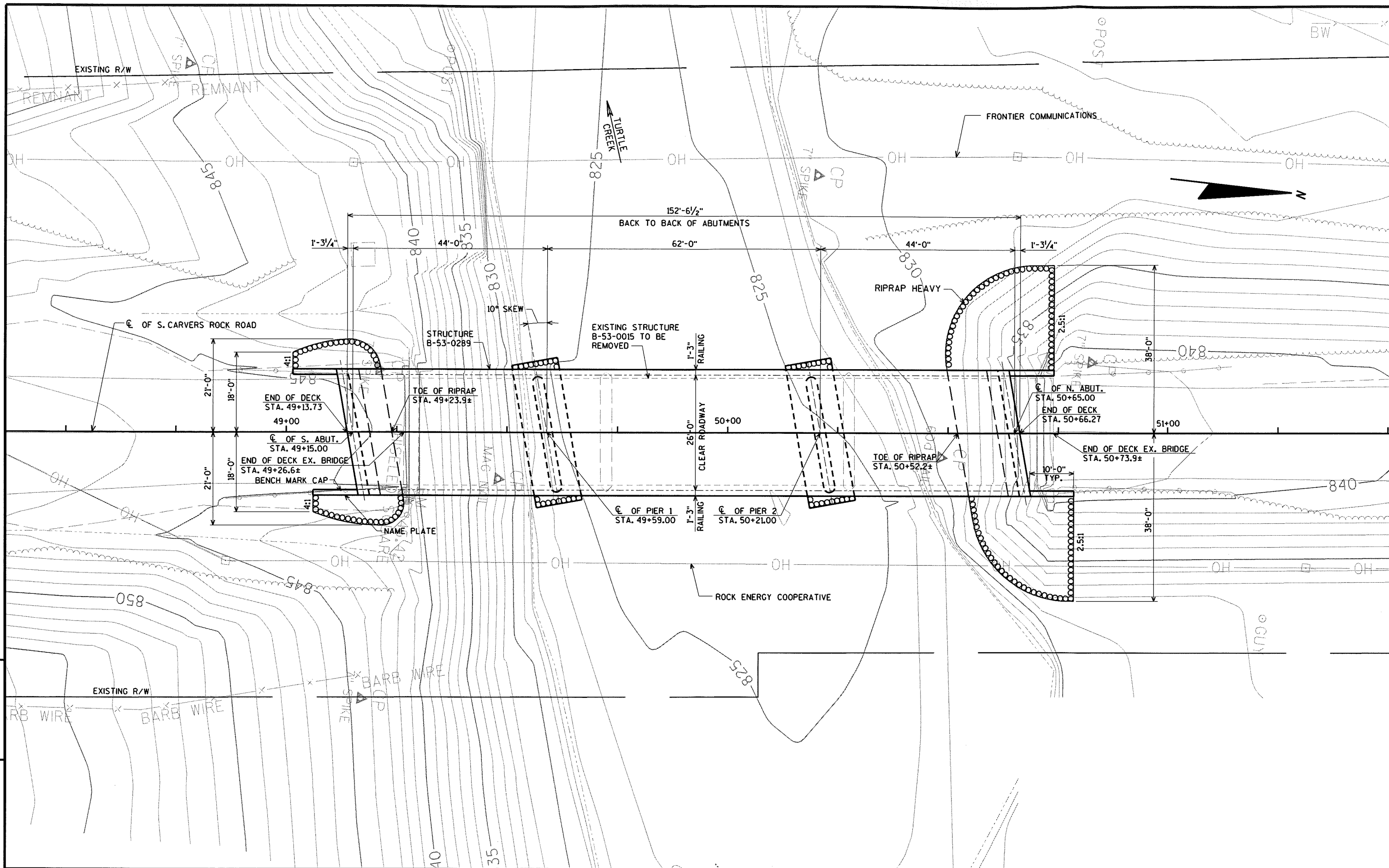
UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT
THE LOCATIONS INDICATED ARE BASED ON DRIVING A
2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140#
HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT
IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A
CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON
THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION
DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE
CHARACTER OF MATERIAL IN AND UPON WHICH THE
FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS
WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON
THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS
THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE.
HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE
LIMITED AND THE AREA OF THE BORINGS AND/OR
SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE
AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION
DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS
INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL
ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY
TYPICAL OF THE ENTIRE SITE.

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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-53-289			
DRAWN BY CJM/CLS		PLANS CK'D.	
SUBSURFACE EXPLORATION			SHEET 3 OF 3



PROJECT NO: 3614-00-76

HWY: S. CARVERS ROCK ROAD

COUNTY: ROCK

CONTOUR MAP

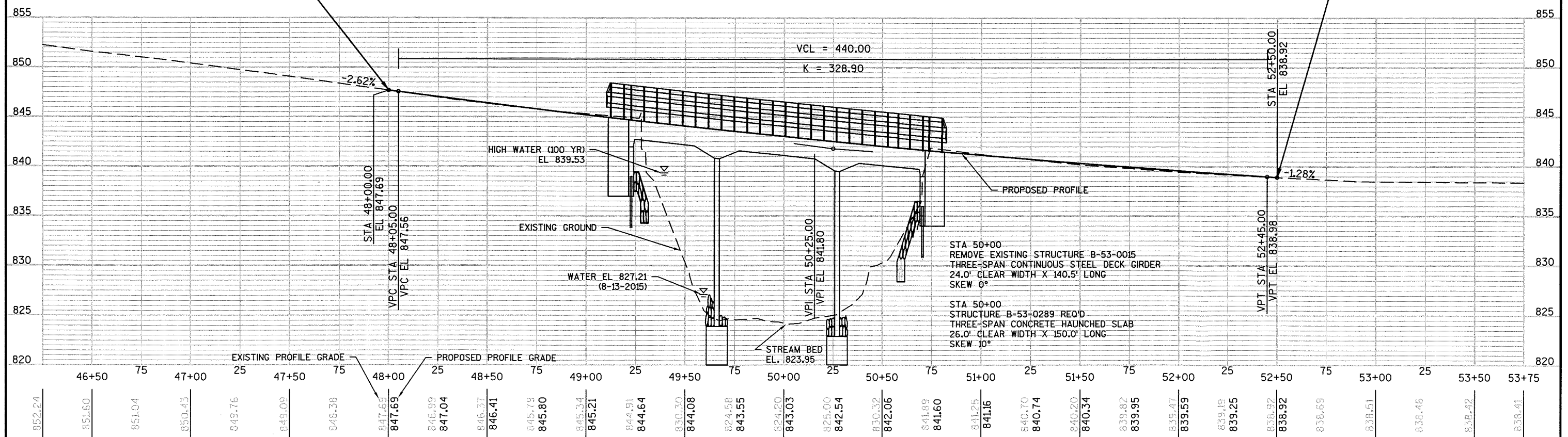
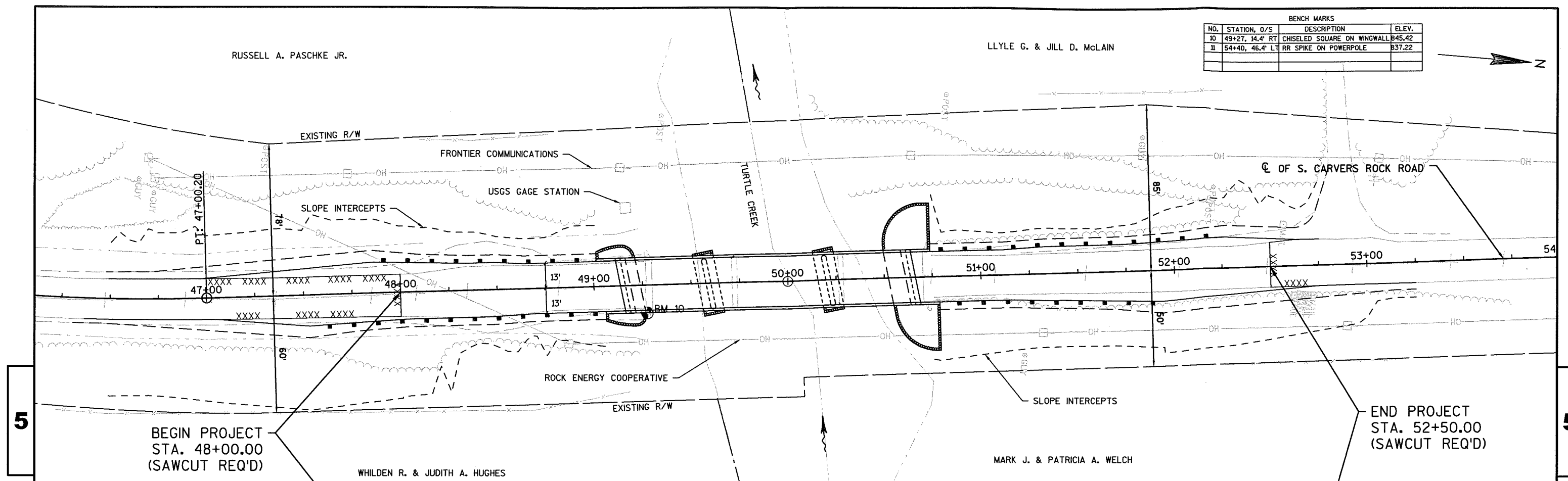
SCALE, FEET 0 10 20

SHEET

E

LLYLE G. & JILL D. McLAIN

BENCH MARKS			
NO.	STATION, O/S	DESCRIPTION	ELEV.
JO	49+27, 14.4' RT	CHISELED SQUARE ON WINGWALL	845.42
II	54+40, 46.4' LT	RR SPIKE ON POWERPOLE	837.22



SHEET

E

WISDOT/CADDS SHEET 44