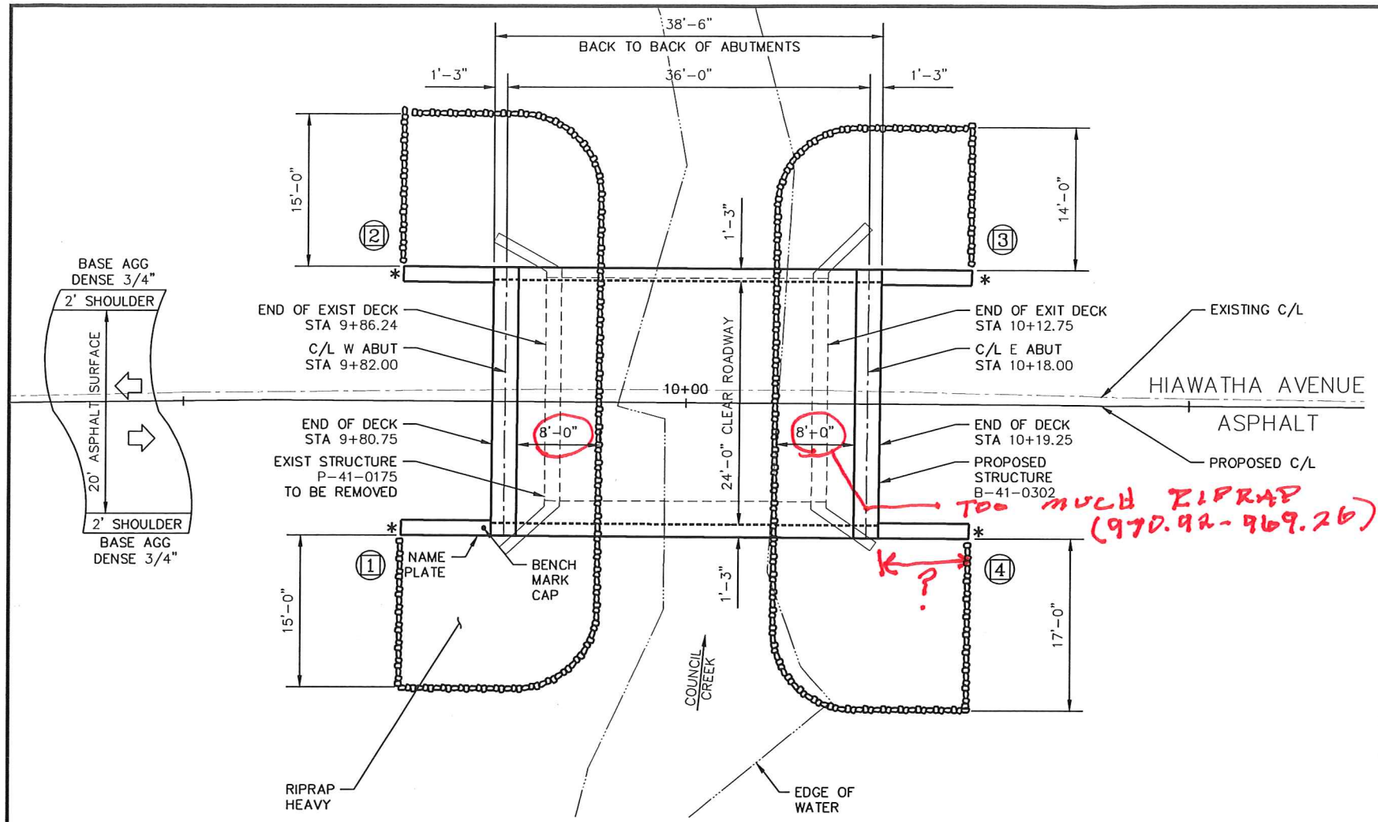
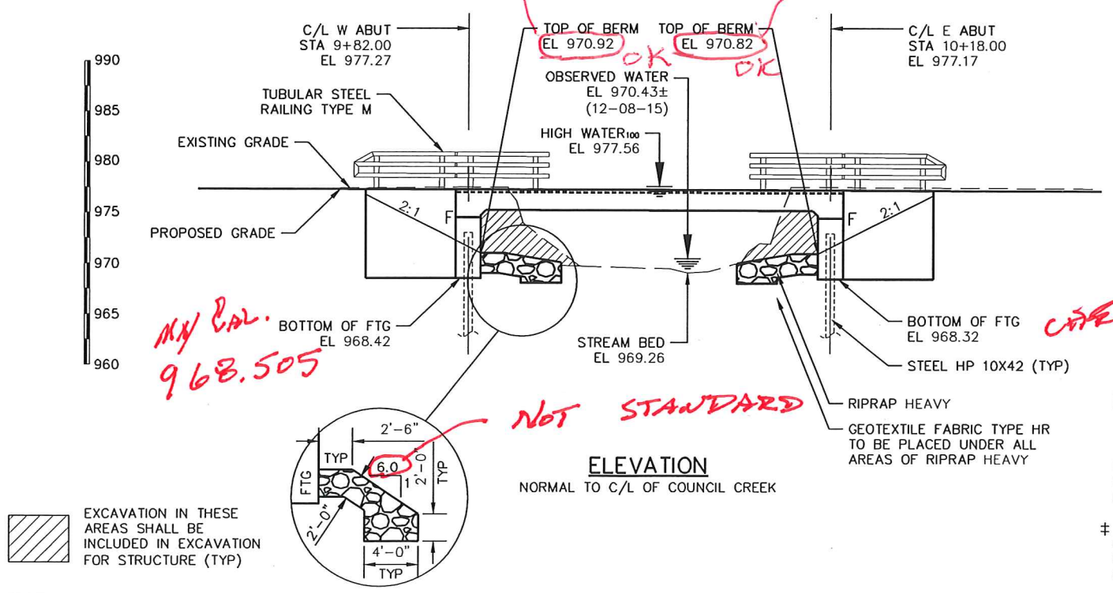


PLAN

SINGLE SPAN CONCRETE FLAT-SLAB BRIDGE



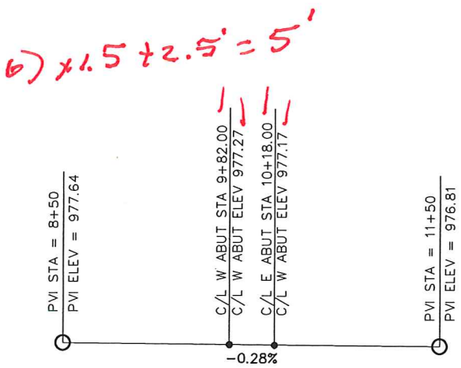
ELEVATION

NORMAL TO C/L OF COUNCIL CREEK

EXCAVATION IN THESE AREAS SHALL BE INCLUDED IN EXCAVATION FOR STRUCTURE (TYP)

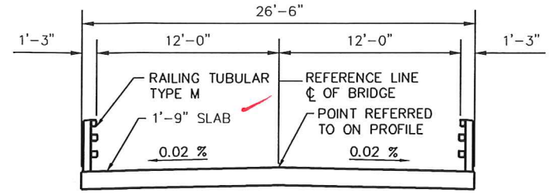
* PROVIDE THE THRIE BEAM GUARD RAIL ATTACHMENT

INDICATES WING NUMBER



PROPOSED GRADE LINE

NOT NEEDED



CROSS-SECTION THRU ROADWAY

DESIGN DATA

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

LIVE LOAD:

DESIGN LOADING	HL-93
INVENTORY RATING FACTOR	RF = 1.XX
OPERATING RATING FACTOR	RF = 1.XX
WISCONSIN STANDARD PERMIT VEHICLE (Wis-SPV)	XXX KIPS

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY	
SLAB	f'c = 4,000 PSI
ALL OTHER	f'c = 3,500 PSI
BAR STEEL REINFORCEMENT, GRADE 60	fy = 60,000 PSI

HYDRAULIC DATA

100 YEAR FREQUENCY	
DRAINAGE AREA	9.5 SQ MILES
Q_{100} TOTAL	2125 CFS
THRU STRUCTURE	924 CFS
OVERFLOW	1201 CFS
VELOCITY - THRU STRUCTURE	5.51 FPS
WATERWAY AREA THRU STRUCTURE	167.6 SQ FT
HIGH WATER$_{100}$ ELEVATION	977.56 FT
SCOUR CRITICAL CODE = 8	
2 YEAR FREQUENCY	
Q_2 TOTAL	410 CFS
HIGH WATER$_2$ ELEVATION	976.15 FT
FREQUENCY OF ROADWAY OVERTOPPING	
Q_6 TOTAL	720 CFS
HIGH WATER$_6$ ELEVATION	976.30 FT
REGULATORY	
Q REG	2125 CFS
HIGH WATER REG	977.40 FT

TRAFFIC DATA

AADT (2016)	< 100
AADT (2036)	< 100
DESIGN SPEED	55 MPH

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING STEEL HP 10x42, WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS ‡ PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.
ESTIMATED LENGTH XX' W ABUTMENT
ESTIMATED LENGTH XX' E ABUTMENT

‡ 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.

TYPE, SIZE & LOCATION APPROVED
BY MLH
DATE 7-22-2016

BENCHMARK

STA 13+28±, 34.80' RT OF C/L, SET 4" NAIL INTO SIDE OF POWER POLE
EL 973.48'

LIST OF DRAWINGS

DESIGN CONTACT:
TROY PETERSON
(715) 232-9081

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608) 266-8489

SHOULD PROVIDE

STATE PROJECT NUMBER
5025-00-71

NO.	DATE	REVISION	BY

ORIGINAL PLANS PREPARED BY
Cedar corporation
MENOMONIE - MADISON - GREEN BAY
www.cedarcorp.com 800-472-7372

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ _____
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-41-0302

HIAWATHA AVENUE OVER COUNCIL CREEK

COUNTY	TOWN/CITY/VILLAGE
MONROE	TOMAH

DESIGN SPEC: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
---	---	NJT	TLP

GENERAL PLAN

SHEET 1 OF 8

SCALE = 1:2

8

8

STATE PROJECT NUMBER
5025-00-71

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT	W ABUT	E ABUT	SUPER	TOTALS
203.0600.S	REMOVING OLD STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS STA 10+00	LS	———	———	———	
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-41-0302	LS	———	———	———	
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			———	
550.1100	PILING STEEL HP 10-INCH x 42 LB	LF			———	
513.4061	RAILING TUBULAR TYPE M (STRUCTURE) B-41-0302	LF	———	———	———	
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY			———	
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	———	———	———	

210.1500 Structure backfill type A, TON. Granular materials can be bid in units of cubic yard or tons. Structure plans (with a December 2016 letting or thereafter) should use the TON bid item, unless directed otherwise by the Region.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

ALL REINFORCING BARS ARE ENGLISH. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK 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 SHEET 1 AND AND IN THE ABUTMENT DETAILS.

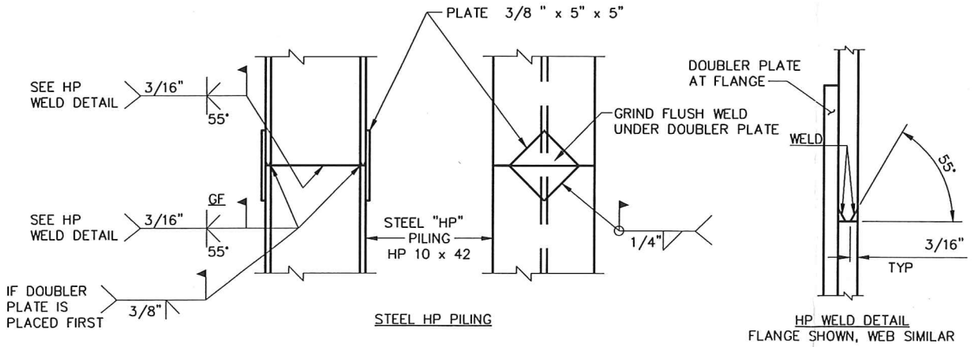
STEEL 'HP' PILE MATERIAL SHALL BE A.S.T.M. DESIGNATION A36.

THE EXISTING STRUCTURE (P-41-0175) IS A 28.5' LONG BY 22.5' WIDTH SINGLE-SPAN CONCRETE DECK BRIDGE.

THE PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE TOP AND EDGES OF THE SLAB AND TO THE OUTSIDE 1'-0" OF THE UNDERSIDE OF THE SLAB.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE IN PLACE BEFORE ABUTMENT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

THE GRADATION OF THE BACKFILL STRUCTURE SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.



STEEL HP PILING

HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR

PILE SPLICE DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-0302

DRAWN BY NJT | PLANS CK'D. TLP

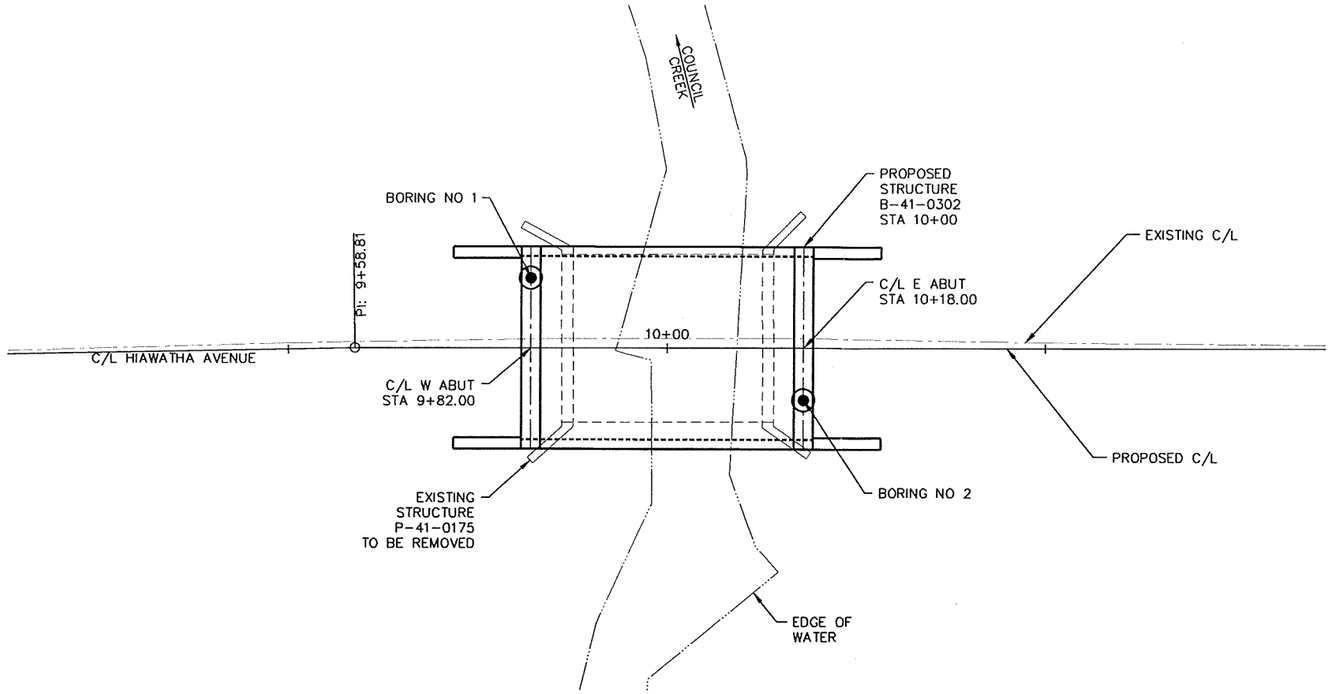
QUANTITIES & NOTES

SHEET 2 OF 8

SCALE = 1:2

8

8



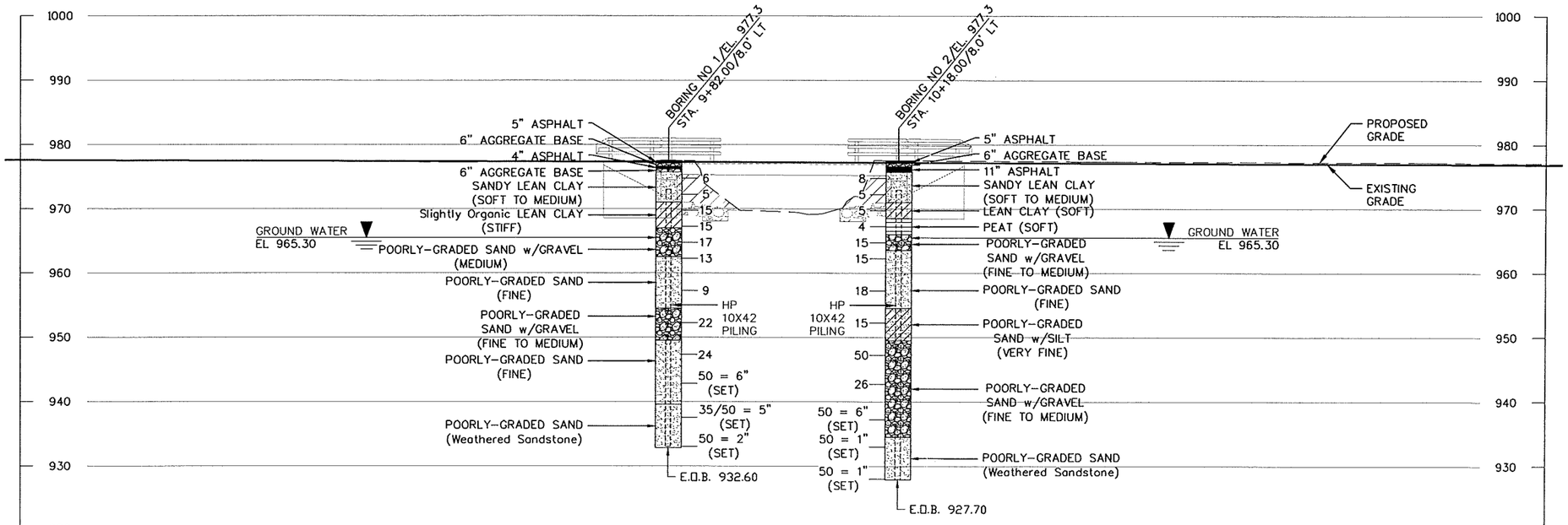
BORINGS TAKEN BY:

CHOSEN VALLEY TESTING, INC.

WISCONSIN OFFICE
135 BUCKNER PLACE
LA CROSSE, WI 54603
(608)782-5505

MINNESOTA OFFICE
1410 7TH STREET NW
ROCHESTER, MN 55901
(507) 281-0968

BORINGS 1 & 2
PERFORMED ON 3/18/2016



STATE PROJECT NUMBER
5025-00-71

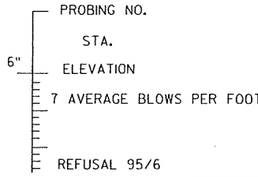
ABBREVIATIONS

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

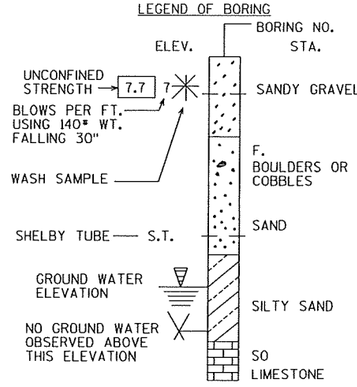
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-41-0302

DRAWN BY NJT | PLANS CK'D. TLP

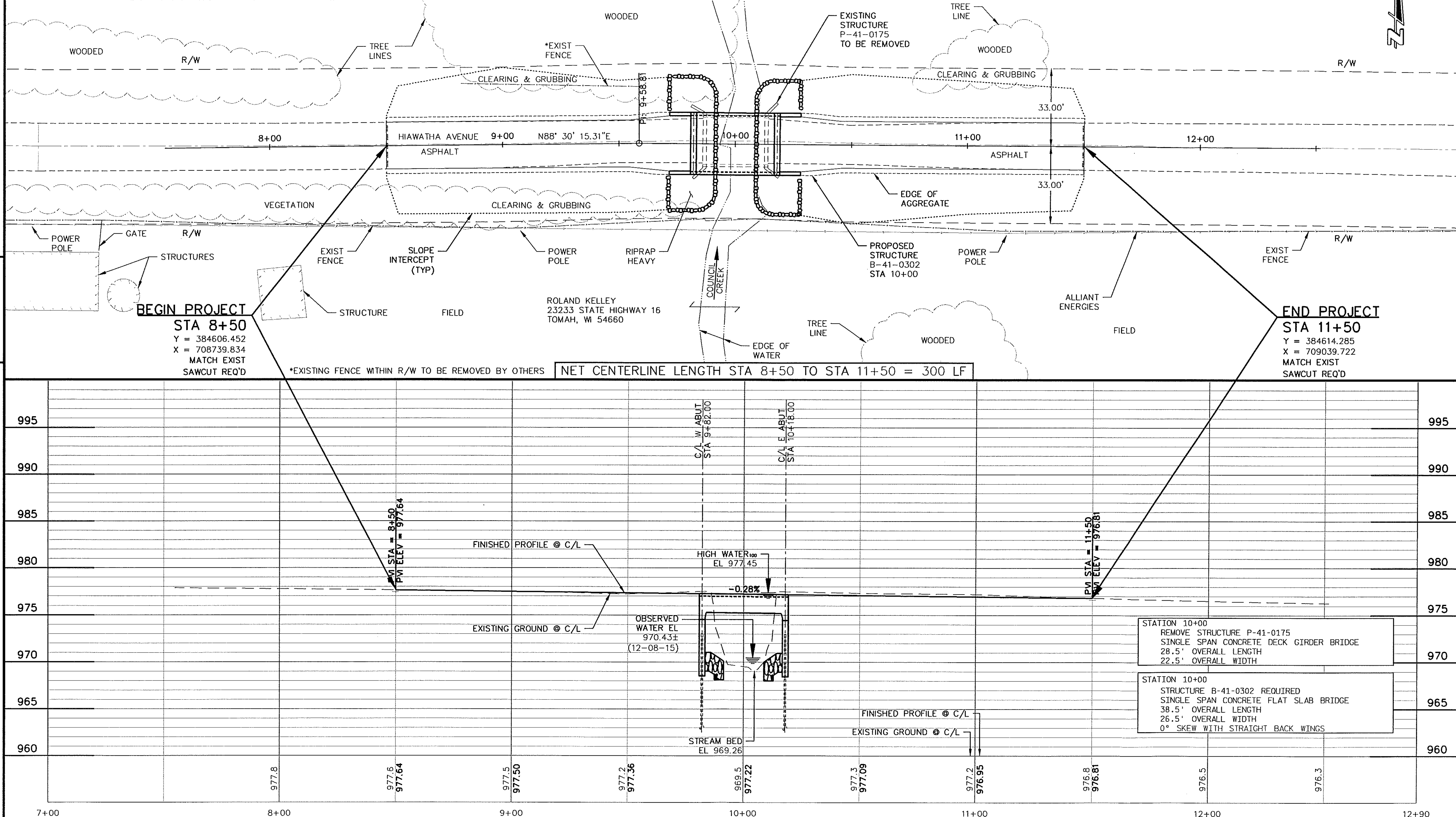
SUBSURFACE EXPLORATION

SHEET 3 OF 8

SCALE = 1:2

BENCHMARKS			
NO	STA	DESCRIPTION	ELEV
1	13+28±	SET 4" NAIL INTO SIDE OF POWER POLE (@ 34.80' RT OF C/L)	973.484

NOTE: POSITIONS SHOWN ARE WISCONSIN COUNTY COORDINATES, MONROE, NAD 88 (1991) IN US SURVEY FEET. VALUES SHOWN ARE GRID COORDINATES, GRID BEARINGS AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.



HARVERD A. WAGNER TRUST
C/O DONNA M. WAGNER TRUST
25922 HIAWATHA AVENUE
TOMAH, WI 54660
TREE LINE
WETLANDS
WOODED
TREE LINES
*EXIST FENCE
EXISTING STRUCTURE P-41-0175 TO BE REMOVED
CLEARING & GRUBBING
R/W
33.00'
HIAWATHA AVENUE
9+00
N88° 30' 15.31"E
PI 9+58.81
8+00
10+00
11+00
12+00
ASPHALT
EDGE OF AGGREGATE
VEGETATION
POWER POLE
GATE
STRUCTURES
EXIST FENCE
SLOPE INTERCEPT (TYP)
RIPRAP HEAVY
COUNCIL CREEK
PROPOSED STRUCTURE B-41-0302 STA 10+00
STRUCTURE
FIELD
ROLAND KELLEY
23233 STATE HIGHWAY 16
TOMAH, WI 54660
ALLIANT ENERGIES
EDGE OF WATER
5
BEGIN PROJECT
STA 8+50
Y = 384606.452
X = 708739.834
MATCH EXIST
SAWCUT REQ'D
END PROJECT
STA 11+50
Y = 384614.285
X = 709039.722
MATCH EXIST
SAWCUT REQ'D
*EXISTING FENCE WITHIN R/W TO BE REMOVED BY OTHERS
NET CENTERLINE LENGTH STA 8+50 TO STA 11+50 = 300 LF
995
990
985
980
975
970
965
960
C/L W ABUT STA 9+82.00
C/L E ABUT STA 10+18.00
PVI STA = 8+50
PVI ELEV = 977.64
PVI STA = 11+50
PVI ELEV = 976.81
FINISHED PROFILE @ C/L
HIGH WATER100 EL 977.45
-0.28%
EXISTING GROUND @ C/L
OBSERVED WATER EL 970.43± (12-08-15)
STREAM BED EL 969.26
977.8
977.6
977.64
977.5
977.50
977.2
977.36
969.5
977.22
977.3
977.09
977.2
976.95
976.8
976.81
976.5
976.3
7+00
8+00
9+00
10+00
11+00
12+00
12+90

STATION 10+00
REMOVE STRUCTURE P-41-0175
SINGLE SPAN CONCRETE DECK GIRDER BRIDGE
28.5' OVERALL LENGTH
22.5' OVERALL WIDTH

STATION 10+00
STRUCTURE B-41-0302 REQUIRED
SINGLE SPAN CONCRETE FLAT SLAB BRIDGE
38.5' OVERALL LENGTH
26.5' OVERALL WIDTH
0° SKEW WITH STRAIGHT BACK WINGS

PROJECT NO: 5025-00-71	HWY: HIAWATHA AVENUE	COUNTY: MONROE	PLAN AND PROFILE	SHEET	E

2

TREE LINE

COUNCIL CREEK

TREE LINE

TREE LINE

RS = 10

TREE LINE

EXIST FENCE

R/W

EXISTING STRUCTURE P-41-0175 TO BE REMOVED

RS = 20

PI: 9+58.60

8+00

HIAWATHA AVENUE

ASPHALT

9+00

N88° 30' 15.31"E

10+00

11+00

ASPHALT

12+00

RS = 80

R/W

GATE

POWER POLE

BEGIN PROJECT
STA 8+50
Y = 384606.45
X = 708739.84

EXIST FENCE

POWER POLE

PROPOSED STRUCTURE B-41-0302 STA 10+00

POWER POLE

EXIST FENCE

END PROJECT
STA 11+50
Y = 384614.29
X = 709039.72

RS = 120

STRUCTURES

EDGE OF WATER

RS = 170

TREE LINE

1 INCH = 20 FEET

SCALE

NET CENTERLINE LENGTH STA 8+50 TO STA 11+50 = 300 LF

PROJECT NO: 5025-00-71	HWY: HIAWATHA AVENUE	COUNTY: MONROE	CONTOUR MAP	SHEET	E

FILE NAME : I:\CLIENTS\M5714 MONROE COUNTY HIGHWAY DEPARTMENT\001 5025-00-00 HIAWATHA AVENUE OVER COUNCIL CREEK\100 CAD\DWG\021601_CMEB01400XE.DWG 6/22/2016 2:23 PM
LAYOUT NAME - ****
PLOT BY : NICK THOMPSON
PLOT NAME :
PLOT SCALE : **********
WISDOT/CADDS SHEET 42