STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

MAH-680-(5.41)(5.60)

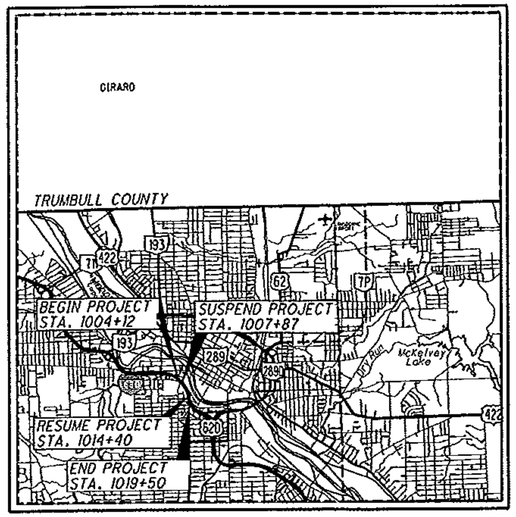
PART 2

CITY OF YOUNGSTOWN

MAHONING COUNTY

(FOR PART 1, SEE MAH-680-3.25)

(FOR PART 3, SEE MAH-680-2.06)



LOCATION MAP

LATITUDE: 041°5'46" LONGITUDE: -80°39'24.75"

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

CURRENT ADT (2020)	50,000
DESIGN YEAR ADT (2040)	50,000
DESIGN HOURLY VOLUME (2040)	4,500
DIRECTIONAL DISTRIBUTION	53%
TRUCKS (24 HOUR B&C)	7%
DESIGN SPEED	50
LEGAL SPEED	50
DESIGN FUNCTIONAL CLASSIFICATION:	
URBAN INTERSTATE	
NHS PROJECT	YES

DESIGN EXCEPTIONS

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

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

PLAN PREPARED BY:

E.L. ROBINSON ENGINEERING

1668 West 6th Street • Cleveland, Ohio 44113 • 216-452-1890
www.elrobinsonengineering.com

ENGINEERS SEAL:

FOR STRUCTURES 20' & OVER

STATE OF OHIO
JAMES A. O'LEARY JR.
E-59053
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 11/10/2017

ENGINEERS SEAL:

FOR ENTIRE PLAN EXCEPT STRUCTURES 20' & OVER AND LIGHTING

STATE OF OHIO
JASON THOMAS WISE
E-72224
REGISTERED PROFESSIONAL ENGINEER

SIGNED:
DATE: 11/10/2017

INDEX OF SHEETS:

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TYPICAL SECTIONS	4-8
GENERAL NOTES	9-10
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PLAN & PROFILE (MAH-680-0575)	26
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RIGHT OF WAY	45-48
SOIL PROFILES	

STANDARD CONSTRUCTION DRAWINGS					SUPPLEMENTAL SPECIFICATIONS	SPECIAL PROVISIONS

PROJECT DESCRIPTION

REMOVAL AND REPLACEMENT OF APPROACH SLABS AND FULL DEPTH REPLACEMENT OF APPROACH PAVEMENT ON MAH-680-0555. REMOVAL OF THE EXISTING MAH-680-0575 STRUCTURE AND CONSTRUCTION OF PROPOSED PAVEMENT ON PROPOSED EMBANKMENT.

PROJECT EARTH DISTURBED AREA:	2.45 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	1.42 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	4.90 ACRES

LIMITED ACCESS

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

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.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEETS 14 TO 17

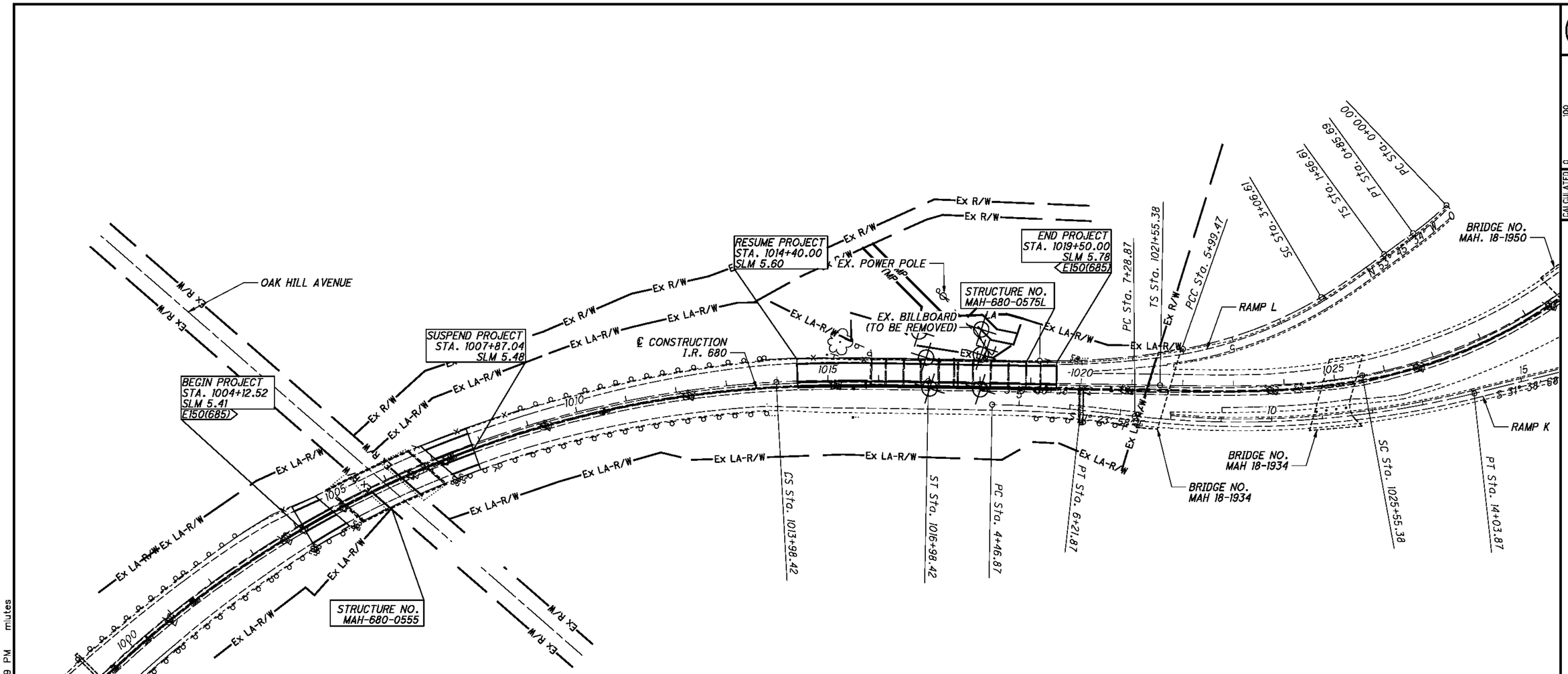
APPROVED
DATE 12/15/17 DISTRICT DEPUTY DIRECTOR

APPROVED
DATE 12-11-18 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.	E150(685)
PID NO.	96637
CONSTRUCTION PROJECT NO.	
RAILROAD INVOLVEMENT	NONE
	MAH-680-(5.41/ 5.60)
	1/48

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2017.11.28_MAH-680-(5.41)(5.60)_Final Tracings



CURVE DATA

P.I.Sta. 1028+63.78
Δ = 53° 44′ 53″ (LT)
Dc = 5° 44′ 51″
R = 996.86′
Ls = 400.00′
θs = 11° 29′ 43″
LT = 267.23′
ST = 133.85′
x = 398.39′
y = 26.67′
k = 199.73′
p = 6.68′
Δc = 30° 45′ 28″ (LT)
Lc = 535.14′
Ts = 708.28′
Es = 128.18′
C = 528.73′
C1 = C2 = 399.28′
C.B.1 = S 20° 27′ 55″ E
C.B. = S 43° 30′ 32″ E
C.B.2 = N 66° 33′ 09″ W

RAMP L

P.I.Sta. 3+04.01
Δ = 46° 00′ 01″ (LT)
Dc = 8° 00′ 00″
R = 716.20′
T = 304.01′
L = 575.00′
E = 61.85′
C = 559.69′
C.B. = S 50° 47′ 00″ E

RAMP K

P.I.Sta. 5+31.95
Δ = 17° 36′ 01″ (LT)
Dc = 4° 00′ 00″
R = 1,432.39′
T = 221.75′
L = 440.01′
E = 17.06′
C = 438.28′
C.B. = S 25° 09′ 04″ E

P.I.Sta. 13+10.01
Δ = 32° 19′ 09″ (RT)
Dc = 10° 25′ 03″
R = 550.00′
T = 159.37′
L = 310.24′
E = 22.62′
C = 306.15′
C.B. = S 17° 47′ 28″ E

P.I.Sta. 1004+22.10
Δ = 74° 52′ 17″ (RT)
Dc = 2° 44′ 59″
R = 2,083.60′
Ls = 300.00′
θs = 4° 07′ 29″
LT = 200.05′
ST = 100.05′
x = 299.84′
y = 7.20′
k = 149.97′
p = 1.80′
Δc = 66° 37′ 18″ (RT)
Lc = 2,422.74′
Ts = 1,746.44′
Es = 542.73′
C = 2,288.55′
C1 = C2 = 299.93′
C.B.1 = N 89° 52′ 07″ E
C.B. = S 54° 04′ 14″ E
C.B.2 = N 18° 00′ 35″ W

HORIZONTAL SCALE IN FEET
0 50 100 200
CALCULATED JTW
CHECKED MJC

SCHEMATIC PLAN

MAH-680-(5.41/5.60)

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POINT NUMBER	GROUND COORDINATES		ELEV.	FEATURE	STATION	OFFSET	REMARKS
	NORTHING	EASTING					
CALC7	527184.3688	2476066.4210	869.07	MONBOX	1004+50.83	4.90	
MN24	527184.3688	2476066.4210	869.06	MONBOX	1004+50.83	4.90	
MN524	527184.3688	2476066.4210	869.07	IPIN	1004+50.83	4.90	
GP21	527210.1250	2476103.5710	872.30	MAGS	1004+60.12	-39.33	
GP22	527141.8646	2476062.6340	868.43	MAGS	1004+77.65	38.31	
GP24	527187.3190	2476245.8330	846.74	MAGS	1005+72.48	-123.79	
GP25	527009.0620	2476117.4540	857.01	MAGS	1006+15.41	91.59	
GP26	527039.8970	2476183.0710	853.84	MAGS	1006+36.98	22.19	
GP20	527026.6150	2476274.5580	880.10	MAGS	1007+06.49	-38.46	
GP23	526948.1057	2476239.4100	877.29	MAGS	1007+45.04	38.43	
CALC8	526759.9445	2476413.0910	886.99	MONBOX	1010+01.73	4.90	
MN25	526759.9445	2476413.0910	887.01	MONBOX	1010+01.73	4.90	
MN525	526759.9445	2476413.0910	886.99	IPIN	1010+01.73	4.90	
CALC9	526405.0315	2476587.7640	900.03	MONBOX	1013+98.84	4.92	
MN26	526405.0315	2476587.7640	900.03	MONBOX	1013+98.84	4.92	
MN526	526405.0315	2476587.7640	900.03	IPIN	1013+98.84	4.92	
MN103	527038.3408	2478396.8490	859.26	MONBOX	1014+24.76	-1911.49	
GP2	526296.7370	2476683.5470	907.37	MAGS	1015+31.63	-49.95	
GP6	526276.6226	2476633.5950	905.51	MAGS	1015+35.41	3.77	
GP3	526258.3770	2476587.5890	903.96	MAGS	1015+38.72	53.15	
GP8	526226.3284	2476719.2710	894.96	IPINS	1016+08.62	-62.97	
MN9	526208.0284	2476723.7800	891.76	NAIL	1016+27.29	-61.95	
MN10	526170.7943	2476738.2140	886.00	NAIL	1016+66.90	-65.03	
CALC10	526120.2467	2476680.2920	910.11	MONBOX	1016+98.70	4.94	
MN27	526120.2467	2476680.2920	910.10	MONBOX	1016+98.70	4.94	
MN527	526120.2467	2476680.2920	910.11	IPIN	1016+98.70	4.94	
GP7	526132.0936	2476761.1610	888.32	IPINS	1017+10.50	-75.93	
MN11	526113.6714	2476767.4810	885.08	NAIL	1017+29.96	-76.71	
MN12	526075.5222	2476770.0340	886.66	NAIL	1017+67.24	-68.24	
MN13	526043.4610	2476774.7050	889.12	NAIL	1017+99.30	-63.54	
MN14	526015.7105	2476790.9140	887.90	NAIL	1018+30.53	-71.12	
MN15	525981.0728	2476803.0330	891.40	NAIL	1018+67.19	-72.82	
MN16	525947.9236	2476802.3580	902.93	NAIL	1018+98.75	-62.68	
GP4	525912.3520	2476691.0600	917.35	MAGS	1019+00.98	54.14	
GP5	525909.2265	2476744.1780	918.33	MAGS	1019+19.18	4.14	
GP1	525910.3260	2476799.1900	918.10	MAGS	1019+33.87	-48.88	
BM1	527175.4246	2476007.4130	866.91		1004+12.99	51.46	OCSS (CANTILEVERE SIGN)
BM2	526301.2651	2476629.2720	926.57		1015+10.63	0.24	LIGHT POLE
BM3	526020.6412	2476715.6100	918.69		1018+04.25	-0.38	LIGHT POLE
BM4	525752.8320	2476795.1500	907.75		1020+83.62	0.07	LIGHT POLE

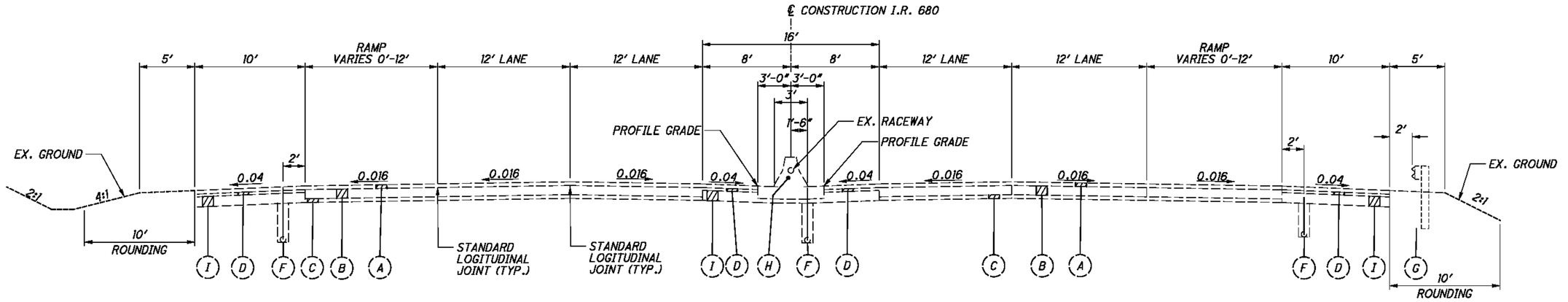
CALCULATED SWC
CHECKED JTW

SURVEY CONTROL

MAH-680-(5.41/5.60)

3
48

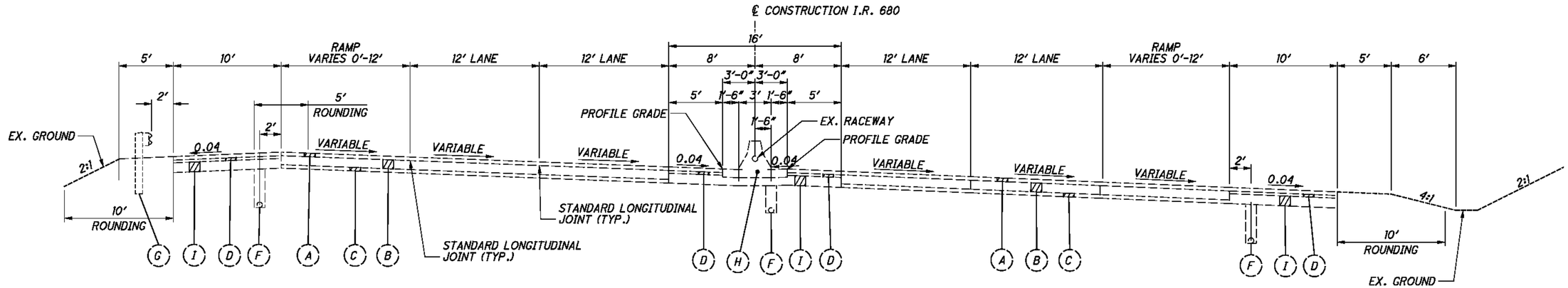
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EXISTING NORMAL SECTION - I.R. 680

LIMITING STATIONS

STA. 1019+18.75 TO STA. 1021+55.38



EXISTING SUPERELEVATED SECTION - I.R. 680

LIMITING STATIONS

STA. 1003+59.90 TO STA. 1005+07.88
STA. 1006+88.64 TO STA. 1015+83.75
STA. 1021+55.38 TO STA. 1034+91.44 (BK)

LEGEND: EXISTING

- (A) EX. 5" ASPHALT CONCRETE SURFACE
- (B) EX. 10" REINFORCED CONCRETE BASE
- (C) EX. SUB-BASE
- (D) EX. 3" WATERPROOF AGGREGATE BASE COURSE
- (E) EX. BRIDGE DECK
- (F) EX. 6" PIPE UNDERDRAIN
- (G) EX. GUARDRAIL
- (H) EX. TYPE B MODIFIED TYPE 3 CONCRETE BARRIER
- (I) EX. 8" AGGREGATE BASE
- (J) EX. 15" APPROACH SLAB
- (K) EX. BRIDGE PARAPET

LEGEND: PROPOSED

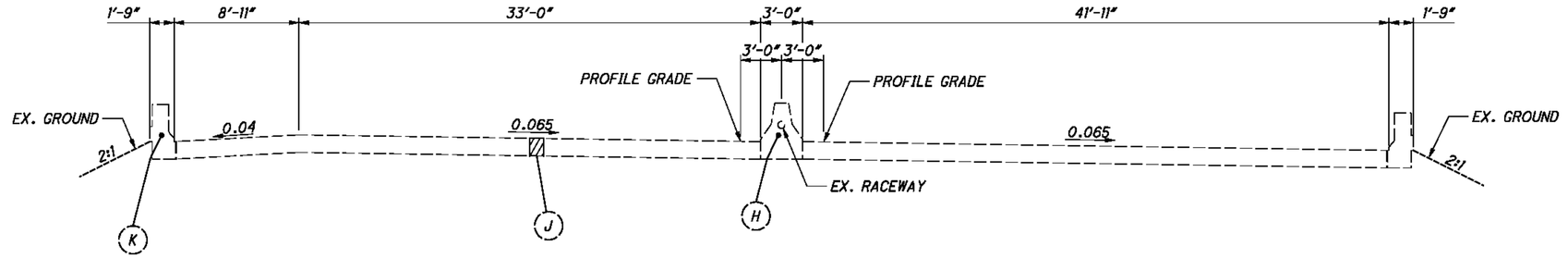
- (1) ITEM 442 1.5" ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN (PG64-22)
- (2) ITEM 407 NON-TRACKING TACK COAT
- (3) ITEM 442 3.5" ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448) (2 LIFTS)
- (4) ITEM 407 TACK COAT, 702.13
- (5) ITEM 305 10" CONCRETE BASE
- (6) ITEM 304 6" AGGREGATE BASE, AS PER PLAN
- (7) ITEM 204 PROOF ROLLING
- (8) ITEM 204 SUBGRADE COMPACTION
- (9) ITEM 659 SEEDING AND MULCHING
- (10) ITEM 605 6" SHALLOW PIPE UNDERDRAIN
- (11) ITEM 606 GUARDRAIL, TYPE MGS.
- (12) ITEM 622 CONCRETE BARRIER, SINGLE SLOPE, TYPE B1
- (13) ITEM 526 REINFORCED CONCRETE APPROACH SLAB (T=15')
- (14) ITEM 609 - CURB, TYPE 4C
- (15) ITEM 209 - LINEAR GRADING
- (16) ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (448), (UNDER GUARDRAIL)

MAH-680-(5.41/5.60)		
1	3/3/18	ADJUSTED PAVEMENT ITEMS
NO.	DATE	DESCRIPTION
ISSUE RECORD		

TYPICAL SECTIONS

MAH-680-(5.41/5.60)

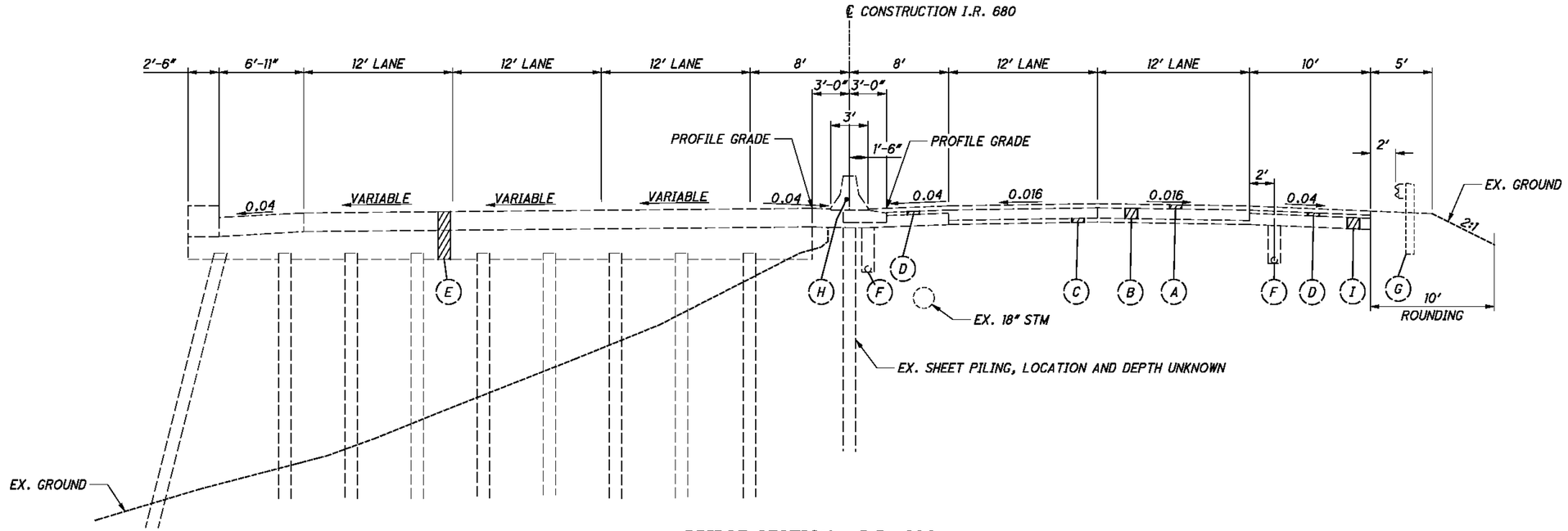
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APPROACH SLAB SECTION - I.R. 680

LIMITING STATIONS

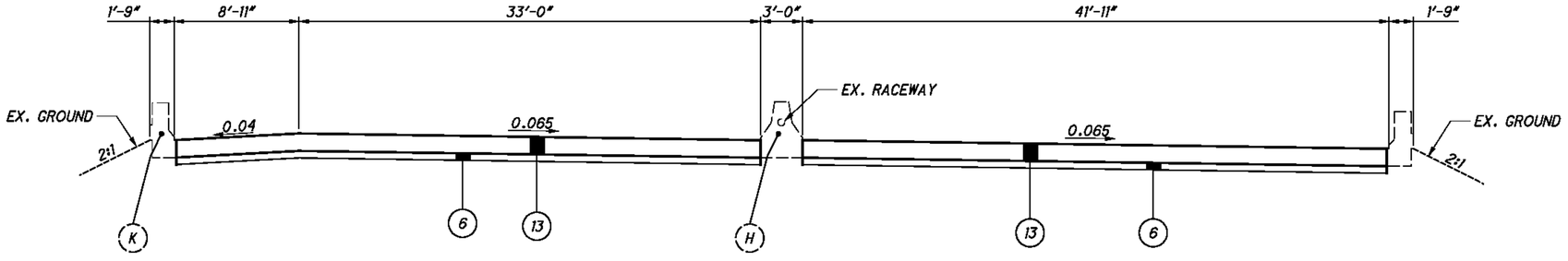
STA. 1004+81.94 TO STA. 1005+07.94
STA. 1006+88.08 TO STA. 1007+14.08



BRIDGE SECTION - I.R. 680

LIMITING STATIONS MAH-680-0575

STA. 1015+18.75 TO STA. 1019+18.75



PROPOSED APPROACH SLAB SECTION - I.R. 680

LIMITING STATIONS

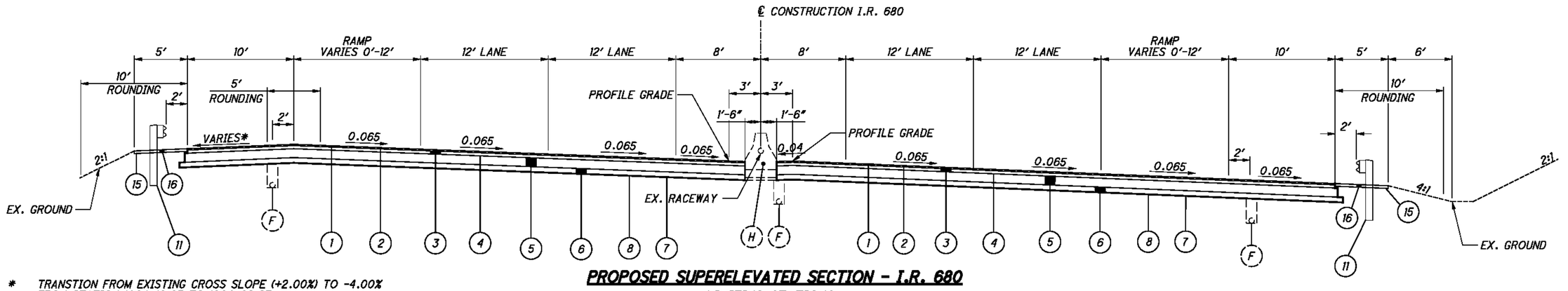
STA. 1004+82.94 TO STA. 1005+07.94
STA. 1006+88.08 TO STA. 1007+13.08

SEE SHEET 4 FOR LEGEND

TYPICAL SECTIONS

MAH-680-(5.41/5.60)

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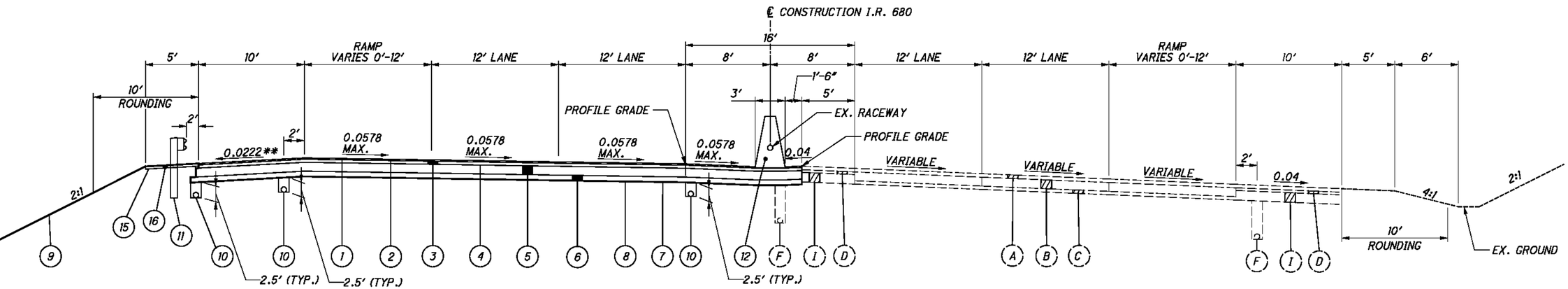


* TRANSTION FROM EXISTING CROSS SLOPE (+2.00%) TO -4.00% FROM STATION 1004+16.97 TO 1004+66.97
TRANSITION FROM -4.00% TO EXISTING CROSS SLOPE (-1.50%) FROM STATION 1006+91.54 TO 1007+85.66

PROPOSED SUPERELEVATED SECTION - I.R. 680

LIMITING STATIONS

STA. 1004+16.97 TO STA. 1004+82.94 = 65.97 FT
STA. 1007+13.08 TO STA. 1007+85.66 = 72.58 FT
TOTAL = 138.55 FT

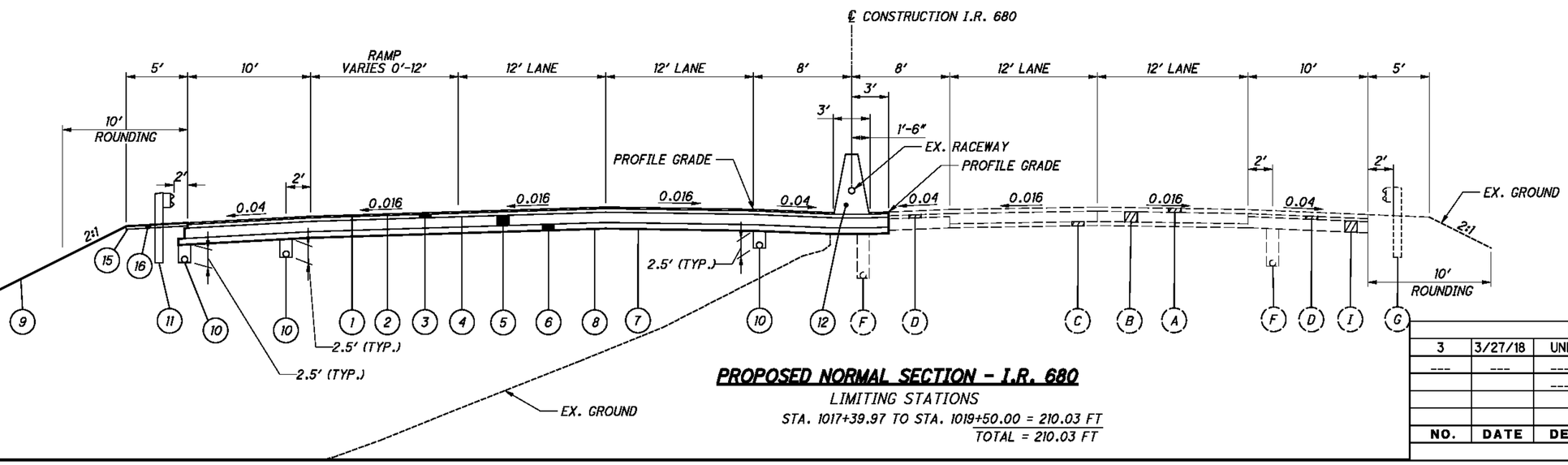


PROPOSED SUPERELEVATED SECTION - I.R. 680

LIMITING STATIONS

STA. 1014+40.00 TO STA. 1017+39.97 = 299.97 FT
TOTAL = 299.97 FT

** TRANSTION TO EXISTING CROSS SLOPE FROM STATION 1014+40.00 TO 1015+15.00



SEE SHEET 4 FOR LEGEND

PROPOSED NORMAL SECTION - I.R. 680

LIMITING STATIONS

STA. 1017+39.97 TO STA. 1019+50.00 = 210.03 FT
TOTAL = 210.03 FT

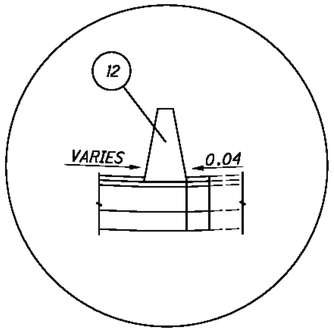
MAH-680-3.25		
3	3/27/18	UNDERDRAIN DIMENSION
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NO.	DATE	DESCRIPTION
ISSUE RECORD		

TYPICAL SECTIONS

MAH-680-(5.41/5.60)

6
48

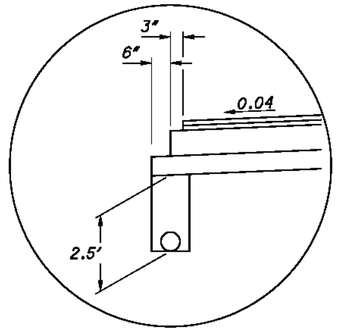
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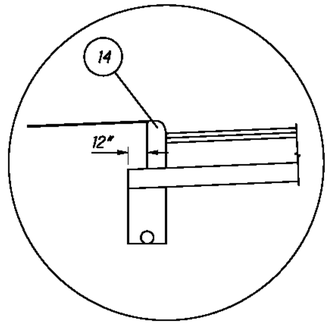
MEDIAN BARRIER DETAIL

LIMITING STATIONS:

STA. 1014+40.00 TO STA. 1019+75.00 - MEDIAN



EDGE COURSE DETAIL



CURBED SHOULDER DETAIL

LIMITING STATIONS:

STA. 1005+06.77 S.B. TO STA. 1005+25.31 S.B. - OUTSIDE
STA. 1006+67.27 N.B. TO STA. 1006+85.05 N.B. - OUTSIDE

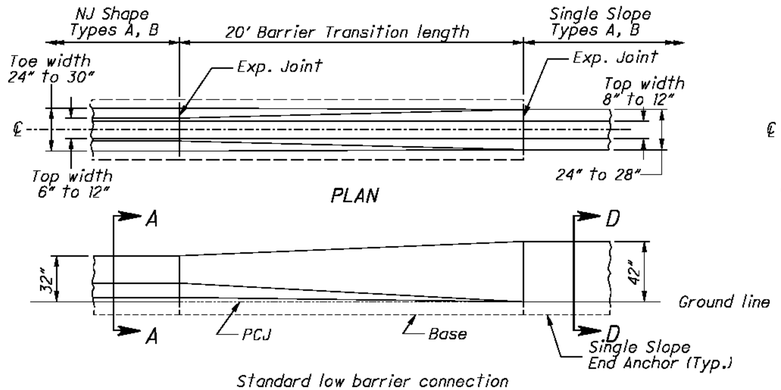
SEE SHEET 4 FOR LEGEND

MAH-680-3.25		
3	3/27/18	UNDERDRAIN DIMENSION
---	---	---
NO.	DATE	DESCRIPTION
ISSUE RECORD		

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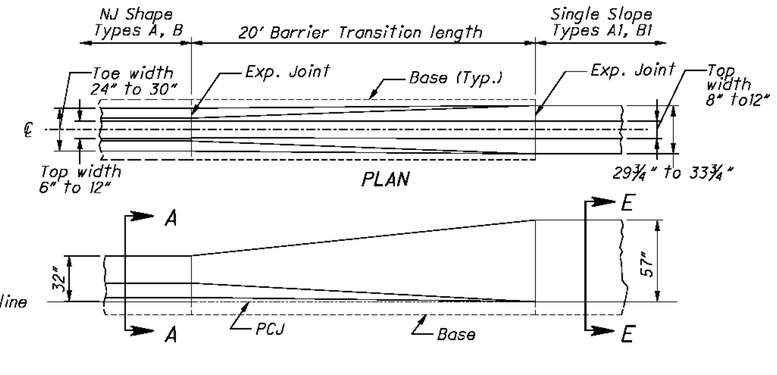
TYPICAL SECTIONS

MAH-680-(5.41/5.60)



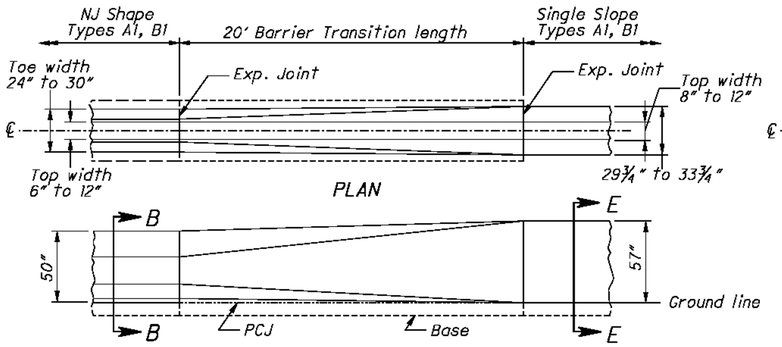
Standard low barrier connection

ELEVATION



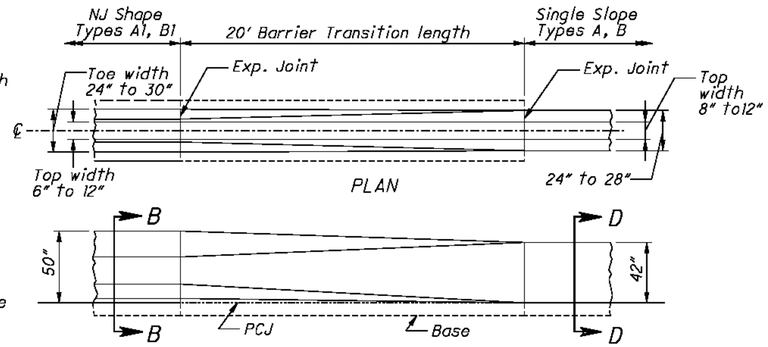
Atypical use

ELEVATION



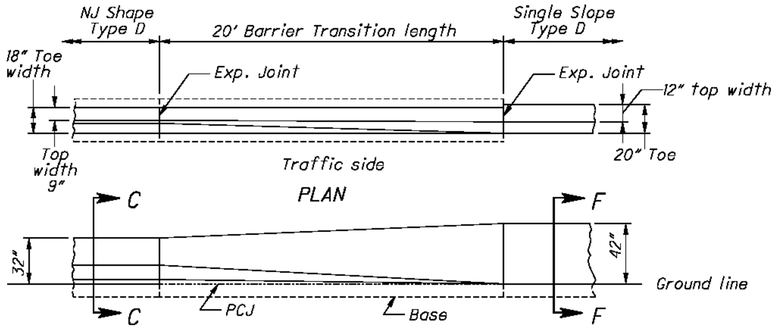
Standard tall barrier connection

ELEVATION



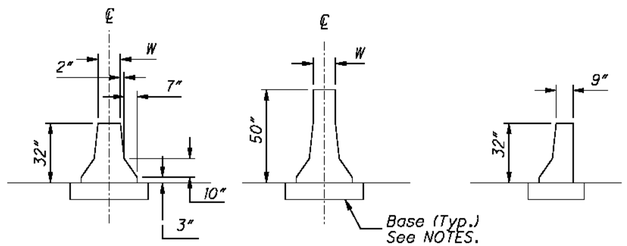
Atypical use

ELEVATION



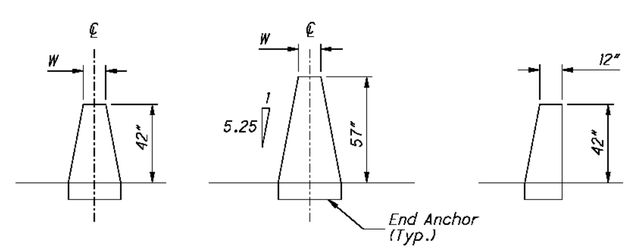
Standard Roadside barrier connection

ELEVATION



NJ SHAPE SECTIONS

See Plan Insert sheets for specific NJ Shape Concrete barrier details.



SINGLE SLOPE SECTIONS

See SCD RM-4.3 and RM-4.5 for specific Single Slope concrete barrier details.

NOTES

GENERAL: This insert details the Barrier Transition, to connect existing NJ Concrete Barrier (safety shape) to a new run of Single Slope Concrete Barrier at locations shown on the plans. For NJ barrier shape and other details see the respective plan insert sheets. For Single Slope barrier details, see SCD RM-4.3 (RM-4.5 for Type D).

ADJACENT CONCRETE BARRIER RUNS: Remove any tapered end sections, Impact attenuators, or other guardrail hardware from existing barrier end. The barrier to barrier transition is not intended to be used at transition sections (those shown on SCD RM-4.4), Inlets, or on Type C or C1 Barrier. If proposed adjacent single slope barrier is Type A or A1, the Barrier Transiton should contain horizontal reinforcing steel similiar to that required in the respective single slope barrier. Reinforcement is not shown and should be detailed separately. The adjacent single slope end should be terminated with a reinforced End Anchor as detailed on the SCDs.

BARRIER FACE TRANSITION: To prevent vehicle snagging, a smooth transition from the safety shape face to the single slope face is made over a 20' length. The actual shape of the Transition is dependent on both the adjacent NJ barrier and the single slope barrier Types, as detailed on the plans. The contractor and Engineer will agree on a construction method to ensure a smooth barrier face.

MATERIALS: Materials are same for those shown on RM-4.3 and RM-4.5, except that cast-in-place is the only acceptable method. Edges may be chamfered or radiused as shown on those drawings.

CONCRETE BASE: Construct base as shown on the NJ shape insert sheets, including the methods detailing the footing joint, Permissible Construction Joint (PCJ), and Dowelling requirements. The width of the base matches the existing NJ barrier.

JOINTS: Construct joints as shown on respective barrier drawings.

RACEWAYS: When specified, place raceway(s) to match raceway elevation in adjoining segments. Place to obtain maximum concrete cover.

METRIC UNITS: Refer to respective barrier drawings or inserts for metric dimensions.

PAYMENT: This Barrier Transiton shall include all material and labor needed to construct this 20' section, including any raceways, reinforcing steel, dowels and other necessary incidentals. Payment shall be made at the unit price for Item 622 - Barrier Transition, As Per Plan, Each.

OFFICE OF ROADWAY ENGINEERING

DESIGNED XXX REVIEWED XXX

REVISION DATE 10/20/2006 CHECKED CHECKED

PLAN INSERT SHEET

NJ SHAPE TO SINGLE SLOPE BARRIER TRANSITION

MAH-680-(5.41/5.60)

0 / 0

8 / 48

UTILITIES

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

GAS

DOMINION EAST OHIO
320 SPRINGSIDE DR. SUITE 320
AKRON, OH 44333
OFFICE: 330-664-2409
ATTN: BRYAN D. DAYTON

ELECTRIC

OHIO EDISON
730 SOUTH AVE
YOUNGSTOWN, OH 44502
OFFICE: 330-740-7704 EXT. 7704
ATTN: MIKE BECK

FIRSTENERGY TRANSMISSION
76 SOUTH MAIN STREET
AKRON, OH 44308-1890
OFFICE: 330-761-4487
ATTN: ALLISON OULTON

WATER

YOUNGSTOWN WATER DEPT.
160 N.WEST AVE
YOUNGSTOWN, OH 44503
OFFICE: 330-743-5338
ATTN: GENE LESON

SANITATION

YOUNGSTOWN SANITARY DEPT.
YOUNGSTOWN HALL
26 S. PHELPS ST.
YOUNGSTOWN, OH 44503
OFFICE: 330-742-8800
ATTN: CHUCK SASHO

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.

SURVEYING PARAMETERS

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

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: 12B

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83 (2011)
ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE (3401)
ORIGIN OF SCALE (X,Y) - EASTING (X): 0, NORTHING (Y): 0
COMBINED SCALE FACTOR: 0.99990123

SURVEY POINT USED FOR COMPUTATION OF AVERAGE COMBINED SCALE FACTOR: GP2

POSITIONING ON TYPE B MONUMENTS ESTABLISHED BY GPS-RTK METHODS REFERENCED TO THE ODOT VRS GNSS, COMBINED SCALE FACTOR BASED ON OPUS-RS SOLUTION

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

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

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

ROUNDING

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

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT OF WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS) A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEERS FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRICT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS AS DEFINED ABOVE WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER.

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.

EXISTING PLANS

EXISTING PLANS ENTITLED MAH-680-0.56, MAH-680-4.03, MAH-680-4.29, MAH-680-5.08/5.57, AND MAH-18-17.20 MAY BE INSPECTED IN THE ODOT DISTRICT 4 OFFICE IN AKRON, OHIO

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 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.

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.

EXISTING UNDERDRAINS

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE.

UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

SEEDING AND MULCHING

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

659, SOIL ANALYSIS TEST 2 EACH

659, TOPSOIL 379 CU. YD.

659, SEEDING AND MULCHING 3412 SQ. YD.

659, REPAIR SEEDING AND MULCHING 171 SQ. YD

659, INTER-SEEDING 171 SQ. YD.

659, COMMERCIAL FERTILIZER 0.49 TON

659, LIME 0.70 ACRES

659, WATER 19 M. GAL.

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.

ITEM 304 - AGGREGATE BASE, AS PER PLAN

GRANULATED SLAG (GS) SHALL NOT BE PERMITTED FOR THIS ITEM. ALL OTHER REQUIREMENTS OF SECTIONS 304 AND 703.17 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL STILL BE APPLICABLE.

ITEM 442 - ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN (PG64-22)

DO NOT USE COARSE AGGREGATE FROM A SOURCE DESIGNATED 'SR' OR 'SRH' ACCORDING TO THE OFFICE OF MATERIALS MANAGEMENT (OMM) IN ANY JOB MIX FORMULA (JMF) FOR THIS ITEM.

ITEM 305 - 10" CONCRETE BASE, CLASS QC1, AS PER PLAN

IN ADDITION TO THE SPECIFICATIONS SET FORTH BY ITEM 305 IN THE CMS.

THE CONCRETE SHALL FOLLOW THE CONCRETE MIX DESIGN FROM TABLE 499.03-1 UNDER THE ITEM 499 CONCRETE - GENERAL, IN THE CMS.

ITEM 611 - INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN

THE CONTRACTOR SHALL VERIFY ALL INLET AND PIPE ELEVATIONS AND LOCATIONS IN THE FIELD.

THESE INLETS SHALL BE REPLACED IN KIND WITH THE EXISTING INLETS AND ALL EXISTING PIPES SHALL REMAIN, UNLESS OTHERWISE NOTED IN THE PLANS.

SPECIAL - BILLBOARD REMOVED

THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING BILLBOARD SHOWN ON SHEET 26.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR:

SPECIAL - BILLBOARD REMOVED LS

MAH-680-3.25		
1	3/3/18	ADJUSTED & ADDED NOTES
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MLL CHECKED JTW

GENERAL NOTES

MAH-680-(5.41/5.60)

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

ITEM 204 - PROOF ROLLING 3 HOUR.

THE FOLLOWING CONTINGENCY QUANTITIES BELOW ARE PROVIDED IN THE GENERAL SUMMARY ARE ARE TO BE USED AS DIRECTED BY THE ENGINEER.

ITEM 204 - EXCAVATION OF SUBGRADE	120 CY.
ITEM 204 - GRANULAR MATERIAL, TYPE B	120 CY.
ITEM 204 - GEOTEXTILE FABRIC	240 SY.

PAVING UNDER GUARDRAIL

(SEE PART 1)

TREE CUTTING/REMOVAL PROHIBITED

THE MAH-680-3.33L/R, MAH-680-3.43L/R, MAH-680-4.66, MAH-680-5.56, MAH-680-5.75L, MAH-680-5.88, MAH-680-6.87, MAH-680-6.93 AND MAH-680-12.40 STRUCTURES ARE LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG-EARED BAT. TREE TRIMMING IS PERMITTED FOR THESE LOCATIONS AS DIRECTED BY THE PROJECT ENGINEER, HOWEVER, NO TREES SHALL BE REMOVED AT THESE LOCATIONS. 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.

AREAS DISTURBED BY EQUIPMENT ACTIVITIES

ANY AREAS DISTURBED BY CONSTRUCTION ACTIVITY MUST BE SEEDED AND MULCHED DURING CONSTRUCTION TO ENCOURAGE ESTABLISHMENT OF BENEFICIAL VEGETATIVE COVER FOR POLLINATORS AND DECREASE OR PREVENT EROSION OF SEDIMENTS INTO WATERS OF THE UNITED STATES.

CALCULATED MLL
CHECKED JTW

GENERAL NOTES

MAH-680-(5.41/5.60)

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ITEM 614, MAINTAINING TRAFFIC

THIS ITEM SHALL CONSIST OF MAINTENANCE OF TRAFFIC ON EXISTING ROADWAYS AND RAMPS IN ACCORDANCE WITH THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, CURRENT EDITION, LATEST REVISION, THE SPECIFICATIONS AND THE FOLLOWING:

A MINIMUM OF TWO ELEVEN FOOT LANES SHALL BE MAINTAINED ON EXISTING PAVEMENT AND COMPLETED PAVEMENT DURING CONSTRUCTION. A REDUCTION IN THE NUMBER OF LANES ON IR 680 IS ALLOWED AS LONG AS IT IS IN COMPLIANCE WITH THE NOTES LISTED HEREIN. THE CONTRACTOR SHALLY NOTIFY THE ENGINEER NOT LESS THAN 72 HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 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.

PERMITTED LANE CLOSURES

LANE CLOSURES ON IR 680 SHALL ONLY BE IMPLEMENTED AT THE TIMES LISTED ON THE OHIO DEPARTMENT OF TRANSPORTATION'S PERMITTED LANE CLOSURES WEB SITE WHICH IS LOCATED AT:

http://plcm.dot.state.oh.us/

THE PERMITTED CLOSURE TIMES LISTED ON THE WEBSITE, 14 CALENDAR DAYS PRIOR TO THE BID LETTING DATE, SHALL BE IN EFFECT FOR THIS PROJECT EXCEPT FOR THE CONDITIONS LISTED IN THE "EXCEPTION TO THE PERMITTED LANE CLOUSURE CHART" NOTES.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF $2000 PER HOUR OR PORTION THEREOF THAT THE LANE RESTRICTION AND RAMP CLOSURES REMAIN BEYOND THE SPECIFIED LIMIT.

APPROVED MAINTENANCE OF TRAFFIC (MOT) POLICY EXCEPTION

PORTIONS OF THE MOT PLANS AS DESCRIBED BELOW HAVE BEEN APPROVED BY THE MOT EXCEPTION COMMITTEE (MOTEC) OR THE PROJECT IMPACT ADVISORY COUNCIL (PIAC) PER TRAFFIC MANAGEMENT IN WORK ZONES POLICY (21-008(P)) AND STANDARD PROCEDURE (123-001(SP)).

APPROVED MOT EXCEPTION INCLUDES: CLOSURE OF I-680 NORTHBOUND FOR 4 CONSECUTIVE WEEKS.

A MAINTENANCE OF TRAFFIC MEETING SHALL BE HELD A MINIMUM OF 30 CALENDAR DAYS PRIOR TO IMPLEMENTATION OF EACH APPROVED MOT EXCEPTION. THIS MEETING SHALL INCLUDE THE DISTRICT WORK ZONE TRAFFIC MANAGER AND CITY OF YOUNGSTOWN AS WELL AS THE CONTRACTOR, WORKSITE TRAFFIC SUPERVISOR (WTS) AND ANY SUBCONTRACTORS INVOLVED WITH TEMPORARY TRAFFIC CONTROL.

IN ADDITION TO ANY NOTIFICATIONS REQUIRED IN OTHER NOTES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AT LEAST 3 BUSINESS DAYS IN ADVANCE OF IMPLEMENTATION OF THE APPROVED MOT EXCEPTION(S) REFERENCED ABOVE SO THAT THE PROJECT ENGINEER CAN SEND EMAIL NOTIFICATION TO THE OFFICE OF ROADWAY ENGINEERING, STATEWIDE TMC, DWZTM AND SPECIAL HAULING PERMITS AT LEAST 2 BUSINESS DAYS IN ADVANCE OF THE IMPLEMENTATION OF THE APPROVED MOT EXCEPTION REFERENCED ABOVE. "REFERENCE EXCEPTION REQUEST APPROVAL DATED 5/13/16 FOR PID 96637 IN THE NOTIFICATION AND OTHER CORRESPONDENCE.

ANY CHANGES TO THE MOT THAT IMPACT THE PREVIOUSLY APPROVED MOT EXCEPTION(S) LISTED ABOVE SHALL BE APPROVED IN WRITING BY THE APPLICABLE ODOT CENTRAL OFFICE COMMITTEE (MOTEC OR PIAC). IN THE EVENT THAT SUCH CHANGES ARE PROPOSED, THE REQUEST SHALL BE COORDINATED THROUGH THE DISTRICT WORK ZONE TRAFFIC MANAGER (DWZTM) A MINIMUM OF 30 CALENDAR DAYS PRIOR TO THE DESIRED IMPLEMENTATION DATE. IF THE DISTRICT AGREES WITH THE PROPOSED CHANGES THE DWZTM SHALL SEEK APPROVAL FROM THE APPLICABLE ODOT CENTRAL OFFICE COMMITTEE. IN THE EVENT THE PROPOSED CHANGES ARE APPROVED IN WRITING, THE CLOSURES ARE STILL SUBJECT TO NOTIFICATION REQUIREMENTS WITHIN THIS NOTE PRIOR TO IMPLEMENTATION.

ITEM 614, MAINTAINING TRAFFIC (TIME LIMITATION ON A DETOUR) (I-680 NORTHBOUND)

ALL LANES AND ENTRANCE RAMP OF I-680 NORTHBOUND FROM SLM 5.07 (EDWARDS ST) TO SLM 6.09 (US 62) MAY BE CLOSED FOR A PERIOD NOT TO EXCEED 4 CONSECUTIVE WEEKS. ALL WORK ON STRUCTURE MAH-680-0555 (OAKHILL AVE) IN THE NORTHBOUND DIRECTION AND MAH-680-0575 (SIDE HILL BRIDGE) SHALL BE COMPLETED DURING THE CLOSURE. I-680 NORTHBOUND SHALL NOT BE CLOSED WHEN I-680 SOUTHBOUND IS REDUCED TO ONE LANE TO COMPLETE THE APPROACH SLABS OF MAH-680-0555 SOUTH SIDE. I-680 NORTHBOUND SHALL BE DETOURED AS SHOWN ON SHEETS 14 TO 15.

I-680 NORTHBOUND SHALL NOT BE CLOSED PRIOR TO JUNE 1, 2018. I-680 NORTHBOUND CLOSURE CANNOT BE CONCURRENT WITH ANY OTHER PHASE IN PART 1, MAH-680-3.25, THAT HAS CONTRA-FLOW.

THE FOURTH OF JULY HOLIDAY FOR I-680 NORTHBOUND MAY BE WAIVED UPON A WRITTEN REQUEST SUBMITTED TO ODOT DISTRICT 4.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF $5000 PER HOUR OR PORTION THEREOF THAT THE LANE RESTRICTION REMAINS BEYOND THE SPECIFIED LIMIT.

ITEM 614, MAINTAINING TRAFFIC (TIME LIMITATION ON A DETOUR) (I-680 SOUTH)

ONE LANE OF I-680 SOUTHBOUND MAY BE CLOSED FOR 2 CONSECUTIVE WEEKENDS (6PM FRIDAY TO 6AM MONDAY) IN ORDER TO COMPLETE ALL STRUCTURE WORK ON MAH-680-0555 (OAKHILL AVE) SOUTHBOUND.

ENTRANCE RAMPS FROM HIGH ST, MAHONING AVE, OAKWOOD AVE AND SILLIMAN ST TO I-680 SOUTHBOUND SHALL BE CLOSED WHEN I-680 SOUTHBOUND IS REDUCED TO ONE LANE. I-680 SOUTHBOUND SHALL NOT BE REDUCED TO ONE LANE WHEN I-680 NORTHBOUND IS CLOSED TO COMPLETE WORK ON MAH-680-0575 AND MAH-0555.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THE ABOVE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED DISINCENTIVES IN THE AMOUNT OF $2000 PER HOUR OR PORTION THEREOF THAT THE LANE RESTRICTION AND RAMP CLOSURES REMAIN BEYOND THE SPECIFIED LIMIT.

DETOUR NOTIFICATION

THE CONTRACTOR SHALL ADVISE THE ODOT DISTRICT OFFICE (330-786-3148), MAHONING COUNTY ENGINEERS (330-799-1581), AND CITY OF YOUNGSTOWN (330-742-8800) EIGHTEEN (18) DAYS IN ADVANCE OF WHEN THE DETOUR ROUTE SHOULD BE IN EFFECT. ALL WORK ZONE DEVICES REQUIRED SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR. PAYMENT FOR ALL WORK ASSOCIATED WITH THE DETOUR SHALL BE INCLUDED UNDER THE LUMP SUM BID FOR ITEM 614, DETOUR SIGNING.

HOLIDAY NOTE

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC ON I-680 NORTHBOUND & SOUTHBOUND DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	FOURTH OF JULY
NEW YEARS	LABOR DAY
MEMORIAL DAY	THANKSGIVING

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF HOLIDAY OR EVENT	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY
MONDAY	12:00N FRIDAY THROUGH 6:00 AM TUESDAY
TUESDAY	12:00N MONDAY THROUGH 6:00 AM WEDNESDAY
WEDNESDAY	12:00N TUESDAY THROUGH 6:00 AM THURSDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM FRIDAY
THURSDAY	12:00N WEDNESDAY THROUGH 6:00 AM MONDAY (THANKSGIVING ONLY)
FRIDAY	12:00N THURSDAY THROUGH 6:00 AM MONDAY
SATURDAY	12:00N FRIDAY THROUGH 6:00 AM MONDAY

THE FOURTH OF JULY HOLIDAY FOR I-680 NORTHBOUND MAY BE WAIVED UPON A WRITTEN REQUEST SUBMITTED TO DISTRICT.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED A DISINCENTIVE IN THE AMOUNT OF $4500 FOR EACH HOUR THE ABOVE DESCRIBED LANE CLOSURE RESTRICTIONS ARE VIOLATED.

NOTICE OF CLOSURE

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD/RAMP 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 OR NEAR THE POINT OF CLOSURE. THE SIGNS MAY BE ERECTED ANYWHERE ON RAMPS AS LONG AS THEY ARE VISIBLE TO THE MOTORISTS USING THE RAMP. ON ENTRANCE RAMPS, THE SIGN SHALL BE ERECTED WELL IN ADVANCE OF THE MERGE AREA TO AVOID DISTRACTING MOTORISTS.

NOTICE OF CLOSURE SIGN TIME TABLE

ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
RAMP & ROAD CLOSURES	>= 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAY PRIOR TO CLOSURE
	< 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION. THIS IS TO BE A SPECIFIC OFFICE WITHIN THE DISTRICT RATHER THAN THE GENERAL SWITCHBOARD NUMBER.



W20-H13-60

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 103 M. GAL

FLOODLIGHTING

FLOODLIGHTING OF THE WORK SITE FOR OPERATIONS CONDUCTED DURING NIGHTTIME PERIODS SHALL BE ACCOMPLISHED SO THAT THE LIGHTS DO NOT CAUSE GLARE TO THE DRIVERS ON THE ROADWAY. TO ENSURE THE ADEQUACY OF THE FLOODLIGHT PLACEMENT, THE CONTRACTOR AND THE ENGINEER SHALL DRIVE THROUGH THE WORK SITE EACH NIGHT WHEN THE LIGHTING IS IN PLACE AND OPERATIVE PRIOR TO COMMENCING ANY WORK. IF GLARE IS DETECTED, THE LIGHT PLACEMENT AND SHIELDING SHALL BE ADJUSTED TO THE SATISFACTION OF THE ENGINEER BEFORE WORK PROCEEDS.

PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC

CALCULATED MLL CHECKED JTW

NOTICE OF TRAFFIC GENERAL NOTES

MAINTENANCE

MAH-680-(5.41/5.60)

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NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE OFFICE OF COMMUNICATIONS. THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL AND SHALL LLIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTICE TO OFFICE OF COMMUNICATIONS TIME TABLE

ITEM	DURATION OF CLOSURE	NOTICE DUE TO OFFICE OF COMMUNICATIONS
RAMP	>=2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
ROAD	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES	< 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE	>=2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
CLOSURES & RESTRICTIONS	<2 WEEKS	2 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES		14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTICE TO OFFICE OF COMMUNICATIONS TIME TABLE.

ITEM 622, PORTABLE BARRIER, 50", AS PER PLAN

THIS WORK SHALL CONSIST OF FURNISHING, MAINTAINING, AND SUBSEQUENTLY REMOVING A 50-INCH PORTABLE BARRIER IN THE MEDIAN BETWEEN STATIONS 1014+00 TO 1020+00 AT AN OFFSET OF 4.0' RT FROM THE CENTERLINE OF I-680. FOR DETAILS, SEE SCD RM-4.1, FOR TYPICAL SECTION SEE SHEET 44

PORTABLE STEEL BARRIER IS AN APPROVED ALTERNATIVE TO PORTABLE CONCRETE BARRIER. FOR INFORMATION ON APPROVED VENDORS, SEE THE APPROVED PRODUCTS LIST MAINTAINED BY ROADWAY ENGINEERING.

PORTABLE BARRIER, 32 INCHES HIGH WITH AN 18-INCH MINIMUM HEIGHT GLARE SCREEN MAY BE USED AT THE OPTION OF THE CONTRACTOR. THE GLARE SCREEN SHALL BE CONSTRUCTED USING ONE OF THE SCREENS PROVIDED ON THE APPROVED LIST, AVAILABLE ON THE OFFICE OF ROADWAY ENIGNEERING WEBSITE.

PADDLE OR INTERMITTENT TYPE GLARE SCREENS SHALL BE DESIGNED USING A 20 DEGREE CUT-OFF ANGLE BASED ON TANGENT ALIGNMENT. THAT SPACING SHALL BE USED THROUGHOUT THE BARRIER LENGTH WITHOUT REGARD TO BARRIER CURVATURE.

THE GLARE SCREEN SYSTEM SHALL BE SECURELY FASTENED TO THE 32-INCH PORTABLE BARRIER USING THE HARDWARE AND PROCEDURES SPECIFIED BY THE MANUFACTURER.

FOR DIRECTIONS ON HOW TO INSTALL THE GLARE SCREEN AND THE BARRIER, SEE THE MANUFACTURER'S INSTRUCTIONS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 622, PORTABLE BARRIER, 50" AS PER PLAN - 600 FT

PAYMENT SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO PERFORM THE WORK AND SHALL BE PAID FOR AT THE CONTRACT PRICE PER FOOT FOR ITEM 622, PORTABLE BARRIER, 50". AS PER PLAN

ITEM 606 - IMPACT ATTENUATOR, TYPE 1, UNIDIRECTIONAL

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE TYPE 1 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE. INSTALLATION AND PLACEMENT SHALL BE AT THE END OF THE PORTABLE CONCRETE BARRIER LOCATED AT STA. 1014+00 TO HELP PROTECT THE SOUTHBOUND TRAFFIC FROM THE WORKZONE. THIS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE FACE OF THE TYPE 1 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19. PAYMENT FOR THE 730.19. PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 1, UNIDIRECTIONAL, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED TRANSITIONS, HARDWARE, REFLECTIVE SHEETING AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 606, IMPACT ATTENUATOR, TYPE 1, UNIDIRECTIONAL - 1 EA

DELINEATION OF PORTABLE AND PERMANENT BARRIER

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL AND ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE PLANS AND CARRIED TO THE GENERAL SUMMARY:

ITEM 614, BARRIER REFLECTOR, TYPE 1, ONE-WAY 13 EACH
ITEM 614, OBJECT MARKER, ONE-WAY 13 EACH

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

ITEM 614 - PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND REMOVE, WHEN NO LONGER NEEDED, A PORTABLE CHANGEABLE MESSAGE SIGN, THE SIGN SHALL BE OF A TYPE SHOWN ON A LIST OF APPROVED PCMS UNITS AVAILABLE ON THE OFFICE OF MATERIALS MANAGEMENT WEB PAGE. THE LIST CONTAINS CLASS A AND B UNITS WITH MINIMUM LEGIBILITY DISTANCE OF 800 FEET AND 650 FEET RESPECTIVELY.

EACH SIGN SHALL BE TRAILER MOUNTED AND EQUIPPED WITH A FUNCTIONAL DIMMING MECHANISM TO DIM THE SIGN DURING DARKNESS AND A TAMPER AND VANDAL PROOF ENCLOSURE. EACH SIGN SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE ON-SITE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT. THE SIGN SHALL ALSO BE CAPABLE OF BEING POWERED BY AN ELECTRICAL SERVICE DROP FROM A LOCAL UTILITY COMPANY. PCMS TRAILERS SHOULD BE DELINEATED.

PLACEMENT, OPERATION, MAINTENANCE AND ALL ACTIVATION OF THE SIGNS BY THE CONTRACTOR SHALL BE AS DIRECTED BY THE ENGINEER. THE PCMS SHALL BE LOCATED IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE PCMS SHOULD NOT BE LOCATED IN THE MEDIAN OF THE HIGHWAY UNLESS IT IS PROTECTED FROM BOTH DIRECTIONS OF TRAFFIC. THE PCMS SHALL BE LOCATED. IN A HIGHLY VISIBLE POSITION YET PROTECTED FROM TRAFFIC. THE CONTRACTOR SHALL, AT THE DIRECTION OF THE ENGINEER, RELOCATE THE PCMS TO IMPROVE THE VISIBILITY OR ACCOMMODATE CHANGED CONDITIONS. WHEN NOT IN USE, THE PCMS WILL BE OFF. ADDITIONALLY WHEN NOT IN USE FOR EXTENDED PERIODS OF TIME, THE PCMS SHALL BE TURNED, FACING AWAY FROM ALL TRAFFIC AND SHALL DISPLAY ONE OR MORE TYPE G YELLOW REFLECTIVE SHEETING SURFACES OF 9-INCH BY 15-INCH MINIMUM SIZE FACING TRAFFIC.

THE ENGINEER SHALL BE PROVIDED ACCESS TO EACH SIGN UNIT AND SHALL BE PROVIDED WITH APPROPRIATE TRAINING AND OPERATION INSTRUCTIONS TO ENABLE PERSONNEL TO OPERATE AND TROUBLESHOOT THE UNIT AND TO REVISE SIGN MESSAGES, IF NECESSARY.

ALL MESSAGES TO BE DISPLAYED ON THE SIGN WILL BE PROVIDED BY THE CONTRACTOR. A LIST OF ALL PROPOSED PREPROGRAMMED MESSAGES WILL BE GIVEN TO THE ENGINEER PRIOR TO CONSTRUCTION. THE SIGN SHALL HAVE THE CAPABILITY TO STORE UP TO 99 MESSAGES. MESSAGE MEMORY OR PREPROGRAMMED DISPLAYS SHALL NOT BE LOST AS A RESULT OF POWER FAILURES TO THE ON-BOARD COMPUTER. THE SIGN LEGEND SHALL BE CAPABLE OF BEING CHANGED IN THE FIELD. THREE LINE PRESENTATION FORMATS WITH UP TO OF SIX MESSAGE PHASES SHALL BE SUPPORTED. PCMS FORMAT SHALL PERMIT THE COMPLETE MESSAGE FOR EACH PHASE TO BE READ AT LEAST TWICE.

THE PCMS SHALL CONTAIN AN ACCURATE CLOCK AND PROGRAMMING LOGIC WHICH WILL ALLOW THE SIGN TO BE ACTIVATED, DE-ACTIVATED OR MESSAGES CHANGED AUTOMATICALLY AT DIFFERENT TIMES OF THE DAY FOR DIFFERENT DAYS OF THE WEEK.

THE PCMS SHALL CONTAIN A CELLULAR TELEPHONE DATA LINK WHICH WILL ALLOW REMOTE SIGN ACTIVATION, DEACTIVATION, MESSAGE CHANGES, MESSAGE ADDITIONS AND REVISIONS TO TIME OF DAY PROGRAMS. THE SYSTEM SHALL ALSO PERMIT VERIFICATION OF CURRENT AND PROPOSED MESSAGES

THE PCMS UNIT SHALL BE MAINTAINED IN GOOD WORKING ORDER BY THE CONTRACTOR IN ACCORDANCE WITH THE PROVISIONS OF 614.07. THE CONTRACTOR SHALL PRIOR TO ACTIVATING THE UNIT, MAKE ARRANGEMENTS WITH AN AUTHORIZED SERVICE AGENT FOR THE PCMS TO ASSURE PROMPT SERVICE IN THE EVENT OF FAILURE. ANY FAILURE SHALL NOT RESULT IN THE SIGN BEING OUT OF SERVICE FOR MORE THAN 12 HOURS INCLUDING WEEKENDS. FAILURE TO COMPLY MAY RESULT IN AN ORDER TO STOP WORK AND OPEN ALL TRAFFIC LANES AND/OR IN THE DEPARTMENT TAKING APPROPRIATE ACTION TO SAFELY CONTROL TRAFFIC. THE ENTIRE COST TO CONTROL TRAFFIC ACCRUED BY THE DEPARTMENT WILL BE DEDUCTED FROM MONEYS DUE, OR TO BECOME DUE THE CONTRACTOR ON HIS CONTRACT

THE CONTRACTOR SHALL BE RESPONSIBLE FOR 24 HOURS PER DAY OPERATION AND MAINTENANCE OF THESE SIGNS ON THE PROJECT FOR THE DURATION OF THEIR USE. THE REQUIREMENT TO FURNISH, INSTALL, MAINTAIN AND REMOVE A PCMS UNIT ON THIS PROJECT SHALL NOT IN ANY WAY RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES AS OUTLINED IN 614.02.

PAYMENT FOR THE ABOVE DESCRIBED ITEM SHALL BE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, FUELS, LUBRICATING OILS, SOFTWARE, HARDWARE AND INCIDENTALS TO PERFORM THE ABOVE DESCRIBED WORK.

ITEM 614 PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN
30 SIGN MONTH

(ASSUMING 5 SIGNS FOR 6 MONTHS)

CALCULATED MLL CHECKED SWC

MAINTENANCE OF TRAFFIC GENERAL NOTES

MAH-680-(5.41/5.60)

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ITEM 614 - LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

- DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.
- DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

- FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP). IN GENERAL, LEOS SHOULD BE POSITIONED AT THE POINT OF LANE RESTRICTION OR ROAD CLOSURE AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH INTERSECTIONS IN WORK ZONES.

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION OR AT THE POINT OF ROAD CLOSURE, AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. ONCE THE LEO HAS COMPLETED THE DUTIES DESCRIBED ABOVE AND STILL HAS TIME REMAINING ON HIS/HER SHIFT, THE LEO MAY BE ASKED TO PATROL THROUGH THE WORK ZONE (WITH FLASHING LIGHTS OFF) OR BE PLACED AT A LOCATION TO DETER MOTORISTS FROM SPEEDING. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE WHICH SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE, 200 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

SEQUENCE OF CONSTRUCTION

PHASE 1 - I-680 NORTHBOUND

PRIOR TO THE START OF PHASE 1, THE CONTRACTOR SHALL PLACE ALL TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED FOR PHASE 1 OPERATIONS.

THE CONTRACTOR SHALL CLOSE ALL LANES AND ENTRANCE RAMPS TO I-680 NORTHBOUND FROM EDWARDS ST. TO US 62 FOR A MAXIMUM PERIOD NOT TO EXCEED 4 CONSECUTIVE WEEKS.
I-680 NORTHBOUND SHALL BE DETOURED AS SHOWN ON SHEETS 14 TO 15.

THE CONTRACTOR COMPLETE ALL WORK MAH-680-0555 AND MAH-680-0575 IN THE NORTHBOUND DIRECTION.

PHASE 2A - I-680 SOUTHBOUND

1. PRIOR TO THE START OF PHASE 2A, THE CONTRACTOR SHALL PLACE ALL TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED FOR PHASE 2A OPERATIONS.
2. THE CONTRACTOR SHALL CLOSE THE INSIDE LANE OF I-680 SOUTHBOUND FOR A MAXIMUM PERIOD NOT TO EXCEED 1 WEEKEND.
3. THE CONTRACTOR SHALL CLOSE THE ENTRANCE RAMPS FROM HIGH ST, MAHONING AVE, OAKWOOD AVE, AND SILLIMAN ST, WHEN I-680 IS REDUCED TO ONE LANE.
4. I-680 SOUTHBOUND SHALL BE DETOURED AS SHOWN ON SHEETS 16 TO 17.
5. THE CONTRACTOR SHALL COMPLETE ALL WORK FOR MAH-680-0555 WITHIN THE INSIDE LANE IN THE SOUTHBOUND DIRECTION.

PHASE 2B - I-680 SOUTHBOUND

1. PRIOR TO THE START OF PHASE 2B, THE CONTRACTOR SHALL PLACE ALL TEMPORARY TRAFFIC CONTROL DEVICES REQUIRED FOR PHASE 2B OPERATIONS.
2. THE CONTRACTOR SHALL CLOSE THE OUTSIDE LANE OF I-680 SOUTHBOUND FOR A MAXIMUM PERIOD NOT TO EXCEED 1 WEEKEND.
3. THE CONTRACTOR SHALL CLOSE THE ENTRANCE RAMPS FROM HIGH ST, MAHONING AVE, OAKWOOD AVE, AND SILLIMAN ST, WHEN I-680 IS REDUCED TO ONE LANE.
4. I-680 SOUTHBOUND SHALL BE DETOURED AS SHOWN ON SHEETS 16 TO 17.
5. THE CONTRACTOR SHALL COMPLETE ALL WORK FOR MAH-680-0555 WITHIN THE OUTSIDE LANE IN THE SOUTHBOUND DIRECTION.

MAH-680-3.25		
2	3/15/18	ADJUSTED NOTE
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MLL CHECKED SWC

MAINTENANCE OF TRAFFIC GENERAL NOTES

MAH-680-(5.41/5.60)

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NORTHBOUND I.R. 680 - DETOUR PLAN

INTERSTATE 680

NORTH

Cleveland
Akron

Exit 1/4 Mile

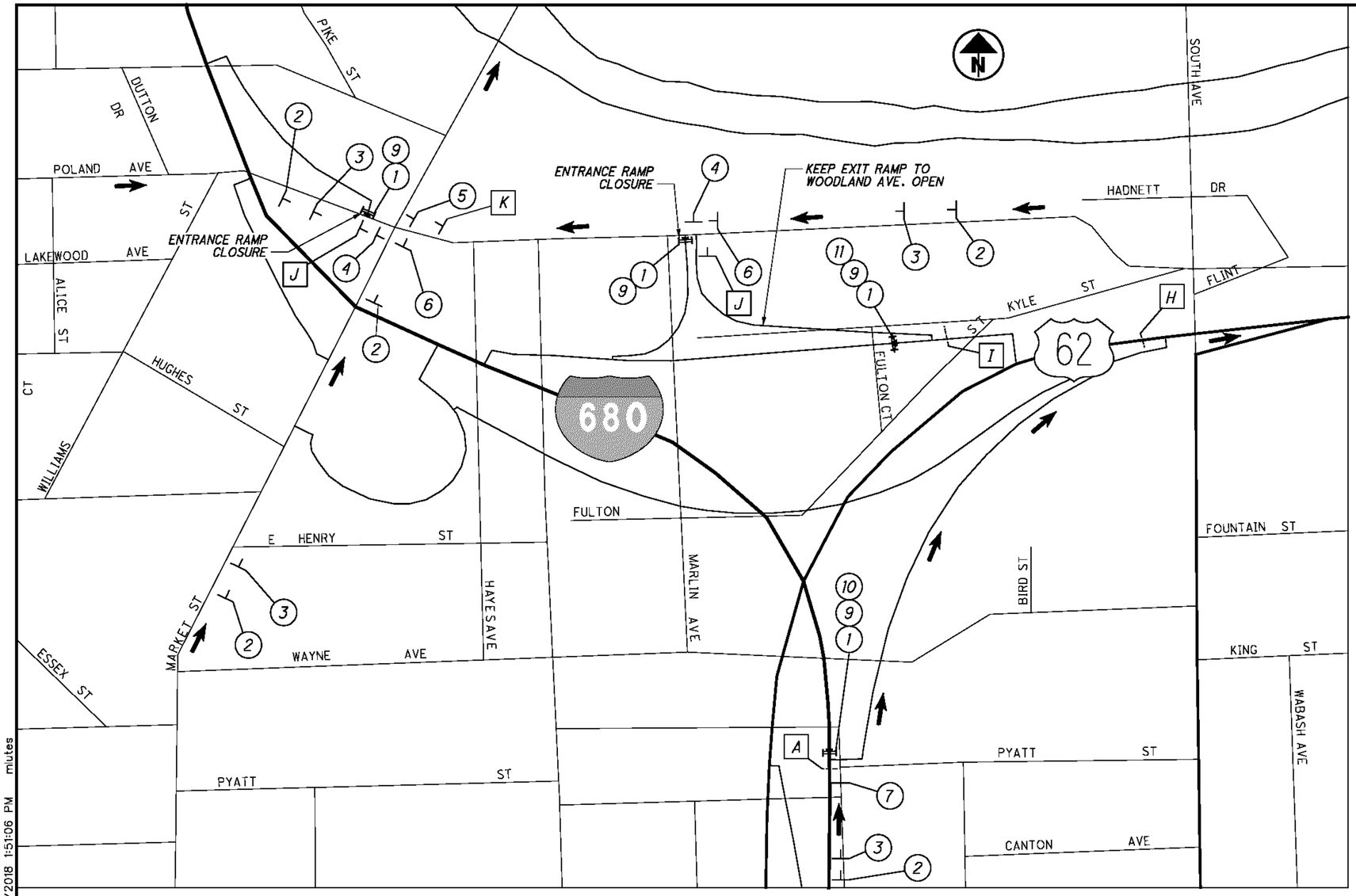
* COVER FOR DURATION OF NORTHBOUND CLOSURE

DETAIL A SEE SHEET 15

* FOR NOTES AND SIGNS PERTAINING TO THE NORTHBOUND I-680 DETOUR, SEE SHEETS 15 AND 16

MAH-680-(5.41/5.60)

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DETAIL A

EXIT 5

Glenwood Ave
Mahoning Ave

1 MILE

* COVER FOR DURATION OF NORTHBOUND CLOSURE (10)

INTERSTATE 680 NO[illegible] CLOSED [illegible] MPH

INTERSTATE 680 **NORTH**

Cleveland
Akron

* COVER FOR DURATION OF NORTHBOUND CLOSURE (11)

DETOUR PLAN FOR I-680 NORTHBOUND CLOSURE:

1. OFFICIAL DETOUR I-680 NORTHBOUND: US62 EAST (SR7 NORTH)/US422 WEST/SR 193.
2. DETOUR ENTRANCE RAMPS: FROM WOODLAND AVE: MARKET ST/US422 WEST/ SR 193.
3. DETOUR ENTRACE RAMP FROM HIMROD AVE: N LANE AVE/US422 WEST/SR193.
4. CLOSE ENTRANCE RAMPS PER SCD MT-101.60.
5. SEE STANDARD CONSTRUCTION DRAWINGS MT-98.30 AND MT-99.50 TO CLOSE I-680 NORTH AND ENTRANCE FROM US 62W TO I-680 NORTH.

(1) ROAD CLOSED
R11-2-48
MOUNTED ON TYPE III BARRICADE WITH TYPE B FLASHING (YELLOW) WARNING LIGHTS

(2) RAMP CLOSED AHEAD — W20-3-36 — INTERSTATE 680 — M1-1-36-3

(3) DETOUR AHEAD — W20-2-36 — INTERSTATE 680 — M1-1-36-3

(4) DETOUR M4-8-36 — NORTH M3-1-36 — INTERSTATE 680 M1-1-36-3 — M6-1L-30

(5) DETOUR M4-8-36 — NORTH M3-1-36 — INTERSTATE 680 M1-1-36-3 — M6-1R-30

(6) DETOUR M4-8-36 — NORTH M3-1-36 — INTERSTATE 680 M1-1-36-3 — M6-3-30

(7) DETOUR M4-8-36 — NORTH M3-1-36 — INTERSTATE 680 M1-1-36-3 — M5-2R-30

(8) DETOUR M4-8-36 — NORTH M3-1-36 — INTERSTATE 680 M1-1-36-3 — END DETOUR M4-8A-30

(9) NOTICE OF CLOSURE SIGN SEE SHEET 11

⊥ SINGLE POST SIGN

TYPE III BARRICADE WITH SIGN

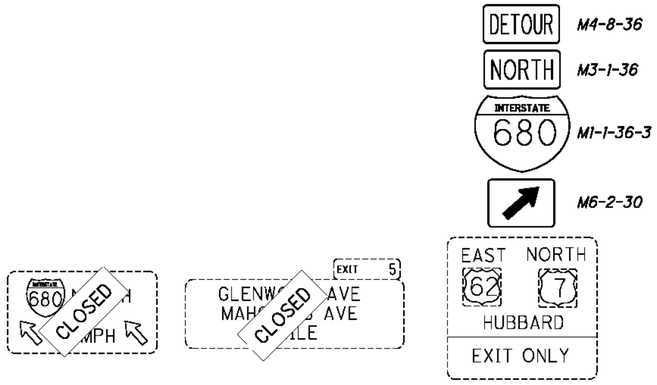
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NORTHBOUND I.R. 680 - DETOUR PLAN

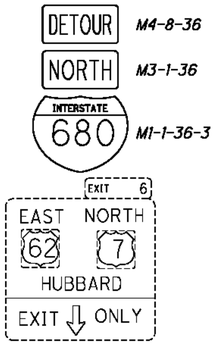
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A



B

PORTABLE CHANGABLE MESSAGE SIGN MESSAGE:
-PLACE 7 DAYS PRIOR TO CLOSURE

1. I-680N
TO CLOSE
(DATE)

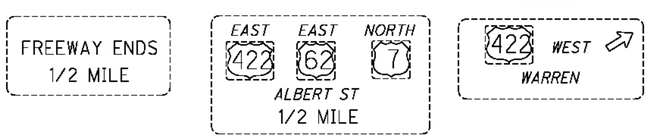
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PORTABLE CHANGABLE MESSAGE SIGN:

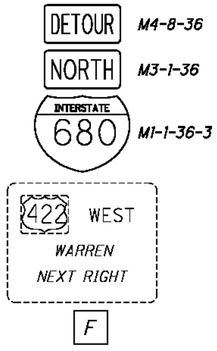
1. I-680N
CLOSED

2. FOLLOW
62E/7N

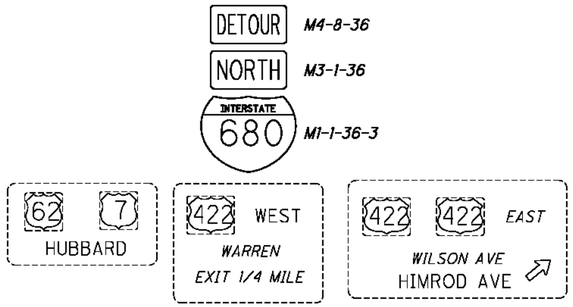
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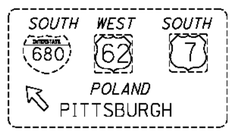
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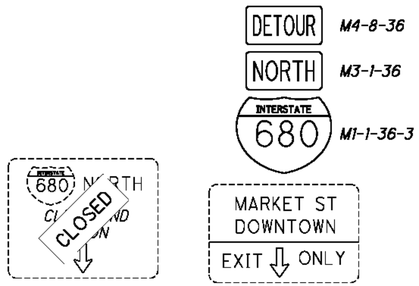
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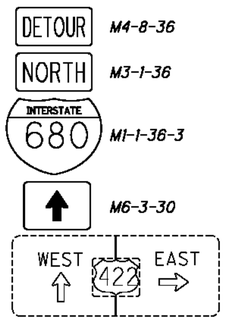
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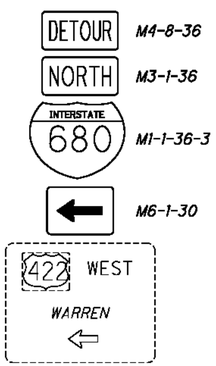
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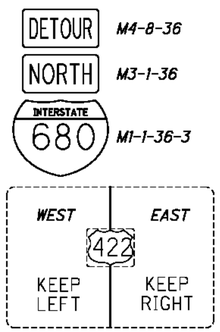
I



L



N



M

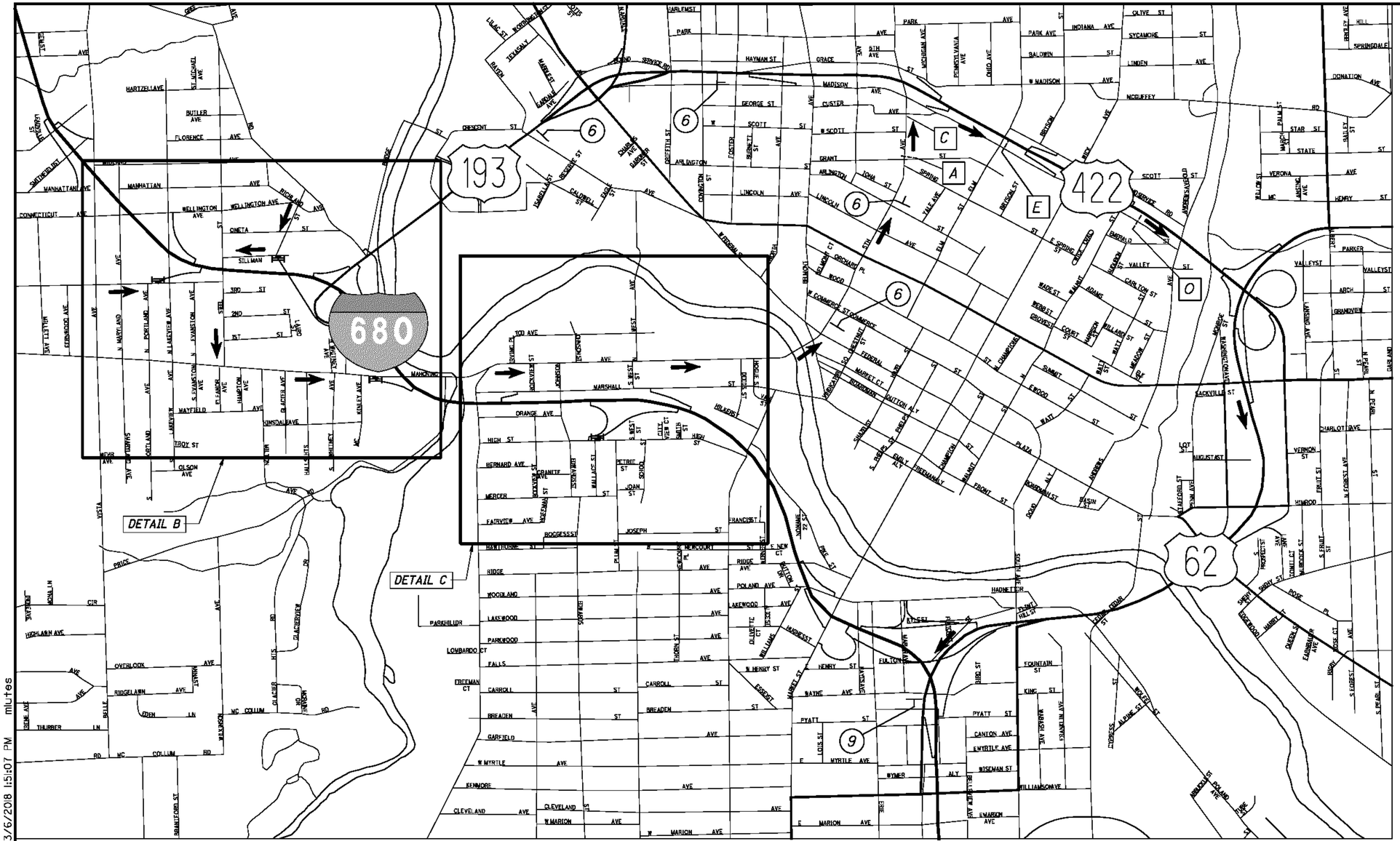
CALCULATED JAC
CHECKED MLL

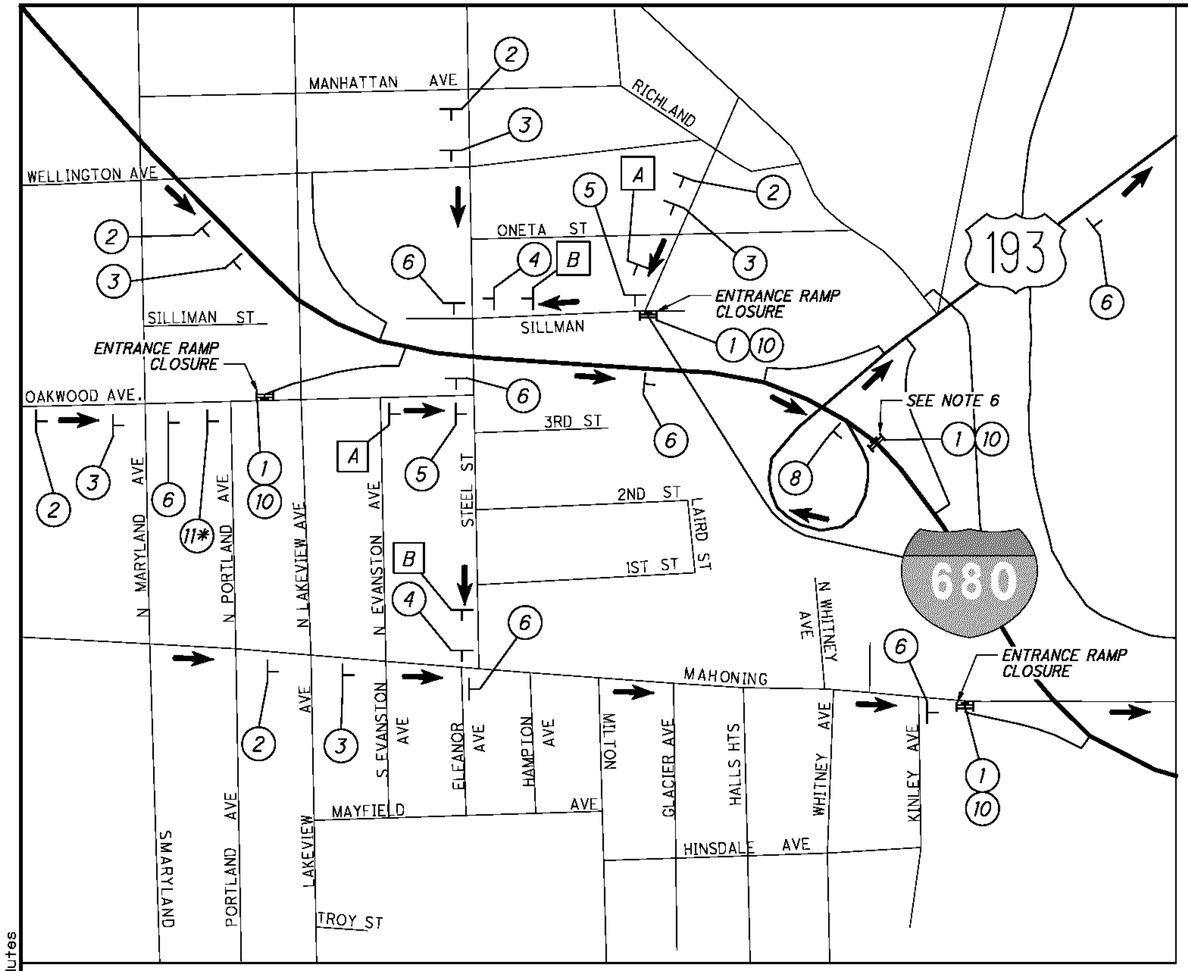
I-680 DETOUR SIGNS

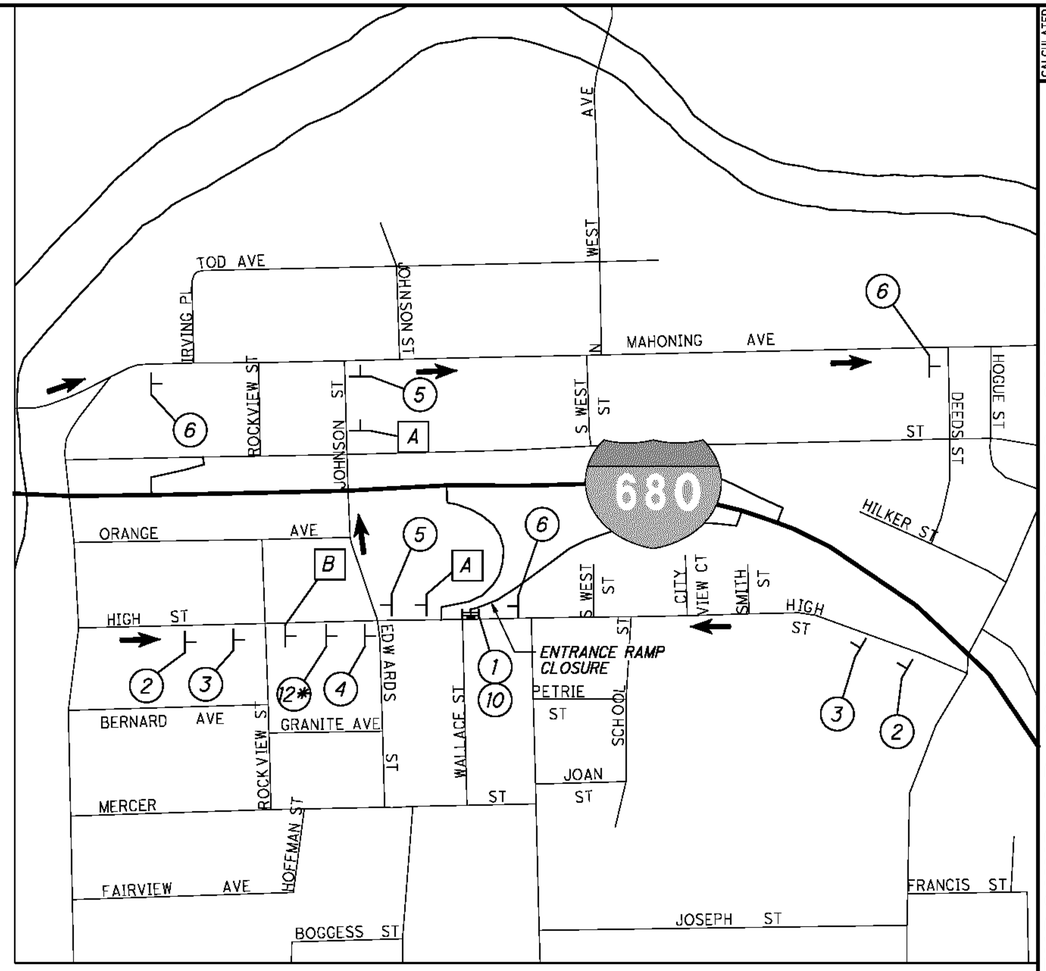
MAH-680-(5.41/5.60)

16
48

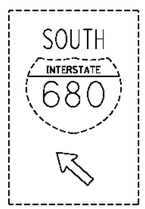
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DETAIL B
DETAIL C
193
680
422
62
6
9
A
C
D
E
L
MAHONING
SILLIMAN
WELLINGTON AVE
RICHARD AVE
MARKET ST
MARKET
WATT
FRONT ST
MAIN ST
WOOD
COMMERCE ST
FEDERAL
MARSHALL
ORANGE AVE
HIGH ST
MERCER
FAIRVIEW AVE
HAYTHORNE ST
RIDGE
WOODLAND
LAKEWOOD
PARKWOOD
FALLS
CARROLL
BREADEN
GARFIELD
W MYRTLE
KENMORE
CLEVELAND
W MARION
W HENRY ST
WAYNE AVE
PYATT ST
CANTON AVE
EMYRTLE AVE
WISEMAN ST
E MARION AVE
MAHONING
MARKET
MAIN ST
WOOD
WATT
FRONT ST
SUMMIT
E WOOD
MARKET ST
COMMERCE ST
FEDERAL
MARSHALL
ORANGE AVE
HIGH ST
MERCER
FAIRVIEW AVE
HAYTHORNE ST
RIDGE
WOODLAND
LAKEWOOD
PARKWOOD
FALLS
CARROLL
BREADEN
GARFIELD
W MYRTLE
KENMORE
CLEVELAND
W MARION
W HENRY ST
WAYNE AVE
PYATT ST
CANTON AVE
EMYRTLE AVE
WISEMAN ST
E MARION AVE
SCOTT
GRANT
ARLINGTON
LINCOLN
MADISON
GEORGE ST
HAYMAN ST
GRACE
PARK
PARK AVE
BALDWIN
LINDEN
MCDUFFEY
OLIVE ST
SYCAMORE
INDIANA AVE
MICHIGAN AVE
PENNSYLVANIA
OHIO AVE
CUSTER
BROWN
SPRING
ELM
DALE
BRYDON
E SPRING
E MAIN
ORCHARD PL
WADE ST
WEBB ST
GROVES ST
COURT
ADAMS
CARLTON ST
WILLARD ST
MEADOW
VALLEY
EMERALD
SUMMIT
CHAMPION
PLAZA
WALNUT
BROADWAY
BASIN ST
ANDERSON
SHARON
JACKSONVILLE ST
AUGUST ST
LOT
HUNTINGTON
MONROE
VALLEY ST
VALLEYST
PARKER
ARCH ST
GRANDVIEW
LANSING AVE
HENRY ST
WILLOW ST
MC
VERONA
STATE
STAR ST
PALM ST
MARC
DONATION
BERDLEY
HILL
SPRINGDALE
VERMON
FRUIT ST
N FOREST AVE
HINWOOD
CHARLOTTE AVE
N PENN
LANSING AVE
DARLAND
S PENN
S FRUIT ST
S PROSPECT ST
S FOREST
S DEAN ST
WARWICK ST
DOUGLAS
MARKET
ROSE PL
ROSE CT
FAIRMOUNT AVE
HIGH ST
SHERIDAN
SHERIDAN ST
DOUGLAS ST
DOUGLAS
HADDINGTON
KYLE ST
DEWALT ST
CRAIG AVE
FULTON
MARKET ST
ESSEX ST
BIRD ST
FOUNTAIN ST
KING ST
FRANKLIN AVE
WOLCOTT ST
CYPRESS
ALPINE ST
ARBOR ST
POLAND AVE
POLAND
WILLIAMSON AVE
WYMER
ALY
SR 165
ALY
ALLEY
DAVIS ST
DAVIS
HAMILTON
BRIDGE ST
BRIDGE
CRAIG AVE
DEWALT ST
KYLE ST
HADDINGTON
SHERIDAN ST
DOUGLAS ST
DOUGLAS
MARKET
ROSE PL
ROSE CT
FAIRMOUNT AVE
HIGH ST
S FOREST
S DEAN ST
WARWICK ST
S PROSPECT ST
S FRUIT ST
S PENN
LANSING AVE
DARLAND
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MONROE
VALLEY ST
VALLEYST
PARKER
ARCH ST
GRANDVIEW
LANSING AVE
HENRY ST
WILLOW ST
MC
VERONA
STATE
STAR ST
PALM ST
MARC
DONATION
BERDLEY
HILL
SPRINGDALE
HARTZELL AVE
ST MICHAEL AVE
BUTLER AVE
FLORENCE AVE
SMITHFIELD
MANHATTAN AVE
CONNECTICUT AVE
WELLINGTON AVE
GNETA ST
3RD ST
2ND ST
1ST ST
MAYFIELD
GINSDALE AVE
TROY ST
OLSON AVE
PRICE
HIGHLAWN AVE
OVERLOOK AVE
RIDGELAWN AVE
THURBER LN
NC COLLUM RD
COLLUM RD
GLACIER RD
GLACIER VIEW RD
MCKINLEY AVE
MCKINLEY
BELLE AVE
BELLE
MARSHALL AVE
FERNWOOD AVE
N MARYLAND AVE
N PORTLAND AVE
N EVANSTON AVE
S EVANSTON AVE
S ELMORE AVE
HAMPTON AVE
N BAKER AVE
KINLEY AVE
S PORTLAND AVE
S MARYLAND AVE
S MARSHALL AVE
N MARSHALL AVE
HALLECK
HALLECK ST
VISTA
VISTA AVE
SHARON AVE
SHARON
SHARONFORD ST
SHARONFORD
MAHONING AVE
MAHONING
SR 7
SR 7
SR 7





DETAIL B



(11)

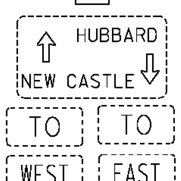
*COVER FOR DURATION OF SOUTHBOUND CLOSURE



(12)

*COVER FOR DURATION OF SOUTHBOUND CLOSURE

C



A



B





DETAIL C

E PORTABLE CHANGEABLE MESSAGE SIGN MESSAGES:

1.) TO 680 S.B.
2.) FOLLOW 62W/7S

MOUNTED ON TYPE III BARRICADE WITH TYPE B FLASHING (YELLOW) WARNING LIGHTS

(1)



R11-2-48

(2)



W20-3-36



M1-1-36-3

(3)

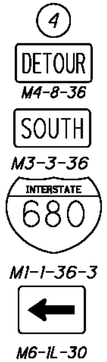


W20-2-36



M1-1-36-3

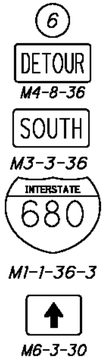
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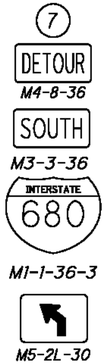
(5)



(6)



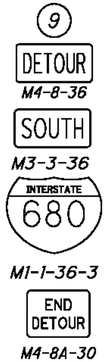
(7)



(8)



(9)



(10)

NOTICE OF CLOSURE SIGN SEE SHEET 11

⊥ SINGLE POST SIGN

TYPE III BARRICADE WITH SIGN

NOTES:

1. THESE DETOURS SHALL BE IN EFFECT WHEN I.R. 680 S.B. IS REDUCED TO ONE LANE.
2. DETOUR SIGNING LOCATIONS SHALL BE PER OMUTCD AND ROAD CLOSURES SHALL BE PER MT-101.60.
3. FOR TURN LANE CLOSURE DETAILS, SEE STANDARD CONSTRUCTION DRAWING MT-98.30
4. DETOUR SIGNS SHALL BE UNCOVERED AND VISIBLE TO TRAFFIC ONLY WHEN THE ROAD CLOSURE IS IN EFFECT.
5. COVER ALL CONFLICTING SIGNING PRIOR TO THE CLOSURE.
6. CLOSE I.R. 680 PER STANDARD CONSTRUCTION DRAWING MT-99.50
7. FOR ADDITIONAL DETAILS, SEE SHEET 16

CALCULATED MLL CHECKED JTW

SOUTHBOUND I.R. 680 (REDUCED TO ONE LANE) DETOUR PLAN

MAH-680-(5.41/5.60)

18
48

X:\96637\Design\MOT\Sheets\96637_MD578.dgn Sheet 3/6/2018 1:51:08 PM minutes

SHEET NUM.													PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
OFFICE	9	10	21	22	23	24	39						02/IMS/BR	06/IMS/BR						
																			ROADWAY	
	LS													LS	201	11000	LS		CLEARING AND GRUBBING	
2,161													1,302	859	202	23000	2,161	SY	PAVEMENT REMOVED	
			220											220	202	30700	220	FT	CONCRETE BARRIER REMOVED	
			117										81	36	202	32000	117	FT	CURB REMOVED	
			581										388	193	202	38000	581	FT	GUARDRAIL REMOVED	
			6										4	2	202	47000	6	EACH	BRIDGE TERMINAL ASSEMBLY REMOVED	
			2											2	202	58200	2	EACH	INLET REMOVED	
			72.5											72.5	202	75000	72.5	FT	FENCE REMOVED	
				3,954										3,954	203	10000	3,954	CY	EXCAVATION	
				21,756										21,756	203	20000	21,756	CY	EMBANKMENT	
5,130													1,807	3,323	204	10000	5,130	SY	SUBGRADE COMPACTION	
		120											60	60	204	13000	120	CY	EXCAVATION OF SUBGRADE	
		120											60	60	204	30010	120	CY	GRANULAR MATERIAL, TYPE B	
		3											1.33	1.67	204	45000	3	HOUR	PROOF ROLLING	
		240											120	120	204	50000	240	SY	GEOTEXTILE FABRIC	
			862.5										375	487.5	606	15050	862.5	FT	GUARDRAIL, TYPE MGS	
			2										2		606	35002	2	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	
			3										2	1	606	35102	3	EACH	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	
			503											503	607	23000	503	FT	FENCE, TYPE CLT	
			503											503	607	70000	503	FT	FENCELINE SEEDING AND MULCHING	
			331											331	622	10100	331	FT	CONCRETE BARRIER, SINGLE SLOPE, TYPE B1	
			3											3	622	10201	3	EACH	BARRIER TRANSITION, AS PER PLAN	8
			1											1	622	24850	1	EACH	CONCRETE BARRIER END SECTION, TYPE B1	
			8											8	622	25006	8	EACH	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B1	
														LS	SPECIAL	69098400	LS		SPECIAL - BILLBOARD REMOVED	9
																			EROSION CONTROL	
	2													2	659	00100	2	EACH	SOIL ANALYSIS TEST	
	379													379	659	00300	379	CY	TOPSOIL	
	3,412													3,412	659	10000	3,412	SY	SEEDING AND MULCHING	
	171													171	659	14000	171	SY	REPAIR SEEDING AND MULCHING	
	171													171	659	15000	171	SY	INTER-SEEDING	
	0.49													0.49	659	20000	0.49	TON	COMMERCIAL FERTILIZER	
	0.7													0.7	659	31000	0.7	ACRE	LIME	
	19													19	659	35000	19	MGAL	WATER	
						2,761								2,761	671	15040	2,761	SY	EROSION CONTROL MAT, TYPE E	
						LS								LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
						19,000								19,000	832	30000	19,000	EACH	EROSION CONTROL	
																			DRAINAGE	
					1,335									1,335	605	11100	1,335	FT	6" SHALLOW PIPE UNDERDRAINS	
					195									195	605	13300	195	FT	6" UNCLASSIFIED PIPE UNDERDRAINS	
					121									121	611	00510	121	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	
			2											2	611	99101	2	EACH	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN	9
					1									1	611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	
																			PAVEMENT	
841													294	547	304	20001	841	CY	AGGREGATE BASE, AS PER PLAN	9
4,539													1,287	3,252	305	14011	4,539	SY	10" CONCRETE BASE, CLASS QC1, AS PER PLAN	9
363													104	259	407	13900	363	GAL	TACK COAT, 702.13	
262													78	184	407	20000	262	GAL	NON-TRACKING TACK COAT	
182													54	128	442	20001	182	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448), AS PER PLAN (PG64-22)	9
441													126	315	442	20200	441	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448)	
			36										36		609	24510	36	FT	CURB, TYPE 4-C	
1,576													556	1,020	618	40100	1,576	FT	RUMBLE STRIPS, (ASPHALT CONCRETE)	

MAH-680-3.25		
1	3/3/18	ADJUSTED ITEM
2	3/14/18	ADJUSTED QUANTITY OF ITEM 305 -
		10" CONCRETE BASE, CLASS QC1, APP
3	3/27/18	ADJUSTED UNDERDRAIN QUANTITIES
		AND ADDED ITEM
NO.	DATE	DESCRIPTION
ISSUE RECORD		

CALCULATED MLL CHECKED JTW

GENERAL SUMMARY

MAH-680-(5.41/5.60)

19
48

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SHEET NUM.												PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
11	12	13	21	34	39							02/IMS/BR	06/IMS/BR						
																		LIGHTING	
					6								6	625	00450	6	EACH	CONNECTION, FUSED PULL APART	
					8								8	625	10614	8	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE	
					2								2	625	14306	2	EACH	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP	
					2,685								2,685	625	23200	2,685	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	
					253								253	625	23400	253	FT	NO. 10 AWG POLE AND BRACKET CABLE	
					536								536	625	25400	536	FT	CONDUIT, 2", 725.04	
					2								2	625	29930	2	EACH	MEDIAN JUNCTION BOX	
					2								2	625	32000	2	EACH	GROUND ROD	
					1								1	625	34001	1	EACH	POWER SERVICE, AS PER PLAN	37
					2								2	625	35010	2	EACH	REMOVE AND REERECT EXISTING LIGHT POLE	
					2								2	625	75500	2	EACH	LIGHT POLE FOUNDATION REMOVED	
					2,685								2,685	625	75550	2,685	FT	DISTRIBUTION CABLE REMOVED	
					2								2	625	75801	2	EACH	DISCONNECT CIRCUIT, AS PER PLAN	37
													2	625	98000	2	EACH	LIGHTING, MISC.: NEW IDENTIFICATION LABEL	
																		TRAFFIC CONTROL	
				15								5	10	621	00100	15	EACH	RPM	
			1										1	626	00102	1	EACH	BARRIER REFLECTOR, TYPE 1, ONE WAY	
			6										6	626	00102	6	EACH	BARRIER REFLECTOR, TYPE 1, BIDIRECTIONAL	
			15									10	5	626	00112	15	EACH	BARRIER REFLECTOR, TYPE 3, ONE WAY	
				7.5									7.5	630	02100	7.5	FT	GROUND MOUNTED SUPPORT, NO. 2 POST	
				1									1	630	81020	1	EACH	CONCRETE MEDIAN BARRIER SIGN BRACKET, (TYPE1)	
				1									1	630	86320	1	EACH	REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION	
				0.48								0.28	0.2	646	10010	0.48	MILE	EDGE LINE, 6"	
				0.34								0.14	0.2	646	10110	0.34	MILE	LANE LINE, 6"	
																		STRUCTURE OVER 20 FOOT SPAN (MAH-680-0555L&R)	
																		FOR QUANTITIES, SEE SHEET 41	
																		STRUCTURE OVER 20 FOOT SPAN (MAH-680-0575L)	
																		FOR QUANTITIES, SEE SHEET 44	
																		MAINTENANCE OF TRAFFIC	
	1												1	606	60002	1	EACH	IMPACT ATTENUATOR, TYPE 1 (UNIDIRECTIONAL)	
		200											200	614	11110	200	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
LS													LS	614	12420	LS		DETOUR SIGNING	
	13												13	614	13310	13	EACH	BARRIER REFLECTOR, TYPE 1, ONE-WAY	
	13												13	614	13350	13	EACH	OBJECT MARKER, ONE WAY	
	30												30	614	18600	30	SNMT	PORTABLE CHANGEABLE MESSAGE SIGN	
103													103	616	10000	103	MGAL	WATER	
	600												600	622	41011	600	FT	PORTABLE BARRIER, 50", AS PER PLAN	12
																		INCIDENTALS	
													LS	108	10000	LS		CPM PROGRESS SCHEDULE	
LS													LS	614	11000	LS		MAINTAINING TRAFFIC	
													42	619	16020	42	MNTH	FIELD OFFICE, TYPE C	
													LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
													LS	624	10000	LS		MOBILIZATION	

CALCULATED MLL CHECKED JTW

GENERAL SUMMARY

MAH-680-(5.41/5.60)

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ROADWAY, REMOVAL & DRAINAGE SUBSUMMARY

CALCULATED MLL
CHECKED SWC

REF. NO.	SHEET NO.	STATION TO STATION		202						606			607		609	611	622				626		
				CONCRETE BARRIER REMOVED	CURB REMOVED	GUARDRAIL REMOVED	BRIDGE TERMINAL ASSEMBLY REMOVED	INLET REMOVED	FENCE REMOVED	GUARDRAIL, TYPE MGS	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1	MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2	FENCE, TYPE CLT	FENCELINE SEEDING AND MULCHING	CURB, TYPE 4-C	INLET, NO. 3 FOR SINGLE SLOPE BARRIER, TYPE B1, AS PER PLAN	CONCRETE BARRIER, SINGLE SLOPE, TYPE B1	BARRIER TRANSITION, AS PER PLAN	CONCRETE BARRIER, END SECTION, TYPE B1	CONCRETE BARRIER, END ANCHORAGE, REINFORCED, TYPE B1	BARRIER REFLECTOR, TYPE 1, ONE WAY, WHITE	BARRIER REFLECTORS, TYPE 1, BIDIRECTIONAL, YELLOW	BARRIER REFLECTORS, TYPE 3, ONE WAY, WHITE
				FT	FT	FT	EACH	EACH	FT	FT	EACH	EACH	FT	FT	FT	EA	FT	EACH	EACH	EACH	EACH	EACH	EACH
I.R. 680 - 0555																							
R-1	25	1004+12.52	1005+25.31			113	1																
R-2	25	1004+12.52	1004+91.32		11	79	1																
R-3	25	1006+67.27	1007+87.09			120	1																
R-4	25	1007+10.19	1007+87.09		13	77	1																
GR-1	25	1004+12.52	1005+25.31							100.0	1												3
GR-2	25	1004+12.52	1004+91.32							87.5		1											2
GR-3	25	1006+67.27	1007+87.09							100.0	1												3
GR-4	25	1007+10.19	1007+87.09							87.5		1											2
C-1	25	1005+06.77	1005+25.31		43										18								
C-2	25	1006+67.27	1006+85.05		14										18								
I.R. 680 - 0575																							
R-1	26	1014+40.00	1015+83.75		18	135	1																
R-2	26	1019+18.75	1019+50.00		18	58	1																
R-3	26	1014+20.01	1015+83.75	164				2															
R-4	26	1019+18.75	1019+75.00	56																			
R-5	26	1015+33.22	1015+85.60						72.5														
GR-1	26	1014+40.00	1019+27.17							487.5		1											5
B-1	26	1014+40.00	1015+09.65														35	1		1			
B-2	26	1015+11.65	1015+64.54														23			2			
B-3	26	1015+84.54	1018+03.21														189			2		6	
B-4	26	1018+05.21	1019+19.92														85			2			
B-5	26	1019+39.92	1019+75.00															1		1			
B-6	26	1019+27.15	1019+77.14															1	1		1		
D-1	26	1015+74.54														1							
D-2	26	1019+29.92														1							
F-1	26	1015+48.09	1020+11.79										503	503									
TOTALS CARRIED TO GENERAL SUMMARY				220	117	581	6	2	72.5	862.5	2	3	503	503	36	2	331	3	1	8	1	6	15

MAH-680-(5.41/5.60)

X:\96637\Design\Roadway\Sheets\96637_GS575.dgn Sheet 3/6/2018 1:51:10 PM mlutes

EARTHWORK						
SHEET NO.	STATION		203			659
			EXCAVATION	EMBANKMENT		SEEDING AND MULCHING
	FROM	TO	CU. YD.	CU. YD.		SQ. YD.
	MAH-680-5.60					
27	1014+00.00	1014+40.00	0	0		0
28	1014+50.00	1015+50.00	181	5		102
29	1016+00.00	1016+50.00	562	3200		580
30	1017+00.00	1017+50.00	1183	7635		1014
31	1018+00.00	1018+50.00	1176	7209		1014
32	1019+00.00	1020+00.00	852	3707		702
TOTALS CARRIED TO SHEET 9						3412
TOTALS CARRIED TO GENERAL SUMMARY			3954	21756		

CALCULATED MLL
CHECKED SWC

EARTHWORK SUBSUMMARY

MAH-680-(5.41/5.60)

22
48

X:\96637\Design\Roadway\Sheets\96637_GS576.dgn Sheet 3/6/2018 1:51:10 PM mlutes

UNDERDRAIN SUBSUMMARY

CALCULATED MLL
CHECKED SWC

SHEET NO.	REFERENCE NO.	ROADWAY	STATION FROM	SIDE FROM	OFFSET FROM	INVERT FROM	STATION TO	SIDE TO	OFFSET TO	INVERT TO	OUTLET TYPE	605 6" SHALLOW PIPE UNDERDRAINS FT	605 6" UNCLASSIFIED UNDERDRAINS FT		611 6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLET FT	611 PRECAST REINFORCED CONCRETE OUTLET EACH					BENDS AND BRANCHES (FOR INFORMATION ONLY) PLUG EACH	TEE EACH	45° WYE EACH	90° BEND EACH	45° BEND EACH
			FROM	LT/RT	FT	FT	TO	LT/RT	FT	FT															
26	UD-1	I.R. 680	1019+50.00	LT	8.00	914.78	1015+74.54	LT	8.00	902.82	UD-5	375									1	1			
26	UD-2	I.R. 680	1019+50.00	LT	46.00	914.51	1015+84.54	LT	46.00	903.81	UD-3	365									1				
26	UD-3	I.R. 680	1015+84.54	LT	46.00	903.81	1015+74.54	LT	46.00	903.46	UD-5		10									1			
26	UD-4	I.R. 680	1019+50.00	LT	54.50	914.19	1015+74.54	LT	54.50	903.54	UD-5	375									1			1	
26	UD-5	I.R. 680	1015+74.54	LT	54.50	903.54	1015+74.54	LT	2.75	902.77	INLET				52										
26	UD-6	I.R. 680	1015+74.54	LT	54.50	904.53	1014+65.00	LT	54.50	901.09	UD-7	110									1	1			
26	UD-7	I.R. 680	1014+65.00	LT	54.50	901.09	1014+40.00	LT	54.50	898.32	UD-11		25												
26	UD-8	I.R. 680	1015+74.54	LT	46.00	904.85	1014+65.00	LT	46.00	900.58	UD-9	110									1			1	
26	UD-9	I.R. 680	1014+65.00	LT	46.00	900.58	1014+40.00	LT	46.00	898.36	UD-11		25								1			1	
26	UD-10	I.R. 680	1015+74.54	LT	8.00	902.82	1014+40.00	LT	8.00	898.55	UD-11		135								1				
26	UD-11	I.R. 680	1014+40.00	LT	8.00	898.55	1014+40.00	LT	77.00	898.20	OUTLET				69	1									
TOTALS CARRIED TO GENERAL SUMMARY												1,335	195		121	1					7	3	0	3	0

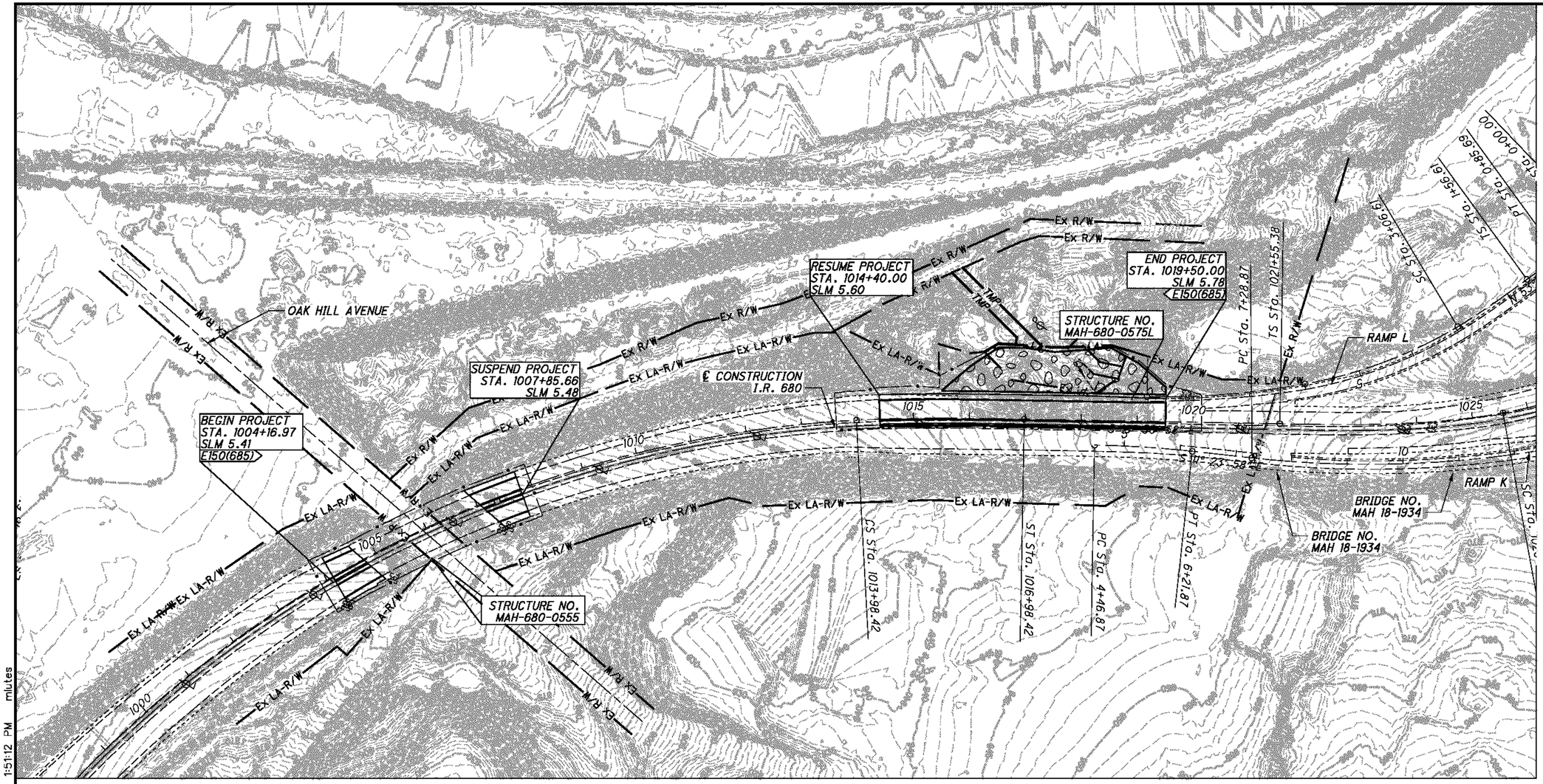
NO.	DATE	DESCRIPTION
3	3/27/18	ADJUSTED QUANTITIES/INVERTS ADDED OUTLET QTY
		ISSUE RECORD

MAH-680-(5.41/5.60)

MAH-680-(5.41/5.60)

23
48

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PROJECT DESCRIPTION

REMOVAL AND REPLACEMENT OF APPROACH SLABS AND FULL DEPTH REPLACEMENT OF APPROACH PAVEMENT ON MAH-680-0555. REMOVAL OF THE EXISTING MAH-680-0575 STRUCTURE AND CONSTRUCTION OF PROPOSED PAVEMENT ON PROPOSED EMBANKMENT.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 671, EROSION CONTROL, TYPE E - 2761 SF

ITEM 832, STORM WATER POLLUTION PREVENTION PLAN - LUMP SUM

ITEM 832, EROSION CONTROL - 19,000 EACH

NOTE:
BMP TREATMENT IS NOT REQUIRED. PROJECT RUNOFF WILL SHEET FLOW OFF THE ROADWAY AND CONTINUE TO SHEET FLOW OUTSIDE ODOT RIGHT OF WAY.

LEGEND:

EROSION CONTROL, TYPE E

TOTAL AREA:	2.45 AC
IMPERVIOUS (PAVED) AREA FOR PRE-CONSTRUCTION SITE:	1.35 AC
IMPERVIOUS (PAVED) AREA FOR POST-CONSTRUCTION SITE:	1.35 AC
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE:	0.86
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE:	0.86
USDA SOIL & WATER CONSERVATION MAP:	MAHONING COUNTY, OH
IMMEDIATE RECEIVING WATERS:	MAHONING RIVER LAKE GLACIER
SUBSEQUENT RECEIVING WATERS:	BEAVER RIVER
EARTH DISTURBED AREA SUMMARY	
PROJECT EDA:	2.45 ACRES
CONTRACTOR EDA:	1.42 ACRES
NOTICE OF INTENT EDA:	4.90 ACRES

CONTOUR INTERVAL = 5 FEET

USGS MAP: YOUNGSTOWN, OHIO

LONGITUDE: -80°-39'-25" W *
LATITUDE: 41°-05'-46" N *

* LONGITUDE AND LATITUDE TO APPROX. CENTER OF PROJECT

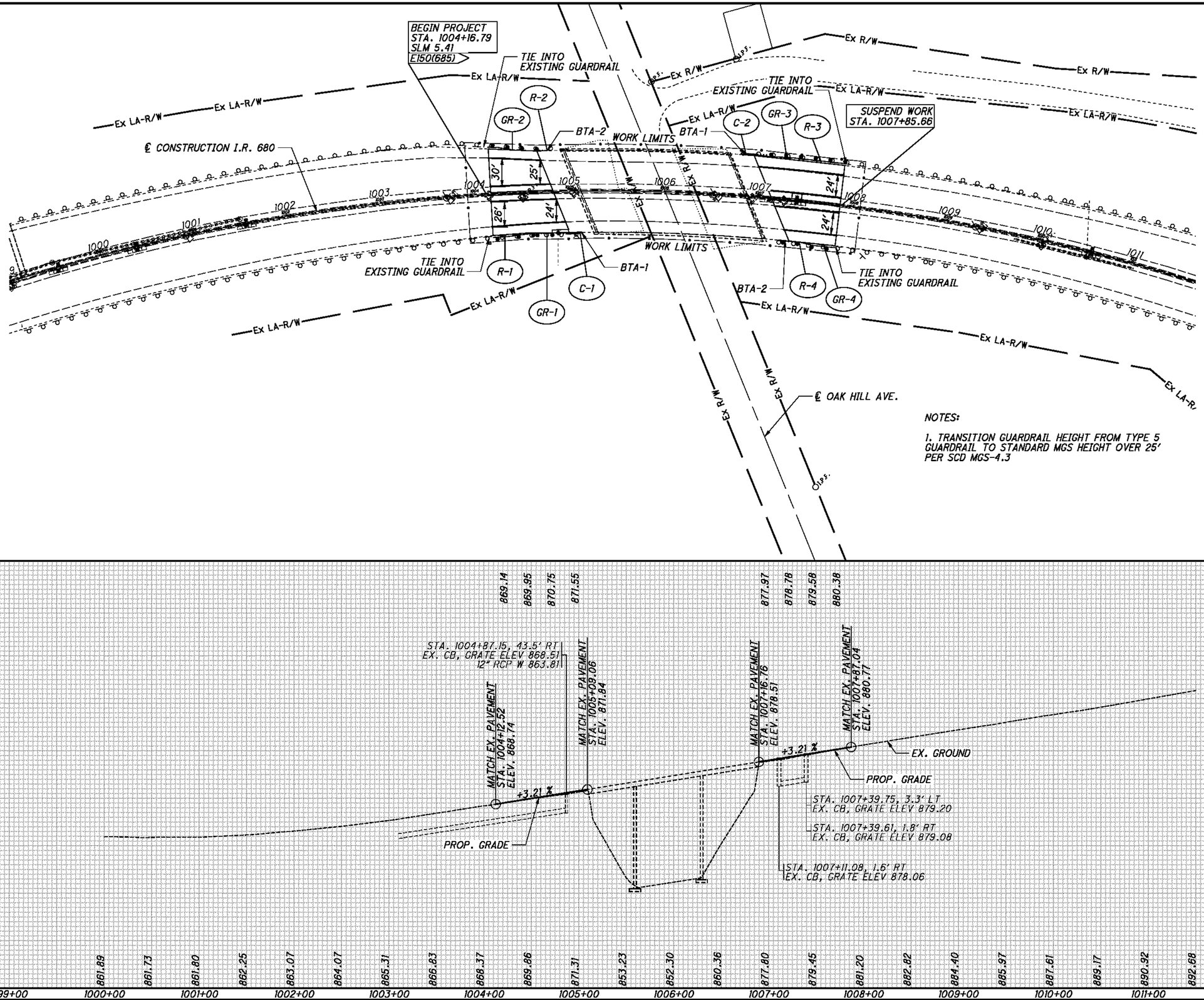
HORIZONTAL SCALE IN FEET
0 50 100 200

CALCULATED MLL
CHECKED SWC

PROJECT SITE PLAN

MAH-680-(5.41/5.60)

X:\96637\Design\Drainage\Sheets\96637_DE575.dgn Sheet 3/6/2018 1:51:12 PM mlutes



HORIZONTAL SCALE IN FEET
0 25 50 100

CALCULATED SWC
CHECKED JTW

PLAN AND PROFILE
STA. 999+00.00 TO STA. 1011+00.00

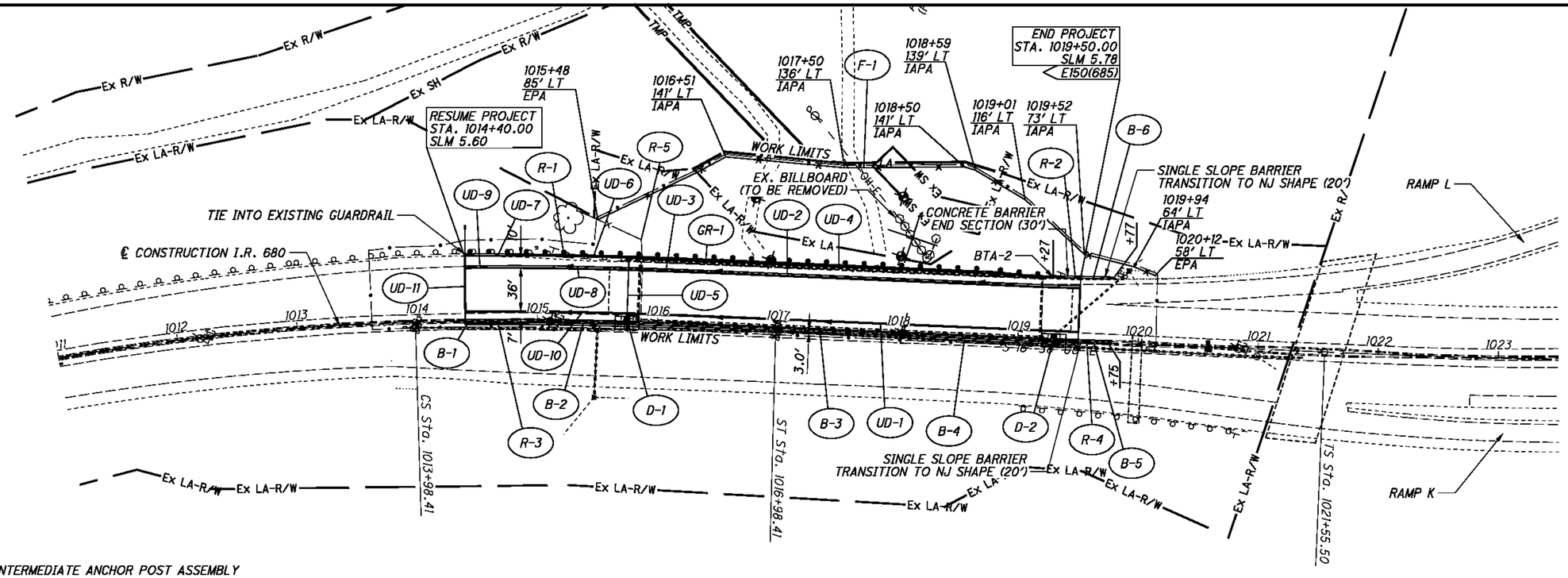
MAH-680-(5.41/5.60)

25
48

X:\96637\Design\Roadway\Sheets\96637_GP555.dgn Sheet 3/6/2018 1:51:15 PM mlutes

NO.	DATE	DESCRIPTION
3	3/27/18	MODIFIED UD OUTLETS
---	---	----------
---	---	ISSUE RECORD

MAH-680-(5.41/5.60)



LEGEND:

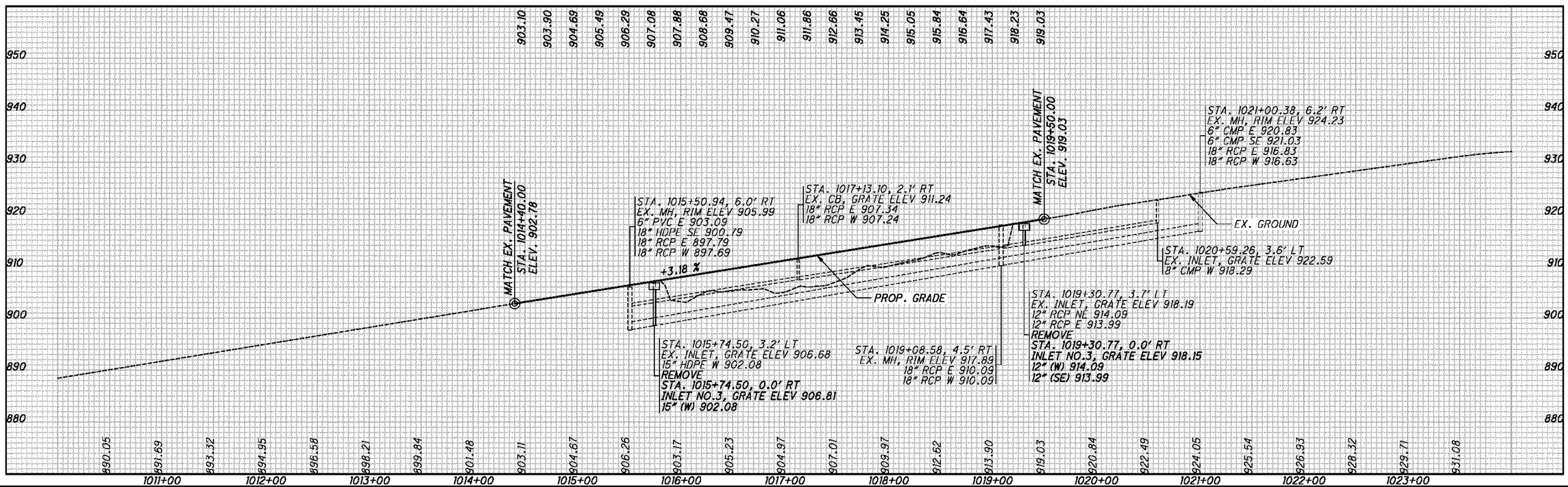
IAPA INTERMEDIATE ANCHOR POST ASSEMBLY

EPA END POST ASSEMBLY

⌖ SOIL BORING

NOTES:

1. TRANSITION GUARDRAIL HEIGHT FROM TYPE 5 GUARDRAIL TO STANDARD MGS HEIGHT OVER 25' PER SCD MGS-4.3



HORIZONTAL SCALE IN FEET

CALCULATED MLL CHECKED JTW

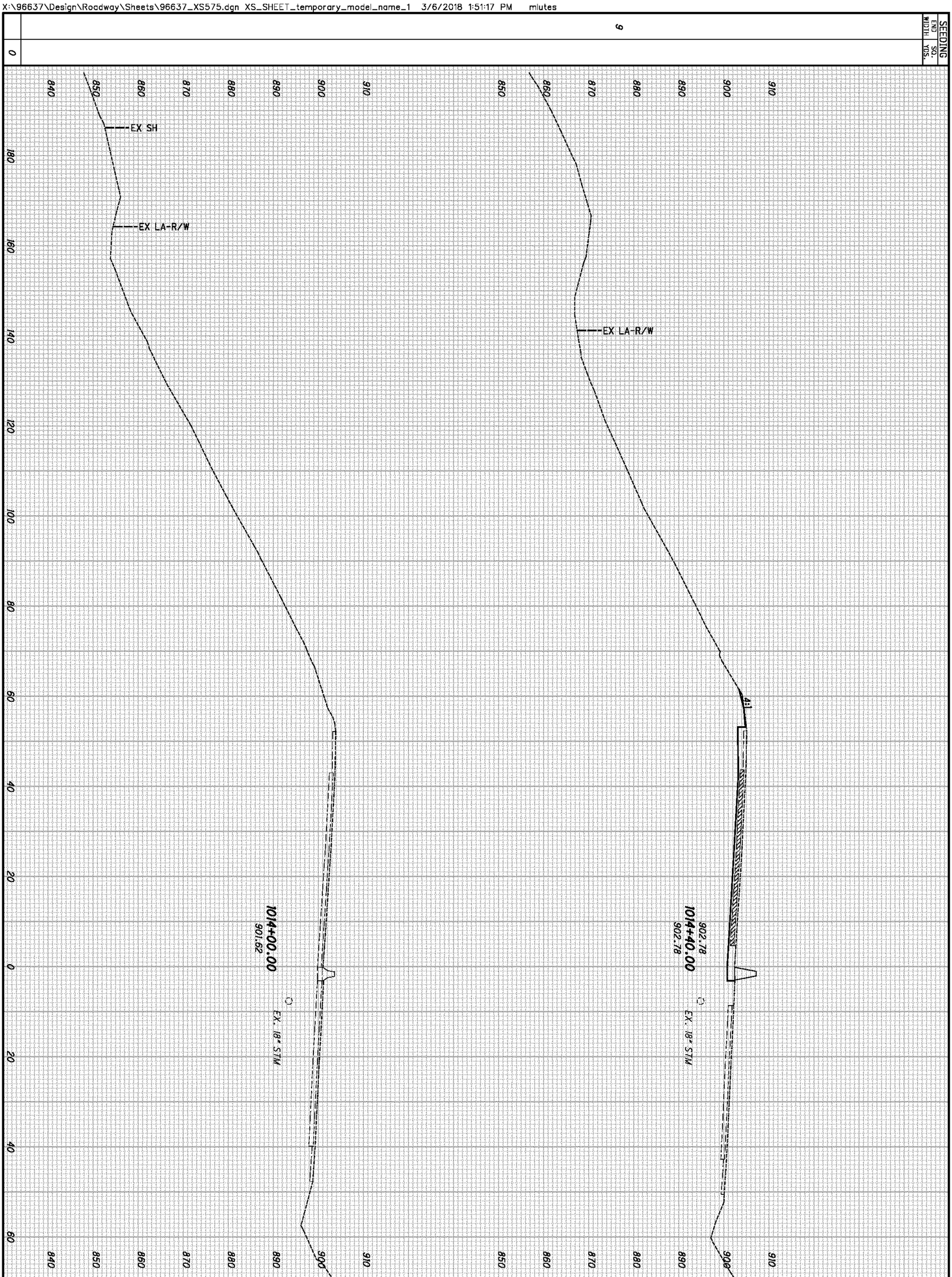
PLAN AND PROFILE
STA. 1011+00.00 TO STA. 1023+50.00

MAH-680-(5.41/5.60)

26
48

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MAH-680-(5.41/ 5.60)

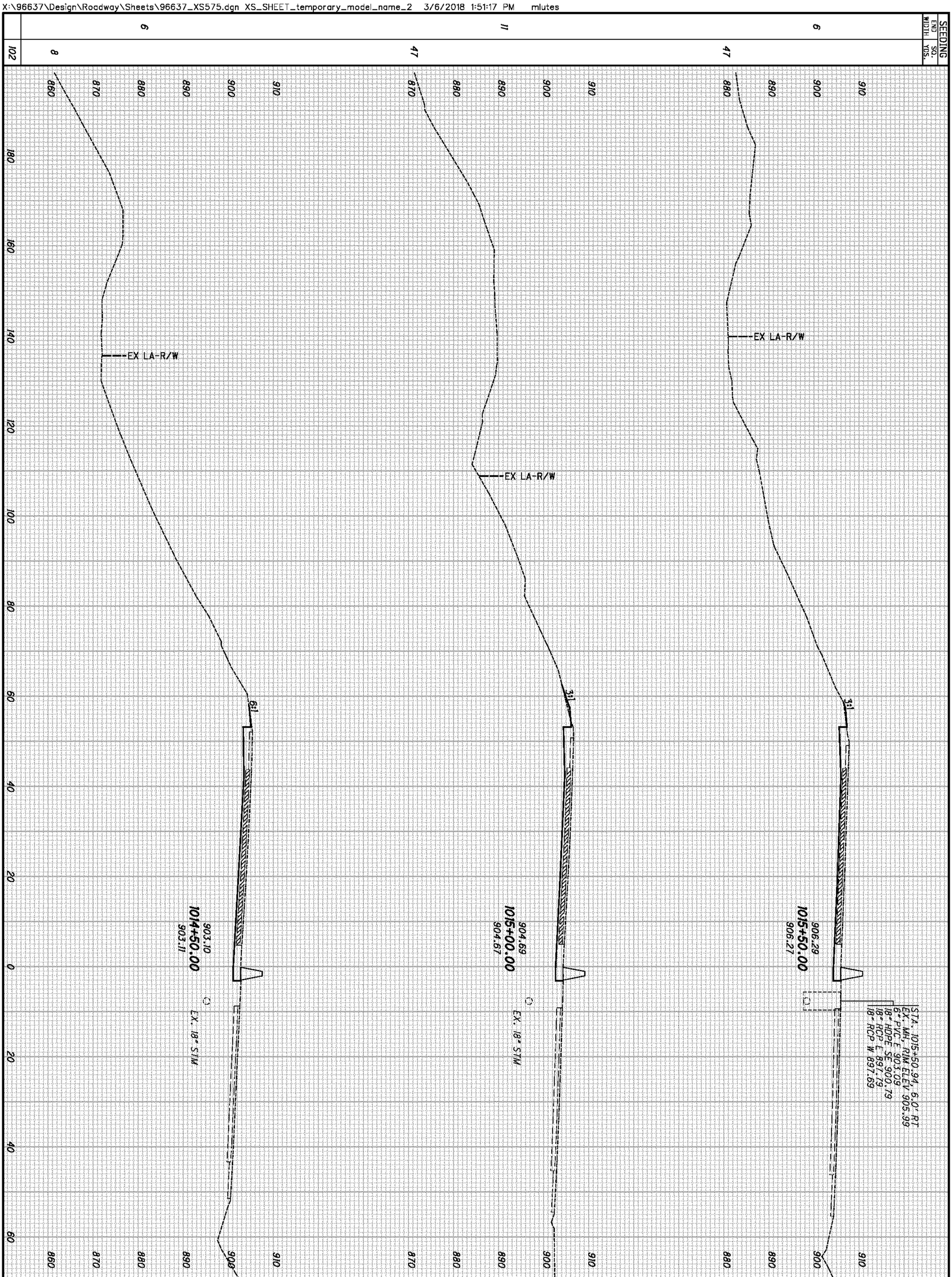
CROSS SECTIONS

STA. 1014+00.00 TO STA. 1014+40.00

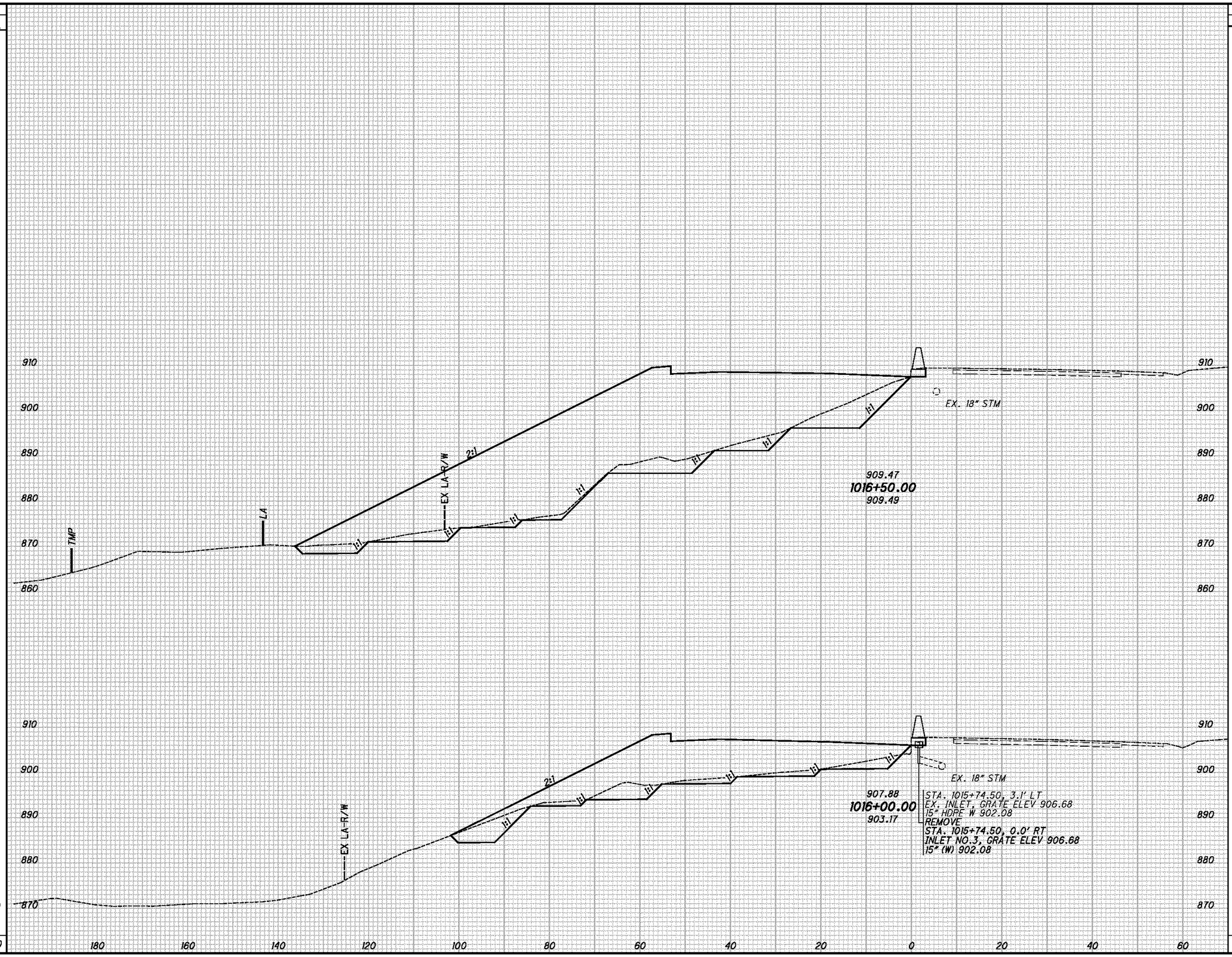
CALCULATED MLL

CHECKED JTW

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SEEDING	
END WIDTH	SQ. YDS.
93	411
55	169
	580



END AREA		VOLUME	
CUT	FILL	CUT	FILL
256	2003		
		381	2527
155	726		
		181	673
		562	3200

CALCULATED MLL
CHECKED JTW

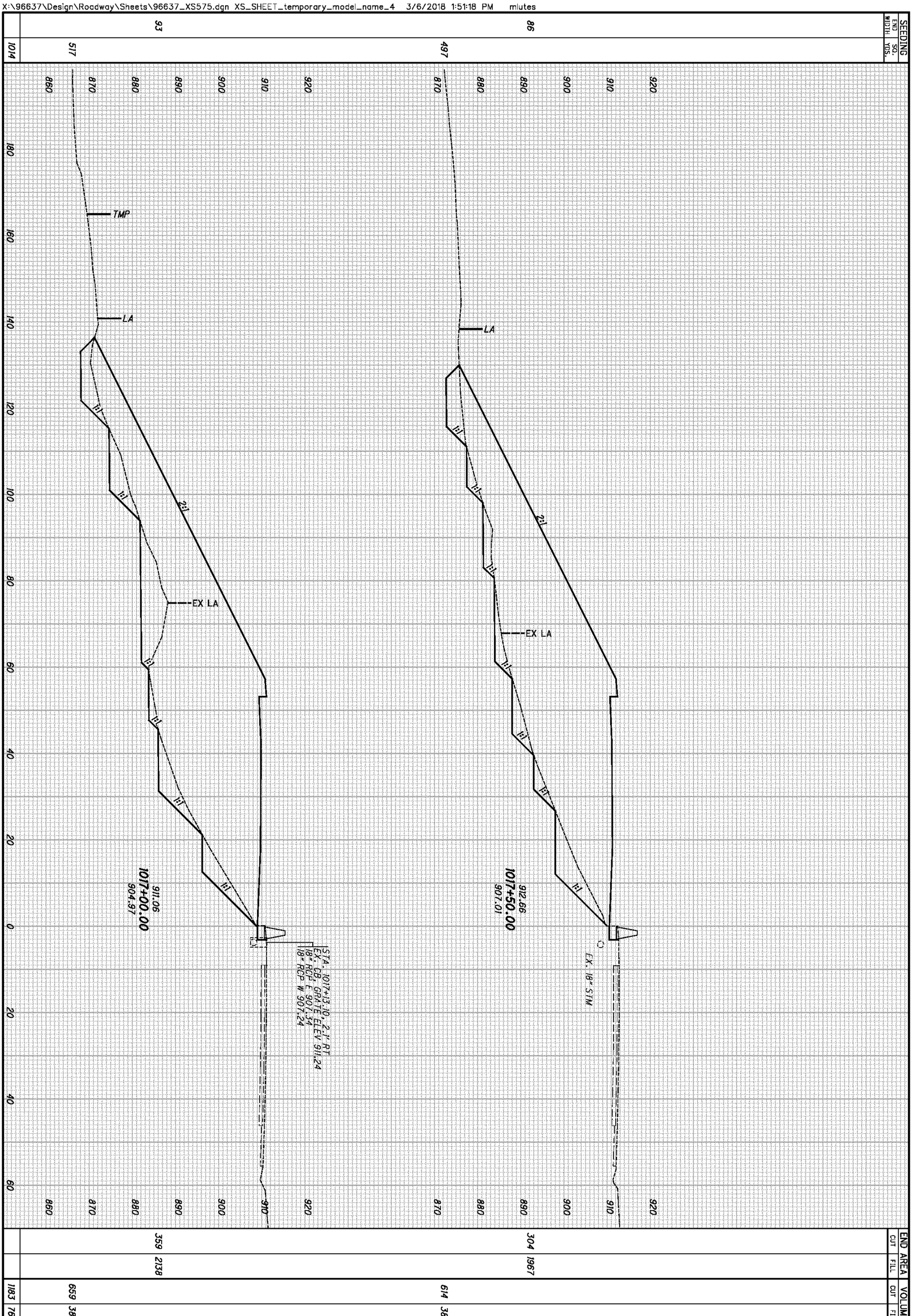
CROSS SECTIONS
STA. 1016+00.00 TO STA. 1016+50.00

MAH-680-(5.41/5.60)

29
48

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30/48

MAH-680-(5.41/5.60)

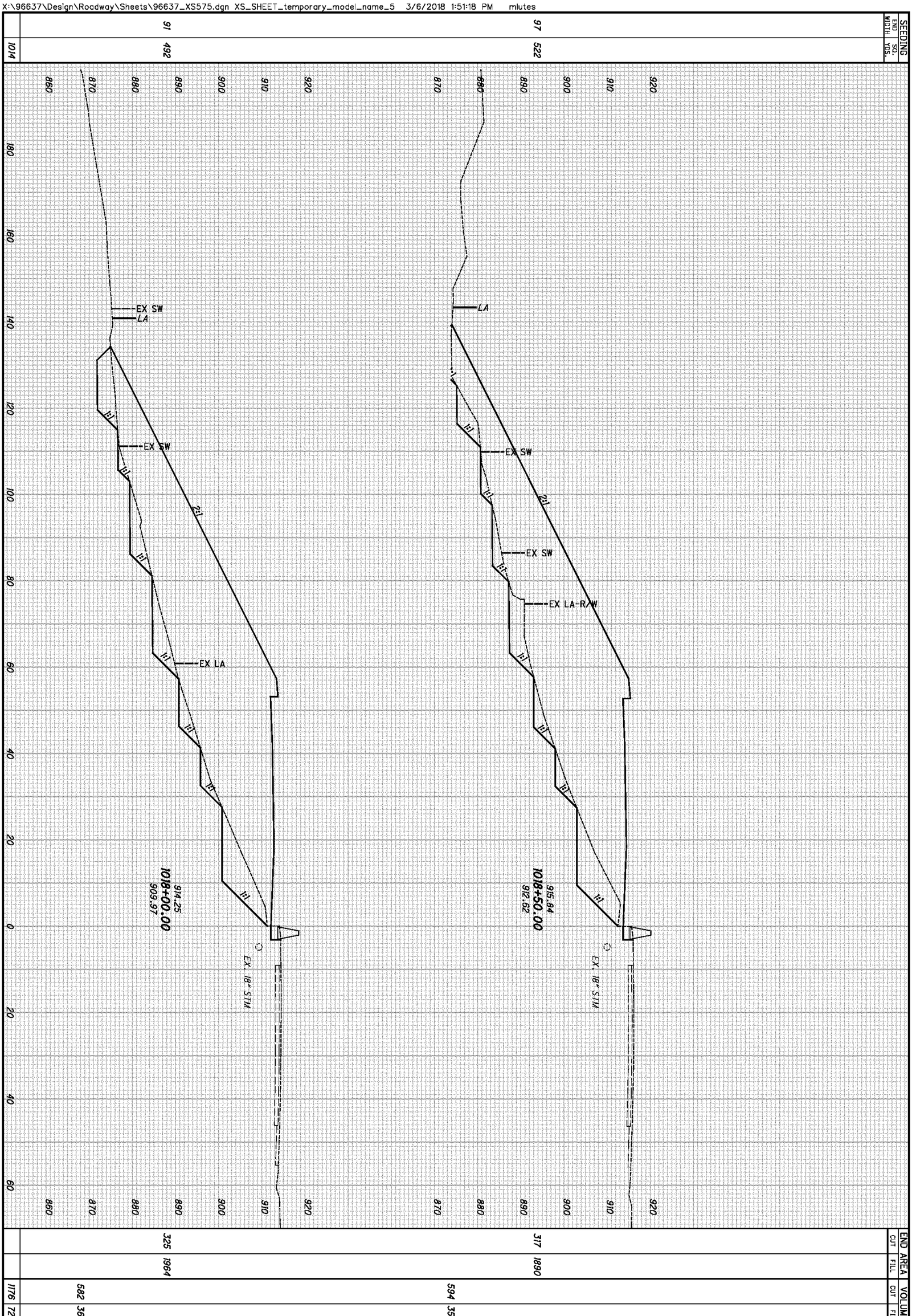
CROSS SECTIONS

STA. 1017+00.00 TO STA. 1017+50.00

CALCULATED MLL

CHECKED JTW

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31 / 48	MAH-680-(5.41/ 5.60)	**CROSS SECTIONS** **STA. 1018+00.00 TO STA. 1018+50.00**

CALCULATED MLL
CHECKED JTW

SEEDING	
END WIDTH	SQ. YDS.
20	244
68	458
	702

END AREA	
CUT	FILL
29	3
287	1055

VOLUME	
CUT	FILL
293	980
559	2727
852	3707

CALCULATED MLL
CHECKED JTW

950 940 930 920 910 900

1020+00.00
920.84
EX. 18" STM

EX LA-R/W

3:1

918.96
1019+50.00
919.03
EX. 18" STM

STA. 1019+30.77, 3.7' LT
EX. INLET, GRATE ELEV 918.19
12" RCP NE 914.09
12" RCP E 913.99
REMOVE
STA. 1019+30.77, 0.0' RT
INLET NO.3, GRATE ELEV 918.15
12" (W) 914.09
12" (SE) 913.99

EX LA-R/W

2:1 1:1 1:1 1:1 1:1 1:1

917.43
1019+00.00
913.90

STA. 1019+08.58, 4.5' RT
EX. MH, RIM ELEV 917.89
18" RCP E 910.09
18" RCP W 910.09

890 880

180 160 140 120 100 80 60 40 20 0 20 40 60

CROSS SECTIONS
STA. 1019+00.00 TO STA. 1020+00.00

MAH-680-(5.41/5.60)

32
48

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SUPERELEVATION TABLE

P.I. STA. 1004+22.10 | **Dc = 2°44'59"**

REMARKS	OUTSIDE EDGE					CROWN LINE					INSIDE EDGE (PROFILE GRADE)		STATION	INSIDE EDGE (PROFILE GRADE)		CROWN LINE					OUTSIDE EDGE					REMARKS
	ELEVATION	ELEVATION CORRECTION	CROSS SLOPE	TRANSITION RATE	WIDTH	ELEVATION	ELEVATION CORRECTION	CROSS SLOPE	TRANSITION RATE	WIDTH	ELEVATION	OFFSET		OFFSET	ELEVATION	WIDTH	TRANSITION RATE	CROSS SLOPE	ELEVATION CORRECTION	ELEVATION	WIDTH	TRANSITION RATE	CROSS SLOPE	ELEVATION CORRECTION	ELEVATION	
	904.86	1.39	0.0578	216	24	903.48	0.69	0.0578	216	12	902.78	8.00	1014+40.00													
	905.11	1.34	0.0558		24	903.77	0.67	0.0558		12	903.10	8.00	1014+50.00													
	905.74	1.22	0.0510		24	904.51	0.61	0.0510		12	903.90	8.00	1014+75.00													
	906.36	1.11	0.0462		24	905.25	0.55	0.0462		12	904.69	8.00	1015+00.00													
	906.98	0.99	0.0414		24	905.99	0.50	0.0414		12	905.49	8.00	1015+25.00													
	907.60	0.88	0.0366		24	906.73	0.44	0.0366		12	906.29	8.00	1015+50.00													
	908.23	0.76	0.0318		24	907.46	0.38	0.0318		12	907.08	8.00	1015+75.00													
	908.85	0.65	0.0270		24	908.20	0.32	0.0270		12	907.88	8.00	1016+00.00													
	909.47	0.53	0.0221		24	908.94	0.27	0.0221		12	908.68	8.00	1016+25.00													
	910.10	0.42	0.0173		24	909.68	0.21	0.0173		12	909.47	8.00	1016+50.00													
R.C.	910.27	0.38	0.0160		24	909.88	0.19	0.0160		12	909.69	8.00	1016+56.87													
	910.68	0.22	0.0090		24	910.46	0.19	0.0160		12	910.27	8.00	1016+75.00													
S.T. 1/2 FLAT	911.21	0.00	0.0000		24	911.21	0.19	0.0160		12	911.01	8.00	1016+98.41													
	911.24	-0.01	-0.0006		24	911.26	0.19	0.0160		12	911.06	8.00	1017+00.00													
	911.81	-0.25	-0.0102		24	912.05	0.19	0.0160		12	911.86	8.00	1017+25.00													
N.C.	912.15	-0.38	-0.0160		24	912.53	0.19	0.0160		12	912.34	8.00	1017+39.97													

CALCULATED JTW | CHECKED MJC

SUPERELEVATION TABLE

MAH-680-(5.41/5.60)

33
48

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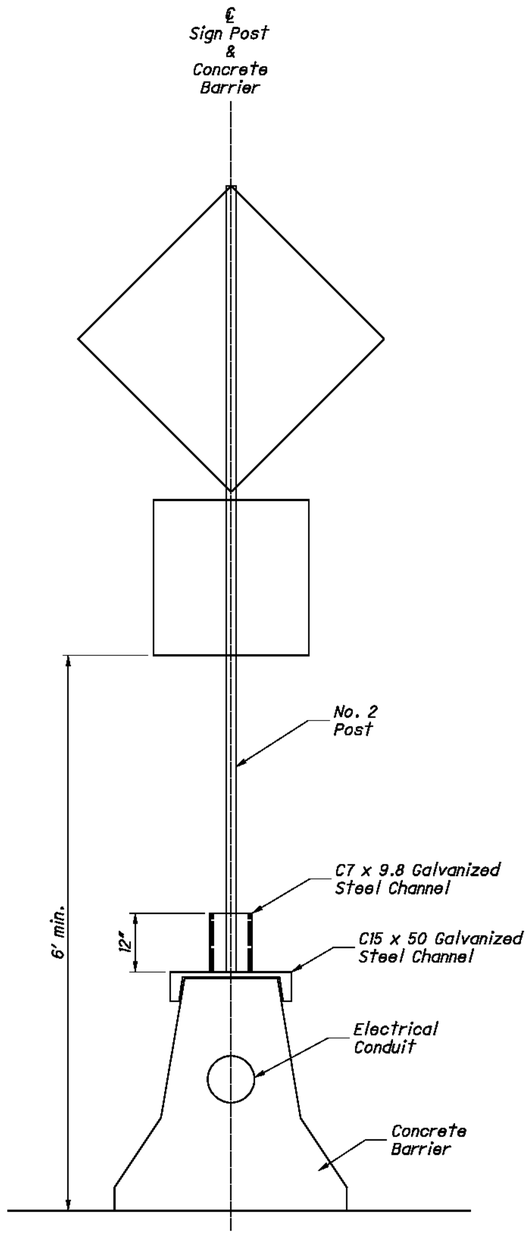
SHEET NO.	REFERENCE NO.	STATION FROM	STATION TO	SIDE	621 RPM, ONE WAY, WHITE		630 GROUND MOUNTED SUPPORT, NO. 2 POST	630 CONCRETE MEDIAN BARRIER SIGN BRACKET	630 REMOVAL OF STRUCTURE MOUNTED SIGN AND REERECTION		646 EDGE LINE, WHITE, 6"	646 EDGE LINE, YELLOW, 6"	646 LANE LINE, 6"							
					EA		FT	EA	EA		MILE	MILE	MILE							
I.R. 680 - 5.41																				
36	ELY-1	1004+13	1007+87	RT								0.07								
36	LL-1	1004+13	1007+87	RT	2								0.07							
36	ELW-1	1004+13	1007+87	RT							0.07									
36	ELW-2	1004+13	1007+87	LT							0.07									
36	LL-2	1004+13	1007+87	LT	2								0.07							
36	ELY-2	1004+13	1007+87	LT								0.07								
I.R. 680 - 5.60																				
36	ELW-3	1014+41	1019+51	LT							0.10									
36	LL-3	1014+41	1019+51	LT	5								0.10							
36	LL-4	1014+41	1019+51	LT	5								0.10							
36	ELY-3	1014+41	1019+51	LT								0.10								
36	SR-1	1019+18		LT			7.5	1	1											
			SUBTOTAL								0.24	0.24								
TOTALS CARRIED TO GENERAL SUMMARY					15		7.5	1	1		0.48		0.34							

CALCULATED MLL CHECKED SWC

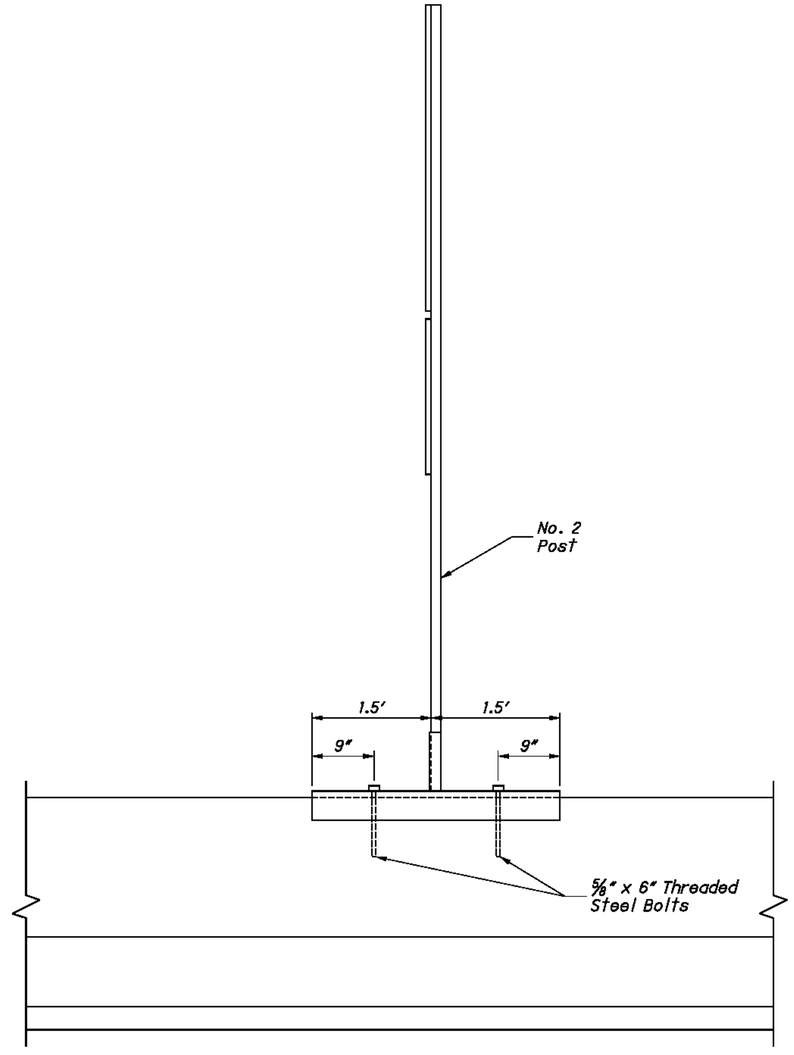
TRAFFIC CONTROL SUBSUMMARY

MAH-680-(5.41/5.60)

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REAR VIEW



SIDE VIEW

NOTES:

1. The C7 x 9.8 galvanized steel channel shall be welded to the C15 x 50 galvanized steel channel.
2. The No. 2 post shall be attached to the C7 x 9.8 galavanized steel channel with two 5/8" steel hex head bolts. The holes in the C7 x 9.8 steel channel shall be drilled before galvanizing. The holes shall be 9" center to center.
3. The 5/8" threaded steel bolts shall be attached to the concrete barrier with grout meeting the requirements of CMS 255.02.

THIS DRAWING REPLACES PIS 202020 DATED 11-27-2006.

OFFICE OF ROADWAY ENGINEERING

DESIGNED XXX | REVIEWED XXX

REVISION DATE 7/18/2014 | CHECKED CHECKED

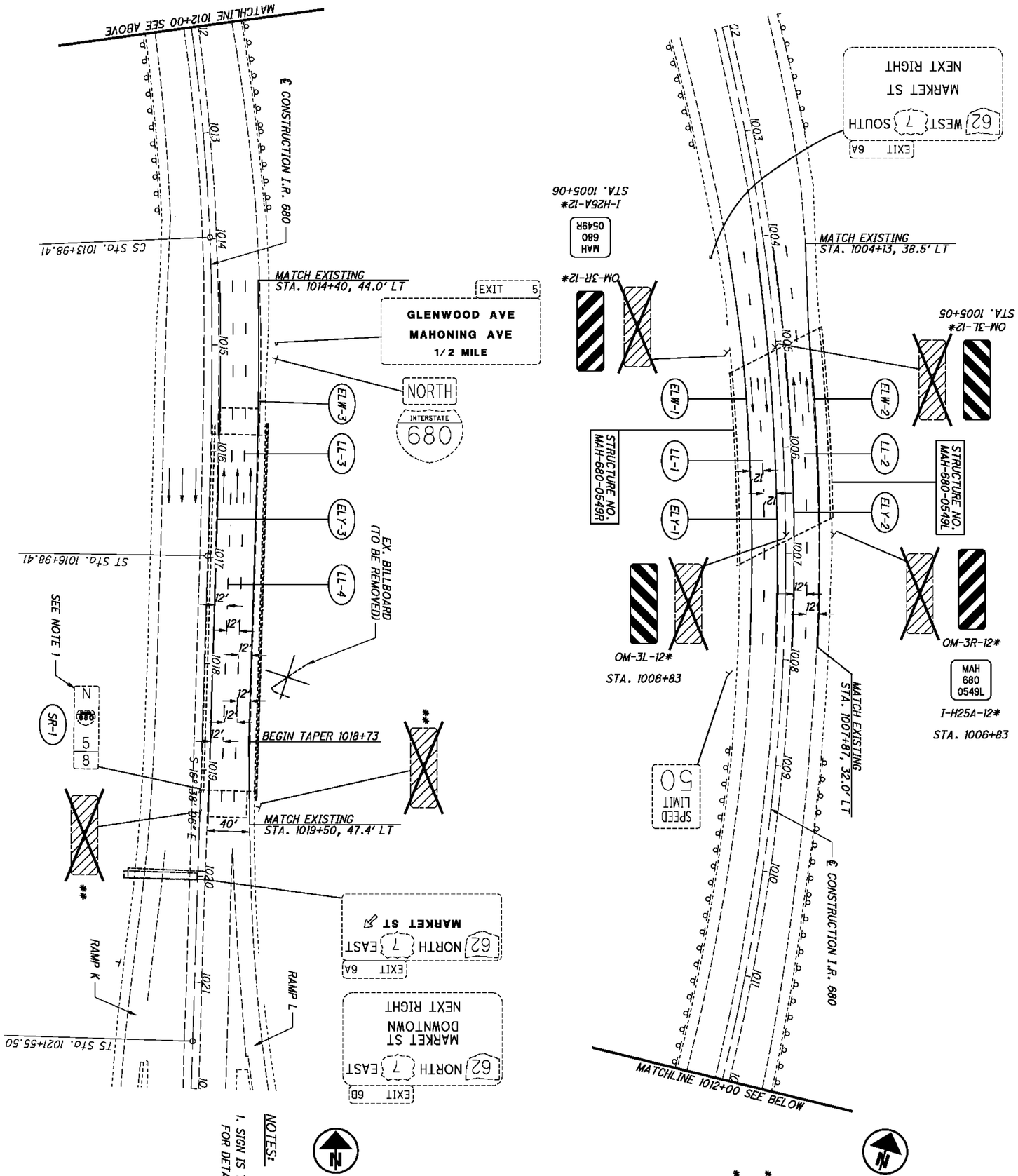
PLAN INSERT SHEET

CONCRETE BARRIER MOUNTED SIGN SUPPORT DETAIL, METHOD A

MAH-680-(5.41/5.60)

1 / 1

35
48



NOTES:

1. SIGN IS TO BE REMOVED AND RE-ERECTED AT STA. 1018+18. FOR DETAILS, SEE PLAN INSERT SHEET LOCATED ON SHEET 35

* INCLUDED IN STRUCTURE QUANTITIES, SEE SHEET 41

** INCLUDED IN STRUCTURE QUANTITIES, SEE SHEET 44

LEGEND:

- LL — LANE LINE,
- ELW — EDGE LINE, WHITE
- ELY — EDGE LINE, YELLOW
- DIRECTION OF TRAVEL
- SINGLE POST INSTALLATION

36/48	MAH-680-(5.41/5.60)	TRAFFIC CONTROL PLAN STA. 1002+00 TO STA. 1022+00	CALCULATED MLL CHECKED JTW 0 50 25 100 HORIZONTAL SCALE IN FEET

ITEM 625, DISCONNECT CIRCUIT, AS PER PLAN

THIS ITEM SHALL CONSIST OF THE DISCONNECTION OF AN EXISTING LIGHT CIRCUIT AT A PULL BOX OR TRANSFORMER BASE.

DISCONNECTION AT A PULL BOX SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL SPLICE KITS. ANY CABLE THAT IS TO BE ABANDONED SHALL BE TERMINATED FROM THE PULL BOX SO THAT NO CABLE IS LEFT IN THE BOX.

DISCONNECTION AT A TRANSFORMER BASE SHALL INVOLVE CUTTING THE EXISTING CIRCUIT AND REMOVING ALL CONNECTOR KITS. ALL DUCT-CABLE NOT TO BE REUSED SHALL BE REMOVED FROM THE TRANSFORMER BASE AND THE EXISTING CONDUIT IN THE FOUNDATION SHALL BE CLEANED OF ALL CABLE AND DEBRIS SO THAT THE NEW DUCT-CABLE CAN BE INSTALLED. ALL EXISTING CABLE TO REMAIN ACTIVE SHALL BE CUT IN A MANNER SO THAT THERE IS SUFFICIENT CABLE LEFT FOR RECONNECTION.

THOSE WIRES THAT ARE TO REMAIN ON ACTIVE CIRCUITS SHALL HAVE A WATER-RESISTANT SEAL AT THE CUT END. THE WATER-RESISTANT SEAL SHALL BE ACCOMPLISHED BY PLUGGING THE DEACTIVATED PORT OF AN EXISTING CONNECTOR KIT OR BY INSTALLING A CABLE SPLICE KIT ON THE CUT END OF THE CABLE.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE UNDER CMS "ITEM 625 - DISCONNECT CIRCUIT, AS PER PLAN" AT EACH LOCATION WHERE DISCONNECTION IS REQUIRED WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

CONDUIT EXPANSION AND DEFLECTION

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, APPLETON TYPE AX, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, APPLETON TYPE DF, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

ITEM 625 - POWER SERVICE, AS PER PLAN

THIS ITEM SHALL INCLUDE ANY WORK AT THE EXISTING LIGHTING CONTROL CENTER NECESSARY TO PUT THE REERECTED LIGHT POLES BACK IN SERVICE AND WILL BE PAID FOR UNDER THE UNIT BID PRICE OF ITEM 625 - POWER SERVICE, AS PER PLAN

LIGHT POLE ANCHOR BOLTS ON STRUCTURES

WHEN A LIGHT POLE IS MOUNTED ON A PILASTER ON A BRIDGE PARAPET OR ON A RETAINING WALL, THE REQUIRED ANCHOR BOLTS MAY DIFFER IN LENGTH AND/OR SHAPE FROM THOSE REQUIRED WHEN THE POLE IS MOUNTED ON A CAST-IN-PLACE DRILLED SHAFT FOUNDATION. THE COST DIFFERENTIAL FOR FURNISHING SUCH BOLTS IS INCLUDED HEREIN.

IN ADDITION, THERE IS NO FOUNDATION CONSTRUCTION ITEM IN WHICH TO INCLUDE THE SETTING OF THE ANCHOR BOLTS. THUS, THE SETTING OF THE ANCHOR BOLTS INTO THE PILASTER IS ALSO PART OF THIS WORK.

PAYMENT WILL BE MADE AT EACH SUCH POLE LOCATION AT THE UNIT PRICE BID FOR EACH C&MS ITEM 625, "LIGHT POLE ANCHOR BOLTS ON STRUCTURE" AND SHALL BE FULL COMPENSATION FOR FURNISHING AND PLACING THE SET OF ANCHOR BOLTS REQUIRED.

HIGH VOLTAGE TEST WAIVED

THE HIGH VOLTAGE TEST SHALL NOT BE PERFORMED ON THE CIRCUITS CONSTRUCTED BY THIS PROJECT, SINCE THE TEST COULD DAMAGE THE PORTION OF THE COMPLETED CIRCUIT WHICH HAS BEEN IN SERVICE PRIOR TO THIS PROJECT.

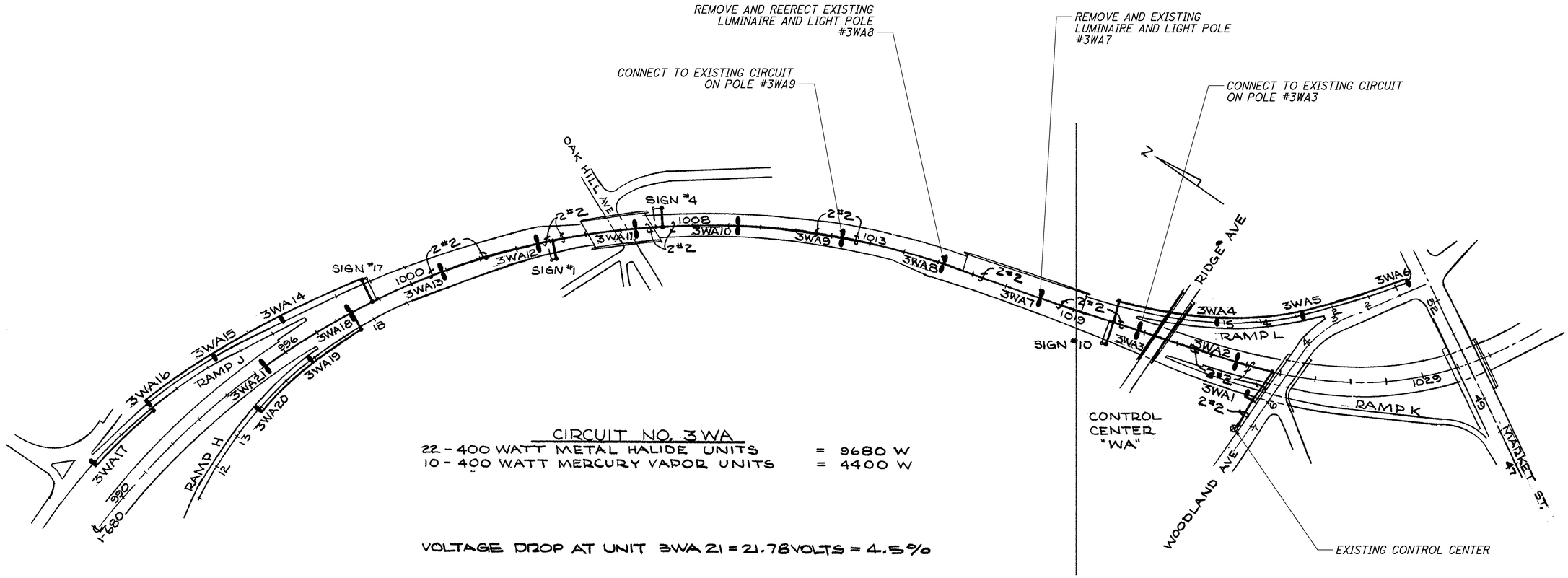
CALCULATED MLL CHECKED JTW

LIGHTING GENERAL NOTES

MAH-680-(5.41/5.60)

37
48

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CIRCUIT NO. 3WA

22 - 400 WATT METAL HALIDE UNITS	= 9680 W
10 - 400 WATT MERCURY VAPOR UNITS	= 4400 W

VOLTAGE DROP AT UNIT 3WA 21 = 21.78 VOLTS = 4.5%

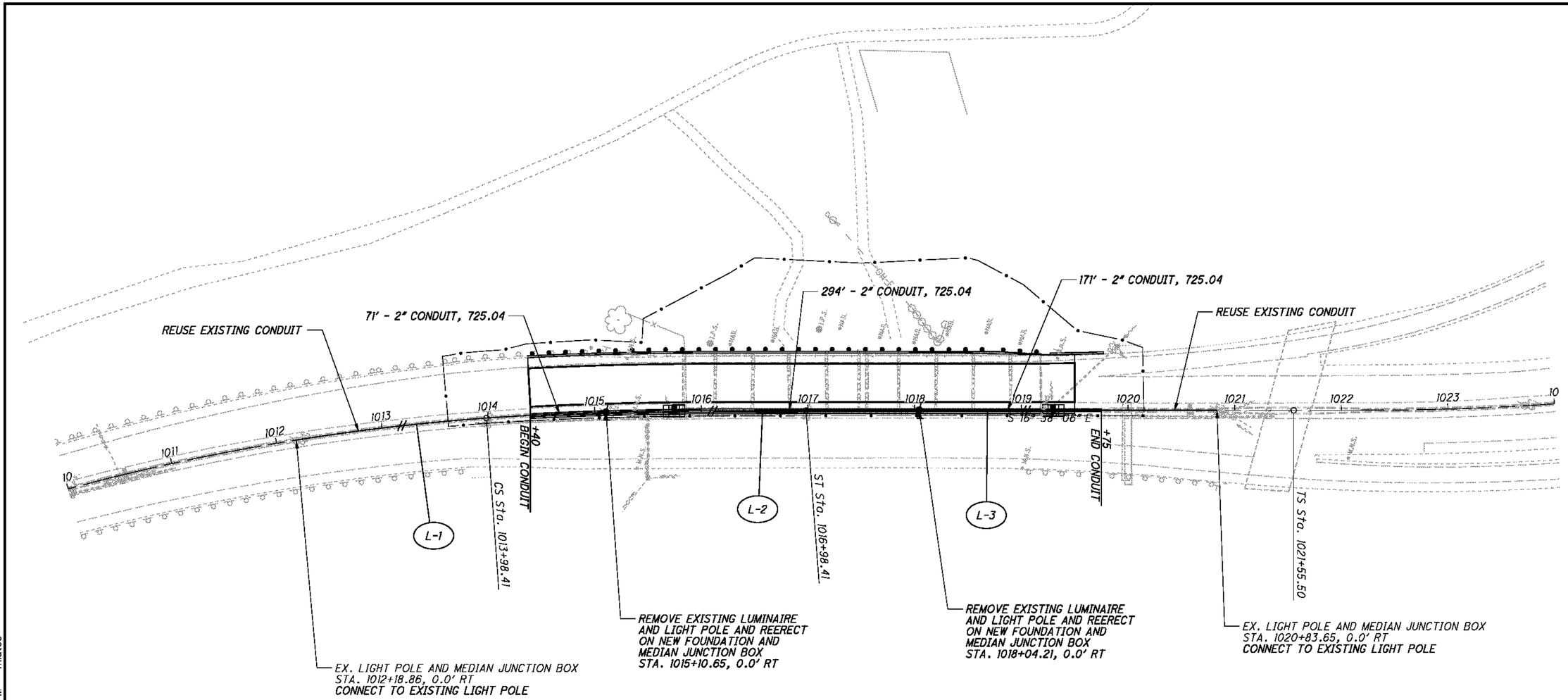
NOTE:
CIRCUIT INFORMATION FOR REFERENCE ONLY. APPLIES ONLY TO POLES #3WA3, #3WA7, #3WA8, AND #3WA9

CALCULATED SWC
CHECKED JTW

CIRCUIT DIAGRAM

MAH-680-(5.41/5.60)

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REFERENCE NO.	SHEET NO.	SIDE	ROADWAY	STATION TO STATION		202											
						DISCONNECT CIRCUIT, AS PER PLAN	CONNECTION, FUSED PULL APART	LIGHT POLE ANCHOR BOLTS ON STRUCTURE	MEDIAN LIGHT POLE FOUNDATION, 10' DEEP	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE	NO. 10 AWG POLE AND BRACKET CABLE	CONDUIT, 2", 725.04	MEDIAN JUNCTION BOX	GROUND ROD	POWER SERVICE, AS PER PLAN	REMOVE AND REERECT EXISTING LIGHT POLE	LIGHT POLE FOUNDATION REMOVED	DISTRIBUTION CABLE REMOVED
						EACH	EACH	EACH	EACH	FT	FT	FT	EACH	EACH	EACH	EACH	EACH	EACH
L-1	39	CL	I.R. 680	1012+18.86	1015+10.65	1	2	4	1	906	127	71	1	1		1	1	906
L-2	39	CL	I.R. 680	1015+10.65	1018+04.21		2	4	1	912	127	294	1	1		1	1	912
L-3	39	CL	I.R. 680	1018+04.21	1020+83.65	1	2			867		171			1			867
TOTALS CARRIED TO GENERAL SUMMARY						2	6	8	2	2685	253	536	2	2	1	2	2	2685

HORIZONTAL SCALE IN FEET
0 25 50 100

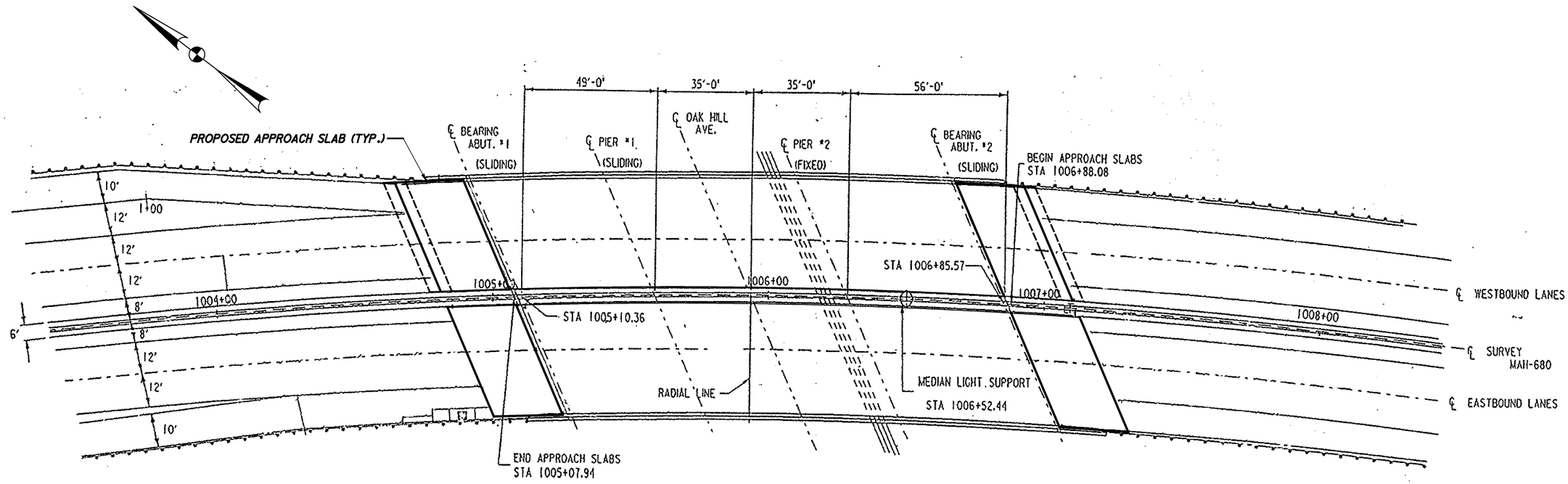
CALCULATED SWC
CHECKED JTW

LIGHTING PLAN - I.R. 680
STA. 1010+00 TO STA. 1024+00

MAH-680-(5.41/5.60)

39
48

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PLAN

EXISTING STRUCTURE

TYPE: STEEL BEAM WITH REINFORCED CONCRETE DECK AND SUBSTRUCTURE

SPANS: 49'-0", 70'-0", 56'-0" C/C BEARINGS

ROADWAY: 86'-10" TOE/TOE PARAPET INCLUDING 3'-2" MEDIAN

LOADING: CF 2000

SKEW: 23° 43' 27" R.F.

APPROACH SLABS: 25'-0" LONG (AS-1-81)

ALIGNMENT: 2°45' RT.

SUPERELEVATION: 0.065 FT/FT

STRUCTURE FILE NUMBER: 5006961

DATE BUILT: 1963 (1994 DECK REPLACEMENT)

DISPOSITION: TO REMAIN

PROPOSED WORK

REMOVE AND REPLACE EXISTING APPROACH SLABS.

PATCH ALL UNSOUND AREAS OF THE CONCRETE DECK.

APPROACH SLABS: 25'-0" LONG (AS-1-15 & AS-2-15)
TYPE A INSTALLATION - NB ONLY

NOTES:

1. FOR ADDITIONAL DETAILS, SEE PLAN AND PROFILE, SHEET 25 .
2. FOR PHASE CONSTRUCTION DETAILS, SEE SHEET 4/4 .

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1480 West 9th Street - Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
AEF	AEF	RER	12/27/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006961	

MAHONING COUNTY
STA. 1005+07.94
STA. 1006+88.08

SITE PLAN
BRIDGE NO. MAH-680-0555L&R
OVER OAK HILL AVENUE

MAH-680-(5.41/5.60)
PID No. 96637

1 / 4

40
48

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STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWING(S):
AS-1-15 REVISED 7-17-15
AS-2-15 REVISED 7-17-15

AND THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):
800 DATED 07-21-17

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05, 105.02, AND 513.04.

BASE CONTRACT BID PRICES UP ON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

ITEM 202 APPROACH SLAB REMOVED, AS PER PLAN

REPAIR OR REPLACE ANY OF THE EXISTING POROUS BACKFILL BEHIND THE ABUTMENTS THAT IS DAMAGED DURING REMOVAL OF THE APPROACH SLAB. INCLUDE ALL LABOR AND MATERIALS NECESSARY WITH THIS PAY ITEM.

ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

IF THE CONTRACTOR ELECTS TO RETAIN THE EXISTING APPROACH SLAB ANCHOR BARS, REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE.

REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW EPOXY COATED REINFORCING STEEL OF THE SAME SIZE AT NO COST TO THE DEPARTMENT.

IF THE CONTRACTOR ELECTS TO REPLACE ALL OF THE EXISTING APPROACH SLAB ANCHOR BARS, THIS WORK AND NOTE ARE NOT APPLICABLE.

ITEM 526 REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN

IF THE CONTRACTOR ELECTS TO REPLACE ALL OF THE EXISTING APPROACH SLAB ANCHOR BARS, INCLUDE ALL WORK, MATERIALS, AND AND LABOR NECESSARY TO INSTALL THE NEW ANCHOR BARS AS SHOWN IN THE PLANS WITH THIS PAY ITEM.

USE CONCRETE CLASS MS FOR SOUTHBOUND APPROACH SLAB ONLY. USE CONCRETE CLASS QC2 FOR NORTHBOUND APPROACH SLAB. ALL CONCRETE SHALL BE COMPRESSIVE STRENGTH 4,500 PSI.

OBJECT MARKERS AND STRUCTURE IDENTIFICATION SIGNS

OBJECT MARKERS WILL BE PLACED ON EACH APPROACH OFF THE LEFT AND RIGHT SHOULDER, FACING TRAFFIC, AND BEHIND THE GUARDRAIL IF APPLICABLE. ONE OM-3L AND ONE OM-3R WILL BE INSTALLED AT EACH APPROACH. THE SIGNS WILL BE MOUNTED ON NEW NO. 2 POSTS AND SHALL BE INSTALLED AS PER STANDARD CONSTRUCTION DRAWING TC-41.20, MOST CURRENT REVISION. EACH POST WILL BE 10.5' IN LENGTH.

STRUCTURE IDENTIFICATION SIGNS (I-H25a) WILL BE INSTALLED ON THE SAME POST AND DIRECTLY BELOW THE OBJECT MARKER OFF THE RIGHT SHOULDER ON EACH APPROACH. A QUANTITY OF ONE SIGN WILL BE INSTALLED AT EACH APPROACH. THE SIGNS WILL HAVE A NON-REFLECTIVE WHITE SHEETING BACKGROUND.

FOR ADDITIONAL SIGN INFORMATION AND LOCATIONS, SEE SHEET 36.

ABBREVIATIONS:

ABUT. - ABUTMENT
APPR. - APPROACH
C/C - CENTER TO CENTER
C.J. - CONSTRUCTION JOINT
FT. - FEET
LT. - LEFT
RT. - RIGHT
STA. - STATION

MADE BY: AEF DATE: 12/22/2016
CHECKED BY: JOL DATE: 12/23/2016

ESTIMATED QUANTITIES - PLAN SPLIT 02/IMS/BR

STRUCTURAL FILE NUMBER: 5006961

ITEM	EXTENSION	TOTAL	UNIT	DESCRIPTION	SUPER	GEN.	REFERENCE SHEET NO.
202	22901	478	SY	APPROACH SLAB REMOVED, AS PER PLAN		478	2/4
509	20001	100	LB	REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN	100		
516	46900	24	EACH	BEARING DEVICE, MISC.: CLEAN AND LUBRICATE EXISTING BEARING	24		
519	12304	350	SY	PATCHING CONCRETE BRIDGE DECK - TYPE C	350		
526	25001	447	SY	REINFORCED CONCRETE APPROACH SLABS (T=15"), AS PER PLAN		447	2/4, 3/4, 4/4
526	90010	86	FT	TYPE A INSTALLATION		86	
630	02100	34	FT	GROUND MOUNTED SUPPORT, NO. 2 POST			
630	80100	12	SF	SIGN, FLAT SHEET			
630	80101	2	SF	SIGN, FLAT SHEET, T30.20			
630	81020	2	EA	CONCRETE MEDIAN BARRIER SIGN BRACKET			
630	84900	6	EA	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL			
630	86002	3	EA	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL			
630	86310	3	EA	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL			

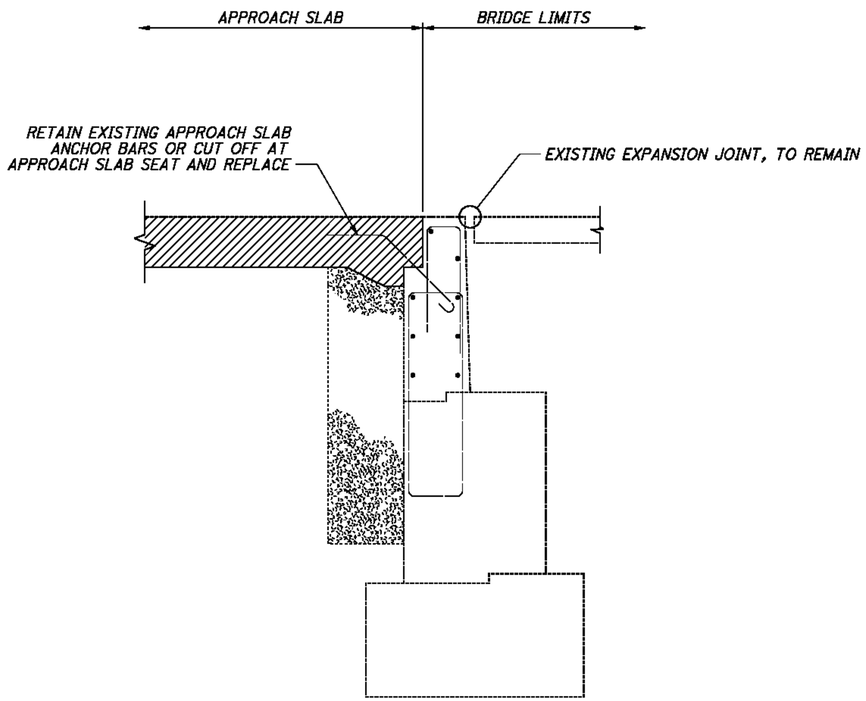
DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED AEF | DRAWN AEF | REVIEWED RER | DATE 12/27/2016
CHECKED JOL | REVISED | STRUCTURE FILE NUMBER 5006961

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. MAH-680-0555L&R
OVER OAK HILL AVENUE

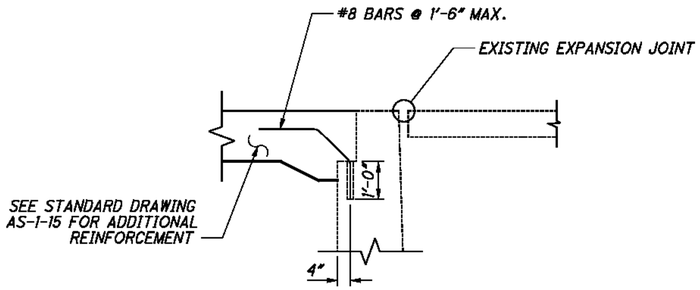
MAH-680-(5.41/5.60)
PID No. 96637

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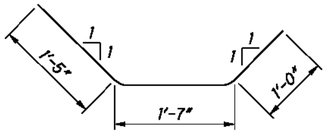


APPROACH SLAB REMOVAL DETAIL

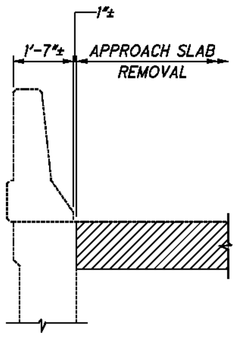
(REAR ABUTMENT SHOWN, FORWARD ABUTMENT SIMILAR)



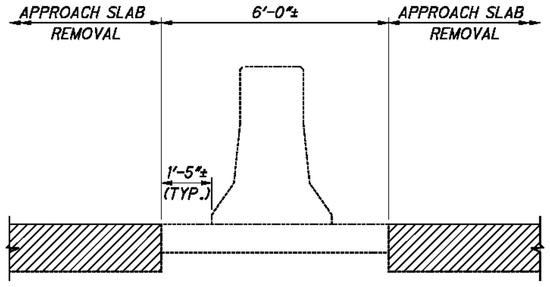
APPROACH SLAB ANCHOR BAR REPLACEMENT DETAIL (OPTIONAL)



ANCHOR BAR DETAIL



REMOVAL DETAIL AT BARRIER



REMOVIAL DETAIL AT MEDIAN

LEGEND:

▨ - INDICATES APPROACH SLAB AREA TO BE REMOVED

NOTES:

1. REFER TO APPROACH SLAB PLAN FOR ADDITIONAL DETAILS.
2. INCLUDE REPLACEMENT ANCHOR BARS AND DOWELS WITH ITEM 526 FOR PAYMENT.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1400 West 6th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED	DRAWN	REVIEWED	DATE
AEF	AEF	RER	12/27/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006961	

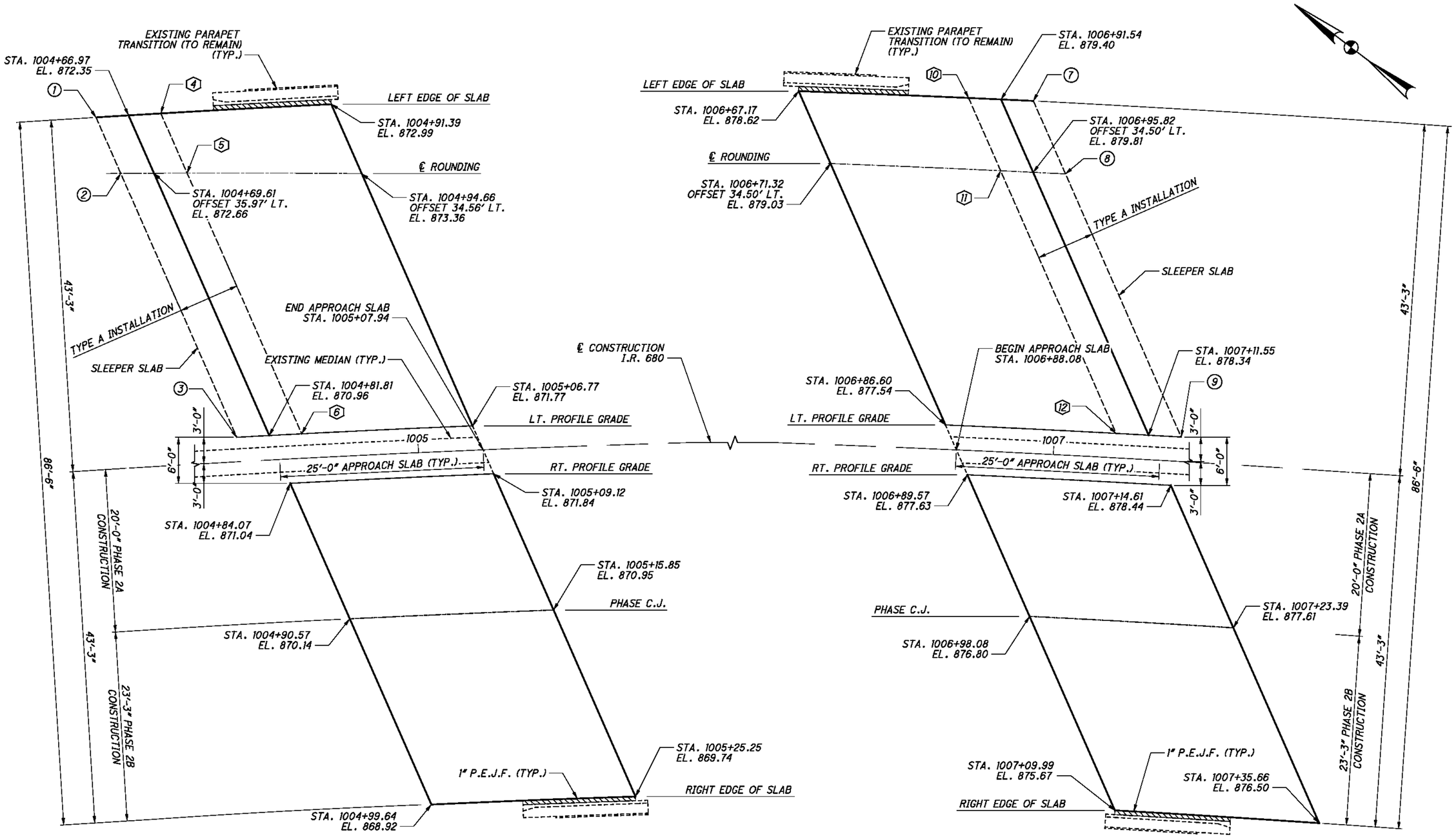
STRUCTURE DETAILS
BRIDGE NO. MAH-680-0555L&R
OVER OAK HILL AVENUE

MAH-680-(5.41/5.60)
PID No. 96637

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APPROACH SLAB PLAN

SLEEPER SLAB SURFACE ELEVATIONS UNDER ROADWAY			
①	871.04	⑦	878.27
②	871.29	⑧	878.70
③	869.59	⑨	877.22

SLEEPER SLAB SURFACE ELEVATIONS UNDER APPR. SLAB			
④	871.21	⑩	878.02
⑤	871.51	⑪	878.44
⑥	869.84	⑫	876.96

NOTES:

1. FOR ADDITIONAL APPROACH SLAB DETAILS, SEE ODOT STANDARD DRAWINGS AS-1-15 AND AS-2-15 TYPE A INSTALLATION.
2. INCLUDE 1" P.E.J.F. WITH APPROACH SLAB FOR PAYMENT.
3. SEE SHEET 6 FOR CROSS SLOPE VALUES AND SHOULDER TRANSITION LIMITS.
4. AT THE OPTION OF THE CONTRACTOR, PHASES 2A & 2B MAY BE REVERSED.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
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DESIGNED	DRAWN	REVIEWED	DATE
AEF	AEF	RER	12/27/2016
CHECKED	REVISED	STRUCTURE FILE NUMBER	
JOL		5006961	

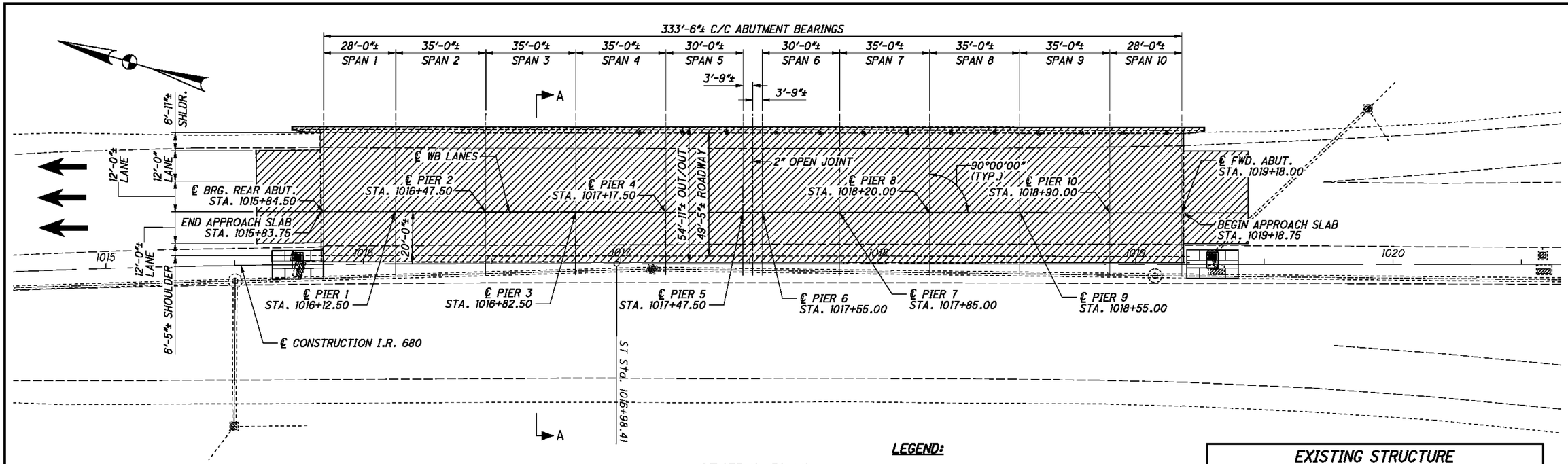
APPROACH SLAB PLAN
BRIDGE NO. MAH-680-0555L&R
OVER OAK HILL AVENUE

MAH-680-(5.41/5.60)
PID No. 96637

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GENERAL PLAN

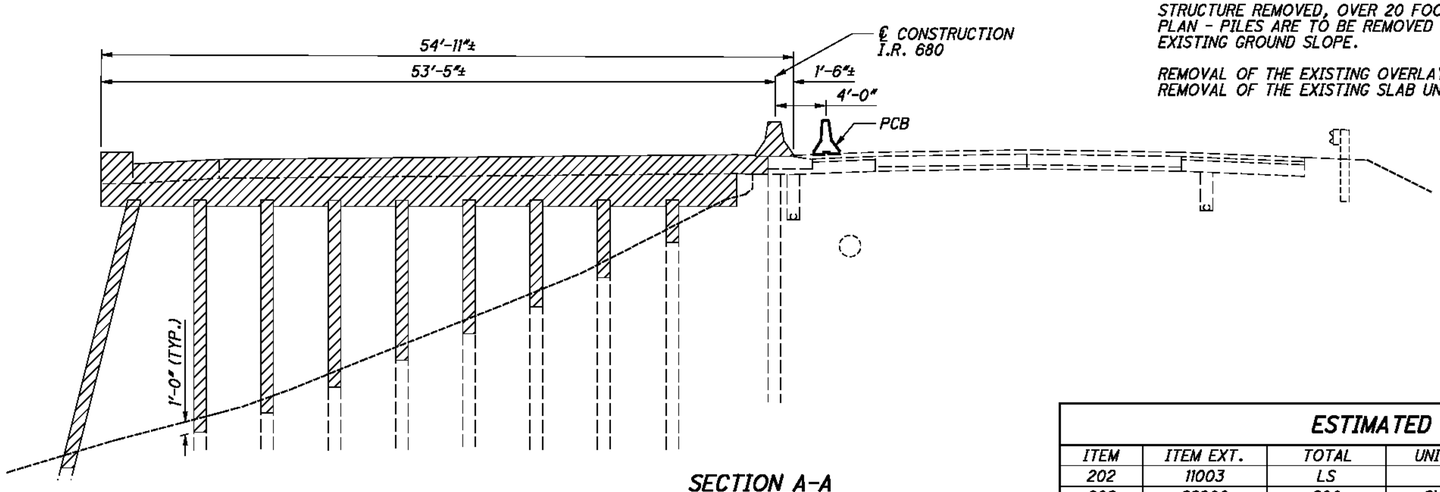
LEGEND:

▨ = INDICATES REMOVAL PER ITEM 202 - STRUCTURE REMOVED, AS PER PLAN

NOTE:

STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN - PILES ARE TO BE REMOVED 1'-0" BELOW THE EXISTING GROUND SLOPE.

REMOVAL OF THE EXISTING OVERLAY IS INCLUDED WITH REMOVAL OF THE EXISTING SLAB UNDER THIS PAY ITEM.



SECTION A-A

EXISTING STRUCTURE

TYPE: CONTINUOUS CONCRETE SLAB DECK WITH CAPPED PILE SUBSTRUCTURES

SPANS: 28'-0", 35'-0", 35'-0", 35'-0", 30'-0", 7'-6", 30'-0", 35'-0", 35'-0", 35'-0", 28'-0" C/C BRGS.

ROADWAY: 47'-10" TOE/TOE PARAPET

LOADING: CF 2000

SKEW: NONE

APPROACH SLABS: 25'-0" LONG (AS-1-54)

ALIGNMENT: CURVE RIGHT AND TANGENT

SUPERELEVATION: VARIES

STRUCTURE FILE NUMBER: 5006996

DATE BUILT: 1963

DISPOSITION: TO BE REMOVED

PROPOSED WORK

REMOVE EXISTING STRUCTURE, WEARING SURFACE ON APPROACH SLABS, AND APPROACH SLABS.

ESTIMATED QUANTITIES - PLAN SPLIT 06/IMS/BR

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION
202	11003	LS		STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN
202	22900	200	SY	APPROACH SLAB REMOVED
202	23500	200	SY	WEARING COURSE REMOVED
630	84900	2	EA	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL
630	86002	1	EA	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
630	86310	1	EA	REMOVAL OF STRUCTURE MOUNTED SIGN AND DISPOSAL

ASBESTOS NOTIFICATION STRUCTURE NO. MAH-680-0575L (SFN: 5006996):

AN ASBESTOS SURVEY OF THE IR-680 BRIDGE OVER HILLSIDE (SFN: 5006996) FOR REHABILITATION WAS CONDUCTED BY A CERTIFIED ASBESTOS HAZARD EVALUATION SPECIALIST. THE SURVEY DETERMINED THAT NO ASBESTOS IS PRESENT ON THE BRIDGE STRUCTURE.

A COPY OF THE OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA) NOTIFICATION OF DEMOLITION AND RENOVATION FORMS, PARTIALLY COMPLETED AND SIGNED BY THE BRIDGE OWNER, WILL BE PROVIDED TO THE SUCCESSFUL BIDDER. THE CONTRACTOR SHALL COMPLETE THE FORM AND SUBMIT IT TO:

MAHONING-TRUMBULL AIR POLLUTION CONTROL
345 OAK HILL AVE., SUITE 200
YOUNGSTOWN, OH 44502
ATTN.: TARA CIOFFI
(330) 743-3333
FAX: (330) 743-3960

AT LEAST TEN (10) WORKING DAYS PRIOR TO THE START OF ANY DEMOLITION AND/OR REHABILITATION. THE CONTRACTOR SHALL PROVIDE A COPY OF THE COMPLETED FORM TO THE ENGINEER. INFORMATION REQUIRED ON THE FORM WILL INCLUDE: 1) THE CONTRACTORS NAME AND ADDRESS, 2) THE SCHEDULED DATES FOR THE START AND COMPLETION OF THE BRIDGE REMOVAL AND 3) A DESCRIPTION OF THE PLANNED DEMOLITION WORK AND THE METHOD(S) TO BE USED. A COPY OF THE OEPA FORM IS AVAILABLE FOR INSPECTION AT THE ODOT DISTRICT 4 OFFICE, 2088 SOUTH ARLINGTON, AKRON, OHIO 44306.

BASIS FOR PAYMENT-THE CONTRACTOR SHALL FURNISH ALL FEES, LABOR, AND MATERIAL NECESSARY TO COMPLETE AND SUBMIT THE OEPA NOTIFICATION FORM. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN ITEM 202-PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

DESIGNED AEK | DRAWN LAH | REVIEWED RER | DATE 12/27/2016
CHECKED JOL | REVISED | STRUCTURE FILE NUMBER 5006996

GENERAL PLAN
BRIDGE NO. MAH-680-0575L
I.R. 680 OVER RENNER BREWERY

MAH-680-(5.41/5.60)
PID No. 96637

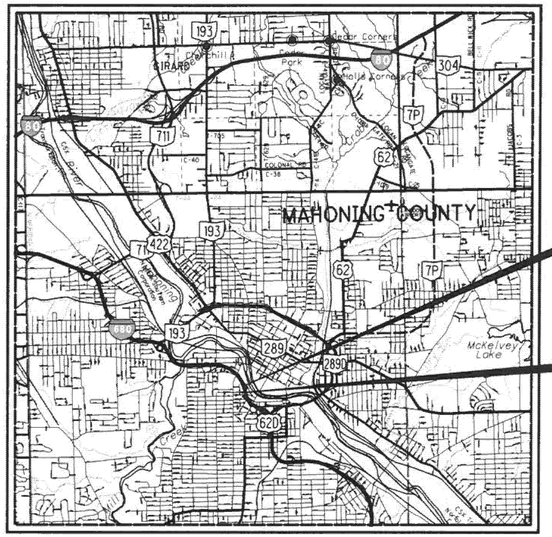
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RIGHT OF WAY LEGEND SHEET MAH-680-5.75

MAHONING COUNTY
CITY OF YOUNGSTOWN
CITY LOTS 1559, 1560, 4114 &
VACATED 20' ALLEY
TOWNSHIP 2, RANGE II
CONNECTICUT WESTERN RESERVE



LOCATION MAP

LATITUDE: 41°05'45"N LONGITUDE: 80°39'25"W

SCALE IN MILES
0 1 2 3 4

N

PROJECT DESCRIPTION

REMOVAL OF THE EXISTING MAH-680-5.75 STRUCTURE AND CONSTRUCTION OF PROPOSED PAVEMENT ON PROPOSED EMBANKMENT.

THE EXISTING AND PROPOSED RIGHT OF WAY ARE REFERENCED FROM THE CENTERLINE OF RIGHT OF WAY & CONSTRUCTION OF INTERSTATE ROUTE 680.

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

UTILITY OWNERS	
TYPE	NAME & ADDRESS
NATURAL GAS	DOMINION EAST OHIO 320 SPRINGSIDE DR. SUITE 320 AKRON, OH 44333 OFFICE: 330-664-2409 ATTN: BRYAN D. DAYTON
ELECTRIC	OHIO EDISON 730 SOUTH AVENUE YOUNGSTOWN, OH 44502 OFFICE: 330-740-7704 EXT. 7704 ATTN: MIKE BECK
	FIRSTENERGY TRANSMISSION 76 SOUTH MAIN STREET AKRON, OH 44308-1890 OFFICE: 330-761-4487 ATTN: ALLISON OULTON
WATER	YOUNGSTOWN WATER DEPT. 160 N. WEST AVE. YOUNGSTOWN, OH 44503 OFFICE: 330-743-5338 ATTN: GENE LESON
SEWER	YOUNGSTOWN SANITARY DEPT. YOUNGSTOWN HALL 26 S. PHELPS ST. YOUNGSTOWN, OH 44503 OFFICE: 330-742-8800 ATTN: CHUCK SASHO

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.

PLANS PREPARED BY:

FIRM NAME : THOMAS FOK & ASSOCIATES, INC.
R/W DESIGNER: JOSEPH P. SLIFKA, JR. PE
R/W REVIEWER: CARL D. KANTOR, PS
FIELD REVIEWER: CARL D. KANTOR, PS
PRELIMINARY FIELD REVIEW DATE: 08/26/16
TRACINGS FIELD REVIEW DATE: 10/21/16
OWNERSHIP UPDATED BY: JOSEPH P. SLIFKA, JR.
DATE COMPLETED: 10/19/16
PLAN COMPLETION DATE: 10/21/16

TYPES OF TITLE LEGEND:
WL = FEE SIMPLE WITH LIMITATION OF ACCESS
T = TEMPORARY EASEMENT

INDEX OF SHEETS:

LEGEND SHEET	1
PROPERTY MAP/SUMMARY SHEET	2
R/W TOPO/BOUNDARY SHEETS	3 - 4

STRUCTURE KEY

RESIDENTIAL
COMMERCIAL
OUT-BUILDING

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
Limited Access R/W (Pr) LA-R/W
Limited Access R/W (Ex) Ex LA-R/W
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)

I, Franklin D. Snyder, Jr., P.S. have conducted a survey of the existing conditions for the Ohio Department of Transportation begininng in April 2015. The results of that survey are contained herein.

The horizontal coordinates expressed herein are based on the Ohio State Plane Coordinate System, North Zone, NAD 83 (2011). The Project Coordinates (US Survey feet) are relative to State Plane Grid Coordinates (meters) by a Combined Scale Factor of 0.99990123 and U.S. Survey Feet to Meter conversion of 3937/1200.

As a part of this project I have established the existing property lines, calculated the gross take, present road occupied (PRO), net take, and net residue; as well as prepared the legal descriptions necessary to acquire the parcels shown herein. As a part of this work I will 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 upon notification by the Ohio Department of Transportation

All of my work contained herein was conducted in accordance with Ohio Administrative Code 4733-37 commonly known as "Standards for Boundary Surveys" unless noted. The words I and my as used herein are to mean either myself or someone working under my direct supervision.

Franklin D. Snyder, Jr., P.S.
Franklin D. Snyder, Jr., Professional Surveyor No. S-7468

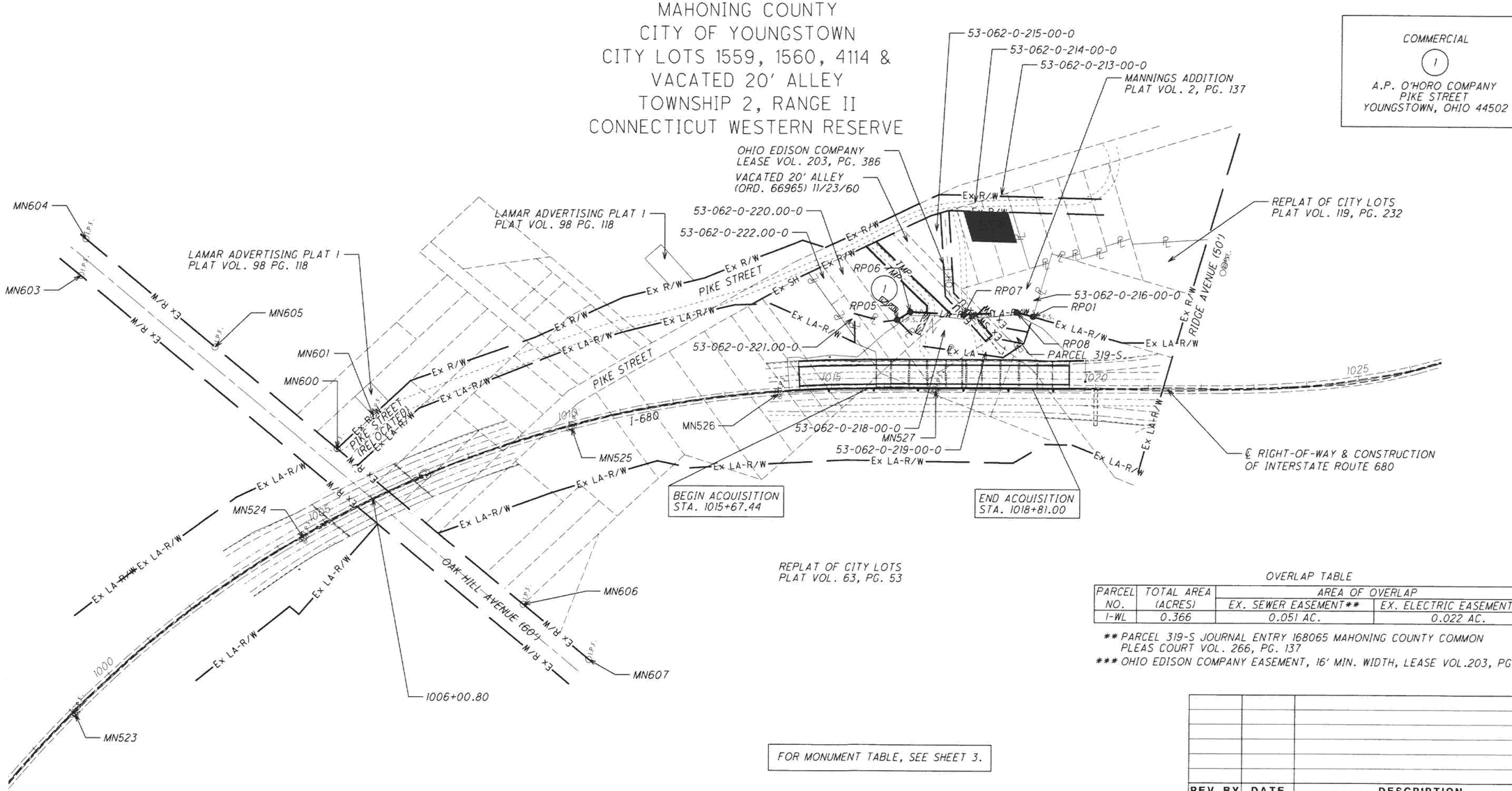
Date: 10/23/2016

STATE OF OHIO
SURVEYOR
FRANKLIN D. SNYDER, JR. 7468
REGISTERED PROFESSIONAL SURVEYOR

FEDERAL PROJECT NO. E150(685)
PID NO. 96637
CALCULATED JPS CHECKED CDK
RIGHT OF WAY LEGEND SHEET
MAH-680-(5.41/5.60)
1 / 4
45 / 48

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MAHONING COUNTY
CITY OF YOUNGSTOWN
CITY LOTS 1559, 1560, 4114 & VACATED 20' ALLEY
TOWNSHIP 2, RANGE II
CONNECTICUT WESTERN RESERVE



FOR MONUMENT TABLE, SEE SHEET 3.

OVERLAP TABLE

PARCEL NO.	TOTAL AREA (ACRES)	AREA OF OVERLAP	
		EX. SEWER EASEMENT**	EX. ELECTRIC EASEMENT***
1-WL	0.366	0.051 AC.	0.022 AC.

** PARCEL 319-S JOURNAL ENTRY 168065 MAHONING COUNTY COMMON PLEAS COURT VOL. 266, PG. 137

*** OHIO EDISON COMPANY EASEMENT, 16' MIN. WIDTH, LEASE VOL.203, PG.386

REV. BY	DATE	DESCRIPTION

DATE COMPLETED 10/21/16

TOTAL NUMBER OF :

1 OWNERSHIPS
2 PARCELS
1 TOTAL TAKES
0 OWNERSHIPS W/ STRUCTURES INVOLVED

NOTE: ALL TEMPORARY PARCELS TO BE OF 12 MONTH DURATION.

TYPES OF TITLE LEGEND:
WL = FEE SIMPLE WITH LIMITATION OF ACCESS
OR = OFFICIAL RECORD

NET RESIDUE = RECORD AREA - TOTAL PRO - NET TAKE
* DENOTES RIGHT OF WAY ENCROACHMENT
(c) = CALCULATED AREA

ALL AREAS IN ACRES

NOTE: UNDER NO CIRCUMSTANCES ARE TEMPORARY EASEMENTS TO BE USED FOR STORAGE OF MATERIAL OR EQUIPMENT BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

GRANTEE:

ALL RIGHT OF WAY ACQUIRED IN THE NAME OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION 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	AS ACQUIRED BOOK	AS ACQUIRED PAGE
1-WL	A.P. O'HORO COMPANY,	3-4	OR5761	2473	53-062-0-213.00-0	0.138											
	AN OHIO CORPORATION				53-062-0-214.00-0	0.157											
					53-062-0-215.00-0	0.158											
					53-062-0-216.00-0	0.243		0.075		0.075							
					53-062-0-218.00-0	0.883		0.213		0.213	S			100% STATE	TAKE 10' x 45' SEMI BOX TRAILER		
					53-062-0-219.00-0	0.033 (c)		0.033		0.033	S				AUDITOR LISTS RECORD AREA = 0.066 Ac.;		
					53-062-0-220.00-0	0.204									BILLBOARD (LAMAR)-(TAKE)		
					53-062-0-221.00-0	0.101											
					53-062-0-222.00-0	0.045											
					UNKNOWN	0.145 (c)		0.045		0.045					VACATED 20' ALLEY (ORD. 66965) 11/23/60		
	TOTAL:					2.107	0.000	0.366	0.000	0.366		1.741			SEE TABLE FOR OVERLAP W/ SEWER EASE.		
1-T								0.090		0.090					CONSTRUCTION ACCESS		

R/W DESIGNER JPS
R/W REVIEWER CDK

PID NO. 96637

HORIZONTAL SCALE IN FEET
0 50 100 200

MAH-680-(5.41/5.60) PROPERTY MAP/SUM OF ADD. R/W

2 / 4

46 / 48

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NOTE: THE EXISTING R/W WIDTH AND LOCATION WERE DETERMINED USING:

1) MAHONING COUNTY PLATS:
LAMAR ADVERTISING PLAT 1 - PLAT VOL. 98, PG. 118.
MANNINGS ADDITION - PLAT VOL. 2, PG. 137.
REPLAT OF CITY LOTS - PLAT VOL. 119, PG. 232.
REPLAT OF CITY LOTS - PLAT VOL. 63, PG. 53.

2) MAHONING COUNTY TAX MAPS:
TAX MAP 53061 (2014), TAX MAP 53062 (2014), PLATE 62 (1970), AND PLATE 62 (1994).

3) MAHONING COUNTY DEEDS:
A.P. O'HORO COMPANY, OFFICIAL RECORD 5761, PAGE 2473.

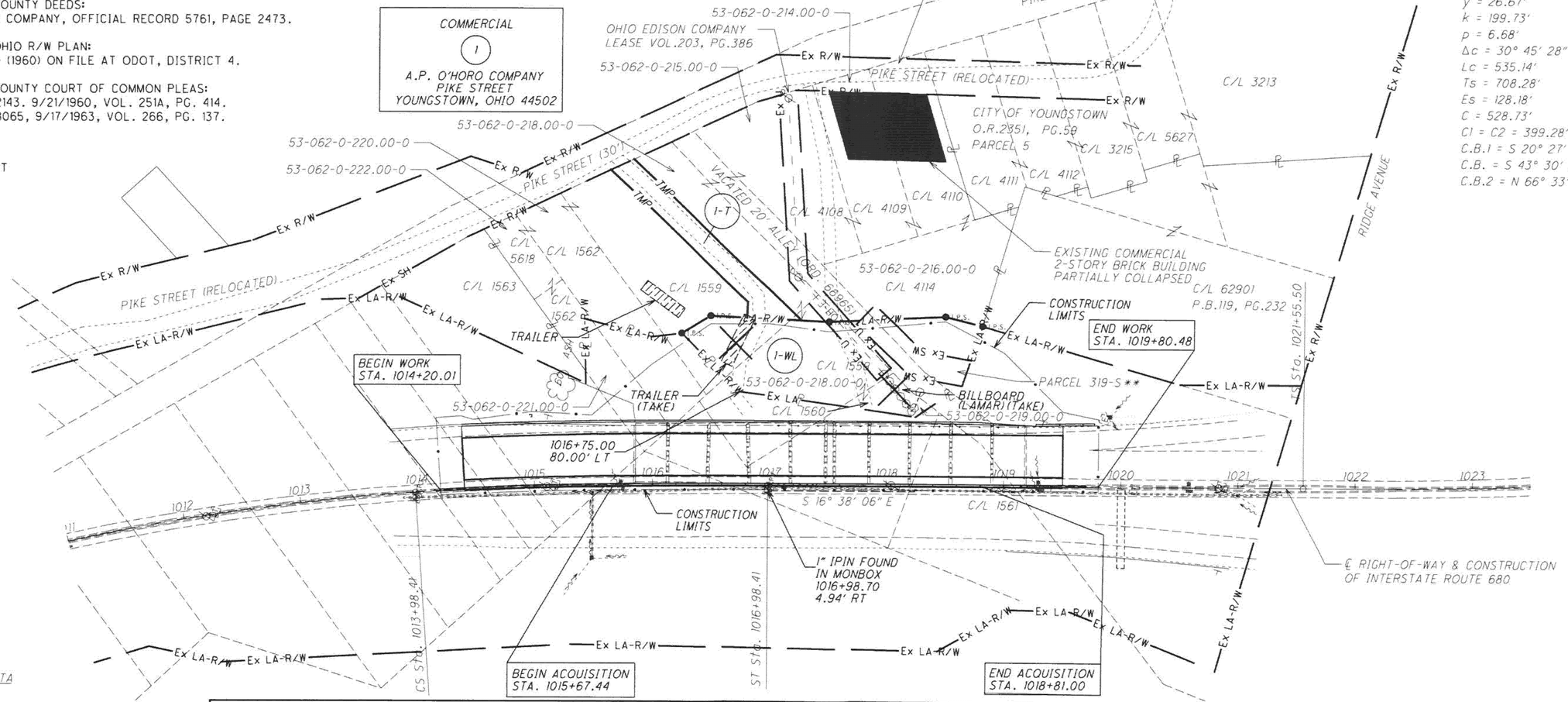
4) STATE OF OHIO R/W PLAN:
MAH-18-17.20 (1960) ON FILE AT ODOT, DISTRICT 4.

5) MAHONING COUNTY COURT OF COMMON PLEAS:
CASE No. 162143. 9/21/1960, VOL. 251A, PG. 414.
CASE No. 168065, 9/17/1963, VOL. 266, PG. 137.

NOTE: C/L = CITY LOT

MAHONING COUNTY
CITY OF YOUNGSTOWN
CITY LOTS 1559, 1560, 4114 & VACATED 20' ALLEY
TOWNSHIP 2, RANGE II
CONNECTICUT WESTERN RESERVE

NOTE: FOR PARCEL LEAD-IN, BEARING/DISTANCE, AND STATION/OFFSET DATA, SEE SHEET 4



I-680 SPIRAL CURVE DAT
P.I. Sta. 1028+63.78
Δ = 53° 44' 53" (LT)
Dc = 5° 44' 51"
R = 996.86'
Ls = 400.00'
θs = 11° 29' 43"
LT = 267.23'
ST = 133.85'
x = 398.39'
y = 26.67'
k = 199.73'
p = 6.68'
Δc = 30° 45' 28" (LT)
Lc = 535.14'
Ts = 708.28'
Es = 128.18'
C = 528.73'
C1 = C2 = 399.28'
C.B.1 = S 20° 27' 55" E
C.B. = S 43° 30' 32" E
C.B.2 = N 66° 33' 09" W

I-680 SPIRAL CURVE DATA
P.I. Sta. 1004+22.10
Δ = 74° 52' 17" (RT)
Dc = 2° 44' 59"
R = 2,083.60'
Ls = 300.00'
θs = 4° 07' 29"
LT = 200.05'
ST = 100.05'
x = 299.84'
y = 7.20'
k = 149.97'
p = 1.80'
Δc = 66° 37' 18" (RT)
Lc = 2,422.74'
Ts = 1,746.44'
Es = 542.73'
C = 2,288.55'
C1 = C2 = 299.93'
C.B.1 = N 89° 52' 07" E
C.B. = S 54° 04' 14" E
C.B.2 = N 18° 00' 35" W

MONUMENT TABLE

POINT	FEATURE	STATION	OFFSET	SIDE	GROUND (U.S. SURVEY FT.) NORTHING	GROUND (U.S. SURVEY FT.) EASTING	GRID (METERS) NORTHING	GRID (METERS) EASTING	REMARKS
MN523	IPIN	999+00.81	5.17	RT.	527502.795	2475621.532	160767.293	754496.423	1" IPF IN MONBOX
MN603	IPIN	1003+63.51	643.35	LT.	527733.487	2476425.100	160837.601	754741.327	
MN604	IPID	1003+97.54	697.19	LT.	527744.311	2476494.411	160840.900	754762.451	
MN524	IPIN	1004+50.83	4.90	RT.	527184.369	2476066.421	160670.246	754632.012	1" IPF IN MONBOX
MN605	IPIN	1004+82.19	395.08	LT.	527450.280	2476367.148	160751.288	754723.665	
MN600	IPIN	1005+83.53	115.73	LT.	527173.285	2476247.987	160666.868	754687.348	5/8" IPF
MN601	IPIN	1006+66.74	143.35	LT.	527126.122	2476327.663	160652.494	754711.631	5/8" IPF (BENT)
MN606	IPIN	1007+97.46	297.66	RT.	526750.531	2476064.849	160538.025	754631.533	
MN607	IPIN	1008+99.22	438.19	RT.	526600.297	2476000.131	160492.238	754611.809	
MN525	IPIN	1010+01.74	4.90	RT.	526759.944	2476413.091	160540.894	754737.667	1" IPF IN MONBOX
MN526	IPIN	1013+98.84	4.92	RT.	526405.032	2476587.764	160432.727	754790.902	1" IPF IN MONBOX
RP05	IPINS	1016+25.00	130.00	LT.	526229.998	2476788.227	160379.382	754851.997	3/4" IRON PIN SET W/ 2" ALUMINUM CAP
RP06	IPINS	1016+50.00	145.00	LT.	526210.083	2476809.912	160373.312	754858.606	3/4" IRON PIN SET W/ 2" ALUMINUM CAP
MN527	IPIN	1016+98.70	4.94	RT.	526120.247	2476680.292	160345.933	754819.102	1" IPF IN MONBOX
RP07	IPINS	1017+50.00	140.00	LT.	526112.586	2476833.855	160343.598	754865.903	3/4" IRON PIN SET W/ 2" ALUMINUM CAP
RP08	IPINS	1018+50.00	145.00	LT.	526018.202	2476867.273	160314.833	754876.088	3/4" IRON PIN SET W/ 2" ALUMINUM CAP
RP01	IPINS	1018+81.00	137.00	LT.	525986.209	2476868.482	160305.082	754876.457	3/4" IRON PIN SET W/ 2" ALUMINUM CAP

COMBINED SCALE FACTOR: 0.99990123

** PARCEL 319-S JOURNAL ENTRY 168065
MAHONING COUNTY COMMON PLEAS COURT
VOL. 266, PG. 137

REV. BY	DATE	DESCRIPTION

DATE COMPLETED 10/21/16

HORIZONTAL SCALE IN FEET
0 25 50 100

PID NO. 96637

R/W DESIGNER JPS
R/W REVIEWER CDK

RIGHT OF WAY TOPO SHEET
STA. 1011+00 TO STA. 1023+50

MAH-680-(5.41/5.60)

3 / 4

47 / 48

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MAHONING COUNTY
CITY OF YOUNGSTOWN
CITY LOTS 1559, 1560, 4114 & VACATED 20' ALLEY
TOWNSHIP 2, RANGE II
CONNECTICUT WESTERN RESERVE

1015+85.90
279.29' LT
21.40'
S 41° 58' 18" E
1015+67.44
270.37' LT
Ex R/W
PIKE STREET (30')
TMP
198.86'
S 27° 12' 08" W
1-T
162.80'
N 27° 12' 08" E
COMMERCIAL
1
A.P. O'HORO COMPANY
PIKE STREET
YOUNGSTOWN, OHIO 44502
VACATED 20' ALLEY (ORD. 66965)
53-062-0-215.00-0
53-062-0-214.00-0
53-062-0-213.00-0
CITY OF YOUNGSTOWN
O.R.2351, PG.59
PARCEL 5
C/L 3215
C/L 4112
C/L 4111
C/L 4110
C/L 4109
C/L 4108
Ex U
53-062-0-218.00-0
C/L 1559
53-062-0-220.00-0
C/L 53-062-0-222.00-0
5618
C/L 1562
C/L 1563
C/L
1562
53-062-0-216.00-0
C/L 62901
PLAT VOL. 119, PG. 232
MERIDIAN SERVICES, INC.
OR VOL. 5849, PG. 2268
53-062-0-238.00
OHIO EDISON COMPANY
LEASE VOL. 203, PG. 386
C/L 4114
1016+81.20
156.99' LT
13.56'
N 76° 12' 08" E
1016+25.00
130.00' LT
1017+50.00
140.00' LT
1018+50.00
145.00' LT
1018+81.00
137.00' LT
46.08'
N13°47'52"W
29.44'
S47°26'13"E
30.80'
LA-R/W
100.12'
S 19° 29' 50" E
32.02'
S 02° 09' 53" E
Ex SW
Ex LA-R/W
1016+50.00
145.00' LT
100.39'
S 13° 47' 52" E
1017+26.51
141.16' LT
1016+80.53
143.45' LT
PARCEL 319-S JOURNAL
ENTRY 168065 MAHONING
COUNTY COMMON PLEAS
COURT VOL 266, PG. 137
MS x3
Ex x3
53-062-0-221.00-0
C/L 1559
53-062-0-218.00-0
1-WL
N 28° 00' 24" E
71.01'
53.76'
N 88° 12' 00" W
1018+64.00
86.00' LT
Ex LA
151.50'
N 08° 40' 06" W
STATE OF OHIO
53-062-0-219.00-0
C/L 1560
1016+75.00
80.00' LT
47.43'
N 51° 19' 48" W
1018+25.00
59.00' LT
59.00'
N 73° 21' 54" E
126.30'
S 16° 38' 06" E
1015
1016
1017
1018
1019
1020
4.94'
N 73° 21' 54" E
1" IPIN FOUND
IN MONBOX
1016+98.70
4.94' RT
ST Sta. 1016+98.41
1018+25.00
C/L 1561
℄ RIGHT-OF-WAY & CONSTRUCTION
OF INTERSTATE ROUTE 680

REV. BY	DATE	DESCRIPTION

DATE COMPLETED 10/21/16

HORIZONTAL SCALE IN FEET
0 25 50 100

PID NO. 96637

R/W DESIGNER JPS
R/W REVIEWER CDK

RIGHT OF WAY BOUNDARY SHEET
STA. 1014+50 TO STA. 1020+00

MAH-680-(5.41/5.60)

4 / 4

48 / 48

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PROJECT DESCRIPTION

REMOVE EXISTING BRIDGE MAH-680-0575L OVER THE HILLSIDE AND REPLACE WITH EMBANKMENT FILL.

HISTORIC RECORDS

THE SUBSURFACE EXPLORATION FOR THE ORIGINAL ROADWAY AND BRIDGE WAS CONDUCTED IN 1959 FOR PROJECT MAH-18-17.20. IN THE PROJECT AREA, THERE ARE TEN (10) HISTORICAL BORINGS THAT WERE SELECTED FOR PRESENTATION ON THE PLAN AND CROSS SECTIONS. THE SOIL TEST DATA FOR THE HISTORIC BORINGS ARE ALSO INCLUDED. HOWEVER, SINCE THE HISTORICAL EXPLORATION DID NOT INCLUDE BORING LOGS, LOGS ARE NOT INCLUDED FOR THE HISTORICAL BORINGS.NOTE THAT THE PRACTICE IN 1959 WAS TO ONLY LABEL THE BORINGS WITH THE STATION AND OFFSET LOCATION. THEY DID NOT RECORD THE BORING NUMBER, IF ANY WAS EVEN ASSIGNED. TO AVOID CONFUSION AND FOLLOW CURRENT PRACTICE, WE ASSIGNED BORING NUMBERS TO THESE HISTORICAL BORINGS USING THE PROCEDURE DESCRIBED IN THE ODOT SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS.

GEOLOGY

THE PROJECT SITE IS LOCATED IN THE KILLBUCK GLACIATED PITTSBURGH PLATEAU PHYSIOGRAPHIC REGION. THIS AREA GENERALLY CONSISTS OF RIDGES AND FLAT UPLANDS COVERED WITH THIN DRIFT AND DISSECTED BY STEEP VALLEYS. THE OVERBURDEN SOIL AT THE PROJECT SITE CONSISTS OF CLAYEY AND SILTY GLACIAL TILL DEPOSITED IN HUMMOCKY MORAINES BY THE WISCONSINAN GLACIER ALONG THE UPPER PORTIONS OF THE SLOPE. BELOW THE GLACIAL TILL AND ALONG THE LOWER PORTIONS OF THE SLOPE, THE SOIL CONSISTS OF SAND AND GRAVEL WITH DISCONTINUOUS LAYERS OF SILT AND CLAY. THE SURFACE TOPOGRAPHY AT THE SITE VARIES FROM AROUND ELEVATION 820 ALONG THE MAHONING RIVER TO ABOUT ELEVATION 950 AT THE TOP OF THE SLOPE ABOVE THE ROADWAY. THE UNDERLYING BEDROCK REPORTEDLY CONSISTS OF SANDSTONE, SILTSTONE AND SHALE FROM THE MISSISSIPIAN-AGE LOGAN AND CUYAHOGA FORMATIONS. THE BEDROCK TOPOGRAPHY MAP OF OHIO FROM ODNR INDICATES THAT THE TOP OF BEDROCK ELEVATION AT THE PROJECT SITE IS BETWEEN 800 AND 875 FEET.

RECONNAISSANCE

ON MARCH 13, 2015, REPRESENTATIVES FROM S&ME VISITED THE SITE. THE AREA BELOW THE BRIDGE AND DOWNSLOPE FROM THE BRIDGE HAS GRAVEL AND STONE FRAGMENTS COVERING THE GROUND. THE AREA USED TO HAVE INDUSTRIAL FACILITIES ON IT AND THERE ARE THE REMAINS OF BUILDING FOUNDATIONS DOWN SLOPE OF THE BRIDGE.

SUBSURFACE EXPLORATION

SIX (6) BORINGS WERE DRILLED BY SOIL AND MATERIALS ENGINEERS, INC. (SME) BETWEEN JUNE 22 AND JULY 7, 2015, AS PART OF THIS GEOTECHNICAL EXPLORATION. THE BORINGS WERE DRILLED TO DEPTHS RANGING FROM 61.5 TO 104 FEET. THE BORINGS WERE DRILLED WITH A RUBBER TIRE ATV MOUNTED ROTARY DRILL RIG, USING 4-INCH INSIDE DIAMETER CASING AND TRICONE ROLLER BIT TO ADVANCE THE BORINGS THROUGH THE SOIL. DISTURBED SOIL SAMPLES WERE OBTAINED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 2.5 TO 5-FOOT INTERVALS FOR THE FULL DEPTH OF THE BORINGS. THE HAMMER SYSTEM USED WAS AN AUTOMATIC DROP HAMMER AND WAS LAST CALIBRATED ON SEPTEMBER 9, 2014. DURING THE CALIBRATION, THE AVERAGE MEASURED DRILL ROD ENERGY RATIO (ER) WAS 82 PERCENT. UNDISTURBED SOIL SAMPLES WERE OBTAINED FROM AN HOLE OFFSET 5 FEET FROM BORING B-002-2-15 FOR TESTING THE COMPRESSIVE STRENGTH OF THE SOIL. BEDROCK WAS NOT ENCOUNTERED.

EXPLORATION FINDINGS

THE BORINGS ENCOUNTERED PREDOMINANTLY GRANULAR SOILS, VARYING FROM LOOSE TO VERY DENSE, BUT GENERALLY WERE DENSE TO VERY DENSE BELOW A DEPTH OF 20 FEET. THE BORINGS ALSO ENCOUNTERED LAYERS OF COHESIVE SOIL CONSISTING OF SILT (A-4B), SANDY SILT (A-4A), SILT AND CLAY (A-6A), SILTY CLAY (A-6B), AND CLAY (A-7-6). BORINGS B-001-0-15 AND B-001-1-15 ENCOUNTERED A THREE TO FIVE-FOOT THICK LAYER OF VERY SOFT TO MEDIUM STIFF SILT OR SILTY CLAY AT DEPTHS AROUND 18 TO 23 FEET. WE BELIEVE THIS LAYER IS THE ORIGINAL GROUND SURFACE OF THE SLOPE FROM BEFORE CONSTRUCTION OF THE EXISTING ROADWAY EMBANKMENT. ALL OTHER COHESIVE SOIL WAS GENERALLY VERY STIFF TO HARD. THE HISTORIC BORINGS FROM 1959 ENCOUNTERED SIMILAR SOILS.

NO SEEPAGE OR GROUNDWATER WAS ENCOUNTERED DURING THE DRILLING OF THE PROJECT BORINGS, HOWEVER, WATER WAS ADDED TO THE HOLES DURING THE DRILLING PROCESS AS A DRILLING FLUID. THREE OF THE PROJECT BORINGS DID HAVE MEASUREABLE WATER AT THE COMPLETION OF DRILLING. THE DEPTH TO THE WATER VARIED FROM 22 TO 39 FEET, AND THIS IS SHOWN ON THE BORING LOGS. ONLY ONE OF THE HISTORIC BORINGS FROM 1959, B-042-2-59 REPORTED ANY GROUNDWATER SEEPAGE AT A DEPTH OF FIVE FEET.

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 JANUARY 2015.

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 OR THE OFFICE OF GEOTECHNICAL ENGINEERING AT 1980 WEST BROAD STREET.

LEGEND

DESCRIPTION	ODOT CLASS	CLASSIFIED MECH.	CLASSIFIED VISUAL
GRAVEL	A-1-a	12	16
GRAVEL WITH SAND	A-1-b	9	16
GRAVEL WITH SAND AND SILT	A-2-4	10	11
GRAVEL WITH SAND, SILT & CLAY	A-2-7	1	0
FINE SAND	A-3	1	0
COARSE & FINE SAND	A-3a	0	1
SANDY SILT	A-4a	11	9
SILT	A-4b	1	0
SILT & CLAY	A-6a	2	1
SILTY CLAY	A-6b	5	1
CLAY	A-7-6	5	6
	TOTAL	57	61
PAVEMENT OR BASE = X = APPROXIMATE THICKNESS			VISUAL

BORING LOCATION - PLAN VIEW

HISTORIC BORING LOCATION - PLAN VIEW - MAH-18-17.20

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.

X/Y/D" NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X= NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED). Y/D"= NUMBER OF BLOWS 9UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.

*X/** *= REFUSAL (PENETRATION NOT RECORDED) HISTORICAL BORINGS.

W INDICATES FREE WATER ELEVATION.

INDICATES STATIC WATER ELEVATION.

INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.

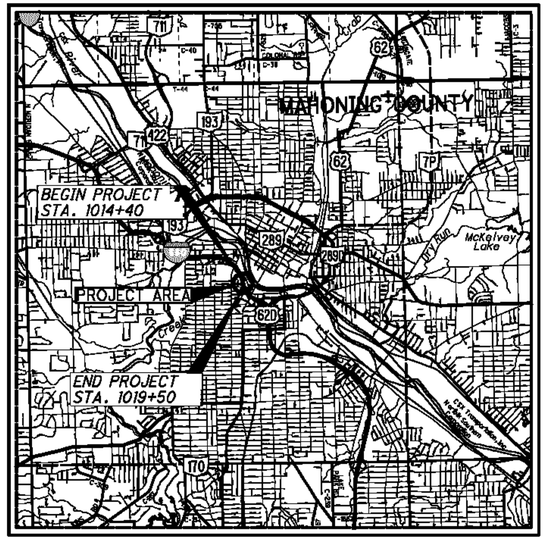
INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.

SS INDICATES A SPLIT SPOON SAMPLE.

NP INDICATES A NON-PLASTIC SAMPLE.

ST INDICATES A SHELBY TUBE SAMPLE.

INDEX OF SHEETS			
LOCATION FROM STA. TO STA.	PLAN VIEW SHEET	PROFILE SHEET	CROSS-SECTION SHEET
0575L			
1014+40 1019+50	5	-	-
1016+90	-	-	6
1018+00	-	-	7



LOCATION MAP

SCALE IN MILES

0 1 2 3 4

N

PARTICLE SIZE DEFINITIONS

12"	3"	2.0 mm	0.42 mm	0.074 mm	0.005 mm
BOULDERS	COBBLES	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY
		No. 10 SIEVE	No. 40 SIEVE	No. 200 SIEVE		

LEGEND HISTORIC BORING DESCRIPTIONS	ODOT CLASS	HISTORICAL BORINGS CLASSIFIED MECHANICALLY
GRAVEL	A-1-a	9
GRAVEL WITH SAND	A-1-b	6
GRAVEL WITH SAND AND SILT	A-2-4	4
GRAVEL WITH SAND, SILT & CLAY	A-2-6	2
COARSE & FINE SAND	A-3a	4
SANDY SILT	A-4a	13
SILT	A-4b	12
SILT & CLAY	A-6a	5
SILTY CLAY	A-6b	1
CLAY	A-7-6	3
SLAG/RANDOM FILL (VISUALLY IDENTIFIED)	SLAG	

RECON. - S&ME 03/13/2015
DRILLING - S&ME 06/22-07/07/15
DRAWN - LJS 01/21/2016
REVIEWED - PAN 01/25/2016

DESIGN AGENCY
E.L. ROBINSON ENGINEERING
1468 West 9th Street · Cleveland, Ohio 44113
www.elrobinsonengineering.com

PID NO. 96637

STRUCTURE REMOVAL EXPLORATION
BRIDGE NO. MAH-680-0575L
MAH-680-(5.41/5.60)

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UNCONFINED COMPRESSION TEST REPORT

S&ME ENGINEERING INTEGRITY.

ASTM D7012 METHOD C

PROJECT INFORMATION

CLIENT:	ODOT D-4
PROJECT NUMBER:	1117-15-004
PROJECT NAME:	MAH-680-3.33
PROJECT LOCATION:	Mahoning County, Ohio

SAMPLE INFORMATION

BORING ID:	B-002-2-15 Offset
SAMPLE NUMBER:	S-1, SEC I
SAMPLE DEPTH:	5.0' - 7.0
DATE OF TEST:	7/20/2015

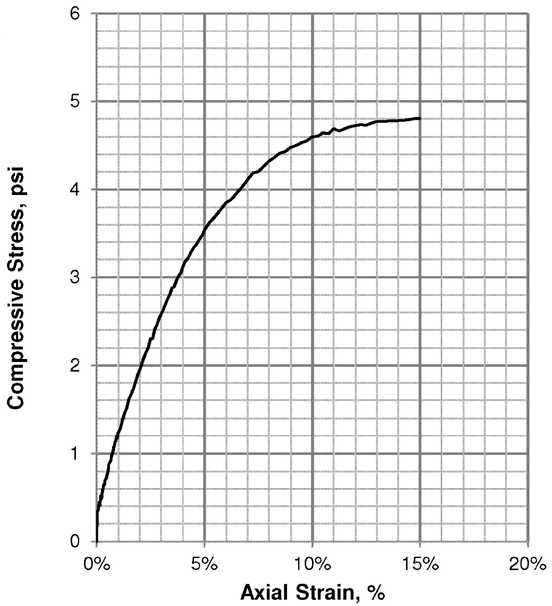
SAMPLE DESCRIPTION: Silt and Clay (A-6a)

SPECIMEN MEASUREMENTS

MOISTURE CONTENT:	16.84%	
AVERAGE DIAMETER:	2.8847	in.
AVERAGE HEIGHT:	5.5232	in.
HEIGHT/DIAMETER RATIO:	1.91	
WET DENSITY:	136.20	pcf
DRY DENSITY:	116.57	pcf
SPECIFIC GRAVITY:	2.75	(est.)
SATURATION:	97.95%	(est.)
VOID RATIO:	0.4728	(est.)

TEST RESULTS

MAXIMUM LOAD:	**37**	lbs
UNCONFINED STRENGTH:	**5**	psi
STRAIN RATE:	**1%**	%/min
STRAIN AT FAILURE:	**14.97%**	%



ADDITIONAL TESTING REMARKS:

TESTED BY: BKS/KJD CHECKED BY: EAA

UNCONFINED COMPRESSION TEST REPORT

S&ME ENGINEERING INTEGRITY.

ASTM D7012 METHOD C

PROJECT INFORMATION

CLIENT:	ODOT D-4
PROJECT NUMBER:	1117-15-004
PROJECT NAME:	MAH-680-3.33
PROJECT LOCATION:	Mahoning County, Ohio

SAMPLE INFORMATION

BORING ID:	B-002-2-15 Offset
SAMPLE NUMBER:	S-1, SEC III
SAMPLE DEPTH:	5.0' - 7.0
DATE OF TEST:	7/20/2015

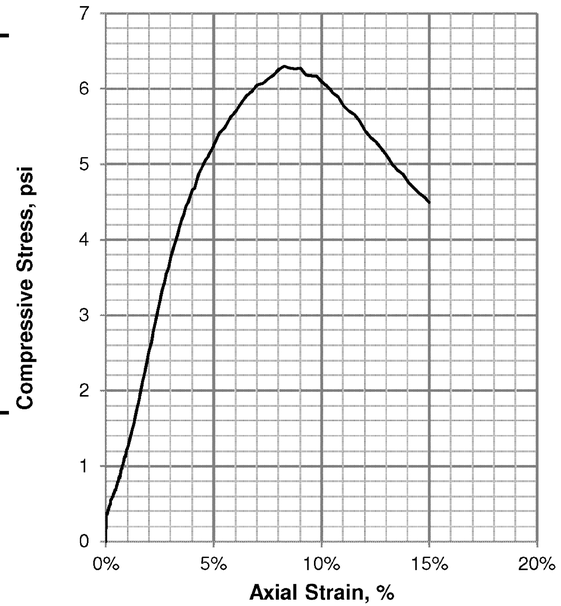
SAMPLE DESCRIPTION: Sandy Silt (A-4a)

SPECIMEN MEASUREMENTS

MOISTURE CONTENT:	36.05%	
AVERAGE DIAMETER:	2.8492	in.
AVERAGE HEIGHT:	5.2175	in.
HEIGHT/DIAMETER RATIO:	1.83	
WET DENSITY:	118.92	pcf
DRY DENSITY:	87.41	pcf
SPECIFIC GRAVITY:	2.75	(est.)
SATURATION:	102.82%	(est.)
VOID RATIO:	0.9642	(est.)

TEST RESULTS

MAXIMUM LOAD:	**44**	lbs
UNCONFINED STRENGTH:	**6**	psi
STRAIN RATE:	**1%**	%/min
STRAIN AT FAILURE:	**8.28%**	%



ADDITIONAL TESTING REMARKS:

TESTED BY: BKS/KJD CHECKED BY: EAA

DRAWN LJS CHECKED PAN

STRUCTURE REMOVAL EXPLORATION
COMPRESSIVE STRENGTH TEST RESULTS

MAH-680-(5.41/5.60)

2/20

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UNCONFINED COMPRESSION TEST REPORT

S&ME ENGINEERING INTEGRITY.

ASTM D7012 METHOD C

PROJECT INFORMATION

CLIENT: ODOT D-4
PROJECT NUMBER: 1117-15-004
PROJECT NAME: MAH-680-3.33
PROJECT LOCATION: Mahoning County, Ohio

SAMPLE INFORMATION

BORING ID: B-002-2-15 Offset
SAMPLE NUMBER: S-1, SEC IV
SAMPLE DEPTH: 5.0' - 7.0
DATE OF TEST: 7/20/2015

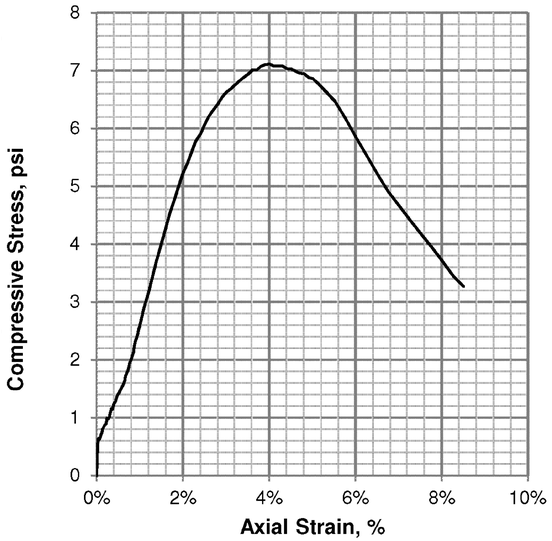
SAMPLE DESCRIPTION: Sandy Silt (A-4a)

SPECIMEN MEASUREMENTS

MOISTURE CONTENT:	16.84%	
AVERAGE DIAMETER:	2.8578	in.
AVERAGE HEIGHT:	5.5787	in.
HEIGHT/DIAMETER RATIO:	1.95	
WET DENSITY:	133.83	pcf
DRY DENSITY:	114.54	pcf
SPECIFIC GRAVITY:	2.75	(est.)
SATURATION:	92.85%	(est.)
VOID RATIO:	0.4989	(est.)

TEST RESULTS

MAXIMUM LOAD:	**48**	lbs
UNCONFINED STRENGTH:	**7**	psi
STRAIN RATE:	**1%**	%/min
STRAIN AT FAILURE:	**4.02%**	%



ADDITIONAL TESTING REMARKS:

TESTED BY: BKS/KJD

CHECKED BY: EAA

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DRAWN LJS CHECKED PAN

STRUCTURE REMOVAL EXPLORATION
COMPRESSIVE STRENGTH TEST RESULTS

MAH-680-(5.41/5.60)

3/20

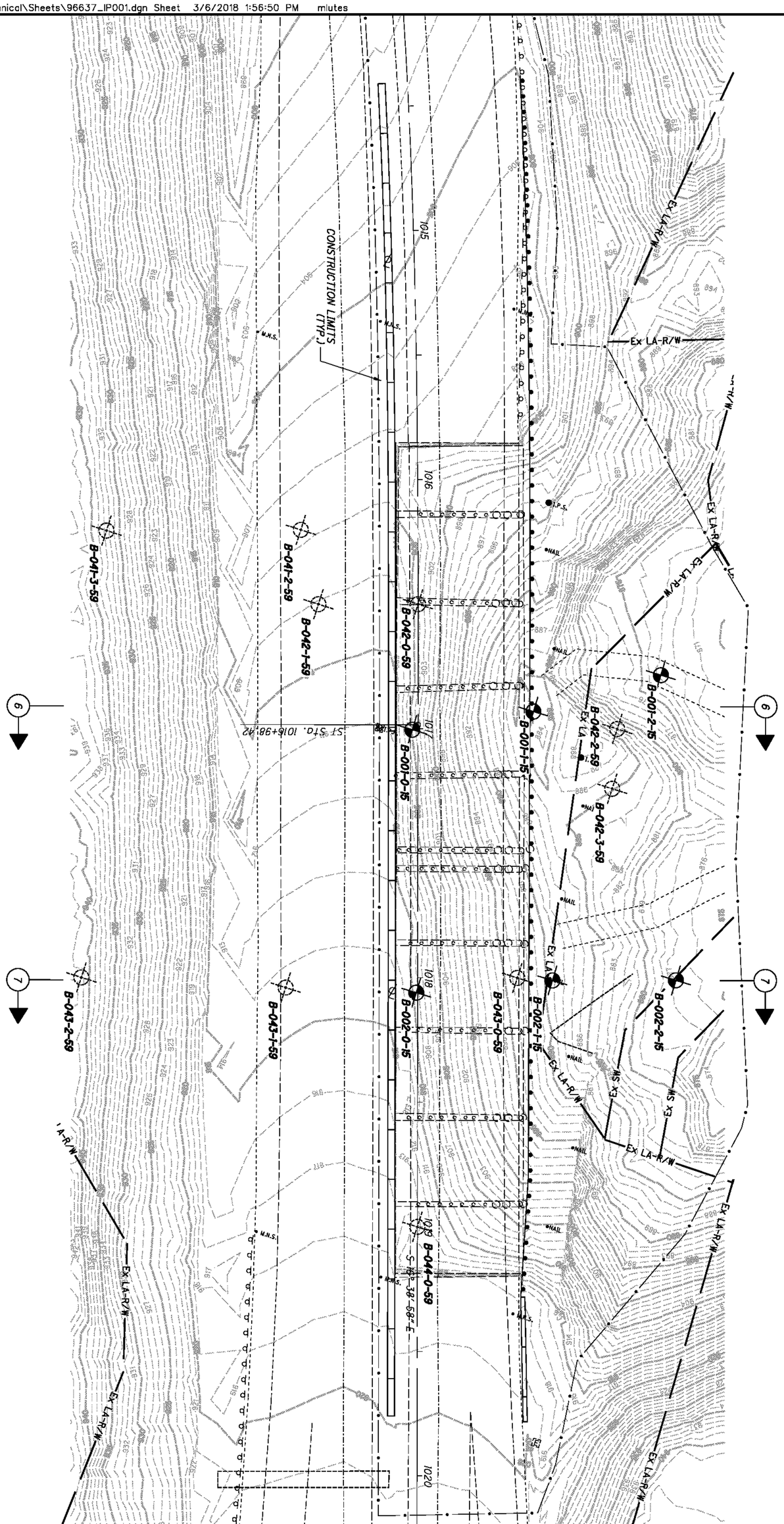
SUMMARY OF SOIL TEST DATA

EXPLORATION NO. / STATION & OFFSET	FROM		TO	% GR	% CS	% FS	% SILT	% CLAY	LL	PL	PI	% WC	ODOT CLASS
B-041-2-59	10.0	-	11.0	0	3	14	66	17	NP	NP	NP	36	A-4b
STA. 1016+20, 47' RT	15.0	-	16.0	46	8	17	23	6	NP	NP	NP	25	A-2-4
	20.0	-	21.0	21	4	11	32	32	29	18	11	15	A-6a
	25.0	-	26.0	11	1	3	57	28	26	20	6	19	A-4b
	30.0	-	31.0	0	0	1	66	33	25	19	6	21	A-4b
	35.0	-	36.0	48	6	7	29	10	NP	NP	NP	22	A-4a
	40.0	-	41.0	38	4	7	36	15	NP	NP	NP	18	A-4a
	45.0	-	46.0	0	1	4	73	22	NP	NP	NP	16	A-4b
	50.0	-	51.0	0	1	1	56	42	37	25	12	21	A-6a
B-041-3-59	5.0	-	6.0	52	29	14	- 5 -		NP	NP	NP	25	A-1-a
STA. 1016+20, 125' RT	10.0	-	11.0	15	31	44	- 10 -		NP	NP	NP	19	A-3a
	15.0	-	16.0	43	16	31	- 10 -		NP	NP	NP	12	A-1-b
	20.0	-	21.0	16	12	16	28	28	16	11	5	12	A-4a
	25.0	-	26.0	12	7	23	34	24	20	13	7	11	A-4a
B-042-0-59	10.0	-	11.0	73	8	12	4	3	NP	NP	NP	12	A-1-a
STA. 1016+51, CL	15.0	-	16.0	0	1	2	72	25	NP	NP	NP	18	A-4b
	20.0	-	21.0	0	0	7	71	22	20	19	1	17	A-4b
	25.0	-	26.0	0	0	5	65	30	24	16	8	18	A-4b
	30.0	-	31.0	0	0	0	71	29	27	22	5	26	A-4b
	35.0	-	36.0	15	37	31	15	2	NP	NP	NP	17	A-3a
B-042-1-59	0.4	-	10.0				SLAG (VISUAL)					4	
STA. 1016+50, 40' RT													
B-042-2-59	0.0	-	4.0	60	26	9	5	0	NP	NP	NP	6	A-1-a
STA. 1017+00, 80' LT	7.0	-	10.0	38	17	13	16	16	28	17	11	16	A-2-6
	10.0	-	13.0	13	23	53	9	2	NP	NP	NP	23	A-3a
	13.0		17.0	4	6	37	37	16	NP	NP	NP	16	A-4a
	17.0	-	18.0	10	14	38	26	12	18	15	3	12	A-4a
B-042-3-59	5.0	-	6.0	57	15	17	7	4	NP	NP	NP	11	A-1-a
STA. 1017+24, 78' LT	10.0	-	11.0	58	6	28	9	0	NP	NP	NP	20	A-1-b
	15.0	-	16.0	80	6	8	- 6 -		NP	NP	NP	12	A-1-a
	20.0	-	21.0	9	11	31	31	18	NP	NP	NP	10	A-4a
	25.0	-	26.0	12	9	30	28	21	NP	NP	NP	13	A-4a
	30.0	-	31.0	19	5	25	33	18	18	17	1	8	A-4a
	35.0	-	36.0	14	11	27	31	17	18	14	4	11	A-4a
	40.0	-	41.0	0	0	0	24	76	39	23	16	24	A-6b
	45.0	-	46.0	0	0	0	29	71	44	22	22	25	A-7-6
	50.0	-	51.0	31	24	24	12	9	NP	NP	NP	10	A-1-b
B-043-0-59	5.0	-	6.0	55	6	10	16	13	25	16	9	14	A-2-4
STA. 1018+00, 40' LT	10.0	-	11.0	0	1	0	65	34	NP	NP	NP	33	A-4b
	15.0	-	16.0	38	26	21	8	7	NP	NP	NP	16	A-1-b
	20.0	-	21.0	49	22	20	- 9 -		NP	NP	NP	11	A-1-b
	25.0	-	26.0	53	28	13	- 6 -		NP	NP	NP	12	A-1-a
	30.0	-	31.0	80	12	5	- 3 -		NP	NP	NP	16	A-1-a
	35.0	-	36.0	62	16	9	10	3	NP	NP	NP	9	A-1-a
B-043-1-59	5.0	-	6.0	80	6	7	- 7 -		NP	NP	NP	15	A-1-a
STA. 1018+00, 53' RT	10.0	-	11.0	57	10	8	9	16	26	21	5	15	A-1-b
	15.0	-	16.0	71	5	4	6	14	31	13	18	20	A-2-6
	20.0	-	21.0	0	1	22	60	17	NP	NP	NP	27	A-4b
	25.0	-	26.0	5	2	50	34	9	NP	NP	NP	21	A-4a
	30.0	-	31.0	0	0	28	62	10	NP	NP	NP	29	A-4b
	35.0	-	36.0	0	1	45	46	8	NP	NP	NP	22	A-4a
	40.0	-	41.0	8	1	4	45	42	28	17	11	24	A-6a
	45.0	-	46.0	8	1	3	43	45	28	17	11	19	A-6a
	50.0	-	51.0	4	5	6	44	41	33	22	11	21	A-6a
B-043-2-59	0.6	-	7.0	47	8	11	21	13	21	17	4	10	A-2-4
STA. 1018+00, 135' RT	7.0	-	16.0	20	11	22	29	18	NP	NP	NP	14	A-4a
	16.0	-	18.0	24	24	24	17	11	NP	NP	NP	14	A-2-4
	21.0	-	27.0	19	10	58	- 13 -		NP	NP	NP	7	A-3a
B-044-0-59	0.4	-	4.0	0	0	2	36	62	43	29	14	24	A-7-6
STA. 1019+00, CL	4.0	-	6.0	0	1	2	40	57	41	29	12	22	A-7-6
	6.0	-	10.0	0	1	1	51	47	28	22	6	22	A-4b

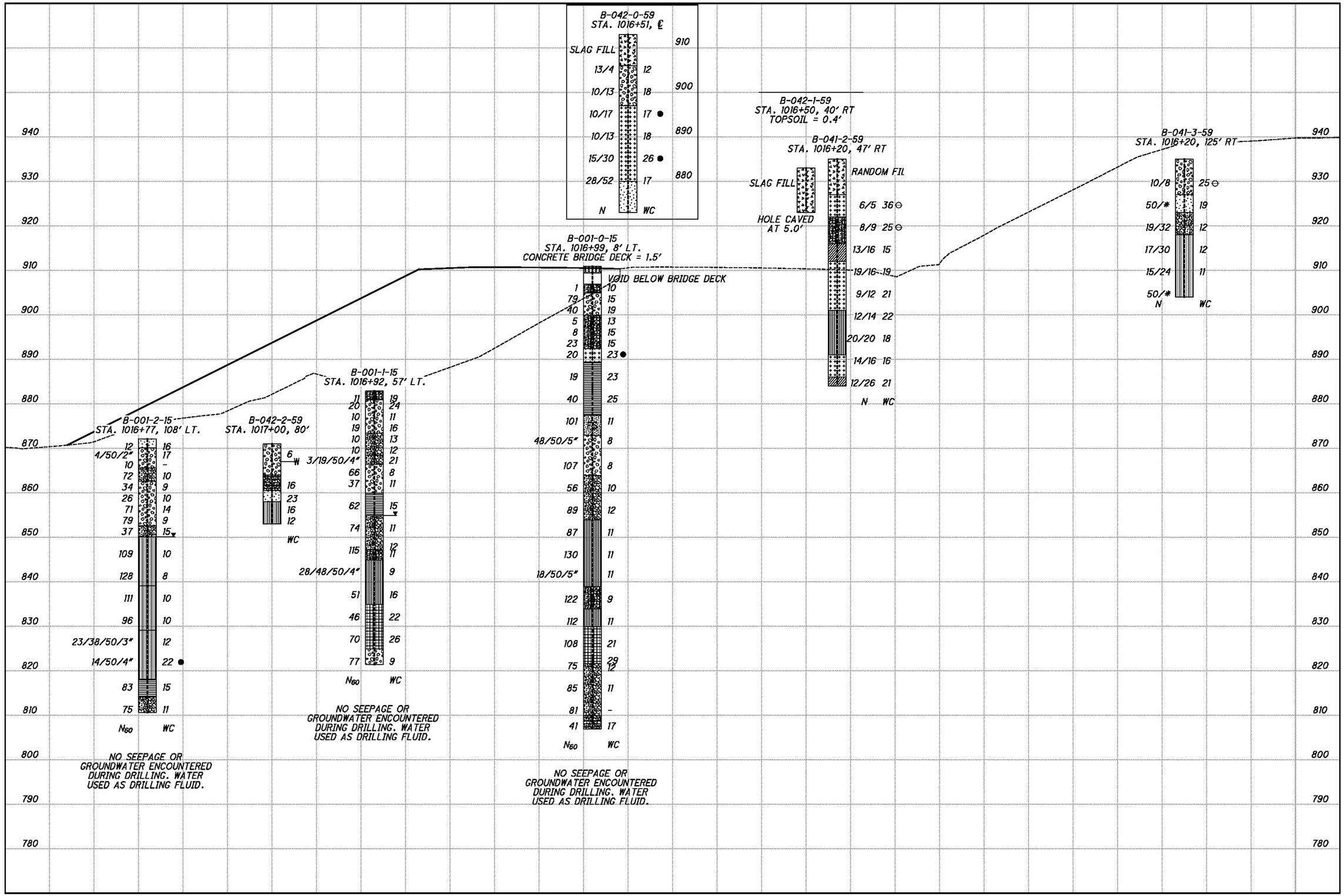
SUMMARY OF SOUL TEST DATA - HISTORICAL BORINGS
STRUCTURE REMOVAL EXPLORATION

DRAWN LRS
CHECKED PAN

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5/20	MAH-680-(5.41/5.60)	STRUCTURE REMOVAL EXPLORATION BRIDGE NO. MAH-680-0575L	DRAWN LJS CHECKED PN	0 20 10 40 HORIZONTAL SCALE IN FEET	N



HORIZONTAL SCALE IN FEET
0 5 10 20

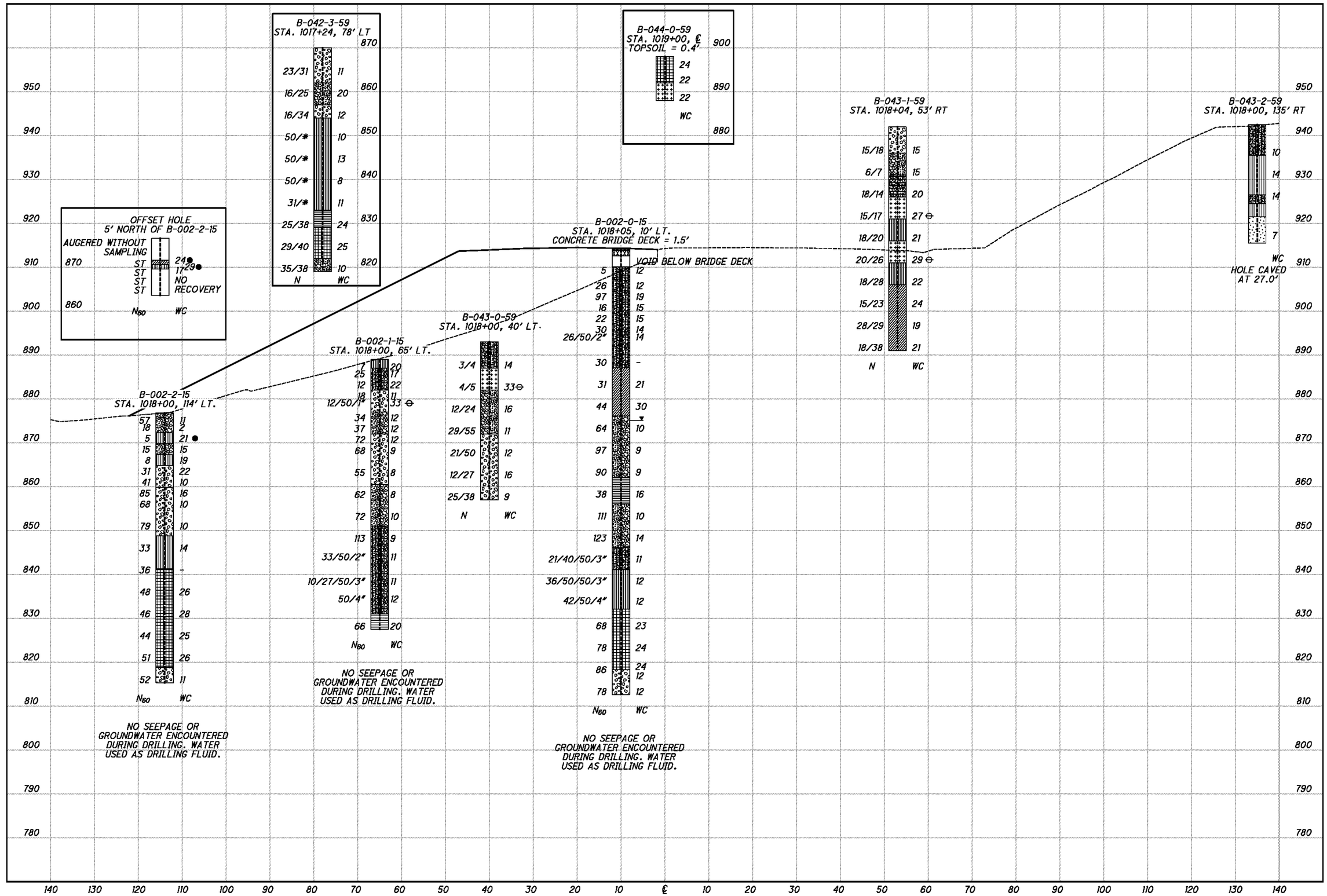
DRAWN LJS
CHECKED PAN

STRUCTURE REMOVAL EXPLORATION CROSS SECTION STA. 1016+90

MAH-680-(5.41/5.60)

6 / 20

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0 5 10 20
HORIZONTAL SCALE IN FEET

DRAWN LJS
CHECKED PAN

STRUCTURE REMOVAL EXPLORATION
CROSS SECTION STA. 1018+00

MAH-680-(5.41/5.60)

7/20

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PROJECT: MAH-680-0575L BR. REMOVAL	DRILLING FIRM / OPERATOR: L.G. HETAGER / OTIS	DRILL RIG: S&ME CME 750	STATION / OFFSET: 1016+99, 8 LT	EXPLORATION ID B-001-0-15
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&ME / K. HARPER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-680	
PID: 96637 BR ID: SFN 5006996 (E)	DRILLING METHOD: 4" ID CASING, 3-7/8" TRB	CALIBRATION DATE: 9/19/14	ELEVATION: 910.9 (MSL) EOB: 104.0 ft.	PAGE 1 OF 2
START: 6/22/15 END: 6/25/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 82	LAT / LONG: 41.095911000, 80.656914000	

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)	HOLE SEALED
CONCRETE DECK - 3"	910.9																	
CONCRETE - 14.5"	910.6																	
	909.4																	
VOID - 2.5'																		
	906.9																	
FILL: Very-loose brown **GRAVEL WITH SAND AND SILT**, little clay, contains few slag fragments, damp.			1 1 WOH	1	61	SS-1	-	31	15	20	22	12	23	19	4	10	A-2-4 (0)	
	904.9																	
FILL: Dense to very-dense brown intermixed with gray **GRAVEL**, some fine to coarse sand, little silt, trace clay, contains many slag fragments and few brick fragments, moist.			21 26 32	79	44	SS-2	-	-	-	-	-	-	-	-	-	15	A-1-a (V)	
			10 16 13	40	100	SS-3	-	58	17	11	11	3	29	26	3	19	A-1-a (0)	
	899.9																	
FILL: Loose to medium-dense gray **GRAVEL WITH SAND AND SILT**, contains many slag fragments and few clay pipe fragments, moist.			7 3 1	5	22	SS-4	-	-	-	-	-	-	-	-	-	13	A-2-4 (V)	
			1 3 3	8	33	SS-5	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	
			13 11 6	23	33	SS-6	-	81	11	5	3	0	-	-	-	15	A-2-4 (V)	
	892.4																	
Soft to medium-stiff gray **SILT**, some clay, little fine to coarse sand, contains many sand seams and pockets, moist.			7 6 9	20	100	SS-7	0.25-0.7	0	1	14	60	25	20	15	5	23	A-4b (8)	
	889.4																	
Very-stiff to hard gray **SILTY CLAY**, trace fine to coarse sand, contains many silt seams and pockets, moist.			5 6 8	19	72	SS-8	2.5-3.7	0	0	1	42	57	38	20	18	23	A-6b (11)	
			10 13 16	40	100	SS-9	3.0-4.5	-	-	-	-	-	-	-	-	25	A-6b (V)	
	877.4																	
Very-dense brown **FINE SAND**, some fine to coarse gravel, trace silt, trace clay, moist.			26 31 43	101	100	SS-10	-	27	15	49	8	1	NP	NP	NP	11	A-3 (0)	
	872.9																	
Very-dense brown **GRAVEL**, some fine to coarse sand, trace silt, trace clay, moist.			48 50/5"	-	100	SS-11	-	58	20	15	6	1	NP	NP	NP	8	A-1-a (0)	
			42 43 35	107	100	SS-12	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
	863.9																	
Very-dense brown **GRAVEL WITH SAND**, trace silt, trace clay, moist.			22 26 15	56	78	SS-13	-	51	19	18	9	3	NP	NP	NP	10	A-1-b (0)	
			30 30 35	89	100	SS-14	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
	853.9																	
Hard gray **SANDY SILT**, some fine to coarse gravel, some clay, contains many sandstone fragments, moist.			21 26	87	100	SS-15	4.5+	28	10	19	21	22	24	15	9	11	A-4a (2)	

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

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PID: 96637	BR ID: SFN 5006996 (E)	PROJECT: MAH-680-0575L BR. REMOVAL	STATION / OFFSET: 1016+99, 8 LT	START: 6/22/15	END: 6/25/15	PG 2 OF 2	B-001-0-15

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)	HOLE SEALED
Hard gray **SANDY SILT**, some fine to coarse gravel, some clay, contains many sandstone fragments, moist. *(continued)*	850.9		38															
		61																
		62																
		63																
		64																
		65	21 45 50	130	100	SS-16	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		66																
		67																
		68																
		69																
		70	18 50/5"	-	100	SS-17	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		71																
		72																
		73																
		74																
		75	21 39 50	122	100	SS-18	-	33	18	20	16	13	18	14	4	9	A-2-4 (0)	
		76																
		77																
		78																
		79																
		80	21 32 50	112	100	SS-19	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)	
		81																
		82																
		83																
		84																
		85	29 34 45	108	100	SS-20	3.5-4.5+	0	0	0	26	74	43	22	21	21	A-7-6 (13)	
		86																
		87																
		88																
		89																
		90	11 25 30	75	44	SS-21AB	3.0-4.0	-	-	-	-	-	-	-	-	29	A-7-6 (V)	
								-	-	-	-	-	-	-	-	12	A-1-b (V)	
		91																
		92																
		93																
		94																
		95	29 32 30	85	72	SS-22	-	47	33	9	8	3	22	20	2	11	A-1-b (0)	
		96																
		97																
		98																
		99																
		100	11 29 30	81	0	SH	-	-	-	-	-	-	-	-	-	-	A-1-b (V)	
		101																
		102																
		103																
		104	10 15 15	41	28	SS-23	-	35	32	1	9	23	42	22	20	17	A-2-7 (2)	
Very-dense gray **GRAVEL WITH SAND AND SILT**, little clay, moist.	838.9																	
Hard gray **SANDY SILT**, little clay, trace fine to coarse gravel, moist.	833.9																	
Very-stiff to hard gray **CLAY**, some silt, contains many silt pockets and seams, damp.	829.9																	
Very-dense brown **GRAVEL WITH SAND**, trace silt, trace clay, moist.	821.6																	
Dense gray **GRAVEL WITH SAND, SILT, AND CLAY**, moist.	809.9																	
	806.9	EOB																

NOTES:
- No seepage encountered during drilling.
- No groundwater encountered during drilling.
- After removal of augers, boring caved at 27.0' and was observed to be dry.
- Borehole was backfilled with soil cuttings and the pavement patched with asphalt during abandonment.
- Borehole cased to 102.5'.
- Water used as drilling fluid.

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1/4 BAG ASPHALT PATCH; PLACED SOIL CUTTINGS

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\179-15-004.GPJ

9/20	MAH-680-(5.41/5.60)	STRUCTURE REMOVAL EXPLORATION BRIDGE NO. MAH-680-0575L BORING LOG B-001-0-15 (PAGE 2 OF 2)	DRAWN LJS CHECKED PAN

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PROJECT: MAH-680-0575L BR. REMOVAL	DRILLING FIRM / OPERATOR: L.G. HETAGER / OTIS	DRILL RIG: S&ME CME 750	STATION / OFFSET: 1016+93, 57 LT
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&ME / K. HARPER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-680
PID: 96637 BR ID: SFN 5006996 (E)	DRILLING METHOD: 4" ID CASING, 3-7/8" TRB	CALIBRATION DATE: 9/19/14	ELEVATION: 882.9 (MSL) EOB: 61.5 ft.
START: 7/1/15 END: 7/1/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 82	LAT / LONG: 41.095953000, 80.656725000

EXPLORATION ID B-001-1-15

PAGE 1 OF 2

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)	BACK FILL
FILL: Medium-dense brown **GRAVEL WITH SAND AND SILT**, trace clay, contains few wood fragments and many slag fragments, moist.	882.9		2 2 6	11	72	SS-1	-	46	16	13	16	9	33	25	8	19	A-2-4 (0)	
	880.9																	
FILL: Loose to medium-dense gray **GRAVEL**, little fine to coarse sand, trace silt, trace clay, contains many slag fragments, few wood fragments, few glass fragments, moist.			8 9 6	20	33	SS-2	-	-	-	-	-	-	-	-	-	24	A-1-a (V)	
			5 5 2	10	22	SS-3	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	873.4		11 7 7	19	44	SS-4	-	72	11	6	8	3	NP	NP	NP	16	A-1-a (0)	
FILL: Loose gray **GRAVEL WITH SAND**, little silt, trace clay, contains many slag fragments and few coal fragments, moist.			6 4 3	10	33	SS-5	-	-	-	-	-	-	-	-	-	13	A-1-b (V)	
	868.4		8 3 4	10	56	SS-6	-	67	5	8	14	6	21	16	5	12	A-1-b (0)	
FILL: Very-dense gray **GRAVEL WITH SAND**, little clay, trace silt, contains many slag fragments, moist.	866.4		3 19 50/4"	-	100	SS-7	-	-	-	-	-	-	-	-	-	21	A-1-b (V)	
FILL: Dense to very-dense brown **GRAVEL**, some fine to coarse sand, trace silt, contains few slag fragments, moist.			14 18 30	66	72	SS-8	-	63	22	10	5	0	NP	NP	NP	8	A-1-a (0)	
			3 11 16	37	56	SS-9	-	-	-	-	-	-	-	-	-	11	A-1-a (V)	
	859.9																	
Very-soft to medium-stiff gray **SILTY CLAY,** "and" fine to coarse gravel, trace fine to coarse sand, moist			10 23 22	62	44	SS-10	0.2-0.7	54	3	3	16	24	36	19	17	15	A-6b (3)	
	854.9	▼																
Very-dense brown **GRAVEL WITH SAND**, little silt, trace clay, contains many sandstone fragments, moist.			18 27 27	74	89	SS-11	-	48	13	23	12	4	NP	NP	NP	11	A-1-b (0)	
	847.2		20 34 50	115	89	SS-12AB	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
Very-dense gray **GRAVEL WITH SAND AND SILT**, trace clay, moist.	844.9						-	17	19	30	26	8	NP	NP	NP	11	A-2-4 (0)	
Very-dense gray **SANDY SILT**, little fine to coarse gravel, little clay, contains many sandstone fragments, and many silt seams and pockets, moist.			28 48 50/4"	-	100	SS-13	-	19	12	30	27	12	NP	NP	NP	9	A-4a (1)	
			21 15 22	51	78	SS-14	-	-	-	-	-	-	-	-	-	16	A-4a (V)	
	834.9																	
Hard gray **CLAY**, little silt, little fine to coarse gravel, contains many silt pockets and seams, moist.			5 13 21	46	100	SS-15	4.5+	10	0	0	15	75	49	27	22	22	A-7-6 (15)	
			15 21 30	70	100	SS-16	4.5+	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
	824.9																	
Very-dense brown **GRAVEL**, some fine to coarse sand, little silt, trace clay, moist.																		

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\179-15-004.GPJ

10/20	MAH-680-(5.41/5.60)	STRUCTURE REMOVAL EXPLORATION BRIDGE NO. MAH-680-0575L BORING LOG B-001-1-15 (PAGE 1 OF 2)	DRAWN LJS CHECKED PAN

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PID: 96637	BR ID: SFN 5006996 (E)	PROJECT: MAH-680-0575L BR. REMOVAL	STATION / OFFSET: 1016+93, 57 LT	START: 7/1/15	END: 7/1/15	PG 2 OF 2	B-001-1-15

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)	BACK FILL
Very-dense brown **GRAVEL**, some fine to coarse sand, little silt, trace clay, moist. *(continued)*	822.9																	
	821.4	61 EOB	30 29 27	77	89	SS-17	-	55	20	12	10	3	NP	NP	NP	9	A-1-a (0)	

NOTES:
- No seepage encountered during drilling.
- No groundwater encountered during drilling.
- Water upon completion at 28.0'.
- Shelby Tube push failure at 40.0', maximum psi of 800 lifted rig off ground.
- Borehole was backfilled with soil cuttings during abandonment.
- Plastic hole plug device placed into borehole during abandonment.
- Borehole cased to 60.0'.
- Water used as drilling fluid.

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1 PLASTIC HOLE PLUG DEVICE; PLACED SOIL CUTTINGS

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

11 / 20	MAH-680-(5.41/ 5.60)	STRUCTURE REMOVAL EXPLORATION BRIDGE NO. MAH-680-0575L BORING LOG B-001-1-15 (PAGE 2 OF 2)	DRAWN LJS / CHECKED PAN

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PROJECT: MAH-680-0575L BR. REMOVAL	DRILLING FIRM / OPERATOR: L.G. HETAGER / OTIS	DRILL RIG: S&ME CME 750	STATION / OFFSET: 1016+77, 108 LT	EXPLORATION ID B-001-2-15
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&ME / K. HARPER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-680	
PID: 96637 BR ID: SFN 5006996 (E)	DRILLING METHOD: 4" ID CASING, 3-7/8" TRB	CALIBRATION DATE: 9/19/14	ELEVATION: 872.1 (MSL) EOB: 61.5 ft.	PAGE 1 OF 2
START: 6/30/15 END: 7/1/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 82	LAT / LONG: 41.096003000, 80.656528000	

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)	BACK FILL
FILL: Medium-dense brown **COARSE AND FINE SAND**, little fine to coarse gravel, little clay, little silt, contains few asphalt fragments, moist.	872.1		4 4 5	12	33	SS-1	-	-	-	-	-	-	NP	NP	NP	16	A-3a (V)	
	870.1																	
FILL: Loose to very-dense brown **GRAVEL**, trace clay, trace silt, contains many sandstone fragments, damp.			4 50/2"	-	25	SS-2	-	-	-	-	-	-	-	-	-	17	A-1-a (V)	
	865.6		4 3 4	10	0	SH	-	-	-	-	-	-	-	-	-	-		
Very-dense brown **GRAVEL WITH SAND**, trace silt, moist.	862.6		21 27 26	72	89	SS-3	-	-	-	-	-	-	-	-	-	10	A-1-b (V)	
Medium-dense to very-dense brown **GRAVEL**, some fine to coarse sand, trace silt, trace clay, moist.			12 13 12	34	100	SS-4	-	68	15	8	7	2	NP	NP	NP	9	A-1-a (0)	
			9 10 9	26	61	SS-5	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
			16 22 30	71	33	SS-6	-	-	-	-	-	-	-	-	-	14	A-1-a (V)	
	852.6		14 32 26	79	72	SS-7	-	67	10	14	7	2	NP	NP	NP	9	A-1-a (0)	
Medium-dense brown **GRAVEL WITH SAND**, little clay, little silt, moist.	850.1	▼	9 16 11	37	67	SS-8	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
Hard gray **SANDY SILT**, some fine to coarse gravel, little clay, contains many fine sand pockets, moist.			19 30 50	109	100	SS-9	4.5+	20	14	30	24	12	17	14	3	10	A-4a (0)	
			25 45 49	128	100	SS-10	4.5+	-	-	-	-	-	-	-	-	8	A-4a (V)	
	839.1																	
Hard gray **SANDY SILT**, little clay, trace fine to coarse gravel, contains few fine sand pockets and seams, moist.			40 43 38	111	100	SS-11	4.5+	9	14	27	32	18	20	13	7	10	A-4a (3)	
			24 27 43	96	100	SS-12	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)	
	829.1																	
Hard gray **SANDY SILT**, some fine to coarse gravel, some clay, contains many silt pockets and seams, moist.			23 38 50/3"	-	100	SS-13	4.5+	21	8	19	32	20	23	14	9	12	A-4a (3)	
			14 50/4"	-	100	SS-14	4.5+	-	-	-	-	-	-	-	-	22	A-4a (V)	
	818.1																	
Hard gray **SILTY CLAY**, "and" fine to coarse gravel, trace fine to coarse sand, moist.			26 27 34	83	33	SS-15	4.5+	56	1	3	13	27	40	20	20	15	A-6b (4)	
	814.1																	
Very-dense brown **GRAVEL WITH SAND**, trace silt, trace clay, moist.																		

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

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PID: 96637	BR ID: SFN 5006996 (E)	PROJECT: MAH-680-0575L BR. REMOVAL	STATION / OFFSET: 1016+77, 108 LT	START: 6/30/15	END: 7/1/15	PG 2 OF 2	B-001-2-15

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)	BACK FILL
Very-dense brown **GRAVEL WITH SAND**, trace silt, trace clay, moist. *(continued)*	812.1	61	10 26 29	75	78	SS-16	-	40	36	18	5	1	-	-	-	11	A-1-b (V)	
	810.6	EOB																

NOTES:
- No seepage encountered during drilling.
- No groundwater encountered during drilling.
- Water upon completion at 22.0'.
- Borehole was backfilled with soil cuttings during abandonment.
- Plastic hole plug device placed into borehole during abandonment.
- Borehole cased to 60.0'.
- Water used as drilling fluid.

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1 PLASTIC HOLE PLUG DEVICE; PLACED SOIL CUTTINGS

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

STRUCTURE REMOVAL EXPLORATION
BRIDGE NO. MAH-680-0575L
BORING LOG B-001-2-15 (PAGE 2 OF 2)

DRAWN LJS
CHECKED PAN

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PROJECT: MAH-680-0575L BR. REMOVAL	DRILLING FIRM / OPERATOR: L.G. HETAGER / OTIS	DRILL RIG: S&ME CME 750	STATION / OFFSET: 1018+05, 10 LT	EXPLORATION ID B-002-0-15
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&ME / K. HARPER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-680	
PID: 96637 BR ID: SFN 5006996 (E)	DRILLING METHOD: 4" ID CASING, 3-7/8" TRB	CALIBRATION DATE: 9/19/14	ELEVATION: 914.1 (MSL) EOB: 101.5 ft.	PAGE 1 OF 2
START: 6/25/15 END: 6/29/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 82	LAT / LONG: 41.095633000, 80.656806000	

MATERIAL DESCRIPTION AND NOTES	ELEV. 914.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
CONCRETE DECK - 3"	913.8																	
CONCRETE - 14.5"	912.6																	
VOID - 2.5'	910.1																	
FILL: Loose gray **GRAVEL WITH SAND AND SILT**, trace clay, moist.	907.6		1 1 3	5	94	SS-1	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	
FILL: Medium-dense brown **GRAVEL WITH SAND AND SILT**, trace clay, moist.	904.6		12 9 10	26	67	SS-2	-	44	13	17	18	8	19	16	3	12	A-2-4 (0)	
FILL: Very-dense brown intermixed with gray **GRAVEL WITH SAND AND SILT**, trace clay, contains few slag fragments, moist.	902.1		5 21 50	97	61	SS-3	-	-	-	-	-	-	-	-	-	19	A-2-4 (V)	
FILL: Medium-dense brown and gray **GRAVEL WITH SAND AND SILT**, little clay, contains many sandstone fragments, and few brick fragments, moist.	894.6		9 6 6	16	56	SS-4	-	40	12	16	20	12	24	17	7	15	A-2-4 (0)	
			12 8 8	22	100	SS-5	-	-	-	-	-	-	-	-	-	15	A-2-4 (V)	
			15 12 10	30	67	SS-6	-	36	13	19	22	10	24	17	7	14	A-2-4 (0)	
FILL: Medium-dense to very-dense gray **GRAVEL WITH SAND AND SILT**, contains few glass fragments, moist.	887.1		26 50/2"	-	100	SS-7	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)	
			10 10 12	30	0	SH	-	-	-	-	-	-	-	-	-	-		
Very-stiff to hard gray **SILT AND CLAY**, trace fine to coarse sand, trace fine to coarse gravel, contains many silt pockets and seams, moist.	876.1		4 9 14	31	100	SS-8	3.0-4.5	1	1	3	48	47	30	18	12	21	A-6a (9)	
			11 14 18	44	100	SS-9	3.0-4.5	-	-	-	-	-	-	-	-	30	A-6a (V)	
Very-dense brown **GRAVEL WITH SAND**, trace silt, trace clay, moist.	862.1		15 21 26	64	78	SS-10	-	34	40	18	7	1	NP	NP	NP	10	A-1-b (0)	
			27 34 37	97	89	SS-11	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
			21 22 44	90	67	SS-12	-	-	-	-	-	-	-	-	-	9	A-1-b (V)	
Very-stiff to hard gray **SILTY CLAY**, "and" fine to coarse gravel, little fine to coarse sand, contains many silt seams and pockets, moist.	856.1		19 13 15	38	89	SS-13	3.0-4.5	47	8	7	11	27	33	17	16	16	A-6b (2)	
Very-dense brown **GRAVEL WITH SAND**, little silt, trace clay, contains many sandstone fragments, moist.																		

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\179-15-004.GPJ

MAH-680-(5.41/5.60)

STRUCTURE REMOVAL EXPLORATION
BRIDGE NO. MAH-680-0575L
BORING LOG B-002-0-15 (PAGE 1 OF 2)

DRAWN LJS
CHECKED PAN

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PID: 96637	BR ID: SFN 5006996 (E)	PROJECT: MAH-680-0575L BR. REMOVAL	STATION / OFFSET: 1018+05, 10 LT	START: 6/25/15	END: 6/29/15	PG 2 OF 2	B-002-0-15

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)	HOLE SEALED
Very-dense brown **GRAVEL WITH SAND**, little silt, trace clay, contains many sandstone fragments, moist. *(continued)*	854.1	61	19 31 50	111	100	SS-14	-	38	15	28	14	5	NP	NP	NP	10	A-1-b (0)	
		62																
		63																
		64																
		65	25 41 49	123	100	SS-15	-	-	-	-	-	-	-	-	-	14	A-1-b (V)	
		66																
	846.1	67																
Very-dense gray **GRAVEL WITH SAND AND SILT**, little clay, contains few black coal pockets and many fine sand pockets and seams, moist.		68																
		69																
		70	21 40 50/3"	-	100	SS-16	-	17	17	32	23	11	NP	NP	NP	11	A-2-4 (0)	
		71																
		72																
	841.1	73																
Very-stiff to hard gray **SANDY SILT**, little fine to coarse gravel, little clay, contains few coal fragments, moist.		74																
		75	36 50 50/3"	-	100	SS-17	3.5-4.5	-	-	-	-	-	-	-	-	12	A-4a (V)	
		76																
		77																
		78																
		79																
		80	42 50/4"	-	100	SS-18	3.0-4.5	18	10	19	39	14	21	16	5	12	A-4a (4)	
	832.1	81																
Hard gray **CLAY**, some silt, contains many silt pockets and seams, moist.		82																
		83																
		84																
		85																
		86	18 22 28	68	100	SS-19	4.5+	-	-	-	-	-	-	-	-	23	A-7-6 (V)	
		87																
		88																
		89																
		90																
		91	16 25 32	78	100	SS-20	4.5+	0	0	0	29	71	41	21	20	24	A-7-6 (12)	
		92																
		93																
		94																
	818.3	95	25 30 33	86	100	SS-21AB	4.5+	-	-	-	-	-	-	-	-	24	A-7-6 (V)	
Very-dense brown **GRAVEL**, some fine to coarse sand, little silt, trace clay, moist.		96					-	64	15	8	10	3	NP	NP	NP	12	A-1-a (0)	
		97																
		98																
		99																
		100	25 30 27	78	100	SS-22	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
	812.6	101	EOB															

NOTES:
- No seepage encountered during drilling.
- No groundwater encountered during drilling.
- Water at completion 39.0'.
- After removal of augers, boring caved at 66.0'.
- Borehole was backfilled with soil cuttings and the pavement patched with asphalt during abandonment.
- Borehole cased to 100.0'.
- Water used as drilling fluid.

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1/4 BAG ASPHALT PATCH; PLACED SOIL CUTTINGS

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

MAH-680-(5.41/5.60)

STRUCTURE REMOVAL EXPLORATION
BRIDGE NO. MAH-680-0575L
BORING LOG B-002-0-15 (PAGE 2 OF 2)

DRAWN LJS
CHECKED PAN

PROJECT: MAH-680-0575L BR. REMOVAL	DRILLING FIRM / OPERATOR: L.G. HETAGER / OTIS	DRILL RIG: S&ME CME 750	STATION / OFFSET: 1018+00, 65 LT	EXPLORATION ID B-002-1-15
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&ME / K. HARPER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-680	
PID: 96637 BR ID: SFN 5006996 (E)	DRILLING METHOD: 4" ID CASING, 3-7/8" TRB	CALIBRATION DATE: 9/19/14	ELEVATION: 889.0 (MSL) EOB: 61.5 ft.	PAGE 1 OF 2
START: 7/6/15 END: 7/7/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 82	LAT / LONG: 41.095667000, 80.656625000	

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)	BACK FILL
FILL: Soft gray **SANDY SILT**, little fine to coarse gravel, trace clay, contains few glass fragments, roots, wood fragments, and slag fragments, moist.	889.0		2 2 3	7	72	SS-1	0.25-0.5	-	-	-	-	-	-	-	-	20	A-4a (V)	
	887.0																	
FILL: Medium-dense gray intermixed with brown **GRAVEL WITH SAND AND SILT**, trace clay, contains few slag fragments, brick fragments and sandstone fragments, moist.			10 12 6	25	100	SS-2	-	41	12	18	20	9	25	19	6	17	A-2-4 (0)	
			3 4 5	12	100	SS-3	-	-	-	-	-	-	-	-	-	22	A-2-4 (V)	
	882.0																	
FILL: Medium-dense to very-dense red and gray **GRAVEL**, trace fine to coarse sand, trace silt, trace clay, contains many slag and brick fragments, moist.			4 4 9	18	33	SS-4	-	90	1	1	-	8 -	-	-	-	11	A-1-a (V)	
			12 50/1"	-	57	SS-5	-	-	-	-	-	-	-	-	-	33	A-1-a (V)	
	877.0																	
FILL: Dense brown **GRAVEL WITH SAND**, trace silt, trace clay, contains few brick fragments, moist.			9 10 15	34	67	SS-6	-	-	-	-	-	-	-	-	-	12	A-1-b (V)	
			8 12 15	37	72	SS-7	-	38	26	30	5	1	NP	NP	NP	12	A-1-b (0)	
	872.0																	
Very-dense brown **GRAVEL**, some fine to coarse sand, trace silt, trace clay, contains few sandstone fragments, moist.			16 17 36	72	67	SS-8	-	-	-	-	-	-	-	-	-	12	A-1-a (V)	
			20 24 26	68	78	SS-9	-	62	20	11	6	1	NP	NP	NP	9	A-1-a (0)	
			25 19 21	55	61	SS-10	-	-	-	-	-	-	-	-	-	8	A-1-a (V)	
	860.5																	
Very-dense brown **GRAVEL WITH SAND**, trace silt, trace clay, contains few sandstone fragments, moist.			26 24 21	62	89	SS-11	-	-	-	-	-	-	-	-	-	8	A-1-b (V)	
			20 23 30	72	61	SS-12	-	55	11	22	6	6	NP	NP	NP	10	A-1-b (0)	
	851.0																	
Very-dense gray **GRAVEL WITH SAND AND SILT**, some clay, contains few sandstone fragments, few coal fragments, and few fine sand pockets, moist.			25 36 47	113	78	SS-13	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)	
			33 50/2"	-	100	SS-14	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)	
			10 27 50/3"	-	100	SS-15	-	27	11	27	8	27	17	12	5	11	A-2-4 (0)	
			50/4"	-	100	SS-16	-	-	-	-	-	-	-	-	-	12	A-2-4 (V)	
	831.0																	
Hard gray **SILTY CLAY**, little fine to coarse sand, trace fine to coarse gravel, contains many silt seams and pockets, moist.																		

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

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PID: 96637	BR ID: SFN 5006996 (E)	PROJECT: MAH-680-0575L BR. REMOVAL	STATION / OFFSET: 1018+00, 65 LT	START: 7/6/15	END: 7/7/15	PG 2 OF 2	B-002-1-15

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)	BACK FILL
Hard gray **SILTY CLAY**, little fine to coarse sand, trace fine to coarse gravel, contains many silt seams and pockets, moist. *(continued)*	829.0	– 61	11 21 27	66	100	SS-17	4.0-4.5	4	3	8	26	59	36	17	19	20	A-6b (12)	
	827.5 EOB																	

NOTES:
- No seepage encountered during drilling.
- No groundwater encountered during drilling.
- Borehole was observed to be dry at completion.
- Borehole was backfilled with soil cuttings during abandonment.
- Plastic hole plug device placed into borehole during abandonment.
- Borehole was cased to 60.0'.
- Water used as drilling fluid.

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1 PLASTIC HOLE PLUG DEVICE; PLACED SOIL CUTTINGS

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

17 / 20

MAH-680-(5.41/ 5.60)

STRUCTURE REMOVAL EXPLORATION
BRIDGE NO. MAH-680-0575L
BORING LOG B-002-1-15 (PAGE 2 OF 2)

DRAWN LJS
CHECKED PAN

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PROJECT: MAH-680-0575L BR. REMOVAL	DRILLING FIRM / OPERATOR: L.G. HETAGER / OTIS	DRILL RIG: S&ME CME 750	STATION / OFFSET: 1018+00, 114 LT	EXPLORATION ID B-002-2-15
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&ME / K. HARPER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-680	
PID: 96637 BR ID: SFN 5006996 (E)	DRILLING METHOD: 4" ID CASING, 3-7/8" TRB	CALIBRATION DATE: 9/19/14	ELEVATION: 876.6 (MSL) EOB: 61.5 ft.	PAGE 1 OF 2
START: 7/2/15 END: 7/6/15	SAMPLING METHOD: SPT	ENERGY RATIO (%): 82	LAT / LONG: 41.095744000, 80.656450000	

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)	BACK FILL
FILL: Medium-dense to very-dense gray **GRAVEL WITH SAND**, little silt, trace clay, contains many slag fragments and few glass fragments, damp.	876.6	1	10 8 34	57	78	SS-1	-	42	16	25	10	7	NP	NP	NP	11	A-1-b (0)	
		3	8 6 7	18	33	SS-2	-	-	-	-	-	-	-	-	-	2	A-1-b (V)	
Very-soft gray and brown **SANDY SILT**, some fine to coarse gravel, little clay, moist.	872.1	5	6 2 2	5	44	SS-3	0.10	32	11	21	21	15	23	18	5	21	A-4a (0)	
Medium-dense brown **GRAVEL WITH SAND**, little clay, trace silt, moist.	869.6	8	5 5 6	15	33	SS-4	-	-	-	-	-	-	-	-	-	15	A-1-b (V)	
Soft gray **SANDY SILT**, "and" fine to coarse gravel, some clay, contains many sandstone fragments, moist.	867.1	10	5 3 3	8	39	SS-5	0.30	40	3	5	32	20	30	20	10	19	A-4a (3)	
Dense gray **GRAVEL**, some fine to coarse sand, trace silt, trace clay, contains many sandstone fragments, moist.	864.6	13	8 14 9	31	28	SS-6	-	-	-	-	-	-	-	-	-	22	A-1-a (V)	
		16	14 13 17	41	67	SS-7	-	67	9	15	6	3	NP	NP	NP	10	A-1-a (0)	
Very-dense gray **GRAVEL**, some fine to coarse sand, trace silt, trace clay, moist.	859.6	18	36 39 23	85	28	SS-8	-	-	-	-	-	-	-	-	-	16	A-1-a (V)	
		21	11 26 24	68	22	SS-9	-	-	-	-	-	-	-	-	-	10	A-1-a (V)	
		26	8 24 34	79	67	SS-10	-	59	12	21	4	4	NP	NP	NP	10	A-1-a (0)	
Very-stiff gray **SANDY SILT**, some fine to coarse gravel, little clay, moist.	848.6	31	7 11 13	33	78	SS-11	3.0-4.0	30	3	9	44	14	26	19	7	14	A-4a (5)	
Hard gray **CLAY**, some silt, trace fine to coarse sand, contains many silt pockets and seams, moist.	841.1	36	9 11 15	36	0	SH	-	-	-	-	-	-	-	-	-	-		
		41	10 15 20	48	100	SS-12	4.0-4.5	0	0	0	21	79	46	23	23	26	A-7-6 (14)	
		46	10 15 19	46	100	SS-13	4.0-4.5	-	-	-	-	-	-	-	-	28	A-7-6 (V)	
		51	7 14 18	44	100	SS-14	4.5+	0	0	2	21	77	46	22	24	25	A-7-6 (15)	
		56	9 15 22	51	100	SS-15	4.0-4.5	-	-	-	-	-	-	-	-	26	A-7-6 (V)	
Very-dense brown **GRAVEL**, some fine to coarse sand, trace silt, trace clay, moist.	818.6																	

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

18/20	MAH-680-(5.41/5.60)	STRUCTURE REMOVAL EXPLORATION BRIDGE NO. MAH-680-0575L BORING LOG B-002-2-15 (PAGE 1 OF 2)	DRAWN LJS	CHECKED PAN

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PID: 96637	BR ID: SFN 5006996 (E)	PROJECT: MAH-680-0575L BR. REMOVAL	STATION / OFFSET: 1018+00, 114 LT	START: 7/2/15	END: 7/6/15	PG 2 OF 2	B-002-2-15

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)	BACK FILL
Very-dense brown **GRAVEL**, some fine to coarse sand, trace silt, trace clay, moist. *(continued)*	816.6																	
	815.1	61	13 16 22	52	78	SS-16	-	64	14	8	8	6	25	20	5	11	A-1-a (0)	
		EOB																

NOTES:
- No seepage encountered during drilling.
- No groundwater encountered during drilling.
- Borehole was observed to be dry at completion.
- Borehole was backfilled with soil cuttings during abandonment.
- Plastic hole plug device placed into borehole during abandonment.
- Borehold cased to 60.0'.
- Water used as drilling fluid.
- Shelby Tube obtained from offset hole from 5'-7' and 7'-9'.

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1 PLASTIC HOLE PLUG DEVICE; PLACED SOIL CUTTINGS

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

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PROJECT: MAH-680-0575L BR. REMOVAL	DRILLING FIRM / OPERATOR: L.G. HETAGER / OTIS	DRILL RIG: S&ME CME 750	STATION / OFFSET: 1017+95, 115 LT	EXPLORATION ID OFFSET HOLE
TYPE: BRIDGE REPLACEMENT	SAMPLING FIRM / LOGGER: S&ME / K. HARPER	HAMMER: CME AUTOMATIC	ALIGNMENT: I-680	
PID: 96637 BR ID: SFN 5006996 (E)	DRILLING METHOD: 4" ID CASING, 3-7/8" TRB	CALIBRATION DATE: 9/19/14	ELEVATION: 876.6 (MSL) EOB: 13.0 ft.	PAGE 1 OF 1
START: 7/7/15 END: 7/7/15	SAMPLING METHOD: ST	ENERGY RATIO (%): 82	LAT / LONG: Not Recorded	

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)	BACK FILL
Offset 5 feet north from B-002-2-15 for Shelby Tube attempts.	876.6	1																
		2																
		3																
		4																
		5																
		6			100	ST-1	-	6	6	17	42	29	27	16	11	24	A-6a (8)	
					100	ST	-	15	9	26	31	19	31	22	9	29	A-4a (3)	
		7			100	ST	-	14	10	32	28	16	21	15	6	17	A-4a (2)	
		8			96	ST-2	-	-	-	-	-	-	-	-	-	-		
		9																
		10			0	SH	-	-	-	-	-	-	-	-	-	-		
		11																
		12			0	SH	-	-	-	-	-	-	-	-	-	-		
	863.6	EOB 13																

NOTES:

NOTES: NONE

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 1 PLASTIC HOLE PLUG DEVICE; PLACED SOIL CUTTINGS

STANDARD OHDOT SOIL BORING LOG (11 X 17) - OH DOT.GDT - 3/9/17 17:53 - X:\96637\DESIGN\GEOTECHNICAL\ENGDATA\1179-15-004.GPJ

20/20	MAH-680-(5.41/5.60)	STRUCTURE REMOVAL EXPLORATION BRIDGE NO. MAH-680-0575L BORING LOG OFFSET HOLE	DRAWN LJS CHECKED PAN