

PROJECT ID: 7830-00-72
WITH: N/A

COUNTY: EAU CLAIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

FOSTER - AUGUSTA

BEARGRASS CREEK BRIDGE B-18-0256

CTH VV

EAU CLAIRE COUNTY

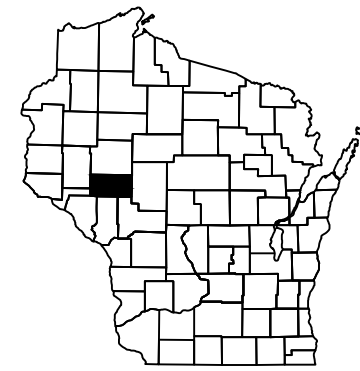
STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
7830-00-72		

Preliminary

ORDER OF SHEETS

Section No.	Title
1	Section No. 1 Title
2	Section No. 2 Typical Sections and Details
3	Section No. 3 Estimate of Quantities
3	Section No. 3 Miscellaneous Quantities
4	Section No. 4 Right of Way Plat
5	Section No. 5 Plan and Profile
6	Section No. 6 Standard Detail Drawings
7	Section No. 7 Sign Plates
8	Section No. 8 Structure Plans
9	Section No. 9 Computer Earthwork Data
9	Section No. 9 Cross Sections

TOTAL SHEETS =



PROJECT LOCATION

STATE PROJECT NUMBER
7830-00-72

DESIGN DESIGNATION

A.A.D.T.	2026	=	160
A.A.D.T.	2046	=	170
D.H.V.		=	N/A
D.D.		=	50/50
T.		=	10% MAX
DESIGN SPEED		=	40 MPH
ESALS		=	XXX,XXX

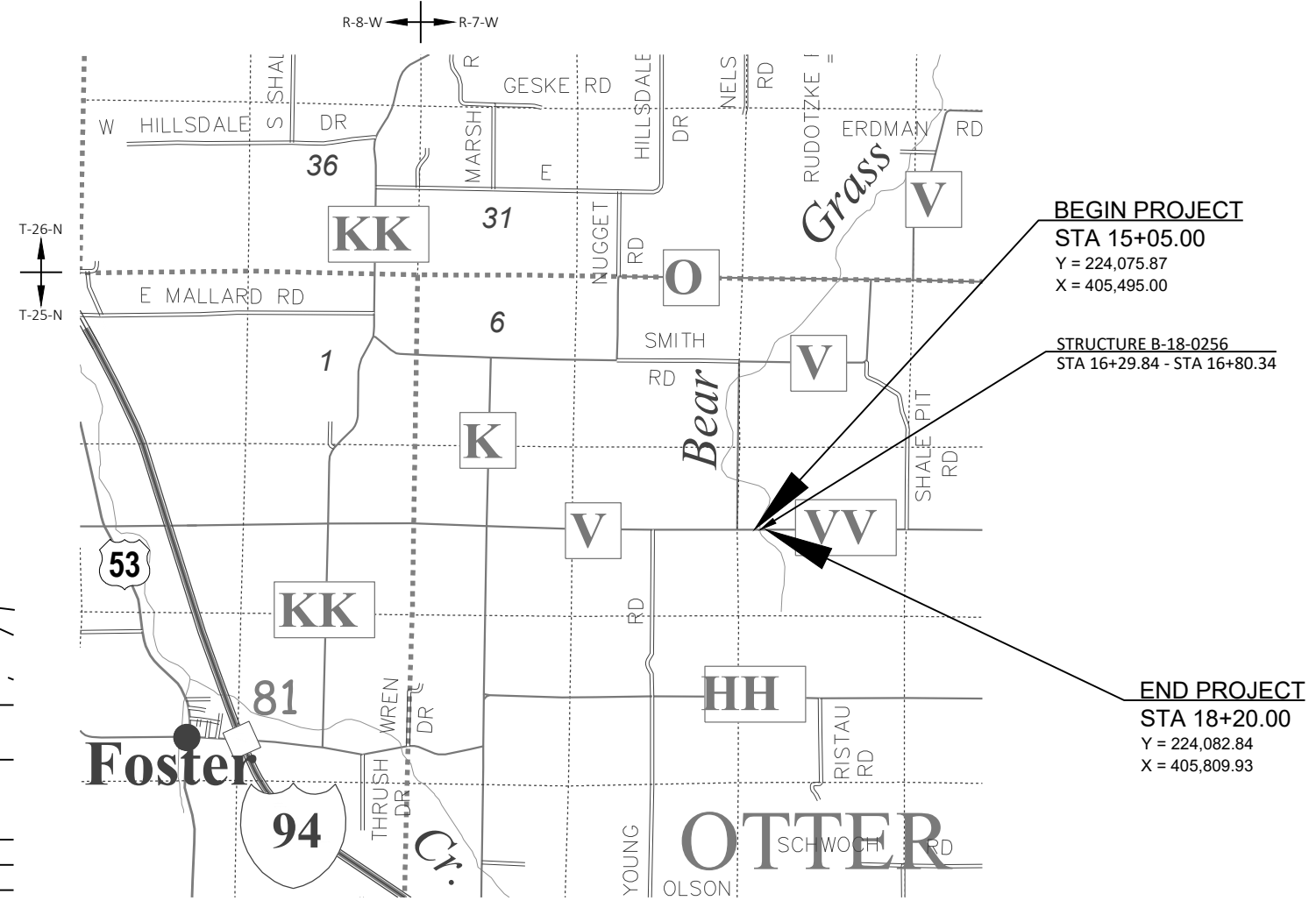
CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

PROFILE

GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



LAYOUT
SCALE 0 1 MI
TOTAL NET LENGTH OF CENTERLINE = 0.060 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATE SYSTEM (WCSS), EAU CLAIRE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.
ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

ACCEPTED FOR
EAU CLAIRE COUNTY
Date _____
(Signature and Title of Official)

ORIGINAL PLANS PREPARED BY
DATE: _____
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor _____ COOPER ENGINEERING
Designer _____ COOPER ENGINEERING
Project Manager _____ TOU YANG, PE
Regional Examiner _____ TOU YANG, PE
Regional Supervisor _____ TOU YANG, PE

APPROVED FOR THE DEPARTMENT
DATE: _____
(Signature)

E

LIST OF STANDARD ABBREVIATIONS

Table listing standard abbreviations such as ABUT, AC, AGG, AH, ADT, AVG., ASPH, BK., BM, Δ, etc., with their corresponding full names.

UTILITY CONTACTS

ELECTRIC
EAU CLAIRE ENERGY COOPERATIVE
JOEY MARKEY
3200 EAST AVE S, PO BOX 817
LA CROSSE, WI 54602
PHONE: (608) 787-1362
EMAIL: joey.markey@dairylandpower.com

ALL UTILITIES LISTED ARE MEMBERS OF DIGGERS HOTLINE



OTHER CONTACTS

DESIGN CONSULTANT

COOPER ENGINEERING
JACOB FRIBERG
2600 COLLEGE DRIVE
RICE LAKE, WI 54868
PHONE: (715) 234-7008
EMAIL: jfriberg@cooperengineering.net

EAU CLAIRE COUNTY

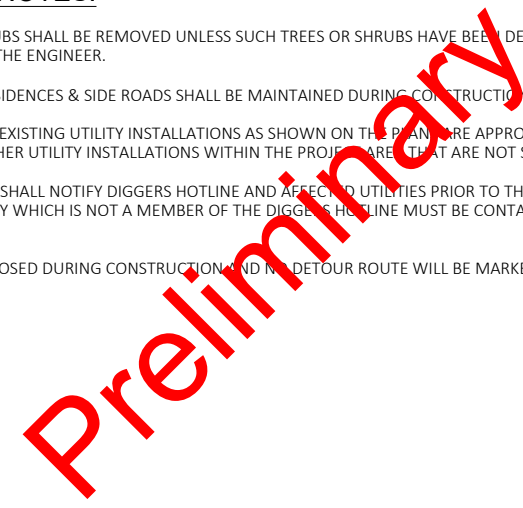
HIGHWAY COMMISSIONER
JON JOHNSON
5061 US HIGHWAY 53
EAU CLAIRE, WI 54701
PHONE: (715) 839-2952
EMAIL: ecchwy@eauclairecounty.gov

WDNR REGIONAL CONTACT

WDNR/WISDOT LIAISON
LEAH NICOL
1300 WEST CLAIREMONT AVENUE
EAU CLAIRE, WI 54701
PHONE: (715) 934-9014
EMAIL: Leah.Nicol@wisconsin.gov

GENERAL NOTES:

NO TREES OR SHRUBS SHALL BE REMOVED UNLESS SUCH TREES OR SHRUBS HAVE BEEN DESIGNATED FOR REMOVAL BY THE ENGINEER.
ACCESS TO ALL RESIDENCES & SIDE ROADS SHALL BE MAINTAINED DURING CONSTRUCTION.
THE LOCATION OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THIS PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.
CTH VV WILL BE CLOSED DURING CONSTRUCTION AND AN ALTERNATE ROUTE WILL BE MARKED.

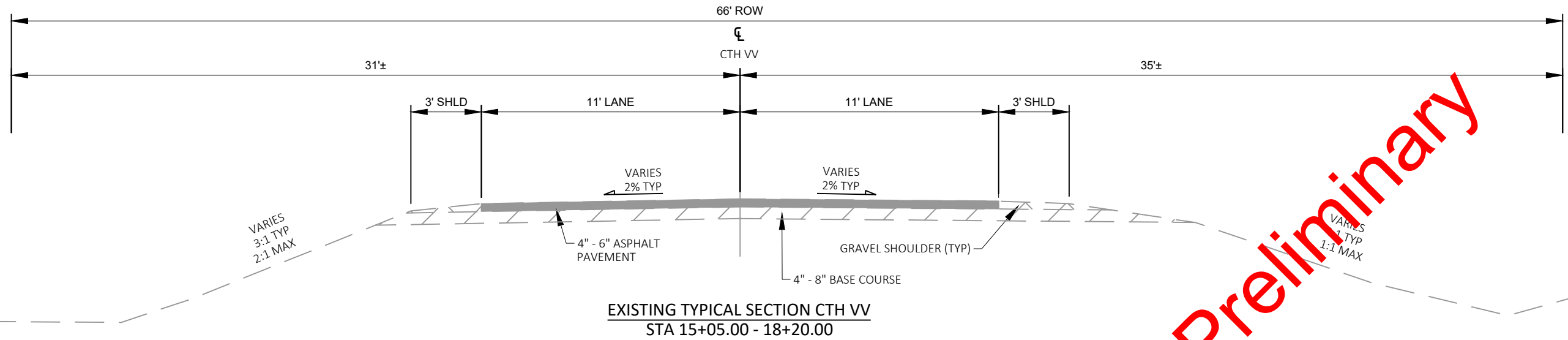


RUNOFF COEFFICIENT TABLE

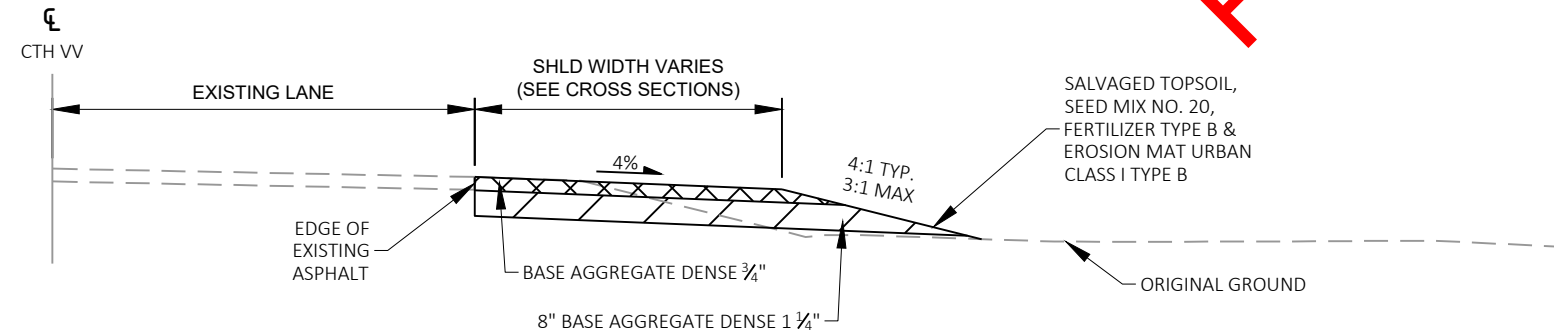
Table with columns for Land Use, Hydrologic Soil Group (A, B, C), and Slope Range (%). Rows include Land Use (ROW CROPS, MEDIAN STRIP-TURF, SIDE SLOPE-TURF), Pavement (ASPHALT, CONCRETE, BRICK, DRIVES, WALKS, ROOFS, GRAVEL ROADS, SHOULDERS), and Slope Range (%).

TOTAL PROJECT AREA = 0.75 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.49 ACRES

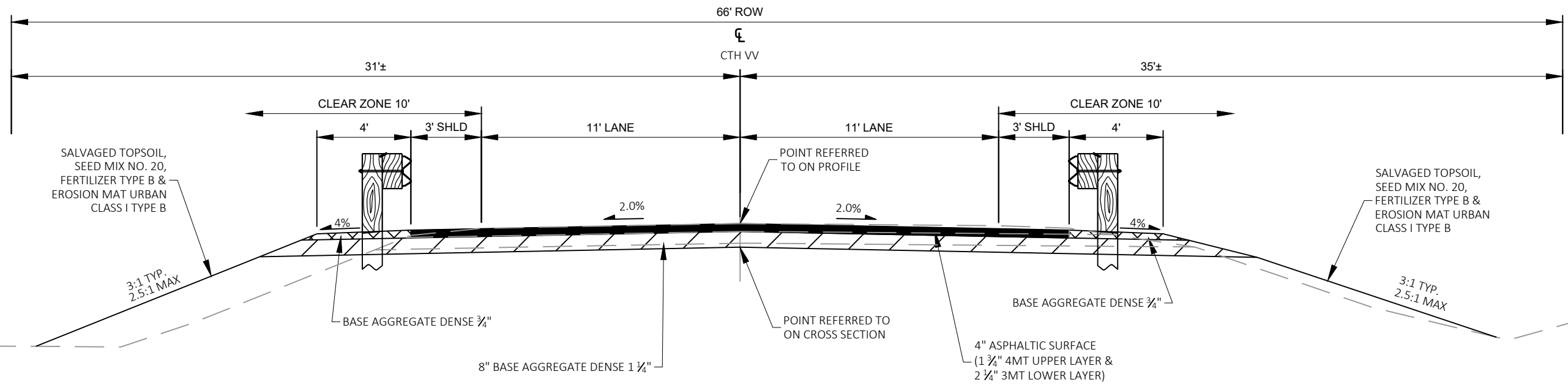
Preliminary



EXISTING TYPICAL SECTION CTH VV
STA 15+05.00 - 18+20.00

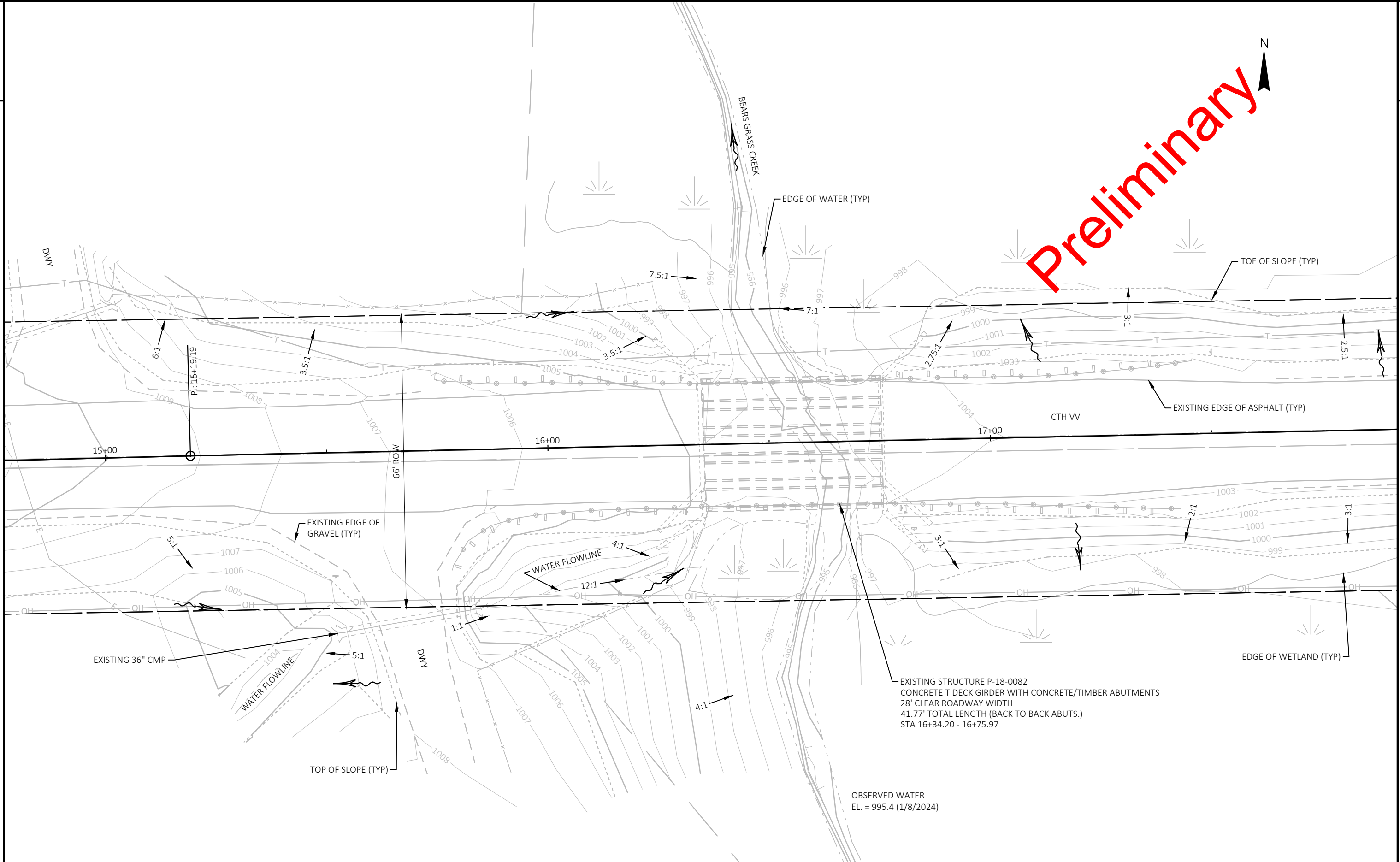


TYPICAL HALF SECTION
SHOULDER WIDENING
STA 18+20 - 19+25 LT STA 18+20 - 19+25 RT



PROPOSED TYPICAL SECTION CTH VV
STA 15+05.00 - 18+20.00

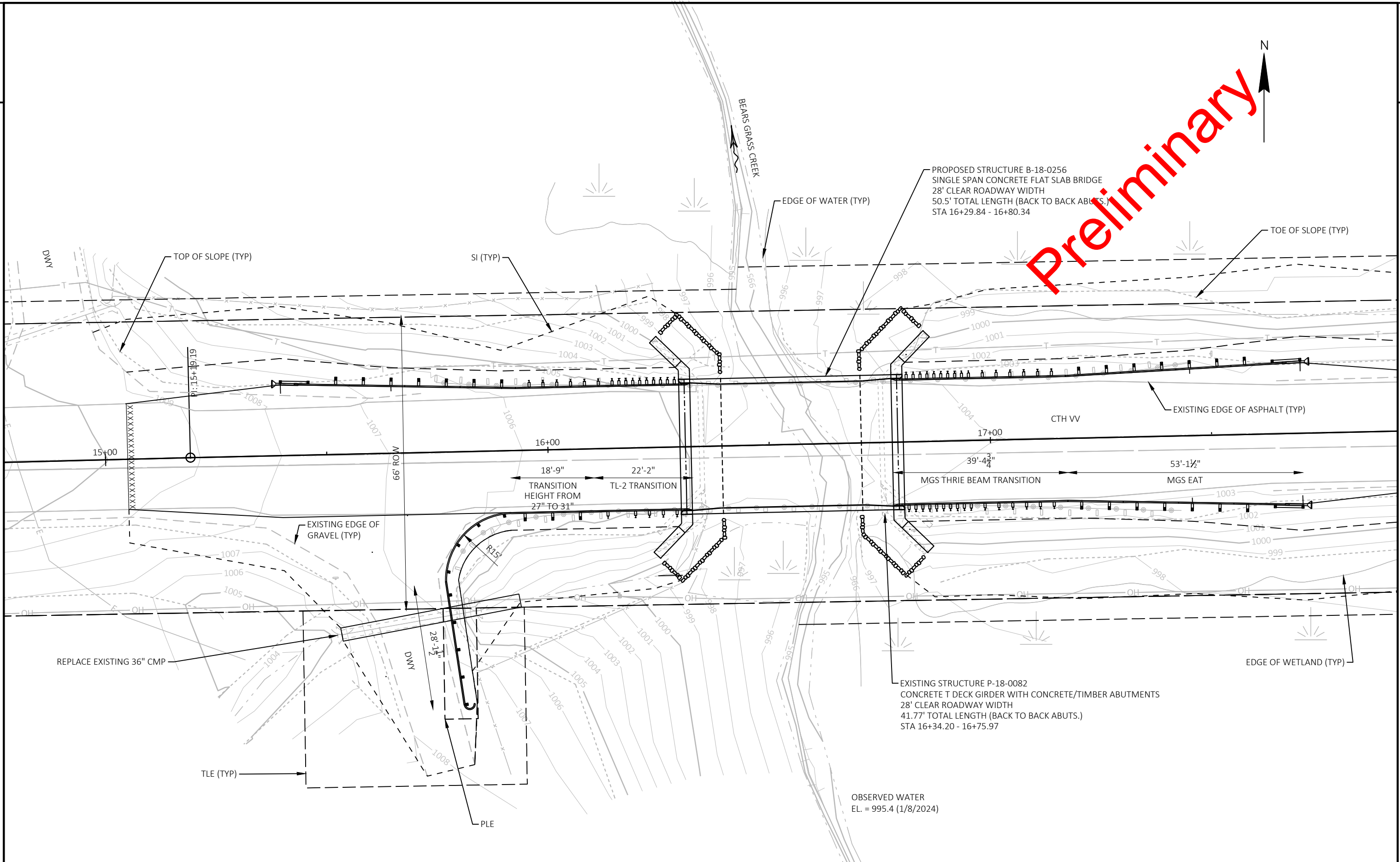
Preliminary



EXISTING STRUCTURE P-18-0082
 CONCRETE T DECK GIRDER WITH CONCRETE/TIMBER ABUTMENTS
 28' CLEAR ROADWAY WIDTH
 41.77' TOTAL LENGTH (BACK TO BACK ABUTS.)
 STA 16+34.20 - 16+75.97

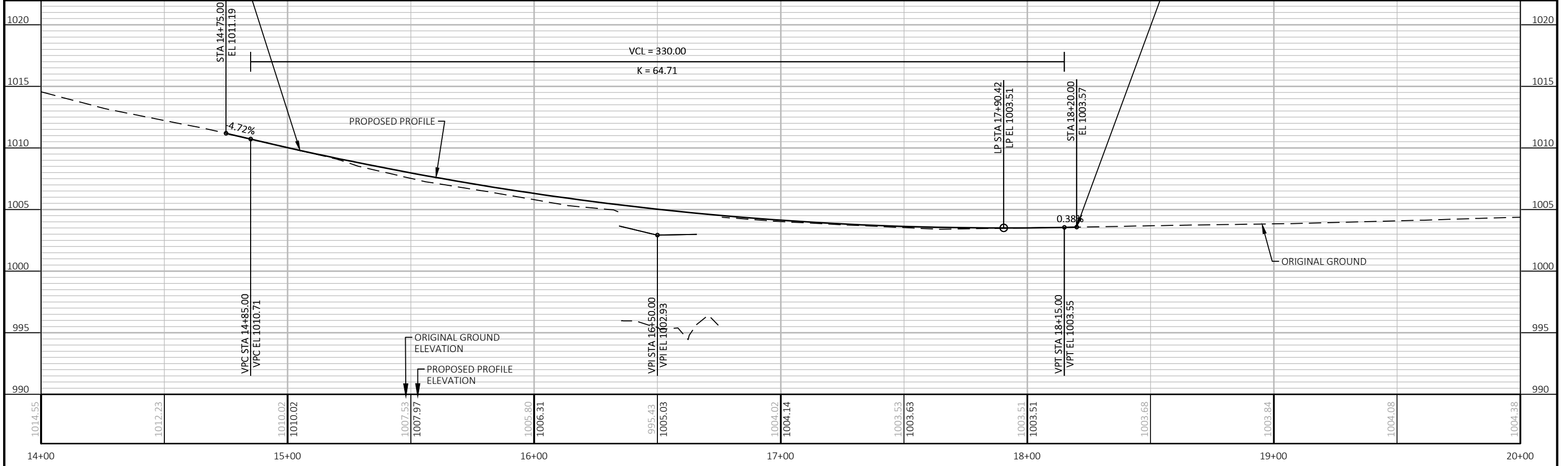
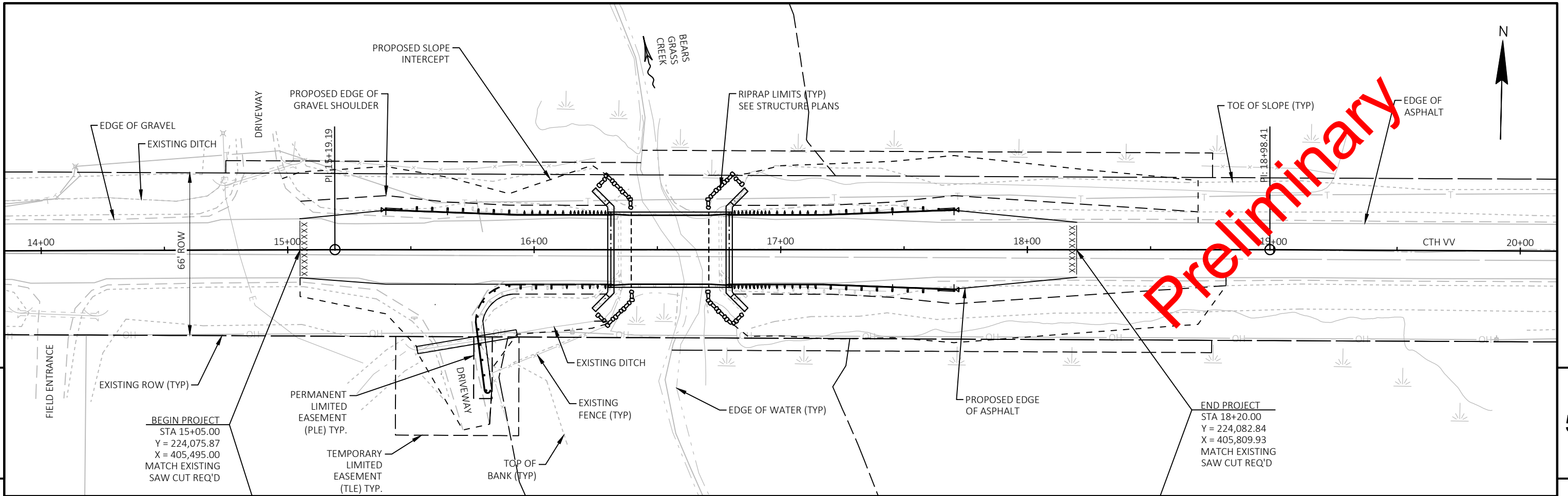
OBSERVED WATER
 EL. = 995.4 (1/8/2024)

PROJECT NO: 7830-00-02	HWY: CTH VV	COUNTY: EAU CLAIRE	EXISTING CONTOUR MAP	SHEET	E
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Preliminary





PROJECT NO: 7830-00-02	HWY: CTH VV	COUNTY: EAU CLAIRE	PLAN AND PROFILE: CTH VV	SHEET	E
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GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

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

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-18-0256" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE OF ABUTMENT ALL FILL WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

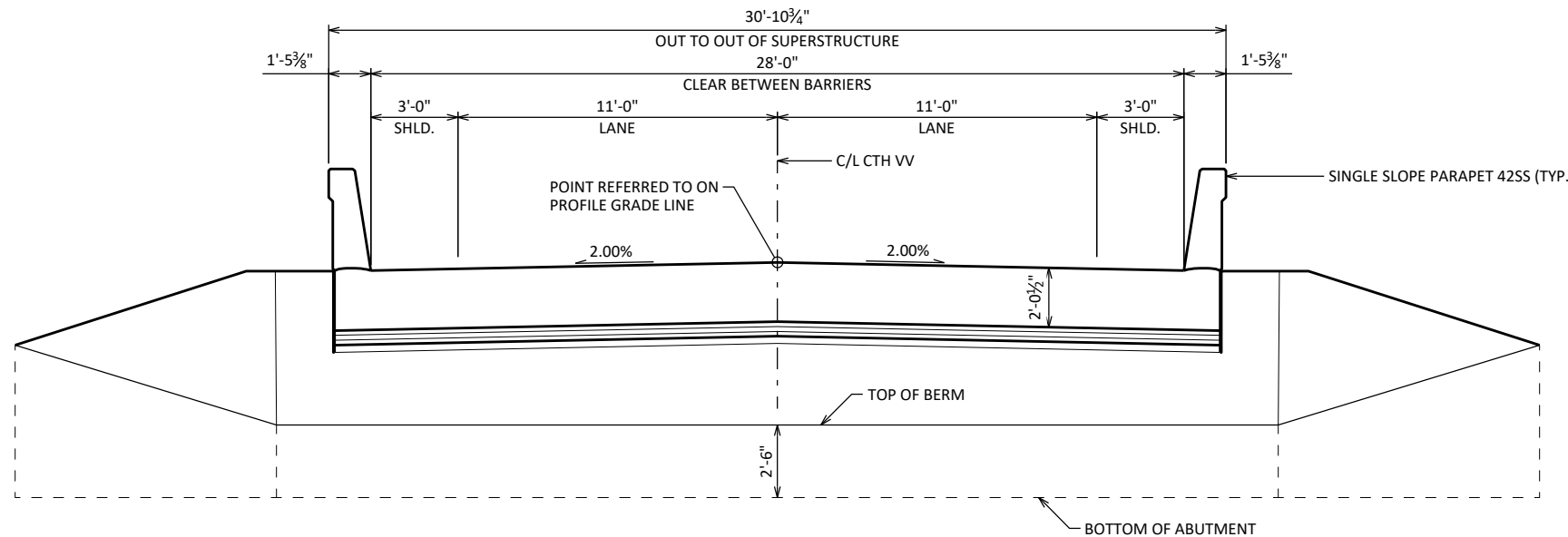
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE HR TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

FOR ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

SLAB FALSEWORK SHALL BE SUPPORTED ON PILES OR THE SUBSTRUCTURE UNLESS AN ALTERNATE METHOD IS APPROVED BY THE ENGINEER.

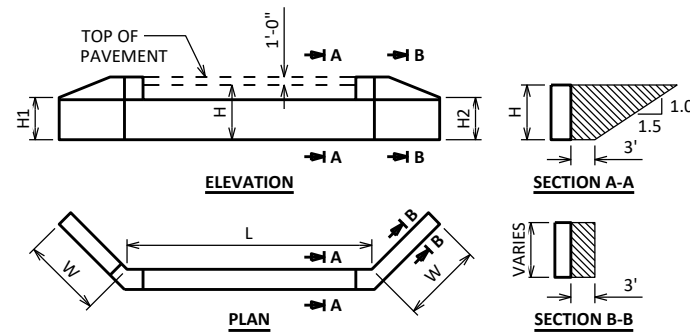
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO ENTIRE EXPOSED TOP OF SLAB, THE TOP AND EXTERIOR EXPOSED FACE OF WINGS AND FRONT FACE OF ABUTMENT TO 1'-0" PAST THE EDGE OF SLAB.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND TOP OF PARAPET.



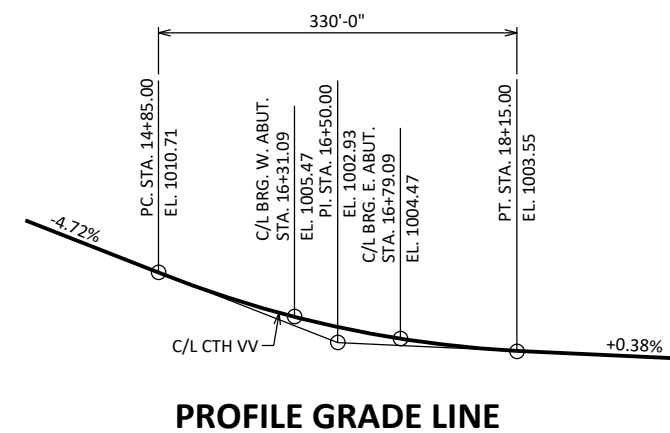
CROSS SECTION THRU ROADWAY

LOOKING UPSTATION
(PILING NOT SHOWN FOR CLARITY)

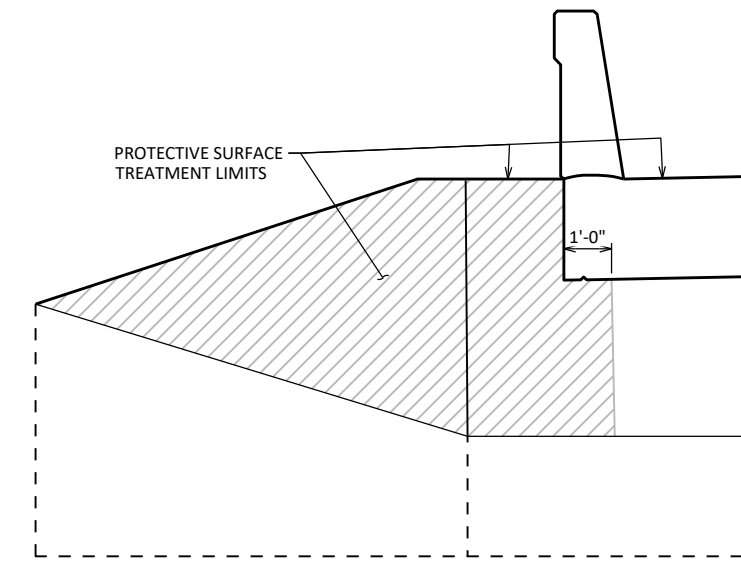


ABUTMENT BACKFILL DIAGRAM

- L = ABUTMENT BODY LENGTH AT BACKFACE (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- H1 = WING 1 HEIGHT AT TIP (FT)
- H2 = WING 2 HEIGHT AT TIP (FT)
- W = WING LENGTH (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3')(0.5)(H1+H2+H+H)(W)$
- $V_{CY} = V_{CF}(EF)/27$
- $V_{TON} = V_{CY}(2.0)$



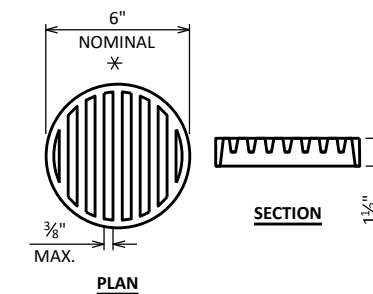
PROFILE GRADE LINE



PROTECTIVE SURFACE TREATMENT DETAILS

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
1	21+33	33' RT; GPS MONUMENT (DJ4705)	1002.87

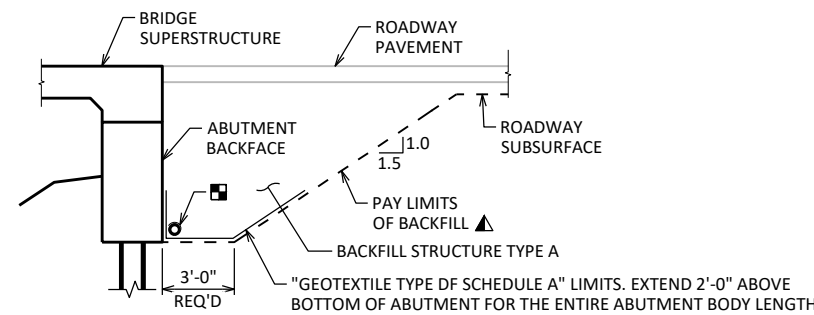


RODENT SHIELD DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



TYPICAL SECTION THRU ABUTMENT

▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

■ PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER	WEST ABUT.	EAST ABUT.	TOTALS
203.0260	REMOVING STRUCTURE OVER WATERWAY WITH MINIMAL DEBRIS (P-18-0082)	EACH	---	---	---	1
206.1001	EXCAVATION FOR STRUCTURES BRIDGES (B-18-0256)	EACH	---	---	---	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	---	170	170	340
502.0100	CONCRETE MASONRY BRIDGES	CY	134	28	28	190
502.3200	PROTECTIVE SURFACE TREATMENT	SY	157	16	16	189
502.3210	PIGMENTED SURFACE SEALER	SY	50	---	---	50
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	---	2,200	2,200	4,400
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	29,900	1,520	1,520	32,940
506.0105	STRUCTURAL STEEL CARBON	LB	630	---	---	630
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	---	6	6	12
550.1100	PILING STEEL HP 10-INCH X 42 LB	LF	---	---	---	---
606.0300	RIPRAP HEAVY	CY	---	---	---	---
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	---	73	73	146
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	4	---	---	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	---	46	46	92
645.0120	GEOTEXTILE TYPE HR	SY	---	---	---	---
NON-BID ITEMS						
	FILLER	SIZE	---	---	---	1/2", 3/4"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-18-256			
DRAWN BY JAF		PLANS CK'D SKP	
CROSS SECTION & QUANTITIES			SHEET 2

* PROVIDE FOR THREE BEAM GUARD RAIL ATTACHMENT.

Ⓛ INDICATES WING NUMBER

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
 INVENTORY RATING FACTOR: RF = 1.09
 OPERATING RATING FACTOR: RF = 1.41
 WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 450 (KIPS)

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

MATERIAL PROPERTIES:

CONCRETE MASONRY: _____ f'c = 4,000 P.S.I.
 SUPERSTRUCTURE _____ f'c = 3,500 P.S.I.
 ALL OTHER _____
 BAR STEEL REINFORCEMENT: _____ fy = 60,000 P.S.I.
 GRADE 60 _____

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON HP 10 x 42 PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 37 FEET LONG.

** 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 VOLUME

FEATURE ON CTH VV
 ADT = 170 (2046)
 R.D.S. = 40 M.P.H.

HYDRAULIC DATA

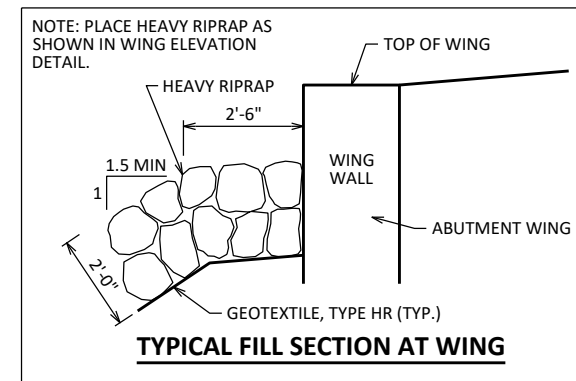
100 YEAR FREQUENCY
 Q₁₀₀ = 1,040 C.F.S.
 VEL. = 10.4 F.P.S.
 HW₁₀₀ = EL. 1001.39
 WATERWAY AREA = 242 SQ. FT.
 DRAINAGE AREA = 5.47 SQ. MI.
 ROADWAY OVERTOPPING = NA
 SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q₂ = 226 C.F.S.
 VEL. = 5.0 F.P.S.
 HW₂ = EL. 998.44

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. SUPERSTRUCTURE
9. SUPERSTRUCTURE DETAILS
10. SINGLE SLOPE PARAPET 42SS



TYPICAL FILL SECTION AT WING

STRUCTURE DESIGN CONTACTS:

JACOB FRIBERG 715-234-7008
 AARON BONK 608-261-0261

THESE PLANS ARE BASED UPON STANDARD BRIDGE PLANS DEVELOPED AND MAINTAINED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION THROUGH THE USE OF THE WISDOT STANDARD BRIDGE DESIGN TOOL. THE UNDERSIGNED DESIGNER CERTIFIES THE ACCURACY OF THE BRIDGE TYPE, SIZE AND LOCATION, HYDRAULICS AND FOUNDATION SUPPORT, AND INFORMATION IN THE PLANS THAT IS NOT PART OF THE STANDARD PLANS SUPPLIED BY THE DEPARTMENT. THE DESIGNER FURTHER CERTIFIES THAT USE OF THE STANDARD BRIDGE DESIGN TOOL FOR DEVELOPMENT OF THIS PLAN IS CONSISTENT WITH THE GUIDANCE PROVIDED IN THE WISDOT BRIDGE MANUAL.

NO.	DATE	REVISION	BY



STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

ACCEPTED _____ DATE _____
 CHIEF STRUCTURES DESIGN ENGINEER

STRUCTURE B-18-256

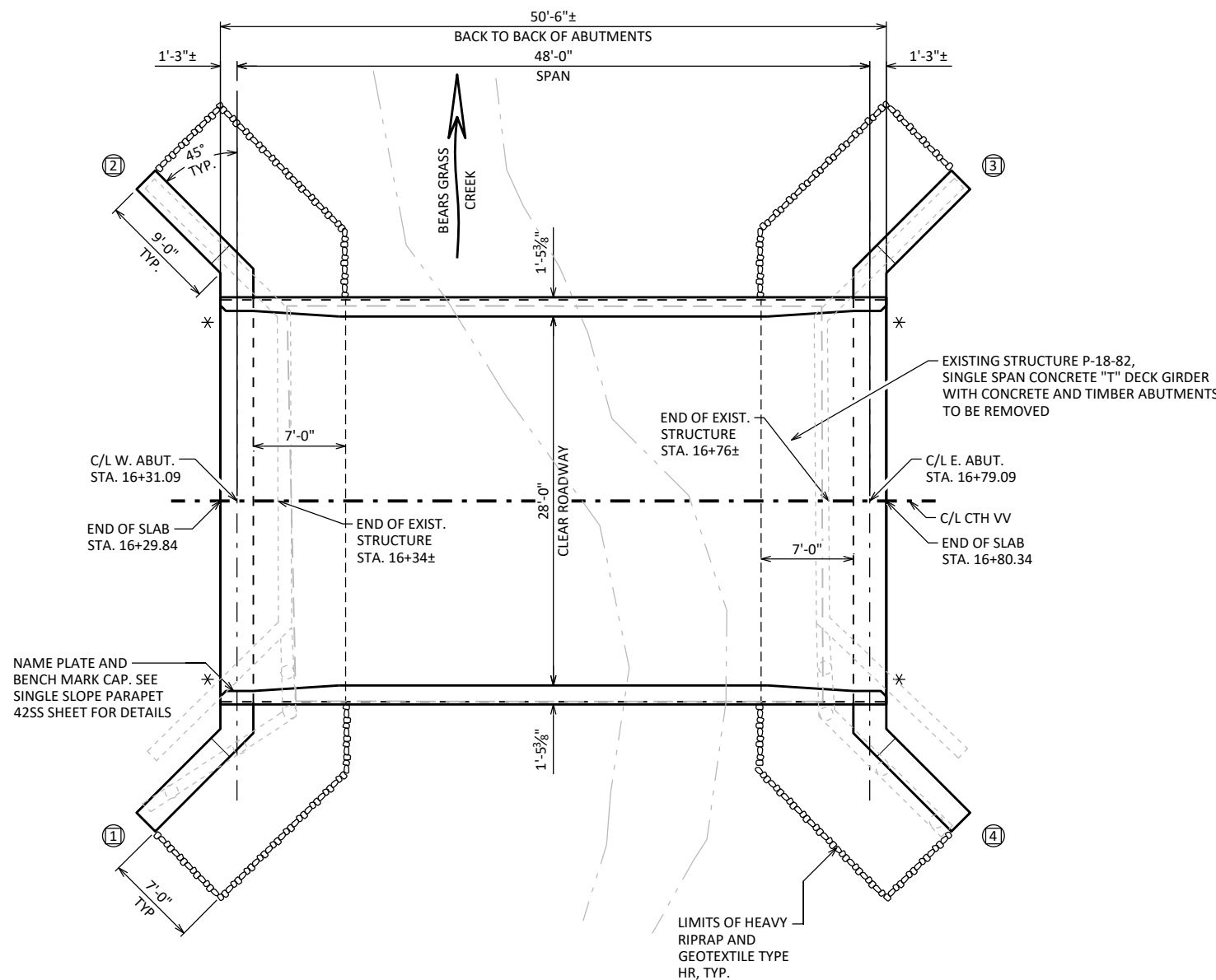
CTH VV OVER BEARS GRASS CREEK

COUNTY EAU CLAIRE TOWN OTTER CREEK

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION

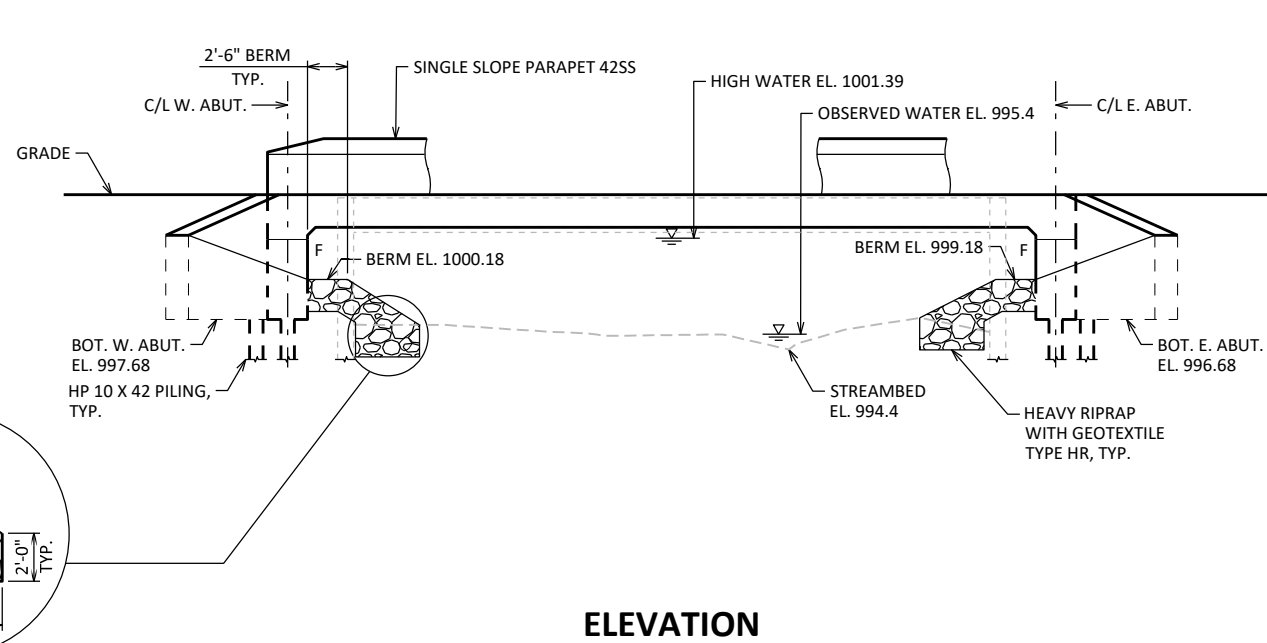
DESIGNED BY JAF CK'D SKP DRAWN BY JAF PLANS CK'D SKP

GENERAL PLAN SHEET 1 OF 10



PLAN

SINGLE SPAN FLAT SLAB



ELEVATION

NORMAL TO WATERWAY

