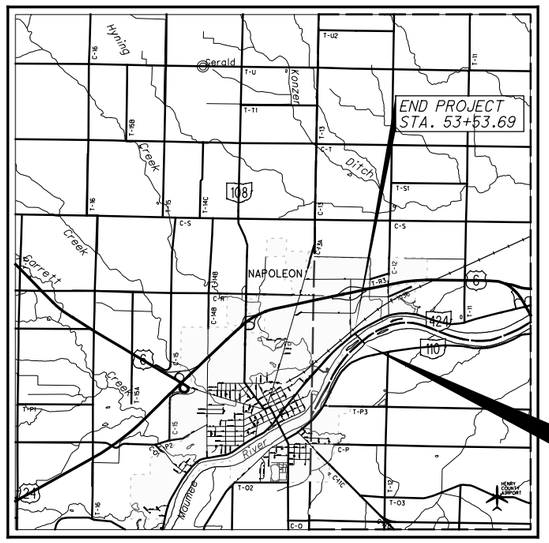

LOCATION MAP

LATITUDE: 41°24'17" LONGITUDE: 84°06'14"

SCALE IN MILES

0 1 2 3 4

N

PORTION TO BE IMPROVED _____

INTERSTATE HIGHWAY _____

FEDERAL ROUTES _____

STATE ROUTES _____

COUNTY & TOWNSHIP ROADS _____

OTHER ROADS _____

DESIGN DESIGNATION

SEE SCHEMATIC SHEET 2

NHS PROJECT _____ NO

DESIGN EXCEPTIONS

NONE

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES TWO WORKING DAYS
BEFORE YOU DIG

OHIO Utilities Protection SERVICE

Call Before You Dig
1-800-362-2764

(Non-members must be called directly)

OIL & GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
1-800-925-0988

PLAN PREPARED BY:

Mannik Smith GROUP
TECHNICAL SKILL. CREATIVE SPIRIT.
www.MannikSmithGroup.com

ENGINEERS SEAL:

SIGNED: _____
DATE: _____

ENGINEERS SEAL:

SIGNED: _____
DATE: _____

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

HEN-NEW BRIDGE

CITY OF NAPOLEON

HARRISON TOWNSHIP

HENRY COUNTY

INDEX OF SHEETS:

PROJECT DESCRIPTION

EXTENSION OF INDUSTRIAL DRIVE OVER THE MAUMEE RIVER. THE PROJECT INCLUDE THE CONSTRUCTION OF A NEW STRUCTURE, NEW ROADWAY FROM RIVERVIEW AVE. TO S.R. 110, THE RECONSTRUCTION OF INDUSTRIAL DR., RIVERVIEW AVE. AND S.R. 110 AND TWO ROUNDABOUTS.

PROJECT EARTH DISTURBED AREA: 10.50 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 1.80 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA: 12.30 ACRES

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE PART TIME CLOSING OF THE HIGHWAY TO TRAFFIC, AS NOTED ON SHEET 15. DURING WHICH TIME DETOURS WILL BE PROVIDED AS SHOWN HEREIN. PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

2016 SPECIFICATIONS

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

STAGE 3 SUBMITTAL
APRIL 22, 2016

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	1/15/16	MGS-1.1	7/19/13	PSID-1-13	1/16/15	TC-65.11	7/18/14			WATERWAY PERMIT
BP-4.1	7/19/13	MGS-2.1	7/19/13	SBR-1-13	1/7/14	TC-71.10	1/17/14	832	1/17/14	TBD
BP-5.1	7/19/13	MGS-3.1	7/18/14					846	4/17/15	
BP-7.1	7/18/14	MGS-3.2	1/18/13	MT-101.60	7/19/13	HL-10.12	1/17/14	902	12/31/12	
		MGS-4.2	7/19/13	MT-101.70	1/17/14	HL-20.11	1/16/15			
CB-1.1	1/15/16	MGS-4.3	1/18/13	MT-101.90	7/17/15	HL-30.11	1/16/15			
CB-1.2	1/15/16	MGS-5.3	7/19/13	MT-105.10	7/19/13	HL-30.21	1/17/14			
CB-2.1	1/15/16	MGS-6.1	7/19/13			HL-30.22	1/17/14			
CB-2.2	1/15/16			TC-41.20	10/18/13	HL-40.11	1/17/14			
		RM-1.1	7/18/14	TC-41.30	10/18/13					
DM-1.1	1/15/16	RM-4.2	4/18/14	TC-42.20	10/18/13					
DM-1.2	1/18/13			TC-52.10	10/18/13					
DM-4.1	1/15/16	AS-1-15	7/17/15	TC-52.20	7/18/14					
		AS-2-15	7/17/15	TC-61.30	7/18/14					
HW-2.1	1/15/16	BR-2-98	7/20/12	TC-64.10	7/17/15					
HW-2.2	1/15/16	EXJ-6-06	1/18/13	TC-65.10	1/17/14					

APPROVED _____
DATE _____ DISTRICT DEPUTY DIRECTOR

APPROVED _____
DATE _____ DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO. G020 (069)

PID NO. 22984

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
MICHIGAN SOUTHERN RAILROAD

HEN-NEW BRIDGE

W:\Projects\Projects F-JNH2530002\22984\roadway\sheets\22984GT001.dgn 4/22/2016 11:52:01 AM svdentin

S.R. 110
CURVE DATA
P.I. STA. 97+48.28
Δ = 21° 40′ 09″ (RT)
Dc = 2° 00′ 00″
R = 2,864.80′
T = 548.28′
L = 1,083.46′
E = 51.99′
emax = 0.045

S.R. 110
CURVE DATA
P.I. STA. 103+94.64
Δ = 20° 59′ 50″ (LT)
Dc = 9° 32′ 57″
R = 600.00′
T = 111.19′
L = 219.88′
E = 10.22′
emax = NC

S.R. 110
EX. CURVE DATA
P.I.STA. 90+33.37
Δ = 49° 52′ 00″ (RT)
Dc = 2° 00′ 00″
R = 2,864.80′
T = 1,331.82′
L = 2,493.34′
E = 294.45′
emax=0.045

S.R. 110
CURVE DATA
P.I. STA. 105+83.15
Δ = 18° 08′ 21″ (RT)
Dc = 11° 27′ 33″
R = 500.00′
T = 79.81′
L = 158.29′
E = 6.33′
emax = NC

S.R. 110
CURVE DATA
P.I. STA. 107+61.70
Δ = 11° 25′ 43″ (RT)
Dc = 5° 43′ 46″
R = 1,000.00′
T = 100.06′
L = 199.47′
E = 4.99′
emax = NC

S.R. 110
CURVE DATA
P.I. STA. 111+03.62
Δ = 10° 20′ 30″ (LT)
Dc = 2° 08′ 16″
R = 2,680.00′
T = 242.53′
L = 483.74′
E = 10.95′
emax = NC

INDUSTRIAL DR.
CURVE DATA
P.I. STA. 36+63.17
Δ = 22° 55′ 17″ (RT)
Dc = 7° 23′ 35″
R = 775.00′
T = 157.12′
L = 310.04′
E = 15.77′
emax = NC

INDUSTRIAL DR.
CURVE DATA
P.I.STA. 33+37.88
Δ = 52° 05′ 04″ (LT)
Dc = 14° 19′ 26″
R = 400.00′
T = 195.46′
L = 363.62′
E = 45.20′
emax = NC

INDUSTRIAL DR.
CURVE DATA
P.I.STA. 52+17.04
Δ = 43° 25′ 15″ (RT)
Dc = 16° 22′ 13″
R = 350.00′
T = 139.36′
L = 265.24′
E = 26.72′
emax = NC

RIVERVIEW AVE.
EX. CURVE DATA
P.I. STA. 596+98.18
Δ = 12° 59′ 05″ (RT)
Dc = 1° 00′ 00″
R = 5,729.16′
T = 651.98′
L = 1,298.38′
E = 36.98′
emax=0.025

UNCONTROLLED FILL AREA TO BE REMOVED AND REPLACED

BEGIN WORK STA. 99+87.94
S.R. 110
℄ R/W S.R. 110
10″ OHIO GAS H.P. GAS LINE
PT STA. 101+94.89
PRC STA. 102+83.46
69 kV TOLEDO EDISON TRANSMISSION LINE
PC STA. 31+42.43
PRC STA. 105+03.34
℄ R/W S.R. 110
PCC STA. 106+61.63
PRC STA. 108+61.10
LANDSCAPED AREA
PRC STA. 35+06.04
PT STA. 38+16.09
S.R. 110
STA. 32+01.52 ℄ R/W & CONST. INDUSTRIAL DR.= STA. 106+42.53 ℄ CONST S.R. 110
PC STA. 31+42.43 ℄ R/W & CONST. INDUSTRIAL DR.= STA. 106+40.00 ℄ EX. S.R. 110
℄ CONST. S.R. 110
GO20 (069)
BEGIN PROJECT STA. 31+42.43 S.L.M. 0.00
BEGIN WORK STA. 31+42.43
END WORK STA. 113+91.64
PT STA. 113+44.83 BK= STA. 113+34.33 AHD
CULTIVATED
HARRISON TOWNSHIP
CITY OF NAPOLEON
℄ R/W & CONST. INDUSTRIAL DR.
INDUSTRIAL DR.
S 42° 27′ 08″ W 45
STRUCTURE NO HEN-INDUSTRIAL DR. - 0000
CORPORATION LIMIT STA. 43+11.18
WETLAND AREA
MAUMEE RIVER
CULTIVATED

WETLAND AREA
BEGIN WORK STA. 586+53.26
UNCONTROLLED FILL AREA
℄ R/W & CONST. RIVERVIEW AVE.
N 48° 55′ 07″ E
MAUMEE RIVER
PC STA. 590+46.19
STA. 50+59.41 ℄ R/W & CONST. INDUSTRIAL DR.= STA. 593+78.62 ℄ R/W & CONST. RIVERVIEW AVE.
UNCONTROLLED AREA WITHIN CONST. LIMIT
EX. ℄ R/W INDUSTRIAL DR.
Ex R/W
RESIDENTIAL
END PROJECT STA. 53+53.69 S.L.M. 0.42
GO20 (069)
END WORK STA. 53+64.45
RAILROAD STA. 53+63.19
12″ TRANSCANAD H.P. GAS LINE
PT STA. 53+42.92 BK= STA. 53+42.92 AHD
PC STA. 50+17.68
LANDSCAPED AREA
END WORK STA. 598+95.61
RIVERVIEW AVE.
MICHIGAN SOUTHERN RAILROAD
MAUMEE RIVER
PT STA. 603+44.57

DESIGN DESIGNATION

	INDUSTRIAL DRIVE	RIVERVIEW AVENUE	S.R. 110
CURRENT ADT (2015)	7390	3230	5740
DESIGN YEAR ADT (2035)	8010	3510	6230
DESIGN HOURLY VOLUME (2035)	910	380	700
DIRECTIONAL DISTRIBUTION	55%	50%	50%
TRUCKS (24 HOUR B&C)	9%	12%	6%
T_D	5%	7%	14%
DESIGN SPEED	40	55	60
LEGAL SPEED	35	50	55
DESIGN FUNCTIONAL CLASSIFICATION:	URBAN COLLECTOR	URBAN MINOR ARTERIAL	URBAN MINOR ARTERIAL

HORIZONTAL SCALE IN FEET
0 50 100 200

SCHEMATIC PLAN

HEN-NEW BRIDGE

2
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CALCULATED | CHECKED

BENCHMARKS AND HORIZONTAL CONTROL

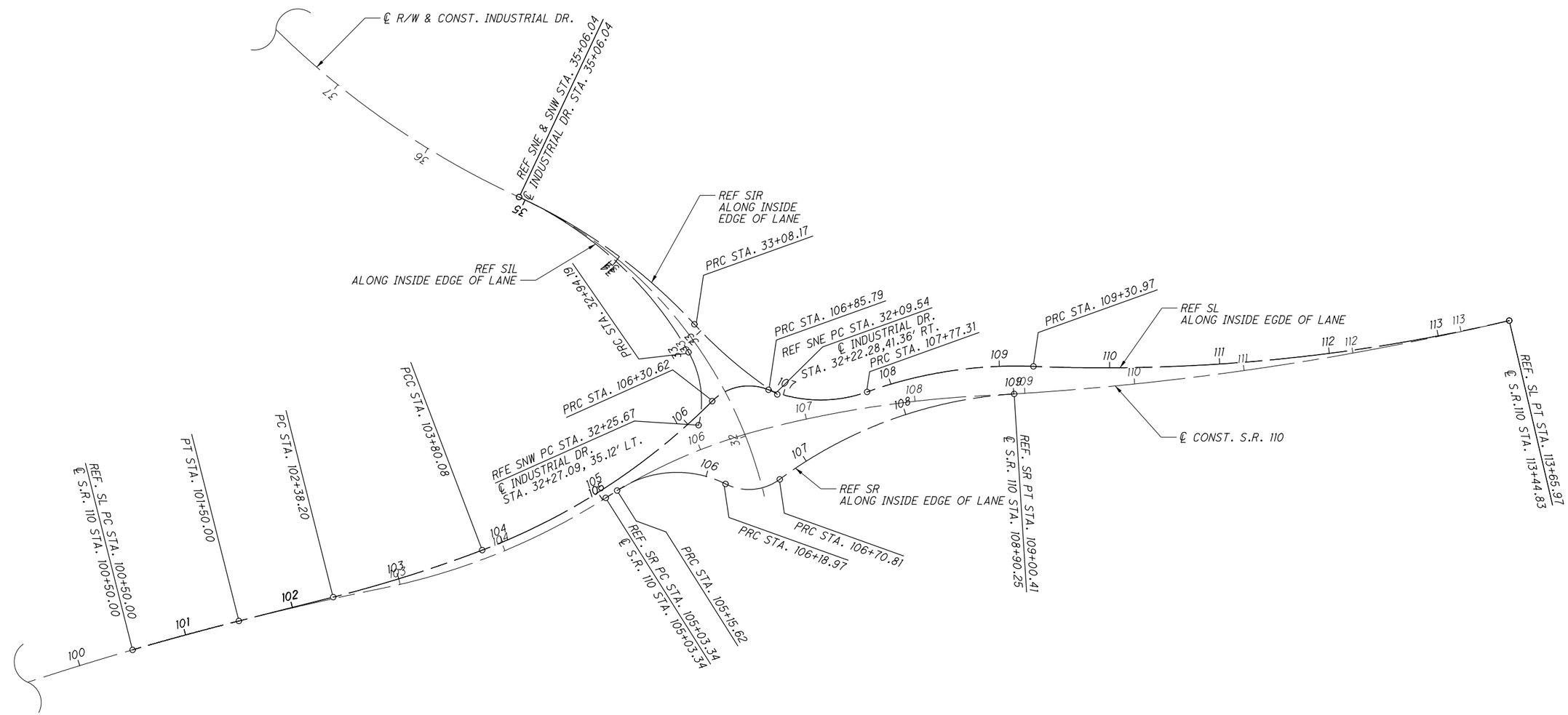
HEN-NEW BRIDGE

PRIMARY PROJECT CONTROL INFORMATION

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
ARP1	638573.6970	1528220.3138	678.11	IPINS /CIR
ARP2	638206.8882	1528219.4996	678.39	IPINS /CIR
ARP3	638499.0526	1529338.0111	674.81	IPINS /CIR
ARP4	637071.1187	1527468.4342	671.16	IPINS /CIR
ARP5	636091.1981	1528575.4343	667.46	IPINS /CIR
ARP6	635754.7549	1528038.3710	671.21	IPINS /CIR
JAS500	637266.4642	1527666.6053	670.59	MAG SPIKE
JEW1	636329.8015	1529263.7085	667.21	IPINS /CIR
JEW2	636549.8196	1530198.8952	665.77	IPINS /CIR
JEW3	636112.8419	1530882.4102	671.58	IPINS /CIR
JEW4	637659.8855	1528148.4581	678.13	IPINS /CIR
JEW5	637834.1903	1528370.4531	677.75	IPINS /CIR
JEW6	637483.2673	1528308.0899	657.38	IPINS /CIR
JEW7	637594.2634	1528367.7320	658.49	IPINS /CIR
JEW8	637725.4669	1528460.3426	660.03	MAG
JEW9	637889.5540	1528167.4761	678.45	IPINS /CAP
JEW10	637533.8146	1528056.8241	676.36	IPIN -CAP
JEW11	637404.8315	1527907.9181	675.19	IPIN -CAP
JEW12	637242.5817	1527729.1355	673.40	IPIN -CAP
JJL1	638118.1772	1528248.0499	678.06	IPINS /CIR
JJL2	637886.5906	1528504.3997	675.99	IPINS
JJL3	638056.5414	1528759.0865	674.94	IPINS
JJL4	638204.6910	1529006.4512	673.59	IPINS
JJL5	638131.5868	1528882.9361	674.10	MAGS
MSGBASE1	637271.9148	1526923.5899	678.73	IPINS /CIR

VERTICAL CONTROL INFORMATION

POINT NO.	ELEVATION	DESCRIPTION	
BM18	680.83	CMON /BRASS DISC	STA. 65+94.80-134.94' LT CL INDUSTRIAL DR.
BM38	672.71	CMON /BRASS DISC	STA. 55+02.58-19.45' RT CL SR110
BM82	677.06	CMON /BRASS DISC	STA. 578+65.55-540.18' LT CL RIVERVIEW



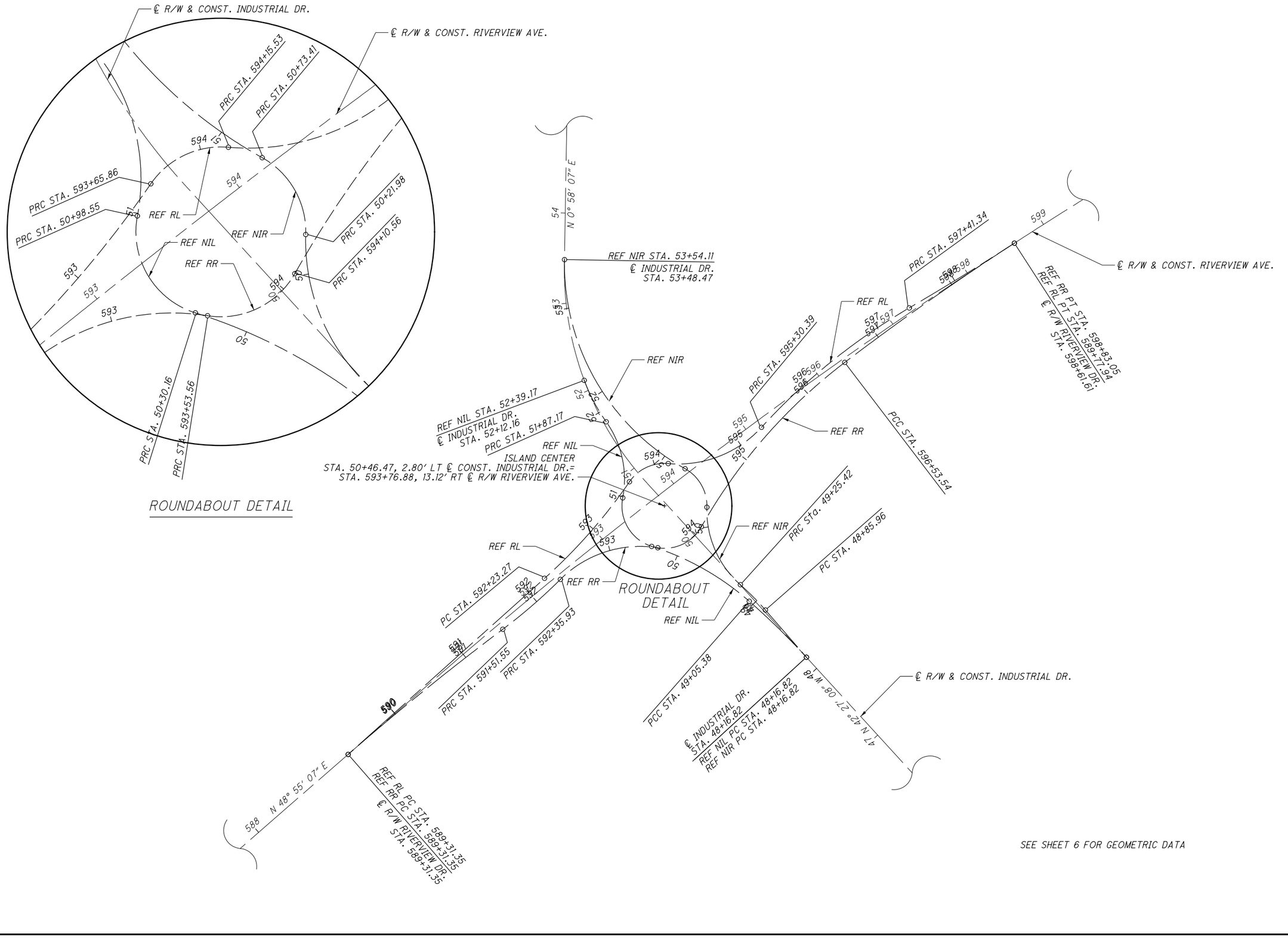
SEE SHEET 6 FOR GEOMETRIC DATA

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

ROUNDABOUT GEOMETRIC LAYOUT
S.R.110 & INDUSTRIAL DR.

HEN-NEW BRIDGE



SEE SHEET 6 FOR GEOMETRIC DATA

HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED | CHECKED

ROUNDABOUT GEOMETRIC LAYOUT
RIVERVIEW AVE. & INDUSTRIAL DR.

HEN-NEW BRIDGE

5
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REF. ALIGNMENT	P.I./P.O.T. STATION	NORTHING	EASTING	Degree	Delta	T (FT.)	L (FT.)	R (FT.)	BEGIN CURVE/CHAIN	END CURVE/CHAIN	AHEAD/BACK BEARING
SL		636247.79	1529035.18						100+50.00		
	101+00.01	636261.73	1529083.21	2° 00' 00"	2° 00' 00"	50.00	100.00	2864.80			
		636273.98	1529131.69							101+50.00	75°48'47"
		636295.60	1529217.19						102+38.20		
	103+09.22	636313.01	1529286.05	4° 40' 38"	6° 38' 10"	71.02	141.88	1225.00			
		636338.25	1529352.43							103+80.08	
	105+07.25	636383.46	1529471.30	9° 40' 42"	24° 14' 52"	127.17	250.54	592.00			
		636473.50	1529561.11							106+30.62	
	106+61.89	636495.63	1529583.19	121° 58' 06"	67°17' 54"	31.27	55.18	46.98			
		636483.80	1529612.14							106+85.79	
	107+33.71	636465.68	1529656.50	45° 50' 12"	41°56' 56"	47.92	91.52	125.00			
		636481.85	1529701.60							107+77.31	
	108+55.10	636508.10	1529774.83	14° 19' 26"	22°00' 35"	77.79	153.66	400.00			
		636504.99	1529852.55							109+30.97	
	111+49.82	636496.25	1530071.23	3° 34' 52"	15°34' 38"	218.85	435.00	1600.00			
		636546.56	1530284.22							113+65.97	
SR		636385.63	1529464.50						105+03.34		
	105+09.48	636388.93	1529469.67	9°32' 57"	1° 10' 21"	6.14	12.28	600.00			
		636392.34	1529474.78							105+15.62	
	105+72.68	636423.99	1529522.26	58°27' 54"	60°25' 29"	57.07	103.35	98.00			
		636398.32	1529573.23							106+18.97	
	106+47.88	636385.31	1529599.05	121°54' 21"	63°11' 45"	28.91	51.84	47.00			
		636402.49	1529622.30							106+70.81	
	107+88.87	636472.65	1529717.26	14°19' 26"	32°53' 17"	118.06	229.60	400.00			
		636480.00	1529835.09							109+00.41	
SIL		636451.62	1529548.76						32+25.67		
	32+61.69	636486.57	1529557.44	63°39' 43"	43°37' 15"	36.02	68.52	90.00			
		636517.87	1529539.61							32+94.19	
	34+03.68	636613.00	1529485.41	16°51' 06"	35°42' 04"	109.49	211.86	340.00			
		636658.63	1529385.87							35+06.04	
SIR		636479.63	1529620.09						32+09.54		
	32+59.11	636506.75	1529578.60	14°19' 26"	14°07'41"	49.57	98.63	400.00			
		636543.18	1529544.99							33+08.17	
	34+08.42	636616.86	1529477.00	11°27' 33"	22°40' 28"	100.25	197.87	500.00			
		636658.63	1529385.87							35+06.04	

REF. ALIGNMENT	P.I./P.O.T. STATION	NORTHING	EASTING	Degree	Delta	T (FT.)	L (FT.)	R (FT.)	BEGIN CURVE/CHAIN	END CURVE/CHAIN	AHEAD/BACK BEARING
RL		637470.89	1527954.44						589+31.35		48° 07' 23"
		637665.76	1528171.80						592+23.27		
	592+94.90	637713.57	1528225.14	9° 32' 57"	13° 36'58"	71.63	142.59	600.00			
		637772.60	1528265.72							593+65.86	
	593+93.30	637795.21	1528281.26	121° 54' 21"	60° 33' 21"	27.44	49.67	47.00			
		637792.79	1528308.59							594+15.53	
	594+77.38	637787.33	1528370.19	45° 50' 12"	52°38' 48"	61.84	114.86	125.00			
		637832.99	1528411.91							595+30.39	
	596+36.67	637911.45	1528483.59	8° 11' 06"	17°15' 58"	106.28	210.95	700.00			
		637965.10	1528575.34							597+41.34	
	598+09.65	637999.58	1528634.31	1° 54' 35"	2°36' 32"	68.31	136.60	3000.00			
		638036.71	1528691.64							598+77.94	
RR		637470.89	1527954.44						589+31.35		
	590+41.50	637543.27	1528037.47	1° 54' 35"	4° 12'20"	110.15	220.20	3000.00			
		637609.37	1528125.58							591+51.55	
	591+93.81	637634.73	1528159.39	9°32' 57"	8°03' 27"	42.26	84.38	600.00			
		637664.57	1528189.30							592+35.93	
	592+99.51	637709.48	1528234.31	45°50' 12"	53°54' 59"	63.58	117.63	125.00			
		637699.55	1528297.11							593+53.56	
	593+86.16	637694.46	1528329.31	121°54' 21"	69°29' 43"	32.60	57.00	47.00			
		637722.84	1528345.36							594+10.56	
	595+33.74	637830.06	1528405.99	9°32' 57"	23°12' 09"	123.18	242.97	600.00			
		637904.72	1528503.96							596+53.54	
	597+68.35	637974.31	1528595.28	1°54' 35"	4°23' 00"	114.81	229.51	3000.00			
		638036.71	1528691.64							598+83.05	
NIL		637578.42	1528461.52						48+16.82		
	48+61.14	637611.12	1528431.60	7°03'53"	6°15' 24"	44.33	88.56	811.00			
		637640.37	1528398.30							49+05.38	
	49+68.69	637682.14	1528350.73	19°05' 55"	23°49' 54"	63.31	124.78	300.00			
		637701.14	1528290.34							50+30.16	
	50+72.01	637713.70	1528250.42	121°54' 21"	83°22' 00"	41.85	68.39	47.00			
		637754.80	1528258.28							50+98.55	
	51+45.42	637800.84	1528267.09	52°05' 14"	46°09' 40"	46.87	88.62	110.00			
		637839.08	1528239.98							51+87.17	
	52+13.32	637860.41	1528224.85	28°38' 52"	14°53' 47"	26.15	52.00	200.00			
		637884.91	1528215.72							52+39.17	
NIR		637578.42	1528461.52						48+16.82		40°57' 08"
		637630.64	1528416.20						48+85.96		
	49+05.72	637645.56	1528403.25	19°05' 55"	7°32'06"	19.76	39.45	300.00			
		637658.65	1528388.46							49+25.42	
	49+77.06	637692.88	1528349.79	52°05' 13"	50°17' 40"	51.64	96.56	110.00			
		637744.49	1528351.42							50+21.98	
	50+50.61	637773.11	1528352.33	121°54' 21"	62°41' 51"	28.63	51.43	47.00			
		637787.04	1528327.31							50+73.41	
	52+29.20	637862.83	1528191.20	22°02' 13"	61°51' 32"	155.79	280.71	260.00			
		638018.59	1528193.83							53+54.11	

CALCULATED XF
CHECKED CEB

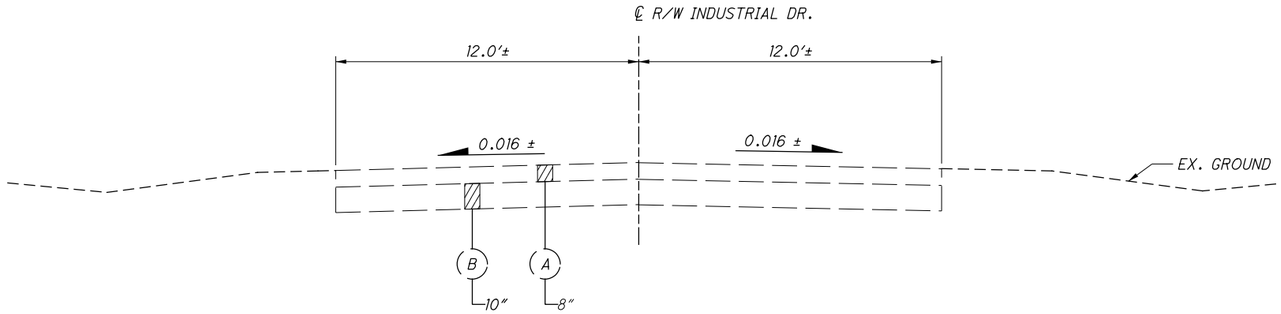
ROUNDABOUT GEOMETRIC DATA

HEN-NEW BRIDGE

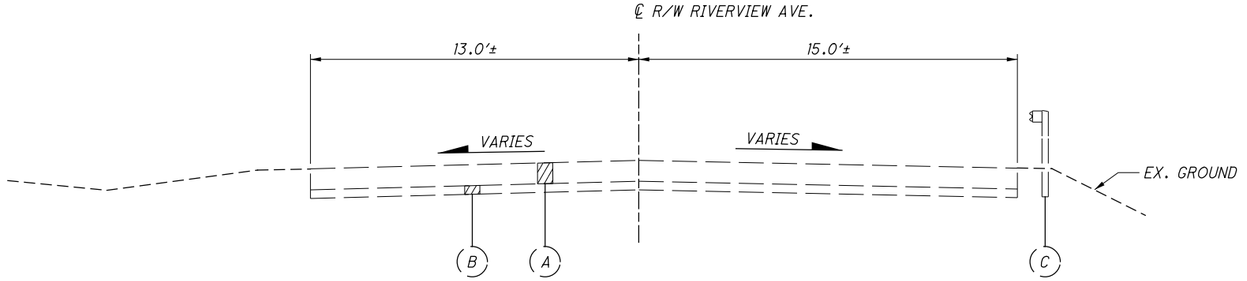
LEGEND

(1) ITEM 441 - 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), AS PER PLAN
(2) ITEM 442 - 1¾" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446), AS PER PLAN
(3) ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
(4) ITEM 304 - 6" AGGREGATE BASE
(5) ITEM 407 - TACK COAT (0.06 GAL/SY)
(6) ITEM 407 - TACK COAT (0.09 GAL/SY)
(7) ITEM 203 - SUBGRADE COMPACTION
(8) ITEM 605 - 6" SHALLOW PIPE UNDERDRAIN WITH FABRIC WRAP
(9) ITEM 609 - COMBINATION CURB AND GUTTER, TYPE 2
(10) ITEM 609 - COMBINATION CURB AND GUTTER, TYPE 3, AS PER PLAN
(11) ITEM 609 - CURB, TYPE 2-A
(12) ITEM 609 - CURB, TYPE 6
(13) ITEM 452 - NON-REINFORCED CONCRETE PAVEMENT, MISC.: DECORATIVE, 8" THICK (TRUCK APRON)
(14) ITEM 608 WALKWAY MISC.: DECORATIVE CONCRETE, 6" THICK (SPLITTER ISLAND)
(15) ITEM 608 - 4" CONCRETE WALK
(16) ITEM 659 - SEEDING AND MULCHING
(17) ITEM 526 - REINFORCED CONCRETE APPROACH SLAB. (T=17"), AS PER PLAN
(18) ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS (UNLESS OTHERWISE NOTED IN THE PLANS)
(19) ITEM 204 - EXCAVATION OF SUBGRADE
ITEM 204 - GRANULAR MATERIAL, TYPE B
(20) ITEM 609 - CURB, TYPE 4C
(21) ITEM 608 - 1" AGGREGATE WALK (LIMESTONE SCREENINGS)
(22) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448) (DEPTH VARIES TO ESTABLISH CROSS SLOPE)
(23) ITEM 254 - PAVEMENT PLANING, ASPHALT CONCRETE (DEPTH VARIES FROM 1.25" TO 1.75")
(24) ITEM 409 - SEALING MISC.: LONGITUDINAL JOINT SEALER

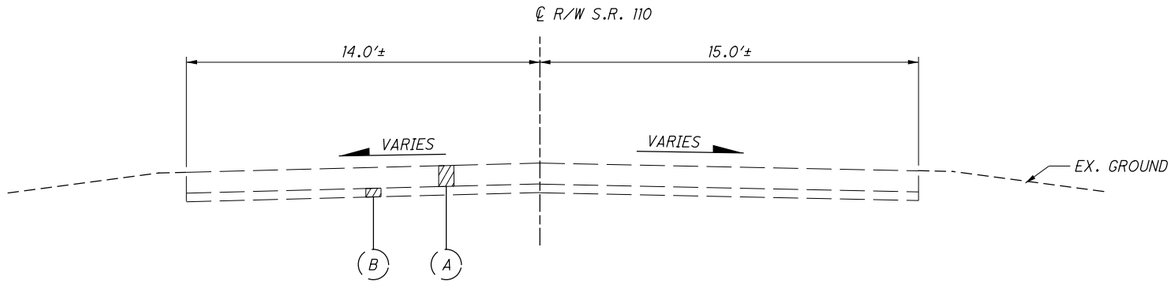
(A) 10" ASPHALT (UNLESS OTHERWISE SHOWN)
(B) 4" AGGREGATE BASE (UNLESS OTHERWISE SHOWN)
(C) GUARDRAIL



EXISTING SECTION - INDUSTRIAL DR.



EXISTING SECTION - RIVERVIEW AVE.



EXISTING SECTION - S.R. 110

TYPICAL SECTIONS - EXISTING ROAD

HEN-NEW BRIDGE

7
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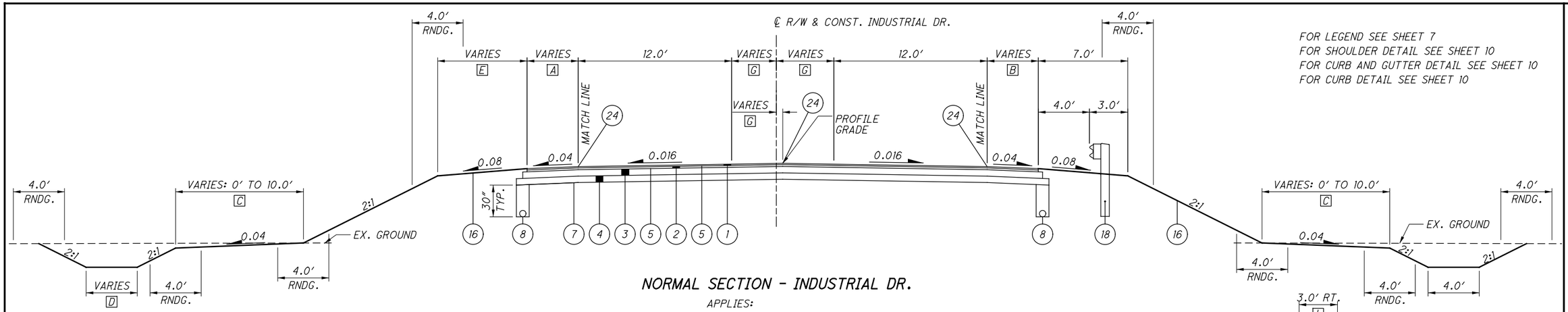


FOR LEGEND SEE SHEET 7
FOR SHOULDER DETAIL SEE SHEET 10
FOR CURB AND GUTTER DETAIL SEE SHEET 10
FOR CURB DETAIL SEE SHEET 10

NORMAL SECTION - INDUSTRIAL DR.

APPLIES:
STA. 33+64.83 TO STA. 35+06.04

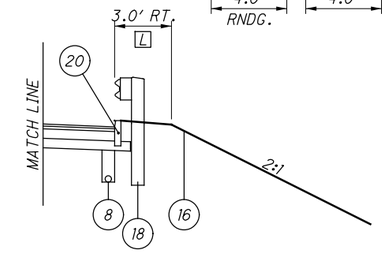
A VARIES: 2.0′ AT STA. 33+64.83 TO 4.0′ AT STA. 33+73.11
4.0′ FROM STA. 33+73.11 TO STA. 35+06.04

B VARIES: 2.0′ AT STA. 33+64.90 TO 4.0′ AT STA. 33+72.99
4.0′ FROM STA. 33+72.99 TO STA. 35+06.04

C VARIES: 0′ AT STA. 33+75.00 TO 10.0′ AT STA. 34+75.00
10.0′ FROM STA. 34+75 TO STA. 35+06.04

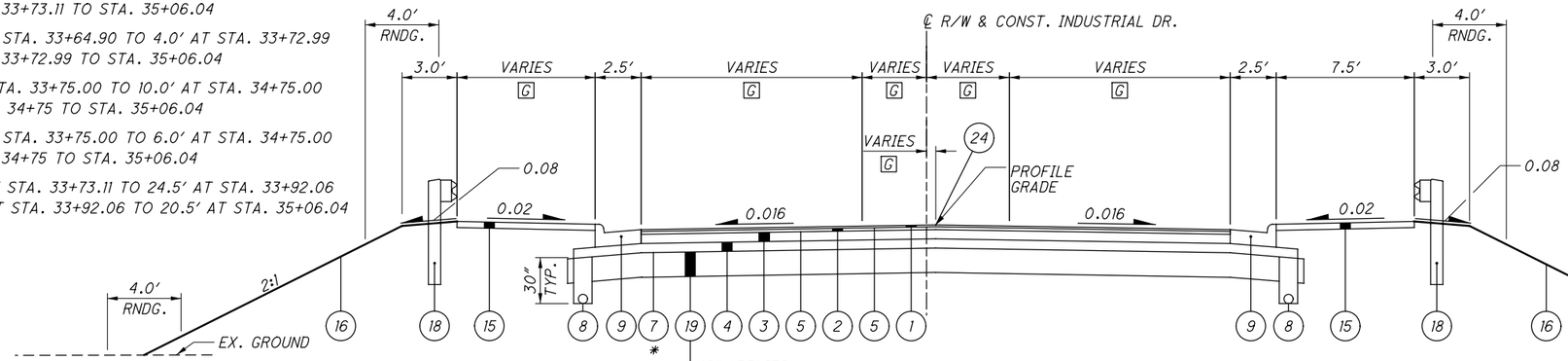
D VARIES: 4.0′ AT STA. 33+75.00 TO 6.0′ AT STA. 34+75.00
6.0′ FROM STA. 34+75 TO STA. 35+06.04

E VARIES: 19.9′ AT STA. 33+73.11 TO 24.5′ AT STA. 33+92.06
VARIES: 24.5′ AT STA. 33+92.06 TO 20.5′ AT STA. 35+06.04



CURB SECTION

APPLIES:
STA. 33+64.96 TO STA. 33+73.11 LT.
STA. 33+65.03 TO STA. 33+72.93 RT.
STA. 38+43.09 TO STA. 39+00.65



* 16″ APPLIES:
STA. 50+11.63 TO 53+64.45

NORMAL SECTION - INDUSTRIAL DR.

APPLIES:
STA. 35+06.04 TO STA. 39+00.65

F 20.5′ FROM STA. 35+06.04 TO STA. 37+65.15
VARIES: 20.5′ AT STA. 37+65.15 TO 11.4′ AT STA. 38+74.65

G VARIES: SEE GEOMETRIC DETAILS

H VARIES: SEE CROSS SECTIONS

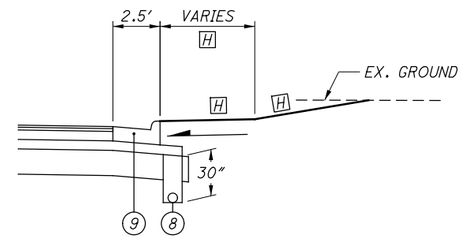
I 12.0′ FROM STA. 35+06.04 TO STA. 38+25.65
VARIES: 12.0′ AT STA. 38+25.65 TO 11.0′ AT STA. 38+52.65
11.0′ FROM STA. 38+52.65 TO STA. 39+00.65

J 12.0′ FROM STA. 35+06.04 TO STA. 38+16.09
VARIES: 12.0′ AT STA. 38+16.09 TO 11.0′ AT STA. 38+43.09
11.0′ FROM STA. 38+43.09 TO STA. 39+00.65

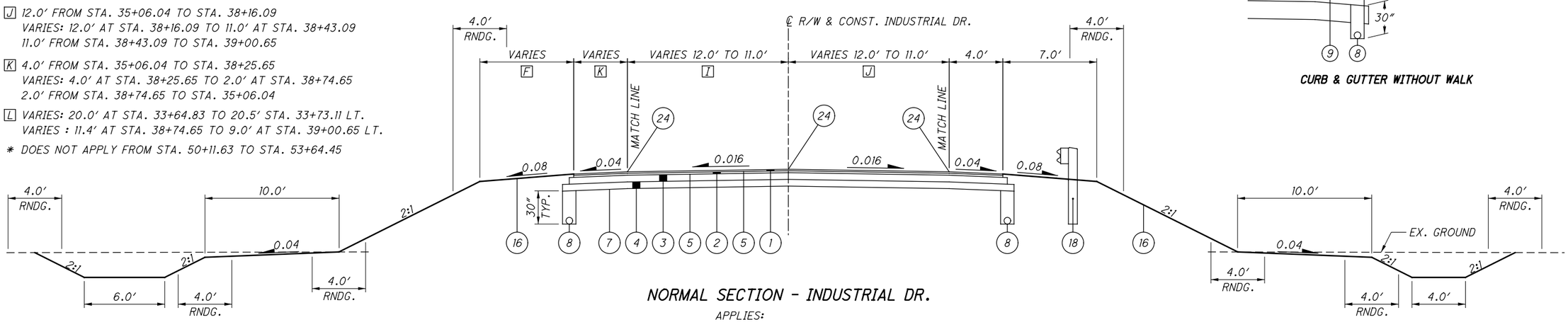
K 4.0′ FROM STA. 35+06.04 TO STA. 38+25.65
VARIES: 4.0′ AT STA. 38+25.65 TO 2.0′ AT STA. 38+74.65
2.0′ FROM STA. 38+74.65 TO STA. 35+06.04

L VARIES: 20.0′ AT STA. 33+64.83 TO 20.5′ STA. 33+73.11 LT.
VARIES : 11.4′ AT STA. 38+74.65 TO 9.0′ AT STA. 39+00.65 LT.

* DOES NOT APPLY FROM STA. 50+11.63 TO STA. 53+64.45



CURB & GUTTER WITHOUT WALK

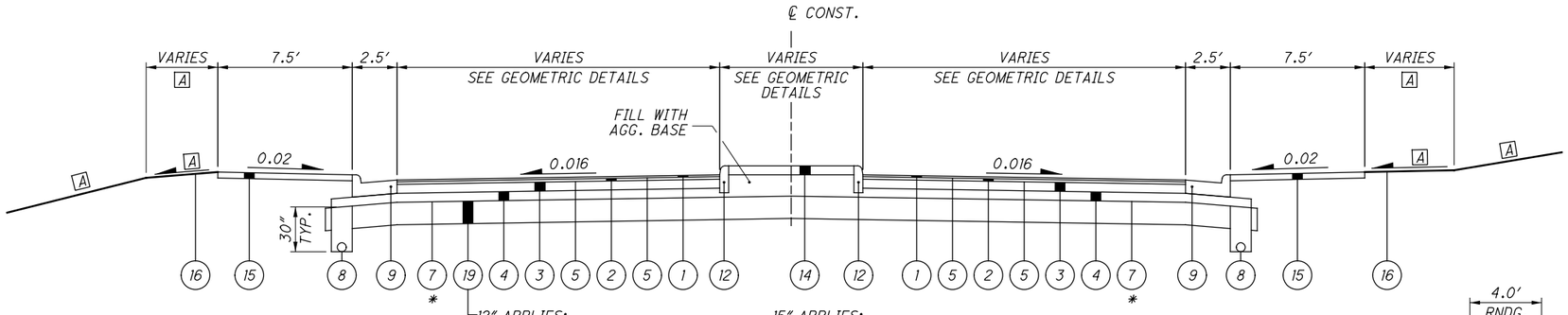


NORMAL SECTION - INDUSTRIAL DR.

APPLIES:
STA. 49+08.98 TO STA. 49+27.57
STA. 52+15.45 TO STA. 53+64.45

TYPICAL SECTIONS - INDUSTRIAL DR.

HEN-NEW BRIDGE



NORMAL SECTION - SPLITTER ISLANDS

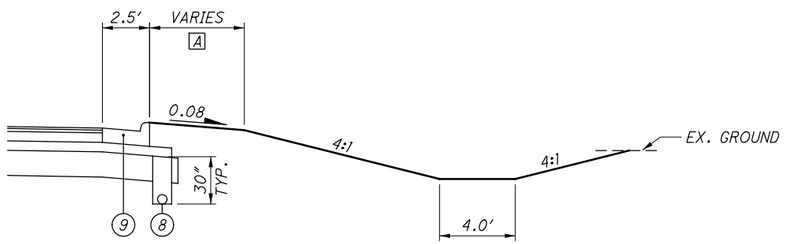
APPLIES:
INDUSTRIAL DR.
STA. 32+64.77 TO STA. 33+63.77
STA. 49+27.51 TO STA. 49+81.05
STA. 51+11.17 TO STA. 52+15.46

RIVERVIEW AVE.
STA. 591+11.11 TO STA. 593+12.97
STA. 594+42.37 TO STA. 596+34.91

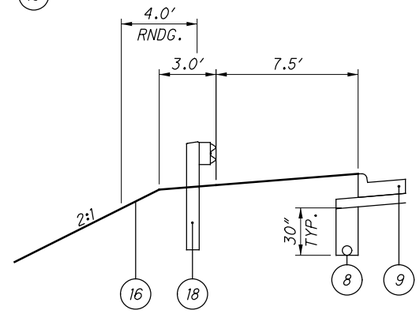
S.R. 110
STA. 103+78.89 TO STA. 105+79.01
STA. 107+09.47 TO STA. 110+94.51

* DOES NOT APPLY IN AREAS WHERE EXCAVATION OF SUBGRADE OCCURS

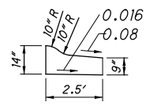
A VARIES: SEE CROSS SECTIONS AND GRADING DETAIL SHEET 78-79



CURB & GUTTER WITHOUT WALK

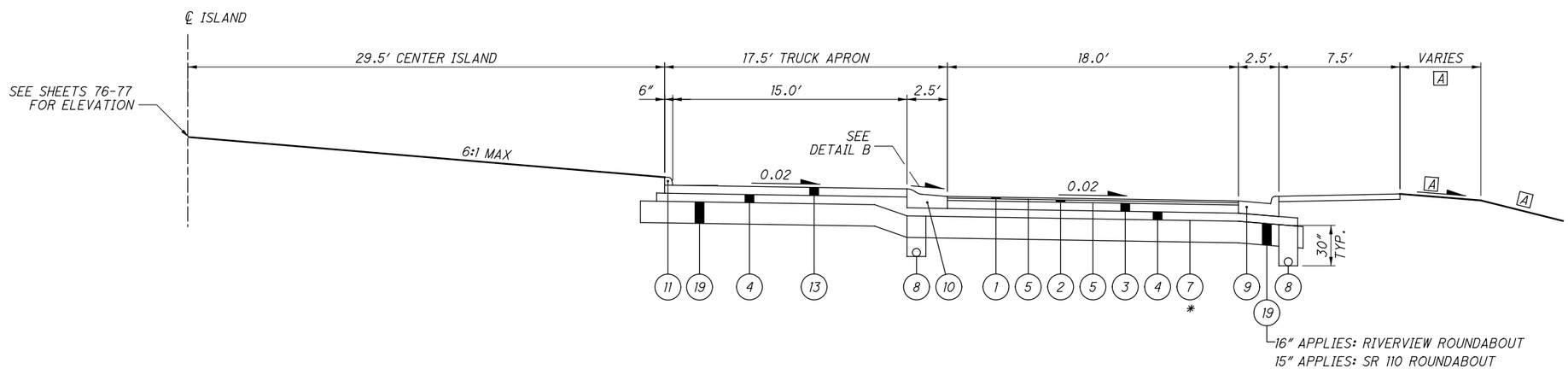


BARRIER GRADING DETAIL



DETAIL B

COMBINATION CURB AND GUTTER, TYPE 3, AS PER PLAN



NORMAL SECTION - ROUNDABOUT

FOR LEGEND SEE SHEET 7
FOR SHOULDER DETAIL SEE SHEET 10
FOR CURB AND GUTTER DETAIL SEE SHEET 10

TYPICAL SECTIONS - ROUNDABOUT

HEN-NEW BRIDGE

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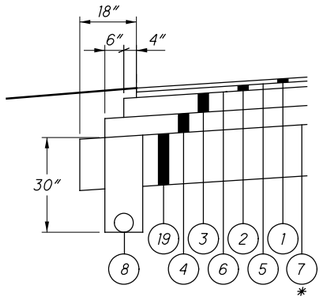
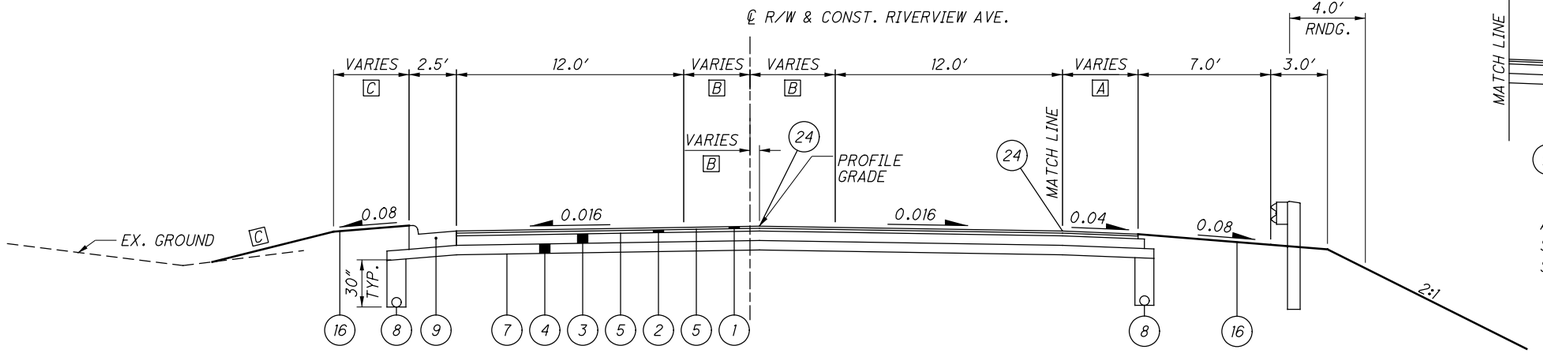
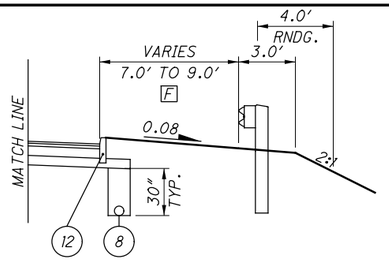


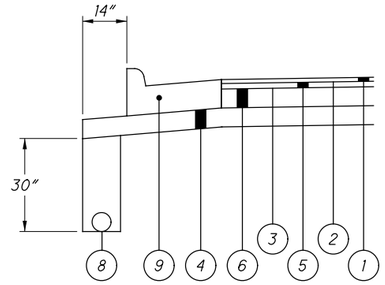
SHOULDER DETAIL





CURB SECTION

APPLIES:
STA. 591+06.20 TO STA. 591+10.23 RT.
STA. 596+35.65 TO STA. 596+39.63 RT.



CURB & GUTTER DETAIL

NORMAL SECTION - RIVERVIEW AVE.

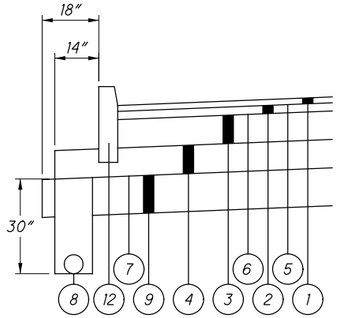
APPLIES:
STA. 588+87.77 TO STA. 591+10.23
STA. 596+35.53 TO STA. 598+95.61

A 3.0′ FROM STA. 588+87.77 TO STA. 591+06.20
VARIES: 3.0′ AT STA. 591+06.20 TO 2.0′ AT STA. 591+10.23
VARIES: 2.0′ AT STA. 596+35.65 TO 3.0′ AT STA. 596+39.63
3.0′ FROM STA. 596+39.63 TO STA. 598+95.61

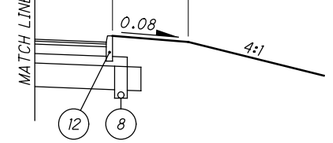
B VARIES: SEE GEOMETRIC DETAILS SHEETS 71-74

C VARIES: SEE GRADING DETAILS SHEETS 78-79

F VARIES: 7.0′ AT STA. 591+06.20 TO 8.0′ AT STA. 591+10.23
VARIES: 9.0′ AT STA. 596+36.65 TO 8.0′ AT STA. 596+39.63



CURB DETAIL



CURB SECTION

APPLIES:
STA. 103+74.75 TO STA. 103+78.86 LT.
STA. 103+74.89 TO STA. 103+78.80 RT.
STA. 110+94.51 TO STA. 110+98.51 RT.
STA. 110+95.65 TO STA. 110+99.70 LT.

NORMAL SECTION - S.R. 110

APPLIES:
STA. 101+00.00 TO STA. 103+78.89
STA. 110+94.51 TO STA. 113+44.83

D 3.0′ FROM STA. 101+00.00 TO STA. 103+74.75
VARIES: 3.0′ AT STA. 103+74.75 TO 2.0′ AT STA. 103+78.86
VARIES: 2.0′ AT STA. 110+95.52 TO 3.0′ AT STA. 110+99.70
3.0′ FROM STA. 110+99.70 TO STA. 113+44.83

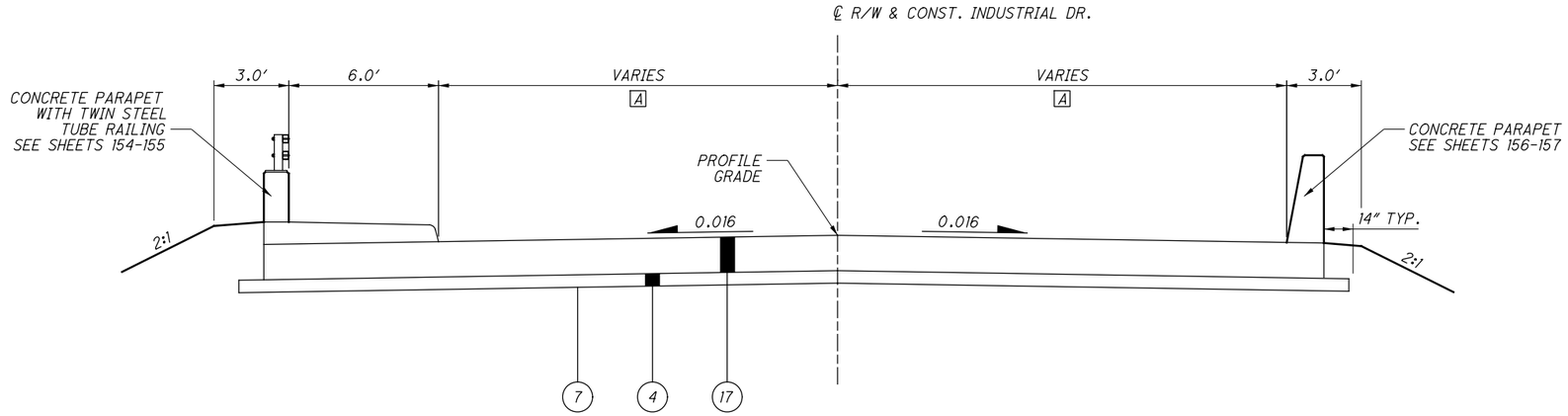
E 3.0′ FROM STA. 101+00.00 TO STA. 103+74.89
VARIES: 3.0′ AT STA. 103+74.89 TO 2.0′ AT STA. 103+78.89
VARIES: 2.0′ AT STA. 110+94.51 TO 3.0′ AT STA. 110+98.51
3.0′ FROM STA. 110+98.51 TO STA. 113+44.83

* DOES NOT APPLY IN AREAS WHERE EXCAVATION OF SUBGRADE OCCURS

FOR LEGEND, SEE SHEET 7

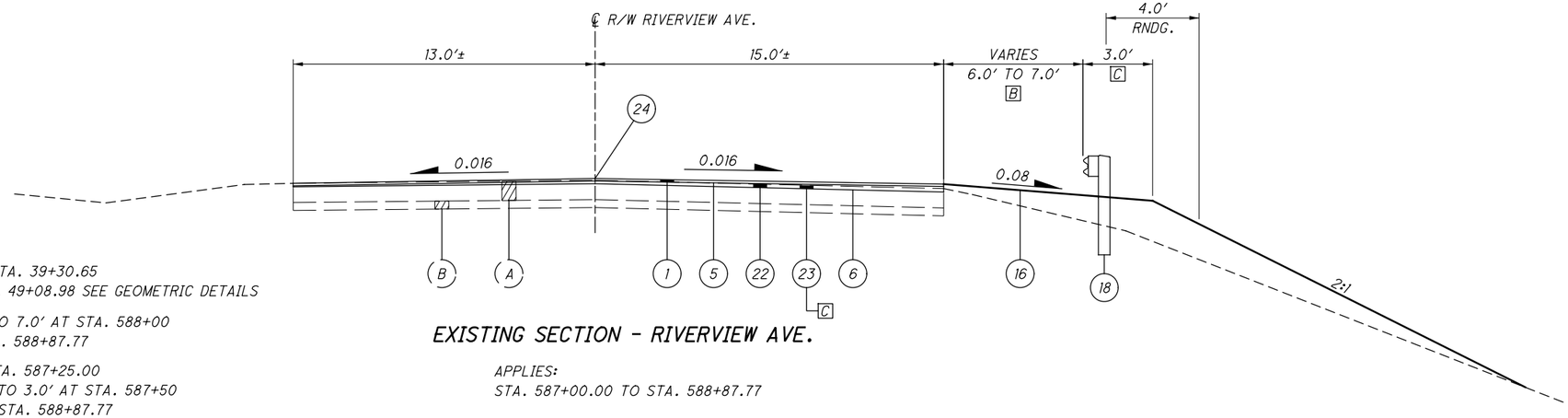
TYPICAL SECTIONS - RIVERVIEW AVE. & S.R. 110

HEN-NEW BRIDGE



NORMAL SECTION - APPROACH SLAB

APPLIES:
STA. 39+00.65 TO STA. 39+30.65
STA. 48+78.98 TO STA. 49+08.98



EXISTING SECTION - RIVERVIEW AVE.

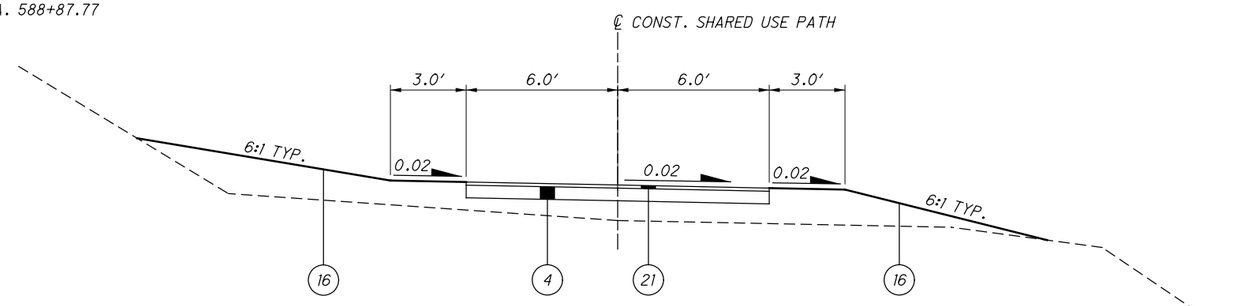
APPLIES:
STA. 587+00.00 TO STA. 588+87.77

A 11.0′ FROM STA. 39+00.65 TO STA. 39+30.65
VARIES: STA. 48+78.98 TO STA. 49+08.98 SEE GEOMETRIC DETAILS

B VARIES: 6.0′ AT STA. 587+00 TO 7.0′ AT STA. 588+00
7.0′ FROM STA. 588+00 TO STA. 588+87.77

C 0′ FROM STA. 587+00.00 TO STA. 587+25.00
VARIES: 0′ AT STA. 587+25.00 TO 3.0′ AT STA. 587+50
3.0′ FROM STA. 587+50.00 TO STA. 588+87.77

D VARIES: 1.25″ AT STA. 587+00.00 TO 1.75″ AT STA. 587+50.00
VARIES: 1.75″ AT STA. 587+50.00 TO 1.25″ AT STA. 588+00.00
1.25″ FROM STA. 588+00.00 TO STA. 588+87.77



NORMAL SECTION - SHARED USE PATH

APPLIES:
STA. 100+00.00 TO STA. 103+48.18

* APPLY TYPE C RCP WITH AGGREGATE FILTER UNDER THE BRIDGE, SEE CROSS SECTIONS FOR DETAILS.

** APPLY 1″ LIMESTONE SCREENINGS FOR SURFACE MATERIAL.

FOR LEGEND, SEE SHEET 7

TYPICAL SECTIONS

HEN-NEW BRIDGE

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS-SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

UTILITY OWNERSHIP

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

TIME WARNER CABLE
ATTN: STEPHEN RAY
3760 INTERCHANGE DR.
COLUMBUS, OH 43204
614-255-6271

TRANSCANADA
ATTN: MARK REYNOLDS
6357 SR 66 NORTH
DEFIANCE, OH 43512
419-439-0720

CITY OF NAPOLEON
ATTN: CHRIS SPIESS
255 WEST RIVERVIEW
NAPOLEON, OH 43545
419-592-4010

TRANSCANDA U.S. LAND MANGEMENT
ATTN: JIM NORROD
5250 CORPORATE DRIVE
TROY, MI 48098
248-205-7408

OHIO GAS
ATTN: GREG NOFZIGER
P.O. BOX 528
BRYAN, OH 43506
419-636-1117

TOLEDO EDISON
ATTN: JOHN WIRICK
134 LAWRENCE AVE.
WAUSEON, OH 43567
419-249-4170

CENTURY LINK
ATTN: THOMAS J. TROMBLEY
175 ASHLAND RD.,
MANSFIELD, OH 44902
734-777-1910

TOLEDO EDISON TRANSMISSION
ATTN: CHRISSY TODD
76 SOUTH MAIN STREET
AKRON, OH 44308
330-384-5773

SURVEYING PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET 3 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS
MONUMENT TYPE: CORS STATIONS

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD 88
GEOID: GEOID9

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (CORS96)
ELLIPSOID: GRS 80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE - NORTH ZONE
COMBINED SCALE FACTOR: 1.0000675074
ORIGIN OF COORDINATE
SYSTEM: 0.00, 0.00

SURVEYING PARAMETERS (CONT.)

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH SUPPLEMENTAL SPECIFICATION 823.

UNITS ARE IN U.S. SURVEY FEET. USE THE FOLLOWING CONVERSION FACTOR: 1 METER = 3.280833333 U.S. SURVEY FEET.

CONSTRUCTION NOISE

ACTIVITIES AND LAND USE ADJACENT TO THIS PROJECT MAY BE AFFECTED BY CONSTRUCTION NOISE. IN ORDER TO MINIMIZE ANY ADVERSE CONSTRUCTION NOISE IMPACTS, DO NOT OPERATE POWER-OPERATED CONSTRUCTION-TYPE DEVICES BETWEEN THE HOURS OF 8:00 PM AND 7:00 AM. IN ADDITION, DO NOT OPERATE AT ANY TIME ANY DEVICE IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

REMOVE ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

SIZES	NO. TREES	NO. STUMPS	TOTAL
18"	25	0	25
30"	4	0	4
48"	0	0	0
60"	0	0	0

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN 203.05. NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF 203.05.

MONUMENT ASSEMBLIES

CONSTRUCT MONUMENT ASSEMBLIES IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NO. 172.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - PROOF ROLLING 4 HOUR.

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.

2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO 204.05.

   IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

3. COMPACT THE SUBGRADE ACCORDING TO 204.03.

4. APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS.

   PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO 204.06.

5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.

6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO 204.06 TO VERIFY STABILITY.

7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204 EXCAVATION OF SUBGRADE.

ADDITIONAL UNSUITABLE SOILS

UNSUITABLE SOILS MAY BE ENCOUNTERED WITHIN THE PROJECT AREA IN ADDITION TO THE AREAS ALREADY INDENTIFIED IN THESE PLANS. THE UNSUITABLE SOILS SHALL BE EXCAVATED AND REPLACED AS DETAILED ABOVE. THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY TO PERFORM THIS WORK AS DIRECTED BY THE ENGINEER:

ITEM 204	EXCAVATION OF SUBGRADE	1000 CU. YD.
ITEM 204	GRANULAR MATERIAL, TYPE B	1000 CU. YD.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

PART-WIDTH CONSTRUCTION

BECAUSE OF THE NECESSITY TO BUILD THIS PROJECT UNDER TRAFFIC AND TO CONSTRUCT THE FULL PAVEMENT WIDTH IN STAGES, EXERCISE CARE TO PREVENT THE CONSTRUCTION OF A BUTT JOINT IN THE BASE COURSES. LAP LONGITUDINAL JOINTS AS SHOWN ON STANDARD CONSTRUCTION DRAWING BP-3.1.

MEDIAN AND/OR CURBING ON APPROACH SLABS

WITHIN THE LIMITS OF THE APPROACH SLAB, TRANSITION THE SHAPE OF THE MEDIAN AND/OR CURBING ON APPROACH SLABS FROM THE STANDARD SECTION ON THE APPROACHES TO THE SECTION USED ON THE BRIDGE.

ITEM 609 COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN

THIS ITEM SHALL BE IN ACCORDANCE WITH C&MS 609 AND STANDARD CONSTRUCTION DRAWING BP-5.1 EXCEPT THAT THE GUTTER WIDTH SHALL VARY AS DETAILED IN THESE PLANS.

ITEM 609 COMBINATION CURB AND GUTTER, TYPE 3, AS PER PLAN

THIS ITEM SHALL BE IN ACCORDANCE WITH C&MS 609 AND STANDARD CONSTRUCTION DRAWING BP-5.1 EXCEPT THAT THE DESIGN SHALL BE AS SHOWN ON SHEET 9.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

CALCULATED ALT
CHECKED CEB

GENERAL NOTES

HEN-NEW BRIDGE

ITEM SPECIAL - MAILBOX SUPPORT

THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING MAILBOX SUPPORTS AND ANY ASSOCIATED MOUNTING HARDWARE IN ACCORDANCE WITH PLAN DETAILS, AND ATTACHING AN OWNER-SUPPLIED MAILBOX AT LOCATIONS SPECIFIED IN THE PLAN, OR OTHERWISE ESTABLISHED BY THE ENGINEER.

WOOD POSTS SHALL BE NOMINAL 4 INCHES BY 4 INCHES SQUARE OR 4.5 INCHES DIAMETER ROUND, AND CONFORM TO 710.14.

STEEL POSTS SHALL BE NOMINAL PIPE SIZE 2 INCHES I.D., AND CONFORM TO AASHTO M 181.

ALL HARDWARE INCLUDING BUT NOT LIMITED TO PLATES, SCREWS, BOLTS, AND ETC. SHALL BE COMMERCIAL-GRADE GALVANIZED STEEL.

POSTS SHALL BE SET PER THE FIRST PARAGRAPH OF 606.03, AND SHALL IN NO INSTANCE BE ENCASED IN CONCRETE.

SUPPORT HARDWARE SHALL ACCOMMODATE EITHER A SINGLE OR A DOUBLE MAILBOX INSTALLATION, AND NO MORE THAN TWO BOXES MAY BE MOUNTED ON A SINGLE POST.

THE MAILBOX SHALL BE SECURELY AND NEATLY ATTACHED BY THE CONTRACTOR TO THE NEW SUPPORT. THE CONTRACTOR SHALL FURNISH ALL NECESSARY ATTACHMENT HARDWARE (NUTS, BOLTS, PLATES, SPACERS, AND WASHERS) AS NECESSARY TO ACCOMMODATE THE COMPLETE INSTALLATION.

IN THE ABSENCE OF A NEW BOX SUPPLIED BY THE OWNER, THE CONTRACTOR SHALL SALVAGE THE EXISTING BOX AND PLACE IT ON THE NEW SUPPORT. DUE CARE SHALL BE EXERCISED IN SUCH AN OPERATION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY BOX DAMAGED BY IMPROPER HANDLING ON HIS PART, AS JUDGED AND DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE LOCAL POST MASTER REGARDING THE TIMING OF THE MOVEMENT OF ANY MAILBOX TO A NEW LOCATION.

PAYMENT UNDER THIS ITEM SHALL BE LIMITED TO FINAL PERMANENT INSTALLATIONS. TEMPORARY INSTALLATIONS SHALL BE IN ACCORDANCE WITH 107.10. HOWEVER, THE SAME MATERIAL AND SIZE LIMITATIONS AS FOR PERMANENT INSTALLATIONS SHALL APPLY.

MAILBOX SUPPORTS, COMPLETE IN PLACE, WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH, FOR ITEM SPECIAL MAILBOX SUPPORT SYSTEM, (SINGLE) (DOUBLE).

ITEM 441, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), AS PER PLAN

ITEM 441, ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), AS PER PLAN SHALL FOLLOW THE SPECIFICATIONS FOR 441 EXCEPT FOR SECTION 441.02 THAT THE BINDER SHALL BE PG88-22M FOR THE SURFACE COURSE AND A MAXIMUM OF 10% RAP BY DRY WEIGHT OF MIX CAN BE USED.

THE PG88-22M BINDER USED FOR THIS MIXTURE SHALL BE SAMPLED AT THE SUPPLIER TERMINAL AND TESTED BY THE DEPARTMENT PRIOR TO SHIPMENT TO THE ASPHALT PLANT. CONTACT THE DISTRICT FOR SAMPLING. IF THE SUPPLIER IS CERTIFIED FOR THE BINDER DO NOT SAMPLE AT THE TERMINAL. OBTAIN FOUR 1-QUART SAMPLES OF THE BINDER FROM THE ASPHALT PLANT STORAGE TANK AND HOLD FOR THE DISTRICT.

THE USE OF WARM MIX IS NOT PERMITTED FOR THIS MIXTURE.

ITEM 441, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (446), AS PER PLAN

ITEM 441, ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (446), AS PER PLAN SHALL FOLLOW THE SPECIFICATIONS FOR 441 EXCEPT FOR SECTION 441.02 THAT THE BINDER SHALL BE PG88-22M FOR THE INTERMEDIATE COURSE AND A MAXIMUM OF 10% RAP BY DRY WEIGHT OF MIX CAN BE USED.

THE PG88-22M BINDER USED FOR THIS MIXTURE SHALL BE SAMPLED AT THE SUPPLIER TERMINAL AND TESTED BY THE DEPARTMENT PRIOR TO SHIPMENT TO THE ASPHALT PLANT. CONTACT THE DISTRICT FOR SAMPLING. IF THE SUPPLIER IS CERTIFIED FOR THE BINDER DO NOT SAMPLE AT THE TERMINAL. OBTAIN FOUR 1-QUART SAMPLES OF THE BINDER FROM THE ASPHALT PLANT STORAGE TANK AND HOLD FOR THE DISTRICT.

THE USE OF WARM MIX IS NOT PERMITTED FOR THIS MIXTURE.

ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, MISC.: DECORATIVE, 8" THICK (TRUCK APRON)
ITEM 608 WALKWAY MISC.: DECORATIVE CONCRETE, 6" THICK (SPLITTER ISLAND)

IN ADDITION TO THE REQUIREMENTS OF C&MS ITEM 452 AND ITEM 608, THESE ITEMS OF SHALL HAVE TEH FOLLOWING REQUIREMENTS.

THE CONCRETE SHALL BE SEALED WITH WITH A CONCRETE SEALENT IN ACCORDANCE WITH C&MS 512. THE COLOR SHALL MATCH THE FEDERAL STANDARD COLOR No.30166.

THE CONCRETE SURFACE SHALL HAVE A STAMPED FINISH. THE PATTERN SHALL BE A HERRING BONE PATTERN.

THE CONTRACTOR SHALL PROVIDE ONE FIELD SAMPLE OF THE SPECIFIED SURFACE COLOR, TEXTURE AND PATTERN TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF THIS WORK. THE SAMPLE SHALL BE 4'X4' IN SIZE AND SHALL BE CONSTRUCTED USING THE SAME TECHNIQUES AND MATERIALS THAT WILL BE USED FOR THE CONSTRUCTION OF THE FINAL PAVED SURFACE. THE CONTRACTOR SHALL DIPSOSE OF THE SAMPLE AT THE DIRECTION OF THE ENGINEER.

ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO COMPLETE THE WORK AS STATED ABOVE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 452 NON-REINFORCED CONCRETE PAVEMENT, MISC.: DECORATIVE, 8" THICK (TRUCK APRON) AND ITEM 608 WALKWAY MISC.: DECORATIVE CONCRETE, 6" THICK (SPLITTER ISLAND)

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

FARM DRAINS

ALL FARM DRAINS, WHICH ARE ENCOUNTERED DURING CONSTRUCTION, SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS. EXISTING COLLECTORS WHICH ARE LOCATED BELOW THE ROADWAY DITCH ELEVATIONS, AND WHICH CROSS THE ROADWAY, SHALL BE REPLACED WITHIN THE (RIGHT OF WAY) (CONSTRUCTION) LIMITS BY ITEM 611 CONDUIT, TYPE B, ONE COMMERCIAL SIZE LARGER THAN THE EXISTING CONDUIT.

EXISTING COLLECTORS AND ISOLATED FARM DRAINS, WHICH ARE ENCOUNTERED ABOVE THE ELEVATION OF ROADWAY DITCHES, SHALL BE OUTLETTED INTO THE ROADWAY DITCH BY 611 TYPE F CONDUIT. THE OPTIMUM OUTLET ELEVATION SHALL BE ONE FOOT ABOVE THE FLOWLINE ELEVATION OF THE DITCH. LATERAL FIELD TILES WHICH CROSS THE ROADWAY SHALL BE INTERCEPTED BY 611, TYPE E CONDUIT, AND CARRIED IN A LONGITUDINAL DIRECTION TO AN ADEQUATE OUTLET OR ROADWAY CROSSING.

THE LOCATION, TYPE, SIZE AND GRADE OF REPLACEMENTS SHALL BE DETERMINED BY THE ENGINEER AND PAYMENT SHALL BE MADE ON FINAL MEASUREMENTS.

EROSION CONTROL PADS AND ANIMAL GUARDS SHALL BE PROVIDED AT THE OUTLET END OF ALL FARM DRAINS AS PER STANDARD CONSTRUCTION DRAWING DM-1.1, EXCEPT WHEN THEY OUTLET INTO A DRAINAGE STRUCTURE. PAYMENT FOR THE EROSION CONTROL PADS AND ANIMAL GUARDS AND ANY NECESSARY BENDS OR BRANCHES SHALL BE INCLUDED FOR PAYMENT IN THE PERTINENT CONDUIT ITEMS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR THE WORK NOTED ABOVE:

611 6" CONDUIT, TYPE B	100 FT.
611 6" CONDUIT, TYPE E	100 FT.
611 6" CONDUIT, TYPE F	100 FT.
601 ROCK CHANNEL PROTECTION TYPE C WITH FILTER	5 CU. YD.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND THE CONTRACTOR, ALONG WITH LOCAL REPRESENTATIVES, SHALL MAKE AN INSPECTION OF ALL EXISTING SEWERS WHICH ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCE SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL NEW CONDUITS, INLETS, CATCH BASINS, AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE STATE.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

659, TOPSOIL 3156 CU. YD.

659, SEEDING AND MULCHING 28428 SQ. YD.

659, REPAIR SEEDING AND MULCHING 1421 SQ. YD

659, INTER-SEEDING 1421 SQ. YD.

659, COMMERCIAL FERTILIZER 3.96 TON

659, LIME 5.88 ACRES

659, WATER 158 M. GAL.

659, MOWING 64 M. SQ. FT.

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT. QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS.

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

CALCULATED ALT CHECKED CEB

GENERAL NOTES

HEN-NEW BRIDGE

ITEM 409 - SEALING, MISC.: LONGITUDINAL JOINT SEALER

409 DESCRIPTION

THE WORK SHALL CONSIST OF FURNISHING AND INSTALLING A HOT-APPLIED ASPHALTIC JOINT ADHESIVE/SEALER ON LONGITUDINAL COLD CONSTRUCTION JOINTS IN ASPHALT CONCRETE PAVEMENTS AS SHOWN IN THE PLANS IN ACCORDANCE WITH THESE SPECIAL PROVISIONS.

409 MATERIALS

MATERIALS SHALL MEET THE FOLLOWING REQUIREMENTS:

CHARACTERISTIC	TEST	VALUE
BROOKFIELD VISCOSITY @ 400° F	ASTM D 3236	4000 - 10000 cp
CONE PENETRATION @ 77° F	ASTM D 5329	60 - 100
FLOW @ 140° F	ASTM D 5329	5MM MAXIMUM
RESILIENCE @ 77° F	ASTM D 5329	30% MINIMUM
DUCTILITY @ 77° F	ASTM D 113	30CM MINIMUM
DUCTILITY @ 39.2° F	ASTM D 113	30CM MINIMUM
TENSILE ADHESION @ 77° F	ASTM D 5329	500% MINIMUM
SOFTENING POINT	ASTM D 36	170° F MINIMUM
ASPHALT COMPATIBILITY	ASTM D 5329	PASS

THE MATERIAL SHALL BE "CRAFCO PAVEMENT JOINT ADHESIVE, PRODUCT NO. 34524" OR APPROVED EQUAL.

409 INSTALLATION

INSTALLATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER.

409 BASIS OF PAVEMENT

LONGITUDINAL JOINT SEALER SHALL BE APPLIED TO ALL VERTICAL ASPHALT FACES FOR THE JOINT BETWEEN ANY CONSTRUCTION PHASES AT AN APPLICATION RATE OF 0.63 FT/LB.

$$0 \text{ FT} \times \frac{1 \text{ LB}}{0.63 \text{ FT}} = 0 \text{ LB}$$

IN SALVAGE SECTION:
LONGITUDINAL JOINT SEALER SHALL BE APPLIED TO ALL VERTICAL ASPHALT FACES TO REMAIN IN PLACE AFTER MILLING AT AN APPLICATION RATE OF 1.5 FT/LB.

$$563.31 \text{ FT} \times \frac{1 \text{ LB}}{1.5 \text{ FT}} = 376 \text{ LB}$$

TOTAL LENGTH OF PROJECT:
LONGITUDINAL JOINT SEALER SHALL BE APPLIED TO ALL COLD JOINTS OF THE INTERMEDIATE COURSE AND SURFACE COURSES AT AN APPLICATION OF 4 FT/LB FOR EACH COURSE.

$$4245.11 \text{ FT} \times \frac{1 \text{ LB}}{4 \text{ FT}} = 1061 \text{ LB (INTERMEDIATE)}$$

$$4245.11 \text{ FT} \times \frac{1 \text{ LB}}{4 \text{ FT}} = 1061 \text{ LB (SURFACE)}$$

WORK UNDER THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER LBS, FURNISHED AND PLACED. PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT, TOOLS AND INCIDENTALS NECESSARY TO PERFORM THE WORK, COMPLETE IN PLACE AND ACCEPTED.

ITEM 409 - SEALING, MISC.: LONGITUDINAL JOINT SEALER 2498 LB

TOTALS CARRIED TO THE GENERAL SUMMARY.

EMBANKMENT MATERIALS AND TESTING

THE EMBANKMENT FILL MATERIAL SHALL CONSIST OF MATERIALS SUITABLE PER ITEM 703.16 WITH THE EXCEPTION THAT SOILS CLASSIFIED AS A-7-6 AND A-4B ARE NOT CONSIDERED SUITABLE FILL MATERIALS. IF BORROW MATERIALS CONSISTING OF A-7-6 AND A-4B WILL BE UTILIZED, THEN THESE MATERIALS SHALL BE THOROUGHLY BLENDED WITH OTHER NATURAL SOIL MATERIALS SUCH THAT THE BLENDED MATERIAL SOIL CLASSIFICATION IS IN ACCORDANCE WITH ITEM 703.16 AND IS NOT CLASSIFIED AS A-7-6 OR A-4B.

CONSOLIDATED UNDRAINED (CU) TRIAXIAL COMPRESSION TESTING SHALL BE PERFORMED PER ASTM D4767 ON REMOLDED SAMPLES OF PROPOSED FILL MATERIAL WITH AT LEAST ONE SAMPLE TESTED FOR EACH MATERIAL TYPE AS WELL AS AT A RATE OF NO LESS THAN ONE TEST PER 25,000 CUBIC YARDS OF MATERIAL. THE SAMPLES SHALL BE REMOLDED TO REPLICATE THE FILL MATERIAL PROPERTIES COMPACTED IN ACCORDANCE WITH ITEM 203. THE MATERIAL SHALL BE CONSIDERED SUITABLE FOR USE PROVIDED THE FOLLOWING MINIMUM DRAINED STRENGTH PARAMETERS ARE MET:

EFFECTIVE COHESION (C') = 250 PSF
EFFECTIVE INTERNAL ANGLE OF FRICTION (PHI') = 30 DEGREES

UNCONTROLLED FILL AREA

THE UNCONTROLLED FILL AREA IDENTIFIED IN THESE PLANS CONSISTS OF LEGALLY DEPOSITED SOLID WASTE FILL MATERIAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE EXISTING MATERIAL THAT IS WITHIN THE PROJECT CONSTRUCTION LIMITS TO A DEPTH NECESSARY TO MEET THE SUBGRADE COMPACTION REQUIREMENTS OF THESE PLANS AND REPLACING WITH GRANULAR EMBANKMENT.

ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED FOR THE EXCAVATION AND DISPODAL OF THE UNCONTROLLED FILL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 203 EXCAVATION, AS PER PLAN.

ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED TO BACKFILL THE EXCAVATED AREA TO THE EXISTING GRADE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 203, EMBANKMENT.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER.

ITEM 203, EXCAVATION, AS PER PLAN	16879 CU. YD.
ITEM 203, EMBANKMENT	16879 CU. YD

ITEM SPECIAL -SETTLEMENT PLATFORMS

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. SETTLEMENT READINGS SHALL BE TAKEN WEEKLY DURING CONSTRUCTION AND DURING ANY SPECIFIED WAITING PERIOD. THE READINGS SHALL BE PLOTTED ON GRAPH PAPER PRESENTING DEFORMATION (ON THE NEGATIVE Y-AXIS) AND FILL HEIGHT (ON THE POSITIVE Y-AXIS) VERSUS TIME (ON THE X-AXIS). A COPY OF EACH CUMULATIVE PLOT SHALL BE SENT TO THE DISTRICT GEOTECHNICAL ENGINEER AND THE OFFICE OF GEOTECHNICAL ENGINEERING, ATTENTION: GEOTECHNICAL DESIGN COORDINATOR, AFTER EACH SETTLEMENT READING IS RECORDED.

THE DEPARTMENT WILL CONSIDER VIBRATING WIRE SETTLEMENT MONITORING PLATFORMS IN LIEU OF THE CONVENTIONAL SETTLEMENT PLATFORMS. THE CONTRACTOR SHOULD PROVIDE DETAILS OF THE PROPOSED VIBRATING WIRE SETTLEMENT PLATFORMS AS WELL AS DESIGN DRAWINGS OF THE PROPOSED PLATFORM AND CABLING LAYOUT TO THE ENGINEER AT LEAST 30 DAYS PRIOR TO CONSTRUCTION. THE DEPARTMENT WILL REQUIRE 10 WORKING DAYS FOR REVIEW AND APPROVAL. THE DESIGN DRAWINGS SHOULD ILLUSTRATE THE PROPOSED SETTLEMENT VIBRATING WIRE SETTLEMENT PLATFORM LOCATIONS WITH ALL EXISTING AND PROPOSED SITE FEA TUBES TO VERIFY THE PROPOSED CABLING WILL NOT CONFLICT WITH EXISTING FACILITIES, PROPOSED FACILITIES OR UTILITIES. NO ADDITIONAL PAYMENT WILL BE PROVIDED IF THE CONTRACTOR ELECTS TO UTILIZE VIBRATING WIRE SETTLEMENT PLATFORMS.

MATERIALS: SOUND LUMBER SUCH AS 1/4 INCH EXTERIOR GRADE PLYWOOD SHALL BE USED FOR THE BASE. THE PIPE SHALL BE 2 1/2" STANDARD BLACK PIPE WITH THREADED FITTINGS AS SHOWN ON THE PLANS. A STEEL PLATE 36"x36"x1/8" MAY BE SUBSTITUTED FOR THE LUMBER FOR THE PLATFORMS, AT CONTRACTORS OPTION.

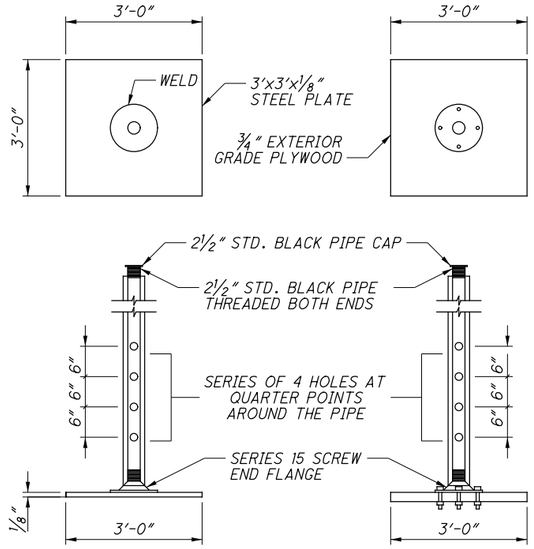
CONSTRUCTION REQUIREMENTS: THE 36"x36" PLATFORM SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS. THE PLATFORM SHALL BE SET ON A LEVEL SURFACE. THE PIPES SHALL BE FIRMLY SECURED TO THE PLATFORMS AND SHALL BE MAINTAINED IN PLUMB POSITION DURING THE PLACEMENT OF THE EMBANKMENT. PIPES SHALL BE MARKED AT INTERVALS BY THE CONTRACTOR TO FACILITATE MEASUREMENT OF THE DEPTH OF FILL. THE
CONTRACTOR SHALL STOP WORK IN ANY LOCATION WHERE A SETTLEMENT PLATFORM HAS BEEN DISTURBED OR DAMAGED UNTIL THE NECESSARY CORRECTIONS OR REPLACEMENT HAS BEEN PERFORMED.

FINAL GRADING AND INSTALLATION OF PAVEMENT CAN BEGIN ONCE THE SETTLEMENT PLATFORM READINGS ILLUSTRATE 1"8" OR LESS OF TOTAL MOVEMENT OVER A TWO WEEK WATING PERIOD.

PRIOR TO PAVING, THE TOP OF THE SETTLEMENT PLATFORM PIPE SHALL BE CUT OFF 2 FEET BELOW THE FINISHED SURFACE OF THE SUBGRADE OR TOPSOIL SURFACE, WHICHEVER IS APPLICABLE.

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

BASIS OF PAYMENT: PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE PER EACH FOR "ITEM SPECIAL, SETTLEMENT PLATFORMS" WHICH IS COMPENSATED FOR CONSTRUCTION, MAINTAINING AND MONITORING THE SETTLEMENT PLATFORMS INCLUDING FURNISHING ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK. PAYMENT WILL NOT BE MADE FOR SETTLEMENT PLATFORMS WHICH BECOME USELESS BECAUSE OF DAMAGE INFLICTED BY THE CONTRACTOR'S OPERATIONS.



NOTES:

1. SETTLEMENT PLATES SHALL BE PLACED AT
   STA. 39+20, LT. & RT.
   STA. 48+90, LT. & RT.
   UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. CONTRACTOR HAS 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.

THE FOLLOWING QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM SPECIAL, SETTLEMENT PLATFORMS	4 EACH

CALCULATED ALT CHECKED CEB

GENERAL NOTES

HEN-NEW BRIDGE

MAINTENANCE OF TRAFFIC DURING CONSTRUCTION - ENVIRONMENTAL COMMITMENTS

1. FOR PUBLIC NOTIFICATION OF MAINTENANCE OF TRAFFIC ACTIVITIES BY THE ODOT DISTRICT 2 PUBLIC INFORMATION OFFICER AND THE HENRY COUNTY ENGINEER OFFICE, THE CONTRACTOR WILL ADVISE THE ODOT DISTRICT 2 OFFICE OF COMMUNICATIONS; THE ODOT DISTRICT 2 WORK ZONE TRAFFIC MANAGER; AND THE HENRY COUNTY ENGINEER OFFICE OF THE ANTICIPATED START DATE OF ANY CONSTRUCTION ACTIVITIES AT LEAST 18 DAYS IN ADVANCE, INCLUDING BUT NOT LIMITED TO THE PLACING OF WORK ZONE SIGNS. THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR WILL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES 15 DAYS BEFOREHAND. INFORMATION WILL INCLUDE ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND WILL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, DETOUR ROUTES IF APPLICABLE, AND OTHER INFORMATION AS REQUESTED BY THE PROJECT ENGINEER. UPON RECEIPT OF NOTICE FROM THE CONTRACTOR, ODOT AND HENRY COUNTY WILL NOTIFY AFFECTED AGENCIES INCLUDING LOCAL MEDIA OUTLETS, SCHOOLS, POLICE, FIRE, EMERGENCY SERVICES, BUS TRANSPORTATION DEPARTMENTS, AND POST OFFICES 15 DAYS PRIOR THE WORK.

2. MARINE RECREATIONAL TRAFFIC/ACTIVITIES WILL NEED TO BE MAINTAINED DURING CONSTRUCTION, BUT MAY BE RESTRICTED DURING SPECIFIC CONSTRUCTION ACTIVITIES. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE MARINE IMPACTS WITH THE OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR) SCENIC RIVERS AND THE DIVISION OF WATERCRAFT (DOW). THE CONTRACTOR WILL BE RESPONSIBLE FOR NOTIFYING THE ODNR DIVISION OF WATERCRAFT OF ANY AND ALL RIVER TRAFFIC RESTRICTIONS A MINIMUM OF 48 HOURS PRIOR TO ACTIVITIES. NOTICES SHALL BE POSTED IN AN AREA THAT CAN BE SEEN BY THE USERS OF THE RIVER AND ON ODNR'S WEBSITE. THE INSTALLATION OF THE APPROPRIATE WARNING SIGNS AND BUOYS IN THE WATER SHALL BE COORDINATED WITH ODNR DIVISION OF WATERCRAFT OFFICER CHAD A. GERMAN, AREA SUPERVISOR AT 419-863-6003 OR CHAD.GERMAN@DNR.STATE.OH.US. APPROPRIATE WARNING SIGNS AND LIGHTS SHALL BE INSTALLED ACCORDING TO ODNR DIVISION OF WATERCRAFT.

3. APPROPRIATE LOCAL DETOUR ROUTES AND ACCOMMODATIONS SHALL BE MADE FOR ANY LOCAL SPECIAL EVENTS OR FESTIVALS USING APPROPRIATE SIGNAGE. COORDINATION WITH LOCAL FIRE, LAW ENFORCEMENT, EMERGENCY SERVICES, AND SCHOOLS WILL CONTINUE THROUGHOUT THE PROJECT PHASES, AND BE COORDINATED THROUGH THE HENRY COUNTY ENGINEER OFFICE FOR LOCAL CONTACTS.

ENVIRONMENTAL SITE ASSESSMENT - ENVIRONMENTAL COMMITMENTS

1. THE LEGALLY DEPOSITED SOLID WASTE FILL MATERIAL IDENTIFIED ON PARCEL NUMBER 28-0700640000 AND NUMBER 28-0700600000 THAT IS WITHIN THE PROJECT CONSTRUCTION LIMITS SHOULD BE REMOVED BY THE CONTRACTOR DURING THE CONSTRUCTION PHASE.

AGENCY COORDINATION - ENVIRONMENTAL COMMITMENTS

1. THE PROJECT IS WITHIN THE RANGE OF THE GREATER REDHORSE (MOXOSTOMA VALENCIENNESI), A STATE THREATENED FISH. THE DOW RECOMMENDS NO IN-WATER WORK IN PERENNIAL STREAMS FROM APRIL 15 TO JUNE 30 TO REDUCE IMPACTS TO INDIGENOUS AQUATIC SPECIES AND THEIR HABITAT.

2. THE PROJECT IS WITHIN THE RANGE OF THE THREEHORN WARTYBACK (OBLIQUARIA REFLEXA), A STATE THREATENED MUSSEL. THE DOW CONCURS THAT A MUSSEL SURVEY/RELOCATION SHOULD BE CONDUCTED PRIOR TO IN-WATER CONSTRUCTION. A MUSSEL SURVEY AND RELOCATION MUST BE COORDINATED BY HENRY COUNTY AND CONDUCTED PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL THIS HAS BEEN COMPLETED.

3. THIS PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS: A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET. IF SUITABLE TREES MUST BE CUT DURING THE SUMMER MONTHS, THE DOW RECOMMENDS A NET SURVEY BE CONDUCTED BETWEEN JUNE 1 AND AUGUST 15, PRIOR TO CUTTING.

4. THE CONTRACTOR SHALL NOTIFY THE U.S. COAST GUARD (USCG) NINTH DISTRICT AT LEAST 30 DAYS PRIOR TO THE START OF CONSTRUCTION. CONTACT INFO: SCOT STRIFFLER, BRIDGE PROJECT MANAGER, NINTH COAST GUARD DISTRICT PH: (216) 902-6087 FAX: (216) 902-6088 OR SCOT.M.STRIFFLER@USGS.MIL

5. ODOT SHALL PROVIDE DOCUMENTATION REQUIRED BY THE U.S. COAST GUARD (USCG) ONCE THE BRIDGE REPLACEMENT IS COMPLETED. COMPLETE DRAWINGS ARE NOT REQUIRED BUT A SINGLE PAGE SHOWING AN OVERHEAD AND SIDE VIEW OF THE BRIDGE WITH CLEARANCE INFORMATION FROM INTERNATIONAL GREAT LAKES DATUM 1985/LOW WATER DATUM (IGDLD85/LWD) WOULD BE ADEQUATE FOR DOCUMENTATION FOR THE USCG.

5. ODOT SHALL PROVIDE DOCUMENTATION REQUIRED BY THE U.S. COAST GUARD (USCG) ONCE THE BRIDGE REPLACEMENT IS COMPLETED. COMPLETE DRAWINGS ARE NOT REQUIRED BUT A SINGLE PAGE SHOWING AN OVERHEAD AND SIDE VIEW OF THE BRIDGE WITH CLEARANCE INFORMATION FROM INTERNATIONAL GREAT LAKES DATUM 1985/LOW WATER DATUM (IGDLD85/LWD) WOULD BE ADEQUATE FOR DOCUMENTATION FOR THE USCG.

6. STAGING AREAS SHOULD BE KEPT WELL AWAY FROM STREAMS AND STREAM BANKS. ANY DISTURBED STREAMBANKS SHALL BE RETURNED TO PREVIOUSLY EXISTING CONTOURS AND ALL STREAMBANK DISTURBED AREAS IN THE PROJECT VICINITY SHOULD BE MULCHED AND RE-VEGETATED WITH NATIVE PLANT SPECIES. ACCEPTABLE NATIVE PLANT SPECIES ARE AS FOLLOWS OR AS APPROVED BY THE ENGINEER:

   BLACK CHOKEBERRY - Aronia melanocarpa
   COMMON WINTERBERRY - Ilex verticillata
   AMERICAN ELDERBERRY - Sambucus Canadensis
   WITHEROD VIBURNUM - Viburnum cassinoides
   COMMON BUTTONBUSH - Cephalanthus occidentalis
   COMMON NINEBARK - Physocarpus opulifolius
   HAWTHORN - Crataegus mol/is
   WAHOO - Euonymus atropurpureus
   SWITCH GRASS - Panicum virgatum
   BLUE JOINT - Calamagrostis Canadensis
   PRAIRIE CORDGRASS - Spartina pectinate
   WILD RYE - Elymus riparius & E. virginicus
   LITTLE BLUE STEM - Schizachyrum scoparium
   BIG BLUESTEM - Andropogon gerardii
   INDIAN GRASS - Sorghastrum nutans

7. AN APPROVAL LETTER FROM THE OHIO SCENIC RIVERS PROGRAM SHALL BE ACQUIRED BEFORE THIS PROJECT MAY COMMENCE.

8. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON EROSION CONTROLS: A SEDIMENT AND EROSION CONTROL PLAN SHALL BE DEVELOPED FOR THE SITE AND IMPLEMENTED BEFORE EARTHWORK COMMENCES. PARTICULAR ATTENTION SHALL BE GIVEN TO ANY DRAINAGE WAYS, DITCHES AND STREAMS THAT COULD CONVEY SEDIMENT LADEN WATER DIRECTLY TO THE MAUMEE RIVER. PROPERLY INSTALLED (FRAMED AND ENTRENCHED) SEDIMENT FENCE SHALL BE UTILIZED AROUND THE WORK SITE PERIMETER AND STORM WATER INLETS. APPROPRIATELY DESIGNED ROCK-CHECK DAMS AND OTHER EROSION CONTROLS SHALL BE UTILIZED IN DITCHES AND DRAINAGE WAYS. ALL CONTROLS SHALL BE PROPERLY MAINTAINED UNTIL FINAL SITE STABILIZATION IS ACHIEVED. ALL SEDIMENT AND EROSION CONTROLS SHALL BE REMOVED UPON STABILIZATION OF THE PROJECT AREA WITH VEGETATION. STRAW BALES SHALL NOT BE PERMITTED AS A FORM OF EROSION CONTROL. ALL DENUDED AREAS, INCLUDING DITCHES, CULVERTS AND RIVER/STREAM BANKS, SHALL BE PERMANENTLY SEEDED AND MULCHED (OR FIBER MAT) IMMEDIATELY UPON COMPLETION OF EARTHWORK OR TEMPORARILY SEEDED AND MULCHED (OR FIBER MAT) WITHIN 7 DAYS IF THE AREA IS TO REMAIN IDLE FOR MORE THAN 30 DAYS. ACCESS ROADS CONSTRUCTED ON SLOPES SHALL BE GRAVELED TO PREVENT EROSION FROM SURFACE RUNOFF.

9. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON STORAGE OF FUELS, PETROCHEMICALS AND EQUIPMENT: IDLE EQUIPMENT, PETROCHEMICALS AND TOXIC/HAZARDOUS MATERIALS SHOULD NOT BE STORED IN THE FLOODPLAIN OR NEAR ANY DRAINAGE WAYS, DITCHES OR STREAMS THAT COULD CONVEY SUCH MATERIALS TO THE MAUMEE RIVER OR ANY OF ITS TRIBUTARIES. PETROCHEMICALS AND TOXIC/HAZARDOUS MATERIALS SHALL NOT BE DISCHARGED INTO THE MAUMEE RIVER, ITS FLOODPLAIN OR ANY OF ITS TRIBUTARY DRAINAGE WAYS, DITCHES OR STREAMS. REFUELING OF EQUIPMENT SHALL NOT OCCUR IN THE FLOODPLAIN OR NEAR ANY TRIBUTARY DRAINAGE WAYS, DITCHES OR STREAMS.

10. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON SPILL PREVENTION: THE CONTRACTOR SHALL DEVELOP A SPILL PREVENTION COUNTERMEASURE AND CONTINGENCY PLAN (SPCC) IN THE EVENT OF A SPILL OR BREAK IN AN EQUIPMENT HYDRAULIC LINE, WHICH MAY DISCHARGE INTO WATERS OF THE STATE. ALL SPILLS MUST BE REPORTED TO THE OHIO SPILL LINE (1-800-282-9378) IN ACCORDANCE WITH ORC 3750.06.

11. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON MATERIAL DISPOSAL: ANY AND ALL CONSTRUCTION DEBRIS, EARTHEN DEBRIS, EXCESS ASPHALT OR CONCRETE, WOOD DEBRIS FROM CLEARING, EXCESS FILL MATERIAL, MATERIAL EXCAVATED FROM THE RIVER BOTTOM AND TRASH SHALL BE DISPOSED OF AT AN APPROVED UPLAND SITE OR LAND FILL ABOVE 100 YEAR FLOOD ELEVATIONS. DISPOSAL OF ANY SUCH MATERIALS IN WETLANDS, FLOODPLAINS OR WITHIN 1,000 FEET OF THE MAUMEE RIVER IS PROHIBITED.

12. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON IN-STREAM WORK: ALL IN-STREAM WORK SHALL BE CONDUCTED DURING DRY PERIODS OF EXTREMELY LOW FLOW (AUGUST 1 THROUGH OCTOBER 31). THIS WOULD ALSO INCLUDE ANY BORING WORK THAT WOULD BE CONDUCTED TO EVALUATE PIER PLACEMENT. NOTE THAT BORING WORK IN THE MAUMEE RIVER WILL REQUIRE AN APPROVAL LETTER. AS IN-STREAM WORK COMMENCES, A PLAN SHALL BE IN PLACE TO HANDLE BOAT TRAFFIC IN THE AREA. PLEASE COORDINATE WITH CHAD GERMAN, CHAD.GERMAN@DNR.STATE.OH.US OR (419) 836-6003 TO SEE THAT BOAT TRAFFIC WILL BE HANDLED ACCORDINGLY DURING PERIODS OF IN-STREAM WORK. ANY DISTURBED AREAS IN THE STREAM BOTTOM SHALL BE RETURNED TO PRE-CONSTRUCTION CONTOURS. STREAM BOTTOM ELEVATIONS SHALL BE DETERMINED BEFORE IN-STREAM WORK COMMENCES TO ENSURE THAT ALL FILL MATERIAL AND DEBRIS IS COMPLETELY REMOVED BEFORE CONSTRUCTION IS COMPLETED. IF FEASIBLE, PIER CONSTRUCTION UTILIZING DRILLED SHAFTS AND HOLDING PITS (FOR SEDIMENT LADEN WATER AND EXCESS CONCRETE) IS RECOMMENDED.

RIP-RAP USED SHALL BE KEPT TO THE MINIMUM AMOUNT NEEDED TO PREVENT SCOUR AND SHALL CONSIST OF CLEAN ROCK ONLY (FREE OF ANY TOXIC OR FINE MATERIAL). ALL FILL MATERIAL USED AS RIP-RAP; WORK PLATFORMS OR COFFERDAMS SHALL BE A MINIMUM OF THREE INCHES IN DIAMETER AND BE WASHED TO REMOVE FINE PARTICULATE MATTER (I.E. CLAY, SILT, SAND AND SOIL). WORK PLATFORMS SHALL BE KEPT TO THE ABSOLUTE MINIMUM SIZE NEEDED TO FACILITATE IN-STREAM WORK. IN-STREAM WORK SHALL BE CONDUCTED THROUGH THE USE OF WATER DIVERSIONS NOT REQUIRING THE PLACEMENT OF EARTHEN FILL (I.E. SHEET PILING, MEMBRANE DAMS, ETC.) WHEREVER POSSIBLE. ANY FILL SHALL BE COMPLETELY REMOVED FROM THE STREAMBED IMMEDIATELY UPON COMPLETION OF IN-STREAM WORK. IF FEASIBLE, THE USE OF AQUA BARRIERS IS RECOMMENDED.

CALCULATED ALT
CHECKED CEB

GENERAL NOTES

HEN-NEW BRIDGE

AGENCY COORDINATION - ENVIRONMENTAL COMMITMENTS (CONT.)

13. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON DE-WATERING: NO WASTEWATER OF ANY KIND SHALL BE DIRECTLY DISCHARGED INTO THE MAUMEE RIVER OR ANY OF ITS TRIBUTARY STREAMS, DRAINAGE WAYS OR DITCHES. IF DEWATERING IS NECESSARY TO FACILITATE IN-STREAM WORK OR PIER CONSTRUCTION, ALL WASTEWATER SHALL BE PUMPED ONTO A VEGETATED AREA A SUFFICIENT DISTANCE FROM THE RIVER TO ALLOW FOR COMPLETE INFILTRATION. IF DISCHARGE TO A VEGETATED AREA IS NOT FEASIBLE, THEN WASTEWATER SHALL BE DISCHARGED INTO A SEDIMENT FILTER BAG OR INTO A TEMPORARY DETENTION/RETENTION POND WITH SUFFICIENT RETENTION TIME TO PERMIT FOR THE SETTLING OF ALL SUSPENDED SOLIDS.

14. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON CLEARING AND GRUBBING: ALL STREAMBANK VEGETATION SHALL BE LEFT UNDISTURBED TO THE MAXIMUM EXTENT POSSIBLE. AREAS WHERE VEGETATION IS REMOVED SHALL BE RE-VEGETATED WITH NATIVE TREE SPECIES. ANY DISTURBED STREAMBANKS SHALL BE RETURNED TO PREVIOUSLY EXISTING CONTOURS AND ELEVATIONS. A NATIVE TREE SPECIES LIST CAN BE PROVIDED BY THE NORTHWEST OHIO ASSISTANT REGIONAL SCENIC RIVERS MANAGER. TREES SHALL BE CONTAINERIZED NURSERY STOCK OR WHIPS DEPENDING ON THE NUMBER BEING PLANTED AND THE CONDITION OF THE SITE. ANY TREES THAT DIE DURING THE FIRST GROWING SEASON SHALL BE REPLACED. CUTTING OR CLEARING OF ANY RIPARIAN VEGETATION WITHIN 1,000 FEET OF THE MAUMEE RIVER BEYOND THE EXISTING RIGHT-OF-WAY SHALL BE PROHIBITED, HOWEVER VERTICAL TRIMMING IS PERMITTED WHERE NECESSARY. CARE SHALL BE TAKEN NOT TO GIRDLE OR SCUFF TREE TRUNKS OR DAMAGE ANY STANDING TREES.

15. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING BEST MANAGEMENT PRACTICE ENVIRONMENTAL COMMITMENTS ON PAINTING AND SAND/WATER BLASTING: IF PAINTING, SAND OR WATER BLASTING ANY PORTION OF THE BRIDGE IS NECESSARY THEN APPROPRIATE APRONS SHALL BE UTILIZED TO PROVIDE FOR COMPLETE CONTAINMENT OF ALL PAINT DEBRIS PARTICLES AND OTHER DEBRIS. APPROPRIATE APRONS SHALL BE UTILIZED TO PROVIDE FOR COMPLETE CONTAINMENT OF ALL PAINT AND/OR SEALANT OVER-SPRAY. ANY SUCH DEBRIS SHALL BE REMOVED IMMEDIATELY FROM 1,000 FEET OF THE MAUMEE RIVER AND DISPOSED OF AT AN APPROVED UPLAND SITE ABOVE THE 100 YEAR FLOOD ELEVATIONS. DISPOSAL IN WETLANDS, FLOODPLAINS OR WITHIN 1,000 FEET OF THE MAUMEE RIVER IS PROHIBITED.

16. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING ENVIRONMENTAL COMMITMENTS ON NOTIFICATION: THE NORTHWEST OHIO ASSISTANT REGIONAL SCENIC RIVERS MANAGER, CHRISTINA KUCHLE SHALL BE INVITED TO A PRE-CONSTRUCTION MEETING WITH THE CONTRACTOR PRESENT AND BE NOTIFIED OF THE PROJECT START DATE ONE WEEK PRIOR TO THE COMMENCEMENT OF WORK. CHRISTINA MAY BE CONTACTED AT (419) 429-8306 OR CHRISTINA.KUCHLE@DNR.STATE.OH.US. PERIODIC INSPECTIONS OF THE PROJECT SHALL TAKE PLACE TO ENSURE SCENIC RIVER REQUIREMENTS ARE BEING MET. CHRISTINA SHALL ALSO BE CONTACTED ONE WEEK PRIOR TO COMPLETION OF THE PROJECT TO CONDUCT A FINAL SITE INSPECTION. THE FINAL SITE INSPECTION SHALL BE SCHEDULED WHILE THE CONTRACTOR IS PRESENT TO ENSURE THAT FINAL SITE STABILIZATION HAS BEEN ACHIEVED. SCENIC RIVER 5/32S CONDITIONS SHALL BE INCLUDED IN THE FINAL PROJECT PLAN SET AND MUST BE MADE AVAILABLE TO ALL CONSTRUCTION PERSONNEL THROUGHOUT THE DURATION OF THE PROJECT. THIS SHALL ENSURE THAT THE CONTRACTORS UNDERSTAND SCENIC RIVER REQUIREMENTS.

17. THE OHIO SCENIC RIVERS PROGRAM REQUIRES THE FOLLOWING ENVIRONMENTAL COMMITMENTS ON SCENIC RIVER 5/32S SIGNAGE: SIGNS STATING MAUMEE STATE RECREATIONAL RIVER SHALL BE PROVIDED AND INSTALLED AT BOTH APPROACHES OF THE NEW BRIDGE. A SIGN STATING (BRIDGE NAME, ROAD NAME/NUMBER) SHALL BE INSTALLED ON THE UPSTREAM SIDE OF THE NEW BRIDGE.

DRINKING WATER - ENVIRONMENTAL COMMITMENTS

1. THE PROJECT IS LOCATED IN THE CORRIDOR MANAGEMENT ZONE FOR THE HENRY COUNTY REGIONAL WATER & SEWER DISTRICT'S MCCLURE DRINKING WATER RESOURCE AREA. IN ORDER TO MINIMIZE THE POTENTIAL FOR A RELEASE IN THIS SENSITIVE AREA, PROJECT RELATED REFUELING AND MAINTENANCE ACTIVITIES SHALL NOT BE PERFORMED WITHIN THE PROJECT AREA. SPILLS OF FUELS, OILS, CHEMICALS OR OTHER MATERIALS WHICH COULD POSE A THREAT TO THE DRINKING WATER SOURCE AREA SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR. IF THE SPILL IS A REPORTABLE AMOUNT, THE CONTRACTOR SHALL CONTACT CITY OF NAPOLEON FIRE CHIEF, CLAYTON O'BRIEN AT (419) 592-0441 FOR CLEAN-UP OF THE SPILL; AS WELL AS THE LOCAL EMERGENCY PLANNING COMMITTEE (LEPC) DIRECTOR, NICK NYE AT (419) 599-5827; AND THE LOCAL EMERGENCY MANAGEMENT AGENCY (EMA) DIRECTOR, TRACY BUSCH AT (419) 599-6432.

IDENTIFIED SECTION 4(f) PROPERTIES - ENVIRONMENTAL COMMITMENTS

1. THE MIAMI, WABASH & ERIE CANAL TRAIL (OLD TOWPATH TRAIL) HAS BEEN IDENTIFIED AS A 4(F) RECREATIONAL RESOURCE. THE FOLLOWING MEASURES TO MINIMIZE HARM TO THIS RECREATIONAL TRAIL WILL BE ADHERED TO FOR MAINTAINING THE RESOURCE:

   A. ACCESS TO THE TRAIL WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION VIA A SHORT DETOUR AROUND THE WORK ZONE ALONG THE RIVERVIEW AVENUE RIGHT-OF-WAY.

   B. THE PROJECT SPONSOR OR CONTRACTOR WILL INSTALL APPROPRIATE CLOSURE/DETOUR SIGNS IN AREAS THAT WILL BE VISIBLE TO USERS OF THE TRAIL PRIOR TO CONSTRUCTION.

   C. ADVANCE NOTICE WILL BE PROVIDED WITHIN 48 HOURS PRIOR TO CLOSURE, AND DETOUR SIGNS WILL BE POSTED AT LOCATIONS ALONG THE TRAIL THAT MEET ALL ODOT AND LOCAL SPECIFICATIONS

   D. TEMPORARY CONSTRUCTION FENCING WILL BE INSTALLED ALONG PROPOSED CONSTRUCTION LIMITS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES TO PROTECT THE EXISTING 4(F) PROPERTY AND THE PUBLIC

   E. THE CONTRACTOR WILL CLOSELY COORDINATE THE CONSTRUCTION SCHEDULE WITH ODOT, THE HENRY COUNTY ENGINEER AND THE OWJ'S, ODNR AND HENRY COUNTY PARK DISTRICT. IN ADDITION, THE CONTRACTOR WILL NOTIFY ODOT, THE HENRY COUNTY ENGINEER AND THE OWJ'S, ODNR AND HENRY COUNTY PARK DISTRICT 14 DAYS PRIOR TO BEGINNING CONSTRUCTION

   F. THE AREA TO BE DISTURBED ADJACENT TO THE TRAIL WITHIN THE PROPOSED CONSTRUCTION LIMITS WILL BE FULLY RESTORED, I.E. RETURNED TO A CONDITION AT LEAST AS GOOD AS THAT EXISTING BEFORE CONSTRUCTION

   G. NO STAGING AND/OR STORAGE OF CONSTRUCTION EQUIPMENT WILL OCCUR OUTSIDE THE PROPOSED CONSTRUCTION LIMITS.

2. THE MAUMEE RIVER IS DESIGNATED AS A STATE SCENIC AND RECREATIONAL RIVER BY THE ODNR UNDER THE STATE SCENIC RIVERS ACT OF 1968, AND IS THEREFORE A RECOGNIZED 4(F) RECREATIONAL PROPERTY. THE FOLLOWING MEASURES TO MINIMIZE HARM TO THIS STATE SCENIC AND RECREATIONAL RIVER WILL BE ADHERED TO FOR MAINTAINING THE RESOURCE:

   A. THE CONTRACTOR WILL BE REQUIRED TO CLOSELY COORDINATE THE CONSTRUCTION SCHEDULE WITH ODOT AND ODNR (SCENIC RIVERS, CHRISTINA KUCHLE).

   B. THE CONTRACTOR WILL COORDINATE THE INSTALLATION OF APPROPRIATE WARNING SIGNS AND BUOYS IN THE WATER ACCORDING TO ODNR DIVISION OF WATERCRAFT SPECIFICATIONS FOR WATERCRAFT SAFETY.

   C. ADVANCE NOTICE OF THE PROJECT'S CONSTRUCTION SCHEDULE AND POTENTIAL FOR USERS TO ENCOUNTER PARTIAL CLOSURES AT THE BRIDGE (FOR THE CAUSEWAY) WILL BE PROVIDED NO LESS THAN 48 HOURS PRIOR TO CONSTRUCTION ACTIVITIES.

   D. NOTICES WILL BE POSTED IN AN AREA THAT CAN BE SEEN BY USERS OF THE MAUMEE RIVER, BOTH UPSTREAM AND DOWNSTREAM, AND ON THE ODNR AND ODOT WEBSITES.

WATERWAY PERMITS - ENVIRONMENTAL COMMITMENTS

1. THE PROJECT REQUIRES A WATERWAY PERMIT FOR WORK WITHIN WETLANDS AND THE MAUMEE RIVER WHICH SHALL BE ATTACHED TO THE PLANS AS SPECIAL PROVISIONS. NO WORK WITHIN WETLANDS AND/OR BELOW THE ORDINARY HIGH WATER MARK (OHWM) SHALL TAKE PLACE UNTIL THE PROPER PERMIT IS OBTAINED FROM ODOT. ALL CONDITIONS OF THE PERMIT SHALL BE FOLLOWED THROUGHOUT CONSTRUCTION BY THE CONTRACTOR.

STORM WATER PERMITS - ENVIRONMENTAL COMMITMENTS

1. THE SPECIFICATIONS SET FORTH IN THE MOST CURRENT VERSION OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LOCATION AND DESIGN MANUAL AND STANDARD DRAWINGS WILL BE USED TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION. DISTURBED AREAS WILL BE RESEEDED. A STORM WATER POLLUTION PREVENTION PLAN (SWPP) WILL BE PREPARED BY THE CONTRACTOR AND A NOTICE OF INTENT TO THE OEPA WILL BE SUBMITTED.

FLOODPLAINS - ENVIRONMENTAL COMMITMENTS

1. THE PROJECT IS LOCATED WITHIN A REGULATED FLOODPLAIN. ALL FLOODPLAIN REGULATIONS SHALL BE FOLLOWED THROUGHOUT DESIGN AND CONSTRUCTION.

CALCULATED ALT CHECKED CEB

GENERAL NOTES

HEN-NEW BRIDGE

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED FOR ALL ROADS AT ALL TIMES BY THE USE OF THE EXISTING PAVEMENT, THE COMPLETED PAVEMENT AND ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, EXCEPT AS FOLLOWS:

THE INTERSECTION OF INDUSTRIAL DR. AND RIVERVIEW AVE. MAY BE CLOSED FOR A PERIOD NOT TO EXCEED 45 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 19.

S.R. 110 MAY BE CLOSED AT THE LOCATION OF THE PROPOSED ROUNDABOUT FOR A PERIOD NOT TO EXCEED 45 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET 20.

A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $1400 PER DAY FOR EACH CALENDAR DAY THE ROADWAY(S) REMAIN CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

RIVERVIEW DR. AND S.R. 110 SHALL NOT BE CLOSED TO THROUGH TRAFFIC AT THE SAME TIME.

FLAGGERS MAY BE UTILIZED AS NEEDED DURING DAYTIME HOURS.

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

NOTICE OF CLOSURE SIGNS, AS DETAILED IN THESE PLANS, SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT THE POINT OF CLOSURE.

ROAD WILL BE CLOSED [DATE *] FOR [ ] DAYS INFO: [ ]	ROAD WILL BE CLOSED [DATE *] FOR [ ] DAYS OHIO DEPT. OF TRANSPORTATION

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DETERMINED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

THE CONTRACTOR SHALL NOTIFY THE CITY OF NAPOLEON AND ODOT IN WRITING AT LEAST 14 DAYS PRIOR TO THE CLOSURES.

ITEM 410, TRAFFIC COMPACTED SURFACE, TYPE A OR B	100 CU. YD.
ITEM 616, WATER	50 M. GAL.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CMS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 180 M. GAL

ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 614, BARRIER REFLECTORS AND/OR OBJECT MARKERS

BARRIER REFLECTORS AND/OR OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL. BARRIER REFLECTORS, OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO CMS 626, EXCEPT THAT THE SPACING SHALL BE 50 FEET. AN ESTIMATED QUANTITY OF 24 EACH OF ITEM 614 BARRIER REFLECTOR, TYPE B2 AND 24 EACH OF ITEM 614 OBJECT MARKER, TWO-WAY HAVE BEEN PROVIDED AND CARRIED TO THE GENERAL SUMMARY.

ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

ALL EXCAVATION, EMBANKMENT AND GRADING NECESSARY FOR THE PLACEMENT OF ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A SHALL BE CONSIDERED INCIDENTAL TO THIS WORK AND SHALL BE PAID FOR UNDER THE LUMP SUM BID FOR ITEM 614 MAINTAINING TRAFFIC.

MODIFICATIONS TO MAINTENANCE OF TRAFFIC

IF THE CONTRACTOR SO ELECTS, HE MAY SUBMIT AN ALTERNATE SEQUENCE PROVIDED THE INTENT OF THE PROVISIONS IN THESE PLANS ARE FOLLOWED AND NO ADDITIONAL INCONVENIENCE TO THE TRAVELING PUBLIC RESULTS FROM THESE CHANGES. NO ALTERNATE PLAN SHALL BE PLACED INTO EFFECT UNTIL APPROVAL HAS BEEN GRANTED, IN WRITING, BY THE COUNTY.

MAUMEE WABASH ERIE CANAL TRAIL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS FOR THE MAUMEE WABASH ERIE CANAL TRAIL (OLD TOWPATH TRAIL) DURING CONSTRUCTION IN ACCORDANCE WITH THESE PLANS.

SEQUENCE OF CONSTRUCTION

GENERAL

THE FOLLOWING WORK MAY BE PERFORMED AT ANY TIME DURING THE CONSTRUCTION SEQUENCE SO LONG AS ALL REQUIREMENTS OF THESE PLANS AND THE PROJECT SCHEDULE ARE MET:

- THE CONSTRUCTION OF THE NEW STRUCTURE
- THE CONSTRUCTION OF INDUSTRIAL DR. BETWEEN RIVERVIEW AVE. AND S.R. 110
- THE CONSTRUCTION OF THE SHARED USE PATH

STAGE 1

SETUP THE TEMPORARY TRAFFIC CONTROL FOR RIVERVIEW AVE. AND INDUSTRIAL DRIVE AS SHOWN ON SHEET 21 AND MAINTAIN TRAFFIC IN THEIR EXISTING LANES ON S.R. 110 AND PERFORM THE FOLLOWING WORK:

- CONSTRUCT THE EMBANKMENT FOR INDUSTRIAL DR., RIVERVIEW AVE., S.R. 110 AND THE ROUNDABOUTS OUTSIDE OF THE EXISTING AND TEMPORARY PAVEMENT.
- CONSTRUCT THE NEW FIELD DRIVES ON THE WESTBOUND SIDE OF S.R. 110

STAGE 2

UPON THE COMPLETION OF ALL STAGE 1 WORK CONSTRUCT THE RIVERVIEW AVE. ROUNDABOUT AND THE S.R. 110 ROUNDABOUT IN SEPARATE PHASES. THESE PHASES MAY BE CONSTRUCTED IN ANY ORDER.

PHASE 1

CLOSE THE INTERSECTION OF INDUSTRIAL DR. AND RIVERVIEW AVE. TO THROUGH TRAFFIC AND PERFORM THE FOLLOWING WORK:

- CONSTRUCT THE RIVERVIEW AVE. AND INDUSTRIAL DR. IMPROVEMENTS AND THE ROUNDABOUT TO THE FINAL SURFACE COURSE.
- INSTALL PAVEMENT MARKINGS AND SIGNING FOR THE ROUNDABOUT AND APPROACHES.

UPON THE COMPLETION OF THIS WORK, CLOSE THE SOUTH APPROACH OF THE ROUNDABOUT TO TRAFFIC WITH BARRICADES AND OPEN INDUSTRIAL DR., RIVERVIEW AVE. AND THE ROUNDABOUT TO TRAFFIC.

PHASE 2

CLOSE S.R. 110 TO THROUGH TRAFFIC AT EACH END OF THE PROJECT WORK LIMITS AND PERFORM THE FOLLOWING WORK:

- CONSTRUCT THE S.R. 110 IMPROVEMENTS AND THE ROUNDABOUT TO THE FINAL SURFACE COURSE.
- INSTALL PAVEMENT MARKINGS AND SIGNING FOR THE ROUNDABOUT AND APPROACHES.

UPON THE COMPLETION OF THIS WORK, CLOSE THE NORTH APPROACH OF THE ROUNDABOUT TO TRAFFIC WITH BARRICADES AND OPEN S.R. 110 AND THE ROUNDABOUT TO TRAFFIC.

STAGE 3

UPON THE COMPLETION OF ALL STAGE 2 WORK, THE CONSTRUCTION OF THE NEW STRUCTURE AND ALL WORK ON INDUSTRIAL DR. BETWEEN RIVERVIEW AVE. AND S.R. 110 OPEN INDUSTRIAL DRIVE FROM RIVERVIEW AVE. TO S.R. 110 TO TRAFFIC.

CALCULATED ALT | CHECKED RLS

PLAN AND SEQUENCE OF TRAFFIC GENERAL NOTES

MAINTENANCE

HEN-NEW BRIDGE

SHEET NO.	REF. NO.	STATION FROM	STATION TO	SIDE	614 WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	614 WORK ZONE CENTER LINE, CLASS 1, 740.06, TYPE I	614 WORK ZONE EDGE LINE, CLASS 1, 642 PAINT (WHITE)	615 PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	622 PORTABLE BARRIER, 32"
					EACH	MILE	MILE	SY	FT
21	CL-1	583+00	592+94	CL/LT		0.19			
21	CL-2	593+49	603+10	CL/LT		0.18			
21	EW-1	586+00	592+94	LT			0.13		
21	EW-2	586+00	600+10	RT			0.27		
21	EW-3	592+94	600+10	LT			0.14		
21	P-1	586+55	592+94	LT				142	
21	P-2	593+49	597+82	LT				97	
21	PB-1	586+87	593+67	RT	2				680
21	PB-2	595+14	595+04	RT	2				390
TOTALS CARRIED TO GENERAL SUMMARY					4	0.37	0.54	239	1070

CALCULATED ALT
CHECKED RLS

MAINTENANCE OF TRAFFIC SUBSUMMARY

HEN-NEW BRIDGE

18
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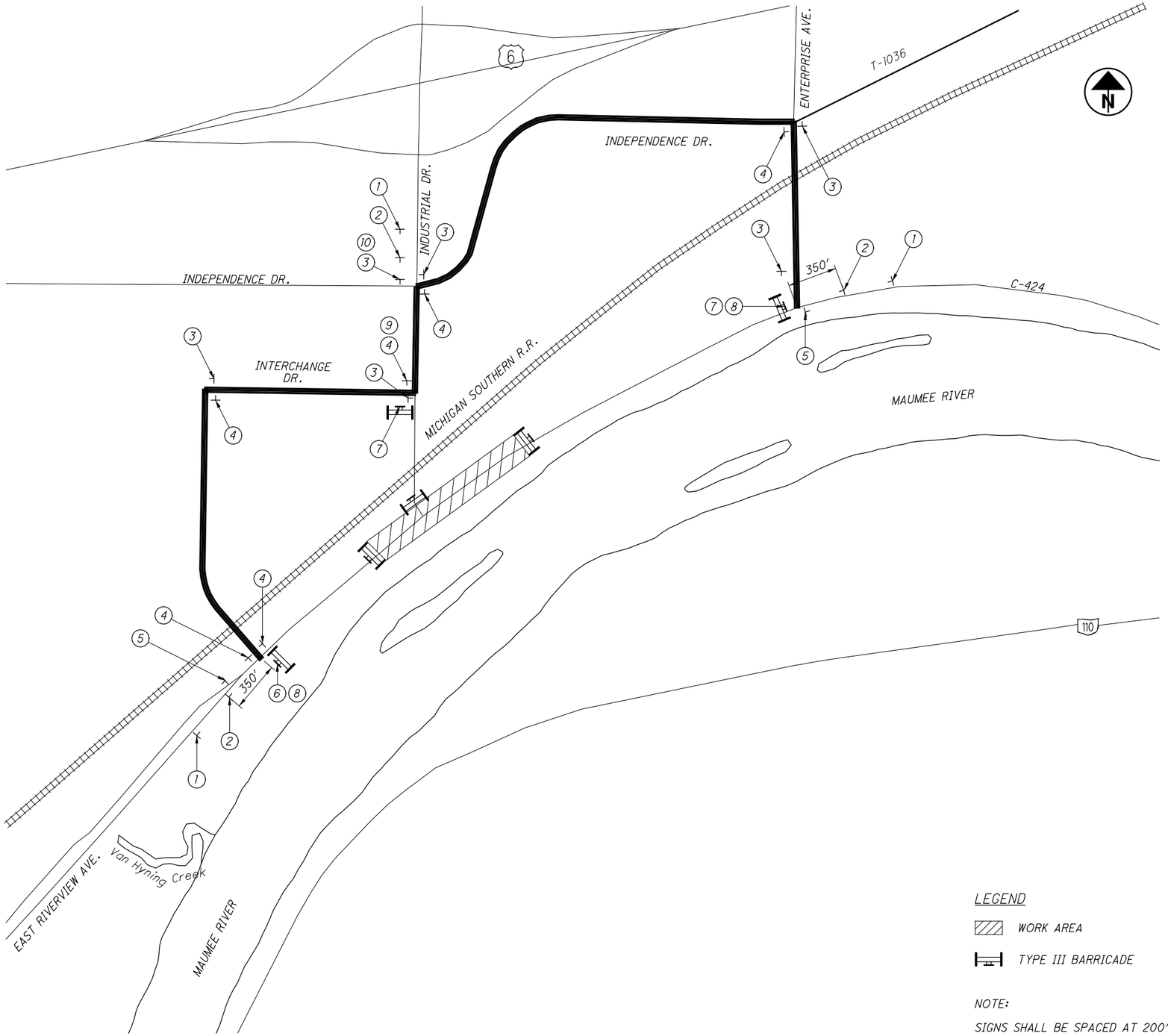
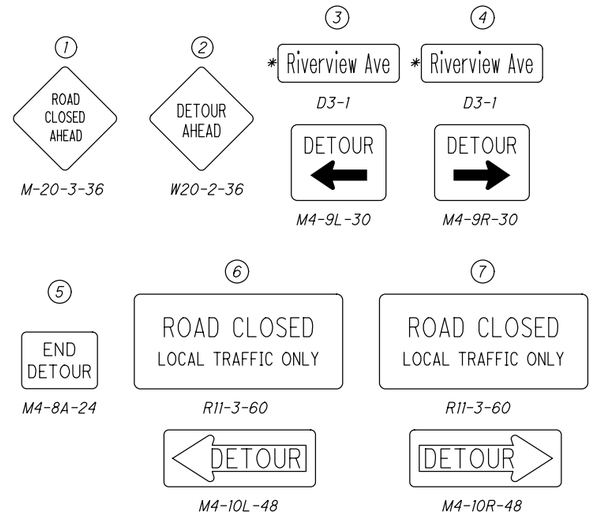




* SIGN SHALL BE BLACK ON ORANGE

LEGEND

WORK AREA

TYPE III BARRICADE

NOTE:

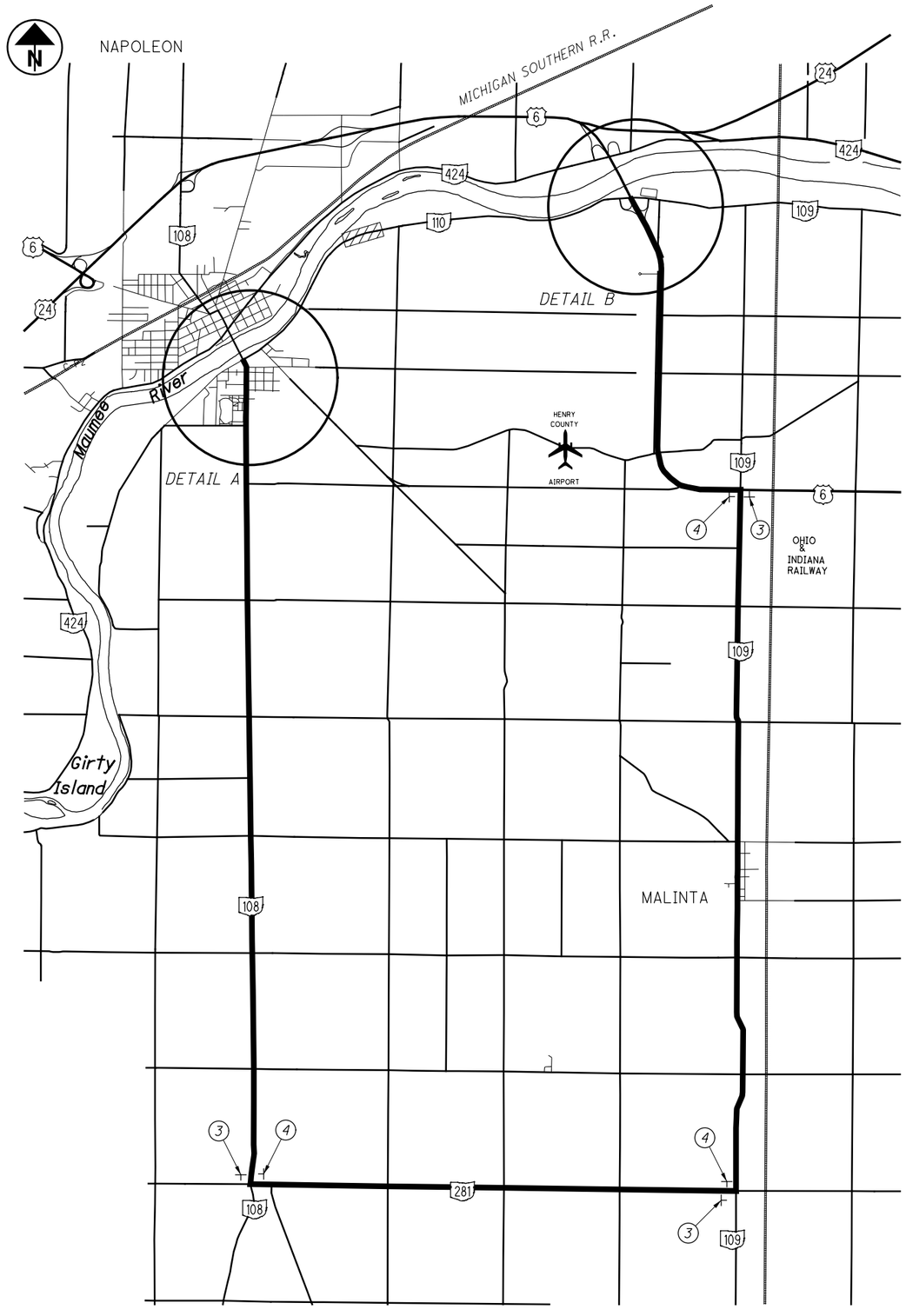
SIGNS SHALL BE SPACED AT 200' FOR INDUSTRIAL DR. AND 350' FOR RIVERVIEW AVE.

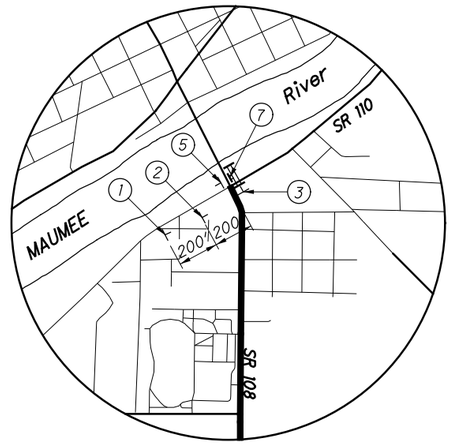
CONTRACTOR SHALL CLOSE RIVERVIEW AVE AND INDUSTRIAL DR. AS SHOWN ON SHEET 23

CALCULATED | CHECKED

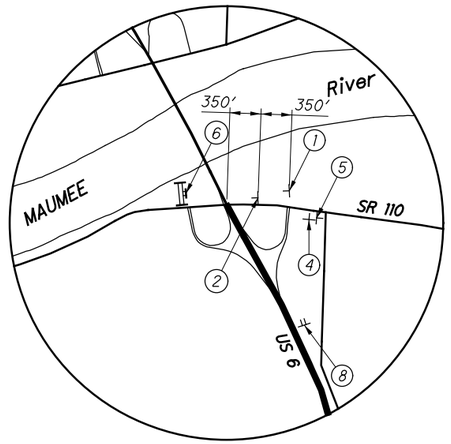
MAINTENANCE OF TRAFFIC
DETOUR MAP- RIVERVIEW AVE.

HEN-NEW BRIDGE

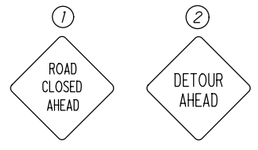


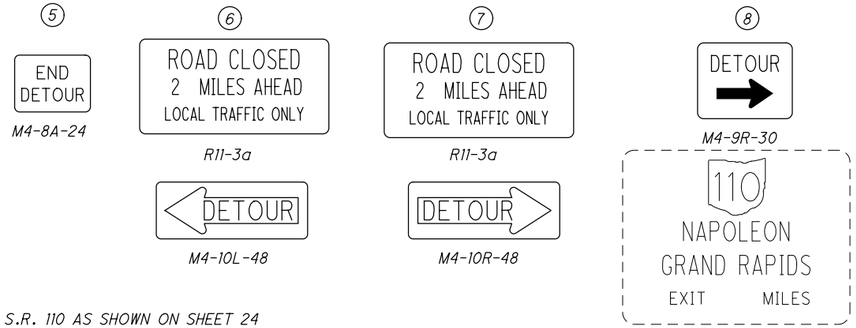


DETAIL A
S.R. 108 AND S.R. 110



DETAIL B
U.S. 6 AND S.R. 110





LEGEND

WORK AREA

TYPE III BARRICADE

NOTE:

CONTRACTOR SHALL CLOSE S.R. 110 AS SHOWN ON SHEET 24

CALCULATED | CHECKED

MAINTENANCE OF TRAFFIC DETOUR MAP - S.R. 110

HEN-NEW BRIDGE

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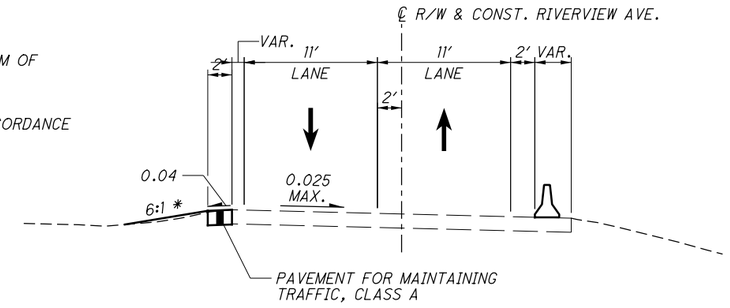
NOTES

ACCESS TO PRIVATE DRIVES SHALL BE MAINTAINED AT ALL TIME UNLESS OTHERWISE SHOWN IN THE PLANS.

EX. GUARDRAIL SHALL REMAIN IN PLACE UNLESS AN ALTERNATE FORM OF PROTECTION IS PROVIDED FOR SLOPES STEEPER THAN 4:1.

EXISTING MAILBOXES WITHIN THE PROJECT WORK LIMITS AND THE MAINTENANCE OF TRAFFIC WORK ZONE SHALL BE MAINTAINED IN ACCORDANCE WITH C&MS 107.10.



* SLOPES MAY VARY TO A MAX OF 4:1 AT DRAINAGE STRUCTURES & OTHER UTILITIES WHERE 6:1 SLOPES CANNOT BE MAINTAINED.

LEGEND

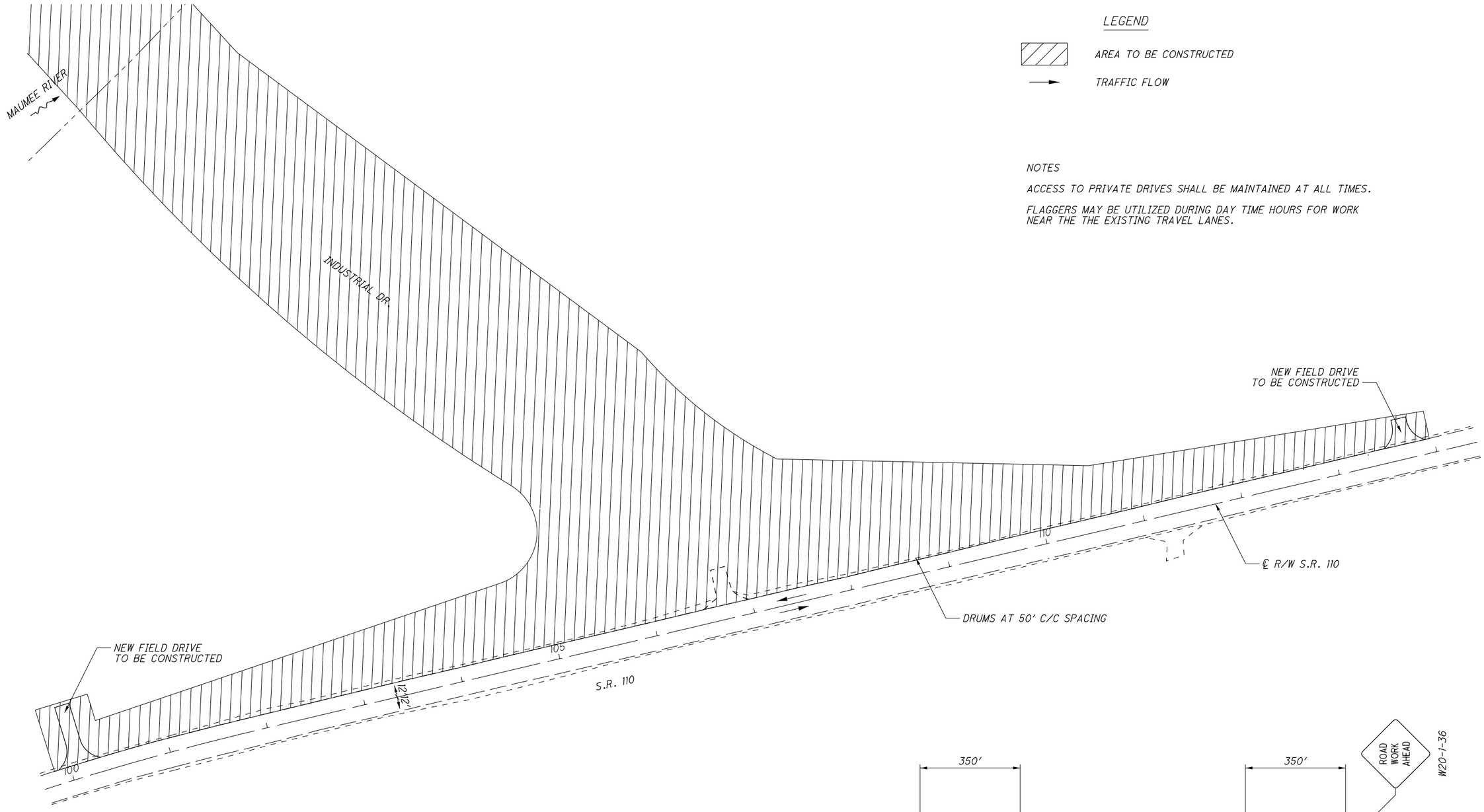
- AREA TO BE CONSTRUCTED
- TRAFFIC FLOW
- EW — WORKZONE EDGE LINE, WHITE
- CL — WORKZONE CENTER LINE, DOUBLE SOLID
- PB — 32" PORTABLE CONCRETE BARRIER
- P — PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A

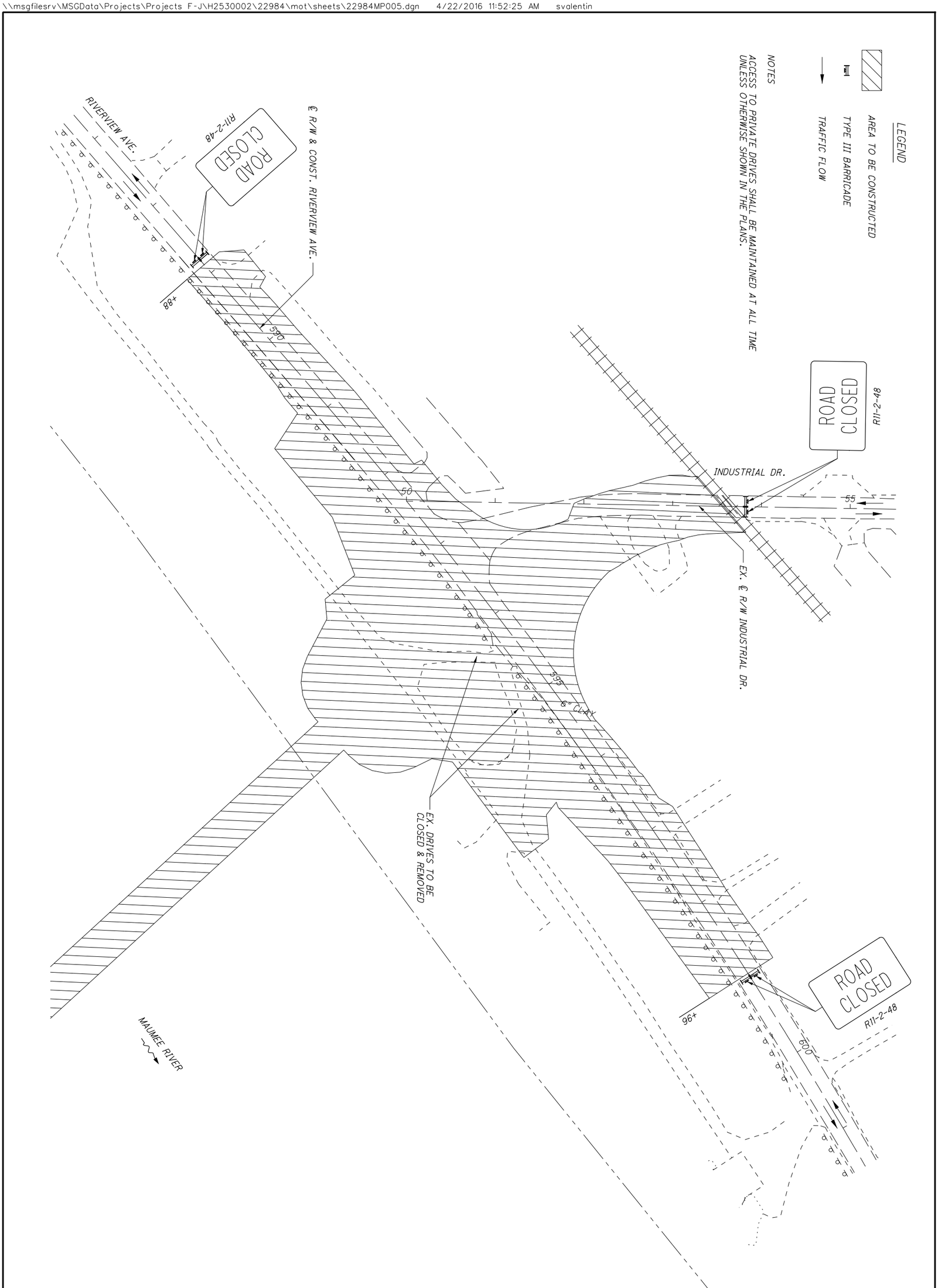
HORIZONTAL SCALE IN FEET: 0, 25, 50, 100

CALCULATED | CHECKED

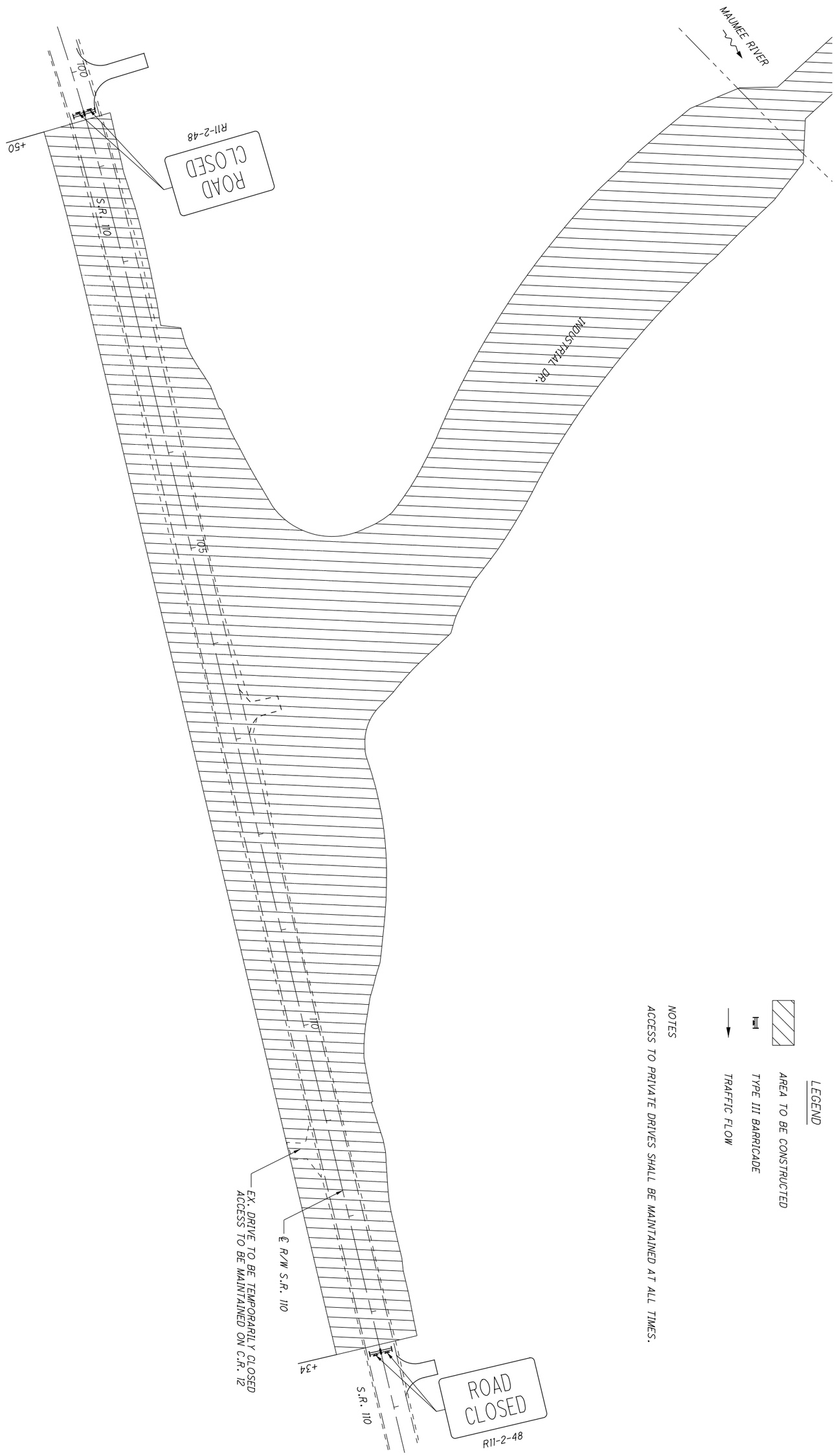
MAINTENANCE OF TRAFFIC - STAGE 1
RIVERVIEW AVE. & INDUSTRIAL DR.

HEN-NEW BRIDGE





23 / 186	HEN-NEW BRIDGE	MAINTENANCE OF TRAFFIC - STAGE 2 RIVERVIEW AVE. & INDUSTRIAL DR.	CALCULATED CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET



24 / 189	**HEN-NEW BRIDGE**	**MAINTENANCE OF TRAFFIC - STAGE 2** **S.R. 110**	CALCULATED CHECKED	0 50 25 100 HORIZONTAL SCALE IN FEET

SHEET NUM.														ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
12	13	14	28	29	30	31	172						OFFICE CALCS						
																		ROADWAY	
LUMP														201	11000	LS		CLEARING AND GRUBBING	12
			8563											202	23010	8563	SY	PAVEMENT REMOVED, ASPHALT	
			76											202	23000	76	SY	PAVEMENT REMOVED	
			1207											202	38000	1207	FT	GUARDRAIL REMOVED	
			LUMP											202	56000	LS		BUILDING DEMOLISHED : 16'x12' SHED WITH FOUNDATION	
			180											202	98400	180	SF	REMOVAL MISC.:FLOWER BED REMOVED	
						10617								203	10000	10617	CY	EXCAVATION	
		16879												203	10001	16879	CY	EXCAVATION, AS PER PLAN	14
		16879				47603								203	20000	64482	CY	EMBANKMENT	
		4												SPECIAL	20365000	4	EACH	SETTLEMENT PLATFORM	14
			87.5											606	15050	87.5	FT	GUARDRAIL, TYPE MGS	
			1700											606	15100	1700	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
			2											606	26100	2	EACH	ANCHOR ASSEMBLY, TYPE E	
			1											606	26500	1	EACH	ANCHOR ASSEMBLY, TYPE T	
			2											606	35000	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 1	
			2											606	35100	2	EACH	BRIDGE TERMINAL ASSEMBLY, TYPE 2	
			2852											608	10000	2852	SF	4" CONCRETE WALK	
			1118											608	52000	1118	SF	CURB RAMP	
							7							623	38500	7	EACH	MONUMENT ASSEMBLY	172
							1							623	40500	1	EACH	REFERENCE MONUMENT	172
			1											623	39500	1	EACH	MONUMENT BOX ADJUSTED TO GRADE	
			1											638	10400	1	EACH	FIRE HYDRANT ADJUSTED TO GRADE	
			2											638	10800	2	EACH	VALVE BOX ADJUSTED TO GRADE	
			2											SPECIAL	69050000	2	EACH	MAILBOX SUPPORT	13
			3											SPECIAL	69050350	3	EACH	MAILBOX REMOVED AND RESET	13
																		EROSION CONTROL	
		5		9										601	32200	14	CY	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	
				88										601	21060	88	SY	TIED CONCRETE BLOCK MAT, TYPE 2	
	3156													659	00300	3156	CY	TOPSOIL	
	28428													659	10000	28428	SY	SEEDING AND MULCHING	
	1421													659	14000	1421	SY	REPAIR SEEDING AND MULCHING	
	1421													659	15000	1421	SY	INTER-SEEDING	
	3.96													659	20000	3.96	TON	COMMERCIAL FERTILIZER	
	5.88													659	31000	5.88	ACRE	LIME	
	158													659	35000	158	MGAL	WATER	
	64													659	40000	64	MSF	MOWING	
				1506										670	00700	1506	SY	DITCH EROSION PROTECTION	
														832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
														832	30000	110	EACH	EROSION CONTROL	
																		DRAINAGE	
				232.0										202	35100	232.0	FT	PIPE REMOVED, 24" AND UNDER	
				2										202	58100	2	EACH	CATCH BASIN REMOVED	
				2										602	20000	2	CY	CONCRETE MASONRY	
					5873									605	11100	5873	FT	6" SHALLOW PIPE UNDERDRAINS : WITH GEOTEXTILE FABRIC	
	100				101									611	00900	201	FT	6" CONDUIT, TYPE B FOR UNDERDRAIN OUTLETS	
	100													611	01400	100	FT	6" CONDUIT, TYPE E	
	100				355									611	01500	455	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
					3									611	99710	3	EACH	PRECAST REINFORCED CONCRETE OUTLET	
				664										611	04400	664	FT	12" CONDUIT, TYPE B	
				676										611	04600	676	FT	12" CONDUIT, TYPE C	
				94										611	05200	94	FT	12" CONDUIT, TYPE F 707.05 TYPE C OR 707.21	
				20										611	04900	20	FT	12" CONDUIT, TYPE D	
				149										611	06100	149	FT	15" CONDUIT, TYPE C	
				63										611	07400	63	FT	18" CONDUIT, TYPE B	
				141										611	07600	141	FT	18" CONDUIT, TYPE C	
				155										611	10600	155	FT	24" CONDUIT, TYPE C	
				6										611	98150	6	EACH	CATCH BASIN, NO. 3	
				12										611	98180	12	EACH	CATCH BASIN, NO. 3A	
				5										611	98470	5	EACH	CATCH BASIN, NO. 2-2B	
				1										611	98510	1	EACH	CATCH BASIN, NO. 2-3	
			2	1										611	99654	3	EACH	MANHOLE ADJUSTED TO GRADE	

CALCULATED XF
CHECKED CEB

GENERAL SUMMARY

HEN-NEW BRIDGE

25
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SHEET NUM.													OFFICE CALCS	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
12	14	83	85	100															
																		PAVEMENT	
													10733	204	10000	10733	SY	SUBGRADE COMPACTION	
1000													3226	204	13000	4226	CY	EXCAVATION OF SUBGRADE	
1000													3226	204	30010	4226	CY	GRANULAR MATERIAL, TYPE B	
4														204	45000	4	HOUR	PROOF ROLLING	
													590	254	01000	590	SY	PAVEMENT PLANING, ASPHALT CONCRETE	
													2037	301	46000	2037	CY	ASPHALT CONCRETE BASE, PG64-22	
													3254	304	20000	3254	CY	AGGREGATE BASE	
													1544	407	10000	1544	GAL	TACK COAT	
	2498													409	98010	2498	LB	SEALING, MISC.:LONGITUDINAL JOINT SEALER	14
													442	441	10101	442	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (446), AS PER PLAN	13
													618	441	10201	618	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (446), AS PER PLAN	13
													13	441	50200	13	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448)(WEDGING)	
													44	452	10010	44	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC1	
													754	452	19200	754	SY	NON-REINFORCED CONCRETE PAVEMENT, MISC.: DECORATIVE, (8" THICK TRUCK APRON)	13
													4178	608	30000	4178	SF	AGGREGATE WALK: 1" LIMESTONE SCREENINGS	
													13284	608	98000	13284	SF	WALKWAY, MISC.:DECORATIVE CONCRETE, (6" THICK SPLITTER ISLAND)	13
													3607	609	12000	3607	FT	COMBINATION CURB AND GUTTER, TYPE 2	
													32	609	12001	32	FT	COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN	12
													590	609	18001	590	FT	COMBINATION CURB AND GUTTER, TYPE 3, AS PER PLAN	12
													52	609	24510	52	FT	CURB, TYPE 4-C	
													2690	609	26000	2690	FT	CURB, TYPE 6	
													376	609	14000	376	FT	CURB, TYPE 2-A	
																		LIGHTING	
				28										625	00450	28	EACH	CONNECTION, FUSED PULL APART	
				8										625	00480	8	EACH	CONNECTION, UNFUSED PERMANENT	
				6										625	10490	6	EACH	LIGHT POLE, CONVENTIONAL AT08B30	
				8										625	10490	8	EACH	LIGHT POLE, CONVENTIONAL AT14B30	
				14										625	14000	14	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	
				6652										625	23304	6652	FT	NO. 8 AWG 600 VOLT DISTRIBUTION CABLE	
				1160										625	23400	1160	FT	NO. 10 AWG POLE AND BRACKET CABLE	
				1423										625	25300	1423	FT	CONDUIT, 1-1/2", 725.04	
				311										625	25500	311	FT	CONDUIT, 3", 725.04	
				8										625	26250	8	EACH	LUMINAIRE, CONVENTIONAL 150 W, TYPE II DISTRIBUTION	
				6										625	26250	6	EACH	LUMINAIRE, CONVENTIONAL 250 W, TYPE II DISTRIBUTION	
				1423										625	29002	1423	FT	TRENCH, 24" DEEP	
				10										625	30700	10	EACH	PULL BOX, 725.08, 18"	
				14										625	32000	14	EACH	GROUND ROD	
				2										625	34001	2	EACH	POWER SERVICE, AS PER PLAN	100
				1423										625	36000	1423	FT	PLASTIC CAUTION TAPE	
																		TRAFFIC CONTROL	
		7												620	60000	7	EACH	DELINEATOR, POST SURFACE MOUNTED	
		17												621	00100	17	EACH	RPM	
		1.61												642	00090	1.61	MILE	EDGE LINE, 4"	
		0.77												642	00290	0.77	MILE	CENTER LINE	
		260												644	00601	260	FT	CROSSWALK LINE, AS PER PLAN	80
		144												644	00700	144	FT	TRANSVERSE/DIAGONAL LINE	
		1												644	01000	1	EACH	RAILROAD SYMBOL MARKING	
		8												644	01300	8	EACH	LANE ARROW	
		306												644	01520	306	FT	DOTTED LINE, 12"	
		113												644	20800	113	FT	YIELD LINE	
			836.5											630	03101	836.5	FT	GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN	80
			22											630	08600	22	EACH	SIGN POST REFLECTOR	
			1											630	79604	1	EACH	SIGN SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 2	
			365.3											630	80100	365.3	SF	SIGN, FLAT SHEET	
			365.3											630	81100	365.3	SF	SIGN ERECTED, FLAT SHEET	
			9											630	84900	9	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
			1											630	85000	1	EACH	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE	
			2											630	85100	2	EACH	REMOVAL OF GROUND MOUNTED SIGN AND REERECTION	

CALCULATED XF
CHECKED CEB

GENERAL SUMMARY

HEN-NEW BRIDGE

SHEET NUM.														ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
17	18	28	80	85	103	104							OFFICE CALCS						
				10										630	86002	10	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
				7										630	87500	7	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
				15.2										630	97900	15.2	FT	SIGNING, MISC.:4"x6" SOLID WOOD POST	80
				1										630	97700	1	EACH	SIGNING, MISC.:REMOVAL OF SOLID WOOD POST	80
		35	24											626	00100	59	EACH	BARRIER REFLECTOR	
																		LANDSCAPING	
					32	32								661	30000	64	EACH	EVERGREEN SHRUB, 12" HEIGHTJUNIPERUS HORIZONTALIS - 'ANDORRA YOUNGSTOWN'	
					3	3								661	50160	6	EACH	EVERGREEN TREE, 8' HEIGHTTAXODIUM DISTICHUM - 'BALDCYPRESS'	
					88	88								661	12000	176	EACH	GROUNDCOVER AND VINES, 1 YEAR, POTTEDSCHIZACHYRIUM SCOPARIUM - 'LITTILE BLUESTEM'	
					37	37								661	00500	74	CY	MULCH	
					700	700								661	31000	1400	GAL	LANDSCAPE WATERING	
																		STRUCTURE 20 FOOT SPAN AND OVER (CTY-RTE-SECT or SFN)	
																		SEE SHEET 111 FOR STRUCTURE QUANTITIES	111
																		MAINTENANCE OF TRAFFIC	
100														410	12000	100	CY	TRAFFIC COMPACTED SURFACE, TYPE A OR B	
	4													614	12336	4	EACH	WORK ZONE IMPACT ATTENUATOR (UNIDIRECTIONAL)	
													LUMP	614	12420	LS		DETOUR SIGNING	
24														614	13302	24	EACH	BARRIER REFLECTOR, TYPE B2	
24														614	13360	24	EACH	OBJECT MARKER, TWO WAY	
	0.37													614	21200	0.37	MILE	WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I	
	0.54													614	22100	0.54	MILE	WORK ZONE EDGE LINE, CLASS I, 642 PAINT	
	239													615	20000	239	SY	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS A	
230														616	10000	230	MGAL	WATER	
	1,070													622	41000	1,070	FT	PORTABLE BARRIER, 32"	
																		INCIDENTALS	
													LUMP	103	05000	LS		PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR PAYMENT BOND	
													LUMP	614	11000	LS		MAINTAINING TRAFFIC	
													24	619	16020	24	MNTH	FIELD OFFICE, TYPE C	
													LUMP	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
													LUMP	624	10000	LS		MOBILIZATION	

CALCULATED XF
CHECKED CEB

GENERAL SUMMARY

HEN-NEW BRIDGE

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 PAVEMENT REMOVED, ASPHALT	202 PAVEMENT REMOVED	202 GUARDRAIL REMOVED	202 BUILDING DEMOLISHED 16' X 12' SHED	202 REMOVAL MISC.: FLOWER BED REMOVED	606 GUARDRAIL, TYPE MGS	606 GUARDRAIL, TYPE MGS WITH LONG POSTS	606 ANCHOR ASSEMBLY, TYPE E	606 ANCHOR ASSEMBLY, TYPE T	606 BRIDGE TERMINAL ASSEMBLY, TYPE 1	606 BRIDGE TERMINAL ASSEMBLY, TYPE 2	608 CONCRETE WALK, 4"	608 CURB RAMP	611 MANHOLE ADJUSTED TO GRADE	623 MONUMENT BOX ADJUSTED TO GRADE	626 BARRIER REFLECTOR (TYPE A2)	638 FIRE HYDRANT ADJUSTED TO GRADE	638 VALVE BOX ADJUSTED TO GRADE	690 SPECIAL - MAILBOX SUPPORT	690 SPECIAL - MAILBOX REMOVED AND RESET	
					SY	SY	FT	LS	SF	FT	FT	EACH	EACH	EACH	EACH	SF	SF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
GR-1	33	34+23	38+76	RT							450	1		1						11					
GR-1	34	38+15	39+03	LT						87.5			1		1					3					
GR-1	35	49+07	598+96	RT							550				1					10					
GR-2	35	49+32	587+03	LT							700	1		1						11					
R-1	35	50+76	51+50	LT	383																				
WK-1	35	49+09	592+65	LT												949	208								
WK-2	35	49+46	594+81	RT												583	199								
WK-3	35	49+51	49+57	LT													66								
WK-4	35	592+67	51+46	LT												730	200								
WK-5	35	594+77	51+52	RT												590	200								
WK-6	35	51+36	51+43	RT													92								
R-1	36	51+50	53+65	LT/RT	581																				
R-2	36	52+19	52+52	LT/RT	105																				
R-3	36	52+25	52+38	RT					180																
R-4	36	52+76	53+09	RT	45																				
S-1	36		52+82	RT														1							
R-1	37	586+53	594+29	RT			775																		
R-2	37	588+88	591+50	LT/RT	836																				
R-3	37	588+94	589+51	LT	96																				
M-1	37		588+90	CL															1						
W-1	37		590+66	LT																	1				
R-1	38	591+50	596+50	LT/RT	1626																				
R-2	38	592+04	592+59	LT	83																				
R-3	38		594+38	LT																					1
R-4	38	594+67	598+96	RT			432																		
R-5	38		595+91	RT				LUMP																	
WK-1	38	592+71	592+77	LT/RT													70								
WK-2	38	594+65	594+72	RT													83								
S-1	38		592+82	LT														1							
W-1	38		592+89	LT																			1		
W-2	38		595+63	LT																			1		
R-1	39	596+50	598+96	LT/RT	798																				
R-2	39	596+93	597+21	LT		39																			
R-3	39	597+78	598+12	LT	30																				
R-4	39	598+42	598+73	LT		37																			
MB-1	39		596+90	LT																					1
MB-2	39	597+81	597+84	RT																				2	1
R-1	40	101+00	105+00	LT/RT	1308																				
R-1	41	105+00	110+00	RT	1551																				
R-1	42	110+00	113+45	LT/RT	1121																				
TOTALS CARRIED TO GENERAL SUMMARY					8563	76	1207	LUMP	180	87.5	1700	2	1	2	2	2852	1118	2	1	35	1	2	2	3	

CALCULATED ALT
CHECKED CEB

ROADWAY SUBSUMMARY

HEN-NEW BRIDGE

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REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	202 PIPE REMOVED, 24" AND UNDER	202 CATCH BASIN REMOVED	601 ROCK CHANNEL PROTECTION, TYPE C WITH FILTER	601 TIED CONCRETE BLOCK MAT, TYPE 2	602 CONCRETE MASONRY	611 12" CONDUIT, TYPE B	611 12" CONDUIT, TYPE C	611 15" CONDUIT, TYPE C	611 18" CONDUIT, TYPE B	611 18" CONDUIT, TYPE C	611 24" CONDUIT, TYPE C	611 12" CONDUIT, TYPE D	611 12" CONDUIT, TYPE F, 707.05 TYPE C OR 707.21	611 CATCH BASIN, NO. 3	611 CATCH BASIN, NO. 3A	611 CATCH BASIN, NO. 2-2B	611 CATCH BASIN, NO. 2-3	611 MANHOLE, ADJUST TO GRADE	670 DITCH EROSION PROTECTION
					FT	EACH	CY	SY	CY	FT	FT	FT	FT	FT	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	SQ YD
		INDUSTRIAL DR.																					
D-1	33	33+60	33+60	LT/RT						37									1				
D-2	33	33+60	33+60	RT			1.33		0.21		55								1				
D-3	33	105+00	36+50	LT																			314
D-4	33	32+50	36+50	RT																			368
D-1	34	36+50	39+32	LT																			247
D-2	34	36+50	39+39	RT																			230
D-3	34	38+66	38+75	LT				46															
D-4	34	38+66	38+75	RT				42															
D-5	34	38+80	39+29	LT/RT						76									1				
D-6	34	38+80	39+29	RT			1.33		0.21	50							44		1				
D-1	35	49+18	49+18	LT/RT						36									1				
D-2	35	49+18	49+44	RT							79								1				
D-3	35	49+62	49+84	LT/RT	51																		
D-4	35	50+16	51+08	LT	97					95	55											1	
D-5	35	51+08	51+09	LT	27	1																	
D-1	36	51+08	51+77	LT							91							1					
D-2	36	51+77	51+77	LT/RT						47								1					
D-3	36	51+77	52+72	RT							86									1			
		RIVERVIEW AVE.																					
D-1	37	589+42	589+72	LT	29						34									1			
D-2	37	589+72	591+15	LT						143									1				
D-3	37	591+15	591+15	LT/RT						36									1				
D-4	37	591+15	591+15	RT			1.33		0.21		56								1				
D-1	38	596+30	596+30	LT/RT						38									1				
D-2	38	596+30	596+30	RT							70								1				
D-3	38	594+79	596+30	RT								149								1			
D-1	39	598+85	598+85	LT/RT			1.33		0.21	30							50						
		S.R. 110																					
D-1	40	104+00	104+00	LT			1.33		0.21		41							1					
D-2	40	104+00	104+00	LT/RT						35								1					
D-3	40	103+48	105+00	LT																			113
D-1	41	107+25	107+35	RT					0.21		54								1				
D-2	41	32+50	110+08	LT																			234
D-1	42	110+10	110+10	LT/RT						41								1					
D-2	42	110+10	110+10	LT			1.33		0.21		23							1					
D-3	42	112+61	112+62	LT	28	1					12												
D-4	42	112+62	112+65	LT							20									1			
D-5	42	113+60	113+80	LT												20							
		SHARED USE PATH																					
D-1	43	100+14	103+16	LT									63	141						1			
D-2	43	102+35	103+16	LT/RT			1.33		0.46						155						1		
TOTALS CARRIED TO GENERAL SUMMARY					232	2	9	88	2	664	676	149	63	141	155	20	94	6	12	5	1	1	1506

CALCULATED XF CHECKED CEB

DRAINAGE SUBSUMMARY

HEN-NEW BRIDGE

REF. NO.	SHEET NO.	STATION FROM	STATION TO	SIDE	605 6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC FT	611 6" CONDUIT TYPE B FOR UNDERDRAIN OUTLETS FT	611 6" CONDUIT TYPE F FOR UNDERDRAIN OUTLETS FT	611 PRECAST REINFORCED CONCRETE OUTLET EACH	BENDS & BRANCHES (FOR INFORMATION ONLY) TEE EACH	45° BEND EACH	60° BEND EACH	90° BEND EACH	45° WYE EACH	OUTLET DETAIL (SEE SHEET **)
INDUSTRIAL DR.														
UD-1	33	32+61	33+60	LT	89		10							
UD-2	33	33+64	34+61	LT	92	34			1					C
UD-3	33	34+61	38+80	LT	420									C
UD-4	33	32+43	33+60	RT	121		10							
UD-5	33	33+64	34+61	RT	102		37	1	1	1			1	C
UD-6	33	34+61	38+80	RT	420									C
UD-1	34	38+80	39+00	LT	10		10							
UD-2	34	38+80	39+00	RT	10		10							
UD-1	35	49+18	50+11	LT	92		10							
UD-2	35	49+18	49+88	RT	69		10							
UD-3	35	51+09	51+77	LT	68		10							
UD-4	35	50+89	51+77	RT	70		10							
UD-1	36	51+77	53+43	LT	156		10							
UD-2	36	51+77	53+64	RT	177		10							
RIVERVIEW AVE.														
UD-1	37	589+72	591+11	LT	129		10							
UD-2	37	588+88	591+11	RT	223		47	1				1		A
UD-1	38	591+15	593+42	LT	222		10							
UD-2	38	591+15	593+19	RT	202		10							
UD-3	38	594+34	596+30	LT	196		10							
UD-4	38	594+28	596+30	RT	197		10							
UD-1	39	596+34	598+85	LT	241		10							
UD-2	39	596+34	598+85	RT	233	34					1			D
S.R. 110														
UD-1	40	101+00	101+26	LT	27		31	1		1			1	B
UD-2	40	101+00	102+31	RT	130	33						1		B
UD-3	40	101+28	104+00	LT	259		10							
UD-4	40	102+33	104+00	RT	157		10							
UD-5	40	104+00	105+93	LT	190		10							
UD-6	40	104+00	105+88	RT	186		10							
UD-1	41	106+86	110+10	LT	325		10							
UD-2	41	105+90	110+10	RT	409		10							
UD-1	42	110+10	113+44	LT	323		10							
UD-2	42	110+10	113+44	RT	327		10							
TOTALS CARRIED TO GENERAL SUMMARY					5873	101	355	3	2	2	1	2	2	

CALCULATED XF
CHECKED CEB

UNDERDRAIN SUBSUMMARY

HEN-NEW BRIDGE

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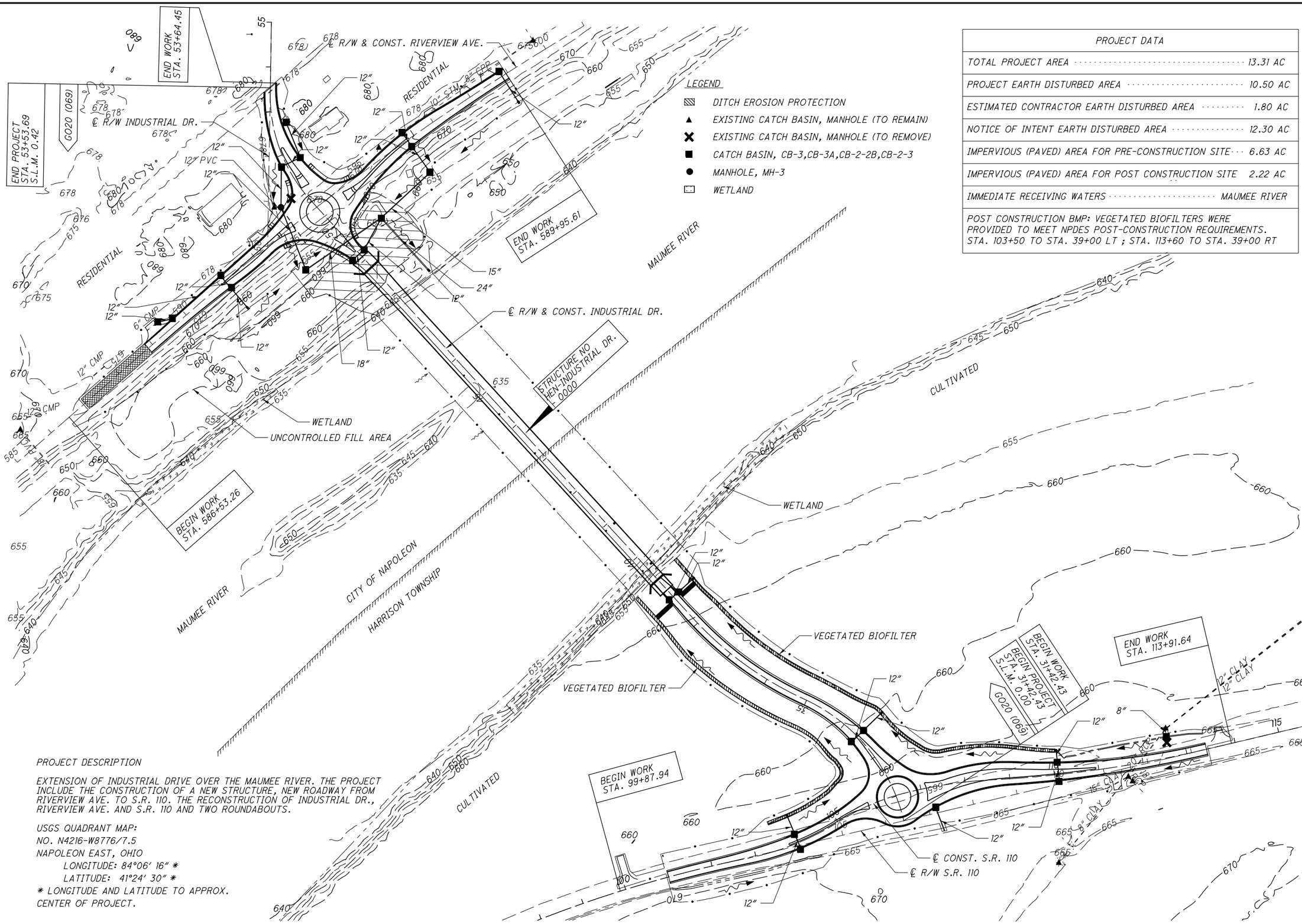
SHEET NO.	STATION TO STATION		203 EXCAVATION CU YD	203 EMBANKMENT CU YD	659 SEEDING AND MULCHING SQ YD
	INDUSTRIAL DR.				
44	31+50	33+00			
45	33+50	35+00	540	4632	2739
46	35+50	37+00	882	3400	2689
47	37+50	39+00	793	6815	3114
48	49+50	51+00	0	4750	844
49	51+50	53+00	388	58	489
50	53+50	END	42	7	61
	RIVERVIEW AVE.				
51	587+00	588+50	576	710	516
52	589+00	590+50	1147	1293	1081
53	591+00	592+50	1158	2189	1400
54	593+00	594+50	239	1297	419
55	595+00	596+50	338	1335	922
56	597+00	598+50	1444	2120	1542
57	599+00	END			
	S.R. 110				
58	101+00	102+50	434	161	1319
59	103+00	104+50	738	281	1967
60	105+00	106+50	147	806	1039
61	107+00	108+50	234	986	1106
62	109+00	110+50	646	473	1648
63	111+00	112+50	216	272	1067
64	113+00	END	59	113	556
	BIKE PATH				
65	100+00	101+50	203	102	364
66	102+00	103+50	78	1224	815
	DRIVEWAY				
	INDUSTRIAL DR. & RIVERVIEW AVE.		34	0	
	S.R .110		23	44	
	ROUNDABOUT GRADING AREA				
78	INDUSTRIAL DR & S.R. 110 ROUNDABOUT		227	6305	1584
79	INDUSTRIAL DR & RIVERVIEW ROUNDABOUT		31	8230	1147
	SUBTOTALS FROM THIS COLUMN		10617	47603	28428
	TOTALS CARRIED TO GENERAL NOTES				28428
	TOTALS CARRIED TO GENERAL SUMMARY		10617	47603	

CALCULATED XF CHECKED CEB

EARTHWORK SUBSUMMARY

HEN-NEW BRIDGE



LEGEND

- DITCH EROSION PROTECTION
- EXISTING CATCH BASIN, MANHOLE (TO REMAIN)
- EXISTING CATCH BASIN, MANHOLE (TO REMOVE)
- CATCH BASIN, CB-3,CB-3A,CB-2-2B,CB-2-3
- MANHOLE, MH-3
- WETLAND

PROJECT DATA	
TOTAL PROJECT AREA	13.31 AC
PROJECT EARTH DISTURBED AREA	10.50 AC
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	1.80 AC
NOTICE OF INTENT EARTH DISTURBED AREA	12.30 AC
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE	6.63 AC
IMPERVIOUS (PAVED) AREA FOR POST CONSTRUCTION SITE	2.22 AC
IMMEDIATE RECEIVING WATERS	MAUMEE RIVER
POST CONSTRUCTION BMP: VEGETATED BIOFILTERS WERE PROVIDED TO MEET NPDES POST-CONSTRUCTION REQUIREMENTS. STA. 103+50 TO STA. 39+00 LT ; STA. 113+60 TO STA. 39+00 RT	

PROJECT DESCRIPTION

EXTENSION OF INDUSTRIAL DRIVE OVER THE MAUMEE RIVER. THE PROJECT INCLUDE THE CONSTRUCTION OF A NEW STRUCTURE, NEW ROADWAY FROM RIVERVIEW AVE. TO S.R. 110. THE RECONSTRUCTION OF INDUSTRIAL DR., RIVERVIEW AVE. AND S.R. 110 AND TWO ROUNDABOUTS.

USGS QUADRANT MAP:
NO. N4216-W8776/7.5
NAPOLEON EAST, OHIO
LONGITUDE: 84°06' 16" *
LATITUDE: 41°24' 30" *
* LONGITUDE AND LATITUDE TO APPROX. CENTER OF PROJECT.

HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED XF
CHECKED CEB

PROJECT SITE PLAN

HEN-NEW BRIDGE

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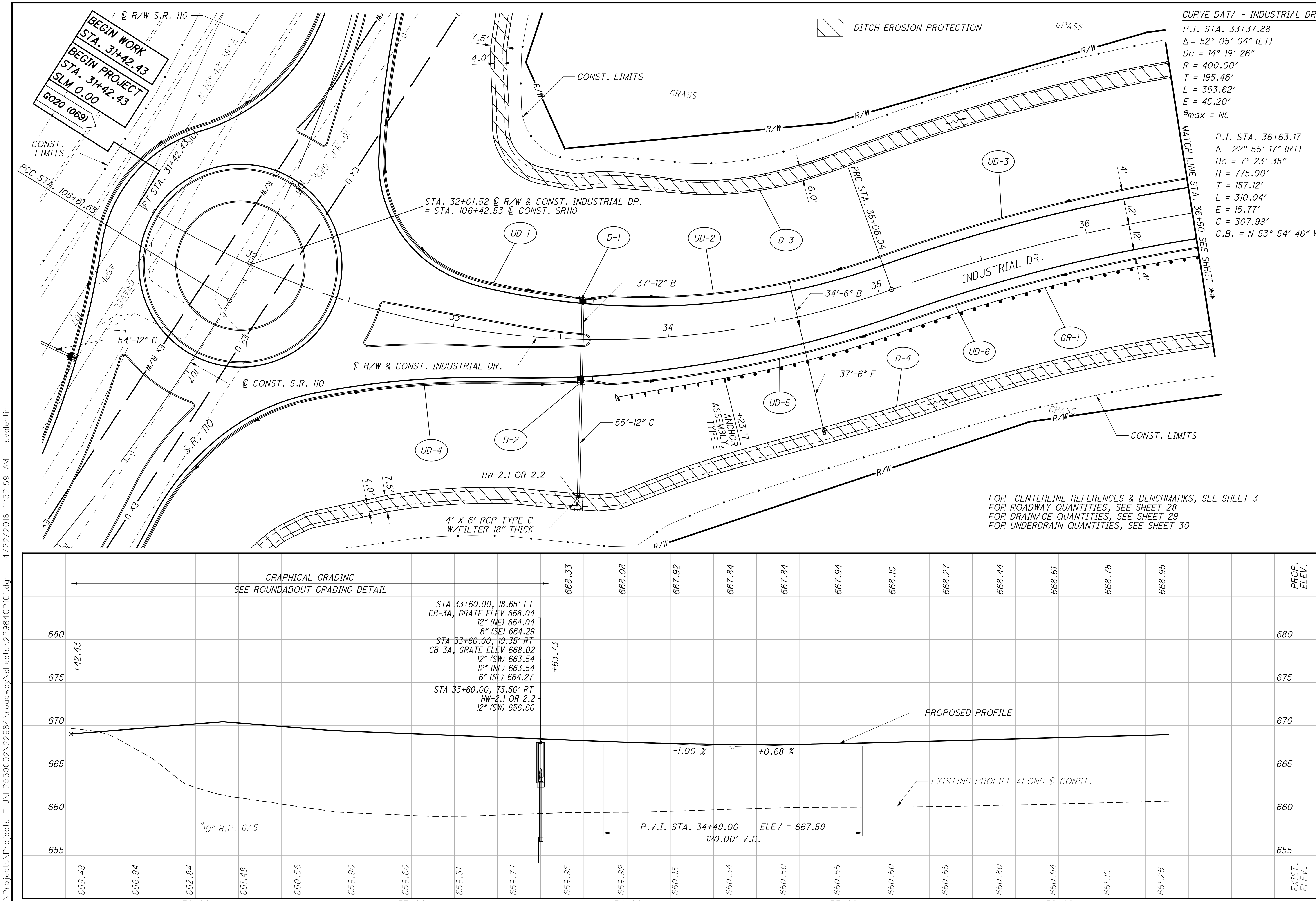

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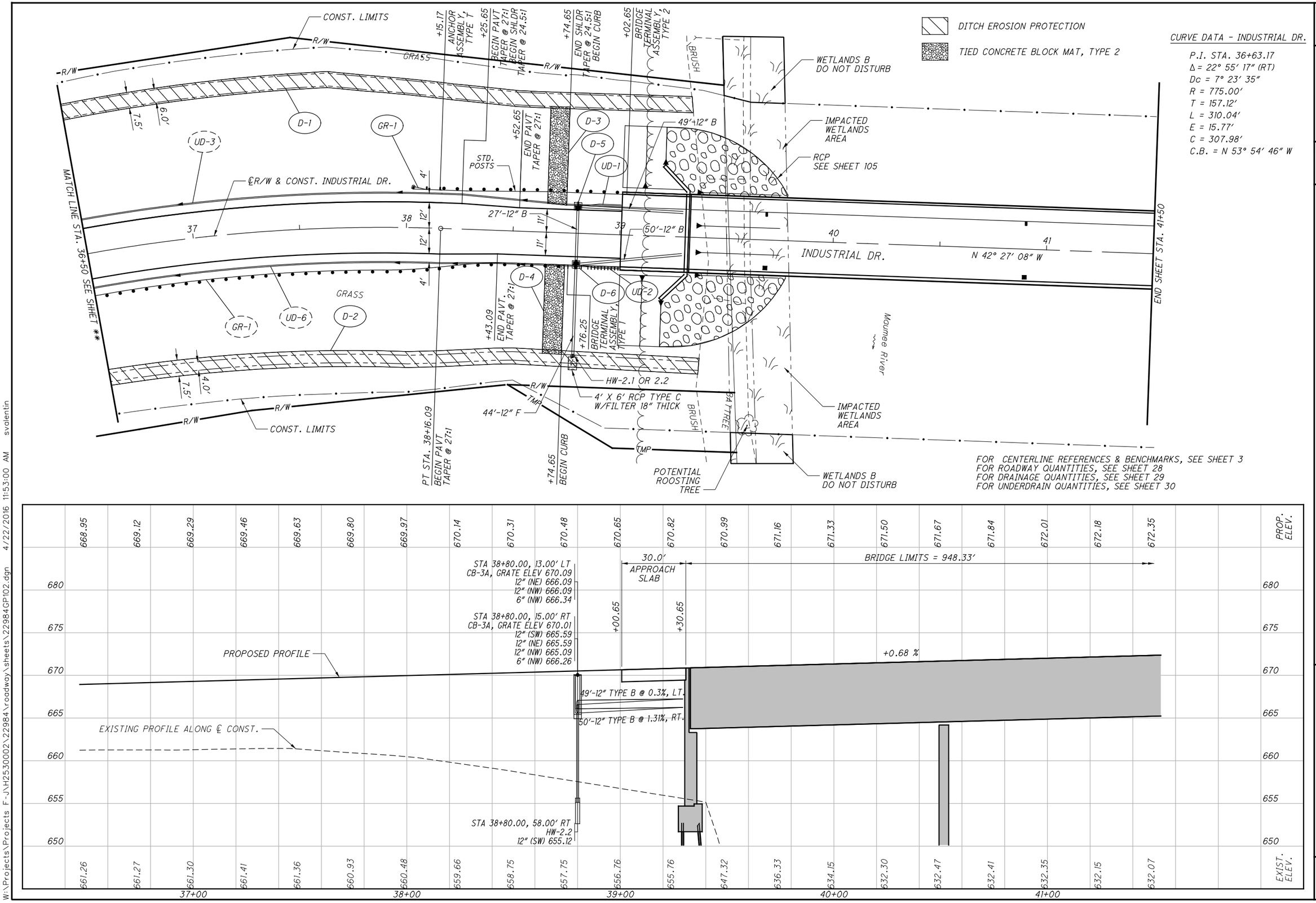
HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED ALT
CHECKED CEB

PLAN AND PROFILE - INDUSTRIAL DR, STA. 31+42.43 TO STA. 36+50.00

HEN-NEW BRIDGE


CONST. LIMITS
R/W
GRASS
+15.17 ANCHOR ASSEMBLY, TYPE T
+25.65 BEGIN PAVT TAPER @ 27:1 BEGIN SHLDR TAPER @ 24.5:1
+74.65 END SHLDR TAPER @ 24.5:1 BEGIN CURB
+02.65 BRIDGE TERMINAL ASSEMBLY, TYPE 2
BRUSH
WETLANDS B DO NOT DISTURB
DITCH EROSION PROTECTION
TIED CONCRETE BLOCK MAT, TYPE 2
CURVE DATA - INDUSTRIAL DR.
P.I. STA. 36+63.17
Δ = 22° 55′ 17″ (RT)
Dc = 7° 23′ 35″
R = 775.00′
T = 157.12′
L = 310.04′
E = 15.77′
C = 307.98′
C.B. = N 53° 54′ 46″ W
7.5′
6.0′
D-1
GR-1
UD-3
D-3
D-5
UD-1
+52.65 END PAVT TAPER @ 27:1
STD. POSTS
4′
℄R/W & CONST. INDUSTRIAL DR.
49′-12″ B
IMPACTED WETLANDS AREA
RCP SEE SHEET 105
MATCH LINE STA. 36+50 SEE SHHET **
37
38
12′
27′-12″ B
11′
39
50′-12″ B
40
41
INDUSTRIAL DR.
N 42° 27′ 08″ W
END SHEET STA. 41+50
GRASS
D-4
D-6
UD-2
+43.09 END PAVT TAPER @ 27:1
+76.25 BRIDGE TERMINAL ASSEMBLY, TYPE T
GR-1
UD-6
D-2
Maumee River
7.5′
4.0′
HW-2.1 OR 2.2
4′ X 6′ RCP TYPE C W/FILTER 18″ THICK
TMP
44′-12″ F
BA TREE
IMPACTED WETLANDS AREA
CONST. LIMITS
PT STA. 38+16.09 BEGIN PAVT TAPER @ 27:1
+74.65 BEGIN CURB
POTENTIAL ROOSTING TREE
WETLANDS B DO NOT DISTURB
FOR CENTERLINE REFERENCES & BENCHMARKS, SEE SHEET 3
FOR ROADWAY QUANTITIES, SEE SHEET 28
FOR DRAINAGE QUANTITIES, SEE SHEET 29
FOR UNDERDRAIN QUANTITIES, SEE SHEET 30
668.95 669.12 669.29 669.46 669.63 669.80 669.97 670.14 670.31 670.48 670.65 670.82 670.99 671.16 671.33 671.50 671.67 671.84 672.01 672.18 672.35
PROP. ELEV.
STA 38+80.00, 13.00′ LT
CB-3A, GRATE ELEV 670.09
12″ (NE) 666.09
12″ (NW) 666.09
6″ (NW) 666.34
STA 38+80.00, 15.00′ RT
CB-3A, GRATE ELEV 670.01
12″ (SW) 665.59
12″ (NE) 665.59
12″ (NW) 665.09
6″ (NW) 666.26
30.0′ APPROACH SLAB
BRIDGE LIMITS = 948.33′
+00.65
+30.65
PROPOSED PROFILE
+0.68 %
49′-12″ TYPE B @ 0.3%, LT.
50′-12″ TYPE B @ 1.31%, RT.
EXISTING PROFILE ALONG ℄ CONST.
STA 38+80.00, 58.00′ RT
HW-2.2
12″ (SW) 655.12
680
675
670
665
660
655
650
661.26 661.27 661.30 661.41 661.36 660.93 660.48 659.66 658.75 657.75 656.76 655.76 647.32 636.33 634.15 632.30 632.47 632.41 632.35 632.15 632.07
EXIST. ELEV.
37+00
38+00
39+00
40+00
41+00
HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED ALT
CHECKED CEB
PLAN AND PROFILE - INDUSTRIAL DR.
STA. 36+50.00 TO STA. 41+50.00
HEN-NEW BRIDGE
34
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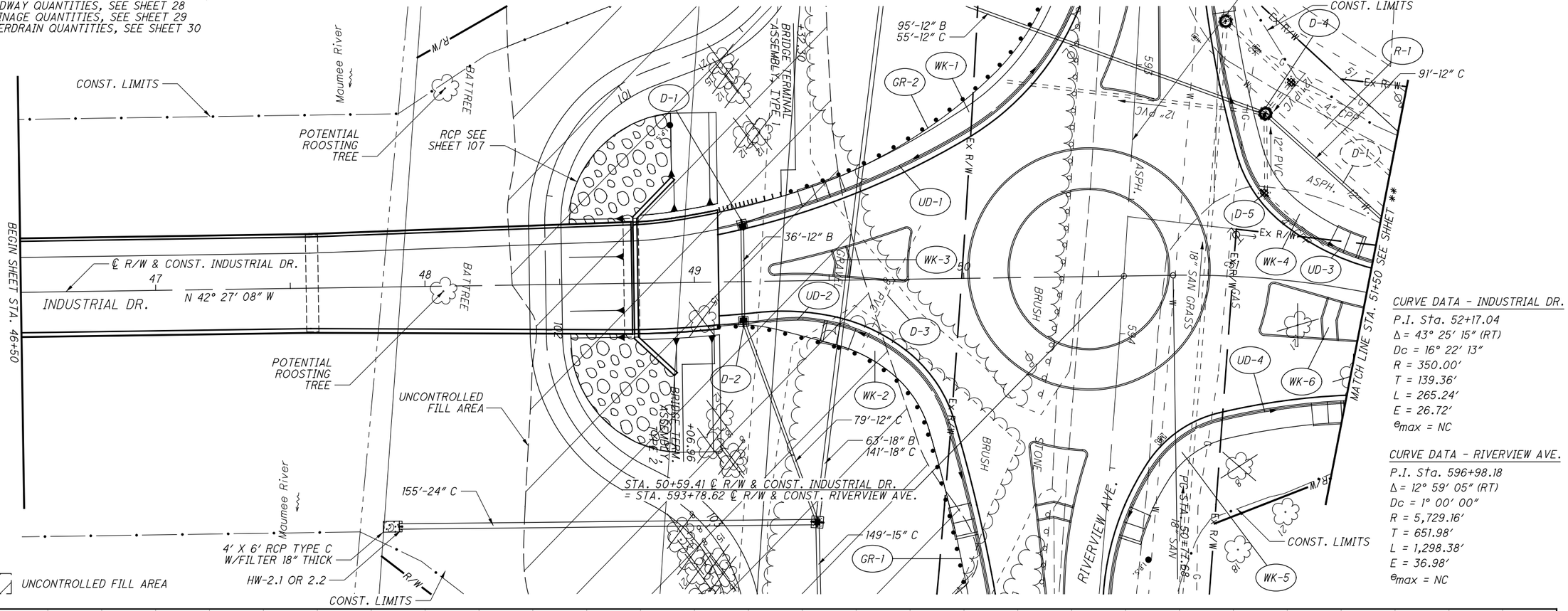
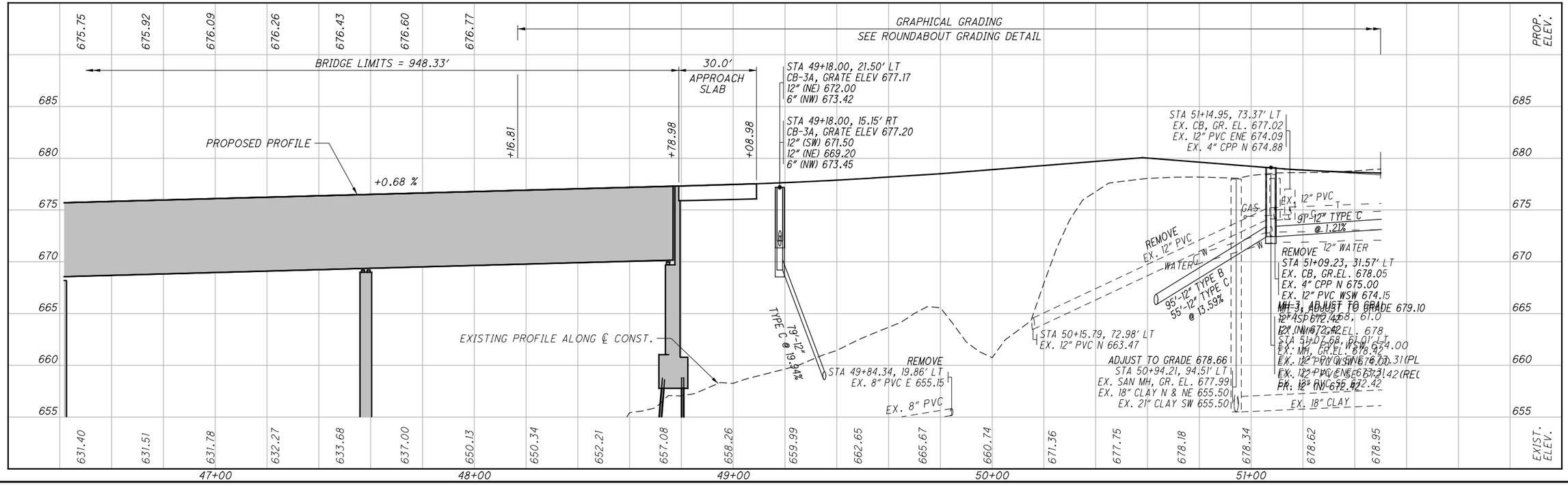
FOR CENTERLINE REFERENCES & BENCHMARKS, SEE SHEET 3
FOR ROADWAY QUANTITIES, SEE SHEET 28
FOR DRAINAGE QUANTITIES, SEE SHEET 29
FOR UNDERDRAIN QUANTITIES, SEE SHEET 30





CURVE DATA - INDUSTRIAL DR.
P.I. Sta. 52+17.04
Δ = 43° 25' 15" (RT)
Dc = 16° 22' 13"
R = 350.00'
T = 139.36'
L = 265.24'
E = 26.72'
e_{max} = NC

CURVE DATA - RIVERVIEW AVE.
P.I. Sta. 596+98.18
Δ = 12° 59' 05" (RT)
Dc = 1° 00' 00"
R = 5,729.16'
T = 651.98'
L = 1,298.38'
E = 36.98'
e_{max} = NC

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED ALT
CHECKED CEB

PLAN AND PROFILE - INDUSTRIAL DR. STA. 46+50.00 TO STA. 51+50.00

HEN-NEW BRIDGE

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189

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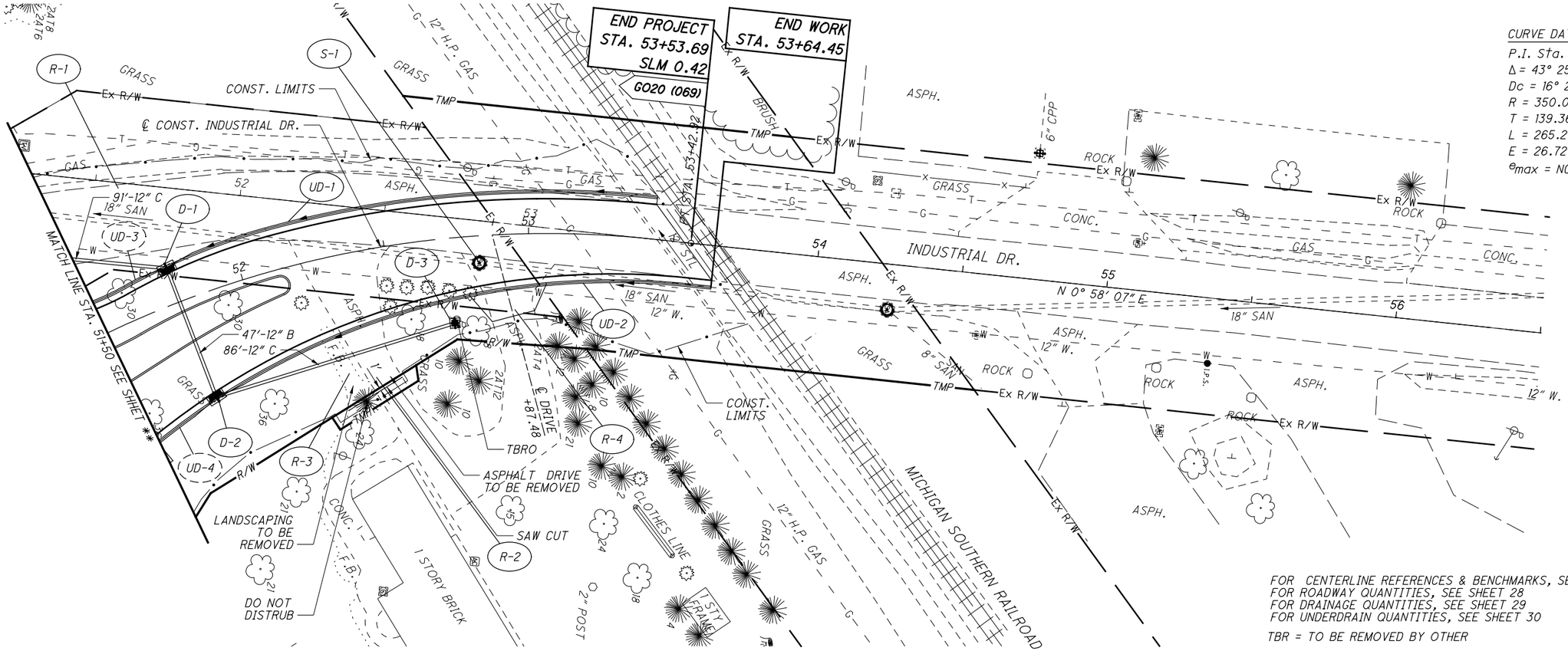

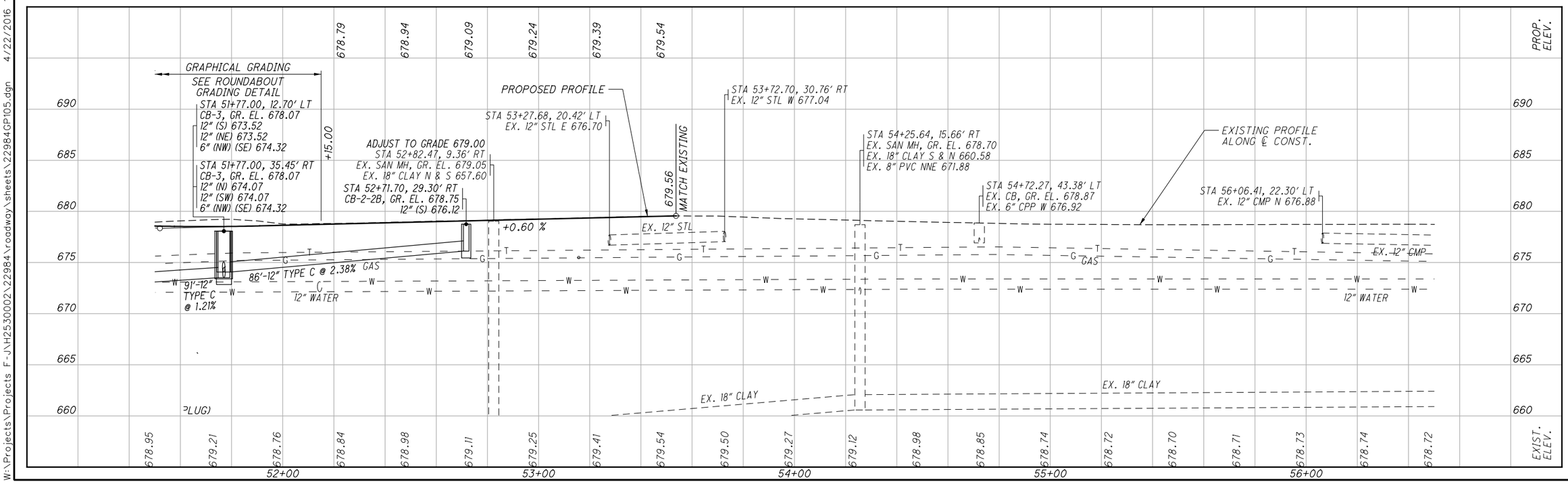

PLAN AND PROFILE - INDUSTRIAL DR.
STA. 51+50.00 TO STA. 56+50.00

HEN-NEW BRIDGE

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED ALT
CHECKED CEB

36
189

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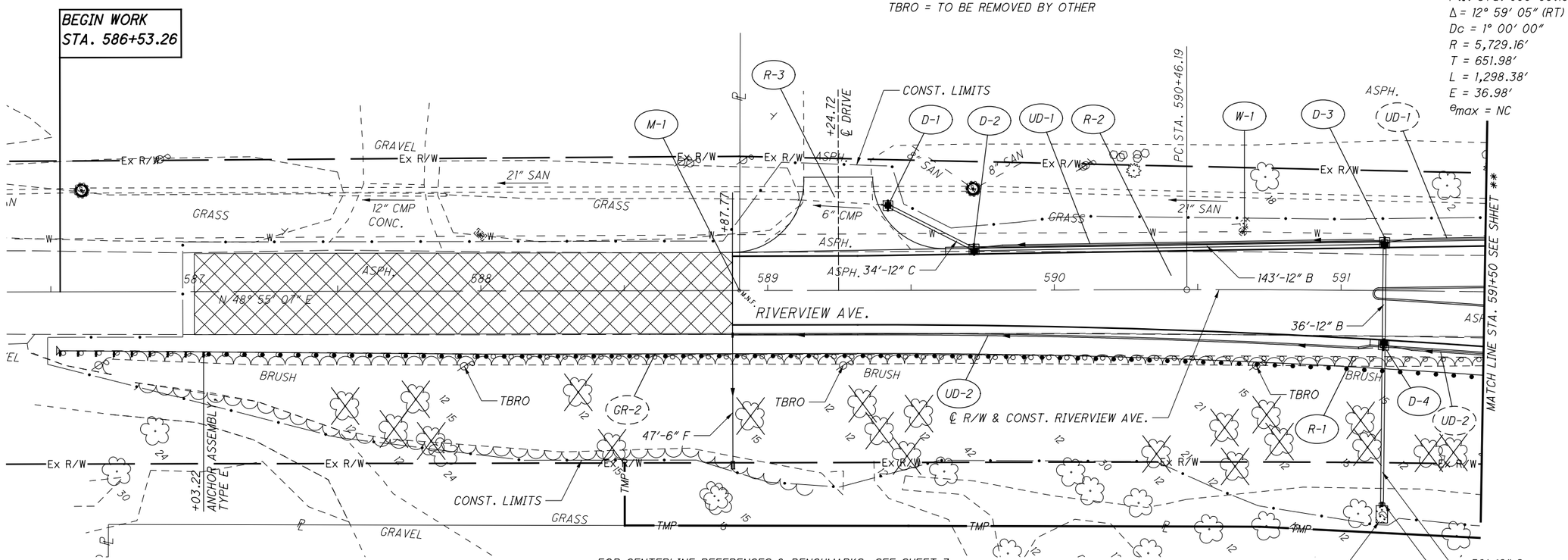
RESURFACING AREA

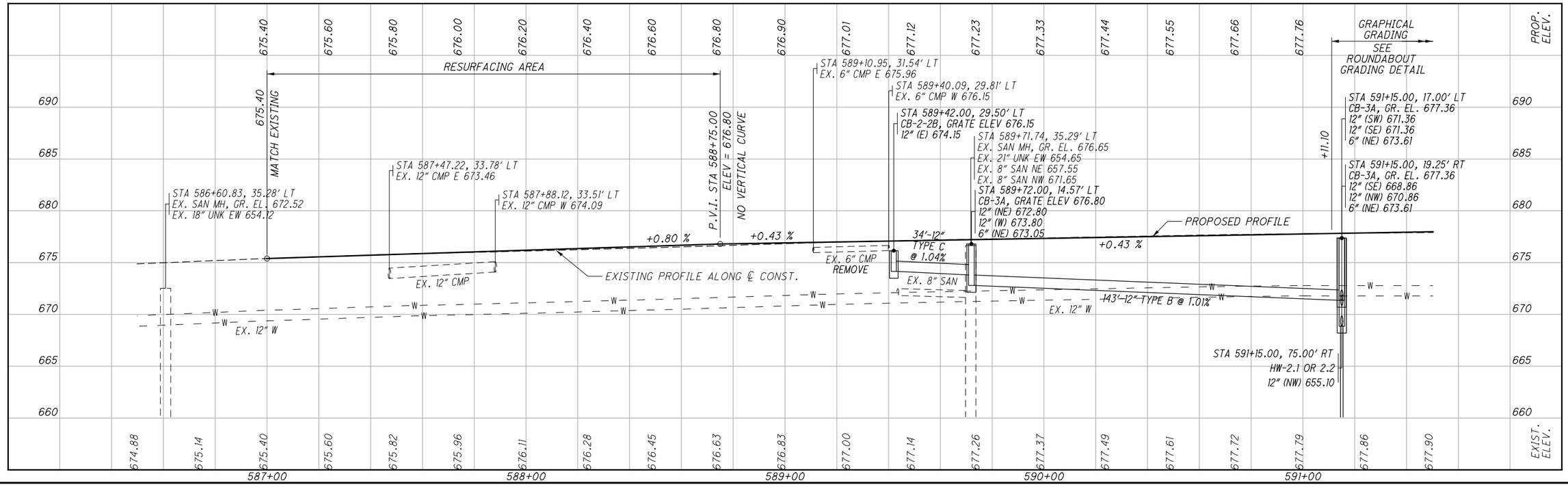
TBRO = TO BE REMOVED BY OTHER

BEGIN WORK
STA. 586+53.26

CURVE DATA - RIVERVIEW AVE.
P.I. Sta. 596+98.18
Δ = 12° 59′ 05″ (RT)
Dc = 1° 00′ 00″
R = 5,729.16′
T = 651.98′
L = 1,298.38′
E = 36.98′
emax = NC



FOR CENTERLINE REFERENCES & BENCHMARKS, SEE SHEET 3
FOR ROADWAY QUANTITIES, SEE SHEET 28
FOR DRAINAGE QUANTITIES, SEE SHEET 29
FOR UNDERDRAIN QUANTITIES, SEE SHEET 30



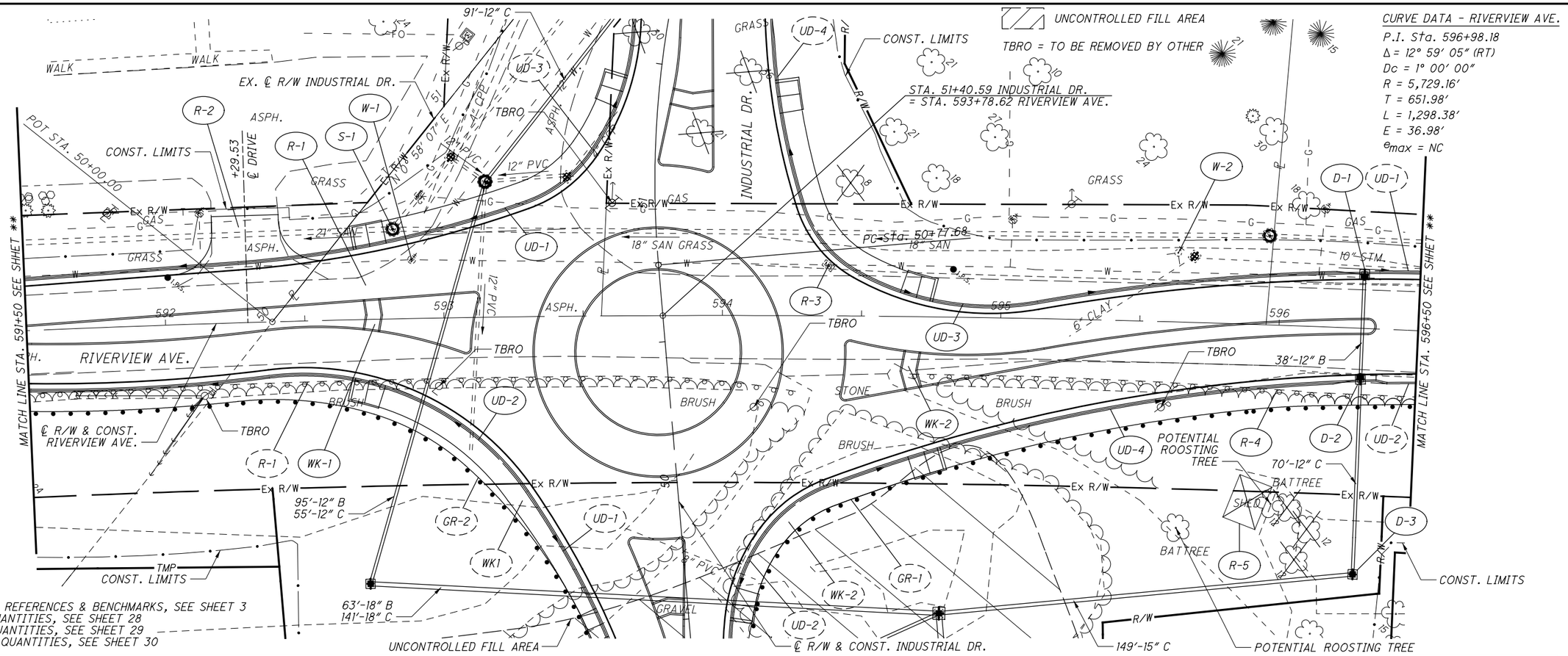
PLAN AND PROFILE - RIVERVIEW AVE.
STA. 586+50.00 TO STA. 591+50.00

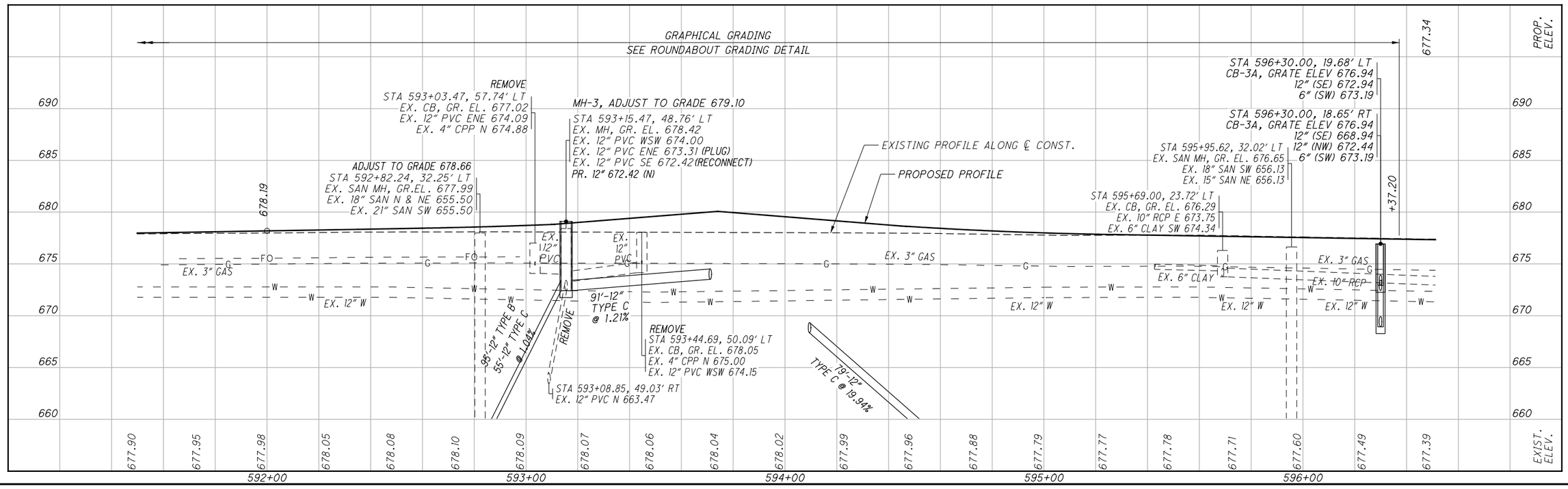
HEN-NEW BRIDGE

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED ALT
CHECKED CEB

37
189





HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED ALT
CHECKED CEB

PLAN AND PROFILE - RIVERVIEW AVE. STA. 591+50.00 TO STA. 596+50.00

HEN-NEW BRIDGE

38
189

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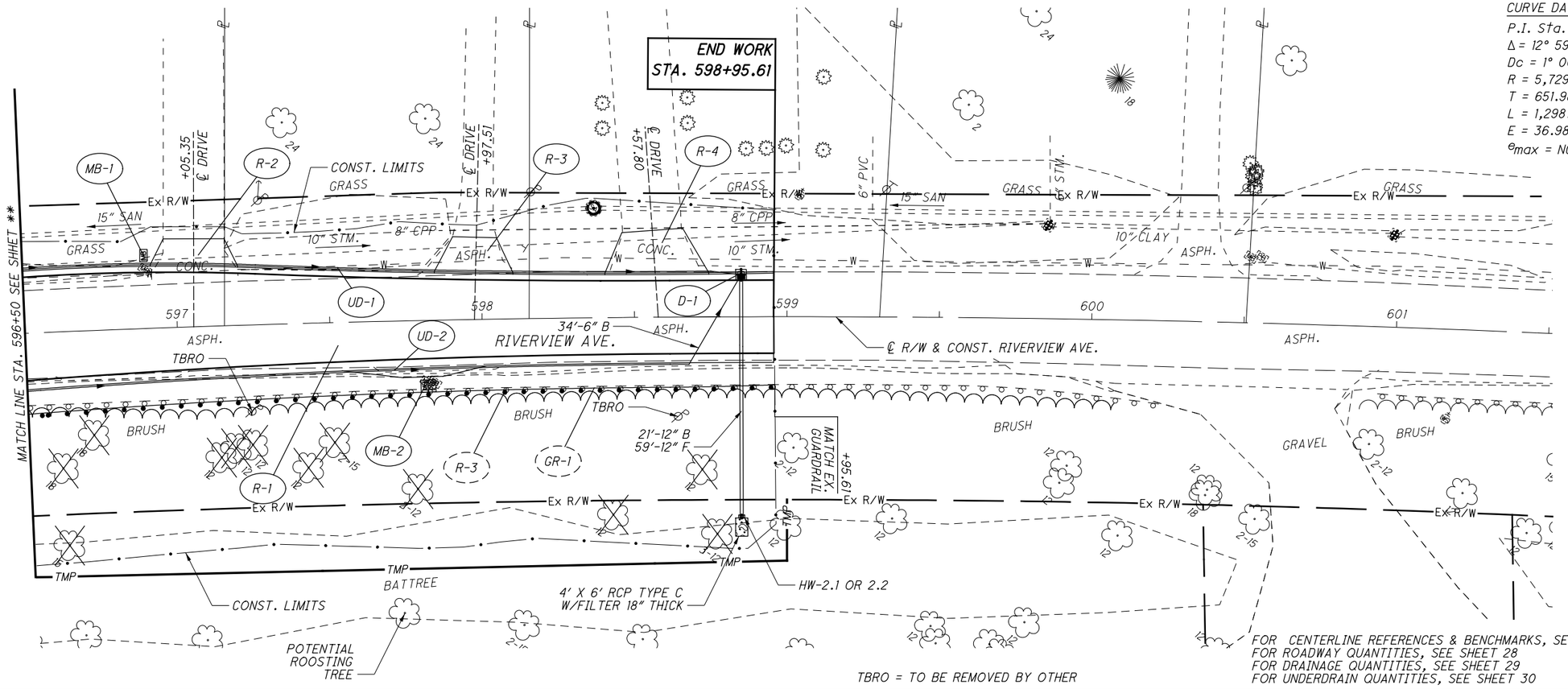
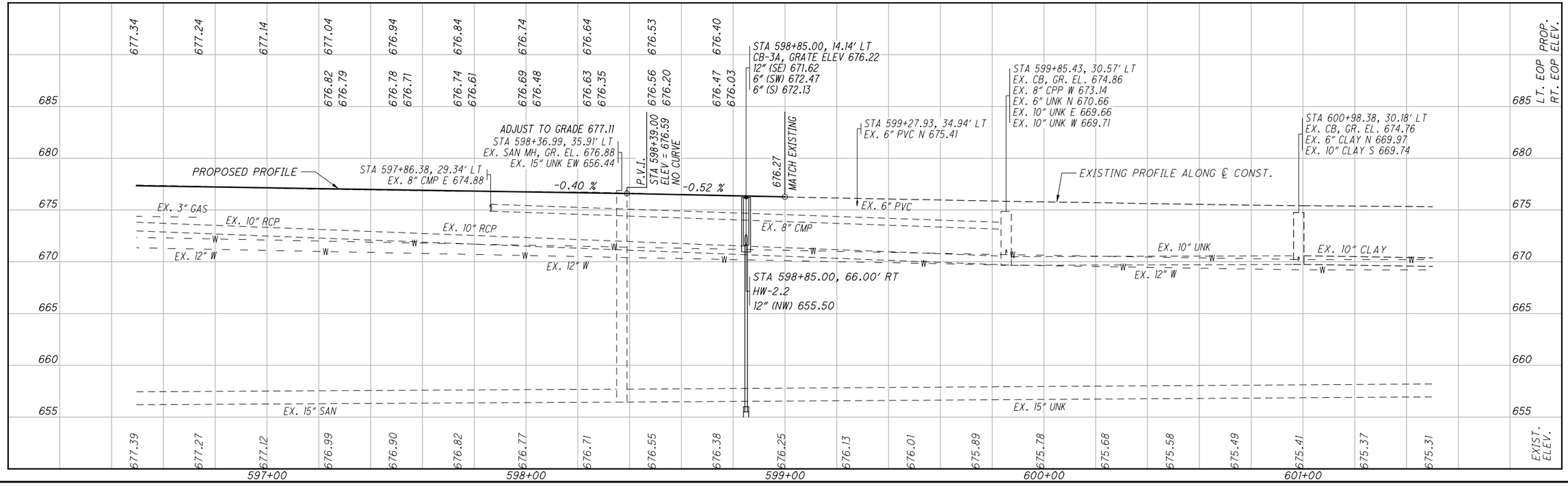


CURVE DATA - RIVERVIEW AVE.
P.I. Sta. 596+98.18
Δ = 12° 59′ 05″ (RT)
Dc = 1° 00′ 00″
R = 5,729.16′
T = 651.98′
L = 1,298.38′
E = 36.98′
e_{max} = NC

TBRO = TO BE REMOVED BY OTHER

FOR CENTERLINE REFERENCES & BENCHMARKS, SEE SHEET 3
FOR ROADWAY QUANTITIES, SEE SHEET 28
FOR DRAINAGE QUANTITIES, SEE SHEET 29
FOR UNDERDRAIN QUANTITIES, SEE SHEET 30

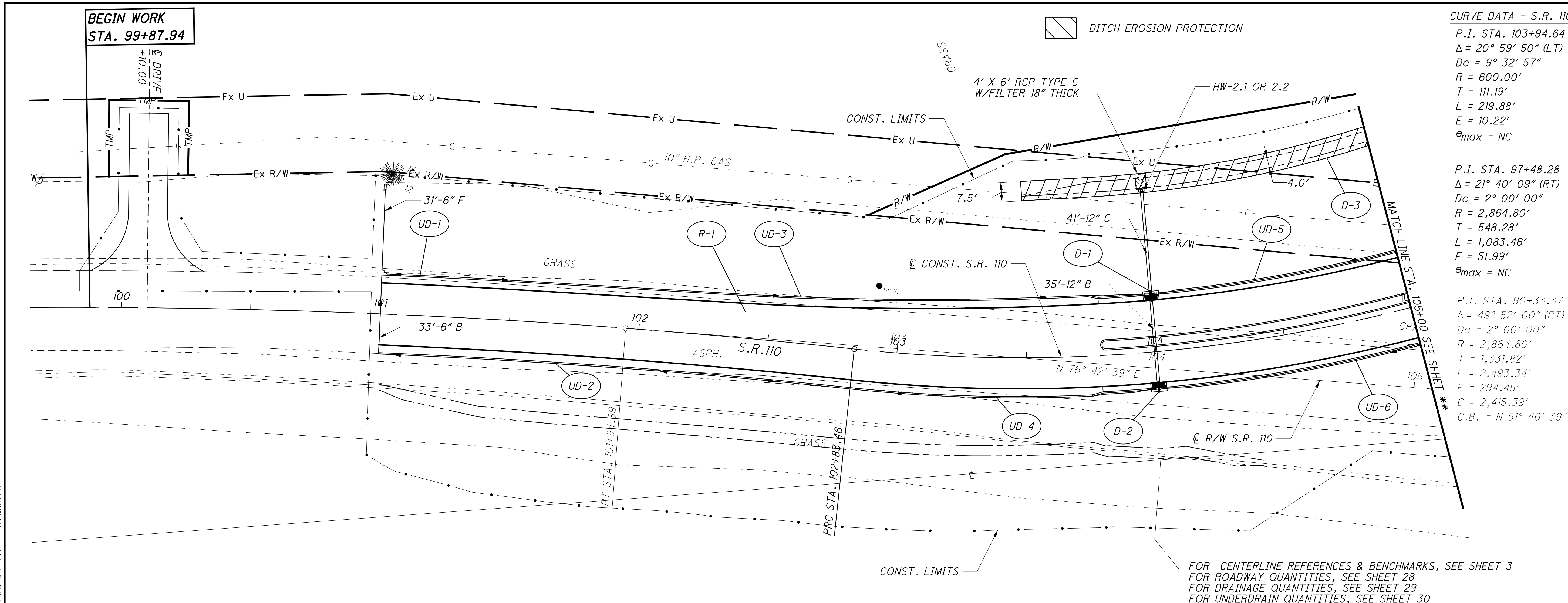


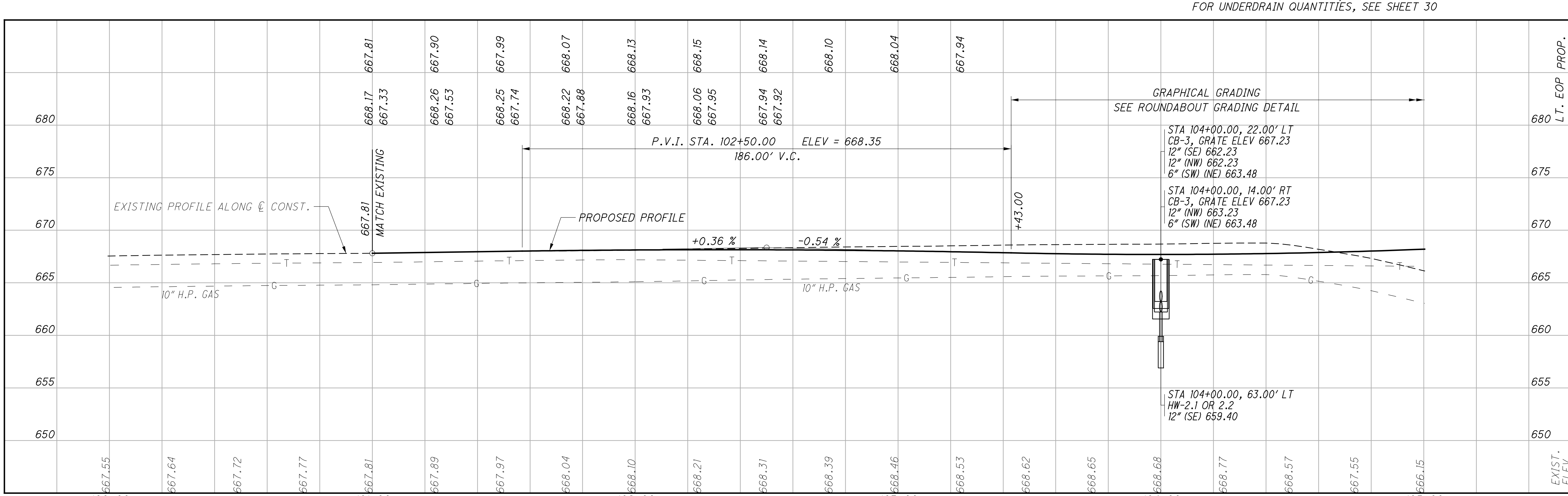
HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED ALT
CHECKED CEB

PLAN AND PROFILE - RIVERVIEW AVE.
STA. 596+50 TO STA. 601+50.00

HEN-NEW BRIDGE

39
189





HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED ALT
CHECKED CEB

PLAN AND PROFILE - S.R.110
STA. 100+00.00 TO STA. 105+00.00

HEN-NEW BRIDGE

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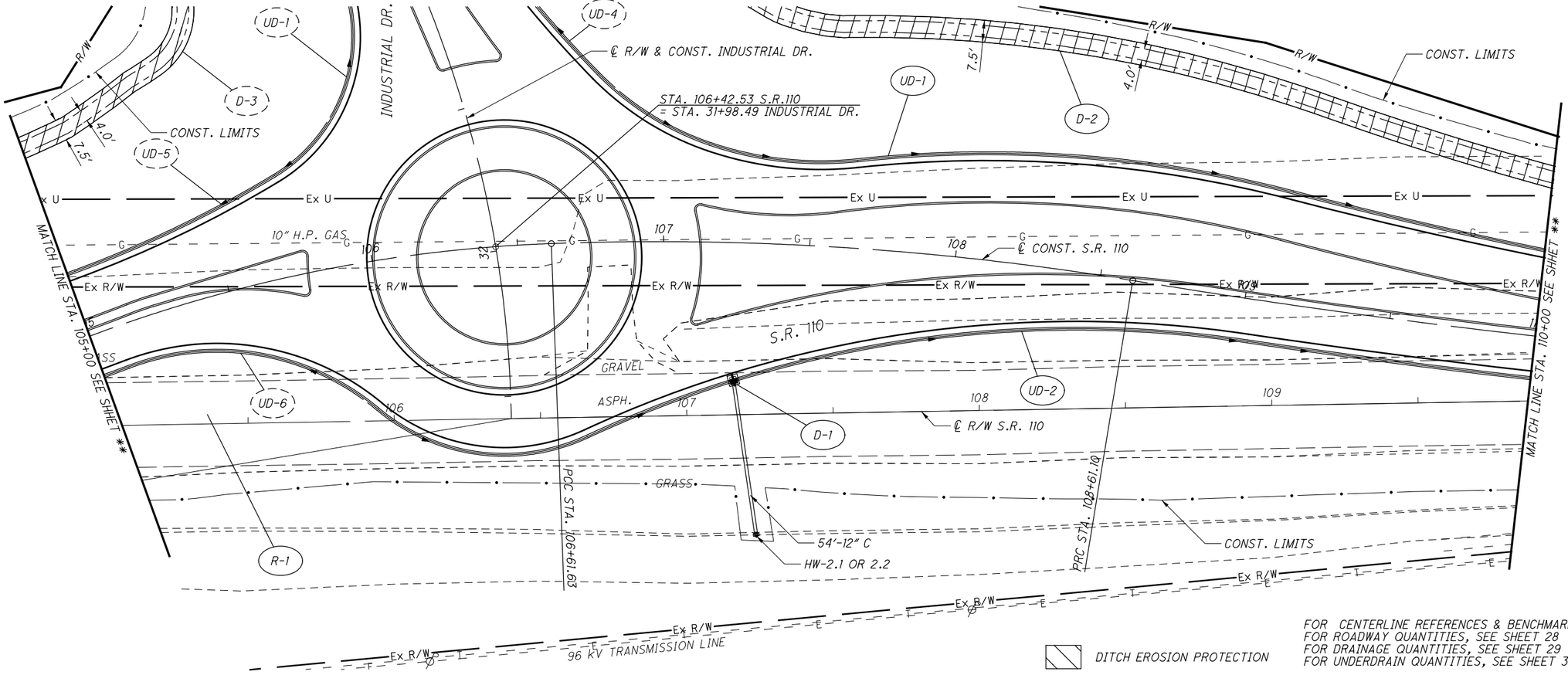


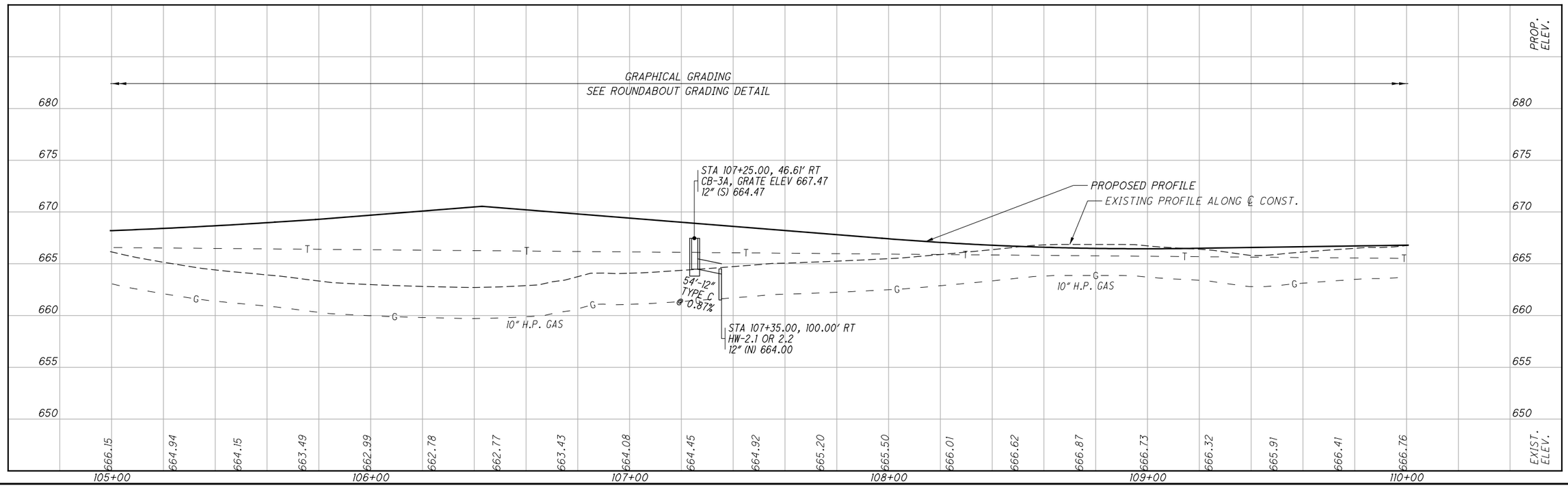
CURVE DATA - S.R. 110

P.I. STA. 105+83.15
Δ = 18° 08' 21" (RT)
Dc = 11° 27' 33"
R = 500.00'
T = 79.81'
L = 158.29'
E = 6.33'
emax = NC

P.I. STA. 107+61.70
Δ = 11° 25' 43" (RT)
Dc = 5° 43' 46"
R = 1,000.00'
T = 100.06'
L = 199.47'
E = 4.99'
emax = NC

P.I. STA. 111+03.62
Δ = 10° 20' 30" (LT)
Dc = 2° 08' 16"
R = 2,680.00'
T = 242.53'
L = 483.74'
E = 10.95'
C = 483.08'
C.B. = N 81° 52' 55" E

FOR CENTERLINE REFERENCES & BENCHMARKS, SEE SHEET 3
FOR ROADWAY QUANTITIES, SEE SHEET 28
FOR DRAINAGE QUANTITIES, SEE SHEET 29
FOR UNDERDRAIN QUANTITIES, SEE SHEET 30



HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED ALT
CHECKED CEB

PLAN AND PROFILE - S.R.110
STA. 105+00.00 TO STA. 110+00.00

HEN-NEW BRIDGE

41
189

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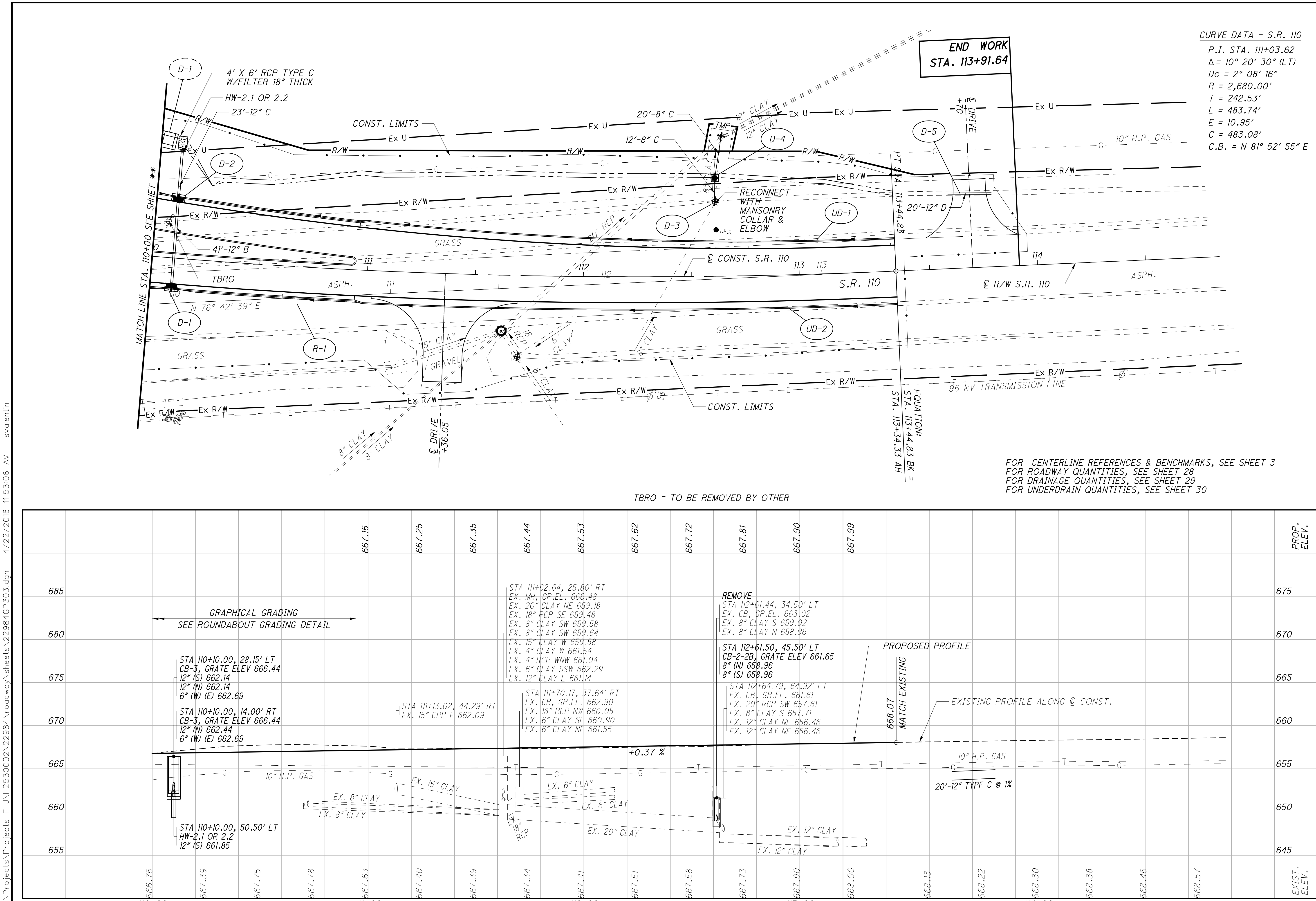


TBRO = TO BE REMOVED BY OTHER

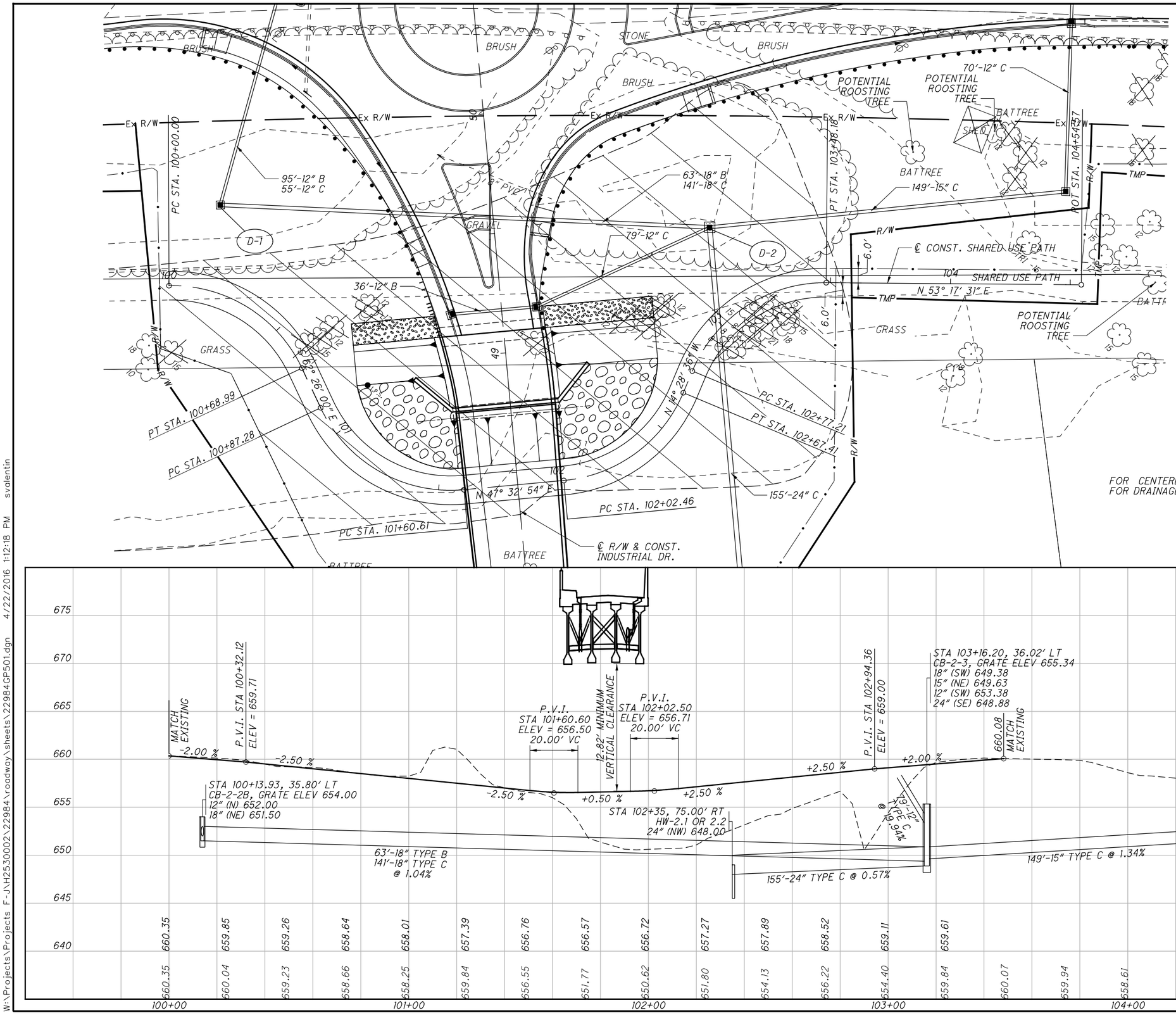
FOR CENTERLINE REFERENCES & BENCHMARKS, SEE SHEET 3
FOR ROADWAY QUANTITIES, SEE SHEET 28
FOR DRAINAGE QUANTITIES, SEE SHEET 29
FOR UNDERDRAIN QUANTITIES, SEE SHEET 30

HORIZONTAL SCALE IN FEET

CALCULATED ALT CHECKED CEB

PLAN AND PROFILE - S.R. 110
STA. 110+00.00 TO STA. 115+00.00

HEN-NEW BRIDGE



CURVE DATA - SHARED USE PATH

P.I. Sta. 100+38.87
Δ = 65° 52' 36" (RT)
Dc = 95° 29' 35"
R = 60.00'
T = 38.87'
L = 68.99'
E = 11.49'
e_{max} = NC

P.I. Sta. 101+29.31
Δ = 70° 01' 06" (LT)
Dc = 95° 29' 35"
R = 60.00'
T = 42.03'
L = 73.32'
E = 13.25'
e_{max} = NC

P.I. Sta. 102+38.53
Δ = 62° 01' 29" (LT)
Dc = 95° 29' 35"
R = 60.00'
T = 36.07'
L = 64.95'
E = 10.01'
e_{max} = NC

P.I. Sta. 103+17.50
Δ = 67° 46' 06" (RT)
Dc = 95° 29' 35"
R = 60.00'
T = 40.29'
L = 70.97'
E = 12.27'
e_{max} = NC

VERTICAL CLEARANCE

MINIMUM VERTICAL CLEARANCE IS 12.82'
AT STA. 102+01.43, 6.0' LT.

DESIGN SPEED

DESIGN SPEED IS 18 MPH

HORIZONTAL SCALE IN FEET
0 10 20 50

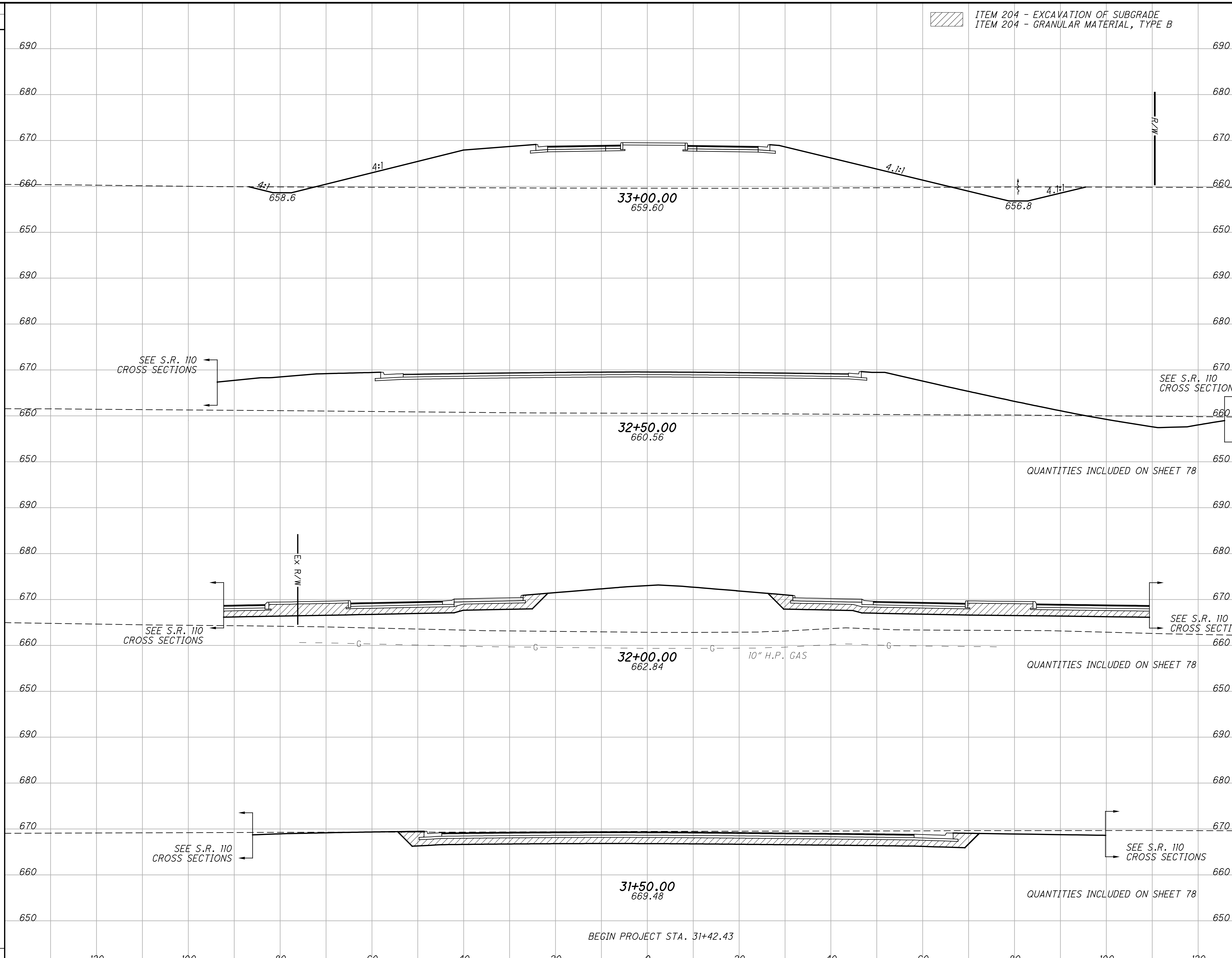
CALCULATED ALT
CHECKED CEB

PLAN AND PROFILE - SHARED USE PATH
STA. 100+00.00 TO 104+54.57

HEN-NEW BRIDGE

43
189

SEEDING	
END WIDTH	SQ. YDS.
	134



END AREA		VOLUME	
CUT	FILL	CUT	FILL
62	893		

CALCULATED XF
CHECKED CEB

CROSS SECTIONS INDUSTRIAL DR.
STA. 31+50.00 TO STA. 33+00.00

HEN-NEW BRIDGE

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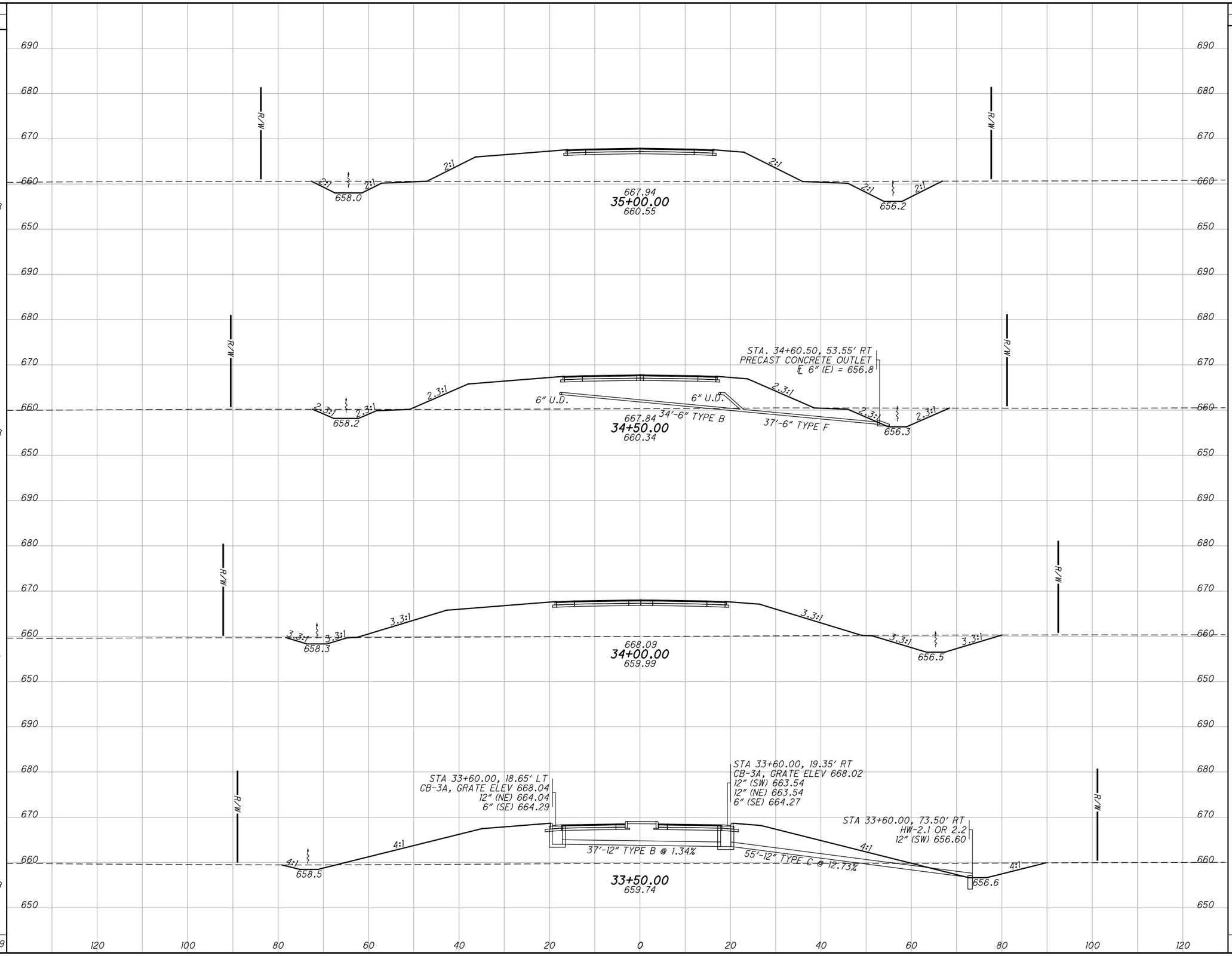
SEEDING END WIDTH	SEEDING SQ. YDS.
114	628
112	658
125	714
132	739
	2739



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
90	435	156	839
78	471	143	1001
76	610	127	1265
61	756	114	1527
		540	4632

CALCULATED XF
CHECKED CEB

CROSS SECTIONS INDUSTRIAL DR.
STA. 33+50.00 TO STA. 35+00.00

HEN-NEW BRIDGE

45
189

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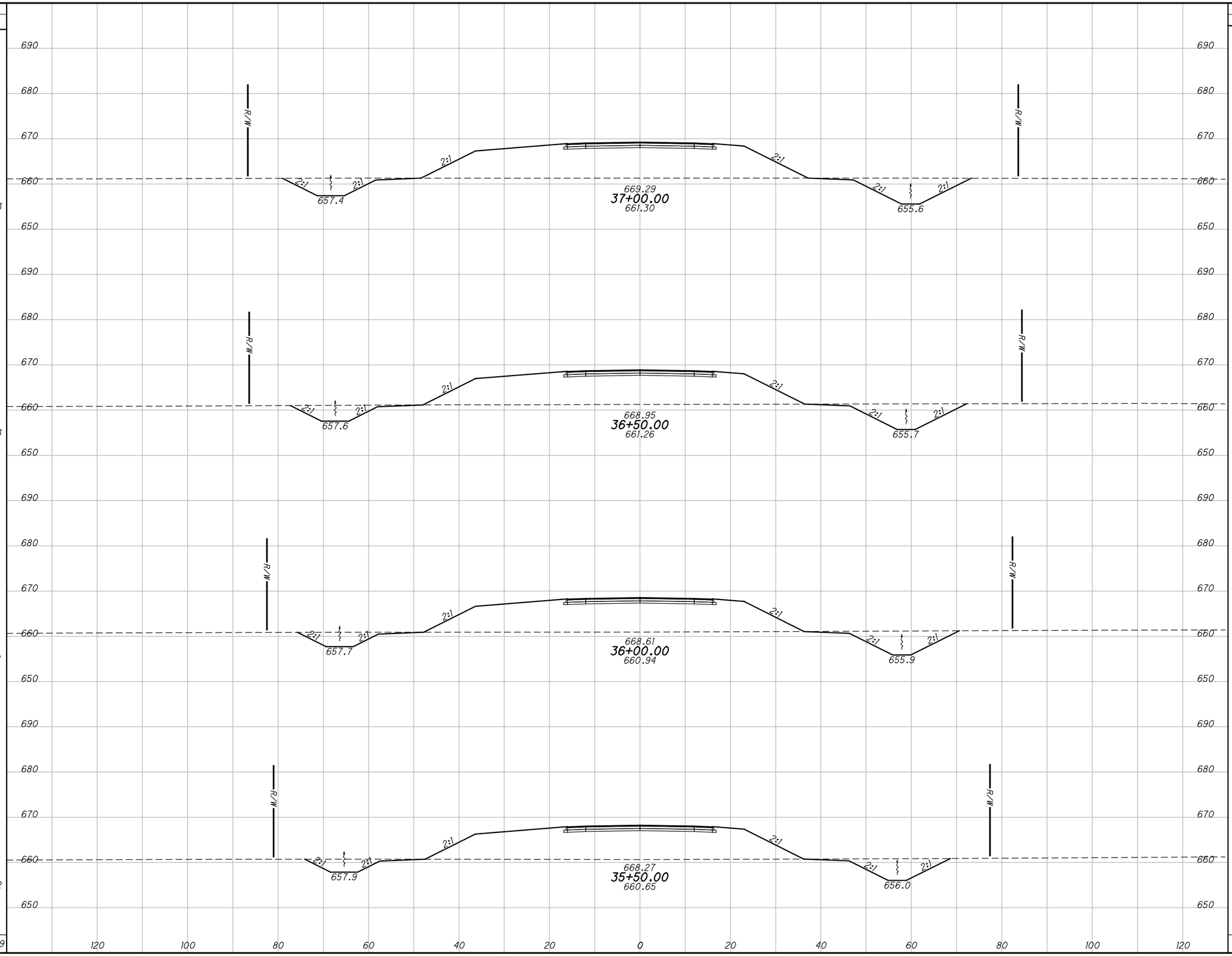
SEEDING	
END WIDTH	SQ. YDS.
128	703
125	683
121	661
117	642
	2689



END AREA	
CUT	FILL
145	488
136	463
120	459
103	452

VOLUME	
CUT	FILL
260	881
237	854
206	844
179	821
882	3400

CALCULATED XF

CHECKED CEB

CROSS SECTIONS INDUSTRIAL DR.
STA. 35+50.00 TO STA. 37+00.00

HEN-NEW BRIDGE

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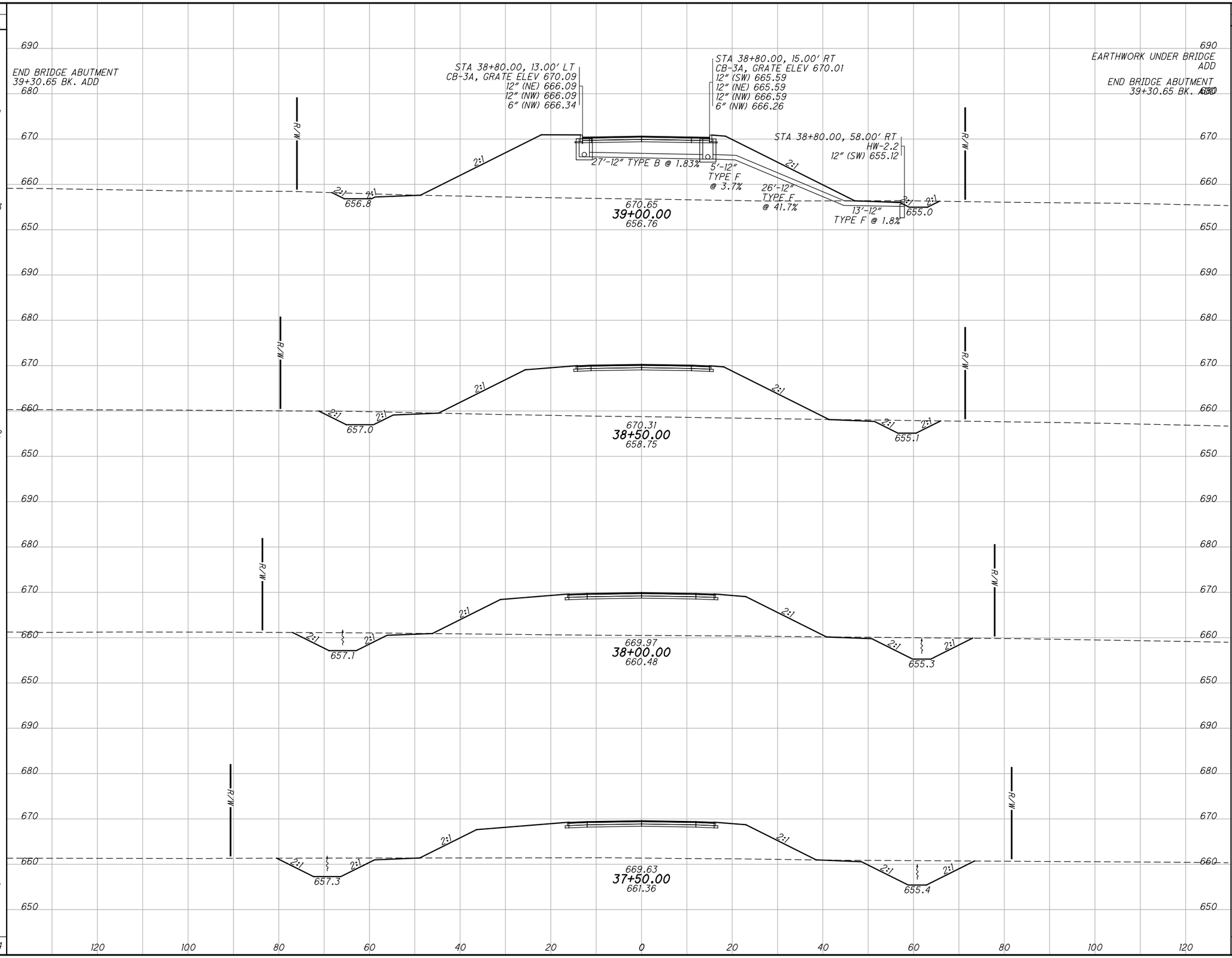
SEEDING	
END WIDTH	SQ. YDS.
112	381
112	633
116	672
126	711
130	717
	3114



END AREA	
CUT	FILL
24	915
24	915
66	679
122	582
141	516
793	6815

VOLUME	
CUT	FILL
0	1185
27	1039
83	1476
174	1168
244	1017
265	930

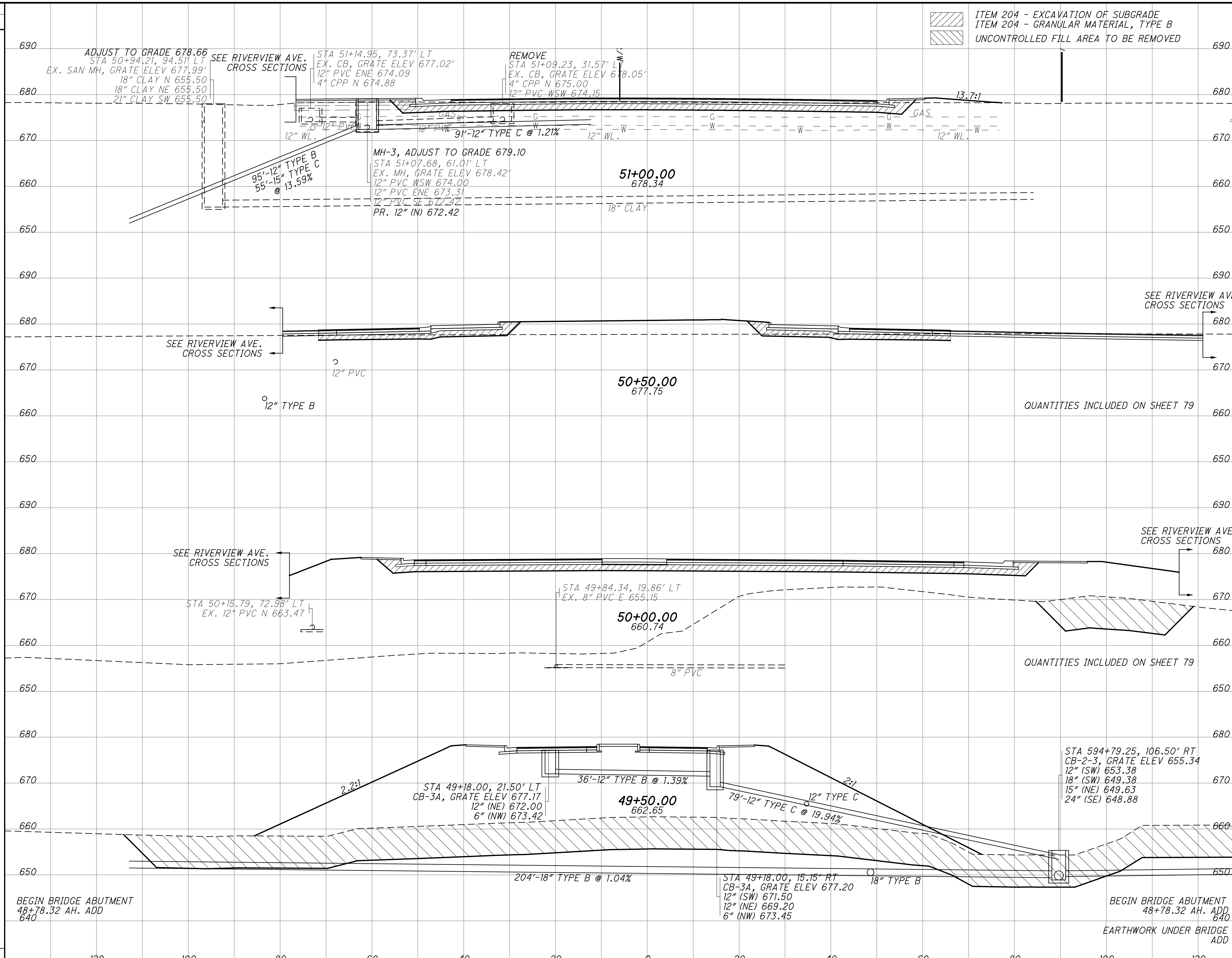
CALCULATED XF
CHECKED CEB

CROSS SECTIONS INDUSTRIAL DR.
STA. 37+50.00 TO STA. 39+00.00

HEN-NEW BRIDGE

47
189

W:\Projects\Projects F-J\H2530002\22984\roadway\sheets\22984XS001.dgn 4/22/2016 11:53:09 AM svolentin



SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
106		0	1736		
	844			0	4609
106		0	1736		
				0	141
	844			0	4750

CALCULATED XF
CHECKED CEB

CROSS SECTIONS INDUSTRIAL DR.
STA. 49+50.00 TO STA. 51+00.00

HEN-NEW BRIDGE

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SEEDING END WIDTH	SEEDING SQ. YDS.
10	67
14	144
38	278
62	
	489

ITEM 204 - EXCAVATION OF SUBGRADE
ITEM 204 - GRANULAR MATERIAL, TYPE B

TMP

Ex R/W

Ex R/W

R/W

ADJUST TO GRADE 679.00
STA 52+82.47, 9.36' RT
EX. SAN MH, GRATE ELEV 679.05'
18" CLAY N 657.60
18" CLAY S 657.60

2.0'

6.5:1

FIBER OPTICS
GAS
12" H.P. GAS

12" WL.

679.23
53+00.00
679.26

SEE DRIVE PROFILE FOR QUANTITIES

STA 52+71.70, 29.30' RT
CB-2-2B, GRATE ELEV 678.75
12" (S) 676.12

45.5:1

827.4:1

FIBER OPTICS
GAS

12" WL.

86'-12" TYPE C @ 2.38%

678.93
52+50.00
679.02

STA 51+77.00, 12.70' LT
CB-3, GRATE ELEV 678.07
12" (NE) 673.52
12" (S) 673.52
6" (NW) (SE) 674.32

STA 51+77.00, 35.45' RT
CB-3, GRATE ELEV 678.07
12" (N) 674.07
12" (SW) 674.07
6" (NW) (SE) 674.32

9.5'

50.4:1

50:1

FIBER OPTICS
GAS

91'-12" TYPE C @ 1.21%

12" WL.

47'-12" TYPE B @ 1.16%

4.5'

53.6:1

26.5:1

86'-12" TYPE C @ 2.38%

52+00.00
678.76

9.5'

7.7'

53.7:1

47.6:1

48.25:1

24.7:1

FIBER OPTICS

FIBER OPTICS
GAS

12" WL.

12" TYPE C

51+50.00
678.95

690 680 670 660 650

120 100 80 60 40 20 0 20 40 60 80 100 120

END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
30	2	73	8
49	7	129	19
90	13	186	31
111	21		
		388	58

CALCULATED XF
CHECKED CEB

CROSS SECTIONS INDUSTRIAL DR.
STA. 51+50.00 TO STA. 53+00.00

HEN-NEW BRIDGE

49
189

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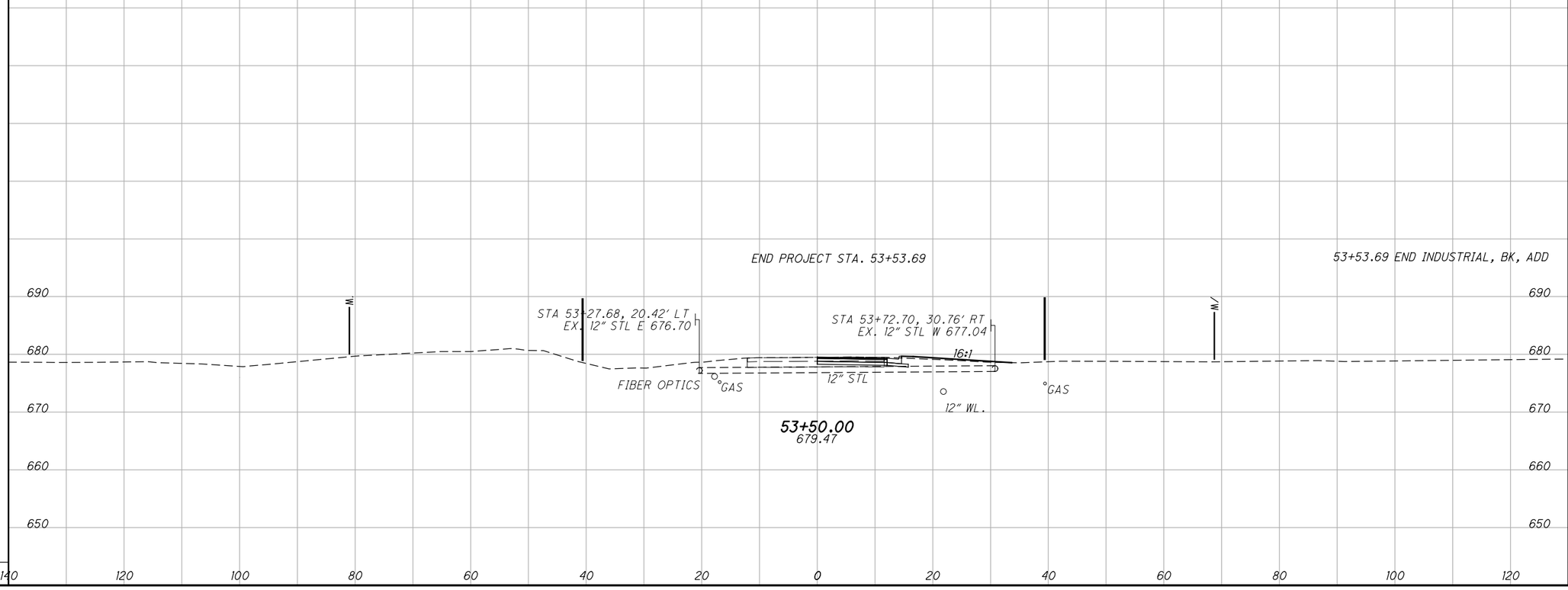
SEEDING	
END WIDTH	SQ. YDS.
17	7
17	75
82	

END AREA	
CUT	FILL
13	4
13	4

VOLUME	
CUT	FILL
2	1
40	6
42	7

CALCULATED XF

CHECKED CEB



CROSS SECTIONS INDUSTRIAL DR.
STA. 53+50.00

HEN-NEW BRIDGE

50
189

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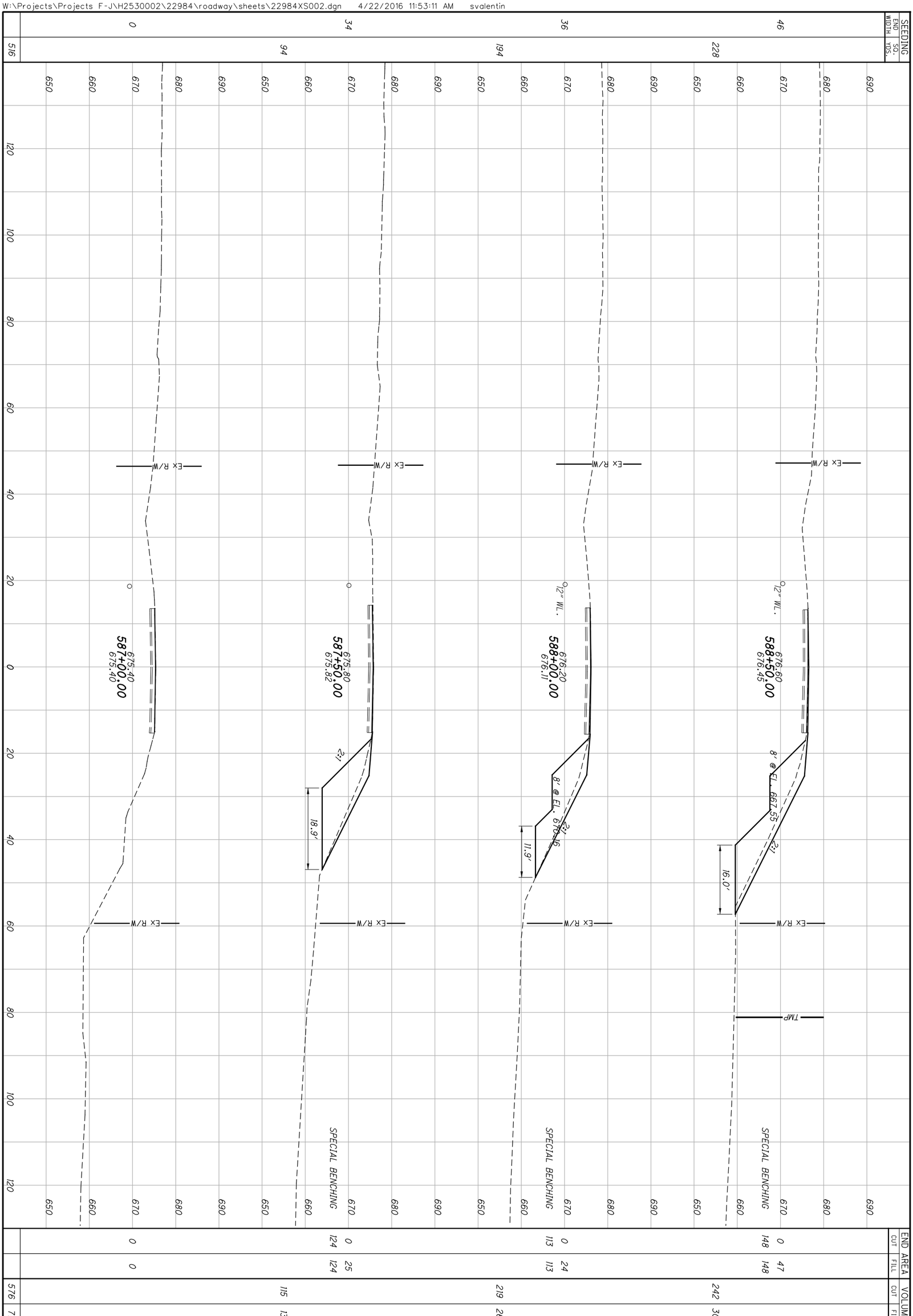


51
189

HEN-NEW BRIDGE

CROSS SECTIONS RIVERVIEW AVE.
STA. 587+00.00 TO STA. 588+50.00

CALCULATED XF
CHECKED CEB

SEEDING	
END WIDTH	SQ. YDS.
41	267
55	275
44	267
52	272
	1081

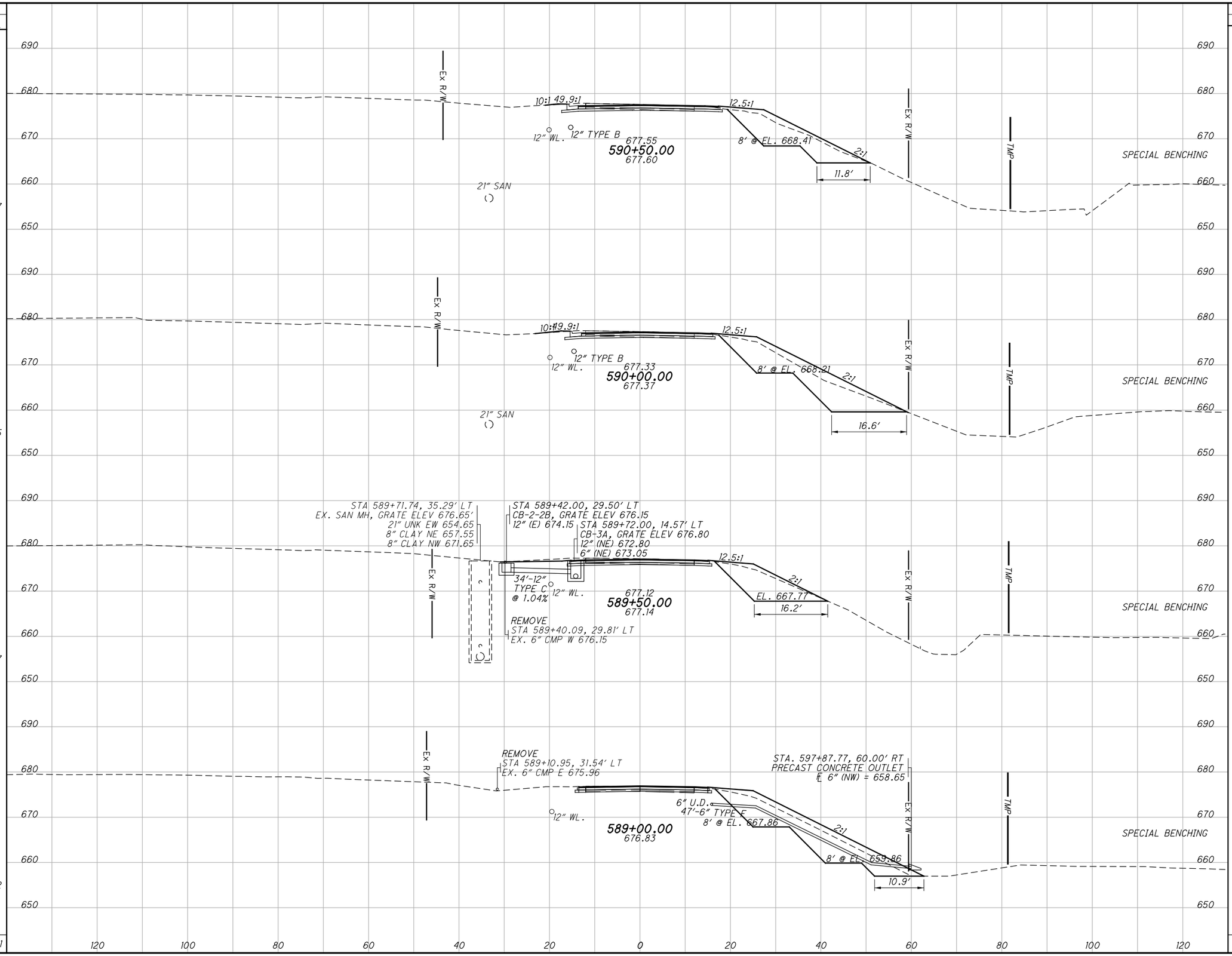
END AREA		VOLUME	
CUT	FILL	CUT	FILL
27	27		
110	110		
		293	318
24	51		
155	155		
		272	286
26	14		
89	89		
		276	302
14	54		
169	169		
		306	387
		1147	1293

CALCULATED XF
CHECKED CEB

CROSS SECTIONS RIVERVIEW AVE.
STA. 589+00.00 TO STA. 590+50.00

HEN-NEW BRIDGE

52
189



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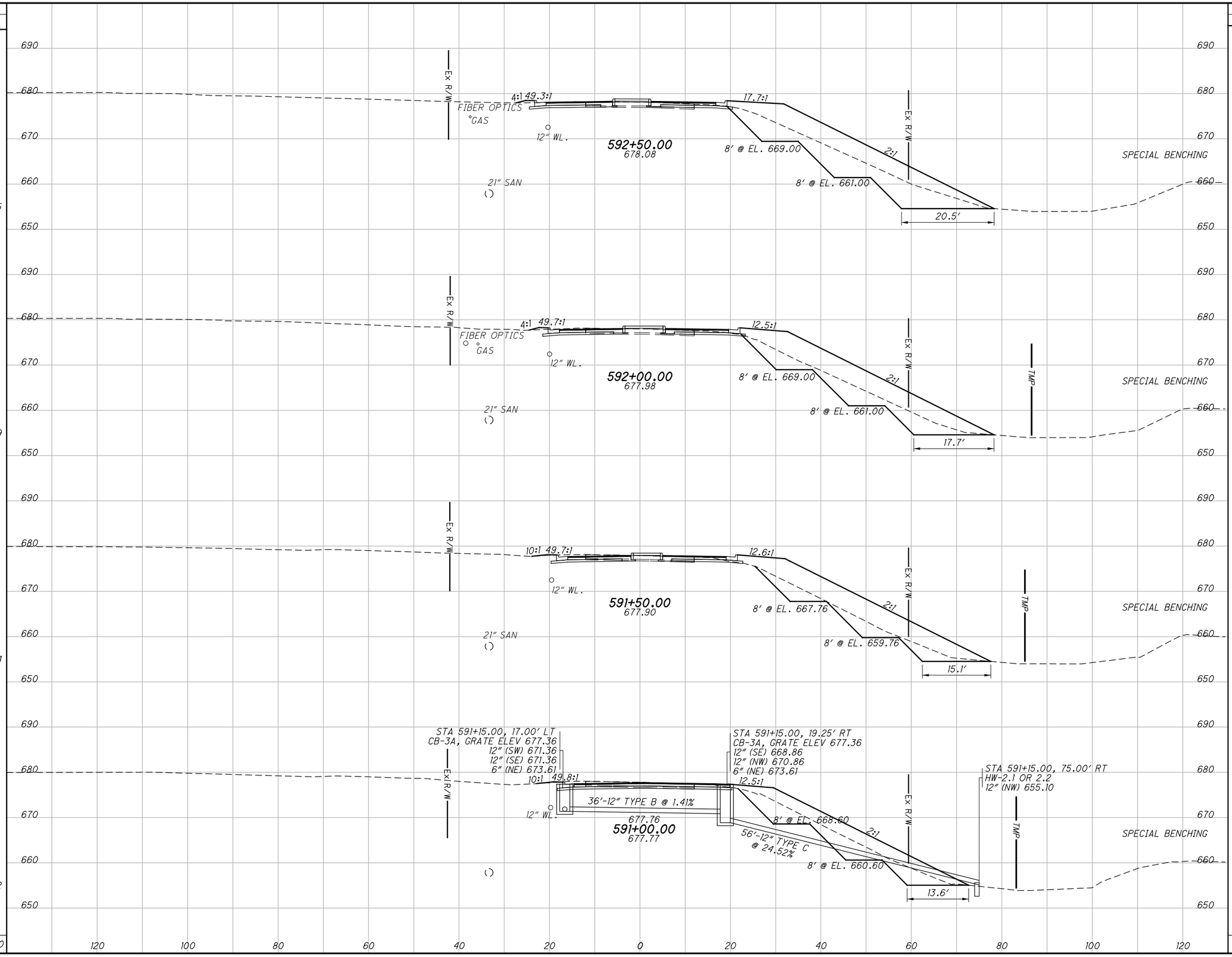
SEEDING END WIDTH	SEEDING SQ. YDS.
69	375
66	369
67	364
64	292
	1400



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
24	193		
212	212		
		367	696
26	213		
134	134		
		257	606
27	216		
91	91		
		258	522
29	125		
132	132		
		276	365
		1158	2189

SPECIAL BENCHING

CALCULATED XF
CHECKED CEB

CROSS SECTIONS RIVERVIEW AVE.
STA. 591+00.00 TO STA. 592+50.00

HEN-NEW BRIDGE

53
189

W:\Projects\Projects F-J\H2530002\22984\roadway\sheets\22984XS002.dgn 4/22/2016 11:53:12 AM svalentin

SEEDING	
END WIDTH	SQ. YDS.
82	419
	419

ITEM 204 - EXCAVATION OF SUBGRADE
ITEM 204 - GRANULAR MATERIAL, TYPE B

690 / 680 / 670 / 660 / 650

R/W

Ex R/W

GAS

12" WL.

594+50.00
677.96

18" SAN

QUANTITIES INCLUDED ON SHEET 79

SEE INDUSTRIAL DR. CROSS SECTIONS

12" TYPE C

18" TYPE B

594+00.00
678.02

SEE INDUSTRIAL DR. CROSS SECTIONS

QUANTITIES INCLUDED ON SHEET 79

18" SAN

18" TYPE B

REMOVE
STA 593+44.69, 50.09' LT
EX. CB, GRATE ELEV 678.05'
4" CPP N 675.00
12" PVC WSW 674.15

SEE INDUSTRIAL DR. CROSS SECTIONS

12" WL.

12" TYPE C

4" CPP

GAS

12" WL.

593+50.00
678.06

18" SAN

QUANTITIES INCLUDED ON SHEET 79

SEE INDUSTRIAL DR. CROSS SECTIONS

18" TYPE B

REMAIN
STA 593+03.47, 57.74' LT
EX. CB, GRATE ELEV 677.02'
12" PVC ENE 674.09
4" CPP N 674.88

4" CPP

GAS

12" PVC

5.4:1

41.4:1

GAS

12" WL.

12" WL.

91'-12" TYPE C @ 1.55%

ADJUST TO GRADE = 679.10
STA 593+15.47, 48.76' LT
EX. MH, GRATE ELEV 678.42'
12" PVC WSW 674.00
PLUG 12" PVC ENE 673.31
RECONNECT 12" PVC SE 672.42
PR. 12" (N) 672.42

18" CLAY

150'-12" TYPE B @ 13.59%

ADJUST TO GRADE 678.66
STA 592+82.24, 32.25' LT
EX. SAN MH, GRATE ELEV 677.99'
8" CLAY N 655.50
18" CLAY NE 655.50
21" CLAY SW 655.50

593+00.00
678.09

12" PVC

REMOVE

STA 593+08.85, 49.03' RT
EX. PIO, GRATE ELEV 663.47'
12" PVC NW 663.47

95'-12" TYPE B
55'-12" TYPE C
@ 13.59%

2:1

STA 592+71.50, 95.00' RT
CB-2-2B, GRATE ELEV 654.00
12" (N) 652.00
18" (NE) 651.50

204'-18" TYPE B @ 1.04%

18" TYPE B

120 100 80 60 40 20 0 20 40 60 80 100 120

END AREA		VOLUME	
CUT	FILL	CUT	FILL
22	996		
		239	1297
		239	1297

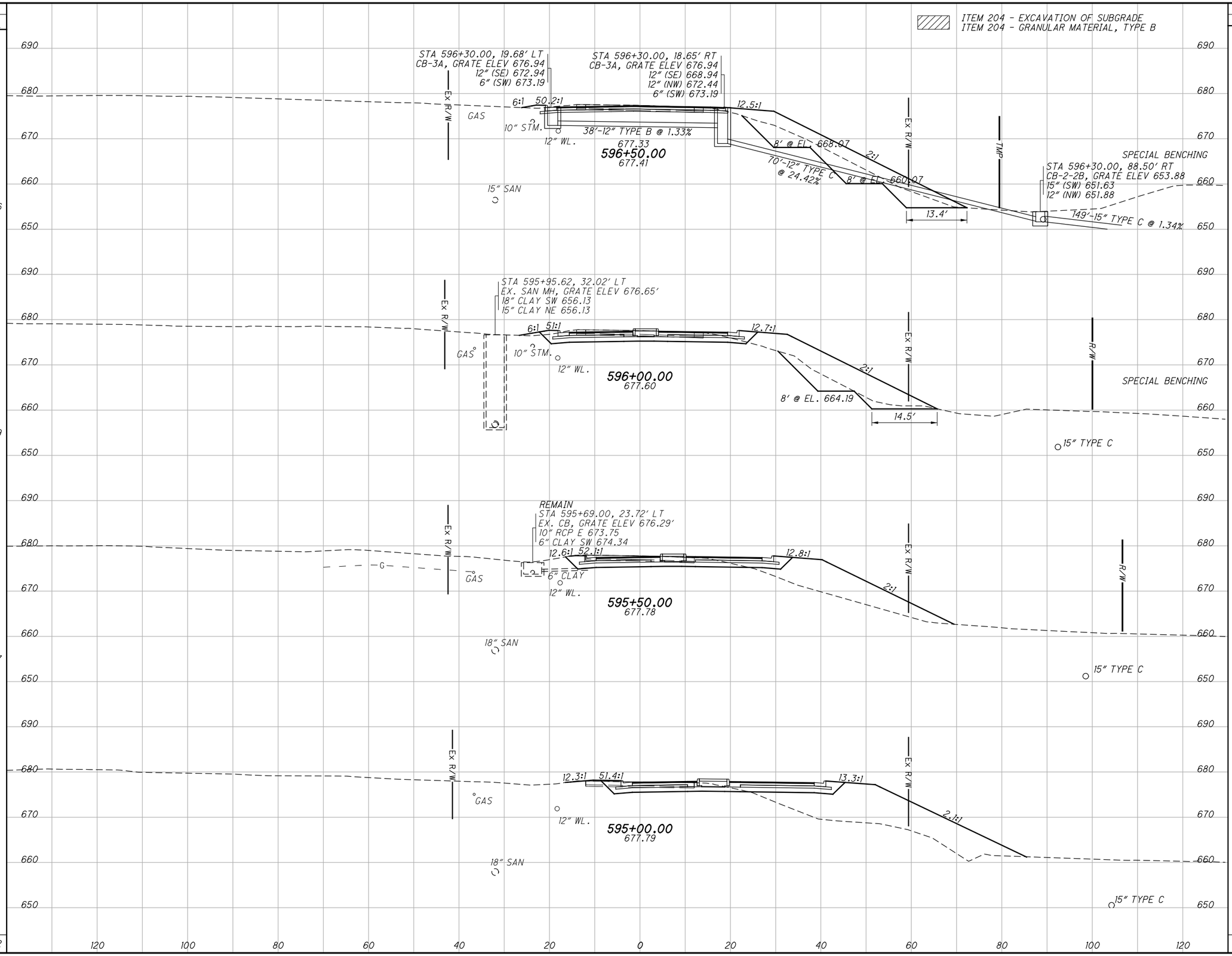
CALCULATED XF
CHECKED CEB

CROSS SECTIONS RIVERVIEW AVE.
STA. 593+00.00 TO STA. 594+50.00

HEN-NEW BRIDGE

54
189

SEEDING	
END WIDTH	SQ. YDS.
64	336
57	289
47	297
60	
	922



END AREA		VOLUME	
CUT	FILL	CUT	FILL
30	127		
131	131		
		221	446
25	171		
53	53		
		90	386
19	193		
		27	503
10	350		
		338	1335

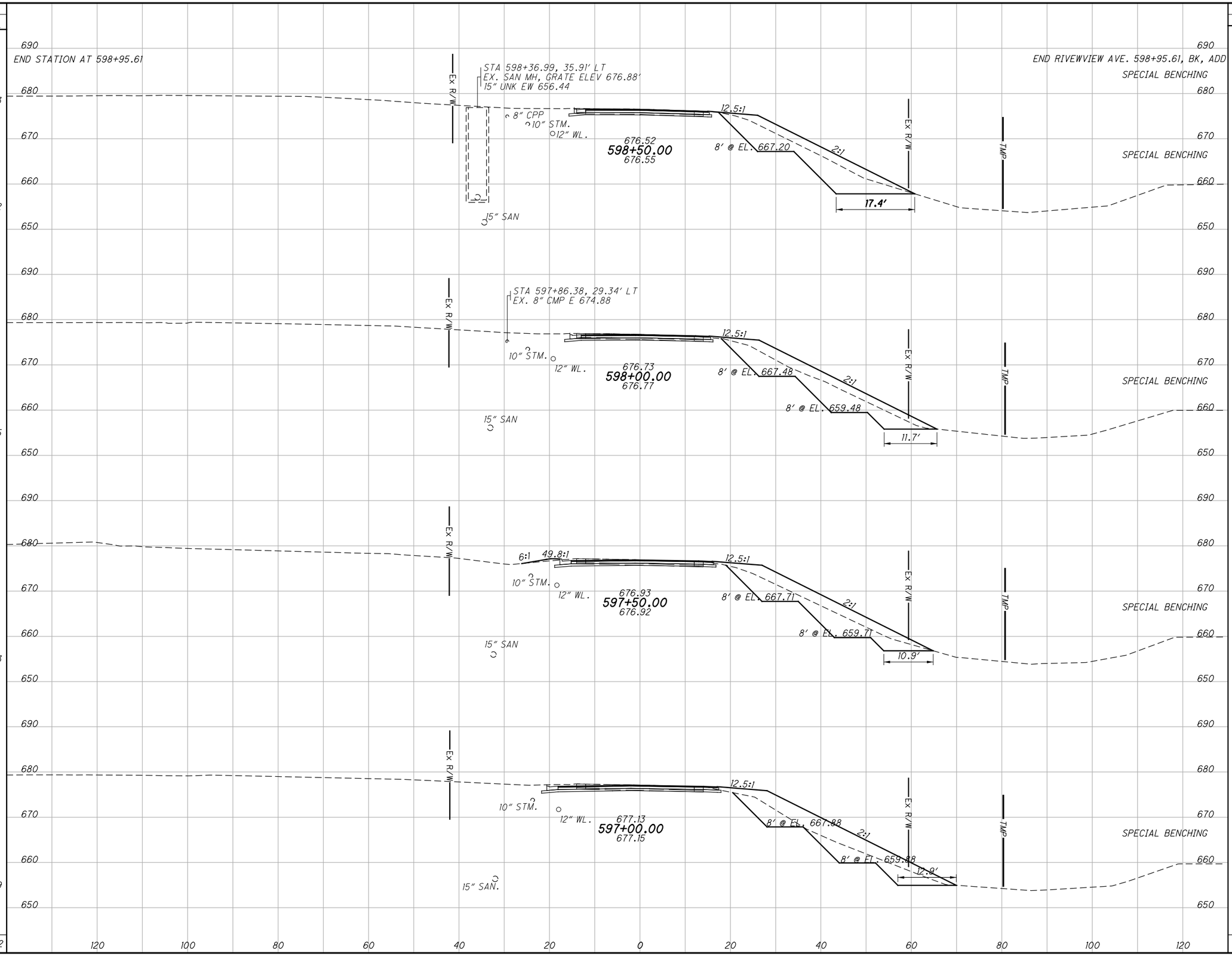
CALCULATED XF
CHECKED CEB

CROSS SECTIONS RIVERVIEW AVE.
STA. 595+00.00 TO STA. 596+50.00

HEN-NEW BRIDGE

55
189

SEEDING END WIDTH	SEEDING SQ. YDS.
50	253
50	292
55	325
62	333
58	339
	1542



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
16	67		
151	151		
		282	368
16	67		
151	151		
		309	418
19	85		
148	148		
		296	425
21	94		
132	132		
		275	440
28	133		
116	116		
		282	469
		1444	2120

END RIVEWVIEW AVE. 598+95.61, BK, ADD
SPECIAL BENCHING
SPECIAL BENCHING
SPECIAL BENCHING
SPECIAL BENCHING

CALCULATED XF
CHECKED CEB

CROSS SECTIONS RIVERVIEW AVE. STA. 597+00.00 TO STA. 598+50.00

HEN-NEW BRIDGE

56
189

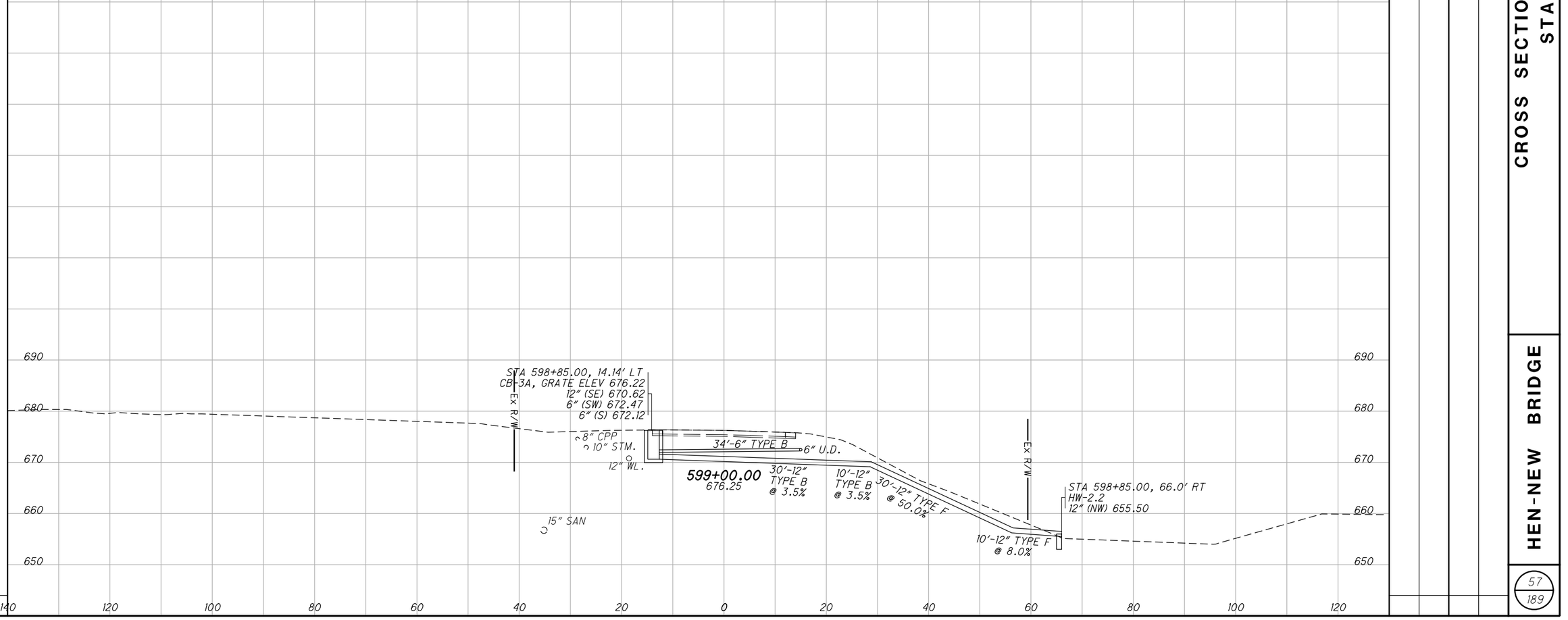
SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL

CALCULATED XF

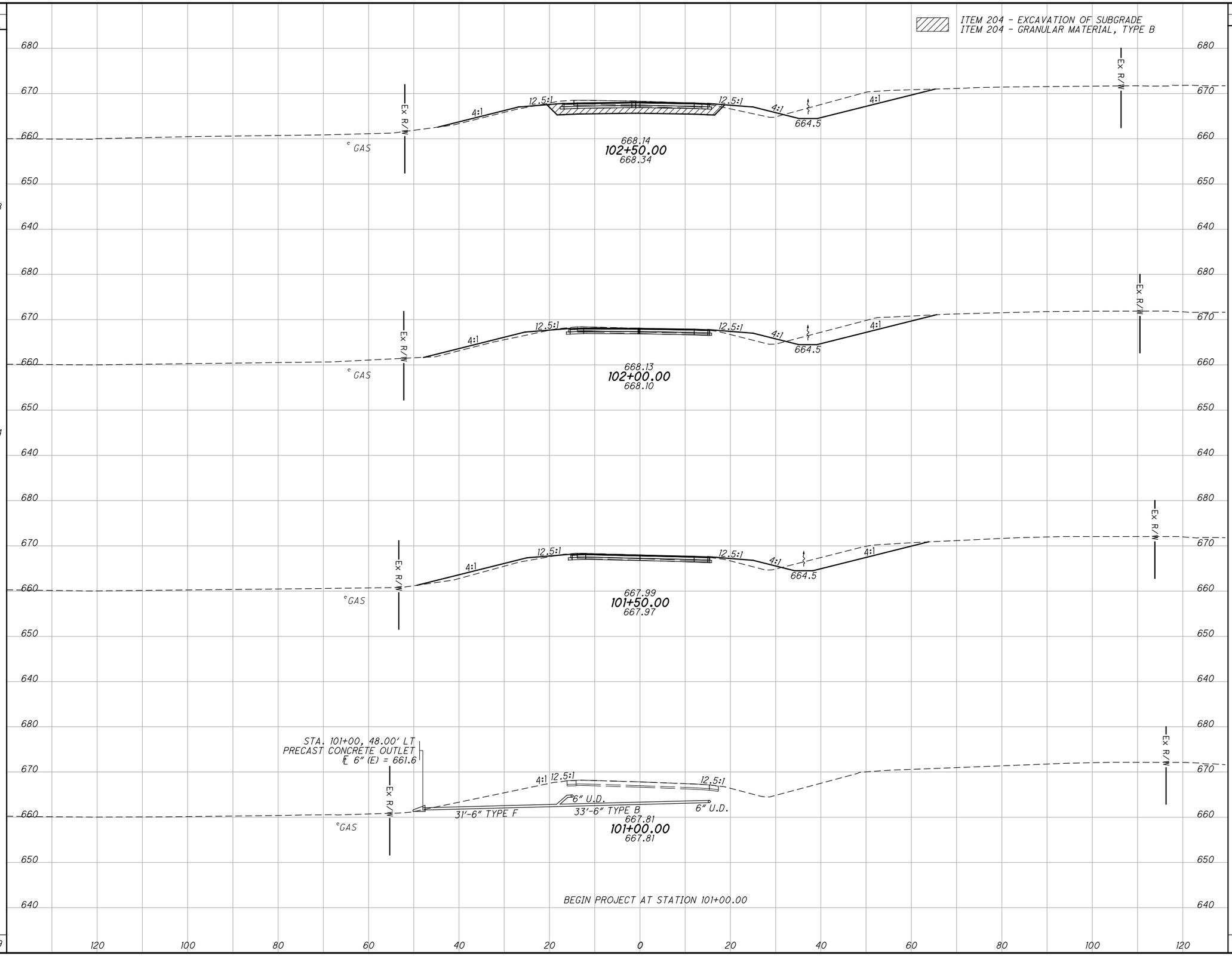
CHECKED CEB



CROSS SECTIONS RIVERVIEW AVE.
STA. 599+00.00

HEN-NEW BRIDGE

SEEDING	
END WIDTH	SQ. YDS.
80	458
85	444
75	417
	1319



END AREA	
CUT	FILL
97	23
78	30
72	30
72	30

VOLUME	
CUT	FILL
162	49
139	56
133	56
434	161

CALCULATED XF

CHECKED CEB

CROSS SECTIONS S.R. 110
STA. 101+00.00 TO STA. 102+50.00

HEN-NEW BRIDGE

58
189

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SEEDING		END AREA		VOLUME	
END WIDTH	SQ. YDS.	CUT	FILL	CUT	FILL
78	503	64	98	149	139
103	561	97	52	196	65
99	478	115	18	205	36
73	425	106	21	188	41
	1967			738	281

CALCULATED XF
CHECKED CEB

ITEM 204 - EXCAVATION OF SUBGRADE
ITEM 204 - GRANULAR MATERIAL, TYPE B

104+50.00
668.57
659.2
GAS

STA 104+00.00, 22.00' LT
CB-3, GRATE ELEV 667.23
12" (SE) 662.23
12" (NW) 662.23
6" (SW) (NE) 663.48
STA 104+00.00, 63.00' LT
HW 2.1 OR 2.2
12" (SE) 659.40
GAS 41'-12" TYPE C @ 6.84%
35'-12" TYPE B @ 2.84%
STA 104+00.00, 14.00' RT
CB-3, GRATE ELEV 667.23
12" (NW) 663.23
6" (SW) (NE) 663.48
104+00.00
668.68
659.4
664.4

667.81
103+50.00
668.59
659.5
GAS
664.4

668.04
103+00.00
668.50
GAS
664.5

R/W
Ex R/W
4:1
12.5:1
50:1

680 670 660 650 640

120 100 80 60 40 20 0 20 40 60 80 100 120

CROSS SECTIONS S.R. 110
STA. 103+00.00 TO STA. 104+50.00

HEN-NEW BRIDGE

59
189

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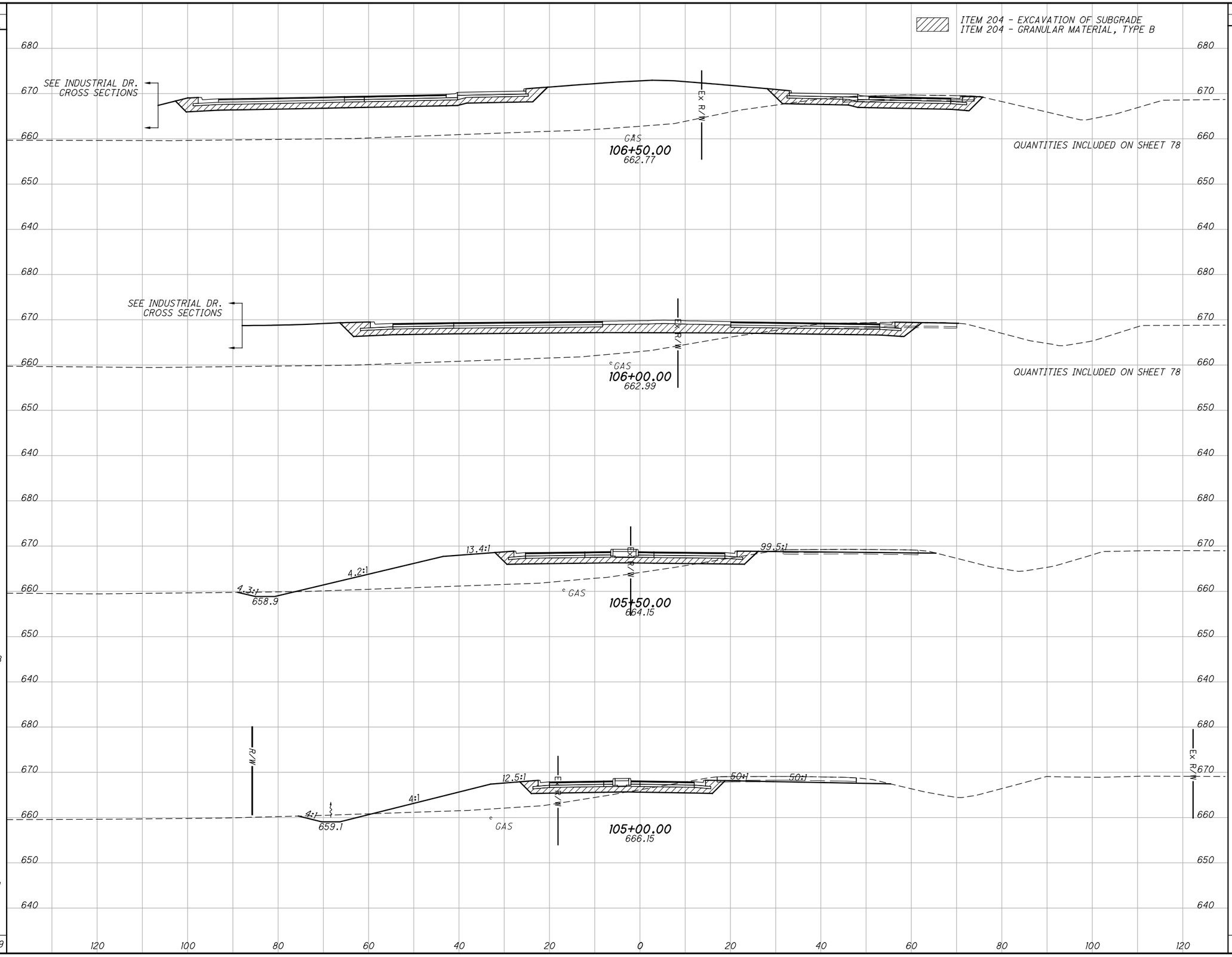
SEEDING	
END WIDTH	SQ. YDS.
106	558
95	481
	1039



END AREA		VOLUME	
CUT	FILL	CUT	FILL
11	394	49	540
42	189	98	266
		147	806

CALCULATED XF

CHECKED CEB

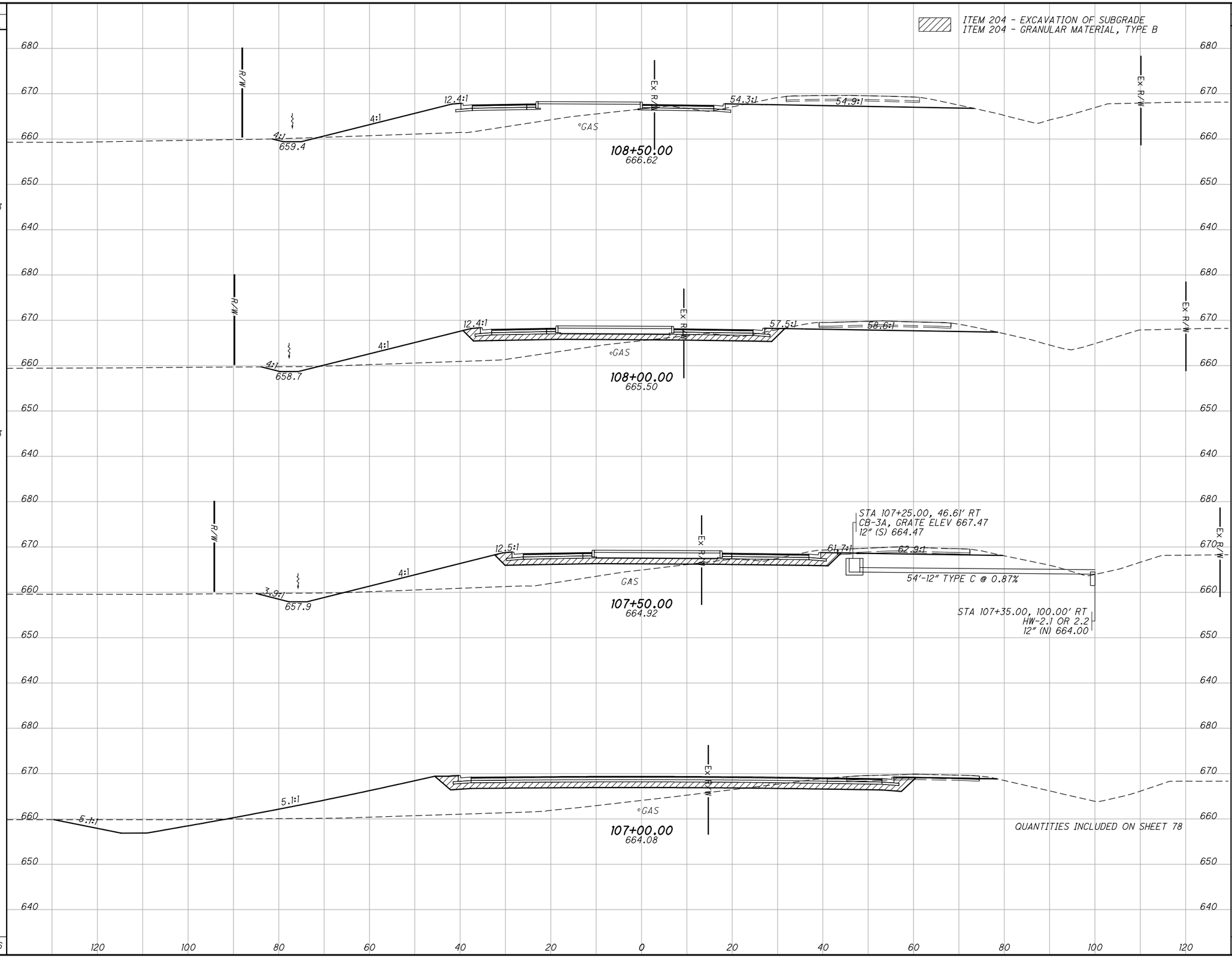
CROSS SECTIONS S.R. 110
STA. 105+00.00 TO STA. 106+50.00

HEN-NEW BRIDGE

60
189

SEEDING END WIDTH	SEEDING SQ. YDS.
98	553
101	553
98	
	1106

ITEM 204 - EXCAVATION OF SUBGRADE
ITEM 204 - GRANULAR MATERIAL, TYPE B



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
79	200		
		128	444
59	280		
		106	542
56	305		
		234	986

CALCULATED XF
CHECKED CEB

CROSS SECTIONS S.R. 110
STA. 107+00.00 TO STA. 108+50.00

HEN-NEW BRIDGE

61
189

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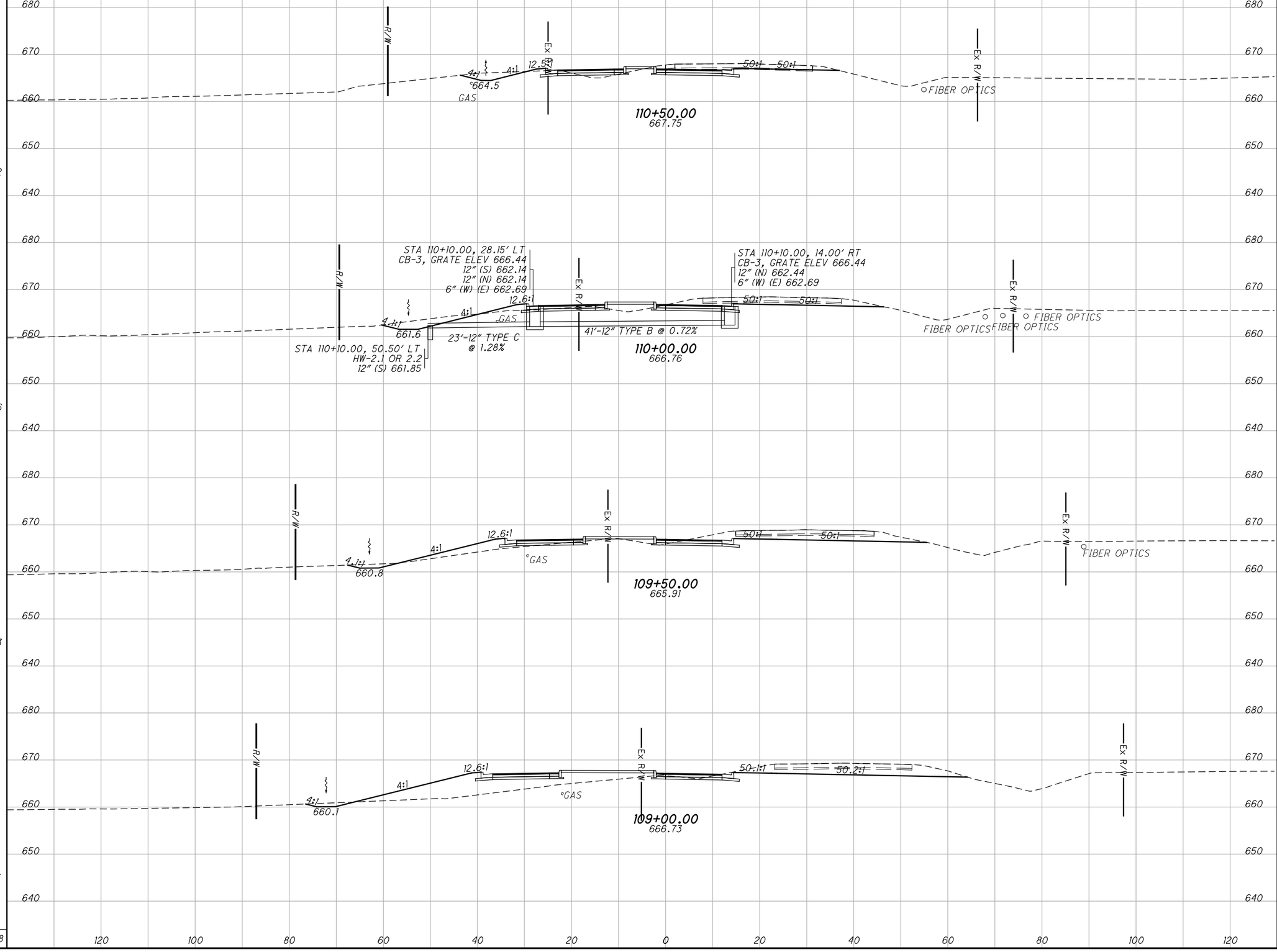
SEEDING END WIDTH	SEEDING SQ. YDS.	END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
41	292	61	4	141	11
64	386	91	8	175	33
75	453	98	28	174	135
88	517	90	118	156	294
	1648			646	473

CALCULATED XF
CHECKED CEB

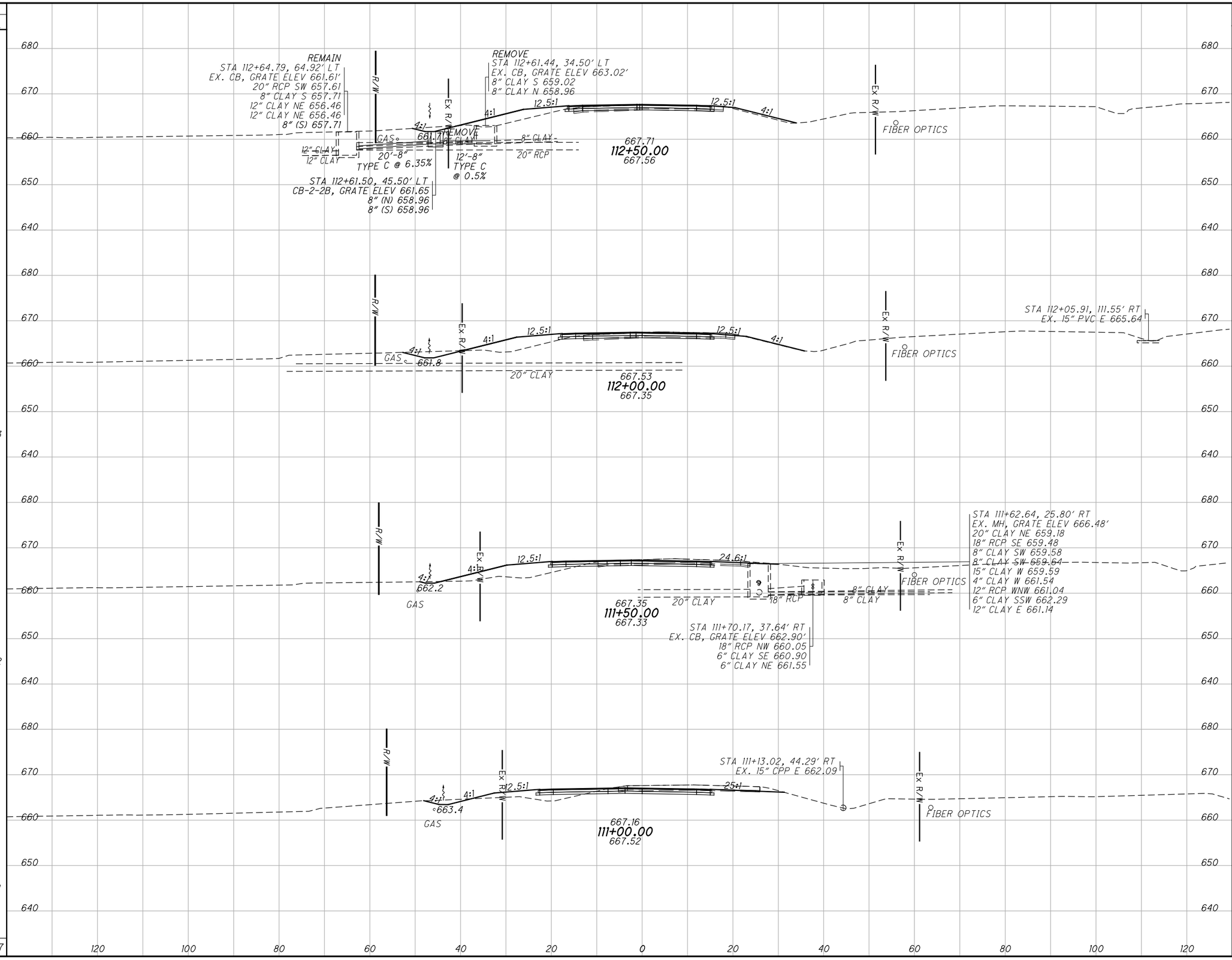


CROSS SECTIONS S.R. 110
STA. 109+00.00 TO STA. 110+50.00

HEN-NEW BRIDGE

62
189

SEEDING END WIDTH	SEEDING SQ. YDS.
55	311
57	283
45	242
42	231
	1067



END AREA CUT	END AREA FILL	VOLUME CUT	VOLUME FILL
16	41	35	78
22	43	37	91
18	55	52	75
38	26	92	28
		216	272

CALCULATED XF
CHECKED CEB

CROSS SECTIONS S.R. 110
STA. 111+00.00 TO STA. 112+50.00

HEN-NEW BRIDGE

63
189

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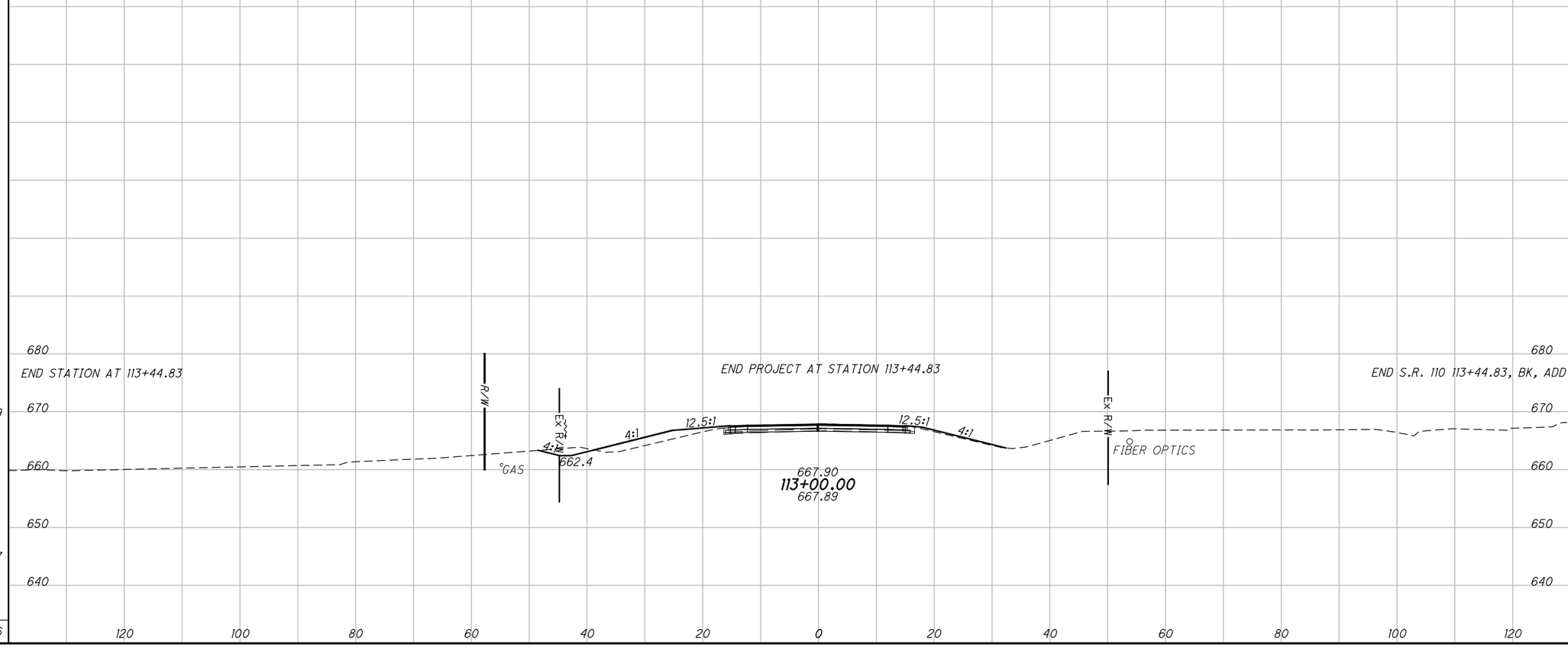
SEEDING	
END WIDTH	SQ. YDS.
52	259
52	297
	556



END AREA	
CUT	FILL
17	29
17	29

VOLUME	
CUT	FILL
28	48
31	65
59	113

CALCULATED XF

CHECKED CEB

CROSS SECTIONS S.R. 110
STA. 113+00.00

HEN-NEW BRIDGE

64
189

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SEEDING	
END WIDTH	SQ. YDS.
	364

TYPE C RCP 2.0' THICK WITH AGGREGATE FILTER

660 / 655 / 650

2:1 — 657.07 — 50:1 — 50:1 — 4:1

QUANTITIES INCLUDED IN INDUSTRIAL DR. QUANTITY

656.75
101+50.00
656.55

665 / 660 / 655

2:1 — 6:1 50:1 — 50:1 — 50:1

QUANTITIES INCLUDED IN INDUSTRIAL DR. QUANTITY

657.95
101+00.00
658.25

665 / 660 / 655

2:1 — 6:1 50:1 — 50:1

QUANTITIES INCLUDED IN INDUSTRIAL DR. QUANTITY

659.15
100+50.00
659.23

665 / 660 / 655

2:1 — 50:1 — 50:1 6:1 — 2:1

660.35
100+00.00
660.35

60 50 40 30 20 10 0 10 20 30 40 50 60

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		203	102

CALCULATED XF
CHECKED CEB

CROSS SECTIONS SHARED USE PATH STA. 100+00.00 TO STA. 101+50.00

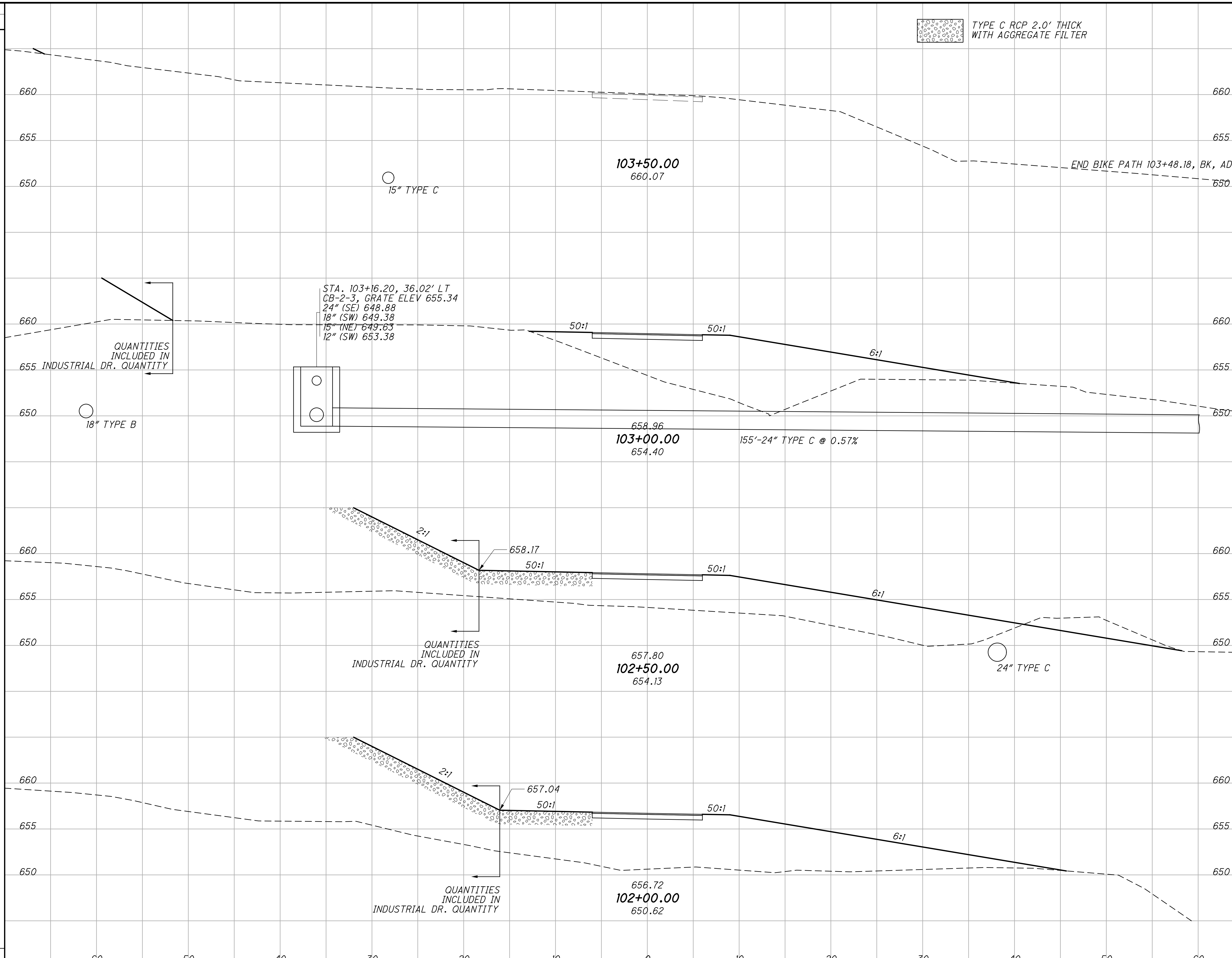
HEN-NEW BRIDGE

65
189

CROSS SECTIONS SHARED USE PATH
STA. 102+00.00 TO STA. 103+50.00

HEN-NEW BRIDGE

CALCULATED XF
CHECKED CEB



SEEDING	
END WIDTH	SQ. YDS.
	815

END AREA		VOLUME	
CUT	FILL	CUT	FILL
		78	1224

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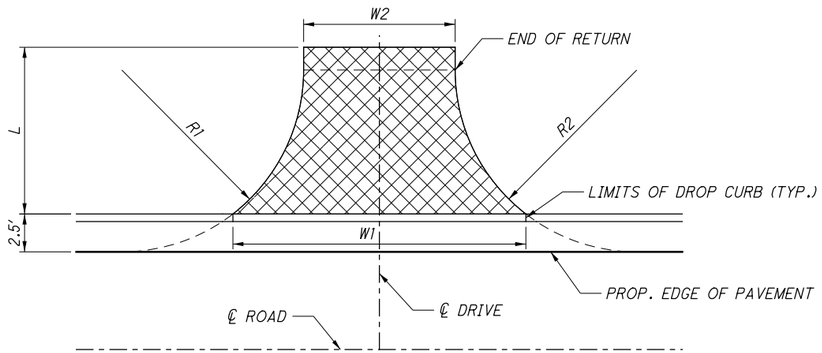
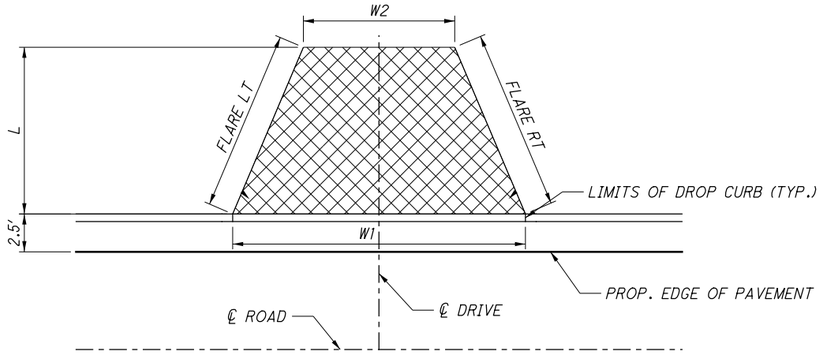
MATCH EXISTING DRIVE MATERIAL

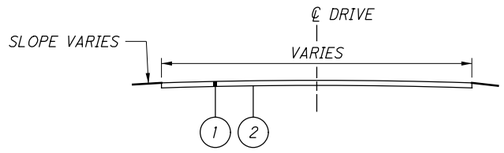


DRIVE PLAN DETAIL



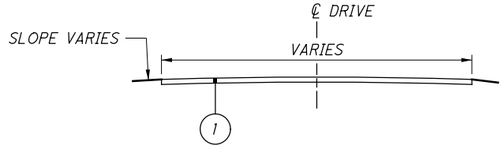
DRIVE PLAN DETAIL

SHEET NO.	STATION	SIDE	DRIVE TYPE	EXISITING DRIVE MATERIAL	DRIVE ANGLE	APRON LENGTH "L"	WIDTH "W1"	WIDTH "W2"	R1 (LEFT SIDE RADII OF DRIVE LOOKING FROM CL)	R2 9RIGHT SIDE RADII LOOKING FROM CL)	FLARED RATE (LT)	FLARED RATE (RT)
					DEG.	FT	FT	FT	FT	FT	FT	FT
RIVERVIEW AVE.												
GP201	589+24.72	LT	RES.	ASPH.	90.00	25.58	74.30	24.04	25.00	25.00		
GP202	592+29.53	LT	RES.	ASPH.	90.00	16.86	40.13	24.00	15.00	15.00		
GP203	597+05.35	LT	RES.	CONC.	91.86	8.50	28.65	20.00			9.47	9.86
GP203	597+97.51	LT	RES.	ASPH.	92.30	11.43	25.79	14.38			12.86	12.65
GP203	598+57.80	LT	RES.	CONC.	86.42	13.30	34.06	20.00			14.41	16.87
INDUSTRIAL DR.												
GP105	52+87.48	RT	RES.	ASPH.	78.36	9.65	26.73	15.00			9.95	11.98
S.R. 110												
GP301	100+10.00	LT	FIELD	AGG.	90.00	60.93	44.10	15.00	25.00	25.00		
GP303	111+36.05	RT	FIELD	AGG.	90.00	35.26	67.35	18.00	25.00	25.00		
GP303	113+70.00	LT	FIELD	AGG.	90.00	26.37	43.10	15.00	25.00	25.00		



(1) ITEM 452 6" NON-REINFORCED CONCRETE PAVEMENT

(2) ITEM 204 SUBGRADE COMPACTION



(1) ITEM 304 6" AGGREGATE BASE

CALCULATED | CHECKED

DRIVE DETAILS

HEN-NEW BRIDGE

67
189

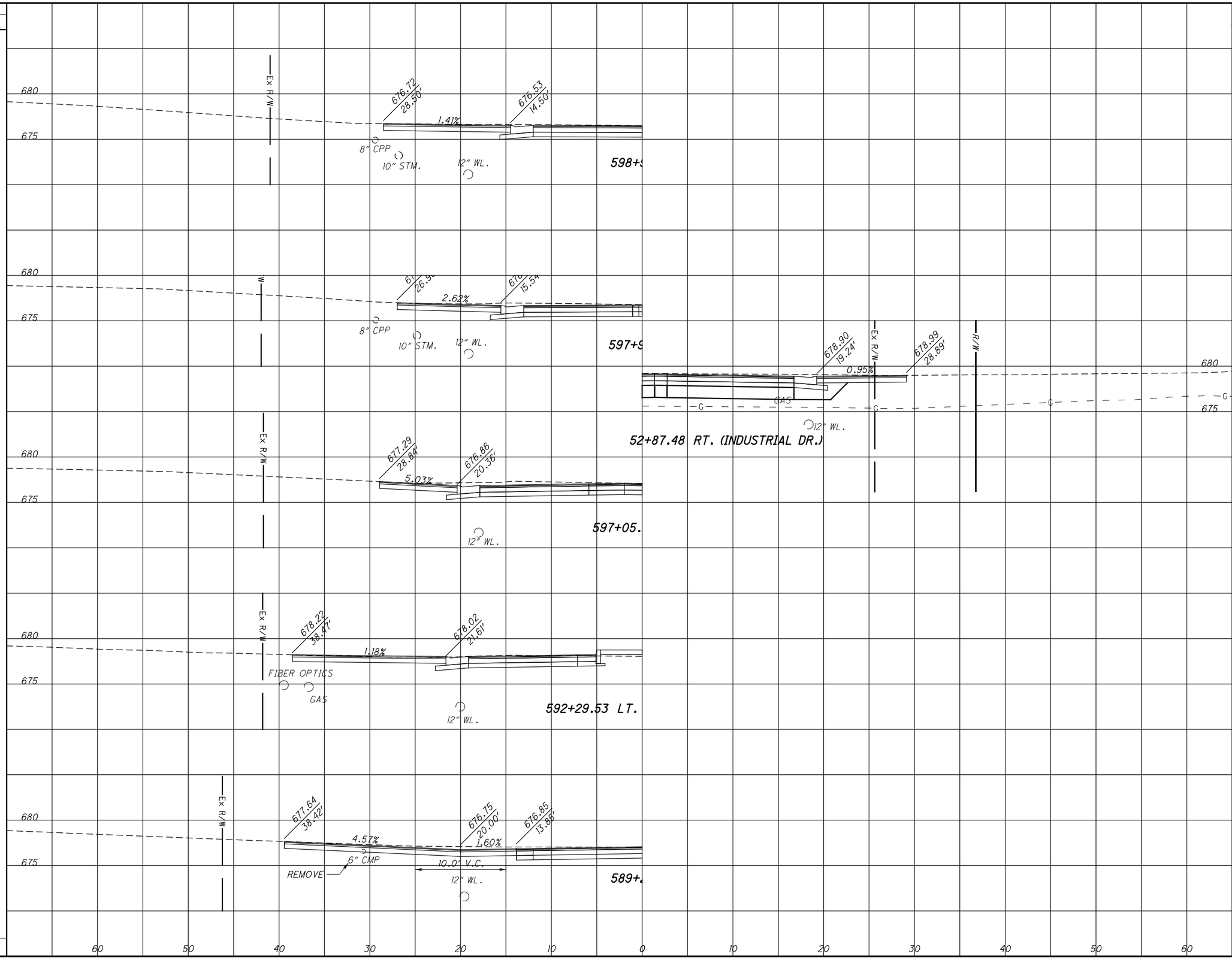
SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL

VOLUME	
CUT	FILL
34	0

CALCULATED XF

CHECKED CEB



DRIVEWAY PROFILES
INDUSTRIAL DR. & RIVERVIEW AVE.

HEN-NEW BRIDGE

68
189

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SEEDING	
END WIDTH	SQ. YDS.

END AREA	
CUT	FILL
2	20
30	0
4	60

VOLUME	
CUT	FILL
1	11
20	0
2	33
23	44

CALCULATED XF

CHECKED CEB

DRIVEWAY PROFILES
S.R.110

HEN-NEW BRIDGE

69
189

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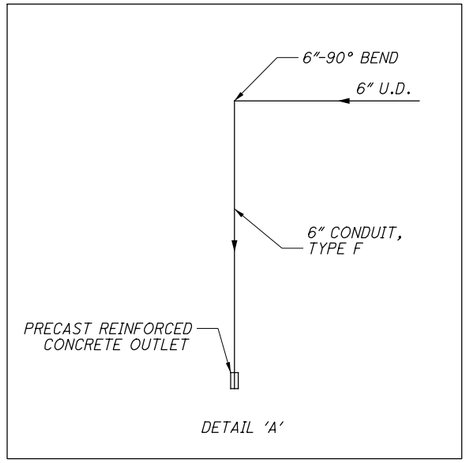
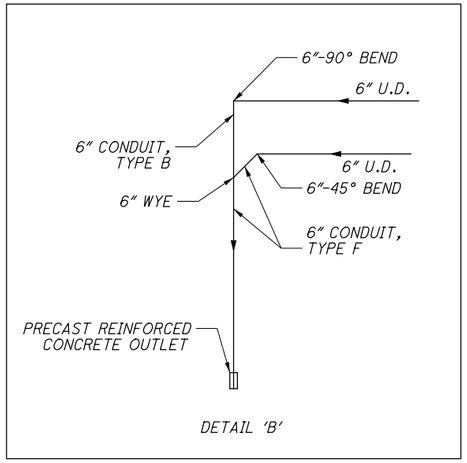
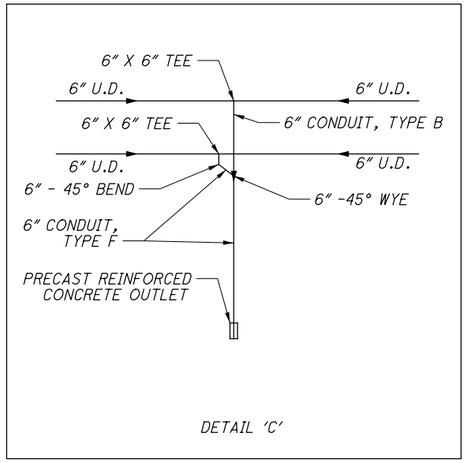


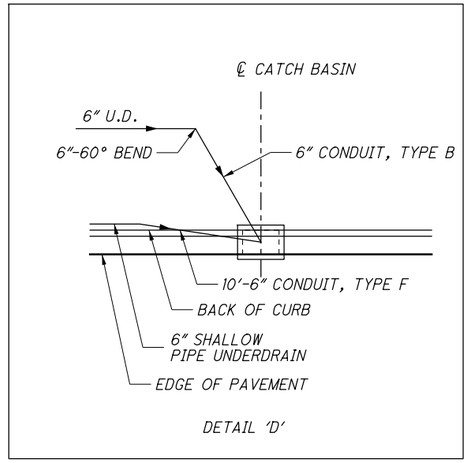
DETAIL 'A'



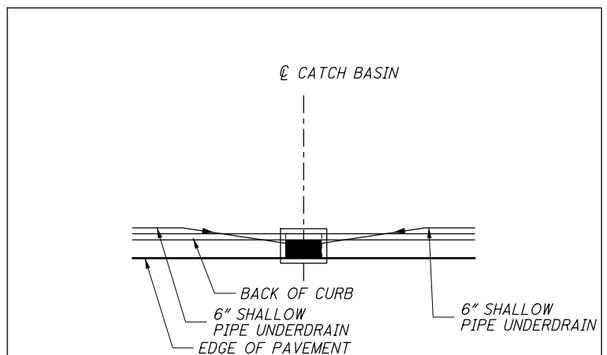
DETAIL 'B'



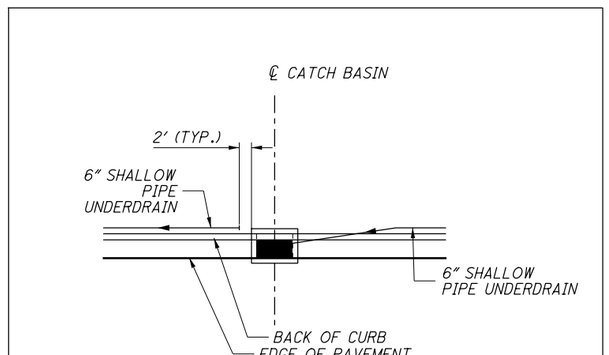
DETAIL 'C'



DETAIL 'D'



UNDERDRAIN OUTLET DETAIL
AT CATCH BASIN (SUMP CONDITION)



UNDERDRAIN OUTLET DETAIL
AT CATCH BASIN (CONTINUOUS GRADE)

CALCULATED XF
CHECKED CEB

UNDERDRAIN DETAILS

HEN-NEW BRIDGE

70
189

NOTE: ALL STATION AND OFFSET CALLOUTS ARE BASED ON ℄ R/W & CONST. INDUSTRIAL DR. OR ℄ CONST. S.R. 110.

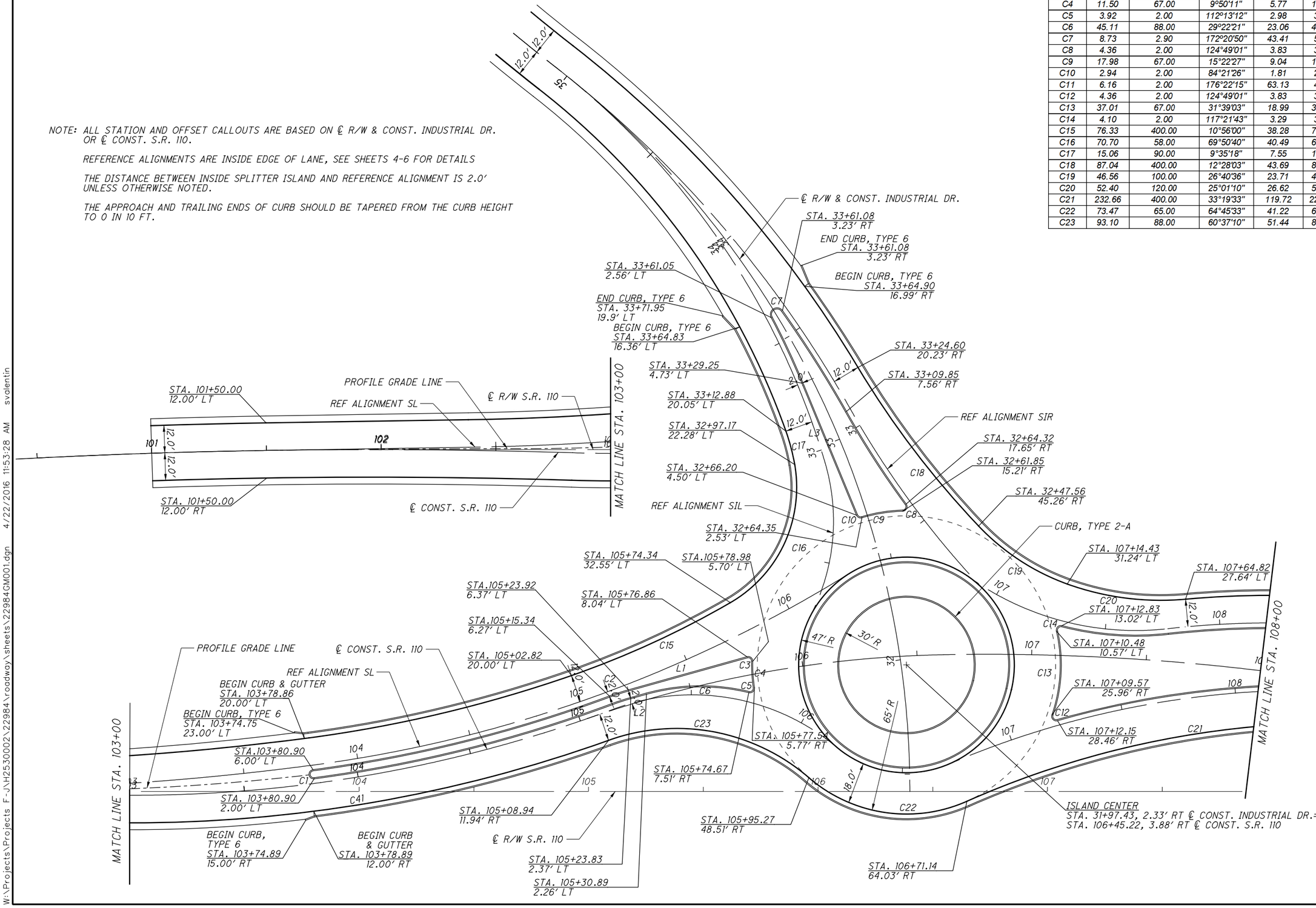
REFERENCE ALIGNMENTS ARE INSIDE EDGE OF LANE, SEE SHEETS 4-6 FOR DETAILS

THE DISTANCE BETWEEN INSIDE SPLITTER ISLAND AND REFERENCE ALIGNMENT IS 2.0' UNLESS OTHERWISE NOTED.

THE APPROACH AND TRAILING ENDS OF CURB SHOULD BE TAPERED FROM THE CURB HEIGHT TO 0 IN 10 FT.

LINE TABLE		
LINE	LENGTH	BEARING
L1	53.71	N 61°05'54" E
L2	7.09	N 61°05'54" E
L3	62.27	N 35°44'47" W

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	CHORD BRG
C1	6.28	2.00	180°0'00"	N/A	4.00	S 20°49'23" E
C2	8.69	104.00	4°47'9"	4.35	8.68	N 58°42'20" E
C3	3.73	2.00	106°59'20"	2.70	3.22	S 65°24'26" E
C4	11.50	67.00	9°50'11"	5.77	11.49	S 16°49'51" E
C5	3.92	2.00	112°13'12"	2.98	3.32	N 34°21'40" E
C6	45.11	88.00	29°22'21"	23.06	44.62	S 75°47'05" W
C7	8.73	2.90	172°20'50"	43.41	5.79	S 45°08'07" W
C8	4.36	2.00	124°49'01"	3.83	3.55	N 12°51'43" E
C9	17.98	67.00	15°22'27"	9.04	17.92	S 67°35'00" W
C10	2.94	2.00	84°21'26"	1.81	2.69	S 77°55'30" E
C11	6.16	2.00	176°22'15"	63.13	4.00	N 6°04'48" W
C12	4.36	2.00	124°49'01"	3.83	3.55	N 56°46'10" W
C13	37.01	67.00	31°39'03"	18.99	36.54	S 10°11'11" E
C14	4.10	2.00	117°21'43"	3.29	3.42	N 32°40'09" E
C15	76.33	400.00	10°56'00"	38.28	76.21	N 52°04'06" E
C16	70.70	58.00	69°50'40"	40.49	66.41	N 11°40'46" E
C17	15.06	90.00	9°35'18"	7.55	15.04	S 28°02'14" E
C18	87.04	400.00	12°28'03"	43.69	86.87	S 50°31'40" E
C19	46.56	100.00	26°40'36"	23.71	46.14	N 70°05'59" W
C20	52.40	120.00	25°01'10"	26.62	51.99	N 84°03'08" E
C21	232.66	400.00	33°19'33"	119.72	229.39	S 69°29'47" W
C22	73.47	65.00	64°45'33"	41.22	69.62	S 85°12'47" W
C23	93.10	88.00	60°37'10"	51.44	88.82	S 87°16'59" W



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED | CHECKED

ROUNDABOUT GEOMETRIC DETAIL
INDUSTRIAL DR. & S.R. 110

HEN-NEW BRIDGE

71
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NOTE: ALL STATION AND OFFSET CALLOUTS ARE BASED ON ℄ CONST. S.R. 110.

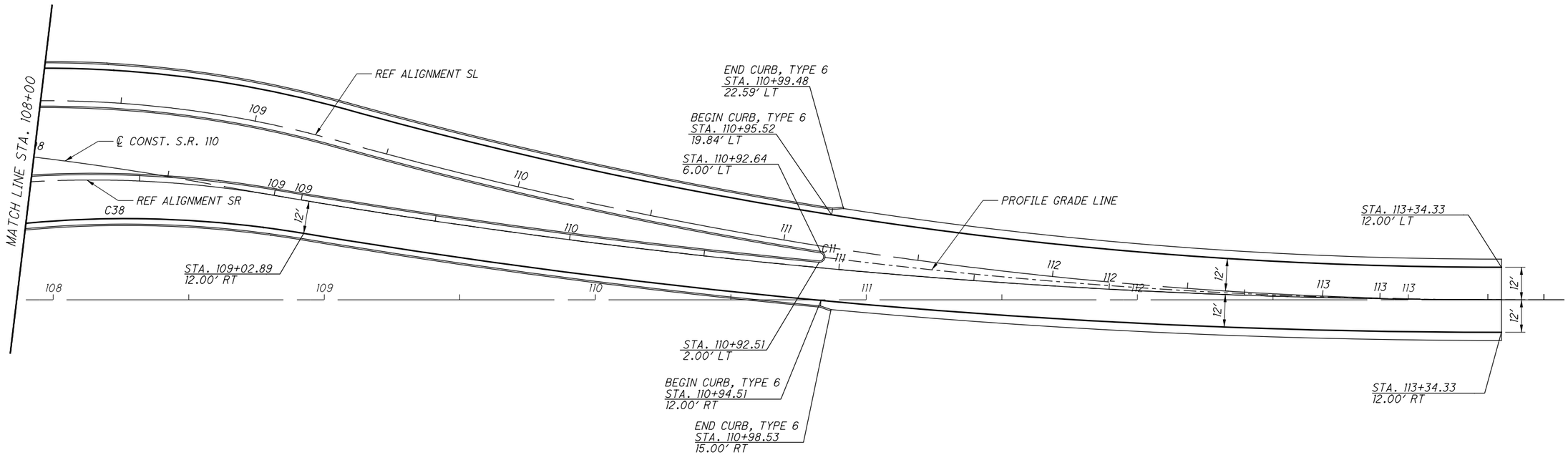
REFERENCE ALIGNMENTS ARE INSIDE EDGE OF LANE, SEE SHEETS 4-6 FOR DETAILS.

THE DISTANCE BETWEEN INSIDE SPLITTER ISLAND AND REFERENCE ALIGNMENT IS 2.0′ UNLESS OTHERWISE NOTED.

SEE SHEET 71 FOR CURVE AND LINE DATA.

THE APPROACH AND TRAILING ENDS OF CURB SHOULD BE TAPERED FROM THE CURB HEIGHT TO 0 IN 10 FT.

CURVE DATA - S.R. 110
P.I. Sta. 111+03.62
Δ = 10° 20′ 30″ (LT)
Dc = 2° 08′ 16″
R = 2,680.00′
T = 242.53′
L = 483.74′
E = 10.95′
C = 483.08′
C.B. = N 81° 52′ 55″ E



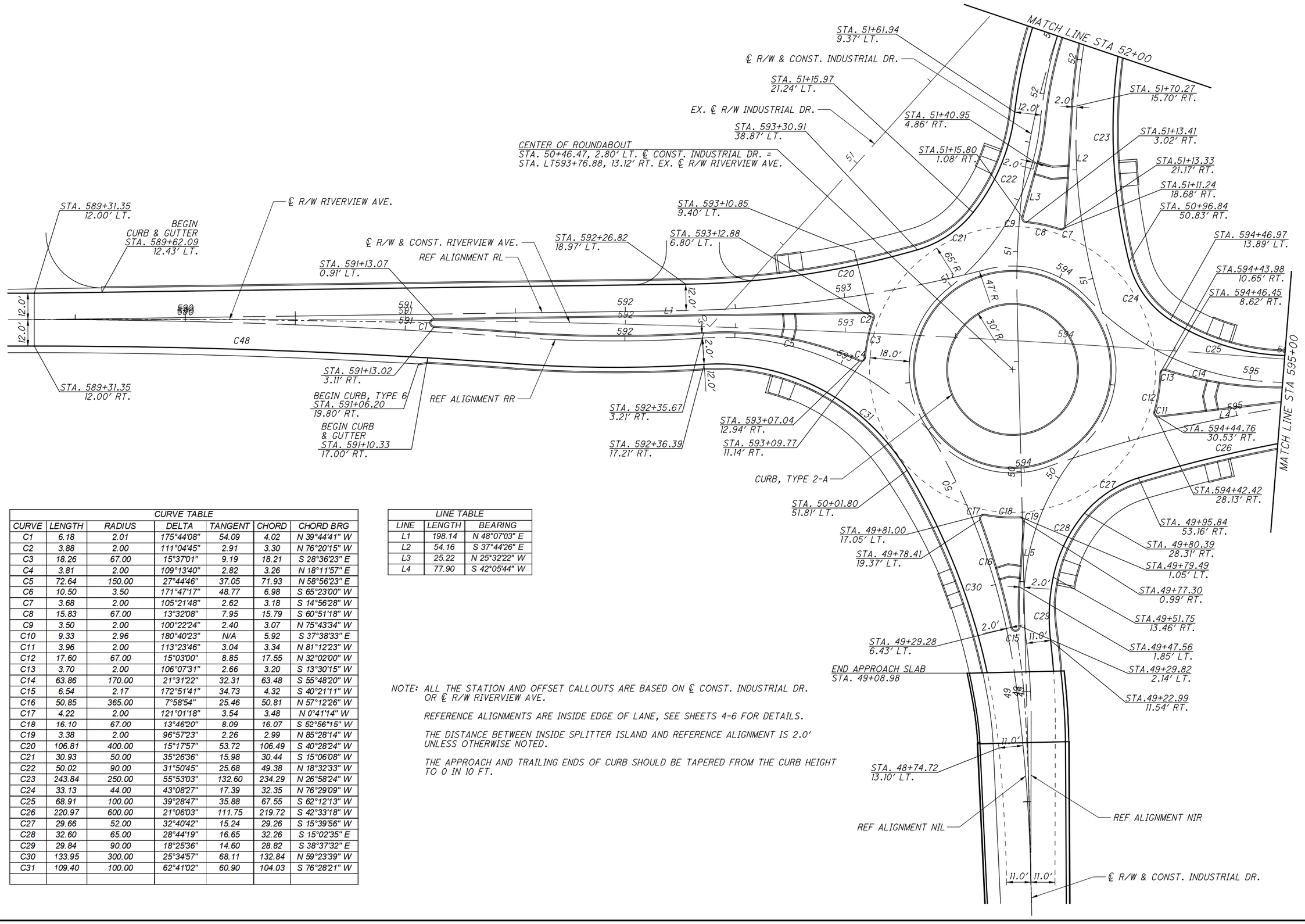
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED | CHECKED

ROUNDABOUT GEOMETRIC DETAIL
INDUSTRIAL DR. & S.R. 110

HEN-NEW BRIDGE

72
189



CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	CHORD BRG
C1	6.18	2.01	175°44'08"	54.09	4.02	N 39°44'41" W
C2	3.88	2.00	111°04'45"	2.91	3.30	N 76°20'15" W
C3	18.26	67.00	15°37'01"	9.19	18.21	S 28°36'23" E
C4	3.81	2.00	109°13'40"	2.82	3.26	N 18°11'57" E
C5	72.64	150.00	27°44'46"	37.05	71.93	N 58°56'23" E
C6	10.50	3.50	171°47'17"	48.77	6.98	S 65°23'00" W
C7	3.68	2.00	105°21'48"	2.62	3.18	S 14°56'28" W
C8	15.83	67.00	13°32'08"	7.95	15.79	S 60°51'18" W
C9	3.50	2.00	100°22'24"	2.40	3.07	N 75°43'34" W
C10	9.33	2.96	180°40'23"	N/A	5.92	S 37°38'33" E
C11	3.96	2.00	113°23'46"	3.04	3.34	N 81°12'23" W
C12	17.60	67.00	15°03'00"	8.85	17.55	N 32°02'00" W
C13	3.70	2.00	106°07'31"	2.66	3.20	S 13°30'15" W
C14	63.86	170.00	21°31'22"	32.31	63.48	S 55°48'20" W
C15	6.54	2.17	172°51'41"	34.73	4.32	S 40°21'11" W
C16	50.85	365.00	7°58'54"	25.46	50.81	N 57°12'26" W
C17	4.22	2.00	121°01'18"	3.54	3.48	N 0°41'14" W
C18	16.10	67.00	13°46'20"	8.09	16.07	S 52°56'15" W
C19	3.38	2.00	96°57'23"	2.26	2.99	N 85°28'14" W
C20	106.81	400.00	15°17'57"	53.72	106.49	S 40°28'24" W
C21	30.93	50.00	35°26'36"	15.98	30.44	S 15°06'08" W
C22	50.02	90.00	31°50'45"	25.68	49.38	N 18°32'33" W
C23	243.84	250.00	55°53'03"	132.60	234.29	N 26°58'24" W
C24	33.13	44.00	43°08'27"	17.39	32.35	N 76°29'09" W
C25	68.91	100.00	39°28'47"	35.88	67.55	S 62°12'13" W
C26	220.97	600.00	21°06'03"	111.75	219.72	S 42°33'18" W
C27	29.66	52.00	32°40'42"	15.24	29.26	S 15°39'56" W
C28	32.60	65.00	28°44'19"	16.65	32.26	S 15°02'35" E
C29	29.84	90.00	18°25'36"	14.60	28.82	S 38°37'32" E
C30	133.95	300.00	25°34'57"	68.11	132.84	N 59°23'39" W
C31	109.40	100.00	62°41'02"	60.90	104.03	S 76°28'21" W

LINE TABLE		
LINE	LENGTH	BEARING
L1	198.14	N 48°07'03" E
L2	54.16	S 37°44'26" E
L3	25.22	N 25°32'22" W
L4	77.90	S 42°05'44" W

NOTE: ALL THE STATION AND OFFSET CALLOUTS ARE BASED ON ℄ CONST. INDUSTRIAL DR. OR ℄ R/W RIVERVIEW AVE.

REFERENCE ALIGNMENTS ARE INSIDE EDGE OF LANE, SEE SHEETS 4-6 FOR DETAILS.

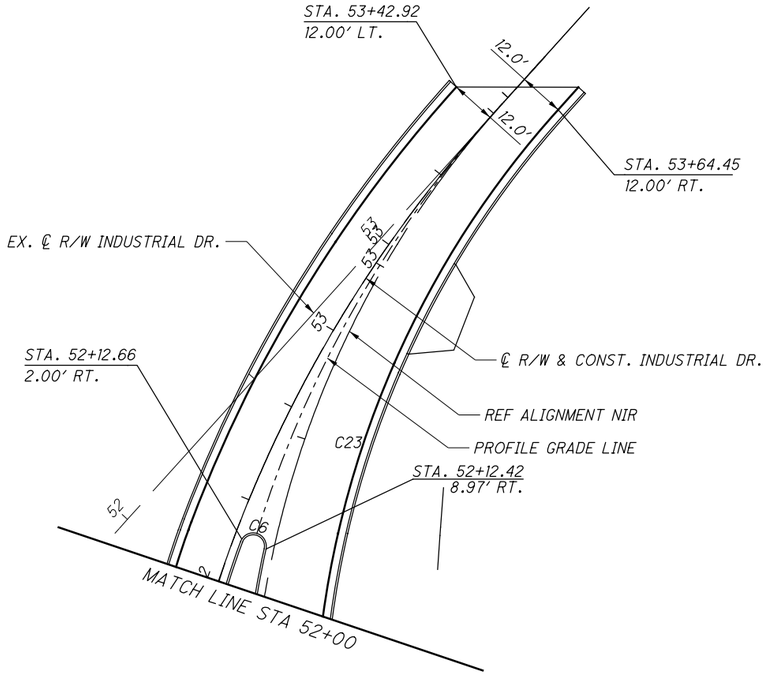
THE DISTANCE BETWEEN INSIDE SPLITTER ISLAND AND REFERENCE ALIGNMENT IS 2.0' UNLESS OTHERWISE NOTED.

THE APPROACH AND TRAILING ENDS OF CURB SHOULD BE TAPERED FROM THE CURB HEIGHT TO 0 IN 10 FT.

HORIZONTAL SCALE IN FEET
0 10 20 40
CALCULATED
CHECKED

ROUNDABOUT GEOMETRIC DETAIL
INDUSTRIAL DR. & RIVERVIEW AVE.

HEN-NEW BRIDGE



CURVE DATA - INDUSTRIAL DR.
P.I. STA. 52+17.04
Δ = 43° 25' 15" (RT)
Dc = 16° 22' 13"
R = 350.00'
T = 139.36'
L = 265.24'
E = 26.72'
C = 258.94'
C.B. = N 20° 44' 30" W

NOTE: ALL STATION AND OFFSET CALLOUTS ARE BASED ON ℄ CONST. INDUSTRIAL DR. OR ℄ R/W & CONST. RIVERVIEW AVE.

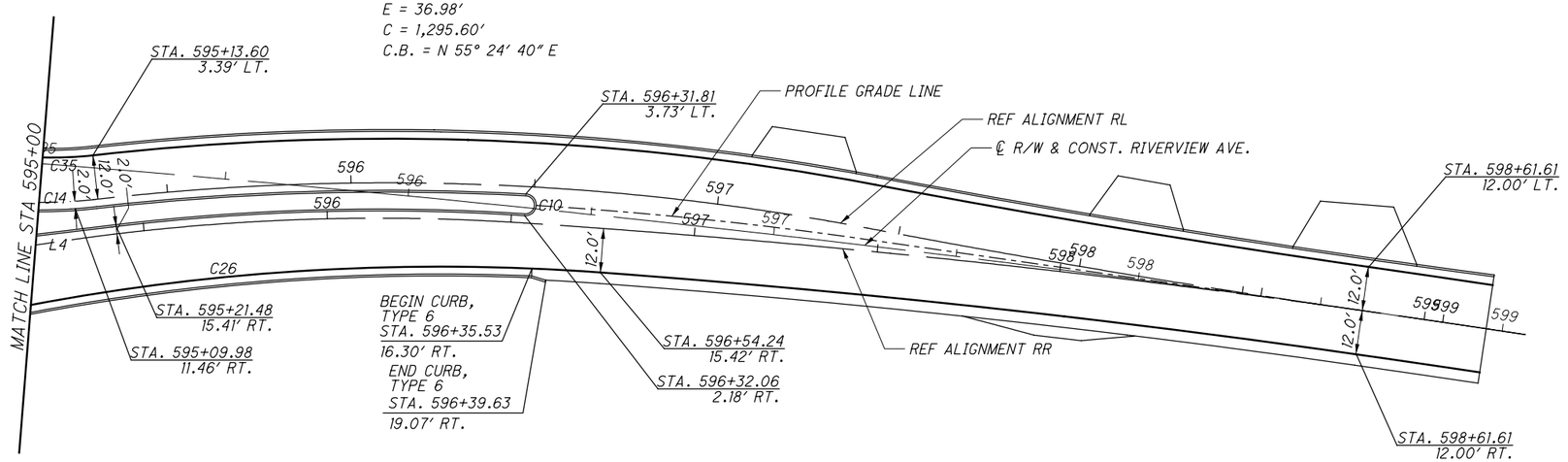
REFERENCE ALIGNMENTS ARE INSIDE EDGE OF LANE, SEE SHEETS 4-6 FOR DETAILS.

THE DISTANCE BETWEEN INSIDE SPLITTER ISLAND AND REFERENCE ALIGNMENT IS 2.0' UNLESS OTHERWISE NOTED.

SEE SHEET 73 FOR CURVE AND LINE DATA.

THE APPROACH AND TRAILING ENDS OF CURB SHOULD BE TAPERED FROM THE CURB HEIGHT TO 0 IN 10 FT.

CURVE DATA - RIVERVIEW RD.
P.I. STA. 596+98.18
Δ = 12° 59' 05" (RT)
Dc = 1° 00' 00"
R = 5,729.16'
T = 651.98'
L = 1,298.38'
E = 36.98'
C = 1,295.60'
C.B. = N 55° 24' 40" E



HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED | CHECKED

ROUNDABOUT GEOMETRIC DETAIL
INDUSTRIAL DR. & RIVERVIEW AVE.

HEN-NEW BRIDGE

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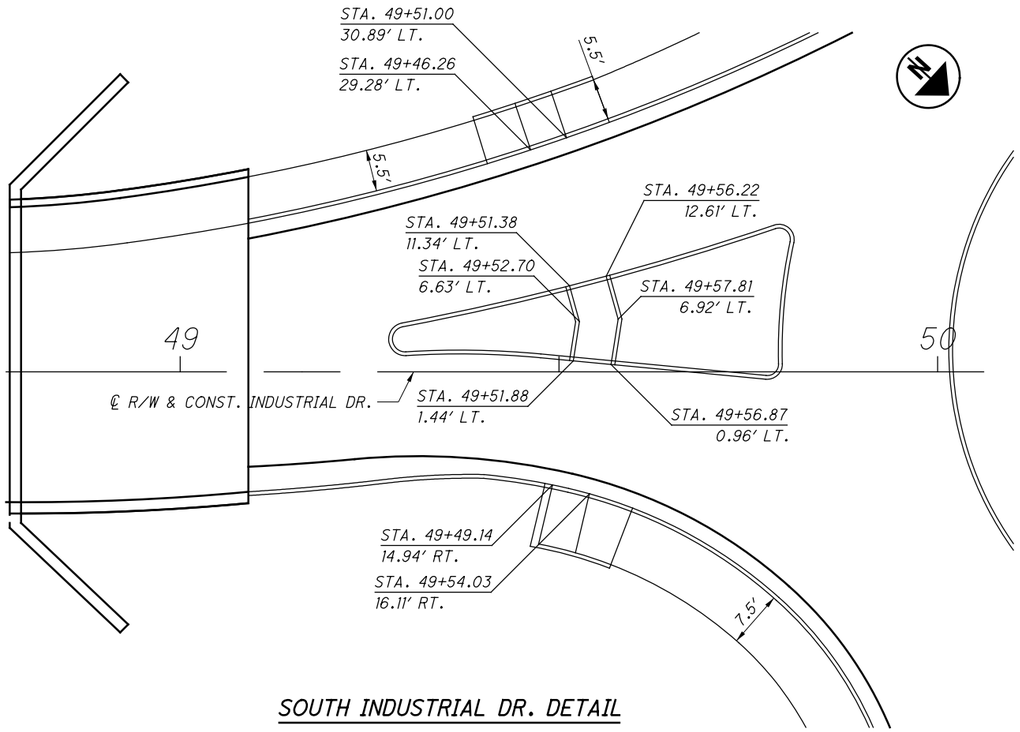
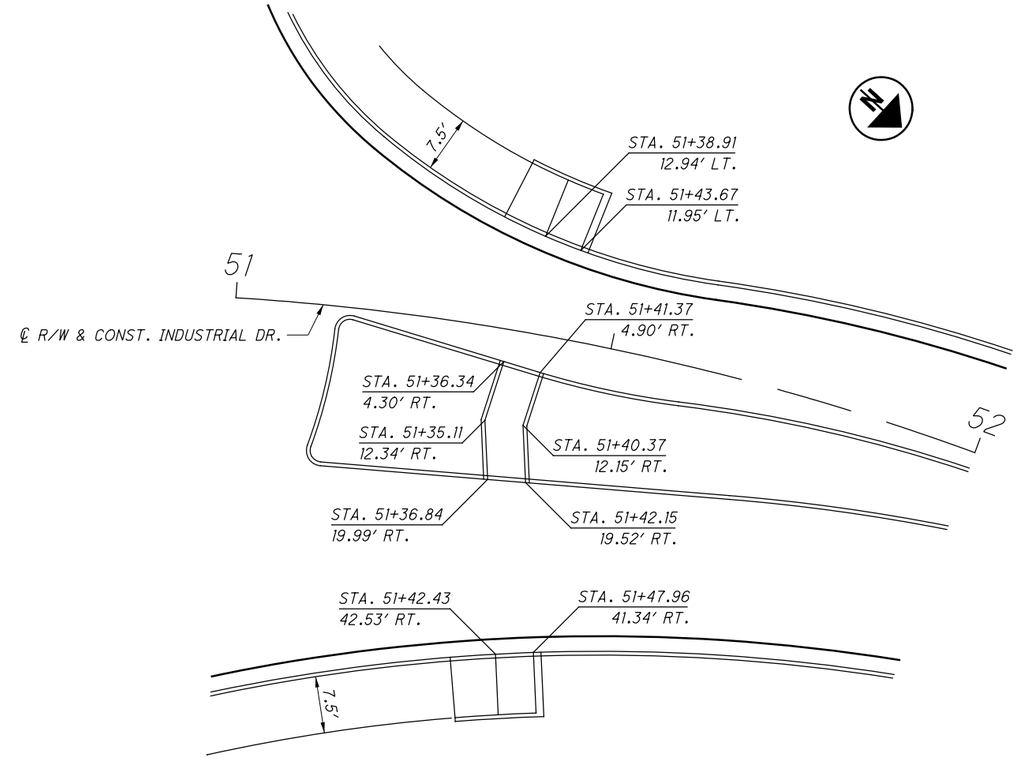
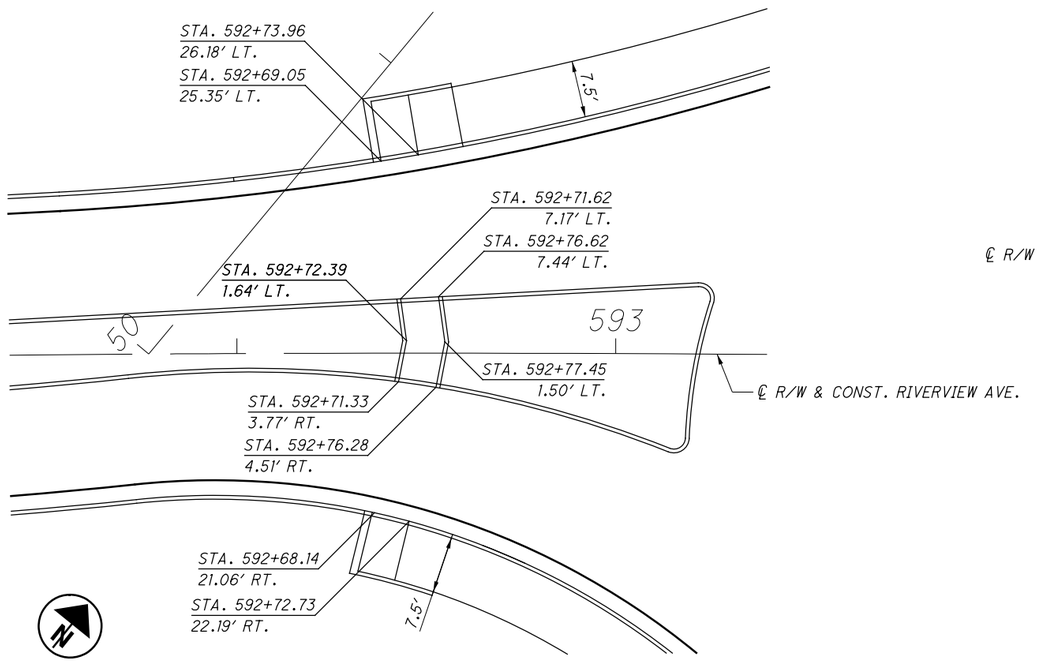


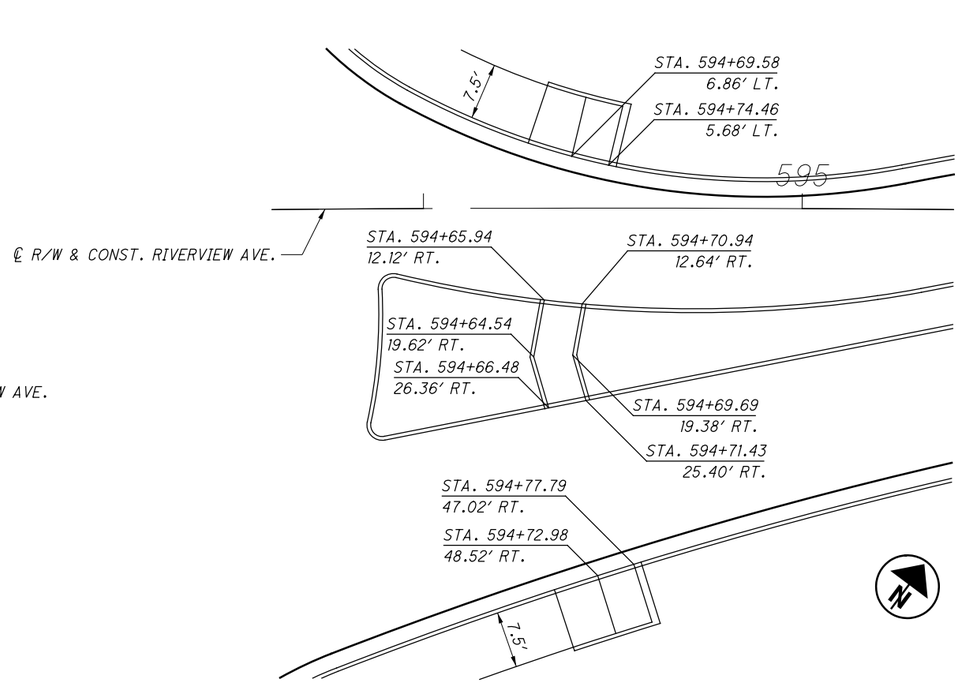
SOUTH INDUSTRIAL DR. DETAIL



NORTH INDUSTRIAL DR. DETAIL



WEST RIVERVIEW AVE. DETAIL

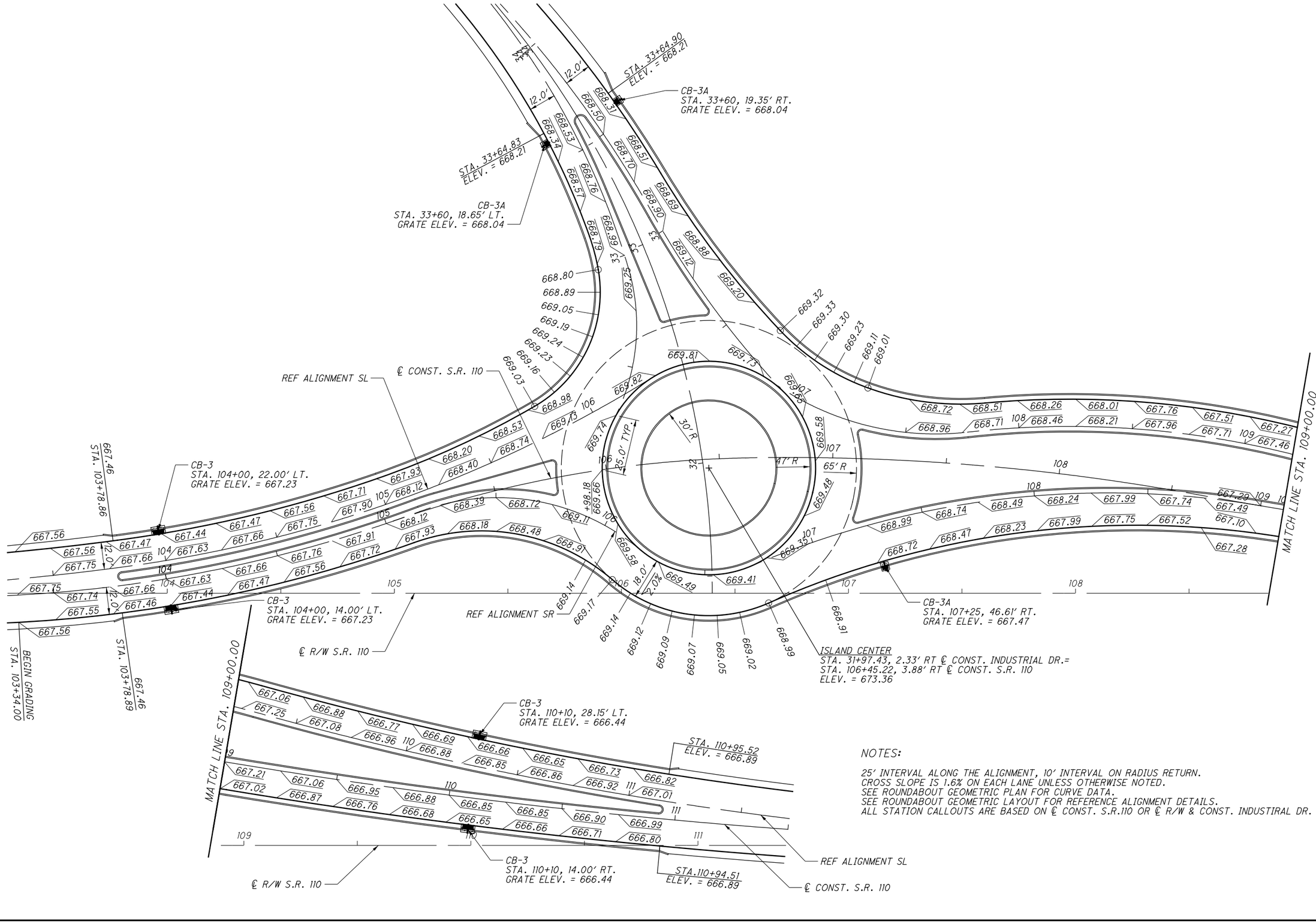


EAST RIVERVIEW AVE. DETAIL

HORIZONTAL SCALE IN FEET
0 5 10 20
CALCULATED
CHECKED

WALK DETAILS
INDUSTRIAL DR. AND RIVERVIEW AVE.
HEN-NEW BRIDGE

75
189



NOTES:

25' INTERVAL ALONG THE ALIGNMENT, 10' INTERVAL ON RADIUS RETURN.
CROSS SLOPE IS 1.6% ON EACH LANE UNLESS OTHERWISE NOTED.
SEE ROUNDABOUT GEOMETRIC PLAN FOR CURVE DATA.
SEE ROUNDABOUT GEOMETRIC LAYOUT FOR REFERENCE ALIGNMENT DETAILS.
ALL STATION CALLOUTS ARE BASED ON ℄ CONST. S.R.110 OR ℄ R/W & CONST. INDUSTIRAL DR.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED | CHECKED

ROUNDABOUT GRADING DETAIL
INDUSTRIAL DR. & S.R. 110

HEN-NEW BRIDGE

76
189

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STA. 52+15.45
ELEV. = 678.43

CB-3A
STA. 51+77, 12.70' LT.
ELEV. = 678.07

℄ R/W & CONST. INDUSTRIAL DR.

℄ EX. R/W INDUSTRIAL DR.

REF ALIGNMENT NIL

REF ALIGNMENT RL

REF ALIGNMENT RR

REF ALIGNMENT NIR

STA. 52+18.55
ELEV. = 678.37

CB-3A
STA. 51+77, 35.45' RT.
ELEV. = 678.07

STA. 591+10.70
ELEV. = 677.96

CB-3A
STA. 591+15, 16.95' LT.
ELEV. = 677.36

CB-3A
STA. 591+15, 19.25' RT.
ELEV. = 677.36

STA. 591+10.33
ELEV. = 677.56

STA. 596+34.16
ELEV. = 677.13

CB-3A
STA. 596+30, 19.68' LT.
ELEV. = 676.94

℄ R/W & CONST. RIVERVIEW AVE.

CB-3A
STA. 596+30, 18.65' RT.
ELEV. = 676.94

STA. 596+35.53
ELEV. = 677.13

ISLAND CENTER
STA. 50+46.47, 2.80' LT ℄ CONST. INDUSTRIAL DR. =
STA. 593+76.88, 13.12' RT EX. ℄ R/W RIVERVIEW AVE.
ELEV. = 681.72

CB-2-2B
STA. 592+71.50, 95.00 RT.
ELEV. = 654.00

CB-2-2B
STA. 594+79.25, 106.50' RT.
ELEV. = 655.34

CB-2-2B
STA. 596+30, 85.50 RT.
ELEV. = 653.88

CB-3A
STA. 49+18, 21.50' LT.
ELEV. = 677.17

CB-3A
STA. 49+18, 15.15' RT.
ELEV. = 677.20

BEGIN LANE TAPER
STA. 48+74.72

NOTES:

25' INTERVAL ALONG THE ALIGNMENT, 10' INTERVAL ON RADIUS RETURN.
CROSS SLOPE IS 1.6% ON EACH LANE UNLESS OTHERWISE NOTED.
SEE ROUNDABOUT GEOMETRIC PLAN FOR CURVE DATA.
SEE ROUNDABOUT GEOMETRIC LAYOUT FOR REFERENCE ALIGNMENT DETAILS.
ALL STATION CALLOUTS ARE BASED ON ℄ R/W & CONST. RIVERVIEW AVE.
OR ℄ R/W & CONST. INDUSTIRAL DR.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED | CHECKED

ROUNDABOUT GRADING DETAIL
INDUSTRIAL DR. & RIVERVIEW AVE.

HEN-NEW BRIDGE

77
189

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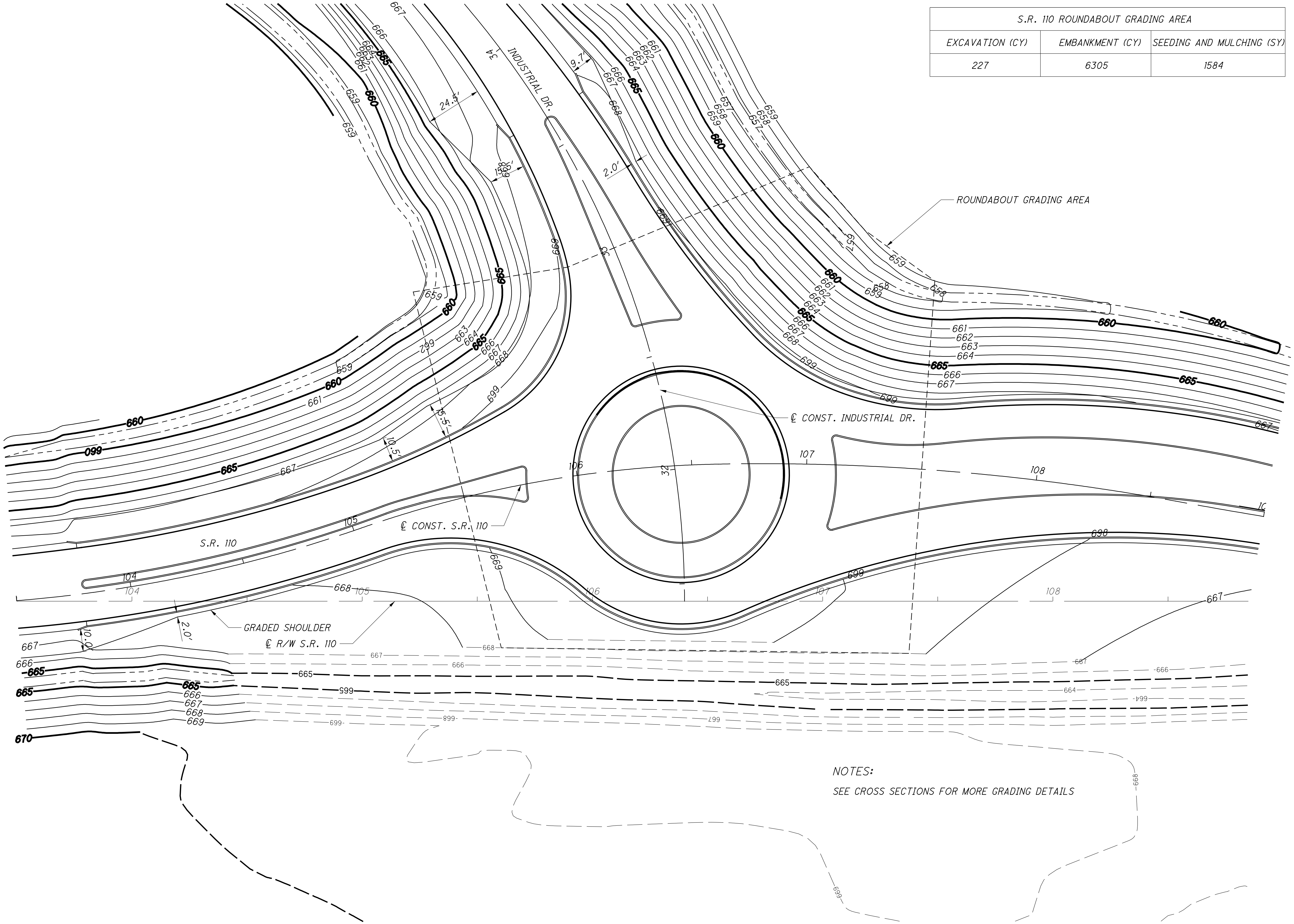
S.R. 110 ROUNDABOUT GRADING AREA		
EXCAVATION (CY)	EMBANKMENT (CY)	SEEDING AND MULCHING (SY)
227	6305	1584



NOTES:

SEE CROSS SECTIONS FOR MORE GRADING DETAILS

N

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED XF
CHECKED CEB

ROUNDABOUT GRADING PLAN INDUSTRIAL DR. & S.R. 110

HEN-NEW BRIDGE

RIVERVIEW AVE. ROUNDABOUT GRADING AREA		
EXCAVATION (CY)	EMBANKMENT (CY)	SEEDING AND MULCHING (SY)
31	8230	1147

℄ EX. R/W INDUSTRIAL DR.

℄ CONST. INDUSTRIAL DR.

℄ R/W RIVERVIEW AVE.

RIVERVIEW AVE.

ROUNDABOUT GRADING AREA

INDUSTRIAL DR.

℄ CONST. SHARED USE PATH

NOTES:

SEE CROSS SECTIONS FOR ADDITIONAL GRADING DETAIL.
0.2′ CONTOUR INTERVAL ON NORTH SIDE DUE TO FLATTER SLOPE;
2.0′ INTERVAL ON SOUTH SIDE.

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED XF
CHECKED CEB

ROUNDABOUT GRADING PLAN
INDUSTRIAL DR. & RIVERVIEW AVE.

HEN-NEW BRIDGE

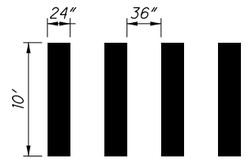
79
189

ITEM 644, CROSSWALK LINE, AS PER PLAN

THIS WORK SHALL BE IN ACCORDANCE WITH 641.08E OF THE CMS EXCEPT THAT THE MARKINGS SHALL CONSIST OF SOLID 24 INCH WIDE WHITE STRIPES SPACED AT 36 INCHES AS SHOWN BELOW.

PLACEMENT OF MARKINGS SHALL BE IN ACCORDANCE WITH SECTION 3B.18 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THE WORK.



ITEM 630, GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN

THIS ITEM SHALL BE IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING TC-41.20 AND TC-42.20 EXCEPT THAT ALL SUPPORTS SHALL HAVE A MINIMUM EMBEDDED DEPTH OF 48 INCHES AND ALL SUPPORTS LOCATED IN ASPHALT OR CONCRETE SHALL BE PLACED IN 4 INCH PVC PIPE, 48 INCHES IN LENGTH.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THE WORK.

ITEM 630, SIGNING MISC.: 4" X 6" SOLID WOOD POST

THIS ITEM SHALL CONSIST OF INSTALLING A GROUND MOUNTED 6"X8" SOLID WOOD POST. FIGURE 298-26 OF THE TRAFFIC ENGINEERING MANUAL (P. 2-233) SHOULD BE USED AS A GUIDE FOR INSTALLATION OF THE 6"X8" POST.

GRADE 2 SOUTHERN YELLOW PINE SHOULD BE USED, AND SHOULD BE PRESSURE TREATED WITH CCA PRESERVATIVE.

U-CHANNEL DRIVE POSTS OF THE SAME HEIGHT AS THE SIGN, WILL BE ATTACHED TO THE WOOD POST WITH LAG SCREWS. THE EXTRUSHEET WILL THEN BE INSTALLED USING STANDARD SIGN CLIPS.

ITEM 630, SIGNING MISC.: REMOVAL OF SOLID WOOD POST

THIS ITEM SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF A SOLID WOOD POST IN ACCORDANCE WITH 630.12 OF THE CMS.

PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THIS WORK.

ITEM 626, BARRIER REFLECTOR

TYPE B2 BARRIER REFLECTORS SHALL BE INSTALLED ALONG THE BRIDGE PARAPETS IN ACCORDANCE WITH C&MS 626. THE FOLLOWING QUANTITITES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 626 BARRIER REFLECTOR 24 EACH

CALCULATED ALT
CHECKED RLS

SIGNING & PAVEMENT MARKING NOTES

HEN-NEW BRIDGE

SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST SURFACE MOUNTED	621 RPMS YELLOW/YELLOW	642 EDGE LINE, 4", WHITE	642 EDGE LINE, 4", YELLOW	642 CENTER LINE, DOUBLE SOLID	642 CENTER LINE, SOLID/DASHED	644 CROSS WALK LINE, AS PER PLAN	644 TRANSVERSE/DIAGONAL LINE, YELLOW	644 RAILROAD SYMBOL MARKING	644 LANE ARROW	644 DOTTED LINE, 12", WHITE	644 YIELD LINE					
			FROM	TO		EACH	EACH	MILE	MILE	MILE	MILE	FT	FT	EACH	EACH	FT	FT					
86	PD-1	INDUSTRIAL DR.		33+61	CL	1																
86	EW-1	ROUNDABOUT						0.01														
86	EW-2	ROUNDABOUT						0.01														
86	EW-3	ROUNDABOUT						0.01														
86	EW-4	INDUSTRIAL DR.	33+65	36+00	LT			0.04														
86	EW-5	INDUSTRIAL DR.	33+65	36+00	RT			0.04														
86	EY-1	ROUNDABOUT							0.06													
86	EY-2	INDUSTRIAL DR.	32+57	33+61	NB				0.02													
86	EY-3	INDUSTRIAL DR.	32+60	33+61	SB				0.02													
86	EY-4	INDUSTRIAL DR.	32+62	33+29	SB				0.01													
86	EY-5	S.R. 110	105+00	105+86	WB				0.02													
86	EY-6	S.R. 110	105+15	105+82	WB				0.01													
86	EY-7	S.R. 110	105+00	105+80	EB				0.02													
86	EY-8	S.R. 110	107+05	108+00	EB				0.02													
86	EY-9	S.R. 110	107+06	108+00	WB				0.02													
86	CS-1	INDUSTRIAL DR.	33+61	35+06	LT					0.03												
86	CS-2	INDUSTRIAL DR.	33+61	36+00	RT/CL					0.05												
86	TY-1	INDUSTRIAL DR.	32+62	33+29	SB								18									
86	TY-2	RIVERVIEW AVE.	105+15	105+82	WB								34									
86	LA-1	ROUNDABOUT													1							
86	LA-2	ROUNDABOUT													1							
86	LA-3	ROUNDABOUT													1							
86	LA-4	ROUNDABOUT													1							
86	DW-1	ROUNDABOUT														37						
86	DW-2	ROUNDABOUT														54						
86	DW-3	ROUNDABOUT														54						
86	YL-1	INDUSTRIAL DR.		32+60	SB												19					
86	YL-2	S.R. 110		105+80	EB												17					
86	YL-3	S.R. 110		107+06	WB												16					
87	EW-1	INDUSTRIAL DR.	36+00	41+50	LT			0.10														
87	EW-2	INDUSTRIAL DR.	36+00	41+50	RT			0.10														
87	EW-3	INDUSTRIAL DR.	41+50	47+00	LT			0.10														
87	EW-4	INDUSTRIAL DR.	41+50	47+00	RT			0.10														
87	CS-1	INDUSTRIAL DR.	36+00	41+50	CL					0.10												
87	CS-2	INDUSTRIAL DR.	41+50	47+00	CL					0.10												
TOTALS CARRIED TO SHEET						1		0.51	0.2	0.28			52		4	145	52					

CALCULATED ALT
CHECKED RLS

PAVEMENT MARKING SUBSUMMARY

HEN-NEW BRIDGE

SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST SURFACE MOUNTED, YELLOW	621 RPMS YELLOW/YELLOW	642 EDGE LINE, 4", WHITE	642 EDGE LINE, 4", YELLOW	642 CENTER LINE, DOUBLE SOLID	642 CENTER LINE, SOLID/DASHED	644 CROSS WALK LINE, AS PER PLAN	644 TRANSVERSE/DIAGONAL LINE, YELLOW	644 RAILROAD SYMBOL MARKING	644 LANE ARROW	644 DOTTED LINE, 12", WHITE	644 YIELD LINE					
						EACH	EACH	MILE	MILE	MILE	MILE	FT	FT	EACH	EACH	FT	FT					
88	PD-1	INDUSTRIAL DR.		49+30	LT	1																
88	EW-1	INDUSTRIAL DR.	47+00	49+09	LT			0.04														
88	EW-2	INDUSTRIAL DR.	47+00	49+09	RT			0.04														
88	EW-3	ROUNDABOUT						0.01														
88	EW-4	ROUNDABOUT						0.01														
88	EW-5	ROUNDABOUT						0.01														
88	EW-6	ROUNDABOUT						0.01														
88	EY-1	INDUSTRIAL DR.	49+29	49+85	SB				0.01													
88	EY-2	INDUSTRIAL DR.	49+30	49+83	NB				0.01													
88	EY-3	INDUSTRIAL DR.	49+47	49+82	NB				0.01													
88	EY-4	INDUSTRIAL DR.	51+04	52+00	NB				0.02													
88	EY-5	INDUSTRIAL DR.	51+08	51+71	NB				0.01													
88	EY-6	INDUSTRIAL DR.	51+11	51+41	SB				0.01													
88	EY-7	INDUSTRIAL DR.	51+11	52+00	SB				0.02													
88	EY-8	RIVERVIEW AVE.	592+50	593+21	WB				0.01													
88	EY-9	RIVERVIEW AVE.	595+50	593+17	WB				-0.04													
88	EY-10	RIVERVIEW AVE.	592+50	593+12	EB				0.01													
88	EY-11	RIVERVIEW AVE.	592+50	593+12	EB				0.01													
88	EY-12	RIVERVIEW AVE.	594+36	595+50	EB				0.02													
88	EY-13	RIVERVIEW AVE.	594+39	595+22	EB				0.02													
88	EY-14	RIVERVIEW AVE.	594+41	595+50	WB				0.02													
88	EY-15	RIVERVIEW AVE.	591+42	595+10	WB				0.07													
88	EY-16	ROUNDABOUT							0.06													
88	CS-1	INDUSTRIAL DR.	47+00	49+29	CL\LT					0.04												
88	CS-2	INDUSTRIAL DR.	48+17	49+30	RT					0.02												
88	WL-1	INDUSTRIAL DR.		49+54	NB							30										
88	WL-2	INDUSTRIAL DR.		49+53	SB							30										
88	WL-3	INDUSTRIAL DR.		51+40	SB							30										
88	WL-4	INDUSTRIAL DR.		51+42	NB							40										
88	WL-5	RIVERVIEW AVE.		592+72	EB							30										
88	WL-6	RIVERVIEW AVE.		592+73	WB							30										
88	WL-7	RIVERVIEW AVE.		594+70	WB							30										
88	WL-8	RIVERVIEW AVE.		594+72	EB							40										
88	TY-1	INDUSTRIAL DR.	49+59	49+83	NB								10									
88	TY-2	INDUSTRIAL DR.	51+04	51+35	NB								14									
88	TY-3	RIVERVIEW AVE.	592+91	593+21	WB								20									
88	TY-4	RIVERVIEW AVE.	594+36	594+65	EB								37									
88	TY-5	RIVERVIEW AVE.	594+41	594+64	WB								11									
88	RR-1	INDUSTRIAL DR.		51+97	NB									1								
88	LA-1	ROUNDABOUT													1							
88	LA-2	ROUNDABOUT													1							
88	LA-3	ROUNDABOUT													1							
88	LA-4	ROUNDABOUT													1							
88	DW-1	ROUNDABOUT														46						
88	DW-2	ROUNDABOUT														33						
88	DW-3	ROUNDABOUT														41						
88	DW-4	ROUNDABOUT														41						
88	YL-1	INDUSTRIAL DR.		49+83	NB												16					
88	YL-2	INDUSTRIAL DR.		51+11	SB												15					
88	YL-3	INDUSTRIAL DR.		593+12	EB												15					
88	YL-4	INDUSTRIAL DR.		594+41	WB												15					
TOTALS CARRIED TO SHEET						1		0.12	0.27	0.06		260	92	1	4	161	61					

CALCULATED ALT
CHECKED RLS

PAVEMENT MARKING SUBSUMMARY

HEN-NEW BRIDGE

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SHEET NO.	REF. NO.	LOCATION	STATION FROM	STATION TO	SIDE	620 DELINEATOR, POST SURFACE MOUNTED, YELLOW	621 RPMS YELLOW/YELLOW	642 EDGE LINE, 4", WHITE	642 EDGE LINE, 4", YELLOW	642 CENTER LINE, DOUBLE SOLID	642 CENTER LINE, SOLID/DASHED	644 CROSS WALK LINE, AS PER PLAN	644 TRANSVERSE/DIAGONAL LINE, YELLOW	644 RAILROAD SYMBOL MARKING	644 LANE ARROW	644 DOTTED LINE, 12", WHITE	644 YIELD LINE					
						EACH	EACH	MILE	MILE	MILE	MILE	FT	FT	EACH	EACH	FT	FT					
89	PD-1	INDUSTRIAL DR.		52+12	RT	1																
89	EY-1	INDUSTRIAL DR.	52+00	52+12	SB				0.01													
89	EY-2	INDUSTRIAL DR.	52+00	52+13	NB				0.01													
89	CS-1	INDUSTRIAL DR.	52+12	53+43	CL					0.02												
89	CS-2	INDUSTRIAL DR.	52+13	53+54	RT					0.03												
90	PD-1	S.R. 110		103+81	LT	1																
90	EW-1	S.R. 110	101+50	103+79	LT			0.04														
90	EW-2	S.R. 110	101+50	103+79	RT			0.04														
90	EY-1	S.R. 110	103+81	105+00	WB				0.02													
90	EY-2	S.R. 110	103+81	105+00	EB				0.02													
90	CS-1	S.R. 110	101+50	103+81	LT		4			0.04												
90	CS-2	S.R. 110	101+50	103+81	RT		4			0.04												
90	CP-1	S.R. 110	101+00	101+50	CL		1				0.01											
91	PD-1	S.R. 110		110+93	LT	1																
91	EW-1	S.R. 110	110+95	112+00	RT			0.02														
91	EW-2	S.R. 110	110+96	112+00	LT			0.02														
91	EW-3	S.R. 110	112+00	113+45	LT			0.03														
91	EW-4	S.R. 110	112+00	113+45	RT			0.03														
91	EY-1	S.R. 110	108+00	110+93	WB				0.06													
91	EY-2	S.R. 110	108+00	110+93	EB				0.06													
91	CS-1	S.R. 110	110+93	112+00	LT		2			0.02												
91	CS-2	S.R. 110	110+93	112+00	RT		2			0.02												
91	CS-3	S.R. 110	112+00	113+45	LT		2			0.03												
91	CS-4	S.R. 110	112+00	113+45	RT		2			0.03												
92	PD-1	RIVERVIEW AVE.		591+13	RT	1																
92	PD-2	RIVERVIEW AVE.		596+32	LT	1																
92	EW-1	RIVERVIEW AVE	588+88	589+62	LT			0.01														
92	EW-2	RIVERVIEW AVE	588+88	591+10	RT			0.04														
92	EW-3	RIVERVIEW AVE	596+36	598+62	LT			0.04														
92	EY-1	RIVERVIEW AVE.	591+13	592+50	WB				0.03													
92	EY-2	RIVERVIEW AVE.	591+13	592+50	EB				0.03													
92	EY-3	RIVERVIEW AVE.	595+50	596+32	WB																	
92	EY-4	RIVERVIEW AVE.	595+50	596+32	EB																	
92	CS-1	RIVERVIEW AVE.	589+31	591+13	LT					0.03												
92	CS-2	RIVERVIEW AVE.	589+31	591+13	RT					0.03												
92	CS-3	RIVERVIEW AVE.	596+32	598+62	LT					0.04												
92	CS-4	RIVERVIEW AVE.	596+32	598+62	RT					0.04												
92	CP-1	RIVERVIEW AVE.	587+00	589+31	CL						0.04											
92	CP-2	RIVERVIEW AVE.	598+62	598+96	CL						0.01											
TOTALS THIS SHEET						5	17	0.27	0.24	0.37	0.06											
TOTALS FROM SHEET						1		0.51	0.2	0.28			52		4	145	52					
TOTALS FROM SHEET						1		0.12	0.27	0.06		260	92	1	4	161	61					
TOTALS CARRIED TO GENERAL SUMMARY						7	17	1.61		0.77		260	144	1	8	306	113					

CALCULATED ALT
CHECKED RLS

PAVEMENT MARKING SUBSUMMARY

HEN-NEW BRIDGE

SHEET NO.	REF. NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN (FT)	630 SIGN POST REFLECOTR (EACH)	630 SIG SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 2 (EACH)	630 SIGN, FLAT SHEET (SF)	630 SIGN ERECTED, FLAT SHEET (SF)	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION (EACH)	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL (EACH)	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL (EACH)	630 SIGNING MISC.: 4" X 6" SOLID WOOD POST (FT)	630 SIGNING MISC.: REMOVAL OF SOLID WOOD POST (EACH)				
93	S1	INDUSTRIAL DR.	32+22	LT	R6-4-30	30 X 24	13	1		5	5											
93	S2	INDUSTRIAL DR.	32+66	RT	D1-H1A-48	48 X 8	23.4			2.7	2.7											
93	S3	INDUSTRIAL DR.	32+68	LT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
93	S4	INDUSTRIAL DR.	32+71	LT	R1-2-36	36 X 36 X 36	14	1		3.9	3.9											
93	S5	INDUSTRIAL DR.	33+65	RT	R2-1-24	24 X 30	13.5			5	5											
93	S6	S.R. 110	105+68	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
93	S7	S.R. 110	105+74	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
93	S8	S.R. 110	105+75	LT	M3-4-24	24 X 12	15.3			2	2											
					M1-5-30-3	30 X 24				5	5											
					M6-2-21	21 X 15				2.2	2.2											
93	S9	S.R. 110	106+19	RT	R6-4-30	30 X 24	13	1		5	5											
93	S10	S.R. 110	106+69	LT	R6-4-30	30 X 24	13	1		5	5											
93	S11	S.R. 110	107+12	LT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
93	S12	S.R. 110	107+13	RT	M3-2-24	24 X 12	15.3			2	2											
					M1-5-30-3	30 X 24				5	5											
					M6-2-21	21 X 15				2.2	2.2											
93	S13	S.R. 110	107+15	LT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
94	S14	INDUSTRIAL DR.	37+78	LT	W2-6-36	36 X 36	28.9			9	9											
					W16-H8P-48	48 X 8				2.7	2.7											
94	S15	INDUSTRIAL DR.	44+77	RT	W2-6-36	36 X 36			1	9	9											
					W16-H8P-48	48 X 8				2.7	2.7											
95	R1	INDUSTRIAL DR.	50+96	LT								1			1							
95	R2	INDUSTRIAL DR.	51+00	LT												2						
95	R3	INDUSTRIAL DR.	51+35	LT								3			2							
95	R4	INDUSTRIAL DR.	51+48	LT									1		2							
95	R5	RIVERVIEW AVE.	592+98	RT								1			2	3						
95	S16	INDUSTRIAL DR.	48+85	LT	R2-1-24	24 X 30	13.5			5	5											
95	S17	INDUSTRIAL DR.	48+85	RT	D9-2-24	24 X 24	12			4	4											
					M5-1-21	21 X 15				2.2	2.2											
95	S18	INDUSTRIAL DR.	49+53	LT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PL-24	24 X 12				2	2											
95	S19	INDUSTRIAL DR.	49+60	LT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
					W11-2-30	30 X 30				6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
95	S20	INDUSTRIAL DR.	49+71	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S21	INDUSTRIAL DR.	49+75	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S22	INDUSTRIAL DR.	49+76	LT	D1-H1A-48	48 X 8	23.4			2.7	2.7											
95	S23	INDUSTRIAL DR.	50+22	RT	R6-4-30	30 X 24	13	1		5	5											
95	S24	INDUSTRIAL DR.	50+72	LT	R6-4-30	30 X 24	13	1		5	5											
95	S25	INDUSTRIAL DR.	51+14	RT	D1-H1A-48	48 X 8	23.4			2.7	2.7											
95	S26	INDUSTRIAL DR.	51+17	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S27	INDUSTRIAL DR.	51+22	LT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S28	INDUSTRIAL DR.	51+31	RT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
					W11-2-30	30 X 30				6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
95	S29	INDUSTRIAL DR.	51+48	RT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PL-24	24 X 12				2	2											
95	S30	INDUSTRIAL DR.	51+89	RT	W10-1-36	36	15.3			9	9											
					W10-15P-30	30 X 24				5	5											
					W13-1P-18	18 X 18				2.3	2.3											
TOTALS CARRIED TO SHEET							443.4	15	1	196.2	196.2	5	1		7	5						

CALCULATED ALT
CHECKED RLS

SIGNING SUBSUMMARY

HEN-NEW BRIDGE

SHEET NO.	REF. NO.	LOCATION	STATION	SIDE	CODE	SIZE (INCHES)	630 GROUND MOUNTED SUPPORT, NO. 3 POST, AS PER PLAN (FT)	630 SIGN POST REFLECOTR (EACH)	630 SIG SUPPORT ASSEMBLY, BRIDGE MOUNTED, TYPE 2 (EACH)	630 SIGN, FLAT SHEET (SF)	630 SIGN ERECTED, FLAT SHEET (SF)	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND STORAGE (EACH)	630 REMOVAL OF GROUND MOUNTED SIGN AND REERECTION (EACH)	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL (EACH)	630 REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL (EACH)	630 SIGNING MISC.: 4" X 6" SOLID WOOD POST (FT)	630 SIGNING MISC.: REMOVAL OF SOLID WOOD POST (EACH)				
95	S31	RIVERVIEW AVE.	592+80	LT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
					W11-2-30	30 X 30				6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
95	S32	RIVERVIEW AVE.	592+81	LT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PL-24	24 X 12				2	2											
95	S33	RIVERVIEW AVE.	592+99	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S34	RIVERVIEW AVE.	593+06	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S35	RIVERVIEW AVE.	593+08	LT	D1-H1A-48	48 X 8	23.4			2.7	2.7											
95	S36	RIVERVIEW AVE.	593+51	RT	R6-4-30	30 X 24	13	1		5	5											
95	S37	RIVERVIEW AVE.	594+02	RT	R6-4-30	30 X 24	13	1		5	5											
95	S38	RIVERVIEW AVE.	594+47	RT	D1-H1A-48	48 X 8	23.4			2.7	2.7											
95	S39	RIVERVIEW AVE.	594+48	RT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S40	RIVERVIEW AVE.	594+51	LT	R1-2-36	36 X 36 X 36	13.6	1		3.9	3.9											
95	S41	RIVERVIEW AVE.	594+63	RT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
					W11-2-30	30 X 30				6.3	6.3											
					W16-7PR-24	24 X 12				2	2											
95	S42	RIVERVIEW AVE.	594+78	RT	W11-2-30	30 X 30	14.5			6.3	6.3											
					W16-7PL-24	24 X 12				2	2											
96	R6	INDUSTRIAL DR.	54+36	LT								1			1							
96	RR1	INDUSTRIAL DR.	53+62	RT				1						2			15.2	1				
96	S43	INDUSTRIAL DR.	52+50	LT	D9-2-24	24 X 24	14.4			4	4											
					M5-3-21	21 X 12				1.8	1.8											
96	S44	INDUSTRIAL DR.	55+61	LT	W2-6-36	36 X 36	29.1			9	9											
					W16-H8P-48	48 X 8				2.7	2.7											
97	S45	S.R. 110	100+65	RT	W2-6-36	36 X 36	28.6			9	9											
					W16-H8P-48	48 X 8				2.7	2.7											
97	S46	S.R. 110	101+77	LT	R2-1-24	24 X 30	12.4			5	5											
97	S47	S.R. 110	103+77	LT	M3-4-24	24 X 12	13			2	2											
					M1-5-30-3	30 X 24				5	5											
98	R7	S.R. 110	111+10	RT								1			1							
98	S48	S.R. 110	109+11	RT	M3-2-24	24 X 12	14			2	2											
					M1-5-30-3	30 X 24				5	5											
98	S49	S.R. 110	111+11	RT	R2-1-24	24 X 30	12			5	5											
98	S50	S.R. 110	112+18	LT	W2-6-36	36 X 36	26.3			9	9											
					W16-H8P-48	48 X 8				2.7	2.7											
99	R8	RIVERVIEW AVE.	587+94	RT												2						
99	R9	RIVERVIEW AVE.	598+15	LT								2			1							
99	S51	RIVERVIEW AVE.	587+90	RT	W2-6-36	36 X 36	30.8			9	9											
					W16-H8P-48	48 X 8				2.7	2.7											
99	S52	RIVERVIEW AVE.	599+57	LT	W2-6-36	36 X 36	27.3			9	9											
					W16-H8P-48	48 X 8				2.7	2.7											
TOTALS THIS SHEET							393.1	7		169.1	169.1	4		2	3	2	15.2	1				
TOTALS FROM SHEET							443.4	15	1	196.2	196.2	5	1		7	5						
TOTALS CARRIED TO GENERAL SUMMARY							836.5	22	1	365.3	365.3	9	1	2	10	7	15.2	1				

CALCULATED ALT
CHECKED RLS

SIGNING SUBSUMMARY

HEN-NEW BRIDGE

85
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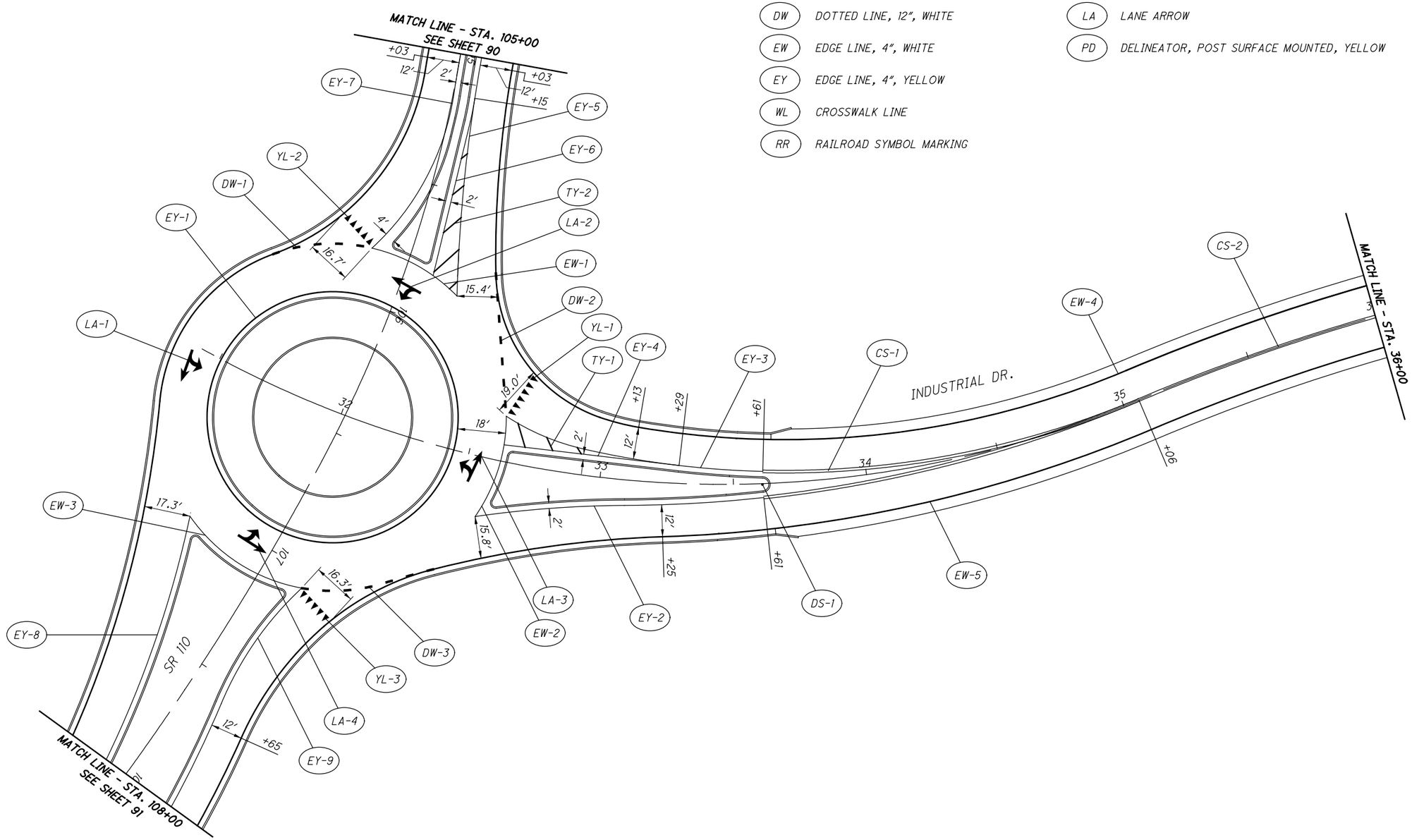
LEGEND

CS	CENTER LINE, DOUBLE SOLID
CP	CENTER LINE, SOLID/DASHED
DW	DOTTED LINE, 12", WHITE
EW	EDGE LINE, 4", WHITE
EY	EDGE LINE, 4", YELLOW
WL	CROSSWALK LINE
RR	RAILROAD SYMBOL MARKING
TY	TRANSVERSE/DIAGONAL LINE, YELLOW
YL	YIELD LINE (24" X 36' TRIANGLES)
LA	LANE ARROW
PD	DELINEATOR, POST SURFACE MOUNTED, YELLOW



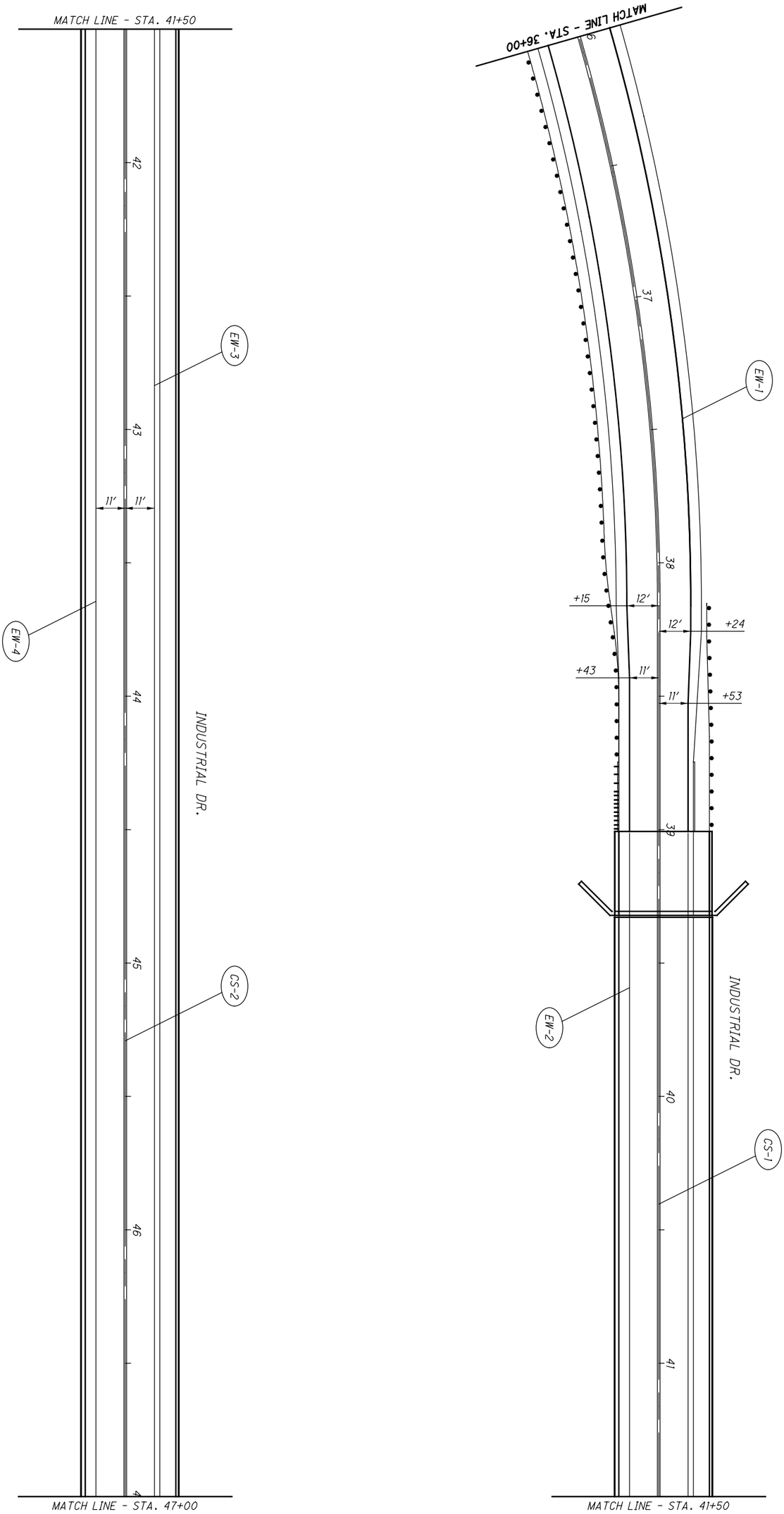
CALCULATED ALT
CHECKED CEB

HORIZONTAL SCALE IN FEET
0 10 20 40

PAVEMENT MARKING PLAN
INDUSTRIAL DR. & S.R. 110 ROUNDABOUT

HEN-NEW BRIDGE

86
189



FOR LEGEND, SEE SHEET 86

87
189

HEN-NEW BRIDGE

PAVEMENT MARKING PLAN
INDUSTRIAL DR.

CALCULATED ALT
CHECKED RLS

0 10 20 40
HORIZONTAL SCALE IN FEET

FOR LEGEND SEE SHEET 86

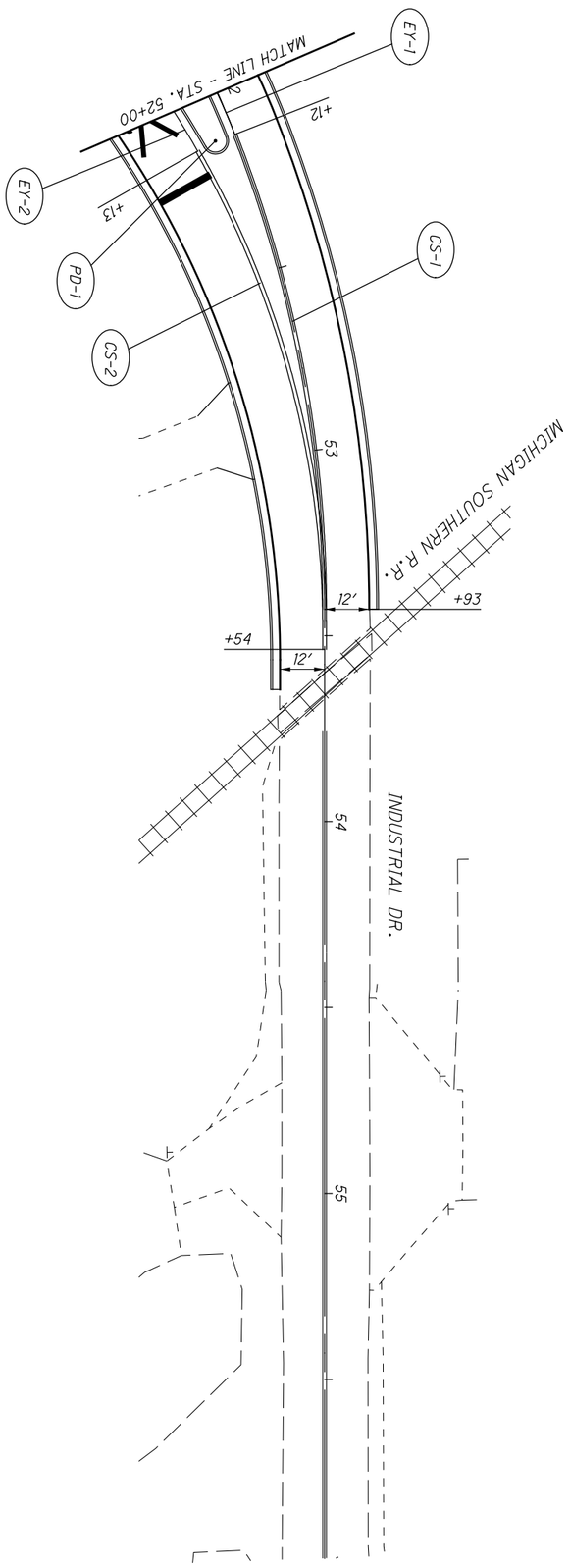
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED ALT
CHECKED RLS

PAVEMENT MARKING PLAN
INDUSTRIAL DR. & RIVERVIEW AVE. ROUNDABOUT

HEN-NEW BRIDGE

88
189



FOR LEGEND, SEE SHEET 86

FOR LEGEND, SEE SHEET 86

N

0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED ALT
CHECKED RLS

PAVEMENT MARKING PLAN
S.R. 110

HEN-NEW BRIDGE

90
189

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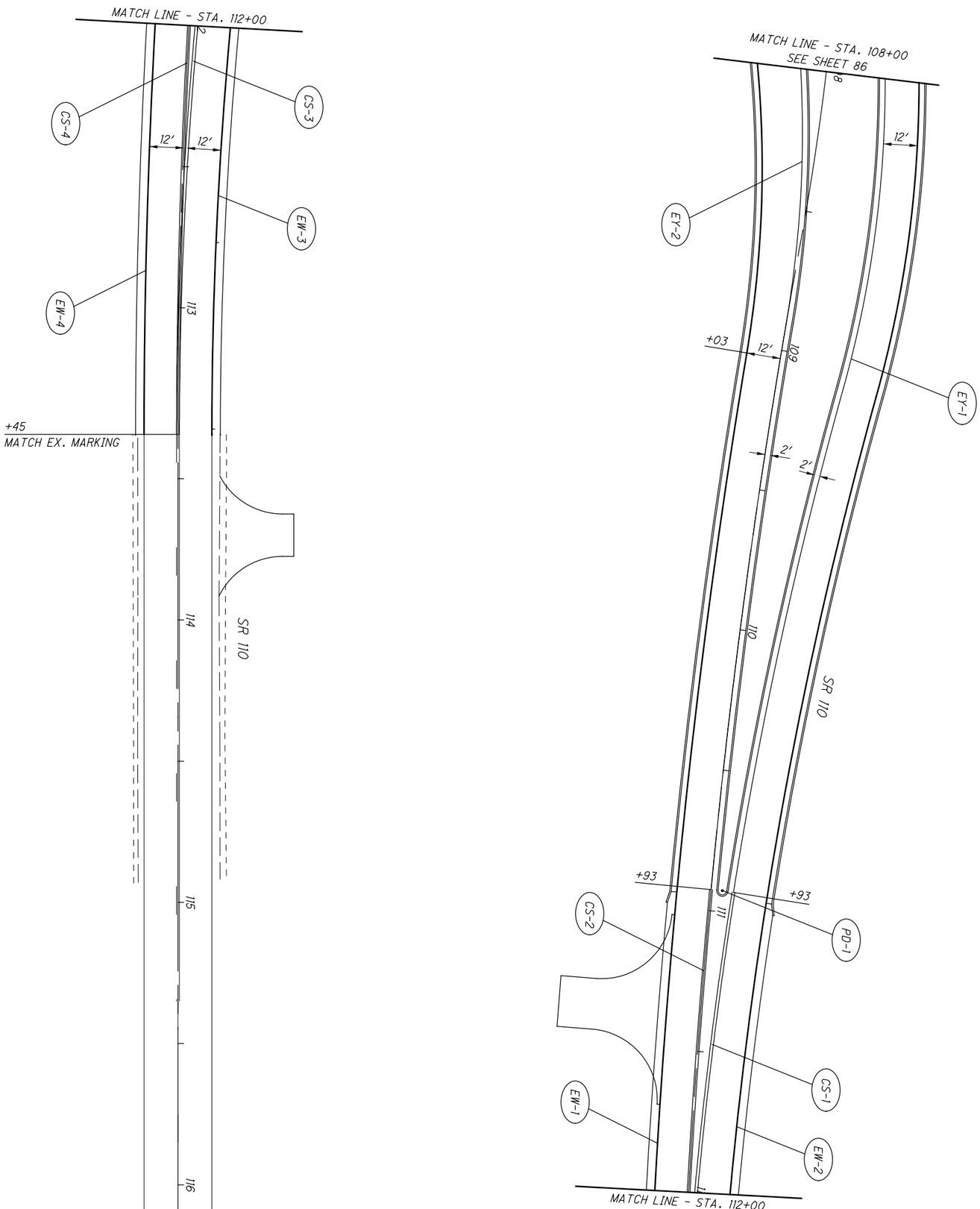
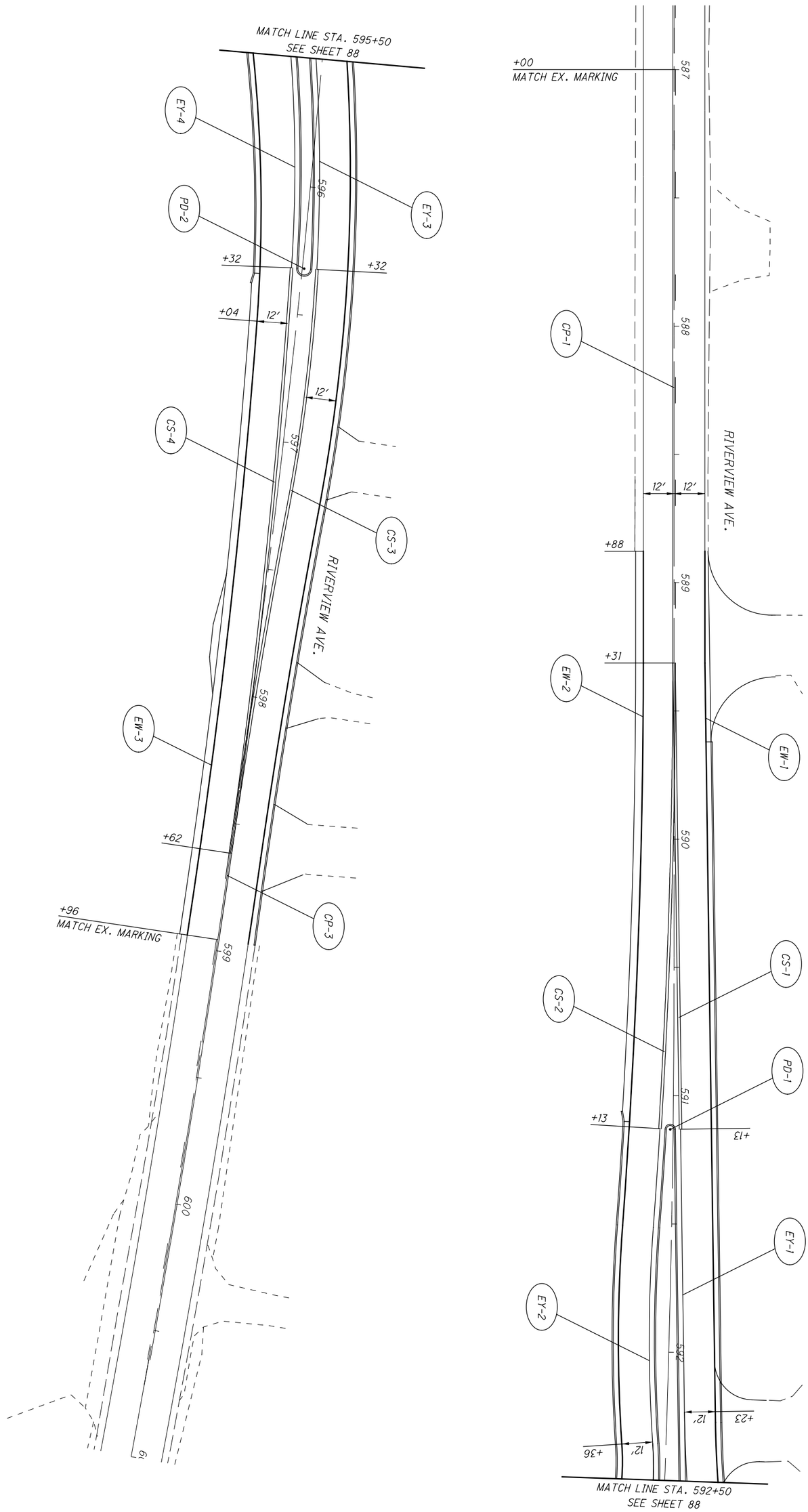


FOR LEGEND SEE SHEET 86

91 / 189	HEN-NEW BRIDGE	PAVEMENT MARKING PLAN S.R. 110	CALCULATED ALT CHECKED RLS	0 10 20 40 HORIZONTAL SCALE IN FEET



FOR LEGEND SEE SHEET 86

92
189

HEN-NEW BRIDGE

PAVEMENT MARKING PLAN
RIVERVIEW AVE.

CALCULATED ALT
CHECKED RLS

0 10 20 40
HORIZONTAL SCALE IN FEET

LEGEND

EXISTING SIGN TO REMAIN

EXISTING SIGN TO BE REMOVED

PROPOSED SIGN

[1] R6-4-30

[2] R1-2-36

MATCH LINE - STA. 105+00
SEE SHEET 97

(S8) M3-4-24 WEST
M1-5-30-3 110
M6-2-21
STA. 105+75

(S7) [2] STA. 105+74

(S6) [2] STA. 105+68

(S9) [1] STA. 106+19

[1] STA. 32+22 (S1)

[2] STA. 32+71 (S4)

[2] STA. 32+68 (S3)

INDUSTRIAL DR.

MATCH LINE - STA. 36+00

STA. 107+13
M6-2-21
M1-5-30-3 110
M3-2-24 EAST
(S12)

SR 110

[1] STA . 106+69 (S10)

[2] STA. 107+12 (S11)

[2] STA. 107+15 (S13)

Industrial Dr
D1-H1A-48
STA. 32+66
(S2)

R2-1-24
STA. 33+65
SPEED LIMIT 35
(S5)

MATCH LINE - STA. 108+00
SEE SHEET 98

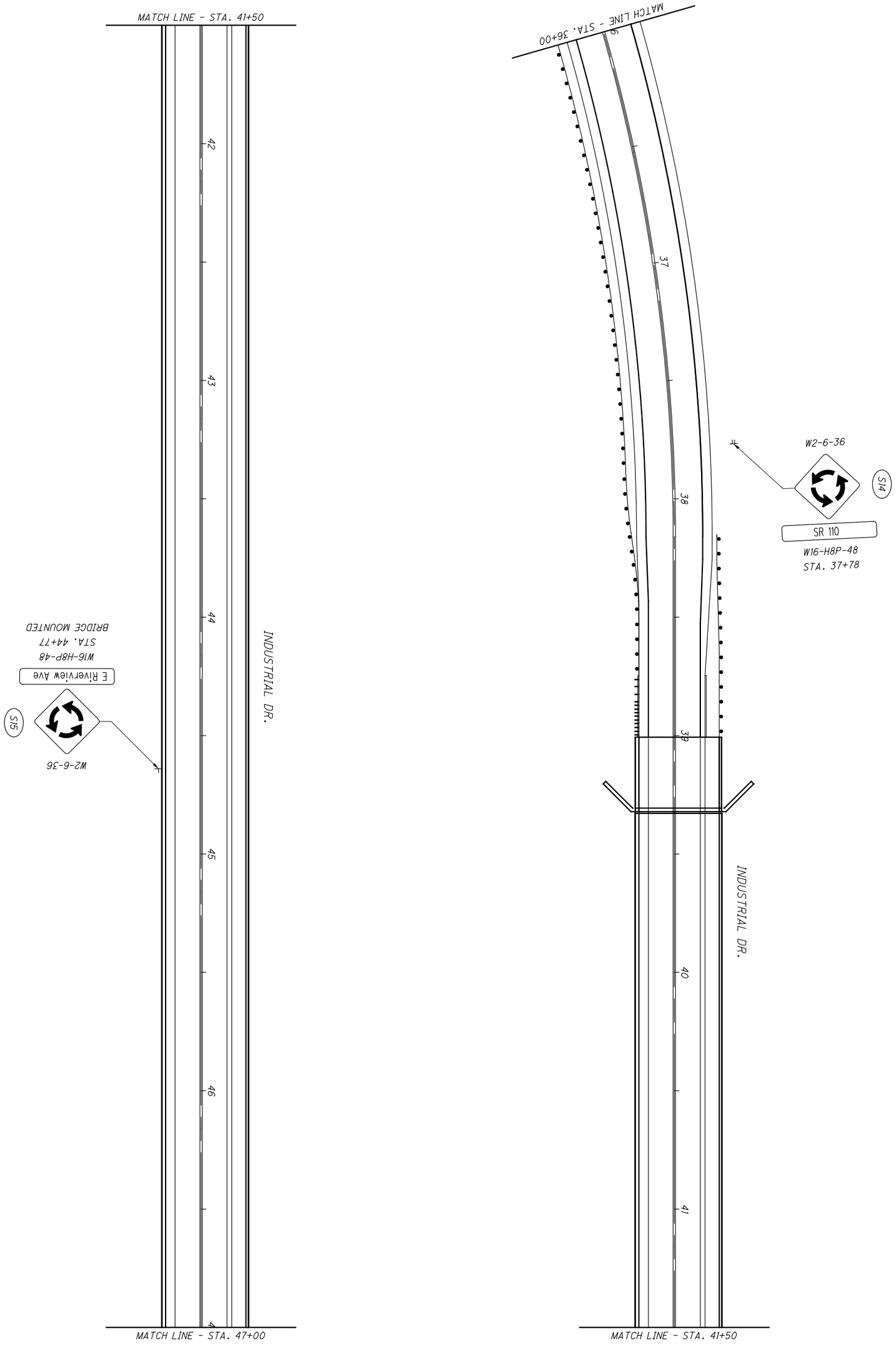
HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED ALT
CHECKED RLS

SIGNING PLAN
INDUSTRIAL DR. & S.R. 110 ROUNDABOUT

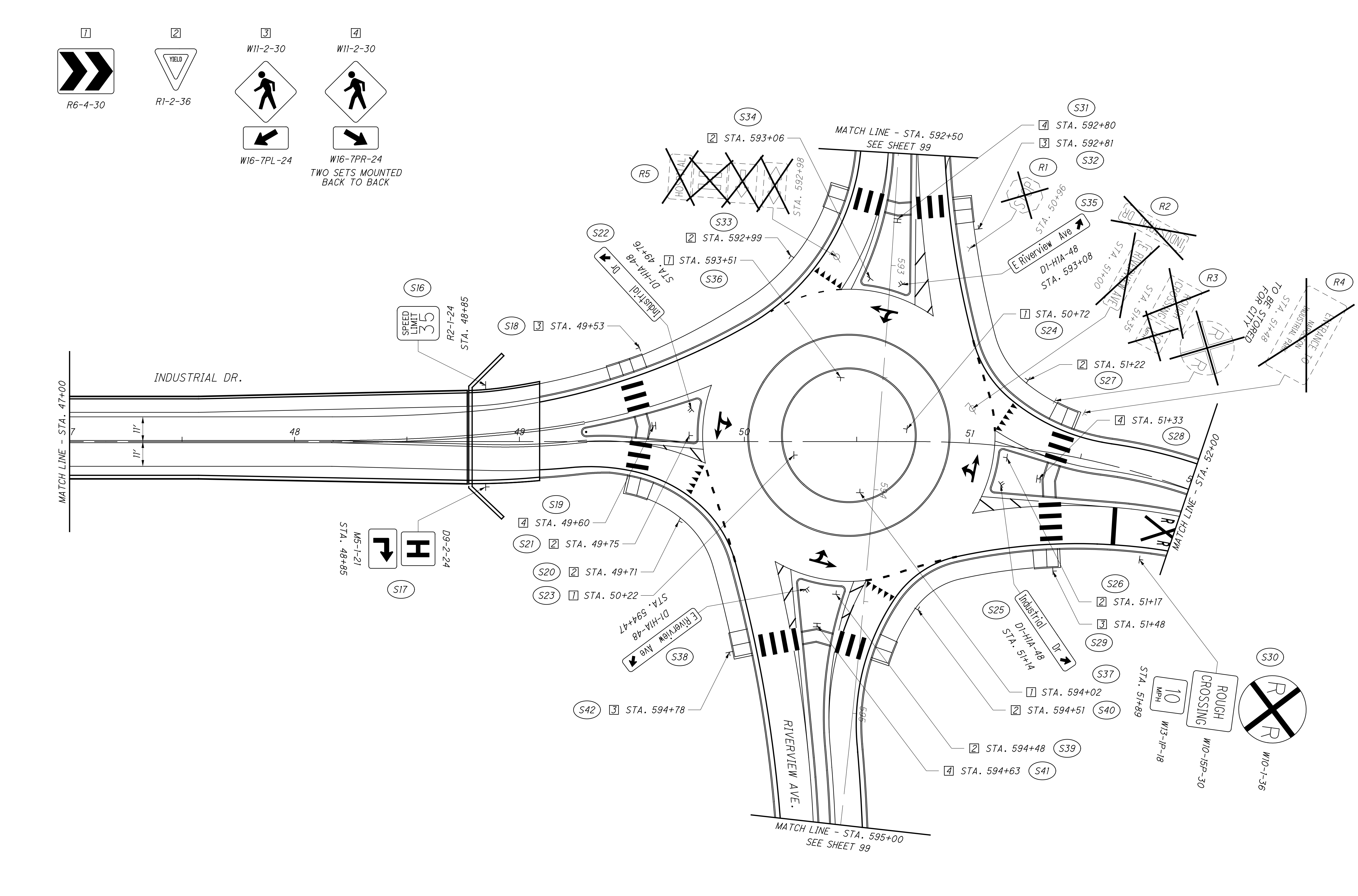
HEN-NEW BRIDGE

93
189



FOR LEGEND, SEE SHEET 93

94 of 189	HEN-NEW BRIDGE	SIGNING PLAN INDUSTRIAL DR.	CALCULATED ALT CHECKED RLS	0 20 10 40 HORIZONTAL SCALE IN FEET

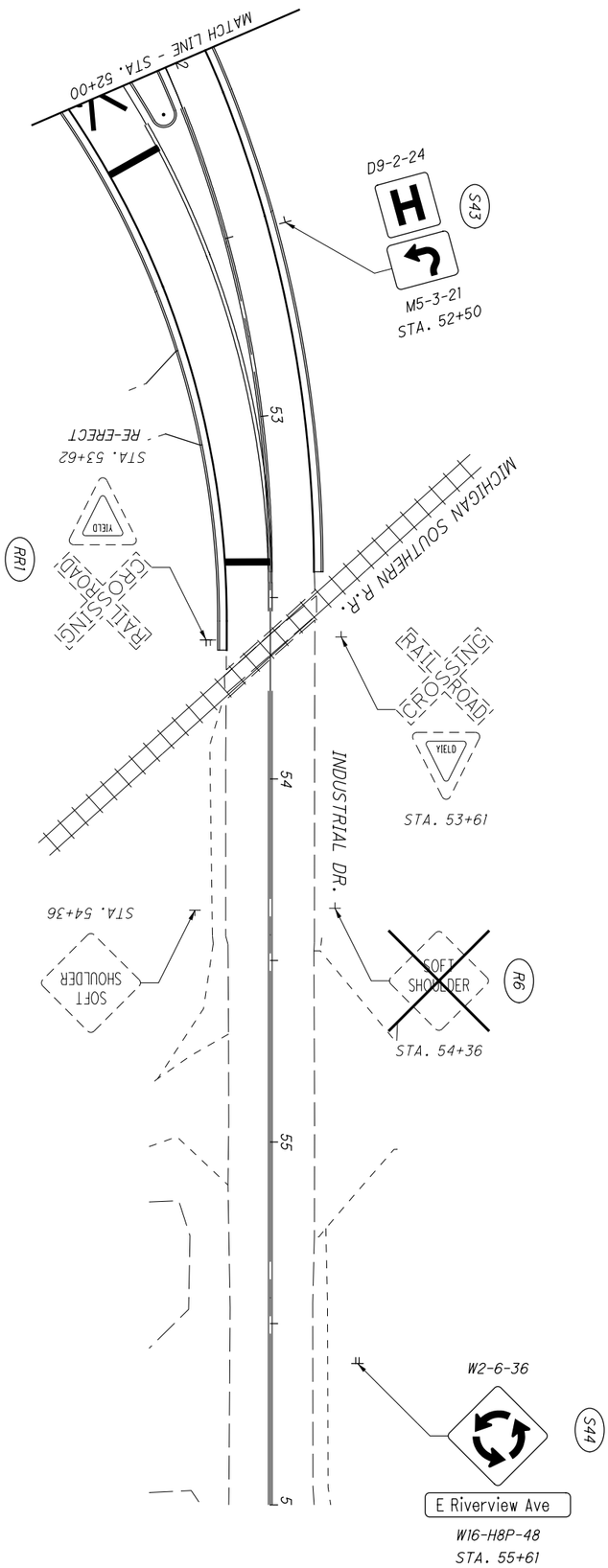


FOR LEGEND, SEE SHEET 93

SIGNING PLAN
INDUSTRIAL DR. & RIVERVIEW AVE. ROUNDABOUT

HEN-NEW BRIDGE

CALCULATED ALT
CHECKED RLS



FOR LEGEND, SEE SHEET 93

96 / 189	HEN-NEW BRIDGE	SIGNING AND PAVEMENT MARKING PLAN INDUSTRIAL DR.	CALCULATED ALT CHECKED RLS	0 10 20 40 HORIZONTAL SCALE IN FEET

FOR LEGEND, SEE SHEET 93

N

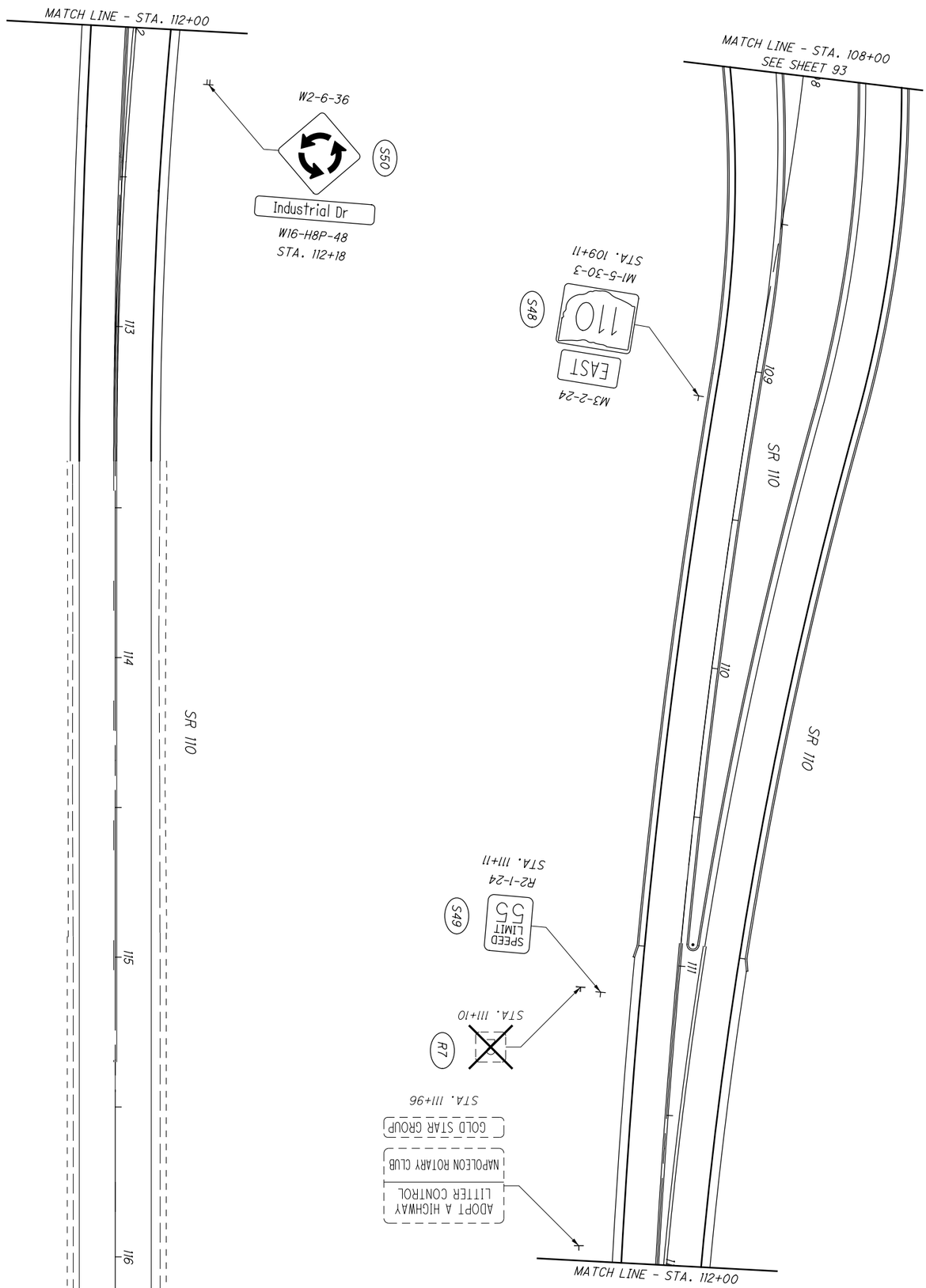
0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED ALT
CHECKED RLS

SIGNING PLAN
S.R. 110

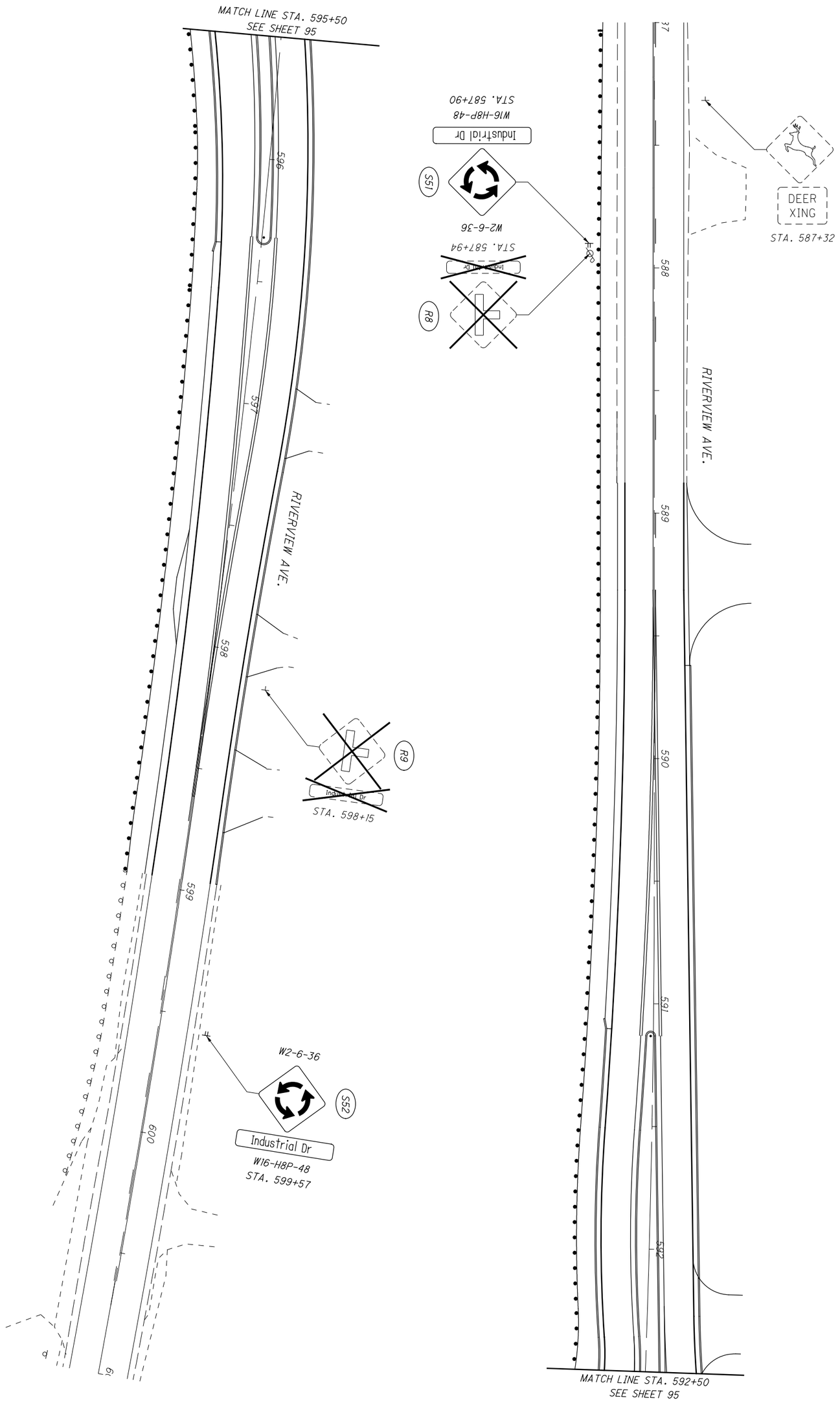
HEN-NEW BRIDGE

97
189



FOR LEGEND, SEE SHEET 93

98 / 189	HEN-NEW BRIDGE	SIGNING PLAN S.R. 110	CALCULATED ALT CHECKED RLS	0 20 10 40 HORIZONTAL SCALE IN FEET



FOR LEGEND, SEE SHEET 93

99 / 189	HEN-NEW BRIDGE	SIGNING PLAN RIVERVIEW AVE.	CALCULATED ALT CHECKED RLS	0 10 20 40 HORIZONTAL SCALE IN FEET

SPECIFICATIONS

LIGHTING GENERAL NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 725 OF THE OHIO DEPARTMENT OF TRANSPORTATION (ODOT) CONSTRUCTION AND MATERIAL SPECIFICATIONS, DATED JANUARY 1, 2016, WHICH SHALL GOVERN ALL WORK OF THIS PROJECT, EXCEPT AS HEREINAFTER MODIFIED.

REFERENCES SHALL BE MADE TO STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO ODOT STANDARD DRAWING HL-30.11 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED 20 FEET. THE COST FOR THIS WORK IS TO BE INCLUDED IN THE PULLBOX ITEMS.

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND SHALL BE KEYED IN ACCORDANCE WITH CMS 631.06. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

625, POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING IS ADDED.

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

TOLEDO EDISON
MS: A-HLOC-2332
134 LAWRENCE AVE.
WAUSEON, OHIO, 43567
MR. JOHN WIRICK
419-249-4170

THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE MAINTAINING AGENCY NOTED IN THE PLANS.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, "POWER SERVICE, AS PER PLAN" WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

CONTROL CENTER DATA

CONTROL CENTER	LINE VOLTS	CONNEC. LOAD (KVA)	SERVICE ENTRANCE CONDUCTOR SIZE-AWG	ENCLOSURE RATING (AMPS)	CIRCUIT NO.	CIRCUIT LOAD AMPS	CIRCUIT FUSE SIZE AMPS	CIRCUIT CABLE SIZE AWG	MAINTAINING AGENCY
PC-A-1 RIVERVIEW AVE.	240V	0.9	PER TOLEDO EDISON	100	A	3.8	20	NO.8	CITY OF NAPOLEON
PC-B-1 S.R. 110	240V	1.5	PER TOLEDO EDISON	100	B	6.3	20	NO.8	ODOT

NOTE: FOR ADDITIONAL CONTROL CENTER DETAILS, SEE STANDARD DRAWINGS

SHEET NO.	REF. NO.	STATION FROM	STATION TO	SIDE	625 CONNECTION, FUSED PULL APART EACH	625 CONNECTIONS, UNFUSED PERMANENT EACH	625 LIGHT POLE CONVENTIONAL, AT08B30 EACH	625 LIGHT POLE CONVENTIONAL, AT14B30 EACH	625 LIGHT POLE FOUNDATION, 24"X6' DEEP EACH	625 NO. 8 AWG 600 VOLT DISTRIBUTION CABLE FT	625 NO. 10 AWG POLE AND BRACKET CABLE FT	625 CONDUIT 1-1/2" 725.04 FT	625 CONDUIT 3" 725.04 FT	625 LUMINAIRE, CONVENTIONAL: 150W, TYPE II DISTRIBUTION EACH	625 LUMINAIRE, CONVENTIONAL: 250W, TYPE II DISTRIBUTION EACH	625 TRENCH, 24" DEEP FT	625 PULL BOX, 725.08, 18" EACH	625 GROUND ROD EACH	625 POWER SERVICE, AS PER PLAN EACH	625 PLASTIC CAUTION TAPE FT			
		RIVERVIEW AVE. ROUNDABOUT																				
101	LP-A-2	592+92	593+58	LT	2			1	1	404	88	91		1		91		1		91		
101	LP-A-3	593+58	593+52	LT	2			1	1	60	88	5		1		5		1		5		
101	PB-A-3	593+52	594+29	LT						312		68	68			68	1			68		
101	PC-A-1	593+08	593+52	LT		4				248		52				52			1	52		
101	PB-A-4	594+29	594+31	LT						132		23	23			23	1			23		
101	LP-A-4	594+31	594+84	LT	2			1	1	392	88	88		1		88		1		88		
101	LP-A-5	594+84	595+11	LT	2			1	1	148	88	27		1		27		1		27		
101	PB-A-5	595+11	595+29	LT/RT						292		63	63			63	1			63		
101	PB-A-6	595+29	594+68	RT						288		62				62	1			62		
101	LP-A-6	594+68	594+13	RT	2			1	1	372	88	83		1		83		1		83		
101	LP-A-7	594+13	594+16	RT	2			1	1	72	88	8		1		8		1		8		
101	PB-A-2	594+16	593+48	RT						252		53	53			53	1			53		
101	PB-A-1	593+48	593+44	RT						112		18				18	1			18		
101	LP-A-1	593+44	592+58	RT	2			1	1	500	88	115		1		115		1		115		
101	LP-A-8	592+58		RT	2			1	1		88			1				1				
		S.R.110																				
102	LP-B-4	107+22	105+77	RT	2		1		1	628	76	147			1	147		1		147		
102	LP-B-3	105+77	105+31	RT	2		1		1	228	76	47			1	47		1		47		
102	PC-B-1	105+98	105+31	RT		4				544		126				126			1	126		
102	PB-B-3	105+31	105+34	RT/LT						244		51	51			51	1			51		
102	PB-B-2	105+34	105+48	LT						96		14				14	1			14		
102	LP-B-2	105+48	106+01	LT	2		1		1	360	76	80			1	80		1		80		
102	LP-B-1	106+01	105+80	LT	2		1		1	156	76	29			1	29		1		29		
102	PB-B-1	105+80	106+40	LT						252		53	53			53	1			53		
102	PB-B-4	106+40	106+47	LT						104		16				16	1			16		
102	LP-B-6	106+47	107+14	LT	2		1		1	456	76	104			1	104		1		104		
102	LP-B-5	107+14		LT	2		1		1		76				1			1				
TOTALS CARRIED TO GENERAL SUMMARY					28	8	6	8	14	6652	1160	1423	311	8	6	1423	10	14	2	1423		

CALCULATED XF
CHECKED CEB

LIGHTING NOTES & SUBSUMMARY

HEN-NEW BRIDGE

100
189

PLAN LEGEND

- PROPOSED POWER SERVICE
- A /// NO. 8 — 1-1/2" CONDUIT (3-NO.8 AWG & NO.8 GROUND 600 V)
- CIRCUIT PB-X# / PB REF. NO. — PULL BOX, (725.08, 18")
- EXISTING LUMINAIRE & BRACKET ARM
- EXISTING WOOD LIGHT POLE/ UTILITY POLE
- PROPOSED 3" CONDUIT
- PROPOSED LUMINAIRE & BRACKET ARM
- CIRCUIT LP-X# / POLE REF. NO. — PROPOSED HL-10.12 LIGHT POLE & HL-20.11 LIGHT POLE FOUNDATION

PB-A-3 PULL BOX STA 593+52, 98 LT

LP-A-3 LIGHT POLE, AT14B30 TYPE II, 150W STA 593+58, 93 LT

PC-A-1 POWER SERVICE CENTER STA 593+08, 95 LT

LP-A-2 LIGHT POLE,AT14B30 TYPE II, 150W STA 592+92, 40 LT

LP-A-8 LIGHT POLE, AT14B30 TYPE II, 150W STA 592+58, 33 RT

LP-A-1 LIGHT POLE,AT14B30 TYPE II, 150W STA 593+44, 105 RT

PB-A-1 PULL BOX STA 593+48, 123 RT

PB-A-4 PULL BOX STA. 594+29, 95 LT

LP-A-4 LIGHT POLE, AT14B30 TYPE II, 150W 594+31, 72 LT

LP-A-5 LIGHT POLE,AT14B30 TYPE II, 150W STA 594+84, 14 LT

PB-A-5 PULL BOX STA 595+11, 15 LT

PB-A-6 PULL BOX STA 595+29, 45 RT

LP-A-6 LIGHT POLE,AT14B30 TYPE II, 150W STA 594+68, 62 RT

LP-A-7 LIGHT POLE, AT14B30 TYPE II, 150W STA 594+13, 115 RT

PB-A-2 PULL BOX STA. 594+16, 123 RT

CONST. LIMIT

RIVERVIEW AVE

INDUSTRIAL DRIVE

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED XF CHECKED CEB

LIGHTING PLAN
RIVERVIEW AVE. AND INDUSTRIAL DR.
HEN-NEW BRIDGE

101
189

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PLAN LEGEND

- PROPOSED POWER SERVICE
- A /// NO. 8 — 1-1/2" CONDUIT (3-NO.8 AWG & NO.8 GROUND 600 V)
- CIRCUIT PB-X# PB REF. NO. — PULL BOX, (725.08, 18")
- EXISTING LUMINAIRE & BRACKET ARM
- EXISTING WOOD LIGHT POLE/ UTILITY POLE
- PROPOSED 3" CONDUIT
- PROPOSED LUMINAIRE & BRACKET ARM
- CIRCUIT LP-X# POLE REF. NO. — PROPOSED HL-10.12 LIGHT POLE & HL-20.11 LIGHT POLE FOUNDATION

PB-B-1 PULL BOX STA. 105+80, 110' LT

LP-B-1 LIGHT POLE, AT08B30 TYPE II, 250W STA. 106+01, 78 LT

LP-B-2 LIGHT POLE, AT08B30 TYPE II, 250W STA. 105+48, 32' LT

PB-B-2 PULL BOX STA. 105+34, 26' LT

PB-B-4 PULL BOX STA. 106+40, 125' LT

LP-B-6 LIGHT POLE, AT08B30 TYPE II, 250W STA. 106+47, 111' LT

LP-B-5 LIGHT POLE, AT08B30 TYPE II, 250W STA. 107+14, 39' LT

LP-B-4 LIGHT POLE, AT08B30 TYPE II, 250W STA. 107+22, 53' RT

LP-B-3 LIGHT POLE, AT08B30 TYPE II, 250W STA. 105+77, 40' RT

PB-B-3 PULL BOX STA. 105+31, 24' RT

PC-B-1 POWER SERVICE CENTER STA.105+98, 134' RT

℄ CONST. INDUSTRIAL DR.

℄ CONST. S.R. 110

CONST. LIMIT

R/W

Ex R/W

GRASS

GRAVEL

ASPH.

10" H.P. GAS

HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED XF CHECKED CEB

LIGHTING PLAN
S.R. 110 AND INDUSTRIAL DRIVE
HEN-NEW BRIDGE

102
189

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NOTES:

ITEM	KEY	DESCRIPTION: BOTANICAL NAME-COMMON NAME	SIZE	COND.	QTY.
1		32 Juniperus horizontalis - 'Andorra Youngstown'	12"	Cont.	32
2		Taxodium distichum - 'Baldcypress'	8'	B&B	3
3		Schizachyrium scoparium - 'Little Bluestem'	1 Gal.	Cont.	88
4		MULCH	C.Y.		37
5		LANDSCAPE WATERING	M GAL		100

HORIZONTAL SCALE IN FEET
0 10 20 40

CALCULATED SV
CHECKED CEB

LANDSCAPE PLAN

HEN-NEW BRIDGE

103
189

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NOTES:

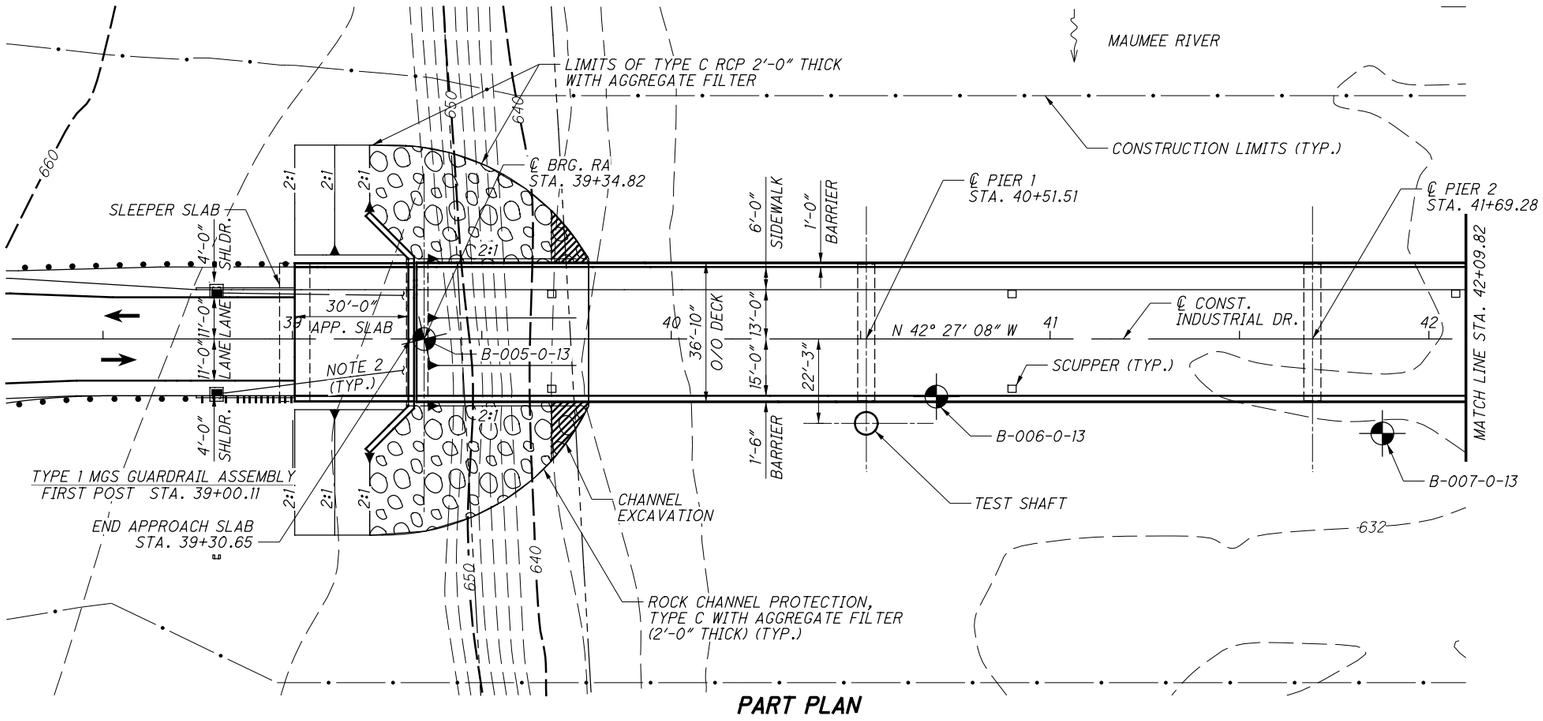
ITEM	KEY	DESCRIPTION: BOTANICAL NAME-COMMON NAME	SIZE	COND.	QTY.
1		*Juniperus horizontalis - 'Andorra Youngstown'*	*12"*	*Cont.*	*32*
2		*Taxodium distichum - 'Baldcypress'*	*8'*	*B&B*	*3*
3		*Schizachyrium scoparium - 'Little Bluestem'*	*1 Gal.*	*Cont.*	*88*
4		*MULCH*	*C.Y.*		*37*
5		*LANDSCAPE WATERING*	*M GAL*		*100*

HORIZONTAL SCALE IN FEET
0 10 20 40

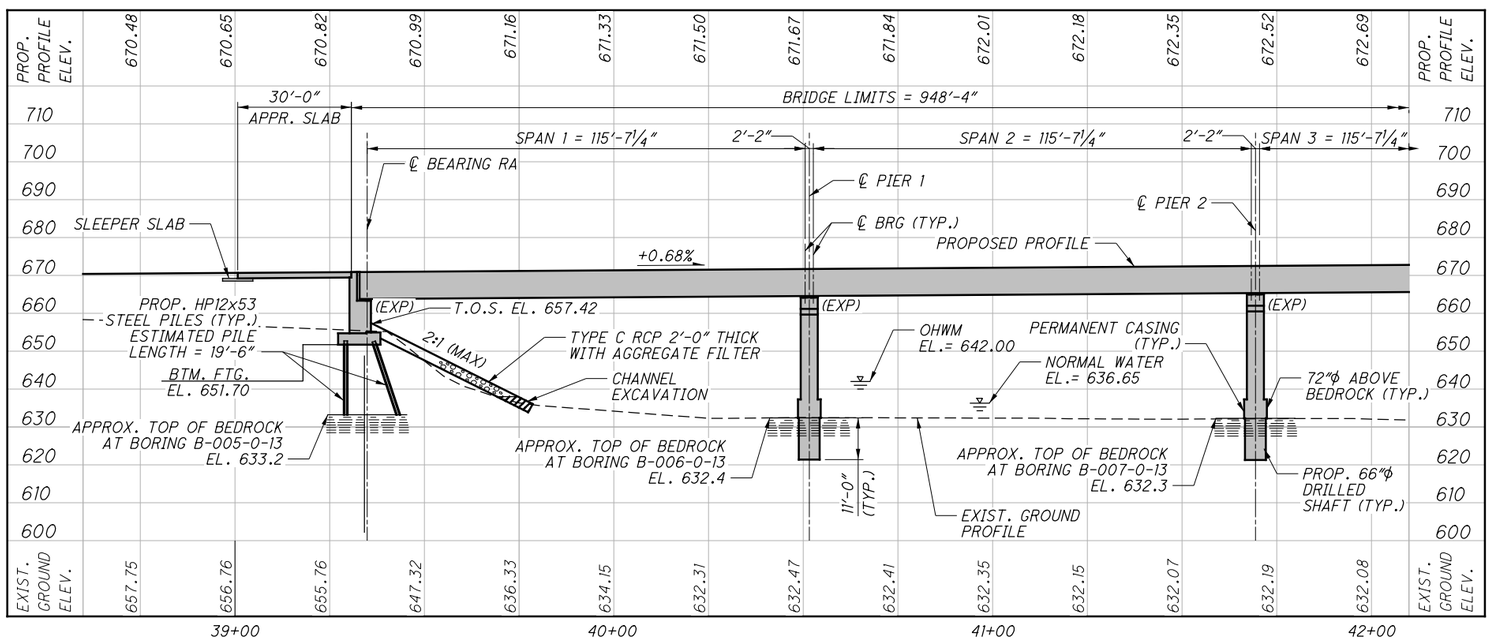
CALCULATED SV
CHECKED CEB

LANDSCAPE PLAN

HEN-NEW BRIDGE



PART PLAN



PART PROFILE ALONG ℄ CONST. INDUSTRIAL DRIVE

BENCHMARK DATA

BM #1 STA. 55+02.58	ELEV. 672.71	OFFSET 19.45' RT
BM #2 STA. 65+94.80	ELEV. 680.83	OFFSET 134.94' LT
BM #3 STA.	ELEV.	OFFSET
BM #4 STA.	ELEV.	OFFSET

NOTES

1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
2. 12"ϕ PVC, SDR 35 (707.45), OUTLET TO CATCH BASINS. SEE ROADWAY PLANS FOR MORE INFORMATION.

DESIGN TRAFFIC:
2015 ADT = 7660 2015 ADTT = 690
2035 ADT = 9860 2035 ADTT = 890
DIRECTIONAL DISTRIBUTION = 0.55

LEGEND

- ⌖ - BORING LOCATION
- ▨ - CHANNEL EXCAVATION
- T.O.S. - TOP OF SLOPE
- RCP - ROCK CHANNEL PROTECTION
- ▩ - CONCRETE MAT
- ▬ - PROPOSED STRUCTURE

HYDRAULIC DATA

DRAINAGE AREA = 5650 SQ. MILES
Q (25) = 94800 CFS V (25) = 5.14 FT/S
Q (100) = 110800 CFS V (100) = 5.63 FT/S
STRUCTURE CLEARS THE 25 YEAR
DESIGN HW BY 7.64 FEET.

APPROXIMATE TOP OF BEDROCK ELEVATIONS

B-005-0-13	EL. 633.2
B-006-0-13	EL. 632.4
B-007-0-13	EL. 632.3
B-008-0-13	EL. 631.0
B-008-1-13	EL. 631.8
B-009-0-13	EL. 632.2
B-010-0-13	EL. 634.3
B-011-0-13	EL. 631.3
B-012-0-13	EL. 634.8
B-013-1-13	EL. 631.3

PROPOSED STRUCTURE

TYPE: EIGHT SPAN COMPOSITE PRESTRESSED I-BEAM SUPERSTRUCTURE WITH REINFORCED CONCRETE DECK SUPPORTED BY REINFORCED CONCRETE ABUTMENTS AND PIERS WITH SLOPED EMBANKMENTS

SPANS: 8 SPANS @ 115'-7¼", 115'-7¼", 115'-7¼", 115'-7¼", 115'-7¼", 115'-7¼", 115'-7¼" AND 115'-7¼" C/C BEARINGS MEASURED ALONG ℄ CONSTRUCTION INDUSTRIAL DR.

ROADWAY: VARIABLE WIDTH 28'-0" MIN. TO 32'-0" MAX. TOE/TOE BARRIER WITH 6'-0" SIDEWALK (LEFT SIDE)

LOADING: HL-93 W/ 60 PSF FUTURE WEARING SURFACE

SKEW: NONE

APPROACH SLABS: 30'-0" LONG (AS-1-15) MODIFIED

ALIGNMENT: TANGENT

CROWN: 0.016 FT/FT

WEARING SURFACE: 1" MONOLITHIC CONCRETE

COORDINATES: LATITUDE N 41° 24' 17"
LONGITUDE W 84° 06' 14"

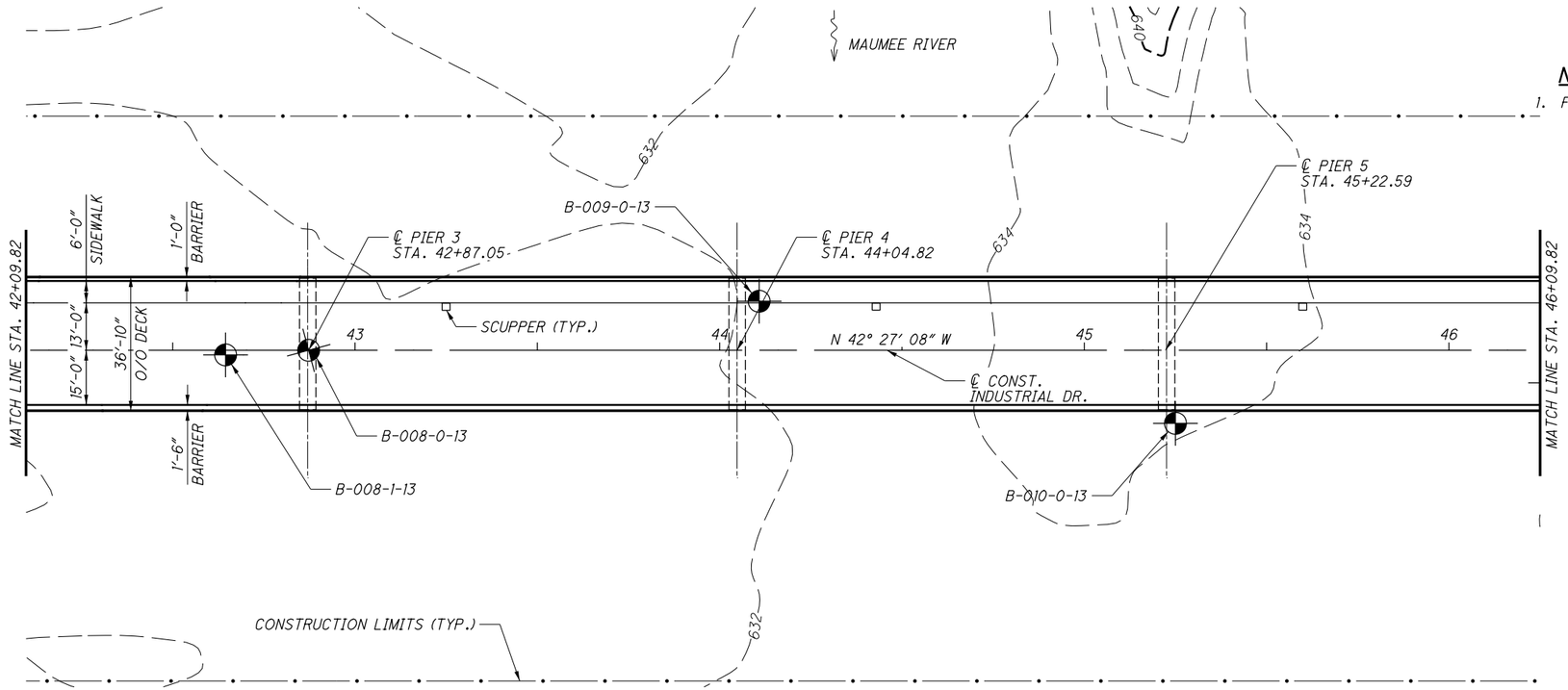
Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN AMK | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

HENRY COUNTY
STA. 39+46.50
STA. 48+93.50

SITE PLAN (1 of 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

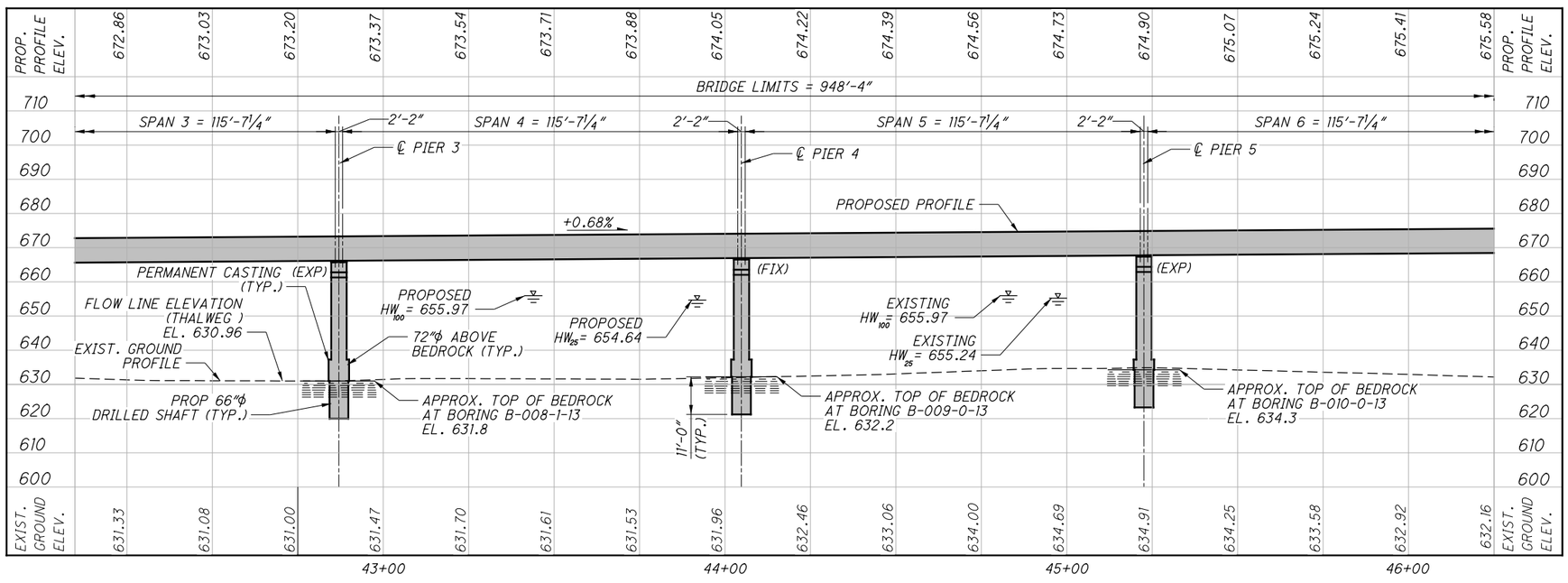
HEN-NEW BRIDGE
PID No. 22984



PART PLAN

NOTES

1. FOR PLAN NOTES AND LEGEND SEE SHEET 1/65



PART PROFILE ALONG ℄ CONST. INDUSTRIAL DRIVE

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
KRH	AMK	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

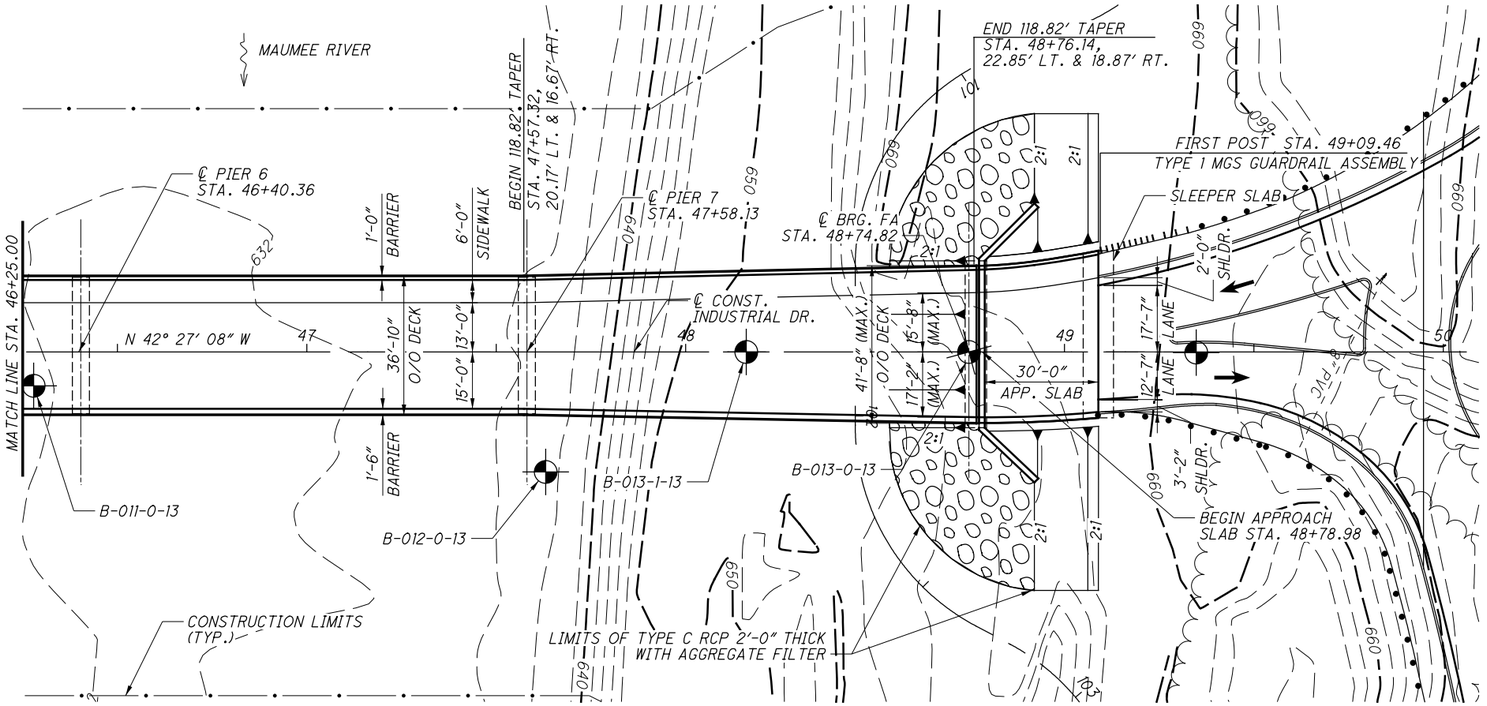
HENRY COUNTY
STA. 39+46.50
STA. 48+93.50

SITE PLAN (2 of 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

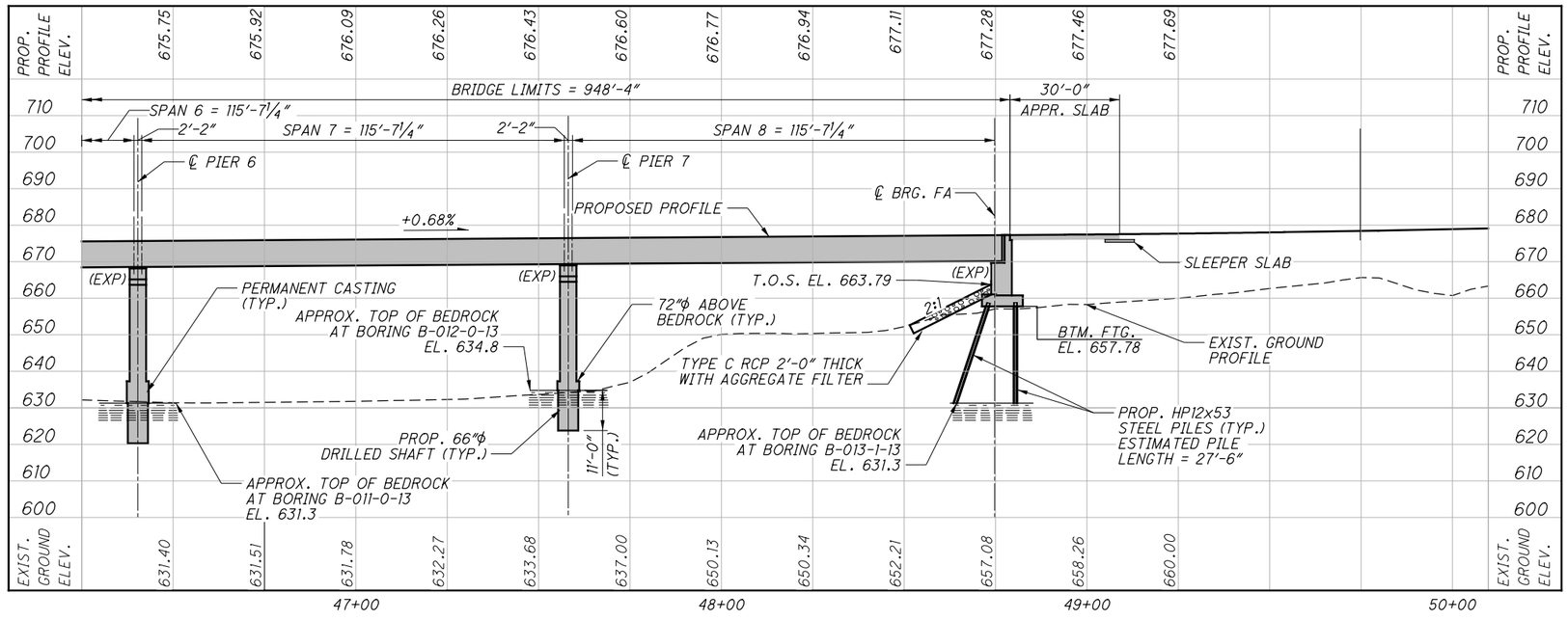
HEN-NEW BRIDGE
PID No. 22984

2/65

106/189



PART PLAN



PART PROFILE ALONG ℄ CONST. INDUSTRIAL DRIVE

NOTES

1. FOR PLAN NOTES AND LEGEND SEE SHEET 1/65

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
KRH	AMK	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

HENRY COUNTY
STA. 39+46.50
STA. 48+93.50

SITE PLAN (3 of 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

3/65

107/189

STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):

AS-1-15 DATED/REVISED 7/17/2015

AS-2-15 DATED/REVISED 7/17/2015

BR-2-98 DATED/REVISED 7/20/2012

EXJ-6-06 DATED/REVISED 1/18/2013

PSID-1-13 DATED/REVISED 1/16/2015

SBR-1-13 DATED/REVISED 1/17/2014

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

800 DATED 4/17/2015 832 DATED 1/17/2014

846 DATED 4/17/2015

DESIGN SPECIFICATIONS

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 7TH EDITION, INCLUDING THE 2016 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2007.

LOAD MODIFIER FOR OPERATIONAL IMPORTANCE

OPERATIONAL IMPORTANCE: A LOAD MODIFIER OF 1.00 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

DESIGN LOADING: HL-93

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

DESIGN DATA

DESIGN DATA:
CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)
CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)
CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.0 KSI (DRILLED SHAFT)
REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

STEEL H-PILES - ASTM A572 - YIELD STRENGTH 50 KSI

DESIGN DATA

CONCRETE FOR PRESTRESSED BEAMS:
COMPRESSIVE STRENGTH (FINAL) - 7.0 KSI
COMPRESSIVE STRENGTH (RELEASE) - 5.0 KSI
WELDED WIRE FABRIC:
YIELD STRENGTH - 70 KSI
PRESTRESSING STRAND:
AREA = 0.217 SQ. IN.
ULTIMATE STRENGTH = 270 KSI
INITIAL STRESS = 202.5 KSI (LOW RELAXATION STRANDS)

DECK PROTECTION METHOD

EPOXY COATED REINFORCING STEEL

2.5" CONCRETE COVER

PILE DRIVING CONSTRAINTS

PILE DRIVING CONSTRAINTS: PRIOR TO DRIVING PILES, CONSTRUCT THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 200 FT BEHIND EACH ABUTMENT. DO NOT BEGIN THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

PILES TO BEDROCK

PILES TO BEDROCK: DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED WHEN THE PILE PENETRATION IS AN INCH OR LESS AFTER RECEIVING AT LEAST 20 BLOWS FROM THE PILE HAMMER. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE TOTAL FACTORED LOAD IS 317 KIPS PER PILE FOR THE REAR ABUTMENT PILES AND 336 KIPS PER PILE FOR THE FORWARD ABUTMENT PILES. THE ABUTMENT PILES INCLUDE AN ADDITIONAL 36 KIPS OF FACTORED LOAD PER PILE TO ACCOUNT FOR POSSIBLE DOWNDRAG FORCES.

ABUTMENT PILES:
REAR:
26 HP12X53 PILES 25 FEET LONG, ORDER LENGTH
FORWARD:
28 HP12X53 PILES 35 FEET LONG, ORDER LENGTH

PILE SPLICES

PILE 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, NJ 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 203 EMBANKMENT, AS PER PLAN

PLACE AND COMPACT EMBANKMENT MATERIAL IN 6 INCH LIFTS FOR THE CONSTRUCTION OF THE APPROACH EMBANKMENT BETWEEN STATIONS 38+34.82 TO 49+74.82.

ITEM 503 UNCLASSIFIED EXCAVATION, AS PER PLAN:

UNCLASSIFIED EXCAVATION SHALL BE IN ACCORDANCE WITH 503 EXCEPT THAT THE BACKFILL MATERIAL PLACED BEHIND THE ABUTMENTS SHALL BE 703.17 MATERIAL PLACED IN 6 INCH LIFTS AS PER 304.05.

ITEM 509 - EPOXY COATED REINFORCING STEEL, AS PER PLAN

ITEM - 509 EPOXY COATED REINFORCING STEEL, AS PER PLAN: IN ADDITION TO THE PROVISIONS OF ITEM 509, FIELD BEND AND/OR FIELD CUT THE REINFORCING STEEL DESIGNATED IN THE PLANS, AS NECESSARY, IN ORDER TO MAINTAIN THE REQUIRED CLEARANCES AND BAR SPACINGS. REPAIR ALL DAMAGE TO THE EPOXY COATING, AS A RESULT OF THIS WORK, ACCORDING TO 709.00

DECK PLACEMENT DESIGN ASSUMPTIONS:

DECK PLACEMENT DESIGN ASSUMPTIONS:
THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.2 KIPS FOR A TOTAL MACHINE LOAD OF 17.6 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

MONOLITHIC WEARING SURFACE

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

ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA CONCRETE, SUPERSTRUCTURE, AS PER PLAN

DESCRIPTION:
IN ADDITION TO THE WORK REQUIREMENTS OF 511,THE CONTRACTOR MAY EITHER PROVIDE TRADITIONAL BRIDGE DECK FORMS CONFORMING TO CMS 508 OR DESIGN, BUILD, PROVIDE, AND CONSTRUCT GALVANIZED STEEL STAY-IN-PLACE (SIP) FABRICATED METAL FORMS CONFORMING TO CMS 508 AND THESE ADDITIONAL REQUIREMENTS. 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 511. THE DEPARTMENT WILL PAY NO EXTRA FOR ANY ADDITIONAL CONCRETE, REINFORCEMENT STEEL, OR STRUCTURAL STEEL THAT MAY BE REQUIRED WHEN USING SIP FORMS. ANY ADDITIONAL COST AND/OR DESIGN ASSOCIATED WITH THE USE OF SIP FORMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE ADDITIONAL DEAD LOAD OF THE SIP FORM PLUS THE WEIGHT OF THE ADDITIONAL CONCRETE SHALL BE DETERMINED FROM THE REQUIRED BEAM SPACING AND DEPTH OF FORM. THIS LOAD WILL BE IN ADDITION TO THE LOADS AS SPECIFIED AS DESIGN LOADS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DESIGN, FABRICATION, AND INSTALLATION MODIFICATIONS TO THE BRIDGE COMPONENTS INCLUDING THE BRIDGE BEAMS OR GIRDERS, CAMBER DIAGRAMS, DECK SCREED TABLES, BRIDGE BEARINGS, AND SUBSTRUCTURES. ALL PLAN MODIFICATIONS SHALL BE PREPARED AS PER 501.

DESIGN, BUILD, SIP FORMS WILL NOT BE PERMITTED AT OVERHANGS, AND WITHIN EIGHT FEET OF ALL EXPANSION JOINTS AND FOUR FEET OF ALL THROUGH DECK DRAINAGE SYSTEMS. IN ADDITION SIP FORMS WILL NOT BE PERMITTED WITHIN STRINGER BAYS WHERE CONSTRUCTION IS PHASED OR CLOSURE POURS ARE USED.

IF THE CONTRACTOR ELECTS TO USE CONVENTIONAL FORM METHODS OR SIP FORMS, THEN THE FORM METHOD SELECTED SHALL BE USED FOR THE ENTIRE BRIDGE PROJECT UNLESS SPECIFIED IN THE PLANS OR APPROVED BY THE ENGINEER. THIS INCLUDES PROJECTS UTILIZING PHASED CONSTRUCTION AND STIPULATES THAT ALL PHASES BE CONSTRUCTED ALIKE.

DESIGN:
SUBMIT CONSTRUCTION PLANS ACCORDING TO 501.05.B.3. DESIGN SIP FORMS TO SUPPORT THE SELF WEIGHT OF SIP FORMS, REINFORCEMENT, WET CONCRETE FOR THE DECK, ANY CONSTRUCTION EQUIPMENT LOADS, AND AT LEAST A 50 PSI LOAD FOR CONSTRUCTION LIVE LOADS MEET THE DEFLECTION REQUIREMENTS OF 508.

DESIGN SIP FORMS THAT HAVE THE DEPTH OF THE FORM CORRUGATION FILLED WITH CONCRETE.

INCLUDED THE FOLLOWING INFORMATION IN THE CONSTRUCTION PLAN:
A: DESIGN CALCULATIONS
B: PHYSICAL PROPERTIES OF THE SIP FORMS (GAGE, SECTION MODULUS, WEIGHT, DEPTH, AND PITCH)
C: CROSS SECTION VIEW AND DIMENSIONS OF: SIP FORMS, SUPPORT ANGLES, CHANNELS CLOSURES, SAFETY STOPS, CLIPS, PLATES, AND HARDWARE.
D: INCLUDE AN OVERALL LAYOUT PLAN WITH
1. WORKING POINTS OR CONTROL ELEVATIONS NECESSARY TO SET SUPPORT ANGLES.
2. TYPICAL AND SPECIFIC CROSS SECTIONS OR DETAILS: SUPPORT CONNECTIONS TO THE STRUCTURAL MEMBERS, SIP FORM CONNECTIONS TO SUPPORTS, FORM LAPS, AND CLOSURE SECTIONS.
3. MINIMUM BEARING LENGTHS (EDGE DISTANCES) OF SIP FORMS TO THE SUPPORT ANGLES.
4. WELDING DETAILS: SIZE, LENGTH, LOCATIONS, ELECTRODES, AND PROCESS.
E: WORKER SAFETY RESTRICTIONS.
F: INSTALLATION INSPECTION CHECK LISTS.

MATERIALS:
SUBMIT 501.06 TEST REPORTS AND WRITTEN ACCEPTANCE LETTERS TO THE ENGINEER. MATERIALS INSPECTION AND ACCEPTANCE IS PERFORMED BY THE ENGINEER AT THE PROJECT SITE. FURNISH FORM, SUPPORT MATERIALS, AND HARDWARE CONFORMING TO THE FOLLOWING:

A: FORM AND SUPPORT MATERIAL, ASTM A653 HAVING A COATING DESIGNATION OF G235, AND CONFORMING TO THE MECHANICAL PROPERTIES THE DESIGN REQUIRES.
B: PROVIDE DECK FORMS WITH A 2 INCH MINIMUM FORM DEPTH.
C: PROVIDE MINIMUM MATERIAL THICKNESS AS FOLLOWS: SIP FORMS (20 GAGE), SUPPORT ANGLES (12 GAGE) AND SUPPORT BARS (12 GAGE).
D: SUPPLY DECK, SELF DRILLING FASTENERS WITH CADMIUM PLATING PER ASTM B766 WITH MINIMUM THICKNESS OF 5, TEN THOUSANDTHS. (0.0005 INCH). THE HEADS OF THESE FASTENERS WILL BE A HIGHLY VISIBLE COLOR, RED OR OTHER, TO AID INSPECTION.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED DRH | DRAWN RJS | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

GENERAL NOTES (1 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

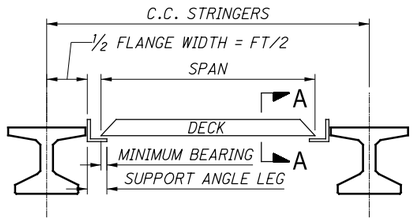
ITEM 511 - CLASS QC2 CONCRETE WITH QC/QA CONCRETE, BRIDGE DECK, AS PER PLAN (CONTINUED)

WELDING:

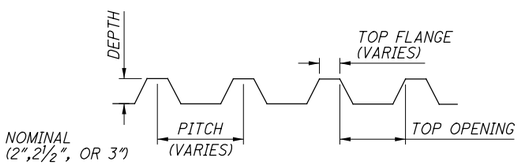
DO NOT WELD SIP FORM OR THEIR SUPPORTS TO THE STEEL BRIDGE MEMBERS. SIP SUPPORTS MAY BE WELDED TO ANCHORS CAST INTO PRECAST CONCRETE BRIDGE MEMBERS. PERFORM WELDING PER 513.21.

INSTALLATION LIMITATIONS:

A: FIELD CUT SIP FORMS USING MECHANICAL CUTTING METHODS. THERMAL CUTTING IS NOT PERMITTED.
B: PLACE FORMS ON FORM SUPPORTS. DO NOT INSTALL SIP FORMS DIRECTLY TO THE BRIDGE'S STRUCTURAL MEMBERS.
C: ADJUST THE SCREED ELEVATIONS BY PRORATING THE CONCRETE DEAD LOAD DEFLECTION TO ACCOUNT FOR THE ADDITIONAL PERMANENT DEAD LOADS ASSOCIATED WITH CONCRETE FILLED STAY IN PLACE FORMS.
D: SET THE HEIGHT OF THE FORM SUPPORTS TO DEVELOP THE ADJUSTED SCREED ELEVATIONS, DECK THICKNESS, AND PLAN PROFILE.
E: PLACE SIP FORMS TO FORM SUPPORTS TO ACHIEVE MINIMUM BEARING LENGTH PER MANUFACTURES DESIGN.
F: CONNECT SIP FORMS TO FORM SUPPORTS BEFORE USING THE SIP AS A WORKING SURFACE AND BEFORE THE END OF EACH WORK SHIFT.
G: PROVIDE SAFETY STOPS TO ELIMINATE HAZARDS FROM SUDDEN UPLIFT AND LATERAL MOVEMENT. AFTER THE DECK CONCRETE MEETS THE LOADING REQUIREMENTS OF CMS 511.17, REMOVE THE VISIBLE PORTION OF ALL SAFETY STOPS.
H: COATINGS DAMAGED BY MECHANICAL CUTTING OR FIELD WELDING NEED NOT BE REPAIRED UNLESS SPECIFIED BY THE SIP FORM MANUFACTURER.
I: THE CONTRACTOR SHALL PROTECT INSTALLED SIP FORMS FROM ANY CLEANING SOLUTIONS, 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. ALL COST FOR THE REPAIR OR REMOVAL SHALL BE PAID BY THE CONTRACTOR.



STAY IN PLACE DECK ELEVATION
NTS



SECTION A-A
STAY IN PLACE FORM TYPICAL DETAIL (OPTIONAL)
NTS

INSPECTIONS:

THE ENGINEER WILL CHECK SIP MATERIALS MEET DESIGN REQUIREMENTS AND EVALUATE INSTALLATION BASED ON CONSTRUCTION PLAN.

BASIS OF PAYMENT:

THE DEPARTMENT WILL NOT SEPARATELY PAY FOR SIP FORMS. THE COST OF THIS WORK IS INCLUDED FOR PAYMENT IN THE PRICE BID FOR THE ITEM FOR WHICH THE SIP FORMS ARE USED.

ITEM 513 STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN

ALL MATERIAL, LABOR, AND INCIDENTALS ASSOCIATED WITH INTERMEDIATE SCUPPER SUPPORTS SHALL BE INCLUDED WITH ABOVE ITEM 513 FOR PAYMENT.

ITEM 515 INTERMEDIATE DIAPHRAGM, AS PER PLAN

THE GALVANIZED STEEL OPTION FOR INTERMEDIATE DIAPHRAGMS SHALL BE USED. THE CONCRETE OPTION SHALL NOT BE USED.

ITEM 516 SPECIAL: MODULAR EXPANSION JOINT

ABUTMENT JOINTS SHALL BE WATSON BOWMAN ACME (WABO) MODULAR D-600, DS BROWN D-160, OR APPROVED ALTERNATE. THE MANUFACTURER SHALL SUBMIT DESIGN CALCULATIONS SHOWING THAT THE DEVICE CAN MEET THE IMPACT AND FATIGUE DESIGN REQUIREMENTS SET FORTH BY AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, SECTION 14.5.

A. DESCRIPTION:
FURNISH ALL MATERIALS, SERVICES, LABOR, TOOLS, EQUIPMENT, AND INCIDENTALS NECESSARY TO DESIGN, FABRICATE, INSPECT, TEST AND INSTALL MODULAR EXPANSION JOINTS IN ACCORDANCE WITH THE PLANS AND THESE NOTES. ALL REQUIREMENTS OF 513, SF LEVEL FABRICATION APPLY, UNLESS MODIFIED BY THESE NOTES.

B. DESIGN:
1. PREPARE AND CHECK THE DESIGN UNDER THE AUTHORITY OF AN OHIO REGISTERED PROFESSIONAL ENGINEER. THE REGISTERED ENGINEER SHALL SEAL, SIGN, AND DATE THE DESIGN CALCULATIONS AND SHOP DRAWINGS.
2. INCLUDE DESIGN CALCULATIONS WITH THE CONTRACTOR'S SUBMISSION OF SHOP DRAWINGS PER 513.06.
3. PROVIDE A DETAILED INSTALLATION PROCEDURE AND INCLUDE ANY SPECIFIC MANUFACTURER'S NOTES NECESSARY FOR COMPLETION OF THE WORK.
4. DESIGN AND TEST THE MODULAR JOINT COMPONENTS, JOINT ARMOR AND ANCHORAGES ACCORDING TO THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 402 "FATIGUE DESIGN OF MODULAR BRIDGE EXPANSION JOINTS" APPENDIX A AND B.
5. DESIGN TEMPORARY AND FIELD CONNECTIONS TO THE BRIDGE TO ACCOMMODATE ADJUSTMENTS FOR ROADWAY GEOMETRY AND VARYING TEMPERATURE.
6. DESIGN FOR THE PLAN SPECIFIED MOVEMENT PER AASHTO LRFD 3.12.2 FOR A COLD CLIMATE (TEMPERATE RANGE IS FROM -30°F TO +120°F WITH BASE TEMPERATURE SET TO 60°F).
7. SUPPLY SUPPORT BAR BEARINGS TO TRANSFER THE LOAD FROM THE SUPPORT BARS TO THE JOINT ARMOR.
8. FOR DESIGN OF THE DECK JOINT AT ALL LIMIT STATES, THE DYNAMIC LOAD ALLOWANCE (IM) SHALL BE TAKEN AS 125% OF THE STATIC EFFECT OF EITHER THE DESIGN TRUCK OR THE DESIGN TANDEM.
9. SUPPLY EQUALIZATION SPRINGS TO COUNTER THE COMPRESSION FORCES FROM THE SEALING ELEMENTS AND MAINTAIN EQUAL EXPANSION PROPERTIES FOR EACH SEALING ELEMENT ACROSS THE JOINT.
10. SUPPLY CONTROL SPRINGS WHICH WORK LONGITUDINALLY TO MAINTAIN EQUAL DISTANT SPACING BETWEEN TRANSVERSE SEPARATION BEAMS.
11. SUPPLY SEPARATION BEAMS/TRANSVERSE DIVIDERS/ CENTER BEAMS TO LIMIT TOTAL HORIZONTAL MOVEMENT IN ANY INDIVIDUAL STRIP SEAL.
12. SUPPLY A STRIP SEAL TYPE SEAL CONNECTED TO MATCHING RETAINERS CONNECTED TO THE JOINT ARMOR AND THE SEPARATION BEAMS. DO NOT EXCEED 3.15 INCHES OF TOTAL HORIZONTAL MOVEMENT IN ANY INDIVIDUAL STRIP SEAL.
13. SUPPLY REMOVABLE AND REPLACEABLE NEOPRENE SEALS, SUPPORT BAR BEARINGS AND EQUALIZATION SPRINGS.
14. SET SEALS AND RETAINERS 1/8" LOWER THAN THE ROADWAY SURFACE.
15. DESIGN AND FABRICATE THE MODULAR JOINT AS A CONTINUOUS FULL LENGTH MEMBER WITHOUT FIELD SPLICES.

C. MATERIALS:
1. SUPPLY STRUCTURAL STEEL MEETING ASTM A709 GRADE 50. SUPPLY SEPARATION BEAMS/TRANSVERSE DIVIDERS/CENTER BEAMS, EDGE BEAMS AND JOINT ARMOR MEETING CHARPY V NOTCH IMPACT REQUIREMENTS PER ASTM A709 TABLE S1.2 ZONE 2 TEMPERATURE RANGE. SUPPLY TUBE SECTIONS MEETING ASTM A501 OR A500 GRADE B.
2. SUPPLY ASTM A240, TYPE 304 STAINLESS STEEL, 13 GAGE MINIMUM THICKNESSES WITH NO. 8 FINISH FOR SLIDING SURFACES IN CONTACT WITH PTFE.
3. SUPPLY TESTING AND REPORTS BY THE MANUFACTURER OR AN INDEPENDENT TESTING LABORATORY FOR ALL ELASTOMERIC, PTFE URETHANE AND PREFORMED FABRIC MATERIALS USED IN ALL BEARINGS AND SPRINGS. THE SUBMISSION OF MATERIAL CERTIFICATION AND TESTING DATA SHALL BE PER 514.08. THESE MATERIALS SHALL BE TESTED ACCORDING TO THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 402 APPENDIX A "A GUIDELINE FOR DURABILITY (NCHRP) REPORT 402 APPENDIX A "A GUIDELINE FOR DURABILITY TESTING OF SPRINGS AND BEARINGS FOR MBEJ."
4. SUPPLY STRIP SEALS CONFORMING TO ASTM D5973. SUBMIT CERTIFIED TEST DATA PER 513.08 FORM THE MANUFACTURER OR AN ACCREDITED LABORATORY. D5973 SECTION 8, LOT SIZE IS ONE SAMPLE PER JOINT. A SAMPLE IS A PIECE 4 FEET LONG WITH ALL MANUFACTURES' MARKINGS. THE SEAL AND RETAINER ARE AN INTEGRAL SYSTEM SUPPLIED BY ONE MANUFACTURER.
5. SEAL RETAINERS: EXTRUDE, HOT ROLL OR MACHINE, STEEL RETAINERS INTO A SOLID SHAPE. RETAINERS MANUFACTURED FROM BENT PLATE OR BUILT UP PIECES ARE NOT ACCEPTABLE. THE INTERNAL DIMENSION OF THE RETAINER SHALL BE SPECIFIED BY THE MANUFACTURER TO ACHIEVE POSITIVE SEAL ANCHORAGE.
6. SEPARATION BEAMS/TRANSVERSE DIVIDERS/CENTER BEAMS SHALL BE A SOLID, NON WELDED MACHINED OR EXTRUDED STEEL SECTION.
7. LUBRICANT - ADHESIVE, ONE PART MOISTURE CURING POLYURETHANE COMPOUND MEETING THE REQUIREMENTS OF ASTM D4070 AND AS SPECIFIED BY THE SEAL MANUFACTURER.
8. HARDWARE SHALL BE ASTM AS325 TYPE 1, GALVANIZED, OR A449 GALVANIZED.

D. FABRICATION:
1. THE MODULAR JOINTS SHALL BE FABRICATED ACCORDING TO CMS 513.
2. SHOP ASSEMBLE THE MODULAR JOINT WITH ALL COMPONENTS EXCEPT, NEOPRENE SEALS, PER 513.24 EXCEPT THAT FULL ASSEMBLY IS REQUIRED WITH PHASED CONSTRUCTION.
3. JOINTS IN STRIP SEALS: NO JOINTS ARE ALLOWED.
4. JOINTS IN RETAINERS: WELDS ARE WATER TIGHT, PARTIAL PENETRATION WELDS AROUND THE OUTER PERIPHERY OF THE ABUTTING SURFACES. MAKE SPLICES ONLY IN COMPRESSION ZONES OF THE JOINT ARMOR. GRIND FLUSH ALL WELDS IN CONTACT WITH THE SEAL AND JOINT ARMOR. DO NOT USE SHORT PIECES OF RETAINERS LESS THAN 6'-0" LONG, UNLESS REQUIRED. AT CURBS OR SIDEWALKS. DO NOT PROVIDE ADDITIONAL SPLICES IN RETAINERS AT CURB OR SIDEWALK SECTIONS OTHER THAN REQUIRED FOR GEOMETRY.
5. SHOP OR FIELD WELDS OR CENTER BEAMS AND JOINT ARMOR, SHALL BE COMPLETE PENETRATION WELDS, GROUND TO PROVIDE SMOOTH TRANSITIONS AND BE 100% ULTRASONICALLY TESTED PER AASHTO/AWS BRIDGE WELDING CODE, WITH TENSION ACCEPTANCE CRITERIA, WITNESSED BY THE DEPARTMENT.
6. CODE, WITH TENSION ACCEPTANCE CRITERIA, WITNESSED BY THE DEPARTMENT. SUPPORT BAR CONNECTIONS SHALL BE COMPLETE PENETRATION WELDS GROUND TO PROVIDE SMOOTH TRANSITIONS AND BE 100% ULTRASONICALLY TESTED PER AASHTO/AWS BRIDGE WELDING CODE, WITH TENSION ACCEPTANCE CRITERIA, WITNESSED BY THE DEPARTMENT.
7. TEMPORARY SUPPORTS: FABRICATOR DESIGNED AND INSTALLED SUPPORTS ARE REQUIRED TO SUPPORT SHIPPING, ERECTION AND CONSTRUCTION FORCES WITHOUT DAMAGE TO THE STEEL ARMOR OR COATINGS. THESE SUPPORTS SHALL BE ADJUSTABLE FOR FIELD TEMPERATURE SETTING.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
DRH	RJS	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

GENERAL NOTES (2 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

ITEM 516 SPECIAL: MODULAR EXPANSION JOINT (CONTINUED)

E. COATING:

1. GALVANIZE OR METALIZE ALL STEEL SURFACES AND COMPONENTS, EXCEPT AT STAINLESS STEEL AND PTFE SLIDING SURFACES. THESE COATING MAY BE MIXED ON ONE ASSEMBLY, IF ALL SIMILAR COMPONENTS OF THE ASSEMBLY HAVE THE SAME COATING TYPE.

2. PROVIDE A GALVANIZED COATING PER ASTM A123, WITH A MINIMUM THICKNESS OF 4 MILS. CLEAN EXCESSIVE GALVANIZING AS NECESSARY TO ACHIEVE MECHANICAL MOVEMENT AND SEAL INSTALLATION.

3. PROVIDE A METALIZED COATING PER SOCIETY FOR PROTECTIVE COATINGS (SSPC) SPECIFICATION SSPC-CS23.00 (MARCH 17, 2003) FOR THERMAL SPRAY METALLIC COATINGS. THE COATING SHALL BE A MINIMUM OF 8 MILS THICK. THE METALIZING WIRE SHALL BE 100% ZINC. AREAS OF STRUCTURAL STEEL THAT ARE IN CONTACT WITH CAST-IN-PLACE CONCRETE SHALL HAVE AN ADDITIONAL COATING. THE COATING SHALL BE THE EPOXY INTERMEDIATE COAT SPECIFIED IN CMS 514. THE COATING THICKNESS WILL COVER ALL PEAKS, VALLEYS AND SURFACE ROUGHNESS ATTRIBUTED TO METALIZING.

4. COATING REPAIRS: DAMAGED COATINGS SHALL BE REPAIRED BY ASTM A780, ANNEX "A1. REPAIR USING ZINC BASED ALLOYS". THE PROCEDURE SHALL BE AS FOLLOWS: REMOVE SURFACE CONTAMINATES, PREHEAT TO 600°F, AND APPLY ZINC COATING BY RUBBING WITH A PURE ZINC STICK OR SPRINKLING ZINC POWDER ON THE PREHEATED SURFACE, TO ACHIEVE A MINIMUM COATING. THICKNESS OF 6 MILS.

5. THE METALIZED OR GALVANIZED COATINGS SHOULD NOT BE FIELD PAINTED. DAMAGED AREAS SHALL BE METALIZED AS PER 516.03 AND SUPPLEMENTAL SPECIFICATION 845.

6. PRIOR TO SHIPPING, RETAINER GROOVES SHALL BE PROTECTED FROM CONSTRUCTION DEBRIS BY THE INSTALLATION OF BACKER RODS OR OTHER EFFECTIVE MASKING TECHNIQUES.

F. INSTALLATION:

1. A JOINT MANUFACTURER'S TECHNICAL REPRESENTATIVE TO PHYSICALLY OVERSEE THE FABRICATION, INSTALLATION, ADJUSTMENT AND TESTING DURING ALL OPERATIONS. WHERE SPECIAL INSTRUCTIONS ARE NOT CONTAINED HEREIN OR ELSEWHERE IN THESE NOTES, DIRECTION FOR THE INSTALLATION SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THE TECHNICAL REPRESENTATIVE.

2. COORDINATE AND SCHEDULE THE TECHNICAL REPRESENTATIVE.

3. INSTALL THE SUPERSTRUCTURE SUPPORTING UNITS BEFORE INSTALLING THE MODULAR JOINT. POSITION THE JOINT TO MATCH ROADWAY GEOMETRY SUPERSTRUCTURE CONNECTIONS AND TEMPERATURE OPENING. TAKE CARE TO MAINTAIN EXACT ALIGNMENT OF ADJACENT ENDS OF THE ARMOR AND SEPARATION BEAMS/TRANSVERSE DIVIDERS/CENTER BEAMS FOR FIELD WELDED UNITS. PROVIDE TEMPORARY SUPPORTS AS DIRECTED BY THE MANUFACTURER TO MAINTAIN THE PROPER POSITIONING. FOR PHASED CONSTRUCTION, THE CONTRACTOR'S METHODS FOR INSTALLATION AND TEMPORARY SUPPORTS SHALL ACHIEVE SEPARATION OF THE PHASES AND UNRESTRICTED TEMPERATURE MOVEMENT.

4. PERFORM CONCRETE PLACEMENT USING VIBRATION AND HAND WORK AS NECESSARY TO ACHIEVE CONSOLIDATION AND ELIMINATE AIR VOIDS. THE MAXIMUM AGGREGATE SIZE SHALL BE #8 FOR CONCRETE BLOCKOUT AREAS.

5. PLACE THE DECK CONCRETE FIRST. CHECK THE ABUTMENT OR ADJACENT SPAN SIDE OF THE MODULAR JOINT FOR ALIGNMENT AND TEMPERATURE ADJUSTMENT. THE TEMPERATURE SHALL BE MEASURED AT THE UNDERSIDE OF THE CONCRETE DECK AT EACH END AND MID-SPAN TO ACHIEVE THE AVERAGE SUPERSTRUCTURE TEMPERATURE. PLACE THE BACKWALL OR ADJACENT SPAN CONCRETE SECOND. THE MANUFACTURER'S REPRESENTATIVE SHALL CHECK THAT TEMPERATURE MOVEMENT HAS NOT CAUSED ANY DAMAGE TO THE BOND BETWEEN THE JOINT AND THE CONCRETE.

6. EXAMINE SEAL RETAINERS FOR SOIL OR DEFECTS THAT CAN DAMAGE THE SEAL. REPAIR ANY DEFECTS AS DIRECTED BY THE MANUFACTURER'S REPRESENTATIVE.

7. SOLVENT CLEAN THE NEOPRENE SEAL ELEMENTS AND THE RETAINER GROOVES TO REMOVE OIL, GREASE OR OTHER SOIL IMMEDIATELY PRIOR TO INSTALLING THE SEALS. INSTALL SEALS USING PROCEDURES AND ADHESIVE SPECIFIED BY THE JOINT MANUFACTURER. KEEP THE BONDING SURFACES CLEAN, DRY AND WARMER THAN 45°F.

8. TEST THE INSTALLED MODULAR JOINT FOR LEAKS. FLOOD THE TOTAL EXPANSION JOINT LENGTH WITH WATER FOR A PERIOD OF NOT LESS THAN ONE HOUR. COVER THE ENTIRE JOINT SYSTEM BY EITHER PONDING OR FLOWING WATER. LOCATE ANY POINTS OR LEAKAGE AND TAKE ANY AND ALL MEASURES NECESSARY TO STOP THE LEAKAGE. PERFORM THIS WORK AT THE CONTRACTOR'S EXPENSE. PERFORM A SECOND WATER TEST AFTER ALL REPAIRS HAVE BEEN MADE.

ITEM 524 DRILLED SHAFTS, AS PER PLAN

DRILLED SHAFTS:
THE MAXIMUM FACTORED LOAD TO BE SUPPORTED BY EACH DRILLED SHAFT IS 1367 KIPS AT PIERS 1 - 6 AND 1407 KIPS AT PIER 7. THIS LOAD IS RESISTED BY SIDE RESISTANCE WITHIN A PORTION OF THE BEDROCK SOCKET AND ALSO BY TIP RESISTANCE. THE FACTORED UNIT RESISTANCE DEVELOPED BY SIDE RESISTANCE IS 3.0 KSF, ASSUMED TO ACT ALONG THE BOTTOM 6 FEET OF THE BEDROCK SOCKET FOR THE PIERS. THE FACTORED UNIT RESISTANCE PROVIDED BY THE DRILLED SHAFT TIP IS 45.8 KSF.

FOR HOLE EXCAVATION SEE CMS 524.04, CASE D PERMANENT CASING CONSTRUCTION METHOD SHALL BE USED TO CONSTRUCT PIERS 1 THRU 7.

SUPPLY ALL REQUIRED EQUIPMENT AND PERSONNEL NECESSARY TO PERFORM VIDEO INSPECTION OF THE DRILLED SHAFT EXCAVATION, INCLUDING THE INSPECTIONS PERFORMED UNDERWATER OR WITHIN SLURRY. PROVIDE EQUIPMENT CAPABLE OF THE FOLLOWING: MEASURING THE DEPTH OF LOOSE OR DISTURBED MATERIAL AT THE BOTTOM OF THE SHAFT, AND RECORDING COLOR VIDEO IMAGES OF THE INSPECTION TO A DVD OR VIDEOTAPE. FURNISH ALL NECESSARY SUPPLIES, FUEL AND ELECTRIC SERVICE TO OPERATE THE EQUIPMENT. PERFORM THE VIDEO INSPECTION IMMEDIATELY BEFORE POURING THE CONCRETE, AND IN THE PRESENCE OF THE ENGINEER OR INSPECTOR. SUBMIT RECORDINGS OF ALL VIDEO INSPECTIONS TO THE ENGINEER AFTER COMPLETING ALL VIDEO INSPECTIONS, OR WHEN REQUESTED BY THE ENGINEER.

PAYMENT IS FULL COMPENSATION FOR SUPPLYING THE REQUIRED EQUIPMENT AND PERSONNEL, AND FOR PERFORMING THE VIDEO INSPECTION OF THE DRILLED SHAFT EXCAVATIONS. THE DEPARTMENT WILL PAY FOR ACCEPTED QUANTITIES AT THE LUMP SUM CONTRACT PRICE FOR ITEM 524 DRILLED SHAFT, 66" DIAMETER, INTO BEDROCK, AS PER PLAN

ITEM 524 DRILLED SHAFTS, MISC: DRILLED SHAFT OSTERBERG LOAD TEST AS PER PLAN

1. THE LOAD TEST ON THE TEST SHAFT SHALL BE PERFORMED PRIOR TO BEGINNING ANY WORK ON THE PRODUCTION SHAFTS.

2. THE CONTRACTOR SHALL FURNISH, INSTALL, INSTRUMENT, AND LOAD TEST THE TEST PILE IN ACCORDANCE WITH THE PROJECT CONTRACT PLANS, PER ITEM 524 DRILLED SHAFTS, MISC: DRILLED SHAFT OSTERBERG LOAD TEST, AS PER PLAN, THE PROJECT SPECIFICATIONS, AND THE PROJECT SPECIFICATIONS FOR OSTERBERG CELL LOAD TESTING OF DEEP FOUNDATIONS.

3. SOME DETAILS OF OSTERBERG (O-CELL) CONSTRUCTION ARE SUBJECT TO CHANGE BY LOADTEST, INC WITH APPROVAL OF THE GEOTECHNICAL ENGINEER.

4. THE SIZE AND OR LOCATION OF ALL PLATE CUTS ARE TO BE MADE AT THE DIRECTION OF LOADTEST, INC. ADDITIONAL CUTOUTS MAY BE REQUIRED. DETAILS AND DIMENSIONS ARE FOR GENERAL INFORMATION ONLY. ACTUAL DIMENSIONS ARE TO BE DETERMINED BT LOADTEST, INC. ADDITIONAL PLATES MAY BE REQUIRED AT THE DIRECTION OF LOADTEST, INC.

5. STRAIN GAGES, TELLTALES, AND LVWDTs ARE REQUIRED TO MONITOR THE PERFORMANCE OF THE TEST SHAFT. STRAIN GAGE LOCATIONS MAY BE CHANGED AFTER EXCAVATION OF THE TEST SHAFT WITH THE JOINT APPROVAL OF THE GEOTECHNICAL ENGINEER AND LOADTEST, INC.

6. PUMP CONCRETE IN A TREMIE PIPE NO SMALLER THAN 8.00 INCHES DIAMETER THAT ALLOWS THE TREMIE PIPE TO PASS THRU THE O-CELL BEARING PLATES TO THE BOTTOM OF THE TEST SHAFT.

7. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING, DETAILING, AND CONSTRUCTING WORK PLATFORMS TO ALLOW ACCESS TO THE TOP OF THE TEST PIER AND TO SUPPORT SURVEY INSTRUMENTS. COORDINATE ALL WORK WITH LOADTEST, INC. ON THE DESIGN AND DETAILING OF THE WORK PLATFORM AND SURVEY PLATFORM.

8. THE TESTING SHALL BE PERFORMED AS OUTLINED IN THE PROJECT SPECIFICATIONS FOR OSTERBERG CELL LOAD TESTING OF DEEP FOUNDATIONS, AS DESCRIBED ON THE CONTRACT PLANS, AND AS OUTLINED IN SECTION 17.2.2.2 OF PUBLICATION NO. FHWA-NHI-10-016 (FHWA GEC 010, MAY 2010).

9. THE TEST SHAFT WILL BE CONSIDERED TO HAVE PERFORMED SATISFACTORILY IF THE TOTAL (NOMINAL) END BEARING AND SIDE RESISTANCE OF THE DRILLED SHAFT IS EQUAL TO OR GREATER THAN 2,090 KIPS. THE CONTRACTOR SHALL PROVIDE THE RESULTS OF THE TESTS TO THE DESIGN ENGINEER.

10. UPON COMPLETION OF THE TEST SHAFT AND UPON ACCEPTANCE OF THE TEST SHAFT BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE THE TEST SHAFT TO THE LEVEL OF THE BOTTOM OF CASING OR BOTTOM OF ROCK SOCKET UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ABBREVIATIONS:

ABUT.	- ABUTMENT
APPR.	- APPROACH
APPROX.	- APPROXIMATELY
BRG	- BEARING
BOT.	- BOTTOM
BTWN.	- BETWEEN
C/C	- CENTER TO CENTER
CJ	- CONSTRUCTION JOINT
CLR.	- CLEAR
CNTRL.	- CONTROL
CONST.	- CONSTRUCTION
DIA.	- DIAMETER
DWG.	- DRAWING
EF	- EACH FACE
EL.	- ELEVATION
EQ.	- EQUAL
EXP.	- EXPANSION
FA	- FORWARD ABUTMENT
FF	- FAR FACE
FWD.	- FORWARD
INV.	- INVERT
JT.	- JOINT(S)
LT.	- LEFT
LEN.	- LENGTH
MAX.	- MAXIMUM
MIN.	- MINIMUM
NF	- NEAR FACE
NO.	- NUMBER
N.P.C.P.P.	- NON-PERFORATED CORRUGATED PLASTIC PIPE
O/O	- OUT TO OUT
P.C.P.P.	- PERFORATED CORRUGATED PLASTIC PIPE
P.E.J.F.	- PREFORMED EXPANSION JOINT FILLER
PG	- PROFILE GRADE
PROP.	- PROPOSED
RA	- REAR ABUTMENT
RT.	- RIGHT
SER	- SERIES
SHLDR.	- SHOULDER
SPA.	- SPACE OR SPACES
STA.	- STATION
STD.	- STANDARD
STR	- STRAIGHT
T	- TOP
TEMP.	- TEMPORARY
THK.	- THICK
T.O.S.	- TOP OF SLOPE
T/T	- TOE TO TOE
TYP.	- TYPICAL
U.N.O.	- UNLESS NOTED OTHERWISE
VAR.	- VARIES

MANNIK SMITH GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED DRH | DRAWN RJS | CHECKED SCT | REVIEWED TLR | DATE 04/2016 | REVISED | STRUCTURE FILE NUMBER TBD

GENERAL NOTES (3 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

ESTIMATED QUANTITIES

CALCULATED: RJS DATE: 5-13-15 CHECKED: DRH DATE: 5-15-15

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SHEET #
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING					
503	21301	LUMP		UNCLASSIFIED EXCAVATION, AS PER PLAN					4
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION					
507	00200	1630	FT	STEEL PILES HP12X53, FURNISHED	1630				
507	00250	1360	FT	STEEL PILES HP12X53, DRIVEN	1360				
509	10001	606696	POUND	EPOXY COATED REINFORCING STEEL, AS PER PLAN	39206	134602	432888		4
511	21523	1060	CU YD	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN			1060		4,5
511	33418	93	CU YD	CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE			93		
511	34450	152	CU YD	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			152		
511	41013	499	CU YD	CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS, AS PER PLAN		499			21
511	43512	409	CU YD	CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING	409				
511	51512	205	CU YD	CLASS QC2 CONCRETE WITH QC/QA, SIDEWALK			192	13	
512	10100	5528	SQ YD	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	243		5285		
512	33000	1	SQ YD	TYPE 2 WATERPROOFING			1		
513	10201	9389	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN			9389		5
515	15130	32	EACH	DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE WF72-49			32		
515	20001	72	EACH	INTERMEDIATE DIAPHRAGMS, AS PER PLAN			72		
516	12400	78	FT	MODULAR EXPANSION JOINT			78		5,6
516	13600	115	SQ FT	1" PREFORMED EXPANSION JOINT FILLER			115		
516	13800	126	SQ FT	1½" PREFORMED EXPANSION JOINT FILLER			126		
516	44100	52	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES (14"x22"x2.36") AND LOAD PLATE (15"x41"x2") (NEOPRENE)		52			
516	44100	4	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES (14"x22"x2.36") AND LOAD PLATE (15"x41"x2.1875") (NEOPRENE)	4				
516	44200	8	EACH	ELASTOMERIC BEARING WITH INTERNAL LAMINATES (14.5"x25"x3.39") AND LOAD PLATE (15.5"x41"x2") (NEOPRENE)	8				
517	75120	1008	FT	RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING)			1008		
518	12001	8	EACH	SCUPPERS INCLUDING SUPPORTS, AS PER PLAN			8		60
518	21200	189	CU YD	POROUS BACKFILL WITH FILTER FABRIC		189			
518	40000	137	FT	6" PERFORATED CORRUGATED PLASTIC PIPE		137			
518	40010	56	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS		56			
518	43300	25	FT	6" PIPE DOWNSPOUT, INCLUDING SPECIALS			25		
524	94935	231	FT	DRILLED SHAFTS, 66" DIAMETER, INTO BEDROCK, AS PER PLAN		231			6
524	94947	104	FT	DRILLED SHAFTS, 72" DIAMETER, ABOVE BEDROCK, AS PER PLAN		104			6
524	95100	1	EA	DRILLED SHAFTS, MISC: DRILLED SHAFT OSTERBERG LOAD TEST, AS PER PLAN				1	25
526	30001	265	SQ YD	REINFORCED CONCRETE APPROACH SLABS (T=17"), AS PER PLAN				265	
526	90010	81	FT	TYPE A INSTALLATION				81	
601	32210	615	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH AGGREGATE FILTER				615	
611	04600	784	FT	12" CONDUIT, TYPE C, 707.45			784		
846	00110	81	FT	POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM				81	

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED RJS | DRAWN RJS | REVIEWED TLR | DATE 04/2016
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ESTIMATED QUANTITIES
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

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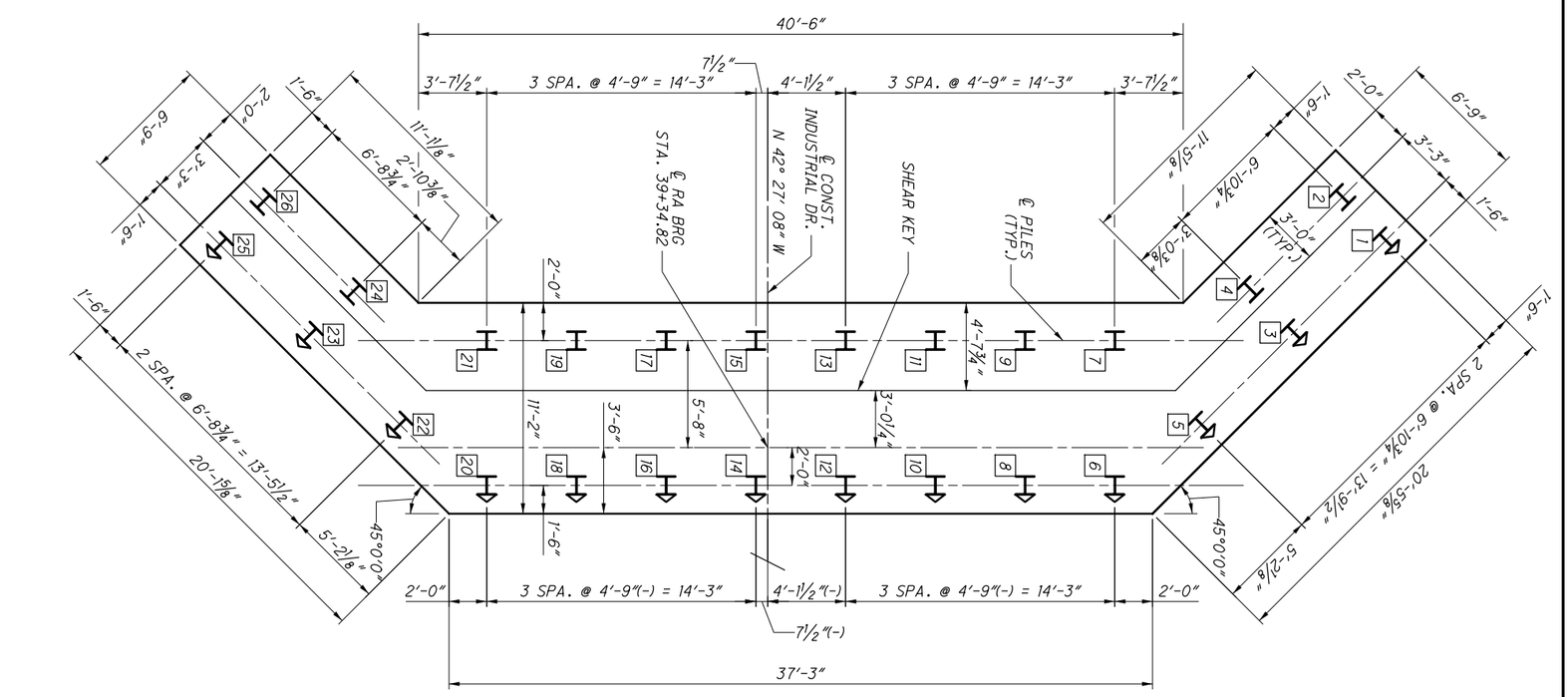
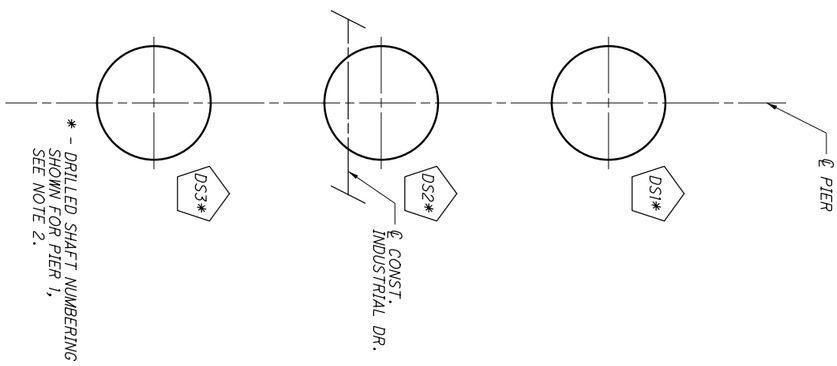


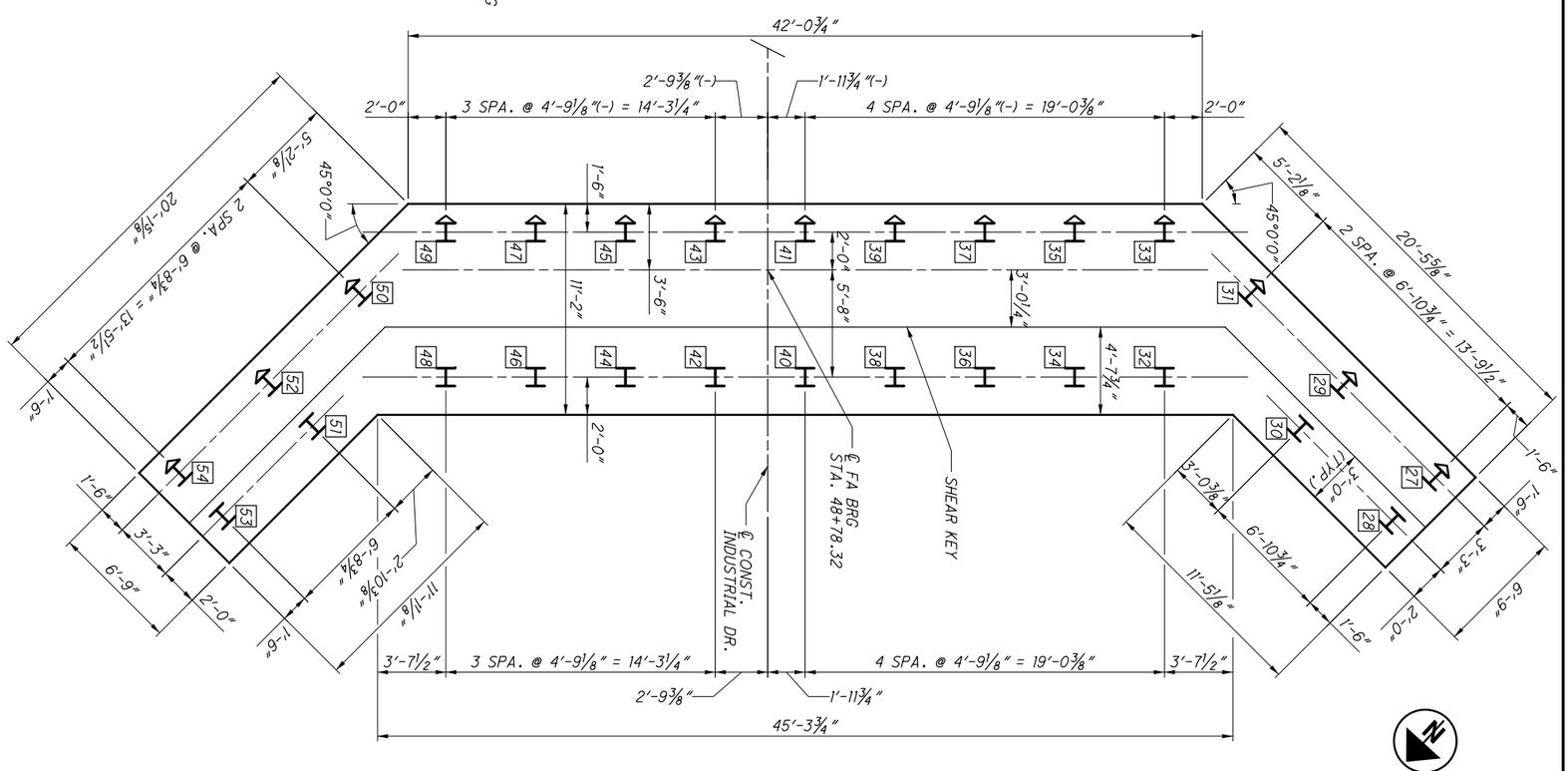
NOTES:

1. FOR PILE AND DRILLED SHAFT CAPACITY, SEE SHEETS 4 /65 AND 6 /65
2. FOR DRILLED SHAFT NUMBERING AND LOCATIONS, SEE SHEETS 9-10 /65

LEGEND:

- # - PILE NUMBER
- DS1* - DRILLED SHAFT NUMBER
- HP12x63 DRIVEN AT 3:1 BATTER IN DIRECTION SHOWN
- HP12x63 STRAIGHT

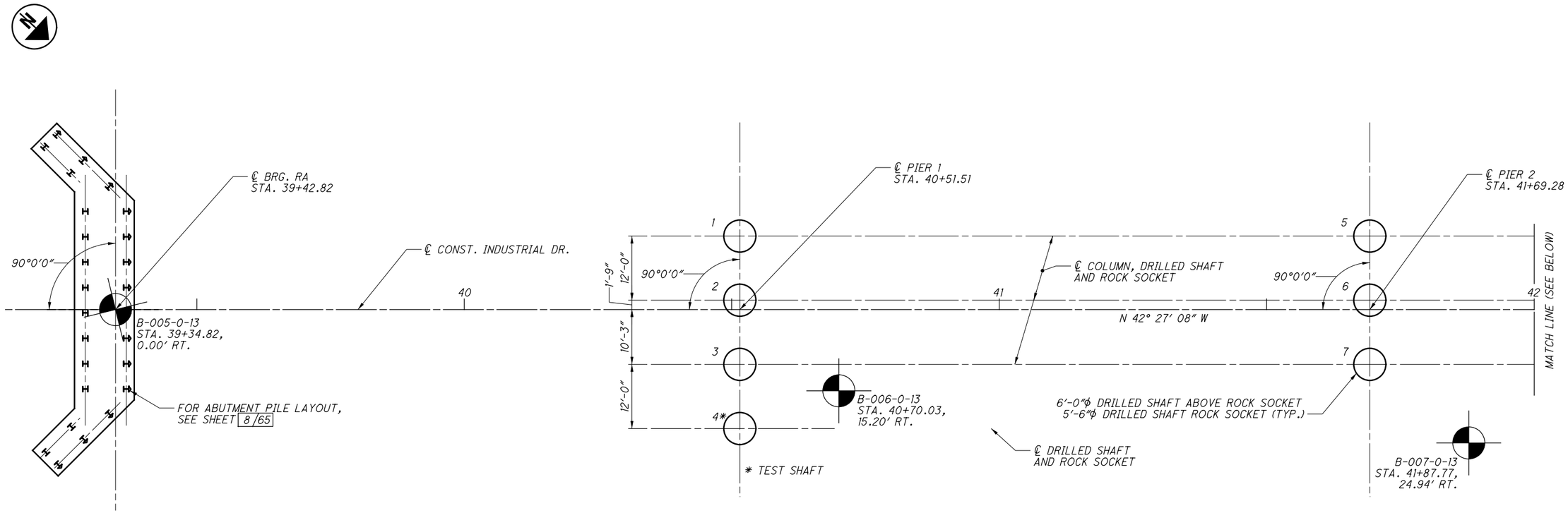




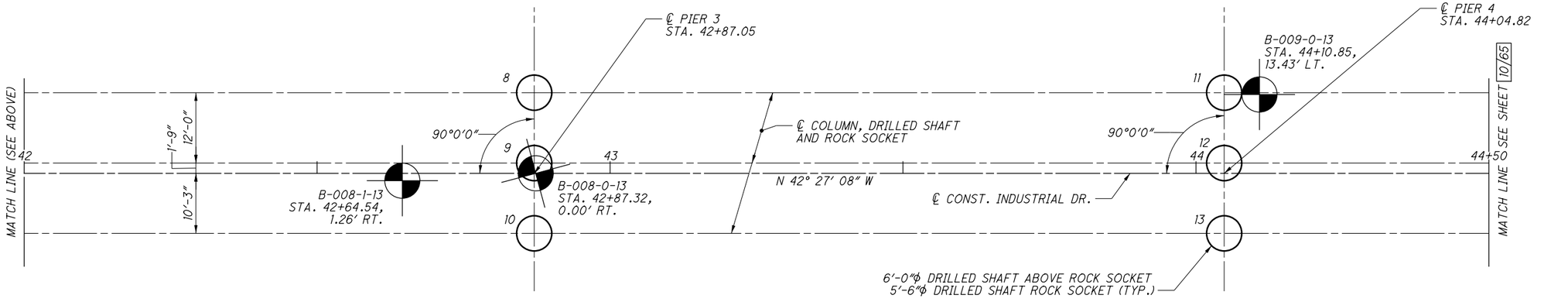
FOUNDATION PLAN
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

DESIGNED	DRAWN	REVIEWED	DATE
KRH	KRH	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537



PART FOUNDATION PLAN



PART FOUNDATION PLAN

LEGEND:

— DENOTES DRILLED SHAFT LOCATION AND NUMBER

B-010-0-13 — DENOTES SOIL BORING AND NUMBER

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
CWE	JEC	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMZ		TBD	

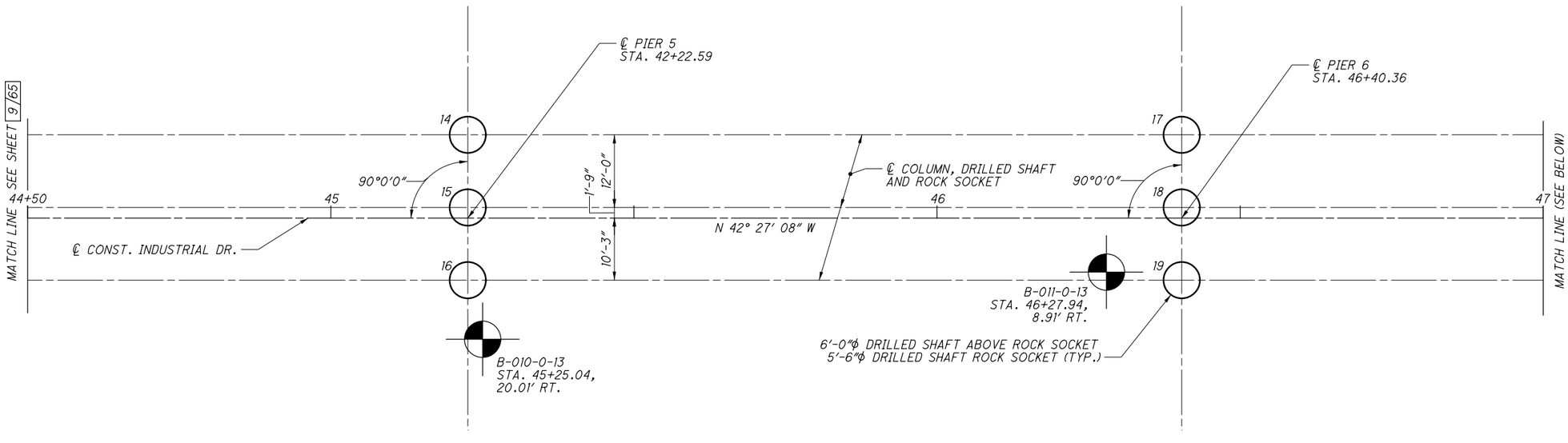
PIER FOUNDATION LAYOUT (1 OF 2)

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

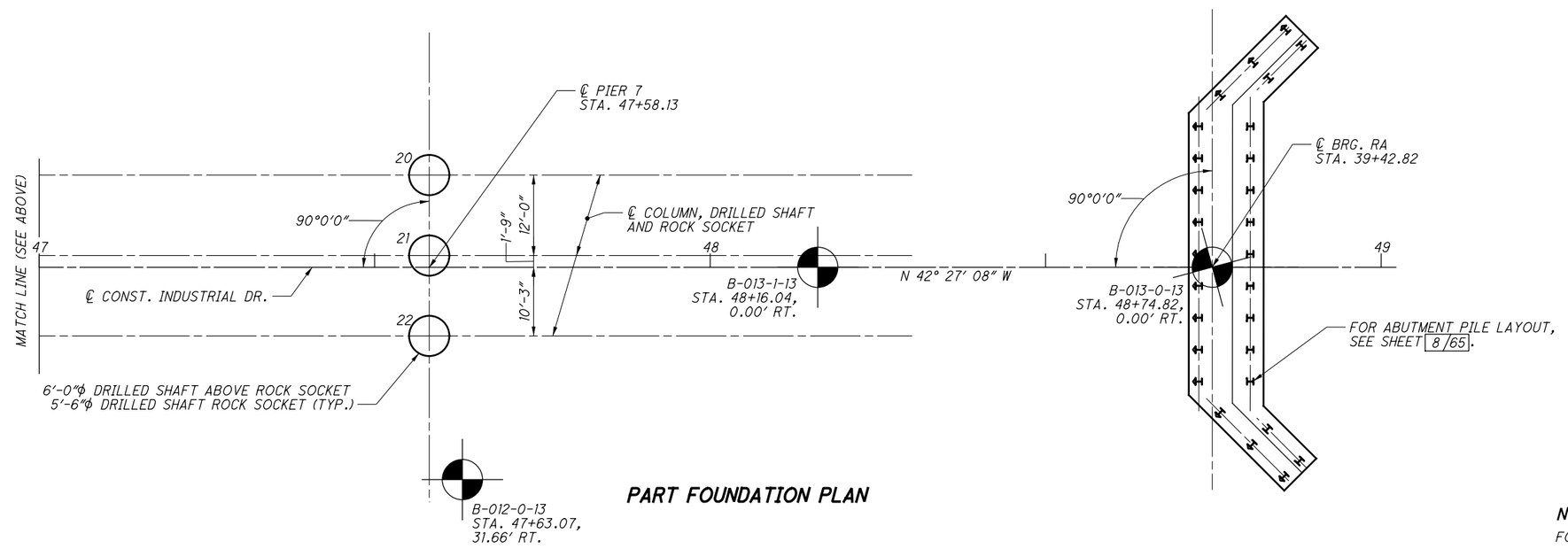
HEN-NEW BRIDGE
PID No. 22984

9 / 65

113 / 189



PART FOUNDATION PLAN



PART FOUNDATION PLAN

NOTES:

FOR LEGEND, SEE SHEET 9/65.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
CWE	JEC	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
CMZ		TBD	

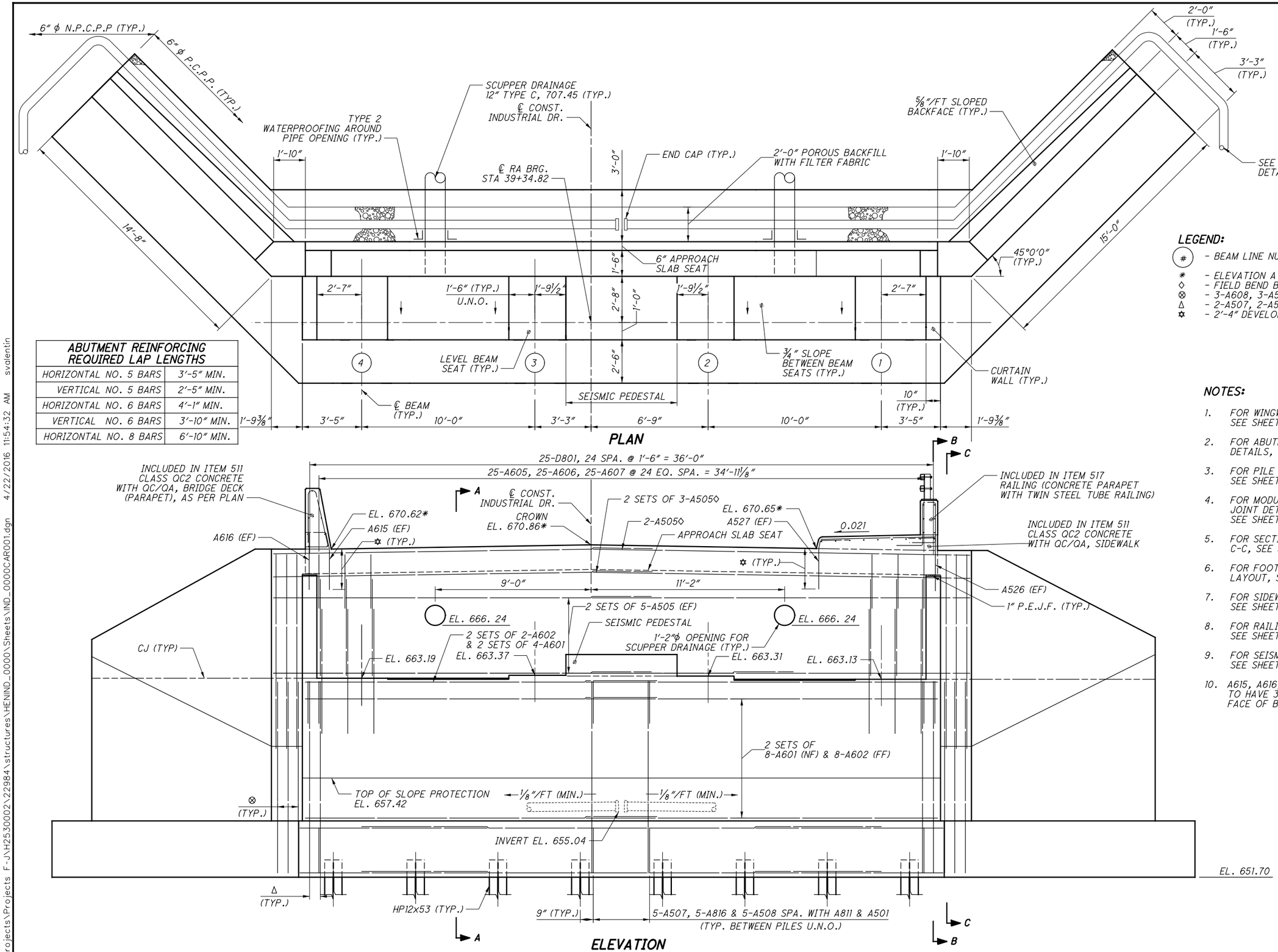
PIER FOUNDATION LAYOUT (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

10 / 65

114
189

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.



LEGEND:

(#) - BEAM LINE NUMBER
* - ELEVATION AT BRIDGE LIMITS
◊ - FIELD BEND BARS AS NECESSARY
⊗ - 3-A608, 3-A508, & 3-A816
Δ - 2-A507, 2-A508, & 2-A816
✡ - 2'-4" DEVELOP INTO BACKWALL

NOTES:

1. FOR WINGWALL DETAILS, SEE SHEET 14-15 /65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 36/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT DETAILS, SEE SHEETS 55-57/65
5. FOR SECTIONS A-A, B-B C-C, SEE SHEET 13/65
6. FOR FOOTING REINFORCING LAYOUT, SEE SHEET 12/65
7. FOR SIDEWALK DETAILS, SEE SHEET 54/65
8. FOR RAILING DETAILS, SEE SHEETS 50-53/65
9. FOR SEISMIC PEDESTAL, SEE SHEET 13/65
10. A615, A616, A526 & A527 TO HAVE 3" COVER FROM FACE OF BACKWALL.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
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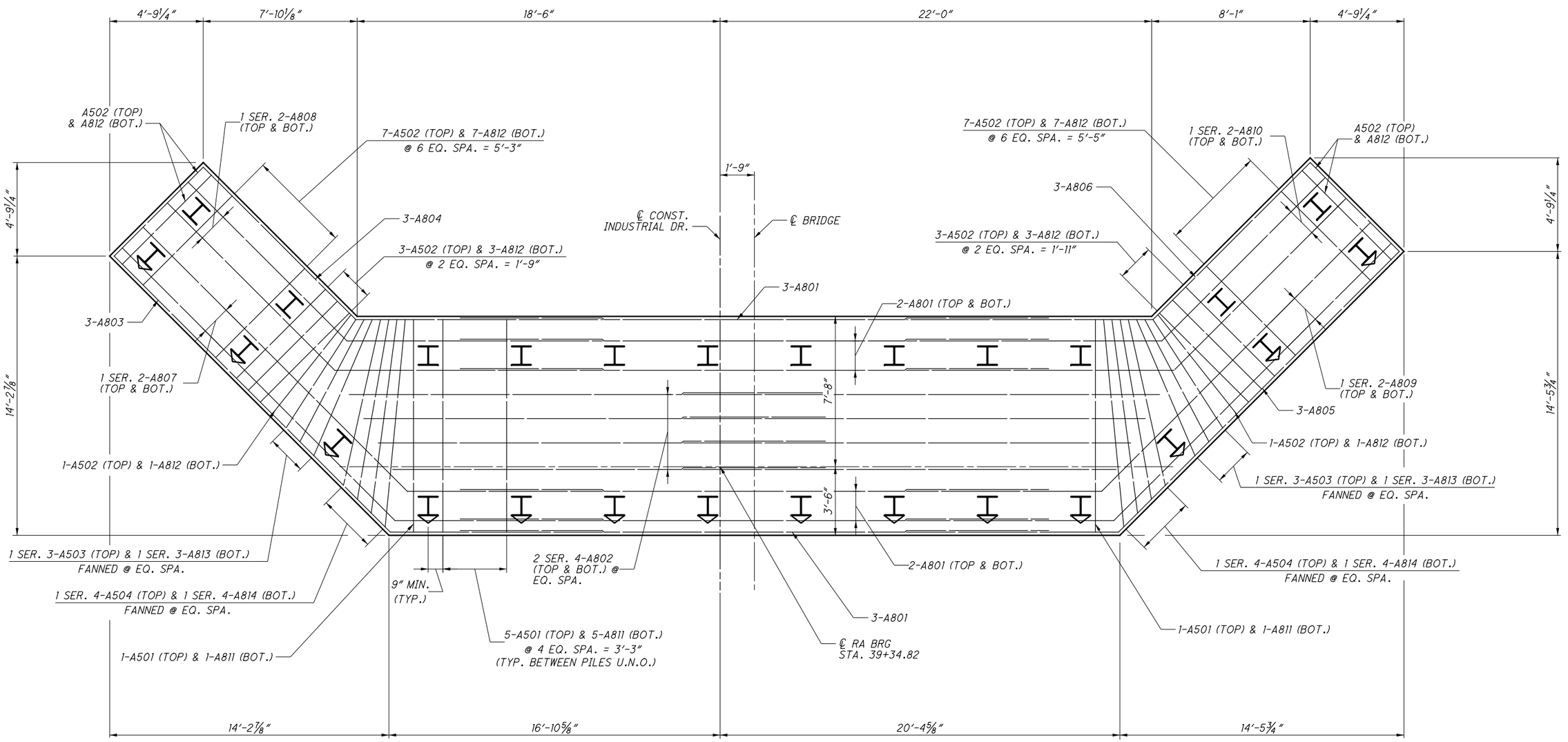
REAR ABUTMENT PLAN AND ELEVATION

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

11 / 65

115 / 189



NOTES:

1. FOR ABUTMENT PLAN AND ELEVATION, SEE SHEET 11/65
2. FOR PILE LAYOUT, SEE SHEET 8/65

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

REAR ABUTMENT FOOTING REINFORCING PLAN

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
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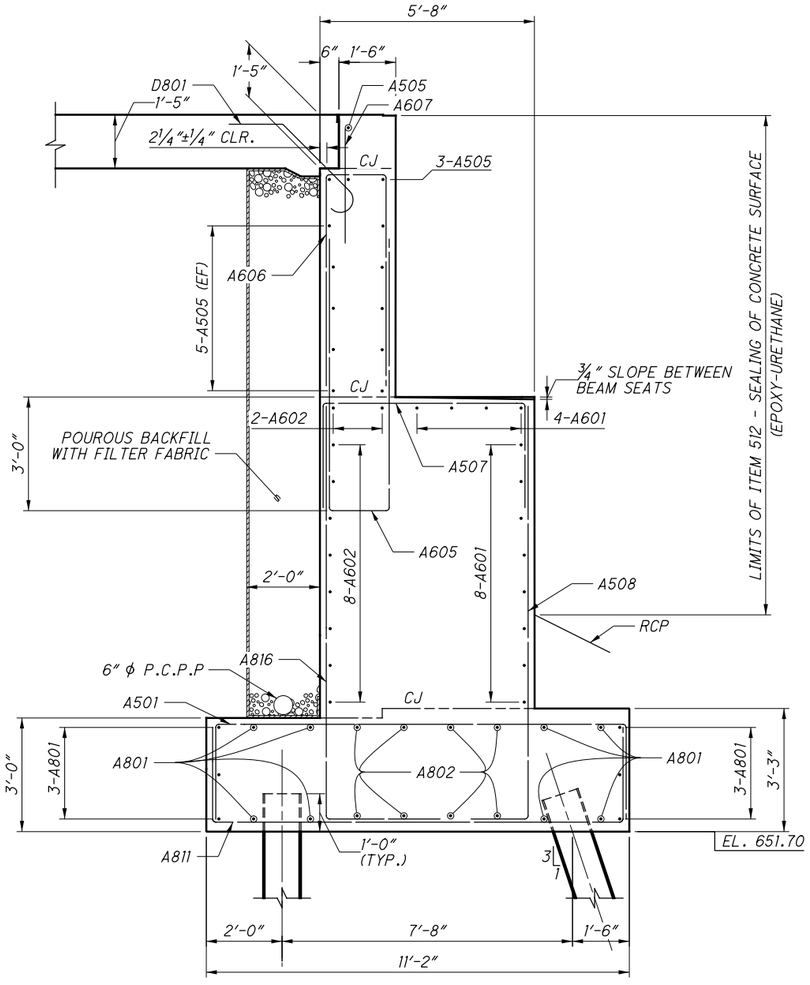
REAR ABUTMENT FOOTING REINFORCING
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

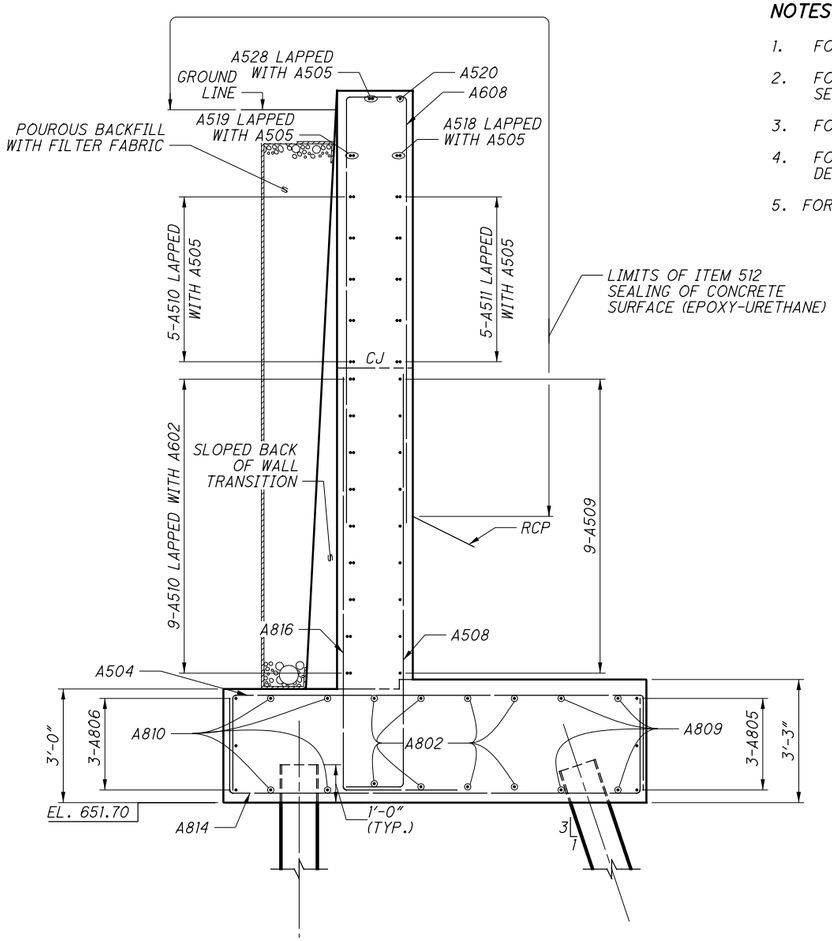
12/65

116/189



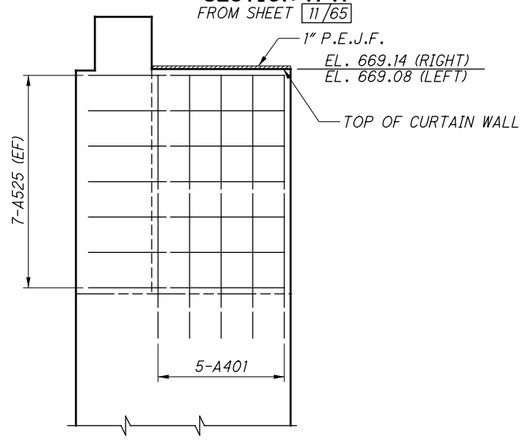
SECTION A-A

FROM SHEET 11/65



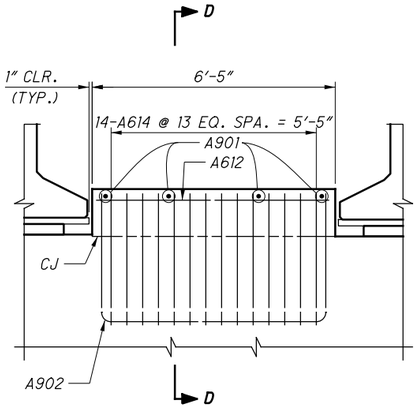
SECTION C-C

FROM SHEET 11/65

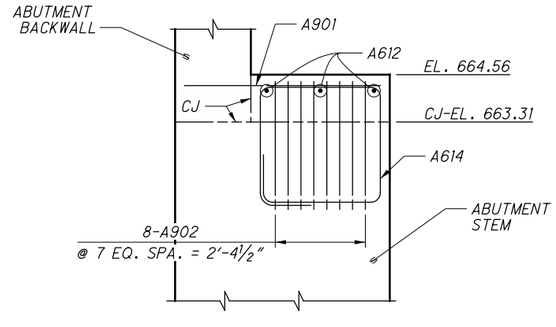


SECTION B-B

FROM SHEET 11/64



SEISMIC PEDISTAL



SECTION D-D

NOTES:

1. FOR WINGWALL DETAILS, SEE SHEET 14-15/65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 36/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT (NOT SHOWN) DETAILS, SEE SHEETS 55-57/65
5. FOR RAILING DETAILS, SEE SHEETS 50-53/65

ABUTMENT REINFORCING REQUIRED LAP LENGTHS

HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

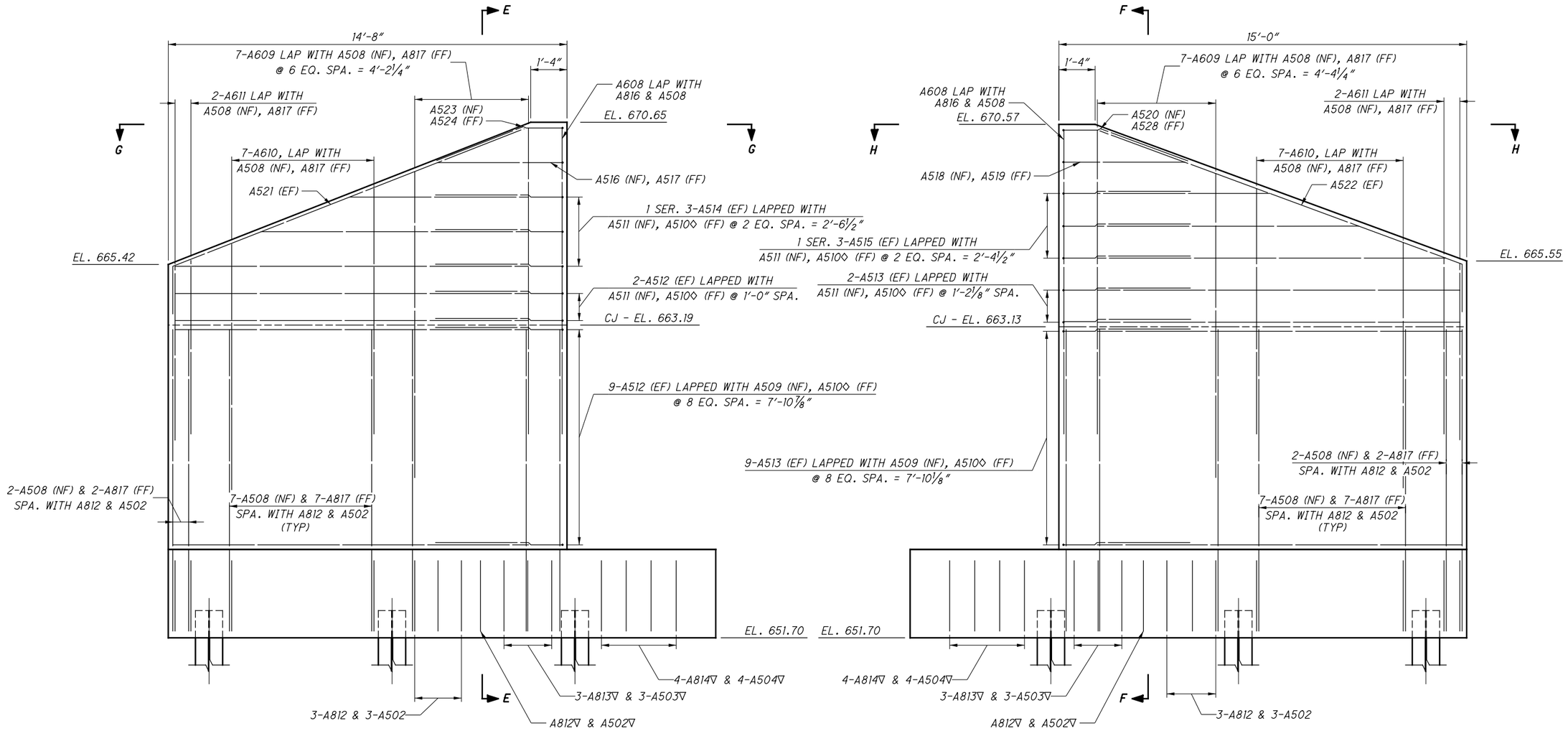
Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | CHECKED SCT | REVIEWED TLR | DATE 04/2016 | REVISED | STRUCTURE FILE NUMBER TBD

REAR ABUTMENT DETAILS

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

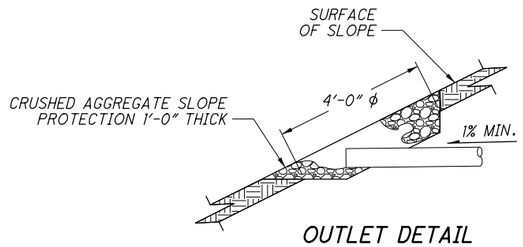


REAR RIGHT WINGWALL

REAR LEFT WINGWALL

▽ - INDICATES FANNED BAR
SEE SHEET 12/65 FOR DETAILS

◇- INDICATES POSSIBLE NECESSITY
FOR FIELD BEND TO MATCH
BATTERED BACK FACE



OUTLET DETAIL

OUTLET PAID FOR WITH ITEM 518:
6" NON-PERFORATED COURRUGATED PLASTIC PIPE

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

NOTES:

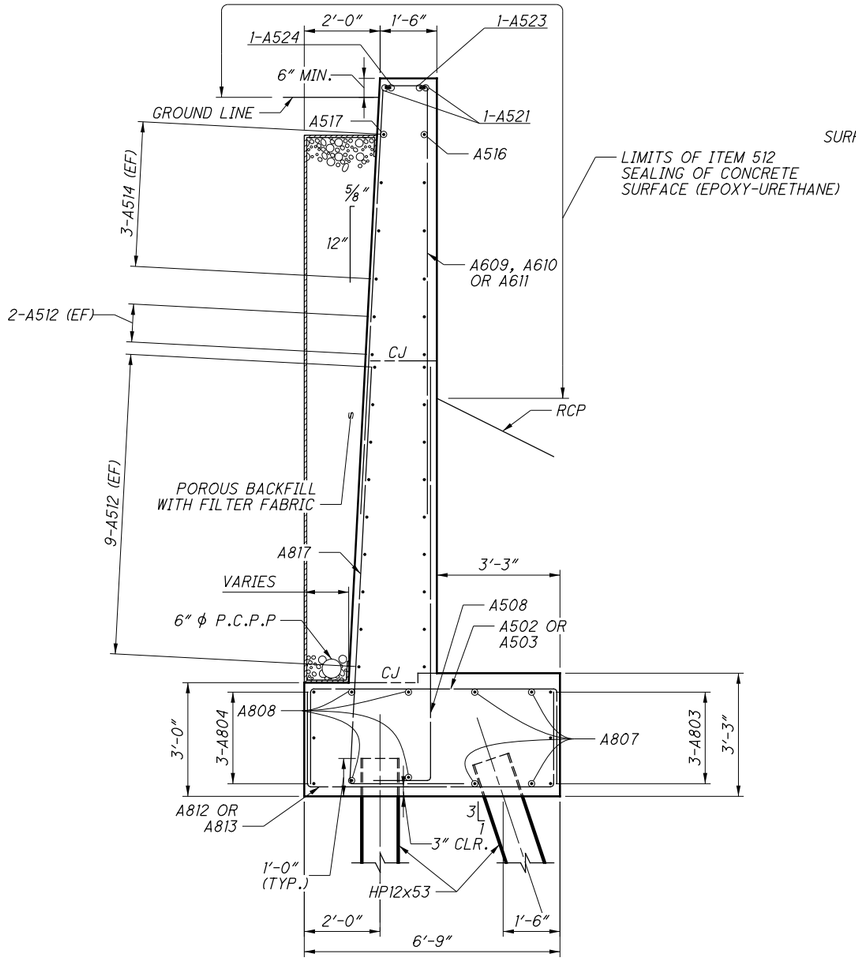
1. FOR ABUTMENT DETAILS, SEE SHEET 11/65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 36/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT DETAILS, SEE SHEETS 55-57/65
5. FOR SECTIONS E-E & F-F AND VIEWS G-G & H-H, SEE SHEET 15/65

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
KRH	KRH	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

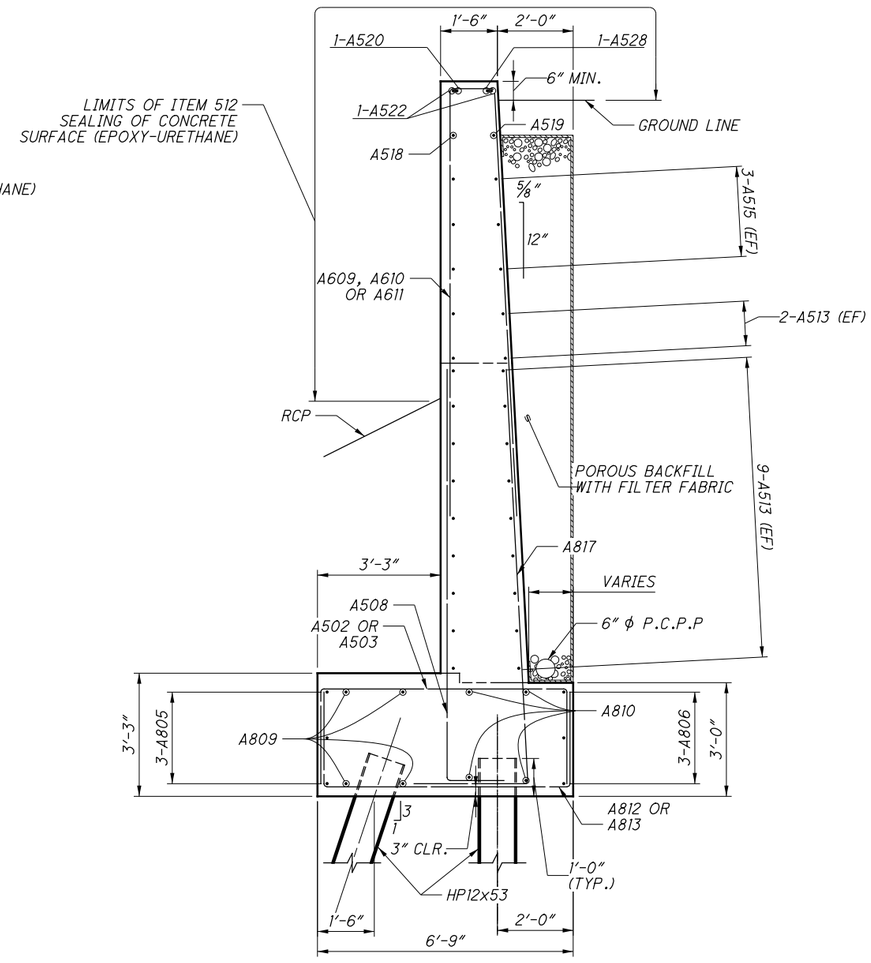
REAR WINGWALL DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



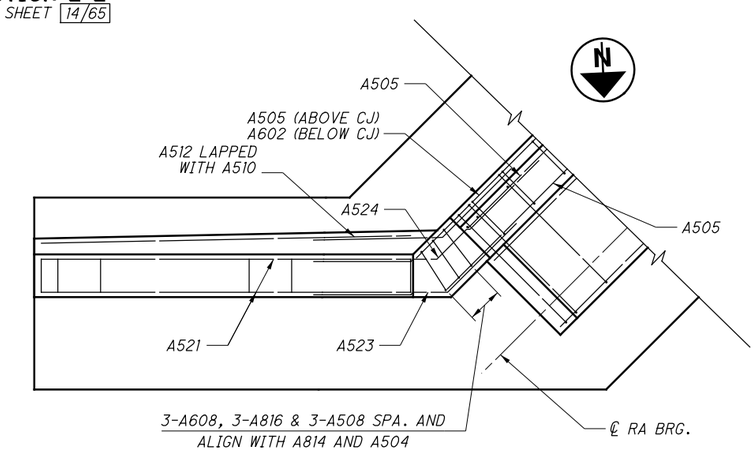
SECTION E-E

FROM SHEET 14/65



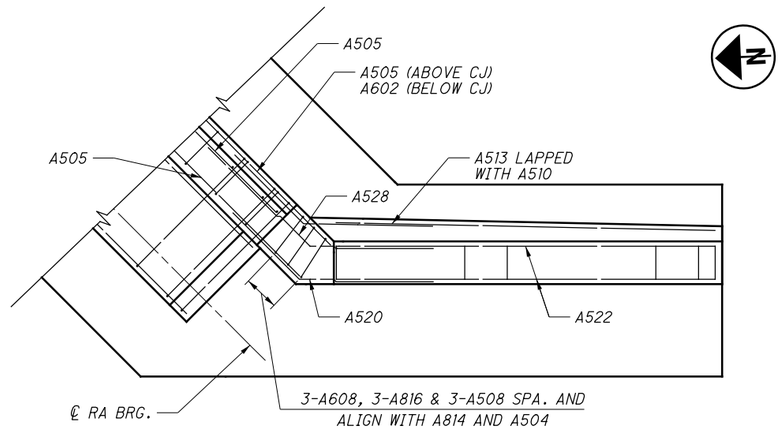
SECTION F-F

FROM SHEET 14/65



VIEW G-G

FROM SHEET 14/65



VIEW H-H

FROM SHEET 14/65

NOTES:

1. FOR ABUTMENT DETAILS, SEE SHEET 11/65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 39/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT DETAILS, SEE SHEETS 55-57/65
5. FOR RAILING DETAILS, SEE SHEETS 50-53/65
6. FOR SIDEWALK DETAILS, SEE SHEET 54/65

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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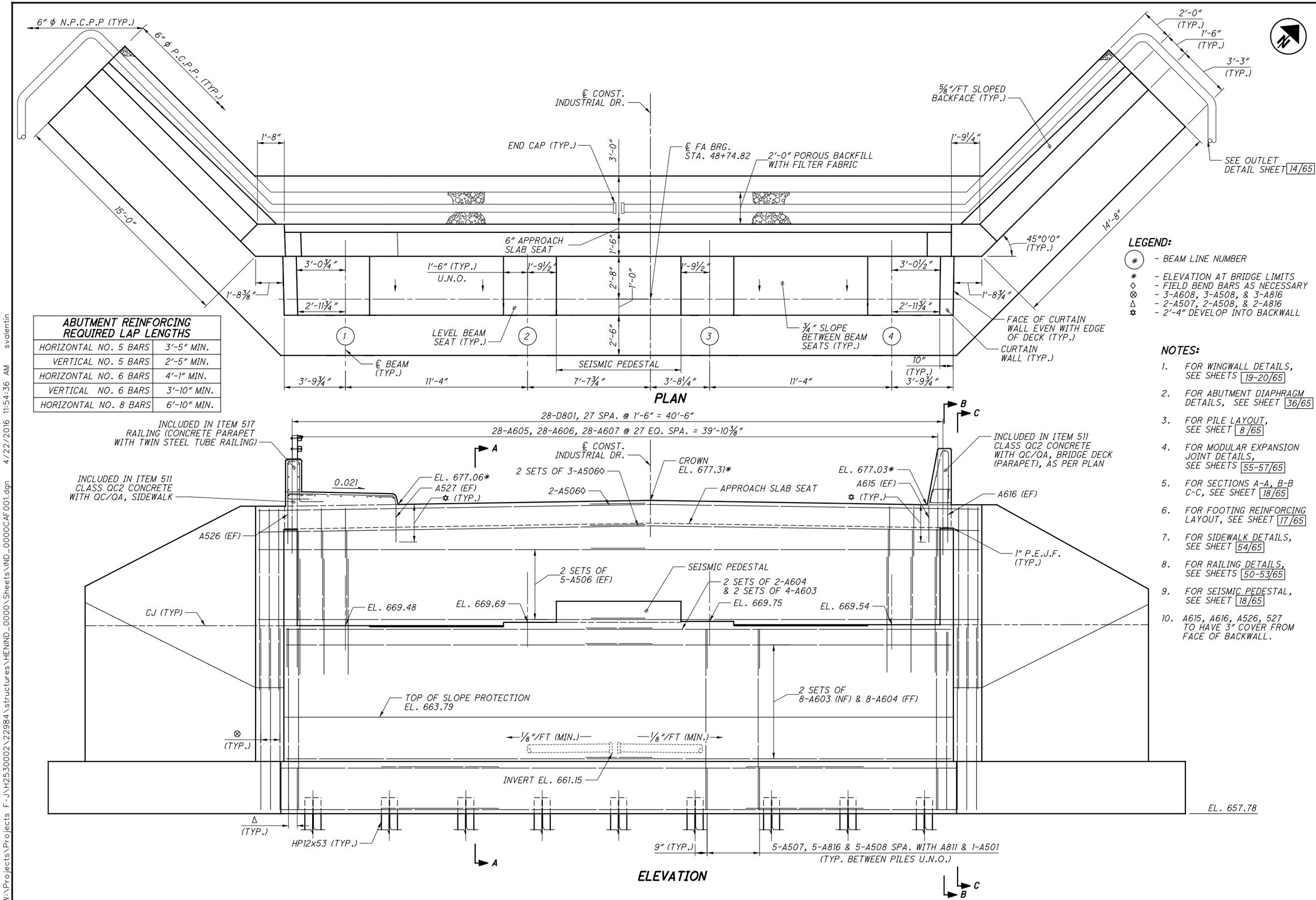
REAR WINGWALL DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

15 / 65

119
189



ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

LEGEND:

(#) - BEAM LINE NUMBER
✱ - ELEVATION AT BRIDGE LIMITS
◇ - FIELD BEND BARS AS NECESSARY
⊗ - 3-A608, 3-A508, & 3-A816
△ - 2-A507, 2-A508, & 2-A816
✡ - 2'-4" DEVELOP INTO BACKWALL

NOTES:

1. FOR WINGWALL DETAILS, SEE SHEETS 19-20/65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 36/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT DETAILS, SEE SHEETS 55-57/65
5. FOR SECTIONS A-A, B-B C-C, SEE SHEET 18/65
6. FOR FOOTING REINFORCING LAYOUT, SEE SHEET 17/65
7. FOR SIDEWALK DETAILS, SEE SHEET 54/65
8. FOR RAILING DETAILS, SEE SHEETS 50-53/65
9. FOR SEISMIC PEDESTAL, SEE SHEET 18/65
10. A615, A616, A526, 527 TO HAVE 3" COVER FROM FACE OF BACKWALL.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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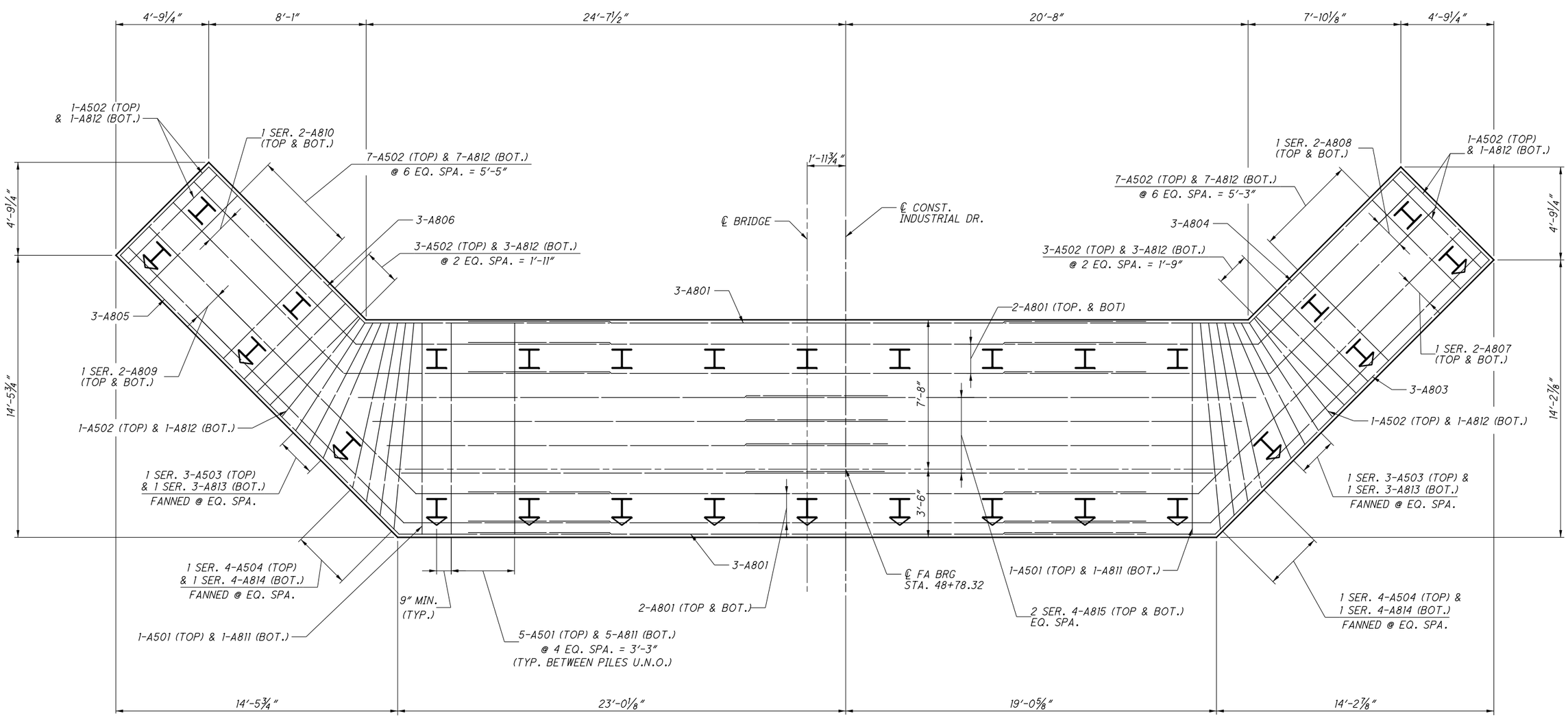
SCT		TBD	

FORWARD ABUTMENT PLAN AND ELEVATION

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



FORWARD ABUTMENT FOOTING REINFORCING PLAN

NOTES:

1. FOR ABUTMENT PLAN AND ELEVATION, SEE SHEET 16/65
2. FOR PILE LAYOUT, SEE SHEET 8/65

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

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1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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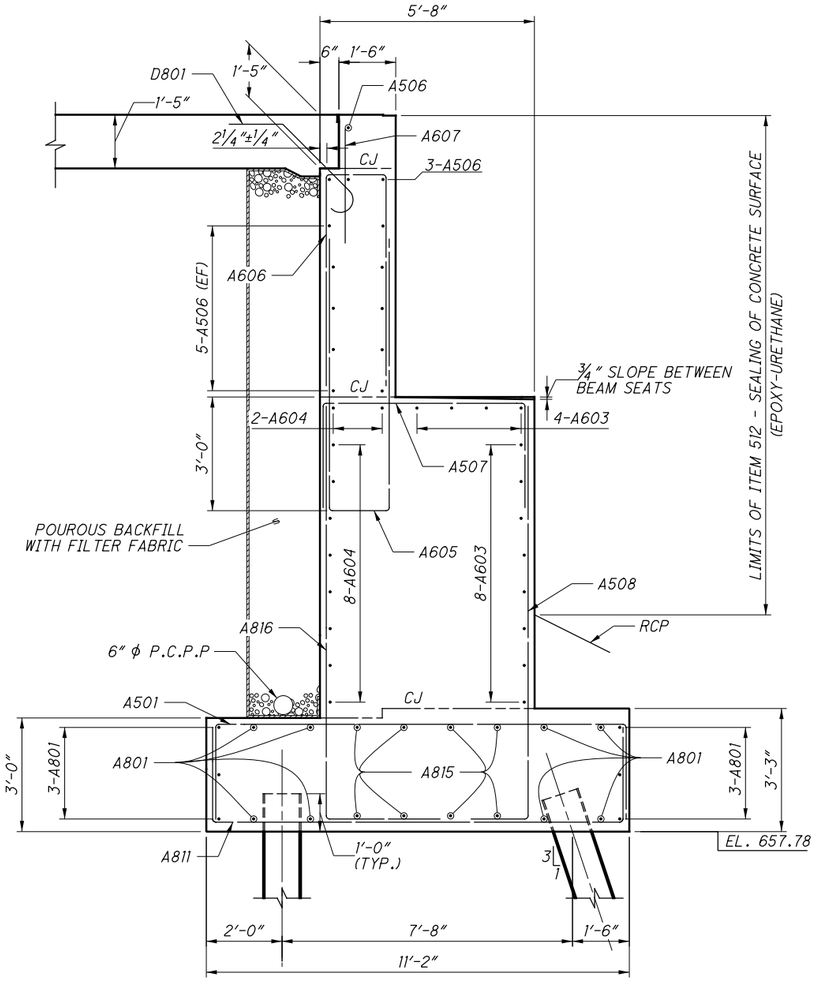
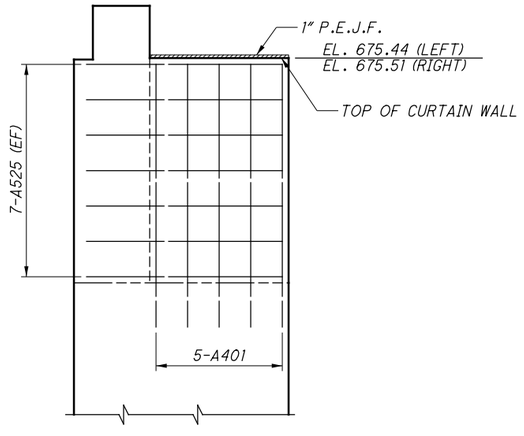
FORWARD ABUTMENT FOOTING REINFORCING
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



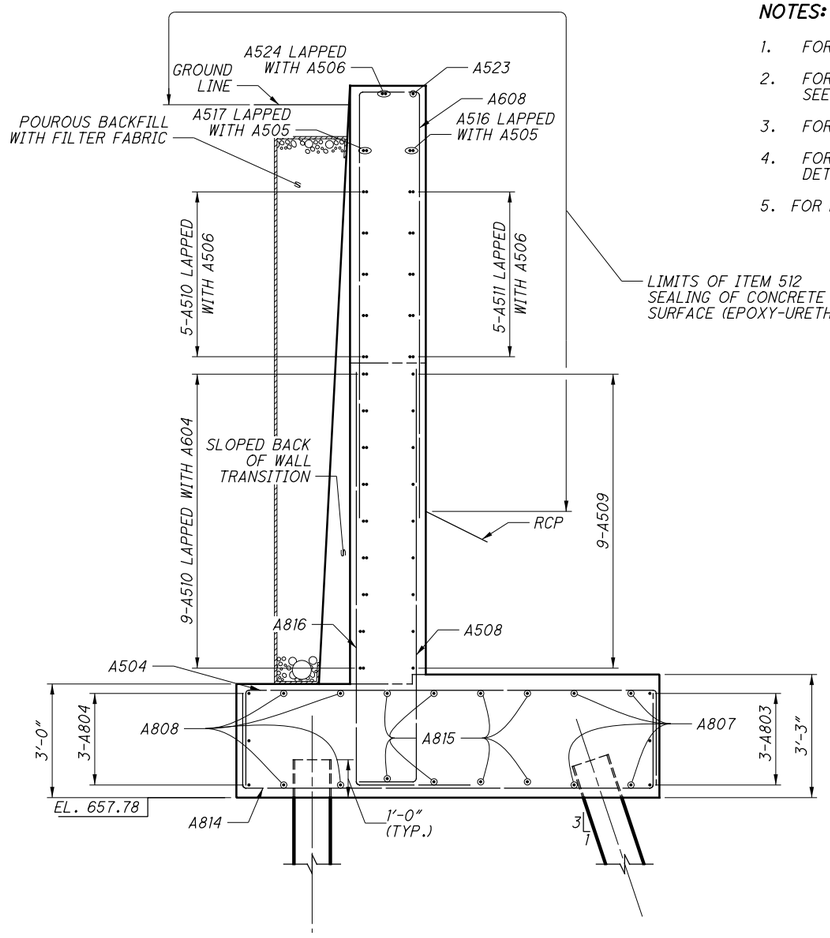
SECTION A-A

FROM SHEET 16/65



SECTION B-B

FROM SHEET 16/65



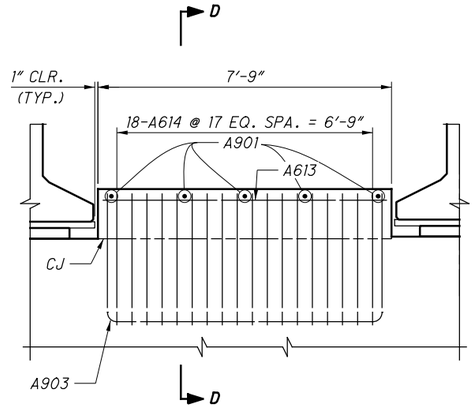
SECTION C-C

FROM SHEET 16/65

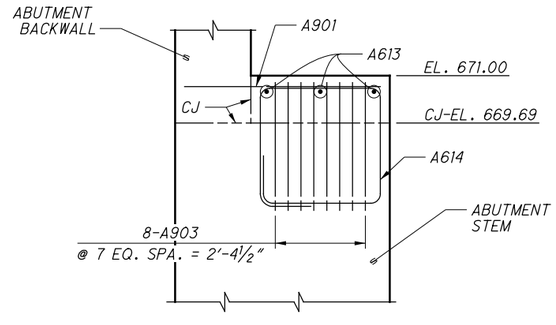
NOTES:

1. FOR WINGWALL DETAILS, SEE SHEETS 19-20/65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 36/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT (NOT SHOWN) DETAILS, SEE SHEETS 55-57/65
5. FOR RAILING DETAILS, SEE SHEETS 50-53/65

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.



SEISMIC PEDISTAL



SECTION D-D

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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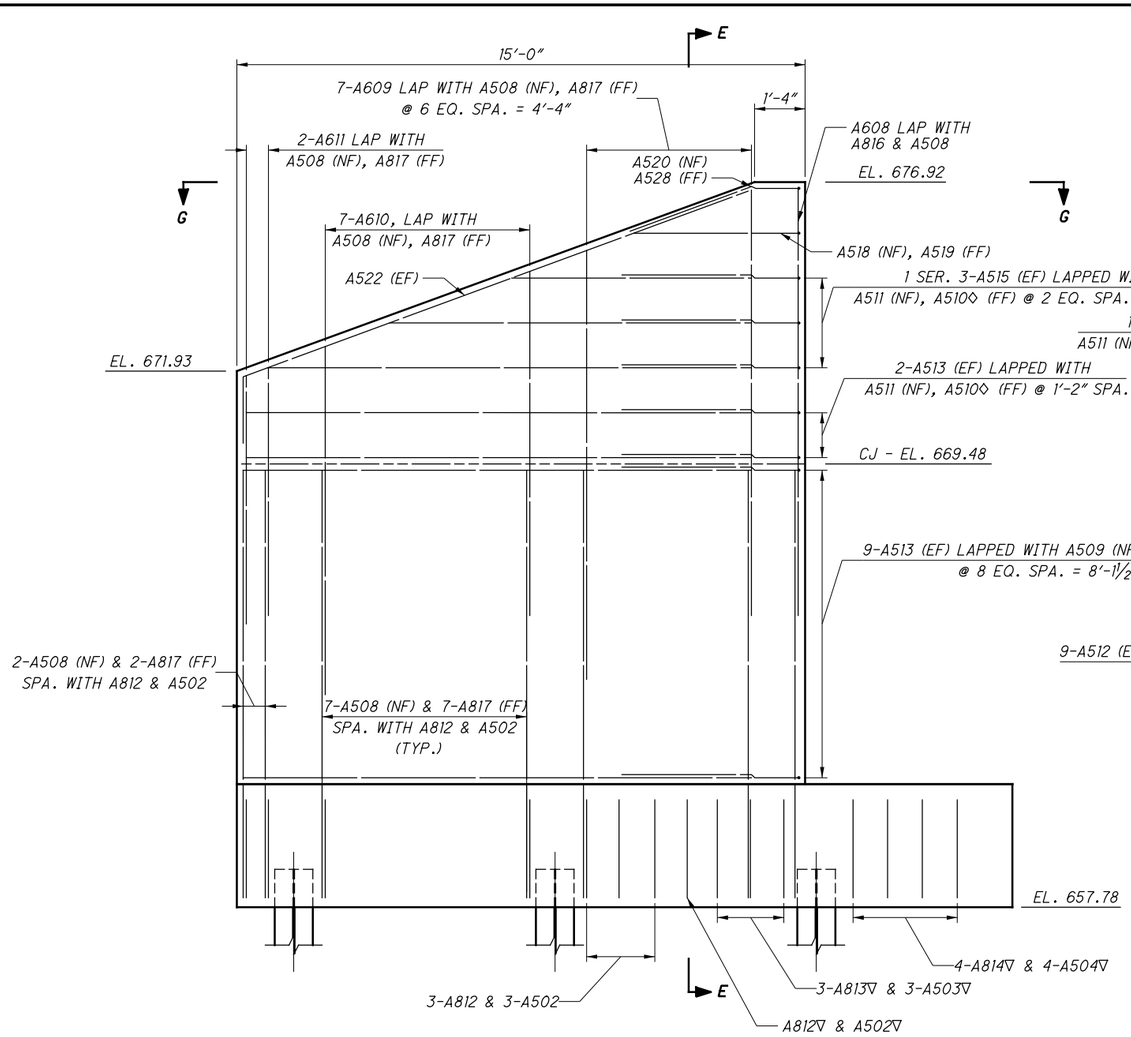
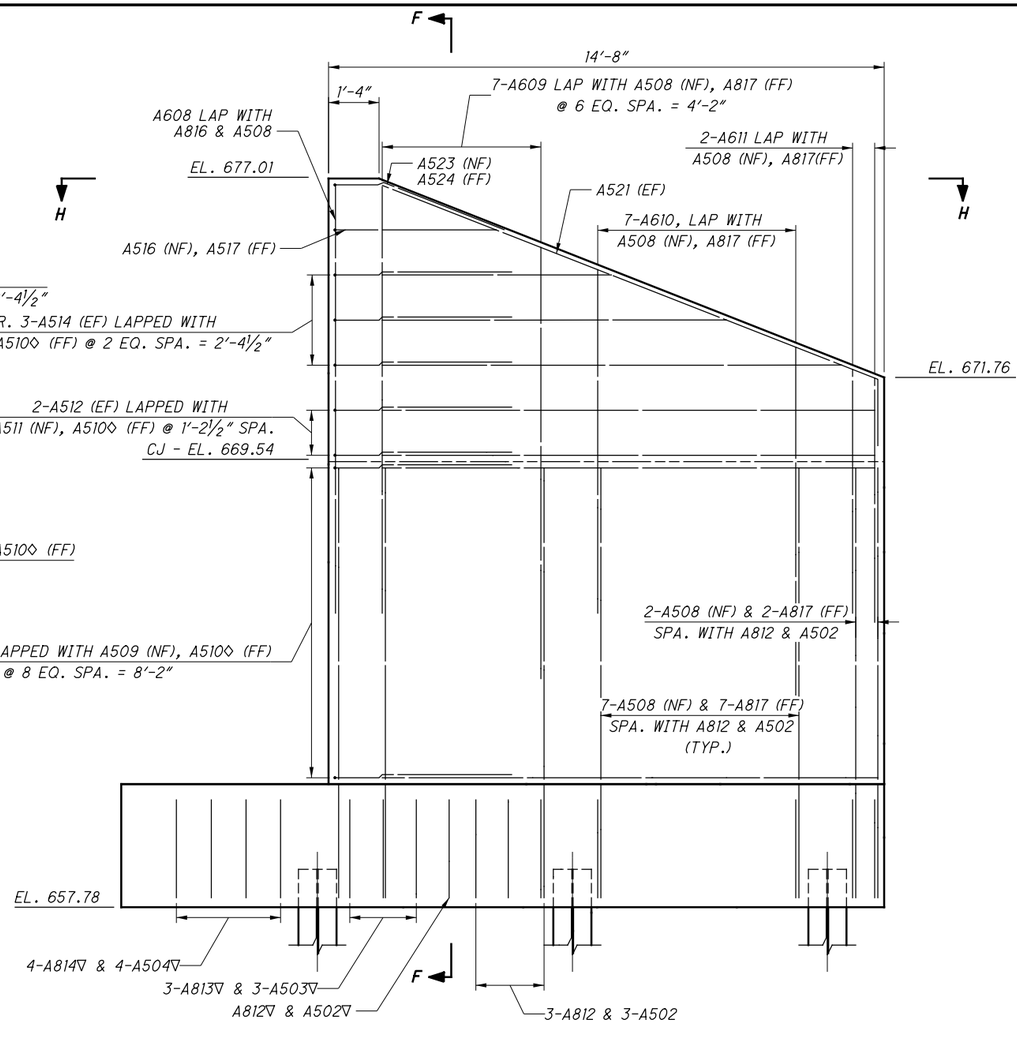
FORWARD ABUTMENT DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



FORWARD LEFT WINGWALL



FORWARD RIGHT WINGWALL

▽ - INDICATES FANNED BAR
SEE SHEET 17/65 FOR DETAILS

◇- INDICATES POSSIBLE NECESSITY
FOR FIELD BEND TO MATCH
BATTERED BACK FACE

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

NOTES:

1. FOR ABUTMENT DETAILS, SEE SHEET 16/65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 36/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT DETAILS, SEE SHEETS 55-57/65
5. FOR SECTIONS E-E & F-F AND VIEWS G-G & H-H, SEE SHEET 20/65

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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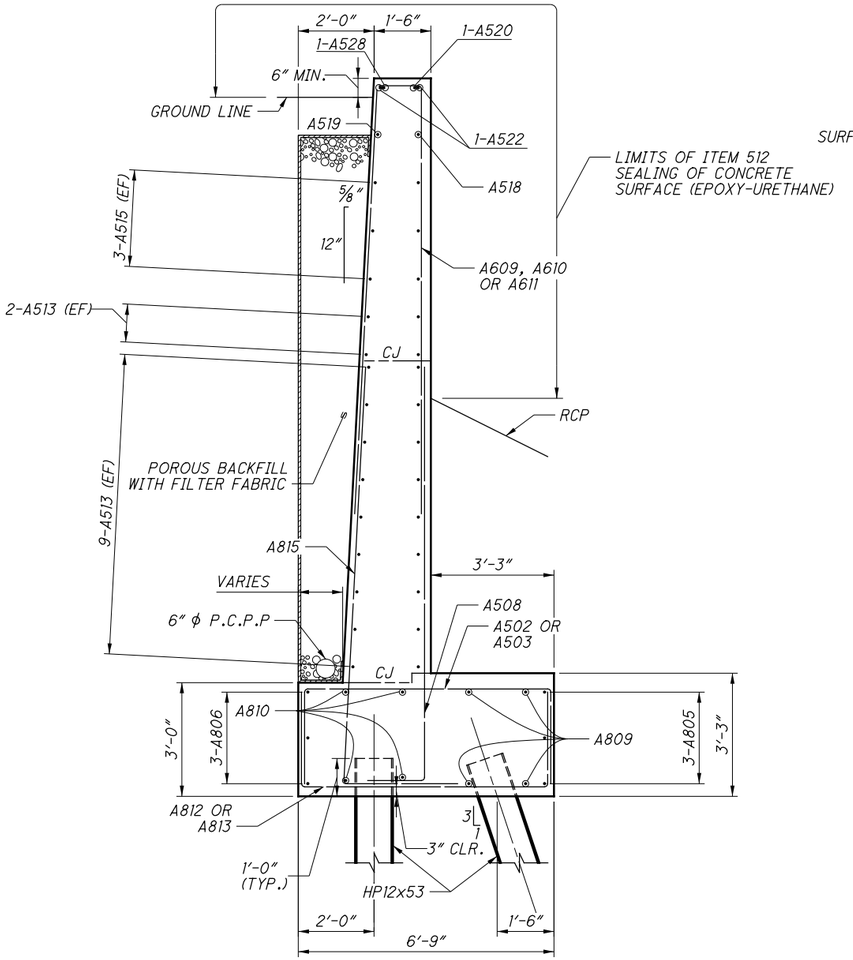
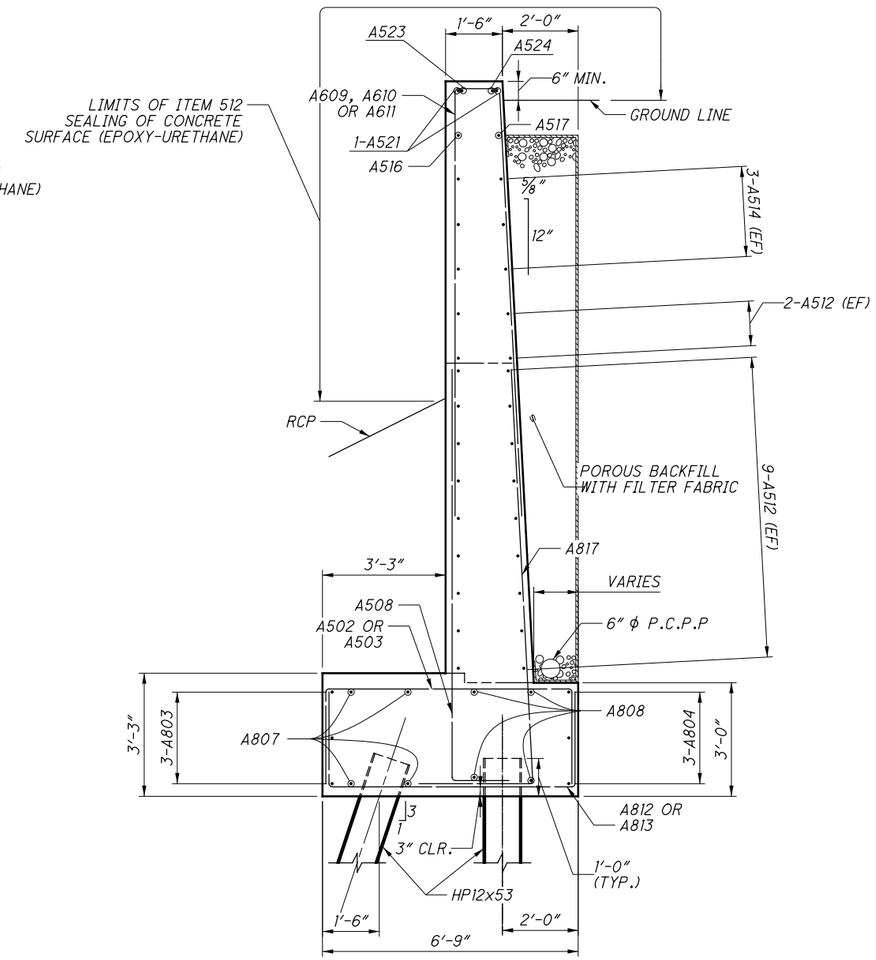
FORWARD WINGWALL DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

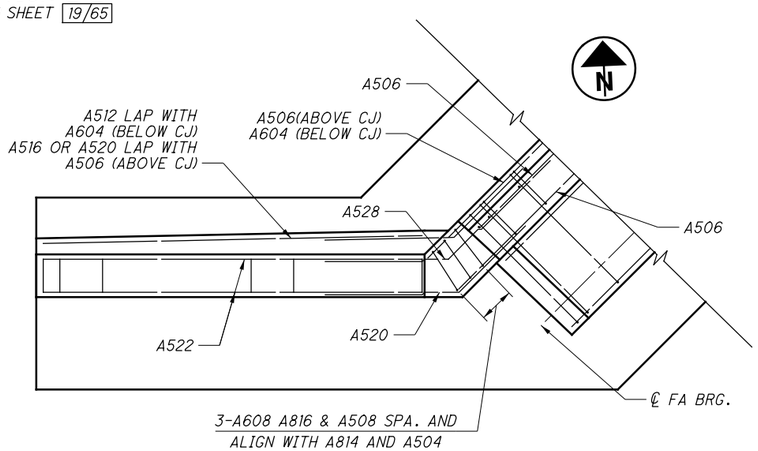
HEN-NEW BRIDGE
PID No. 22984



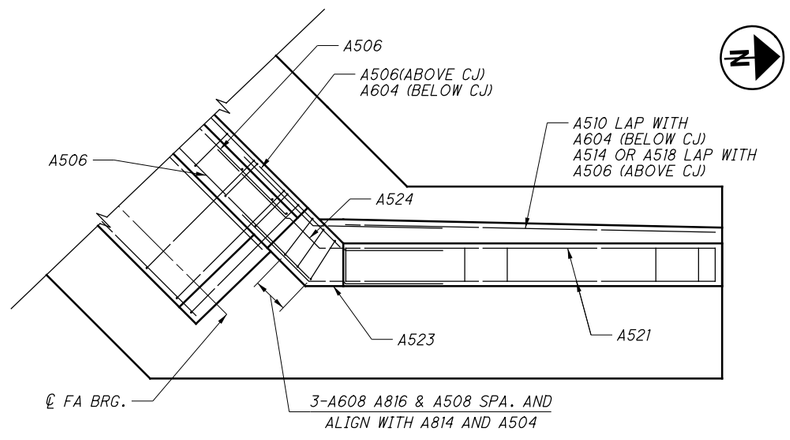
SECTION E-E
FROM SHEET 19/65



SECTION F-F
FROM SHEET 19/65



VIEW G-G
FROM SHEET 19/65



VIEW H-H
FROM SHEET 19/65

NOTES:

1. FOR ABUTMENT DETAILS, SEE SHEET 16/65
2. FOR ABUTMENT DIAPHRAGM DETAILS, SEE SHEET 36/65
3. FOR PILE LAYOUT, SEE SHEET 8/65
4. FOR MODULAR EXPANSION JOINT DETAILS, SEE SHEETS 55-57/65
5. FOR RAILING DETAILS, SEE SHEETS 50-53/65
6. FOR SIDEWALK DETAILS, SEE SHEET 54/65

ABUTMENT REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 5 BARS	3'-5" MIN.
VERTICAL NO. 5 BARS	2'-5" MIN.
HORIZONTAL NO. 6 BARS	4'-1" MIN.
VERTICAL NO. 6 BARS	3'-10" MIN.
HORIZONTAL NO. 8 BARS	6'-10" MIN.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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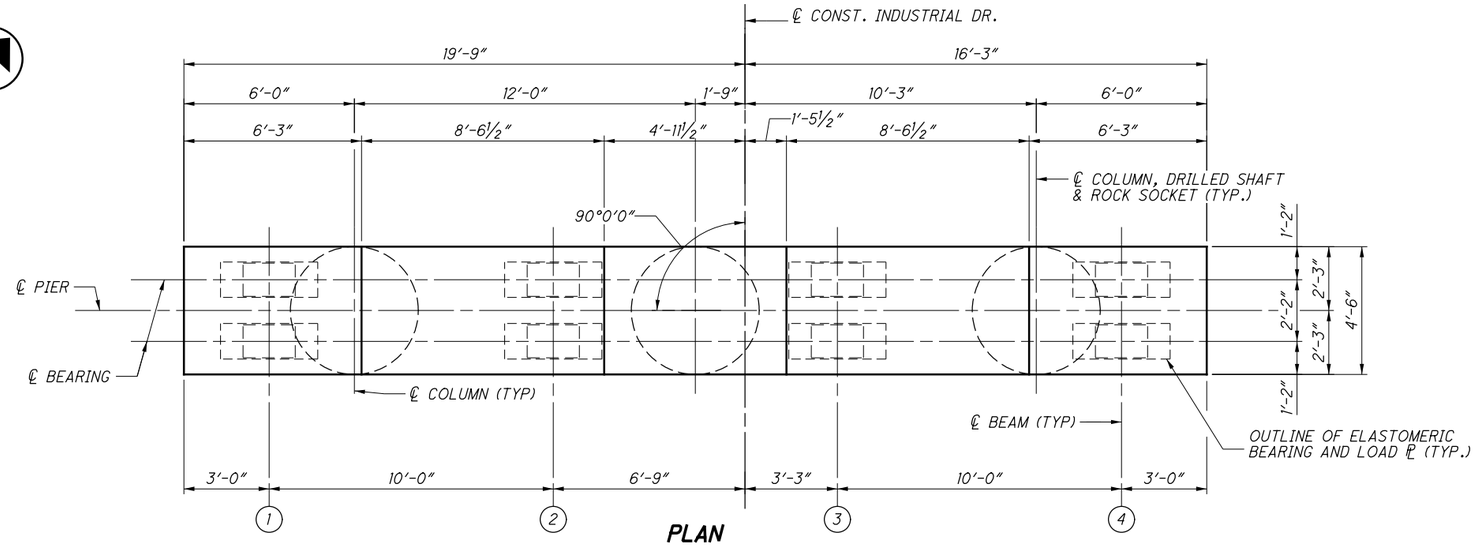
FORWARD WINGWALL DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

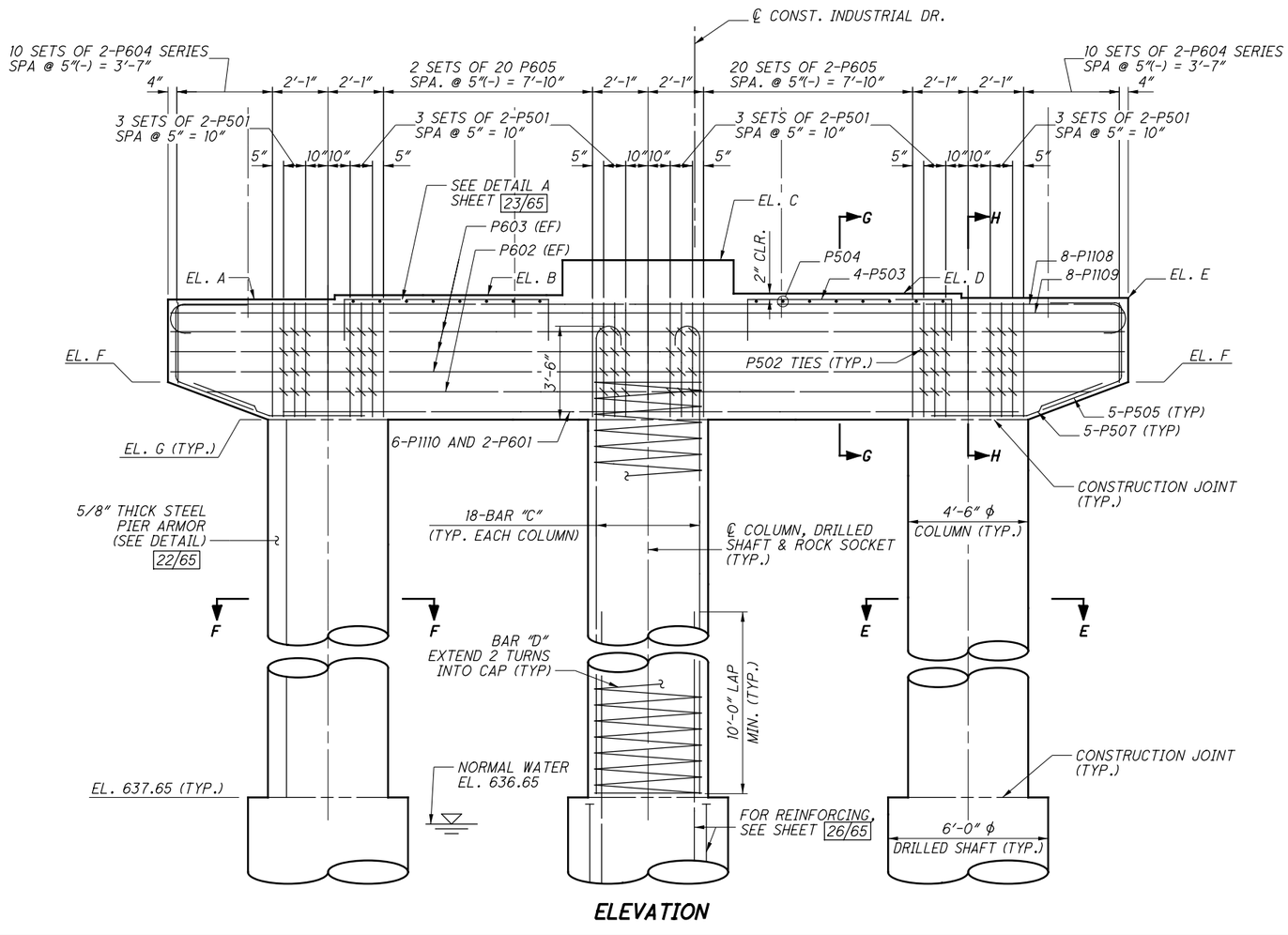
HEN-NEW BRIDGE
PID No. 22984

20/65

124
189



PLAN



ELEVATION

PIER NO.	STATION	EL. A	EL. B	EL. C	EL. D	EL. E	EL. F	EL. G
1	40+51.51	664.00	664.18	665.49	664.24	664.06	661.00	659.50
2	41+69.28	664.81	664.98	666.29	665.04	664.86	661.81	660.31
3	42+87.05	665.61	665.78	667.09	665.84	665.66	662.61	661.11
4	44+04.82	666.41	666.58	667.89	666.64	666.46	663.41	661.91
5	45+22.59	667.21	667.38	668.69	667.44	667.26	664.21	662.71
6	46+40.36	668.01	668.19	669.49	668.24	668.06	665.01	663.51
7	47+58.13	668.81	668.99	670.29	669.04	668.87	665.81	664.31

REINFORCING BAR	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7
BAR "C"	P1101	P1102	P1103	P1104	P1105	P1106	P1107
BAR "D"	SP403	SP404	SP405	SP406	SP407	SP408	SP409

LEGEND:

(#) - DENOTES PROPOSED BEAM LINE

NOTES:

1. FOR DRILLED SHAFT DETAILS, SEE SHEET 26/65.
2. FOR FOUNDATION PLAN, SEE SHEET 9-10/65.
3. FOR ELASTOMERIC BEARING DETAILS, SEE SHEET 34-35/65.
4. FOR SEISMIC PEDESTAL DETAILS, SEE SHEET 23/65.
5. FOR FIXED PIER DOWEL BAR DETAILS, SEE SHEET 22/65.
6. FOR SECTIONS E-E, F-F, G-G, AND H-H, SEE SHEET 22/65.
7. ALL MATERIAL, LABOR, AND INIDENTALS ASSOCIATED WITH THE STEEL PIER ARMOR SHALL BE INCLUDED IN PAYMENT FOR ITEM 511, CLASS QC1 CONCRETE WITH QC/QA, PIER ABOVE FOOTINGS, AS PER PLAN.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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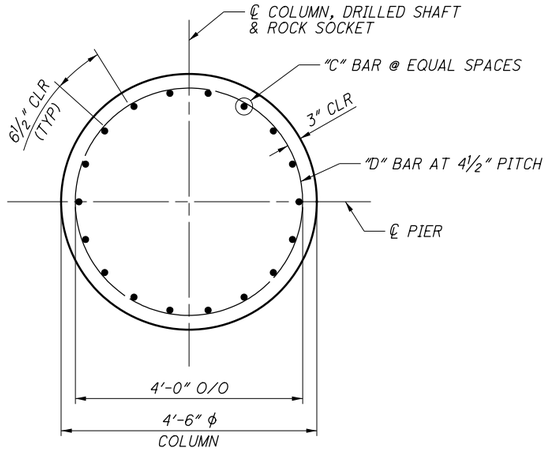
PIER PLAN & ELEVATION
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

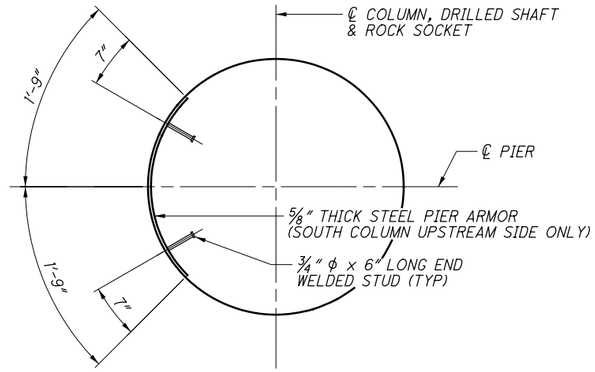
HEN-NEW BRIDGE
PID No. 22984

21/65

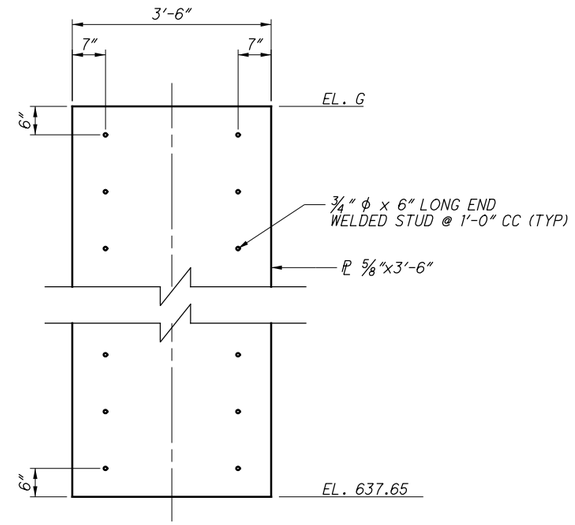
125/189



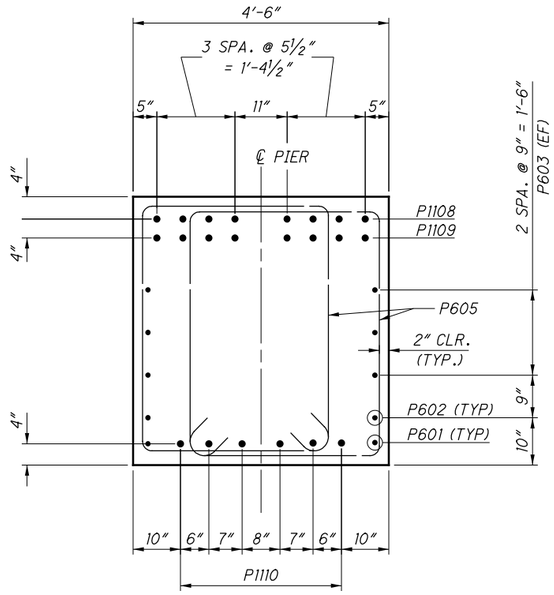
SECTION E-E



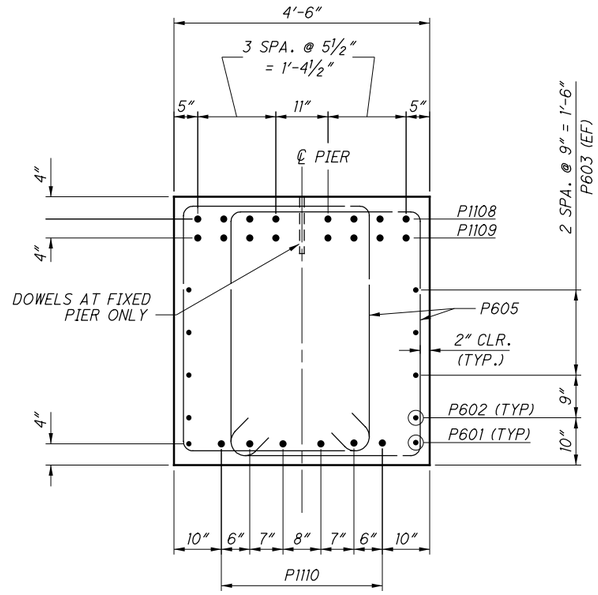
SECTION F-F
(COLUMN REINFORCEMENT NOT SHOWN)



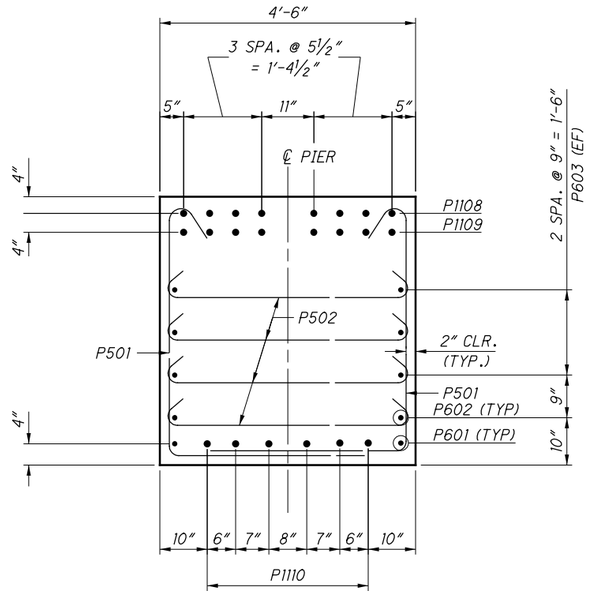
STEEL PIER ARMOR
(SHOWN DEVELOPED)



SECTION G-G



SECTION G-G
(FIXED PIER)
(PIER 4)



SECTION H-H

NOTES:

1. SEE SHEET 21/65 FOR NOTES.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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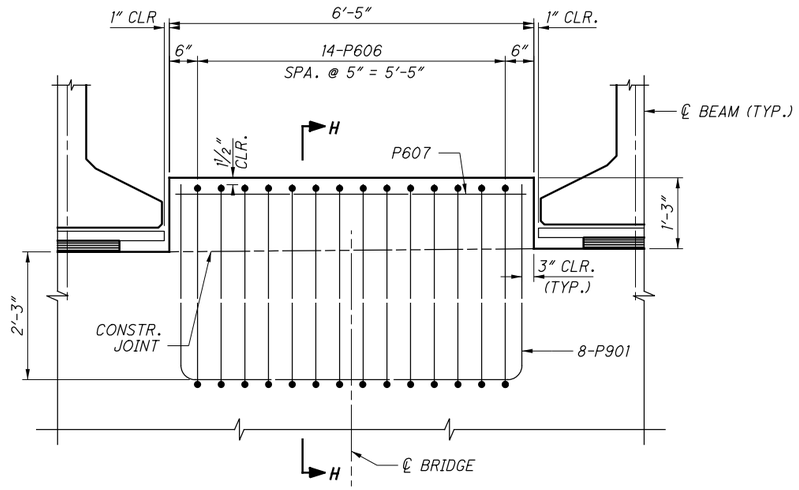
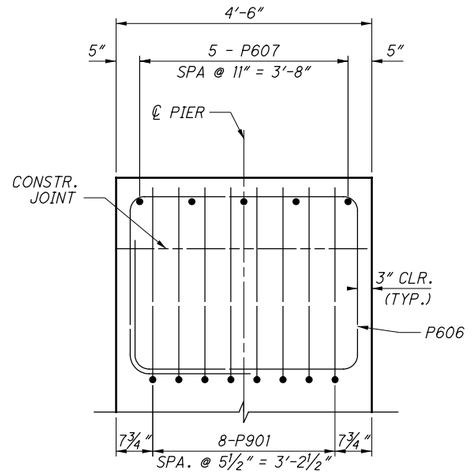
PIER DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

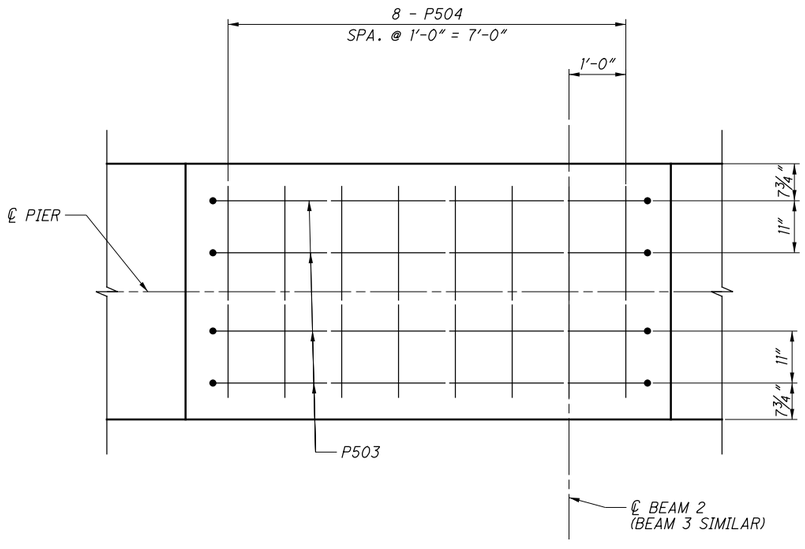
HEN-NEW BRIDGE
PID No. 22984



FRONT VIEW OF SEISMIC PEDESTAL



SECTION H-H



DETAIL A

PIER 4 DOWELS NOT SHOWN

NOTES:

1. SEE SHEET 21/65 FOR NOTES.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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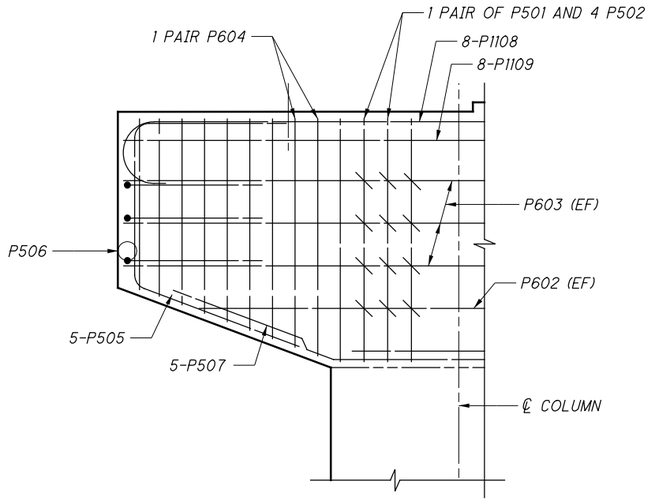
PIER DETAILS

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

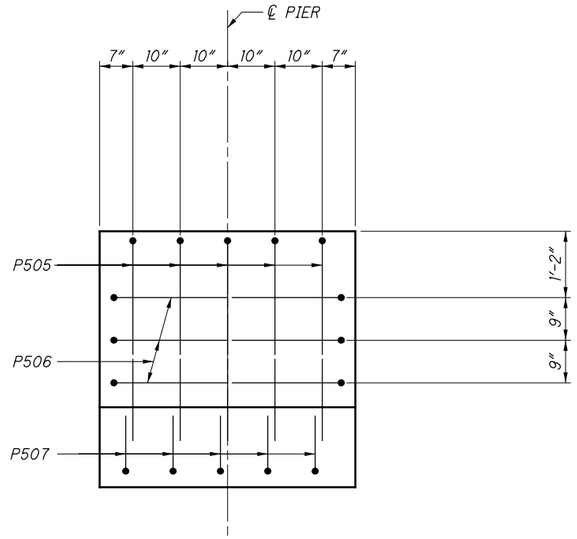
HEN-NEW BRIDGE

PID No. 22984

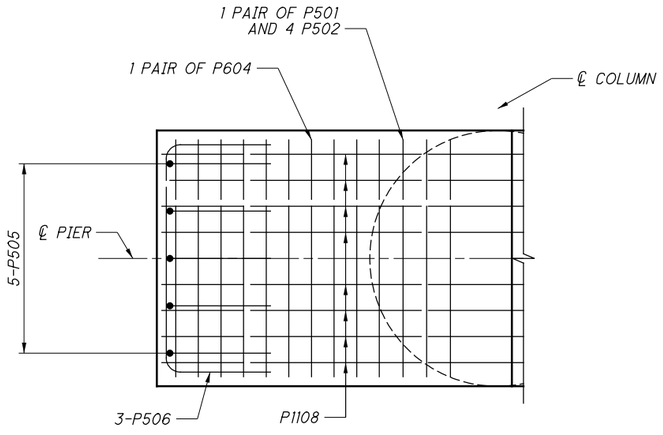


PIER CAP ELEVATION

(COLUMN REINFORCING STEEL AND PIER 4 DOWELS NOT SHOWN)



PIER CAP END DETAIL



PIER CAP SECTION LEFT

Mannik Smith GROUP
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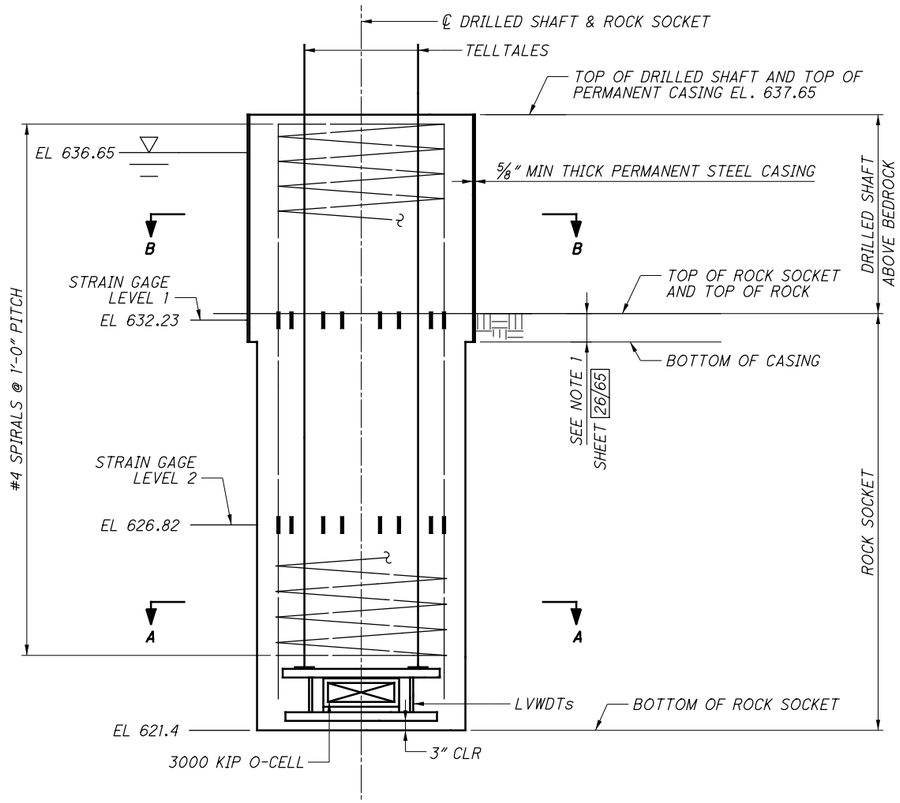
PIER DETAILS

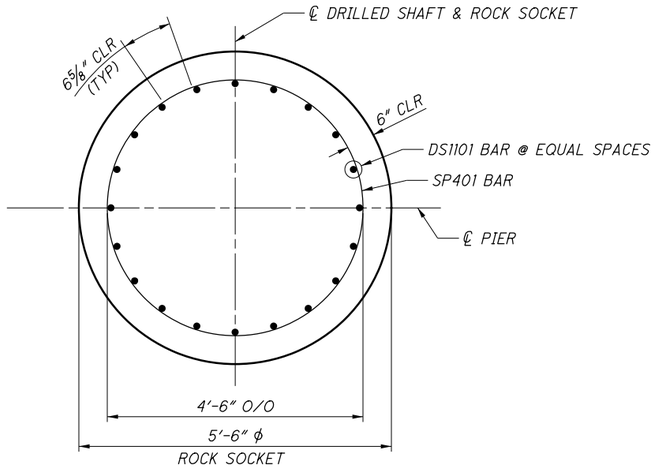
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE

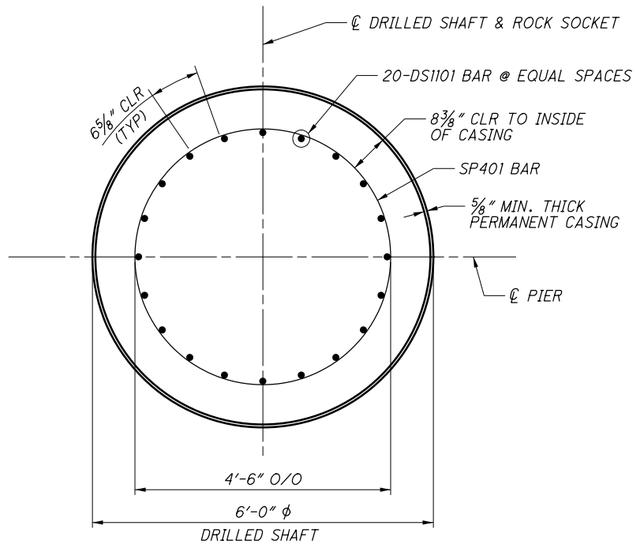
PID No. 22984



TEST SHAFT ELEVATION



SECTION A-A



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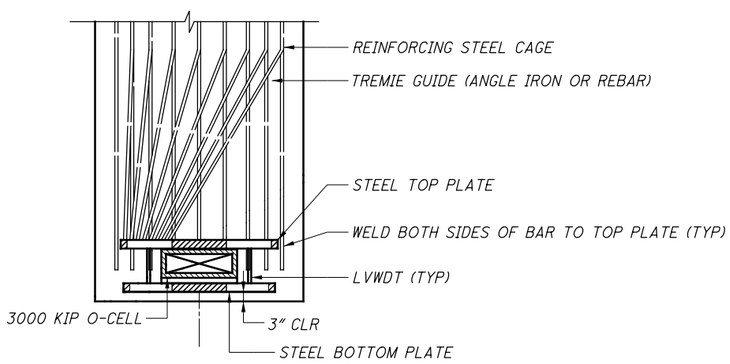
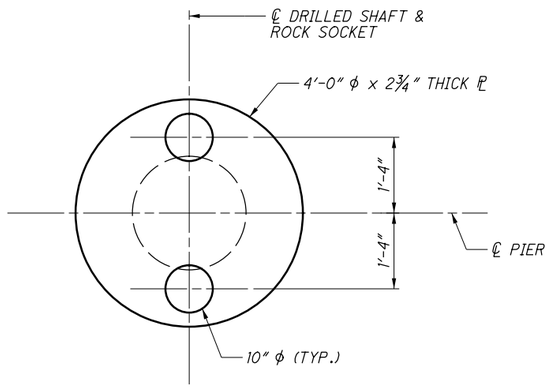
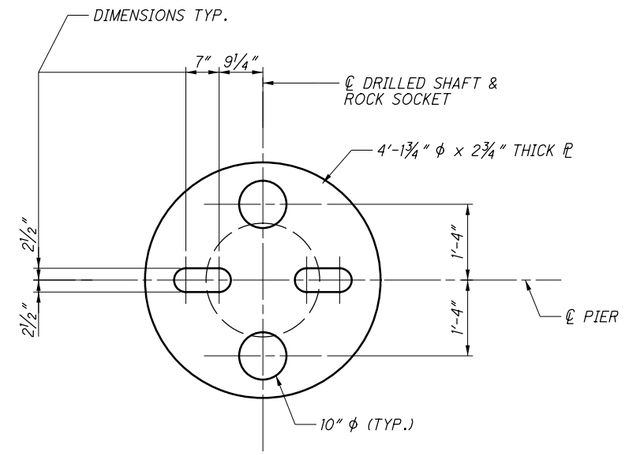


TREMIE GUIDE



BOTTOM PLATE



TOP PLATE

ASSEMBLY STEPS

1. *O-CELL FITTED WITH TOP AND BOTTOM STEEL PLATES*
2. *TOP PLATE OF O-CELL ASSEMBLY WELDED TO REINFORCING CAGE WITH FILLED WELDS ON BOTH SIDES OF STEEL REBARS*
3. *A TREMIE PIPE SHALL BE USED FOR CONCRETE PLACEMENT. A GUIDE SHALL BE CONSTRUCTED TO DIRECT THE TREMIE PIPE PAST THE O-CELL ASSEMBLY*
4. *REINFORCING CAGE IS LOWERED INTO EXCAVATION AND SECURED AT REQUIRED ELEVATION. 12.00 INCH DIAMETER REINFORCING STEEL CENTERING DEVICES (FOUR REQUIRED PER 10.0 VERTICAL FEET OF CAGE) SHALL BE EQUALLY SPACED AROUND THE PERMITER OF THE REINFORCING STEEL CAGE.*

NOTES:

1. *FOR ADDITIONAL NOTES, SEE SHEET 6, 26/65.*
2. *FOR DRILLED SHAFT RECORD, SEE SHEET 27/65.*

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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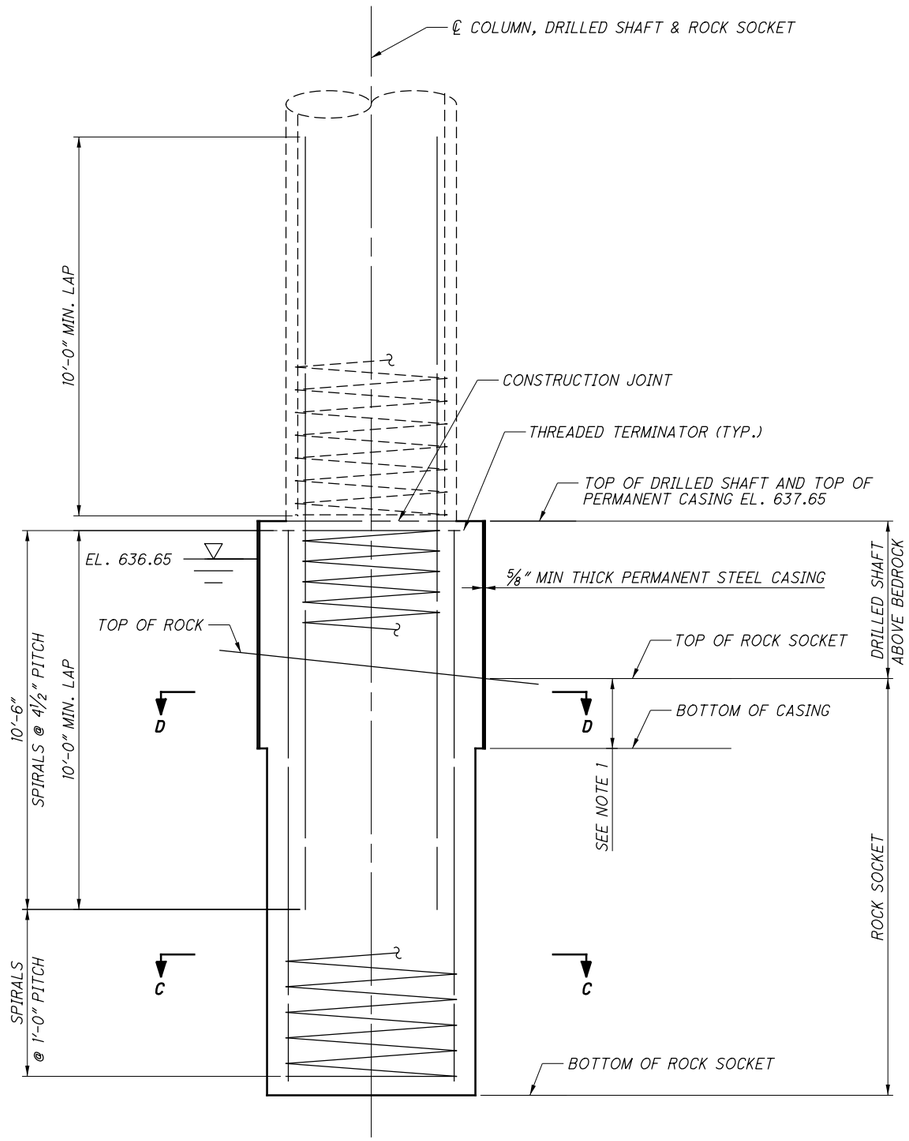
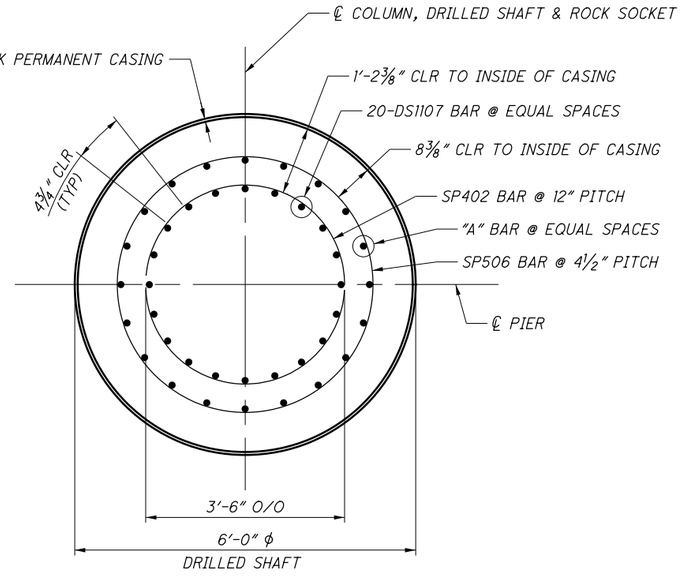
PIER DETAILS - TEST SHAFT

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984





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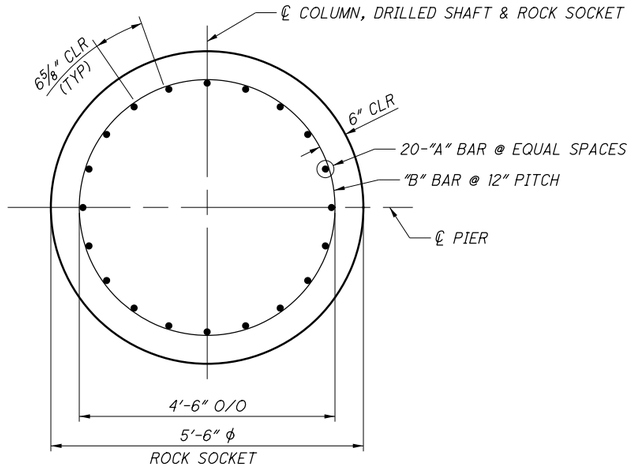
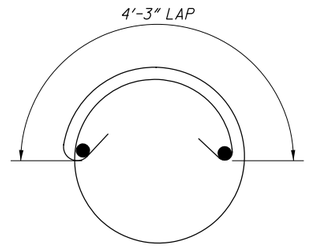
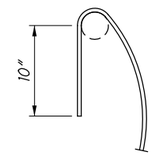


SECTION C-C





DETAILS OF 135 DEGREE SPIRAL TIE HOOK

SPIRAL ANCHOR SPLICE

REINFORCING BAR	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7
BAR "A" *	DS1102	DS1102	DS1103	DS1102	DS1104	DS1105	DS1106
BAR "B"	SP501	SP501	SP502	SP501	SP503	SP504	SP505

* THREADED TERMINATOR REQUIRED

NOTES:

1. PERMANENT CASING IS REQUIRED IN WATER AND IN THE OVERBURDEN, AND IT SHALL BE EMBEDDED INTO ROCK TO CREATE AND MAINTAIN A CONCRETE TIGHT SEAL FOR CONSTRUCTION OF THE DRILLED SHAFT. DIMENSION TO BE FIELD VERIFIED.
2. ELEVATIONS FOR THE BOTTOM OF THE DRILLED SHAFT AND BOTTOM OF DRILLED SHAFT ROCK SOCKET WILL BE DETERMINED BY THE OHIO DEPARTMENT OF TRANSPORTATION BASED ON THE RESULTS OF ROCK SOUNDING AND ROCK CORING. QUANTITIES FOR THE DRILLED SHAFTS SHOWN ON THE ESTIMATED QUANTITIES SHEET ARE ESTIMATES. THE PAID QUANTITIES WILL BE THAT OF THE ACTUAL INSTALLED QUANTITY.
3. MECHANICAL COUPLERS SHALL COMPLY WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SEVENTH EDITION, ARTICLE 5.11.5.2.2. WHEN A DRILLED SHAFT IS LENGTHENED IN THE FIELD, 100% OF THE VERTICAL REINFORCEMENT MAY BE SPLICED AT THE BOTTOM OF THE REINFORCEMENT CAGE.
4. SPIRAL SPLICES SHALL BE MECHANICALLY COUPLED, WELDED, OR HOOKED LAPPED SPLICED. ENDS OF SPIRAL REINFORCING SHALL BE HOOKED 135 DEGREES AROUND A VERTICAL REINFORCING BAR. SEE SPLICE DETAIL.
5. 5/8 INCH CASING THICKESS SHOWN IS A MINIMAL STRUCTURAL REQUIREMENT FOR THE DRILLED SHAFTS IN THEIR FINAL IN-SERVICE CONDITION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SIZE THE CASING TO SATISIFY CONSTRUCTION INSTALLATION REQUIREMENTS.
6. FOR DRILLED SHAFT RECORD, SEE SHEET 27/65 .
7. DIMENSIONS SHOWN IN THE DRAWINGS ARE BASED ON THE SATISFACTORY PERFORMANCE OF THE TEST SHAFT. IN THE EVENT OF UNSATISFACTORY PERFORMANCE OF THE TEST SHAFT, THE DESIGN ENGINEER RESERVES THE RIGHT TO REVISE THE DIMENSIONS OF THE PRODUCTION SHAFTS.
8. REINFORCING BARS ARE INCLUDED IN PAYMENT FOR ITEM 524 - DRILLED SHAFT

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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PIER DETAILS - PRODUCTION SHAFT

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

PIER NUMBER	DRILLED SHAFT NUMBER	REQUIRED FACTORED RESISTANCE KIPS		ELEVATIONS				DRILLED SHAFT ROCK SOCKET LENGTH	DRILLED SHAFT ABOVE BEDROCK LENGTH
				TOP OF DRILLED SHAFT	TOP OF ROCK (2)	BOTT OF ROCK SOCKET ELEVATION	TOP OF ROCK SOCKET (4)		
		BEARING	LATERAL			PLAN (3)		PLAN	PLAN
1	1	1303	120	637.65	632.40	621.40	632.40	11.00	5.25
	2	1303	120	637.65	632.40	621.40	632.40	11.00	5.25
	3	1303	120	637.65	632.40	621.40	632.40	11.00	5.25
*	4	2090	-	637.65	632.40	621.40	632.40	11.00	5.25
2	5	1303	120	637.65	632.30	621.30	632.30	11.00	5.35
	6	1303	120	637.65	632.30	621.30	632.30	11.00	5.35
	7	1303	120	637.65	632.30	621.30	632.30	11.00	5.35
3	8	1303	120	637.65	631.80	620.80	631.80	11.00	6.65
	9	1303	120	637.65	631.80	620.80	631.80	11.00	6.65
	10	1303	120	637.65	631.80	620.80	631.80	11.00	6.65
4	11	1303	120	637.65	632.20	621.20	632.20	11.00	5.45
	12	1303	120	637.65	632.20	621.20	632.20	11.00	5.45
	13	1303	120	637.65	632.20	621.20	632.20	11.00	5.45
5	14	1303	120	637.65	634.30	623.30	634.30	11.00	3.35
	15	1303	120	637.65	634.30	623.30	634.30	11.00	3.35
	16	1303	120	637.65	634.30	623.30	634.30	11.00	3.35
6	17	1303	120	637.65	631.30	620.30	631.30	11.00	6.35
	18	1303	120	637.65	631.30	620.30	631.30	11.00	6.35
	19	1303	120	637.65	631.30	620.30	631.30	11.00	6.35
7	20	1303	145	637.65	634.80	623.80	634.80	11.00	2.85
	21	1303	145	637.65	634.80	623.80	634.80	11.00	2.85
	22	1303	145	637.65	634.80	623.80	634.80	11.00	2.85

NOTES:

* 1. DRILLED SHAFT NUMBER 4 IS A TEST SHAFT.

2. TOP OF ROCK ELEVATIONS BASED ON 2014 BORINGS / ROCK CORE.

3. BOTTOM OF ROCK SOCKET ELEVATONS WERE SELECTED BASED ON THE TOP OF ROCK ELEVATIONS AT EACH SHAFT AND FOR CONSISTANCY OF TIP ELEVATONS IN A GIVEN ROW.

4. TOP OF ROCK SOCKET ELEVATION IS ESTIMATED FROM THE LOWEST TOP OF ROCK ELEVATION NEAR EACH SHAFT. TOP OF ROCK SOCKET ELEVATION SHALL BE VERIFIED BY THE CONTRACTOR PER C&MS 524.01.

5. THE FOLLOWING RESISTANCE FACTORS WERE CONSIDERED IN CALCULATING REQUIRED NOMINAL GEOTECHNICAL RESISTANCE PER AASHTO LRFD TABLE 10.5.5.2.4-1 AND ARTICLE 10.5.5.3.3:

   RESISTANCE FACTOR FOR AXIAL COMPRESSION RESISTANCE (SIDE RESISTANCE IN ROCK) = 0.55
   RESISTANCE FACTOR FOR AXIAL COMPRESSION RESISTANCE (TIP RESISTANCE IN ROCK) = 0.50
   RESISTANCE FACTOR FOR HORIZONTAL (LATERAL) GEOTECHNICAL RESISTANCE OF SINGLE SHAFT OR SHAFT GROUP = 1.0
   RESISTANCE FACTOR FOR AXIAL COMPRESSION RESISTANCE (SIDE RESISTANCE IN ROCK) FOR EXTREME EVENT = 1.0
   RESISTANCE FACTOR FOR AXIAL COMPRESSION RESISTANCE (TIP RESISTANCE IN ROCK) FOR EXTREME EVENT = 1.0

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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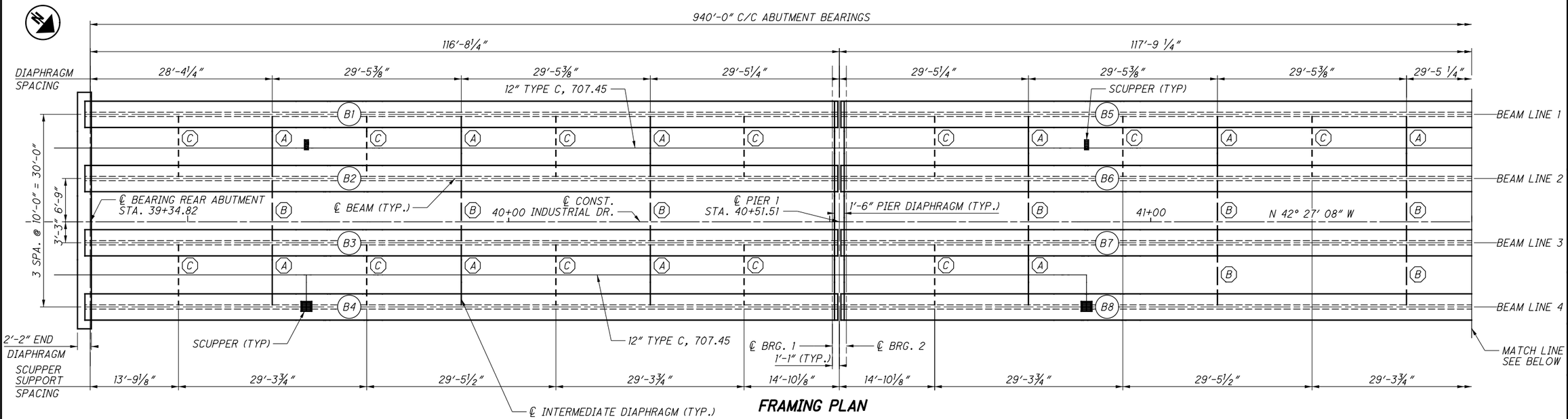
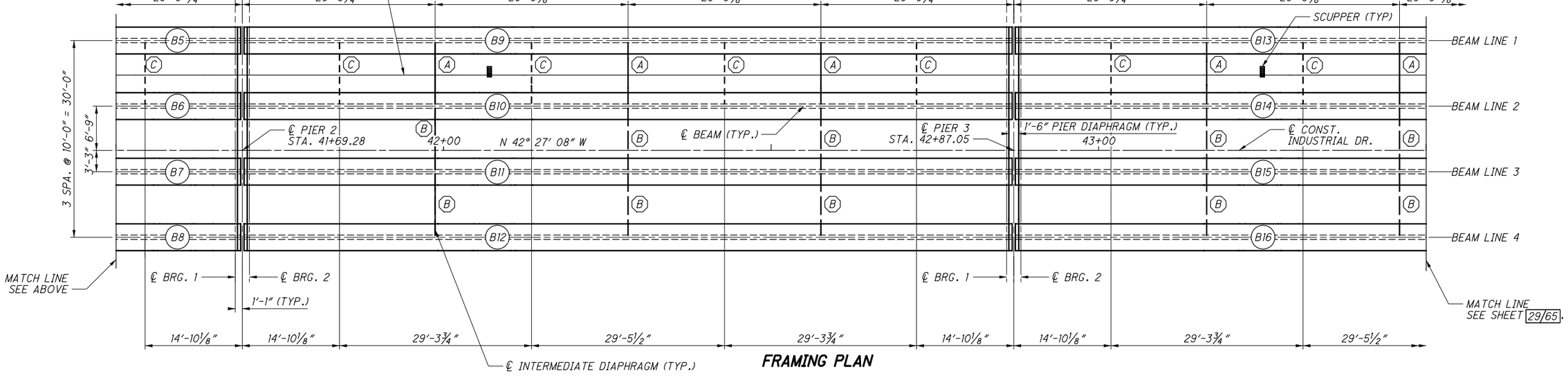
PIER DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



FRAMING PLAN



FRAMING PLAN

CAMBER (SPANS 1-7)

CALCULATED CAMBER AT DAY 0 (D30) IS 2.002 INCHES.

CALCULATED CAMBER AT DAY 30 (D30) IS 2.899 INCHES.

DEFLECTION DUE TO REMAINING DEAD LOAD (E.G. CONCRETE DECK, CROSSFRAMES, DIAPHRAGMS, BARRIERS, UTILITIES,ETC.) IS 1.516 INCHES (INTERIOR) AND 1.317 INCHES (FASCIA).

THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D30 WITH A SACRIFICIAL HAUNCH THICKNESS OF 2-INCHES.

LEGEND:

- (BX) - BEAM NUMBER
- (A) - TYPE A INTERMEDIATE DIAPHRAGM
- (B) - TYPE B INTERMEDIATE DIAPHRAGM
- (C) - STORM COLLECTION PIPE SUPPORT

NOTES:

1. FOR ADDITIONAL DETAILS AND NOTES, SEE ODOT STANDARD DRAWING PSID-1-13.
2. FOR BEARING DETAILS, SEE SHEETS 34/65 THRU 35/65.
3. FOR HAUNCH AND DECK INFORMATION, SEE SHEETS 44/65 THRU 49/65.
4. FOR SCREED ELEVATIONS, SEE SHEETS 43/65.
5. FOR PRESTRESSED I-BEAM DETAILS, SEE SHEETS 31/65 THRU 32/65.
6. FOR END DIAPHRAGM DETAILS, SEE SHEETS 36/65.
7. FOR PIER DIAPRAGM DETAILS, SEE SHEETS 37/65.
8. INTERMEDIATE DIAPHRAGMS: DO NOT PLACE THE DECK CONCRETE UNTIL ALL INTERMEDIATE DIAPHRAGMS HAVE BEEN PROPERLY INSTALLED.
9. THE THREADED INSERTS AND THE THREADED RODS FOR THE DIAPHRAGMS SHALL BE GALVANIZED ACCORDING TO CMS 711.02.

1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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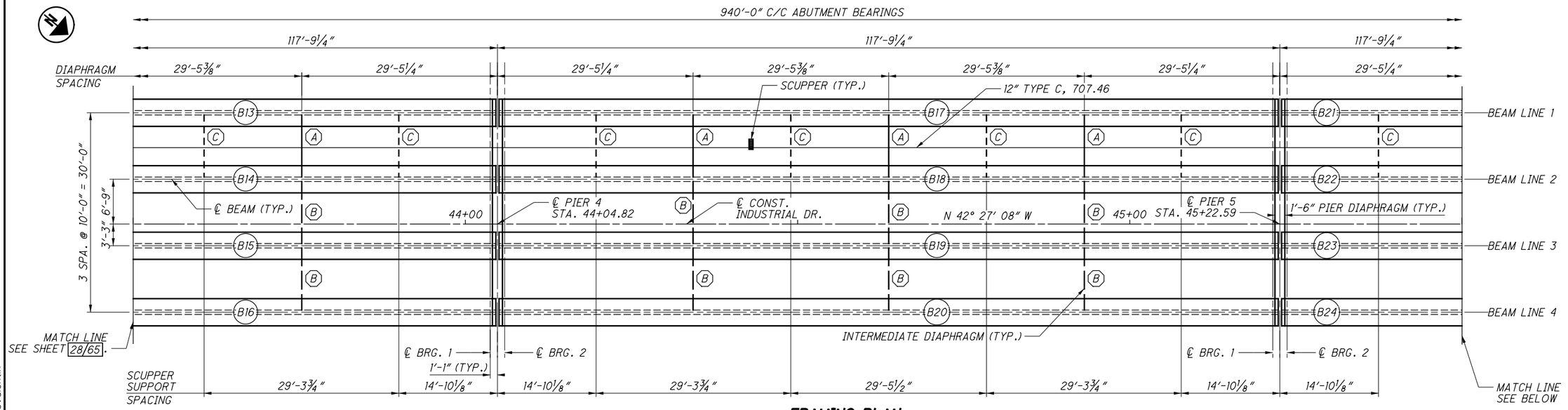
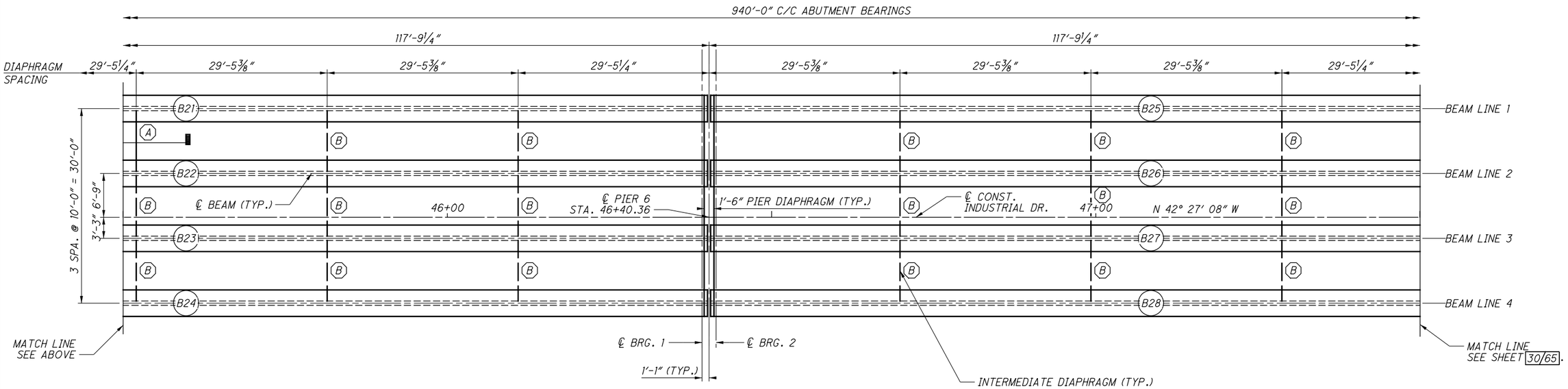
FRAMING PLAN (1 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



FRAMING PLAN



FRAMING PLAN

NOTES:

1. FOR NOTES, SEE SHEETS 28/65.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
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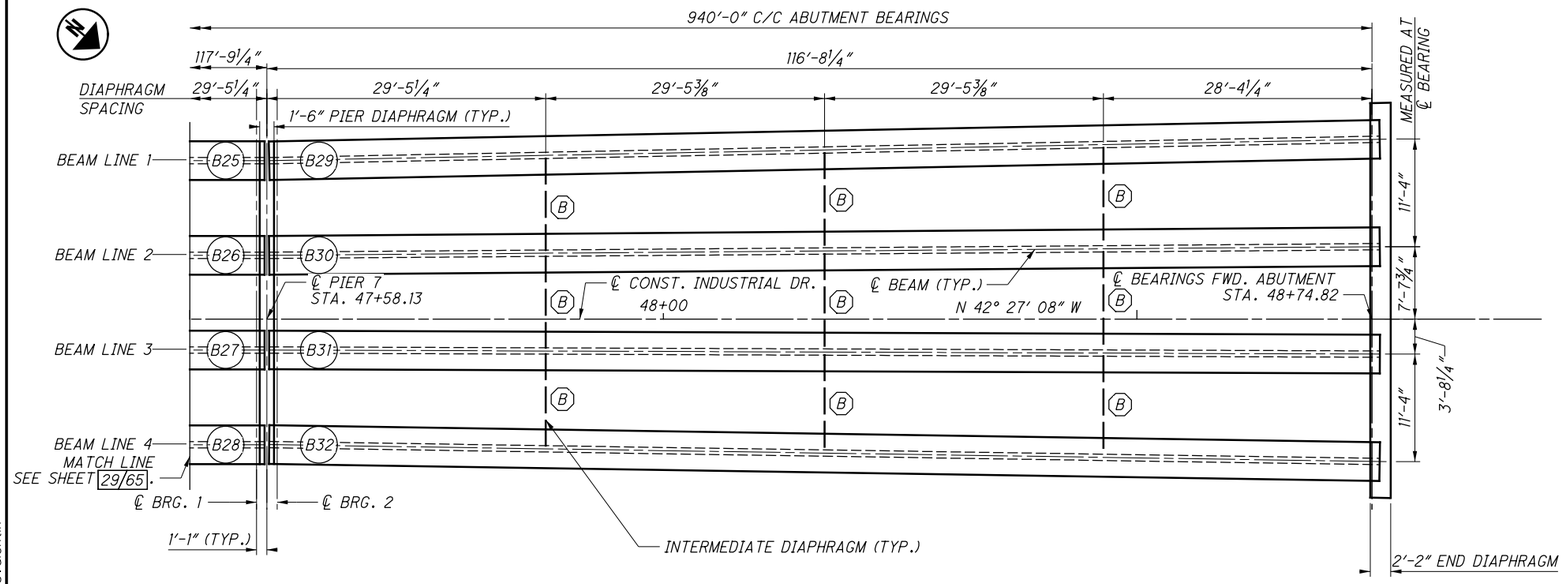
FRAMING PLAN (2 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

29 / 65

133 / 189



FRAMING PLAN

CAMBER (SPANS 8)

CALCULATED CAMBER AT DAY 0 (D30) IS 2.002 INCHES.

CALCULATED CAMBER AT DAY 30 (D30) IS 2.899 INCHES.

DEFLECTION DUE TO REMAINING DEAD LOAD (E.G. CONCRETE DECK, CROSSFRAMES, DIAPHRAGMS, BARRIERS, UTILITIES,ETC.) IS 1.8 INCHES (INTERIOR) AND 1.412 INCHES (FASCIA).

THE BEAM SEAT ELEVATIONS ASSUME ESTIMATED CAMBER D30 WITH A SACRIFICIAL HAUNCH THICKNESS OF 2-INCHES.

NOTES:

1. FOR NOTES, SEE SHEETS 28/65.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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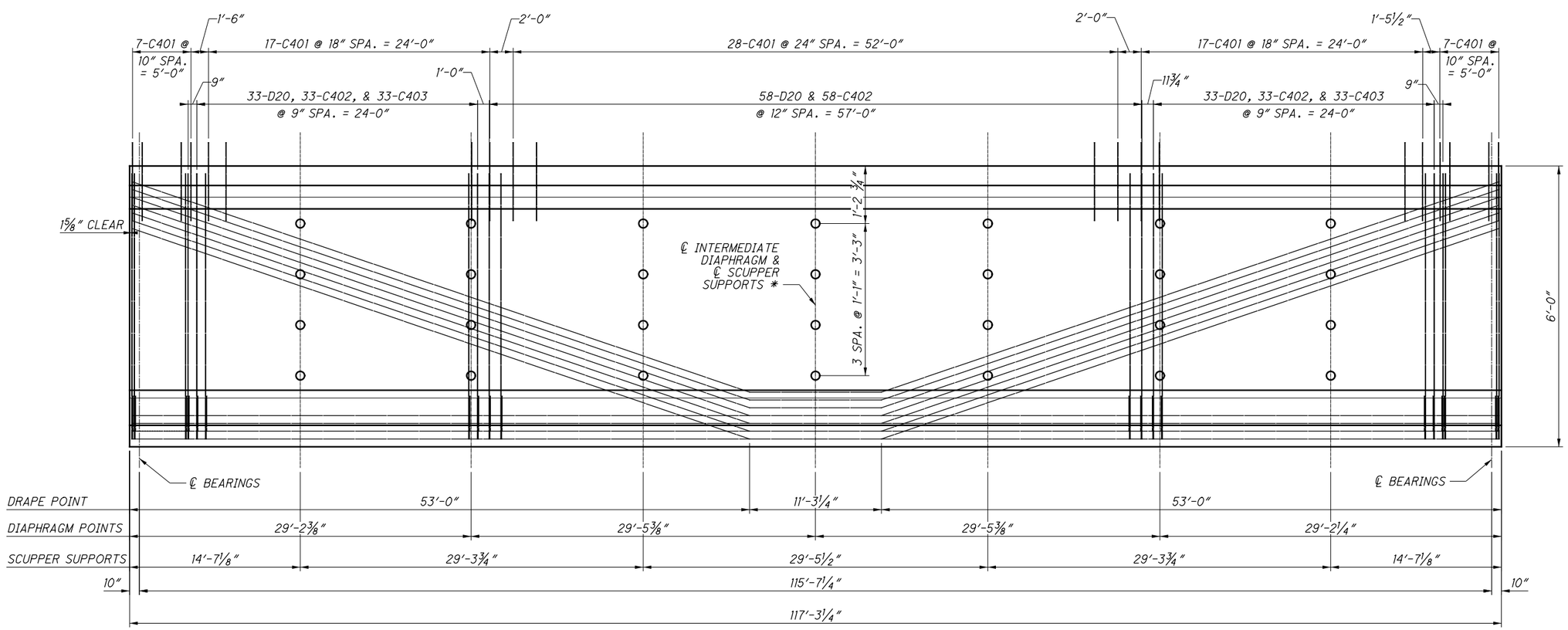
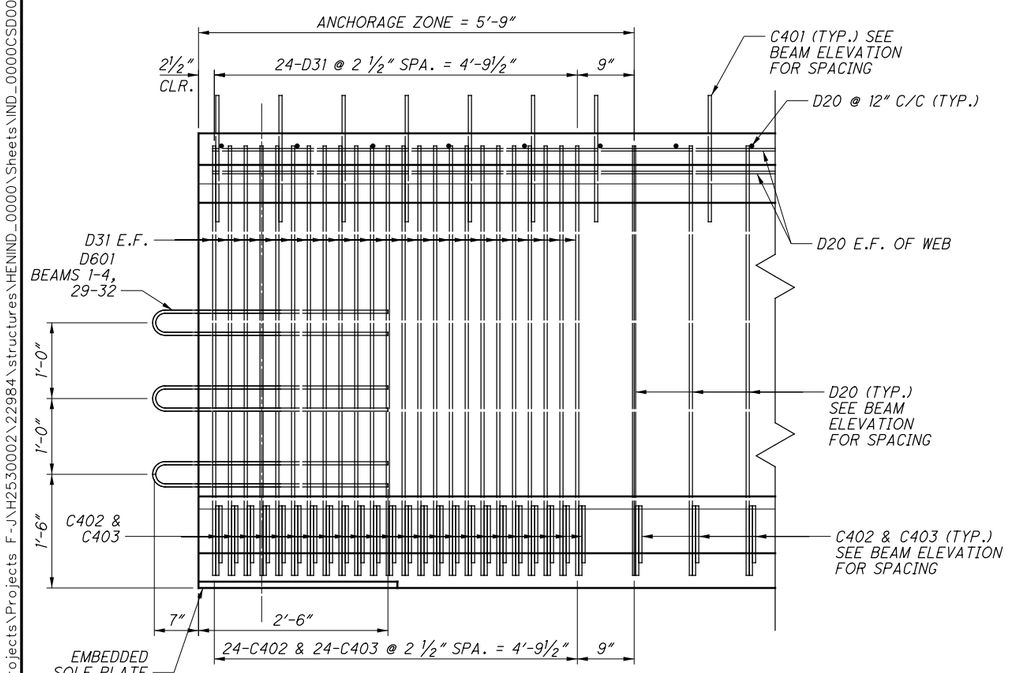
FRAMING PLAN (3 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

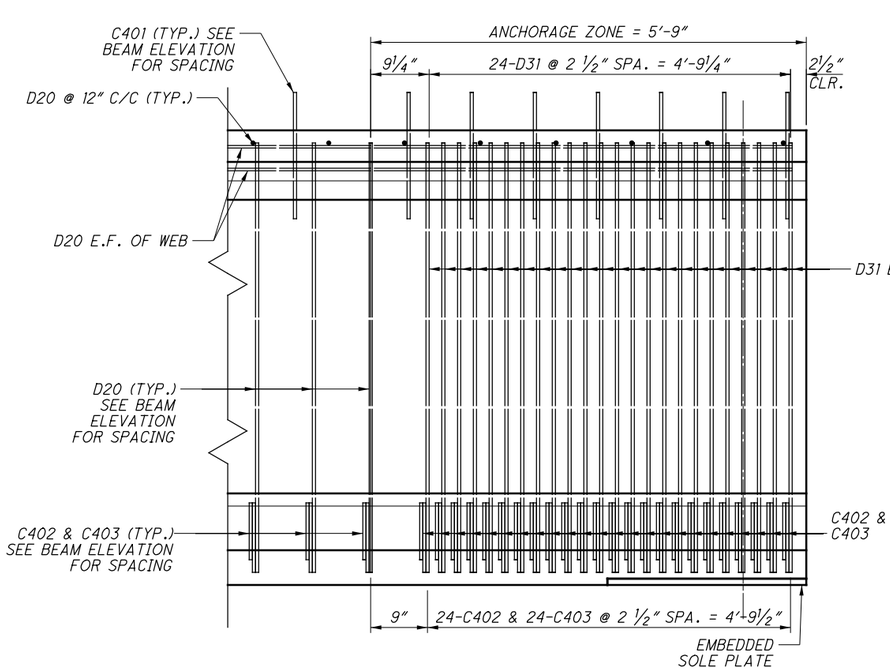
HEN-NEW BRIDGE
PID No. 22984



BEAM ELEVATION



ACHORAGE REINFORCEMENT DETAIL AT ABUTMENTS



ACHORAGE REINFORCEMENT DETAIL AT PIERS

LEGEND:

* - LOCATE BOLT HOLES IN THE I-BEAM WEBS TO AVOID PRESTRESS PRESTRESSING STRANDS. THE MINIMUM CLEAR DISTANCE SHALL BE 1 ½"

NOTES:

1. FOR ADDITIONAL DETAILS AND NOTES, SEE ODOT STANDARD DRAWING PSID-1-13.
2. ALL PRESTRESSING STRANDS SHALL BE GRADE 270 KIPS SEVEN WIRE, UNCOATED, LOW RELAXATION STRAND, WITH A DIAMETER OF 0.6 INCHES AND A NOMINAL AREA OF 0.217 SQUARE INCHES.
3. ONLY THE C401 REINFORCING BARS SHALL BE EPOXY COATED, GRADE 60.

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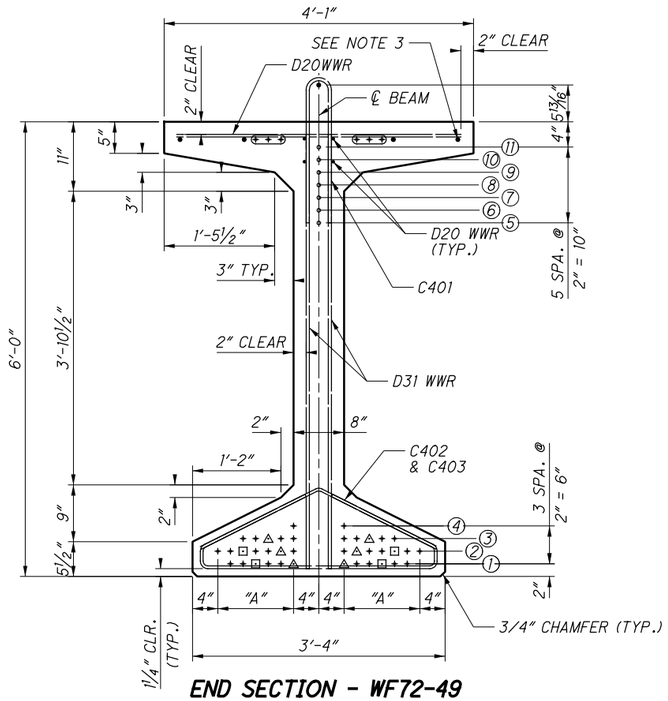
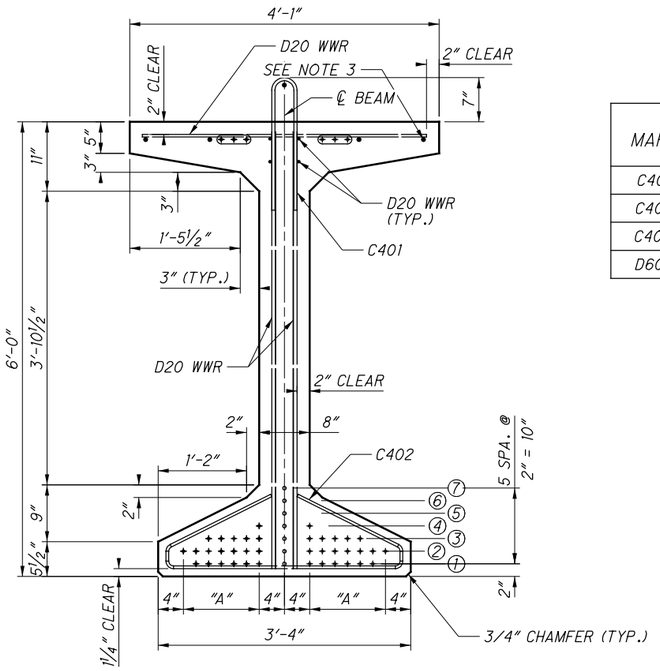
PRESTRESSED I-BEAM DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



END SECTION - WF72-49

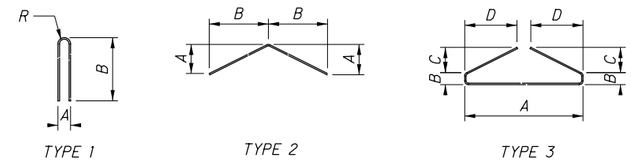
"A" = 6 SPA. @ 2" = 12"



MID-SPAN SECTION - WF72-49

"A" = 6 SPA. @ 2" = 12"

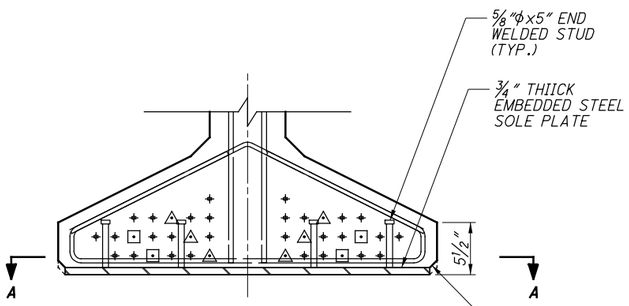
MARK	TYPE	DIMENSIONS					
		A	B	C	D	E	R
C401	1	4"	1'-8"				2"
C402	2	9"	1'-6"				
C403	3	3'-1 1/2"	3 1/2"	7 1/2"	1'-3"		
D601	1	6"	3'-1"				



BENDING DIAGRAMS

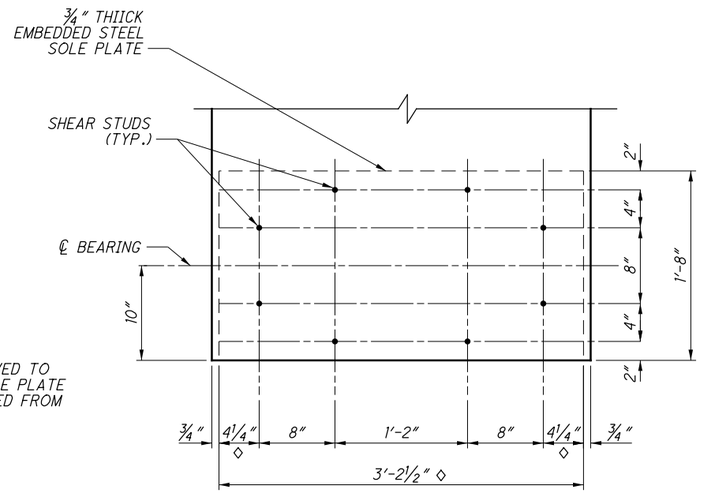
PRESTRESSED I-BEAM DESIGN TABLE																					
	NUMBER OF STRANDS PER ROW																		TOTAL STRANDS	CONCRETE STRENGTHS		B401 BARS REQ'D	B402 BARS REQ'D	B403 BARS REQ'D
	END SECTION											MID-SPAN SECTION												
	①	②	③	④	⑤*	⑥*	⑦*	⑧*	⑨*	⑩*	⑪*	①*	②*	③*	④*	⑤*	⑥*	⑦*		f'ci	f'c			
BEAM	12	14	10	2	1	1	1	1	1	1	1	13	15	11	3	1	1	1	45	5.0 KSI	7 KSI	76	114	172

- THE INFORMATION IN THE ABOVE TABLE IS TYPICAL FOR ALL BEAMS.
- SEE GENERAL NOTES , SHEET 4/65, FOR PRESTRESSING STRAND TYPE AND DESIGN DATA.
* DENOTES ROWS WHERE DRAPED STRANDS ARE PRESENT



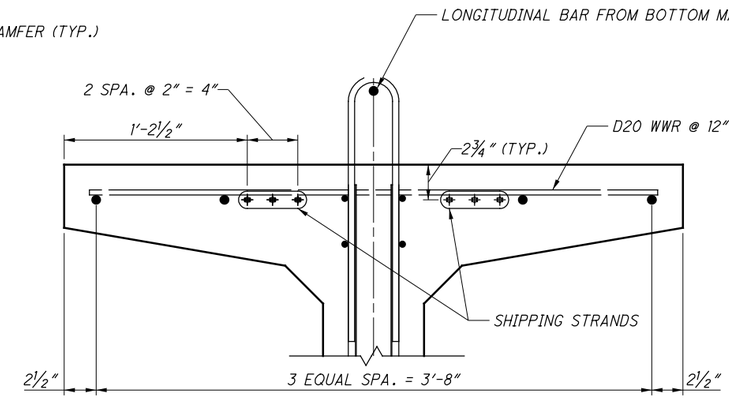
EMBEDDED SOLE PLATE & SHEAR STUD DETAIL

FOR BEARING DETAILS, SEE SHEETS 33-35/65



◊ IN ORDER TO ALLOW FOR FIT UP, THE PLATE WIDTH MAY BE DECREASED BY ⅜". THE DENOTED DIMENSIONS SHALL BE CORRECTED ACCORDINGLY.

SECTION A-A



LAYOUT IN TOP FLANGE

LEGEND:

① - INDICATES STRAND ROW

△ - STRAND DEBONDED 15'-0"

⊡ - STRAND DEBONDED 25'-0"

○ - INDICATED DRAPED STRAND

NOTES:

1. FOR ADDITIONAL DETAILS AND NOTES, SEE ODOT STANDARD DRAWING PSID-1-13.

2. ALL PRESTRESSING STRANDS SHALL BE GRADE 270 KIPS SEVEN WIRE, UNCOATED, LOW RELAXATION STRAND, WITH A DIAMETER OF 0.6 INCHES AND A NOMINAL AREA OF 0.217 SQUARE INCHES.

3. FOUR CONTINUOUS D31 BARS SHALL BE PROVIDED IN THE TOP FLANGE AS SHOWN FOR THE FULL LENGTH OF THE BEAMS PER PSID-1-13.

4. ONLY THE C401 REINFORCING BARS SHALL BE EPOXY COATED, GRADE 60.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
KRH	RJS	TLR	04/2016
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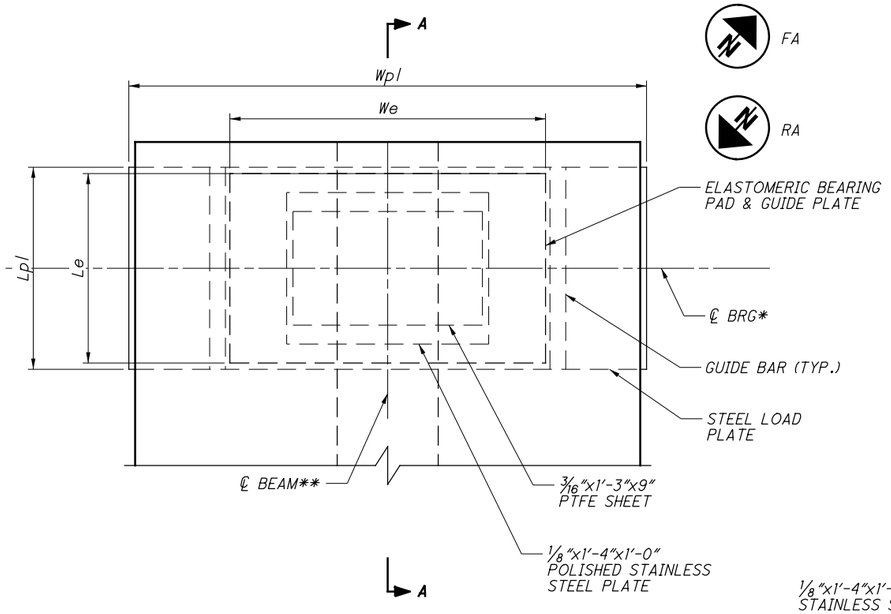
SCT		TBD	

PRESTRESSED I-BEAM DETAILS

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE

PID No. 22984



BEARING LAYOUT

		ELASTOMER							STEEL LAMINATES		LOAD PLATE			LOAD (KIPS)		
LOCATION	TYPE	DUROMETER	Le	We	Te	ti	te	N	P	t	Lpl	Wpl	Tpl	DL	LL	TOTAL
REAR ABUTMENT	EXP	50	15"	25"	1.84"	0.44"	0.3"	3	3	0.0747"	16"	41"	2"	215	110	325
FORWARD ABUTMENT	EXP	50	15"	25"	1.84"	0.44"	0.3"	3	3	0.0747"	16"	41"	2"	230	110	340

NOTES:

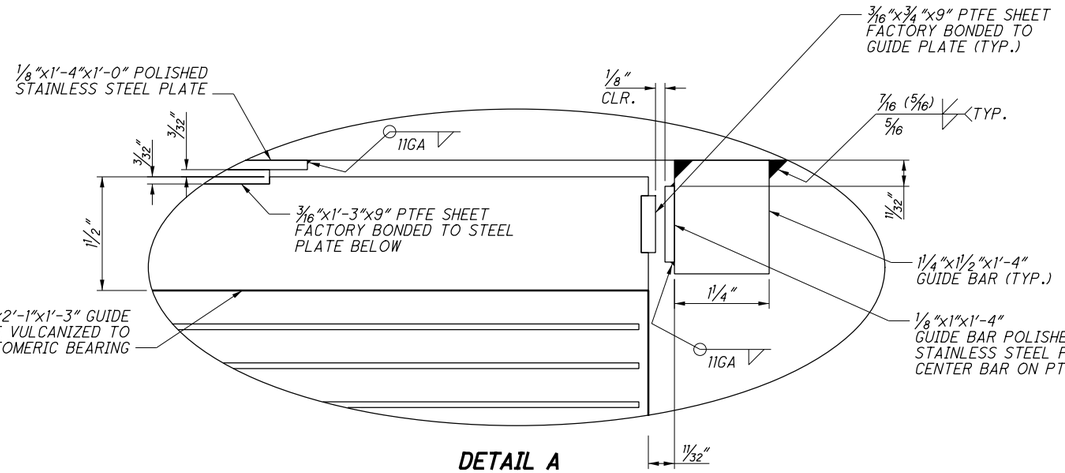
1. LOAD PLATE:
   THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
2. ELASTOMERIC BEARING:
   THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
3. THE STEEL LOAD PLATE, GUIDE PLATE, AND GUIDE BARS SHALL BE METALIZED ASTM A709 GRADE 50 STEEL.
4. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

LEGEND:

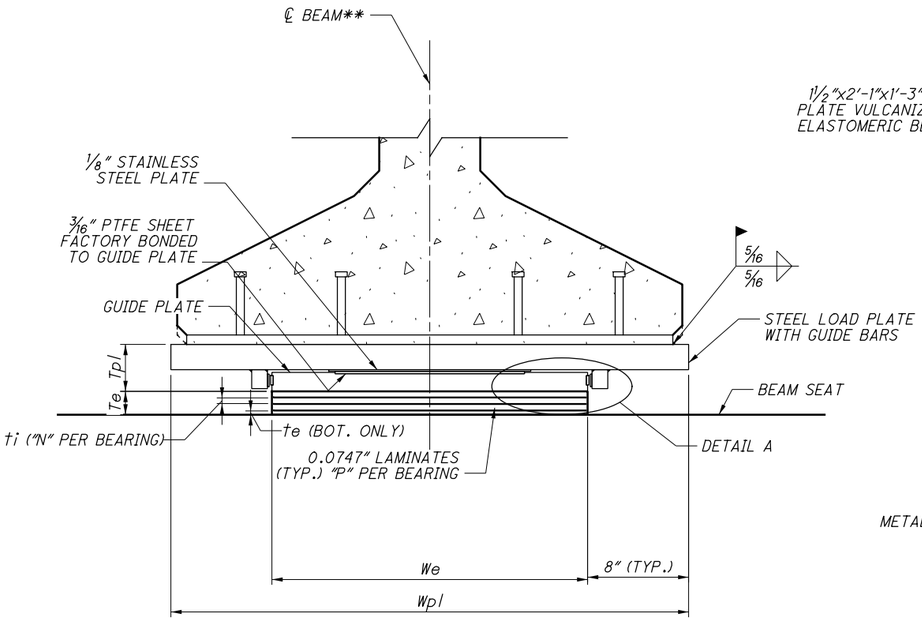
* - DIMENSIONS SYMMETRICAL ABOUT ℄ BRG (& BRG ASSEMBLY)

** - DIMENSIONS SYMMETRICAL ABOUT ℄ BEAM

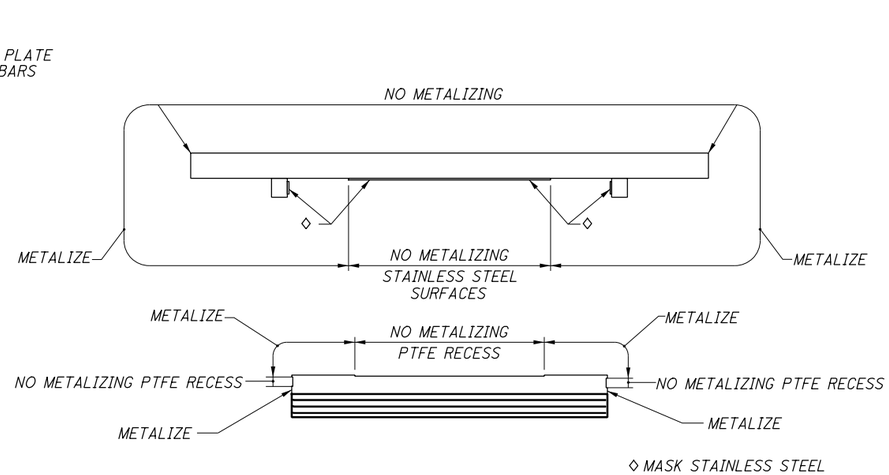
Le - LENGTH OF LAMINATED ELASTOMERIC BEARING
We - WIDTH OF LAMINATED ELASTOMERIC BEARING
Te - TOTAL THICKNESS OF LAMINATED ELASTOMERIC BEARING
ti - THICKNESS OF INTERNAL ELASTOMER LAYER
te - THICKNESS OF EXTERNAL ELASTOMER LAYER
N - NUMBER OF INTERNAL ELASTOMER LAYERS
t - THICKNESS OF STEEL LAMINATES
P - NUMBER OF STEEL LAMINATES



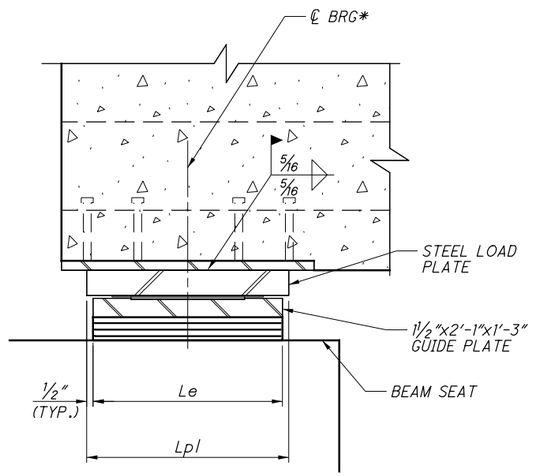
DETAIL A



BEARING ELEVATION



METALIZING DIAGRAM



SECTION A-B

ABUTMENT BEARING DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

33 / 65

137 / 189

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

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LOCATION		TYPE	ELASTOMER							STEEL LAMINATES		LOAD PLATE			LOAD (KIPS)		
			DUROMETER	Le	We	Te	ti	te	N	P	t	Lpl	Wpl	Tpl	DL	LL	TOTAL
PIERS 1	BRG 1	EXP	50	14″	22″	1.16″	0.44″	0.3″	2	2	0.0747″	15″	41″	2″	203	110	313
	BRG 2	EXP	50	14″	22″	1.16″	0.44″	0.3″	2	2	0.0747″	15″	41″	2 3/16″	203	110	313
PIERS 7	BRG 1	EXP	50	14″	22″	1.16″	0.44″	0.3″	2	2	0.0747″	15″	41″	2″	203	110	313
	BRG 2	EXP	50	14″	22″	1.16″	0.44″	0.3″	2	2	0.0747″	15″	41″	2″	209	110	319

NOTES:

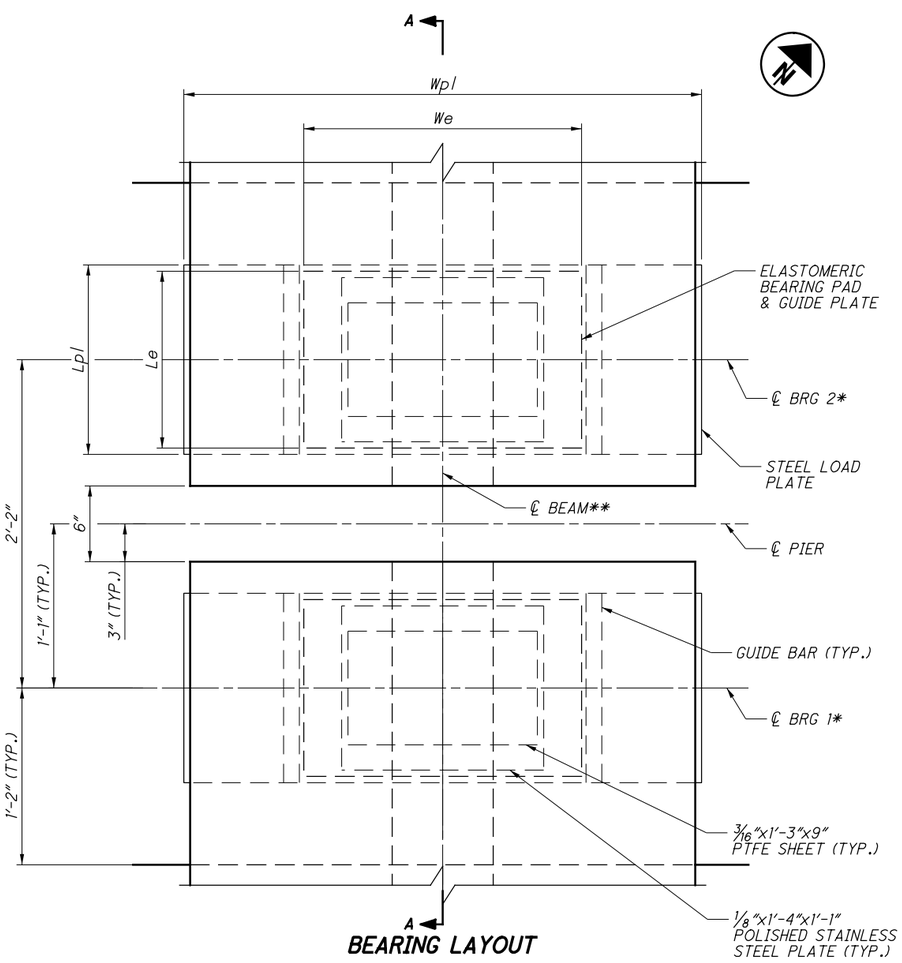
1. LOAD PLATE:
   THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
2. ELASTOMERIC BEARING:
   THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, SECTION 14.7.6 (METHOD A) OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS. THE LONG TERM COMPRESSION PROOF LOAD TEST (AASHTO STANDARD SPECIFICATION FOR HIGHWAY BRIDGES, DIVISION II, SECTION 18.7.2.6) IS NOT REQUIRED.
3. THE STEEL LOAD PLATES, GUIDE PLATES AND GUIDE BARS SHALL BE METALIZED ASTM A709 GRADE 50 STEEL.
4. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.
5. FOR METALIZING DETAIL, SEE SHEET 33/65

LEGEND:

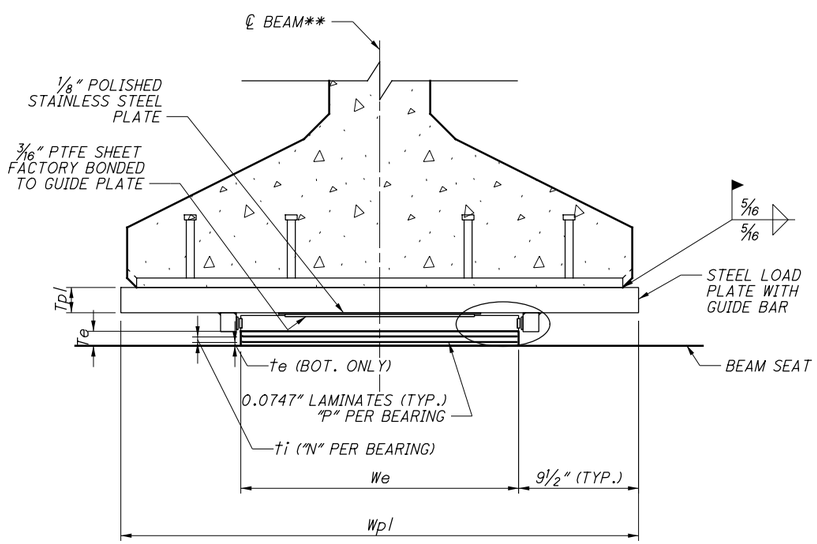
* - DIMENSIONS SYMMETRICAL ABOUT ℄ BRG (& BRG ASSEMBLY)

** - DIMENSIONS SYMMETRICAL ABOUT ℄ BEAM

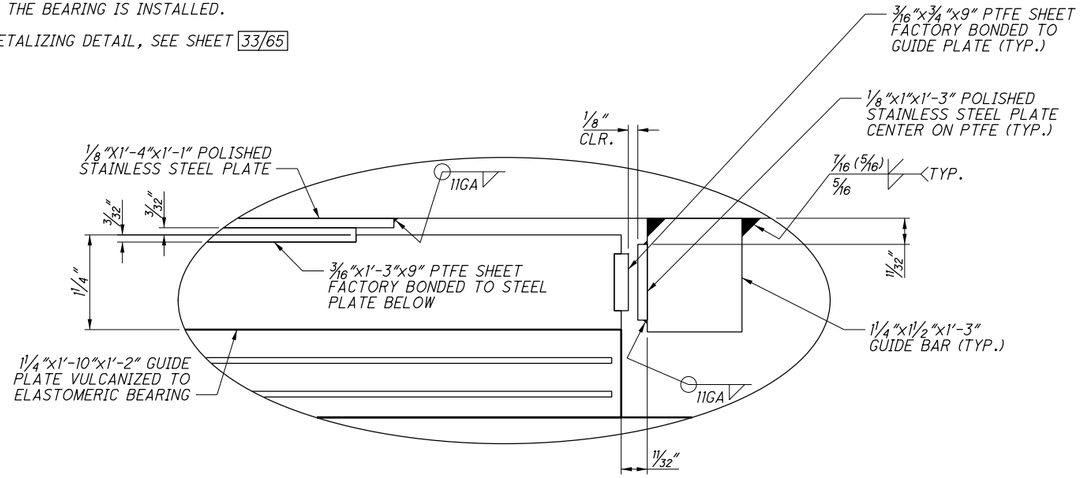
Le - LENGTH OF LAMINATED ELASTOMERIC BEARING
We - WIDTH OF LAMINATED ELASTOMERIC BEARING
Te - TOTAL THICKNESS OF LAMINATED ELASTOMERIC BEARING
ti - THICKNESS OF INTERNAL ELASTOMER LAYER
te - THICKNESS OF EXTERNAL ELASTOMER LAYER
N - NUMBER OF INTERNAL ELASTOMER LAYERS
t - THICKNESS OF STEEL LAMINATES
P - NUMBER OF STEEL LAMINATES

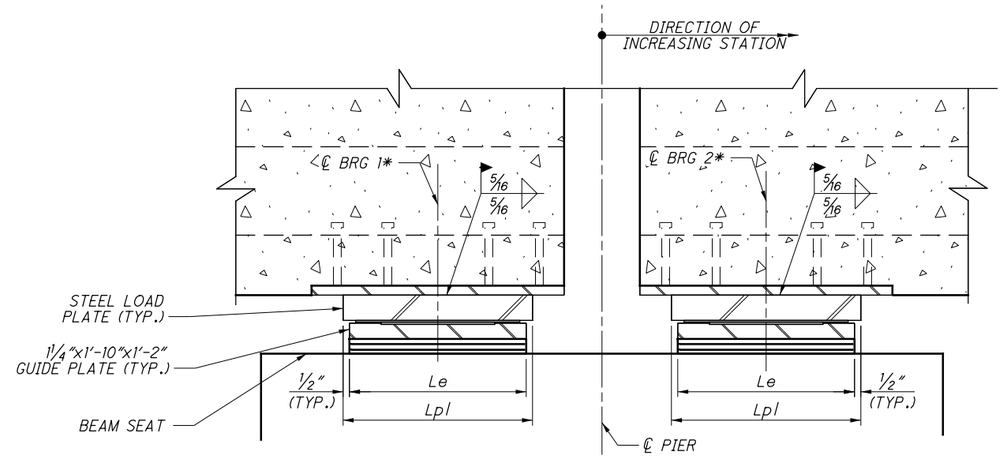


BEARING LAYOUT



BEARING ELEVATION





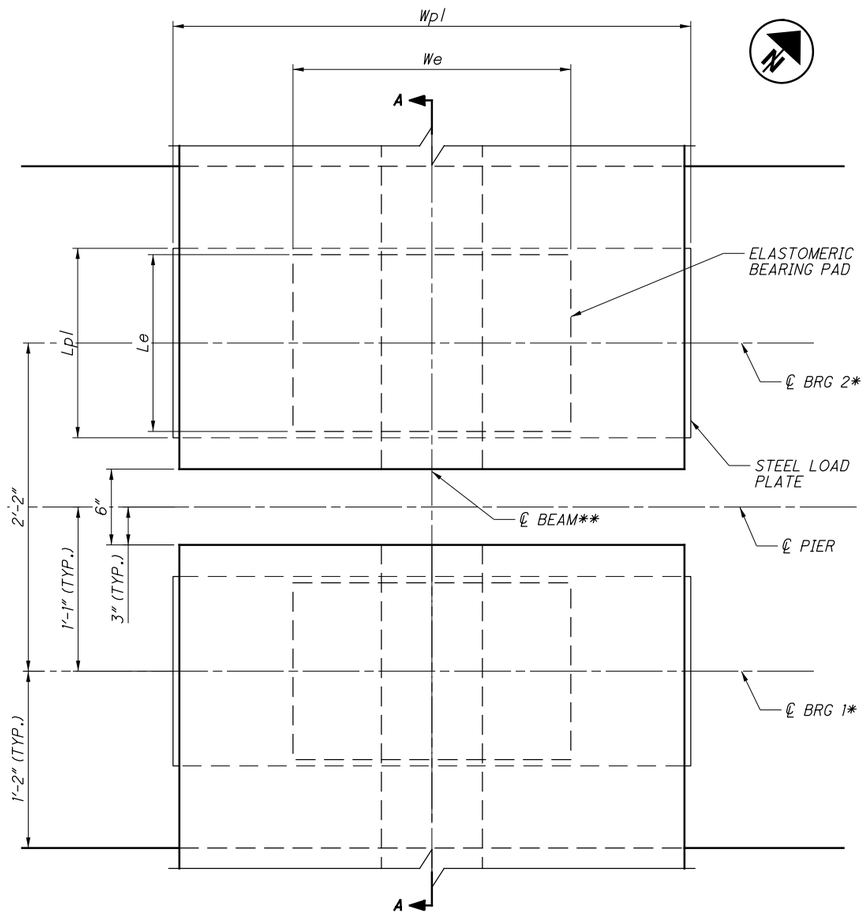
SECTION A-A

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
KRH	KRH	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

PIER BEARING DETAILS (PIERS 1 & 7)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



BEARING LAYOUT

			ELASTOMER							STEEL LAMINATES		LOAD PLATE			LOAD (KIPS)		
LOCATION		TYPE	DUROMETER	Le	We	Te	ti	te	N	P	t	Lpl	Wpl	Tpl	DL	LL	TOTAL
PIERS 2 THRU 6	BRG 1	EXP	50	14"	22"	2.36"	0.44"	0.3"	4	4	0.0747"	15"	41"	2"	203	110	313
	BRG 2	EXP	50	14"	22"	2.36"	0.44"	0.3"	4	4	0.0747"	15"	41"	2 3/16"	203	110	313

NOTES:

1. LOAD PLATE:
   THE STEEL LOAD PLATE SHALL BE BONDED BY VULCANIZATION TO THE ELASTOMER DURING THE MOLDING PROCESS.
2. ELASTOMERIC BEARING:
   THE ELASTOMER SHALL HAVE A HARDNESS OF 50 DUROMETER. THE BEARINGS WERE DESIGNED UNDER DIVISION I, 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.
3. STEEL LOAD PLATES SHALL BE METALIZED ASTM A709 GRADE 50 STEEL.
4. ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND BE VISIBLE AFTER THE BEARING IS INSTALLED.

LEGEND:

* - DIMENSIONS SYMMETRICAL ABOUT ℄ BRG (& BRG ASSEMBLY)

** - DIMENSIONS SYMMETRICAL ABOUT ℄ BEAM

Le - LENGTH OF LAMINATED ELASTOMERIC BEARING
We - WIDTH OF LAMINATED ELASTOMERIC BEARING
Te - TOTAL THICKNESS OF LAMINATED ELASTOMERIC BEARING
ti - THICKNESS OF INTERNAL ELASTOMER LAYER
te - THICKNESS OF EXTERNAL ELASTOMER LAYER
N - NUMBER OF INTERNAL ELASTOMER LAYERS
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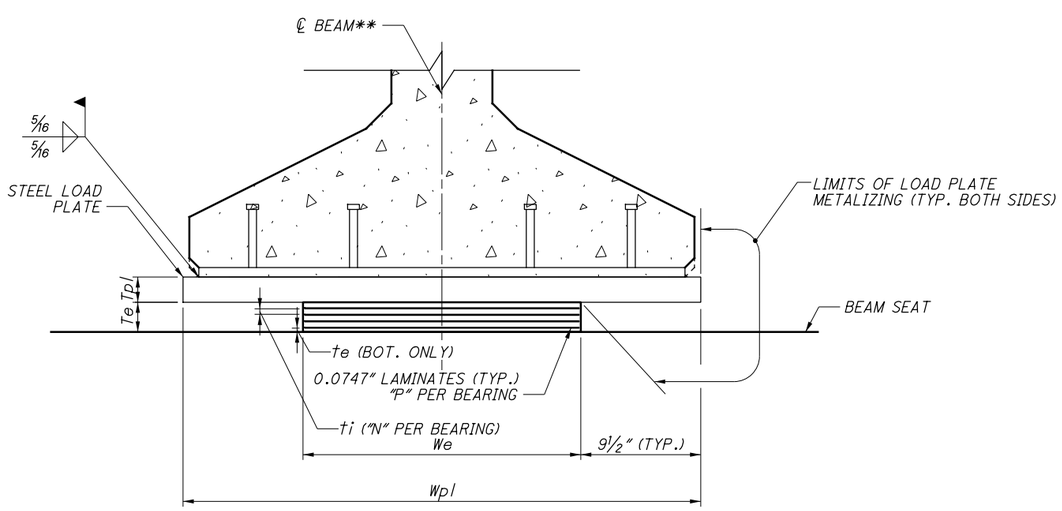
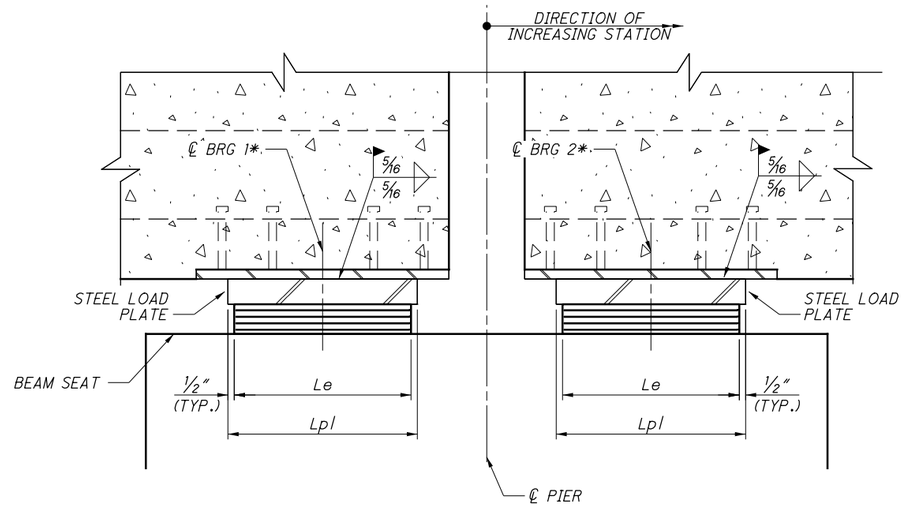
P - NUMBER OF STEEL LAMINATES



BEARING ELEVATION



SECTION A-A

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

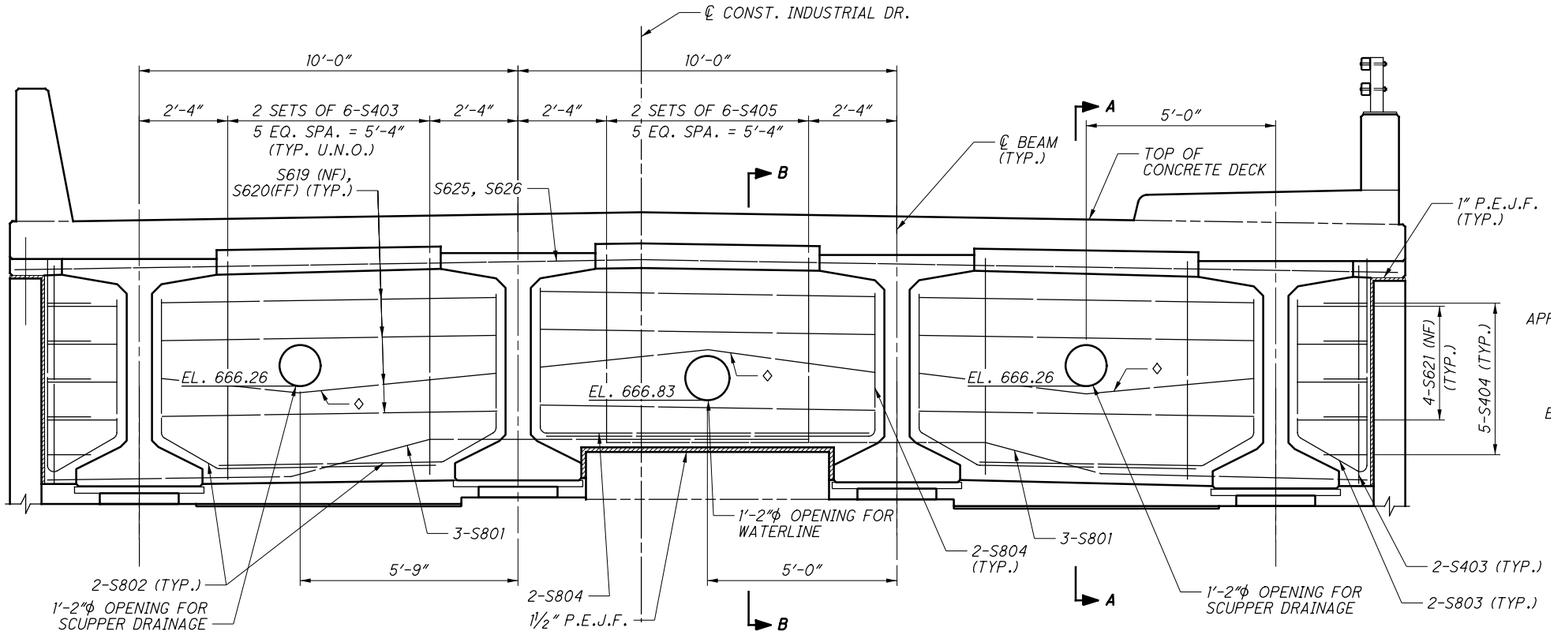
DESIGNED	DRAWN	REVIEWED	DATE
KRH	KRH	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

PIER BEARING DETAILS (PIERS 2 - 6)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

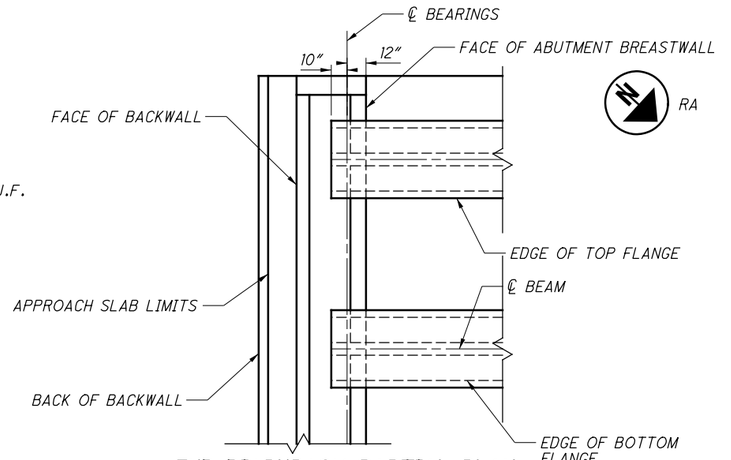
35 / 65

139 / 189



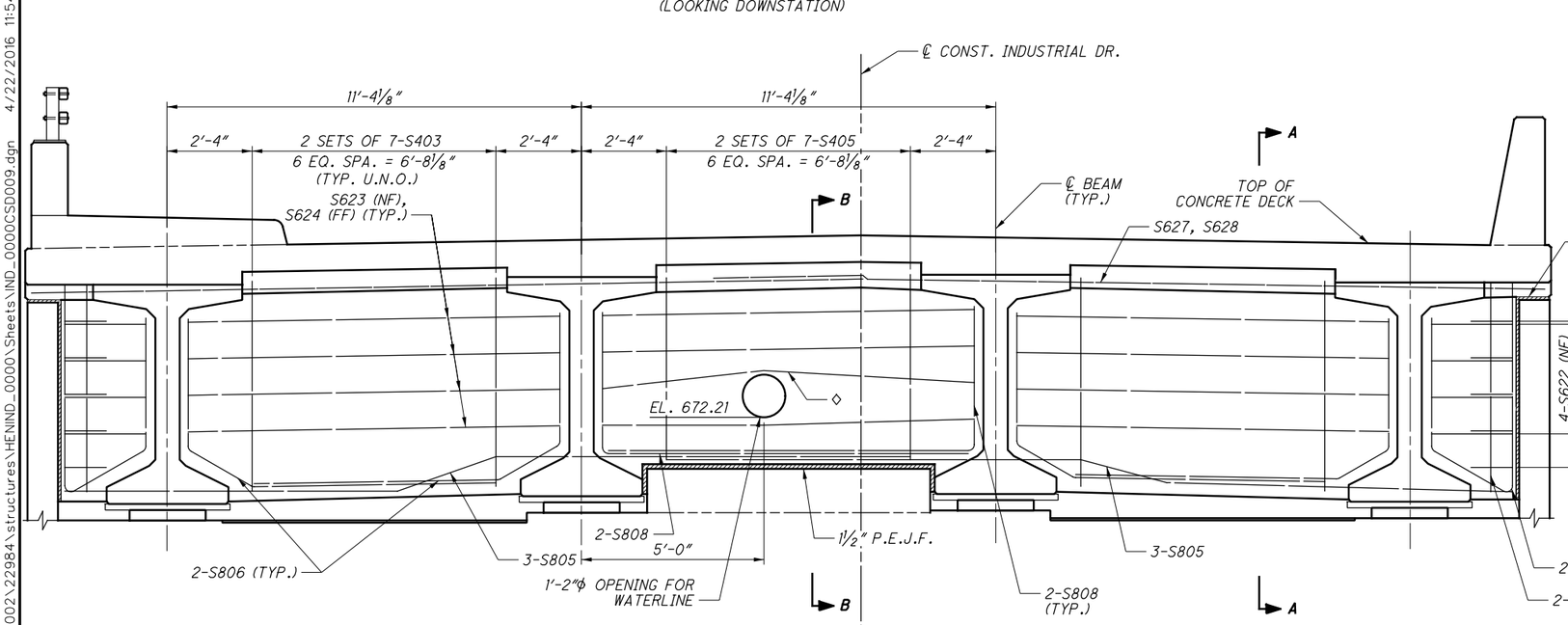
REAR ABUTMENT END DIAPHRAGM ELEVATION

(LOOKING DOWNSTATION)



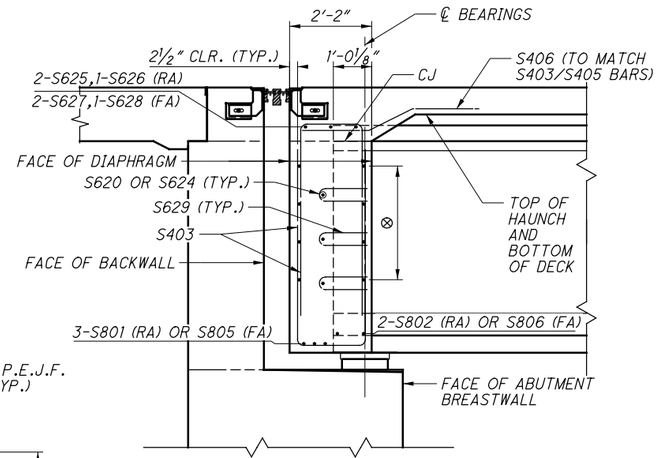
END DIAPHRAGM PARTIAL PLAN

(REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR, OPPOSITE HAND)
(MODULAR EXPANSION JOINT NOT SHOWN FOR CLARITY)

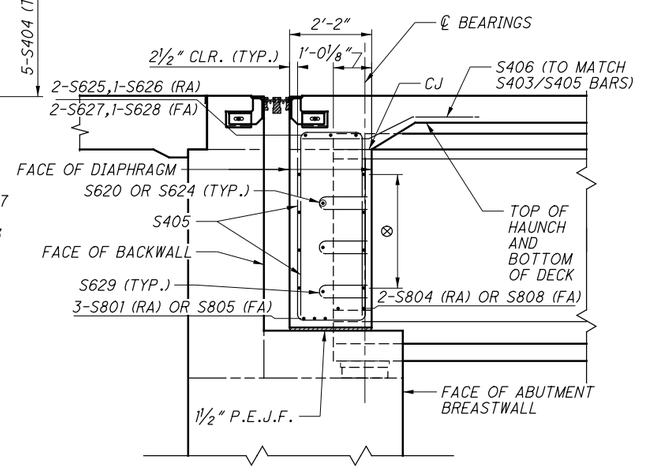


FORWARD ABUTMENT END DIAPHRAGM ELEVATION

(LOOKING UPSTATION)



SECTION A-A



SECTION B-B

NOTES:

1. FOR ADDITIONAL DETAILS AND NOTES NOT SHOWN, SEE ODOT STANDARD DRAWING PSID-1-13.
2. FOR BEARING DETAILS, SEE SHEET 33/65 .
3. PLACE VERTICAL BARS PARALLEL TO BEAMS.
4. ABUTMENT DIAPHRAGM, PRESTRESSED I-BEAM SUPERSTRUCTURE: PLACE THE CONCRETE ENCASING THE PRESTRESSED I-BEAM STRUCTURAL MEMBERS AS PART OF THE DECK POUR.

DIAPHRAGM REINFORCING REQUIRED LAP LENGTHS	
HORIZONTAL NO. 6 BARS	4′-1″ MIN.
HORIZONTAL NO. 8 BARS	6′-10″ MIN.

LEGEND:

⊗ - 4-S619 (RA) OR 4-S623 (FA) (NF)
4-S620 (RA) OR 4-S624 (FA) (FF)
3 SPA. @ 1′-0″ MAX.

◊ - FIELD BEND TO AVOID PIPE OPENINGS

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

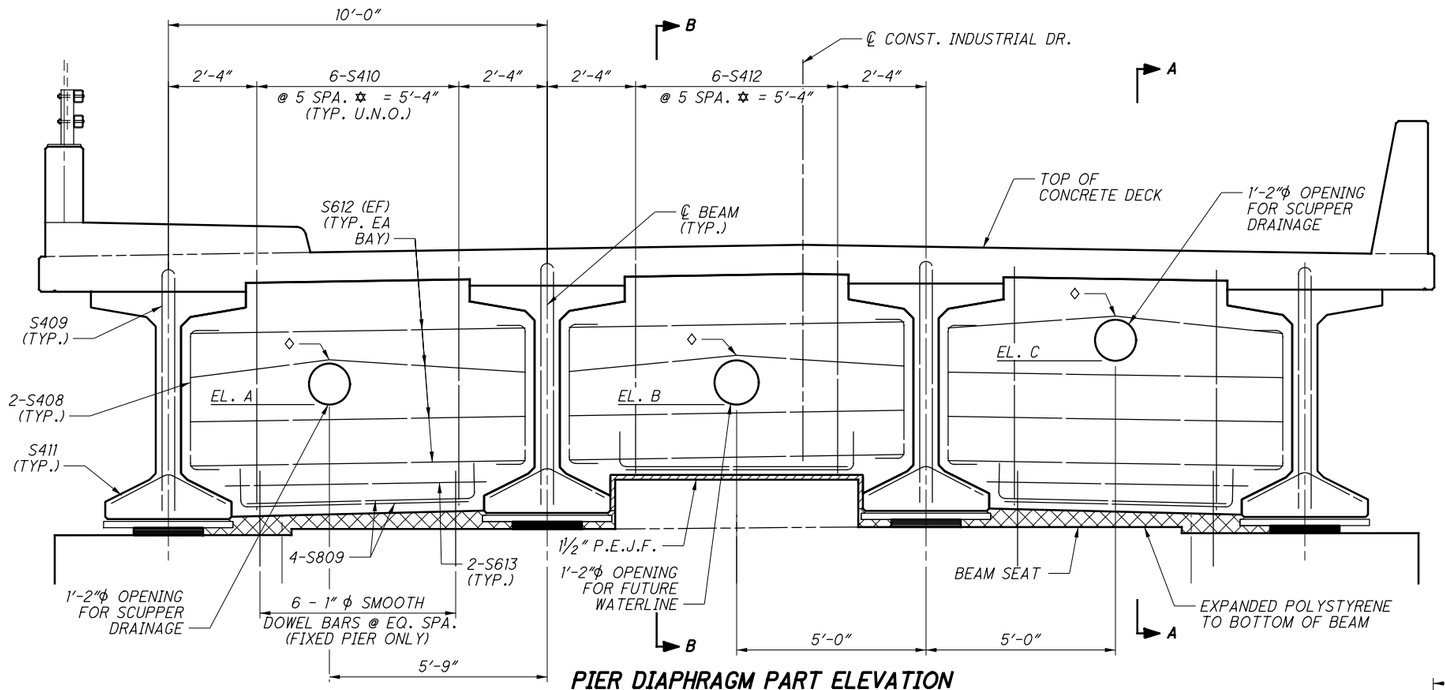
DESIGNED KRH | DRAWN RJS | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

END DIAPHRAGM DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

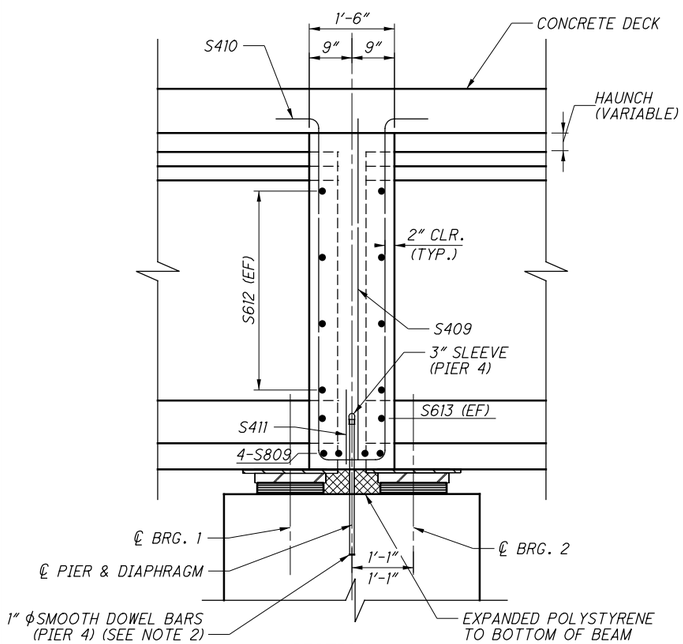
SCUPPER DRAINAGE OPENING LOCATION		
PIER	EL. A	EL. C
1	667.43	668.59
2	668.60	-
3	669.76	-
4	670.96	-
5	672.14	-

WATERLINE OPENING LOCATION	
PIER	EL. B
1	666.62
2	667.42
3	668.22
4	669.02
5	669.82
6	670.62
7	671.42

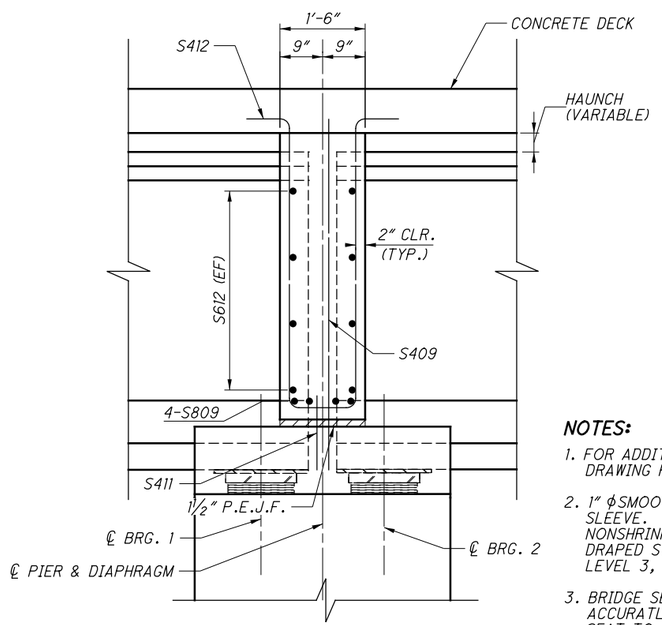


PIER DIAPHRAGM PART ELEVATION

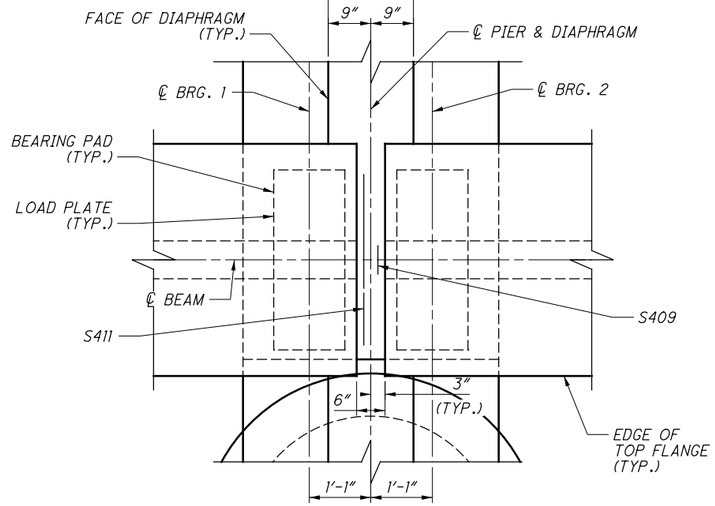
✡ - SPA. NOT TO EXCEED 1'-0" EXCEPT TO AVOID SCUPPER & WATERLINE OPENINGS.



SECTION A-A



SECTION B-B



PIER PARTIAL PLAN

NOTES:

1. FOR ADDITIONAL DETAILS AND NOTES NOT SHOWN, SEE ODOT STANDARD DRAWING PSID-1-13.
2. 1" ϕSMOOTH DOWEL BARS ARE ASTM A311 CLASS A, GRADE 1018, WITH SLEEVE. (INSTALL DOWEL ACCORDING TO ITEM 510 DOWEL HOLES WITH NONSHRINK, NON-METALLIC GROUT, 705.20.) INCLUDED WITH ITEM 515, DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, WF72-49 FOR PAYMENT.
3. BRIDGE SEAT REINFORCING, SETTING ANCHORS: ACCURATLY PLACE REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT TO AVOID INTERFERENCE WITH THE DRILLING OF ANCHOR HOLES OR THE PRESETTING OF ANCHORS.

LEGEND:

◇ - FIELD BEND AROUND PIPE OPENINGS

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED CWE | DRAWN JEC | REVIEWED TLR | DATE 04/2016
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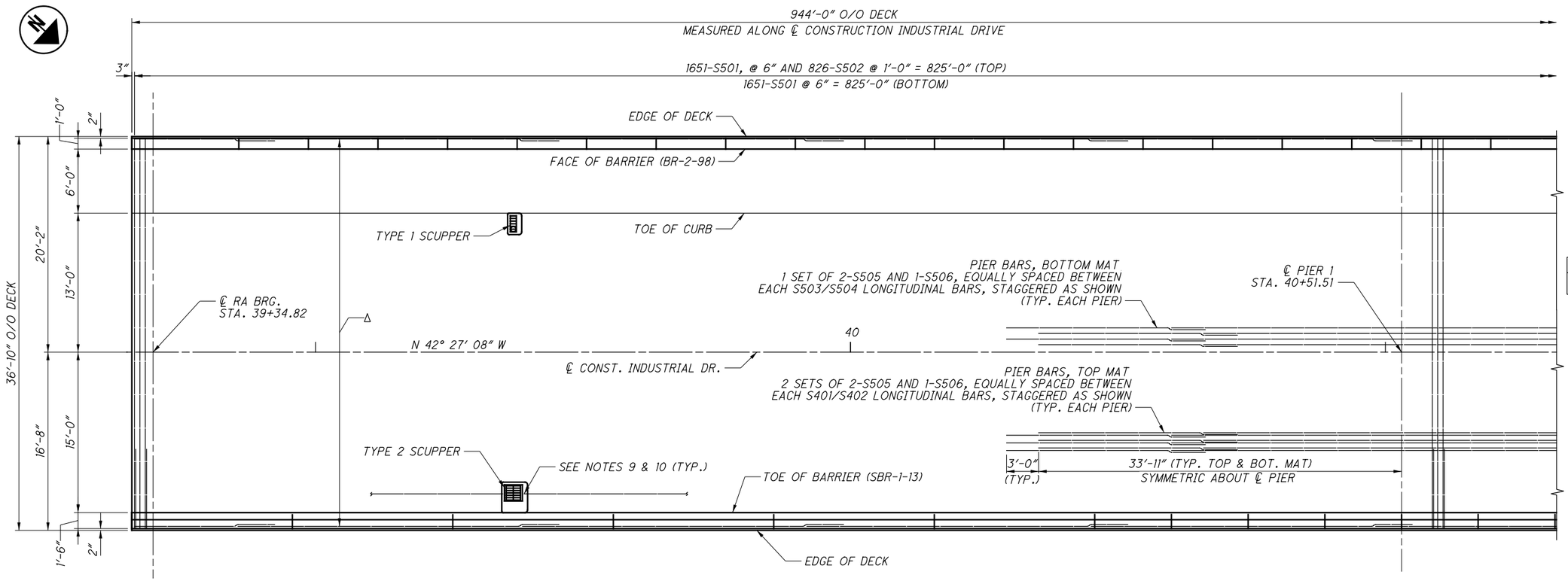
PIER DIAPHRAGM DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

37 / 65
141 / 189



DECK REINFORCING REQUIRED LAP LENGTHS	
NO. 4 BARS	2'-0" MIN.
NO. 5 BARS	3'-2" MIN.
NO. 6 BARS	3'-10" MIN.

Δ FROM REAR TO FORWARD	
TOP BARS	BOTTOM BARS
1 SET OF 48-S402 28 SET OF 48-S401 5 SET OF 48-S503	1 SET OF 67-S504 1 SET OF 67-S503

PARTIAL DECK PLAN

NOTES:

1. FOR RAILING DETAILS, SEE SHEETS 50-53/65.
2. FOR TRANSVERSE SECTION, SEE SHEETS 40-41/65.
3. FOR APPROACH SLAB DEATILS, SEE SHEETS 57-58/65.
4. FOR SIDEWALK DETAILS, SEE SHEET 54/65.
5. FOR SCREED AND TOP OF HAUNCH ELEVATIONS, SEE SHEETS 43-45/65.
6. FOR FINAL DECK SURFACE ELEVATIONS, SEE SHEETS 46-47/65.
7. FOR EXPANSION JOINT DETAILS, SEE SHEET 55-57/65.
8. DECK POUR SEQUENCE SHALL BE AS PER STD. DWG. PSID-1-13.
9. CUT REINFORCING BARS AROUND SCUPPER LOCATIONS (ALLOW 3" COVER) AND REPAIR BAR ENDS PER CMS 509.09.
10. FOR SCUPPER DETAILS, SEE SHEET 60/65.
11. DECK SLAB CONCRETE QUANTITY: THE ESTIMATED QUANTITY OF DECK SLAB CONCRETE IS BASED ON THE CONSTANT DECK SLAB THICKNESS THAT FORMS EACH BEAM/GIRDER HAUNCH. THE ESTIMATE ASSUMES A VARIABLE HAUNCH THICKNESS OF MINIMUM 2". DEVIATE FROM THIS HAUNCH THICKNESS AS NECESARRY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE.

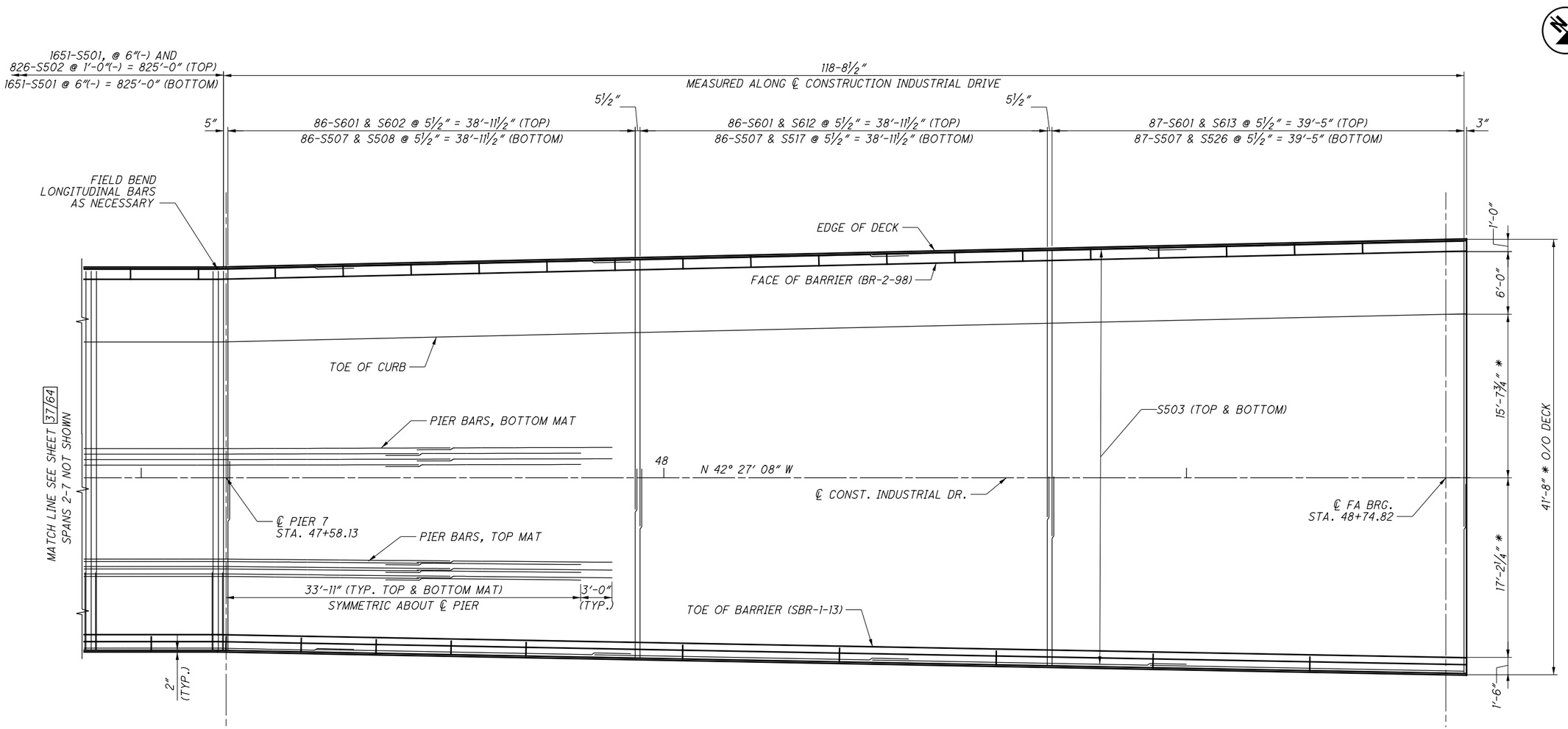
    THE HAUNCH THICKNESS WAS MEASURED AT THE CENTERLINE OF THE BEAM/GIRDER, FROM THE SURFACE OF THE DECK TO THE TOP OF THE TOP FLANGE MINUS THE DECK SLAB THICKNESS.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
KRH	AMK	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

DECK PLAN (1 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



* - MEASURED AT ℄ BEARING

PARTIAL DECK PLAN

DECK REINFORCING REQUIRED LAP LENGTHS	
NO. 4 BARS	2'-0" MIN.
NO. 5 BARS	3'-2" MIN.
NO. 6 BARS	3'-10" MIN.

NOTES:

1. FOR NOTES, SEE SHEET 38/65.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
KRH	AMK	TLR	04/2016
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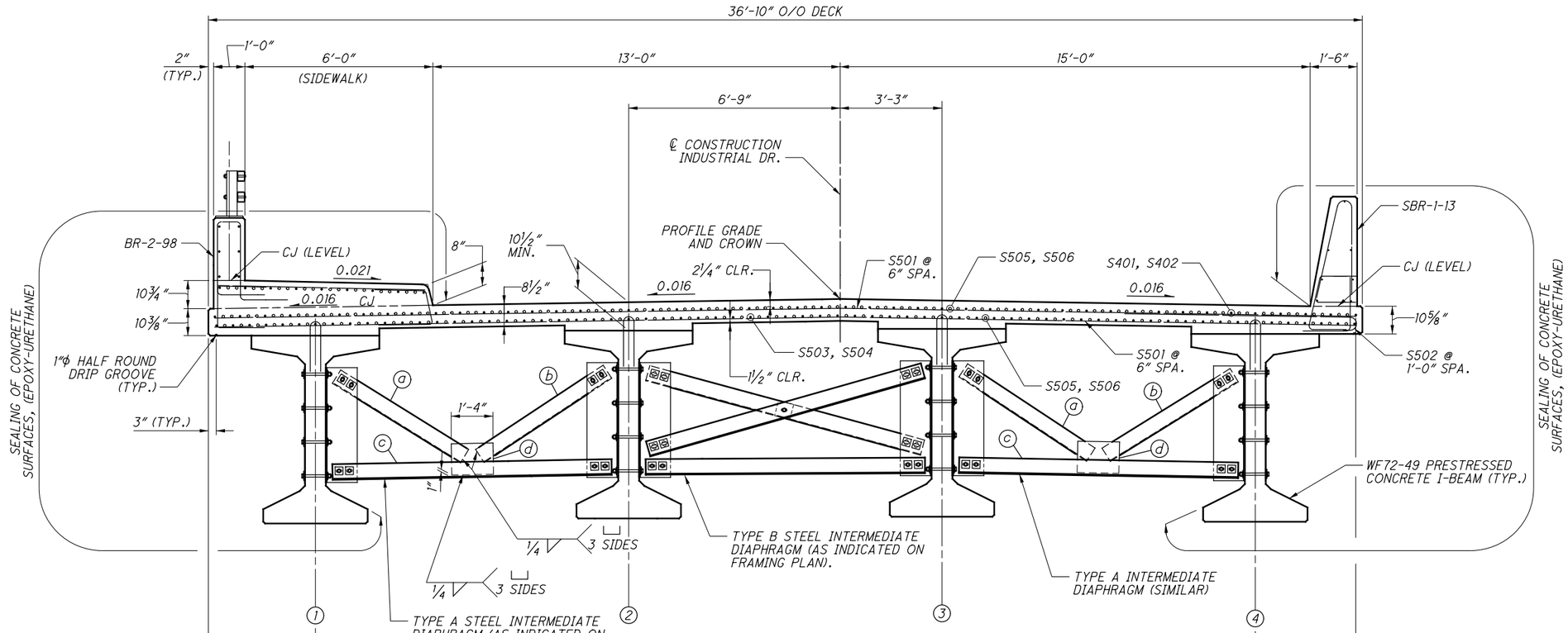
SCT		TBD	

DECK PLAN (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

39/65

143/189



LEGEND:

(#) - DESIGNATES BEAM LINE NUMBER

(a) - L6x4x5/16x4'-10¾" (L.L.V)

(b) - L6x4x5/16x4'-10⅝" (L.L.V)

(c) - L6x6x⅜x8'-10⅞"

(d) - PL ⅝"x10"x1'-4"

DECK REINFORCING REQUIRED LAP LENGTHS	
NO. 4 BARS	2'-0" MIN.
NO. 5 BARS	3'-2" MIN.
NO. 6 BARS	3'-10" MIN.

TRANSVERSE SECTION

SPANS 1 - 7

NOTES:

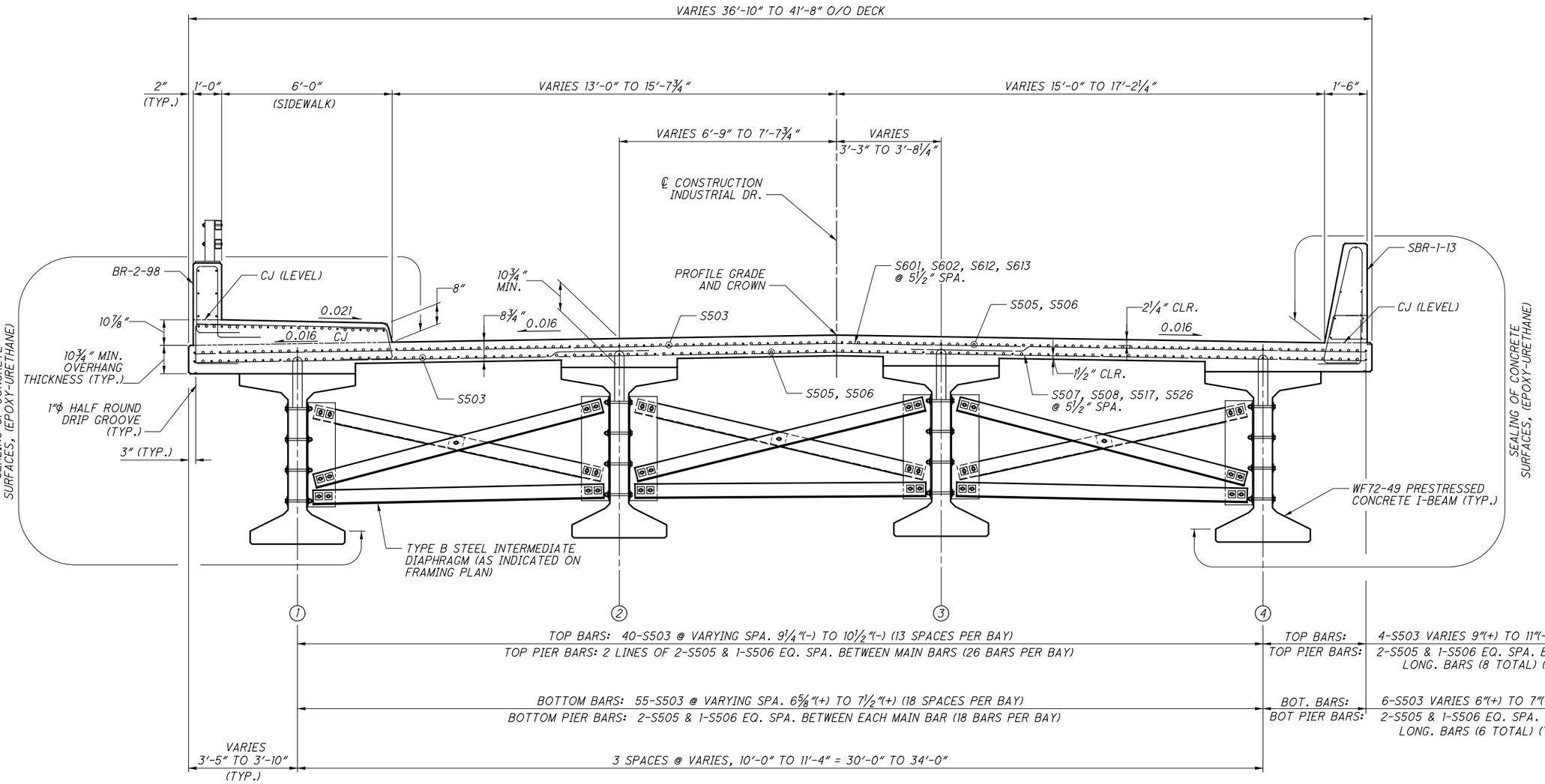
1. FOR SPAN 8 TRANSVERSE SECTION, SEE SHEET 40/64.
2. DECK SLAB THICKNESS FOR CONCRETE QUANTITY: THE TOPPING THICKNESSES SHOWN FROM THE TOP OF DECK SLAB TO THE TOP OF THE TOP FLANGE ALONG THE CENTERLINE OF THE I-BEAM ARE THEORETICAL DIMENSIONS. THE HAUNCH DEPTH IS THE TOPPING THICKNESS MINUS THE DESIGN SLAB THICKNESS. THE DEPARTMENT WILL PAY FOR SUPERSTRUCTURE CONCRETE BASED ON THE DESIGN SLAB THICKNESS AND THE AVERAGE OF THE THEORETICAL HAUNCH DEPTHS AT MID-SPAN AND AT EACH BEAM BEARING EVEN THOUGH THE DEVIATION FROM THE DIMENSIONS SHOWN MAY BE NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. ONCE ALL BEAMS ARE SET IN THEIR FINAL POSITION, THE ACTUAL CAMBER FOR EACH MEMBER WILL BE THE TOP OF THE BEAM ELEVATION AT THE MID-SPAN MINUS THE AVERAGE TOP OF BEAM ELEVATION AT EACH BEARING. THE ACTUAL TOPPING THICKNESS AT MID-SPAN WILL BE THE THEORETICAL DIMENSION PLUS OR MINUS THE DIFFERENCE BETWEEN THE ACTUAL AND ANTICIPATED CAMBER.
3. FOR DECK PLAN, SEE SHEETS 37-38/64.
4. FOR FRAMING PLAN, SEE SHEETS 28-30/64.
5. FOR RAILING DETAILS, SEE SHEETS 49-52/64.
6. FOR SIDEWALK DETAILS, SEE SHEET 53/64.
7. FOR PRESTRESSED I-BEAM DETAILS, SEE SHEET 31-32/64.
8. FOR "TYPE B" STEEL INTERMEDIATE DIAPHRAGM DETAILS, SEE STD. DWG. PSID-1-13.
9. FOR "TYPE A" STEEL INTERMEDIATE DIAPHRAGM DETAILS, USE STD. DWG. PSID-1-13 EXCEPT AS DETAILED HEREIN.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN AMK | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

TRANSVERSE SECTION (1 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



TRANSVERSE SECTION
SPAN 8

DECK REINFORCING REQUIRED LAP LENGTHS	
NO. 4 BARS	2'-0" MIN.
NO. 5 BARS	3'-2" MIN.
NO. 6 BARS	3'-10" MIN.

LEGEND:

(#) - DESIGNATES BEAM LINE NUMBER

NOTES:

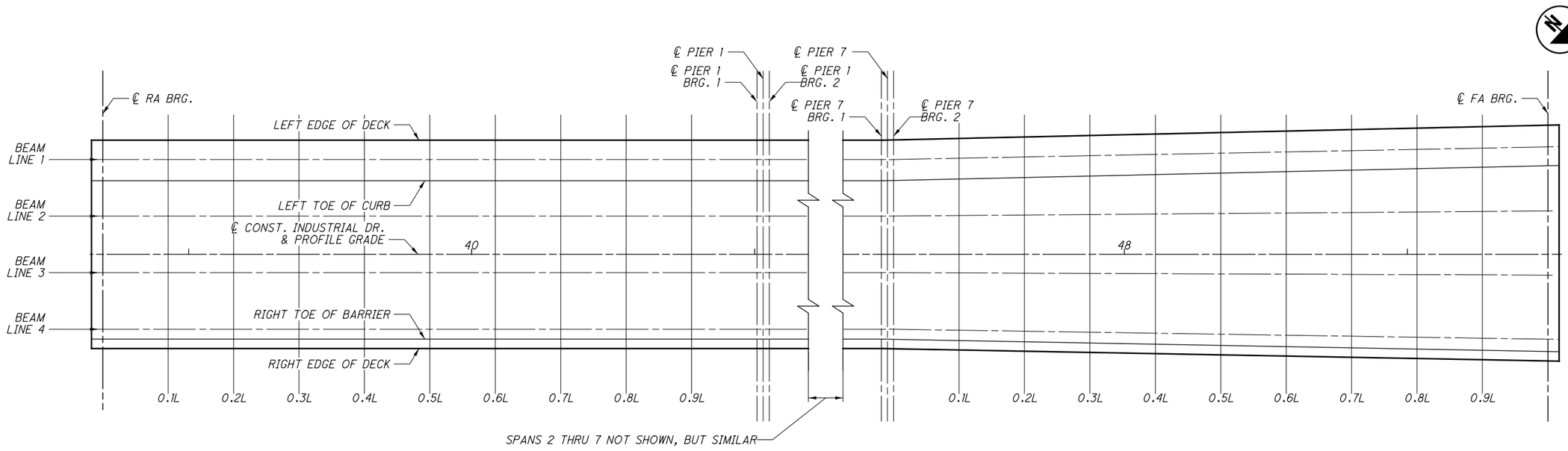
1. FOR TRANSVERSE SECTION ALONG SPANS 1 - 7, AND TRANSVERSE SECTION NOTES, SEE SHEET 39/64.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

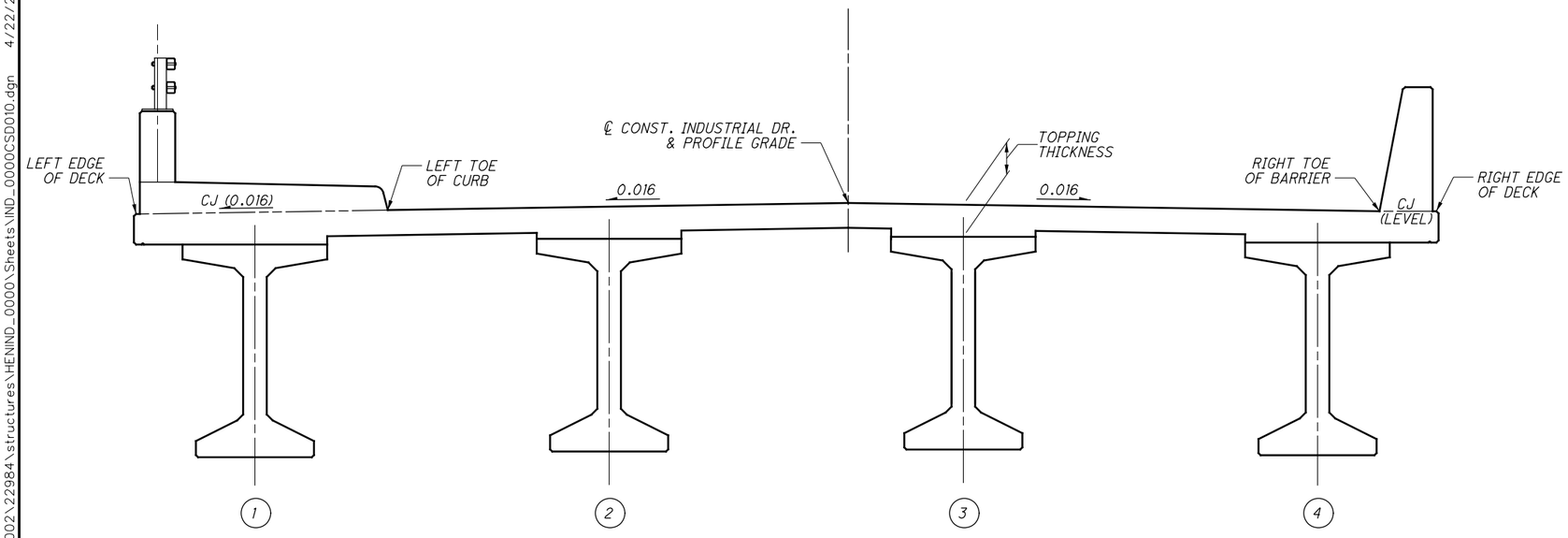
DESIGNED	DRAWN	REVIEWED	DATE
KRH	AMK	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

TRANSVERSE SECTION (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

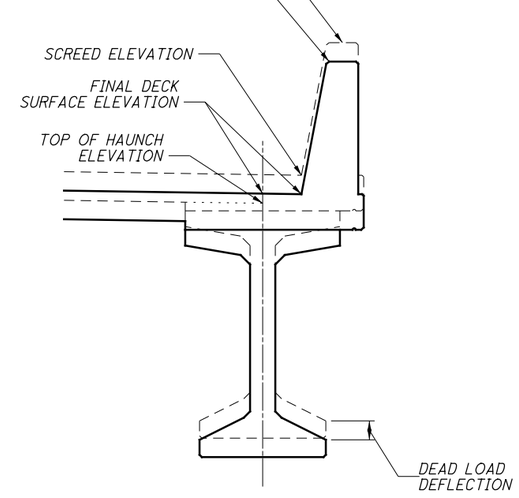
HEN-NEW BRIDGE
PID No. 22984



KEY PLAN



TYPICAL CROSS SECTION



SCREED AND HAUNCH LOCATION

NOTES:

1. DECK SLAB THICKNESS FOR CONCRETE QUANTITY: THE TOPPING THICKNESSES SHOWN FROM THE TOP OF THE DECK SLAB TO THE TOP OF THE TOP FLANGE ALONG THE CENTERLINE OF THE I-BEAM ARE THEORETICAL DIMENSIONS. THE HAUNCH DEPTH CONCRETE BASED ON THE DESIGN SLAB THICKNESS AND THE AVERAGE OF THE THEORETICAL HAUNCH DEPTHS AT MID-SPAN AND AT EACH BEAM BEARING EVEN THROUGH DEVIATION FROM THE DIMENSIONS SHOWN MAY BE NECESSARY TO PLACE THE DECK SURFACE AT THE FINISHED GRADE. ONCE ALL BEAM S ARE SET IN THEIR FINAL POSITION, THE ACTUAL CAMBER FOR EACH MEMBER WILL BE THE TOP OF BEAM ELEVATION AT MID-SPAN MINUS THE AVERAGE TOP OF BEAM ELEVATION AT EACH BEARING. THE ACTUAL TOPPING THICKNESS AT MID-SPAN WILL BE THE THEORETICAL DIMENSION PLUS OR MINUS THE DIFFERENCE BETWEEN THE ACTUAL AND ANTICIPATED CAMBER.

LEGEND:

(#) - BEAM LINE NUMBER

BEAM LINE	BEAMS
1	B1, B5, B9, B13, B17, B21, B25, AND B29
2	B2, B6, B10, B14, B18, B22, B26, AND B30
3	B3, B7, B11, B15, B19, B23, B27, AND B31
4	B4, B8, B12, B16, B20, B24, B28, AND B32

MANNIK SMITH GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | CHECKED SCT
DRAWN AMK | REVISED
REVIEWED TLR | DATE 04/2016
STRUCTURE FILE NUMBER TBD

KEY PLAN
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

SCREED ELEVATIONS

	LOCATION	LEFT EDGE OF DECK		LEFT TOE OF CURB		CL CONST. IND DR & PG		RIGHT TOE OF BARRIER		RIGHT EDGE OF DECK	
		STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
SPAN 1	CL RA BRG	39+34.82	670.57	39+34.82	670.68	39+34.82	670.89	39+34.82	670.65	39+34.82	670.65
	0.1L	39+46.49	670.68	39+46.49	670.79	39+46.49	671.01	39+46.49	670.76	39+46.49	670.76
	0.2L	39+58.16	670.79	39+58.16	670.90	39+58.16	671.12	39+58.16	670.87	39+58.16	670.87
	0.3L	39+69.83	670.89	39+69.83	671.01	39+69.83	671.23	39+69.83	670.98	39+69.83	670.98
	0.4L	39+81.50	670.99	39+81.50	671.10	39+81.50	671.33	39+81.50	671.07	39+81.50	671.07
	0.5L	39+93.16	671.07	39+93.16	671.19	39+93.16	671.41	39+93.16	671.16	39+93.16	671.16
	0.6L	40+04.83	671.15	40+04.83	671.26	40+04.83	671.49	40+04.83	671.23	40+04.83	671.23
	0.7L	40+16.50	671.21	40+16.50	671.33	40+16.50	671.55	40+16.50	671.29	40+16.50	671.29
	0.8L	40+28.17	671.27	40+28.17	671.38	40+28.17	671.60	40+28.17	671.35	40+28.17	671.35
	0.9L	40+39.84	671.31	40+39.84	671.43	40+39.84	671.64	40+39.84	671.40	40+39.84	671.40
	P1 BRG 1	40+50.42	671.35	40+50.42	671.47	40+50.42	671.68	40+50.42	671.44	40+50.42	671.44
	PIER 1	40+51.51	671.36	40+51.51	671.48	40+51.51	671.68	40+51.51	671.44	40+51.51	671.44
SPAN 2	P1 BRG 2	40+52.59	671.37	40+52.59	671.48	40+52.59	671.69	40+52.59	671.45	40+52.59	671.45
	0.1L	40+63.28	671.47	40+63.28	671.59	40+63.28	671.80	40+63.28	671.56	40+63.28	671.56
	0.2L	40+75.06	671.58	40+75.06	671.70	40+75.06	671.92	40+75.06	671.67	40+75.06	671.67
	0.3L	40+86.84	671.69	40+86.84	671.80	40+86.84	672.03	40+86.84	671.77	40+86.84	671.77
	0.4L	40+98.62	671.79	40+98.62	671.90	40+98.62	672.12	40+98.62	671.87	40+98.62	671.87
	0.5L	41+10.39	671.87	41+10.39	671.99	41+10.39	672.21	41+10.39	671.95	41+10.39	671.95
	0.6L	41+22.17	671.95	41+22.17	672.06	41+22.17	672.28	41+22.17	672.03	41+22.17	672.03
	0.7L	41+33.95	672.01	41+33.95	672.12	41+33.95	672.35	41+33.95	672.09	41+33.95	672.09
	0.8L	41+45.72	672.07	41+45.72	672.18	41+45.72	672.40	41+45.72	672.15	41+45.72	672.15
	0.9L	41+57.50	672.11	41+57.50	672.23	41+57.50	672.44	41+57.50	672.20	41+57.50	672.20
	P2 BRG 1	41+68.19	672.15	41+68.19	672.27	41+68.19	672.48	41+68.19	672.24	41+68.19	672.24
	PIER 2	41+69.28	672.16	41+69.28	672.28	41+69.28	672.48	41+69.28	672.24	41+69.28	672.24
SPAN 3	P2 BRG 2	41+70.36	672.17	41+70.36	672.28	41+70.36	672.49	41+70.36	672.25	41+70.36	672.25
	0.1L	41+81.06	672.27	41+81.06	672.39	41+81.06	672.60	41+81.06	672.36	41+81.06	672.36
	0.2L	41+92.83	672.39	41+92.83	672.50	41+92.83	672.72	41+92.83	672.47	41+92.83	672.47
	0.3L	42+04.61	672.49	42+04.61	672.61	42+04.61	672.83	42+04.61	672.57	42+04.61	672.57
	0.4L	42+16.39	672.59	42+16.39	672.70	42+16.39	672.92	42+16.39	672.67	42+16.39	672.67
	0.5L	42+28.16	672.67	42+28.16	672.79	42+28.16	673.01	42+28.16	672.75	42+28.16	672.75
	0.6L	42+39.94	672.75	42+39.94	672.86	42+39.94	673.09	42+39.94	672.83	42+39.94	672.83
	0.7L	42+51.72	672.81	42+51.72	672.93	42+51.72	673.15	42+51.72	672.89	42+51.72	672.89
	0.8L	42+63.49	672.87	42+63.49	672.98	42+63.49	673.20	42+63.49	672.95	42+63.49	672.95
	0.9L	42+75.27	672.92	42+75.27	673.03	42+75.27	673.24	42+75.27	673.00	42+75.27	673.00
	P3 BRG 1	42+85.97	672.96	42+85.97	673.07	42+85.97	673.28	42+85.97	673.04	42+85.97	673.04
	PIER 3	42+87.05	672.96	42+87.05	673.08	42+87.05	673.29	42+87.05	673.05	42+87.05	673.05
SPAN 4	P3 BRG 2	42+88.13	672.97	42+88.13	673.08	42+88.13	673.29	42+88.13	673.05	42+88.13	673.05
	0.1L	42+98.83	673.08	42+98.83	673.19	42+98.83	673.40	42+98.83	673.16	42+98.83	673.16
	0.2L	43+10.60	673.19	43+10.60	673.30	43+10.60	673.52	43+10.60	673.27	43+10.60	673.27
	0.3L	43+22.38	673.29	43+22.38	673.41	43+22.38	673.63	43+22.38	673.37	43+22.38	673.37
	0.4L	43+34.16	673.39	43+34.16	673.50	43+34.16	673.73	43+34.16	673.47	43+34.16	673.47
	0.5L	43+45.93	673.47	43+45.93	673.59	43+45.93	673.81	43+45.93	673.56	43+45.93	673.56
	0.6L	43+57.71	673.55	43+57.71	673.66	43+57.71	673.89	43+57.71	673.63	43+57.71	673.63
	0.7L	43+69.49	673.61	43+69.49	673.73	43+69.49	673.95	43+69.49	673.69	43+69.49	673.69
	0.8L	43+81.27	673.67	43+81.27	673.78	43+81.27	674.00	43+81.27	673.75	43+81.27	673.75
	0.9L	43+93.04	673.72	43+93.04	673.83	43+93.04	674.04	43+93.04	673.80	43+93.04	673.80
	P4 BRG 1	44+03.74	673.76	44+03.74	673.87	44+03.74	674.08	44+03.74	673.84	44+03.74	673.84

SCREED ELEVATIONS

	LOCATION	LEFT EDGE OF DECK		LEFT TOE OF CURB		CL CONST. IND DR & PG		RIGHT TOE OF BARRIER		RIGHT EDGE OF DECK	
		STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.	STATION	ELEV.
	PIER 4	44+04.82	673.76	44+04.82	673.88	44+04.82	674.09	44+04.82	673.85	44+04.82	673.85
SPAN 5	P4 BRG 2	44+05.90	673.77	44+05.90	673.89	44+05.90	674.09	44+05.90	673.85	44+05.90	673.85
	0.1L	44+16.60	673.88	44+16.60	673.99	44+16.60	674.20	44+16.60	673.96	44+16.60	673.96
	0.2L	44+28.37	673.99	44+28.37	674.10	44+28.37	674.32	44+28.37	674.07	44+28.37	674.07
	0.3L	44+40.15	674.09	44+40.15	674.21	44+40.15	674.43	44+40.15	674.17	44+40.15	674.17
	0.4L	44+51.93	674.19	44+51.93	674.30	44+51.93	674.53	44+51.93	674.27	44+51.93	674.27
	0.5L	44+63.71	674.27	44+63.71	674.39	44+63.71	674.61	44+63.71	674.36	44+63.71	674.36
	0.6L	44+75.48	674.35	44+75.48	674.46	44+75.48	674.69	44+75.48	674.43	44+75.48	674.43
	0.7L	44+87.26	674.41	44+87.26	674.53	44+87.26	674.75	44+87.26	674.50	44+87.26	674.50
	0.8L	44+99.04	674.47	44+99.04	674.58	44+99.04	674.80	44+99.04	674.55	44+99.04	674.55
	0.9L	45+10.81	674.52	45+10.81	674.63	45+10.81	674.84	45+10.81	674.60	45+10.81	674.60
	P5 BRG 1	45+21.51	674.56	45+21.51	674.67	45+21.51	674.88	45+21.51	674.64	45+21.51	674.64
	PIER 5	45+22.59	674.56	45+22.59	674.68	45+22.59	674.89	45+22.59	674.65	45+22.59	674.65
SPAN 6	P5 BRG 2	45+23.67	674.57	45+23.67	674.69	45+23.67	674.89	45+23.67	674.65	45+23.67	674.65
	0.1L	45+34.37	674.68	45+34.37	674.79	45+34.37	675.00	45+34.37	674.76	45+34.37	674.76
	0.2L	45+46.14	674.79	45+46.14	674.90	45+46.14	675.12	45+46.14	674.87	45+46.14	674.87
	0.3L	45+57.92	674.89	45+57.92	675.01	45+57.92	675.23	45+57.92	674.98	45+57.92	674.98
	0.4L	45+69.70	674.99	45+69.70	675.10	45+69.70	675.33	45+69.70	675.07	45+69.70	675.07
	0.5L	45+81.48	675.07	45+81.48	675.19	45+81.48	675.41	45+81.48	675.16	45+81.48	675.16
	0.6L	45+93.25	675.15	45+93.25	675.26	45+93.25	675.49	45+93.25	675.23	45+93.25	675.23
	0.7L	46+05.03	675.21	46+05.03	675.33	46+05.03	675.55	46+05.03	675.30	46+05.03	675.30
	0.8L	46+16.81	675.27	46+16.81	675.38	46+16.81	675.60	46+16.81	675.35	46+16.81	675.35
	0.9L	46+28.58	675.32	46+28.58	675.43	46+28.58	675.65	46+28.58	675.40	46+28.58	675.40
	P6 BRG 1	46+39.28	675.36	46+39.28	675.47	46+39.28	675.68	46+39.28	675.44	46+39.28	675.44
	PIER 6	46+40.36	675.36	46+40.36	675.48	46+40.36	675.69	46+40.36	675.45	46+40.36	675.45
SPAN 7	P6 BRG 2	46+41.44	675.37	46+41.44	675.49	46+41.44	675.70	46+41.44	675.46	46+41.44	675.46
	0.1L	46+52.14	675.48	46+52.14	675.59	46+52.14	675.81	46+52.14	675.56	46+52.14	675.56
	0.2L	46+63.92	675.59	46+63.92	675.70	46+63.92	675.92	46+63.92	675.67	46+63.92	675.67
	0.3L	46+75.69	675.69	46+75.69	675.81	46+75.69	676.03	46+75.69	675.78	46+75.69	675.78
	0.4L	46+87.47	675.79	46+87.47	675.90	46+87.47	676.13	46+87.47	675.87	46+87.47	675.87
	0.5L	46+99.25	675.88	46+99.25	675.99	46+99.25	676.21	46+99.25	675.96	46+99.25	675.96
	0.6L	47+11.02	675.95	47+11.02	676.06	47+11.02	676.29	47+11.02	676.03	47+11.02	676.03
	0.7L	47+22.80	676.01	47+22.80	676.13	47+22.80	676.35	47+22.80	676.10	47+22.80	676.10
	0.8L	47+34.58	676.07	47+34.58	676.18	47+34.58	676.40	47+34.58	676.15	47+34.58	676.15
	0.9L	47+46.36	676.12	47+46.36	676.23	47+46.36	676.45	47+46.36	676.20	47+46.36	676.20
	P7 BRG 1	47+57.05	676.16	47+57.05	676.27	47+57.05	676.48	47+57.05	676.24	47+57.05	676.24
	PIER 7	47+58.13	676.17	47+58.13	676.28	47+58.13	676.49	47+58.13	676.25	47+58.13	676.25
SPAN 8	P7 BRG 2	47+59.22	676.17	47+59.22	676.29	47+59.22	676.50	47+59.22	676.26	47+59.22	676.26
	0.1L	47+69.80	676.27	47+69.80	676.39	47+69.80	676.61	47+69.80	676.36	47+69.80	676.36
	0.2L	47+81.47	676.38	47+81.47	676.50	47+81.47	676.73	47+81.47	676.47	47+81.47	676.47
	0.3L	47+93.14	676.48	47+93.14	676.60	47+93.14	676.84	47+93.14	676.57	47+93.14	676.57
	0.4L	48+04.81	676.58	48+04.81	676.69	48+04.81	676.94	48+04.81	676.66	48+04.81	676.66
	0.5L	48+16.48	676.66	48+16.48	676.77	48+16.48	677.04	48+16.48	676.75	48+16.48	676.75
	0.6L	48+28.14	676.73	48+28.14	676.84	48+28.14	677.11	48+28.14	676.82	48+28.14	676.82
	0.7L	48+39.81	676.79	48+39.81	676.90	48+39.81	677.17	48+39.81	676.88	48+39.81	676.88
	0.8L	48+51.48	676.84	48+51.48	676.95	48+51.48	677.21	48+51.48	676.93	48+51.48	676.93
	0.9L	48+63.15	676.88	48+63.15	676.99	48+63.15	677.25	48+63.15	676.97	48+63.15	676.97
	CL FA BRG	48+74.82	676.92	48+74.82	677.03	48+74.82	677.28	48+74.82	677.01	48+74.82	677.01

NOTES:

1. FOR DECK KEY PLAN, SEE SHEET 42/65
2. FOR TOP OF HAUNCH ELEVATIONS, SEE SHEETS 44-45/65
3. FOR FINAL DECK ELEVATIONS, SEE SHEETS 45-46/65
4. FOR HAUNCH THICKNESS, SEE SHEETS 48-49/65

SCREED ELEVATIONS

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

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

SCREED ELEVATIONS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

TOP OF HAUNCH ELEVATIONS

	LOCATION	BEAM LINE 1			BEAM LINE 2			BEAM LINE 3			BEAM LINE 4		
		STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)
SPAN 1	CL RA BRG	39+34.82	669.91	16.75 LT.	39+34.82	670.07	6.75 LT.	39+34.82	670.13	3.25 RT.	39+34.82	669.97	13.25 RT.
	0.1L	39+46.49	670.03	16.75 LT.	39+46.49	670.19	6.75 LT.	39+46.49	670.25	3.25 RT.	39+46.49	670.08	13.25 RT.
	0.2L	39+58.16	670.14	16.75 LT.	39+58.16	670.31	6.75 LT.	39+58.16	670.36	3.25 RT.	39+58.16	670.19	13.25 RT.
	0.3L	39+69.83	670.24	16.75 LT.	39+69.83	670.41	6.75 LT.	39+69.83	670.47	3.25 RT.	39+69.83	670.30	13.25 RT.
	0.4L	39+81.50	670.34	16.75 LT.	39+81.50	670.51	6.75 LT.	39+81.50	670.57	3.25 RT.	39+81.50	670.39	13.25 RT.
	0.5L	39+93.16	670.42	16.75 LT.	39+93.16	670.60	6.75 LT.	39+93.16	670.65	3.25 RT.	39+93.16	670.48	13.25 RT.
	0.6L	40+04.83	670.49	16.75 LT.	40+04.83	670.67	6.75 LT.	40+04.83	670.73	3.25 RT.	40+04.83	670.55	13.25 RT.
	0.7L	40+16.50	670.56	16.75 LT.	40+16.50	670.73	6.75 LT.	40+16.50	670.79	3.25 RT.	40+16.50	670.61	13.25 RT.
	0.8L	40+28.17	670.61	16.75 LT.	40+28.17	670.78	6.75 LT.	40+28.17	670.84	3.25 RT.	40+28.17	670.67	13.25 RT.
	0.9L	40+39.84	670.66	16.75 LT.	40+39.84	670.83	6.75 LT.	40+39.84	670.88	3.25 RT.	40+39.84	670.72	13.25 RT.
	P1 BRG 1	40+50.42	670.70	16.75 LT.	40+50.42	670.86	6.75 LT.	40+50.42	670.92	3.25 RT.	40+50.42	670.76	13.25 RT.
SPAN 2	P1 BRG 2	40+52.59	670.71	16.75 LT.	40+52.59	670.87	6.75 LT.	40+52.59	670.93	3.25 RT.	40+52.59	670.77	13.25 RT.
	0.1L	40+63.28	670.82	16.75 LT.	40+63.28	670.98	6.75 LT.	40+63.28	671.04	3.25 RT.	40+63.28	670.88	13.25 RT.
	0.2L	40+75.06	670.93	16.75 LT.	40+75.06	671.10	6.75 LT.	40+75.06	671.16	3.25 RT.	40+75.06	670.99	13.25 RT.
	0.3L	40+86.84	671.04	16.75 LT.	40+86.84	671.21	6.75 LT.	40+86.84	671.27	3.25 RT.	40+86.84	671.09	13.25 RT.
	0.4L	40+98.62	671.13	16.75 LT.	40+98.62	671.31	6.75 LT.	40+98.62	671.36	3.25 RT.	40+98.62	671.19	13.25 RT.
	0.5L	41+10.39	671.22	16.75 LT.	41+10.39	671.39	6.75 LT.	41+10.39	671.45	3.25 RT.	41+10.39	671.27	13.25 RT.
	0.6L	41+22.17	671.29	16.75 LT.	41+22.17	671.47	6.75 LT.	41+22.17	671.52	3.25 RT.	41+22.17	671.35	13.25 RT.
	0.7L	41+33.95	671.36	16.75 LT.	41+33.95	671.53	6.75 LT.	41+33.95	671.59	3.25 RT.	41+33.95	671.41	13.25 RT.
	0.8L	41+45.72	671.41	16.75 LT.	41+45.72	671.58	6.75 LT.	41+45.72	671.64	3.25 RT.	41+45.72	671.47	13.25 RT.
	0.9L	41+57.50	671.46	16.75 LT.	41+57.50	671.63	6.75 LT.	41+57.50	671.68	3.25 RT.	41+57.50	671.52	13.25 RT.
	P2 BRG 1	41+68.19	671.50	16.75 LT.	41+68.19	671.66	6.75 LT.	41+68.19	671.72	3.25 RT.	41+68.19	671.56	13.25 RT.
SPAN 3	P2 BRG 2	41+70.36	671.52	16.75 LT.	41+70.36	671.68	6.75 LT.	41+70.36	671.73	3.25 RT.	41+70.36	671.57	13.25 RT.
	0.1L	41+81.06	671.62	16.75 LT.	41+81.06	671.79	6.75 LT.	41+81.06	671.84	3.25 RT.	41+81.06	671.68	13.25 RT.
	0.2L	41+92.83	671.73	16.75 LT.	41+92.83	671.90	6.75 LT.	41+92.83	671.96	3.25 RT.	41+92.83	671.79	13.25 RT.
	0.3L	42+04.61	671.84	16.75 LT.	42+04.61	672.01	6.75 LT.	42+04.61	672.07	3.25 RT.	42+04.61	671.89	13.25 RT.
	0.4L	42+16.39	671.93	16.75 LT.	42+16.39	672.11	6.75 LT.	42+16.39	672.16	3.25 RT.	42+16.39	671.99	13.25 RT.
	0.5L	42+28.16	672.02	16.75 LT.	42+28.16	672.19	6.75 LT.	42+28.16	672.25	3.25 RT.	42+28.16	672.07	13.25 RT.
	0.6L	42+39.94	672.09	16.75 LT.	42+39.94	672.27	6.75 LT.	42+39.94	672.32	3.25 RT.	42+39.94	672.15	13.25 RT.
	0.7L	42+51.72	672.16	16.75 LT.	42+51.72	672.33	6.75 LT.	42+51.72	672.39	3.25 RT.	42+51.72	672.21	13.25 RT.
	0.8L	42+63.49	672.21	16.75 LT.	42+63.49	672.38	6.75 LT.	42+63.49	672.44	3.25 RT.	42+63.49	672.27	13.25 RT.
	0.9L	42+75.27	672.26	16.75 LT.	42+75.27	672.43	6.75 LT.	42+75.27	672.48	3.25 RT.	42+75.27	672.32	13.25 RT.
	P3 BRG 1	42+85.97	672.30	16.75 LT.	42+85.97	672.46	6.75 LT.	42+85.97	672.52	3.25 RT.	42+85.97	672.36	13.25 RT.
SPAN 4	P3 BRG 2	42+88.13	672.32	16.75 LT.	42+88.13	672.48	6.75 LT.	42+88.13	672.53	3.25 RT.	42+88.13	672.37	13.25 RT.
	0.1L	42+98.83	672.42	16.75 LT.	42+98.83	672.59	6.75 LT.	42+98.83	672.64	3.25 RT.	42+98.83	672.48	13.25 RT.
	0.2L	43+10.60	672.53	16.75 LT.	43+10.60	672.70	6.75 LT.	43+10.60	672.76	3.25 RT.	43+10.60	672.59	13.25 RT.
	0.3L	43+22.38	672.64	16.75 LT.	43+22.38	672.81	6.75 LT.	43+22.38	672.87	3.25 RT.	43+22.38	672.69	13.25 RT.
	0.4L	43+34.16	672.73	16.75 LT.	43+34.16	672.91	6.75 LT.	43+34.16	672.97	3.25 RT.	43+34.16	672.79	13.25 RT.
	0.5L	43+45.93	672.82	16.75 LT.	43+45.93	673.00	6.75 LT.	43+45.93	673.05	3.25 RT.	43+45.93	672.87	13.25 RT.
	0.6L	43+57.71	672.89	16.75 LT.	43+57.71	673.07	6.75 LT.	43+57.71	673.13	3.25 RT.	43+57.71	672.95	13.25 RT.
	0.7L	43+69.49	672.96	16.75 LT.	43+69.49	673.13	6.75 LT.	43+69.49	673.19	3.25 RT.	43+69.49	673.01	13.25 RT.
	0.8L	43+81.27	673.01	16.75 LT.	43+81.27	673.18	6.75 LT.	43+81.27	673.24	3.25 RT.	43+81.27	673.07	13.25 RT.
	0.9L	43+93.04	673.06	16.75 LT.	43+93.04	673.23	6.75 LT.	43+93.04	673.28	3.25 RT.	43+93.04	673.12	13.25 RT.
	P4 BRG 1	44+03.74	673.10	16.75 LT.	44+03.74	673.26	6.75 LT.	44+03.74	673.32	3.25 RT.	44+03.74	673.16	13.25 RT.

NOTES:

1. FOR DECK KEY PLAN, SEE SHEET 42/65
2. FOR SCREED ELEVATIONS, SEE SHEET 43/65
3. FOR FINAL DECK ELEVATIONS, SEE SHEETS 46-47/65
4. FOR HAUNCH THICKNESS, SEE SHEETS 48-49/65

TOP OF HAUNCH ELEVATIONS

TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

TOP OF HAUNCH ELEVATION (1 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

TOP OF HAUNCH ELEVATIONS

	LOCATION	BEAM LINE 1				BEAM LINE 2				BEAM LINE 3				BEAM LINE 4			
		STATION	ELEV.	OFFSET(FT.)		STATION	ELEV.	OFFSET(FT.)		STATION	ELEV.	OFFSET(FT.)		STATION	ELEV.	OFFSET(FT.)	
SPAN 5	P4 BRG 2	44+05.90	673.12	16.75	LT.	44+05.90	673.28	6.75	LT.	44+05.90	673.33	3.25	RT.	44+05.90	673.17	13.25	RT.
	0.1L	44+16.60	673.22	16.75	LT.	44+16.60	673.39	6.75	LT.	44+16.60	673.44	3.25	RT.	44+16.60	673.28	13.25	RT.
	0.2L	44+28.37	673.33	16.75	LT.	44+28.37	673.50	6.75	LT.	44+28.37	673.56	3.25	RT.	44+28.37	673.39	13.25	RT.
	0.3L	44+40.15	673.44	16.75	LT.	44+40.15	673.61	6.75	LT.	44+40.15	673.67	3.25	RT.	44+40.15	673.49	13.25	RT.
	0.4L	44+51.93	673.53	16.75	LT.	44+51.93	673.71	6.75	LT.	44+51.93	673.77	3.25	RT.	44+51.93	673.59	13.25	RT.
	0.5L	44+63.71	673.62	16.75	LT.	44+63.71	673.80	6.75	LT.	44+63.71	673.85	3.25	RT.	44+63.71	673.68	13.25	RT.
	0.6L	44+75.48	673.69	16.75	LT.	44+75.48	673.87	6.75	LT.	44+75.48	673.93	3.25	RT.	44+75.48	673.75	13.25	RT.
	0.7L	44+87.26	673.76	16.75	LT.	44+87.26	673.93	6.75	LT.	44+87.26	673.99	3.25	RT.	44+87.26	673.82	13.25	RT.
	0.8L	44+99.04	673.81	16.75	LT.	44+99.04	673.98	6.75	LT.	44+99.04	674.04	3.25	RT.	44+99.04	673.87	13.25	RT.
	0.9L	45+10.81	673.86	16.75	LT.	45+10.81	674.03	6.75	LT.	45+10.81	674.08	3.25	RT.	45+10.81	673.92	13.25	RT.
	P5 BRG 1	45+21.51	673.90	16.75	LT.	45+21.51	674.06	6.75	LT.	45+21.51	674.12	3.25	RT.	45+21.51	673.96	13.25	RT.
SPAN 6	P5 BRG 2	45+23.67	673.92	16.75	LT.	45+23.67	674.08	6.75	LT.	45+23.67	674.13	3.25	RT.	45+23.67	673.97	13.25	RT.
	0.1L	45+34.37	674.02	16.75	LT.	45+34.37	674.19	6.75	LT.	45+34.37	674.24	3.25	RT.	45+34.37	674.08	13.25	RT.
	0.2L	45+46.14	674.13	16.75	LT.	45+46.14	674.30	6.75	LT.	45+46.14	674.36	3.25	RT.	45+46.14	674.19	13.25	RT.
	0.3L	45+57.92	674.24	16.75	LT.	45+57.92	674.41	6.75	LT.	45+57.92	674.47	3.25	RT.	45+57.92	674.30	13.25	RT.
	0.4L	45+69.70	674.33	16.75	LT.	45+69.70	674.51	6.75	LT.	45+69.70	674.57	3.25	RT.	45+69.70	674.39	13.25	RT.
	0.5L	45+81.48	674.42	16.75	LT.	45+81.48	674.60	6.75	LT.	45+81.48	674.65	3.25	RT.	45+81.48	674.48	13.25	RT.
	0.6L	45+93.25	674.50	16.75	LT.	45+93.25	674.67	6.75	LT.	45+93.25	674.73	3.25	RT.	45+93.25	674.55	13.25	RT.
	0.7L	46+05.03	674.56	16.75	LT.	46+05.03	674.73	6.75	LT.	46+05.03	674.79	3.25	RT.	46+05.03	674.62	13.25	RT.
	0.8L	46+16.81	674.62	16.75	LT.	46+16.81	674.79	6.75	LT.	46+16.81	674.84	3.25	RT.	46+16.81	674.67	13.25	RT.
	0.9L	46+28.58	674.66	16.75	LT.	46+28.58	674.83	6.75	LT.	46+28.58	674.89	3.25	RT.	46+28.58	674.72	13.25	RT.
	P6 BRG 1	46+39.28	674.70	16.75	LT.	46+39.28	674.86	6.75	LT.	46+39.28	674.92	3.25	RT.	46+39.28	674.76	13.25	RT.
SPAN 7	P6 BRG 2	46+41.44	674.72	16.75	LT.	46+41.44	674.88	6.75	LT.	46+41.44	674.93	3.25	RT.	46+41.44	674.77	13.25	RT.
	0.1L	46+52.14	674.82	16.75	LT.	46+52.14	674.99	6.75	LT.	46+52.14	675.04	3.25	RT.	46+52.14	674.88	13.25	RT.
	0.2L	46+63.92	674.94	16.75	LT.	46+63.92	675.10	6.75	LT.	46+63.92	675.16	3.25	RT.	46+63.92	674.99	13.25	RT.
	0.3L	46+75.69	675.04	16.75	LT.	46+75.69	675.21	6.75	LT.	46+75.69	675.27	3.25	RT.	46+75.69	675.10	13.25	RT.
	0.4L	46+87.47	675.14	16.75	LT.	46+87.47	675.31	6.75	LT.	46+87.47	675.37	3.25	RT.	46+87.47	675.19	13.25	RT.
	0.5L	46+99.25	675.22	16.75	LT.	46+99.25	675.40	6.75	LT.	46+99.25	675.45	3.25	RT.	46+99.25	675.28	13.25	RT.
	0.6L	47+11.02	675.30	16.75	LT.	47+11.02	675.47	6.75	LT.	47+11.02	675.53	3.25	RT.	47+11.02	675.35	13.25	RT.
	0.7L	47+22.80	675.36	16.75	LT.	47+22.80	675.53	6.75	LT.	47+22.80	675.59	3.25	RT.	47+22.80	675.42	13.25	RT.
	0.8L	47+34.58	675.42	16.75	LT.	47+34.58	675.59	6.75	LT.	47+34.58	675.64	3.25	RT.	47+34.58	675.47	13.25	RT.
	0.9L	47+46.36	675.47	16.75	LT.	47+46.36	675.63	6.75	LT.	47+46.36	675.69	3.25	RT.	47+46.36	675.52	13.25	RT.
	P7 BRG 1	47+57.05	675.50	16.75	LT.	47+57.05	675.66	6.75	LT.	47+57.05	675.72	3.25	RT.	47+57.05	675.56	13.25	RT.
SPAN 8	P7 BRG 2	47+59.22	675.50	16.75	LT.	47+59.22	675.66	6.75	LT.	47+59.22	675.71	3.25	RT.	47+59.22	675.55	13.25	RT.
	0.1L	47+69.80	675.60	16.96	LT.	47+69.80	675.77	6.84	LT.	47+69.80	675.82	3.29	RT.	47+69.80	675.66	13.41	RT.
	0.2L	47+81.47	675.71	17.18	LT.	47+81.47	675.89	6.93	LT.	47+81.47	675.94	3.33	RT.	47+81.47	675.77	13.59	RT.
	0.3L	47+93.14	675.81	17.41	LT.	47+93.14	676.00	7.02	LT.	47+93.14	676.06	3.37	RT.	47+93.14	675.87	13.77	RT.
	0.4L	48+04.81	675.91	17.63	LT.	48+04.81	676.10	7.11	LT.	48+04.81	676.16	3.42	RT.	48+04.81	675.96	13.94	RT.
	0.5L	48+16.48	675.99	17.86	LT.	48+16.48	676.19	7.20	LT.	48+16.48	676.25	3.46	RT.	48+16.48	676.05	14.12	RT.
	0.6L	48+28.14	676.06	18.08	LT.	48+28.14	676.26	7.29	LT.	48+28.14	676.32	3.51	RT.	48+28.14	676.12	14.30	RT.
	0.7L	48+39.81	676.12	18.31	LT.	48+39.81	676.32	7.38	LT.	48+39.81	676.38	3.55	RT.	48+39.81	676.18	14.48	RT.
	0.8L	48+51.48	676.17	18.53	LT.	48+51.48	676.37	7.47	LT.	48+51.48	676.43	3.59	RT.	48+51.48	676.23	14.66	RT.
	0.9L	48+63.15	676.21	18.76	LT.	48+63.15	676.40	7.56	LT.	48+63.15	676.46	3.64	RT.	48+63.15	676.27	14.84	RT.
	CL FA BRG	48+74.82	676.25	18.98	LT.	48+74.82	676.43	7.65	LT.	48+74.82	676.49	3.68	RT.	48+74.82	676.31	15.02	RT.

NOTES:

1. FOR DECK KEY PLAN, SEE SHEET 42/65
2. FOR SCREED ELEVATIONS, SEE SHEET 43/65
3. FOR FINAL DECK ELEVATIONS, SEE SHEETS 46-47/65
4. FOR HAUNCH THICKNESS, SEE SHEETS 48-49/65

TOP OF HAUNCH ELEVATIONS

TOP OF HAUNCH ELEVATIONS SHOWN REPRESENT THE THEORETICAL LOCATION OF THE BOTTOM OF THE DECK ABOVE THE BEAM/GIRDER HAUNCH PRIOR TO DEFLECTIONS CAUSED BY DECK PLACEMENT AND OTHER ANTICIPATED DEAD LOADS.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

TOP OF HAUNCH ELEVATION (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

FINAL DECK ELEVATIONS

	LOCATION	LEFT EDGE OF DECK			BEAM LINE 1			LEFT TOE OF CURB			BEAM LINE 2			CL CONST. IND DR & PG		BEAM LINE 3			BEAM LINE 4			RIGHT TOE OF BARRIER			RIGHT EDGE OF DECK		
		STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)
SPAN 1	CL RA BRG	39+34.82	670.57	20.17 LT.	39+34.82	670.62	16.75 LT.	39+34.82	670.68	13.00 LT.	39+34.82	670.78	6.75 LT.	39+34.82	670.89	39+34.82	670.84	3.25 RT.	39+34.82	670.68	13.25 RT.	39+34.82	670.65	15.00 RT.	39+34.82	670.65	16.67 RT.
	0.1L	39+46.49	670.65	20.17 LT.	39+46.49	670.70	16.75 LT.	39+46.49	670.76	13.00 LT.	39+46.49	670.86	6.75 LT.	39+46.49	670.97	39+46.49	670.92	3.25 RT.	39+46.49	670.76	13.25 RT.	39+46.49	670.73	15.00 RT.	39+46.49	670.73	16.67 RT.
	0.2L	39+58.16	670.73	20.17 LT.	39+58.16	670.78	16.75 LT.	39+58.16	670.84	13.00 LT.	39+58.16	670.94	6.75 LT.	39+58.16	671.05	39+58.16	671.00	3.25 RT.	39+58.16	670.84	13.25 RT.	39+58.16	670.81	15.00 RT.	39+58.16	670.81	16.67 RT.
	0.3L	39+69.83	670.81	20.17 LT.	39+69.83	670.86	16.75 LT.	39+69.83	670.92	13.00 LT.	39+69.83	671.02	6.75 LT.	39+69.83	671.13	39+69.83	671.08	3.25 RT.	39+69.83	670.92	13.25 RT.	39+69.83	670.89	15.00 RT.	39+69.83	670.89	16.67 RT.
	0.4L	39+81.50	670.88	20.17 LT.	39+81.50	670.94	16.75 LT.	39+81.50	671.00	13.00 LT.	39+81.50	671.10	6.75 LT.	39+81.50	671.21	39+81.50	671.16	3.25 RT.	39+81.50	671.00	13.25 RT.	39+81.50	670.97	15.00 RT.	39+81.50	670.97	16.67 RT.
	0.5L	39+93.16	670.96	20.17 LT.	39+93.16	671.02	16.75 LT.	39+93.16	671.08	13.00 LT.	39+93.16	671.18	6.75 LT.	39+93.16	671.29	39+93.16	671.23	3.25 RT.	39+93.16	671.07	13.25 RT.	39+93.16	671.05	15.00 RT.	39+93.16	671.05	16.67 RT.
	0.6L	40+04.83	671.04	20.17 LT.	40+04.83	671.10	16.75 LT.	40+04.83	671.16	13.00 LT.	40+04.83	671.26	6.75 LT.	40+04.83	671.37	40+04.83	671.31	3.25 RT.	40+04.83	671.15	13.25 RT.	40+04.83	671.13	15.00 RT.	40+04.83	671.13	16.67 RT.
	0.7L	40+16.50	671.12	20.17 LT.	40+16.50	671.18	16.75 LT.	40+16.50	671.24	13.00 LT.	40+16.50	671.34	6.75 LT.	40+16.50	671.45	40+16.50	671.39	3.25 RT.	40+16.50	671.23	13.25 RT.	40+16.50	671.21	15.00 RT.	40+16.50	671.21	16.67 RT.
	0.8L	40+28.17	671.20	20.17 LT.	40+28.17	671.26	16.75 LT.	40+28.17	671.32	13.00 LT.	40+28.17	671.42	6.75 LT.	40+28.17	671.52	40+28.17	671.47	3.25 RT.	40+28.17	671.31	13.25 RT.	40+28.17	671.28	15.00 RT.	40+28.17	671.28	16.67 RT.
	0.9L	40+39.84	671.28	20.17 LT.	40+39.84	671.34	16.75 LT.	40+39.84	671.40	13.00 LT.	40+39.84	671.50	6.75 LT.	40+39.84	671.60	40+39.84	671.55	3.25 RT.	40+39.84	671.39	13.25 RT.	40+39.84	671.36	15.00 RT.	40+39.84	671.36	16.67 RT.
	P1 BRG 1	40+50.42	671.35	20.17 LT.	40+50.42	671.41	16.75 LT.	40+50.42	671.47	13.00 LT.	40+50.42	671.57	6.75 LT.	40+50.42	671.68	40+50.42	671.62	3.25 RT.	40+50.42	671.46	13.25 RT.	40+50.42	671.44	15.00 RT.	40+50.42	671.44	16.67 RT.
	PIER 1	40+51.51	671.36	20.17 LT.	40+51.51	671.42	16.75 LT.	40+51.51	671.48	13.00 LT.	40+51.51	671.58	6.75 LT.	40+51.51	671.68	40+51.51	671.63	3.25 RT.	40+51.51	671.47	13.25 RT.	40+51.51	671.44	15.00 RT.	40+51.51	671.44	16.67 RT.
SPAN 2	P1 BRG 2	40+52.59	671.37	20.17 LT.	40+52.59	671.42	16.75 LT.	40+52.59	671.48	13.00 LT.	40+52.59	671.58	6.75 LT.	40+52.59	671.69	40+52.59	671.64	3.25 RT.	40+52.59	671.48	13.25 RT.	40+52.59	671.45	15.00 RT.	40+52.59	671.45	16.67 RT.
	0.1L	40+63.28	671.44	20.17 LT.	40+63.28	671.50	16.75 LT.	40+63.28	671.56	13.00 LT.	40+63.28	671.66	6.75 LT.	40+63.28	671.76	40+63.28	671.71	3.25 RT.	40+63.28	671.55	13.25 RT.	40+63.28	671.52	15.00 RT.	40+63.28	671.52	16.67 RT.
	0.2L	40+75.06	671.52	20.17 LT.	40+75.06	671.58	16.75 LT.	40+75.06	671.64	13.00 LT.	40+75.06	671.74	6.75 LT.	40+75.06	671.84	40+75.06	671.79	3.25 RT.	40+75.06	671.63	13.25 RT.	40+75.06	671.60	15.00 RT.	40+75.06	671.60	16.67 RT.
	0.3L	40+86.84	671.60	20.17 LT.	40+86.84	671.66	16.75 LT.	40+86.84	671.72	13.00 LT.	40+86.84	671.82	6.75 LT.	40+86.84	671.92	40+86.84	671.87	3.25 RT.	40+86.84	671.71	13.25 RT.	40+86.84	671.68	15.00 RT.	40+86.84	671.68	16.67 RT.
	0.4L	40+98.62	671.68	20.17 LT.	40+98.62	671.74	16.75 LT.	40+98.62	671.80	13.00 LT.	40+98.62	671.90	6.75 LT.	40+98.62	672.00	40+98.62	671.95	3.25 RT.	40+98.62	671.79	13.25 RT.	40+98.62	671.76	15.00 RT.	40+98.62	671.76	16.67 RT.
	0.5L	41+10.39	671.76	20.17 LT.	41+10.39	671.82	16.75 LT.	41+10.39	671.88	13.00 LT.	41+10.39	671.98	6.75 LT.	41+10.39	672.08	41+10.39	672.03	3.25 RT.	41+10.39	671.87	13.25 RT.	41+10.39	671.84	15.00 RT.	41+10.39	671.84	16.67 RT.
	0.6L	41+22.17	671.84	20.17 LT.	41+22.17	671.90	16.75 LT.	41+22.17	671.96	13.00 LT.	41+22.17	672.06	6.75 LT.	41+22.17	672.16	41+22.17	672.11	3.25 RT.	41+22.17	671.95	13.25 RT.	41+22.17	671.92	15.00 RT.	41+22.17	671.92	16.67 RT.
	0.7L	41+33.95	671.92	20.17 LT.	41+33.95	671.98	16.75 LT.	41+33.95	672.04	13.00 LT.	41+33.95	672.14	6.75 LT.	41+33.95	672.24	41+33.95	672.19	3.25 RT.	41+33.95	672.03	13.25 RT.	41+33.95	672.00	15.00 RT.	41+33.95	672.00	16.67 RT.
	0.8L	41+45.72	672.00	20.17 LT.	41+45.72	672.06	16.75 LT.	41+45.72	672.12	13.00 LT.	41+45.72	672.22	6.75 LT.	41+45.72	672.32	41+45.72	672.27	3.25 RT.	41+45.72	672.11	13.25 RT.	41+45.72	672.08	15.00 RT.	41+45.72	672.08	16.67 RT.
	0.9L	41+57.50	672.08	20.17 LT.	41+57.50	672.14	16.75 LT.	41+57.50	672.20	13.00 LT.	41+57.50	672.30	6.75 LT.	41+57.50	672.40	41+57.50	672.35	3.25 RT.	41+57.50	672.19	13.25 RT.	41+57.50	672.16	15.00 RT.	41+57.50	672.16	16.67 RT.
	P2 BRG 1	41+68.19	672.15	20.17 LT.	41+68.19	672.21	16.75 LT.	41+68.19	672.27	13.00 LT.	41+68.19	672.37	6.75 LT.	41+68.19	672.48	41+68.19	672.42	3.25 RT.	41+68.19	672.26	13.25 RT.	41+68.19	672.24	15.00 RT.	41+68.19	672.24	16.67 RT.
	PIER 2	41+69.28	672.16	20.17 LT.	41+69.28	672.22	16.75 LT.	41+69.28	672.28	13.00 LT.	41+69.28	672.38	6.75 LT.	41+69.28	672.48	41+69.28	672.43	3.25 RT.	41+69.28	672.27	13.25 RT.	41+69.28	672.24	15.00 RT.	41+69.28	672.24	16.67 RT.
SPAN 3	P2 BRG 2	41+70.36	672.17	20.17 LT.	41+70.36	672.22	16.75 LT.	41+70.36	672.28	13.00 LT.	41+70.36	672.38	6.75 LT.	41+70.36	672.49	41+70.36	672.44	3.25 RT.	41+70.36	672.28	13.25 RT.	41+70.36	672.25	15.00 RT.	41+70.36	672.25	16.67 RT.
	0.1L	41+81.06	672.24	20.17 LT.	41+81.06	672.30	16.75 LT.	41+81.06	672.36	13.00 LT.	41+81.06	672.46	6.75 LT.	41+81.06	672.56	41+81.06	672.51	3.25 RT.	41+81.06	672.35	13.25 RT.	41+81.06	672.32	15.00 RT.	41+81.06	672.32	16.67 RT.
	0.2L	41+92.83	672.32	20.17 LT.	41+92.83	672.38	16.75 LT.	41+92.83	672.44	13.00 LT.	41+92.83	672.54	6.75 LT.	41+92.83	672.64	41+92.83	672.59	3.25 RT.	41+92.83	672.43	13.25 RT.	41+92.83	672.40	15.00 RT.	41+92.83	672.40	16.67 RT.
	0.3L	42+04.61	672.40	20.17 LT.	42+04.61	672.46	16.75 LT.	42+04.61	672.52	13.00 LT.	42+04.61	672.62	6.75 LT.	42+04.61	672.72	42+04.61	672.67	3.25 RT.	42+04.61	672.51	13.25 RT.	42+04.61	672.48	15.00 RT.	42+04.61	672.48	16.67 RT.
	0.4L	42+16.39	672.48	20.17 LT.	42+16.39	672.54	16.75 LT.	42+16.39	672.60	13.00 LT.	42+16.39	672.70	6.75 LT.	42+16.39	672.80	42+16.39	672.75	3.25 RT.	42+16.39	672.59	13.25 RT.	42+16.39	672.56	15.00 RT.	42+16.39	672.56	16.67 RT.
	0.5L	42+28.16	672.56	20.17 LT.	42+28.16	672.62	16.75 LT.	42+28.16	672.68	13.00 LT.	42+28.16	672.78	6.75 LT.	42+28.16	672.88	42+28.16	672.83	3.25 RT.	42+28.16	672.67	13.25 RT.	42+28.16	672.64	15.00 RT.	42+28.16	672.64	16.67 RT.
	0.6L	42+39.94	672.64	20.17 LT.	42+39.94	672.70	16.75 LT.	42+39.94	672.76	13.00 LT.	42+39.94	672.86	6.75 LT.	42+39.94	672.96	42+39.94	672.91	3.25 RT.	42+39.94	672.75	13.25 RT.	42+39.94	672.72	15.00 RT.	42+39.94	672.72	16.67 RT.
	0.7L	42+51.72	672.72	20.17 LT.	42+51.72	672.78	16.75 LT.	42+51.72	672.84	13.00 LT.	42+51.72	672.94	6.75 LT.	42+51.72	673.04	42+51.72	672.99	3.25 RT.	42+51.72	672.83	13.25 RT.	42+51.72	672.80	15.00 RT.	42+51.72	672.80	16.67 RT.
	0.8L	42+63.49	672.80	20.17 LT.	42+63.49	672.86	16.75 LT.	42+63.49	672.92	13.00 LT.	42+63.49	673.02	6.75 LT.	42+63.49	673.12	42+63.49	673.07	3.25 RT.	42+63.49	672.91	13.25 RT.	42+63.49	672.88	15.00 RT.	42+63.49	672.88	16.67 RT.
	0.9L	42+75.27	672.88	20.17 LT.	42+75.27	672.94	16.75 LT.	42+75.27	673.00	13.00 LT.	42+75.27	673.10	6.75 LT.	42+75.27	673.21	42+75.27	673.15	3.25 RT.	42+75.27	672.99	13.25 RT.	42+75.27	672.97	15.00 RT.	42+75.27	672.97	16.67 RT.
	P3 BRG 1	42+85.97	672.96	20.17 LT.	42+85.97	673.01	16.75 LT.	42+85.97	673.07	13.00 LT.	42+85.97	673.17	6.75 LT.	42+85.97	673.28	42+85.97	673.23	3.25 RT.	42+85.97	673.07	13.25 RT.	42+85.97	673.04	15.00 RT.	42+85.97	673.04	16.67 RT.
	PIER 3	42+87.05	672.96	20.17 LT.	42+87.05	673.02	16.75 LT.	42+87.05	673.08	13.00 LT.	42+87.05	673.18	6.75 LT.	42+87.05	673.29	42+87.05	673.23	3.25 RT.	42+87.05	673.07	13.25 RT.	42+87.05	673.05	15.00 RT.	42+87.05	673.05	16.67 RT.
SPAN 4	P3 BRG 2	42+88.13	672.97	20.17 LT.	42+88.13	673.02	16.75 LT.	42+88.13	673.08	13.00 LT.	42+88.13	673.18	6.75 LT.	42+88.13	673.29	42+88.13	673.24	3.25 RT.	42+88.13	673.08	13.25 RT.	42+88.13	673.05	15.00 RT.	42+88.13	673.05	16.67 RT.
	0.1L	42+98.83	673.04	20.17 LT.	42+98.83	673.10	16.75 LT.	42+98.83	673.16	13.00 LT.	42+98.83	673.26	6.75 LT.	42+98.83	673.37	42+98.83	673.31	3.25 RT.	42+98.83	673.15	13.25 RT.	42+98.83	673.13	15.00 RT.	42+98.83	673.13	16.67 RT.
	0.2L	43+10.60	673.12	20.17 LT.	43+10.60	673.18	16.75 LT.	43+10.60	673.24	13.00 LT.	43+10.60	673.34	6.75 LT.	43+10.60	673.45	43+10.60	673.39	3.25 RT.	43+10.60	673.23	13.25 RT.	43+10.60	673.21	15.00 RT.	43+10.60	673.21	16.67 RT.
	0.3L	43+22.38	673.20	20.17 LT.	43+22.38	673.26	16.75 LT.	43+22.38	673.32	13.00 LT.	43+22.38	673.42	6.75 LT.	43+22.38	673.53	43+22.38	673.47	3.25 RT.	43+22.38	673.31	13.25 RT.	43+22.38	673.29	15.00 RT.	43+22.38	673.29	16.67 RT.
	0.4L	43+34.16	673.28	20.17 LT.	43+34.16	673.34	16.75 LT.	43+34.16	673.40	13.00 LT.	43+34.16	673.50	6.75 LT.	43+34.16	673.61	43+34.16	673.55	3.25 RT.	43+34.16	673.39	13.25 RT.	43+34.16	673.37	15.00 RT.	43+34.16	673.37	16.67 RT.
	0.5L	43+45.93	673.36	20.17 LT.	43+45.93	673.42	16.75 LT.	43+45.93	673.48	13.00 LT.	43+45.93	673.58	6.75 LT.	43+45.93	673.69	43+45.93	673.63	3.25 RT.	43+45.93	673.47	13.25 RT.	43+45.93	673.45	15.00 RT.	43+45.93	673.45	16.67 RT.
	0.6L	43+57.71	673.44	20.17 LT.	43+57.71	673.50	16.75 LT.	43+57.71	673.56	13.00 LT.	43+57.71	673.66	6.75 LT.	43+57.71	673.77	43+57.71	673.71	3.25 RT.	43+57.71	673.55	13.25 RT.	43+57.71	673.53	15.00 RT.	43+57.71	673.53	16.67 RT.
	0.7L	43+69.49	673.52	20.17 LT.	43+69.49	673.58	16.75 LT.	43+69.49	673.64	13.00 LT.	43+69.49	673.74	6.75 LT.	43+69.49	673.85	43+69.49	673.79	3.25 RT.	43+69.49	673.63	13.25 RT.	43+69.49	673.61	15.00 RT.	43+69.49	673.61	16.67 RT.
	0.8L	43+81.27	673.60	20.17 LT.	43+81.27	673.66	16.75 LT.	43+81.27	673.72	13.00 LT.	43+81.27	673.82	6.75 LT.	43+81.27	673.93	43+81.27	673.87	3.25 RT.	43+81.27	673.71	13.25 RT.	43+81.27	673.69	15.00 RT.	43+81.27	673.69	16.67 RT.
	0.9L	43+93.04	673.68	20.17 LT.	43+93.04	673.74	16.75 LT.	43+93.04	673.80	13.00 LT.	43+93.04	673.90	6.75 LT.	43+93.04	674.01	43+93.04	673.95	3.25 RT.	43+93.04	673.79	13.25 RT.	43+93.04	673.77	15.00 RT.	43+93.04	673.77	16.67 RT.
	P4 BRG 1	44+03.74	673.76	20.17 LT.	44+03.74	673.81	16.75 LT.	44+03.74	673.87	13.00 LT.	44+03.74	673.97	6.75 LT.	44+03.74	674.08	44+03.74	674.03	3.25 RT.	44+03.74	673.87	13.25 RT.	44+03.74	673.84	15.00 RT.	44+03.74	673.84	16.67 RT.

FINAL DECK SURFACE ELEVATIONS

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

NOTES:

1. FOR DECK KEY PLAN, SEE SHEET 42/65
2. FOR SCREED ELEVATIONS, SEE SHEET 43/65
3. FOR TOP OF HAUNCH ELEVATIONS, SEE SHEETS 44-45/65
4. FOR HAUNCH THICKNESS, SEE SHEETS 48-49/65

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DATE 04/2016
STRUCTURE FILE NUMBER TBD
REVIEWED TLR
DRAWN KRH
REVISED
DESIGNED KRH
CHECKED SCT

FINAL DECK ELEVATION (1 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

FINAL DECK ELEVATIONS

	LOCATION	LEFT EDGE OF DECK			BEAM LINE 1			LEFT TOE OF CURB			BEAM LINE 2			CL CONST. IND DR & PG		BEAM LINE 3			BEAM LINE 4			RIGHT TOE OF BARRIER			RIGHT EDGE OF DECK		
		STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)	STATION	ELEV.	OFFSET(FT.)
	PIER 4	44+04.82	673.76	20.17 LT.	44+04.82	673.82	16.75 LT.	44+04.82	673.88	13.00 LT.	44+04.82	673.98	6.75 LT.	44+04.82	674.09	44+04.82	674.03	3.25 RT.	44+04.82	673.87	13.25 RT.	44+04.82	673.85	15.00 RT.	44+04.82	673.85	16.67 RT.
SPAN 5	P4 BRG 2	44+05.90	673.77	20.17 LT.	44+05.90	673.83	16.75 LT.	44+05.90	673.89	13.00 LT.	44+05.90	673.99	6.75 LT.	44+05.90	674.09	44+05.90	674.04	3.25 RT.	44+05.90	673.88	13.25 RT.	44+05.90	673.85	15.00 RT.	44+05.90	673.85	16.67 RT.
SPAN 5	0.1L	44+16.60	673.84	20.17 LT.	44+16.60	673.90	16.75 LT.	44+16.60	673.96	13.00 LT.	44+16.60	674.06	6.75 LT.	44+16.60	674.17	44+16.60	674.11	3.25 RT.	44+16.60	673.95	13.25 RT.	44+16.60	673.93	15.00 RT.	44+16.60	673.93	16.67 RT.
SPAN 5	0.2L	44+28.37	673.92	20.17 LT.	44+28.37	673.98	16.75 LT.	44+28.37	674.04	13.00 LT.	44+28.37	674.14	6.75 LT.	44+28.37	674.25	44+28.37	674.19	3.25 RT.	44+28.37	674.03	13.25 RT.	44+28.37	674.01	15.00 RT.	44+28.37	674.01	16.67 RT.
SPAN 5	0.3L	44+40.15	674.00	20.17 LT.	44+40.15	674.06	16.75 LT.	44+40.15	674.12	13.00 LT.	44+40.15	674.22	6.75 LT.	44+40.15	674.33	44+40.15	674.27	3.25 RT.	44+40.15	674.11	13.25 RT.	44+40.15	674.09	15.00 RT.	44+40.15	674.09	16.67 RT.
SPAN 5	0.4L	44+51.93	674.08	20.17 LT.	44+51.93	674.14	16.75 LT.	44+51.93	674.20	13.00 LT.	44+51.93	674.30	6.75 LT.	44+51.93	674.41	44+51.93	674.35	3.25 RT.	44+51.93	674.19	13.25 RT.	44+51.93	674.17	15.00 RT.	44+51.93	674.17	16.67 RT.
SPAN 5	0.5L	44+63.71	674.16	20.17 LT.	44+63.71	674.22	16.75 LT.	44+63.71	674.28	13.00 LT.	44+63.71	674.38	6.75 LT.	44+63.71	674.49	44+63.71	674.43	3.25 RT.	44+63.71	674.27	13.25 RT.	44+63.71	674.25	15.00 RT.	44+63.71	674.25	16.67 RT.
SPAN 5	0.6L	44+75.48	674.24	20.17 LT.	44+75.48	674.30	16.75 LT.	44+75.48	674.36	13.00 LT.	44+75.48	674.46	6.75 LT.	44+75.48	674.57	44+75.48	674.51	3.25 RT.	44+75.48	674.35	13.25 RT.	44+75.48	674.33	15.00 RT.	44+75.48	674.33	16.67 RT.
SPAN 5	0.7L	44+87.26	674.32	20.17 LT.	44+87.26	674.38	16.75 LT.	44+87.26	674.44	13.00 LT.	44+87.26	674.54	6.75 LT.	44+87.26	674.65	44+87.26	674.59	3.25 RT.	44+87.26	674.43	13.25 RT.	44+87.26	674.41	15.00 RT.	44+87.26	674.41	16.67 RT.
SPAN 5	0.8L	44+99.04	674.40	20.17 LT.	44+99.04	674.46	16.75 LT.	44+99.04	674.52	13.00 LT.	44+99.04	674.62	6.75 LT.	44+99.04	674.73	44+99.04	674.67	3.25 RT.	44+99.04	674.51	13.25 RT.	44+99.04	674.49	15.00 RT.	44+99.04	674.49	16.67 RT.
SPAN 5	0.9L	45+10.81	674.48	20.17 LT.	45+10.81	674.54	16.75 LT.	45+10.81	674.60	13.00 LT.	45+10.81	674.70	6.75 LT.	45+10.81	674.81	45+10.81	674.75	3.25 RT.	45+10.81	674.59	13.25 RT.	45+10.81	674.57	15.00 RT.	45+10.81	674.57	16.67 RT.
SPAN 5	P5 BRG 1	45+21.51	674.56	20.17 LT.	45+21.51	674.61	16.75 LT.	45+21.51	674.67	13.00 LT.	45+21.51	674.77	6.75 LT.	45+21.51	674.88	45+21.51	674.83	3.25 RT.	45+21.51	674.67	13.25 RT.	45+21.51	674.64	15.00 RT.	45+21.51	674.64	16.67 RT.
	PIER 5	45+22.59	674.56	20.17 LT.	45+22.59	674.62	16.75 LT.	45+22.59	674.68	13.00 LT.	45+22.59	674.78	6.75 LT.	45+22.59	674.89	45+22.59	674.83	3.25 RT.	45+22.59	674.67	13.25 RT.	45+22.59	674.65	15.00 RT.	45+22.59	674.65	16.67 RT.
SPAN 6	P5 BRG 2	45+23.67	674.57	20.17 LT.	45+23.67	674.63	16.75 LT.	45+23.67	674.69	13.00 LT.	45+23.67	674.79	6.75 LT.	45+23.67	674.89	45+23.67	674.84	3.25 RT.	45+23.67	674.68	13.25 RT.	45+23.67	674.65	15.00 RT.	45+23.67	674.65	16.67 RT.
SPAN 6	0.1L	45+34.37	674.64	20.17 LT.	45+34.37	674.70	16.75 LT.	45+34.37	674.76	13.00 LT.	45+34.37	674.86	6.75 LT.	45+34.37	674.97	45+34.37	674.91	3.25 RT.	45+34.37	674.75	13.25 RT.	45+34.37	674.73	15.00 RT.	45+34.37	674.73	16.67 RT.
SPAN 6	0.2L	45+46.14	674.72	20.17 LT.	45+46.14	674.78	16.75 LT.	45+46.14	674.84	13.00 LT.	45+46.14	674.94	6.75 LT.	45+46.14	675.05	45+46.14	674.99	3.25 RT.	45+46.14	674.83	13.25 RT.	45+46.14	674.81	15.00 RT.	45+46.14	674.81	16.67 RT.
SPAN 6	0.3L	45+57.92	674.80	20.17 LT.	45+57.92	674.86	16.75 LT.	45+57.92	674.92	13.00 LT.	45+57.92	675.02	6.75 LT.	45+57.92	675.13	45+57.92	675.08	3.25 RT.	45+57.92	674.92	13.25 RT.	45+57.92	674.89	15.00 RT.	45+57.92	674.89	16.67 RT.
SPAN 6	0.4L	45+69.70	674.88	20.17 LT.	45+69.70	674.94	16.75 LT.	45+69.70	675.00	13.00 LT.	45+69.70	675.10	6.75 LT.	45+69.70	675.21	45+69.70	675.16	3.25 RT.	45+69.70	675.00	13.25 RT.	45+69.70	674.97	15.00 RT.	45+69.70	674.97	16.67 RT.
SPAN 6	0.5L	45+81.48	674.96	20.17 LT.	45+81.48	675.02	16.75 LT.	45+81.48	675.08	13.00 LT.	45+81.48	675.18	6.75 LT.	45+81.48	675.29	45+81.48	675.24	3.25 RT.	45+81.48	675.08	13.25 RT.	45+81.48	675.05	15.00 RT.	45+81.48	675.05	16.67 RT.
SPAN 6	0.6L	45+93.25	675.04	20.17 LT.	45+93.25	675.10	16.75 LT.	45+93.25	675.16	13.00 LT.	45+93.25	675.26	6.75 LT.	45+93.25	675.37	45+93.25	675.32	3.25 RT.	45+93.25	675.16	13.25 RT.	45+93.25	675.13	15.00 RT.	45+93.25	675.13	16.67 RT.
SPAN 6	0.7L	46+05.03	675.12	20.17 LT.	46+05.03	675.18	16.75 LT.	46+05.03	675.24	13.00 LT.	46+05.03	675.34	6.75 LT.	46+05.03	675.45	46+05.03	675.40	3.25 RT.	46+05.03	675.24	13.25 RT.	46+05.03	675.21	15.00 RT.	46+05.03	675.21	16.67 RT.
SPAN 6	0.8L	46+16.81	675.20	20.17 LT.	46+16.81	675.26	16.75 LT.	46+16.81	675.32	13.00 LT.	46+16.81	675.42	6.75 LT.	46+16.81	675.53	46+16.81	675.48	3.25 RT.	46+16.81	675.32	13.25 RT.	46+16.81	675.29	15.00 RT.	46+16.81	675.29	16.67 RT.
SPAN 6	0.9L	46+28.58	675.28	20.17 LT.	46+28.58	675.34	16.75 LT.	46+28.58	675.40	13.00 LT.	46+28.58	675.50	6.75 LT.	46+28.58	675.61	46+28.58	675.56	3.25 RT.	46+28.58	675.40	13.25 RT.	46+28.58	675.37	15.00 RT.	46+28.58	675.37	16.67 RT.
SPAN 6	P6 BRG 1	46+39.28	675.36	20.17 LT.	46+39.28	675.41	16.75 LT.	46+39.28	675.47	13.00 LT.	46+39.28	675.57	6.75 LT.	46+39.28	675.68	46+39.28	675.63	3.25 RT.	46+39.28	675.47	13.25 RT.	46+39.28	675.44	15.00 RT.	46+39.28	675.44	16.67 RT.
	PIER 6	46+40.36	675.36	20.17 LT.	46+40.36	675.42	16.75 LT.	46+40.36	675.48	13.00 LT.	46+40.36	675.58	6.75 LT.	46+40.36	675.69	46+40.36	675.64	3.25 RT.	46+40.36	675.48	13.25 RT.	46+40.36	675.45	15.00 RT.	46+40.36	675.45	16.67 RT.
SPAN 7	P6 BRG 2	46+41.44	675.37	20.17 LT.	46+41.44	675.43	16.75 LT.	46+41.44	675.49	13.00 LT.	46+41.44	675.59	6.75 LT.	46+41.44	675.70	46+41.44	675.64	3.25 RT.	46+41.44	675.48	13.25 RT.	46+41.44	675.46	15.00 RT.	46+41.44	675.46	16.67 RT.
SPAN 7	0.1L	46+52.14	675.45	20.17 LT.	46+52.14	675.50	16.75 LT.	46+52.14	675.56	13.00 LT.	46+52.14	675.66	6.75 LT.	46+52.14	675.77	46+52.14	675.72	3.25 RT.	46+52.14	675.56	13.25 RT.	46+52.14	675.53	15.00 RT.	46+52.14	675.53	16.67 RT.
SPAN 7	0.2L	46+63.92	675.53	20.17 LT.	46+63.92	675.58	16.75 LT.	46+63.92	675.64	13.00 LT.	46+63.92	675.74	6.75 LT.	46+63.92	675.85	46+63.92	675.80	3.25 RT.	46+63.92	675.64	13.25 RT.	46+63.92	675.61	15.00 RT.	46+63.92	675.61	16.67 RT.
SPAN 7	0.3L	46+75.69	675.61	20.17 LT.	46+75.69	675.66	16.75 LT.	46+75.69	675.72	13.00 LT.	46+75.69	675.82	6.75 LT.	46+75.69	675.93	46+75.69	675.88	3.25 RT.	46+75.69	675.72	13.25 RT.	46+75.69	675.69	15.00 RT.	46+75.69	675.69	16.67 RT.
SPAN 7	0.4L	46+87.47	675.69	20.17 LT.	46+87.47	675.74	16.75 LT.	46+87.47	675.80	13.00 LT.	46+87.47	675.90	6.75 LT.	46+87.47	676.01	46+87.47	675.96	3.25 RT.	46+87.47	675.80	13.25 RT.	46+87.47	675.77	15.00 RT.	46+87.47	675.77	16.67 RT.
SPAN 7	0.5L	46+99.25	675.77	20.17 LT.	46+99.25	675.82	16.75 LT.	46+99.25	675.88	13.00 LT.	46+99.25	675.98	6.75 LT.	46+99.25	676.09	46+99.25	676.04	3.25 RT.	46+99.25	675.88	13.25 RT.	46+99.25	675.85	15.00 RT.	46+99.25	675.85	16.67 RT.
SPAN 7	0.6L	47+11.02	675.85	20.17 LT.	47+11.02	675.90	16.75 LT.	47+11.02	675.96	13.00 LT.	47+11.02	676.06	6.75 LT.	47+11.02	676.17	47+11.02	676.12	3.25 RT.	47+11.02	675.96	13.25 RT.	47+11.02	675.93	15.00 RT.	47+11.02	675.93	16.67 RT.
SPAN 7	0.7L	47+22.80	675.93	20.17 LT.	47+22.80	675.98	16.75 LT.	47+22.80	676.04	13.00 LT.	47+22.80	676.14	6.75 LT.	47+22.80	676.25	47+22.80	676.20	3.25 RT.	47+22.80	676.04	13.25 RT.	47+22.80	676.01	15.00 RT.	47+22.80	676.01	16.67 RT.
SPAN 7	0.8L	47+34.58	676.01	20.17 LT.	47+34.58	676.06	16.75 LT.	47+34.58	676.12	13.00 LT.	47+34.58	676.22	6.75 LT.	47+34.58	676.33	47+34.58	676.28	3.25 RT.	47+34.58	676.12	13.25 RT.	47+34.58	676.09	15.00 RT.	47+34.58	676.09	16.67 RT.
SPAN 7	0.9L	47+46.36	676.09	20.17 LT.	47+46.36	676.14	16.75 LT.	47+46.36	676.20	13.00 LT.	47+46.36	676.30	6.75 LT.	47+46.36	676.41	47+46.36	676.36	3.25 RT.	47+46.36	676.20	13.25 RT.	47+46.36	676.17	15.00 RT.	47+46.36	676.17	16.67 RT.
SPAN 7	P7 BRG 1	47+57.05	676.16	20.17 LT.	47+57.05	676.21	16.75 LT.	47+57.05	676.27	13.00 LT.	47+57.05	676.37	6.75 LT.	47+57.05	676.48	47+57.05	676.43	3.25 RT.	47+57.05	676.27	13.25 RT.	47+57.05	676.24	15.00 RT.	47+57.05	676.24	16.67 RT.
	PIER 7	47+58.13	676.17	20.18 LT.	47+58.13	676.22	16.77 LT.	47+58.13	676.28	13.02 LT.	47+58.13	676.38	6.77 LT.	47+58.13	676.49	47+58.13	676.44	3.27 RT.	47+58.13	676.28	13.27 RT.	47+58.13	676.25	15.02 RT.	47+58.13	676.25	16.68 RT.
SPAN 8	P7 BRG 2	47+59.22	676.17	20.21 LT.	47+59.22	676.23	16.75 LT.	47+59.22	676.29	13.04 LT.	47+59.22	676.39	6.75 LT.	47+59.22	676.50	47+59.22	676.44	3.25 RT.	47+59.22	676.28	13.25 RT.	47+59.22	676.26	15.04 RT.	47+59.22	676.26	16.70 RT.
SPAN 8	0.1L	47+69.80	676.24	20.45 LT.	47+69.80	676.30	16.96 LT.	47+69.80	676.36	13.28 LT.	47+69.80	676.46	6.84 LT.	47+69.80	676.57	47+69.80	676.52	3.29 RT.	47+69.80	676.35	13.41 RT.	47+69.80	676.32	15.23 RT.	47+69.80	676.32	16.90 RT.
SPAN 8	0.2L	47+81.47	676.32	20.71 LT.	47+81.47	676.37	17.18 LT.	47+81.47	676.43	13.54 LT.	47+81.47	676.54	6.93 LT.	47+81.47	676.65	47+81.47	676.59	3.33 RT.	47+81.47	676.43	13.59 RT.	47+81.47	676.40	15.45 RT.	47+81.47	676.40	17.12 RT.
SPAN 8	0.3L	47+93.14	676.39	20.97 LT.	47+93.14	676.45	17.41 LT.	47+93.14	676.51	13.81 LT.	47+93.14	676.61	7.02 LT.	47+93.14	676.73	47+93.14	676.67	3.37 RT.	47+93.14	676.51	13.77 RT.	47+93.14	676.48	15.67 RT.	47+93.14	676.48	17.33 RT.
SPAN 8	0.4L	48+04.81	676.47	21.24 LT.	48+04.81	676.52	17.63 LT.	48+04.81	676.58	14.07 LT.	48+04.81	676.69	7.11 LT.	48+04.81	676.81	48+04.81	676.75	3.42 RT.	48+04.81	676.58	13.94 RT.	48+04.81	676.55	15.88 RT.	48+04.81	676.55	17.55 RT.
SPAN 8	0.5L	48+16.48	676.54	21.50 LT.	48+16.48	676.60	17.86 LT.	48+16.48	676.66	14.33 LT.	48+16.48	676.77	7.20 LT.	48+16.48	676.89	48+16.48	676.83	3.46 RT.	48+16.48	676.66	14.12 RT.	48+16.48	676.63	16.10 RT.	48+16.48	676.63	17.77 RT.
SPAN 8	0.6L	48+28.14	676.62	21.76 LT.	48+28.14	676.68	18.08 LT.	48+28.14	676.73	14.60 LT.	48+28.14	676.85	7.29 LT.	48+28.14	676.96	48+28.14	676.91	3.51 RT.	48+28.14	676.74	14.30 RT.	48+28.14	676.70	16.32 RT.	48+28.14	676.70	17.98 RT.
SPAN 8	0.7L	48+39.81	676.69	22.03 LT.	48+39.81	676.75	18.31 LT.	48+39.81	676.81	14.86 LT.	48+39.81	676.93	7.38 LT.	48+39.81	677.04	48+39.81	676.99	3.55 RT.	48+39.81	676.81	14.48 RT.	48+39.81	676.78	16.53 RT.	48+39.81	676.78	18.20 RT.
SPAN 8	0.8L	48+51.48	676.77	22.29 LT.	48+51.48	676.83	18.53 LT.	48+51.48	676.88	15.12 LT.	48+51.48	677.00	7.47 LT.	48+51.48	677.12	48+51.48	677.07	3.59 RT.	48+51.48	676.89	14.66 RT.	48+51.48	676.86	16.75 RT.	48+51.48	676.86	18.42 RT.
SPAN 8	0.9L	48+63.15	676.84	22.55 LT.	48+63.15	676.90	18.76 LT.	48+63.15	676.96	15.39 LT.	48+63.15	677.08	7.56 LT.	48+63.15	677.20	48+63.15	677.14	3.64 RT.	48+63.15	676.97	14.84 RT.	48+63.15	676.93	16.97 RT.	48+63.15	676.93	18.63 RT.
SPAN 8	FA BRG	48+74.82	676.92	22.82 LT.	48+74.82	676.98	18.98 LT.	48+74.82	677.03	15.65 LT.	48+74.82	677.16	7.65 LT.	48+74.82	677.28	48+74.82	677.22	3.68 RT.	48+74.82	677.04	15.02 RT.	48+74.82	677.01	17.18 RT.	48+74.82	677.01	18.85 RT.

FINAL DECK SURFACE ELEVATIONS

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

NOTES:

1. FOR DECK KEY PLAN, SEE SHEET 42/65
2. FOR SCREED ELEVATIONS, SEE SHEET 43/65
3. FOR TOP OF HAUNCH ELEVATIONS, SEE SHEETS 44-45/65
4. FOR HAUNCH THICKNESS, SEE SHEETS 48-49/65

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | CHECKED SCT | REVIEWED TLR | DATE 04/2016 | REVISED | STRUCTURE FILE NUMBER TBD

FINAL DECK ELEVATION (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

VARIABLE HAUNCH THICKNESS

	LOCATION	BEAM LINE 1			BEAM LINE 2			BEAM LINE 3			BEAM LINE 4		
		STATION	THICK.	OFFSET(FT)	STATION	THICK.	OFFSET(FT)	STATION	THICK.	OFFSET(FT)	STATION	THICK.	OFFSET(FT)
SPAN 1	CL RA BRG	39+34.82	3.97 in.	16.75 LT.	39+34.82	3.77 in.	6.75 LT.	39+34.82	3.77 in.	3.25 RT.	39+34.82	3.97 in.	13.25 RT.
	0.1L	39+46.49	3.36 in.	16.75 LT.	39+46.49	3.22 in.	6.75 LT.	39+46.49	3.22 in.	3.25 RT.	39+46.49	3.36 in.	13.25 RT.
	0.2L	39+58.16	2.92 in.	16.75 LT.	39+58.16	2.84 in.	6.75 LT.	39+58.16	2.84 in.	3.25 RT.	39+58.16	2.92 in.	13.25 RT.
	0.3L	39+69.83	2.62 in.	16.75 LT.	39+69.83	2.58 in.	6.75 LT.	39+69.83	2.58 in.	3.25 RT.	39+69.83	2.62 in.	13.25 RT.
	0.4L	39+81.50	2.45 in.	16.75 LT.	39+81.50	2.44 in.	6.75 LT.	39+81.50	2.44 in.	3.25 RT.	39+81.50	2.45 in.	13.25 RT.
	0.5L	39+93.16	2.39 in.	16.75 LT.	39+93.16	2.39 in.	6.75 LT.	39+93.16	2.39 in.	3.25 RT.	39+93.16	2.39 in.	13.25 RT.
	0.6L	40+04.83	2.45 in.	16.75 LT.	40+04.83	2.44 in.	6.75 LT.	40+04.83	2.44 in.	3.25 RT.	40+04.83	2.45 in.	13.25 RT.
	0.7L	40+16.50	2.63 in.	16.75 LT.	40+16.50	2.59 in.	6.75 LT.	40+16.50	2.59 in.	3.25 RT.	40+16.50	2.63 in.	13.25 RT.
	0.8L	40+28.17	2.93 in.	16.75 LT.	40+28.17	2.85 in.	6.75 LT.	40+28.17	2.85 in.	3.25 RT.	40+28.17	2.93 in.	13.25 RT.
	0.9L	40+39.84	3.37 in.	16.75 LT.	40+39.84	3.23 in.	6.75 LT.	40+39.84	3.23 in.	3.25 RT.	40+39.84	3.37 in.	13.25 RT.
	P1 BRG 1	40+50.42	3.97 in.	16.75 LT.	40+50.42	3.77 in.	6.75 LT.	40+50.42	3.77 in.	3.25 RT.	40+50.42	3.97 in.	13.25 RT.
SPAN 2	P1 BRG 2	40+52.59	3.97 in.	16.75 LT.	40+52.59	3.77 in.	6.75 LT.	40+52.59	3.77 in.	3.25 RT.	40+52.59	3.97 in.	13.25 RT.
	0.1L	40+63.28	3.36 in.	16.75 LT.	40+63.28	3.22 in.	6.75 LT.	40+63.28	3.22 in.	3.25 RT.	40+63.28	3.36 in.	13.25 RT.
	0.2L	40+75.06	2.92 in.	16.75 LT.	40+75.06	2.84 in.	6.75 LT.	40+75.06	2.84 in.	3.25 RT.	40+75.06	2.92 in.	13.25 RT.
	0.3L	40+86.84	2.62 in.	16.75 LT.	40+86.84	2.58 in.	6.75 LT.	40+86.84	2.58 in.	3.25 RT.	40+86.84	2.62 in.	13.25 RT.
	0.4L	40+98.62	2.45 in.	16.75 LT.	40+98.62	2.44 in.	6.75 LT.	40+98.62	2.44 in.	3.25 RT.	40+98.62	2.45 in.	13.25 RT.
	0.5L	41+10.39	2.39 in.	16.75 LT.	41+10.39	2.39 in.	6.75 LT.	41+10.39	2.39 in.	3.25 RT.	41+10.39	2.39 in.	13.25 RT.
	0.6L	41+22.17	2.45 in.	16.75 LT.	41+22.17	2.44 in.	6.75 LT.	41+22.17	2.44 in.	3.25 RT.	41+22.17	2.45 in.	13.25 RT.
	0.7L	41+33.95	2.63 in.	16.75 LT.	41+33.95	2.59 in.	6.75 LT.	41+33.95	2.59 in.	3.25 RT.	41+33.95	2.63 in.	13.25 RT.
	0.8L	41+45.72	2.93 in.	16.75 LT.	41+45.72	2.85 in.	6.75 LT.	41+45.72	2.85 in.	3.25 RT.	41+45.72	2.93 in.	13.25 RT.
	0.9L	41+57.50	3.37 in.	16.75 LT.	41+57.50	3.23 in.	6.75 LT.	41+57.50	3.23 in.	3.25 RT.	41+57.50	3.37 in.	13.25 RT.
	P2 BRG 1	41+68.19	3.97 in.	16.75 LT.	41+68.19	3.77 in.	6.75 LT.	41+68.19	3.77 in.	3.25 RT.	41+68.19	3.97 in.	13.25 RT.
SPAN 3	P2 BRG 2	41+70.36	3.97 in.	16.75 LT.	41+70.36	3.77 in.	6.75 LT.	41+70.36	3.77 in.	3.25 RT.	41+70.36	3.97 in.	13.25 RT.
	0.1L	41+81.06	3.36 in.	16.75 LT.	41+81.06	3.22 in.	6.75 LT.	41+81.06	3.22 in.	3.25 RT.	41+81.06	3.36 in.	13.25 RT.
	0.2L	41+92.83	2.92 in.	16.75 LT.	41+92.83	2.84 in.	6.75 LT.	41+92.83	2.84 in.	3.25 RT.	41+92.83	2.92 in.	13.25 RT.
	0.3L	42+04.61	2.62 in.	16.75 LT.	42+04.61	2.58 in.	6.75 LT.	42+04.61	2.58 in.	3.25 RT.	42+04.61	2.62 in.	13.25 RT.
	0.4L	42+16.39	2.45 in.	16.75 LT.	42+16.39	2.44 in.	6.75 LT.	42+16.39	2.44 in.	3.25 RT.	42+16.39	2.45 in.	13.25 RT.
	0.5L	42+28.16	2.39 in.	16.75 LT.	42+28.16	2.39 in.	6.75 LT.	42+28.16	2.39 in.	3.25 RT.	42+28.16	2.39 in.	13.25 RT.
	0.6L	42+39.94	2.45 in.	16.75 LT.	42+39.94	2.44 in.	6.75 LT.	42+39.94	2.44 in.	3.25 RT.	42+39.94	2.45 in.	13.25 RT.
	0.7L	42+51.72	2.63 in.	16.75 LT.	42+51.72	2.59 in.	6.75 LT.	42+51.72	2.59 in.	3.25 RT.	42+51.72	2.63 in.	13.25 RT.
	0.8L	42+63.49	2.93 in.	16.75 LT.	42+63.49	2.85 in.	6.75 LT.	42+63.49	2.85 in.	3.25 RT.	42+63.49	2.93 in.	13.25 RT.
	0.9L	42+75.27	3.37 in.	16.75 LT.	42+75.27	3.23 in.	6.75 LT.	42+75.27	3.23 in.	3.25 RT.	42+75.27	3.37 in.	13.25 RT.
	P3 BRG 1	42+85.97	3.97 in.	16.75 LT.	42+85.97	3.77 in.	6.75 LT.	42+85.97	3.77 in.	3.25 RT.	42+85.97	3.97 in.	13.25 RT.
SPAN 4	P3 BRG 2	42+88.13	3.97 in.	16.75 LT.	42+88.13	3.77 in.	6.75 LT.	42+88.13	3.77 in.	3.25 RT.	42+88.13	3.97 in.	13.25 RT.
	0.1L	42+98.83	3.36 in.	16.75 LT.	42+98.83	3.22 in.	6.75 LT.	42+98.83	3.22 in.	3.25 RT.	42+98.83	3.36 in.	13.25 RT.
	0.2L	43+10.60	2.92 in.	16.75 LT.	43+10.60	2.84 in.	6.75 LT.	43+10.60	2.84 in.	3.25 RT.	43+10.60	2.92 in.	13.25 RT.
	0.3L	43+22.38	2.62 in.	16.75 LT.	43+22.38	2.58 in.	6.75 LT.	43+22.38	2.58 in.	3.25 RT.	43+22.38	2.62 in.	13.25 RT.
	0.4L	43+34.16	2.45 in.	16.75 LT.	43+34.16	2.44 in.	6.75 LT.	43+34.16	2.44 in.	3.25 RT.	43+34.16	2.45 in.	13.25 RT.
	0.5L	43+45.93	2.39 in.	16.75 LT.	43+45.93	2.39 in.	6.75 LT.	43+45.93	2.39 in.	3.25 RT.	43+45.93	2.39 in.	13.25 RT.
	0.6L	43+57.71	2.45 in.	16.75 LT.	43+57.71	2.44 in.	6.75 LT.	43+57.71	2.44 in.	3.25 RT.	43+57.71	2.45 in.	13.25 RT.
	0.7L	43+69.49	2.63 in.	16.75 LT.	43+69.49	2.59 in.	6.75 LT.	43+69.49	2.59 in.	3.25 RT.	43+69.49	2.63 in.	13.25 RT.
	0.8L	43+81.27	2.93 in.	16.75 LT.	43+81.27	2.85 in.	6.75 LT.	43+81.27	2.85 in.	3.25 RT.	43+81.27	2.93 in.	13.25 RT.
	0.9L	43+93.04	3.37 in.	16.75 LT.	43+93.04	3.23 in.	6.75 LT.	43+93.04	3.23 in.	3.25 RT.	43+93.04	3.37 in.	13.25 RT.
	P4 BRG 1	44+03.74	3.97 in.	16.75 LT.	44+03.74	3.77 in.	6.75 LT.	44+03.74	3.77 in.	3.25 RT.	44+03.74	3.97 in.	13.25 RT.

NOTES:

1. FOR DECK KEY PLAN, SEE SHEET 42/65
2. FOR SCREED ELEVATIONS, SEE SHEET 43/65
3. FOR TOP OF HAUNCH ELEVATIONS, SEE SHEETS 44-45/65
4. FOR FINAL DECK ELEVATIONS, SEE SHEETS 46-47/65

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

VARIABLE HAUNCH THICKNESS (1 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

VARIABLE HAUNCH THICKNESS

	LOCATION	BEAM LINE 1			BEAM LINE 2			BEAM LINE 3			BEAM LINE 4		
		STATION	THICK.	OFFSET(FT)	STATION	THICK.	OFFSET(FT)	STATION	THICK.	OFFSET(FT)	STATION	THICK.	OFFSET(FT)
SPAN 5	P4 BRG 2	44+05.90	3.97 in.	16.75 LT.	44+05.90	3.77 in.	6.75 LT.	44+05.90	3.77 in.	3.25 RT.	44+05.90	3.97 in.	13.25 RT.
	0.1L	44+16.60	3.36 in.	16.75 LT.	44+16.60	3.22 in.	6.75 LT.	44+16.60	3.22 in.	3.25 RT.	44+16.60	3.36 in.	13.25 RT.
	0.2L	44+28.37	2.92 in.	16.75 LT.	44+28.37	2.84 in.	6.75 LT.	44+28.37	2.84 in.	3.25 RT.	44+28.37	2.92 in.	13.25 RT.
	0.3L	44+40.15	2.62 in.	16.75 LT.	44+40.15	2.58 in.	6.75 LT.	44+40.15	2.58 in.	3.25 RT.	44+40.15	2.62 in.	13.25 RT.
	0.4L	44+51.93	2.45 in.	16.75 LT.	44+51.93	2.44 in.	6.75 LT.	44+51.93	2.44 in.	3.25 RT.	44+51.93	2.45 in.	13.25 RT.
	0.5L	44+63.71	2.39 in.	16.75 LT.	44+63.71	2.39 in.	6.75 LT.	44+63.71	2.39 in.	3.25 RT.	44+63.71	2.39 in.	13.25 RT.
	0.6L	44+75.48	2.45 in.	16.75 LT.	44+75.48	2.44 in.	6.75 LT.	44+75.48	2.44 in.	3.25 RT.	44+75.48	2.45 in.	13.25 RT.
	0.7L	44+87.26	2.63 in.	16.75 LT.	44+87.26	2.59 in.	6.75 LT.	44+87.26	2.59 in.	3.25 RT.	44+87.26	2.63 in.	13.25 RT.
	0.8L	44+99.04	2.93 in.	16.75 LT.	44+99.04	2.85 in.	6.75 LT.	44+99.04	2.85 in.	3.25 RT.	44+99.04	2.93 in.	13.25 RT.
	0.9L	45+10.81	3.37 in.	16.75 LT.	45+10.81	3.23 in.	6.75 LT.	45+10.81	3.23 in.	3.25 RT.	45+10.81	3.37 in.	13.25 RT.
	P5 BRG 1	45+21.51	3.97 in.	16.75 LT.	45+21.51	3.77 in.	6.75 LT.	45+21.51	3.77 in.	3.25 RT.	45+21.51	3.97 in.	13.25 RT.
SPAN 6	P5 BRG 2	45+23.67	3.97 in.	16.75 LT.	45+23.67	3.77 in.	6.75 LT.	45+23.67	3.77 in.	3.25 RT.	45+23.67	3.97 in.	13.25 RT.
	0.1L	45+34.37	3.36 in.	16.75 LT.	45+34.37	3.22 in.	6.75 LT.	45+34.37	3.22 in.	3.25 RT.	45+34.37	3.36 in.	13.25 RT.
	0.2L	45+46.14	2.92 in.	16.75 LT.	45+46.14	2.84 in.	6.75 LT.	45+46.14	2.84 in.	3.25 RT.	45+46.14	2.92 in.	13.25 RT.
	0.3L	45+57.92	2.62 in.	16.75 LT.	45+57.92	2.58 in.	6.75 LT.	45+57.92	2.58 in.	3.25 RT.	45+57.92	2.62 in.	13.25 RT.
	0.4L	45+69.70	2.45 in.	16.75 LT.	45+69.70	2.44 in.	6.75 LT.	45+69.70	2.44 in.	3.25 RT.	45+69.70	2.45 in.	13.25 RT.
	0.5L	45+81.48	2.39 in.	16.75 LT.	45+81.48	2.39 in.	6.75 LT.	45+81.48	2.39 in.	3.25 RT.	45+81.48	2.39 in.	13.25 RT.
	0.6L	45+93.25	2.45 in.	16.75 LT.	45+93.25	2.44 in.	6.75 LT.	45+93.25	2.44 in.	3.25 RT.	45+93.25	2.45 in.	13.25 RT.
	0.7L	46+05.03	2.63 in.	16.75 LT.	46+05.03	2.59 in.	6.75 LT.	46+05.03	2.59 in.	3.25 RT.	46+05.03	2.63 in.	13.25 RT.
	0.8L	46+16.81	2.93 in.	16.75 LT.	46+16.81	2.85 in.	6.75 LT.	46+16.81	2.85 in.	3.25 RT.	46+16.81	2.93 in.	13.25 RT.
	0.9L	46+28.58	3.37 in.	16.75 LT.	46+28.58	3.23 in.	6.75 LT.	46+28.58	3.23 in.	3.25 RT.	46+28.58	3.37 in.	13.25 RT.
	P6 BRG 1	46+39.28	3.97 in.	16.75 LT.	46+39.28	3.77 in.	6.75 LT.	46+39.28	3.77 in.	3.25 RT.	46+39.28	3.97 in.	13.25 RT.
SPAN 7	P6 BRG 2	46+41.44	3.97 in.	16.75 LT.	46+41.44	3.77 in.	6.75 LT.	46+41.44	3.77 in.	3.25 RT.	46+41.44	3.97 in.	13.25 RT.
	0.1L	46+52.14	3.36 in.	16.75 LT.	46+52.14	3.22 in.	6.75 LT.	46+52.14	3.22 in.	3.25 RT.	46+52.14	3.36 in.	13.25 RT.
	0.2L	46+63.92	2.92 in.	16.75 LT.	46+63.92	2.84 in.	6.75 LT.	46+63.92	2.84 in.	3.25 RT.	46+63.92	2.92 in.	13.25 RT.
	0.3L	46+75.69	2.62 in.	16.75 LT.	46+75.69	2.58 in.	6.75 LT.	46+75.69	2.58 in.	3.25 RT.	46+75.69	2.62 in.	13.25 RT.
	0.4L	46+87.47	2.45 in.	16.75 LT.	46+87.47	2.44 in.	6.75 LT.	46+87.47	2.44 in.	3.25 RT.	46+87.47	2.45 in.	13.25 RT.
	0.5L	46+99.25	2.39 in.	16.75 LT.	46+99.25	2.39 in.	6.75 LT.	46+99.25	2.39 in.	3.25 RT.	46+99.25	2.39 in.	13.25 RT.
	0.6L	47+11.02	2.45 in.	16.75 LT.	47+11.02	2.44 in.	6.75 LT.	47+11.02	2.44 in.	3.25 RT.	47+11.02	2.45 in.	13.25 RT.
	0.7L	47+22.80	2.63 in.	16.75 LT.	47+22.80	2.59 in.	6.75 LT.	47+22.80	2.59 in.	3.25 RT.	47+22.80	2.63 in.	13.25 RT.
	0.8L	47+34.58	2.93 in.	16.75 LT.	47+34.58	2.85 in.	6.75 LT.	47+34.58	2.85 in.	3.25 RT.	47+34.58	2.93 in.	13.25 RT.
	0.9L	47+46.36	3.37 in.	16.75 LT.	47+46.36	3.23 in.	6.75 LT.	47+46.36	3.23 in.	3.25 RT.	47+46.36	3.37 in.	13.25 RT.
	P7 BRG 1	47+57.05	3.97 in.	16.75 LT.	47+57.05	3.77 in.	6.75 LT.	47+57.05	3.77 in.	3.25 RT.	47+57.05	3.97 in.	13.25 RT.
SPAN 8	P7 BRG 2	47+59.22	3.88 in.	16.75 LT.	47+59.22	3.51 in.	6.75 LT.	47+59.22	3.51 in.	3.25 RT.	47+59.22	3.88 in.	13.25 RT.
	0.1L	47+69.80	3.28 in.	16.96 LT.	47+69.80	2.96 in.	6.84 LT.	47+69.80	2.96 in.	3.29 RT.	47+69.80	3.28 in.	13.41 RT.
	0.2L	47+81.47	2.86 in.	17.18 LT.	47+81.47	2.63 in.	6.93 LT.	47+81.47	2.63 in.	3.33 RT.	47+81.47	2.86 in.	13.59 RT.
	0.3L	47+93.14	2.58 in.	17.41 LT.	47+93.14	2.44 in.	7.02 LT.	47+93.14	2.44 in.	3.37 RT.	47+93.14	2.58 in.	13.77 RT.
	0.4L	48+04.81	2.43 in.	17.63 LT.	48+04.81	2.37 in.	7.11 LT.	48+04.81	2.37 in.	3.42 RT.	48+04.81	2.43 in.	13.94 RT.
	0.5L	48+16.48	2.39 in.	17.86 LT.	48+16.48	2.40 in.	7.20 LT.	48+16.48	2.40 in.	3.46 RT.	48+16.48	2.39 in.	14.12 RT.
	0.6L	48+28.14	2.46 in.	18.08 LT.	48+28.14	2.45 in.	7.29 LT.	48+28.14	2.45 in.	3.51 RT.	48+28.14	2.46 in.	14.30 RT.
	0.7L	48+39.81	2.63 in.	18.31 LT.	48+39.81	2.57 in.	7.38 LT.	48+39.81	2.57 in.	3.55 RT.	48+39.81	2.63 in.	14.48 RT.
	0.8L	48+51.48	2.91 in.	18.53 LT.	48+51.48	2.76 in.	7.47 LT.	48+51.48	2.76 in.	3.59 RT.	48+51.48	2.91 in.	14.66 RT.
	0.9L	48+63.15	3.32 in.	18.76 LT.	48+63.15	3.05 in.	7.56 LT.	48+63.15	3.05 in.	3.64 RT.	48+63.15	3.32 in.	14.84 RT.
	CL FA BRG	48+74.82	3.88 in.	18.98 LT.	48+74.82	3.49 in.	7.65 LT.	48+74.82	3.49 in.	3.68 RT.	48+74.82	3.88 in.	15.02 RT.

NOTES:

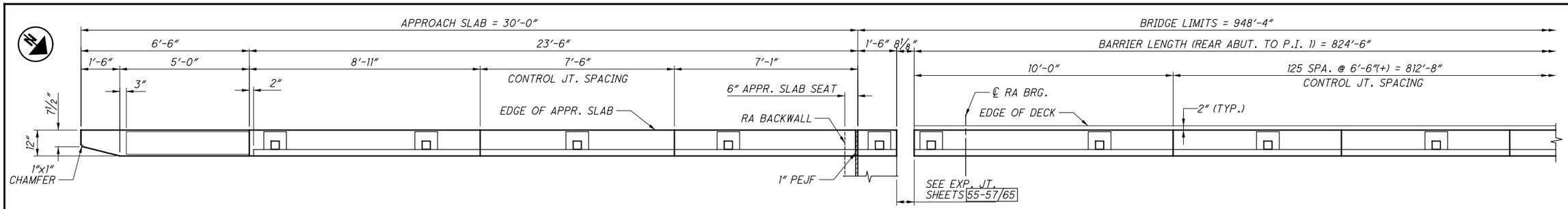
1. FOR DECK KEY PLAN, SEE SHEET 42/65
2. FOR SCREED ELEVATIONS, SEE SHEET 43/65
3. FOR TOP OF HAUNCH ELEVATIONS, SEE SHEETS 44-45/65
4. FOR FINAL DECK ELEVATIONS, SEE SHEETS 46-47/65

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

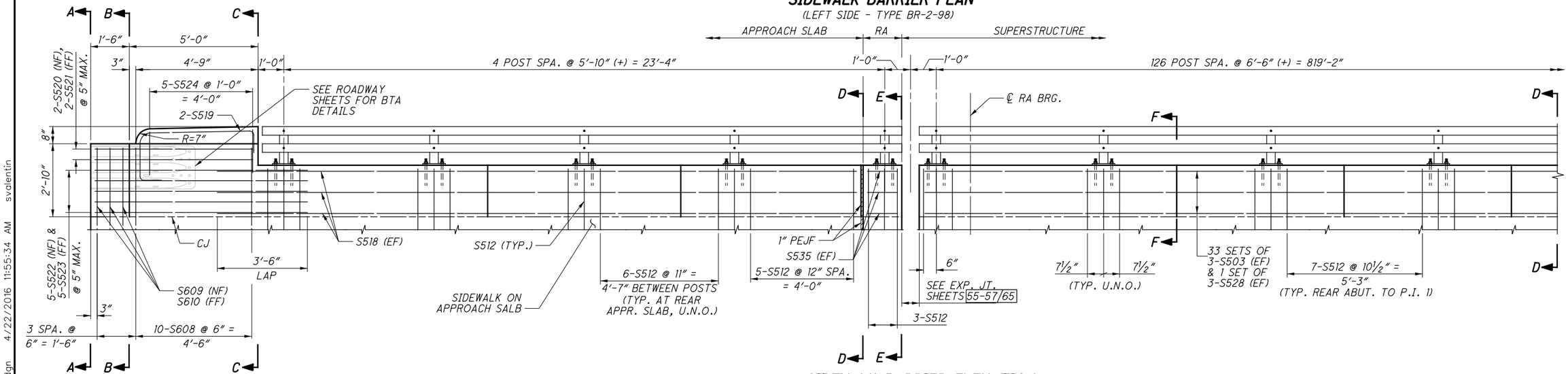
VARIABLE HAUNCH THICKNESS (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



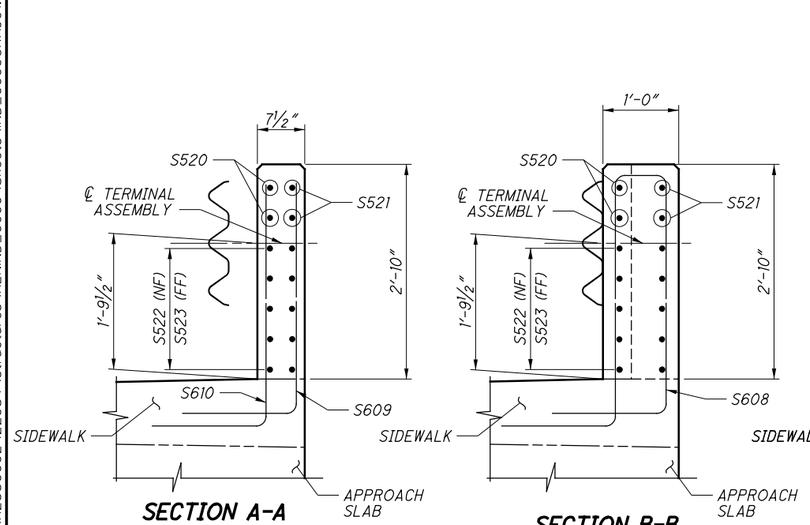
SIDEWALK BARRIER PLAN

(LEFT SIDE - TYPE BR-2-98)



SIDEWALK BARRIER ELEVATION

(LEFT SIDE - TYPE BR-2-98)

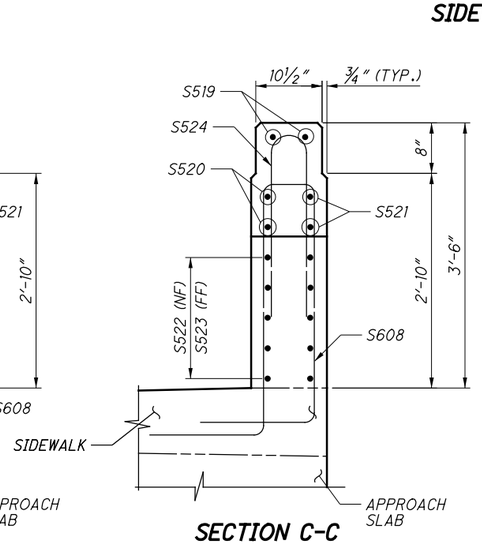


SECTION A-A

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)

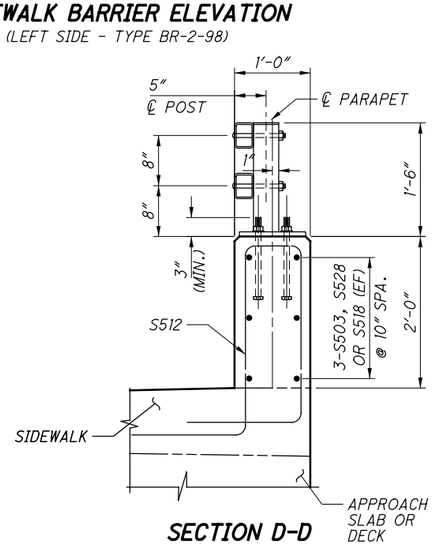
SECTION B-B

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)



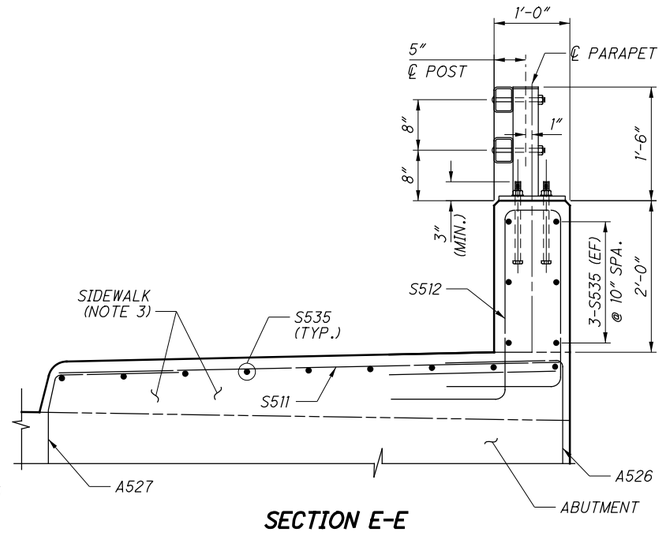
SECTION C-C

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)



SECTION D-D

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)



SECTION E-E

(SECTION THRU ABUTMENT RA SHOWN, FA OPPOSITE HAND)

NOTES:

1. FOR SECTION F-F, SEE SHEET 51/65.
2. FOR ADDITIONAL NOTES, SEE SHEET 51/65 .
3. FOR SIDEWALK PLAN & ELEVATION, SEE SHEET 58-59/65.

1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537
Mannik Smith GROUP

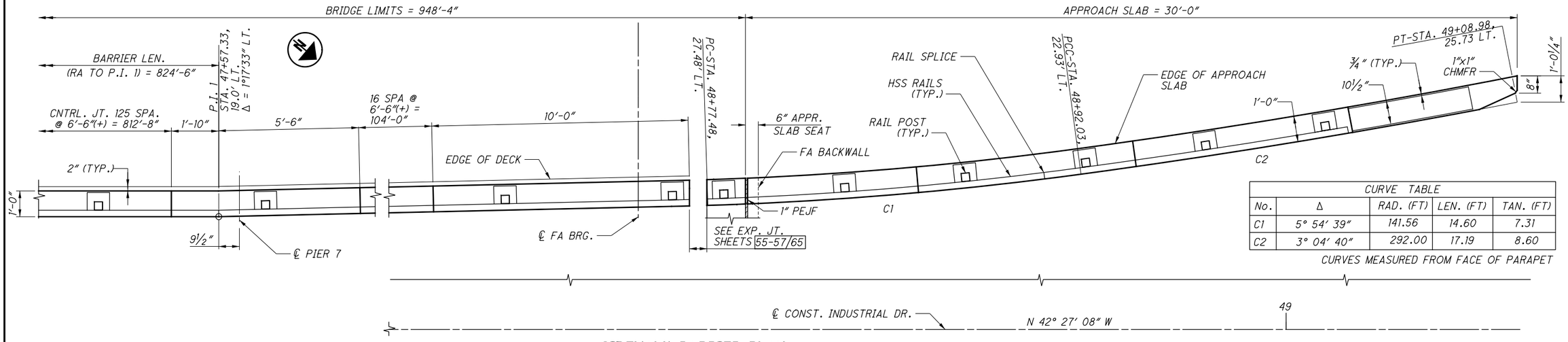
DESIGNED	DRAWN	REVIEWED	DATE
AMK	AMK	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

LEFT RAILING DETAILS (1 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

50/65

154/189

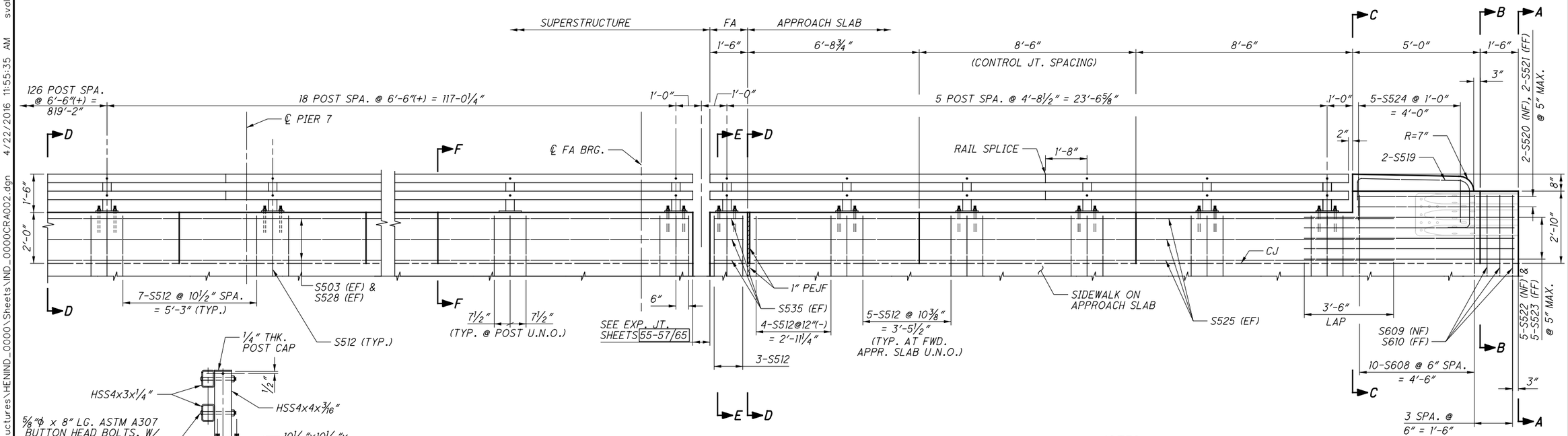


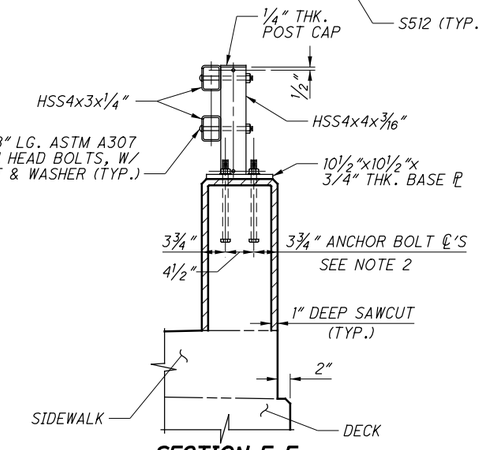
CURVE TABLE				
No.	Δ	RAD. (FT)	LEN. (FT)	TAN. (FT)
C1	5° 54' 39"	141.56	14.60	7.31
C2	3° 04' 40"	292.00	17.19	8.60

CURVES MEASURED FROM FACE OF PARAPET

SIDEWALK BARRIER PLAN

(LEFT SIDE - TYPE BR-2-98)





SECTION F-F

(SECTION THRU CONTROL JOINT)
(DECK SHOWN, APPROACH SIMILAR)
(REINFORCING NOT SHOWN, SEE SEC. D-D)

SIDEWALK BARRIER ELEVATION

(LEFT SIDE - TYPE BR-2-98)

BARRIER REINFORCING REQUIRED LAP LENGTHS	
NO. 5 BARS	2'-5" MIN.

NOTES:

1. CONTRACTOR HAS THE OPTION TO ADJUST RAILING SPLICE LOCATIONS PROVIDED ALL CRITERIA ON ODOT STD. DWG. BR-2-98 WILL BE MET.
2. HORIZONTAL RAILING ELEMENTS SHALL BE PLACED FLUSH WITH THE FACE OF THE PARAPET WALL.
3. ANCHOR BOLTS SHALL BE ASTM A449 ⅞"ϕx1'-1" LG. WITH HEX NUT AND WASHER, AND MIN. 10" EMBEDMENT IN THE CONCRETE PARAPET.
4. FOR ADDITIONAL INFORMATION, SEE ODOT STD. DWG. BR-2-98.
5. FOR SECTIONS A-A THRU E-E, SEE SHEET 50/65.
6. FOR SIDEWALK REINFORCING, SEE SHEET 54/65.
7. FOR ADDITIONAL ABUTMENT INFORMATION, SEE SHEETS 11-18/65.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

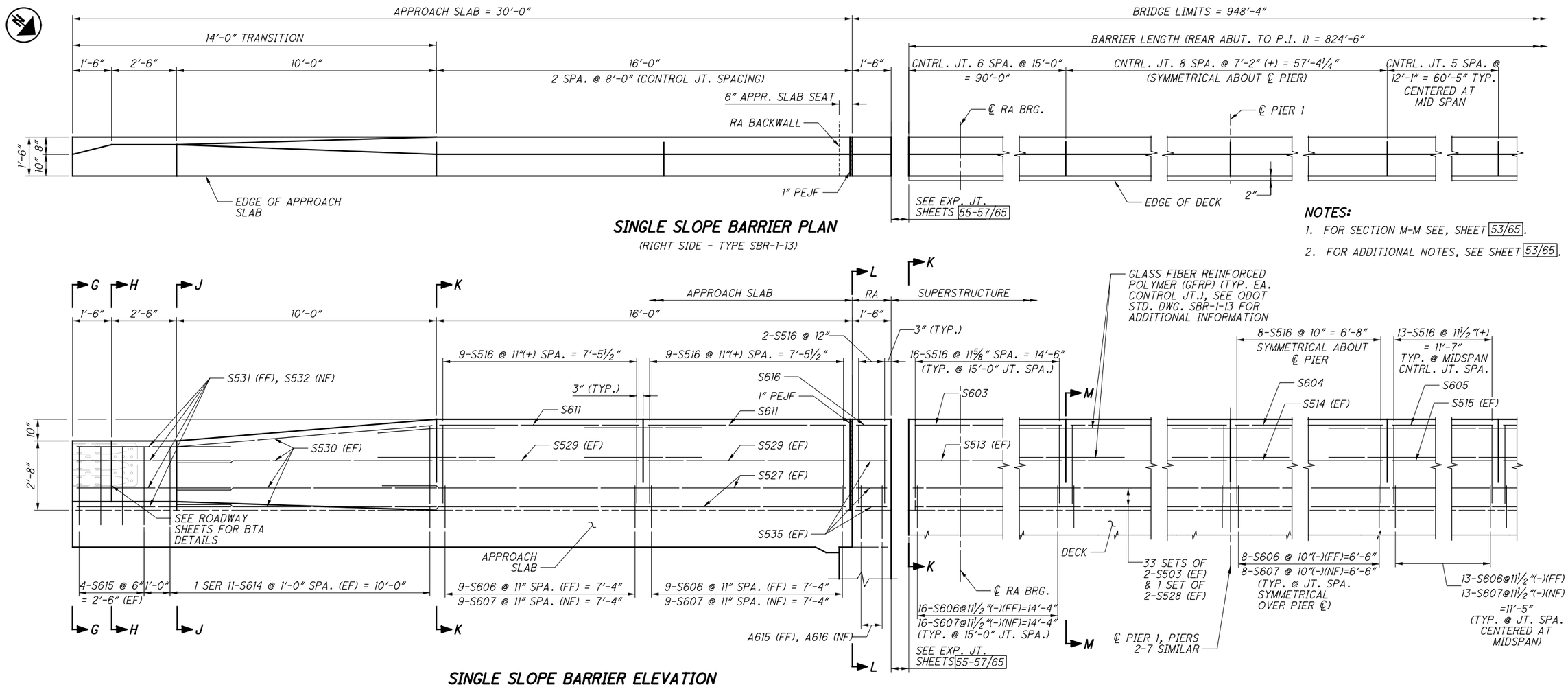
DESIGNED AMK | DRAWN AMK | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

LEFT RAILING DETAILS (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

51 / 65

155
189



SINGLE SLOPE BARRIER PLAN

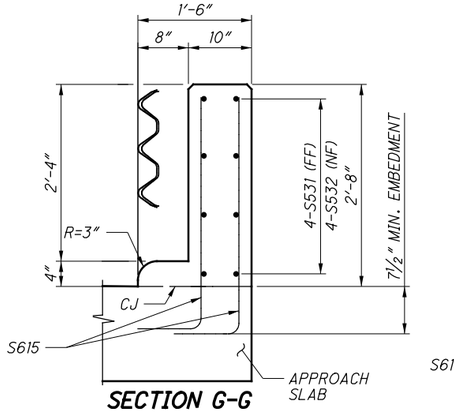
(RIGHT SIDE - TYPE SBR-1-13)

NOTES:

1. FOR SECTION M-M SEE, SHEET 53/65.
2. FOR ADDITIONAL NOTES, SEE SHEET 53/65.

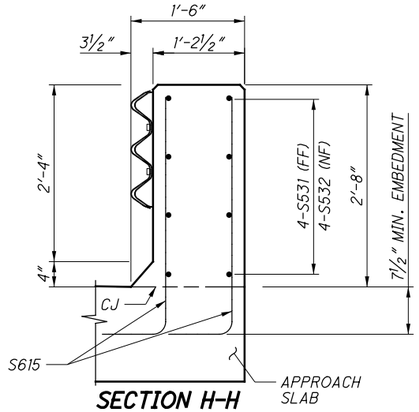
SINGLE SLOPE BARRIER ELEVATION

(RIGHT SIDE - TYPE SBR-1-13)



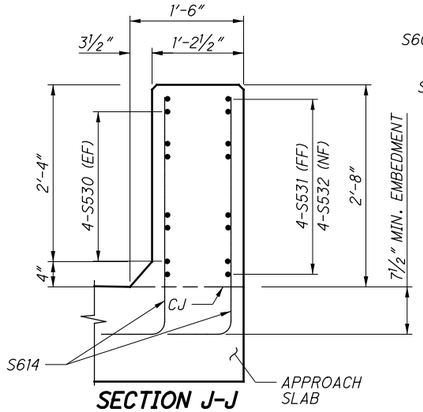
SECTION G-G

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)



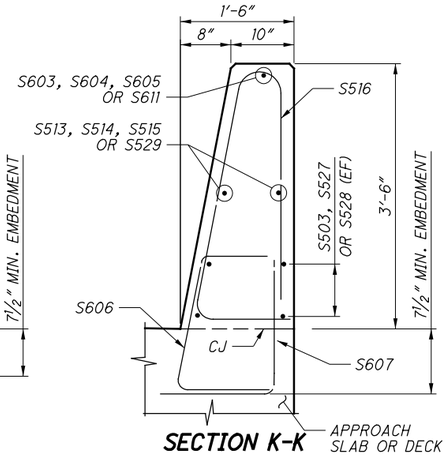
SECTION H-H

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)



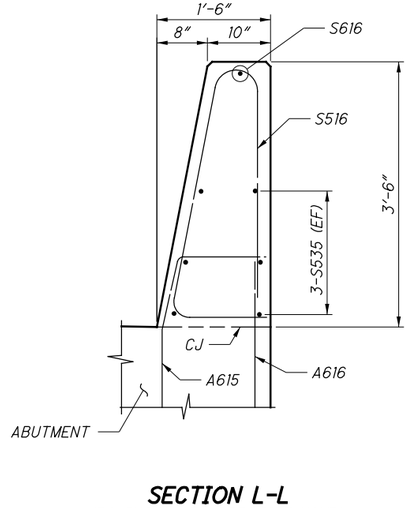
SECTION J-J

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)



SECTION K-K

(REAR APPROACH SHOWN, FWD. APPROACH OPPOSITE HAND)



SECTION L-L

(RA SHOWN, FA OPPOSITE HAND)

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
AMK	AMK	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

RIGHT RAILING DETAILS (1 OF 2)

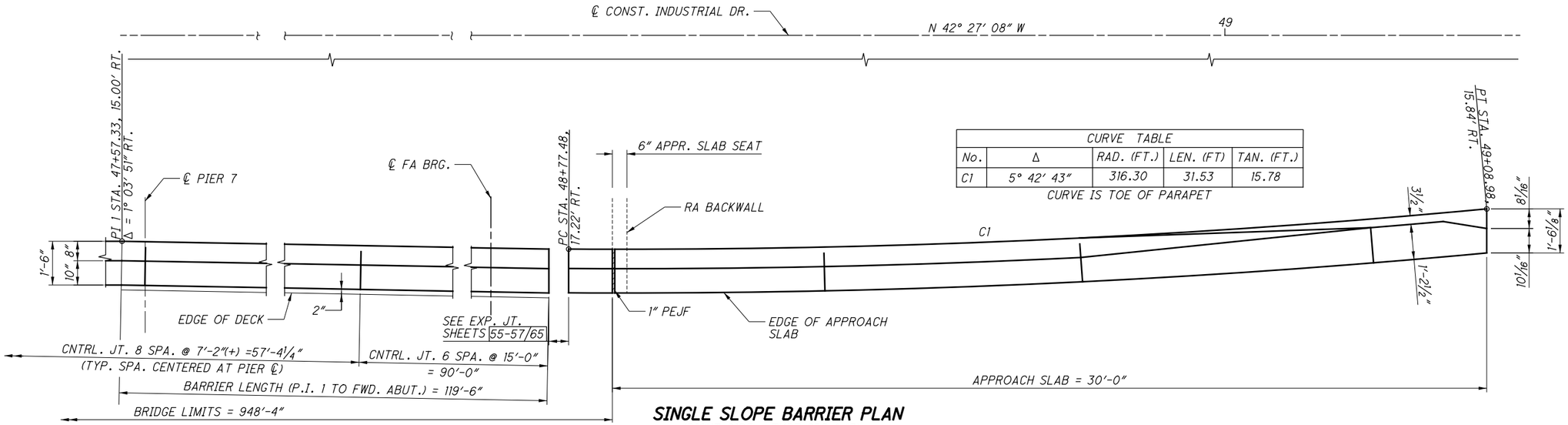
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE

PID No. 22984

52/65

156/189

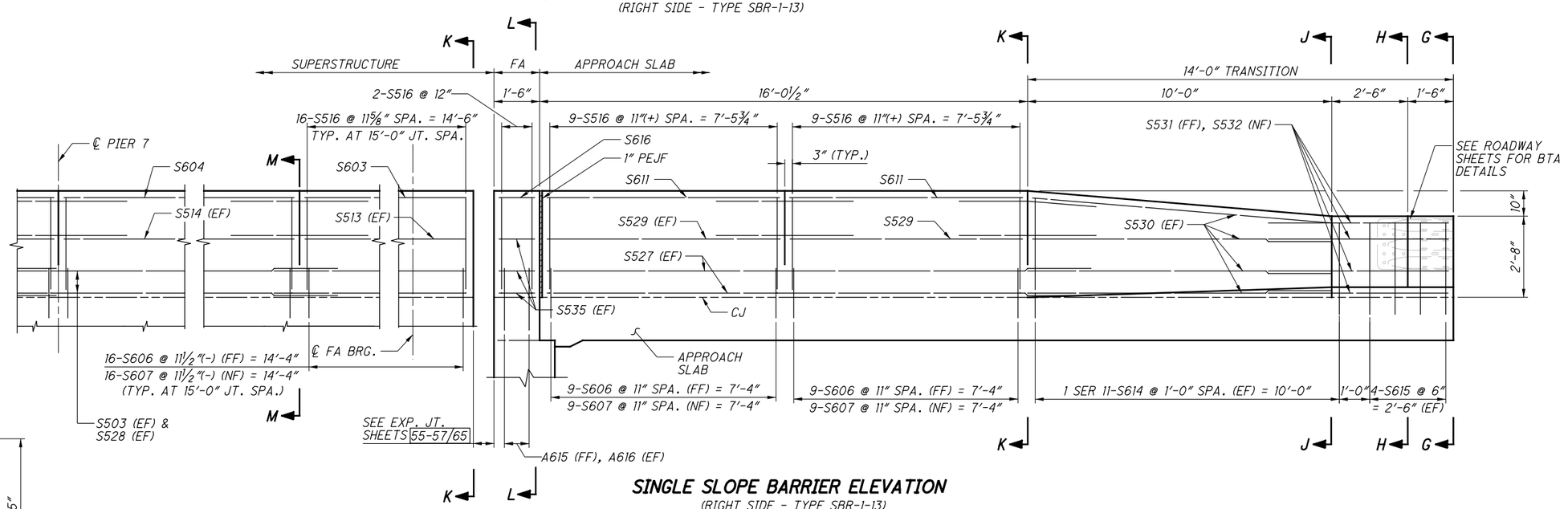


CURVE TABLE				
No.	Δ	RAD. (FT.)	LEN. (FT)	TAN. (FT.)
C1	5° 42′ 43″	316.30	31.53	15.78

CURVE IS TOE OF PARAPET

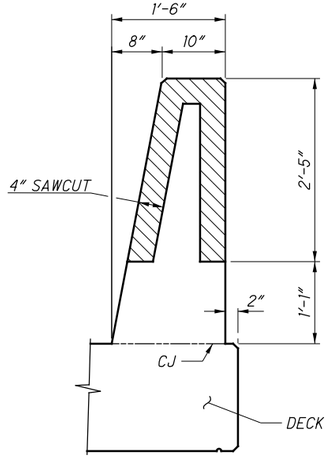
SINGLE SLOPE BARRIER PLAN

(RIGHT SIDE - TYPE SBR-1-13)



SINGLE SLOPE BARRIER ELEVATION

(RIGHT SIDE - TYPE SBR-1-13)



SECTION M-M

(SECTION AT CONTROL JOINT)
(DECK SHOWN, APPROACH SIMILAR)

BARRIER REINFORCING REQUIRED LAP LENGTHS	
NO. 5 BARS	2′-5″ MIN.

NOTES:

1. FOR SECTIONS G-G THRU L-L, SEE SHEET 52/65.
2. FOR ADDITIONAL SINGLE SLOPE RAILING INFORMATION, SEE ODOT STD. DWGS. SBR-1-13.
3. FOR DECK PLAN, SEE SHEETS 38-39/65.
4. FOR ABUTMENT DETAILS, SEE SHEETS 11-20/65.
5. FOR APPROACH SLAB DETAILS, SEE SHEETS 58-59/65.
6. FOR ADDITIONAL APPROACH SLAB INFORMATION, SEE ODOT STD. DWGS. AS-1-15 & AS-2-15.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED AMK | DRAWN AMK | REVIEWED TLR | DATE 04/2016
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RIGHT RAILING DETAILS (2 OF 2)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

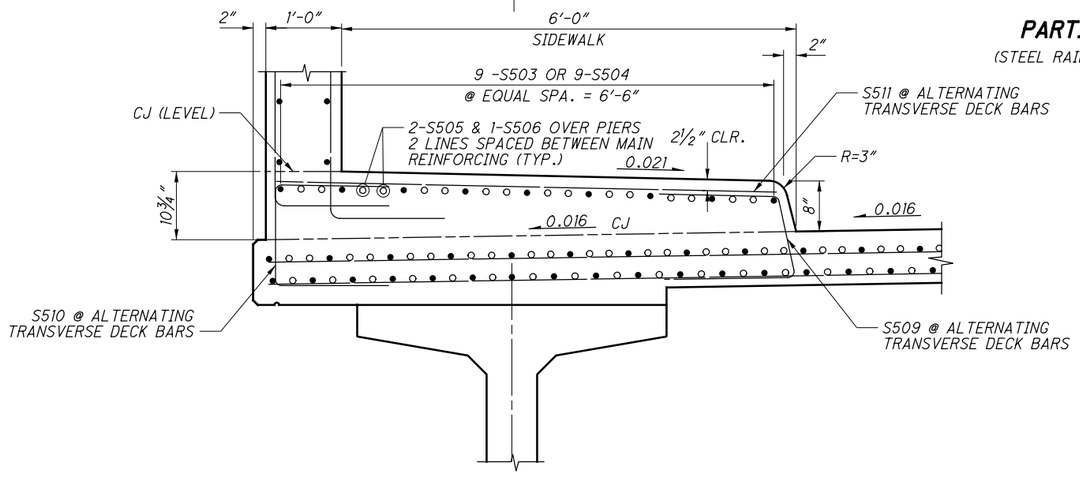
826-S509, S510 AND S511 @ 1'-0"(-) = 825'-0"
MEASURED ALONG FASCIA

EDGE OF DECK
FACE OF CONCRETE BARRIER
TOE OF CURB
34 SETS OF 9-S503
& 1 SET OF 9-S504
℄ PIER 1 (PIERS 2 - 7 SIMILAR)
2-S505 AND 1-S506, 2 LINES EQUALLY SPACED
BETWEEN EACH S503/S504 LONGITUDINAL BARS, STAGGERED
AS SHOWN (TYP. EACH PIER, UNLESS NOTED OTHERWISE).
3'-0"
36'-11" (TYP.)
33'-11" (TYP.)
3'-0"
SPANS 2-7 NOT SHOWN
MATCH LINE SEE BELOW
℄ RA BRG.
STA. 39+34.82
℄ CONST. INDUSTRIAL DR.
N 42° 27' 08" W
40
EXP. JT.

1'-0"
129-S509, S510 AND S511 @ 11" = 118'-3"
MEASURED ALONG FASCIA

EDGE OF DECK
FACE OF CONCRETE BARRIER
S503
& S504
TOE OF CURB
FIELD BEND
AS NECESSARY
MATCH LINE SEE ABOVE
SPANS 2-7 NOT SHOWN
P.I. 1 STA. 47+57.40,
13.00' LT
℄ PIER 7
STA. 47+58.13
℄ CONST. INDUSTRIAL DR.
N 42° 27' 08" W
48
℄ FA BRG.
STA. 48+74.82
EXP. JT.

PARTIAL SIDEWALK PLAN
(STEEL RAILING ON BARRIER NOT SHOWN)



SECTION A-A
(TYP. SIDEWALK SECTION)

SIDEWALK REINFORCING REQUIRED LAP LENGTHS	
NO. 5 BARS	3'-2" MIN.

NOTES:

1. FOR SIDEWALK RAILING DETAILS, SEE SHEETS 50-51/65.
2. FOR TRANSVERSE SECTION INCLUDING CONCRETE SEALING INFORMATION, SEE SHEETS 40-41/65.
3. FOR DECK PLAN, SEE SHEETS 38-39/65.
4. FOR EXPANSION JOINT DETAILS, SEE SHEETS 55-57/65.
5. FOR APPROACH SLAB DETAILS, SEE SHEETS 58-59/65.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN AMK | REVIEWED TLR | DATE 04/2016
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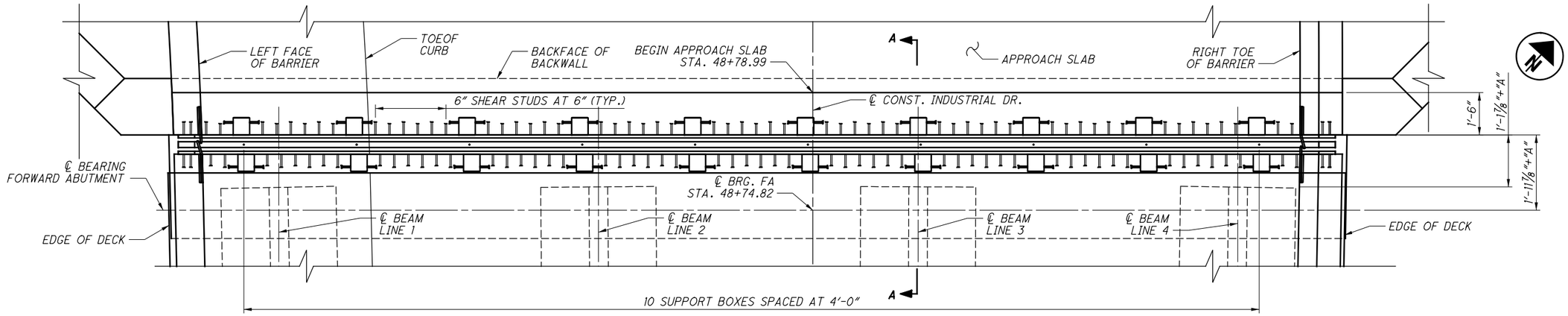
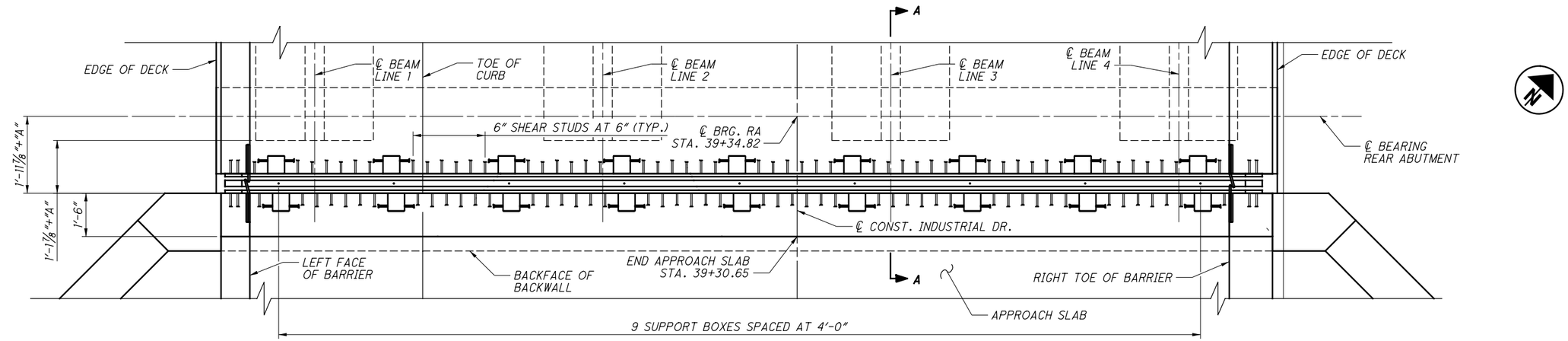
SIDEWALK PLAN AND SECTION
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

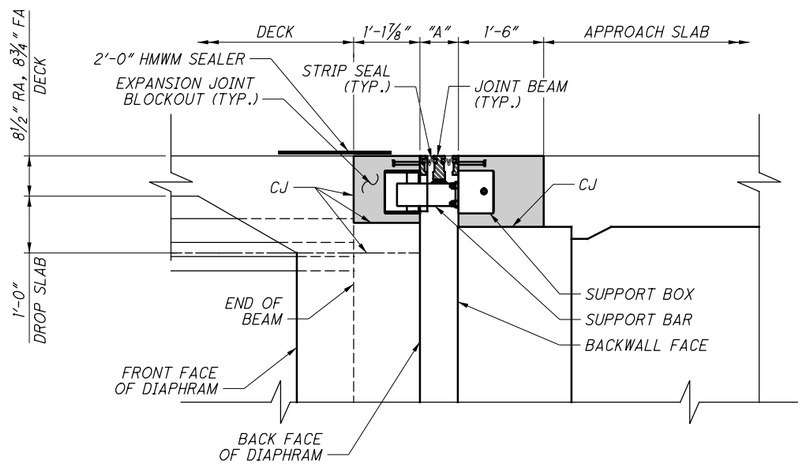
HEN-NEW BRIDGE
PID No. 22984



FORWARD ABUTMENT EXPANSION JOINT DETAIL



REAR ABUTMENT EXPANSION JOINT DETAIL



SECTION A-A

MODULAR EXPANSION JOINT OPENINGS		
TEMP	DIMENSION "A" (INCHES)	
	REAR ABUT	FWD ABUT
15°F	9 13/16	9 13/16
20°F	9 5/8	9 5/8
30°F	9 1/4	9 1/4
40°F	8 7/8	8 7/8
50°F	8 1/2	8 1/2
60°F	8 1/8	8 1/8
70°F	7 3/4	7 3/4
80°F	7 3/8	7 3/8
90°F	7	7
95°F	6 13/16	6 13/16

NOTES:

1. SEAL TRANSVERSE DECK CONSTRUCTION JOINT WITH 2'-0" HMWM, CENTERED ABOUT JOINT.
2. THE MODULAR JOINT SPECIFIED SHALL BE A D.S. BROWN "D160-PV-S" STEELFLEX MODULAR EXPANSION JOINT SYSTEM OR EQUIVALENT. IF AN ALTERNATE JOINT IS USED, THE PLANS SHALL BE MODIFIED TO ACCOMODATE THE NEW JOINT SYSTEM.
3. FOR DECK PLAN, SEE SHEETS 38-39/65
4. FOR END DIAPHRAM DETAILS, SEE SHEET 36/65
5. DROP SLAB SHALL EXTEND THE ENTIRE WIDTH OF DECK.
6. CONCRETE PARAPETS TO BE INSTALLED AFTER INSTALLATION OF MODULAR EXPANSION JOINT.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
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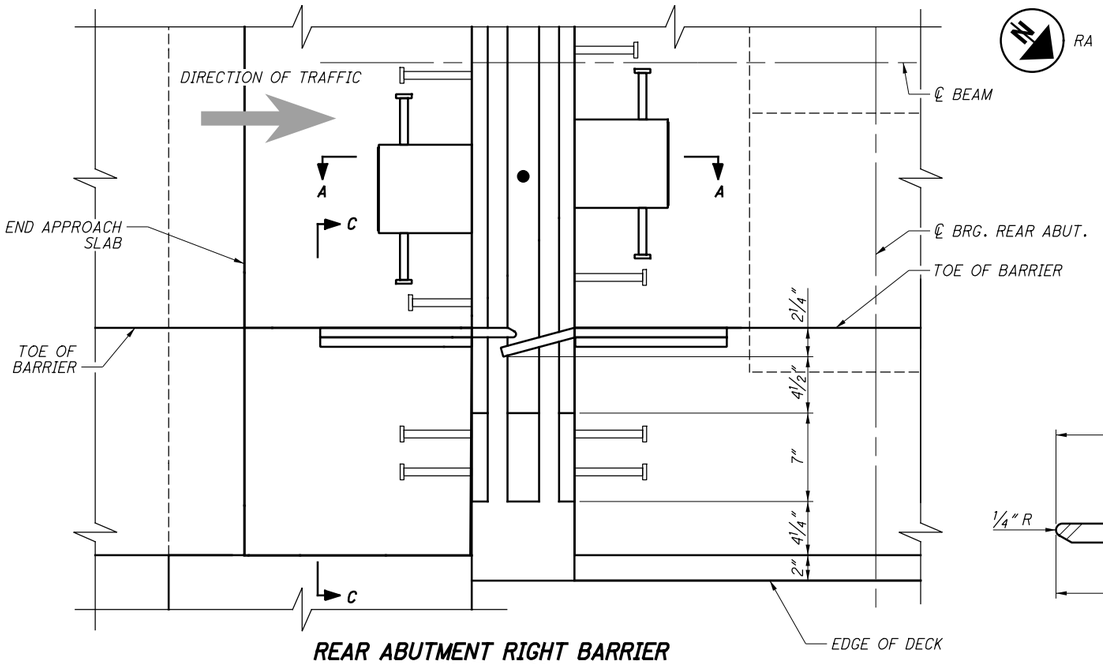
MODULAR EXPANSION JOINT DETAILS (1 OF 3)
HEN-IND-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

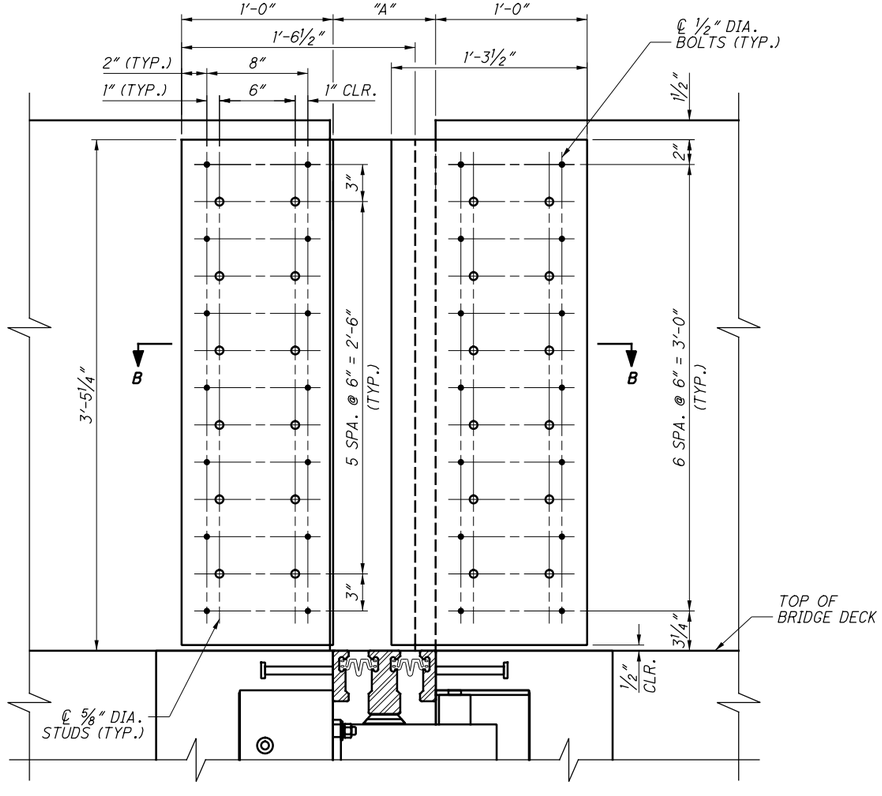
55/65

159
189



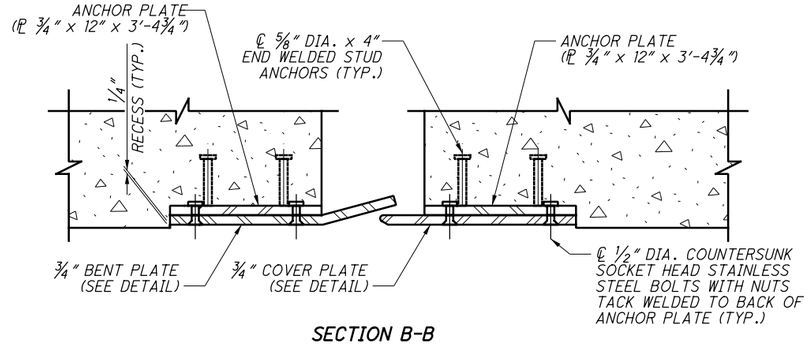
REAR ABUTMENT RIGHT BARRIER PART PLAN

(FORWARD ABUTMENT OPPOSITE HAND)



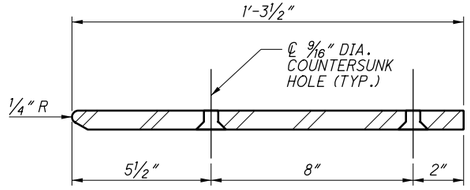
SECTION A-A

(DIMENSIONS MEASURED ARE ALONG THE FACE OF THE PARAPET)

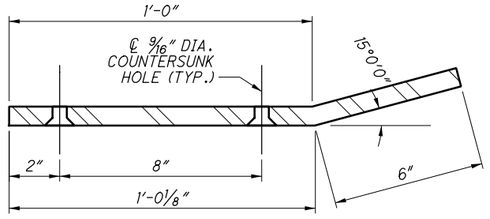


SECTION B-B

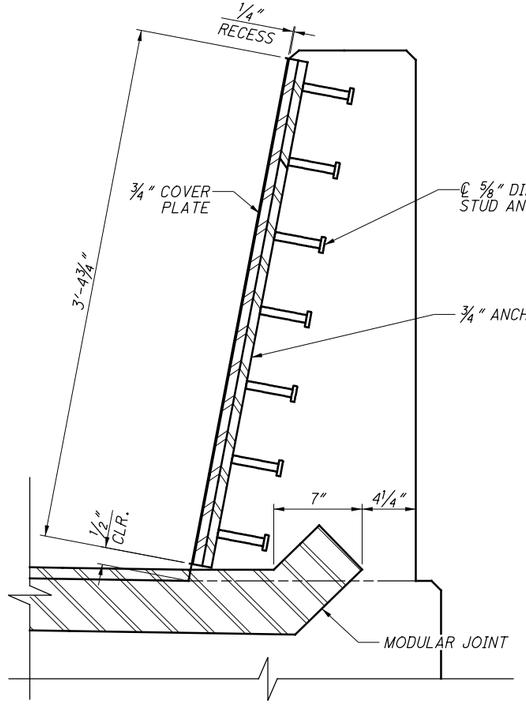
(REAR ABUTMENT RIGHT BARRIER SHOWN)
(ALL OTHER PLATES SIMILAR)



¾" COVER PLATE



¾" BENT PLATE



SECTION C-C

NOTES:

1. FOR DIMENSIONS "A", SEE SHEET 55/65
2. CONCRETE PARAPETS TO BE INSTALLED AFTER INSTALLATION OF MODULAR EXPANSION JOINTS.
3. FOR ADDITIONAL NOTES SEE SHEET 55/65

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

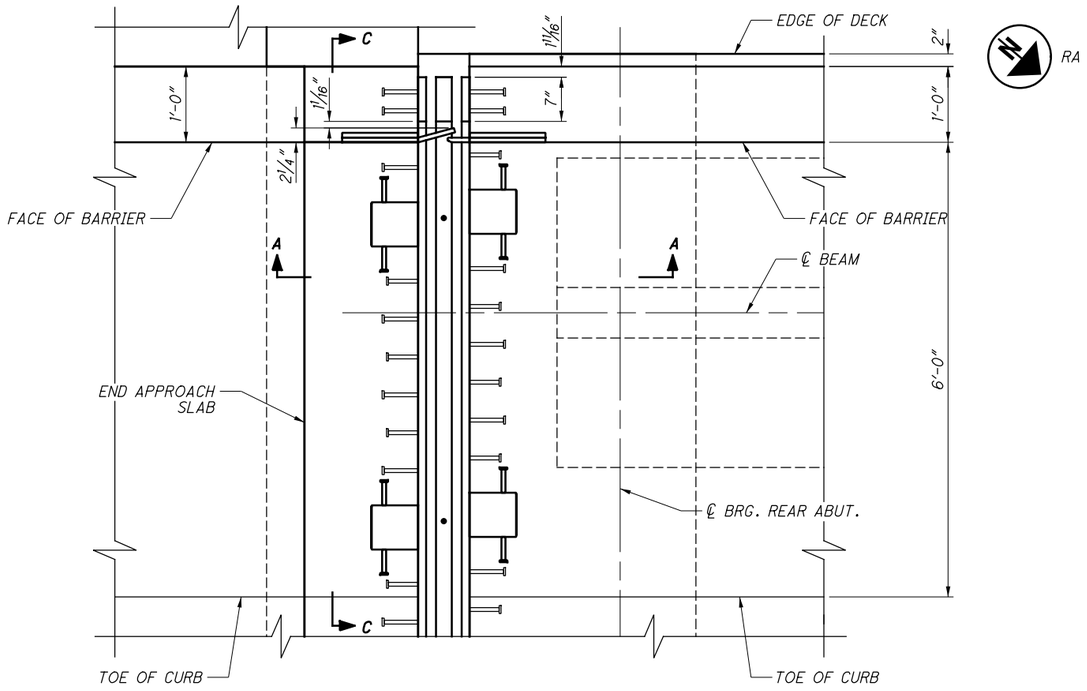
DESIGNED	DRAWN	REVIEWED	DATE
CWE	JEC	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

MODULAR EXPANSION JOINT DETAILS (2 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

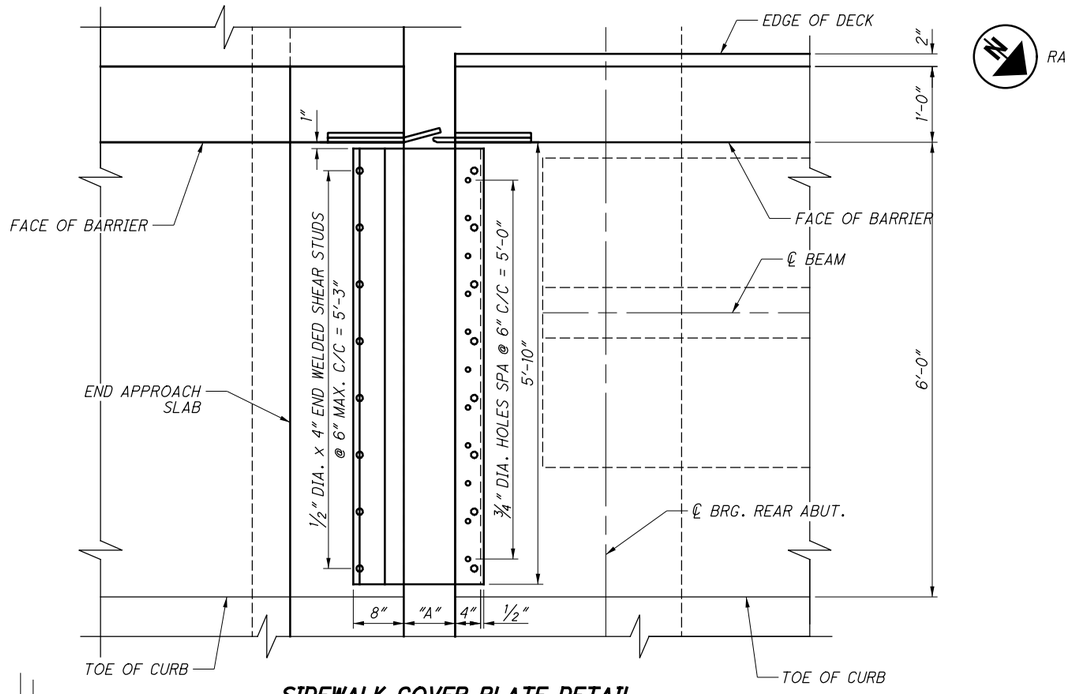
56/65

160/189

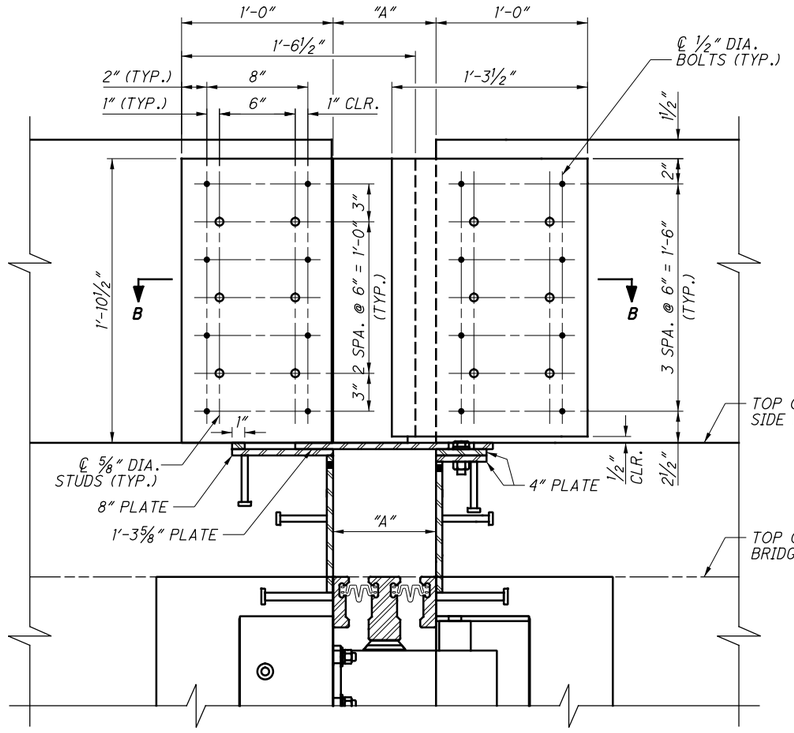


REAR ABUTMENT LEFT BARRIER PART PLAN

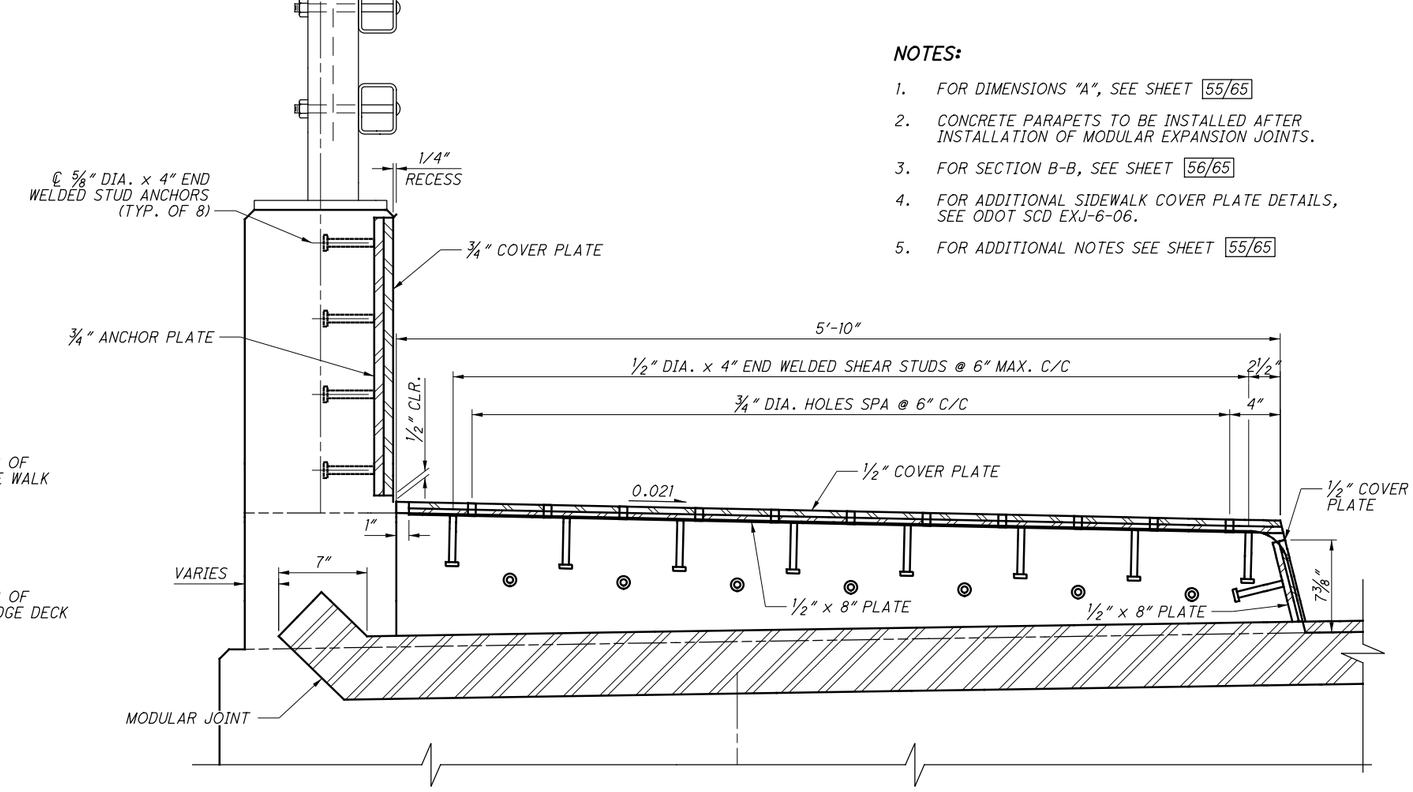
(FORWARD ABUTMENT OPPOSITE HAND)



SIDEWALK COVER PLATE DETAIL



SECTION A-A



SECTION C-C

NOTES:

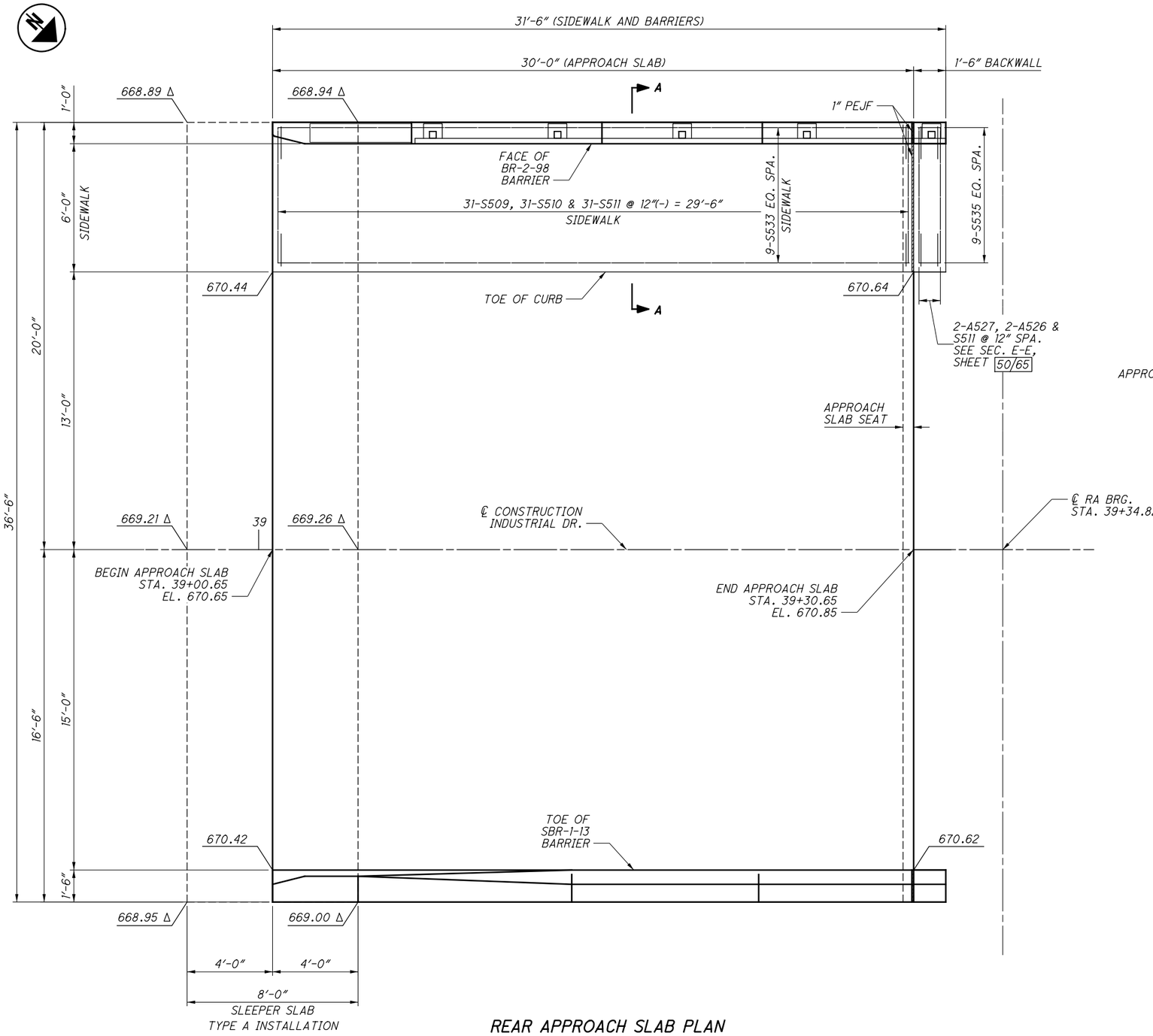
1. FOR DIMENSIONS "A", SEE SHEET 55/65
2. CONCRETE PARAPETS TO BE INSTALLED AFTER INSTALLATION OF MODULAR EXPANSION JOINTS.
3. FOR SECTION B-B, SEE SHEET 56/65
4. FOR ADDITIONAL SIDEWALK COVER PLATE DETAILS, SEE ODOT SCD EXJ-6-06.
5. FOR ADDITIONAL NOTES SEE SHEET 55/65

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

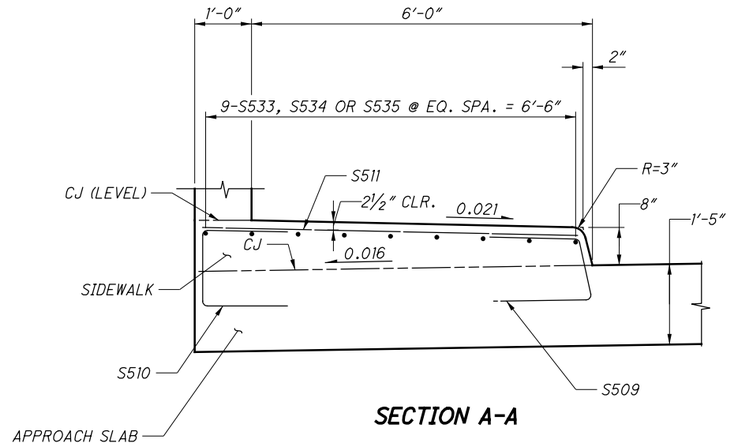
DESIGNED	DRAWN	REVIEWED	DATE
CWE	JEC	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

MODULAR EXPANSION JOINT DETAILS (3 OF 3)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



REAR APPROACH SLAB PLAN



SECTION A-A

LEGEND:

Δ - SLEEPER SLAB SURFACE ELEVATIONS

NOTES:

1. HMWM SEALER INCLUDED WITH ITEM 512 SEALING OF CONCRETE BRIDGE DECKS WITH HMWM RESIN AS PER PLAN FOR PAYMENT.
2. SEE STD. DWG. AS-1-15 AND AS-2-15 FOR ADDITIONAL DETAILS INCLUDING APPROACH SLAB REINFORCING STEEL.
3. FOR SIDEWALK RAILING DETAILS, SEE SHEETS 50-51/65.
4. FOR FORWARD APPROACH SLAB DETAILS, SEE SHEET 59/65.
5. THE CONCRETE AND REINFORCING STEEL FOR THE SIDEWALK PARAPET IS INCLUDED WITH ITEM 517, RAILING MISC.: CONCRETE PARAPET WITH STEEL RAILING.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

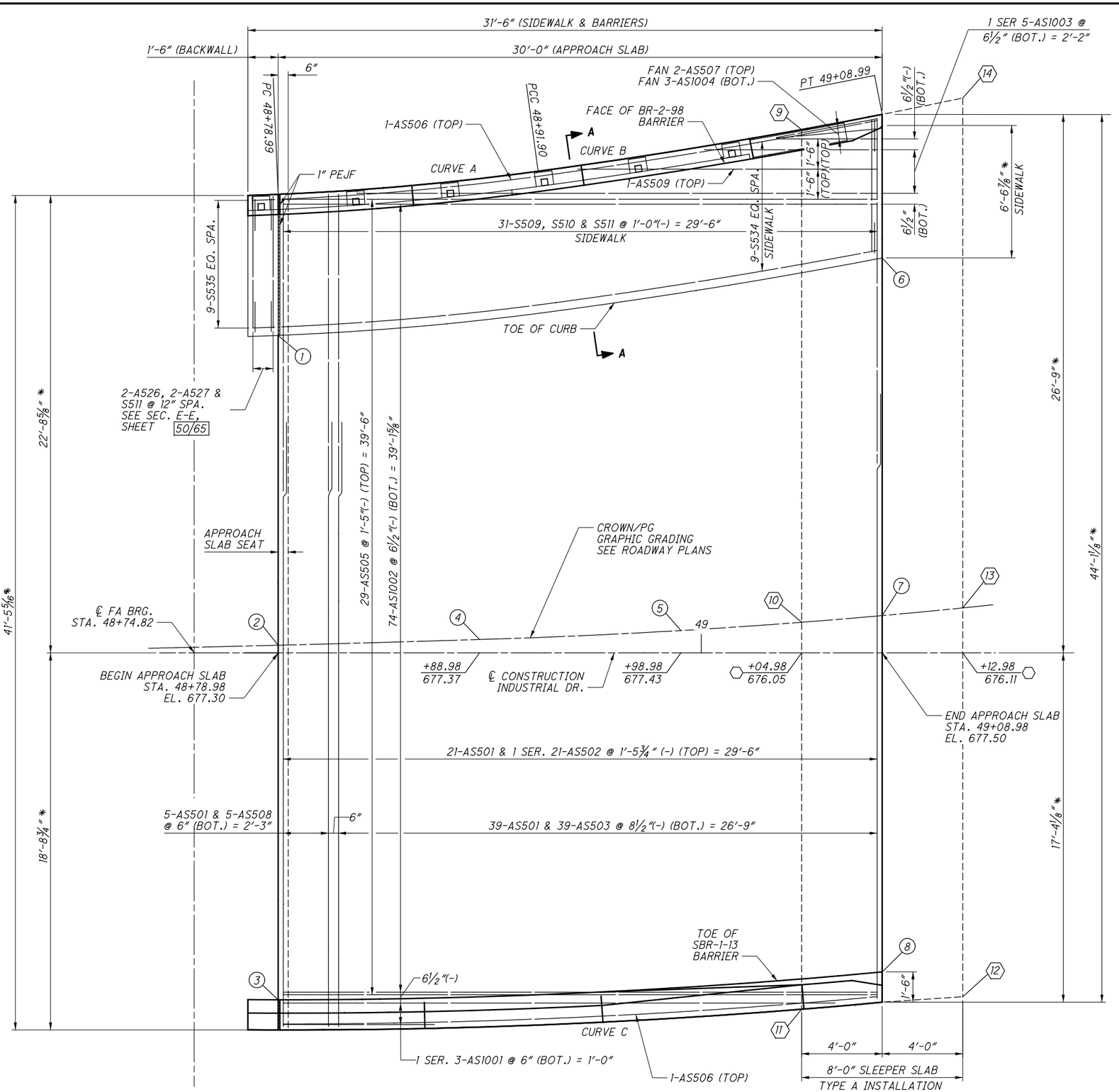
DESIGNED AMK | DRAWN AMK | CHECKED SCT | REVIEWED TLR | DATE 04/2016 | REVISED | STRUCTURE FILE NUMBER TBD

REAR APPROACH SLAB DETAILS

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE

PID No. 22984



FORWARD APPROACH SLAB PLAN

APPROACH SLAB SURFACE			
No.	STA.	OFFSET	ELEV.
1	48+78.98	15.77' LT	677.07
2	48+78.98	0.38' LT	677.31
3	48+78.98	17.22' RT	677.03
4	48+88.98	0.67' LT	677.38
5	48+98.98	1.11' LT	677.45
6	49+08.98	19.62' LT	677.27
7	49+08.98	1.85' LT	677.53
8	49+08.98	15.84' RT	677.25
SLEEPER SLAB SURFACE			
No.	STA.	OFFSET	ELEV.
9	49+04.99	25.99' LT	675.70
10	49+04.99	1.52' LT	676.08
11	49+04.99	17.70' RT	675.77
12	49+12.99	17.08' RT	675.85
13	49+12.99	2.24' LT	676.15
14	49+12.99	27.56' LT	675.76

APPROACH SLAB CURVE DATA

CURVE A
Δ = 5° 17' 11"
D = 40.76°
R = 140.56'
T = 6.49'
L = 12.97'
CH. = 12.96'
CB = N 84° 55' 05" E

CURVE B
Δ = 3° 24' 38"
D = 19.69°
R = 291.00'
T = 8.66'
L = 17.32'(+)
CH. = 17.32'(-)
CB = N 80° 36' 53" E

CURVE C
Δ = 5° 24' 59"
D = 18.03°
R = 317.80
T = 15.03'
L = 30.04
CH. = 30.03'
CB = N 87° 22' 25" E

APPROACH SLAB REINFORCING REQUIRED LAP LENGTHS	
NO. 5 BARS	3'-5" MIN.

LEGEND:

* MEASURED PERPENDICULAR TO ℄ CONSTRUCTION INDUSTRIAL DR.

⬡ - SLEEPER SLAB SURFACE ELEVATIONS

NOTES:

1. FOR APPROACH SLAB DETAIL NOTES, SEE SHEET 58/65.
2. FOR SECTION A-A, SEE SHEET 58/65.
3. FORWARD APPROACH SLAB TO BE INCLUDED WITH ITEM 526, REINFORCED CONCRETE APPROACH SLAB WITH QC/QA (T=17") AS PER PLAN.
4. CURVE INFORMATION DEFINES OUTSIDE EDGES OF APPROACH/SLEEPER SLAB.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN AMK | REVIEWED TLR | DATE 04/2016
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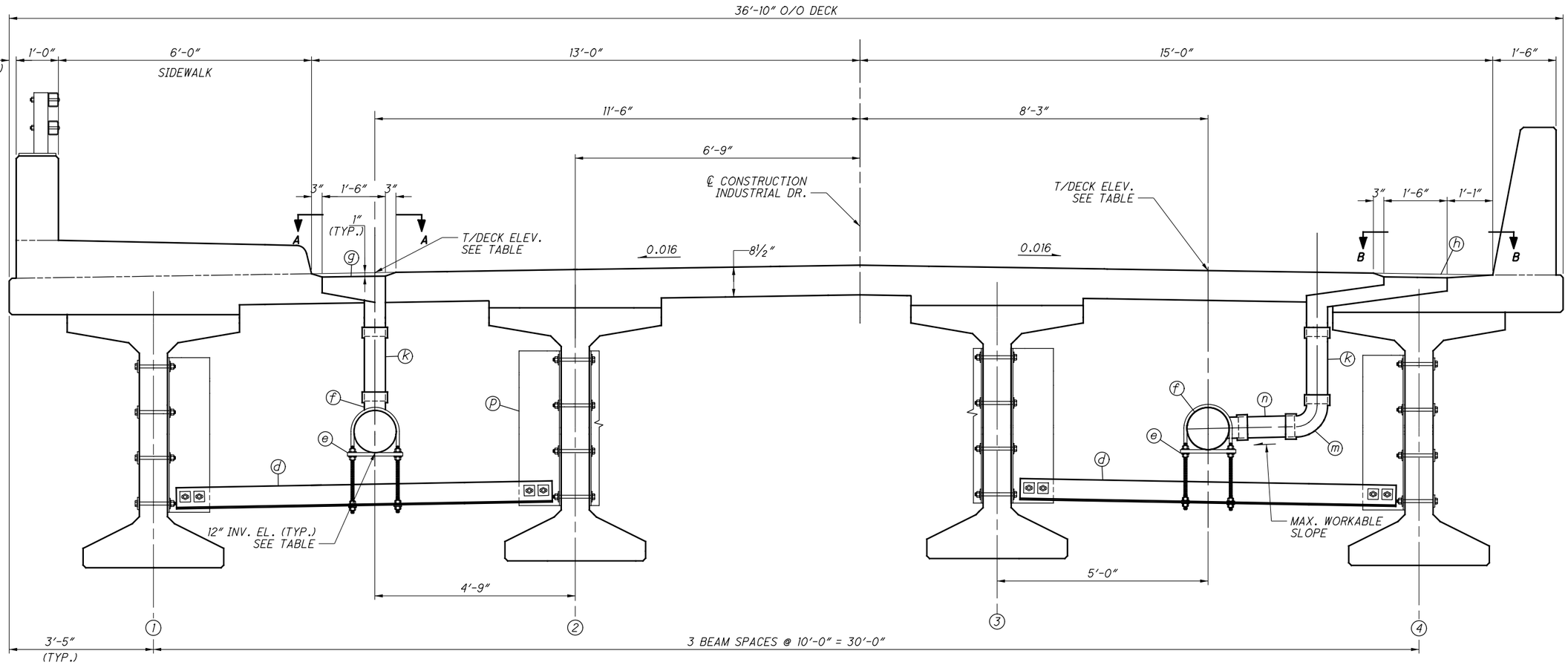
FORWARD APPROACH SLAB DETAILS
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

59/65
163/189



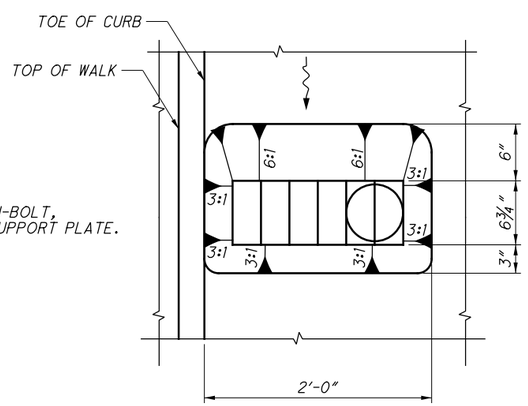
SCUPPER DETAIL

INTERMEDIATE DIAPHRAGM CROSSFRAMING NOT SHOWN

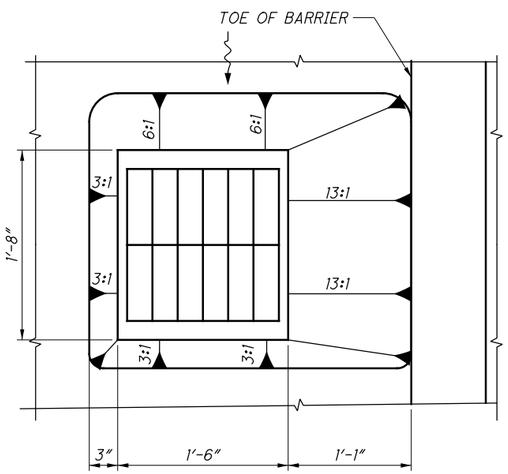
SCUPPER LOCATION TABLE			
STATION	SIDE	T/DECK	INVERT
39+68.50	LEFT	670.94	666.67
39+68.50	RIGHT	670.99	667.00
40+90.00	LEFT	671.76	667.89
40+90.00	RIGHT	671.81	669.43
42+07.00	LEFT	672.56	669.06
43+25.00	LEFT	673.37	670.24
44+43.00	LEFT	674.16	671.42
45+60.00	LEFT	674.96	672.59

LEGEND:

- (#) - DESIGNATES BEAM LINE NUMBER
- (d) - L6x6X⅜ SEE TYPE A CROSSFRAME, SEE SHEET 40/65.
- (e) - 12"ϕ SUPPORT CLAMP, COMPLETE WITH ⅞"ϕ VARIABLE LENGTH U-BOLT, NUTS, FLAT WASHERS, BEVELED WASHERS, LOCK WASHERS AND SUPPORT PLATE.
- (f) - 12"x12"x6" TEE (PVC)
- (g) - TYPE 1 SCUPPER - PER ODOT SD-1-69
- (h) - TYPE 2 SCUPPER - CUSTOMIZED NEENAH TYPE R-3935
- (k) - 6"ϕ STRAIGHT PIPE (PVC), VARIABLE LENGTH, HUB ON ONE END
- (m) - 6"x6" STD. RADIUS 90° BEND (PVC)
- (n) - 6"ϕ STRAIGHT "SPOOL PIECE", NO HUB (PVC)
- (p) - STEEL SUPPORT, SEE STD. DWG. PSID-1-13



VIEW A-A



VIEW B-B

NOTES:

1. FOR TRANSVERSE SECTIONS ALONG SPANS 1 - 7, SEE SHEET 40/65.
2. FOR DECK PLAN, SEE SHEETS 38-39/65.
3. FOR FRAMING PLAN, SEE SHEETS 28-30/65.
4. FOR RAILING DETAILS, SEE SHEETS 50-53/65.
5. FOR SIDEWALK DETAILS, SEE SHEET 54/65.
6. FOR PRESTRESSED I-BEAM DETAILS, SEE SHEET 31-32/65
7. FOR STEEL INTERMEDIATE DIAPHRAGM DETAILS, SEE STD. DWG. PSID-1-13.
8. PROVIDE 12"ϕ PIPE EXPANSION FITTING IN SPAN 1 NEAR REAR ABUTMENT DIAPHRAGM. TYPE SUBJECT TO ENGINEER APPROVAL.
9. ALL PVC PIPE SHALL CONFORM TO ITEM 707.45.
10. INCLUDE (d) AND (p) WITH ITEM 513 FOR PAYMENT.
11. INCLUDE (e), (g) AND (h) WITH ITEM 518 - SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN FOR PAYMENT.
12. INCLUDE (k), (m), (n) AND (f) WITH ITEM 518 - 6" PIPE DOWNSPOUT, INCLUDING SPECIALS FOR PAYMENT.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED AMK | DRAWN AMK | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

SCUPPER DETAILS

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD.	TOTAL				A	B	C	D	E	R	INC
ABUTMENT													
D801	25	28	53	5'-0"	708	18	2'-10"	1'-0"	1'-0"				
A401	10	10	20	14'-2"	189	2	6'-11"	0'-6"	6'-11"				
A501	37	42	79	15'-7"	1284	2	2'-6"	10'-10"	2'-6"				
A502	26	26	52	11'-2"	606	2	2'-6"	6'-5"	2'-6"				
A503	2 SR OF 3	2 SR OF 3	4 SR OF 3	11'-4" TO 12'-4"	148	2	2'-6"	6'-7" TO 7'-7"	2'-6"				0'-6"
A504	2 SR OF 4	2 SR OF 4	4 SR OF 4	13'-5" TO 15'-5"	241	2	2'-6"	8'-8" TO 10'-8"	2'-6"				0'-8"
A505	28	0	28	21'-10"	638	STR							
A506	0	28	28	24'-2"	706	STR							
A507	39	44	83	10'-7"	916	2	2'-9"	5'-4"	2'-9"				
A508	77	82	159	12'-5"	2059	1	1'-6"	11'-1"					
A509	18	18	36	9'-5"	354	19	4'-9"	3'-4"	3'-4"				
A510	28	28	56	9'-2"	535	19	4'-7"	3'-3"	3'-3"				
A511	10	10	20	9'-5"	196	19	4'-9"	3'-4"	3'-4"				
A512	11	11	22	13'-0"	298	STR							
A513	11	11	22	13'-5"	308	STR							
A514	2 SR OF 3	2 SR OF 3	4 SR OF 3	6'-0" TO 13'-0"	119	STR							3'-6"
A515	2 SR OF 3	2 SR OF 3	4 SR OF 3	6'-4" TO 13'-4"	123	STR							3'-6"
A516	1	1	2	8'-6"	18	19	4'-3"	3'-0"	3'-0"				
A517	1	1	2	6'-9"	14	19	3'-4"	2'-5"	2'-5"				
A518	1	1	2	8'-6"	18	19	4'-4"	3'-0"	3'-0"				
A519	1	1	2	6'-10"	14	19	3'-5"	2'-5"	2'-5"				
A520	1	1	2	8'-1"	17	52	1'-2"	3'-3"	1'-3"	2'-5"	2'-5"		
A521	2	2	4	15'-8"	65	19	13'-11"	0'-8"	1'-8"				
A522	2	2	4	16'-0"	67	19	14'-3"	0'-8"	1'-8"				
A523	1	1	2	8'-2"	17	52	1'-3"	3'-2"	1'-4"	2'-5"	2'-5"		
A524	1	1	2	9'-7"	20	52	1'-3"	3'-2"	1'-2"	3'-7"	3'-7"		
A525	28	28	56	5'-2"	302	STR							
A526	3	3	6	4'-5"	28	1	1'-7"	3'-0"					
A527	3	3	6	4'-4"	27	13	2'-4"	0'-6"	0'-2"	1'-7"			
A528	1	1	2	9'-7"	20	52	1'-2"	3'-3"	1'-1"	3'-7"	3'-7"		
A601	24	0	24	20'-4"	733	STR							
A602	20	0	20	22'-2"	666	STR							
A603	0	24	24	22'-9"	820	STR							
A604	0	20	20	24'-6"	736	STR							
A605	25	28	53	16'-4"	1300	2	7'-6"	1'-8"	7'-6"				
A606	25	28	53	7'-1"	564	1	5'-7"	1'-8"	5'-7"				
A607	25	28	53	3'-1"	245	STR							
A608	6	6	12	23'-10"	430	2	11'-3"	1'-8"	11'-3"				
A609	14	14	28	23'-5"	985	10	0'-7"	11'-3"	1'-2"	11'-3"			
A610	14	14	28	19'-1"	803	10	0'-6"	9'-1"	1'-2"	9'-1"			
A611	4	4	8	13'-10"	166	10	0'-4"	6'-6"	1'-2"	6'-6"			
A612	3	0	3	6'-2"	28	STR							
A613	0	3	3	7'-6"	34	STR							
A614	14	18	32	13'-8"	657	33	3'-2"	3'-1"					
A615	2	2	4	4'-4"	26	13	2'-4"	1'-0"	0'-3"	1'-1"			
A616	2	2	4	3'-3"	20	STR							
				SUB-TOTAL	18,268								

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD.	TOTAL				A	B	C	D	E	R	INC
ABUTMENT													
A801	14	14	28	30'-0"	2243	STR							
A802	4 SR OF 4	0	4 SR OF 4	22'-1" TO 24'-4"	991	STR							0'-9"
A803	3	3	6	30'-8"	491	19	19'-11"	7'-8"	7'-8"				
A804	3	3	6	23'-7"	378	19	11'-0"	8'-11"	8'-11"				
A805	3	3	6	31'-0"	497	19	20'-3"	7'-8"	7'-8"				
A806	3	3	6	23'-11"	383	19	11'-4"	8'-11"	8'-11"				
A807	2 SR OF 2	2 SR OF 2	4 SR OF 2	28'-11" TO 30'-3"	632	19	19'-1" TO 19'-8"	7'-0" TO 7'-6"	7'-0" TO 7'-6"			Incr A = 0'-7" Incr B = 0'-6" Incr C = 0'-6"	
A808	2 SR OF 2	2 SR OF 2	4 SR OF 2	24'-5" TO 25'-8"	536	19	11'-5" TO 12'-1"	9'-3" TO 9'-8"	9'-3" TO 9'-8"			Incr A = 0'-8" Incr B = 0'-5" Incr C = 0'-5"	
A809	2 SR OF 2	2 SR OF 2	4 SR OF 2	29'-3" TO 30'-7"	639	19	19'-5" TO 20'-0"	7'-0" TO 7'-6"	7'-0" TO 7'-6"			Incr A = 0'-7" Incr B = 0'-6" Incr C = 0'-6"	
A810	2 SR OF 2	2 SR OF 2	4 SR OF 2	24'-9" TO 26'-0"	543	19	11'-9" TO 12'-5"	9'-3" TO 9'-8"	9'-3" TO 9'-8"			Incr A = 0'-8" Incr B = 0'-5" Incr C = 0'-5"	
A811	37	42	79	15'-5"	3252	2	2'-6"	10'-10"	2'-6"				
A812	26	26	52	11'-0"	1527	2	2'-6"	6'-5"	2'-6"				
A813	2 SR OF 3	2 SR OF 3	4 SR OF 3	11'-2" TO 12'-2"	374	2	2'-6"	6'-7" TO 7'-7"	2'-6"				0'-6"
A814	2 SR OF 4	2 SR OF 4	4 SR OF 4	13'-3" TO 15'-3"	609	2	2'-6"	8'-8" TO 10'-8"	2'-6"				0'-8"
A815	0	4 SR OF 4	4 SR OF 4	25'-0" TO 27'-2"	1114	STR							0'-8 3/4"
A816	45	50	95	13'-10"	3509	1	3'-0"	11'-1"					
A817	32	32	64	13'-10"	2364	11	0'-7"	11'-1"	3'-0"				
A901	4	5	9	5'-2"	158	STR							
A902	8	0	8	12'-2"	331	2	3'-5"	5'-11"	3'-5"				
A903	0	8	8	13'-6"	367	2	3'-5"	7'-3"	3'-5"				
				SUB-TOTAL	20,938								
				ABUTMENT TOTAL	39,206								

NOTES:

1. ALL REINFORCING STEEL SHALL BE EPOXY COATED.
2. FOR BAR BEND DIAGRAMS, SEE SHEET 65/65.
3. 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, P601 IS A NO. 6 BAR. BAR DIMENSIONS SHOWN ARE OUT TO OUT, AND "R" INDICATES INSIDE RADIUS, UNLESS NOTED OTHERWISE. "STD." WRITTEN IN PLACE OF A DIMENSION INDICATES A STANDARD BEND AT THE END OF A BAR.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED KRH | DRAWN KRH | REVIEWED TLR | DATE 04/2016
CHECKED SCT | REVISED | STRUCTURE FILE NUMBER TBD

REINFORCING STEEL LIST (1 OF 4)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

MARK	NUMBER								TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	TEST SHAFT	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7					A	B	C	D	E	R	INC
DRILLED SHAFT*																			
SP401	1								1	16'-9"	188	27	12"	4'-6"					
SP402		1	1	1	1	1	1	1	7	10'-0"	667	27	12"	3'-6"					
SP501		1	1		1				3	5'-8"	381	27	12"	4'-6"					
SP502				1					1	6'-11"	145	27	12"	4'-6"					
SP503						1			1	3'-8"	98	27	12"	4'-6"					
SP504							1		1	6'-8"	142	27	12"	4'-6"					
SP505								1	1	3'-2"	90	27	12"	4'-6"					
SP506		1	1	1	1	1	1	1	7	10'-6"	3165	27	4½"	4'-6"					
DS1101	20								20	14'-9"	1567	STR							
DS1102		20	20		20				60	15'-9"	5021	51	15'-9"						
DS1103				20					20	17'-2"	1825	51	17'-2"						
DS1104						20			20	13'-10"	1469	51	13'-10"						
DS1105							20		20	16'-10"	1788	51	16'-10"						
DS1106								20	20	13'-4"	1416	51	13'-4"						
DS1107		20	20	20	20	20	20	20	140	20'-4"	15122	STR							
										SUB-TOTAL	33,063								

MARK	NUMBER							TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7					A	B	C	D	E	R	INC
PIERS																		
P501	36	36	36	36	36	36	36	252	8'-1"	2125	9	0'-6"	0'-8"	4'-4"	3'-6"			
P502	72	72	72	72	72	72	72	504	5'-4"	2804	17	4'-2"						
P503	8	8	8	8	8	8	8	56	11'-1"	647	2	1'-7"	7'-8"	1'-7"				
P504	16	16	16	16	16	16	16	112	4'-0"	467	STR							
P505	10	10	10	10	10	10	10	70	8'-2"	596	10	1'-2"	2'-11"	2'-10"	2'-5"			
P506	6	6	6	6	6	6	6	42	8'-7"	376	2	2'-5"	4'-0"	2'-5"				
P507	10	10	10	10	10	10	10	70	6'-7"	481	19	3-7"	2'-10"	1'-1"				
P601	2	2	2	2	2	2	2	14	28'-0"	589	STR							
P602	2	2	2	2	2	2	2	14	33'-2"	698	STR							
P603	6	6	6	6	6	6	6	42	35'-7"	2244	STR							
P604	4 SER OF 10	4 SER OF 10	4 SER OF 10	4 SER OF 10	4 SER OF 10	4 SER OF 10	4 SER OF 10	28 SER OF 10	13'-0" TO 15'-8"	6028	3	3'-3"	2'-10" TO 4'-2"					0'-1¾"
P605	80	80	80	80	80	80	80	560	15'-8"	13178	3	3'-3"	4'-2"					
P606	14	14	14	14	14	14	14	98	15'-10"	2331	33	4'-0"	3'-4"					
P607	5	5	5	5	5	5	5	35	6'-1"	320	STR							
P901	8	8	8	8	8	8	8	56	12'-0"	2285	2	3'-4"	5'-11"	3'-4"				
P1101	54							54	26'-11"	7722	16	25'-4"						
P1102		54						54	27'-9"	7962	16	26'-2"						
P1103			54					54	28'-6"	8177	16	26'-11"						
P1104				54				54	29'-4"	8416	16	27'-9"						
P1105					54			54	30'-1"	8631	16	28'-6"						
P1106						54		54	30'-11"	8870	16	29'-4"						
P1107							54	54	31'-9"	9109	16	30'-2"						
P1108	8	8	8	8	8	8	8	56	38'-9"	11529	17	35'-8"						
P1109	8	8	8	8	8	8	8	56	35'-7"	10586	STR							
P1110	6	6	6	6	6	6	6	42	28'-0"	6248	STR							
SP403	3							3	22'-8"	1583	27	0'-4½"	4'-0"	22'-8"				
SP404		3						3	23'-5"	1633	27	0'-4½"	4'-0"	23'-5"				
SP405			3					3	24'-3"	1688	27	0'-4½"	4'-0"	24'-3"				
SP406				3				3	25'-0"	1738	27	0'-4½"	4'-0"	25'-0"				
SP407					3			3	25'-10"	1793	27	0'-4½"	4'-0"	25'-10"				
SP408						3		3	26'-8"	1849	27	0'-4½"	4'-0"	26'-8"				
SP409							3	3	27'-5"	1899	27	0'-4½"	4'-0"	27'-5"				
									SUB-TOTAL	134,602								

NOTES:

1. * - INDICATES ITEM IS INCLUDED IN COST OF ITEM 524, DRILLED SHAFTS.
2. FOR ADDITIONAL REINFORCING STEEL NOTES, SEE SHEET 61/65.

Mannik Smith Group
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED RJS | DRAWN RJS | REVIEWED TLR | DATE 04/2016
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REINFORCING STEEL LIST (2 OF 4)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
DECK											
S401	1344	30'-0"	26934	STR							
S402	48	28'-3"	906	STR							
S501	3302	36'-5"	125430	STR							
S502	826	8'-0"	6892	16	7'-5"						
S503	2518	30'-0"	78788	STR							
S504	67	34'-2"	2388	STR							
S505	2240	18'-7"	43409	STR							
S506	1120	40'-0"	46726	STR							
S507	259	18'-0"	4862	STR							
S508	86	23'-2"	2078	STR							
S517	86	24'-10"	2227	STR							
S526	87	26'-5"	2397	STR							
S601	259	18'-0"	7002	STR							
S602	86	23'-10"	3078	STR							
S612	86	25'-5"	3283	STR							
S613	87	27'-0"	3528	STR							
SUB-TOTAL			359,928								
SIDEWALK											
S503	306	30'-0"	9575	STR							
S504	9	34'-0"	319	STR							
S505	224	18'-7"	4341	STR							
S506	112	40'-0"	4673	STR							
S509	1017	4'-2"	4420	28	1'-1"	1'-8"	1'-9"				
S510	1017	4'-1"	4243	2	1'-6"	1'-3"	1'-6"				
S511	1021	6'-7"	7007	STR							
S533	9	29'-7"	278	STR							
S534	9	29'-9"	279	STR							204'-11"
S535	18	1'-2"	22	STR							
SUB-TOTAL			35,133								
RAILING - BR-2-98 (FOR INFORMATION ONLY)											
S503*	198	30'-0"		STR							
S512*	1219	7'-8"		30	1'-6"	0'-8"	2'-4"	2'-2"			
S518*	6	24'-10"		STR							
S519*	4	7'-7"		31	1'-11"	0'-1"	4'-5"				0'-4 3/8"
S520*	4	6'-0"		19	4'-8"	1'-4"	0'-4"				
S521*	4	6'-0"		STR							
S522*	10	8'-2"		19	6'-10"	1'-4"	0'-4"				
S523*	10	8'-2"		STR							
S524*	10	3'-8"		24	0'-6"	1'-8"					0'-3 1/4"
S525*	6	25'-3"		STR							204'-11"
S528*	6	36'-0"		STR							
S535*	12	1'-2"		STR							
S608*	20	9'-11"		30	1'-10"	0'-8"	3'-2"	3'-0"			
S609*	6	4'-10"		1	1'-10"	3'-2"					
S610*	6	4'-8"		1	1'-10"	3'-0"					
SUB-TOTAL											

MARK	NUMBER TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
RAILING - SBR-1-13											
S503	132	30'-0"	4130	STR							
S513	24	14'-6"	363	STR							
S514	112	6'-8"	779	STR							
S515	60	11'-7"	725	STR							
S516	1070	7'-4"	8184	23	0'-11"	3'-3"	3'-0"			0'-2 3/4"	
S527	8	18'-4"	153	STR							
S528	4	36'-0"	150	STR							
S529	8	7'-7"	63	STR							
S530	16	10'-0"	167	STR							
S531	8	6'-4"	53	25	2'-5"	2'-5"	1'-5"	0'-1 1/2"	0'-5"		
S532	8	6'-4"	53	STR							
S535	12	1'-2"	15	STR							
S603	12	14'-6"	261	STR							
S604	56	6'-8"	561	STR							
S605	30	11'-7"	522	STR							
S606	1066	3'-5"	5471	28	1'-9"	1'-0"					
S607	1066	2'-7"	4136	1	1'-0"	1'-9"					
S611	4	7'-7"	46	STR							
S614	4 SER OF 11	4'-1" TO 5'-0"	303	1	1'-0"	3'-3" TO 4'-2"					0'-1"
S615	16	4'-1"	98	1	1'-0"	3'-3"					
S616	2	3'-3"	7	STR							
SUB-TOTAL			26,167								

MARK	NUMBER FORWARD ⊗	LENGTH	WEIGHT	TYPE	DIMENSIONS A	B	C	D	E	R	INC
APPROACH SLAB (FOR INFORMATION ONLY)											
AS501**	65	30'-0"		STR							
AS502**	1 SER OF 21	14'-7" TO 17'-1"		STR							0'-1 1/2"
AS503**	39	17'-1"		STR							
AS505**	29	29'-7"		STR							
AS506**	2	29'-9"		STR							
AS507**	2	5'-1"		STR							
AS508**	5	14'-8"		STR							
AS509**	1	14'-10"		STR							
AS1001**	1 SER OF 3	8'-10" TO 28'-10"		16	7'-5" TO 27'-5"						10'-0"
AS1002**	74	30'-11"		16	29'-6"						
AS1003**	1 SER OF 5	8'-5" TO 25'-10"		STR							4'-4 1/4"
AS1004**	3	5'-1"		STR							
SUB-TOTAL											

⊗ FOR REAR ABUTMENT REINFORCING, SEE STD. DWG. AS-1-15.

NOTES:

1. * - INDICATES ITEM IS INCLUDED IN COST OF ITEM 517 RAILING (CONCRETE PARAPET WITH TWIN STEEL TUBE RAILING).
2. ** - INDICATES ITEM IS INCLUDED IN COST OF ITEM 526 REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=17").
3. FOR ADDITIONAL REINFORCING STEEL NOTES, SEE SHEET 61/65.

Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED RJS | DRAWN RJS | REVIEWED TLR | DATE 04/2016
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REINFORCING STEEL LIST (3 OF 4)
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

MARK	NUMBER							TOTAL	LENGTH	WEIGHT	TYPE	DIMENSIONS						
	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7					A	B	C	D	E	R	INC
PIER DIAPHRAGMS																		
S408	12	12	12	12	12	12	12	84	5'-0"	281	2	0'-9"	3'-8"	0'-9"				
S409	4	4	4	4	4	4	4	28	12'-8"	237	24	0'-4"	6'-1"				2"	
S410	12	12	12	12	12	12	12	84	15'-1"	846	6	1'-2"	6'-0"	1'-2"				
S411	4	4	4	4	4	4	4	28	3'-4"	62	19	1'-8"	1'-0"	1'-4"				
S412	6	6	6	6	6	6	6	42	13'-5"	376	6	1'-2"	5'-2"	1'-2"				
S612	24	24	24	24	24	24	24	168	9'-0"	2271	STR							
S613	4	4	4	4	4	4	4	28	6'-11"	291	STR							
S809	24	24	24	24	24	24	24	168	6'-10"	3065	1	1'-0"	6'-0"					
SUB-TOTAL										7,429								

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD.	TOTAL				A	B	C	D	E	R	INC
END DIAPHRAGMS													
S403	28	32	60	12'-0"	481	2	5'-2"	1'-10"	5'-2"				
S404	10	10	20	4'-0"	53	2	1'-2"	1'-10"	1'-2"				
S405	12	14	26	10'-3"	178	2	4'-4"	1'-10"	4'-4"				
S406	20	23	43	4'-3"	139	53	1'-9"	1'-2"	1'-9"	0'-7"			
S619	12		12	9'-0"	162	STR							
S620	7		7	34'-6"	363	STR							
S621	8		8	1'-10"	22	STR							
S622		8	8	2'-3"	27	STR							
S623		12	12	10'-4"	186	STR							
S624		7	7	39'-6"	417	STR							
S625	2		2	36'-5"	110	STR							
S626	3		3	5'-6"	25	STR							
S627		4	4	22'-9"	137	STR							
S628		3	3	6'-10"	31	STR							
S629 *	12	12	24	4'-5"	159	24	0'-6"	1'-10"				0'-3"	
S801	6		6	21'-0"	337	53	6'-5"	3'-8"	10'-9"	1'-0"			
S802	8		8	11'-5"	244	13	5'-10"	1'-10"	0'-11"	3'-8"			
S803	4		4	10'-9"	115	54	3'-8"	0'-11"	1'-10"	5'-7"			
S804	4		4	12'-3"	131	1	8'-8"	3'-9"					
S805		6	6	23'-6"	377	53	9'-2"	2'-8"	11'-6"	1'-0"			
S806		8	8	12'-9"	272	13	7'-2"	1'-10"	0'-11"	3'-8"			
S807		4	4	11'-4"	121	54	3'-8"	1'-1"	2'-3"	5'-7"			
S808		4	4	13'-5"	144	1	10'-0"	3'-9"					
SUB-TOTAL					4,231								

* CAST WITH BEAM

NOTES:

1. FOR REINFORCING STEEL NOTES, SEE SHEET 61/65.

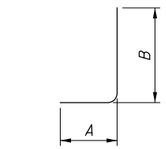
MANNIK SMITH GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
RJS	RJS	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

REINFORCING STEEL LIST (4 OF 4)

HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984



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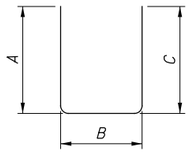

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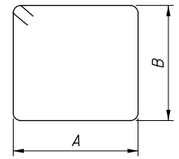

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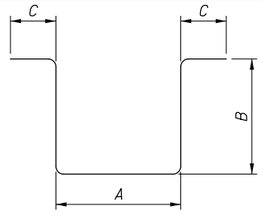

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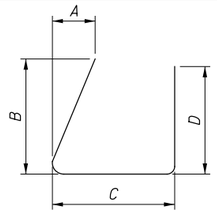

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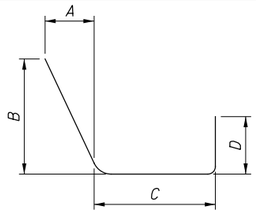

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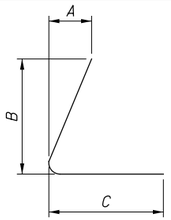

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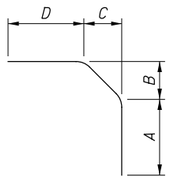

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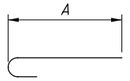

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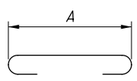

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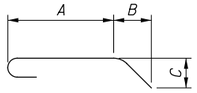

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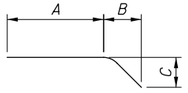

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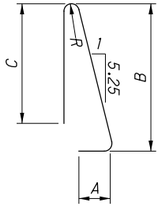

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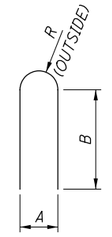
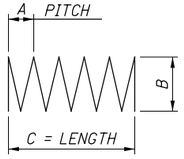


TYPE-24

TYPE-25



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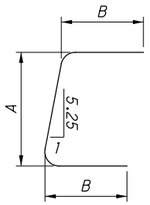

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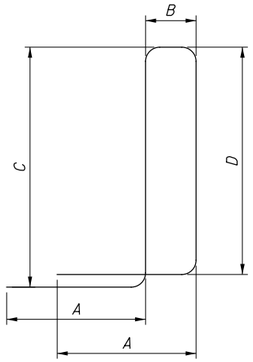

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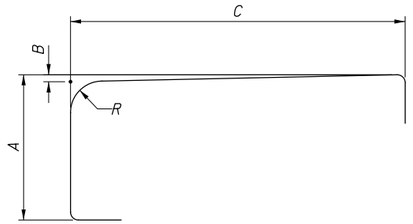

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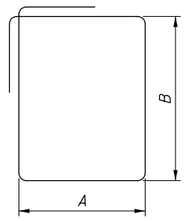

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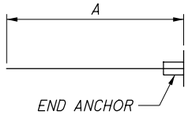

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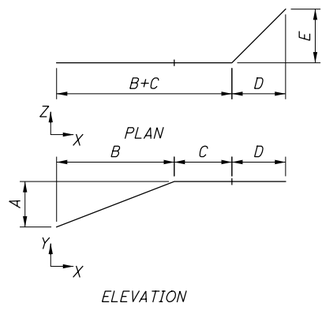

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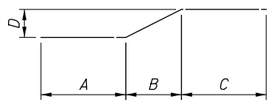

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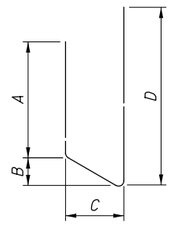

TYPE-54

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Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE
MAUMEE, OHIO 43537

DESIGNED	DRAWN	REVIEWED	DATE
CWE	JEC	TLR	04/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
SCT		TBD	

REINFORCING BENDING DIAGRAM
HEN-INDUSTRIAL DRIVE-0000
INDUSTRIAL DRIVE OVER MAUMEE RIVER

HEN-NEW BRIDGE
PID No. 22984

65/65

169
189

RIGHT OF WAY LEGEND SHEET

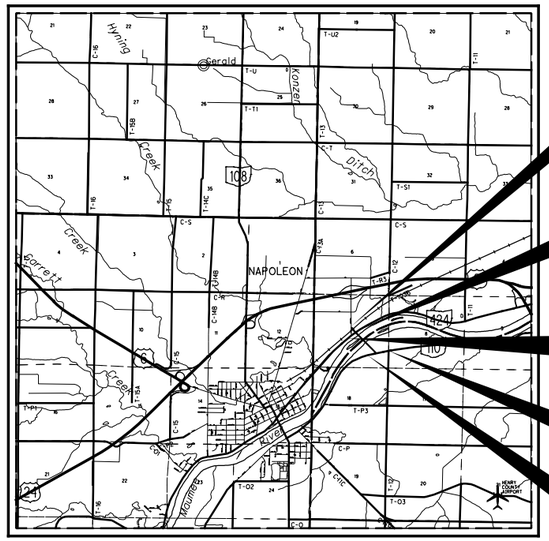
HEN-INDUSTRIAL DRIVE

HENRY COUNTY

LIBERTY AND HARRISON TOWNSHIPS

AND CITY OF NAPOLEON

SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



END ACQUISITION STA. 54+58.26

END ACQUISITION STA. 599+00.00

BEGIN ACQUISITION STA. 588+50.00

END ACQUISITION STA. 119+41.16

BEGIN ACQUISITION STA. 97+54.59

LOCATION MAP

LATITUDE: 41°24'17" LONGITUDE: 84°06'14"

SCALE IN MILES

0 1 2 3 4

N

NOTES: THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE OBTAINED FROM THE OWNER OF THE UTILITIES AS REQUIRED BY SECTION 153.64 O.R.C.

UTILITY OWNERSHIP

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

ELECTRIC

TOLEDO EDISON COMPANY
300 MADISON AVENUE
TOLEDO, OH 43652
(419) 249-5218

GAS

OHIO GAS
1460 QUALITY DRIVE
DEFIANCE, OH 43512
(419) 784-3512

PHONE

QWEST COMMUNICANTIONS COMPANY, LLC
d/b/a CENTURYLINK QCC
700 W. MINERAL AVENUE,
MAILSTOP: UT D27.34
LITTLETON, CO 80120
(303) 992-9931

VERIZON (MCI)
2400 NORTH GLENVILLE
RICHARDSON, TX 75082
(972) 729-6016

WATER, SAN. & STORM SEWER

CITY OF DEFIANCE
631 PERRY STREET
DEFIANCE, OH 43512
(419) 784-2101

CABLE TELEVISION

TIME WARNER CABLE
2010 JEFFERSON STREET
DEFIANCE, OH 43512
(419) 576-6840

CONVENTIONAL SYMBOLS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (Ex) (Pr)
Center Line
Right of Way (Ex) Ex R/W
Right of Way (Pr) R/W
Standard Highway Ease.(Ex) Ex SH
Temporary Right of Way TMP
Channel Ease. (Pr) CH
Utility Ease. (Ex) Ex U
Railroad or
Guardrail (Ex) (Pr)
Construction Limits
Edge of Pavement (Ex)
Edge of Pavement (Pr)
Edge of Shoulder (Ex)
Edge of Shoulder (Pr)

Ditch / Creek (Ex)
Ditch / Creek (Pr)
Tree Line (Ex)
Ownership Hook Symbol , Example
Property Line Symbol , Example
Break Line Symbol , Example
Tree (Pr) , Tree (Ex) , Shrub (Ex)
Tree (Remove) , Shrub (Remove)
Evergreen (Ex) , Stump
Evergreen (Remove) , Stump (Remove)
Wetland (Pr) , Grass (Pr) , Aerial Target
Post (Ex) , Mailbox (Ex) MB , Mailbox (Pr) MB
Light (Ex) , Telephone Marker (Ex) TEL
Fire Hydrant (Ex) , Water Meter (Ex) WM
Water Valve (Ex) , Utility Valve Unknown (Ex.)
Telephone Pole (Ex) , Power Pole (Ex)
Light Pole (Ex)

INDEX OF SHEETS:

PROJECT DESCRIPTION

EXTENSION OF INDUSTRIAL DRIVE OVER THE MAUMEE RIVER. THE PROJECT INCLUDES THE CONSTRUCTION OF A NEW STRUCTURE, NEW ROADWAY FROM RIVERVIEW AVE. TO S.R. 110, THE RECONSTRUCTION OF INDUSTRIAL DR., RIVERVIEW AVE. AND S.R. 110 AND TWO ROUNDABOUTS.

PROJECT CONTROL

STATE PLANE GRID OHIO NORTH (CORS96)
PROJECT ADJUSTMENT FACTOR 3.2810548139

PLANS PREPARED BY:

FIRM NAME : THE MANNIK SMITH GROUP
R/W DESIGNER: TIM JOHNSON
R/W REVIEWER: JON BRUNER P.S.
FIELD REVIEWER: JDB
PRELIMINARY FIELD REVIEW DATE: 9/10/14
TRACINGS FIELD REVIEW DATE:
OWNERSHIP UPDATED BY: JDB
DATE COMPLETED: 7/21/15
PLAN COMPLETION DATE:

TYPES OF TITLE LEGEND:
WD = WARRANTY DEED
T = TEMPORARY EASEMENT

STRUCTURE KEY

RESIDENTIAL
COMMERCIAL
OUT-BUILDING

I, JON D. BRUNER, P. S. have conducted a survey of the existing conditions for the HENRY COUNTY ENGINEER in 2013-2014. The results of that survey are contained herein. The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinates System North Zone on NAD 83 (CORS96) datum. The Project Coordinates (US Survey Feet) are relative to State Plane Grid Coordinates (meters) by a Project Adjustment Factor of 3.2810548139. As a part of this project I have reestablished the locations of the existing property lines and the existing centerline of Right of Way for property takes contained herein. As a part of this project I have established the proposed property lines, calculated the Gross Take, present roadway occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein. As a part of this work I have set right of way monuments at the property corners, property line intersection, points along the right of way and/or angle points on the right of way, Section Corners and other points as shown herein. All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words I and my as used herein are to mean either myself or someone working under my direct supervision.

_____
Jon D. Bruner, Professional Land Surveyor 7098 Date:

SURVEYORS SEAL

FEDERAL PROJECT NO. G020069
PID NO. 22984
CALCULATED TCJ CHECKED JDB

RIGHT OF WAY LEGEND SHEET
HEN-NEW BRIDGE

1 / 20
170 / 189

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INDUSTRIAL DRIVE EXTENSION
BRIDGE OVER MAUMEE RIVER

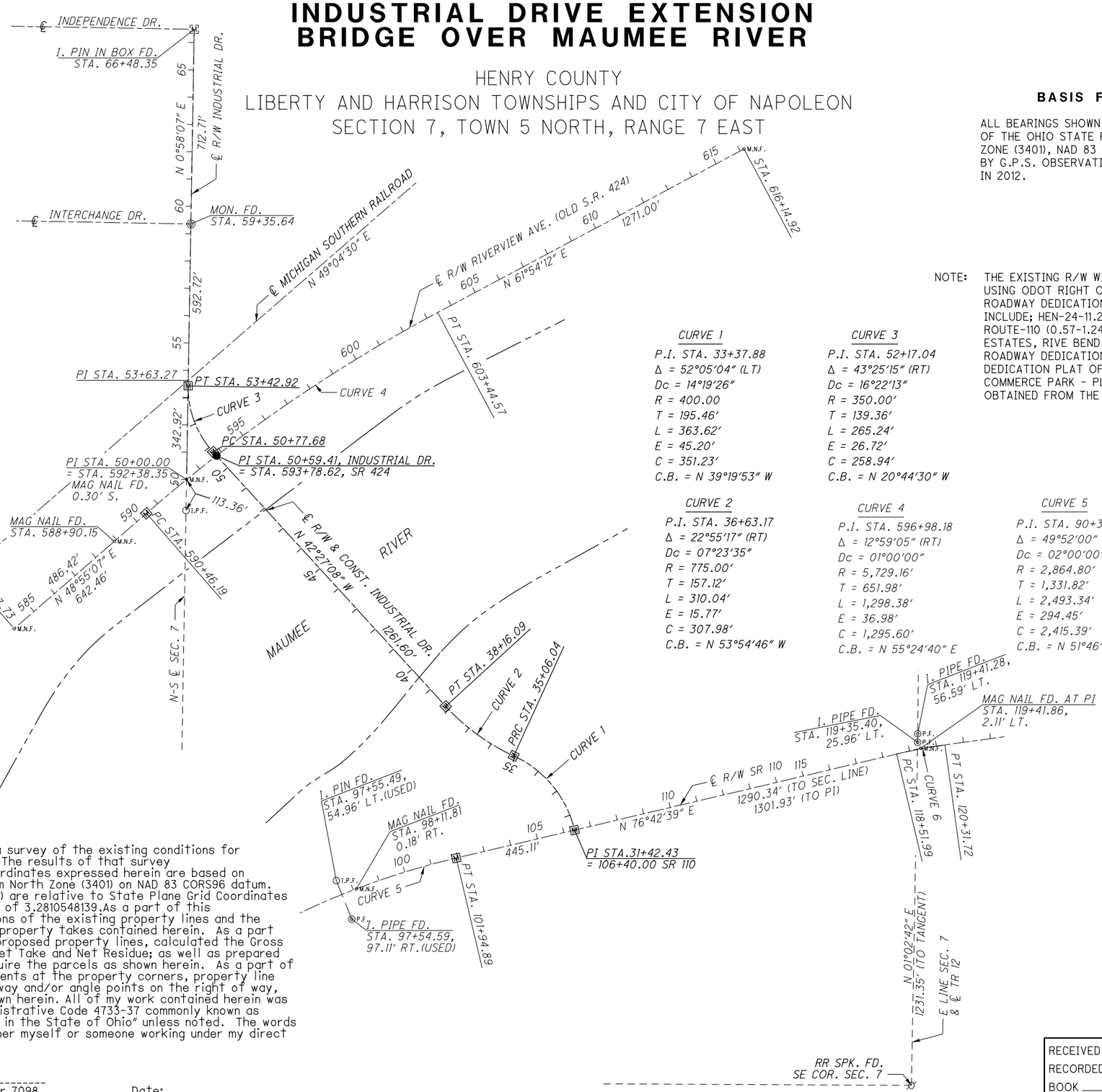
HENRY COUNTY

LIBERTY AND HARRISON TOWNSHIPS AND CITY OF NAPOLEON

SECTION 7, TOWN 5 NORTH, RANGE 7 EAST

MONUMENT LEGEND

- EXISTING R/W MONUMENT BOX
- PROPOSED R/W MONUMENT BOX
- EXISTING CONCRETE MONUMENT
- PROPOSED CONCRETE MONUMENT
- RAILROAD SPIKE FOUND
- I.R.F. IRON PIN FOUND
- I.R.F. IRON PIN FOUND W/ ID CAP
- I.R.S. IRON PIN SET W/ ID CAP
- R.F. IRON PIPE FOUND
- M.N.F. MAG NAIL FOUND



BASIS FOR BEARINGS:

ALL BEARINGS SHOWN ARE FOR RELATIVE TO GRID NORTH OF THE OHIO STATE PLANE COORDINATE SYSTEM, NORTH ZONE (3401), NAD 83 (CORS96) DATUM, AS ESTABLISHED BY G.P.S. OBSERVATIONS BY THE MANNIK SMITH GROUP IN 2012.

NOTE: THE EXISTING R/W WIDTH AND LOCATION WERE DETERMINED USING ODOT RIGHT OF WAY PLANS AND CITY OF NAPOLEON ROADWAY DEDICATION PLATS AND OTHER RECORD PLATS TO INCLUDE; HEN-24-11.22-15.37, HEN-424-6.96, HENRY COUNTY ROUTE-110 (0.57-1.24), HEN-110-2.22, HEN-109-16.55, RIVERVIEW ESTATES, RIVE BEND ESTATES, HOGREFE INDUSTRIAL PLAT 1, ROADWAY DEDICATION PLAT OF INDEPENDENCE DRIVE, ROADWAY DEDICATION PLAT OF INDUSTRIAL DRIVE, REPLAT OF NAPOLEON COMMERCE PARK - PLAT 1, AS WELL AS RECORDED SURVEYS OBTAINED FROM THE HENRY COUNTY ENGINEER AND RECORDER.

CURVE 1
P.I. STA. 33+37.88
Δ = 52°05'04" (LT)
Dc = 14°19'26"
R = 400.00
T = 195.46'
L = 363.62'
E = 45.20'
C = 351.23'
C.B. = N 39°19'53" W

CURVE 2
P.I. STA. 36+63.17
Δ = 22°55'17" (RT)
Dc = 07°23'35"
R = 775.00'
T = 157.12'
L = 310.04'
E = 15.77'
C = 307.98'
C.B. = N 53°54'46" W

CURVE 3
P.I. STA. 52+17.04
Δ = 43°25'15" (RT)
Dc = 16°22'13"
R = 350.00'
T = 139.36'
L = 265.24'
E = 26.72'
C = 258.94'
C.B. = N 20°44'30" W

CURVE 4
P.I. STA. 596+98.18
Δ = 12°59'05" (RT)
Dc = 01°00'00"
R = 5,729.16'
T = 651.98'
L = 1,298.38'
E = 36.98'
C = 1,295.60'
C.B. = N 55°24'40" E

CURVE 5
P.I. STA. 90+33.37
Δ = 49°52'00" (RT)
Dc = 02°00'00"
R = 2,864.80'
T = 1,331.82'
L = 2,493.34'
E = 294.45'
C = 2,415.39'
C.B. = N 51°46'39" E

CURVE 6
P.I. STA. 119+41.92
Δ = 05°22'20" (RT)
Dc = 02°59'20"
R = 1,916.88'
T = 89.93'
L = 179.73'
E = 2.11'
C = 179.66'
C.B. = N 79°23'49" E

I, JON D. BRUNER, P. S. have conducted a survey of the existing conditions for the HENRY COUNTY ENGINEER in 2013-2014. The results of that survey are contained herein. The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinates System North Zone (3401) on NAD 83 CORS96 datum. The Project Coordinates (US Survey Feet) are relative to State Plane Grid Coordinates (Meters) by a Project Adjustment Factor of 3.2810548139.As a part of this project I have reestablished the locations of the existing property lines and the existing centerline of Right of Way for property takes contained herein. As a part of this project I have established the proposed property lines, calculated the Gross Take, present roadway occupied (PRO), Net Take and Net Residue; as well as prepared the legal descriptions necessary to acquire the parcels as shown herein. As a part of this work I have set right of way monuments at the property corners, property line intersection, points along the right of way and/or angle points on the right of way, Section Corners and other points as shown herein. All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Minimum Standards for Boundary Surveys in the State of Ohio" unless noted. The words I and my as used herein are to mean either myself or someone working under my direct supervision.

_____
Jon D. Bruner, Professional Land Surveyor 7098 Date:

SURVEYORS SEAL

RECEIVED _____, 20___
RECORDED _____, 20___
BOOK _____ PAGE _____
_____
COUNTY RECORDER

HORIZONTAL SCALE IN FEET: 0, 100', 200', 400'

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

CENTERLINE PLAT

HEN-NEW BRIDGE

2 / 20

171 / 189

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INDUSTRIAL DRIVE EXTENSION
BRIDGE OVER MAUMEE RIVER

HENRY COUNTY
LIBERTY AND HARRISON TOWNSHIPS AND CITY OF NAPOLEON
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST

EXISTING MONUMENTATION

				PROJECT GROUND COORDINATES (FEET)		STATE PLANE GRID COORDINATES (METERS)		
EXISTING INDUSTRIAL DRIVE								
STATION	OFFSET DIST.	DESCRIPTION	STATUS	NORTHING	EASTING	NORTHING	EASTING	COMMENTS
49+99.70	0	MAG NAIL	USED	637669.870	1528187.938	194349.045	465761.173	INTERSECTION OF INDUSTRIAL DR. & RIVERVIEW AVE.
59+35.64	.03' LT	CONC. MON.		638605.683	1528203.729	194634.262	465765.986	INTERSECTION OF INDUSTRIAL DR. & INTERCHANGE DR.
66+48.35	0	I. PIN IN BOX	USED	639318.287	1528215.810	194851.450	465769.668	INTERSECTION OF INDUSTRIAL DR. & INDEPENDENCE DR.
EXISTING RIVERVIEW AVE. (OLD S.R. 424)								
584+03.73	.20' RT	MAG NAIL		637124.019	1527556.866	194182.681	465568.835	CENTERLINE MONUMENTATION POINT
588+90.15	0	MAG NAIL	USED	637443.817	1527923.377	194280.149	465680.540	CENTERLINE MONUMENTATION POINT
592+38.16	0.23' RT	MAG NAIL		637669.870	1528187.938	194349.045	465761.173	INTERSECTION OF RIVERVIEW AVE. AND INDUSTRIAL DR.
616+14.92	0	MAG NAIL	USED	638880.145	1530228.245	194717.913	466383.018	PT CENTERLINE RIVERVIEW AVE.
EXISTING STATE ROUTE 110								
97+55.49	54.96' LT	C.I.R.	USED	636202.238	1528736.402	193901.740	465928.334	PROPERTY CORNER ON EXISTING R/W
97+54.59	97.11' RT	C.I.R.	USED	636060.988	1528792.757	193858.690	465945.510	PROPERTY CORNER ON OLD CENTERLINE
98+11.81	0.18' RT	MAG NAIL		636171.794	1528809.519	193892.462	465950.619	CENTERLINE MONMENTATION POINT
119+35.40	25.96' LT	IRON PIPE		636708.450	1530864.726	194056.024	466577.005	IRON ON SECTION LINE
119+41.28	56.59' LT	C.I.R.		636739.669	1530864.933	194065.539	466577.068	INTERSECTION OF SECTION LINE AND R/W
119+41.86	2.11' LT	MAG NAIL	USED	636686.223	1530875.544	194049.249	466580.302	PI OF CURVE 5 (SR 110)

MONUMENTATION TO BE SET DURING CONSTRUCTION

				PROJECT GROUND COORDINATES (FEET)		STATE PLANE GRID COORDINATES (METERS)		
INDUSTRIAL DRIVE								
STATION	OFFSET DIST.	DESCRIPTION	STATUS	NORTHING	EASTING	NORTHING	EASTING	COMMENTS
31+42.43	0	I. PIN IN BOX	PI	636386.958	1529608.483	193958.039	466194.127	INTERSECTION OF INDUSTRIAL DR. & SR 110
35+06.04	0	I. PIN IN BOX	PRC	636658.630	1529385.874	194040.840	466126.280	PRC CURVE 1 & 2
38+16.09	0	I. PIN IN BOX	PT	636840.034	1529136.990	194096.128	466050.425	PT CURVE 2
50+59.41	0	CONC. MON.	PI	637757.411	1528297.779	194375.726	465794.650	INTERSECTION OF INDUSTRIAL DR. & RIVERVIEW AVE.
50+77.68	0	I. PIN IN BOX	PC	637770.892	1528285.446	194379.835	465790.892	PC CURVE 3
53+42.92	0	I. PIN IN BOX	PT	638013.050	1528193.741	194453.640	465762.942	PT CURVE 3
STATE ROUTE 424 (RIVERVIEW AVE.)								
590+46.19	0	I. PIN IN BOX	PC	637546.354	1538041.008	194311.400	468764.192	PC CURVE 4
593+78.62	0	CONC. MON.	PI	637757.411	1528297.779	194375.726	465794.650	INTERSECTION OF RIVERVIEW AVE. & INDUSTRIAL DR.
STATE ROUTE 110								
101+94.89	0	I. PIN IN BOX	PT	636284.644	1529175.295	193926.856	466062.100	PT CURVE 5
106+40.00	0	I. PIN IN BOX	PI	636386.958	1529608.483	193958.039	466194.127	INTERSECTION OF SR 110 & INDUSTRIAL DR.
TOTAL TO GENERAL SUMMARY								7 - MON BOX ASSEMBLY
								1 - CONC. MONUMENTS

SETTING OF ALL MONUMENTS SHALL BE PERFORMED BY A SURVEYOR REGISTERED IN THE STATE OF OHIO. THE MONUMENT ASSEMBLIES AND REFERENCE MONUMENTS WILL BE INSTALLED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. THE IRON PIN AND CAP (WHEN REQUIRED) ARE TO BE INSTALLED BY THE CONTRACTOR'S SURVEYOR.

CHANGES OR ALTERATIONS TO THE LOCATION OF ANY MONUMENTS SHOWN IN THIS TABLE, REQUIRE PRIOR APPROVAL FROM THE DISTRICT REAL ESTATE ADMINISTRATOR OF THE OHIO DEPARTMENT OF TRANSPORTATION. IN THE EVENT THAT CHANGES OR ALTERATIONS ARE APPROVED, A REVISED CENTERLINE PLAT WITH THE NEW LOCATIONS SHALL BE RECORDED IN THE APPLICABLE COUNTY RECORDS AND THE OHIO DEPARTMENT OF TRANSPORTATION. SPECIFICATIONS FOR MONUMENT ASSEMBLIES, REFERENCE MONUMENTS AND RIGHT OF WAY MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1.

PROJECT CONTROL
STATE PLANE GRID OHIO NORTH (CORS96)
PROJECT ADJUSTMENT FACTOR 3.2810548139

SURVEYORS SEAL

RECEIVED _____, 20___
RECORDED _____, 20___
BOOK _____ PAGE _____
COUNTY RECORDER

HORIZONTAL SCALE IN FEET
0 100' 200' 400'

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

CENTERLINE PLAT

HEN-NEW BRIDGE

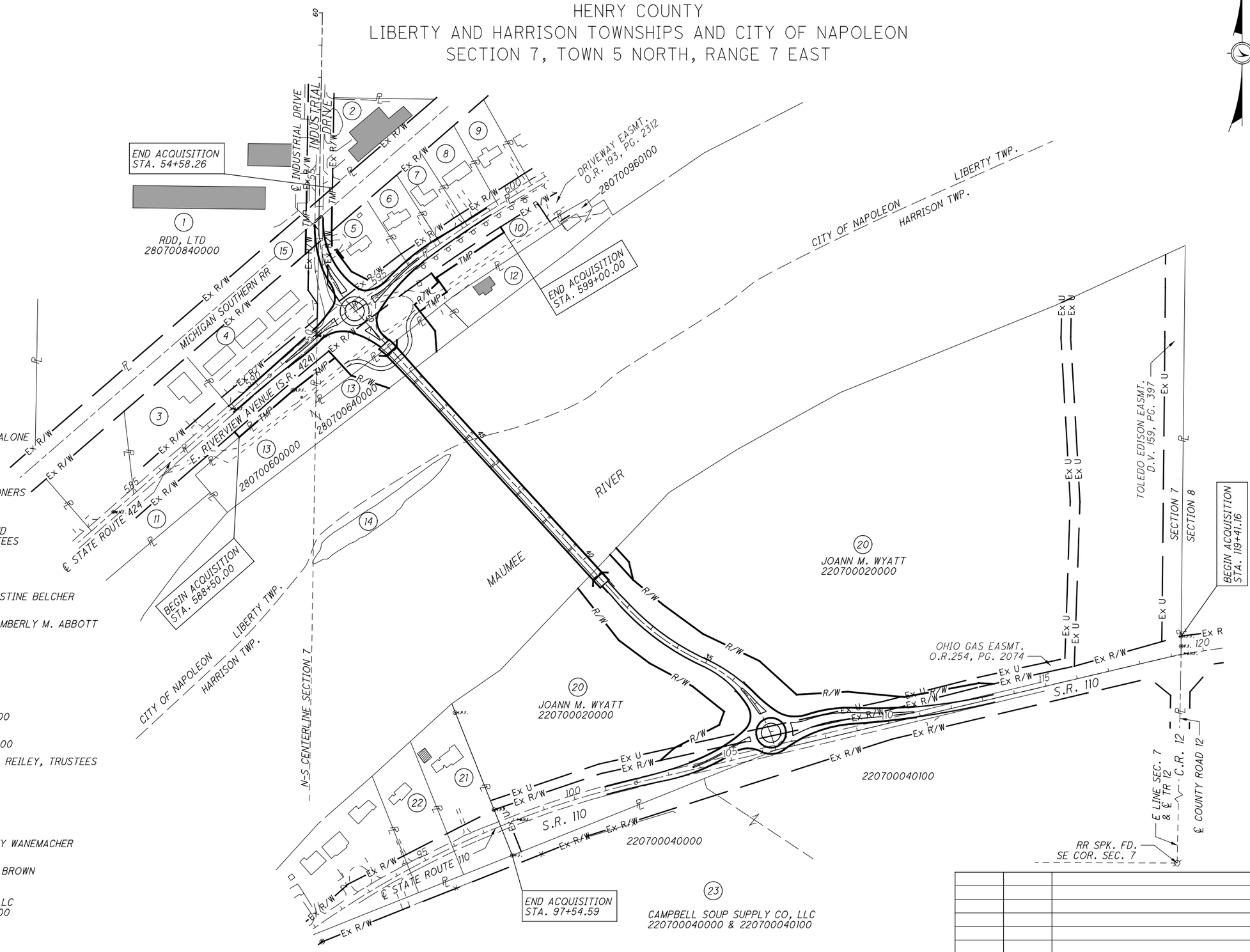
3 / 20

172
189

STRUCTURE KEY

- RESIDENTIAL
- COMMERCIAL
- OUT-BUILDING

HENRY COUNTY
LIBERTY AND HARRISON TOWNSHIPS AND CITY OF NAPOLEON
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



1. RDD, LTD 280700840000
2. L & L PROPERTIES, LTD 280700880200
3. GARY L. MALONE AND DIXIE MALONE 28700340000
4. HARTLAND ESTATES, LLC 280700800000
5. BOARD OF COUNTY COMMISSIONERS OF HENERY COUNTY 280700940000
6. FREDERICK C. BROCKELMAN AND KAREN S. BROCKELMAN, TRUSTEES 280700360000
7. PATRICIA L. HARTMAN 280700380000
8. WAYNE C. BELCHER AND EARNESTINE BELCHER 280700400000
9. CHARLES D. ABBOTT III AND AMBERLY M. ABBOTT 280700420000
10. CITY OF NAPOLEON 280700960000
11. STATE OWNED CANAL LAND
12. TODD R. HAUENSTEIN 280700660000 & 280700960100
13. TODD A. RETTIG, CUSTODIAN 280700640000 & 280700600000
14. BRUCE A. REILEY AND ANNE E. REILEY, TRUSTEES 280700620000
15. MICHIGAN SOUTHERN RAILROAD
20. JOANN M. WYATT 220700020000
21. ROGER WANEMACHER AND KATHY WANEMACHER 220700060000
22. CRAIG D. BROWN AND SARA J. BROWN 220700100000
23. CAMPBELL SOUP SUPPLY CO, LLC 220700040000 & 220700040100

REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET: 0, 75, 150, 300

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

PROPERTY MAP
HEN-NEW BRIDGE

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TOTAL NUMBER OF :

6 OWNERSHIPS — 0 TOTAL TAKE

12 PARCELS — 0 OWNERSHIPS W/ STRUCTURES INVOLVED

RECORD AREA - TOTAL PRO - NET TAKE = NET RESIDUE

GROSS TAKE - PRO IN TAKE = NET TAKE

ALL AREAS IN ACRES

GRANTEE:

ALL RIGHT OF WAY ACQUIRED IN THE NAME OF THE BOARD OF COUNTY COMMISIONEERS OF HENRY COUNTY, UNLESS OTHERWISE SHOWN.

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1	RDD, LTD		67	466	280700840000	16.7100	0.0000								NO RIGHT OF WAY TAKE REQUIRED		
2	L & L PROPERTIES, LTD		168	51	280700880200	1.0000	0.0000								NO RIGHT OF WAY TAKE REQUIRED		
3	GARY L. MALONE AND DIXIE MALONE		251	866	280700340000	1.6000	0.4076								NO RIGHT OF WAY TAKE REQUIRED		
4	HARTLAND ESTATES, LLC		237	1411	280700800000	2.0900	0.3627								NO RIGHT OF WAY TAKE REQUIRED		
5WD	BOARD OF COUNTY COMMISSIONERS OF HENRY COUNTY	16, 19	284	1689	280700940000	1.4500	0.2254	0.4706	0.2254	0.2452			0.6814	LOCAL	RECORD AREA INCLUDES 0.298 ACRES OF ROADWAY DEDICATION		
5T		19						0.0038	0.0000	0.0038				LOCAL	TO CONSTRUCT A DRIVE		
6	FREDERICK C. BROCKELMAN AND KAREN S. BROCKELMAN, TRUSTEES		284	2284	280700360000	0.6800	0.1158								NO RIGHT OF WAY TAKE REQUIRED		
7	PATRICIA L. HARTMAN		195	2206	280700380000	0.5900	0.0949								NO RIGHT OF WAY TAKE REQUIRED		
8	WAYNE C. BELCHER AND EARNESTINE BELCHER		221	994	280700400000	0.7600	0.1088								NO RIGHT OF WAY TAKE REQUIRED		
9	CHARLES D. ABBOTT III AND AMBERLY M. ABBOTT		265	626	280700420000	0.8000	0.1134								NO RIGHT OF WAY TAKE REQUIRED		
10WD	CITY OF NAPOLEON	16, 18	242	763	280700960000	12.0700	0.0000	0.7934	0.0000	0.7934	YES	0.2183	11.0583	LOCAL	* 12' x 16' WOOD SHED		
10T-1		16, 18						0.2045	0.0000	0.2045				LOCAL	TO COMPLETE GRADING		
10T-2		16						0.0384	0.0000	0.0384				LOCAL	TO COMPLETE GRADING		
11T	STATE OWNED CANAL LAND	16, 17	57	231	N/A		0.0000	0.1709	0.0000	0.1709				LOCAL	TO COMPLETE GRADING		
12	TODD R. HAUENSTEIN		41	225	280700660000	1.1100	0.0000								NO RIGHT OF WAY TAKE REQUIRED		
13WD	TODD A. RETTIG, CUSTODIAN	14 - 16	82	680	280700640000	1.3100	0.0000	0.5855	0.0000	0.5855		0.5066	0.2179	LOCAL			
			82	675	280700600000	1.550	0.0000	0.0000	0.0000	0.0000		1.5500					
	TOTAL					2.8600	0.0000	0.5855	0.0000	0.5855		2.0566	0.2179				

NOTE: ALL TEMPORARY PARCELS TO BE OF 12 MONTH DURATION.

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

(c) = CALCULATED AREA

TYPES OF TITLE LEGEND:
WD = WARRANTY DEED
T = TEMPORARY EASEMENT

* DENOTES RIGHT OF WAY ENCROACHMENT

+ DENOTES REMOVAL ITEMS, FOR DESCRIPTION OF REMOVAL ITEMS SEE CORRESPONDING RIGHT OF WAY PLAN SHEET

REV. BY	DATE	DESCRIPTION

FIELD REVIEW BY — DATE:

OWNERSHIP VERIFIED BY — DATE:

DATE COMPLETED

FEDERAL PROJECT NO. C020069

PID NO. 22984

STATE JOB NO. -

R/W DESIGNER TCJ

R/W REVIEWER JDB

SUMMARY OF ADDITIONAL RIGHT OF WAY (PARCELS 1-13)

HEN-NEW BRIDGE

5 / 20

174 / 189

$TIME$

$DATE$

$FILE$

RECORD AREA - TOTAL PRO - NET TAKE = NET RESIDUE

GROSS TAKE - PRO IN TAKE = NET TAKE

ALL AREAS IN ACRES

GRANTEE:
ALL RIGHT OF WAY ACQUIRED IN THE NAME OF THE BOARD OF COUNTY COMMISSIONEERS OF HENRY COUNTY, UNLESS OTHERWISE SHOWN.

PARCEL NO.	OWNER	SHEET NO.	OWNERS RECORD BOOK	OWNERS RECORD PAGE	AUDITOR'S PARCEL	RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUCTURE	NET RESIDUE LEFT	NET RESIDUE RIGHT	TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED BOOK	AS ACQUIRED PAGE
14	BRUCE A. RILEY AND ANNE E. RILEY, TRUSTEES		96	509	280700620000	N/A	0.0000								NO RIGHT OF WAY TAKE REQUIRED		
15T	MICHIGAN SOUTHERN RAILROAD	19, 20	274	1252	2805000600000	175.000		0.2467	0.0000	0.2467				LOCAL	TO CONSTRUCT PAVEMENT AND COMPLETE GRADING		
16 -19	NOT USED																
20WD	JOANN M. WYATT	7 - 14	44	323	220700020000	50.120	3.5356	7.5396	3.5356	4.0040		6.8024	35.7780	LOCAL			
20T-1		13						0.0529	0.0000	0.0529				LOCAL	TO CONSTRUCT STONE CAUSEWAY		
20T-2								0.0205	0.0000	0.0205				LOCAL	TO CONSTRUCT DRIVE		
20T-3								0.0036	0.0000	0.0036				LOCAL	TO CONNECT DRAIN TILE		
21	ROGER WANEMACHER AND KATHY WANEMACHER		233	76	220700060000	1.770	0.5389								NO RIGHT OF WAY TAKE REQUIRED		
22	CRAIG D. BROWN AND SARA J. BROWN		249	48	220700100000	1.430	0.4482								NO RIGHT OF WAY TAKE REQUIRED		
23	CAMPBELL SOUP SUPPLY CO. LLC		223	926	220700040000	26.820	2.8105								NO RIGHT OF WAY TAKE REQUIRED		
			55	853	220700040100	25.090	1.6348										

NOTE: ALL TEMPORARY PARCELS TO BE OF 12 MONTH DURATION.

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

(c) = CALCULATED AREA

TYPES OF TITLE LEGEND:
WD = WARRANTY DEED
T = TEMPORARY EASEMENT

* DENOTES RIGHT OF WAY ENCROACHMENT

+ DENOTES REMOVAL ITEMS, FOR DESCRIPTION OF REMOVAL ITEMS SEE CORRESPONDING RIGHT OF WAY PLAN SHEET

REV. BY	DATE	DESCRIPTION
FIELD REVIEW BY		DATE:
OWNERSHIP VERIFIED BY		DATE:
DATE COMPLETED		

FEDERAL PROJECT NO. C020069

PID NO. 22984

STATE JOB NO. -

R/W DESIGNER TCJ

R/W REVIEWER JDB

SUMMARY OF ADDITIONAL RIGHT OF WAY (PARCELS 14-23)

HEN-NEW BRIDGE

6 / 20

175 / 189

$TIME$ $DATE$ $FILE$

HENRY COUNTY
HARRISON TOWNSHIP
SECTION7, TOWN 5 NORTH, RANGE 7 EAST

21
ROGER WANEWMACHER
AND
KATHY WANEMACHER
220700060000
RESIDENTIAL

20
JOANN M. WYATT
220700020000
AGRICULTURAL

N 73°00'47" E
30.84'

99+95.00
80.00' LT.

100+25.00
80.00' LT.

TMP

S 16°41'13" E
28.60'

N 17°17'13" W
29.48'

20
T=2

99+95.00
50.52' LT.

100+25.00
51.40' LT.

101+00.00
55.00' LT.

N 48°29'02" E
57.88'

OHIO GAS EASMT. O.R. 254, PG. 2074

97+55.49
54.96' LT.

N 71°21'43" E
350.91'

N 77°33'44" E
186.82'

102+85.00
50.62' LT.

S 71°21'43" W
30.55'

CONST. LIMITS

GRASS

C5

98
99
100
101
102

ASPH.

℄ R/W STATE ROUTE 110
℄ CONST. S.R. 110

PT STA. 101+96.89

MATCH LINE STA. 103+00 SEE SHEET 8 OF 20

BEGIN WORK
STA. 99+87.94

20
WD

152.08' ℄

OHIO GAS EASMT.
O.R. 254, PG. 2074

S 68°13'09" W
878.58'

97+54.59
97.11' RT.

BEGIN ACQUISITION
STA. 97+54.59

CURVE 5
P.I. STA. 90+33.37
Δ = 49°52'00" (RT)
Dc = 02°00'00"
R = 2,864.80'
T = 1,331.82'
L = 2,493.34'
E = 294.45'
CH. = N 51°46'39" E
2,415.39'

23
CAMPBELL SOUP SUPPLY CO., LLC
220700040000
COMMERCIAL

REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 97+50 TO STA. 103+00

HEN-NEW BRIDGE

7 / 20

176
189

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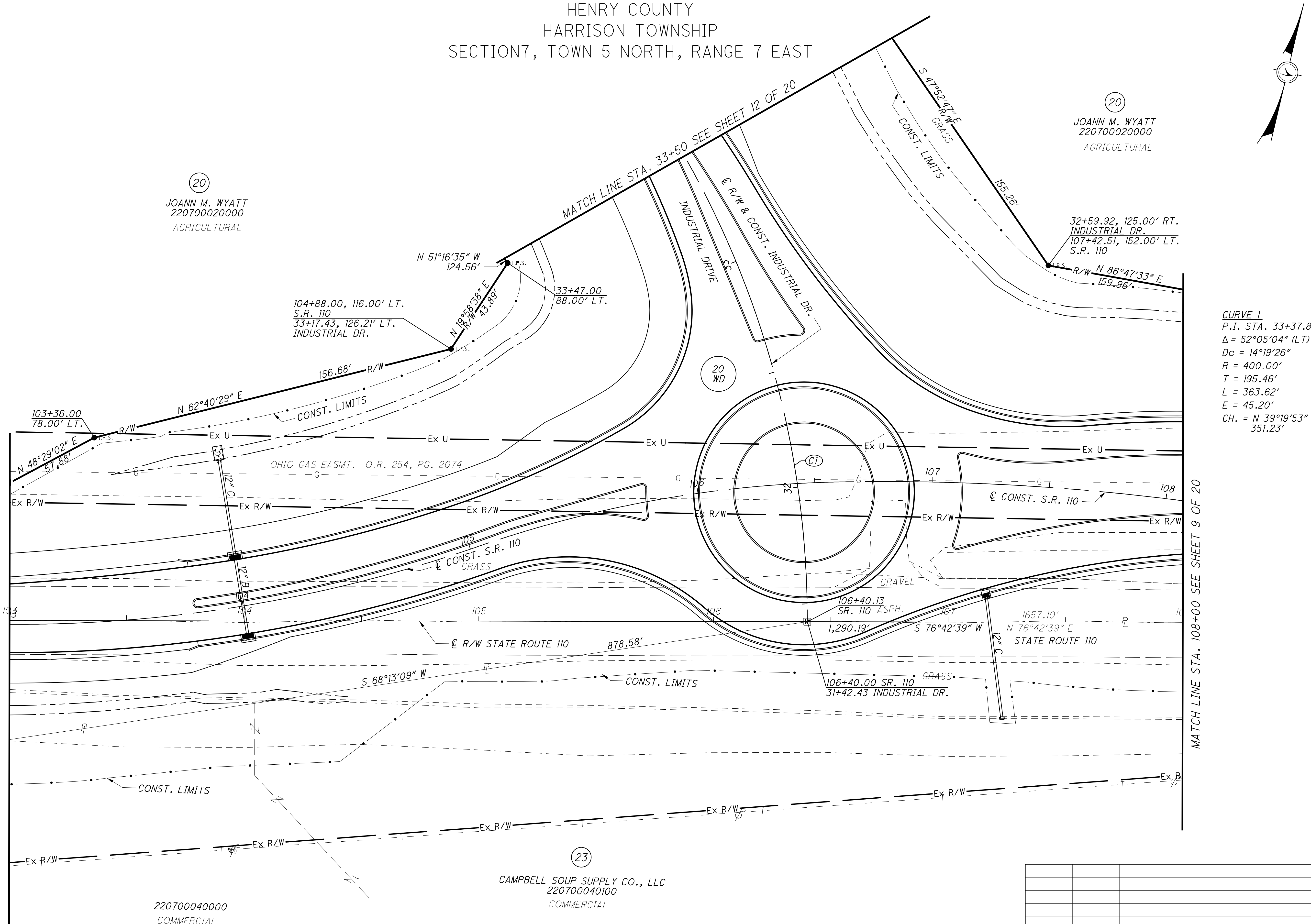
HENRY COUNTY
HARRISON TOWNSHIP
SECTION7, TOWN 5 NORTH, RANGE 7 EAST



CURVE 1
P.I. STA. 33+37.88
Δ = 52°05'04" (LT)
Dc = 14°19'26"
R = 400.00'
T = 195.46'
L = 363.62'
E = 45.20'
CH. = N 39°19'53" W
351.23'

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 103+00 TO STA. 108+00

HEN-NEW BRIDGE

REV. BY	DATE	DESCRIPTION

DATE COMPLETED

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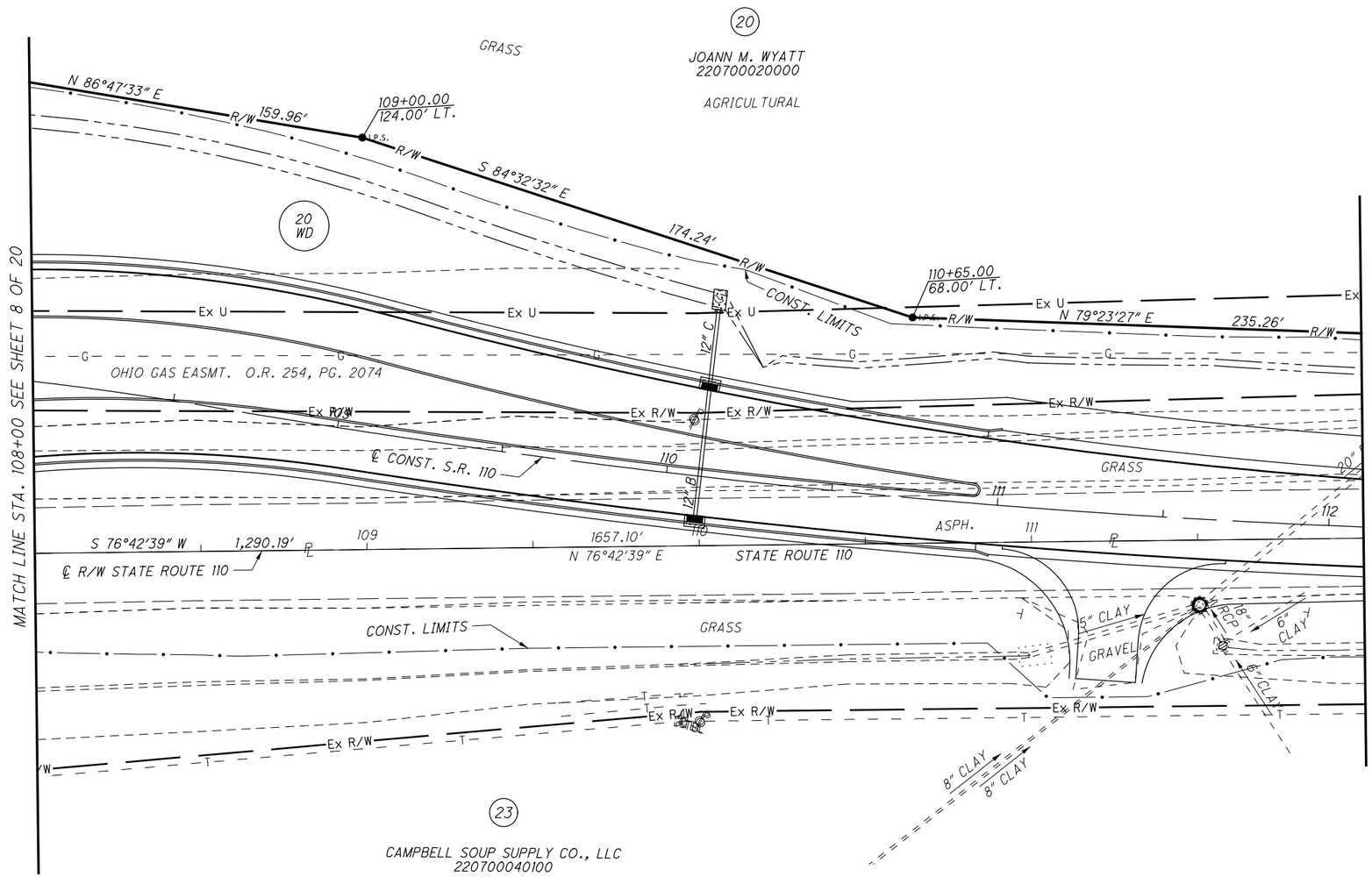
HENRY COUNTY
HARRISON TOWNSHIP
SECTION7, TOWN 5 NORTH, RANGE 7 EAST



REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 108+00 TO STA. 112+00

HEN-NEW BRIDGE

9 / 20

178
189

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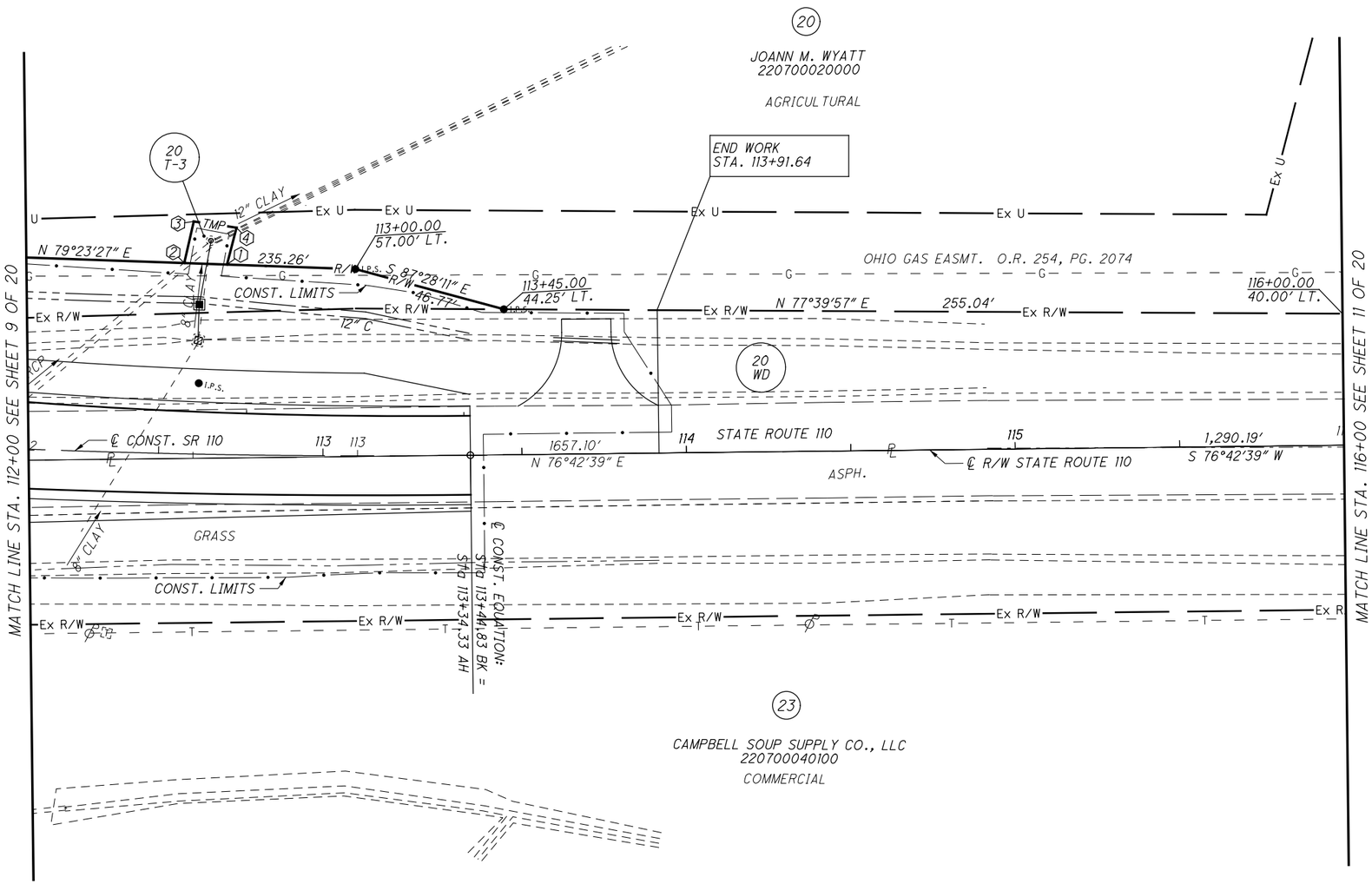
PARCEL 20T-3 DETAIL TABLE

POINT	STATION	OFFSET	COURSE	BEARING	DISTANCE
1	112+61.00	58.83' LT.	1-2	S 79°23'27" W	13.01'
2	112+48.00	59.43' LT.	2-3	N 00°08'18" E	12.92'
3	112+51.00	72.00' LT.	3-4	N 85°27'26" E	13.15'
4	112+64.00	70.00' LT.	4-1	S 01°44'19" W	11.57'

HENRY COUNTY
HARRISON TOWNSHIP
SECTION7, TOWN 5 NORTH, RANGE 7 EAST



REV. BY	DATE	DESCRIPTION
DATE COMPLETED		

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 112+00 TO STA. 114+00

HEN-NEW BRIDGE

10 / 20

179
189

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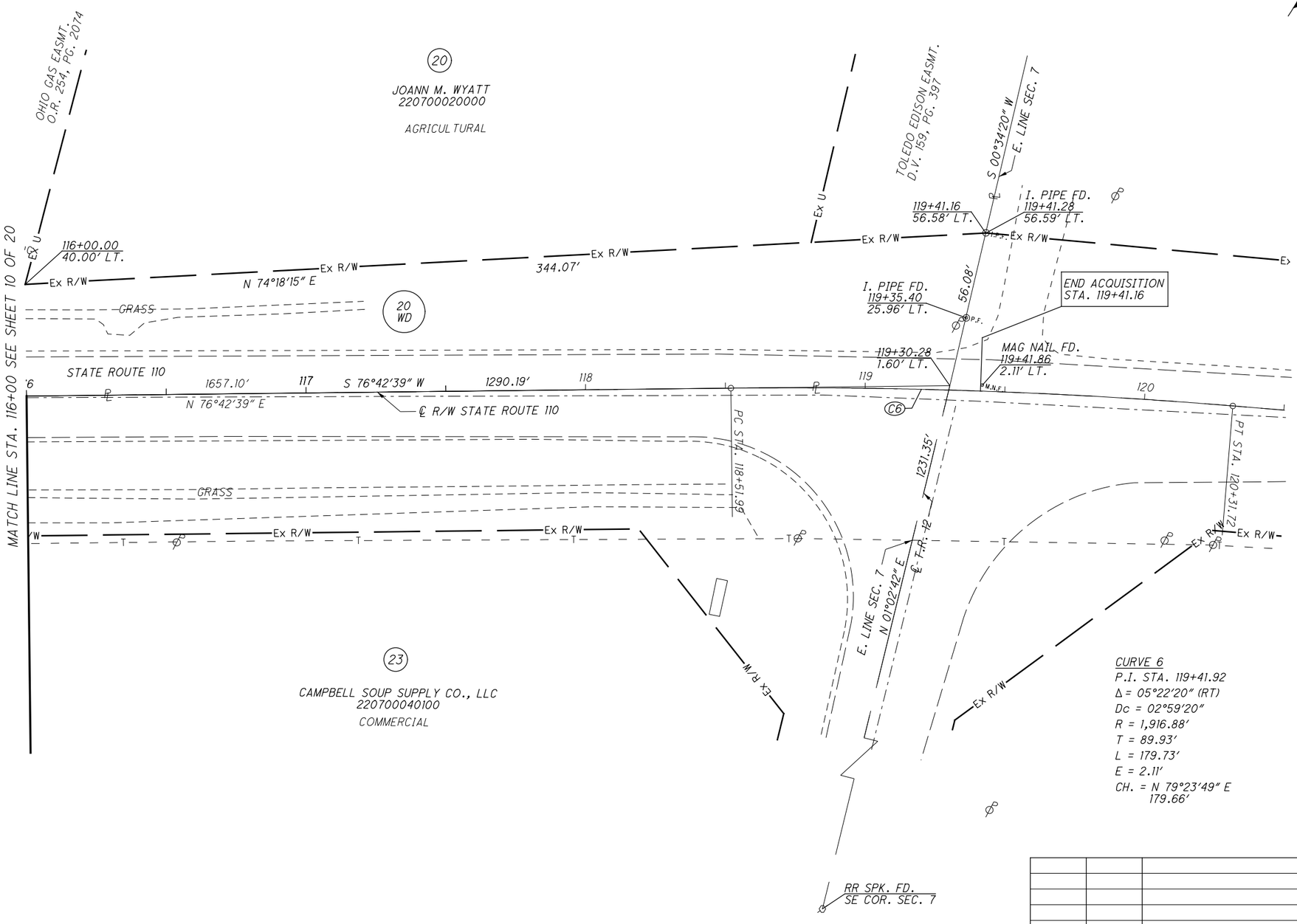
HENRY COUNTY
HARRISON TOWNSHIP
SECTION7, TOWN 5 NORTH, RANGE 7 EAST



REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 116+00 TO STA. 120+50

HEN-NEW BRIDGE

11 / 20

180
189

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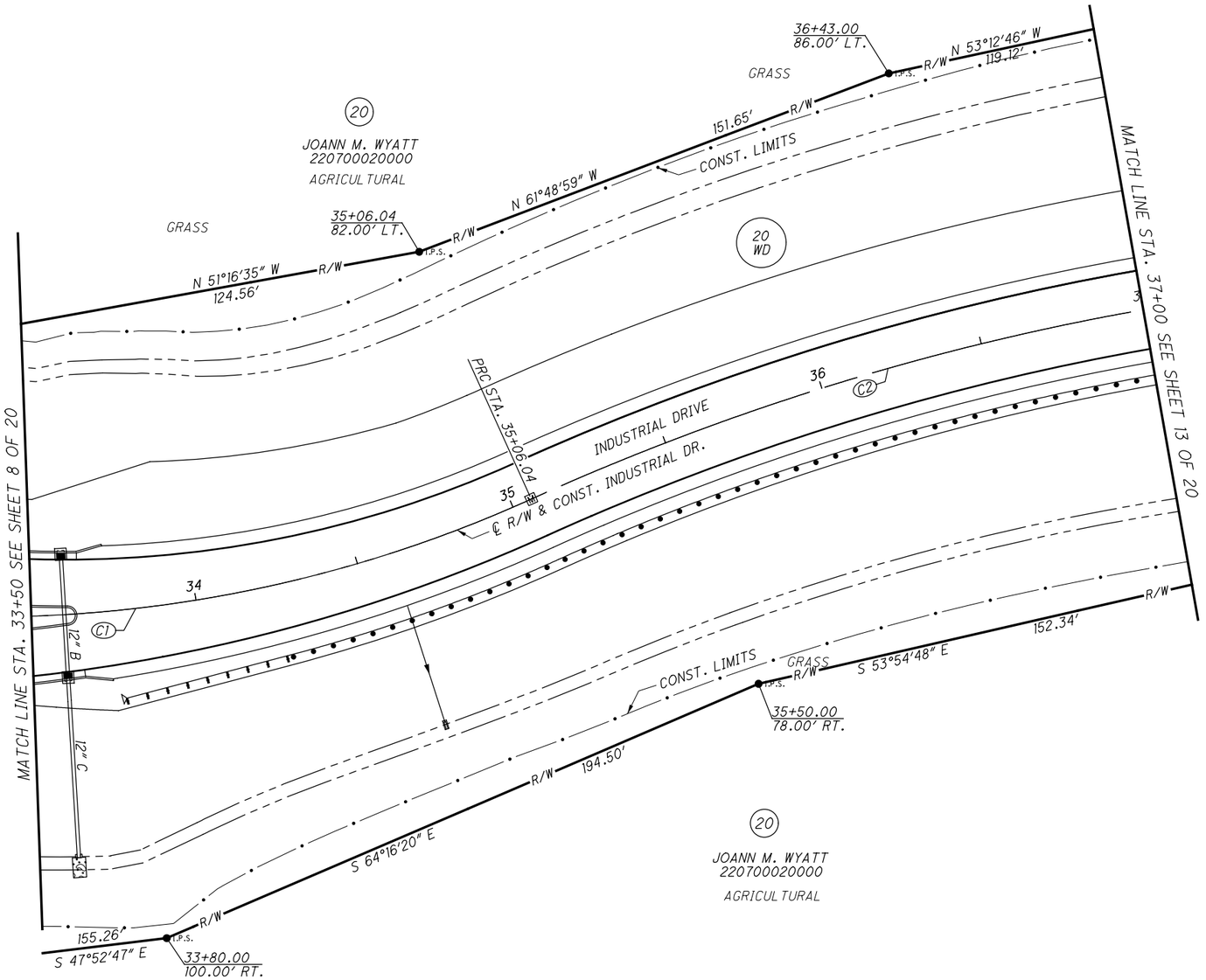
HENRY COUNTY
HARRISON TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



CURVE 1
P.I. STA. 33+37.88
Δ = 52°05'04" (LT)
Dc = 14°19'26"
R = 400.00'
T = 195.46'
L = 363.62'
E = 45.20'
CH. = N 39°19'53" W
351.23'

CURVE 2
P.I. STA. 36+63.17
Δ = 22°55'17" (RT)
Dc = 07°23'35"
R = 775.00'
T = 157.12'
L = 310.04'
E = 15.77'
CH. = N 53°54'46" W
307.98'

REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 33+50 TO 37+00

HEN-NEW BRIDGE

12 / 20

181
189

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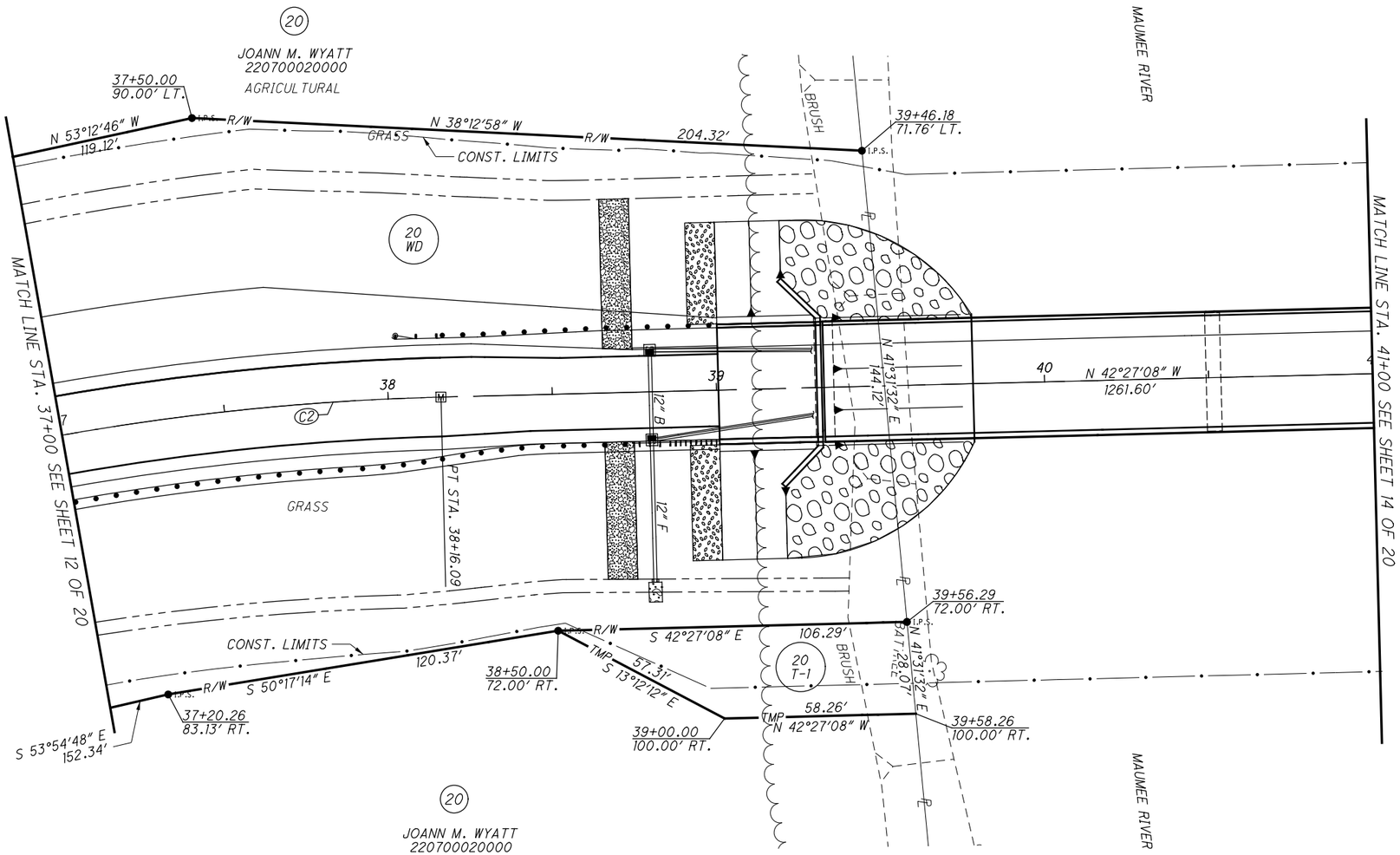
HENRY COUNTY
HARRISON TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



CURVE 2
P.I. STA. 36+63.17
Δ = 22°55'17" (RT)
Dc = 07°23'35"
R = 775.00'
T = 157.12'
L = 310.04'
E = 15.77'
CH. = N 53°54'46" W
307.98'

REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 37+00 TO STA. 41+00

HEN-NEW BRIDGE

13 / 20

182
189

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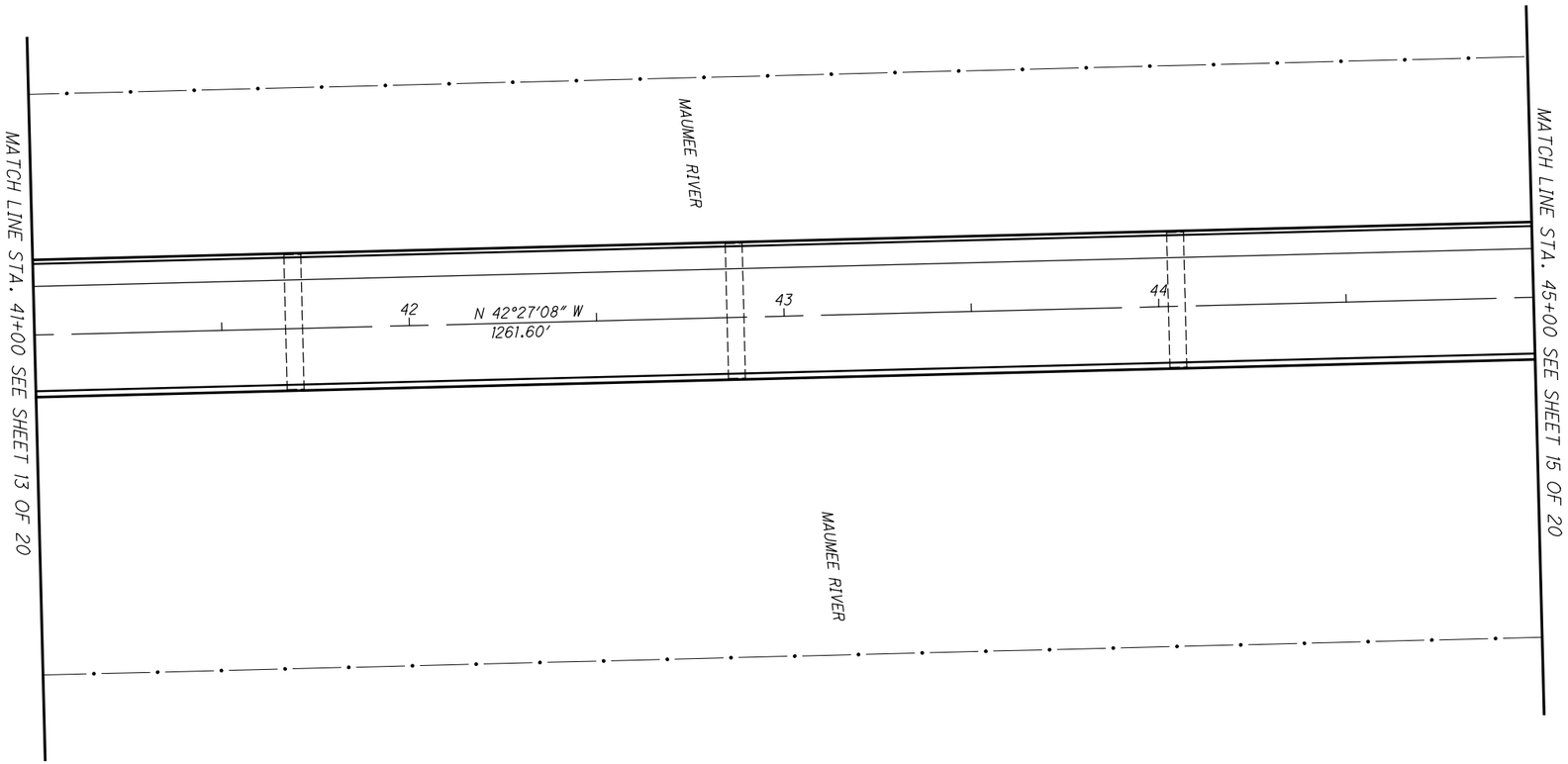
HENRY COUNTY
HARRISON TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 41+00 TO STA. 45+00

HEN-NEW BRIDGE

14 / 20

183
189

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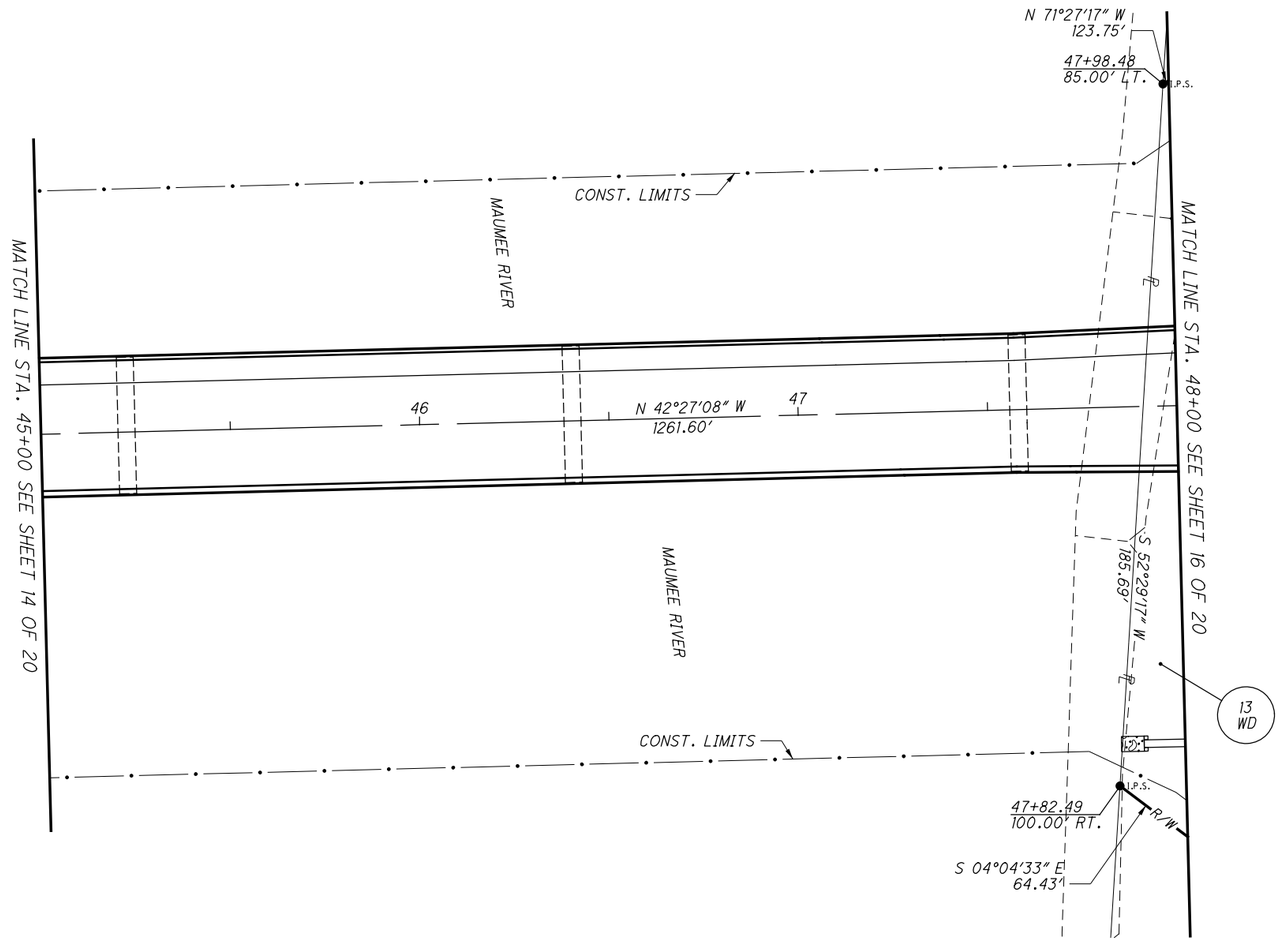
HENRY COUNTY
HARRISON TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 45+00 TO STA. 48+00

HEN-NEW BRIDGE

15 / 20

184
189

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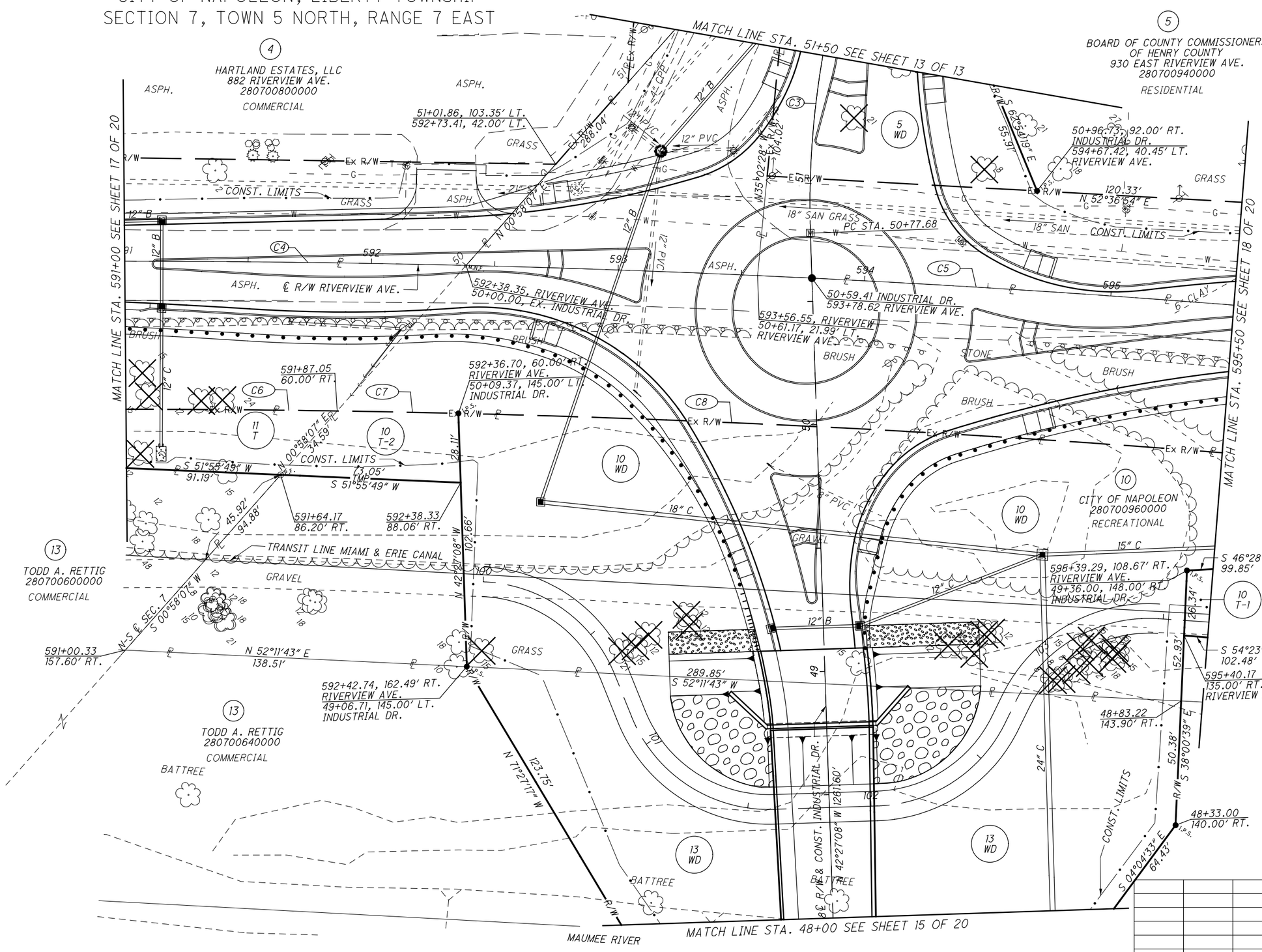
HENRY COUNTY
CITY OF NAPOLEON, LIBERTY TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



CURVE 3
P.I. STA. 52+17.04
Δ = 43°25'15" (RT)
Dc = 16°22'13"
R = 350.00'
T = 139.36'
L = 265.24'
E = 26.72'
C = 258.94'
CH. = N 20°44'30" W
258.94'

CURVE 4
P.I. STA. 596+98.18
Δ = 12°59'05" (RT)
Dc = 01°00'00"
R = 5,729.16'
T = 651.98'
L = 1,298.38'
E = 36.98'
CH. = N 55°24'40" E
1,295.60'

CURVE 5
Δ = 02°23'17" (LT)
Dc = 01°00'00"
R = 5,729.16'
T = 119.41'
L = 238.80'
E = 1.24'
CH. = S 53°13'00" W
238.78'

CURVE 6
Δ = 01°24'31" (RT)
Dc = 01°00'38"
R = 5,669.16'
T = 69.69'
L = 139.38'
E = 0.43'
CH. = N 49°37'23" E
139.38'

CURVE 7
Δ = 00°29'48" (RT)
Dc = 01°00'38"
R = 5,669.16'
T = 24.57'
L = 49.13'
E = 0.05'
CH. = N 50°34'32" E
49.13'

CURVE 8
Δ = 04°02'00" (RT)
Dc = 01°00'38"
R = 5,669.16'
T = 199.62'
L = 399.07'
E = 3.51'
CH. = N 52°50'26" E
398.99'

REV. BY	DATE	DESCRIPTION
DATE COMPLETED		

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 590+50 TO STA. 595+50

HEN-NEW BRIDGE

16 / 20

185 / 189

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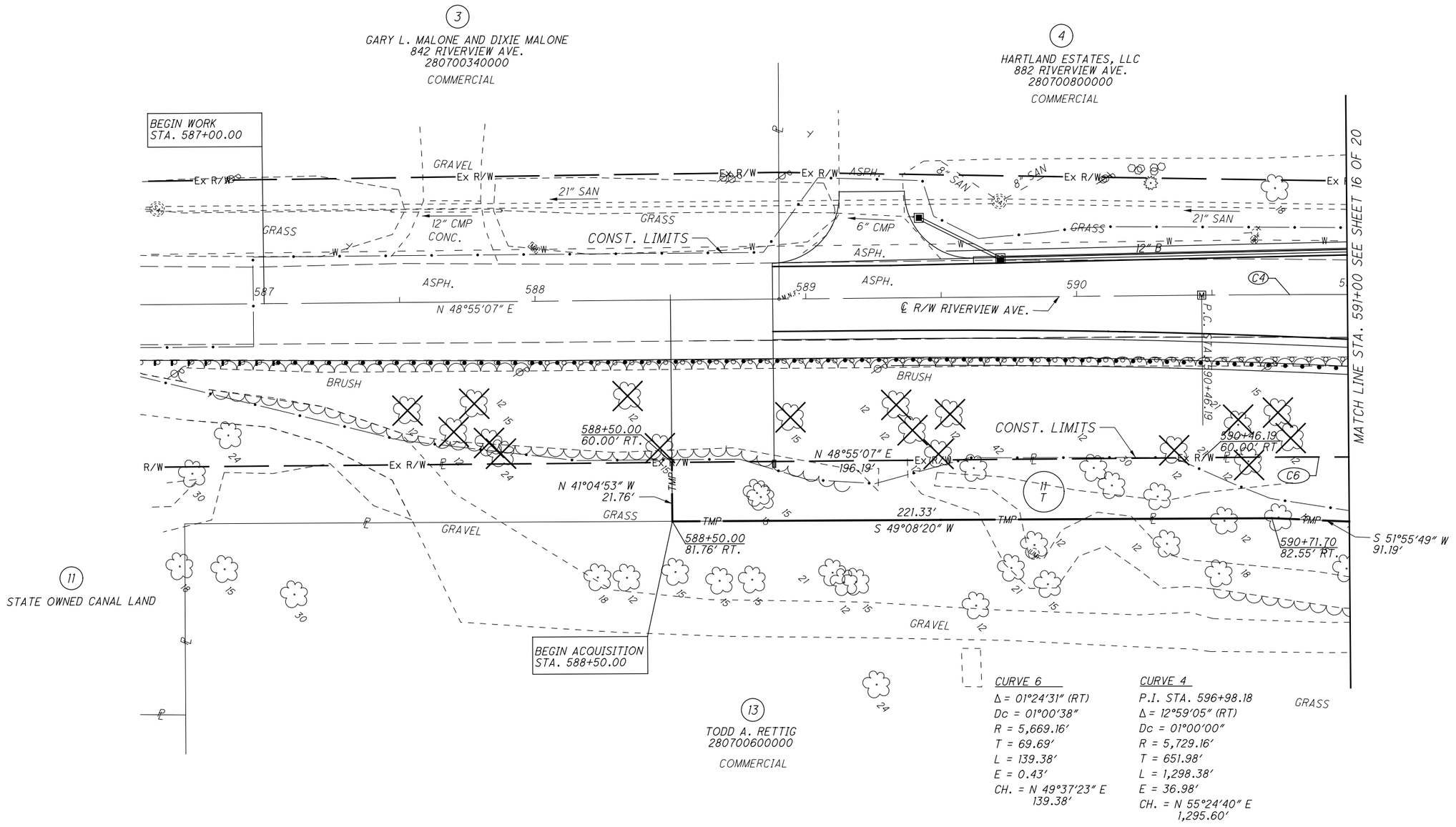
HENRY COUNTY
CITY OF NAPOLEON, LIBERTY TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



CURVE 6
Δ = 01°24'31" (RT)
Dc = 01°00'38"
R = 5,669.16'
T = 69.69'
L = 139.38'
E = 0.43'
CH. = N 49°37'23" E
139.38'

CURVE 4
P.I. STA. 596+98.18
Δ = 12°59'05" (RT)
Dc = 01°00'00"
R = 5,729.16'
T = 651.98'
L = 1,298.38'
E = 36.98'
CH. = N 55°24'40" E
1,295.60'

REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 586+50 TO STA. 591+00

HEN-NEW BRIDGE

17 / 20

186
189

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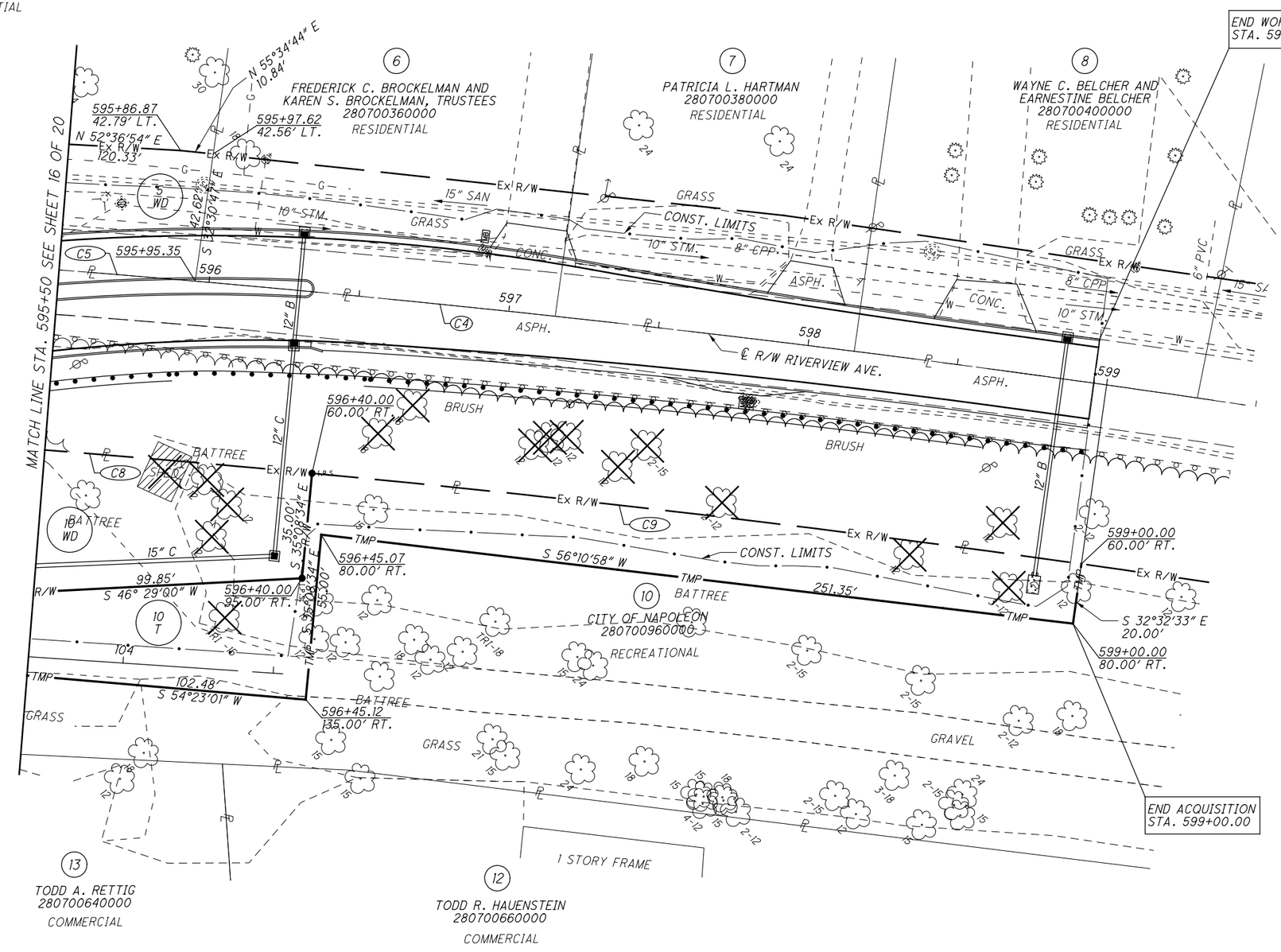
HENRY COUNTY
CITY OF NAPOLEON, LIBERTY TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



REV. BY	DATE	DESCRIPTION

DATE COMPLETED

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 595+50 TO STA. 599+50

HEN-NEW BRIDGE

18 / 20

187
189

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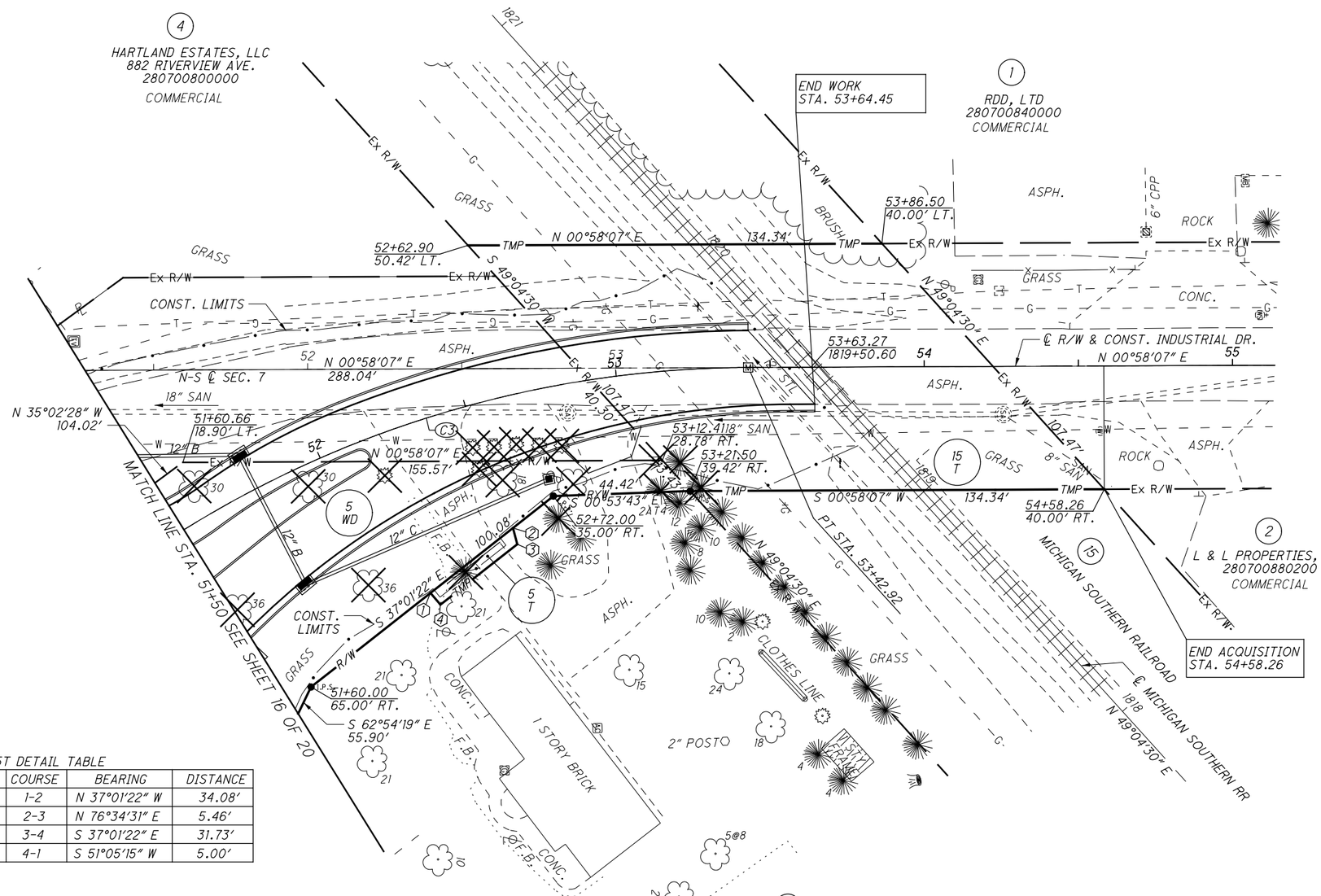
HENRY COUNTY
CITY OF NAPOLEON, LIBERTY TOWNSHIP
SECTION 7, TOWN 5 NORTH, RANGE 7 EAST



CURVE 3
P.I. STA. 52+17.04
Δ = 43°25'15" (RT)
Dc = 16°22'13"
R = 350.00'
T = 139.36'
L = 265.24'
E = 26.72'
CH. = N 20°44'30" W
258.94'

PARCEL 5T DETAIL TABLE

POINT	STATION	OFFSET	COURSE	BEARING	DISTANCE
1	52+18.00	54.04' RT.	1-2	N 37°01'22" W	34.08'
2	52+55.00	42.05' RT.	2-3	N 76°34'31" E	5.46'
3	52+55.00	47.51' RT.	3-4	S 37°01'22" E	31.73'
4	52+20.00	58.76' RT.	4-1	S 51°05'15" W	5.00'

REV. BY	DATE	DESCRIPTION
DATE COMPLETED		

HORIZONTAL SCALE IN FEET
0 10 20 40

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RIGHT OF WAY DETAIL SHEET
STA. 51+50 TO STA. 55+25

HEN-NEW BRIDGE

19 / 20

188
189

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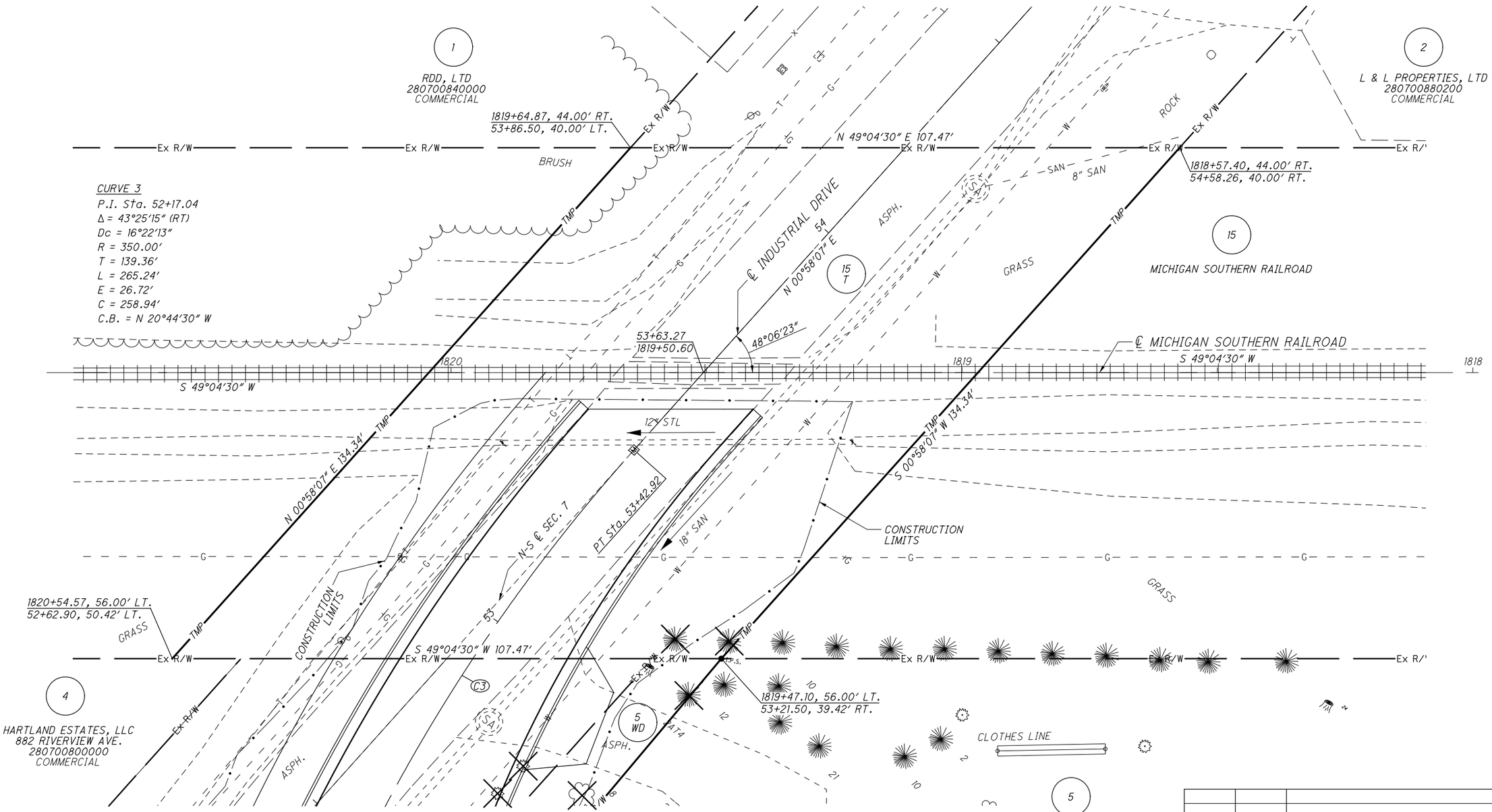
HENRY COUNTY
HARRISON TOWNSHIP
SECTION7, TOWN 5 NORTH, RANGE 7 EAST

*RAILROAD ALIGNMENT AND STATIONING OBTAINED FROM WABASH RAILWAY RIGHT OF WAY AND TRACK MAP 2-OHIO D / 25 AND PREVIOUS SURVEYS BY OTHERS



REV. BY	DATE	DESCRIPTION
DATE COMPLETED		

HORIZONTAL SCALE IN FEET
0 5' 10' 20'

PID NO. 22984

R/W DESIGNER TCJ
R/W REVIEWER JDB

RAILROAD PLAT

HEN-NEW BRIDGE

20 / 20

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189

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PROJECT DESCRIPTION

THE PROJECT, HEN-NEW BRIDGE, WILL INCLUDE CONSTRUCTING A NEW BRIDGE OVER THE MAUMEE RIVER NEAR THE CITY OF NAPOLEON, OHIO TO PROVIDE A CONNECTION BETWEEN SR 110 ON THE SOUTH SIDE OF THE RIVER TO RIVERVIEW AVENUE ON THE NORTH SIDE OF THE RIVER.

HISTORIC RECORDS

NO HISTORIC BORINGS WERE AVAILABLE FOR THIS PROJECT.

GEOLOGY

THE PROJECT SITE IS LOCATED WITHIN THE MAUMEE LAKE PLAINS PHYSIOGRAPHIC REGION OF OHIO WHICH GENERALLY CONSISTS OF PLEISTOCENE-AGE SILT AND CLAY LACUSTRINE DEPOSITS AND/OR DELTAIC SEDIMENTS OVERLYING GLACIAL TILL AND DEVONIAN-AGE LIMESTONE AND SHALE BEDROCK. THE CLOSE PROXIMITY OF THE SITE TO THE MAUMEE RIVER INDICATES THE SITE MAY CONTAIN RIVER ALLUVIUM WITH OVERBANK DEPOSITS. FLOODPLAINS AND TERRACES FLANK THE MAUMEE RIVER WITH OVERBURDEN SOILS GENERALLY CONSISTING OF SILTY AND CLAYEY FLOODPLAIN DEPOSITS OR SANDY AND LOAMY SOILS IN THE TERRACES. NEARBY WATER WELL LOGS INDICATE THE OVERBURDEN SOILS CONSIST OF CLAY AND GRAVEL OVERLYING SHALE THAT WAS ENCOUNTERED AT DEPTHS RANGING FROM 30 TO 40 FEET BELOW GROUND SURFACE (BGS). DRIFT THICKNESS MAPPING INDICATES THE OVERBURDEN IS APPROXIMATELY 15 TO 45 FEET THICK WITH BEDROCK POTENTIALLY AS SHALLOW AS THE GROUND SURFACE WITHIN THE RIVERBED.

RECONNAISSANCE

PERSONNEL FROM THE MANNIK & SMITH GROUP, INC. (MSG) CONDUCTED A SITE WALKTHROUGH ON JANUARY 20, 2014 TO OBSERVE AND DOCUMENT THE SITE CONDITIONS AND NOTE ANY GEOTECHNICAL RELATED ISSUES. A LARGE UNCONTROLLED FILL AREA IS LOCATED BETWEEN EAST RIVERVIEW AVENUE AND THE MAUMEE RIVER. THE CURRENT PROPERTY OWNER STATED TO MSG PERSONNEL THAT HE HAS BEEN DUMPING CONCRETE DEBRIS AND FILL IN THE AREA FOR SEVERAL YEARS IN ORDER TO ESTABLISH A LEVEL FINISH GRADE. THE PAVEMENT AREAS WITHIN THE PROJECT LIMITS APPEARED TO BE IN GOOD TO FAIR CONDITION WITH MINOR TO MODERATE TRANVERSE AND LONGITUDINAL CRACKING NOTED.

SUBSURFACE EXPLORATION

TWENTY-EIGHT (28) SOIL BORINGS, B-001-0-13 THROUGH B-026-0-13 AND OFFSET BORINGS B-008-1-13 AND B-013-1-13 (HEREAFTER REFERRED TO AS B-001 THROUGH B-026, B-008-1 AND B-013-1) WERE COMPLETED AS PART OF THIS SUBSURFACE EXPLORATION BETWEEN APRIL 22, 2014 AND JUNE 12, 2014. BORINGS B-001 THROUGH B-005 AND B-013 THROUGH B-026 (EXCEPT B-016) WERE DRILLED DURING THE FIRST MOBILIZATION FROM APRIL 22, 2014 TO APRIL 29, 2014. BORINGS B-006 THROUGH B-012 (BARGE DRILLING) AND B-016 WERE DRILLED DURING THE SECOND MOBILIZATION FROM JUNE 3, 2014 TO JUNE 12, 2014. A TRACK-MOUNTED GEOPROBE 7822DT DRILL RIG WAS USED TO ADVANCE THE BORINGS BY MECHANICALLY TURNING 4-1/4-INCH INNER DIAMETER HOLLOW-STEM AUGERS INTO THE SOIL MATERIAL. DISTURBED SOIL SAMPLING WAS CONDUCTED USING THE STANDARD PENETRATION TEST (SPT) IN GENERAL ACCORDANCE WITH ASTM D1586. DISTURBED SAMPLING INTERVALS WERE VARIED DEPENDING ON THE BORING TYPE AND THE PROPOSED TOP OF SUBGRADE RELATIVE TO THE EXISTING TOP OF SUBGRADE. UNDISTURBED SAMPLING (I.E. SHELBY TUBE) WAS ALSO PERFORMED AT BORINGS B-002, B-004, B-005 AND B-013-1. THE AUTOMATIC HAMMER ON THE DRILL RIG WAS CALIBRATED ON MAY 10, 2013 AND HAS A DRILL ROD ENERGY RATIO OF 89.3%. AT THE TWO ABUTMENT LOCATIONS (B-005 AND B-013-1) 10 FEET OF BEDROCK WAS CORED AND AT THE BORINGS FOR THE BRIDGE PIER LOCATIONS (B-006 TO B-012) PERFORMED ON A BARGE IN THE RIVER, 5 TO 20 FEET OF BEDROCK WAS CORED. THE SAMPLING OF THE BEDROCK WAS PERFORMED WITH A TYPE NW SERIES CORE BARREL.

EXPLORATION FINDINGS

SR 110

BORINGS B-017 TO B-021 WERE PERFORMED ALONG SR 110. AT THE GROUND SURFACE OF ALL THE BORINGS EXCEPT B-020, 10 INCHES OF ASPHALT PAVEMENT UNDERLAIN BY 4 INCHES OF AGGREGATE BASE WAS ENCOUNTERED. AT B-020 PEFORMED JUST OUTSIDE THE PAVEMENT, THE SURFICIAL MATERIAL CONSISTED OF 3 INCHES OF TOPSOIL. THE SOIL OVERBURDEN CONSISTS PRIMARILY OF DEPOSITS OF CLAY WITH LAYERS OF SAND AND GRAVEL UNDER THE AGGREGATE BASE IN B-017 AND B-019. SOIL UNIT 1 CONSISTS OF LOOSE TO MEDIUM DENSE, GRAY COARSE AND FINE SAND AND GRAVEL WITH SAND AND SILT (A-3a AND A-2-4) ENCOUNTERED BENEATH THE AGGREGATE BASE TO DEPTHS OF 2.7 FEET AND 4.2 FEET, RESPECTIVELY, IN B-019 AND B-017. THE N_{60} VALUES RANGED FROM 10 TO 22 BLOWS PER FOOT (BPF) WITH AN AVERAGE OF 18 BPF. THE MOISTURE CONTENTS RANGED BETWEEN 6 AND 21 PERCENT WITH AN AVERAGE OF 13 PERCENT. SOIL UNIT 2 CONSISTS PREDOMINANTLY OF STIFF TO HARD, BROWN AND/OR GRAY SILT AND CLAY, SILTY CLAY AND CLAY (A-6a, A-6b AND A-7-6). THIS SOIL UNIT WAS ENCOUNTERED BENEATH SOIL UNIT 1 AT B-017 AND B-019 AND BELOW THE PAVEMENT SECTION IN THE OTHER BORING LOCATIONS AND CONTINUED TO DEPTHS OF 6.2 TO 7.2 FEET (BORING TERMINATION DEPTHS). THE N_{60} VALUES RANGED FROM 10 TO 60 BPF WITH AN AVERAGE OF 32 BPF. THE POCKET PENETROMETER TESTS RESULTS WERE BETWEEN 2.25 AND 4.5+ TONS PER SQUARE FOOT (TSF). THE MOISTURE CONTENTS RANGED BETWEEN 13 AND 27 PERCENT WITH AN AVERAGE OF 19 PERCENT.

INDUSTRIAL DRIVE

BORINGS B-001 TO B-016 WERE PERFORMED ALONG THE EXISTING AND PROPOSED ALIGNMENT OF INDUSTRIAL DRIVE. AT THE GROUND SURFACE OF BORINGS B-001 TO B-005, B-013-1 AND B-015, 4 TO 12 INCHES OF TOPSOIL WAS ENCOUNTERED. AT BORING B-014, THE SURFICIAL MATERIAL CONSISTED OF 12 INCHES OF GRAVEL BACKFILL. AT BORING B-016 PERFORMED WITHIN THE EXISTING INDUSTRIAL DRIVE PAVEMENT, 8 INCHES OF ASPHALT OVERLYING 12 INCHES OF AGGREGATE BASE WAS ENCOUNTERED. THE SOIL OVERBURDEN CONSISTS PRIMARILY OF DEPOSITS OF SILTY CLAY. THE BEDROCK WAS IDENTIFIED TO BE SHALE. AT B-013, VERY LOOSE BROWN SANDY SILT FILL WAS UNDERLAIN BY CONCRETE RUBBLE. REFUSAL IN THE CONCRETE RUBBLE WAS ENCOUNTERED AT 4 FEET BGS. SOIL UNIT 1 CONSISTS PREDOMINANTLY OF LOOSE TO MEDIUM DENSE, BROWN OR GRAY NON-COHESIVE SANDY SILT (A-4a) ENCOUNTERED BELOW THE SUFICIAL MATERIAL IN BORINGS B-003, B-004 AND B-013-1 TO DEPTHS OF 2.5 TO 6 FEET BGS. THE N_{60} VALUES RANGED FROM 6 TO 12 BPF WITH AN AVERAGE OF 9 BPF. HOWEVER, AT B-004, VERY LOOSE (N_{60} OF 3 BPF) SANDY SILT WAS ENCOUNTERED BETWEEN 3.5 AND 6 FEET BGS. THE MOISTURE CONTENTS GENERALLY RANGED BETWEEN 14 AND 21 PERCENT WITH AN AVERAGE OF 19 PERCENT. THE SOIL UNIT AT B-013-1 HAD TRACE ORGANIC CONTENT AND WATER CONTENT WAS DETERMINED TO BE 47 PERCENT. SOIL UNIT 2 CONSISTS OF SOFT TO MEDIUM STIFF, BROWN AND/OR GRAY COHESIVE SANDY SILT AND SILT (A-4a AND A-4b) AS WELL AS SILT AND CLAY AND SILTY CLAY (A-6a AND A-6b). THE N_{60} VALUES RANGED FROM 3 TO 7 BPF WITH AN AVERAGE OF 5 BPF. HOWEVER, A LAYER OF VERY SOFT (N_{60} VALUE

CONTINUED ON SHEET 2

LEGEND

	DESCRIPTION	ODOT CLASS	CLASSIFIED MECH./VISUAL	
	GRAVEL AND/OR STONE FRAGMENTS	A-1-a	1	0
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND, AND SILT	A-2-4	1	1
	FINE SAND	A-3	1	0
	COARSE AND FINE SAND	A-3a	0	2
	SANDY SILT	A-4a	6	14
	SILT	A-4b	1	1
	SILT AND CLAY	A-6a	12	16
	SILTY CLAY	A-6b	7	16
	CLAY	A-7-6	10	9
		TOTAL	39	59
	CONCRETE	VISUAL		
XXXXX	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
	SOD AND TOPSOIL	VISUAL		
	SHALE BEDROCK			

EXPLORATION LOCATION - PLAN VIEW

DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.

WC INDICATES WATER CONTENT IN PERCENT.

N_{60} INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.

● INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.

⊖ INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25% OR GREATER THAN 19% WITH A WET APPEARANCE.

X/Y/D" NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT):
X = NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED)
Y/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL

▼— INDICATES STATIC WATER ELEVATION.

W— INDICATES FREE WATER ELEVATION.

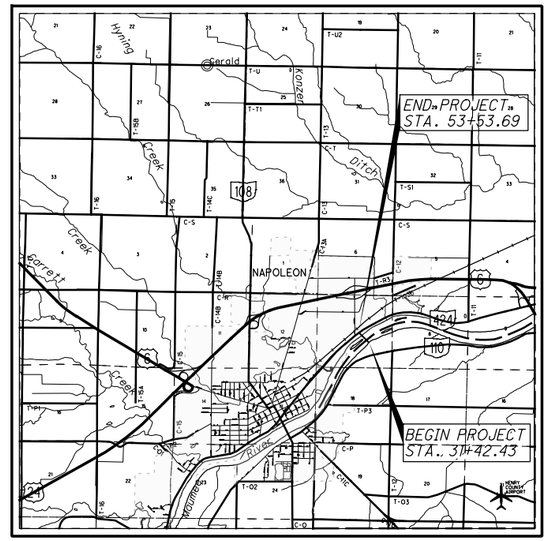
* INDICATES A SAMPLE TAKEN WITHIN 3 FT OF PROPOSED GRADE.

SS INDICATES A SPLIT SPOON SAMPLE.

ST INDICATES A SHELBY TUBE SAMPLE.

NP INDICATES A NON-PLASTIC SAMPLE.

TR INDICATES TOP OF ROCK.



LOCATION MAP

SCALE IN MILES

0 1 2 3 4

N

PARTICLE SIZE DEFINITIONS

BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
12"	3"	2.0 mm (No. 10 SIEVE)	0.42 mm (No. 40 SIEVE)	0.074 mm (No. 200 SIEVE)		0.005 mm

INDEX OF SHEETS

LOCATION FROM STA.	TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CUT MAX.		FILL EMB. MAX.	
INDUSTRIAL DRIVE							
31+42.43	36+50.00	8	8	1	FT	10	FT
36+50.00	41+00.00	9	10	-	FT	16	FT
41+00.00	45+50.00	11	12	-	FT	-	FT
45+50.00	50+50.00	13	14	-	FT	27	FT
50+50.00	56+00.00	15	15	1	FT	2	FT
RIVERVIEW AVENUE							
586+50.00	591+50.00	16	16	-	FT	-	FT
591+50.00	596+50.00	17	17	-	FT	2	FT
596+50.00	601+50.00	18	18	-	FT	-	FT
STATE ROUTE 110							
95+00.00	100+00.00	19	19	-	FT	-	FT
100+00.00	105+00.00	20	20	-	FT	3	FT
105+00.00	110+00.00	21	21	-	FT	5	FT

RECON. - LV 01/20/2014
DRILLING - RJS 04/22 - 06/12/2014
DRAWN - SVJ 05/05/2015
REVIEWED - JLS 05/19/2015

DESIGN AGENCY
Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE . MAUMEE, OHIO 43537

PID NO. 22984

SOIL PROFILE

HEN-NEW BRIDGE

EXPLORATION FINDINGS CONTINUED

INDUSTRIAL DRIVE CONTINUED

OF 1 BPF) SILTY CLAY WAS FOUND AT B-013-1 BETWEEN DEPTHS OF 6 AND 7.5 FEET BGS. THE POCKET PENETROMETER TESTS RESULTS WERE BETWEEN 0 AND 3.0 TSF. THE MOISTURE CONTENTS RANGED BETWEEN 17 AND 26 PERCENT WITH AN AVERAGE OF 22 PERCENT. SOIL UNIT 3 CONSISTS OF STIFF TO HARD, BROWN AND/OR GRAY COHESIVE SANDY SILT AND SILT (A-4a AND A-4b) AS WELL AS SILT AND CLAY, SILTY CLAY AND CLAY (A-6a, A-6b AND A-7-6). THIS UNIT WAS ENCOUNTERED BELOW SOIL UNITS 1 OR 2 AND WAS IDENTIFIED UP TO DEPTHS OF 8 TO 20 FEET WHERE THE BORINGS WERE TERMINATED OR BEDROCK WAS ENCOUNTERED. THE N_{60} VALUES RANGED FROM 9 TO 55 BPF WITH AN AVERAGE OF 25 BPF. THE POCKET PENETROMETER TESTS RESULTS WERE BETWEEN 2.0 AND 4.5+ TSF. THE MOISTURE CONTENTS RANGED BETWEEN 9 AND 26 PERCENT WITH AN AVERAGE OF 16 PERCENT. ROCK UNIT 1 CONSISTS OF WEAK TO STRONG, BROWN OR BLACK SHALE. THESE FORMATIONS WERE FOUND AT DEPTHS OF 22 FEET BGS AND 19.2 FEET BGS AT BORINGS B-005 AND B-013-1, RESPECTIVELY, AND AT THE SURFACE FOR THE RIVER BORINGS B-006 TO B-012. THE RQD OF THE ROCK CORES WERE BETWEEN 0 AND 75 PERCENT WITH AN AVERAGE VALUE OF 29 PERCENT. NINE (9) UNCONFINED COMPRESSIVE STRENGTH TESTS PERFORMED ON THE ROCK CORES INDICATED THE UNCONFINED COMPRESSIVE STRENGTH WAS BETWEEN 1,423 AND 7,676 POUNDS PER SQUARE INCH (PSI) WITH AN AVERAGE OF 4,633 PSI. THE ROCK FORMATIONS WERE FOUND TO BE SLIGHTLY TO SEVERELY WEATHERED.

EAST RIVERVIEW AVENUE

BORINGS B-022 TO B-026 WERE PERFORMED ALONG EAST RIVERVIEW AVENUE. AT THE GROUND SURFACE OF ALL THE BORINGS, 10 INCHES OF ASPHALT PAVEMENT UNDERLAIN BY 4 INCHES OF AGGREGATE BASE WAS ENCOUNTERED. THE SOIL OVERBURDEN CONSISTS PRIMARILY OF DEPOSITS OF SILTY CLAY. SOIL UNIT 1 CONSISTS OF LOOSE TO MEDIUM DENSE, BROWN OR GRAY GRAVEL OR GRAVEL WITH SAND AND SILT (A-1-a AND A-2-4) FOUND AT BORINGS B-023 AND B-025. THE DEPOSIT IS ENCOUNTERED BELOW THE PAVEMENT SECTION AND CONTINUES TO A DEPTH OF 2.7 FEET. THE N_{60} VALUES WERE BETWEEN 22 TO 31 BPF WITH AN AVERAGE OF 27 BPF. THE MOISTURE CONTENTS RANGED BETWEEN 3 AND 16 PERCENT WITH AN AVERAGE OF 10 PERCENT. SOIL UNIT 2 CONSISTS OF MEDIUM DENSE TO DENSE, BROWN AND/OR GRAY FINE SAND AND SANDY SILT (A-3 AND A-4a). THESE DEPOSITS WERE FOUND AT ALL THE BORING LOCATIONS EXCEPT B-025 BELOW THE SURFICIAL MATERIAL OR SOIL UNIT 1 WITH A THICKNESS OF ABOUT 1.5 FEET. THE N_{60} VALUES RANGED FROM 16 TO 34 BPF WITH AN AVERAGE OF 22 BPF. THE MOISTURE CONTENTS RANGED BETWEEN 2 AND 21 PERCENT WITH AN AVERAGE OF 10 PERCENT. SOIL UNIT 3 CONSISTS PREDOMINANTLY OF STIFF TO HARD, BROWN AND/OR GRAY SILTY CLAY. THESE DEPOSITS WERE ENCOUNTERED BELOW SOIL UNITS 1 AND 2 AND EXTENDED TO THE BORING TERMINATION DEPTHS AT 7.2 FEET BGS. THE SOIL UNIT WAS IDENTIFIED AS A-4a, A-6a, A-6b AND/OR A-7-6 IN ALL THE SOIL BORINGS. THE N_{60} VALUES RANGED FROM 18 TO 63 BPF WITH AN AVERAGE OF 38 BPF. THE POCKET PENETROMETER TESTS RESULTS WERE BETWEEN 3.0 AND 4.5 TSF. THE MOISTURE CONTENTS RANGED BETWEEN 14 AND 25 PERCENT WITH AN AVERAGE OF 21 PERCENT.

GROUNDWATER

GROUNDWATER WAS ENCOUNTERED IN FOUR (4) OF THE BORINGS DRUING DRILLING ACTIVITIES INCLUDING B-002, B-003, B-005 AND B-031-1 WITH WATER LEVELS MEASURED AT THE COMPLETION OF DRILLING AT DEPTHS RANGING FROM APPROXIMATELY 2.5 TO 16 FEET BGS. THE WATER LEVELS WERE MEASURED IN THE RIVER BORINGS AND INDICATED THAT THE RIVER ELEVATIONS VARIED BETWEEN ELEVATION 638 AND 641 AT THE TIME OF DRILLING.

SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JULY 2013.

AVAILABLE INFORMATION

ALL AVAILABLE SOIL AND BEDROCK INFORMATION THAT CAN BE CONVENIENTLY SHOWN ON THE GEOTECHNICAL EXPLORATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL EXPLORATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1600 WEST BROAD STREET OR THE OFFICE OF STRUCTURAL ENGINEERING AT 1980 WEST BROAD STREET.

BEDROCK TEST SUMMARY

BORING NO.	SAMPLE ID	SAMPLE DEPTH	Qu (PSI)
B-006-0-13	RC-2	5'-10'	1423
B-006-0-13	RC-4	15'-20'	1641
B-007-0-13	RC-2	5'-10'	4446
B-008-1-13	RC-2	5'-10'	4862
B-009-0-13	RC-4	15'-20'	1451
B-010-0-13	RC-2	5'-10'	7676
B-011-0-13	RC-1	0'-5'	4644
B-012-0-13	RC-1	0'-5'	5539
B-012-0-13	RC-3	10'-15'	6652

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DESIGN AGENCY
Mannik Smith GROUP
1800 INDIAN WOOD CIRCLE . MAUMEE, OHIO 43537

PID NO. 22984

SOIL PROFILE

HEN-NEW BRIDGE

SUMMARY OF SOIL TEST DATA
INDUSTRIAL DRIVE

EXPLORATION NO., STATION & OFFSET	DEPTH FROM - TO	SAMPLE ID	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	SO4 ppm
B-001-0-13	1.0 - 2.5	SS-1	67	0.75	2	3	16	35	44	37	18	19	21	A-6b (12)	
STA. 32+47.39, 102.9 LT.	3.5 - 5.0	SS-2	50	2.0	BROWN MOTTLED WITH GRAY SILT AND CLAY, LITTLE SAND, TRACE GRAVEL								17	A-6a (VISUAL)	
NORTHING = 636432.356	6.0 - 7.5	SS-3	0	-	SAME AS SS-2								-	A-6a (VISUAL)	
EASTING = 1529466.854	8.5 - 10.0	SS-4	61	4.5	5	6	13	35	41	29	15	14	14	A-6a (10)	
	11.0 - 12.5	SS-5	94	4.5	SAME AS SS-4								14	A-6a (VISUAL)	
	13.5 - 15.0	SS-6	25	4.5	SAME AS SS-4								14	A-6a (VISUAL)	
B-002-0-13	1.0 - 2.5	SS-1	33	2.0	BROWN SILTY CLAY, TRACE SAND								21	A-6b (VISUAL)	
STA. 34+29.06, 80.4 LT.	3.5 - 5.5	ST-1	100	4.5+	3	6	15	35	41	29	16	13	22	A-6a (9)	
NORTHING = 636554.632	6.0 - 7.5	SS-2	61	4.0	SAME AS ST-1								14	A-6a (VISUAL)	
EASTING = 1529405.397	8.5 - 10.0	SS-3	72	4.5	SAME AS ST-1								13	A-6a (VISUAL)	
	11.0 - 12.5	SS-4	0	-	SAME AS ST-1								-	A-6a (VISUAL)	
	13.5 - 15.0	SS-5	83	4.5+	3	5	14	35	43	28	16	12	16	A-6a (9)	
B-003-0-13	1.0 - 2.5	SS-1	67	-	SAME AS SS-2								21	A-4a (VISUAL)	
STA. 36+41.71, 24.9 LT.	3.5 - 5.0	SS-2	61	-	1	4	50	34	11	NP	NP	NP	14	A-4a (2)	
NORTHING = 636705.174	6.0 - 7.5	SS-3	78	4.5+	SAME AS SS-6								14	A-6a (VISUAL)	
EASTING = 1529253.905	8.5 - 10.0	SS-4	78	4.5+	SAME AS SS-6								13	A-6a (VISUAL)	
	11.0 - 12.5	SS-5	78	4.5+	SAME AS SS-6								14	A-6a (VISUAL)	
	13.5 - 15.0	SS-6	44	4.5+	3	4	10	41	42	27	16	11	14	A-6a (8)	
B-004-0-13	1.0 - 2.5	SS-1	44	-	SAME AS SS-2								19	A-4a (VISUAL)	
STA. 38+25, 4' RT.	3.5 - 5.0	SS-2	83	-	0	2	29	46	23	NP	NP	NP	21	A-4a (7)	
NORTHING = 636837.733	6.0 - 7.5	SS-3	56	-	SAME AS ST-1								16	A-4a (VISUAL)	
EASTING = 1529144.268	6.0 - 7.5	ST-1	94	-	0	0	41	45	14	22	18	4	11	A-4a (5)	
	8.5 - 10.0	SS-4	83	-	GRAY SANDY SILT, AND CLAY								14	A-4a (VISUAL)	
	11.0 - 12.5	SS-5	72	4.5+	4	5	11	40	40	27	15	12	13	A-6a (9)	
	13.5 - 15.0	SS-6	56	4.5+	SAME AS SS-5								15	A-6a (VISUAL)	
B-014-0-13	1.0 - 2.5	SS-1	78	4.5+	5	7	13	32	43	32	17	15	15	A-6a (10)	
STA. 49+50, CL	3.5 - 5.0	SS-2	17	4.5	SAME AS SS-1								15	A-6a (VISUAL)	
NORTHING = 637665.517	6.0 - 7.5	SS-3	50	4.0	SAME AS SS-1								17	A-6a (VISUAL)	
EASTING = 1528381.896	8.5 - 10.0	SS-4	50	4.5+	2	5	12	34	47	37	16	21	20	A-6b (12)	
	11.0 - 12.5	SS-5	61	3.0	GRAY CLAY, SOME SILT, TRACE GRAVEL					42	18	24	20	A-7-6 (VISUAL)	
	13.5 - 15.0	SS-6	83	4.5	SAME AS SS-6								13	A-7-6 (VISUAL)	
	16.0 - 17.5	SS-7	78	4.5+	BROWN SILTY CLAY, LITTLE SAND, TRACE GRAVEL								17	A-6b (VISUAL)	
	18.5 - 20.0	SS-8	89	4.5+	GRAY SILTY CLAY, LITTLE SAND, TRACE GRAVEL								9	A-6b (VISUAL)	
B-015-0-13	1.0 - 2.5	SS-1	67	2.5	BROWN SILT AND CLAY, LITTLE SAND								19	A-6a (VISUAL) *	1275
STA. 52+77.55, 26.7 RT.	3.5 - 5.0	SS-2	67	4.5	1	3	3	10	83	48	23	25	26	A-7-6 (16)	
NORTHING = 637952.823	6.0 - 7.5	SS-3	83	4.5	4	6	11	30	49	32	17	15	17	A-6a (10)	
EASTING = 1528225.366	8.5 - 10.0	SS-4	100	4.5	SAME AS SS-3								14	A-6a (VISUAL)	
B-016-0-13	1.7 - 3.2	SS-1	78	3.5	SAME AS SS-2								22	A-6b (VISUAL) *	
STA. 55+57, CL	3.2 - 4.7	SS-2	89	3.0	1	1	3	44	51	39	19	20	25	A-6b (12)	
NORTHING = 638227.110	4.7 - 6.2	SS-3	44	2.5	1	1	4	37	57	44	20	24	28	A-7-6 (14)	
EASTING = 1528197.360	6.2 - 7.7	SS-4	78	3.0	SAME AS SS-3								26	A-7-6 (VISUAL)	1140

NOTE:
Excludes B-005 through B-013

DRAWN SVJ
CHECKED JLS

SOIL PROFILE
SUMMARY OF SOIL TEST DATA - INDUSTRIAL DRIVE
HEN-NEW BRIDGE

SUMMARY OF SOIL TEST DATA
RIVERVIEW AVE.

EXPLORATION NO., STATION & OFFSET	DEPTH FROM - TO	SAMPLE ID	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	SO4 ppm
B-022-0-13	1.2 - 2.7	SS-1	56	-	DARK BROWN SANDY SILT, SOME GRAVEL								3	A-4a (VISUAL)*	160
STA. 587+45, 7' RT.	2.7 - 4.2	SS-2	56	4.0	6	4	5	35	50	44	19	25	23	A-7-6 (15)	
NORTHING = 637343.455	4.2 - 5.7	SS-3	67	4.5	SAME AS SS-2								14	A-7-6 (VISUAL)	
EASTING = 1527818.884	5.7 - 7.2	SS-4	61	4.5	15	10	17	23	35	32	17	15	17	A-6a (7)	
B-023-0-13	1.2 - 2.7	SS-1	61	-	66	18	7	7	2	NP	NP	NP	3	A-1-a (0)*	
STA. 591+43, 9' LT.	2.7 - 4.2	SS-2	61	3.25	GRAY MOTTLED WITH BROWN SANDY SILT, LITTLE CLAY								21	A-4a (VISUAL)	1300
NORTHING = 637615.734	4.2 - 5.7	SS-3	89	4.5	0	4	5	19	72	40	20	20	22	A-6b (12)	
EASTING = 1528108.483	5.7 - 7.2	SS-4	83	4.5	SAME AS SS-3								24	A-6b (VISUAL)	
B-024-0-13	1.2 - 2.7	SS-1	72	-	0	5	85	9	1	NP	NP	NP	14	A-3 (0)	
STA. 594+66, 9' RT.	2.7 - 4.2	SS-2	67	3.0	1	0	1	41	57	49	22	27	25	A-7-6 (17)	
NORTHING = 637800.802	4.2 - 5.7	SS-3	100	4.5	BROWN SILTY CLAY, TRACE SAND								24	A-6b (VISUAL)	2880
EASTING = 1528374.091	5.7 - 7.2	SS-4	50	4.5	SAME AS SS-3								23	A-6b (VISUAL)	
B-025-0-13	1.2 - 2.7	SS-1	83	-	LIGHT GRAY GRAVEL WITH SAND AND SILT, SOME CLAY								16	A-2-4 (VISUAL)*	200
STA. 597+23, 8' LT.	2.7 - 4.2	SS-2	67	4.5	2	6	7	38	47	33	18	15	19	A-6a (10)	
NORTHING = 637966.627	4.2 - 5.7	SS-3	56	4.5	BROWN SILTY CLAY, TRACE SAND AND GRAVEL								19	A-6b (VISUAL)	
EASTING = 1528571.100	5.7 - 7.2	SS-4	78	4.5	SAME AS SS-3								22	A-6b (VISUAL)	
B-026-0-13	1.2 - 2.7	SS-1	50	-	DARK BROWN SANDY SILT, SOME GRAVEL								2	A-4a (VISUAL)*	
STA. 600+30, 5' LT.	2.7 - 4.2	SS-2	50	4.5	BROWN MOTTLED WITH GRAY SILTY CLAY, TRACE SAND								23	A-6b (VISUAL)	1140
NORTHING = 638130.283	4.2 - 5.7	SS-3	78	4.5	3	5	8	22	62	41	20	21	17	A-7-6 (13)	
EASTING = 1528832.319	5.7 - 7.2	SS-4	89	4.5	SAME AS SS-3								15	A-7-6 (VISUAL)	

SUMMARY OF SOIL TEST DATA
S.R. 110

EXPLORATION NO., STATION & OFFSET	DEPTH FROM - TO	SAMPLE ID	% REC	HP tsf	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS (GI)	SO4 ppm
B-017-0-13	1.2 - 2.7	SS-1	56	-	GRAY COARSE AND FINE SAND, LITTLE GRAVEL, TRACE SILT								6	A-3a (VISUAL)	
STA. 97+38, 5' RT.	2.7 - 4.2	SS-2	11	-	SAME AS SS-1								21	A-3a (VISUAL)	560
NORTHING = 636139.886	4.2 - 5.7	SS-3	78	2.5	5	5	14	27	49	41	23	18	22	A-7-6 (11)	
EASTING = 1528743.168	5.7 - 7.2	SS-4	67	2.5	2	6	15	32	45	40	19	21	22	A-6b (12)	
B-018-0-13	1.2 - 2.7	SS-1	72	4.5+	DARK GRAY CLAY, SOME GRAVEL AND SILT, TRACE SAND								13	A-7-6 (VISUAL)	500
STA. 99+90, 8' LT.	2.7 - 4.2	SS-2	67	4.5	2	10	35	20	33	26	12	14	16	A-6a (5)	
NORTHING = 636237.894	4.2 - 5.7	SS-3	67	2.25	1	2	10	16	71	49	20	29	27	A-7-6 (17)	
EASTING = 1528975.860	5.7 - 7.2	SS-4	78	3.5	SAME AS SS-3								20	A-7-6 (VISUAL)	
B-019-0-13	1.2 - 2.7	SS-1	61	-	42	18	10	14	16	23	14	9	16	A-2-4 (0)*	
STA. 103+15, CL	2.7 - 4.2	SS-2	56	4.5+	6	6	8	24	56	39	19	20	17	A-6b (12)	
NORTHING = 636312.038	4.2 - 5.7	SS-3	67	4.5+	SAME AS SS-2								16	A-6b (VISUAL)	760
EASTING = 1529291.934	5.7 - 7.2	SS-4	78	4.5+	SAME AS SS-2								15	A-6b (VISUAL)	
B-020-0-13	0.3 - 1.8	SS-1	61	4.5+	SAME AS SS-2								21	A-7-6 (VISUAL)*	2160
STA. 106+98, 21' LT.	1.8 - 3.3	SS-2	42	4.5+	0	2	11	18	69	49	21	28	23	A-7-6 (17)*	
NORTHING = 636420.916	3.3 - 4.8	SS-3	56	4.5+	1	2	3	16	78	48	24	24	23	A-7-6 (15)	
EASTING = 1529660.274	4.8 - 6.3	SS-4	78	4.5+	SAME AS SS-3								15	A-7-6 (VISUAL)	
B-021-0-13	1.2 - 2.7	SS-1	56	4.5+	13	9	30	23	25	28	15	13	18	A-6a (4)*	
STA. 109+41.6, 6' LT.	2.7 - 4.2	SS-2	61	3.0	SAME AS SS-1								17	A-6a (VISUAL)*	660
NORTHING = 636461.405	4.2 - 5.7	SS-3	67	4.5+	3	4	5	16	72	47	25	22	22	A-7-6 (14)	
EASTING = 1529900.005	5.7 - 7.2	SS-4	78	4.5+	BROWN MOTTLED WITH GRAY SILTY CLAY, TRACE SAND AND GRAVEL								15	A-6b (VISUAL)	

DRAWN SVJ
CHECKED JLS

SOIL PROFILE
SUMMARY OF SOIL TEST DATA - RIVERVIEW AVE, & S.R.110
HEN-NEW BRIDGE

Civil Engineering, Surveying and Geoenvironmental Consulting
TOLEDO CANTON LANSING DETROIT MONROE CLEVELAND COLUMBUS

One-Dimensional Consolidation Properties of Soils
ASTM D2435

Project Name:	Maumee River Crossing PID 22984	Project Number:	H2530002
Sample Number:	B-005-ST1	Sample Depth:	13.5'-15'
Soil Classification:	A-4a	Specific Gravity (G):	2.71
		Method Used:	Floating Ring

d_0= Initial zero reading, (in)	0		
Hs= (cm)	1.75	0.70	(in)
H0= (in)	1.00		
A= (in^2)	4.91	31.91	(cm^2)

Load Increment, Pressure (tsf)	(psi)	Deformation @ end of loading or Δ H (in)	Height of sample at the end of loading (in)	Height of Voids, (in)	Strain (Δ H/Ho) (%)	Coefficient of Compressibility a_v (m^2/N)	Void Ratio	Permeability (cm/sec)	Coefficient of Consolidation, Cv @ 50% (in^2/sec)	Coefficient of Consolidation, Cv @ 50% (cm^2/sec)
seating load	0.69	0.000	1.000	0.30	0.00		0.430			
0.25	1.20	0.003	0.997	0.30	0.26	2.09E-05	0.426	3.819E-05	4.090E-03	2.659E-02
0.50	2.00	0.009	0.991	0.29	0.92	3.39E-05	0.417	9.811E-06	6.477E-04	4.210E-03
1.00	3.60	0.020	0.980	0.28	2.00	2.77E-05	0.401	1.803E-05	1.445E-03	9.394E-03
2.00	6.70	0.033	0.967	0.27	3.26	1.67E-05	0.383	1.962E-05	2.584E-03	1.679E-02
4.00	13.00	0.047	0.953	0.25	4.72	9.52E-06	0.362	3.305E-06	7.533E-04	4.897E-03
1.00	3.60	0.042	0.958	0.26	4.21	2.23E-06	0.370	7.362E-08	7.061E-05	4.589E-04
0.25	1.20	0.036	0.964	0.26	3.62	1.01E-05	0.378	1.190E-05	2.531E-03	1.645E-02
0.50	2.00	0.030	0.970	0.27	3.01	-3.13E-05	0.387	-7.471E-06	5.157E-04	3.352E-03
1.00	3.60	0.036	0.964	0.26	3.63	1.59E-05	0.378	1.245E-05	1.702E-03	1.106E-02
2.00	6.70	0.042	0.958	0.26	4.22	7.82E-06	0.370	1.368E-06	3.782E-04	2.458E-03
4.00	13.00	0.054	0.946	0.25	5.40	7.69E-06	0.353	2.656E-06	7.418E-04	4.822E-03
8.00	25.60	0.067	0.933	0.23	6.72	4.30E-06	0.334	9.759E-07	4.812E-04	3.128E-03
16.00	50.80	0.089	0.911	0.21	8.92	3.59E-06	0.302	9.500E-07	5.543E-04	3.603E-03
4.00	13.00	0.090	0.910	0.21	9.00	-8.69E-08	0.301	-2.884E-07	6.777E-03	4.405E-02
1.00	3.60	0.080	0.921	0.22	7.95	4.59E-06	0.316	5.184E-06	2.306E-03	1.499E-02
0.25	1.20	0.062	0.938	0.24	6.17	3.05E-05	0.342	1.924E-05	1.304E-03	8.477E-03

DRAWN SVJ | CHECKED JLS

SOIL PROFILE
LABORATORY TEST DATA

HEN-NEW BRIDGE

Mannik Smith GROUP
Civil Engineering, Surveying and Geoenvironmental Consulting
TOLEDO CANTON LANSING DETROIT MONROE CLEVELAND COLUMBUS

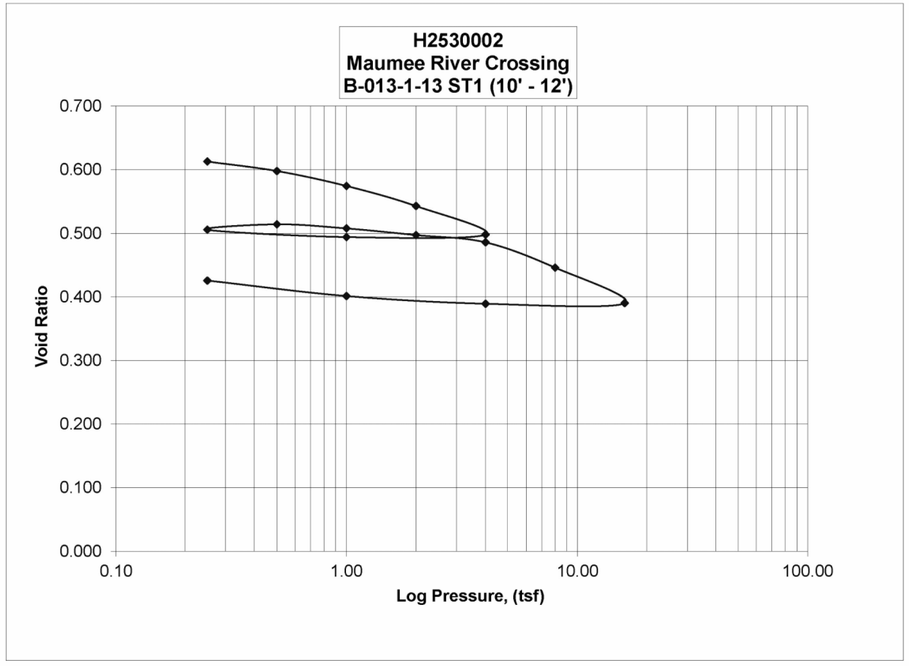
AAR AASHTO R18

One-Dimensional Consolidation Properties of Soils
ASTM D2435

Project Name:	Maumee River Crossing	Project Number:	H2530002
Sample Number:	B-013-1-13 ST1	Sample Depth:	10'-12'
Soil Classification:	A-6b	Specific Gravity (G):	2.71
		Method Used:	Floating Ring

d_0= Initial zero reading, (in)	0		
Hs= (cm)	1.53	0.61	(in)
H0= (in)	1.00		
A= (in^2)	4.91	31.91	(cm^2)

Load Increment, Pressure (tsf)	(psi)	Deformation @ end of loading or Δ H (in)	Height of sample at the end of loading (in)	Height of Voids, (in)	Strain (Δ H/Ho) (%)	Coefficient of Compressibility a_v (m^2/N)	Void Ratio	Permeability (cm/sec)	Coefficient of Consolidation, Cv @ 50% (in^2/sec)	Coefficient of Consolidation, Cv @ 50% (cm^2/sec)
seating load	0.69	0.000	1.000	0.39	0.00		0.636			
0.25	1.40	0.014	0.986	0.37	1.40	9.26E-05	0.613	1.458E-05	4.037E-04	2.624E-03
0.50	2.20	0.023	0.977	0.37	2.31	5.34E-05	0.598	1.463E-07	6.925E-06	4.502E-05
1.00	3.80	0.038	0.963	0.35	3.75	4.23E-05	0.574	1.625E-06	9.634E-05	6.262E-04
2.00	6.90	0.057	0.943	0.33	5.68	2.92E-05	0.543	2.202E-06	1.859E-04	1.208E-03
4.00	13.30	0.084	0.916	0.30	8.42	2.01E-05	0.498	2.345E-06	2.821E-04	1.834E-03
1.00	3.80	0.087	0.913	0.30	8.66	-1.19E-06	0.494	-3.453E-07	6.836E-04	4.443E-03
0.25	1.40	0.080	0.920	0.31	7.96	1.37E-05	0.506	3.859E-07	6.600E-05	4.290E-04
0.50	2.20	0.074	0.926	0.31	7.43	-3.11E-05	0.514	-1.861E-06	1.412E-04	9.179E-04
1.00	3.80	0.078	0.922	0.31	7.83	1.17E-05	0.508	1.385E-06	2.800E-04	1.820E-03
2.00	6.90	0.085	0.915	0.30	8.47	9.70E-06	0.497	1.415E-06	3.450E-04	2.243E-03
4.00	13.30	0.092	0.908	0.30	9.17	5.14E-06	0.486	2.979E-06	1.361E-03	8.850E-03
8.00	25.90	0.116	0.884	0.27	11.60	9.06E-06	0.446	1.019E-06	2.622E-04	1.704E-03
16.00	51.30	0.150	0.850	0.24	15.02	6.33E-06	0.390	7.572E-07	2.715E-04	1.765E-03
4.00	13.30	0.151	0.849	0.24	15.07	-6.18E-08	0.389	-3.341E-08	1.178E-03	7.658E-03
1.00	3.80	0.143	0.857	0.25	14.33	3.66E-06	0.401	5.022E-07	2.990E-04	1.944E-03
0.25	1.40	0.128	0.872	0.26	12.84	2.92E-05	0.426	2.069E-06	1.559E-04	1.013E-03



DRAWN SVJ | CHECKED JLS

SOIL PROFILE
LABORATORY TEST DATA

HEN-NEW BRIDGE

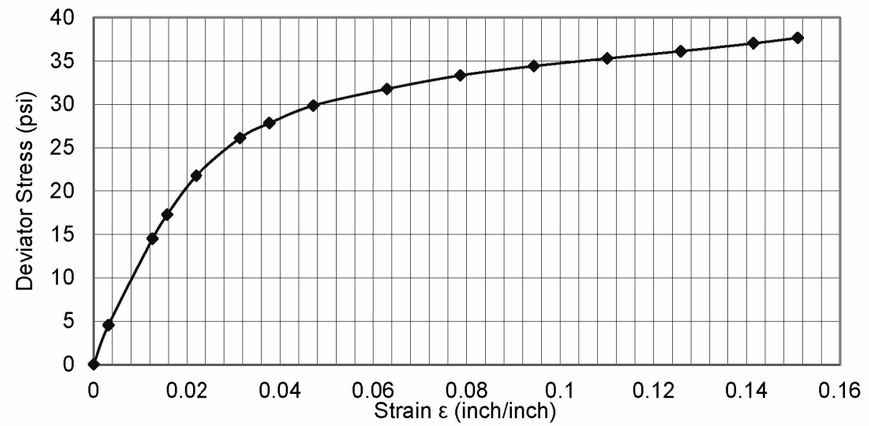
Mannik Smith GROUP

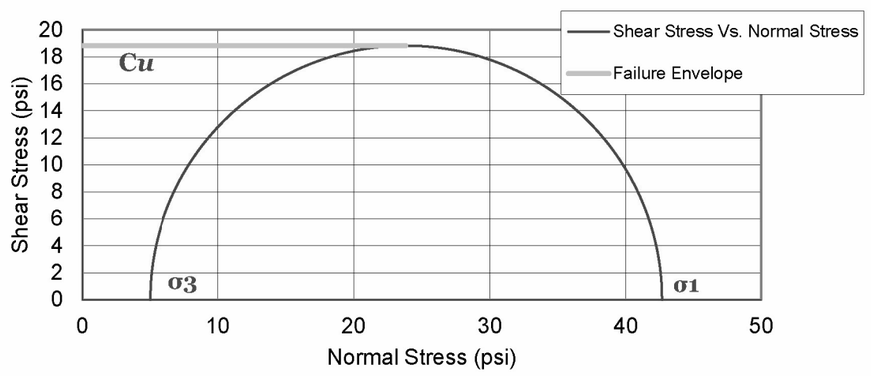
Civil Engineering, Surveying and Environmental Consulting

CANTON DETROIT MONROE LANSING MAUMEE COLUMBUS CLEVELAND TRAVERSE CITY

Unconsolidated-Undrained Triaxial Compression Test ASTM D2850

Project Name:	Maumee River Crossing PID 22984			Project No:	H2530002
Sample No:	B-002-ST1			Date:	5/27/2014
Visual Description of Soil:	Gray Silty Clay			Depth:	3.5-5.0'
Wet Unit Wt. (lb/ft^3):	132.51	Dry Unit Wt.(lb/ft^3):	108.24	MC %:	22.43
Specific Gravity	2.70	Loading Rate(inch/min)	0.050	Void Ratio:	0.557
Chamber Pressure (psi)	5	Deviator Stress q_u (psi)	37.66	Cu (psi)	18.83





Tested By:	KL	Reviewed By:	TR/CAR	Date:	6/4/2014

*The certificate shall not be reproduced except in full, without the written approval of MSG.

UU.B002ST1.xls

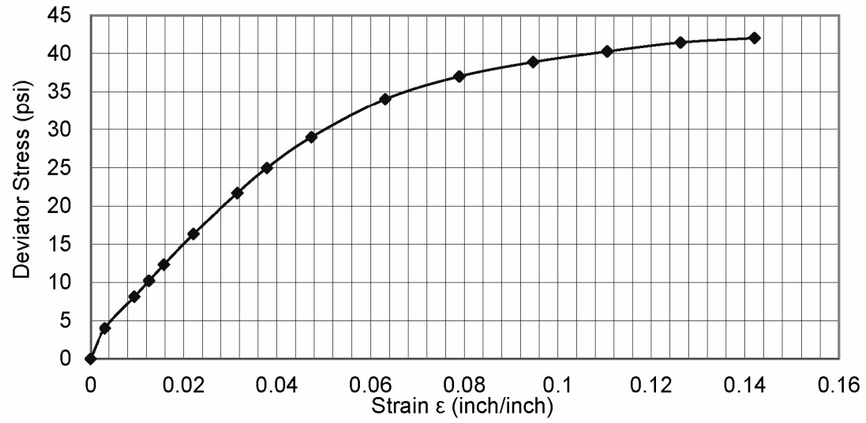
Mannik Smith GROUP

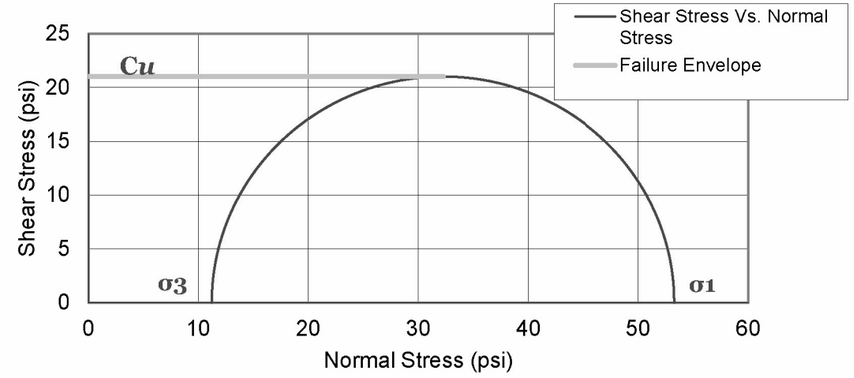
Civil Engineering, Surveying and Environmental Consulting

CANTON DETROIT MONROE LANSING MAUMEE COLUMBUS CLEVELAND TRAVERSE CITY

Unconsolidated-Undrained Triaxial Compression Test ASTM D2850

Project Name:	Maumee River Crossing PID 22984			Project No:	H2530002
Sample No:	B-005-ST1			Date:	5/27/2014
Visual Description of Soil:	Gray Sandy Silt, some Clay			Depth:	13.5-15.0'
Wet Unit Wt. (lb/ft^3):	135.03	Dry Unit Wt.(lb/ft^3):	113.73	MC %:	18.73
Specific Gravity	2.70	Loading Rate(inch/min)	0.050	Void Ratio:	0.481
Chamber Pressure (psi)	11.25	Deviator Stress q_u (psi)	42.04	Cu (psi)	21.01





Tested By:	KL	Reviewed By:	TR	Date:	6/4/2014

*The certificate shall not be reproduced except in full, without the written approval of MSG.

B005ST1_1_1.xls

DRAWN SVJ CHECKED JLS

SOIL PROFILE
LABORATORY TEST DATA

HEN-NEW BRIDGE

℄ R/W S.R. 110

BEGIN PROJECT STA. 31+42.43

PRC STA. 105+03.34

B-001-0-13

B-002-0-13

B-003-0-13

PRC STA. 35+06.04

PT STA. 31+42.43

PCC STA. 106+61.65

STA. 32+01.52 ℄ R/W & CONST. INDUSTRIAL DR.
= STA. 106+42.53 ℄ CONST. S.R. 110

INDUSTRIAL DR.

℄ R/W & CONST. INDUSTRIAL DR.

℄ CONST. S.R. 110

B-020-0-13
SEE SHEET 21

MATCH LINE STA. 36+50 SEE SHEET **

EXIST. S.R. 110

S.R. 110

GRASS

ASPH.

GRAVEL

10' H.P. GAS

N 76° 42' 39" E

PROPOSED PROFILE

EXISTING PROFILE ALONG ℄ CONST.

B-001-0-13
102.9' LT
TOPSOIL = 1.0'
4 13 27 34 34 30
21 17 - 14 14 14
N_{60} WC

B-002-0-13
80.4' LT
TOPSOIL = 1.0'
6 ST 24 28 27 28
21 22 14 13 - 16
N_{60} WC

B-003-0-13
24.9' LT
TOPSOIL = 1.0'
9 9 22 30 33 33
21 14 14 13 14 14
N_{60} WC

	669.20	669.70	670.20	670.21	669.71	669.33	669.08	668.83	668.58	668.33	668.08	667.92	667.84	667.84	667.94	668.10	668.27	668.44	668.61	668.78	668.95		PROP. ELEV.
	669.48	666.94	662.84	661.48	660.56	659.90	659.60	659.51	659.74	659.95	659.99	660.13	660.34	660.50	660.55	660.60	660.65	660.80	660.94	661.10	661.26		EXIST. ELEV.

700 690 680 670 660 650 640

32+00 33+00 34+00 35+00 36+00

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HORIZONTAL SCALE IN FEET
0 10 20 40

DRAWN SVJ
CHECKED JLS

SOIL PROFILE - INDUSTRIAL DR, STA. 31+42.43 TO STA. 36+50.00

HEN-NEW BRIDGE

8 / 32

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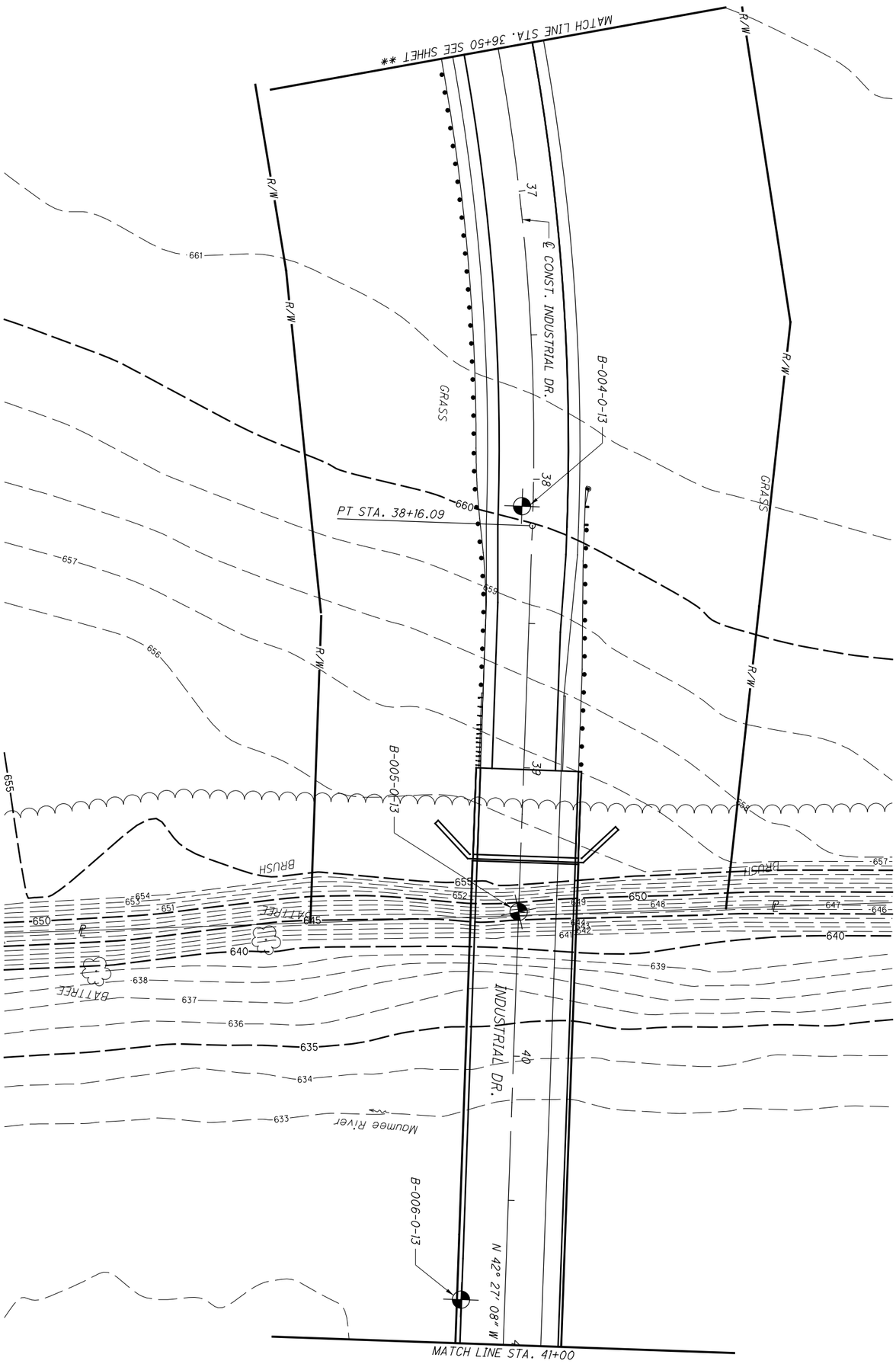

	9/32	HEN-NEW BRIDGE	SOIL PROFILE - INDUSTRIAL DR. STA. 36+50.00 TO STA. 41+00.00	DRAWN SVJ CHECKED JLS	0 20 10 40 HORIZONTAL SCALE IN FEET

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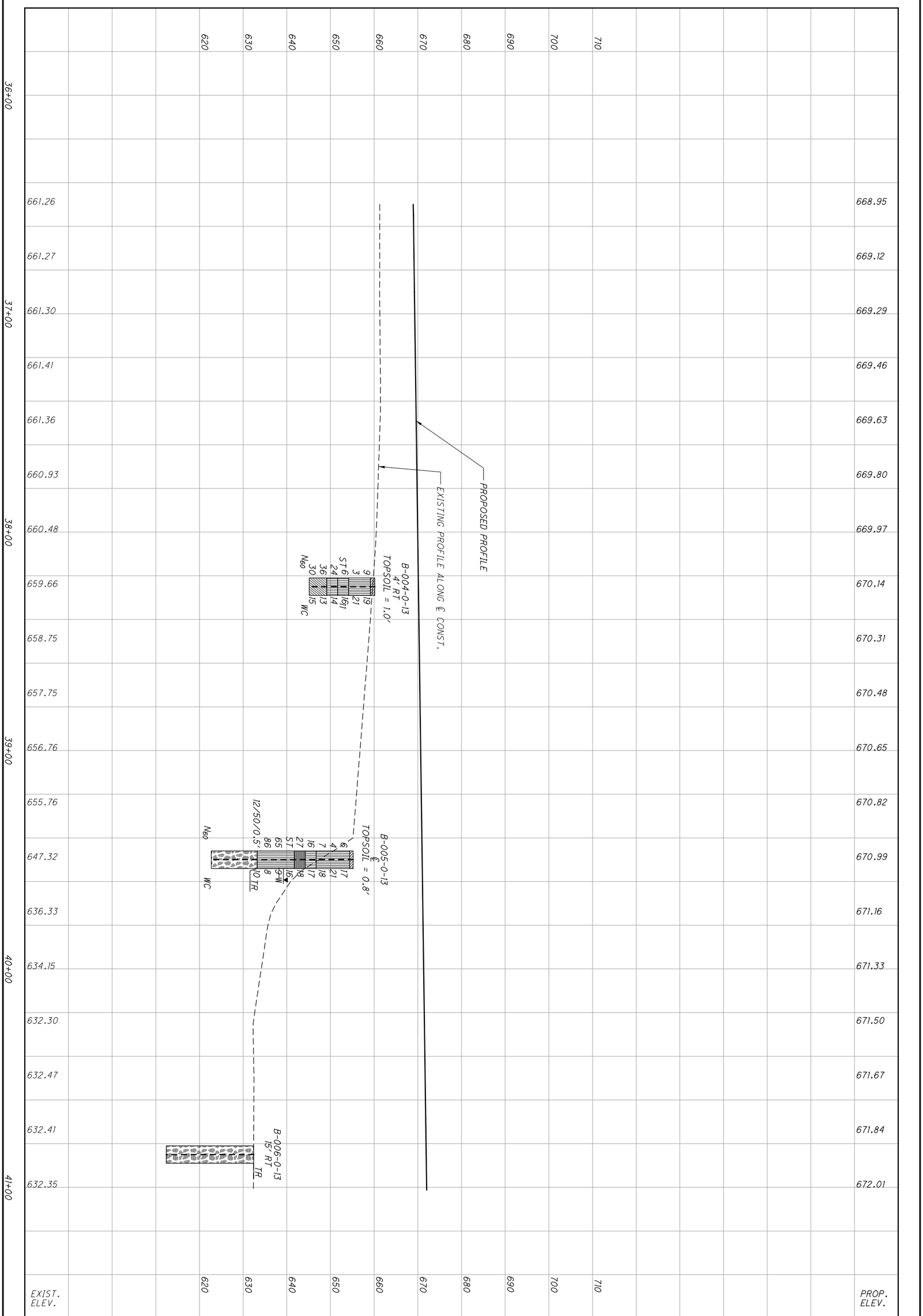
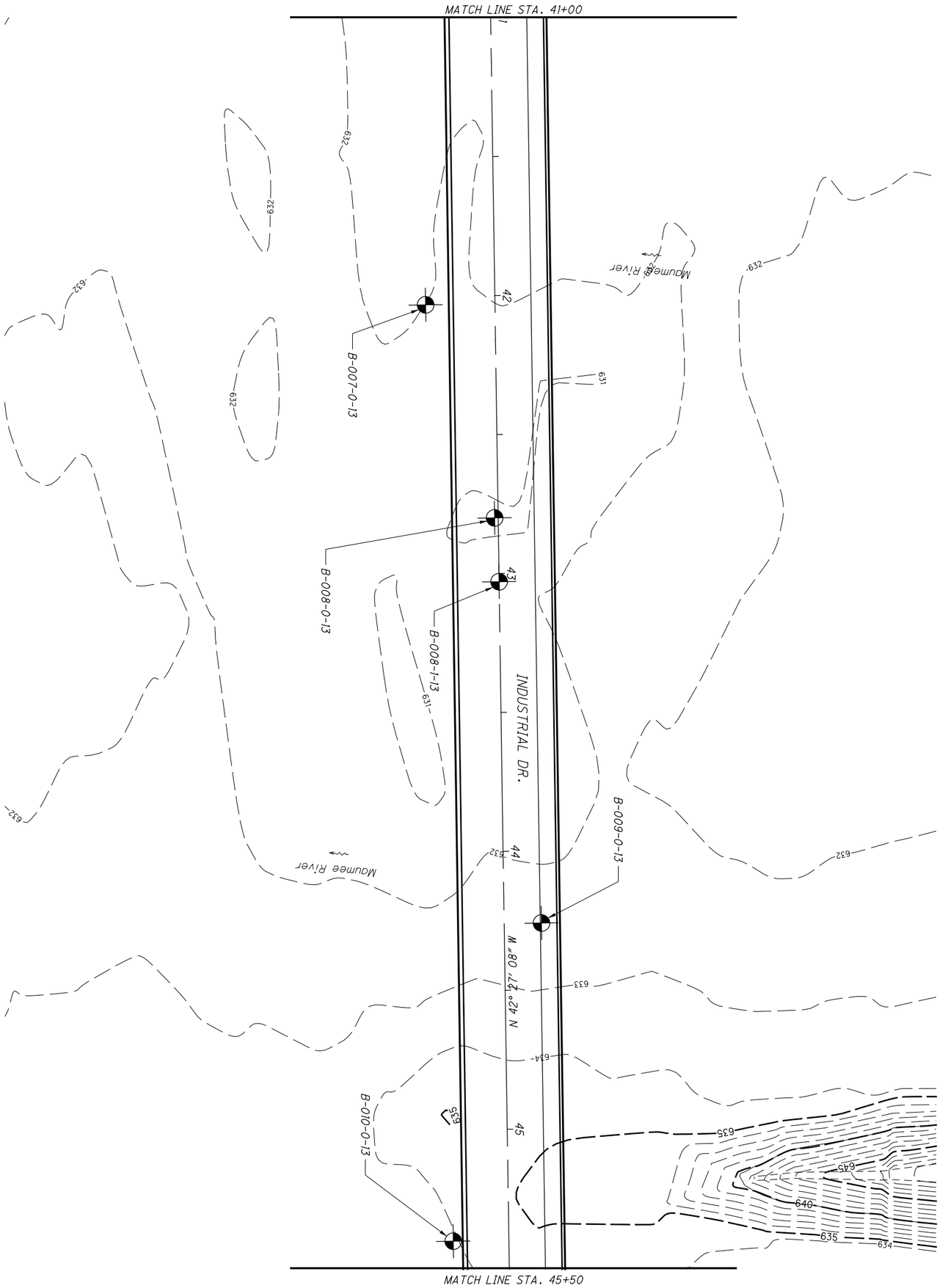


10/32	HEN-NEW BRIDGE	SOIL PROFILE -- INDUSTRIAL DR. STA. 36+50.00 TO STA. 41+00.00	DRAWN SVJ CHECKED JLS	0 20 10 40 HORIZONTAL SCALE IN FEET



11/32	HEN-NEW BRIDGE	SOIL PROFILE - INDUSTRIAL DR. STA. 41+00.00 TO STA. 45+50.00	DRAWN SVJ CHECKED JLS	0 10 20 40 HORIZONTAL SCALE IN FEET	

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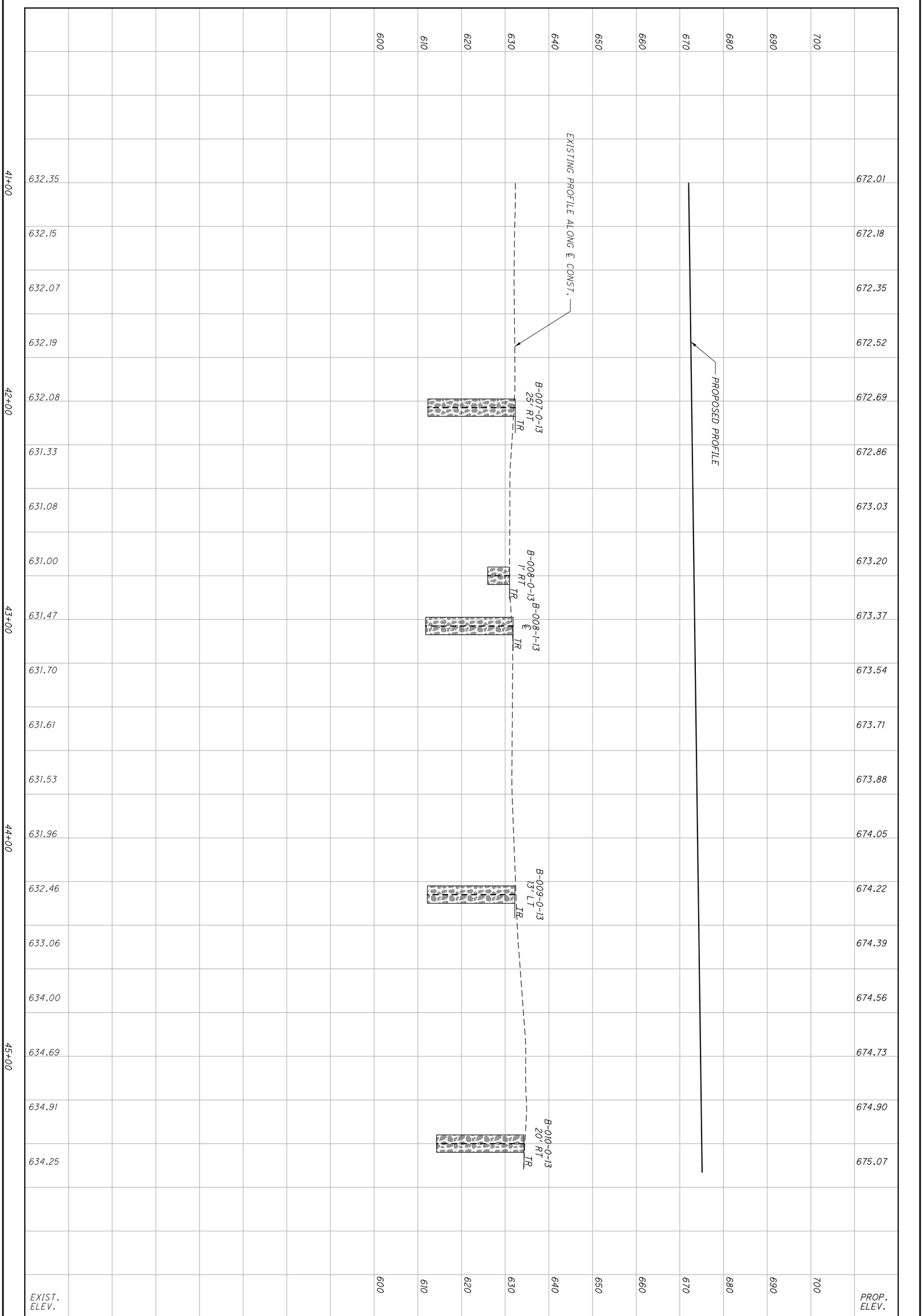

12/32	HEN-NEW BRIDGE	SOIL PROFILE -- INDUSTRIAL DR. STA. 41+00.00 TO STA. 45+50.00	DRAWN SVJ CHECKED JLS	0 20 10 40 HORIZONTAL SCALE IN FEET

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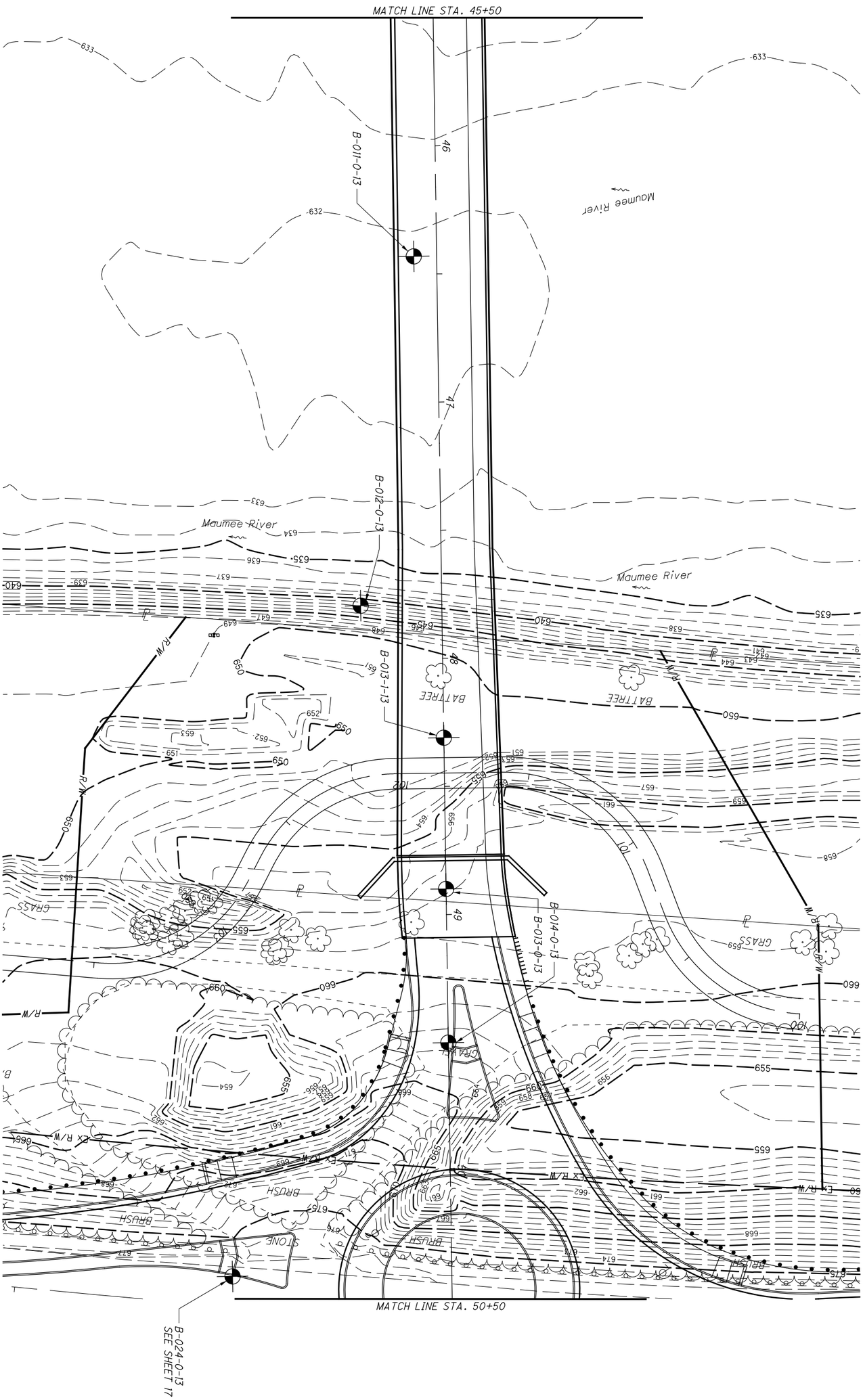

13/32	HEN-NEW BRIDGE	SOIL PROFILE - INDUSTRIAL DR. STA. 45+50.00 TO STA. 50+50.00	DRAWN SVJ CHECKED JLS	0 10 20 40 HORIZONTAL SCALE IN FEET

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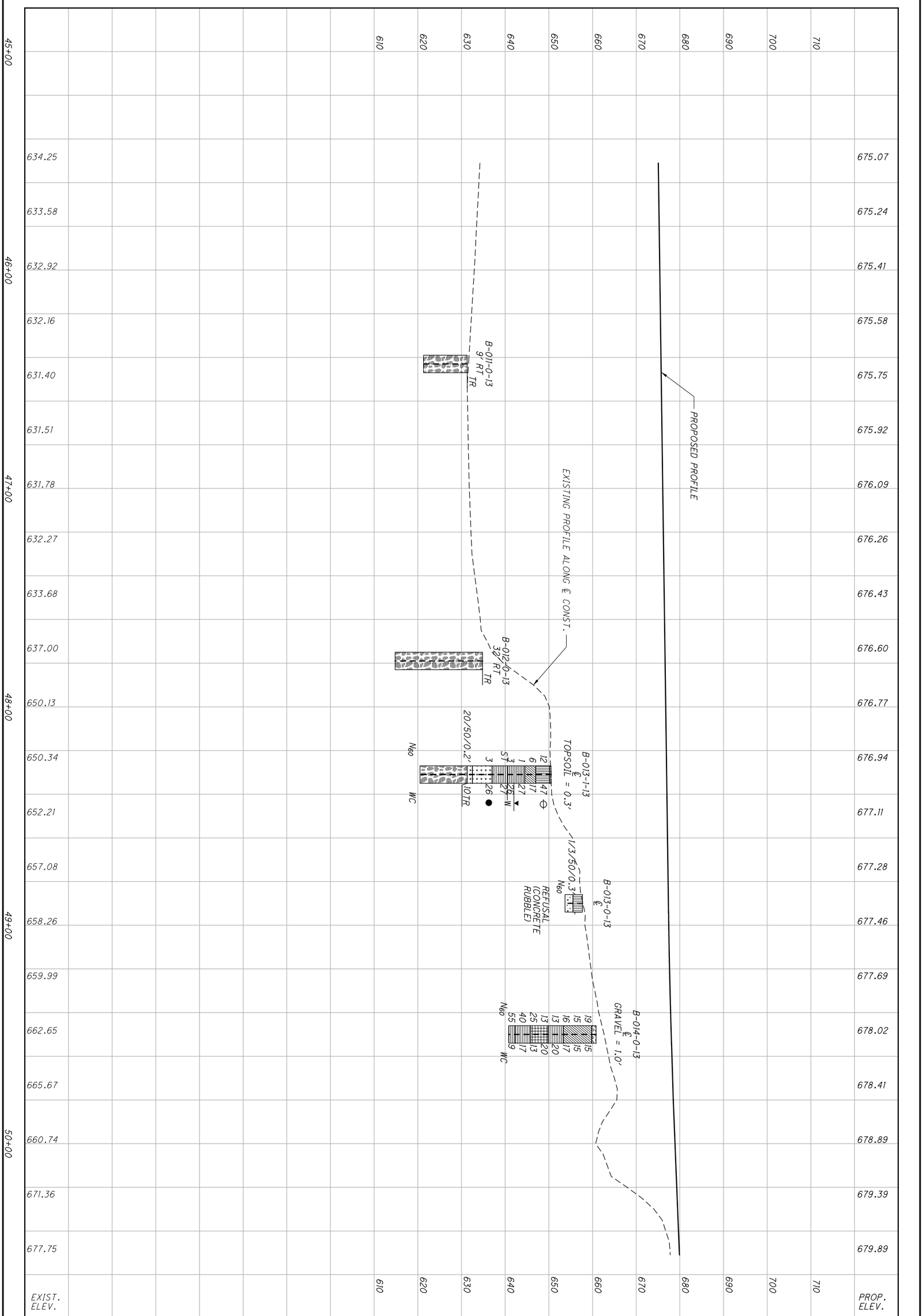

14/32	HEN-NEW BRIDGE	SOIL PROFILE - INDUSTRIAL DR. STA. 45+50.00 TO STA. 50+50.00	DRAWN SVJ CHECKED JLS	0 20 10 40 HORIZONTAL SCALE IN FEET

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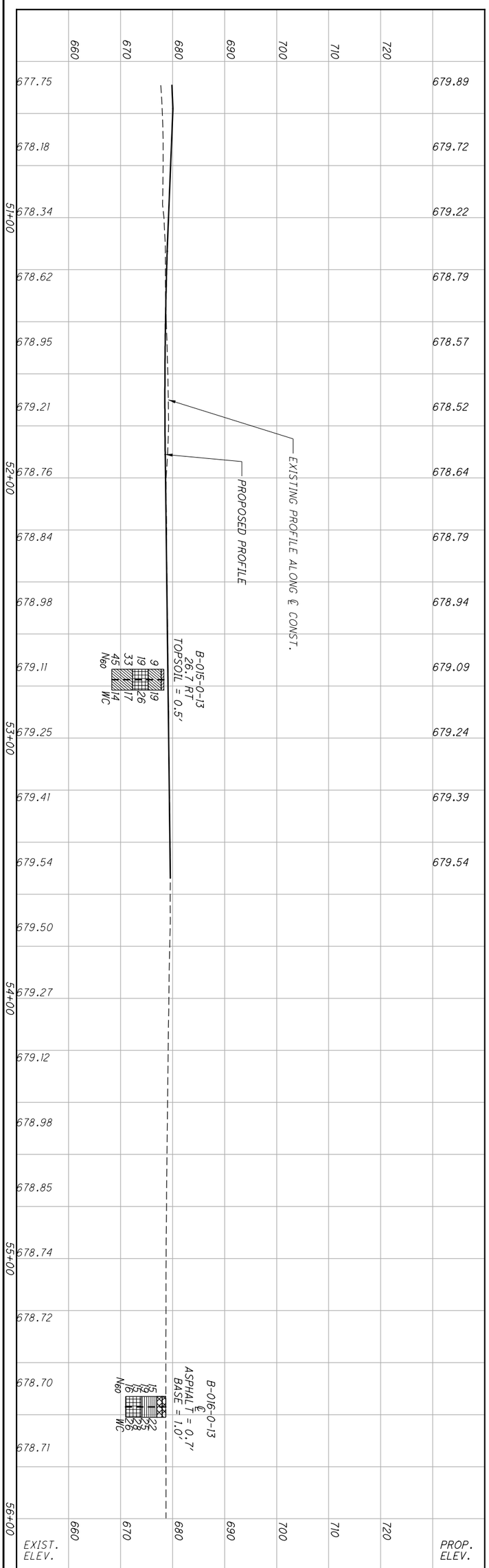

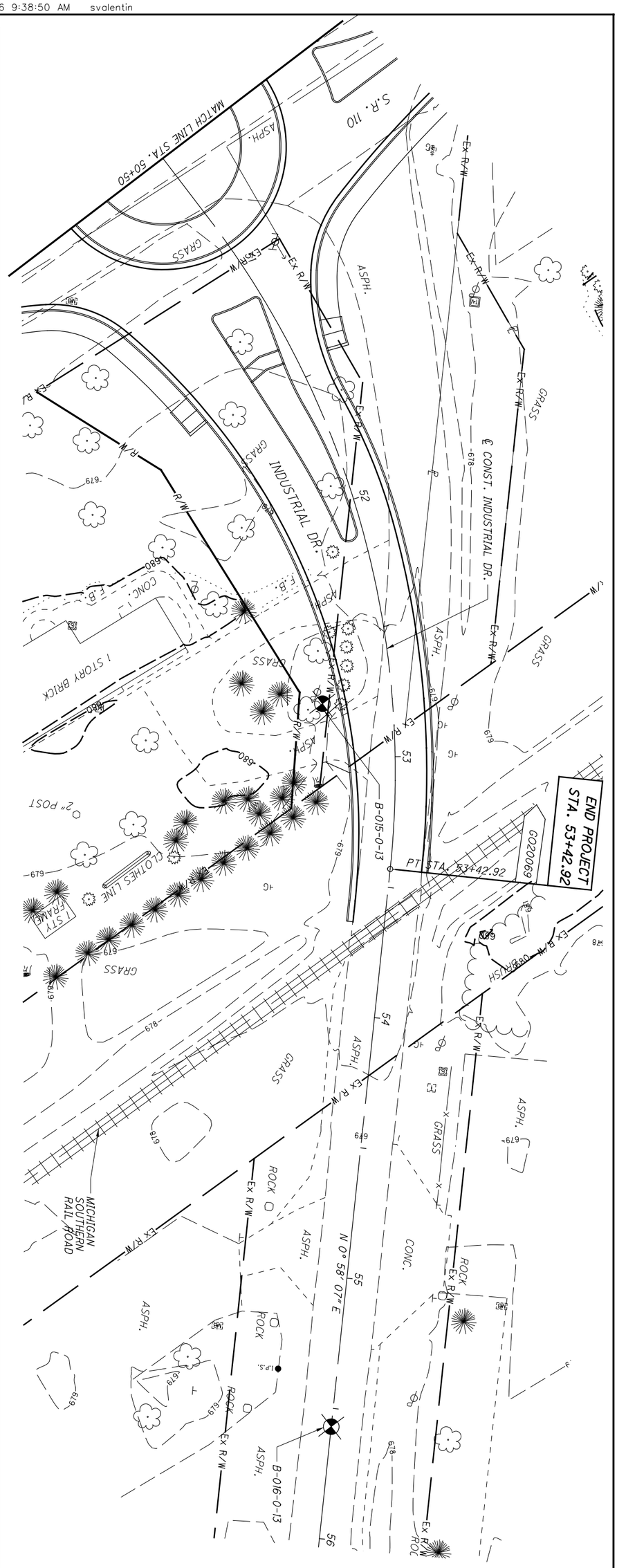

	15/32	HEN-NEW BRIDGE	SOIL PROFILE -- INDUSTRIAL DR. STA. 50+50.00 TO STA. 56+00.00	DRAWN SVJ CHECKED JLS	0 20 10 40 HORIZONTAL SCALE IN FEET

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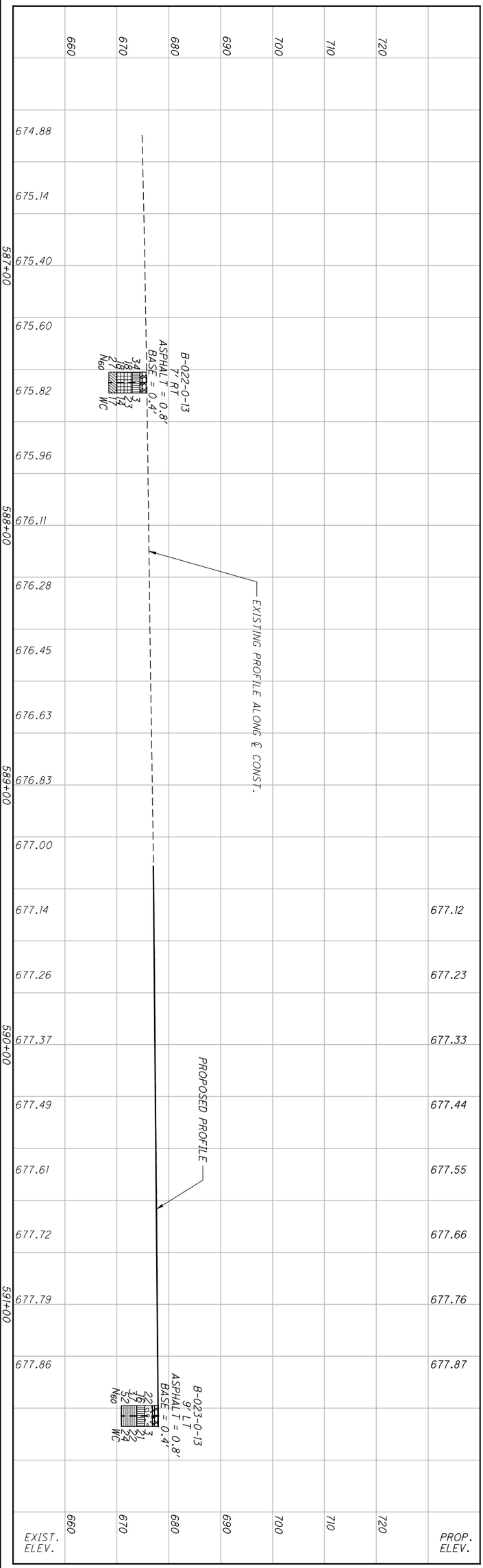

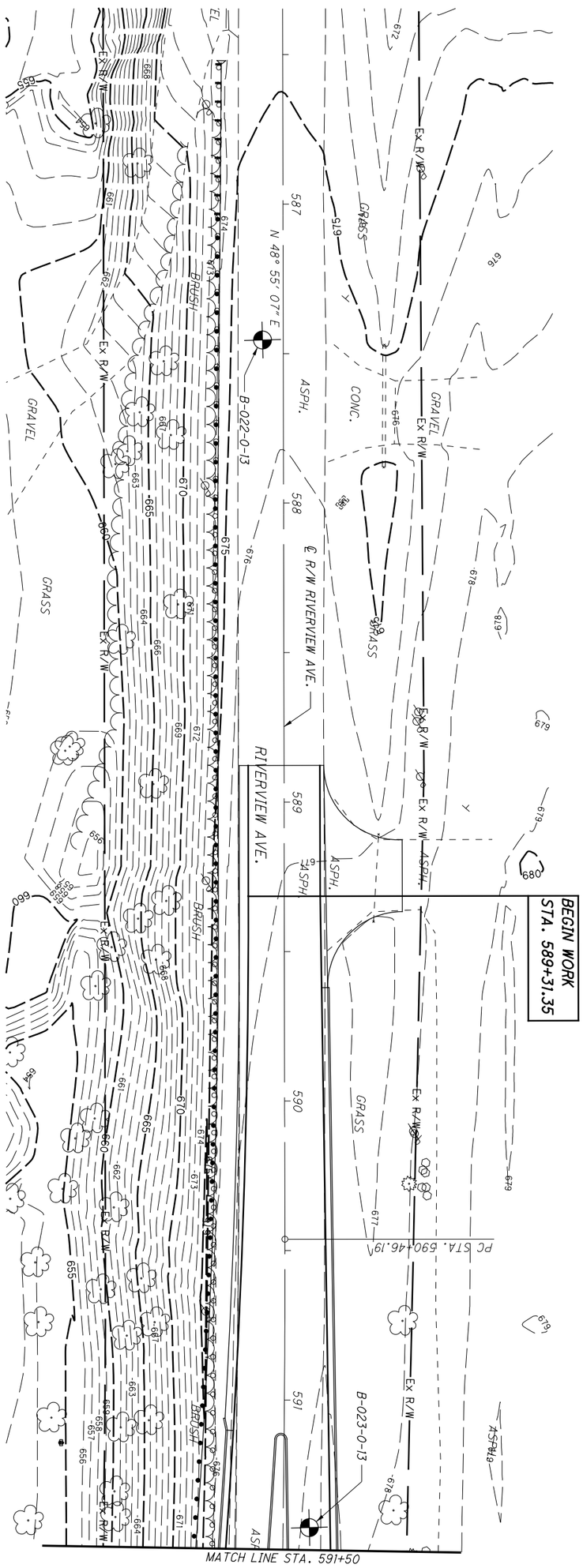

	16/32	HEN-NEW BRIDGE	SOIL PROFILE - RIVERVIEW AVE. STA. 586+50.00 TO STA. 591+50.00	DRAWN SVJ CHECKED JLS	0 20 10 40 HORIZONTAL SCALE IN FEET

HORIZONTAL SCALE IN FEET
0 10 20 40

DRAWN SVJ
CHECKED JLS

SOIL PROFILE - RIVERVIEW AVE.
STA. 591+50.00 TO STA. 596+50.00

HEN-NEW BRIDGE

17 / 32

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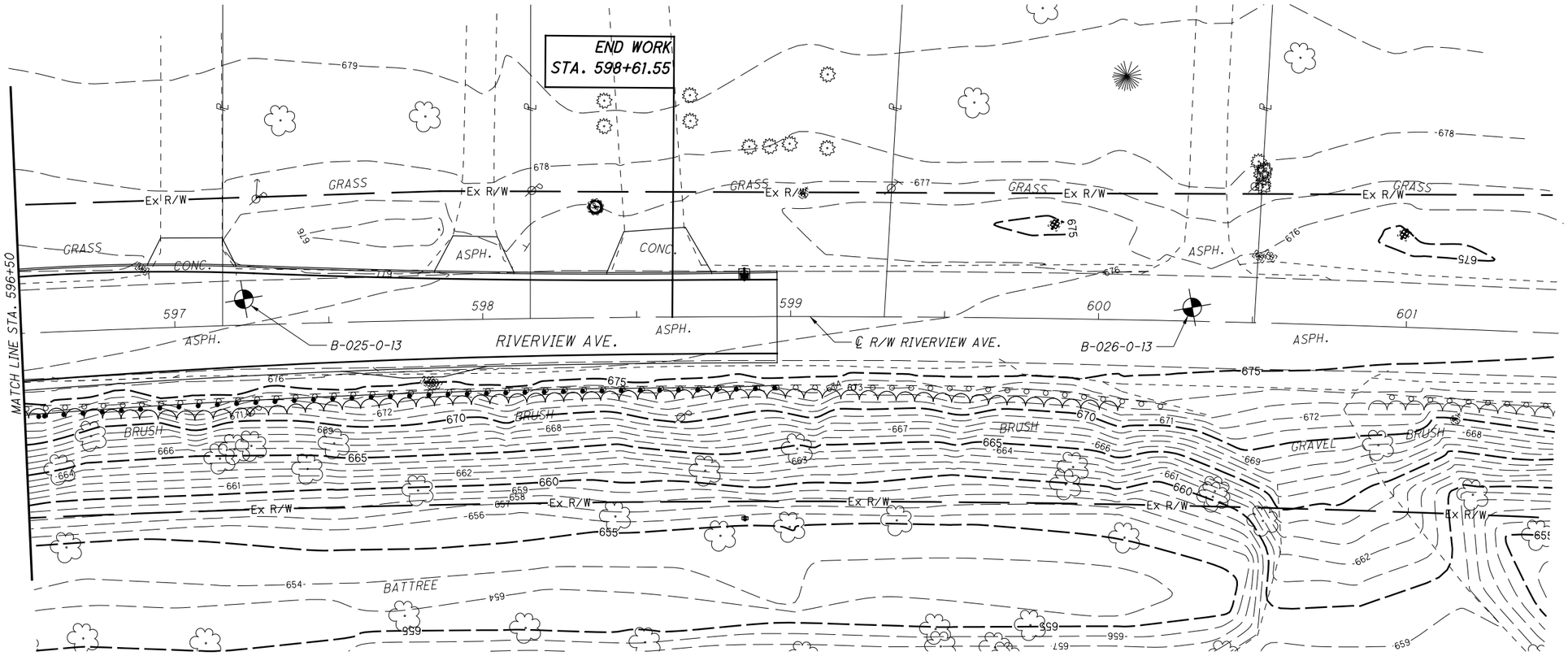

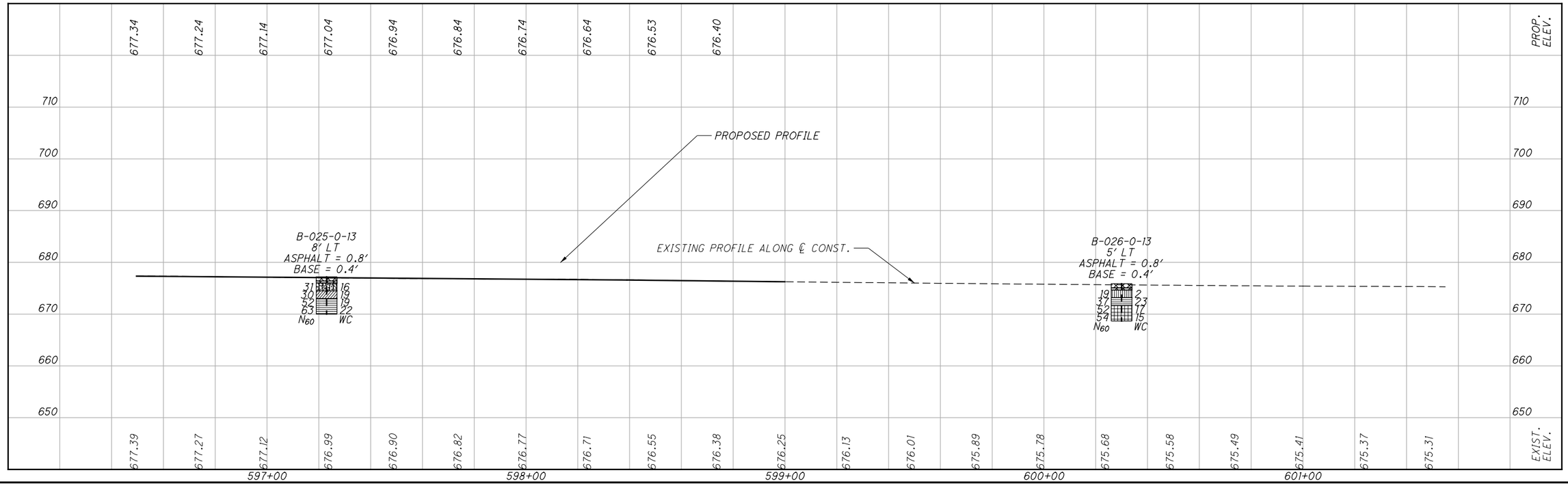

HORIZONTAL SCALE IN FEET
0 10 20 40

DRAWN SVJ
CHECKED JLS

SOIL PROFILE - RIVERVIEW AVE.
STA. 596+50 TO STA. 601+50.00

HEN-NEW BRIDGE

18 / 32

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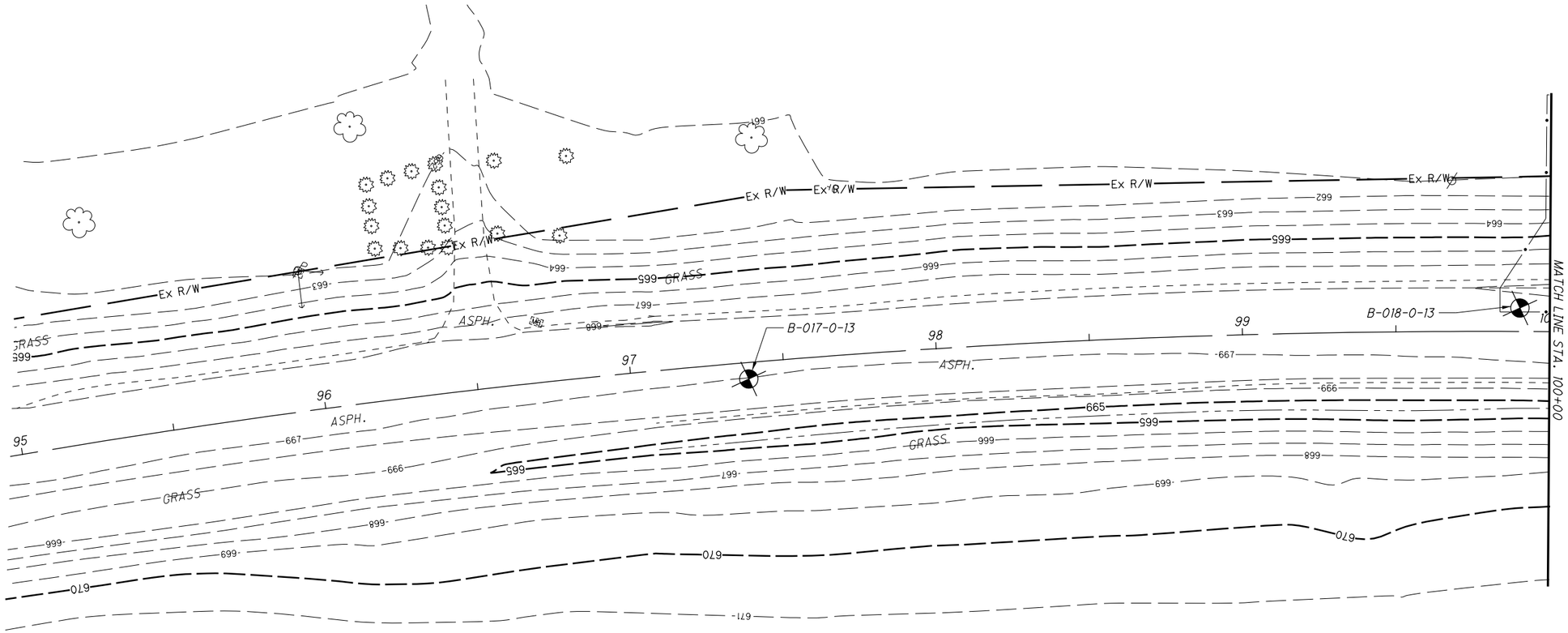

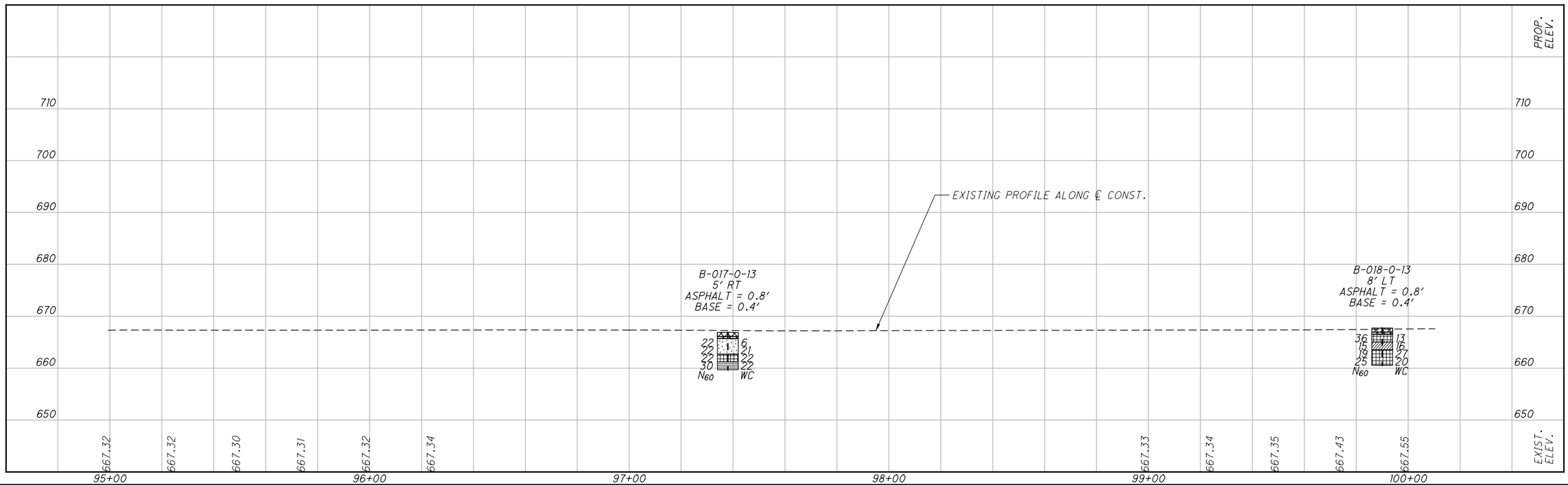

SOIL PROFILE - S.R.110
STA. 95+00.00 TO STA. 100+00.00

HEN-NEW BRIDGE

19/32

HORIZONTAL SCALE IN FEET
0 10 20 40

DRAWN SVJ
CHECKED JLS

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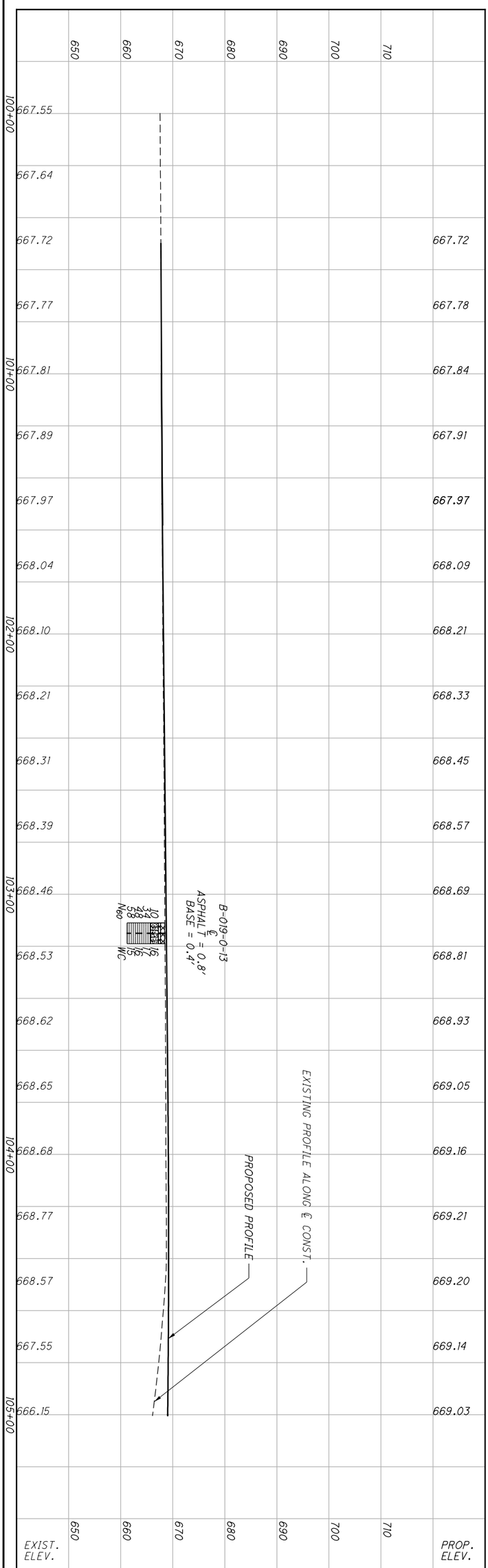
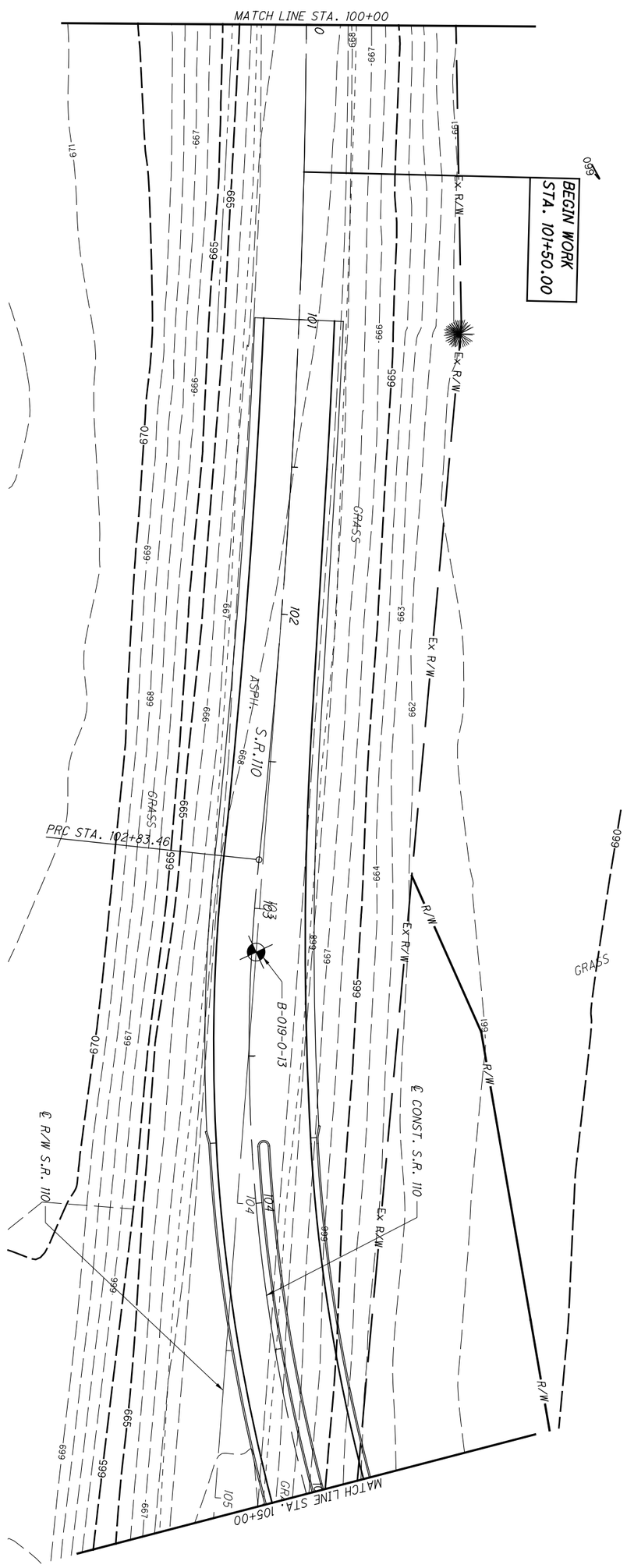
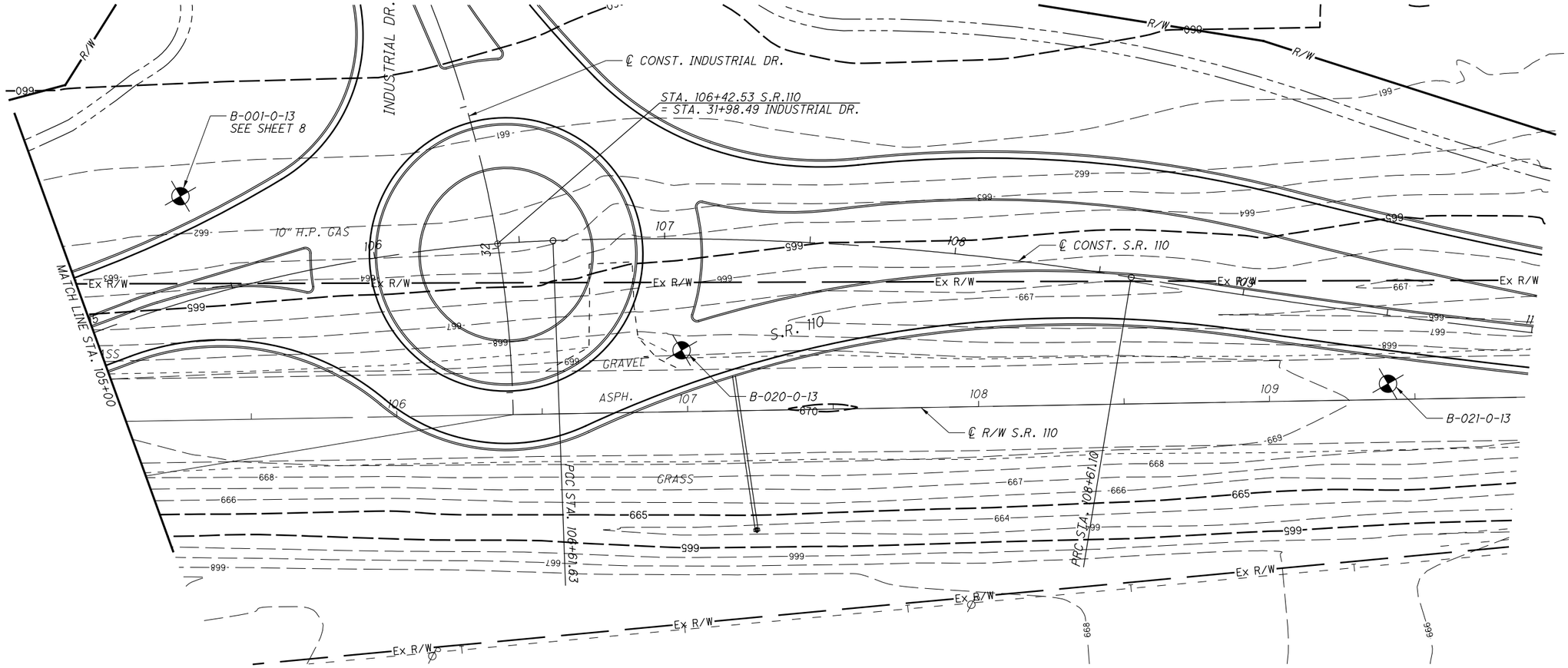
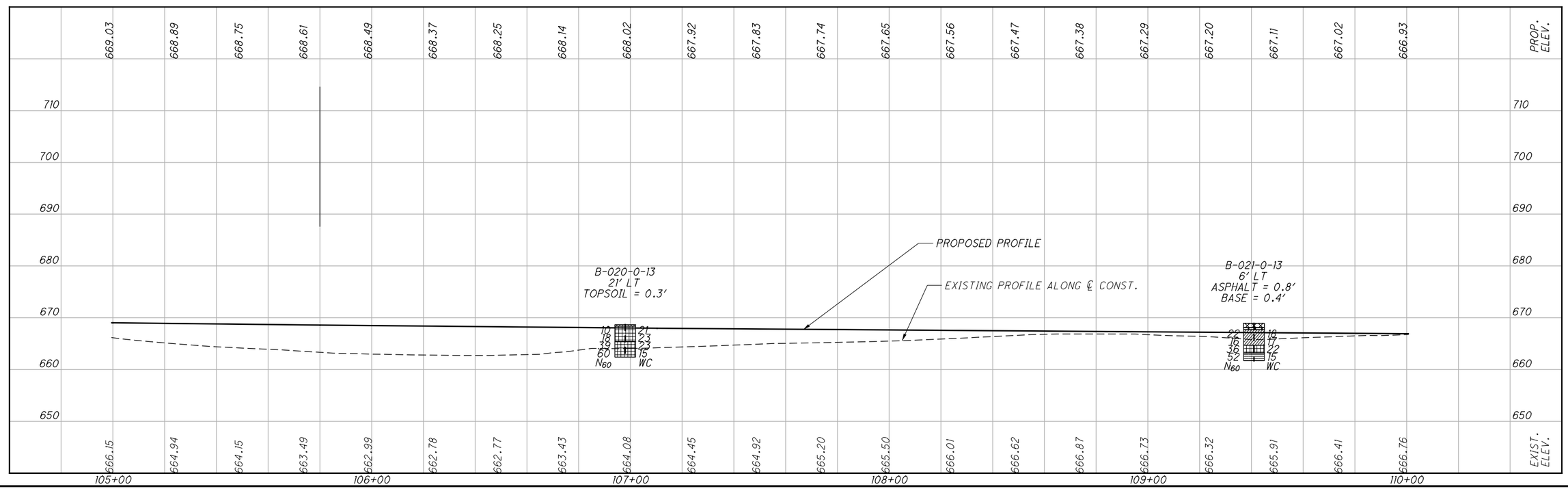




20/32	HEN-NEW BRIDGE	SOIL PROFILE - S.R.110 STA. 100+00.00 TO STA. 105+00.00	DRAWN SVJ CHECKED JLS	0 20 10 40 HORIZONTAL SCALE IN FEET	N





SOIL PROFILE - S.R.110
STA. 105+00.00 TO STA. 110+00.00

HEN-NEW BRIDGE

21/32

HORIZONTAL SCALE IN FEET
0 10 20 40

DRAWN SVJ
CHECKED JLS

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PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 39+50, CL	EXPLORATION ID B-005-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / M. WELKER	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: 4.25" HSA / NW	CALIBRATION DATE: 5/10/13	ELEVATION: 655.2 (MSL) EOB: 32.5 ft.	PAGE 1 OF 1
START: 4/23/14 END: 4/23/14	SAMPLING METHOD: SPT/ST/NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 636926.243 N, 1529055.188 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
TOPSOIL	654.4																	
Soft to medium stiff, brown **SANDY SILT**, some clay; damp			1 2 2	6	61	SS-1	1.50	0	1	25	45	29	25	16	9	17	A-4a (8)	
			1 2 1	4	94	SS-2	-	-	-	-	-	-	-	-	-	21	A-4a (V)	
			1 1 4	7	83	SS-3	-	-	-	-	-	-	-	-	-	18	A-4a (V)	
	646.7																	
Very stiff, brown **SANDY SILT**, some clay, little gravel; damp			3 5 6	16	39	SS-4	3.00	14	5	19	39	23	23	16	7	17	A-4a (5)	
	644.2																	
Very stiff, gray **SILTY CLAY**, trace sand and gravel; damp			4 8 10	27	17	SS-5	-	-	-	-	-	-	-	-	-	18	A-6b (V)	
	641.7																	
Hard, dark gray **SANDY SILT**, some clay, trace gravel; damp					89	ST-1	4.5+	9	10	16	36	29	21	13	8	16	A-4a (6)	
		W	12 18 26	65	78	SS-6	-	-	-	-	-	-	-	-	-	9	A-4a (V)	
			19 25 33	86	89	SS-7	-	-	-	-	-	-	-	-	-	8	A-4a (V)	
	633.2		12 50/6"	-	78	SS-8	-	-	-	-	-	-	-	-	-	10	A-4a (V)	
SHALE, dark brown to black, slightly to moderately weathered, thinly laminated, weak to moderately strong			8		72	RC-1											CORE	
			9		100	RC-2											CORE	
	622.7	EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 10/6/14 11:34 - W:\PROJECTS\PROJECTS F-J\H2530002\22984\GEOTECHNICAL\LABIUPDATED.GPJ

PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 40+85, 15 RT	EXPLORATION ID B-006-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 632.4 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/10/14 END: 6/10/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637037.666 N, 1528976.800 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 632.4	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark gray to gray, moderately weathered, slightly strong to strong		1 2 3 4 5	22		97	RC-1											CORE	
-Unconfined compressive strength (Qu) = 1,423 psi		6 7 8 9 10	45		100	RC-2											CORE	
Becomes severely weathered and weak																		
Becomes moderately weathered and strong		11 12 13 14 15	17		83	RC-3											CORE	
-Unconfined compressive strength (Qu) = 1,641 psi		16 17 18 19	62		100	RC-4											CORE	
	612.4	EOB 20																

NOTES: BORING PERFORMED ON BARGE, WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 639 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 10/6/14 11:34 - W:\PROJECTS\PROJECTS F-J\H2530002\22984\GEOTECHNICAL\LAB\UPDATED.GPJ

PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 42+03, 25 RT	EXPLORATION ID B-007-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 632.3 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/5/14 END: 6/5/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637131.112 N, 1528904.521 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 632.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark brown to gray, moderately weathered, slightly strong to strong		1																
		2	9		90	RC-1											CORE	
		3																
		4																
		5																
		6																
-Unconfined compressive strength (Qu) = 4,446 psi		7	29		83	RC-2											CORE	
		8																
		9																
		10																
		11																
		12	42		48	RC-3											CORE	
		13																
		14																
		15																
		16																
		17	43		80	RC-4											CORE	
		18																
		19																
	612.3	EOB 20																

NOTES: BORING PERFORMED ON BARGE. WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 639 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 10/6/14 11:34 - W:\PROJECTS\PROJECTS F-J\H2530002\22984\GEOTECHNICAL\LAB\UPDATED.GPJ

PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 42+80, 1 RT	EXPLORATION ID B-008-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 631.0 (MSL) EOB: 5.0 ft.	PAGE 1 OF 1
START: 6/4/14 END: 6/4/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637188.193 N, 1528818.266 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark gray-brown, moderately weathered, slightly strong to strong	631.0	1 2 3 4	11		100	RC-1											CORE	
	626.0	EOB 5																

NOTES: BORING PERFORMED ON BARGE, WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 638 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

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PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 43+03, CL	EXPLORATION ID B-008-1-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 631.8 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/12/14 END: 6/12/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637171.773 N, 1528835.231 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark gray-brown, moderately weathered, strong	631.8	1	0		100	RC-1											CORE	
Becomes highly weathered and slightly strong Becomes severly weathered and weak -Unconfined compressive strength (Qu) = 4,862 psi		5	35		83	RC-2											CORE	
		10	0		43	RC-3											CORE	
		15	0		0	RC-4											CORE	
	611.8	EOB 20																

NOTES: BORING PERFORMED ON BARGE, WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 639 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 44+26, 13 LT	EXPLORATION ID B-009-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 632.2 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/11/14 END: 6/11/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637269.805 N, 1528725.628 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 632.2	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark gray to gray, moderately weathered, weak to strong		1																
		2	23		95	RC-1											CORE	
		3																
		4																
		5																
		6																
		7	37		100	RC-2											CORE	
		8																
		9																
		10																
		11																
		12	40		100	RC-3											CORE	
		13																
		14																
		15																
		16																
		17	65		100	RC-4											CORE	
-Unconfined compressive strength (Qu) = 1,451 psi		18																
		19																
	612.2	EOB 20																

NOTES: BORING PERFORMED ON BARGE, WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 640 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

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PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 45+40, 20 RT	EXPLORATION ID B-010-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 634.3 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/6/14 END: 6/6/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637376.638 N, 1528673.227 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark gray to gray, moderately to severely weathered, weak to strong	634.3	1	7		100	RC-1											CORE	
		2																
		3																
		4																
		5																
-Unconfined compressive strength (Qu) = 7,676 psi		6	10		97	RC-2											CORE	
		7																
		8																
		9																
		10																
		11	23		100	RC-3											CORE	
		12																
		13																
		14																
		15																
		16	45		98	RC-4											CORE	
		17																
		18																
		19																
	614.3	EOB 20																

NOTES: BORING PERFORMED ON BARGE, WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 640 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

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PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 46+43, 9 RT	EXPLORATION ID B-011-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 631.3 (MSL) EOB: 10.0 ft.	PAGE 1 OF 1
START: 6/6/14 END: 6/6/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637445.066 N, 1528595.585 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 631.3	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark brown-gray, moderately to highly weathered, strong to weak		1																
		2																
-Unconfined compressive strength (Qu) = 4,644 psi		3	27		100	RC-1											CORE	
		4																
		5																
		6																
		7	17		100	RC-2											CORE	
	621.3	8																
	EOB	9																
		10																

NOTES: BORING PERFORMED ON BARGE, WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 640 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

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PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 47+79, 32 RT	EXPLORATION ID B-012-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / N. BREIJAK	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: NW	CALIBRATION DATE: 5/10/13	ELEVATION: 634.8 (MSL) EOB: 20.0 ft.	PAGE 1 OF 1
START: 6/7/14 END: 6/7/14	SAMPLING METHOD: NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637560.130 N, 1528521.160 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 634.8	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
SHALE, dark brown-dark gray, moderately weathered, weak to strong		1																
		2																
-Unconfined compressive strength (Qu) = 5,539 psi		3	13		100	RC-1											CORE	
		4																
		5																
		6																
		7	18		100	RC-2											CORE	
		8																
		9																
		10																
Unconfined compressive strength (Qu) = 6,652 psi		11																
		12	40		92	RC-3											CORE	
		13																
		14																
		15																
		16																
		17	8		83	RC-4											CORE	
		18																
		19																
	614.8	EOB 20																

NOTES: BORING PERFORMED ON BARGE, WATER LEVEL IN RIVER ESTIMATED AT ELEVATION 641 FEET DURING DRILLING

ABANDONMENT METHODS, MATERIALS, QUANTITIES: NATURAL COLLAPSE

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 10/6/14 11:34 - W:\PROJECTS\PROJECTS F-J\H2530002\22984\GEOTECHNICAL\LABUPDATED.GPJ

PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 48+90, CL	EXPLORATION ID B-013-0-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / J. FAITEL	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: 4.25" HSA	CALIBRATION DATE: 5/10/13	ELEVATION: 657.7 (MSL) EOB: 4.0 ft.	PAGE 1 OF 1
START: 4/22/14 END: 4/22/14	SAMPLING METHOD: SPT	ENERGY RATIO (%): 89.3	COORD: 637621.240 N, 1528422.325 E	

MATERIAL DESCRIPTION AND NOTES	ELEV. 657.7	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
Very loose, brown **SANDY SILT**, little gravel, trace clay; damp (FILL)	655.5	1	1 3 50/4"	-	38	SS-1	-	-	-	-	-	-	-	-	-	-	A-4a (V)	
CONCRETE RUBBLE	653.7	2 3 EOB 4																

NOTES: REFUSAL IN CONCRETE RUBBLE AT 4'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BENTONITE CHIPS; SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 10/6/14 11:34 - W:\PROJECTS\PROJECTS F-J\H2530002\22984\GEOTECHNICAL\LABUPDATED.GPJ

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PROJECT: HEN-IND-0000	DRILLING FIRM / OPERATOR: MSG / R. SCHIPPERT	DRILL RIG: GEOPROBE 7822DT	STATION / OFFSET: 48+31, CL	EXPLORATION ID B-013-1-13
TYPE: NEW ALIGNMENT	SAMPLING FIRM / LOGGER: MSG / J. FAITEL	HAMMER: AUTOMATIC HAMMER	ALIGNMENT: INDUSTRIAL DR.	
PID: 22984 BR ID: N/A	DRILLING METHOD: 4.25" HSA / NW	CALIBRATION DATE: 5/10/13	ELEVATION: 650.5 (MSL) EOB: 30.0 ft.	PAGE 1 OF 1
START: 4/22/14 END: 4/22/14	SAMPLING METHOD: SPT/ST/NW CORE BARREL	ENERGY RATIO (%): 89.3	COORD: 637577.840 N, 1528462.050 E	

MATERIAL DESCRIPTION AND NOTES	ELEV.	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	INST.
TOPSOIL	650.2																	
Loose, brown **SANDY SILT**, some clay, trace organics; damp			2 4 4	12	100	SS-1	-	-	-	-	-	-	-	-	-	47	A-4a (V)	
	647.0																	
Medium stiff, dark brown **SILT AND CLAY**, some sand; damp			2 2 2	6	39	SS-2	1.25	0	1	28	41	30	30	16	14	17	A-6a (9)	
	644.5																	
Very soft to soft, dark brown **SILTY CLAY**, trace sand; moist			0 0 1	1	100	SS-3	0.00	-	-	-	-	-	-	-	-	27	A-6b (V)	
		W	0 0 2	3	100	SS-4	1.00	-	-	-	-	-	-	-	-	26	A-6b (V)	
	640.5																	
Soft to medium stiff, brown mottled with gray **SILTY CLAY**, trace sand; moist					100	ST-1	0.50	0	0	8	56	36	32	16	16	27	A-6b (10)	
	637.0																	
Soft, brown **SILT**, some clay and sand; wet			0 0 2	3	100	SS-5	0.25	0	0	22	53	25	25	15	10	26	A-4b (8)	
	632.5																	
Hard, brown **SILT**, some clay and sand; wet	631.3		20 50/2"	-	100	SS-6	-	-	-	-	-	-	-	-	-	10	A-4b (V)	
SHALE, dark brown to brown, slightly to moderately weathered, thinly laminated, weak to moderately strong			43		95	RC-1											CORE	
			47		100	RC-2											CORE	
	620.5	EOB																

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: 1 BAG BENTONITE CHIPS; SOIL CUTTINGS

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