

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

HEN-6-11.73

CITY OF NAPOLEON HENRY COUNTY

PROJECT DESCRIPTION

REMOVE EXISTING AT GRADE INTERSECTION
AT US-6/US-24 AND GLENWOOD AVENUE AND
CONSTRUCT A GRADE SEPARATION STRUCTURE.

PROJECT EARTH DISTURBED AREA: 6.41 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 2.25 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 8.66 ACRES

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED
FOR THROUGH TRAFFIC AND HAS BEEN DECLARED
A LIMITED ACCESS HIGHWAY OR FREEWAY BY
ACTION OF THE DIRECTOR IN ACCORDANCE WITH
THE PROVISIONS OF SECTION 5511.02 OF THE
OHIO REVISED CODE.

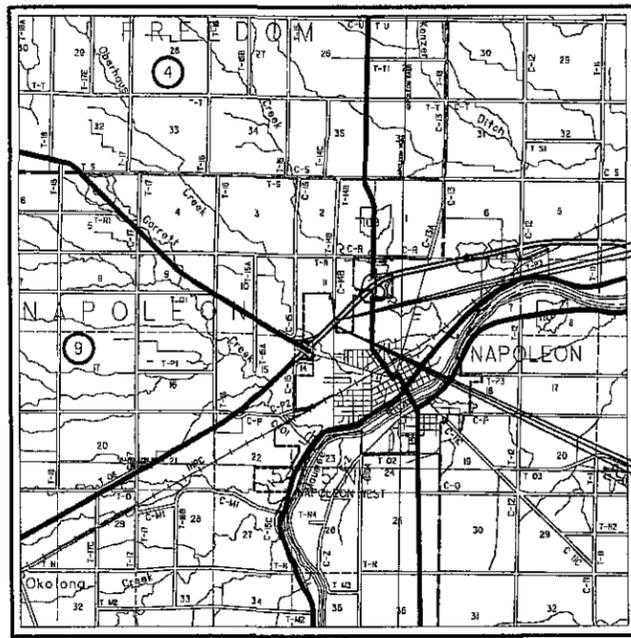
2005 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE
OF OHIO, DEPARTMENT OF TRANSPORTATION,
INCLUDING CHANGES AND SUPPLEMENTAL SPECI-
FICATIONS LISTED IN THE PROPOSAL SHALL
GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE
THAT THE MAKING OF THIS IMPROVEMENT WILL
NOT REQUIRE THE CLOSING TO TRAFFIC OF
US-6/US-24 AND THAT THE MAINTENANCE OF
THE TRAFFIC WILL BE AS SET FORTH ON THE
PLANS AND ESTIMATES. THE CLOSING TO
TRAFFIC OF GLENWOOD AVENUE WILL BE
REQUIRED AND THE DETOUR ROUTE WILL BE
AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED *David R. Deard*
DATE 10-26-07 DISTRICT DEPUTY DIRECTOR

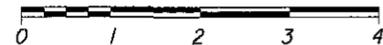
APPROVED *James J. Beasley III*
DATE 11-7-07 DIRECTOR, DEPARTMENT OF
TRANSPORTATION



LOCATION MAP

LATITUDE: N41°24'00" LONGITUDE: W84°08'30"

SCALE IN MILES



PORTION TO BE IMPROVED	-----
INTERSTATE & DIVIDED HIGHWAY	=====
UNDIVIDED STATE & FEDERAL ROUTES	-----
OTHER ROADS	-----

DESIGN DESIGNATION	GLENWOOD AVE	US-6/US-24
CURRENT ADT (2008)	2080	16,540
DESIGN YEAR ADT (2020)	2790	-
DESIGN HOURLY VOLUME (2020)	279	-
DIRECTIONAL DISTRIBUTION	53%	50%
TRUCKS (24 HOUR B&C)	3%	40%
DESIGN SPEED	40 MPH	60 MPH
LEGAL SPEED	35 MPH	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION	URBAN COLLECTOR	FREEWAY
NHS PROJECT	YES	

INDEX OF SHEETS:

TITLE SHEET	1
SCHEMATIC PLAN	2
TYPICAL SECTIONS	3-4
GENERAL NOTES	5-6
DROPOFFS IN WORK ZONES	7
MAINTENANCE OF TRAFFIC	8
PROJECT SITE PLAN	9
GENERAL SUMMARY	10-11
PAVEMENT CALCULATIONS AND SUB-SUMMARIES	12-13
PLAN AND PROFILE	14-18
CROSS SECTIONS	19-29
DRIVE DETAILS	30
PAVEMENT MARKINGS	31
STRUCTURE OVER 20 FOOT SPAN	32-47
RIGHT-OF-WAY	48-49
SOIL BORINGS	

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

PLAN PREPARED BY:
NORTHWEST CONSULTANTS, INC.
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
(419) 841-4704

ENGINEERS SEAL:

SIGNED: *Jed*
DATE: 6/21/2007

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS	
BP-3.1	7-16-04	CB-2.1	7-15-05	AS-1-81	7-19-02	MT-35.10	4-20-01	800	10-19-07
BP-4.1	7-16-04	CB-2.2	7-15-05	GSD-1-96	7-19-02	MT-101.60	9-20-06	802	4-15-05
BP-5.1	7-28-00			SBR-1-99	7-19-02	MT-101.70	10-18-02	832	4-25-06
		HW-2.1	4-21-06	SICD-1-96	7-19-02	MT-102.10	10-20-06	840	1-19-07
GR-1.1	7-16-04	HW-2.2	4-21-06			MT-102.20	9-05-06	845	1-19-07
GR-2.1	1-16-04					MT-102.30	9-05-06	898	7-21-06
GR-3.1	1-19-07	I-2.3	7-15-05			MT-105.10	10-18-02		
GR-4.2	1-19-07					MT-105.11	10-18-02		
GR-5.2	1-16-04	MH-1.2	1-20-06						
GR-5.3	1-16-04								
GR-6.2	4-18-03	DM-1.1	4-21-06						
RM-4.2	10-20-06	DM-1.2	10-21-05						
RM-4.5	1-19-07	DM-4.1	7-19-02						
RM-4.6	1-16-04								

FEDERAL PROJECT NO.
E050251

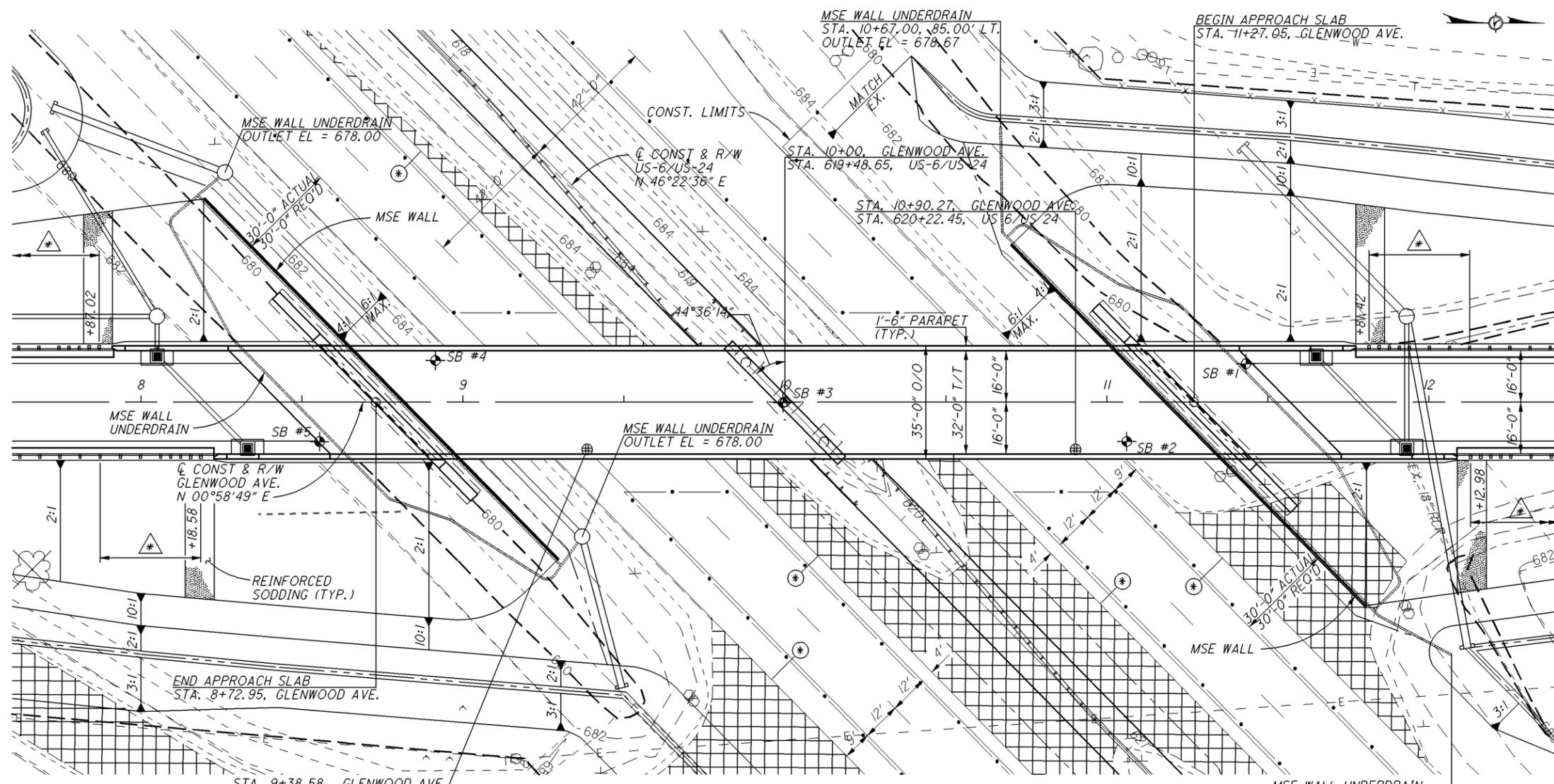
PID NO.
77730

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
NONE

HEN-6-11.73

HEN - US-6-11.73
080066 PID - 77730
Dist 2 1/25/2008



PLAN

± R/W REFERENCES

GR 202.49' BOLT SIGN POST 18' PK NAIL	GR 203.66' BOLT SIGN POST 18' PK NAIL	GR 172.06' BOLT SIGN POST 18' PK NAIL	GR 151.20' BOLT SIGN POST 18' PK NAIL
US-6/US-24	US-6/US-24	US-6/US-24	US-6/US-24
STA 608+23.25	STA 619+48.65	STA 648+23.73	STA 55+28.13
I.P.F. 300.00		I.P.F. 300.00	
FENCE POST SIGN POST		FENCE CORNER SIGN POST	
US-6/US-24		US-6/US-24	
STA 619+48.65		STA 619+48.65	
US-6/US-24		US-6/US-24	
STA 619+48.65		STA 55+28.13	
US-6/US-24		US-6/US-24	
STA 619+48.65		STA 55+28.13	
US-6/US-24		US-6/US-24	
STA 619+48.65		STA 55+28.13	

BM #1 - ELEV. 683.24
CITY OF NAPOLEON BENCHMARK #17
STA. 3+14.20, 62.80' LT.

BM #2 - ELEV. 683.67
NCI CP#101 (IRON PIN W/ CAP)
STA. 18+83.80, 26.00' LT.

NOTES

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

- LEGEND**
- ⊕ - SOIL BORING LOCATION
 - ⊙ - POINT OF MINIMUM VERTICAL CLEARANCE
 - ⊗ - SAW CUT, FULL DEPTH
 - ⊠ - BRIDGE TERMINAL ASSEMBLY, TYPE I

SOIL BORING INFORMATION

BORING NO.	STATION	OFFSET	ELEVATION
1	11+43.14	11.82' LT.	679.81
2	11+06.16	12.18' RT.	684.85
3	9+99.37	0.18' RT.	683.96
4	8+91.47	12.85' LT.	683.96
5	8+55.45	12.19' RT.	680.97

TRAFFIC DATA

CURRENT ADT (2008): 2080
DESIGN ADT (2028): 2790
DESIGN ADTT: 85

PROPOSED STRUCTURE

TYPE: 2-SPAN CONTINUOUS COMPOSITE STEEL PLATE GIRDER BRIDGE WITH REINFORCED CONCRETE DECK, SEMI-INTEGRAL ABUTMENTS BEHIND MSE WALLS AND CAP & COLUMN PIER FOUNDED ON STEEL H-PILES

SPAN: 125'-7 3/4"; 125'-7 3/4" C/C BRG.

ROAD WIDTH: 32'-0" T/T PARAPET

LOAD: HS25 (CASE II), ALT. MILITARY & 60PSF FWS

SKEW: 44°36'14" R.F.

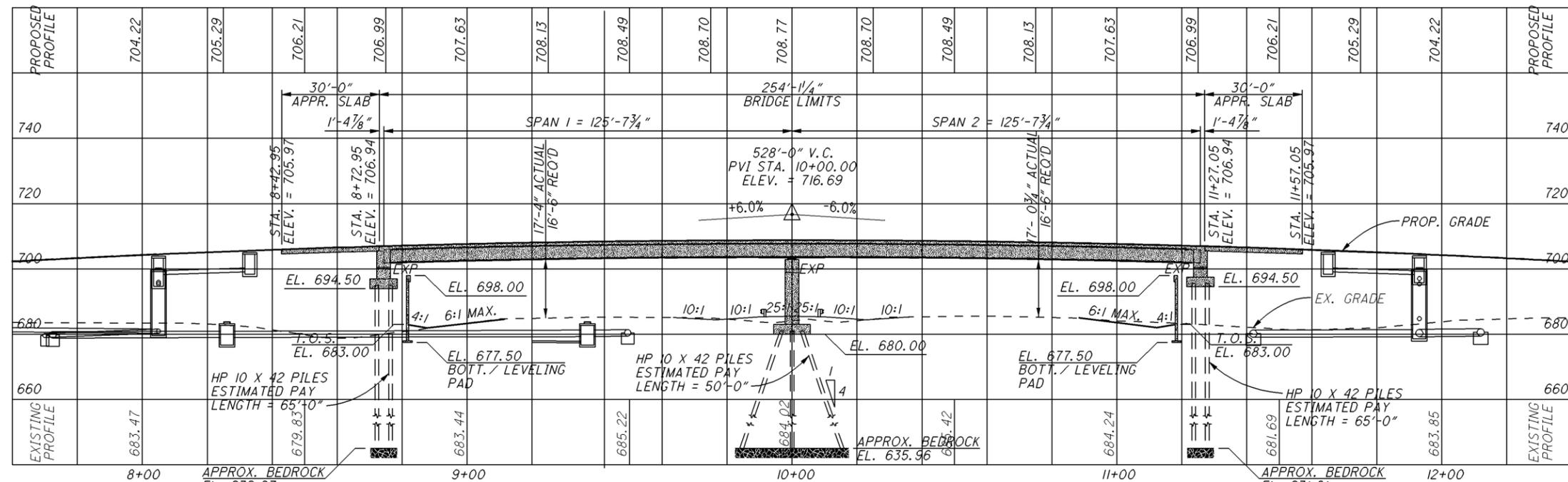
WEARING SURFACE: MONOLITHIC CONCRETE

ALIGNMENT: TANGENT

CROWN: 0.016

APPROACH SLABS: AS-1-81 (30'-0" LONG)

LATITUDE: N84°08'30" LONGITUDE: W41°24'00"



PROFILE AT ± CONSTRUCTION

SITE PLAN

BRIDGE NO. HEN-6-1173
GLENWOOD AVE. OVER US-6/US-24

DESIGN AGENCY: NORTHWEST CONSULTANTS, INC.
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE: (419) 841-4704 FAX: (419) 841-2919

DATE: 06/29/07
REVIEWED: EEC
DRAWN: SJF
DESIGNED: SJF
CHECKED: JBD

STRUCTURE FILE NUMBER: 3500268

HENRY COUNTY
STA. 8+72.95
STA. 11+27.05

HEN-6-11.73
PID No. 77730

1 / 16

32 / 49

ESTIMATED QUANTITIES

COMPUTED BY: SJF DATED: 06/22/07
 CHECKED BY: JBD DATED: 06/22/07

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	MSE WALL	ABUT.	PIER	SUPER.	GEN.	REF. SHEET
203	20001	4050	CU YD	EMBANKMENT, AS PER PLAN	4050					2
203	65000	6	EACH	SPECIAL - SETTLEMENT PLATFORM		6				4
503	21300	LUMP		UNCLASSIFIED EXCAVATION					LUMP	
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION					LUMP	
507	00100	4400	FT	STEEL PILES HPI0X42, FURNISHED *		3080	1320			
507	00150	4400	FT	STEEL PILES HPI0X42, DRIVEN *		3080	1320			
509	10000	132254	POUND	EPOXY COATED REINFORCING STEEL *		22602	12109	97543		
512	10100	1505	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	465	220	105	715		
512	10300	40	SQ YD	SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN				40		
513	10080	LUMP		STRUCTURAL STEEL MEMBERS, LEVEL 4 *				LUMP		
513	20000	3264	EACH	WELDED STUD SHEAR CONNECTORS				3264		
514	00300	LUMP		FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT				LUMP		
514	00400	LUMP		FIELD PAINTING STRUCTURAL STEEL, FINISH COAT				LUMP		
514	10000	4	EACH	FINAL INSPECTION REPAIR				4		
516	13900	112	SQ FT	2" PREFORMED EXPANSION JOINT FILLER		112				
516	14021	100	FT	SEMI INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN		100				3
516	44301	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (20"x15"x4 ³ / ₁₆ " BEARING WITH 21"x16"x1 ¹ / ₂ " LOAD PLATE), AS PER PLAN		8				14
516	44400	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (26"x22 ¹ / ₂ "x5 ⁵ / ₁₆ " BEARING WITH 27"x23 ¹ / ₂ "x2 ³ / ₄ " LOAD PLATE)			4			
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC		LUMP				
518	40000	176	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		176				
518	40010	80	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		80				
607	39900	628	FT	SPECIAL - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC				628		4
840	20000	5310	SQ FT	MECHANICALLY STABILIZED EARTH WALL	5310					
840	21000	1950	CU YD	WALL EXCAVATION	1950					
840	22000	854	SQ YD	FOUNDATION PREPARATION	854					
840	23000	6660	CU YD	SELECT GRANULAR BACKFILL	6660					
840	23050	190	CU YD	NATURAL SOIL	190					
840	25010	648	FT	6" DRAINAGE PIPE, PERFORATED	648					
840	25020	84	FT	6" DRAINAGE PIPE, NON-PERFORATED	84					
840	26000	326	FT	CONCRETE COPING	326					
840	27000	5	DAY	ON-SITE ASSISTANCE	5					
840	28000	LUMP		SGB INSPECTION AND COMPACTION TESTING	LUMP					
898	10211	269	CU YD	QC/QA CONCRETE, CLASS OSC2, SUPERSTRUCTURE (DECK), AS PER PLAN *				269		3
898	10709	234	SQ YD	QC/QA CONCRETE, CLASS OSC2, SUPERSTRUCTURE (APPROACH SLAB), 17", AS PER PLAN *					234	3
898	11000	99	CU YD	QC/QA CONCRETE, CLASS OSC2, SUPERSTRUCTURE (PARAPET) *				99		
898	20100	38	CU YD	QC/QA CONCRETE, CLASS OSC1, SUBSTRUCTURE (PIER ABOVE FOOTING) *			38			
898	20160	274	CU YD	QC/QA CONCRETE, CLASS OSC1, SUBSTRUCTURE (ABUTMENT INCLUDING FOOTING) *		274				
898	20300	22	CU YD	QC/QA CONCRETE, CLASS OSC1, SUBSTRUCTURE (FOOTING) *			22			

* SEE PROPOSAL NOTE

GENERAL NOTES:

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:
 REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-81	DATED/REVISED	07-19-02
GSD-1-96	DATED/REVISED	07-19-02
SBR-1-99	DATED/REVISED	07-19-02
SICD-1-96	DATED/REVISED	07-19-02
VPF-1-90	DATED/REVISED	07-19-02

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

840	DATED	01-19-07
845	DATED	01-19-07
878	DATED	04-21-06
898	DATED	07-21-06

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2002, AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA:

CONCRETE CLASS OSC2 - COMPRESSIVE STRENGTH 4500 PSI (SUPERSTRUCTURE, RAILING, & APPROACH SLAB)

CONCRETE CLASS OSC1 - COMPRESSIVE STRENGTH 4000 PSI (SUBSTRUCTURE)

REINFORCING STEEL - ASTM A615 OR A996, GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI
 SPIRAL REINFORCEMENT MAY BE PLAIN BARS, ASTM A82 OR A615

STRUCTURAL STEEL - ASTM A709 GRADE 50W, MINIMUM YIELD STRENGTH 50,000 PSI

DESIGN LOADING:

DESIGN LOADING: HS25 (CASE I) AND THE ALTERNATE MILITARY

FUTURE WEARING SURFACE (FWS) OF 60 POUNDS PER SQUARE FOOT.

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2 1/2" CONCRETE COVER

MONOLITHIC WEARING SURFACE:

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

PILE DRIVING CONSTRAINTS:

PRIOR TO DRIVING PILES, CONSTRUCT THE MSE WALL AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS. DO NOT BEGIN THE INSTALLATION OF THE ABUTMENT PILES UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED AND THE SPECIFIED SETTLEMENT HAS OCCURED.

ITEM 203 EMBANKMENT, AS PER PLAN:

PLACE AND COMPACT EMBANKMENT MATERIAL BEHIND THE ABUTMENTS CONFORMING TO 703.17 & 503.08 IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT.

PROPRIETARY RETAINING WALL DATA:

THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH THE SPECIAL PROVISIONS TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE AN UNFACTORED HORIZONTAL STRIP LOAD FROM THE SUPERSTRUCTURE OF 2.65 K/FT APPLIED PERPENDICULAR TO THE FACE OF WALL AT THE BASE OF THE CONCRETE FOOTING. THE ALLOWABLE BEARING PRESSURE AT THE BASE OF THE REINFORCED SOIL MASS IS 5 KSF. PROVIDE SOIL REINFORCEMENT WITH AT LEAST THE MINIMUM LENGTH SHOWN IN THE PLANS TO ENSURE EXTRENAL STABILITY.

THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE ABUTMENT SOIL REINFORCEMENT IN ACCORDANCE WITH THE SPECIAL PROVISIONS TO RESIST AN APPLIED HORIZONTAL FORCE OF 2.65 K/FT AT THE ABUTMENTS AND 2.26 K/FT AT THE WINGWALLS

THE PROPRIETARY WALL SUPPLIER SHALL ENSURE THAT A MINIMUM OF 6 INCHES SELECT GRANULAR MATERIAL AND 1 FOOT OF NATURAL SOIL COVER IS PROVIDED AT ALL TOP SOIL REINFORCEMENT LOCATIONS IN EMBANKMENT SLOPES.

VANDAL FENCE PROTECTION ADDED BY ODOT DISTRICT TWO 10-27-07

DESIGN AGENCY
 NORTHWEST CONSULTANTS, INC
 3220 CENTRAL PARK WEST
 TOLEDO, OHIO 43617
 PHONE: (419) 841-4704 FAX: (419) 841-2979

DATE
 06/29/07
 REVIEWED
 EEC
 STRUCTURE FILE NUMBER
 3500268

DRAWN
 SJF
 CHECKED
 JBD

GENERAL NOTES AND ESTIMATED QUANTITIES
 BRIDGE NO. HEN-6-1173
 GLENWOOD AVE. OVER US-6/US-24

HEN-6-11.73
 PID No. 77730

2 / 16

33
 49

DIFFERENTIAL SETTLEMENT LIMITS:

DIFFERENTIAL SETTLEMENT ALONG THE WALL FACE IS ESTIMATED TO BE ON THE ORDER OF 4.75 INCHES OVER A DISTANCE OF 73 FT.

ESTIMATED TOTAL SETTLEMENT:

ESTIMATED TOTAL SETTLEMENT FOR THE CENTER OF THE MSE WALL IS 5.50 INCHES.

ESTIMATED TOTAL SETTLEMENT FOR THE ENDS OF THE MSE WALL ARE 0.75 INCHES.

DRIVING OF ABUTMENT PILES SHALL NOT START UNTIL 90% OF THE ESTIMATED TOTAL SETTLEMENT HAS OCCURED.

PILES TO BEDROCK:

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECIEVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE ULTIMATE BEARING VALUE IS 94 TONS PER PILE FOR THE ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 94 TONS FOR THE PIER PILES.

ABUTMENT PILES:

44 PILES 70 FEET LONG, ORDER LENGTH

PIER PILES:

24 PILES 55 FEET LONG, ORDER LENGTH

UTILITY LINES:

THE UTILITIES SHALL BORE ALL EXPENSES INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES. THE CONTRACTOR AND UTILITIES ARE TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ITEM 512, SEALING OF CONCRETE SURFACES (EPOXY URETHANE):

SEALING OF THE SUBSTRUCTURE CONCRETE SURFACES SHALL NOT BE PERFORMED UNTIL AFTER THE DECK HAS BEEN PLACED.

ITEM 512, SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN:

THE LONGITUDINAL JOINT BETWEEN THE CONCRETE DECK AND PARAPET, AND THE COMPRESSION SEAL JOINTS SHALL BE SEALED WITH ITEM 512 - SEALING CONCRETE BRIDGE DECKS WITH HMWM RESIN IN ACCORDANCE WITH CMS 511.22.

ITEM 514, FIELD PAINTING STRUCTURAL STEEL:

PARTIAL PAINTING OF THE WEATHERING STEEL FASCIA BEAMS ALONG THE ENTIRE BRIDGE LENGTH SHALL BE PERFORMED AS SPECIFIED ON SHEET 11 OF 16 IN THE PLANS AND IN ACCORDANCE WITH SECTION 302.4.1.5a OF THE ODOT BDM.

ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN:

INSTALL A 3 FOOT WIDE NEOPRENE SHEET AT LOCATIONS SHOWN IN THE PLANS. SECURE THE NEOPRENE SHEETING TO THE CONCRETE WITH 1-1/4" X #10 GAGE (LENGTH X SHANK DIAMETER) GALVANIZED BUTTON HEAD SPIKES THROUGH A 1 INCH OUTSIDE DIAMETER, #10 GAGE GALVANIZED WASHER. MAXIMUM FASTENER SPACING IS 9 INCHES. USE OF OTHER SIMILAR GALVANIZED DEVICES, WHICH WILL NOT DAMAGE EITHER THE NEOPRENE OR THE CONCRETE WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

CENTER THE NEOPRENE STRIPS ON ALL JOINTS. FOR HORIZONTAL JOINTS, SECURE THE HORIZONTAL NEOPRENE STRIP BY USING A SINGLE LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE TOP OF THE NEOPRENE STRIP. FOR THE VERTICAL JOINTS SECURE THE VERTICAL NEOPRENE STRIP BY USING A SINGLE VERTICAL LINE OF FASTENERS, STARTING AT 6 INCHES, +/-, FROM THE VERTICAL EDGE OF THE NEOPRENE STRIP NEAREST TO THE CENTERLINE OF ROADWAY. FOR VERTICAL JOINTS, INSTALL 2 ADDITIONAL FASTENERS AT 6 INCHES, CENTER TO CENTER, ACROSS THE TOP OF THE NEOPRENE STRIP ON THE SAME SIDE OF THE VERTICAL JOINT AS THE SINGLE VERTICAL ROW OF FASTENERS IS LOCATED.

THE VERTICAL NEOPRENE STRIPS SHALL COMPLETELY OVERLAP THE HORIZONTAL STRIPS. LAP LENGTHS OF THE HORIZONTAL STRIPS THAT ARE NOT VULCANIZED OR ADHESIVE BONDED, SHALL BE AT LEAST 1 FOOT IN LENGTH, OR 6 INCHES IN LENGTH IF THE LAP IS VULCANIZED OR ADHESIVE BONDED. NO LAPS ARE ACCEPTABLE IN VERTICALLY INSTALLED NEOPRENE STRIPS.

THE NEOPRENE SHEETING SHALL BE 3/32" THICK GENERAL PURPOSE, HEAVY DUTY NEOPRENE SHEET WITH NYLON FABRIC REINFORCEMENT. THE SHEETING SHALL BE "FAIRPRENE NUMBER NN-0003", BY E. I. DUPONT DE NEMOURS AND COMPANY, INC., "WINGPRENE" BY THE GOODYEAR TIRE AND RUBBER COMPANY, OR AN APPROVED ALTERNATE. THE NEOPRENE SHEETING SHALL CONFORM TO THE FOLLOWING:

DESCRIPTION OF TEST	ASTM METHOD	REQUIREMENT
THICKNESS, INCHES	D751	0.094 +/- 0.01
BREAKING STRENGTH, GRAB, LBS, MINIMUM (LONG. X TRANS.)	D751	700 X 700
ADHESIVE STRIP, 1" WIDE X 2" LONG, LBS MINIMUM	D751	9
BURST STRENGTH, PSI MINIMUM	D751	1400
HEAT AGING, 70 HR, 212 DEGREES F, 180 DEGREES BEND WITHOUT CRACKING	D2136	NO CRACKING OF COATING
LOW TEMP. BRITTLINESS, 1 HR, -40 DEGREES F, BEND AROUND 1/4" MANDREL	D2136	NO CRACKING OF COATING

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE THE TOTAL LENGTH OF JOINT TO BE SEALED BY THE NUMBER OF FEET.

BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE CONTRACT PRICE FOR ITEM 516, SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL, AS PER PLAN.

ITEM 898, QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (DECK), AS PER PLAN:

AT THE CONTRACTOR'S OPTION GALVANIZED STEEL STAY-IN-PLACE (SIP) FORMS MAY BE USED AS FALSEWORK FOR THE CONSTRUCTION OF THE CONCRETE DECK. THE DEPARTMENT WILL NOT SEPARATELY PAY FOR SIP FORMS. THE COST OF THIS WORK IF CHOSEN BY THE CONTRACTOR SHALL BE INCLUDED FOR PAYMENT IN THE PRICE BID FOR ITEM 898. THE DEPARTMENT WILL PAY NO EXTRA COST FOR ANY ADDITIONAL CONCRETE THAT MAY BE REQUIRED WHEN USING SIP FORMS. ANY ADDITIONAL COST AND/OR DESIGN ASSOCIATED WITH THE USE OF SIP FORMS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

THE FOLLOWING IS A LISTING OF THE REQUIREMENTS FOR USE OF SIP FORMS:

1. PROVIDE THE ENGINEER WITH A WRITTEN INSTALLATION AND INSPECTION PROCEDURE. INCLUDE METHODS FOR ADJUSTING SUPPORT HEIGHTS, SIP ATTACHMENT SEQUENCE, PLACEMENT METHODS USED TO MINIMIZE COATING DAMAGE, COATING REPAIR METHODS, ACCEPTABLE TOLERANCES AND INSPECTION CRITERIA.
2. FIELD CUT SIP FORMS USING MECHANICAL CUTTING METHODS. THERMAL CUTTING IS NOT PERMITTED.
3. PLACE FORM SUPPORTS IN DIRECT CONTACT WITH THE TOP OF THE BRIDGE'S STRUCTURAL MEMBERS.
4. SET THE HEIGHT OF THE FORM SUPPORTS SO SIP FORMS DO NOT REST DIRECTLY ON THE BRIDGE'S STRUCTURAL MEMBERS AND TO DEVELOP THE SPECIFIED DECK THICKNESS.
5. PLACE SIP FORMS DIRECTLY ON THE SUPPORTS.
6. CONNECT SIP FORMS TO SUPPORTS BEFORE USING THE SIP AS A WORKING SURFACE AND BEFORE THE END OF EACH WORK SHIFT.
7. PROVIDE SAFETY STOPS TO ELIMINATE HAZARDS FROM SUDDEN UPLIFT AND LATERAL MOVEMENT.
8. LOCATE ANY TRANSVERSE CONSTRUCTION JOINTS AT THE BOTTOM CENTER TO CENTER ALONG THE LINE OF THE JOINT.

INSTALL SIP FORMS ACCORDING TO THESE NOTES:

DESIGN, FURNISH AND INSTALL PERMANENT GALVANIZED STEEL STAY-IN-PLACE (SIP) FABRICATED METAL FORMS FOR CONCRETE DECK SLABS OF ALL INTERIOR BAYS OF BEAMS ACCORDING TO CMS SECTIONS 508.02 AND 508.03 EXCEPT AS MODIFIED BY THESE NOTES. SIP FORMS SHALL NOT BE USED AT OVERHANGS AND WITHIN FOUR FEET OF ALL EXPANSION JOINTS. THE CONTRACTOR MAY ELECT TO FURNISH, INSTALL AND REMOVE, REMOVABLE FORMS TO ACCOMODATE THE SKEWED ENDS OF A DECK.

DESIGN SIP FORMS TO SUPPORT THE DEAD WEIGHT OF SIP FORMS, REINFORCEMENT, WET CONCRETE PLUS 50 PSF FOR CONSTRUCTION LIVE LOADS AND MEET THE DEFLECTION SPECIFICATIONS OF 508.02. FLUTES SHALL BE FILLED. FABRICATE THE SIP FORMING SYSTEM ACCORDING TO ITEMS 513 EXCEPT THAT FABRICATOR PRE-QUALIFICATION IS NOT REQUIRED. THE DEPARTMENT WILL BASE FINAL ACCEPTANCE ON THE ENGINEER'S APPROVAL THAT THE SIP FORMS CAN BE SUCCESSFULLY INCORPORATED INTO THE STRUCTURE. SUBMIT MILL TEST REPORTS FOR THE SIP FORMS ACCORDING TO 501.06, CONTRACTOR ACCEPTANCE TO THE ENGINEER NOT THE DIRECTOR. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR THE SIP FORMS ACCORDING TO 513.06, SHOP DRAWINGS TO THE ENGINEER, NOT THE OFFICE OF STRUCTURAL ENGINEERING.

FURNISH FORM MATERIALS CONFORMING TO ASTM A653 WITH G235 COATING WEIGHT WITH A MINIMUM THICKNESS OF 20 GAGE, SUPPORT ANGLES AND BARS MINIMUM OF 12 GAGE. HOT DIP GALVANIZE ALL HARDWARE, HANGERS AND INCIDENTALS.

DO NOT WELD SIP FORMS OR THEIR SUPPORTS TO THE STEEL BRIDGE MEMBERS. SIP SUPPORTS MAY BE WELDED TO ANCHORS CAST INTO PRECAST CONCRETE BRIDGE MEMBERS.

ACHIEVE A ONE-INCH MINIMUM BEARING LENGTH ON ALL SUPPORTS OF A FLUTE.

PLACE CONCRETE ACCORDING TO THE CONTRACT SPECIFICATIONS:

- FILL THE ENTIRE FORM WITH DECK CONCRETE.
- UTILIZE PROPER CONSTRUCTION TECHNIQUES TO PREVENT VOIDS AND HONEYCOMBS ESPECIALLY AT CONSTRUCTION JOINTS, EXPANSION JOINTS, FLUTES AND ENDS OF SIP FORM SHEETS.

IN ADDITION TO THE REQUIREMENTS OF 105.10 FURNISH, ERECT AND MOVE APPROPRIATE EQUIPMENT OR SCAFFOLDING TO ALLOW THE FOLLOWING INSPECTION ACCESS. ACCESS AND THE SPECIFIED INSPECTIONS ARE NOT ELIGIBLE FOR EXTRA PAYMENT. PROVIDE COMPLETED INSPECTION CHECK LISTS TO DOCUMENT THE FOLLOWING INSPECTIONS:

1. PRIOR TO PLACING CONCRETE VISUALLY INSPECT SIP FORMS FOR DAMAGE.
2. TWO DAYS AFTER CONCRETE PLACEMENT, TEST DECK FOR SOUNDNESS AND BONDING OF THE FORMS BY SOUNDING ON THE FORMS WITH A HAMMER. SOUND ALL SURFACES OF AT LEAST 10% OF THE PANELS WITH THE ENGINEER.
3. REMOVE SIP FORMS IN AREAS WITH DOUBTFUL SOUNDNESS OR BONDING FOR THE ENGINEER'S VISUAL INSPECTION. DO NOT REPLACE SIP FORMS REMOVED FOR INSPECTIONS. REMOVE FORMS SO THAT ADJACENT FORMS OR WORK IS NOT DEBONDED OR OTHERWISE DAMAGED.
4. REMOVE AT LEAST ONE SIP FORM AT A RANDOM LOCATION WITH ACCEPTABLE SOUNDNESS FOR THE ENGINEER.
5. IF DEFECTS ARE DISCOVERED DURING THE SPECIFIED INSPECTIONS TEST THE COMPLETE DECK AND PROPOSE REPAIR OR REMOVAL METHODS ACCEPTABLE TO THE DEPARTMENT. THE DEPARTMENT MAY REQUIRE ADVANCED NON-DESTRUCTIVE TESTING METHODS SUCH AS GROUND PENETRATING RADAR TO VERIFY THE DECK CONDITION ACCORDING TO CMS 105.10.

THE CONTRACTOR SHALL PROTECT INSTALLED SIP FORMS FROM ANY CLEANING, BLASTING, OR OTHER WORK OPERATIONS THAT MAY DAMAGE THE FORM COATING. FORMS THAT ARE DAMAGED FROM LACK OF PROTECTION SHALL BE REPAIRED OR REMOVED AS DIRECTED BY THE ENGINEER. IF DIRECTED TO REPAIR, THE DAMAGED AREAS SHALL BE METALIZED AS PER 516.03 AND SUPPLEMENTAL SPECIFICATION 845 DATED 01-19-07. ALL COST FOR REPAIR OR REMOVAL SHALL BE BORN BY THE CONTRACTOR.

THE DEPARTMENT WILL CALCULATE THE FINAL ADJUSTED PAYMENT ACCORDING TO 898.17 AND INCLUDE APPROACH SLAB CONCRETE AND DECK CONCRETE IN THE SAME LOT TO DETERMINE FINAL PAY FACTORS.

ITEM 898, QC/QA CONCRETE, CLASS QSC2, SUPERSTRUCTURE (APPROACH SLABS), AS PER PLAN:

FURNISH APPROACH SLABS CONFORMING TO CMS 526 EXCEPT CONCRETE SHALL BE IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 898, QC/QA CONCRETE, CLASS QSC2. THE ACCEPTED QUANTITIES SHALL INCLUDE: CONCRETE, CURBS, REINFORCING STEEL, JOINT FILLERS, JOINT SEALERS, AND WATERPROOFING. THE DEPARTMENT WILL MEASURE APPROACH SLABS BY THE NUMBER OF SQUARE YARDS. THE DEPARTMENT WILL INITIALLY PAY FULL BID PRICE TO THE CONTRACTOR UPON COMPLETION OF THE WORK. THE DEPARTMENT WILL CALCULATE THE FINAL ADJUSTED PAYMENT ACCORDING TO 898.17 AND INCLUDE APPROACH SLAB CONCRETE AND DECK CONCRETE IN THE SAME LOT TO DETERMINE FINAL PAY FACTORS.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE: 419-841-4104 FAX: 419-841-2819

DATE
06/29/07
REVIEWED
EEC
STRUCTURE FILE NUMBER
3500268

DRAWN
SUF
SUF
REVISION
CHECKED
JBD

GENERAL NOTES
BRIDGE NO. HEN-6-1173
GLENWOOD AVE. OVER US-6/US-24

HEN-6-11.73
PID No. 77730

3/16

34
49

ITEM SPECIAL, SETTLEMENT PLATFORM:

A. **DESCRIPTION:** THIS ITEM CONSISTS OF FURNISHING, CONSTRUCTING, AND MAINTAINING SETTLEMENT PLATFORMS AND OBTAINING SETTLEMENT READINGS AS REQUIRED BY THE PLANS OR AS DIRECTED BY THE ENGINEER. AT THE OPTION AND EXPENSE OF THE CONTRACTOR, ADDITIONAL SETTLEMENT PLATFORMS MAY BE INSTALLED AT LOCATIONS APPROVED BY THE ENGINEER. A COMPLETED COPY OF THE SETTLEMENT READINGS SHALL BE SENT TO THE OFFICE OF MATERIALS MANAGEMENT, ATTENTION: GEOTECHNICAL ENGINEERING COORDINATOR.

B. **MATERIALS:** SOUND LUMBER SUCH AS 3/4" EXTERIOR GRADE PLYWOOD SHALL BE USED FOR THE BASE. THE PIPE SHALL BE 2 1/2 INCH STANDARD BLACK PIPE WITH THREADED FITTINGS AS SHOWN ON THE PLANS. A STEEL PLATE 39" X 39" X 1/8" MAY BE SUBSTITUTED FOR THE LUMBER FOR THE PLATFORMS, AT THE CONTRACTOR'S OPTION.

C. **CONSTRUCTION METHODS:** THE PLATFORM SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS. THE PLATFORM SHALL BE SET ON A LEVEL SURFACE. THE PIPE SHALL BE FIRMLY SECURED TO THE PLATFORM AND SHALL BE MAINTAINED IN A PLUMB POSITION DURING THE PLACEMENT OF THE EMBANKMENT. THE PIPE SHALL BE MARKED AT INTERVALS TO FACILITATE MEASUREMENT OF THE DEPTH OF FILL.

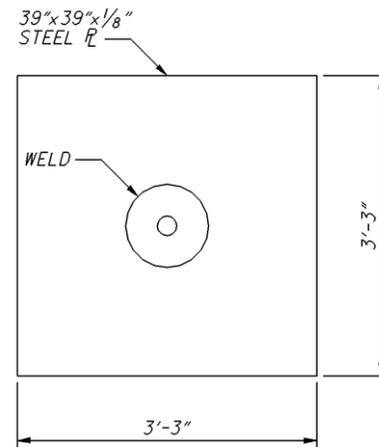
SETTLEMENT PLATFORMS SHALL BE LOCATED AT THE REQUIRED STATIONS. THE PLATFORMS SHOULD EXTEND FROM EXISTING GRADE THROUGH THE TOP OF THE PROPOSED EMBANKMENT, AND SHOULD BE READ WEEKLY DURING EMBANKMENT CONSTRUCTION AND UNTIL 90% CONSOLIDATION HAS OCCURED. THE ESTIMATED TIME REQUIRED TO ACHIEVE 90% CONSOLIDATION IS 3-6 MONTHS. DRIVING OF BRIDGE PILES SHOULD NOT START UNTIL A PLOT OF CONSOLIDATION VERSUS TIME REVEALS THAT 90% CONSOLIDATION HAS OCCURED.

THE CONTRACTOR SHALL STOP WORK IN ANY LOCATION WHERE THE SETTLEMENT PLATFORM HAS BEEN DISTURBED OR DAMAGED. PLATFORMS OR PIPES DAMAGED OR DISPLACED DURING CONSTRUCTION SHALL BE RESTORED TO THEIR PROPER CONDITION AT THE CONTRACTOR'S EXPENSE.

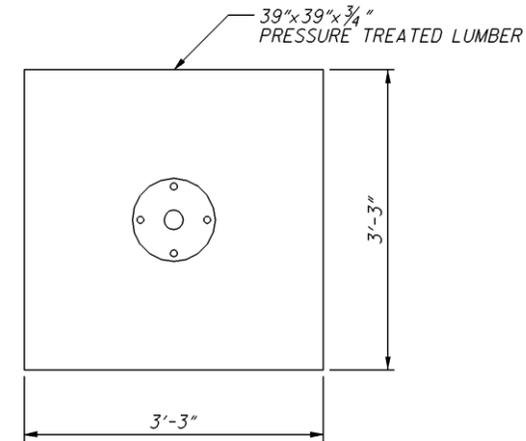
PRIOR TO PAVING, THE TOP OF THE SETTLEMENT PLATFORM PIPE SHALL BE CUT OFF TWO FEET BELOW THE FINISHED SURFACE OF THE SUBGRADE OR FINISHED GROUND SURFACE, WHICHEVER IS APPLICABLE.

D. **METHOD OF MEASUREMENT:** THE NUMBER OF SETTLEMENT PLATFORMS TO BE PAID FOR SHALL BE THE ACTUAL NUMBER OF SETTLEMENT PLATFORMS COMPLETED, MAINTAINED, AND ACCEPTED BY THE ENGINEER.

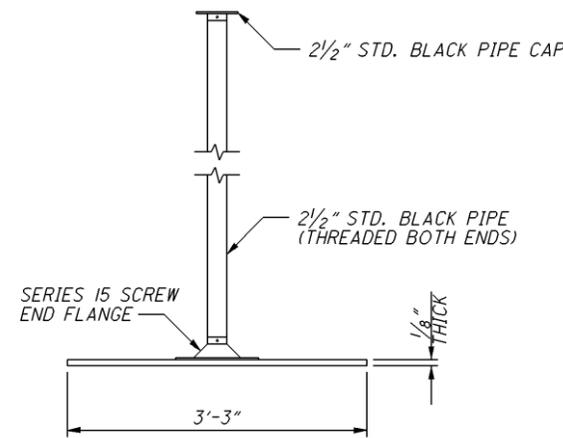
E. **BASIS OF PAYMENT:** PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH FOR "ITEM SPECIAL - SETTLEMENT PLATFORM" WHICH IS COMPENSATION FOR CONSTRUCTING, MAINTAINING, AND MONITORING THE SETTLEMENT PLATFORMS INCLUDING FURNISHING ALL LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK. PAYMENT SHALL NOT BE MADE FOR SETTLEMENT PLATFORMS WHICH BECOME USELESS DUE TO DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS.



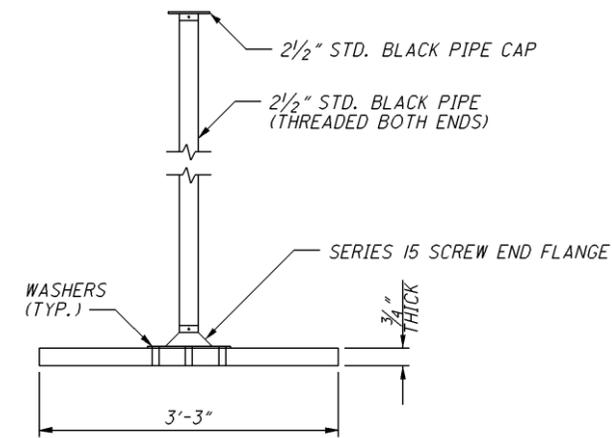
STEEL PLATE OPTION



TREATED LUMBER OPTION



ELEVATION



ELEVATION

SETTLEMENT PLATFORM DETAILS

MONITORING DEVICES
SETTLEMENT PLATFORMS
(REAR ABUTMENT)

STATION AND OFFSET
7+93.63, 50.0' LT.
8+42.95, ☐
8+92.26, 50.0' RT.

SETTLEMENT PLATFORMS
(FORWARD ABUTMENT)

11+07.73, 50.0' LT.
11+57.05, ☐
12+06.36, 50.0' RT.

NOTES:

1. SETTLEMENT PLATFORMS SHALL BE LOCATED AT THE REQUIRED STATION AND OFFSETS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. CONTRACTOR HAS THE OPTION OF USING EITHER STEEL OR PLYWOOD PLATFORM BASE.
3. CONTRACTOR SHALL FURNISH MATERIALS AND LABOR TO EXTEND PIPE UP THROUGH ENTIRE FILL.
4. SETTLEMENT PLATFORMS SHALL BE ANCHORED BY STAKES DRIVEN AT EACH CORNER TO PREVENT OVERTURNING.

ITEM SPECIAL, VANDAL PROTECTION FENCE:

PROVIDE VANDAL PROTECTION FENCE ACCORDING TO STD. CONSTRUCTION DRAWING VPF-1-90 AND CMS 710.03 EXCEPT COLOR IS TO BE BLACK. APPROVE THE COLOR OF THE FENCE WITH THE PROJECT CONSTRUCTION ENGINEER. COLOR OF STEEL POSTS, GATE FRAMES, POST BRACES, AND RAILS TO MATCH FENCE COLOR.

DESIGN AGENCY
NORTHWEST CONSULTANTS, INC.
3220 CENTRAL PARK WEST
TOLEDO, OHIO 43617
PHONE: (419) 841-4104 FAX: (419) 841-2819

DATE
06/29/07
REVIEWED
EEC
STRUCTURE FILE NUMBER
3500268

DRAWN
SUF
REVISED

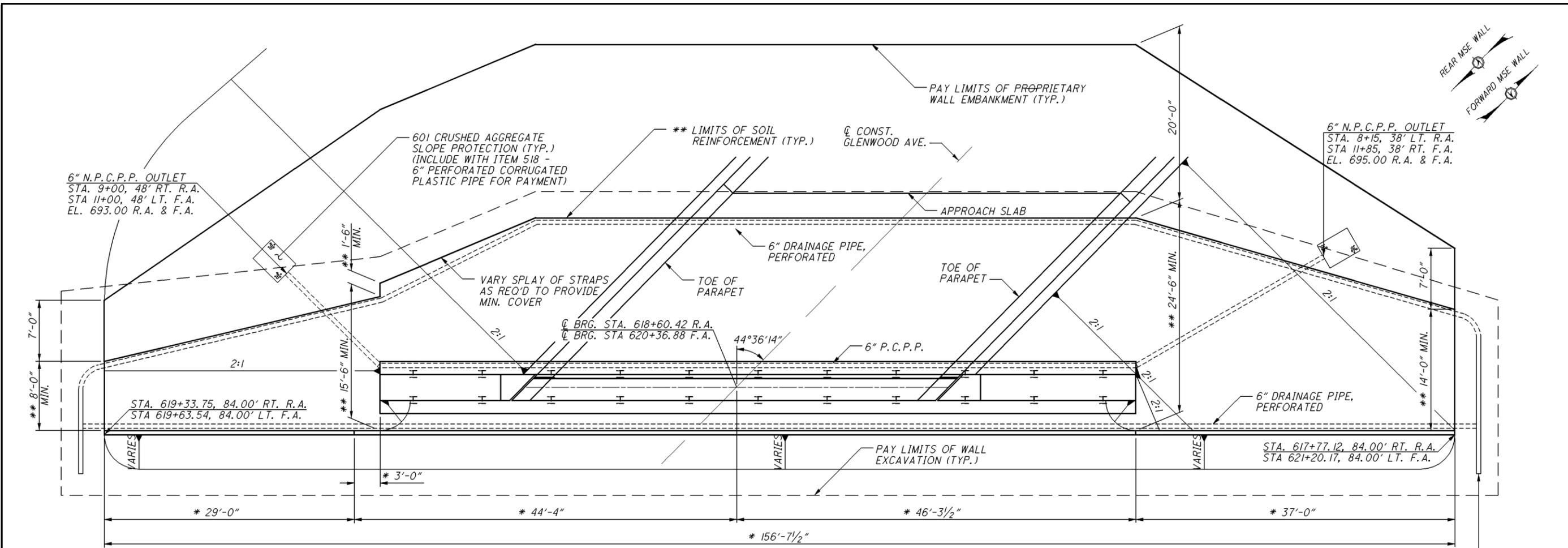
DESIGNED
SUF
CHECKED
JBD

GENERAL NOTES
BRIDGE NO. HEN-6-1173
GLENWOOD AVE., OVER US-6/US-24

HEN-6-11.73
PID No. 77730

4 / 16

35
49



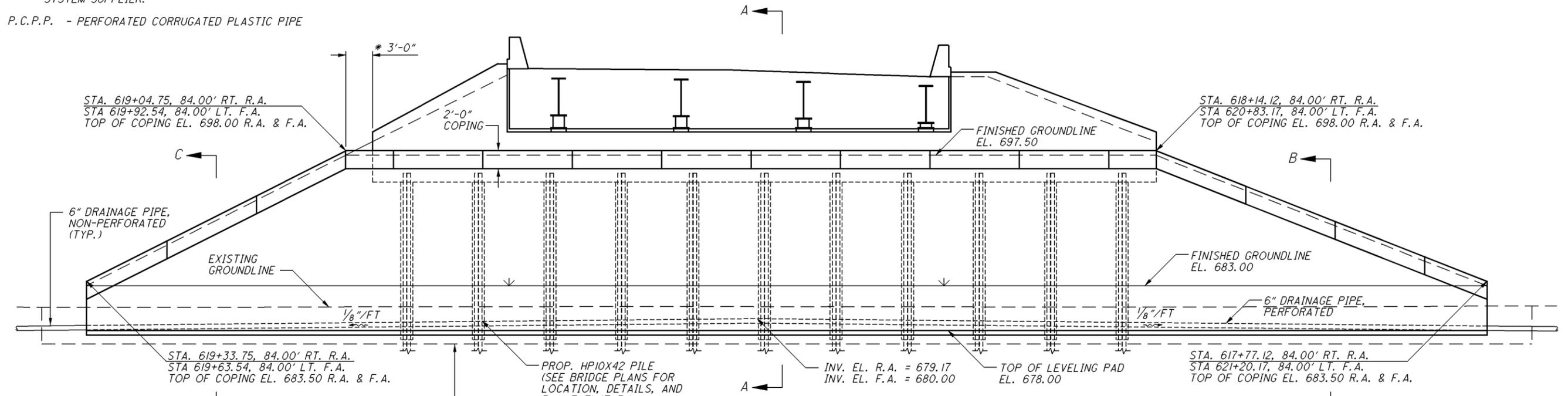
MSE WALL PLAN

LEGEND

- * - MEASURED ALONG FRONT FACE OF MSE WALL
- ** - LIMITS OF SOIL REINFORCEMENT SHOWN ARE MINIMUMS. ACTUAL LIMITS SHALL BE DETERMINED BY THE MSE WALL SYSTEM SUPPLIER.
- P.C.P.P. - PERFORATED CORRUGATED PLASTIC PIPE

NOTES:

1. SEE SHEET [6/16] FOR NOTES, LEGEND, AND SECTIONS A-A, B-B, & C-C.



MSE WALL ELEVATION

DESIGN AGENCY
 NORTHWEST CONSULTANTS, INC
 3220 CENTRAL PARK WEST
 TOLEDO, OHIO 43617
 PHONE: (419) 841-4704 FAX: (419) 841-2919

DESIGNED
 S.J.F.
 CHECKED
 J.B.D.

DRAWN
 S.J.F.
 REVISED

REVIEWED
 E.E.C.
 STRUCTURE FILE NUMBER
 3500268

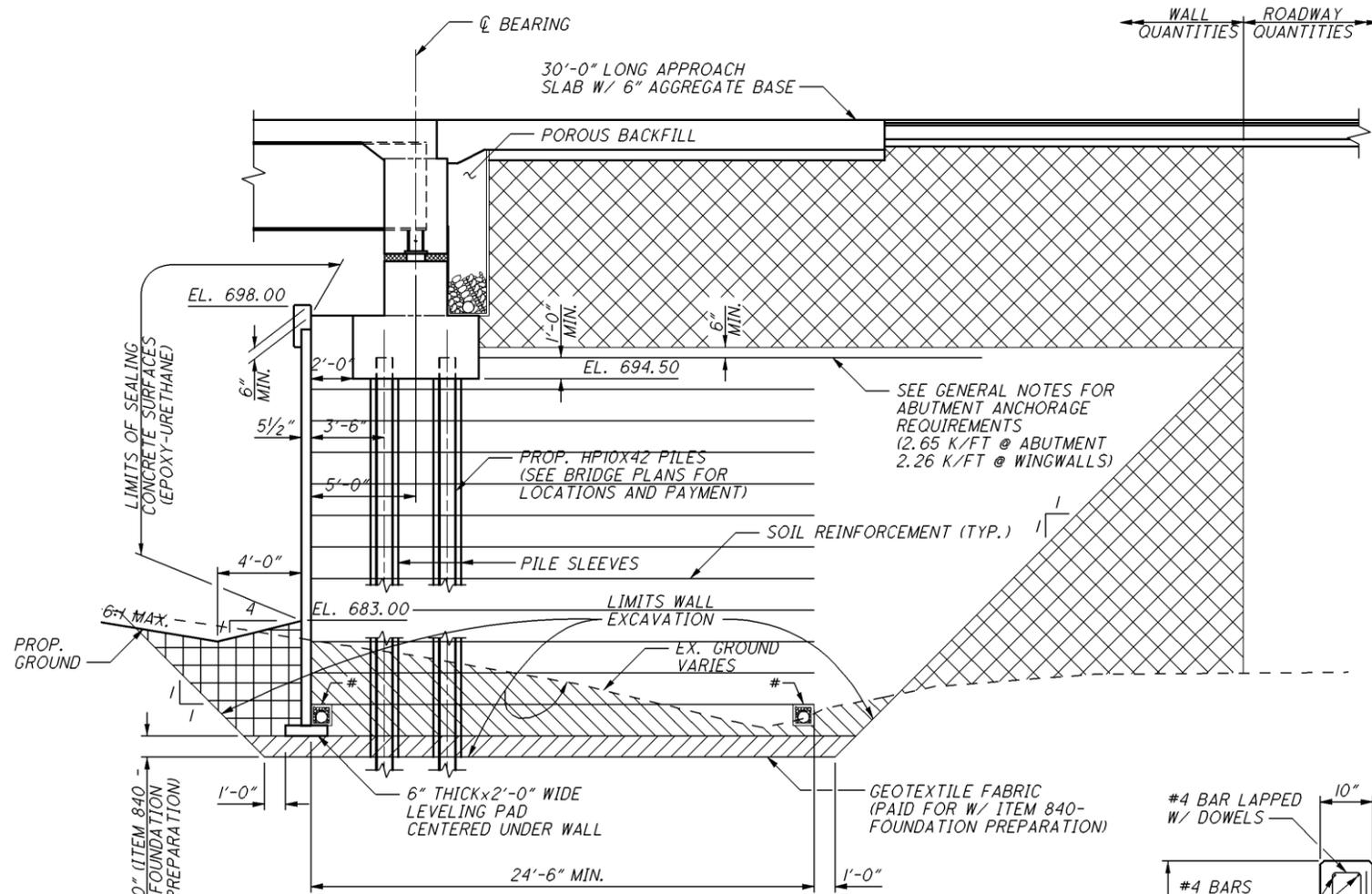
DATE
 06/29/07

MSE WALL DETAILS
 BRIDGE NO. HEN-6-1173
 GLENWOOD AVE. OVER US-6/US-24

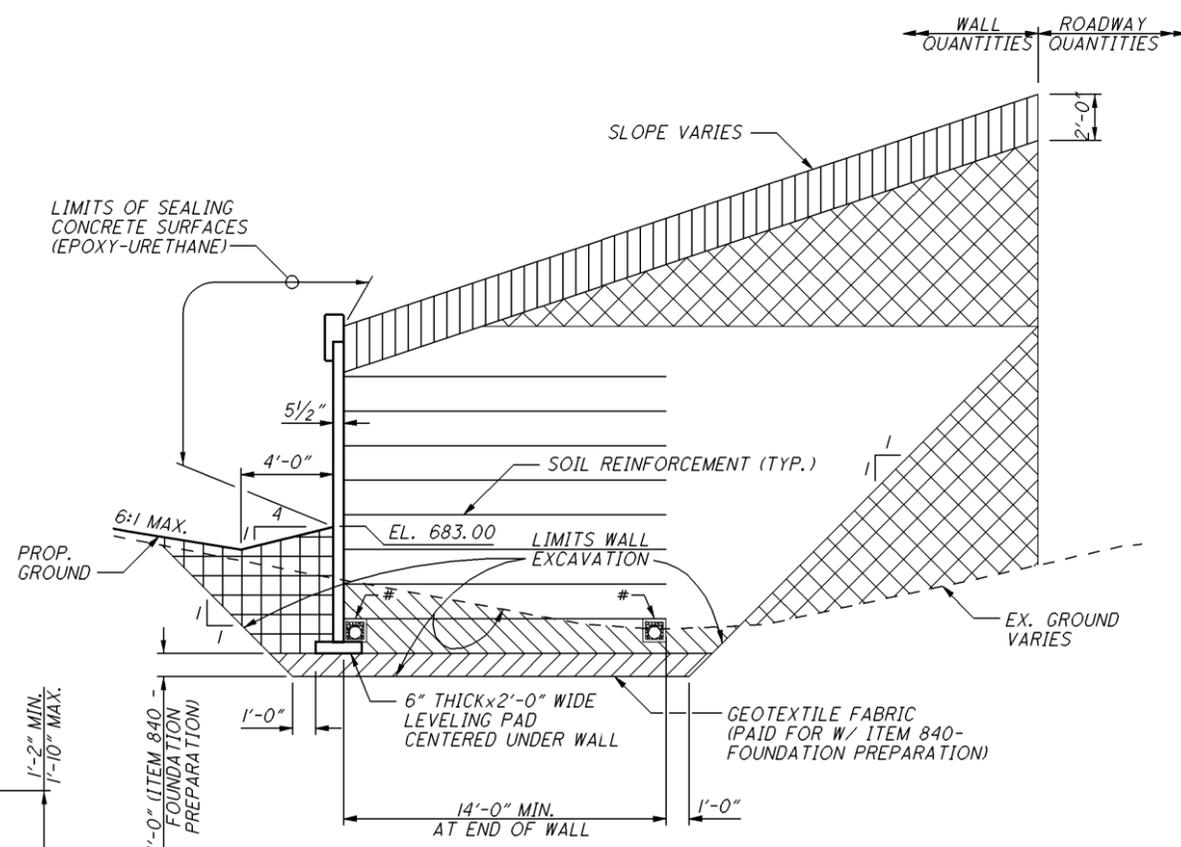
HEN-6-11.73
PID No. 77730

5 / 16

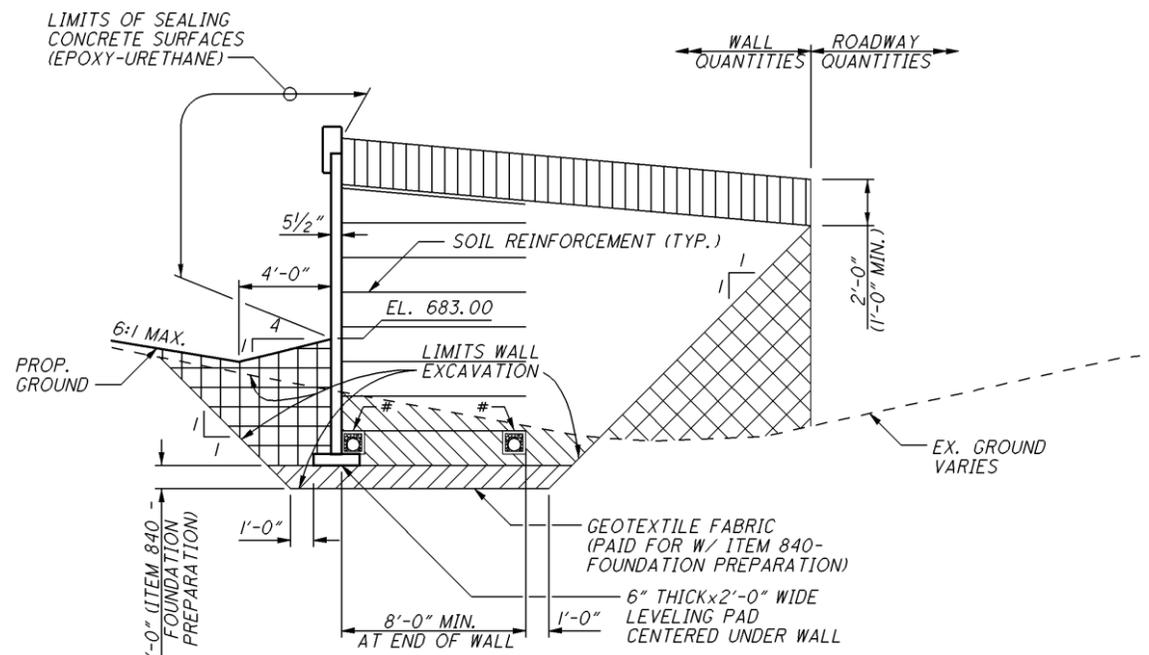
36
 49



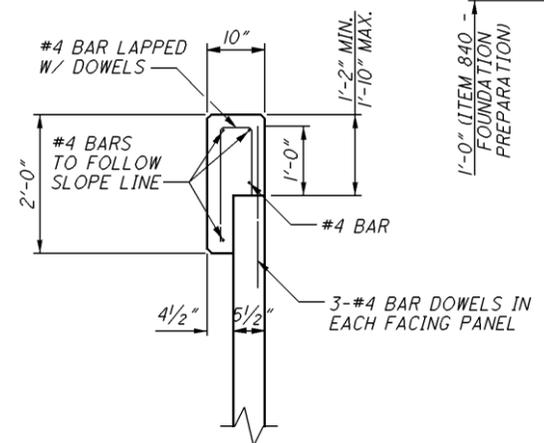
SECTION A-A



SECTION B-B

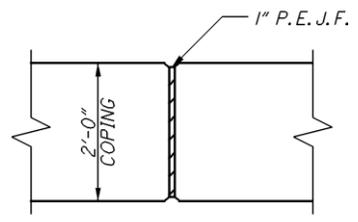


SECTION C-C



MSE COPING DETAIL

ALL REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL BE INCLUDED WITH ITEM 840 - CONCRETE COPING FOR PAYMENT. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING THE COPING REINFORCEMENT DETAILING AND ASSOCIATED BAR LIST BASED ON THE PLAN REQUIREMENTS.



COPING EXPANSION JOINTS

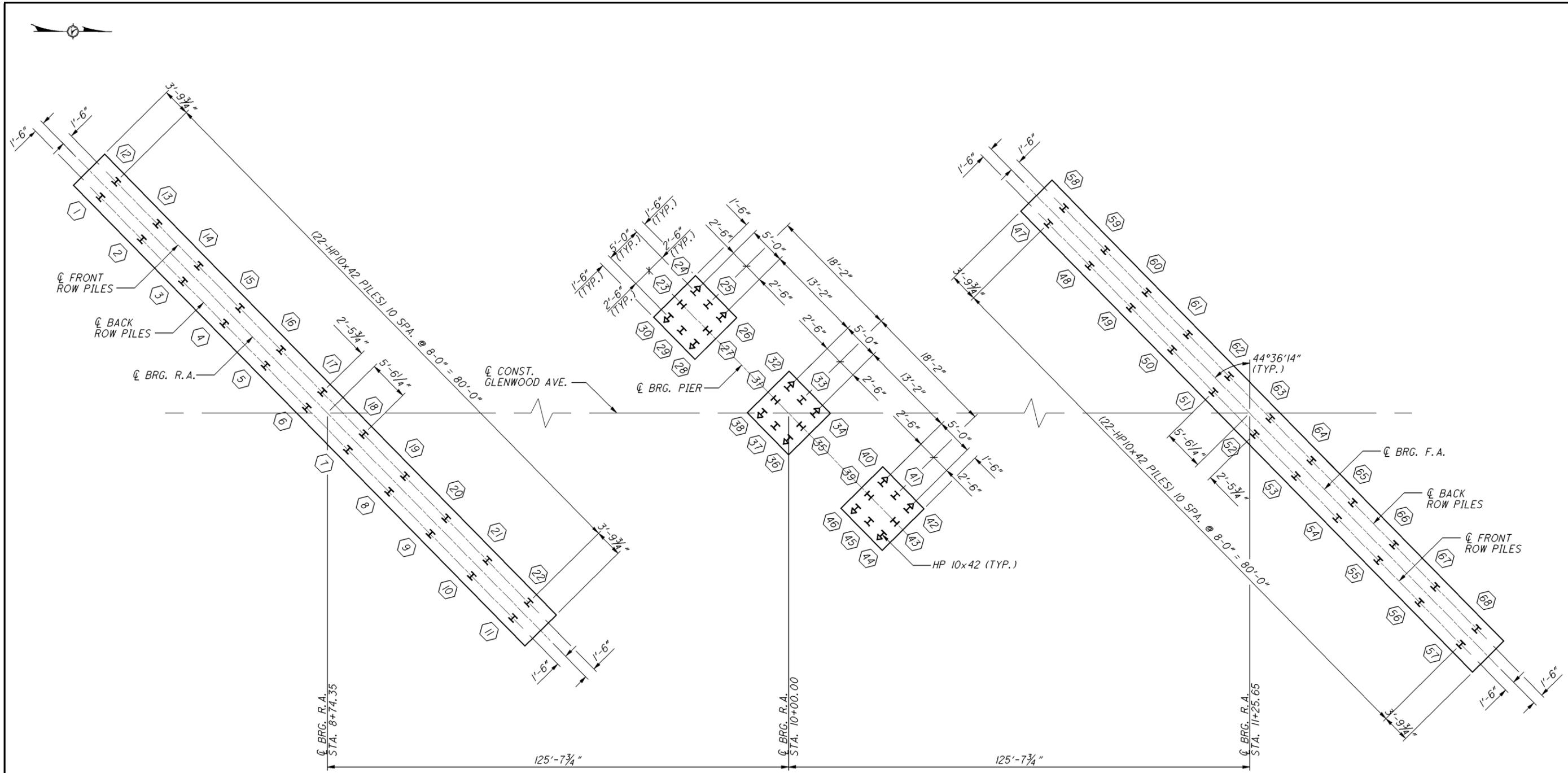
PROVIDE EXPANSION JOINTS PER SS 840.04 A (II). P.E.J.F. SHALL BE INCLUDED WITH ITEM 840 - CONCRETE COPING FOR PAYMENT. REINFORCING STEEL SHALL BE DISCONTINUOUS AT EXPANSION JOINTS.

NOTES:

1. THE SLOPING LINE WHICH DEFINES THE LIMITS OF THE SELECT GRANULAR BACKFILL IS NOT AN ALLOWABLE SLOPE FOR EXCAVATION. CUT THE SIDES OF ALL EXCAVATIONS TO PREVENT CAVING, OR PROTECT THE EXCAVATION FROM CAVING.
2. EMBANKMENT WITHIN THE LIMITS OF THE APPROACH SLAB SHALL MEET THE REQUIREMENTS OF 703.17 AND BE PLACED AS PER 304.05.

LEGEND

- ITEM 840 - WALL EXCAVATION WITH ITEM 203 - EMBANKMENT RETURNED (INCLUDED WITH ITEM 840 - WALL EXCAVATION FOR PAYMENT)
- ITEM 203 - EMBANKMENT, AS PER PLAN
- ITEM 840 - WALL EXCAVATION WITH ITEM 203 - GRANULAR MATERIAL, TYPE C RETURNED (INCLUDED WITH ITEM 840 - FOUNDATION PREPARATION FOR PAYMENT)
- ITEM 840 - WALL EXCAVATION WITH ITEM 840 - SELECT GRANULAR BACKFILL RETURNED
- ITEM 840 - SELECT GRANULAR BACKFILL
- ITEM 840 - NATURAL SOIL
- # - 6" DRAINAGE PIPE, PERFORATED AND 1'-0" HIGH X 1'-0" WIDE POROUS BACKFILL WITH FILTER FABRIC
- P.E.J.F. - PREFORMED EXPANSION JOINT FILLER



FOUNDATION PLAN

REAR ABUTMENT PILING TABLE

PILE NO.	PILE SIZE	CUT OFF ELEVATION	ESTIMATED LENGTH	REMARK
1-22	HP10x42	EL. 695.50	65 FT.	VERTICAL

FORWARD ABUTMENT PILING TABLE

PILE NO.	PILE SIZE	CUT OFF ELEVATION	ESTIMATED LENGTH	REMARK
47-68	HP10x42	EL. 695.50	65 FT.	VERTICAL

PIER PILING TABLE

PILE NO.	PILE SIZE	CUT OFF ELEVATION	ESTIMATED LENGTH	REMARK
23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45	HP10x42	EL. 681.00	50 FT.	VERTICAL
24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46	HP10x42	EL. 681.00	50 FT.	BATTERED

LEGEND
 (1) - PILE NUMBER
 ↯ - DENOTES BATTERED PILE (4:1)

DESIGN AGENCY
 NORTHWEST CONSULTANTS, INC
 3220 CENTRAL PARK WEST
 TOLEDO, OHIO 43617
 PHONE(419) 841-4704 FAX(419) 841-2879

DATE 06/29/07
 REVIEWED EEC
 DRAWN SJF
 DESIGNED SJF
 CHECKED JBD

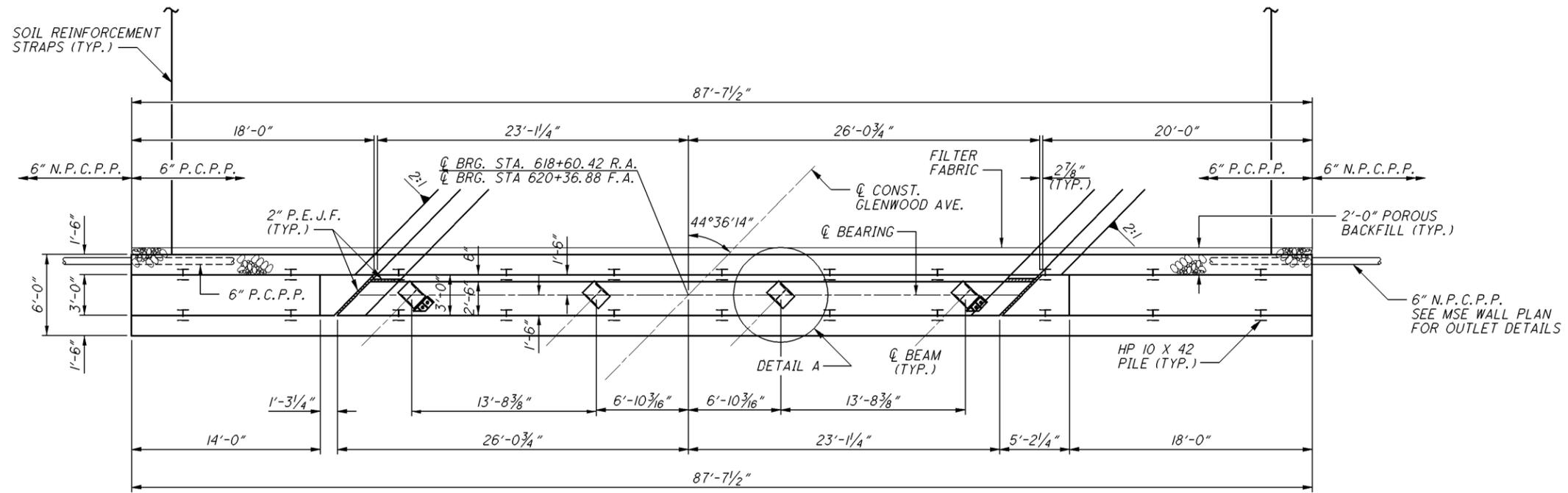
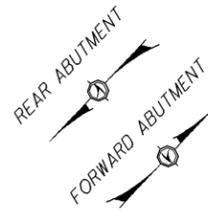
STRUCTURE FILE NUMBER 3500268

FOUNDATION PLAN
 BRIDGE NO. HEN-6-1173
 GLENWOOD AVE. OVER US-6/US-24

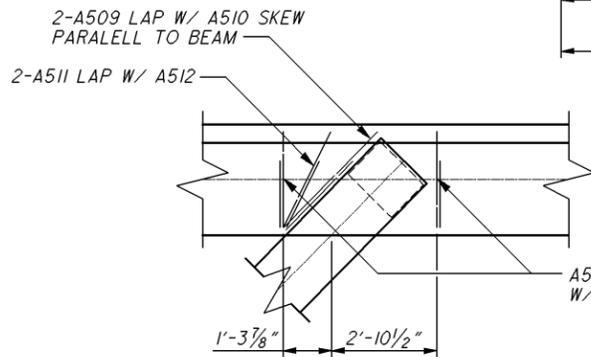
HEN-6-11.73
PID No. 77730

7 / 16

38
49



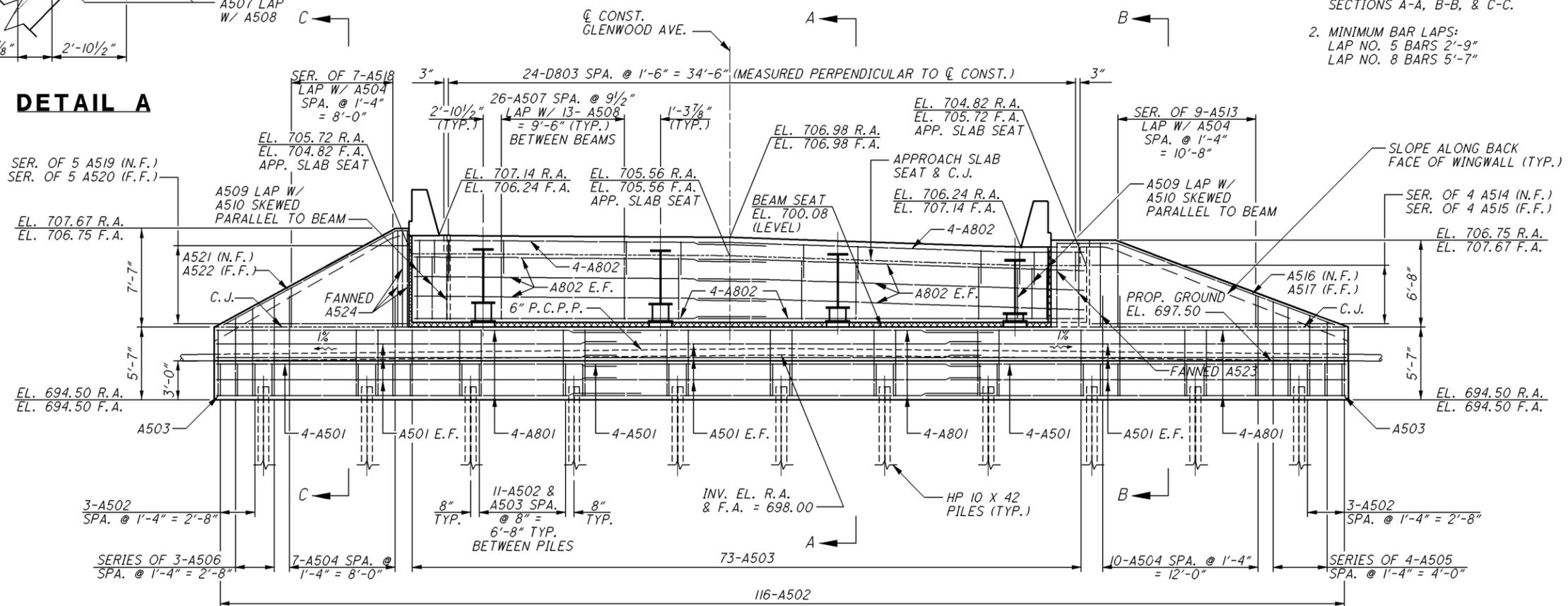
ABUTMENT PLAN



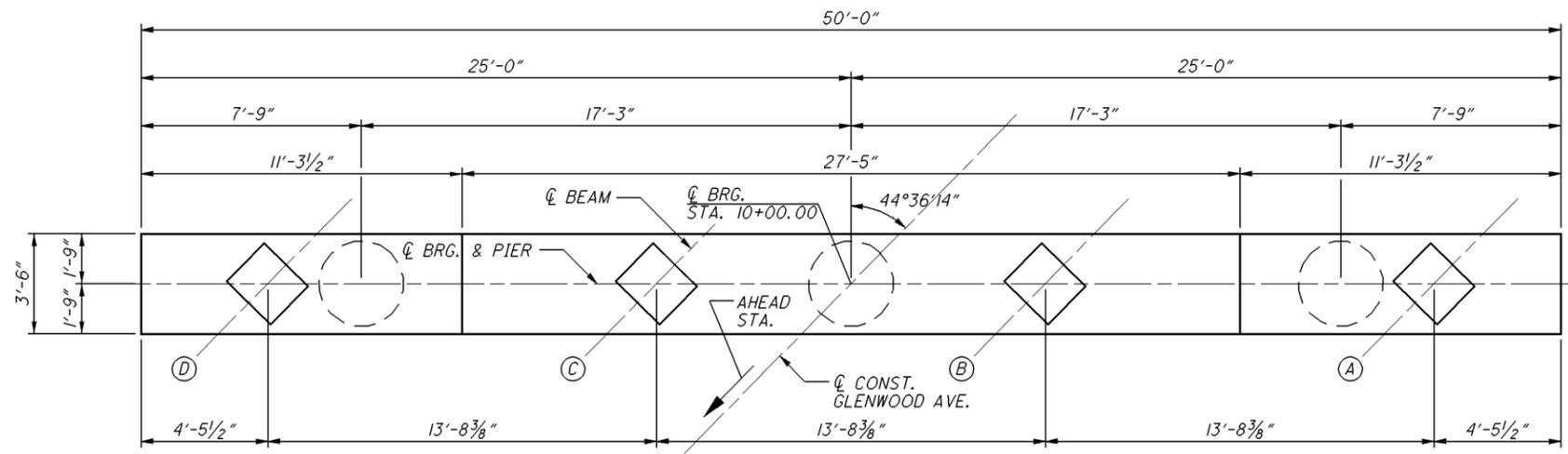
DETAIL A

NOTES:

- SEE SHEET 9/16 FOR NOTES, LEGEND, AND SECTIONS A-A, B-B, & C-C.
- MINIMUM BAR LAPS:
LAP NO. 5 BARS 2'-9"
LAP NO. 8 BARS 5'-7"



ABUTMENT ELEVATION



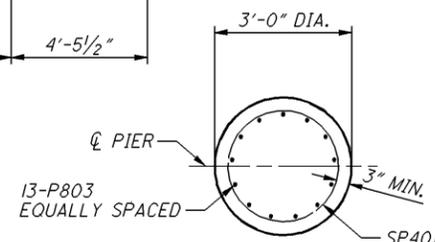
PIER CAP PLAN

NOTES:

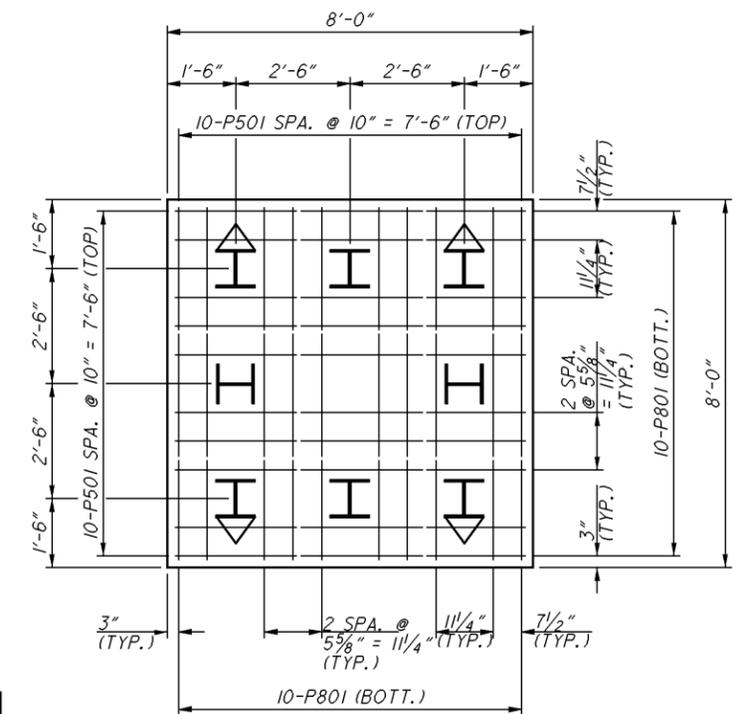
- BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED UPWARD 1/8 INCHES AT PIERS TO COMPENSATE FOR THE VERTICAL DEFORMATION OF THE BEARINGS.
- MINIMUM BAR LAPS:
LAP NO. 5 BARS 2'-9"
LAP NO. 10 BARS 8'-10"

LEGEND

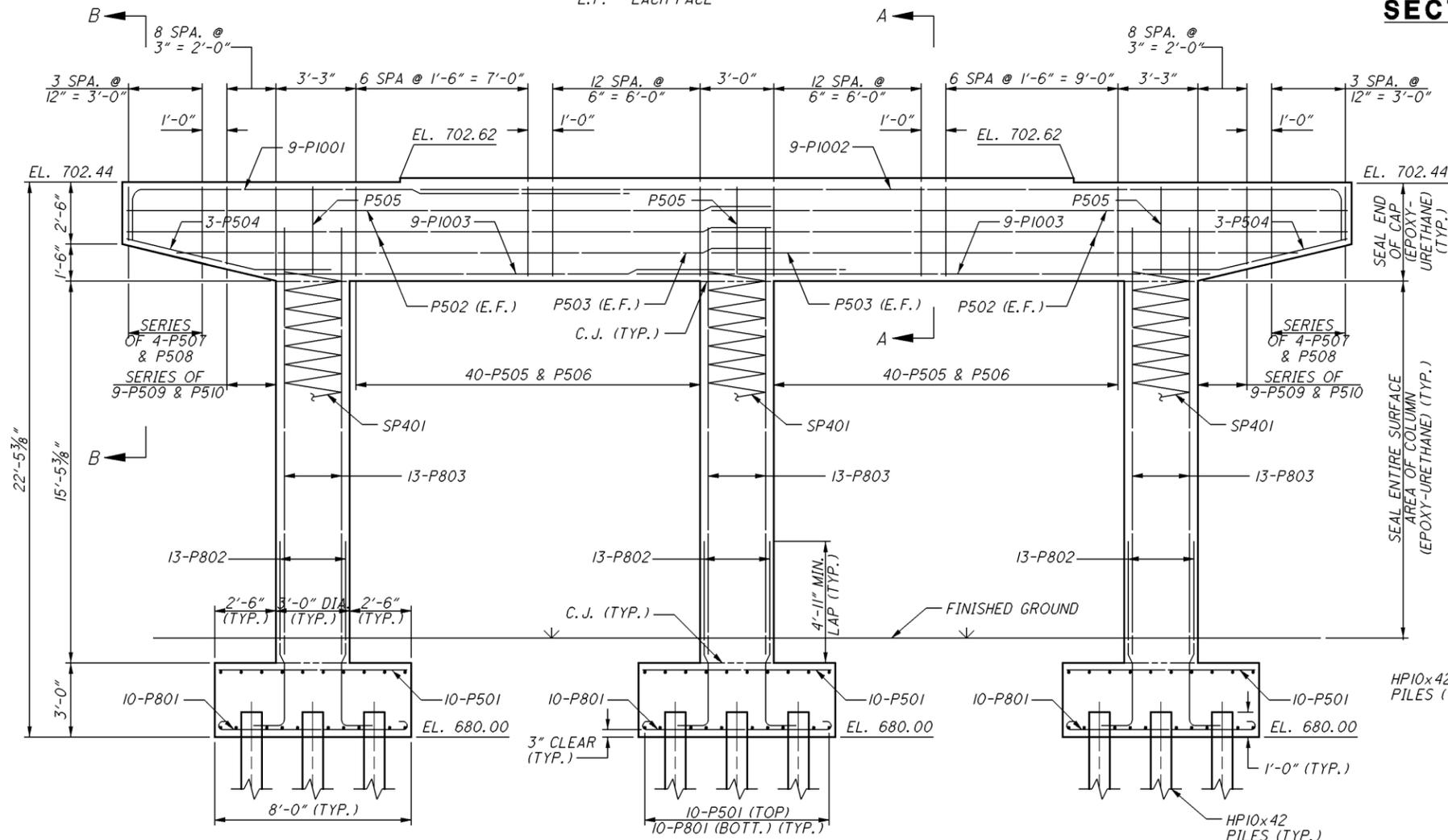
- N.F. - NEAR FACE
- F.F. - FAR FACE
- E.F. - EACH FACE



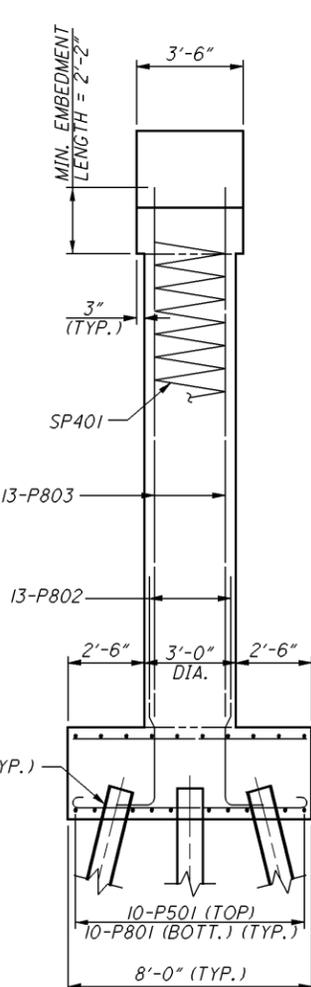
TYPICAL COLUMN SECTION



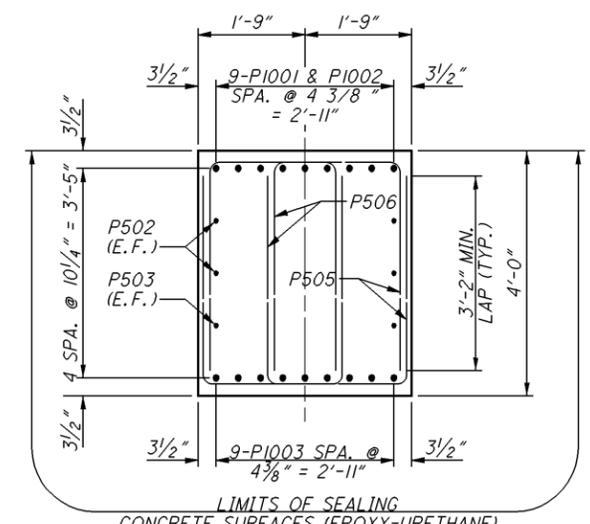
TYPICAL FOOTING PLAN



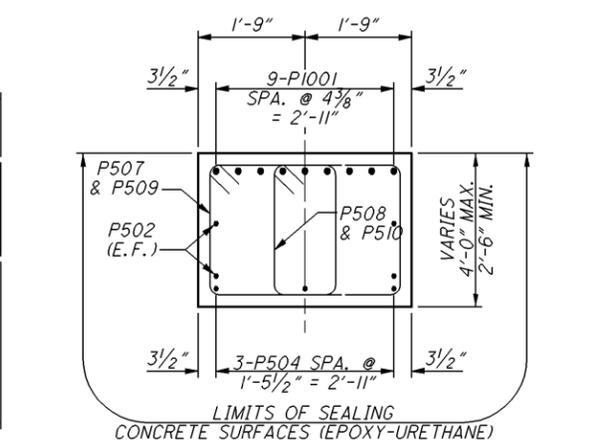
PIER ELEVATION



END VIEW



SECTION A-A



SECTION B-B

DESIGN AGENCY: NORTHWEST CONSULTANTS, INC.
 3220 CENTRAL PARK WEST
 TOLEDO, OHIO 43617
 PHONE: (419) 841-4704 FAX: (419) 841-2919

DATE: 06/29/07
 STRUCTURE FILE NUMBER: 3500268

DESIGNED: SJF
 CHECKED: JBD

DRAWN: SJF
 REVISED:

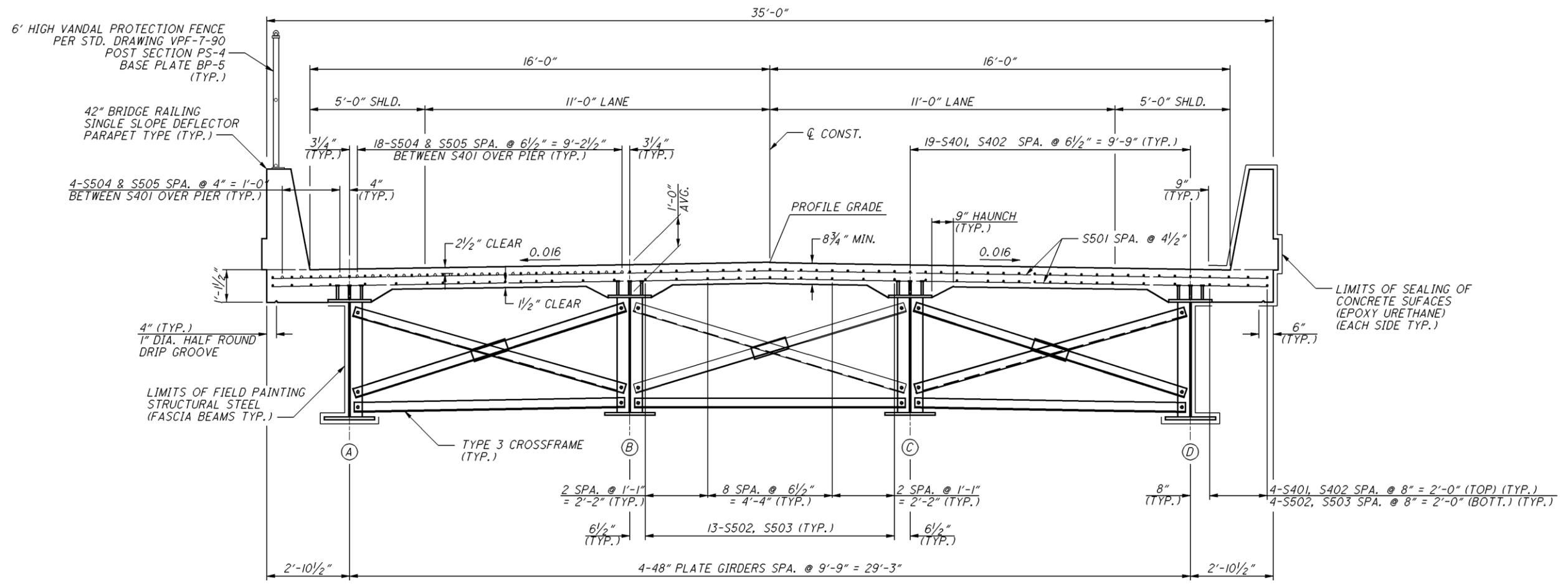
REVIEWED: EEC

PIER DETAILS
 BRIDGE NO. HEN-6-1173
 GLENWOOD AVE. OVER US-6/US-24

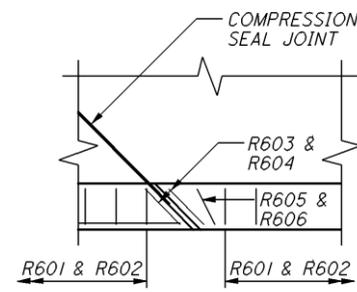
HEN-6-11.73
 PID No. 77730

10/16

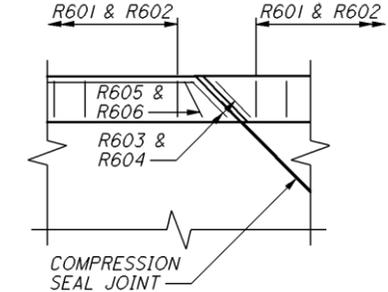
41
 49



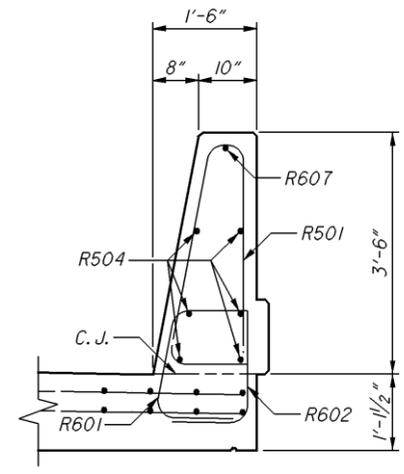
TRANSVERSE SECTION



DETAIL A

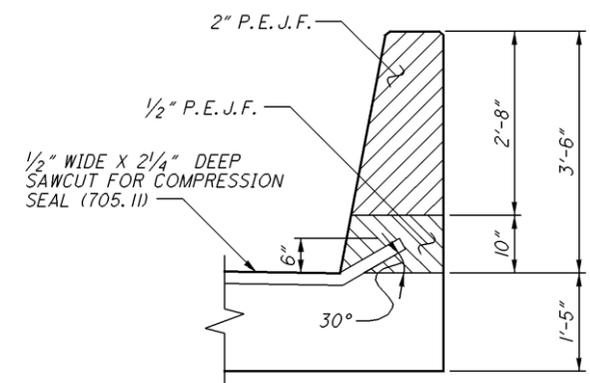


DETAIL B



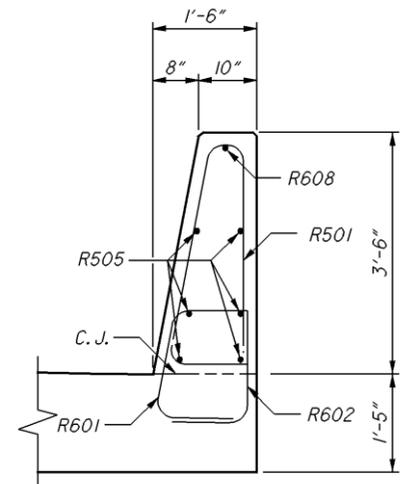
SECTION A-A

(FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-99)



SECTION B-B

ALL LABOR AND MATERIALS NECESSARY TO FURNISH AND INSTALL COMPRESSION SEAL & P.E.J.F. SHALL BE INCLUDED WITH ITEM 898 - QC/OA CONCRETE, CLASS OSC2, SUPERSTRUCTURE (APPROACH SLAB), 17", AS PER PLAN FOR PAYMENT.



SECTION C-C

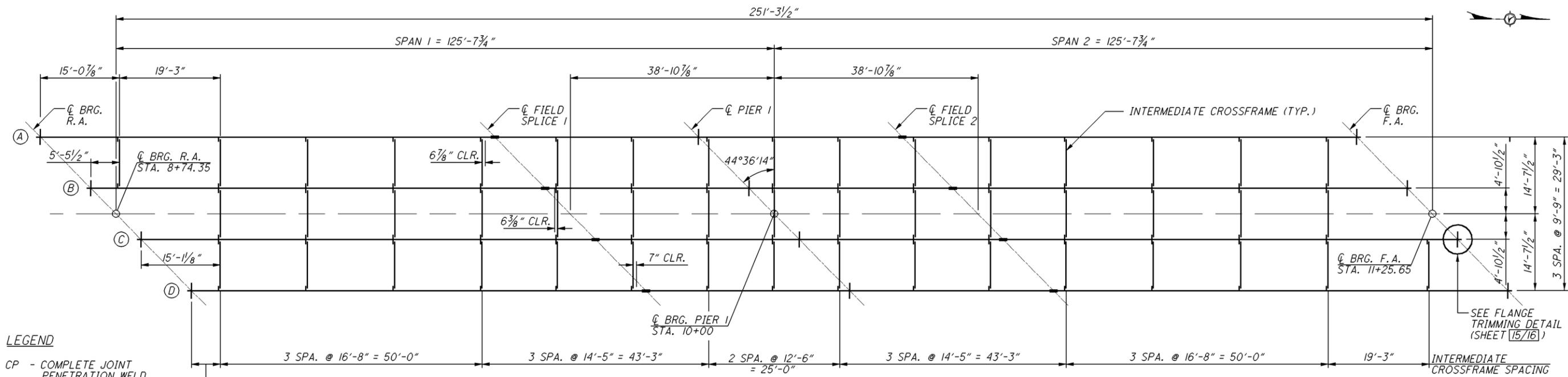
(FOR ADDITIONAL DETAILS SEE STD. DWG. SBR-1-99)

NOTES:

- DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS, AS SHOWN, PLUS THE QUANTITY OF CONCRETE THAT FORMS EACH GIRDER HAUNCH. THE ESTIMATE ASSUMES AN AVERAGE HAUNCH THICKNESS OF 3/4 INCHES AND A CONSTANT HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE OF 9 INCHES. DEVIATE FROM THIS HAUNCH THICKNESS AS NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. THE ALLOWABLE TOLERANCE FOR THE HAUNCH WIDTH OUTSIDE THE EDGE OF EACH GIRDER FLANGE IS ±3 INCHES. THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE GIRDER, FROM THE SURFACE OF THE DECK TO THE BOTTOM OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS. THE AREA OF ALL EMBEDDED STEEL PLATES HAS BEEN DEDUCTED FROM THE HAUNCH QUANTITY IN ACCORDANCE WITH 511.24.
- ERECTION BOLTS: THE HOLE DIAMETER IN THE CROSSFRAMES AND GIRDER STIFFENERS SHALL BE 3/16" LARGER THAN THE DIAMETER OF THE ERECTION BOLTS. ERECTION BOLTS SHALL BE HIGH STRENGTH BOLTS AND SHALL REMAIN IN PLACE. SUPPLY TWO HARDENED WASHERS WITH EACH HIGH STRENGTH BOLT. FULLY TORQUE THE BOLTS OR USE A LOCK WASHER IN ADDITION TO THE TWO HARDENED WASHERS. FURNISH ERECTION BOLTS AS PART OF ITEM 513.
- SEE SHEET 13/16 FOR SECTION & DETAIL LOCATIONS.

VANDAL FENCE ADDED AND SHOULD WIDTH REVISED TO 5'-0" BY ODOT DIST. TWO 10-27-07

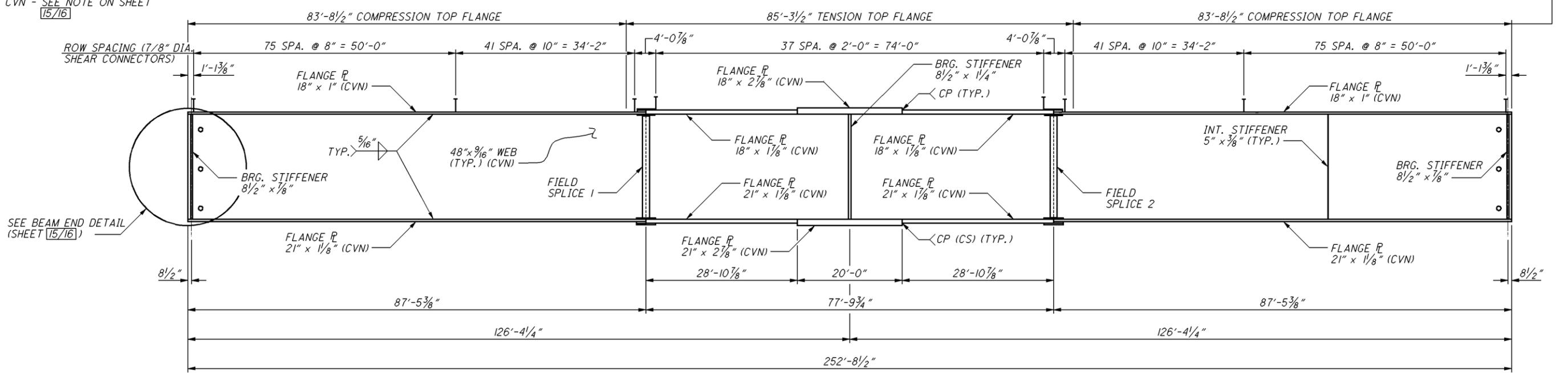
DESIGN AGENCY NORTHWEST CONSULTANTS, INC. 3220 CENTRAL PARK WEST TOLEDO, OHIO 43617 PHONE(419) 841-4704 FAX(419) 841-2879	DATE 06/29/07	DESIGNED SUF	DRAWN SUF	REVIEWED ECC	STRUCTURE FILE NUMBER 3500268
TRANSVERSE SECTION & BARRIER DETAILS					
BRIDGE NO. HEN-6-1173 GLENWOOD AVE. OVER US-6/US-24					
HEN-6-11.73 PID No. 77730					
11 / 16					
42 49					



LEGEND

- CP - COMPLETE JOINT PENETRATION WELD
- CS - BUTT WELD SUBJECT TO COMPRESSIVE STRESSES ONLY
- CVN - SEE NOTE ON SHEET 15/16

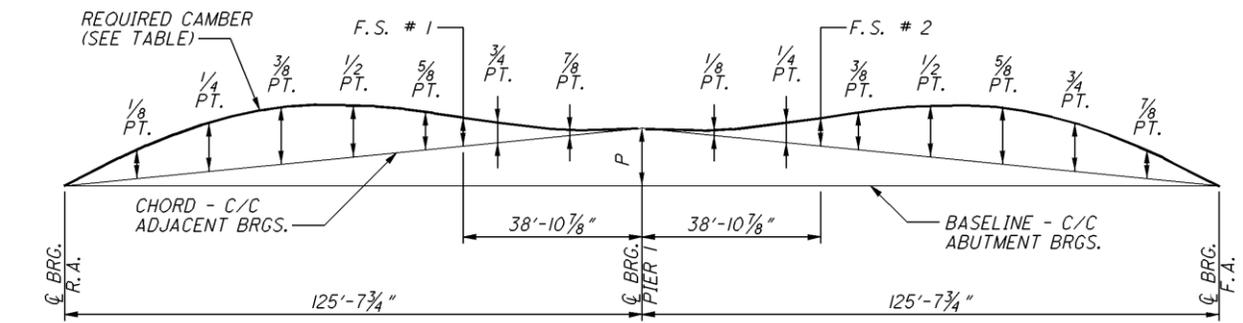
FRAMING PLAN



GIRDER ELEVATION

NOTE:

BACKUP MATERIAL FOR FULL PENETRATION WELDS (CP) SHALL BE REMOVED BY GRINDING IN THE DIRECTION OF THE MAIN STRESSES.

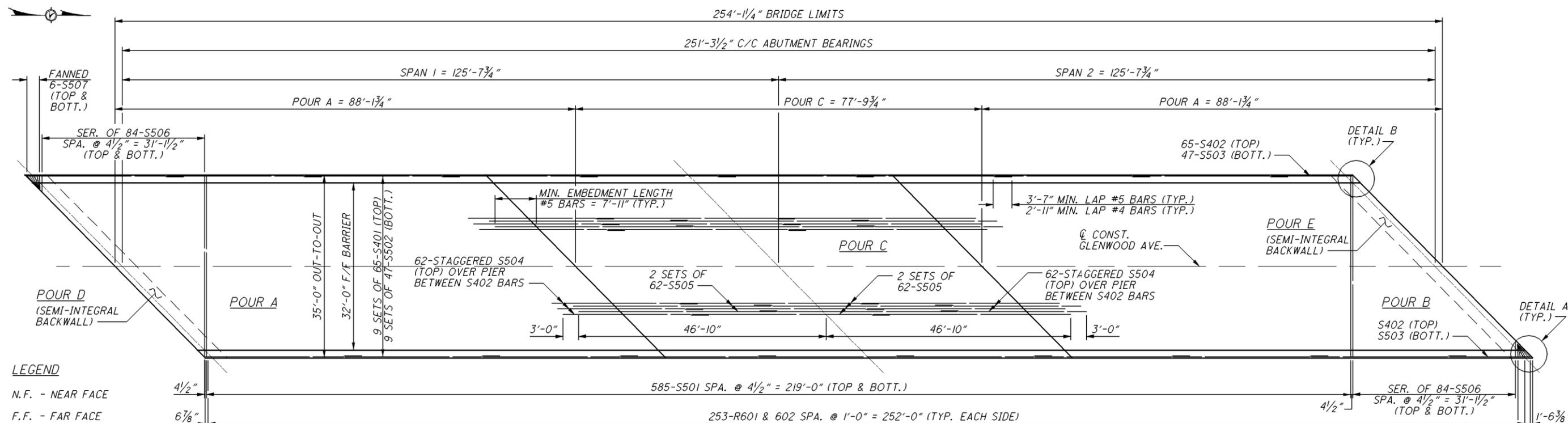


CAMBER DIAGRAM

GIRDER CHORD OFFSET				
BEAM DESIGNATION	A	B	C	D
P	1'-7 1/8"	1'-7 1/8"	1'-7 1/8"	1'-7 1/8"

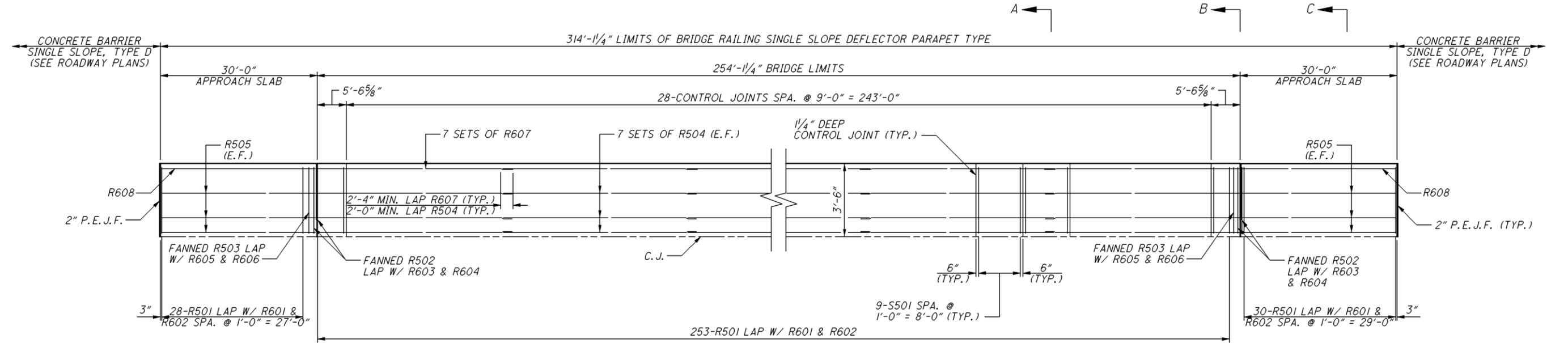
STRUCTURAL STEEL DEFLECTION & CAMBER TABLE																			
LOCATION	SPAN 1								SPAN 2										
	R.A.	1/8	1/4	3/8	1/2	5/8	FS#1	3/4	7/8	PIER	1/8	1/4	FS#2	3/8	1/2	5/8	3/4	7/8	F.A.
DEFLECTION DUE TO WEIGHT OF STEEL	0	5/16	9/16	5/8	5/8	7/16	5/16	1/4	1/8	0	1/8	1/4	5/16	7/16	5/8	5/8	9/16	5/16	0
DEFLECTION DUE TO REMAINING DEADLOAD	0	1/2	2 1/2	3	2 1/8	2 1/8	1 9/16	1 3/16	3/8	0	3/8	1 3/16	1 9/16	2 1/8	2 1/8	3	2 1/2	1 1/2	0
ADJUSTMENT REQUIRED FOR VERTICAL CURVE	0	1/16	1/8	3/16	1/4	5/16	5/16	1/4	1/4	0	1/4	1/4	5/16	5/16	1/4	3/16	1/8	1/16	0
REQUIRED SHOP CAMBER	0	1 1/8	3 3/16	3 3/16	3 3/4	2 7/8	2 3/16	1 11/16	3/4	0	3/4	1 11/16	2 3/16	2 7/8	3 3/4	3 13/16	3 3/16	1 7/8	0

DESIGN AGENCY: NORTHWEST CONSULTANTS, INC.
 3220 CENTRAL PARK WEST
 TOLEDO, OHIO 43617
 PHONE: (419) 841-4704 FAX: (419) 841-2979
 DATE: 06/29/07
 REVIEWED: EEC
 STRUCTURE FILE NUMBER: 3500268
 DRAWN: SJF
 CHECKED: JBD
 DESIGNED: SJF
 SUPERSTRUCTURE DETAILS
 BRIDGE NO. HEN-6-1173
 GLENWOOD AVE. OVER US-6/US-24
HEN-6-11.73
PID No. 77730
 12 / 16
 43
 49



LEGEND

N.F. - NEAR FACE
 F.F. - FAR FACE
 E.F. - EACH FACE
 P.E.J.F. - PREFORMED EXPANSION JOINT FILLER



SCREED ELEVATIONS

LOCATION	SPAN 2										SPAN 2									
	R.A.	1/8	1/4	3/8	1/2	5/8	FS #1	3/4	7/8	PIER	1/8	1/4	FS #2	3/8	1/2	5/8	3/4	7/8	F.A.	
LT. GUTTER	706.24	706.87	707.40	707.80	708.09	708.27	708.33	708.37	708.43	708.49	708.54	708.60	708.61	708.61	708.54	708.37	708.07	707.66	707.14	
BEAM "A"	706.31	706.93	707.45	707.85	708.14	708.32	708.37	708.41	708.46	708.51	708.57	708.61	708.63	708.62	708.55	708.37	708.07	707.65	707.13	
BEAM "B"	706.76	707.35	707.84	708.20	708.45	708.60	708.63	708.65	708.67	708.69	708.71	708.72	708.72	708.70	708.59	708.37	708.04	707.59	707.03	
CROWLINE	706.98	707.55	708.02	708.37	708.60	708.73	708.76	708.77	708.77	708.77	708.77	708.77	708.76	708.73	708.60	708.37	708.02	707.55	706.98	
BEAM "C"	707.03	707.59	708.04	708.37	708.59	708.70	708.72	708.72	708.71	708.69	708.67	708.65	708.63	708.60	708.45	708.20	707.84	707.35	706.76	
BEAM "D"	707.13	707.65	708.07	708.37	708.55	708.62	708.63	708.61	708.57	708.51	708.46	708.41	708.37	708.32	708.14	707.85	707.45	706.93	706.31	
RT. GUTTER	707.14	707.66	708.07	708.37	708.54	708.61	708.61	708.60	708.54	708.49	708.43	708.37	708.33	708.27	708.09	707.80	707.40	706.87	706.24	

- NOTES:**
- SCREED ELEVATIONS SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTIONS.
 - BRIDGE DECK PLACEMENT: TO MINIMIZE DIFFERENTIAL BEAM DEFLECTIONS DURING DECK PLACEMENT THE CONTRACTOR SHALL BE REQUIRED TO SKEW THE DECK FINISHING MACHINE TO WITHIN 5° OF THE BRIDGE SKEW.
 - UPLIFT: IN ORDER TO AVOID GIRDER UPLIFT AT THE END SUPPORT THE CONTRACTOR SHALL BE REQUIRED TO COMPLETE THE DECK POUR IN THE FOLLOWING SEQUENCE: A, B, C, D, & E. ALTERNATIVE METHODS MAY BE SUBSTITUTED AS APPROVED BY THE ENGINEER.
 - PARAPET REINFORCING SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH SAW CUT JOINT.

DESIGN AGENCY: NORTHWEST CONSULTANTS, INC.
 3220 CENTRAL PARK WEST
 TOLEDO, OHIO 43617
 PHONE (419) 841-4704 FAX (419) 841-2878

DATE: 06/29/07
 REVIEWED: EEC
 STRUCTURE FILE NUMBER: 3500268

DESIGNED: SUJ
 CHECKED: JBD

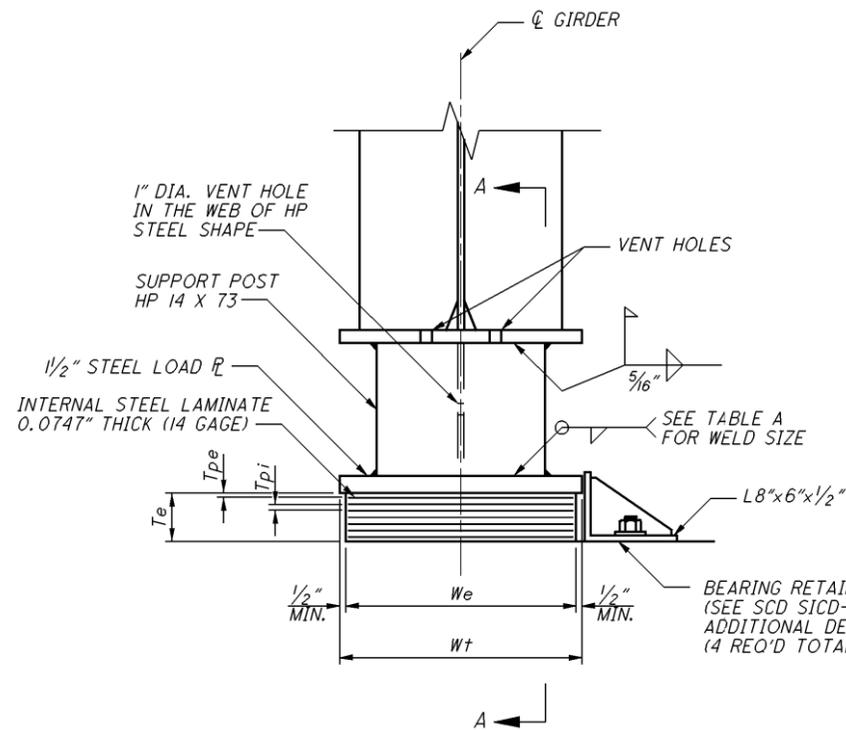
DRAWN: SUJ
 REVISED:

BRIDGE NO. HEN-6-1173
 GLENWOOD AVE. OVER US-6/US-24

HEN-6-11.73
PID No. 77730

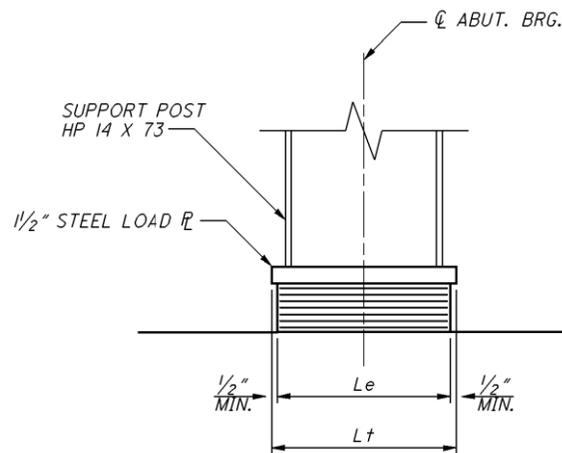
13 / 16

44
 49

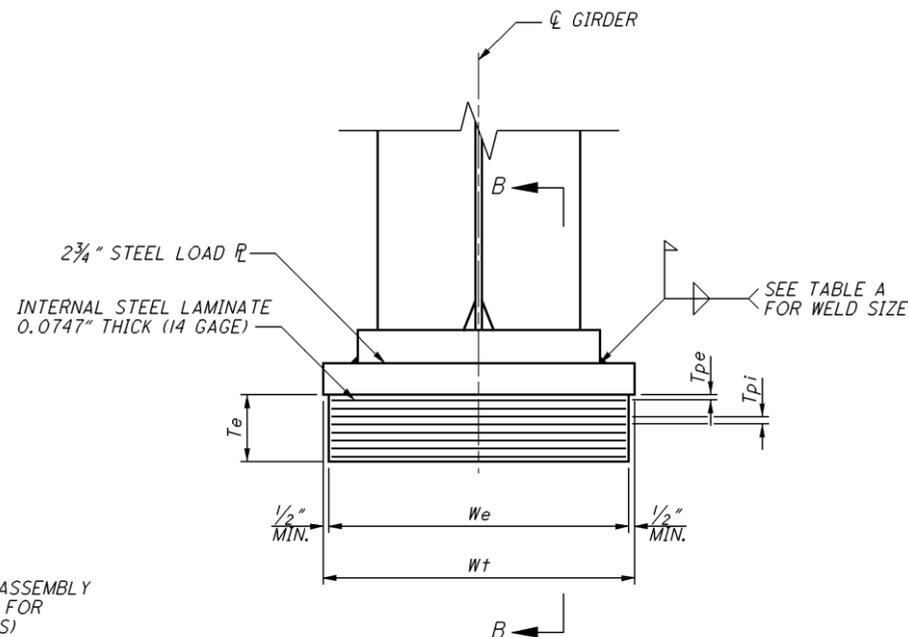


50 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

(ABUTMENTS)

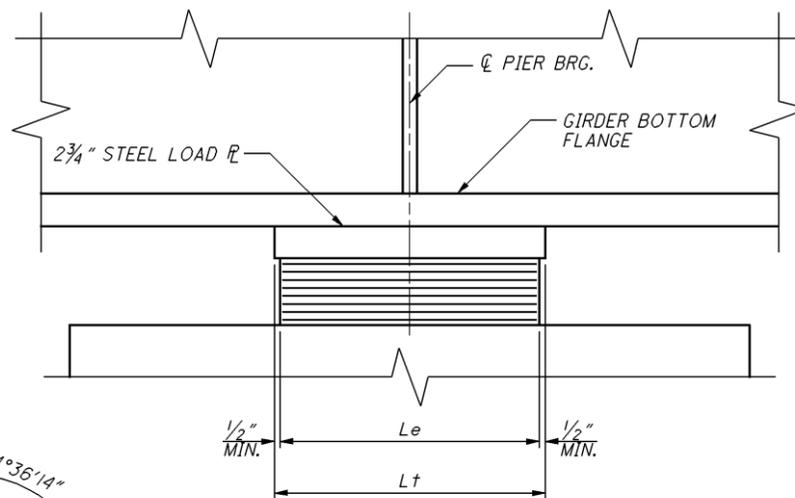


SECTION A-A



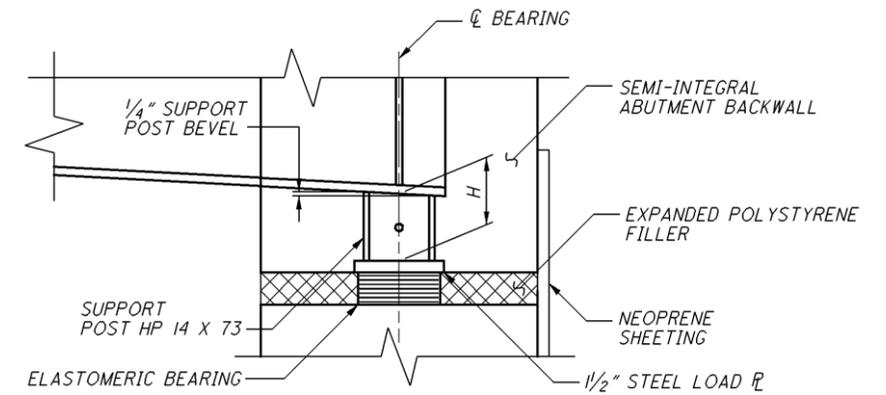
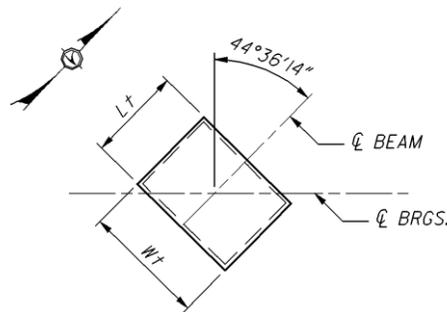
50 DUROMETER LAMINATED ELASTOMERIC EXPANSION BEARING

(PIER)



SECTION B-B

BEARING ORIENTATION PLAN



BEAM SUPPORT DETAILS

LOCATION	REAR ABUTMENT	FORWARD ABUTMENT
GIRDER A	6 1/4"	1'-4 1/4"
GIRDER B	11 3/4"	1'-3"
GIRDER C	1'-3"	11 3/4"
GIRDER D	1'-4 1/4"	6 1/4"

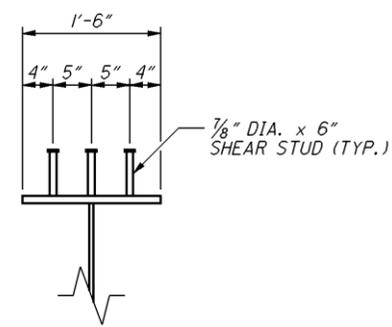
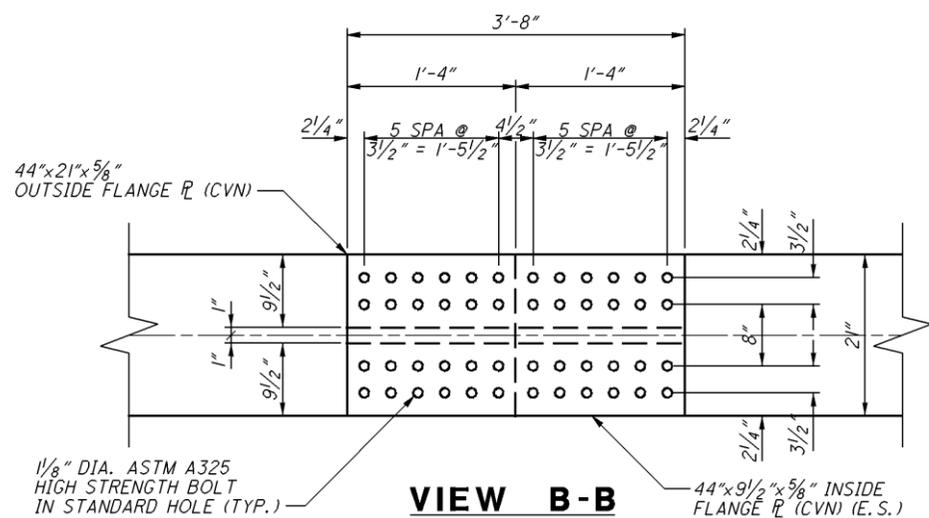
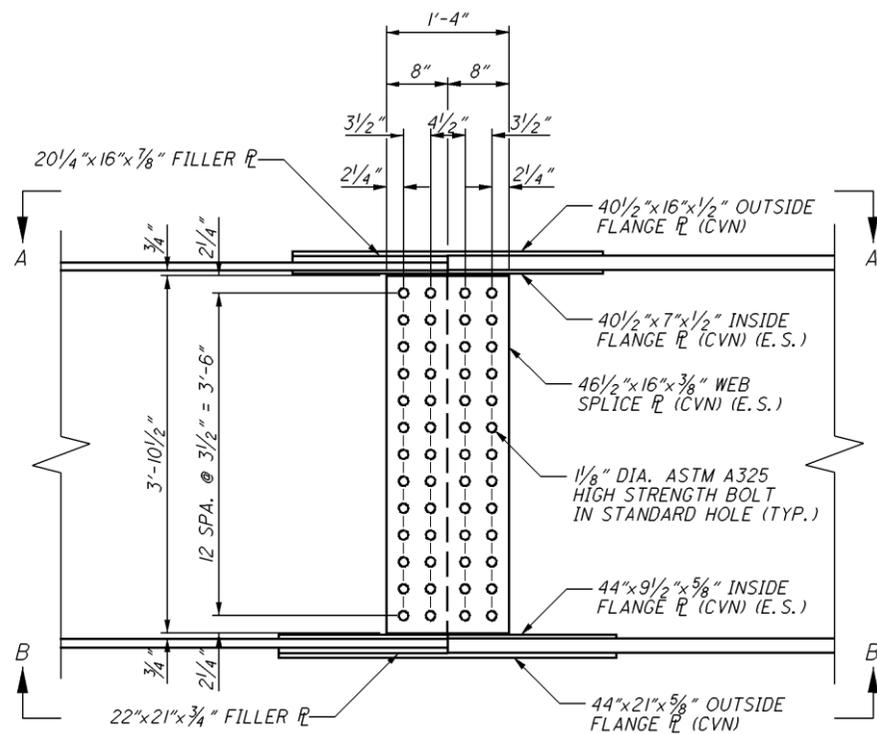
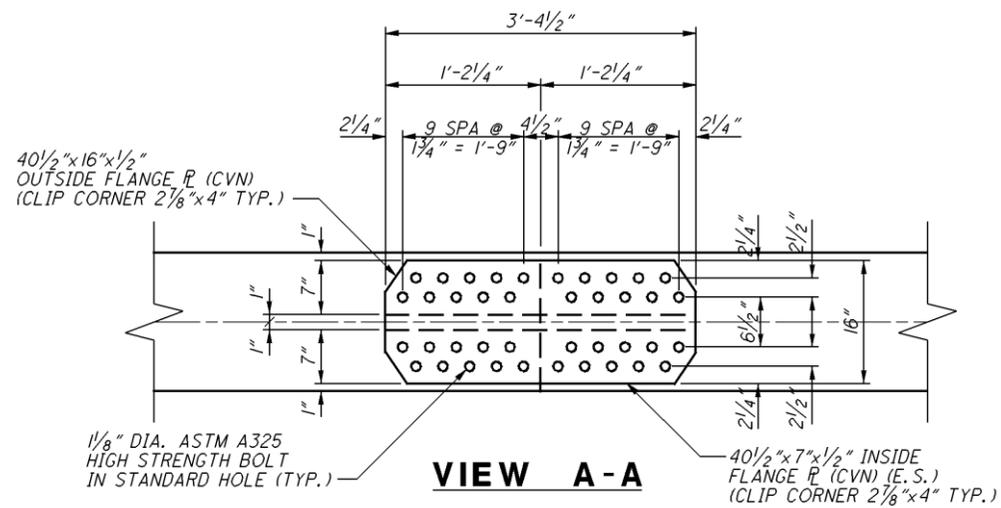
NOTES:

1. ASTM A709 GRADE 50W STEEL SHALL BE USED FOR ALL LOAD PLATES. LOAD PLATES SHALL BE COATED IN A SIMILAR MANNER AS THE REST OF THE STRUCTURAL STEEL. THE LOAD PLATE SHALL BE VULCANIZED BONDED TO THE LAMINATED ELASTOMERIC PAD DURING THE MOLDING PROCESS.
2. BASIS OF PAYMENT: THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO FURNISH AND INSTALL THE LAMINATED ELASTOMERIC BEARINGS, SUPPORT POSTS, STEEL LOAD PLATES, AND BEARING RETAINERS. PAYMENT WILL MADE AT THE CONTRACT PRICE FOR ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE).
3. PRIME COAT FASCIA BEAM PIER BEARING LOAD PLATES AS PER ITEM 514. INCLUDE WITH ITEM 516 - ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) FOR PAYMENT.
4. ELASTOMERIC BEARINGS: THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION 1, SECTION 14.6.6 (METHOD A) OF THE AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES.
5. WELDING: CONTROL WELDING SO THAT THE PLATE TEMPERATURE AT THE ELASTOMER BONDED SURFACE DOES NOT EXCEED 300°F AS DETERMINED BY USE OF PYROMETRIC STICKS OR OTHER TEMPERATURE MONITORING DEVICES.
6. BEARING REPOSITIONING: IF THE STEEL IS ERECTED AT AN AMBIENT TEMPERATURE HIGHER THAN 80°F OR LOWER THAN 40°F AND THE BEARING SHEAR DEFLECTION EXCEEDS 1/8 OF THE BEARING HEIGHT AT 60°F (±) 10°F, RAISE THE BEAMS OR GIRDERS TO ALLOW THE BEARINGS TO RETURN TO THEIR UNDEFORMED SHAPE AT 60°F (±) 10°F.
7. FOR BEARING RETAINER DETAILS SEE SHEET 9/16.

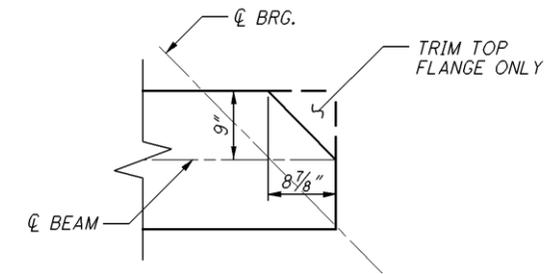
TABLE A

LAMINATED ELASTOMERIC BEARING DATA

BEARING LOCATION	BEARING TYPE	NO. REQUIRED	DEAD LOAD (KIPS)	LIVE LOAD (KIPS)	TOTAL LOAD (DL+LL) KIPS	Le (IN)	We (IN)	Tpi (IN)	NO. OF Tpi	Tpe (IN) (2 EACH)	NO. OF INTERNAL STEEL LAMINATES (14 GAGE)	Te (IN)	STEEL LOAD PLATE (IN)		FILLET WELD SIZE (IN)
													Lt	Wt	
R. A.	EXPANSION	4	164	77	241	15	20	0.495	6	0.347	7	4 3/16	16	21	5/16"
PIER 1	EXPANSION	4	393	144	537	22 1/2	26	0.620	7	0.434	8	5 13/16	23 1/2	27	5/16"
F. A.	EXPANSION	4	164	77	241	15	20	0.495	6	0.347	7	4 3/16	16	21	5/16"

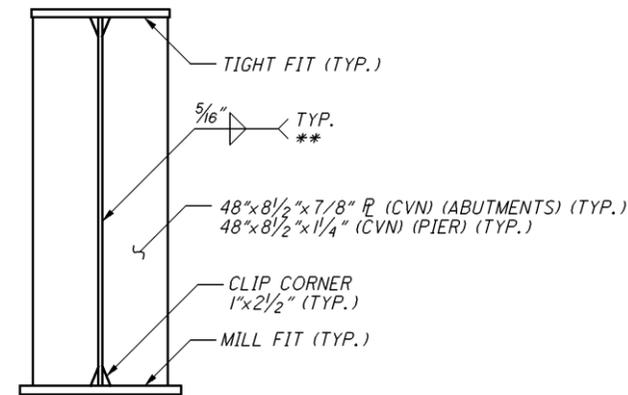


SHEAR STUD CONNECTOR DETAIL



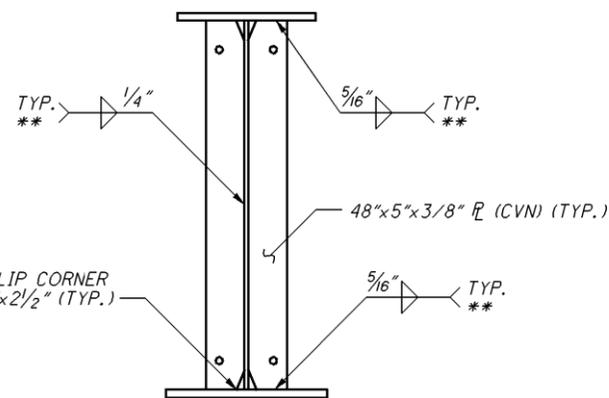
FLANGE TRIMMING DETAIL

TYPICAL ALL GIRDERS @ ABUTMENTS



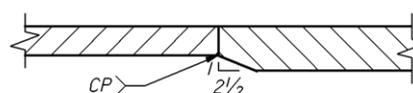
BEARING STIFFENER

** - STOP WELDS 1/2" ± 1/4" SHORT OF CORNER CLIPS

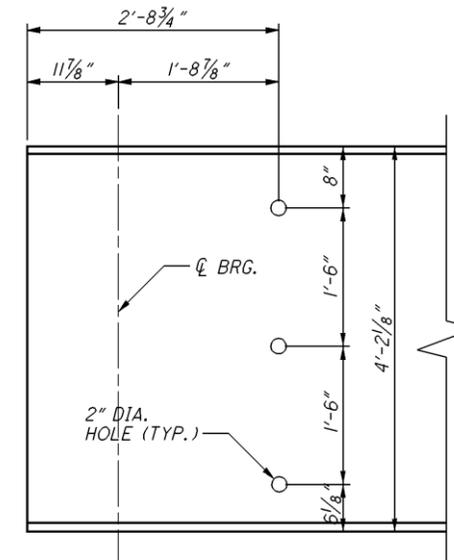


INTERMEDIATE STIFFENER

** - STOP FLANGE WELDS 1/4" ± 1/8" SHORT OF CORNER CLIPS
STOP WEB WELDS 1/2" ± 1/4" SHORT OF CORNER CLIPS
(FOR ADDITIONAL DETAILS SEE SCD GSD-1-96)



FLANGE PLATE TRANSITION DETAIL



BEAM END DETAIL

NOTES:

- ES DENOTES "EACH SIDE".
- CVN: WHERE A SHAPE OR PLATE IS DESIGNATED (CVN), FURNISH MATERIAL THAT MEETS THE MINIMUM NOTCH TOUGHNESS REQUIREMENTS AS SPECIFIED IN 711.01.
- HIGH STRENGTH BOLTS SHALL BE 1/8" DIAMETER A325 UNLESS OTHERWISE NOTED. FASCIA BEAMS SHALL USE A325 GALVANIZED BOLTS. NON-PAINTED BEAMS SHALL USE A325 TYPE III BOLTS.
- WELD ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". DO NOT WELD ATTACHMENTS TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGES SHALL BE AT LEAST 1" FROM EDGE OF FLANGE, BE NO MORE THAN 2" LONG, AND BE AT LEAST 1/4" FOR THICKNESSES UP TO 3/4" OR 5/16" FOR GREATER THAN 3/4" THICK. SEE SHEET [12/16] FOR ADDITIONAL DETAILS.

REINFORCING STEEL LIST

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS				
	REAR	FWD	TOTAL				A	B	C	D	INC.
PIER											
SP401			3	16'-1"	710	1					
P501			60	7'-8"	480	STR					
P502			8	26'-3"	219	STR					
P503			4	24'-2"	101	STR					
P504			6	8'-5"	53	5	2'-9"	5'-7"	1'-4"		
P505			83	10'-1"	873	4	3'-2"	3'-7"			
P506			80	7'-9"	647	4	10"	3'-7"			
P507			2 SER. OF 4	11'-3" TO 12'-7"	99	3	3'-2"	2'-2" TO 2'-10"			2 3/4"
P508			2 SER. OF 4	6'-7" TO 7'-11"	62	3	10"	2'-2" TO 2'-10"			2 3/4"
P509			2 SER. OF 9	13'-1" TO 14'-1"	256	3	3'-2"	3'-1" TO 3'-7"			3/4"
P510			2 SER. OF 9	8'-5" TO 9'-5"	168	3	10"	3'-1" TO 3'-7"			3/4"
P801			60	9'-4"	1495	9	7'-8"				
P802			39	8'-10"	920	2	1'-4"	7'-8"			
P803			39	17'-8"	1840	STR					
PI001			9	22'-8"	878	2	2'-2"	20'-10"			
PI002			9	38'-1"	1475	STR					
PI003			18	23'-8"	1833	STR					
				TOTAL	12109						
ABUTMENTS											
A501	30	30	60	31'-0"	1940	STR					
A502	116	116	232	17'-1"	4134	3	5'-8"	2'-7"			
A503	73	73	146	16'-3"	2475	3	2'-8"	5'-2"			
A504	17	17	34	17'-11"	635	4	2'-8"	7'-9"			
A505	SER. OF 4	SER. OF 4	2 SER. OF 4	20'-5" TO 17'-5"	158	3	2'-8"	7'-3" TO 5'-9"			6"
A506	SER. OF 3	SER. OF 3	2 SER. OF 3	21'-1" TO 18'-1"	123	3	2'-8"	7'-7" TO 6'-1"			9"
A507	78	78	156	9'-11"	1614	4	2'-8"	3'-9"			
A508	39	39	78	6'-9"	549	4	1'-10"	2'-7"			
A509	18	18	36	11'-0"	413	4	3'-9"	3'-9"			
A510	9	9	18	7'-5"	139	4	2'-6"	2'-7"			
A511	6	6	12	10'-5"	130	4	3'-2"	3'-9"			
A512	3	3	6	7'-1"	44	4	2'-2"	2'-7"			
A513	SER. OF 9	SER. OF 9	2 SER. OF 9	15'-3" TO 7'-3"	212	4	2'-8"	6'-5" TO 2'-5"			6"
A514	SER. OF 4	SER. OF 4	2 SER. OF 4	22'-3" TO 10'-3"	136	STR					4'-0"
A515	SER. OF 4	SER. OF 4	2 SER. OF 4	19'-7" TO 7'-7"	114	STR					4'-0"
A516	1	1	2	22'-5"	42	5	4'-7"	16'-10"	6'-3"		
A517	1	1	2	19'-10"	52	5	1'-11"	16'-10"	6'-3"		
A518	SER. OF 7	SER. OF 7	2 SER. OF 7	16'-11" TO 8'-5"	186	4	2'-8"	7'-3" TO 3'-0"			8 1/2"
A519	SER. OF 5	SER. OF 5	2 SER. OF 5	14'-8" TO 3'-8"	96	STR					2'-9"
A520	SER. OF 5	SER. OF 5	2 SER. OF 5	17'-4" TO 6'-4"	124	STR					2'-9"
A521	1	1	2	16'-0"	33	5	11"	13'-4"	7'-2"		
A522	1	1	2	18'-8"	39	5	3'-7"	13'-4"	7'-2"		
A523	3	3	6	16'-3"	102	4	3'-6"	6'-6"			
A524	3	3	6	18'-1"	113	4	3'-6"	7'-5"			

REINFORCING STEEL LIST

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS				
	REAR	FWD	TOTAL				A	B	C	D	INC.
ABUTMENTS (CONT.)											
A801	24	24	48	32'-10"	4208	STR					
A802	28	28	56	27'-3"	4075	STR					
D803	24	24	48	5'-7"	716	8					
				TOTAL	22602						
SUPERSTRUCTURE											
S401			585	30'-0"	11723	STR					
S402			65	10'-0"	434	STR					
S501			1170	34'-6"	42101	STR					
S502			423	30'-0"	13236	STR					
S503			47	16'-0"	784	STR					
S504			62	27'-9"	1795	STR					
S505			124	38'-1"	4925	STR					
S506			4 SER. OF 84	2'-11" TO 34'-6"	6548	STR					4 9/16"
S507			24	3'-0"	75	STR					
R501			622	7'-5"	4812	7	1'-1"				
R502			8	7'-10"	65	7	1'-6"				
R503			4	7'-7"	32	7	1'-3"				
R504			84	38'-0"	3329	STR					
R505			24	29'-6"	739	STR					
R601			622	3'-8"	3426	6	1'-1"	1'-8"			
R602			622	2'-7"	2413	2	1'-1"	1'-8"			
R603			8	4'-1"	49	6	1'-6"	1'-8"			
R604			8	3'-0"	36	2	1'-6"	1'-8"			
R605			4	3'-10"	23	6	1'-3"	1'-8"			
R606			4	2'-9"	17	2	1'-3"	1'-8"			
R607			14	38'-3"	804	STR					
R608			4	29'-6"	177	STR					
				TOTAL	97543						

NOTES:

- 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 WHEN FOUR DIGITS ARE USED, INDICATES THE BAR SIZE NUMBER. FOR EXAMPLE, P601 IS A No. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT UNLESS OTHERWISE NOTED. "R" INDICATES INSIDE RADIUS, UNLESS OTHERWISE NOTED. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF THE BAR.
- ALL REINFORCING STEEL TO BE EPOXY COATED.
- REBAR DIMENSIONS SHOWN ARE FOR INFORMATION PURPOSES ONLY. IF THE REINFORCING STEEL LIST IS USED, IT SHALL BE VERIFIED BY THE CONTRACTOR. ANY REVISIONS IN THE REINFORCING STEEL SHALL NOT BE A REASON FOR ADJUSTMENT IN THE BID PRICE FOR REINFORCING STEEL.

BEND DIAGRAMS

