GRE

OCT 2013

PROJECT ID: 1220-19-72

WITH:

COUNTY: BROWN

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	6	Standard Detail Drawings
Section No.	8	Structure Plans

TOTAL SHEETS = 46

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1220-19-72	WISC 2014033	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF BRIDGE REHABILITATION

CITY OF GREEN BAY, LEO FRIGO BRG

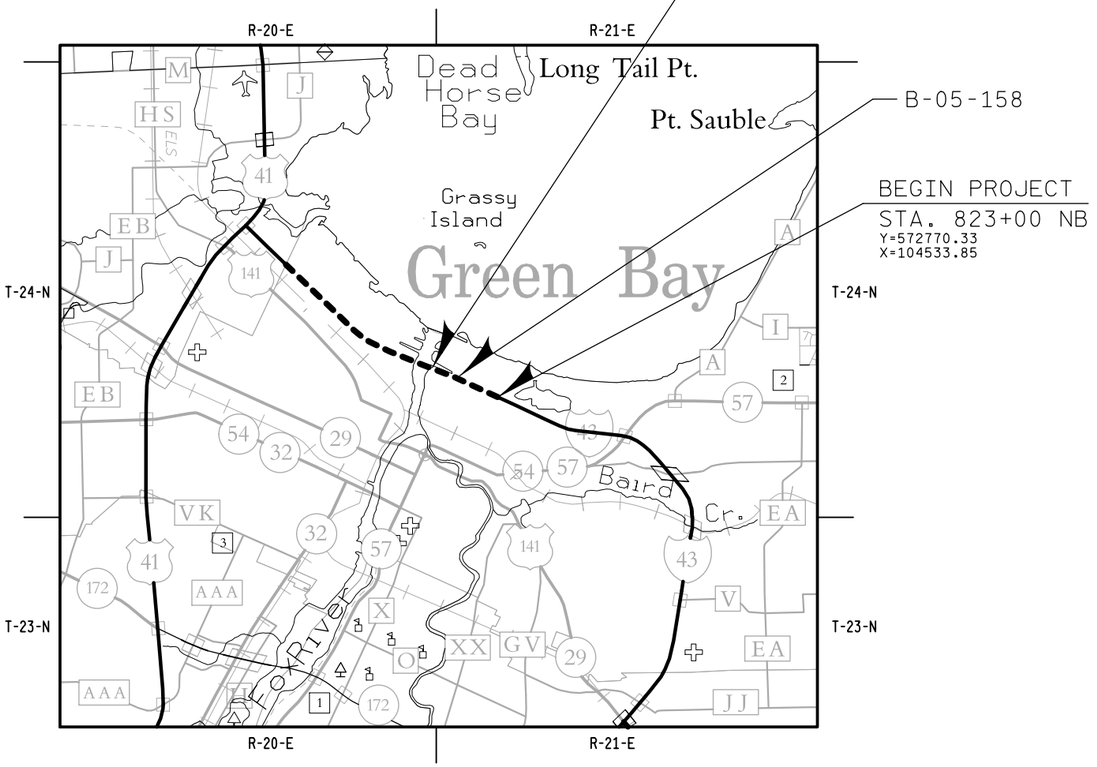
IRWIN AVENUE - ATKINSON DRIVE

IH 43

BROWN COUNTY

N

STATE PROJECT NUMBER
1220-19-72



DESIGN DESIGNATION

A.A.D.T. (2012)	=	43,000
A.A.D.T. (2032)	=	57,000
D.H.V. (2032)	=	5,130
D.D.	=	60/40
T.	=	8.0%
DESIGN SPEED	=	70 MPH
ESALS	=	11,169,000

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 (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.00 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), BROWN COUNTY. THE VERTICAL DATUM IS NAVD 88.

ORIGINAL PLANS PREPARED BY

Baker

MICHAEL BAKER JR., INC.
7633 GANSER WAY, STE 206,
MADISON, WI 53719

WISCONSIN
CHAD D. HALVERSON
E-34364
MADISON, WI
PROFESSIONAL ENGINEER

10/21/2013 (Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT / AYRES
Designer	BAKER
Project Manager	TOM BUCHHOLZ
Regional Examiner	KRISSY VANHOUT
Regional Supervisor	MIKE KING
C.O. Examiner	

APPROVED FOR THE DEPARTMENT (Signature)

DATE: 10/21/2013

E

2

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

THE LOCATION OF KNOWN EXISTING UTILITIES IN THE VICINITY OF THE PROJECT ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITIES IN THE AREA THAT ARE NOT SHOWN.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.

UTILITY CONTACTS

MIKE OLSEN
ATC - ELECTRICITY
801 O'KEEFE RD
P.O. BOX 6113
DE PERE, WI 54115-6113
(920) 338-6582
molsen@atcllc.com

NATHAN QUALLS
GREEN BAY METROPOLITAN SEWERAGE DISTRICT - SEWER
2231 N QUINCY ST
GREEN BAY, WI 54302-1248
(920) 438-1032
NQualls@newwater.us

JAMES KOSTUCH
WINDSTRAEM KDL INC. - COMMUNICATION LINE
13935 BISHOPS DRIVE
BROOKFIELD, WI 53005
(262) 792-7938
james.kostuch@windstream.com

KEVIN HUFF
QWEST COMMUNICATIONS - COMMUNICATION LINE
13057 S. MONITOR AVENUE
PALOS HEIGHTS, IL 60463
(708) 837-7927
kevin.huff@centurylink.com

VINCE ALBIN
TIME WARNER CABLE, A DELAWARE LIMITED PARTNERSHIP - COMMUNICATION LINE
3520 DESTINATION DR
APPLETON, WI 54915
(920) 831-9249
vince.albin@twcable.com

CASEY SCHWANDT
WEST SHORE PIPE LINE COMPANY - GAS/PETROLEUM
2119 NORTH QUINCY STREET
GREEN BAY, WI 54302
(920) 876-2462
cschwan@buckeye.com

LORI BUTRY
WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRICITY
700 N ADAMS ST
P.O. BOX 19001
GREEN BAY, WI 54307-9001
(920) 433-1703
LAButry@Integrysgroup.com

STEVE GRENIER
CITY OF GREEN BAY - SEWER
100 N JEFFERSON ST
GREEN BAY, WI 54301
(920) 448-3100
stevengr@ci.green-bay.wi.us

BRIAN POWELL
GREEN BAY WATER UTILITY - WATER
631 S ADAMS ST
GREEN BAY, WI 54301
(920) 448-3480
brianpo@ci.green-bay.wi.us

WAYNE CRETTON
PACKERLAND BROADBAND - COMMUNICATION LINE
105 KENT ST
P.O. BOX 190
IRON MOUNTAIN, MI 49801
(906) 282-3768
wayne.cretton@plbb.us

STEVE JAKUBIEC
TDS METROCOM - COMMUNICATION LINE
SUITE 218A
10 COLLEGE AVE
APPLETON, WI 54911
(920) 882-4166
steve.jakubiec@tdstelecom.com

JEFF MADSON
WISCONSIN DEPARTMENT OF TRANSPORTATION - COMMUNICATION LINE
STE. 300
433 W. ST. PAUL AVE.
MILWAUKEE, WI 53203-3007
(414) 225-3723
Jeffrey.Madson@dot.wi.gov

KAREN WELLS
AT&T WISCONSIN - COMMUNICATION LINE
205 S JEFFERSON ST
GREEN BAY, WI 54301
(920) 433-4226
kw9272@att.com

LORI BUTRY
WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PETROLEUM
700 N ADAMS ST
P.O. BOX 19001
GREEN BAY, WI 54307-9001
(920) 433-1703
LAButry@Integrysgroup.com

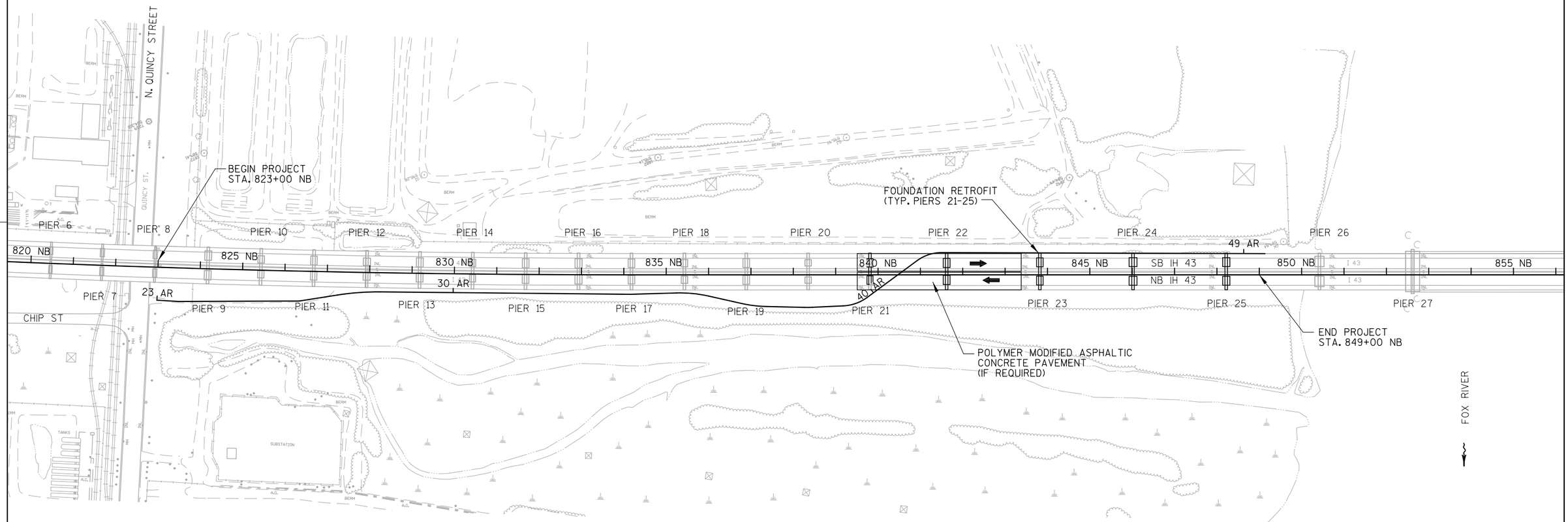
DNR CONTACT

WDNR CONTACT
JIM DOPERALSKI
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
NORTHEAST REGION HEADQUARTERS
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
(920) 662-5119
James.Doperalski@wisconsin.gov

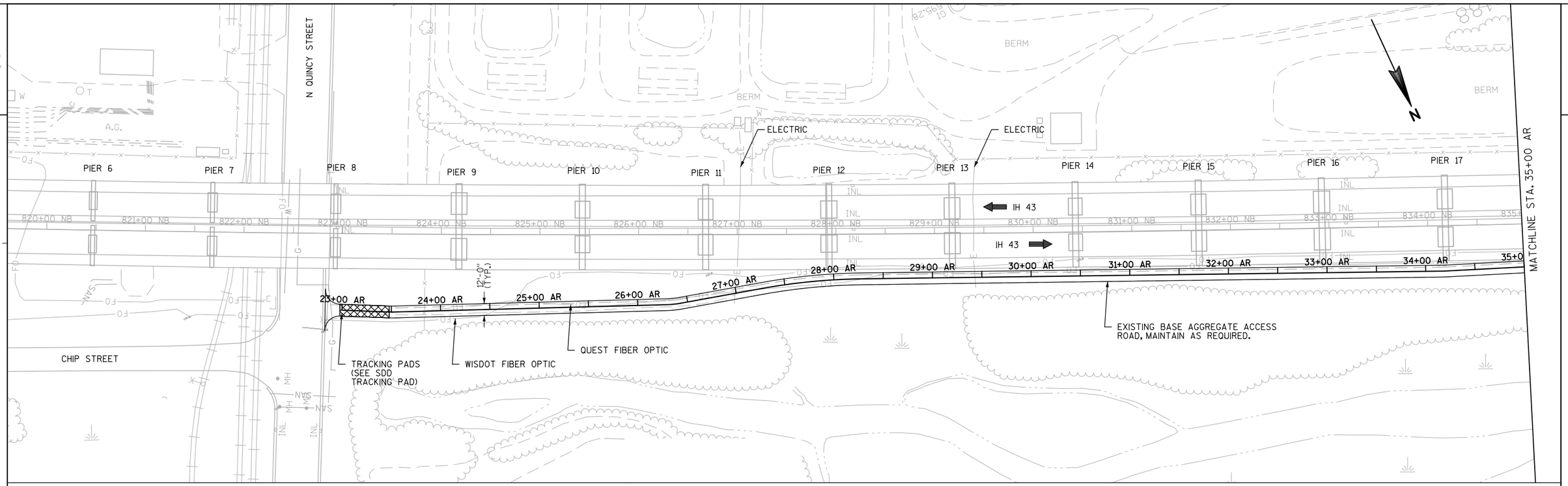
DIGGERS HOTLINE

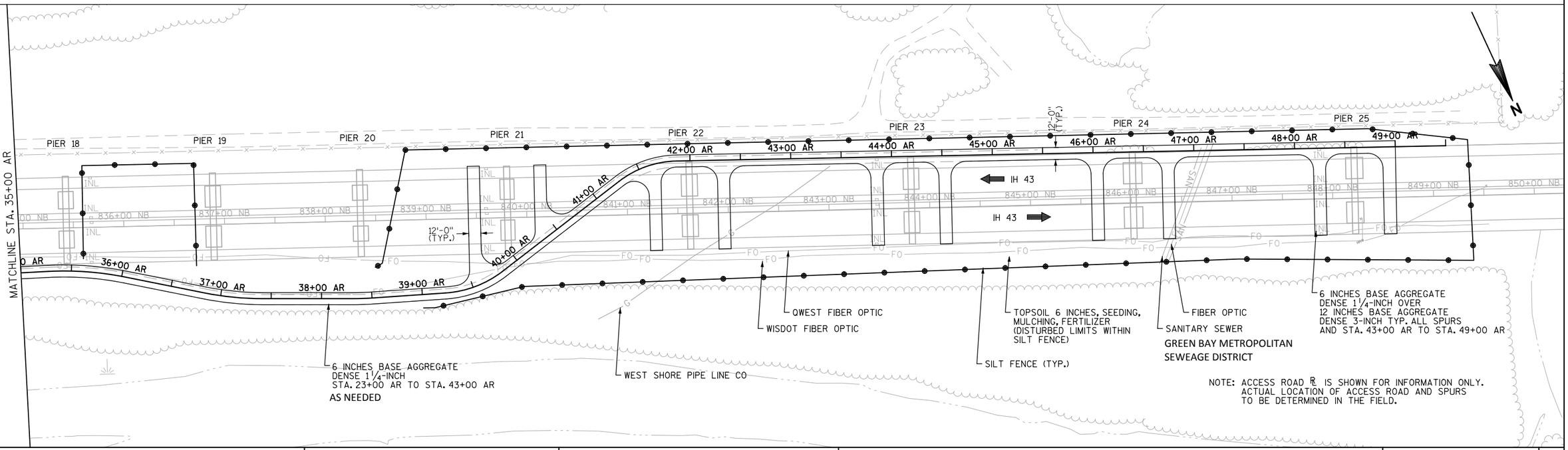
Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

2



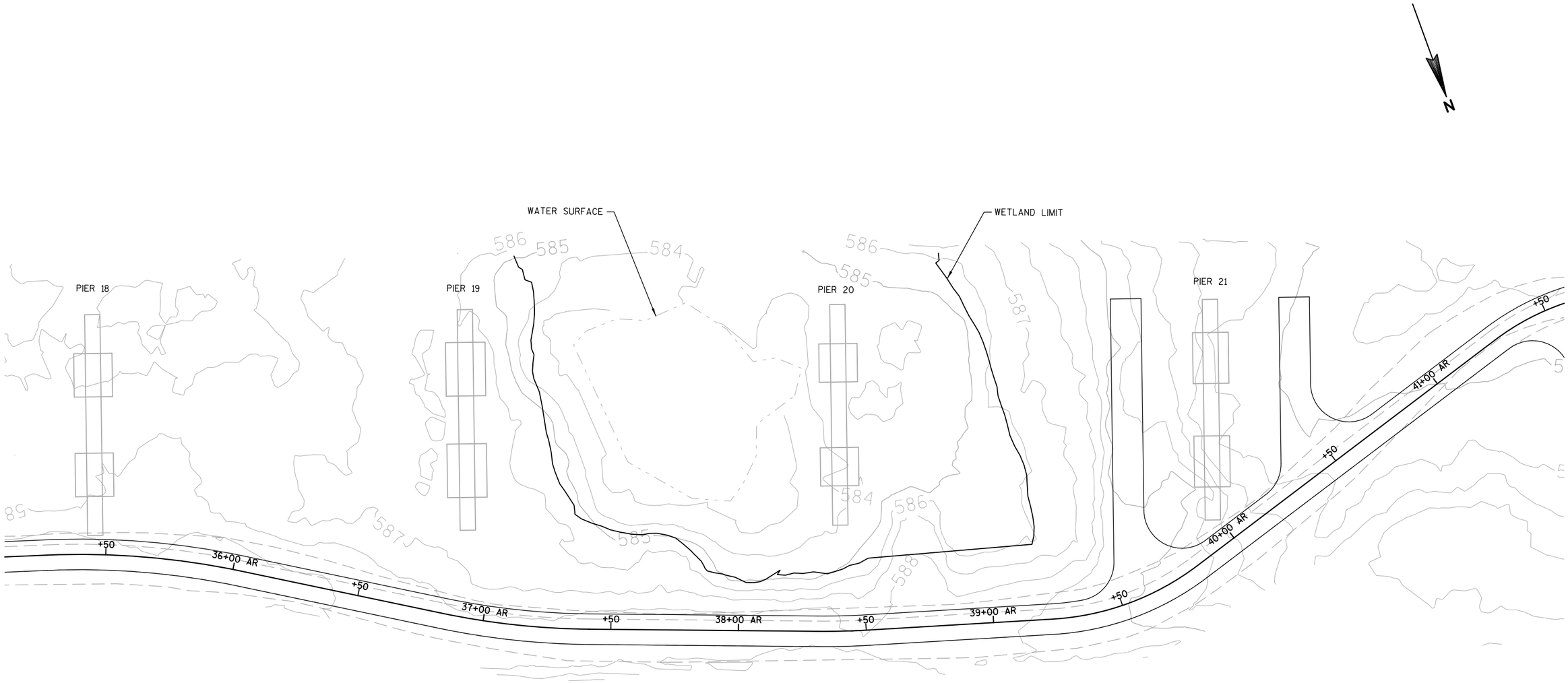
PROJECT NO: 1220-19-72	HWY: IH 43	COUNTY: BROWN	PROJECT OVERVIEW	SHEET 3	E





PROJECT NO: 1220-19-72	HWY: IH 43	COUNTY: BROWN	PLAN DETAILS	SHEET 4	E

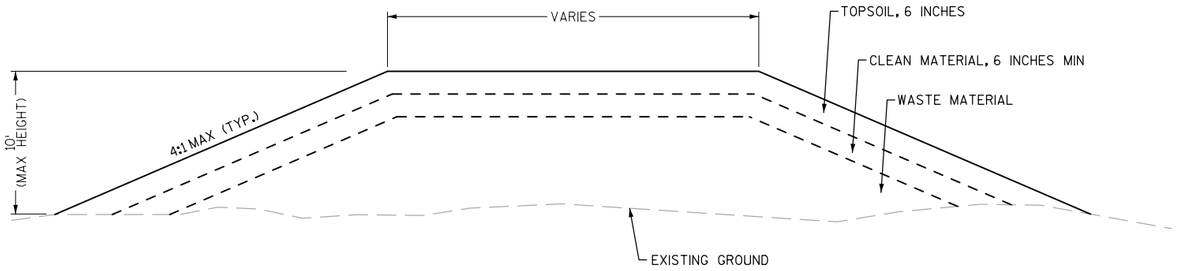
2



NOTES: REMOVE TEMPORARY ACCESS FOR PIER 21 AND RESTORE TO EXISTING CONTOURS BETWEEN PIERS 20 AND 21.

PROJECT NO: 1220-19-72	HWY: IH 43	COUNTY: BROWN	PLAN DETAIL - EXISTING CONTOURS TO BE RESTORED	SHEET 5	E

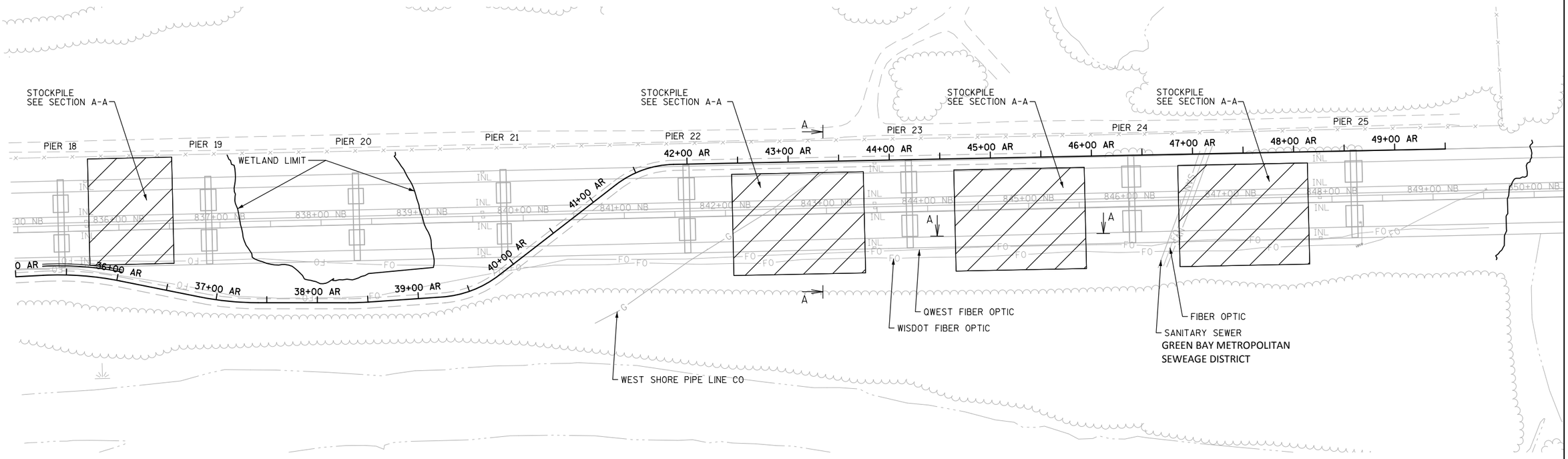
FILE NAME : IP_PWP:d0272004\021202_pd.dgn PLOT DATE : 20-OCT-2013 PLOT BY : Alicia.DeShasier PLOT NAME : PLOT SCALE : 40.000000:1.000000 WISDOT/CADDS SHEET 42



SECTION A-A

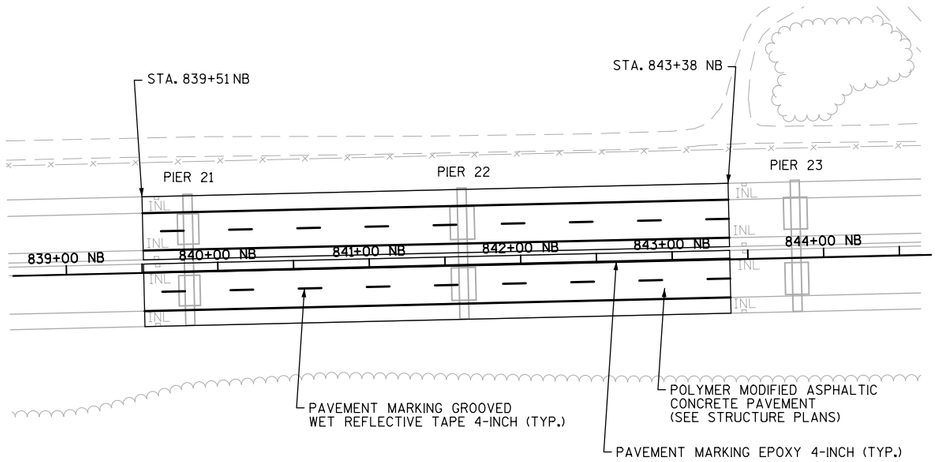
STOCKPILE DETAIL
(NOT TO SCALE)

NOTES: CLEAN MATERIAL = MATERIAL EXCAVATED FROM DRILLED SHAFTS, FROM 30'± BELOW SURFACE TO BEDROCK
WASTE MATERIAL = EXCAVATION FOR STRUCTURES PLUS THE TOP 30'± OF MATERIAL EXCAVATED FROM DRILLED SHAFTS



PROJECT NO: 1220-19-72	HWY: IH 43	COUNTY: BROWN	PLAN DETAIL - STOCKPILE AND PLACE EXCAVATED MATERIAL	SHEET 6	E

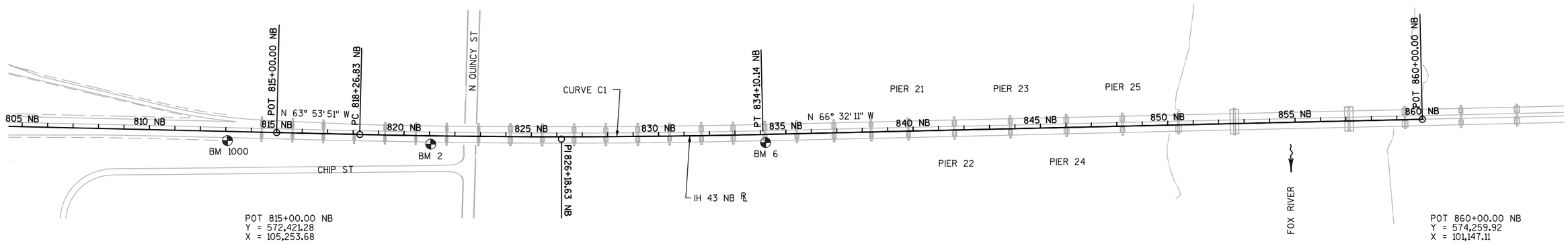
2



PAVEMENT MARKING DETAIL

2

CURVE = C1
P.I. = 826+18.63 NB
Y = 572,913.45
X = 104,249.14
DELTA = 2° 38' 20" (LT)
T = 791.79'
L = 1,583.31'
R = 34,377.47'
P.C. = 818+26.83 NB
P.T. = 834+10.14 NB



BENCH MARKS

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM 1000	813+07.39 NB	36.06' RT	BM DISK B-5-158	617.21
BM 2	821+05.61 NB	32.75' RT		627.65
BM 6	834+19.38 NB	32.04' RT		665.53

DATE 21OCT13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1220-19-72 QUANTITY
0010	108.3100.S	INCENTIVE/DISINCENTIVE FOR INTERIM COMPLETION OF WORK	CD	15.000	15.000
0020	203.0200	REMOVING OLD STRUCTURE (STATION) 01. 843+82	LS	1.000	1.000
0030	205.0100	EXCAVATION COMMON	CY	930.000	930.000
0040	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-5-158	LS	1.000	1.000
0050	210.0100	BACKFILL STRUCTURE	CY	4,750.000	4,750.000
0060	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	1,915.000	1,915.000
0070	305.0130	BASE AGGREGATE DENSE 3-INCH	TON	1,850.000	1,850.000
0080	502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	120.000	120.000
0090	502.5015	MASONRY ANCHORS TYPE L NO. 7 BARS	EACH	2,860.000	2,860.000
0100	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	682,670.000	682,670.000
0110	509.9010.S	REMOVING ASPHALTIC CONCRETE DECK OVERLAY (STRUCTURE) 01. B-5-158	SY	3,440.000	3,440.000
0120	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 1220-19-72	EACH	1.000	1.000
0130	619.1000	MOBILIZATION	EACH	1.000	1.000
0140	625.0100	TOPSOIL	SY	22,000.000	22,000.000
0150	627.0200	MULCHING	SY	22,000.000	22,000.000
0160	628.1104	EROSION BALES	EACH	10.000	10.000
0170	628.1504	SILT FENCE	LF	3,320.000	3,320.000
0180	628.1520	SILT FENCE MAINTENANCE	LF	16,568.000	16,568.000
0190	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	8.000	8.000
0200	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	5.000	5.000
0210	628.2004	EROSION MAT CLASS I TYPE B	SY	4,320.000	4,320.000
0220	628.7560	TRACKING PADS	EACH	1.000	1.000
0230	629.0210	FERTILIZER TYPE B	CWT	82.000	82.000
0240	630.0130	SEEDING MIXTURE NO. 30	LB	24.000	24.000
0250	630.0200	SEEDING TEMPORARY	LB	36.000	36.000
0260	642.5401	FIELD OFFICE TYPE D	EACH	1.000	1.000
0270	643.0100	TRAFFIC CONTROL (PROJECT) 01. 1220-19-72	EACH	1.000	1.000
0280	643.0300	TRAFFIC CONTROL DRUMS	DAY	176.000	176.000
0290	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	4.000	4.000
0300	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	8.000	8.000
0310	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	64.000	64.000
0320	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	8.000	8.000
0330	643.0900	TRAFFIC CONTROL SIGNS	DAY	20.000	20.000
0340	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	1,550.000	1,550.000
0350	646.0881.S	PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH	LF	194.000	194.000
0360	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	3,120.000	3,120.000
0370	715.0502	INCENTIVE STRENGTH CONCRETE STRUCTURES	DOL	8,082.000	8,082.000
0380	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5. 00/HR	HRS	2,400.000	2,400.000
0390	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	4,400.000	4,400.000
0400	SPV.0035	SPECIAL 01. HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	CY	40.000	40.000
0410	SPV.0035	SPECIAL 02. FOUNDATION CONCRETE MASONRY	CY	1,307.000	1,307.000
0420	SPV.0045	SPECIAL 01. VIBRATION MONITORING	DAY	25.000	25.000
0430	SPV.0060	SPECIAL 01. BAR COUPLERS NO. 11 BAR SPECIAL	EACH	1,200.000	1,200.000
0440	SPV.0060	SPECIAL 02. SEDIMENTATION BASIN	EACH	1.000	1.000
0450	SPV.0075	SPECIAL 01. DRILLED SHAFT OBSTRUCTIONS	HRS	30.000	30.000

3

DATE 21OCT13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1220-19-72 QUANTITY
0460	SPV.0075	SPECIAL 02. STREET SWEEPING	HRS	33.000	33.000
0470	SPV.0085	SPECIAL 01. POST-TENSIONING PIER FOOTING	LB	65,957.000	65,957.000
0480	SPV.0085	SPECIAL 02. STRUCTURAL STEEL CARBON SPECIAL	LB	27,960.000	27,960.000
0490	SPV.0090	SPECIAL 01. DRILLED SHAFT FOUNDATION 60-INCH	LF	2,472.000	2,472.000
0500	SPV.0105	SPECIAL 01. BRIDGE JACKING SPECIAL STRUCTURE B-5-158	LS	1.000	1.000
0510	SPV.0105	SPECIAL 02. TRIAL DRILLED SHAFT FOUNDATION 60-INCH	LS	1.000	1.000
0520	SPV.0105	SPECIAL 03. STOCKPILE AND PLACE EXCAVATED MATERIAL	LS	1.000	1.000
0530	SPV.0195	SPECIAL 01. POLYMER MODIFIED ASPHALTIC CONCRETE PAVEMENT	TON	385.000	385.000

ALL QUANTITIES ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

3

205.0100
EXCAVATION
COMMON

STATION		TO	STATION		LOCATION	CY
39+50	AR	--	40+25	AR	PIER 21	144
41+50	AR	--	42+50	AR	PIER 22	130
43+75	AR	--	44+75	AR	PIER 23	120
46+00	AR	--	46+75	AR	PIER 24	120
48+10	AR	--	48+85	AR	PIER 25	120
					UNDISTRIBUTED	296
PROJECT TOTAL						930

BASE AGGREGATE DENSE

STATION		TO	STATION		LOCATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	305.0130 BASE AGGREGATE DENSE 3-INCH TON
23+00	AR	--	49+50	AR	LENGTH OF ACCESS ROAD	1228	--
43+00	AR	--	49+50	AR	ACCESS ROAD PIER 23-25	--	607
39+50	AR	--	40+25	AR	PIER 21	101	201
41+50	AR	--	42+50	AR	PIER 22	87	173
43+75	AR	--	44+75	AR	PIER 23	84	168
46+00	AR	--	46+75	AR	PIER 24	83	166
48+10	AR	--	48+85	AR	PIER 25	82	165
					UNDISTRIBUTED	250	370
PROJECT TOTAL						1,915	1,850

3

EROSION CONTROL

STATION		TO	STATION		LOCATION	625.0100 TOPSOIL SY	627.0200 MULCHING SY	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.2004 EROSION MAT CLASS I TYPE B SY	628.7560 TRACKING PADS EACH	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
23+00	AR	--	49+50	AR	LENGTH OF ACCESS ROAD	--	--	--	2650	--	--	--	--	1	--	--	--
39+49	AR	--	40+24	AR	STOCKPILES	350	350	--	--	2208	--	--	--	--	10.9	3.1	4.7
39+50	AR	--	40+25	AR	PIER 21	3450	3450	--	--	2208	--	--	--	--	10.9	3.1	4.7
41+50	AR	--	42+50	AR	PIER 22	3450	3450	--	--	2208	--	--	--	--	10.9	3.1	4.7
43+75	AR	--	44+75	AR	PIER 23	3450	3450	--	--	2208	--	--	--	--	10.9	3.1	4.7
46+00	AR	--	46+75	AR	PIER 24	3450	3450	--	--	2208	--	--	--	--	10.9	3.1	4.7
48+10	AR	--	48+85	AR	PIER 25	3450	3450	--	--	2208	--	--	--	--	10.9	3.1	4.7
					UNDISTRIBUTED	4400	4400	10	670	3320	8	5	4320	--	16.3	4.7	7.1
PROJECT TOTAL						22,000	22,000	10	3,320	16,570	8	5	4,320	1	82	24	36

SUMMARY OF EACH & LUMP SUM BID ITEMS

CATEGORY	ITEM NUMBER	DESCRIPTION	UNITS	TOTAL QUANTITY
	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS 1220-19-72	EACH	1
0020	619.1000	MOBILIZATION	EACH	1
	642.5401	FIELD OFFICE TYPE D	EACH	1
	SPV.0060.02	SEDIMENTATION BASIN	EACH	1
	SPV.0105.03	STOCKPILE AND PLACE EXCAVATED MATERIAL	LS	1

SPV.0075.02
STREET SWEEPING

LOCATION	FREQUENCY	HRS
QUINCY STREET	3 TIMES PER WEEK	33
	PROJECT TOTAL	33

ALL QUANTITIES ARE CATEGORY 0010 UNLESS OTHERWISE NOTED

3

TRAFFIC CONTROL

LOCATION	643.0100 TRAFFIC CONTROL PROJECT EACH	643.0300 TRAFFIC CONTROL DRUMS DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.07105 TRAFFIC CONTROL WARNING LIGHTS TYPE C DAYS	643.0800 TRAFFIC CONTROL ARROW BOARDS DAYS	643.0900 TRAFFIC CONTROL SIGNS DAYS	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (WHITE) LF	649.0400 TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH (YELLOW) LF
STA 839+51 NB - 843+38 NB									
NB IH 43 LANE CLOSURE		88	2	4	32	4	10	780	780
SB IH 43 LANE CLOSURE		88	2	4	32	4	10	780	780
PROJECT TOTAL	1	176	4	8	64	8	20	1560	1560

PAVEMENT MARKING

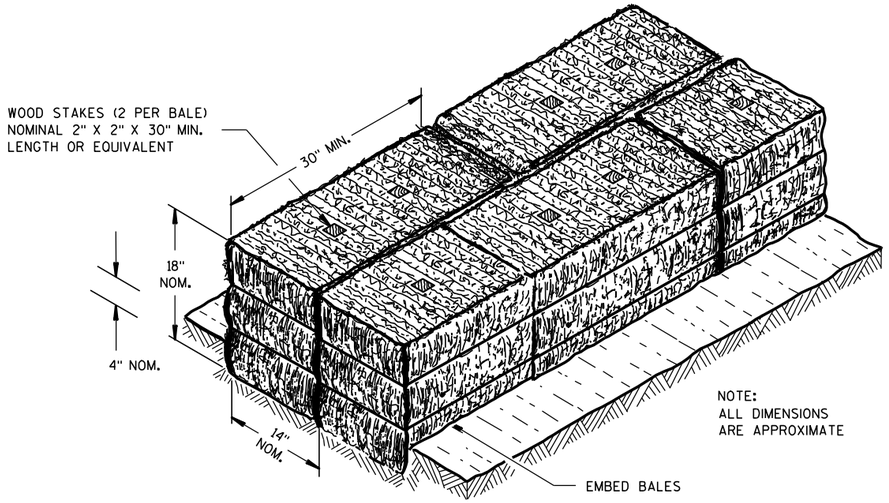
STATION	TO	STATION	LOCATION	646.0106 PAVEMENT MARKING EPOXY 4-INCH (WHITE) LF	646.0106 PAVEMENT MARKING EPOXY 4-INCH (YELLOW) LF	646.0881.S PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH (WHITE) LF
839+51 NB	-	843+38 NB	IH 43 NB & SB	775	775	194
			PROJECT TOTAL	775	775	194

SPV.0045.01 VIBRATION MONITORING

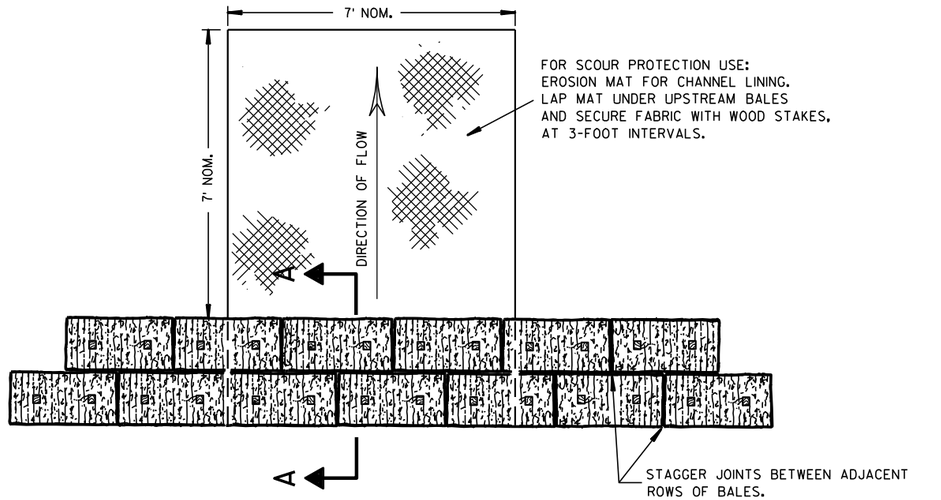
STATION	TO	STATION	DAY
841+00 NB	-	843+00 NB	25
		PROJECT TOTAL	25

Standard Detail Drawing List

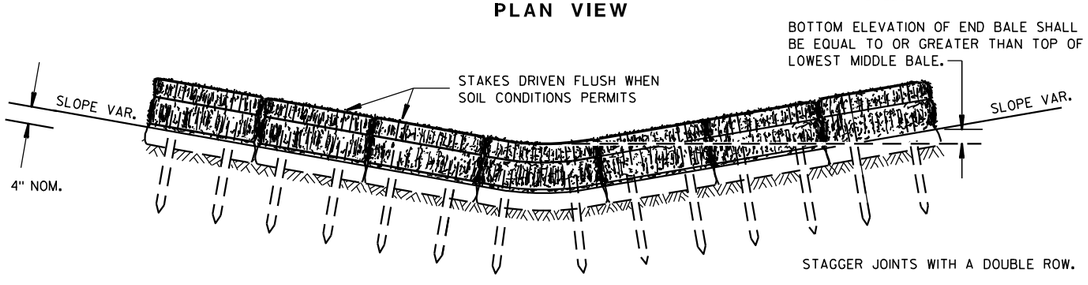
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E14-01	TRACKING PAD
15C08-16A	PAVEMENT MARKING (MAINLINE)
15D12-03	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.



SECTION A-A



PLAN VIEW



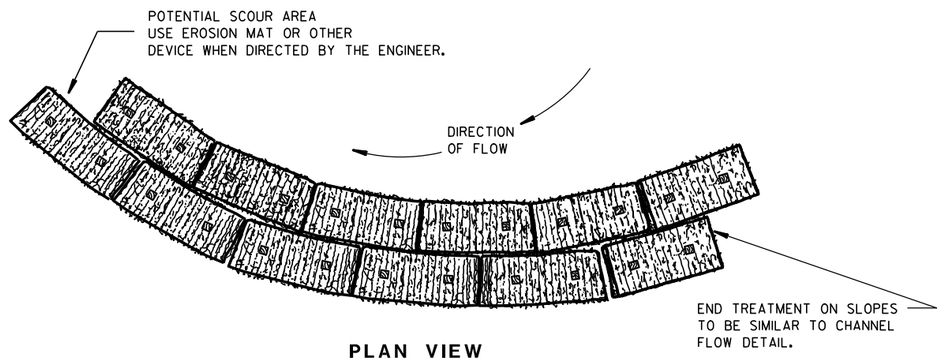
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

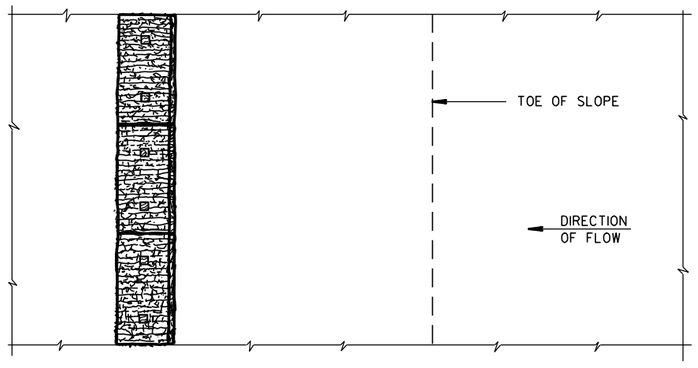
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

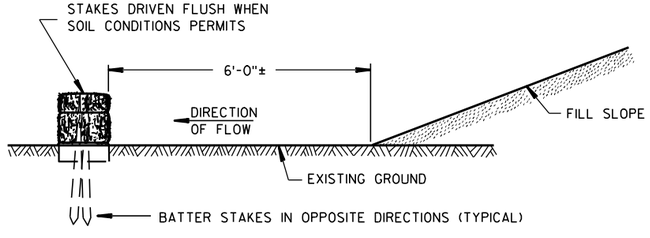


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

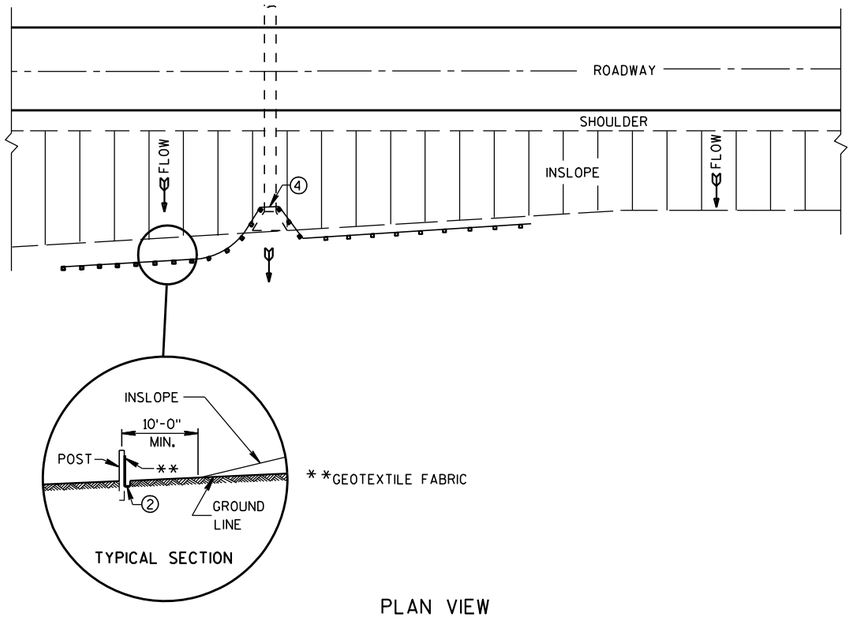
FHWA

6

S.D.D. 8 E 8-3

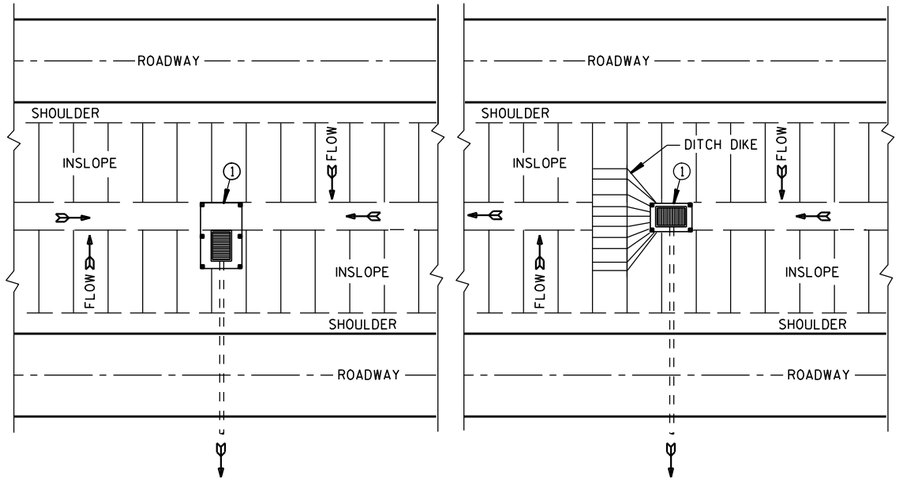
6

S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

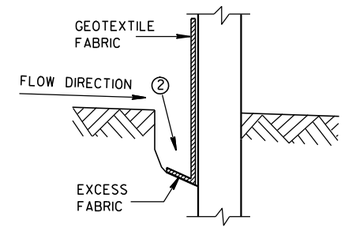
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

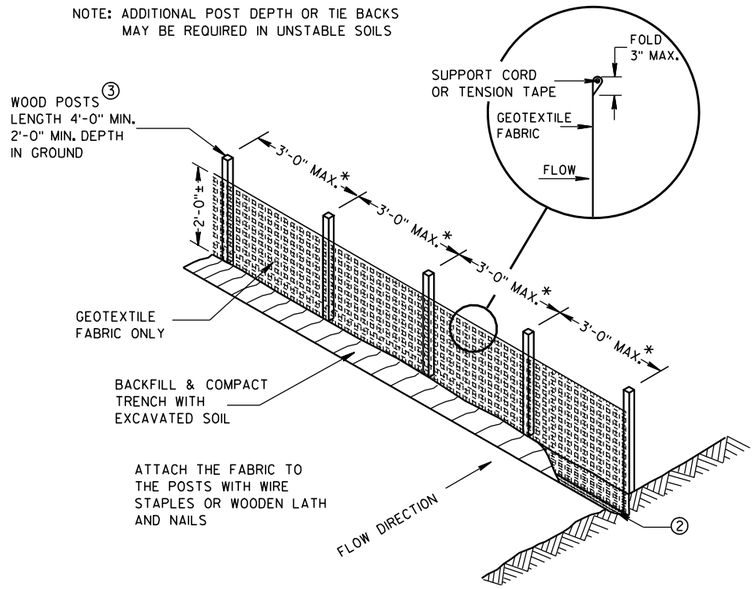
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

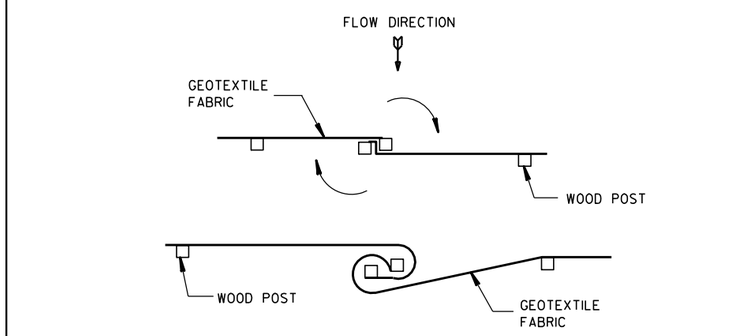
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



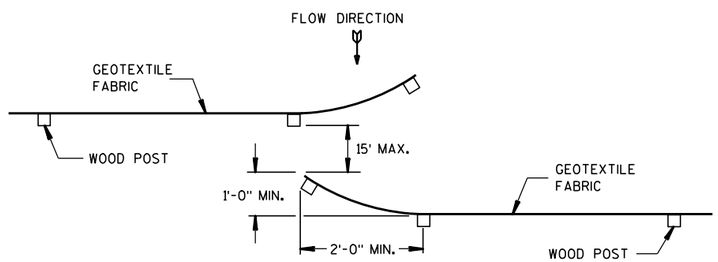
TRENCH DETAIL



SILT FENCE

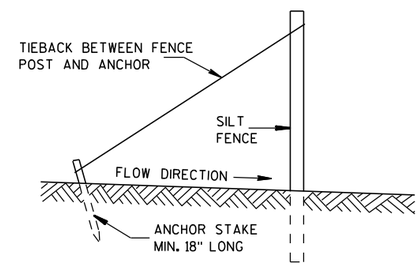


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

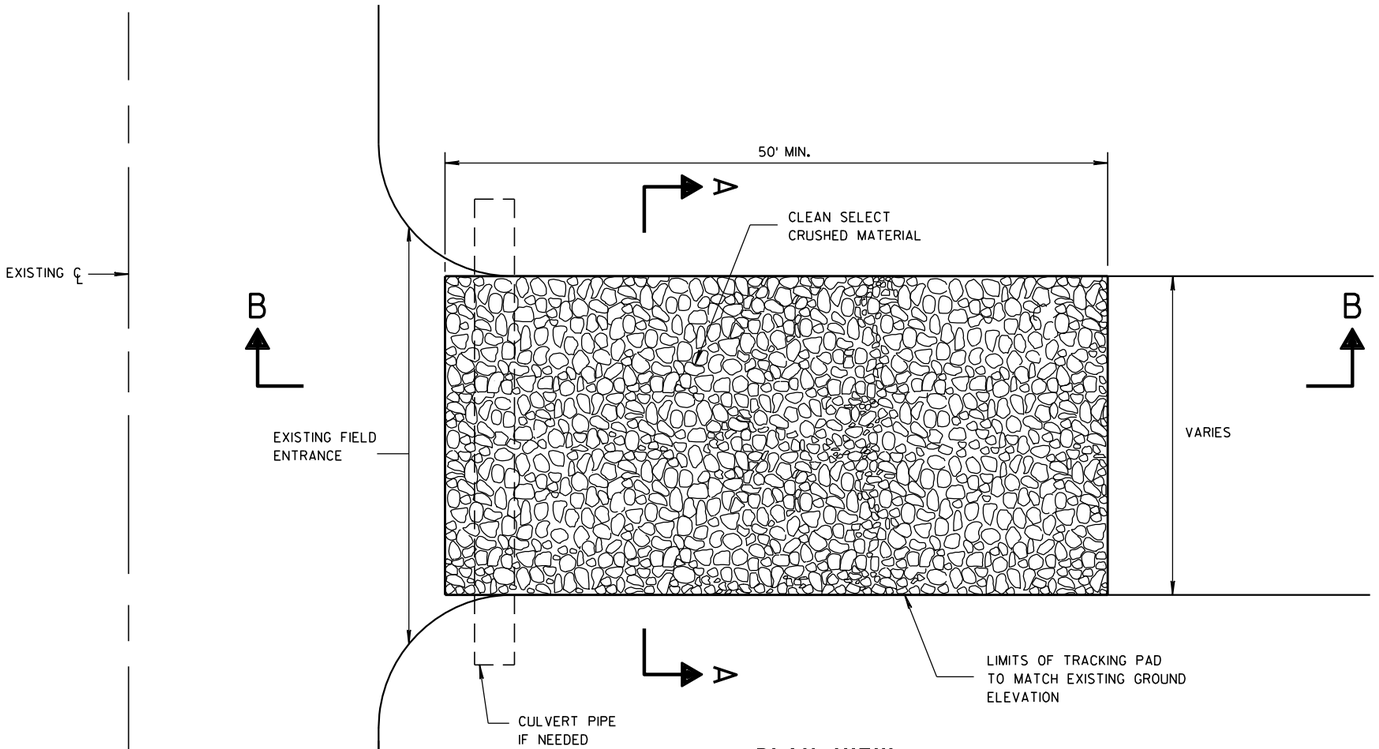
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

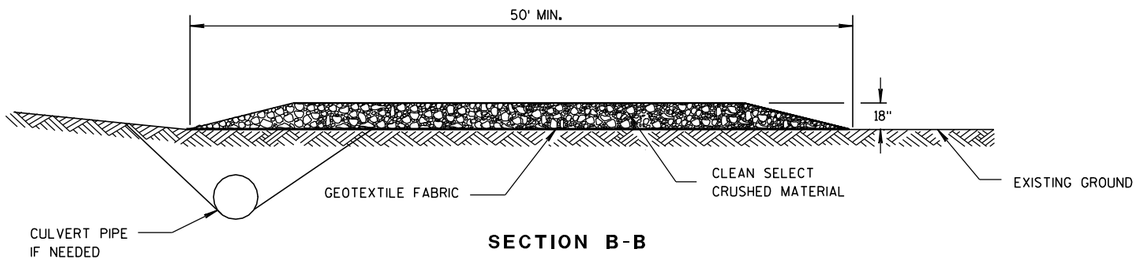
S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6



PLAN VIEW



SECTION B-B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

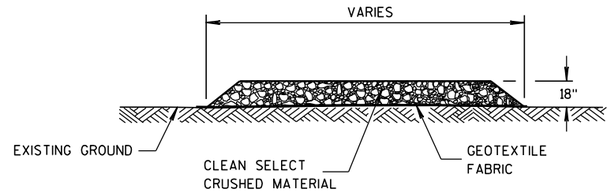
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



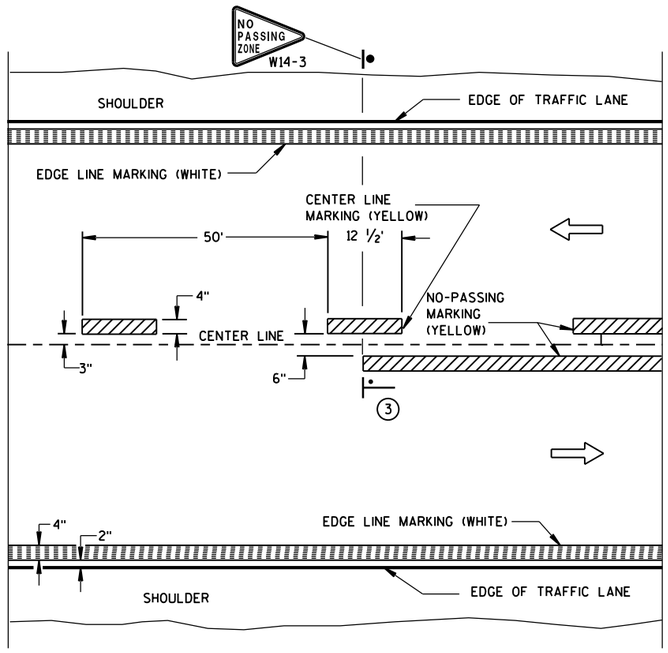
SECTION A-A

TRACKING PAD

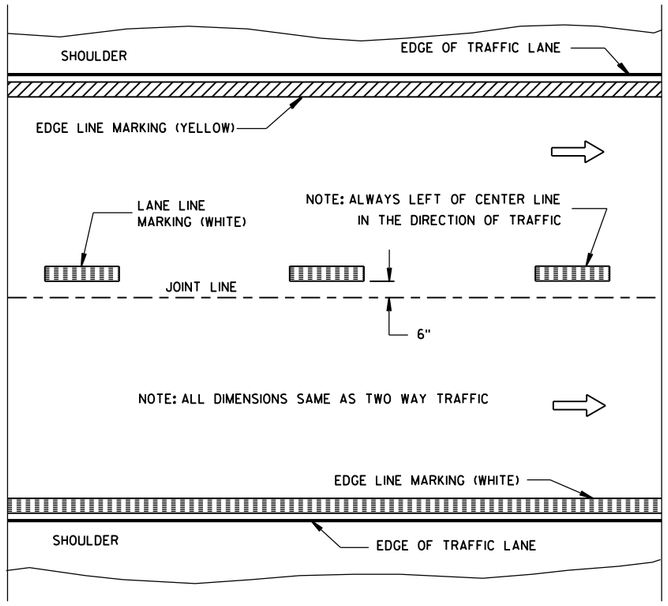
TRACKING PAD	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 3/24/2011 DATE FHWA	/S/ Jerry H. Zoda ROADWAY STANDARDS ENGINEER

6

S.D.D. 8 E 14-1

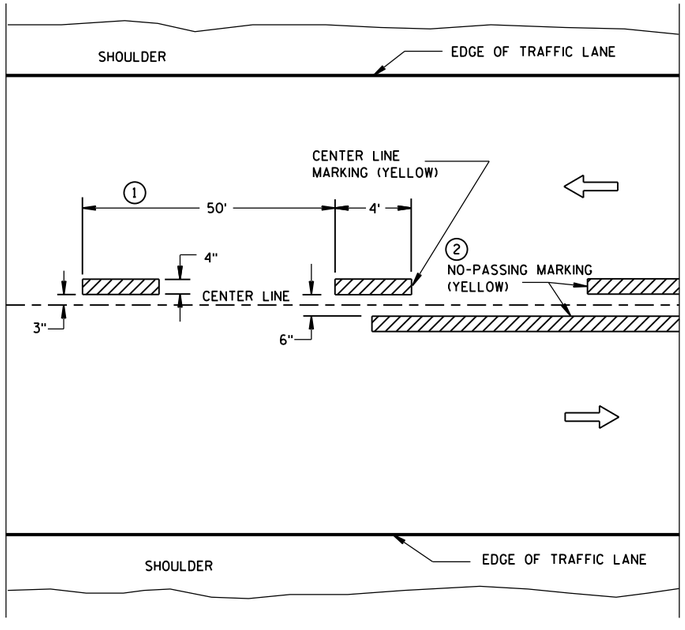


TWO WAY TRAFFIC

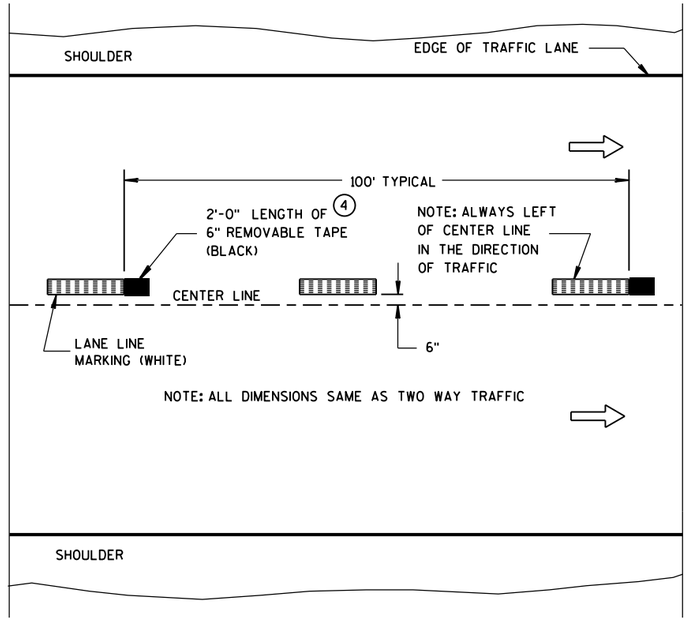


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

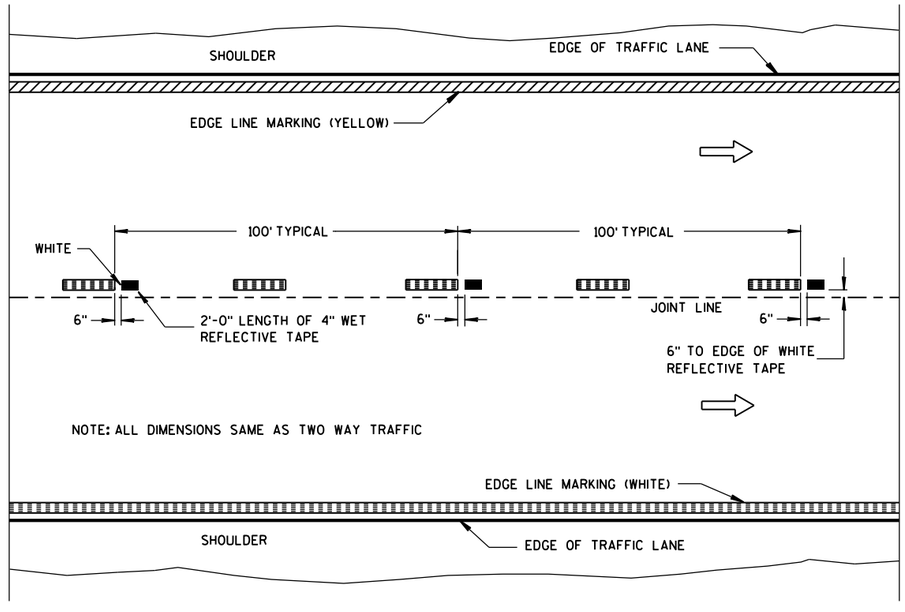
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5-13-2013 DATE
/S/ Travis Feltes STATE TRAFFIC E
FHWA

6

S.D.D. 15 C 8-16a

6

S.D.D. 15 C 8-16a

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- POST WITH ATTACHED SIGN IN DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"×48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

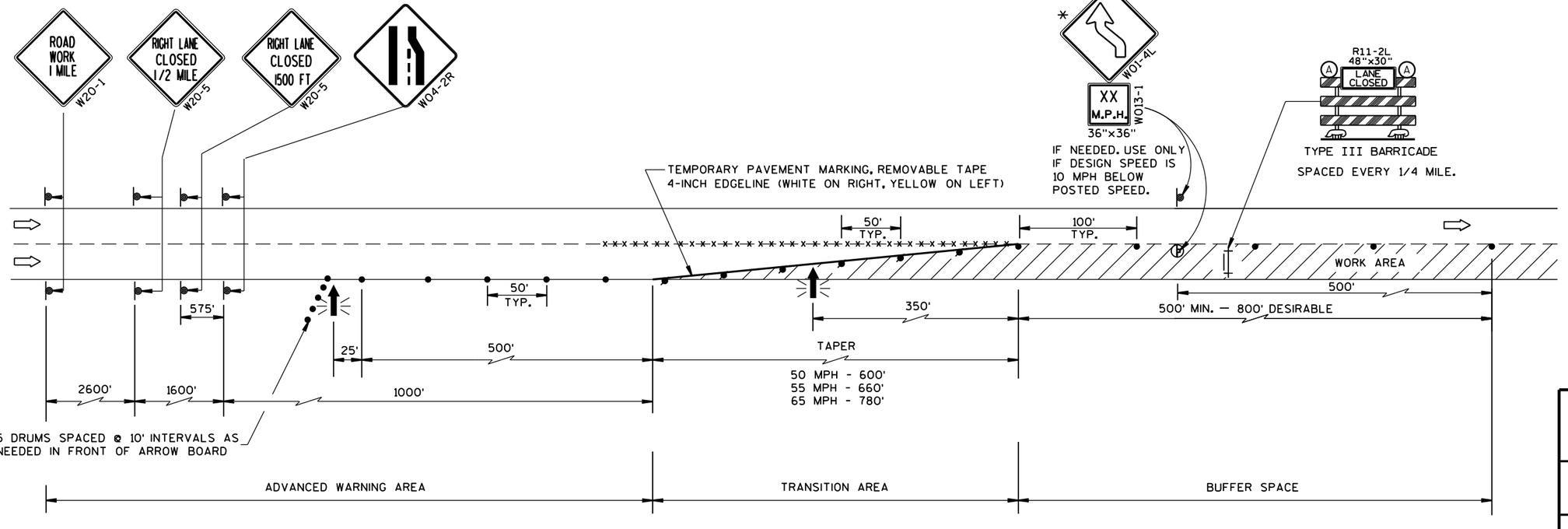
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

LOCATED 500 FEET IN ADVANCE OF R2-1 SIGN AND 500 FEET BEYOND THE "ROAD WORK 1 MILE" SIGN.

R2-1
48"×60"
(BLACK AND WHITE)

IF THE REGULATORY SPEED HAS BEEN REDUCED, A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES.



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.

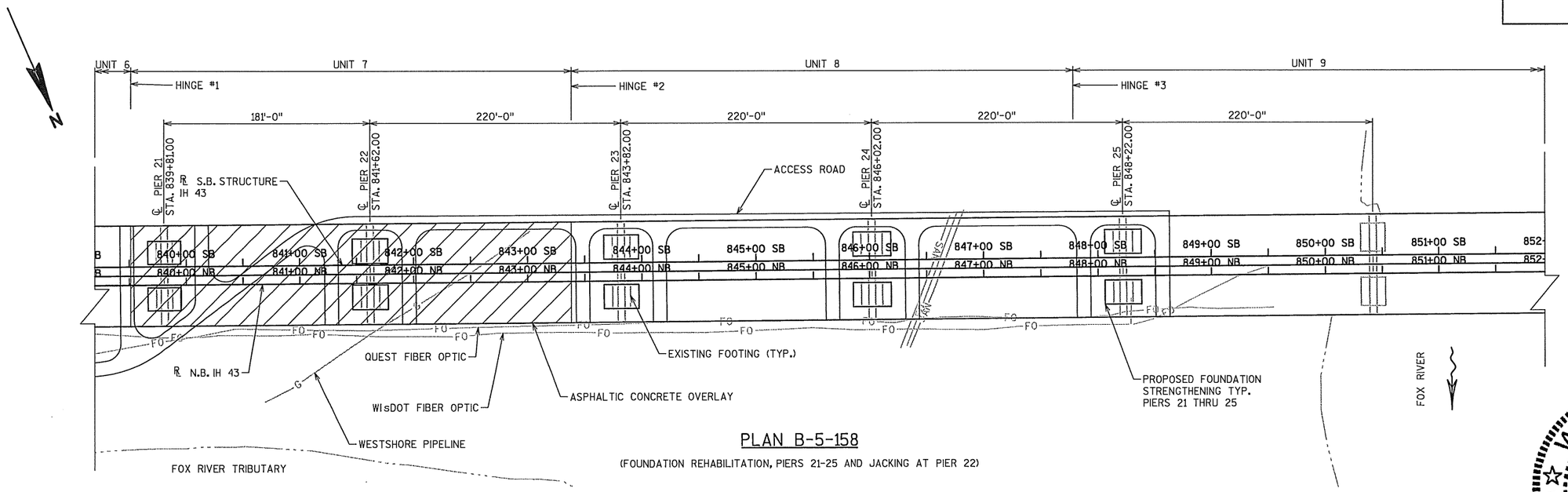
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6
S.D.D. 15 D 12-3

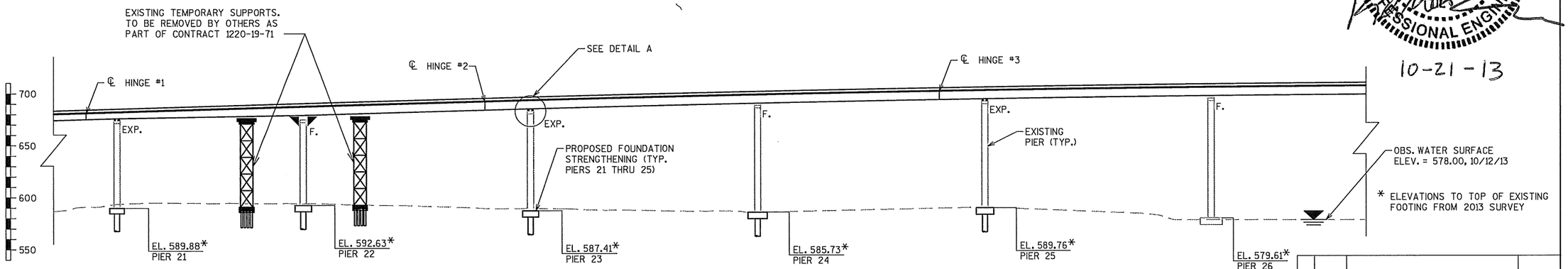
STATE PROJECT NUMBER

1220-19-72



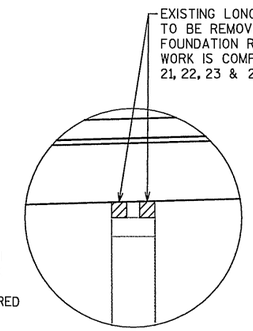
PLAN B-5-158

(FOUNDATION REHABILITATION, PIERS 21-25 AND JACKING AT PIER 22)



ELEVATION

(LOOKING SOUTH)



DETAIL A

LIST OF DRAWINGS

1. GENERAL PLAN
2. PROFILE GRADE LINE & ESTIMATED QUANTITIES
3. GENERAL NOTES, CROSS SECTION & DETAILS
4. SUBSURFACE EXPLORATION
5. DRILLED SHAFT DETAILS
6. PIER 21 FOUNDATION RETROFIT
7. PIER 21 POST TENSIONING LAYOUT
8. PIER 21 REBAR DETAILS
9. PIER 22 FOUNDATION RETROFIT
10. PIER 22 POST TENSIONING LAYOUT
11. PIER 22 REBAR DETAILS
12. PIER 22 SUPERSTRUCTURE JACKING - 1 OF 3
13. PIER 22 SUPERSTRUCTURE JACKING - 2 OF 3
14. PIER 22 SUPERSTRUCTURE JACKING - 3 OF 3
15. PIER 22 BEAM SEAT EXTENSION
16. PIER 22 BOLTER & BEAM SEAT DETAILS
17. PIER 23 FOUNDATION RETROFIT
18. PIER 23 POST TENSIONING LAYOUT
19. PIER 23 REBAR DETAILS
20. PIER 24 FOUNDATION RETROFIT
21. PIER 24 POST TENSIONING LAYOUT
22. PIER 24 REBAR DETAILS
23. PIER 25 FOUNDATION RETROFIT
24. PIER 25 POST TENSIONING LAYOUT
25. PIER 25 REBAR DETAILS
26. POLYMER MODIFIED ASPHALTIC CONCRETE PAVEMENT

FOUNDATION DATA

ALL NEW FOUNDATIONS TO BE SUPPORTED ON 60" DIAMETER DRILLED SHAFTS WITH 54" ROCK SOCKET. ESTIMATED DRILLED SHAFT LENGTHS GIVEN ON SHEET 5. THE ROCK SOCKET FACTORED AXIAL SKIN FRICTION RESISTANCE IS 27.3 KSF AND THE FACTORED AXIAL END BEARING RESISTANCE IS 151 KSF. THE RESISTANCE FACTORS ARE 0.55 FOR SKIN FRICTION AND 0.50 FOR END BEARING.

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS20
INVENTORY RATING: HS26
OPERATING RATING: HS37
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 190 KIPS

DESIGN STRESSES: (PROPOSED WORK)

DRILLED SHAFT FOUNDATION 60-INCH	f'c = 4 KSI
FOUNDATION CONCRETE MASONRY	f'c = 4 KSI
HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	f'c = 4 KSI
BAR STEEL REINFORCEMENT, GRADE 60	fy = 60 KSI
STRUCTURAL STEEL	fy = 50 KSI
POST TENSIONING STEEL	fpu = 150 KSI

TRAFFIC VOLUME

IH 43
A.A.D.T.= 43,000 (2012)
A.A.D.T. = 57,000 (2032)
DESIGN SPEED = 70 M.P.H.

STRUCTURE DESIGN CONTACTS

CONSULTANT: CHAD HALVERSON 608-821-8700
BRIDGE OFFICE: WILLIAM DREHER 608-266-8489

WISCONSIN
KENTON PAUL ZINN
38990-006
CHICAGO, ILL.
PROFESSIONAL ENGINEER

10-21-13

NO.	DATE	REVISION	BY

Baker

MICHAEL BAKER JR., INC
7633 GANSER WAY, SUITE 206
MADISON, WI 53719

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

ACCEPTED William C. Dreher 10/21/13
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-5-158

IH 43 OVER FOX RIVER

COUNTY	~~TOWN~~/CITY/~~VILLAGE~~
BROWN	GREEN BAY

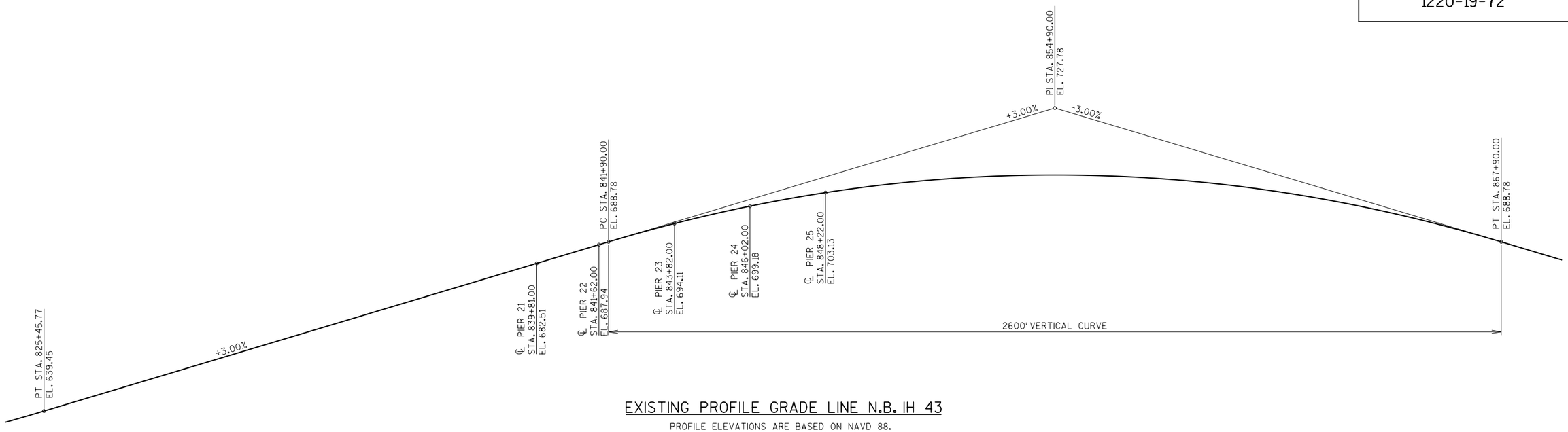
DESIGN SPEC.
REHABILITATION N/A

DESIGNED BY	JWB	DESIGN CK'D.	RWB	DRAWN BY	ABP	PLANS CK'D.	CDH

GENERAL PLAN

SHEET 1 OF 26

STATE PROJECT NUMBER
1220-19-72



EXISTING PROFILE GRADE LINE N.B. IH 43

PROFILE ELEVATIONS ARE BASED ON NAVD 88.
ELEVATIONS SHOWN ON PROFILE DO NOT MATCH
PREVIOUS PLANS WHICH REFERENCE
INTERNATIONAL GREAT LAKES DATUM (IGLD) 95.

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	UNIT	PIER 21	PIER 22	PIER 23	PIER 24	PIER 25	SUPER	TOTALS
203.0200	REMOVING OLD STRUCTURE STATION 843+82	LS	-	-	-	-	-	-	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-5-158	LS	-	-	-	-	-	-	1
210.0100	BACKFILL STRUCTURE	CY	820	1,270	950	490	1,220	-	4,750
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	24	24	24	24	24	-	120
502.5015	MASONRY ANCHORS TYPE L NO. 7 BARS	EACH	536	596	576	576	576	-	2,860
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	134,020	139,250	136,140	136,640	136,620	-	682,670
509.9010.S	REMOVING ASPHALTIC CONCRETE DECK OVERLAY	SY	-	-	-	-	-	3,440	3,440
SPV.0035.01	HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	CY	-	40	-	-	-	-	40
SPV.0035.02	FOUNDATION CONCRETE MASONRY	CY	230.4	269.6	258.0	279.0	270.0	-	1,307
SPV.0060.01	BAR COUPLERS NO. 11 SPECIAL	EACH	240	240	240	240	240	-	1,200
SPV.0075.01	DRILLED SHAFT OBSTRUCTIONS	HRS	6	6	6	6	6	-	30
SPV.0085.01	POST-TENSIONING PIER FOOTING	LB	12,230	13,104	12,886	14,196	13,541	-	65,957
SPV.0085.02	STRUCTURAL STEEL CARBON SPECIAL	LB	-	19,810	-	-	-	8,150	27,960
SPV.0090.01	DRILLED SHAFT FOUNDATION 60-INCH	LF	512	508	476	476	500	-	2,472
SPV.0105.01	BRIDGE JACKING SPECIAL STRUCTURE B-5-158	LS	-	1	-	-	-	-	1
SPV.0105.02	TRIAL DRILLED SHAFT FOUNDATION 60-INCH	LS	-	1	-	-	-	-	1
SPV.0195.01	POLYMER MODIFIED ASPHALTIC CONCRETE PAVEMENT	TON	-	-	-	-	-	385	385

BENCH MARKS

NO.	STATION	OFFSET	DESCRIPTION	ELEV.
BM 1000	813+07.39 NB	36.06' RT	BM DISK B-5-158	617.21
BM 2	821+05.61 NB	32.75' RT		627.65
BM 6	834+19.38 NB	32.04' RT		665.53

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY ABP | PLANS CK'D. CDH

PROFILE GRADE LINE & ESTIMATED QUANTITIES

SHEET 2 OF 26
20

STATE PROJECT NUMBER

1220-19-72

GENERAL NOTES

THE PROPOSED WORK TO INCLUDE FOUNDATION STRENGTHENING AND SUPERSTRUCTURE JACKING.

DRAWINGS SHALL NOT BE SCALED.

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

ALL FIELD CONNECTIONS SHALL BE MADE WITH ¾" DIAMETER FRICTION TYPE HIGH-TENSILE STRENGTH BOLTS UNLESS SHOWN OR NOTED OTHERWISE.

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

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

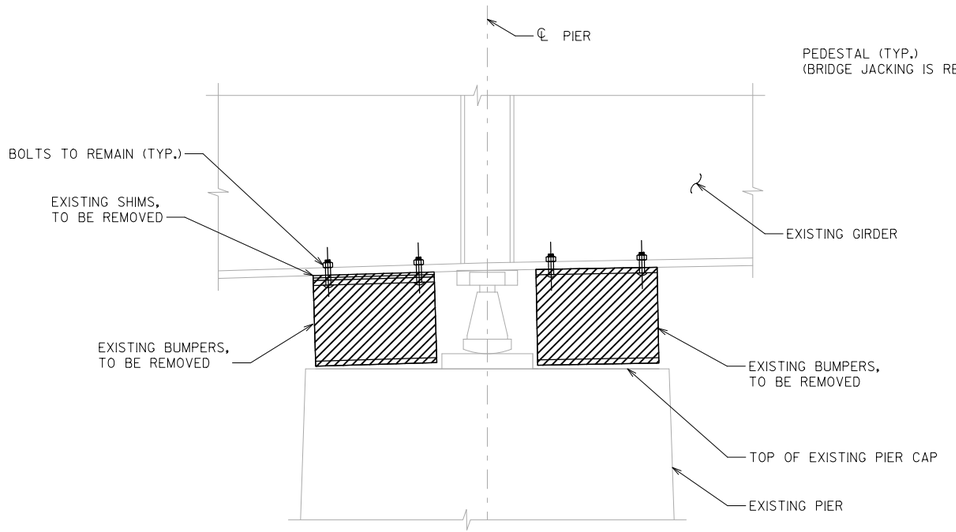
DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

REMOVING ASPHALTIC CONCRETE DECK OVERLAY AND CONSTRUCTING POLYMER MODIFIED ASPHALTIC CONCRETE PAVEMENT (IF REQUIRED) FOR UNIT 7 SHALL NOT BEGIN UNTIL AUTHORIZATION FROM THE DEPARTMENT.

CONCRETE FOR THE DRILLED SHAFTS IS INCLUDED IN BID ITEM "DRILLED SHAFT FOUNDATION 60-INCH".

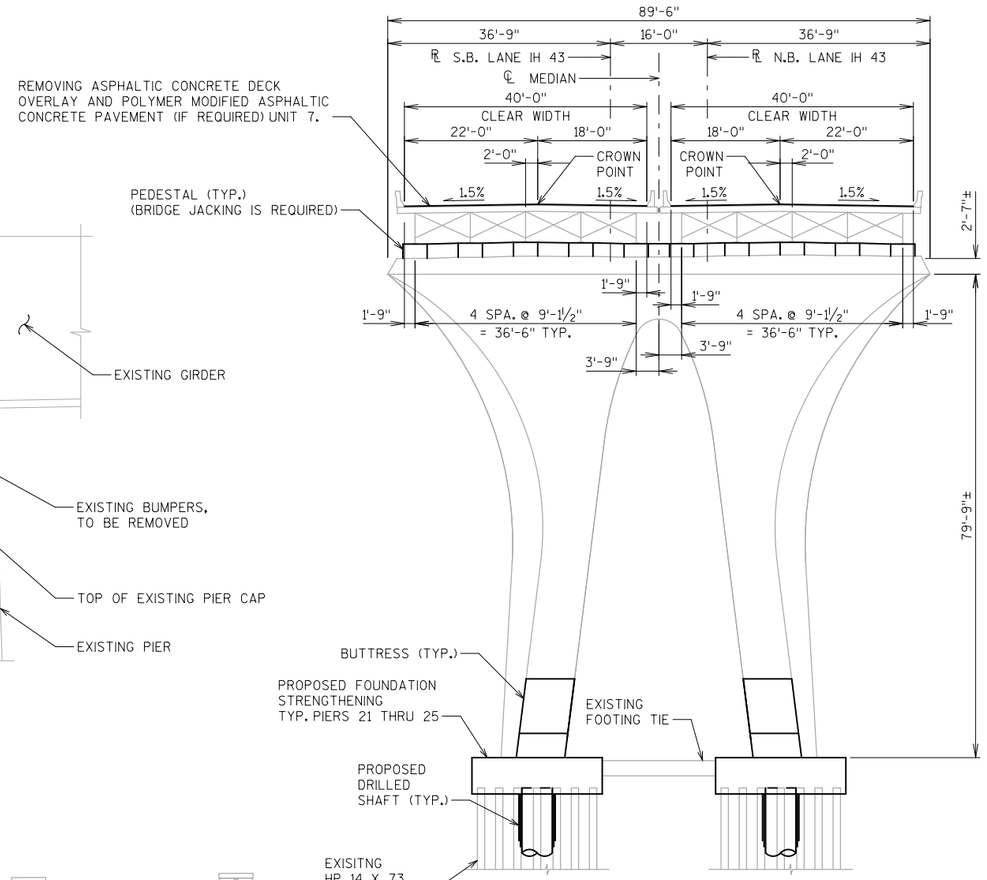
CONCRETE FOR THE FOOTING EXTENSION AND BUTTRESSES IS INCLUDED IN BID ITEM "FOUNDATION CONCRETE MASONRY".

CONCRETE FOR THE PIER CAP (PIER 22) BEAM SEATS IS INCLUDED IN BID ITEM "HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES".



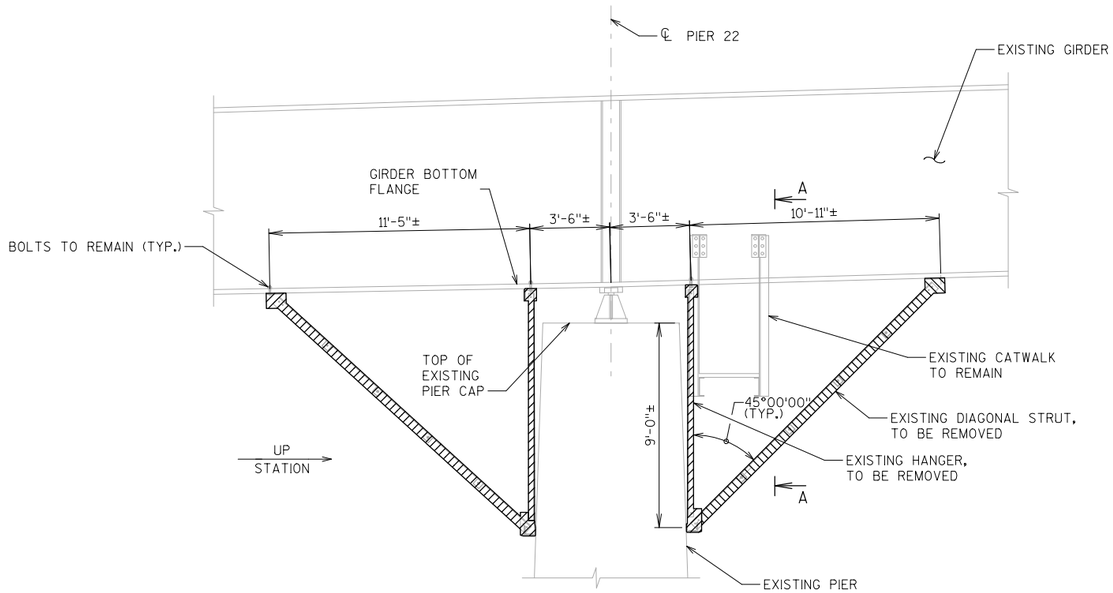
REMOVAL DETAILS*

BRACKETS AT PIERS 21, 23, 25



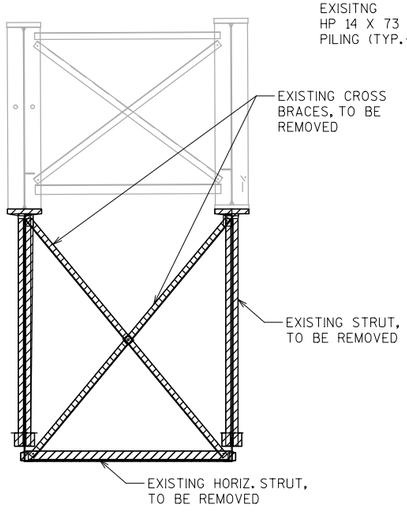
CROSS SECTION

AT PIER 22, LOOKING WEST (OTHER PIERS SIMILAR)



REMOVAL DETAILS*

BRACING AT PIER 22 (LOOKING SOUTH)



VIEW A-A

*BRACING AND BRACKET REMOVALS ARE INCLUDED IN THE BID ITEM "REMOVING OLD STRUCTURE". DO NOT REMOVE BRACING AND BUMPER BRACKETS UNTIL JACKING OPERATION IS COMPLETE.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

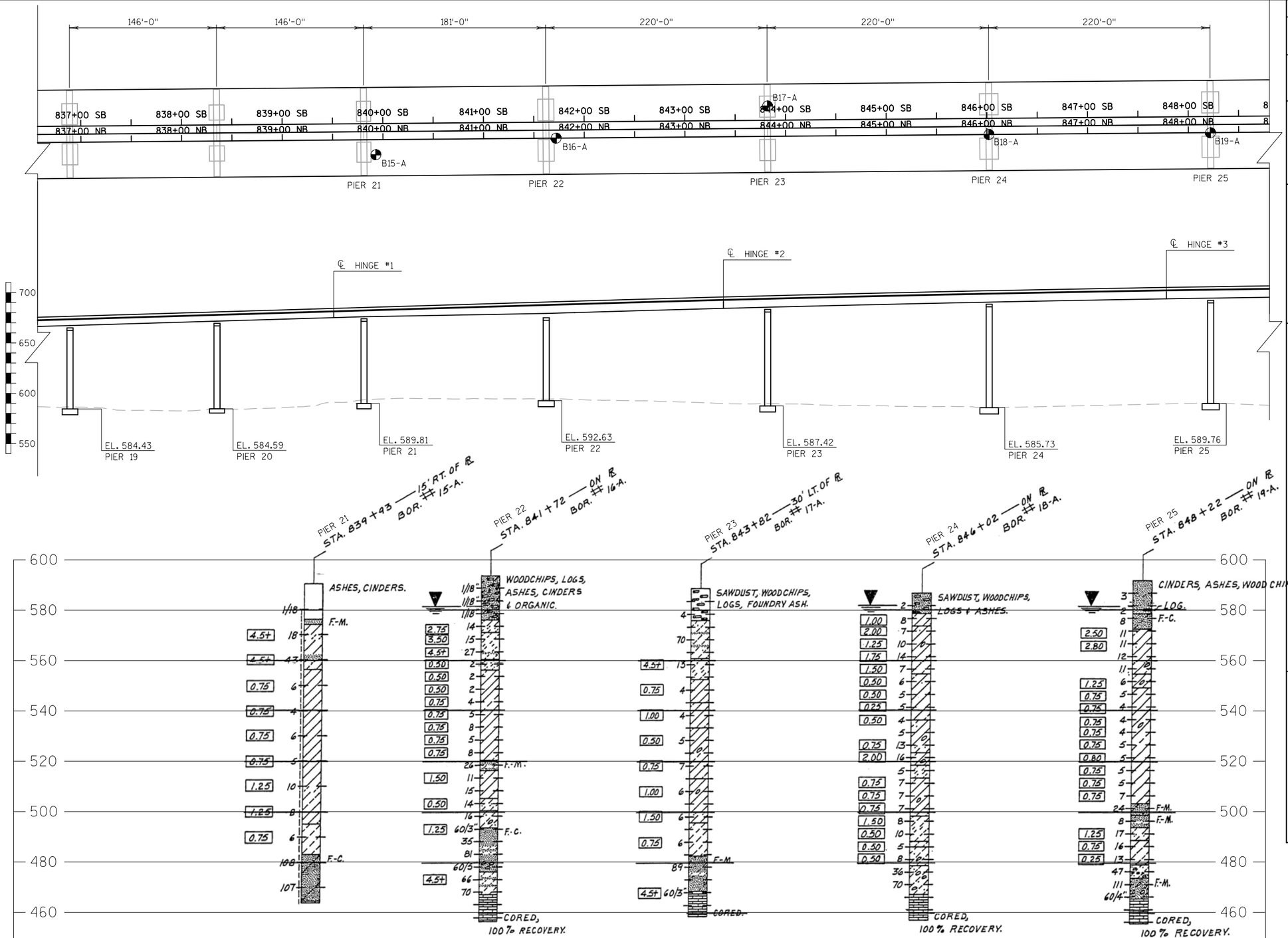
STRUCTURE B-5-158

DRAWN BY ABP | PLANS CK'D. CDH

GENERAL NOTES, CROSS SECTION AND DETAILS

SHEET 3 OF 26

21



BORINGS SHOWN ARE BASED ON THE INTERNATIONAL GREAT LAKES DATUM (1955) AND ARE FROM THE ORIGINAL 1980 PLANS.

STATE PROJECT NUMBER

1220-19-72

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
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH → 7.7 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY ABP PLANS CK'D. CDH

SUBSURFACE EXPLORATION

SHEET 4 OF 26
22

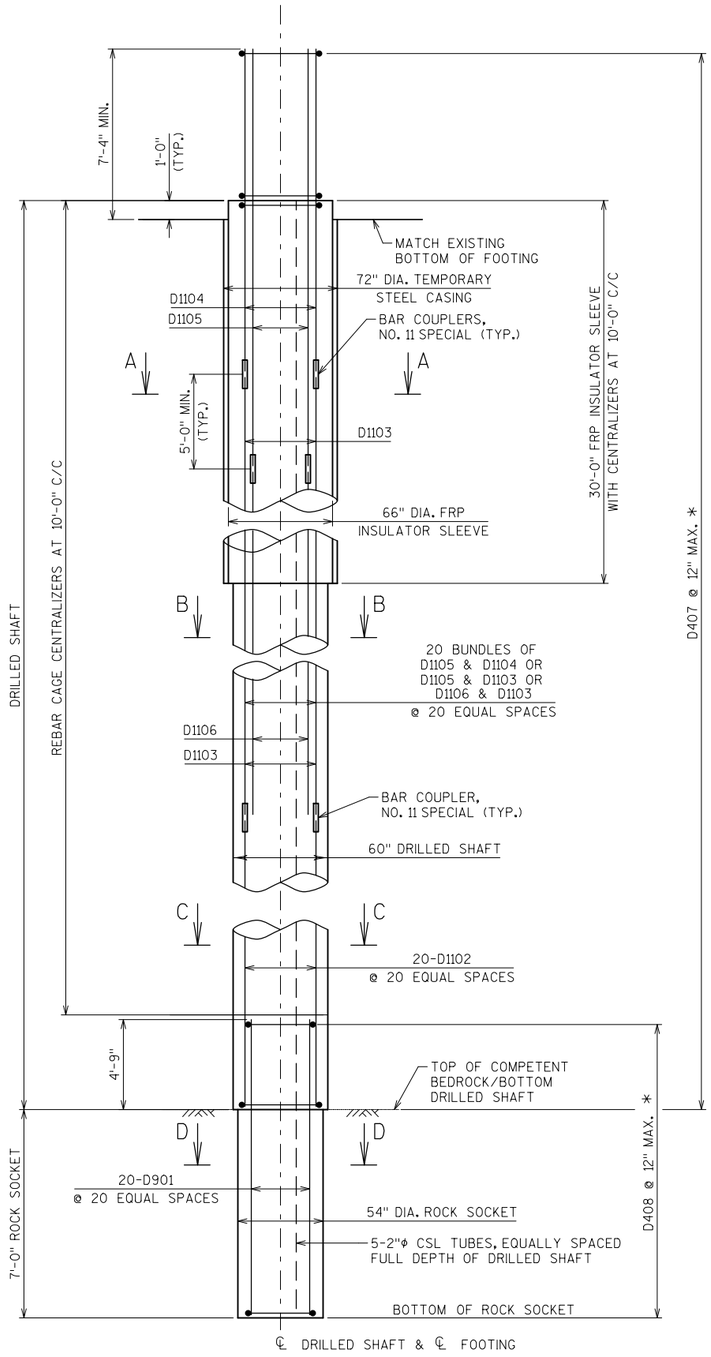
8

8

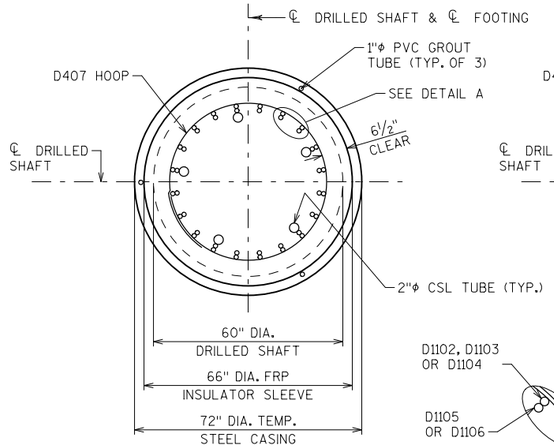
IP_PWP:D0273881±080104_SE.DGN 21-OCT-2013 04:47

FILE=
SCALE =

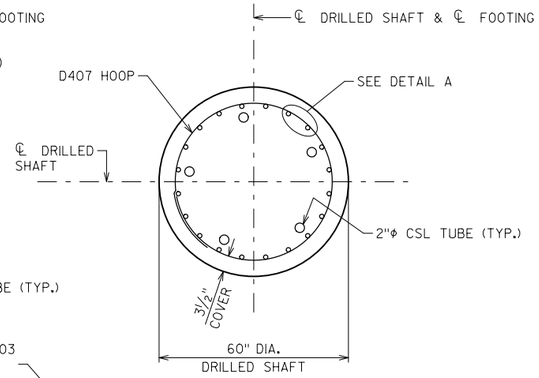
STATE PROJECT NUMBER
1220-19-72



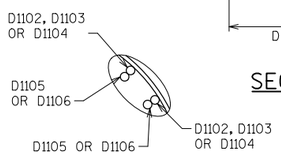
DRILLED SHAFT ELEVATION



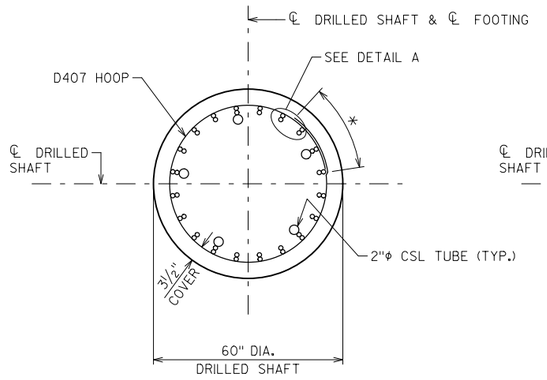
SECTION A-A



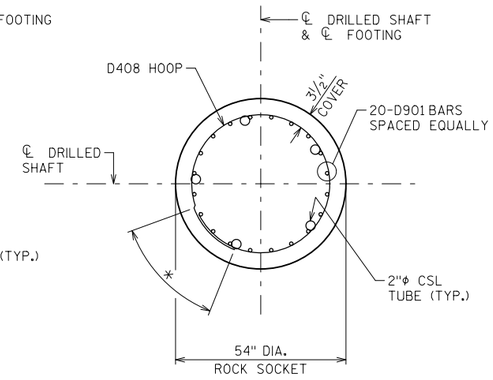
SECTION C-C



DETAIL A



SECTION B-B



SECTION D-D

NOTES

1. STEEL CASING, STEEL PIPES FOR CROSSHOLE SONIC LOGGING (CSL), FRP SLEEVE, AND CONCRETE SHALL BE INCLUDED IN THE COST FOR "DRILLED SHAFT FOUNDATION 60-INCH".
2. EPOXY COATED STEEL PIPES SHALL BE FURNISHED AND INSTALLED FOR THE FULL LENGTH OF THE DRILLED SHAFTS FOR CROSSHOLE SONIC LOGGING (CSL).
3. THE CONTRACTOR SHALL NOT YIELD OR DEFORM THE REINFORCEMENT BAR CAGE DURING ITS LIFTING, HANDLING OR PLACEMENT.
4. STAGGER LOCATIONS OF BAR COUPLERS NO. 11 SPECIAL. CONTRACTOR TO PROVIDE LAYOUT OF SPLICE LOCATIONS WITH SHOP DRAWINGS.
5. CUT SHAFT BARS AS SHOWN TO LIMITS ABOVE TOP OF FOOTING. QUANTITY FOR PAYMENT IS BASED ON REINFORCEMENT AS DETAILED.

DRILLED SHAFT DATA TABLE

PIER	BOTTOM OF FOOTING ELEVATION (1)	APPROX. BOTTOM OF DRILLED SHAFT ELEVATION (2)	APPROX. BOTTOM OF ROCK SOCKET ELEVATION	TOTAL DRILLED SHAFT LENGTH (FEET) (3)
21	584.63	465	458	128
22	586.63	468	461	127
23	581.41	470	463	119
24	579.48	468	461	119
25	583.51	467	460	125

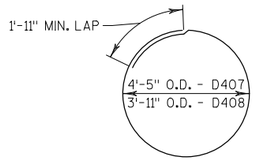
(1) BOTTOM OF FOOTING ELEVATIONS ARE FROM 2013 SURVEY (NAVD 88)
(2) BOTTOM OF DRILLED SHAFT ELEVATIONS ARE AT TOP OF COMPETENT ROCK AS DETERMINED FROM 1975 CORE BORINGS, ADJUSTED BY 1'± TO CORRELATE WITH NAVD 88 .
(3) TOTAL DRILLED SHAFT LENGTH INCLUDES SHAFT LENGTH PLUS 1' EMBEDMENT INTO BOTTOM OF FOOTING PLUS 7' ROCK SOCKET

BILL OF BARS - DRILLED SHAFTS

COATED (PER PIER) = 97,730 LBS
TOTAL COATED = 488,650 LBS

PIER	BAR MARK	NO. REQ'D PER SHAFT	TOTAL NO. REQ'D.	LENGTH	BENT	COAT	LOCATION	COMMENTS
PIERS 21-25	D901	20	400	11'-7"		X	ROCK SOCKET	
	D1102	20	400	60'-0"		X	DRILLED SHAFT VERTICAL	BAR COUPLER AT ONE END
	D1103	20	400	60'-0"		X	DRILLED SHAFT VERTICAL	BAR COUPLER AT BOTH ENDS
	D1104	20	400	14'-0"		X	DRILLED SHAFT VERTICAL	BAR COUPLER AT ONE END - CUT TO FIT IN FIELD
	D1105	20	400	19'-0"		X	DRILLED SHAFT VERTICAL	BAR COUPLER AT ONE END - CUT TO FIT IN FIELD
	D1106	20	400	55'-0"		X	DRILLED SHAFT VERTICAL	BAR COUPLER AT ONE END
	D407	134	2680	15'-10"	X	X	DRILLED SHAFT TIE	
	D408	13	260	14'-3"	X	X	ROCK SOCKET TIE	

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. ALL BAR BEND DIMENSIONS ARE OUT-TO-OUT OF BAR.



D407
D408

LEGEND

✳ STAGGER SPLICE 180° EVERY OTHER BAR

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY CLG | PLANS CK'D. DGM

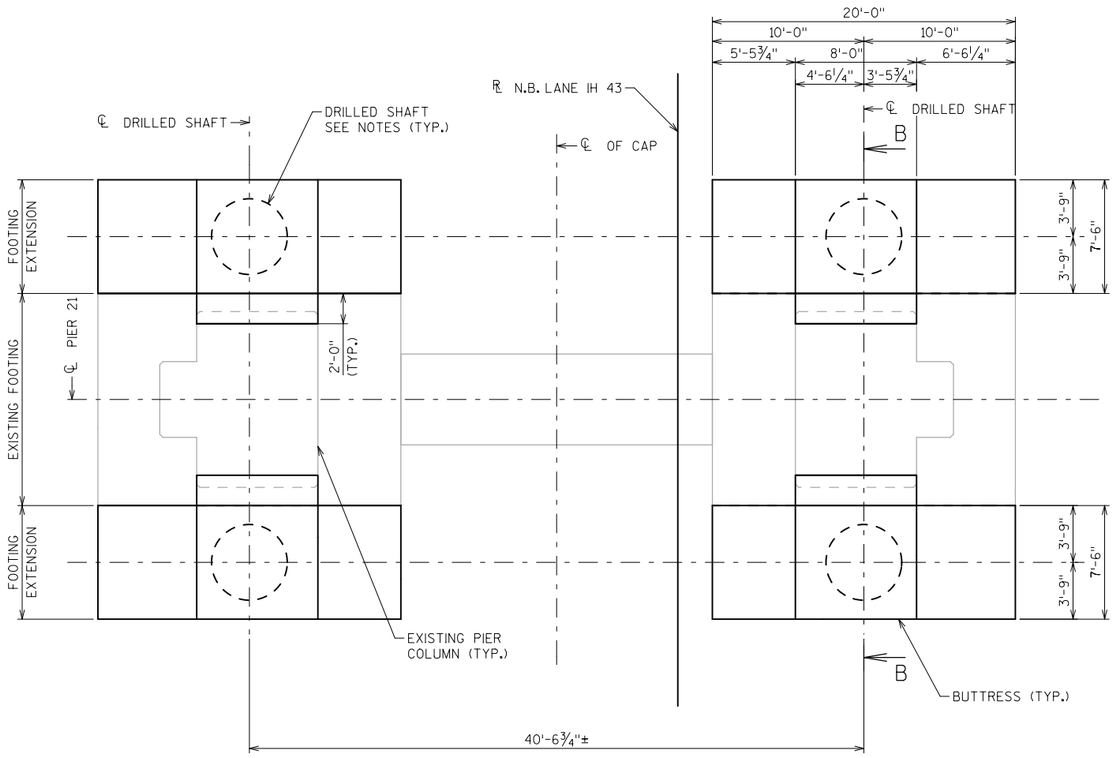
DRILLED SHAFT DETAILS

SHEET 5 OF 26
23

8

8

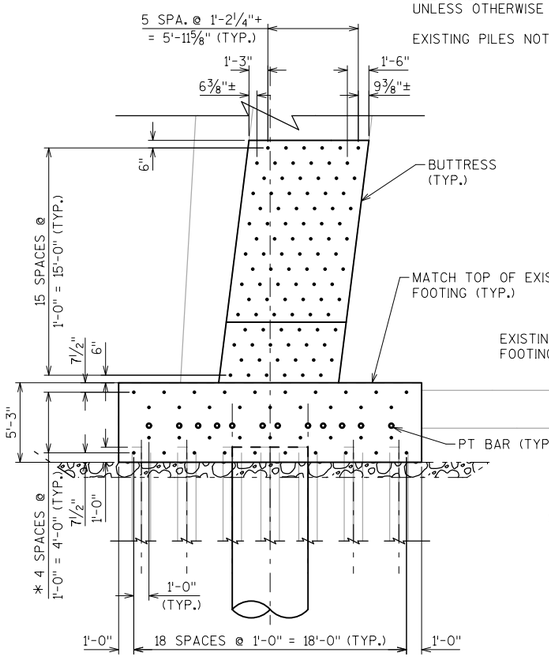
STATE PROJECT NUMBER
1220-19-72



PLAN

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS OTHERWISE NOTED

EXISTING PILES NOT SHOWN FOR CLARITY

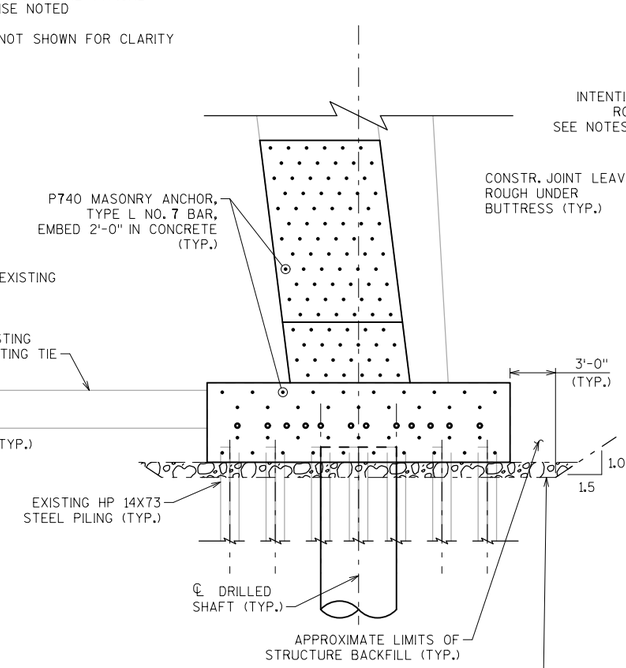


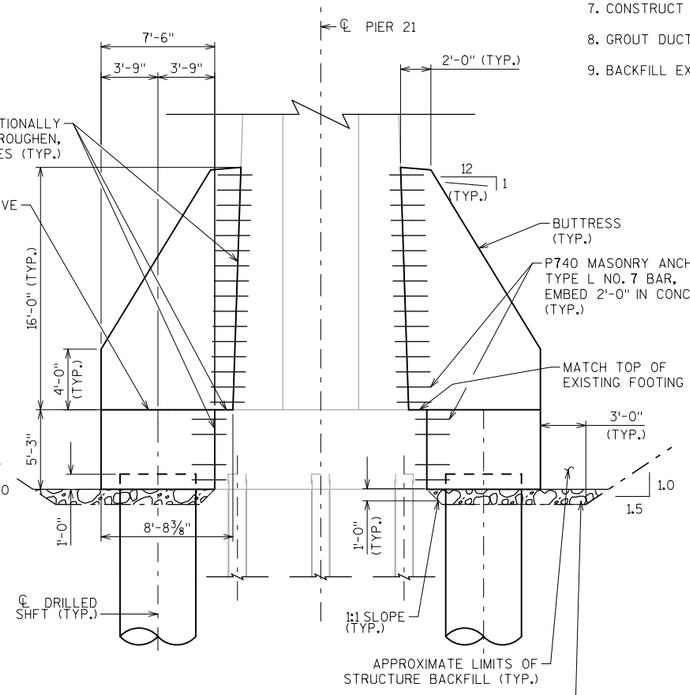
* MASONRY ANCHORS NOT REQUIRED AT PT BAR LOCATIONS.

ELEVATION

(LOOKING UPSTATION)

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS OTHERWISE NOTED





SECTION B-B

DOWEL NOTES

1. DURING FIELD DRILLING OF HOLES FOR MASONRY ANCHORS TYPE L, NO. 7 BARS, IF EXISTING REINFORCING STEEL IS ENCOUNTERED, THE HOLE SHALL BE SHIFTED TO MISS THE REINFORCEMENT.
2. INTENTIONALLY ROUGHEN SURFACES WHERE MASONRY ANCHORS ARE INSTALLED TO AN AMPLITUDE OF 0.25 IN. COST OF FURNISHING INTENTIONALLY ROUGHENED SURFACES SHALL BE INCIDENTAL TO THE PRICE BID FOR "REMOVING OLD STRUCTURE STATION 843+82".
3. DRILL MASONRY ANCHORS AFTER CORING FOR POST TENSIONING.

NOTES

1. CLEAN EXPOSED SURFACES OF EXISTING FOOTING TO REMOVE DIRT, LAITANCE AND ANY OTHER DELETERIOUS MATERIALS PRIOR TO POURING THE PROPOSED FOOTING EXTENSIONS.
2. BUTTRESS CONCRETE SHALL NOT BE PLACED UNTIL ALL OF THE POST TENSIONING BARS HAVE BEEN JACKED AND LOCKED-OFF PER THE PROPOSED POST TENSIONING LAYOUT SHEET.

PIER RETROFIT CONSTRUCTION SEQUENCE

1. EXCAVATE FOR FOOTING EXTENSIONS
2. CORE EXISTING FOOTING FOR PT BARS AND DRILL HOLES FOR MASONRY ANCHORS
3. INSTALL DRILLED SHAFTS
4. INSTALL REINFORCING BARS IN MASONRY ANCHOR HOLES
5. FORM AND PLACE FOOTING EXTENSION CONCRETE
6. AFTER NEW FOOTING EXTENSION CONCRETE ATTAINS 4 KSI COMPRESSIVE STRENGTH, STRESS PT BARS
7. CONSTRUCT BUTTRESS
8. GROUT DUCTS AND PT ANCHORAGE POCKETS
9. BACKFILL EXCAVATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY SLF | PLANS CK'D. SJH

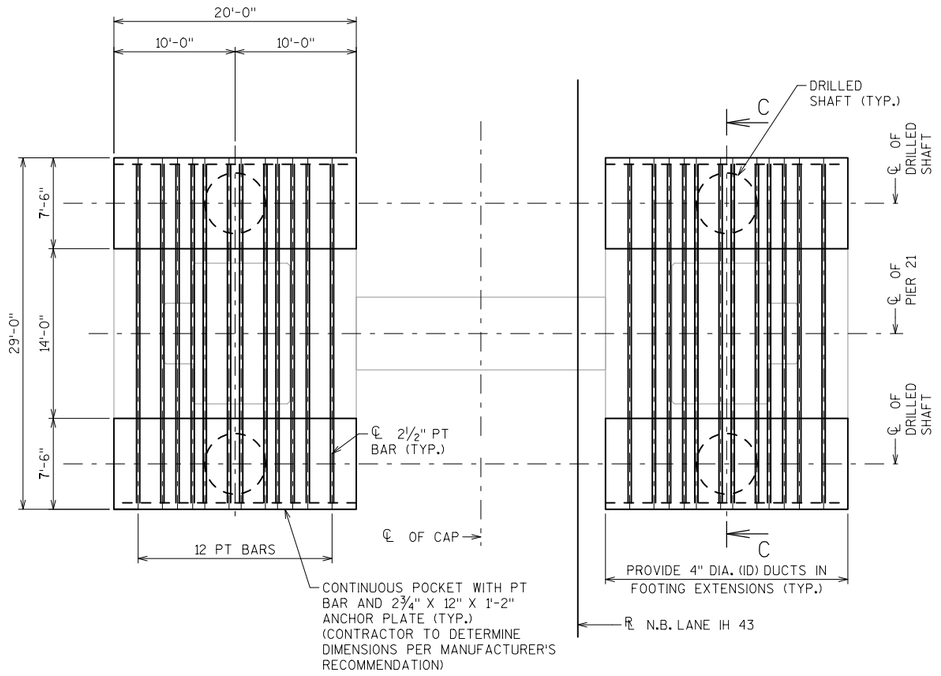
PIER 21 FOUNDATION RETROFIT

SHEET 6 OF 26
24

8

8

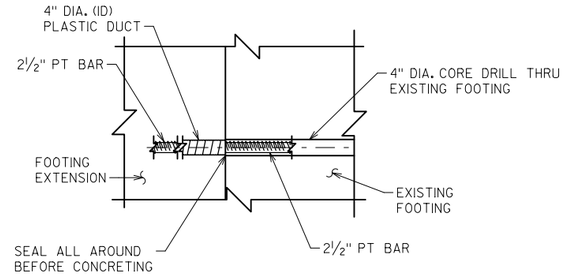
STATE PROJECT NUMBER
1220-19-72



PLAN

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES AND BUTTRESS NOT SHOWN FOR CLARITY.



TYPICAL DETAIL OF CONNECTION BETWEEN DUCT AND EXISTING CONCRETE

PIER 21 - POST TENSIONING

FOOTING	TENDON	BAR STRESSING LENGTH	AREA OF BAR	JACKING FORCE	LOCK-OFF FORCE
		L	A	JF	LOF
		(FT)	(IN2)	(KIPS)	(KIPS)
PIER 21	ALL	28.00	5.16	554.0	540

NOTE: THE LOCK-OFF FORCE HAS BEEN CALCULATED AS FOLLOWS:

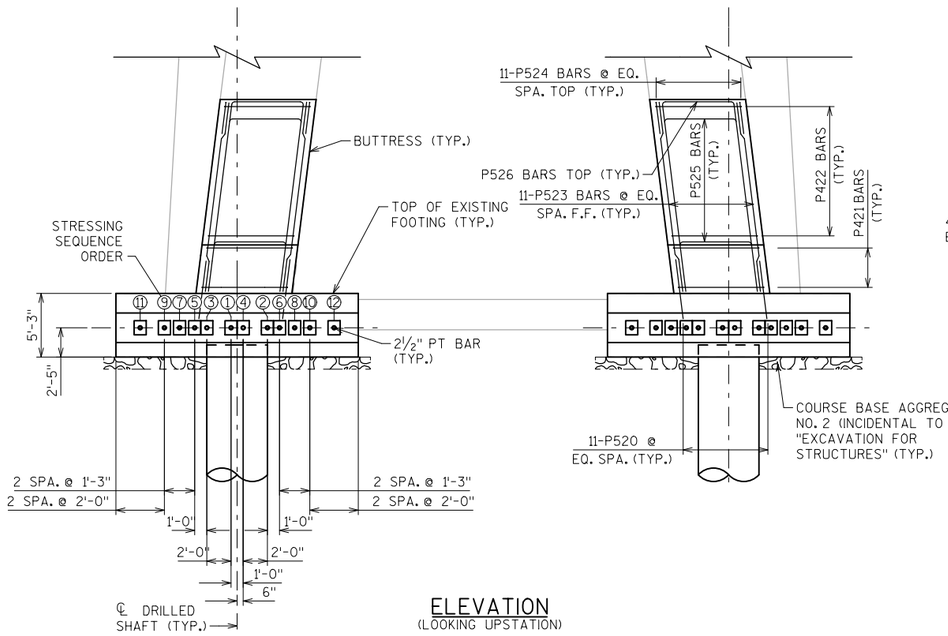
$LOF = JF - ((E \times A)/(12 \times L)) \times AS < 0.7 \times fpu \times As$

WHERE,

LOF	LOCK-OFF FORCE (KIPS)
JF	JACKING FORCE (KIPS)
E	MODULUS OF ELASTICITY (29,700 KSI)
A	AREA OF BAR (IN2)
L	BAR STRESSING LENGTH (FT)
AS	ANCHOR SET (1/32 IN)

NOTES

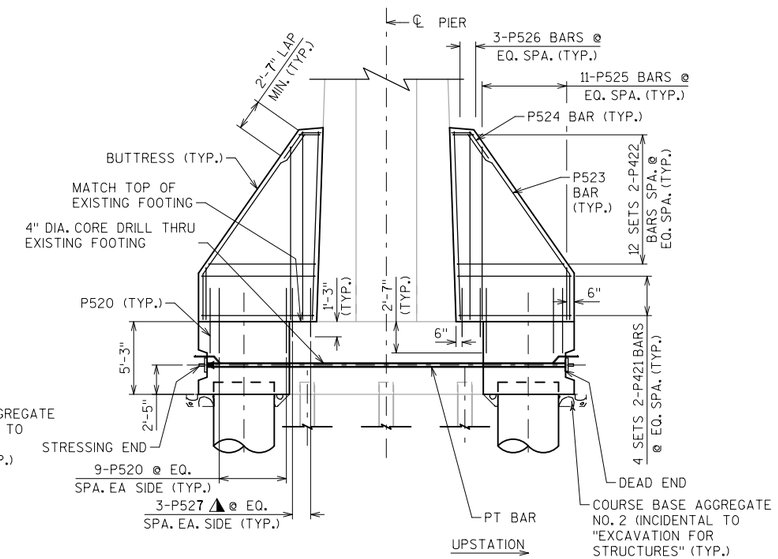
1. CORE DRILL HOLES FOR PT BARS IN EXISTING FOOTING FOLLOWING EXCAVATION AND PRIOR TO DRILLED SHAFT PLACEMENT AND PRIOR TO POURING FOOTING EXTENSIONS.
2. PROVIDE DUCTS IN FOOTING EXTENSIONS FOR PT BARS.
3. ALL PT BARS ARE 2½" DIAMETER, ASTM A 722, GR 150, EPOXY COATED.
4. SPIRAL AND OTHER LOCAL ANCHORAGE ZONE REINFORCEMENT IS TO BE DESIGNED BY THE POST-TENSIONING SUPPLIER AND TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
5. IF FIELD CONDITIONS DIFFER FROM ASSUMPTIONS FOR PT, ADJUSTMENT IN JACK FORCE AND ELONGATION SHALL BE MADE ACCORDINGLY AND BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. CAST ANCHOR FACES PERPENDICULAR TO PT DUCTS WITH NO OUT-OF-PLANENESS. A THIN LAYER OF MORTAR MAY BE APPLIED WHEN SETTING THE ANCHOR PLATE, SUBJECT TO APPROVAL OF THE ENGINEER.
7. STRENGTH OF CONCRETE AT TIME OF POST TENSIONING, f'c = 4 KSI.
8. ALL POST TENSIONING MUST BE COMPLETED AND LOCKED OFF PRIOR TO PLACING BUTTRESS CONCRETE.



ELEVATION
(LOOKING UPSTATION)

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES NOT SHOWN FOR CLARITY.



⚠ MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-3" IN CONCRETE.

SECTION C-C

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY SLF | PLANS CK'D. JWB

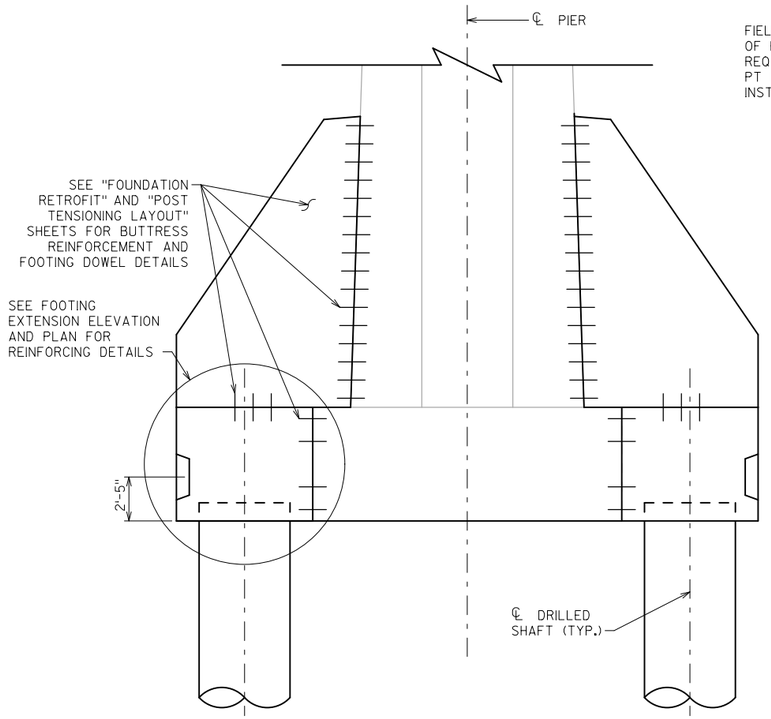
PIER 21
POST TENSIONING
LAYOUT

SHEET 7 OF 26
25

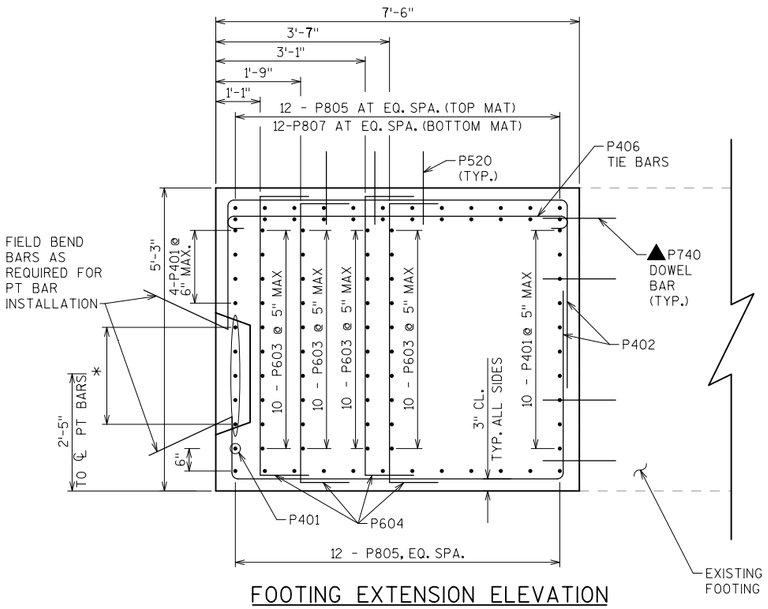
8

8

STATE PROJECT NUMBER
1220-19-72

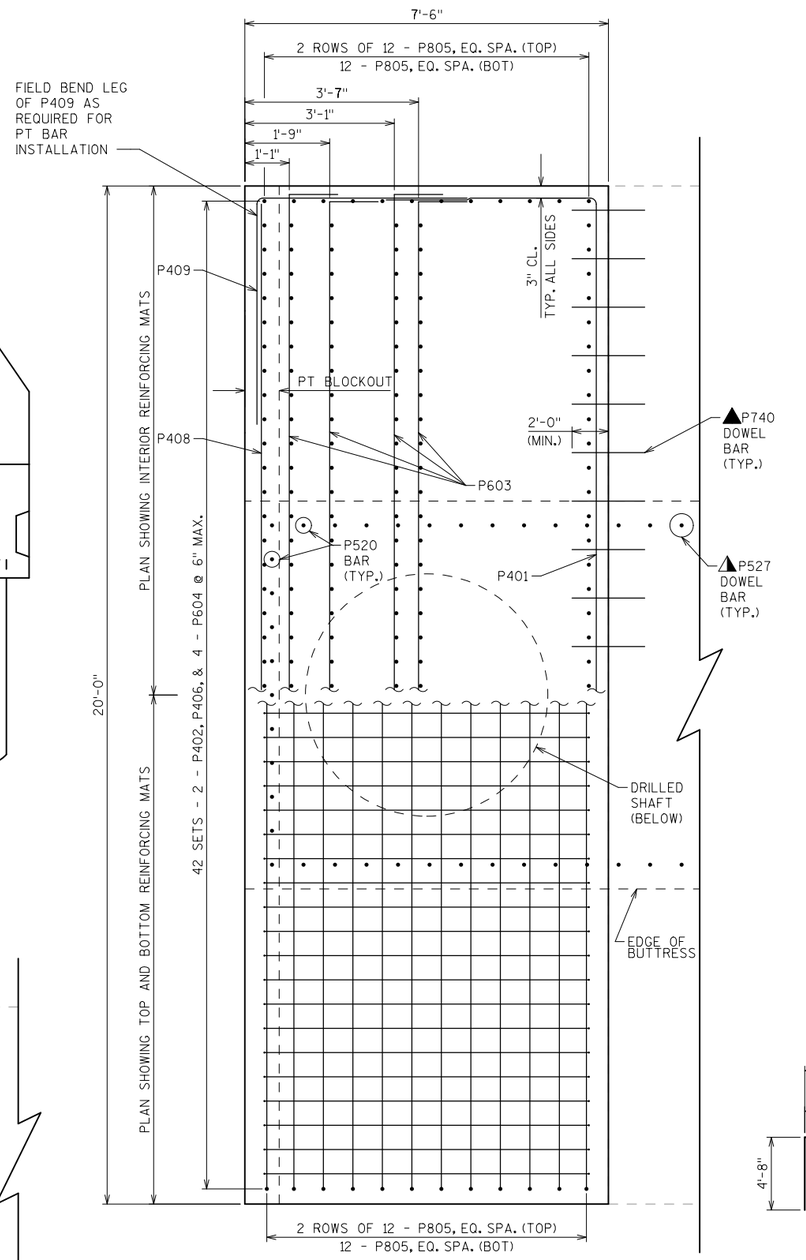


PIER FOOTING ELEVATION



FOOTING EXTENSION ELEVATION

*5-P408 AT 6" MAX. PLACE AFTER STRESSING OF PT BARS AND LAP WITH 5-P409 AT EACH END OF FOOTING



FOOTING EXTENSION PLAN

(TYP. - 4 PER PIER)

BILL OF BARS - PIER 21

TOTAL COATED = 36,300 LBS

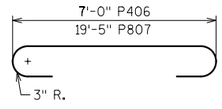
BAR MARK	COAT	NO. REQ'D. TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
P401	X	60	28'-0"	X		FOOTING EXTENSION - SIDES HORIZ.
P402	X	336	13'-4"	X		FOOTING EXTENSION - TOP & BOT TRANS.
P603	X	160	21'-2"	X		FOOTING EXTENSION - INTERIOR MAT HORIZ.
P604	X	672	6'-5"	X		FOOTING EXTENSION - INTERIOR MAT VERT.
P805	X	96	28'-11"	X		FOOTING EXTENSION - TOP, BOT LONGIT.
P406	X	168	8'-0"	X		FOOTING EXTENSION - TIE BAR TRANS.
P807	X	48	21'-3"	X		FOOTING EXTENSION - TOP LONGIT.
P408	X	20	19'-6"			FOOTING EXTENSION - SIDES LONGIT.
P409	X	40	8'-7"	X		FOOTING EXTENSION - SIDES LONGIT.
P520	X	116	5'-4"		XX	FOOTING EXTENSION
P421	X	32	17'-7"	X		BUTTRESS
P422	X	96	14'-1"	X		BUTTRESS
P523	X	44	17'-7"	X	XX	BUTTRESS
P524	X	44	4'-4"	X		BUTTRESS
P525	X	44	26'-2"	X		BUTTRESS
P526	X	12	39'-2"	X		BUTTRESS
◭ P527	X	24	4'-0"			FOOTING EXTENSION
▲ P740	X	536	4'-0"			FOOTING EXTENSION

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. ALL BAR BEND DIMENSIONS ARE OUT-TO-OUT OF BAR.

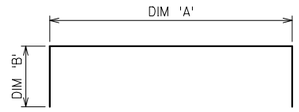
XX LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

◭ MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-3" IN CONCRETE.

▲ MASONRY ANCHORS TYPE L NO. 7 BARS. EMBED 2'-0" IN CONCRETE.



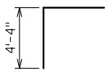
P406, P807



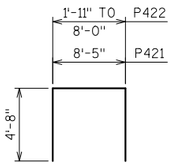
P401, P402, P603, P604, P805

(SEE TABLE FOR DIMENSIONS)

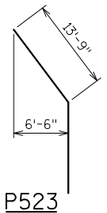
BAR MARK	DIM 'A'	DIM 'B'
P401	19'-6"	4'-4"
P402	7'-0"	3'-3"
P603	19'-6"	1'-0"
P604	4'-9"	1'-0"
P805	19'-6"	4'-11"



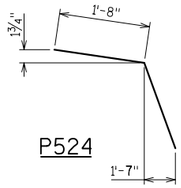
P409



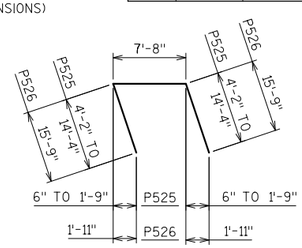
P421
P422



P523



P524



P525, P526

BAR SERIES TABLE		
MARK	NO REQ'D	LENGTH
P422	4 SERIES OF 11	11'-3" TO 17'-4"
P525	4 SERIES OF 11	16'-0" TO 36'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY

NOTES

1. CORE DRILL EXISTING FOOTING FOR PT BARS PRIOR TO POURING PROPOSED FOOTING EXTENSIONS.
2. PROVIDE SLEEVES IN FOOTING EXTENSIONS FOR PT BARS.
3. REINFORCING NEAR PT BAR ANCHORAGE BLOCKOUT SHALL BE MODIFIED AS NECESSARY DEPENDING ON PT SYSTEM SELECTED TO MAINTAIN PROPER CLEARANCES AND AVOID CONFLICTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY MKB | PLANS CK'D. JCD

PIER 21 REBAR DETAILS

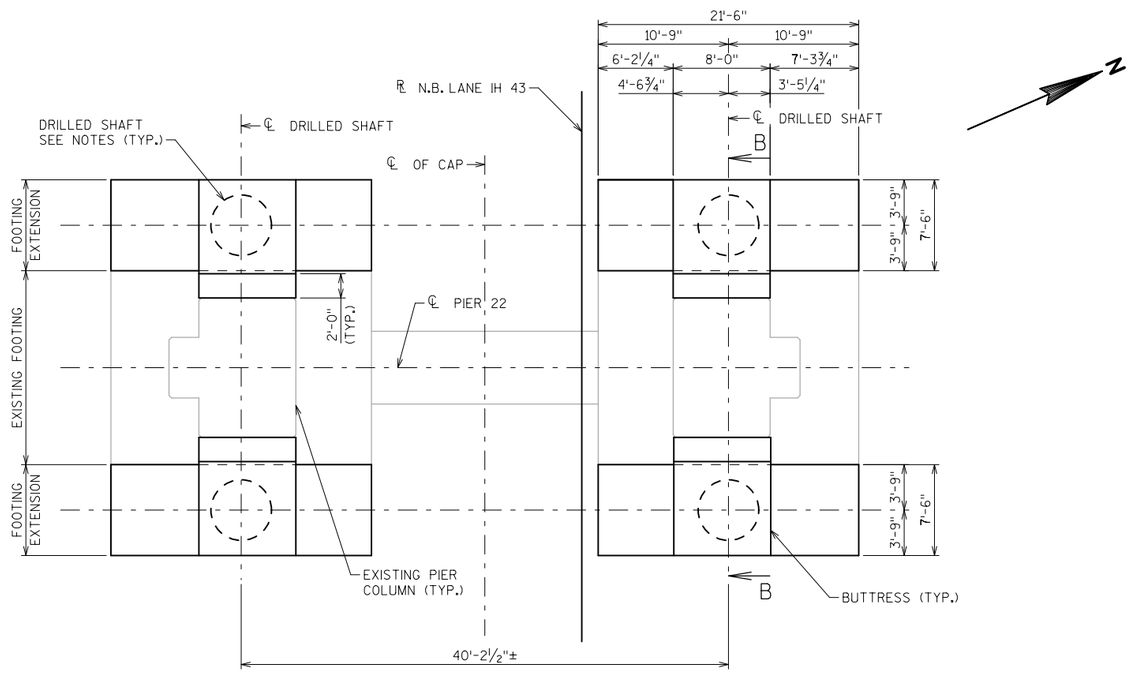
SHEET 8 OF 26

26

8

8

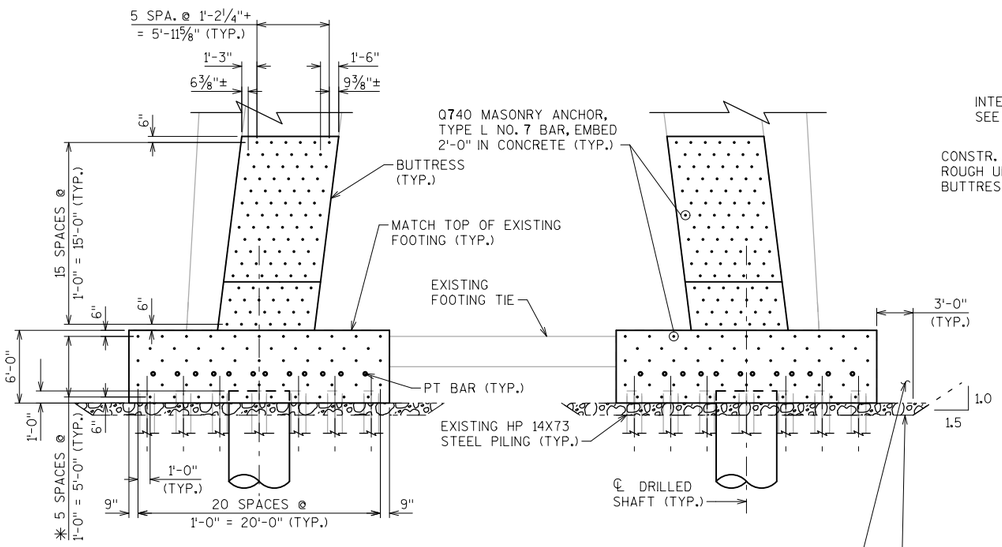
STATE PROJECT NUMBER
1220-19-72



PLAN

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED

EXISTING PILES NOT SHOWN FOR CLARITY



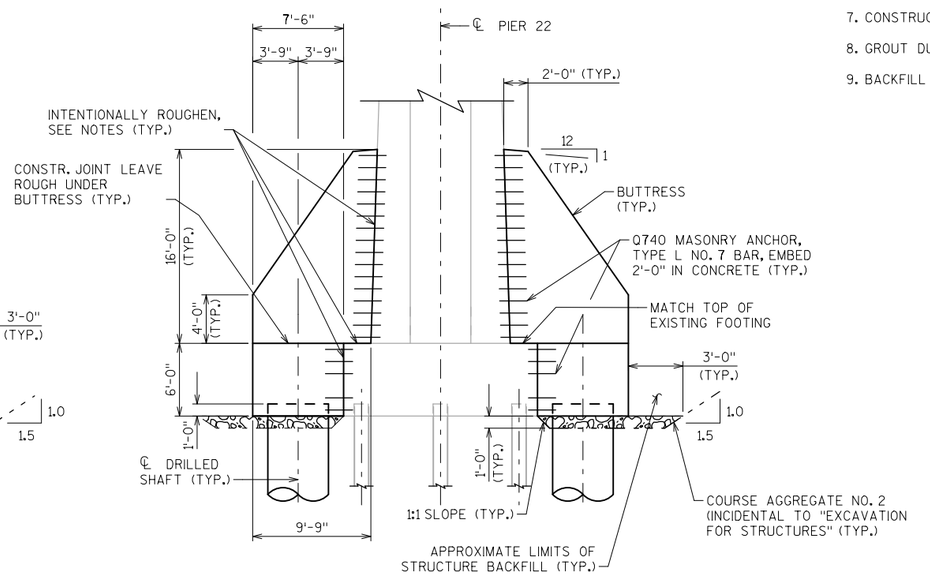
ELEVATION

(LOOKING UPSTATION)

✳ MASONRY ANCHORS NOT REQUIRED
AT PT BAR LOCATIONS.

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED

EXISTING PILES NOT SHOWN FOR CLARITY



SECTION B-B

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED

DOWEL NOTES

1. DURING FIELD DRILLING OF HOLES FOR MASONRY ANCHORS, TYPE L, NO. 7 BARS, IF EXISTING REINFORCING STEEL IS ENCOUNTERED, THE HOLE SHALL BE SHIFTED TO MISS THE REINFORCEMENT.
2. INTENTIONALLY ROUGHEN SURFACES WHERE MASONRY ANCHORS ARE INSTALLED TO AN AMPLITUDE OF 0.25 IN. COST OF FURNISHING INTENTIONALLY ROUGHENED SURFACES SHALL BE INCIDENTAL TO THE PRICE BID FOR "REMOVING OLD STRUCTURE STA 843+82".
3. DRILL MASONRY ANCHORS AFTER CORING FOR POST TENSIONING.

NOTES

1. CLEAN EXPOSED SURFACES OF EXISTING FOOTING TO REMOVE DIRT, LAITANCE AND ANY OTHER DELETERIOUS MATERIALS PRIOR TO POURING THE PROPOSED FOOTING EXTENSIONS.
2. BUTTRESS CONCRETE SHALL NOT BE PLACED UNTIL ALL OF THE POST TENSIONING BARS HAVE BEEN JACKED AND LOCKED-OFF PER THE TENSIONING LAYOUT SHEET.

PIER RETROFIT CONSTRUCTION SEQUENCE

1. EXCAVATE FOR FOOTING EXTENSIONS
2. CORE EXISTING FOOTING FOR PT BARS AND DRILL HOLES FOR MASONRY ANCHORS
3. INSTALL DRILLED SHAFTS
4. INSTALL REINFORCING BARS IN MASONRY ANCHOR HOLES
5. FORM AND PLACE FOOTING EXTENSION CONCRETE
6. AFTER NEW FOOTING EXTENSION CONCRETE ATTAINS 4 KSI COMPRESSIVE STRENGTH, STRESS PT BARS
7. CONSTRUCT BUTTRESS
8. GROUT DUCTS AND PT ANCHORAGE POCKETS
9. BACKFILL EXCAVATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. SJH

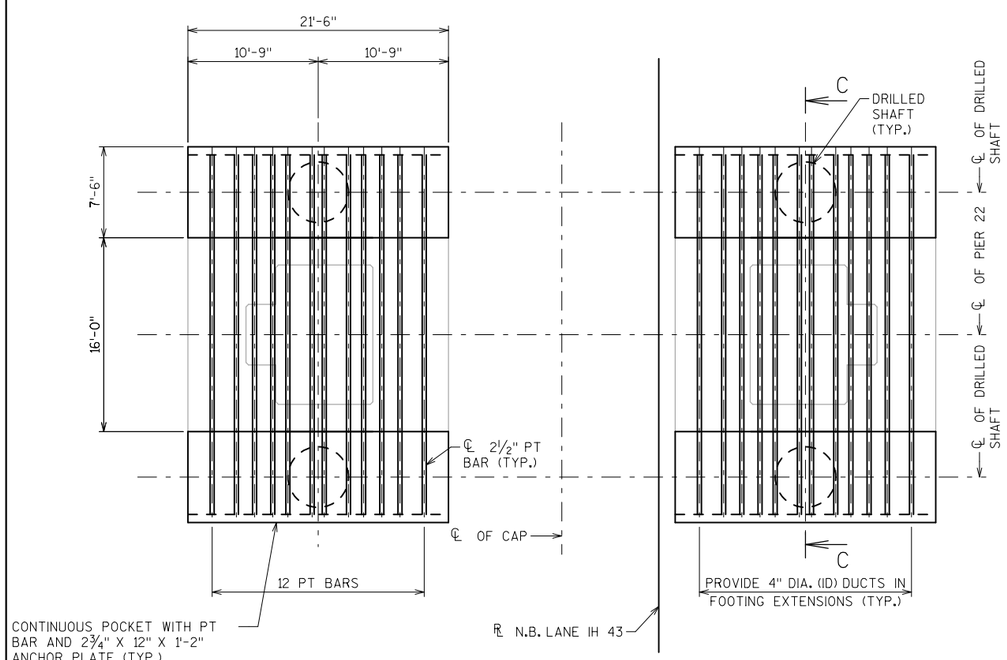
PIER 22
FOUNDATION
RETROFIT

SHEET 9 OF 26
27

8

8

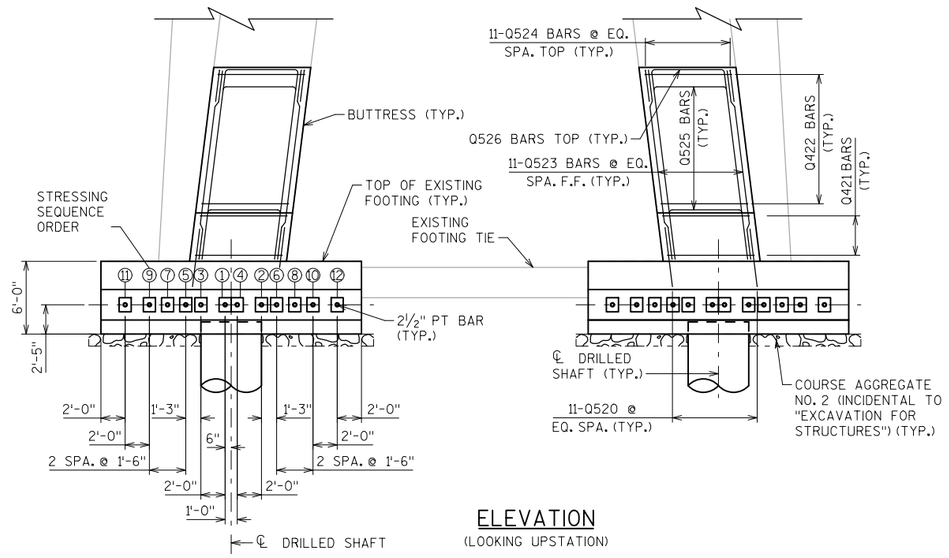
STATE PROJECT NUMBER
1220-19-72



PLAN

NOTES
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES AND BUTTRESS NOT SHOWN FOR CLARITY.

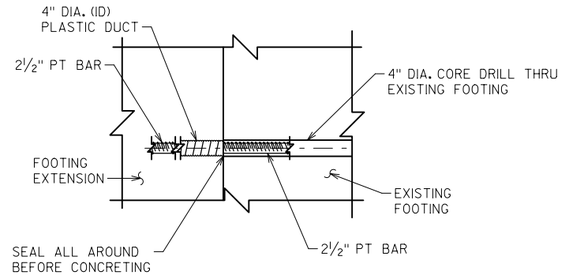


ELEVATION

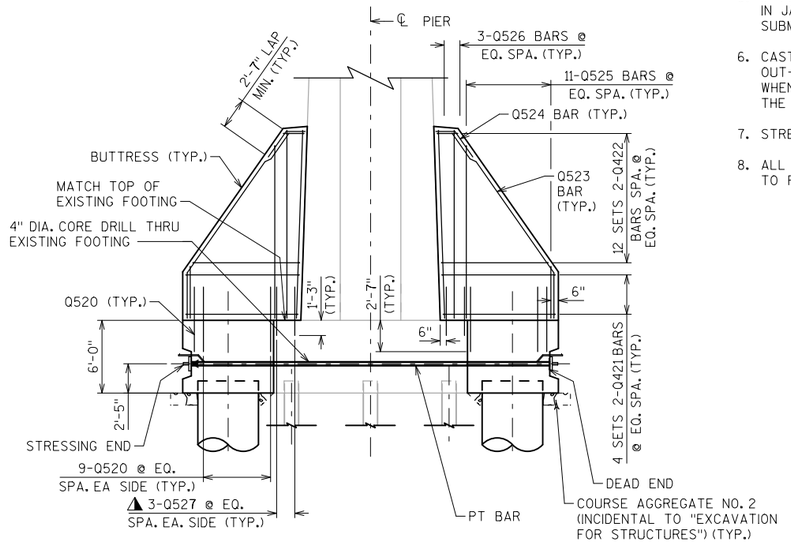
(LOOKING UPSTATION)

NOTES
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES NOT SHOWN FOR CLARITY.



TYPICAL DETAIL OF CONNECTION BETWEEN DUCT AND EXISTING CONCRETE



▲ MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-3" IN CONCRETE.

UPSTATION

SECTION C-C

NOTE
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

PIER 22 - POST TENSIONING

FOOTING	TENDON	BAR STRESSING LENGTH	AREA OF BAR	JACKING FORCE	LOCK-OFF FORCE
		L	A	JF	LOF
		(FT)	(IN2)	(KIPS)	(KIPS)
PIER 22	ALL	30.00	5.16	554.0	540.7

NOTE: THE LOCK-OFF FORCE HAS BEEN CALCULATED AS FOLLOWS:

$$LOF = JF - ((E \times A)/(12 \times L)) \times AS$$

WHERE,

LOF	LOCK-OFF FORCE (KIPS)
JF	JACKING FORCE (KIPS)
E	MODULUS OF ELASTICITY (29,700 KSI)
A	AREA OF BAR (IN2)
L	BAR STRESSING LENGTH (FT)
AS	ANCHOR SET (1/32 IN)

NOTES

1. CORE DRILL HOLES FOR PT BARS IN EXISTING FOOTING FOLLOWING EXCAVATION AND PRIOR TO DRILLED SHAFT PLACEMENT AND PRIOR TO POURING FOOTING EXTENSIONS.
2. PROVIDE DUCTS IN FOOTING EXTENSIONS FOR PT BARS.
3. ALL PT BARS ARE 2½" DIAMETER, ASTM A 722, GR 150, EPOXY COATED.
4. SPIRAL AND OTHER LOCAL ANCHORAGE ZONE REINFORCEMENT IS TO BE DESIGNED BY THE POST-TENSIONING SUPPLIER AND TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
5. IF FIELD CONDITIONS DIFFER FROM ASSUMPTIONS FOR PT, ADJUSTMENT IN JACK FORCE AND ELONGATION SHALL BE MADE ACCORDINGLY AND BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. CAST ANCHOR FACES PERPENDICULAR TO PT DUCTS WITH NO OUT-OF-PLANENESS. A THIN LAYER OF MORTAR MAY BE APPLIED WHEN SETTING THE ANCHOR PLATE, SUBJECT TO APPROVAL OF THE ENGINEER.
7. STRENGTH OF CONCRETE AT TIME OF POST TENSIONING, f'c = 4 KSI.
8. ALL POST TENSIONING MUST BE COMPLETED AND LOCKED OFF PRIOR TO PLACING BUTTRESS CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. JWB

PIER 22
POST TENSIONING
LAYOUT

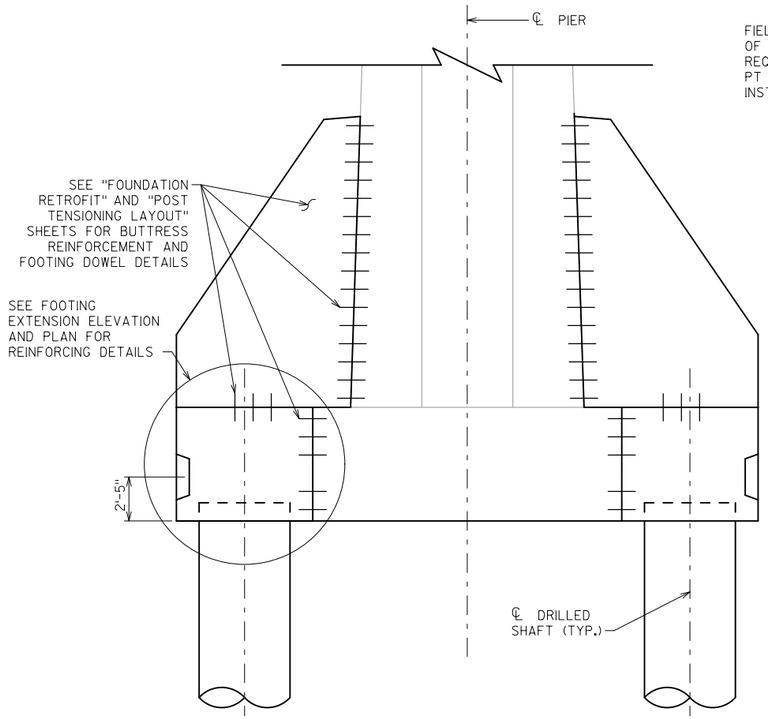
SHEET 10 OF 26
28

8

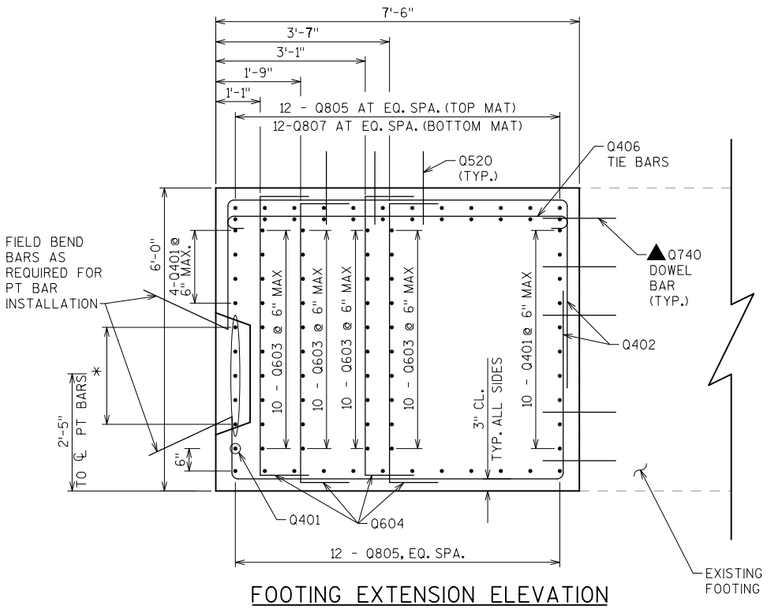
8

STATE PROJECT NUMBER

1220-19-72

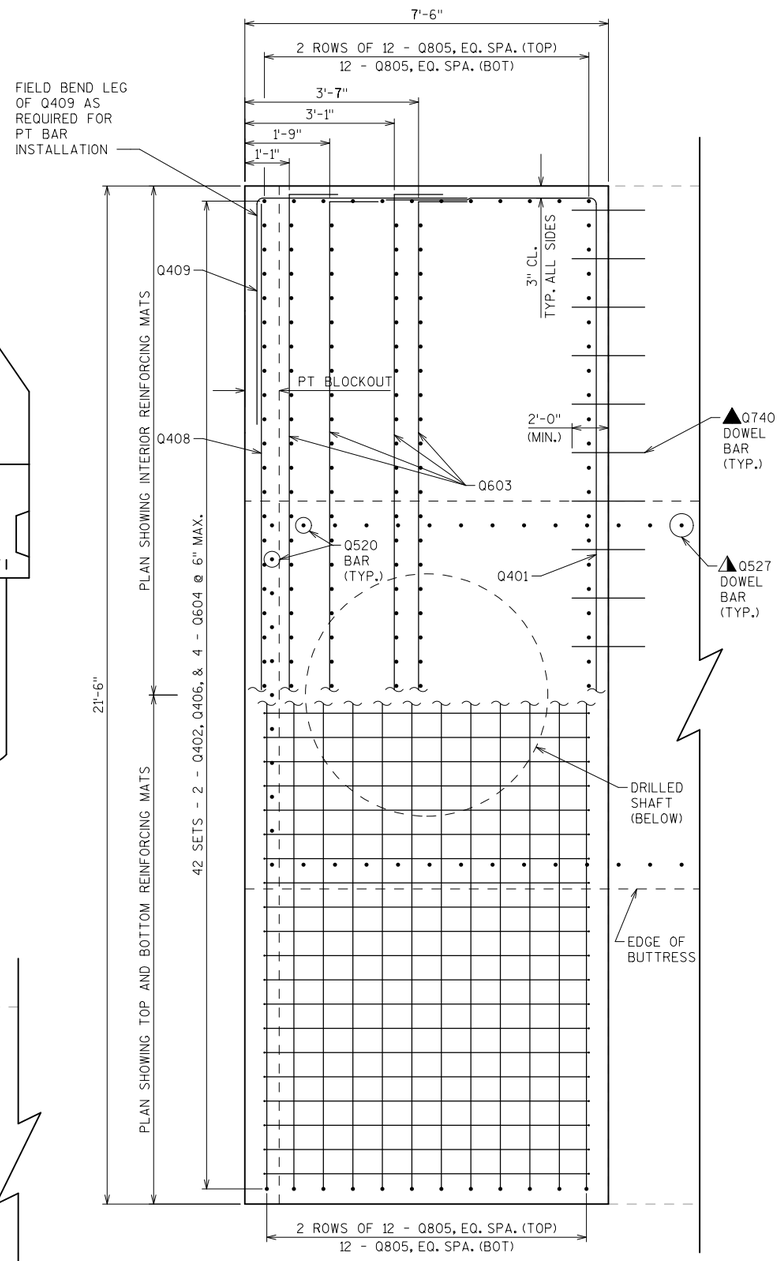


PIER FOOTING ELEVATION



FOOTING EXTENSION ELEVATION

*5-Q408 AT 6" MAX. PLACE AFTER STRESSING OF PT BARS AND LAP WITH 5-Q409 AT EACH END OF FOOTING



FOOTING EXTENSION PLAN

(TYP. - 4 PER PIER)

NOTES

1. CORE DRILL EXISTING FOOTING FOR PT BARS PRIOR TO POURING PROPOSED FOOTING EXTENSIONS.
2. PROVIDE SLEEVES IN FOOTING EXTENSIONS FOR PT BARS.
3. REINFORCING NEAR PT BAR ANCHORAGE BLOCKOUT SHALL BE MODIFIED AS NECESSARY DEPENDING ON PT SYSTEM SELECTED TO MAINTAIN PROPER CLEARANCES AND AVOID CONFLICTS.

BILL OF BARS - PIER 22

TOTAL COATED = 38,970 LBS

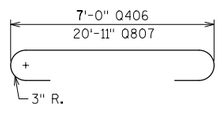
BAR MARK	COAT	NO. REQ'D. TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
Q401	X	60	29'-6"	X		FOOTING EXTENSION - SIDES HORIZ.
Q402	X	336	14'-0"	X		FOOTING EXTENSION - TOP & BOT TRANS.
Q603	X	160	22'-8"	X		FOOTING EXTENSION - INTERIOR MAT HORIZ.
Q604	X	672	7'-2"	X		FOOTING EXTENSION - INTERIOR MAT VERT.
Q805	X	96	31'-1"	X		FOOTING EXTENSION - TOP, BOT LONGIT.
Q406	X	168	8'-0"	X		FOOTING EXTENSION - TIE BAR TRANS.
Q807	X	48	22'-9"	X		FOOTING EXTENSION - TOP LONGIT.
Q408	X	20	21'-0"			FOOTING EXTENSION - SIDES LONGIT.
Q409	X	40	8'-7"	X		FOOTING EXTENSION - SIDES LONGIT.
Q520	X	116	5'-4"		XX	FOOTING EXTENSION
Q421	X	32	18'-7"	X		BUTTRESS
Q422	X	96	14'-8"	X		BUTTRESS
Q523	X	44	18'-0"	X	XX	BUTTRESS
Q524	X	44	4'-4"	X		BUTTRESS
Q525	X	44	26'-2"	X		BUTTRESS
Q526	X	12	39'-2"	X		BUTTRESS
◭ Q527	X	24	4'-0"			FOOTING EXTENSION
▲ Q740	X	596	4'-0"			FOOTING EXTENSION

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. ALL BAR BEND DIMENSIONS ARE OUT-TO-OUT OF BAR.

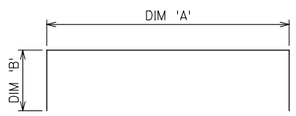
XX LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

◭ MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-3" IN CONCRETE.

▲ MASONRY ANCHORS TYPE L NO. 7 BARS. EMBED 2'-0" IN CONCRETE.



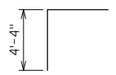
Q406, Q807



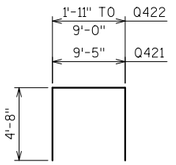
Q401, Q402, Q603, Q604, Q805

(SEE TABLE FOR DIMENSIONS)

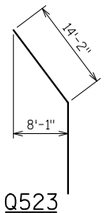
BAR MARK	DIM 'A'	DIM 'B'
Q401	21'-0"	4'-4"
Q402	7'-0"	3'-7"
Q603	21'-0"	1'-0"
Q604	5'-6"	1'-0"
Q805	21'-0"	5'-3"



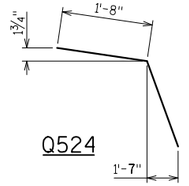
Q409



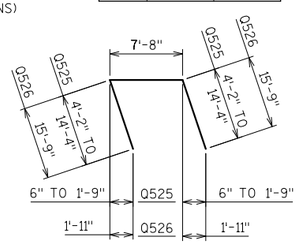
Q421
Q422



Q523



Q524



Q525, Q526

BAR SERIES TABLE		
MARK	NO REQ'D	LENGTH
Q422	4 SERIES OF 11	11'-3" TO 18'-4"
Q525	4 SERIES OF 11	16'-0" TO 36'-4"

BUNDLE AND TAG EACH SERIES SEPARATELY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY MKB | PLANS CK'D. JCD

PIER 22 REBAR DETAILS

SHEET 11 OF 26

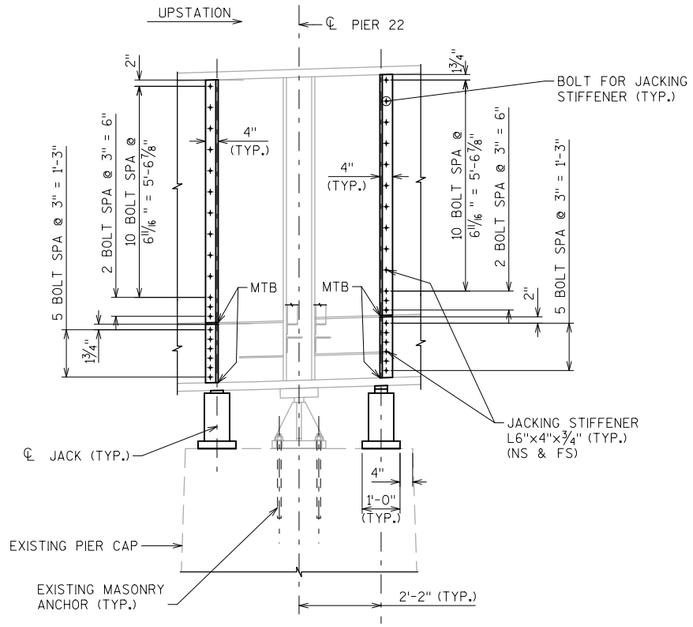
29

8

8

STATE PROJECT NUMBER

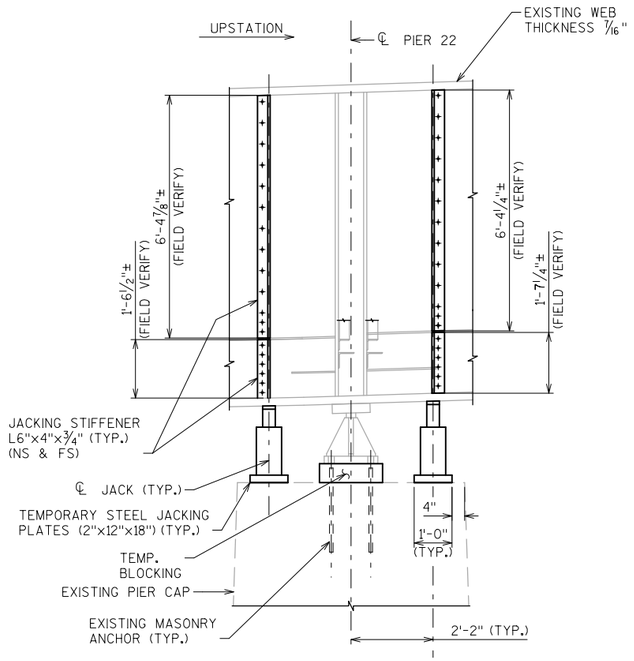
1220-19-72



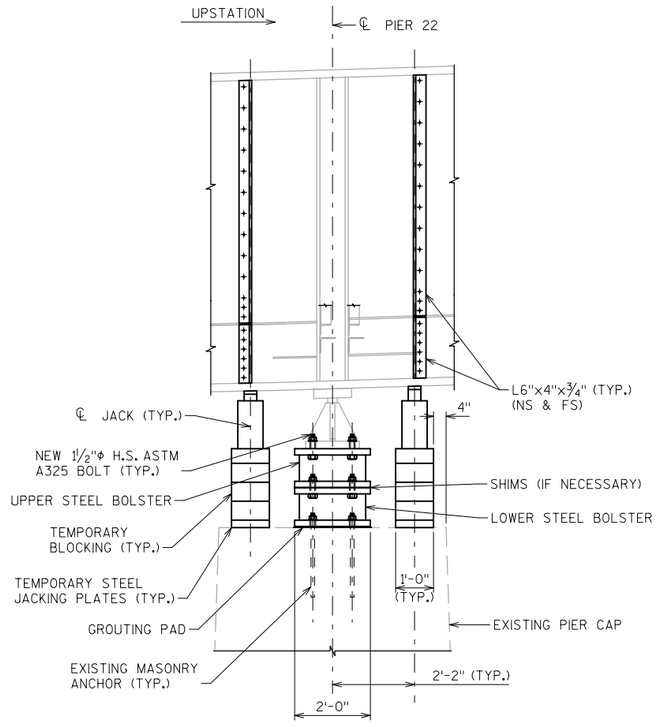
NOTE
1. EXISTING BEARING TO BE CLAMPED TO BOTTOM FLANGE DURING JACKING.

LEGEND
MTB - DENOTES MILL TO BEAR
WEATHERING STEEL SHIMS ALLOWED

JACKING - INITIAL CONDITION



JACKING - INTERMEDIATE CONDITION



JACKING - FINAL CONDITION

JACKING PROCEDURE

1. ATTACH EXISTING BEARING TO GIRDER FOR JACKING.
2. PERFORM LOWER LATERAL BRACING MODIFICATION PROCEDURE. JACKING STIFFENERS ARE INSTALLED AS PART OF THE LOWER LATERAL BRACING MODIFICATION PROCESS. SEE SHEET 14.
3. LEAVE THE EXISTING LATERAL STABILITY BRACKETS IN PLACE. AS THE BRIDGE IS BEING JACKED, ADD SHIMS TO THE PLATES AGAINST THE PIER CAP TO KEEP CONSTANT CONTACT.
4. REMOVE NUTS FROM ANCHOR BOLTS.
5. SET STEEL JACKING PLATES AND JACKS.
6. JACK ALL 5 GIRDERS ON NORTH BOUND SIDE OF THE BRIDGE CONCURRENTLY TO THE MOVEMENT CAPACITY OF THE JACKS, UNLESS BOTH BOUNDS ARE JACKED CONCURRENTLY.
7. PLACE TEMPORARY BLOCKS UNDER EXISTING BEARINGS.
8. LOWER GIRDERS AND BEARINGS ONTO TEMPORARY BLOCKING.
9. RESET JACKS WITH TEMPORARY BLOCKS.
10. JACK AGAIN TO MOVEMENT CAPACITY OF JACKS.
11. ADD ADDITIONAL BLOCKING UNDER BEARING.
12. LOWER GIRDERS AND BEARINGS ONTO TEMPORARY BLOCKING.
13. WHEN THE BRIDGE IS JACKED HIGH ENOUGH, REMOVE TEMPORARY BLOCKING FROM UNDER THE BEARING AND INSTALL LOWER SECTION OF BOLSTER. INSTALL LEVEL WITH USE OF LEVELING NUTS UNDER BOTTOM PLATE OF BOLSTER AND GROUT.

JACKING PROCEDURE (CONTINUED)

14. REPEAT THESE STEPS UNTIL GIRDERS ARE ELEVATED TO FINAL LOCATION PLUS ¼".
15. WHEN THE BRIDGE IS JACKED TO ITS HIGHEST POSITION, REMOVE TEMPORARY BLOCKING BENEATH BEARING.
16. INSTALL UPPER SECTION OF STEEL BOLSTERS BY BOLTING TO ORIGINAL MASONRY PLATES OF BEARING AND TO LOWER SECTION OF STEEL BOLSTER THAT HAS BEEN PREVIOUSLY INSTALLED. USE SHIM PLATES AS NECESSARY BETWEEN UPPER AND LOWER BOLSTER SECTIONS TO MAINTAIN PROPER ELEVATIONS.
17. REMOVE JACKS AND TEMPORARY BLOCKING.
18. REMOVE TEMPORARY ATTACHMENT OF BEARINGS TO GIRDERS.
19. REMOVE LATERAL STABILITY BRACKETS. JACKING STIFFENERS SHALL BE LEFT IN PLACE.
20. APPLY PRIME COAT AND INTERMEDIATE EPOXY COAT OF PAINT TO STEEL BOLSTER.
21. PAINT THE NEW JACKING STIFFENERS, HIGH STRENGTH BOLTS, NUTS AND WASHERS CONNECTING THE BEARING TO THE BOLSTER TO MATCH THE EXISTING PAINT ON THE BRIDGE.
22. FOLLOW THE SAME PROCEDURE FOR THE OTHER SIDE OF THE BRIDGE (UNLESS ALL 10 GIRDERS WERE JACKED SIMULTANEOUSLY).
23. INSTALL CONCRETE PEDESTAL AROUND BOLSTERS.

NOTES

1. JACKING PROCEDURE SHALL NOT BEGIN UNTIL PIER 22 FOUNDATION RETROFIT IS COMPLETED. JACKING SHALL NOT START UNTIL APPROVAL IS GIVEN BY THE ENGINEER.
2. ALL BOLTS TO BE H.S. ⅞"Φ ASTM A325.
3. ALL STEEL ANGLES ARE TO BE ASTM A709 GRADE 50 WEATHERING STEEL.
4. THE JACKING LOAD IS ESTIMATED TO BE 183 KIPS AT EACH JACK LOCATION.
5. PROVIDE JACKS WITH A MINIMUM CAPACITY OF 150% OF REQUIRED JACKING LOAD.
6. APPROXIMATE JACKING LOAD IS UNFACTORED AND INCLUDES ONLY THE APPROXIMATE DEAD LOAD OF EXISTING STRUCTURE.
7. SEE SHEET 3 FOR DETAILS OF LATERAL STABILITY BRACKETS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. JCD

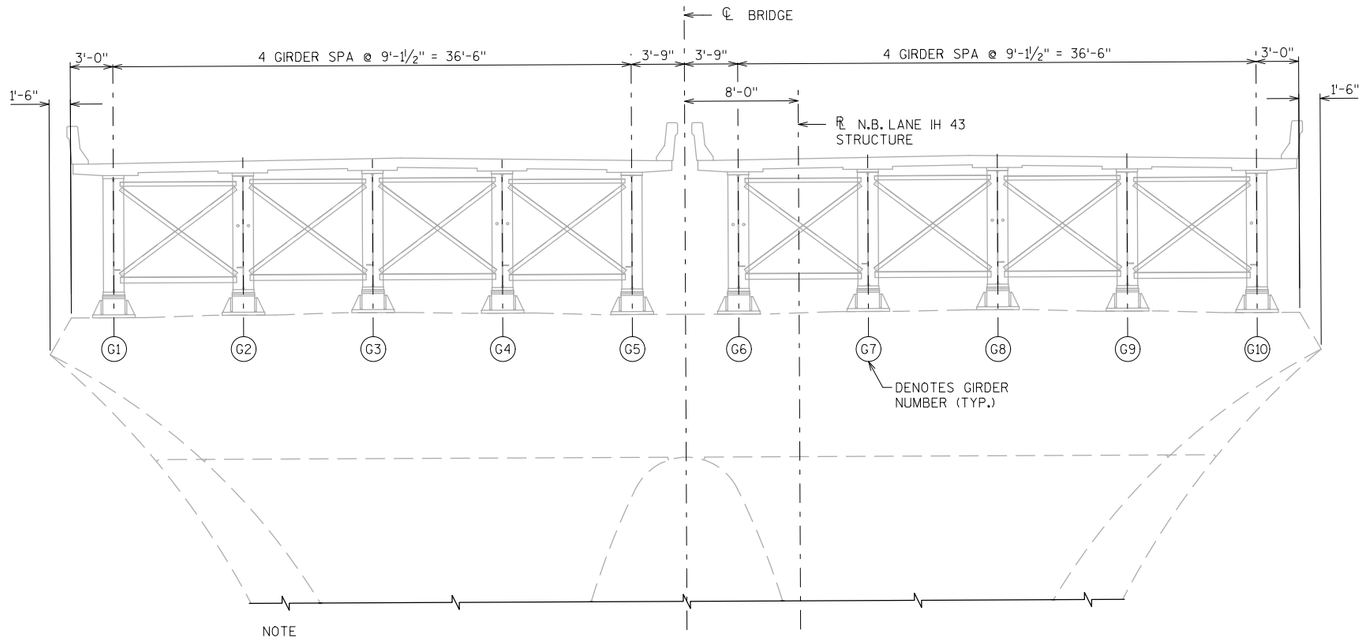
PIER 22
SUPERSTRUCTURE
JACKING - 1 OF 3

SHEET 12 OF 26
30

8

8

STATE PROJECT NUMBER
1220-19-72



NOTE
1. SEE SHEET 14 FOR FRAMING PLAN.

EXISTING SECTION
(LOOKING AHEAD STATION)

PROCEDURE TO DETERMINE AMOUNT TO JACK SUPERSTRUCTURE AT ℄ OF PIER 22

1. SURVEY TOP OF DECK ELEVATION AT EACH GIRDER AT ℄ PIER 21 (STA. 839 + 81.00).
2. SURVEY TOP OF DECK ELEVATION AT EACH GIRDER AT ℄ PIER 23 (STA. 843 + 82.00).
3. ADD 5.43 TO THE SURVERY ELEVATION AT PIER 21.
4. SUBTRACT 6.17 FROM THE SURVEY ELEVATION AT PIER 23.
5. AVERAGE THESE TWO NUMBERS.
6. JACK GIRDERS SO THAT THE ELEVATION AT EACH GIRDER AT ℄ PIER 22 (STA. 841 + 62.00) EQUALS THIS ELEVATION.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

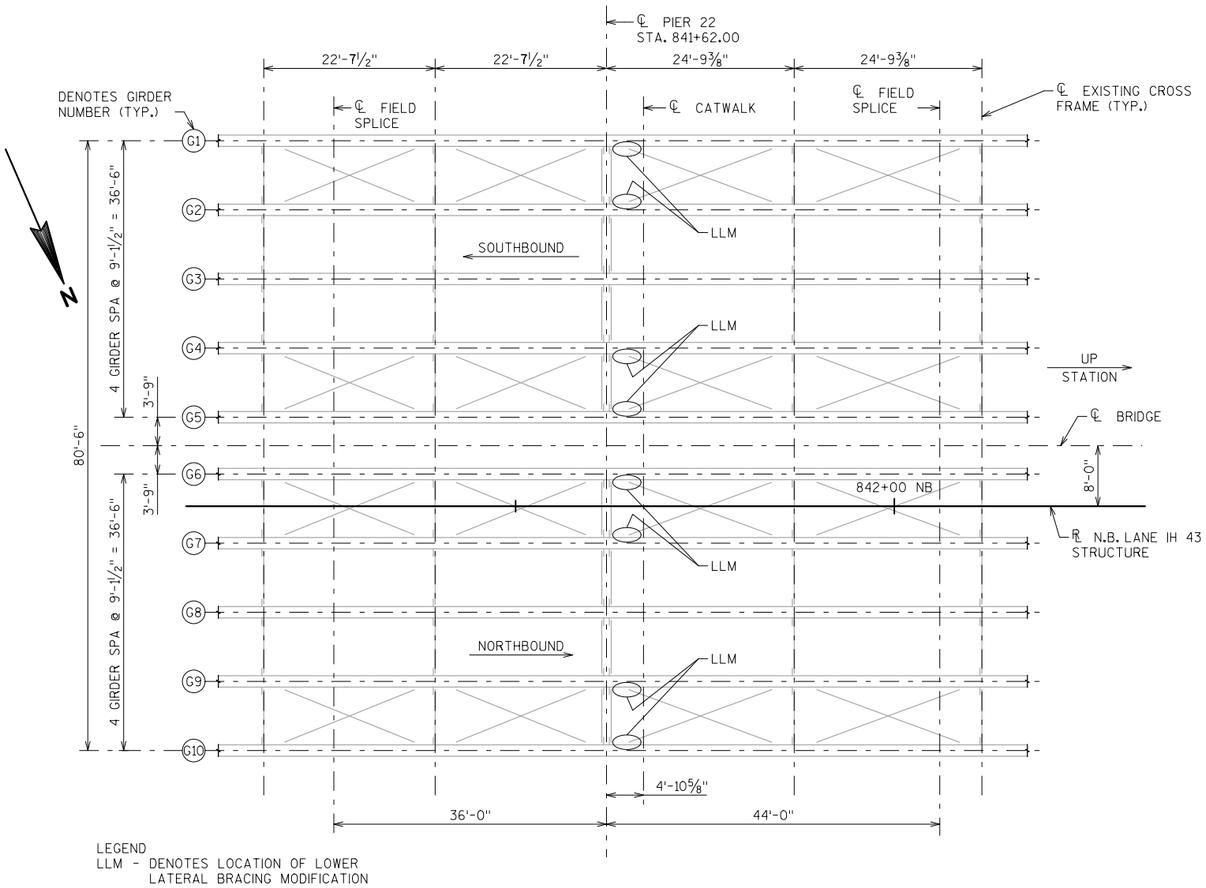
DRAWN BY EEM | PLANS CK'D. JCD

PIER 22
SUPERSTRUCTURE
JACKING - 2 OF 3

SHEET 13 OF 26
31

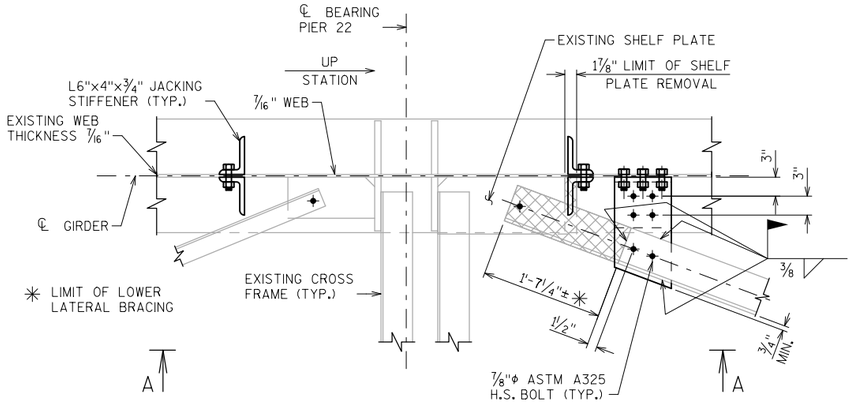
STATE PROJECT NUMBER

1220-19-72



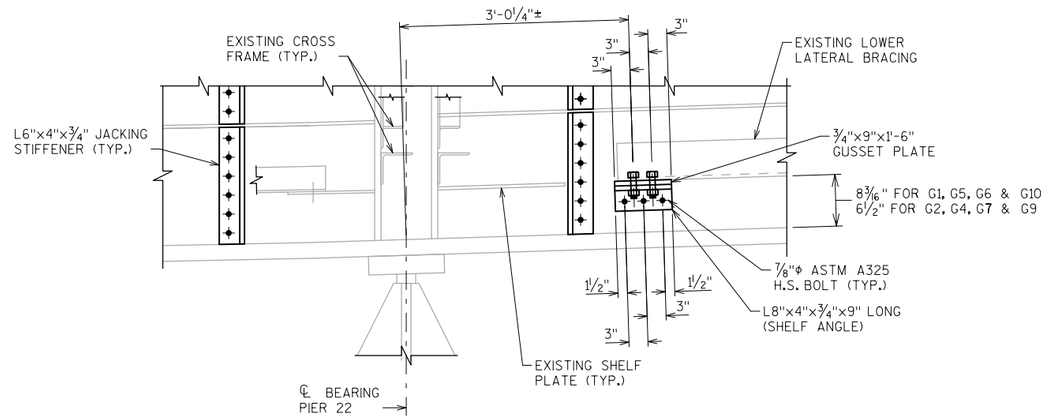
LEGEND
LLM - DENOTES LOCATION OF LOWER LATERAL BRACING MODIFICATION

PARTIAL FRAMING PLAN



DENOTES PORTION OF LOWER LATERAL BRACING AND SHELF PLATE TO BE REMOVED

LOWER LATERAL MODIFICATION DETAIL



VIEW A-A

LATERAL BRACING REMOVAL AND INSTALLATION PROCEDURE

1. UNBOLT THE EXISTING LATERAL BRACING ANGLE FROM THE EXISTING SHELF PLATE.
2. REMOVE THE EXISTING WELD AROUND THE EXISTING LATERAL BRACING ANGLE.
3. REMOVE THE PORTION OF THE EXISTING LATERAL BRACING ANGLE AND SHELF PLATE AS INDICATED.
4. GRIND SMOOTH THE AREA ON THE GIRDER WEB WHERE THE EXISTING SHELF PLATE WAS REMOVED.
5. INSTALL THE NEW JACKING STIFFENERS AND BOLTS.
6. INSTALL THE NEW SHELF ANGLE AND BOLTS.
7. INSTALL THE NEW GUSSET PLATE AND BOLTS.
8. CONNECT THE EXISTING LATERAL BRACING ANGLE TO THE GUSSET PLATE USING NEW BOLTS.
9. ONCE THE EXISTING LATERAL BRACING ANGLE IS BOLTED IN PLACE, WELD AROUND THE ANGLE AS INDICATED.

NOTES

1. ALL STEEL TO BE ASTM A709 GRADE 50 WEATHERING STEEL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. JCD

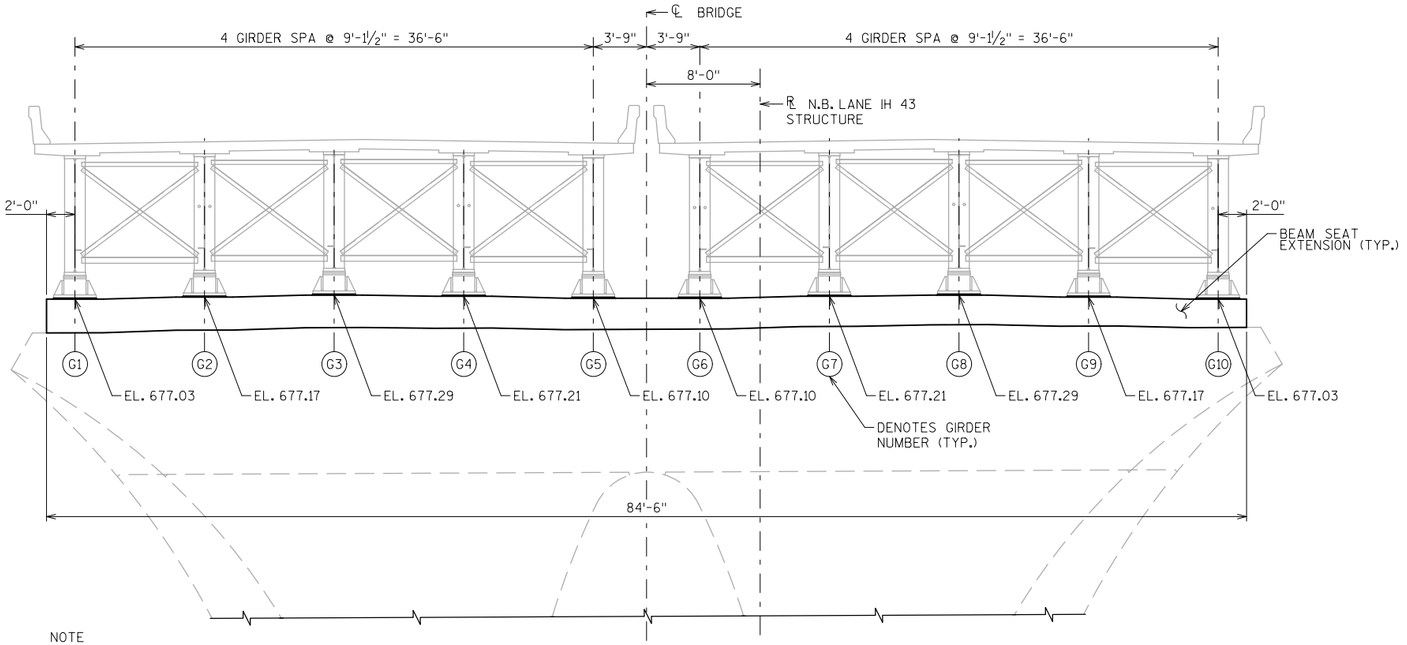
PIER 22
SUPERSTRUCTURE
JACKING - 3 OF 3

SHEET 14 OF 26
32

8

8

STATE PROJECT NUMBER
1220-19-72



NOTE
1. PROPOSED ELEVATIONS ARE APPROXIMATE, SEE SHEET 13 FOR PROCEDURE TO DETERMINE JACKING DIMENSIONS AND TO DETERMINE FINAL BEAM SEAT ELEVATIONS.

PROPOSED SECTION
(LOOKING UPSTATION)

EXISTING BEAM SEAT ELEVATIONS (SEE NOTE 3)

BEAM	ELEVATION
G1	674.79
G2	674.96
G3	675.13
G4	675.11
G5	675.00
G6	675.04
G7	675.23
G8	675.35
G9	675.26
G10	675.13

NOTES

1. SEE SHEET 16 FOR BOLSTER AND BEAM SEAT DETAILS.
2. SEE SHEET 14 FOR FRAMING PLAN.
3. EXISTING BEAM SEAT ELEVATIONS ARE BASED ON SURVEY TAKEN 9/25/13. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING BEAM SEAT ELEVATIONS AT TIME OF JACKING PROCEDURE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. JCD

PIER 22 BEAM SEAT EXTENSION

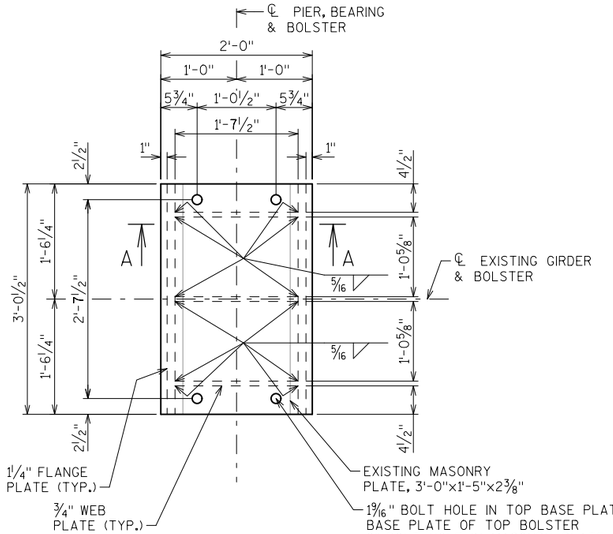
SHEET 15 OF 26
33

8

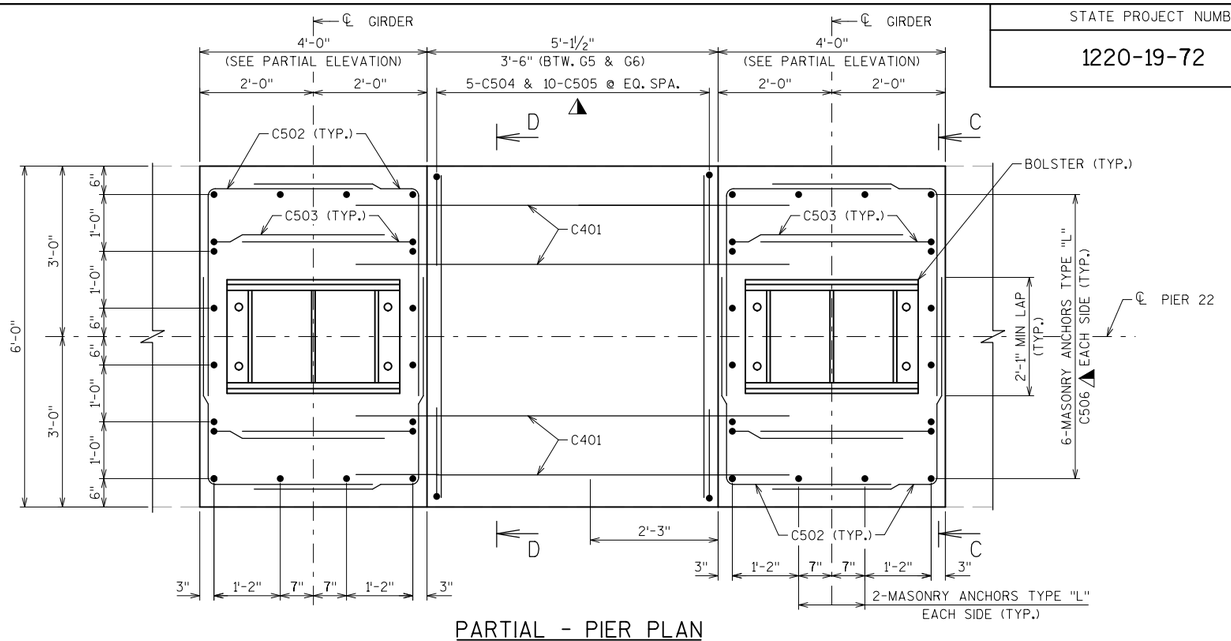
8

STATE PROJECT NUMBER

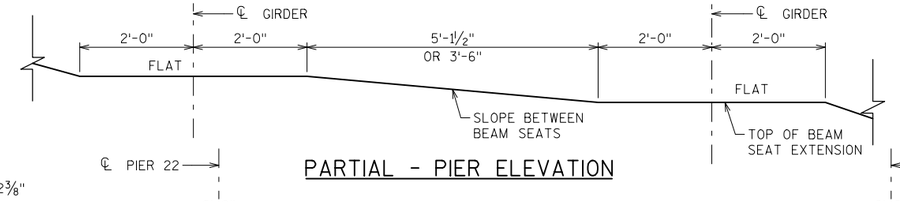
1220-19-72



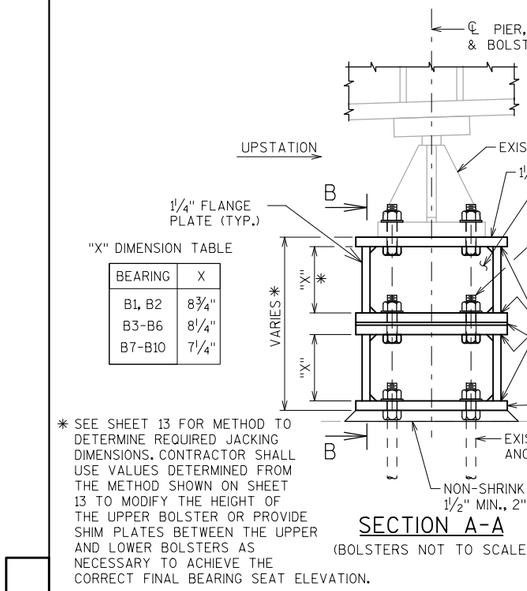
BOLSTER PLAN



PARTIAL - PIER PLAN

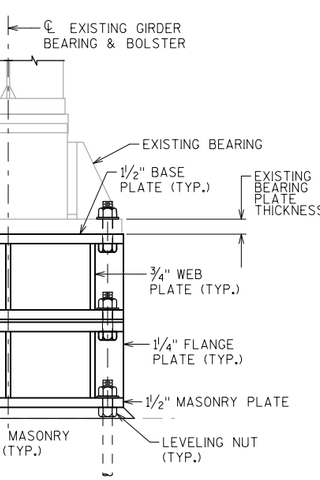


PARTIAL - PIER ELEVATION

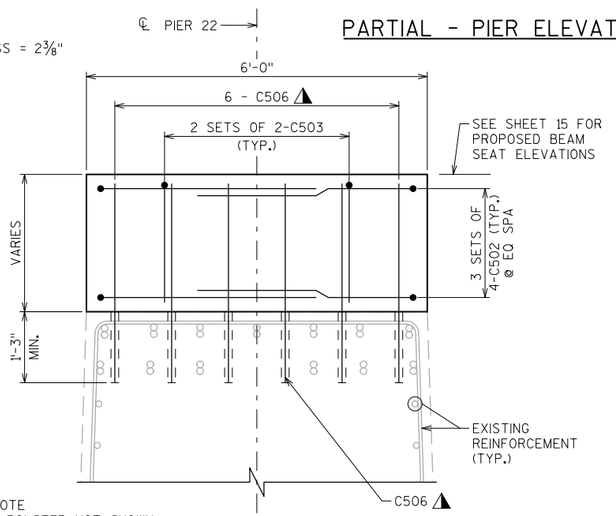


SECTION A-A

(BOLSTERS NOT TO SCALE)

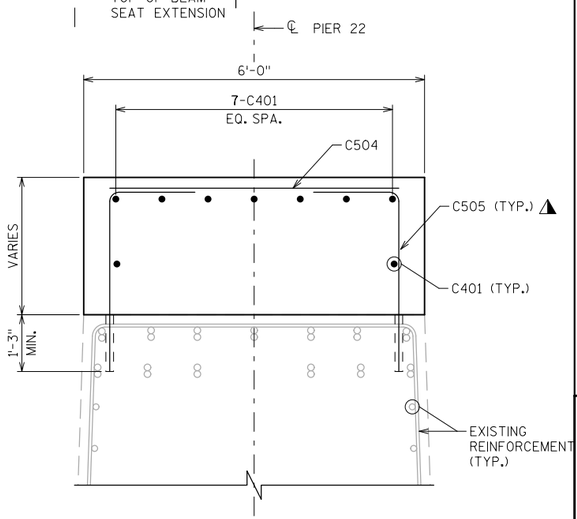


SECTION B-B



NOTE
1. BOLSTER NOT SHOWN FOR CLARITY.

SECTION C-C



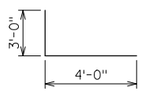
SECTION D-D

BILL OF BARS - PIER 22 TOTAL COATED = 2,560 LBS

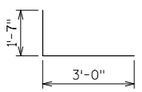
	BAR MARK	NO. REQ'D. TOTAL	LENGTH	COAT	BENT	LOCATION	
	C401	162	3'-9"	X		BEAM SEAT EXTENSION	HORIZ.
	C502	120	6'-11"	X	X	BEAM SEAT EXTENSION	HORIZ.
	C503	40	4'-6"	X	X	BEAM SEAT EXTENSION	VERT.
	C504	45	5'-6"	X		BEAM SEAT EXTENSION	HORIZ.
⚠	C505	90	4'-8"	X	X	BEAM SEAT EXTENSION	VERT.
⚠	C506	120	3'-3"	X		BEAM SEAT EXTENSION	VERT.

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. ALL BAR BEND DIMENSIONS ARE OUT-TO-OUT OF BAR.

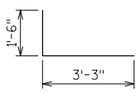
⚠ MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-3" IN CONCRETE.



C502



C503



C505

NOTES

1. CUT MASONRY ANCHORS TYPE "L" IN FIELD AS REQUIRED FOR VARYING PEDESTAL HEIGHTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. JCD

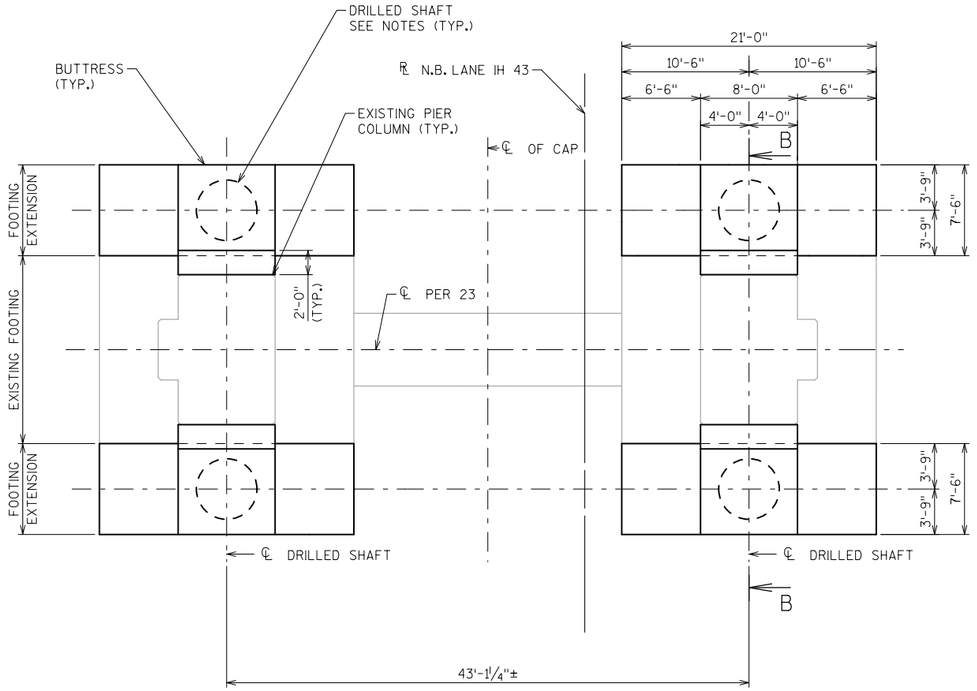
PIER 22
BOLSTER & BEAM SEAT DETAILS

SHEET 16 OF 26
34

8

8

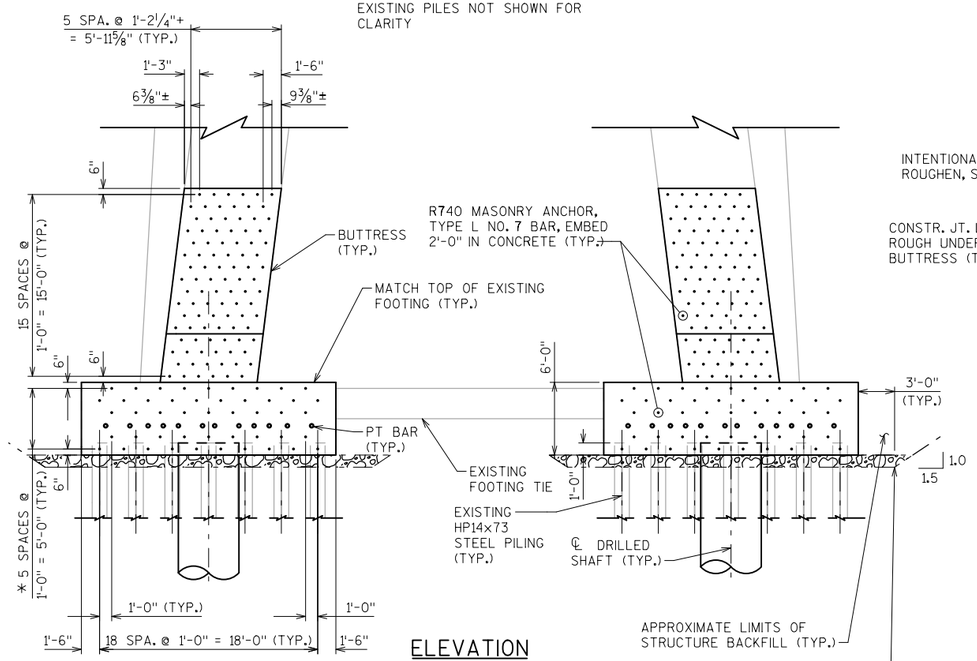
STATE PROJECT NUMBER
1220-19-72



PLAN

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED

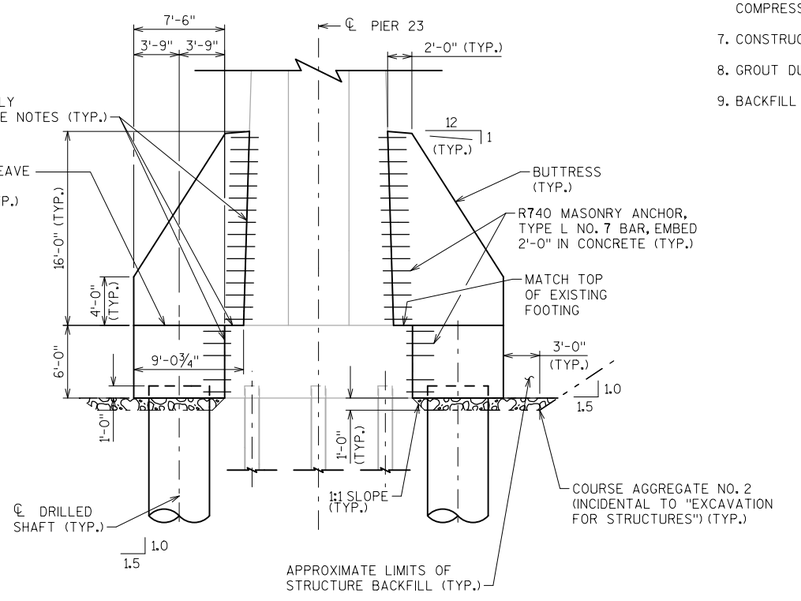
EXISTING PILES NOT SHOWN FOR
CLARITY



* MASONRY ANCHORS NOT REQUIRED
AT PT BAR LOCATIONS

ELEVATION
(LOOKING UPSTATION)

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED



SECTION B-B

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED

DOWEL NOTES

1. DURING FIELD DRILLING OF HOLES FOR MASONRY ANCHORS, TYPE L NO.7 BARS, IF EXISTING REINFORCING STEEL IS ENCOUNTERED, THE HOLE SHALL BE SHIFTED TO MISS THE REINFORCEMENT.
2. INTENTIONALLY ROUGHEN SURFACES WHERE MASONRY ANCHORS ARE INSTALLED TO AN AMPLITUDE OF 0.25 IN. COST OF FURNISHING INTENTIONALLY ROUGHEN SURFACES SHALL BE INCIDENTAL TO THE PRICE BID FOR "REMOVING OLD STRUCTURE STATION 843+82".
3. DRILL MASONRY ANCHORS AFTER CORING FOR POST TENSIONING.

NOTES

1. CLEAN EXPOSED SURFACES OF EXISTING FOOTING TO REMOVE DIRT, LAITANCE AND ANY OTHER DELETERIOUS MATERIALS PRIOR TO POURING THE PROPOSED FOOTING EXTENSIONS.
2. BUTTRESS CONCRETE SHALL NOT BE PLACED UNTIL ALL OF THE POST TENSIONING BARS HAVE BEEN JACKED AND LOCKED-OFF PER THE PROPOSED POST TENSIONING LAYOUT SHEETS.

PIER RETROFIT CONSTRUCTION SEQUENCE

1. EXCAVATE FOR FOOTING EXTENSIONS
2. CORE EXISTING FOOTING FOR PT BARS AND DRILL HOLES FOR MASONRY ANCHORS
3. INSTALL DRILLED SHAFTS
4. INSTALL REINFORCING BARS IN MASONRY ANCHOR HOLES
5. FORM AND PLACE FOOTING EXTENSION CONCRETE
6. AFTER NEW FOOTING EXTENSION CONCRETE ATTAINS 4 KSI COMPRESSIVE STRENGTH, STRESS PT BARS
7. CONSTRUCT BUTTRESS
8. GROUT DUCTS AND PT ANCHORAGE POCKETS
9. BACKFILL EXCAVATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. SJH

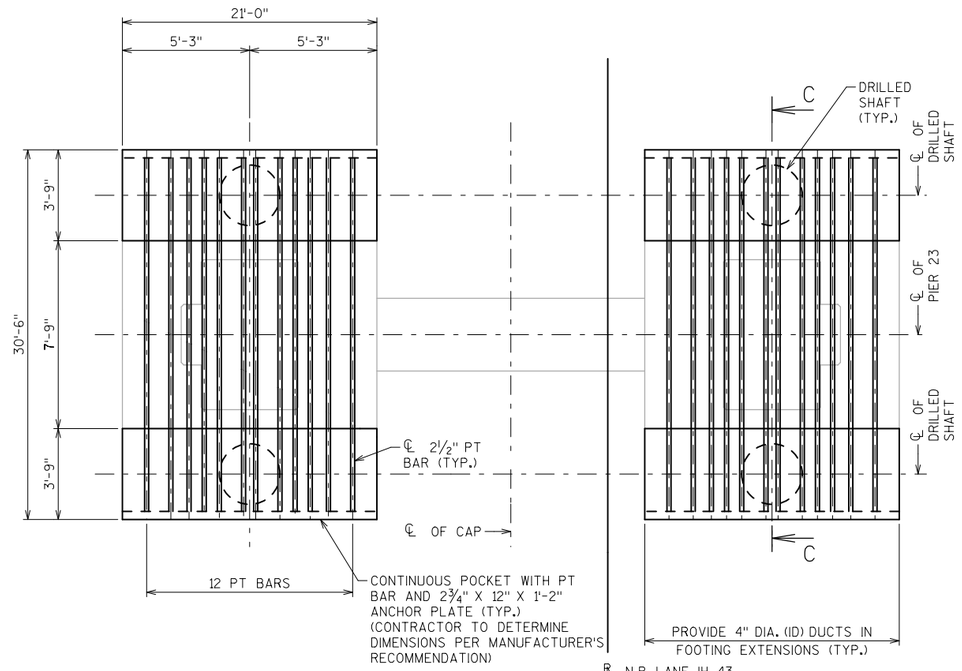
PIER 23
FOUNDATION
RETROFIT

SHEET 17 OF 26
35

8

8

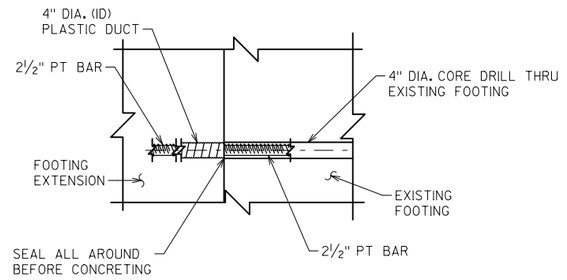
STATE PROJECT NUMBER
1220-19-72



PLAN

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES AND BUTTRESS NOT SHOWN FOR CLARITY.



TYPICAL DETAIL OF CONNECTION BETWEEN DUCT AND EXISTING CONCRETE

PIER 23 - POST TENSIONING

FOOTING	TENDON	BAR STRESSING LENGTH	AREA OF BAR	JACKING FORCE	LOCK-OFF FORCE
		L	A	JF	LOF
		(FT)	(IN2)	(KIPS)	(KIPS)
PIER 23	ALL	29.5	5.16	554.0	540

NOTE: THE LOCK-OFF FORCE HAS BEEN CALCULATED AS FOLLOWS:

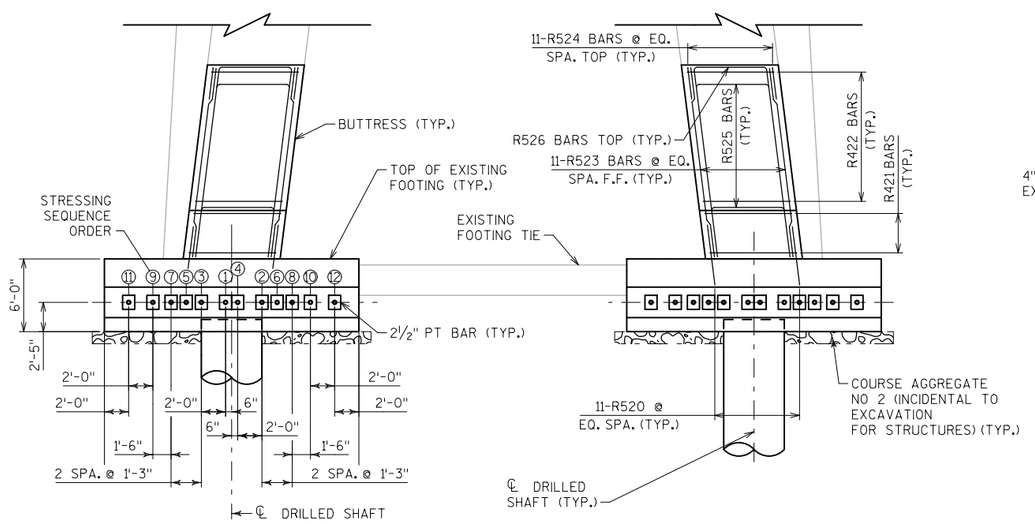
$$LOF = JF - ((E \times A)/(12 \times L)) \times AS$$

WHERE,

LOF	LOCK-OFF FORCE (KIPS)
JF	JACKING FORCE (KIPS)
E	MODULUS OF ELASTICITY (29,700 KSI)
A	AREA OF BAR (IN2)
L	BAR STRESSING LENGTH (FT)
AS	ANCHOR SET (1/32 IN)

NOTES

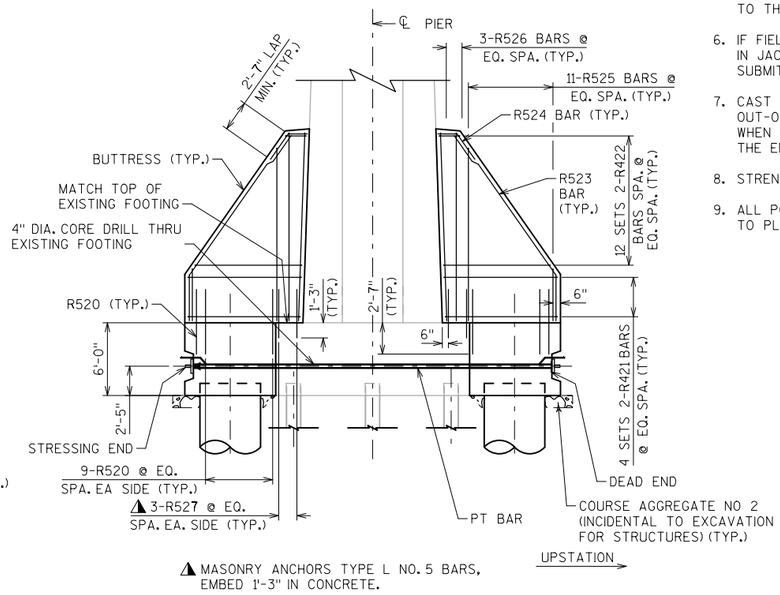
1. CLEAN EXPOSED SURFACES OF EXISTING FOOTING TO REMOVE DIRT, LAITANCE AND ANY OTHER DELETERIOUS MATERIALS PRIOR TO POURING THE FOOTING EXTENSIONS.
2. CORE DRILL HOLES FOR PT BARS IN EXISTING FOOTING FOLLOWING EXCAVATION AND PRIOR TO DRILLED SHAFT PLACEMENT AND PRIOR TO POURING FOOTING EXTENSIONS.
3. PROVIDE DUCTS IN FOOTING EXTENSIONS FOR PT BARS.
4. ALL PT BARS ARE 2½" DIAMETER, ASTM A 722, GR 150, EPOXY COATED.
5. SPIRAL AND OTHER LOCAL ANCHORAGE ZONE REINFORCEMENT IS TO BE DESIGNED BY THE POST-TENSIONING SUPPLIER AND TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. IF FIELD CONDITIONS DIFFER FROM ASSUMPTIONS FOR PT, ADJUSTMENT IN JACK FORCE AND ELONGATION SHALL BE MADE ACCORDINGLY AND BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
7. CAST ANCHOR FACES PERPENDICULAR TO PT DUCTS WITH NO OUT-OF-PLANENESS. A THIN LAYER OF MORTAR MAY BE APPLIED WHEN SETTING THE ANCHOR PLATE, SUBJECT TO APPROVAL OF THE ENGINEER.
8. STRENGTH OF CONCRETE AT TIME OF POST TENSIONING, f'c = 4 KSI.
9. ALL POST TENSIONING MUST BE COMPLETED AND LOCKED OFF PRIOR TO PLACING BUTTRESS CONCRETE.



ELEVATION
(LOOKING UPSTATION)

NOTES
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES NOT SHOWN FOR CLARITY.



⚠ MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-3" IN CONCRETE.

SECTION C-C

NOTE
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. JWB

PIER 23
POST TENSIONING
LAYOUT

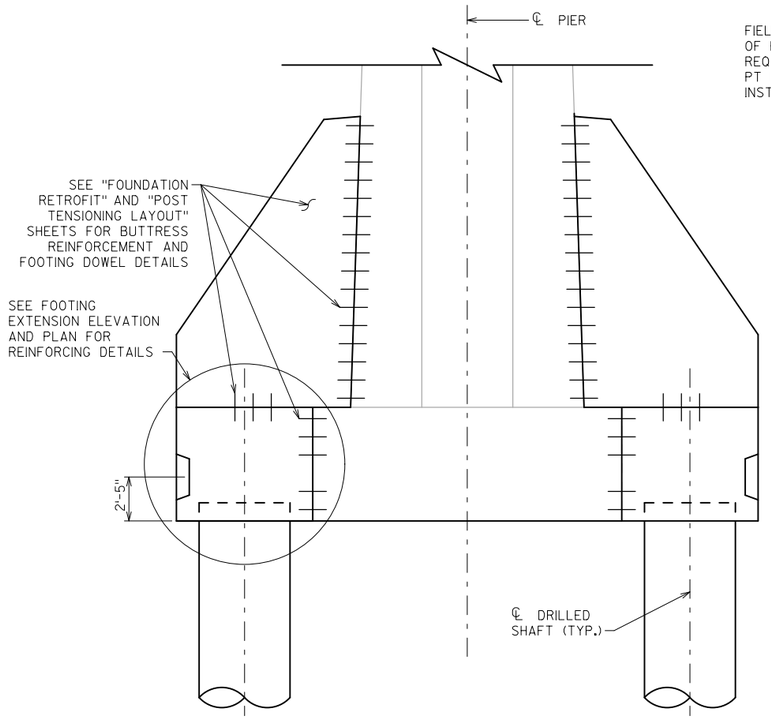
SHEET 18 OF 26
36

8

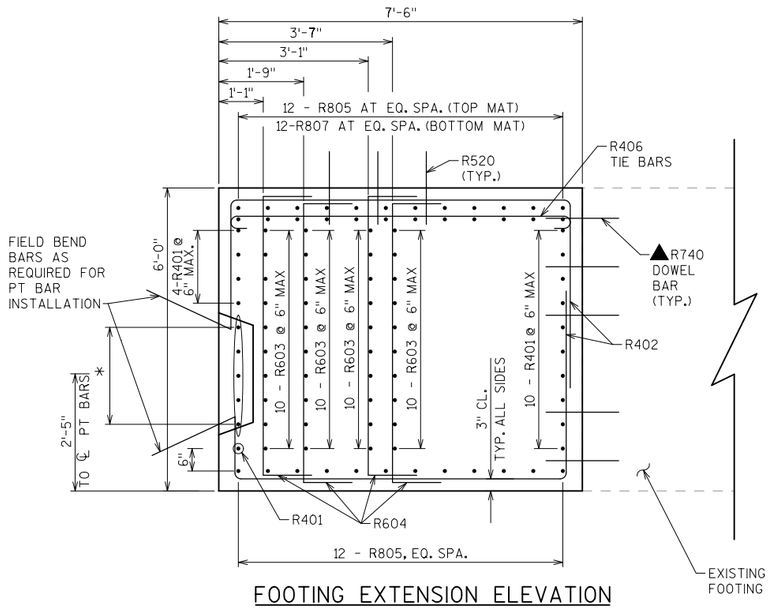
8

STATE PROJECT NUMBER

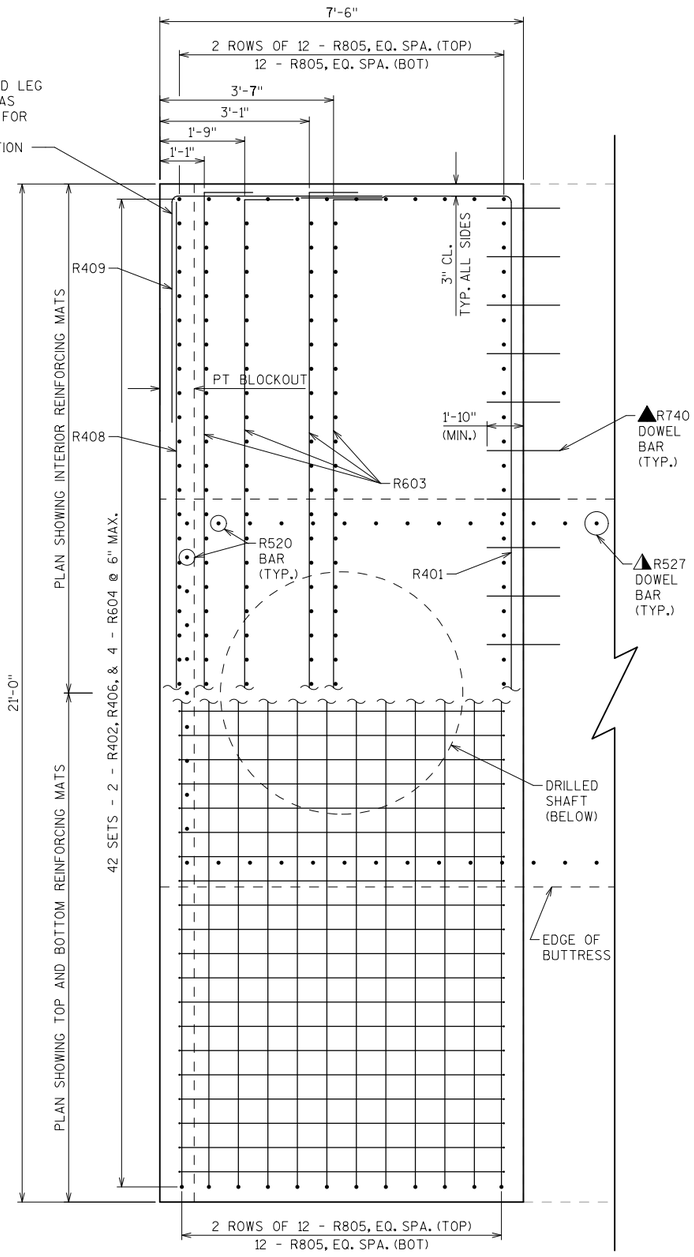
1220-19-72



PIER FOOTING ELEVATION



FOOTING EXTENSION ELEVATION



FOOTING EXTENSION PLAN

(TYP. - 4 PER PIER)

BILL OF BARS - PIER 23

TOTAL COATED = 38,420 LBS

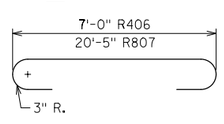
BAR MARK	COAT	NO. REQ'D. TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
R401	X	60	29'-0"	X		FOOTING EXTENSION - SIDES HORIZ.
R402	X	336	14'-0"	X		FOOTING EXTENSION - TOP & BOT TRANS.
R603	X	160	22'-2"	X		FOOTING EXTENSION - INTERIOR MAT HORIZ.
R604	X	672	7'-2"	X		FOOTING EXTENSION - INTERIOR MAT VERT.
R805	X	96	30'-7"	X		FOOTING EXTENSION - TOP, BOT LONGIT.
R406	X	168	8'-0"	X		FOOTING EXTENSION - TIE BAR TRANS.
R807	X	48	22'-3"	X		FOOTING EXTENSION - TOP LONGIT.
R408	X	20	20'-6"			FOOTING EXTENSION - SIDES LONGIT.
R409	X	40	8'-7"	X		FOOTING EXTENSION - SIDES LONGIT.
R520	X	116	5'-4"		XX	FOOTING EXTENSION
R421	X	32	17'-10"	X		BUTTRESS
R422	X	96	14'-4"	X		BUTTRESS
R523	X	44	17'-9"	X	XX	BUTTRESS
R524	X	44	4'-4"	X		BUTTRESS
R525	X	44	26'-2"	X		BUTTRESS
R526	X	12	39'-2"	X		BUTTRESS
◭ R527	X	24	4'-0"			FOOTING EXTENSION
▲ R740	X	576	4'-0"			FOOTING EXTENSION

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. ALL BAR BEND DIMENSIONS ARE OUT-TO-OUT OF BAR.

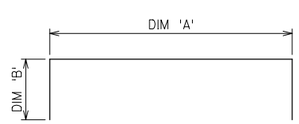
XX LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

◭ MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-3" IN CONCRETE.

▲ MASONRY ANCHORS TYPE L NO. 7 BARS. EMBED 2'-0" IN CONCRETE.



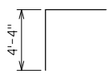
R406, R807



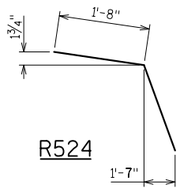
R401, R402, R603, R604, R805

(SEE TABLE FOR DIMENSIONS)

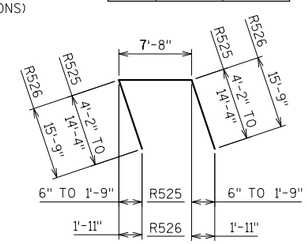
BAR MARK	DIM 'A'	DIM 'B'
R401	20'-6"	4'-4"
R402	7'-0"	3'-7"
R603	20'-6"	1'-0"
R604	5'-6"	1'-0"
R805	20'-6"	5'-3"



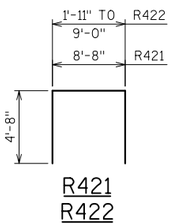
R409



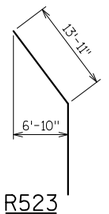
R524



R525, R526



R421
R422



R523

BAR SERIES TABLE		
MARK	NO REQ'D	LENGTH
R422	4 SERIES OF 11	11'-3" TO 17'-8"
R525	4 SERIES OF 11	16'-0" TO 36'-4"

NOTES

1. CORE DRILL EXISTING FOOTING FOR PT BARS PRIOR TO POURING PROPOSED FOOTING EXTENSIONS.
2. PROVIDE SLEEVES IN FOOTING EXTENSIONS FOR PT BARS.
3. REINFORCING NEAR PT BAR ANCHORAGE BLOCKOUT SHALL BE MODIFIED AS NECESSARY DEPENDING ON PT SYSTEM SELECTED TO MAINTAIN PROPER CLEARANCES AND AVOID CONFLICTS.

✳ 5-R408 AT 6" MAX. PLACE AFTER STRESSING OF PT BARS AND LAP WITH 5-R409 AT EACH END OF FOOTING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY MKB | PLANS CK'D. JCD

PIER 23 REBAR DETAILS

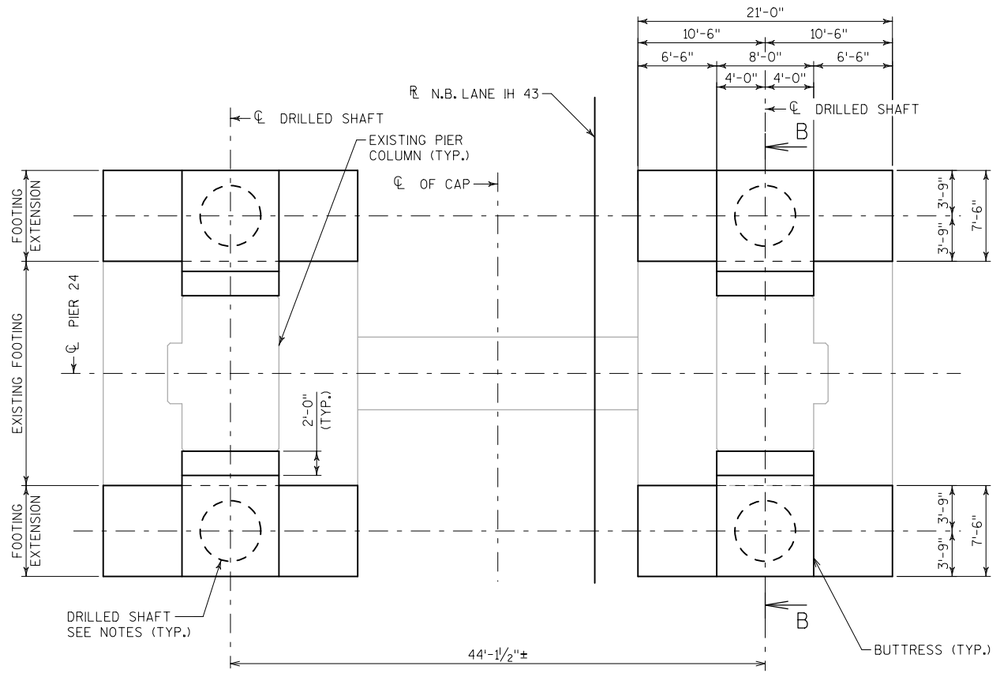
SHEET 19 OF 26

37

8

8

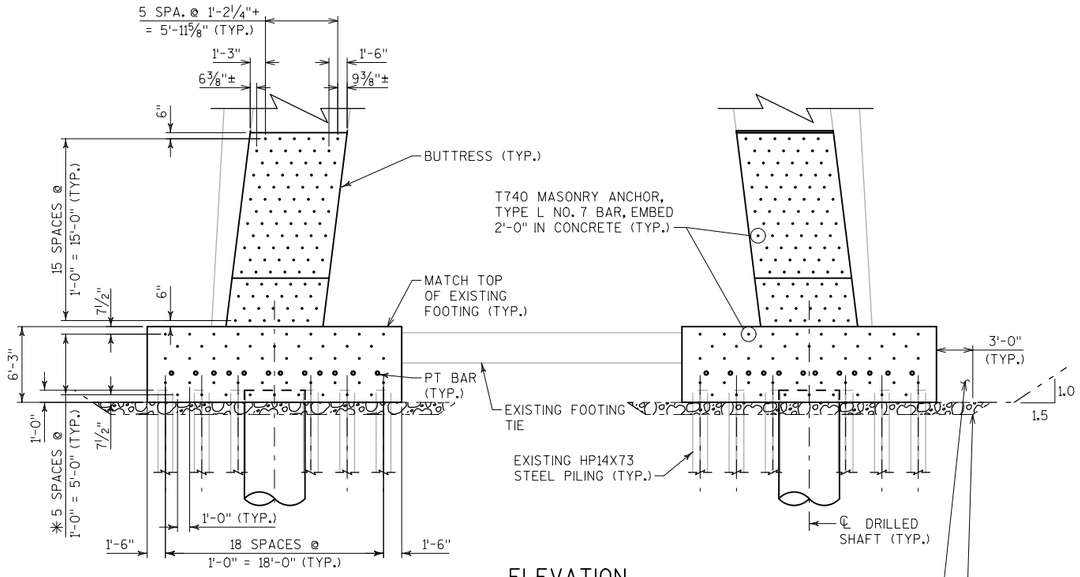
STATE PROJECT NUMBER
1220-19-72



PLAN

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS OTHERWISE NOTED

EXISTING PILES NOT SHOWN FOR CLARITY



✳ MASONRY ANCHORS NOT REQUIRED AT PT BAR LOCATIONS.

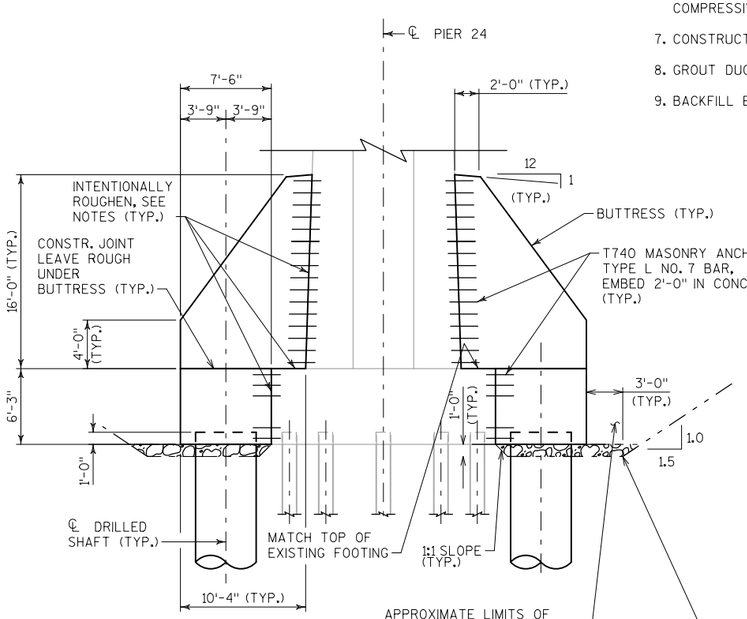
ELEVATION

(LOOKING UPSTATION)

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS OTHERWISE NOTED

APPROXIMATE LIMITS OF STRUCTURE BACKFILL (TYP.)

COARSE AGGREGATE NO. 2 (INCIDENTAL TO EXCAVATION FOR STRUCTURES) (TYP.)



SECTION B-B

ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS OTHERWISE NOTED

DOWEL NOTES

1. DURING FIELD DRILLING OF HOLES FOR MASONRY ANCHORS, TYPE L NO. 7 BARS, IF EXISTING REINFORCING STEEL IS ENCOUNTERED, THE HOLE SHALL BE SHIFTED TO MISS THE REINFORCEMENT.
2. INTENTIONALLY ROUGHEN SURFACES WHERE MASONRY ANCHORS ARE INSTALLED TO AN AMPLITUDE OF 0.25 IN. COST OF FURNISHING INTENTIONALLY ROUGHEN SURFACES SHALL BE INCIDENTAL TO THE PRICE BID "FOR REMOVING OLD STRUCTURE STATION 843+82".
3. DRILL MASONRY ANCHORS AFTER CORING FOR POST TENSIONING.

NOTES

1. CLEAN EXPOSED SURFACES OF EXISTING FOOTING TO REMOVE DIRT, LAITANCE AND ANY OTHER DELETERIOUS MATERIALS PRIOR TO POURING THE PROPOSED FOOTING EXTENSIONS.
2. BUTTRESS CONCRETE SHALL NOT BE PLACED UNTIL ALL OF THE POST TENSIONING BARS HAVE BEEN JACKED AND LOCKED-OFF PER THE PROPOSED POST TENSIONING LAYOUT SHEET.

PIER RETROFIT CONSTRUCTION SEQUENCE

1. EXCAVATE FOR FOOTING EXTENSIONS
2. CORE EXISTING FOOTING FOR PT BARS AND DRILL HOLES FOR MASONRY ANCHORS
3. INSTALL DRILLED SHAFTS
4. INSTALL REINFORCING BARS IN MASONRY ANCHOR HOLES
5. FORM AND PLACE FOOTING EXTENSION CONCRETE
6. AFTER NEW FOOTING EXTENSION CONCRETE ATTAINS 4 KSI COMPRESSIVE STRENGTH, STRESS PT BARS
7. CONSTRUCT BUTTRESS
8. GROUT DUCTS AND PT ANCHORAGE POCKETS
9. BACKFILL EXCAVATION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY CLG | PLANS CK'D. SJH

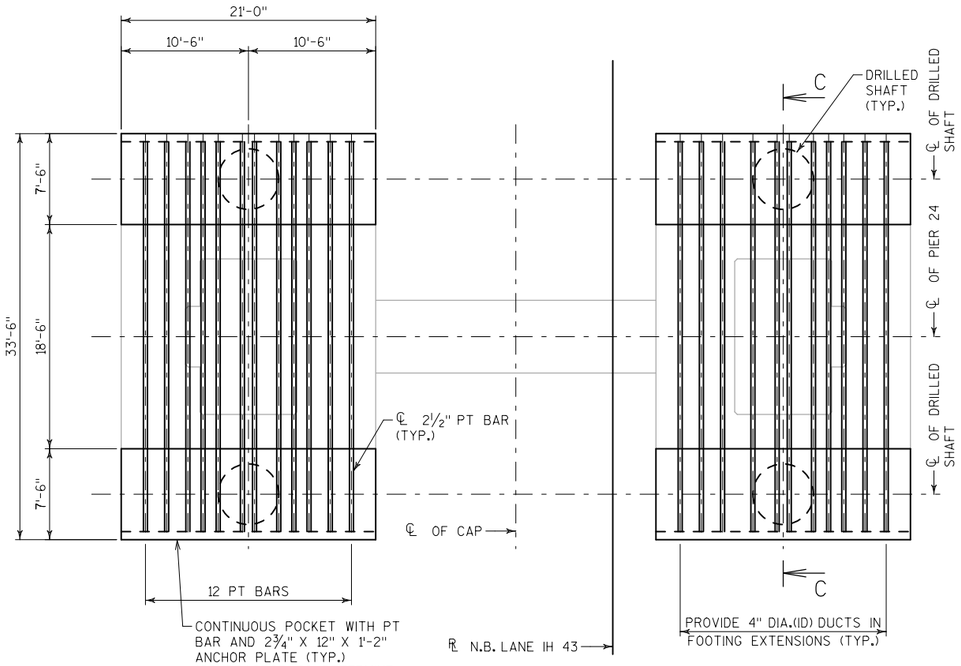
PIER 24 FOUNDATION RETROFIT

SHEET 20 OF 26
38

8

8

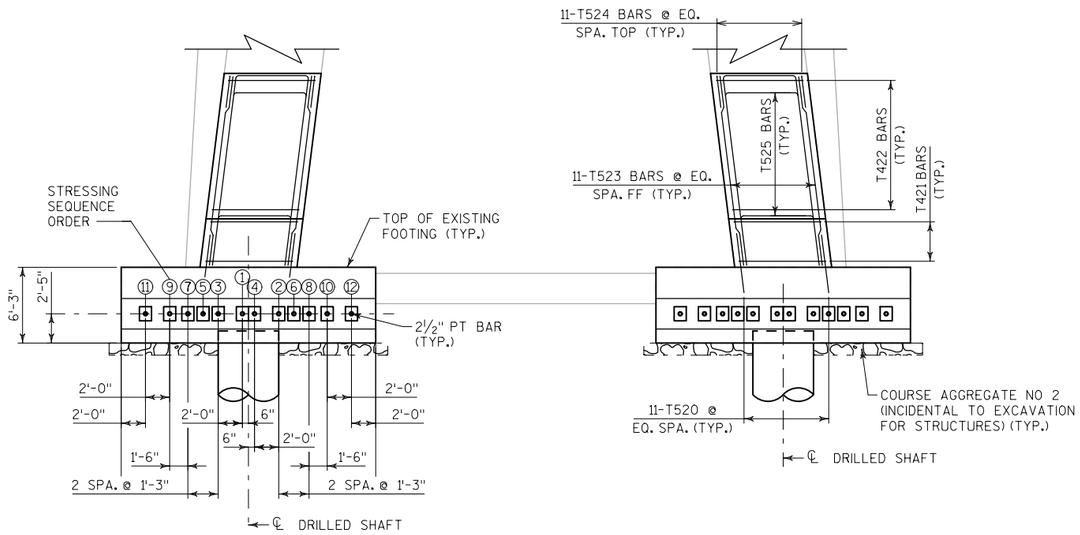
STATE PROJECT NUMBER
1220-19-72



PLAN

NOTES
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES AND BUTTRESS NOT SHOWN FOR CLARITY.

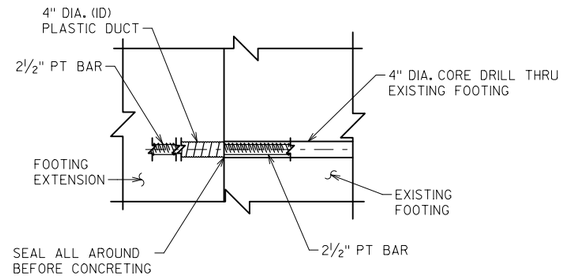


ELEVATION

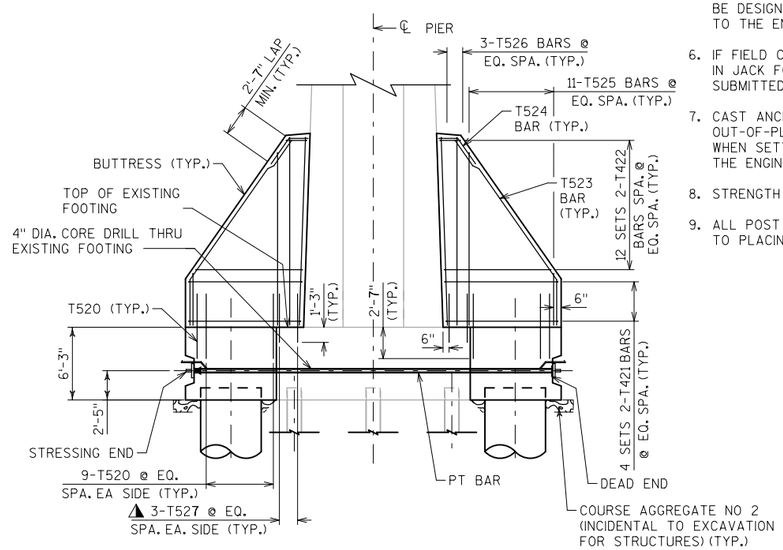
(LOOKING UPSTATION)

NOTE
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES NOT SHOWN FOR CLARITY.



TYPICAL DETAIL OF CONNECTION BETWEEN DUCT AND EXISTING CONCRETE



⚠ MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-3" IN CONCRETE.

UPSTATION

SECTION C-C

NOTE
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

PIER 24 - POST TENSIONING

FOOTING	TENDON	BAR STRESSING LENGTH	AREA OF BAR	JACKING FORCE	LOCK-OFF FORCE
		L	A	JF	LOF
		(FT)	(IN2)	(KIPS)	(KIPS)
PIER 24	ALL	32.50	5.16	554.0	541.7

NOTE: THE LOCK-OFF FORCE HAS BEEN CALCULATED AS FOLLOWS:

$$LOF = JF - ((E \times A)/(12 \times L)) \times AS$$

WHERE,
LOF = LOCK-OFF FORCE (KIPS)
JF = JACKING FORCE (KIPS)
E = MODULUS OF ELASTICITY (29,700 KSI)
A = AREA OF BAR (IN2)
L = BAR STRESSING LENGTH (FT)
AS = ANCHOR SET (1/32 IN)

NOTES

1. CLEAN EXPOSED SURFACES OF EXISTING FOOTING TO REMOVE DIRT, LAITANCE AND ANY OTHER DELETERIOUS MATERIALS PRIOR TO POURING THE FOOTING EXTENSIONS.
2. CORE DRILL HOLES FOR PT BARS IN EXISTING FOOTING FOLLOWING EXCAVATION AND PRIOR TO DRILLED SHAFT PLACEMENT AND PRIOR TO POURING FOOTING EXTENSIONS.
3. PROVIDE DUCTS IN FOOTING EXTENSIONS FOR PT BARS.
4. ALL PT BARS ARE 2½" DIAMETER, ASTM A 722, GR 150, EPOXY COATED.
5. SPIRAL AND OTHER LOCAL ANCHORAGE ZONE REINFORCEMENT IS TO BE DESIGNED BY THE POST-TENSIONING SUPPLIER AND TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. IF FIELD CONDITIONS DIFFER FROM ASSUMPTIONS FOR PT, ADJUSTMENT IN JACK FORCE AND ELONGATION SHALL BE MADE ACCORDINGLY AND BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
7. CAST ANCHOR FACES PERPENDICULAR TO PT DUCTS WITH NO OUT-OF-PLANENESS. A THIN LAYER OF MORTAR MAY BE APPLIED WHEN SETTING THE ANCHOR PLATE, SUBJECT TO APPROVAL OF THE ENGINEER.
8. STRENGTH OF CONCRETE AT TIME OF POST TENSIONING, f'c = 4 KSI.
9. ALL POST TENSIONING MUST BE COMPLETED AND LOCKED OFF PRIOR TO PLACING BUTTRESS CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY CLG | PLANS CK'D. JWB

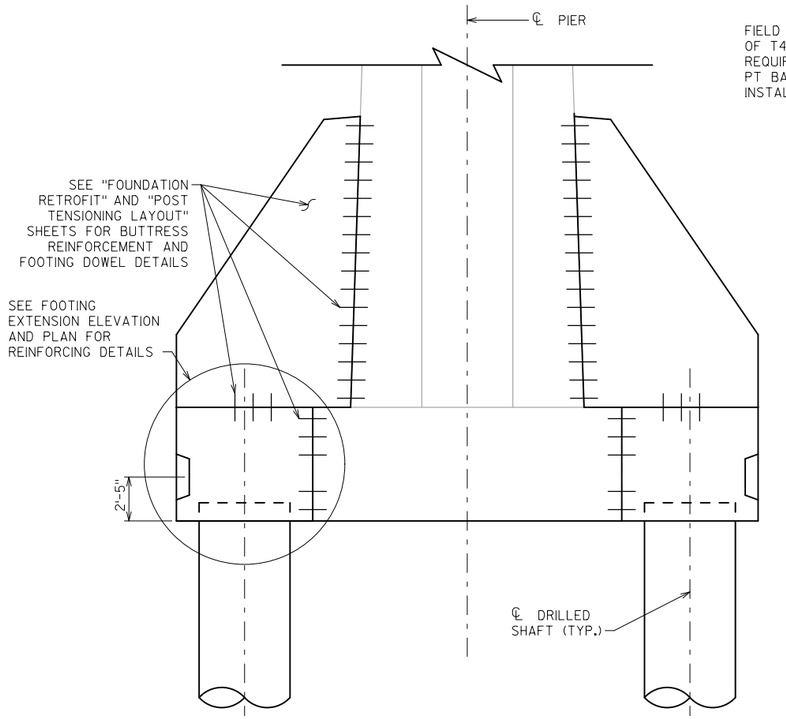
PIER 24
POST TENSIONING
LAYOUT

SHEET 21 OF 26
39

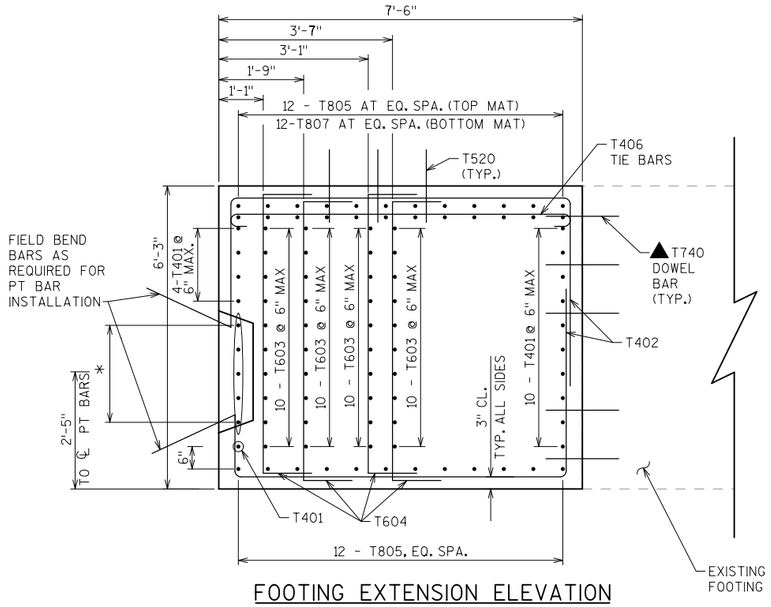
8

8

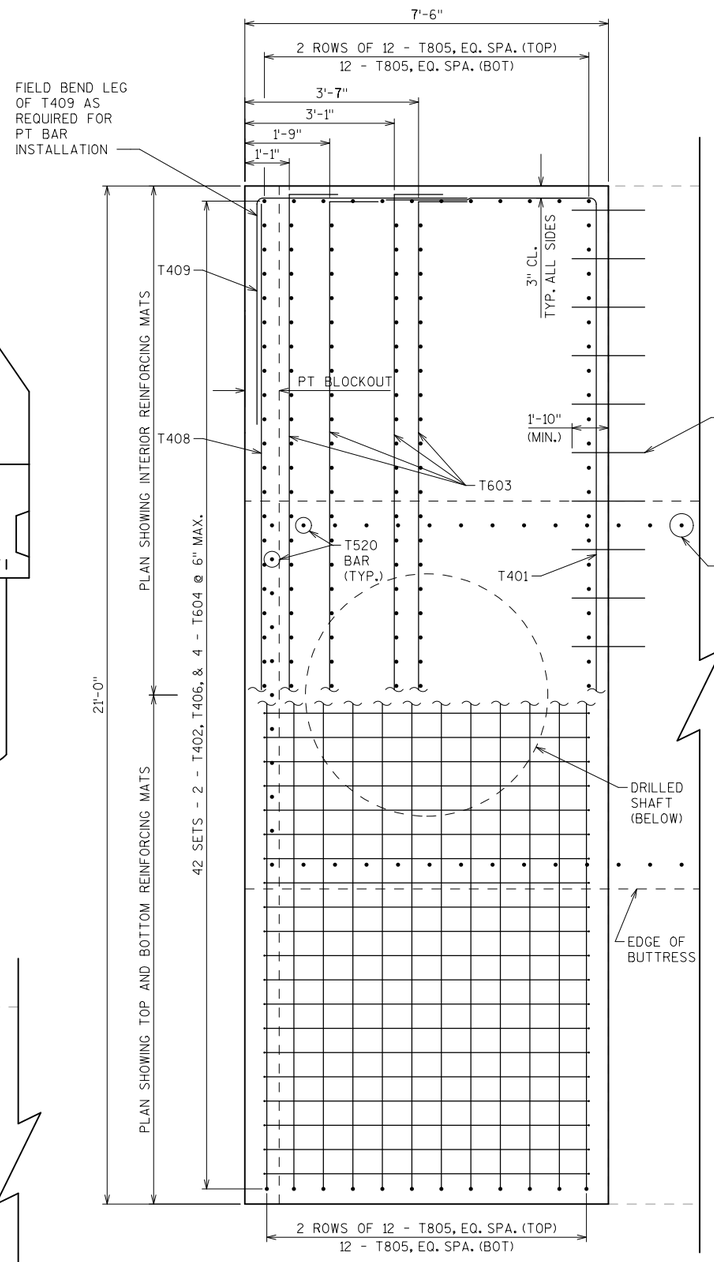
STATE PROJECT NUMBER
1220-19-72



PIER FOOTING ELEVATION



FOOTING EXTENSION ELEVATION



FOOTING EXTENSION PLAN

(TYP. - 4 PER PIER)

BILL OF BARS - PIER 24

TOTAL COATED = 38,920 LBS

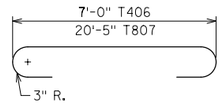
BAR MARK	COAT	NO. REQ'D. TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
T401	X	60	29'-0"	X		FOOTING EXTENSION - SIDES HORIZ.
T402	X	336	14'-4"	X		FOOTING EXTENSION - TOP & BOT TRANS.
T603	X	160	22'-2"	X		FOOTING EXTENSION - INTERIOR MAT HORIZ.
T604	X	672	7'-5"	X		FOOTING EXTENSION - INTERIOR MAT VERT.
T805	X	96	30'-11"	X		FOOTING EXTENSION - TOP, BOT LONGIT.
T406	X	168	8'-0"	X		FOOTING EXTENSION - TIE BAR TRANS.
T807	X	48	22'-3"	X		FOOTING EXTENSION - TOP LONGIT.
T408	X	20	20'-6"			FOOTING EXTENSION - SIDES LONGIT.
T409	X	40	8'-7"	X		FOOTING EXTENSION - SIDES LONGIT.
T520	X	116	5'-4"			FOOTING EXTENSION
T421	X	32	19'-2"	X		BUTTRESS
T422	X	96	14'-11"	X	XX	BUTTRESS
T523	X	44	18'-3"	X		BUTRESS
T524	X	44	4'-4"	X		BUTTRESS
T525	X	44	26'-2"	X	XX	BUTTRESS
T526	X	12	39'-2"	X		BUTTRESS
▲ T527	X	24	4'-0"			FOOTING EXTENSION
▲ T740	X	576	4'-0"			FOOTING EXTENSION

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. ALL BAR BEND DIMENSIONS ARE OUT-TO-OUT OF BAR.

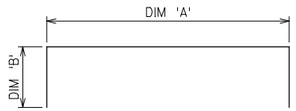
XX LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

▲ MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-3" IN CONCRETE.

▲ MASONRY ANCHORS TYPE L NO. 7 BARS. EMBED 2'-0" IN CONCRETE.



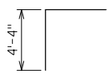
T406, T807



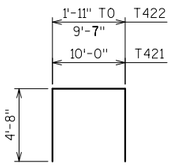
T401, T402, T603, T604, T805

(SEE TABLE FOR DIMENSIONS)

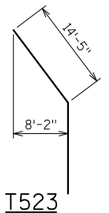
BAR MARK	DIM 'A'	DIM 'B'
T401	20'-6"	4'-4"
T402	7'-0"	3'-9"
T603	20'-6"	1'-0"
T604	5'-9"	1'-0"
T805	20'-6"	5'-5"



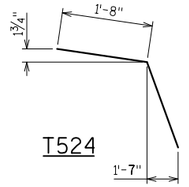
T409



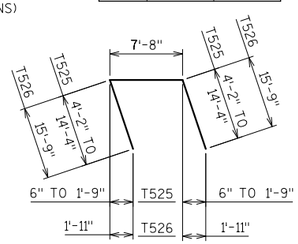
T421
T422



T523



T524



T525
T526

BAR SERIES TABLE		
MARK	NO REQ'D	LENGTH
T422	4 SERIES OF 11	11'-3" TO 18'-11"
T525	4 SERIES OF 11	16'-0" TO 36'-4"

NOTES

1. CORE DRILL EXISTING FOOTING FOR PT BARS PRIOR TO POURING PROPOSED FOOTING EXTENSIONS.
2. PROVIDE SLEEVES IN FOOTING EXTENSIONS FOR PT BARS.
3. REINFORCING NEAR PT BAR ANCHORAGE BLOCKOUT SHALL BE MODIFIED AS NECESSARY DEPENDING ON PT SYSTEM SELECTED TO MAINTAIN PROPER CLEARANCES AND AVOID CONFLICTS.

* 5-T408 AT 6" MAX. PLACE AFTER STRESSING OF PT BARS AND LAP WITH 5-T409 AT EACH END OF FOOTING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY MKB | PLANS CK'D. JCD

PIER 24 REBAR DETAILS

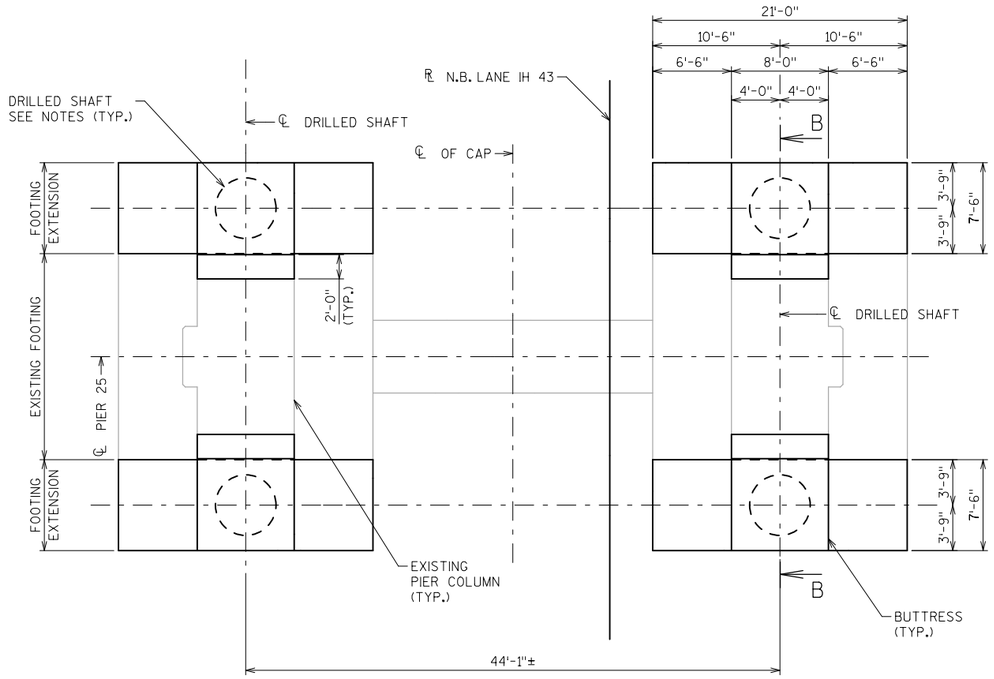
SHEET 22 OF 26

40

8

8

STATE PROJECT NUMBER
1220-19-72



PLAN

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED

EXISTING PILES NOT SHOWN FOR CLARITY

DOWEL NOTES

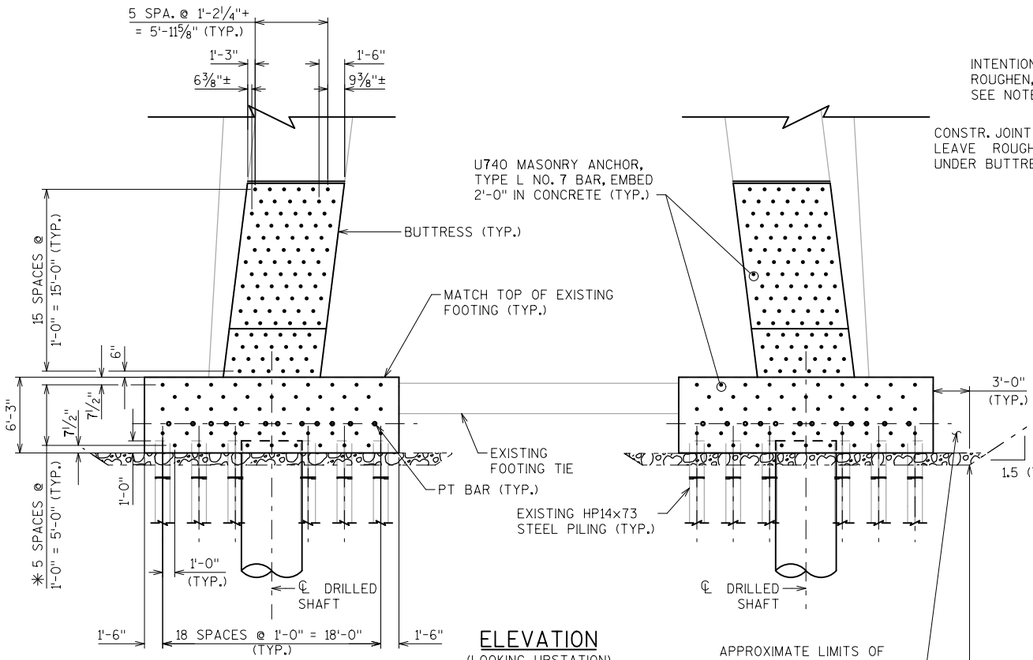
1. DURING FIELD DRILLING OF HOLES FOR MASONRY ANCHORS TYPE L, NO. 7 BARS, IF EXISTING REINFORCING STEEL IS ENCOUNTERED, THE HOLE SHALL BE SHIFTED TO MISS THE REINFORCEMENT.
2. INTENTIONALLY ROUGHEN SURFACES WHERE MASONRY ANCHORS ARE INSTALLED TO AN AMPLITUDE OF 0.25 IN. COST OF FURNISHING INTENTIONALLY ROUGHEN SURFACES SHALL BE INCIDENTAL TO THE PRICE BID FOR "REMOVING OLD STRUCTURE STATION 843+82".
3. DRILL MASONRY ANCHORS AFTER CORING FOR POST TENSIONING.

NOTES

1. CLEAN EXPOSED SURFACES OF EXISTING FOOTING TO REMOVE DIRT, LAITANCE AND ANY OTHER DELETERIOUS MATERIALS PRIOR TO POURING THE PROPOSED FOOTING EXTENSIONS.
2. BUTTRESS CONCRETE SHALL NOT BE PLACED UNTIL ALL OF THE POST TENSIONING BARS HAVE BEEN JACKED AND LOCKED-OFF PER THE PROPOSED POST TENSIONING LAYOUT SHEET.

PIER RETROFIT CONSTRUCTION SEQUENCE

1. EXCAVATE FOR EXISTING FOOTING EXTENSIONS
2. CORE EXISTING FOOTING FOR PT BARS AND DRILL HOLES FOR MASONRY ANCHORS
3. INSTALL DRILLED SHAFTS
4. INSTALL REINFORCING BARS IN MASONRY ANCHOR HOLES
5. FORM AND PLACE FOOTING EXTENSION CONCRETE
6. AFTER NEW FOOTING EXTENSION CONCRETE ATTAINS 4 KSI COMPRESSIVE STRENGTH, STRESS PT BARS
7. CONSTRUCT BUTTRESS
8. GROUT DUCTS AND PT ANCHORAGE POCKETS
9. BACKFILL EXCAVATION

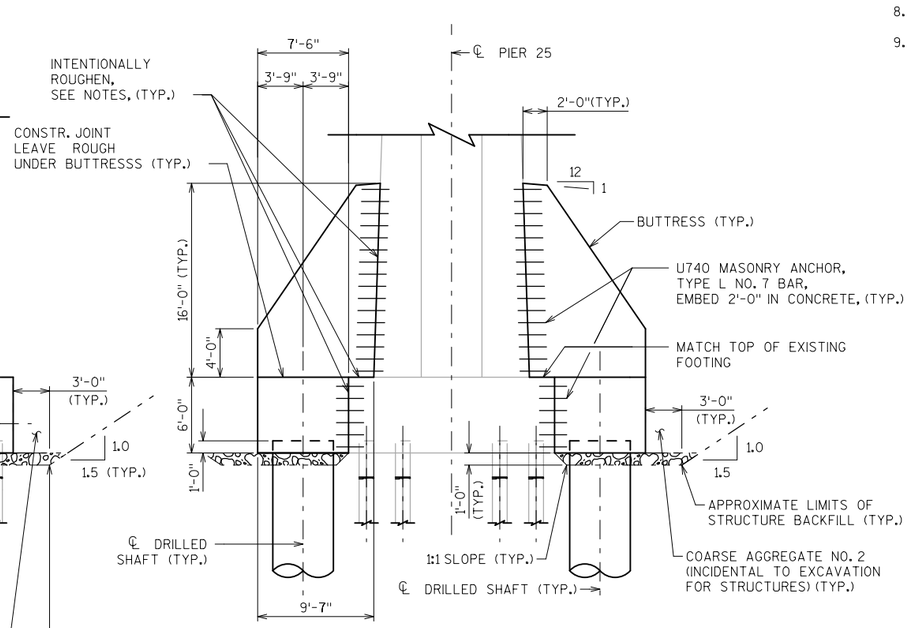


ELEVATION

(LOOKING UPSTATION)

✳ MASONRY ANCHORS NOT REQUIRED AT PT BAR LOCATIONS.

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED



SECTION B-B

ALL DIMENSIONS SHOWN ARE TYPICAL
UNLESS OTHERWISE NOTED

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY GJS | PLANS CK'D. SJH

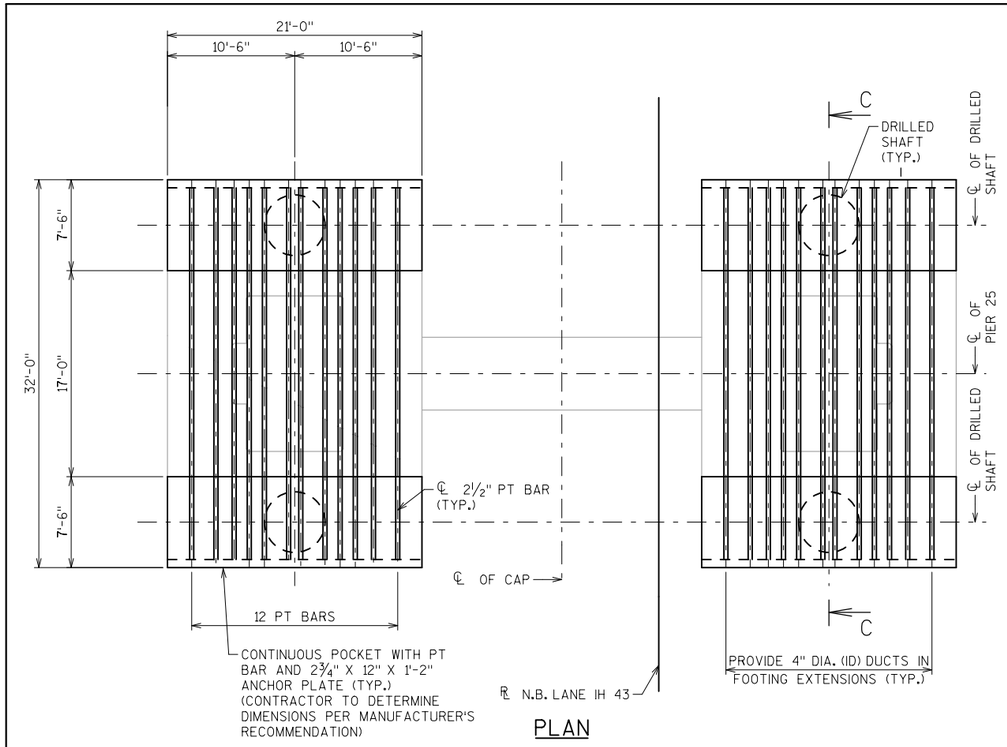
PIER 25
FOUNDATION
RETROFIT

SHEET 23 OF 26
41

8

8

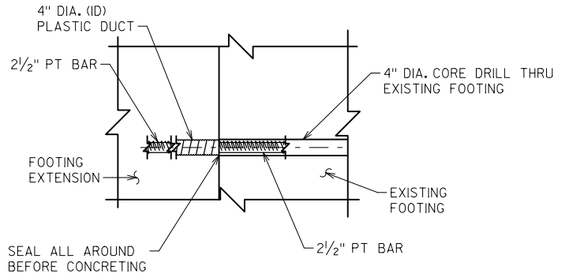
STATE PROJECT NUMBER
1220-19-72



PLAN

NOTES
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES AND BUTTRESS NOT SHOWN FOR CLARITY.



TYPICAL DETAIL OF CONNECTION BETWEEN DUCT AND EXISTING CONCRETE

PIER 25 - POST TENSIONING

FOOTING	TENDON	BAR STRESSING LENGTH	AREA OF BAR	JACKING FORCE	LOCK-OFF FORCE
		L	A	JF	LOF
		(FT)	(IN2)	(KIPS)	(KIPS)
PIER 25	ALL	31.00	5.16	554.0	541.1

NOTE: THE LOCK-OFF FORCE HAS BEEN CALCULATED AS FOLLOWS:

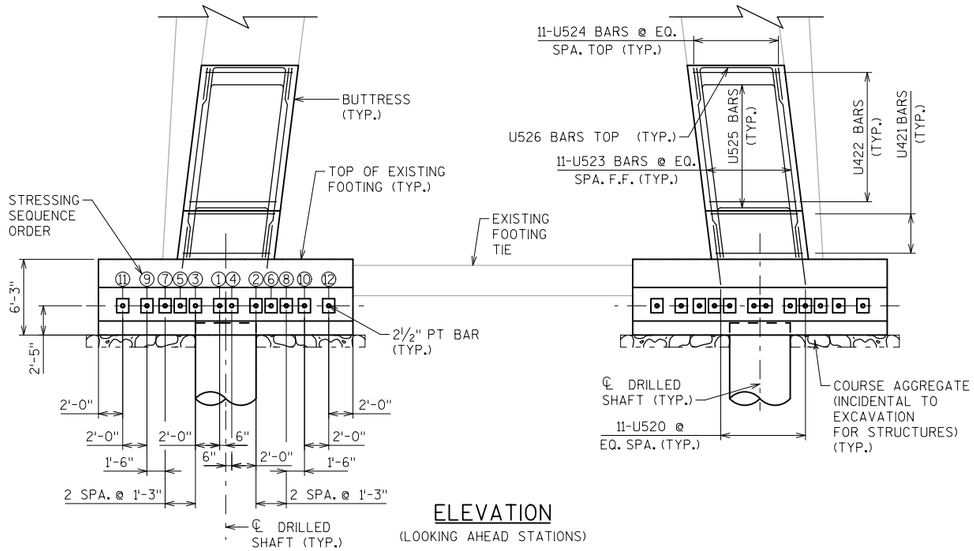
$$LOF = JF - ((E \times A)/(12 \times L)) \times AS$$

WHERE,

LOF	LOCK-OFF FORCE (KIPS)
JF	JACKING FORCE (KIPS)
E	MODULUS OF ELASTICITY (29,700 KSI)
A	AREA OF BAR (IN2)
L	BAR STRESSING LENGTH (FT)
AS	ANCHOR SET (1/32 IN)

NOTES

1. CORE DRILL HOLES FOR PT BARS IN EXISTING FOOTING FOLLOWING EXCAVATION AND PRIOR TO DRILLED SHAFT PLACEMENT AND PRIOR TO POURING FOOTING EXTENSIONS.
2. PROVIDE DUCTS IN FOOTING EXTENSIONS FOR PT BARS.
3. ALL PT BARS ARE 2½" DIAMETER, ASTM A 722, GR 150, EPOXY COATED.
4. SPIRAL AND OTHER LOCAL ANCHORAGE ZONE REINFORCEMENT IS TO BE DESIGNED BY THE POST-TENSIONING SUPPLIER AND TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
5. IF FIELD CONDITIONS DIFFER FROM ASSUMPTIONS FOR PT, ADJUSTMENT IN JACK FORCE AND ELONGATION SHALL BE MADE ACCORDINGLY AND BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. CAST ANCHOR FACES PERPENDICULAR TO PT DUCTS WITH NO OUT-OF-PLANENESS. A THIN LAYER OF MORTAR MAY BE APPLIED WHEN SETTING THE ANCHOR PLATE, SUBJECT TO APPROVAL OF THE ENGINEER.
7. STRENGTH OF CONCRETE AT TIME OF POST TENSIONING, f'c = 4 KSI.
8. ALL POST TENSIONING MUST BE COMPLETED AND LOCKED OFF PRIOR TO PLACING BUTTRESS CONCRETE.

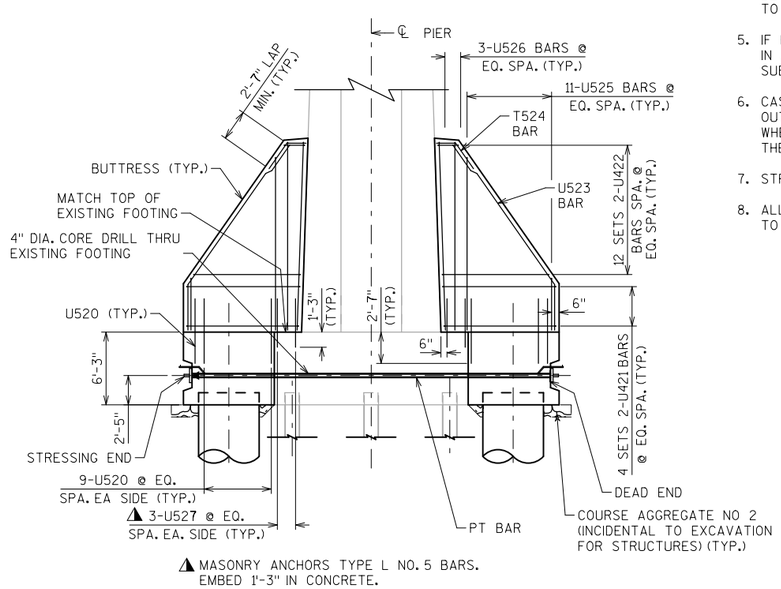


ELEVATION

(LOOKING AHEAD STATIONS)

NOTES
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

EXISTING PILES NOT SHOWN FOR CLARITY.



▲ MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-3" IN CONCRETE.

UPSTATION →

SECTION C-C

NOTE
ALL DIMENSIONS SHOWN ARE TYPICAL UNLESS NOTED OTHERWISE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY GJS | PLANS CK'D. JWB

PIER 25 POST TENSIONING LAYOUT

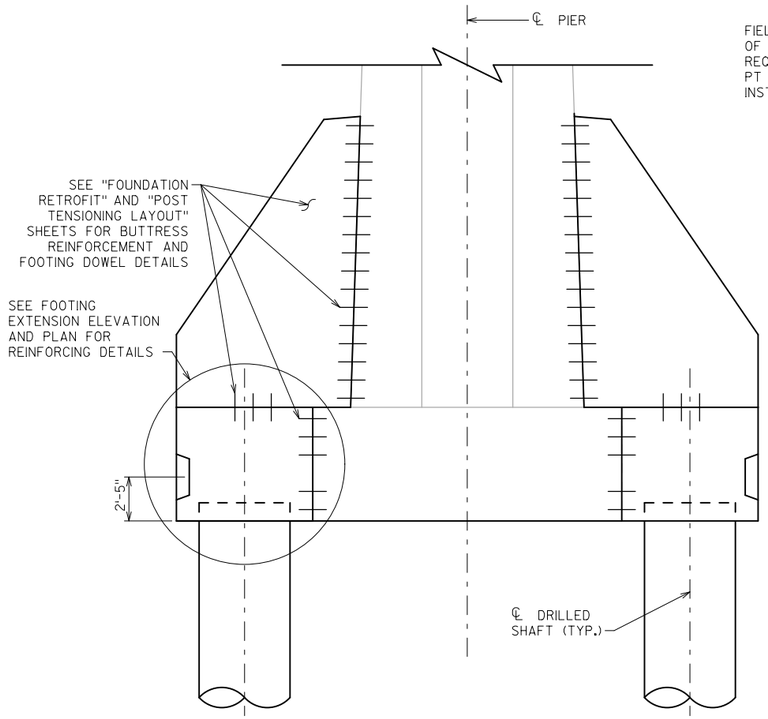
SHEET 24 OF 26
42

8

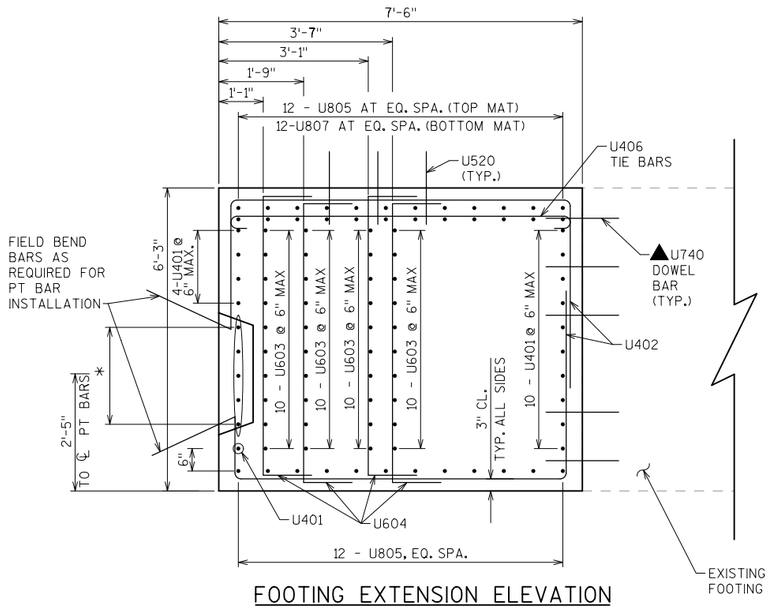
8

STATE PROJECT NUMBER

1220-19-72

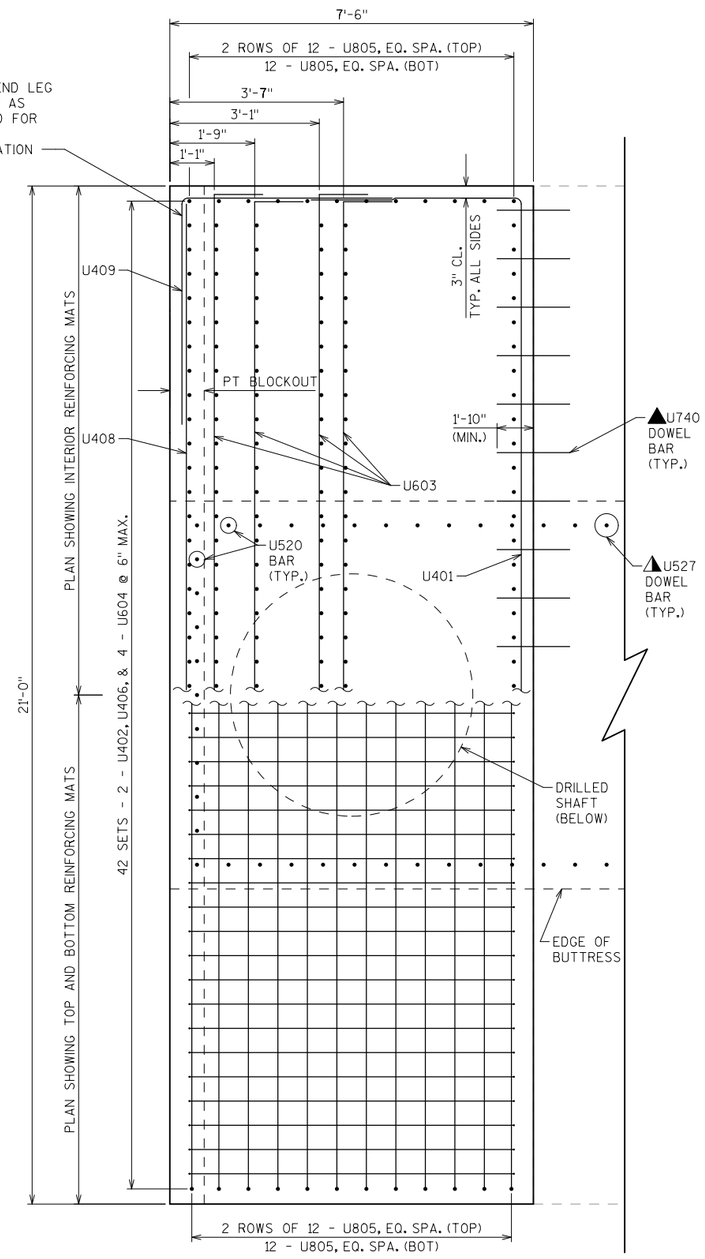


PIER FOOTING ELEVATION



FOOTING EXTENSION ELEVATION

*5-U408 AT 6" MAX. PLACE AFTER STRESSING OF PT BARS AND LAP WITH 5-U409 AT EACH END OF FOOTING



FOOTING EXTENSION PLAN

(TYP. - 4 PER PIER)

BILL OF BARS - PIER 25

TOTAL COATED = 38,900 LBS

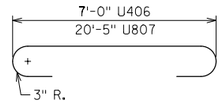
BAR MARK	COAT	NO. REQ'D. TOTAL	LENGTH	BENT	BAR SERIES	LOCATION
U401	X	60	29'-0"	X		FOOTING EXTENSION - SIDES HORIZ.
U402	X	336	14'-4"	X		FOOTING EXTENSION - TOP & BOT TRANS.
U603	X	160	22'-2"	X		FOOTING EXTENSION - INTERIOR MAT HORIZ.
U604	X	672	7'-5"	X		FOOTING EXTENSION - INTERIOR MAT VERT.
U805	X	96	30'-11"	X		FOOTING EXTENSION - TOP, BOT LONGIT.
U406	X	168	8'-0"	X		FOOTING EXTENSION - TIE BAR TRANS.
U807	X	48	22'-3"	X		FOOTING EXTENSION - TOP LONGIT.
U408	X	20	20'-6"			FOOTING EXTENSION - SIDES LONGIT.
U409	X	40	8'-7"	X		FOOTING EXTENSION - SIDES LONGIT.
U520	X	116	5'-4"			FOOTING EXTENSION
U421	X	32	18'-25"	X		BUTTRESS
U422	X	96	14'-6"	X	XX	BUTTRESS
U523	X	44	18'-0"	X		BUTRESS
U524	X	44	4'-4"	X		BUTTRESS
U525	X	44	26'-2"	X	XX	BUTTRESS
U526	X	12	39'-2"	X		BUTTRESS
△ U527	X	24	4'-0"			FOOTING EXTENSION
▲ U740	X	576	4'-0"			FOOTING EXTENSION

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE. ALL BAR BEND DIMENSIONS ARE OUT-TO-OUT OF BAR.

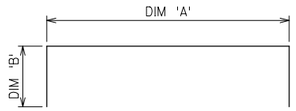
XX LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

△ MASONRY ANCHORS TYPE L NO. 5 BARS. EMBED 1'-3" IN CONCRETE.

▲ MASONRY ANCHORS TYPE L NO. 7 BARS. EMBED 2'-0" IN CONCRETE.



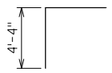
U406, U807



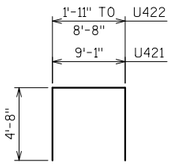
U401, U402, U603, U604, U805

(SEE TABLE FOR DIMENSIONS)

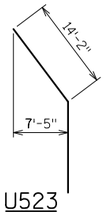
BAR MARK	DIM 'A'	DIM 'B'
U401	20'-6"	4'-4"
U402	7'-0"	3'-9"
U603	20'-6"	1'-0"
U604	5'-6"	1'-0"
U805	20'-6"	5'-5"



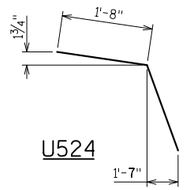
U409



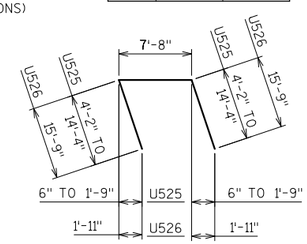
U421
U422



U523



U524



U525
U526

BAR SERIES TABLE		
MARK	NO REQ'D	LENGTH
U422	4 SERIES OF 11	11'-3" TO 18'-4"
U525	4 SERIES OF 11	16'-0" TO 36'-4"

NOTES

1. CORE DRILL EXISTING FOOTING FOR PT BARS PRIOR TO POURING PROPOSED FOOTING EXTENSIONS.
2. PROVIDE SLEEVES IN FOOTING EXTENSIONS FOR PT BARS.
3. REINFORCING NEAR PT BAR ANCHORAGE BLOCKOUT SHALL BE MODIFIED AS NECESSARY DEPENDING ON PT SYSTEM SELECTED TO MAINTAIN PROPER CLEARANCES AND AVOID CONFLICTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY MKB | PLANS CK'D. JCD

PIER 25 REBAR DETAILS

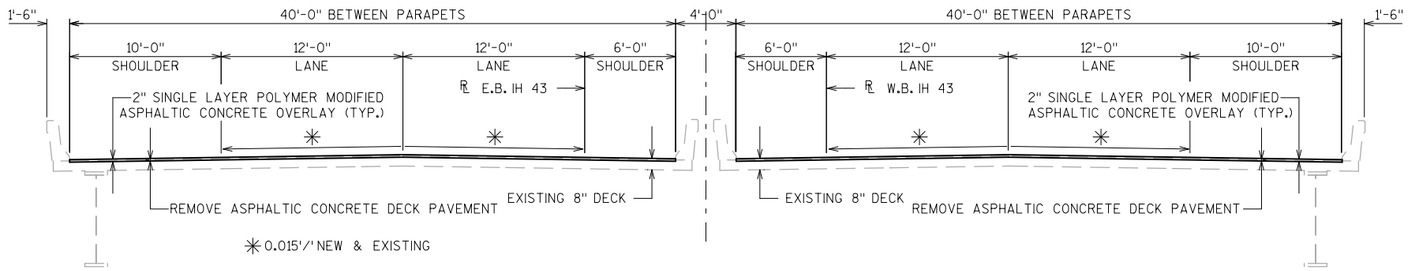
SHEET 25 OF 26

43

8

8

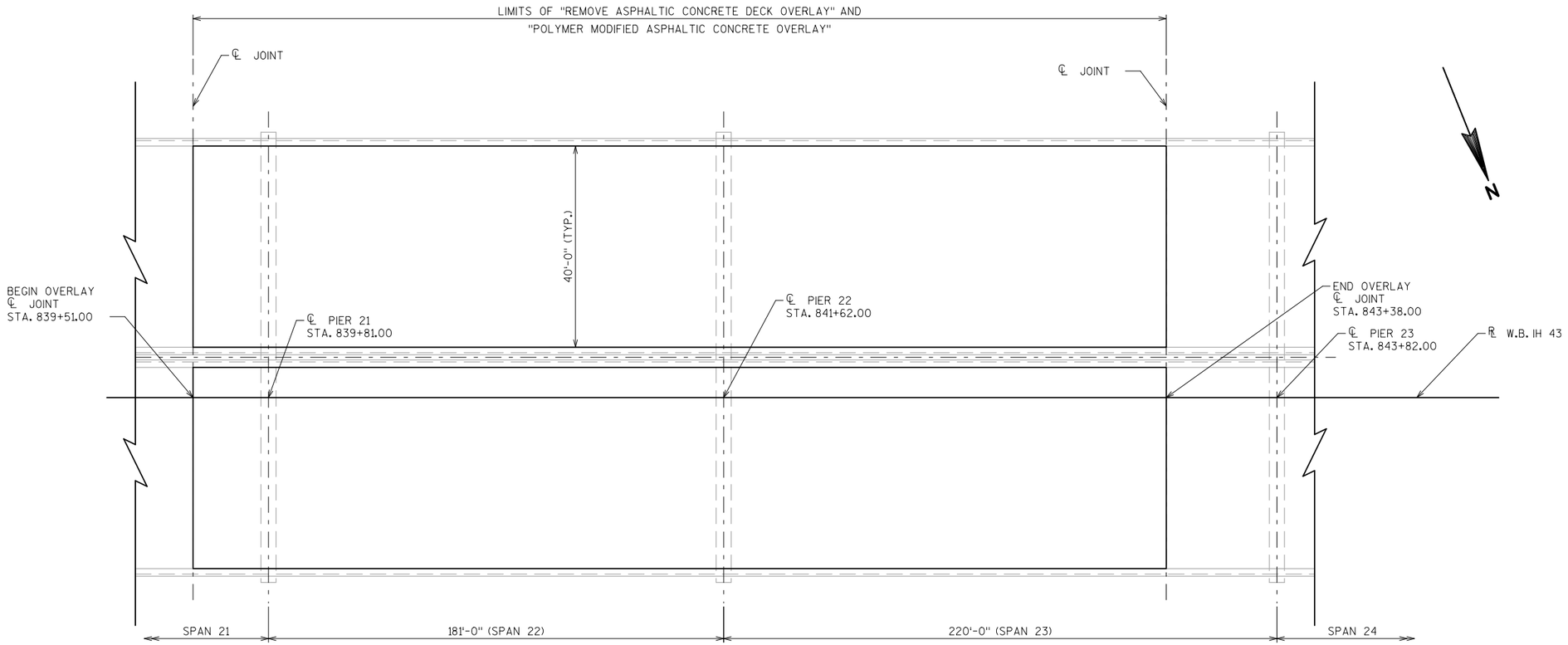
STATE PROJECT NUMBER
1220-19-72



CROSS SECTION THRU ROADWAY LOOKING WEST

NOTE:

1. MILLING AND ASPHALT OVERLAY WORK SHALL NOT PROCEED UNTIL WRITTEN AUTHORIZATION IS GIVEN BY THE DEPARTMENT.



PLAN

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE B-5-158

DRAWN BY EEM | PLANS CK'D. MSC

POLYMER MODIFIED ASPHALTIC CONCRETE PAVEMENT

SHEET 26 OF 26

44

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov