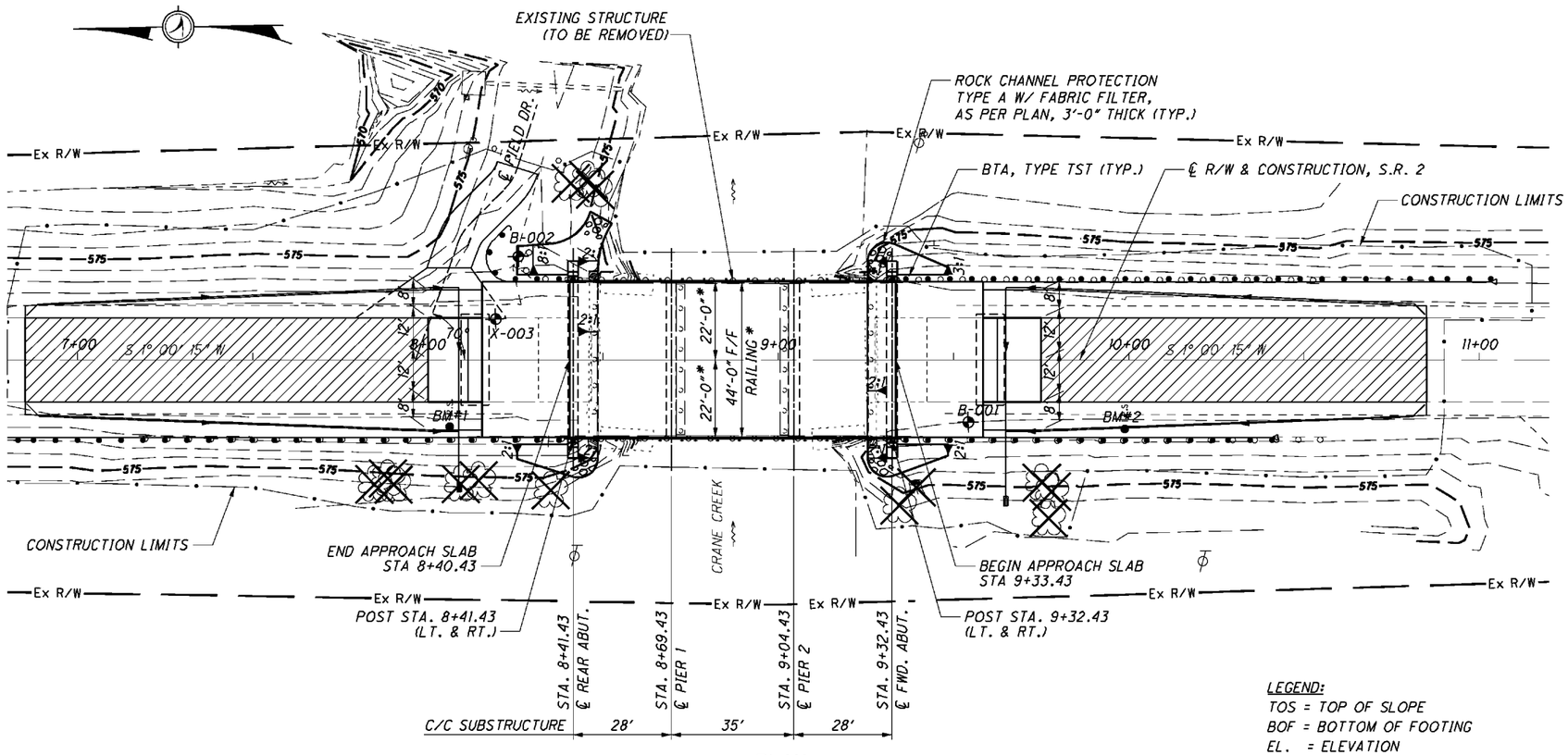
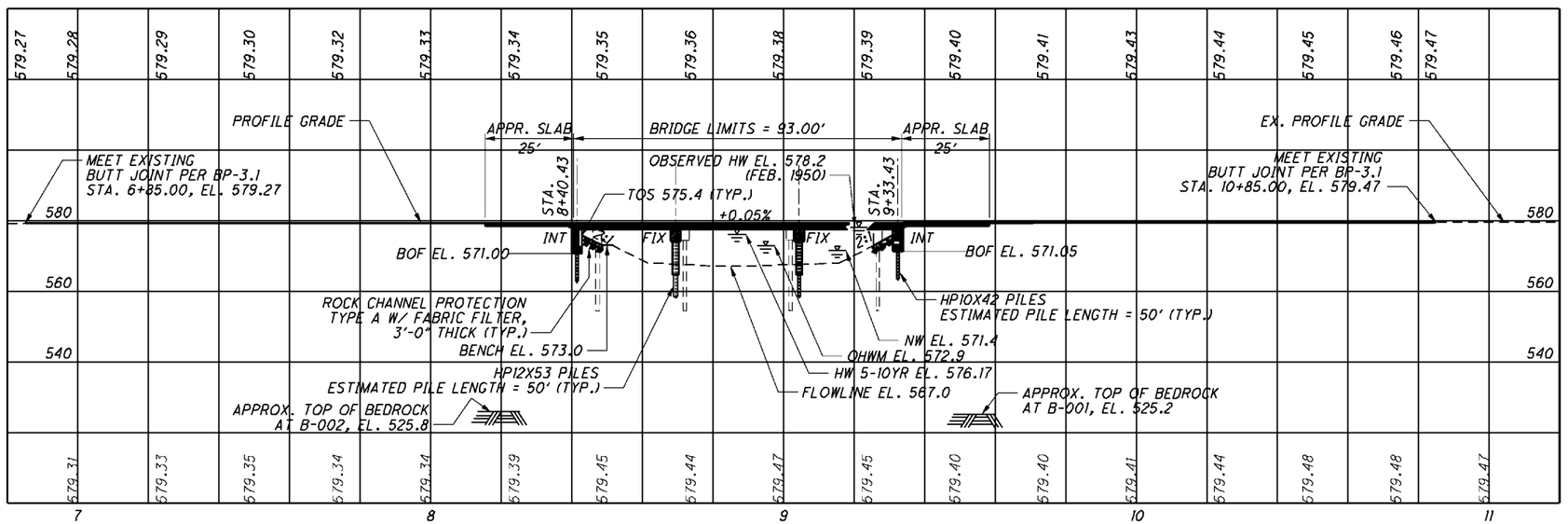


PLAN

LEGEND:
TOS = TOP OF SLOPE
BOF = BOTTOM OF FOOTING
EL. = ELEVATION
BTA = BRIDGE TERMINAL ASSEMBLY
* = PLUS FIT-UP



PROFILE ALONG ℄ OF R/W & CONSTRUCTION

BENCHMARK DATA

BM #1 - IRON PIN SET W/ CAP
STA. 8+06.19 ELEV. = 578.84 OFFSET = 19.15' RT.
BM #2 - IRON PIN SET W/ CAP
STA. 9+98.80 ELEV. = 578.74 OFFSET = 19.74' RT.

PROPOSED WORK:

1. REMOVE EXISTING CONCRETE SLAB, PIERS, ABUTMENTS AND WINGWALLS.
2. INSTALL PILES AND CONSTRUCT PIERS, ABUTMENTS AND WINGWALLS. INSTALL CONCRETE BOXBEAMS ON NEW ELASTOMERIC BEARING PADS AND CONSTRUCT COMPOSITE CONCRETE DECK.
3. CONSTRUCT APPROACH SLABS AND SEAL CONCRETE SURFACES.
4. INSTALL NEW TST RAILING.

NOTES:

EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.

DESIGN TRAFFIC:

2013 ADT = 6760 2013 ADTT = 1825
2033 ADT = 8380 2033 ADTT = 2263
DIRECTIONAL DISTRIBUTION = 55%

LEGEND:

⊕ BORING LOCATION

HYDRAULIC DATA:

DRAINAGE AREA = 45 SQ. MI.
5-10 YEAR HW ELEVATION = 576.17 (FROM EXISTING PLANS)
STRUCTURE CLEARS THE 5-10 YEAR HW BY 0.87 FEET.

EXISTING STRUCTURE

TYPE: THREE SPAN REINFORCED CONCRETE SLAB ON CAPPED PILE PIERS AND ABUTMENTS
SPANS: 24'-0"±, 30'-0"±, 24'-0"± C/C BEARINGS
ROADWAY: 44'-0"± F/F GUARDRAIL
LOADING: S-20-46
SKEW: 0°±
APPROACH SLABS: 15'-0"± LONG
ALIGNMENT: TANGENT
CROWN: 0.0156 FT/FT±
WEARING SURFACE: 4"± ASPHALT CONCRETE
STRUCTURE FILE NUMBER: 6200036
YEAR BUILT: 1952

PROPOSED STRUCTURE

PROPOSED WORK: NEW COMPOSITE REINFORCED CONCRETE DECK WITH TWIN STEEL TUBE BRIDGE RAILING ON PRESTRESSED CONCRETE BOX BEAMS AND REINFORCED CONCRETE SUBSTRUCTURES
TYPE: THREE SPAN COMPOSITE REINFORCED CONCRETE BOX BEAMS ON CAPPED PILE PIERS AND INTEGRAL ABUTMENTS
SPANS: 28'-0", 35'-0", 28'-0" C/C SUBSTRUCTURE
ROADWAY: 44'-0" F/F RAILING
LOADING: HL-93; 60 PSF FWS
SKEW: NONE
APPROACH SLABS: 25' LONG (AS-1-81)
ALIGNMENT: TANGENT
CROWN: 0.016 FT/FT
WEARING SURFACE: 1" MONOLITHIC CONCRETE
STRUCTURE FILE NUMBER: 6200044
COORDINATES: LATITUDE: N41°37'10" LONGITUDE: W83°15'35"

DESIGN AGENCY
THOMAS FOK & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3806 YOUNGSTOWN AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DATE 7-25-12
REVIEWED SDL
STRUCTURE FILE NUMBER 6200044
DRAWN DAB
REVISED
DESIGNED WHT
CHECKED DAK

OTTAWA COUNTY
STA. 8+40.43
STA. 9+33.43

SITE PLAN
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

1 / 10
21
30

DATE: 08-OCT-12 09:26
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016SP001.DGN
SCALE: 1 : 20E

STRUCTURE GENERAL NOTES

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-81 REVISED 07-19-02
DS-1-92 REVISED 07-18-03
PSBD-2-07 DATED 01-21-11
TST-1-99 REVISED 04-18-08

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2012, AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

LOAD MODIFIER FOR OPERATIONAL IMPORTANCE:

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

DESIGN LOADING

HL-93
FUTURE WEARING SURFACE (FWS) OF 0.060 KIPS/SQ.FT.

DESIGN DATA

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
CONCRETE CLASS C - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI

CONCRETE FOR PRESTRESSED BEAMS:
COMPRESSIVE STRENGTH (FINAL) - 5.5 KSI
COMPRESSIVE STRENGTH (RELEASE) - 4.0 KSI

PRESTRESSING STRAND:
AREA = 0.153 SQUARE INCHES
ULTIMATE STRENGTH = 270 KSI
INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL
2½" CONCRETE COVER
STEEL DRIP STRIP

MONOLITHIC WEARING SURFACE

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

PILES TO BEDROCK

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING WEAK BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING STRONG BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL. INSTEAD OF DRIVING TO REFUSAL, THE CONTRACTOR MAY PERFORM DYNAMIC LOAD TESTING ACCORDING TO C&MS 523 TO ESTABLISH A DRIVING CRITERIA FOR EACH PILE TYPE AND CAPACITY. ESTABLISH THE DRIVING CRITERIA TO ACHIEVE AN ULTIMATE BEARING VALUE THAT IS 1.5 TIMES THE TOTAL FACTORED LOAD GIVEN BELOW FOR THE PILES. PAYMENT FOR DYNAMIC LOAD TESTING PERFORMED AT THE CONTRACTOR'S OPTION IS INCLUDED IN THE UNIT PRICE PAY ITEM FOR PILES DRIVEN.

THE TOTAL FACTORED LOAD IS 98 KIPS PER PILE FOR THE REAR AND FORWARD ABUTMENT PILES.

THE TOTAL FACTORED LOAD IS 173 KIPS PER PILE FOR THE PIER 1 AND PIER 2 PILES.

ABUTMENT PILES:
HP10X42 PILES 55 FEET LONG, ORDER LENGTH
PIER PILES:
HP12X53 PILES 55 FEET LONG, ORDER LENGTH

PILES SPLICES

IN LIEU OF USING THE FULL PENETRATION BUTT WELDS SPECIFIED IN CMS 507.09 TO SPLICE STEEL H-PILES, THE CONTRACTOR MAY USE A MANUFACTURED H-PILE SPLICER. FURNISH SPLICERS FROM THE FOLLOWING MANUFACTURER:

ASSOCIATED PILE AND FITTING CORPORATION
8 WOOD HOLLOW RD. PLAZA 1
PARSIPPANY, NEW JERSEY 07054

INSTALL AND WELD THE SPLICER TO THE PILE SECTIONS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN ASSEMBLY PROCEDURE SUPPLIED TO THE ENGINEER BEFORE THE WELDING IS PERFORMED.

ITEM SPECIAL - PILE ENCASEMENT

ENCASE ALL STEEL H-PILES FOR THE CAPPED PILE PIERS IN CLASS C CONCRETE. PROVIDE A CONCRETE SLUMP BETWEEN 6 TO 8 INCHES WITH THE USE OF A SUPERPLASTICIZER. PLACE THE CONCRETE WITHIN A FORM THAT CONSISTS OF POLYETHYLENE PIPE (707.33), OR PVC PIPE (707.42). THE ENCASEMENT SHALL EXTEND FROM 3 FEET BELOW THE FINISHED GROUND SURFACE UP TO THE CONCRETE PIER CAP. POSITION THE PIPE SO THAT AT LEAST 3 INCHES OF CONCRETE COVER IS PROVIDED AROUND THE EXTERIOR OF THE PILE.

IN LIEU OF ENCASING THE PILE IN CONCRETE, GALVANIZE THE PILES ACCORDING TO 711.02. THE GALVANIZING SHALL BE CONTINUOUS FROM A MINIMUM OF 3 FEET BELOW THE FINISH GROUND SURFACE UP TO THE CONCRETE PIER CAP. THE GALVANIZED COATING THICKNESS SHALL BE A MINIMUM OF 4 MILS. REPAIR ALL GOUGES, SCRAPES, SCRATCHES OR OTHER SURFACE IMPERFECTIONS CAUSED BY THE HANDLING OR THE DRIVING OF THE PILE TO THE SATISFACTION OF THE ENGINEER.

THE DEPARTMENT WILL MEASURE PILE ENCASEMENT BY THE NUMBER OF FEET. THE DEPARTMENT WILL DETERMINE THE SUM AS THE LENGTH MEASURED ALONG THE AXIS OF EACH PILE FROM THE BOTTOM OF THE ENCASEMENT TO THE BOTTOM OF THE PIER CAP. THE DEPARTMENT WILL NOT PAY FOR GALVANIZING PROVIDED BEYOND THE PROJECT REQUIREMENTS. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM - SPECIAL, PILE ENCASEMENT.

ABBREVIATIONS

ABUT. = ABUTMENT
BOT. = BOTTOM
BRGS. = BEARINGS
BTA = BRIDGE TERMINAL ASSEMBLY
C.I.P. = CAST IN PLACE
CLR. = CLEARANCE
CONC. = CONCRETE
CONST. = CONSTRUCTION
C.P.P. = CORRUGATED POLYETHYLENE PIPE
DIA. = DIAMETER
DWG. = DRAWING
E.F. = EACH FACE
EL. = ELEVATION
E.P.L. = ESTIMATED PILE LENGTH
EQ. = EQUAL
EXIST. = EXISTING
F.A. = FORWARD ABUTMENT
F.F. = FAR FACE
MIN. = MINIMUM
N.F. = NEAR FACE
N.P.C.P.P. = NON-PERFORATED CORRUGATED POLYETHYLENE PIPE
P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
R.A. = REAR ABUTMENT
SER. = SERIES
SPA. = SPACING
STA. = STATION
STD. = STANDARD
T&B = TOP & BOTTOM
TYP. = TYPICAL
W.P. = WORK POINT

DESIGN AGENCY
THOMAS FOK & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3806 MAHONING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DESIGNED WHT | DRAWN DAB | CHECKED DAK | REVIEWED SDL | DATE 7-25-12 | REVISED | STRUCTURE FILE NUMBER 6200044

GENERAL NOTES
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

DATE: 08-OCT-12 09:26
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016GN001.DGN
SCALE: 1 = 1E

COMPUTED BY : WHT DATE : 7-17-12
CHECKED BY : DAK DATE : 7-20-12

ESTIMATED QUANTITIES

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	ABUT.	PIER	SUPER.	GEN.	AS PER PLAN SHEET NO.
202	11002	LUMP		STRUCTURE REMOVED, OVER 20 FOOT SPAN				LUMP	
202	22900	80	SQ YD	APPROACH SLAB REMOVED				80	
202	23500	393	SQ YD	WEARING COURSE REMOVED			393		
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING				LUMP	
503	21100	111	CU YD	UNCLASSIFIED EXCAVATION				111	
507	00100	880	FT	STEEL PILES HP10X42, FURNISHED	880				
507	00150	800	FT	STEEL PILES HP10X42, DRIVEN	800				
507	00200	770	FT	STEEL PILES HP12X53, FURNISHED		770			
507	00250	700	FT	STEEL PILES HP12X53, DRIVEN		700			
SPECIAL	50771200	140	FT	PILE-ENCASEMENT		140			
507	93300	30	EACH	STEEL POINTS OR SHOES	16	14			
509	10000	31930	POUND	EPOXY COATED REINFORCING STEEL	9205	5434	17291		
512	10100	162	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	33	88	41		
515	12030	33	EACH	PRESTRESSED CONCRETE COMPOSITE BOX BEAM BRIDGE MEMBERS, LEVEL 1, CB17-48			33		
516	14014	101	FT	INTEGRAL ABUTMENT EXPANSION JOINT SEAL	101				
516	20010	29	SQ FT	1" ELASTOMERIC ERECTION STRIP	29				
516	43100	88	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES ONLY (NEOPRENE) (6" X 6" X 1")		88			
517	70000	192	FT	RAILING (TWIN STEEL TUBE)			192		
518	21200	35	CU YD	POROUS BACKFILL WITH FILTER FABRIC	35				
SPECIAL	51822300	182	FT	STEEL DRIP STRIP			182		
518	40000	112	FT	6" PERFORATED CORRUGATED PLASTIC PIPE	112				
518	40010	40	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS	40				
898	10230	92	CU YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (DECK)			92		
898	10704	247	SQ YD	QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLAB), (T=15")				247	
898	20130	31	CU YD	QC/QA CONCRETE, CLASS QSC2, SUBSTRUCTURE (CAPPED PILE PIER)		31			
898	20160	78	CU YD	QC/QA CONCRETE, CLASS QSC1, SUBSTRUCTURE (ABUTMENT INCLUDING FOOTING)	78				

DESIGN AGENCY
THOMAS FOX & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3896 MAHONING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

REVIEWED SDL DATE 7-25-12
STRUCTURE FILE NUMBER 6200044
DRAWN DAB REVISED
DESIGNED WHT CHECKED DAK

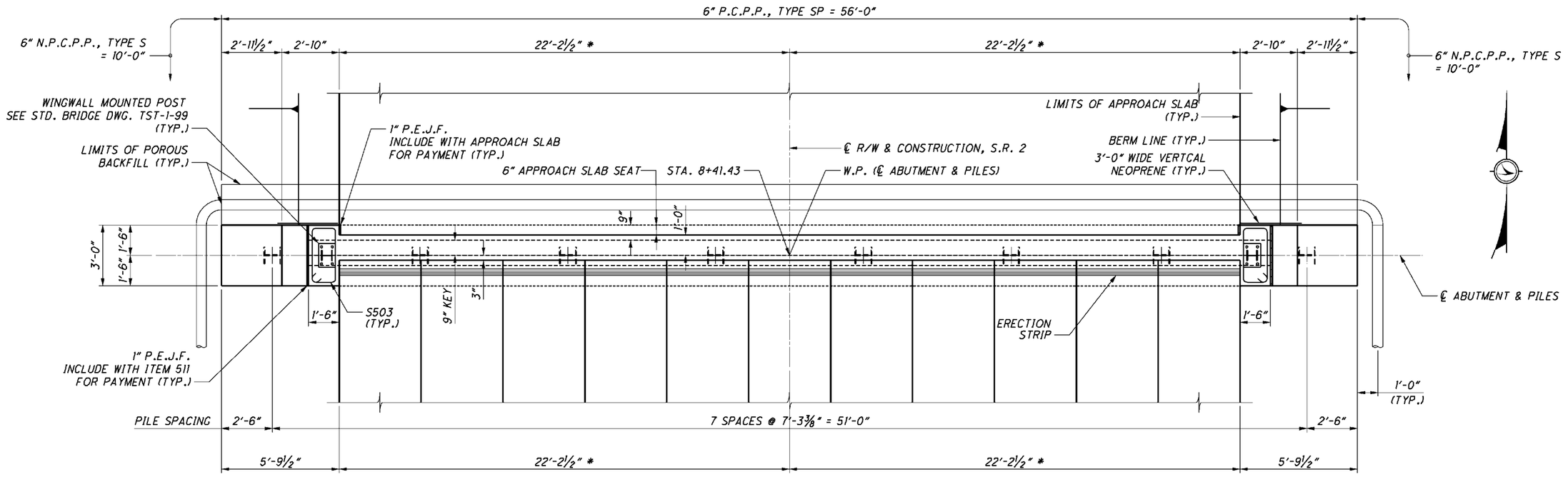
GENERAL SUMMARY
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

3 / 10

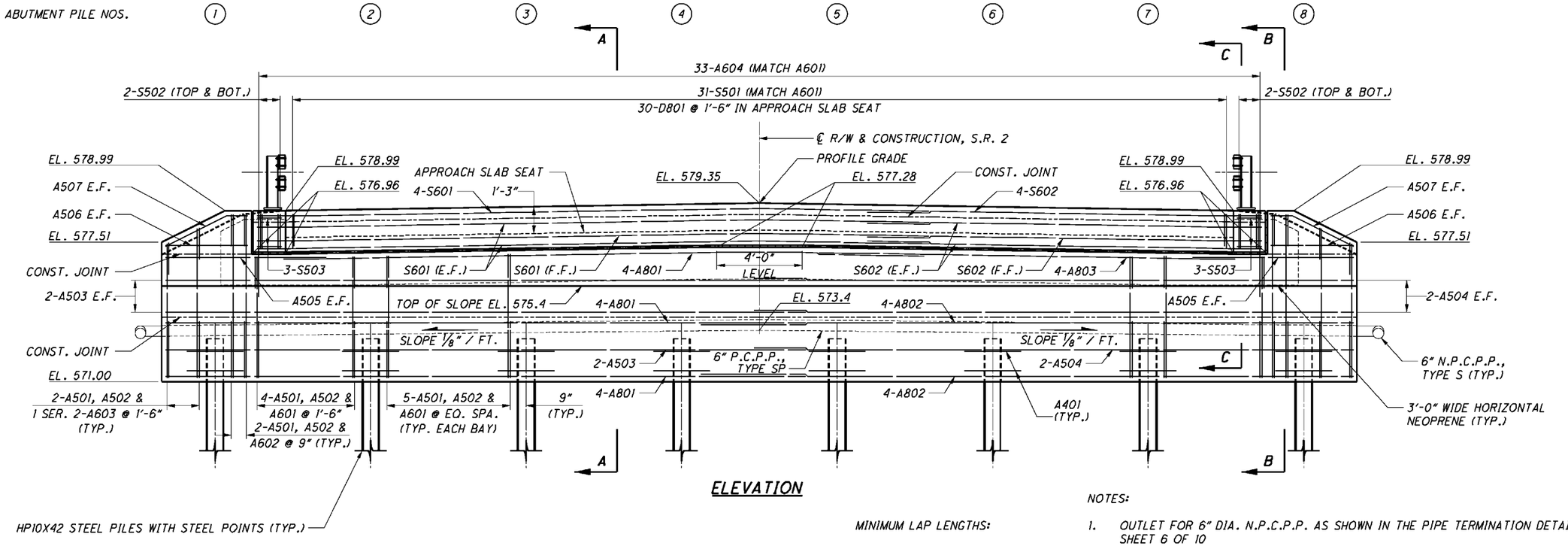
23
30

DATE: 08-OCT-12 09:26
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016E0001.DGN
SCALE: 1 = 1E



PLAN

* INCLUDES ½" FIT-UP PER BOX BEAM



ELEVATION

MINIMUM LAP LENGTHS:

LAP NO. 5 BARS 2'-5"
LAP NO. 6 BARS 2'-11"
LAP NO. 8 BARS 4'-11"

NOTES:

1. OUTLET FOR 6" DIA. N.P.C.P.P. AS SHOWN IN THE PIPE TERMINATION DETAIL SHEET 6 OF 10
2. FOR SECTIONS A-A, B-B & C-C SEE SHEET 6 OF 10.
3. FOR ABBREVIATIONS, SEE SHEET 2 OF 10.

DESIGN AGENCY
THOMAS FOX & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3896 MAHONING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DESIGNED	DRAWN	REVIEWED	DATE
WHT	DAB	SDL	7-25-12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAK		6200044	

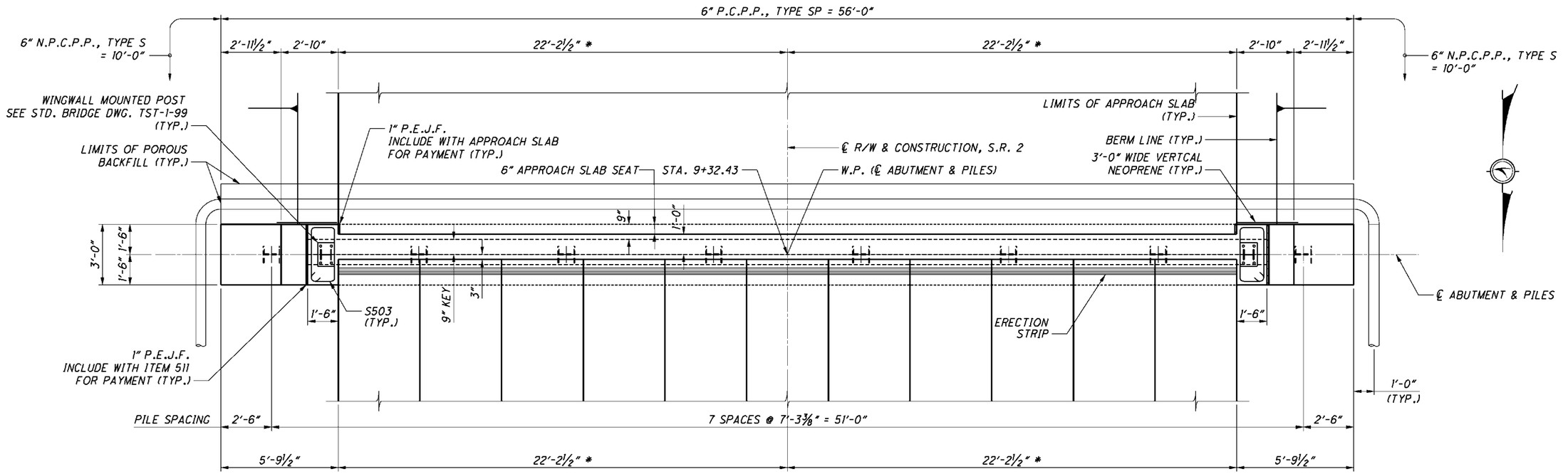
REAR ABUTMENT DETAILS
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86980

4 / 10

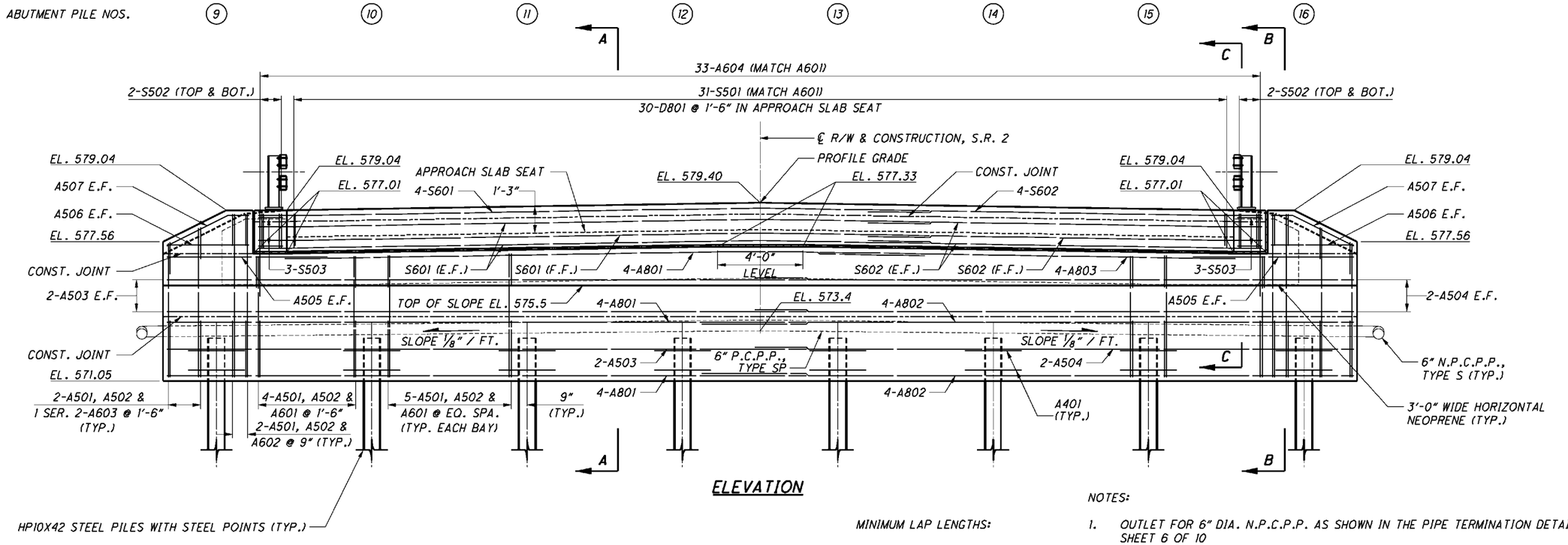
24 / 30

DATE: 08-OCT-12 09:25
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016AR001.DGN
SCALE: 1 • 1E



PLAN

* INCLUDES ½" FIT-UP PER BOX BEAM



ELEVATION

MINIMUM LAP LENGTHS:

LAP NO. 5 BARS 2'-5"
LAP NO. 6 BARS 2'-11"
LAP NO. 8 BARS 4'-11"

NOTES:

1. OUTLET FOR 6" DIA. N.P.C.P.P. AS SHOWN IN THE PIPE TERMINATION DETAIL SHEET 6 OF 10
2. FOR SECTIONS A-A, B-B & C-C SEE SHEET 6 OF 10.
3. FOR ABBREVIATIONS, SEE SHEET 2 OF 10.

DESIGN AGENCY
THOMAS FOX & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3806 MAHONING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DESIGNED WHT | DRAWN DAB | REVIEWED SDL | DATE 7-25-12
CHECKED DAK | REVISED | STRUCTURE FILE NUMBER 6200044

FORWARD ABUTMENT DETAILS

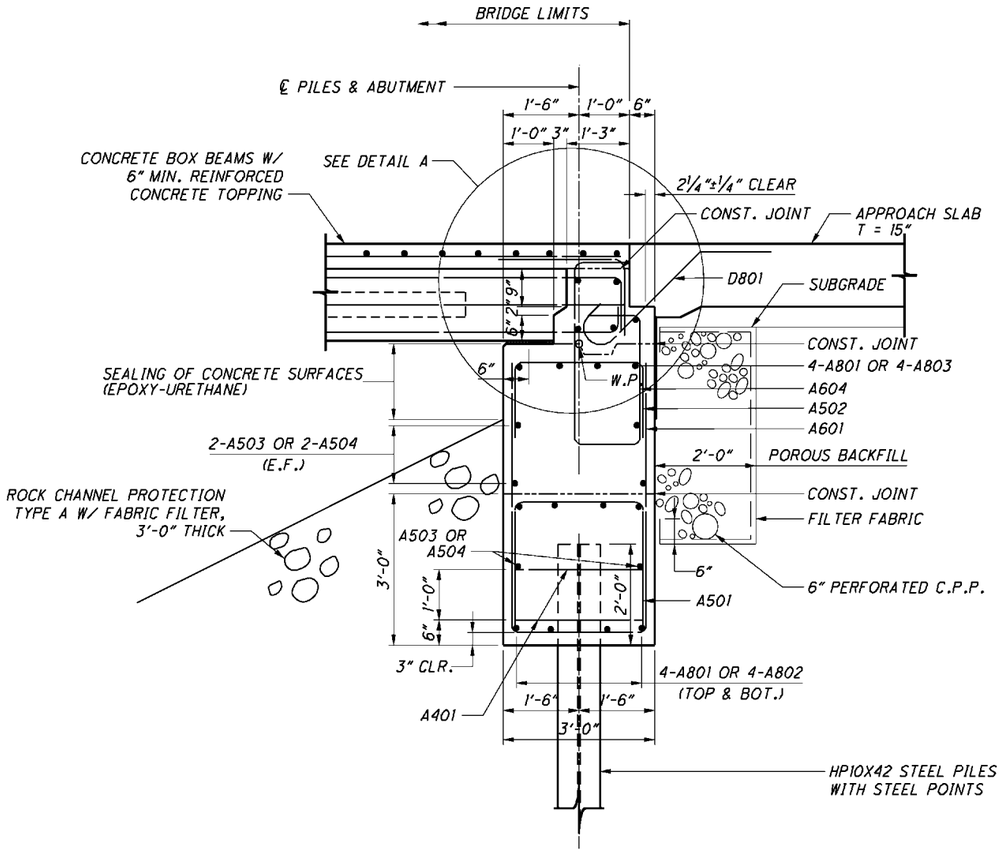
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

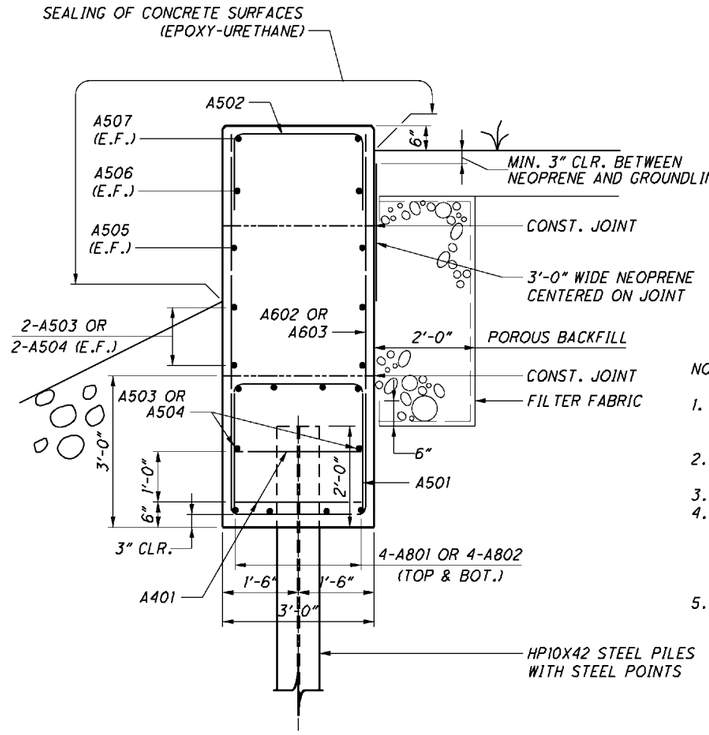
5 / 10

25 / 30

DATE: 08-OCT-12 09:25
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016AF001.DGN
SCALE: 1 : 1



SECTION A-A



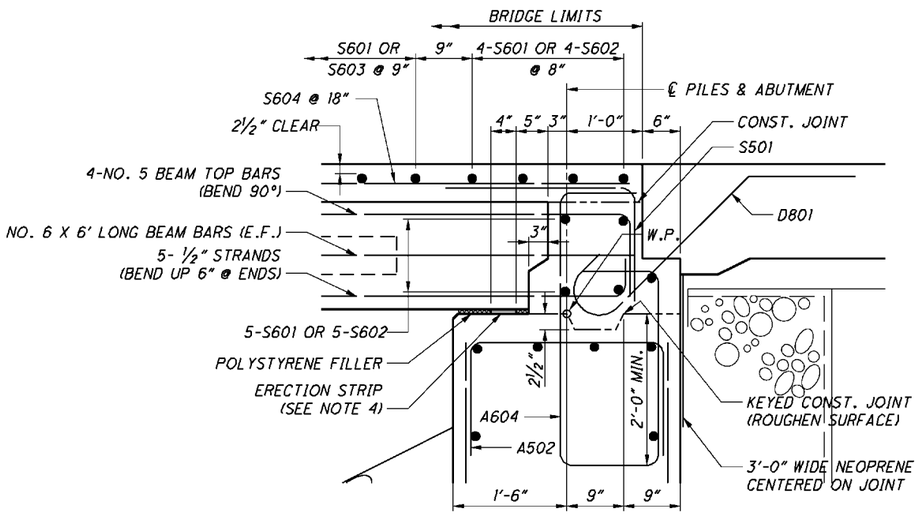
SECTION B-B

MINIMUM LAP LENGTHS:

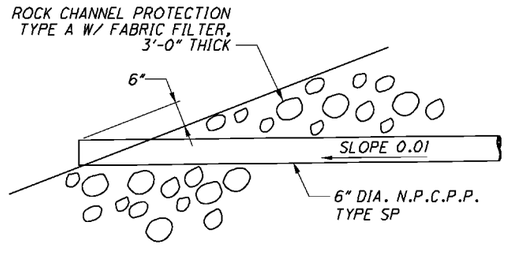
LAP NO. 5 BARS 2'-5"
LAP NO. 6 BARS 2'-11"
LAP NO. 8 BARS 4'-11"

NOTES:

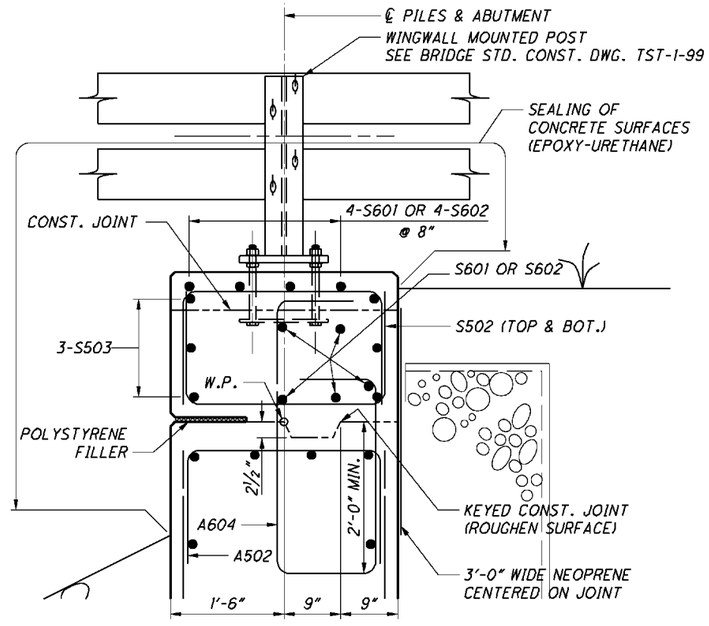
1. DO NOT PLACE ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT UNTIL THE PRESTRESSED CONCRETE BOX BEAMS HAVE BEEN ERECTED.
2. FOR LOCATION OF SECTIONS A-A, B-B & C-C SEE SHEETS 4 OF 10 & 5 OF 10.
3. FOR ABBREVIATIONS, SEE SHEET 2 OF 10.
4. ERECTION STRIP SHALL BE 4" X 1" FOR THE FULL LENGTH OF THE BRIDGE SEAT. THE STRIP SHALL BE 50 OR 60 DUROMETER ELASTOMER MEETING THE REQUIREMENTS OF 711.23. ANY JOINTS IN THE STRIP SHALL BE PLACED NEAR BEAM CENTERS AND TIGHTLY BUTTED TOGETHER.
5. FOR DECK REINFORCING, SEE SHEET 8 OF 10.



DETAIL A



TERMINATION OF 6" N.P.C.P.P. DETAIL



SECTION C-C

DESIGN AGENCY
THOMAS FOK & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3806 WARDING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DRAWN DAB | REVIEWED SDL | DATE 7-25-12
DESIGNED WHT | CHECKED DAK | REVISED
STRUCTURE FILE NUMBER 6200044

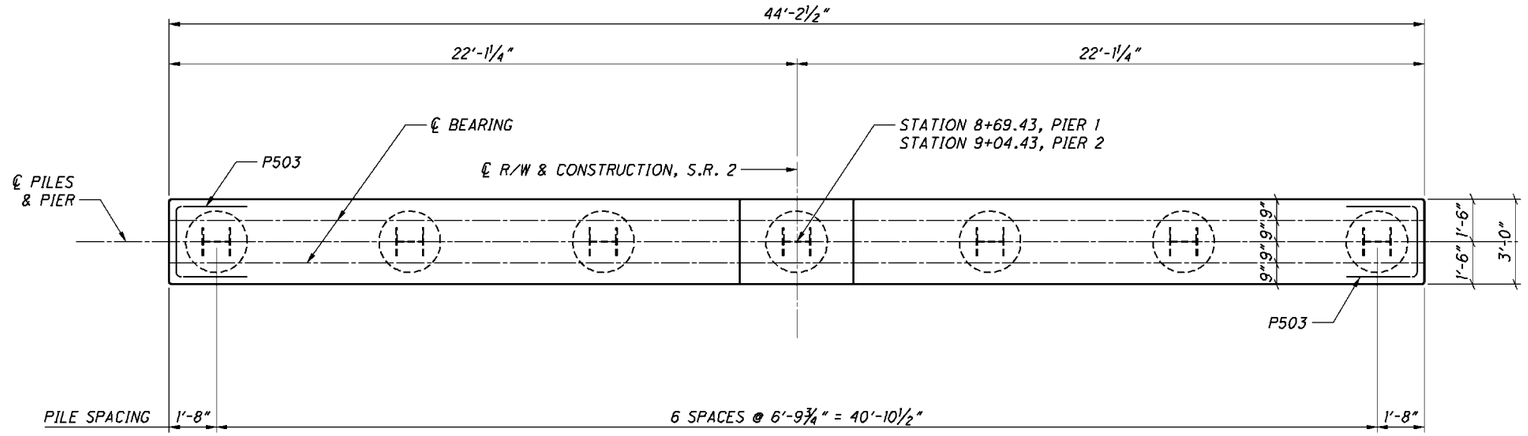
ABUTMENT DETAILS
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

6 / 10

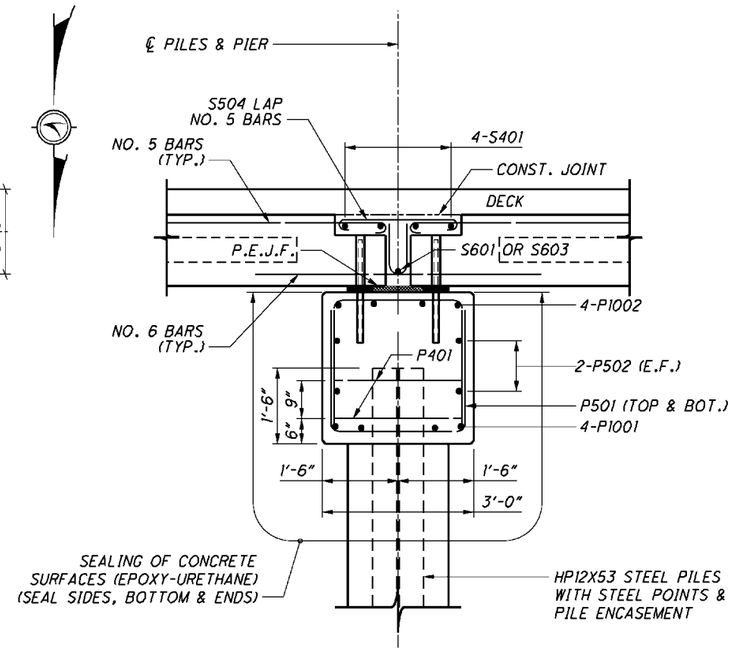
26 / 30

DATE: 08-OCT-12 09:25
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016AR002.DGN
SCALE: 1 : 1

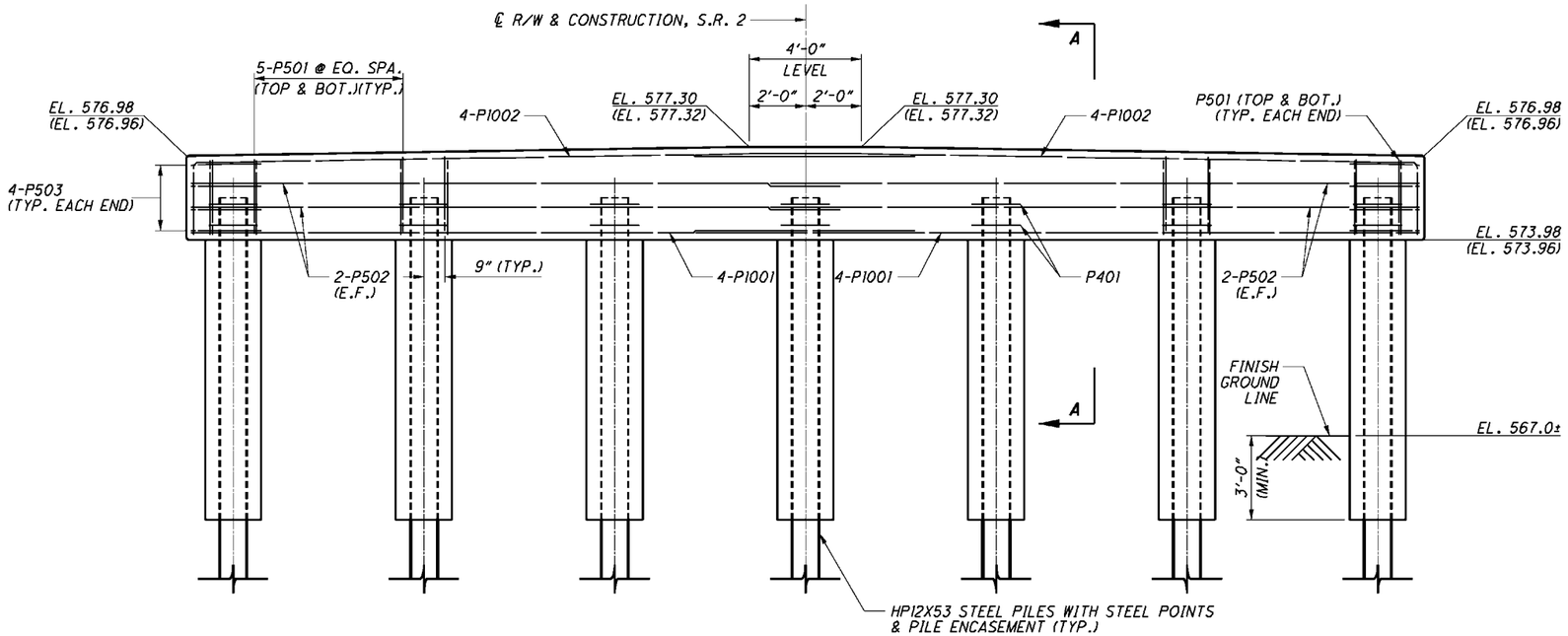


PLAN

PIER 1 PILE NOS.	(17)	(18)	(19)	(20)	(21)	(22)	(23)
PIER 2 PILE NOS.	(24)	(25)	(26)	(27)	(28)	(29)	(30)



SECTION A-A



ELEVATION

NOTES:

1. ELEVATIONS SHOWN IN ( ) ARE FOR PIER 2.
2. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATELY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR BAR HOLES.
3. FOR DECK REINFORCING, SEE SHEET 8 OF 10.
4. SEE BRIDGE STANDARD CONSTRUCTION DRAWING PSBD-2-07 FOR ADDITIONAL BOX BEAM DETAILS.
5. FOR ABBREVIATIONS, SEE SHEET 2 OF 10.

MINIMUM LAP LENGTHS:

LAP NO. 5 BARS 2'-5"
LAP NO. 10 BARS 7'-10"

DESIGN AGENCY
THOMAS FOX & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3896 MAHONING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DESIGNED WHT | DRAWN DAB | REVIEWED SDL | DATE 7-25-12
CHECKED DAK | REVISED | STRUCTURE FILE NUMBER 6200044

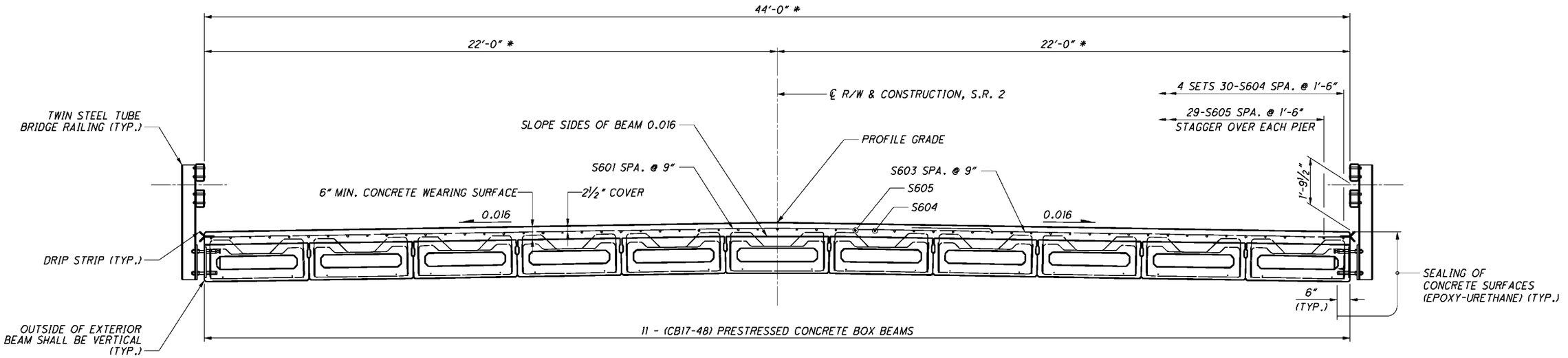
PIER DETAILS
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

7 / 10

27 / 30

DATE: 08-OCT-12 09:26
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016P1001.DGN
SCALE: 1 : 1E



* = PLUS FIT-UP

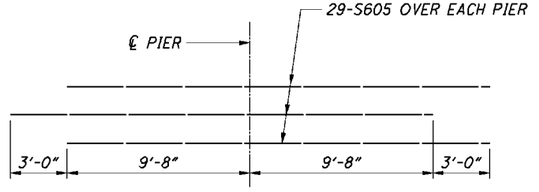
TRANSVERSE SECTION

FINAL DECK SURFACE ELELVATION							
STATION	8+41.43	8+55.43	8+69.43	8+86.93	9+04.43	9+18.43	9+32.43
LOCATION	℄ R.A.	MID SPAN	℄ PIER 1	MID SPAN	℄ PIER 2	MID SPAN	℄ F.A.
LEFT EDGE OF DECK	579.00	579.01	579.01	579.02	579.03	579.04	579.05
℄ CONST. S.R. 2	579.35	579.36	579.36	579.37	579.38	579.39	579.40
RIGHT EDGE OF DECK	579.00	579.01	579.01	579.02	579.03	579.04	579.05

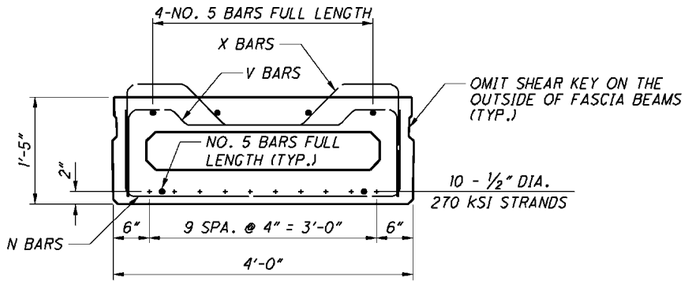
FINAL DECK SURFACE ELEVATIONS SHOWN REPRESENT THE DECK SURFACE LOCATION AFTER ALL ANTICIPATED DEAD LOAD DEFLECTIONS HAVE OCCURRED.

DECK SCREED ELEVATION							
STATION	8+41.43	8+55.43	8+69.43	8+86.93	9+04.43	9+18.43	9+32.43
LOCATION	℄ R.A.	MID SPAN	℄ PIER 1	MID SPAN	℄ PIER 2	MID SPAN	℄ F.A.
LEFT EDGE OF DECK	579.00	579.01	579.01	579.03	579.03	579.04	579.05
℄ CONST. S.R. 2	579.35	579.36	579.36	579.38	579.38	579.39	579.40
RIGHT EDGE OF DECK	579.00	579.01	579.01	579.03	579.03	579.04	579.05

SCREED ELEVATIONS SHOWN REPRESENT THE THEORETICAL DECK SURFACE LOCATION PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

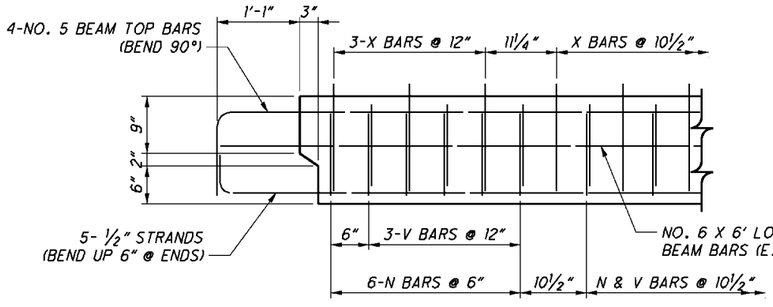


STAGGER DIAGRAM OVER PIERS

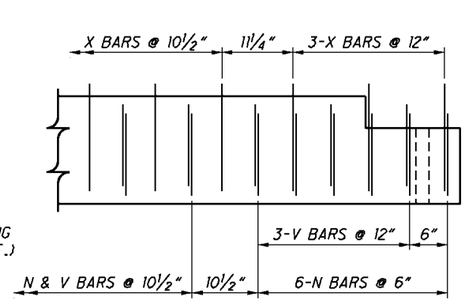


CB17-48 BOX BEAM DETAIL

(TYPICAL ALL SPANS)



PARTIAL ELEVATION @ ABUTMENT END



PARTIAL ELEVATION @ PIER END

NOTES

1. FOR ADDITIONAL PRESTRESSED BOX BEAM DETAILS, SEE BRIDGE STANDARD CONSTRUCTION DRAWING PSBD-2-07.
2. FOR DRIP STRIP DETAILS, SEE BRIDGE STANDARD CONSTRUCTION DRAWING DS-1-92.
3. FOR BOX BEAM PLAN, SEE SHEET 9 OF 10.
4. FOR ADDITIONAL DECK BAR DETAILS AT ABUTMENTS, SEE DETAIL "A" SHEET 6 OF 10.
5. FOR ADDITIONAL DECK BAR DETAILS AT PIERS, SEE SECTION A-A SHEET 7 OF 10.
6. MINIMUM LAP LENGTH FOR NO. 6 BARS = 2'-11".
7. FOR ABBREVIATIONS, SEE SHEET 2 OF 10.

DESIGN AGENCY
THOMAS FOX & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3806 MAHONING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DESIGNED	DRAWN	REVIEWED	DATE
WHT	DAB	SDL	7-25-12
CHECKED	REVISED	STRUCTURE FILE NUMBER	
DAK		6200044	

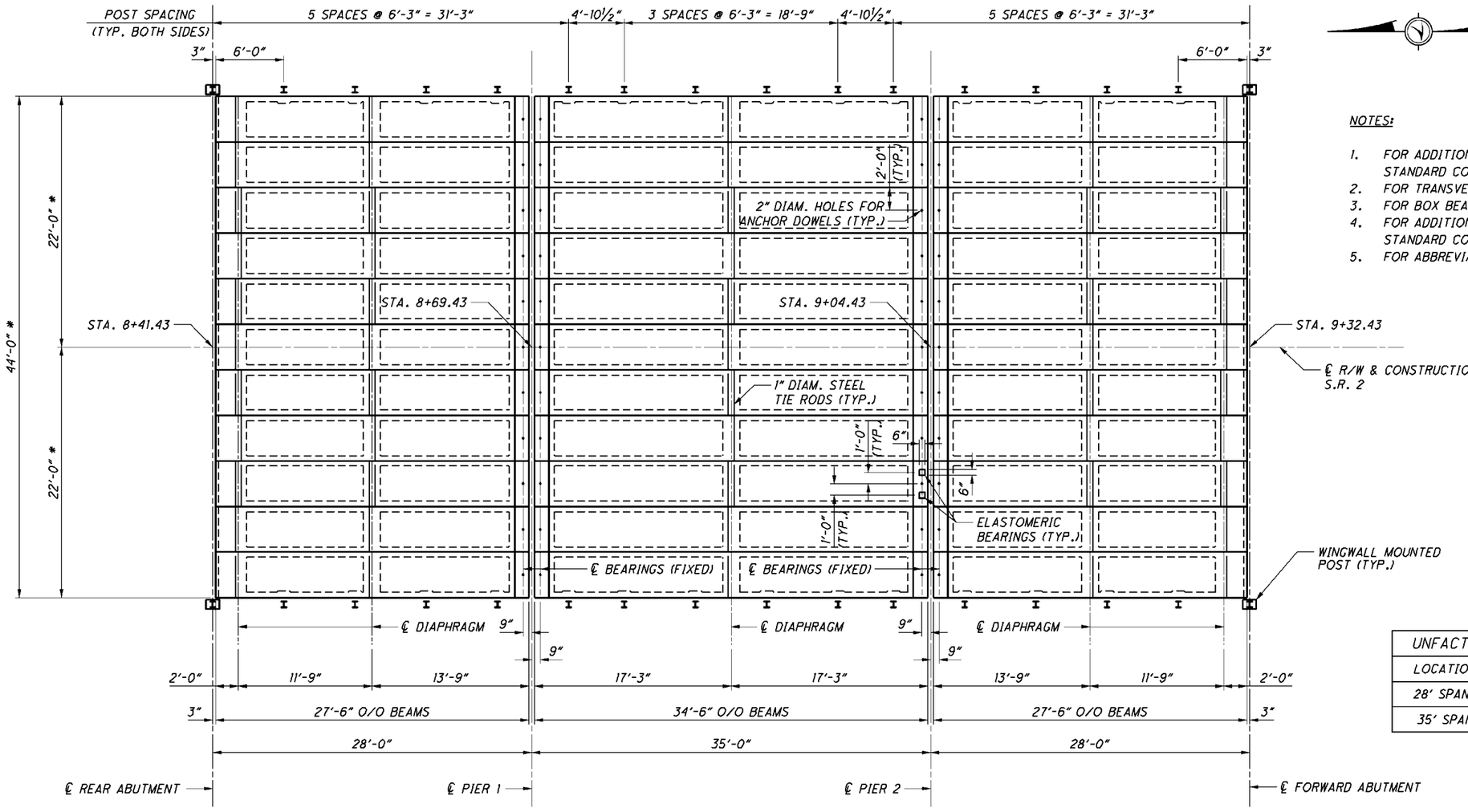
TRANSVERSE SECTION & SUPERSTRUCTURE DETAILS
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

8 / 10

28 / 30

DATE: 08-OCT-12 09:27
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016TS001.DGN
SCALE: 1 : 1



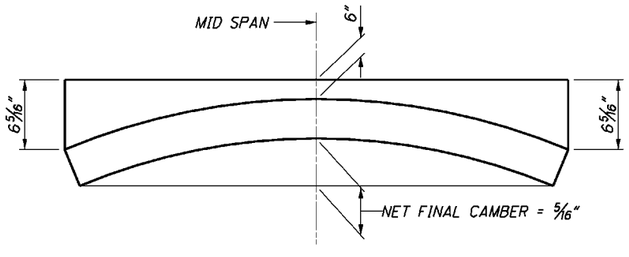
BEAM LAYOUT PLAN

* = PLUS FIT-UP

NOTES:

1. FOR ADDITIONAL PRESTRESSED BOX BEAM DETAILS, SEE BRIDGE STANDARD CONSTRUCTION DRAWING PSBD-2-07.
2. FOR TRANSVERSE SECTION, SEE SHEET 8 OF 10.
3. FOR BOX BEAM DETAILS, SEE SHEET 8 OF 10.
4. FOR ADDITIONAL TST BRIDGE RAILING DETAILS, SEE BRIDGE STANDARD CONSTRUCTION DRAWING TST-1-99.
5. FOR ABBREVIATIONS, SEE SHEET 2 OF 10.

UNFACTORED BEARING REACTION, KIPS			
LOCATION	DL	LL	MAX. DESIGN LOAD
28' SPANS	9.0	7.3	16.3
35' SPAN	8.5	8.7	17.2



DECK SLAB THICKNESS DIAGRAM

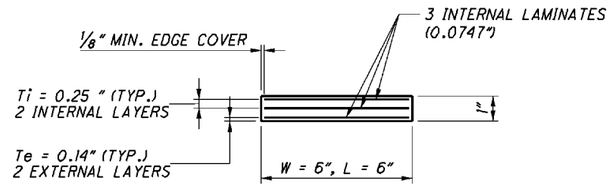
(28' & 35' SPANS)

28' SPAN CAMBER

CALCULATED CAMBER AT TIME OF RELEASE IS ¼" INCHES.
CALCULATED CAMBER AT TIME OF PAVING IS ⅜" INCHES.
CALCULATED LONG TERM CAMBER IS 9/16" INCHES.
CALCULATED DEFLECTION DUE TO DEAD LOAD APPLIED AFTER THE BEAMS ARE SET (WEIGHT OF DECK SLAB AND RAILING) IS 1/16" INCHES.
THE CONCRETE THICKNESS SHALL VARY FROM 6 INCHES AT EACH CENTERLINE OF BEAM BEARING TO 6 5/16" INCHES AT MIDSPAN.

35' SPAN CAMBER

CALCULATED CAMBER AT TIME OF RELEASE IS ¼" INCHES.
CALCULATED CAMBER AT TIME OF PAVING IS 7/16" INCHES.
CALCULATED LONG TERM CAMBER IS ⅝" INCHES.
CALCULATED DEFLECTION DUE TO DEAD LOAD APPLIED AFTER THE BEAMS ARE SET (WEIGHT OF DECK SLAB AND RAILING) IS ⅛" INCHES.
THE CONCRETE THICKNESS SHALL VARY FROM 6 INCHES AT EACH CENTERLINE OF BEAM BEARING TO 6 5/16" INCHES AT MIDSPAN.



ELASTOMERIC BEARING DETAILS

ELASTOMERIC BEARINGS:

THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED IN ACCORDANCE WITH SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.

DESIGN AGENCY
THOMAS FOK & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3806 MAHONING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DESIGNED WHT | DRAWN DAB | REVIEWED SDL | DATE 7-25-12
CHECKED DAK | REVISED | STRUCTURE FILE NUMBER 6200044

SUPERSTRUCTURE DETAILS
BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

9 / 10

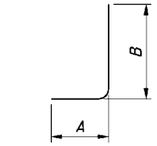
29
30

DATE: 08-OCT-12 09:25
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016DP001.DGN
SCALE: 1 : 1E

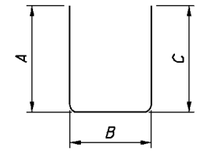
MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS			
	REAR	FORWARD	TOTAL				A	B	C	INC
ABUTMENTS										
A401	16	16	32	8'-11"	191	3	1'-9"	2'-6"		
A501	41	41	82	7'-5"	634	2	2'-6"	2'-8"	2'-6"	
A502	41	41	82	5'-5"	463	2	1'-6"	2'-8"	1'-6"	
A503	6	6	12	30'-0"	375	STR				
A504	6	6	12	28'-1"	351	STR				
A505	4	4	8	8'-0"	67	STR				
A506	4	4	8	5'-5"	45	STR				
A507	4	4	8	4'-4"	36	19	1'-2"	2'-10"	1'-5"	
A601	33	33	66	13'-4"	1322	2	5'-6"	2'-8"	5'-6"	
A602	4	4	8	17'-4"	208	2	7'-6"	2'-8"	7'-6"	
A603	2 SERIES OF 2	2 SERIES OF 2	4 SERIES OF 2	14'-6" TO 16'-0"	183	2	6'-1" TO 6'-10"	2'-8"	6'-1" TO 6'-10"	9"
A604	33	33	66	9'-1"	900	20	2'-7"	1'-5"	3'-9"	
A801	12	12	24	30'-0"	1922	STR				
A802	8	8	16	30'-7"	1307	STR				
A803	4	4	8	19'-4"	413	STR				
D801	30	30	60	4'-11"	788	18	2'-7"	1'-0"	1'-0"	
				SUB-TOTAL	9205					

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS			
	PIER 1	PIER 2	TOTAL				A	B	C	INC
PIERS										
P401	14	14	28	9'-5"	176	3	2'-0"	2'-6"		
P501	64	64	128	7'-9"	1035	2	2'-8"	2'-8"	2'-8"	
P502	8	8	16	23'-2"	387	STR				
P503	8	8	16	7'-1"	118	2	2'-5"	2'-6"	2'-5"	
P1001	8	8	16	25'-10"	1779	STR				
P1002	8	8	16	28'-2"	1939	1	2'-8"	25'-10"		
				SUB-TOTAL	5434					

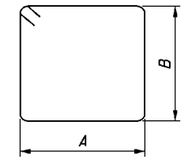
MARK	NUMBER	LENGTH	WEIGHT	TYPE	DIMENSIONS			
	TOTAL				A	B	C	INC
DECK SLAB								
S401	8	43'-10"	234	STR				
S501	62	3'-11"	253	1	1'-6"	2'-6"		
S502	16	5'-3"	88	2	1'-5"	2'-8"	1'-5"	
S503	12	7'-11"	99	3	1'-2"	2'-6"		
S504	88	3'-10"	352	17	2'-8"			
S601	137	30'-0"	6173	STR				
S602	18	20'-0"	541	STR				
S603	119	17'-0"	3039	STR				
S604	120	25'-4"	4566	STR				
S605	58	22'-4"	1946	STR				
		SUB-TOTAL	17291					



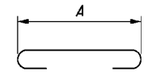
TYPE-1



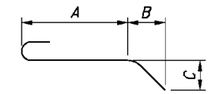
TYPE-2



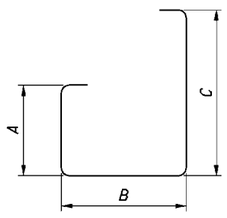
TYPE-3



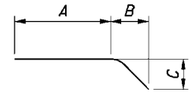
TYPE-17



TYPE-18



TYPE-20



TYPE-19

NOTES:

1. THE BAR SIZE NUMBER IS SPECIFIED ON THE PLANS IN THE BAR MARK COLUMN. THE FIRST DIGIT WHERE THREE DIGITS ARE USED, AND THE FIRST TWO DIGITS WHERE FOUR ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, S501 IS A NO. 5 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. R INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED.
2. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
3. "STR" IN THE TYPE COLUMN INDICATES STRAIGHT BARS.
4. REFER TO C.M.S. SECTION 509.05 FOR STANDARD BEND DIMENSIONS.
5. ALL REINFORCING STEEL CLEARANCES ARE 2" UNLESS OTHERWISE NOTED.

DESIGN AGENCY
THOMAS FOK & ASSOC., INC.
CONSULTING ENGINEERS & SURVEYORS
3806 WADDING AVE. YOUNGSTOWN OHIO
TEL: (330) 799-1501

DESIGNED WHT | DRAWN DAB | REVIEWED SDL | DATE 7-25-12 | CHECKED DAK | REVISED

STRUCTURE FILE NUMBER 6200044

REINFORCING STEEL LIST

BRIDGE NO. OTT-002-0016
OVER CRANE CREEK

OTT-2-00.16
PID No. 86960

DATE: 08-OCT-12 09:26
FILE: J:\JOB\8132 OTT-002-0016\STRUCTURES\002_0016RL001.DGN
SCALE: 1 • 1E