

PROJECT ID:
WITH: XXXX-XX-XX

1090-03-78

COUNTY:

MILWAUKEE

F

PLOT NAME :

UTILITY CONTACTS

ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION
CHRIS DAILEY
P.O. BOX 47
WAUKEHSA, WI 53187
PHONE: (262) 506-6884
CDAILEY@ATCLLC.COM

CITY OF GREENFIELD - COMMUNICATIONS
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GSELISSEN@MCEWI.COM

CITY OF GREENFIELD - SEWER
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JEFFREY.KATZ@GREENFIELDWI.US

CITY OF MILWAUKEE - WATER
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841 N BROADWAY, 4TH FLOOR
MILWAUKEE, WI 53202
CELL: (414) 286-3640
JIWEN@MILWAUKEE.GOV

EVERSTREAM - COMMUNICATION LINE
EVERSTREAM UTILITY COORDINATION
324 E WISCONSIN AVE. SUITE 730
MILWAUKEE, WI 53202
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WI-RELOCATIONS@EVERSTREAM.NET

MIDWEST FIBER NETWORKS LLC - COMMUNICATION LINE
CORY SCHMUKI
6070 NORTH FLINT RD
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CSCHMUKI@MIDWESTFIBERNETWORKS.COM

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT-SEWER
MICHAEL LEE
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CELL: (414) 617-1429
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SPECTRUM - COMMUNICATION LINE
ROBERT DETERT
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VERIZON BUSINESS - COMMUNICATION LINE
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WE ENERGIES - ELECTRIC
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WE ENERGIES - GAS/PETROLEUM
WE ENERGIES UTILITY COORDINATOR
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WEST ALLIS, WI 53214
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WE-UTILITY-RELOCATIONS@WE-ENERGIES.COM

STATE AGENCIES

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
RYAN PAPPAS -
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SOUTHEASTERN REGION HEADQUARTERS
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MILWAUKEE, WI 53233-264
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WISCONSIN DEPARTMENT OF TRANSPORTATION
TOMMY CURRAN -
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141 NW BARSTOW STREET
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WISDOT - COMMUNICATIONS
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WISCONSIN DEPARTMENT OF TRANSPORTATION
AMANDA JOHANSEN - PROJECT MANAGER
141 NW BARSTOW STREET
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WISCONSIN DEPARTMENT OF TRANSPORTATION - LIGHTING
ERIC PEREA
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WISCONSIN DEPARTMENT OF TRANSPORTATION - SIGNALS
JARRETT GATES
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WISDOT ELECTRICAL FIELD UNIT
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STE. 300
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OTHER AGENCIES

MILWAUKEE COUNTY DOT HIGHWAY MAINTENANCE DIVISION
KEVIN KENT, HWY SUPERINTENDENT
10320 W. WATERTOWN PLANK RD
1ST FLOOR
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PHONE: (414) 257-6580
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MILWAUKEE COUNTY DOT
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WEST ALLIS, CITY OF
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GREENFIELD, CITY OF
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MILWAUKEE COUNTY TRANSIT SYSTEM
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MILWAUKEE, WI 53205
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ASENSABAUGH@MCTS.ORG

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DLOCHER@MCTS.ORG

DAN ADAMS
TRANSIT SPECIALIST
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DADAMS@MCTS.ORG

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
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260 W SEEBOTH ST
MILWAUKEE, WI 53204
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MKLAPPASULLIVAN@MMSD.COM

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
ROB MERRY
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P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: (262) 953-4289
CELL: (920) 912-1036
RMERRY@SEWRPC.ORG

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES
BEFORE YOU DIG IN WISCONSIN



GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE FERTILIZED, SEEDED AND MULCHED OR E-MATTED.

BROKEN CONCRETE CONTAINING RE-BAR SHALL NOT BE USED AS RIPRAP MEDIUM.

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

FERTILIZER SHALL NOT BE USED WITHIN 100' OF NAVIGABLE WATERWAYS OR WETLANDS.

ALL PRIVATE EXISTING UTILITIES ARE TO BE ADJUSTED BY THE UTILITIES CONCERNED.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR UNDER THE ITEM TRAFFIC CONTROL COVERING SIGNS.

CONTACT THE PROJECT ENGINEER AND THE SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION (SEWRPC) AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

EXISTING RIGHT-OF-WAY IS APPROXIMATE AND IS BASED ON MILWAUKEE COUNTY GIS.

REFERENCE LINE CALLOUTS

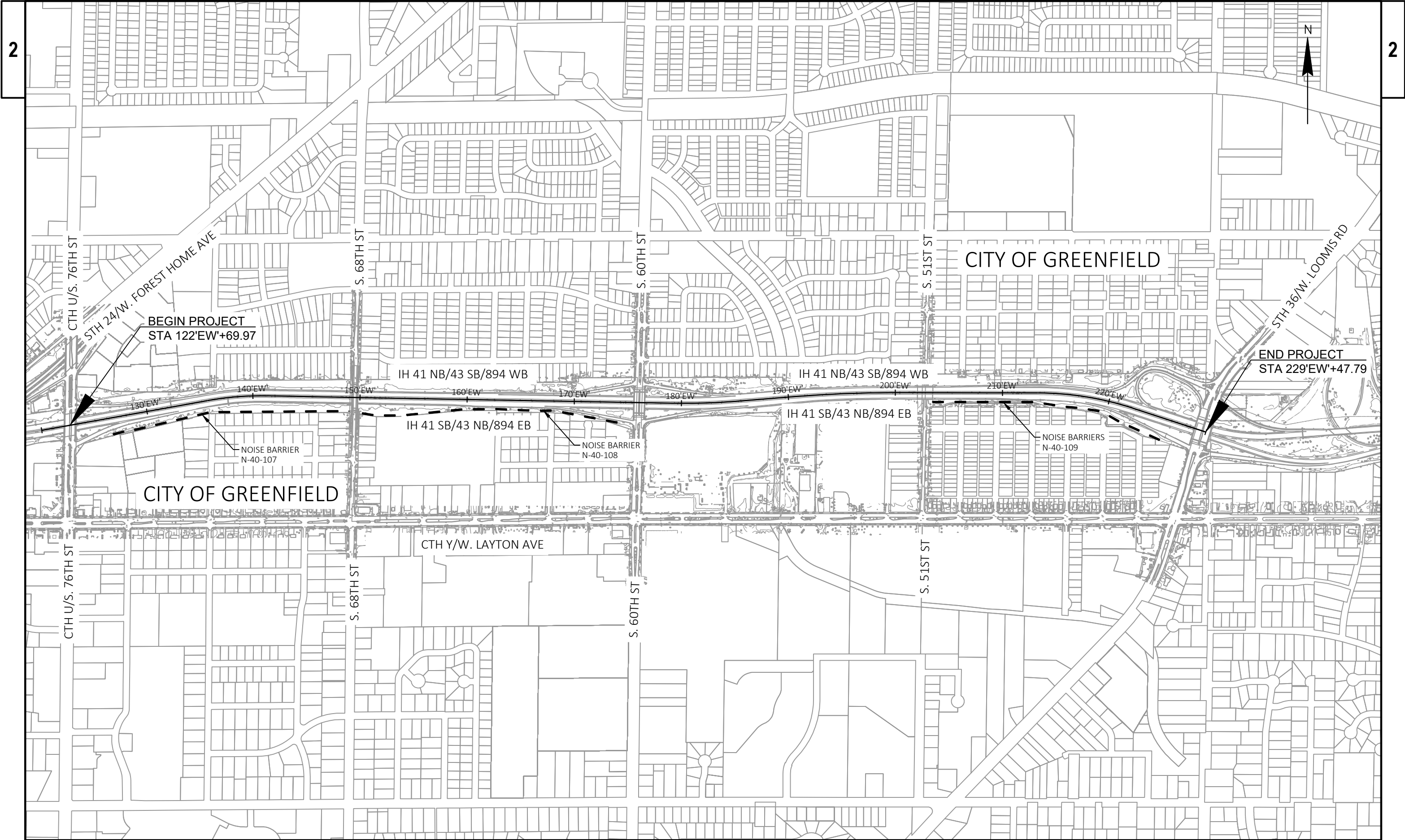
EW - IH 41/ 43/ 894

ORDER OF SECTION 2 DETAIL SHEETS

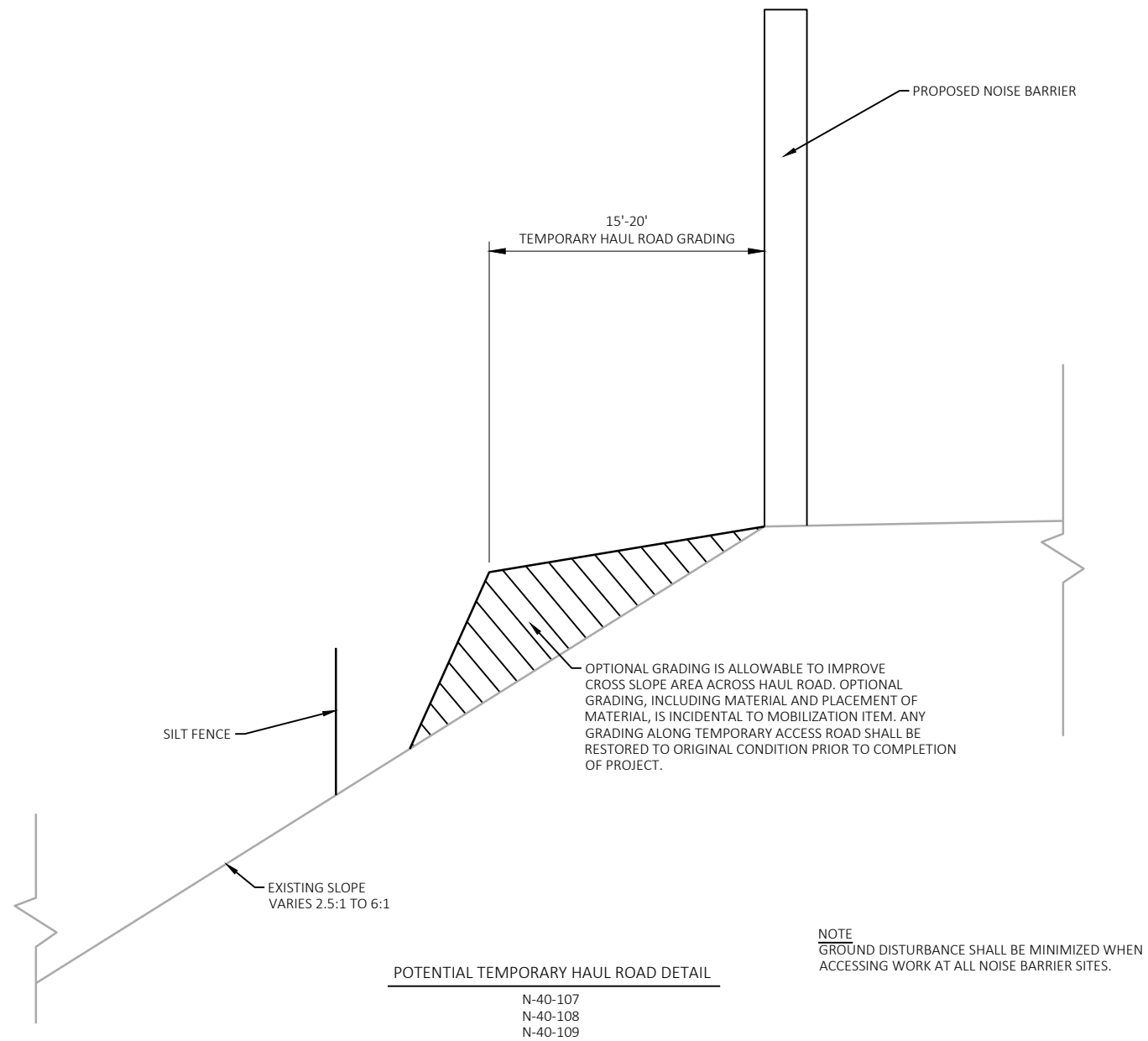
- GENERAL NOTES
- PROJECT OVERVIEW
- CONSTRUCTION DETAILS
- REMOVAL PLANS
- PLAN DETAILS
- EROSION CONTROL
- PERMANENT SIGNING
- TRAFFIC CONTROL
- DETOUR
- ALIGNMENT LAYOUT

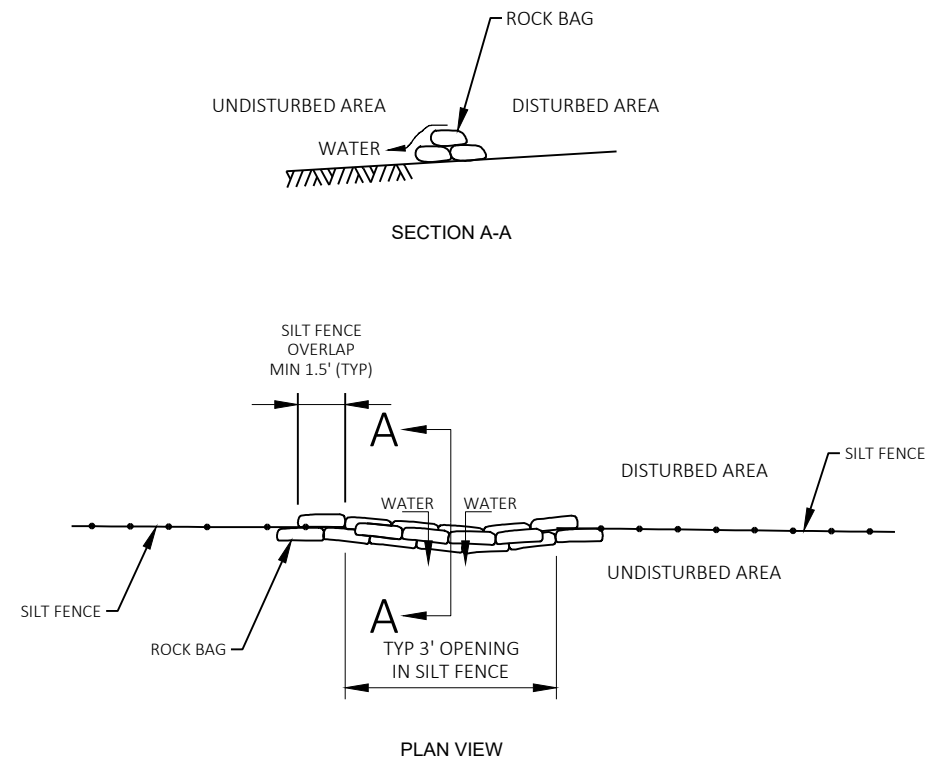
STANDARD ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
AH	AHEAD
ASPH	ASPHALTIC
BK	BACK
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L OR ϵ	CENTER LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
DISCH	DISCHARGE
Δ	DELTA
ϵ	INTERSECTION ANGLE
EB	EASTBOUND
ENB	EXISTING NOISE BARRIER
EOP	EDGE OF PAVEMENT
FE	FIELD ENTRANCE
FL	FLOW LINE
FS	FULL SUPERELEVATION
HMA	HOT MIX ASPHALT
IE	INVERT ELEVATION
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PNB	PROPOSED NOISE BARRIER
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L OR $\sim$	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQ'D	REQUIRED
RD	ROAD
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPERELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT
WB	WESTBOUND



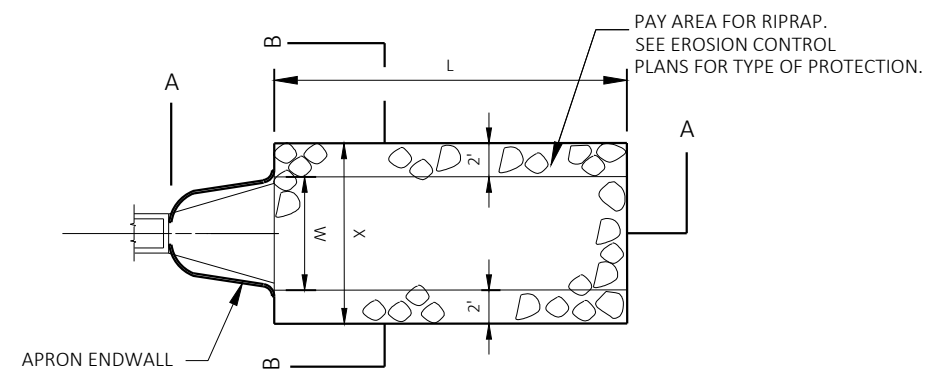
PROJECT NO: 1090-03-78	HWY: IH 41	COUNTY: MILWAUKEE	PROJECT OVERVIEW	SHEET 4	E
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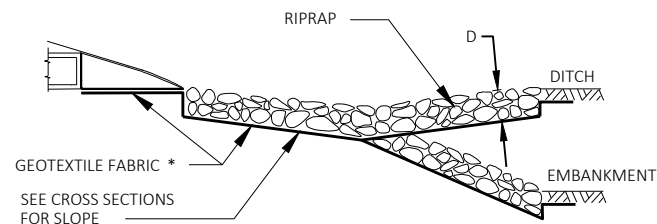


ROCK BAGS USED FOR SILT FENCE RELIEF POINT

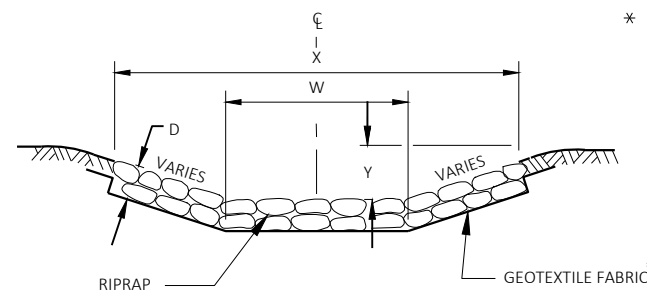
1. PLACE SILT FENCE RELIEFS AS NECESSARY



PLAN VIEW



SECTION A-A



SECTION B-B

L = 3 x W (NOR) OR 10' MIN
OR AS INDICATED IN THE PLANS
OR AS DIRECTED BY THE ENGINEER

D = 12" FOR RIPRAP LIGHT
18" FOR RIPRAP MEDIUM
24" FOR RIPRAP HEAVY

X = W+4' FOR TYPICAL CULVERT
DISCHARGE INTO DITCH
W+6' FOR CULVERT DISCHARGE
DOWN EMBANKMENT SLOPE

Y = 0' FOR TYPICAL CULVERT
DISCHARGE INTO DITCH
6" FOR CULVERT DISCHARGE
DOWN EMBANKMENT SLOPE

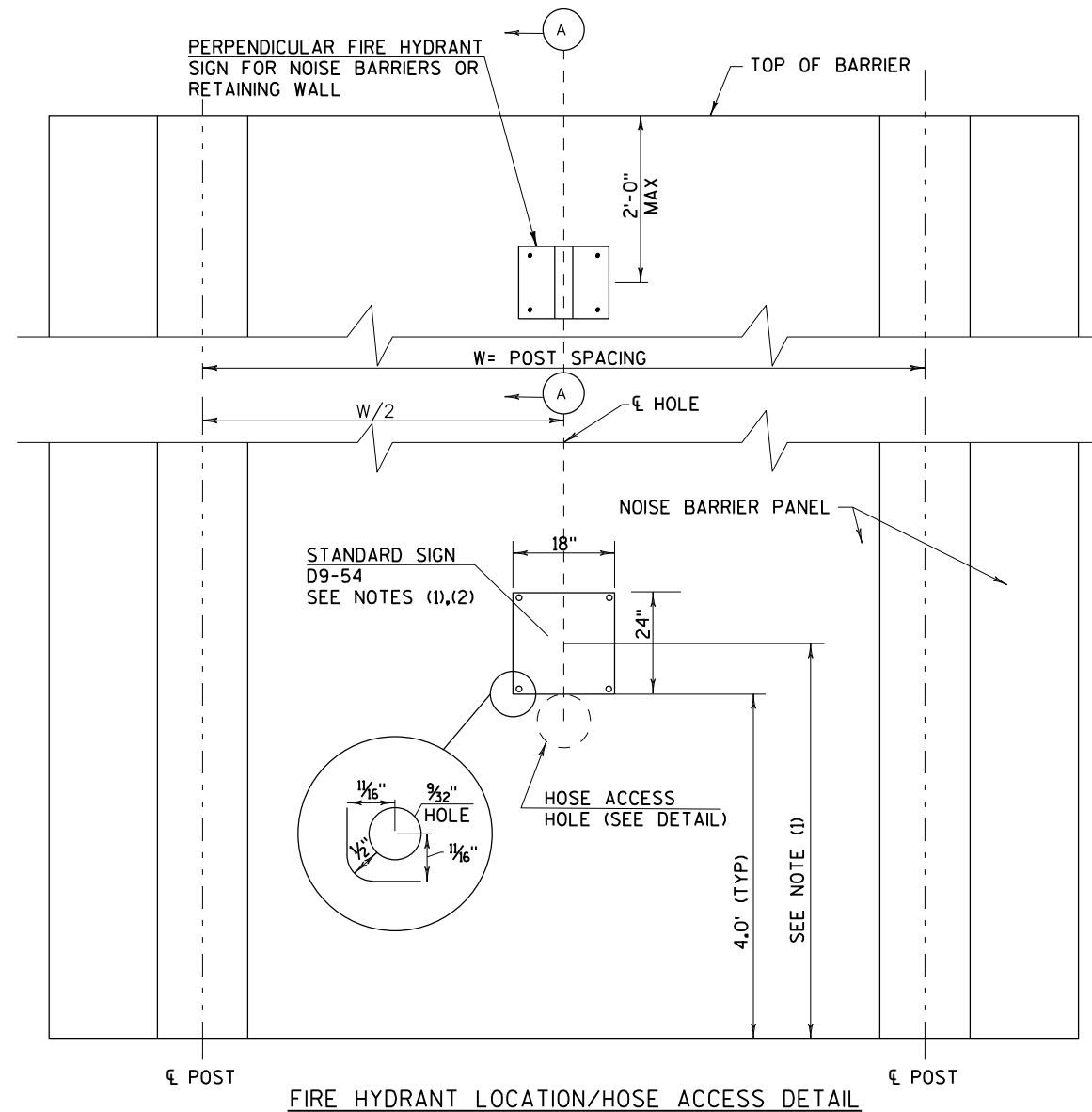
* TYPE R (FOR RIPRAP LIGHT ONLY)
TYPE HR (FOR RIPRAP HEAVY AND MEDIUM ONLY)

CONSTRUCTION NOTES:

1. GEOTEXTILE FABRIC SHALL EXTEND BENEATH THE ENTIRE LENGTH OF THE APRON ENDWALL SECTION. INSTALL ON PREPAVED FOUNDATION. GRADE PRIOR TO END WALL INSTALLATION.
2. COMPLETE GEOTEXTILE FABRIC AND RIPRAP SECTION INSTALLATION PRIOR TO STORM WATER FLOW.

RIPRAP AND GEOTEXTILE FABRIC DETAIL
AT APRON ENDWALLS

SEE EROSION CONTROL PLAN FOR LOCATIONS

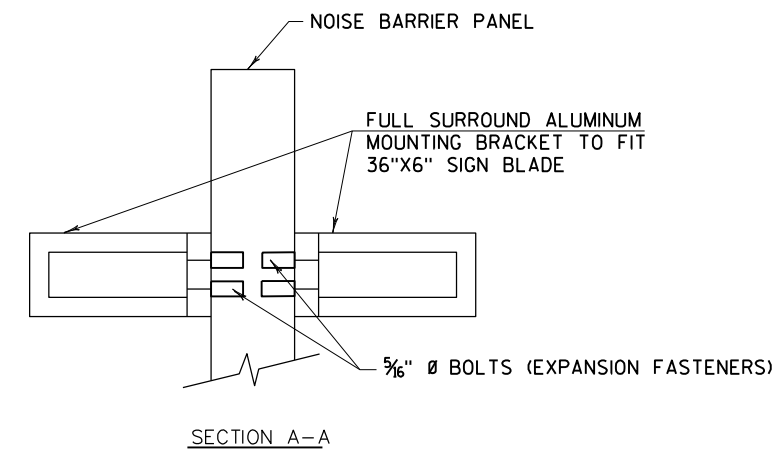


NOTES:

1. STANDARD SIGNS D9-54 WILL BE FURNISHED BY THE CONTRACTOR. SEE PLAN.
2. TWO STANDARD SIGNS D9-54 TO BE FURNISHED PER STATION. ONE SIGN SHALL BE INSTALLED ON EACH SIDE OF THE BARRIER.
3. FIRE HYDRANT SIGN BLADE SHALL BE ATTACHED TO THE NOISE BARRIER PANEL OR RETAINING WALL NEAR THE TOP OF THE BARRIER. SEE DETAIL ABOVE.

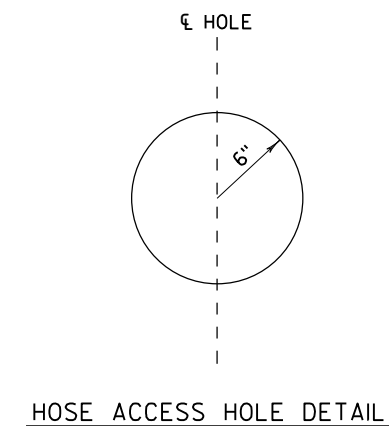
NOTE:

EXPANSION FASTENERS FOR SIGN (D9-54) SIGN IS INCIDENTAL TO SIGN.



PERPENDICULAR FIRE HYDRANT SIGN
FOR NOISE BARRIER OR RETAINING WALL

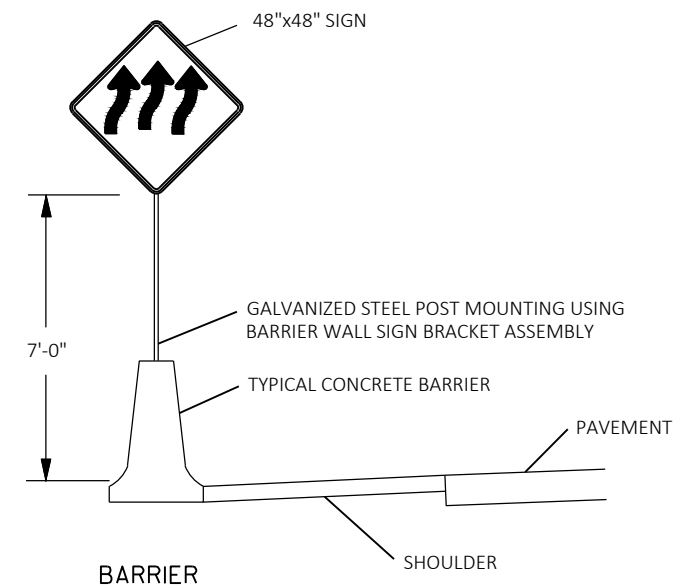
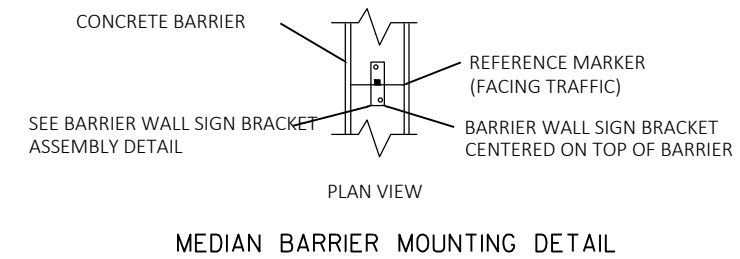
NOTE:
MOUNTING BOLTS, BRACKETS, ARE INCIDENTAL TO SIGN



NOTE:

PLACE SIGNS MOVE TO OPENING WHERE SIGNING PLAN SHEETS SO INDICATE OTHERWISE, INSTALL PER THIS DETAIL.

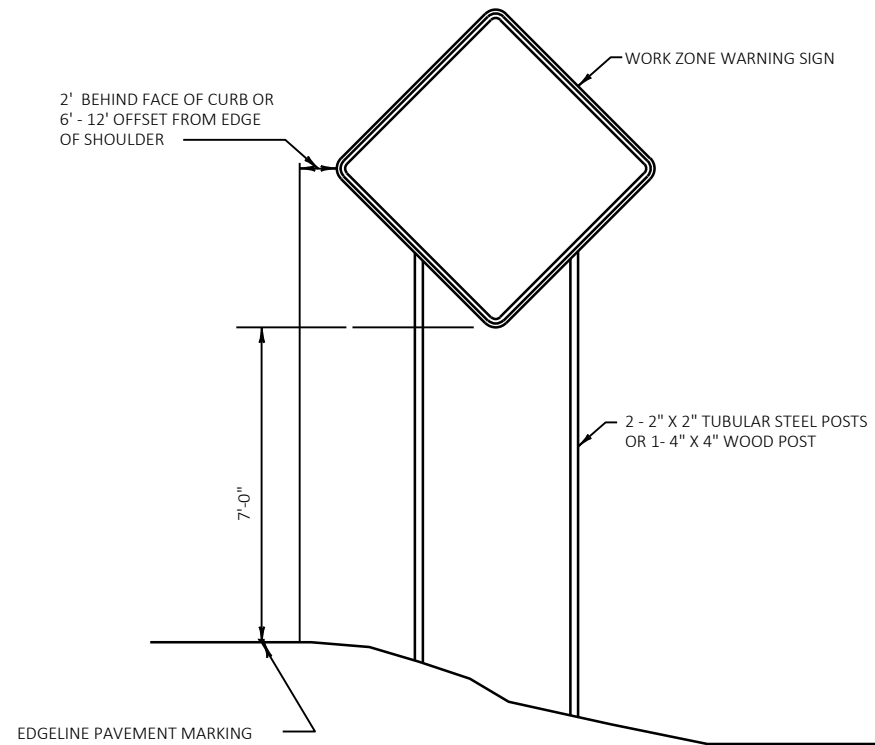
TYPICAL SIGN PLACEMENT DETAILS



- NOTES:**
1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION
 2. ALL MATERIAL TO BE APPROVED BY ENGINEER BEFORE INSTALLATION
 3. SEE SIGN PLATE A4-8 FOR BOLT REQUIREMENTS.

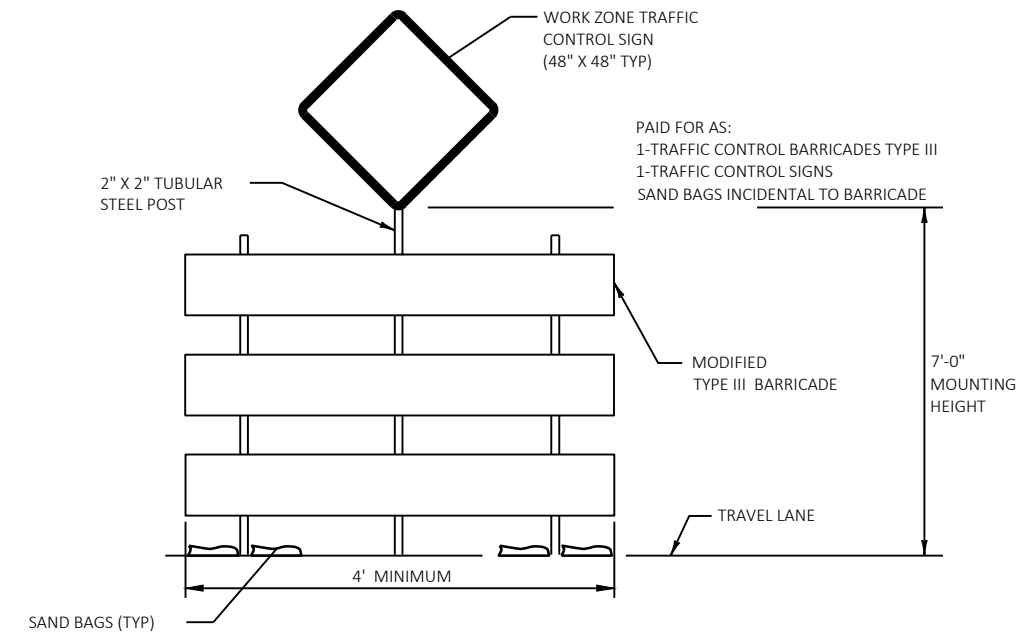
MOUNTING SIGNS TO MEDIAN BARRIER

NOT TO SCALE

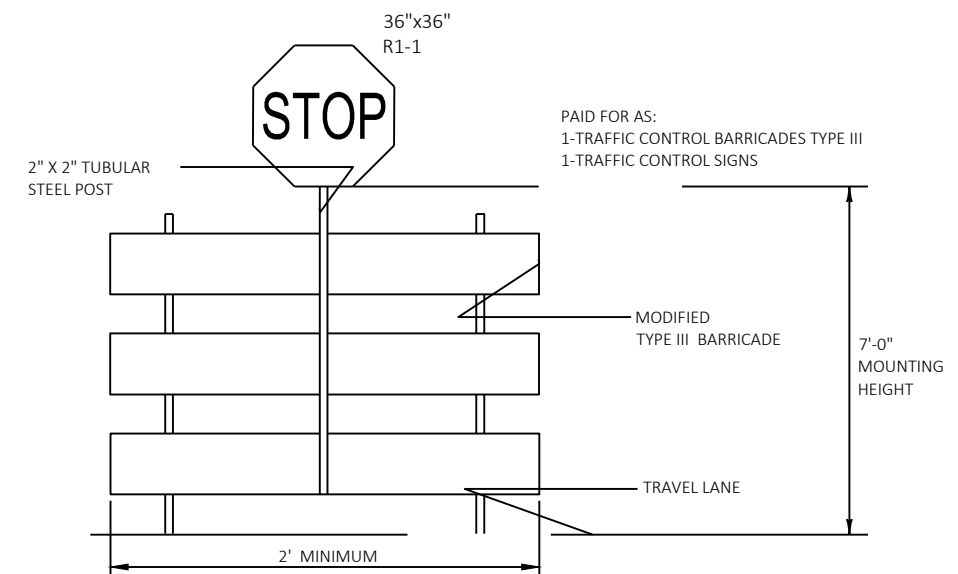


**TYPICAL TEMPORARY TRAFFIC CONTROL SIGN
MOUNTING ON FIXED SUPPORT**

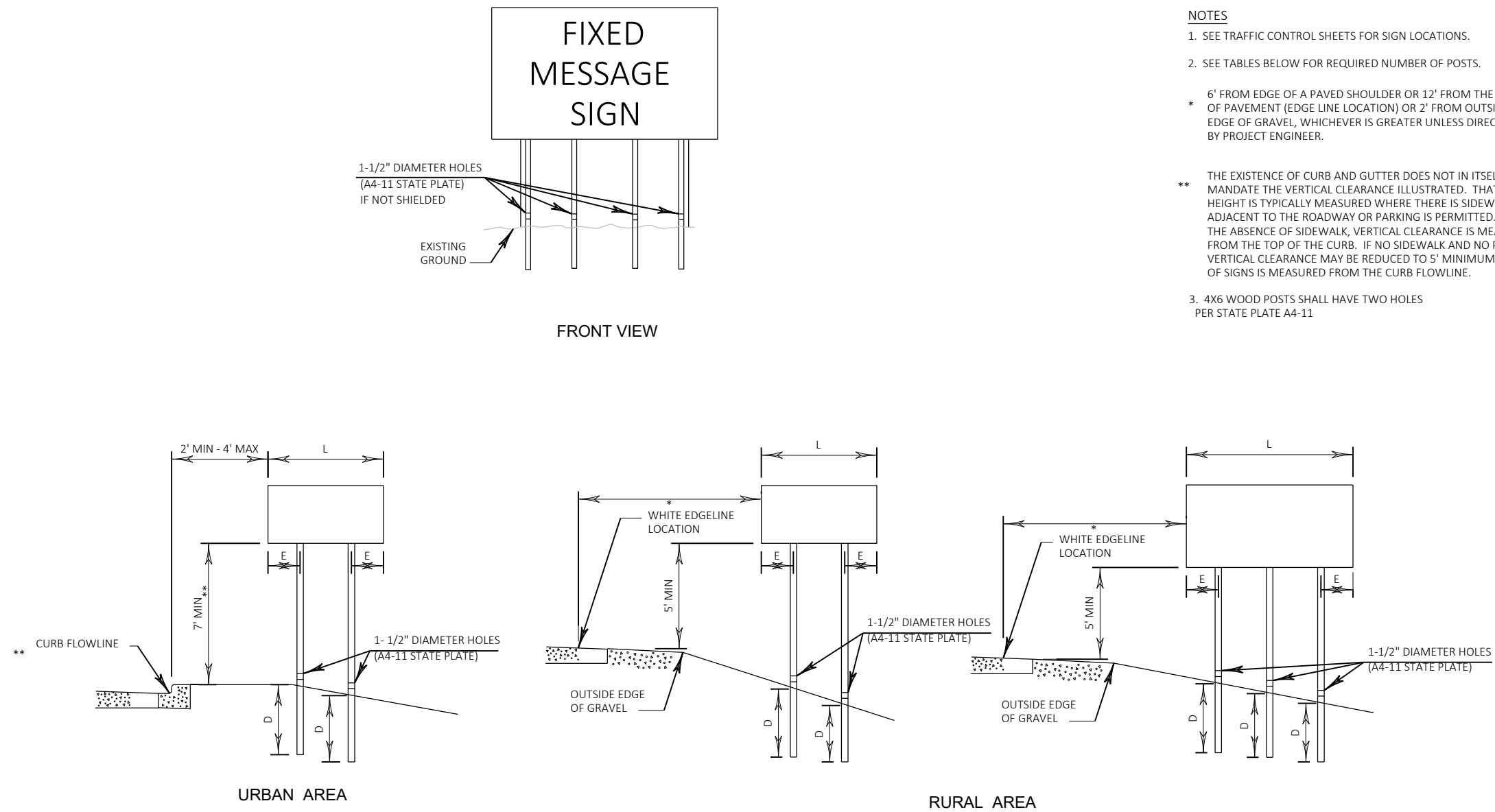
LONG TERM
7 DAYS OR MORE



**TYPICAL TEMPORARY TRAFFIC CONTROL DETAIL
MOUNTING ON TEMPORARY SUPPORT**



TEMPORARY STOP SIGN



SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
GREATER THAN 48" LESS THAN 60"	12"
60" TO 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
GREATER THAN 120" LESS THAN 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" AND GREATER	12"

POST EMBEDMENT DEPTH	
AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

POST MOUNTING DETAIL FOR TRAFFIC CONTROL FIXED MESSAGE SIGNS

GENERAL NOTES:

- 1) ALL ITEMS ASSOCIATED WITH SIGN REMOVALS ARE SHOWN IN THE SIGNING PLANS.
- 2) CLEARING DONE BY OTHERS.
- 3) FOR ADDITIONAL UTILITY INFORMATION SEE EXISTING UTILITY PLAN.
- 4) THE LOCATION OF THE EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS IS APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN, INCLUDING BUILDING SERVICES AND LATERALS.
- 5) EXISTING FENCE TO REMAIN IN PLACE UNTIL ADJACENT NOISE BARRIER CONSTRUCTION IS COMPLETED EXCEPT AT LOCATIONS NOTED WHERE EXISTING FENCE CONFLICTS WITH PROPOSED NOISE BARRIER ALIGNMENT AS NOTED ON THE REMOVAL PLAN SHEETS. INSTALL SAFETY FENCE WHERE EXISTING FENCE IS REMOVED PRIOR TO WALL CONSTRUCTION AS SHOWN ON THE PLAN DETAIL SHEETS.

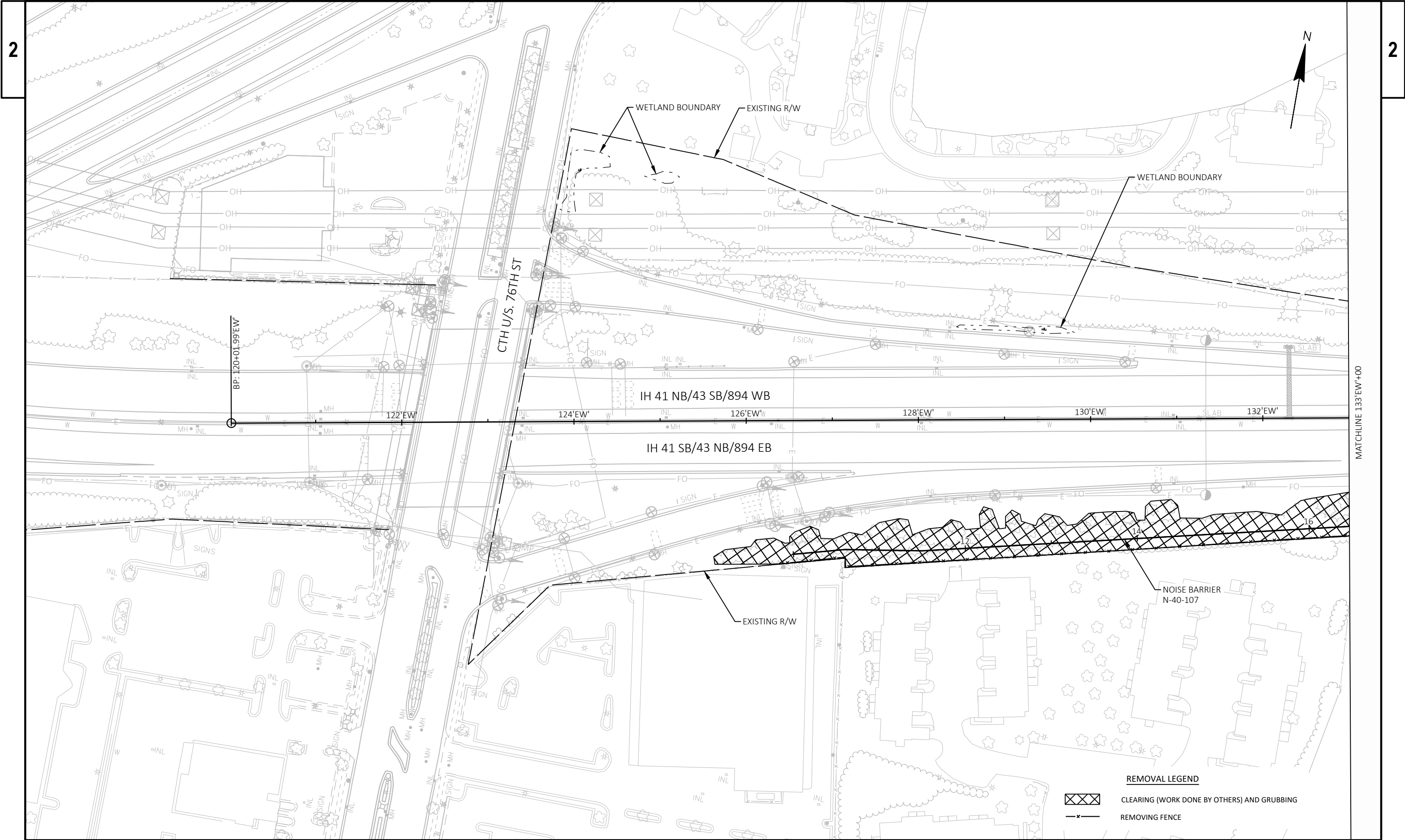
REMOVAL LEGEND

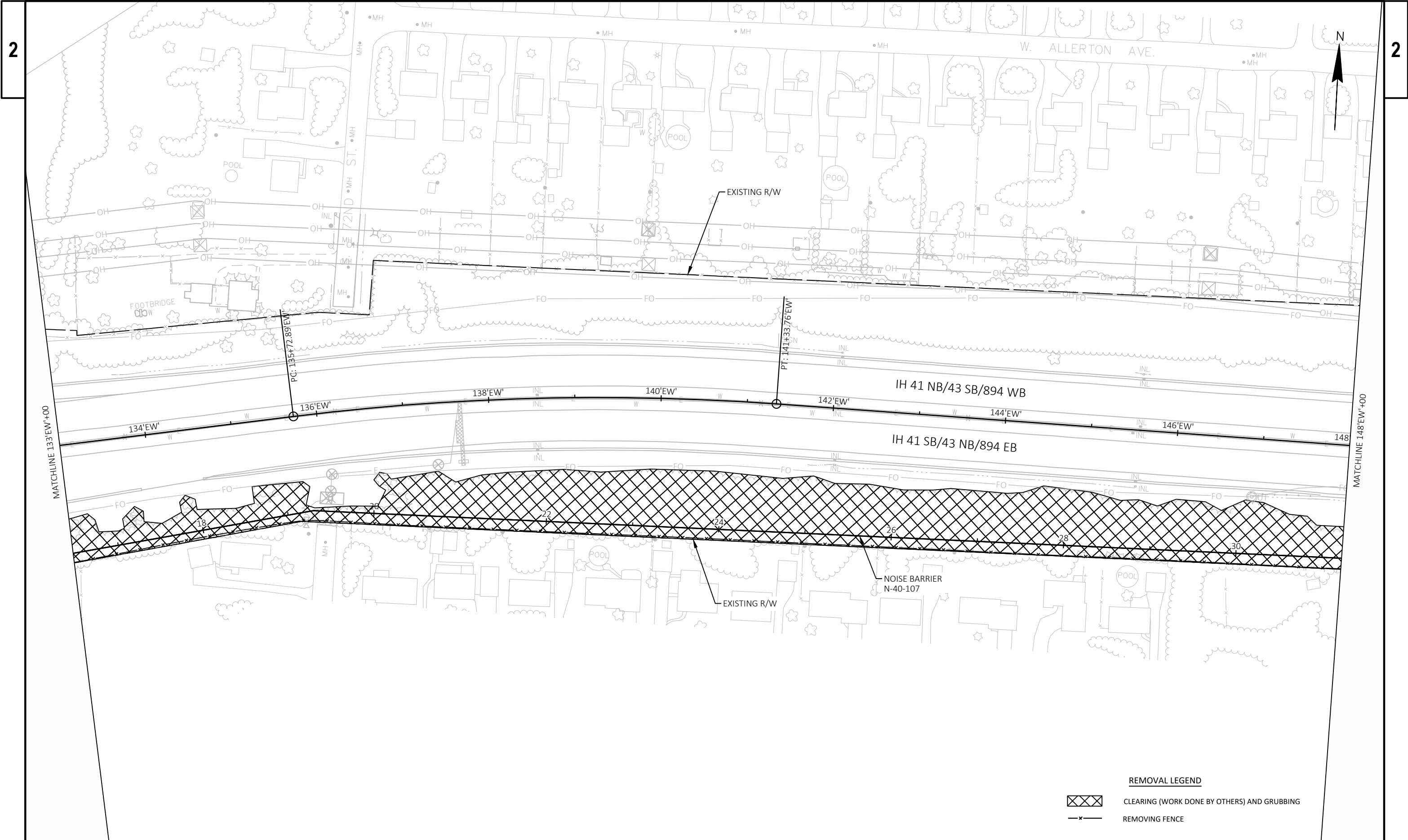


CLEARING (WORK DONE BY OTHERS) AND GRUBBING



REMOVING FENCE





REMOVAL LEGEND



CLEARING (WORK DONE BY OTHERS) AND GRUBBING



REMOVING FENCE

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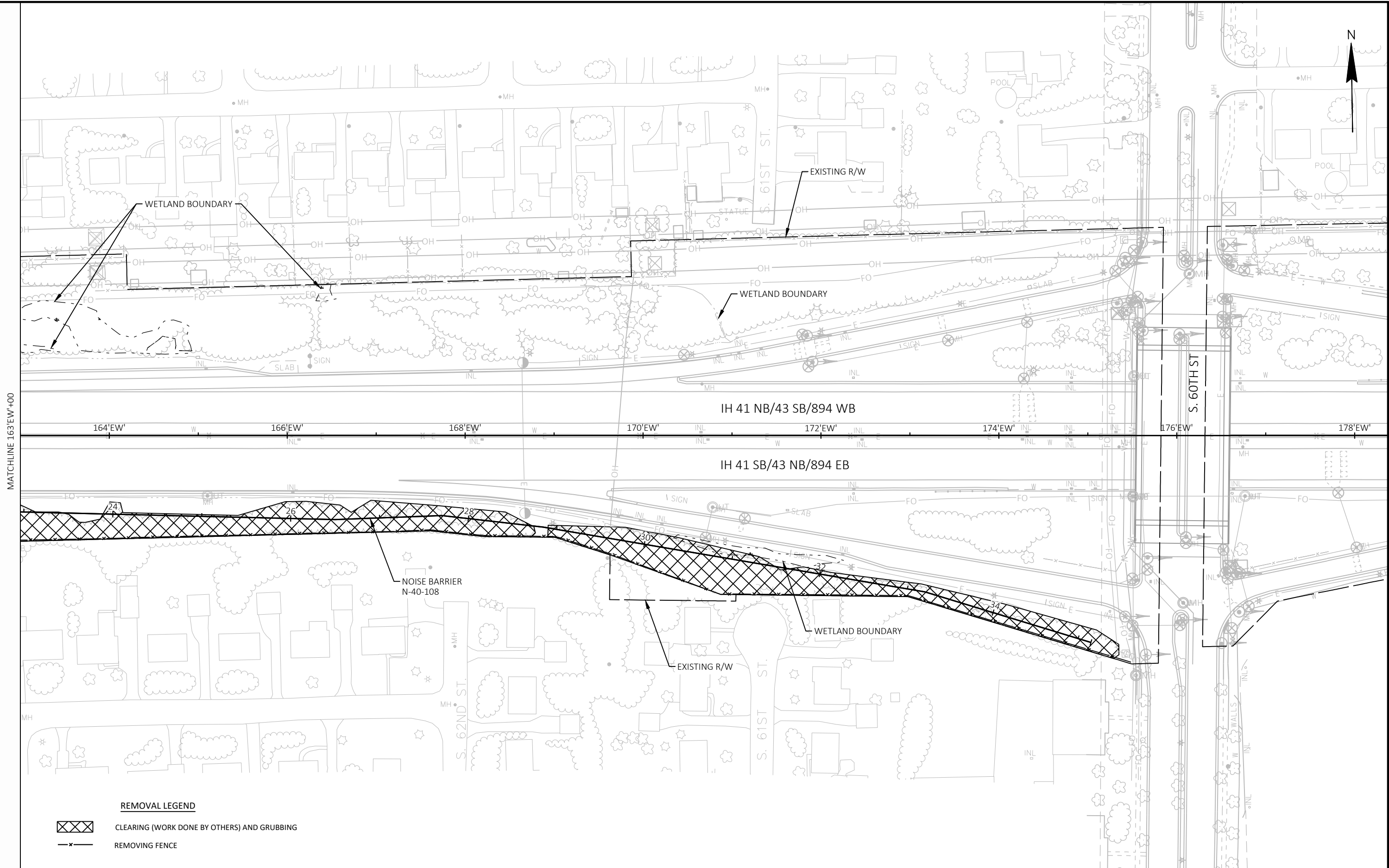
REMOVAL PLANS

SHEET

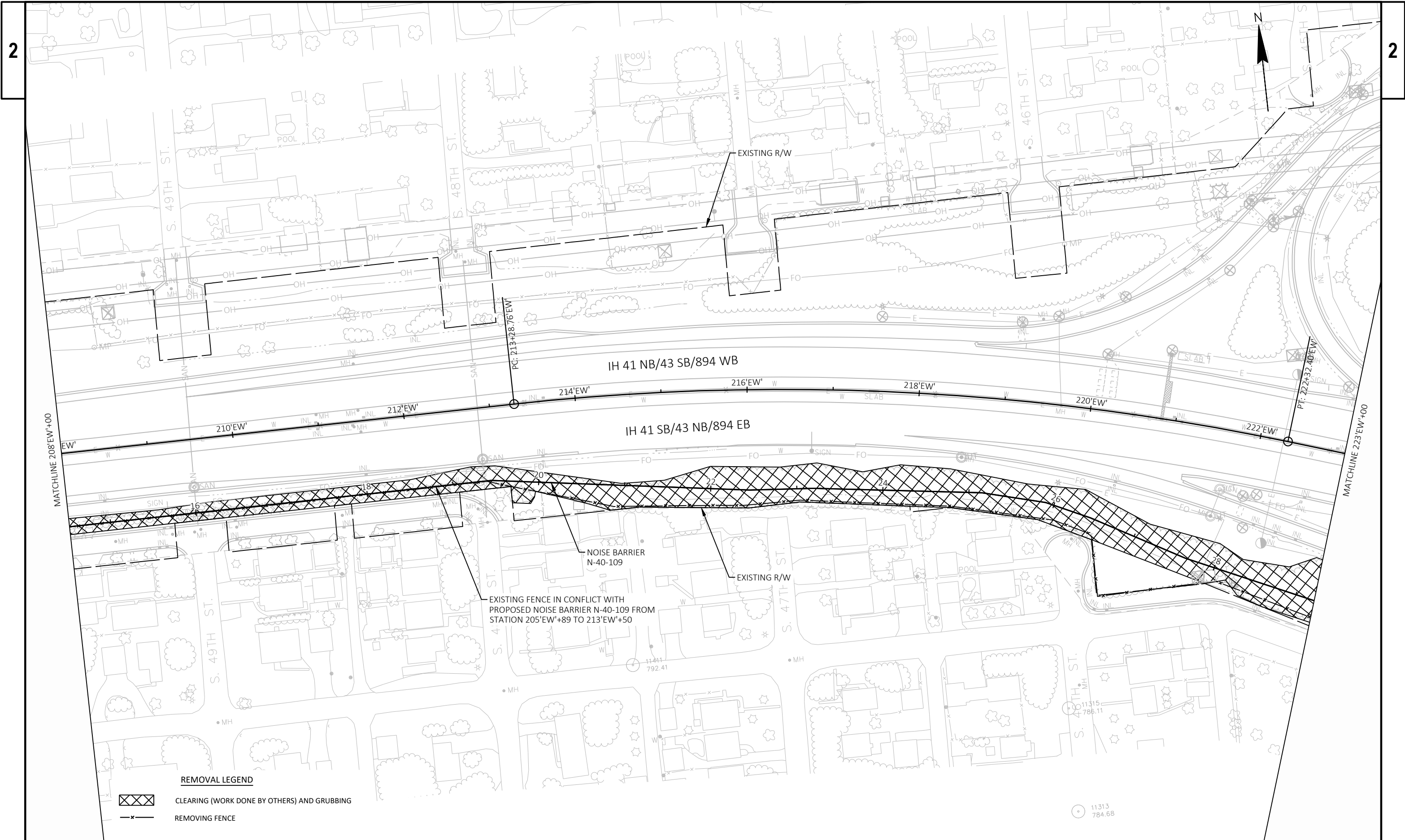
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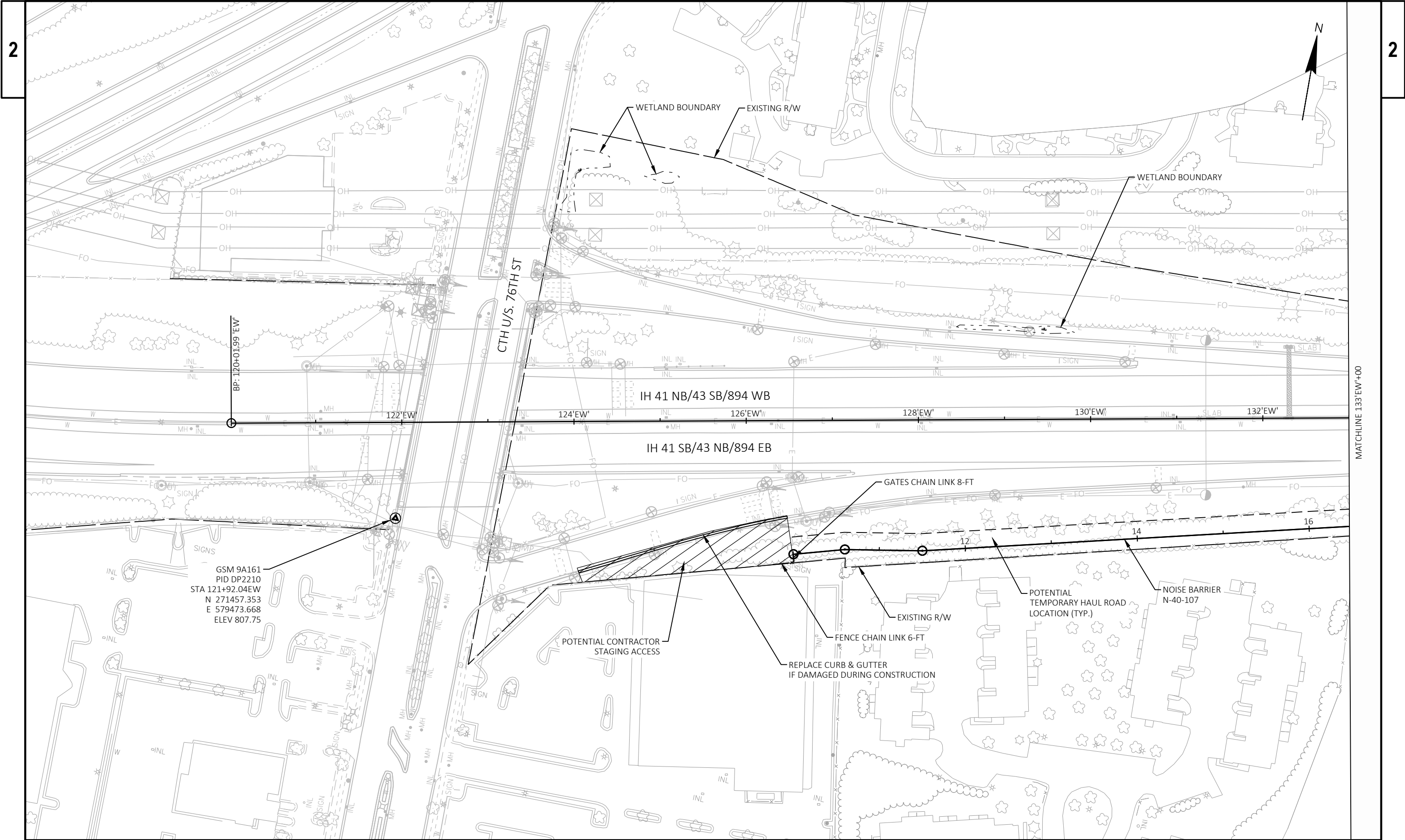
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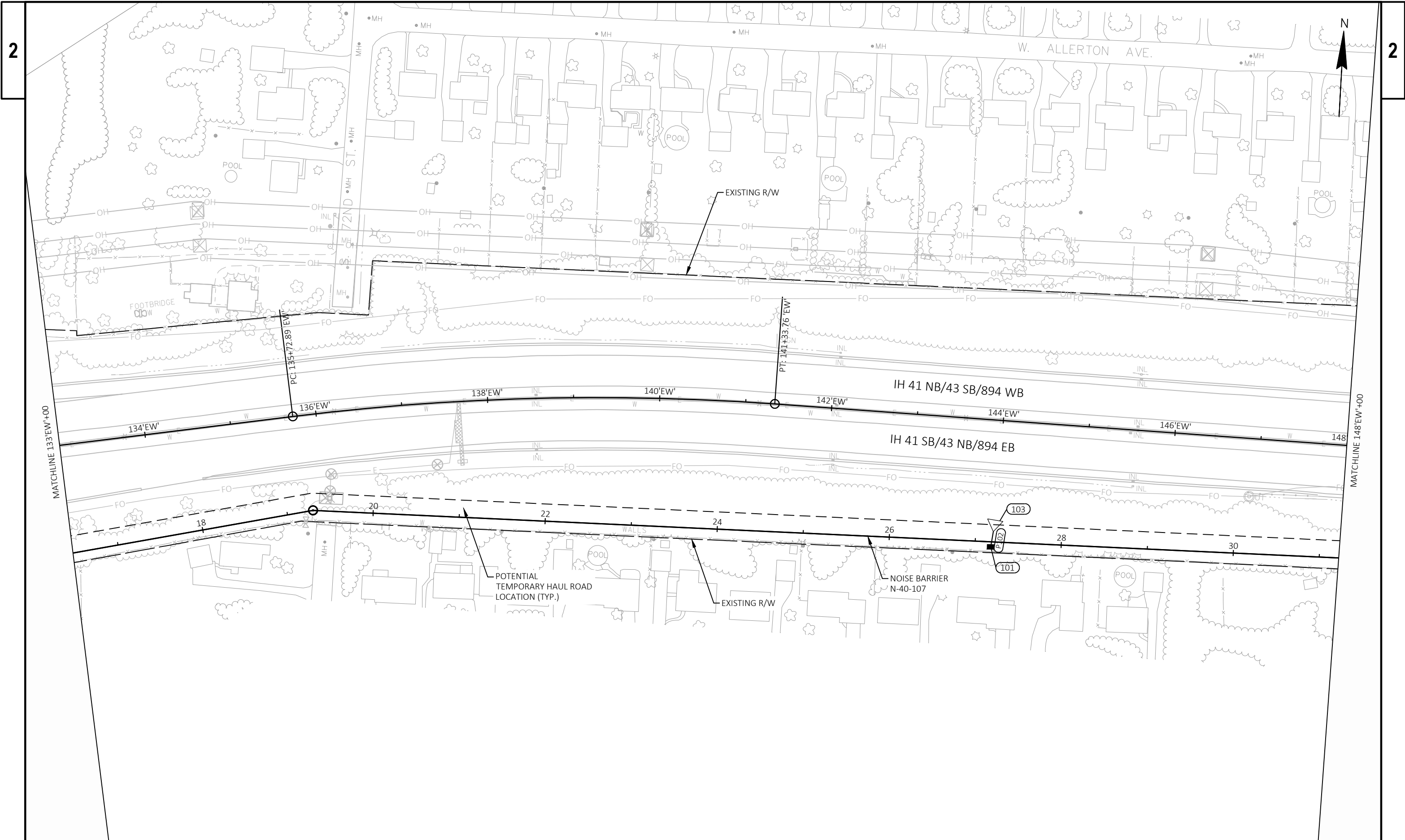


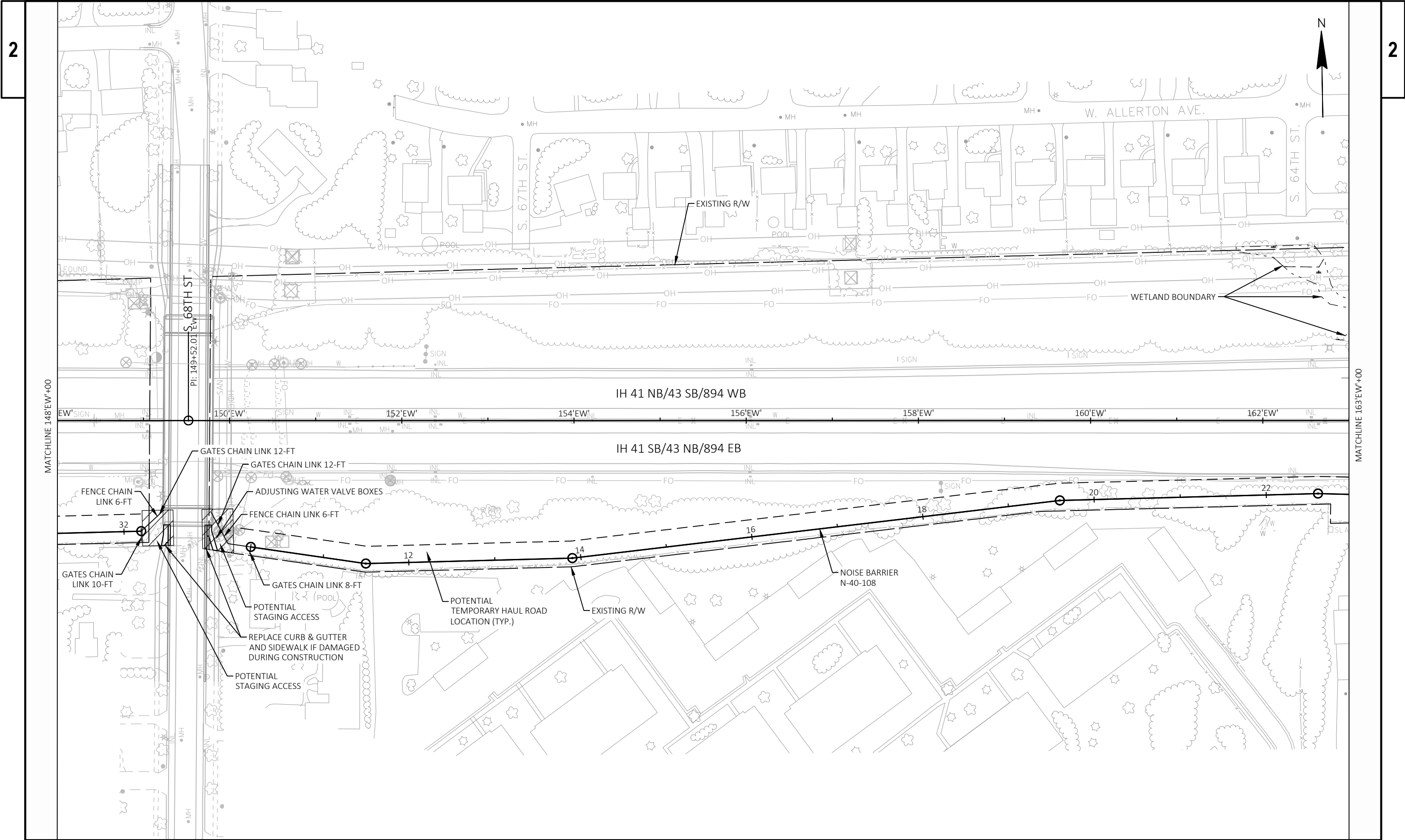








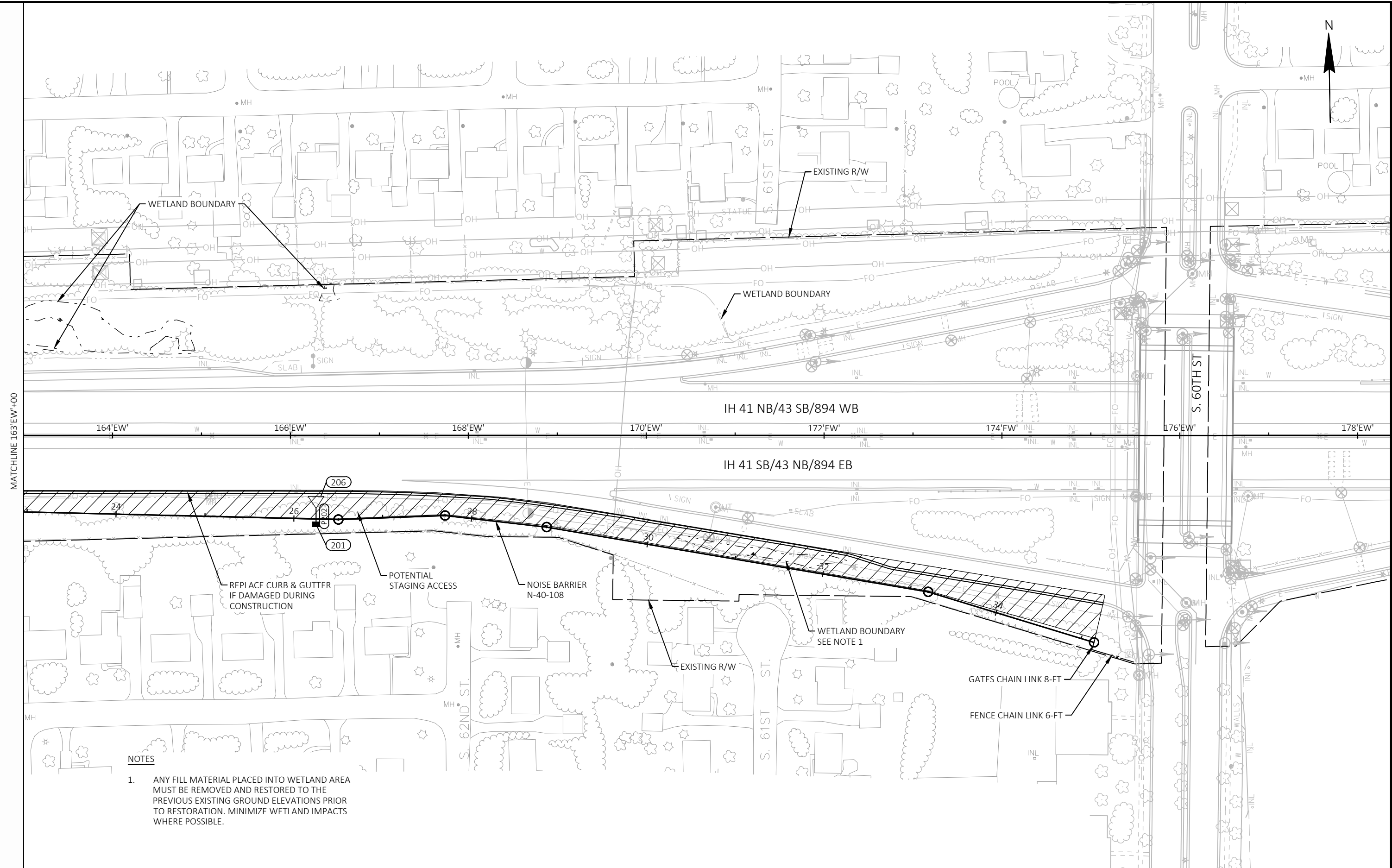




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2

2



PROJECT NO:	1090-03-78
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HWY: IH 41

COUNTY: MILWAUKEE

PLAN DETAILS

SHEET

23

E

FILE NAME : C:\PW_WORKDIR\JACOBS-US-VA-PW-02\D0193572\10900308-021201-PD.DWG
LAYOUT NAME - 04

PLOT DATE : 12/13/2024 10:30 AM

PLOT BY : SCHARLAU, DAVE

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

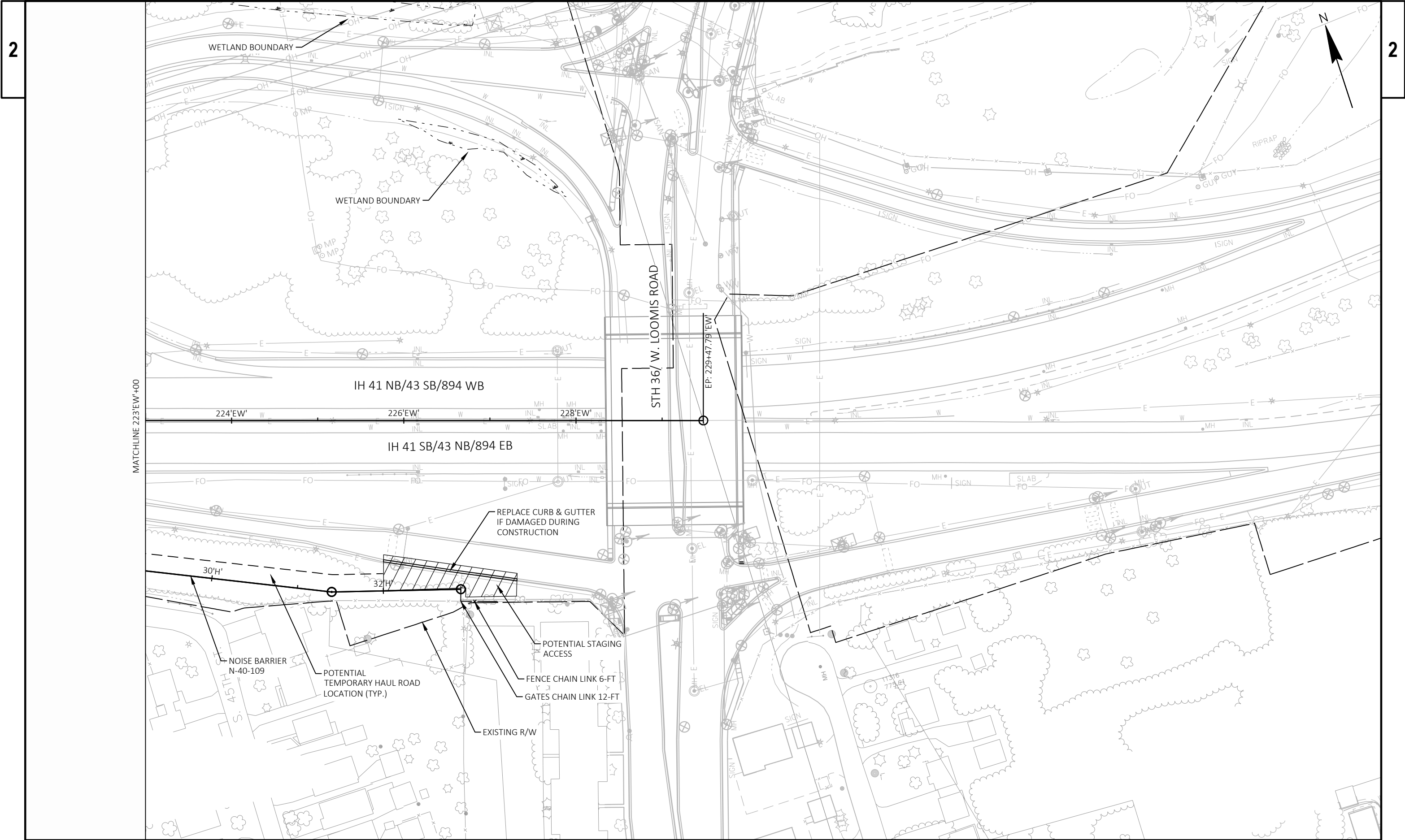
WISDOT/CADDS SHEET 42



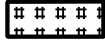
2



1. NO ACCESS IS PERMITTED OFF FRONTAGE ROAD

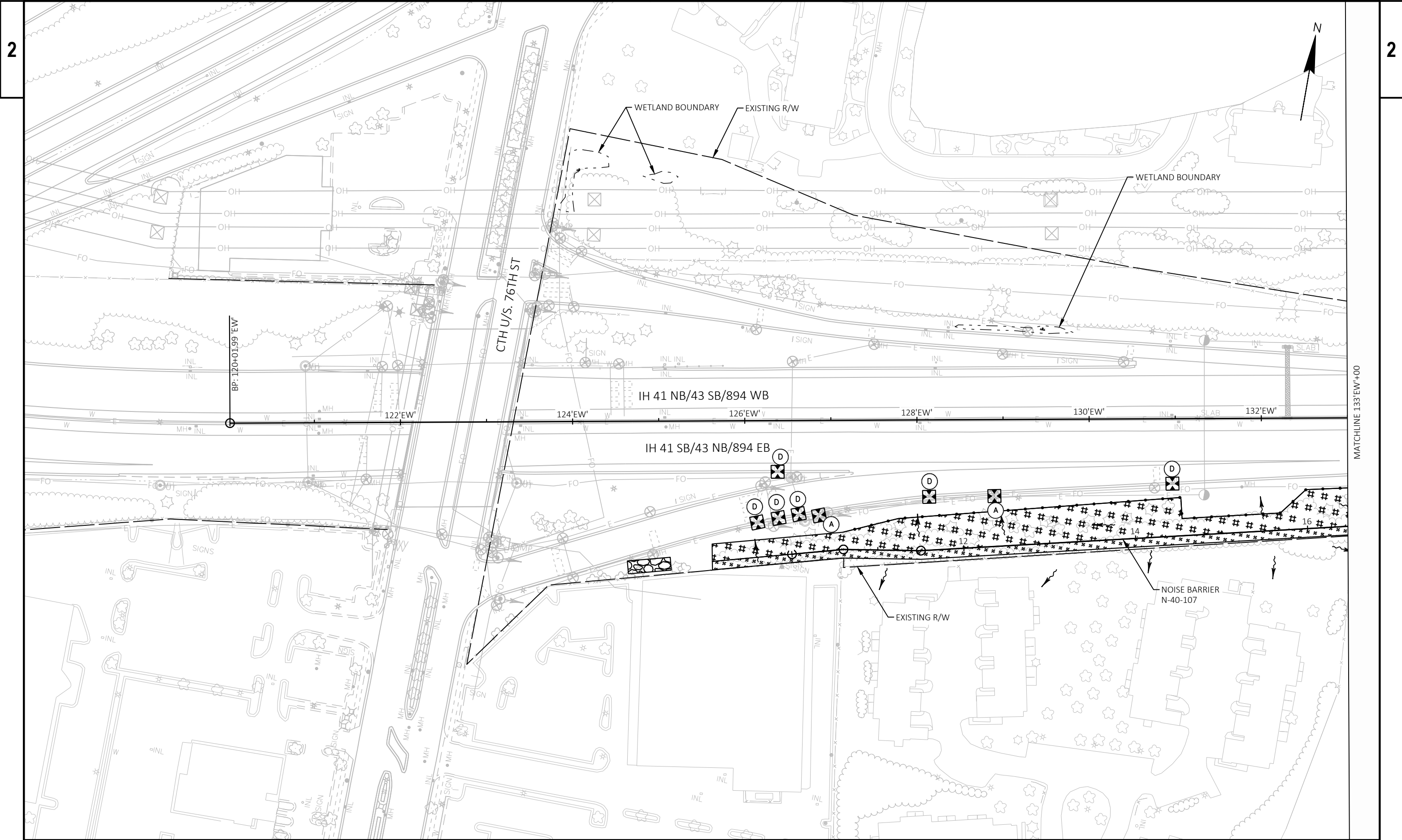


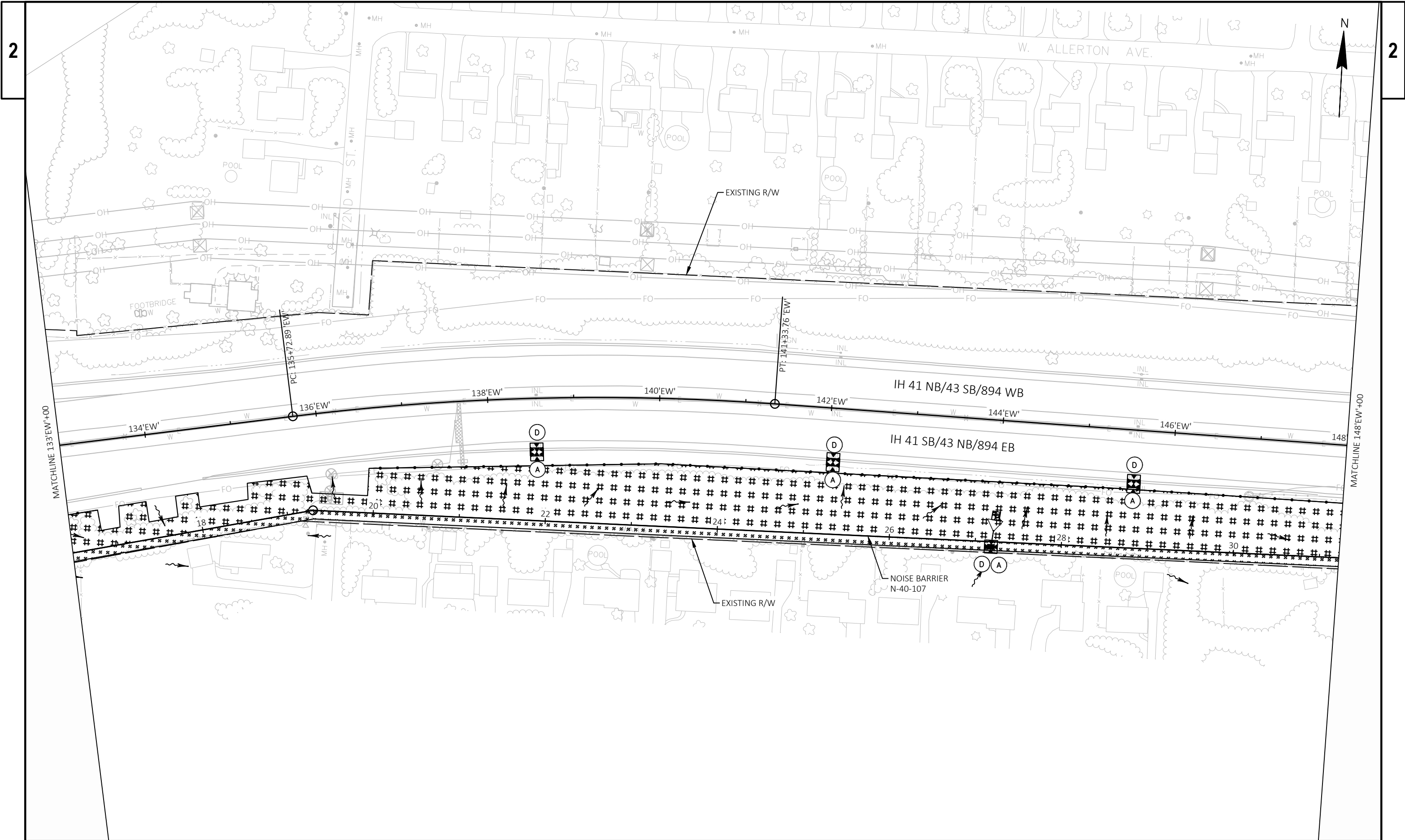
LEGEND

	EROSION MAT CLASS I TYPE B & FERTILIZER TYPE B (WITH SEEDING MIXTURE NO. 20)		INLET PROTECTION TYPE A
	EROSION MAT URBAN CLASS I TYPE B (WITH SEEDING MIXTURE NO. 60)		INLET PROTECTION TYPE B
	MULCHING (WITH SEEDING MIXTURE NO. 40)		INLET PROTECTION TYPE C
			INLET PROTECTION TYPE D
			RIP RAP MEDIUM (UNLESS NOTED OTHERWISE)
			TEMPORARY DITCH CHECK
			SILT FENCE
			EROSION BALES
			SURFACE WATER FLOW
			SLOPE INTERCEPT
			TRACKING PAD
			CULVERT PIPE CHECK

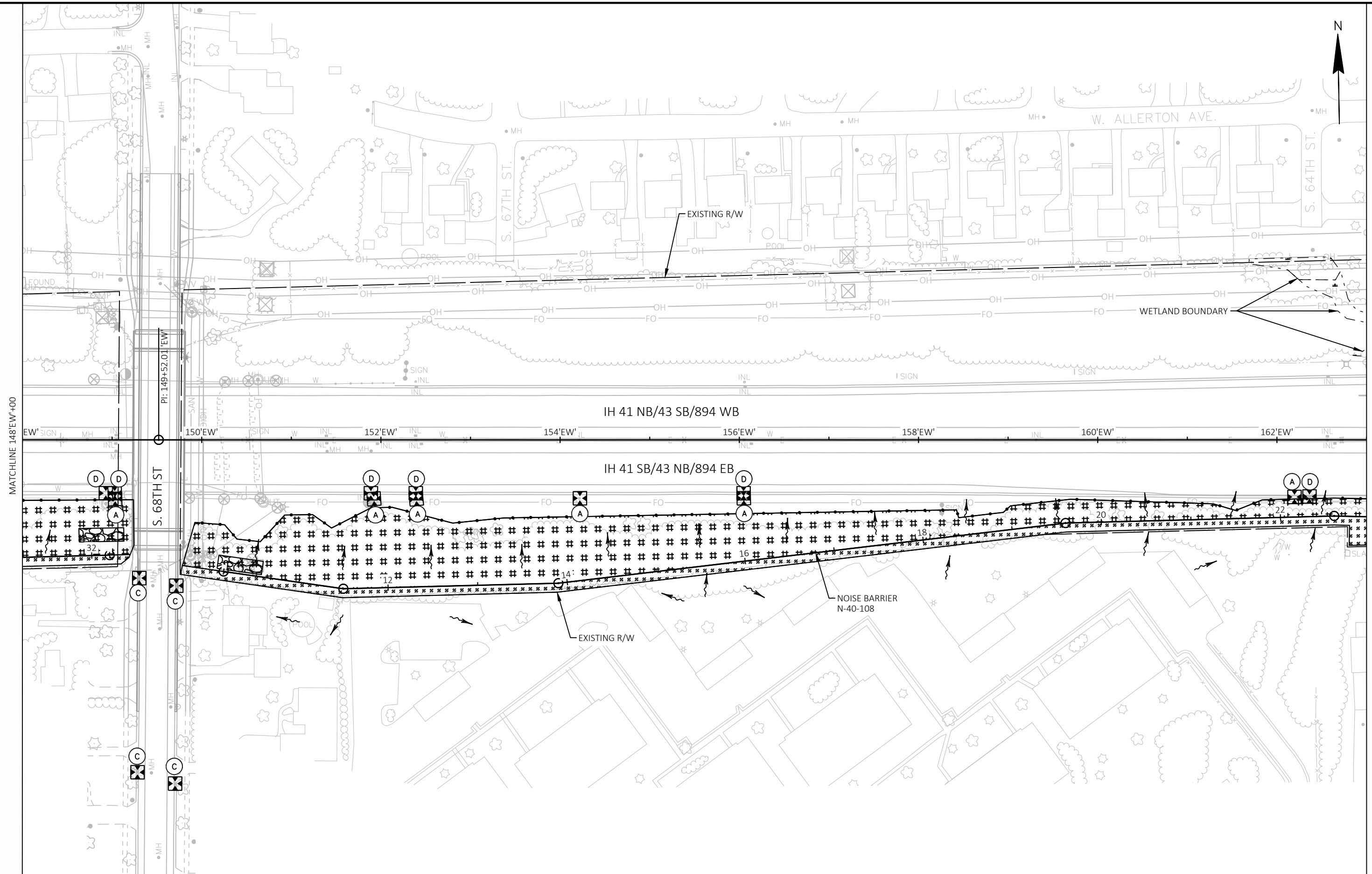
NOTES

- PLACE INLET PROTECTION TYPE A AT ALL NEW INLET LOCATIONS DURING GRADING STAGES.
- PLACE INLET PROTECTION TYPE B, C OR D UNDER INLET COVERS LOCATED IN CURB AND GUTTER UNTIL COMPLETION OF THE PROJECT.
- DO NOT STORE MATERIALS OR OPERATE EQUIPMENT WITHIN THE WETLAND LIMITS OUTSIDE THE SLOPE INTERCEPTS.
- DO NOT APPLY FERTILIZER TO SATURATED SOILS, WETLANDS, SURFACE WATERS, FROZEN GROUND, OR IMPERVIOUS SURFACES.
- DO NOT APPLY FERTILIZER WITHIN 100 FEET OF A WATER BODY OR WETLAND.
- DO NOT APPLY FERTILIZER WHEN A RUNOFF EVENT IS EXPECTED WITHIN 24 HOURS.
- INSTALL SAFETY FENCE WHERE EXISTING RIGHT-OF-WAY FENCE IS IN CONFLICT WITH PROPOSED NOISE BARRIER.

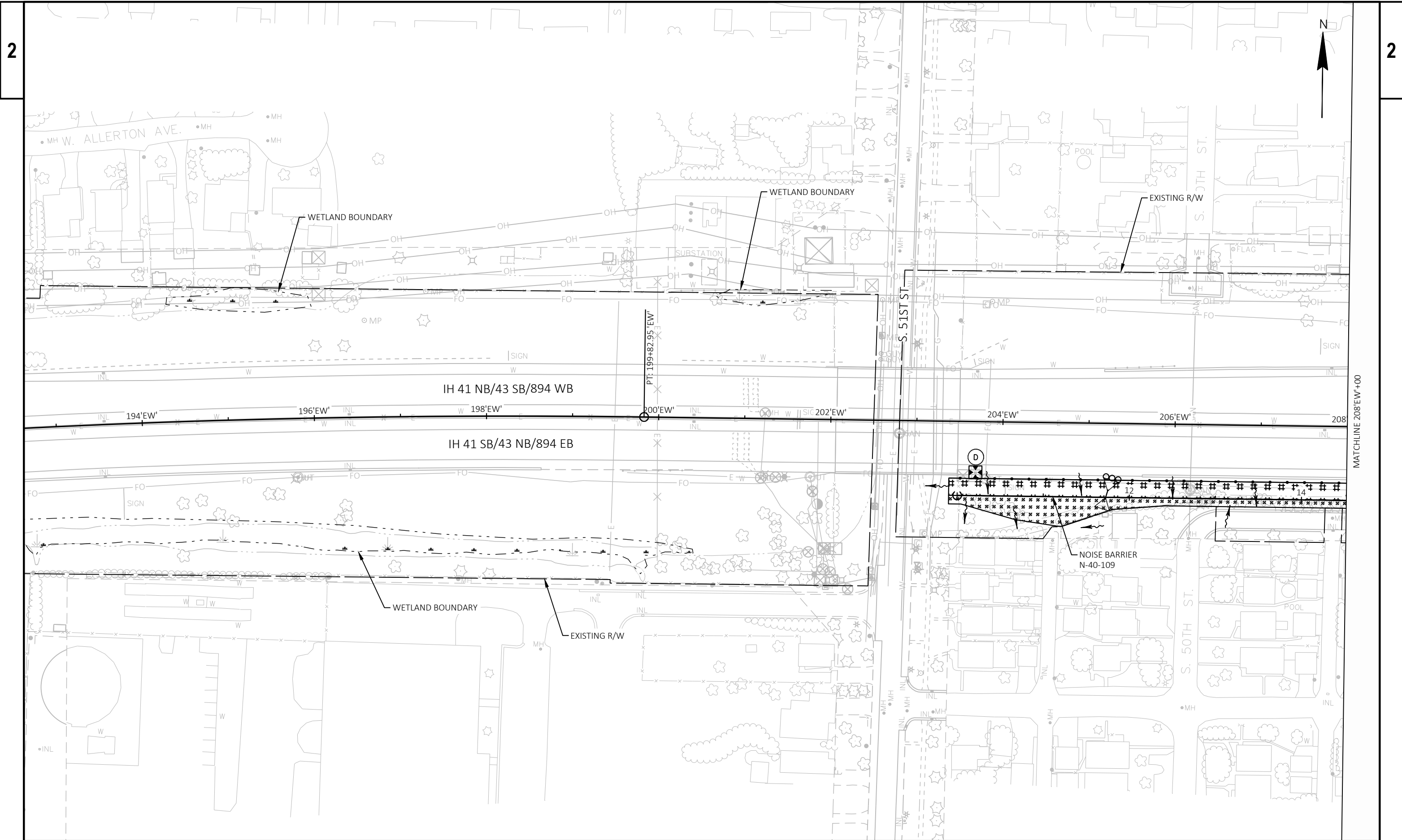


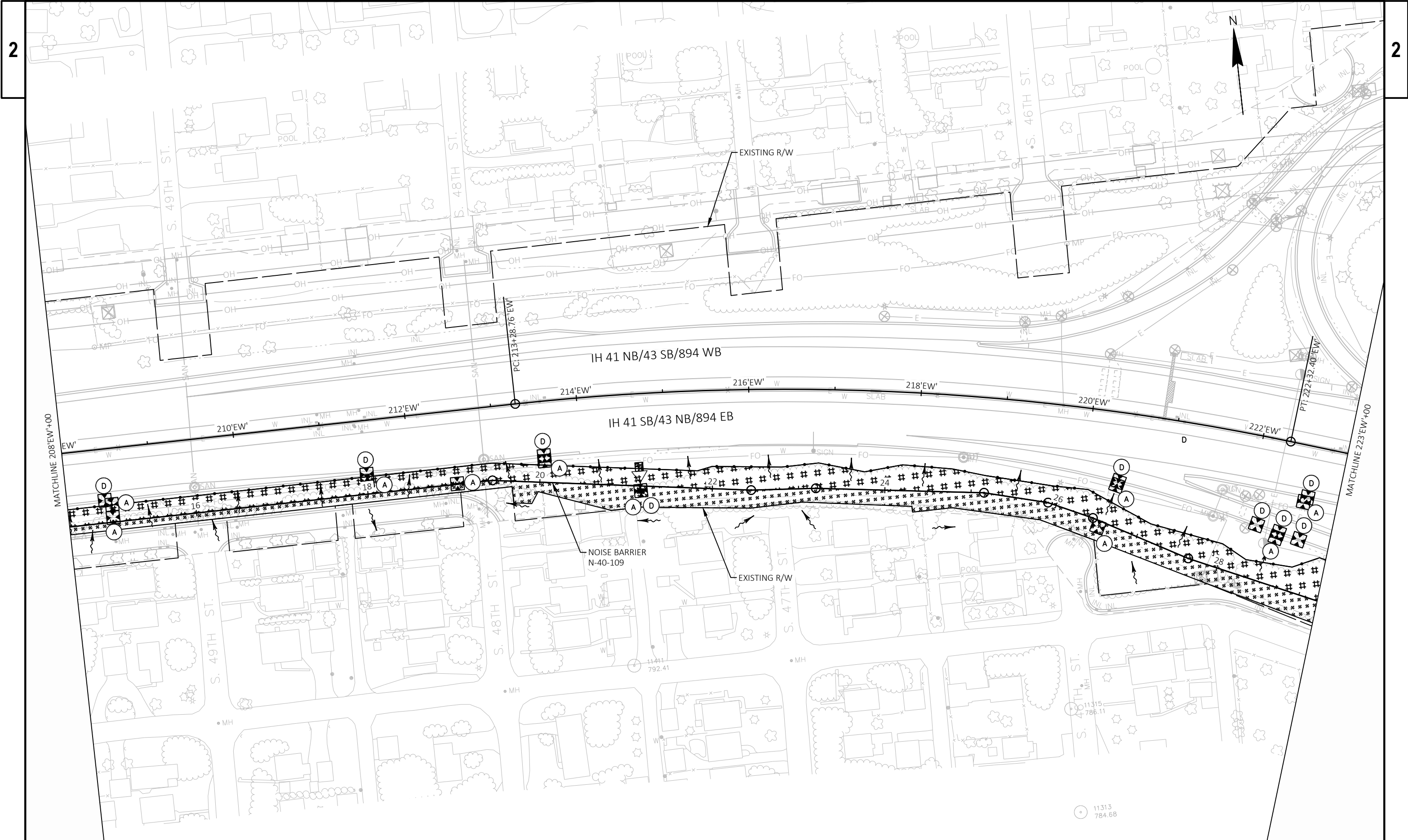


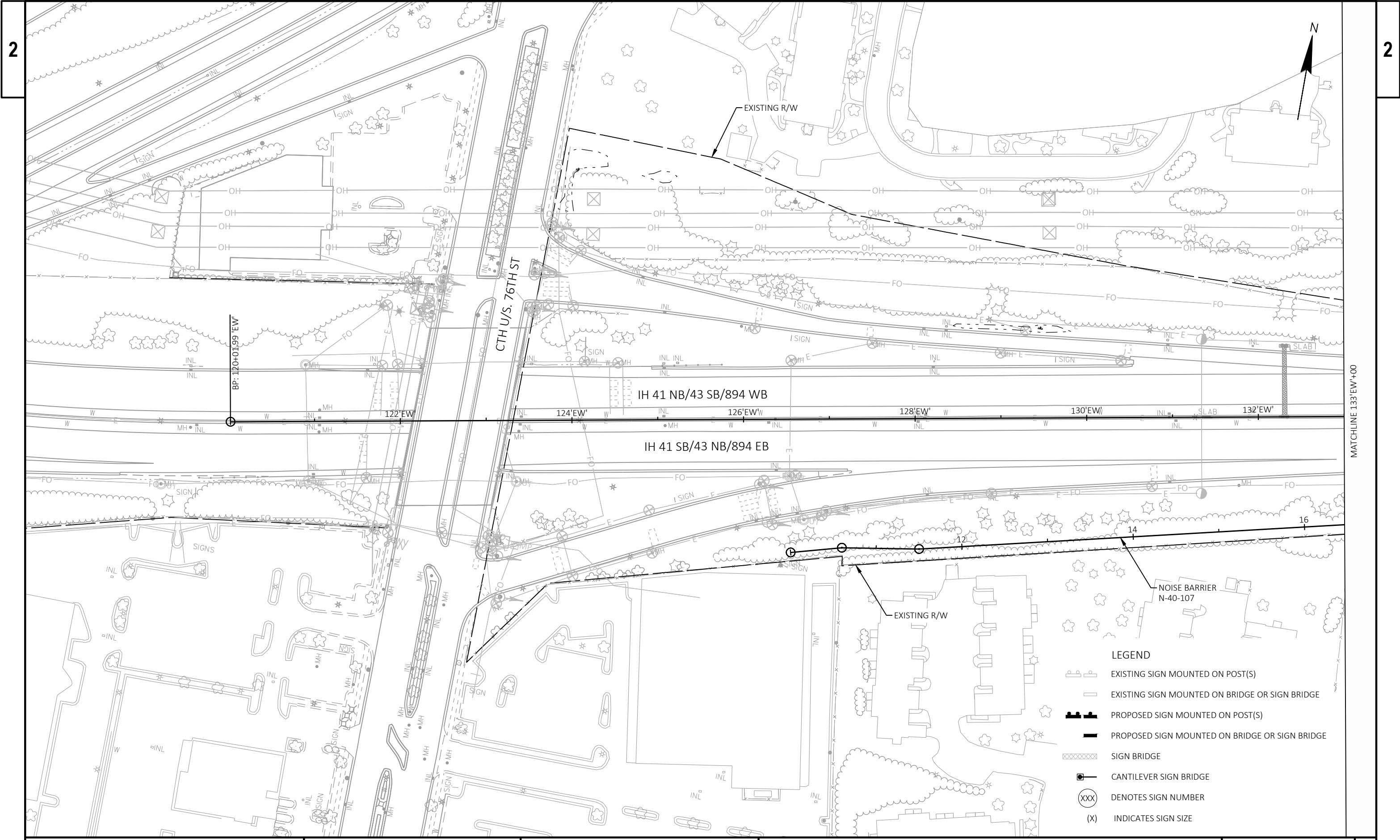
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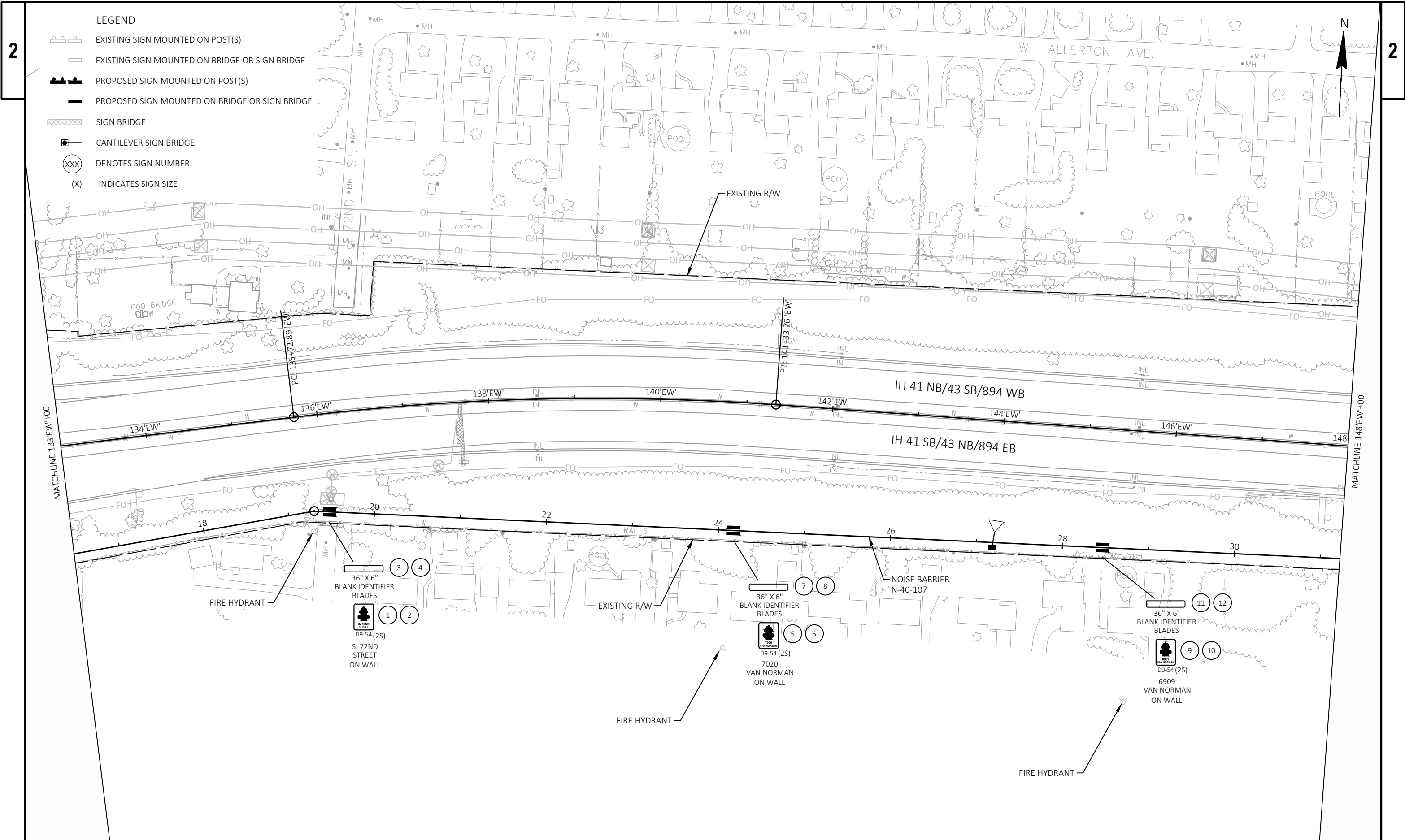


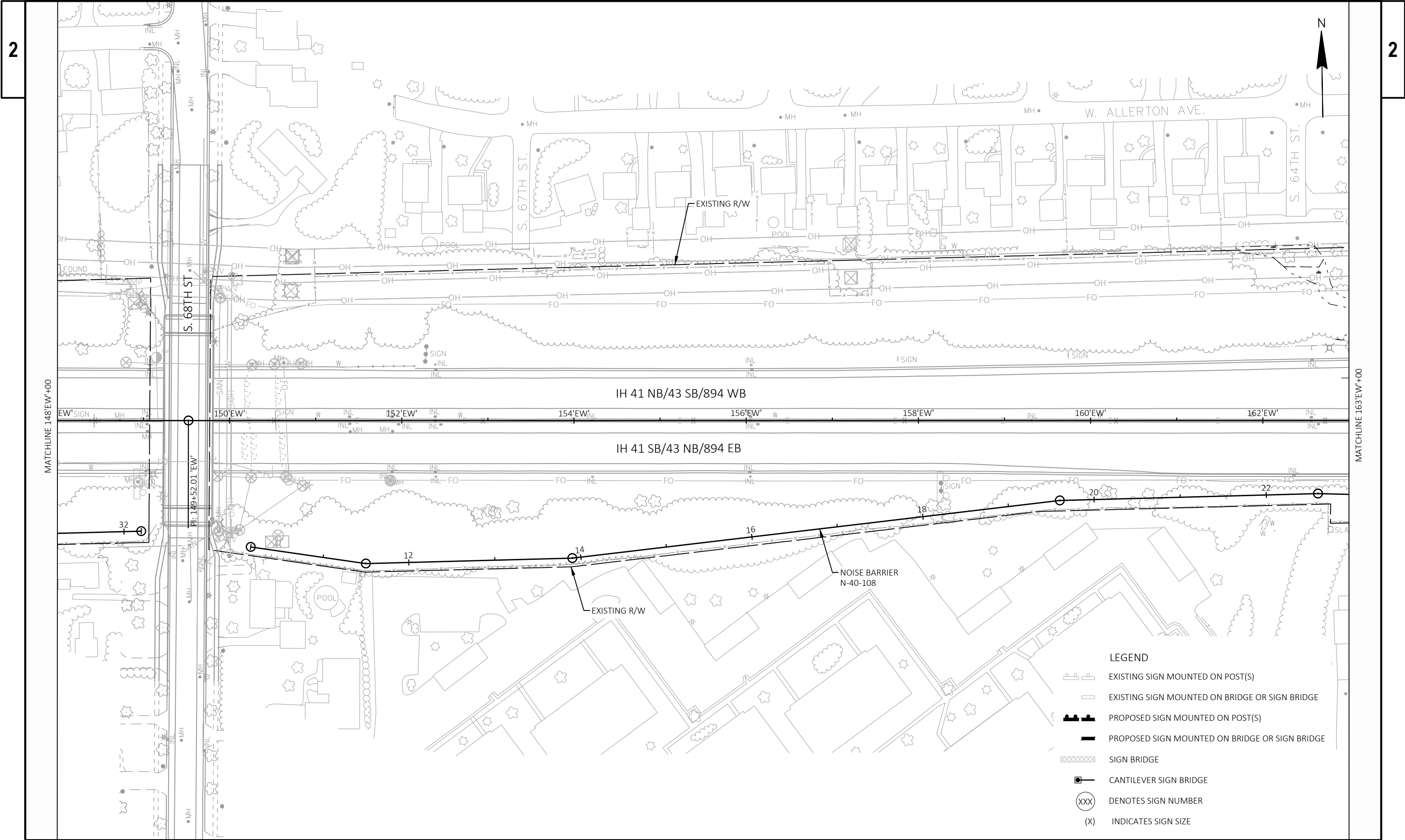
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[illegible]



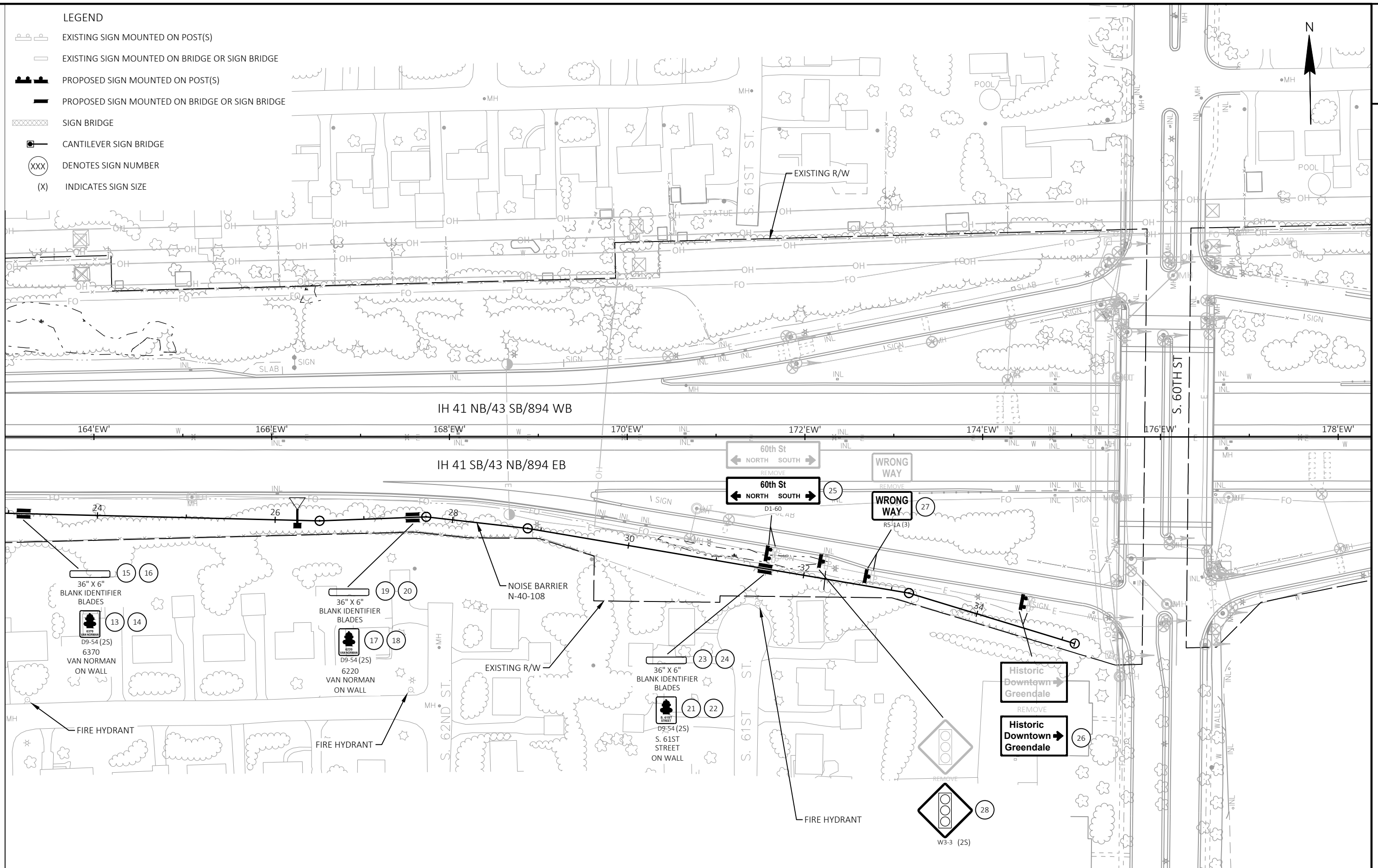




LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE

MATCHLINE 163'EW'+00



PROJECT NO: 1090-03-78

HWY: IH 41

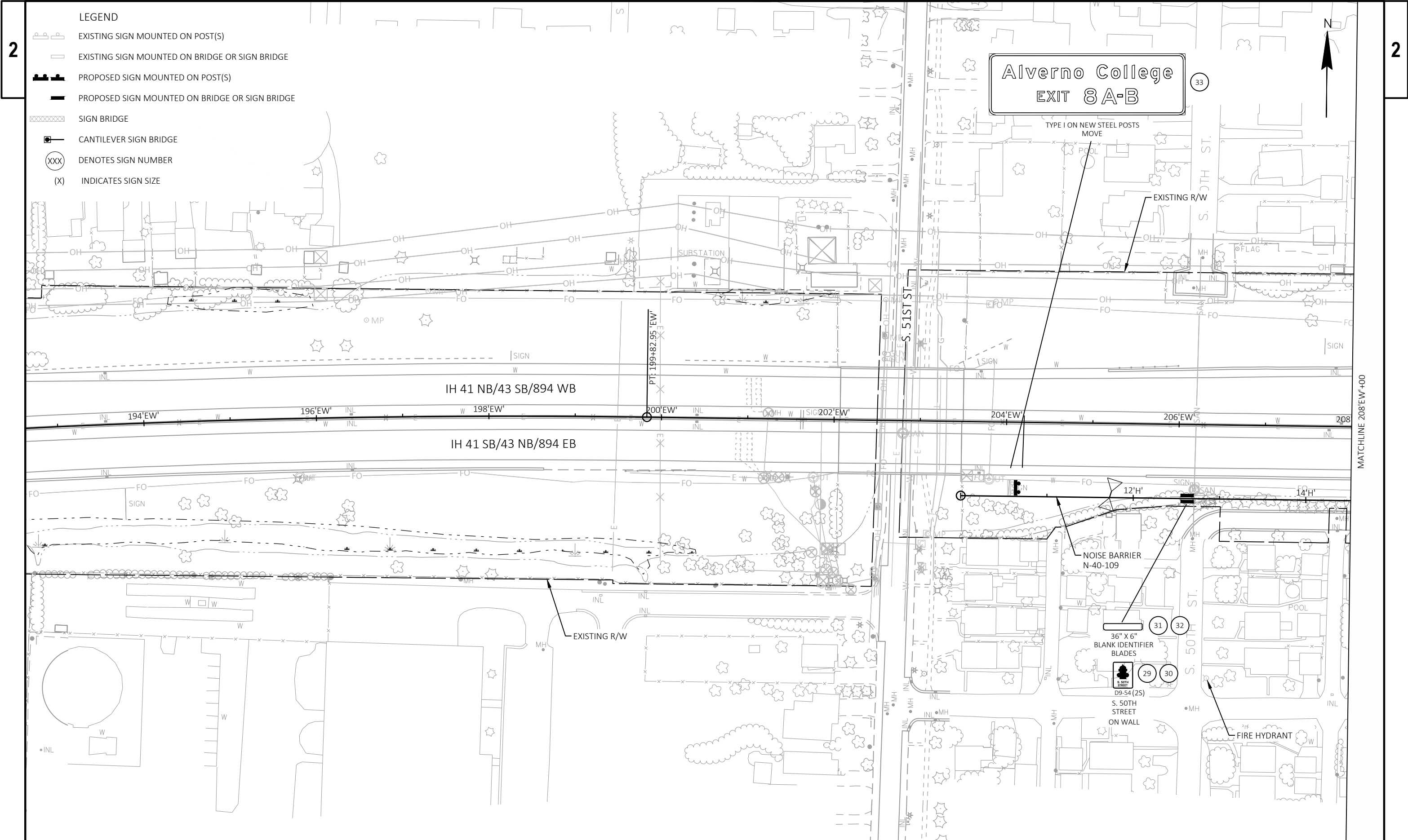
COUNTY: MILWAUKEE

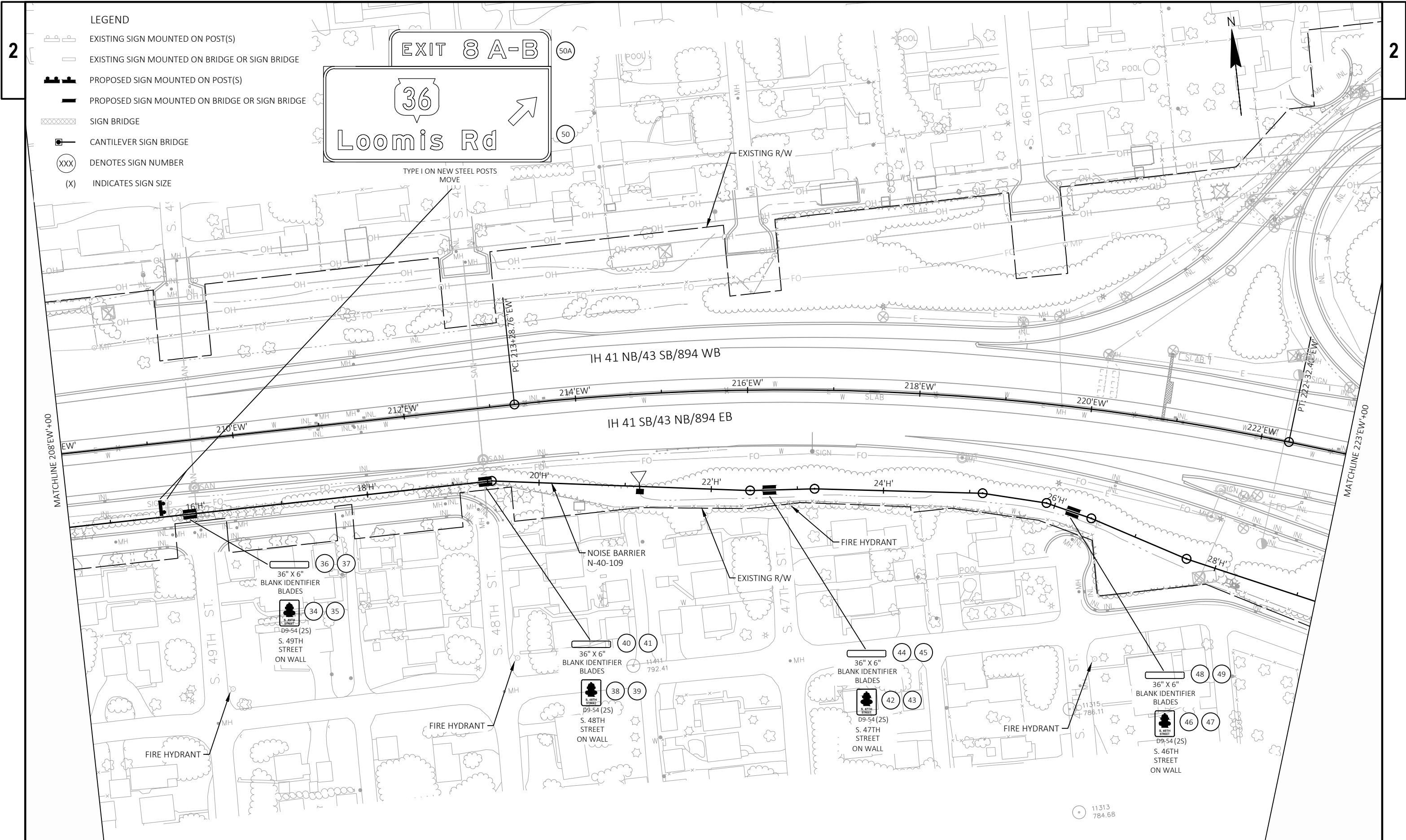
PERMANENT SIGNING

SHEET

38

E





LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE

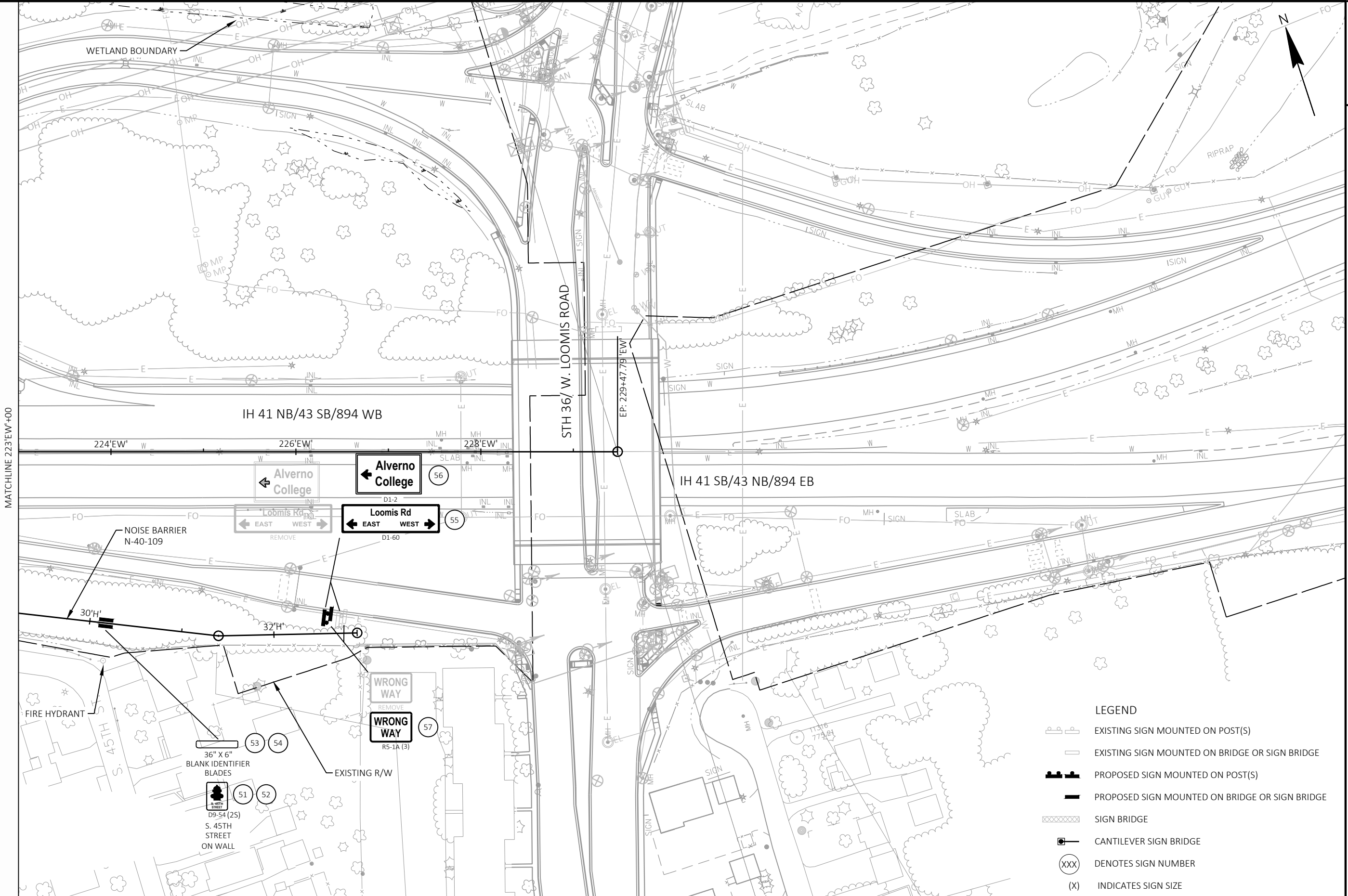
EXIT 8 A-B

36

Loomis Rd

2

2



PROJECT NO:	1090-03-78
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HWY: IH 41

COUNTY: MILWAUKEE

PERMANENT SIGNING

SHEET	41	E
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E

FILE NAME : C:\PW_WORKDIR\JACOBS-US-VA-PW-02\DO193572\10900308-023201-PS.DWG
LAYOUT NAME - 08

PLOT DATE : 12/12/2024 11:55 AM PLOT BY : SCHARLAU, DAVE

PLOT BY : SCHARLAU, DAVE PLOT NAME :

PLOT NAME : PLOT SCALE : 1 IN:100 FT

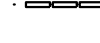
PLOT SCALE : 1 IN:100 FT

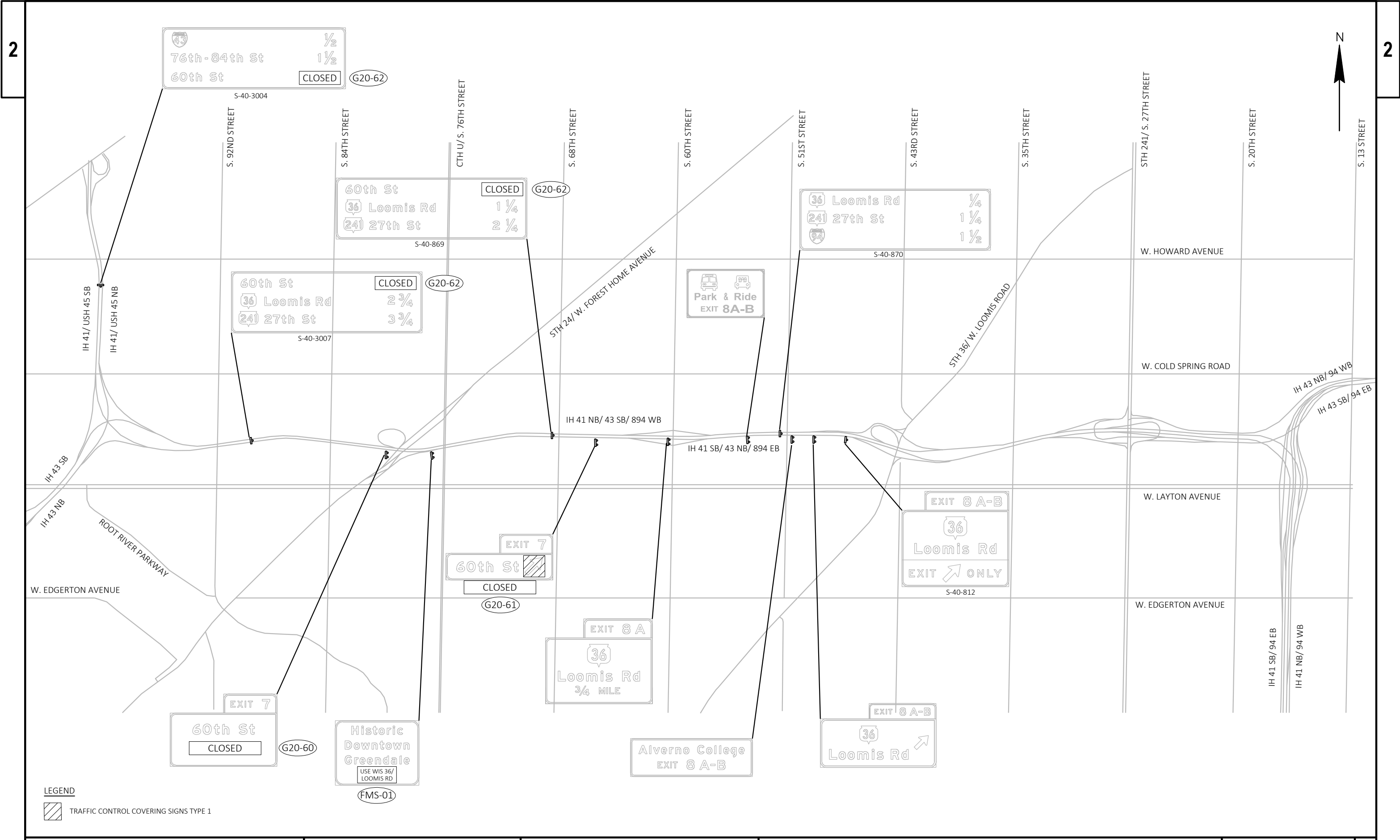
WISDOT/CADDS SHEET 42

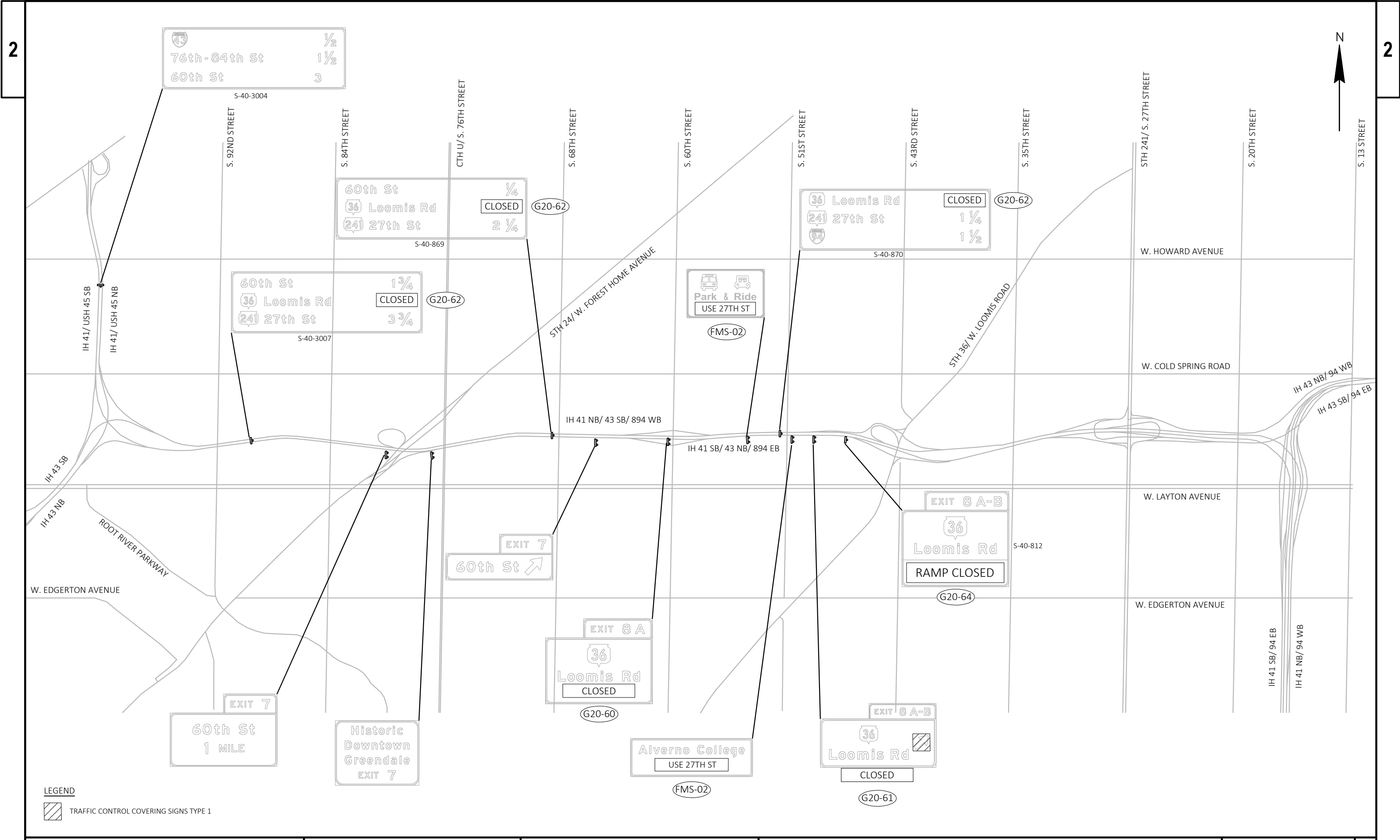
GENERAL NOTES FOR TRAFFIC CONTROL

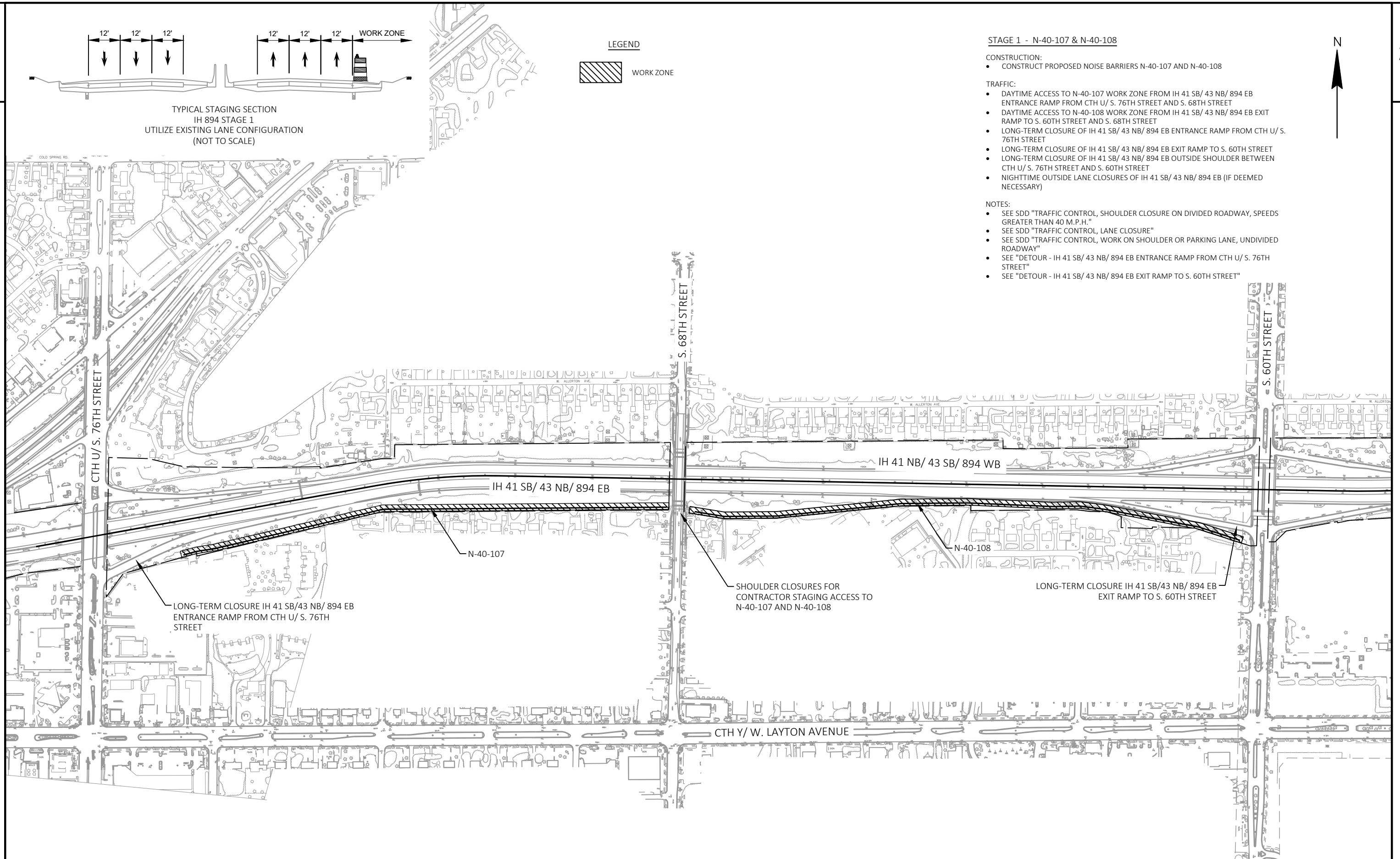
- 1) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
- 2) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER. FLAGGING IS NOT PERMITTED ON FREEWAY LANES.
- 3) ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- 4) "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- 5) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C STEADY BURN WARNING LIGHT.
- 6) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW INTENSITY FLASHING) LIGHTS.
- 7) DIMENSIONS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER ADJACENT TO TRAFFIC. STATION CALL-OUTS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER.
- 8) WORK AREAS SHOWN MAY NOT ILLUSTRATE ALL REMOVALS. SEE REMOVAL SHEETS FOR ADDITIONAL INFORMATION.
- 9) ALL TRAFFIC CONTROL SIGNS LOCATED IN MEDIANS SHALL BE MOUNTED ON CONCRETE BARRIER UNLESS OTHERWISE NOTED, SEE TRAFFIC CONTROL DETAILS.
- 10) WHEN A SEGMENT OF THE PROJECT IS NOT SHOWN ON THE STAGING PLANS, USE THE SAME TRAFFIC CONTROL AS THE PREVIOUS STAGE FOR THAT SEGMENT.
- 11) TRAFFIC CONTROL DRUM SPACING SHALL BE 50' UNLESS OTHERWISE NOTED.
- 12) 16" X 16" ORANGE FLAGS SHALL BE INCIDENTAL TO TRAFFIC CONTROL SIGN BID ITEM.
- 13) ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

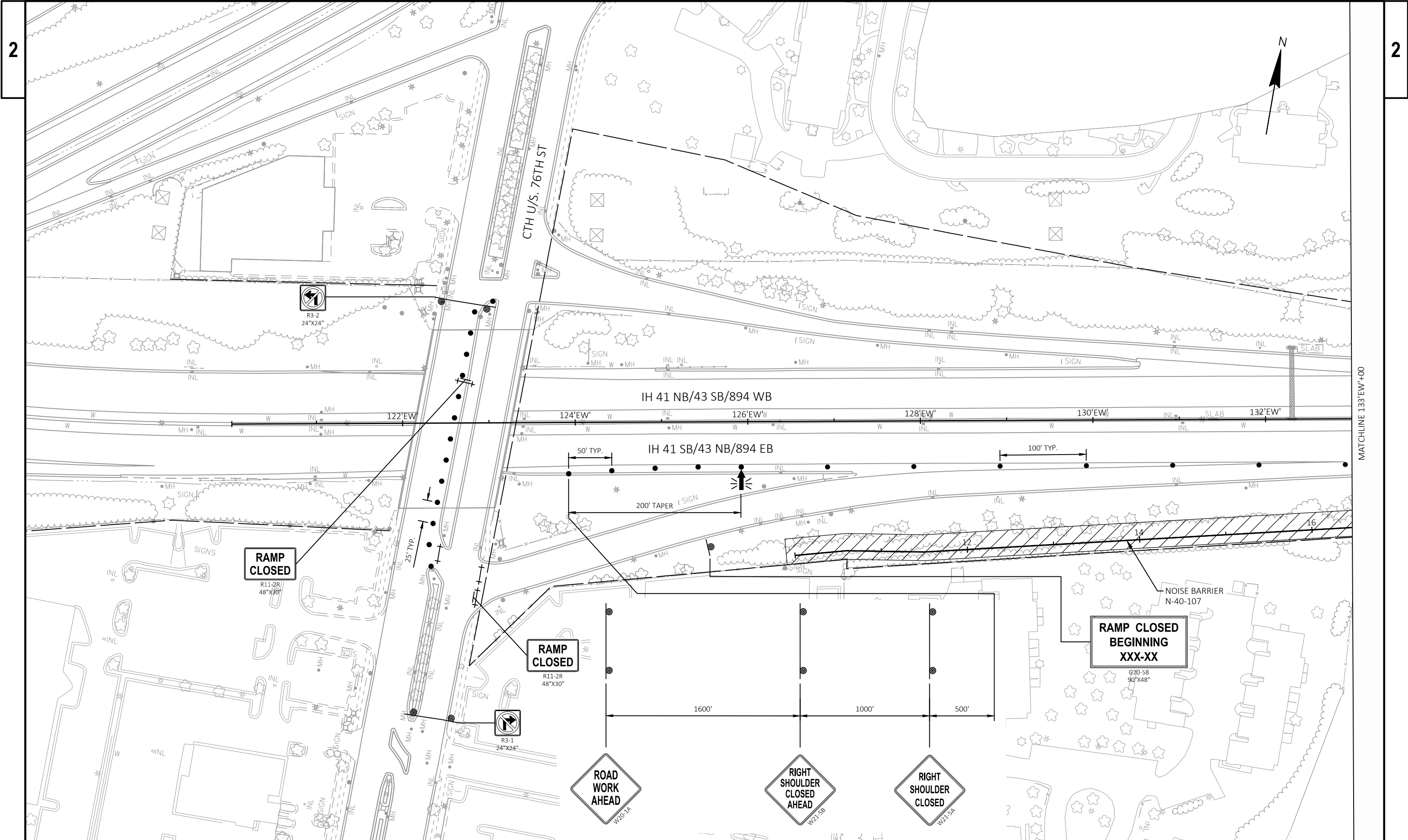
LEGEND

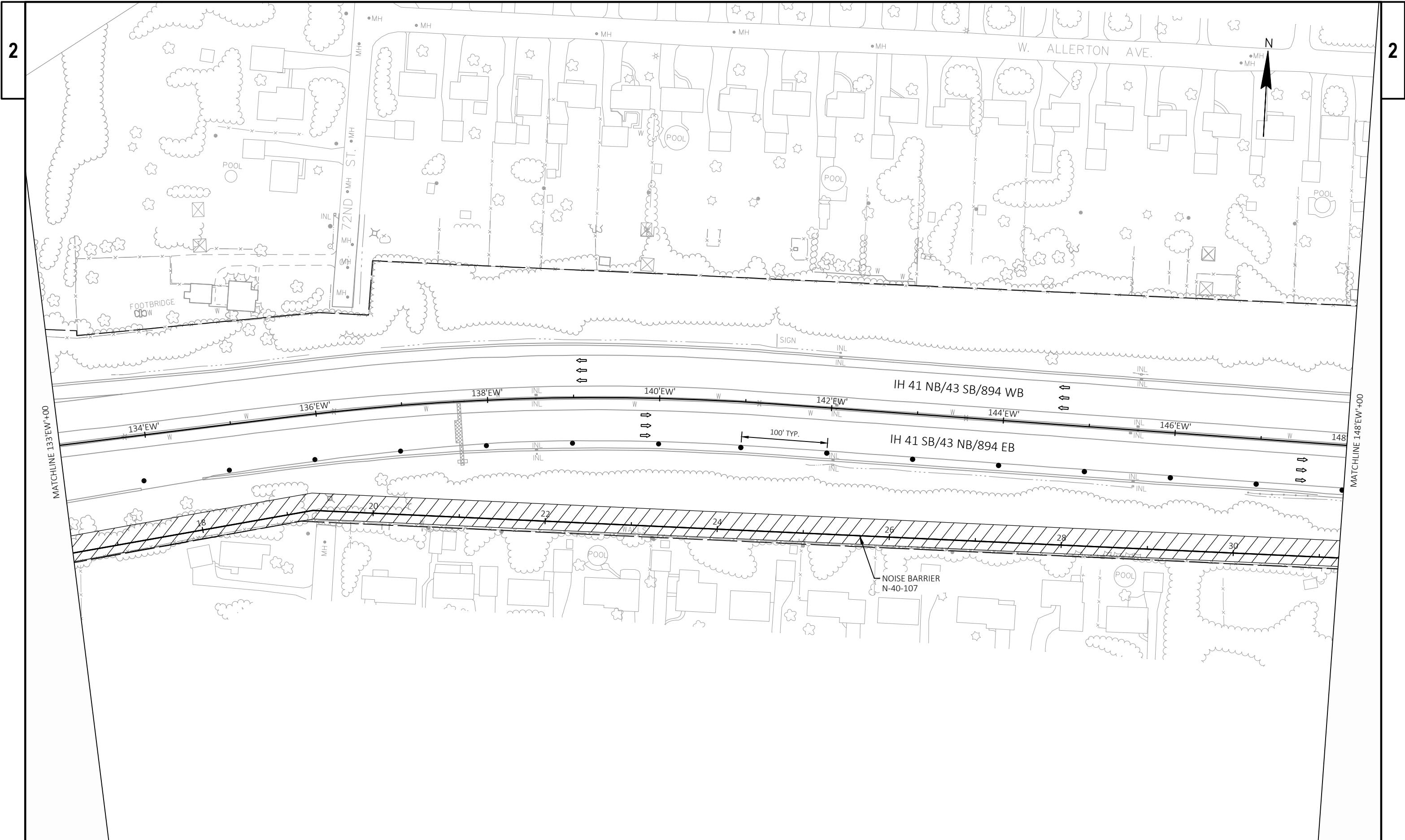
-  TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A
-  TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A AND ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  FIXED MESSAGE SIGN GROUND MOUNT
-  CRASH CUSHION TEMPORARY
-  TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
-  TRAFFIC CONTROL DRUM
-  CONCRETE BARRIER TEMPORARY PRECAST (CBTP)
-  CONCRETE BARRIER TEMPORARY PRECAST PLACED IN PRIOR STAGE
-  TRAFFIC FLOW ARROW
-  WORK ZONE THIS STAGE

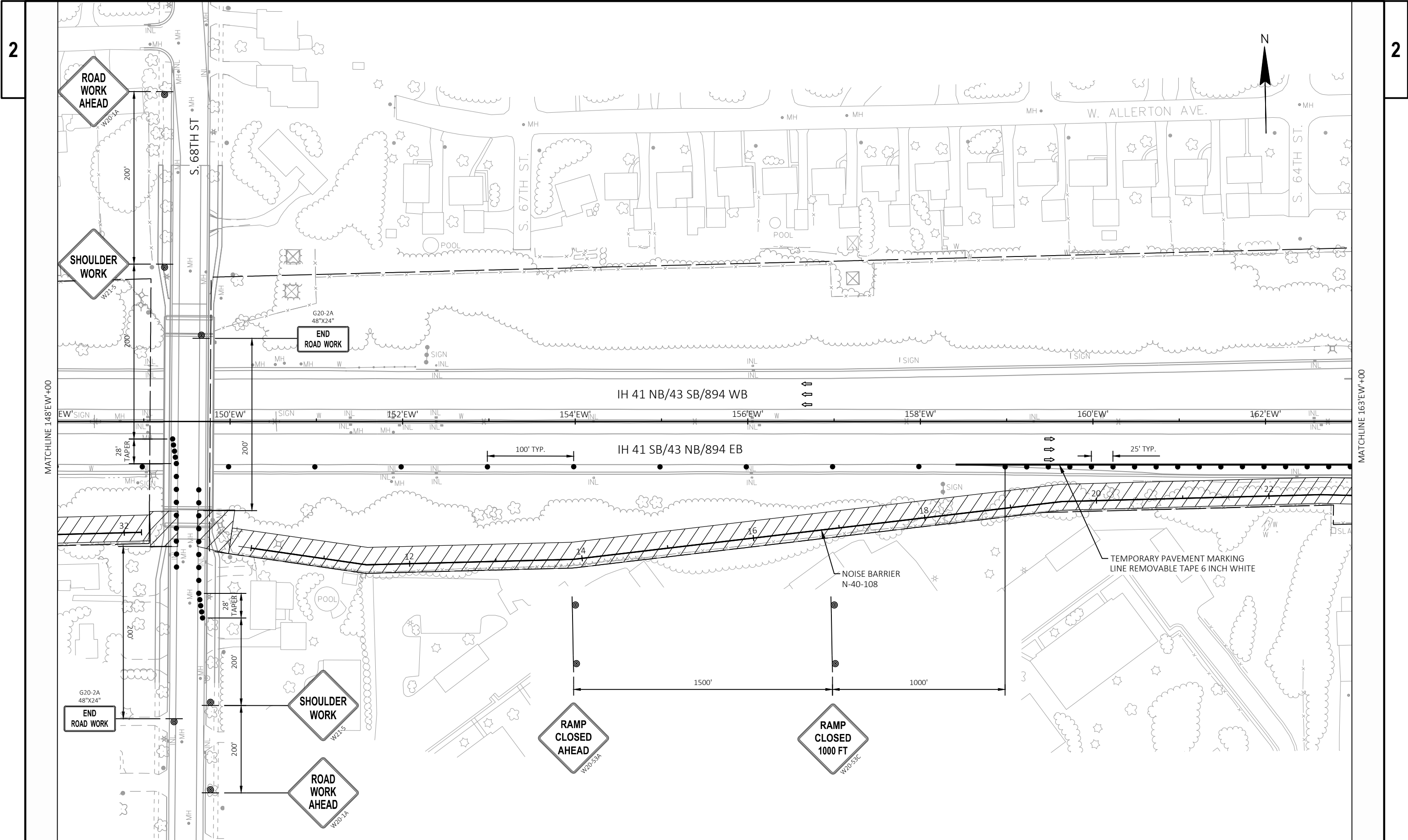




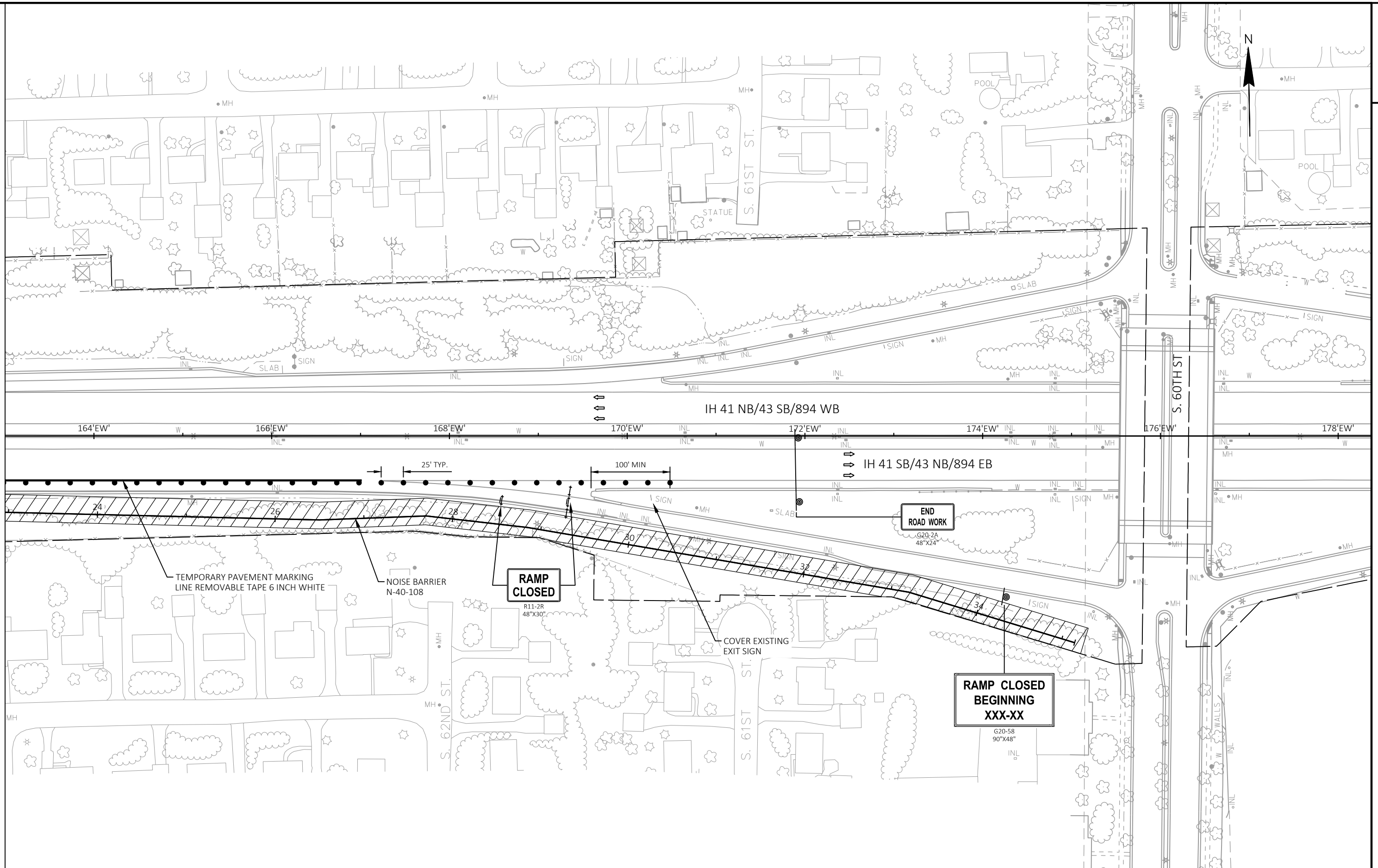




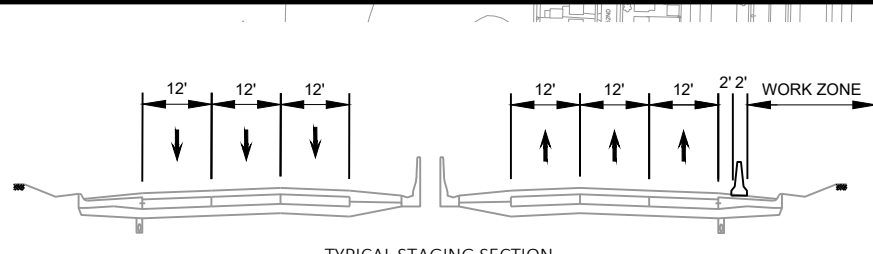




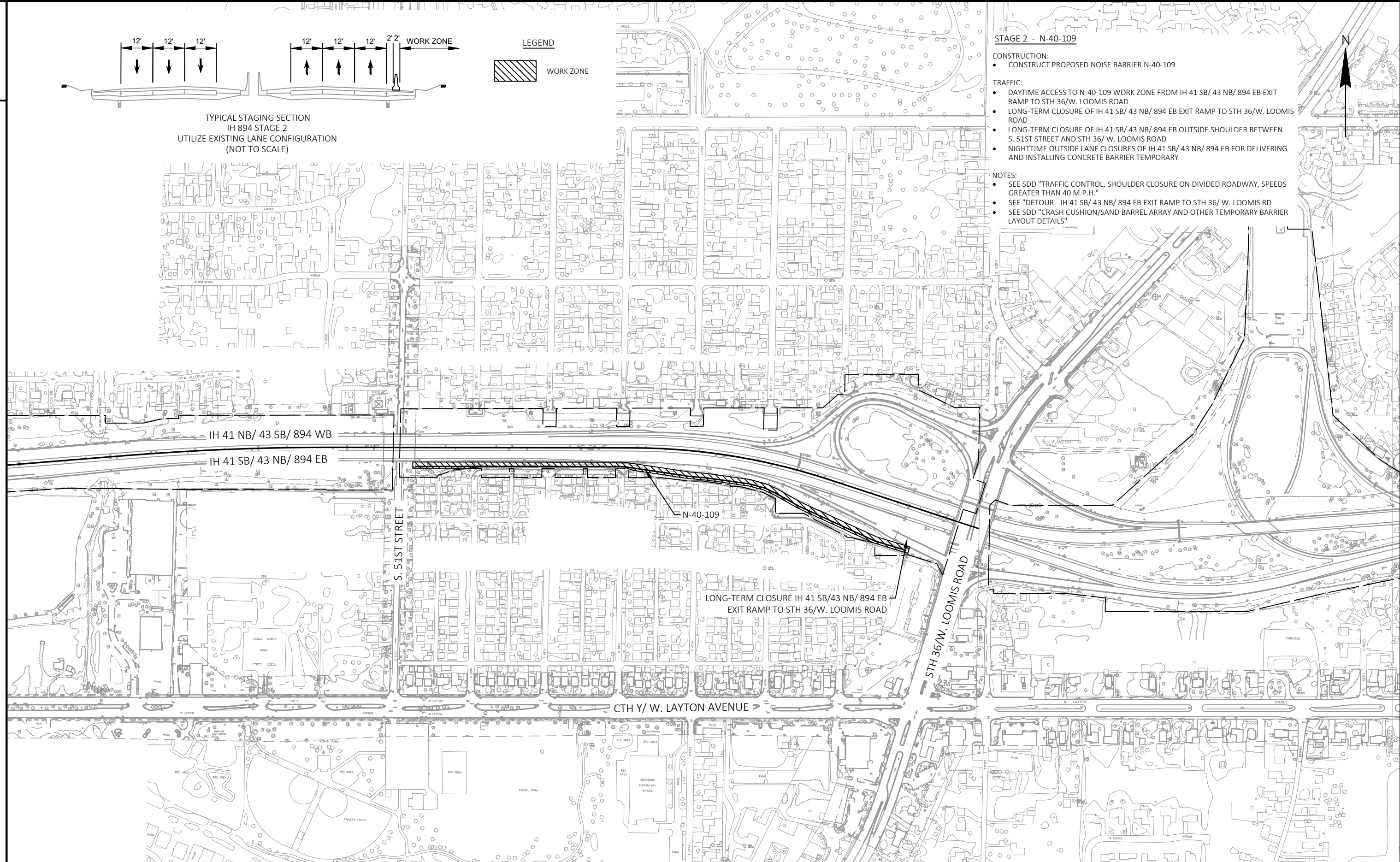
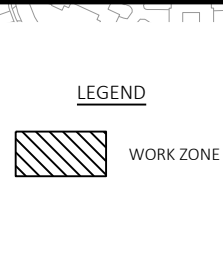
MATCH LINE 163+00



2



TYPICAL STAGING SECTION
IH 894 STAGE 2
UTILIZE EXISTING LANE CONFIGURATION
(NOT TO SCALE)



STAGE 2 - N-40-109

STAGE 2 - N-4

CONSTRUCTION:

- CONSTRUCT

- 
- STAGE 2 - N-40-109**
- CONSTRUCTION:**
- CONSTRUCTION PROPOSED NOISE BARRIER N-40-109
- TRAFFIC:**
- DAYTIME ACCESS TO N-40-109 WORK ZONE FROM IH 41 SB/ 43 NB/ 894 EB EXIT RAMP TO STH 36/W. LOOMIS ROAD
 - LONG-TERM CLOSURE OF IH 41 SB/ 43 NB/ 894 EB EXIT RAMP TO STH 36/W. LOOMIS ROAD
 - LONG-TERM CLOSURE OF IH 41 SB/ 43 NB/ 894 EB OUTSIDE SHOULDER BETWEEN S. 51ST STREET AND STH 36/ W. LOOMIS ROAD
 - NIGHTTIME OUTSIDE LANE CLOSURES OF IH 41 SB/ 43 NB/ 894 EB FOR DELIVERING AND INSTALLING CONCRETE BARRIER TEMPORARY

STAGE

CONSTR

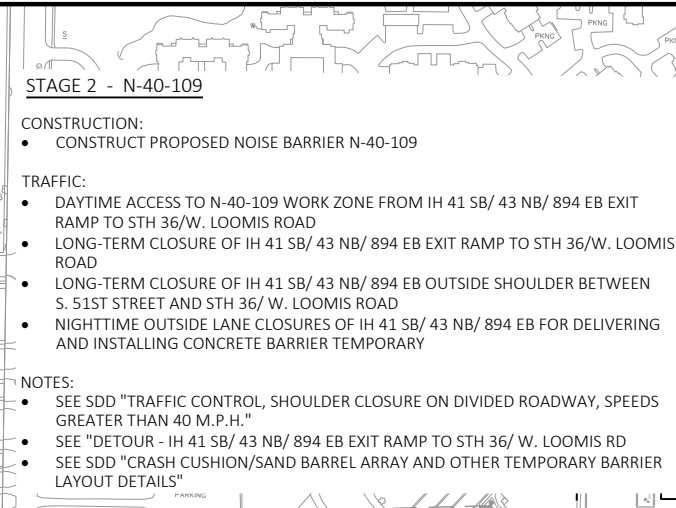
- CON

TRAFFIC

- DAY
- RAM
- LOM
- ROA
- LOM
- S. 5
- NIG
- ANI

NOTES:

- SEE

- 
- ## STAGE 2 - N-40-109
- CONSTRUCTION:**
- CONSTRUCT PROPOSED NOISE BARRIER N-40-109
- TRAFFIC:**
- DAYTIME ACCESS TO N-40-109 WORK ZONE FROM IH 41 SB/ 43 NB/ 894 EB EXIT RAMP TO STH 36/W. LOOMIS ROAD
 - LONG-TERM CLOSURE OF IH 41 SB/ 43 NB/ 894 EB EXIT RAMP TO STH 36/W. LOOMIS ROAD
 - LONG-TERM CLOSURE OF IH 41 SB/ 43 NB/ 894 EB OUTSIDE SHOULDER BETWEEN S. 51ST STREET AND STH 36/ W. LOOMIS ROAD
 - NIGHTTIME OUTSIDE LANE CLOSURES OF IH 41 SB/ 43 NB/ 894 EB FOR DELIVERING AND INSTALLING CONCRETE BARRIER TEMPORARY
- NOTES:**
- SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H."
 - SEE "DETOUR - IH 41 SB/ 43 NB/ 894 EB EXIT RAMP TO STH 36/ W. LOOMIS RD
 - SEE SDD "CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS"

2

PROJECT NO:	1090-03-78
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HWY: IH 41

COUNTY: MILWAUKEE

TRAFFIC CONTROL - STAGE 2 OVERVIEW

SHEET

50

E

FILE NAME : C:\PW_WORKDIR\JACOBS-US-VA-PW-02\00193572\10900308-026201-ST2.DWG
LAYOUT NAME - 00

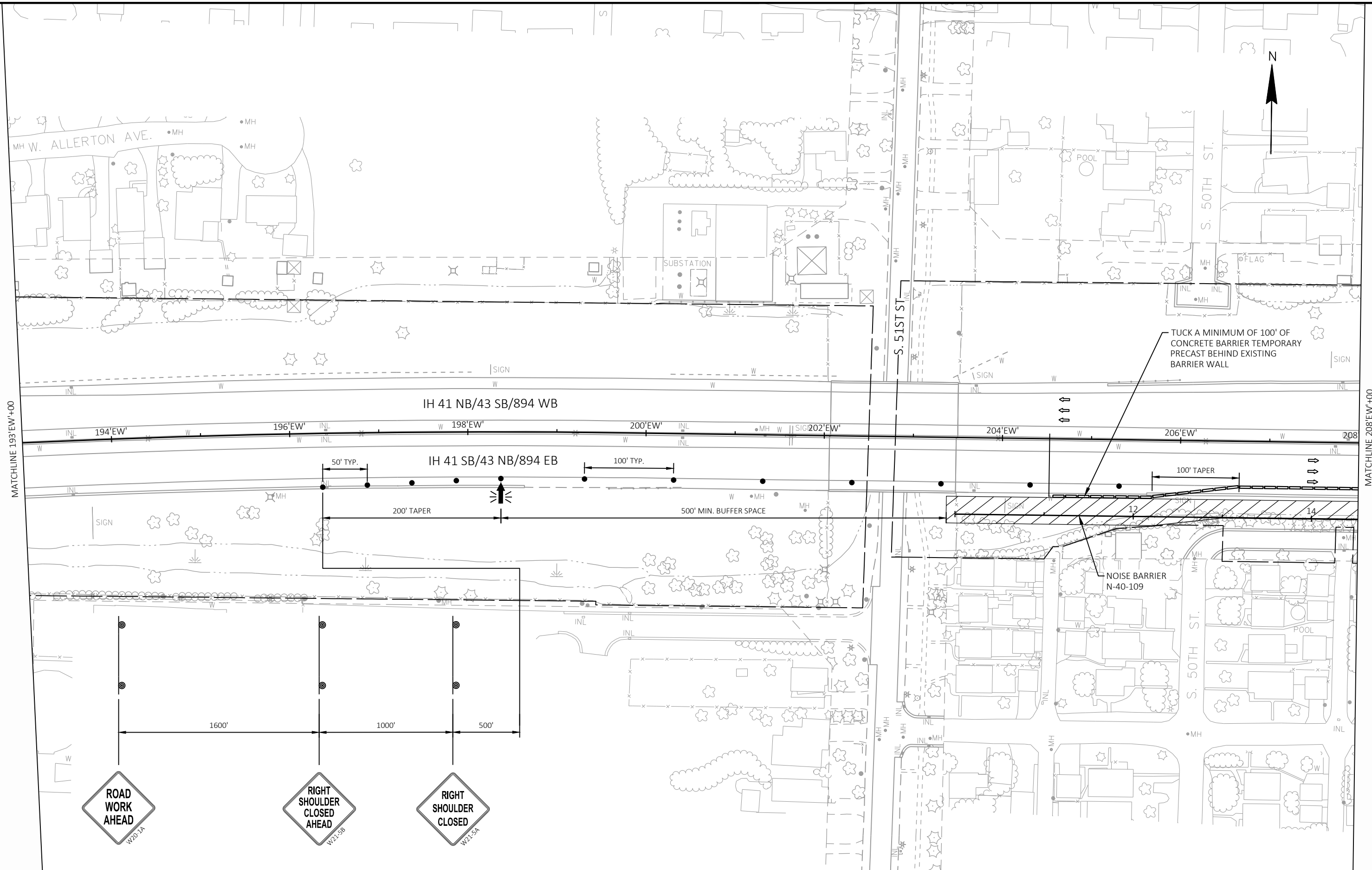
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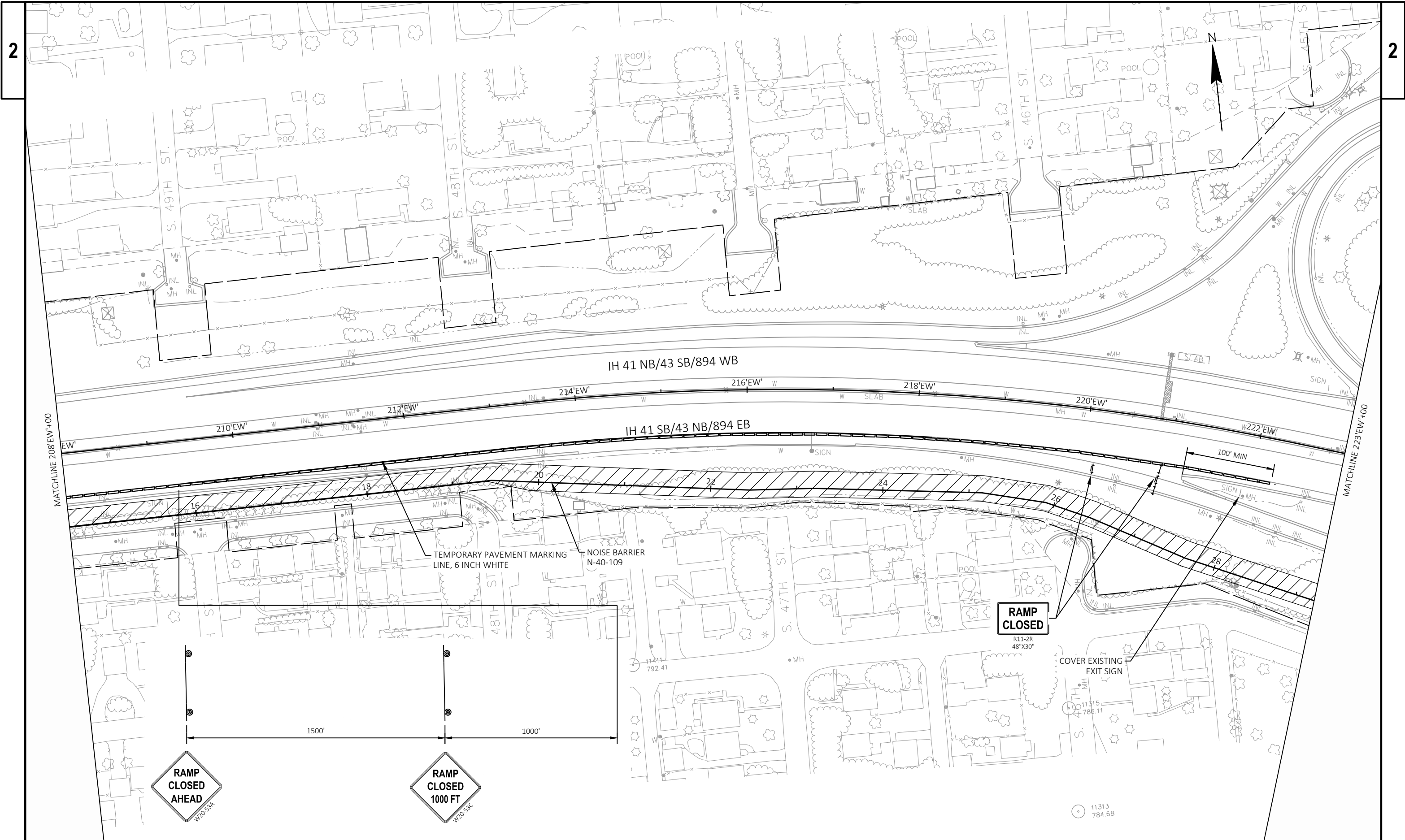
PLOT BY : CAVE, MATT

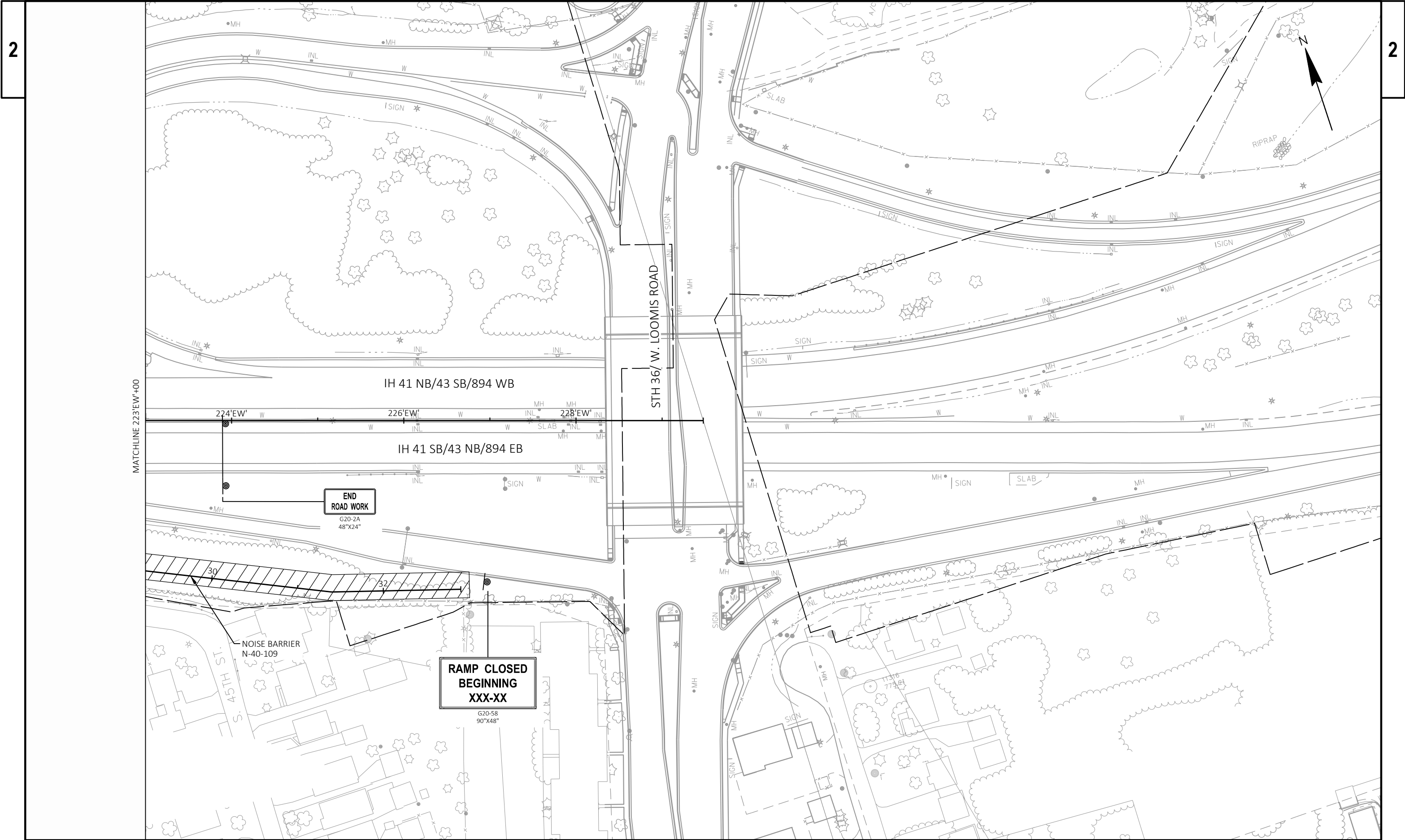
PLOT NAME :

PLOT SCALE : 1 IN:400 FT

WISDOT/CADDS SHEET 42







LEGEND



WORK ZONE

STAGE 3 - SITE RESTORATION

CONSTRUCTION:

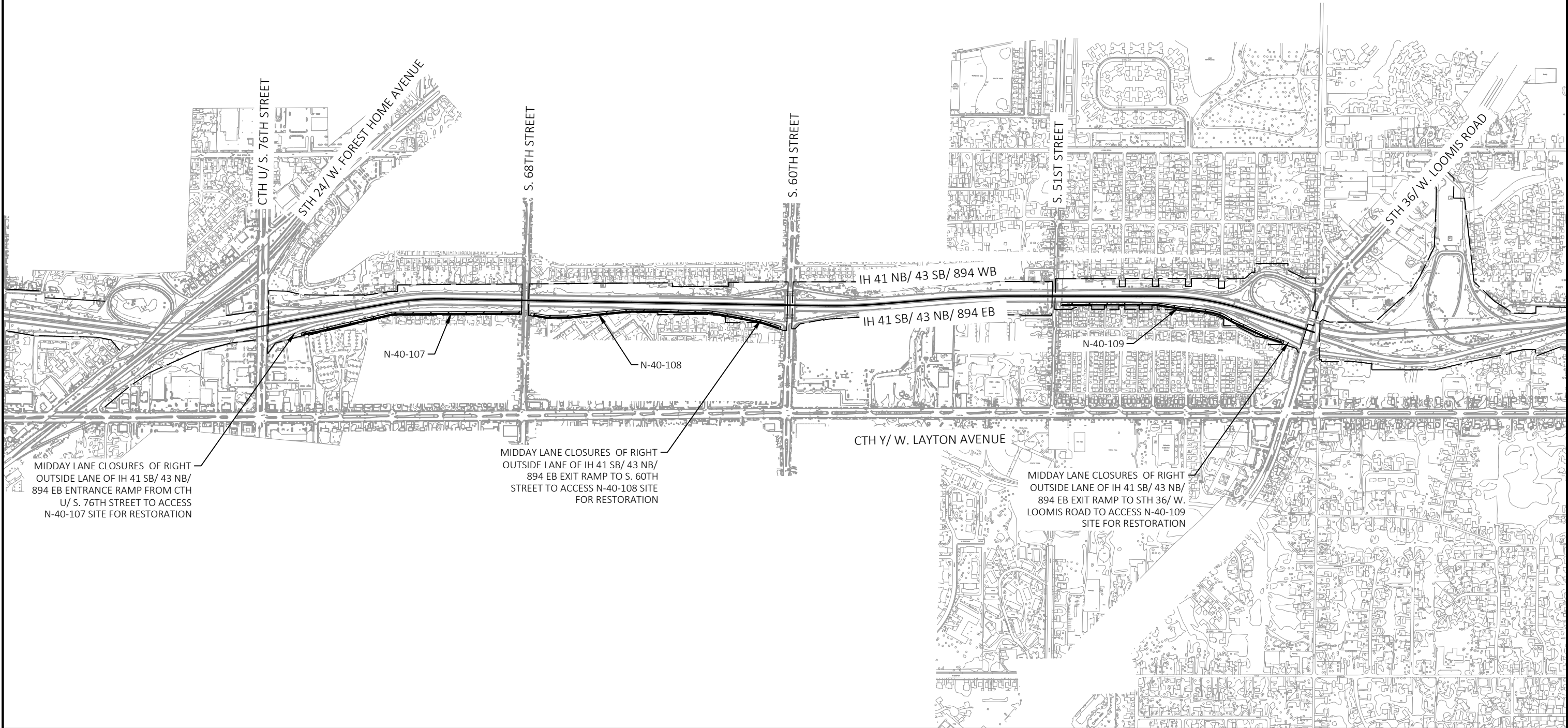
- SITE RESTORATION: PLACE SEED, FERTILIZER AND INSTALL EROSION MAT ON AREAS DISTURBED DURING NOISE BARRIER N-40-107, N-40-108 AND N-40-109 CONSTRUCTION

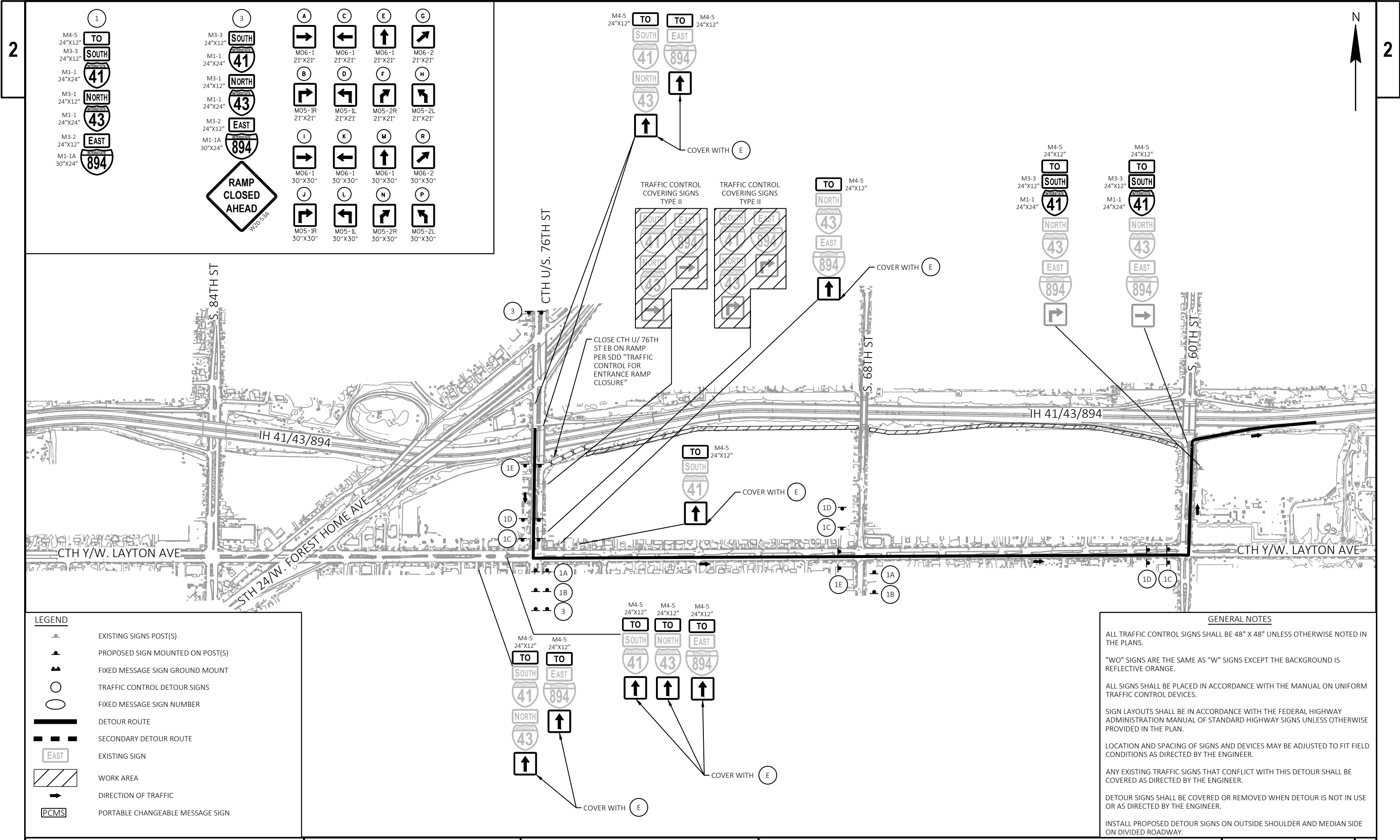
TRAFFIC:

- MIDDAY CLOSURES OF RIGHT OUTSIDE LANE OF IH 41 SB/ 43 NB/ 894 EB ENTRANCE RAMP FROM CTH U/ S. 76TH STREET AND S. 68TH STREET FOR ACCESS TO N-40-107 WORK ZONE .
- MIDDAY CLOSURES OF RIGHT OUTSIDE LANE OF IH 41 SB/ 43 NB/ 894 EB EXIT RAMP TO S. 60TH STREET AND S. 68TH STREET FOR ACCESS TO N-40-108 WORK ZONE.
- MIDDAY CLOSURES OF RIGHT OUTSIDE LANE OF IH 41 SB/ 43 NB/ 894 EB EXIT RAMP TO STH 36/ W. LOOMIS ROAD FOR ACCESS TO N-40-109 WORK ZONE.

NOTES:

- SEE SDD "TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 M.P.H."
- SEE SDD "TRAFFIC CONTROL, ADDED LANE CLOSURE WITHOUT LANE SHIFT"





LEGEND

EXISTING SIGNS POST(S)

PROPOSED SIGN MOUNTED ON POST(S)

FIXED MESSAGE SIGN GROUND MOUNT

TRAFFIC CONTROL DETOUR SIGNS

FIXED MESSAGE SIGN NUMBER

DETOUR ROUTE

SECONDARY DETOUR ROUTE

EXISTING SIGN

WORK AREA

DIRECTION OF TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGN

GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

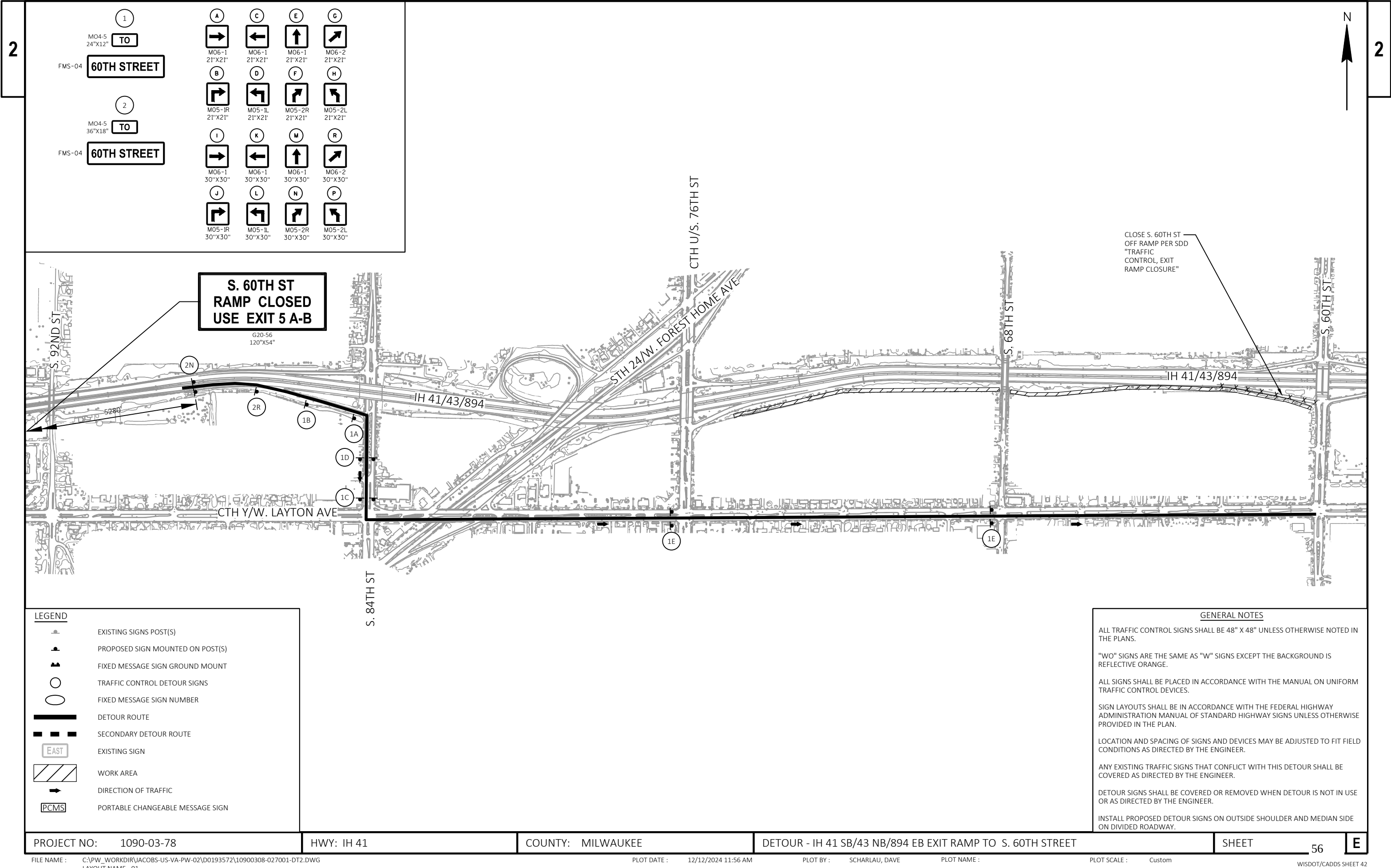
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.



2

2



LEGEND

EXISTING SIGNS POST(S)

PROPOSED SIGN MOUNTED ON POST(S)

FIXED MESSAGE SIGN GROUND MOUNT

TRAFFIC CONTROL DETOUR SIGNS

FIXED MESSAGE SIGN NUMBER

DETOUR ROUTE

SECONDARY DETOUR ROUTE

EXISTING SIGN

WORK AREA

DIRECTION OF TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGN

GENERAL NOTES

ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.

ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

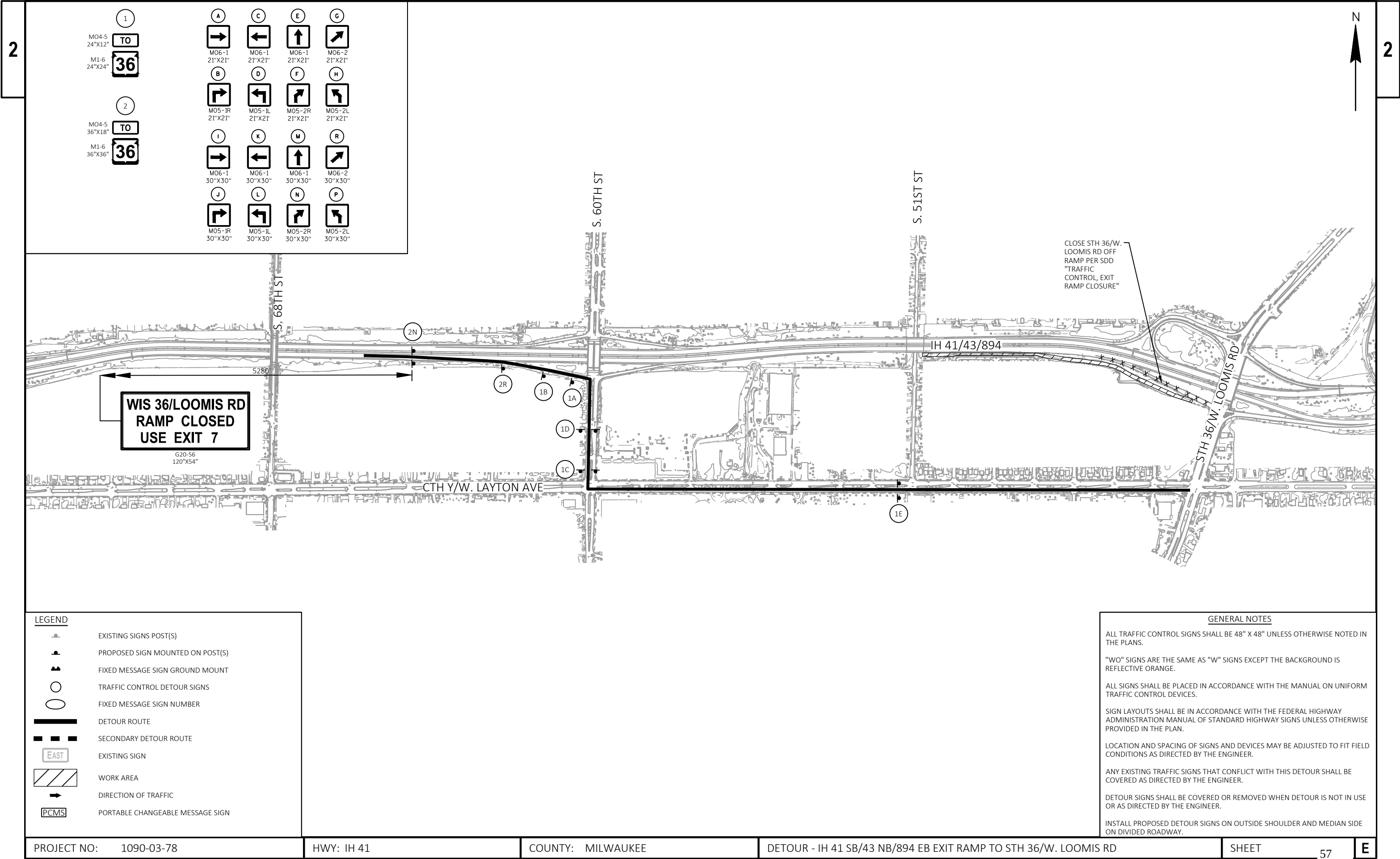
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.

LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.

DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.

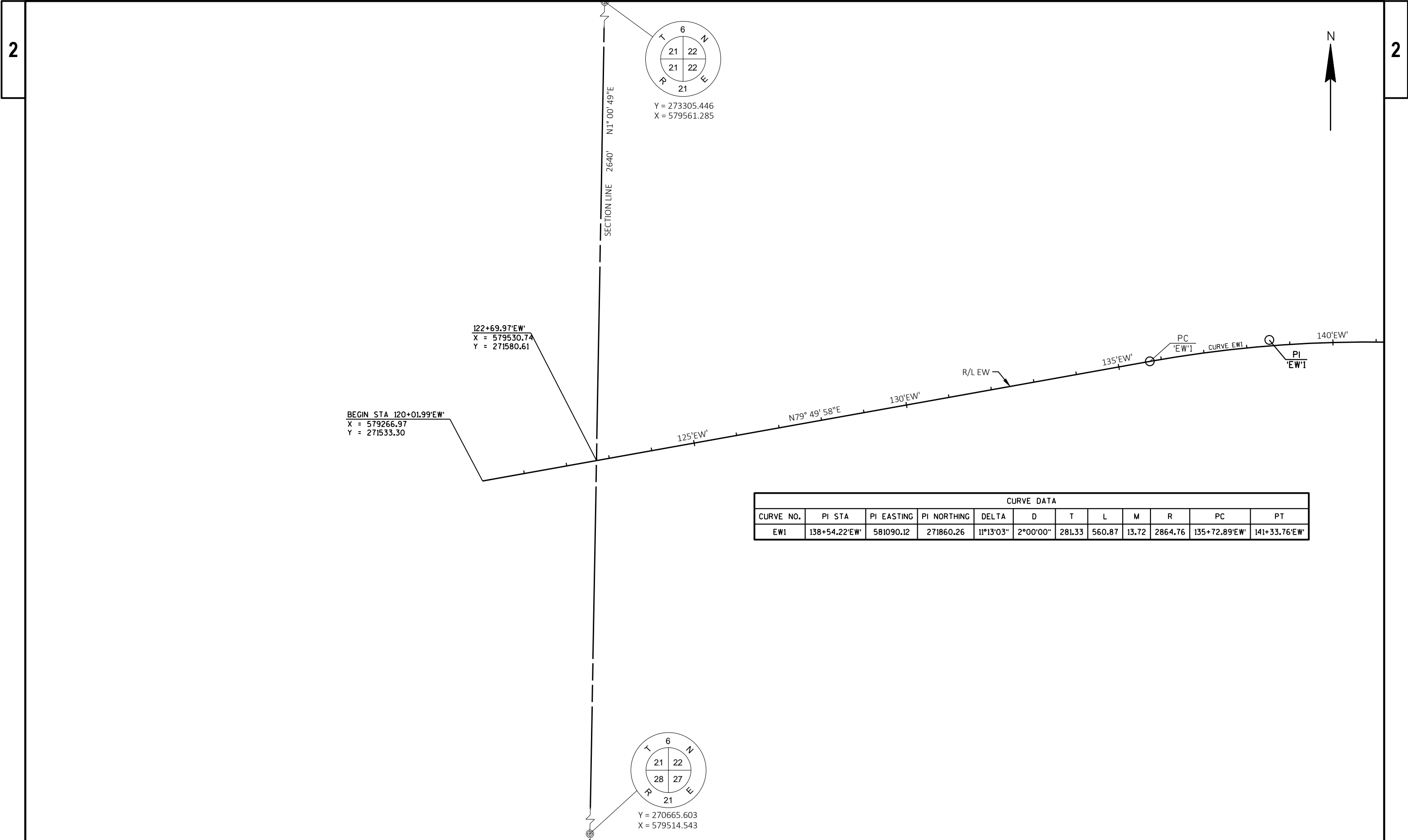
INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

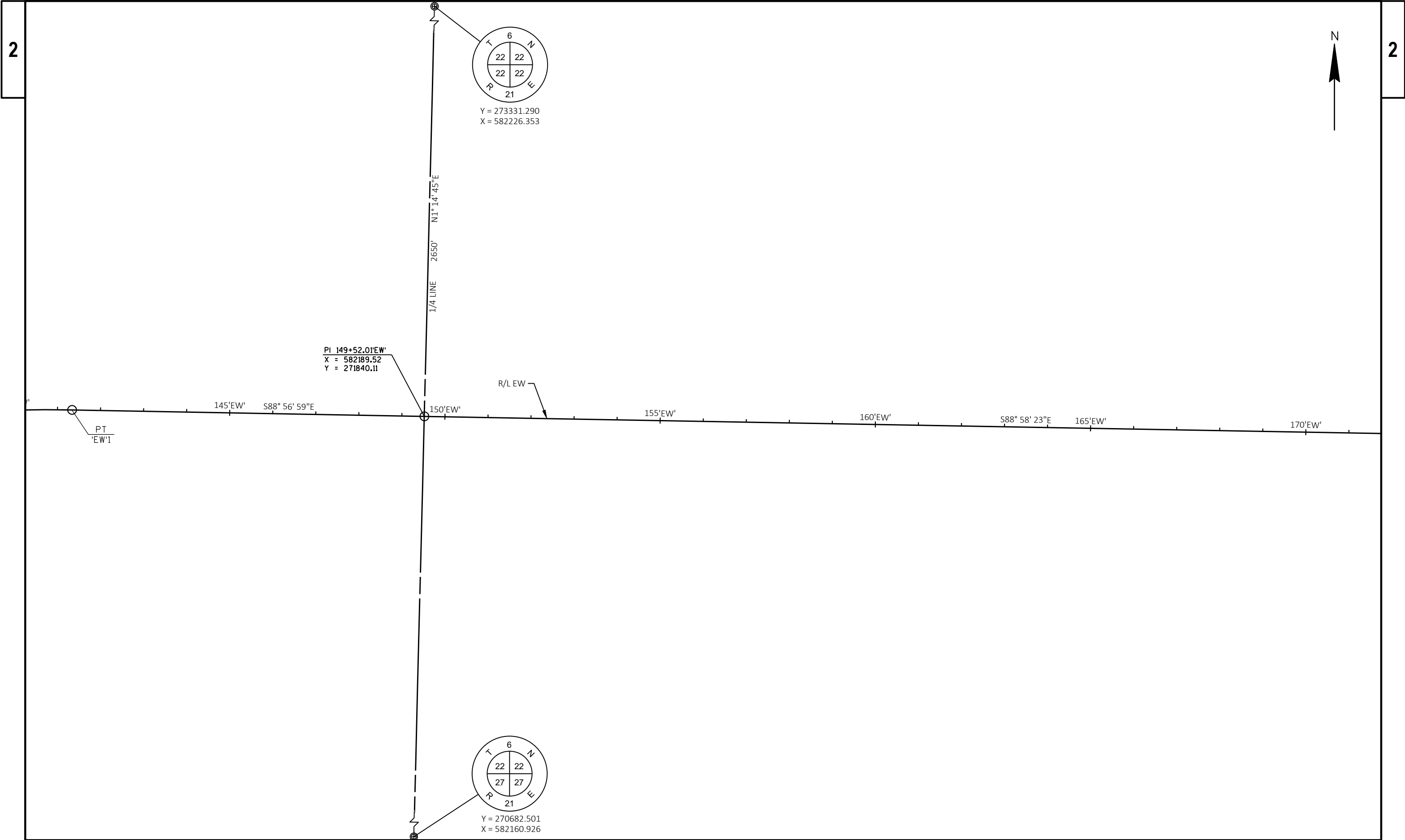


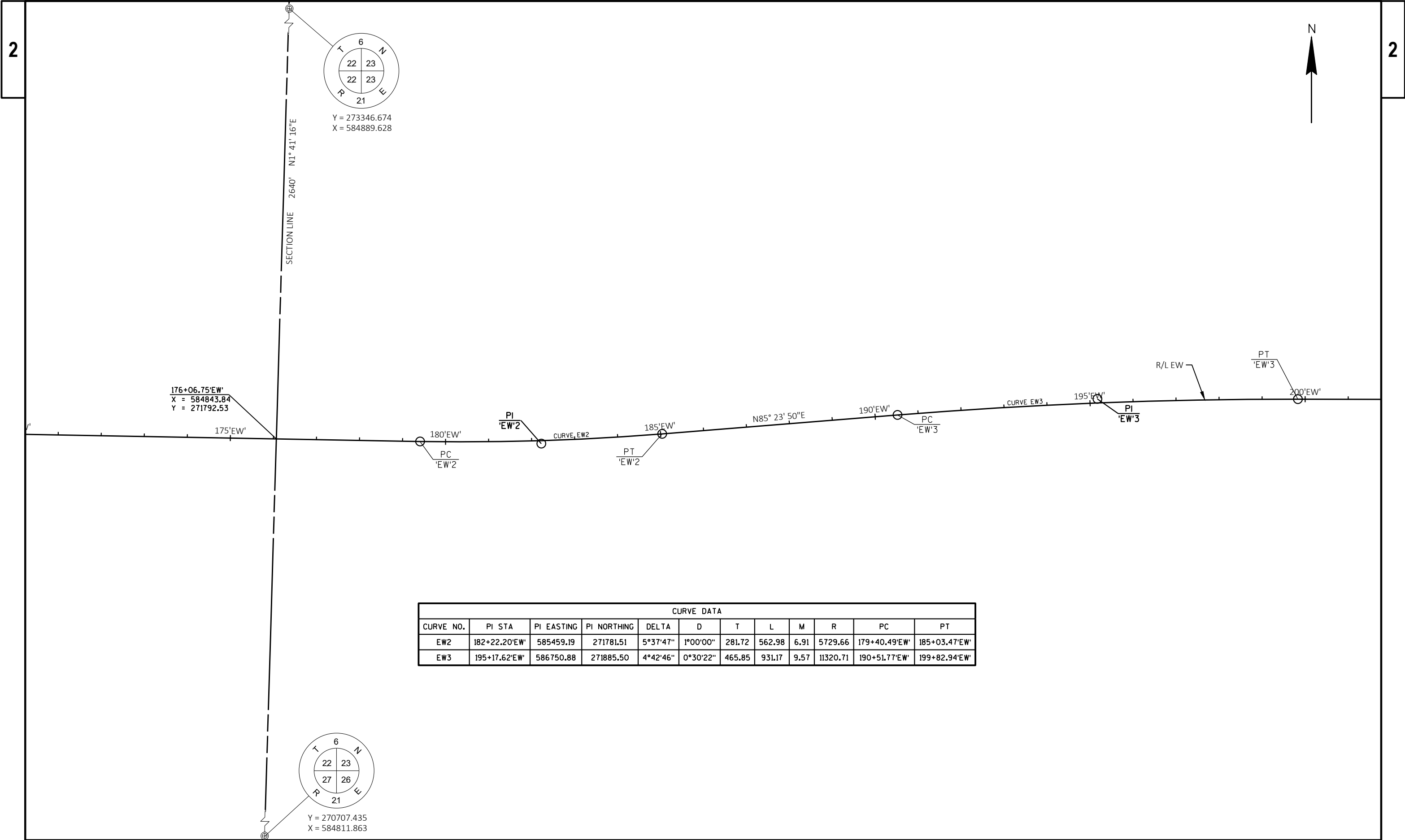
1	A	C	E	G
TO	→	←	↑	↗
M04-S 24"x12"	M06-1 21"x21"	M06-1 21"x21"	M06-1 21"x21"	M06-2 21"x21"
M1-6 24"x24"	36			
2	B	D	F	H
TO	↗	↖	↗	↖
M04-S 36"x18"	M05-1R 21"x21"	M05-1L 21"x21"	M05-2R 21"x21"	M05-2L 21"x21"
M1-6 36"x36"	36			
	I	K	M	R
	→	←	↑	↗
	M06-1 30"x30"	M06-1 30"x30"	M06-1 30"x30"	M06-2 30"x30"
	J	L	N	P
	↗	↖	↗	↖
	M05-1R 30"x30"	M05-1L 30"x30"	M05-2R 30"x30"	M05-2L 30"x30"

LEGEND	
	EXISTING SIGNS POST(S)
	PROPOSED SIGN MOUNTED ON POST(S)
	FIXED MESSAGE SIGN GROUND MOUNT
	TRAFFIC CONTROL DETOUR SIGNS
	FIXED MESSAGE SIGN NUMBER
	DETOUR ROUTE
	SECONDARY DETOUR ROUTE
	EXISTING SIGN
	WORK AREA
	DIRECTION OF TRAFFIC
	PORTABLE CHANGEABLE MESSAGE SIGN

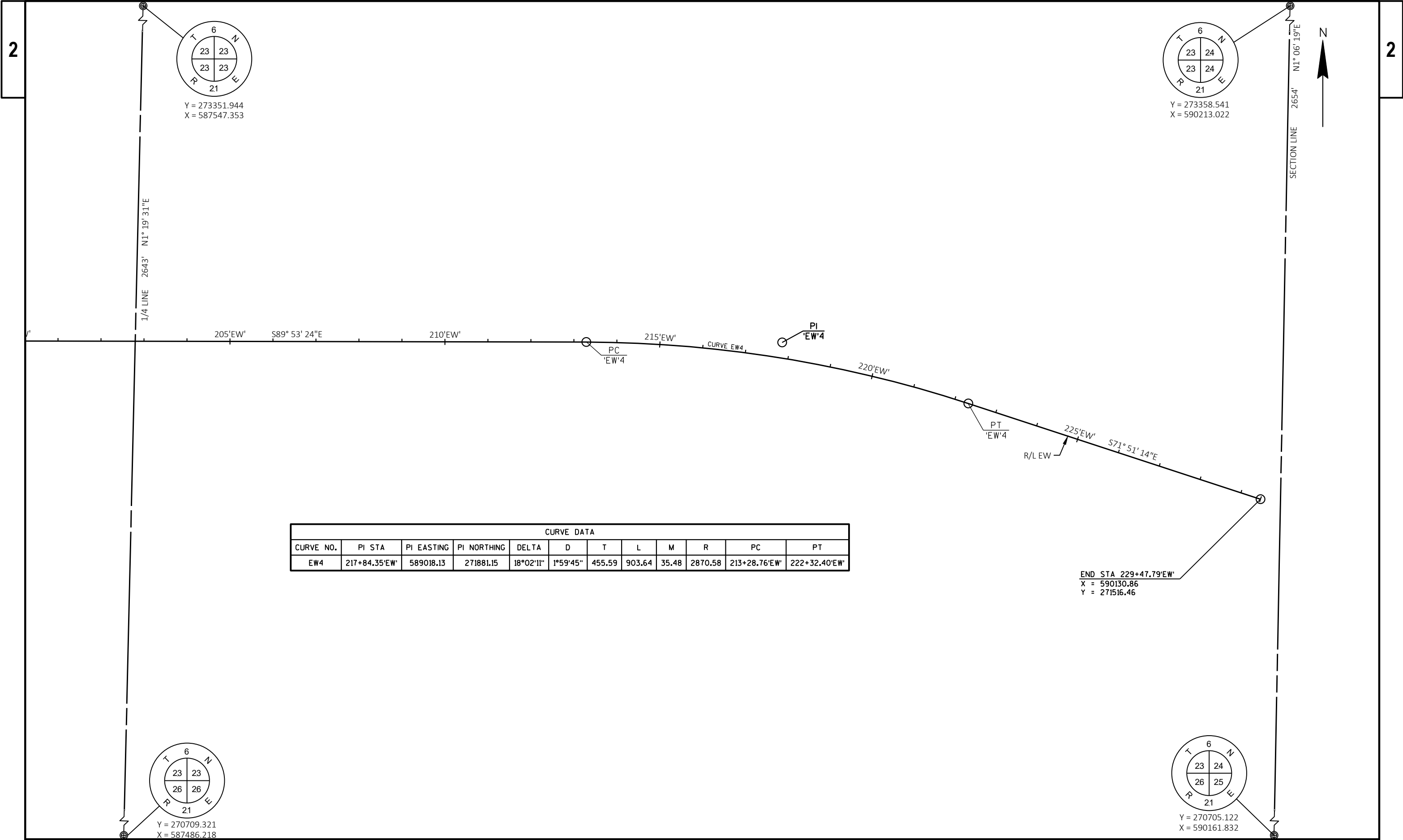
GENERAL NOTES
ALL TRAFFIC CONTROL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED IN THE PLANS.
"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS REFLECTIVE ORANGE.
ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS UNLESS OTHERWISE PROVIDED IN THE PLAN.
LOCATION AND SPACING OF SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS DETOUR SHALL BE COVERED AS DIRECTED BY THE ENGINEER.
DETOUR SIGNS SHALL BE COVERED OR REMOVED WHEN DETOUR IS NOT IN USE OR AS DIRECTED BY THE ENGINEER.
INSTALL PROPOSED DETOUR SIGNS ON OUTSIDE SHOULDER AND MEDIAN SIDE ON DIVIDED ROADWAY.

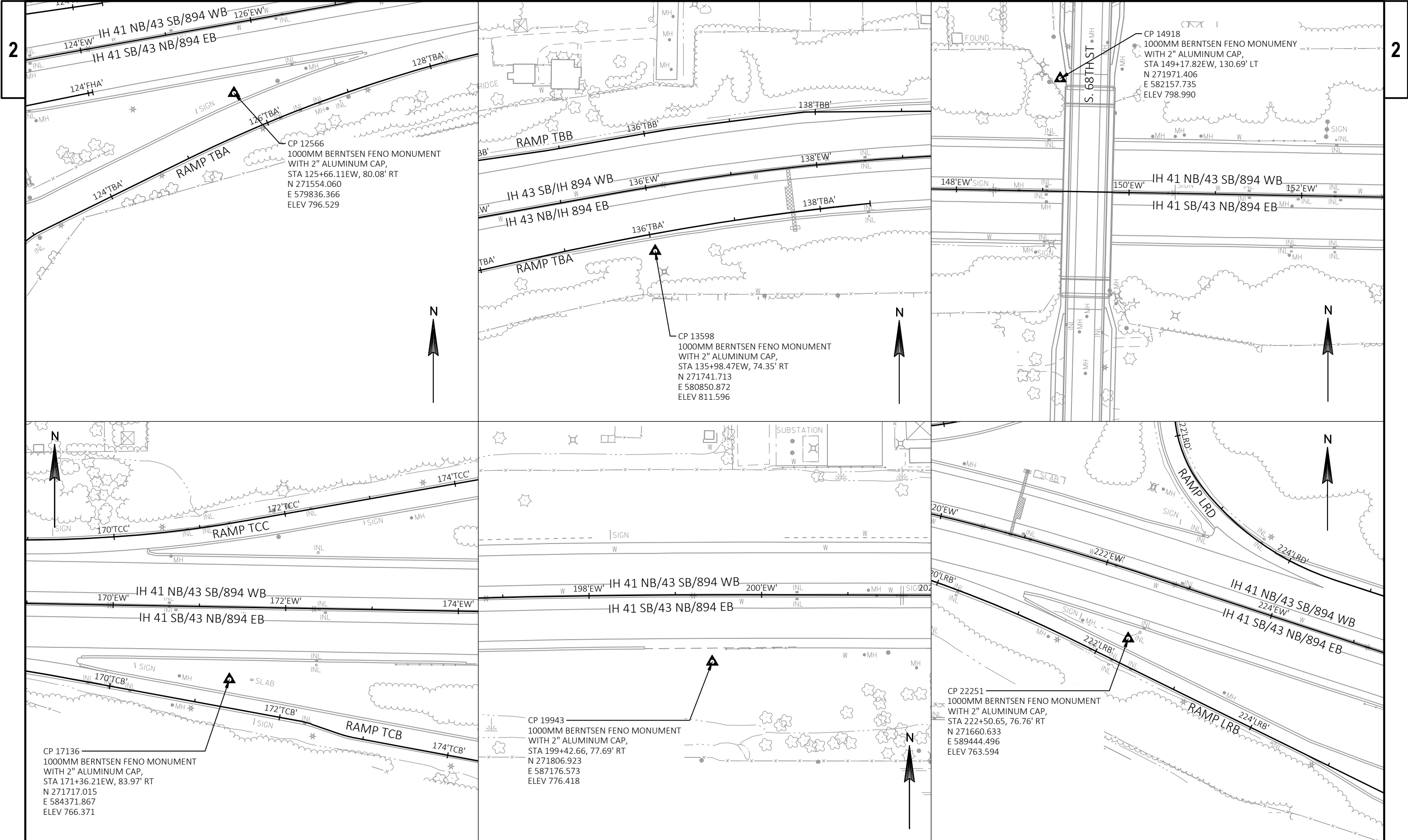






CURVE DATA											
CURVE NO.	PI STA	PI EASTING	PI NORTHING	DELTA	D	T	L	M	R	PC	PT
EW2	182+22.20'EW'	585459.19	271781.51	5°37'47"	1°00'00"	281.72	562.98	6.91	5729.66	179+40.49'EW'	185+03.47'EW'
EW3	195+17.62'EW'	586750.88	271885.50	4°42'46"	0°30'22"	465.85	931.17	9.57	11320.71	190+51.77'EW'	199+82.94'EW'





Estimate Of Quantities

1090-03-78

Line	Item	Item Description	Unit	Total	Qty
0002	108.4400	CPM Progress Schedule	EACH	1.000	1.000
0004	201.0205	Grubbing	STA	74.000	74.000
0006	204.0150	Removing Curb & Gutter	LF	300.000	300.000
0008	204.0155	Removing Concrete Sidewalk	SY	64.000	64.000
0010	204.0170	Removing Fence	LF	7,414.000	7,414.000
0012	213.0100	Finishing Roadway (project) 01. 1090-03-78	EACH	1.000	1.000
0014	416.0610	Drilled Tie Bars	EACH	36.000	36.000
0016	522.0112	Culvert Pipe Reinforced Concrete Class III 12-Inch	LF	8.000	8.000
0018	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	EACH	5.000	5.000
0020	531.1100	Concrete Masonry Ancillary Structures Type NS	CY	4.400	4.400
0022	531.1140	Steel Reinforcement HS Ancillary Structures Type NS	LB	580.000	580.000
0024	531.2024	Drilling Shaft 24-Inch	LF	36.000	36.000
0026	541.0300.S	Noise Barriers Double-Sided Sound Absorptive (structure) 01. N-40-107	SF	31,100.000	31,100.000
0028	541.0300.S	Noise Barriers Double-Sided Sound Absorptive (structure) 02. N-40-108	SF	45,660.000	45,660.000
0030	541.0300.S	Noise Barriers Double-Sided Sound Absorptive (structure) 03. N-40-109	SF	42,070.000	42,070.000
0032	601.0331	Concrete Curb & Gutter 31-Inch	LF	150.000	150.000
0034	601.0553	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D	LF	150.000	150.000
0036	602.0410	Concrete Sidewalk 5-Inch	SF	300.000	300.000
0038	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,775.000	1,775.000
0040	603.8125	Concrete Barrier Temporary Precast Installed	LF	1,775.000	1,775.000
0042	606.0200	Riprap Medium	CY	11.000	11.000
0044	608.0312	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	58.000	58.000
0046	611.0535	Manhole Covers Type J-Special	EACH	1.000	1.000
0048	611.0642	Inlet Covers Type MS	EACH	3.000	3.000
0050	611.3901	Inlets Median 1 Grate	EACH	3.000	3.000
0052	611.8110	Adjusting Manhole Covers	EACH	1.000	1.000
0054	616.0206	Fence Chain Link 6-FT	LF	653.000	653.000
0056	616.0329	Gates Chain Link (width) 01. 8-ft	EACH	3.000	3.000
0058	616.0329	Gates Chain Link (width) 02. 10-ft	EACH	1.000	1.000
0060	616.0329	Gates Chain Link (width) 03. 12-ft	EACH	3.000	3.000
0062	616.0700.S	Fence Safety	LF	953.000	953.000
0064	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1090-03-78	EACH	1.000	1.000
0066	619.1000	Mobilization	EACH	1.000	1.000
0068	623.0200	Dust Control Surface Treatment	SY	2,578.000	2,578.000
0070	625.0100	Topsoil	SY	50,334.000	50,334.000
0072	627.0200	Mulching	SY	14,080.000	14,080.000
0074	628.1504	Silt Fence	LF	7,873.000	7,873.000
0076	628.1520	Silt Fence Maintenance	LF	395.000	395.000
0078	628.1905	Mobilizations Erosion Control	EACH	9.000	9.000
0080	628.1910	Mobilizations Emergency Erosion Control	EACH	6.000	6.000
0082	628.2004	Erosion Mat Class I Type B	SY	35,627.000	35,627.000
0084	628.2008	Erosion Mat Urban Class I Type B	SY	628.000	628.000
0086	628.6505	Soil Stabilizer Type A	ACRE	17.000	17.000
0088	628.7005	Inlet Protection Type A	EACH	35.000	35.000
0090	628.7015	Inlet Protection Type C	EACH	10.000	10.000
0092	628.7020	Inlet Protection Type D	EACH	43.000	43.000
0094	628.7555	Culvert Pipe Checks	EACH	2.000	2.000
0096	628.7560	Tracking Pads	EACH	7.000	7.000
0098	628.7570	Rock Bags	EACH	100.000	100.000

Estimate Of Quantities

1090-03-78

Line	Item	Item Description	Unit	Total	Qty
0100	629.0210	Fertilizer Type B	CWT	24.000	24.000
0102	630.0120	Seeding Mixture No. 20	LB	965.000	965.000
0104	630.0140	Seeding Mixture No. 40	LB	256.000	256.000
0106	630.0160	Seeding Mixture No. 60	LB	9.000	9.000
0108	630.0200	Seeding Temporary	LB	1,361.000	1,361.000
0110	630.0500	Seed Water	MGAL	1,134.000	1,134.000
0112	633.5200	Markers Culvert End	EACH	5.000	5.000
0114	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	14.000	14.000
0116	635.0200	Sign Supports Structural Steel HS	LB	2,700.000	2,700.000
0118	637.2210	Signs Type II Reflective H	SF	189.000	189.000
0120	638.2101	Moving Signs Type I	EACH	3.000	3.000
0122	638.2102	Moving Signs Type II	EACH	5.000	5.000
0124	638.3000	Removing Small Sign Supports	EACH	14.000	14.000
0126	638.3100	Removing Structural Steel Sign Supports	EACH	4.000	4.000
0128	642.5401	Field Office Type D	EACH	1.000	1.000
0130	643.0300	Traffic Control Drums	DAY	12,477.000	12,477.000
0132	643.0420	Traffic Control Barricades Type III	DAY	1,213.000	1,213.000
0134	643.0705	Traffic Control Warning Lights Type A	DAY	2,426.000	2,426.000
0136	643.0715	Traffic Control Warning Lights Type C	DAY	405.000	405.000
0138	643.0800	Traffic Control Arrow Boards	DAY	181.000	181.000
0140	643.0900	Traffic Control Signs	DAY	30,795.000	30,795.000
0142	643.0910	Traffic Control Covering Signs Type I	EACH	4.000	4.000
0144	643.0920	Traffic Control Covering Signs Type II	EACH	45.000	45.000
0146	643.1050	Traffic Control Signs PCMS	DAY	384.000	384.000
0148	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	871.000	871.000
0150	643.4100	Traffic Control Interim Lane Closure	EACH	20.000	20.000
0152	643.5000	Traffic Control	EACH	1.000	1.000
0154	645.0120	Geotextile Type HR	SY	22.000	22.000
0156	646.2020	Marking Line Epoxy 6-Inch	LF	600.000	600.000
0158	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	50.000	50.000
0160	646.4020	Marking Line Epoxy 10-Inch	LF	15.000	15.000
0162	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	900.000	900.000
0164	646.4050	Marking Line Grooved Permanent Tape 10-Inch	LF	2,225.000	2,225.000
0166	646.5020	Marking Arrow Epoxy	EACH	5.000	5.000
0168	646.5220	Marking Symbol Epoxy	EACH	3.000	3.000
0170	646.6120	Marking Stop Line Epoxy 18-Inch	LF	35.000	35.000
0172	646.7120	Marking Diagonal Epoxy 12-Inch	LF	35.000	35.000
0174	646.7220	Marking Chevron Epoxy 24-Inch	LF	100.000	100.000
0176	690.0250	Sawing Concrete	LF	54.000	54.000
0178	SPV.0060	Special 01, Survey Project 1090-03-78	EACH	1.000	1.000
0180	SPV.0060	Special 02. Traffic Control Close-Open Freeway Entrance Ramp	EACH	10.000	10.000
0182	SPV.0060	Special 03. Utility Line Opening	EACH	11.000	11.000
0184	SPV.0060	Special 04. Adjusting Water Valve Boxes	EACH	1.000	1.000
0186	SPV.0075	Special 01. Pavement Cleanup Project 1090-03-78	HRS	120.000	120.000

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GRUBBING

							201.0205			
							GRUBBING			
CATEGORY	STAGE	ROADWAY	STATION	TO	STATION	OFFSET	STA	COMMENTS		
1000	1	<u>N-40-107/108</u>	125'EW+61	-	149'EW+05	RT	25			
			149'EW+05	-	175'EW+35	RT	25			
			STAGE 1 SUBTOTAL						50	
	2	<u>N-40-109</u>	203'EW+52	-	226'EW+79	LT	24			
			STAGE 2 SUBTOTAL						24	
			TOTAL						74	

REMOVING CURB & GUTTER

				204.0150 REMOVING CURB & GUTTER LF	COMMENTS
CATEGORY	STAGE	ROADWAY			
1000	1	<u>N-40-107/108</u>	UNDISTRIBUTED	200	REMOVE CURB & GUTTER IF DAMAGED DURING CONSTRUCTION
		STAGE 1 SUBTOTAL		200	
	2	<u>N-40-109</u>	UNDISTRIBUTED	100	REMOVE CURB & GUTTER IF DAMAGED DURING CONSTRUCTION
		STAGE 2 SUBTOTAL		100	
		TOTAL		300	

REMOVING CONCRETE SIDEWALK

			204.0155 REMOVING CONCRETE SIDEWALK SY		COMMENTS
CATEGORY	STAGE	ROADWAY			
1000	1	<u>N-40-107/108</u>	UNDISTRIBUTED	64	REMOVE SIDEWALK IF DAMAGED DURING CONSTRUCTION
STAGE 1 SUBTOTAL				64	
TOTAL				64	

REMOVING FENCE

								204.0170 REMOVING FENCE LF	COMMENTS
CATEGORY	STAGE	ROADWAY	STATION	OFFSET	TO	STATION	OFFSET		
1000	1	<u>N-40-107</u>	126'EW+30	167' RT		149'EW+23	104' RT	2,300	REMOVE CHAINLINK OR SAFETY FENCE AFTER N-40-107 CONSTRUCTION COMPLETED
		<u>N-40-108</u>	149'EW+81	106' RT		175'EW+49	255' RT	2,647	REMOVE CHAINLINK OR SAFETY FENCE AFTER N-40-107 CONSTRUCTION COMPLETED
STAGE 1 SUBTOTAL								4,947	
	2	<u>N-40-109</u>	203'EW+49	61' RT		206'EW+10	93' RT	343	REMOVE CHAINLINK OR SAFETY FENCE AFTER N-40-107 CONSTRUCTION COMPLETED
			206'EW+10	93' RT		213'EW+50	105' RT	740	REMOVE SAFETY FENCE AFTER N-40-109 CONSTRUCTION COMPLETED
			213'EW+50	105' RT		227'EW+09	210' RT	1,384	REMOVE CHAINLINK OR SAFETY FENCE AFTER N-40-107 CONSTRUCTION COMPLETED
STAGE 2 SUBTOTAL								2,467	
TOTAL								7,414	

SAW CUTTING ITEMS

				690.0250	
				SAWING	
				CONCRETE	
CATEGORY	STAGE	ROADWAY		LF	COMMENTS
1000	1	N-40-107/108			
		UNDISTRIBUTED		42	SAWCUT PRIOR TO REMOVING ANY DAMAGED SIDEWALK AND CURB AND GUTTER
		STAGE 1 SUBTOTAL		42	
	2	N-40-109			
		UNDISTRIBUTED		12	SAWCUT PRIOR TO REMOVING ANY DAMAGED CURB AND GUTTER
		STAGE 2 SUBTOTAL		12	
		CONTRACT TOTAL		54	

CONCRETE CURB & GUTTER ITEMS

				416.0610	601.0331	601.0553	
				DRILLED	CONCRETE	CONCRETE	
				TIE	CURB & GUTTER	CURB & GUTTER	
				BARS	31-INCH	4-INCH SLOPED	
				EACH	LF	36-INCH	
CATEGORY	STAGE	LOCATION				TYPE D	COMMENTS
1000	1	N-40-107/N-40-108					
		UNDISTRIBUTED		24	100	100	REPLACE CURB & GUTTER IF DAMAGED DURING CONSTRUCTION
		STAGE 1 SUBTOTAL		24	100	100	
1000	2	N-40-109					
		UNDISTRIBUTED		12	50	50	REPLACE CURB & GUTTER IF DAMAGED DURING CONSTRUCTION
		STAGE 2 SUBTOTAL		12	50	50	
		TOTAL		36	150	150	

SIDEWALK ITEMS

				602.0410	
				CONCRETE	
				SIDEWALK	
				5-INCH	
				SF	
CATEGORY	STAGE	LOCATION			
1000	1	N-40-107/N-40-108			
		UNDISTRIBUTED		300	
		STAGE 1 SUBTOTAL		300	
		TOTAL		300	

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PAVEMENT MARKING ITEMS

CATEGORY	STAGE	LOCATION	646.2020		646.2040		646.4020	646.4040			646.4050			646.5020	646.5220	646.6120	646.7120	646.7220
			MARKING LINE EPOXY 6-INCH		MARKING LINE GROOVED WET REF EPOXY 6-INCH		MARKING LINE EPOXY 10-INCH	MARKING LINE GROOVED WET REF EPOXY 10-INCH			MARKING LINE GROOVED PERMENANT TAPE 10-INCH			MARKING ARROW EPOXY	MARKING SYMBOL	MARKING STOP LINE EPOXY	MARKING DIAGONAL EPOXY	MARKING CHEV/RON EPOXY
					12.5 FT LINE 37.5 SKIP		3 FT LINE 9 FT SKIP	3 FT LINE 9 FT SKIP			3' LINE 9' SKIP			TYPE 2/3/4	EPOXY	18-INCH	12-INCH	24-INCH
			WHITE LF	YELLOW LF	BLACK LF	WHITE LF	WHITE LF	WHITE LF	WHITE LF	BLACK LF	WHITE LF	WHITE LF	BLACK LF	WHITE EACH	WHITE EACH	WHITE LF	WHITE LF	WHITE LF
1000	1	N-40-107/N-40-108 UNDISTRIBUTED	200	200	25	25	15	200	200	200	625	800	800	1	3	35	20	50
STAGE 1 SUBTOTAL			400		25	25	15		600			2,225		1	3	35	20	50
1000	2	N-40-109 UNDISTRIBUTED	100	100	--	--	--	100	100	100	--	--	--	4	--	--	15	50
STAGE 2 SUBTOTAL			200		--	--	--		300			--		4	--	--	15	50
TOTAL			600		50		15		900			2,225		5	3	35	35	100

CULVERT ITEMS

								522.0112	522.1012	633.5200		
								CULVERT PIPE REINFORCED CONCRETE CLASS III	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE	MARKERS CULVERT		
CATEGORY	INLET END			DISCHARGE END			SLOPE	12-INCH LF	12-INCH EACH	END EACH	COMMENTS	
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV						
PROJECT ID 1090-03-78												
IH 41 SB/ 43 NB/ 894 EB												
1000	205EW+24.29	72.80' RT	770.50	205EW+18.53	92.11' RT	769.93	7.10%	8	2	2	UNDER NOISE BARRIER N-40-109	
TOTAL								8	2	2		

CULVERT GENERAL NOTES

- 1)
- 2)
- 3)
- 4)
- STATION OFFSETS SHOWN ARE TO THE END OF APRON ENDWALLS
- JOINT TIES FOR CONCRETE PIPE SHALL BE PROVIDED AT ALL
- CONCRETE APRON ENDWALLS. THE COST OF THE JOINT TIES SHALL
- BE INCIDENTAL TO THE COST OF THE PIPE
- GRANULAR BACKFILL IS INCIDENTAL TO THE COST OF THE PIPE
- PIPE LENGTH IS FROM END OF PIPE TO END OF PIPE AND DOES NOT
- INCLUDE LENGTH OF A PRON ENDWALL

STORM SEWER ITEMS

																			*	*				
																			608.0312	522.1012	633.5200			
																			STORM SEWER PIPE			APRON ENDWALLS		MARKERS
																			REINFORCED CONCRETE	FOR CULVERT PIPE		CULVERT		
																			CLASS III	REINFORCED CONCRETE				
CATEGORY	STRUCTURE	STATION	OFFSET		INLETS	MANHOLE	INLET	ADJUSTING		STR	PIPE	FROM	TO	INVERT ELEVATION										
	NUMBER		FT		MEDIA N	COVERS	COVERS	MANHOLE		DEPTH	ID	STR	STR	INLET	DISCHARGE	SLOPE	12-INCH	12-INCH	END					
					1 GRA TE	TYPE J-	TYPE MS	COVERS		FT				ELEV	ELEV		LF	EACH	EACH					
PROJECT ID 1090-03-78																								
IH 41 SB/ 43 NB/ 894 EB																								
1000	101	143EW+95.93	147.44	RT	1	--	1	--	807.25	1.48	P102	101	109	805.58	804.98	3.35%	18	--	--					
1000	103	143EW+98.21	123.58	RT	--	--	--	--	--	--	--	OUTFALL	--	804.98	--	--	--	1	1					
1000	201	166EW+28.78	99.80	RT	1	--	1	--	775.40	1.85	P202	201	206	773.36	772.00	7.56%	18	--	--					
1000	203	166EW+28.81	75.72	RT	--	--	--	--	--	--	--	OUTFALL	--	772.00	--	--	--	1	1					
1000	304	214EW+68.13	112.99	RT	1	--	1	--	781.45	3.81	P305	304	309	777.45	776.74	7.28%	10	--	--					
1000	306	214EW+67.91	97.22	RT	--	--	--	--	--	--	--	OUTFALL	--	776.74	--	--	--	1	1					
1000	E307	212EW+52.21	84.61	RT	--	1	--	1	--	--	--	--	--	--	--	--	--	--	--					
SUBTOTAL					3	1	3	1											46	3	3			
1000	UNDISTRIBUTED				--	--	--	--											12	--	--			
TOTAL					3	1	3	1											58	3	3			

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RIPRAP ITEMS

606.0200 645.0120

CATEGORY	STAGE	LOCATION	STATION	OFFSET	PIPE SIZE	L FT	X FT	RIPRAP MEDIUM CY	GEOTEXTILE FABRIC TYPE HR SY
1000	1	<u>N-40-107</u>	27+23	30.4' LT	12-INCH	10.0	9.0	5	10
STAGE 1 SUBTOTAL								5	10
1000	2	<u>N-40-109</u>	21+14	21.8' LT	12-INCH	10.0	9.0	5	10
STAGE 2 SUBTOTAL								5	10
UNDISTRIBUTED								1	2
TOTALS								11	22

EROSION CONTROL ITEMS

616.0700.S 627.0200 628.1504 628.1520 628.1905 628.1910 628.2004 628.2008 628.6505 628.7005 628.7015 628.7020 628.7560 628.7555 628.7570

CATEGORY	STAGE	LOCATION	STATION	TO	STATION	FENCE SAFETY LF	MULCHING SY	SILT FENCE LF	SILT FENCE MAINTENANCE LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	EROSION MAT CLASS I TYPE B SY	EROSION MAT URBAN CLASS I TYPE B SY	SOIL STABILIZER TYPE A ACRE	INLET PROTECTION TYPE A EACH	INLET PROTECTION TYPE C EACH	INLET PROTECTION TYPE D EACH	TRACKING PADS EACH	CULVERT PIPE CHECKS EACH	ROCK BAGS EACH
1000	1	<u>N-40-107</u>	10+00	-	32+20	--	2,607	1,915	96	3	2	13,203	--	7	7	2	12	2	--	--
		<u>N-40-108</u>	10+00	-	35+15	--	4,199	2,067	104	3	2	9,034	502	6	9	3	11	2	--	--
		<u>UNDISTRIBUTED</u>				--	1,702	996	50	--	--	5,560	126	--	4	2	6	1	--	50
STAGE 1 SUBTOTAL						--	8,508	4,978	250	6	4	27,797	628	12	20	7	29	5	--	50
1000	2	<u>N-40-109</u>	10+00	-	32+90	762	4,457	2,316	116	3	2	6,264	--	4	12	2	11	1	1	--
		<u>UNDISTRIBUTED</u>				191	1,115	579	29	--	--	1,566	--	--	3	1	3	1	1	50
STAGE 2 SUBTOTAL						953	5,572	2,895	145	3	2	7,830	--	4	15	3	14	2	2	50
TOTAL						953	14,080	7,873	395	9	6	35,627	628	17	35	10	43	7	2	100

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RESTORATION ITEMS

						625.0100	629.0210	630.0120	630.0140	630.0160	630.0200	630.0500
						TOPSOIL	FERTILIZER	SEEDING MIXTURE	SEEDING MIXTURE	SEEDING MIXTURE	SEEDING	SEED
CATEGORY	STAGE	LOCATION	STATION	TO	STATION	SY	TYPE B	NO. 20	NO. 40	NO. 60	TEMPORARY	WATER
							CWT	LB	LB	LB	LB	MGAL
1000	1	<u>N-40-107</u>	10+00	-	32+20	15,810	9	357	47	--	427	356
		<u>N-40-108</u>	10+00	-	35+15	13,735	6	244	76	7	371	309
		<u>UNDISTRIBUTED</u>				7,387	4	151	31	2	200	167
		STAGE 1 SUBTOTAL				36,932	19	752	154	9	998	832
1000	2	<u>N-40-109</u>	10+00	-	32+90	10,721	4	170	81	--	290	241
		<u>UNDISTRIBUTED</u>				2,681	1	43	21	--	73	61
		STAGE 2 SUBTOTAL				13,402	5	213	102	--	363	302
		TOTAL				50,334	24	965	256	9	1,361	1,134

FENCING ITEMS

			616.0206	616.0329	616.0329	616.0329
			FENCE CHAIN LINK	GATES CHAIN LINK	GATES CHAIN LINK	GATES CHAIN LINK
CATEGORY	STAGE	LOCATION	6-FT	01. 8-FT	02. 10-FT	03. 12-FT
			LF	EACH	EACH	EACH
1000	1	<u>N-40-107</u>	54	1	1	1
		<u>N-40-108</u>	101	2	--	1
		STAGE 1 SUBTOTAL	155	3	1	2
	2	<u>N-40-109</u>	118	--	--	1
		STAGE 2 SUBTOTAL	118	--	--	1
		UNDISTRIBUTED	380	--	--	--
		TOTAL	653	3	1	3

DUST CONTROL

			623.0200
			DUST CONTROL
CATEGORY	STAGE	LOCATION	SURFACE TREATMENT
			SY
1000	1	<u>N-40-107</u>	740
		<u>N-40-108</u>	839
		SUBTOTALS	1,579
	2	<u>N-40-109</u>	764
		SUBTOTALS	764
		UNDISTRIBUTED	235
		TOTAL	2,578

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CPM PROGRESS SCHEDULE

		108.4400 CPM PROGRESS SCHEDULE EACH
CATEGORY	PROJECT	
1000	1090-03-78	1
TOTAL		1

FINISHING ROADWAY

			213.0100 FINISHING ROADWAY EACH
CATEGORY	STAGE	LOCATION	
1000	ALL	1090-03-78	1
TOTAL			1

MAINTENANCE AND REPAIR OF HAUL ROADS

			618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS EACH
CATEGORY	STAGE	LOCATION	
1000	ALL	1090-03-78	1
TOTAL			1

MOBILIZATION

			619.1000 MOBILIZATION EACH
CATEGORY	STAGE	LOCATION	
1000	ALL	1090-03-78	1
TOTAL			1

FIELD OFFICE

			642.5401 FIELD OFFICE TYPE D EACH
CATEGORY	STAGE	LOCATION	
1000	ALL	1090-03-78	1
TOTAL			1

SURVEY PROJECT

		SPV.0060.01 SURVEY PROJECT 1090-03-78 EACH
CATEGORY	LOCATION	
1000	1090-03-78	1
CONTRACT TOTAL		1

UTILITY LINE OPENING

					SPV.0060.03 UTILITY LINE OPENING EACH
CATEGORY	STAGE	LOCATION	STATION	UTILITY	
1000	2	N-40-109	212'EW+42	EX STORM SEWER	1
SUBTOTALS					1
UNDISTRIBUTED					10
TOTAL					11

ADJUSTING WATER VALVE BOXES

			SPV.0060.04 ADJUSTING WATER VALVE BOXES EACH
CATEGORY	STATION	OFFSET	
8000	149'EW+84	137' RT	1
CONTRACT TOTAL			1

PAVEMENT CLEANUP

		SPV.0075.01 PAVEMENT CLEANUP PROJECT 1090-03-78 HRS
CATEGORY	LOCATION	
1000	N-40-107	40
	N-40-108	40
STAGE 1 SUBTOTAL		80
1100	N-40-109	40
STAGE 2 SUBTOTAL		40
TOTAL		120

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TYPE I AND II PERMANENT SIGNING

PROJECT 1090-03-78

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	634.0618	638.2102	638.3000	531.1100	531.1140	531.2024	635.0200	638.2101	638.3100	REMARKS / NEW SIGN LOCATION
			W [IN.]	x	H [IN.]	SIGNS TYPE II REFLECTIVE H [SF]	POSTS WOOD 4 X 6 INCH X 18 FT EACH	MOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	CONCRETE MASONRY ANCILLARY STRUCTURES TYPE NS CY (EST)	STEEL REINFORCEMENT HS ANCILLARY STRUCTURES TYPE NS LB (EST)	DRILLED SHAFT 24-INCH LF	SIGN SUPPORTS STRUCTURAL STEEL HS LBS (EST)	MOVING SIGNS TYPE I EACH	REMOVING STRUCTURAL STEEL SIGN SUPPORTS EACH	
1	D9-54 (2S)	S. 72ND STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
2	D9-54 (2S)	S. 72ND STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
3	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
4	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
5	D9-54 (2S)	7020 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
6	D9-54 (2S)	7020 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
7	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
8	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
9	D9-54 (2S)	6909 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
10	D9-54 (2S)	6909 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
11	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
12	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
13	D9-54 (2S)	6370 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
14	D9-54 (2S)	6370 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
15	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
16	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
17	D9-54 (2S)	6220 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
18	D9-54 (2S)	6220 VAN NORMAN	18	x	24	3.0	--	--	--	--	--	--	--	--	--	

(CONTINUED ON NEXT SHEET)

PROJECT NO: 1090-03-78

HWY: IH 41

COUNTY: MILWAUKEE

MISCELLANEOUS QUANTITIES

SHEET

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3

TYPE I AND II PERMANENT SIGNING

PROJECT 1090-03-78

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	634.0618	638.2102	638.3000	531.1100	531.1140	531.2024	635.0200	638.2101	638.3100	REMARKS / NEW SIGN LOCATION
			W [IN.]	x	H [IN.]	SIGNS TYPE II REFLECTIVE H [SF]	POSTS WOOD 4 X 6 INCH X 18 FT EACH	MOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	CONCRETE MASONRY ANCILLARY STRUCTURES TYPE NS CY (EST)	STEEL REINFORCEMENT HS ANCILLARY STRUCTURES TYPE NS LB (EST)	DRILLED SHAFT 24-INCH LF	SIGN SUPPORTS STRUCTURAL STEEL HS LBS (EST)	MOVING SIGNS TYPE I EACH	REMOVING STRUCTURAL STEEL SIGN SUPPORTS EACH	
19	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
20	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
21	D9-54 (2S)	S. 61ST STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
22	D9-54 (2S)	S. 61ST STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
23	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
24	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
25	D1-60	60th St - NORTH - SOUTH	90	x	24	15.0	2	--	2	--	--	--	--	--	--	REMOVE SIGN FOR N-40-108 CONSTRUCTION. RE-INSTALL AFTER N-40-108 COMPLETED
26	--	Historic Downtown Greenfield RIGHT ARROW	66	x	36	16.5	2	--	2	--	--	--	--	--	--	REMOVE SIGN FOR N-40-108 CONSTRUCTION. RE-INSTALL AFTER N-40-108 COMPLETED
27	R5-1A	WRONG WAY	42	x	30	8.8	1	--	1	--	--	--	--	--	--	REMOVE SIGN FOR N-40-108 CONSTRUCTION. RE-INSTALL AFTER N-40-108 COMPLETED
28	W3-3	--	36	x	36	9.0	1	--	1	--	--	--	--	--	--	REMOVE SIGN FOR N-40-108 CONSTRUCTION. RE-INSTALL AFTER N-40-108 COMPLETED
29	D9-54 (2S)	S. 50TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
30	D9-54 (2S)	S. 50TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
31	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
32	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
33	N/A	Alverno College EXIT 8A-B	192	x	60	--	--	--	--	2.0	220	16	1,100	1	2	W8X21, 2 POSTS - 16' TOTAL (A3-1.20)
34	D9-54 (2S)	S. 49TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
35	D9-54 (2S)	S. 49TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
36	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL

(CONTINUED ON NEXT SHEET)

PROJECT NO: 1090-03-78

HWY: IH 41

COUNTY: MILWAUKEE

MISCELLANEOUS QUANTITIES

SHEET

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E

3

TYPE I AND II PERMANENT SIGNING

PROJECT 1090-03-78

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	634.0618	638.2102	638.3000	531.1100	531.1140	531.2024	635.0200	638.2101	638.3100	REMARKS / NEW SIGN LOCATION
			W [IN.]	x x	H [IN.]	SIGNS TYPE II REFLECTIVE H [SF]	POSTS WOOD 4 X 6 INCH X 18 FT EACH	MOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	CONCRETE MASONRY ANCILLARY STRUCTURES TYPE NS CY (EST)	STEEL REINFORCEMENT HS ANCILLARY STRUCTURES TYPE NS LB (EST)	DRILLED SHAFT 24-INCH LF	SIGN SUPPORTS STRUCTURAL STEEL HS LBS (EST)	MOVING SIGNS TYPE I EACH	REMOVING STRUCTURAL STEEL SIGN SUPPORTS EACH	
37	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
38	D9-54 (2S)	S. 48TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
39	D9-54 (2S)	S. 48TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
40	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
41	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
42	D9-54 (2S)	S. 47TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
43	D9-54 (2S)	S. 47TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
44	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
45	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
46	D9-54 (2S)	S. 46TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
47	D9-54 (2S)	S. 46TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
48	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
49	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
50	E4-1A	36 LOOMIS RD ARROW RIGHT	228	x	96	--	--	--	--	2.4	360	20	1,600	1	2	W12X26, 2 POSTS - 20' TOTAL (A3-1.20)
50A	E1-5P	EXIT 8 A-B	132	x	30	--	--	--	--	--	--	--	--	1	--	MOUNT ON SIGN 50
51	D9-54 (2S)	S. 45TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
52	D9-54 (2S)	S. 45TH STREET	18	x	24	3.0	--	--	--	--	--	--	--	--	--	
53	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL

(CONTINUED ON NEXT SHEET)

3

3

3

TYPE I AND II PERMANENT SIGNING

PROJECT 1090-03-78

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE			637.2210	634.0618	638.2102	638.3000	531.1100	531.1140	531.2024	635.0200	638.2101	638.3100	REMARKS / NEW SIGN LOCATION
			W [IN.]	x x	H [IN.]	SIGNS TYPE II REFLECTIVE H [SF]	POSTS WOOD 4 X 6 INCH X 18 FT EACH	MOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	CONCRETE MA S ONRY A NCILLARY STRUCTURES TYPE NS CY (EST)	STEEL REINFORCEMENT HS A NCILLARY STRUCTURES TYPE NS LB (EST)	DRILLED SHAFT 24-INCH LF	SIGN SUPPORTS STRUCTURAL STEEL HS LBS (EST)	MOVING SIGNS TYPE I EACH	REMOVING STRUCTURAL STEEL SIGN SUPPORTS EACH	
54	NONE	BLANK - IDENTIFIER BLADE	36	x	6	1.5	--	--	--	--	--	--	--	--	--	BLUE BACKGROUND - MOUNT ON WALL BRACKETS INCIDENTAL
55	D1-60	Loomis Rd - EAST - WEST	78	x	24	13.0	2	--	2	--	--	--	--	--	--	REMOVE SIGN FOR N-40-109 CONSTRUCTION. RE-INSTALL AFTER N-40-109 COMPLETED
56	D1-2	Alverno College Left Arrow	60	x	24	10.0	--	--	--	--	--	--	--	--	--	MOUNT ON SAME POSTS AS SIGN 55
57	R5-1A	WRONG WAY	42	x	30	8.8	1	--	1	--	--	--	--	--	--	MOUNT ON SAME POST AS SIGN 55
UNDISTRIBUTED	N/A	VARIES	VARIES			--	5	5	5	--	--	--	--	--	--	UNDISTRIBUTED TYPE II SIGN QUANTITIES. MOVE IF NEEDED FOR GRADING OR ACCESS
TOTALS						189.0	14	5	14	4.4	580	36	2,700	3	4	

3

TRAFFIC CONTROL DETOUR ITEMS

CATEGORY	STAGE	ROADWAY	DETOUR DURATION DAYS	643.0900		643.0920		643.1050	
				TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL COVERING SIGNS TYPE II		TRAFFIC CONTROL SIGNS PCMS	
				EACH**	DAY	EACH**	EACH**	DAY	
				DETOUR					
1000	1	IH 41/43 NB/894 EB ENTRANCE RAMP FROM CTH U/ S. 76TH STREET	80	216	17,280	16	2	174	
1000	1	IH 41/43 NB/894 EB EXIT RAMP TO S. 60TH STREET	80	26	2,080	--	1	87	
1000	2	IH 41/43 NB/894 EB EXIT RAMP TO WIS 36/W. LOOMIS ROAD	54	33	1,782	--	1	61	
1000	2	IH 41/43 NB/894 EB ENTRANCE RAMP FROM S. 60TH STREET	20	120	2,400	21	1	27	
UNDISTRIBUTED					2,355	4	35		
SUBTOTAL					25,897	41	384		
CONTRACT TOTAL					25,897	41	384		

* ADDITIONAL QUANTITIES ELSEWHERE
** FOR INFORMATION ONLY
NOTES: PLACE PCMS SIGNS WITH CLOSURE DATES 7 DAYS PRIOR TO FULL CLOSURES

TRAFFIC CONTROL CLOSURE ITEMS

CATEGORY	STAGE	LOCATION	643.4100	SPV.0060.02
			TRAFFIC CONTROL INTERIM LANE CLOSURE EACH	TRAFFIC CONTROL CLOSE-OPEN FREEWAY ENTRANCE RAMP EACH
1000	ALL	VARIOUS	20	10
TOTAL			20	10

TEMPORARY PAVEMENT MARKING

CATEGORY	STAGE	LOCATION	643.3180
			TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH WHITE LF
1000	1	S. 60TH ST EXIT RAMP	860
1000	2	LOOMIS RD EXIT RAMP	871
TOTAL			871

TRAFFIC CONTROL

CATEGORY	STAGE	LOCATION	643.5000
			TRAFFIC CONTROL EACH
1000	ALL	1090-03-78	1
TOTAL			1

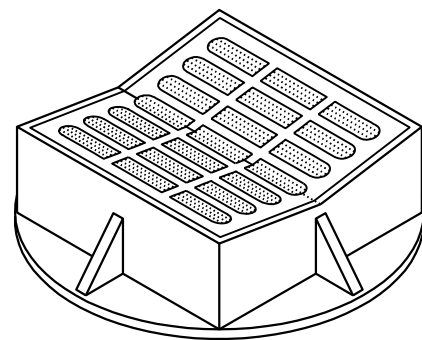
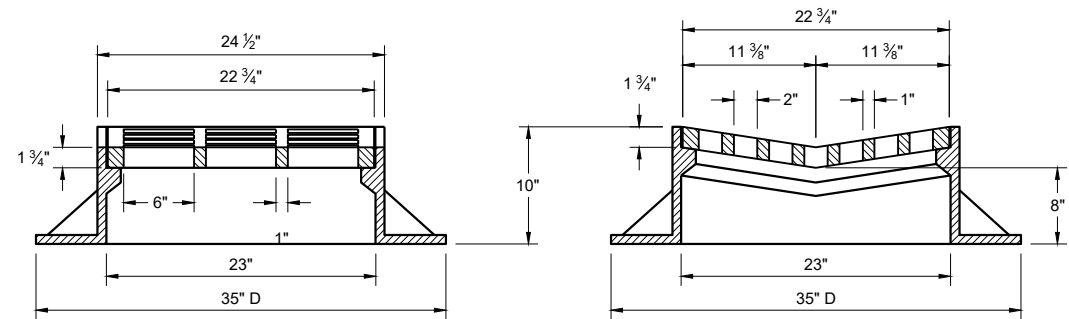
TEMPORARY CONCRETE BARRIER ITEMS

CATEGORY	STAGE	LOCATION	STATION TO	STATION	OFFSET	603.8000	603.8125
						CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	CONCRETE BARRIER TEMPORARY INSTALLED
1000	2	IH 41 SB/43 NB/894 EB	204+53 EW	-	222+28 EW	RT	1775
TOTAL						1775	1775

TRAFFIC CONTROL STAGING ITEMS																		
CATEGORY	ROADWAY	STAGE DURATION DAYS	643.0300		643.0420		643.0705		643.0715		643.0800		*		643.0910		*	
			TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL ARROW BOARDS		TRAFFIC CONTROL SIGNS		TRAFFIC COVERING SIGNS TYPE I		TRAFFIC COVERING SIGNS TYPE II	
			EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY
			EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY	EACH**	DAY
1000	STAGE 1																	
	<u>N-40-107</u>	80	42	3,360	4	320	8	640	--	--	1	80	13	1,040	--	--		
	<u>N-40-108</u>	80	56	4,480	4	320	8	640	--	--	--	--	14	1,120	1	1		
	<u>S. 68TH ST</u>	80	26	2,080	--	--	--	--	--	--	--	--	6	480	--	--		
	<u>UNDISTRIBUTED</u>			992		64		128		120		8		264	1	1		
	STAGE 1 SUBTOTAL			10,912		704		1,408		120		88		2,904	2	2		
1000	STAGE 2	54																
	<u>N-40-109</u>		18	972	8	432	16	864	--	--	1	54	28	1,512	1	1		
	<u>UNDISTRIBUTED</u>			98		44		88		120		6		152	1	1		
	STAGE 2 SUBTOTAL			1,070		476		952		120		60		1,664	2	2		
1000	STAGE 3	30																
	<u>RESTORATION - N-40-107/108/109</u>		15	450	1	30	2	60	5	150	1	30	10	300	--	--		
	<u>UNDISTRIBUTED</u>			45		3		6		15		3		30	--	--		
	STAGE 3 SUBTOTAL			495		33		66		165		33		330	--	--		
CONTRACT TOTAL				12,477		1,213		2,426		405		181		4,898	4	4		
* ADDITIONAL QUANTITIES ELSEWHERE																		
** FOR INFORMATION ONLY																		

Standard Detail Drawing List

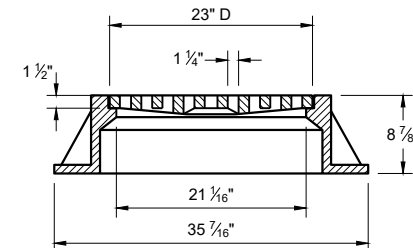
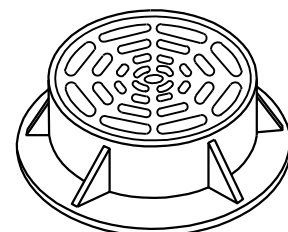
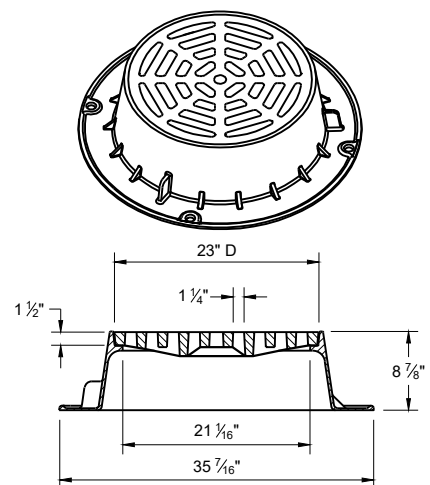
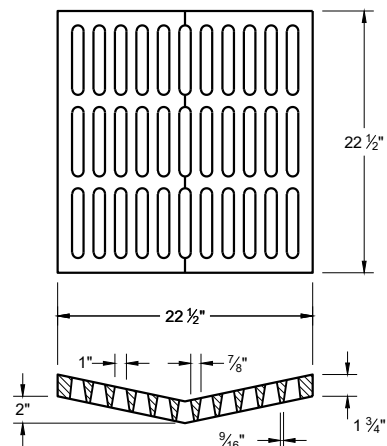
08A05-21B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-21E	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08C08-03	INLETS MEDIAN 1 AND 2 GRATE
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
14B07-16A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16M	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-16N	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15B03-15A	FENCE CHAIN LINK
15B03-15B	FENCE CHAIN LINK
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09D	ON RAMP LANE CLOSURE
15C02-09E	OFF RAMP LANE CLOSURE
15C02-09G	TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE
15C02-09H	MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING
15C07-15A	PAVEMENT MARKING SYMBOLS
15C07-15B	PAVEMENT MARKING WORDS
15C07-15C	PAVEMENT MARKING ARROWS
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C31-07A	PAVEMENT MARKING EXIT RAMP AND PARALLEL EXIT RAMP
15C31-07C	PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP
15D12-13A	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-06	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D50-03A	TRAFFIC CONTROL, ADDED LANE CLOSURE WITHOUT LANE SHIFT



TYPE "B"

**ALTERNATIVE GRATE FOR
TYPE "B" COVER**

USE WHERE PEDESTRIAN OF BICYCLE TRAFFIC IS POSSIBLE
NOTED AS TYPE B - A ON THE DRAINAGE TABLE



TYPE "C"

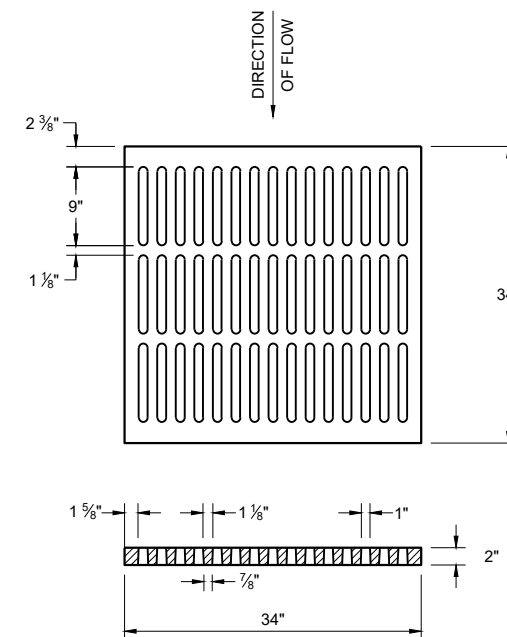
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

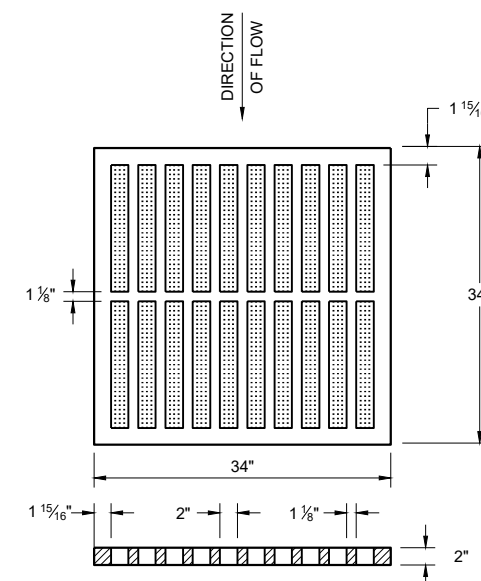
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



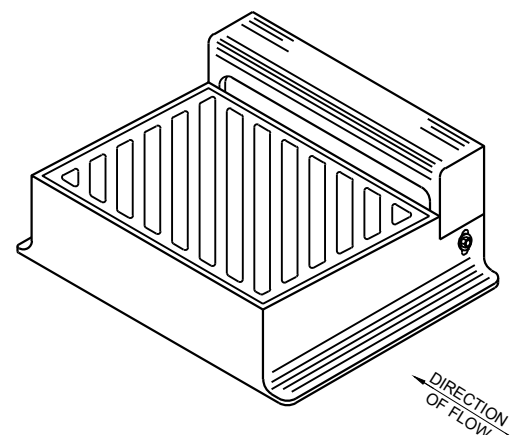
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OF BICYCLE TRAFFIC IS PERMITTED
NOTED AS TYPE MS-A ON THE DRAINAGE TABLE

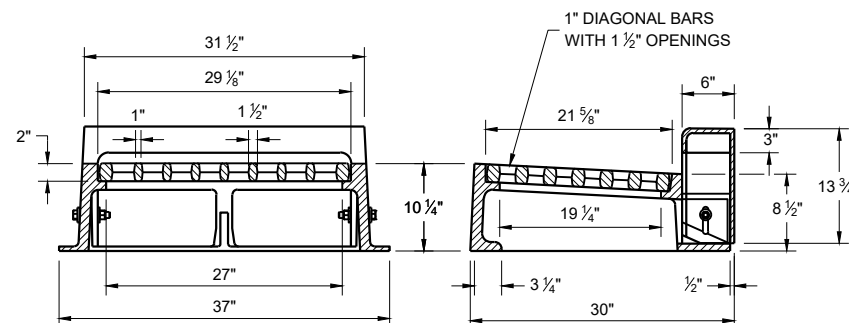


TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
NOTED AS TYPE MS ON THE DRAINAGE TABLE



DIAGONAL SLOTS SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.



TYPE "WM"

NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

**INLET COVERS
TYPES B, B-A, C,
MS, MS-A AND WM**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

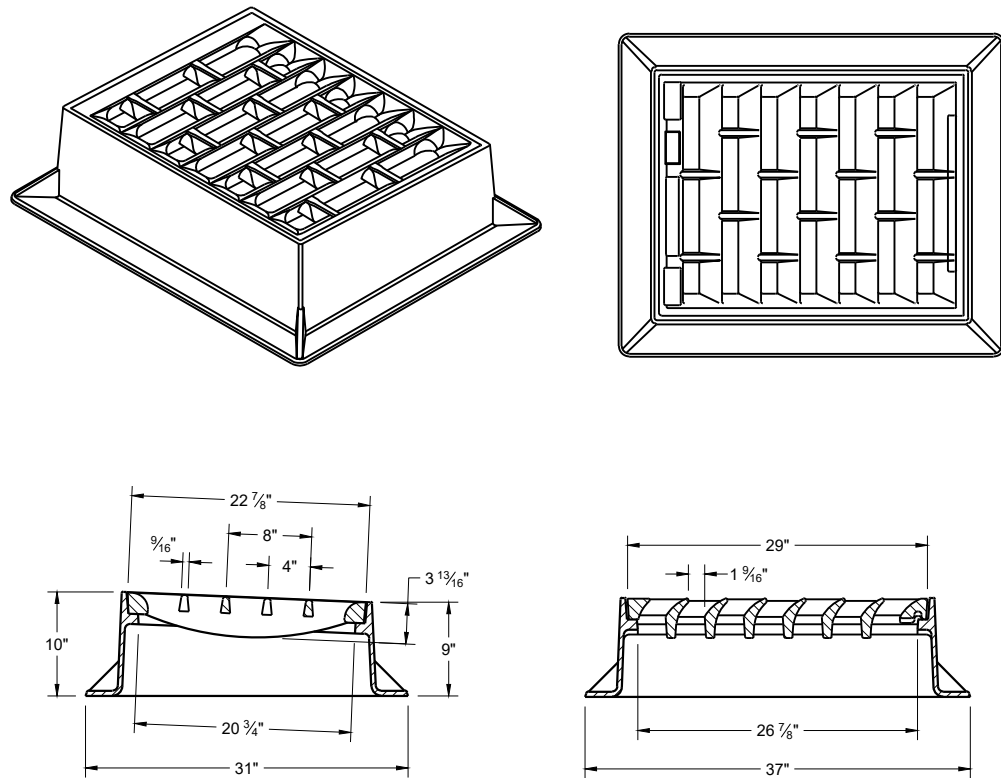
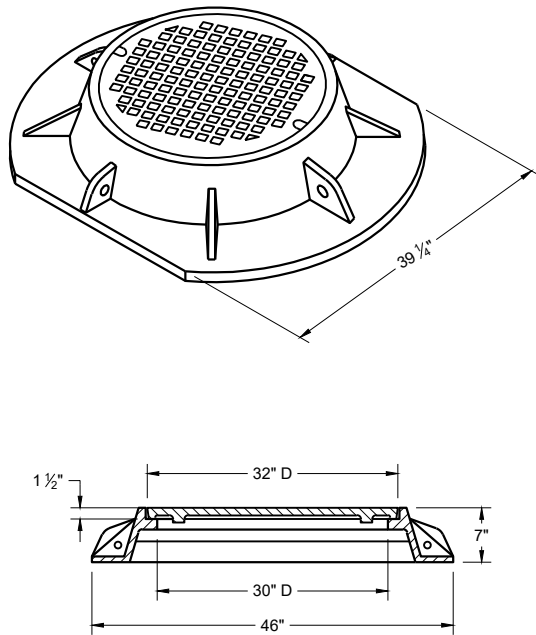
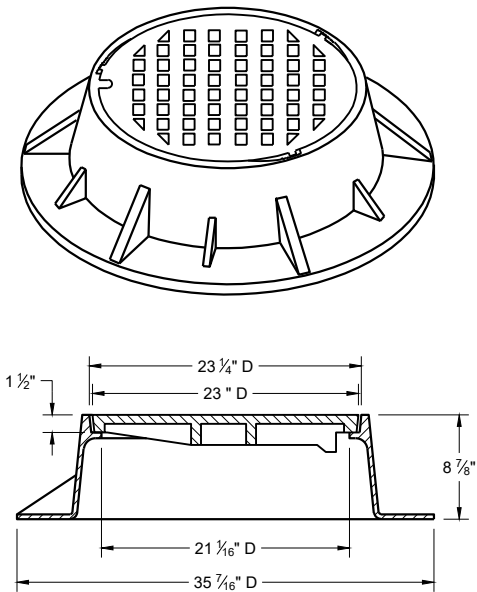
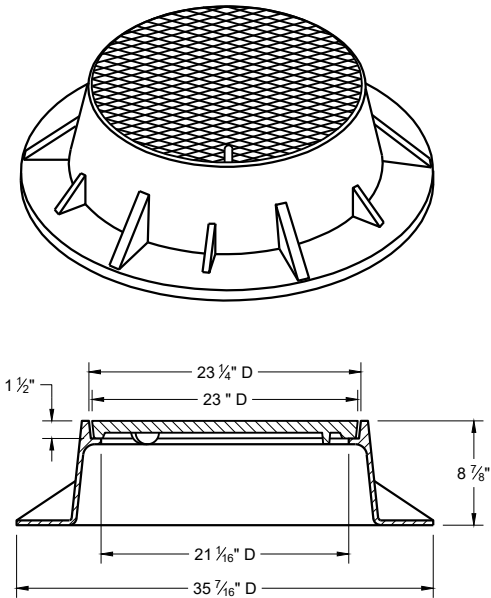
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR

GENERAL NOTES

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

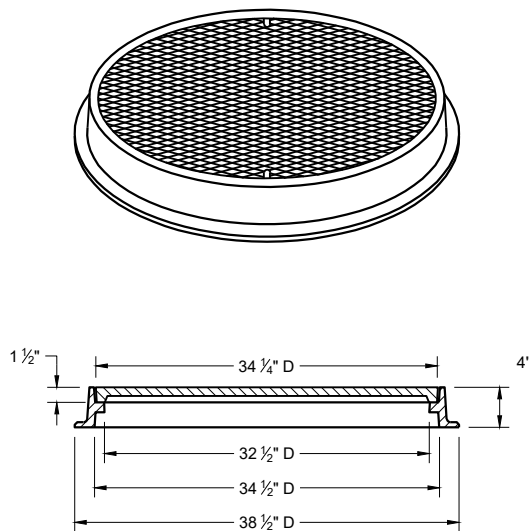
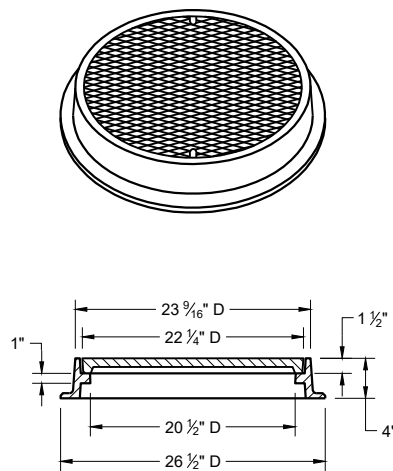
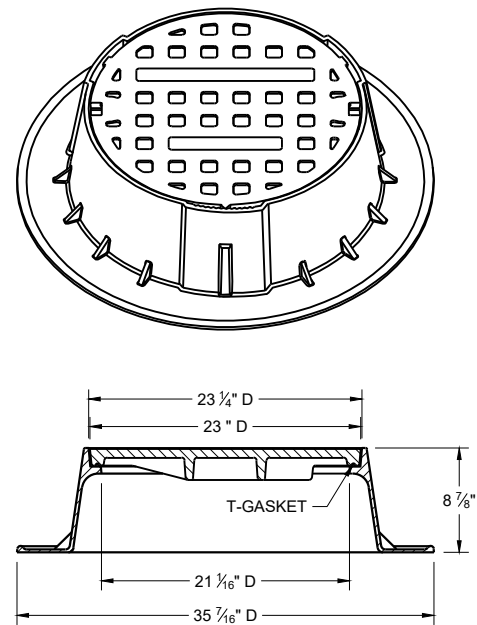
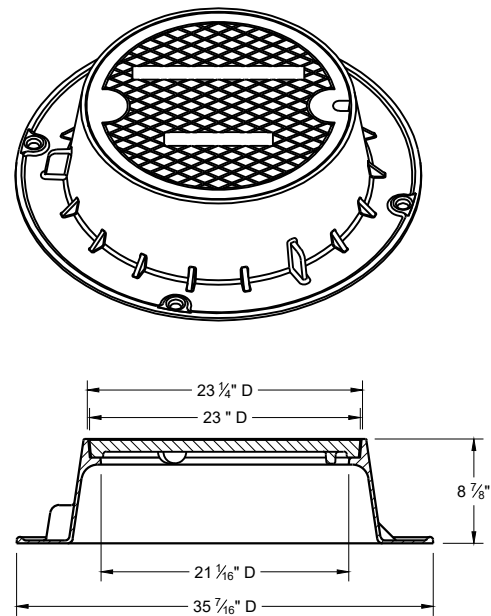
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



TYPE "K"

INLET COVER TYPE "BW"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

NOTE: EITHER CASTING IS ACCEPTABLE

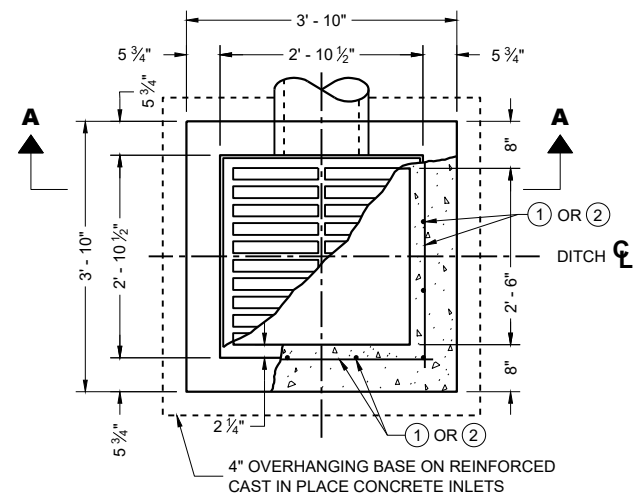
TYPE "L"

TYPE "M"

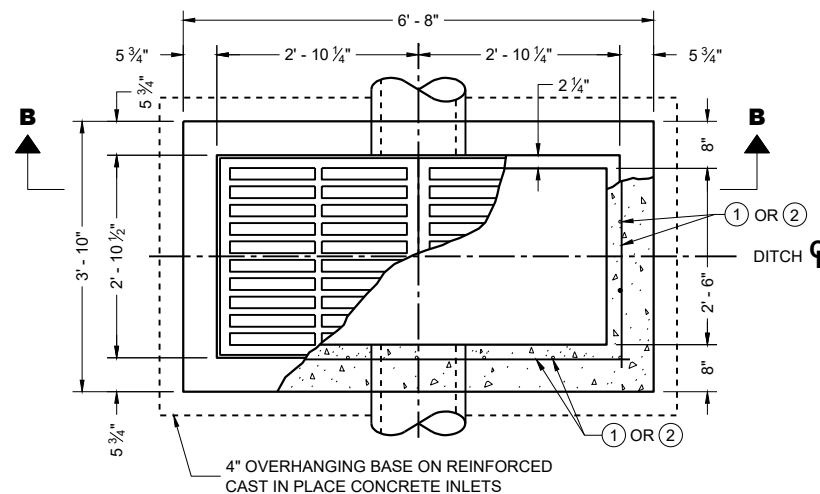
INLET COVERS TYPES BW
MANHOLE COVERS TYPES K,
J, J-S, L, AND M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

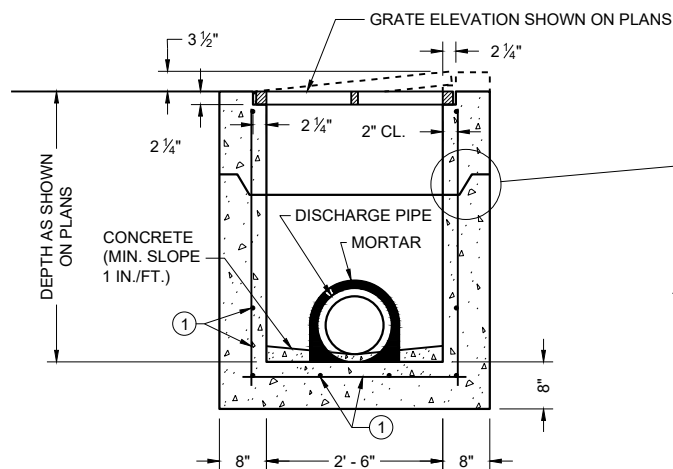
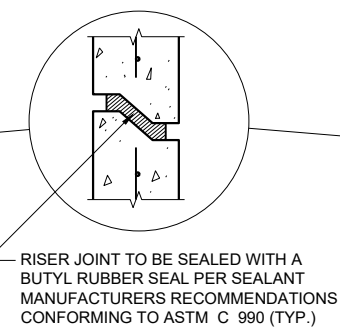
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



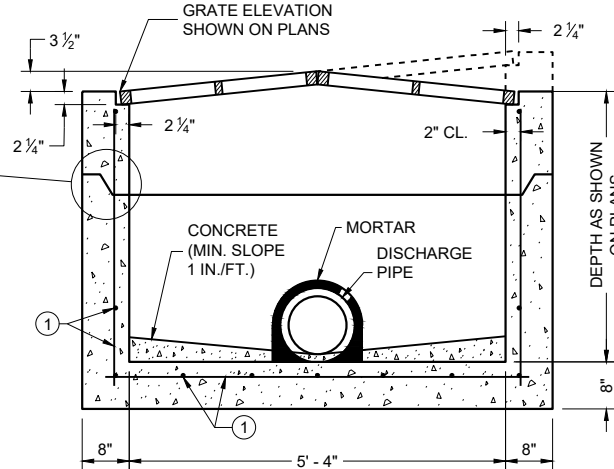
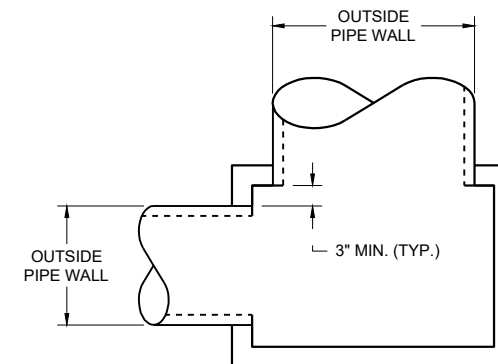
PLAN VIEW



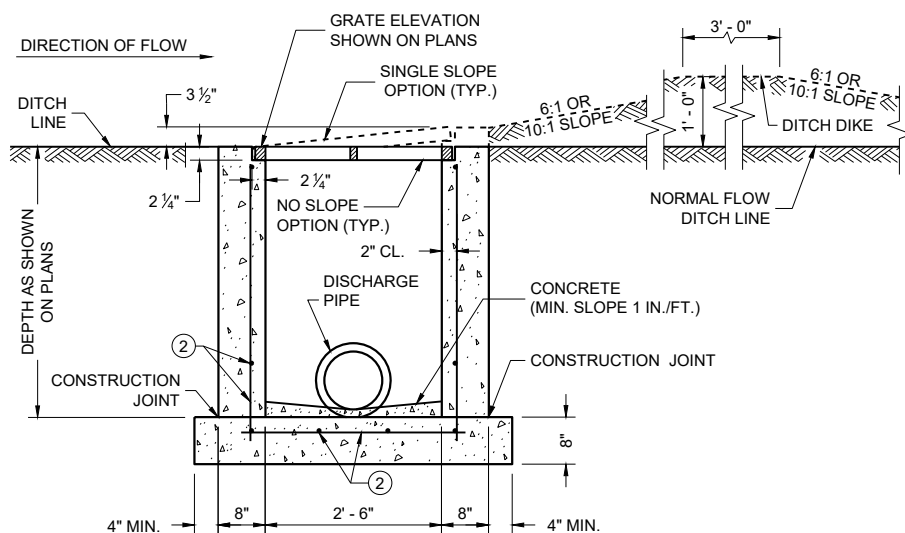
PLAN VIEW

PRECAST REINFORCED CONCRETE
SECTION A - A

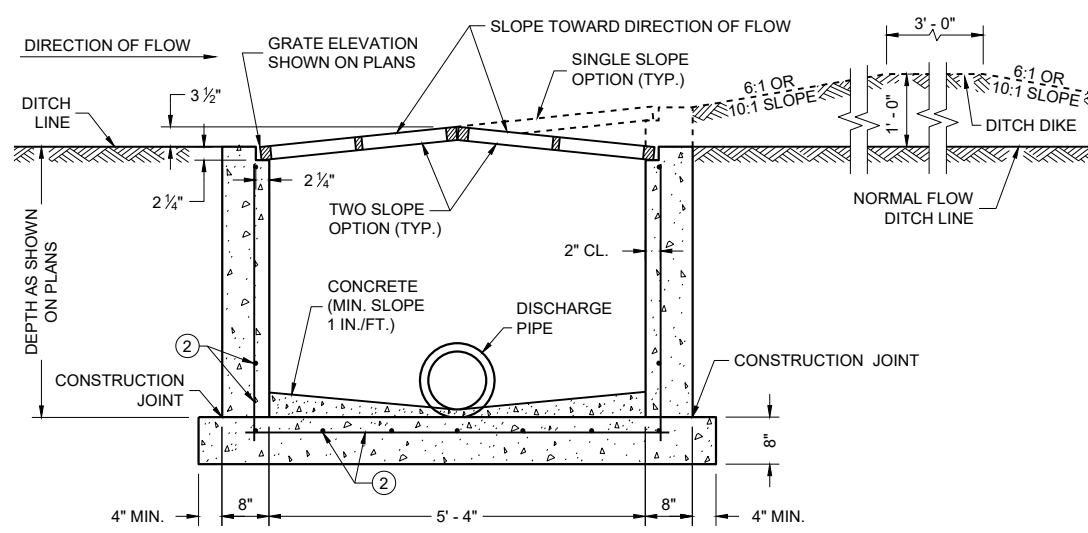
RISER JOINT TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP.)

PRECAST REINFORCED CONCRETE
SECTION B - B

DETAIL "A"

REINFORCED CAST IN PLACE CONCRETE
SECTION A - A

INLETS MEDIAN 1 GRATE

REINFORCED CAST IN PLACE CONCRETE
SECTION B - B

INLETS MEDIAN 2 GRATE

GENERAL NOTES

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

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

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

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

- ① FOR PRECAST INLETS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42

INLETS
MEDIAN 1 AND 2 GRATE

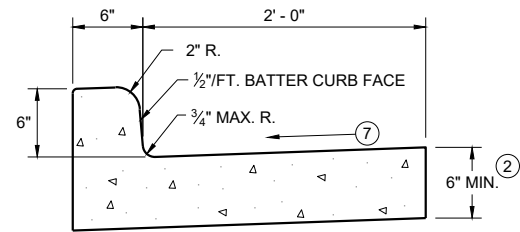
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

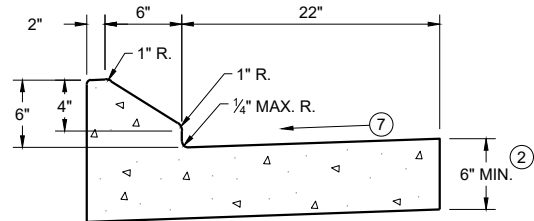
December 2023
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

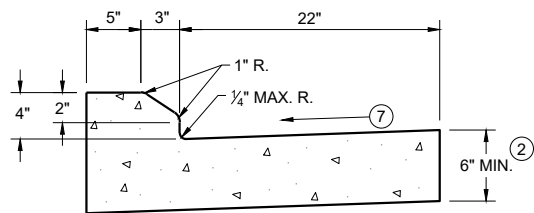
FHWA



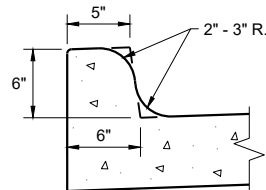
TYPES A^① & D



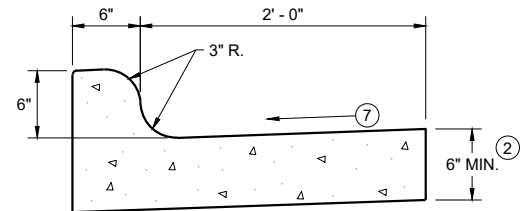
6" SLOPED CURB TYPES G^① & J



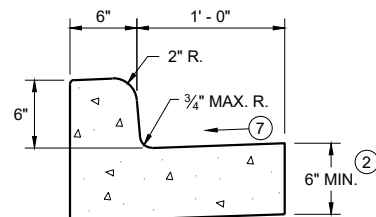
4" SLOPED CURB TYPES G^① & J



TYPES K^① & L
(OPTIONAL CURB SHAPE)

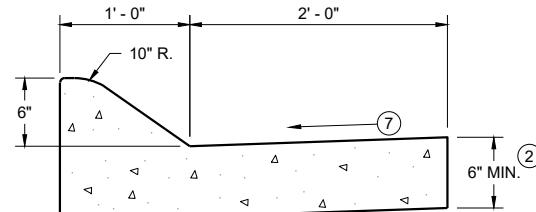


TYPES K^① & L
CONCRETE CURB AND GUTTER 30"

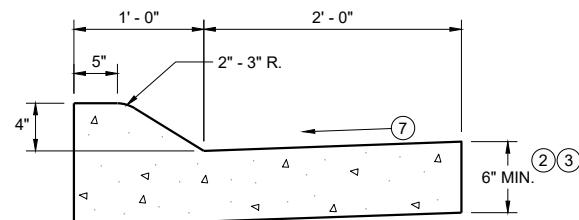


TYPES A^① & D

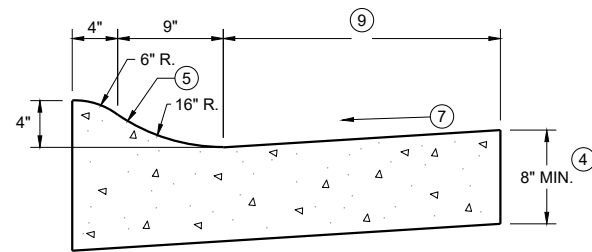
CONCRETE CURB AND GUTTER 18"



6" SLOPED CURB TYPES A^① & D

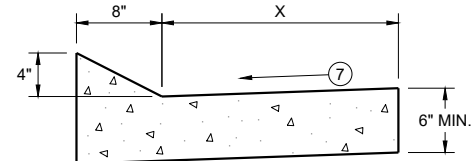


4" SLOPED CURB TYPES A^① & D
CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

TBT & TBTT	X
30"	22"
36"	28"

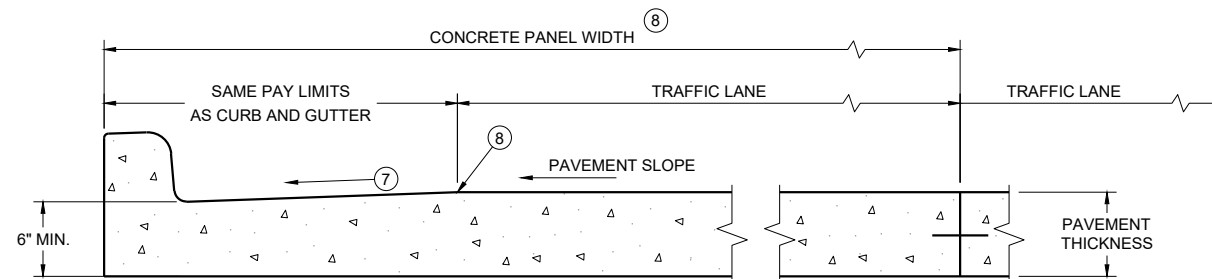


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

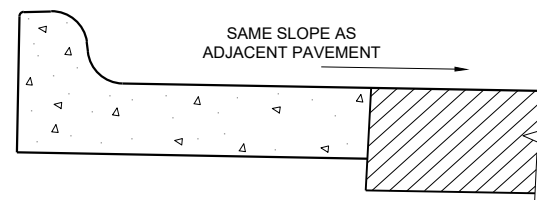
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER *

* BIKE LANE IS NOT SHOWN



REVERSE SLOPE GUTTER^⑥
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

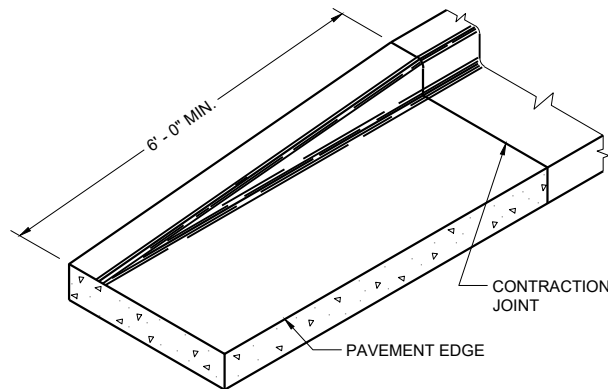
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

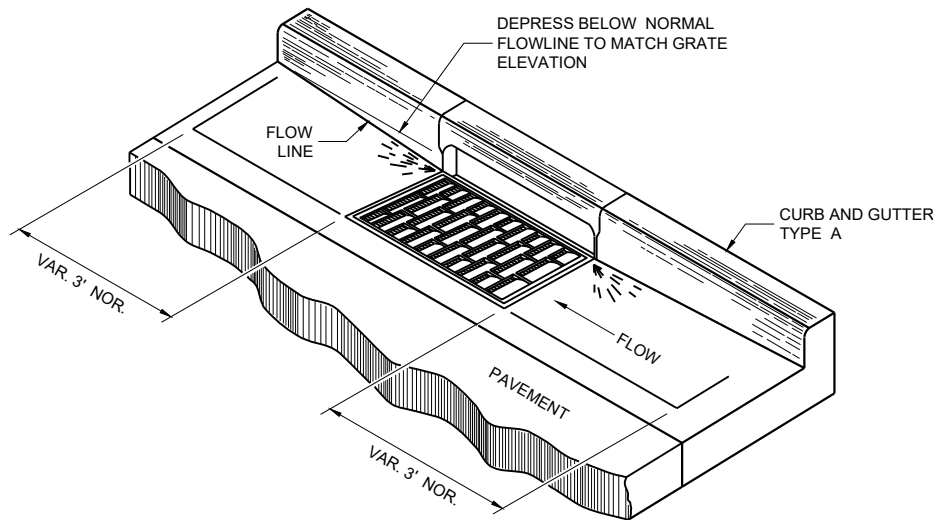
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

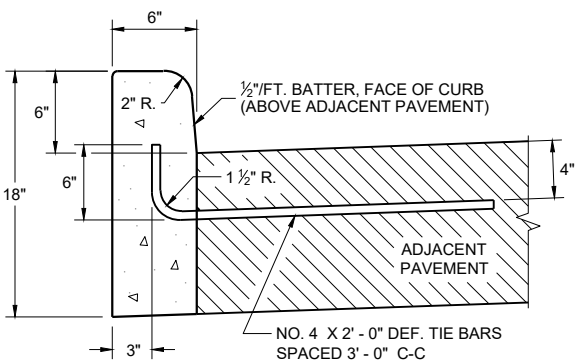


END SECTION CURB AND GUTTER

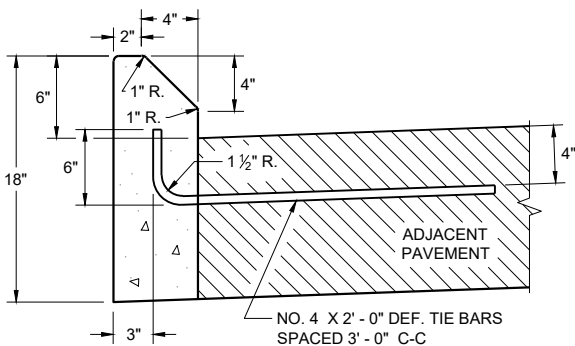


DETAIL OF CURB AND GUTTER AT INLETS

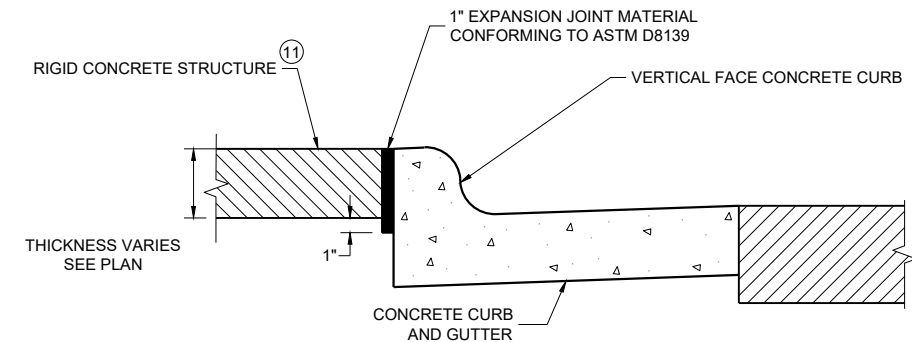
(TYPICAL H INLET COVER SHOWN)



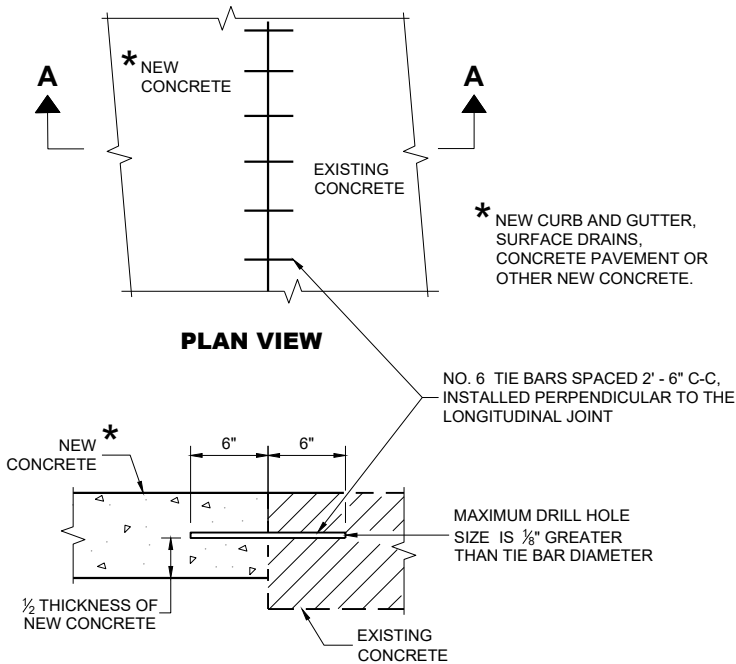
TYPES A^① & D



TYPES G^① & J
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

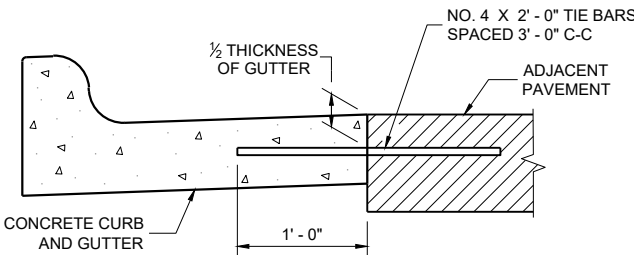
GENERAL NOTES

DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

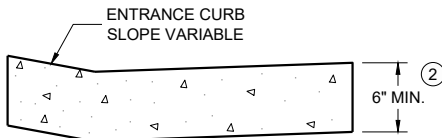
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.



TYPICAL TIE BAR LOCATION^①



DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA



- ① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



PAVEMENT TIES

APPROVED
February 2020
DATE

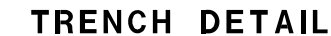
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

85

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

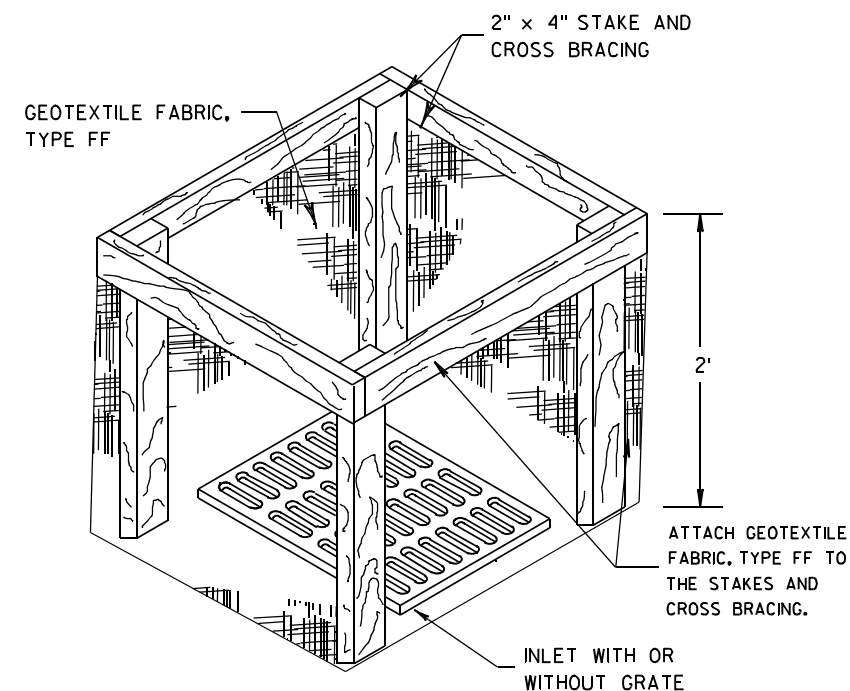
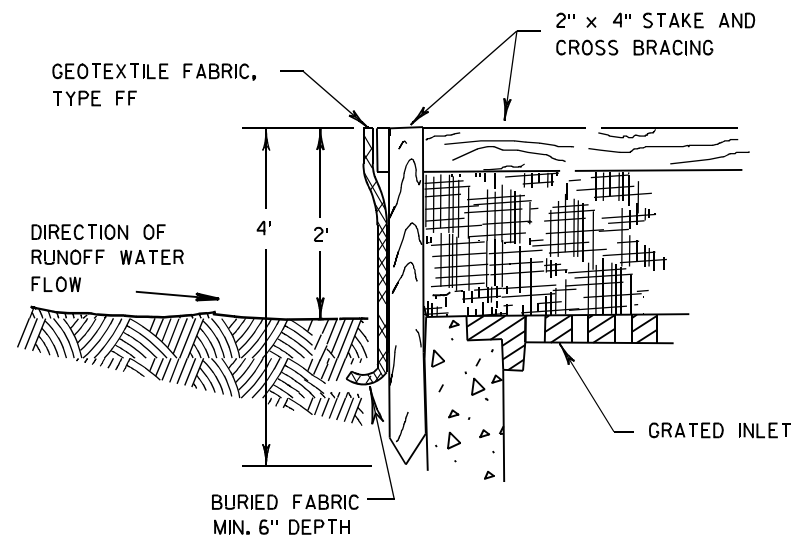
APPROVED
4-29-05
DATE

/S/ Beth Cannata
CHIEF ROADWAY DEVELOPMENT

86

ENGINEER

FHWA



INLET PROTECTION, TYPE A

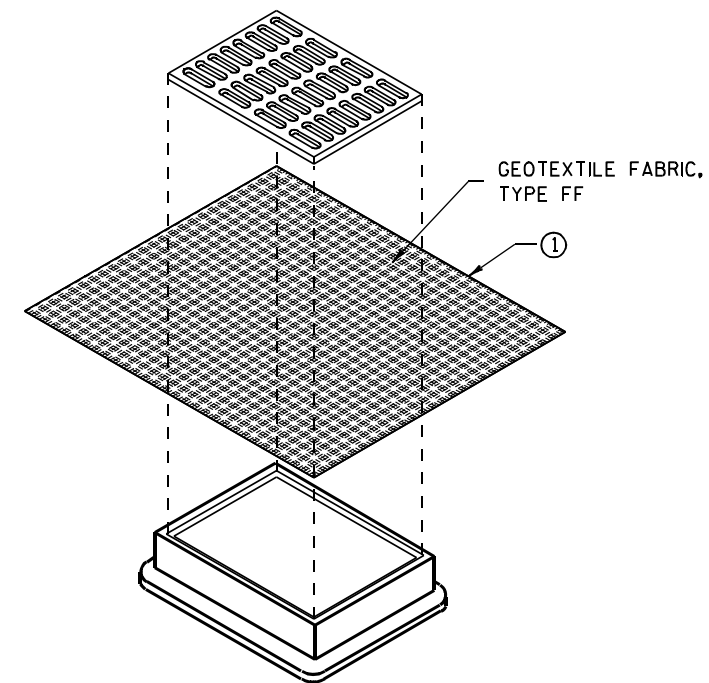
GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE
DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE
SUBSTITUTED.

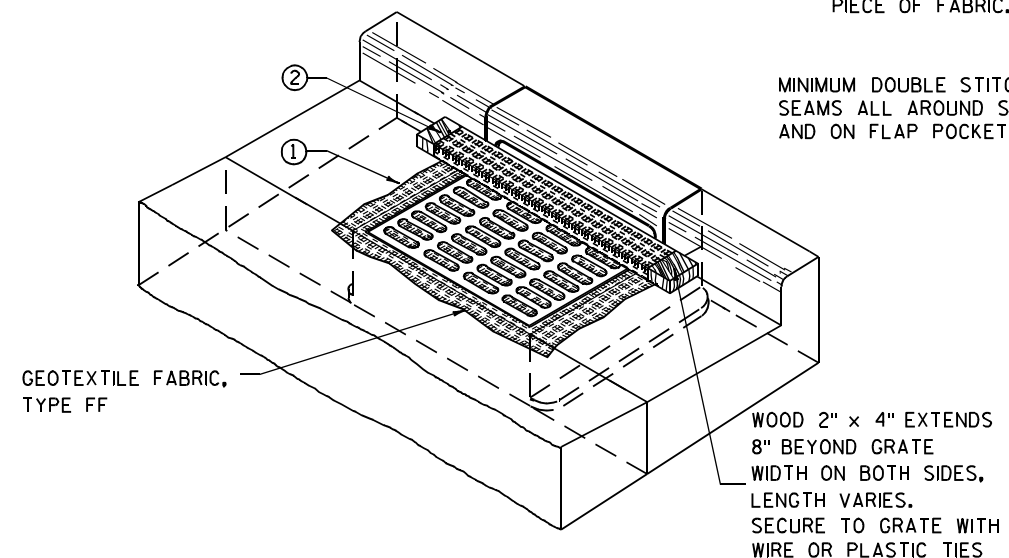
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



INLET PROTECTION, TYPE B (WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

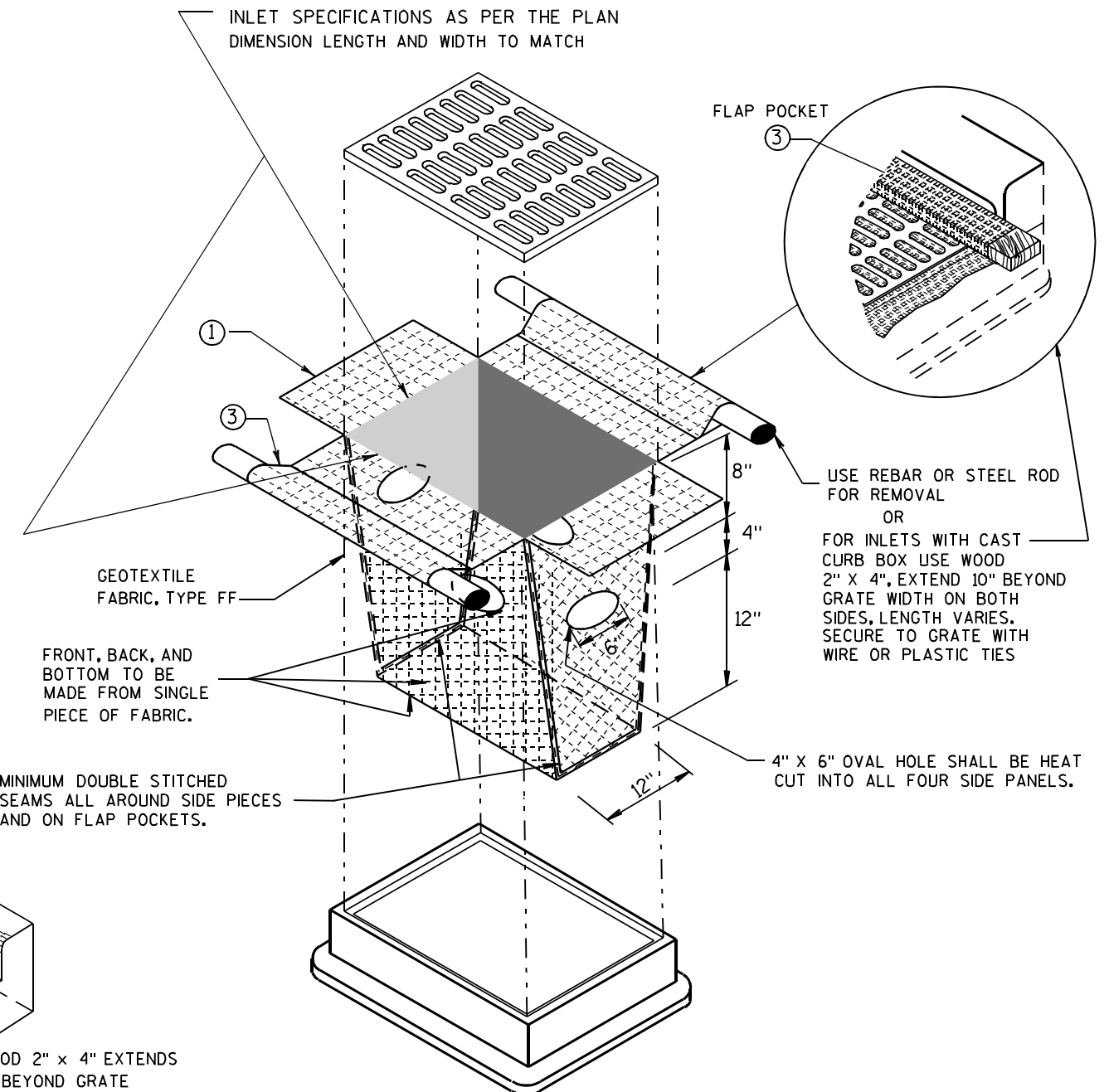
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.



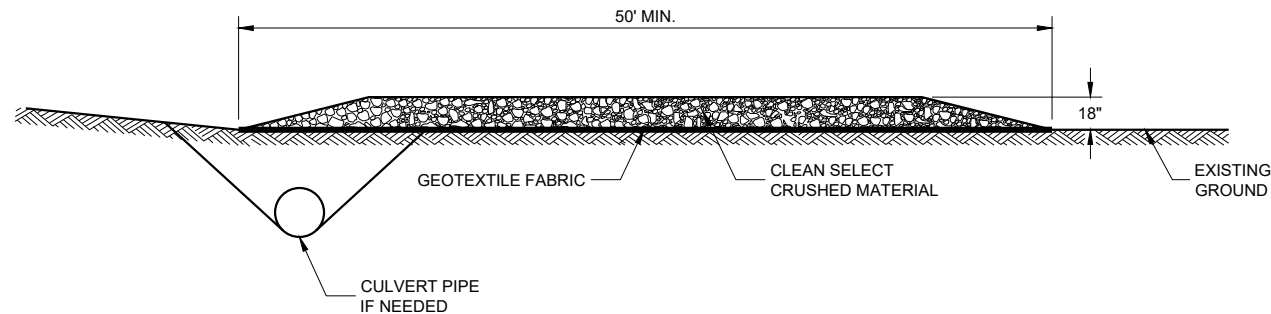
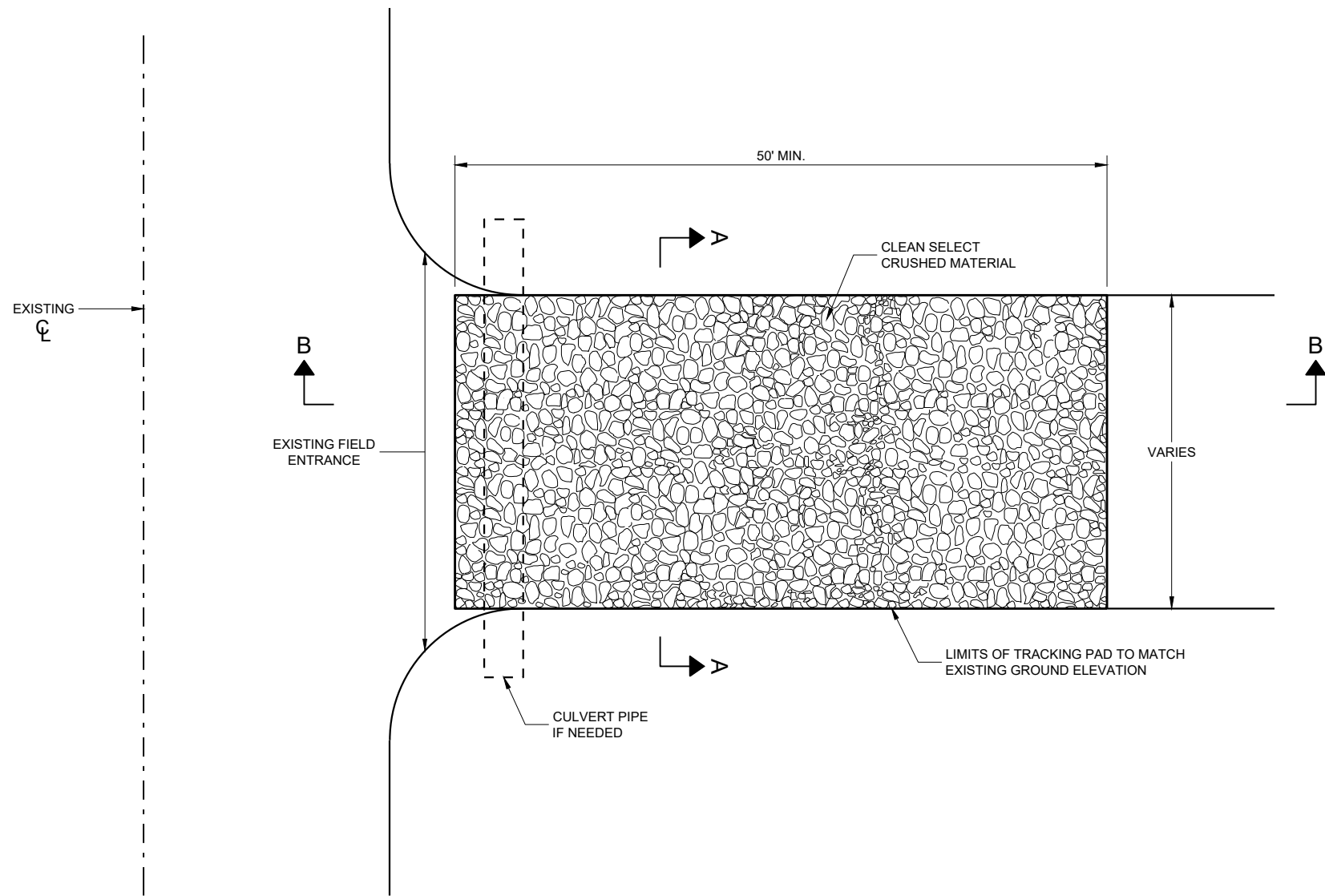
INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE (2))

INLET PROTECTION TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Cunningham
DATE
87
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



SECTION B - B

GENERAL NOTES

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

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

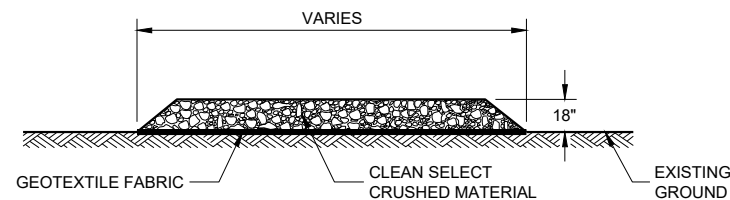
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



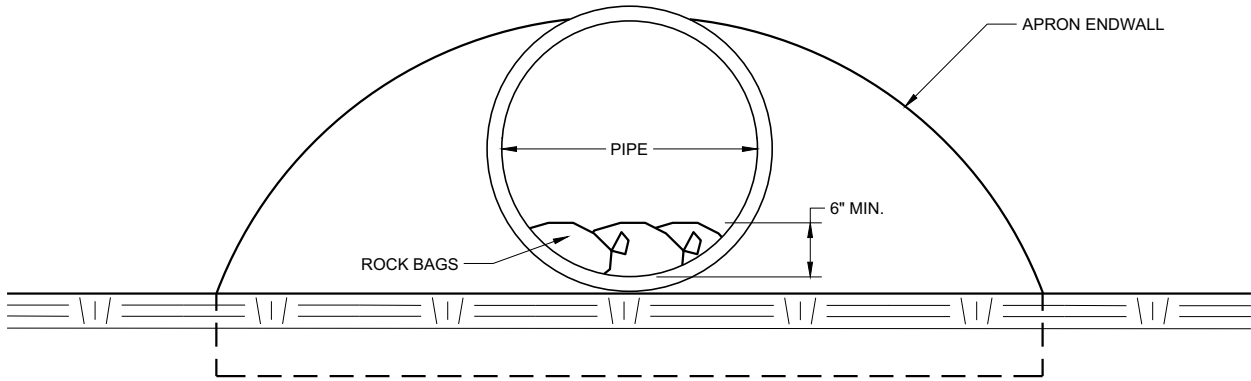
SECTION A - A

TRACKING PAD

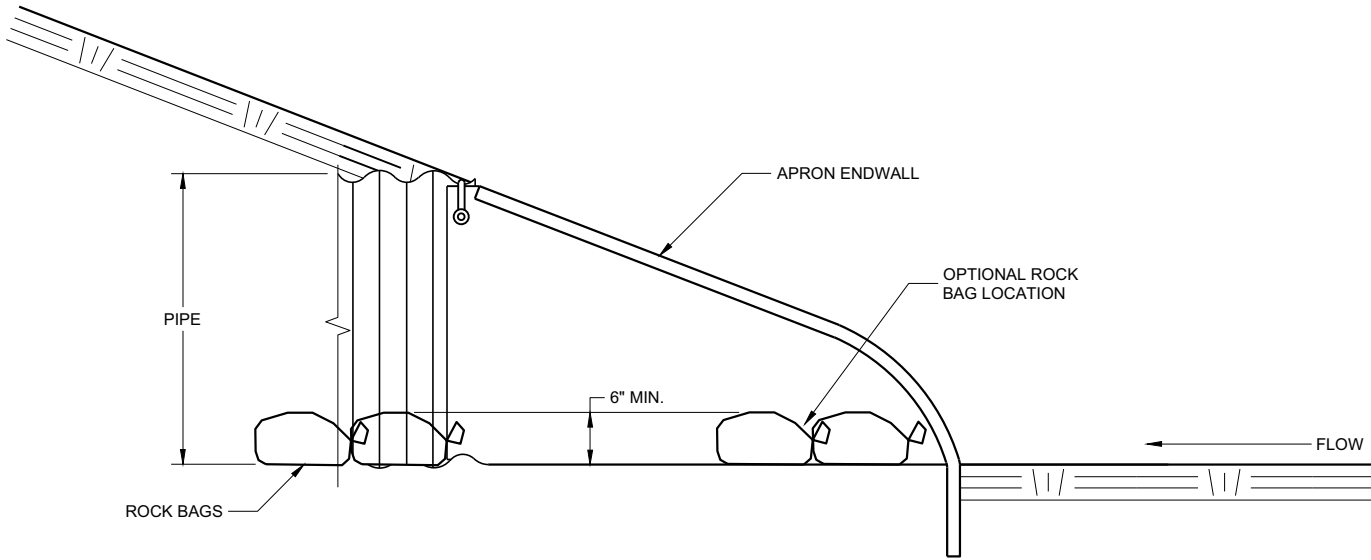
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



END VIEW



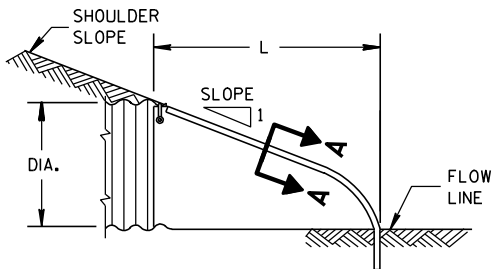
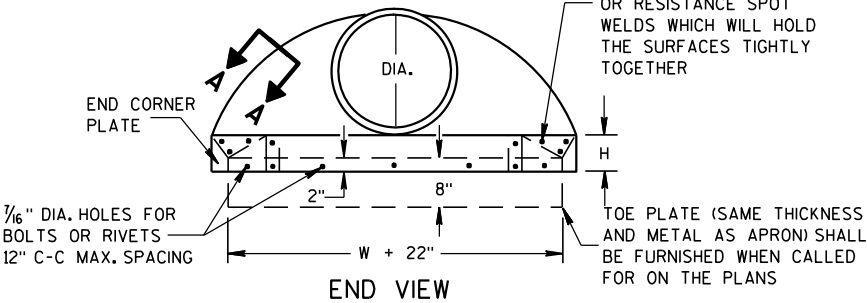
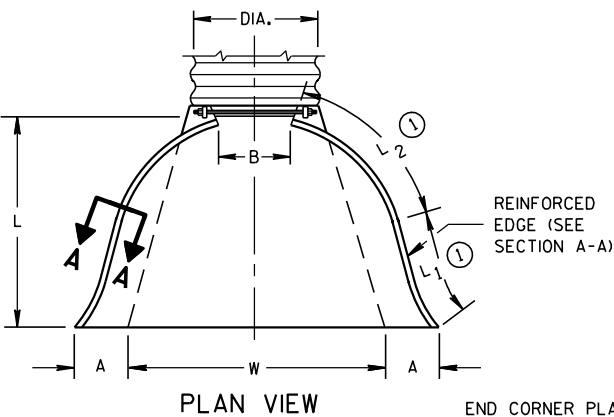
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGI 89	-
FHWA		

METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

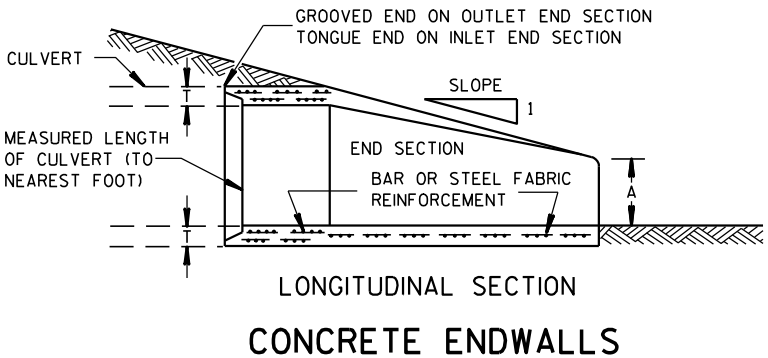
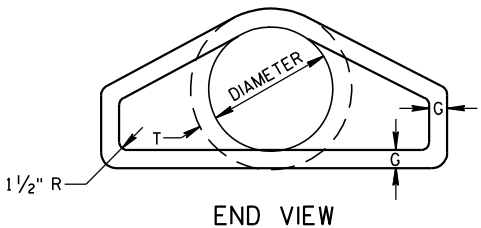
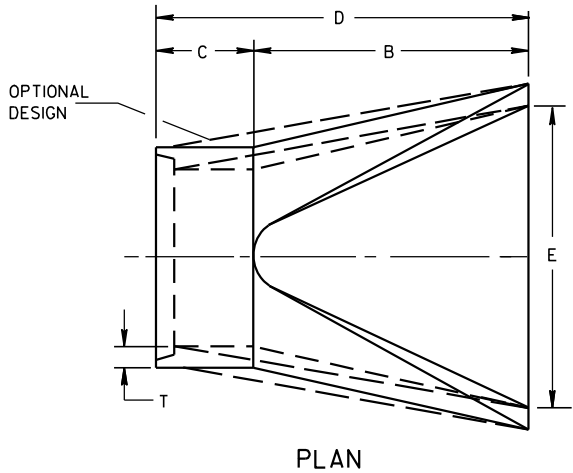
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



METAL ENDWALLS

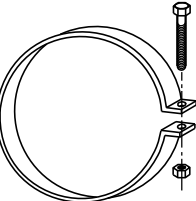
REINFORCED CONCRETE APRON ENDWALLS											
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE			
	T	A	B	C	D	E	G				
12	2	4	24	48 7/8	72 7/8	24	2	3 to 1			
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1			
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1			
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1			
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1			
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1			
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1			
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1			
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1			
48	5	24	72	26	98	84	5	3 to 1			
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1			
60	6	30-35	60	39	99	96	5	2 to 1			
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1			
72	7	24-36	78	21	99	108	6	2 to 1			
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1			
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1			
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1			

* MINIMUM
** MAXIMUM

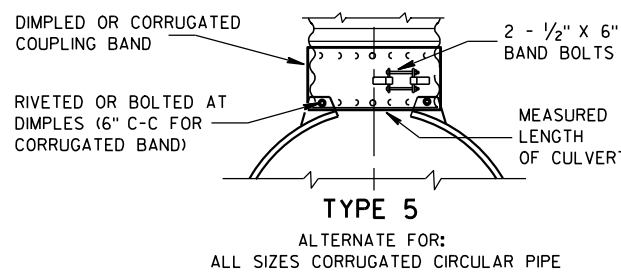
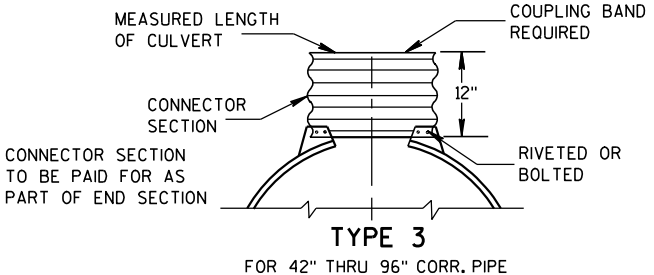
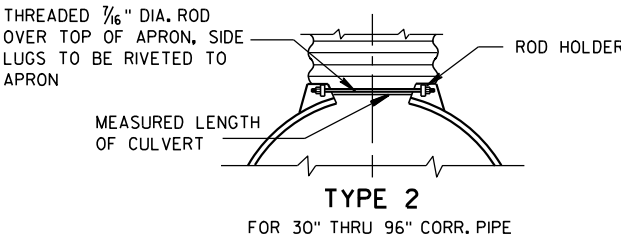
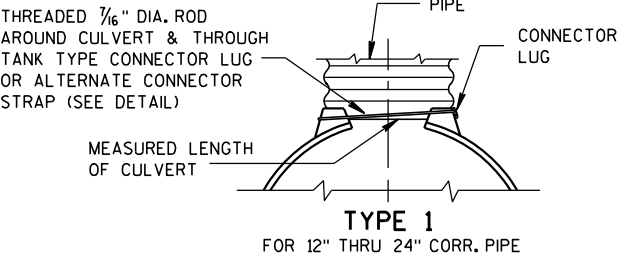


CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



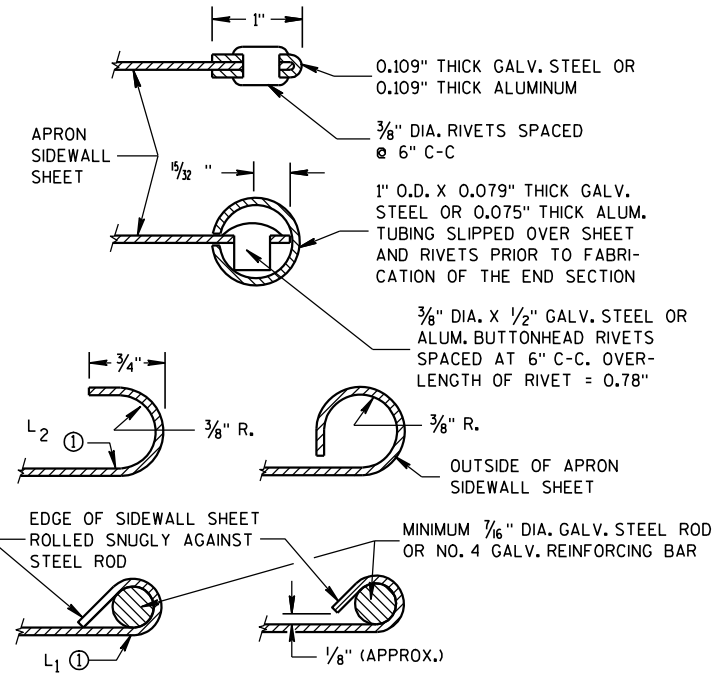
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

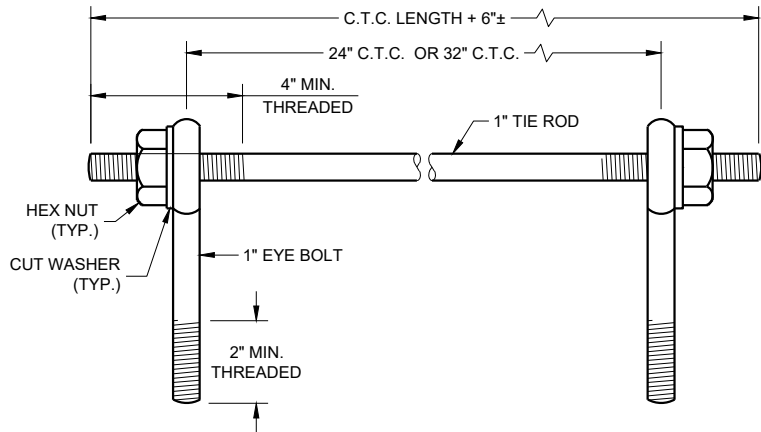
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

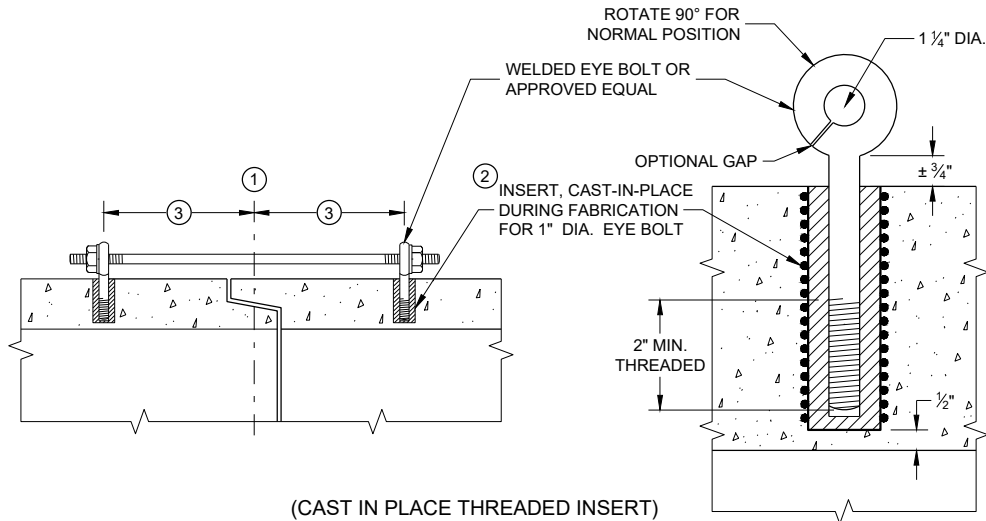
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhinehart CHIEF ROADWAY DEVELOP 90	NEER	
FHWA			



EYE BOLTS AND TIE ROD

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

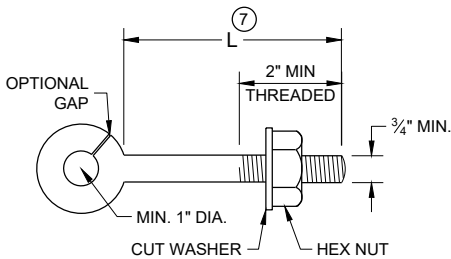
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

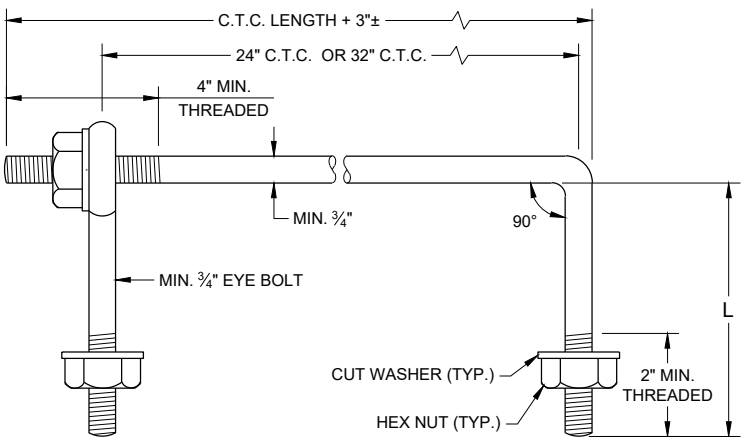
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- 3 HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

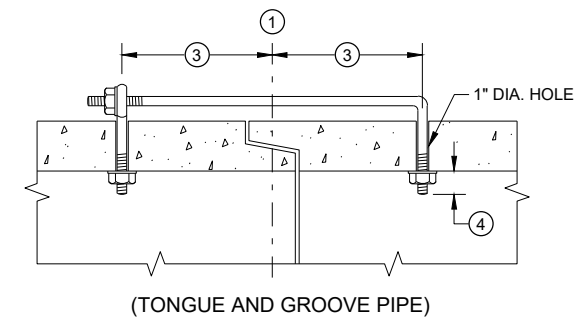


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

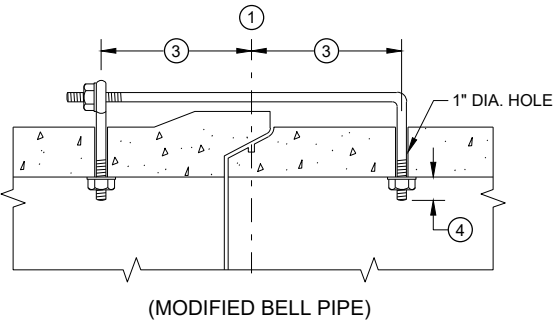


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

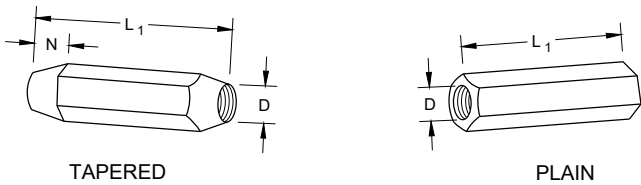


(MODIFIED BELL PIPE)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

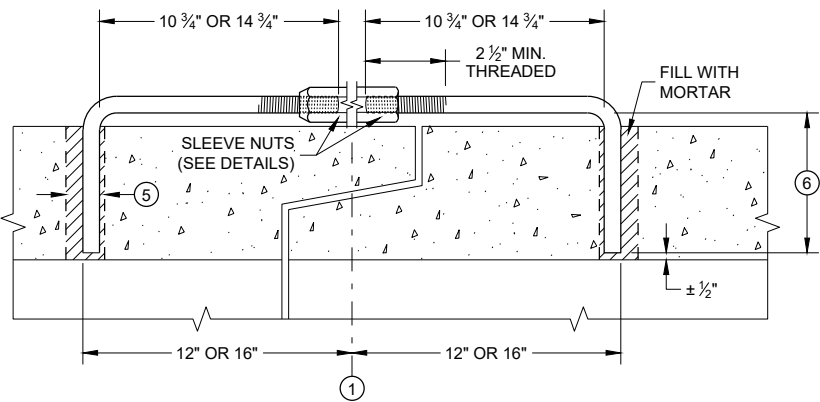
DIMENSIONS SHOWN ARE IN INCHES



TAPERED

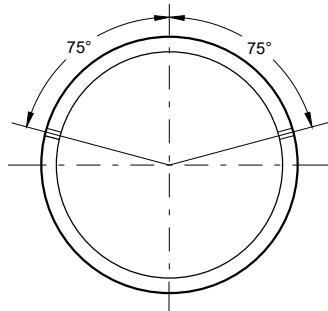
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



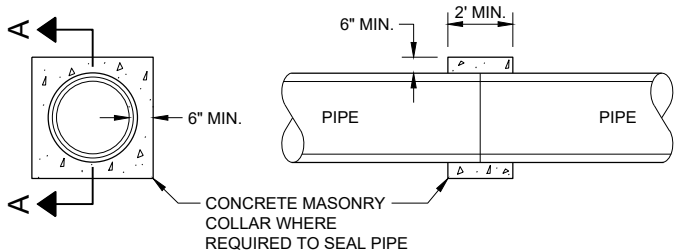
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



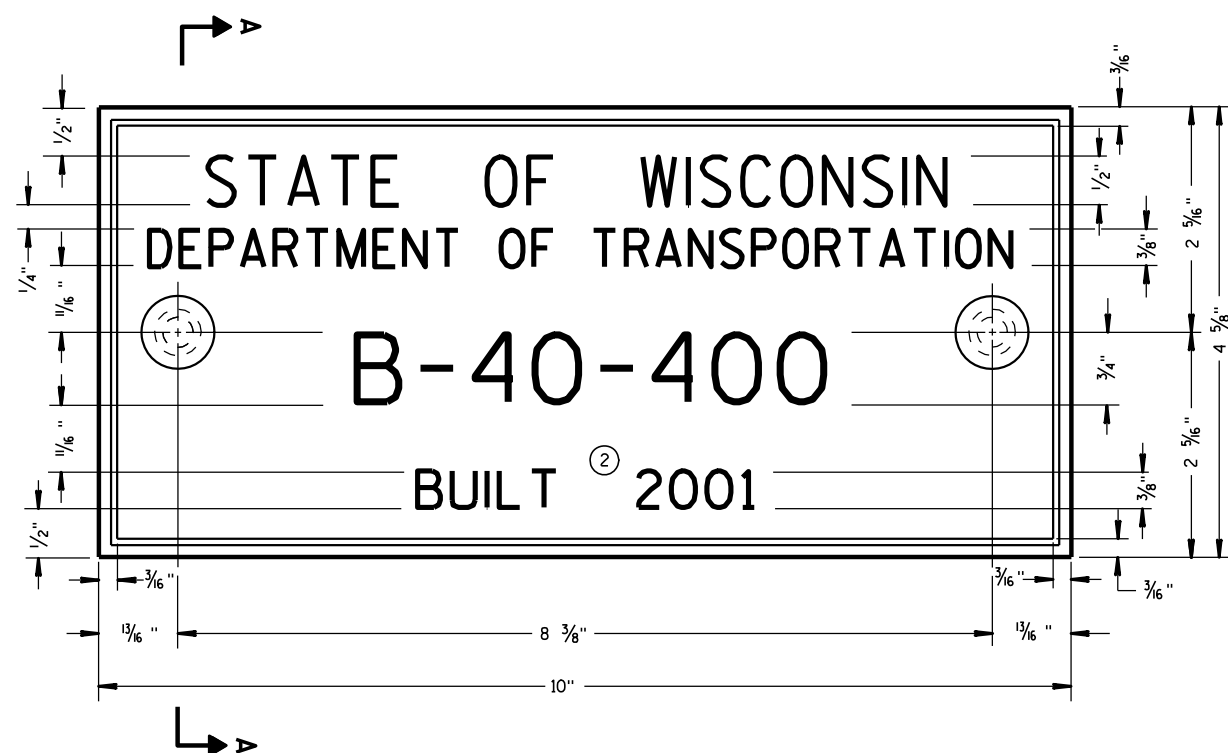
SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE
PIPE AND CONCRETE
COLLAR DETAIL

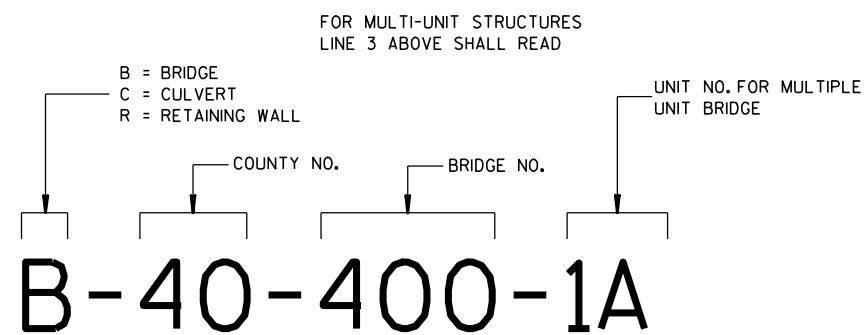
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



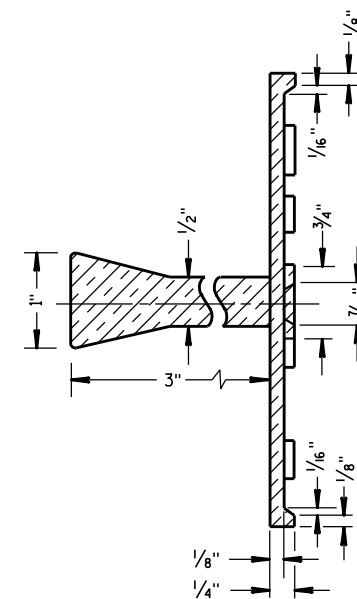
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

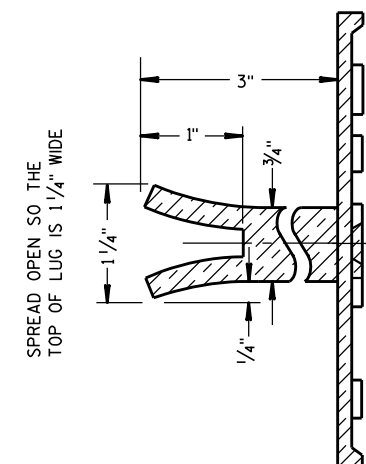
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

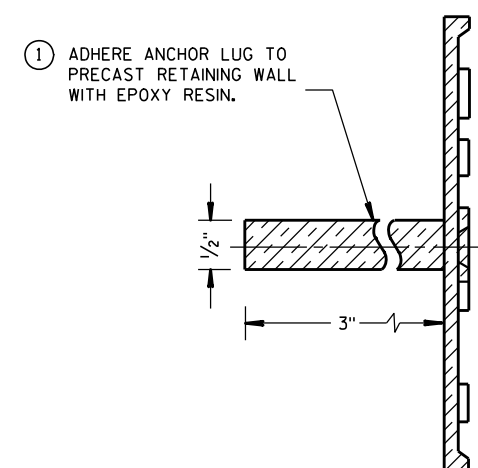
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



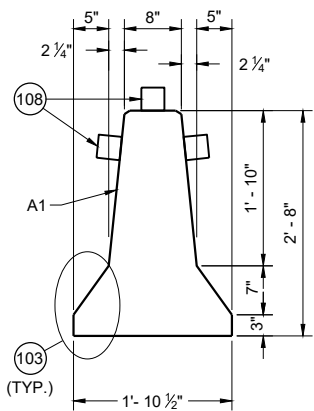
ALTERNATE LUG



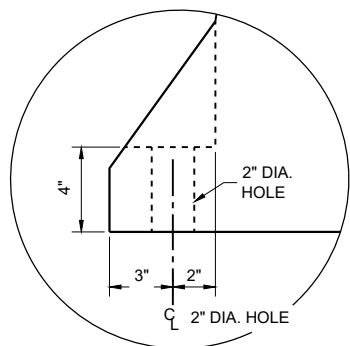
ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

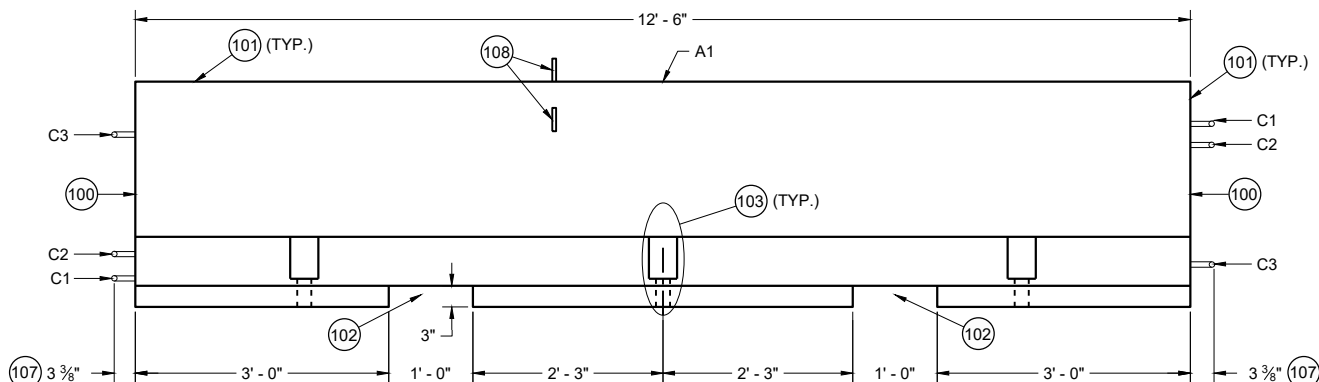
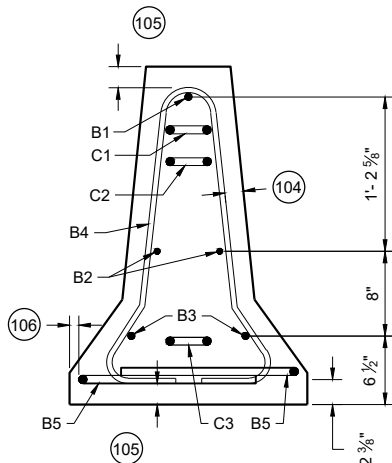
NAME PLATE (STRUCTURES)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED <u>3/26/10</u> DATE	<u>/S/ Scot Beck</u> CHIEF STRUCTURAL DEVELOPER	<u>92</u> JEER



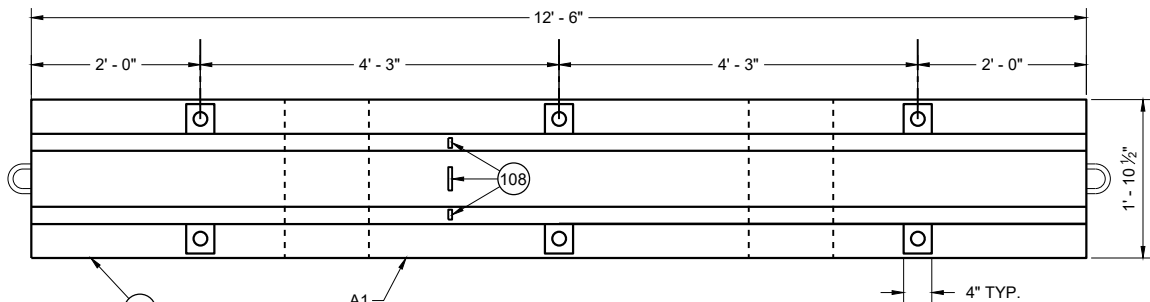
CROSS SECTION



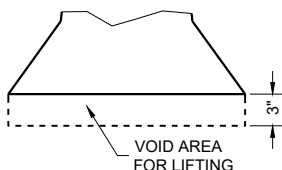
ANCHOR BLOCK
DETAIL



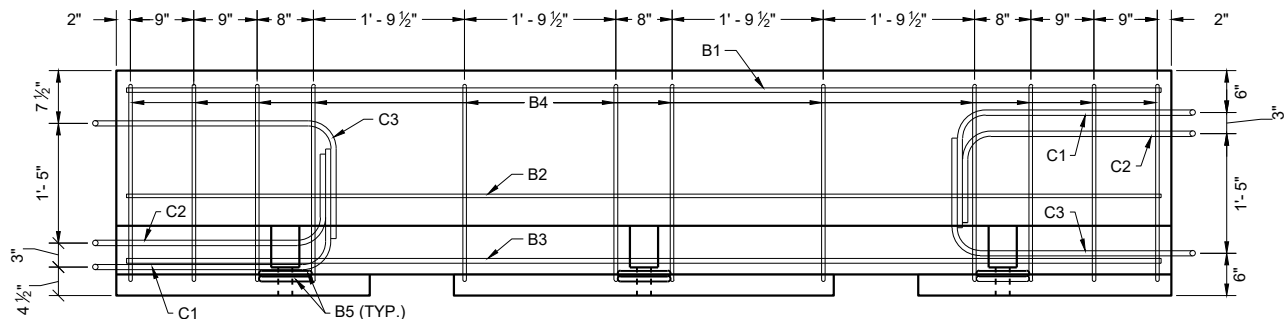
PROFILE VIEW



PLAN VIEW
TEMPORARY BARRIER



LIFTING SLOT DETAIL
(TYP.)



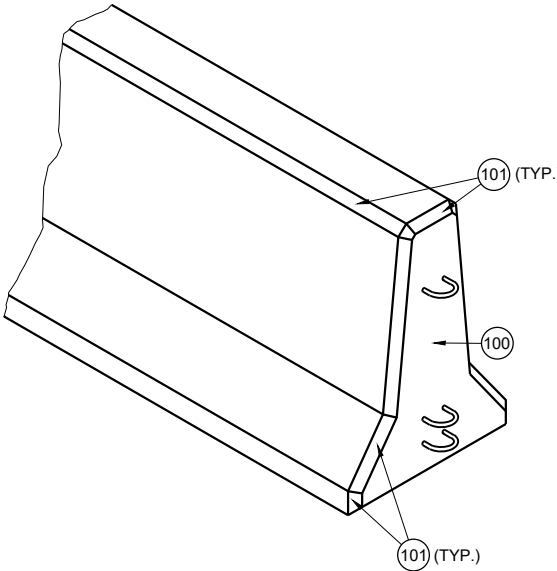
PROFILE VIEW
TEMPORARY BARRIER REINFORCEMENT

GENERAL NOTES

PLACE BARRIER ON PAVED SURFACE. BEFORE PLACEMENT OF TEMPORARY BARRIER, REMOVE ALL LOOSE MATERIAL FROM PAVED SURFACE.

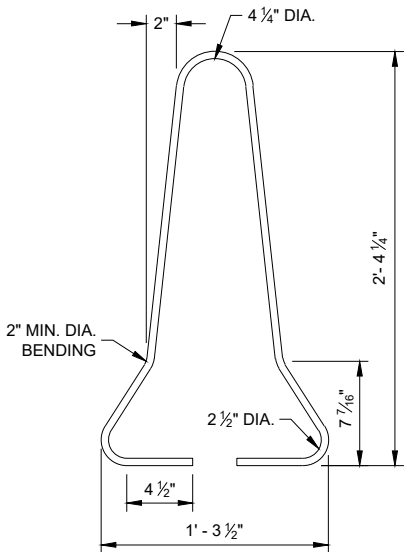
LOOP BARS C1, C2 AND C3 ARE NOT FOR PLACEMENT OR MOVEMENT OF BARRIER.

- 100 PERMANENTLY FORM INTO ONE END OF BARRIER THE FOLLOWING INFORMATION:
 - A. TYPE OF BARRIER: WI-CBTP
 - B. MANUFACTURER
 - C. DATE OF MANUFACTURE (MONTH AND YEAR)
- 101 1" OPTIONAL CHAMFER
- 102 SEE LIFTING SLOT DETAIL
- 103 SEE ANCHOR BLOCK DETAIL
- 104 1 3/4" MIN. CLEAR COVER
- 105 2" MIN. CLEAR COVER
- 106 1" MIN. CLEAR COVER
- 107 ± 1/8" MEASURED FROM FACE OF CONCRETE BARRIER TO OUTSIDE OF LOOP BAR (TYP.)
- 108 USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURERS INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED LEFT OF TRAFFIC AND WHITE WHEN BARRIER IS LOCATED RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART, PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO SIDE MOUNTED DELINEATORS ON BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAT 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

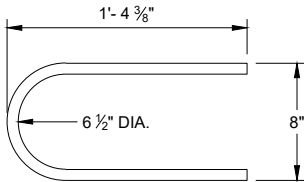


CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

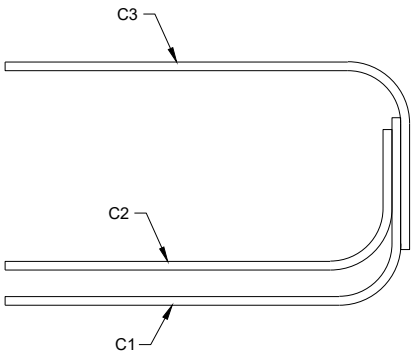
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



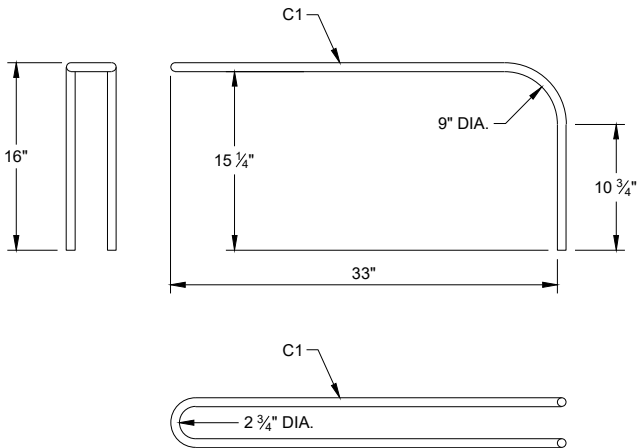
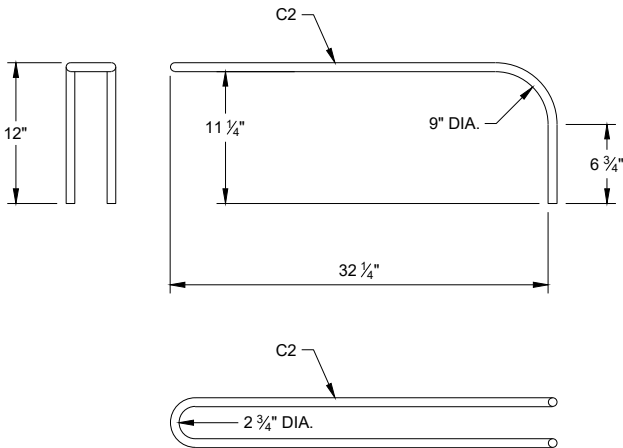
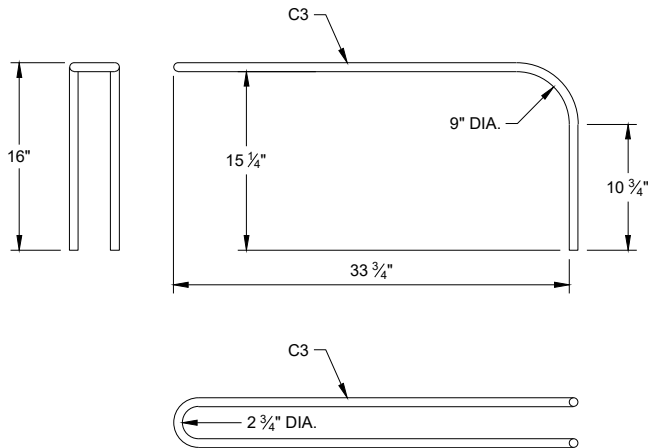
B4 BAR DETAIL



B5 BAR DETAIL



PROFILE VIEW
LOOP BAR ASSEMBLY



C BAR DETAILS

6

SDD 14B07-16m

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	PRECAST TEMPORARY BARRIER - CONCRETE	MIN. = f'c 5000 PSI	
B1	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B2	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-2"
B3	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 12'-2"
B4	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 6'-0"
B5	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#6 REBAR, LENGTH 2'-11"
B6	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 1'-11"
B7	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-2"
B8	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-6"
B9	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 2'-9"
B10	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-2"
B11	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 3'-4"
B12	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 12'-0"
B13	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#4 REBAR, LENGTH 7'-9"
B14	REBAR	STANDARD SPEC. 505.2 GRADE 60 UNCOATED REBAR	#5 REBAR, LENGTH 11'-9"
C1	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C2	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
C3	LOOP BAR	ASTM A709 GRADE 70 SMOOTH BAR OR ASTM A706 GRADE 60 REBAR UNCOATED	¾" DIA.
D1	CONNECTION PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ¼" DIA.
D2	CONNECTION PIN - TOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G1	BOLT THROUGH ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A OR SAE J429 GRADE 2 UNC	1 ⅝" DIA.
G2	BOLT THROUGH ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
G3	BOLT THROUGH ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
H1	ADHESIVE ANCHOR - ADHESIVE	ICC-ES-AC308 5 ¼" EMBEDMENT WITH A MIN. BOND STRENGTH OF 1,650 PSI. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
H2	ADHESIVE ANCHOR - THREADED ROD	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 A307 GRADE A / SAE J429 GRADE 2 UNC	1 ⅝" DIA.
H3	ADHESIVE ANCHOR - WASHER, SQUARE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
H4	ADHESIVE ANCHOR - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
J1	ASPHALT ANCHOR PIN - ROD	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	1 ½" DIA.
J2	ASPHALT ANCHOR PIN - STOP PLATE	ASTM A36 MIN. STRENGTH 36 KSI / ASTM A529 MAX. STRENGTH 50 KSI / ASTM A572 MAX STRENGTH 50 KSI / ASTM A709 MAX STRENGTH 50 KSI / ASTM A992 MAX STRENGTH 50 KSI	
K1	THRIE BEAM RAIL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE
L1	THRIE BEAM RAIL - TERMINAL	AASHTO M180 CLASS A TYPE 2 APPROVED PRODUCER	12 GAUGE

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
M1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	⅝" DIA.
M2	SPLICE BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
N1	THRIE BEAM RAIL TERMINAL - MECHANICAL ANCHOR	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA. LENGTH 6"
N2	THRIE BEAM RAIL TERMINAL - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
N3	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
P1	THRIE BEAM RAIL CONNECTION 1-BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	¾" DIA.
P2	THRIE BEAM RAIL CONNECTION 1-WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
P3	THRIE BEAM RAIL CONNETION 1- MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	
Q1	BLOCK WOOD	SEE STANDARD SPEC. 614	
R1	CAP - BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	⅝" DIA.
R2	CAP- BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1	
R3	CAP - BOLT - MECHANICAL ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	12 GAUGE
S1	CAP 42-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S2	CAP 42-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S3	CAP 42-INCH SIDE PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S4	CAP 42-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S5	CAP 42-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S6	CAP 42-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
S7	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE

6

SDD 14B07-16m

CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTA195

BILL OF MATERIALS - CONCRETE BARRIER PRECAST

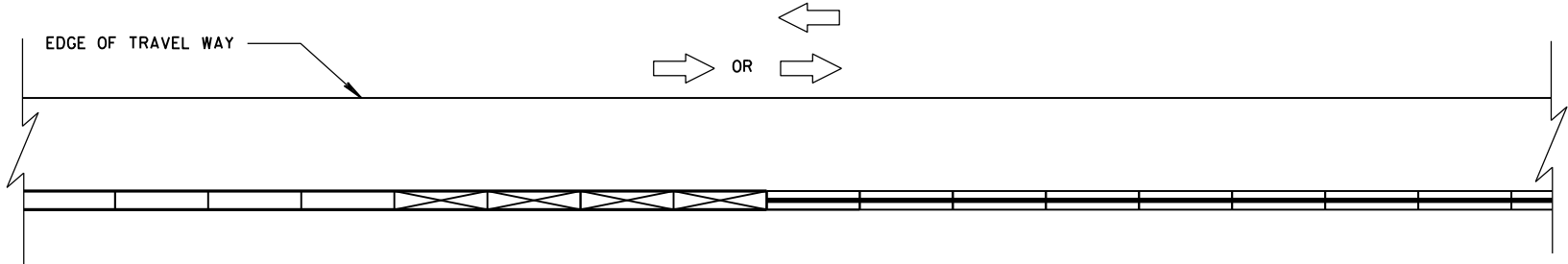
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
T1	CAP 56-INCH TOP PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T2	CAP 56-INCH END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T3	CAP 56-INCH SIDE PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T4	CAP 56-INCH SIDE PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T5	CAP 56-INCH GUSSET 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T6	CAP 56-INCH GUSSET 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T7	CAP 56-INCH GUSSET 3	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T8	CAP 42-INCH GUSSET 4	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T9	CAP 42-INCH GUSSET 5	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T10	CAP 42-INCH GUSSET 6	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T11	CAP 42-INCH GUSSET 7	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T12	CAP 42-INCH GUSSET 8	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T13	CAP 42-INCH GUSSET 9	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T14	CAP 42-INCH GUSSET 10	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T15	CAP 42-INCH GUSSET 11	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
T16	CAP 42-INCH GUSSET 12	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	12 GAUGE
U1	GAP STIFFENER	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U2	GAP STIFFENER - CONNECTOR PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
U3	GAP STIFFENER - CONNECTOR PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
V1	THRIE BEAM RAIL TERMINAL MECHANICAL OR ADHESIVE ANCHOR	MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS ULTIMATE TENSILE LOAD 24.0 KIPS AND ULTIMATE SHEAR LOAD 21.5 KIPS. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.	¾" DIA.
V2	GAP STIFFENER - BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C O R MECHANICAL GALVANIZE TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
W1	TOE PLATE	AASHTO M111/ASTM A123 ASTM A36 MIN STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX. STRENGTH 50 KSI, OR ASTM A709 MAX. STRENGTH 50 KSI, OR ASTM A992 MAX. STRENGTH 50 KSI	
X1	TOE PLATE - CONNECTION BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 UNC HEAVY HEX HEAD OR AASTHO M180 HEAD, ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED. PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	¾" DIA.
X2	TOE PLATE - CONNECTION BOLT - WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 TYPE 2 F436 TYPE 1 (HARDEN WASHER ONLY)	
X3	TOE PLATE - CONNECTION BOLT - NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GALVANIZE TO AASHTO M298 CLASS 55 TYPE 2 / ASTM B695 CLASS 55 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	

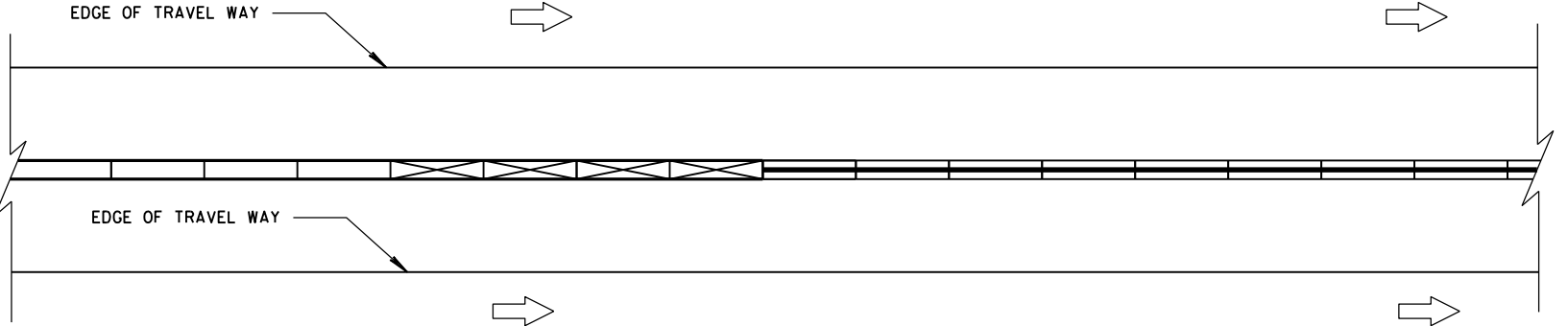
CONCRETE BARRIER
TEMPORARY PRECAST,
12' - 6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2023
DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER 96
FHWA



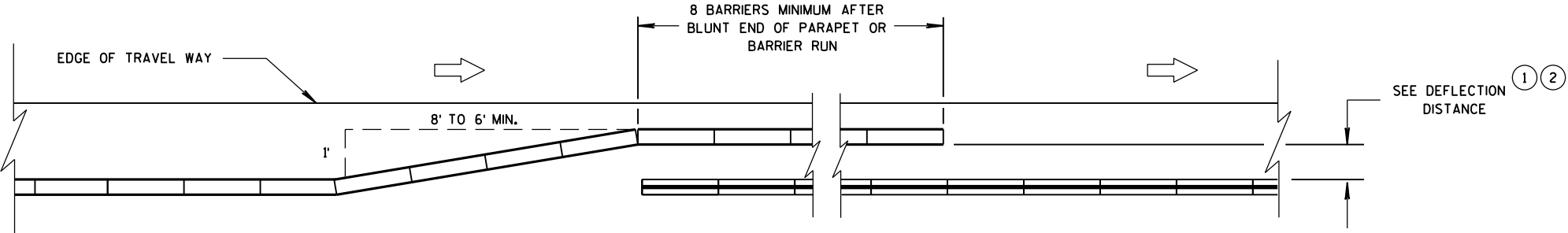
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



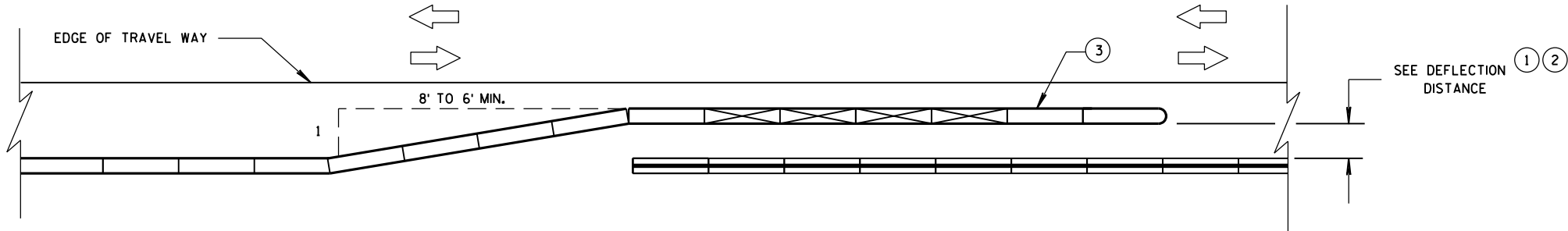
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER



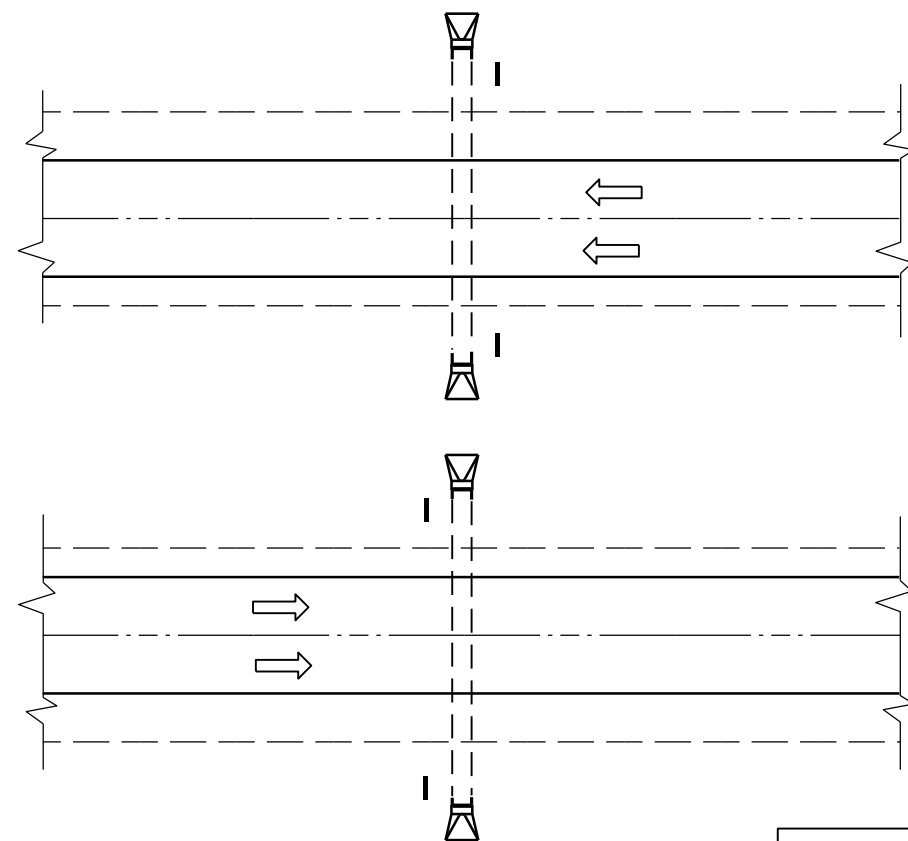
OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



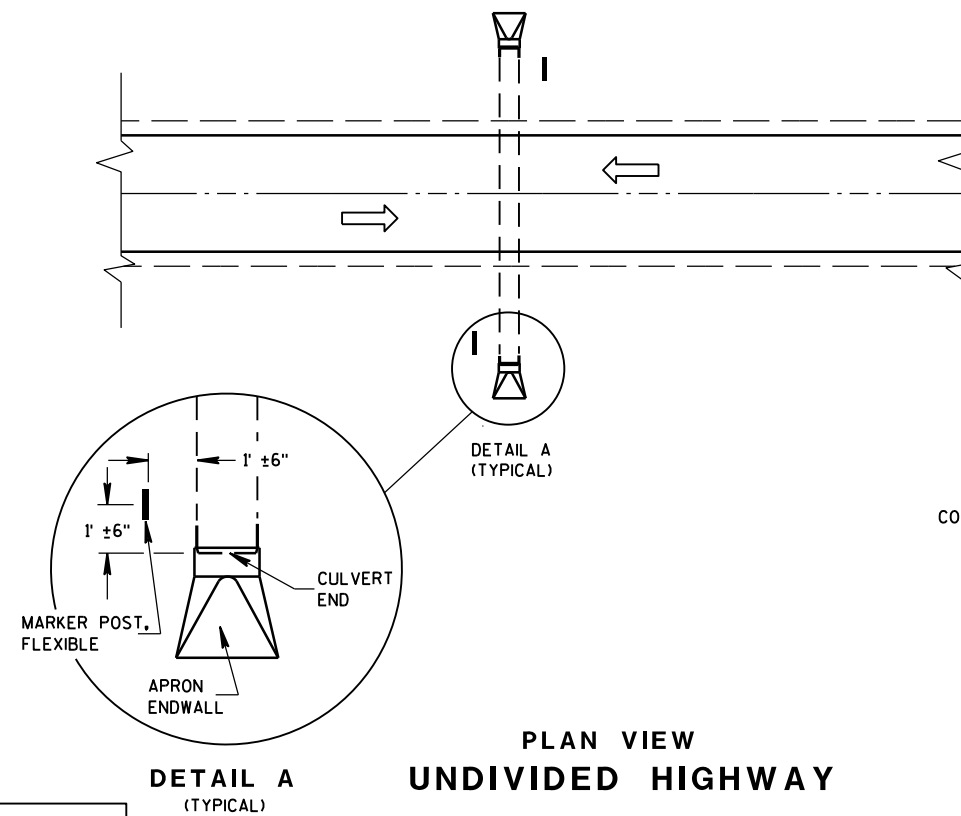
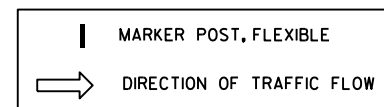
OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
DIVIDED HIGHWAY

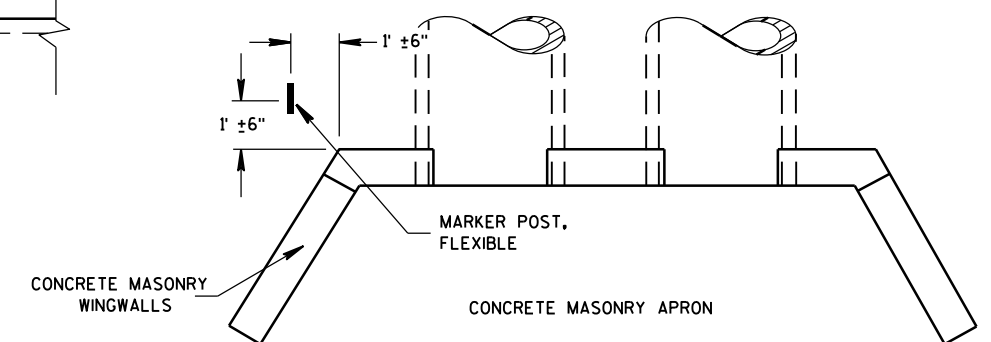


PLAN VIEW
UNDIVIDED HIGHWAY

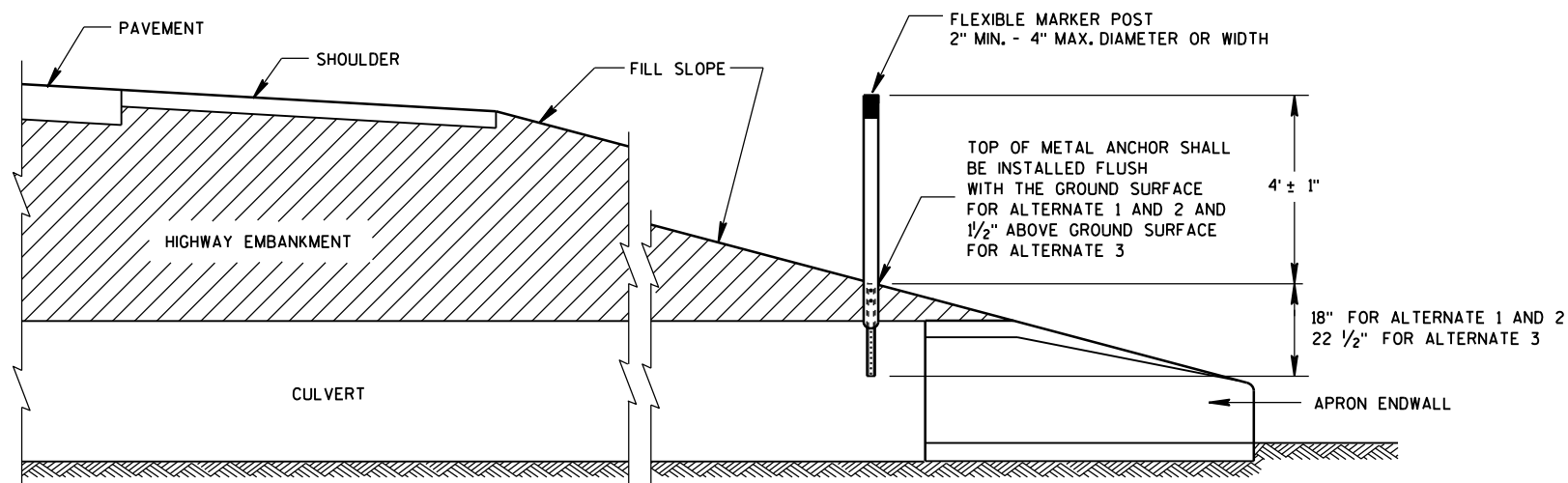
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



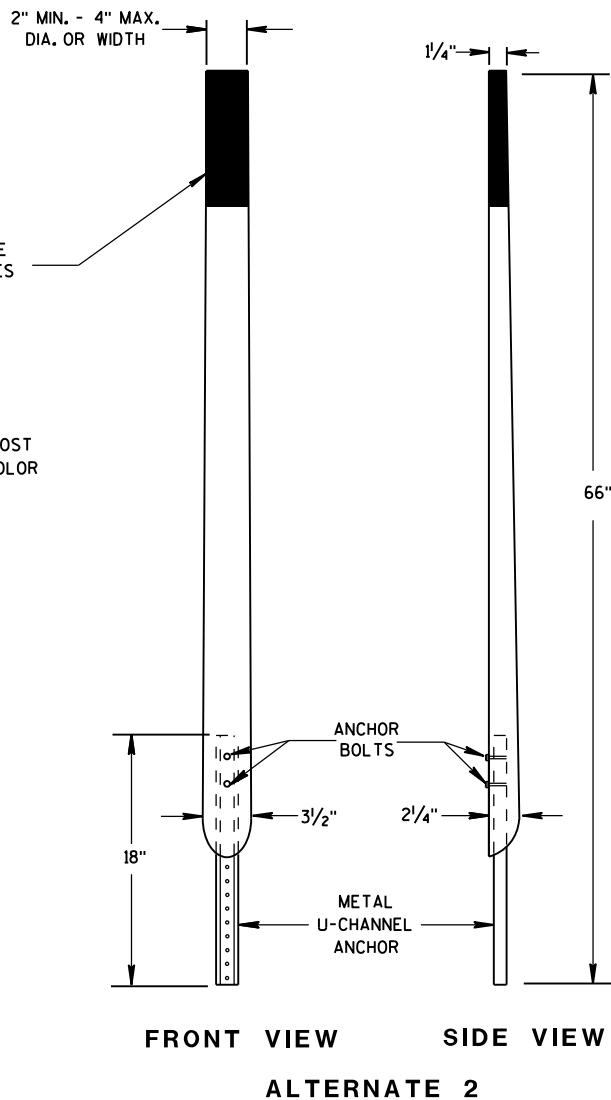
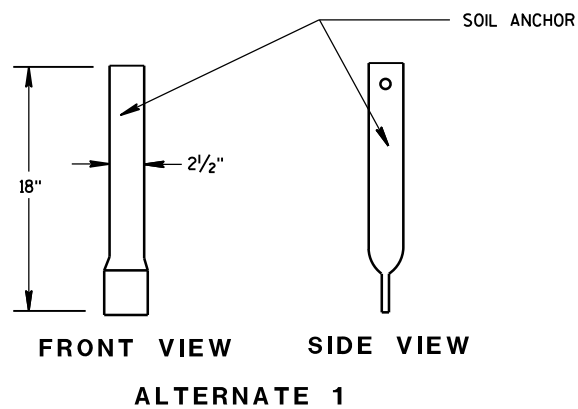
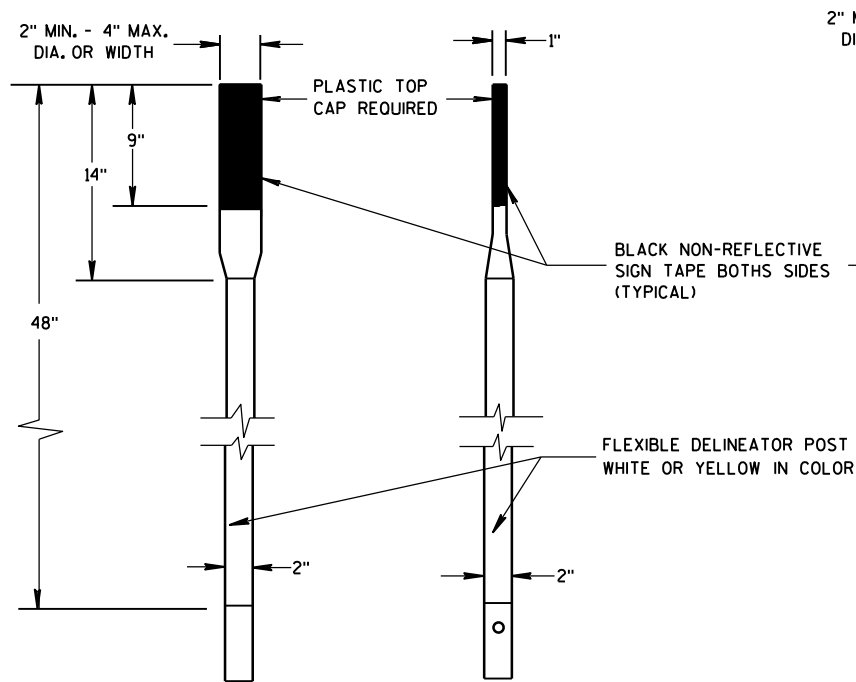
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



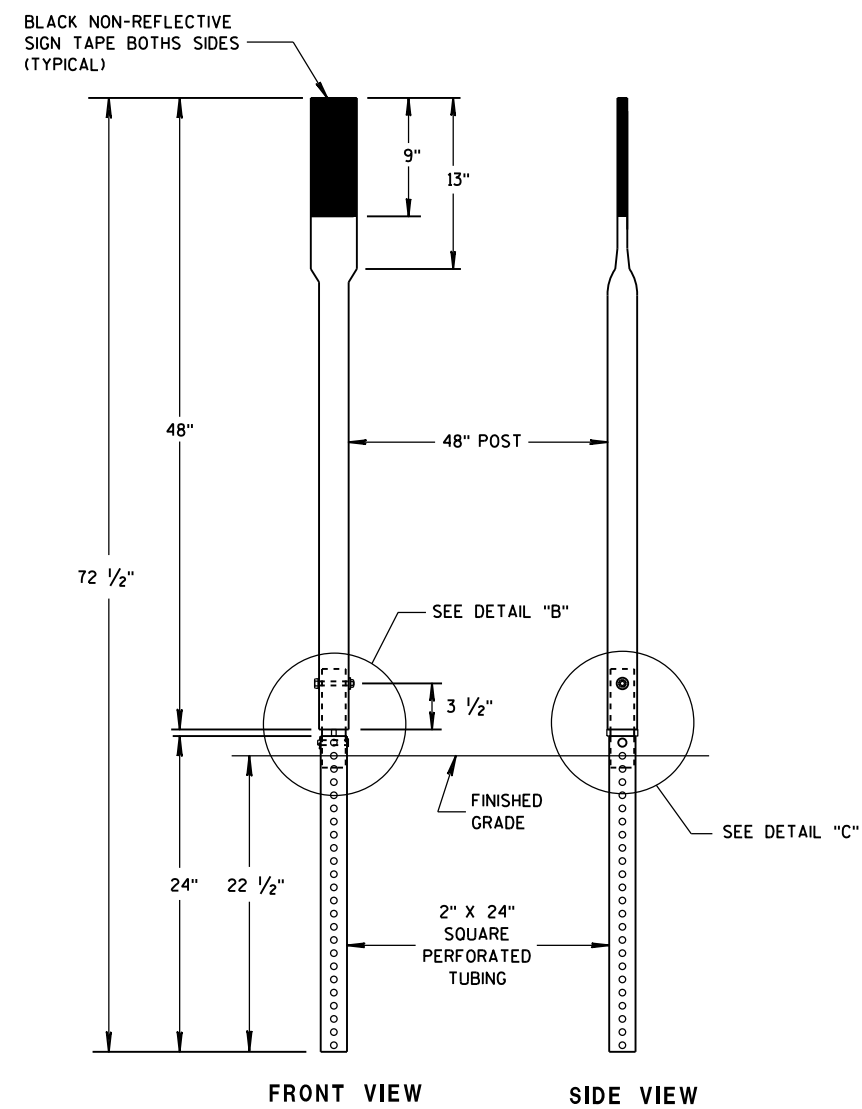
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

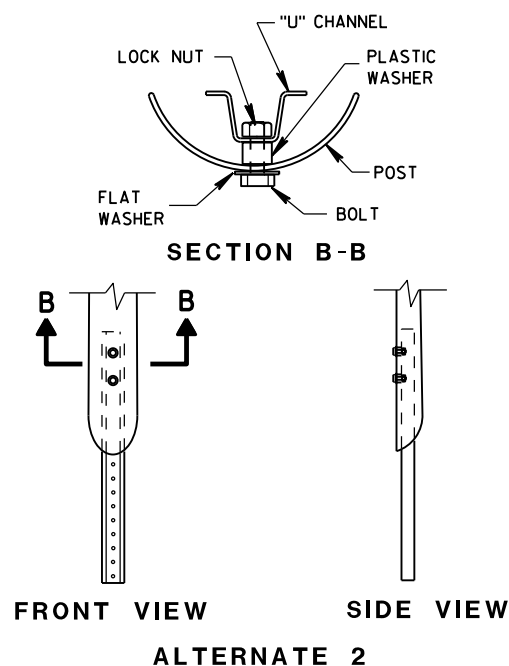
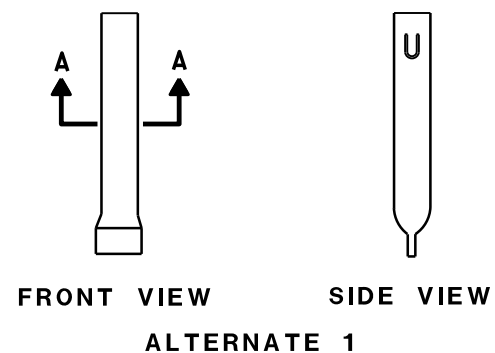
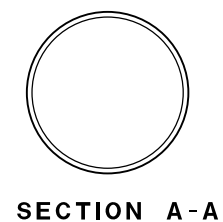
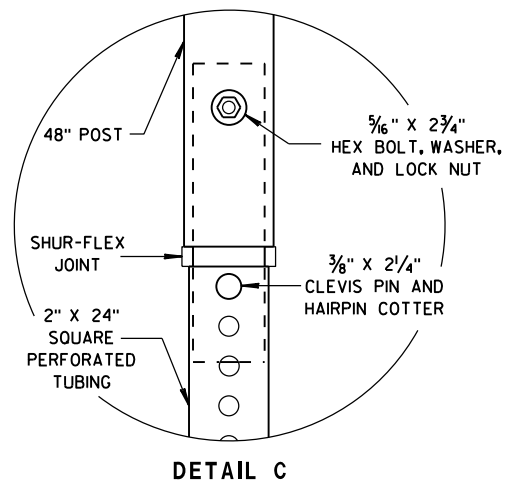
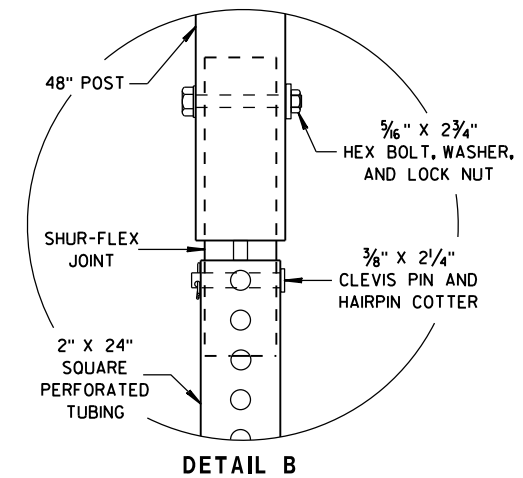
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



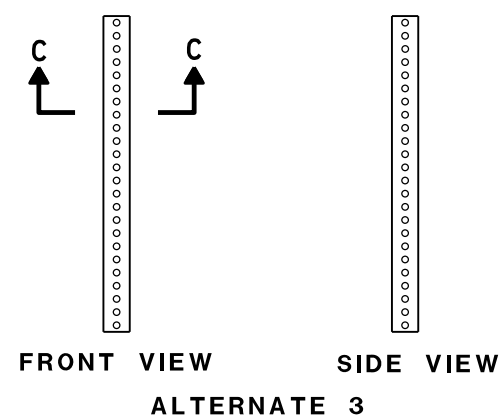
FLEXIBLE MARKER POSTS



SECTION C-C



FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT ENDSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

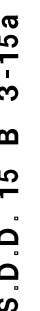
APPROVED

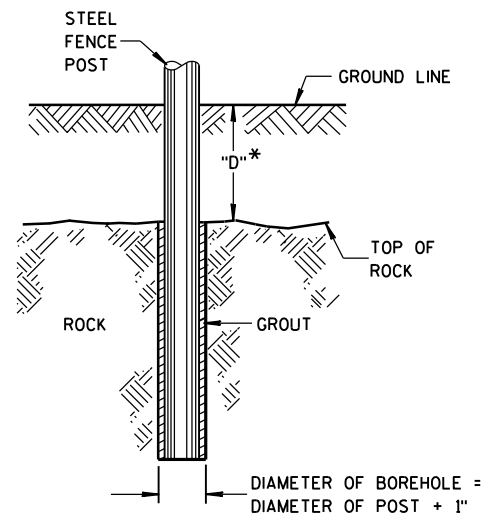
10/1/2012
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

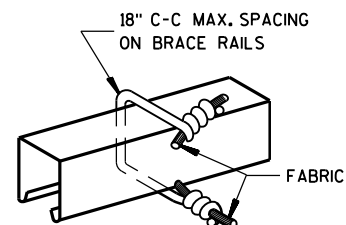
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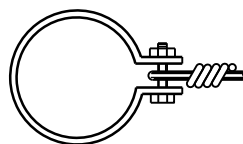
* IF "D" IS LESS THAN 2'-6",
DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST

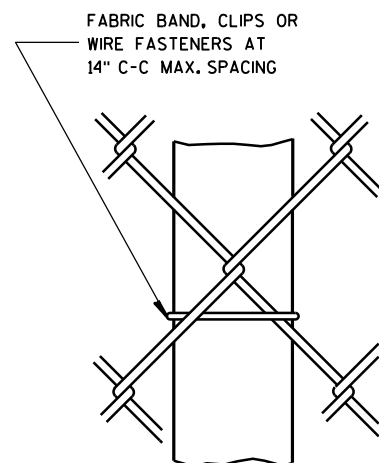


BRACE RAIL FABRIC FASTENER

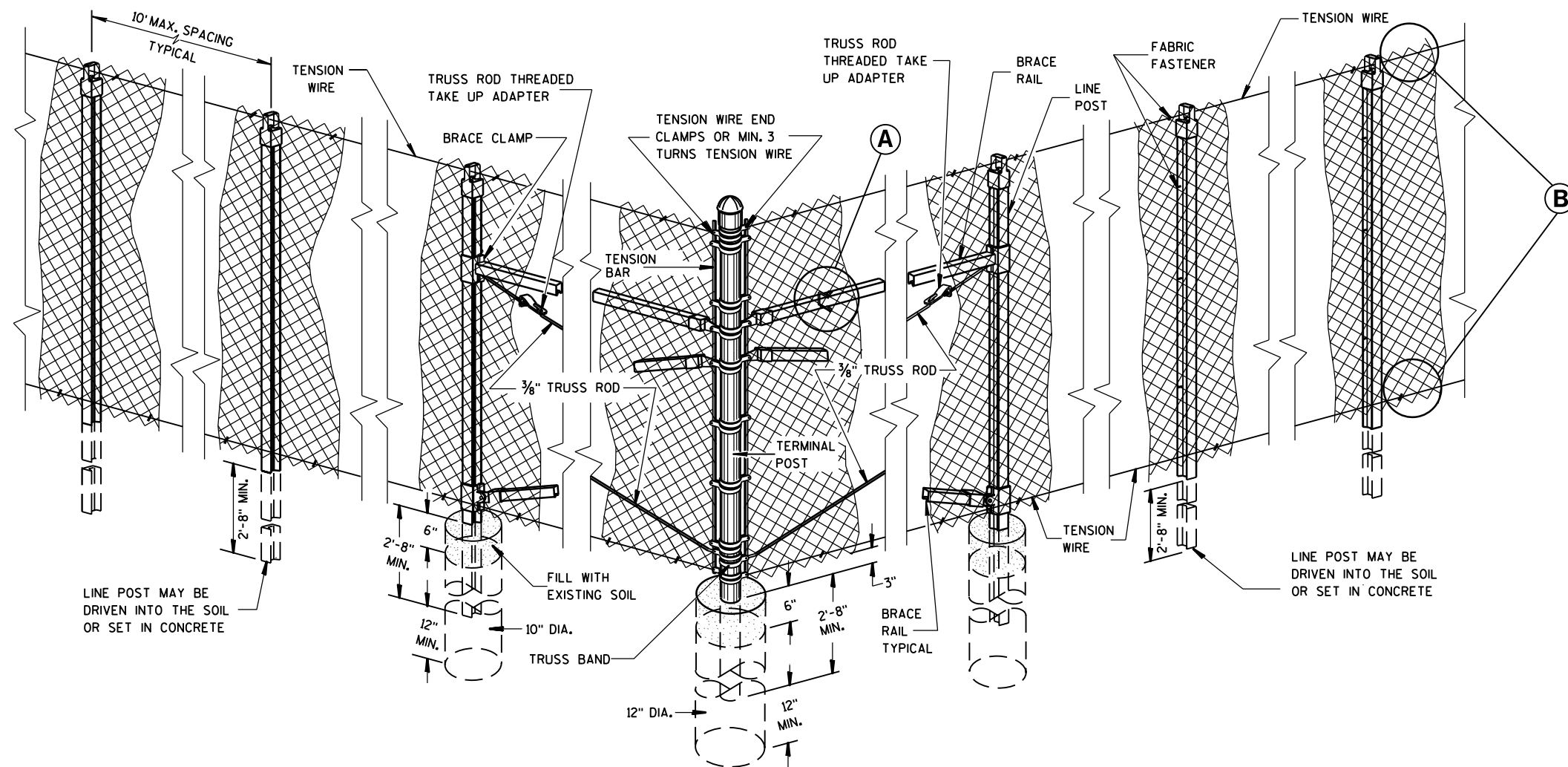
(A)



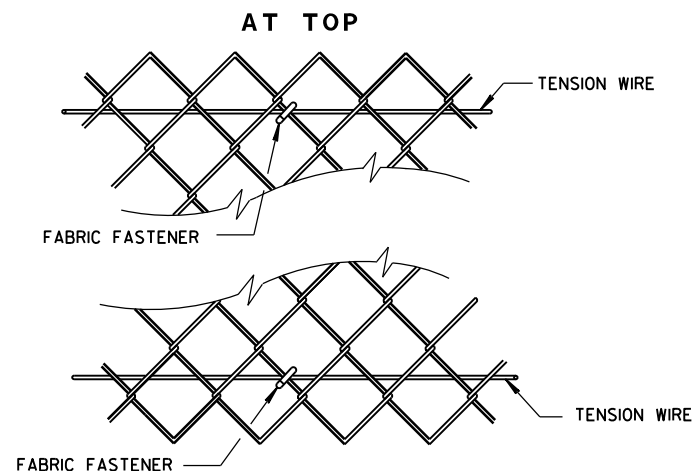
TENSION WIRE END CLAMP



LINE POST FABRIC FASTENER



END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



(B)

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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FEB. 2015

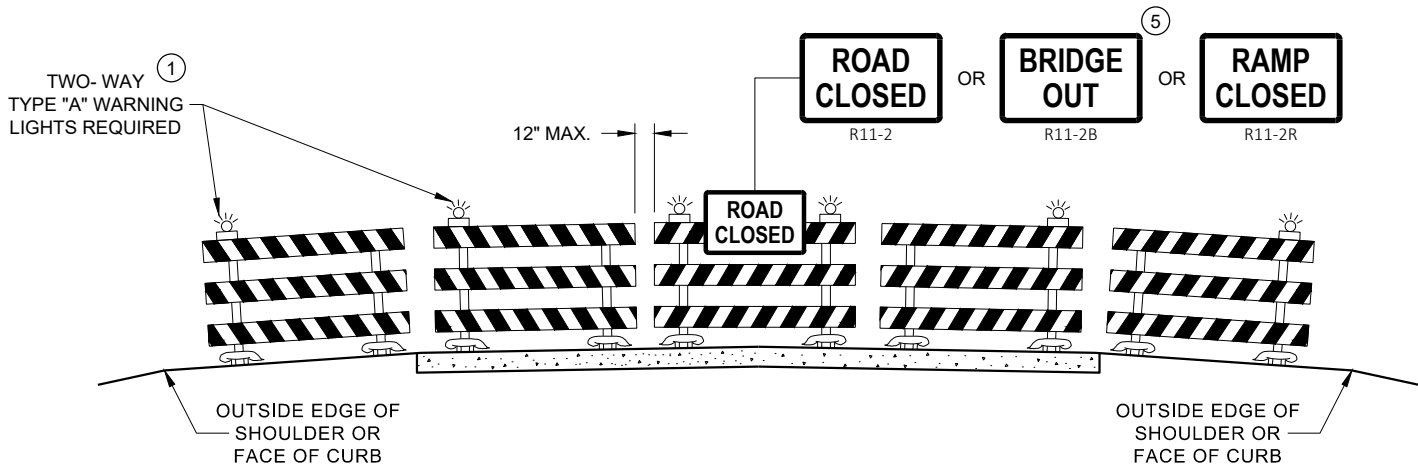
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FHWA

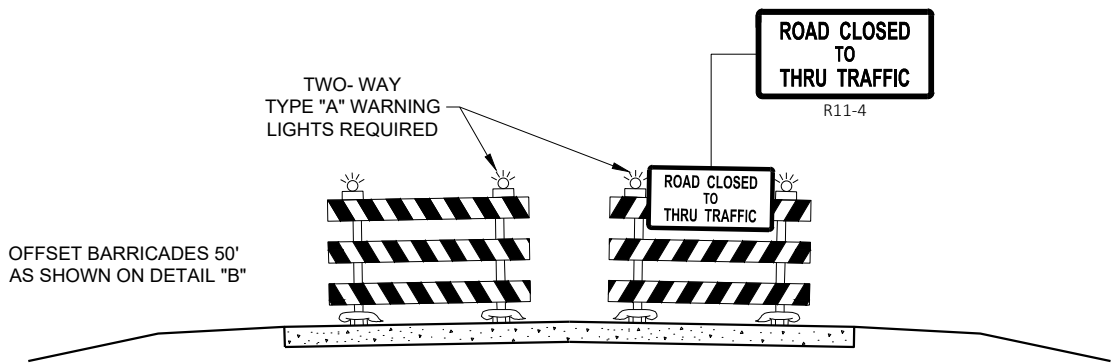
/S/ Jerry H. Zogg

ROADWAY STANDARDS 101

ENGINEER



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL "D" FOR FULL ROAD CLOSURES.

TYPE "A" LOW - INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

"WO" AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60 " X 30"
- M4 - 9 SHALL BE 30" X 24"
- M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
- M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
- MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
- D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1 - 1 SHALL BE 36" X 36"

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT AN INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "D".
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL "E".
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11 - 2 AND R11 - 3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS
FOR
VARIOUS CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 102

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THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL "TO" MO-4 SIGN LAYOUT AND SPACING. SEE PROJECT TO SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

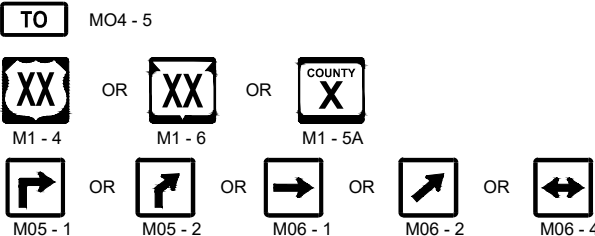
LEGEND



SIGN ON PERMANENT SUPPORT



PORTABLE CHANGEABLE MESSAGE SIGN



GENERAL NOTES

SEE SDD 15D16 "TRAFFIC CONTROL, EXIT RAMP CLOSURE" DETAIL FOR TRAFFIC CONTROL AT EXIT RAMP CLOSURE.

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

IF THERE ARE ANY ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE "TO" MO-4 ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT TO SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND "TO" MO-4 SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOW:
MO4 - 5 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M1 - 4, M1 - 5A, AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS).
MO5 - 1, MO5 - 2, AND MO6 - 1, SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS).

① ONLY ADD IF THERE ARE NO EXISTING ROUTE MARKERS FOR THE INTERSECTING ROADWAY.

OFF RAMP LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE

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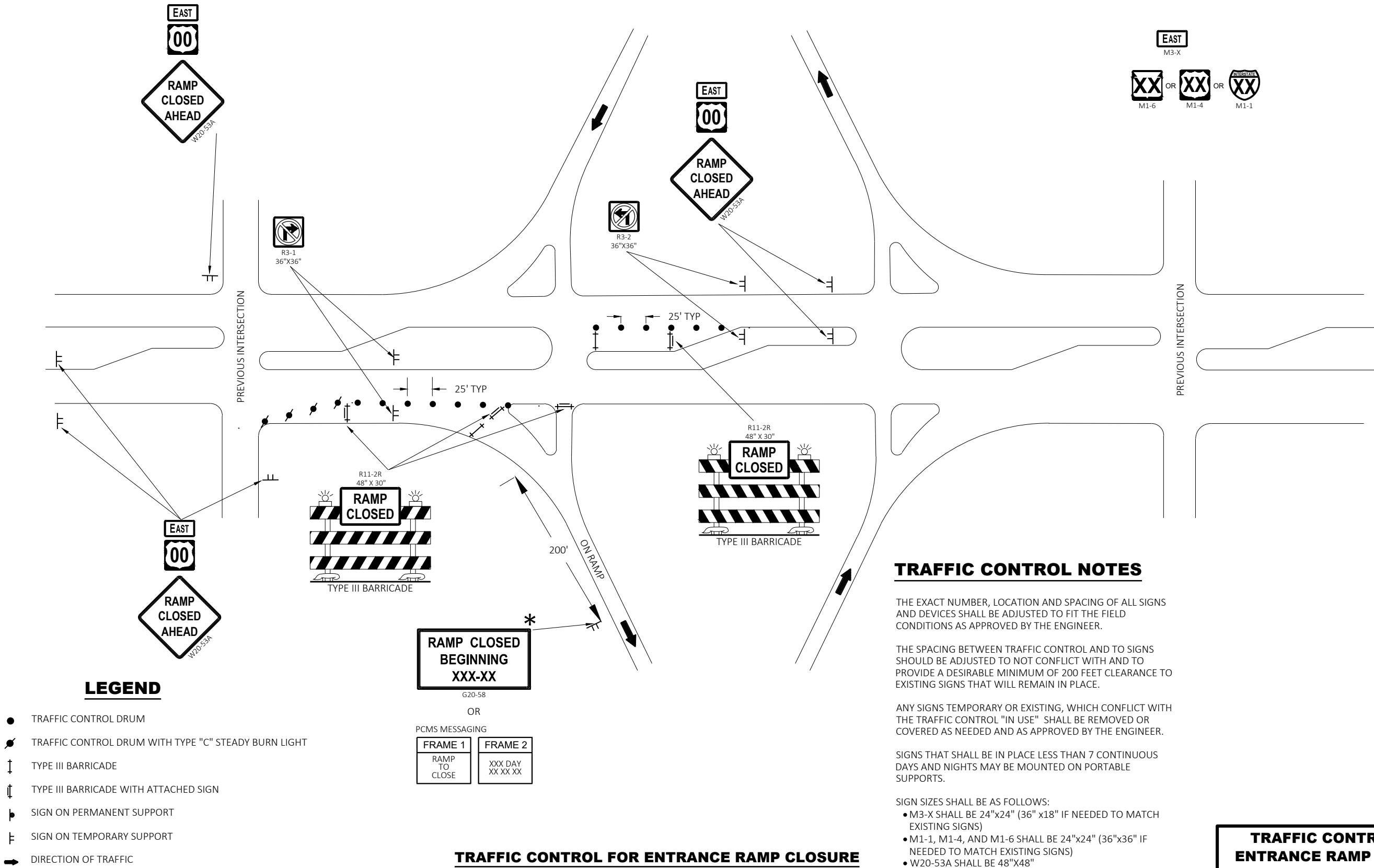
WORK ZONE ENGINEER 104

SDD15C02 - 09e

SDD 15C02 - 09e

6

6 |



TRAFFIC CONTROL NOTES

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

THE SPACING BETWEEN TRAFFIC CONTROL AND TO SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

SIGNS THAT SHALL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

- SIGN SIZES SHALL BE AS FOLLOWS:
- M3-X SHALL BE 24"x24" (36" x18" IF NEEDED TO MATCH EXISTING SIGNS)
 - M1-1, M1-4, AND M1-6 SHALL BE 24"x24" (36"x36" IF NEEDED TO MATCH EXISTING SIGNS)
 - W20-53A SHALL BE 48"x48"

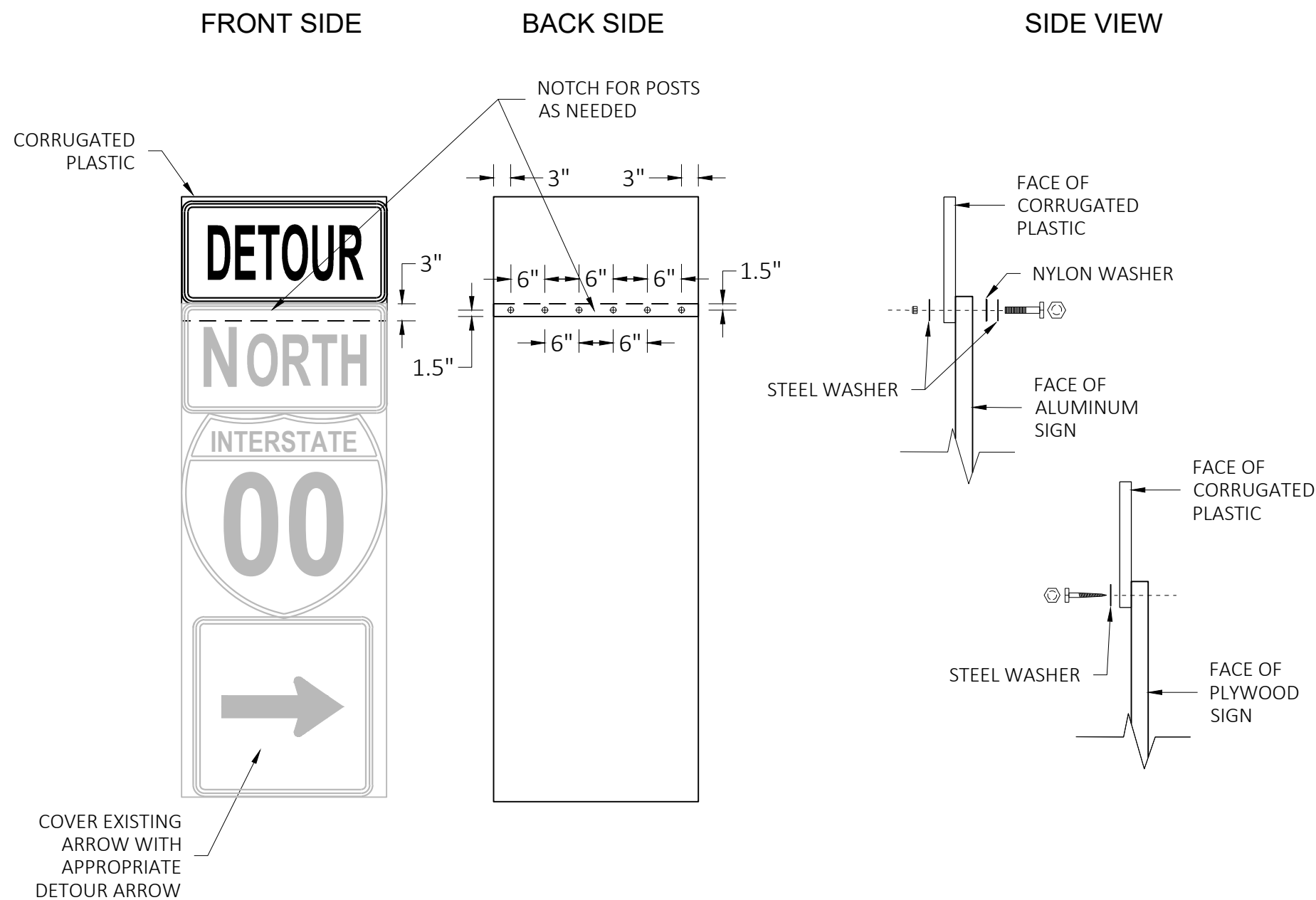
* PLACE "RAMP CLOSED BEGINNING" SIGN 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR LAYOUT.

TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DATE WORK ZONE ENGINEE 105

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GENERAL NOTES

CELLS OF CORRUGATED PLASTIC SHALL BE VERTICALLY ORIENTED.

PROVIDE A 0.4-INCH THICK BASE CORRUGATED PLASTIC WITH A 0.035-INCH WALL THICKNESS AND 0.4-INCH CELL SIZE.

FOR 36" WIDE SIGNS: USE 6 FASTENERS AS SHOWN.

FOR 24" WIDE SIGNS: USE 4 FASTENERS WITH EDGE SPACING AS SHOWN AND 6" SPACING BETWEEN FASTENERS.

METAL WASHERS, NUTS, BOLTS AND LAGS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3.
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

PLYWOOD SIGNS:

LAG SCREWS - 5/16" x 1"

ALUMINUM SIGNS:

MACHINE BOLTS - 5/16" x 1-1/4" LENGTH W/NUTS

WASHERS:

1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL

1-1/4" O.D. x 3/8" I.D. x .080 NYLON

MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

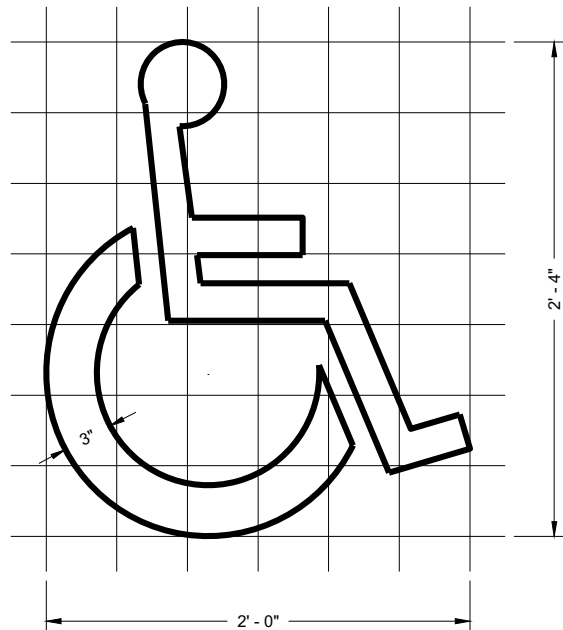
APPROVED

May 2023
DATE

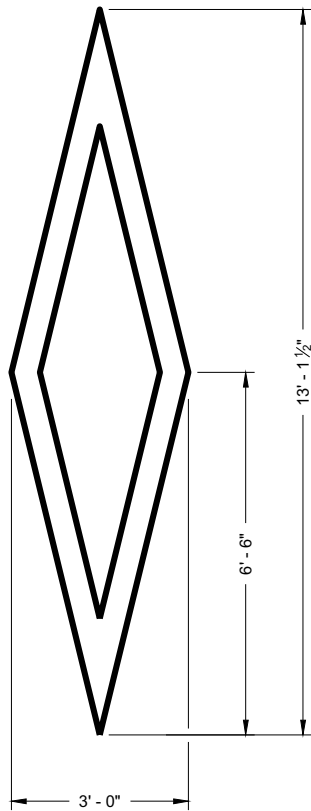
/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

106

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HANDICAP SYMBOL



PREFERENTIAL
LANE SYMBOL

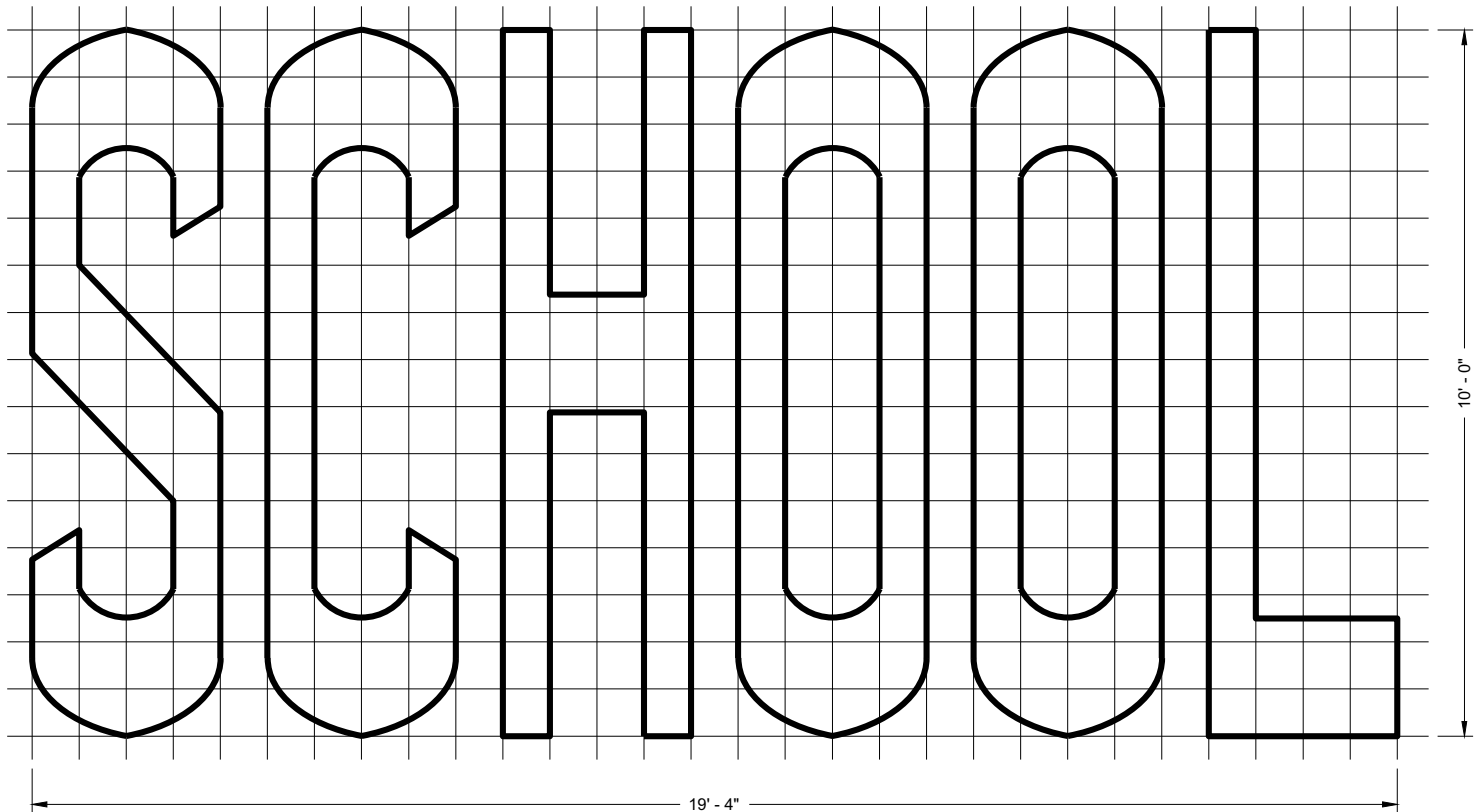
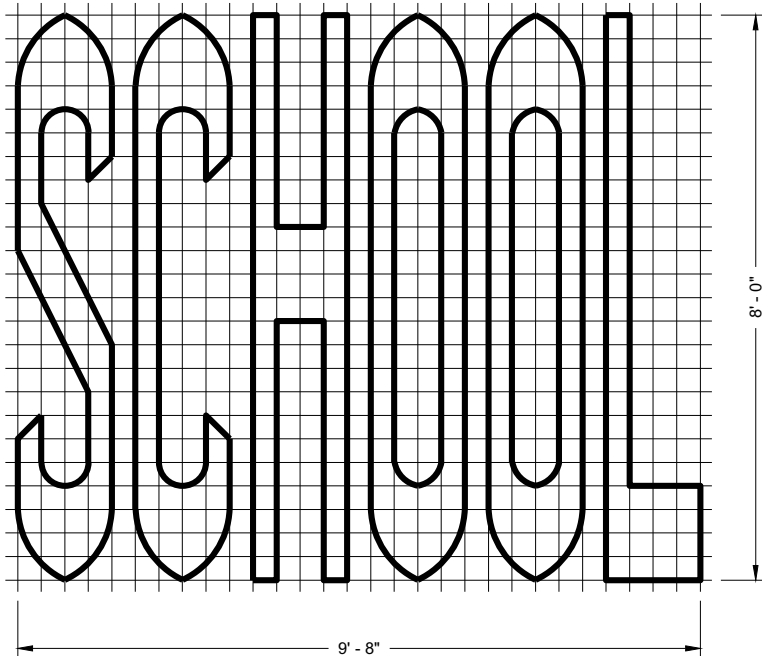
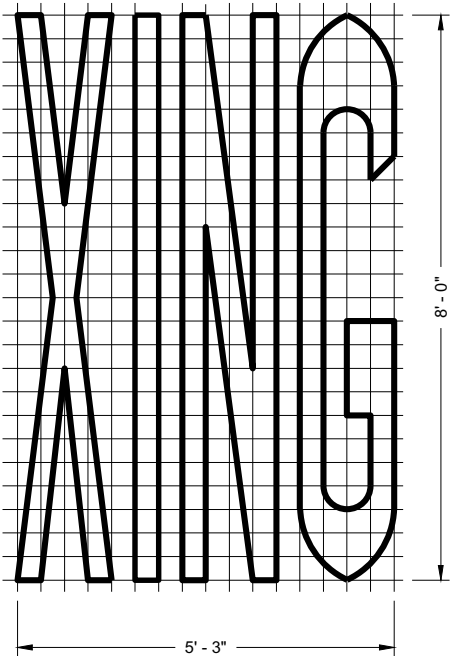
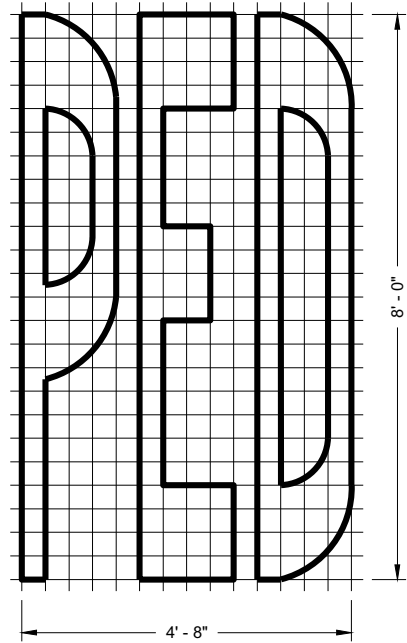
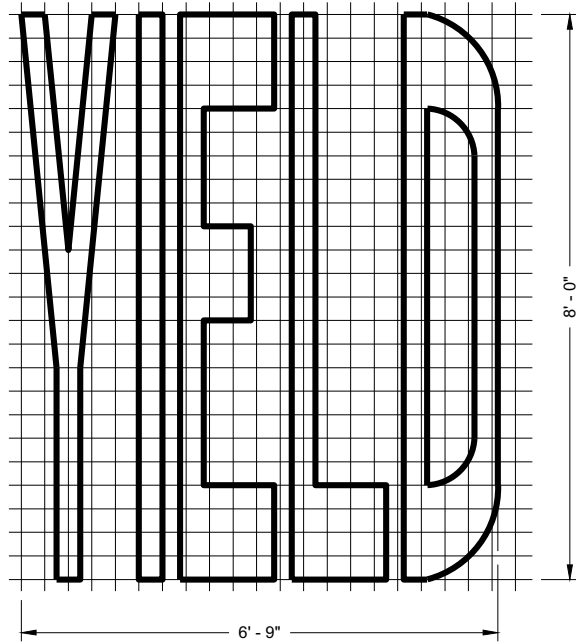
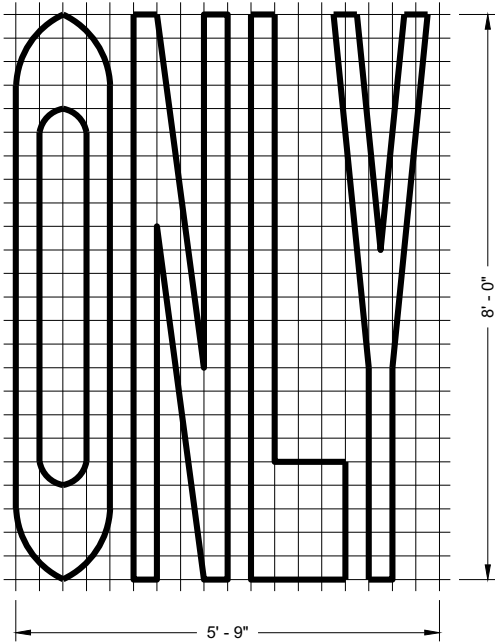
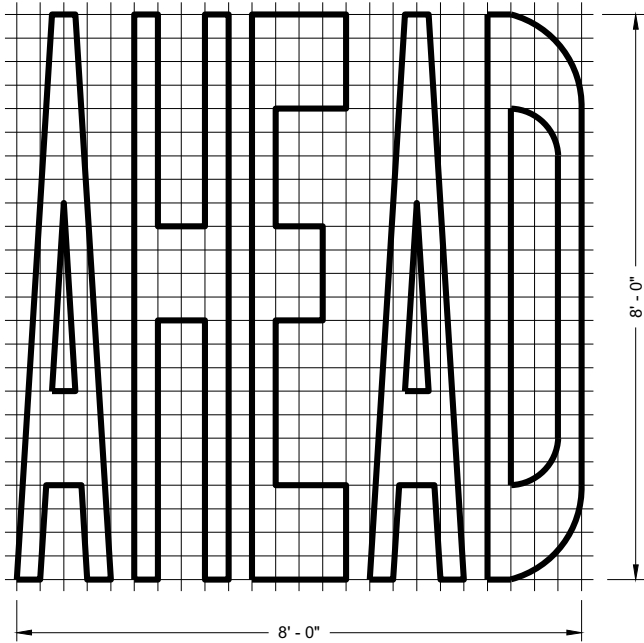
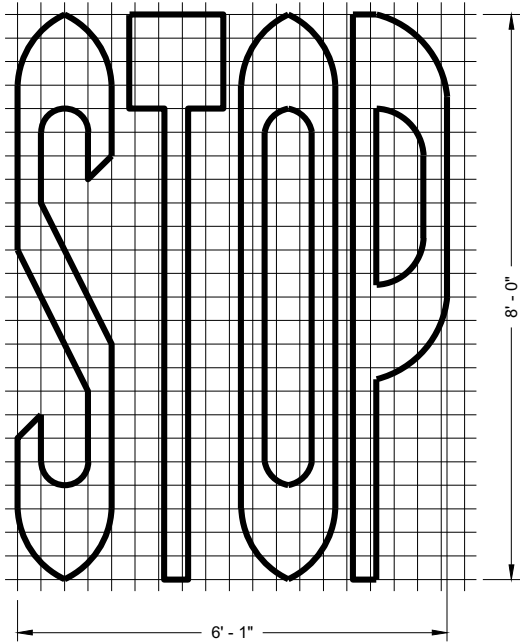
GENERAL NOTES

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

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 107
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SINGLE LANE

TWO - LANE

GENERAL NOTES

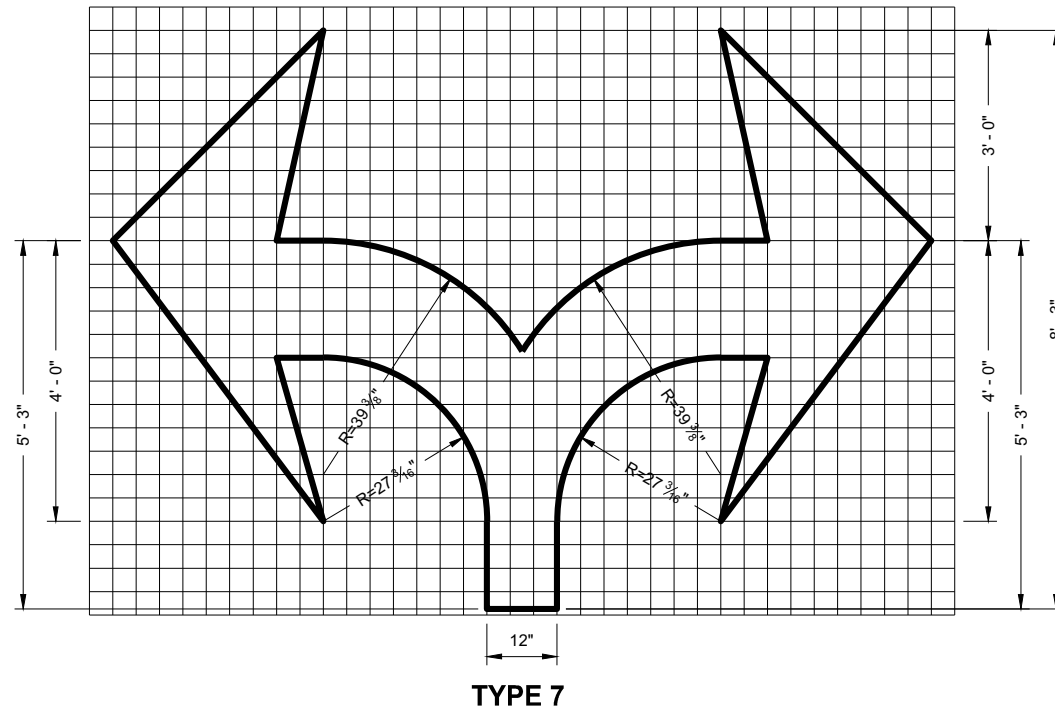
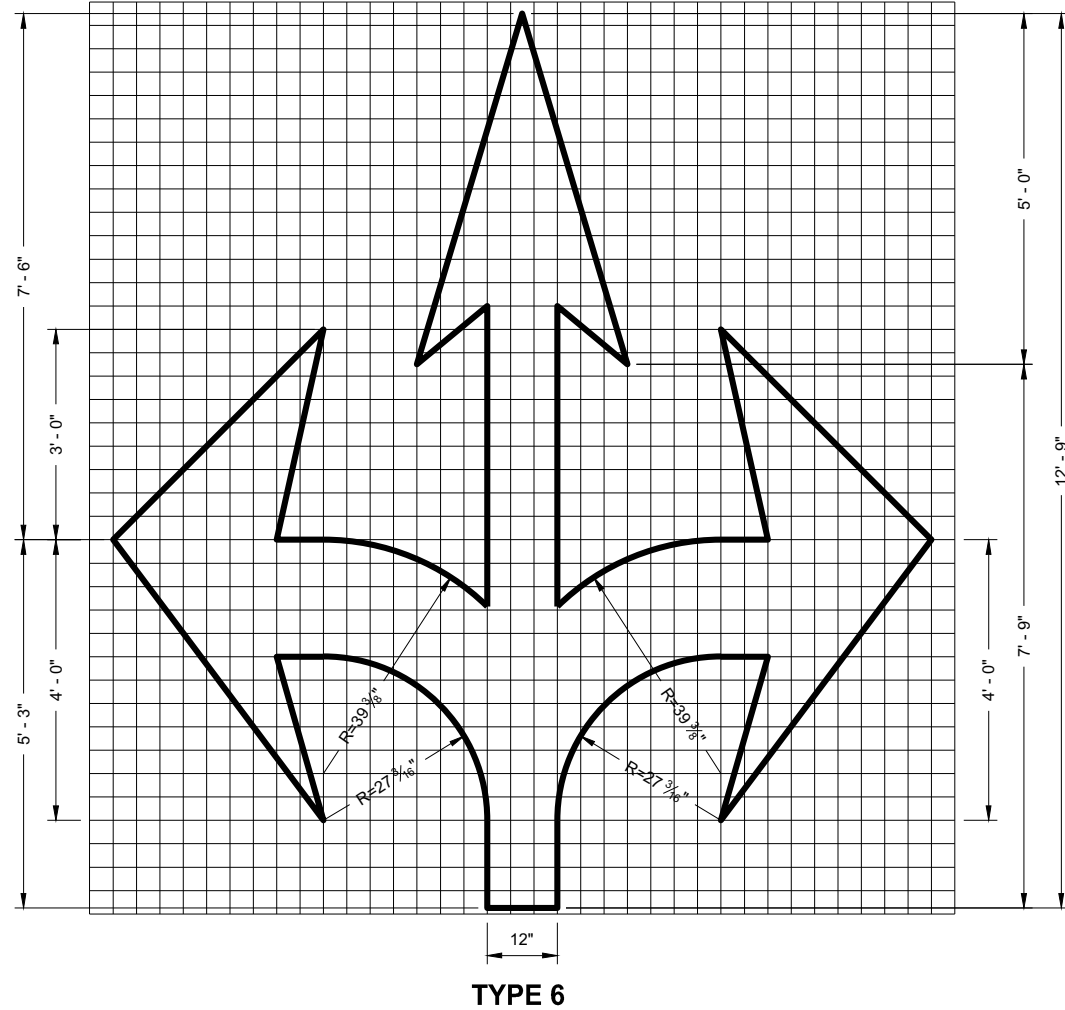
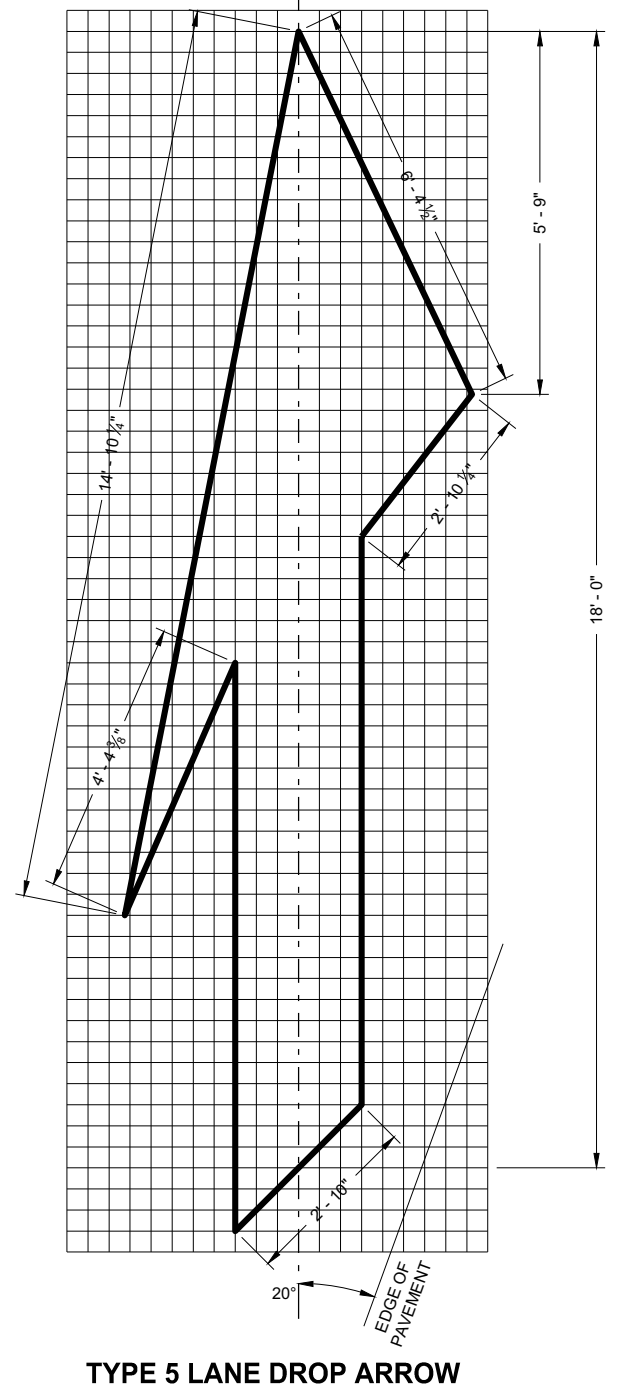
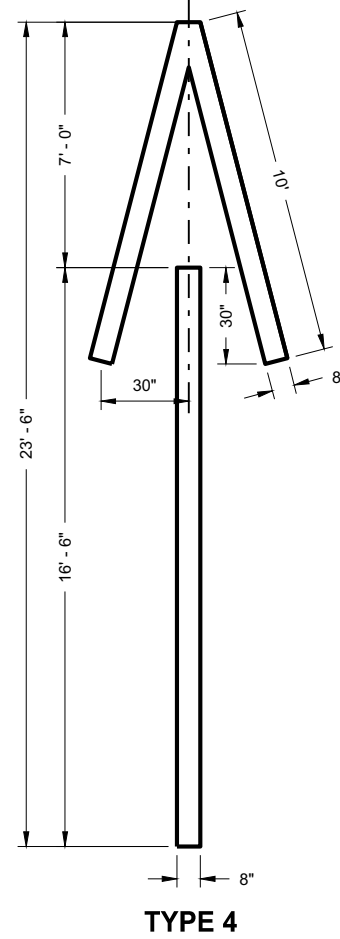
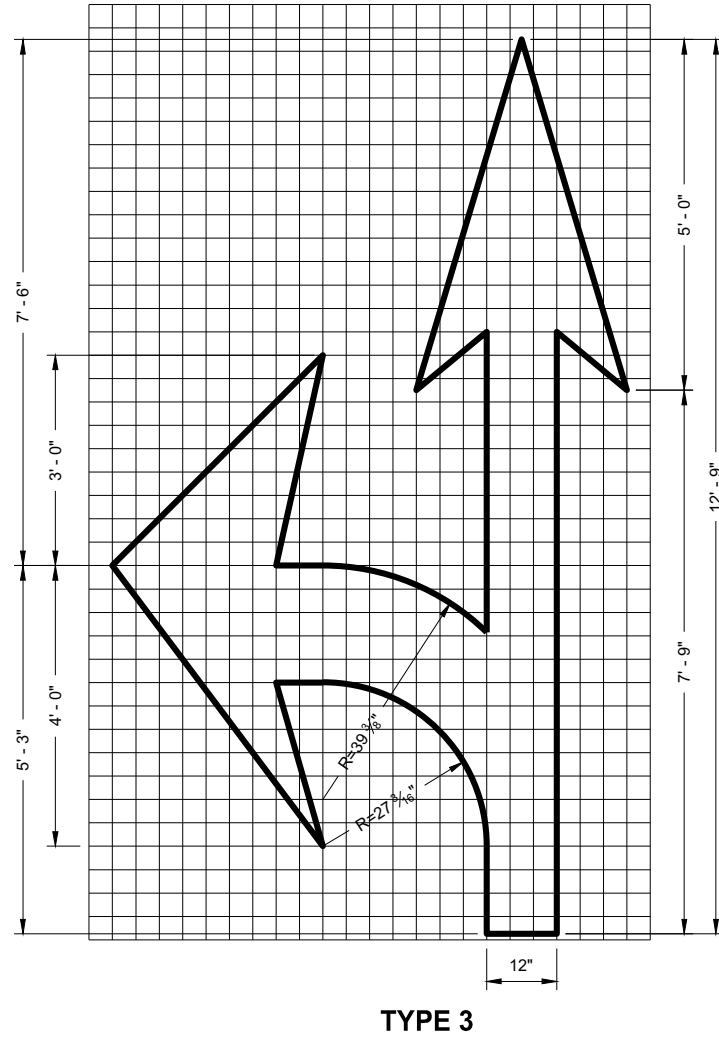
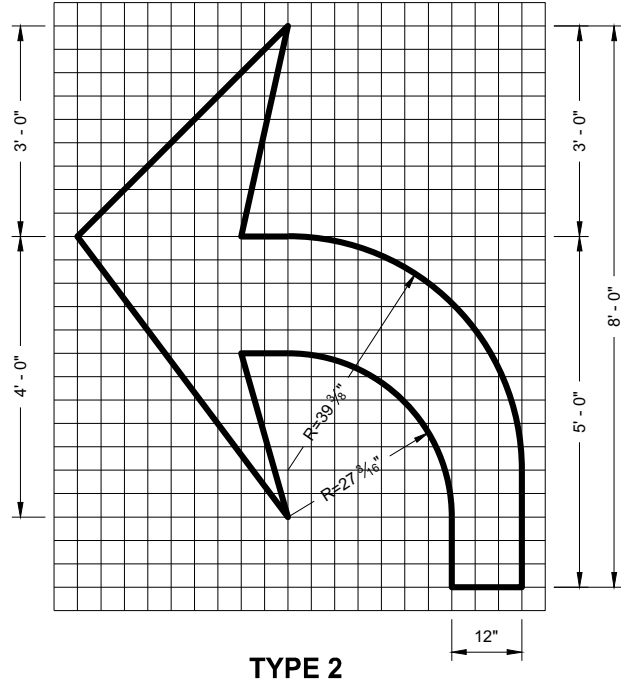
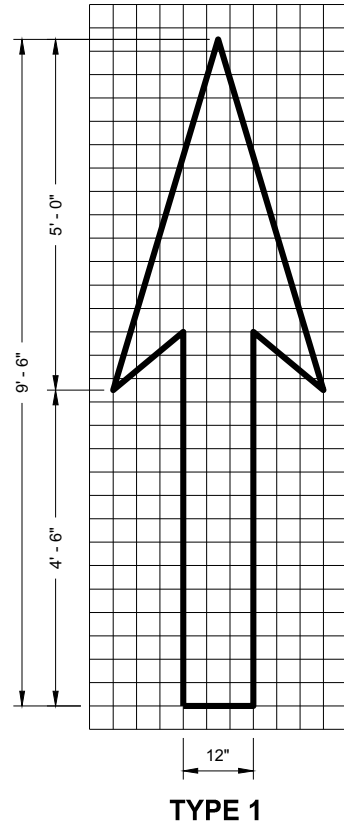
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PAVEMENT MARKING WORDS

STATE OF WISCONSIN
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GENERAL NOTES

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PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

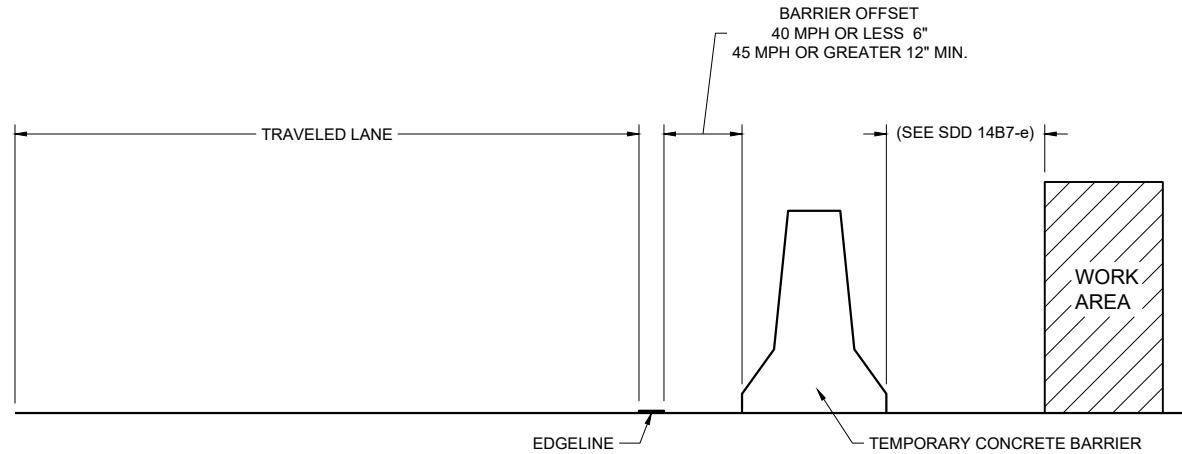
APPROVED
November 2019
DATE
/S/ Matthew Rauch
STATE SIGNING AND MAF
ENGINEER 109

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PERMANENT PAVEMENT MARKING

-  "T" MARKING
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC



TEMPORARY BARRIER OFFSET FROM EDGE LINE

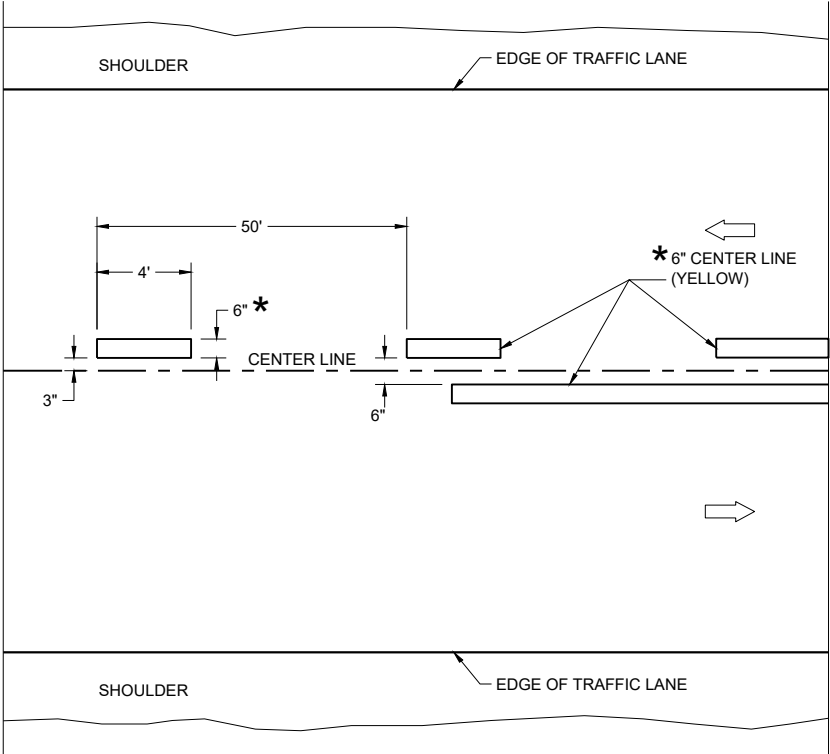
GENERAL NOTES

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

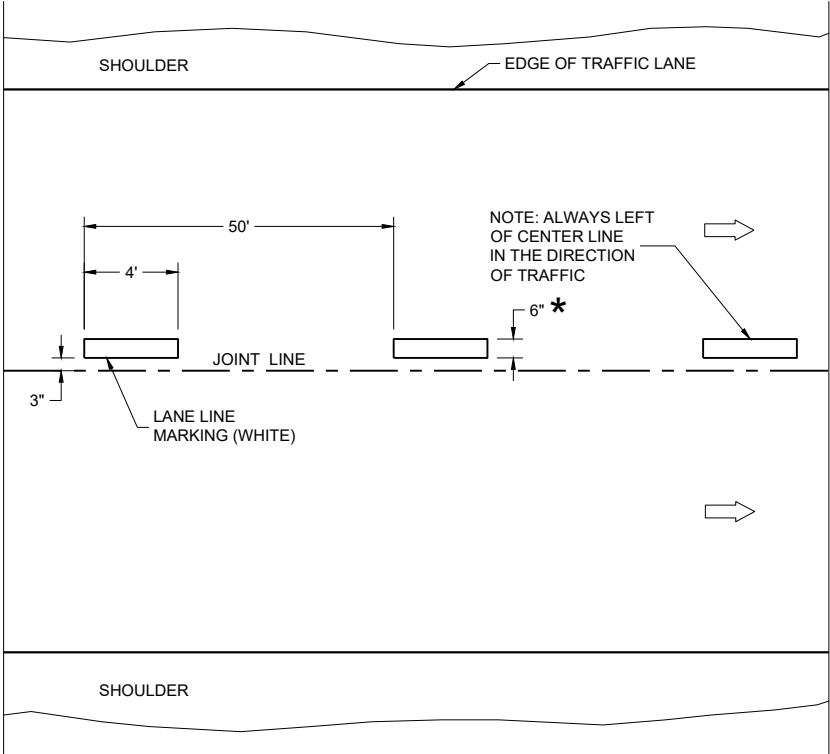
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DIRECTION OF TRAFFIC

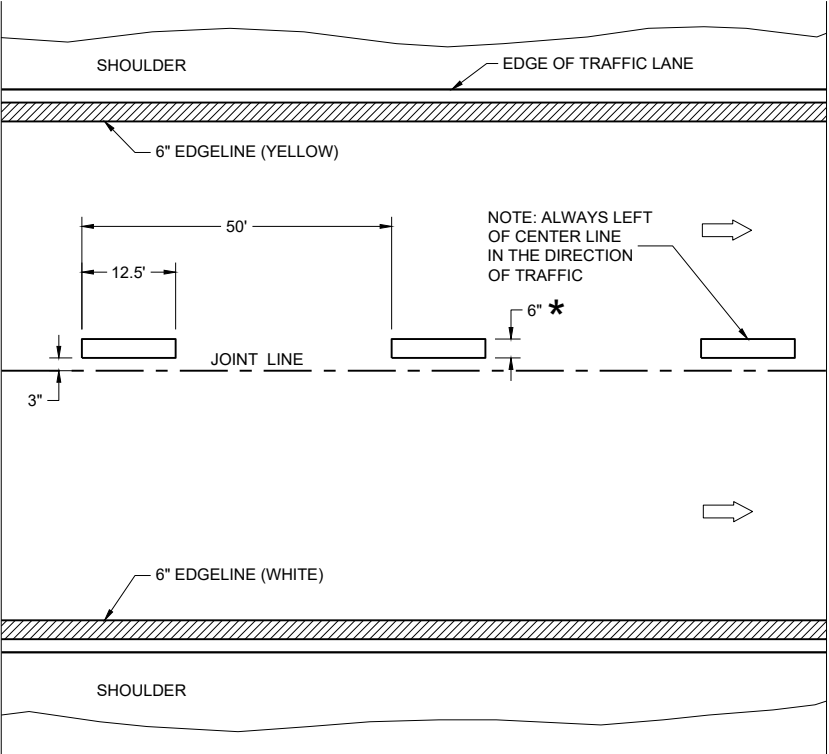
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



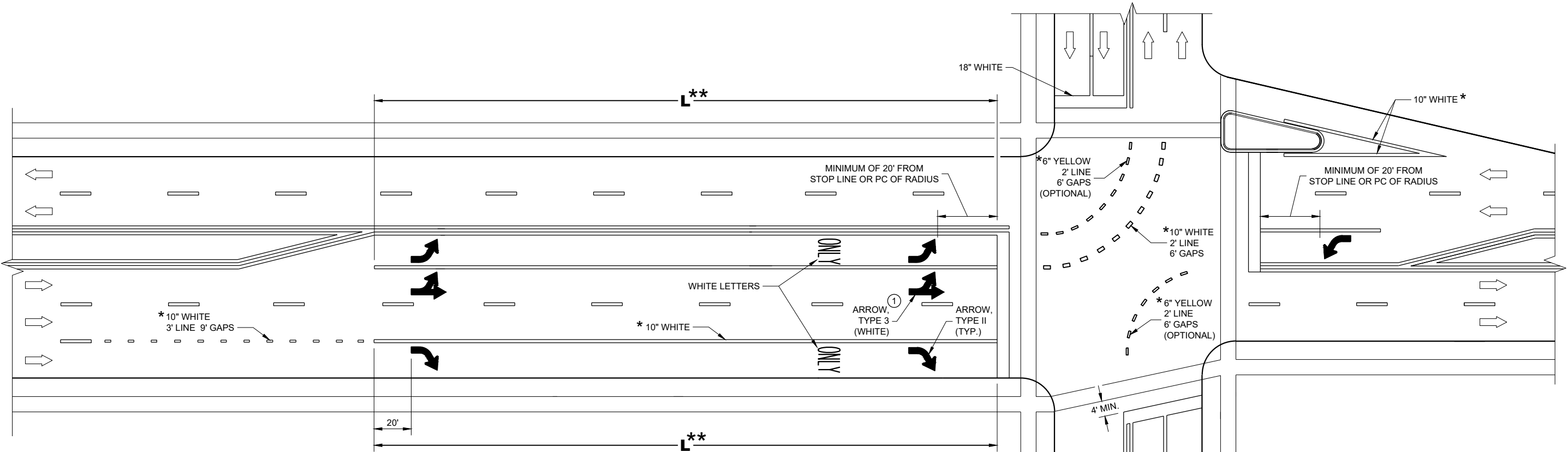
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

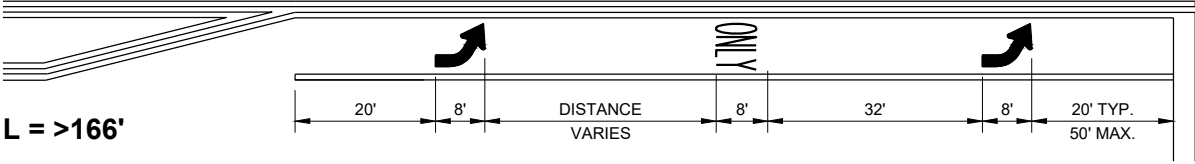
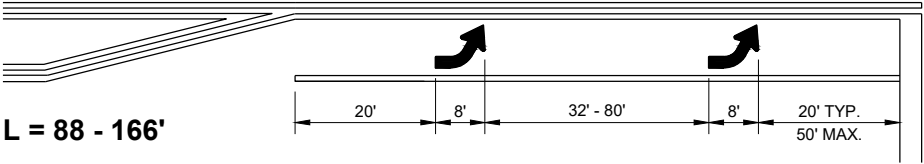
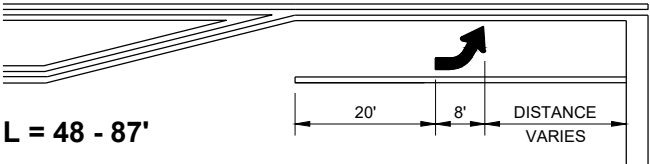
TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	



** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



GENERAL NOTES

① QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

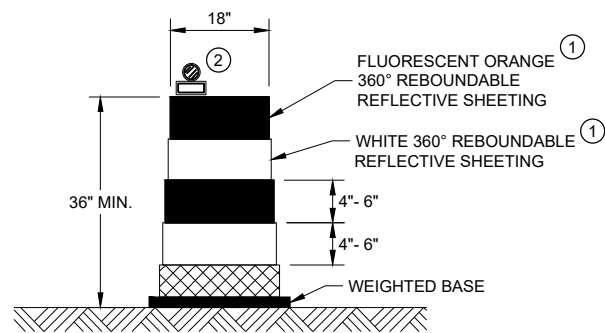
➡ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

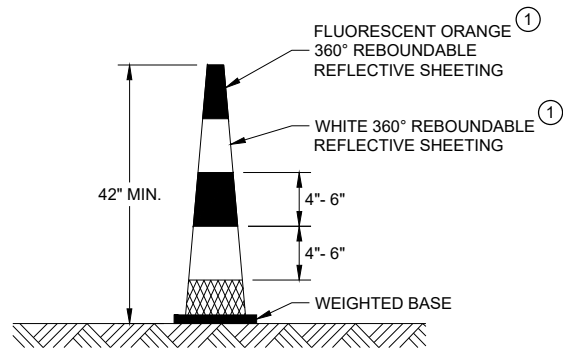
PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 112



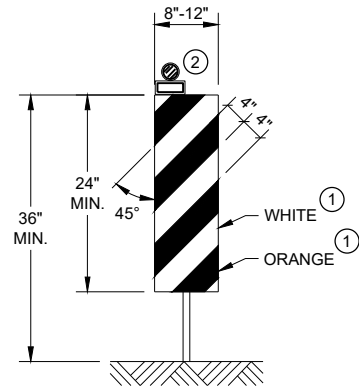
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



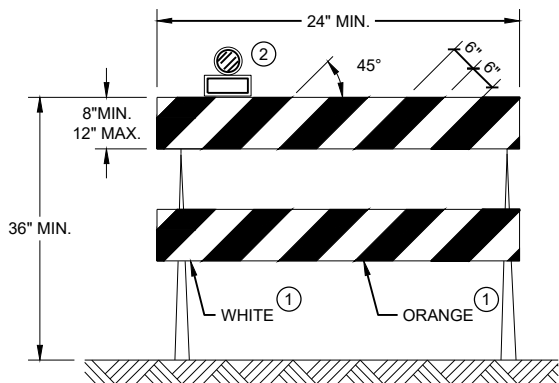
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



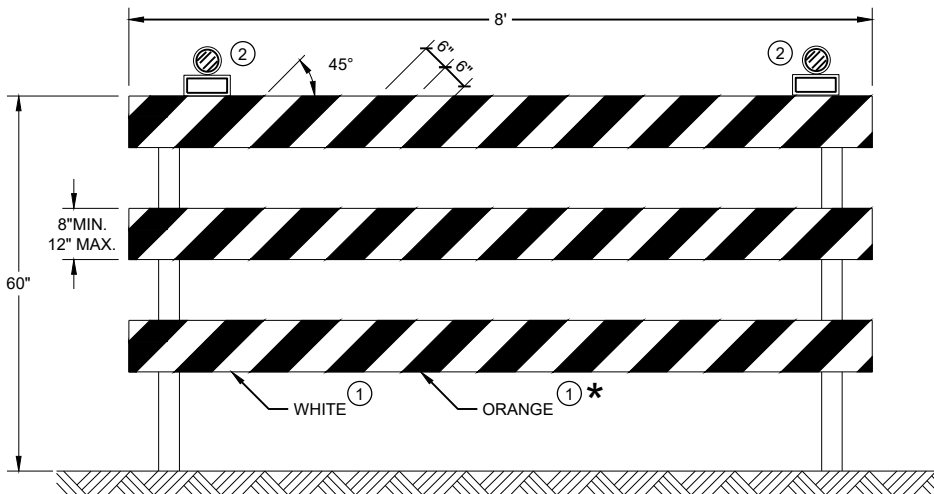
VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO
THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL STRIPES SHALL SLOPE DOWNWARD
TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE III BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

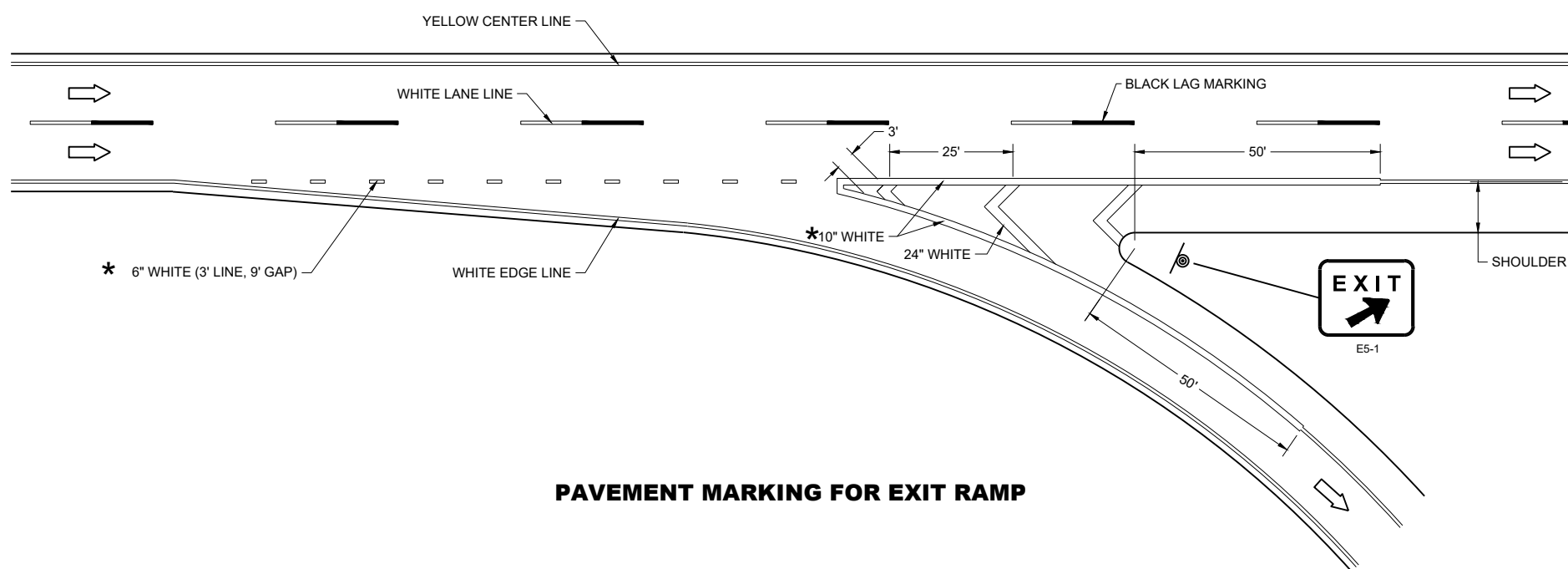
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 113
FHWA



GENERAL NOTES

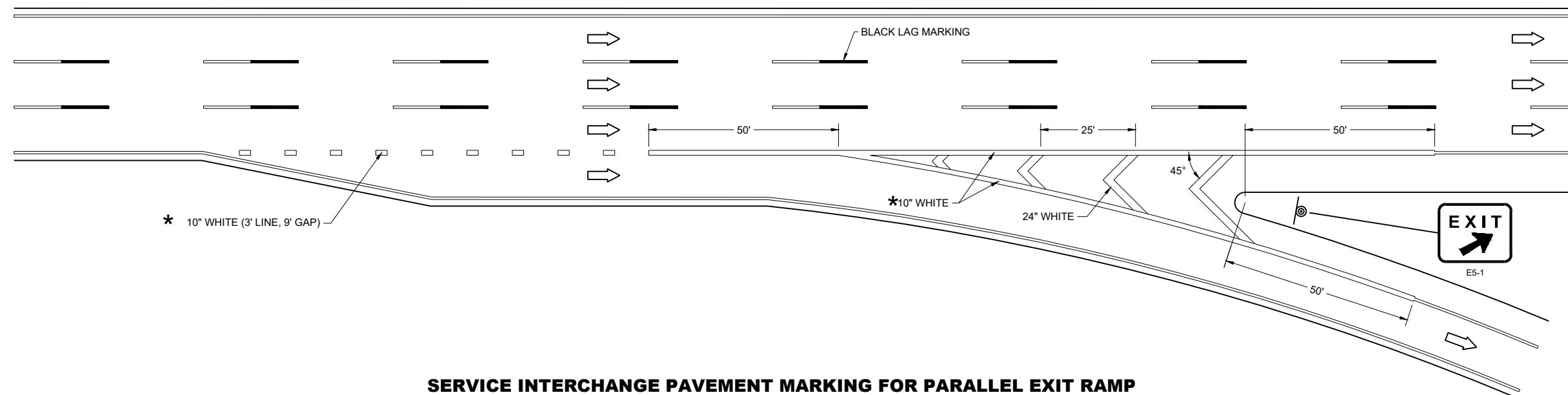
PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

 SIGN ON PERMANENT SUPPORT

 DIRECTION OF TRAVEL

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



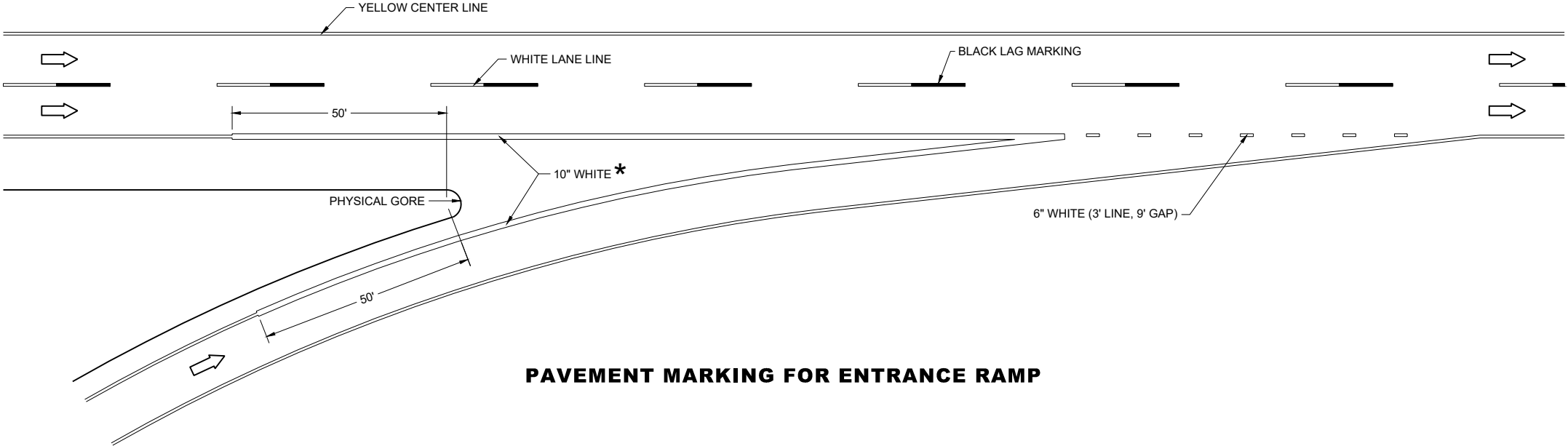
GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

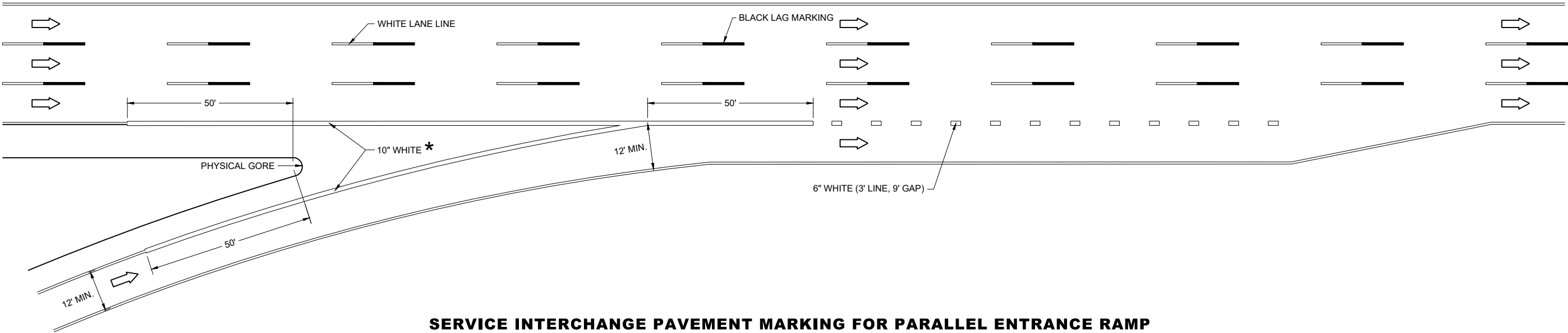
LEGEND

DIRECTION OF TRAVEL

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



PAVEMENT MARKING FOR ENTRANCE RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP

PAVEMENT MARKING,
ENTRANCE RAMP AND
PARALLEL ENTRANCE RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

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

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

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

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED OR AS APPROVED BY THE ENGINEER.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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

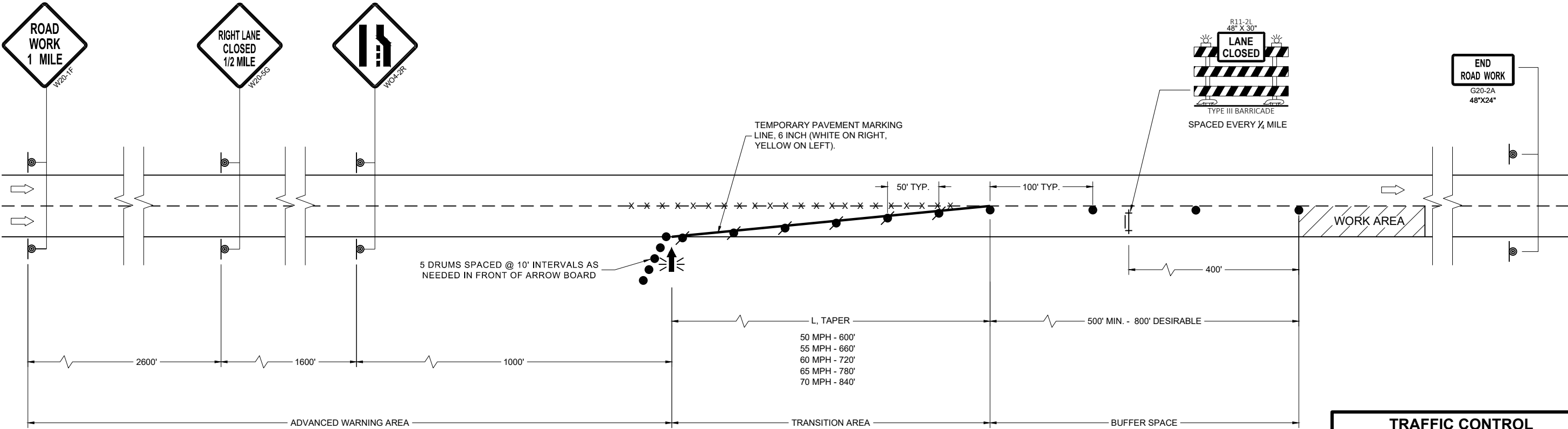
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

LEGEND

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

6

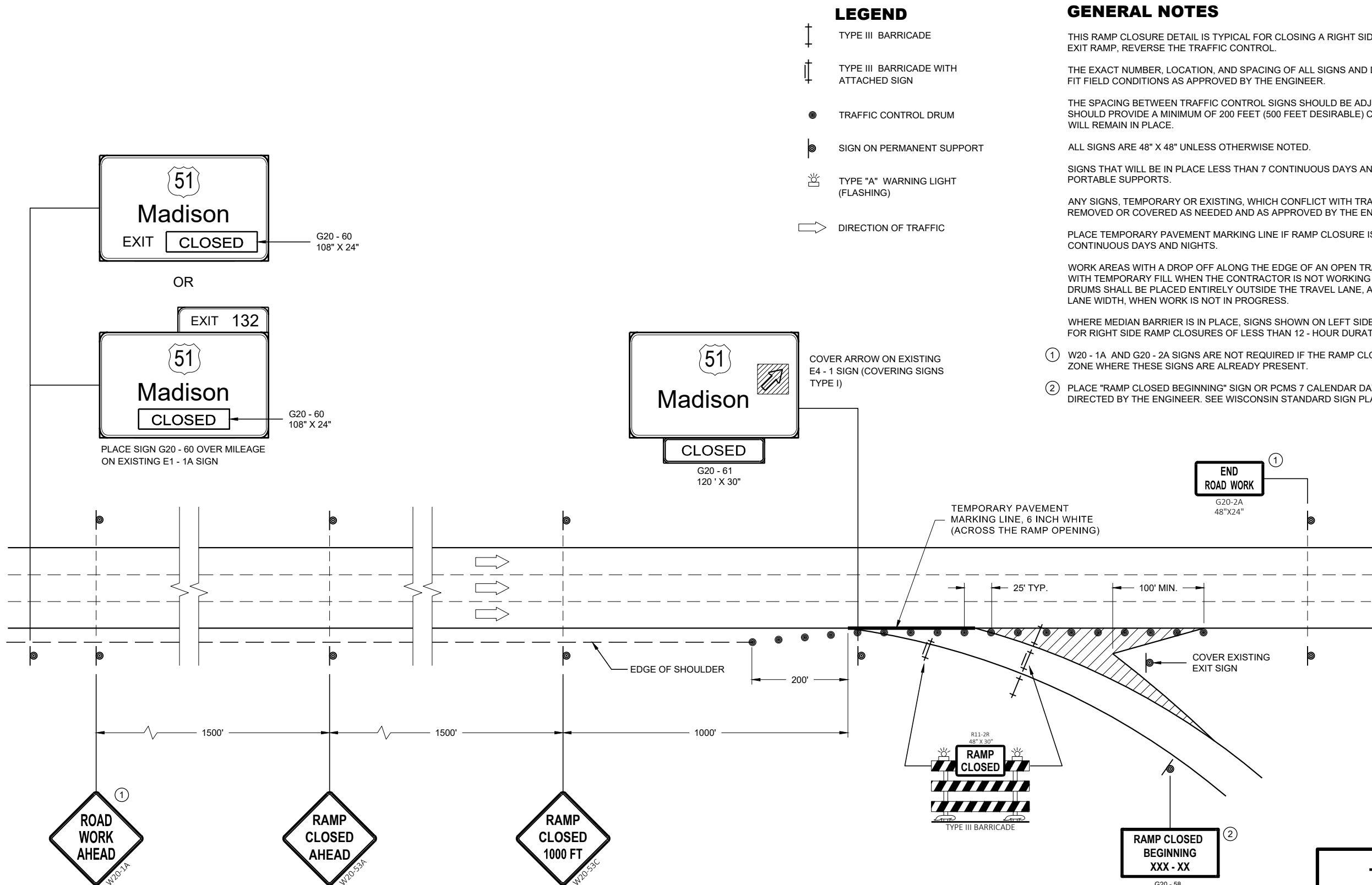


6

SDD 15D12-13a

SDD 15D12-13a

TRAFFIC CONTROL LANE CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Andrew Heidtke Work Zone Engineer
FHWA	



**TRAFFIC CONTROL,
EXIT RAMP CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

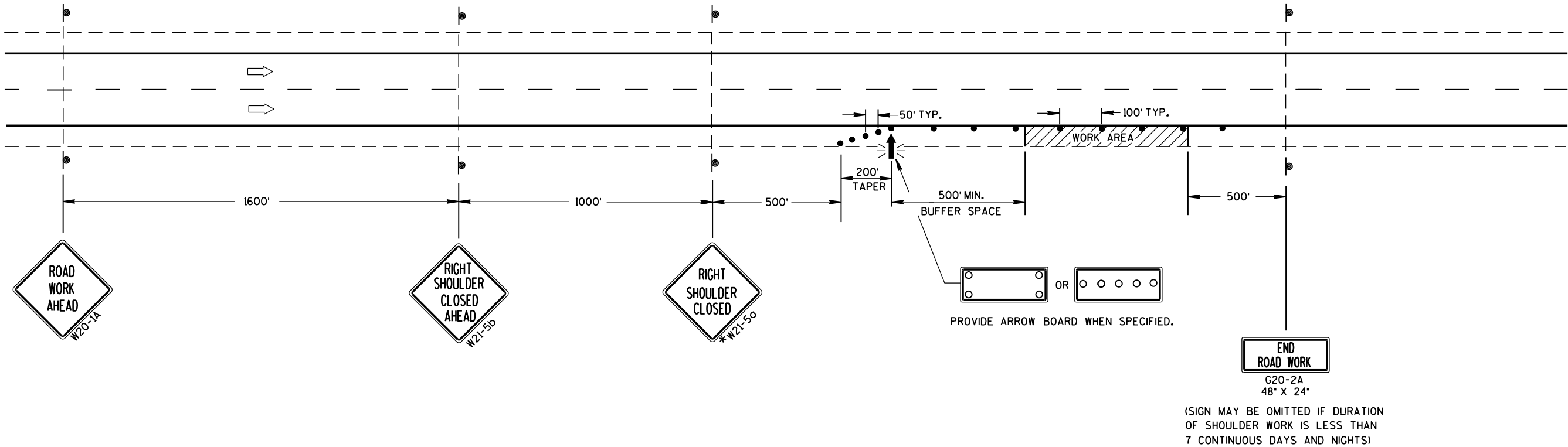
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2016	/S/ Peter Amakobe Atepe		
DATE	STATEWIDE WORK ZONE	118	IC
FHWA	SAFETY ENGINEER		

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

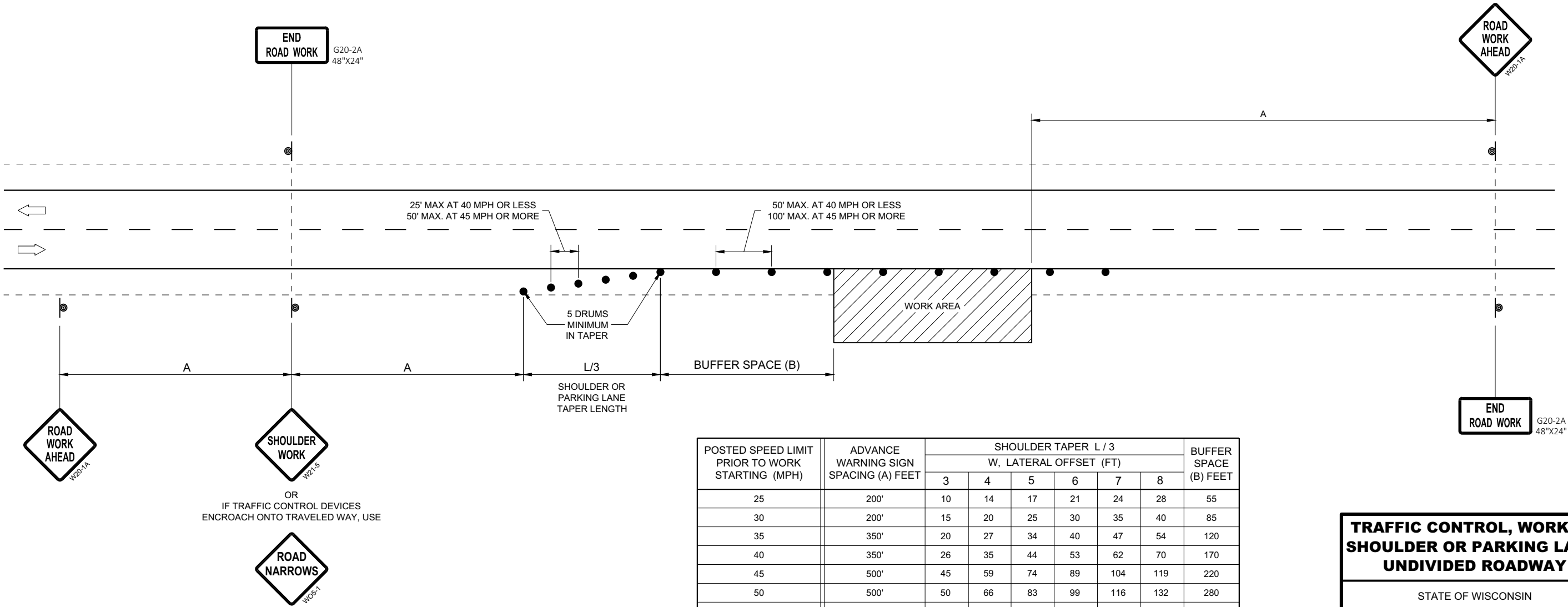
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON
SHOULDER OR PARKING LANE,
UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020
DATE
/S/ Andrew Heidtke
STATEWIDE WORK ZONE T
SAFETY ENGINEER 119
FHWA

6

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER $L\frac{1}{2}$					
		W, LATERAL OFFSET (FT)					
3	4	5	6	7	8		
25	200	10	14	17	21	24	28
30	200	15	20	25	30	35	40
35	350	20	27	34	40	47	54
40	350	26	35	44	53	62	70
45	500	45	59	74	89	104	119
50	500	50	66	83	99	116	132
55	500	54	73	91	109	127	145

GENERAL NOTES

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"x36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

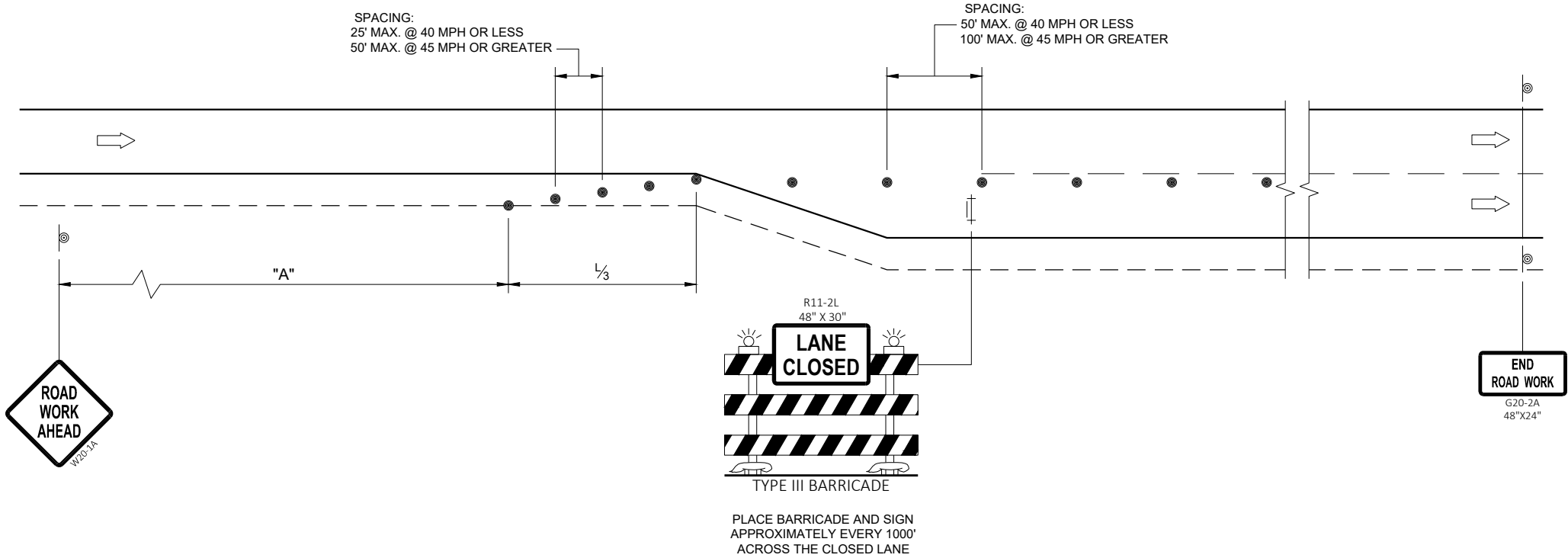
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION WORK IS LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS.



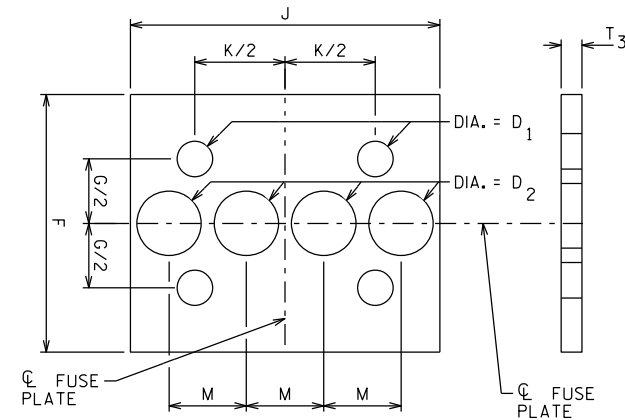
**TRAFFIC CONTROL
ADDED LANE CLOSURE
WITHOUT LANE SHIFT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

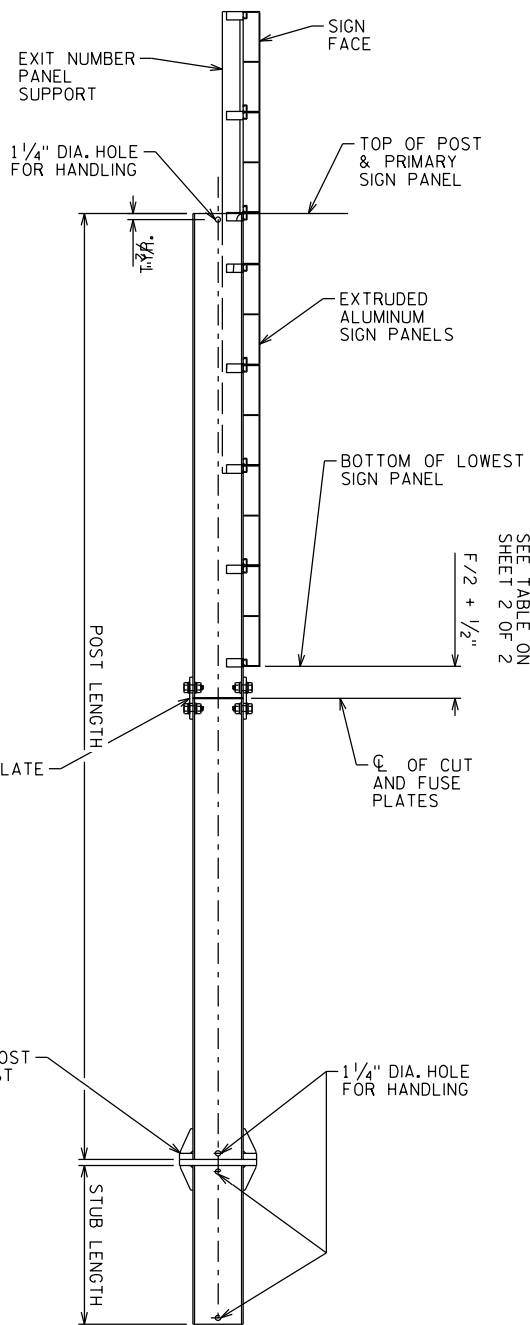
FHWA 120



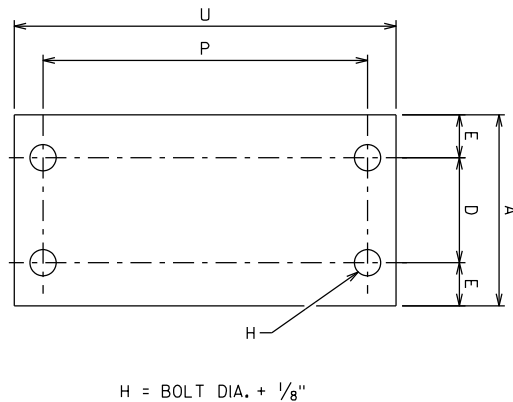
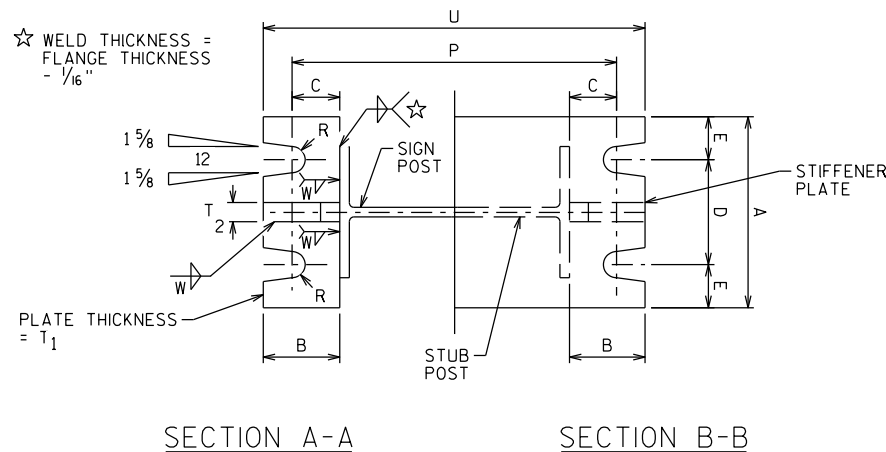
PERFORATED FUSE PLATE DETAIL

USE H.S. HEX HEAD BOLTS, HEX HEAD NUT AND FLAT WASHER UNDER NUT.
INSTALL BOLTS PER THE WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD
SPECIFICATION SECTION 506.3.12.3.

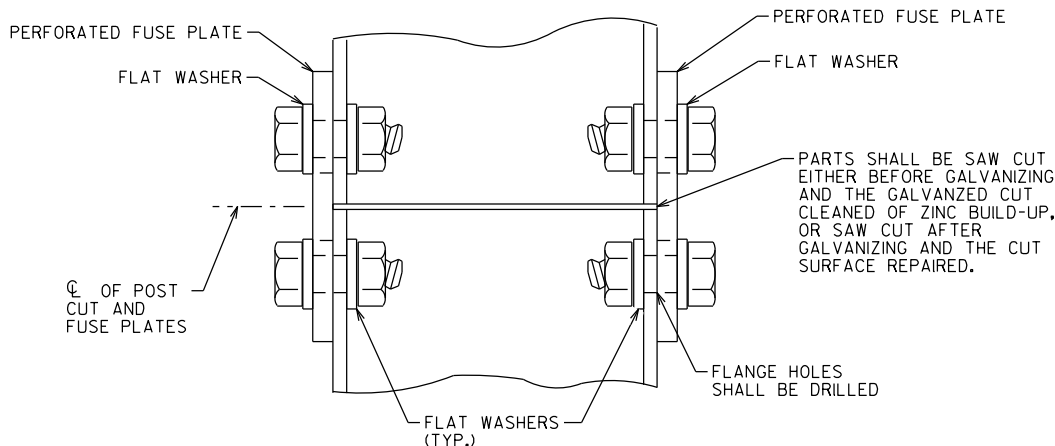
ALL HOLES SHALL BE DRILLED, SUB-PUNCHED AND REAMED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS. HOWEVER, FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND. METAL PROJECTING BEYOND THE PLANE OF THE PLATE FACE WILL NOT BE PERMITTED. STEEL FUSE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36, ASTM A572 GRADE 50 OR ASTM A588 MAY BE SUBSTITUTED FOR A36 AT THE OPTION OF THE FABRICATOR. MILL TEST REPORTS SHALL BE SUBMITTED FOR FUSE PLATES. STEEL USED SHALL HAVE AN ULTIMATE TENSILE STRENGTH NOT TO EXCEED 80 KSI.



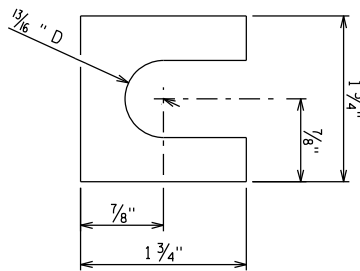
POST DETAIL



BOLT KEEPER PLATE DETAIL
30 GA GALVANIZED SHEET STEEL



FUSE PLATE CONNECTION DETAIL



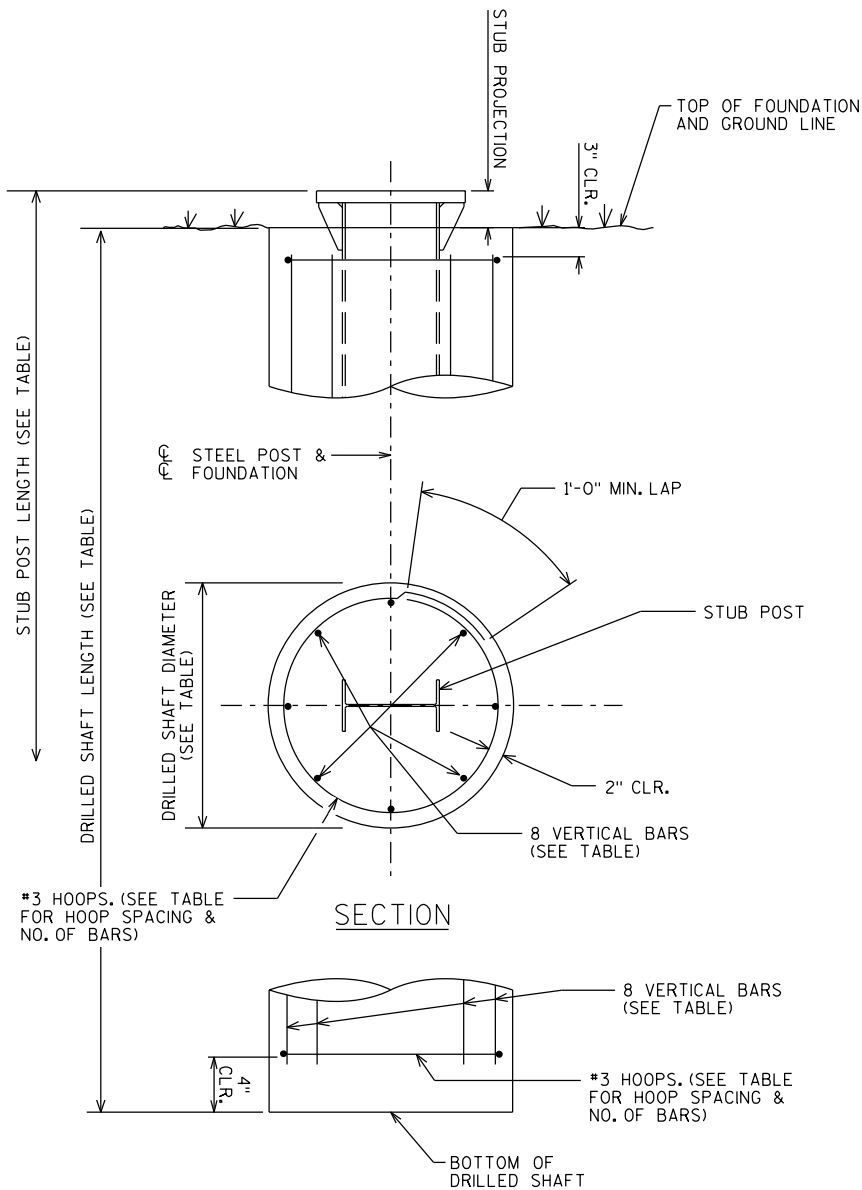
SHIM DETAIL

FURNISH TWO .012"± THICK AND TWO .032"± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO ASTM B36.

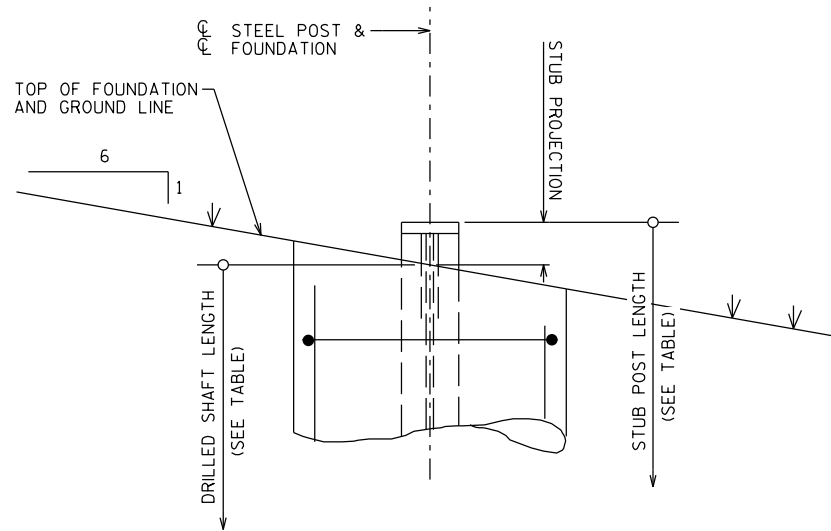
BOLTING PROCEDURE FOR BASE CONNECTION

1. ASSEMBLE SIGN POST, BOLT KEEPER PLATE, AND STUB POST WITH BOLTS AND THREE FLAT WASHERS PER BOLT AS SHOWN.
2. SHIM AS REQUIRED TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING, LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH A 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS.
5. LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PERSCRIBED TORQUE. (SEE TABLE FOR PERSCRIBED TORQUE). DO NOT OVER-TIGHTEN.
6. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 1 OF 2		SHEET A3-1.20	
		121	



FOUNDATION DETAIL



SHAFT PLACEMENT

FOUNDATION DATA TABLE

POST SHAPE	STUB LENGTH	STUB PROJECTION	DRILLED SHAFT DIAMETER	DRILLED SHAFT LENGTH	VERTICAL BARS		HOOPS		CONCRETE VOLUME	TOTAL REINF. WEIGHT
					SIZE	LENGTH	MAX SPA.	NO.		
W6X15	2'-6"	3"	24"	6'-6"	#5	5'-11"	10"	9	0.8 CY	71 LB
W8X18	2'-6"	3"	24"	7'-6"	#6	6'-11"	12"	8	0.9 CY	102 LB
W8X21	3'-0"	2½"	24"	8'-0"	#6	7'-5"	12"	9	1.0 CY	110 LB
W10X22	3'-0"	2½"	24"	8'-6"	#7	7'-11"	12"	9	1.0 CY	151 LB
W12X26	3'-0"	2½"	24"	10'-0"	#7	9'-5"	12"	11	1.2 CY	180 LB

◆ QUANTITIES SHOWN ARE FOR ONE DRILLED SHAFT

BASE CONNECTION & FUSE PLATE DATA TABLE

		BASE CONNECTION DATA										BOLT KEEPER PLATE DATA		PERFORATED FUSE PLATE DATA													
POST SHAPE	WEIGHT PER FOOT	BOLT SIZE & TORQUE	A	B	C	D	E	T1	T2	W	R	P	U	F	G	J	K	M	D1	D2	T3	BOLT DIA.	WGT. EA. LBS	BOLT LENGTH	V 		
W6X15	15 LB	5/8" DIA. X 4"	5"	2"	1 1/4"	2 3/4"	1 1/8"	1 1/4"	1/2"	1/4"	11/32"	8 1/2"	10"	5"	2 1/2"	6"	3 1/2"	1 1/2"	1 1/16"	1 1/4"	3/8"	5/8"	2.4	2	73.0 LB		
W8X18	18 LB	36 TO 38 FT-LB										10 5/8"	12 7/8"	5"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 1/16"	1 1/16"	3/8"	5/8"	2.0	2	83.0 LB		
W8X21	21 LB	3/4" DIA. X 4 3/4"	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1 1/2"	3/4"	5/16"	11/32"	11"	12 3/4"	5 1/2"	2 1/2"	5 1/4"	2 3/4"	1 1/4"	1 3/16"	1"	1/2"	3/4"	3.1	2 1/4"	124.0 LB		
W10X22	22 LB											12 7/8"	14 3/8"	6"	3"	5 3/4"	2 3/4"	1 3/8"	1 3/16"	1 1/8"	1/2"	3/4"	3.9	2 1/4"	134.0 LB		
W12X26	26 LB											62 TO 63 FT-LB	15"	16 3/4"	6"	3"	6 1/2"	3 1/2"	1 5/8"	1 3/16"	1 1/2"	3/4"	4.5	2 1/4"	152.0 LB		

■ TOTAL STRUCTURAL CARBON STEEL WEIGHT FOR ONE POST
= V + (POST LENGTH X POST WEIGHT PER FOOT)

"V" INCLUDES STUB POST, BASE PLATES, STIFFENER
PLATES, PERFORATED FUSE PLATES, BOLTS, NUTS, AND
WASHERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED

MATERIALS SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506, UNLESS
NOTED OTHERWISE.

FABRICATION SHALL CONFORM TO THE WISCONSIN DEPARTMENT OF
TRANSPORTATION STANDARD SPECIFICATIONS SECTION 506.

ALL POST, POST STUBS & ATTACHMENTS SHALL BE ASTM
A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123.

THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST, FLANGE
SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER
FABRICATION.

H.S. BOLTS, WASHERS, & NUTS SHALL BE A325 GALVANIZED.

FOUNDATION MATERIAL PROPERTIES

CONCRETE MASONRY F'C = 3,500 P.S.I.
BAR STEEL REINFORCEMENT (UNCOATED), GRADE 60 FY = 60,000 P.S.I.

DESIGN DATA

DESIGN CONFORMS TO AASHTO LRFD SPECIFICATIONS FOR
STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND
TRAFFIC SIGNALS 1ST EDITION 2015 (WITH 2017 & 2018 INTERIM
REVISIONS).

DEAD LOADS (DL):

- STEEL POST SELF WEIGHT
- SIGN PANEL WEIGHT = 3 PSF

WIND LOADS (WL):

WIND LOADS WERE APPLIED TO THE PROJECTED AREAS OF THE SIGN
PANELS AND THE STEEL SIGN POSTS.

- BASIC WIND SPEED = 76 MPH
- MEAN RECURRENCE INTERVAL (MRI) = 10 YEARS
- HEIGHT & EXPOSURE FACTOR = 1.00
- DIRECTIONALITY FACTOR = 0.85
- GUST EFFECT FACTOR = 1.14

WIND LOAD CASES:

- WL CASE 1: 1.0 X NORMAL WIND
- WL CASE 2: 1.0 X TRANSVERSE WIND
- WL CASE 3: 0.75 X NORMAL WIND + 0.75 X TRANSVERSE WIND

LOAD COMBINATIONS:

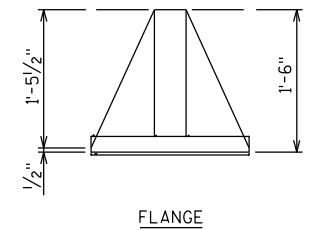
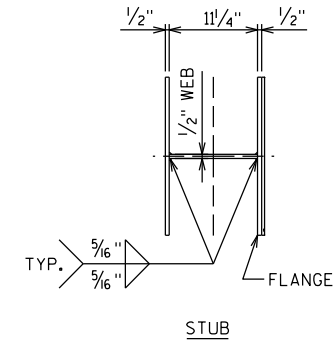
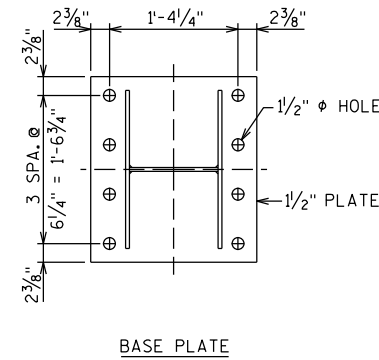
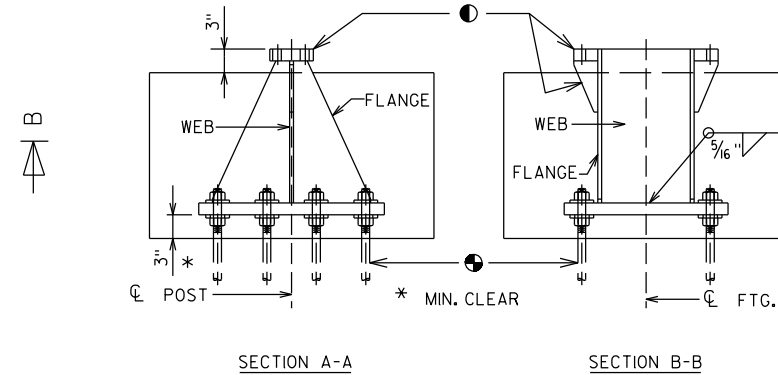
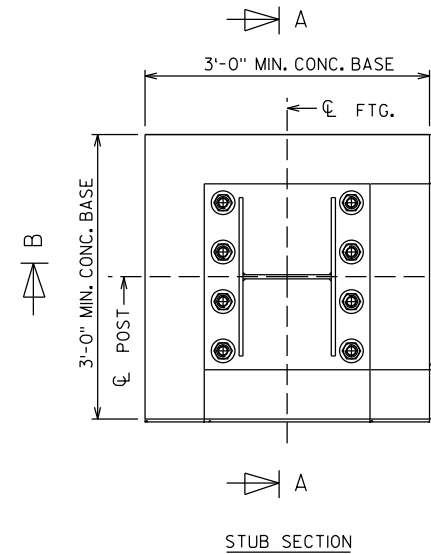
LOAD COMBINATION	TYPE	DL FACTOR	WL FACTOR
STRENGTH I	GRAVITY	1.25	-
EXTREME I	WIND	1.10	1.0
		0.9	1.0
SERVICE I	DEFLECTION	1.0	1.0

FOUNDATION DESIGN DATA

THE FOUNDATION DESIGN ASSUMED COHESIONLESS SOILS (LOOSE
SAND) ABOVE THE WATER TABLE WITH THE FOLLOWING PROPERTIES:

- SOIL UNIT WEIGHT = 115 PCF
- ANGLE OF INTERNAL FRICTION = 24 DEGREES
- SOIL MODULUS PARAMETER = 25 LB/IN³

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
		DRAWN BY	PLANS CK'D.
CONNECTION & FOUNDATION DETAILS 2 OF 2		SHEET A3-120	
		122	



- SEE BASE CONNECTION DETAILS ON "CONNECTIONS & FOUNDATION DETAILS" SHEETS.
- ADHESIVE ANCHORS 1/4-INCHES. ALLOWABLE PULL OUT CAPACITY = 15 KIPS. EMBED 1'-3" INTO ROCK.

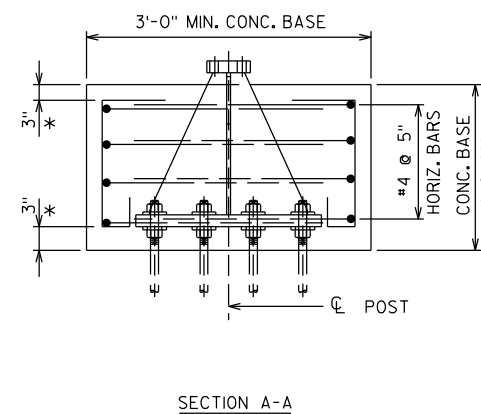
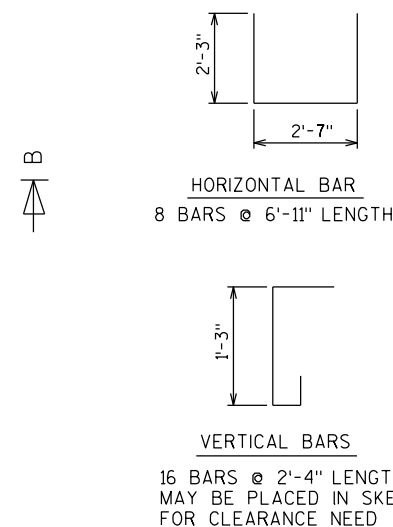
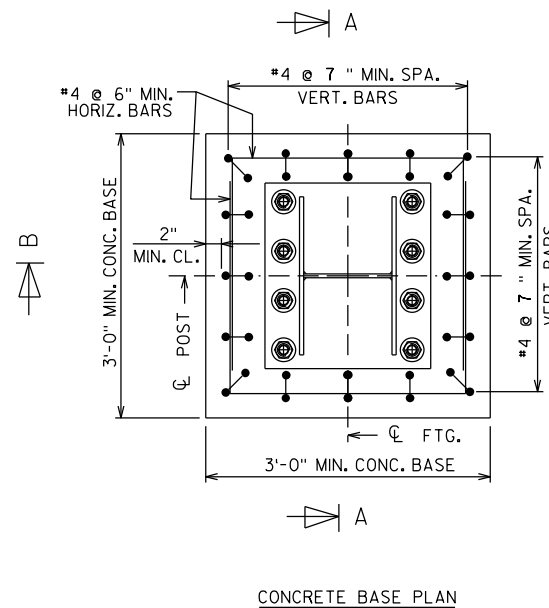
GENERAL NOTES:

QUANTITIES PER BASE:
 REINFORCING STEEL = 62 LB
 CONCRETE = 0.6 CY
 STRUCTURAL STEEL = 335 LB

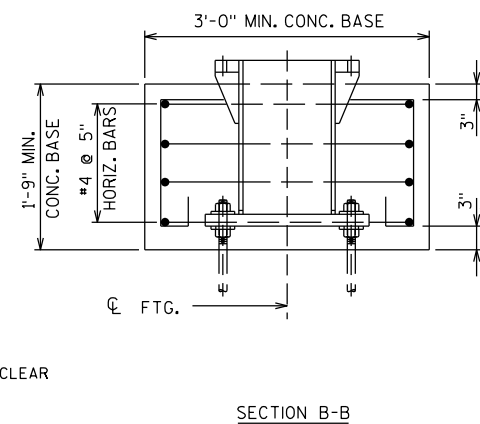
ALL MATERIALS, EXCEPT FOR ANCHOR ROD, NUTS, AND WASHERS, SHALL BE ASTM A709 GRADE 50. ALL MATERIALS TO BE GALVANIZED AFTER FABRICATION.

IF ROCK IS ENCOUNTERED PRIOR TO REACHING THE MINIMUM DRILLED SHAFT EMBEDMENT DEPTH DEFINED ON THE FOUNDATION DATA TABLE OF THE "CONNECTIONS & FOUNDATION DETAILS 2 OF 2" SHEET, THE CONTRACTOR SHALL INSTALL A TEST ADHESIVE ANCHOR AND DETERMINE THE PULL-OUT CAPACITY. IF THE FIELD TEST RESULTS IN A PULL-OUT CAPACITY GREATER THAN OR EQUAL TO 15 KIPS, THE CONTRACTOR MAY INSTALL THE ALTERNATE CONCRETE BASE AND BREAK-WAY STUB PER THE DETAILS ON THIS SHEET.

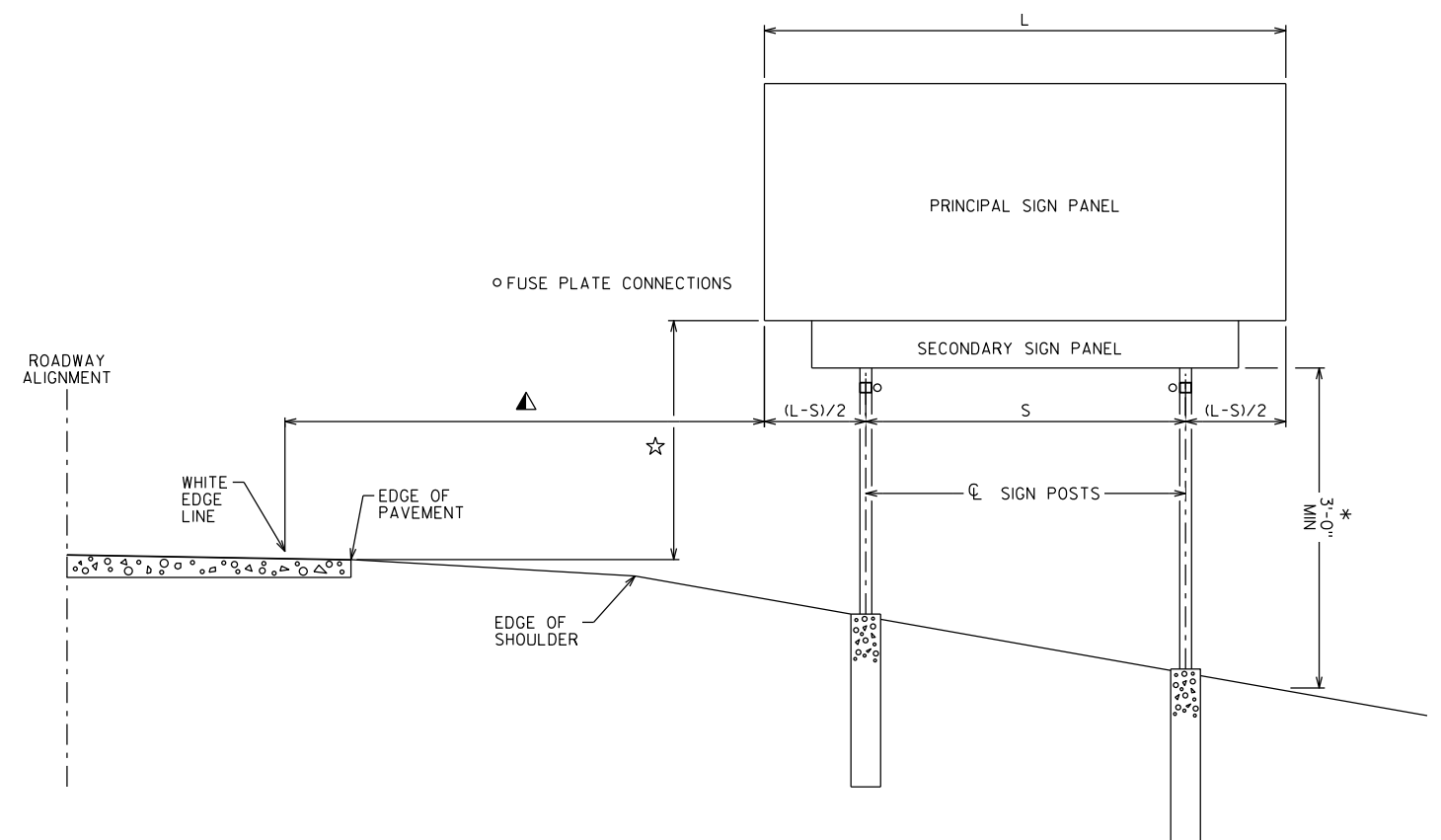
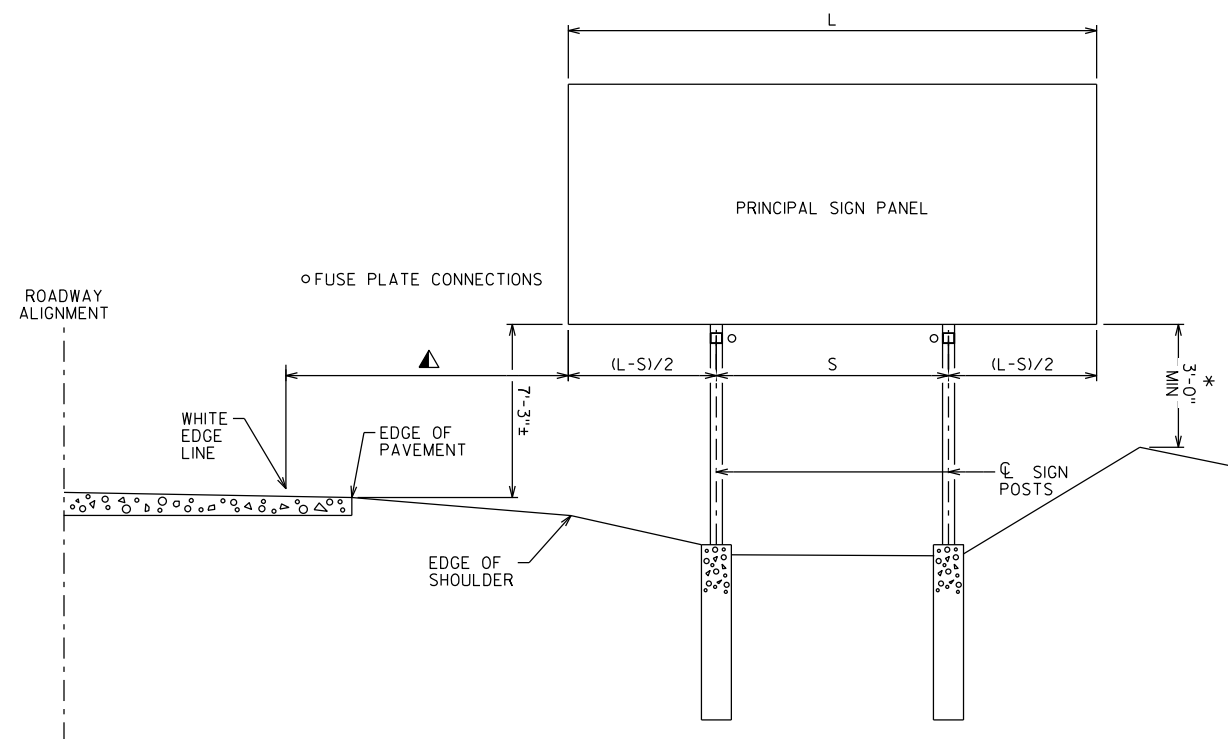
CONCRETE BASE DETAILS



* MIN. CLEAR



NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
DRAWN BY		PLANS CK'D.	
ALTERNATE BREAK-AWAY BASE ON ROCK		SHEET A3-1M.2	
		123	



INSTALLATION WITHOUT SECONDARY SIGN

INSTALLATION WITH SECONDARY SIGN

TYPE 1 SIGN INSTALLATION NOTES:

FOR A 2-POST INSTALLATION, "S" EQUALS $3L/5$, BUT SHALL NOT BE LESS THAN 6'-0".

FOR A 3-POST INSTALLATION, "S" EQUALS 5L/7, BUT SHALL NOT BE LESS THAN 12'-0". THE SPACING BETWEEN ANY TWO POSTS SHALL NOT BE LESS THAN 6'-0".

▲ UNLESS NOTED IN THE PLANS, THE SIGN OFFSET DISTANCE SHALL BE A MINIMUM OF 17'-6" FROM THE WHITE EDGE LINE, DESIRABLE 30'-0".

WHERE SIGNS ARE MOUNTED BEHIND CRASH WORTHY PROTECTION SUCH AS GUARDRAIL OR BARRIER WALL, THE LATERAL OFFSET MAY BE 4'-6" BEHIND THE GUARDRAIL OR BARRIER WALL.

THE ± TOLERANCE SHOWN ON THIS SHEETS IS 3".

THE VERTICAL SIGN HEIGHT CLEARANCES SHOWN ON THIS SHEET ARE MEASURED FROM THE BOTTOM OF THE SIGN PANEL TO THE NEAR EDGE OF PAVEMENT.

☆ THE VERTICAL CLEARANCE SHALL BE 8'-3"± WHEN THE SECONDARY SIGN HEIGHT IS 3'-0" OR LESS. FOR SECONDARY SIGN HEIGHTS LARGER THAN 3'-0", THE VERTICAL CLEARANCE TO THE BOTTOM OF THE SECONDARY SIGN PANEL SHALL BE 5'-3"±.

* THE VERTICAL SIGN GROUND CLEARANCE ON RIGHT
END OF SIGN SHALL BE A MINIMUM OF 3'-0"±.

○ FOR 2-POST SIGNS, IF THERE IS A SECONDARY SIGN THAT IS NOT AS WIDE AS THE POSTS, INSTALL FUSE PLATES BENEATH PRINCIPAL SIGN.

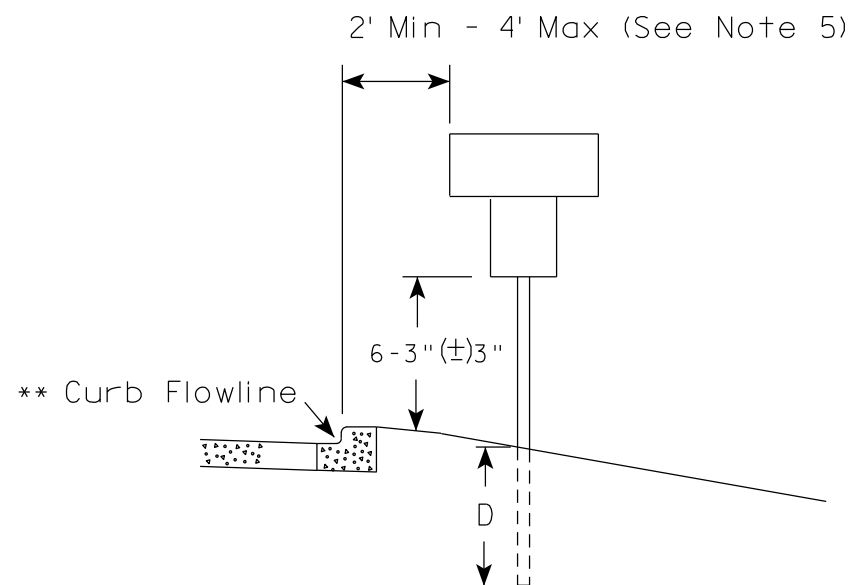
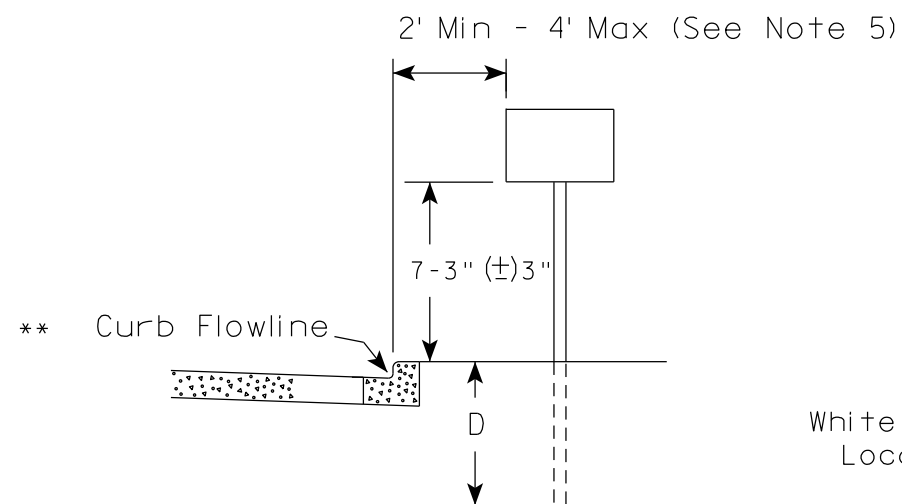
FOR SECONDARY SIGNS THAT ARE NOT AS WIDE AS THE EXTERIOR POSTS, SECURE SIGN WITH CHANNEL STEEL AS DESCRIBED IN A4-6.

POST LENGTHS SHOWN IN THE MISCELLANEOUS
QUANTITIES ARE ESTIMATED LENGTHS. THE
CONTRACTOR SHALL VERIFY POST LENGTHS AT THE
TIME OF FINAL GRADING.

REFER TO THE TRAFFIC ENGINEERING OPERATIONS
AND SAFETY MANUAL FOR FURTHER GUIDANCE ON
MINIMUM VERTICAL CLEARANCE REQUIREMENTS.

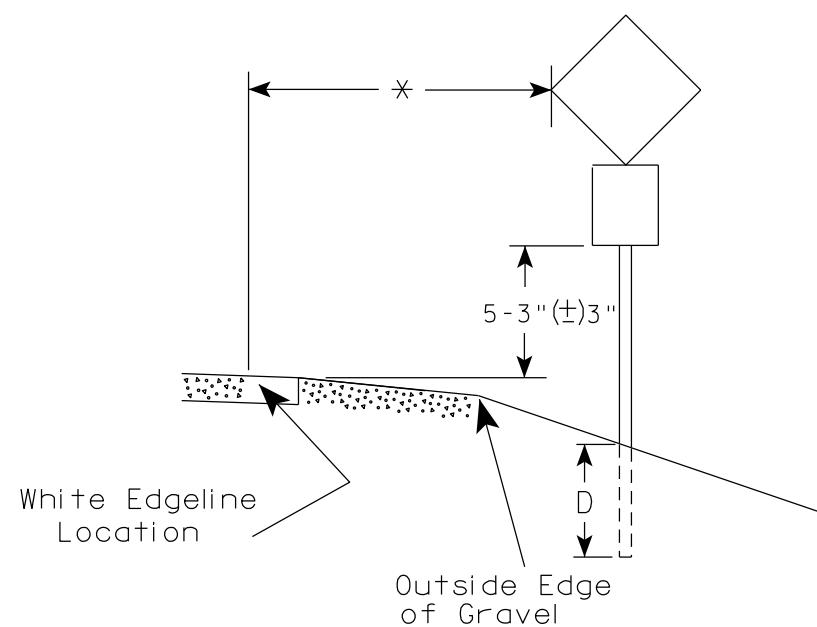
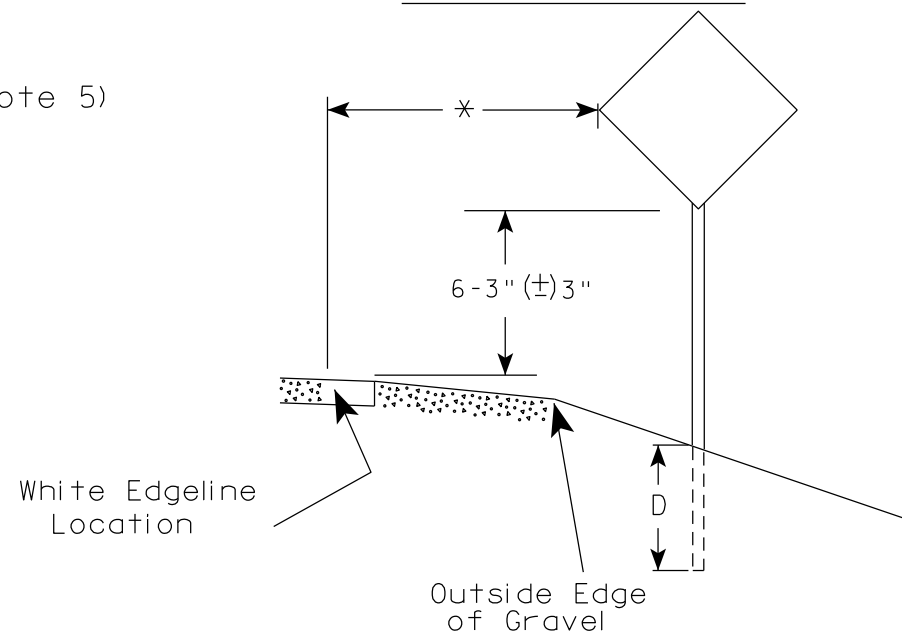
2/29/24			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE BTO TYPE I SIGNS			
DRAWN BY		PLANS CKD.	
TYPICAL TYPE I SIGN INSTALLATION		SHEET A4-1.11	

URBAN AREA



* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

RURAL AREA (See Note 2)



* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

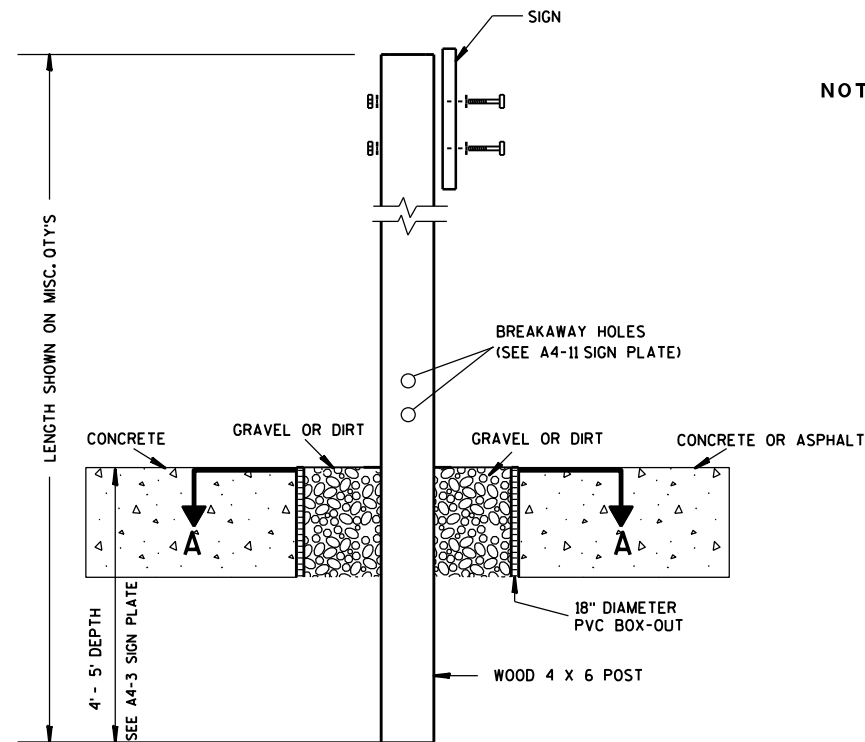
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

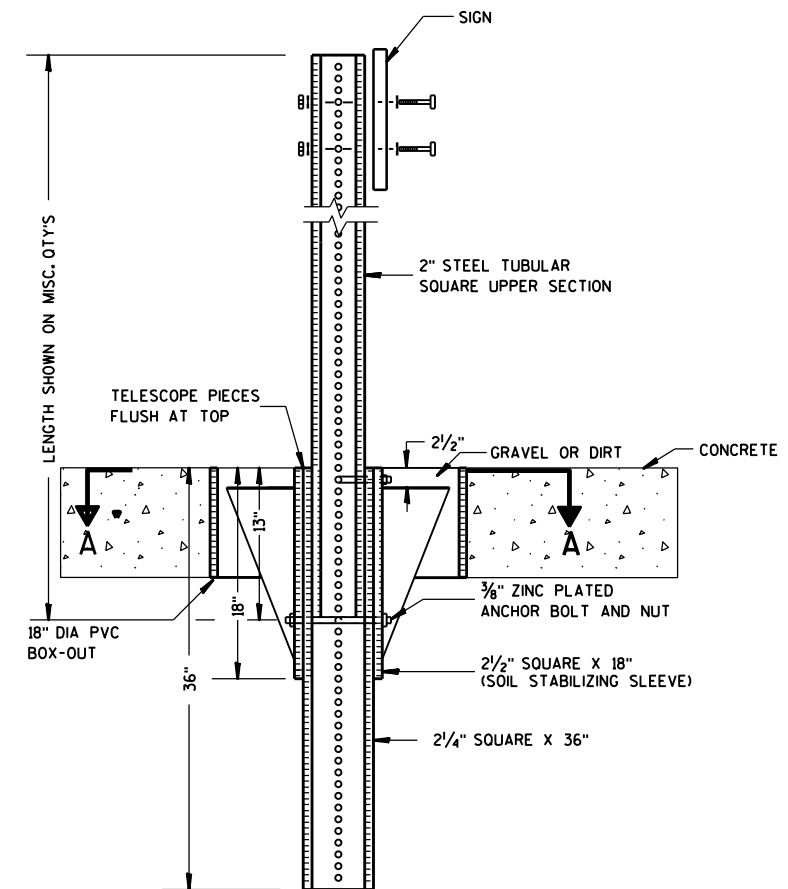
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

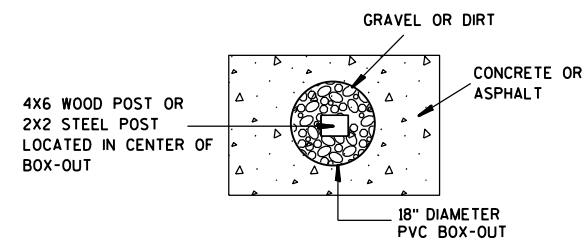
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES:**
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
 2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
 3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

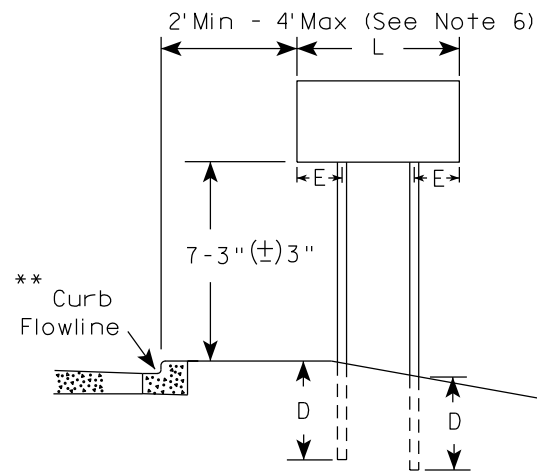
**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

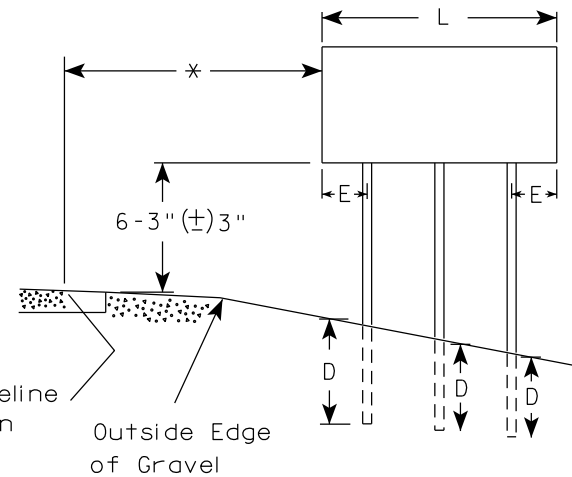
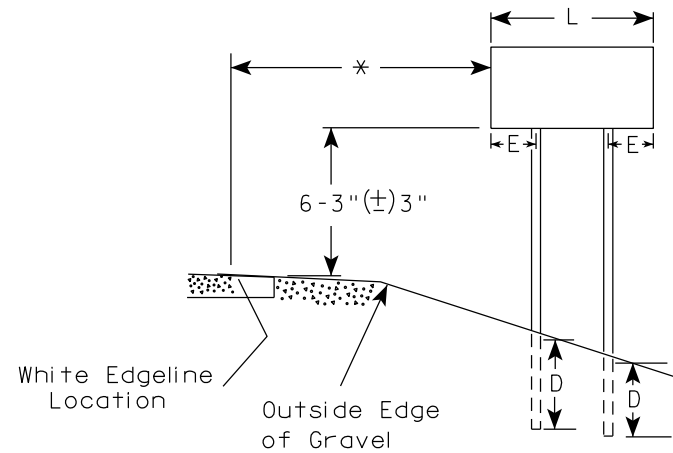
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 126 A4-3B.1

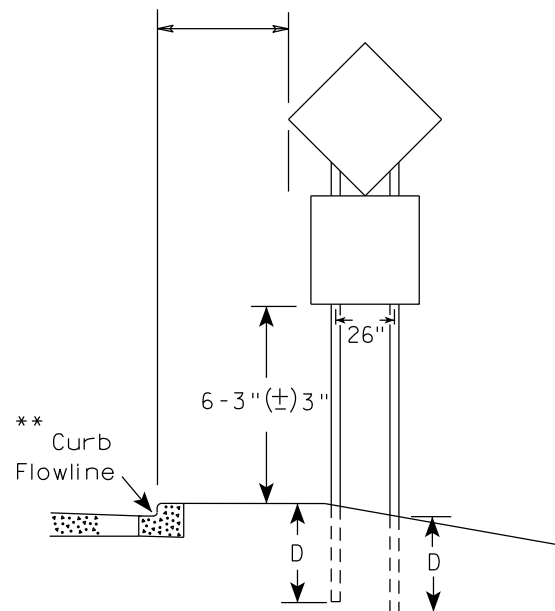
URBAN AREA



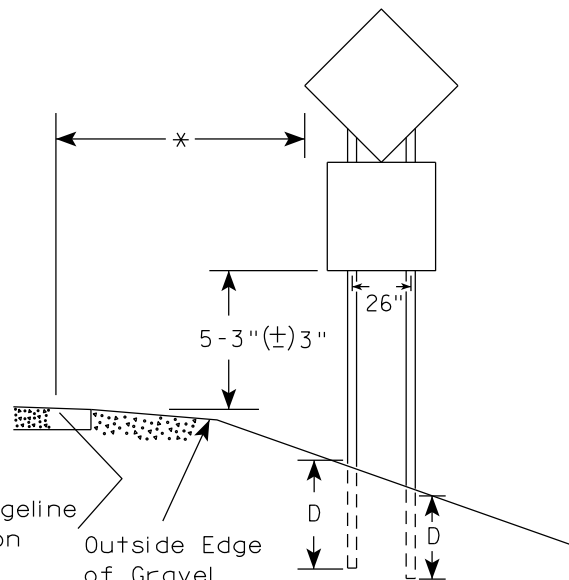
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

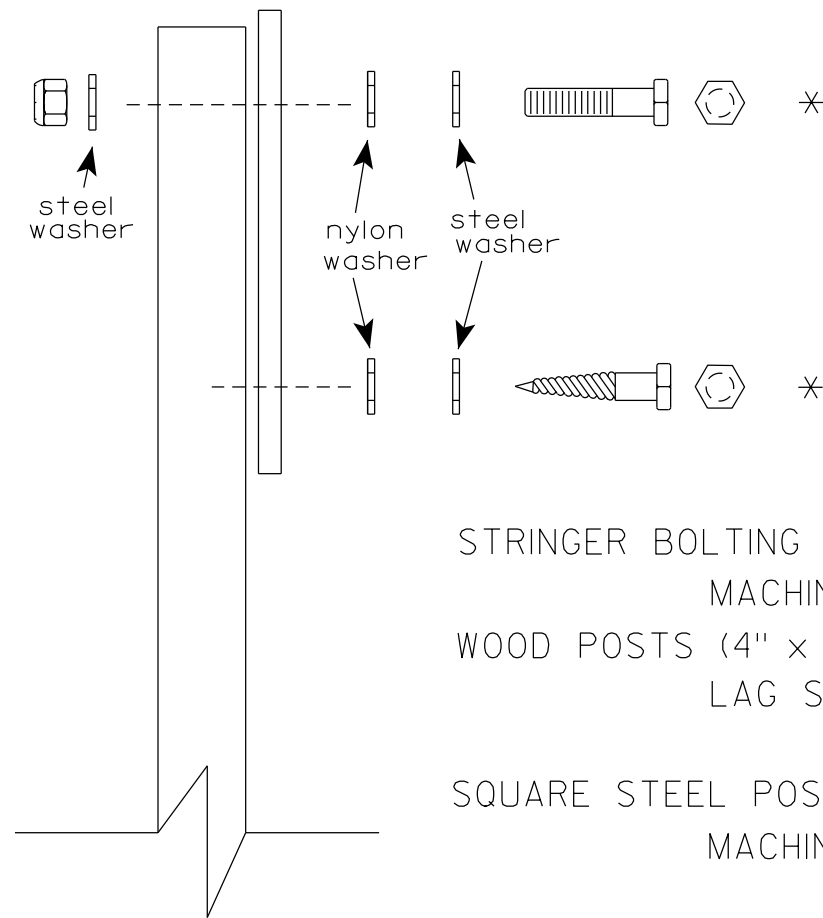
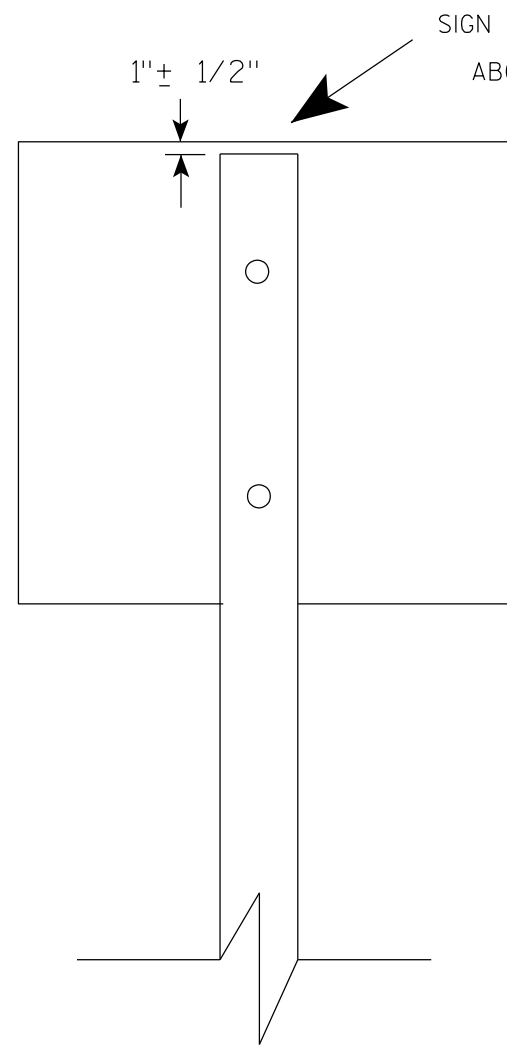
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 127

E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

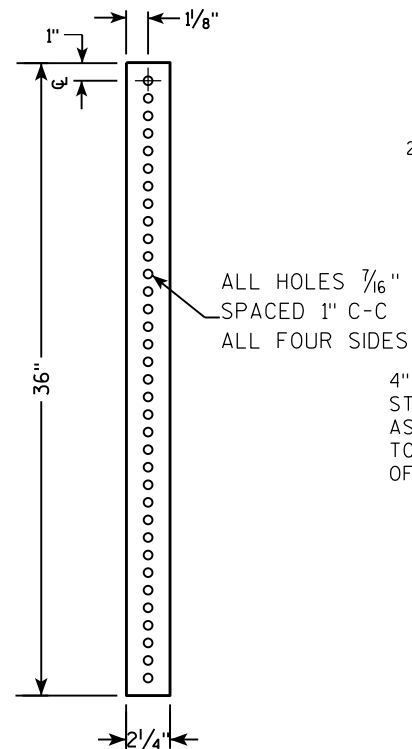
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

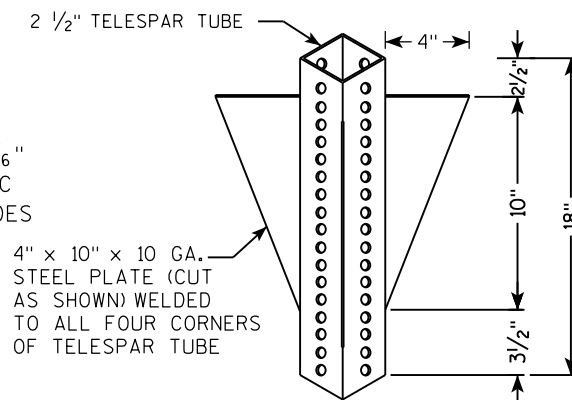
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. QTY'S
 18" DIA SCHEDULE 40 PVC BOX-OUT
 TELESCOPE PIECES FLUSH AT TOP
 36"
 18"
 13"
 2 1/2"
 2 1/4" SQUARE X 36"
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 3/8" ZINC PLATED ANCHOR BOLT AND NUT
 2 1/2" GRAVEL OR DIRT
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES
 2" STEEL TUBULAR SQUARE UPPER SECTION
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 SIGN

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

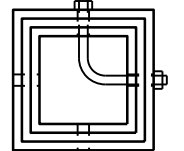
2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthieu R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATI 129 14-9.9

SHEET NO: E

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
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FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN

PLOT DATE : 05-FEB-2015 17:09

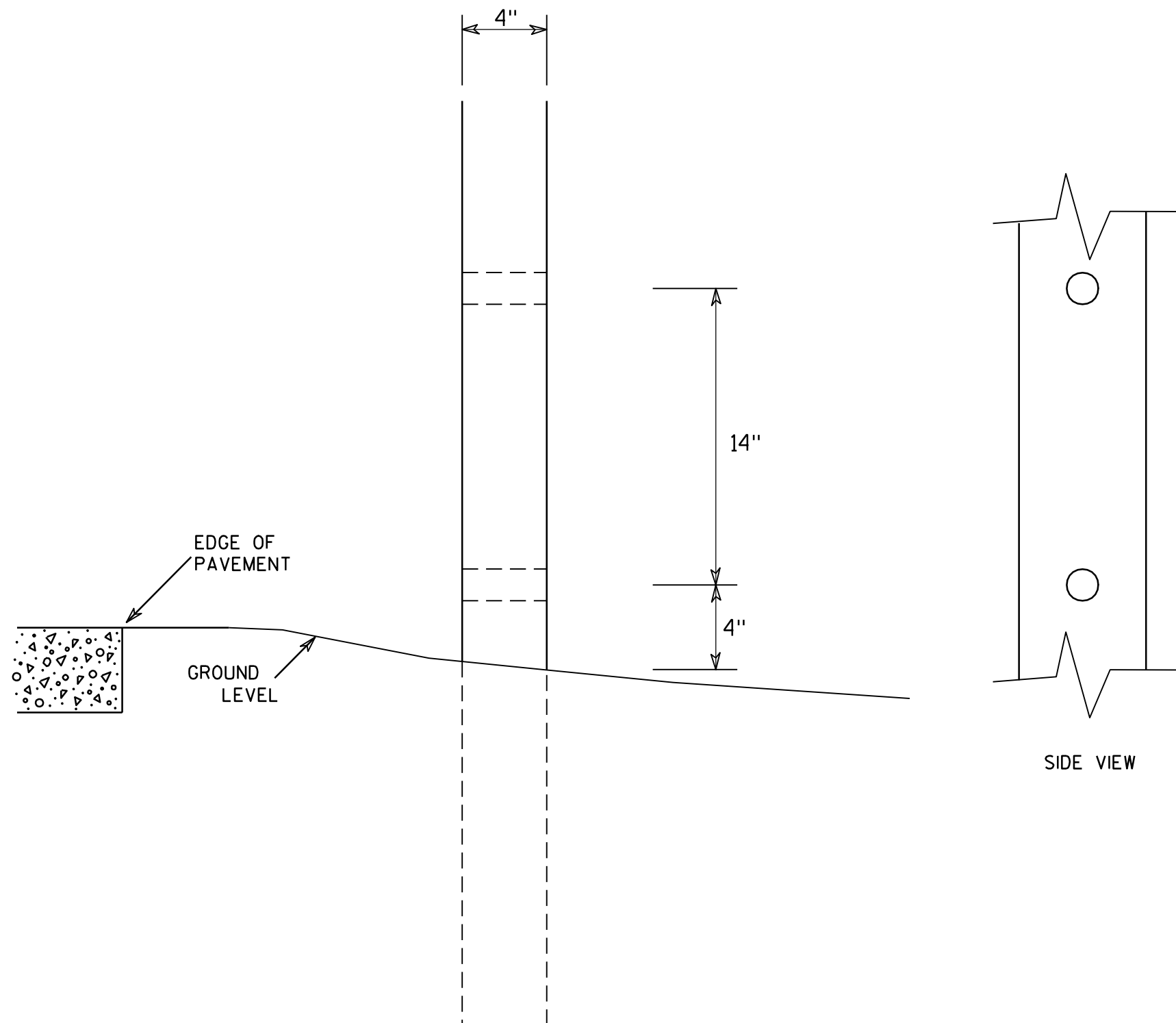
PLOT BY : mscs.ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42

7



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

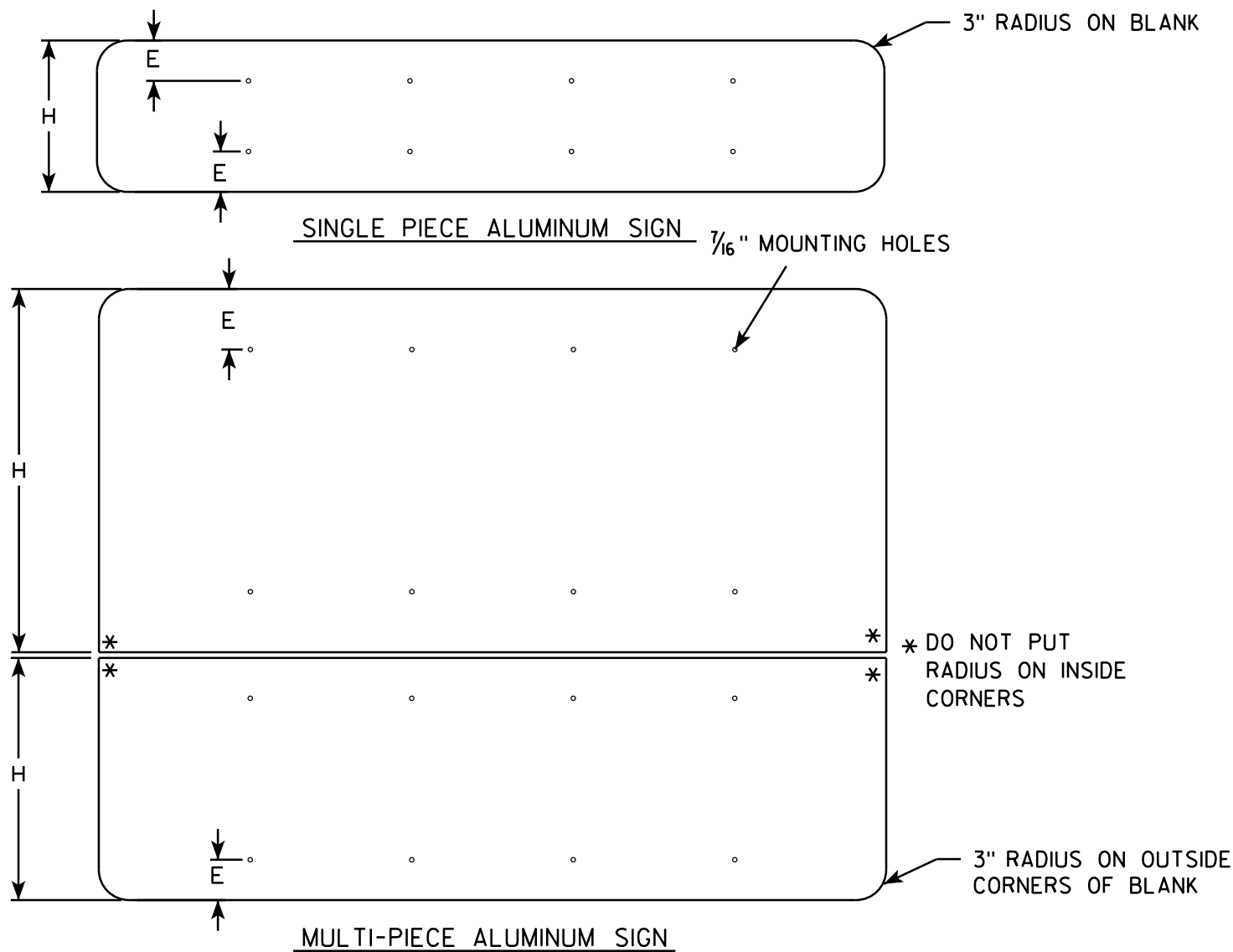
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 130

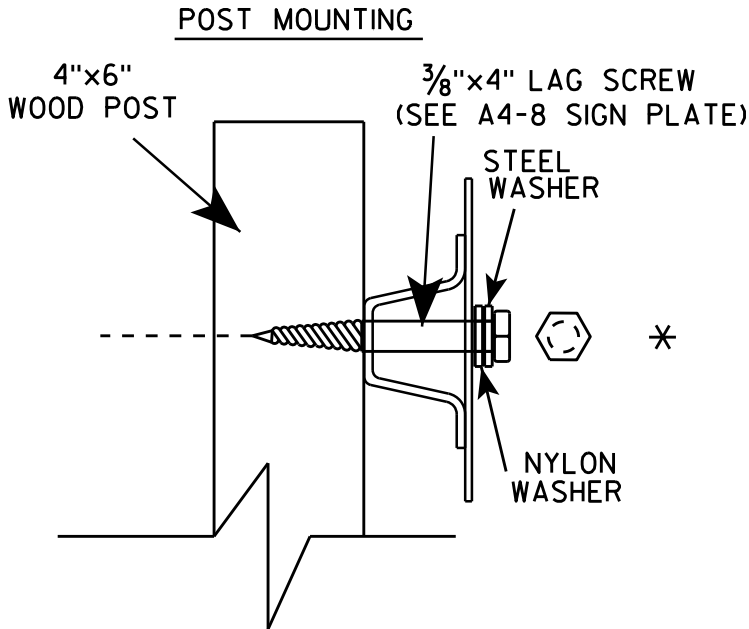
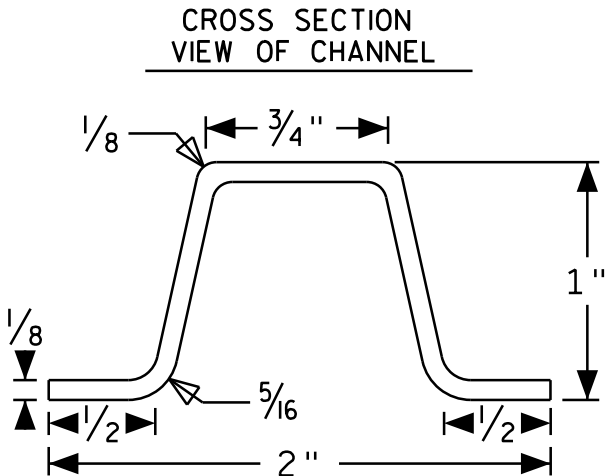
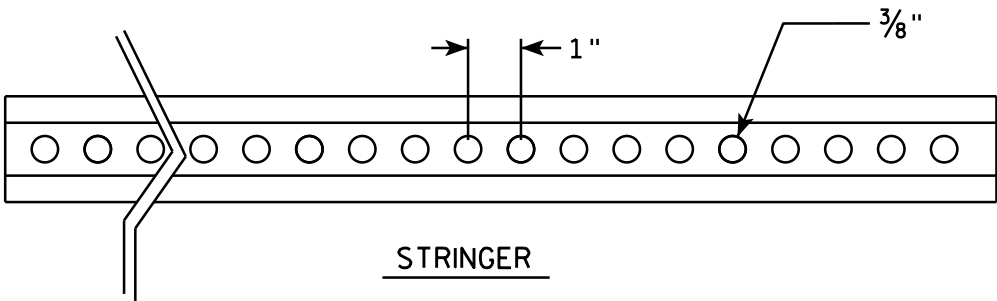
E



GENERAL NOTES

- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"



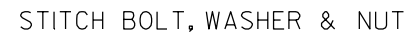
SIGN STRINGER
MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/26/16 PLATE No A4-18.1
131

Hardware



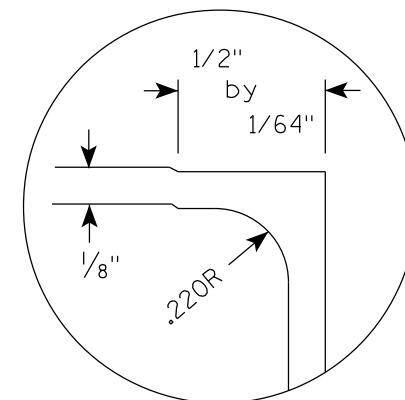
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy



Stop nut shall be stainless steel.



1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.
4. Edge wrapping of sign sheeting required on all extrusions joints shown in Detail A.

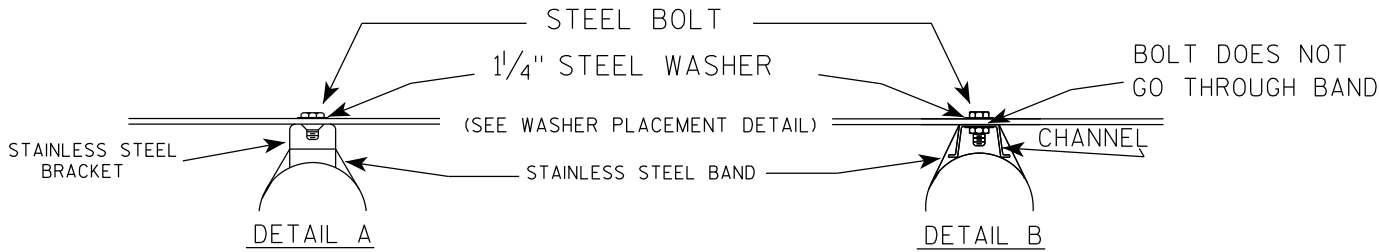
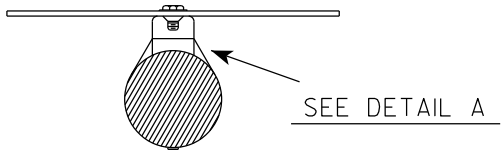
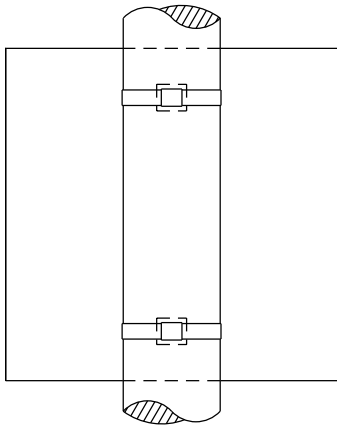


DETAIL A (EDGE WRAP JOINT)

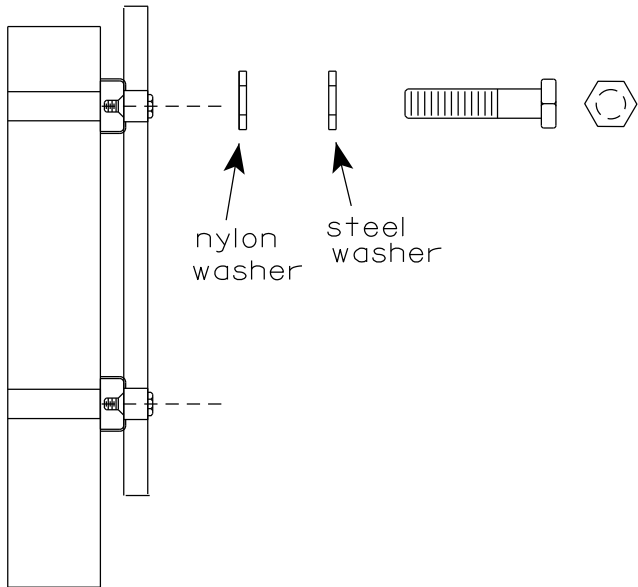
APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 1/07/20 PLATE NO. A5-2.10

BANDING

SINGLE SIGN



WASHER PLACEMENT

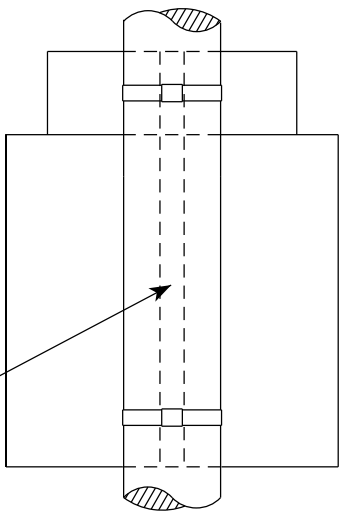


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

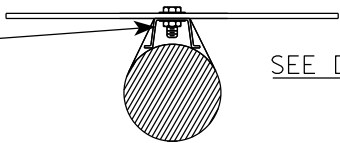
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

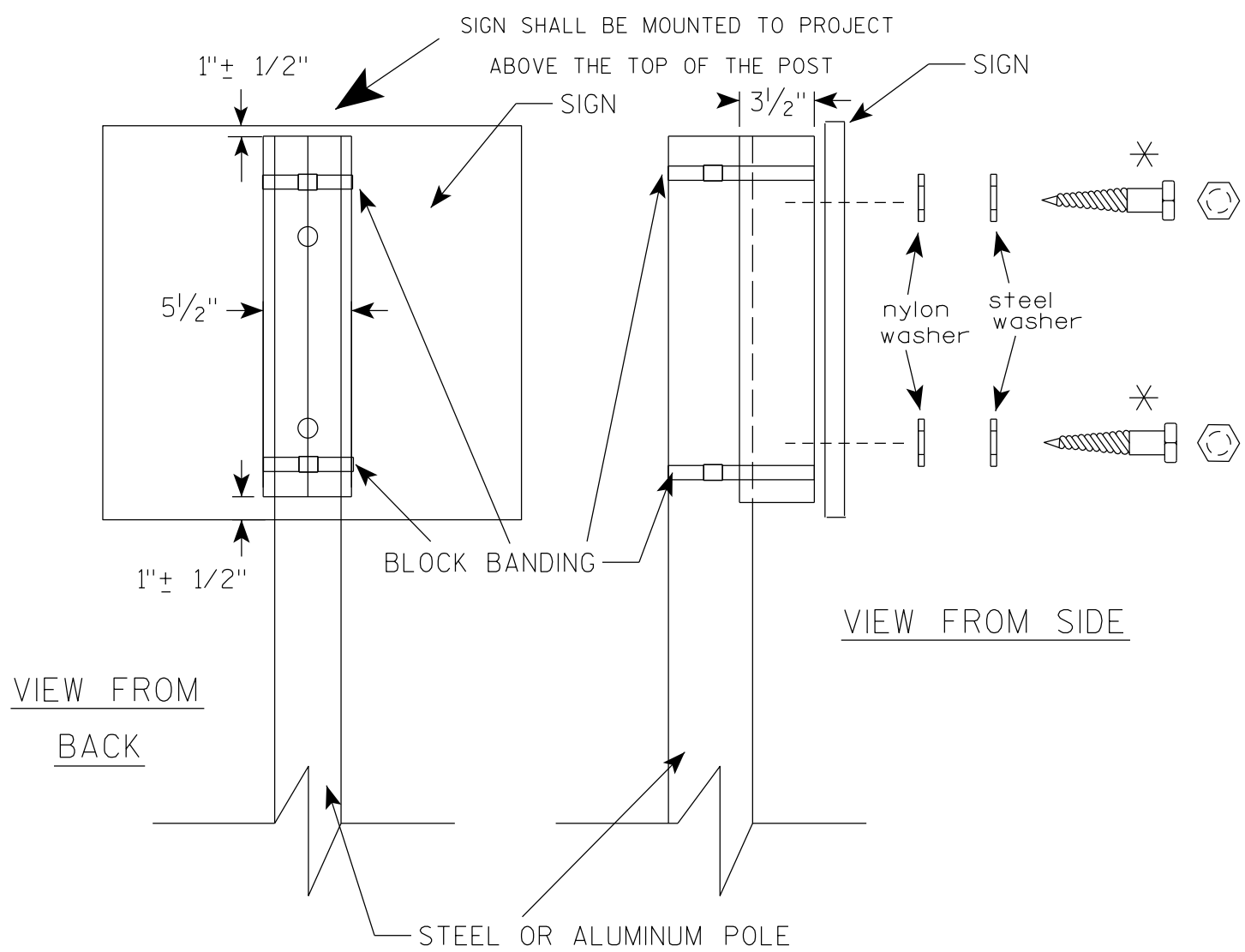


STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

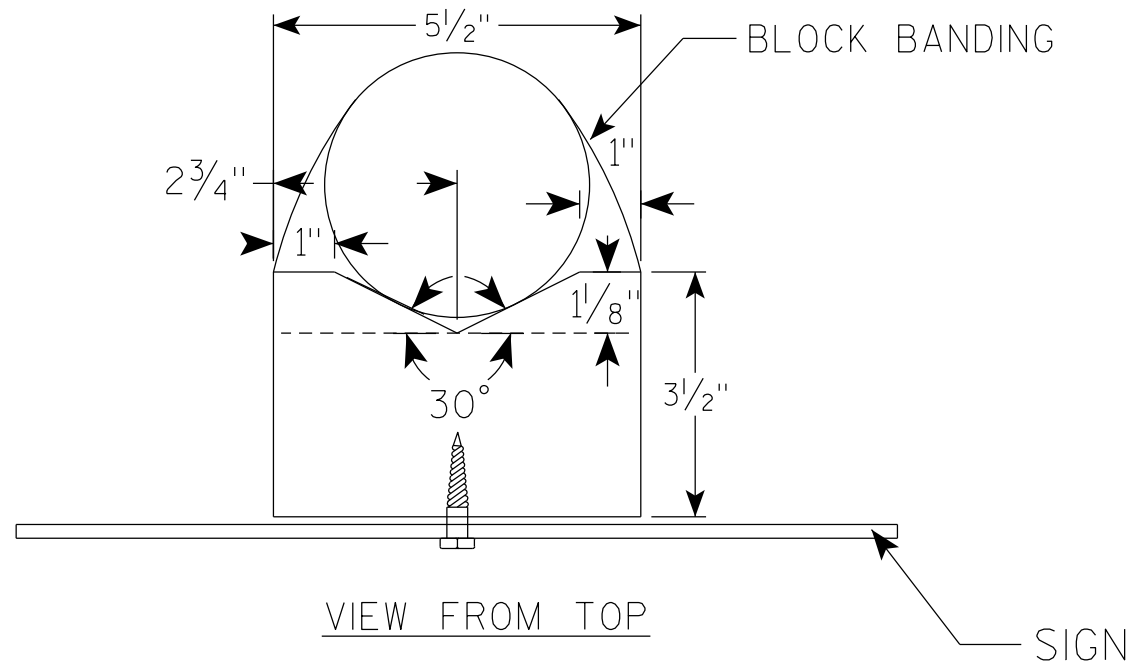
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/19/2022 PLATE NO. A5-10.3

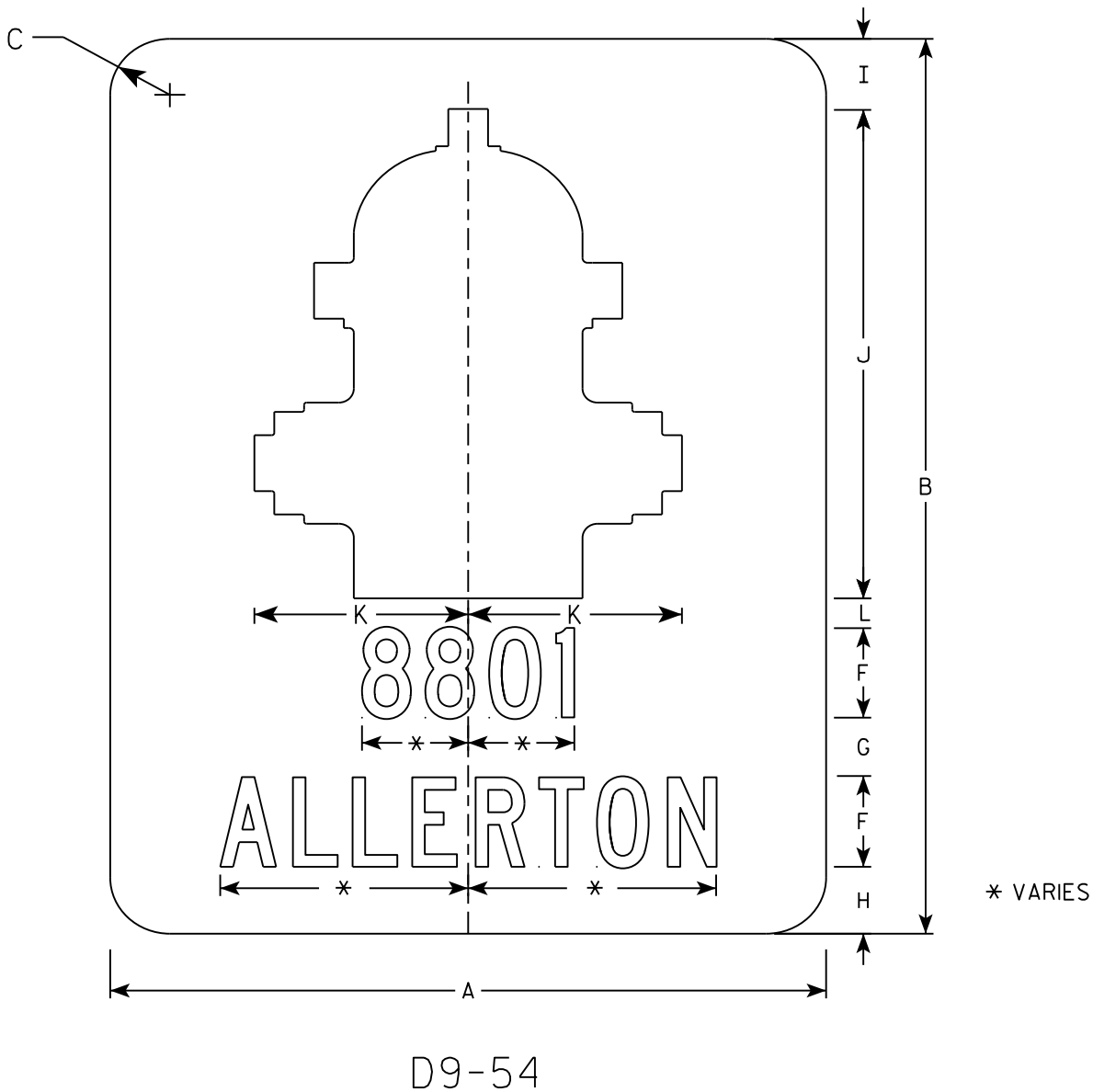
PROJECT NO:

SHEET NO: 134

E

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Green
Message - White
- 3. Message Series - C except Series B if sign will exceed 24" width
- 4. Select appropriate message series and adjust spacing to achieve proper balance.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	30	1 1/2			3	2	2 1/4	2 3/8	16 3/8	7 1/8	1														5.0	
3																											
4																											
5																											

STANDARD SIGN
D9-54

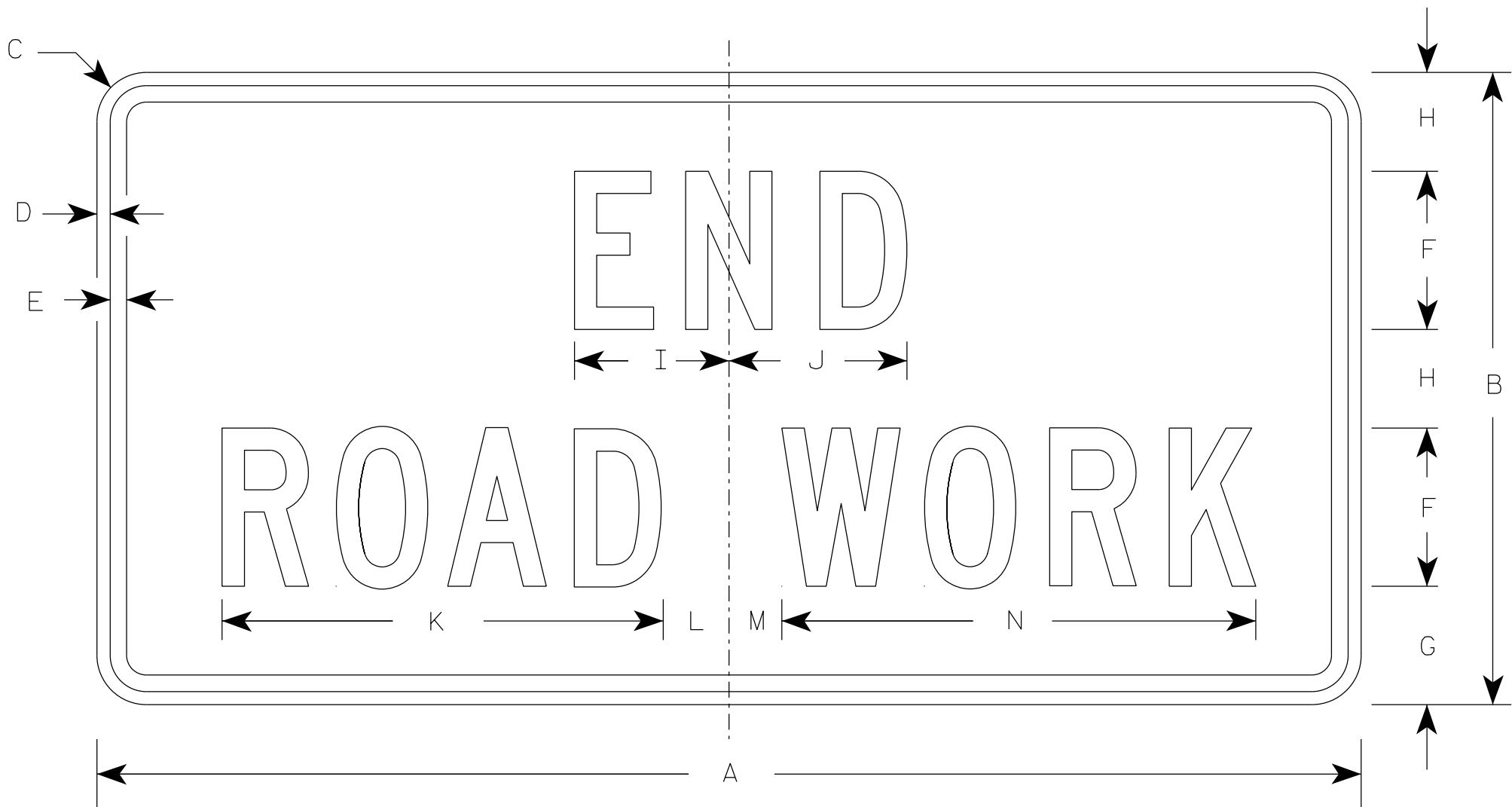
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 5/16/18 PLATE NO. D9-54.4

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



G20-2A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

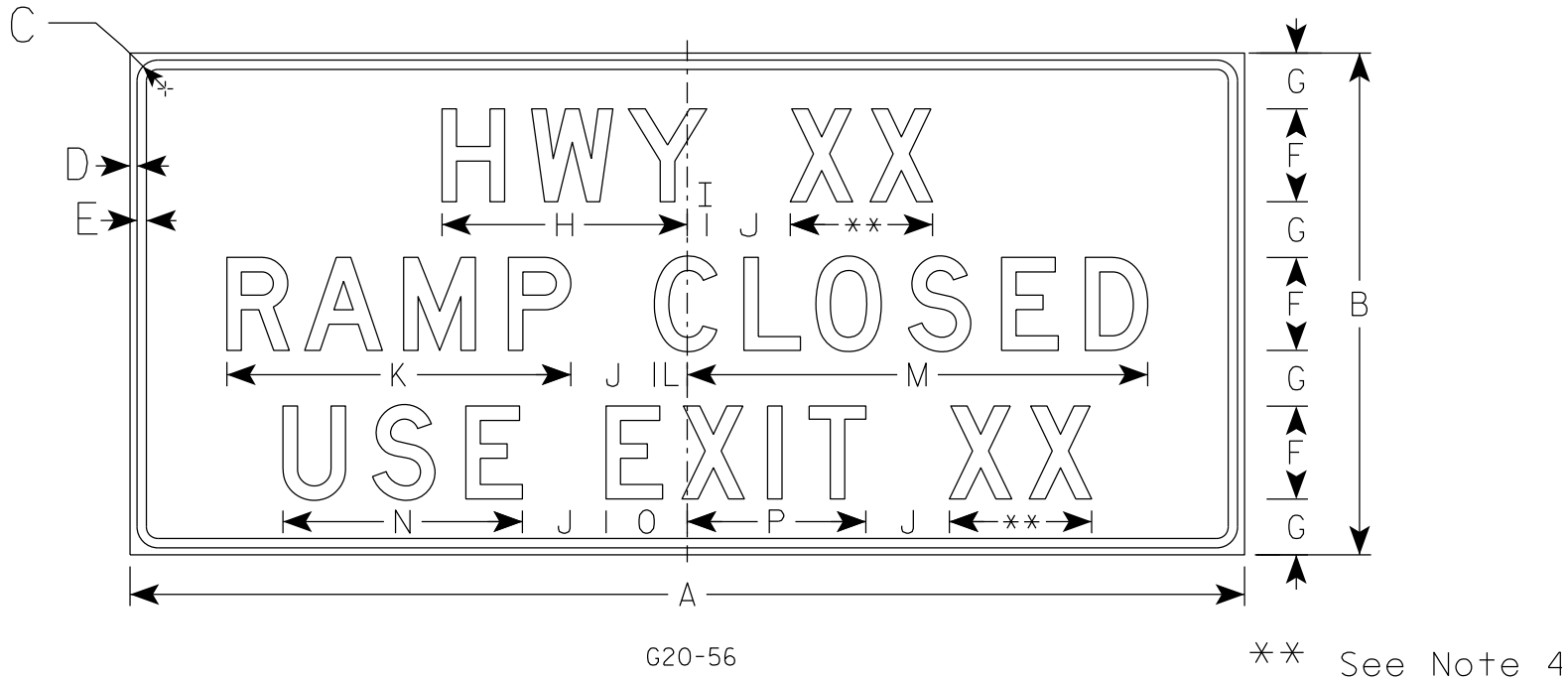
DATE 1/26/2023 PLATE NO. G20-2A.10

7

7

NOTES

- 1. Sign is Type II- Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D
- 4. Substitute appropriate Highway Number and Exit Number and optically center message



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	120	54	3	¾	1	10	6	26 ⅜	2 ⅛	9	37	3 ½	49 ⅝	25 ¾	8 ¾	19 ¼											45.0
5	120	54	3	¾	1	10	6	26 ⅜	2 ⅛	9	37	3 ½	49 ⅝	25 ¾	8 ¾	19 ¼											45.0

STANDARD SIGN
G20-56

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

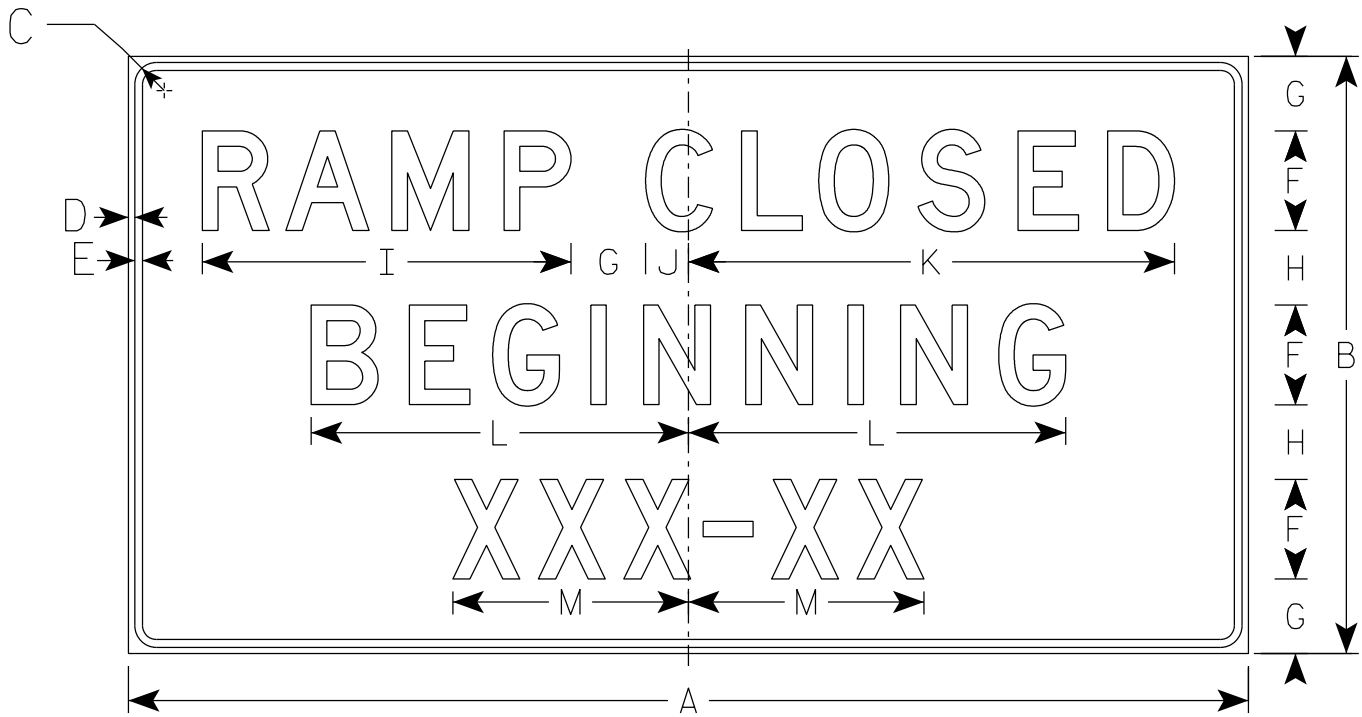
DATE 6/19/18 PLATE NO. G20-56.1

7

7

NOTES

- 1. Sign is Type II- Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D



G20-58

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	72	36	1 5/8	5/8	3/4	6	5	4	22 1/4	2 3/8	29 1/2	22 3/4	14 1/4														18.0
3	90	48	1 5/8	5/8	3/4	8	6	6	29 5/8	3 3/8	39	30 3/8	19														30.0
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 138

E

STANDARD SIGN
G20-58

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/19/2020 PLATE NO. G20-58.2

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - E



G20-61

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	120	30	6		2	12	9	21	78 1/4	20 3/4																	25.0
5																											

STANDARD SIGN

G20-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15

PLATE NO. 139

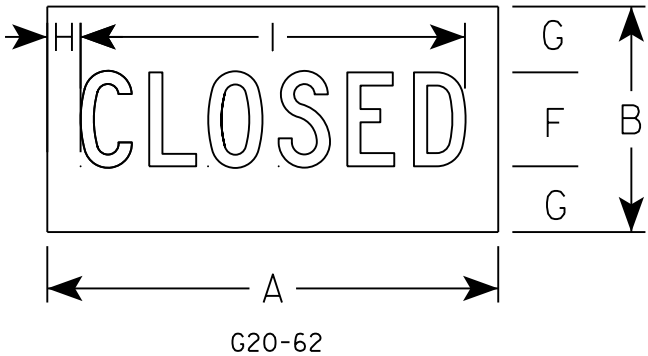
G20-61.1

SHEET NO:

E

NOTES

- 1. Sign is Type II- Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 4. Material shall be .040 aluminum



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	48	24				10	7	3 1/2	40 7/8																		8.0
5																											

STANDARD SIGN
G20-62

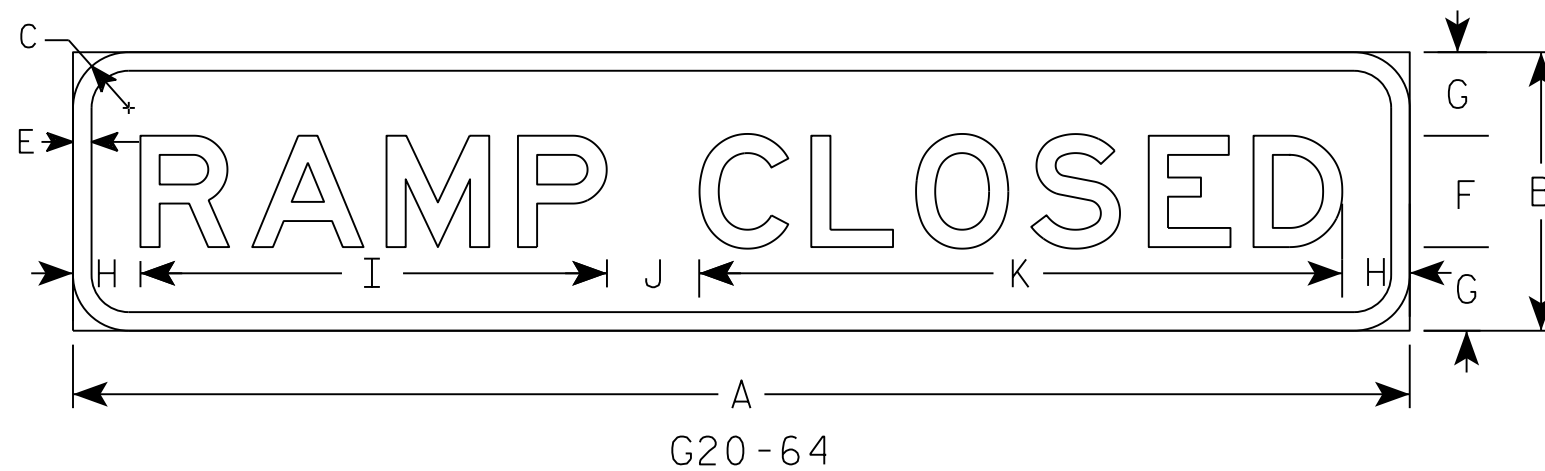
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/24/15 PLATE NO. G20-62.1
140

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - E



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	144	30	6		2	12	9	7 1/4	50 1/4	10	69 1/4																30.0
5																											

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E
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STANDARD SIGN

G20-64

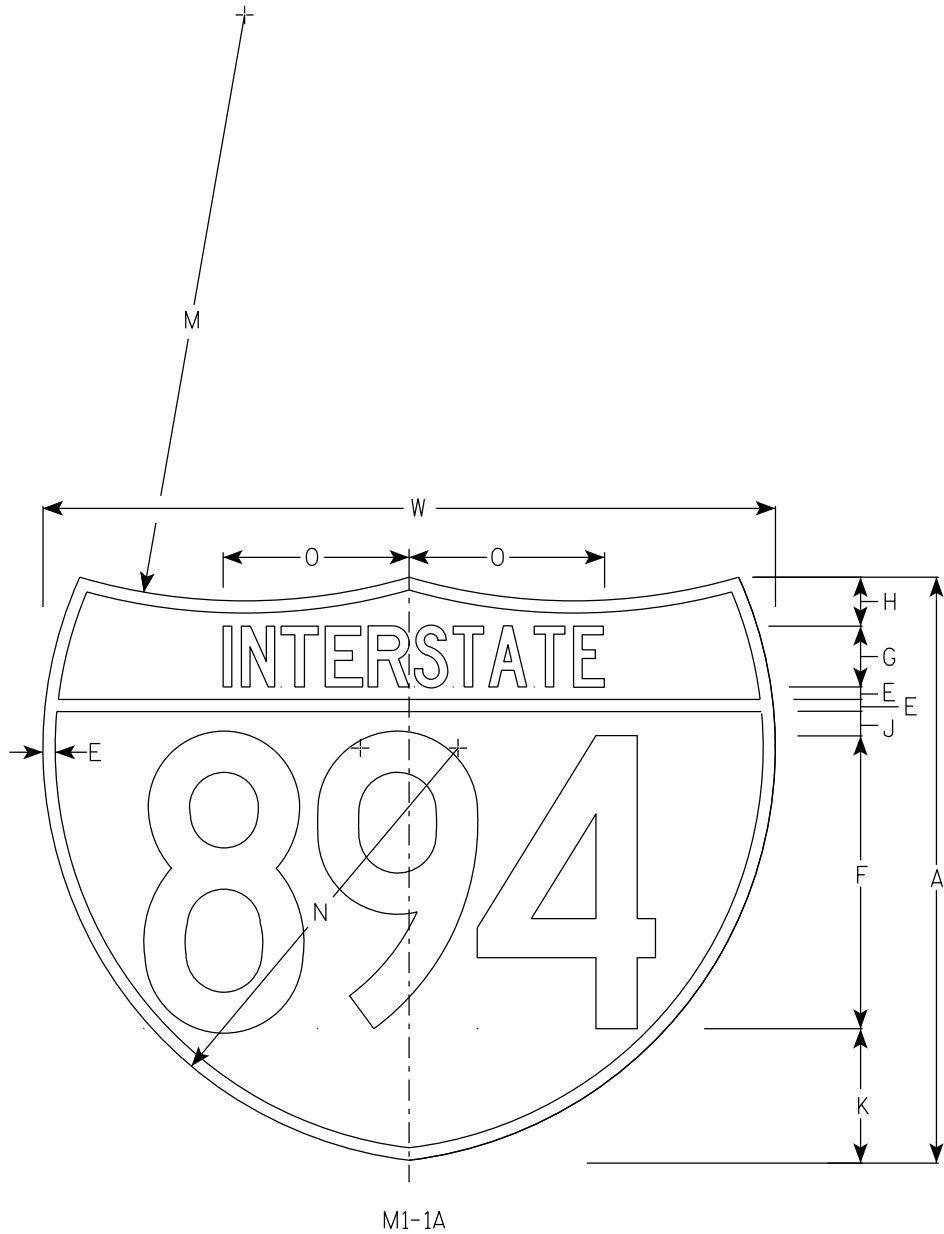
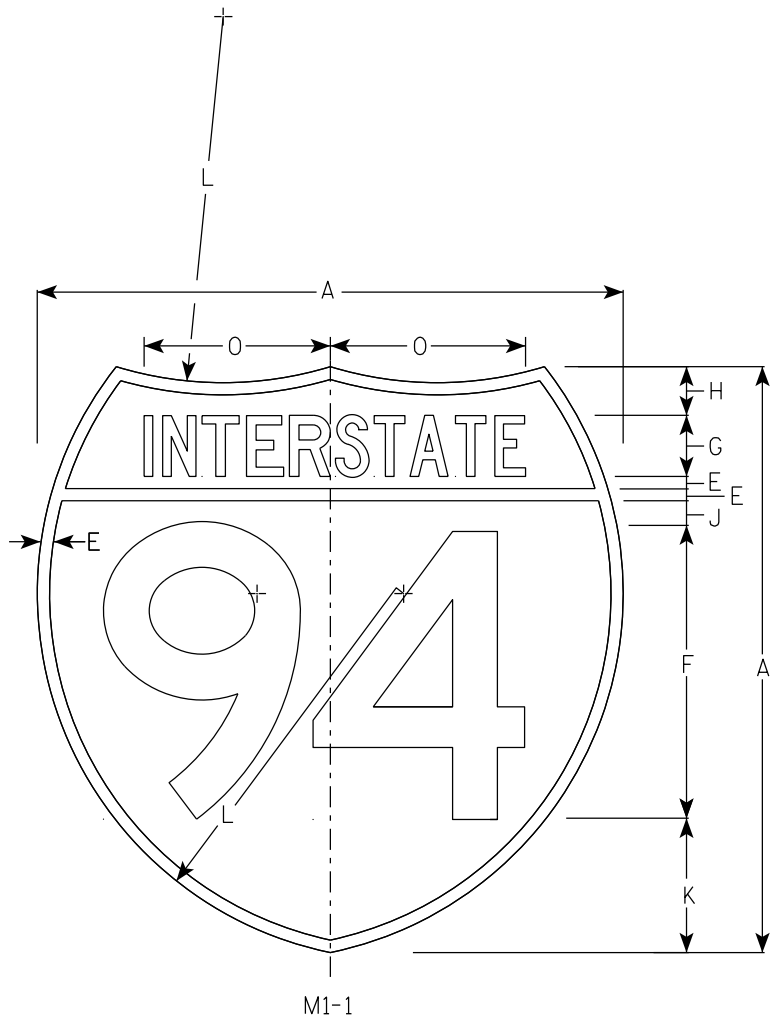
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/13/18

PLATE NO. G20-64.1

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Top Red - Bottom Blue
Message - White
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C

7

																										M1-1	M1-1A
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Area sq. ft.	Area sq. ft.
1																											
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
2M	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79

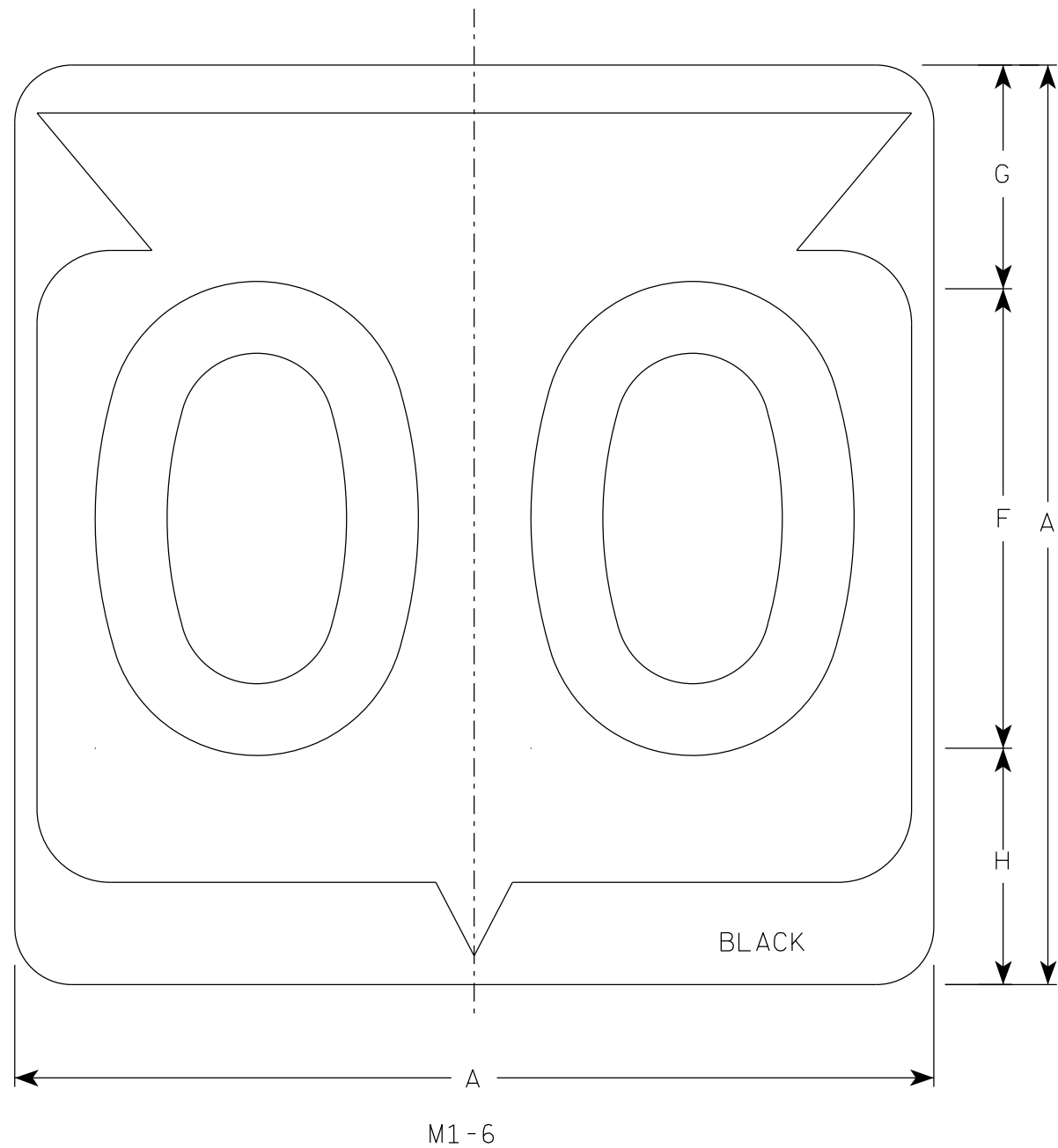
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

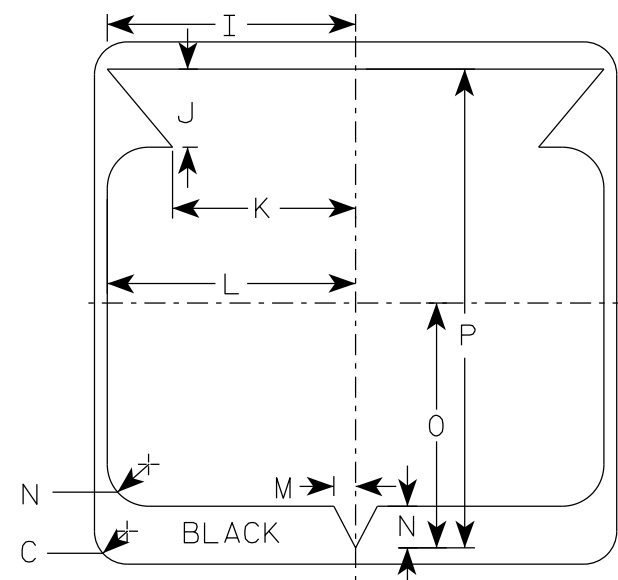
DATE 11/7/2022 PLATE NO. M1-1.9

7



NOTES

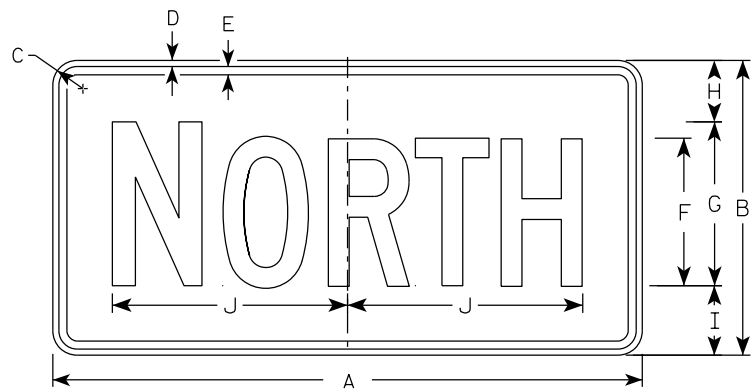
1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C



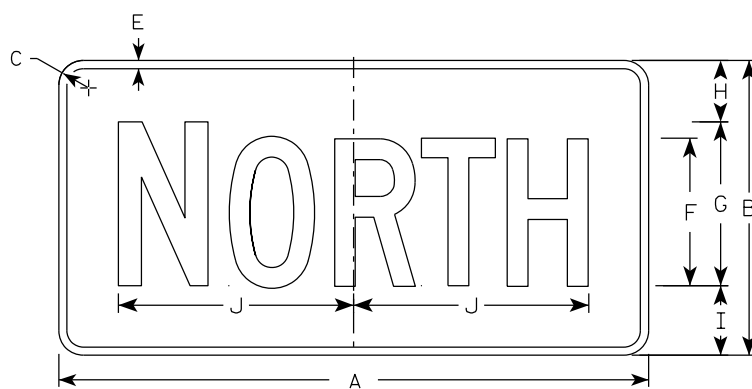
7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
2M	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

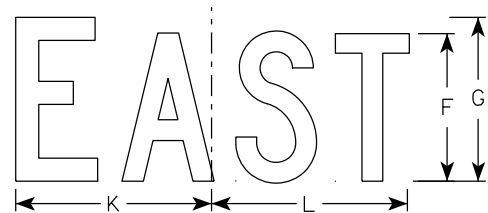
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 143	E
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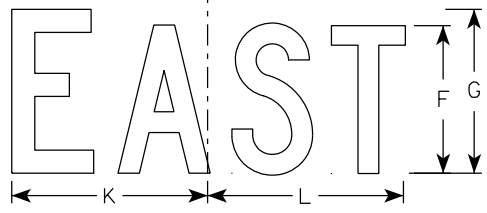
M3-1
MM3-1
MP3-1



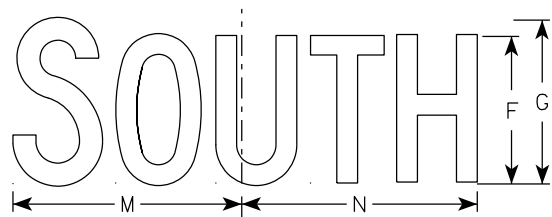
MB3-1
MK3-1
MN3-1



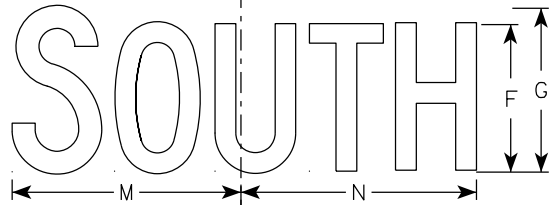
M3-2
MM3-2
MP3-2



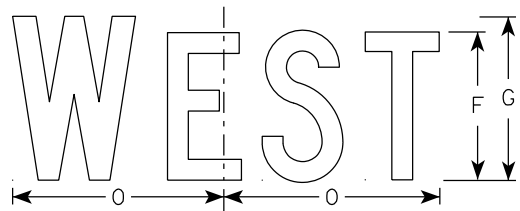
MB3-2
MK3-2
MN3-2



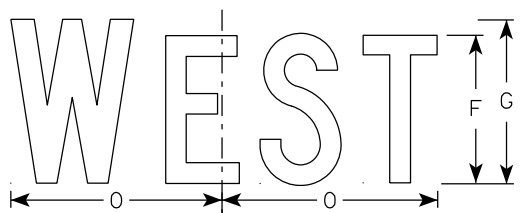
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

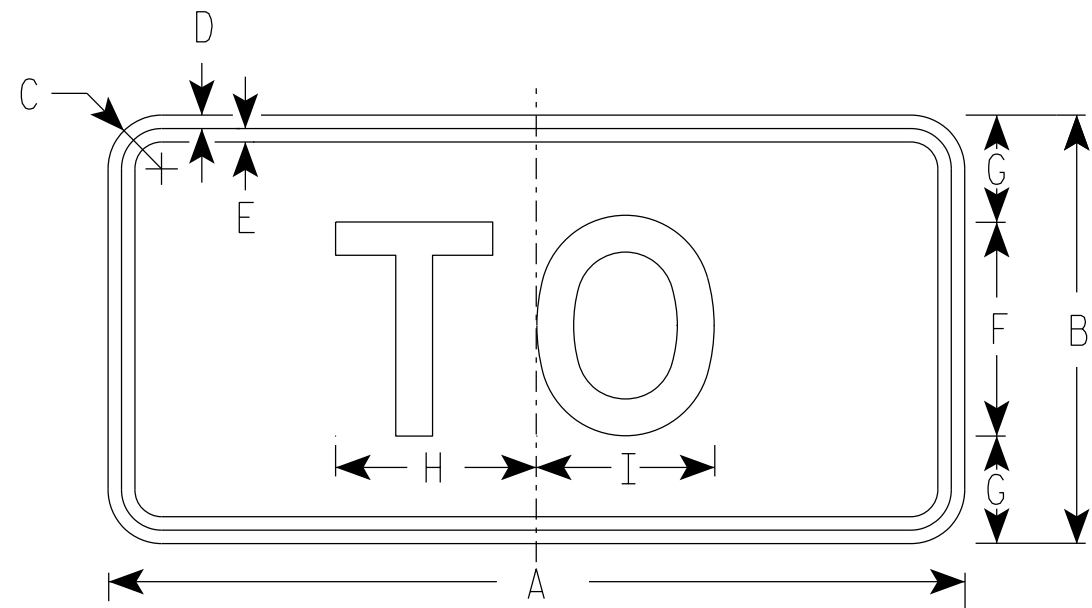
- All Signs Type II - Type H Reflective
- Color:
Background - See note 5
Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
- Note the first letter of each direction is larger than the remainder of the message.

7

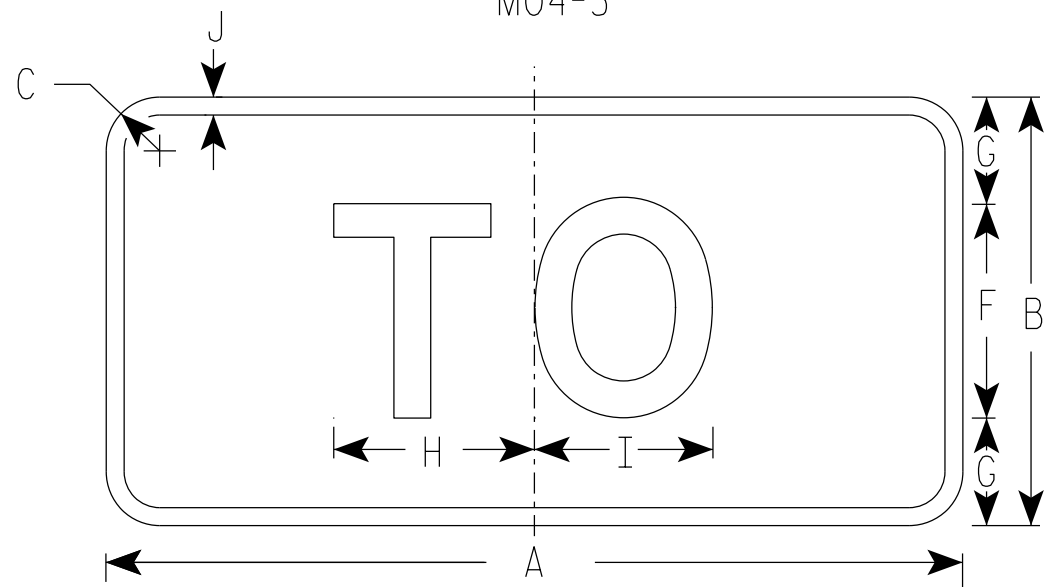
7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 144	E
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M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue
M04-5 Background - Orange Type F Reflective
Message - Black

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	3	5 3/8	5 1/4	1/2																	2.00
2M	24	12	1 1/2	3/8	3/8	6	3	5 3/8	5 1/4	1/2																	2.00
3	36	18	1 1/2	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2																	4.5
4	36	18	1 1/2	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2																	4.5
5	36	18	1 1/2	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2																	4.5

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 145

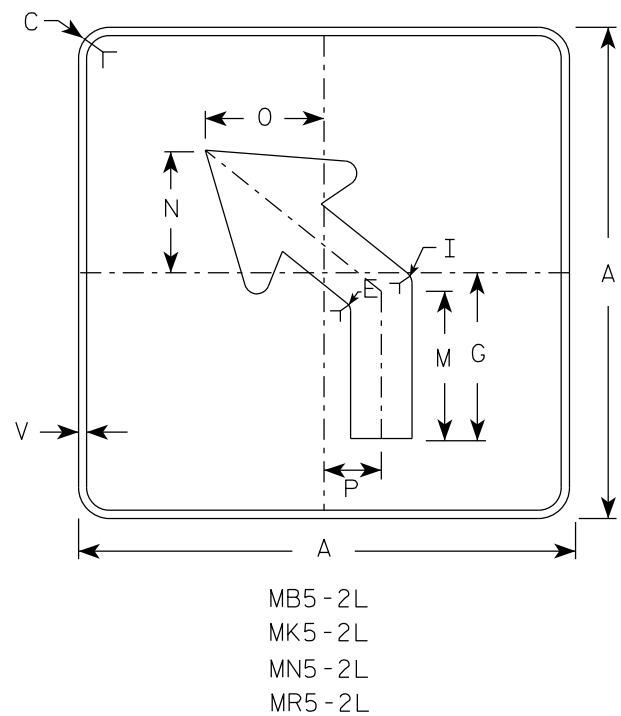
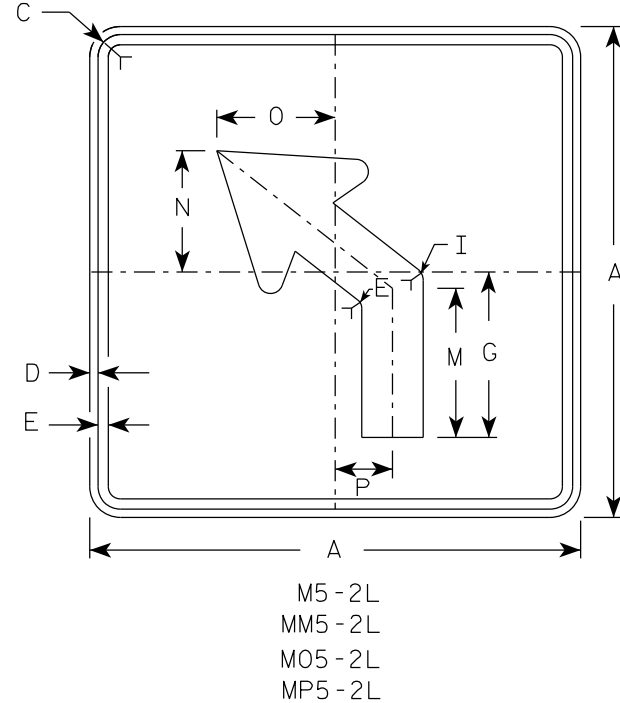
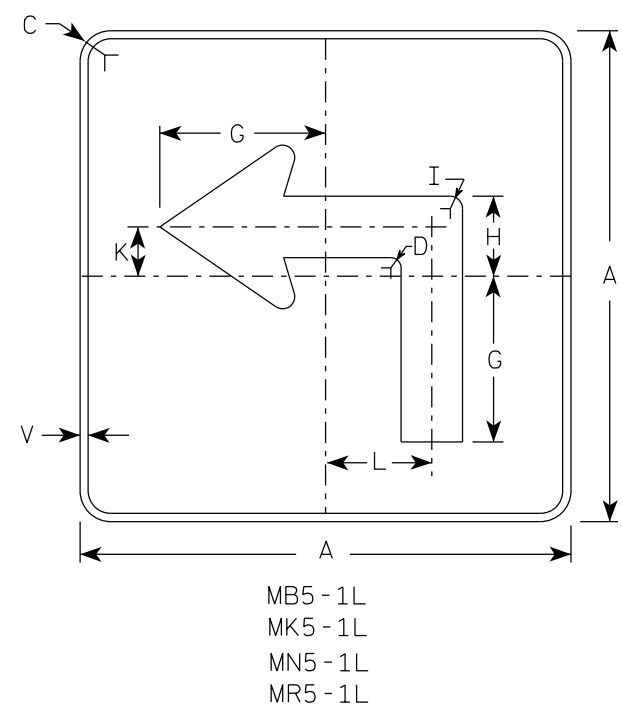
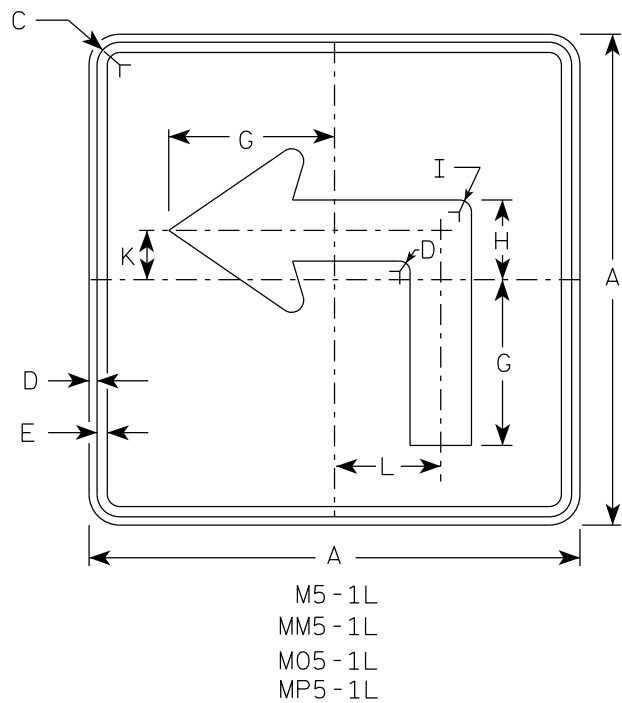
E

STANDARD SIGN
M4-5

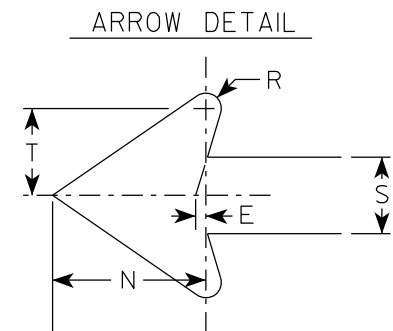
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/8/2023 PLATE NO. M4-5.11

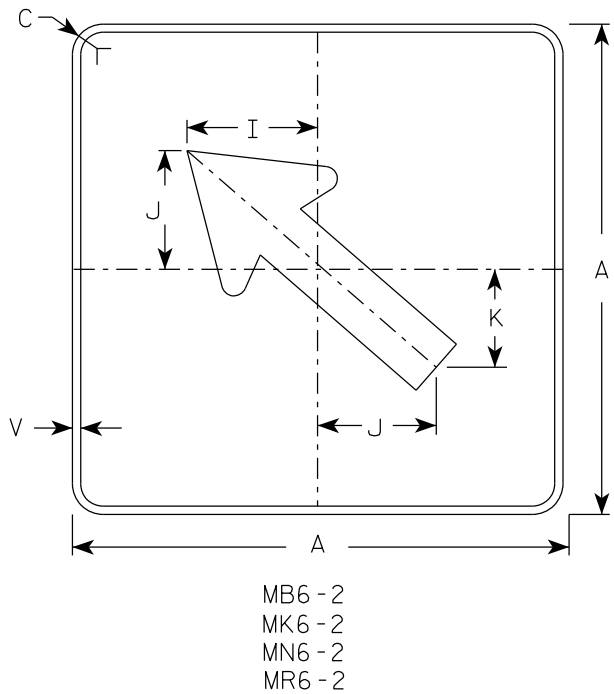
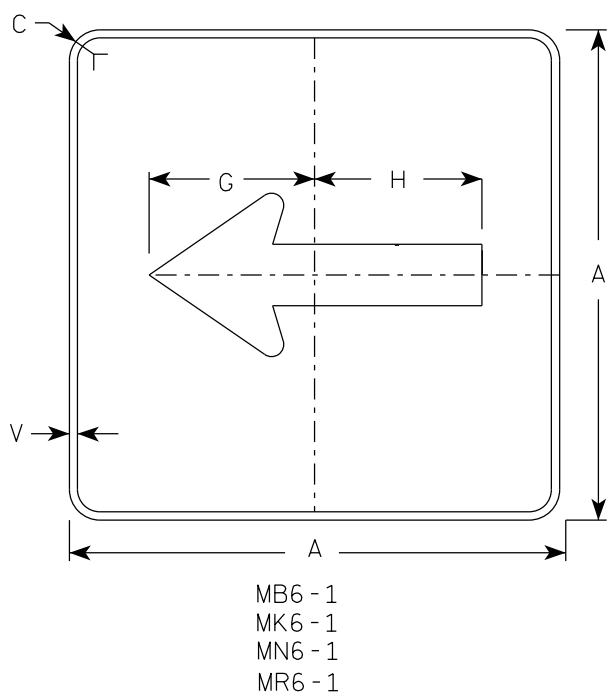
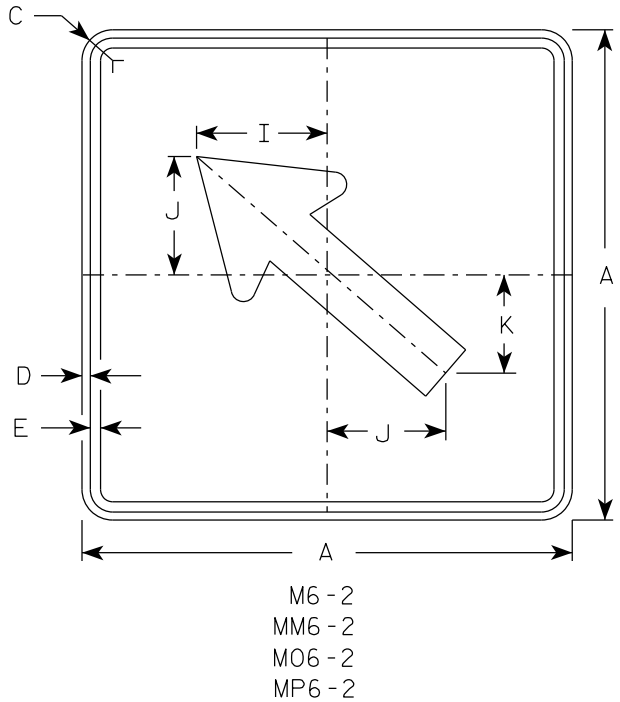
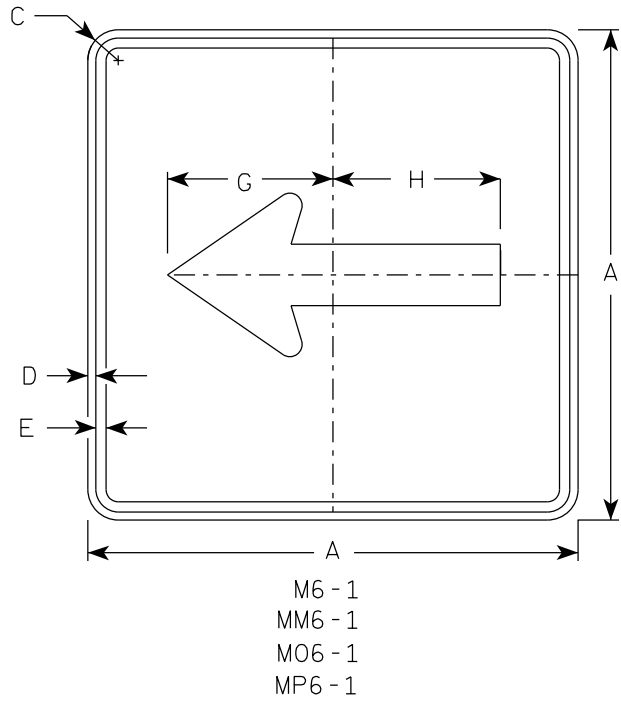


- NOTES
- Signs are Type II - Type H reflective except as shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - | | | |
|-----------|-------|---|
| M5-1 and | M5-2 | Background - White |
| | | Message - Black |
| MB5-1 and | MB5-2 | Background - Blue |
| | | Message - White |
| MK5-1 and | MK5-2 | Background - Green |
| | | Message - White |
| MM5-1 and | MM5-2 | Background - White |
| | | Message - Green |
| MN5-1 and | MN5-2 | Background - Brown |
| | | Message - White |
| M05-1 and | M05-2 | Background - Orange - Type F Reflective |
| | | Message - Black |
| MP5-1 and | MP5-2 | Background - White |
| | | Message - Blue |
| MR5-1 and | MR5-2 | Background - Brown |
| | | Message - Yellow |
 - M5-1R same as M5-1L except arrow points right.
 - M5-2R same as M5-2L except arrow tilts right.

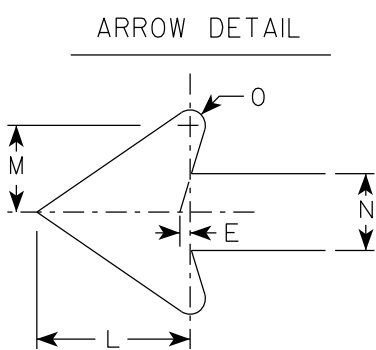


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
4	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25
5	30		1 7/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4		1/2					6.25

PROJECT NO:		HWY:		COUNTY:		SHEET NO: 146		E
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- NOTES**
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
2M	21		1 1/2	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2							1/2					3.06
3	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
4	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25
5	30		1 7/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4							1/2					6.25

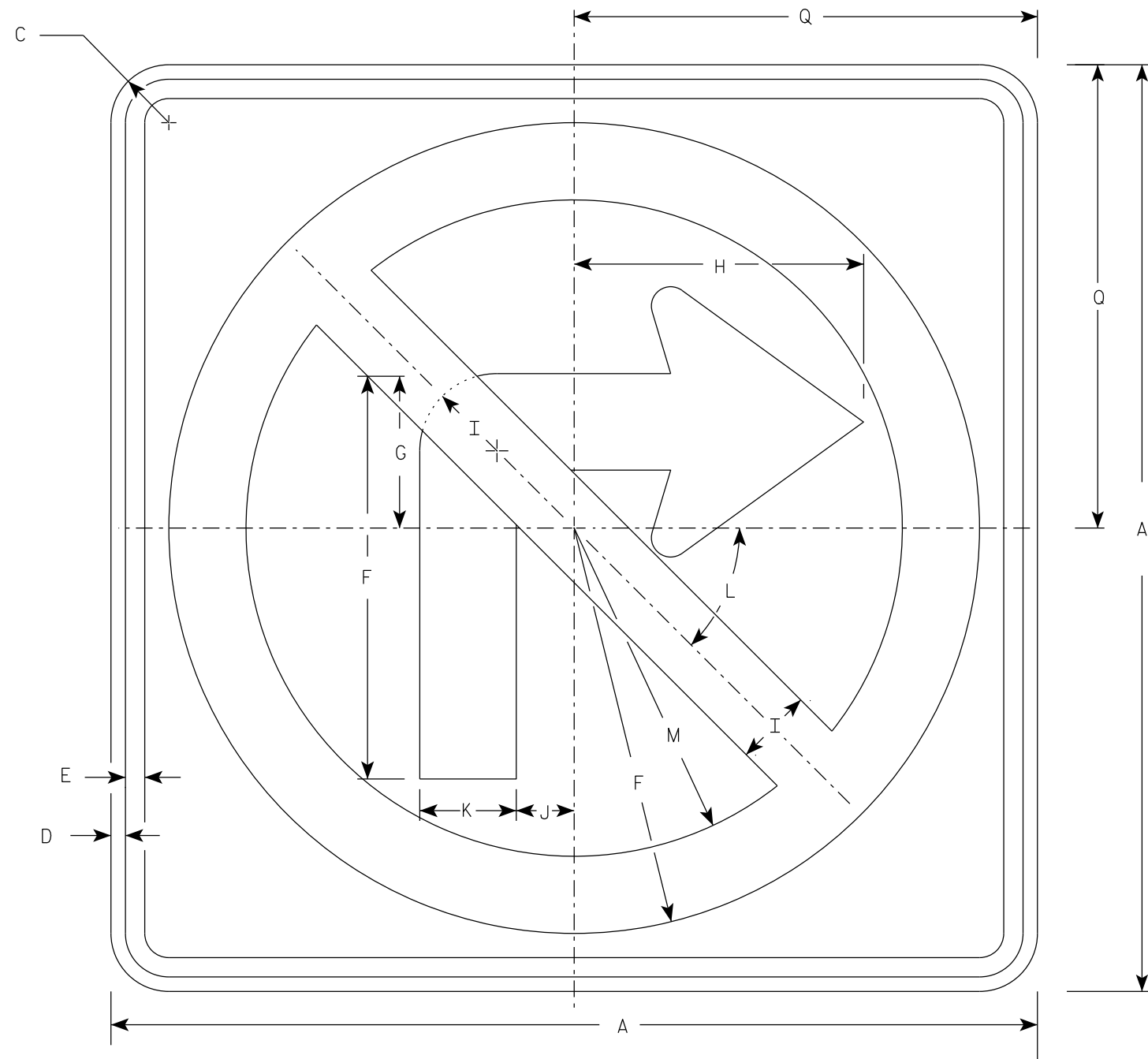
STANDARD SIGN
M6-1 & M6-2
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/13/2023 PLATE NO. M6-1.16

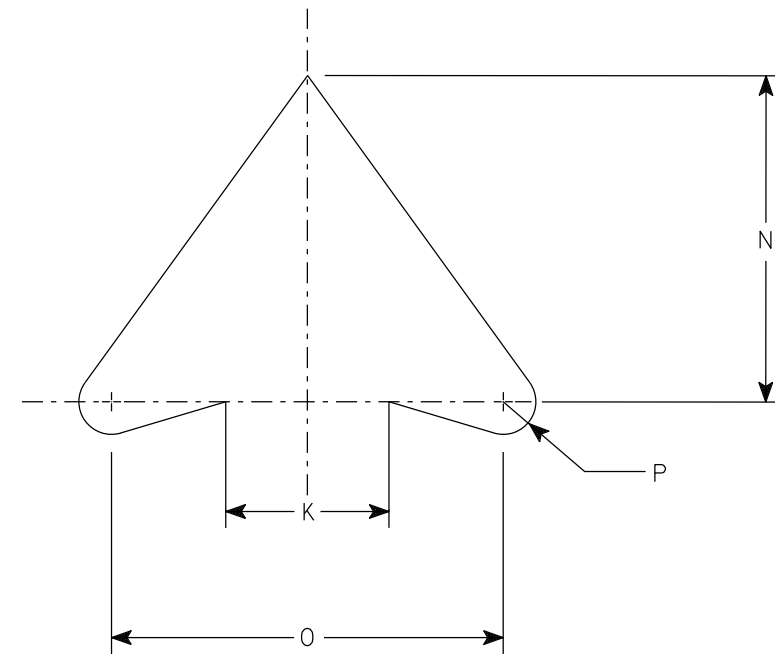
7



R3-1

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - See note 3
3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.

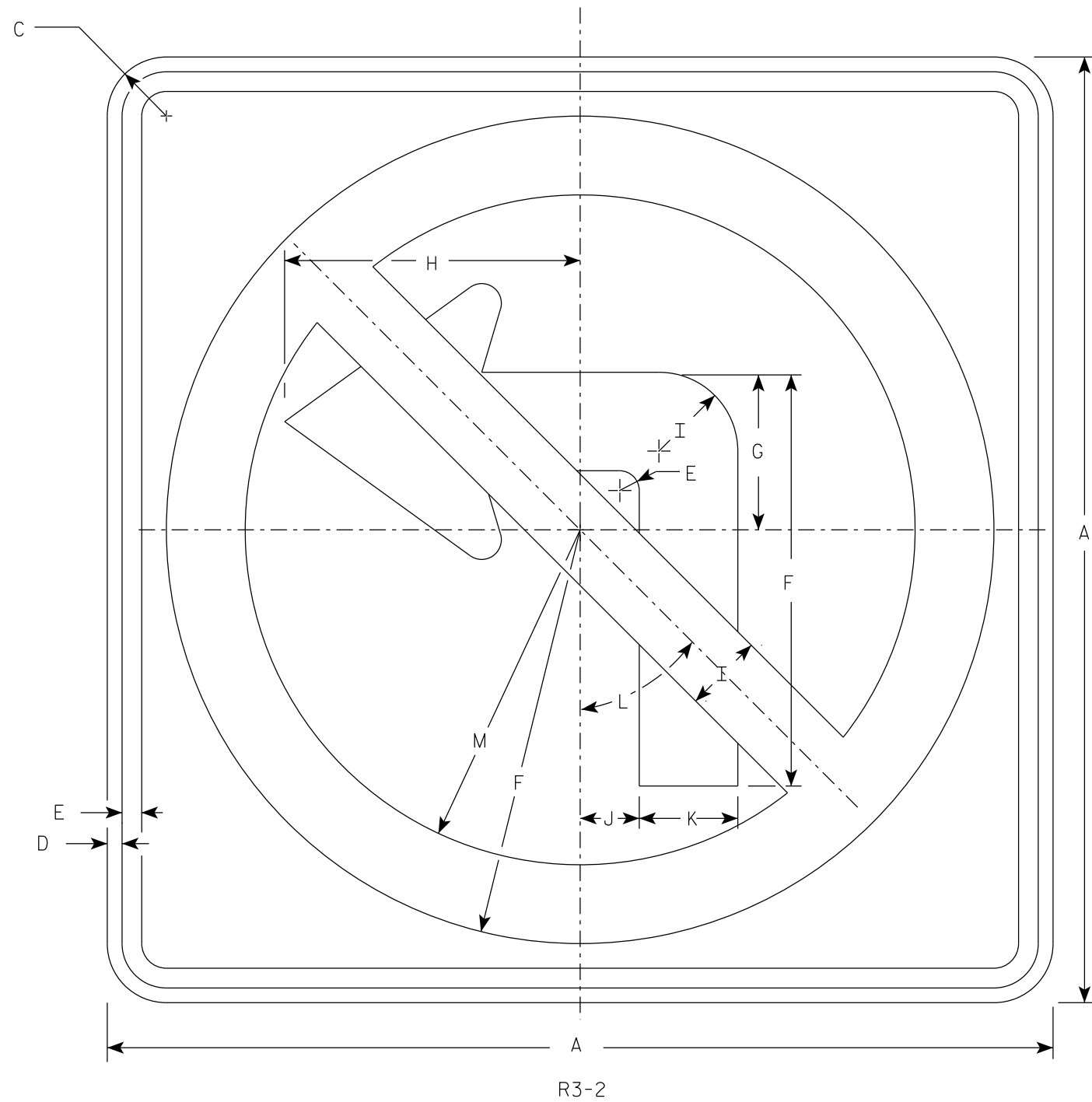


ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

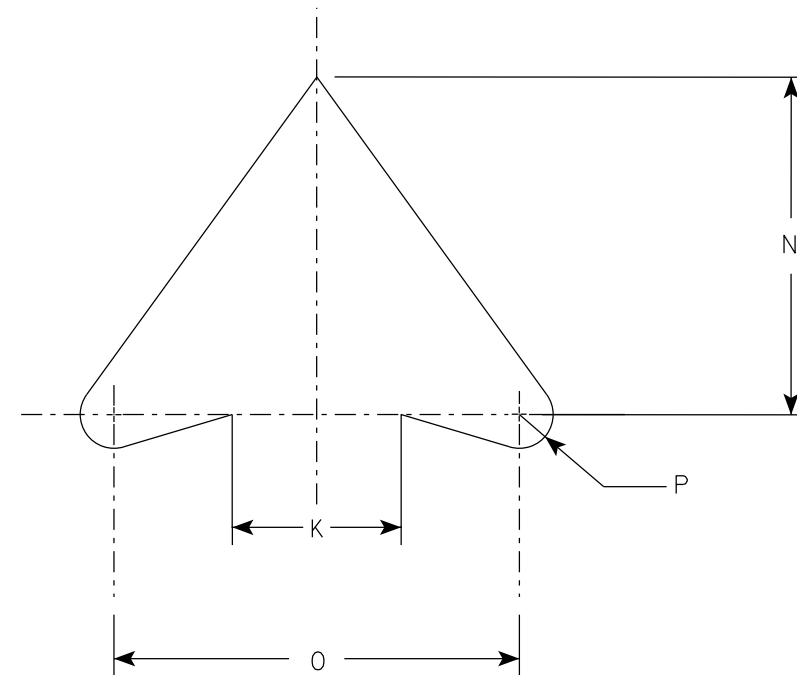
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 148	E
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7



NOTES

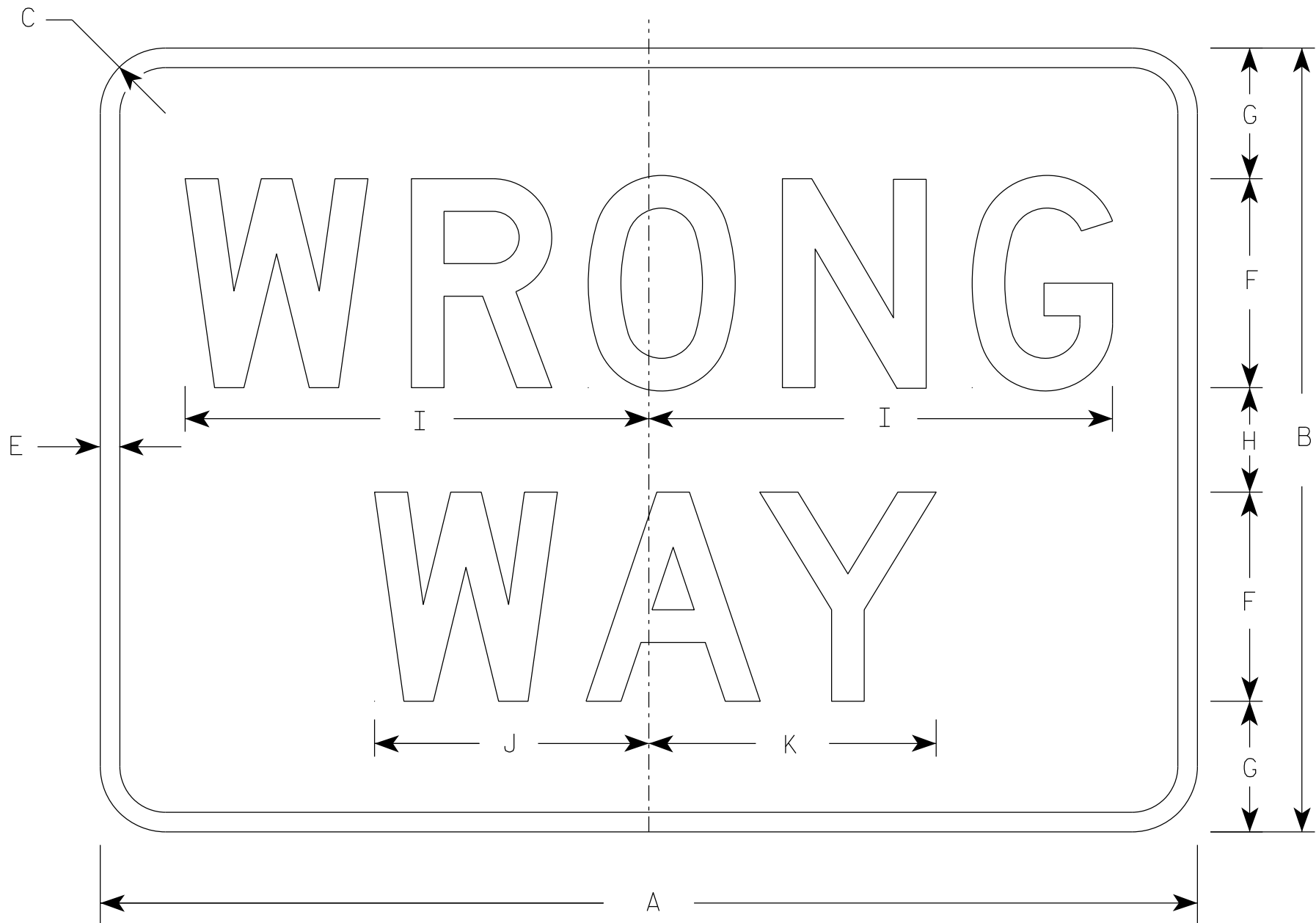
- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - See note 3
- 3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

7



R5-1A

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - Red
 - Message - White
- 3. Message Series - D

7

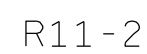
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	1 1/2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75

STANDARD SIGN
R5-1A

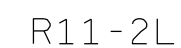
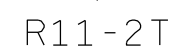
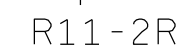
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/17/23 PLATE NO. R5-1A.3

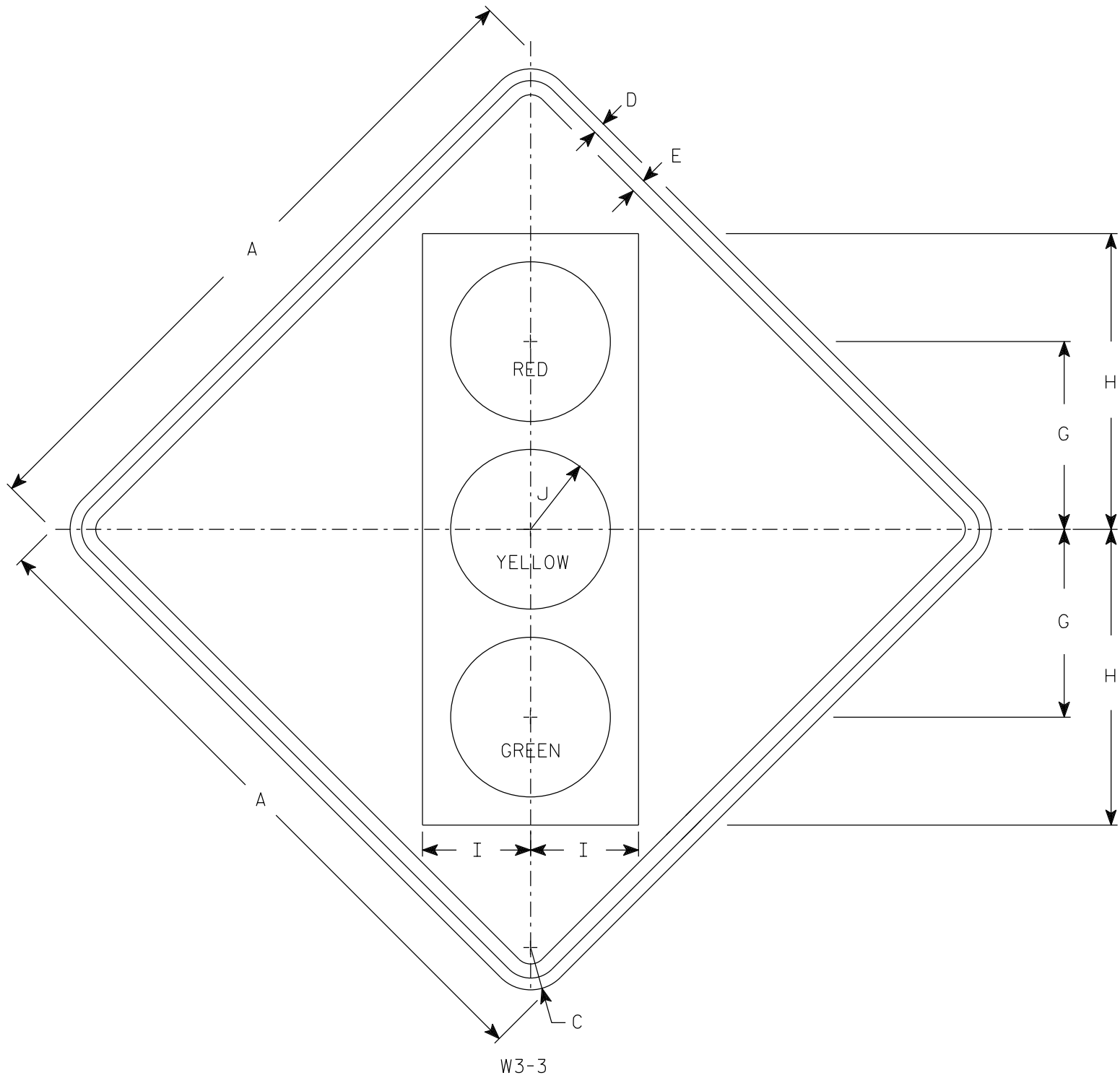


1. Sign is Type II - Type H Reflective
2. Color:
 - Background - White
 - Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the message as required.



STANDARD SIGN	
R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew P Rauch</u> for State Traffic Engineer
DATE <u>2/5/24</u>	PLATE NO. <u>R11-212</u>

PLOT SCALE : \$\$.....plotscale.....\$\$ WISDOT/CADDS SHEET 42



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Yellow
 - Message - See Note 3
- 3. Symbol and border are non-reflective black.
 - Top circle - Type H Reflectorized Red
 - Center circle - Same as background
 - Bottom circle - Type H Reflectorized Green

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 7⁄8	1⁄2	5⁄8		8 3⁄4	13 3⁄4	5	3 3⁄4																	6.25
2S	36		2 1⁄4	5⁄8	3⁄4		10	15 3⁄4	5 3⁄4	4 1⁄4																	9.0
2M	36		2 1⁄4	5⁄8	3⁄4		10	15 3⁄4	5 3⁄4	4 1⁄4																	9.0
3	36		2 1⁄4	5⁄8	3⁄4		10	15 3⁄4	5 3⁄4	4 1⁄4																	9.0
4	48		3	3⁄4	1		12 1⁄2	20	7 1⁄2	5																	16.0
5	48		3	3⁄4	1		12 1⁄2	20	7 1⁄2	5																	16.0

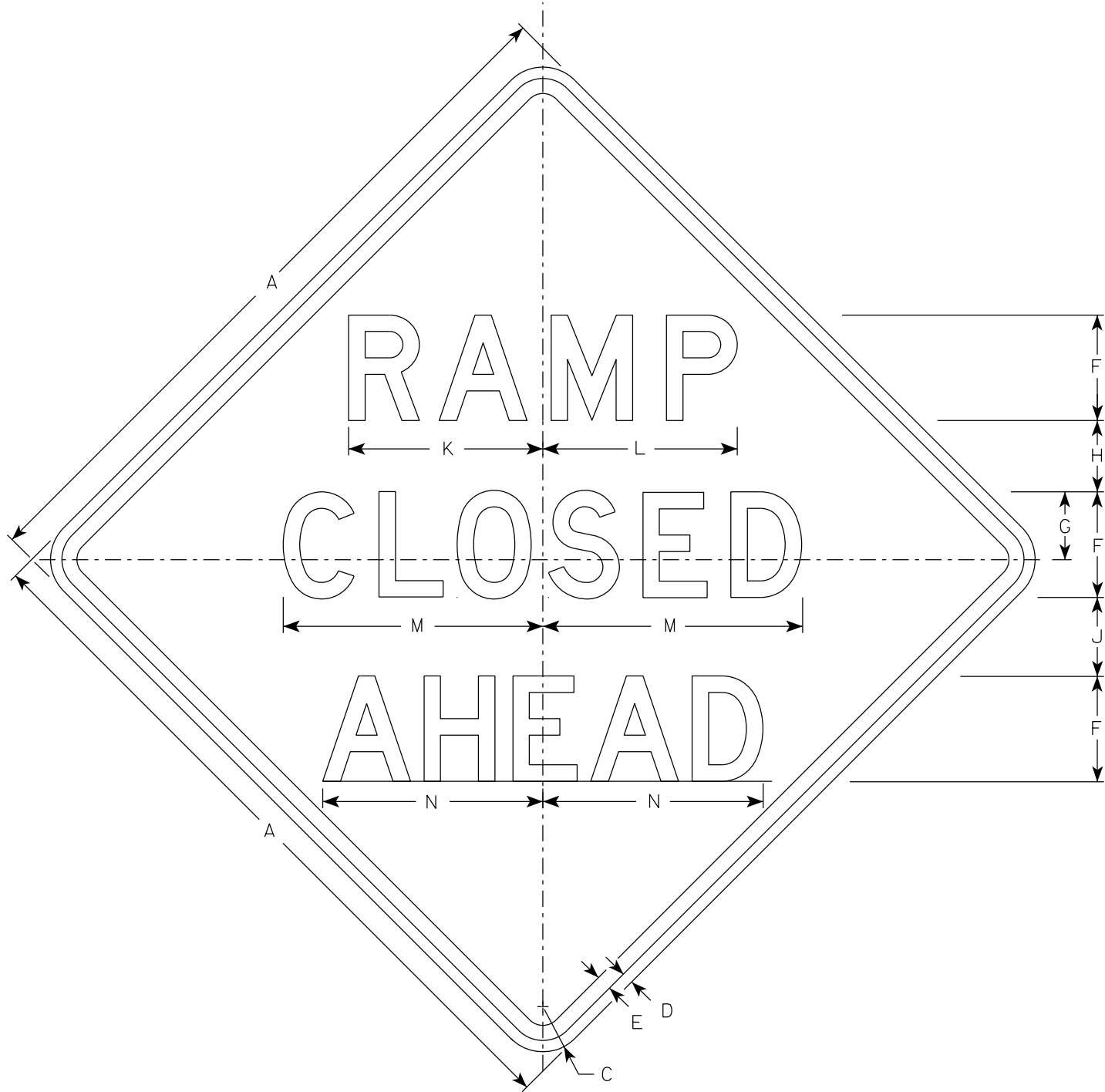
STANDARD SIGN

W3-3

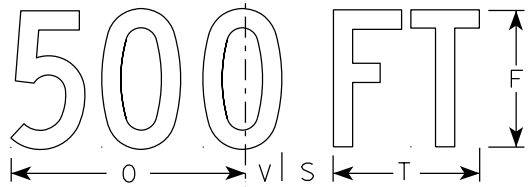
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

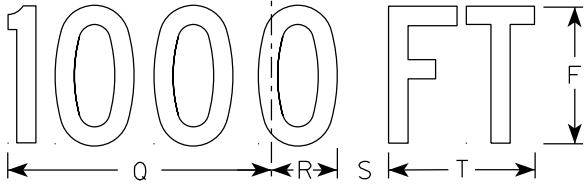
DATE 8/21/2023 PLATE NO. W3-3.12



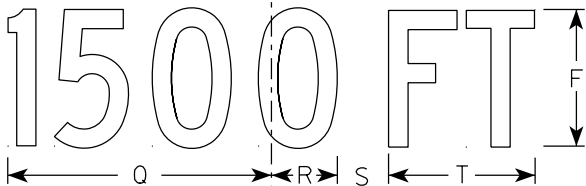
W20-53A



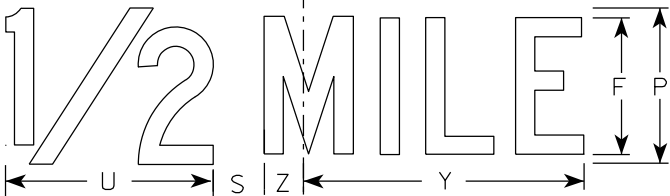
W20-53D



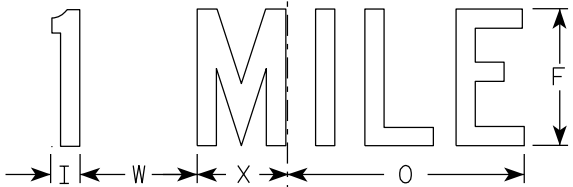
W20-53C



W20-53B



W20-53G



W20-53F

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - see note 5
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	9 1/4	9 1/4	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

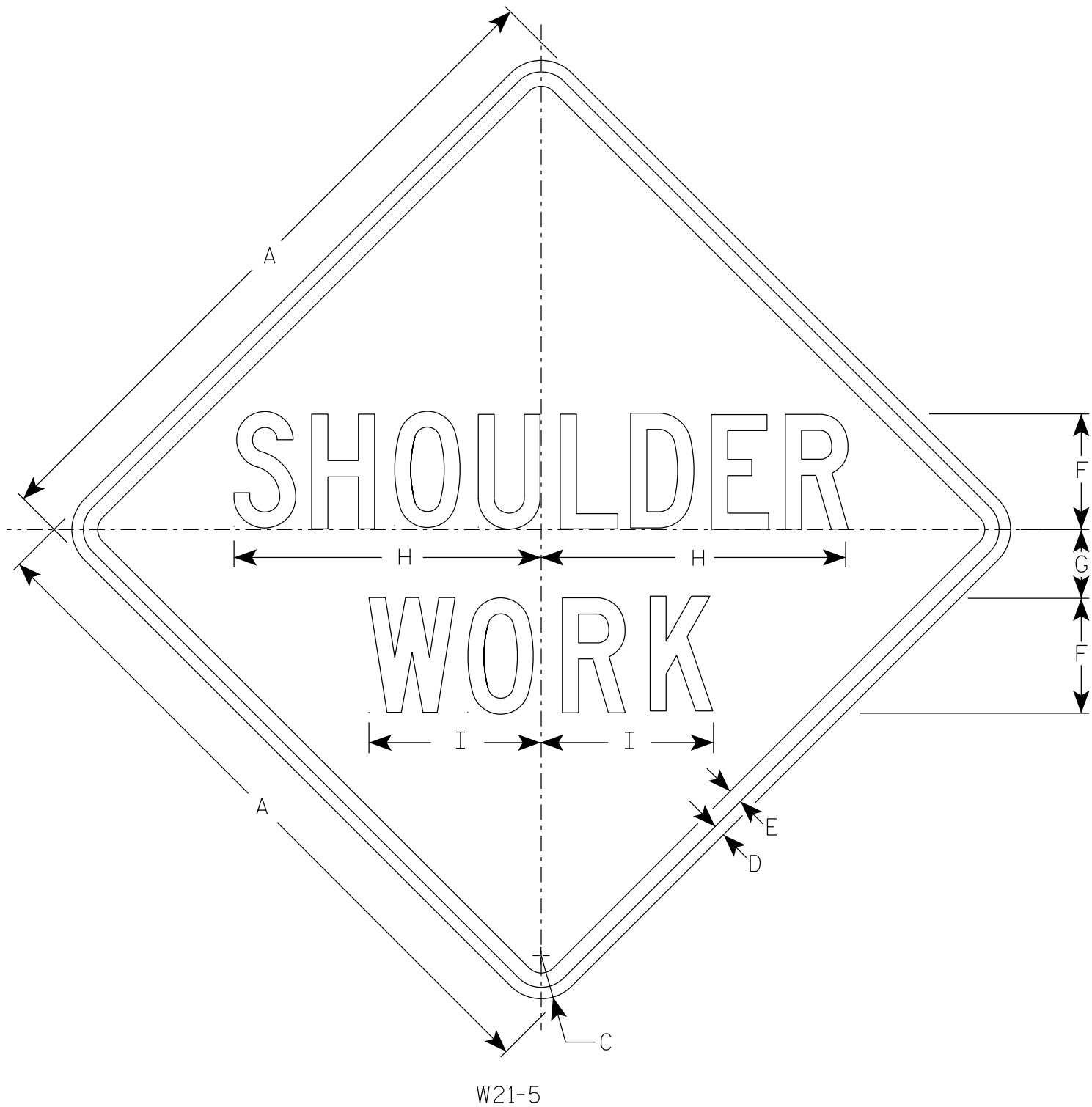
STANDARD SIGN
W20-53A,B,C,D,F,G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-53.2

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - C

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	3 1/2	16	9																		9.0
2S	48		3	3/4	1	8	5	21 3/8	11 1/4																		16.0
2M	48		3	3/4	1	8	5	21 3/8	11 1/4																		16.0
3	48		3	3/4	1	8	5	21 3/8	11 1/4																		16.0
4	48		3	3/4	1	8	5	21 3/8	11 1/4																		16.0
5	48		3	3/4	1	8	5	21 3/8	11 1/4																		16.0

STANDARD SIGN

W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/11/2024 PLATE NO. W21-5.7

PROJECT NO:

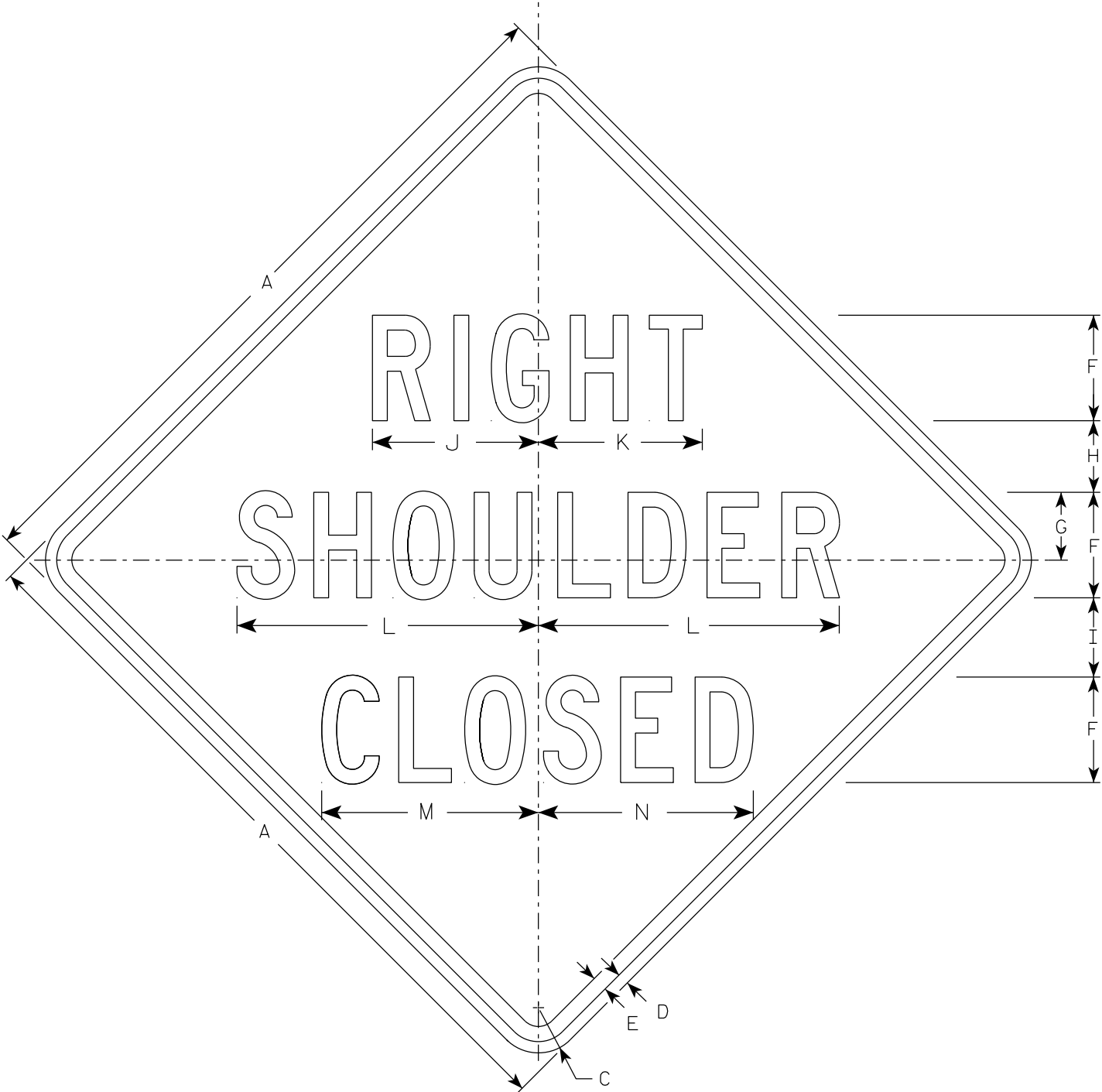
HWY:

COUNTY:

SHEET NO: 154

E

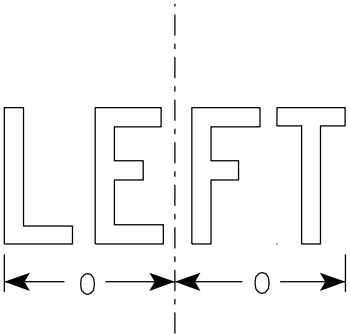
7



W21-5A

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D



W21-5AL

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	4	7 7/8	7 3/4	14 1/4	10 1/4	10 1/8	6 1/4												9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	5 1/4	11	10 7/8	20	14 3/8	14 1/4	8 3/4												16.0

PROJECT NO:

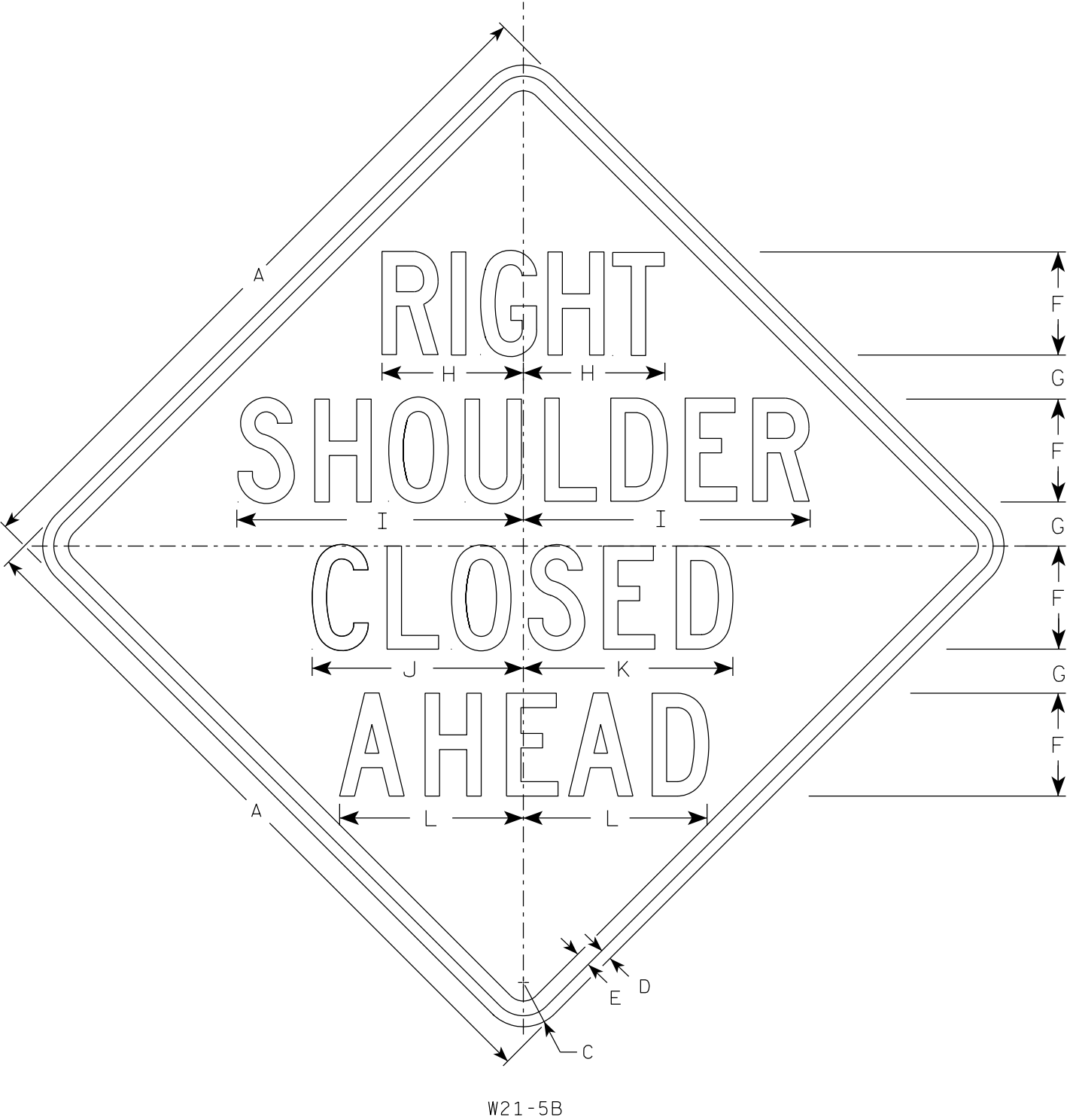
HWY:

COUNTY:

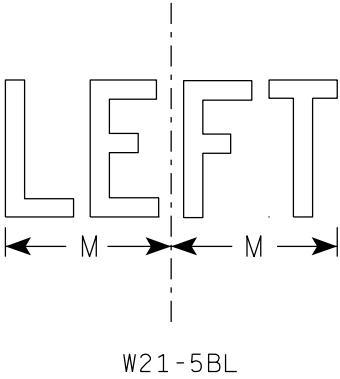
SHEET NO: 155

E

7



- NOTES
- 1. Sign is Type II - Type F Reflective
 - 2. Color:
 - Background - Orange
 - Message - Black
 - 3. Message Series - C



7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 1/4	7 3/8	14 1/4	10 1/4	10 1/8	8 7/8	6 1/4														9.0
2S	48		3	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
2M	48		3	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
3	48		3	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
4	48		3	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0
5	48		3	3/4	1	7	3	9 5/8	19 1/2	14 3/8	14 1/4	12 1/2	8 1/2														16.0

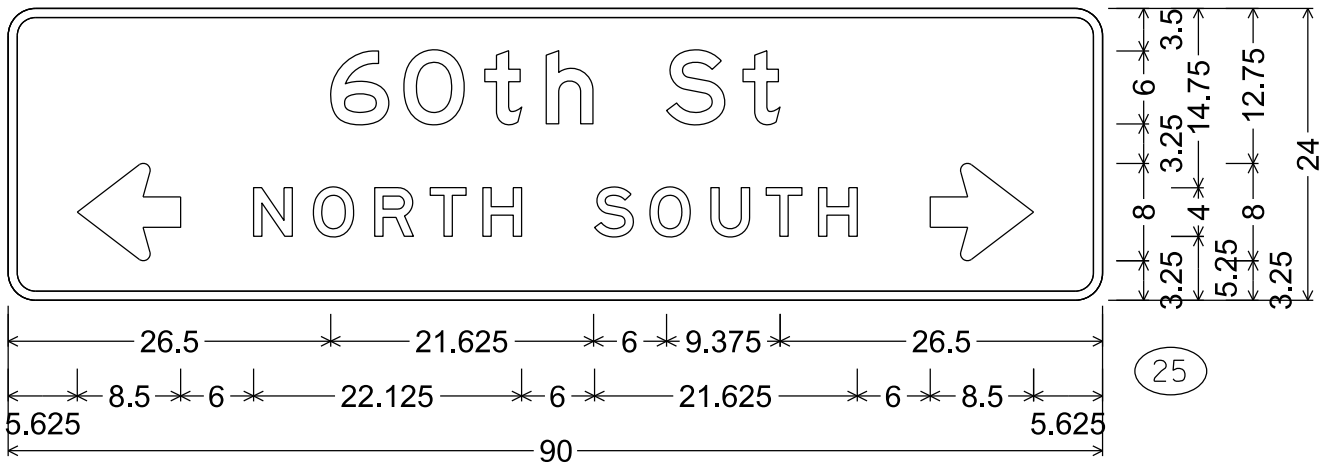
PROJECT NO:

HWY:

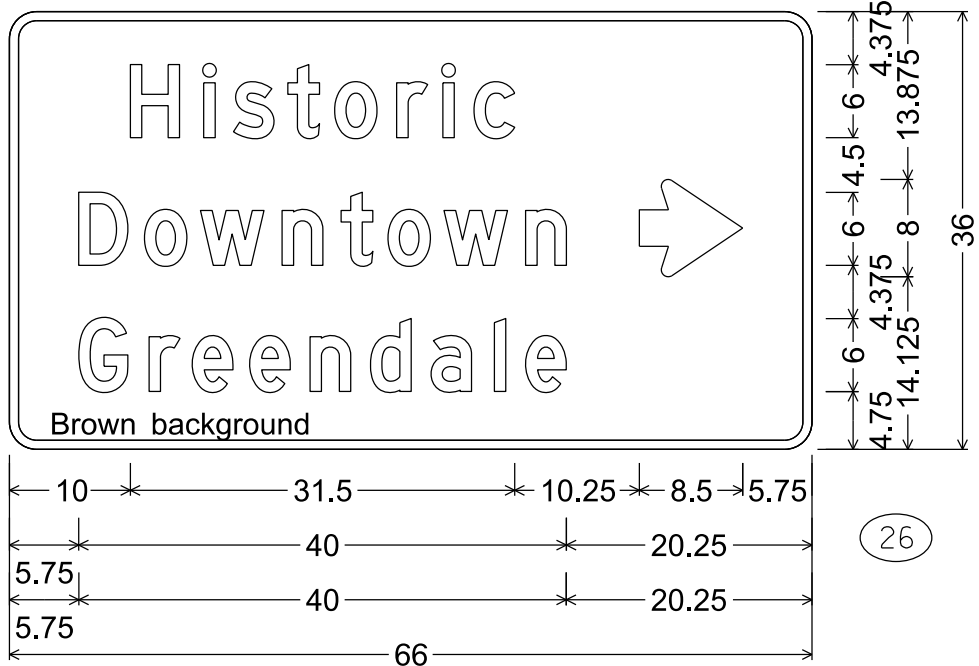
COUNTY:

SHEET NO: 156

E

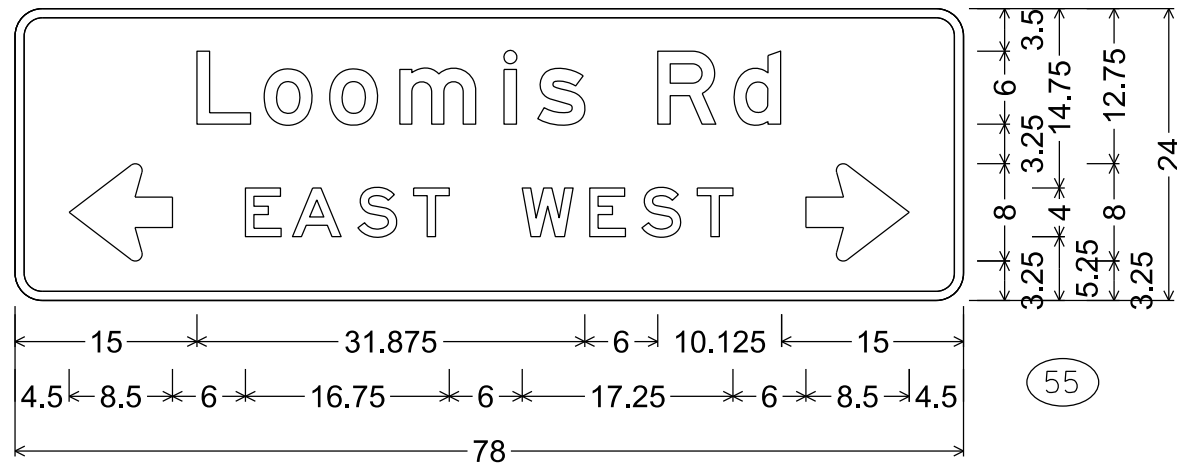


D1-60; 2.250" Radius, 0.750" Border

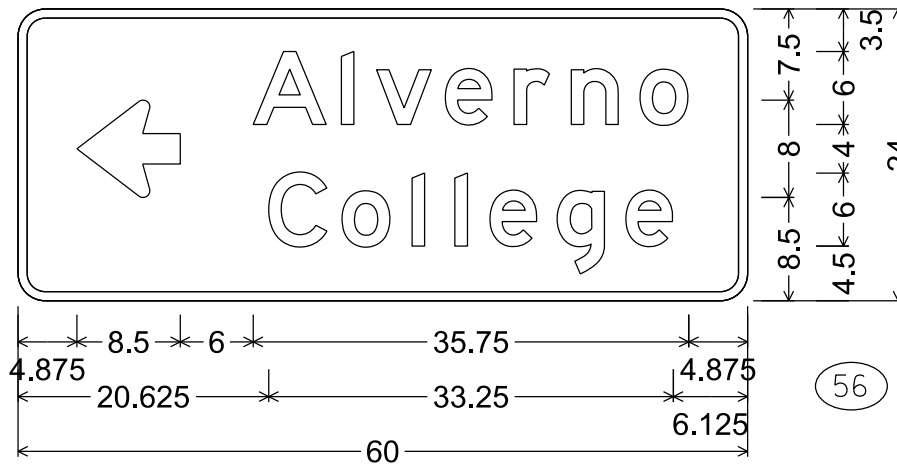


D1-3; 2.250" Radius, 0.750" Border, White on Brown
"Historic", D; "Downtown", D; "Greendale", D

- NOTES
1. All Signs Type II - Type H Reflective
 2. Color:
Background - Green or as noted
Message - White
 3. Message Series - E or as noted

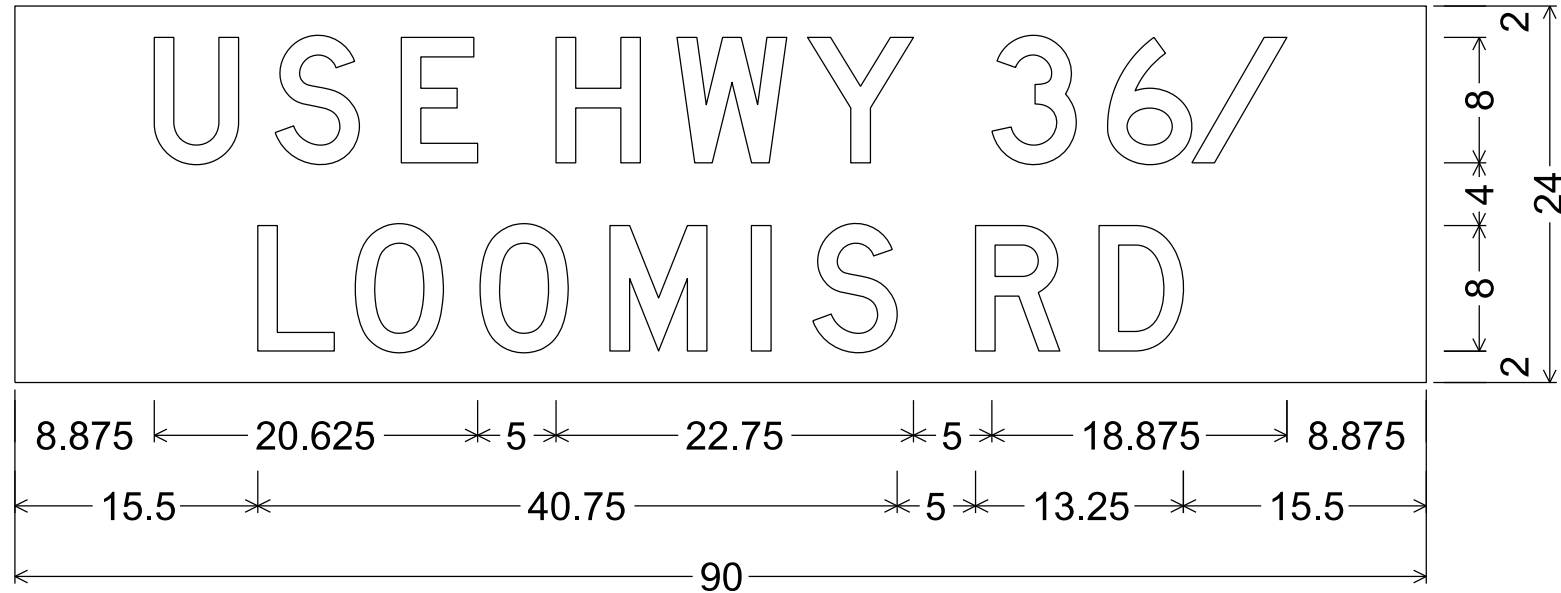


D1-60; 2.250" Radius, 0.750" Border

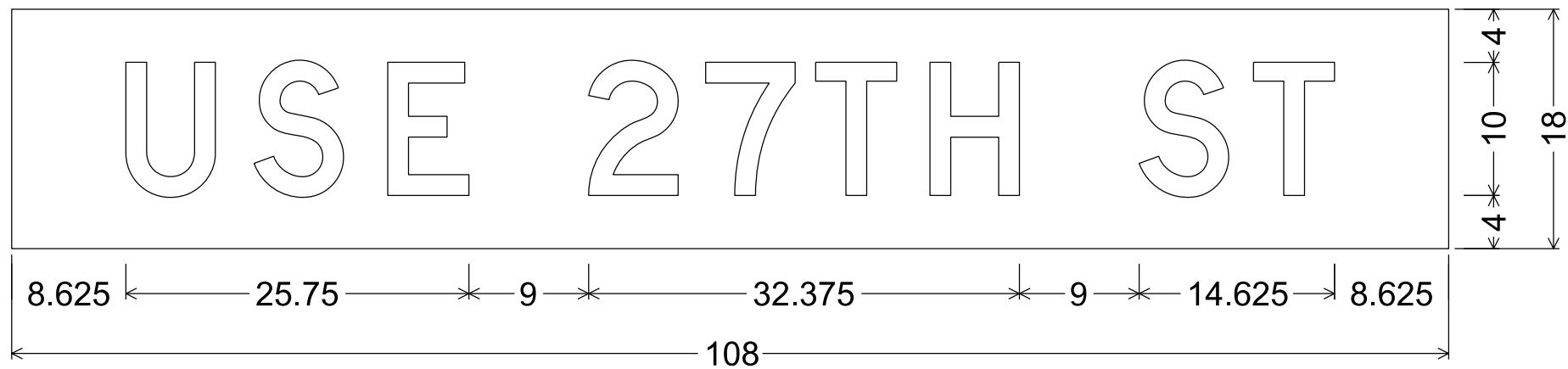


D1-2; 2.250" Radius, 0.750" Border

7



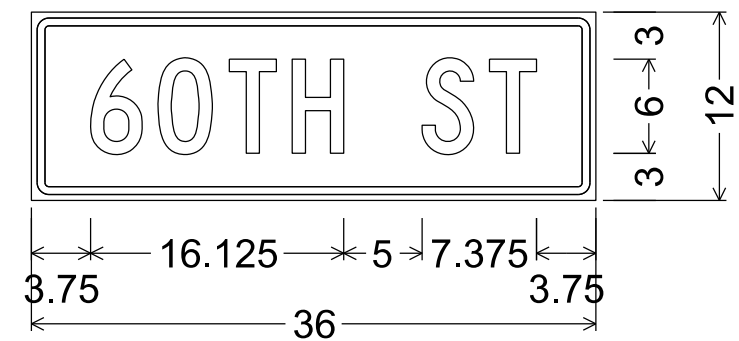
No border, Black on Fluorescent orange



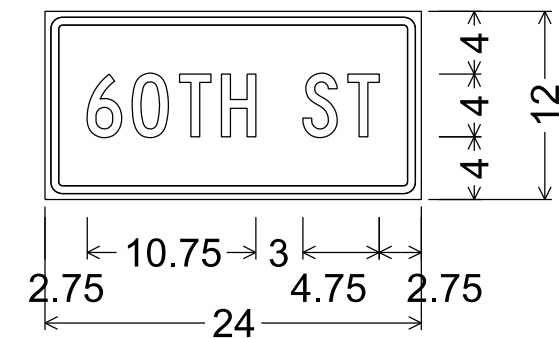
No border, Black on Fluorescent orange

NOTES

1. Fixed Message Signs Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D or as noted



1.125" Radius, 0.500" Border, 0.375" Indent
"60TH", C; "ST", C



1.125" Radius, 0.500" Border, 0.375" Indent
"60TH", C; "ST", C

7

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION (1 OF 3)
2. GENERAL PLAN & ELEVATION (2 OF 3)
3. GENERAL PLAN & ELEVATION (3 OF 3)
4. ALIGNMENT PLAN
5. QUANTITIES, NOTES & CONSTRUCTION DETAILS
6. AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE
7. AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE
8. SUBSURFACE EXPLORATION (1 OF 3)
9. SUBSURFACE EXPLORATION (2 OF 3)
10. SUBSURFACE EXPLORATION (3 OF 3)

NOTES

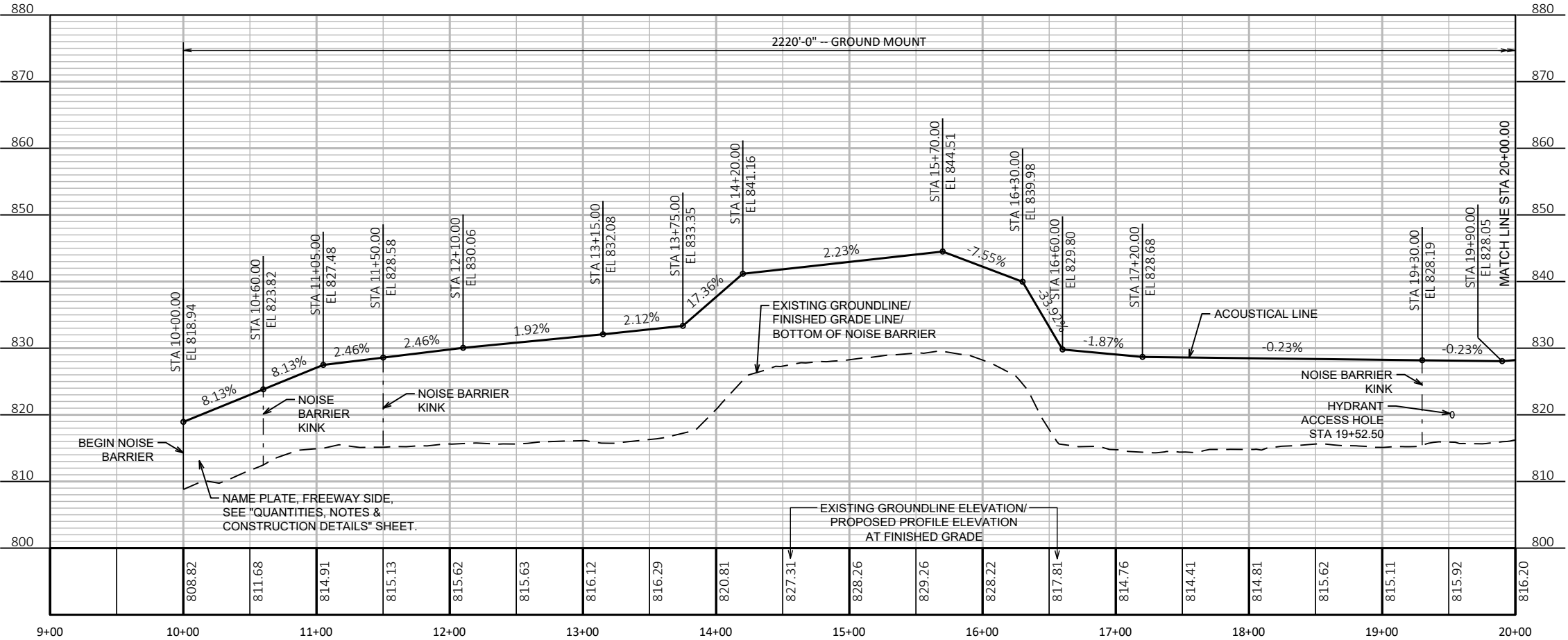
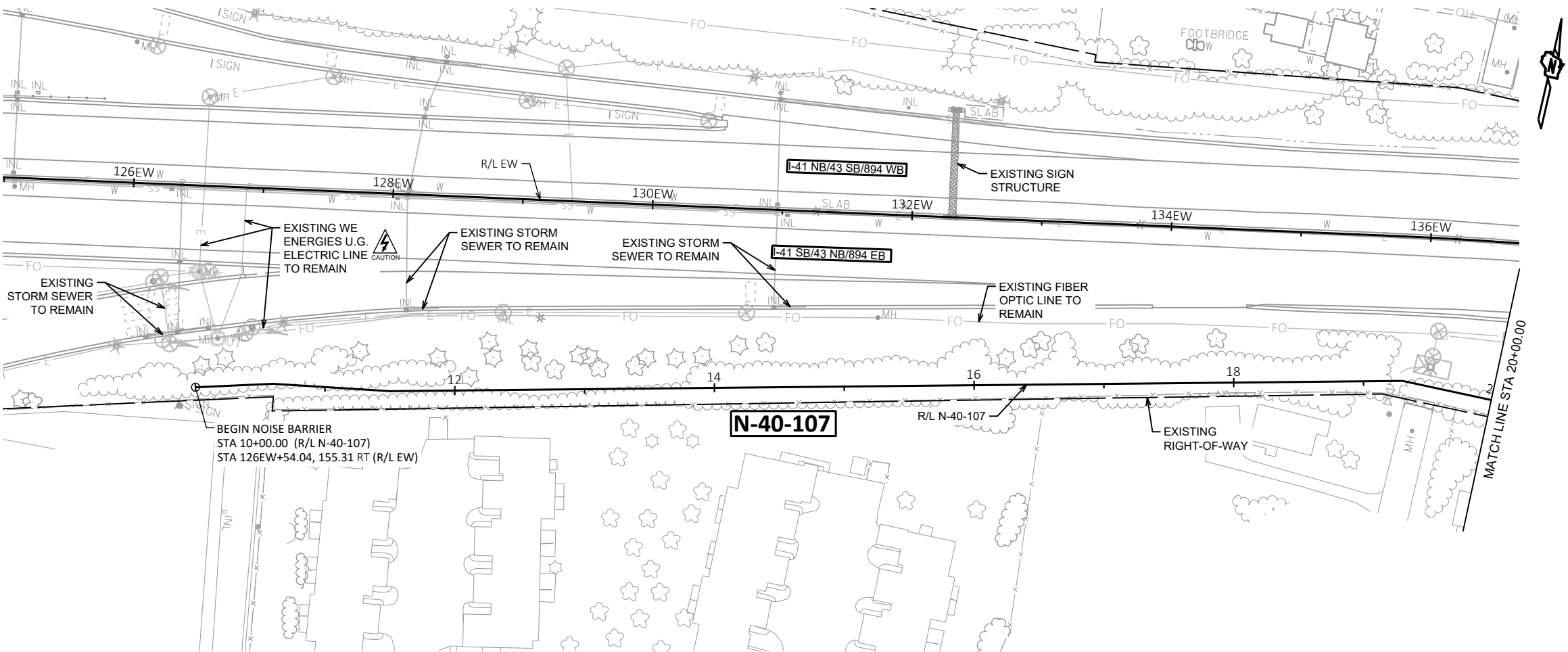
1. SEE "ALIGNMENT PLAN" SHEET FOR GEOMETRY INFORMATION.
2. LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 3.5' ABOVE THE BOTTOM OF NOISE BARRIER.



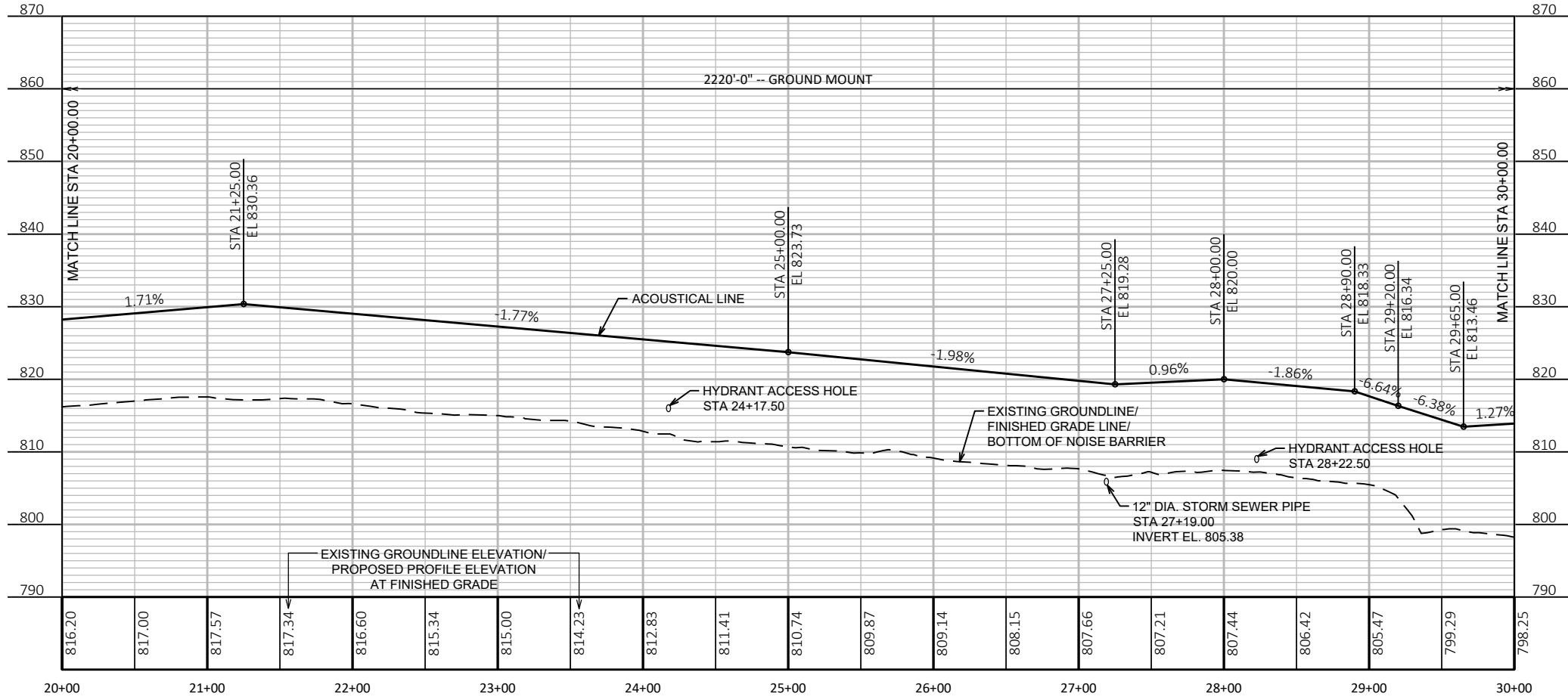
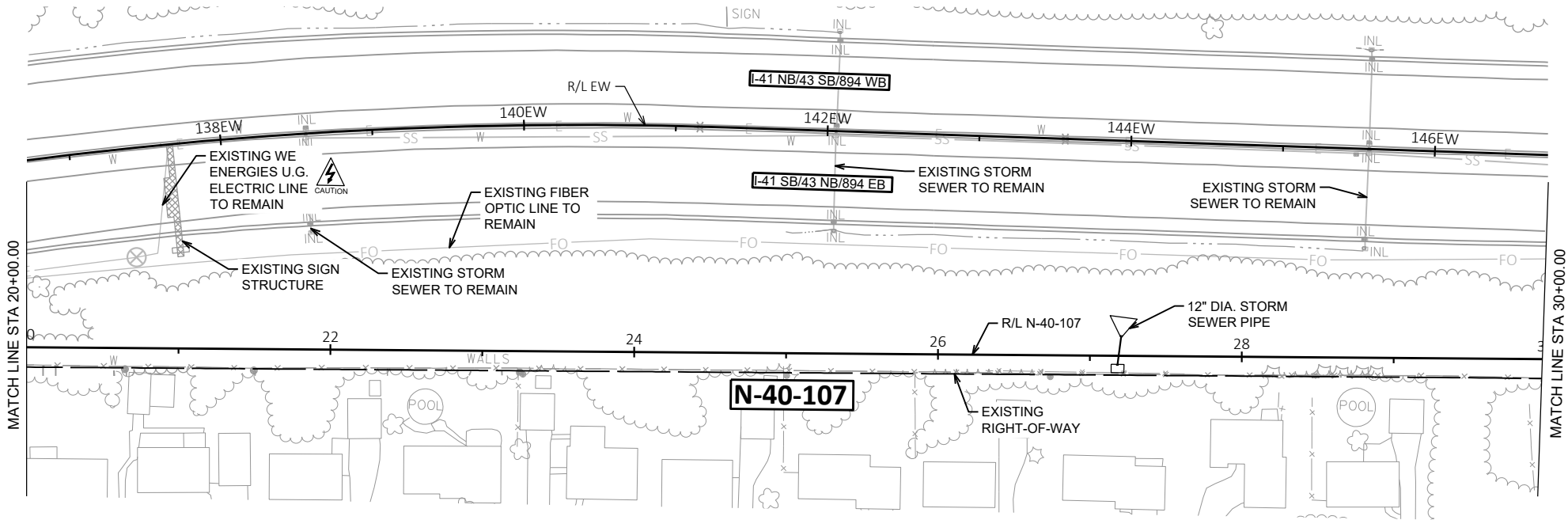
STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK: (608) 261-0261
CONSULTANT:
ED McCRIGHT: (414) 272-2426

NO.	DATE	REVISION	BY
Jacobs			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>[Signature]</i>	SDR	02/03/25
CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE N-40-107			
NOISE BARRIER ALONG IH-41 SB			
COUNTY	MILWAUKEE	TOWN/CITY/VILLAGE	GREENFIELD
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	TMH	DESIGNED CK'D	EKM
DRAWN BY	TMH	PLANS CK'D	EKM
GENERAL PLAN AND ELEVATION (1 OF 3)		SHEET 1 OF 10 159	

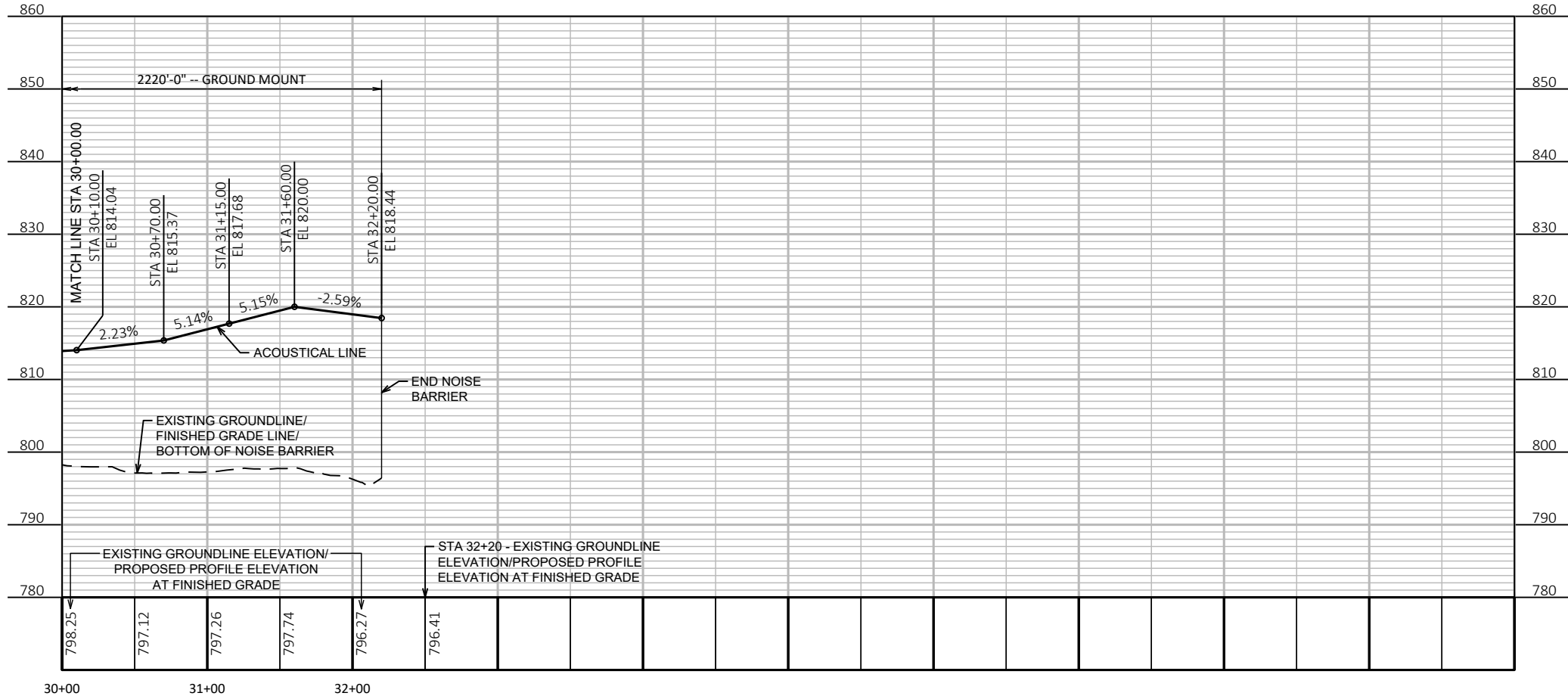
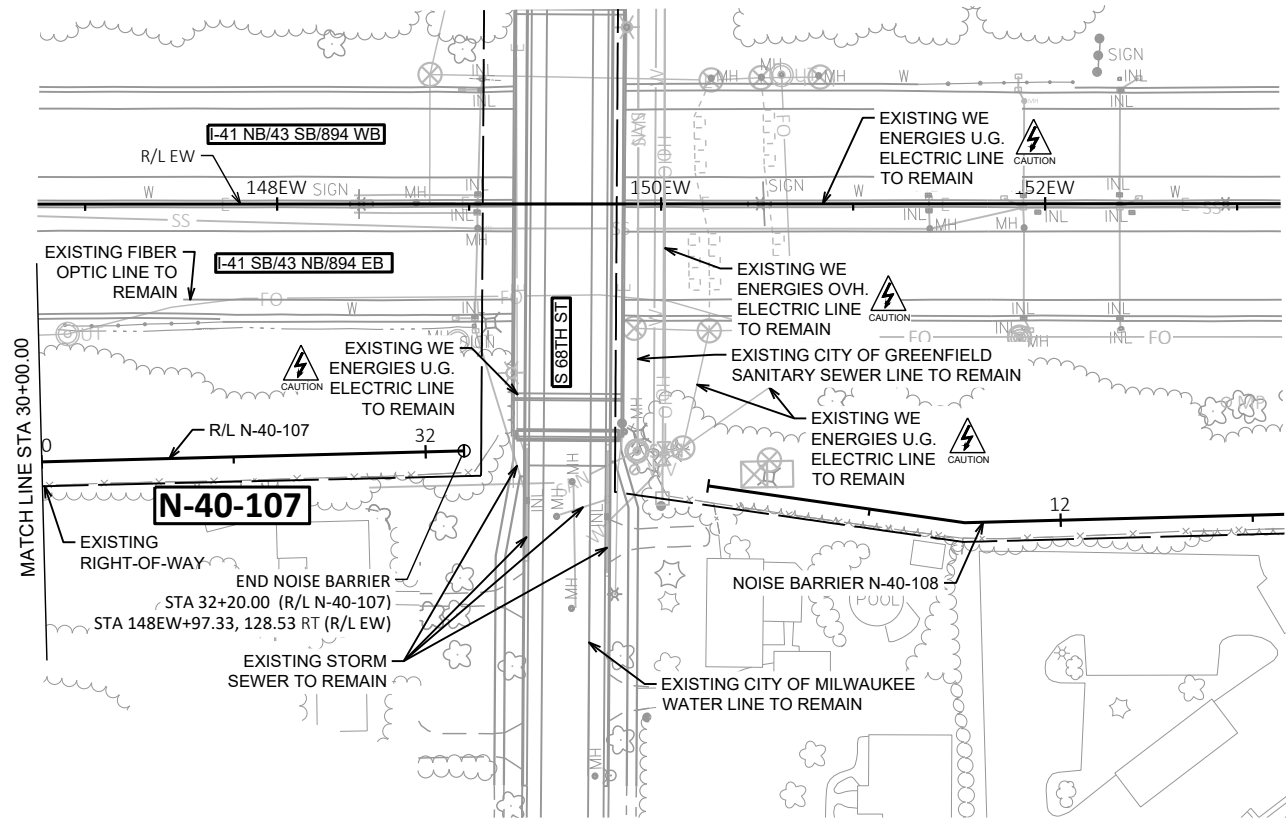


PLAN AND PROFILE: NOISE BARRIER N-40-107



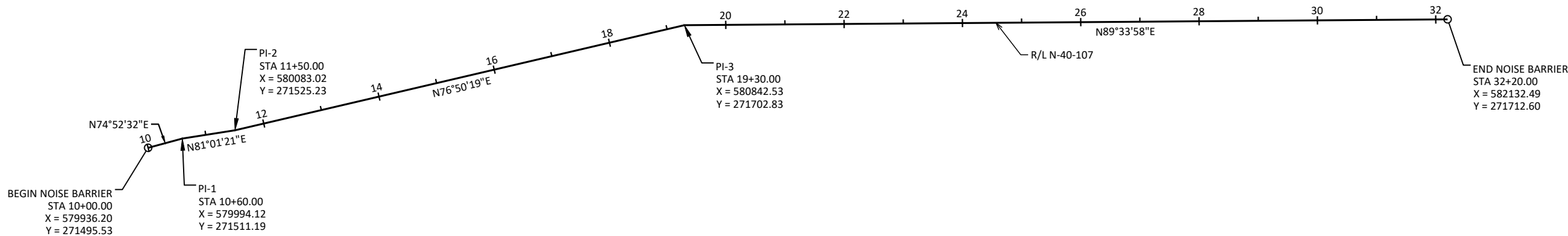
PLAN AND PROFILE: NOISE BARRIER N-40-107

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-107			
DRAWN BY		TMH	PLANS CK'D EKM
GENERAL PLAN AND ELEVATION (2 OF 3)		SHEET 2 OF 10 160	



PLAN AND PROFILE: NOISE BARRIER N-40-107

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-107			
DRAWN BY		TMH	PLANS CK'D EKM
GENERAL PLAN AND ELEVATION (3 OF 3)		SHEET 3 OF 10 161	



ALIGNMENT PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-107			
DRAWN BY		TMH	PLANS CK'D EKM
ALIGNMENT PLAN		SHEET 4 OF 10 162	

SCALE = 1" = 200'

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE NOISE BARRIER IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE NOISE BARRIER MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107".

PLANS, ELEVATIONS AND DETAILS SHOWN ARE INTENDED TO INDICATE LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE NOISE BARRIER IS TO BE DESIGNED USING THE FINISHED GRADE LINE AND THE ACOUSTICAL LINE SHOWN ON THE GENERAL PLAN AND ELEVATION SHEETS.

THE ACOUSTICAL LINE IS THE TOP PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107". NOISE BARRIER PLACED ABOVE THE ACOUSTICAL LINE WILL NOT BE MEASURED FOR PAYMENT.

THE FINISHED GRADE LINE IS THE BOTTOM PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107". NOISE BARRIER PLACED BELOW THE FINISHED GRADE LINE WILL NOT BE MEASURED FOR PAYMENT.

ALL NOISE BARRIERS SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT "GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS", PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).

THE FOLLOWING DESIGN PRESSURES SHALL BE USED IN ACCORDANCE WITH THE SPECIAL PROVISIONS:

- 35 P.S.F. FOR GROUND MOUNTED BARRIERS
- 40 P.S.F. FOR STRUCTURE MOUNTED BARRIERS

REINFORCING STEEL IN THE CONCRETE CORE OF THE NOISE BARRIER PANELS SHALL HAVE A MINIMUM CLEARANCE OF 1 INCH. THE CONCRETE CORE SHALL BE DESIGNED TO RESIST THE LOADS WITHOUT CONSIDERING ANY COMPOSITE ACTION FROM OTHER MATERIAL IN THE PANEL.

BOTTOM NOISE BARRIER PANELS SHALL BE DESIGNED TO SUPPORT THE DEAD LOAD (WEIGHT) OF THE PANELS DIRECTLY ABOVE IT AND ITS OWN DEAD LOAD. THE DEAD LOAD SHALL BE DISTRIBUTED UNIFORMLY ASSUMING SIMPLE BEAM ACTION WITH SUPPORTS AT THE POSTS. BOTTOM PANELS SHALL HAVE A MINIMUM AMOUNT OF PERIMETER REINFORCEMENT OF A #4 BAR WHICH SHALL BE CONTINUOUS AROUND THE CORNERS.

A COMPRESSIBLE BEARING PAD OF 1/4" THICK SHALL BE PROVIDED BETWEEN THE FOUNDATION AND THE BOTTOM PANELS. THE BEARING PADS SHALL BE PREFORMED EPDM RUBBER CONFORMING TO ASTM D-2000, GRADE 2, TYPE A, CLASS A WITH A MINIMUM DUROMETER HARDNESS OF 80. BEARING PADS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERSS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107".

PRECAST CONCRETE PEDESTALS PLACED BETWEEN THE FOUNDATION AND BOTTOM PANELS SHALL BE REINFORCED IF OVER 1'-0" HIGH.

INCLUDE THE COST OF THE STONE PATTERN SURFACE TREATMENT, REVEALS, COATING OF STEEL POSTS AND CONNECTIONS, AND COLORING/STAINING THE PANELS, UNDER THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107".

LOCATE HYDRANT ACCESS HOLES IN NOISE BARRIERS WITH COVER SIGNS AT LOCATIONS SHOWN ON THE GENERAL PLAN & ELEVATION SHEETS. PROVIDING HYDRANT ACCESS HOLES IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107".

INSTALL FREE DRAINING GRANULAR MATERIAL AT THE BOTTOM OF NOISE BARRIERS AS SHOWN IN THE NOISE BARRIER PLANS. FREE DRAINING GRANULAR MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107".

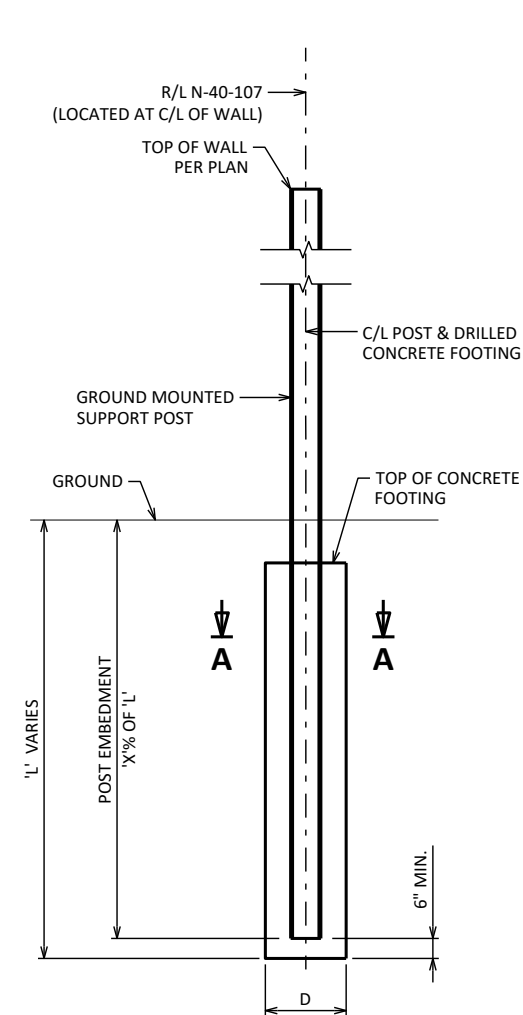
ALL CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IS SUBJECT TO THE QMP REQUIREMENTS FOR CLASS II ANCILLARY CONCRETE. PERFORM QMP TESTING OF CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IN ACCORDANCE WITH SECTION 716 OF THE STANDARD SPECIFICATIONS FOR CLASS II ANCILLARY CONCRETE. QMP TESTING IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107".

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION OF THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

PLACE SELECT CRUSHED MATERIAL IN DRAINAGE DITCH WHERE NOISE BARRIER CROSSES FLOW LINE. SELECT CRUSHED MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISES BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107".

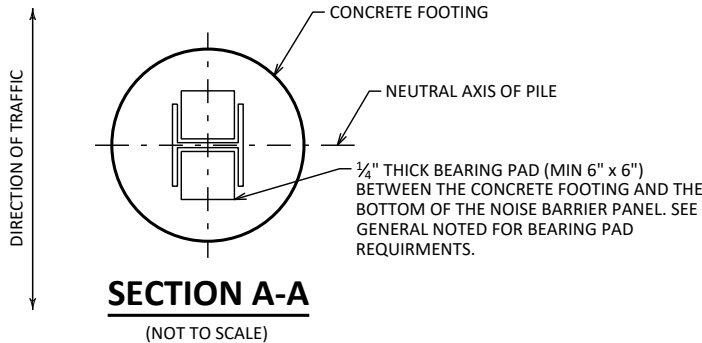
THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY TEMPORARY GRADING DOES NOT IMPACT UTILITIES OR TO COORDINATE WITH AFFECTED UTILITIES TO ACCOMMODATE TEMPORARY GRADING.

INCLUDE THE FOLLOWING ITEMS AND ACTIVITIES IN THE BID PRICE FOR "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107": CONTRACTOR ACCESS TO CONSTRUCT NOISE BARRIER INCLUDING ANY TEMPORARY HAUL ROAD IF REQUIRED; DELIVERING ADDITIONAL GRADING MATERIAL; PLACING AND MAINTAINING TEMPORARY GRADING MATERIALS; PREPARING AND MAINTAINING AREA TO STORE NOISE BARRIER COMPONENTS; REMOVING TEMPORARY GRADING MATERIALS; AND RESTORING GRADE TO APPROXIMATELY MATCH THE EXISTING GRADE AND THE LOCALIZED GRADING NEAR THE NOISE BARRIER AS SHOWN IN THESE PLANS.



SECTION THRU GROUND MOUNTED POST & DRILLED CONCRETE FOOTING

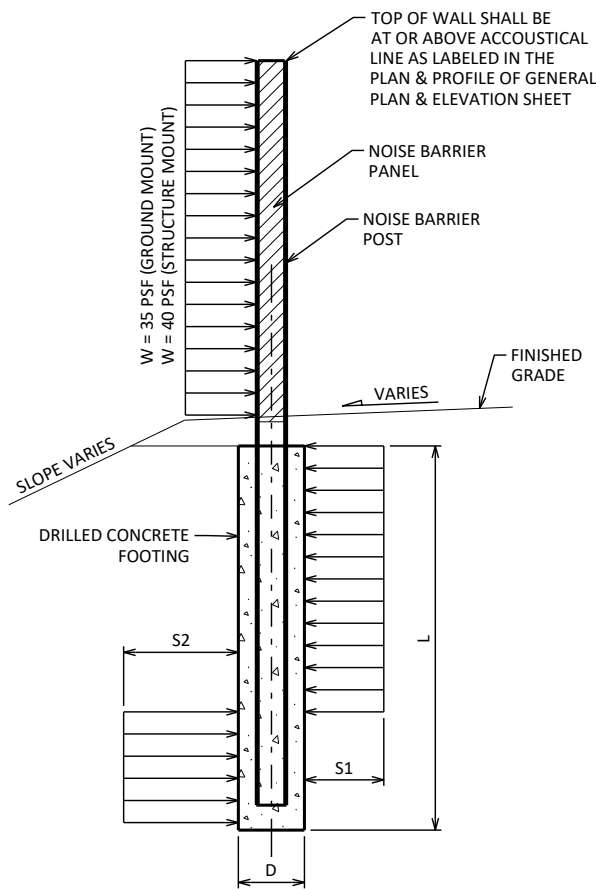
TYPICAL AT EACH POST LOCATION
(NOT TO SCALE)
('D','L' AND 'X' TO BE DETERMINED BY SUPPLIER)



TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
541.0300.S.01	NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-107	SF	31,100

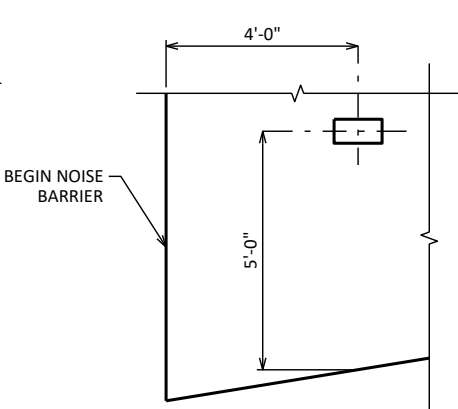
ALL ITEMS ARE CATEGORY 9000



NOISE BARRIER LOADING DIAGRAM

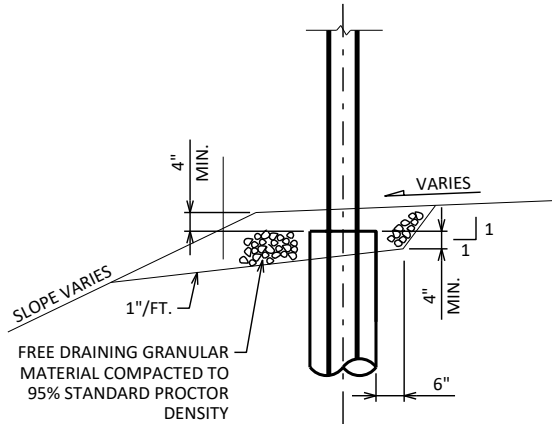
(NOT TO SCALE)

W = DESIGN WIND LOAD
L = NOISE BARRIER FOUNDATION DEPTH BELOW EXISTING GROUND
D = NOISE BARRIER FOUNDATION DIAMETER
S = ALLOWABLE SOIL PRESSURE



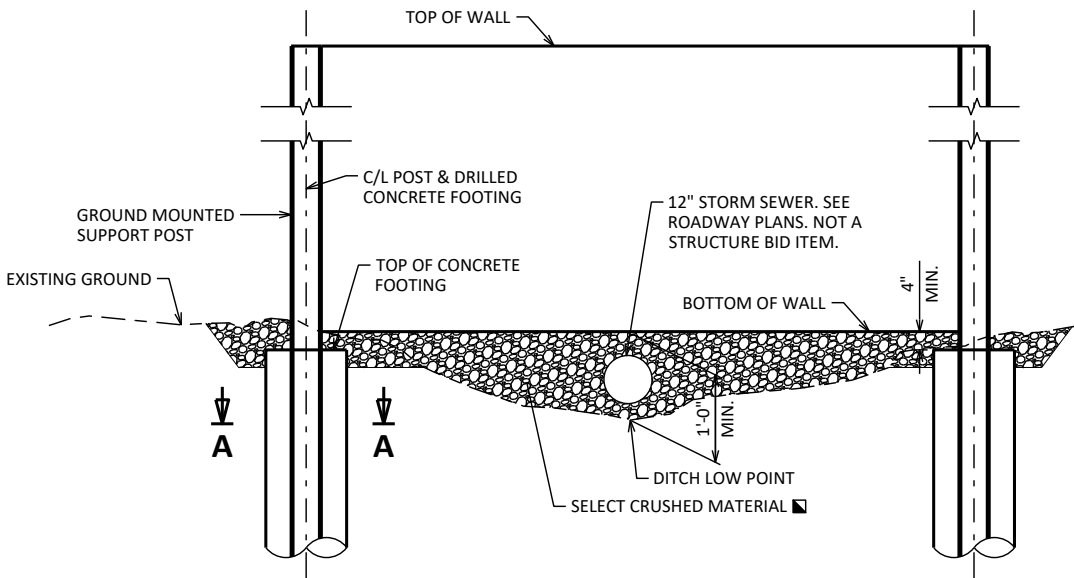
NAME PLATE DETAIL

(NOT TO SCALE)



POST DRAINAGE BACKFILL DETAIL (SLOPED GRADE)

(NOT TO SCALE)

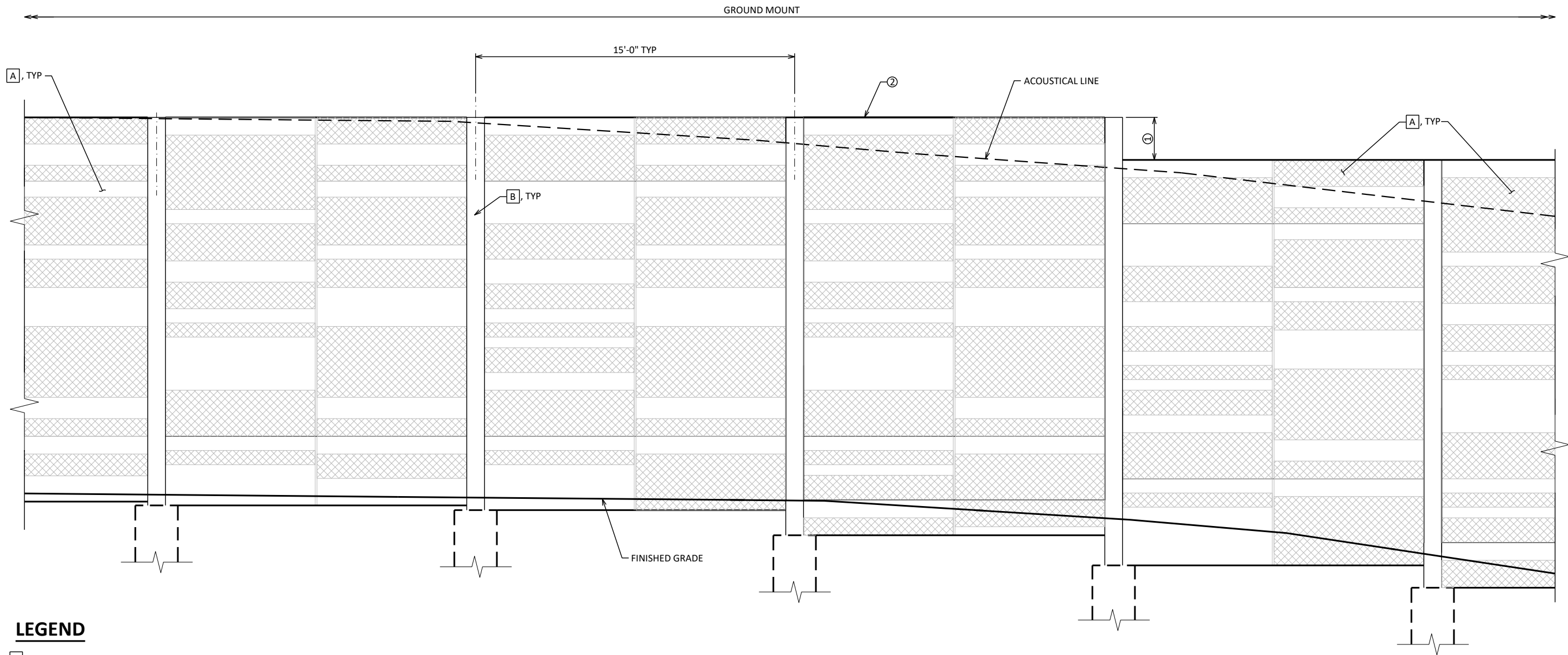


PARTIAL WALL ELEVATION OVER DITCH

APPROXIMATE STA 27+19.00
(NOT TO SCALE)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-107			
DRAWN BY		TMH	PLANS CK'D EKM
QUANTITIES, NOTES & CONSTRUCTION DETAILS			SHEET 5 OF 10 163

SCALE = N/A



LEGEND

- A** BASE COLOR
- B** ACCENT COLOR NO. 1
- ① STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
- ② ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.
- ③ 0.5 X (POST SPA - POST FLANGE WIDTH - 1")
- PANEL THICKNESS + 0"
- PANEL THICKNESS - 3/4" MIN, 1" MAX

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:

BASE COLOR - 33564

ACCENT COLOR NO. 1 - 33448

ELEVATION VIEW - FREEWAY SIDE

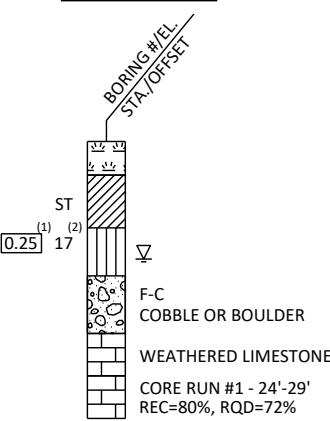
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-107			
		DRAWN BY	PLANS CK'D
		TMH	EKM
AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE		SHEET 7 OF 10 165	

SCALE = N/A

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SP 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

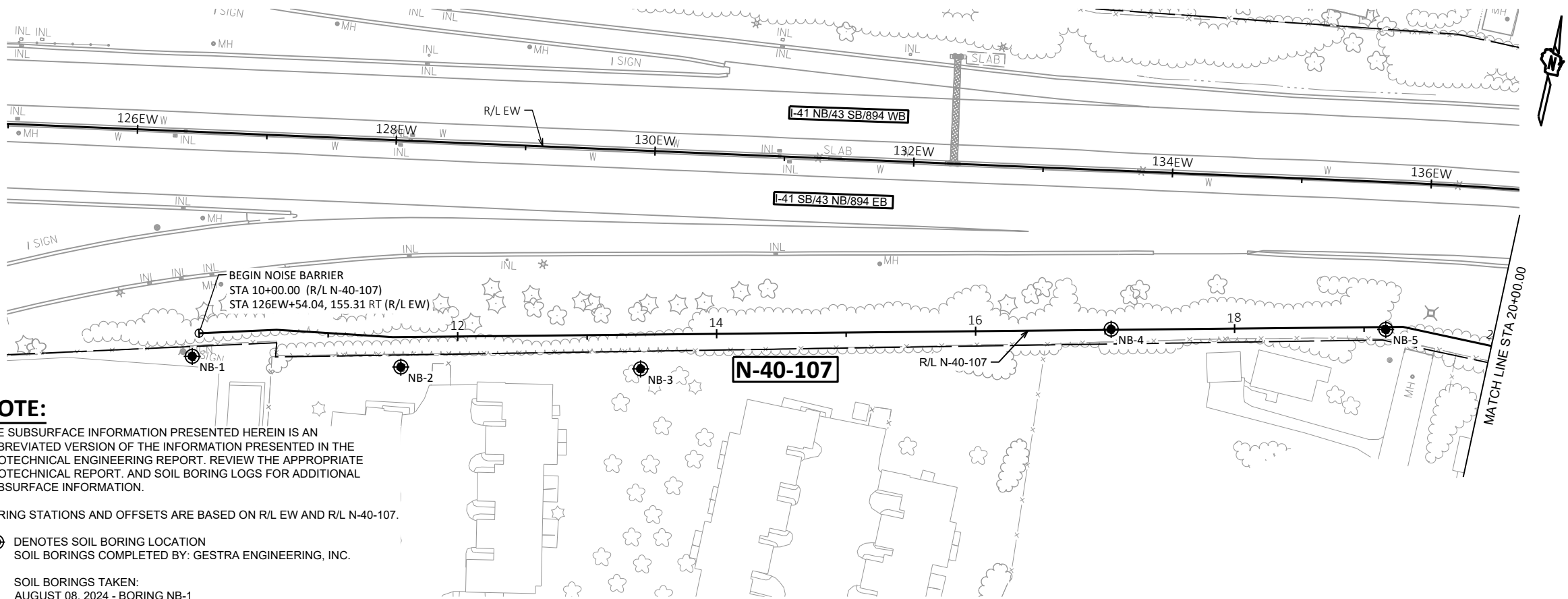
STRUCTURE N-40-107

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE
EXPLORATION
(1 OF 3)

SHEET 8 OF 10
166

SCALE = 1:100



NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT, AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON R/L EW AND R/L N-40-107.

● DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

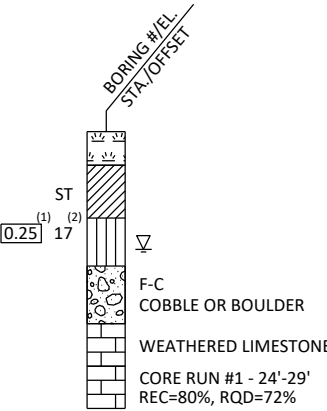
SOIL BORINGS TAKEN:
AUGUST 08, 2024 - BORING NB-1
AUGUST 06, 2024 - BORING NB-2
AUGUST 06, 2024 - BORING NB-3
AUGUST 15, 2024 - BORING NB-4
AUGUST 08, 2024 - BORING NB-5

PLAN AND PROFILE: NOISE BARRIER N-40-107

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING



- (1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
- (2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

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SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

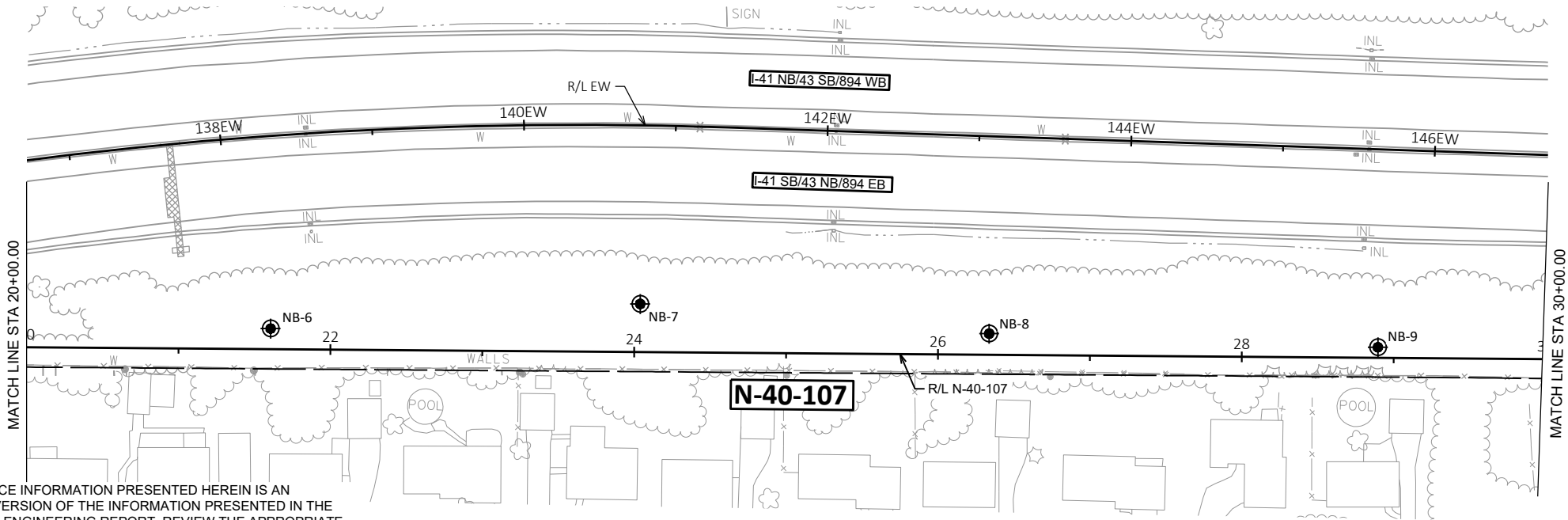
STRUCTURE N-40-107

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE
EXPLORATION
(2 OF 3)

SHEET 9 OF 10
167

SCALE = 1:100



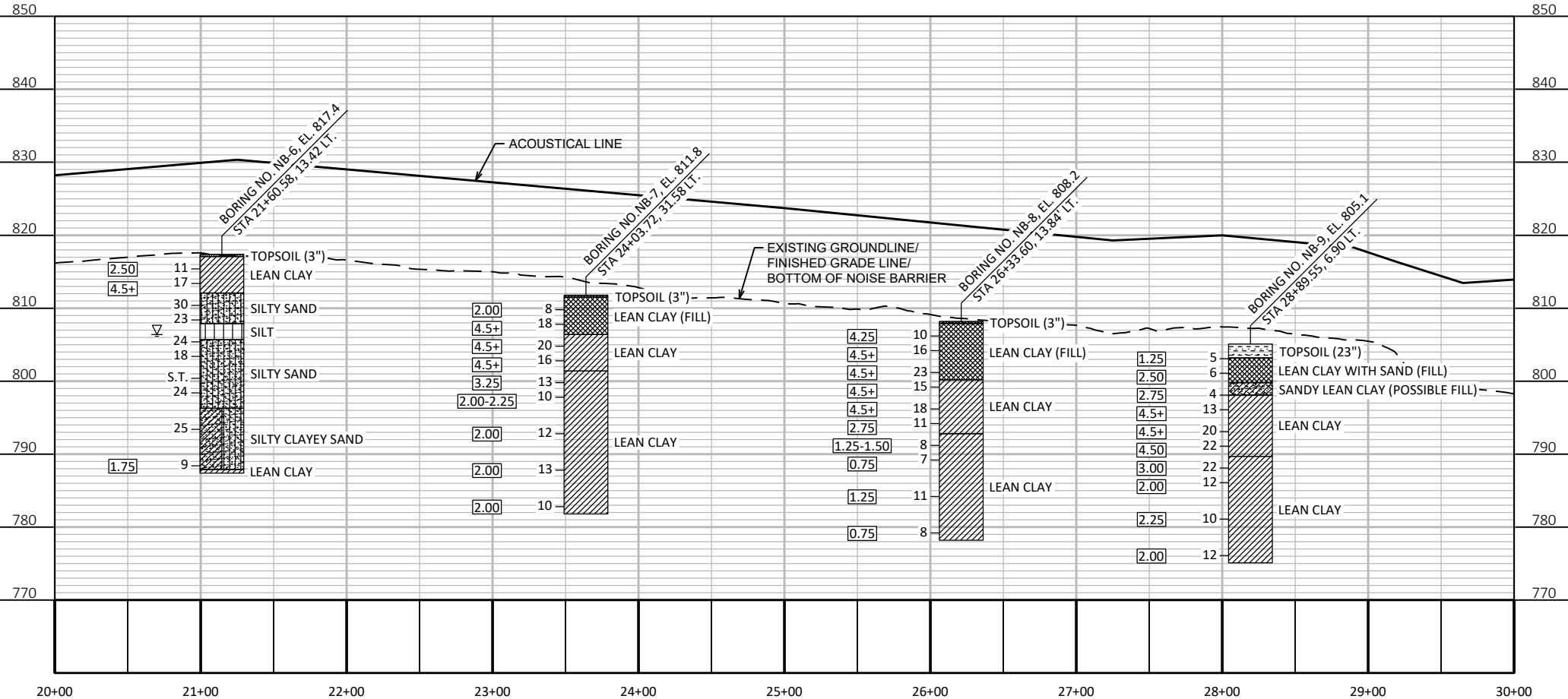
NOTE:

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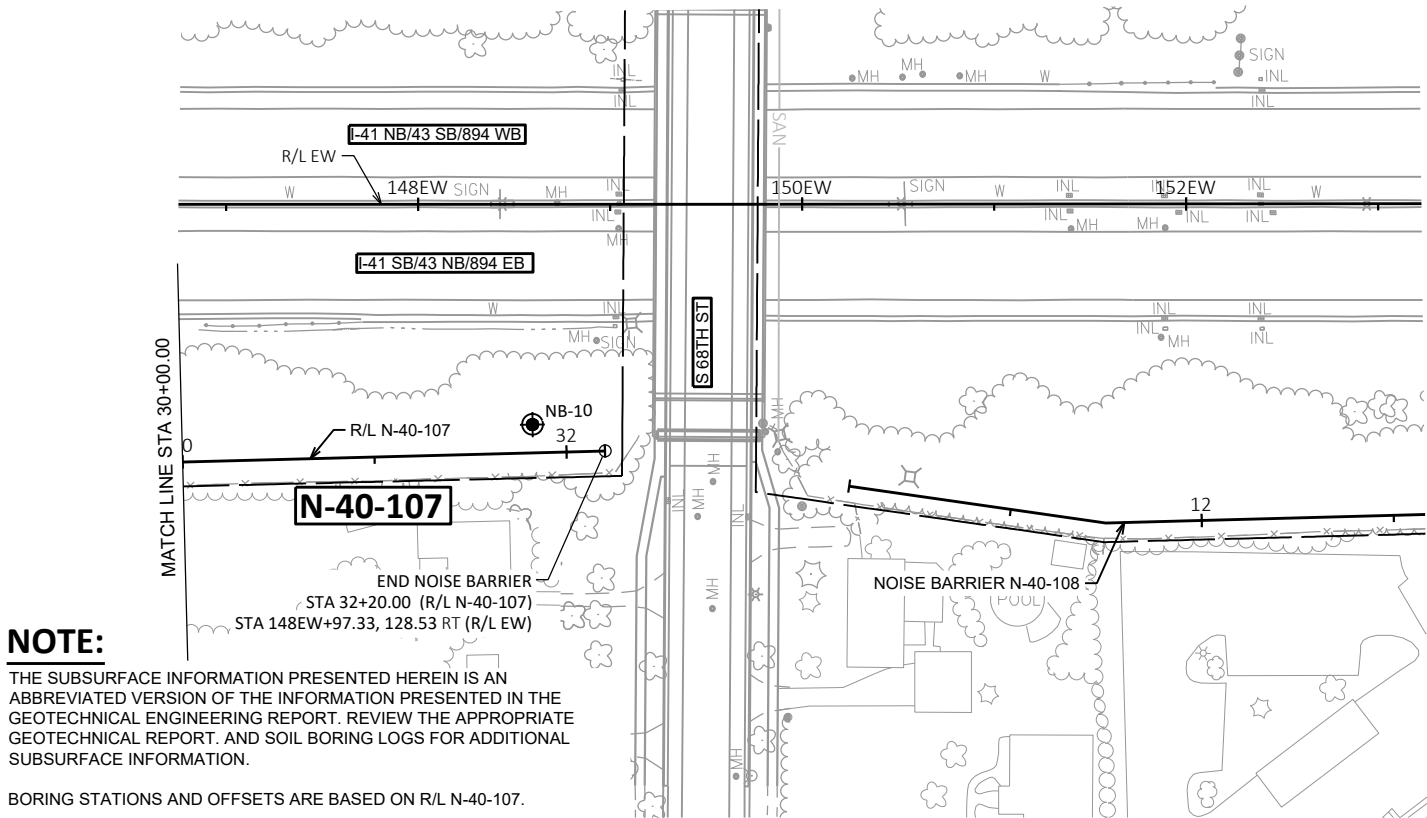
BORING STATIONS AND OFFSETS ARE BASED ON R/L N-40-107.

⊙ DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

SOIL BORINGS TAKEN:
AUGUST 08, 2024 - BORING NB-6
AUGUST 08, 2024 - BORING NB-7
AUGUST 07, 2024 - BORING NB-8
AUGUST 07, 2024 - BORING NB-9



PLAN AND PROFILE: NOISE BARRIER N-40-107

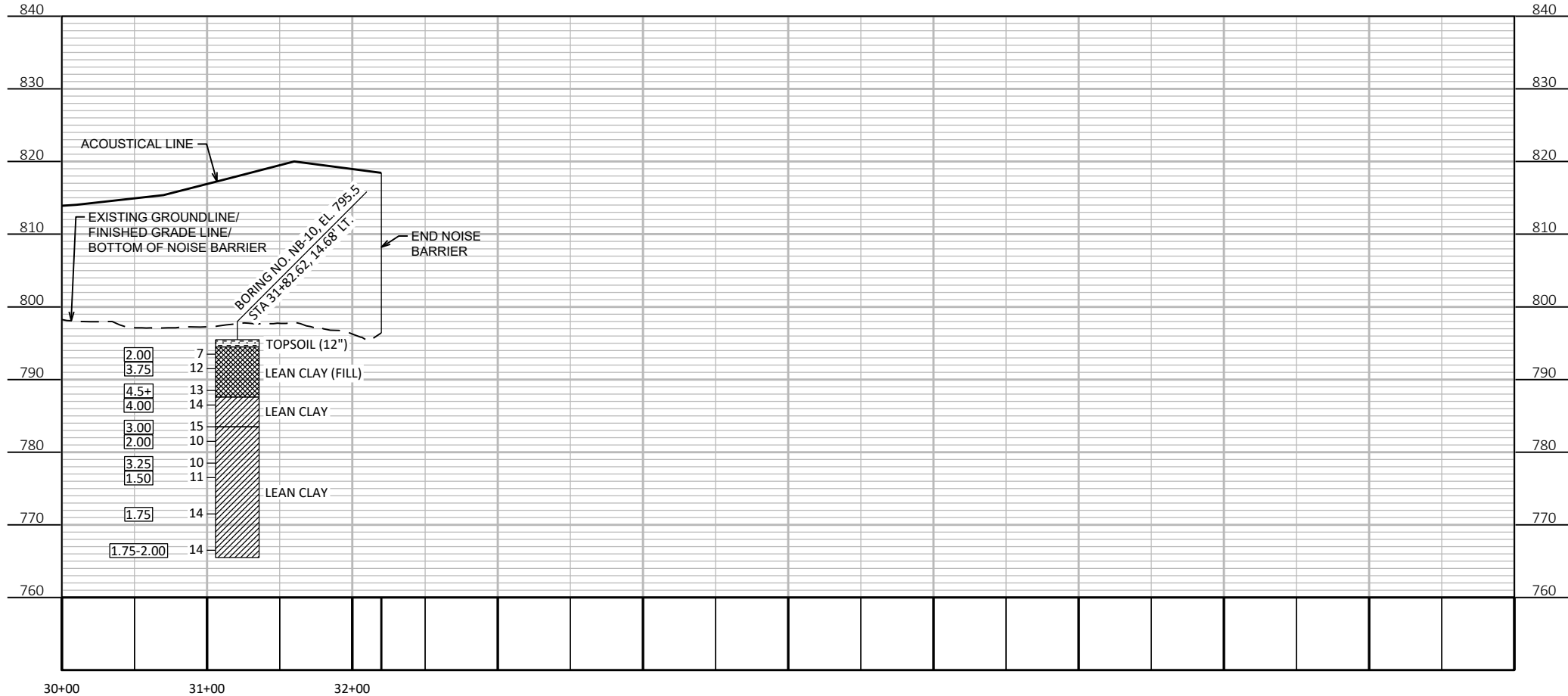


NOTE:
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT. AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON R/L N-40-107.

⊙ DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

SOIL BORINGS TAKEN:
AUGUST 07, 2024 - BORING NB-10



PLAN AND PROFILE: NOISE BARRIER N-40-107

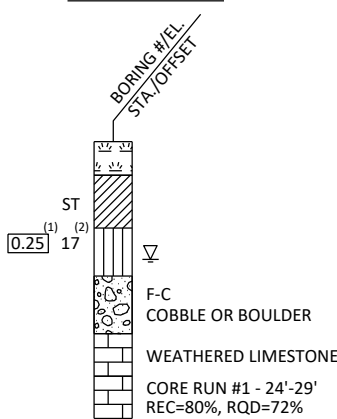
STATE PROJECT NUMBER

1090-03-08

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING



⁽¹⁾ UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

⁽²⁾ UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽	AT TIME OF DRILLING
▼	END OF DRILLING
▼	AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-107

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE
EXPLORATION
(3 OF 3)

SHEET 10 OF 10
168

SCALE = 1:100

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION (1 OF 3)
2. GENERAL PLAN & ELEVATION (2 OF 3)
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10. SUBSURFACE EXPLORATION (3 OF 3)

NOTES

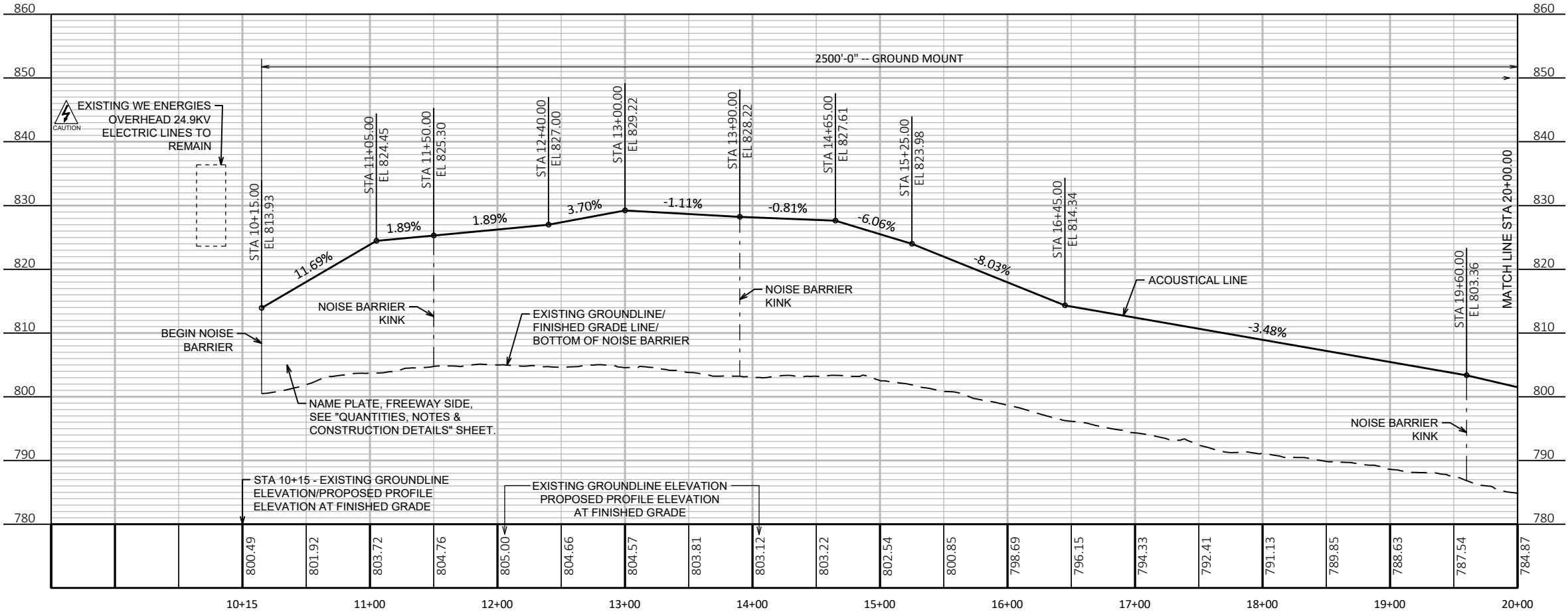
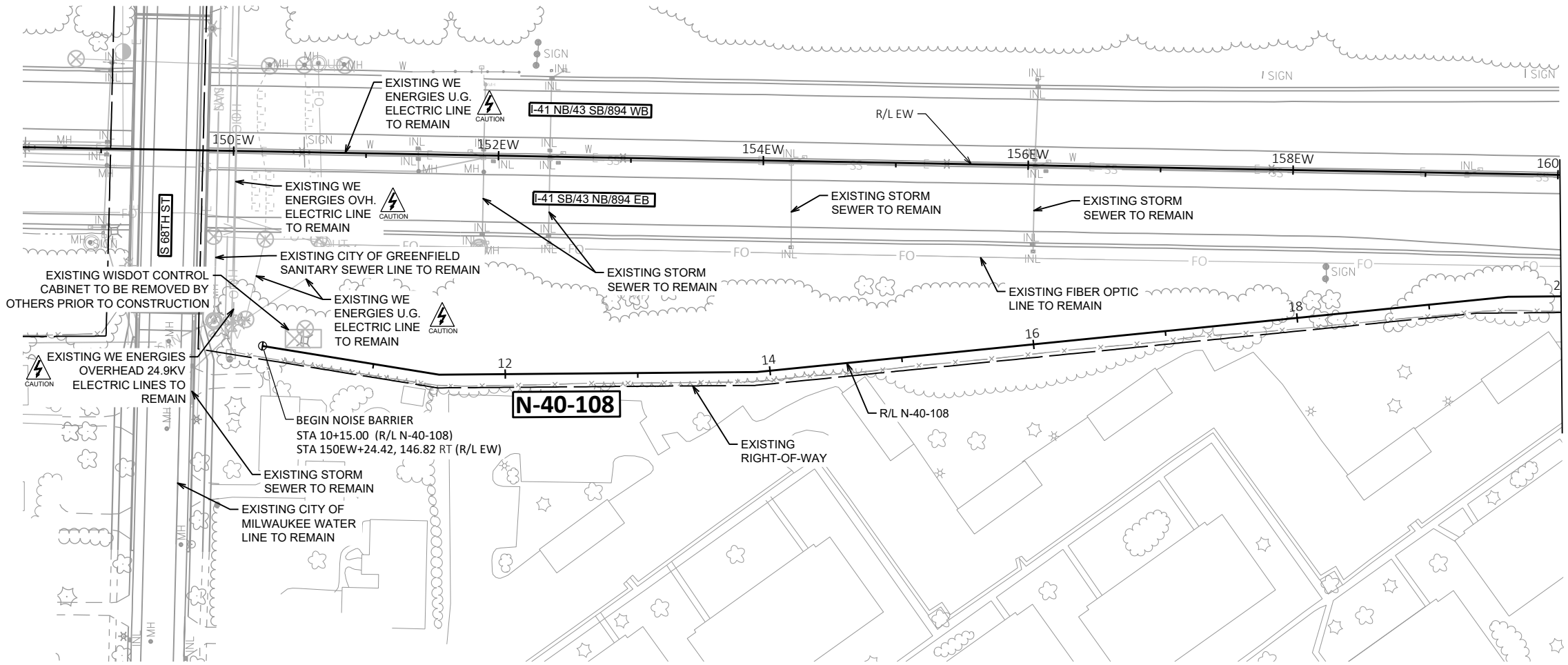
1. CONSTRUCTION OF NOISE BARRIER N-40-108 WILL NEED TO BE ACCOMPLISHED ADJACENT TO ENERGIZED OVERHEAD ELECTRIC DISTRIBUTION LINES OWNED AND OPERATED BY WE ENERGIES. THE HORIZONTAL AND VERTICAL LOCATION OF THESE LINES CAN VARY WITH WIND, AMBIENT TEMPERATURE AND POWER LOADING.
2. SEE "ALIGNMENT PLAN" SHEET FOR GEOMETRY INFORMATION.
3. LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 3.5' ABOVE THE BOTTOM OF NOISE BARRIER.



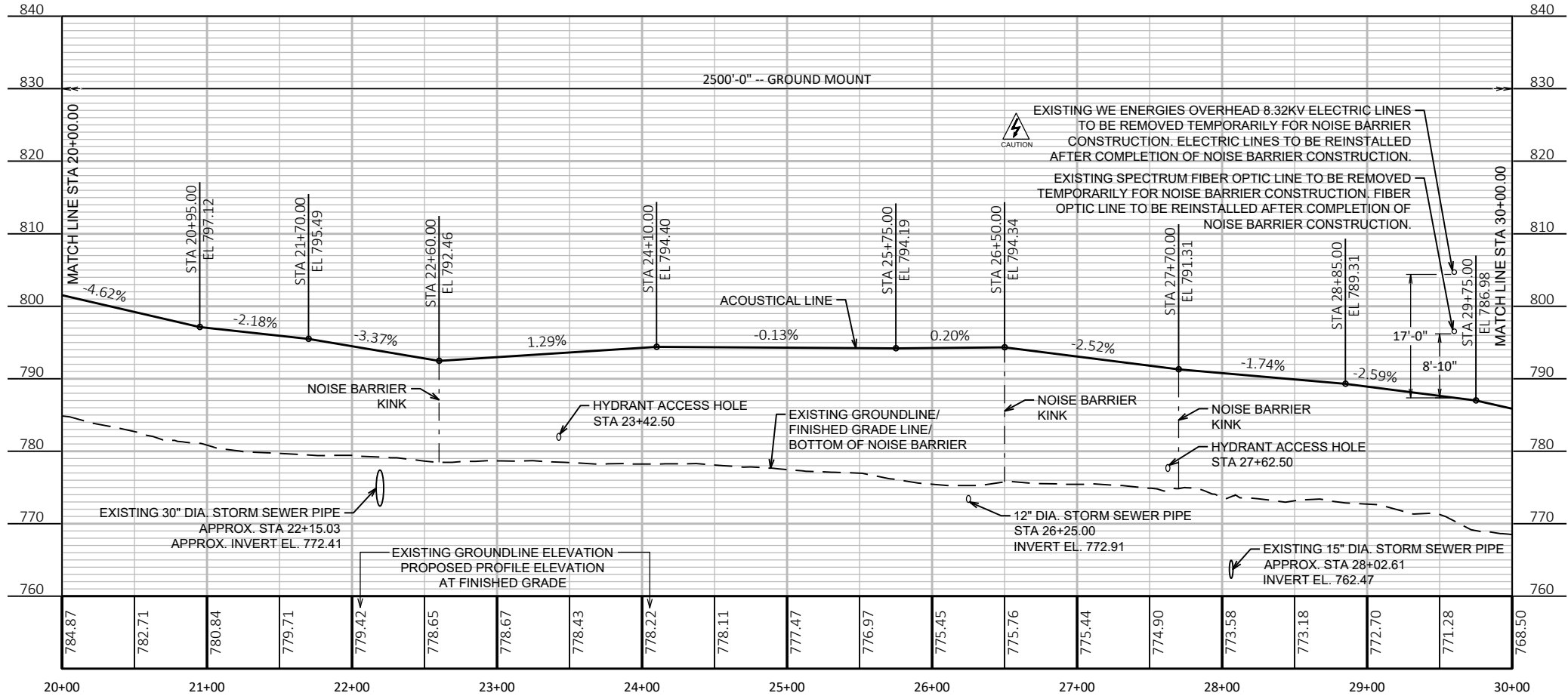
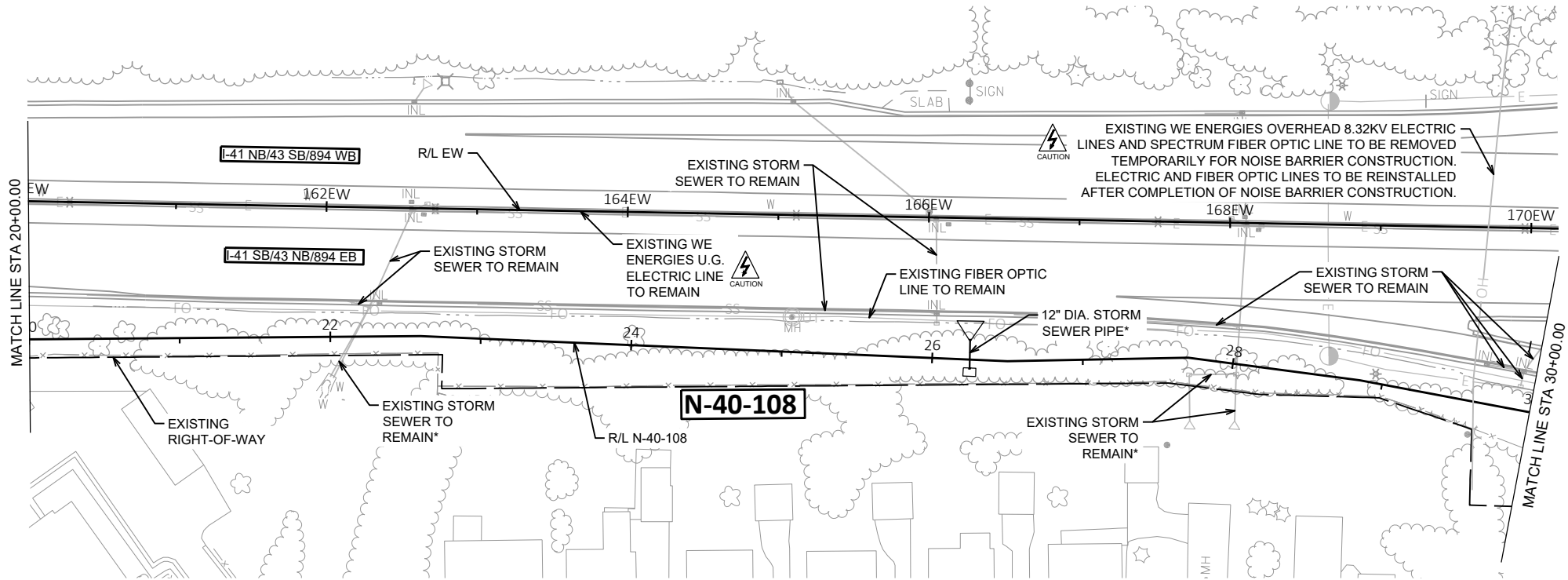
STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK: (608) 261-0261
CONSULTANT:
ED McCRIGHT: (414) 272-2426

NO.	DATE	REVISION	BY
Jacobs			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	<i>[Signature]</i>	SDR	02/03/25
CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE N-40-108			
NOISE BARRIER ALONG IH-41 SB			
COUNTY	MILWAUKEE	TOWN/CITY/VILLAGE	GREENFIELD
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	TMH	DESIGNED CK'D	EKM
DRAWN BY	TMH	PLANS CK'D	EKM
GENERAL PLAN AND ELEVATION (1 OF 3)			SHEET 1 OF 10 169



PLAN AND PROFILE: NOISE BARRIER N-40-108

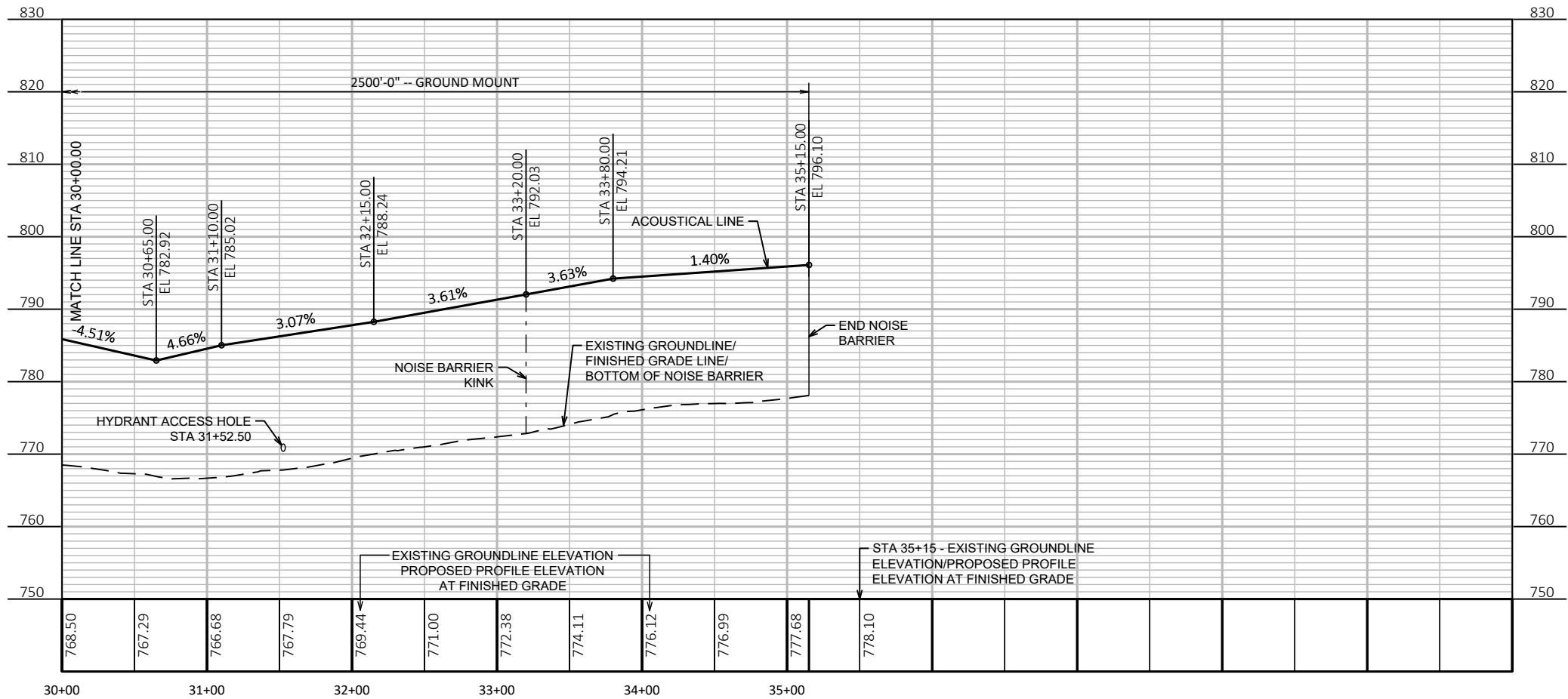
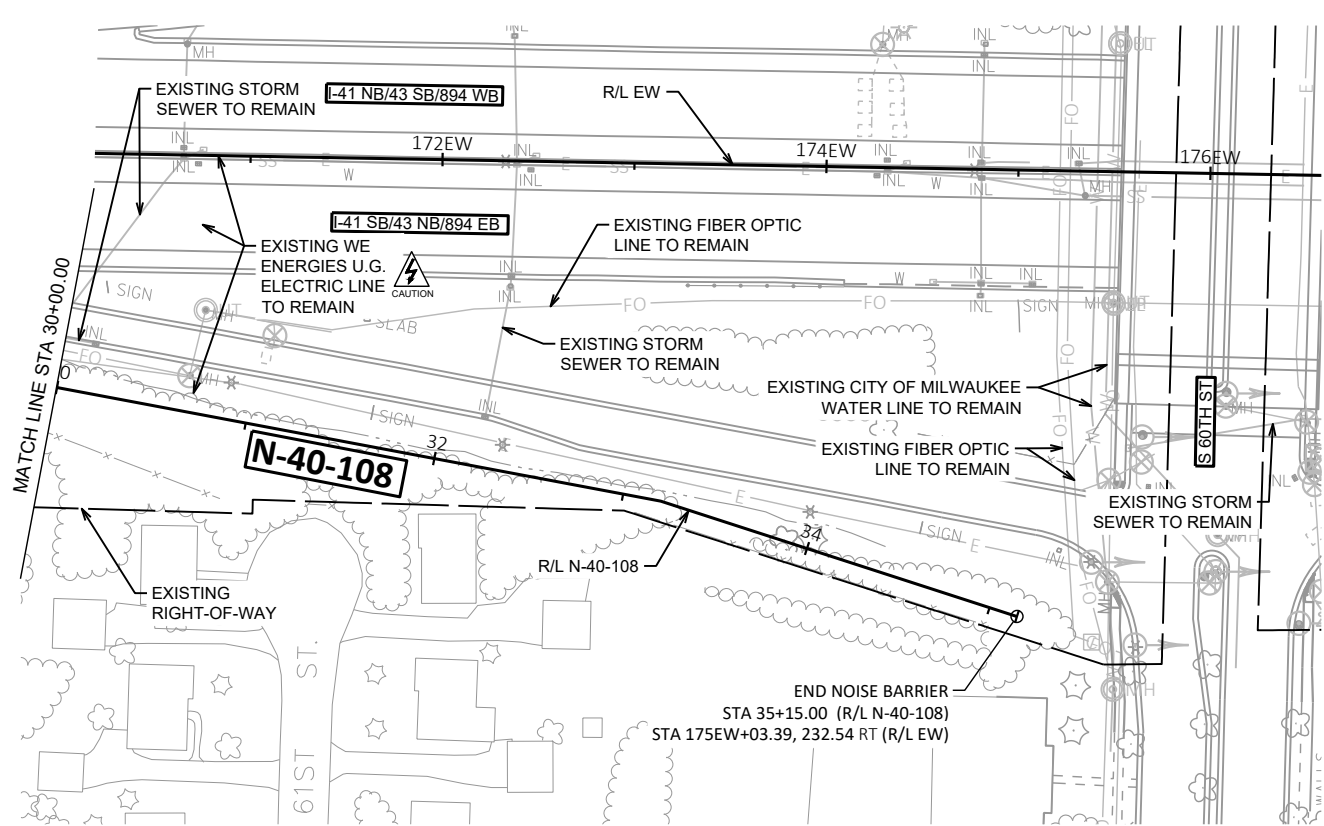


PLAN AND PROFILE: NOISE BARRIER N-40-108

LEGEND

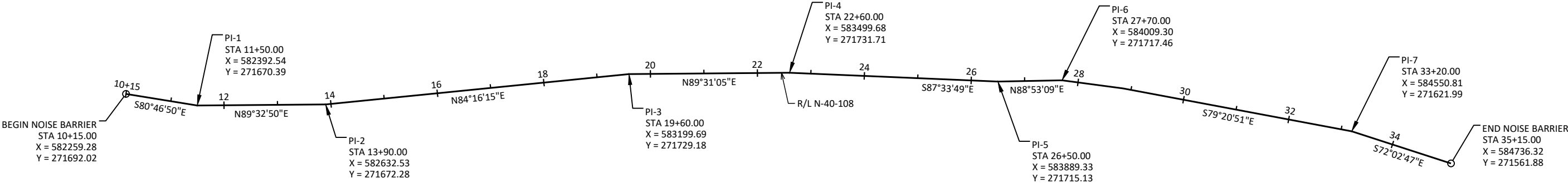
* THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF THE EXISTING STORM AND SANITARY SEWER PIPES. THE PROPOSED NOISE BARRIER POSTS AND FOUNDATIONS SHALL BE SPACED TO AVOID THE EXISTING STORM AND SANITARY PIPES AND PROPOSED STORM SEWER PIPES.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-108			
DRAWN BY		TMH	PLANS CK'D EKM
GENERAL PLAN AND ELEVATION (2 OF 3)		SHEET 2 OF 10 170	



PLAN AND PROFILE: NOISE BARRIER N-40-108

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-108			
DRAWN BY		TMH	PLANS CK'D EKM
GENERAL PLAN AND ELEVATION (3 OF 3)		SHEET 3 OF 10 171	



ALIGNMENT PLAN

8

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-108			
DRAWN BY		TMH	PLANS CK'D EKM
ALIGNMENT PLAN		SHEET 4 OF 10 172	

SCALE = 1" = 200'

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE NOISE BARRIER IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE NOISE BARRIER MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108".

PLANS, ELEVATIONS AND DETAILS SHOWN ARE INTENDED TO INDICATE LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE NOISE BARRIER IS TO BE DESIGNED USING THE FINISHED GRADE LINE AND THE ACOUSTICAL LINE SHOWN ON THE GENERAL PLAN AND ELEVATION SHEETS.

THE ACOUSTICAL LINE IS THE TOP PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108". NOISE BARRIER PLACED ABOVE THE ACOUSTICAL LINE WILL NOT BE MEASURED FOR PAYMENT.

THE FINISHED GRADE LINE IS THE BOTTOM PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108". NOISE BARRIER PLACED BELOW THE FINISHED GRADE LINE WILL NOT BE MEASURED FOR PAYMENT.

ALL NOISE BARRIERS SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT "GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS", PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).

THE FOLLOWING DESIGN PRESSURES SHALL BE USED IN ACCORDANCE WITH THE SPECIAL PROVISIONS:

- 35 P.S.F. FOR GROUND MOUNTED BARRIERS
- 40 P.S.F. FOR STRUCTURE MOUNTED BARRIERS

REINFORCING STEEL IN THE CONCRETE CORE OF THE NOISE BARRIER PANELS SHALL HAVE A MINIMUM CLEARANCE OF 1 INCH. THE CONCRETE CORE SHALL BE DESIGNED TO RESIST THE LOADS WITHOUT CONSIDERING ANY COMPOSITE ACTION FROM OTHER MATERIAL IN THE PANEL.

BOTTOM NOISE BARRIER PANELS SHALL BE DESIGNED TO SUPPORT THE DEAD LOAD (WEIGHT) OF THE PANELS DIRECTLY ABOVE IT AND ITS OWN DEAD LOAD. THE DEAD LOAD SHALL BE DISTRIBUTED UNIFORMLY ASSUMING SIMPLE BEAM ACTION WITH SUPPORTS AT THE POSTS. BOTTOM PANELS SHALL HAVE A MINIMUM AMOUNT OF PERIMETER REINFORCEMENT OF A #4 BAR WHICH SHALL BE CONTINUOUS AROUND THE CORNERS.

A COMPRESSIBLE BEARING PAD OF 1/4" THICK SHALL BE PROVIDED BETWEEN THE FOUNDATION AND THE BOTTOM PANELS. THE BEARING PADS SHALL BE PREFORMED EPDM RUBBER CONFORMING TO ASTM D-2000, GRADE 2, TYPE A, CLASS A WITH A MINIMUM DUROMETER HARDNESS OF 80. BEARING PADS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERSS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108".

PRECAST CONCRETE PEDESTALS PLACED BETWEEN THE FOUNDATION AND BOTTOM PANELS SHALL BE REINFORCED IF OVER 1'-0" HIGH.

INCLUDE THE COST OF THE STONE PATTERN SURFACE TREATMENT, REVEALS, COATING OF STEEL POSTS AND CONNECTIONS, AND COLORING/STAINING THE PANELS, UNDER THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108".

LOCATE HYDRANT ACCESS HOLES IN NOISE BARRIERS WITH COVER SIGNS AT LOCATIONS SHOWN ON THE GENERAL PLAN & ELEVATION SHEETS. PROVIDING HYDRANT ACCESS HOLES IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108".

INSTALL FREE DRAINING GRANULAR MATERIAL AT THE BOTTOM OF NOISE BARRIERS AS SHOWN IN THE NOISE BARRIER PLANS. FREE DRAINING GRANULAR MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108".

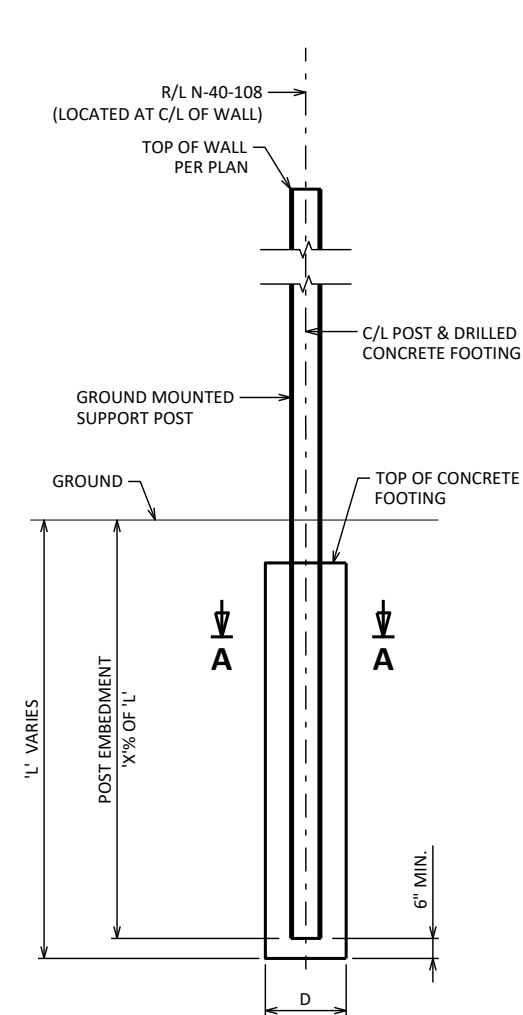
ALL CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IS SUBJECT TO THE QMP REQUIREMENTS FOR CLASS II ANCILLARY CONCRETE. PERFORM QMP TESTING OF CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IN ACCORDANCE WITH SECTION 716 OF THE STANDARD SPECIFICATIONS FOR CLASS II ANCILLARY CONCRETE. QMP TESTING IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108".

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION OF THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

PLACE SELECT CRUSHED MATERIAL IN DRAINAGE DITCH WHERE NOISE BARRIER CROSSES FLOW LINE. SELECT CRUSHED MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISES BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108".

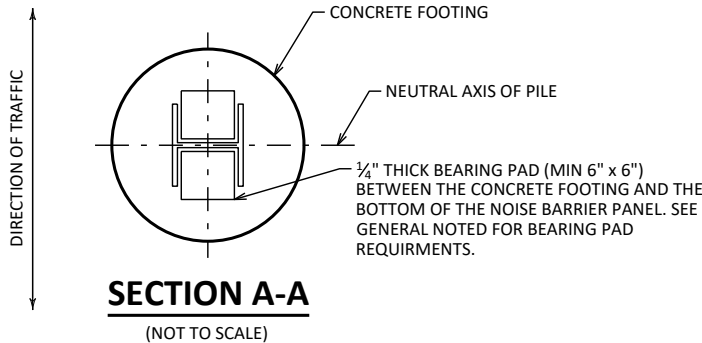
THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY TEMPORARY GRADING DOES NOT IMPACT UTILITIES OR TO COORDINATE WITH AFFECTED UTILITIES TO ACCOMMODATE TEMPORARY GRADING.

INCLUDE THE FOLLOWING ITEMS AND ACTIVITIES IN THE BID PRICE FOR "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108": CONTRACTOR ACCESS TO CONSTRUCT NOISE BARRIER INCLUDING ANY TEMPORARY HAUL ROAD IF REQUIRED; DELIVERING ADDITIONAL GRADING MATERIAL; PLACING AND MAINTAINING TEMPORARY GRADING MATERIALS; PREPARING AND MAINTAINING AREA TO STORE NOISE BARRIER COMPONENTS; REMOVING TEMPORARY GRADING MATERIALS; AND RESTORING GRADE TO APPROXIMATELY MATCH THE EXISTING GRADE AND THE LOCALIZED GRADING NEAR THE NOISE BARRIER AS SHOWN IN THESE PLANS.



SECTION THRU GROUND MOUNTED POST & DRILLED CONCRETE FOOTING

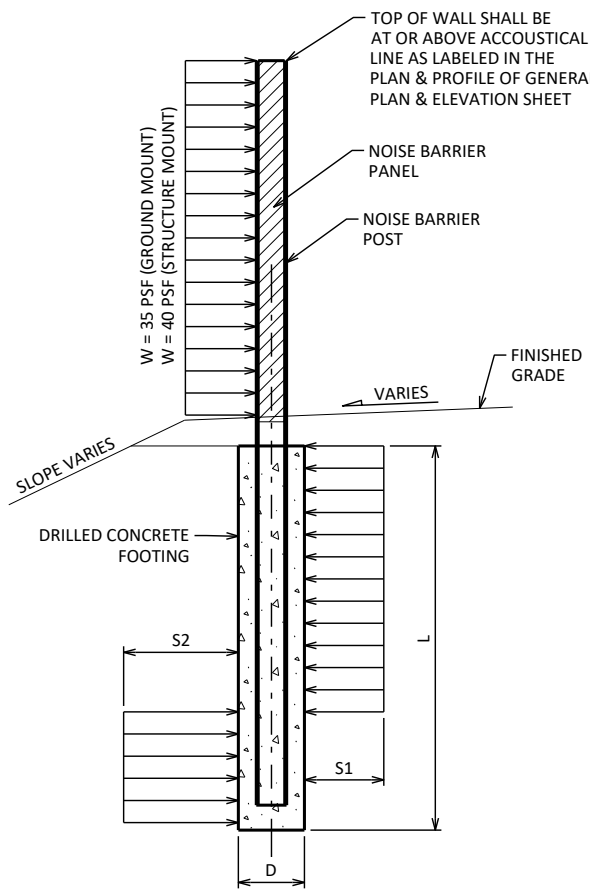
TYPICAL AT EACH POST LOCATION
(NOT TO SCALE)
('D','L' AND 'X' TO BE DETERMINED BY SUPPLIER)



TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
541.0300.S.02	NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-108	SF	45,660

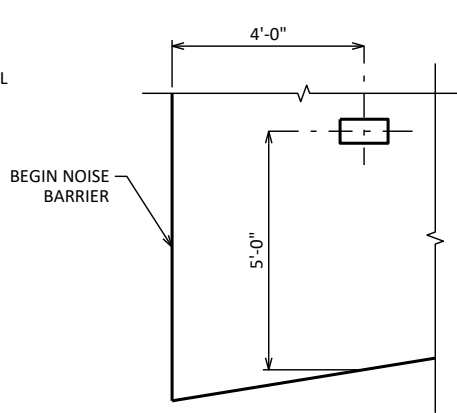
ALL ITEMS ARE CATEGORY 9010



NOISE BARRIER LOADING DIAGRAM

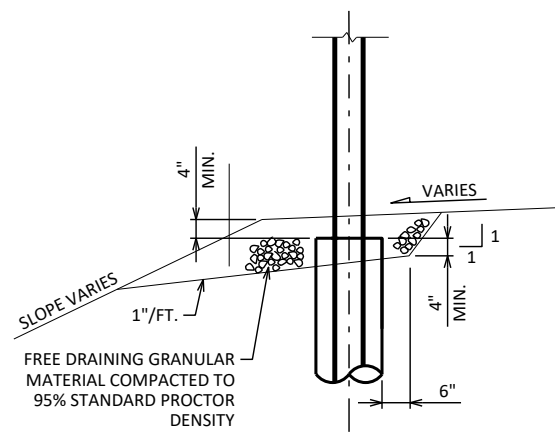
(NOT TO SCALE)

W = DESIGN WIND LOAD
L = NOISE BARRIER FOUNDATION DEPTH
BELOW EXISTING GROUND
D = NOISE BARRIER FOUNDATION DIAMETER
S = ALLOWABLE SOIL PRESSURE



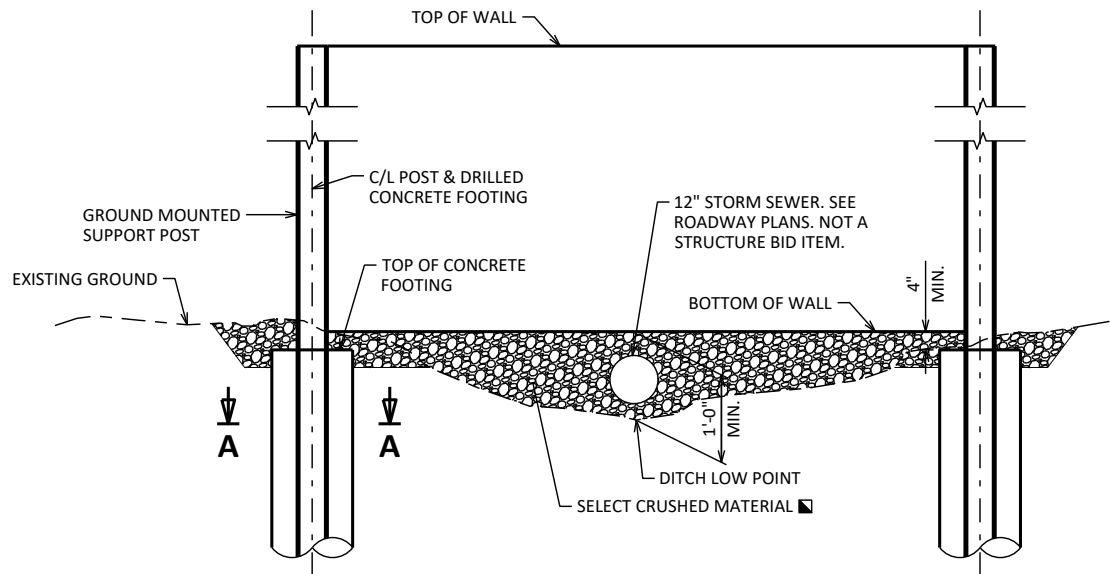
NAME PLATE DETAIL

(NOT TO SCALE)



POST DRAINAGE BACKFILL DETAIL (SLOPED GRADE)

(NOT TO SCALE)

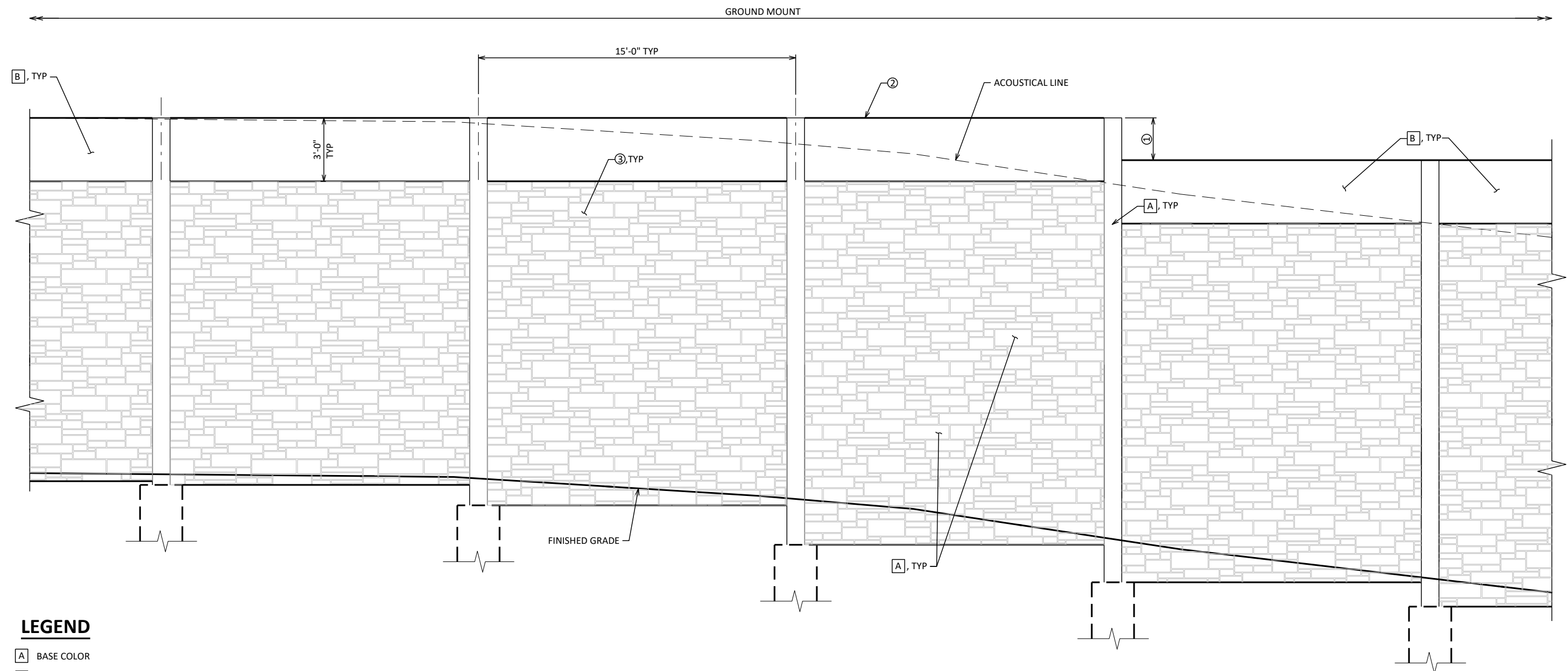


PARTIAL WALL ELEVATION OVER DITCH

APPROXIMATE STA 26+25.00
(NOT TO SCALE)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-108			
DRAWN BY		TMH	PLANS CK'D EKM
QUANTITIES, NOTES & CONSTRUCTION DETAILS			SHEET 5 OF 10 173

SCALE = N/A



LEGEND

- A** BASE COLOR
- B** ACCENT COLOR NO. 1
- ①** STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
- ②** ADJUST VERTICAL ALIGNMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.
- ③** THE RESIDENTIAL SIDE WALL PATTERN SHALL BE A "RANDOM SPLIT EDGE ASHLAR" PATTERN. THE PATTERN SHALL CONSIST OF RANDOM SIZED PIECES RANGING FROM A MINIMUM OF 1 ½ " HIGH BY 4" LONG TO A MAXIMUM OF 10" HIGH BY 31" LONG WITH A MAXIMUM RELIEF 1 ½ ".

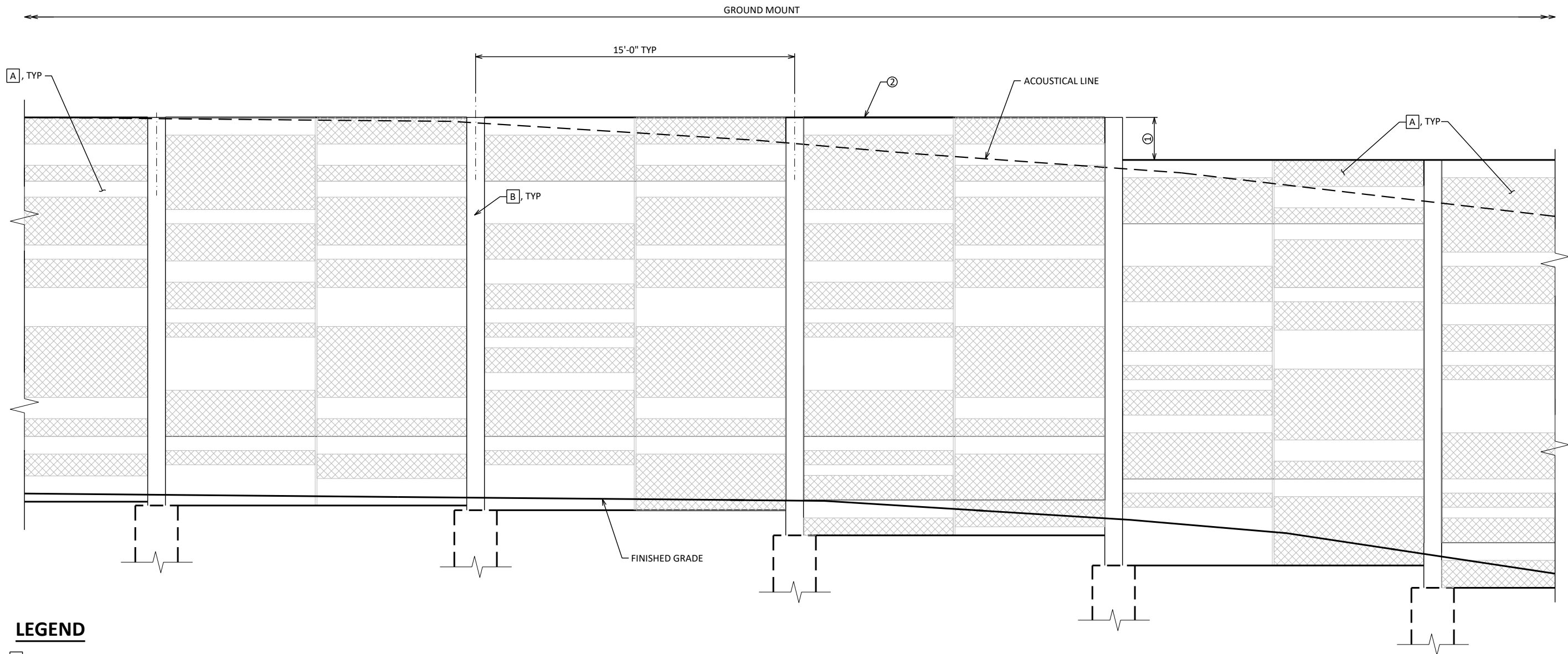
STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:
BASE COLOR - 33564
ACCENT COLOR NO. 1 - 33448

ELEVATION VIEW - RESIDENTIAL SIDE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-108			
DRAWN BY		TMH	PLANS CK'D EKM
AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE		SHEET 6 OF 10	
		— 174 —	

SCALE = N/A



LEGEND

- A** BASE COLOR
- B** ACCENT COLOR NO. 1
- ① STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
- ② ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.
- ③ 0.5 X (POST SPA - POST FLANGE WIDTH - 1")
- PANEL THICKNESS + 0"
- PANEL THICKNESS - 3/4" MIN, 1" MAX

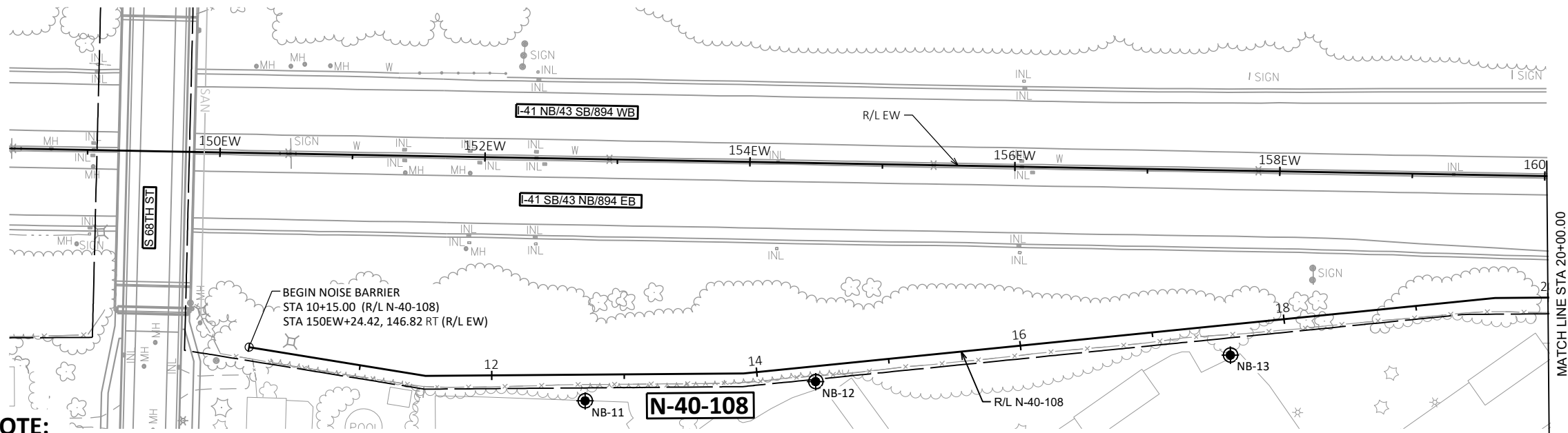
STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:
BASE COLOR - 33564
ACCENT COLOR NO. 1 - 33448

ELEVATION VIEW - FREEWAY SIDE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-108			
DRAWN BY		TMH	PLANS CK'D EKM
AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE		SHEET 7 OF 10 175	

SCALE = N/A



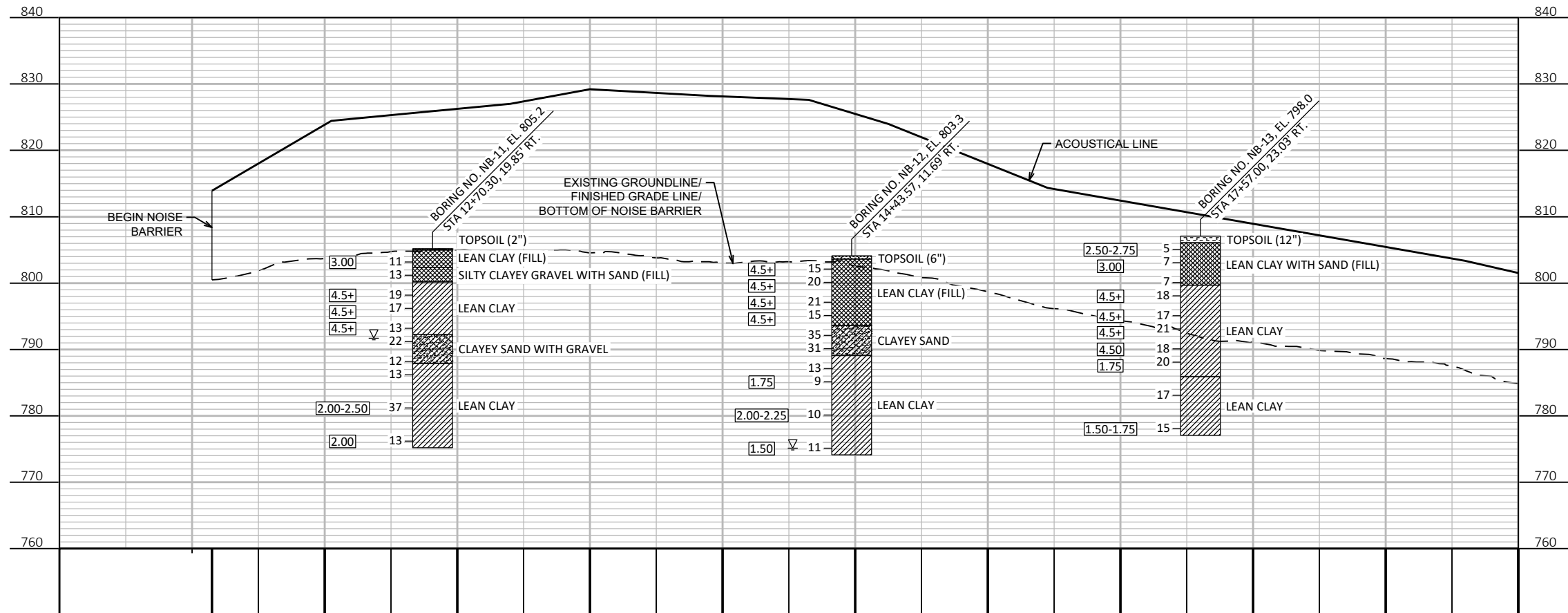
NOTE:

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT. AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON R/L N-40-108.

⊙ DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

SOIL BORINGS TAKEN:
AUGUST 12, 2024 - BORING NB-11
AUGUST 09, 2024 - BORING NB-12
AUGUST 09, 2024 - BORING NB-13



PLAN AND PROFILE: NOISE BARRIER N-40-108

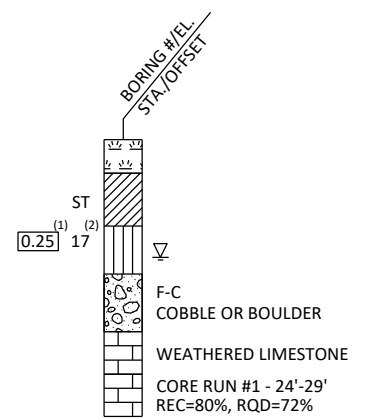
STATE PROJECT NUMBER

1090-03-08

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-108

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE EXPLORATION
(1 OF 3)

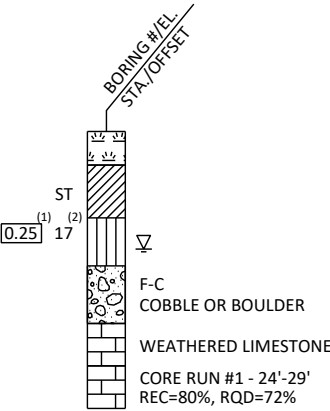
SHEET 8 OF 10
176

SCALE = 1:100

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

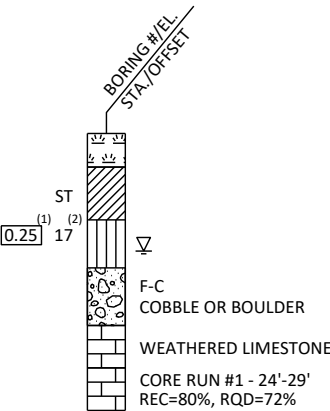
LEGEND OF BORING



MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING



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GROUND WATER ELEVATION

	AT TIME OF DRILLING
	END OF DRILLING
	AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
-----	------	----------	----

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-108

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE
EXPLORATION
(3 OF 3)

SHEET 10 OF 10
178

SCALE = 1:100

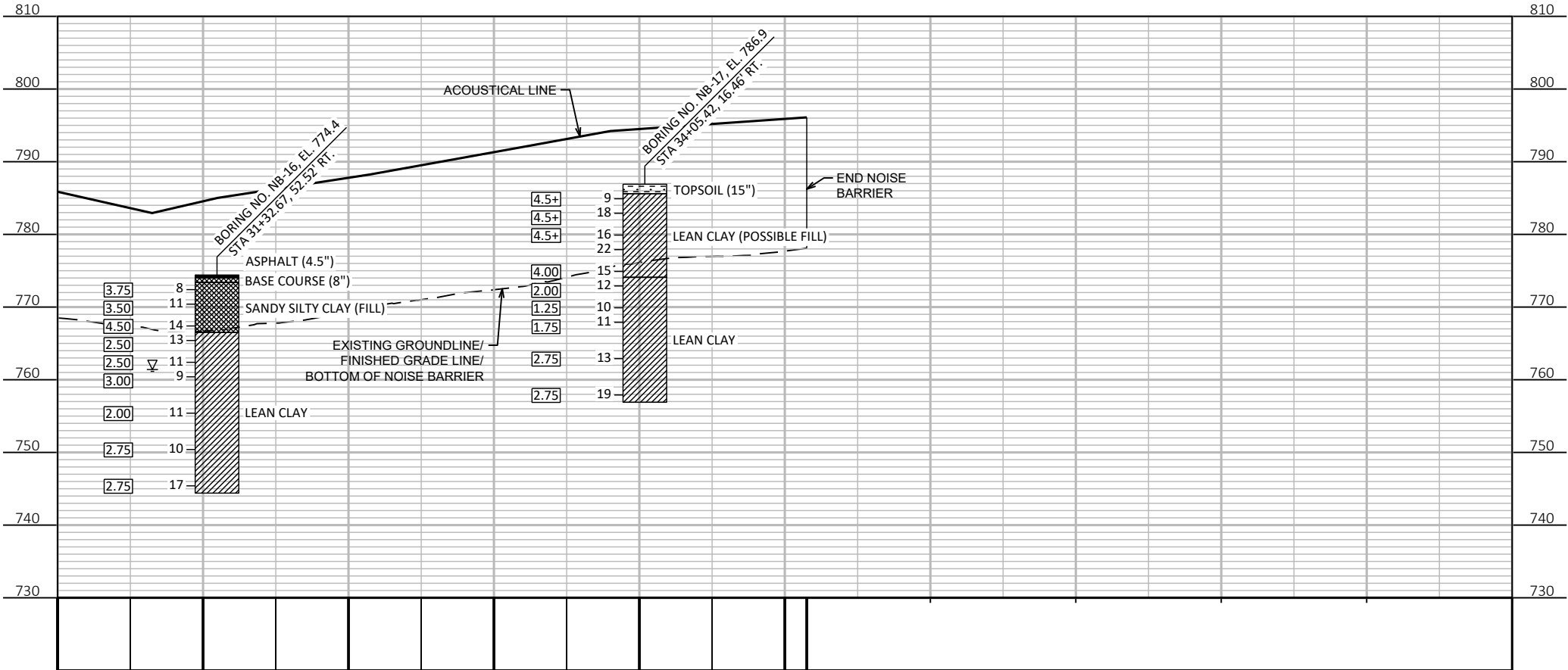
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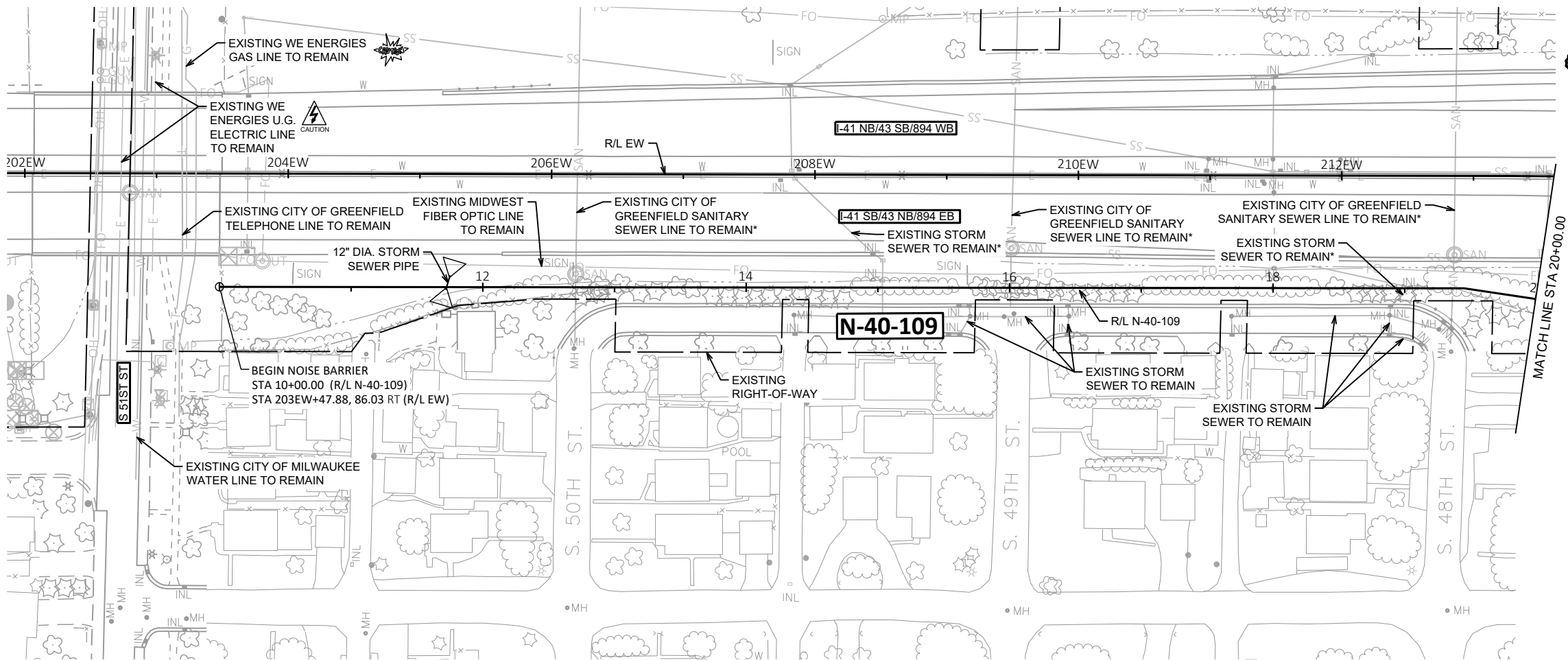
BORING STATIONS AND OFFSETS ARE BASED ON R/L N-40-108.

⊙ DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

SOIL BORINGS TAKEN:
AUGUST 13, 2024 - BORING NB-16
AUGUST 13, 2024 - BORING NB-17



PLAN AND PROFILE: NOISE BARRIER N-40-108



LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION (1 OF 3)
2. GENERAL PLAN & ELEVATION (2 OF 3)
3. GENERAL PLAN & ELEVATION (3 OF 3)
4. ALIGNMENT PLAN
5. QUANTITIES, NOTES & CONSTRUCTION DETAILS
6. AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE
7. AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE
8. SUBSURFACE EXPLORATION (1 OF 3)
9. SUBSURFACE EXPLORATION (2 OF 3)
10. SUBSURFACE EXPLORATION (3 OF 3)

NOTES

1. SEE "ALIGNMENT PLAN" SHEET FOR GEOMETRY INFORMATION.
2. LOCATE THE BOTTOM OF THE HYDRANT ACCESS HOLES 3.5' ABOVE THE BOTTOM OF NOISE BARRIER.

LEGEND

- * THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF THE EXISTING STORM AND SANITARY SEWER PIPES. THE PROPOSED NOISE BARRIER POSTS AND FOUNDATIONS SHALL BE SPACED TO AVOID THE EXISTING STORM AND SANITARY PIPES AND PROPOSED STORM SEWER PIPES.



STRUCTURES DESIGN CONTACTS

BRIDGE OFFICE:
AARON BONK: (608) 261-0261
CONSULTANT:
ED McCRIGHT: (414) 272-2426

NO.	DATE	REVISION	BY

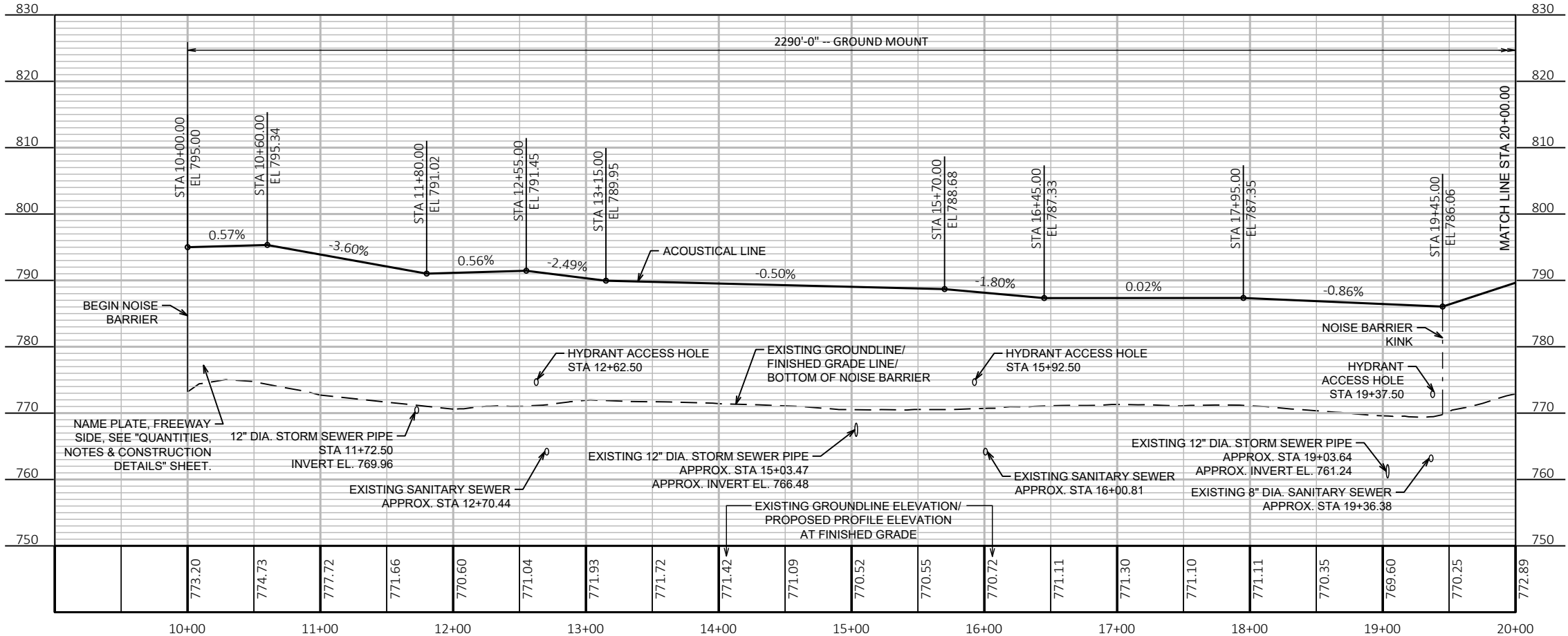
Jacobs

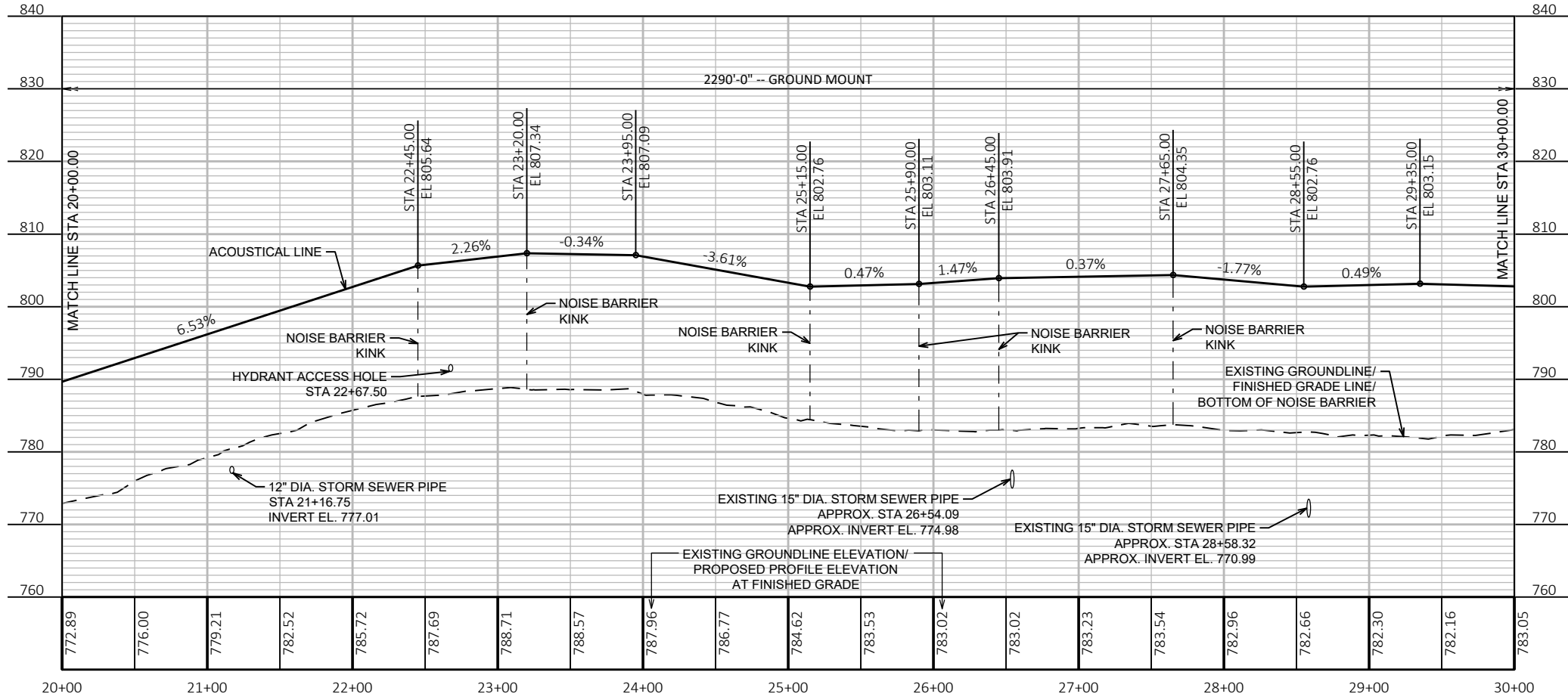
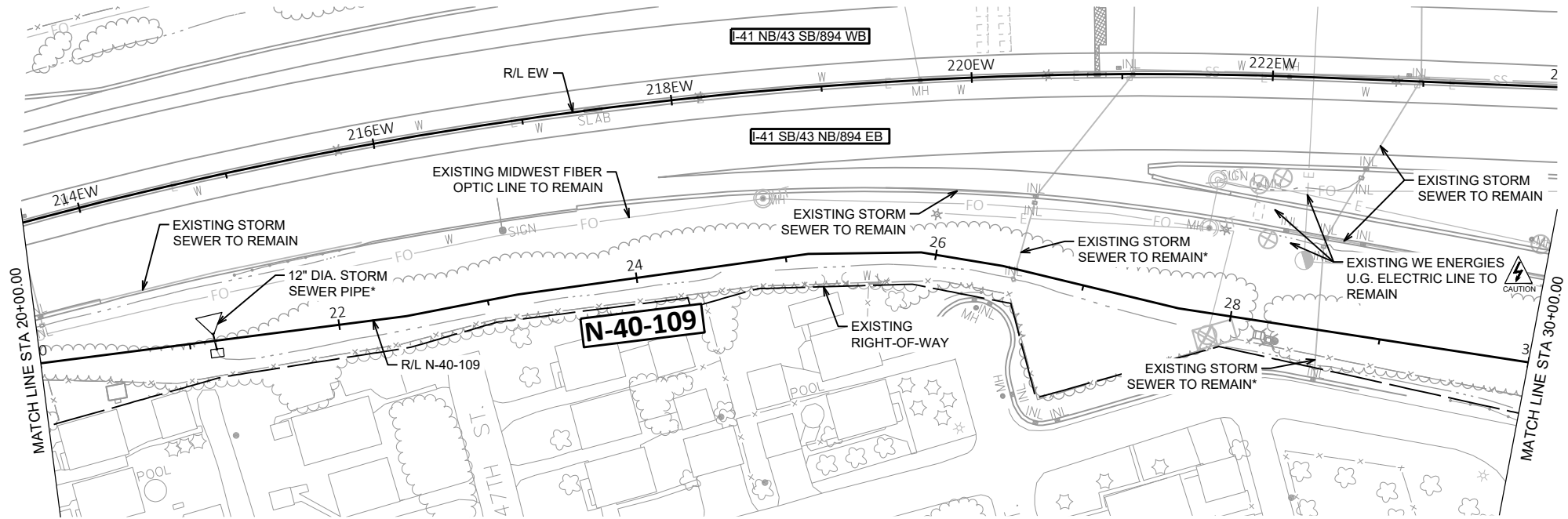
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
ACCEPTED *[Signature]* SDR 02/03/25
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE N-40-109

NOISE BARRIER ALONG IH-41 SB
COUNTY MILWAUKEE TOWN/CITY/VILLAGE GREENFIELD
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
DESIGNED BY TMH DESIGNED CK'D EKM DRAWN BY TMH PLANS CK'D EKM
GENERAL PLAN AND ELEVATION (1 OF 3) SHEET 1 OF 10 179

PLAN AND PROFILE: NOISE BARRIER N-40-109



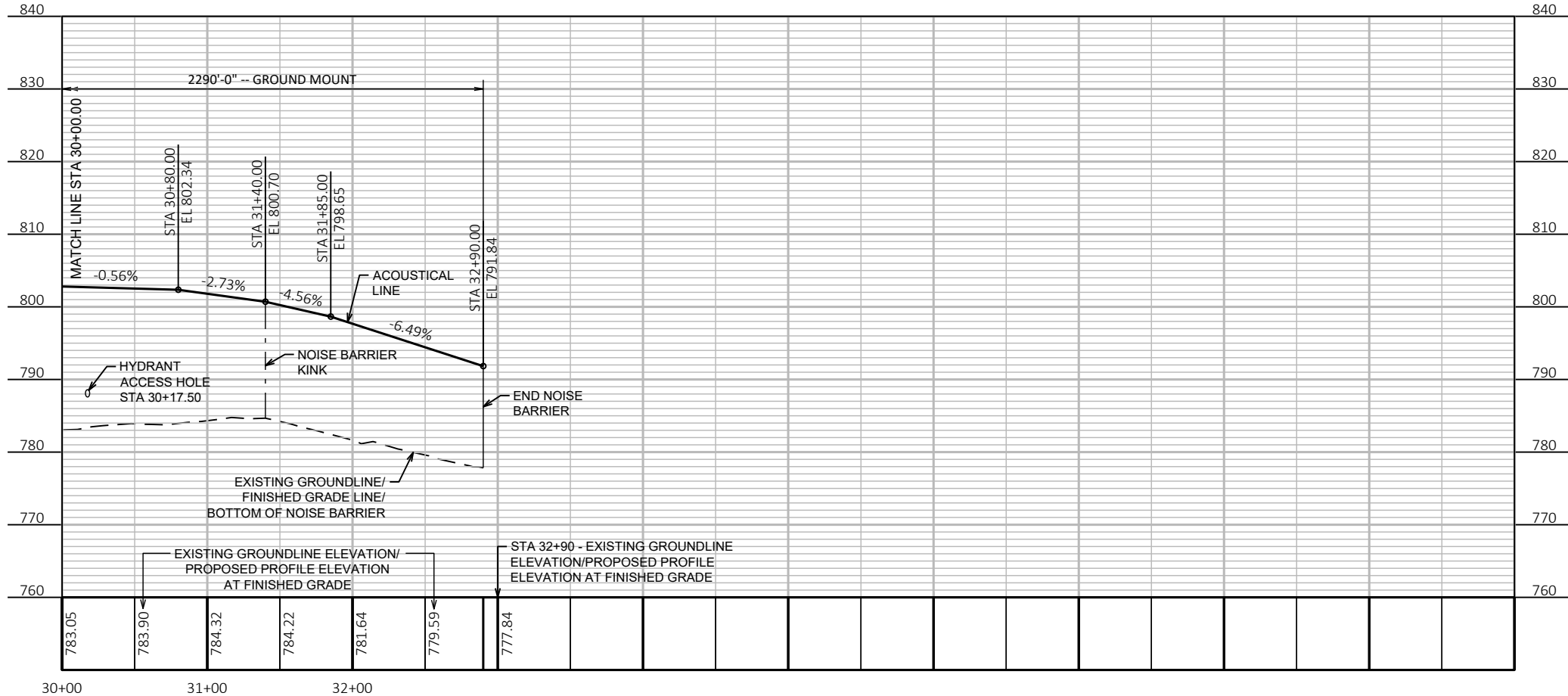
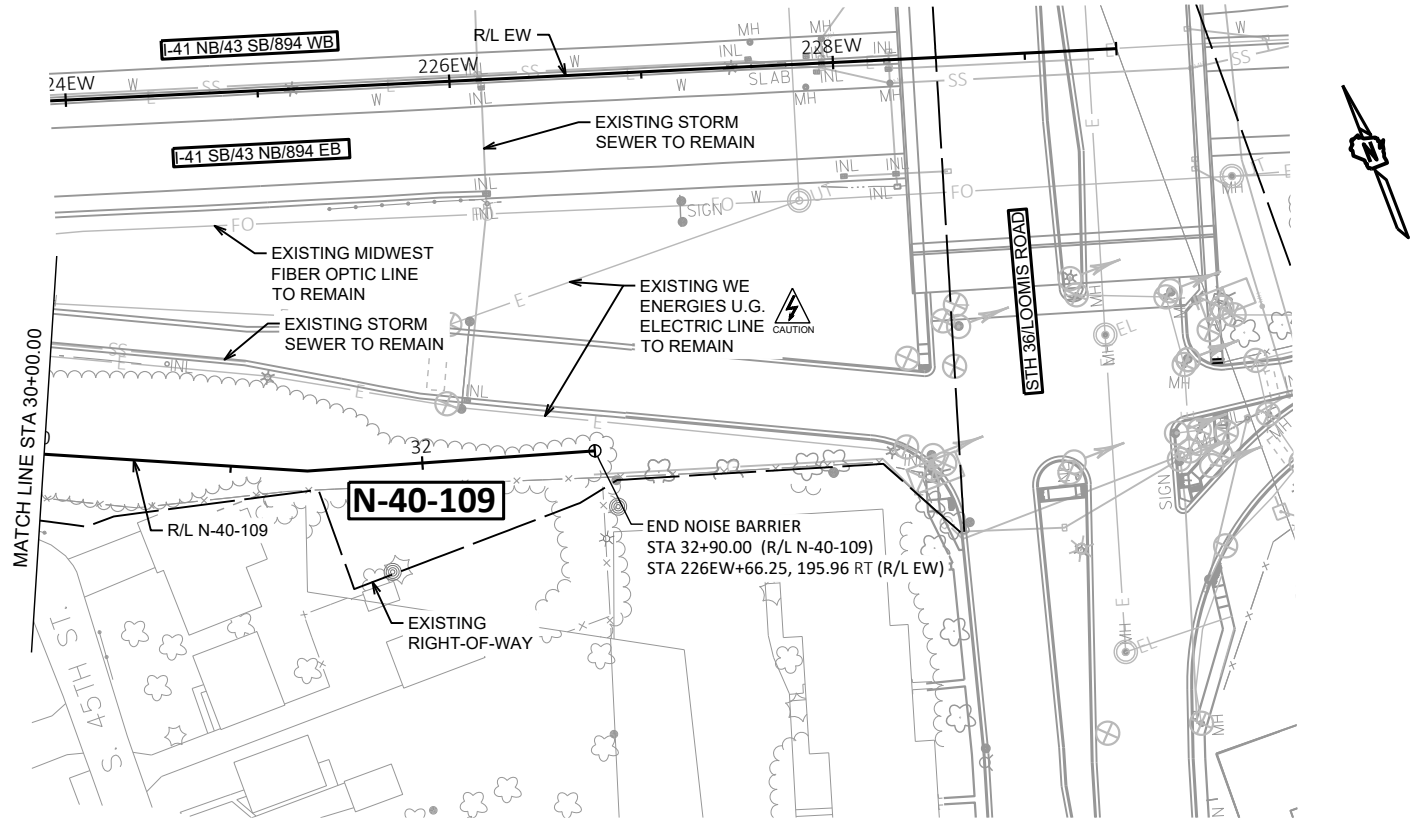


LEGEND

* THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF THE EXISTING STORM AND SANITARY SEWER PIPES. THE PROPOSED NOISE BARRIER POSTS AND FOUNDATIONS SHALL BE SPACED TO AVOID THE EXISTING STORM AND SANITARY PIPES AND PROPOSED STORM SEWER PIPES.

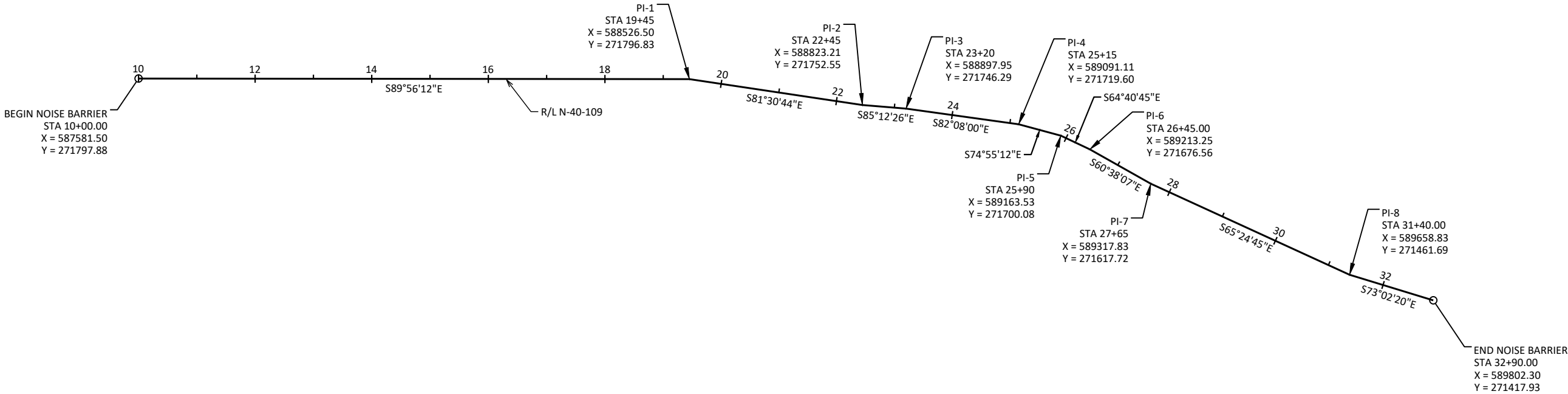
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-109			
DRAWN BY		TMH	PLANS CK'D EKM
GENERAL PLAN AND ELEVATION (2 OF 3)		SHEET 2 OF 10 180	

PLAN AND PROFILE: NOISE BARRIER N-40-109



PLAN AND PROFILE: NOISE BARRIER N-40-109

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-109			
DRAWN BY		TMH	PLANS CK'D EKM
GENERAL PLAN AND ELEVATION (3 OF 3)		SHEET 3 OF 10 181	



ALIGNMENT PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-109			
DRAWN BY		TMH	PLANS CK'D EKM
ALIGNMENT PLAN		SHEET 4 OF 10 182	

SCALE = 1" = 200'

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE NOISE BARRIER IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE NOISE BARRIER MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109".

PLANS, ELEVATIONS AND DETAILS SHOWN ARE INTENDED TO INDICATE LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE NOISE BARRIER IS TO BE DESIGNED USING THE FINISHED GRADE LINE AND THE ACOUSTICAL LINE SHOWN ON THE GENERAL PLAN AND ELEVATION SHEETS.

THE ACOUSTICAL LINE IS THE TOP PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109". NOISE BARRIER PLACED ABOVE THE ACOUSTICAL LINE WILL NOT BE MEASURED FOR PAYMENT.

THE FINISHED GRADE LINE IS THE BOTTOM PAY LIMIT FOR THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109". NOISE BARRIER PLACED BELOW THE FINISHED GRADE LINE WILL NOT BE MEASURED FOR PAYMENT.

ALL NOISE BARRIERS SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT "GUIDE SPECIFICATIONS FOR STRUCTURAL DESIGN OF SOUND BARRIERS", PUBLISHED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).

THE FOLLOWING DESIGN PRESSURES SHALL BE USED IN ACCORDANCE WITH THE SPECIAL PROVISIONS:

- 35 P.S.F. FOR GROUND MOUNTED BARRIERS
- 40 P.S.F. FOR STRUCTURE MOUNTED BARRIERS

REINFORCING STEEL IN THE CONCRETE CORE OF THE NOISE BARRIER PANELS SHALL HAVE A MINIMUM CLEARANCE OF 1 INCH. THE CONCRETE CORE SHALL BE DESIGNED TO RESIST THE LOADS WITHOUT CONSIDERING ANY COMPOSITE ACTION FROM OTHER MATERIAL IN THE PANEL.

BOTTOM NOISE BARRIER PANELS SHALL BE DESIGNED TO SUPPORT THE DEAD LOAD (WEIGHT) OF THE PANELS DIRECTLY ABOVE IT AND ITS OWN DEAD LOAD. THE DEAD LOAD SHALL BE DISTRIBUTED UNIFORMLY ASSUMING SIMPLE BEAM ACTION WITH SUPPORTS AT THE POSTS. BOTTOM PANELS SHALL HAVE A MINIMUM AMOUNT OF PERIMETER REINFORCEMENT OF A #4 BAR WHICH SHALL BE CONTINUOUS AROUND THE CORNERS.

A COMPRESSIBLE BEARING PAD OF 1/4" THICK SHALL BE PROVIDED BETWEEN THE FOUNDATION AND THE BOTTOM PANELS. THE BEARING PADS SHALL BE PREFORMED EPDM RUBBER CONFORMING TO ASTM D-2000, GRADE 2, TYPE A, CLASS A WITH A MINIMUM DUROMETER HARDNESS OF 80. BEARING PADS SHALL BE INCIDENTAL TO THE BID ITEM "NOISE BARRIERSS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109".

PRECAST CONCRETE PEDESTALS PLACED BETWEEN THE FOUNDATION AND BOTTOM PANELS SHALL BE REINFORCED IF OVER 1'-0" HIGH.

INCLUDE THE COST OF THE STONE PATTERN SURFACE TREATMENT, REVEALS, COATING OF STEEL POSTS AND CONNECTIONS, AND COLORING/STAINING THE PANELS, UNDER THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109".

LOCATE HYDRANT ACCESS HOLES IN NOISE BARRIERS WITH COVER SIGNS AT LOCATIONS SHOWN ON THE GENERAL PLAN & ELEVATION SHEETS. PROVIDING HYDRANT ACCESS HOLES IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109".

INSTALL FREE DRAINING GRANULAR MATERIAL AT THE BOTTOM OF NOISE BARRIERS AS SHOWN IN THE NOISE BARRIER PLANS. FREE DRAINING GRANULAR MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109".

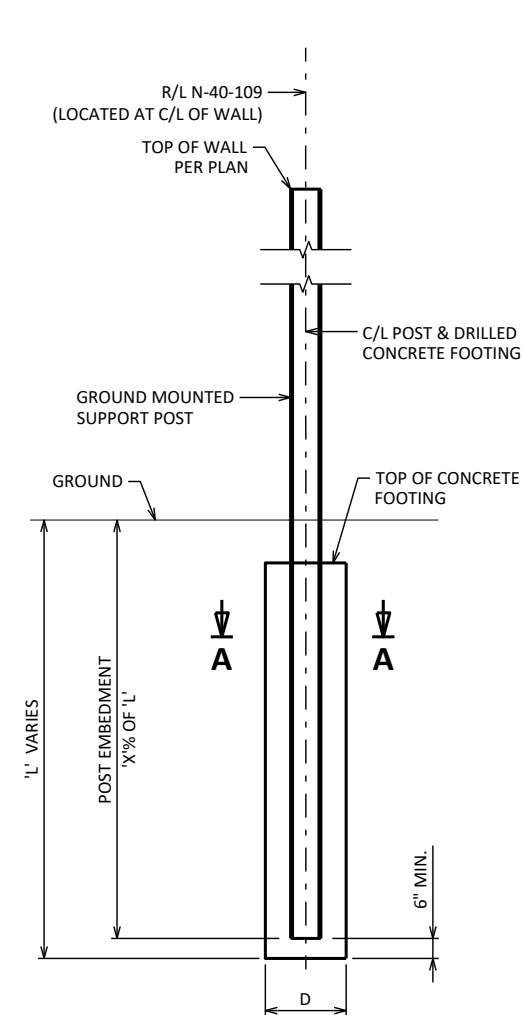
ALL CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IS SUBJECT TO THE QMP REQUIREMENTS FOR CLASS II ANCILLARY CONCRETE. PERFORM QMP TESTING OF CONCRETE MASONRY FOR NOISE BARRIER FOUNDATIONS IN ACCORDANCE WITH SECTION 716 OF THE STANDARD SPECIFICATIONS FOR CLASS II ANCILLARY CONCRETE. QMP TESTING IS INCIDENTAL TO THE BID ITEM "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109".

THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION OF THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE.

PLACE SELECT CRUSHED MATERIAL IN DRAINAGE DITCH WHERE NOISE BARRIER CROSSES FLOW LINE. SELECT CRUSHED MATERIAL IS INCIDENTAL TO THE BID ITEM "NOISES BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109".

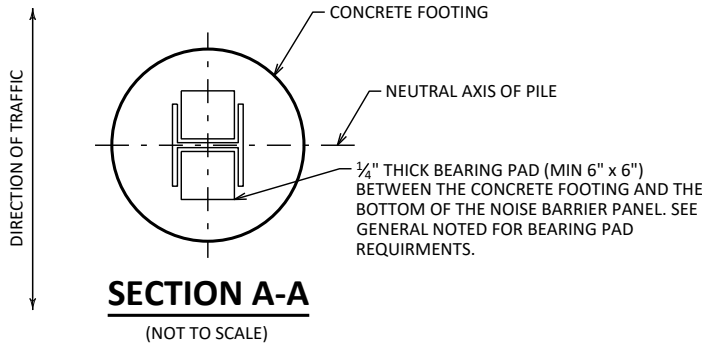
THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ANY TEMPORARY GRADING DOES NOT IMPACT UTILITIES OR TO COORDINATE WITH AFFECTED UTILITIES TO ACCOMMODATE TEMPORARY GRADING.

INCLUDE THE FOLLOWING ITEMS AND ACTIVITIES IN THE BID PRICE FOR "NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109": CONTRACTOR ACCESS TO CONSTRUCT NOISE BARRIER INCLUDING ANY TEMPORARY HAUL ROAD IF REQUIRED; DELIVERING ADDITIONAL GRADING MATERIAL; PLACING AND MAINTAINING TEMPORARY GRADING MATERIALS; PREPARING AND MAINTAINING AREA TO STORE NOISE BARRIER COMPONENTS; REMOVING TEMPORARY GRADING MATERIALS; AND RESTORING GRADE TO APPROXIMATELY MATCH THE EXISTING GRADE AND THE LOCALIZED GRADING NEAR THE NOISE BARRIER AS SHOWN IN THESE PLANS.



SECTION THRU GROUND MOUNTED POST & DRILLED CONCRETE FOOTING

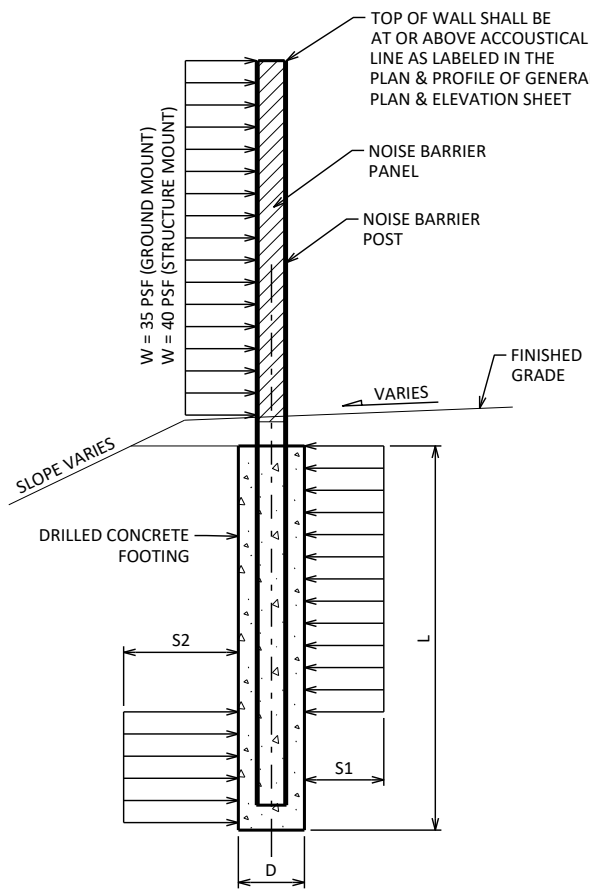
TYPICAL AT EACH POST LOCATION
(NOT TO SCALE)
('D', 'L' AND 'X' TO BE DETERMINED BY SUPPLIER)



TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEM	UNIT	TOTAL
541.0300.S.03	NOISE BARRIERS DOUBLE-SIDED SOUND ABSORPTIVE N-40-109	SF	42,070

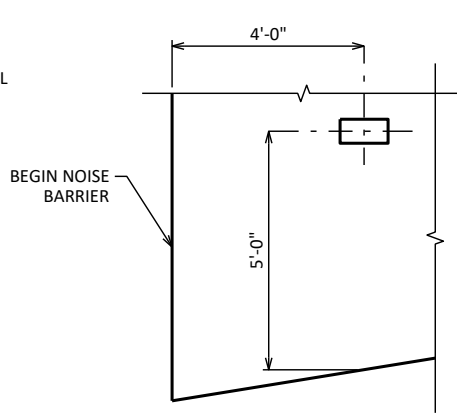
ALL ITEMS ARE CATEGORY 9020



NOISE BARRIER LOADING DIAGRAM

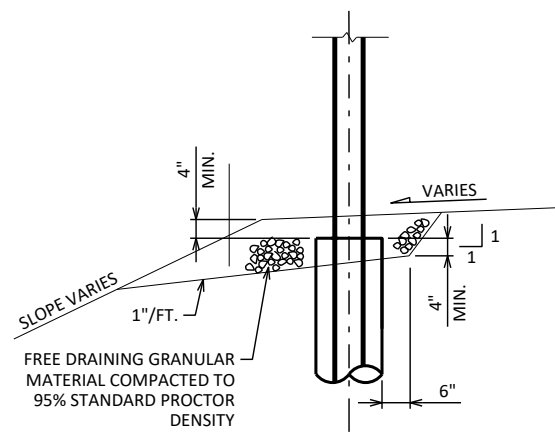
(NOT TO SCALE)

W = DESIGN WIND LOAD
L = NOISE BARRIER FOUNDATION DEPTH
BELOW EXISTING GROUND
D = NOISE BARRIER FOUNDATION DIAMETER
S = ALLOWABLE SOIL PRESSURE



NAME PLATE DETAIL

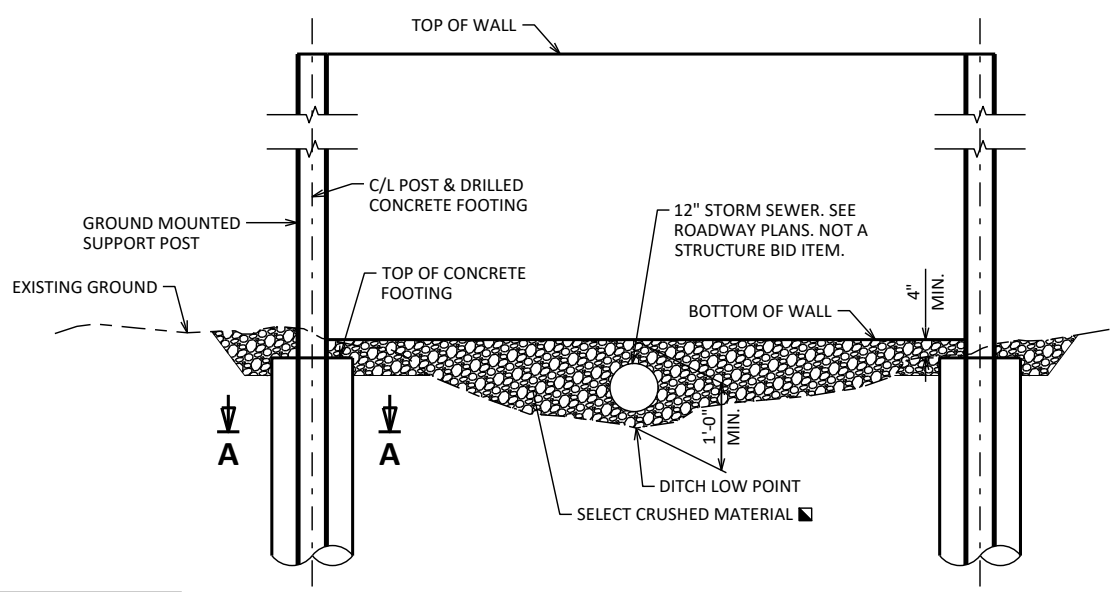
(NOT TO SCALE)



POST DRAINAGE BACKFILL DETAIL

(SLOPED GRADE)

(NOT TO SCALE)

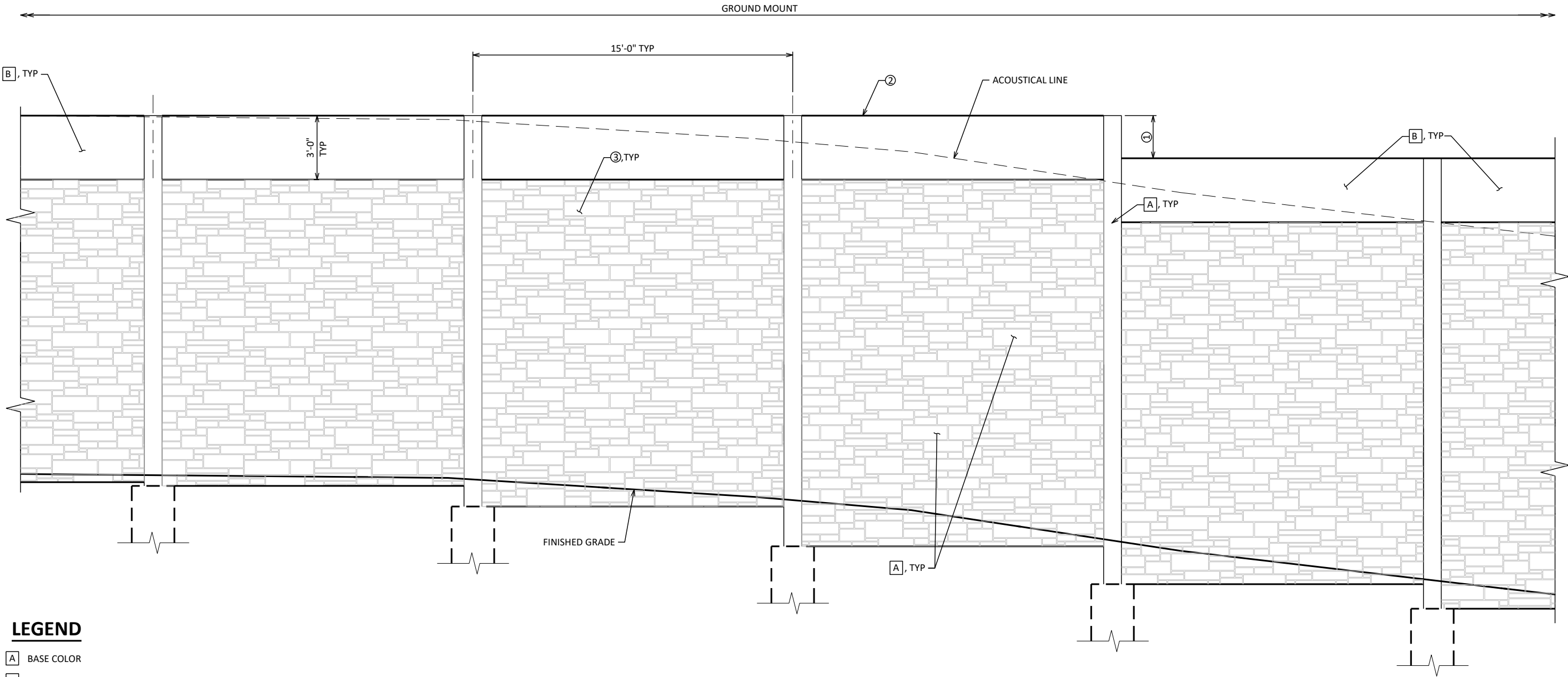


PARTIAL WALL ELEVATION OVER DITCH

APPROXIMATE STA 11+72.50 & STA 21+16.75
(NOT TO SCALE)

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-109			
	DRAWN BY	TMH	PLANS CK'D EKM
QUANTITIES, NOTES & CONSTRUCTION DETAILS			SHEET 5 OF 10 183

SCALE = N/A



LEGEND

[A] BASE COLOR

[B] ACCENT COLOR NO. 1

① STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.

② ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.

③ THE RESIDENTIAL SIDE WALL PATTERN SHALL BE A "RANDOM SPLIT EDGE ASHLAR" PATTERN. THE PATTERN SHALL CONSIST OF RANDOM SIZED PIECES RANGING FROM A MINIMUM OF 1 ½" HIGH BY 4" LONG TO A MAXIMUM OF 10" HIGH BY 31" LONG WITH A MAXIMUM RELIEF 1 ½".

STAIN COLORS

THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:

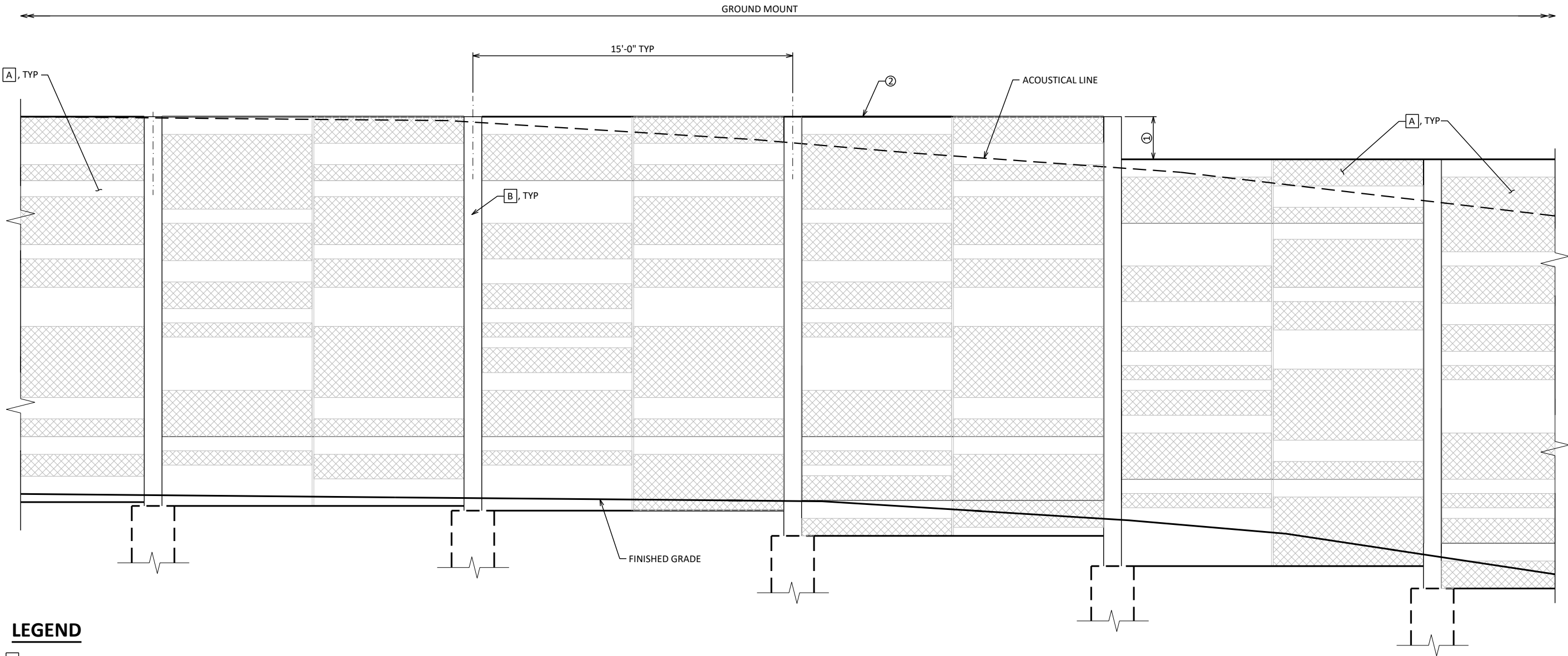
BASE COLOR - 33564

ACCENT COLOR NO. 1 - 33448

ELEVATION VIEW - RESIDENTIAL SIDE

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-109			
		DRAWN BY	PLANS CK'D
		TMH	EKM
AESTHETIC WALL TREATMENT DETAILS RESIDENTIAL SIDE		SHEET 6 OF 10 184	

SCALE = N/A



ELEVATION VIEW - FREEWAY SIDE

LEGEND

- A** BASE COLOR
- B** ACCENT COLOR NO. 1
- ① STEP PANELS IN INCREMENTS OF 2'-0". STEP INCREMENTS LESS THAN 2'-0" SHALL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
- ② ADJUST VERTICAL PLACEMENT OF PANELS TO MAXIMIZE HORIZONTAL RUNS, KEEPING THE TOP OF PANELS AT THE SAME ELEVATION.
- ③ 0.5 X (POST SPA - POST FLANGE WIDTH - 1")
- PANEL THICKNESS + 0"
- PANEL THICKNESS - 3/4" MIN, 1" MAX

STAIN COLORS

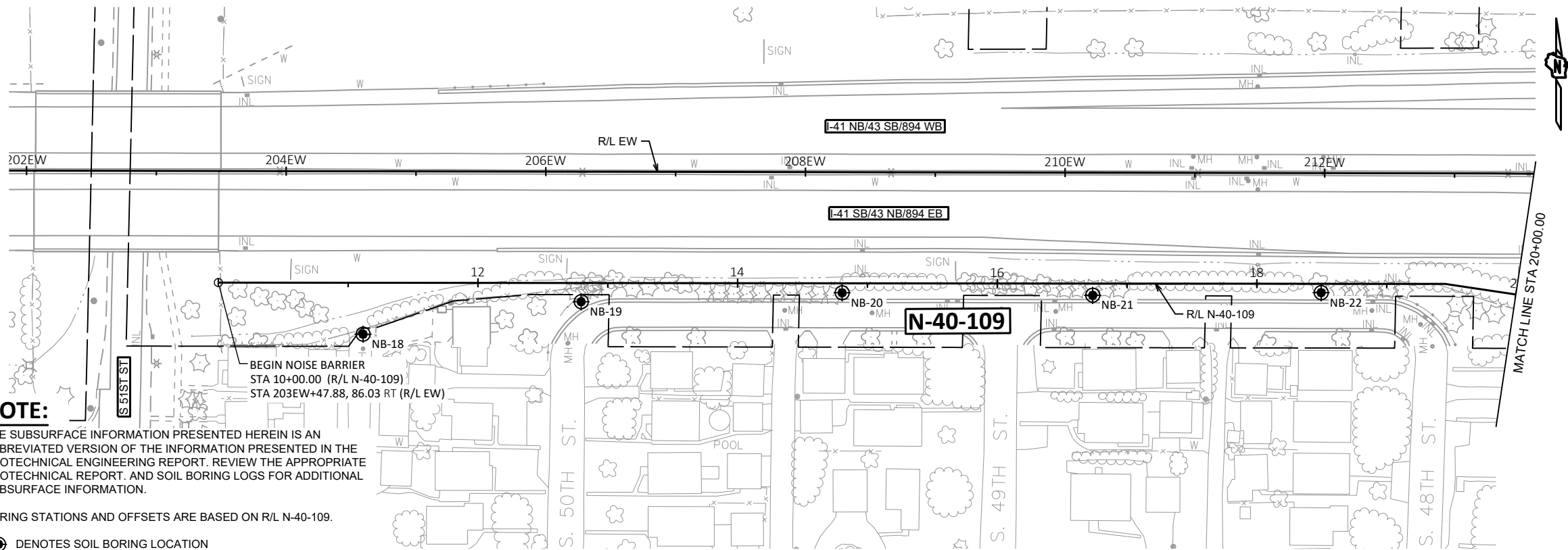
THE FINAL COLORING OF THE NOISE BARRIER FOLLOWING APPLICATION OF THE STAIN SYSTEM SHALL MATCH THE FEDERAL STANDARD COLOR SYSTEM LISTED BELOW:

BASE COLOR - 33564

ACCENT COLOR NO. 1 - 33448

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE N-40-109			
DRAWN BY		TMH	PLANS CK'D EKM
AESTHETIC WALL TREATMENT DETAILS FREEWAY SIDE		SHEET 7 OF 10 185	

SCALE = N/A

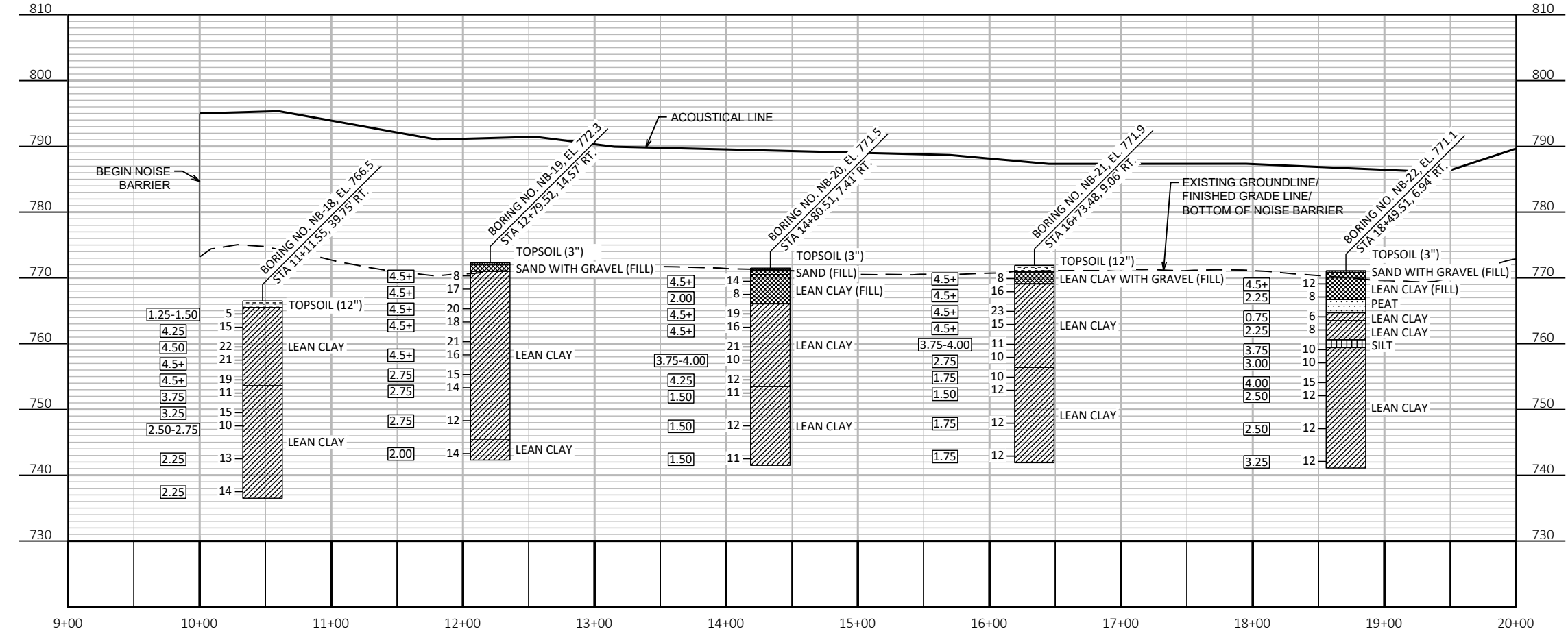


NOTE:
THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT, AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORING STATIONS AND OFFSETS ARE BASED ON R/L N-40-109.

● DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

SOIL BORINGS TAKEN:
AUGUST 13, 2024 - BORING NB-18
AUGUST 14, 2024 - BORING NB-19
AUGUST 14, 2024 - BORING NB-20
AUGUST 13, 2024 - BORING NB-21
AUGUST 14, 2024 - BORING NB-22



PLAN AND PROFILE: NOISE BARRIER N-40-109

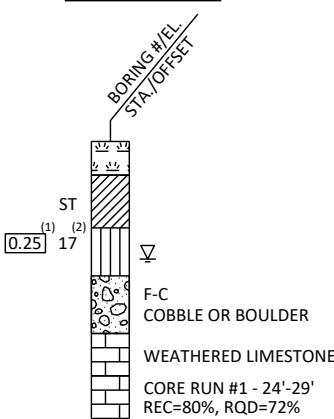
STATE PROJECT NUMBER

1090-03-08

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING



⁽¹⁾ UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

⁽²⁾ UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

▽	AT TIME OF DRILLING
▼	END OF DRILLING
▽	AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

STRUCTURE N-40-109

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE
EXPLORATION
(1 OF 3)

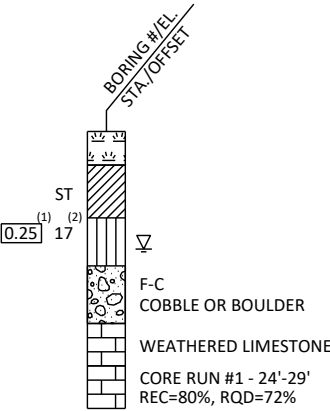
SHEET 8 OF 10
186

SCALE = 1:100

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

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NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

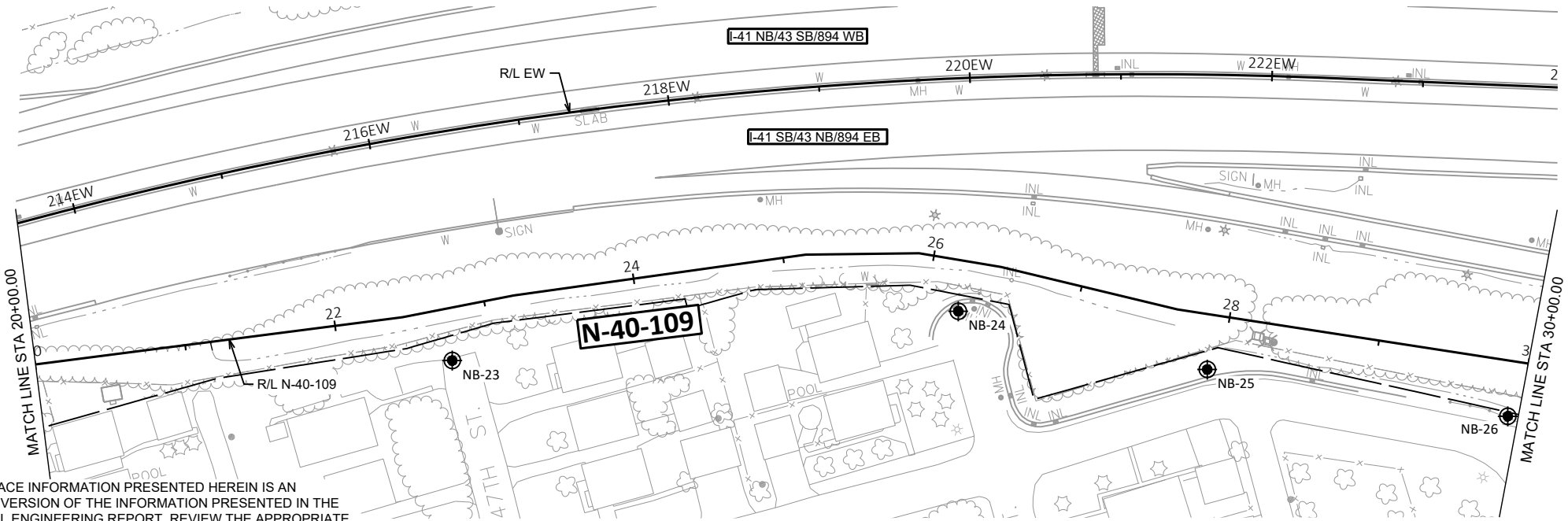
STRUCTURE N-40-109

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE
EXPLORATION
(2 OF 3)

SHEET 9 OF 10
187

SCALE = 1:100



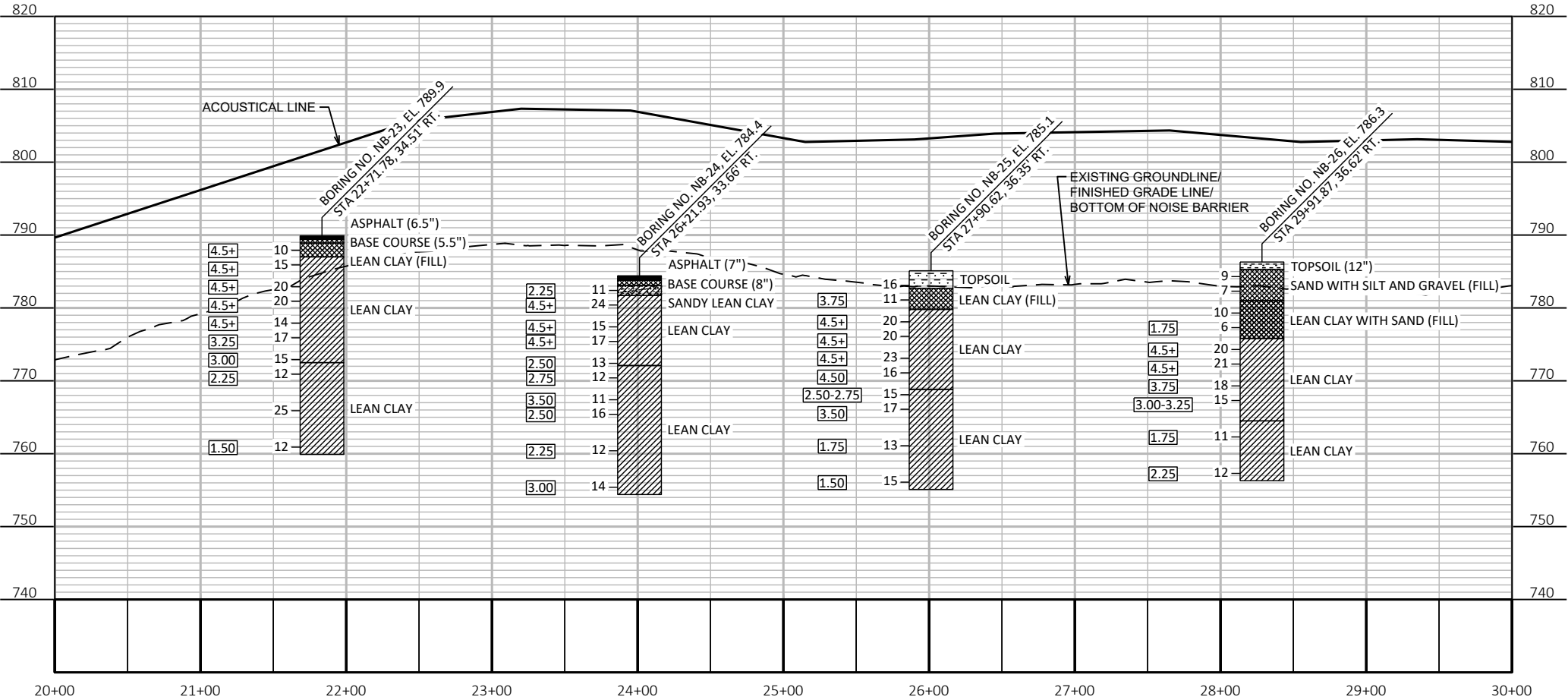
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BORING STATIONS AND OFFSETS ARE BASED ON R/L N-40-109.

⊙ DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

SOIL BORINGS TAKEN:
AUGUST 15, 2024 - BORING NB-23
AUGUST 15, 2024 - BORING NB-24
AUGUST 16, 2024 - BORING NB-25
AUGUST 16, 2024 - BORING NB-26

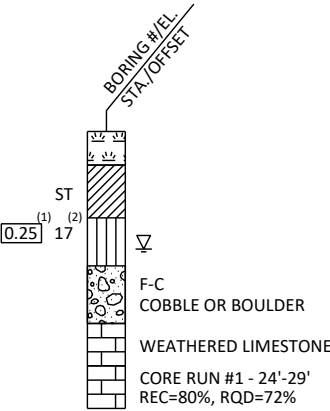


PLAN AND PROFILE: NOISE BARRIER N-40-109

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

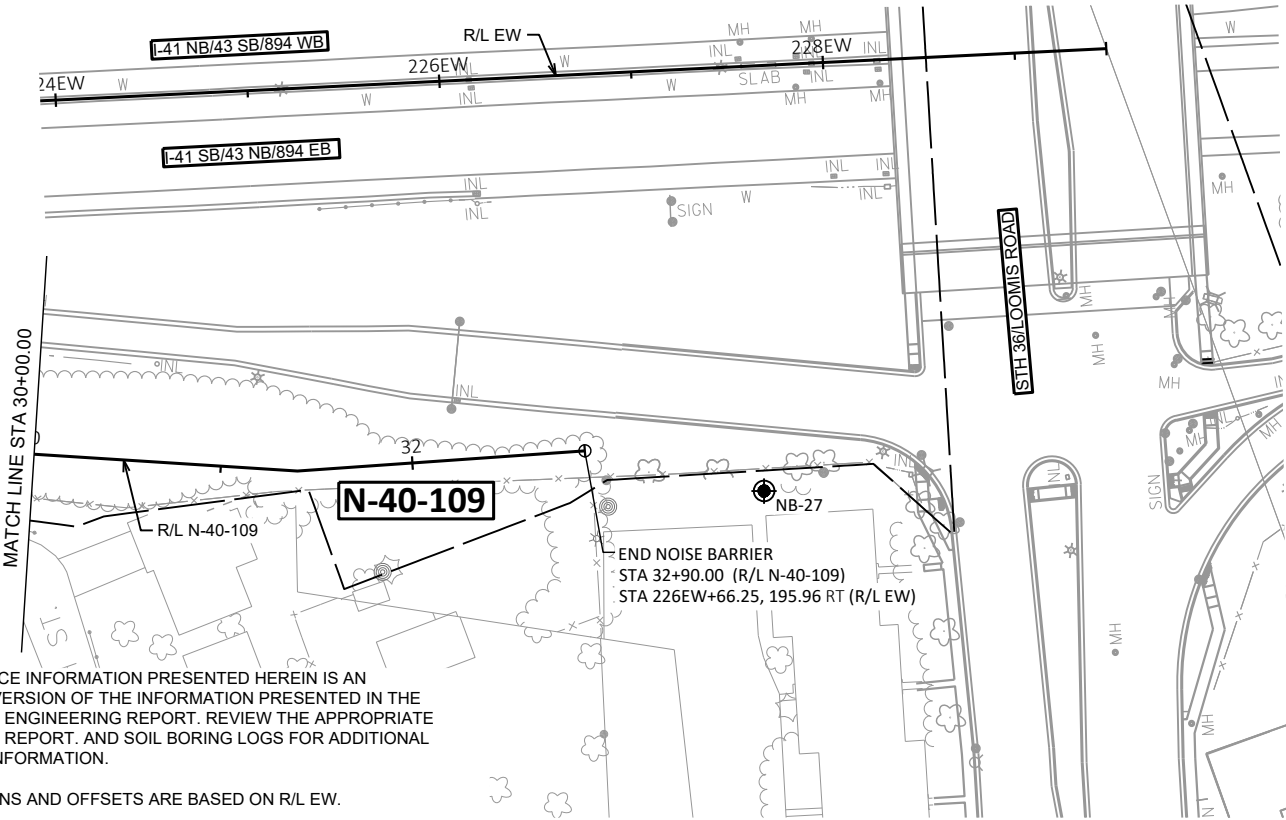
STRUCTURE N-40-109

DRAWN BY	TMH	PLANS CK'D	EKM
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SUBSURFACE
EXPLORATION
(3 OF 3)

SHEET 10 OF 10
188

SCALE = 1:100



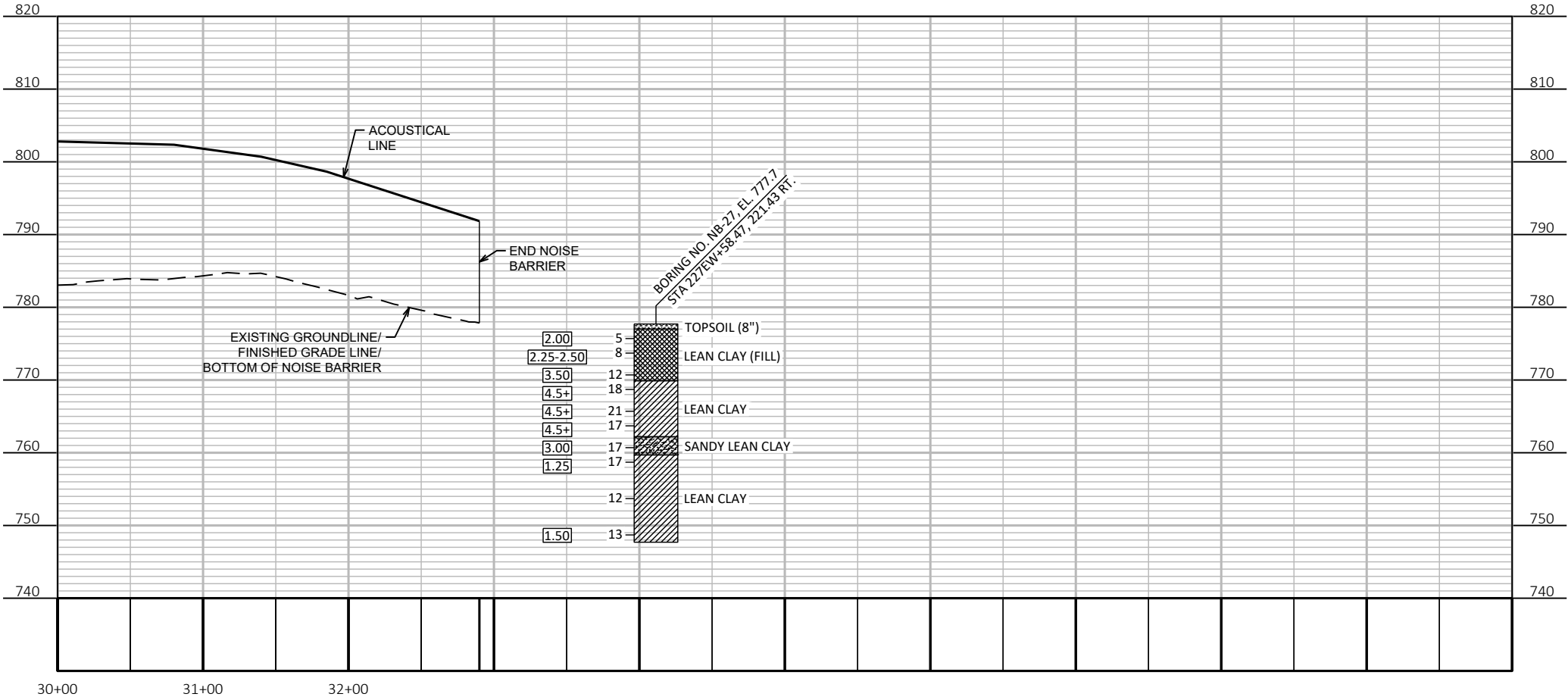
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BORING STATIONS AND OFFSETS ARE BASED ON R/L EW.

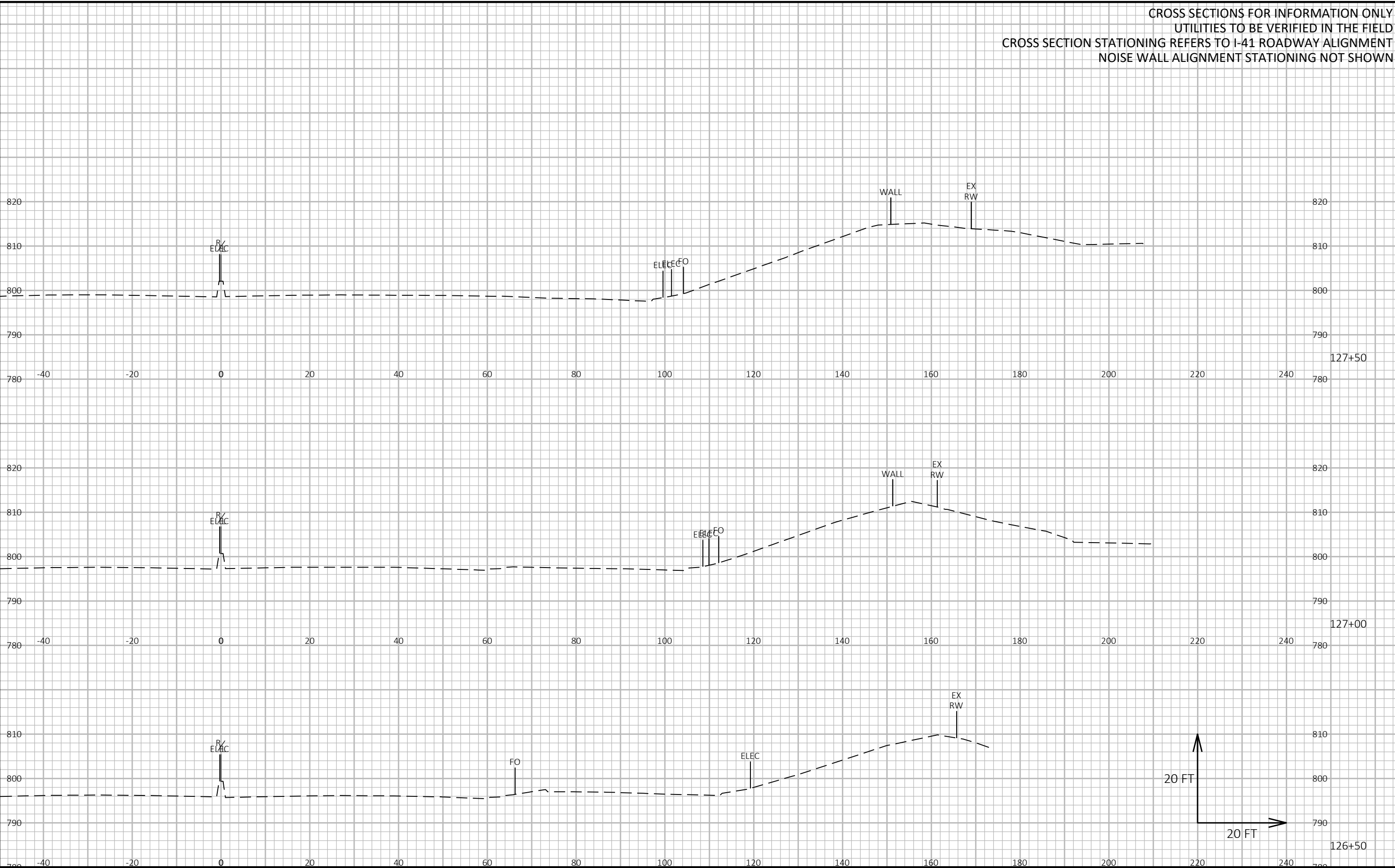
DENOTES SOIL BORING LOCATION
SOIL BORINGS COMPLETED BY: GESTRA ENGINEERING, INC.

SOIL BORINGS TAKEN:
AUGUST 16, 2024 - BORING NB-27



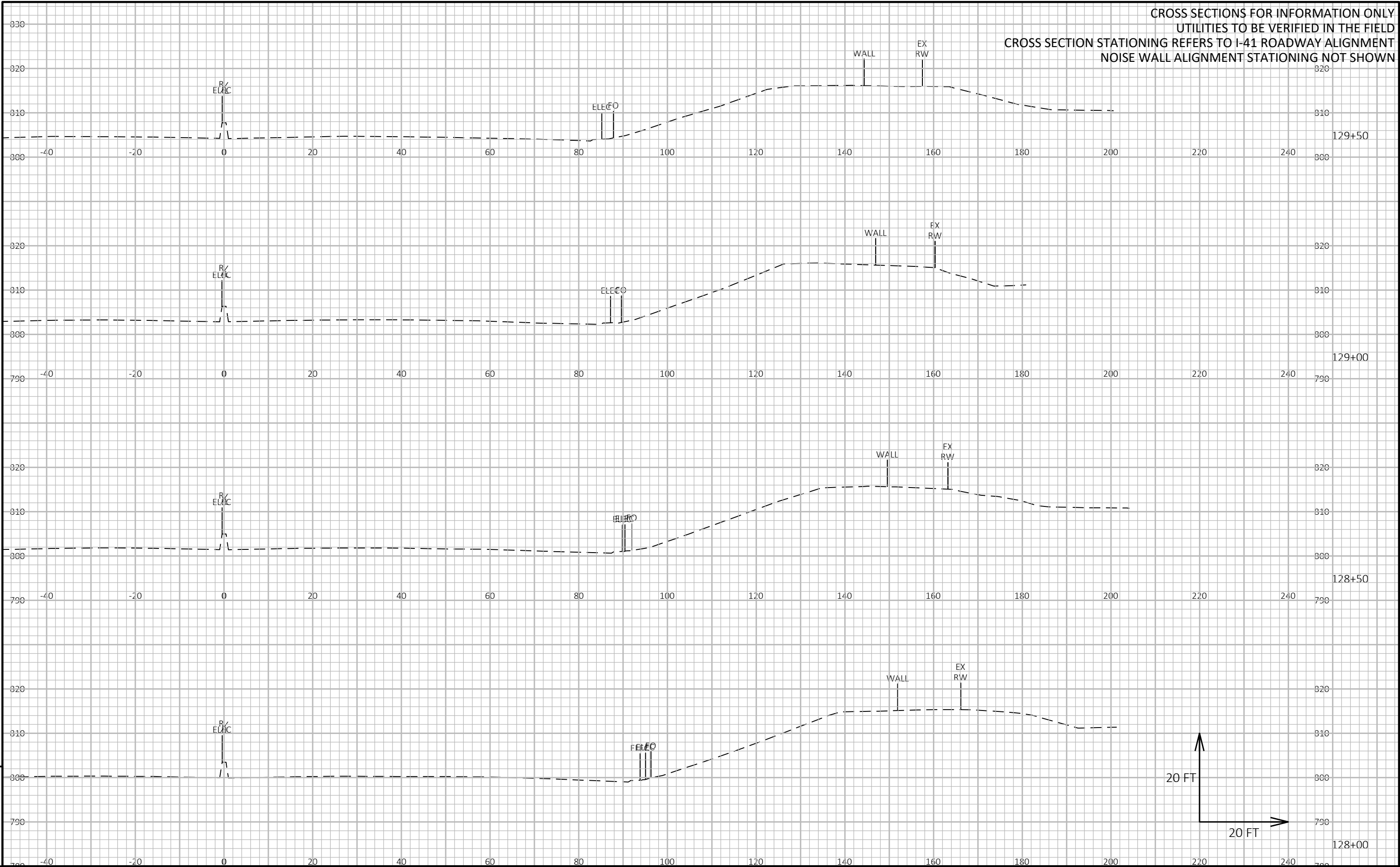
PLAN AND PROFILE: NOISE BARRIER N-40-109

CROSS SECTIONS FOR INFORMATION ONLY
UTILITIES TO BE VERIFIED IN THE FIELD
CROSS SECTION STATIONING REFERS TO I-41 ROADWAY ALIGNMENT
NOISE WALL ALIGNMENT STATIONING NOT SHOWN

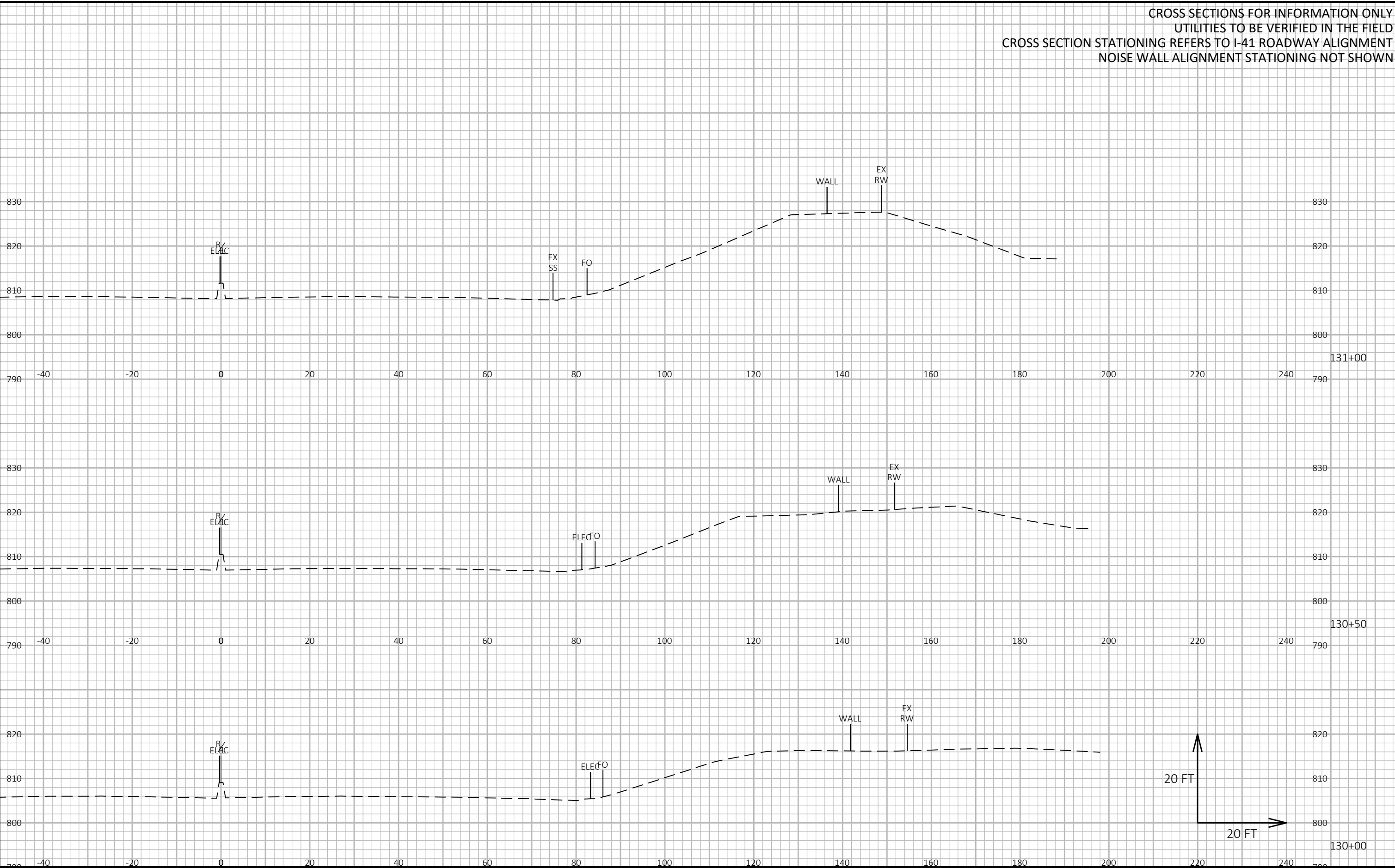


9

9



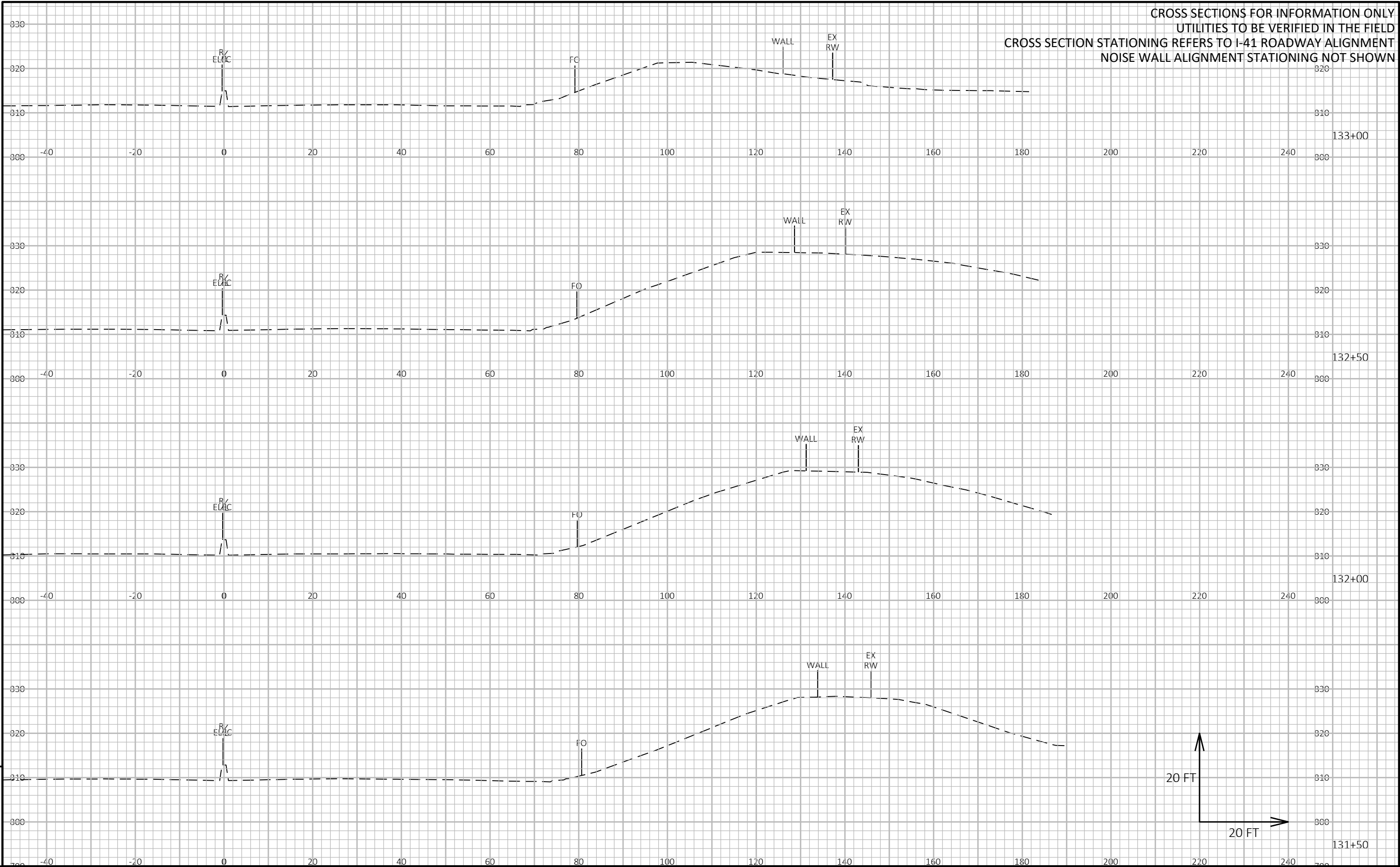
CROSS SECTIONS FOR INFORMATION ONLY
UTILITIES TO BE VERIFIED IN THE FIELD
CROSS SECTION STATIONING REFERS TO I-41 ROADWAY ALIGNMENT
NOISE WALL ALIGNMENT STATIONING NOT SHOWN

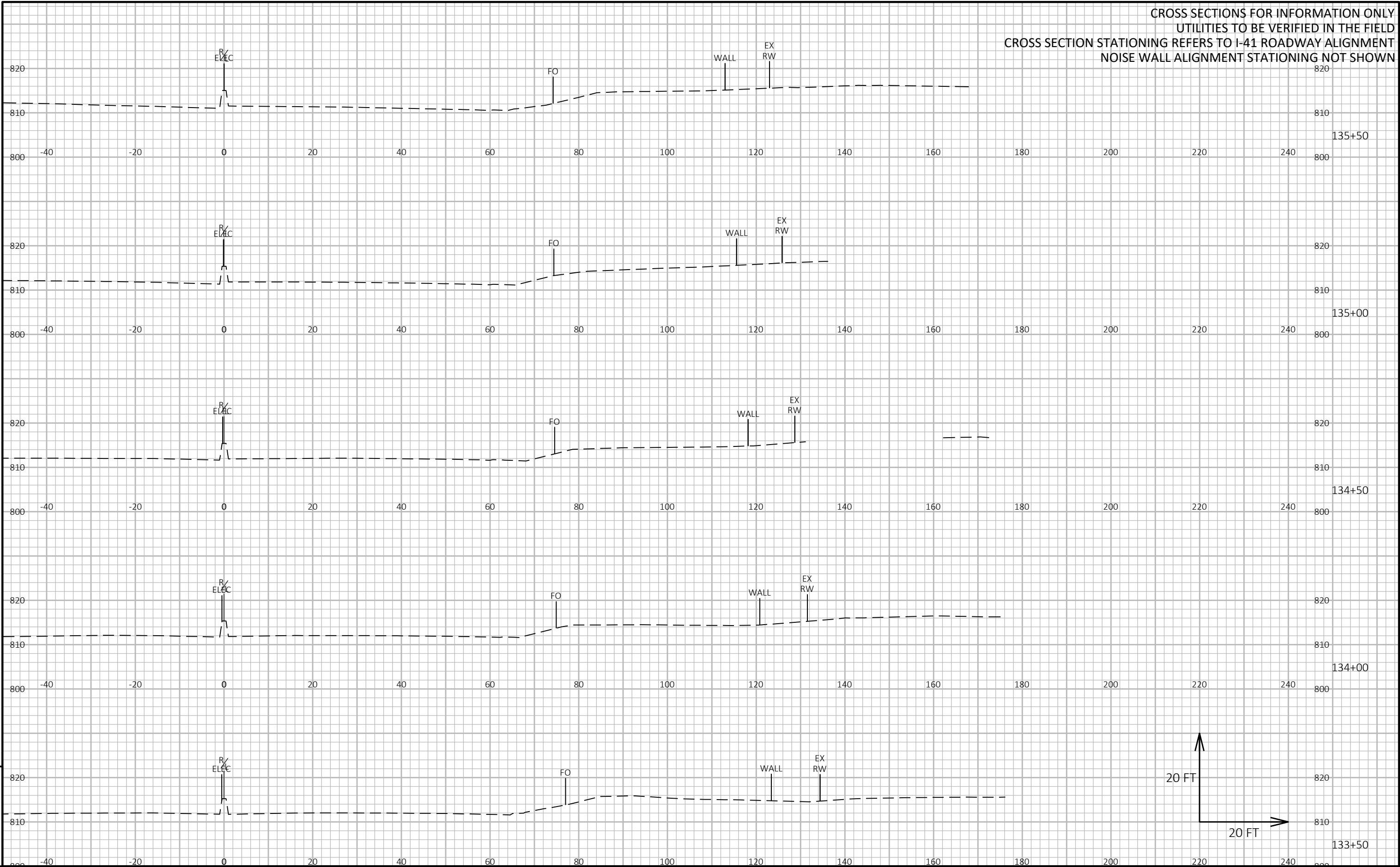


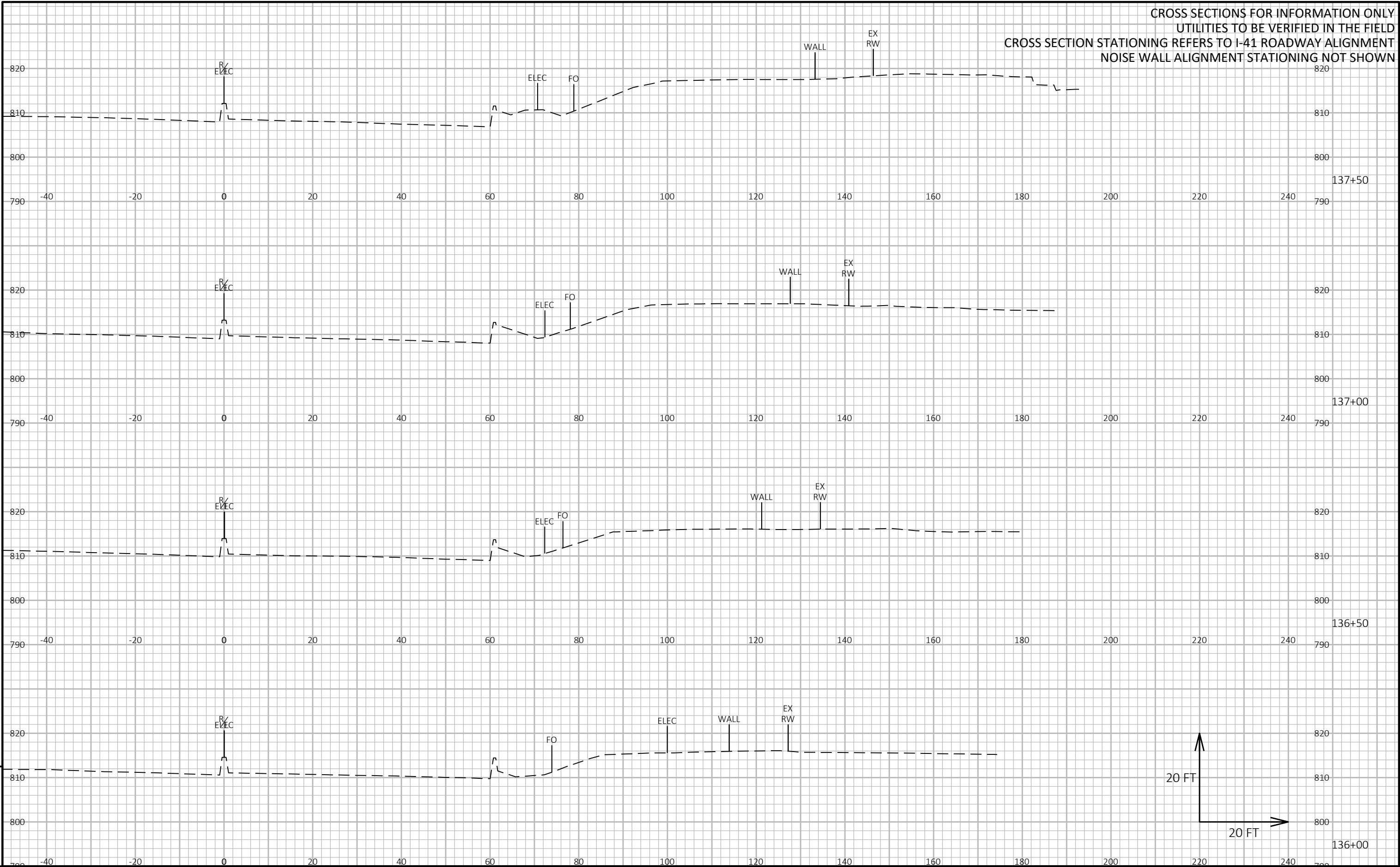
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9

PROJECT NO: 1090-03-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-107	SHEET 191	E
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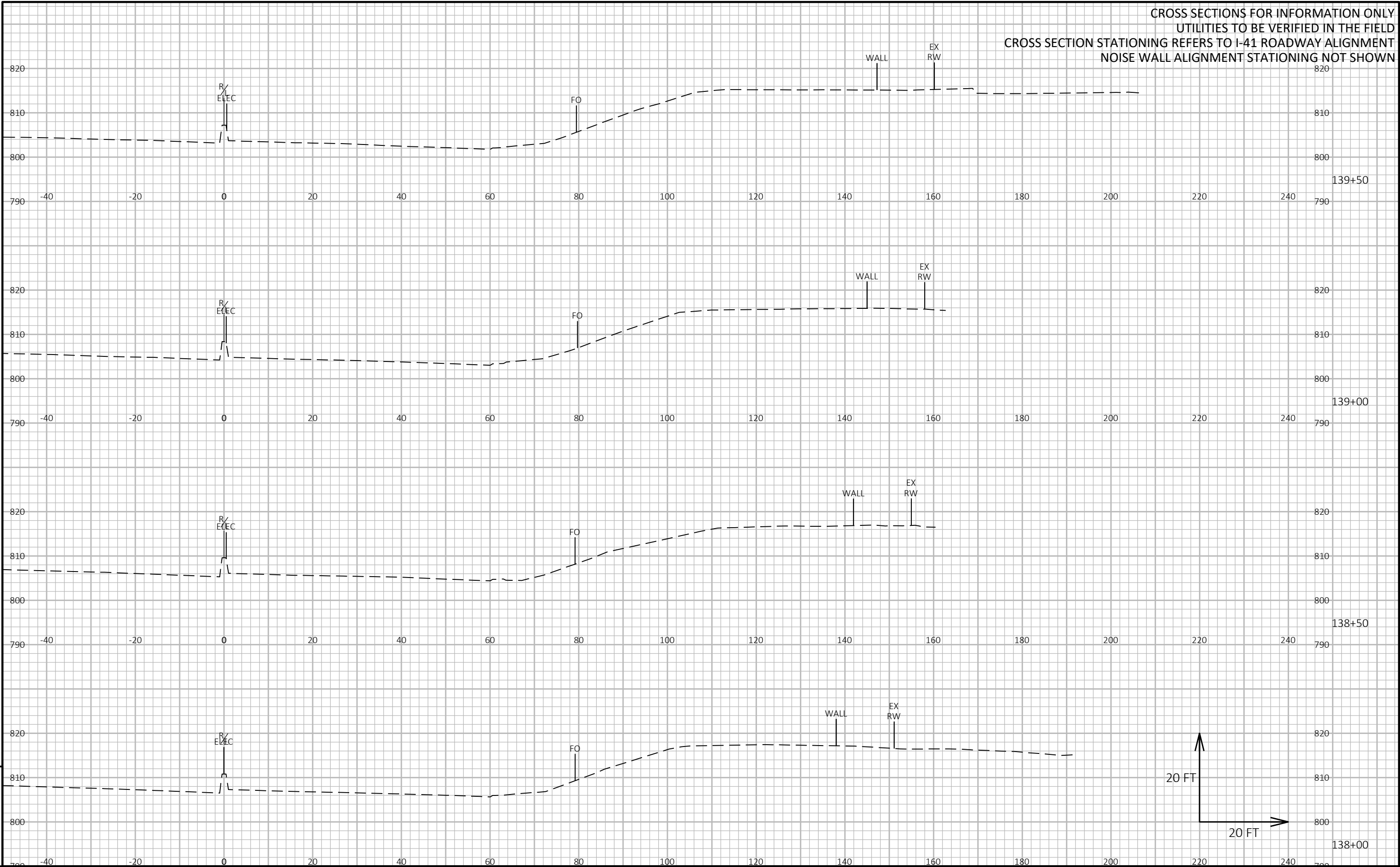




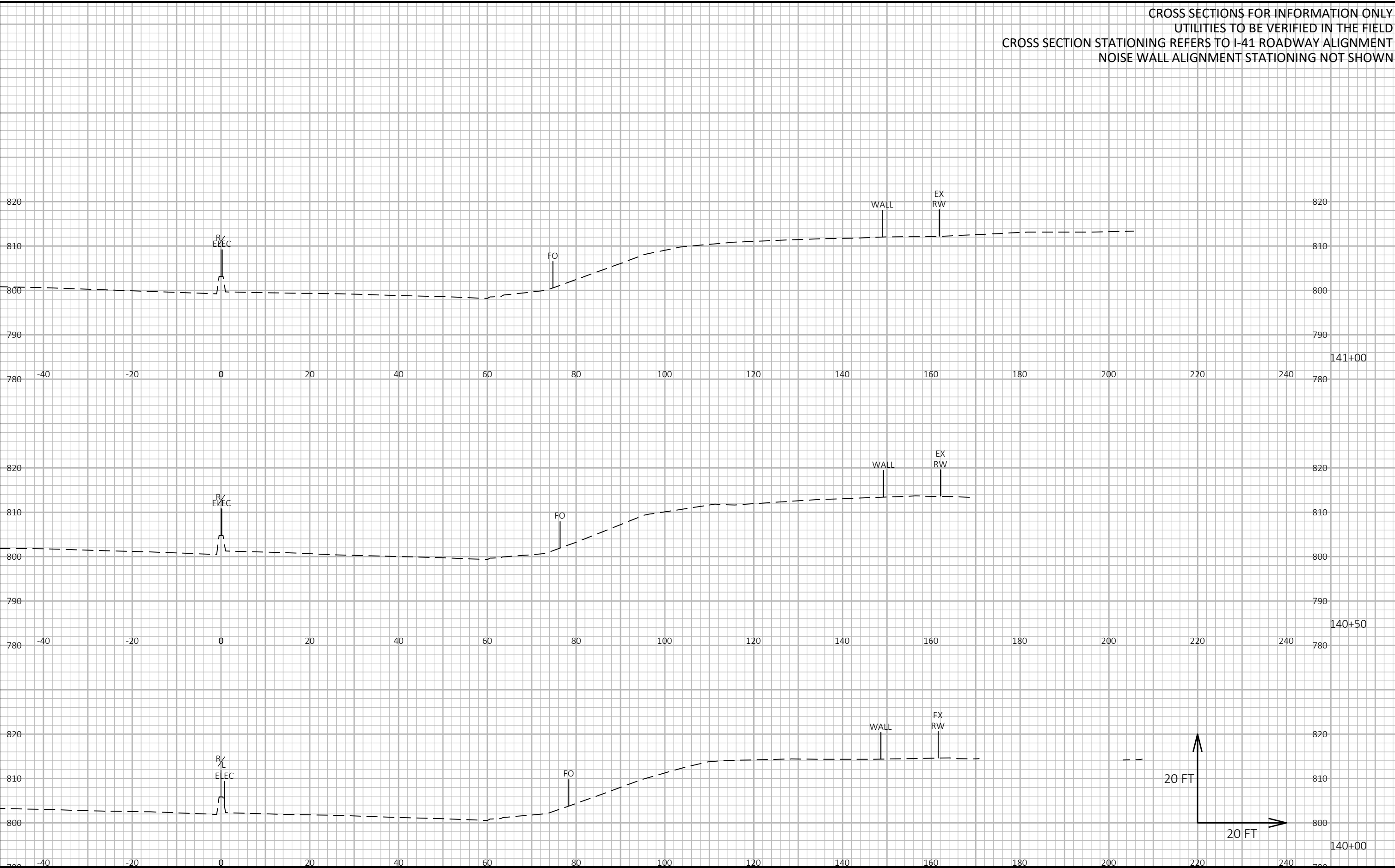


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UTILITIES TO BE VERIFIED IN THE FIELD
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NOISE WALL ALIGNMENT STATIONING NOT SHOWN

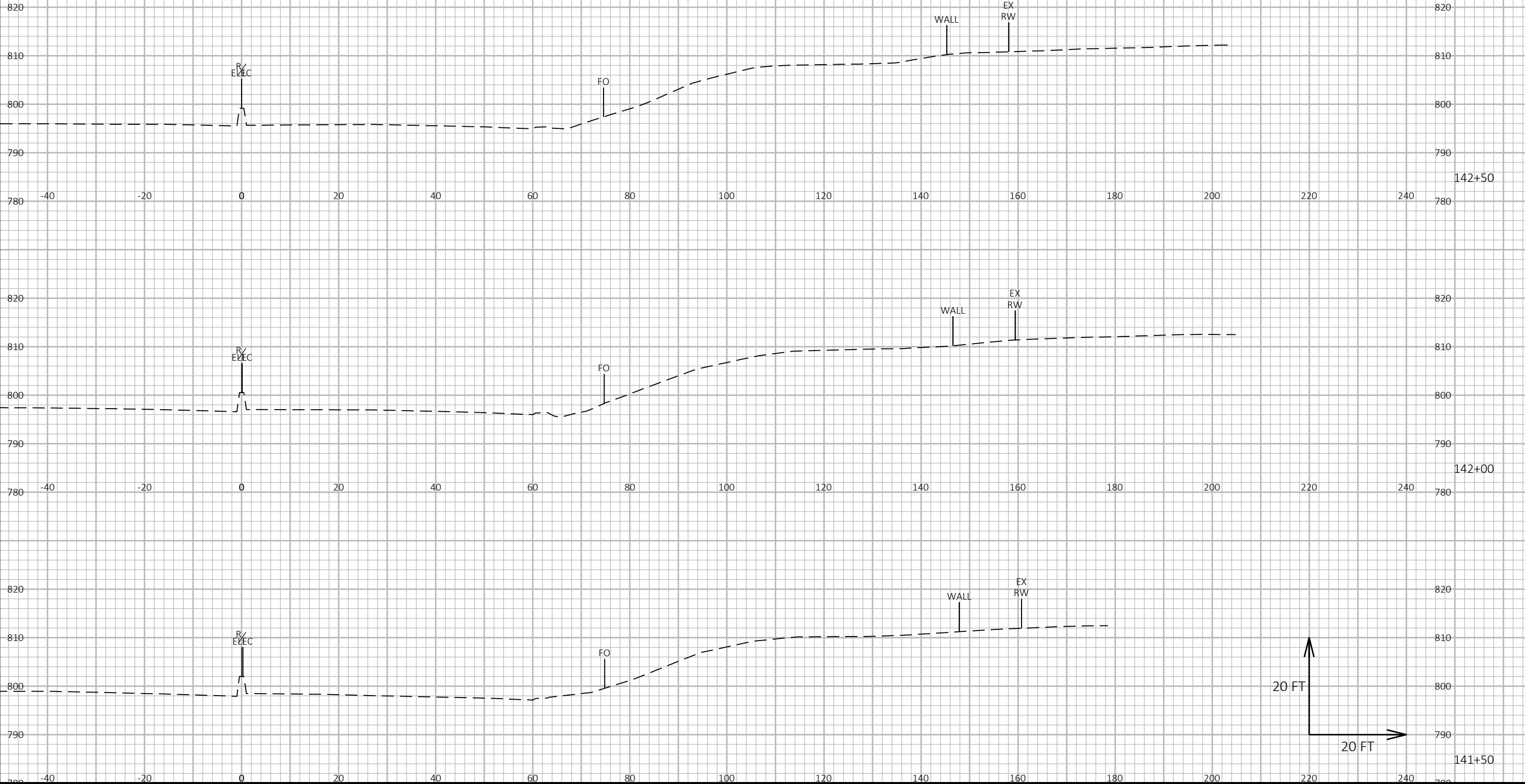


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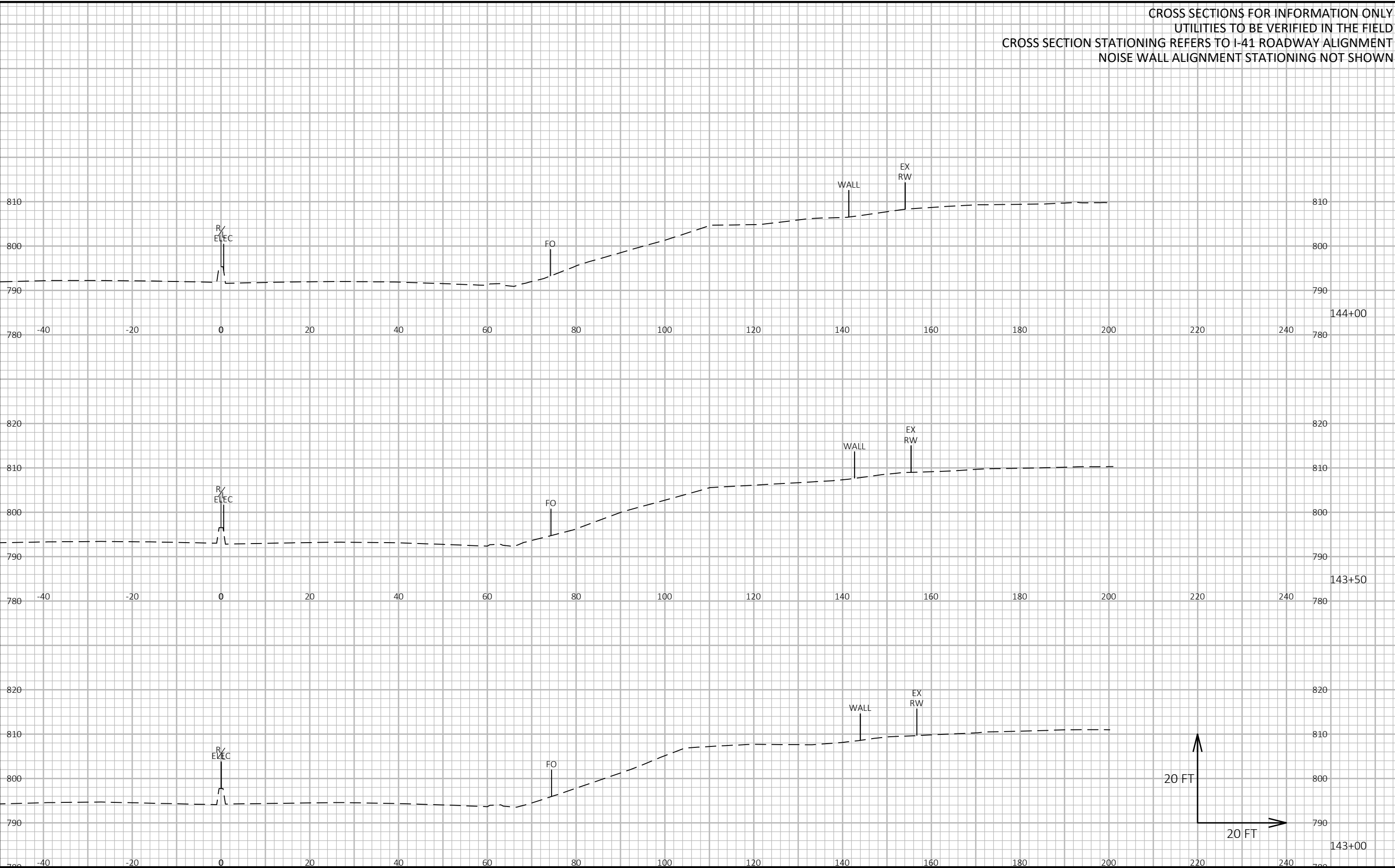
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PROJECT NO: 1090-03-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-107	SHEET 196	E
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CROSS SECTIONS FOR INFORMATION ONLY
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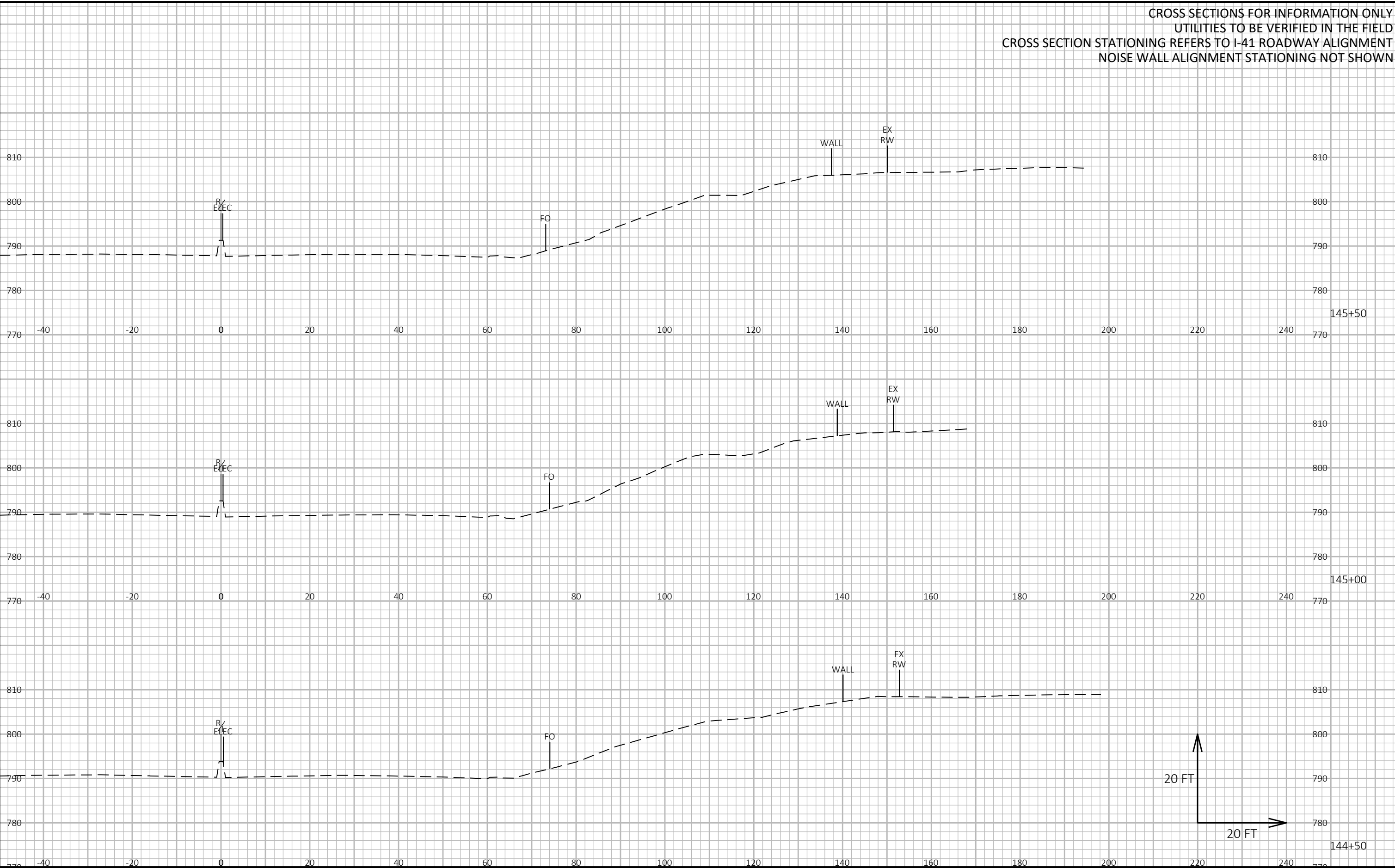
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NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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NOISE WALL ALIGNMENT STATIONING NOT SHOWN



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PROJECT NO: 1090-03-78

HWY: IH 41

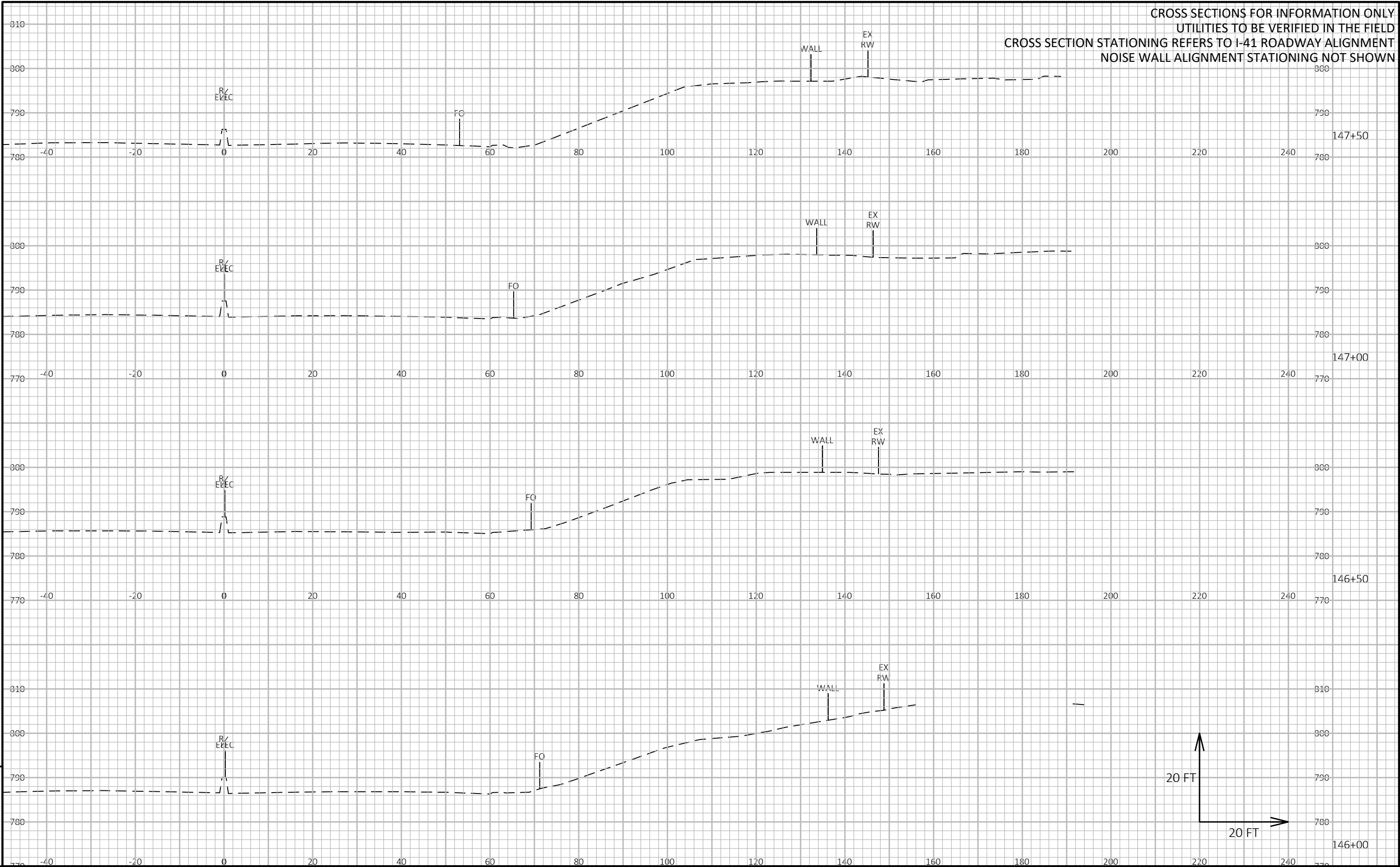
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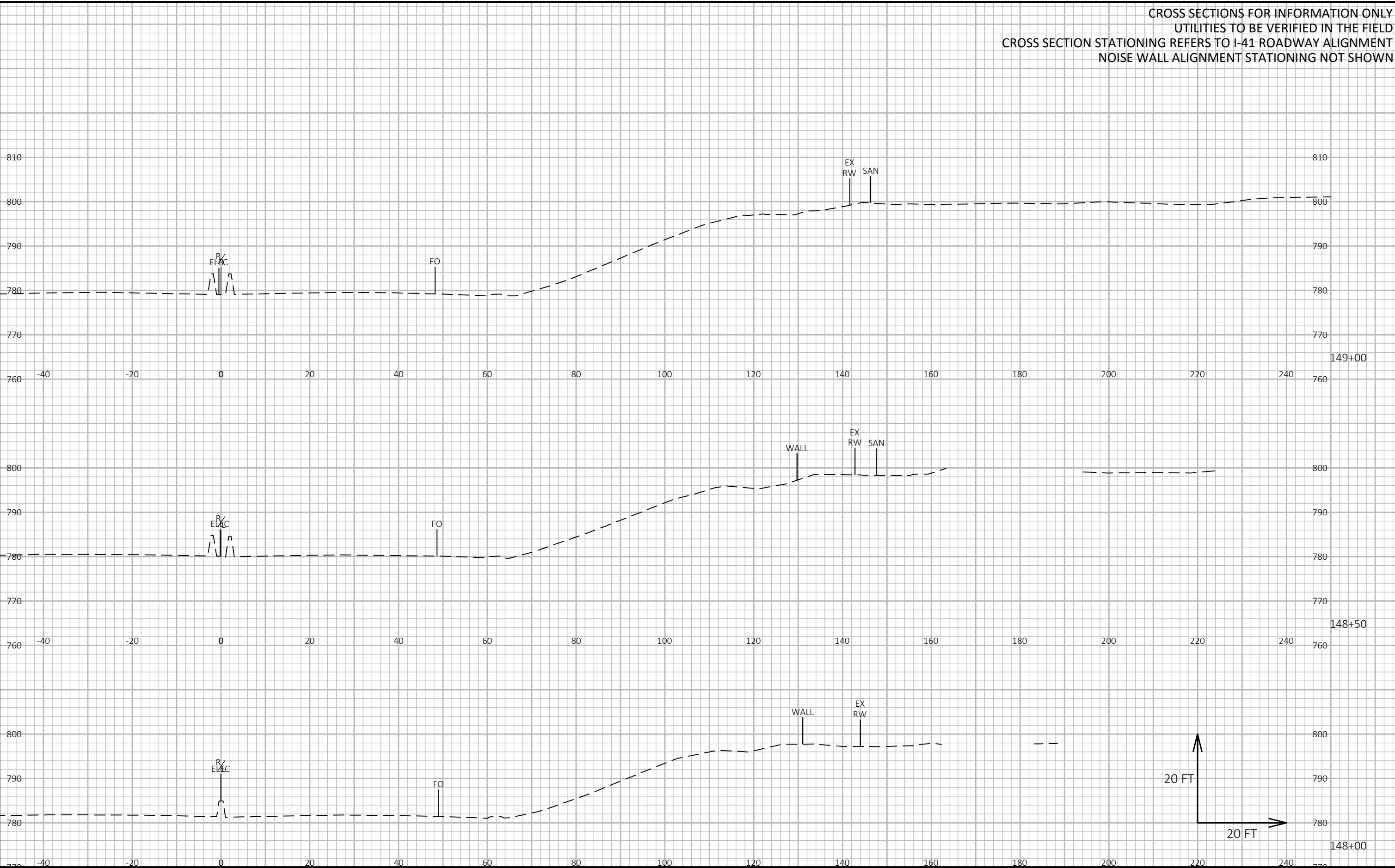
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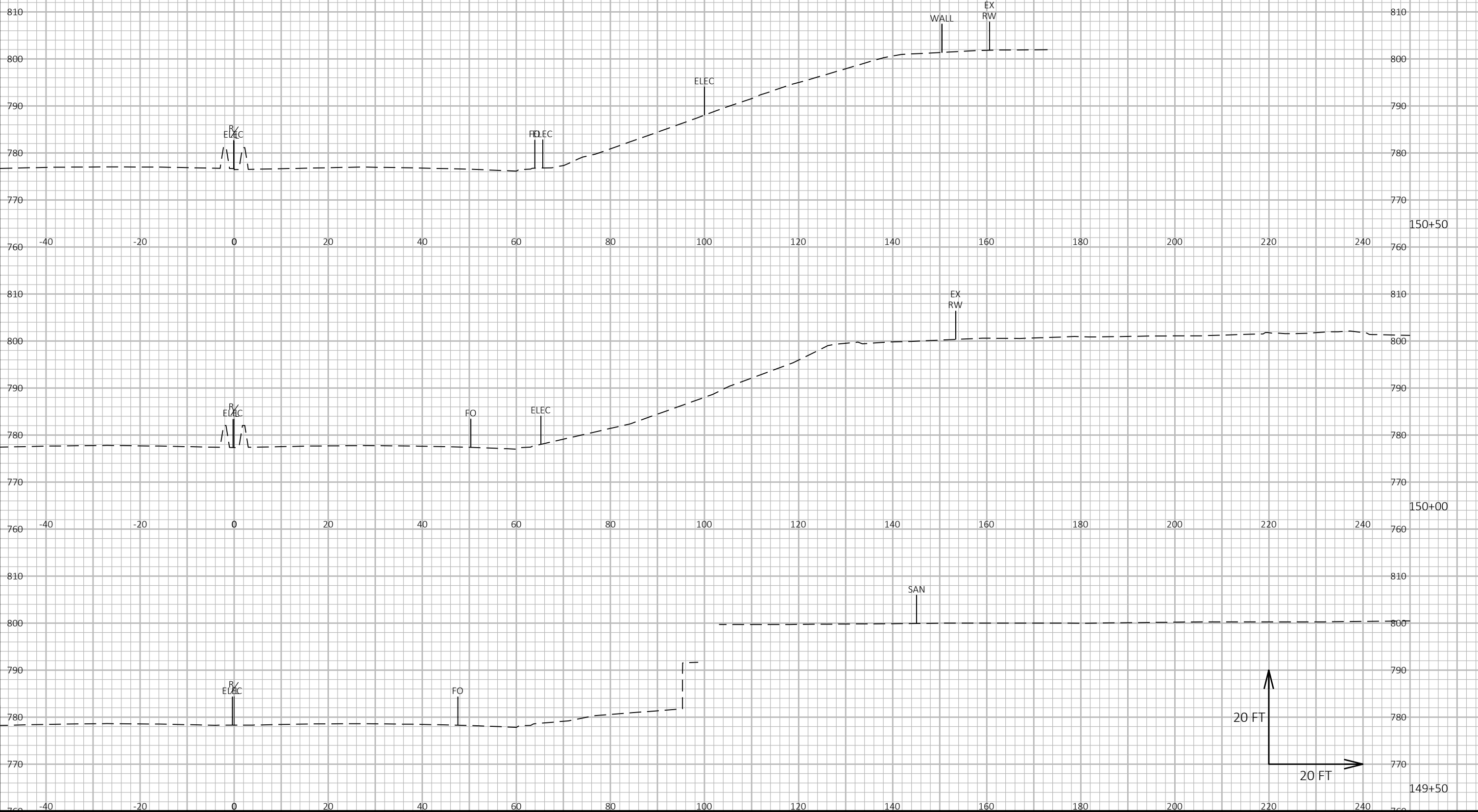
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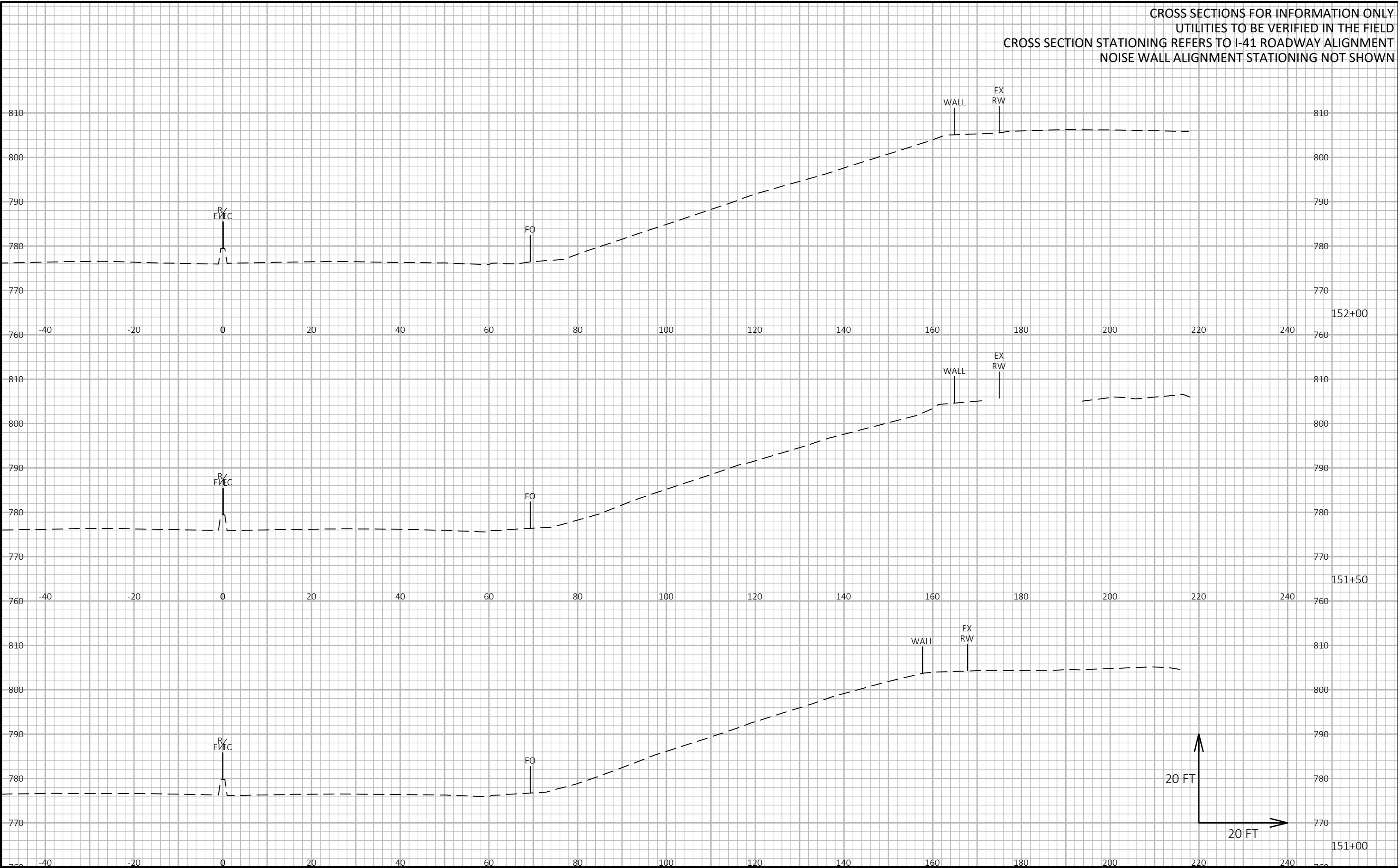


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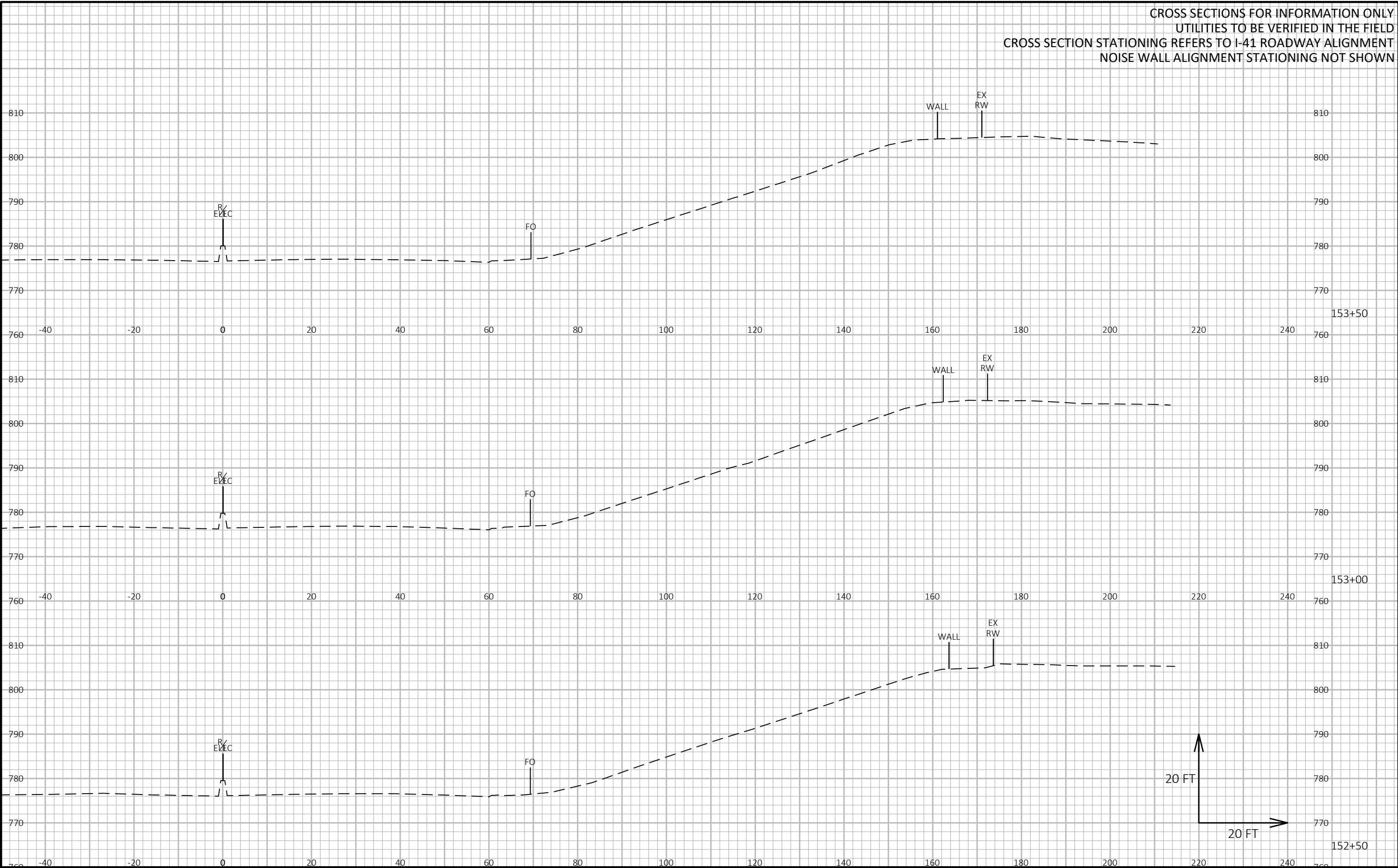
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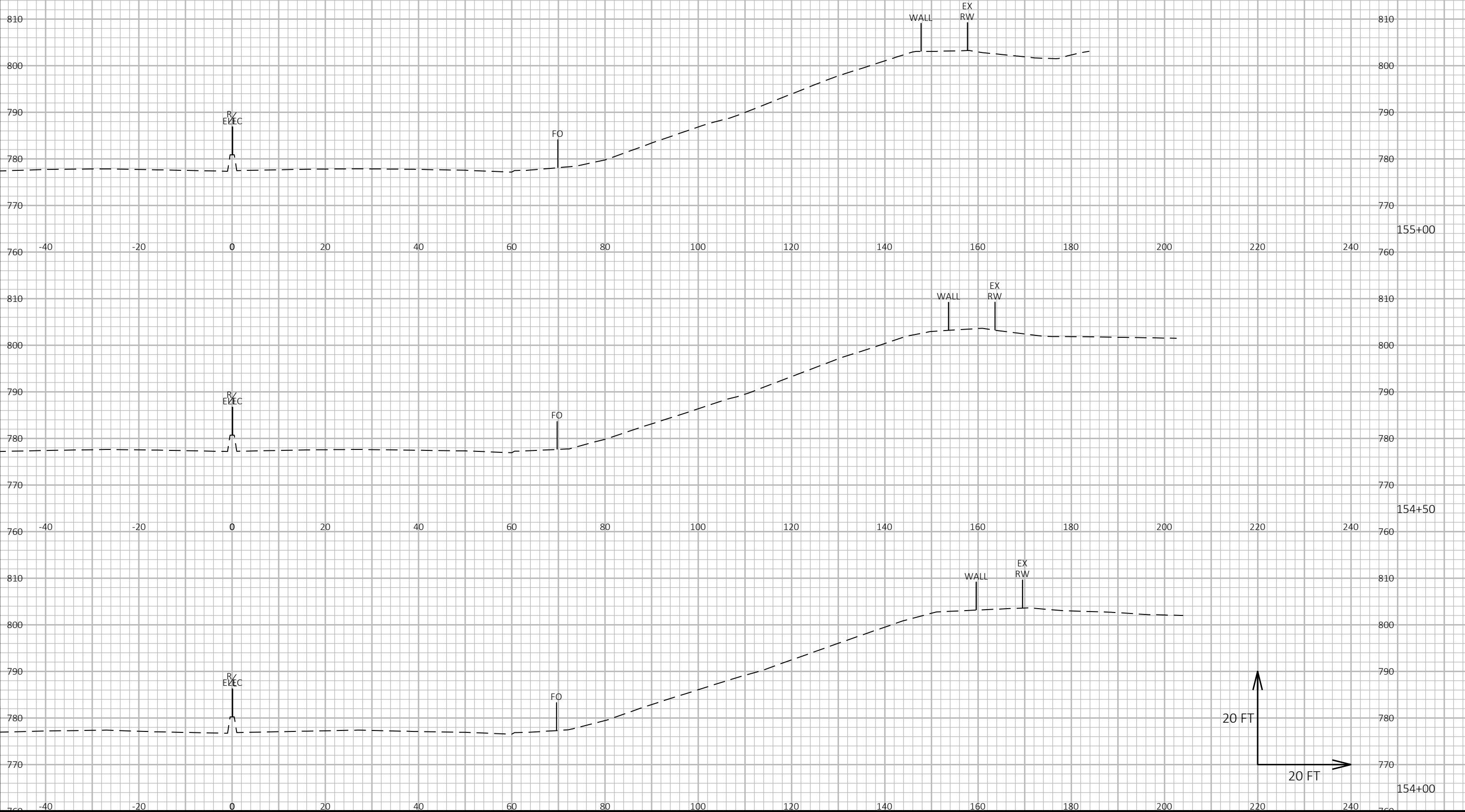


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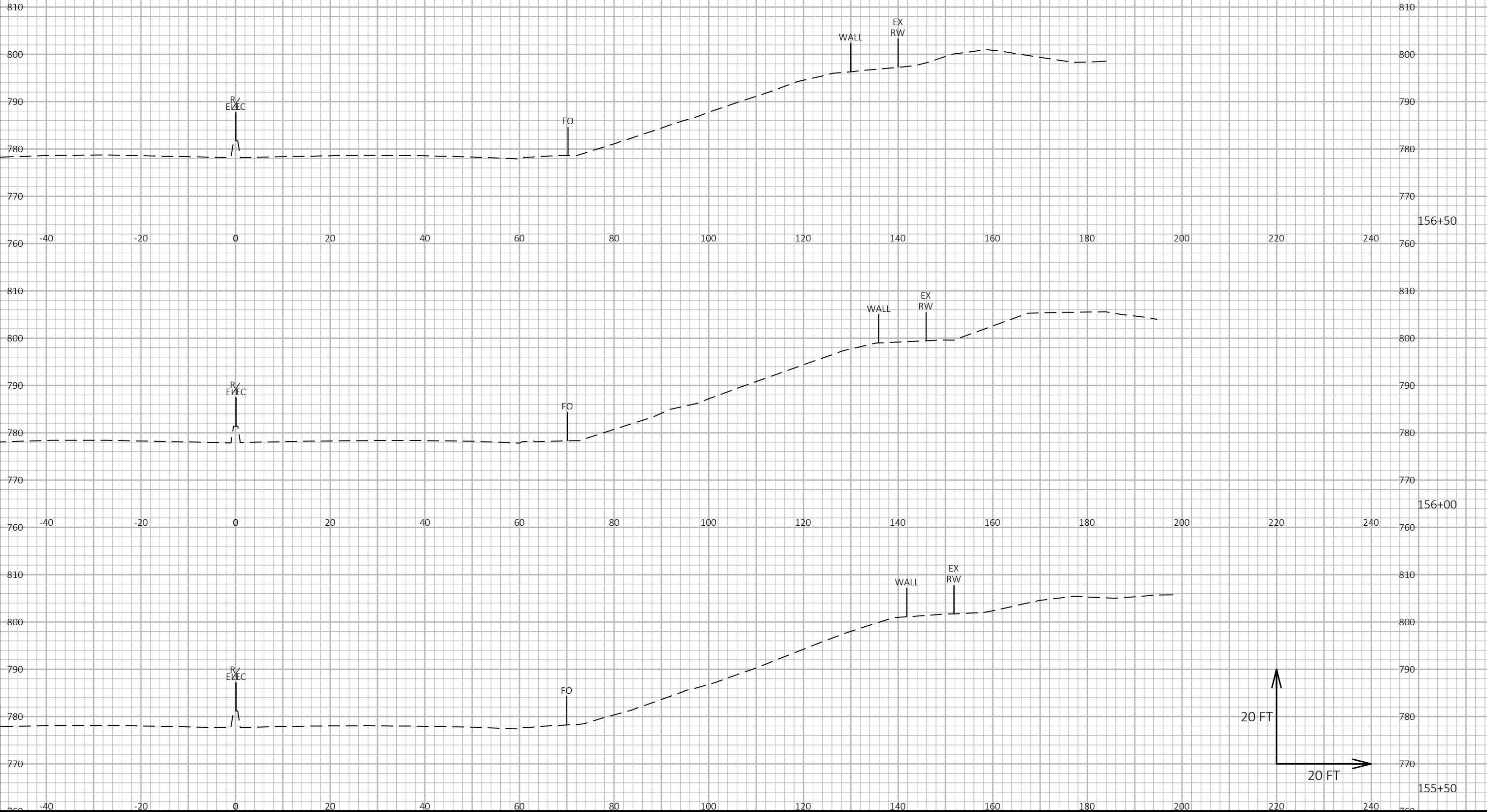


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PROJECT NO: 1090-03-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-108	SHEET 205	E
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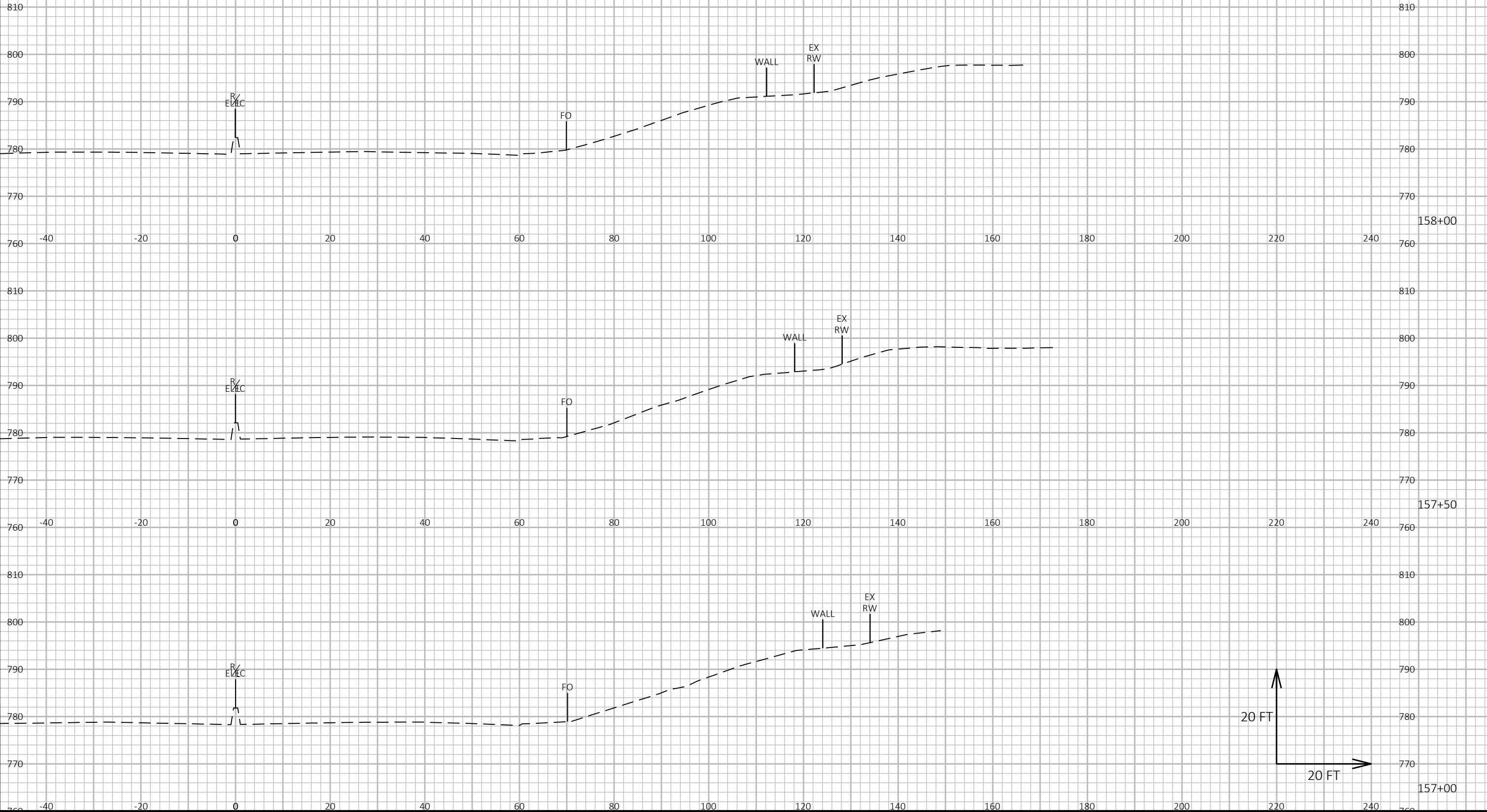
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NOISE WALL ALIGNMENT STATIONING NOT SHOWN



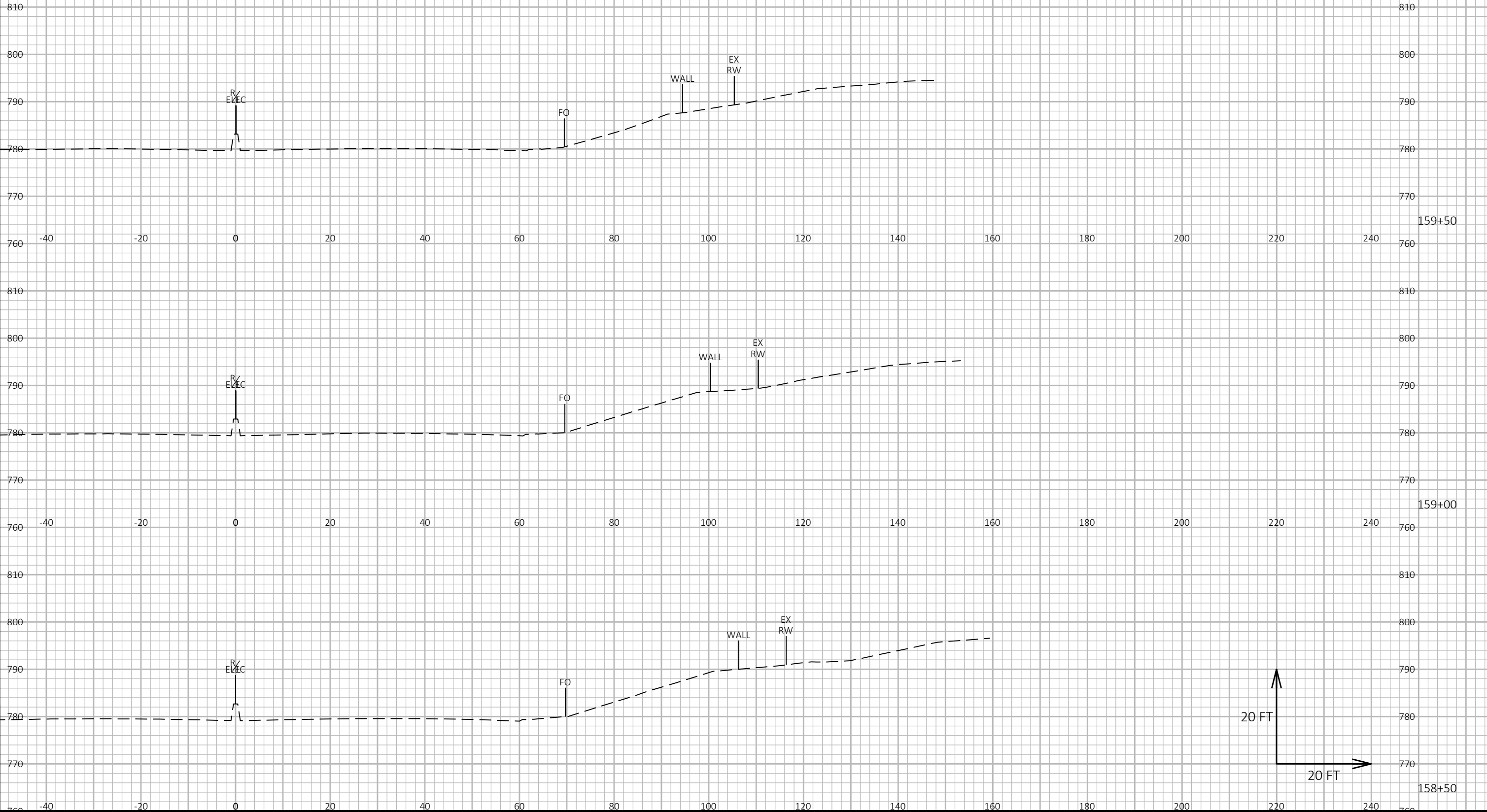
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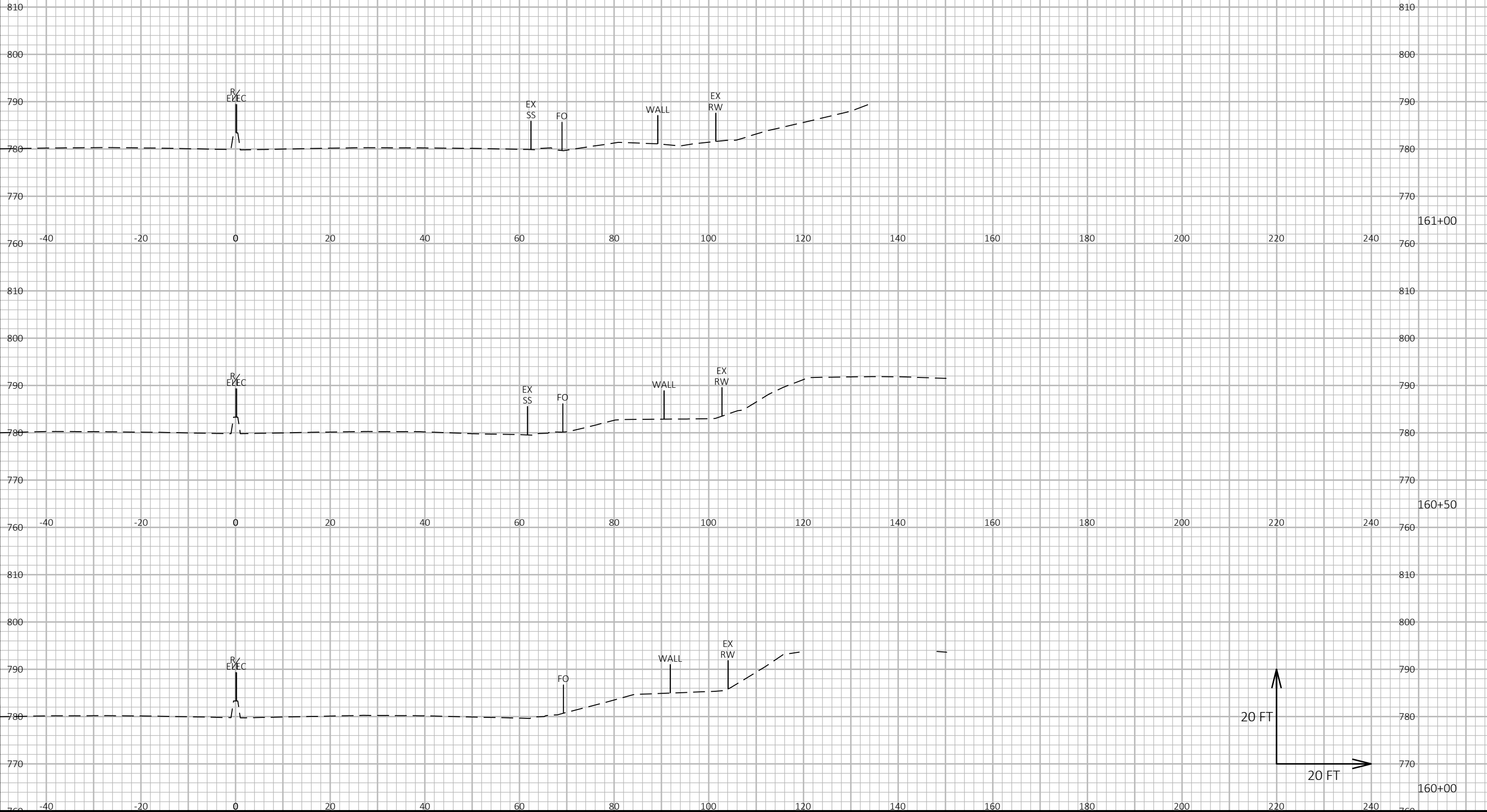
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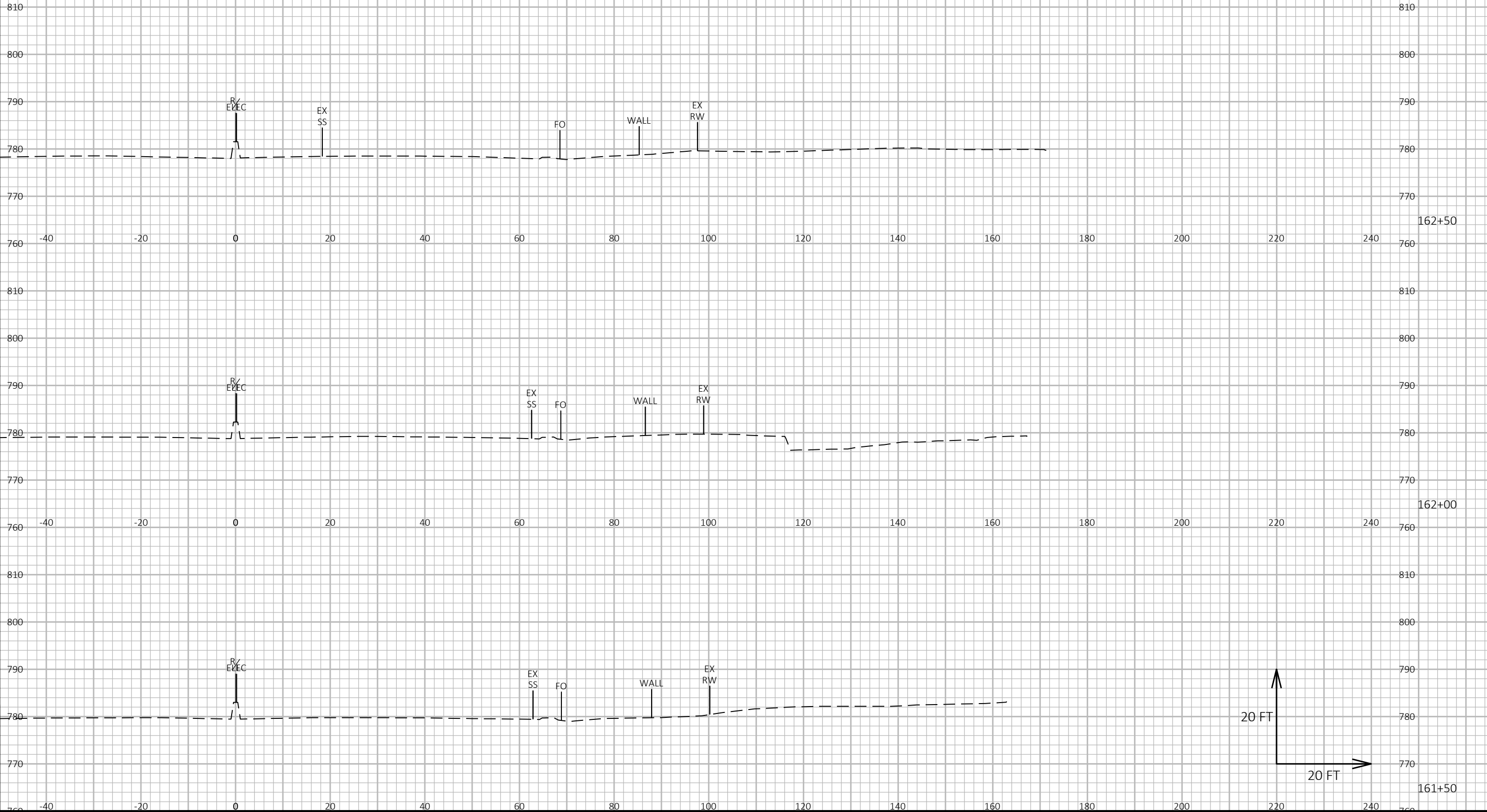
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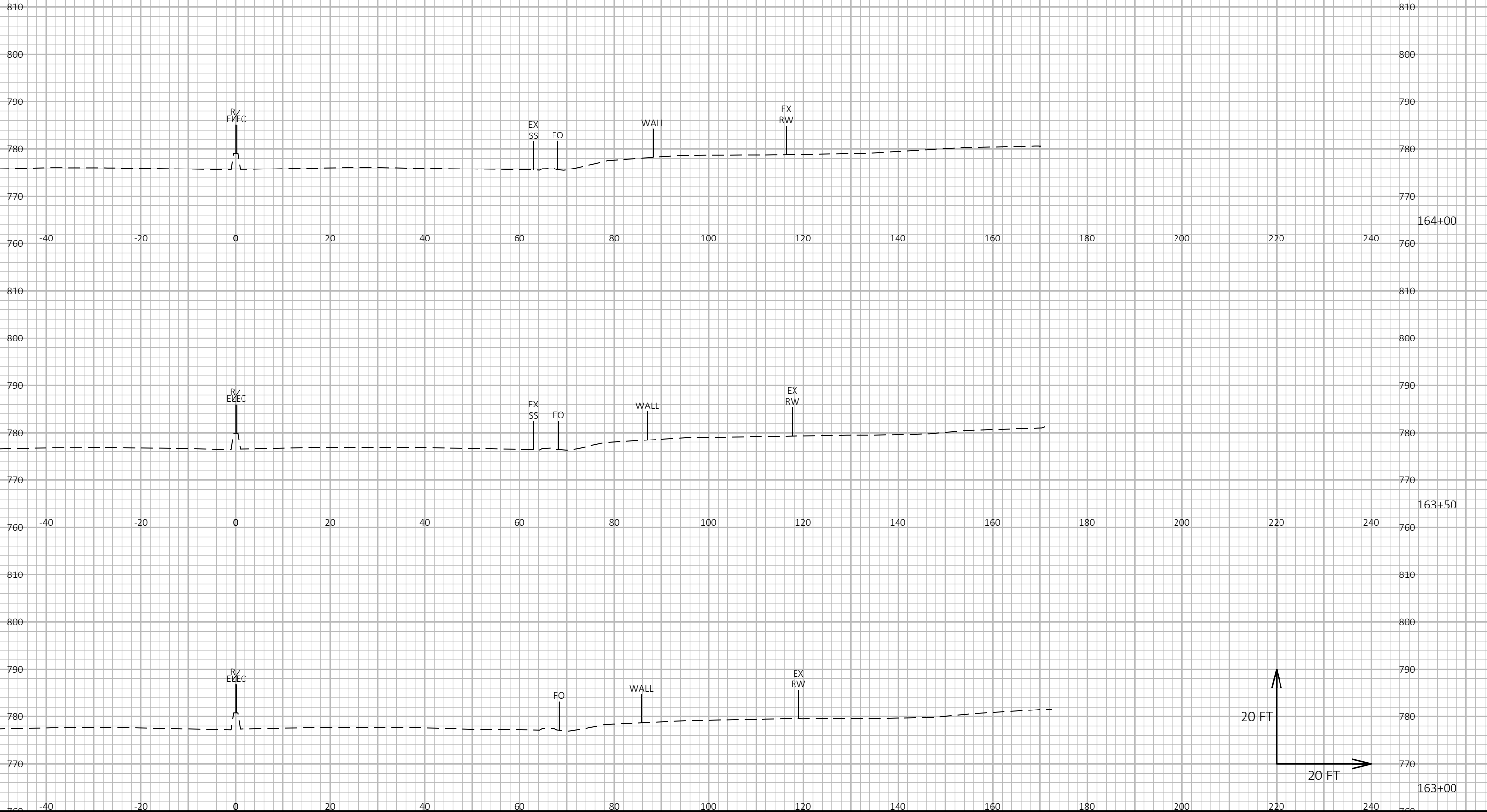
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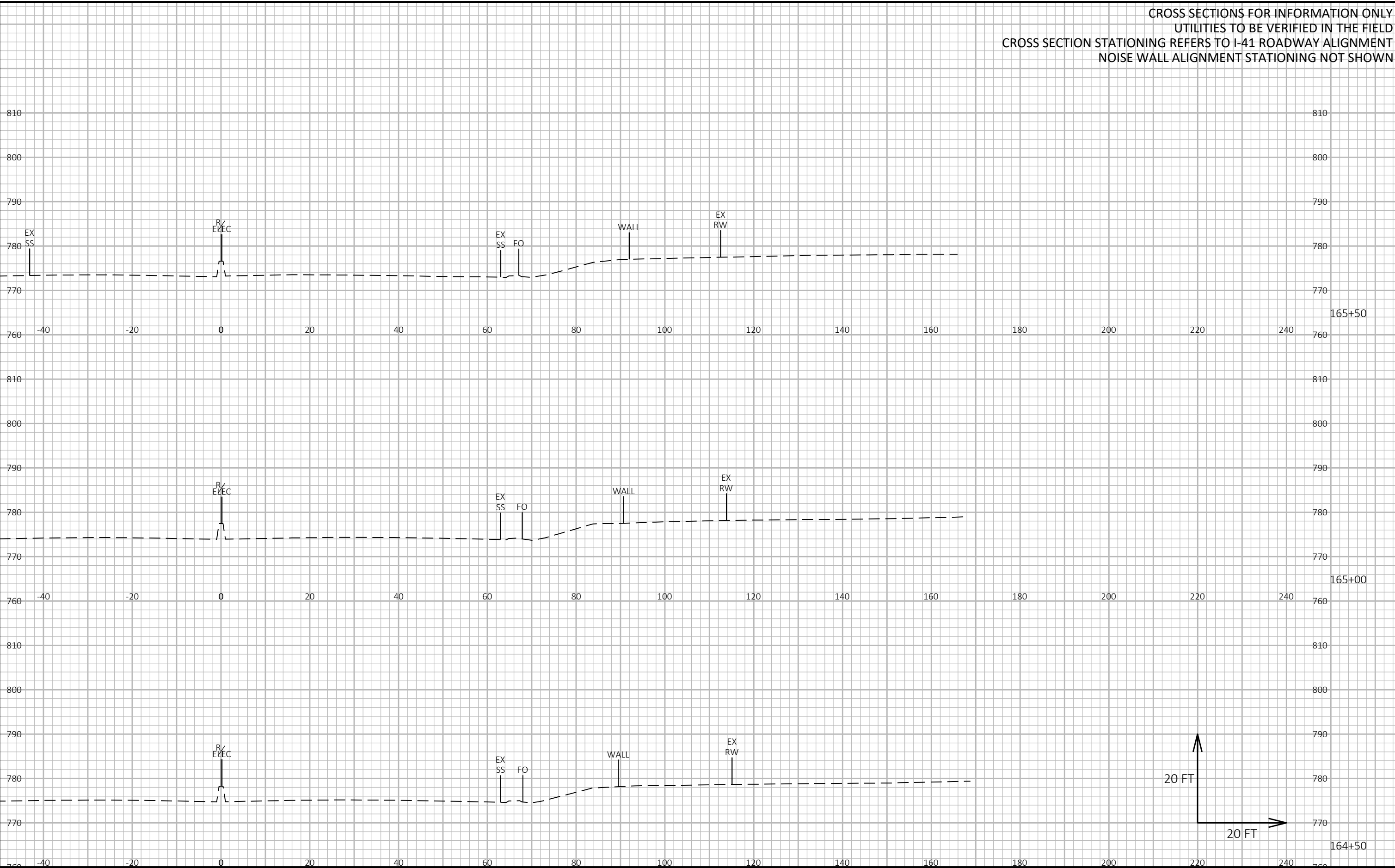


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PROJECT NO: 1090-03-78	HWY: IH 41	COUNTY: MILWAUKEE	CROSS SECTIONS: N-40-108	SHEET 211	E
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NOISE WALL ALIGNMENT STATIONING NOT SHOWN

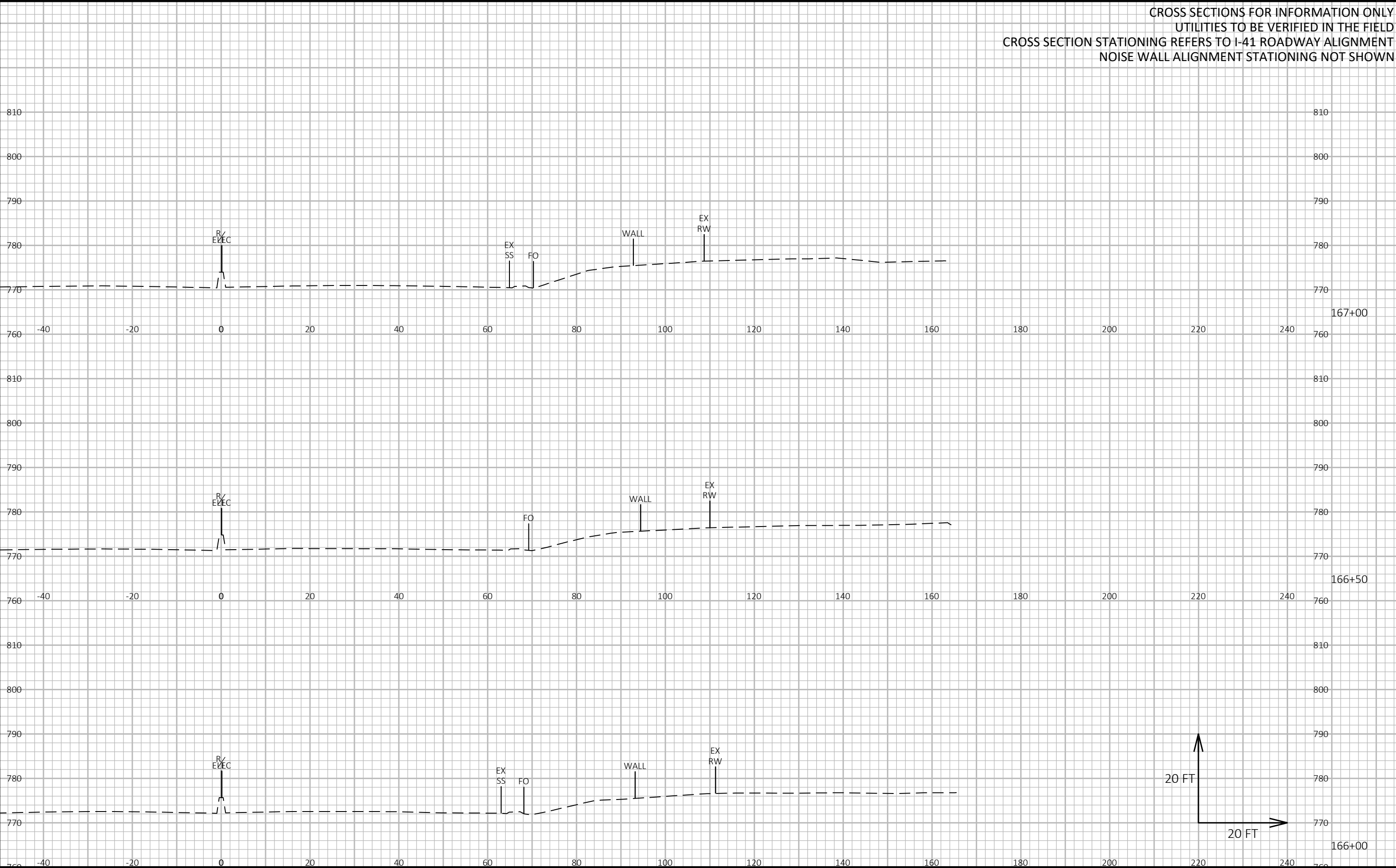


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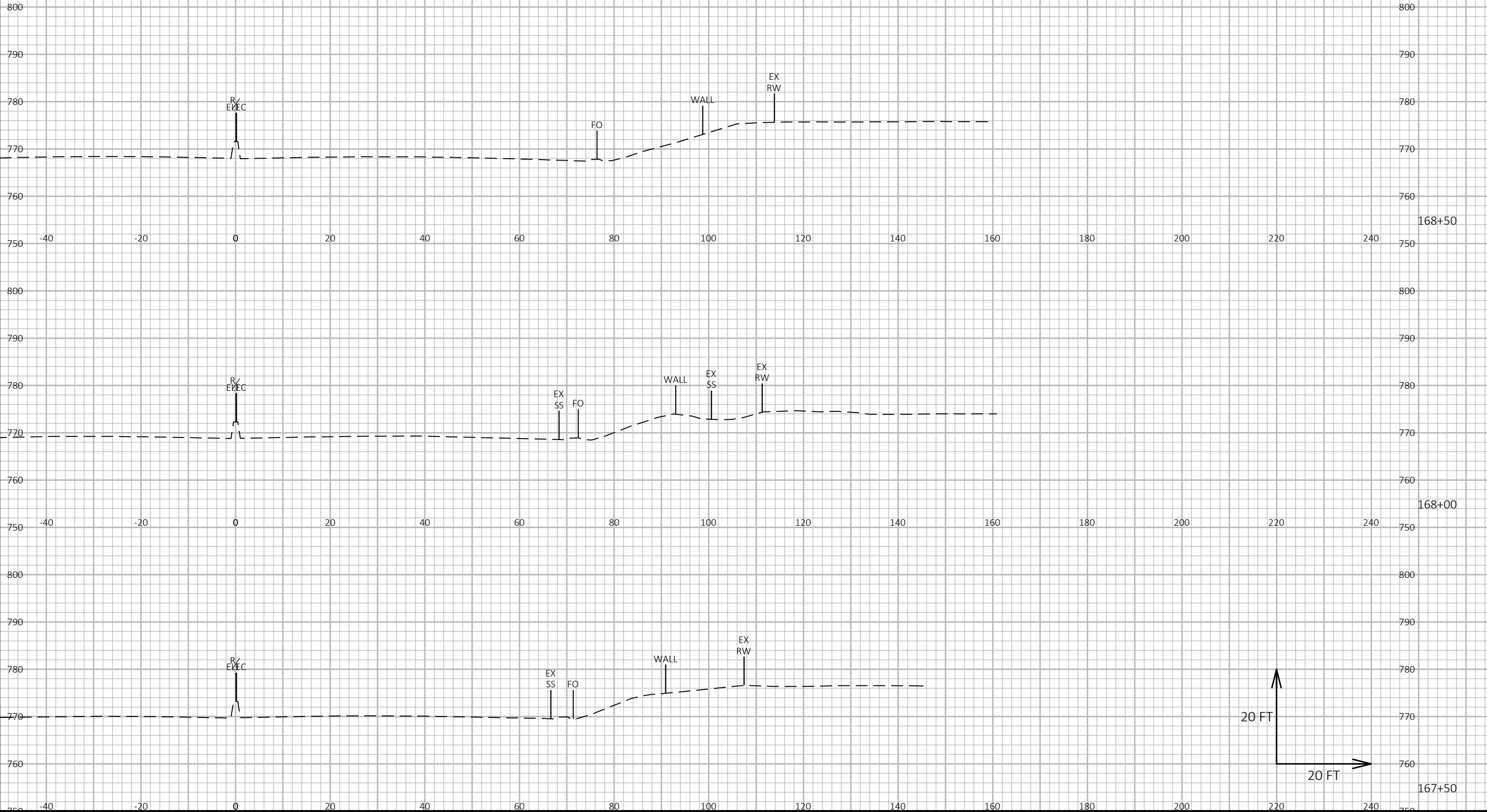
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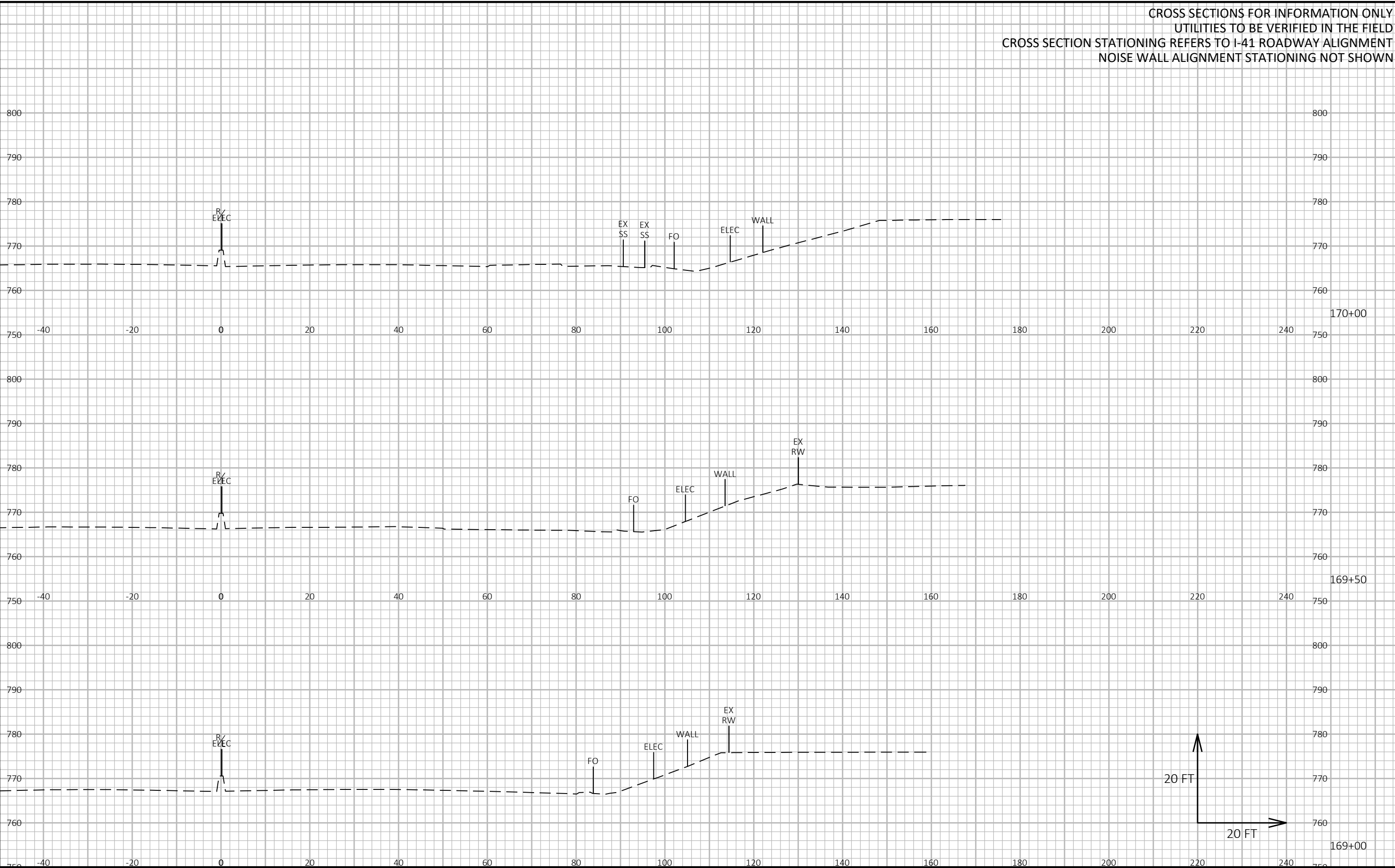
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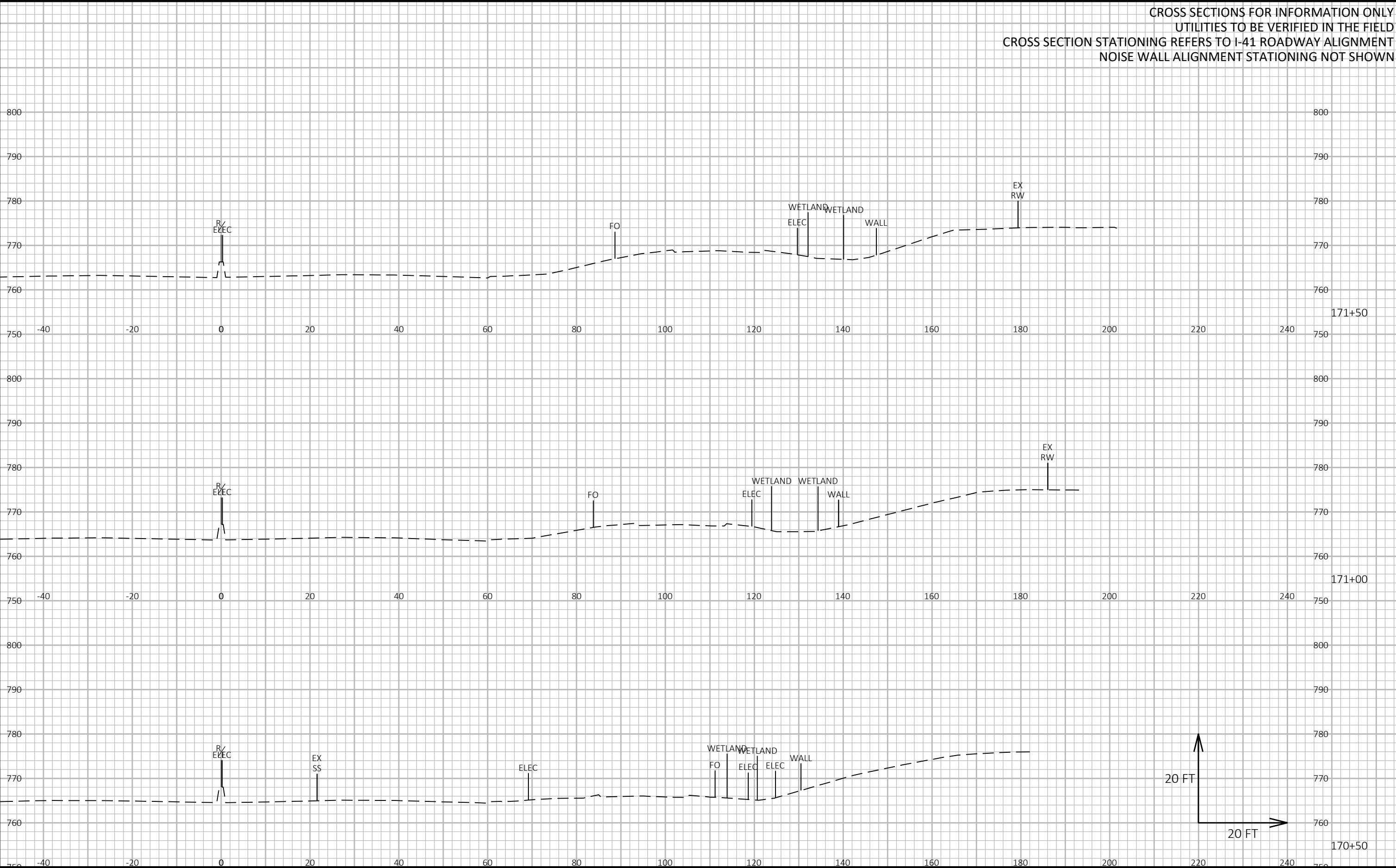
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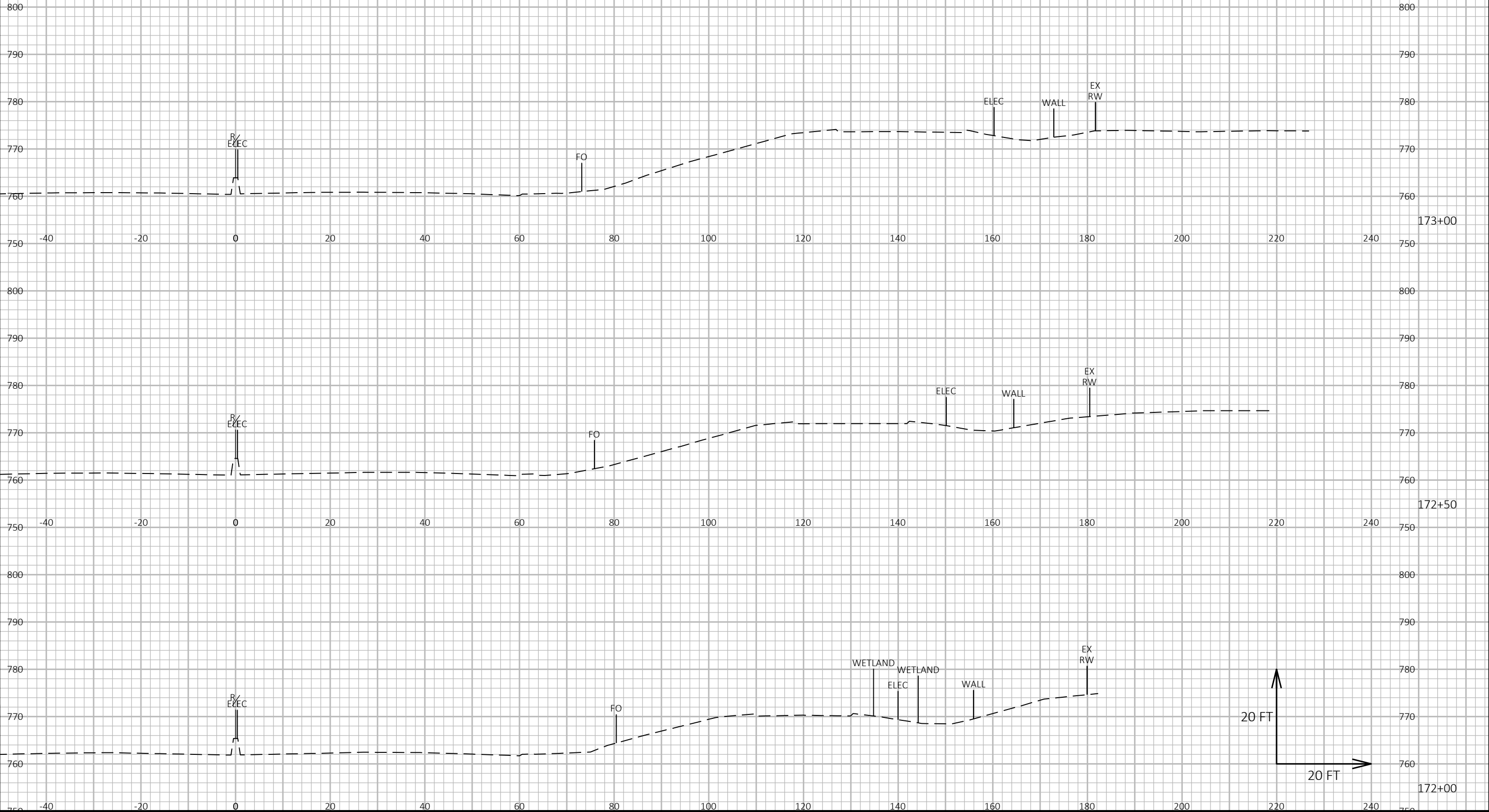
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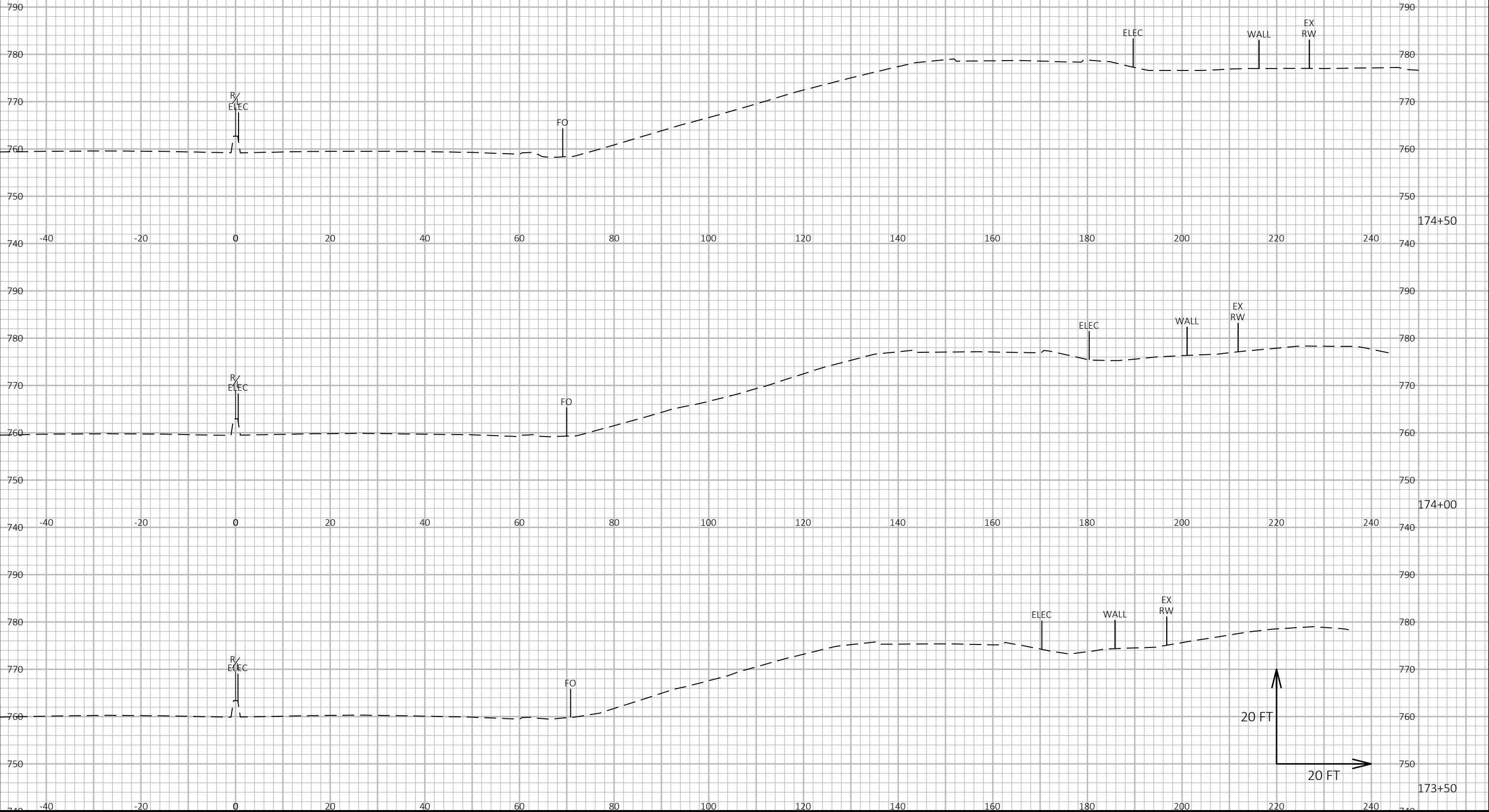
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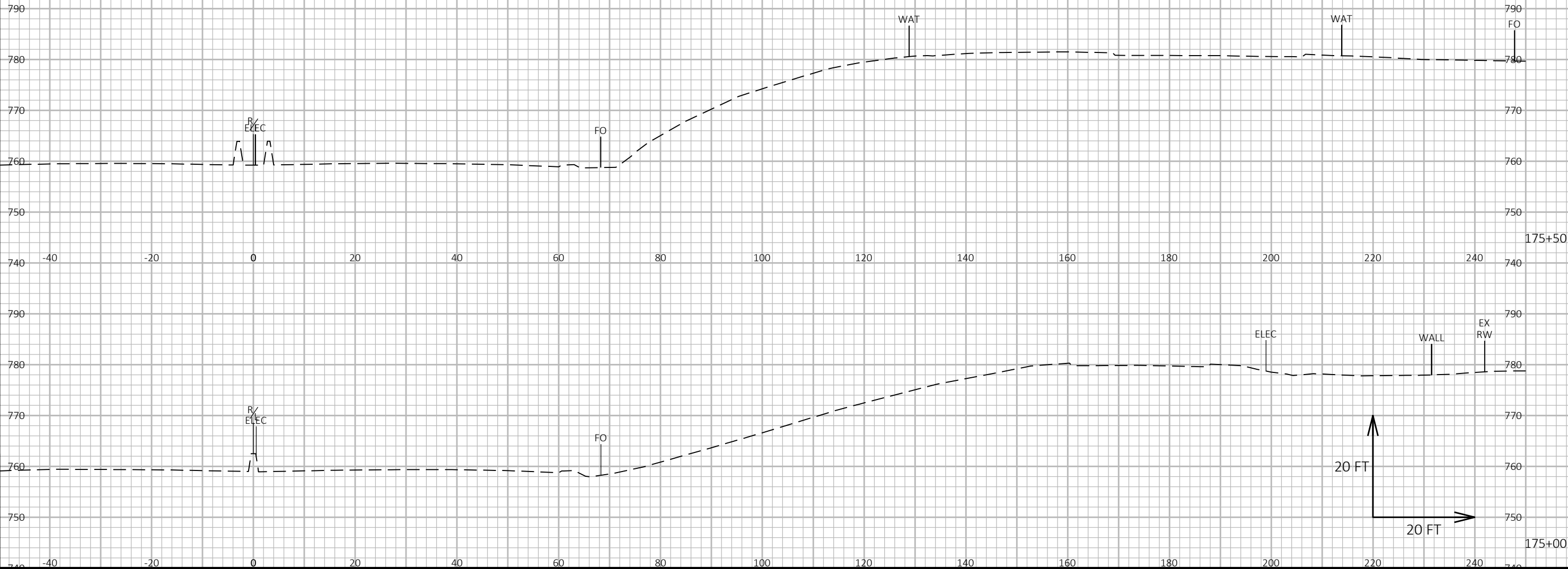
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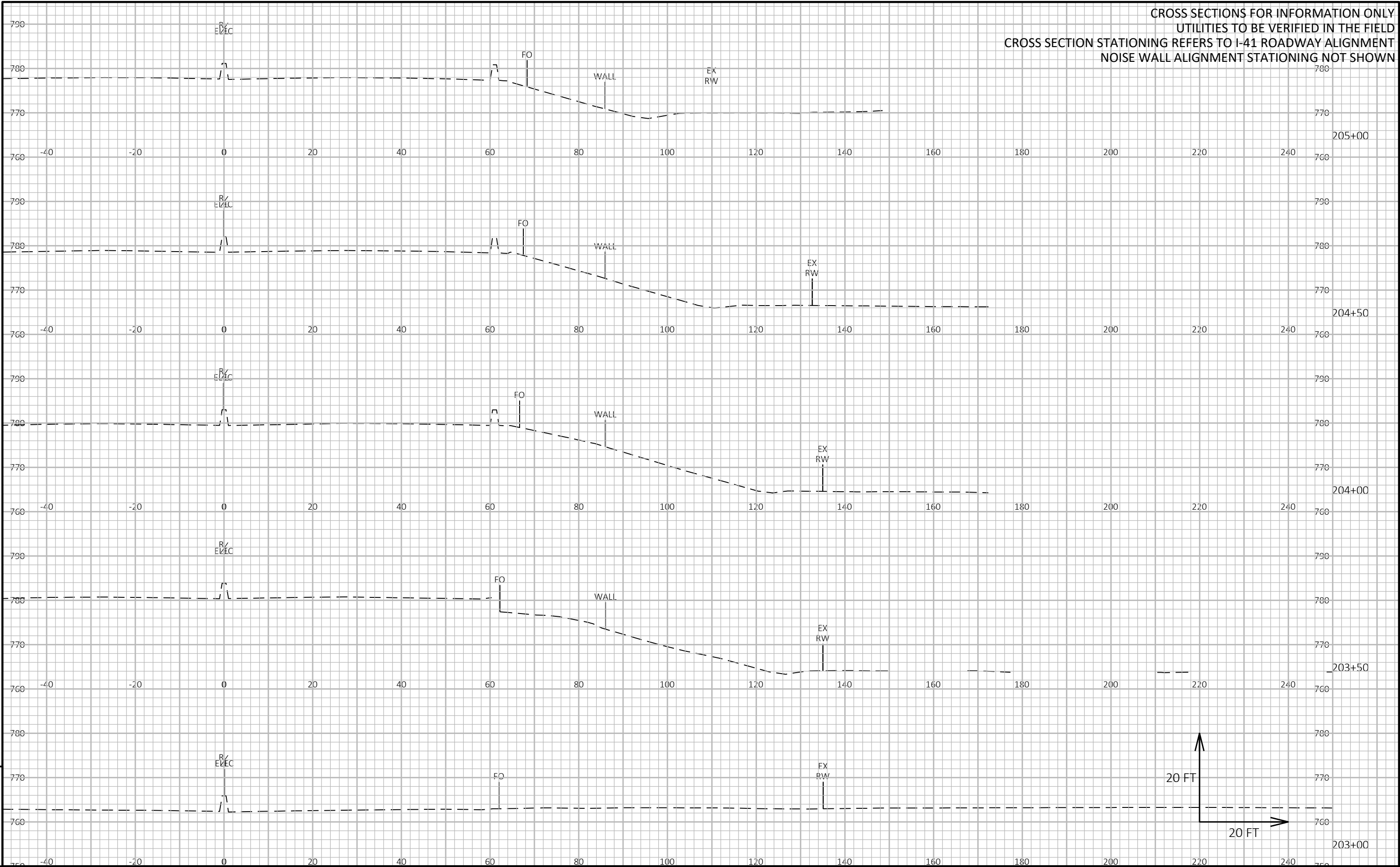


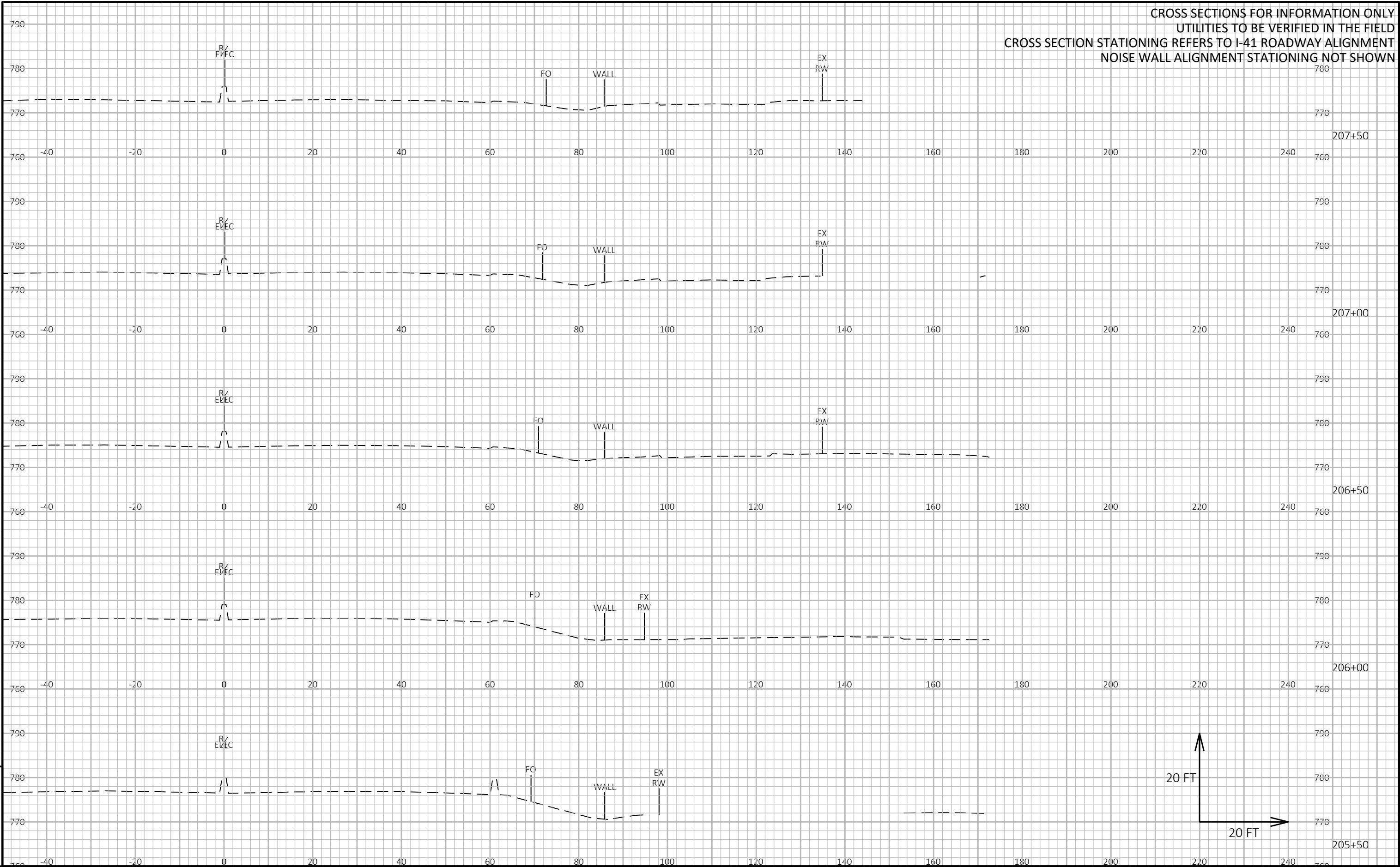
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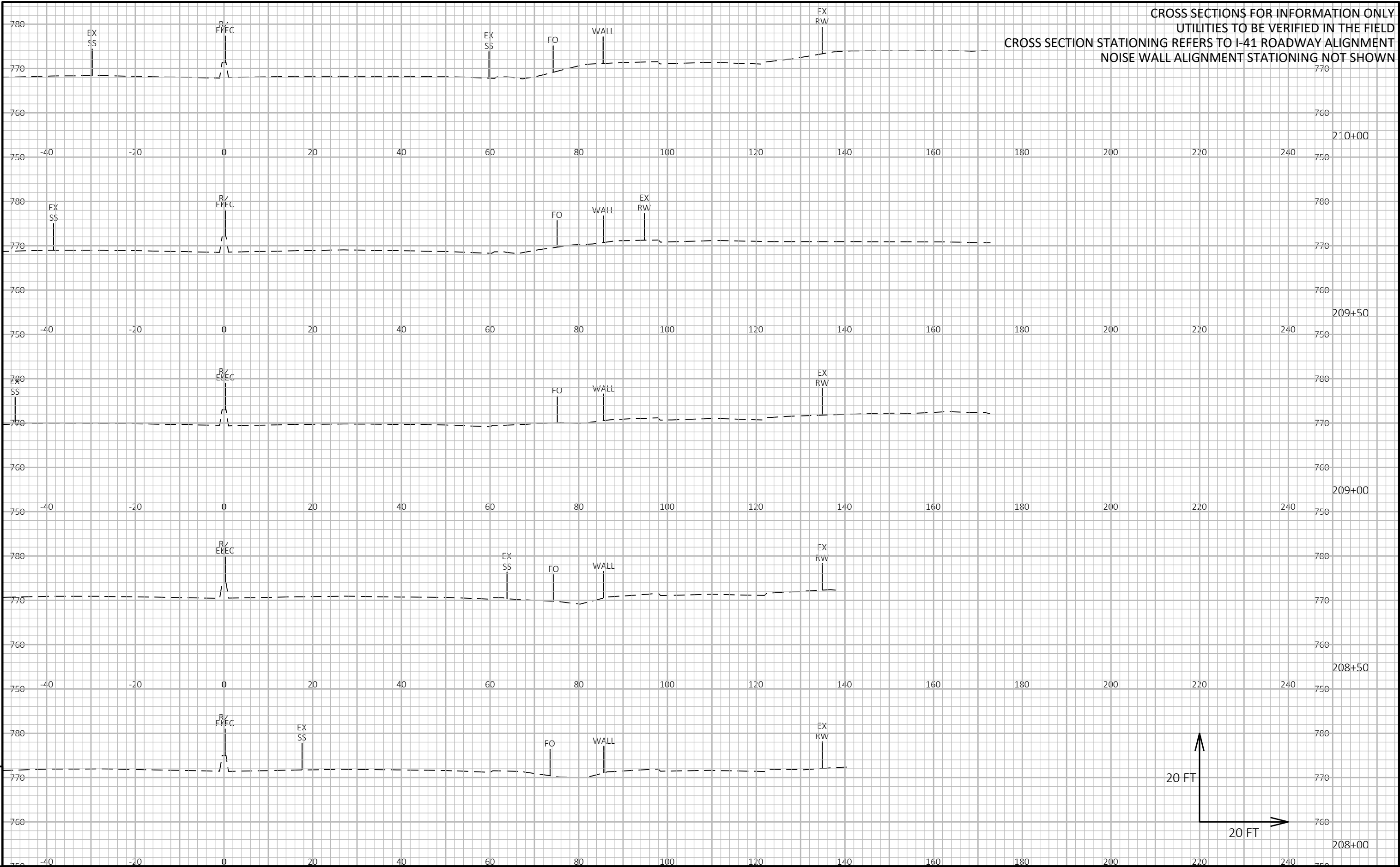


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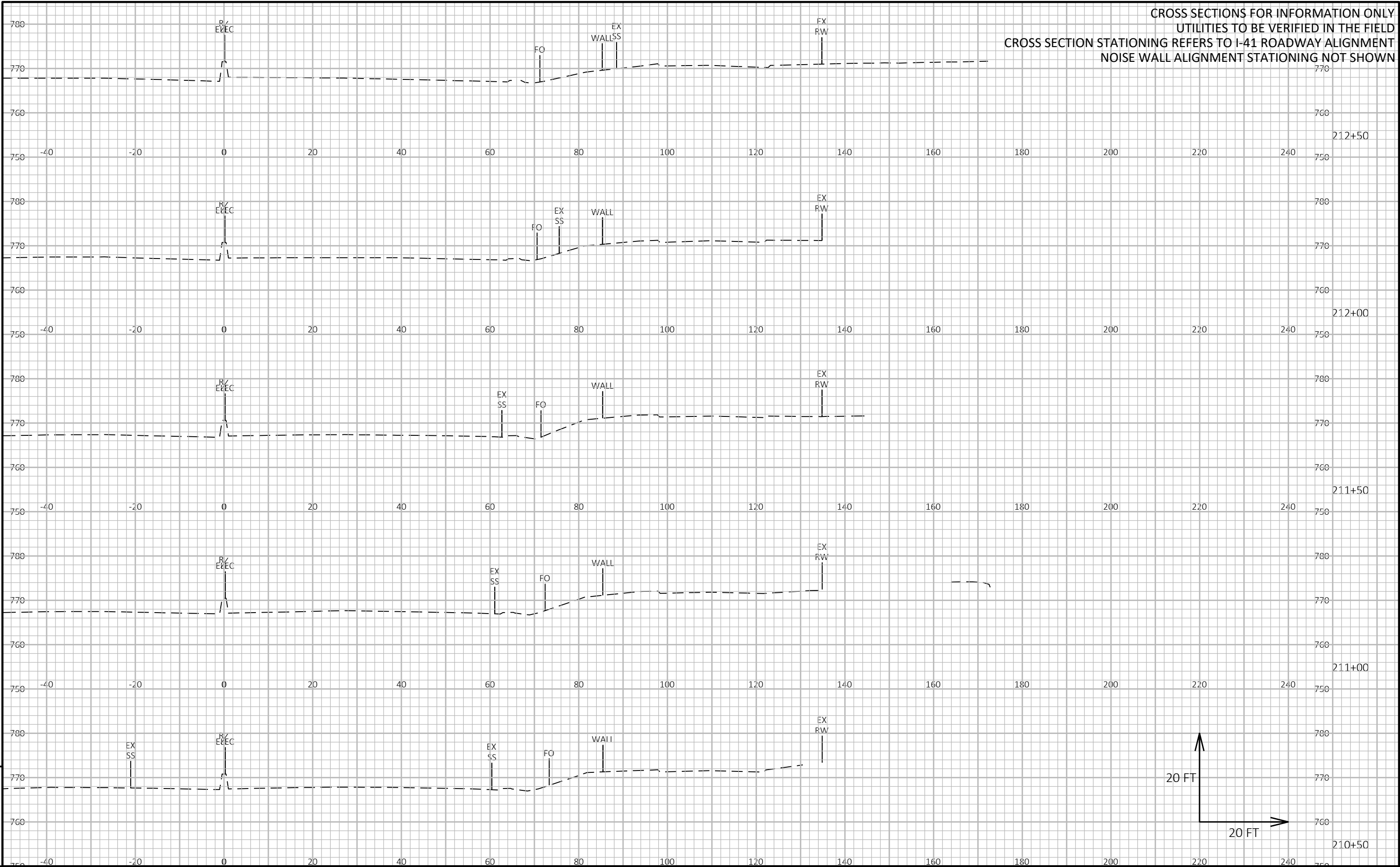




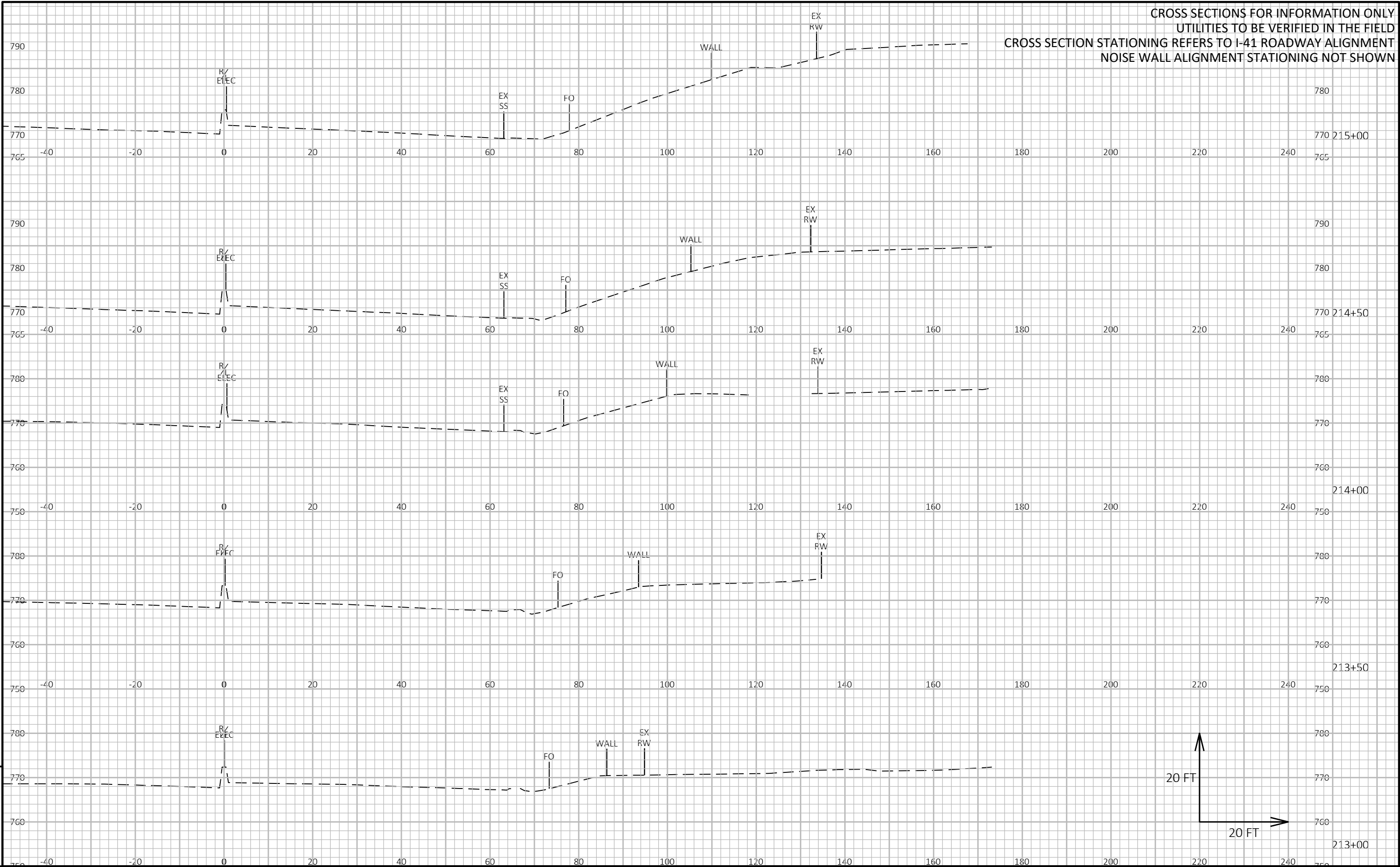


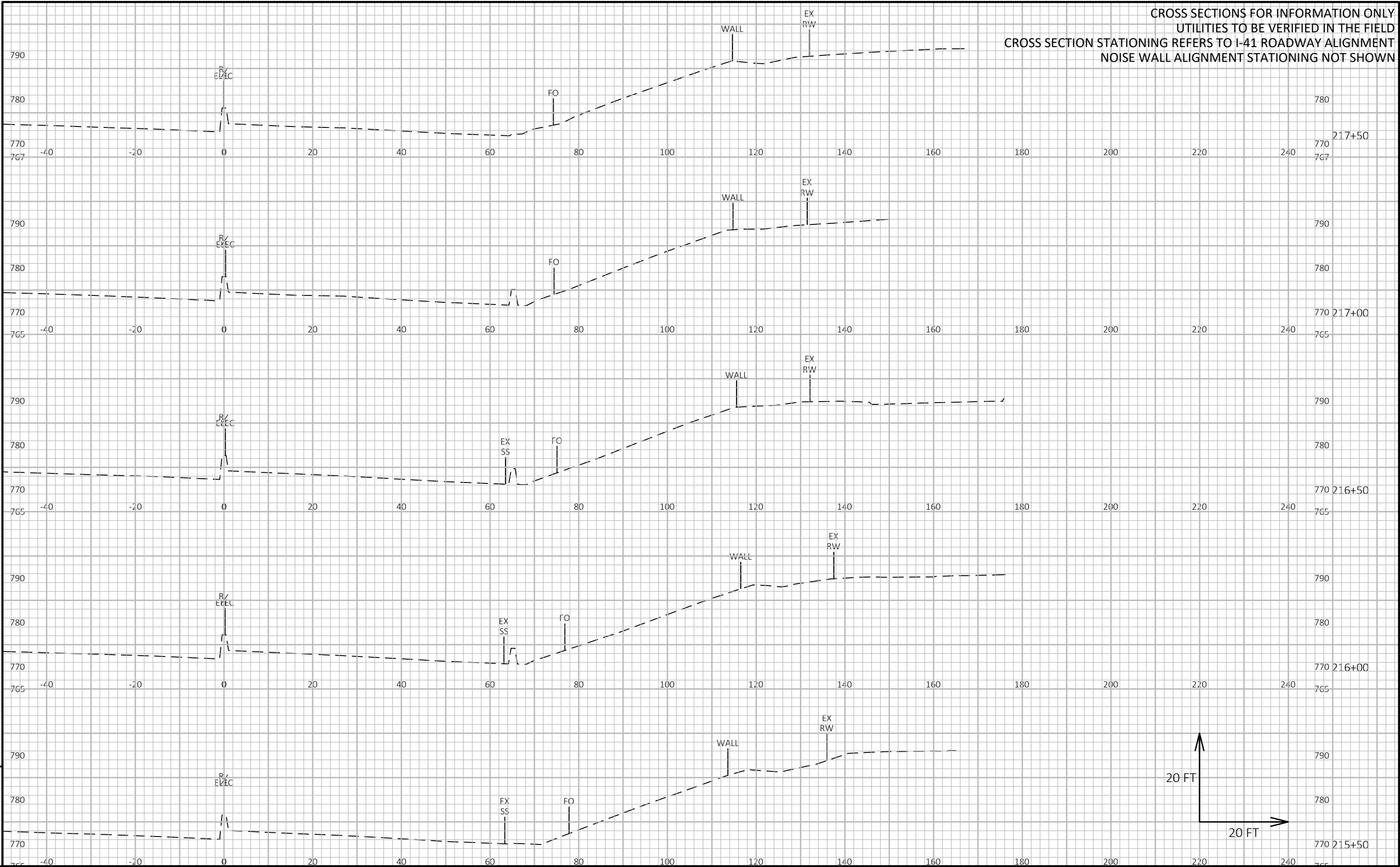


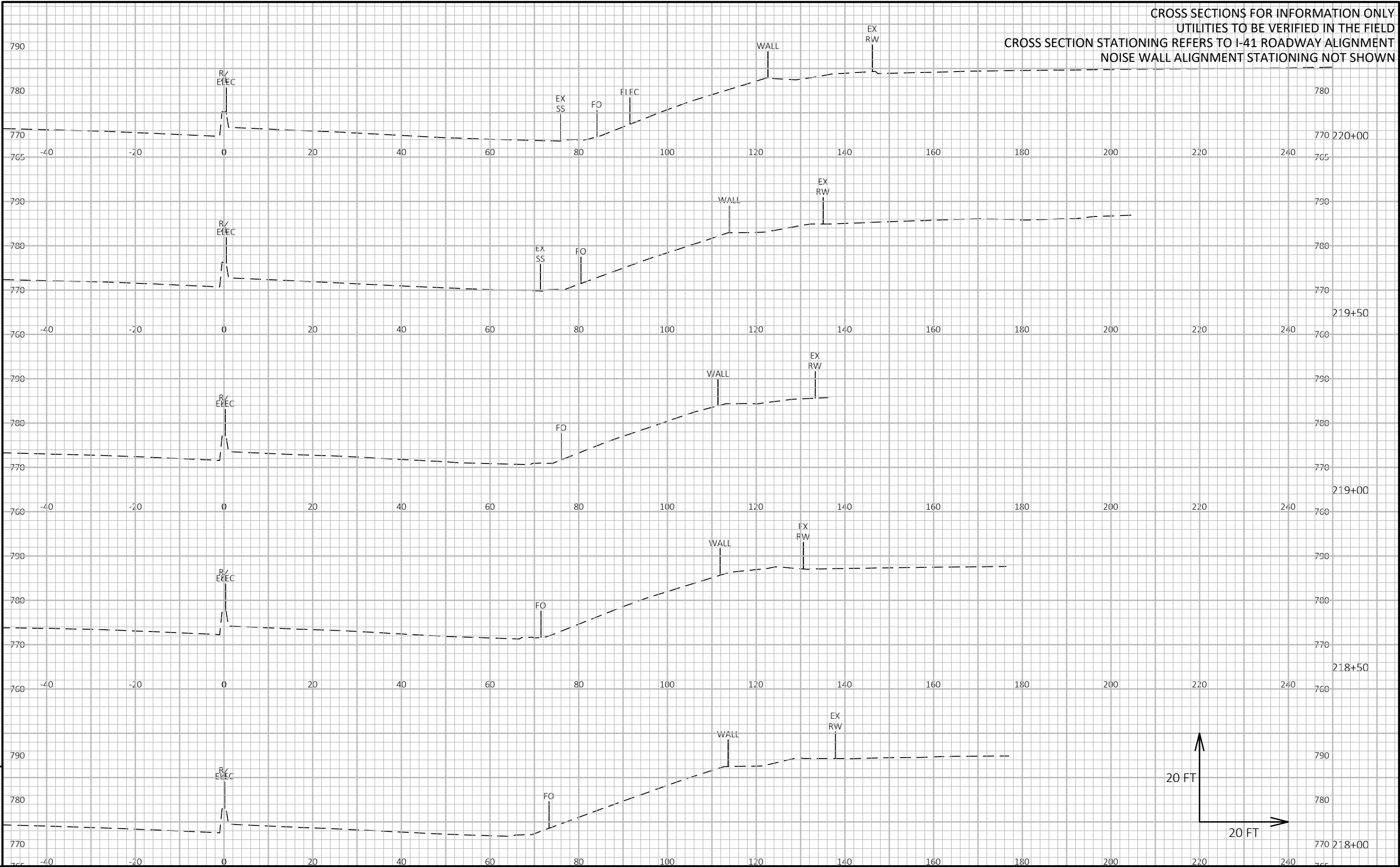
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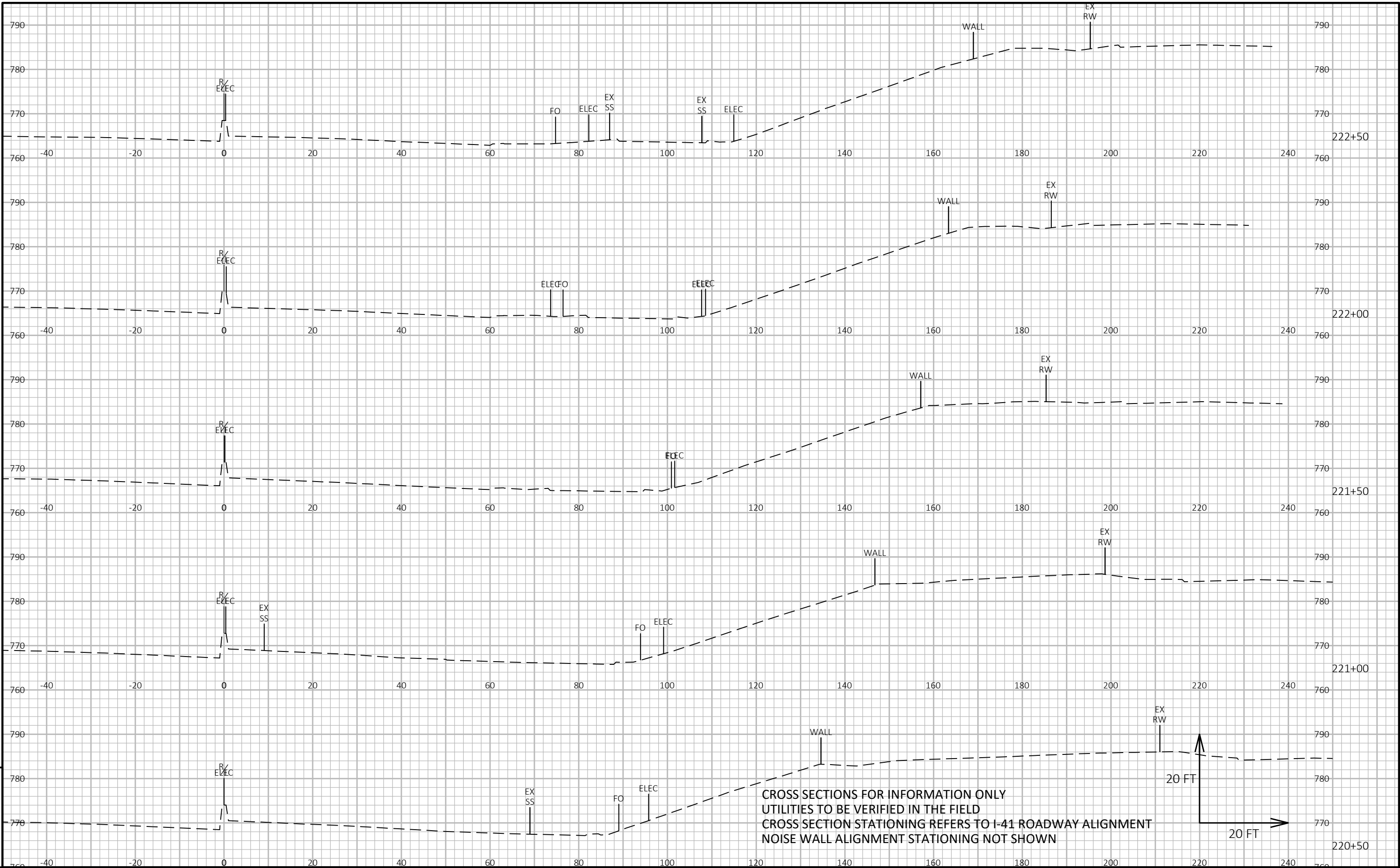


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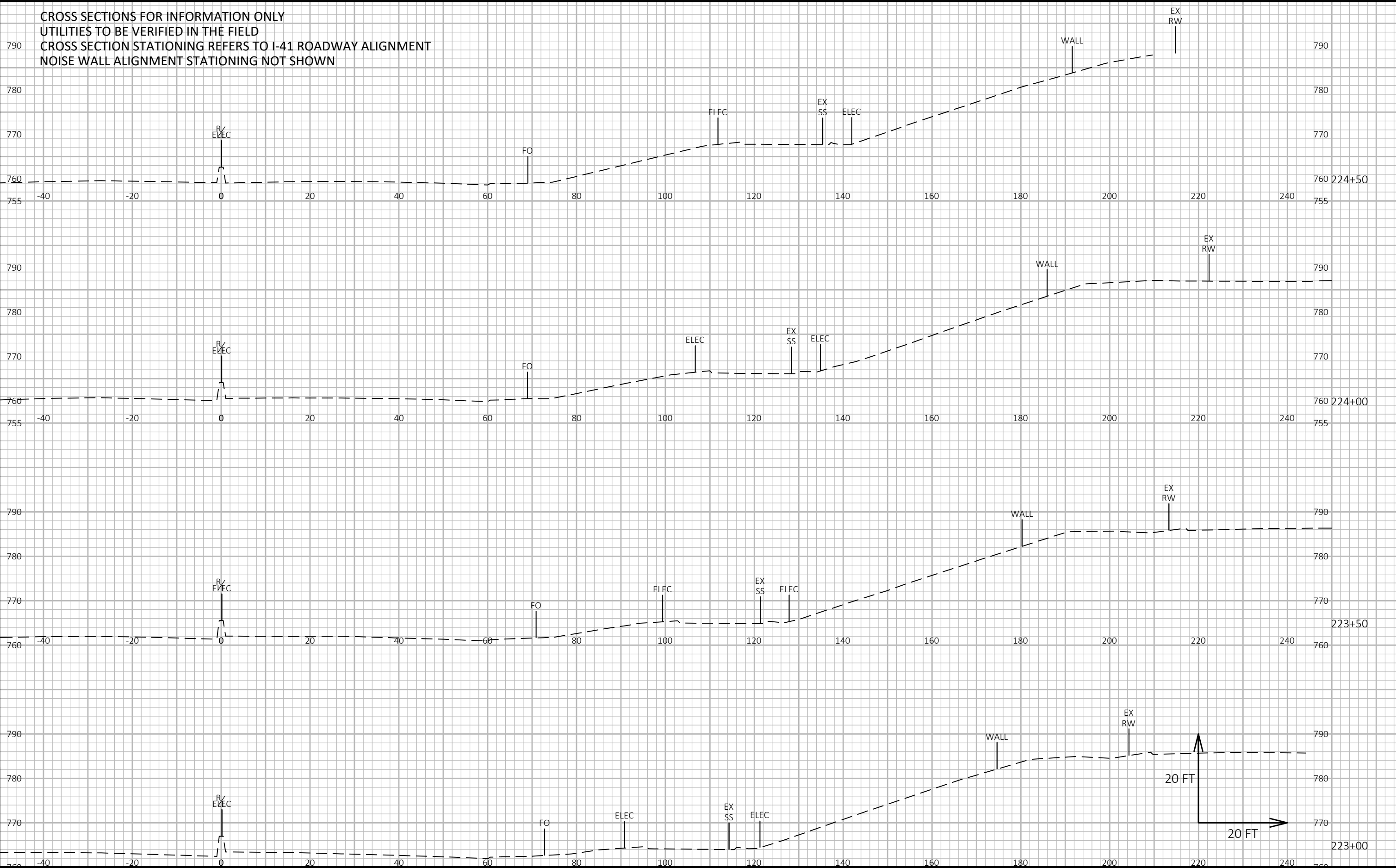








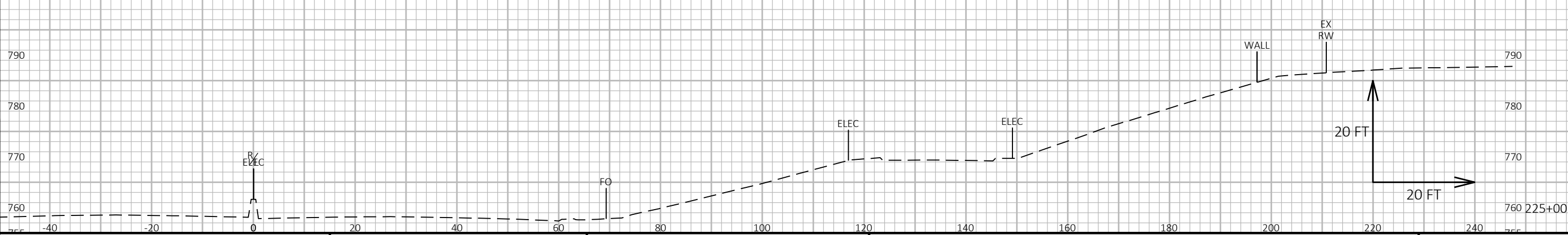
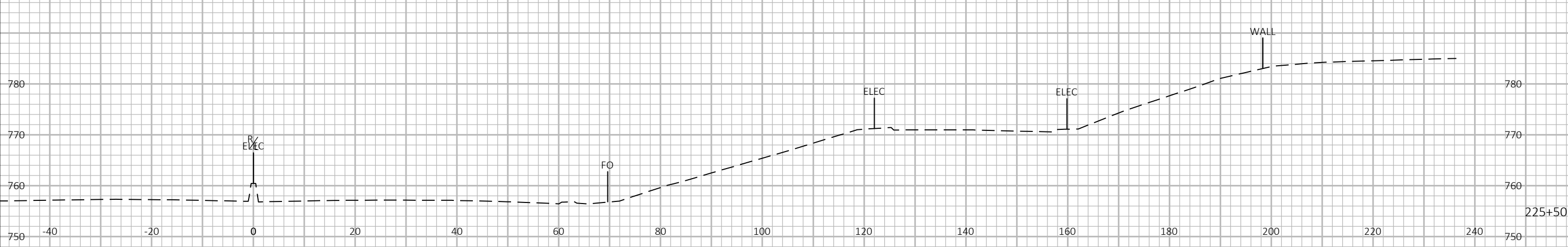
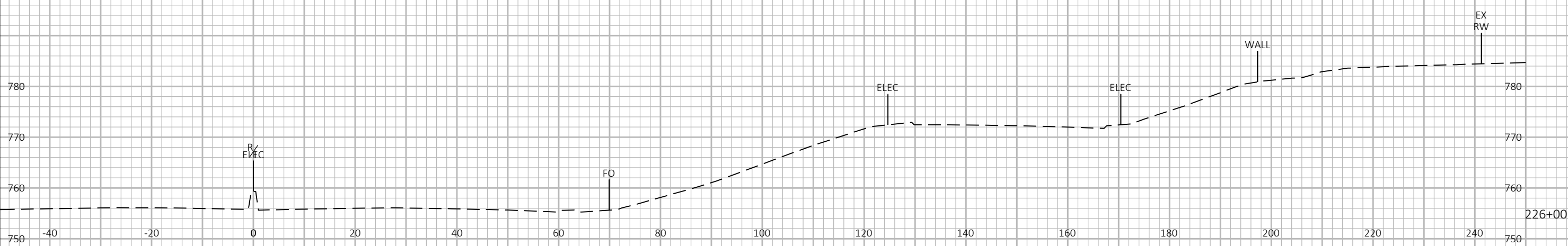
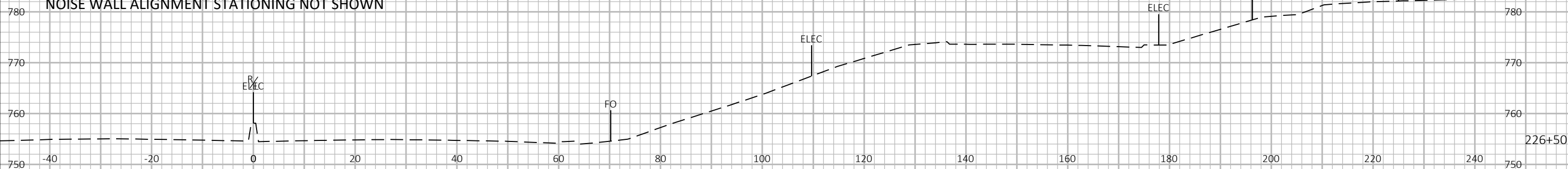
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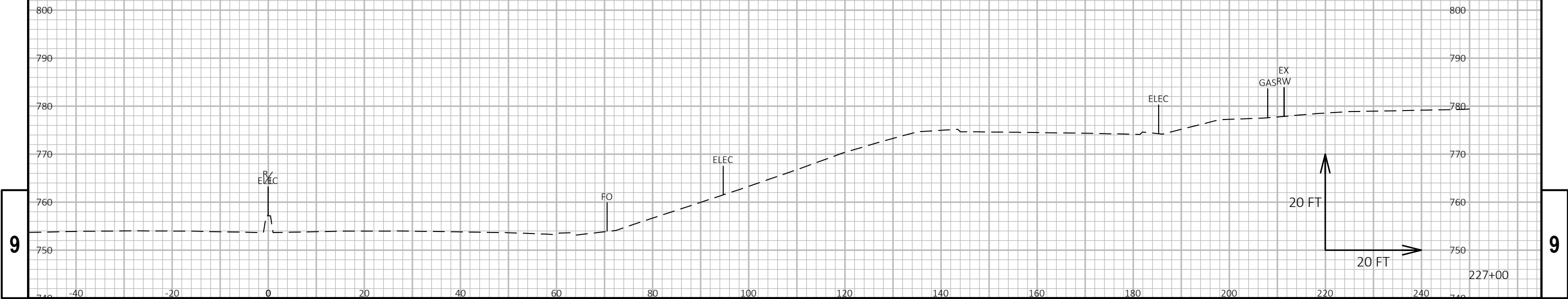
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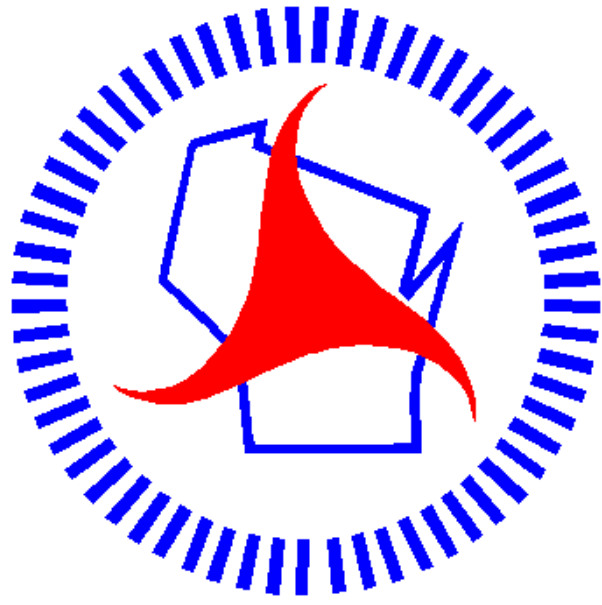


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PROJECT NO:	1090-03-78	HWY:	IH 41	COUNTY:	MILWAUKEE	CROSS SECTIONS:	N-40-109	SHEET	230	E
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Notes



Wisconsin Department of Transportation

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