

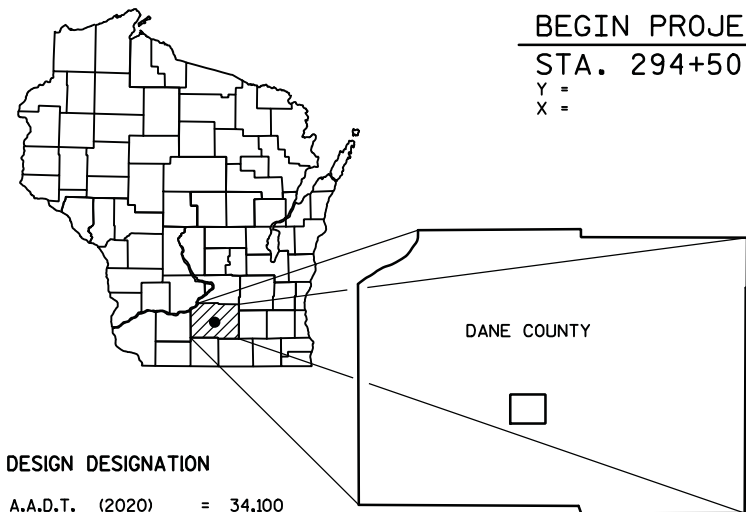
PROJECT ID: 5992-10-31/32
WITH: N/A

COUNTY: DANE

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS =



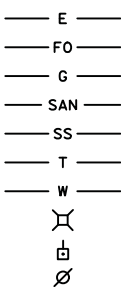
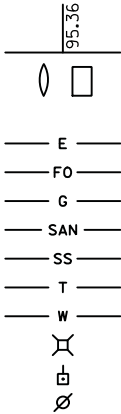
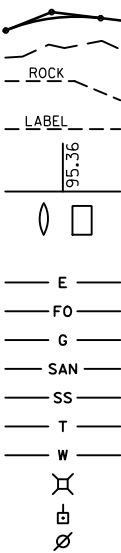
DESIGN DESIGNATION

A.A.D.T. (2020)	=	34,100
A.A.D.T. (2040)	=	37,400
D.H.V. (2040)	=	4,100
D.D.	=	59/41
T.	=	5.4%
DESIGN SPEED	=	40
ESALS	=	3,300,000

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	---
LOT LINE	----
LIMITED HIGHWAY EASEMENT	L---
EXISTING RIGHT OF WAY	---
PROPOSED OR NEW R/W LINE	---
SLOPE INTERCEPT	---
REFERENCE LINE	---
EXISTING CULVERT	---
PROPOSED CULVERT (Box or Pipe)	---
COMBUSTIBLE FLUIDS	CAUTION
MARSH AREA	---
WOODED OR SHRUB AREA	---

PROFILE	
GRADE LINE	---
ORIGINAL GROUND	---
MARSH OR ROCK PROFILE (To be noted as such)	---
SPECIAL DITCH	---
GRADE ELEVATION	95.36
CULVERT (Profile View)	---
UTILITIES	
ELECTRIC	---
FIBER OPTIC	---
GAS	---
SANITARY SEWER	---
STORM SEWER	---
TELEPHONE	---
WATER	---
UTILITY PEDESTAL	---
POWER POLE	---
TELEPHONE POLE	---



GENERAL NOTES

ELEVATIONS SHOWN ARE REFERENCED TO THE USGS DATUM NAVD 88 (1988).

GUTTER SLOPE ON CONCRETE CURB & GUTTER IS 6.25%.

WHEN THE QUANTITY OF BASE AGGREGATE, HMA PAVEMENT OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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.

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

CURVE DATA IS BASED ON ARC DEFINITION.

THE EXACT LOCATION OF EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY ARE TO BE 6-INCH TOPSOIL, FERTILIZED, SEED, MULCHED OR SOD.

BEARINGS SHOWN ON THE PLANS ARE SHOWN TO THE NEAREST SECOND.

ALL CURB AND GUTTER RADII, PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

A VERTICAL SAWCUT WILL BE MADE THROUGH PAVEMENTS AT REMOVAL LIMITS.

TOP OF CASTING ELEVATIONS SHOWN FOR INLETS REFER TO THE CURB FLANGE ELEVATION AT THE FRONT EDGE OF CURB ADJACENT TO THE CASTING.

ALL STORM SEWER INVERTS, ELEVATIONS, PIPE LENGTHS, AND GRADES ARE COMPUTED CENTER-TO-CENTER OF STRUCTURES.

EXCAVATION BELOW SUBGRADE (EBS) MAY BE REQUIRED IN AREAS WHERE POOR SOILS ARE ENCOUNTERED. EBS MATERIAL MAY BE USED AS FILL IN AREAS OUTSIDE OF ROADWAY SHOULDER POINTS. ESTIMATED EBS AREAS ARE SHOWN ON THE CROSS SECTIONS. ACTUAL LIMITS OF EBS IS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

HMA PAVEMENT SHALL BE CONSTRUCTED WITH THE FOLLOWING LAYER THICKNESSES:

- UPPER: 2.0" (4MT58-28H)
- MIDDLE: 2.5" (3MT58-28S)
- LOWER: 2.25" (3MT58-28S)

SILT FENCE IS TO BE PLACED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DESIGN CONTACT

AYRES ASSOCIATES
ATTN: DAN SCHRUM, P.E.
5201 E. TERRACE DRIVE, SUITE 200
MADISON, WI 53718
PHONE: (608) 443-1277
EMAIL: SCHRUMD@AYRESASSOCIATES.COM

DNR CONTACT

WISCONSIN DNR, SOUTHWEST REGION
ATTN: ERIC HEGGELUND
3911 FISH HATCHERY ROAD
FITCHBURG, WI 53711
PHONE: (608) 275-3301
EMAIL: ERIC.HEGGELUND@WISCONSIN.GOV

ORDER OF SECTION 2 SHEETS

- Typical Sections
- Project Overview
- Construction Details
- Intersections
- Contour Maps
- Erosion Control & Drainage
- Storm Sewer and Utilities
- Planting
- Signing
- Lighting
- Traffic Signals
- Pavement Marking
- Traffic Control and Construction Staging
- Fencing
- Alignment

* DENOTES UTILITIES THAT ARE NOT A DIGGERS HOTLINE MEMBER



UTILITY CONTACTS

WATERMAIN:

CITY OF MADISON WATER UTILITY
ATTN: ADAM WIEDERHOEFT
119 E. OLIN AVENUE
MADISON, WI 53713
PHONE: (608) 266-9121 FAX: (608) 266-4426
E-MAIL: AWIEDERHOEFT@MADISONWATER.ORG

STORM SEWER:

CITY OF MADISON ENGINEERING DIVISION
ATTN: JANET SCHMIDT
210 MARTIN LUTHER KING JR. BOULEVARD
CITY-COUNTY BUILDING, ROOM 115
MADISON, WI 53703
PHONE: (608) 266-4913
FAX: (608) 264-9275
E-MAIL: JSCHMIDT@CITYOFMADISON.COM

SANITARY SEWER:

CITY OF MADISON ENGINEERING DIVISION
ATTN: MARK MODER
210 MARTIN LUTHER KING JR. BOULEVARD
CITY-COUNTY BUILDING, ROOM 115
MADISON, WI 53703
PHONE: (608) 261-9250
FAX: (608) 264-9275
E-MAIL: MMODER@CITYOFMADISON.COM

SANITARY SEWER

MMSD
ATTN: JEN HURLEBAUS
1610 MOORLAND ROAD
MADISON, WI 53713

TOWN OF MIDDLETON SANITARY SEWER DISTRICT
DAVID SHAW, TOWN ADMINISTRATOR
7555 W. OLD SAUK RD.
VERONA, WI 53593
EMAIL: DSHAW@TOWN.MIDDLETON.WI.US

TRAFFIC SIGNALS & STREET LIGHTING:

CITY OF MADISON TRAFFIC ENGINEERING DIVISION
ATTN: BRIAN SMITH
P.O. BOX 2986
MADISON, WI 53701-2986
PHONE: (608) 261-9625
FAX: (608) 267-1158
E-MAIL: BSMITH@CITYOFMADISON.COM

GAS:

MADISON GAS & ELECTRIC
ATTN: STEVE BEVERSDORF
P.O. BOX 1231
MADISON, WI 53701-1231
PHONE: (608) 252-1552
E-MAIL: SBEVERSDORF@MGE.COM

CABLE TELEVISION:

CHARTER COMMUNICATIONS
ATTN: BRANDON STORM
2701 DANIELS ST.
MADISON, WI 53718
PHONE: (608) 274-3822 EX 6642
E-MAIL: BRANDON.STORM@CHARTERCOM.COM

ELECTRIC

AMERICAN TRANSMISSION COMPANY
ATC ATTN: ALEX METZ
5303 FEN OAK DRIVE MADISON, WI 53718
PHONE: (608) 877-7105
E-MAIL: AMETZ@ATCLLC.COM

UTILITY CONTACTS (CON'T)

ELECTRIC:

ALLIANT ENERGY
MICHAEL BROLIN
4902 N. BILTMORE LANE
MADISON, WI 53718-2148
PHONE: 608-458-4871

MADISON GAS & ELECTRIC
ATTN: MARK BOHM
P.O. BOX 1231 133 S BLAIR STREET
MADISON, WI 53701-1231 PHONE: (608) 252-7379
E-MAIL: RPARKER@MGE.COM

TELEPHONE:

AT&T WISCONSIN
ATTN: CAROL ANASON
316 W. WASHINGTON AVE., 4TH FLOOR
MADISON, WI 53703
PHONE: (920) 252-2385
E-MAIL: CA2624@ATT.COM

AT&T CORPORATION
ATTN: EMITT LUKASIK
316 W. WASHINGTON AVE., ROOM 209
MADISON, WI 53703
PHONE: (608) 252-2106
E-MAIL: EL1345@ATT.COM

COMMUNICATIONS:

WISCONSIN INDEPENDENT NETWORK
ATTN: JIM BIRKENHEIER
800 WISCONSIN ST, # 107
EAU CLAIRE, WI 54703-3613
PHONE: (715) 832-6041
E-MAIL: JBIRKENHEIER@WINS.NET

WINDSTREAM
FORMERLY: KENTUCKY DATA LINK
KEVIN PARRIS
1858 WRIGHT STREET
MADISON, WI 53704

WISCONSIN DEPARTMENT OF TRANSPORTATION
ATTN: JEFF MADSON
433 W ST PAUL, STE 300
MILWAUKEE, WI 53203
PHONE: (414) 225-3723
E-MAIL: JEFFREY.MADSON@DOT.WI.GOV

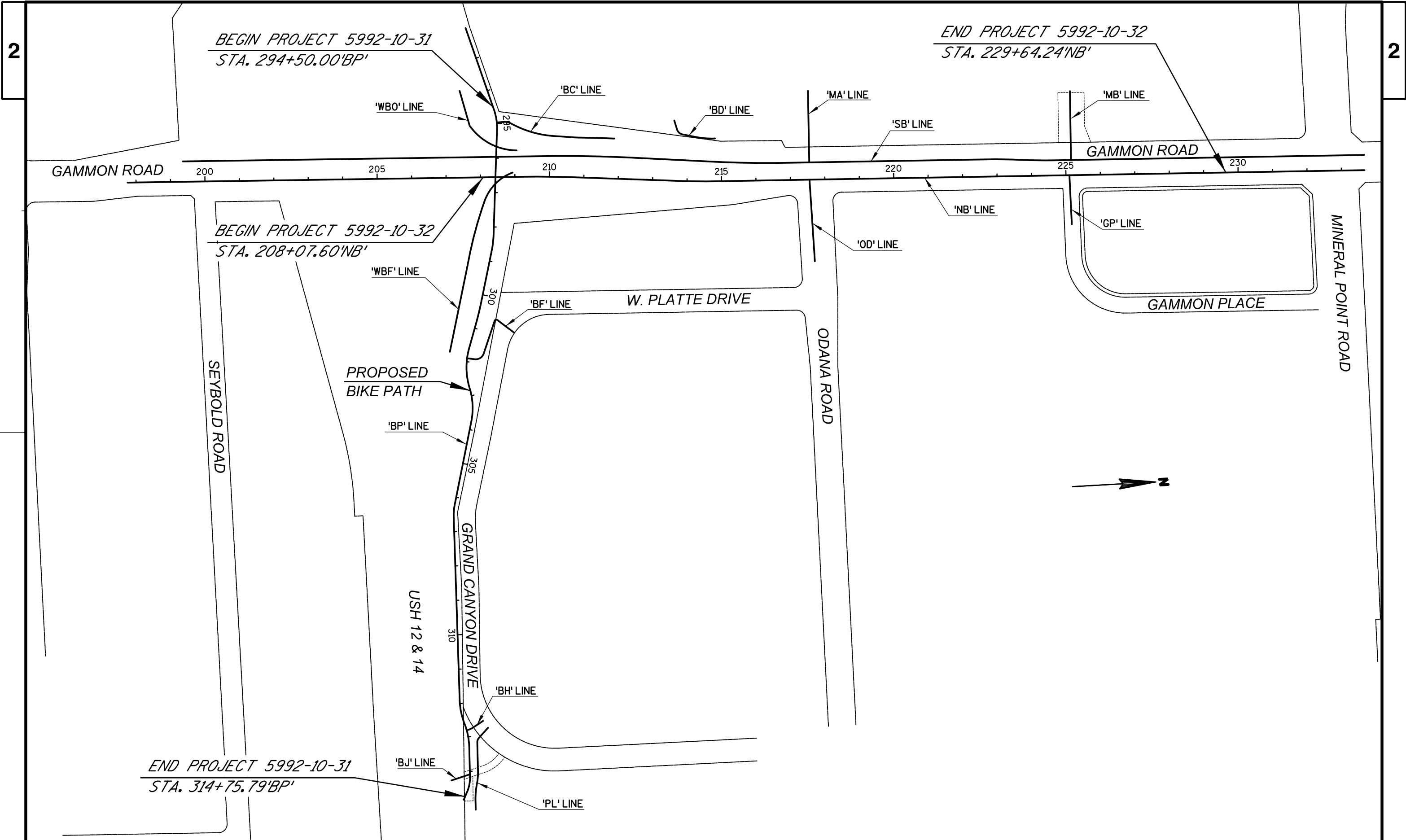
ATTN: GRAHAM HEITZ
2101 WRIGHT ST
MADISON, WI 53704-2559
EMAIL: GRAHAM.HEITZ@DOT.WI.GOV

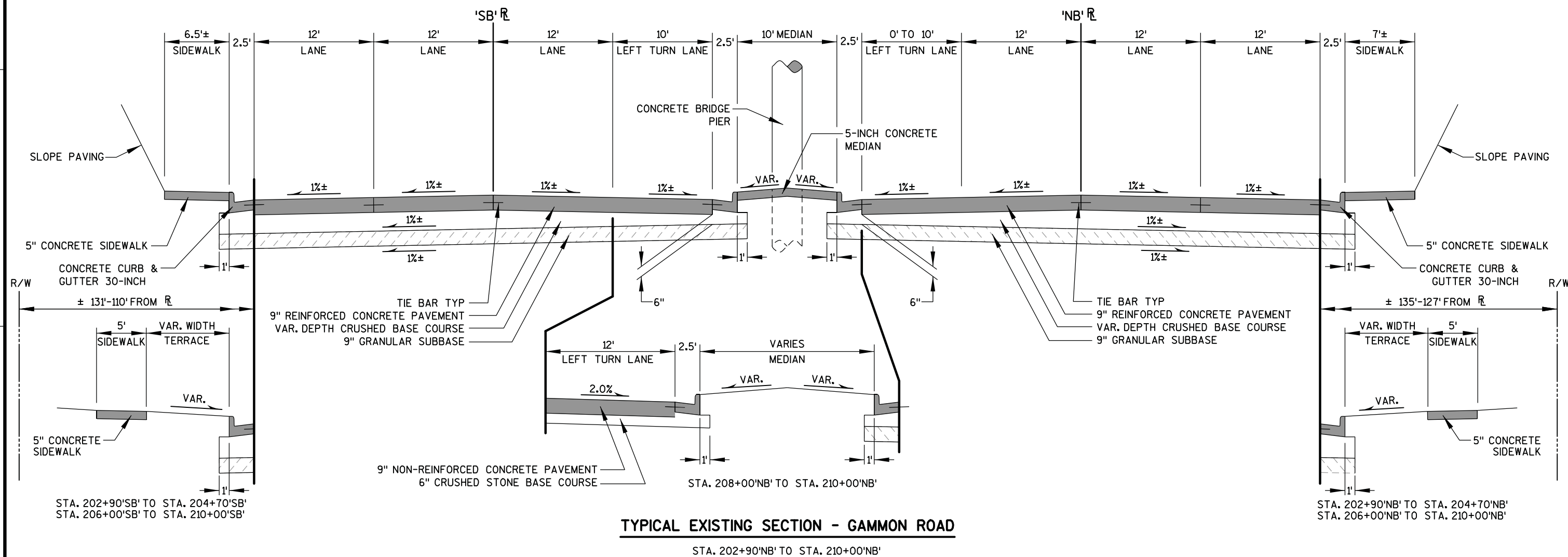
TDS METROCOM
JERRY MYERS
525 JUNCTION ROAD
MADISON, WI 53717
E-MAIL: JERRY.MYERS@TDSTELECOM.COM

TDS TELECOMMUNICATIONS
JERRY MYERS
525 JUNCTION ROAD
MADISON, WI 53717
E-MAIL: JERRY.MYERS@TDSTELECOM.COM

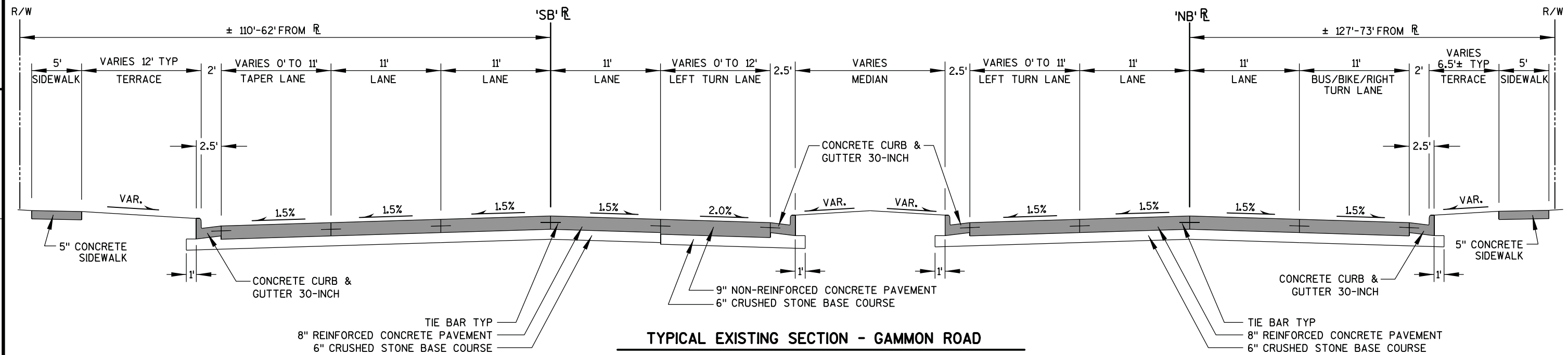
CENTURYLINK CLEC
BRADLEY MORSETH
100 CENTURYLINK DR
MONROE, LA 71203
EMAIL: BRAD.MORSETH@CENTURYLINK.COM

MCI (KLJ ENGINEERING)
STEVE KLICKER
4585 COLEMAN STREET
BISMARCK, ND 58503
PHONE: (701) 690-0162
EMAIL: STEVE.KLICKER@KLJENG.COM

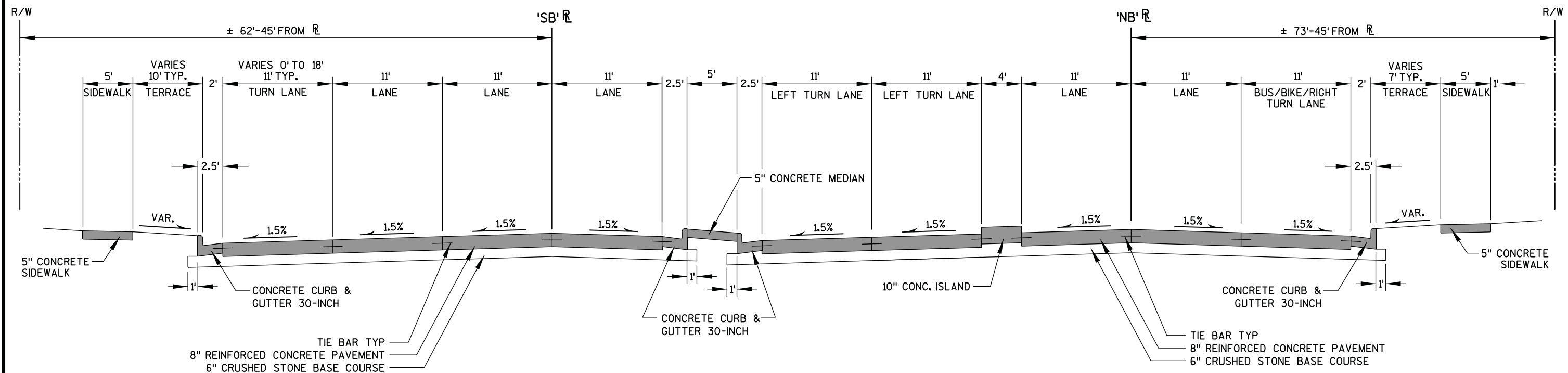


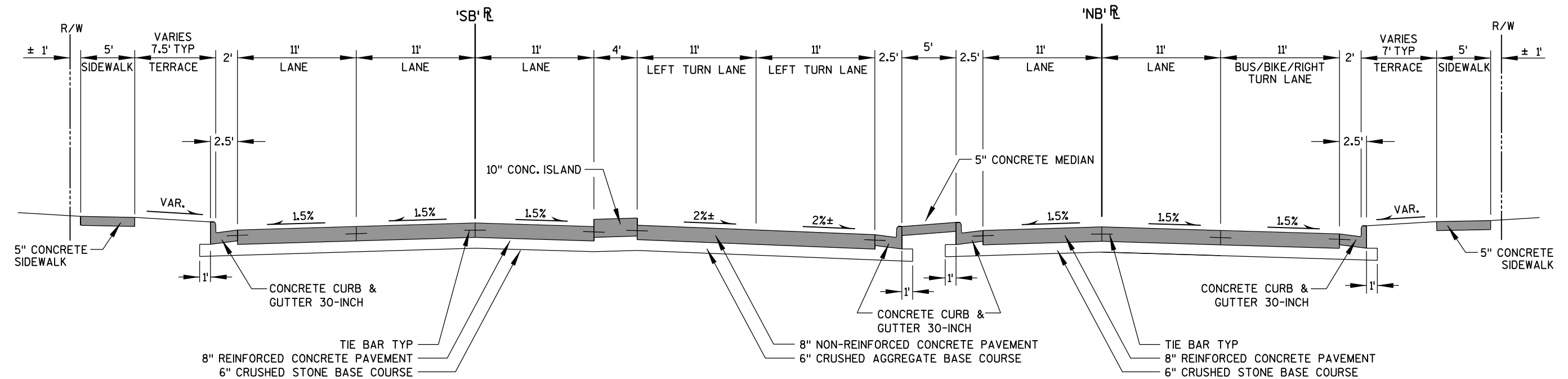


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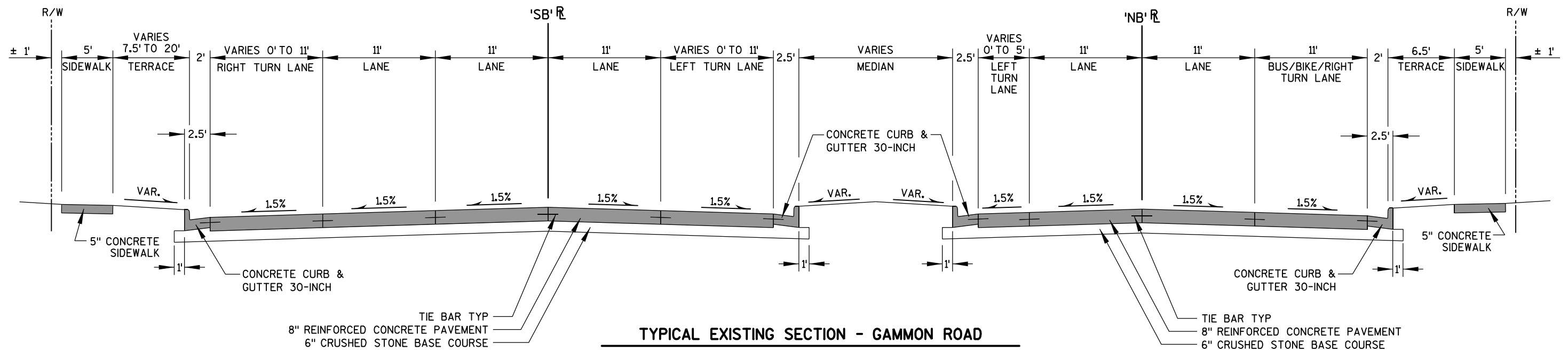
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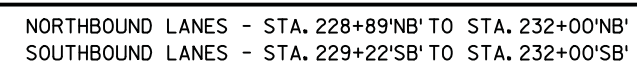
TYPICAL EXISTING SECTION - GAMMON ROAD

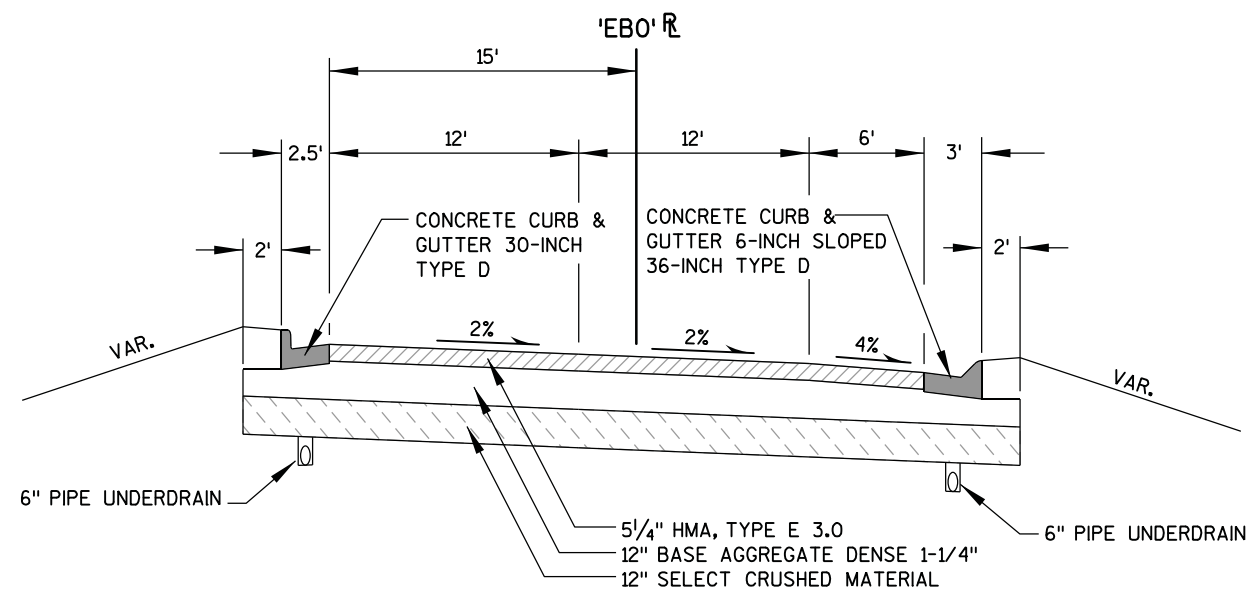
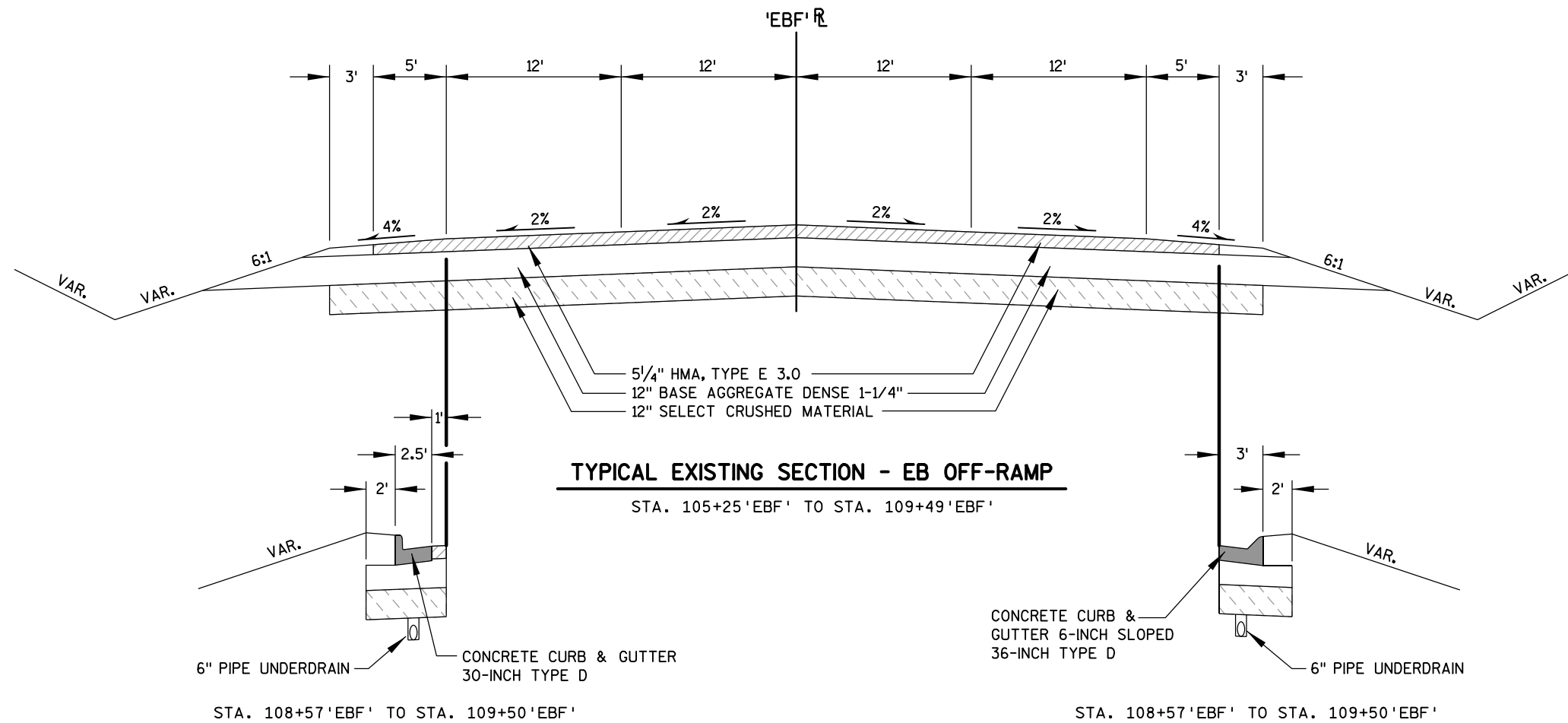
STA. 217+65'NB' TO STA. 220+40'NB'
STA. 217+65'SB' TO STA. 220+40'SB'

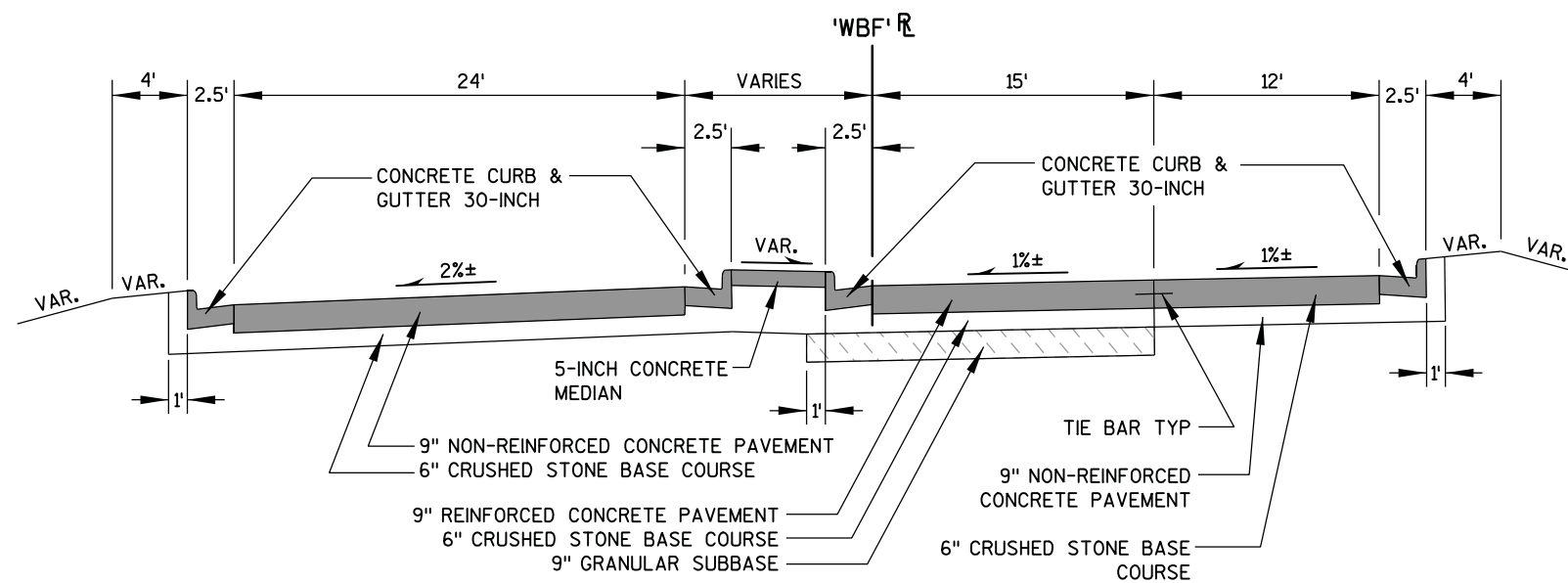


TYPICAL EXISTING SECTION - GAMMON ROAD

NORTHBOUND LANES - STA. 220+40'NB' TO STA. 228+89'NB'
SOUTHBOUND LANES - STA. 220+40'SB' TO STA. 229+22'SB'

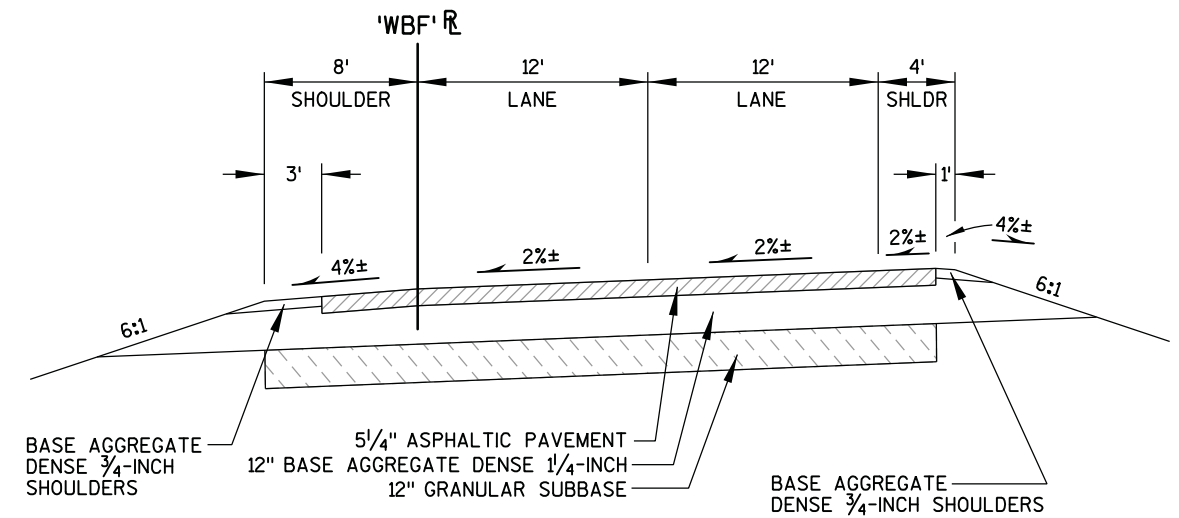






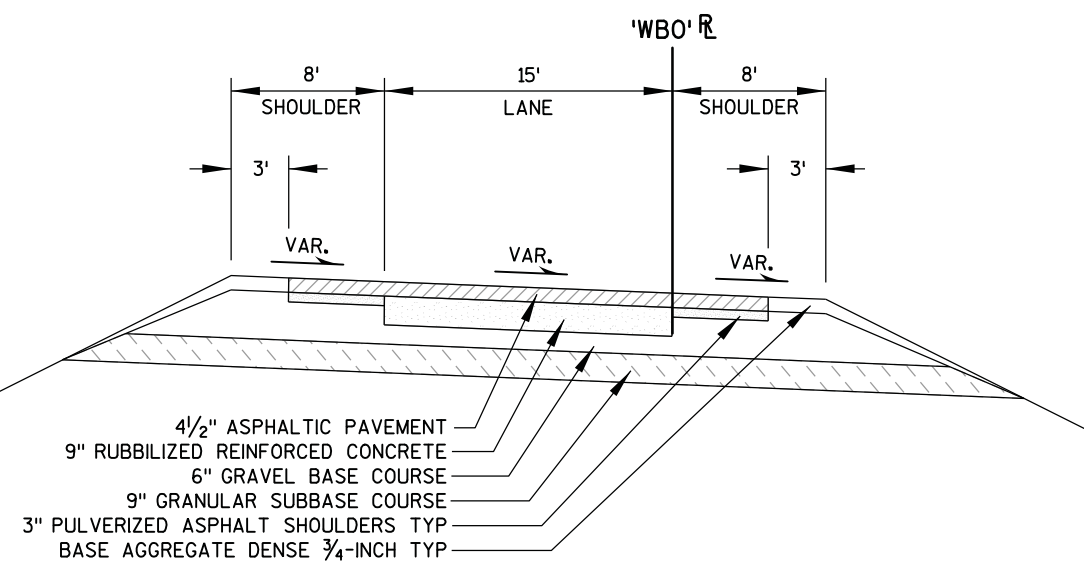
TYPICAL EXISTING SECTION - WB OFF-RAMP

STA. 195+50 'WBF' TO STA. 199+90 'WBF'



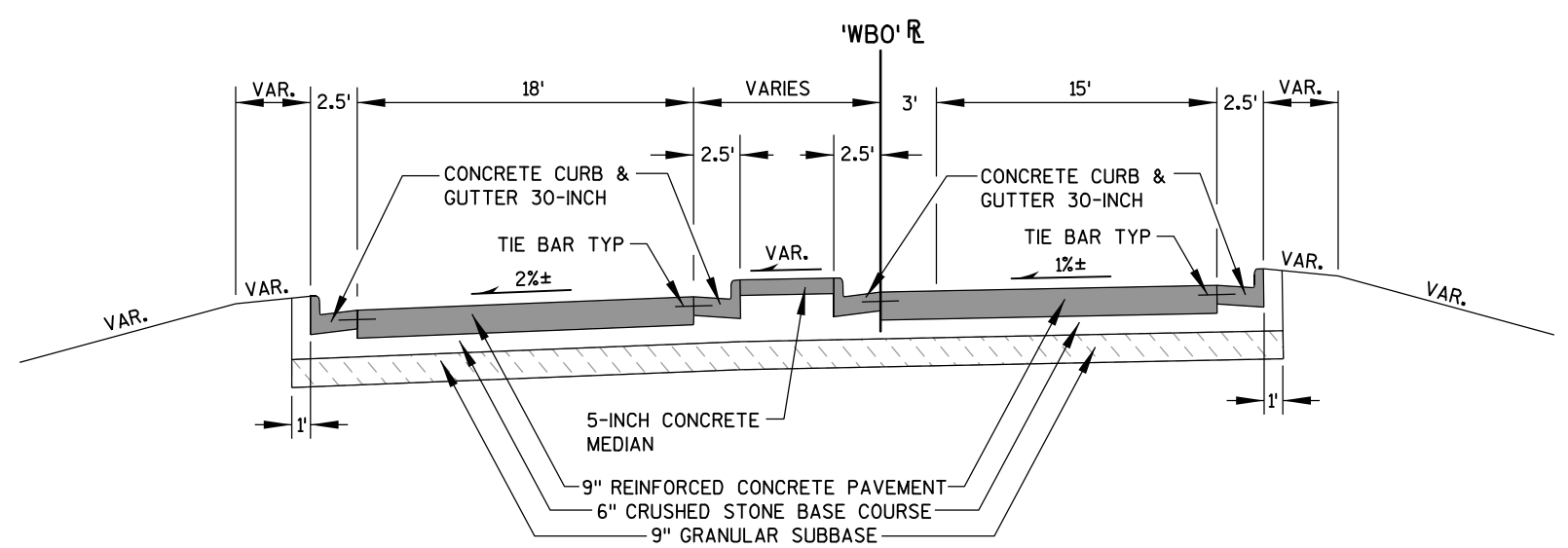
TYPICAL EXISTING SECTION - WB OFF-RAMP

STA. 199+90 'WBF' TO MATCH IN



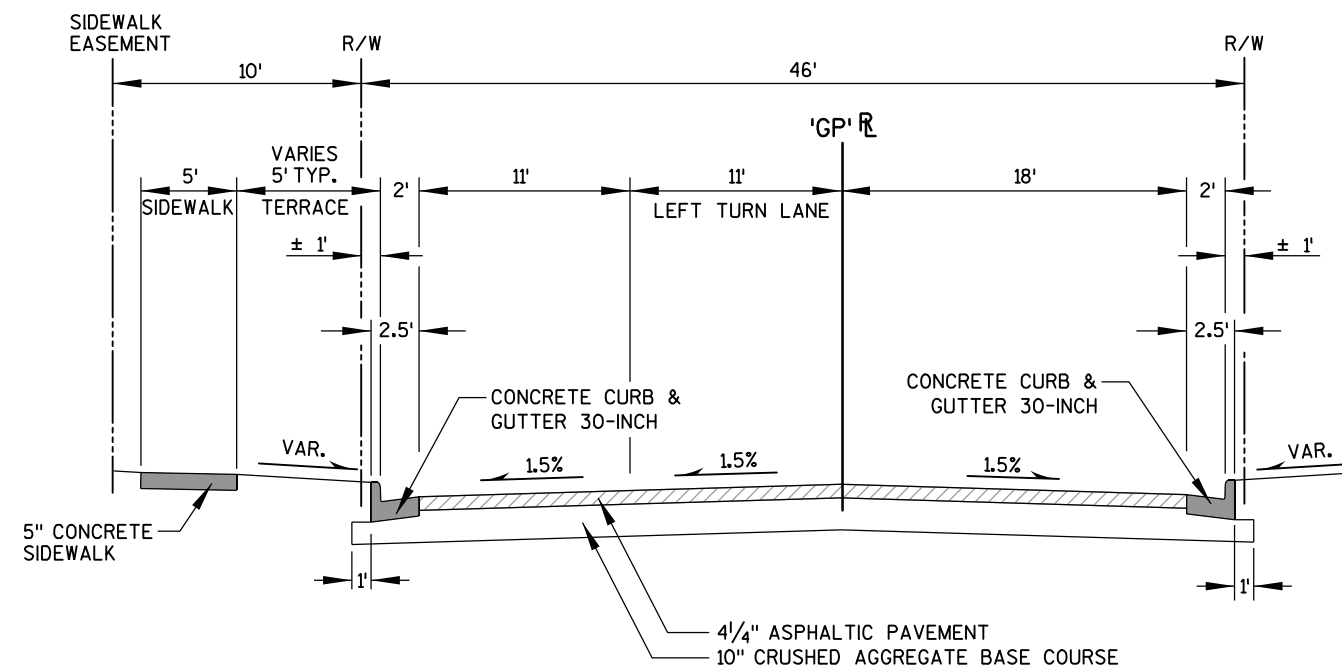
TYPICAL EXISTING SECTION - WB ON-RAMP

MATCH IN TO STA. 397+43 'WBO'

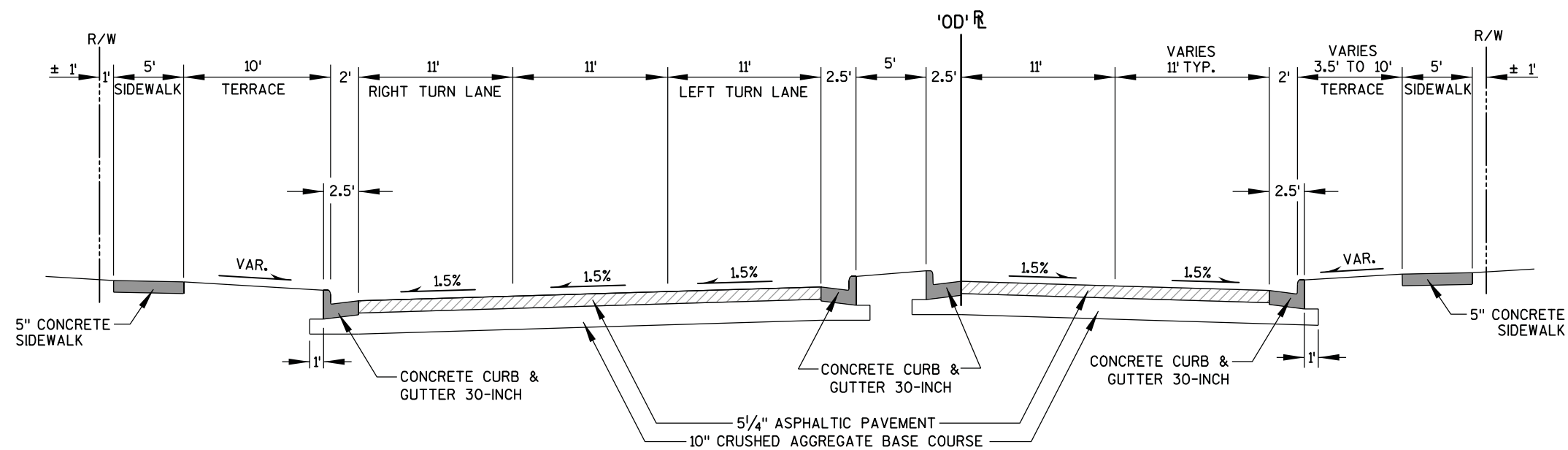


TYPICAL EXISTING SECTION - WB ON-RAMP

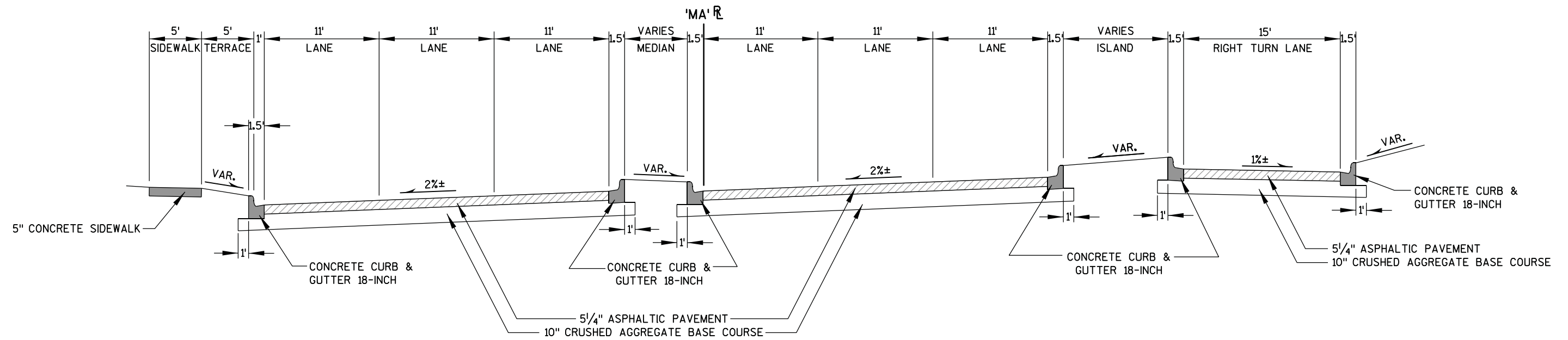
STA. 397+43 'WBO' TO STA. 399+75 'WBO'



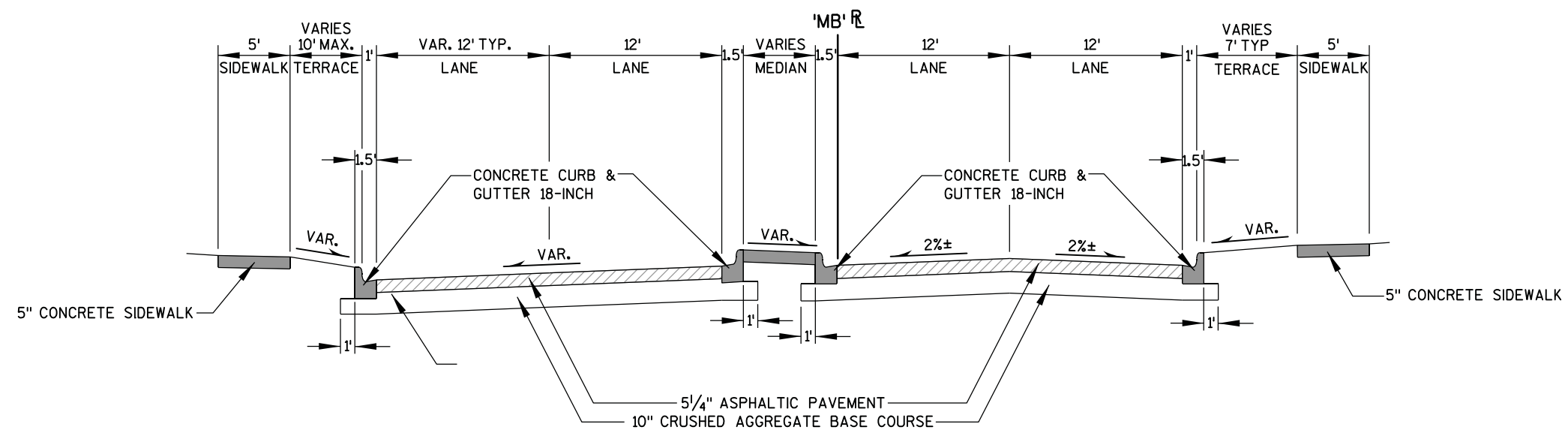
TYPICAL EXISTING SECTION - GAMMON PLACE



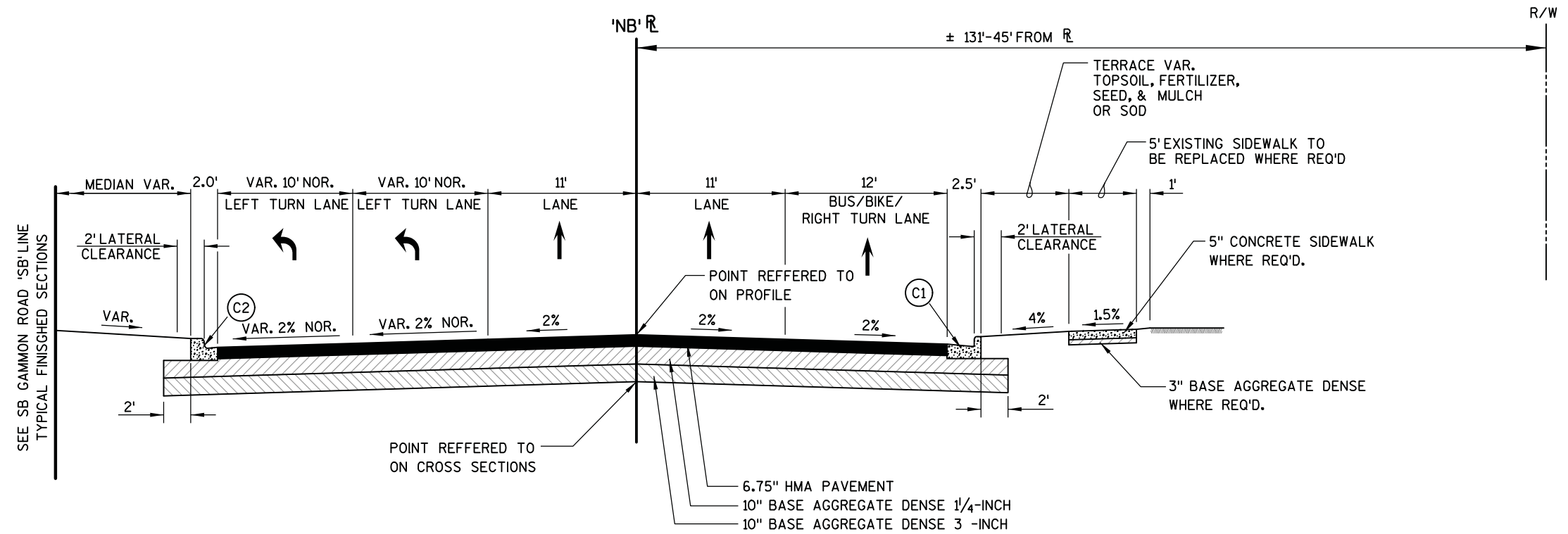
TYPICAL EXISTING SECTION - ODANA ROAD



TYPICAL EXISTING SECTION - SOUTH MALL ENTRANCE 'MA' LINE



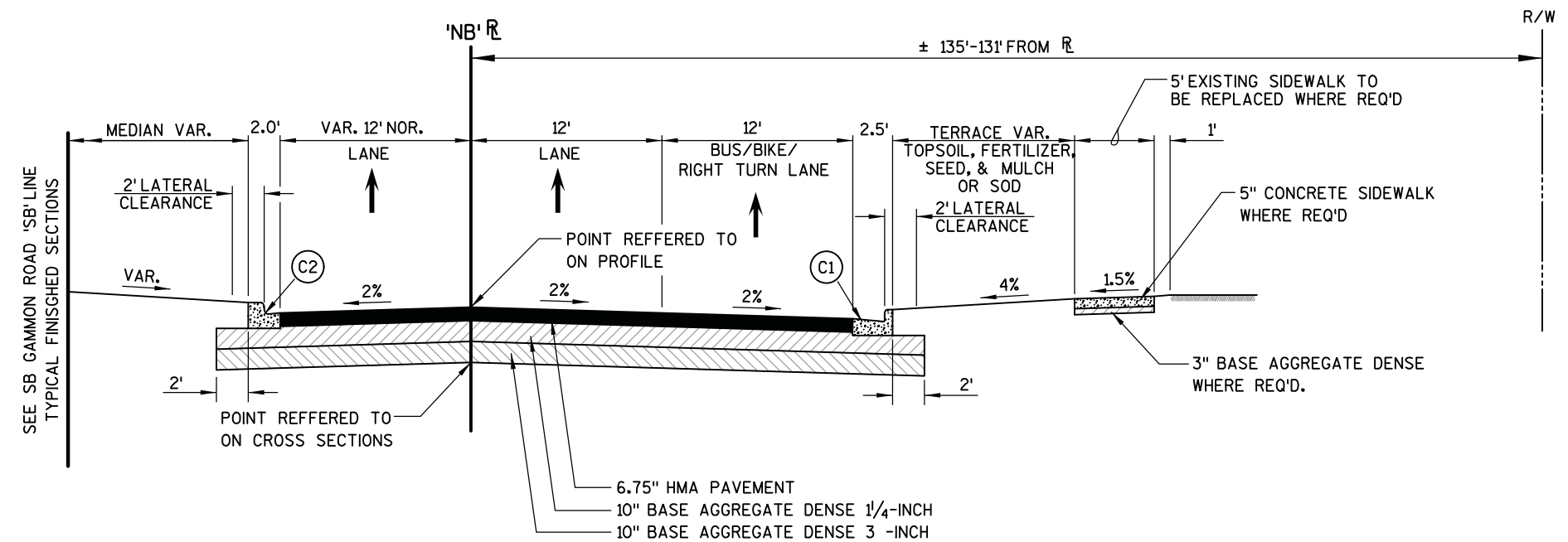
TYPICAL EXISTING SECTION - NORTH MALL ENTRANCE 'MB' LINE



TYPICAL FINISHED SECTION - NB GAMMON ROAD 'NB' LINE

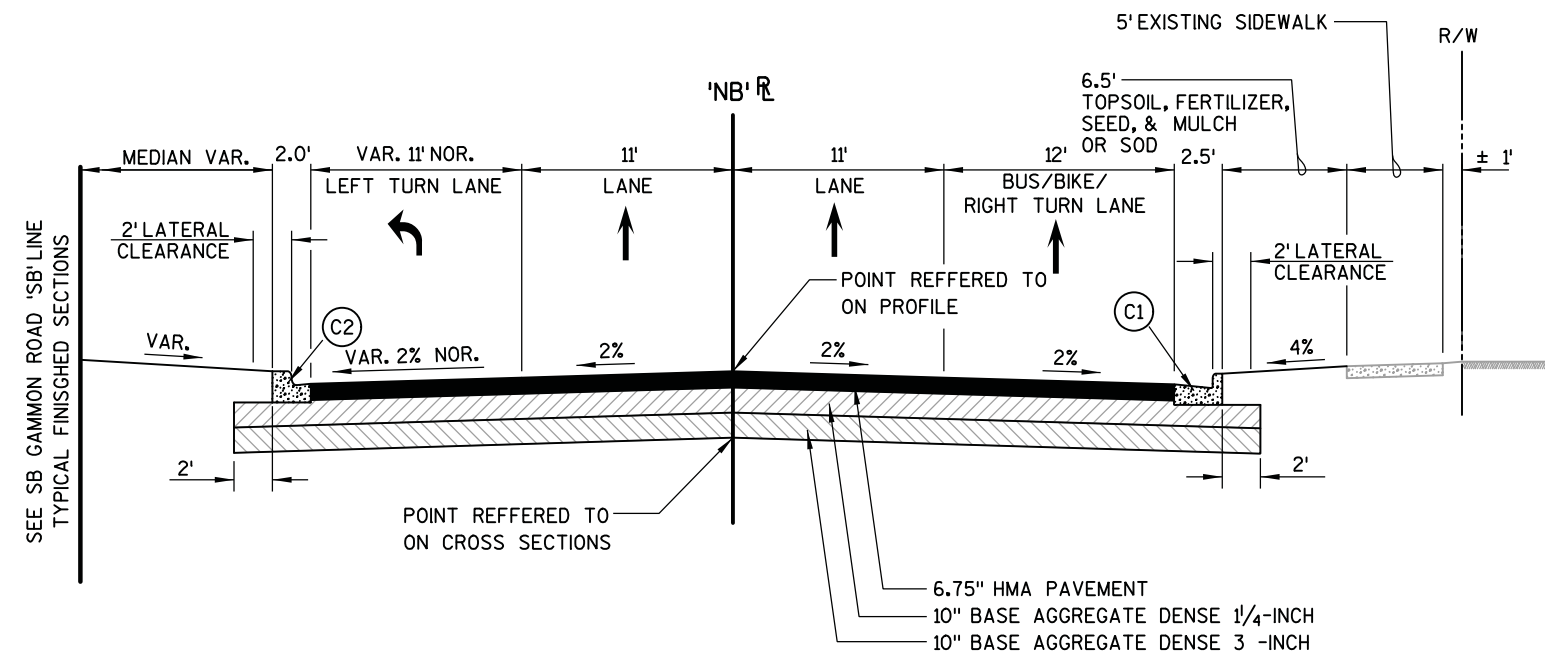
STA. 209+54'NB' TO STA. 217+00'NB'

- (C1) CONCRETE CURB & GUTTER SPECIAL 30-INCH TYPE 'D', GUTTER SLOPE 6.25%
- (C2) CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25%



TYPICAL FINISHED SECTION - NB GAMMON ROAD 'NB' LINE

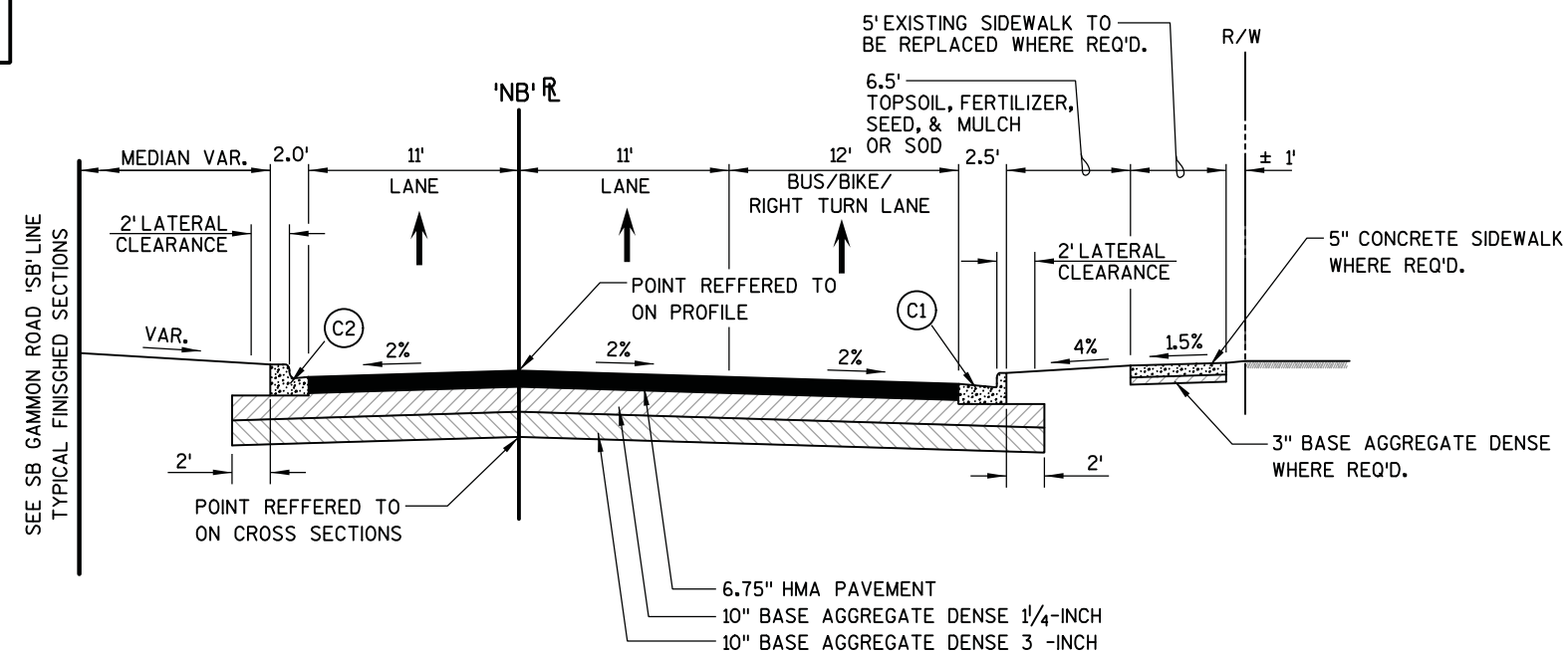
STA. 208+07.60'NB' TO STA. 209+54'NB'



TYPICAL FINISHED SECTION - NB GAMMON ROAD 'NB' LINE

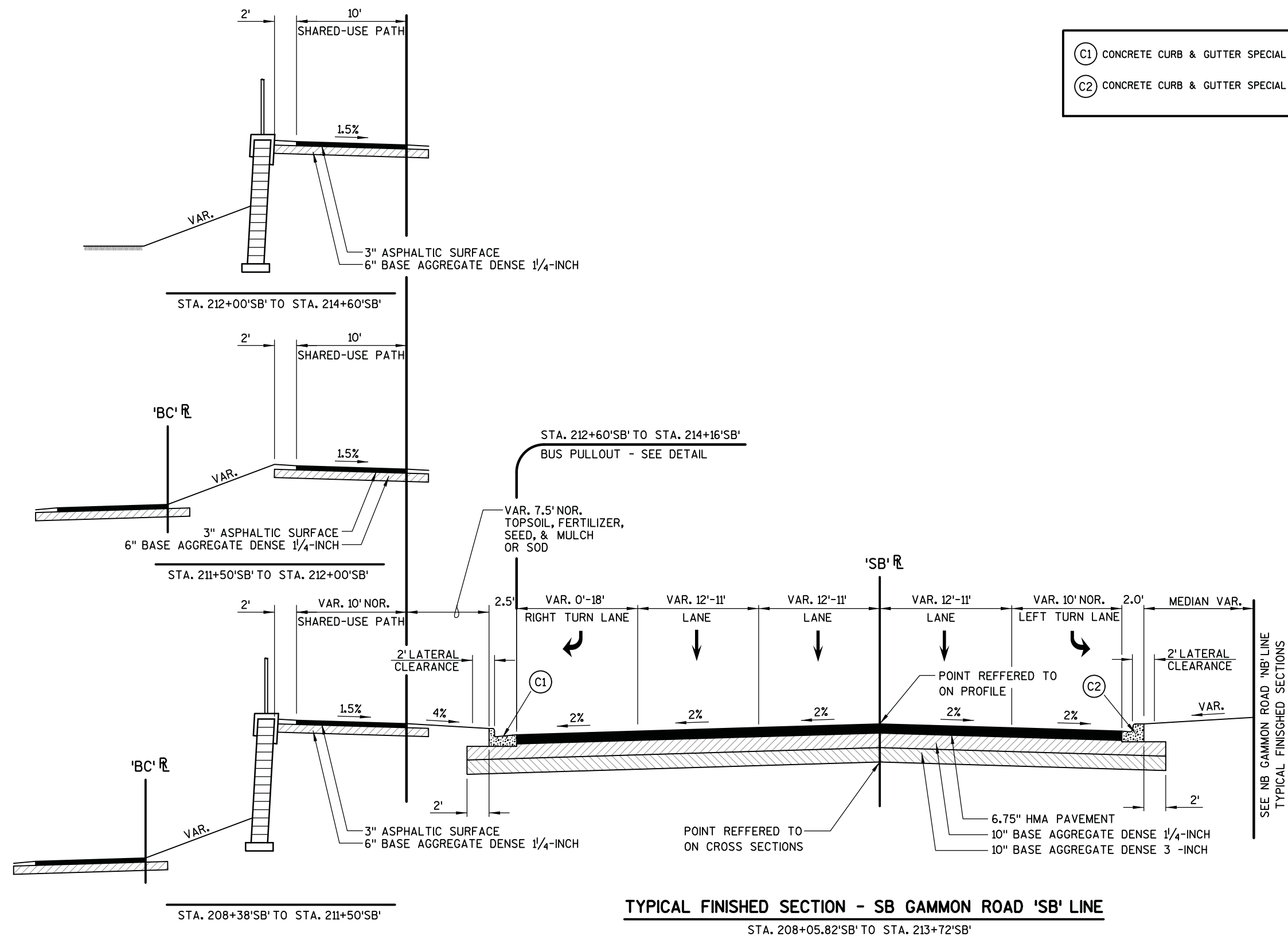
STA. 221+38'NB' TO STA. 224+68'NB'
 STA. 227+15'NB' TO STA. 228+89'NB'
 STA. 228+89'NB' TO STA. 229+64.24'NB' - LEFT TURN LANE ONLY

- (C1) CONCRETE CURB & GUTTER SPECIAL 30-INCH TYPE 'D', GUTTER SLOPE 6.25%
 (C2) CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25%

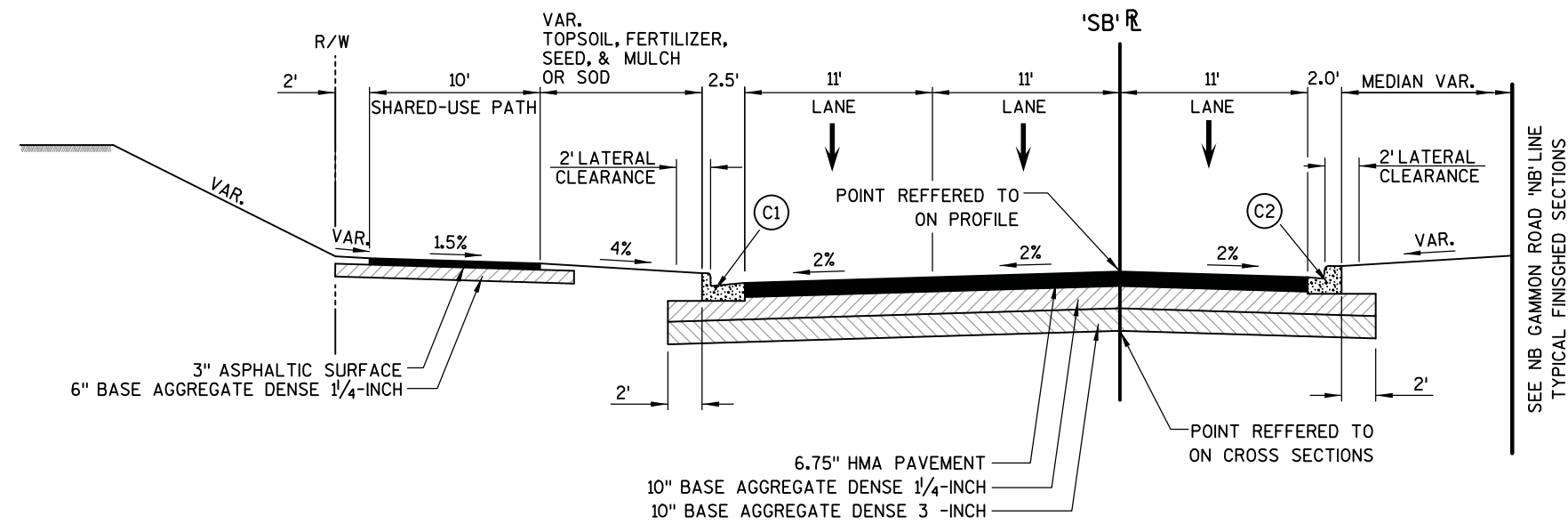


TYPICAL FINISHED SECTION - NB GAMMON ROAD 'NB' LINE

STA. 218+29'NB' TO STA. 221+38'NB'
 STA. 225+56'NB' TO STA. 227+15'NB'



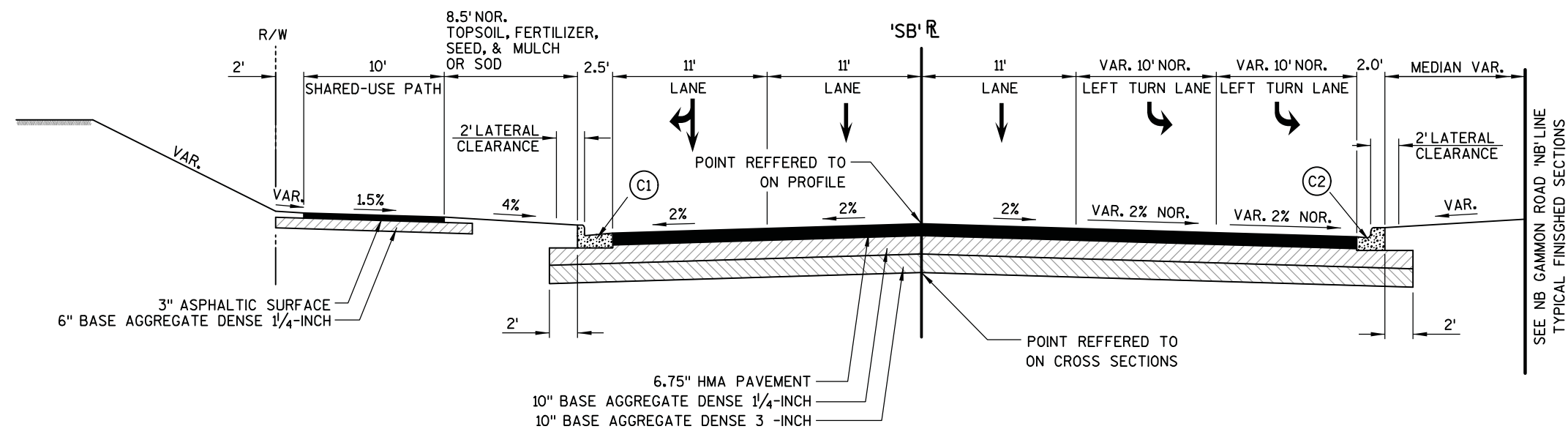




TYPICAL FINISHED SECTION - SB GAMMON ROAD 'SB' LINE

STA. 222+73'SB' TO STA. 224+69'SB'

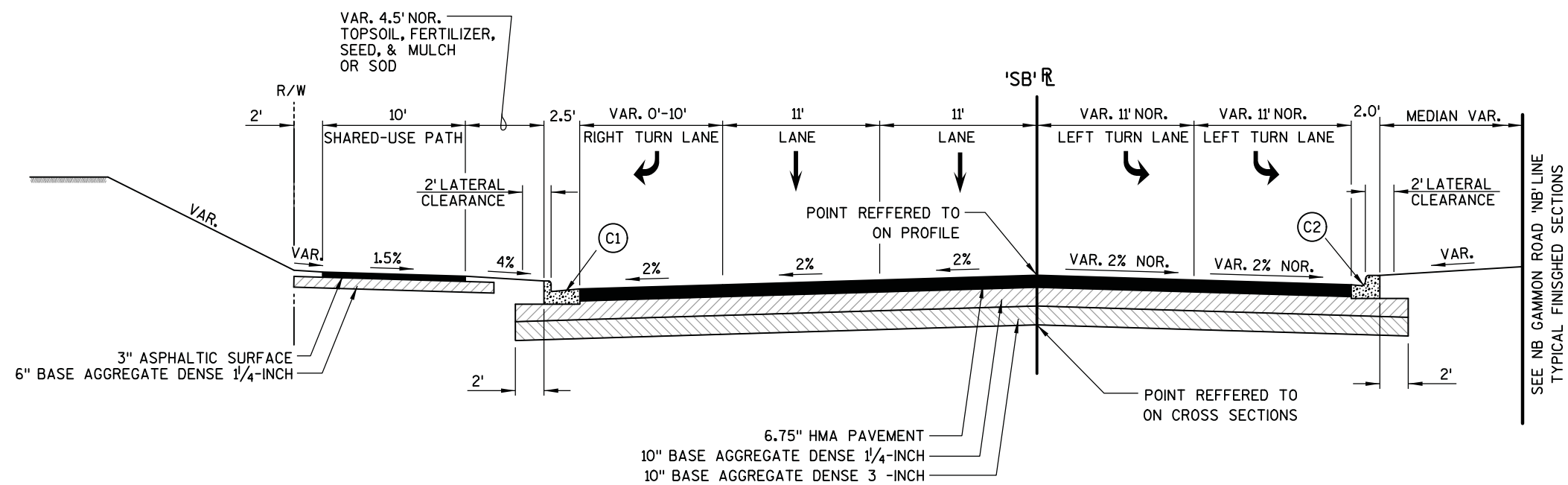
- (C1) CONCRETE CURB & GUTTER SPECIAL 30-INCH TYPE 'D', GUTTER SLOPE 6.25%
- (C2) CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25%



TYPICAL FINISHED SECTION - SB GAMMON ROAD 'SB' LINE

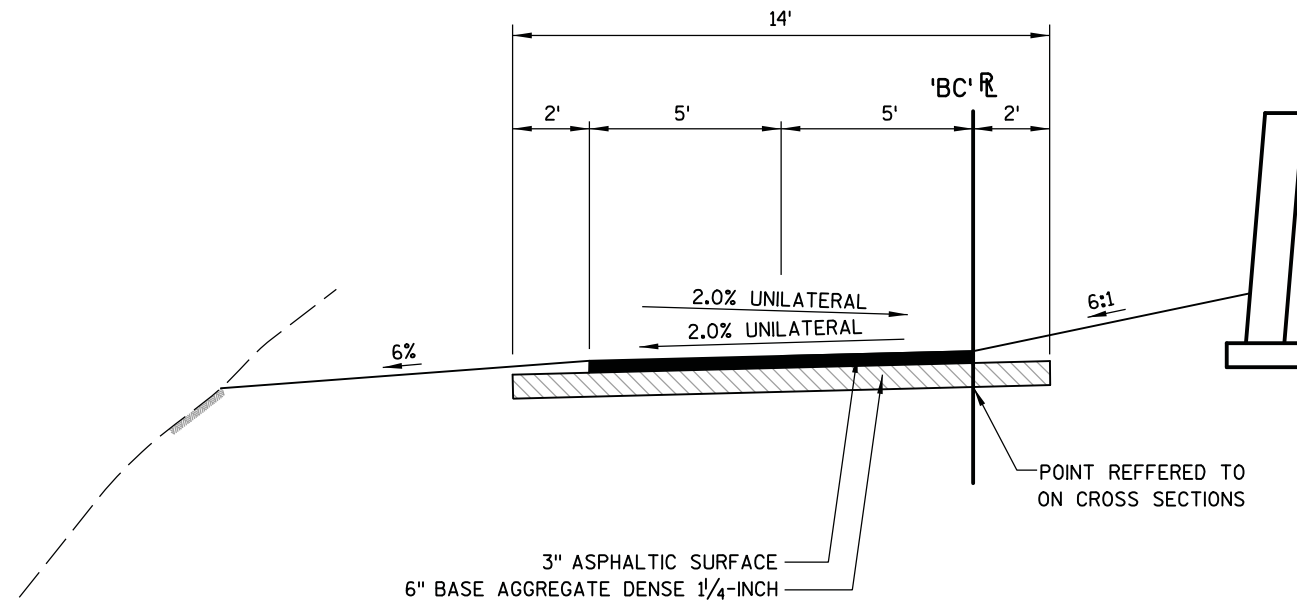
STA. 218+25'SB' TO STA. 222+73'SB'

- (C1) CONCRETE CURB & GUTTER SPECIAL 30-INCH TYPE 'D', GUTTER SLOPE 6.25%
 (C2) CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25%

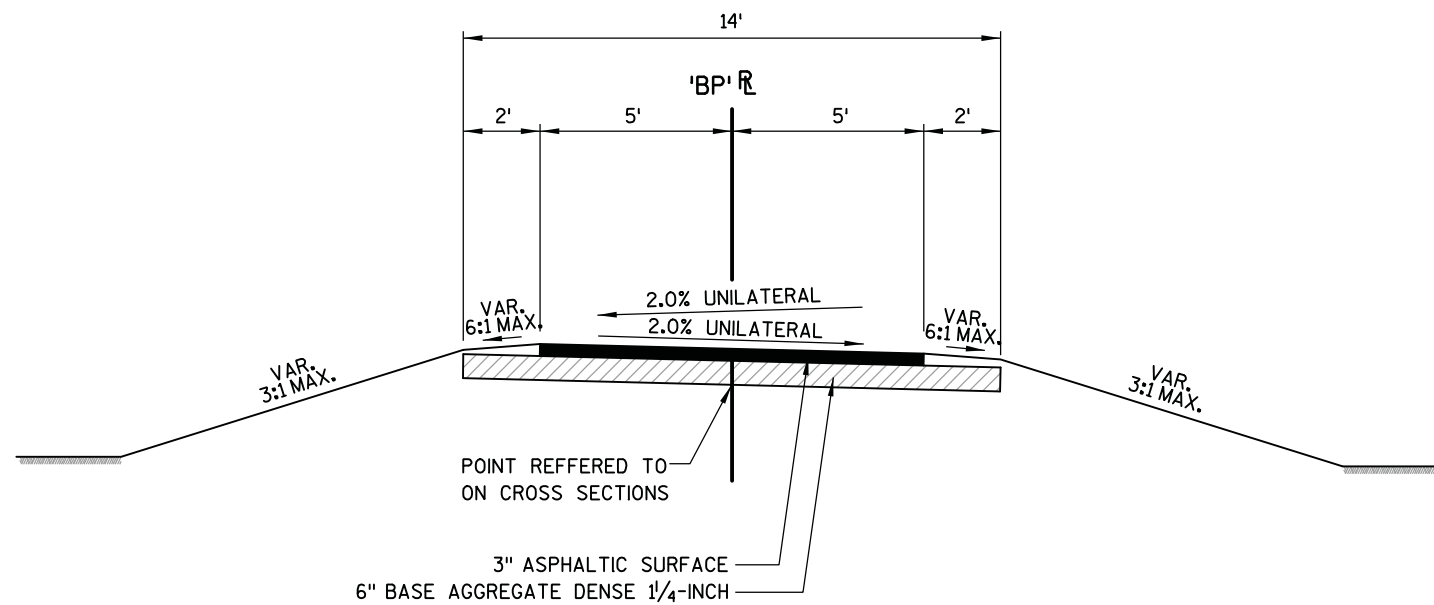


TYPICAL FINISHED SECTION - SB GAMMON ROAD 'SB' LINE

STA. 225+56'SB' TO STA. 229+46.78'SB'

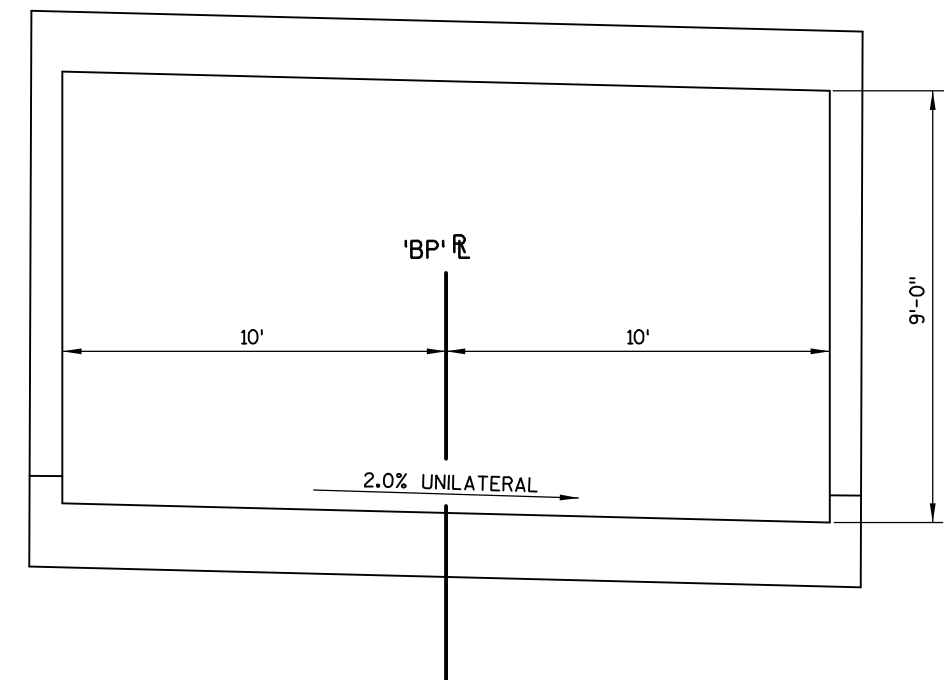


TYPICAL FINISHED SECTION - SHARED-USE PATH 'BC' LINE



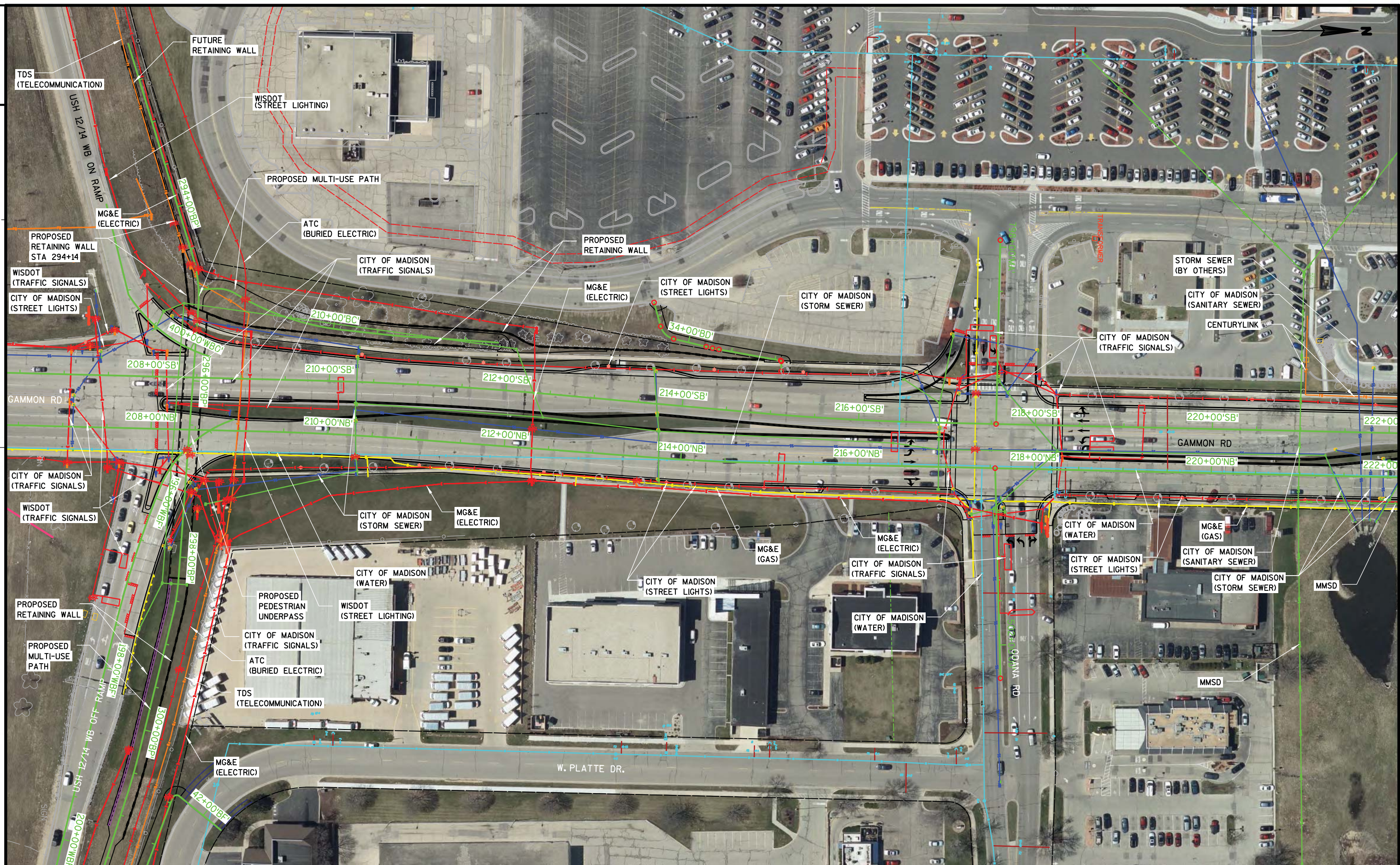
TYPICAL FINISHED SECTION - SHARED-USE PATH 'BP' LINE

STA. 294+50'BP' TO STA. 295+18.32'PB'
STA. 298+24.47'BP' TO STA. 314+75.79'BP'



TYPICAL FINISHED SECTION - SHARED-USE PATH 'BP' LINE

STA. 295+18.32'PB' TO STA. 298+24.47'BP'

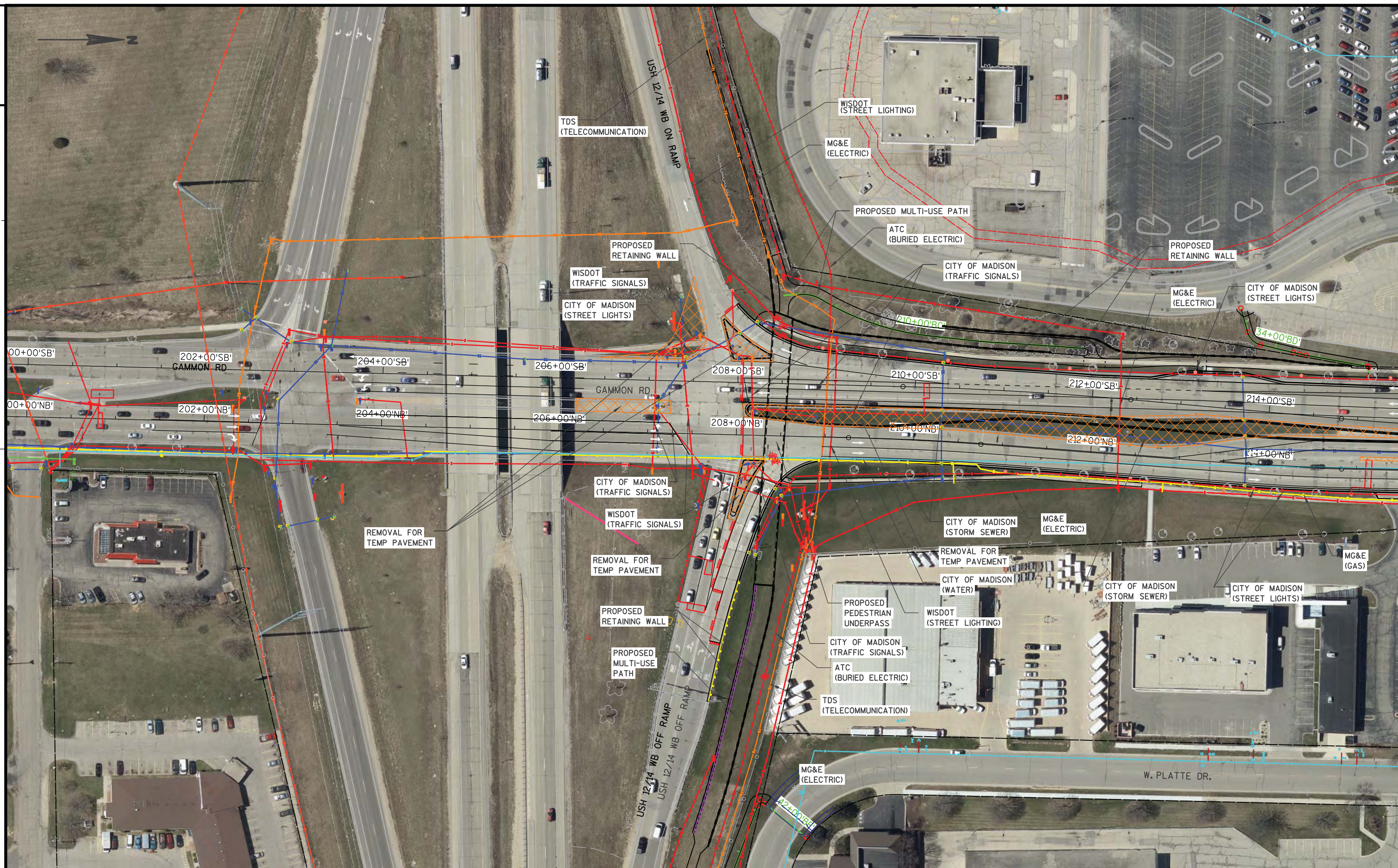


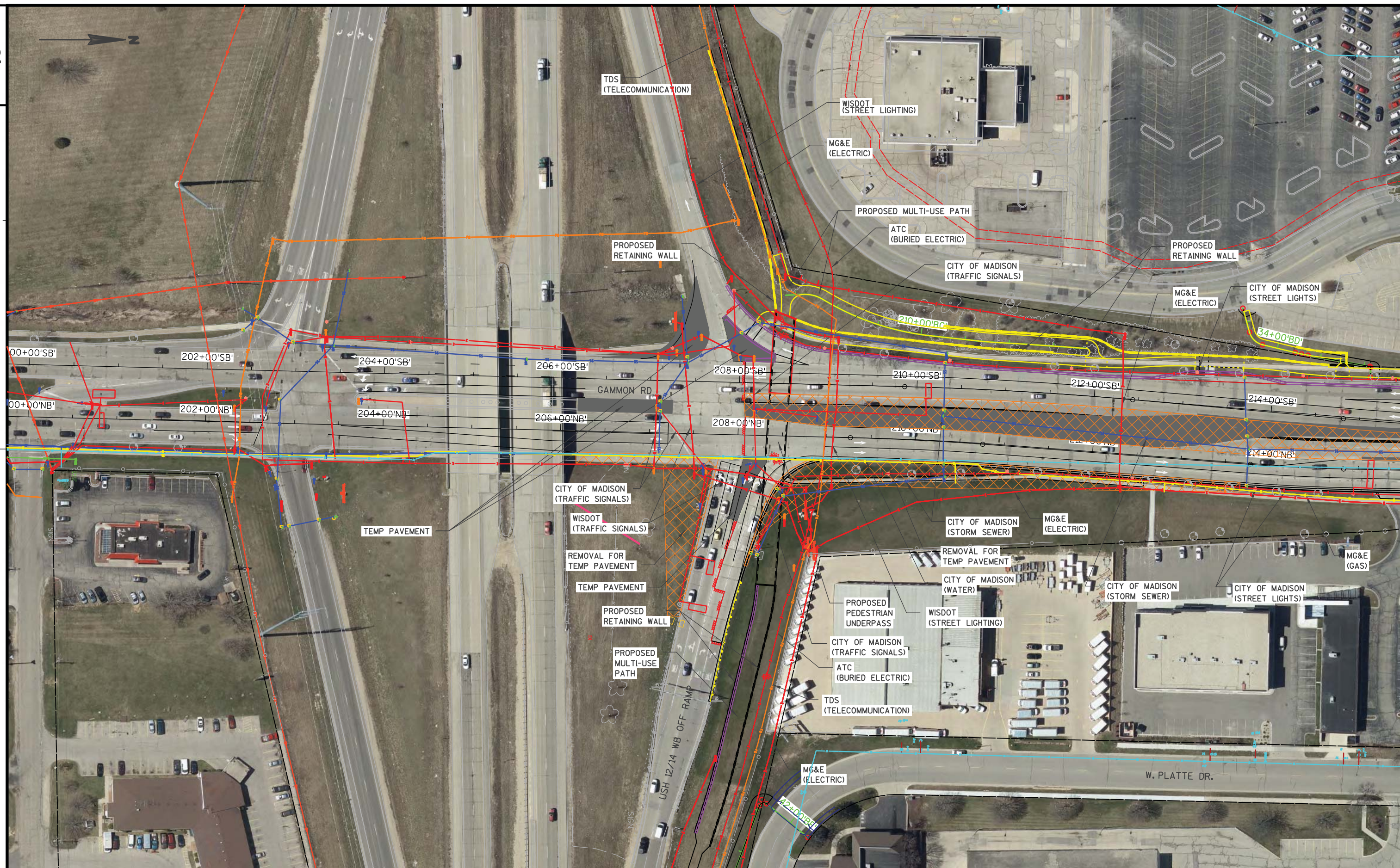


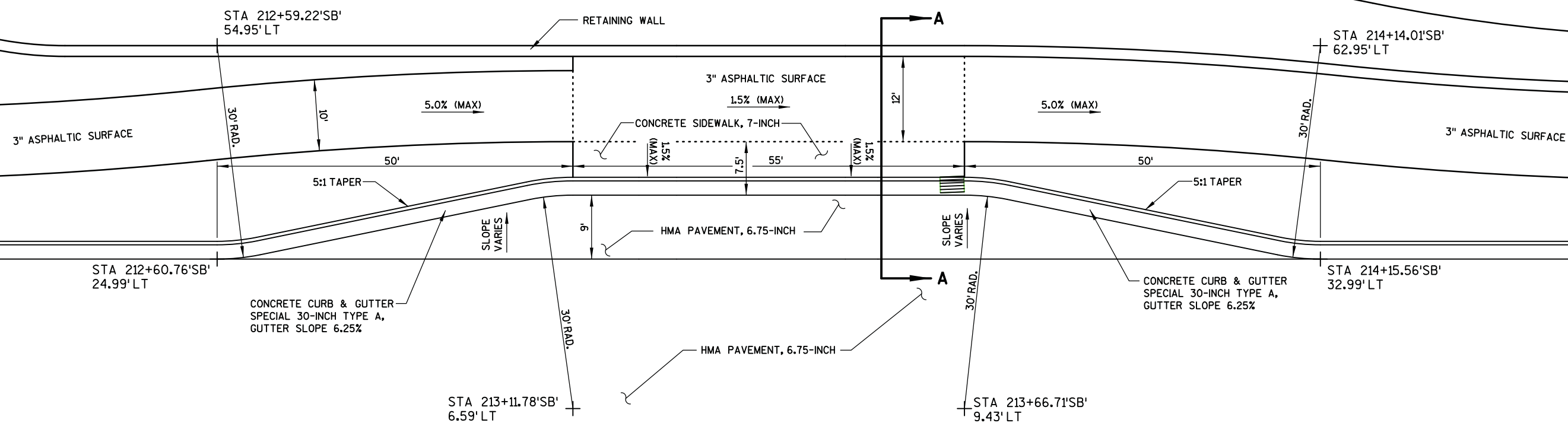
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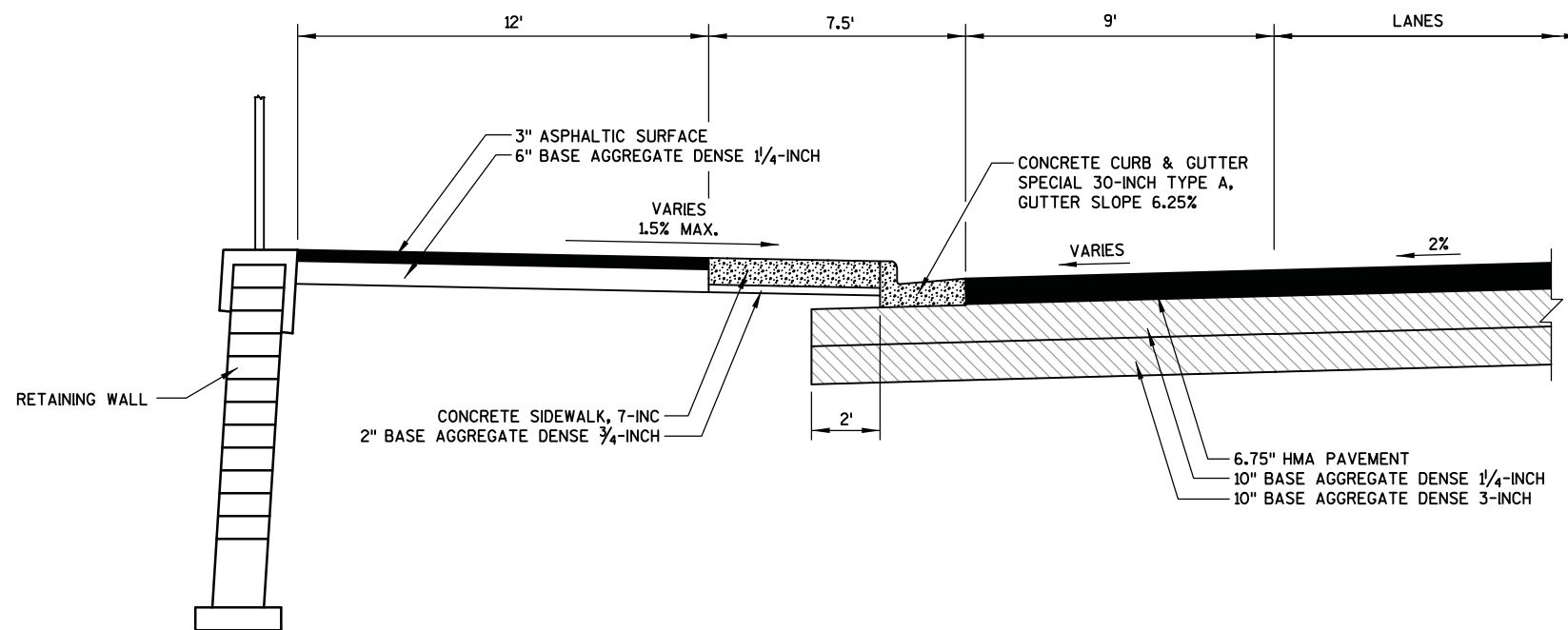
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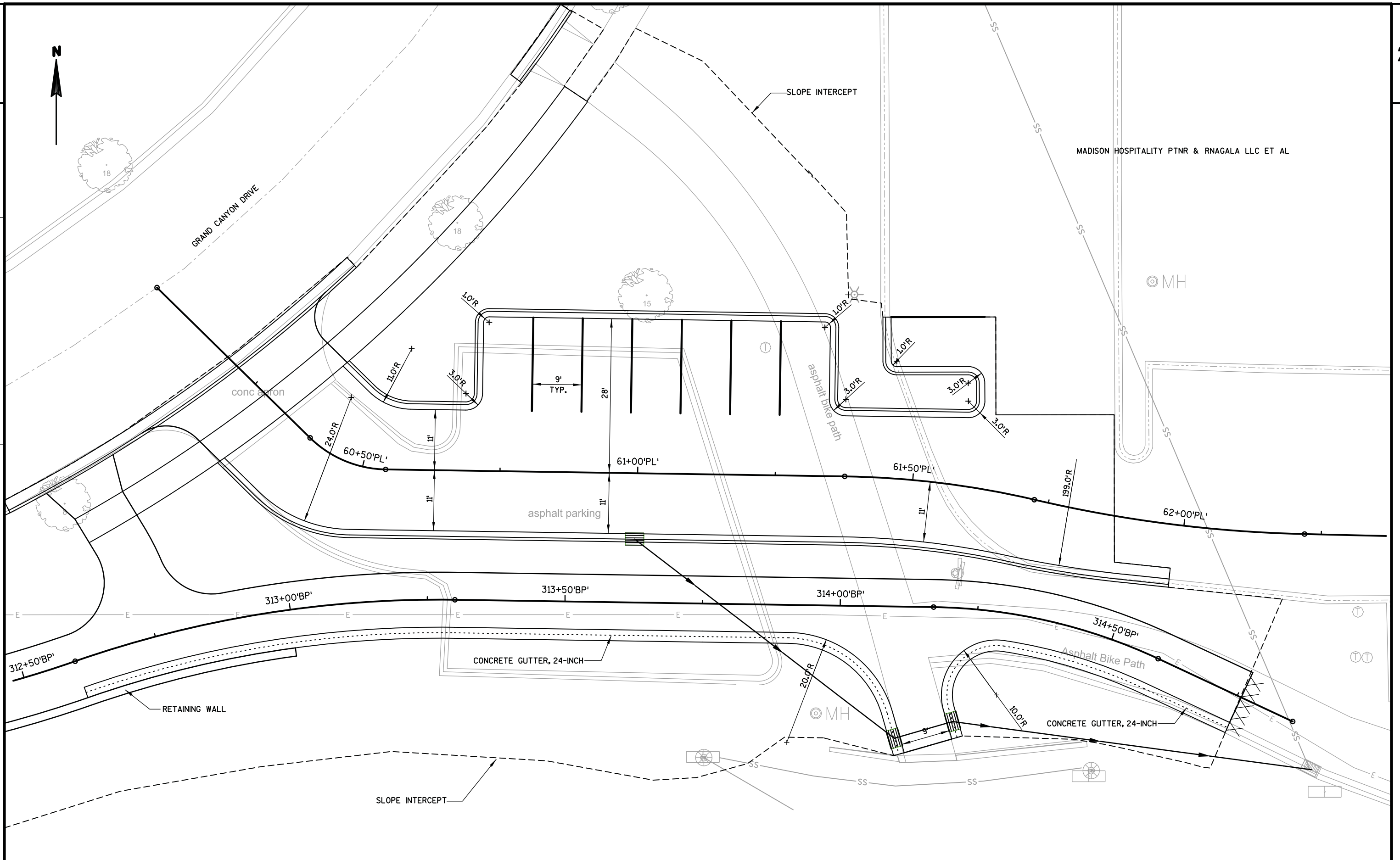




BUS PULLOUT DETAIL

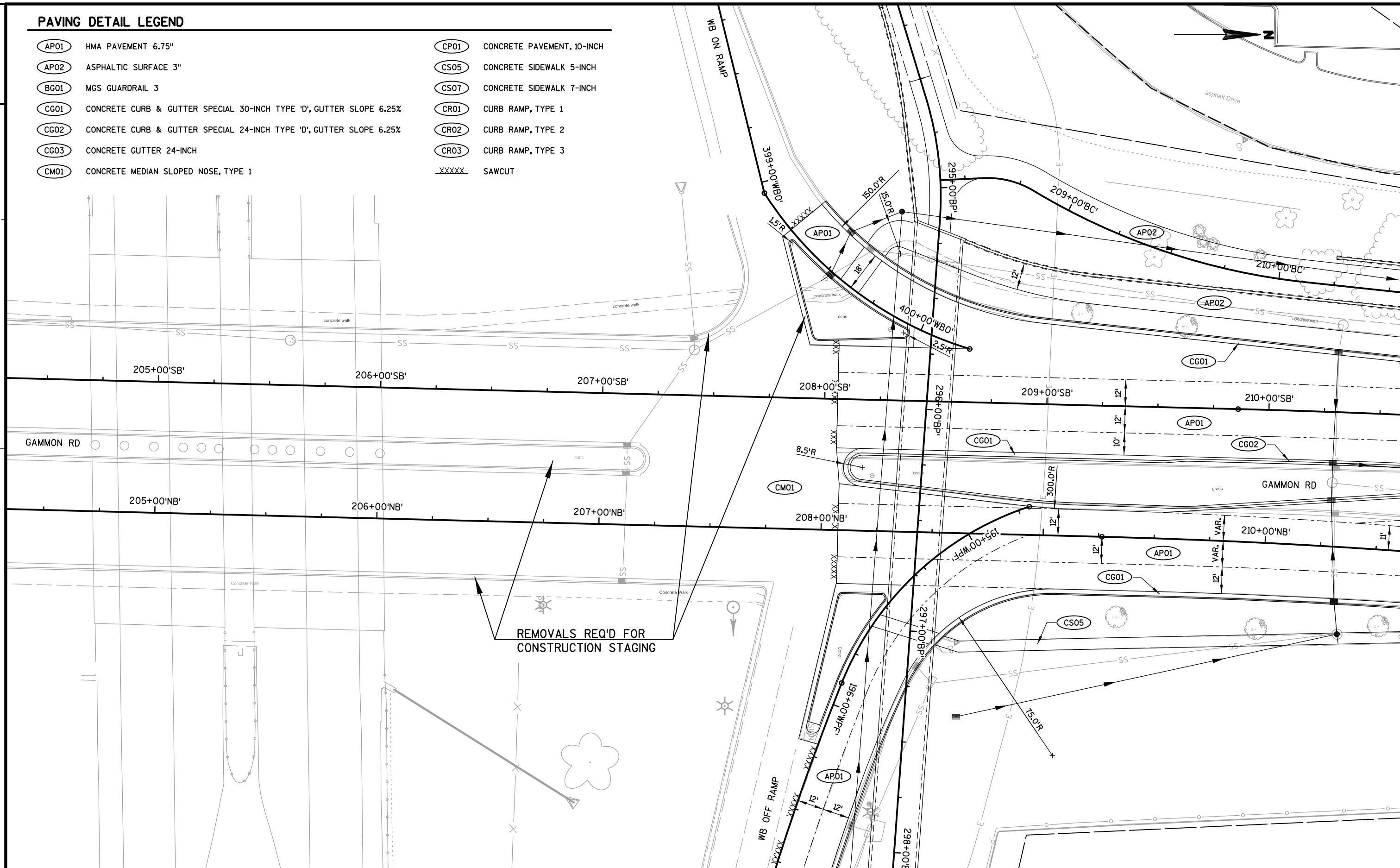


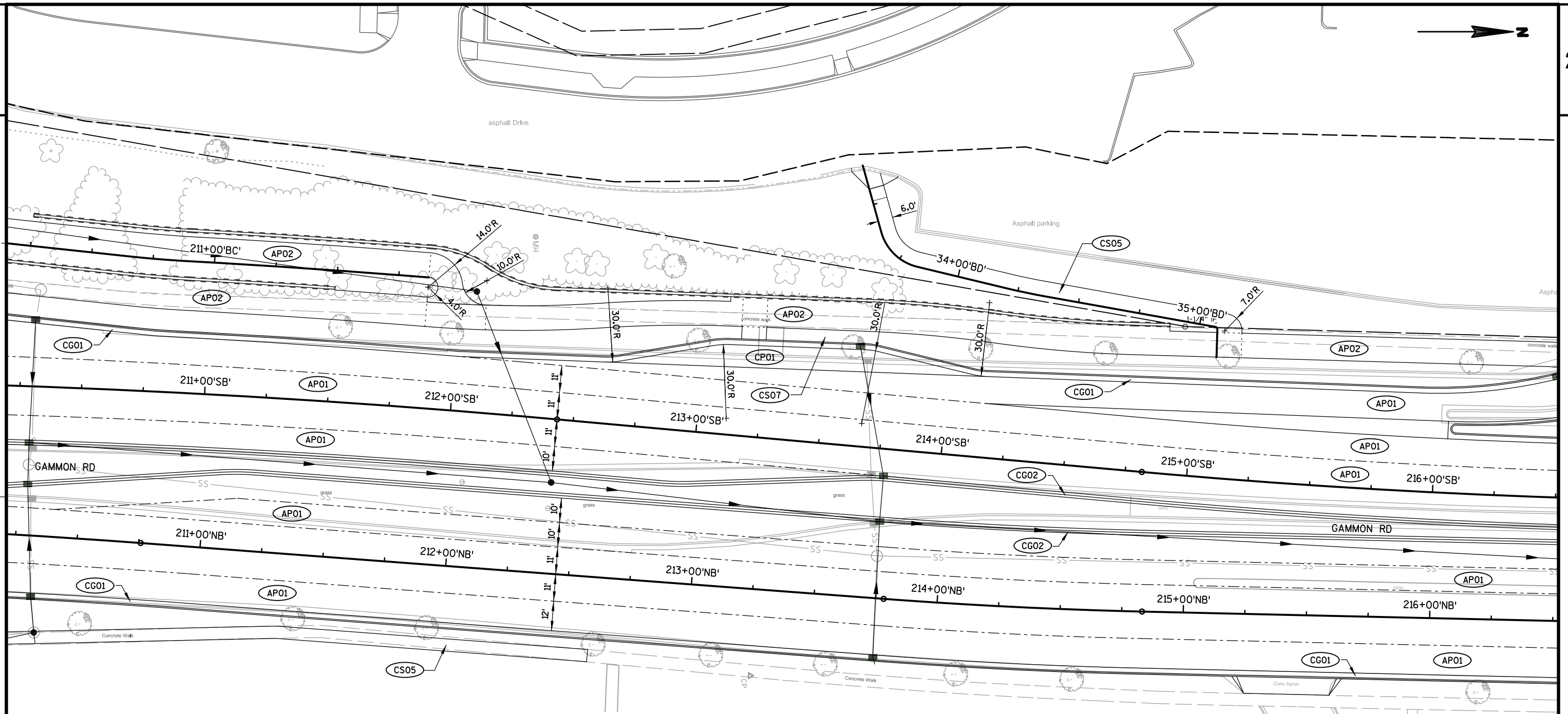
SECTION A-A



PAVING DETAIL LEGEND

- | | | | |
|------|---|-------|----------------------------|
| AP01 | HMA PAVEMENT 6.75" | CP01 | CONCRETE PAVEMENT, 10-INCH |
| AP02 | ASPHALTIC SURFACE 3" | CS05 | CONCRETE SIDEWALK 5-INCH |
| BG01 | MGS GUARDRAIL 3 | CS07 | CONCRETE SIDEWALK 7-INCH |
| CG01 | CONCRETE CURB & GUTTER SPECIAL 30-INCH TYPE 'D', GUTTER SLOPE 6.25% | CR01 | CURB RAMP, TYPE 1 |
| CG02 | CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25% | CR02 | CURB RAMP, TYPE 2 |
| CG03 | CONCRETE GUTTER 24-INCH | CR03 | CURB RAMP, TYPE 3 |
| CM01 | CONCRETE MEDIAN SLOPED NOSE, TYPE 1 | XXXXX | SAWCUT |



**PAVING DETAIL LEGEND**

AP01	HMA PAVEMENT 6.75"	CP01	CONCRETE PAVEMENT, 10-INCH
AP02	ASPHALTIC SURFACE 3"	CS05	CONCRETE SIDEWALK 5-INCH
BG01	MGS GUARDRAIL 3	CS07	CONCRETE SIDEWALK 7-INCH
CG01	CONCRETE CURB & GUTTER SPECIAL 30-INCH TYPE 'D', GUTTER SLOPE 6.25%	CR01	CURB RAMP, TYPE 1
CG02	CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25%	CR02	CURB RAMP, TYPE 2
CG03	CONCRETE GUTTER 24-INCH	CR03	CURB RAMP, TYPE 3
CM01	CONCRETE MEDIAN SLOPED NOSE, TYPE 1	XXXXX	SAWCUT

PROJECT NO:5992-10-32

HWY: GAMMON RD

COUNTY: DANE

PAVING DETAILS - GAMMON RD

SCALE, FEET

SHEET PRE_27 E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\021104_ID-Gammon.dgn

PLOT BY : kk226

PLOT DATE : 5/7/2019

PLOT SCALE : 1:40

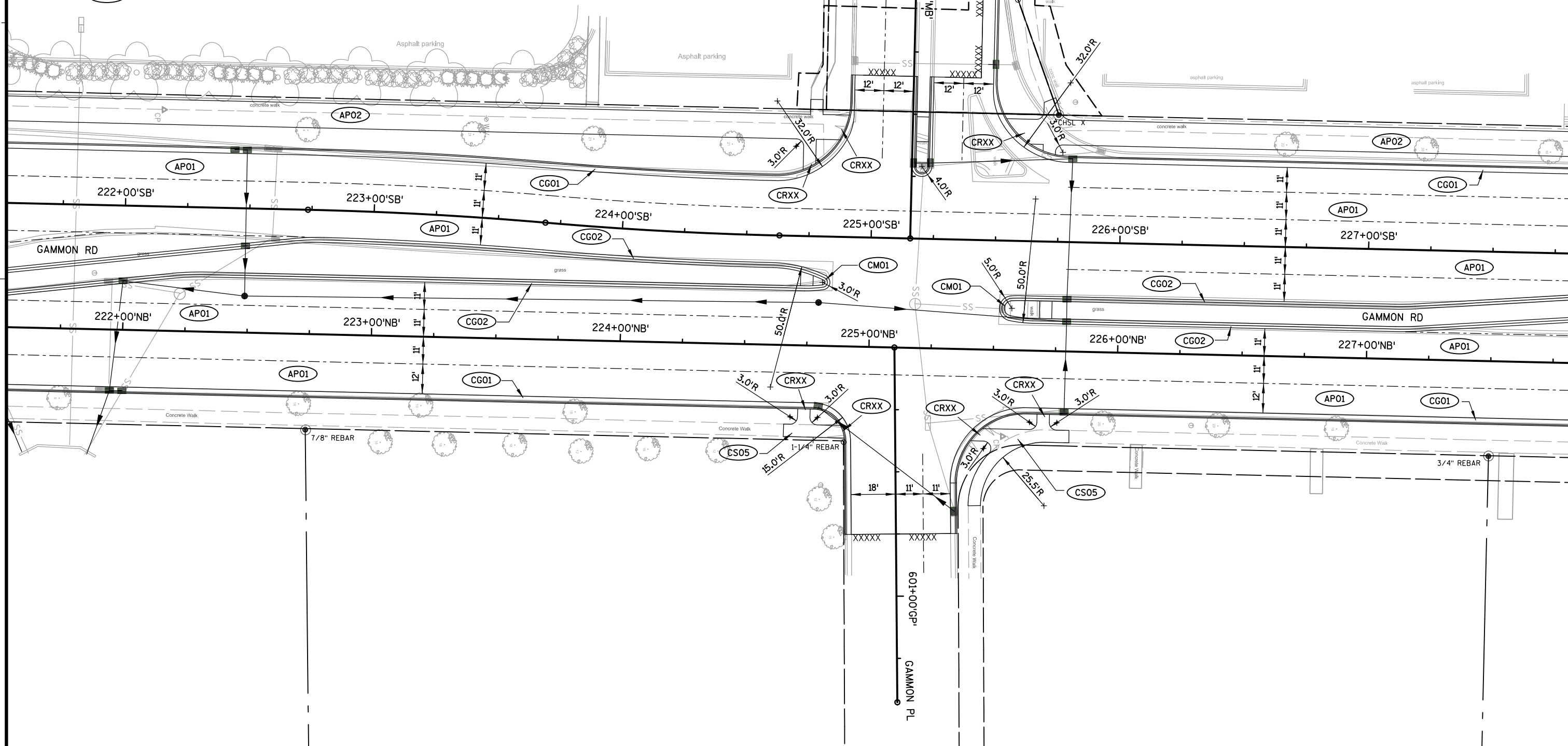
WISDOT/CADDs SHEET 42



AP01	HMA PAVEMENT 6.75"	CP01	CONCRETE PAVEMENT, 10-INCH
AP02	ASPHALTIC SURFACE 3"	CS05	CONCRETE SIDEWALK 5-INCH
BG01	MGS GUARDRAIL 3	CS07	CONCRETE SIDEWALK 7-INCH
CG01	CONCRETE CURB & GUTTER SPECIAL 30-INCH TYPE 'D', GUTTER SLOPE 6.25%	CR01	CURB RAMP, TYPE 1
CG02	CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25%	CR02	CURB RAMP, TYPE 2
CG03	CONCRETE GUTTER 24-INCH	CR03	CURB RAMP, TYPE 3
CM01	CONCRETE MEDIAN SLOPED NOSE, TYPE 1	<u>XXXXX</u>	SAWCUT

PAVING DETAIL LEGEND

AP01	HMA PAVEMENT 6.75"	CP01	CONCRETE PAVEMENT, 10-INCH
AP02	ASPHALTIC SURFACE 3"	CS05	CONCRETE SIDEWALK 5-INCH
BG01	MGS GUARDRAIL 3	CS07	CONCRETE SIDEWALK 7-INCH
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CG02	CONCRETE CURB & GUTTER SPECIAL 24-INCH TYPE 'D', GUTTER SLOPE 6.25%	CR02	CURB RAMP, TYPE 2
CG03	CONCRETE GUTTER 24-INCH	CR03	CURB RAMP, TYPE 3
CM01	CONCRETE MEDIAN SLOPED NOSE, TYPE 1	XXXXX	SAWCUT



PROJECT NO: 5992-10-32

HWY: GAMMON RD

COUNTY: DANE

PAVING DETAILS - GAMMON RD

SCALE, FEET

0 20 40

SHEET

PRE_29

E

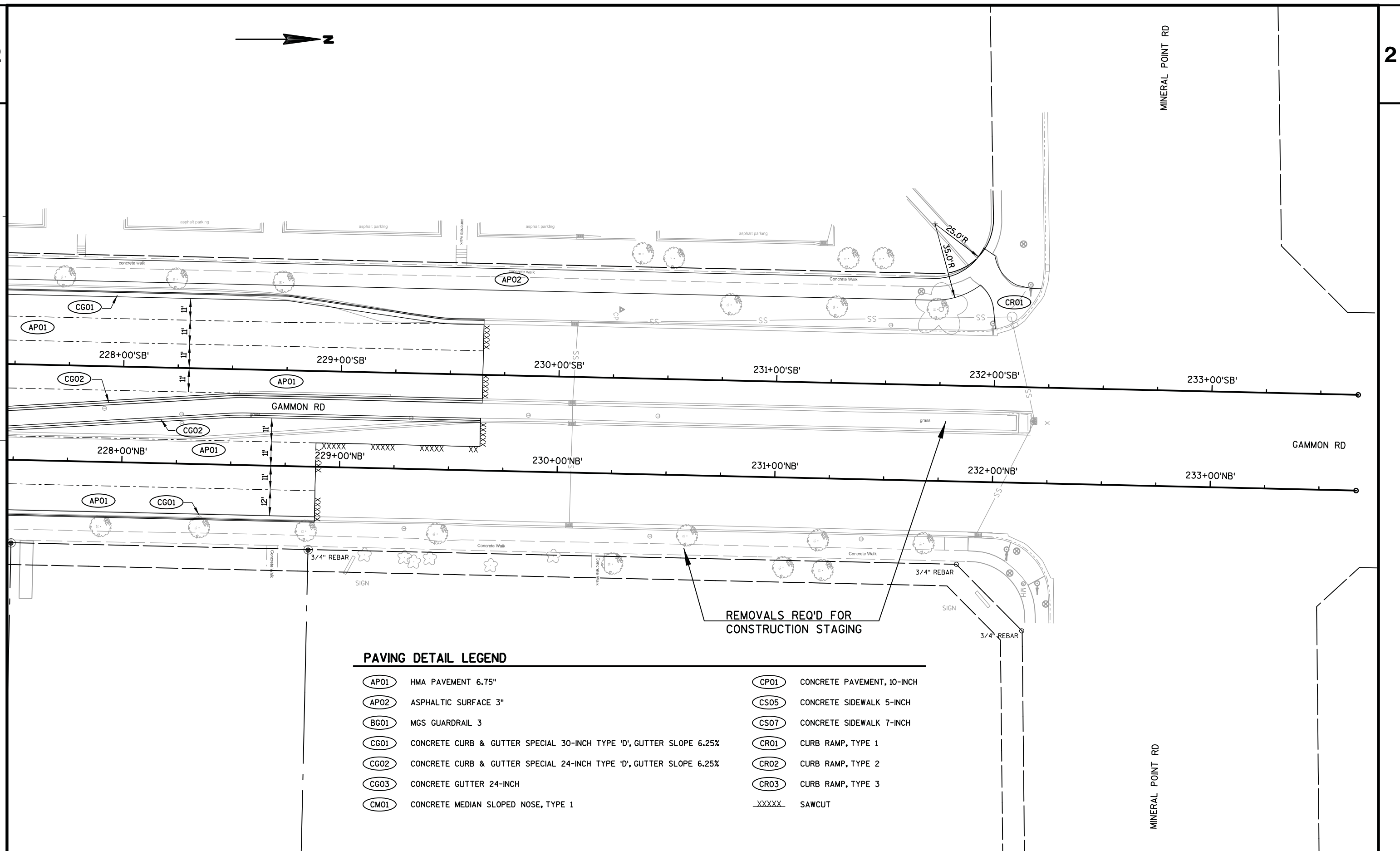
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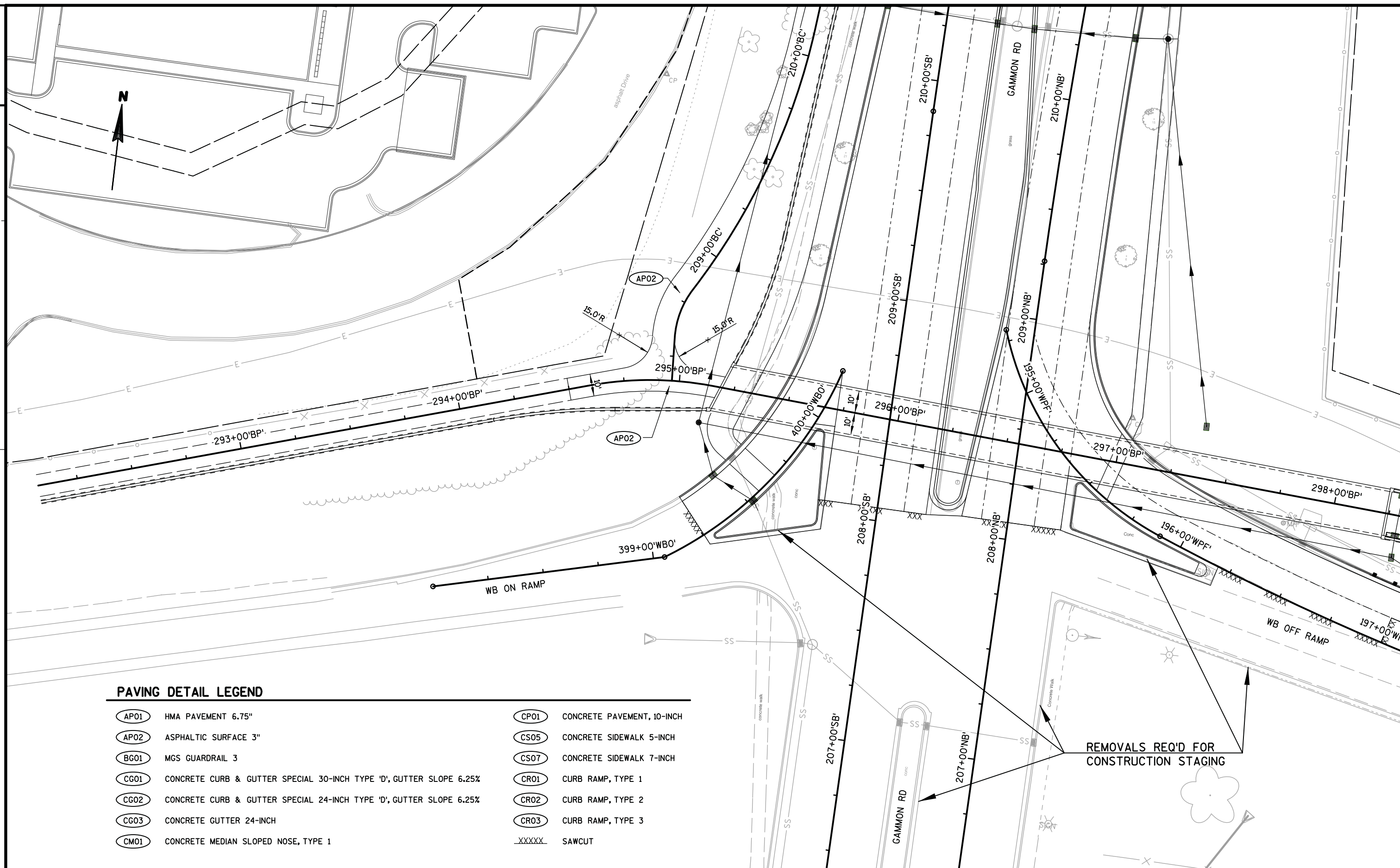
PLOT BY : kk226

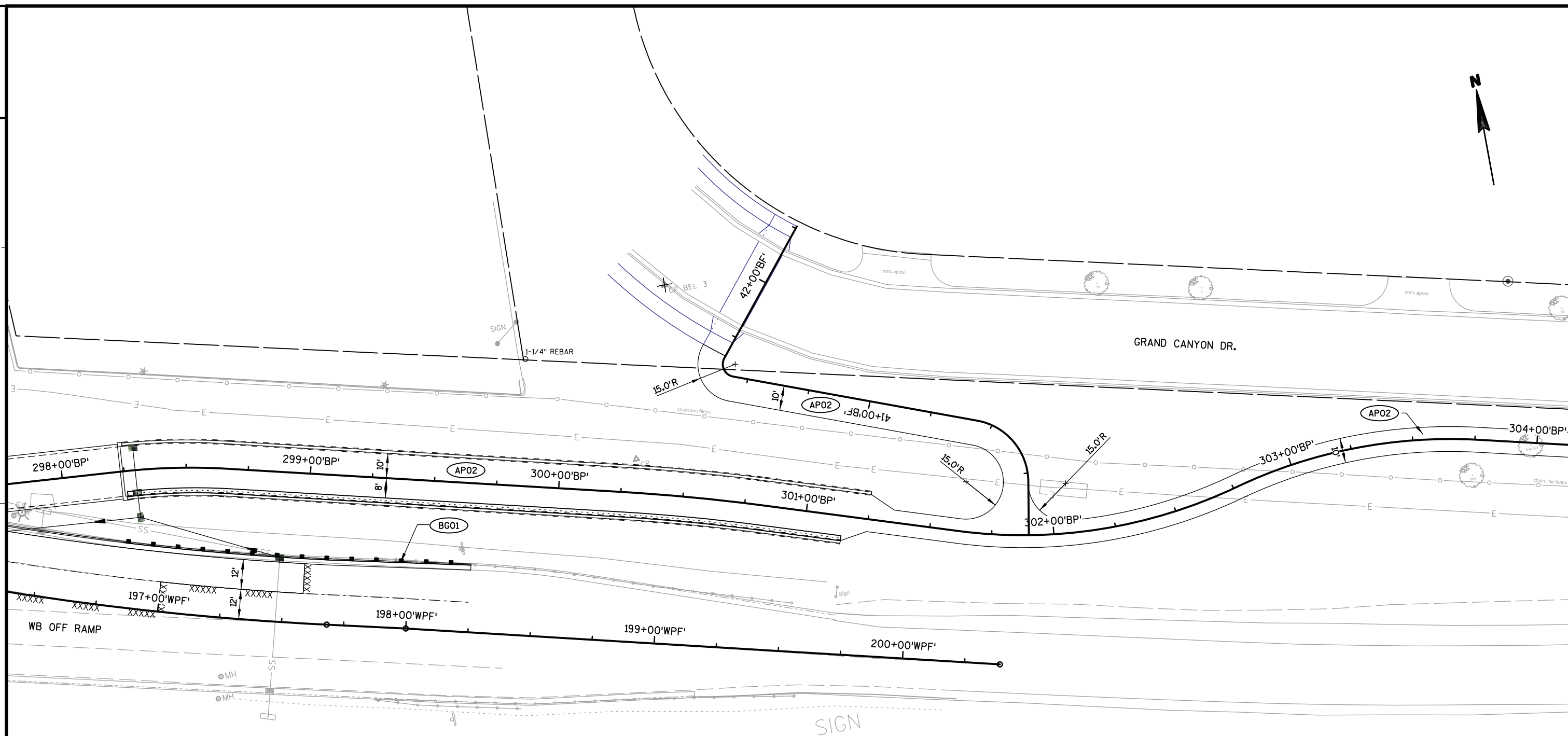
PLOT DATE : 5/7/2019

PLOT SCALE : 1:40

WISDOT/CADDs SHEET 42







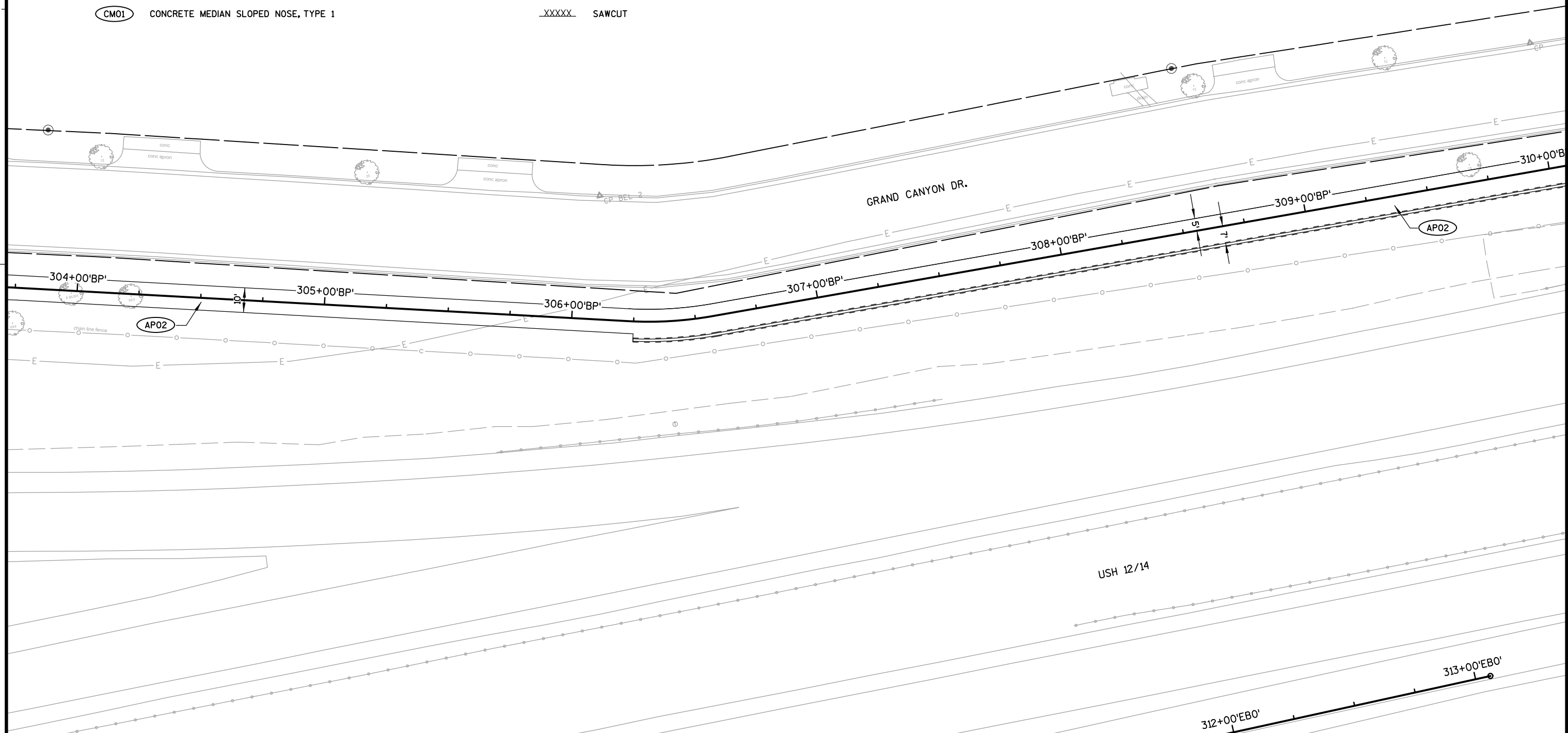
PAVING DETAIL LEGEND

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CG03	CONCRETE GUTTER 24-INCH	CR03	CURB RAMP, TYPE 3
CM01	CONCRETE MEDIAN SLOPED NOSE, TYPE 1	XXXXX	SAWCUT



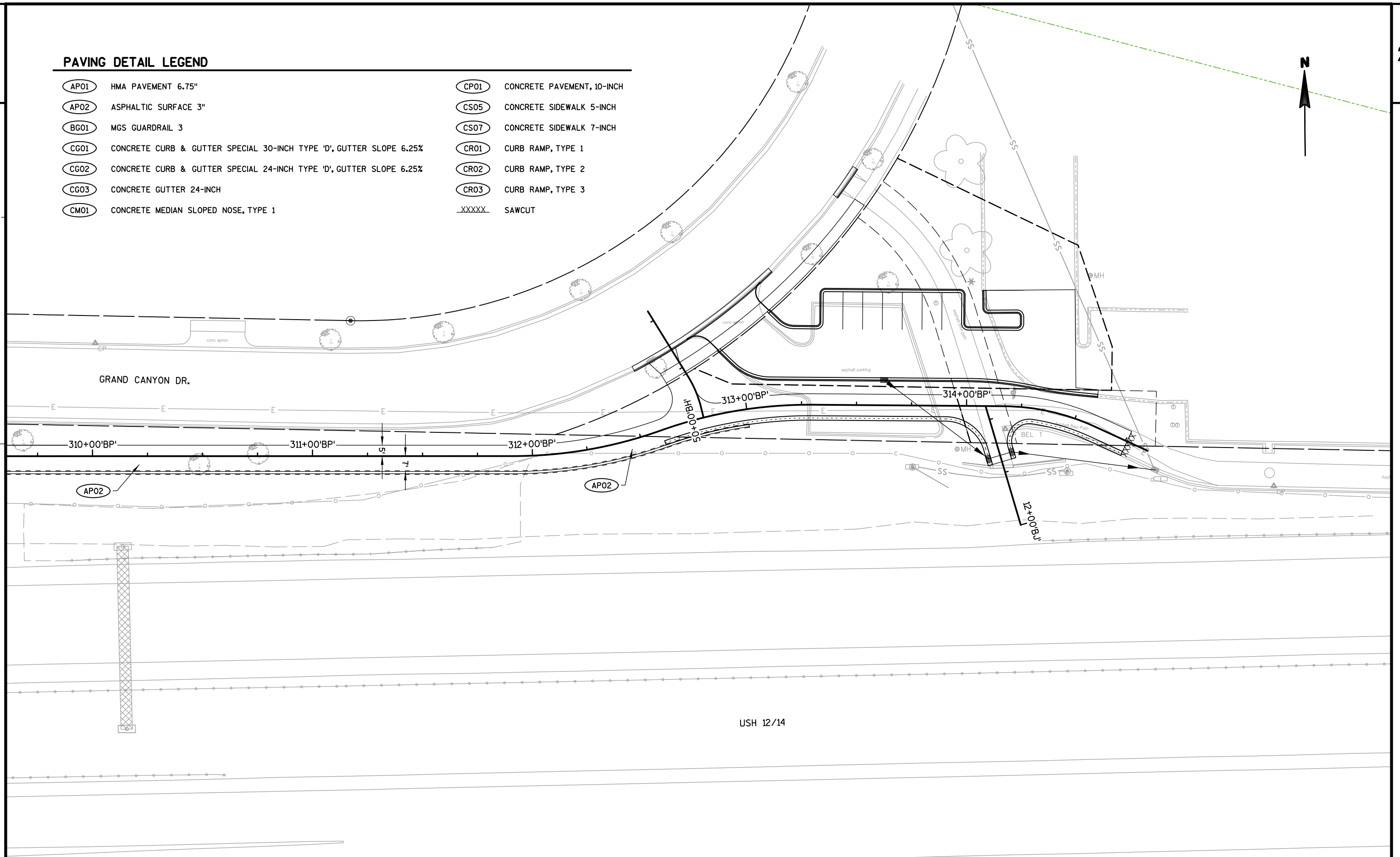
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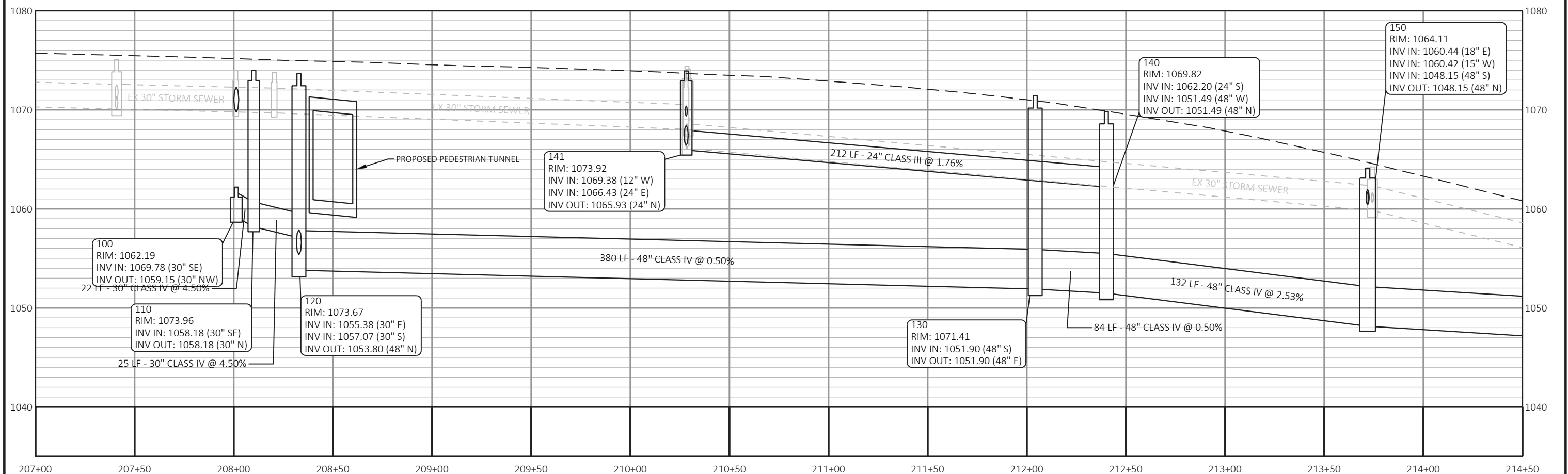
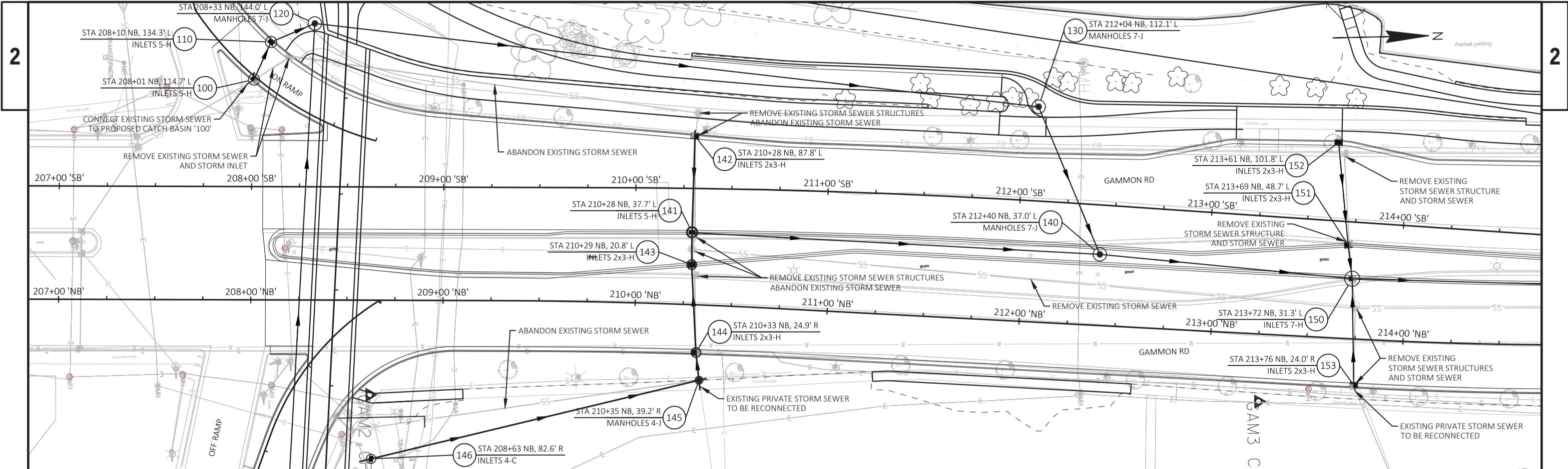
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CM01	CONCRETE MEDIAN SLOPED NOSE, TYPE 1	XXXXX	SAWCUT

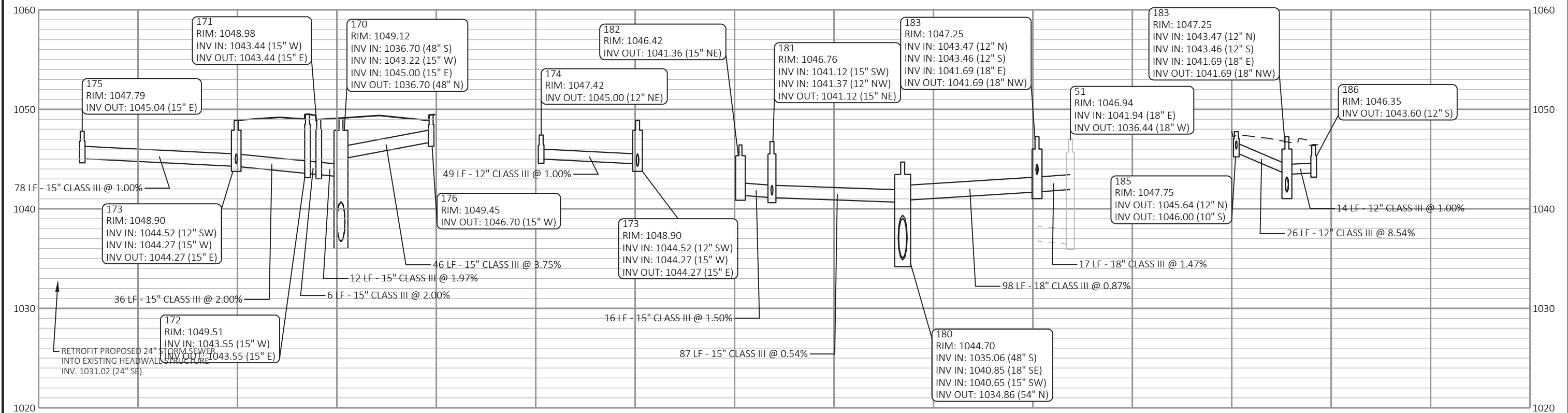
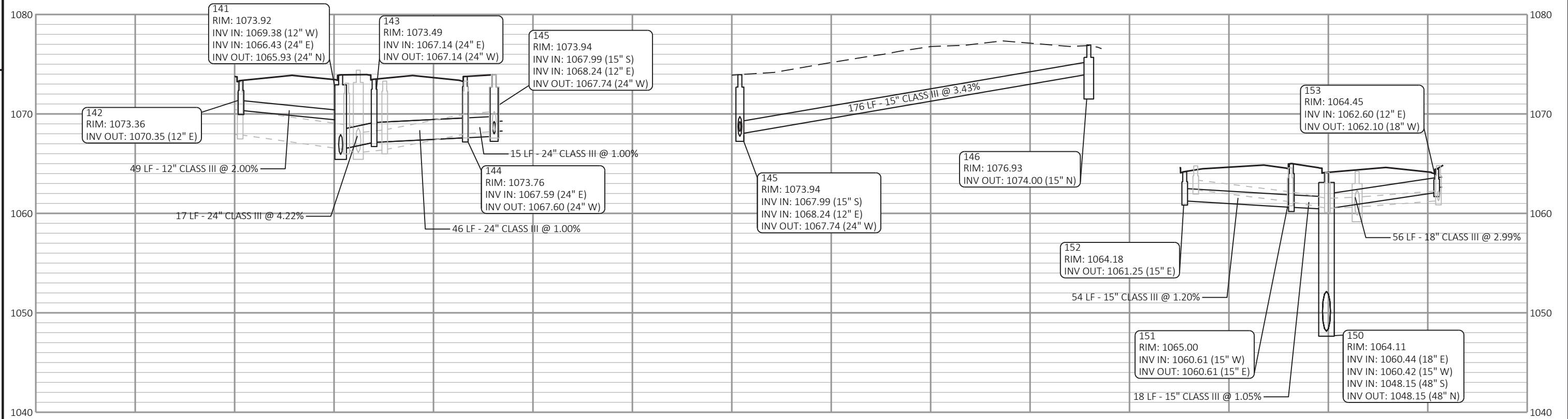


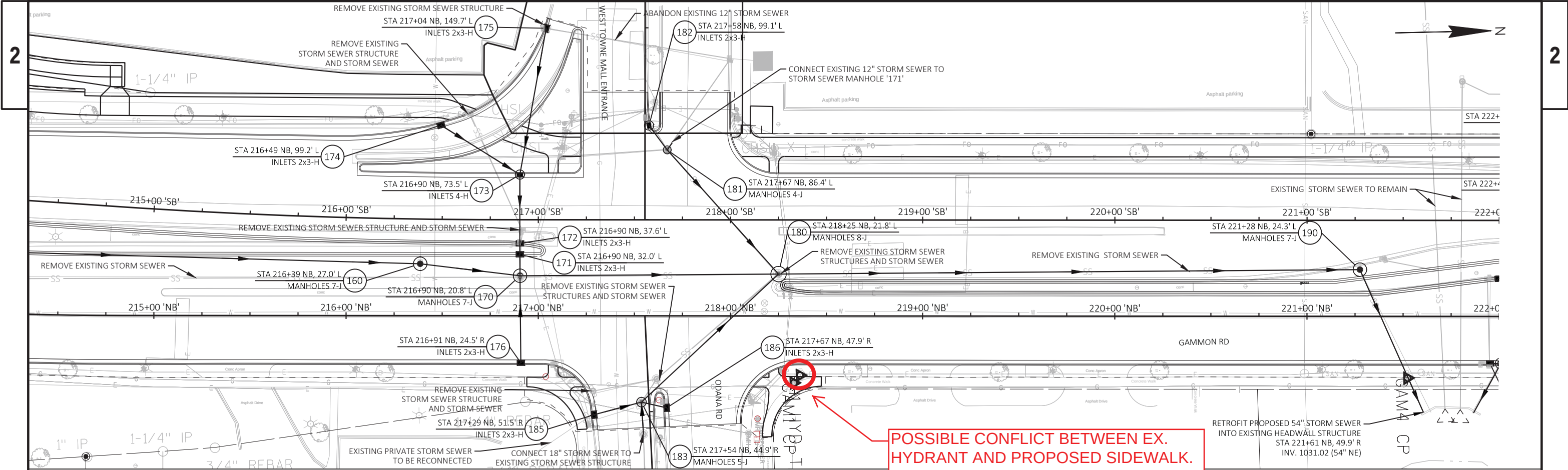
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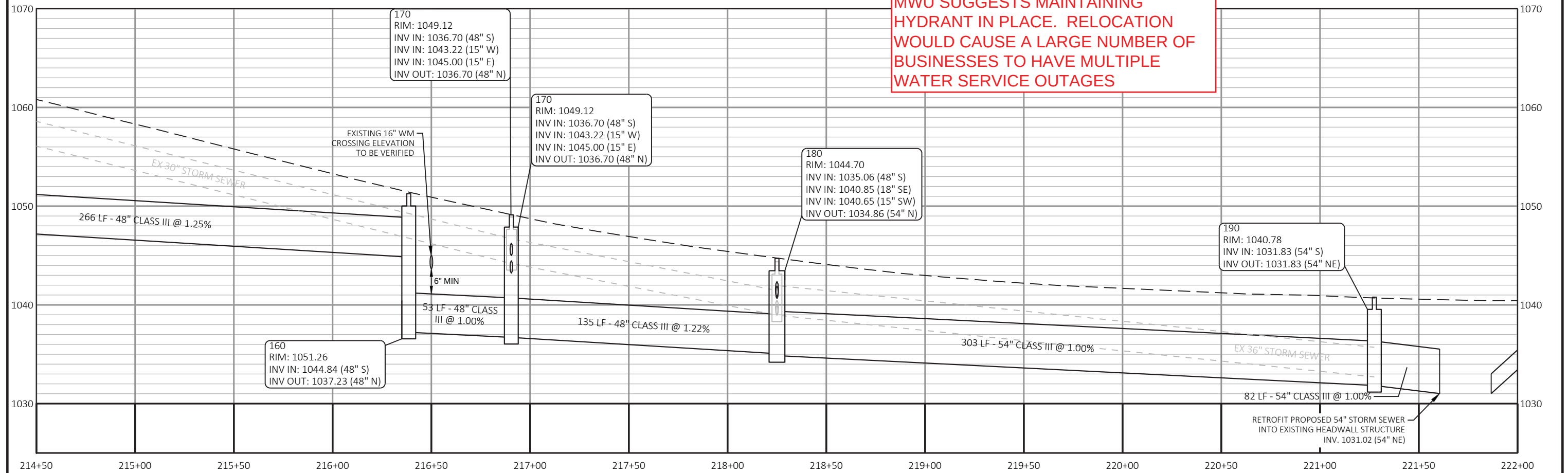


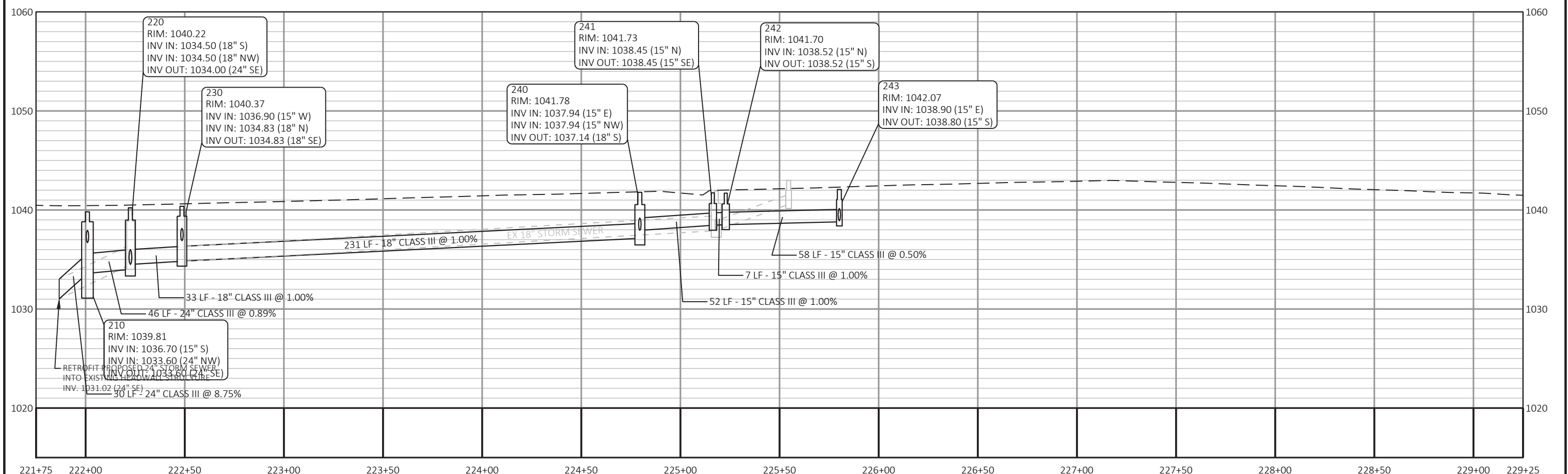
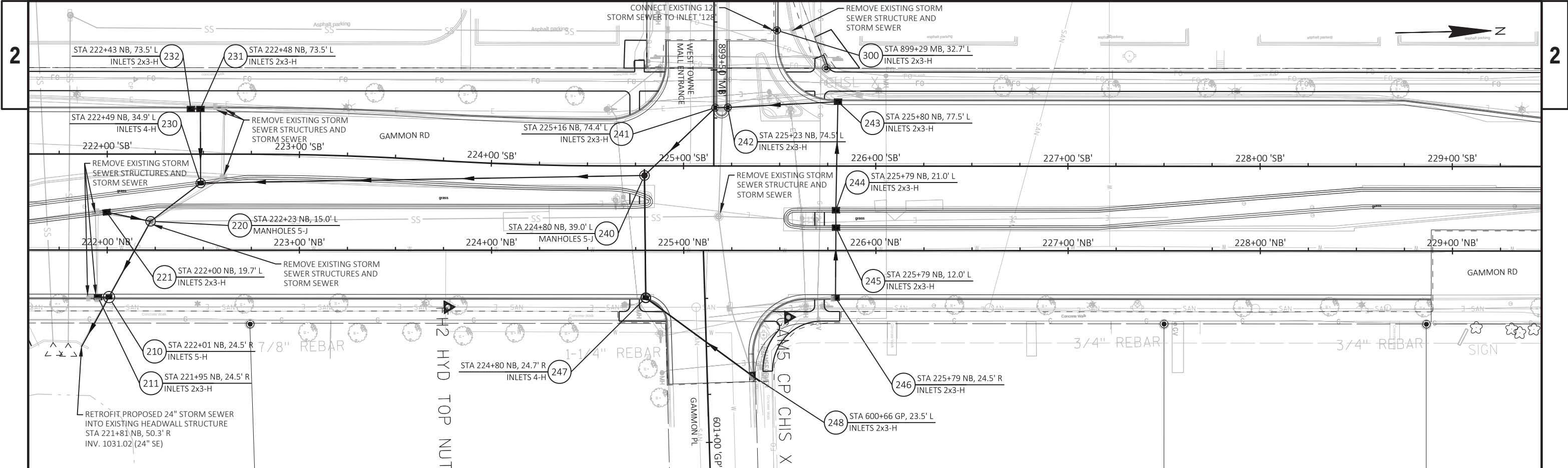


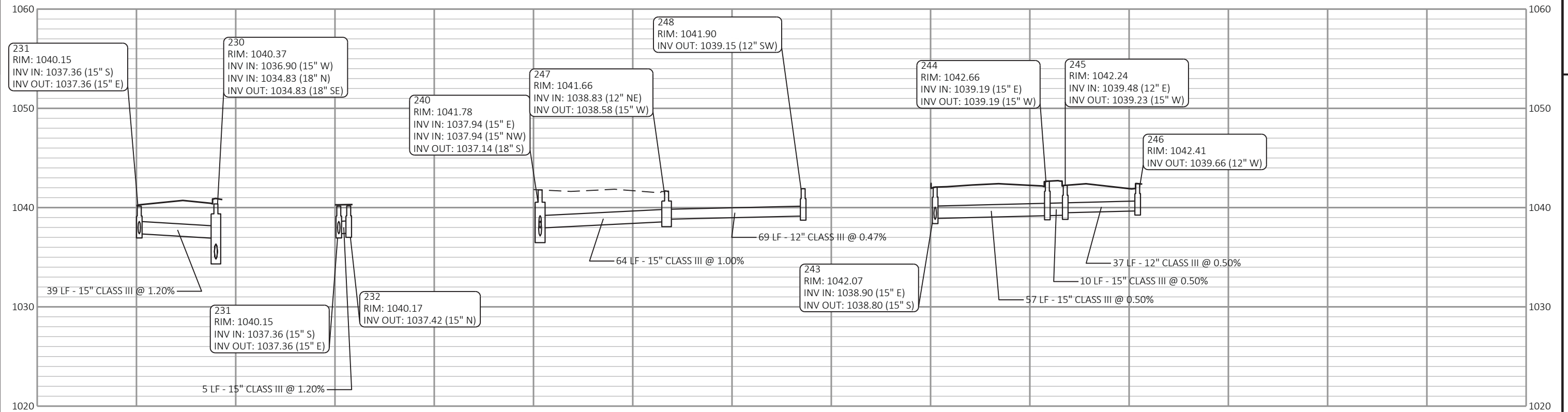


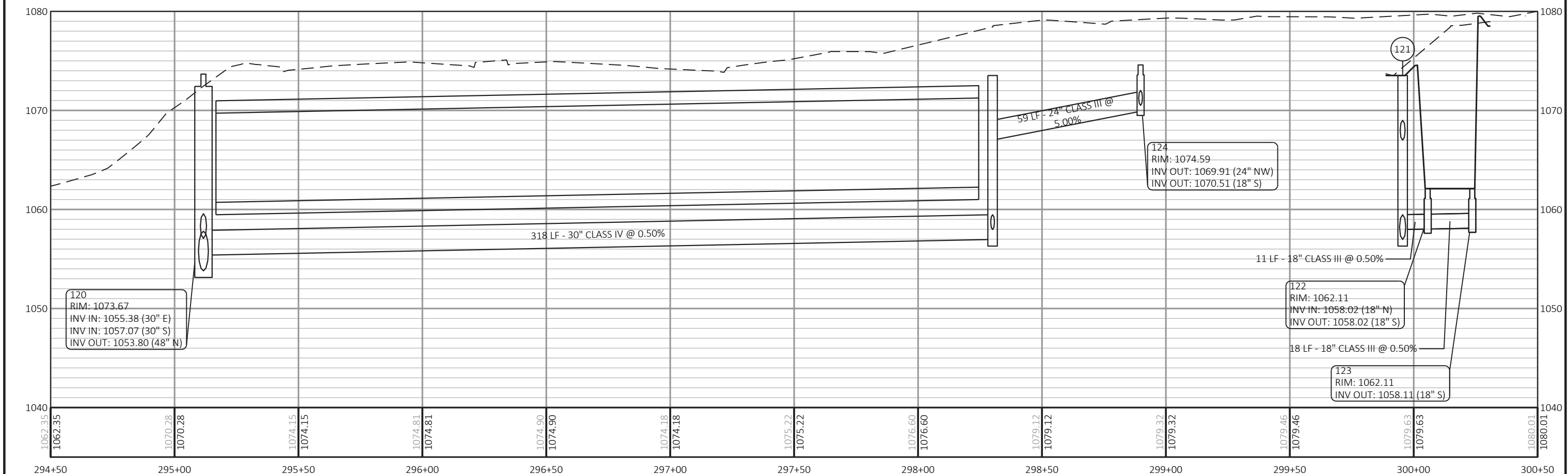
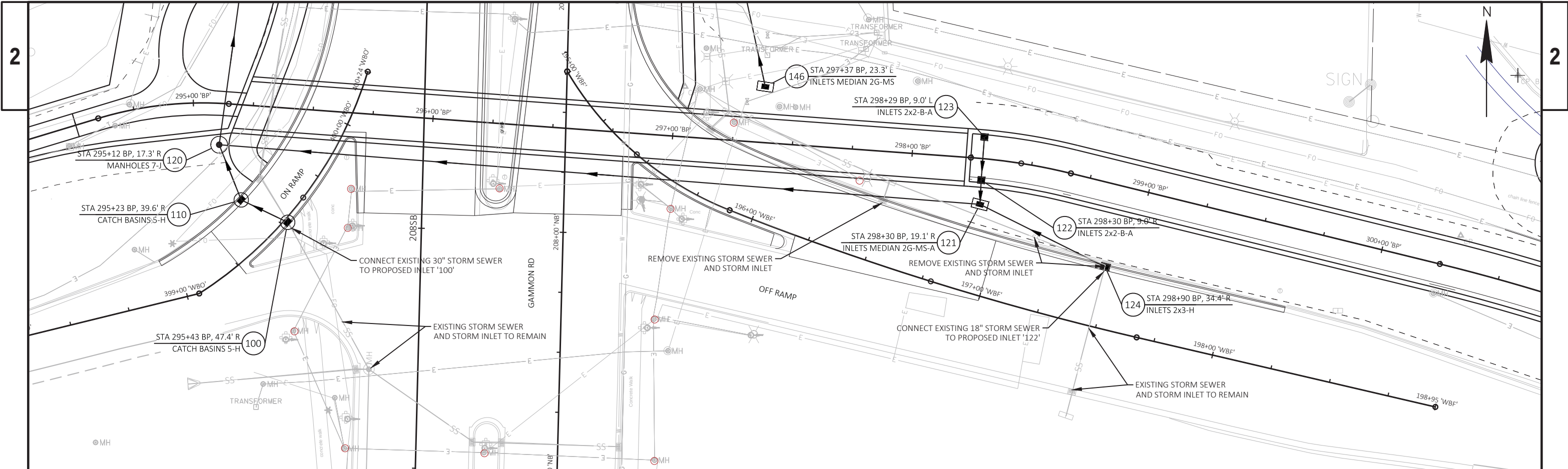


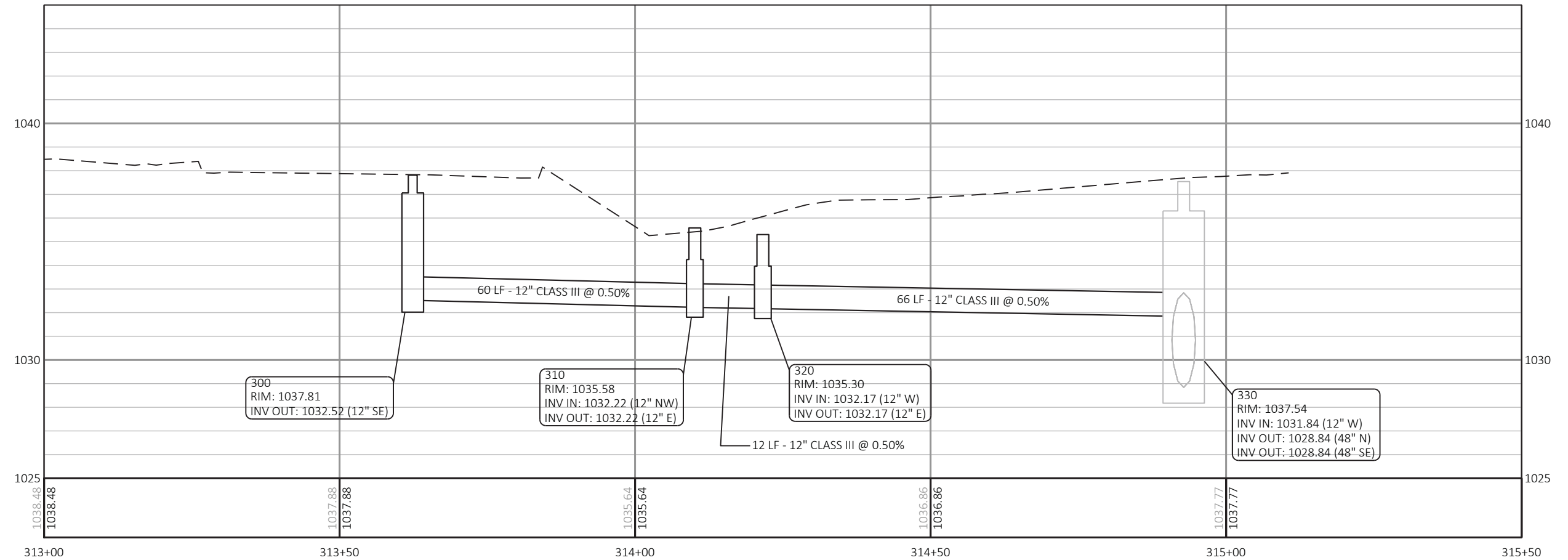
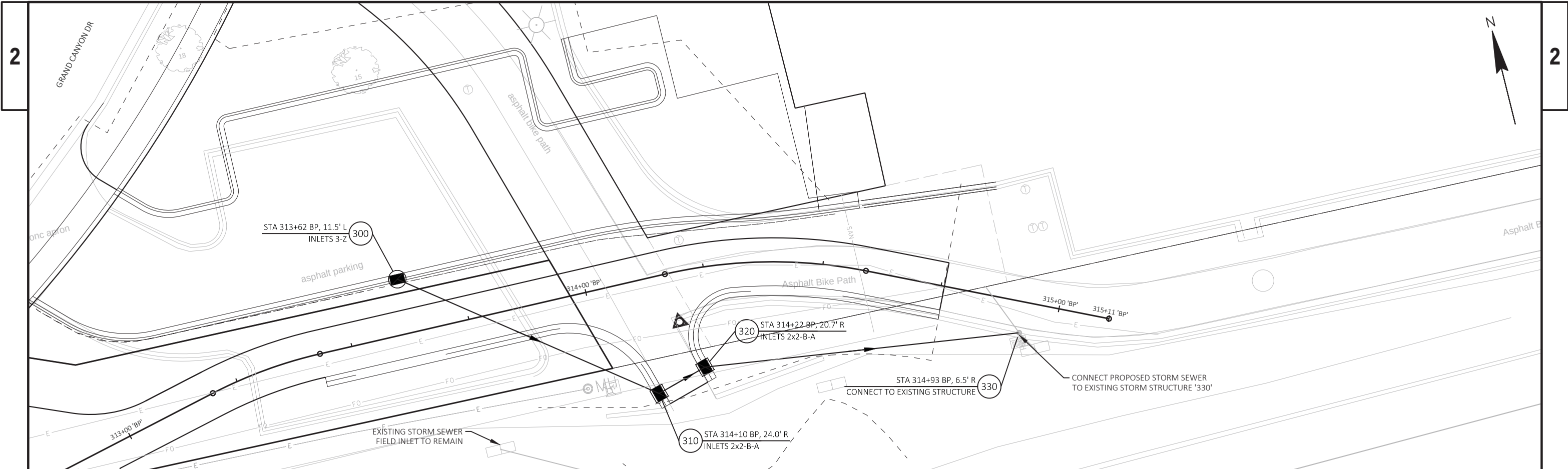
POSSIBLE CONFLICT BETWEEN EX. HYDRANT AND PROPOSED SIDEWALK. MWU SUGGESTS MAINTAINING HYDRANT IN PLACE. RELOCATION WOULD CAUSE A LARGE NUMBER OF BUSINESSES TO HAVE MULTIPLE WATER SERVICE OUTAGES

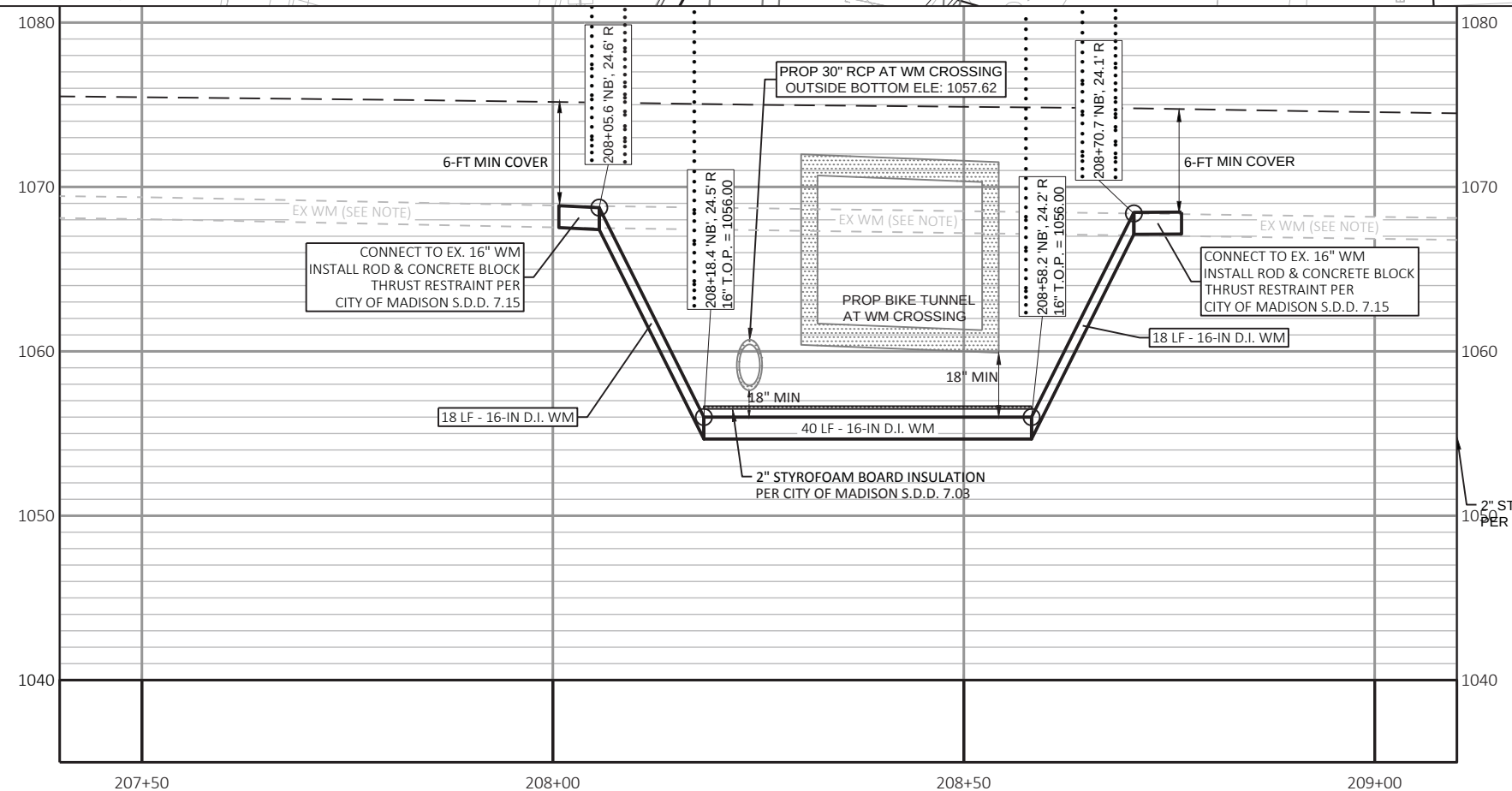
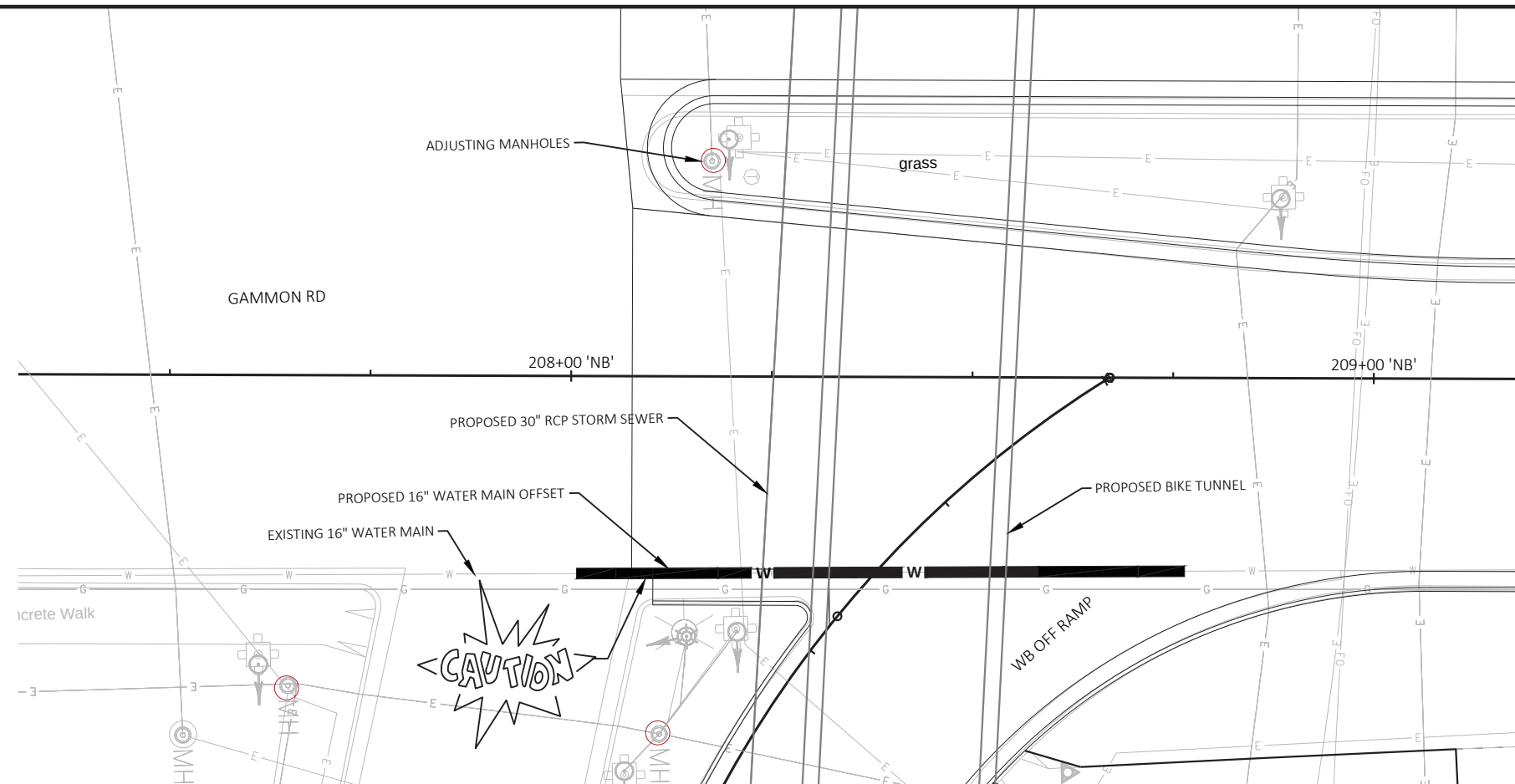








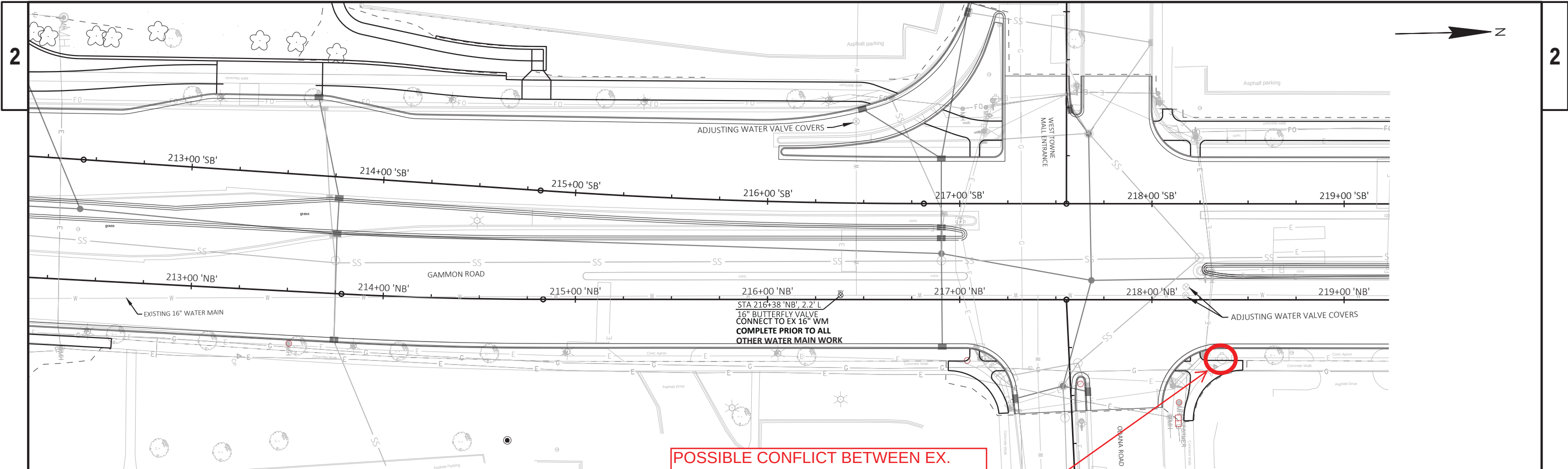




NOTE:
INSTALLATION OF PROPOSED 16" BUTTERFLY VALVE AT STA 216+38 'NB' SHALL BE COMPLETED PRIOR TO ALL OTHER WATER MAIN WORK. COORDINATE WITH THE CITY OF MADISON WATER UTILITY FOR THE OPERATION OF WATER VALVES THROUGHOUT THE PROJECT.

THE EXISTING WATER MAIN ELEVATION SHOWN IN THE PROFILE IS APPROXIMATE. THE LOCATION AND ELEVATION OF THE CONNECTION TO THE EXISTING WATER MAIN SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR IN CONJUNCTION WITH THE PROJECT ENGINEER PRIOR TO STARTING THE CONSTRUCTION OF THE WATER MAIN OFFSET.

REFER TO PART VII OF THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR CONSTRUCTION METHOD SPECIFICATIONS

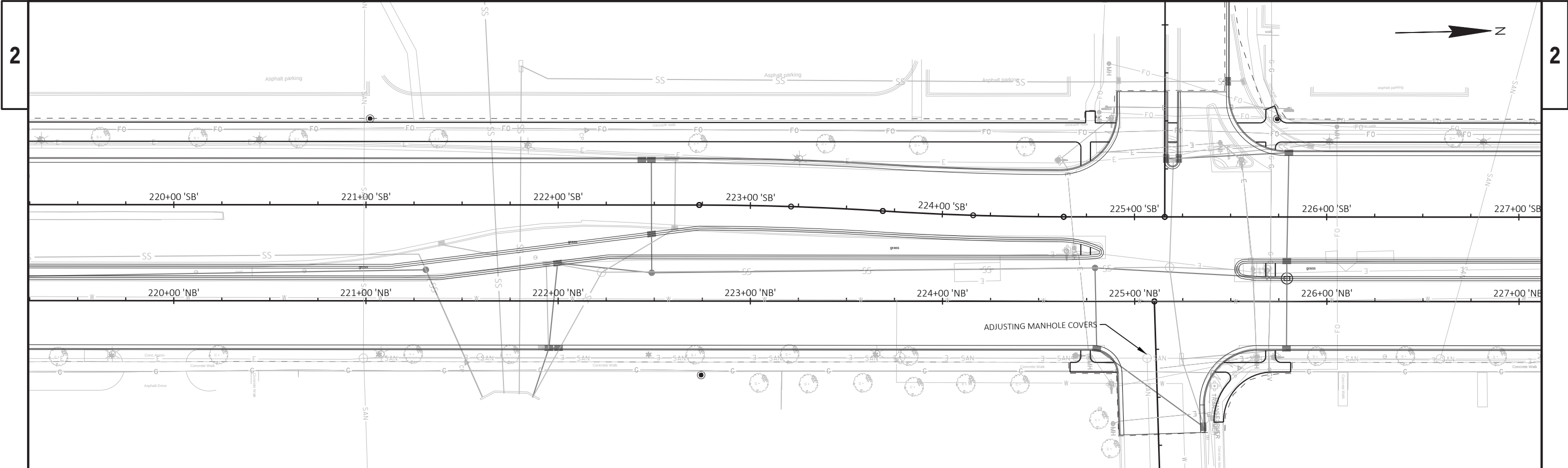


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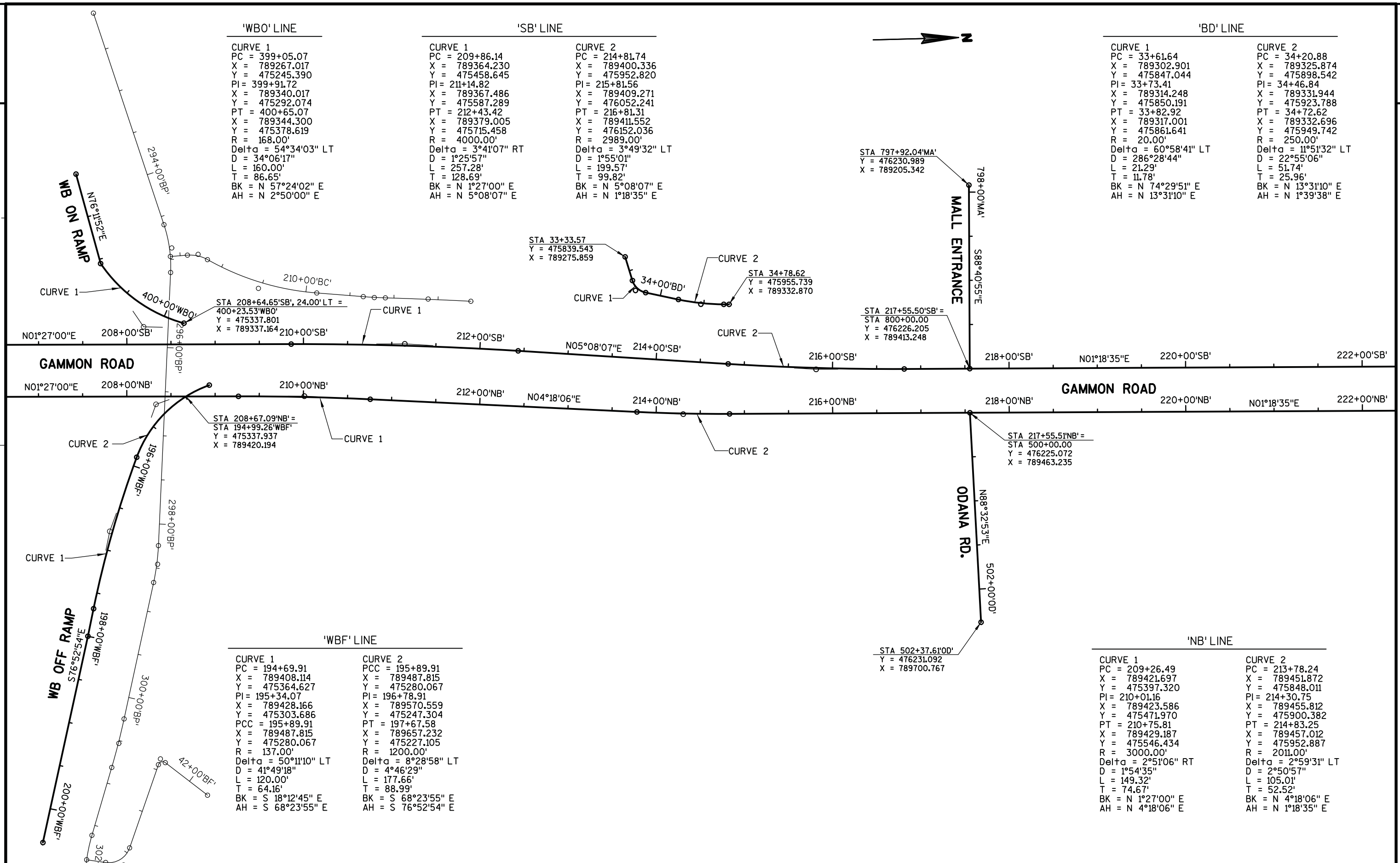
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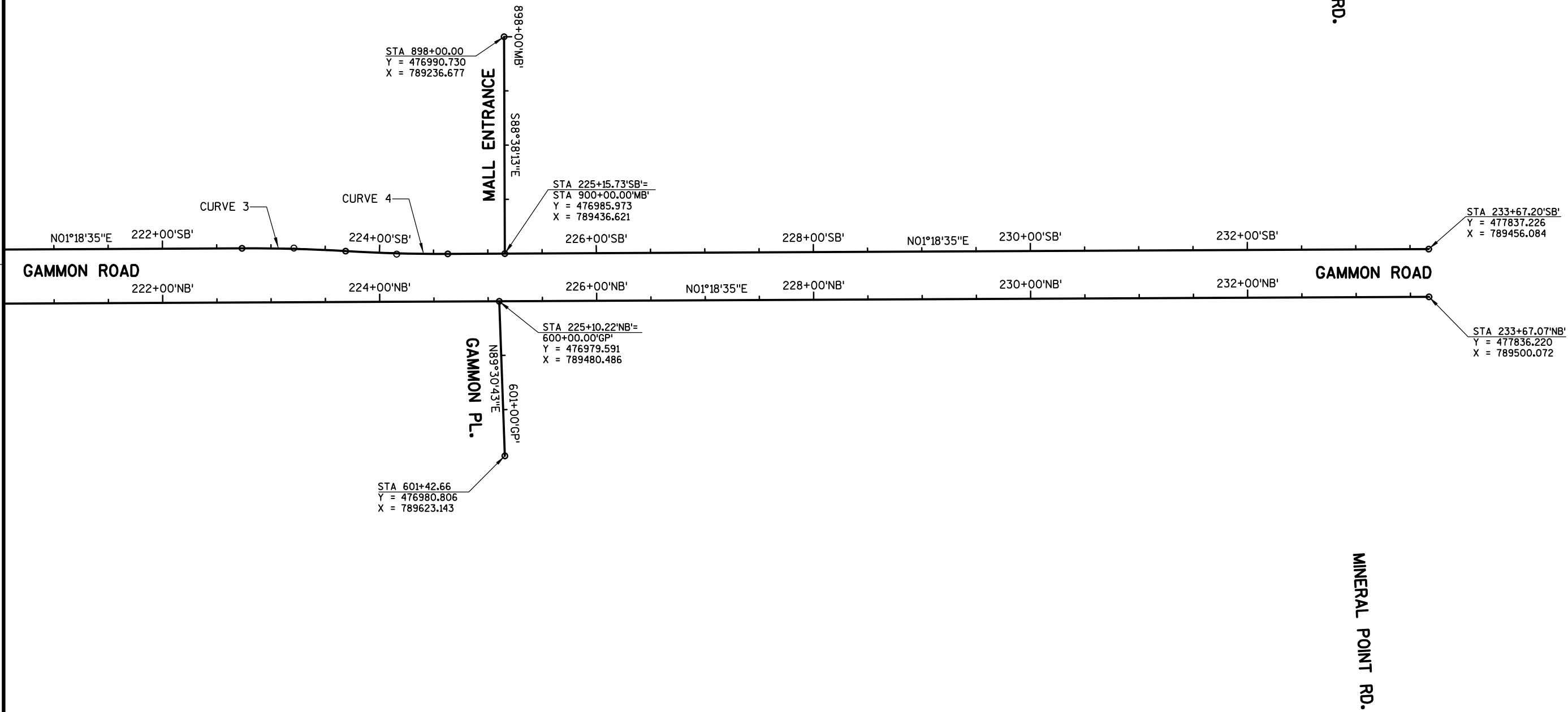
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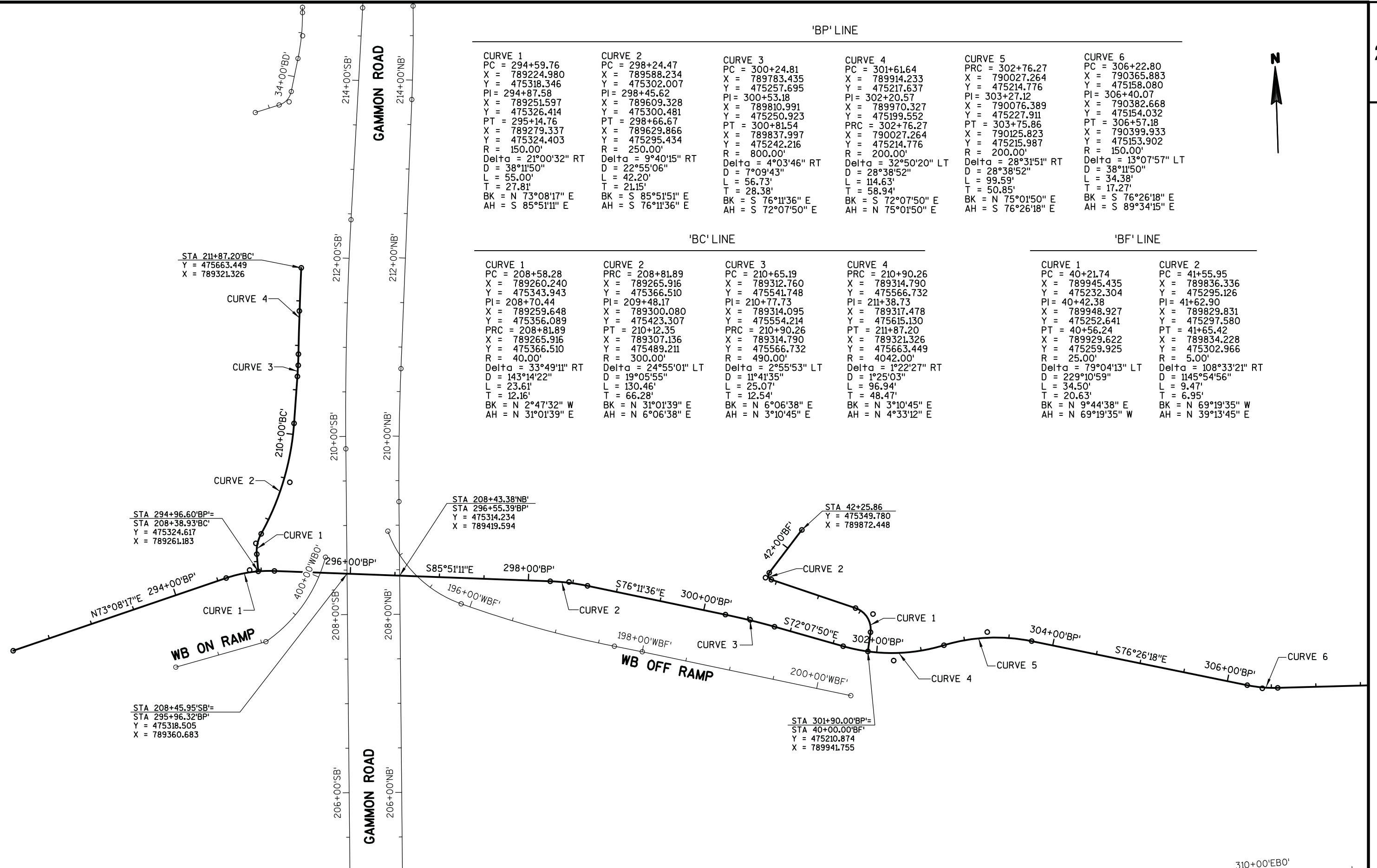
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REFER TO PART VII OF THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION FOR CONSTRUCTION METHOD SPECIFICATIONS



'SB' LINE	
CURVE 3	CURVE 4
PC = 222+73.36	PRC = 223+68.94
X = 789425.085	X = 789430.290
Y = 476743.937	Y = 476839.359
PI= 223+21.17	PI= 224+16.05
X = 789426.178	X = 789434.342
Y = 476791.730	Y = 476886.294
PRC = 223+68.94	PT = 224+63.13
X = 789430.290	X = 789435.419
Y = 476839.359	Y = 476933.392
R = 1511.00'	R = 1489.00'
Delta = 3°37'28" RT	Delta = 3°37'28" LT
D = 3°47'31"	D = 3°50'53"
L = 95.58'	L = 94.19'
T = 47.81'	T = 47.11'
BK = N 1°18'35" E	BK = N 4°56'03" E
AH = N 4°56'03" E	AH = N 1°18'35" E





'BP' LINE

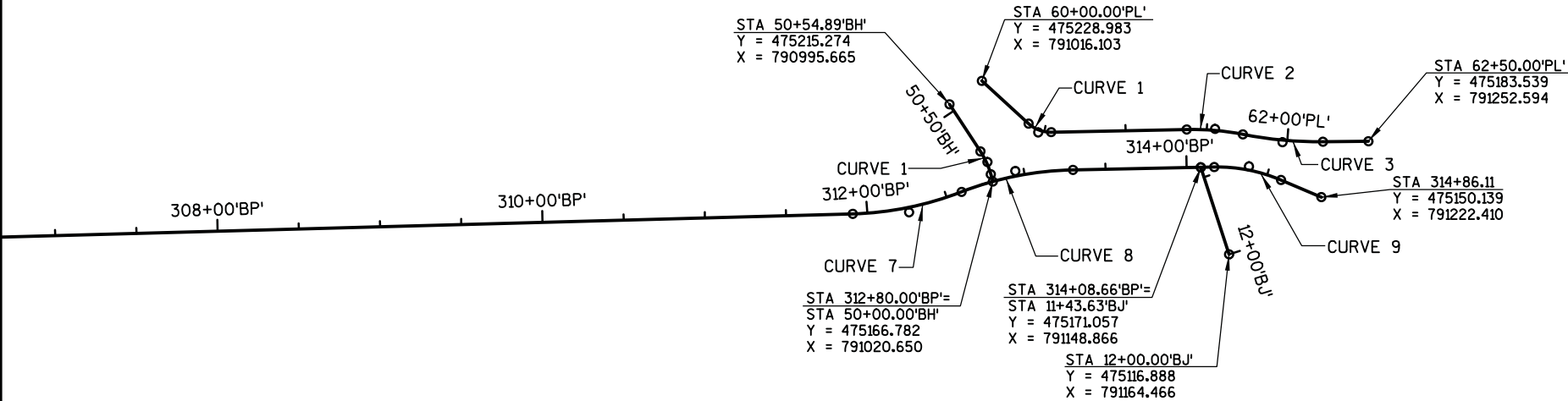
CURVE 7	CURVE 8	CURVE 9
PC = 311+91.05	PRC = 312+59.76	PC = 314+16.97
X = 790933.789	X = 791001.237	X = 791157.175
Y = 475149.905	Y = 475161.085	Y = 475170.931
PI= 312+25.75	PI= 312+95.24	PI= 314+38.37
X = 790968.483	X = 791034.737	X = 791178.575
Y = 475149.645	Y = 475172.787	Y = 475170.606
PRC = 312+59.76	PT = 313+30.00	PT = 314+59.13
X = 791001.237	X = 791070.218	X = 791197.967
Y = 475161.085	Y = 475172.249	Y = 475161.552
R = 200.00'	R = 200.00'	R = 100.00'
Delta = 19°40'58" LT	Delta = 20°07'20" RT	Delta = 24°09'38" RT
D = 28°38'52"	D = 28°38'52"	D = 57°17'45"
L = 68.71'	L = 70.24'	L = 42.17'
T = 34.69'	T = 35.49'	T = 21.40'
BK = S 89°34'15" E	BK = N 70°44'47" E	BK = S 89°07'54" E
AH = N 70°44'47" E	AH = S 89°07'54" E	AH = S 64°58'15" E

'BH' LINE

CURVE 1
PC = 50+04.64
X = 791019.570
Y = 475171.297
PI= 50+12.48
X = 791017.746
Y = 475178.920
PT = 50+20.19
X = 791013.677
Y = 475185.620
R = 50.00'
Delta = 17°49'08" LT
D = 114°35'30"
L = 15.55'
T = 7.84'
BK = N 13°27'19" W
AH = N 31°16'27" W

'PL' LINE

CURVE1	CURVE 2	CURVE 3
PC = 60+38.98	PC = 61+37.62	PC = 61+72.39
X = 791043.916	X = 791141.028	X = 791175.476
Y = 475201.670	Y = 475194.678	Y = 475190.437
PI= 60+46.98	PI= 61+55.07	PI= 61+97.26
X = 791049.625	X = 791158.480	X = 791199.695
Y = 475196.064	Y = 475194.414	Y = 475184.771
PT = 60+54.20	PRC = 61+72.39	PT = 62+21.96
X = 791057.626	X = 791175.476	X = 791224.560
Y = 475195.943	Y = 475190.437	Y = 475184.192
R = 20.00'	R = 162.00'	R = 240.00'
Delta = 43°36'43" LT	Delta = 12°17'58" RT	Delta = 11°50'00" LT
D = 286°28'44"	D = 35°22'04"	D = 23°52'24"
L = 15.22'	L = 34.78'	L = 49.57'
T = 8.00'	T = 17.45'	T = 24.87'
BK = S 45°31'10" E	BK = S 89°07'54" E	BK = S 76°49'56" E
AH = S 89°07'54" E	AH = S 76°49'56" E	AH = S 88°39'56" E



USH 12/14 TO MINERAL POINT ROAD

LOCAL STREET DANE COUNTY

END PROJECT 5992-10

STA. 227+00 "SB"

Y = 477170.199

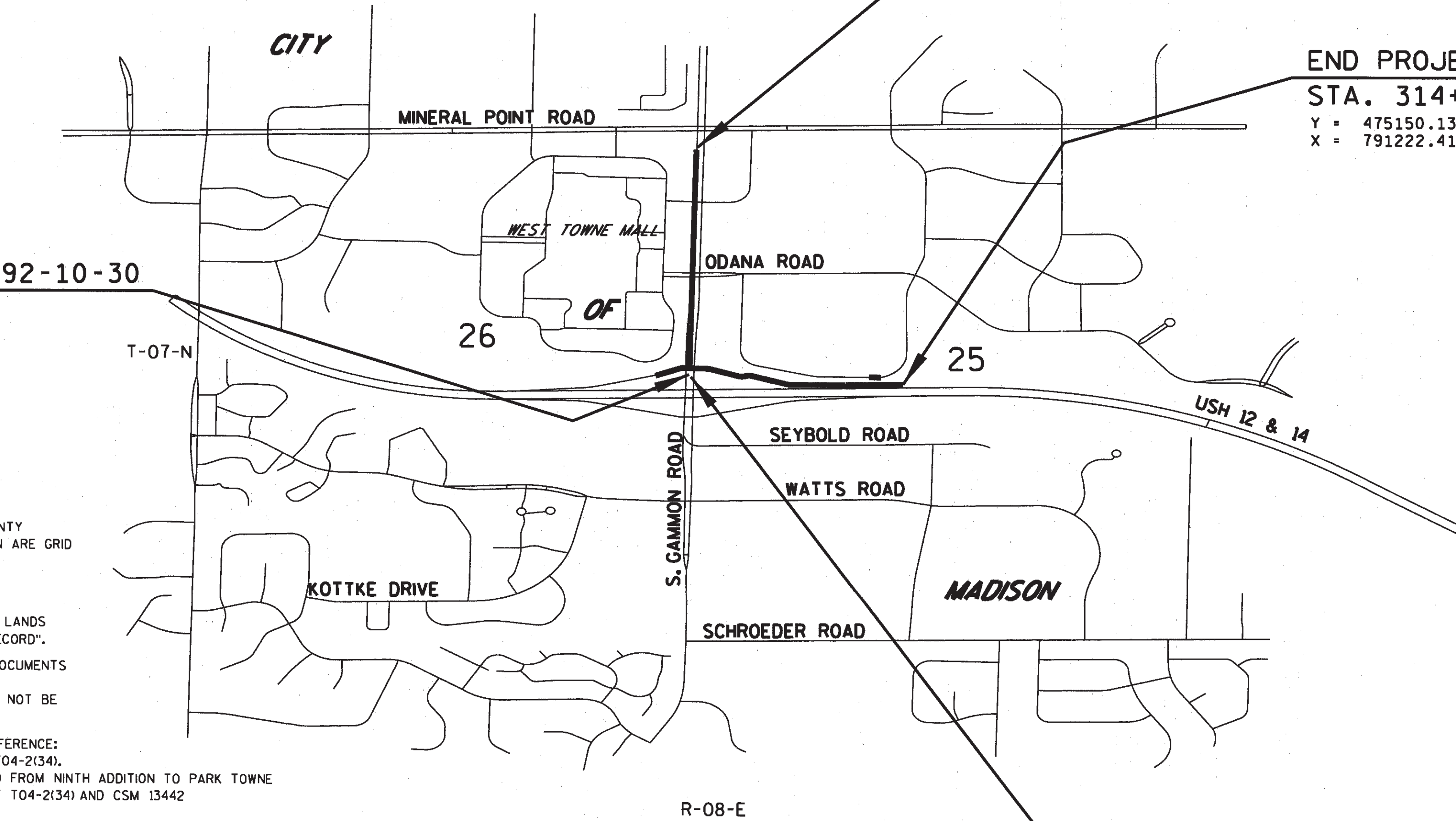
X = 789440.833

END PROJECT

STA. 314+

Y = 475150.13

X = 791222.41



92-10-30

T-07-N

NTY
ARE GRID

LANDS
CORD".

OCUMENTS

NOT BE

ERENCE:

04-2(34).

FROM NINTH ADDITION TO PARK TOWNE

T04-2(34) AND CSM 13442

R-08-E

AMERICAN TRANSMISSION COMPANY DOC NO 3884494

DOC NO 1599638, NINTH ADDITION TO PARK TOWNE

MADISON GAS & ELECTRIC DOC NO 1727857

COORDINATES
E GRID
AS GROUND

LOT 95
NINTH ADDITION TO PARK TOWNE
V. 57 / PGS. 24-25/ DOC. 1599638

CITY

LOT 94
NINTH ADDITION TO PARK TOWNE
V. 57 / PGS. 24-25/ DOC. 1599638

UNLESS
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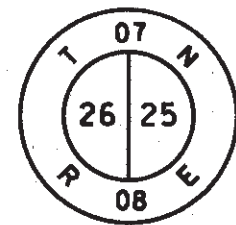
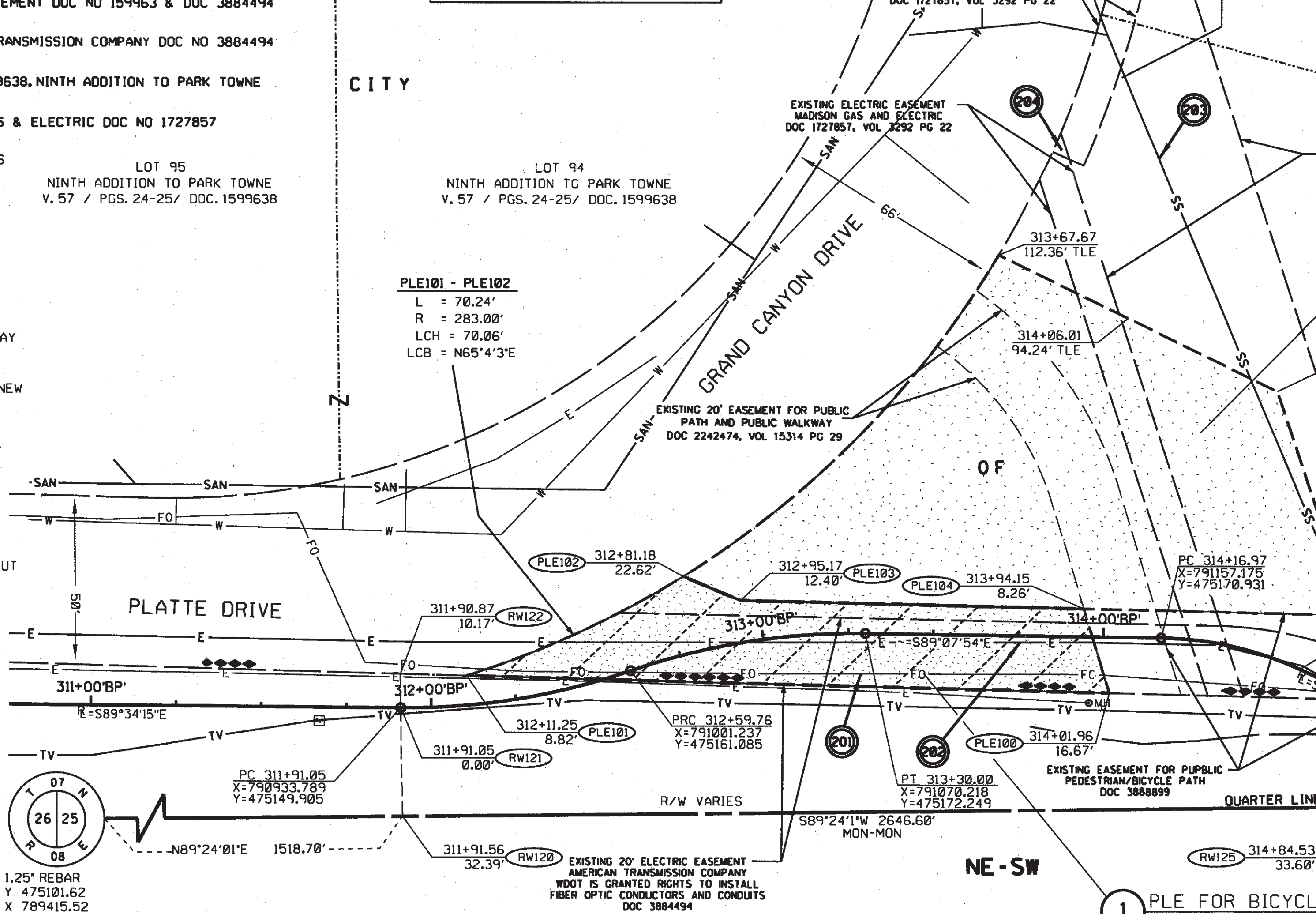
E HIGHWAY
OF PUBLIC

PS AND
RIGHT-OF-WAY
LINES, AND

AR TO THE NEW

AS DEFINED
IGHT OF
G THE RIGHT
HWAY
E AT THE
EN.

ENANCE
EQUIPMENT
CH PUBLIC
N ANY
E, BUT WITHOUT
ID LANDS
HERWISE



1.25" REBAR
Y 475101.62
X 789415.52

ONAL UTILITY SYMBOLS

1 PLE FOR BICYCL
PEDESTRIAN PAT
3949 S.F.

COURSE TABLE

10' WATERMAIN EASEMENT
CITY OF MADISON
DOC 1370667

P.L.

2 PLE FOR SIGNALS
4961 S.F.

10' UNDERGROUND ELECTRIC AND
COMMUNICATION EASEMENT
WISCONSIN POWER AND LIGHT, CHARTER
CABLE PARTNERS LLC D/B/A CHARTER
COMMUNICATIONS, AND MID-PLAINS
TELEPHONE D/B/A TDS TELECOM
DOC 5396255

R/W	WIDTH	YEAR
	VARIABLE	2012
	100'	1973
	VARIABLE	1996

STATE REFERENCE SYSTEM COORDINATES
FEET. VALUES SHOWN ARE GRID
DISTANCES MAY BE USED AS GROUND

ICAL 3/4" X 24" REBAR), UNLESS
COMPLETION OF THE PROJECT BY

F THE PERIMETER OF THE HIGHWAY
ITEM OR OTHER SURVEYS OF PUBLIC

DATA DERIVED FROM MAPS AND
TIONAL LINES. EXCLUDING RIGHT-OF-WAY
F EXISTING PROPERTY LINES, AND
E FIELD SURVEY.

ALONG AND PERPENDICULAR TO THE NEW

ONSTRUCTION PURPOSES, AS DEFINED
EQUIPMENT THEREON, THE RIGHT OF
PUBLIC PURPOSE, INCLUDING THE RIGHT
VEGETATION THAT THE HIGHWAY
ES ON THIS PLAT EXPIRE AT THE
THIS INSTRUMENT IS GIVEN.

ONSTRUCTION AND MAINTENANCE
OPERATE THE NECESSARY EQUIPMENT
ING AS REQUIRED FOR SUCH PUBLIC
MOVE OR PLANT THEREON ANY
NECESSARY OR DESIRABLE, BUT WITHOUT
T IMPROVEMENTS ON SAID LANDS
WILL NOT IMPAIR OR OTHERWISE

THE CITY OF MADISON.

RECORDED AS SHEET 2 OF 2 OF
N THE DANE COUNTY REGISTER OF

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD TRANSMISSION LINES	OH
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	SS
POWER POLE	NON COMPENSABLE
TELEPHONE POLE	COMPENSABLE
TELEPHONE PEDESTAL	
ELECTRIC TOWER	

R/L 20' UNDERGROUND ELECTRIC EASEMENT
REM. AMERICAN TRANSMISSION COMPANY
R/W DOC 3884497
SEC.
STA.

SE-NE

2 TLE CONST.
55,220 S.F.

PISTA = 211+14.82
PIY = 475587.289
PIX = 789367.486
Δ = 03°41'07" (RT)
D = 01°25'57"
T = 128.69'
L = 257.28'
R = 4000.00'
PC STA = 209+86.14
PT STA = 212+43.42

208+98.87
180.27' TLE

208+81.38
200.99' TLE

214+79.87
138.75' TLE

214+56.37
123.49' TLE

214+23.03
127.24' TLE

213+51.70
117.61' TLE

213+08.64
103.13' TLE

212+58.21
98.24' TLE

210+46.81
108.51' TLE

209+97.15
118.11' TLE

209+43.43
143.34' TLE

208+56.43
0.00'

212+00'SB'

210+00'SB'

214+00'SB'

216+00'SB'

PC 214+81.74
Y=475952.820
X=789400.336

PT 212+43.42
Y=475715.458
X=789379.005

PC 209+86.14
Y=475458.645
X=789364.230

SOUTH GAMMON ROAD

R/W VARIES

R/W VARIES

PLE206

PLE249

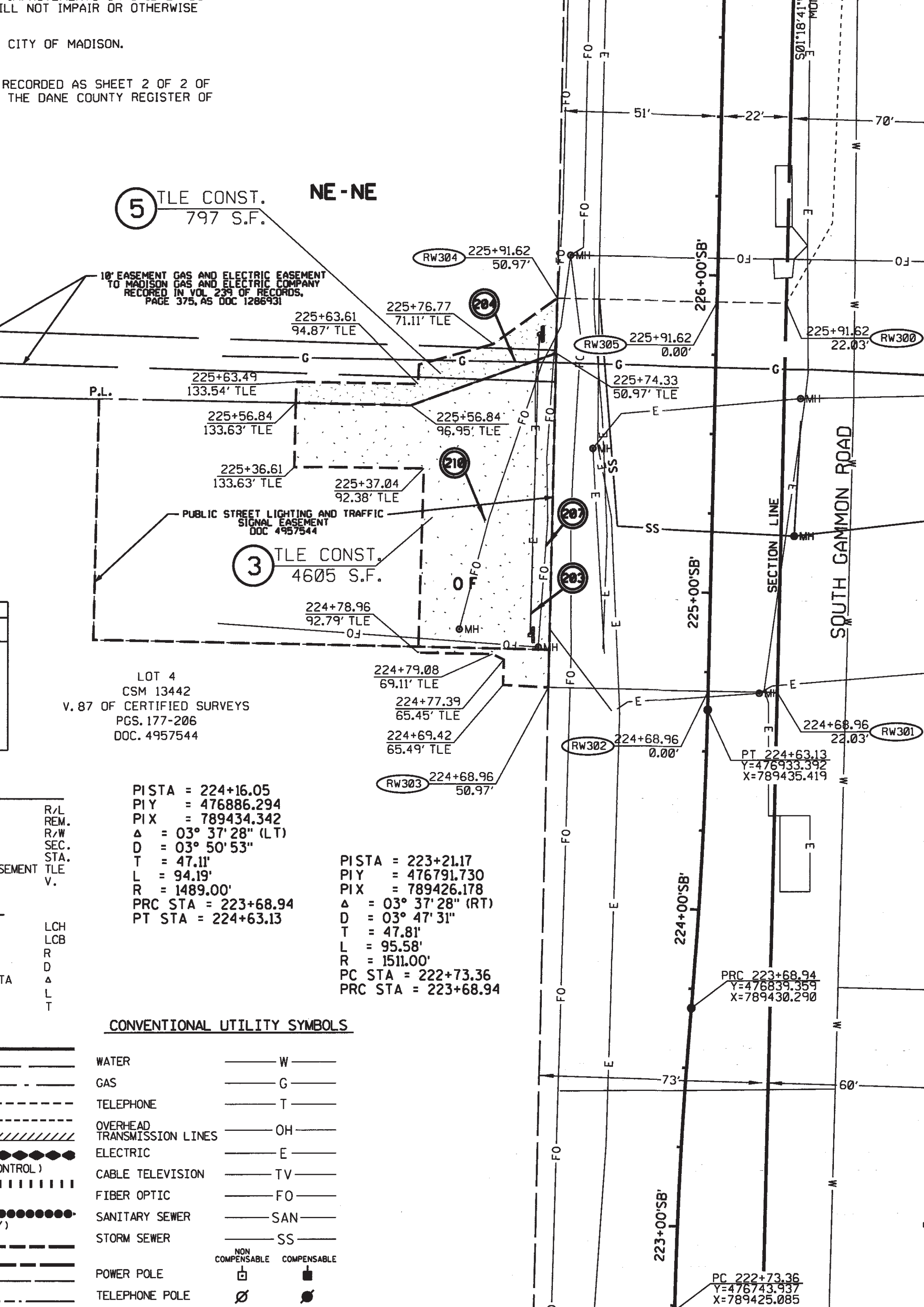
PLE250

203

202

RW202

RW204



⑤ TLE CONST.
797 S.F.

NE - NE

10' EASEMENT GAS AND ELECTRIC EASEMENT
TO MADISON GAS AND ELECTRIC COMPANY
RECORDED IN VOL 239 OF RECORDS,
PAGE 375, AS DOC 1286931

225+63.61
94.87' TLE

225+76.77
71.11' TLE

225+91.62
0.00'

225+91.62
22.03'

225+63.49
133.54' TLE

225+56.84
133.63' TLE

225+56.84
96.95' TLE

225+74.33
50.97' TLE

225+36.61
133.63' TLE

225+37.04
92.38' TLE

PUBLIC STREET LIGHTING AND TRAFFIC
SIGNAL EASEMENT
DOC 4957544

③ TLE CONST.
4605 S.F.

224+78.96
92.79' TLE

224+79.08
69.11' TLE

224+77.39
65.45' TLE

224+69.42
65.49' TLE

224+68.96
50.97'

LOT 4
CSM 13442
V. 87 OF CERTIFIED SURVEYS
PGS. 177-206
DOC. 4957544

PISTA = 224+16.05
PIY = 476886.294
PIX = 789434.342
Δ = 03° 37' 28" (LT)
D = 03° 50' 53"
T = 47.11'
L = 94.19'
R = 1489.00'
PRC STA = 223+68.94
PT STA = 224+63.13

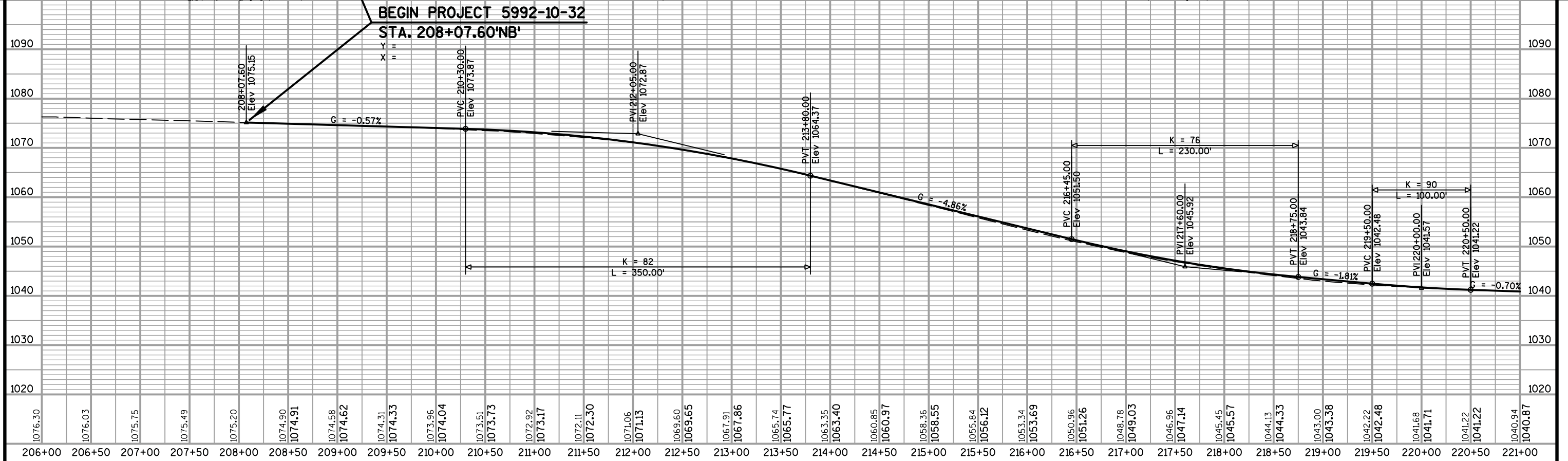
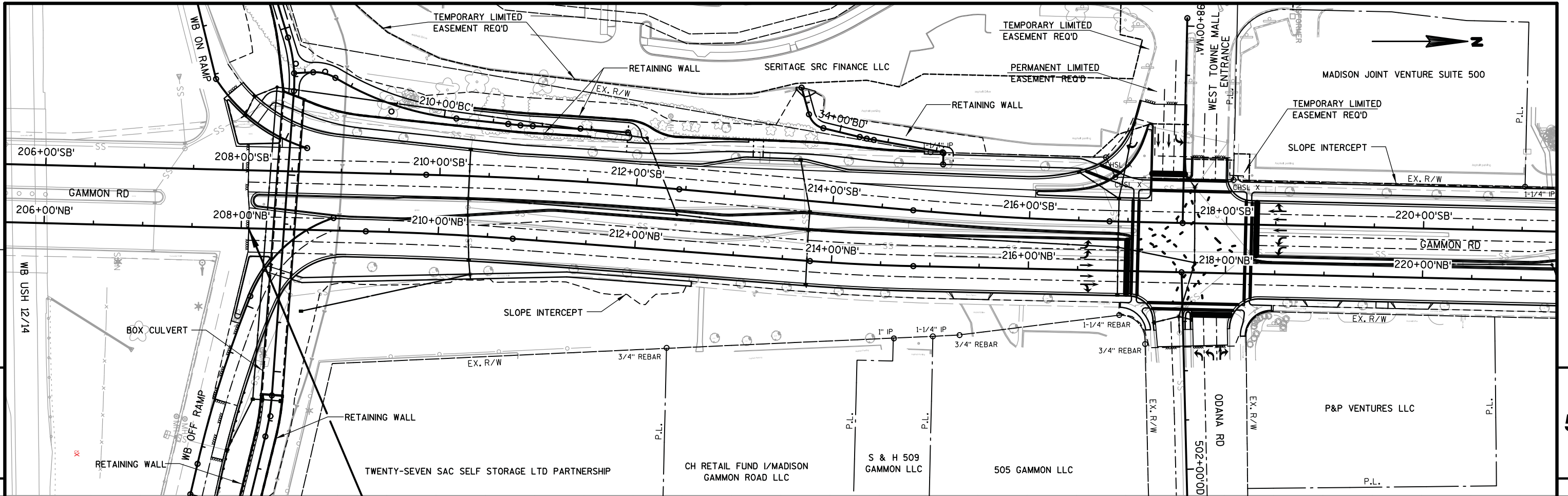
PISTA = 223+21.17
PIY = 476791.730
PIX = 789426.178
Δ = 03° 37' 28" (RT)
D = 03° 47' 31"
T = 47.81'
L = 95.58'
R = 1511.00'
PC STA = 222+73.36
PRC STA = 223+68.94

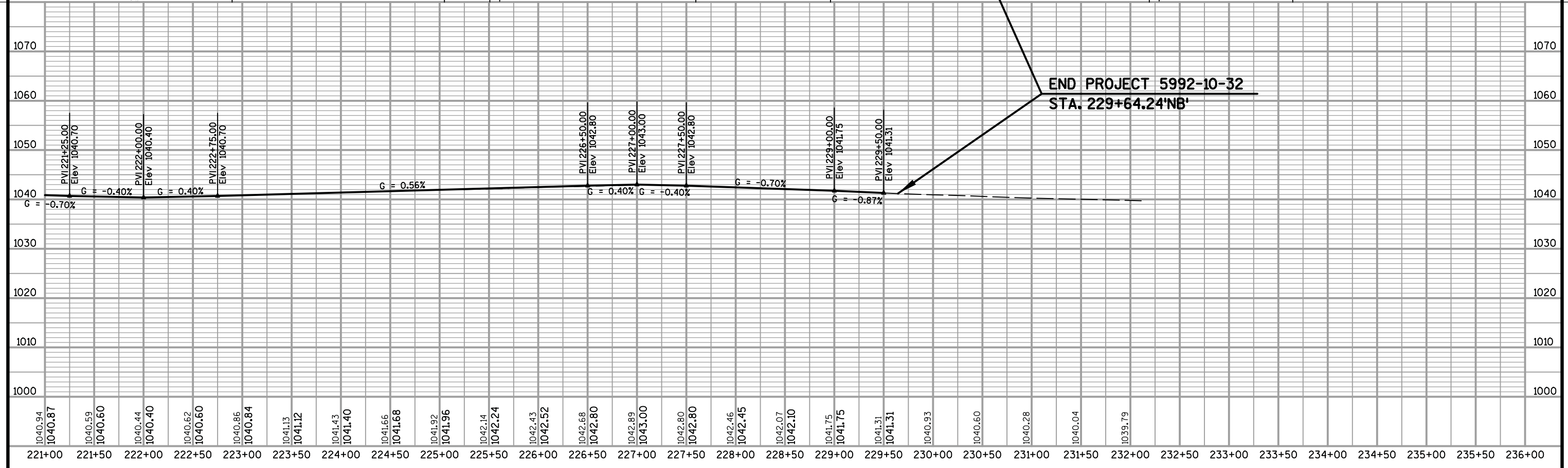
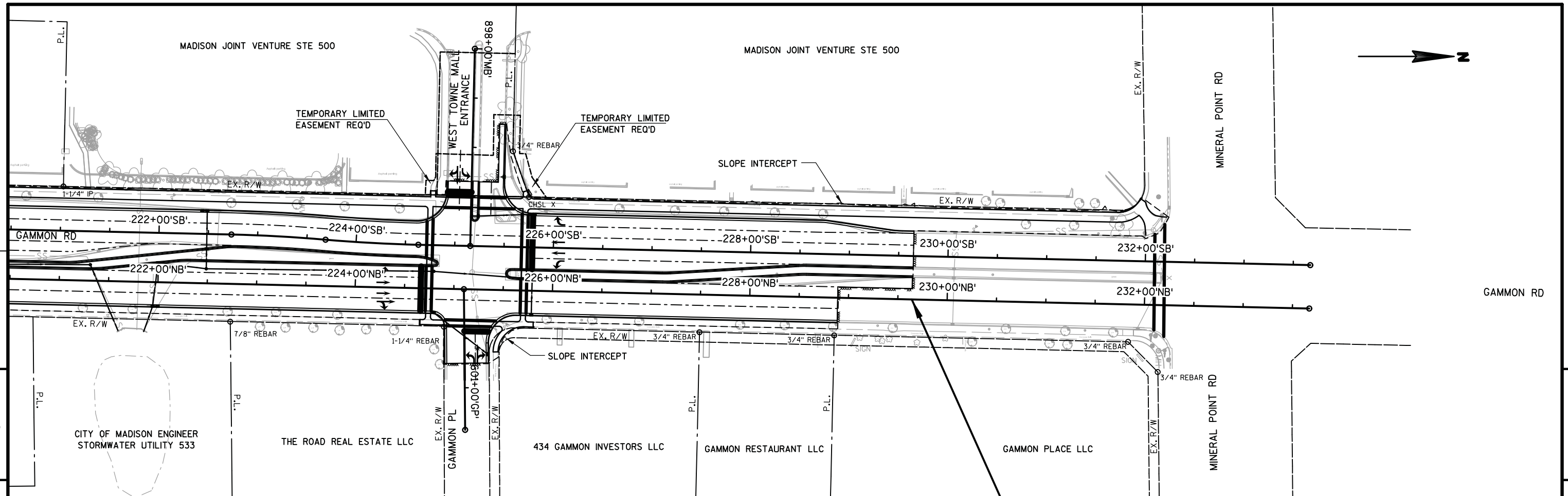
PT 224+63.13
Y=476933.392
X=789435.419

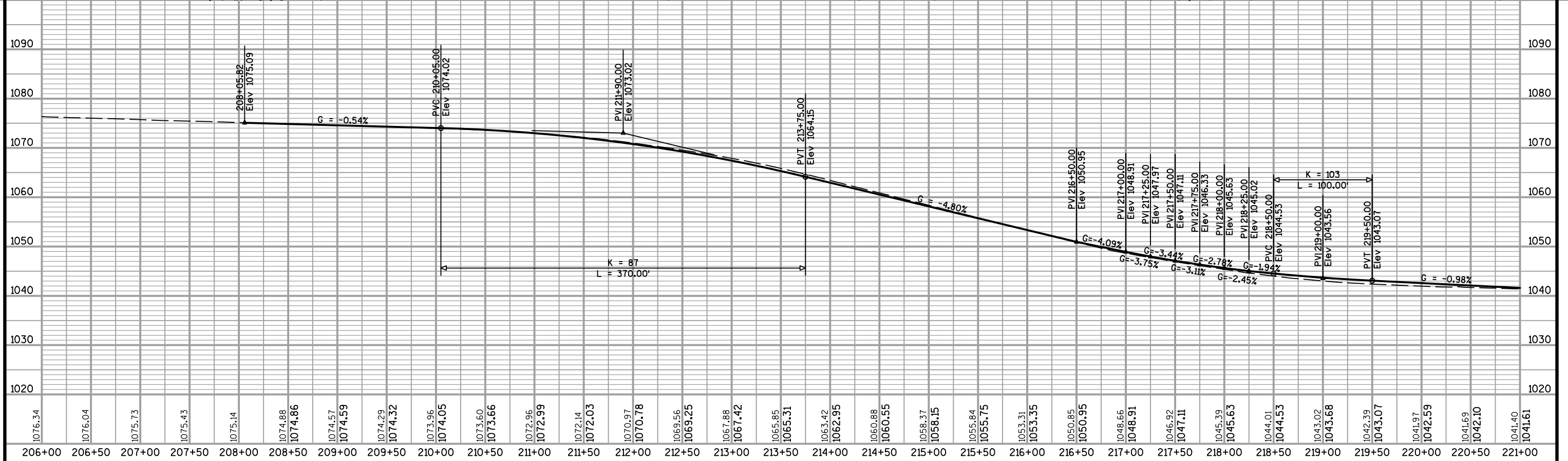
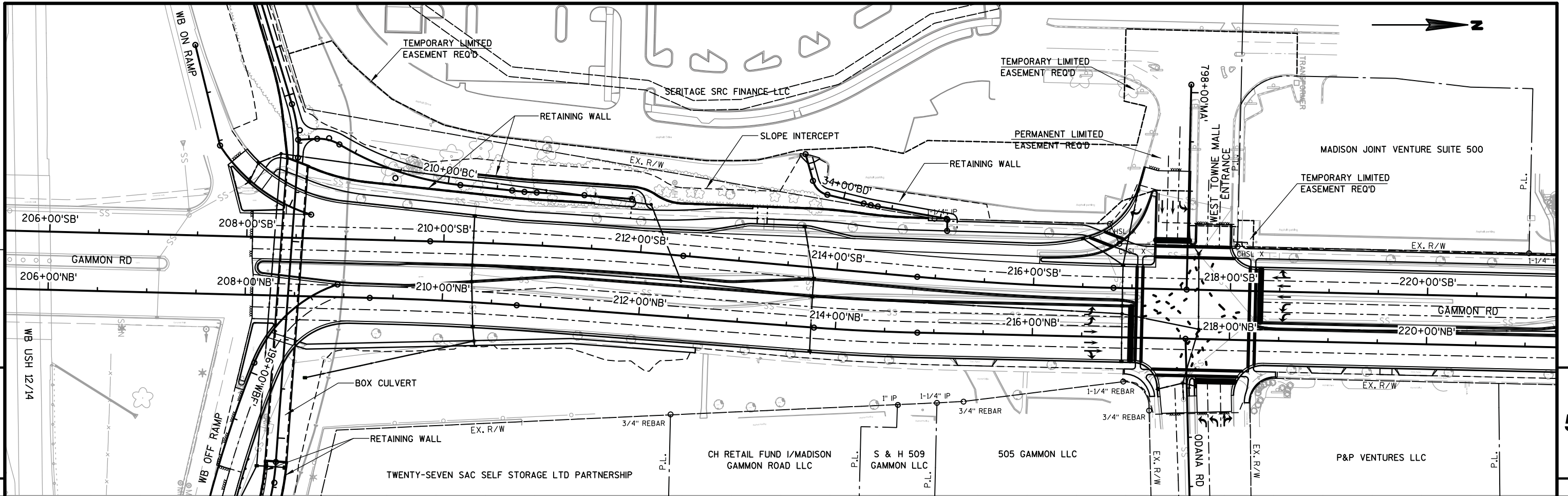
PRC 223+68.94
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X=789430.290

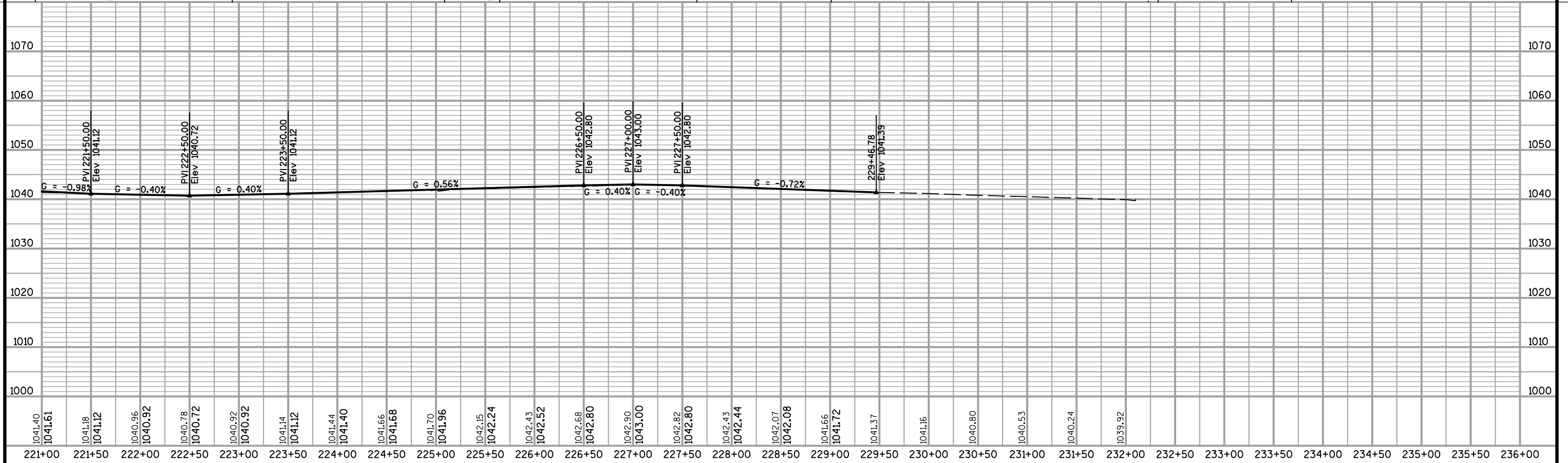
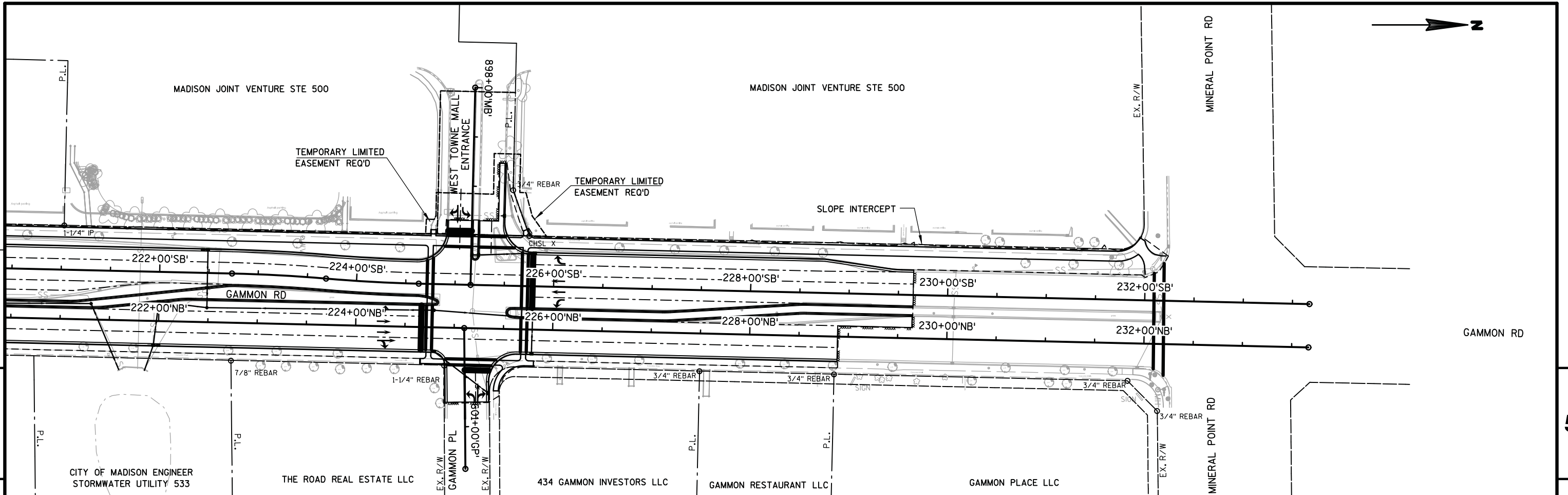
CONVENTIONAL UTILITY SYMBOLS

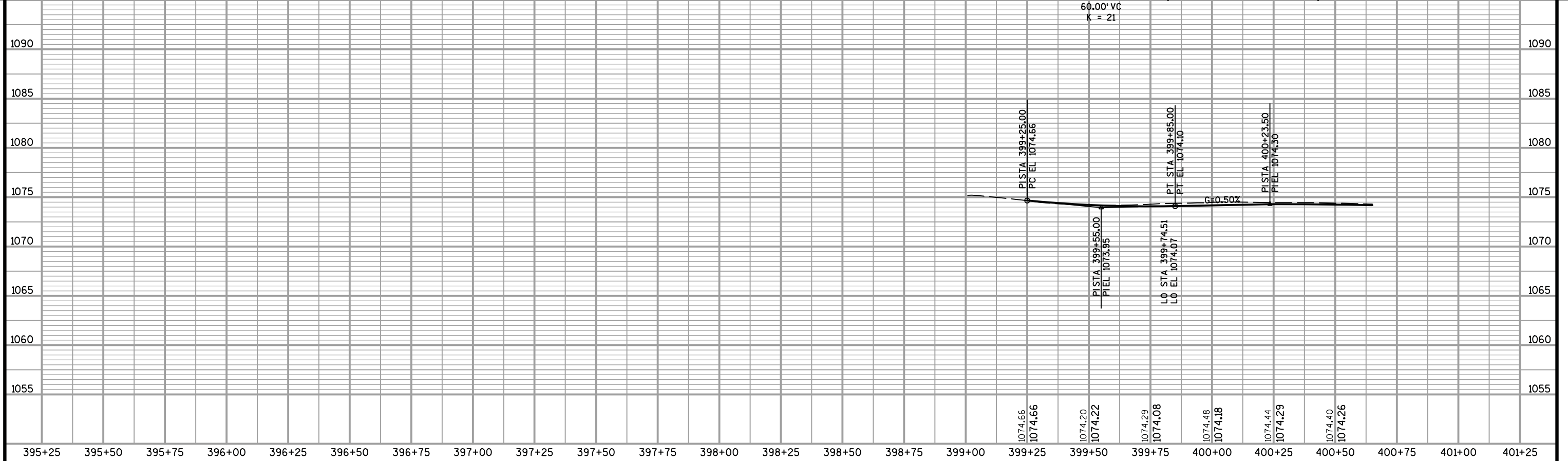
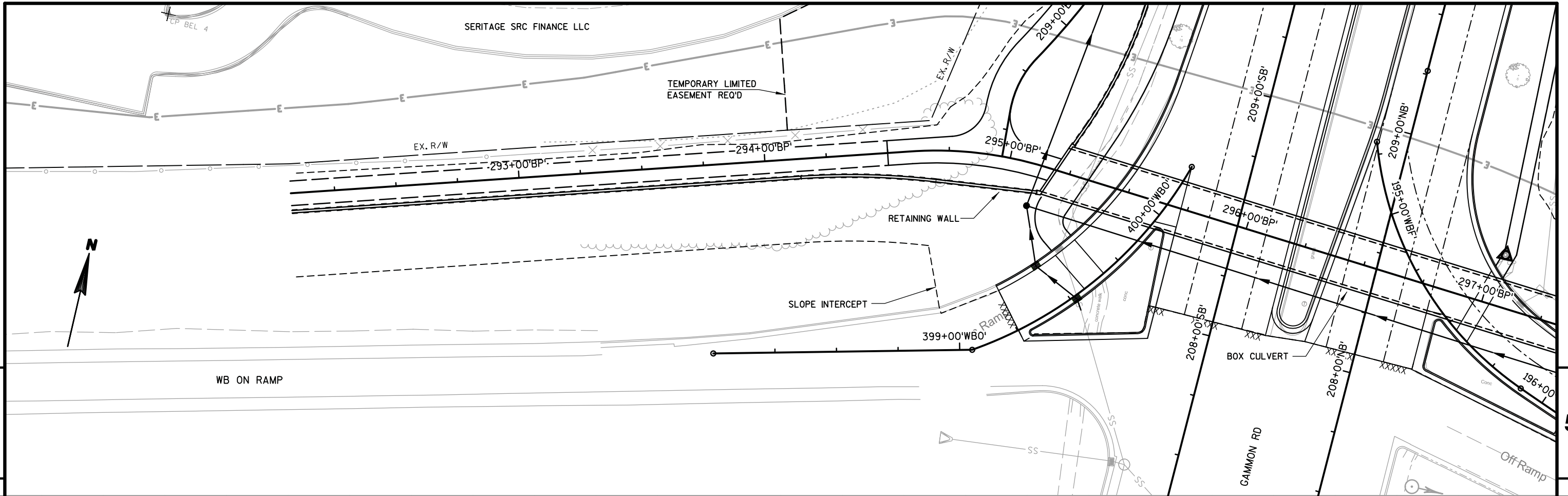
WATER	— W —
GAS	— G —
TELEPHONE	— T —
OVERHEAD TRANSMISSION LINES	— OH —
ELECTRIC	— E —
CABLE TELEVISION	— TV —
FIBER OPTIC	— FO —
SANITARY SEWER	— SAN —
STORM SEWER	— SS —
POWER POLE	NON COMPENSABLE
TELEPHONE POLE	COMPENSABLE

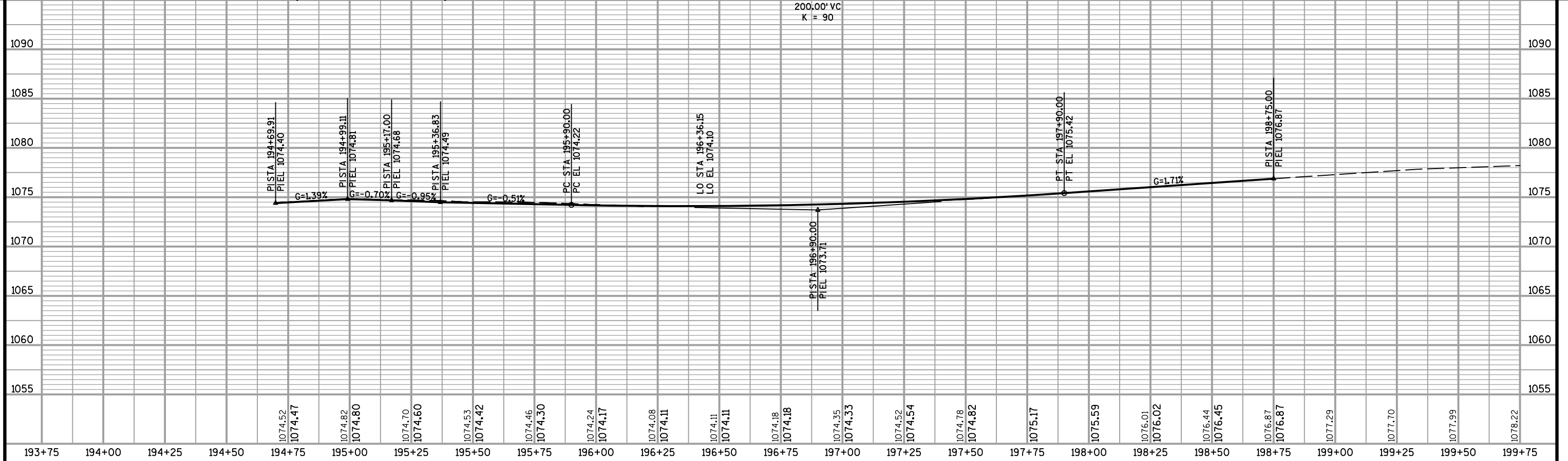
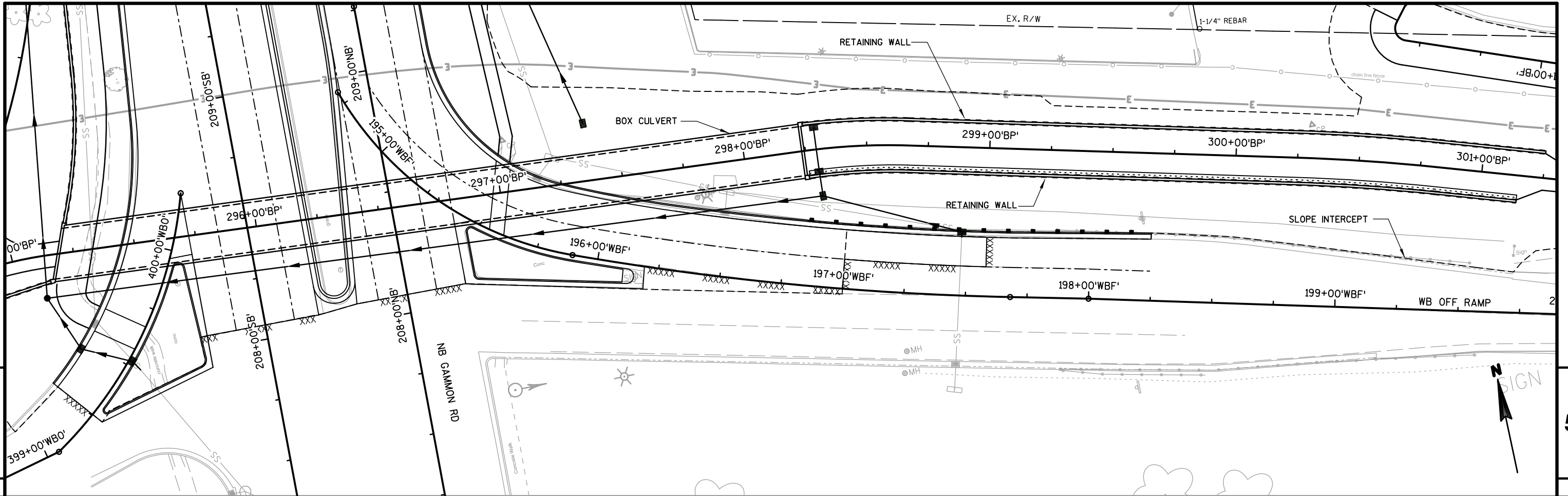


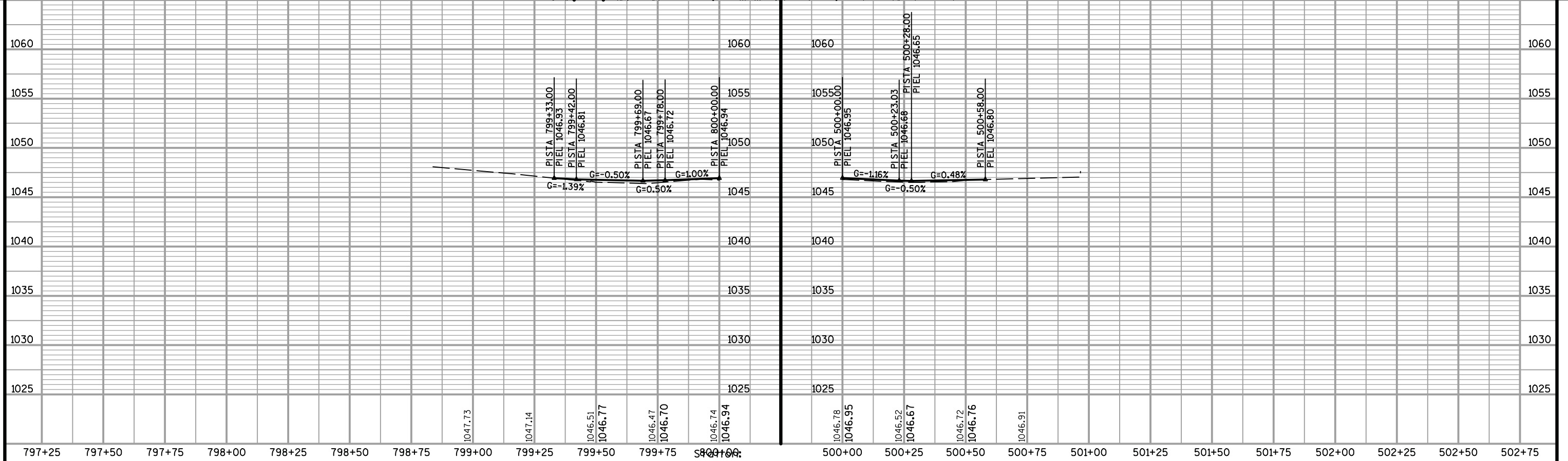
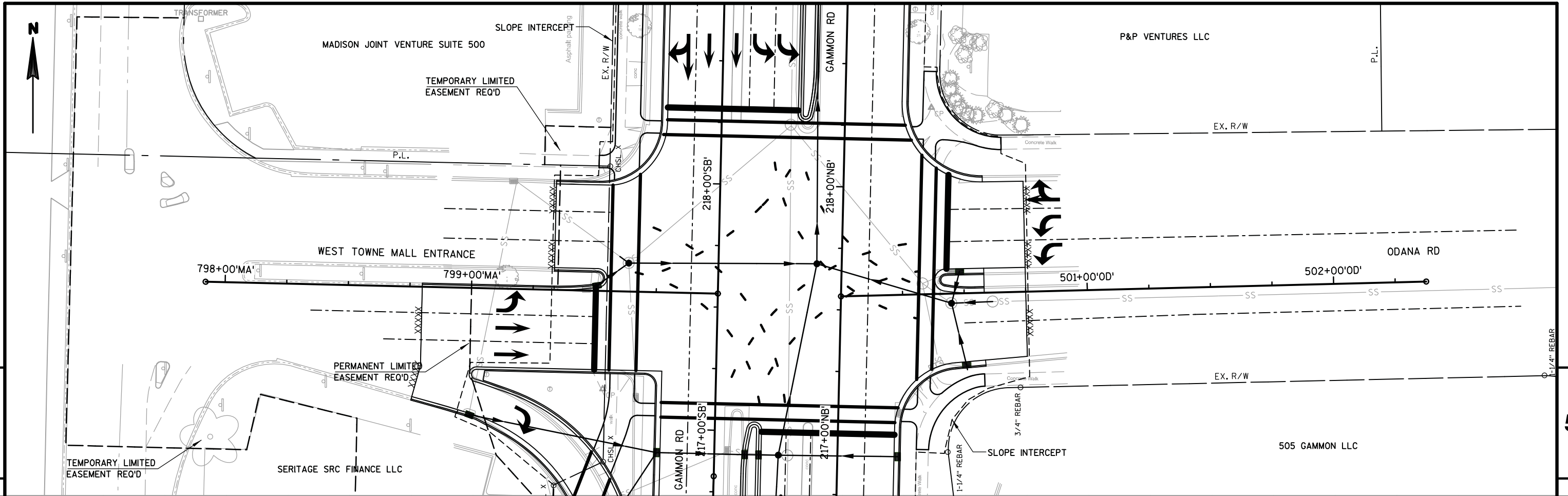


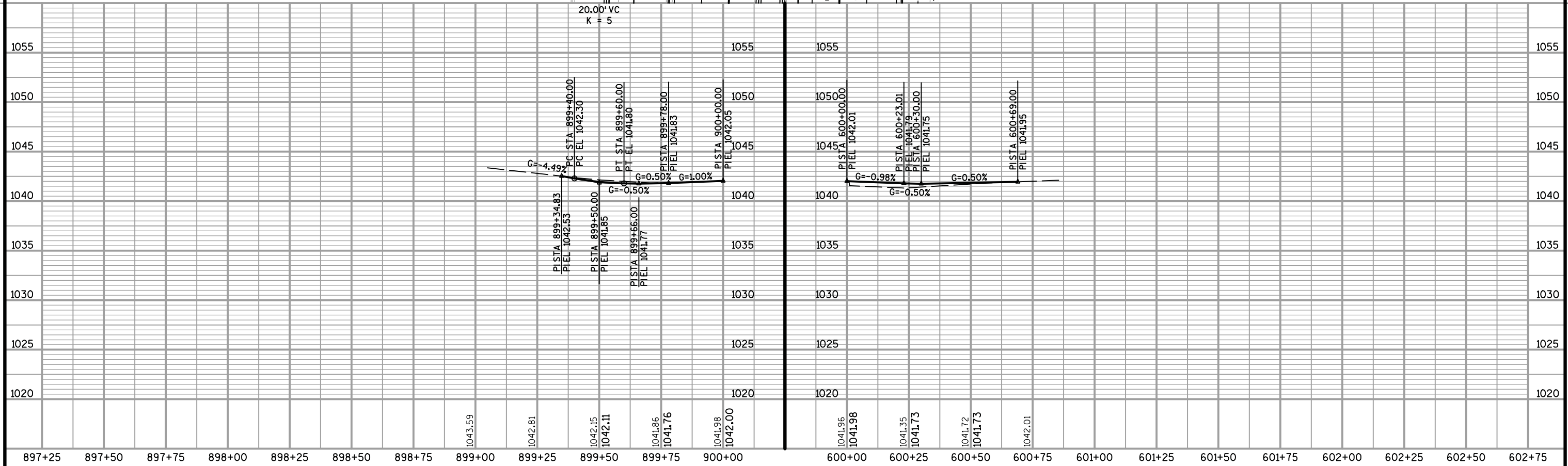
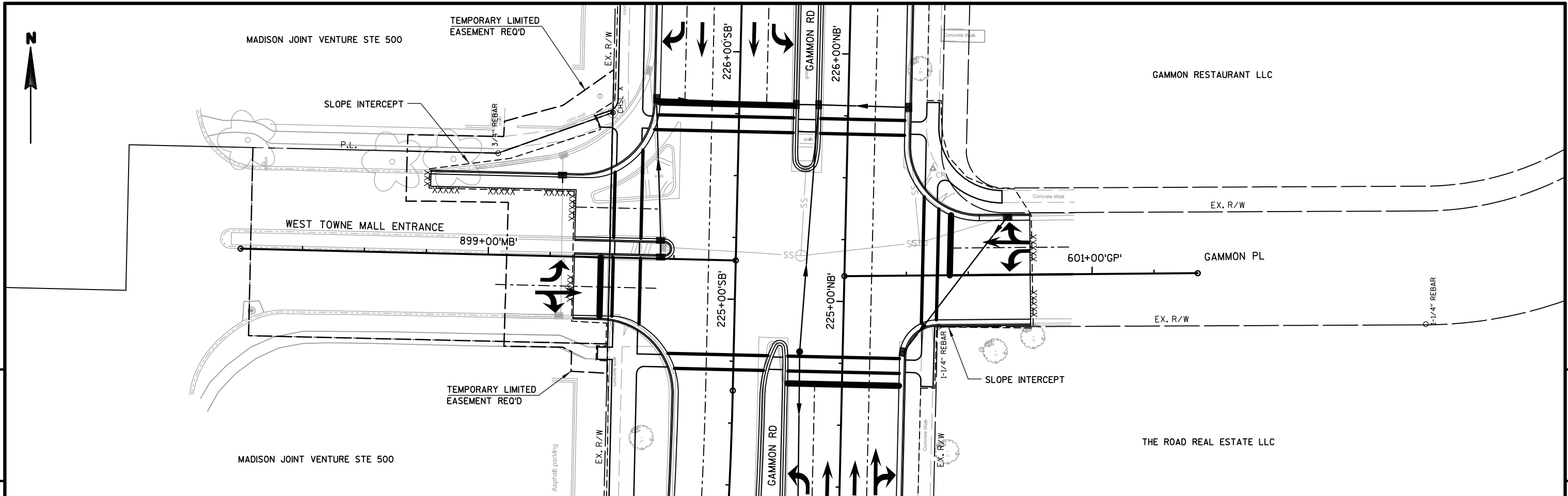


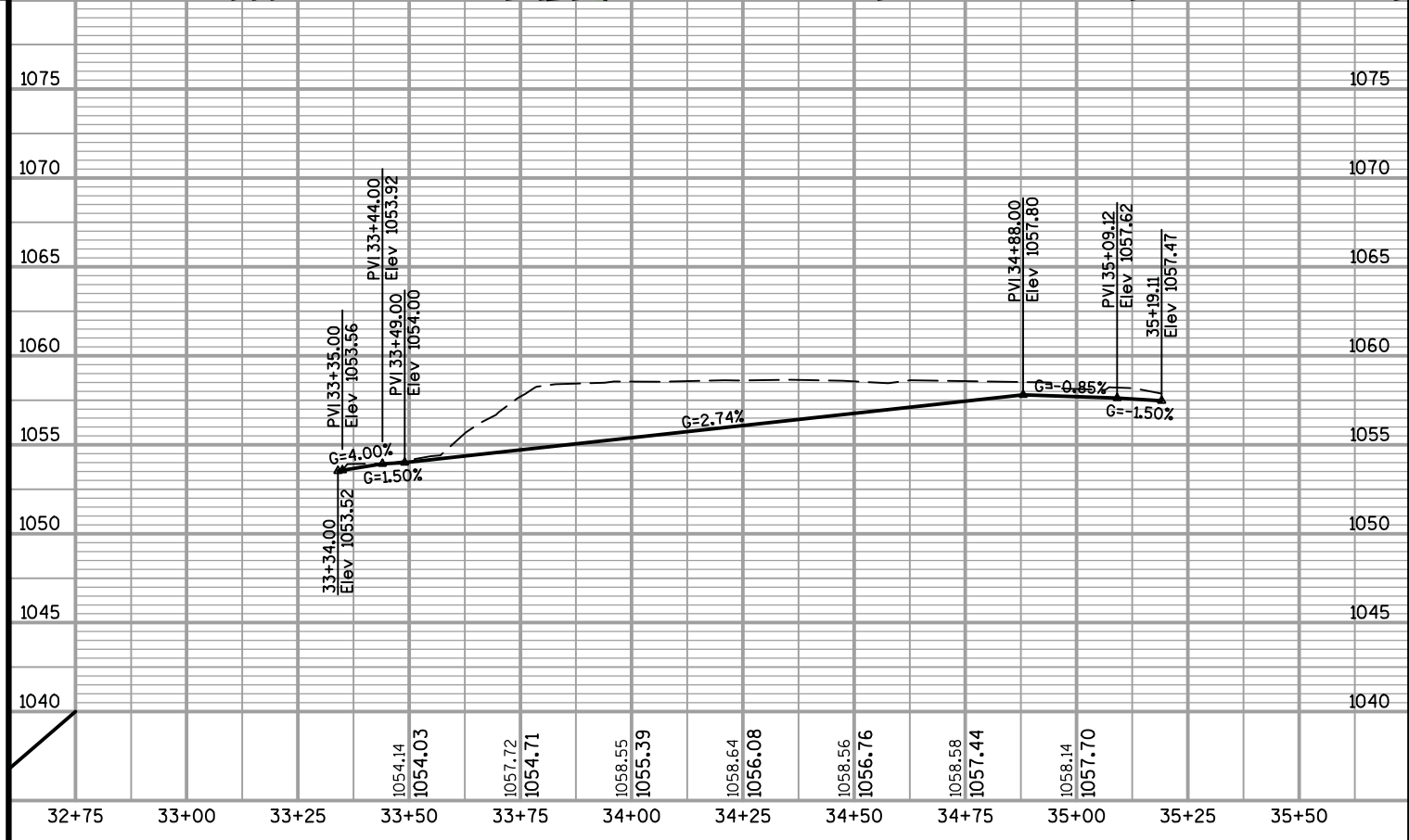
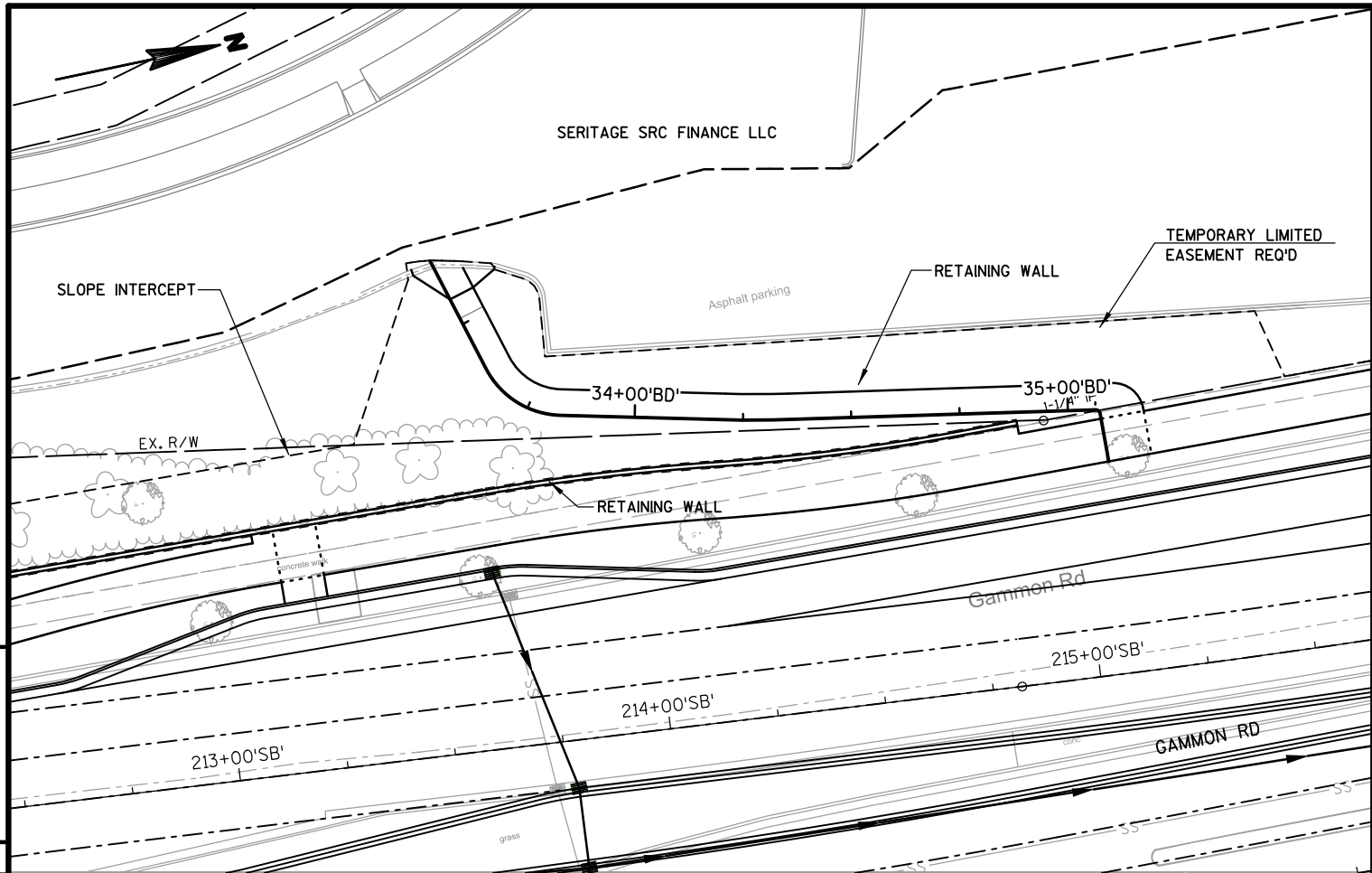






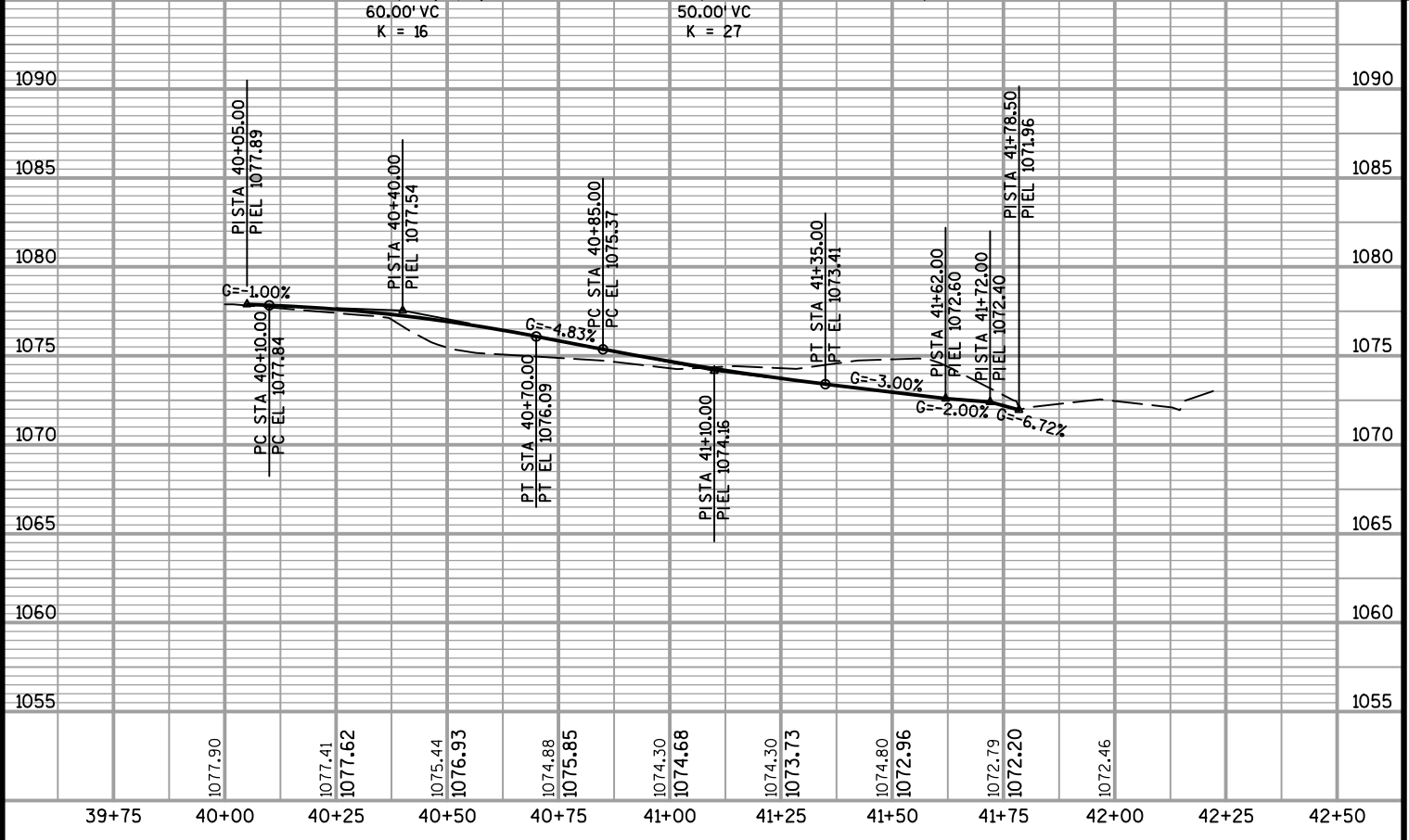
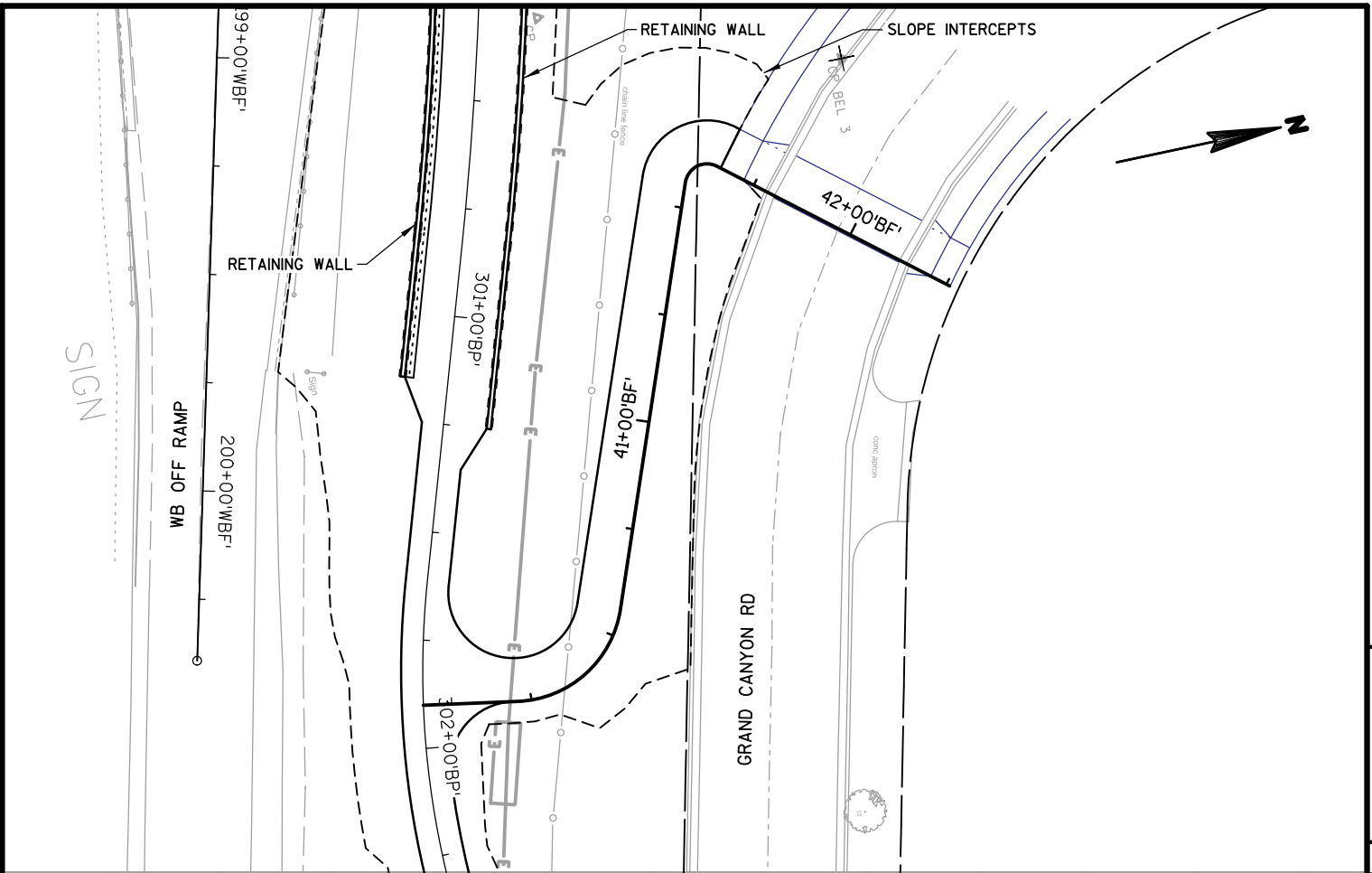






PROJECT NO: 5992-10-31/32 HWY: GAMMON RD COUNTY: DANE

FILE NAME : N:\410737 - Gammon Road\Roadway\DN\SheetsPlan\050146_PP_Connection 'BD' - 'BF'.dgn



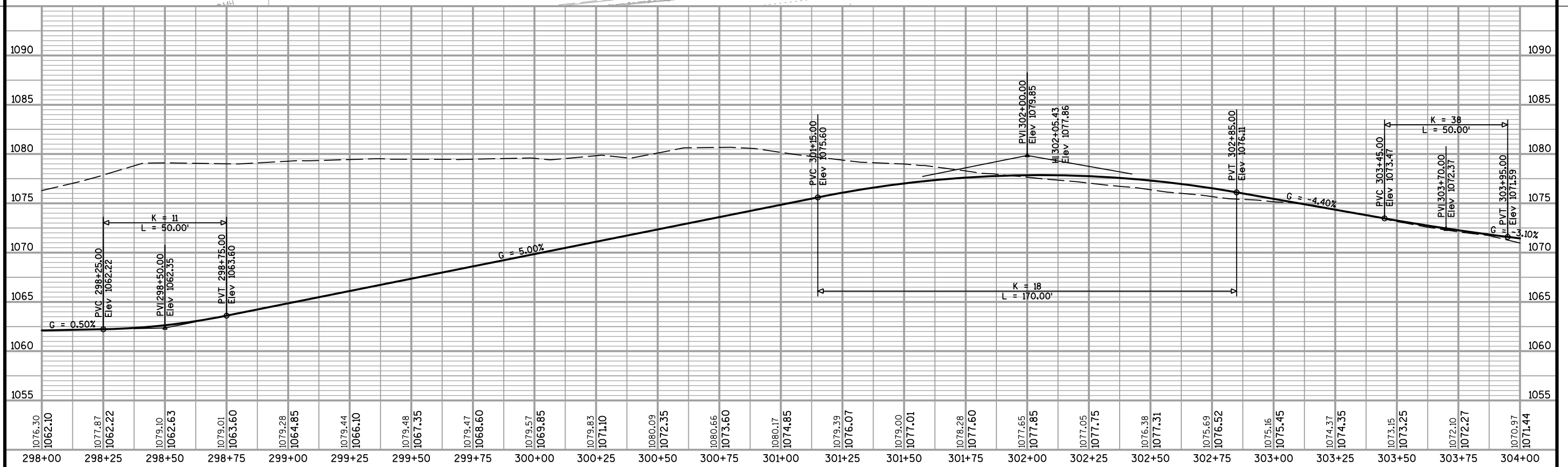
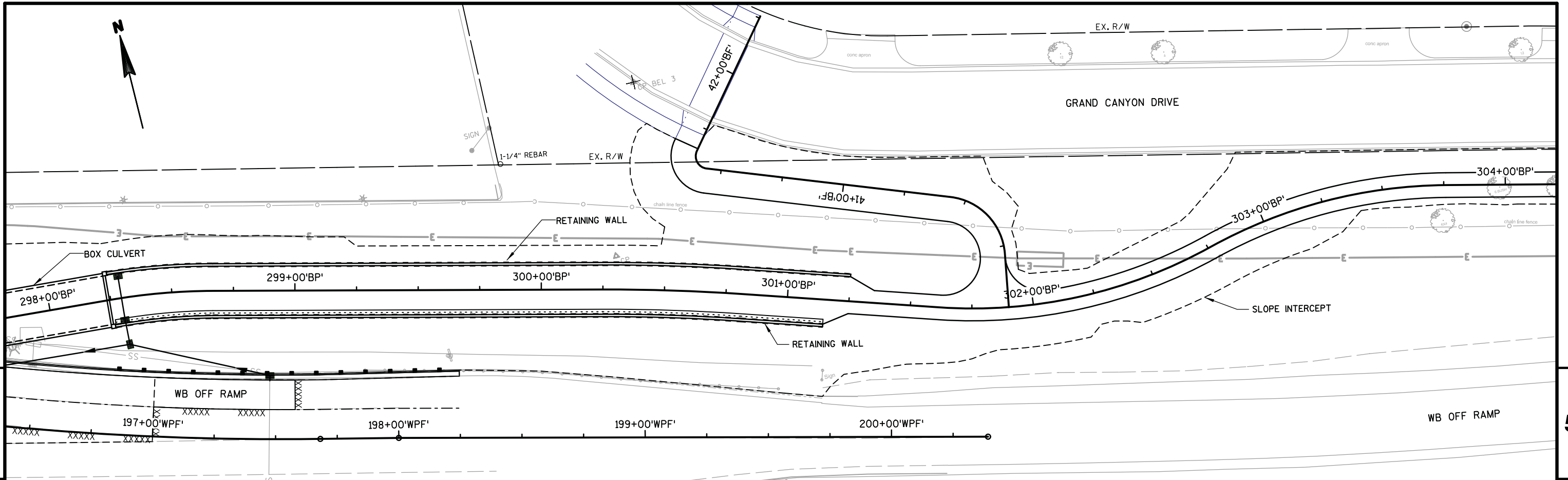
PLAN AND PROFILE - 'BD' & 'BF' LINES SCALE, FEET 0 20 40 SHEET PRE_61 E

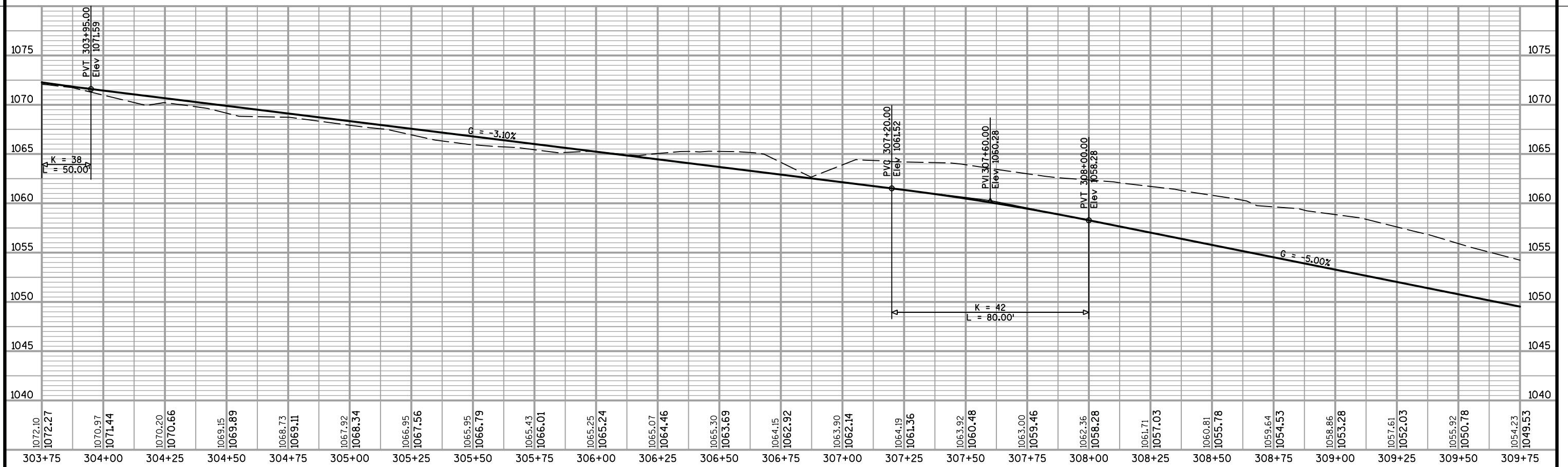
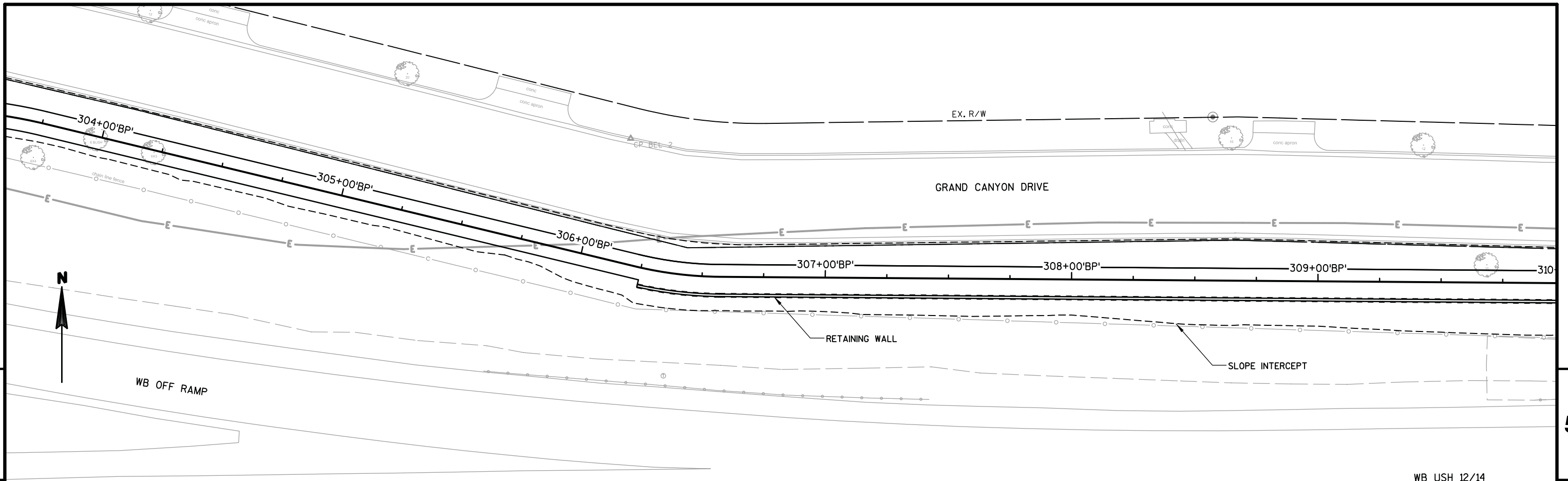
PLOT BY : kk226

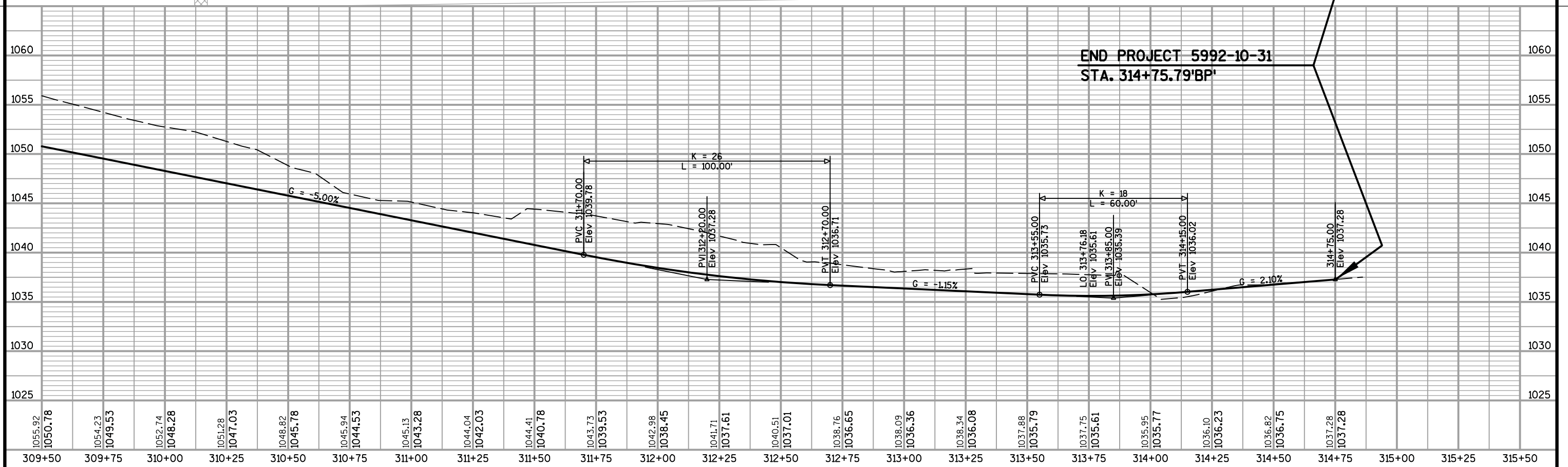
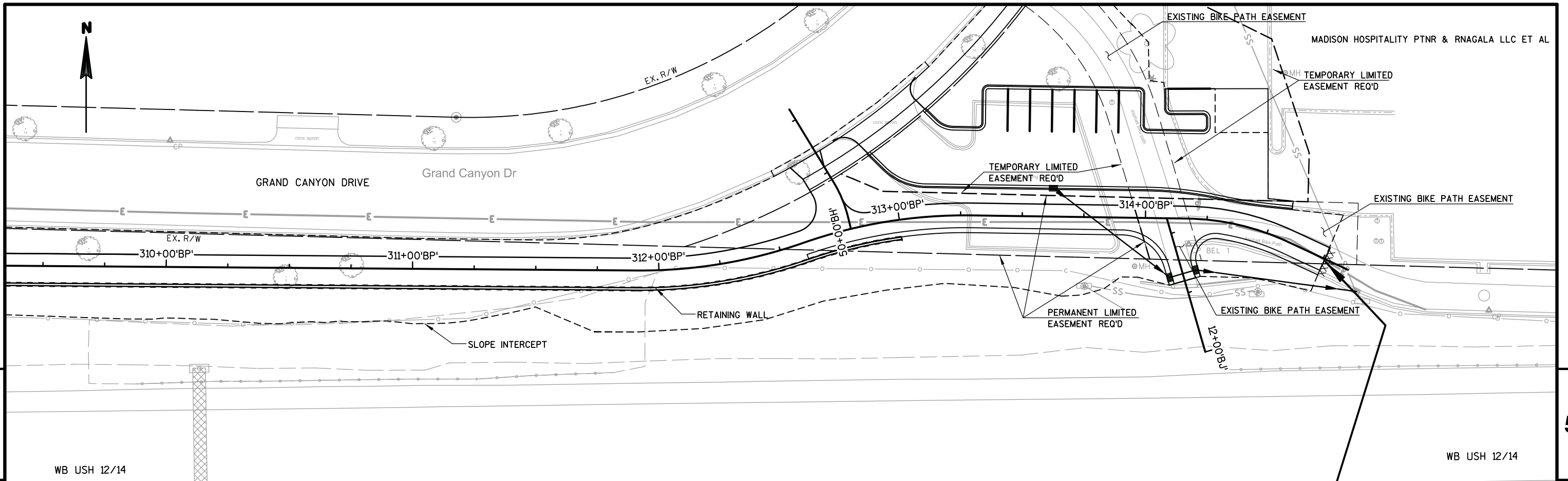
PLOT DATE : 5/13/2019

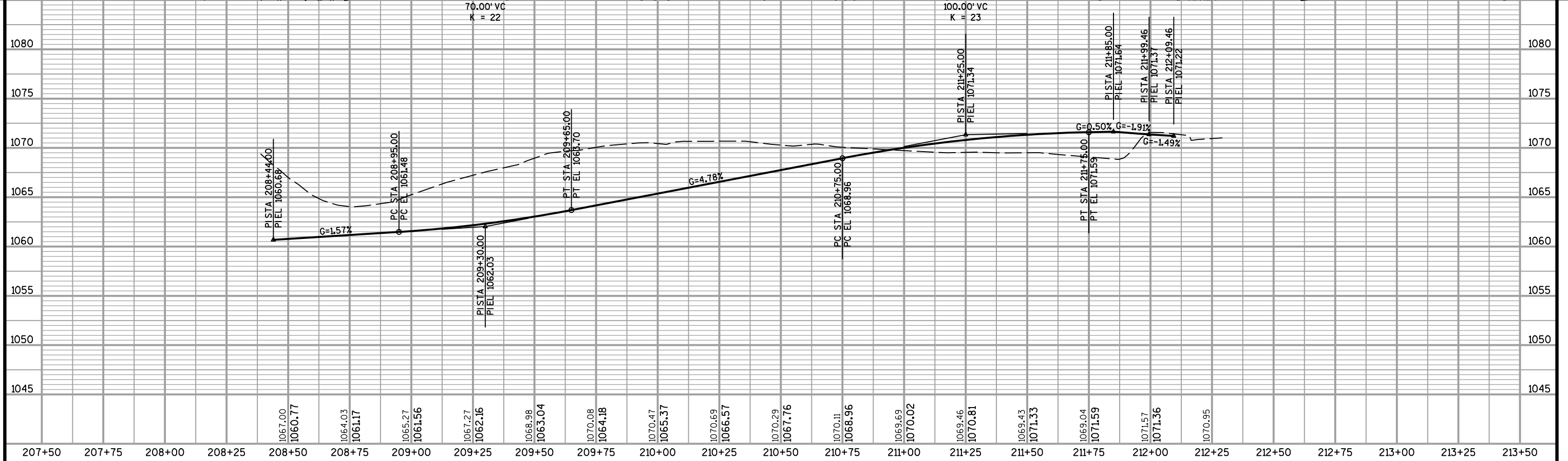
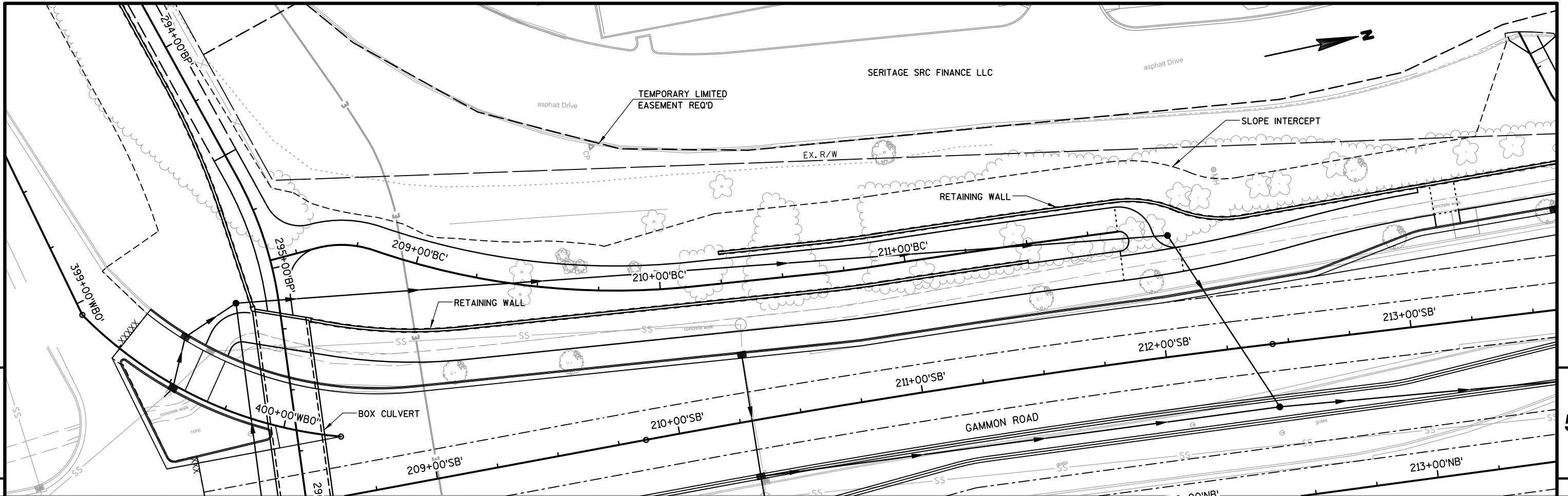
PLOT SCALE : 1:40

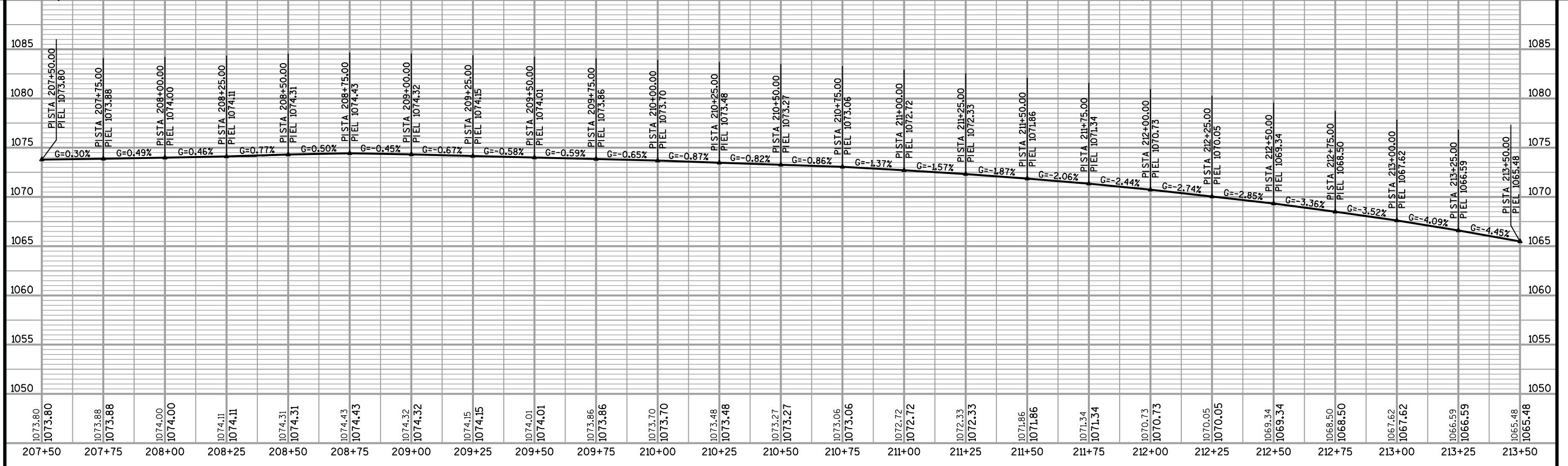
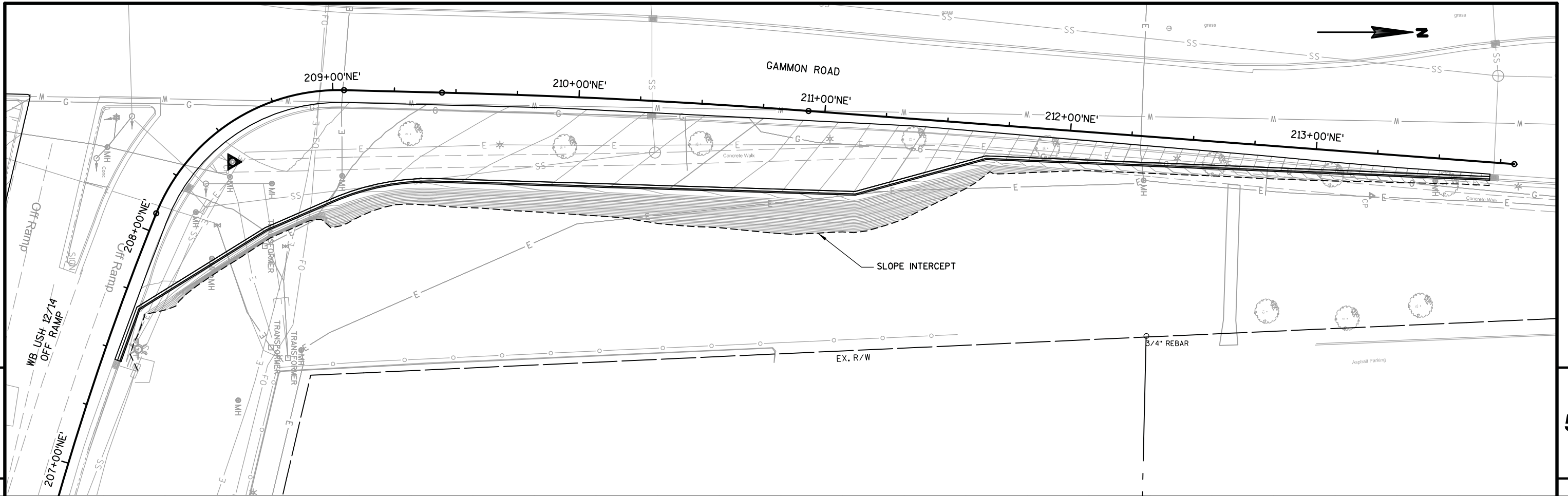
WISDOT/CADS SHEET 30

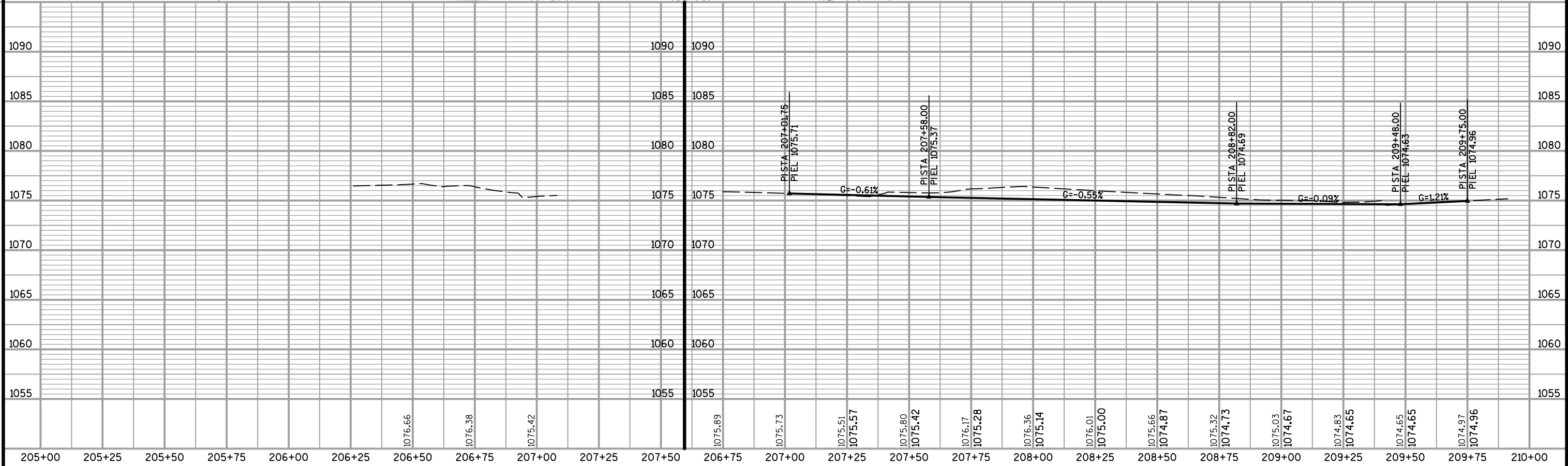
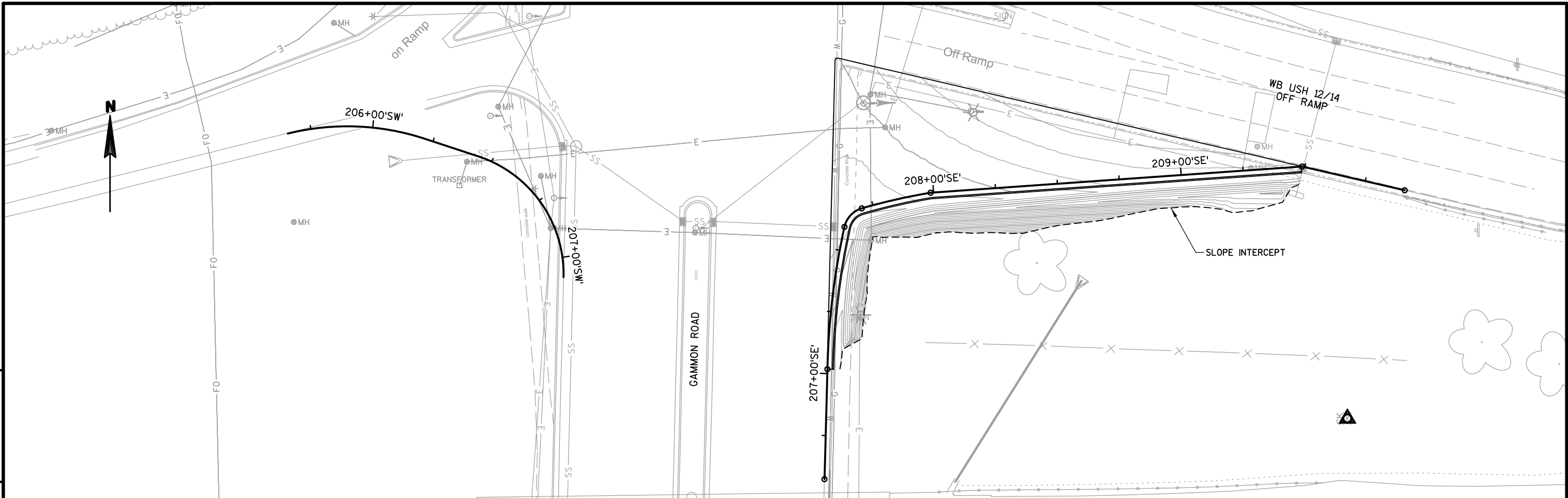












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STATE PROJECT NUMBER

5992-10-31

CURVE DATA

P.I. STA. 294+87.58'BP'
Δ = 21°00'32" RT.
D = 38°11'50"
R = 150.00'
T = 27.81'
L = 55.00'
E = 2.56'
S.E. = 2%
P.C. STA. 294+59.76'BP'
P.T. STA. 295+14.76'BP'

CURVE DATA

P.I. STA. 298+45.62'BP'
Δ = 9°40'15" RT.
D = 22°55'06"
R = 250.00'
T = 21.15'
L = 42.20'
E = 0.89'
S.E. = 2%
P.C. STA. 298+24.47'BP'
P.T. STA. 298+66.67'BP'

PLAN

(SINGLE CELL CONCRETE BOX CULVERT)

ANGLE A	ANGLE B
92°41'49"	87°18'11"

○ DENOTES WALL CONNECTION

ELEVATION

(LOOKING NORTH)

FOR GENERAL NOTES
AND DESIGN DATA
SEE SHEET 2

LIST OF DRAWINGS

1. PRELIMINARY PLAN
2. TYPICAL SECTION, QUANTITIES, AND NOTES
3. PROFILE GRADE LINES
4. UNDERPASS DETAILS
5. RAILING DETAILS
6. SUBSURFACE EXPLORATION

△ 18" RUBBERIZED MEMBRANE
WATERPROOFING UP WALLS
ALONG THE VERT. CONST. JOINTS
AND ALONG HORIZONTAL
CONSTRUCTION JOINTS.

● ELEVATION TAKEN AT REFERENCE
LINE OF BIKE PATH.

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

PRELIMINARY
PLAN

SHEET 1 OF 6
PRE_69



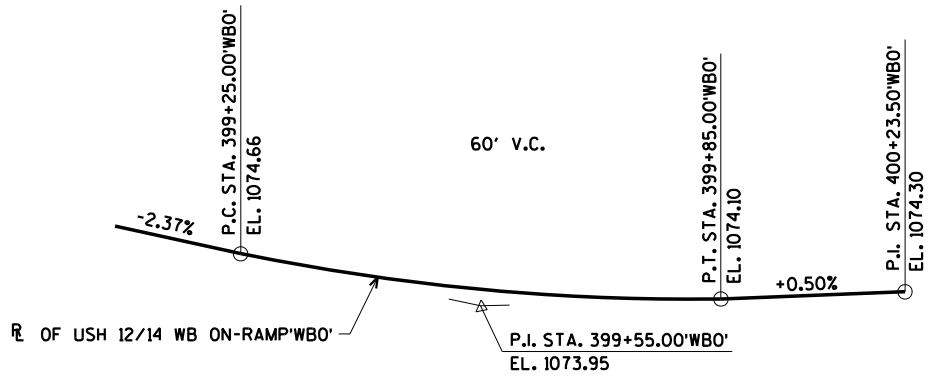
A.A.D.T. = 34,100 (2020)
A.A.D.T. = 37,400 (2040)
R.D.S. = 40 M.P.H.

\$PRNAME\$
U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\B-13-870 ty qn.dgn

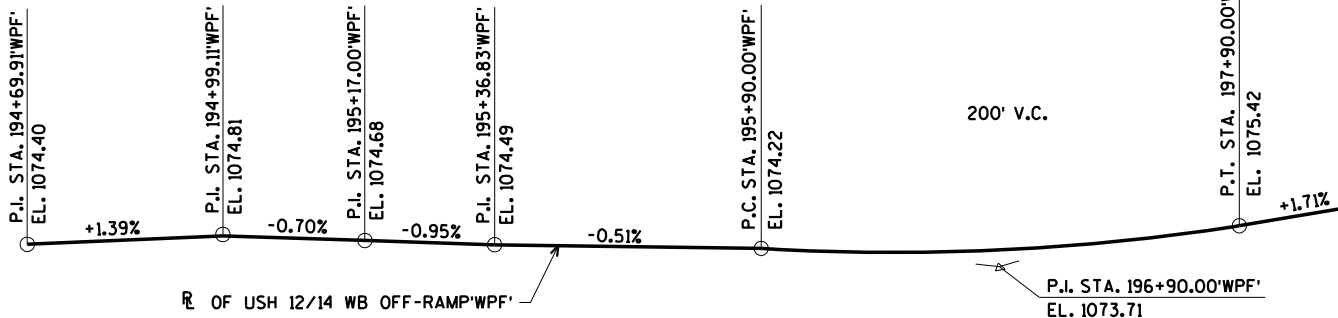
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STATE PROJECT NUMBER

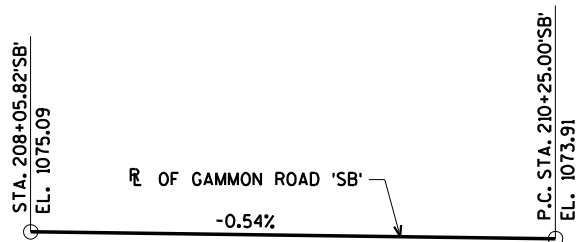
5992-10-31



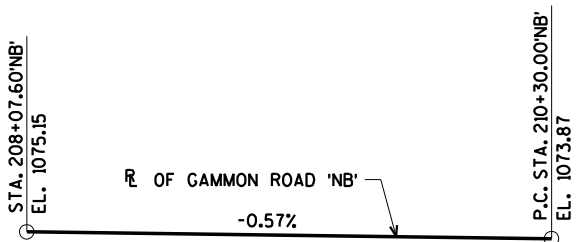
PROFILE GRADE LINE
(USH 12/14 WB ON-RAMP 'WBO')



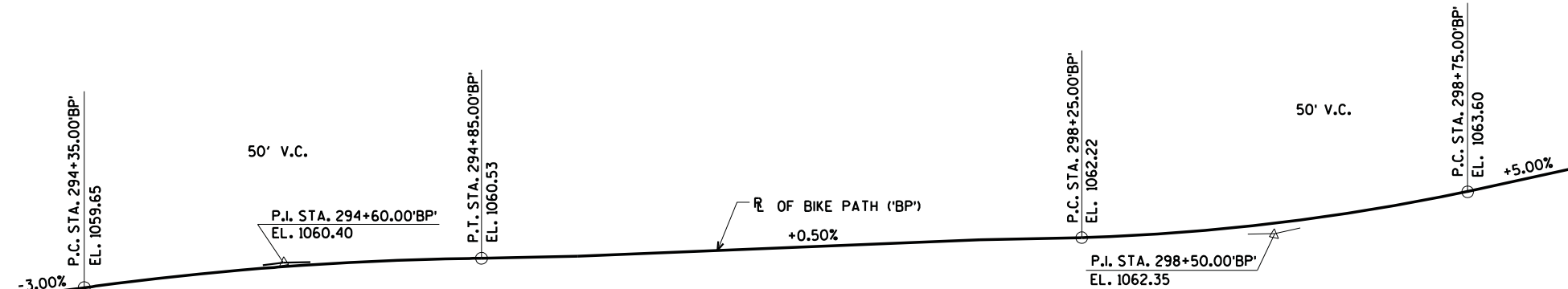
PROFILE GRADE LINE
(USH 12/14 WB OFF-RAMP 'WPF')



PROFILE GRADE LINE
(GAMMON ROAD 'SB')



PROFILE GRADE LINE
(GAMMON ROAD 'NB')



PROFILE GRADE LINE
(BIKE PATH 'BP')

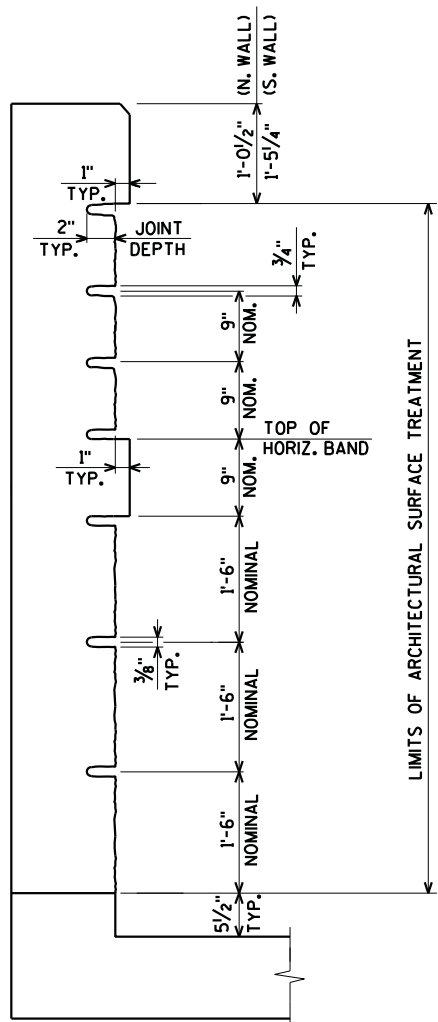
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-13-870			
DRAWN BY		CLS	PLANS CK'D.
PROFILE GRADE LINES			SHEET 3 OF 6 PRE_71

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

\$PRNAME\$
U:\41-0737.00 - Cammon Road Bike Path - Madison\Structures\PRELIM\B-13-870 details.dgn

8



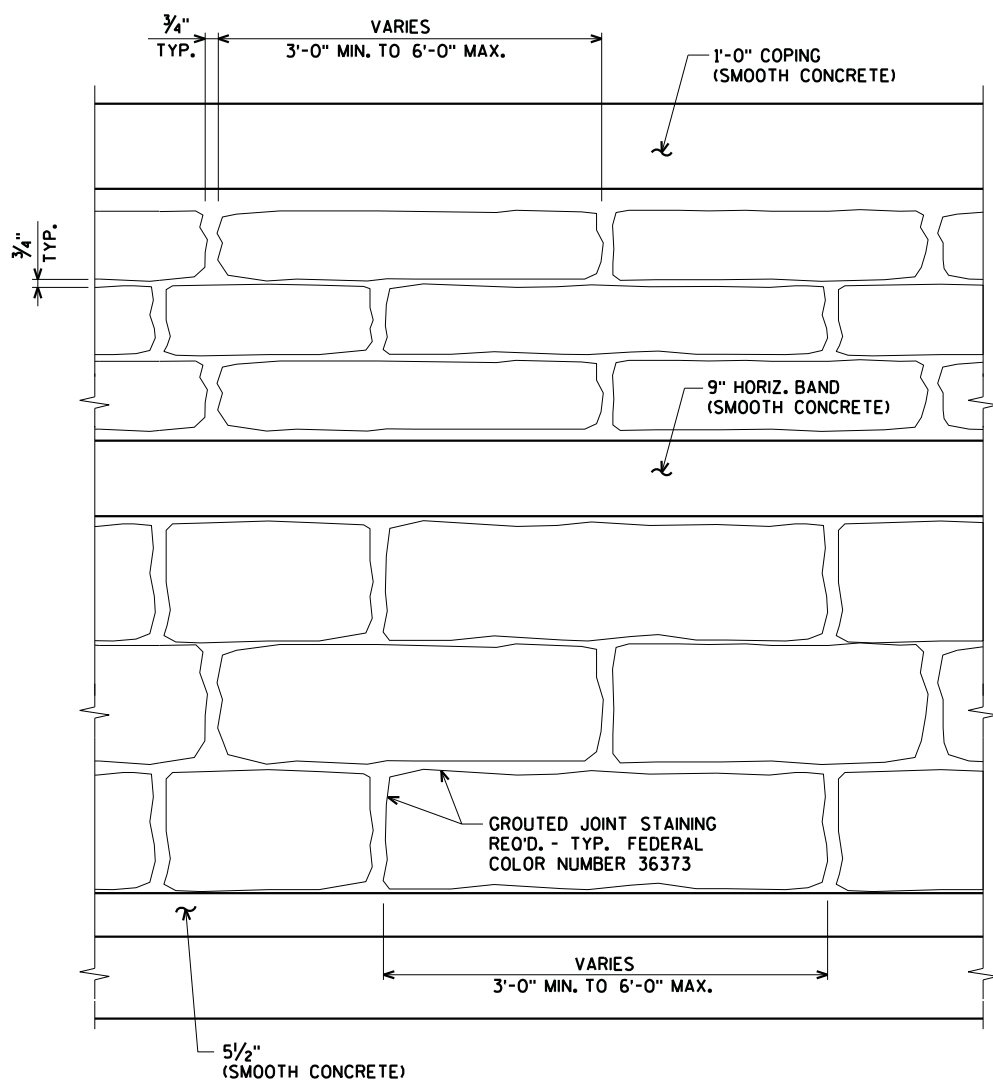
FORMLINER DETAILS

ARCHITECTURAL SURFACE TREATMENT NOTES

ALL EXPOSED SURFACES OF FORMLINED STONES TO BE SPLIT FACE INCLUDING FACES AND EDGES UNLESS OTHERWISE NOTED.

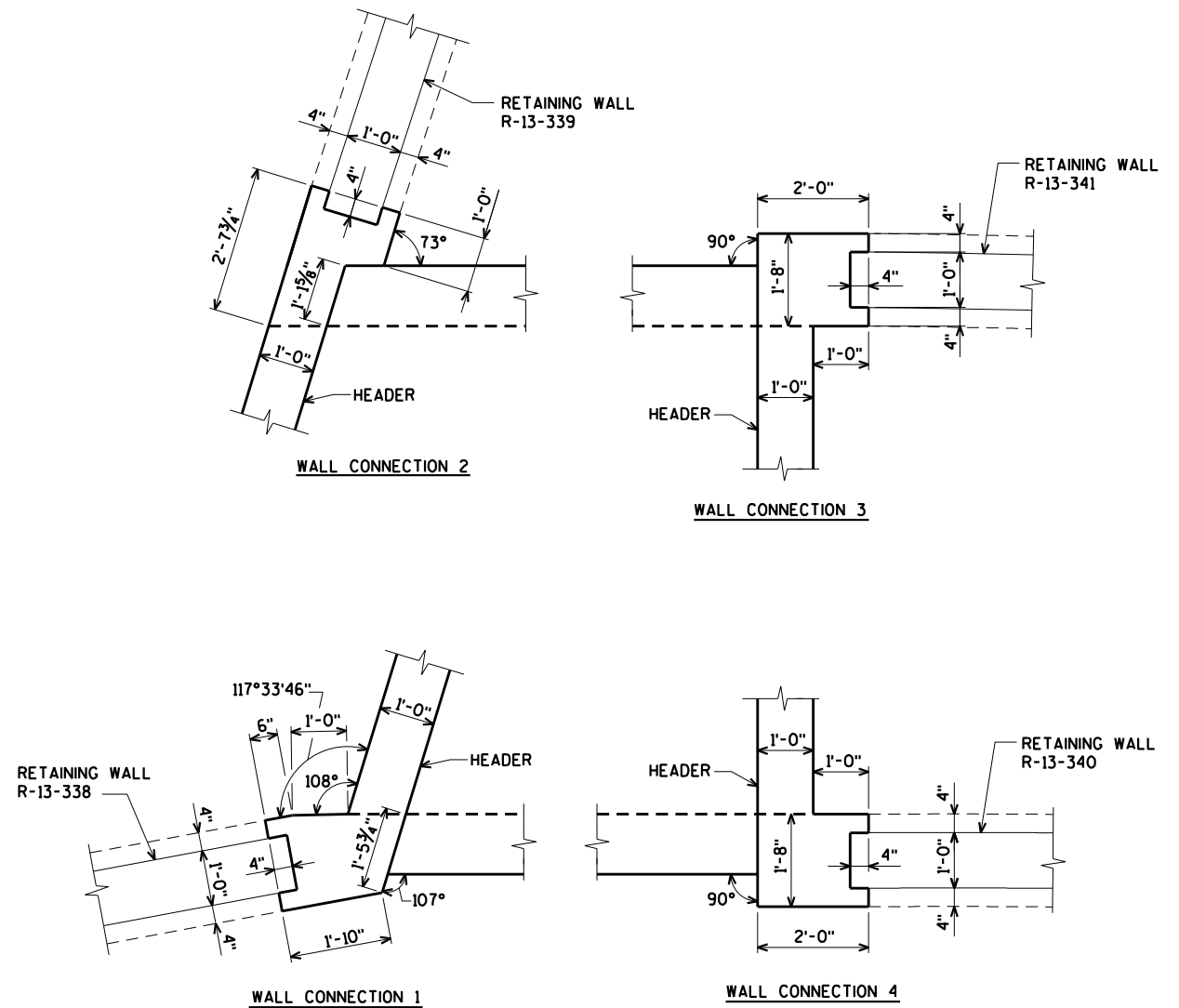
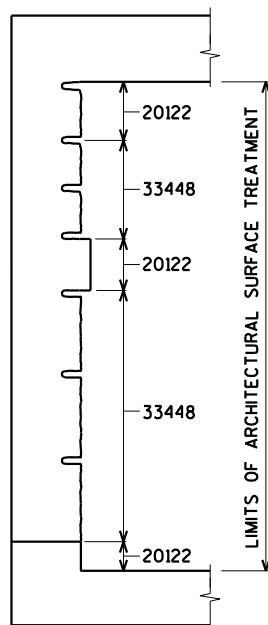
ALL STONE EDGES ADJACENT TO VERTICAL PANEL JOINTS SHALL BE FLUSH CUT. AVERAGE RELIEF IS 3/4\"/>

FORMLINER COURSING SHALL BE LEVEL AND CONTINUOUS ACROSS VERTICAL JOINTS.



CONCRETE STAINING DETAILS

(FEDERAL COLOR NUMBERS SHOWN)



CONNECTION DETAILS - WALLS TO UNDERPASS

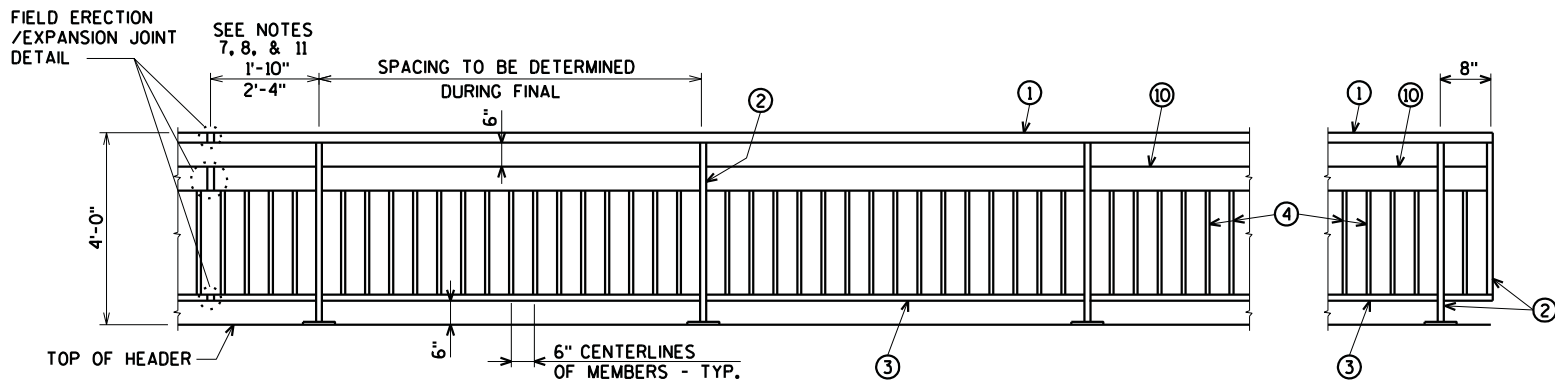
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-13-870			
DRAWN BY		CLS	PLANS CK'D.
UNDERPASS DETAILS			SHEET 4 OF 6 PRE_72

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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U:\41-0737.00 - Common Road Bike Path - Madison\Structures\PRELIM\B-13-870 railing.dgn

STATE PROJECT NUMBER

5992-10-31



PART ELEVATION OF RAILING STEEL

END SECTION

LEGEND

- ① 2 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS.
- ② TS 2" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.
- ③ TS 1 1/2" x 1 1/2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ④ TS 1" x 1" x 0.125" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑤ BASE PLATE 1/2" x 7" x 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO NO. 2 AS SHOWN.
- ⑥ CONCRETE MASONRY ANCHORS, TYPE S, 5/8". PULLOUT STRENGTH SHALL BE 3.6 KIPS.
- ⑦ SQUARE SLEEVE FABRICATED FROM 1/2" COLD DRAWN STEEL ALLOY SQUARE CONFORMING TO ASTM A331 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑧ 1 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 1. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑨ 2" DIA. PIPE SLEEVE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS. PROVIDE "SLIDING FIT".
- ⑩ TS 6" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑪ 1" x 5" SLEEVE CONFORMING TO ASTM DESIGNATION A709 GRADE 36 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE IN I.D. OF NO. 10. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL B-13-870", WHICH INCLUDE ALL ITEMS SHOWN INCLUDING GALVANIZED COATING.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.

POST BASE PLATES NO. 5 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHOR BOLTS NO. 6 SHALL BE GALVANIZED AFTER FABRICATION.

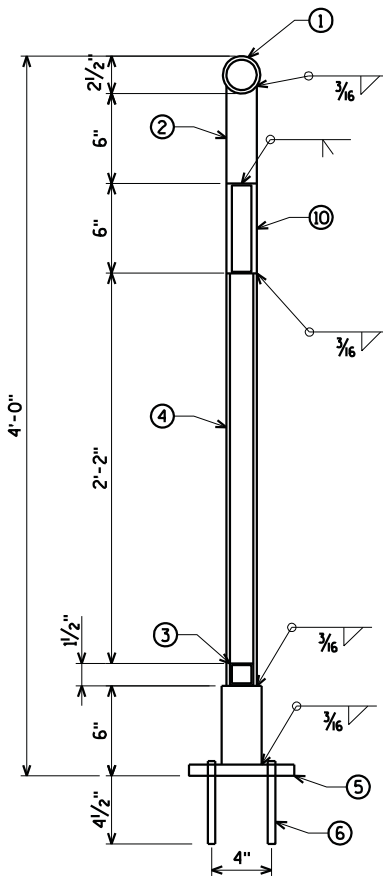
PRIOR TO GALVANIZING ALL STEEL RAILING POSTS, STEEL TUBING, AND STEEL PIPE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

VERTICAL MEMBERS SHALL BE PLUMB.

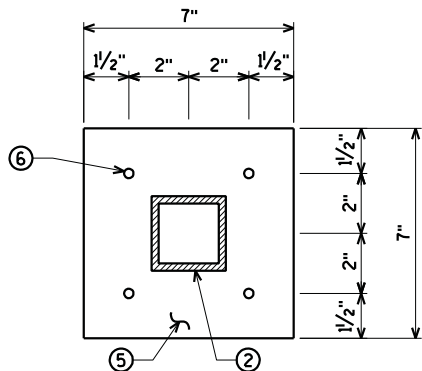
HORIZONTAL MEMBERS SHALL PARALLEL TO GRADE.

PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

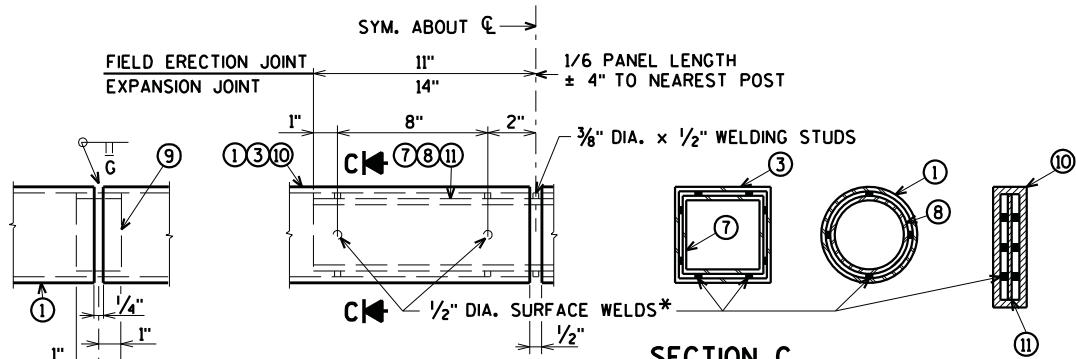
RAILING TO BE PAINTED FEDERAL COLOR NO. 17038 (BLACK).



SECTION THRU RAILING STEEL



RAILING BASE PLATE



FIELD ERECTION JOINT DETAIL

*MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

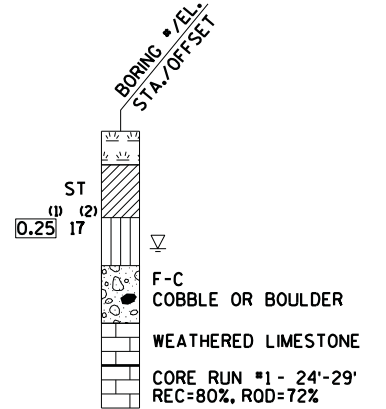
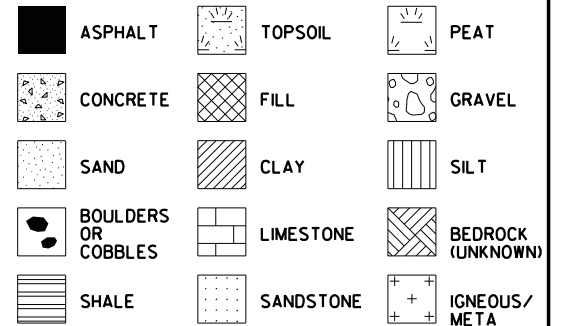
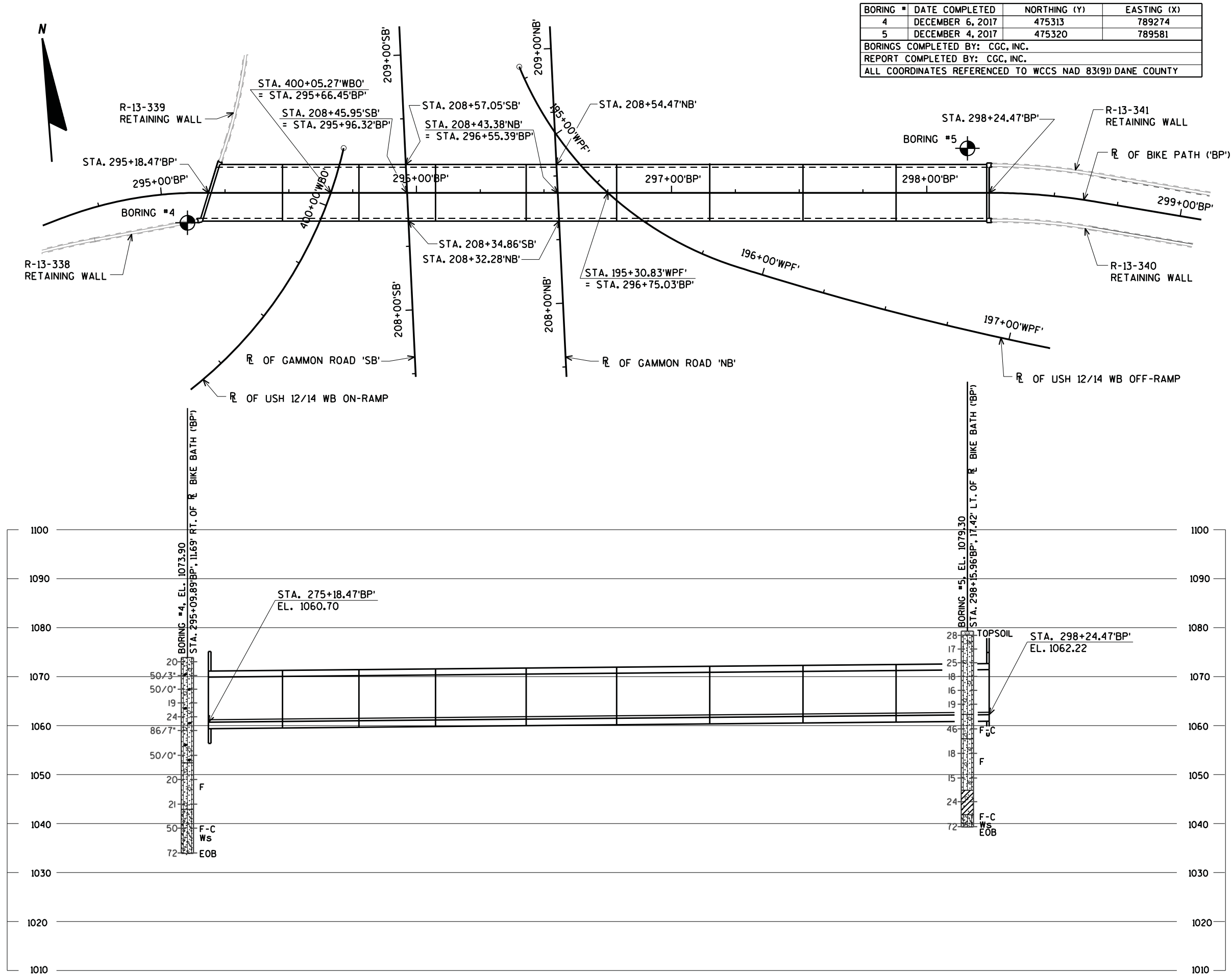
SHOP RAIL SPLICE DETAIL
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-13-870			
DRAWN BY		CLS	PLANS CK'D.
RAILING DETAILS			SHEET 5 OF 6 PRE_73

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Ut#41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM#B-13-870 - soils.dgn

8



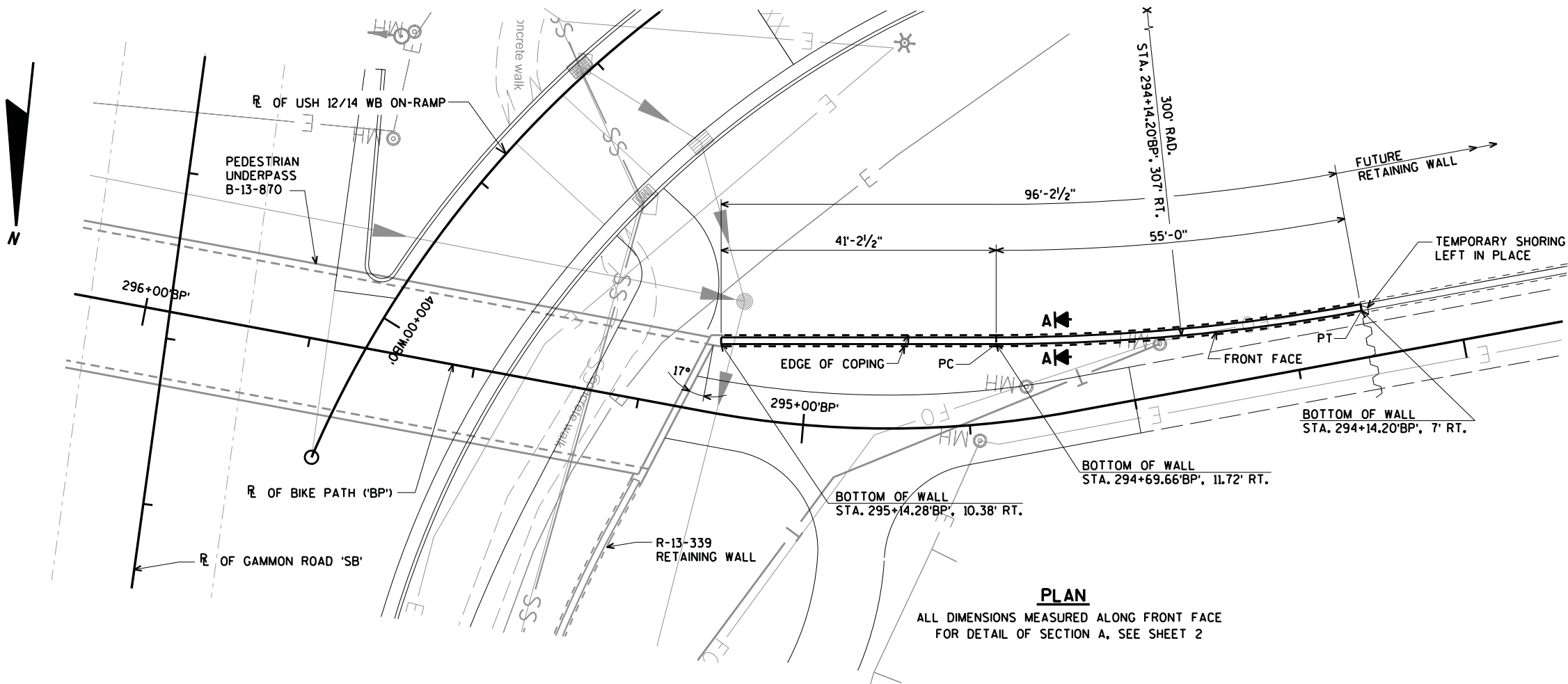
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-13-870			
DRAWN BY		CLS	PLANS CK'D.
SUBSURFACE EXPLORATION		SHEET 6 OF 6 PRE_74	

8

\$PRJNAME\$ U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-338 BP.prelim.dgn

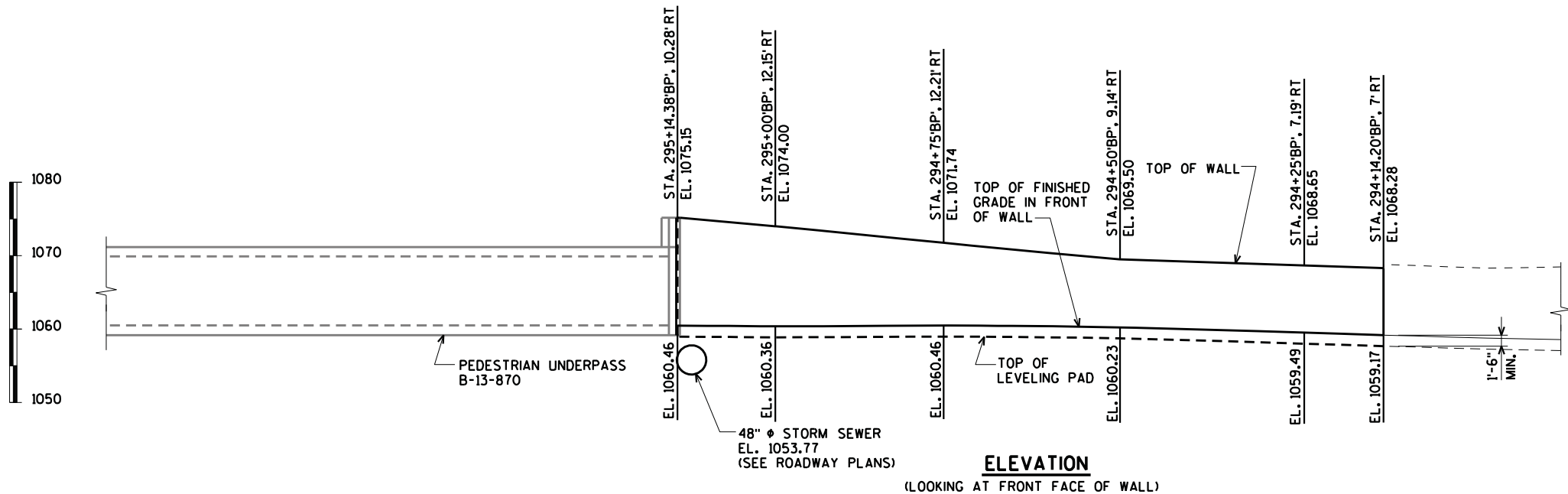
CHECKED BY: DATE: BACK CHECKED BY: DATE: CORRECTED BY: DATE:

8



PLAN

ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTION A, SEE SHEET 2



ELEVATION

(LOOKING AT FRONT FACE OF WALL)

GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
295+14.38	295+14.38'BP'	10.28'	1075.15	1060.46
295+00.00	295+00.00'BP'	12.15'	1074.00	1060.36
294+75.00	294+75.00'BP'	12.21'	1074.74	1060.46
294+50.00	294+50.00'BP'	9.14'	1069.50	1060.23
294+25.00	294+25.00'BP'	7.19'	1068.65	1059.49
294+14.20	294+14.20'BP'	7.00'	1068.28	1059.17

TOTAL ESTIMATED QUANTITIES		
ITEM NUMBER	BID ITEMS	UNIT
511.2200.01	TEMPORARY SHORING LEFT IN PLACE R-13-338	SF
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF
SPV.0090.02	RAILING STEEL R-13-338	LF
SPV.0165.01	WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH R-13-338	SF

STATE PROJECT NUMBER

5992-10-31

LIST OF DRAWINGS

1. RETAINING WALL LAYOUT
2. RETAINING WALL DETAILS
3. RETAINING WALL DETAILS
4. RAILING DETAILS
5. SUBSURFACE EXPLORATION

FOR GENERAL NOTES
AND DESIGN DATA
SEE SHEET 2

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED		CHIEF STRUCTURES DESIGN ENGINEER	DATE
STRUCTURE R-13-338			
RETAINING WALL ALONG BIKE PATH 'BP'			
COUNTY	DANE	TOWN/CITY/VILLAGE	MADISON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY KLW	DESIGN CK'D.	DRAWN BY CLS	PLANS CK'D.
RETAINING WALL LAYOUT			SHEET 1 OF 5 PRE_75

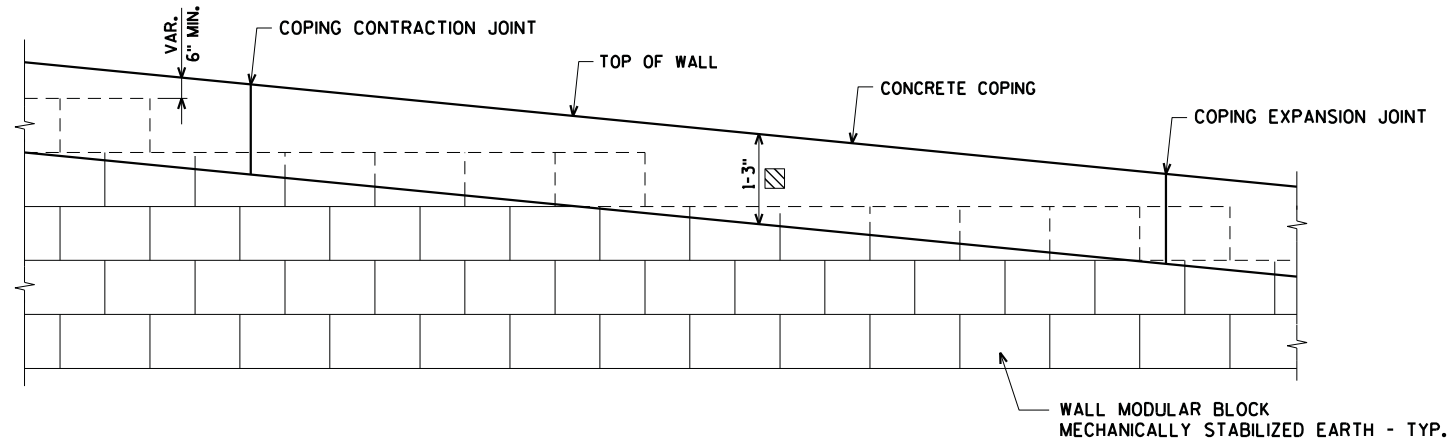
BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

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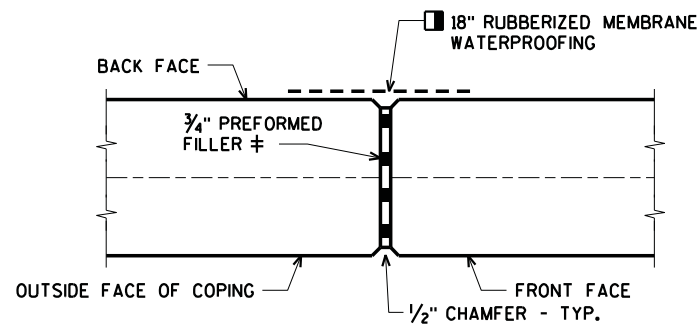
STATE PROJECT NUMBER

5992-10-31



RETAINING WALL FACE & CONCRETE COPING DETAIL

▨ THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.



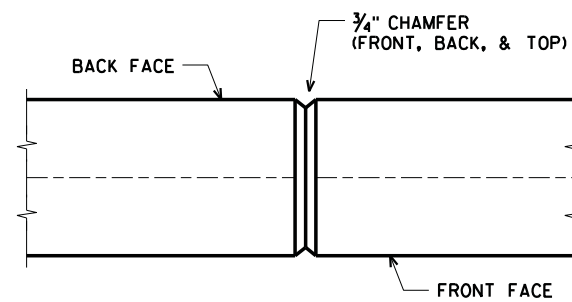
COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 50'

■ MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.

⊕ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

PLACE EXPANSION JOINTS AT EVERY THIRD JOINT AND AT ALL WALL RADIUS PC/PT POINTS AND BEND POINTS.



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 12'

8

8

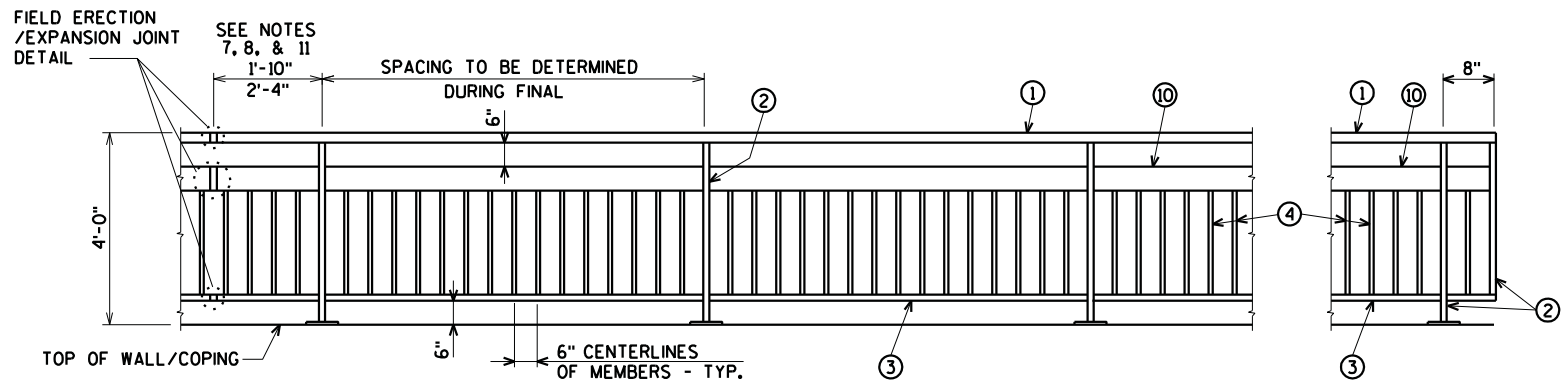
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-338			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL DETAILS			SHEET 3 OF 5 PRE_77

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

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STATE PROJECT NUMBER

5992-10-31



PART ELEVATION OF RAILING STEEL

END SECTION

LEGEND

- 1 2 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS.
- 2 TS 2" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.
- 3 TS 1 1/2" x 1 1/2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- 4 TS 1" x 1" x 0.125" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- 5 BASE PLATE 1/2" x 7" x 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO NO. 2 AS SHOWN.
- 6 CONCRETE MASONRY ANCHORS, TYPE S, 5/8". PULLOUT STRENGTH SHALL BE 3.6 KIPS.
- 7 SQUARE SLEEVE FABRICATED FROM 1/2" COLD DRAWN STEEL ALLOY SQUARE CONFORMING TO ASTM A331 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" Ø SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- 8 1 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 1. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- 9 2" DIA. PIPE SLEEVE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS. PROVIDE "SLIDING FIT".
- 10 TS 6" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- 11 1" x 5" SLEEVE CONFORMING TO ASTM DESIGNATION A709 GRADE 36 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE IN I.D. OF NO. 10. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL R-13-338", WHICH INCLUDE ALL ITEMS SHOWN INCLUDING GALVANIZED COATING.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.

POST BASE PLATES NO. 5 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHOR BOLTS NO. 6 SHALL BE GALVANIZED AFTER FABRICATION.

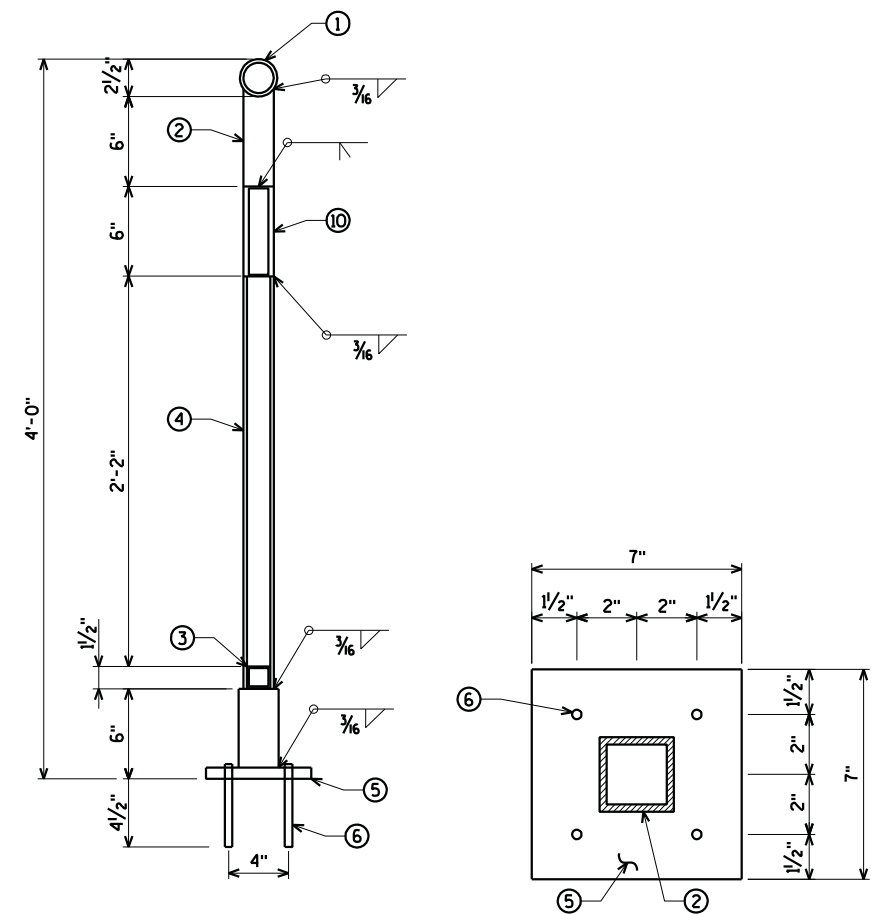
PRIOR TO GALVANIZING ALL STEEL RAILING POSTS, STEEL TUBING, AND STEEL PIPE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

VERTICAL MEMBERS SHALL BE PLUMB.

HORIZONTAL MEMBERS SHALL PARALLEL TO GRADE.

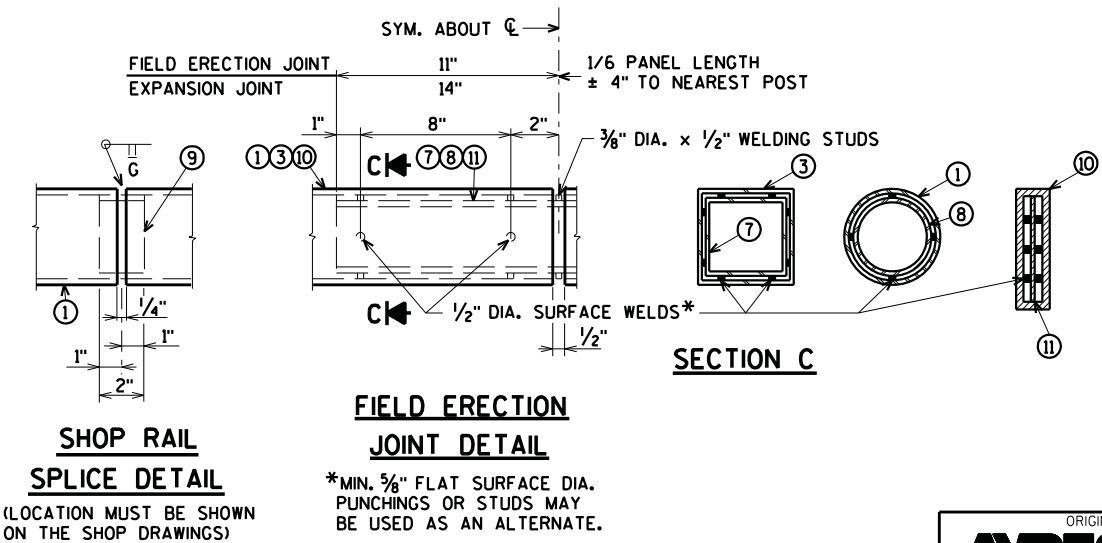
PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

RAILING TO BE PAINTED FEDERAL COLOR NO. 17038 (BLACK).



SECTION THRU RAILING STEEL

RAILING BASE PLATE



SHOP RAIL
SPLICE DETAIL
(LOCATION MUST BE SHOWN
ON THE SHOP DRAWINGS)

FIELD ERECTION
JOINT DETAIL

*MIN. 5/8" FLAT SURFACE DIA.
PUNCHINGS OR STUDS MAY
BE USED AS AN ALTERNATE.

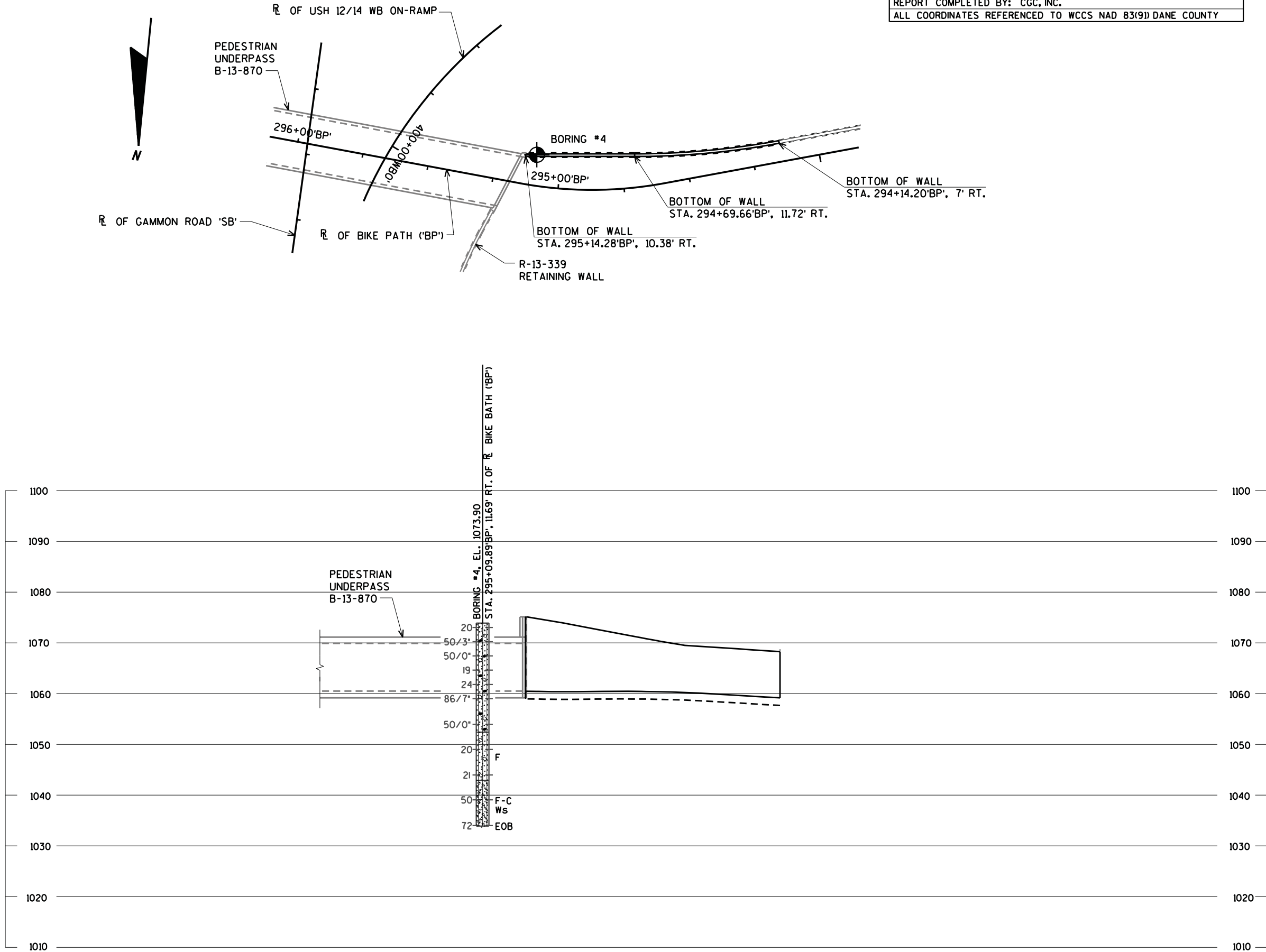
SECTION C

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-338			
DRAWN BY		CLS	PLANS CK'D.
RAILING DETAILS			SHEET 4 OF 5 PRE_78

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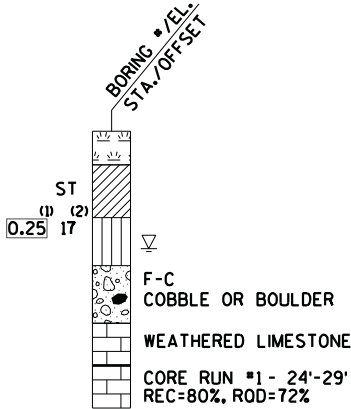
STATE PROJECT NUMBER

5992-10-31

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.

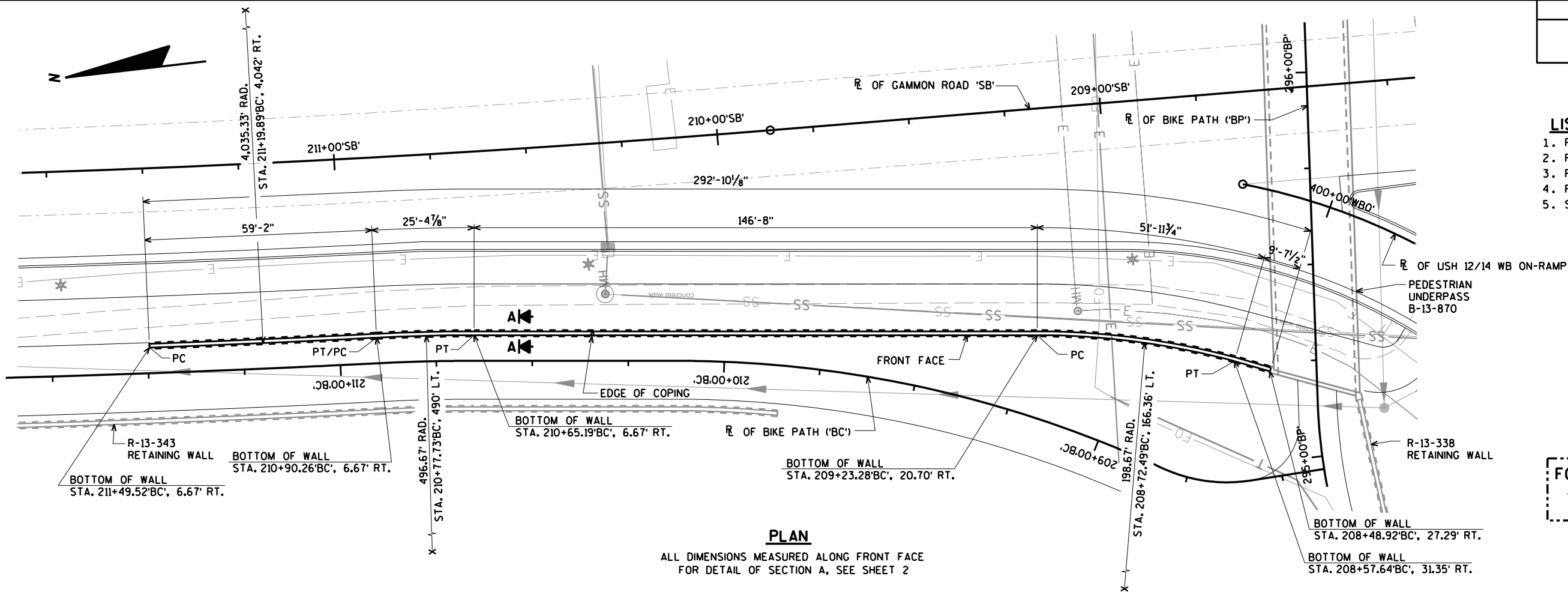
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-338			
DRAWN BY		CLS	PLANS CK'D.
SUBSURFACE EXPLORATION		SHEET 5 OF 5 PRE_79	

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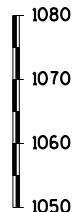
CHECKED BY: DATE:
BACK CHECKED BY: DATE:
CORRECTED BY: DATE:

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PLAN

ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTION A, SEE SHEET 2



GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
211+49.52	211+49.52'BC'	6.67'	1072.76	1072.76
211+25.00	211+25.00'BC'	6.67'	1073.22	1072.37
211+00.00	211+00.00'BC'	6.67'	1073.62	1071.52
210+75.00	210+75.00'BC'	6.67'	1073.95	1070.40
210+50.00	210+50.00'BC'	6.67'	1074.16	1069.13
210+25.00	210+25.00'BC'	6.67'	1074.30	1067.86
210+00.00	210+00.00'BC'	6.93'	1074.40	1066.63
209+75.00	209+75.00'BC'	9.06'	1074.49	1065.72
209+50.00	209+50.00'BC'	13.41'	1074.59	1065.24
209+25.00	209+25.00'BC'	20.14'	1074.69	1065.46
209+00.00	209+00.00'BC'	27.66'	1074.87	1066.11
208+75.00	208+75.00'BC'	32.31'	1075.04	1062.88
208+48.92	208+48.92'BC'	27.29'	1075.15	1060.90

ELEVATION

(LOOKING AT FRONT FACE OF WALL)

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF
SPV.0090.03	RAILING STEEL R-13-339	LF
SPV.0165.02	WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH R-13-339	SF

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

STATE PROJECT NUMBER

5992-10-31

LIST OF DRAWINGS

1. RETAINING WALL LAYOUT
2. RETAINING WALL DETAILS
3. RETAINING WALL DETAILS
4. RAILING DETAILS
5. SUBSURFACE EXPLORATION

FOR GENERAL NOTES
AND DESIGN DATA
SEE SHEET 2

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE R-13-339			
RETAINING WALL ALONG BIKE PATH 'BC'			
COUNTY	DANE	TOWN/CITY/VILLAGE	MADISON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	KLW	DESIGN CK'D.	CLW
DRAWN BY	CLW	PLANS CK'D.	CLW
RETAINING WALL LAYOUT			SHEET 1 OF 5 PRE_80

8

\$PRNAME\$
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GENERAL NOTES

THE PLAN QUANTITY FOR THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

DRAWINGS SHALL NOT BE SCALED.

THE QUANTITY OF CONCRETE MASONRY, COATED REINFORCING STEEL, AND RUBBERIZED MEMBRANE WATERPROOFING FOR THE CAST-IN-PLACE COPING IS INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

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

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

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON SHEET 1.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AND RAILING AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 240 psf.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY (COPING) $f'_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS	EVALUATED LOCATIONS
WALL HEIGHT (FEET)	15.8
EXPOSED WALL HEIGHT (FEET)	14.3
MAXIMUM LENGTH OF REINFORCEMENT (FEET)	12.5
WALL STATION	211+49.52' BC' - 208+48.92' BC'
BORING USED	#4
CAPACITY TO DEMAND RATIO (CDR)	
SLIDING (CDR>1.0)	1.00
ECCENTRICITY (CDR>1.0)	0.63
OVERALL STABILITY (CDR>1.0)	1.19
BEARING RESISTANCE (CDR>1.0)	1.21
FACTORED BEARING RESISTANCE (psf)	3,295

SOIL PARAMETERS

STRATUM LOCATIONS AND SOIL DESCRIPTIONS	TOTAL UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	30	0
RETAINED SOIL	120	30	0
BORING #4			
SAND W/ SILT & COBBLES/BOULDERS EL. 1073.90 - EL. 1052.40	120	30	0
SAND, SOME SILT EL. 1052.40 - EL. 1042.90	120	32	0
SAND & GRAVEL, SOME SILT BELOW EL. 1042.90	130	36	0

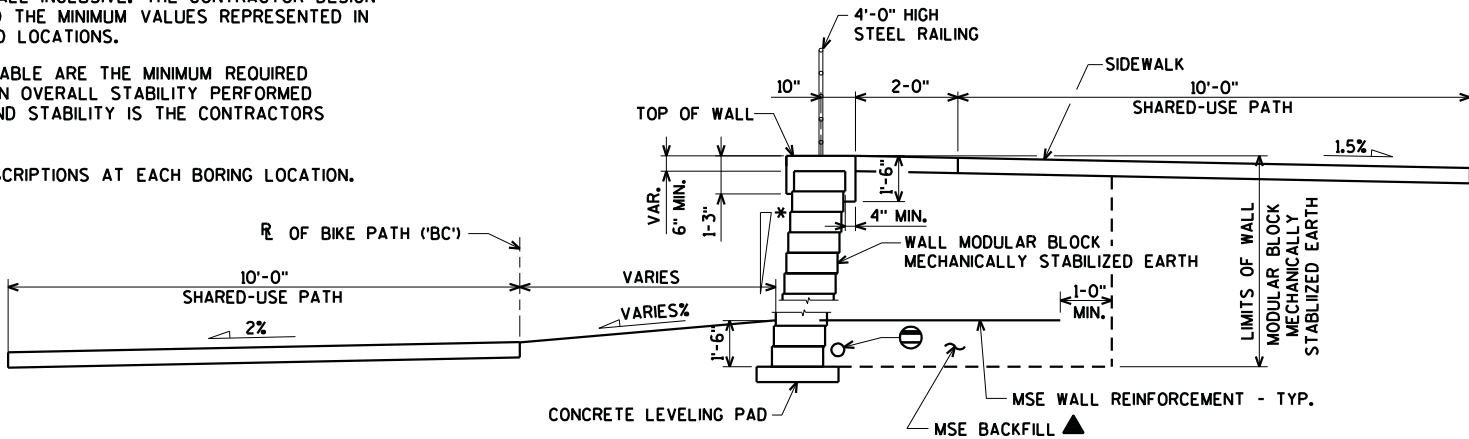
⊗ DESIGN WALL FOR THESE VALUES

NOTES

- THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

- ☆ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED ON OVERALL STABILITY PERFORMED BY THE WALL DESIGNER. COMPOUND STABILITY IS THE CONTRACTORS RESPONSIBILITY.

- ⊗ STRATUM LOCATIONS & SOIL DESCRIPTIONS AT EACH BORING LOCATION.



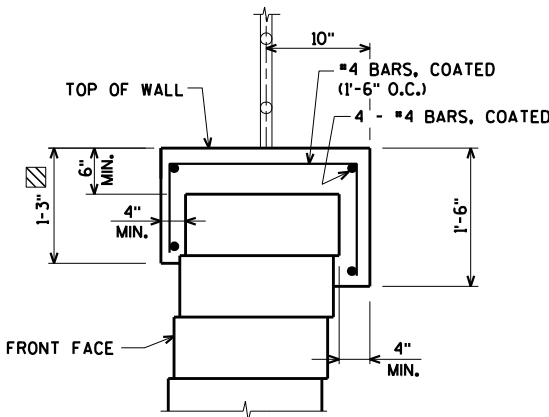
SECTION A-A

* SET BLOCK VARIES BY MANUFACTURER, MAX. FRONT FACE FROM VERTICAL BLOCK IS 1 HORIZ. TO 12 VERT.

▲ INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

⊖ PIPE UNDERDRAIN WRAPPED 6-INCH, SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN AS DETAILED ON THIS SHEET.

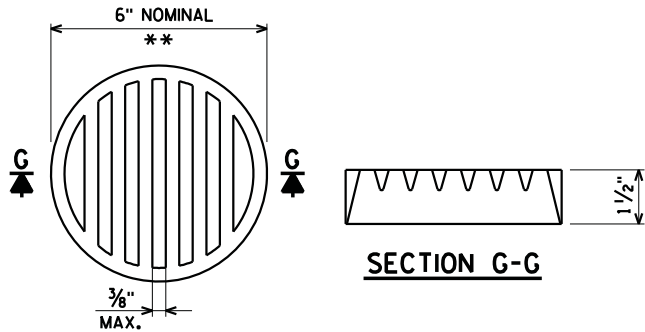
FOR LOCATION OF SECTION A, SEE SHEET 1



COPING DETAIL

⊠ THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.

MAINTAIN 2" MINIMUM COVER ON ALL REBAR.



SECTION G-G

** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL

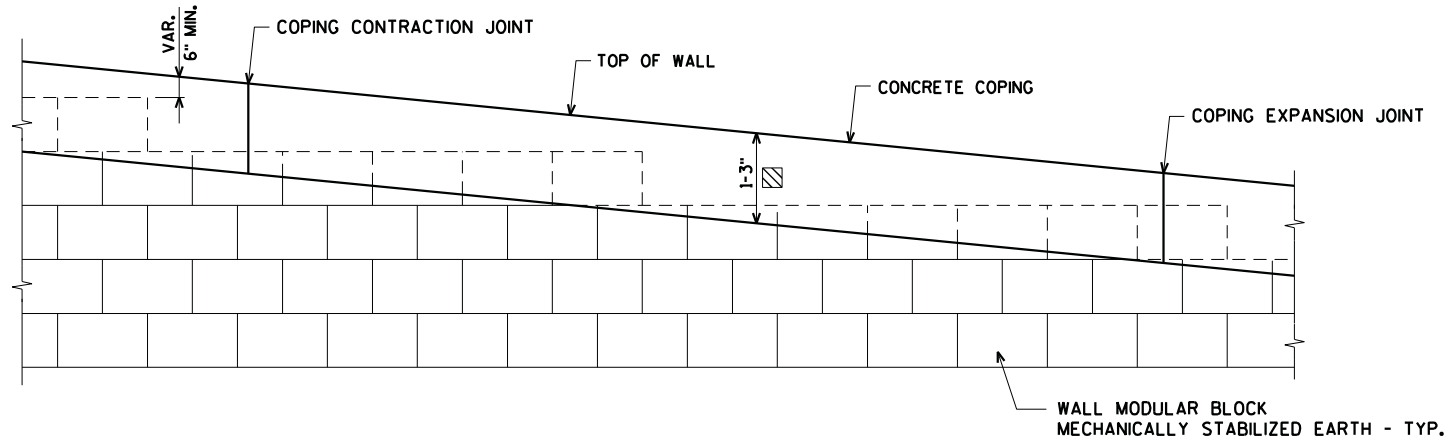
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-339			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL DETAILS			SHEET 2 OF 5 PRE_81

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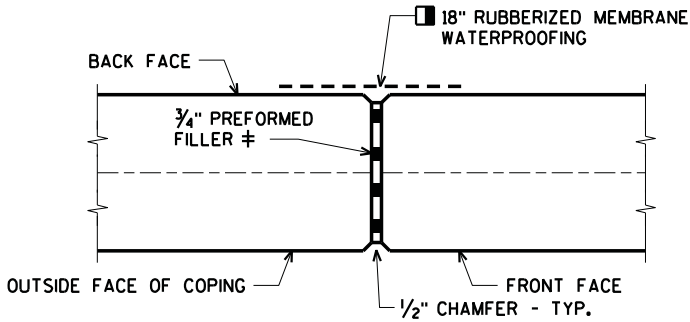
STATE PROJECT NUMBER

5992-10-31



RETAINING WALL FACE & CONCRETE COPING DETAIL

THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.



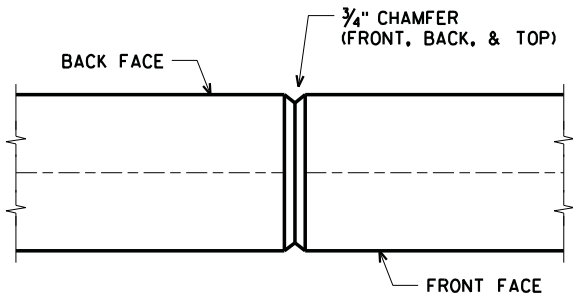
COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 50'

MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.

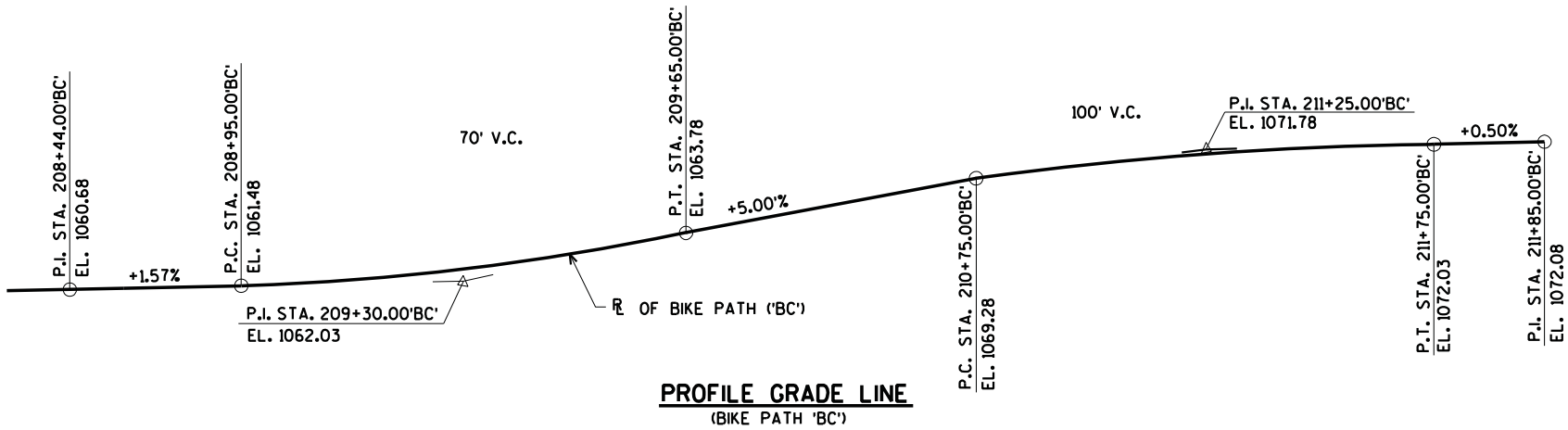
SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

PLACE EXPANSION JOINTS AT EVERY THIRD JOINT AND AT ALL WALL RADIUS PC/PT POINTS AND BEND POINTS.



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 12'



PROFILE GRADE LINE
(BIKE PATH 'BC')

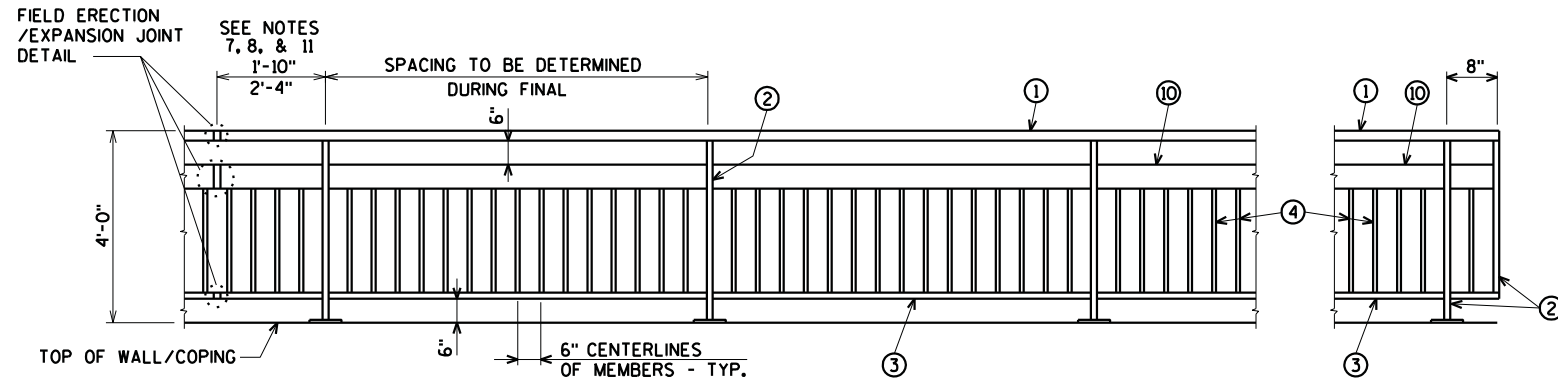
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-339			
DRAWN BY	CLS	PLANS CK'D.	
RETAINING WALL DETAILS			SHEET 3 OF 5 PRE_82

\$PRNAME\$
U:\41-0737.00 - Common Road Bike Path - Madison\Structures\PRELIM\13-339 SB railing.dgn

STATE PROJECT NUMBER

5992-10-31



PART ELEVATION OF RAILING STEEL

END SECTION

LEGEND

- ① 2 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS.
- ② TS 2" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.
- ③ TS 1 1/2" x 1 1/2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ④ TS 1" x 1" x 0.125" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑤ BASE PLATE 1/2" x 7" x 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO NO. 2 AS SHOWN.
- ⑥ CONCRETE MASONRY ANCHORS, TYPE S, 5/8". PULLOUT STRENGTH SHALL BE 3.6 KIPS.
- ⑦ SQUARE SLEEVE FABRICATED FROM 1/2" COLD DRAWN STEEL ALLOY SQUARE CONFORMING TO ASTM A331 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑧ 1 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 1. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑨ 2" DIA. PIPE SLEEVE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS. PROVIDE "SLIDING FIT".
- ⑩ TS 6" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑪ 1" x 5" SLEEVE CONFORMING TO ASTM DESIGNATION A709 GRADE 36 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE IN I.D. OF NO. 10. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL R-13-339", WHICH INCLUDE ALL ITEMS SHOWN INCLUDING GALVANIZED COATING.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.

POST BASE PLATES NO. 5 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHOR BOLTS NO. 6 SHALL BE GALVANIZED AFTER FABRICATION.

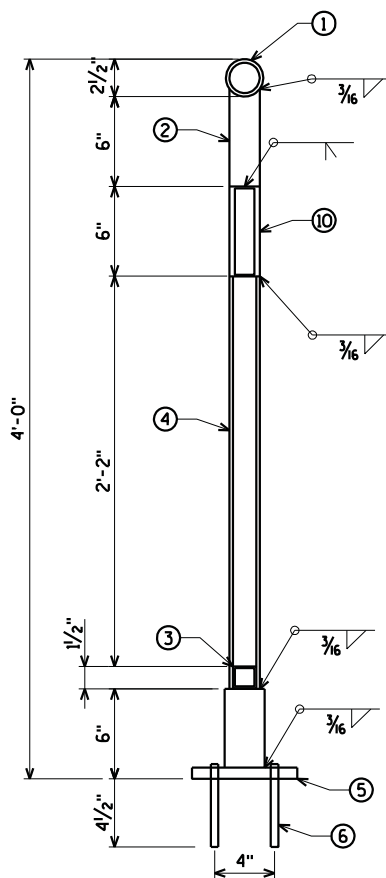
PRIOR TO GALVANIZING ALL STEEL RAILING POSTS, STEEL TUBING, AND STEEL PIPE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

VERTICAL MEMBERS SHALL BE PLUMB.

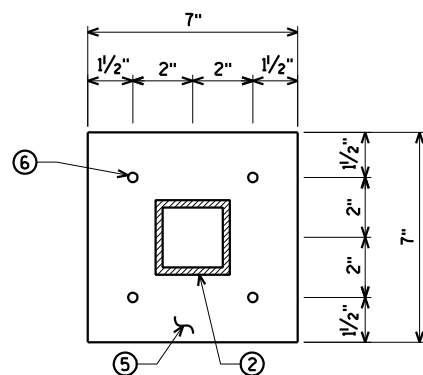
HORIZONTAL MEMBERS SHALL PARALLEL TO GRADE.

PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

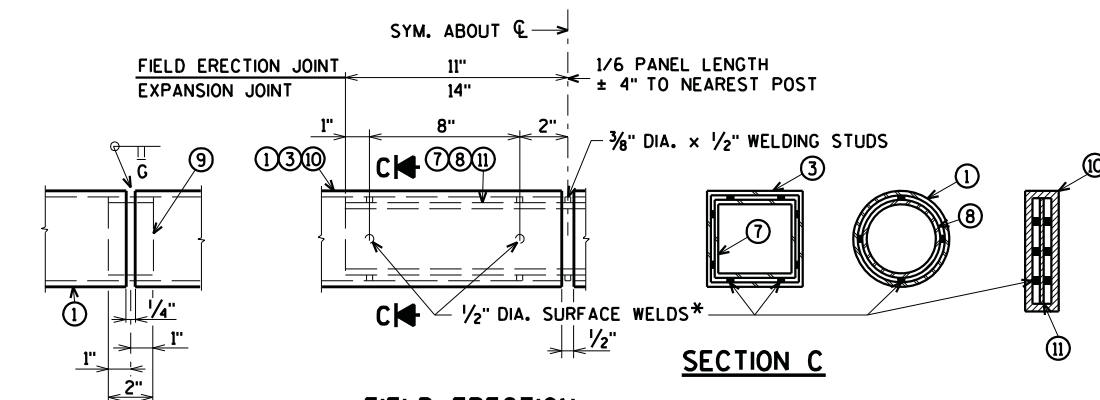
RAILING TO BE PAINTED FEDERAL COLOR NO. 17038 (BLACK).



SECTION THRU RAILING STEEL



RAILING BASE PLATE



SHOP RAIL
SPLICE DETAIL
(LOCATION MUST BE SHOWN
ON THE SHOP DRAWINGS)

FIELD ERECTION
JOINT DETAIL
*MIN. 5/8" FLAT SURFACE DIA.
PUNCHINGS OR STUDS MAY
BE USED AS AN ALTERNATE.

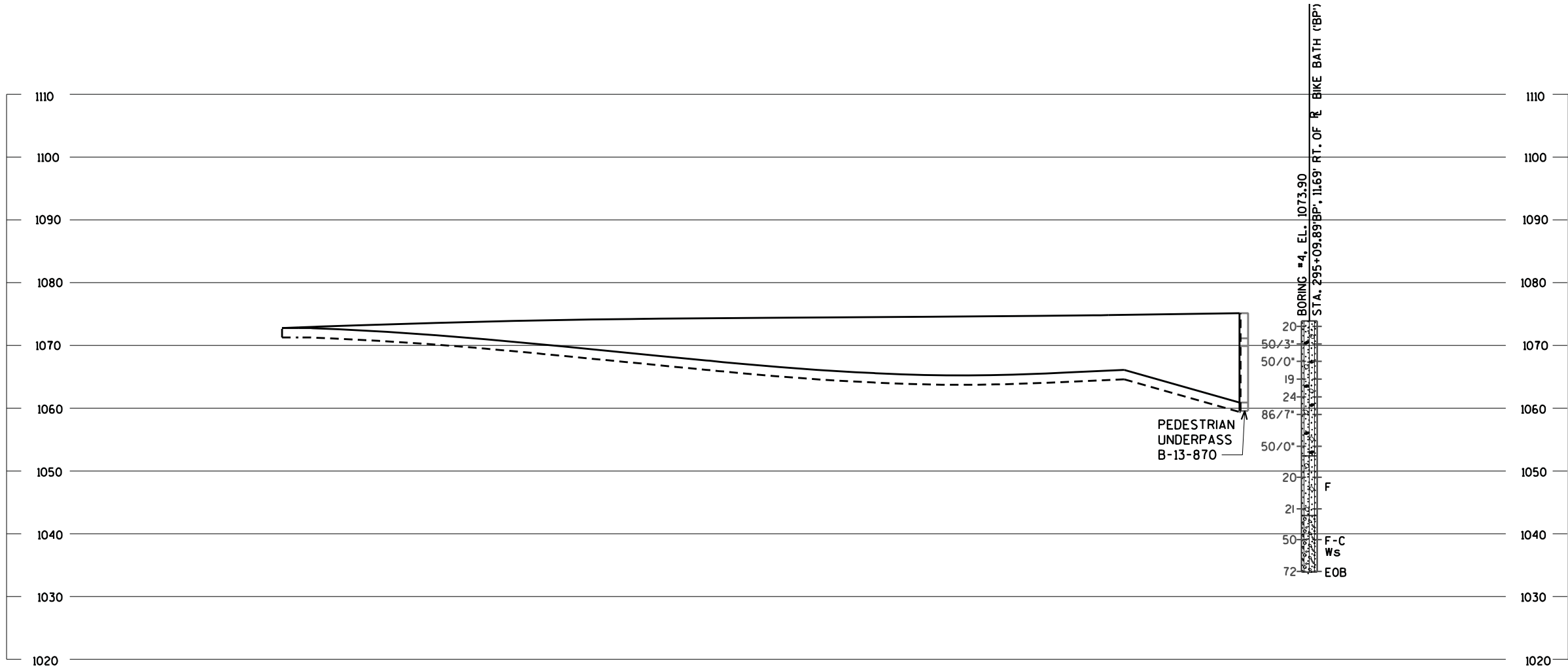
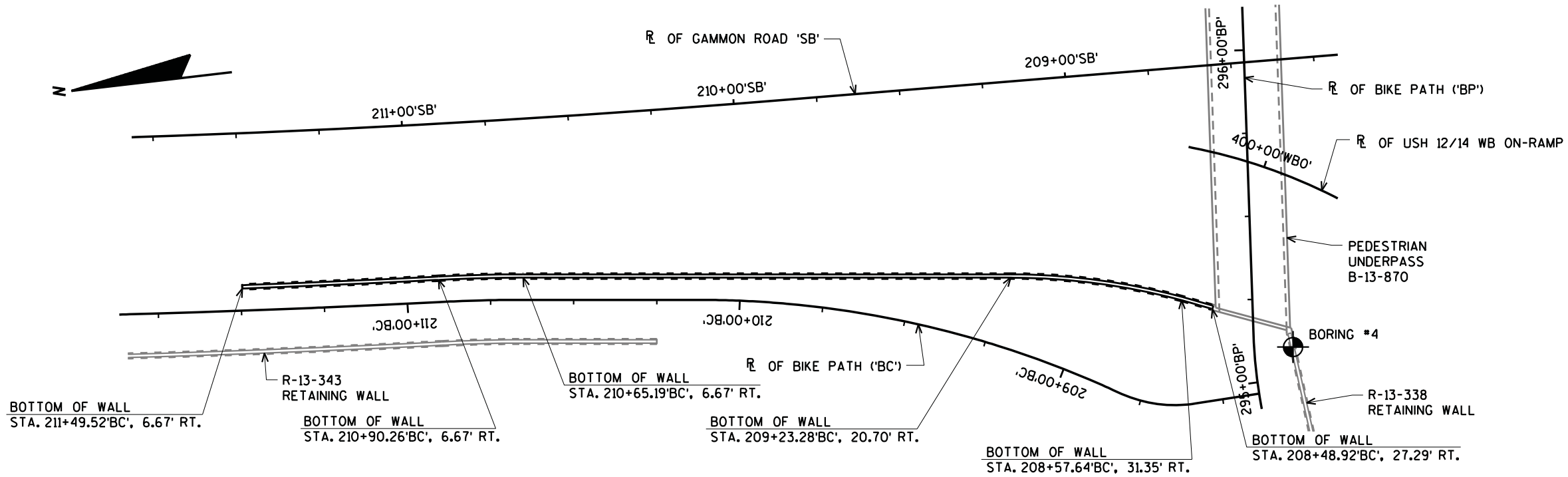
SECTION C

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-339			
DRAWN BY		CLS	PLANS CK'D.
RAILING DETAILS			SHEET 4 OF 5 PRE_83

\$PRNAME\$
Ut=41-0737.00 - Gammon Road Bike Path - Madison Structures PRELIM R-13-339 SB soils.dgn

BORING	DATE COMPLETED	NORTHING (Y)	EASTING (X)
4	DECEMBER 6, 2017	475313	789274
BORINGS COMPLETED BY: CGC, INC.			
REPORT COMPLETED BY: CGC, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY			



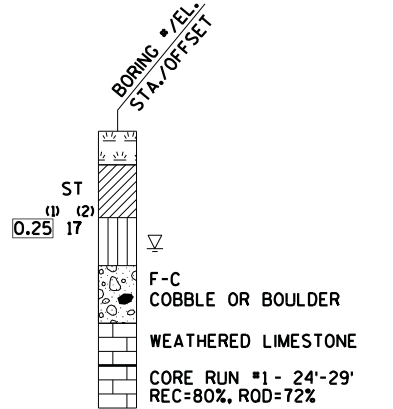
STATE PROJECT NUMBER

5992-10-31

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
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-339			
DRAWN BY		CLS	PLANS CK'D.
SUBSURFACE EXPLORATION		SHEET 5 OF 5 PRE_84	

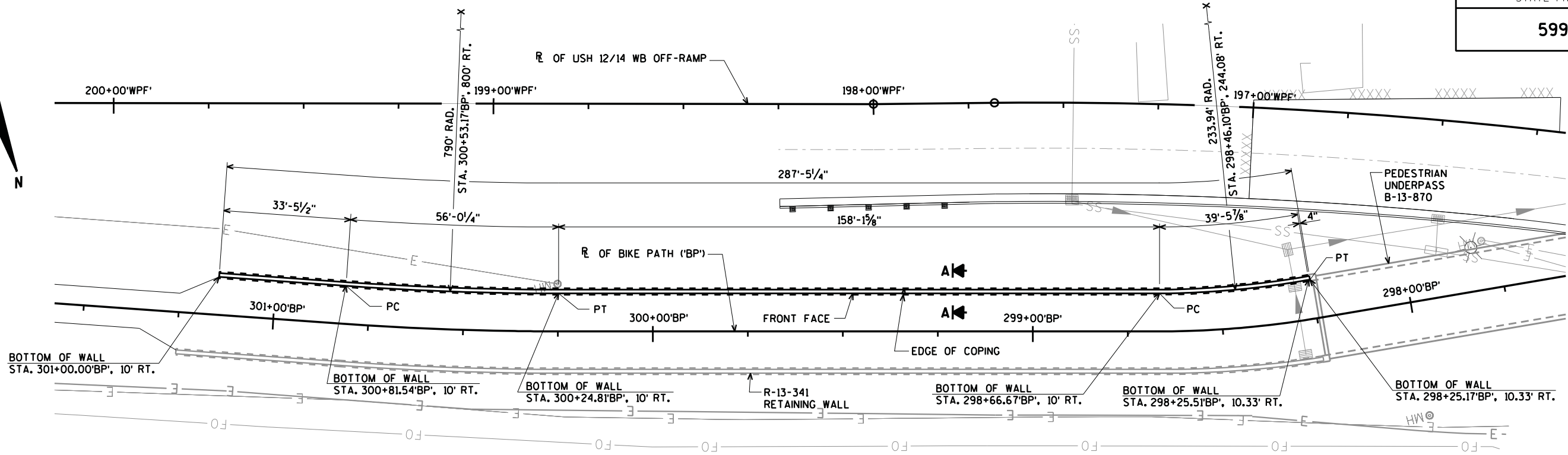
\$PRNAME\$
U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-340 BP prelim.dgn

CHECKED BY: DATE:
BACK CHECKED BY: DATE:
CORRECTED BY:

8

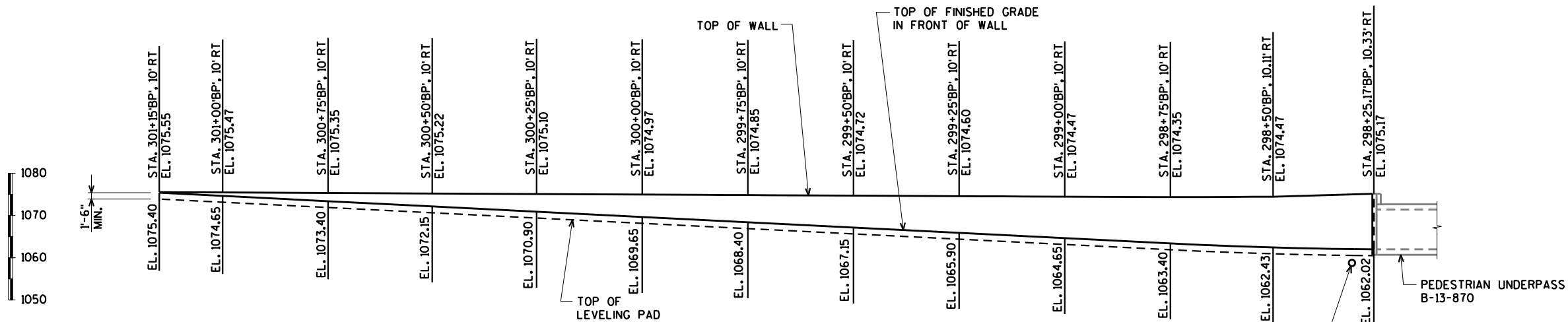
STATE PROJECT NUMBER

5992-10-31



PLAN

ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTION A, SEE SHEET 2



ELEVATION

(LOOKING AT FRONT FACE OF WALL)

GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
301+15.00	301+15.00' BP'	10'	1075.55	1075.40
301+00.00	301+00.00' BP'	10'	1075.47	1074.65
300+75.00	300+75.00' BP'	10'	1075.35	1073.40
300+50.00	300+50.00' BP'	10'	1075.22	1072.15
300+25.00	300+25.00' BP'	10'	1075.10	1070.90
300+00.00	300+00.00' BP'	10'	1074.97	1069.65
299+75.00	299+75.00' BP'	10'	1074.85	1068.40
299+50.00	299+50.00' BP'	10'	1074.72	1067.15
299+25.00	299+25.00' BP'	10'	1074.60	1065.90
299+00.00	299+00.00' BP'	10'	1074.47	1064.65
298+75.00	298+75.00' BP'	10'	1074.35	1063.40
298+50.00	298+50.00' BP'	10.11'	1074.47	1062.43
298+25.17	298+25.17' BP'	10.33'	1075.17	1062.02

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER

612.0406
SPV.0090.04
SPV.0165.03

BID ITEMS

PIPE UNDERDRAIN WRAPPED 6-INCH
RAILING STEEL R-13-340
WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH R-13-340

UNIT

LF
LF
SF

LIST OF DRAWINGS

1. RETAINING WALL LAYOUT
2. RETAINING WALL DETAILS
3. RETAINING WALL DETAILS
4. RAILING DETAILS
5. SUBSURFACE EXPLORATION

FOR GENERAL NOTES
AND DESIGN DATA
SEE SHEET 2

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED		CHIEF STRUCTURES DESIGN ENGINEER	DATE
STRUCTURE R-13-340			
RETAINING WALL ALONG BIKE PATH 'BP'			
COUNTY	DANE	TOWN/CITY/VILLAGE	MADISON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	KLW	DESIGN CK'D.	DRAWN BY CLS
RETAINING WALL LAYOUT			SHEET 1 OF 5 PRE_85

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

THE QUANTITY OF CONCRETE MASONRY, COATED REINFORCING STEEL, AND RUBBERIZED MEMBRANE WATERPROOFING FOR THE CAST-IN-PLACE COPING IS INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

CONCRETE MASONRY (COPING) _____ $f'_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) _____ $f_y = 60,000$ p.s.i.

STRATUM LOCATIONS AND SOIL DESCRIPTIONS	TOTAL UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	30	0
RETAINED SOIL ⊗	120	30	0
BORING #11			
SAND & GRAVEL WITH COBBLES/BOULDERS ⊗ EL. 1074.60 - EL. 1064.10	120	30	0
SAND & GRAVEL, SOME SILT ⊗ EL. 1064.10 - EL. 1061.60	130	36	0
SAND & GRAVEL ⊗ BELOW EL. 1061.60	125	36	0
BORING #5			
SAND W/SILT & GRAVEL ⊗ EL. 1079.30 - EL. 1062.30	120	30	0
SAND ⊗ EL. 1062.30 - EL. 1057.30	125	34	0
SAND ⊗ EL. 1057.30 - EL. 1046.80	120	32	0
CLAY ⊗ EL. 1046.80 - EL. 1041.80	125	0 ¹ /26 ²	2,500 ¹ /50 ²
SAND & GRAVEL, SOME SILT ⊗ BELOW EL. 1041.80	130	36	0

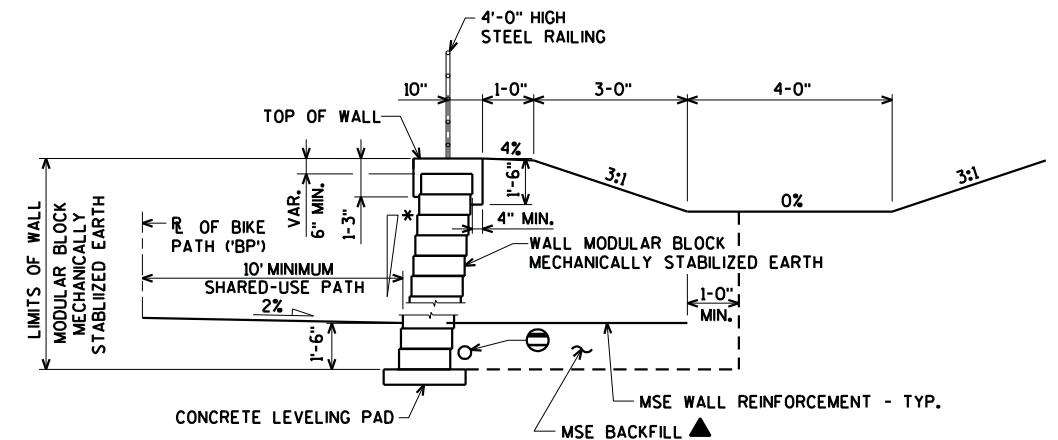
1. FOR SHORT-TERM (UNDRAINED) LOADING CONDITIONS
2. FOR LONG-TERM (DRAINED) LOADING CONDITIONS

Diagram illustrating the cross-section of a wall and footing, showing reinforcement details:

- Reinforcement: #4 BARS, COATED (1'-6" O.C.)
- Reinforcement: 4 - #4 BARS, COATED
- Dimensions:
 - Wall Height: 1'-3" MIN.
 - Footing Height: 1'-6" MIN.
 - Reinforcement Spacing: 10"
 - Top of Wall: Indicated by a horizontal line.
 - Front Face: Indicated by a vertical line.

MAINTAIN 2" MINIMUM COVER ON ALL REBAR.

DIMENSIONS		EVALUATED LOCATIONS	
WALL HEIGHT (FEET)		14.7	14.7
EXPOSED WALL HEIGHT (FEET)		13.2	13.2
MAXIMUM LENGTH OF REINFORCEMENT (FEET)	6	8.5	14
WALL STATION	301+00.00'BP' - 298+25.17'BP'		
BORING USED		#11	#5
CAPACITY TO DEMAND RATIO (CDR)			
SLIDING (CDR>1.0)		1.25	1.00
ECCENTRICITY (CDR>1.0)		0.44	0.67
OVERALL STABILITY (CDR>1.0) ☆		1.73	1.25
BEARING RESISTANCE (CDR>1.0)		2.32	1.04
FACTORED BEARING RESISTANCE (psf)		1,725	3,836

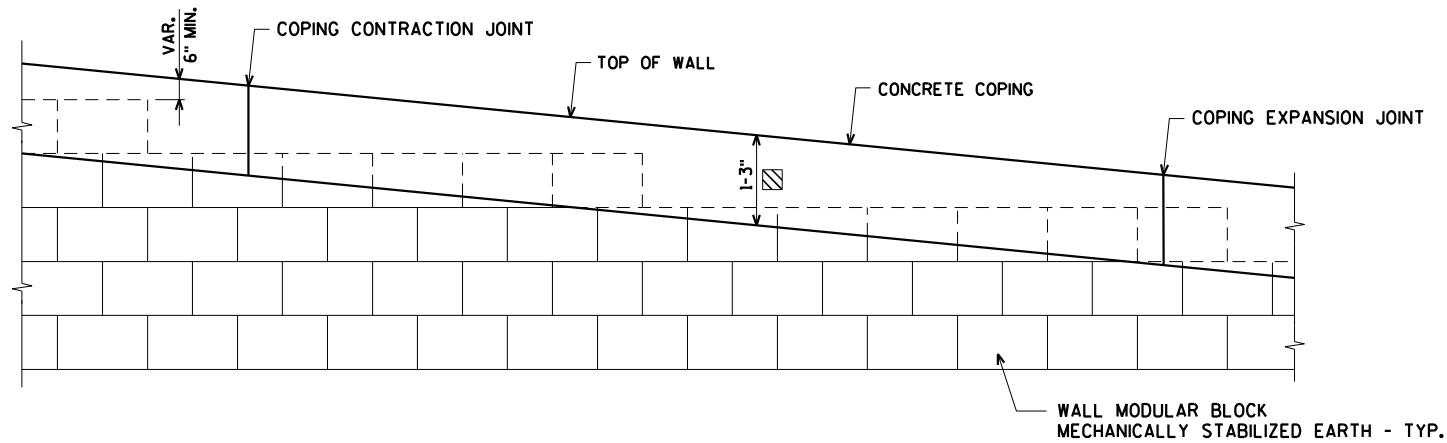


FOR LOCATION OF SECTION A, SEE SHEET 1

\$PRNAME\$
U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-340 BP details.dgn

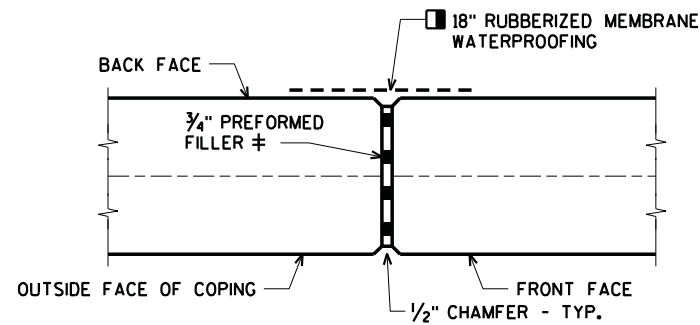
STATE PROJECT NUMBER

5992-10-31



RETAINING WALL FACE & CONCRETE COPING DETAIL

THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.



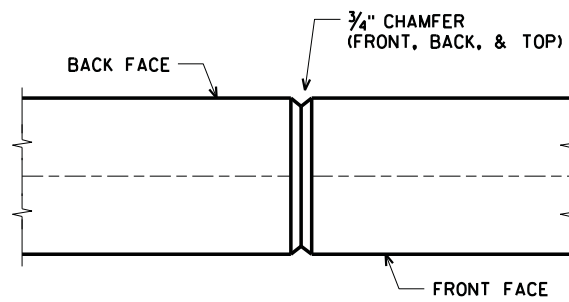
COPENG EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 50'

MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.

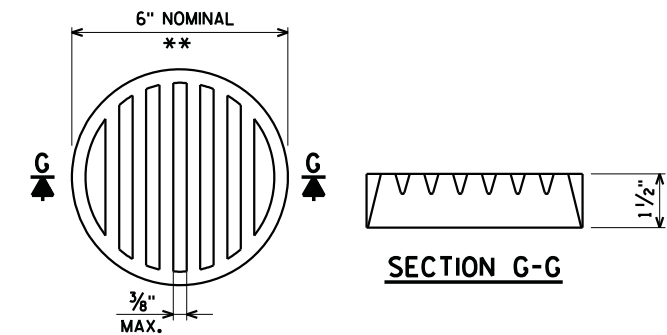
SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

PLACE EXPANSION JOINTS AT EVERY THIRD JOINT AND AT ALL WALL RADIUS PC/PT POINTS AND BEND POINTS.



COPENG CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 12'

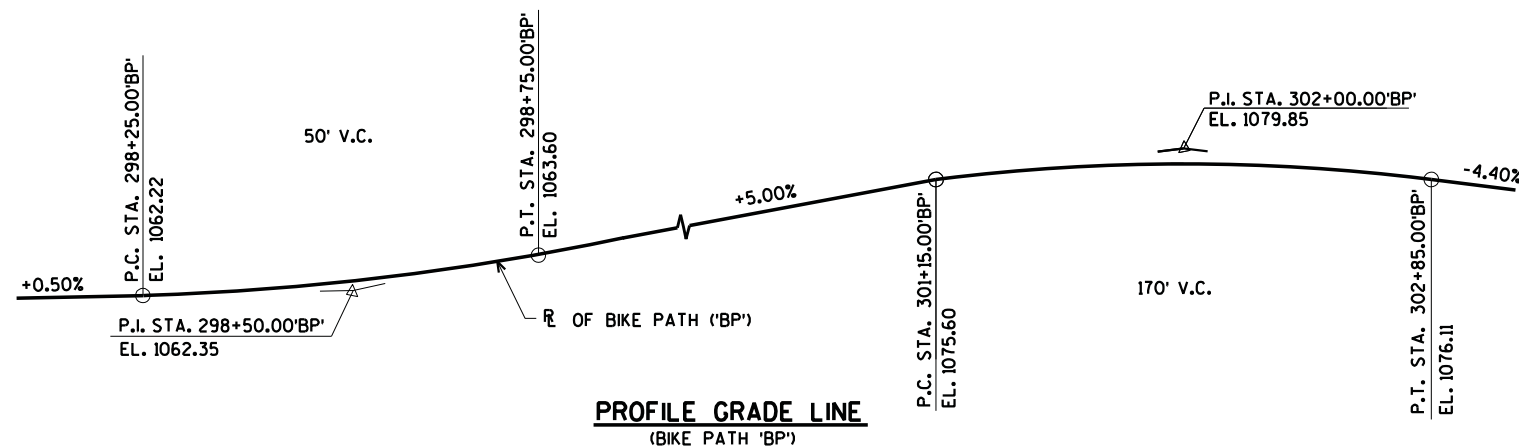


** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL



8

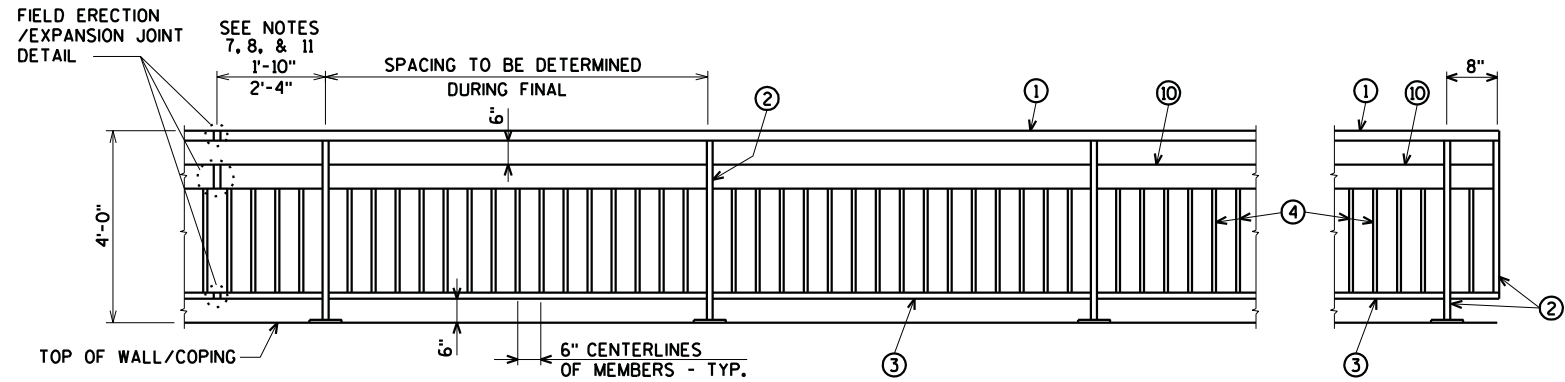
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NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-340			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL DETAILS		SHEET 3 OF 5 PRE_87	

\$PRNAME\$
U:\41-0737.00 - Common Road Bike Path - Madison\Structures\PRELIM\R-13-340 BP railing.dgn

STATE PROJECT NUMBER

5992-10-31



PART ELEVATION OF RAILING STEEL

END SECTION

LEGEND

- ① 2 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS.
- ② TS 2" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.
- ③ TS 1 1/2" x 1 1/2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ④ TS 1" x 1" x 0.125" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑤ BASE PLATE 1/2" x 7" x 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO NO. 2 AS SHOWN.
- ⑥ CONCRETE MASONRY ANCHORS, TYPE S, 5/8". PULLOUT STRENGTH SHALL BE 3.6 KIPS.
- ⑦ SQUARE SLEEVE FABRICATED FROM 1/2" COLD DRAWN STEEL ALLOY SQUARE CONFORMING TO ASTM A331 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑧ 1 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 1. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑨ 2" DIA. PIPE SLEEVE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS. PROVIDE "SLIDING FIT".
- ⑩ TS 6" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑪ 1" x 5" SLEEVE CONFORMING TO ASTM DESIGNATION A709 GRADE 36 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE IN I.D. OF NO. 10. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL R-13-340", WHICH INCLUDE ALL ITEMS SHOWN INCLUDING GALVANIZED COATING.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.

POST BASE PLATES NO. 5 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHOR BOLTS NO. 6 SHALL BE GALVANIZED AFTER FABRICATION.

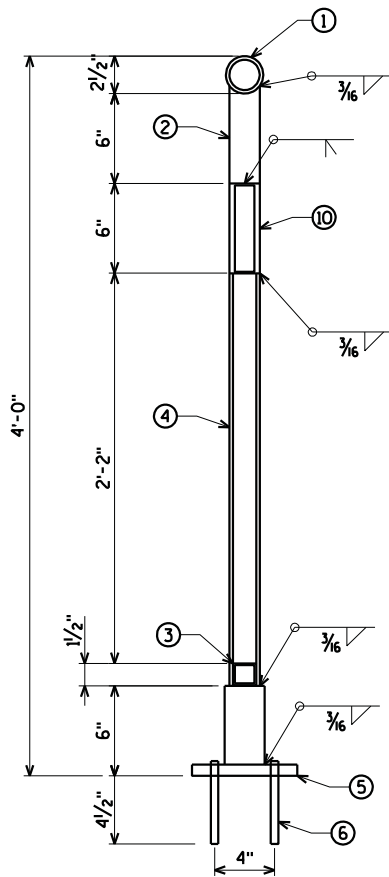
PRIOR TO GALVANIZING ALL STEEL RAILING POSTS, STEEL TUBING, AND STEEL PIPE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

VERTICAL MEMBERS SHALL BE PLUMB.

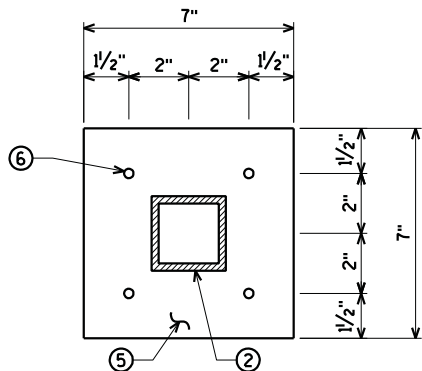
HORIZONTAL MEMBERS SHALL PARALLEL TO GRADE.

PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

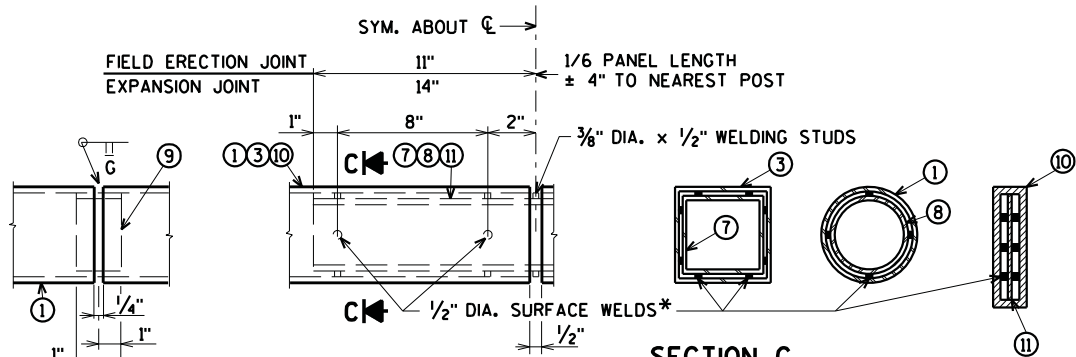
RAILING TO BE PAINTED FEDERAL COLOR NO. 17038 (BLACK).



SECTION THRU RAILING STEEL



RAILING BASE PLATE



SHOP RAIL
SPLICE DETAIL
(LOCATION MUST BE SHOWN
ON THE SHOP DRAWINGS)

FIELD ERECTION
JOINT DETAIL
*MIN. 5/8" FLAT SURFACE DIA.
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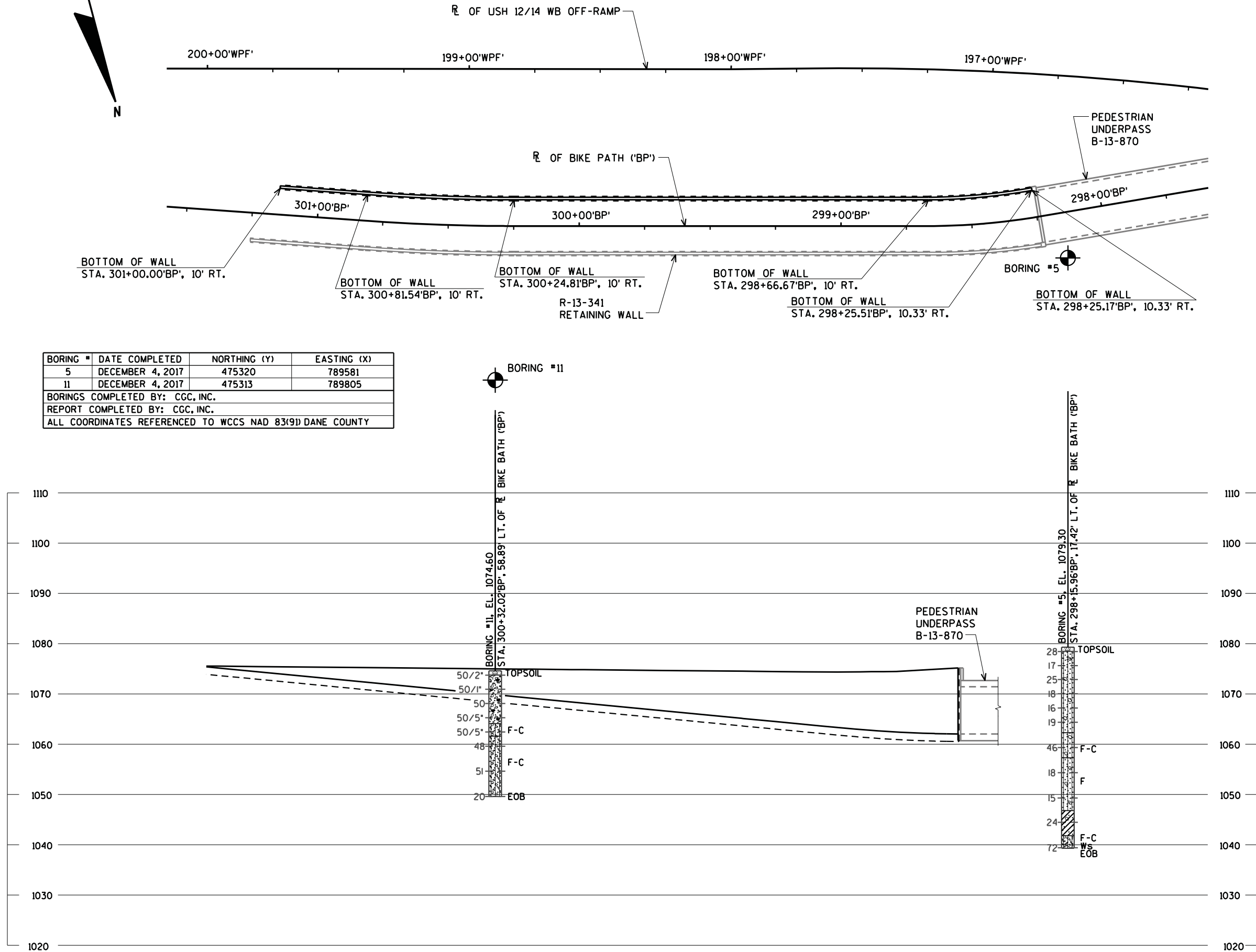
SECTION C

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-340			
DRAWN BY		CLS	PLANS CK'D.
RAILING DETAILS			SHEET 4 OF 5 PRE_88

s:\PRNAME\$
Ut=41-0737.00 - Common Road Bike Path - Madison+Structures+PRELIM+R-13-340 BP soils.dgn

8



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
5	DECEMBER 4, 2017	475320	789581
11	DECEMBER 4, 2017	475313	789805
BORINGS COMPLETED BY: CGC, INC.			
REPORT COMPLETED BY: CGC, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY			

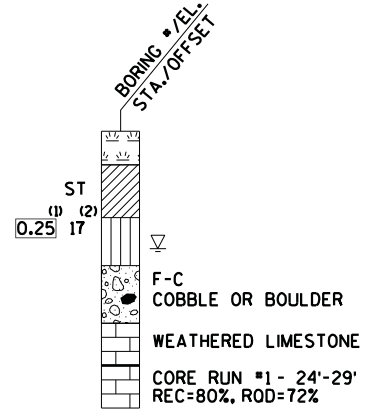
STATE PROJECT NUMBER

5992-10-31

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
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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.

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SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

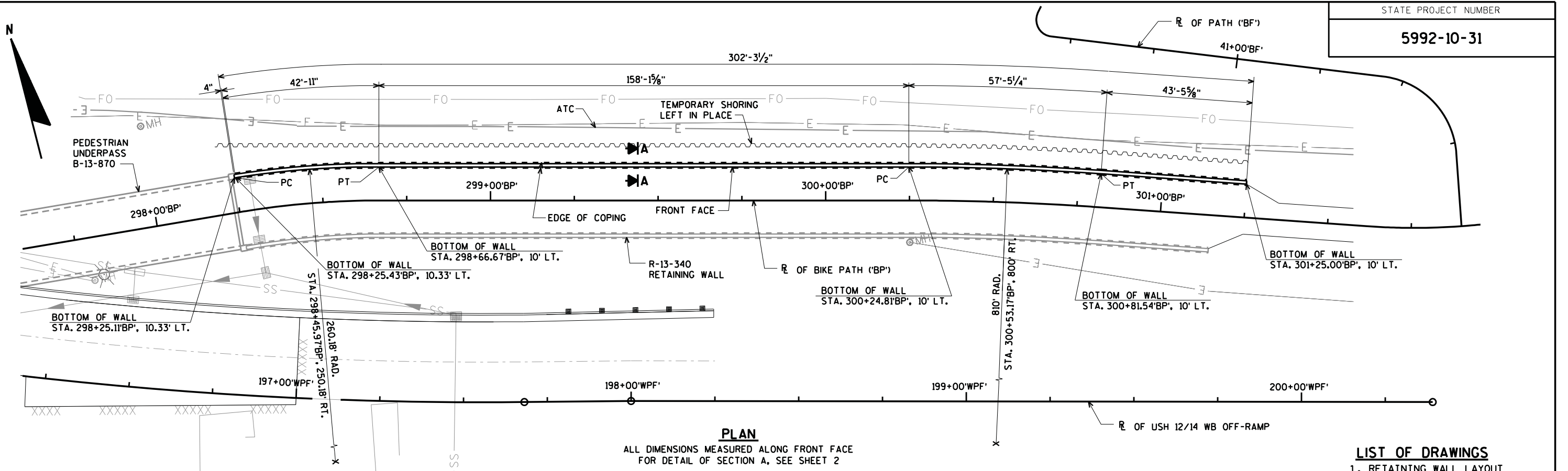
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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.

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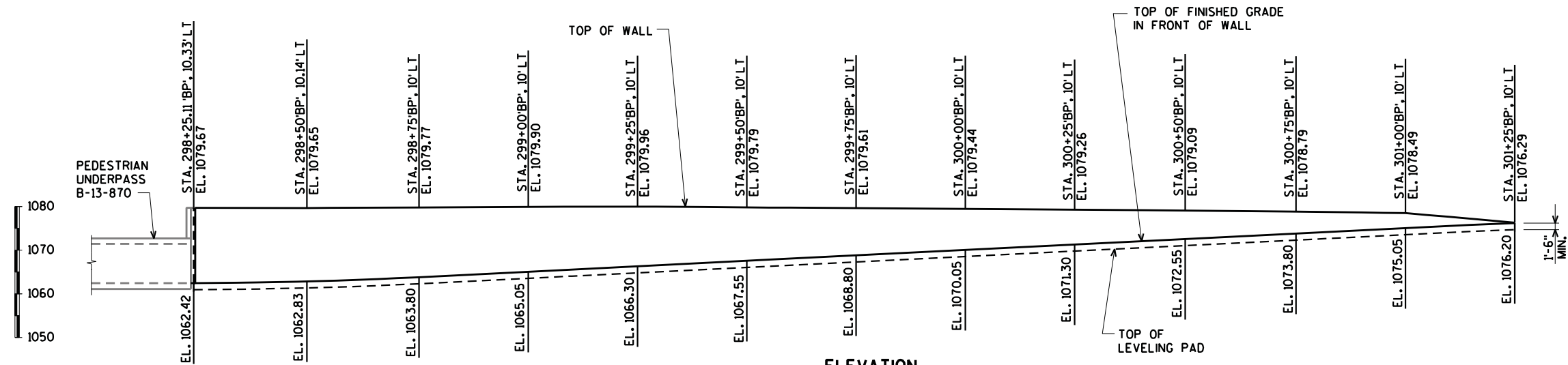
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-340			
DRAWN BY		CLS	PLANS CK'D.
SUBSURFACE EXPLORATION		SHEET 5 OF 5 PRE_89	

CHECKED BY: DATE: BACK CHECKED BY: DATE: CORRECTED BY:

8



PLAN
ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTION A, SEE SHEET 2



ELEVATION
(LOOKING AT FRONT FACE OF WALL)

GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
298+25.11	298+25.11'BP'	10.33'	1079.67	1062.42
298+50.00	298+50.00'BP'	10.14'	1079.65	1062.83
298+75.00	298+75.00'BP'	10'	1079.77	1063.80
299+00.00	299+00.00'BP'	10'	1079.90	1065.05
299+25.00	299+25.00'BP'	10'	1079.96	1066.30
299+50.00	299+50.00'BP'	10'	1079.79	1067.55
299+75.00	299+75.00'BP'	10'	1079.61	1068.80
300+00.00	300+00.00'BP'	10'	1079.44	1070.05
300+25.00	300+25.00'BP'	10'	1079.26	1071.30
300+50.00	300+50.00'BP'	10'	1079.09	1072.55
300+75.00	300+75.00'BP'	10'	1078.79	1073.80
301+00.00	301+00.00'BP'	10'	1078.49	1075.05
301+25.00	301+25.00'BP'	10'	1076.29	1076.20

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT
511.2200.02	TEMPORARY SHORING LEFT IN PLACE R-13-341	SF
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF
SPV.0090.05	RAILING STEEL R-13-341	LF
SPV.0165.07	WALL MODULAR BLOCK GRAVITY R-13-341	SF

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

- LIST OF DRAWINGS
1. RETAINING WALL LAYOUT
 2. RETAINING WALL DETAILS
 3. RETAINING WALL DETAILS
 4. RAILING DETAILS
 5. SUBSURFACE EXPLORATION

FOR GENERAL NOTES
AND DESIGN DATA
SEE SHEET 2

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE R-13-341			
RETAINING WALL ALONG BIKE PATH 'BP'			
COUNTY	DANE	TOWN/CITY/VILLAGE	MADISON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	KLW	DESIGN CK'D.	DRAWN BY CLS
RETAINING WALL LAYOUT			SHEET 1 OF 5 PRE_90

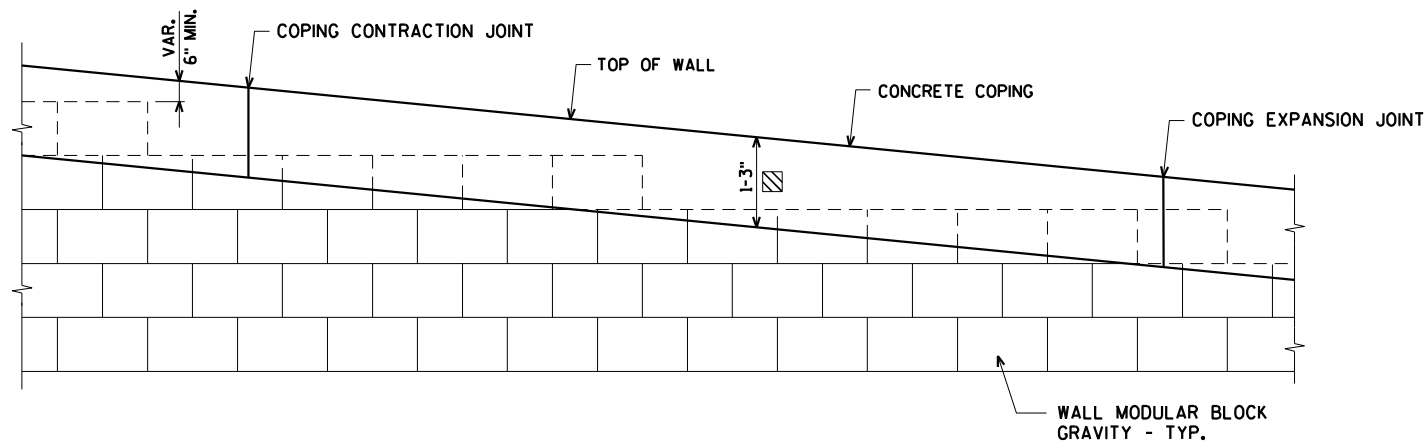
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\$PRNAME\$
U:\41-0737.00 - Cammon Road Bike Path - Madison\Structures\PRELIM\R-13-341\BP details.dgn

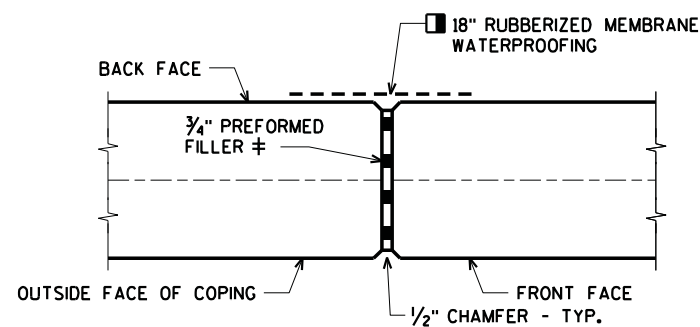
STATE PROJECT NUMBER

5992-10-31



RETAINING WALL FACE & CONCRETE COPING DETAIL

THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.



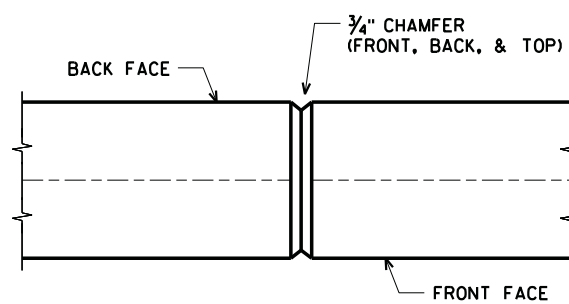
COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 50'

MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.

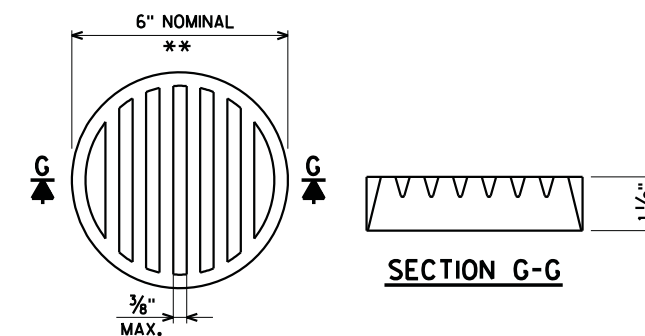
SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

PLACE EXPANSION JOINTS AT EVERY THIRD JOINT AND AT ALL WALL RADIUS PC/PT POINTS AND BEND POINTS.



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 12'

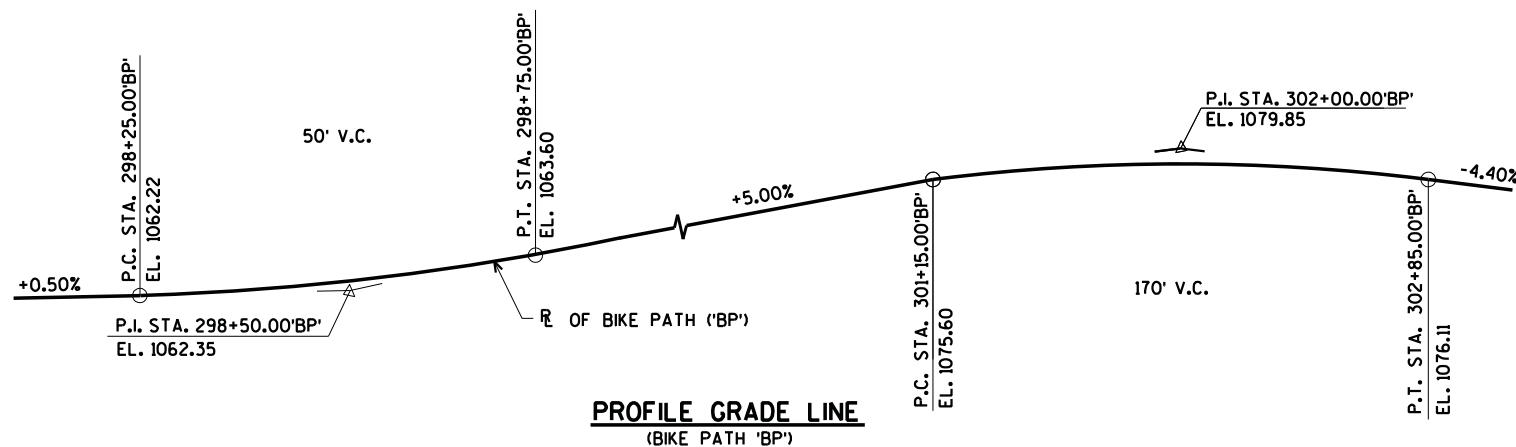


** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL



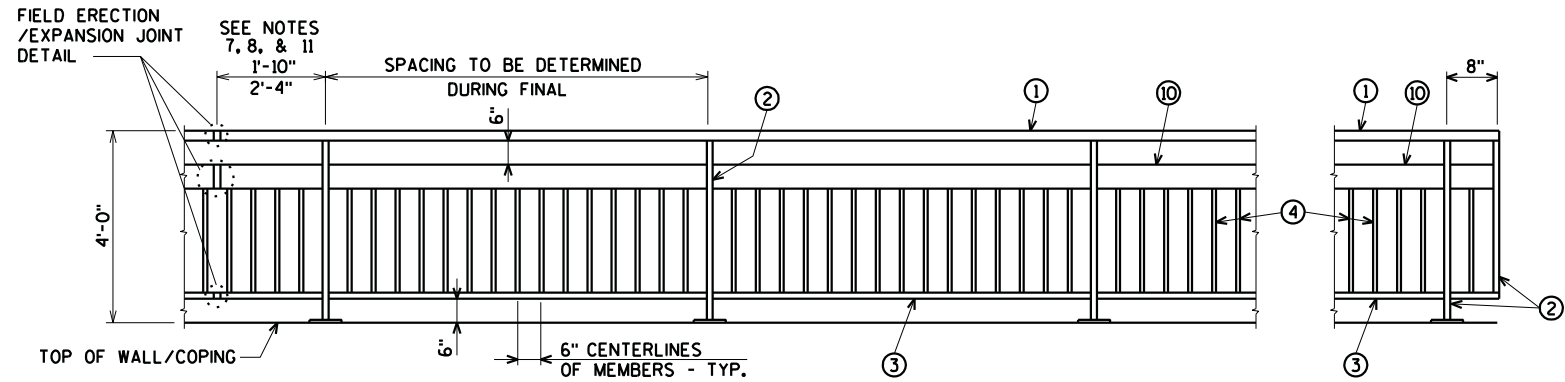
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-341			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL DETAILS		SHEET 3 OF 5 PRE_92	

\$PRNAME\$
U:\41-0737.00 - Common Road Bike Path - Madison\Structures\PRELIM\13-341BP railing.dgn

STATE PROJECT NUMBER

5992-10-31



PART ELEVATION OF RAILING STEEL

END SECTION

LEGEND

- ① 2 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS.
- ② TS 2" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.
- ③ TS 1 1/2" x 1 1/2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ④ TS 1" x 1" x 0.125" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑤ BASE PLATE 1/2" x 7" x 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO NO. 2 AS SHOWN.
- ⑥ CONCRETE MASONRY ANCHORS, TYPE S, 5/8". PULLOUT STRENGTH SHALL BE 3.6 KIPS.
- ⑦ SQUARE SLEEVE FABRICATED FROM 1/2" COLD DRAWN STEEL ALLOY SQUARE CONFORMING TO ASTM A331 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑧ 1 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 1. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑨ 2" DIA. PIPE SLEEVE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS. PROVIDE "SLIDING FIT".
- ⑩ TS 6" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑪ 1" x 5" SLEEVE CONFORMING TO ASTM DESIGNATION A709 GRADE 36 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE IN I.D. OF NO. 10. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL R-13-341", WHICH INCLUDE ALL ITEMS SHOWN INCLUDING GALVANIZED COATING.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.

POST BASE PLATES NO. 5 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHOR BOLTS NO. 6 SHALL BE GALVANIZED AFTER FABRICATION.

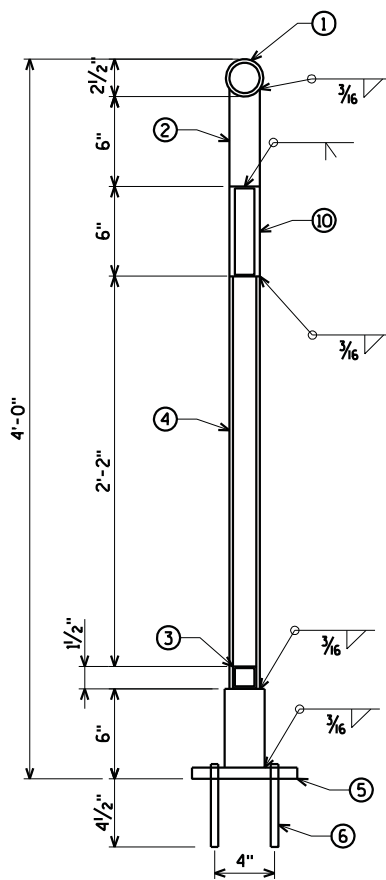
PRIOR TO GALVANIZING ALL STEEL RAILING POSTS, STEEL TUBING, AND STEEL PIPE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

VERTICAL MEMBERS SHALL BE PLUMB.

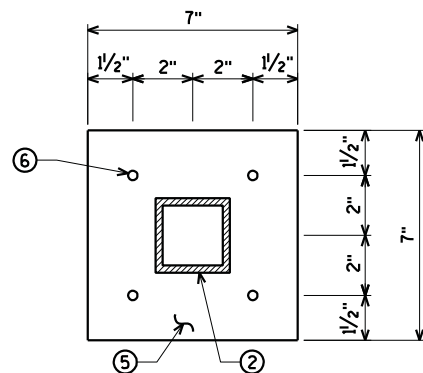
HORIZONTAL MEMBERS SHALL PARALLEL TO GRADE.

PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

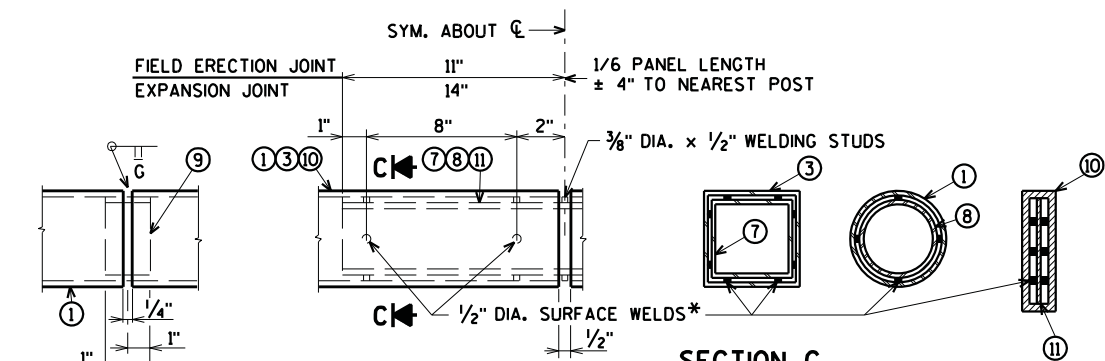
RAILING TO BE PAINTED FEDERAL COLOR NO. 17038 (BLACK).



SECTION THRU RAILING STEEL



RAILING BASE PLATE



**SHOP RAIL
SPLICE DETAIL**
(LOCATION MUST BE SHOWN
ON THE SHOP DRAWINGS)

**FIELD ERECTION
JOINT DETAIL**
*MIN. 5/8" FLAT SURFACE DIA.
PUNCHINGS OR STUDS MAY
BE USED AS AN ALTERNATE.

SECTION C

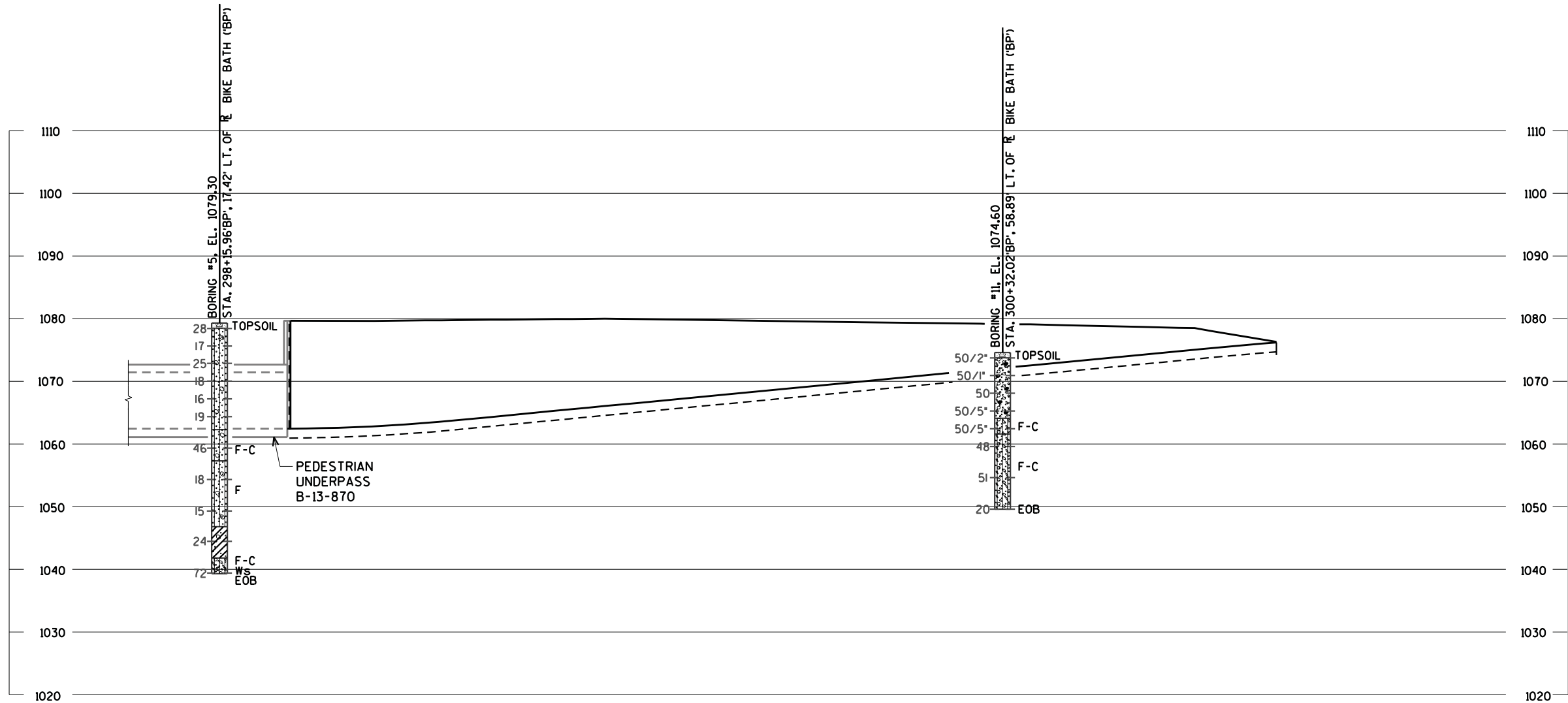
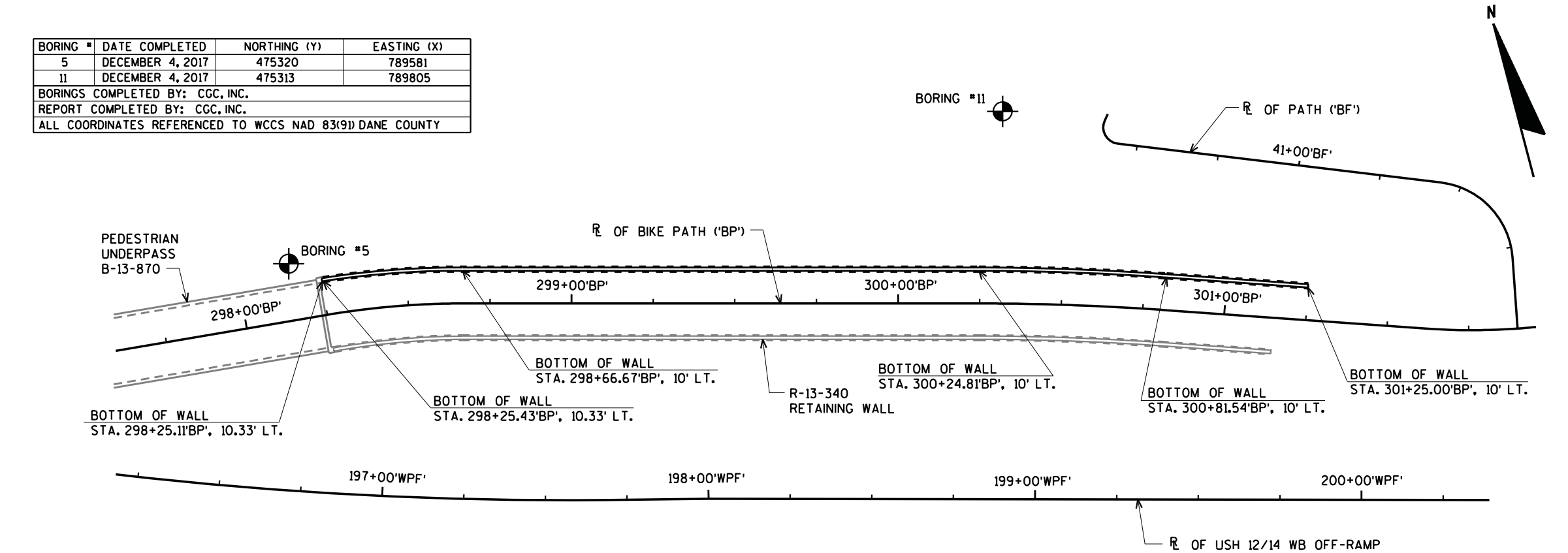
ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-341			
DRAWN BY		CLS	PLANS CK'D.
RAILING DETAILS			SHEET 4 OF 5 PRE_93

s:\PRNAME\$
Ut#41-0737.00 - Cammon Road Bike Path - Madison\Structures\PRELIM#R-13-341\BP soils.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
5	DECEMBER 4, 2017	475320	789581
11	DECEMBER 4, 2017	475313	789805

BORINGS COMPLETED BY: CGC, INC.
REPORT COMPLETED BY: CGC, INC.
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY



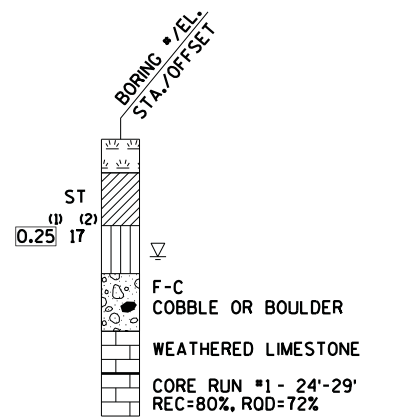
STATE PROJECT NUMBER

5992-10-31

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

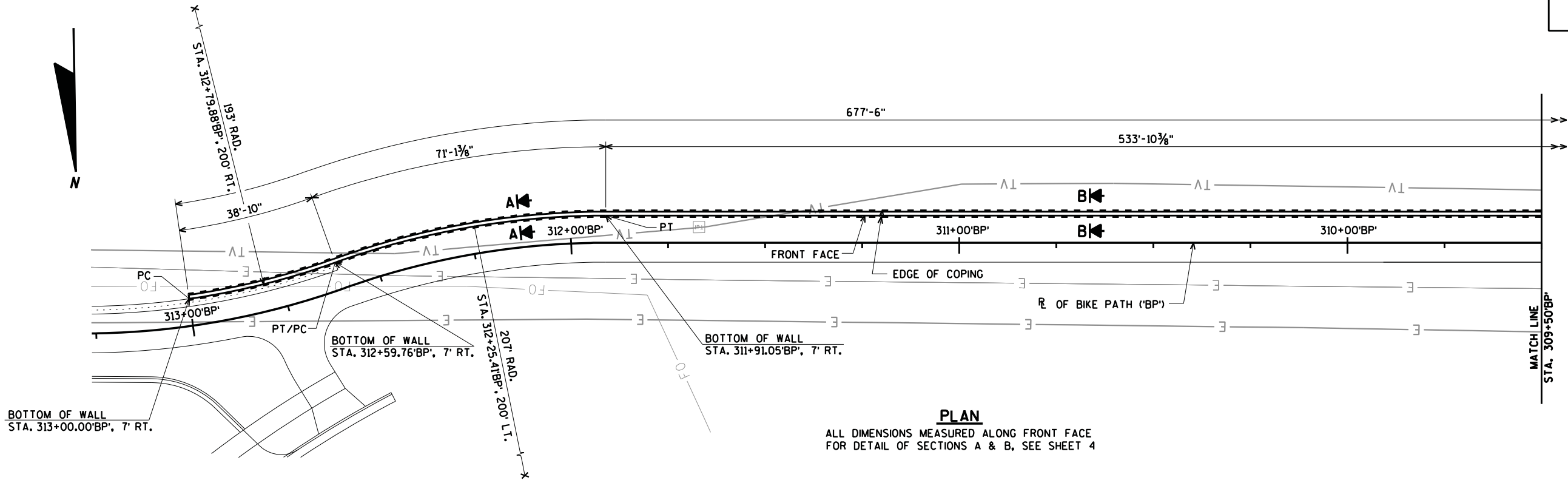
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-341			
DRAWN BY		CLS	PLANS CK'D.
SUBSURFACE EXPLORATION		SHEET 5 OF 5 PRE_94	

\$PRJNAME\$ U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-342 BP prelim.dgn

CHECKED BY: DATE: BACK CHECKED BY: DATE: CORRECTED BY:

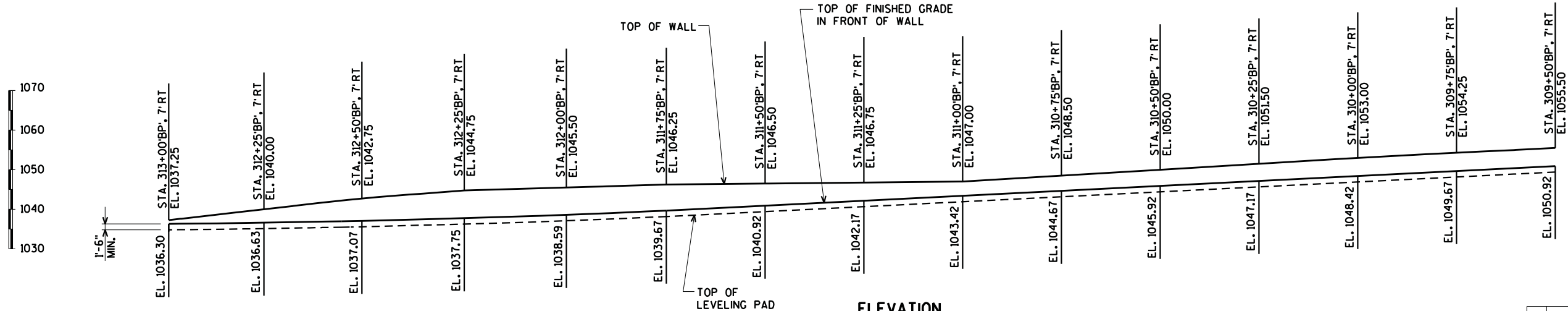
8



PLAN
ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTIONS A & B, SEE SHEET 4

- LIST OF DRAWINGS**
1. RETAINING WALL LAYOUT
 2. RETAINING WALL LAYOUT
 3. RETAINING WALL DETAILS
 4. RETAINING WALL DETAILS
 5. RAILING DETAILS
 6. SUBSURFACE EXPLORATION

FOR GENERAL NOTES
AND DESIGN DATA
SEE SHEET 3



ELEVATION
(LOOKING AT FRONT FACE OF WALL)

GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
313+00.00	313+00.00' BP'	7'	1037.25	1036.30
312+75.00	312+75.00' BP'	7'	1040.00	1036.63
312+50.00	312+50.00' BP'	7'	1042.75	1037.07
312+25.00	312+25.00' BP'	7'	1044.75	1037.75
312+00.00	312+00.00' BP'	7'	1045.50	1038.59
311+75.00	311+75.00' BP'	7'	1046.25	1039.67
311+50.00	311+50.00' BP'	7'	1046.50	1040.92
311+25.00	311+25.00' BP'	7'	1046.75	1042.17
311+00.00	311+00.00' BP'	7'	1047.00	1043.42
310+75.00	310+75.00' BP'	7'	1048.50	1044.67
310+50.00	310+50.00' BP'	7'	1050.00	1045.92
310+25.00	310+25.00' BP'	7'	1051.50	1047.17
310+00.00	310+00.00' BP'	7'	1053.00	1048.42
309+75.00	309+75.00' BP'	7'	1054.25	1049.67
309+50.00	309+50.00' BP'	7'	1055.50	1050.92

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF
SPV.0090.06	RAILING STEEL R-13-342	LF
SPV.0165.04	WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH R-13-342	SF

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

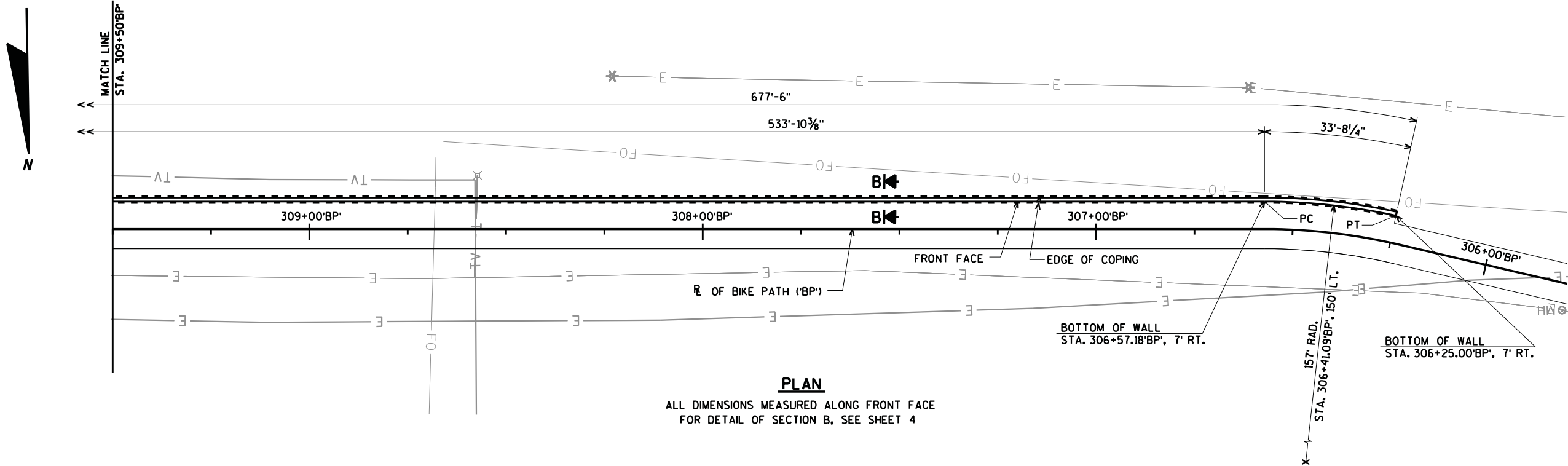
NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE R-13-342			
RETAINING WALL ALONG BIKE PATH 'BP'			
COUNTY	DANE	TOWN/CITY/VILLAGE	MADISON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	KLW	DESIGN CK'D.	DRAWN BY CLS
RETAINING WALL LAYOUT			SHEET 1 OF 6 PRE_95

8

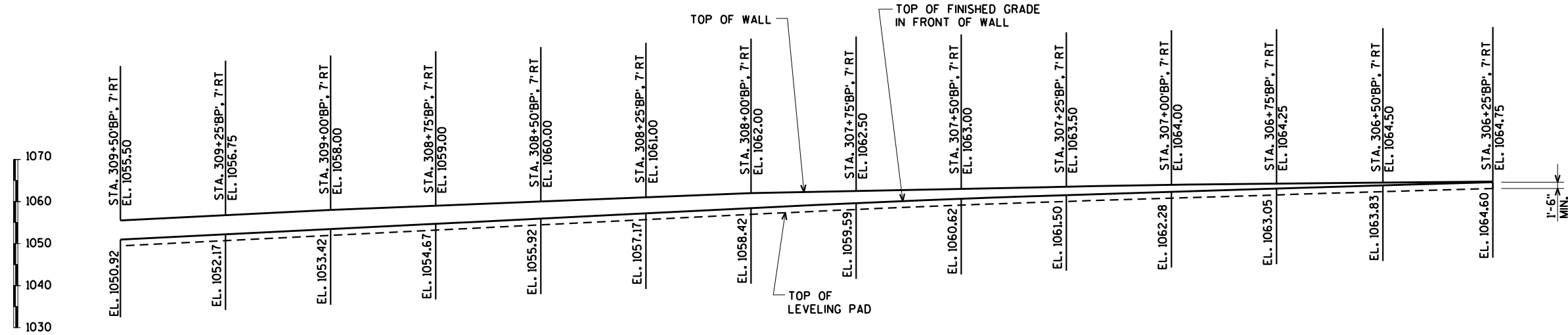
\$PRNAME\$ U:\1-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-342b_BP.prelim.dgn

CHECKED BY: DATE: BACK CHECKED BY: DATE: CORRECTED BY:

8



PLAN
ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTION B, SEE SHEET 4



ELEVATION
(LOOKING AT FRONT FACE OF WALL)

GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
309+50.00	309+50.00'BP'	7'	1055.50	1050.92
309+25.00	309+25.00'BP'	7'	1056.75	1052.17
309+00.00	309+00.00'BP'	7'	1058.00	1053.42
308+75.00	308+75.00'BP'	7'	1059.00	1054.67
308+50.00	308+50.00'BP'	7'	1060.00	1055.92
308+25.00	308+25.00'BP'	7'	1061.00	1057.17
308+00.00	308+00.00'BP'	7'	1062.00	1058.42
307+75.00	307+75.00'BP'	7'	1062.50	1059.59
307+50.00	307+50.00'BP'	7'	1063.00	1060.62
307+25.00	307+25.00'BP'	7'	1063.50	1061.50
307+00.00	307+00.00'BP'	7'	1064.00	1062.28
306+75.00	306+75.00'BP'	7'	1064.25	1063.05
306+50.00	306+50.00'BP'	7'	1064.50	1063.83
306+25.00	306+25.00'BP'	7'	1064.75	1064.60

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-342			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL LAYOUT			SHEET 2 OF 6 PRE_96

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\$PRNAME\$ U:\41-0737.00 - Cammon Road Bike Path - Madison\Structures\PRELIM\R-13-342 BP details.dgn

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GENERAL NOTES

THE PLAN QUANTITY FOR THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

DRAWINGS SHALL NOT BE SCALED.

THE QUANTITY OF CONCRETE MASONRY, COATED REINFORCING STEEL, AND RUBBERIZED MEMBRANE WATERPROOFING FOR THE CAST-IN-PLACE COPING IS INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

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

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

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON SHEETS 1 & 2.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AND RAILING AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 100 psf.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY (COPING) $f'_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

SOIL PARAMETERS

STRATUM LOCATIONS AND SOIL DESCRIPTIONS	TOTAL UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	30	0
RETAINED SOIL ⊗	120	30	0
BORING #13			
FILL W/SCATTERED DEBRIS EL. 1037.10 - EL. 1026.60 ⊗	120	30	0
SAND & GRAVEL, SOME SILT BELOW EL. 1026.60 ⊗	125	34	0
BORING #14			
SAND W/SILT & GRAVEL EL. 1066.70 - EL. 1061.20 ⊗	120	30	0
CLAY EL. 1061.20 - EL. 1056.20 ⊗	125	0 ¹ /26 ²	2,000 ¹ /40 ²
SAND & GRAVEL, SOME SILT EL. 1056.20 - EL. 1053.70 ⊗	120	34	0
SAND & GRAVEL EL. 1053.70 - EL. 1044.70 ⊗	130	36	0
SAND BELOW EL. 1044.70 ⊗	120	34	0

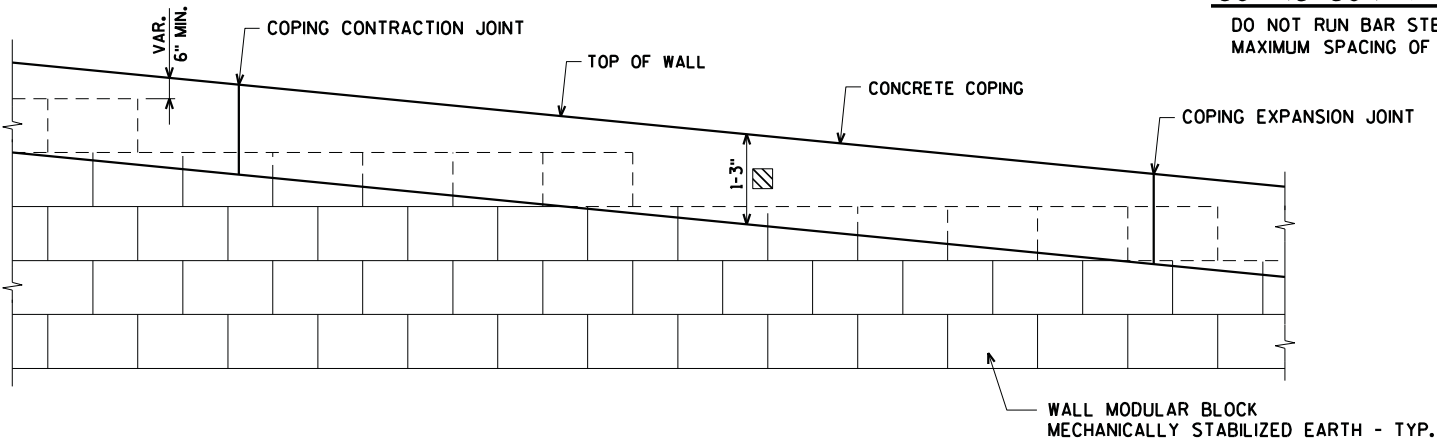
⊗ DESIGN WALL FOR THESE VALUES

NOTES:

- FOR SHORT-TERM (UNDRAINED) LOADING CONDITIONS
- FOR LONG-TERM (DRAINED) LOADING CONDITIONS

NOTES

- THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.
- THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED ON OVERALL STABILITY PERFORMED BY THE WALL DESIGNER. COMPOUND STABILITY IS THE CONTRACTORS RESPONSIBILITY.
- STRATUM LOCATIONS & SOIL DESCRIPTIONS AT EACH BORING LOCATION.



RETAINING WALL FACE & CONCRETE COPING DETAIL

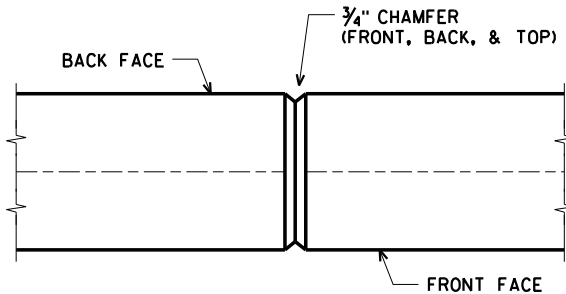
THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS	EVALUATED LOCATIONS	
WALL HEIGHT (FEET)	8.5	8.5
EXPOSED WALL HEIGHT (FEET)	7	7
MAXIMUM LENGTH OF REINFORCEMENT (FEET) ■	8.5	8.5
WALL STATION	313+00.00'BP' - 306+25.00'BP'	
BORING USED	#14	#13
CAPACITY TO DEMAND RATIO (CDR)		
SLIDING (CDR>1.0)	1.05	1.05
ECCENTRICITY (CDR>1.0)	0.46	0.39
OVERALL STABILITY (CDR>1.0) ☆	1.29	1.60
BEARING RESISTANCE (CDR>1.0)	2.01	2.46
FACTORED BEARING RESISTANCE (psf)	1,987	1,629

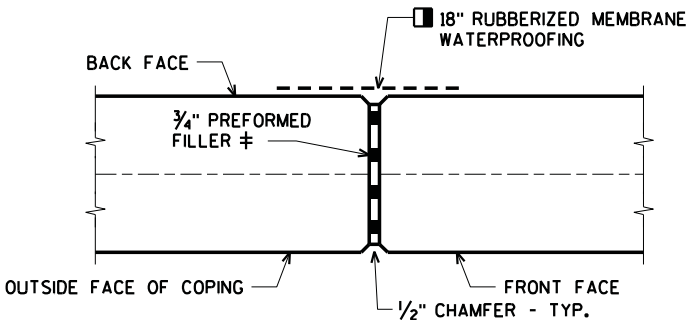
STATE PROJECT NUMBER

5992-10-31



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 12'



COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 50'

MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.

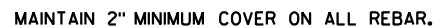
‡ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

PLACE EXPANSION JOINTS AT EVERY THIRD JOINT AND AT ALL WALL RADIUS PC/PT POINTS AND BEND POINTS.

8

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-342			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL DETAILS			SHEET 3 OF 6 PRE_97

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL



NO.		DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION				
STRUCTURE R-13-342				
		DRAWN BY	CLS	PLANS CK'D.
RETAINING WALL DETAILS			SHEET 4 OF 6 PRE_98	

\$PRNAME\$
U:\41-0737.00 - Common Road Bike Path - Madison\Structures\PRELIM\13-342 BP railing.dgn

STATE PROJECT NUMBER

5992-10-31

LEGEND

- ① 2 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS.
- ② TS 2" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.
- ③ TS 1 1/2" x 1 1/2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ④ TS 1" x 1" x 0.125" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑤ BASE PLATE 1/2" x 7" x 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO NO. 2 AS SHOWN.
- ⑥ CONCRETE MASONRY ANCHORS, TYPE S, 5/8". PULLOUT STRENGTH SHALL BE 3.6 KIPS.
- ⑦ SQUARE SLEEVE FABRICATED FROM 1/2" COLD DRAWN STEEL ALLOY SQUARE CONFORMING TO ASTM A331 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑧ 1 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 1. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑨ 2" DIA. PIPE SLEEVE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS. PROVIDE "SLIDING FIT".
- ⑩ TS 6" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑪ 1" x 5" SLEEVE CONFORMING TO ASTM DESIGNATION A709 GRADE 36 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE IN I.D. OF NO. 10. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL R-13-342", WHICH INCLUDE ALL ITEMS SHOWN INCLUDING GALVANIZED COATING.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.

POST BASE PLATES NO. 5 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHOR BOLTS NO. 6 SHALL BE GALVANIZED AFTER FABRICATION.

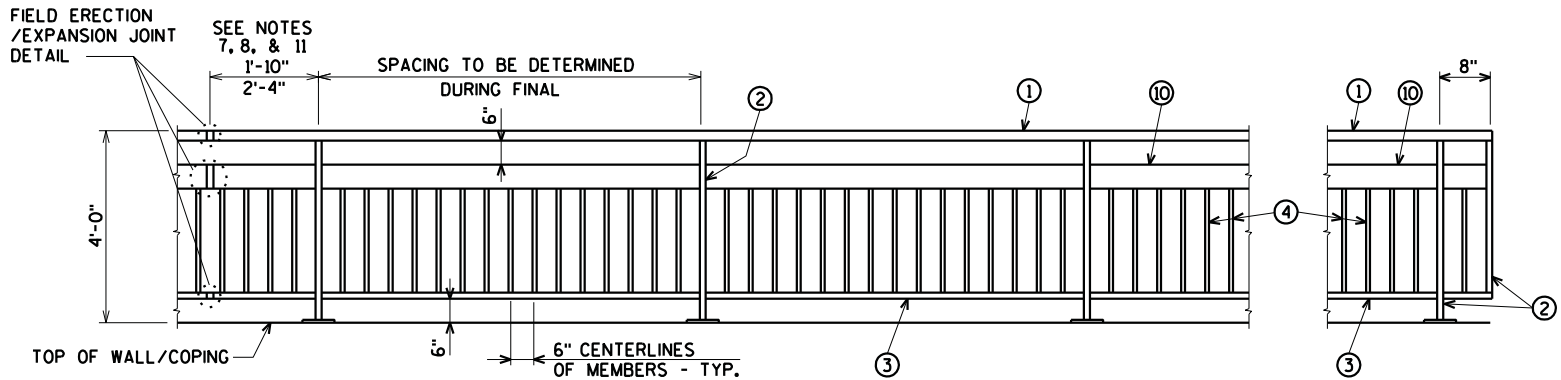
PRIOR TO GALVANIZING ALL STEEL RAILING POSTS, STEEL TUBING, AND STEEL PIPE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

VERTICAL MEMBERS SHALL BE PLUMB.

HORIZONTAL MEMBERS SHALL PARALLEL TO GRADE.

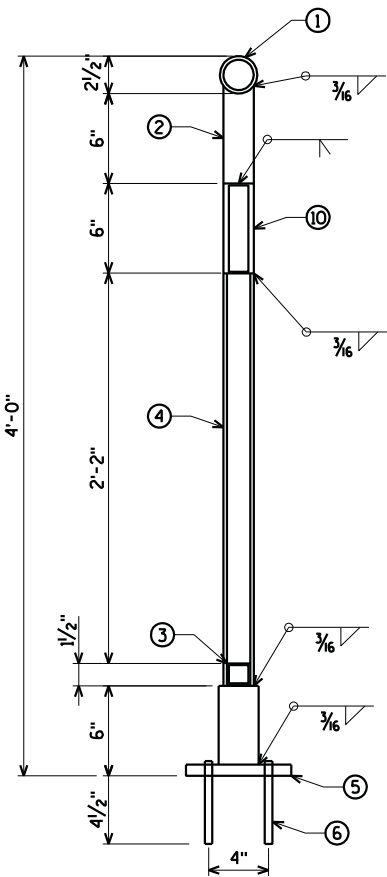
PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

RAILING TO BE PAINTED FEDERAL COLOR NO. 17038 (BLACK).

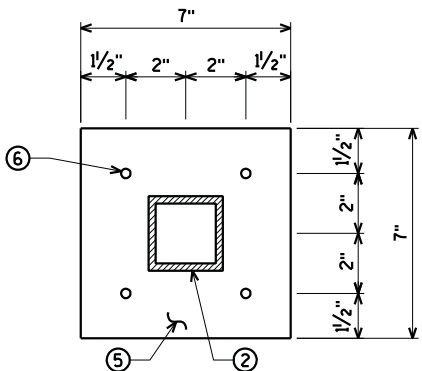


PART ELEVATION OF RAILING STEEL

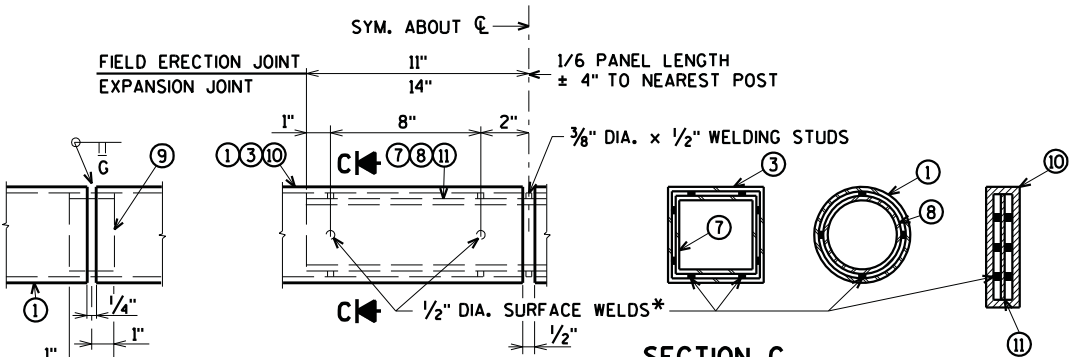
END SECTION



SECTION THRU RAILING STEEL



RAILING BASE PLATE



FIELD ERECTION JOINT DETAIL

SECTION C

SHOP RAIL SPLICE DETAIL
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

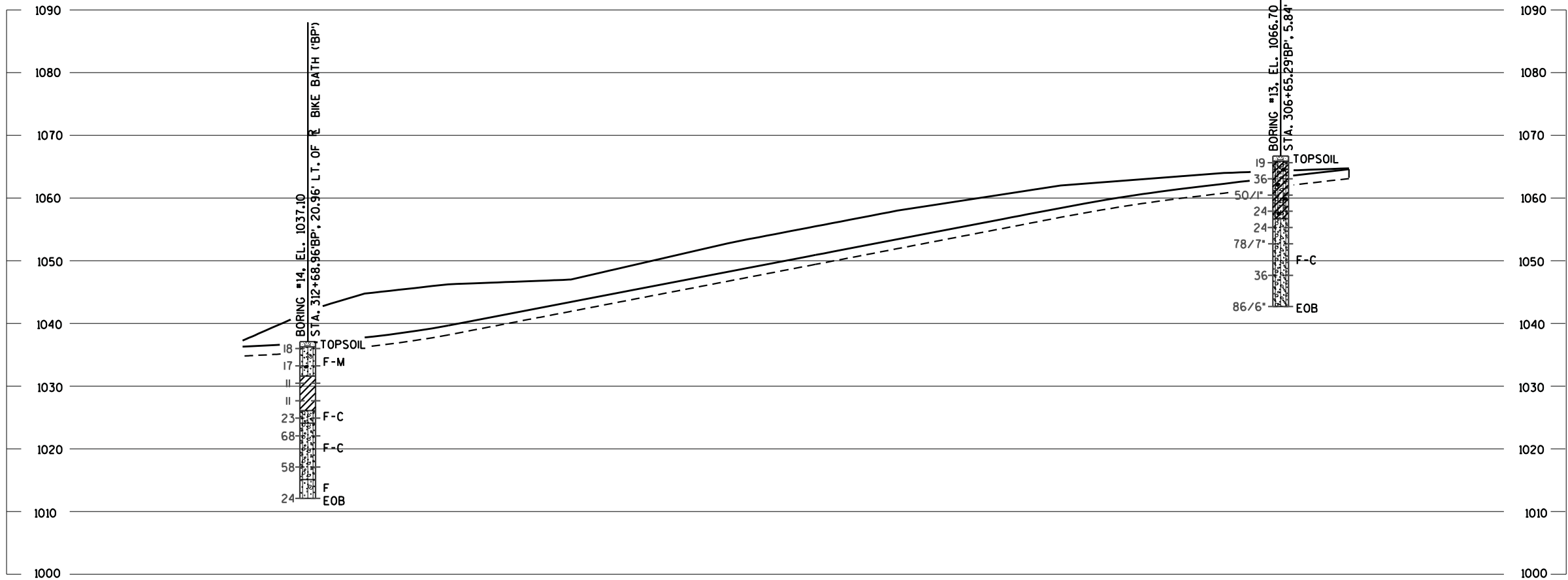
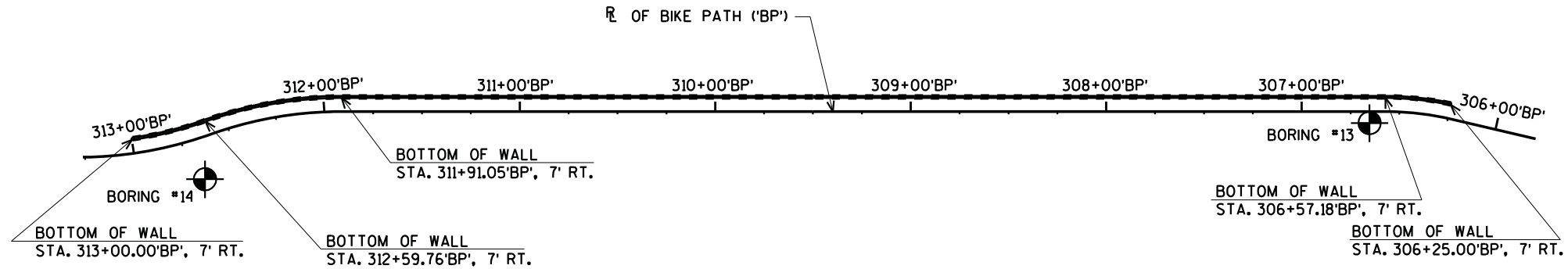
*MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-342			
DRAWN BY		CLS	PLANS CK'D.
RAILING DETAILS			SHEET 5 OF 6 PRE_99

\$PRNAME\$
Ut=41-0737.00 - Common Road Bike Path - MadisonStructures+PRELIM+R-13-342 BP soils.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
13	DECEMBER 5, 2017	475148	790408
14	DECEMBER 5, 2017	475184	791004
BORINGS COMPLETED BY: CGC, INC.			
REPORT COMPLETED BY: CGC, INC.			
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY			



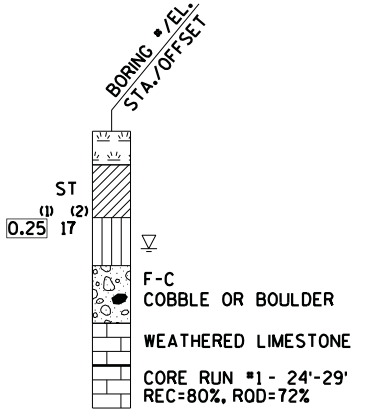
STATE PROJECT NUMBER

5992-10-31

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

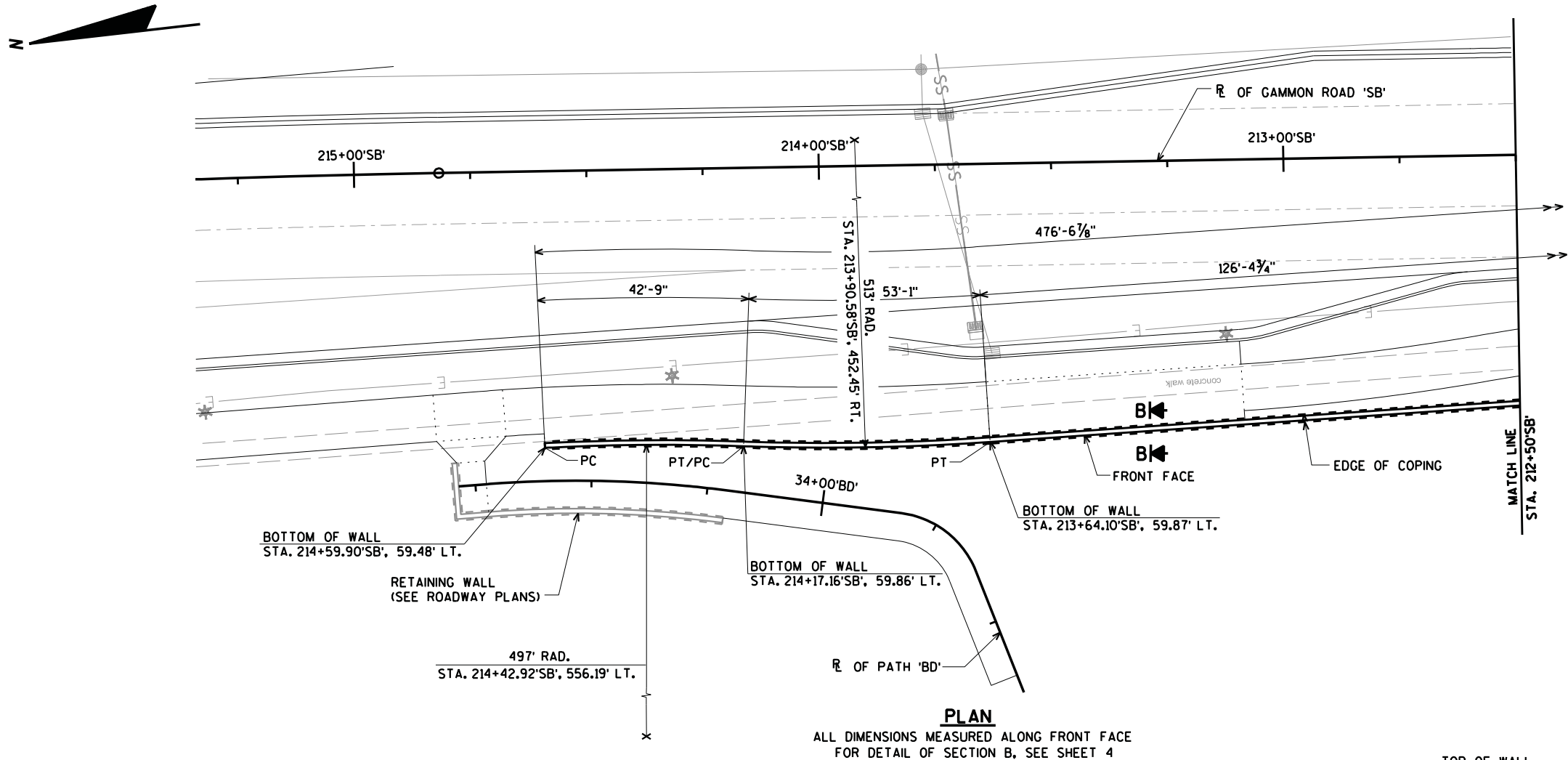
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-342			
DRAWN BY		CLS	PLANS CK'D.
SUBSURFACE EXPLORATION		SHEET 6 OF 6 PRE_100	

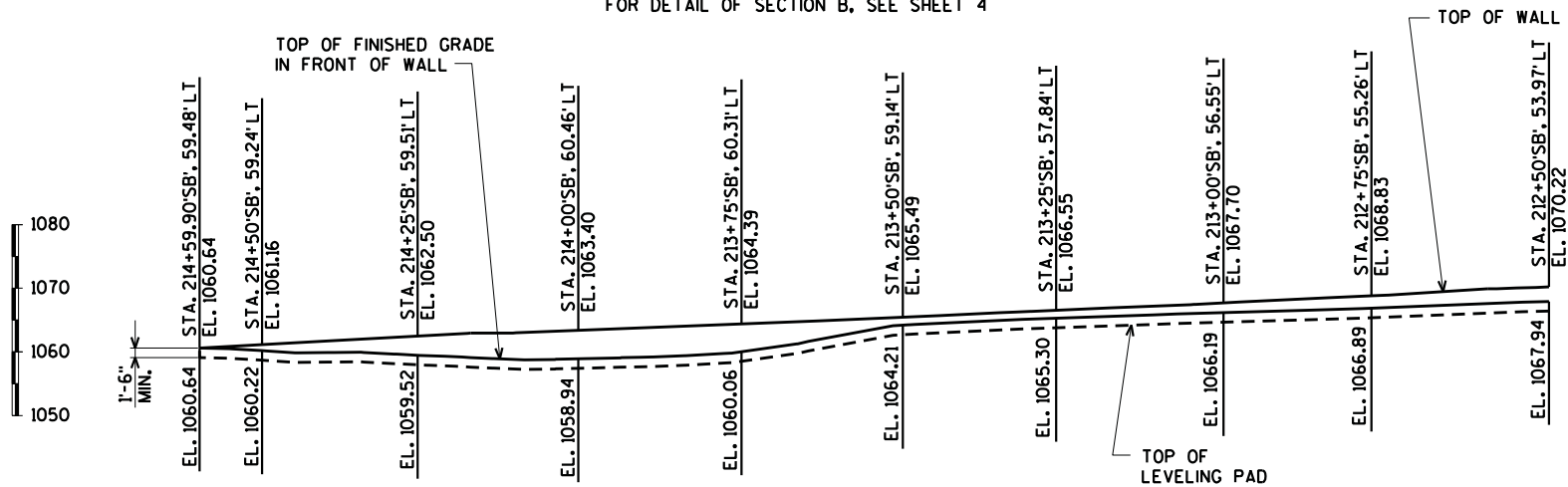
\$PRJNAME\$ U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-343 sheet 1 SB prelim.dgn

CHECKED BY: DATE: BACK CHECKED BY: DATE: CORRECTED BY:

8



PLAN
ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTION B, SEE SHEET 4



ELEVATION
(LOOKING AT FRONT FACE OF WALL)

GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
214+59.90	214+59.90 'SB'	59.48'	1060.64	1060.64
214+50.00	214+50.00 'SB'	59.24'	1061.16	1060.22
214+25.00	214+25.00 'SB'	59.51'	1062.50	1059.52
214+00.00	214+00.00 'SB'	60.46'	1063.40	1058.94
213+75.00	213+75.00 'SB'	60.31'	1064.39	1060.06
213+50.00	213+50.00 'SB'	59.14'	1065.49	1064.21
213+25.00	213+25.00 'SB'	57.84'	1066.55	1065.30
213+00.00	213+00.00 'SB'	56.55'	1067.70	1066.19
212+75.00	212+75.00 'SB'	55.26'	1068.83	1066.89
212+50.00	212+50.00 'SB'	53.97'	1070.22	1067.94

TOTAL ESTIMATED QUANTITIES

ITEM NUMBER	BID ITEMS	UNIT
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF
SPV.0090.07	RAILING STEEL R-13-343	LF
SPV.0165.05	WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH R-13-343	SF

BRIDGE OFFICE CONTACT:
WILLIAM DREHER
(608)-266-8489

CONSULTANT CONTACT:
CHRIS MCMAHON
(715)-834-3161

STATE PROJECT NUMBER

5992-10-31

LIST OF DRAWINGS

1. RETAINING WALL LAYOUT
2. RETAINING WALL LAYOUT
3. RETAINING WALL DETAILS
4. RETAINING WALL DETAILS
5. RAILING DETAILS
6. SUBSURFACE EXPLORATION

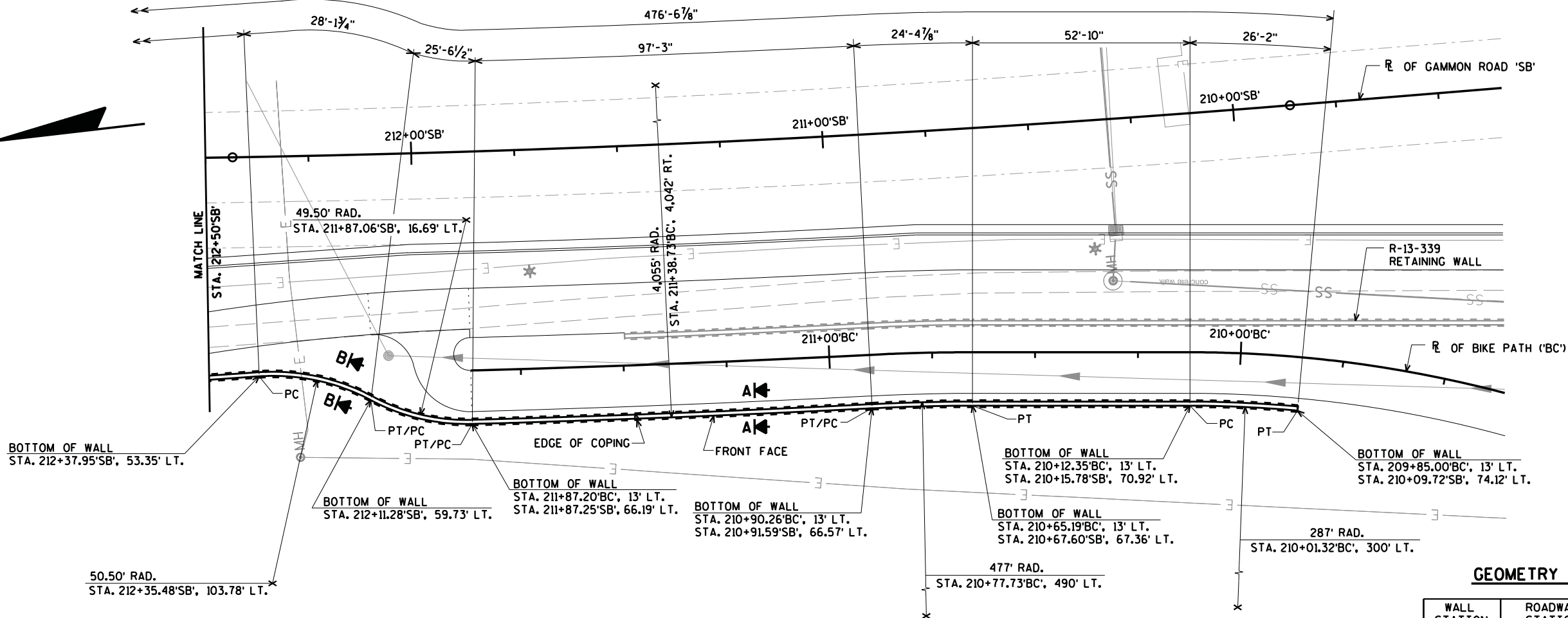
FOR GENERAL NOTES
AND DESIGN DATA
SEE SHEET 3

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY AYRES ASSOCIATES 3433 Oakwood Hills Parkway Eau Claire, WI 54701 www.AyresAssociates.com			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED _____ CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE R-13-343			
RETAINING WALL ALONG BIKE PATH 'BC'			
COUNTY	DANE	TOWN/CITY/VILLAGE	MADISON
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS			
DESIGNED BY	KLW	DESIGN CK'D.	DRAWN BY CLS
RETAINING WALL LAYOUT			SHEET 1 OF 6 PRE_101

\$PRJNAME\$
U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-343 sheet 2 SB.prelim.dgn

STATE PROJECT NUMBER

5992-10-31

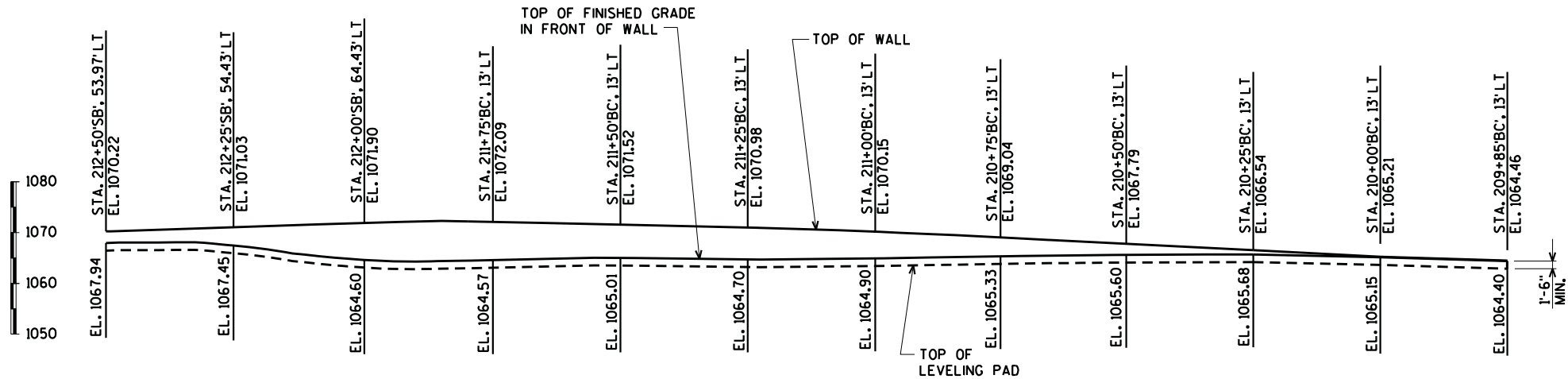


PLAN

ALL DIMENSIONS MEASURED ALONG FRONT FACE
FOR DETAIL OF SECTIONS A & B, SEE SHEET 4

GEOMETRY TABLE

WALL STATION	ROADWAY STATION	OFFSET TO F.F. WALL	TOP OF WALL EL.	FINISHED GRADE EL.
212+50.00	212+50.00'SB'	53.97'	1070.22	1067.94
212+25.00	212+25.00'SB'	54.43'	1071.03	1067.45
212+00.00	212+00.00'SB'	64.43'	1071.90	1064.60
211+75.00	211+75.00'BC'	13'	1072.09	1064.57
211+50.00	211+50.00'BC'	13'	1071.52	1065.01
211+25.00	211+25.00'BC'	13'	1070.98	1064.70
211+00.00	211+00.00'BC'	13'	1070.15	1064.90
210+75.00	210+75.00'BC'	13'	1069.04	1065.33
210+50.00	210+50.00'BC'	13'	1067.79	1065.60
210+25.00	210+25.00'BC'	13'	1066.54	1065.68
210+00.00	210+00.00'BC'	13'	1065.21	1065.15
209+85.00	209+85.00'BC'	13'	1064.46	1064.40



ELEVATION

(LOOKING AT FRONT FACE OF WALL)

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-343			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL LAYOUT			SHEET 12 OF 6 PRE_102

\$PRNAME\$
U:\41-0737.00 - Gammon Road Bike Path - Madison\Structures\PRELIM\R-13-343 SB details.dgn

GENERAL NOTES

THE PLAN QUANTITY FOR THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

DRAWINGS SHALL NOT BE SCALED.

THE QUANTITY OF CONCRETE MASONRY, COATED REINFORCING STEEL, AND RUBBERIZED MEMBRANE WATERPROOFING FOR THE CAST-IN-PLACE COPING IS INCIDENTAL TO BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL MODULAR BLOCK MECHANICALLY STABILIZED EARTH".

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

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

THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON SHEETS 1 & 2.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AND RAILING AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE OF 240 psf.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY (COPING) $f'_c = 3,500$ p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT (GRADE 60) $f_y = 60,000$ p.s.i.

WALL EXTERNAL & OVERALL STABILITY EVALUATION

DIMENSIONS	EVALUATED LOCATIONS
WALL HEIGHT (FEET)	9
EXPOSED WALL HEIGHT (FEET)	7.5
MAXIMUM LENGTH OF REINFORCEMENT (FEET) $\blacksquare$	12.5
WALL STATION	214+59.90'SB' - 210+09.72'SB'
BORING USED	#4
CAPACITY TO DEMAND RATIO (CDR)	
SLIDING (CDR>1.0)	1.00
ECCENTRICITY (CDR>1.0)	0.63
OVERALL STABILITY (CDR>1.0) $\star$	1.19
BEARING RESISTANCE (CDR>1.0)	1.21
FACTORED BEARING RESISTANCE (psf)	3,295

SOIL PARAMETERS

STRATUM LOCATIONS AND SOIL DESCRIPTIONS	TOTAL UNIT WEIGHT (PCF)	FRICTION ANGLE (DEGREES)	COHESION (PCF)
GRANULAR BACKFILL (REINFORCING ZONE OR BACKFILL)	120	30	0
RETAINED SOIL $\otimes$	120	30	0
BORING #4			
SAND W/ SILT, GRAVEL, COBBLES/BOULDERS $\otimes$ EL. 1073.90 - EL. 1052.40	120	30	0
SAND, SOME SILT $\otimes$ EL. 1052.40 - EL. 1042.90	120	32	0
SAND & GRAVEL, SOME SILT $\otimes$ BELOW EL. 1042.90	130	36	0

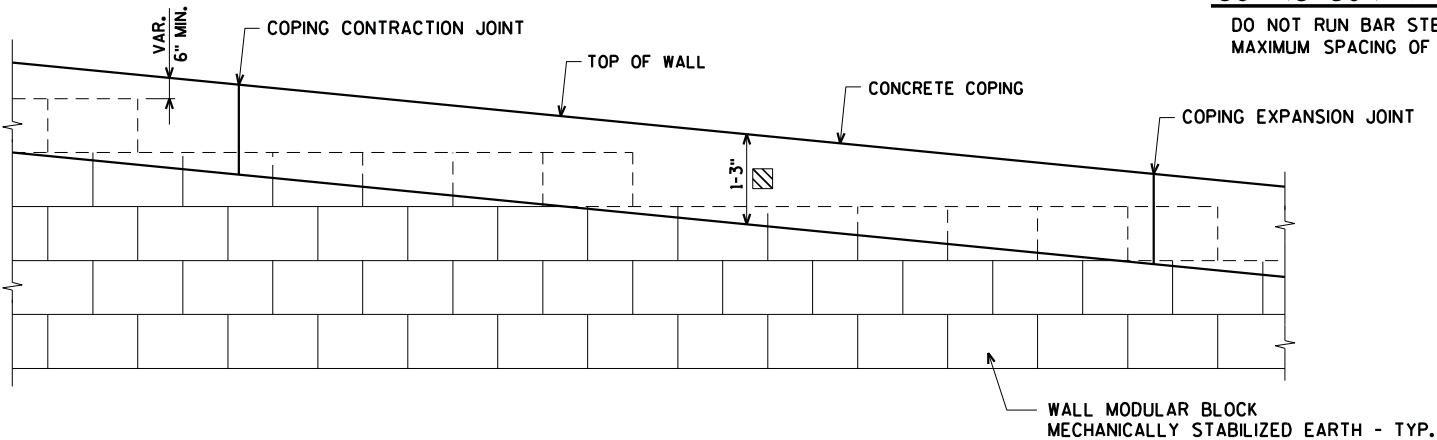
$\otimes$ DESIGN WALL FOR THESE VALUES

NOTES

$\blacksquare$ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED UPON THE MINIMUM DESCRIBED IN THE WALL SYSTEM SPECIAL PROVISIONS OR EXTERNAL AND OVERALL STABILITY AT THE DESIGNATED LOCATIONS. THESE DESIGNATED LOCATIONS REPRESENT TYPICAL AND CRITICAL WALL LOCATIONS, BUT SHALL NOT BE CONSIDERED ALL INCLUSIVE. THE CONTRACTOR DESIGN LENGTHS SHALL MEET OR EXCEED THE MINIMUM VALUES REPRESENTED IN THE TABLE AT THESE DESIGNATED LOCATIONS.

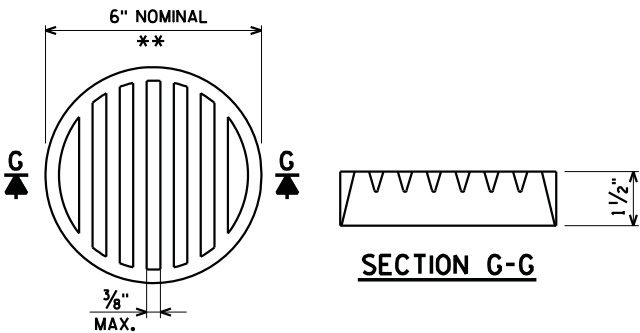
$\star$ THE LENGTHS PROVIDED IN THE TABLE ARE THE MINIMUM REQUIRED REINFORCEMENT LENGTHS BASED ON OVERALL STABILITY PERFORMED BY THE WALL DESIGNER. COMPOUND STABILITY IS THE CONTRACTORS RESPONSIBILITY.

$\otimes$ STRATUM LOCATIONS & SOIL DESCRIPTIONS AT EACH BORING LOCATION.



RETAINING WALL FACE & CONCRETE COPING DETAIL

$\otimes$ THIS DIMENSION MAY CHANGE DEPENDING ON HEIGHT OF BLOCKS. THIS DIMENSION TO BE CONSTANT FOR ENTIRE LENGTH OF WALL. MAXIMUM ALLOWABLE HEIGHT OF BLOCKS TO BE 9 INCHES.



** DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

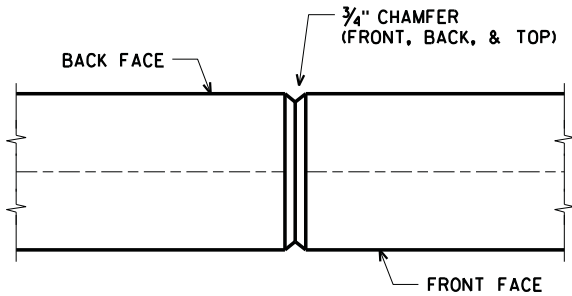
THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 x 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

RODENT SHIELD DETAIL

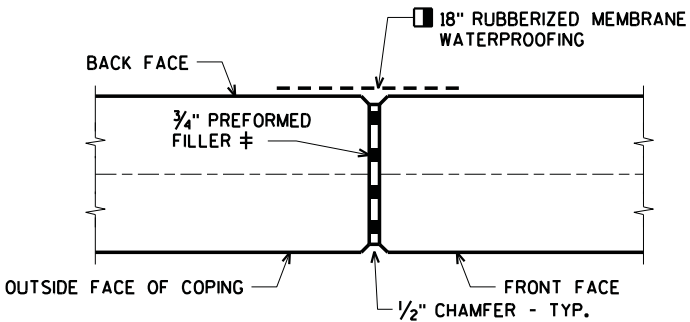
STATE PROJECT NUMBER

5992-10-31



COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 12'



COPING EXPANSION JOINT

DO NOT RUN BAR STEEL THRU JOINT
MAXIMUM SPACING OF JOINT = 50'

$\blacksquare$ MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF PANELS.

$\#$ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONC.)

PLACE EXPANSION JOINTS AT EVERY THIRD JOINT AND AT ALL WALL RADIUS PC/PT POINTS AND BEND POINTS.

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-343			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL DETAILS			SHEET 3 OF 6 PRE_103

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com



MAINTAIN 2" MINIMUM COVER ON ALL REBAR.

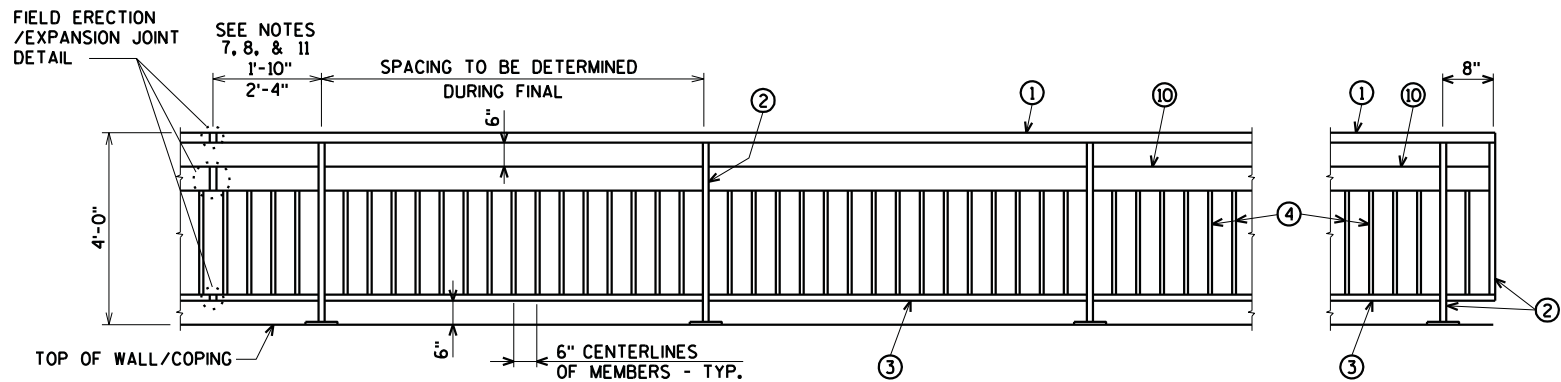


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-343			
DRAWN BY		CLS	PLANS CK'D.
RETAINING WALL DETAILS		SHEET 4 OF 6 PRE_104	

\$PRNAME\$
U:\41-0737.00 - Common Road Bike Path - Madison\Structures\PRELIM\13-343 SB railing.dgn

STATE PROJECT NUMBER

5992-10-31



PART ELEVATION OF RAILING STEEL

END SECTION

LEGEND

- ① 2 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS.
- ② TS 2" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B. CUT BOTTOM OF POST TO MATCH SLOPE OF TOP OF WALL. HOLD 1/16" ABOVE BASE PLATE TO ALLOW POST AND BASE PLATE TO BE WELDED TOGETHER. PLACE POST VERTICAL AND CENTERED ON BASE PLATE.
- ③ TS 1 1/2" x 1 1/2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ④ TS 1" x 1" x 0.125" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑤ BASE PLATE 1/2" x 7" x 7" CONFORMING TO ASTM DESIGNATION A709 GRADE 36 WITH 1/16" HOLES FOR HEX BOLTS NO. 6. WELD TO NO. 2 AS SHOWN.
- ⑥ CONCRETE MASONRY ANCHORS, TYPE S, 5/8". PULLOUT STRENGTH SHALL BE 3.6 KIPS.
- ⑦ SQUARE SLEEVE FABRICATED FROM 1/2" COLD DRAWN STEEL ALLOY SQUARE CONFORMING TO ASTM A331 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" ϕ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 3. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑧ 1 1/2" DIA. STEEL PIPE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 1. PROVIDE 3/8" DIA. x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
- ⑨ 2" DIA. PIPE SLEEVE CONFORMING TO SECTION 506 OF THE STANDARD SPECIFICATIONS. PROVIDE "SLIDING FIT".
- ⑩ TS 6" x 2" x 0.188" STRUCTURAL TUBING CONFORMING TO ASTM DESIGNATION A501 OR A500 GRADE B.
- ⑪ 1" x 5" SLEEVE CONFORMING TO ASTM DESIGNATION A709 GRADE 36 x 2'-4" LONG AT EXPANSION JOINTS AND 1'-10" LONG AT FIELD JOINTS. PROVIDE 1/2" DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE IN I.D. OF NO. 10. PROVIDE 3/8" x 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "RAILING STEEL R-13-343", WHICH INCLUDE ALL ITEMS SHOWN INCLUDING GALVANIZED COATING.

RAILING SHALL BE FABRICATED IN 2 OR 3 PANEL LENGTHS.

POST BASE PLATES NO. 5 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHOR BOLTS NO. 6 SHALL BE GALVANIZED AFTER FABRICATION.

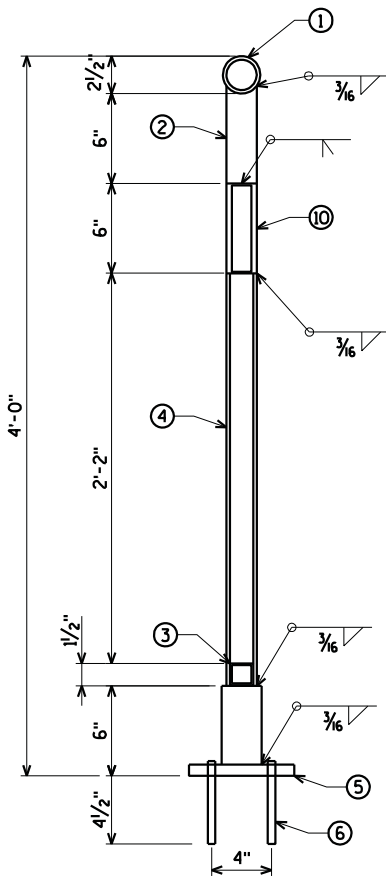
PRIOR TO GALVANIZING ALL STEEL RAILING POSTS, STEEL TUBING, AND STEEL PIPE SHALL BE GIVEN A NO. 6 BLAST CLEANING PER S.S.P.C. SPECIFICATIONS.

VERTICAL MEMBERS SHALL BE PLUMB.

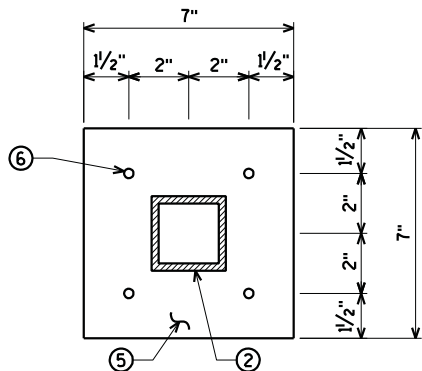
HORIZONTAL MEMBERS SHALL PARALLEL TO GRADE.

PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

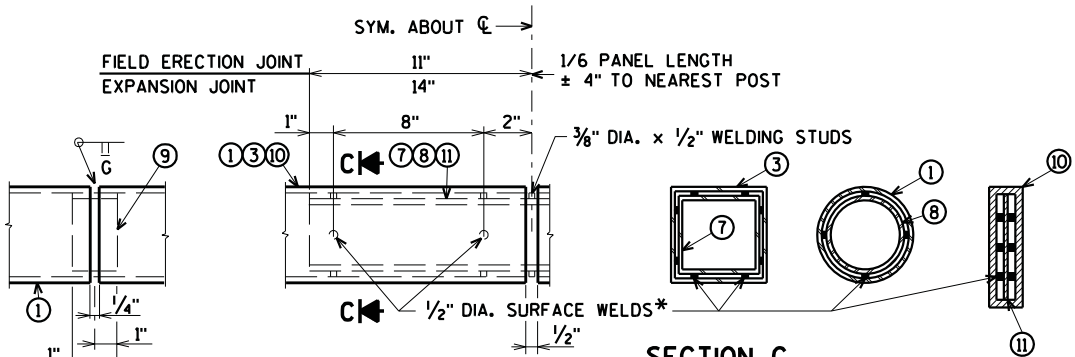
RAILING TO BE PAINTED FEDERAL COLOR NO. 17038 (BLACK).



SECTION THRU RAILING STEEL



RAILING BASE PLATE



**SHOP RAIL
SPLICE DETAIL**
(LOCATION MUST BE SHOWN
ON THE SHOP DRAWINGS)

**FIELD ERECTION
JOINT DETAIL**
*MIN. 5/8" FLAT SURFACE DIA.
PUNCHINGS OR STUDS MAY
BE USED AS AN ALTERNATE.

SECTION C

ORIGINAL PLANS PREPARED BY
AYRES ASSOCIATES
3433 Oakwood Hills Parkway
Eau Claire, WI 54701
www.AyresAssociates.com

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-343			
DRAWN BY		CLS	PLANS CK'D.
RAILING DETAILS			SHEET 5 OF 6 PRE_105

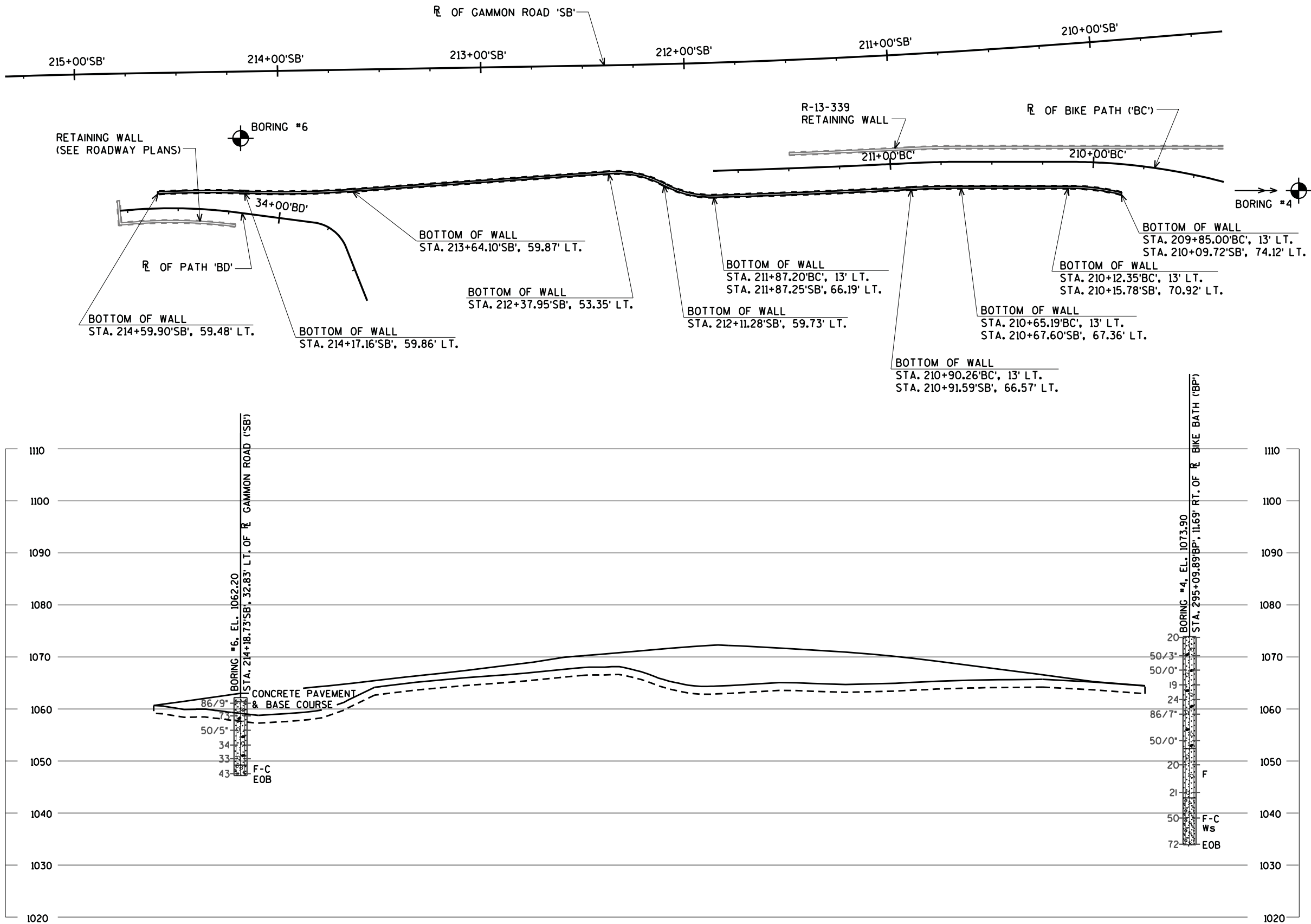
s:\PRNAME\$
Ut=41-0737.00 - Cammon Road Bike Path - Madison\Structures\PRELIM\R-13-343 SB soils.dgn

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
4	DECEMBER 6, 2017	475313	789274
6	DECEMBER 6, 2017	475893	789362

BORINGS COMPLETED BY: CGC, INC.

REPORT COMPLETED BY: CGC, INC.

ALL COORDINATES REFERENCED TO WCCS NAD 83(91) DANE COUNTY



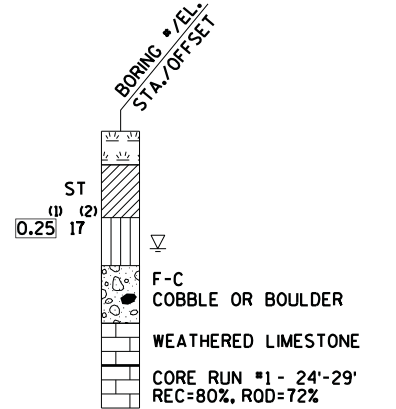
STATE PROJECT NUMBER

5992-10-31

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

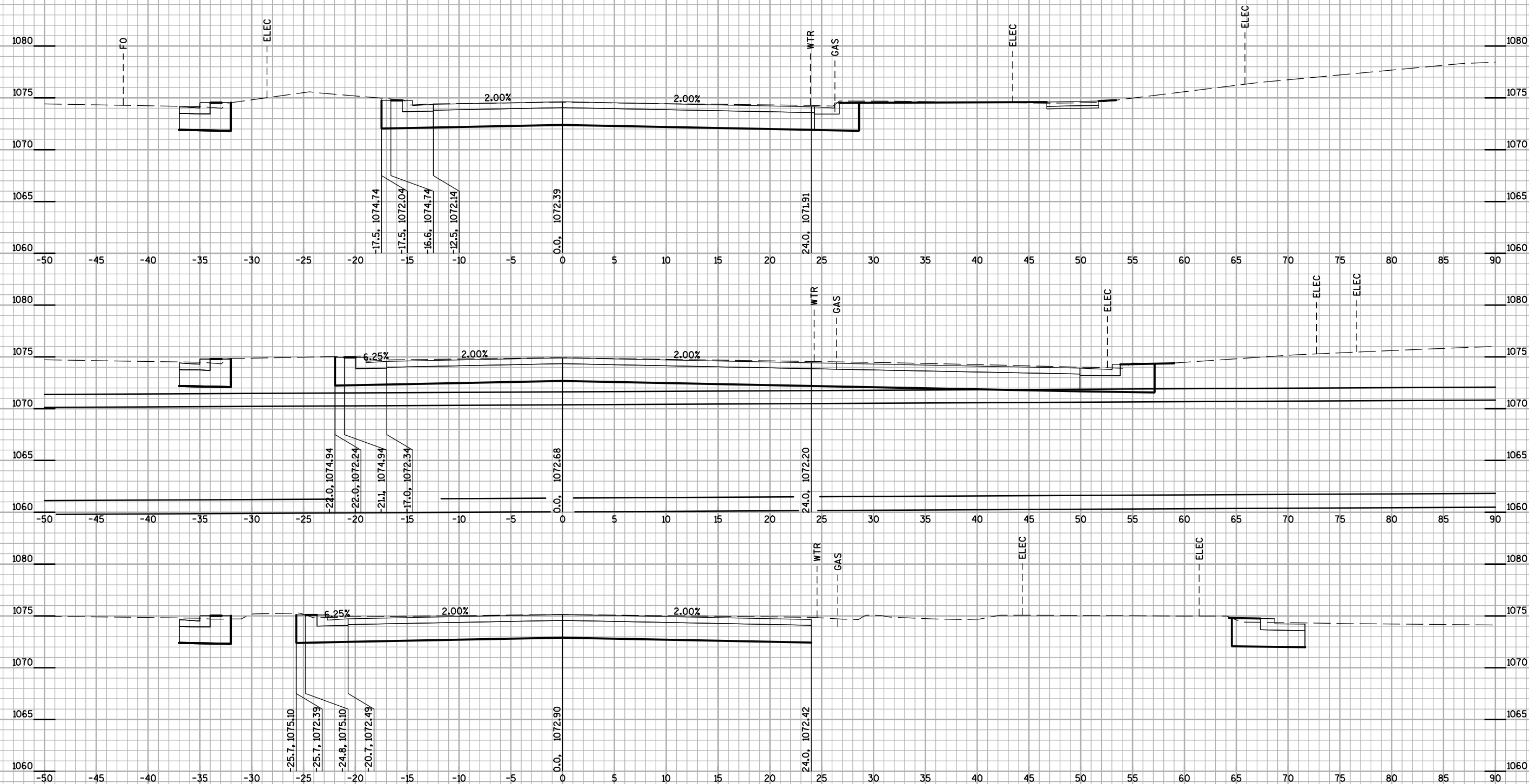
ABBREVIATIONS

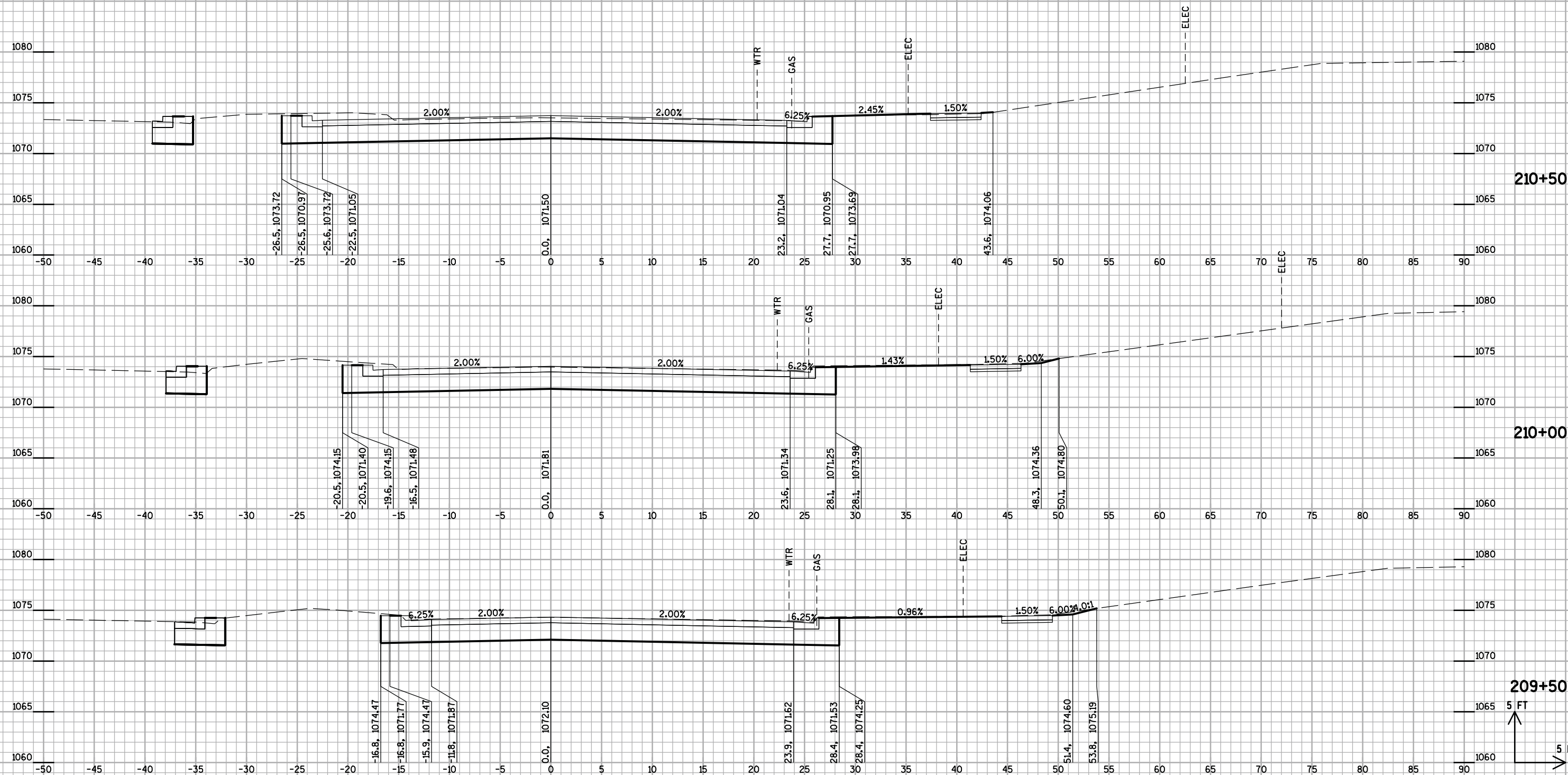
F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

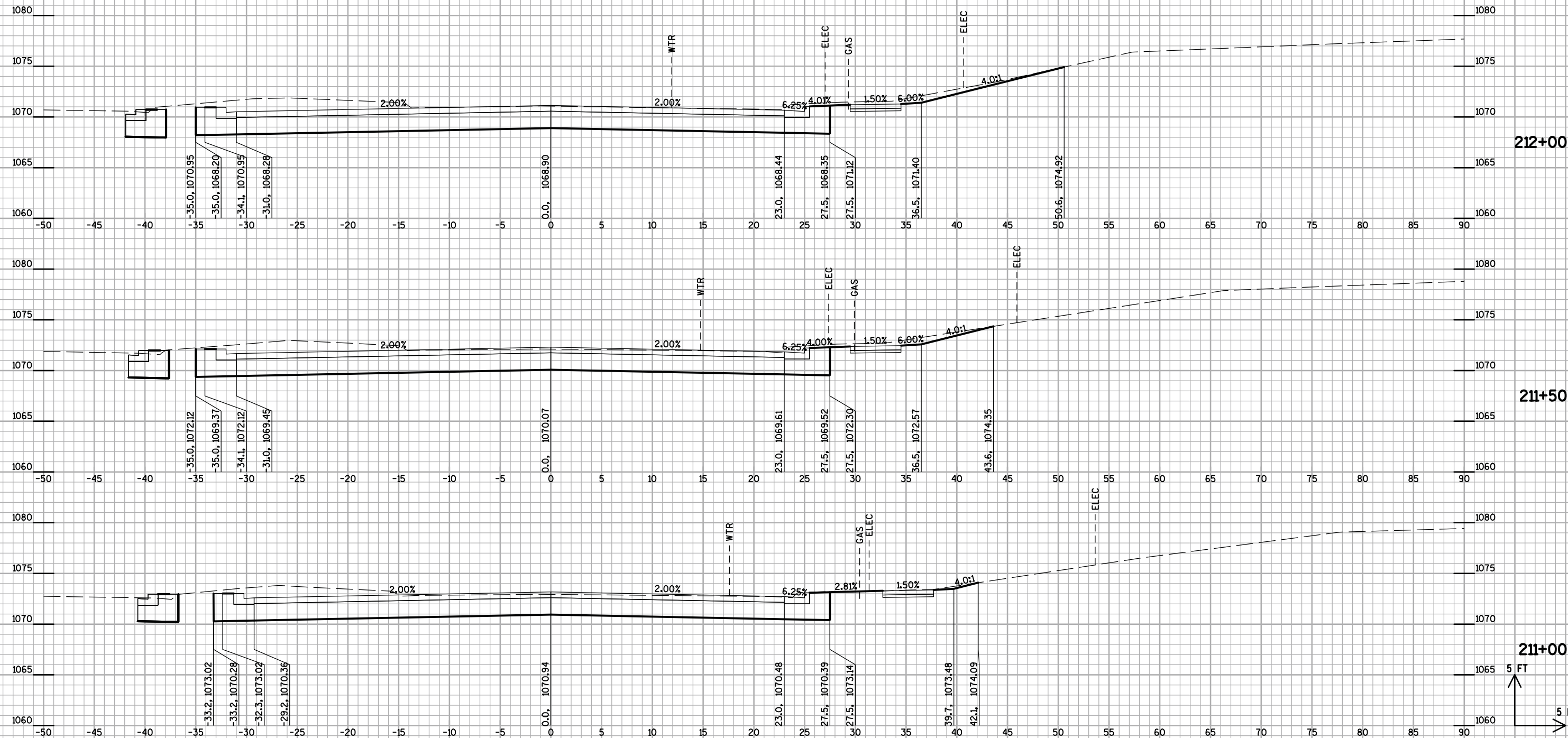
SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

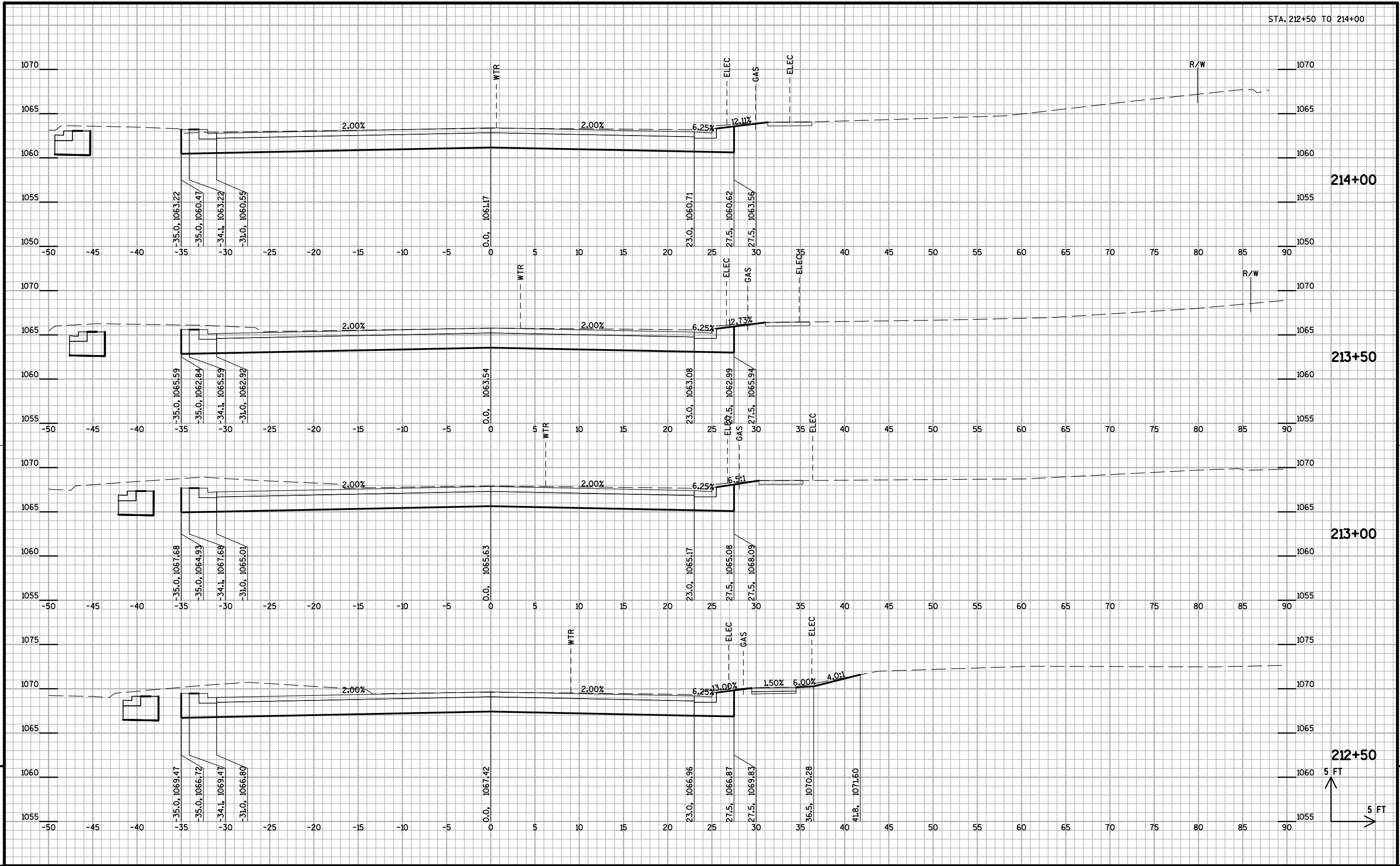
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT 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.

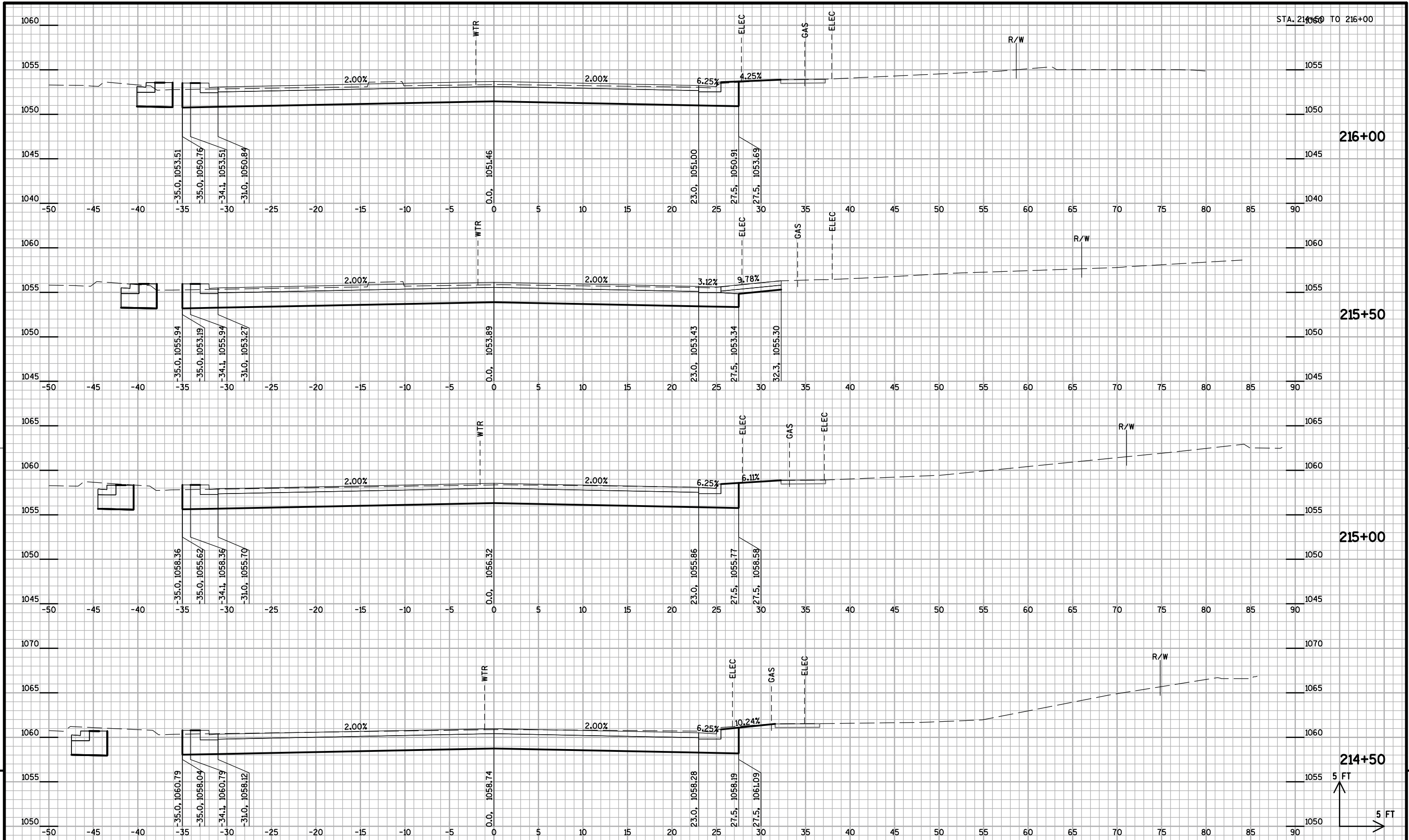
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE R-13-343			
DRAWN BY		CLS	PLANS CK'D.
SUBSURFACE EXPLORATION		SHEET 6 OF 6 PRE_106	

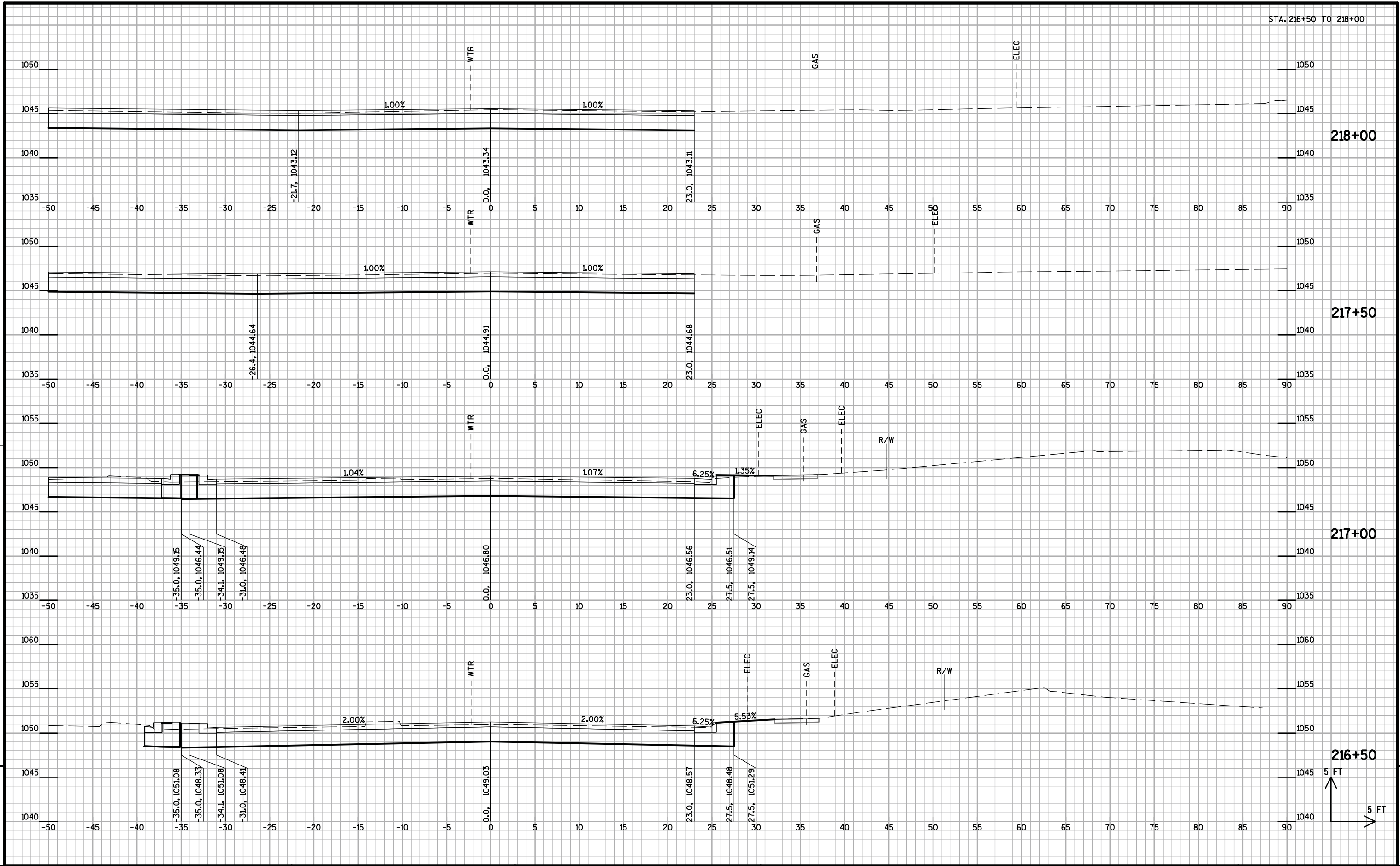


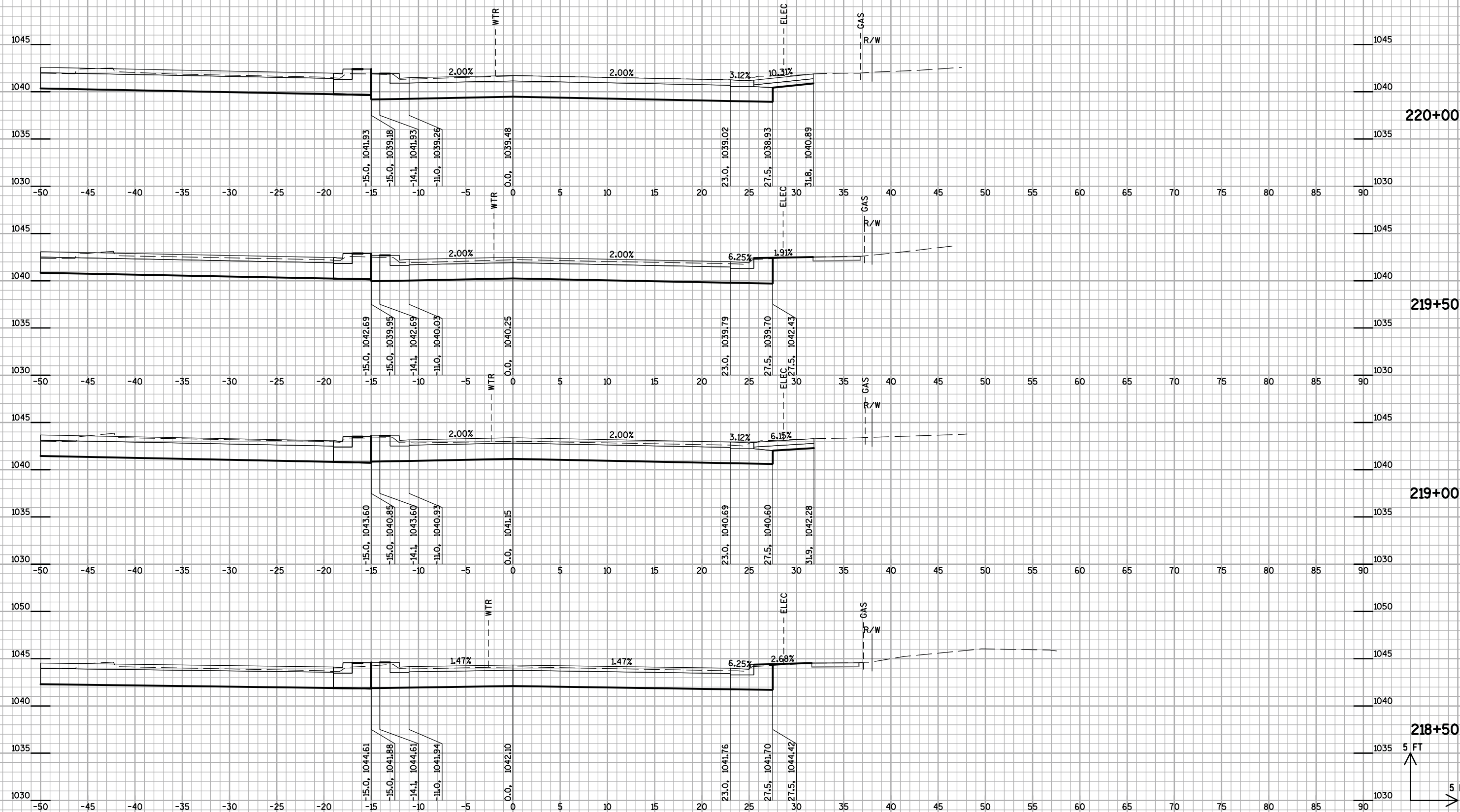


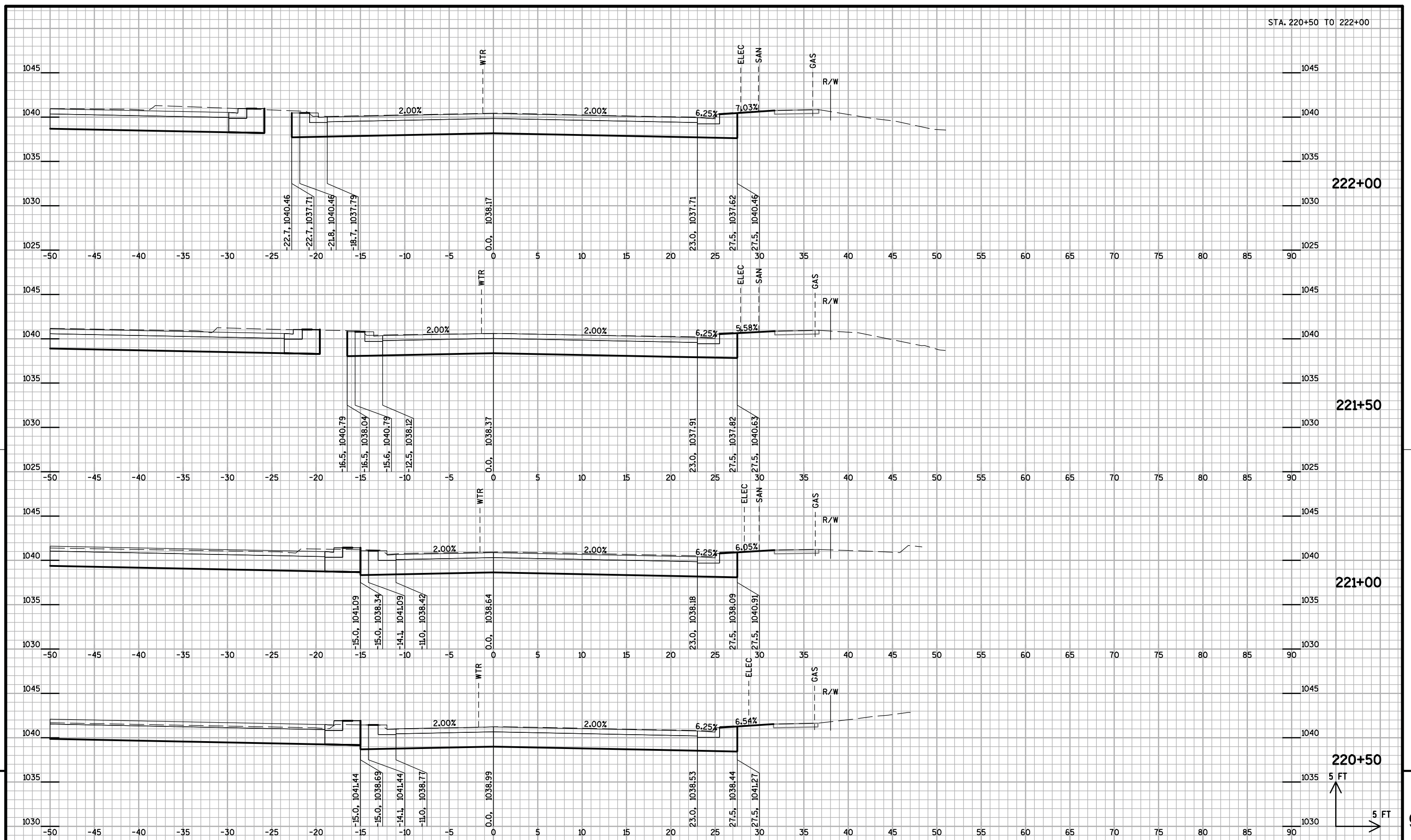


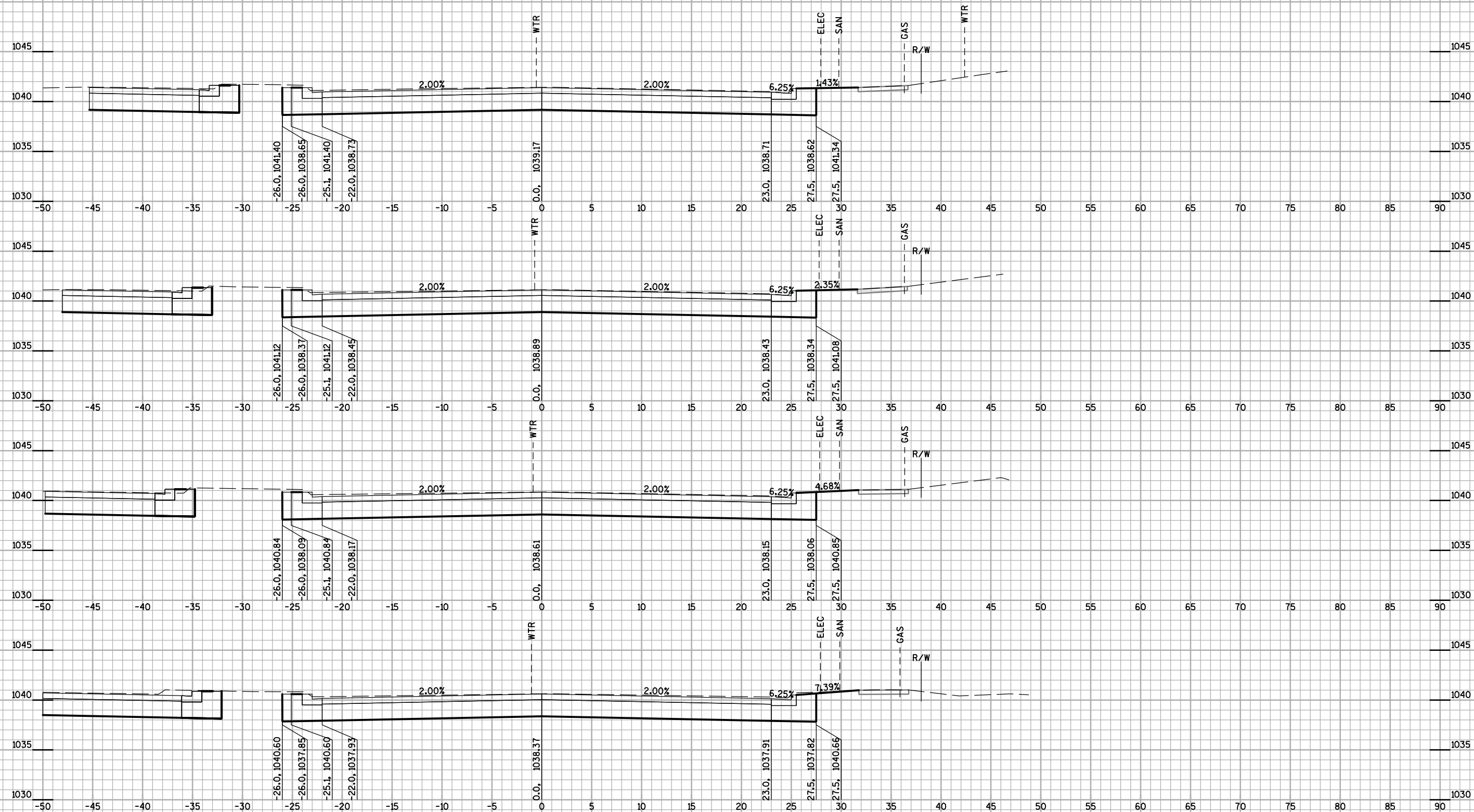








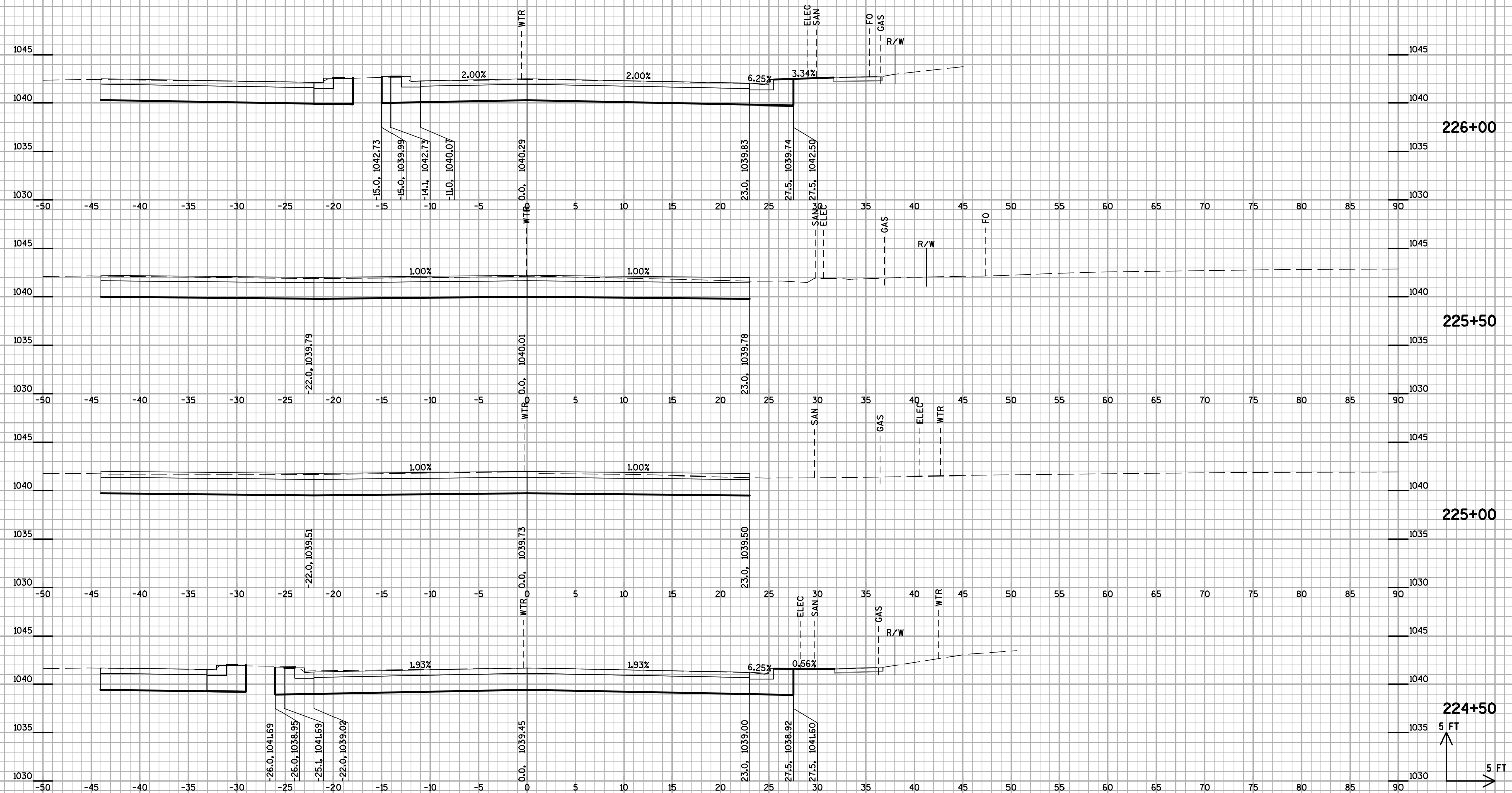




9

9

STA. 224+50 TO 226+00



PROJECT NO: 5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'NB' LINE

SHEET PRE_116 E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090201_XS_NB Gammon.dgn

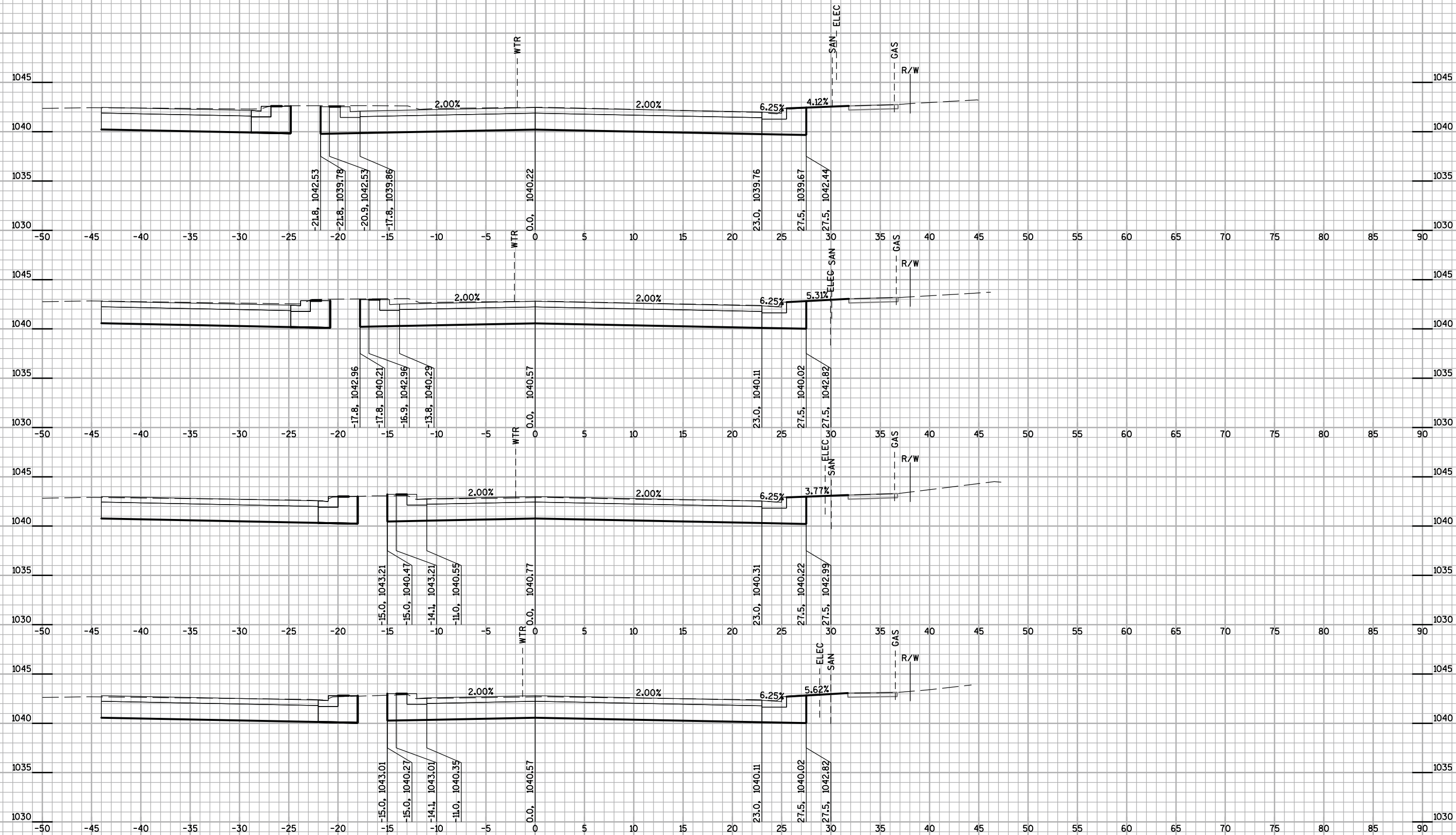
PLOT DATE : 5/10/2019

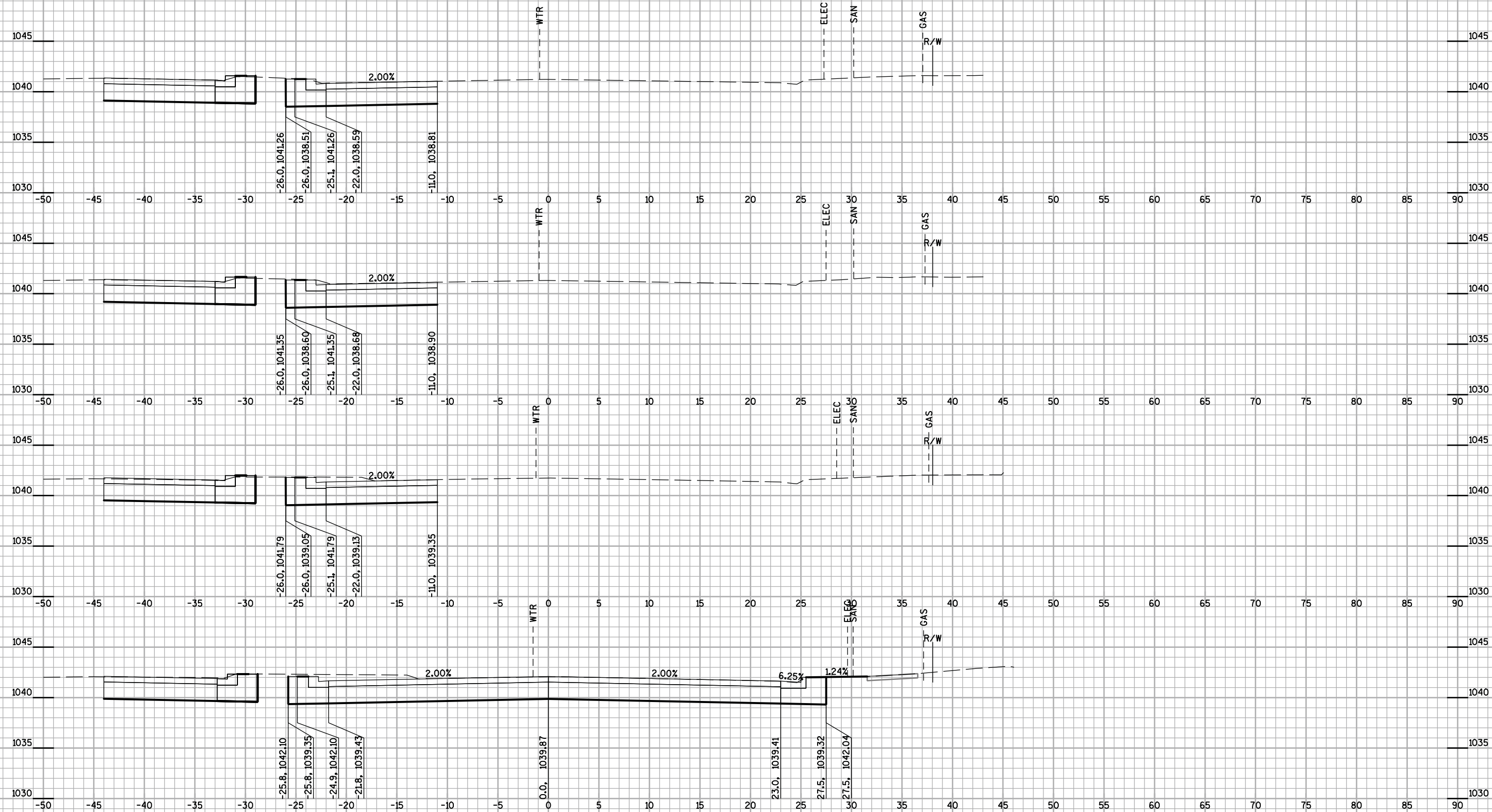
PLOT BY : kk226

PLOT NAME :

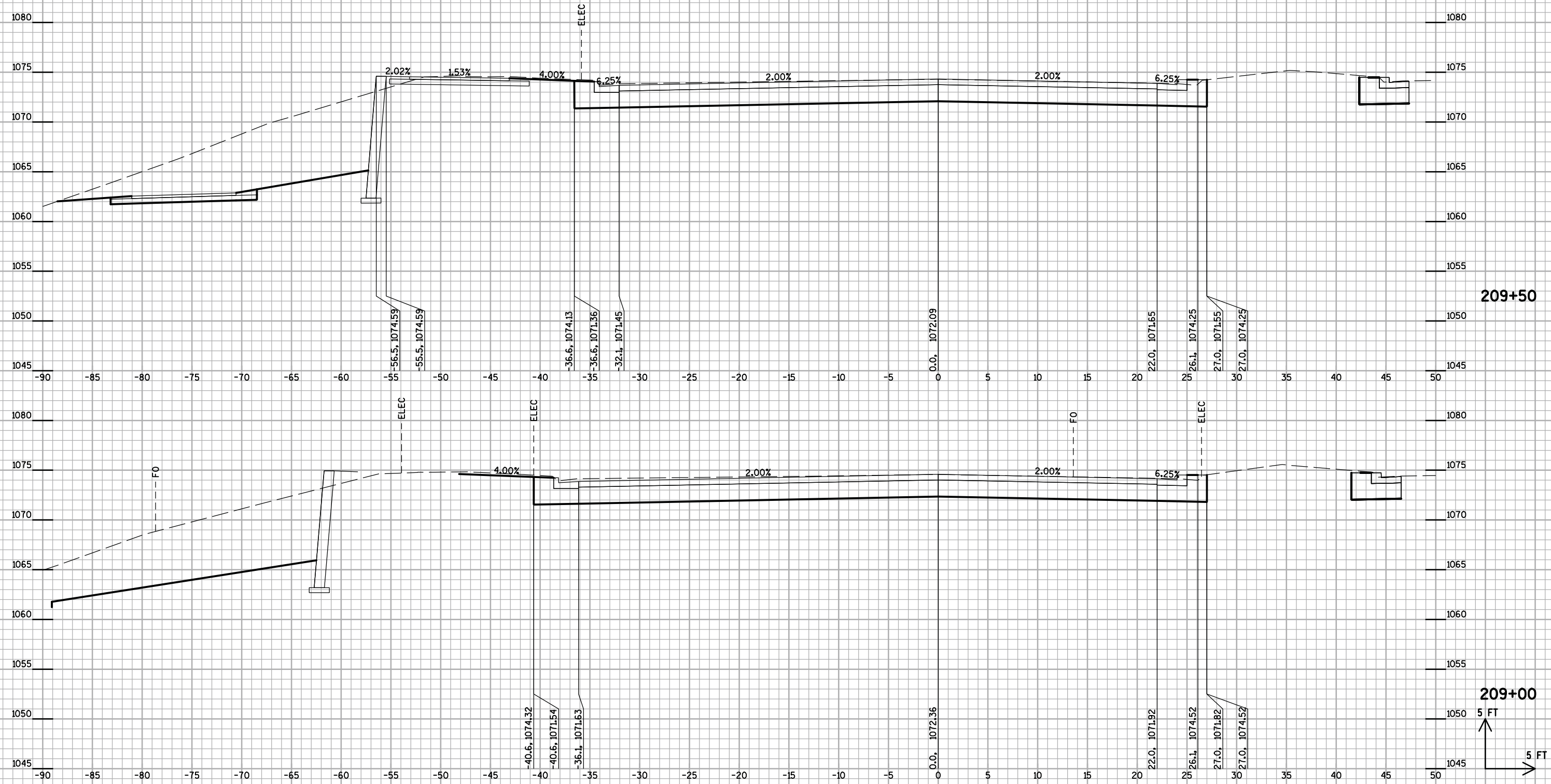
PLOT SCALE : 1:10

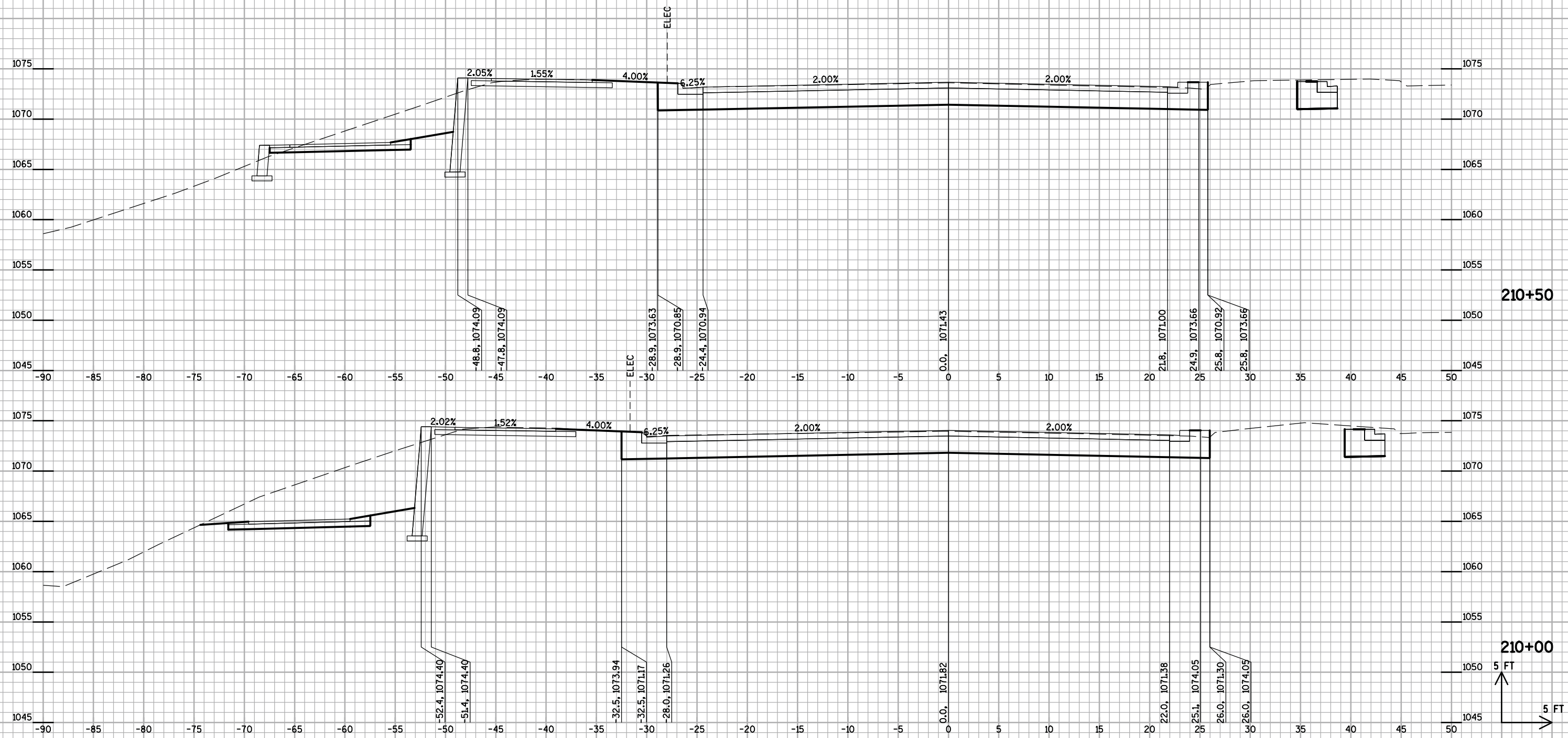
WISDOT/CADDS SHEET 21

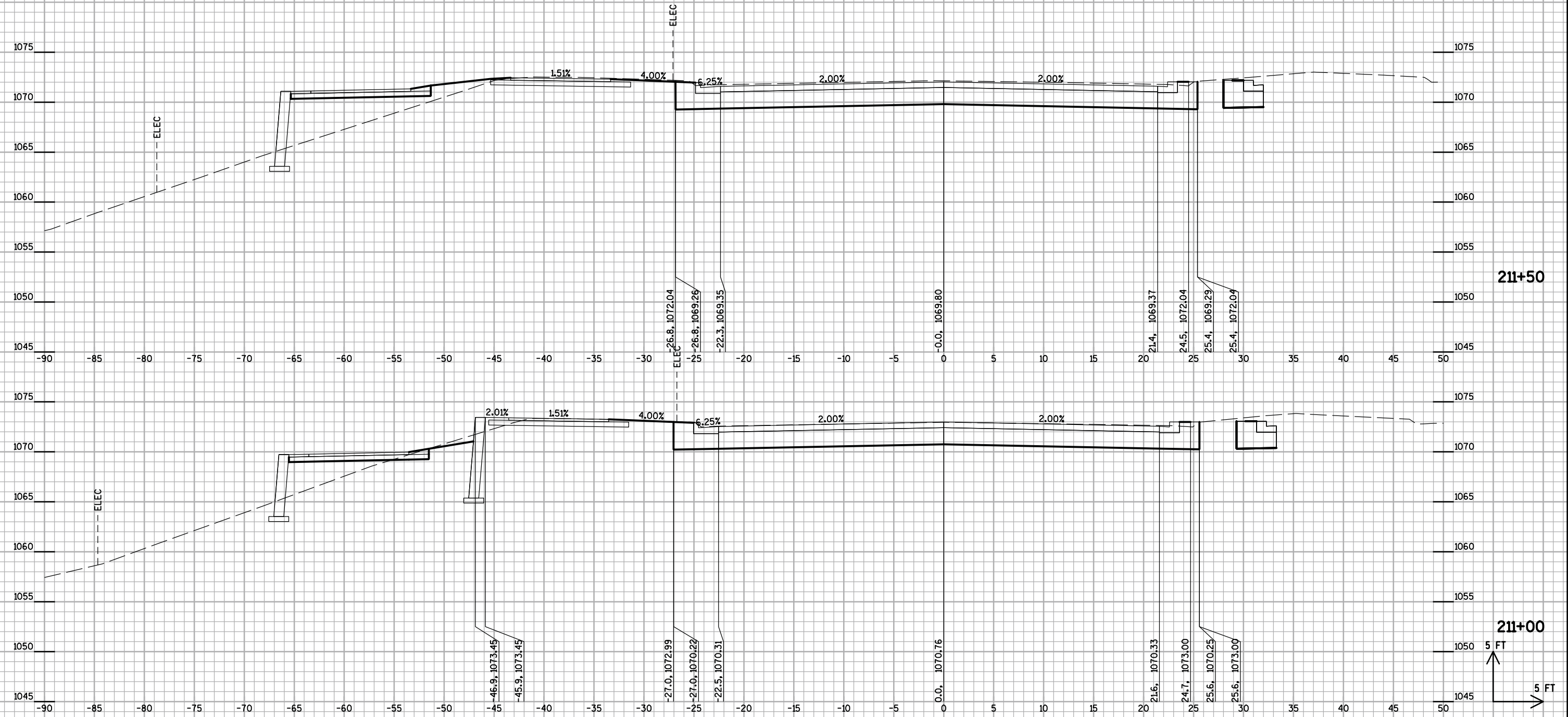


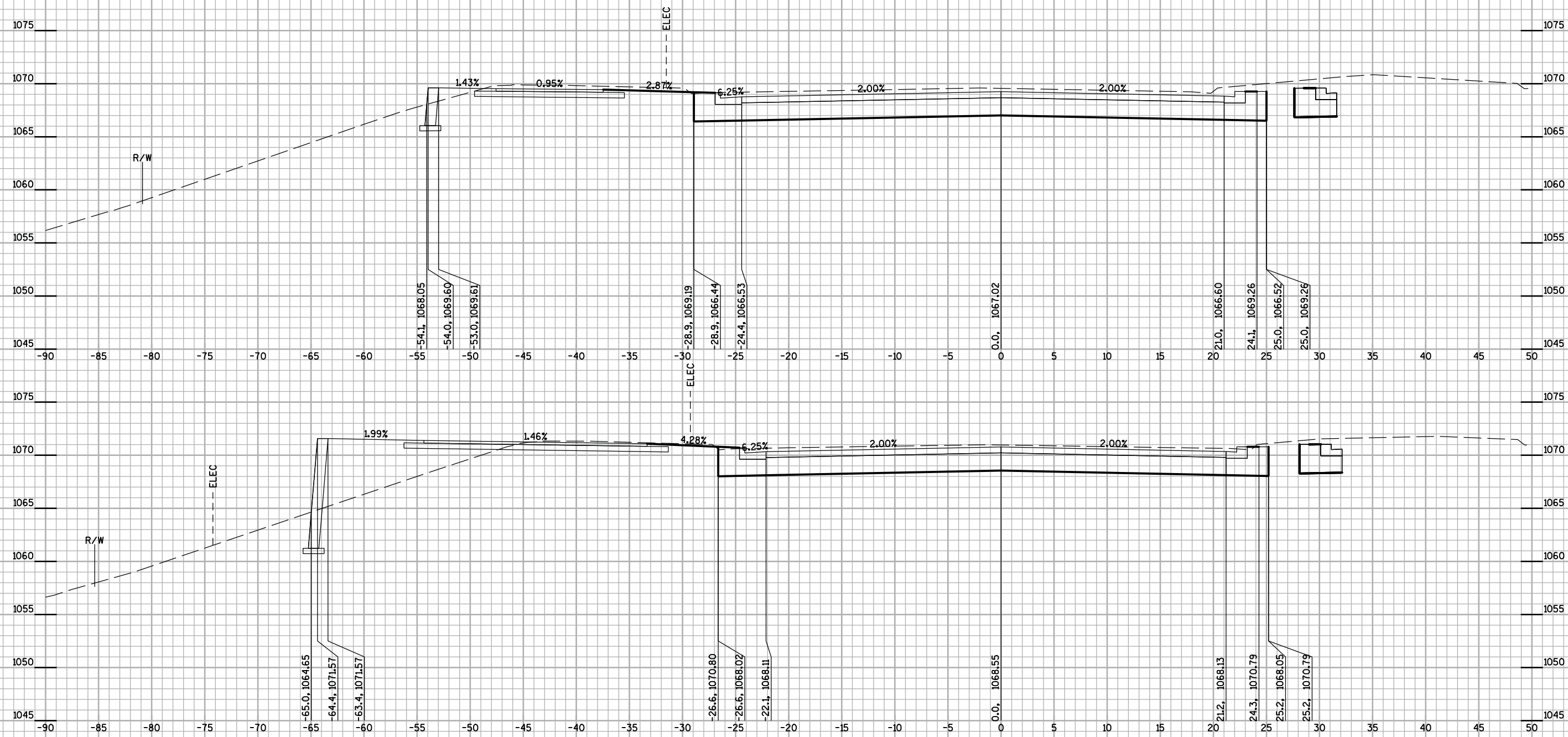


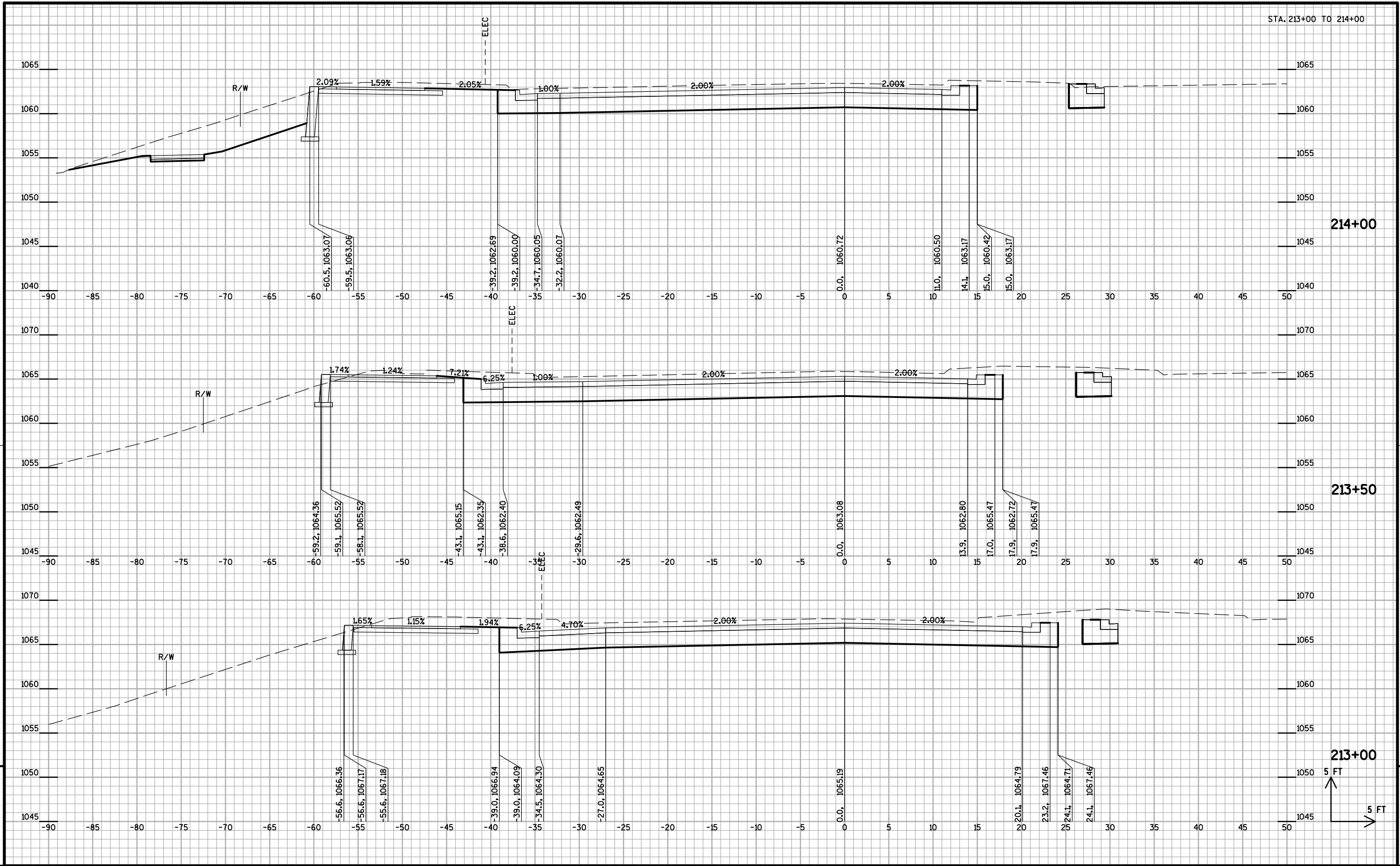




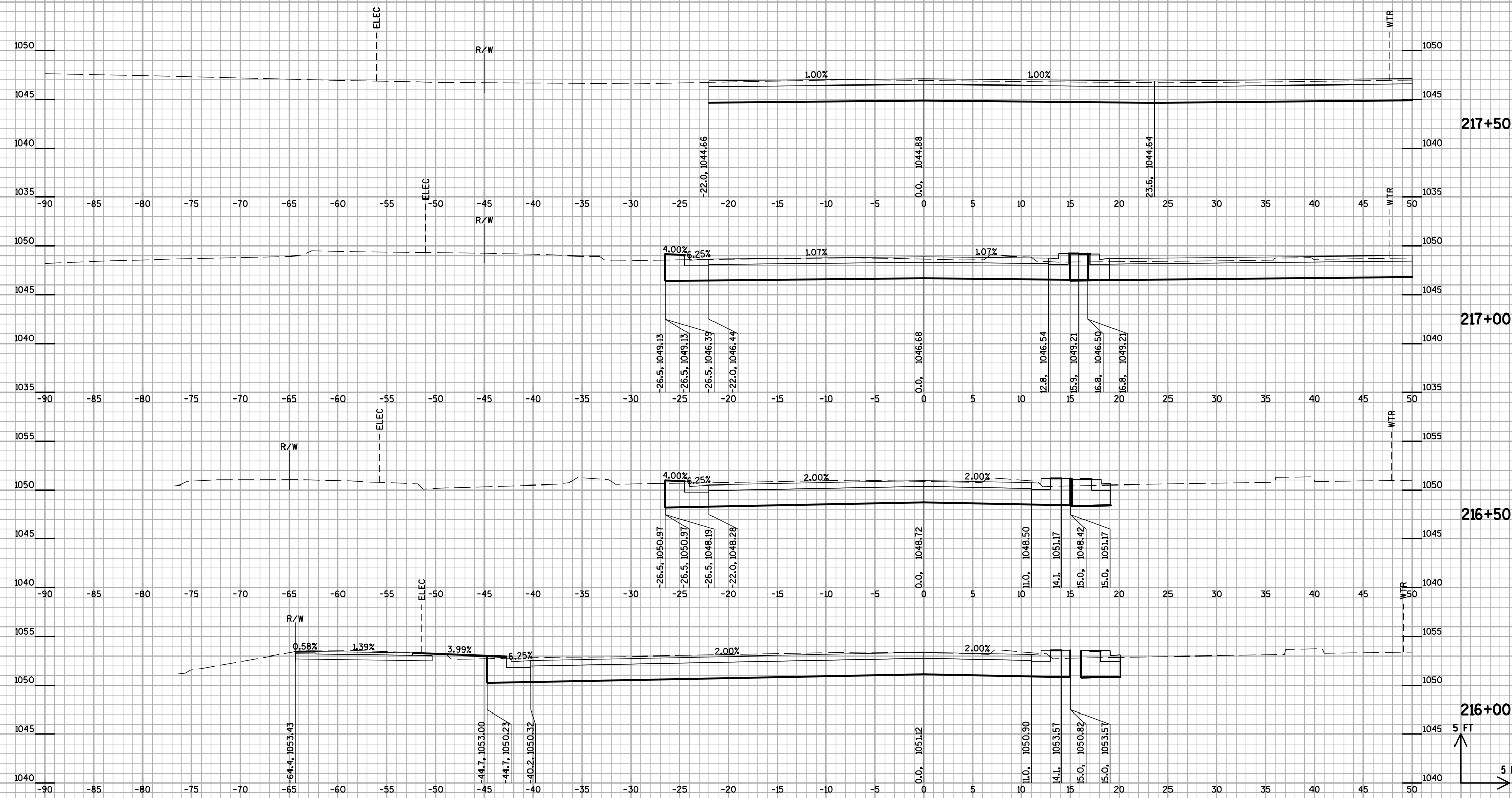






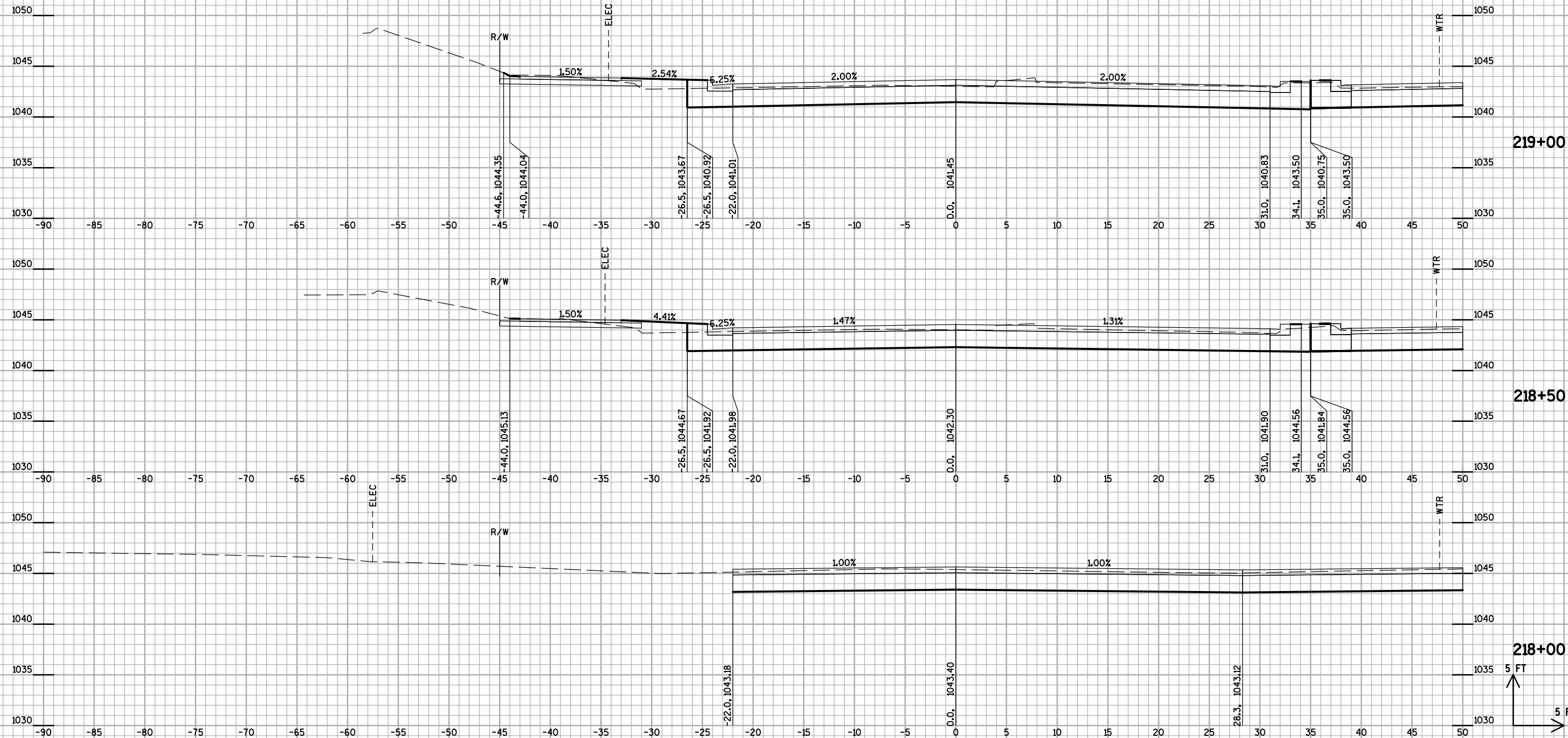


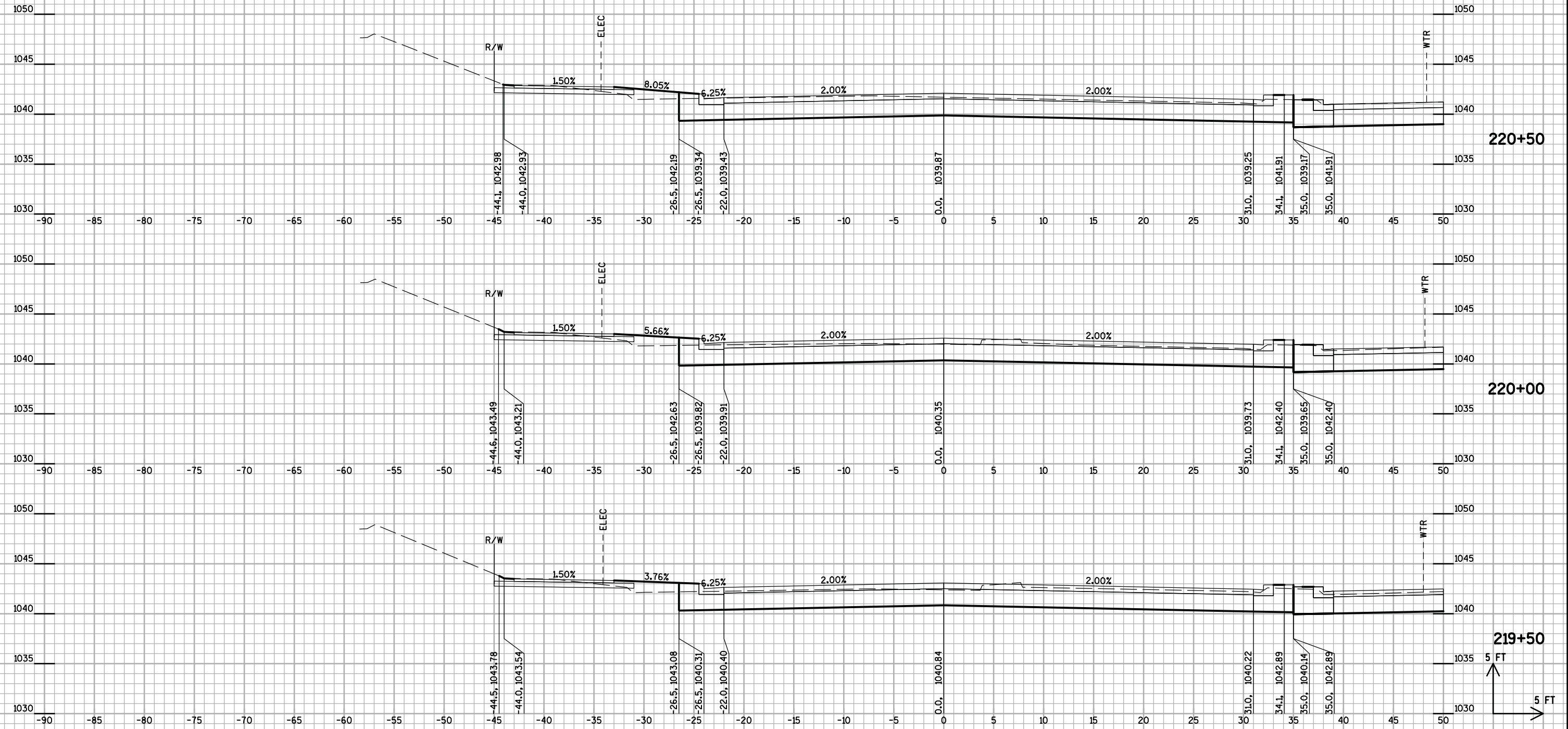




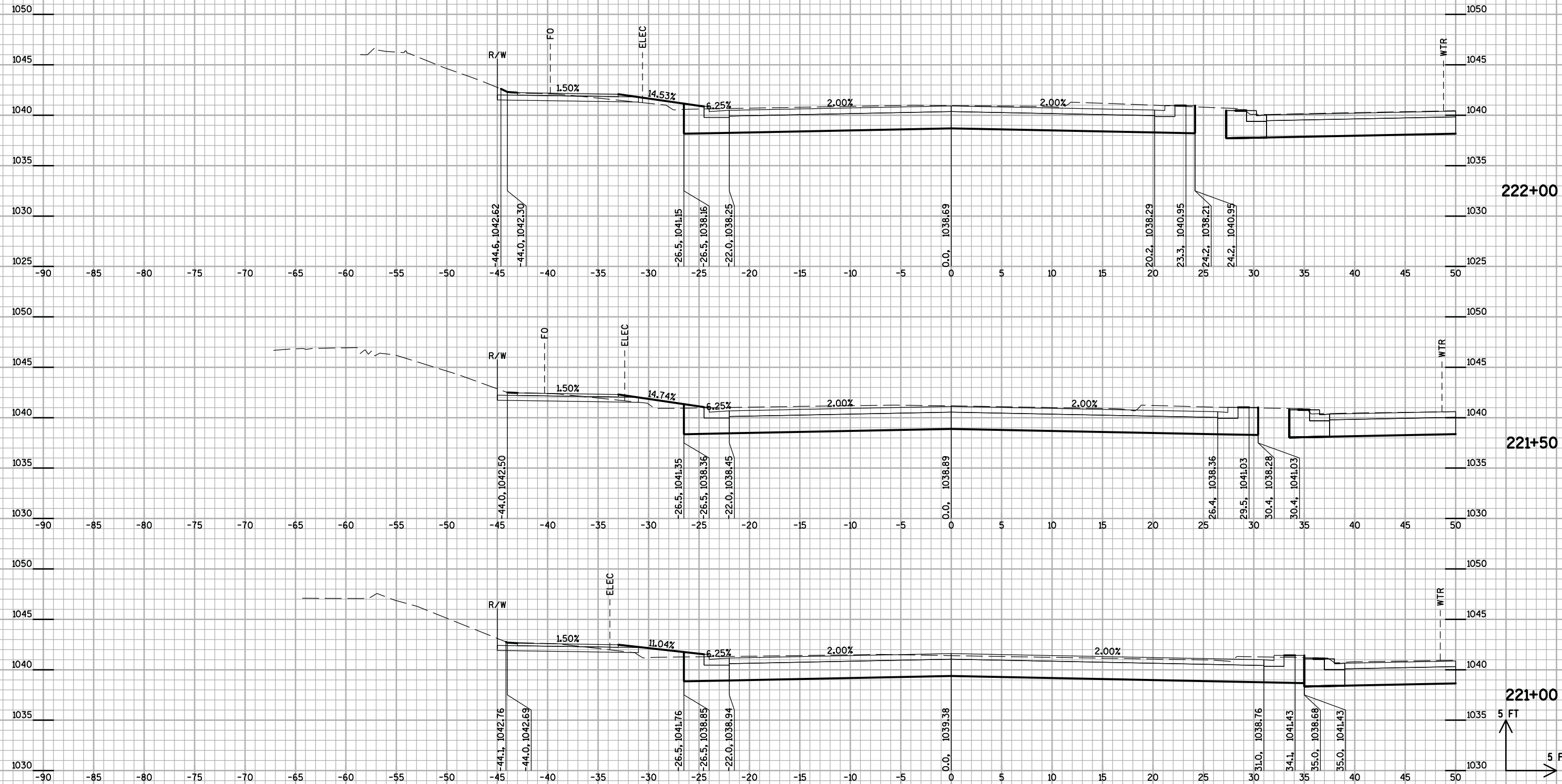
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9





STA. 221+00 TO 222+00



PROJECT NO: 5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'SB' LINE

SHEET

PRE_129

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FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\Sheets\Plan\090202_XS_SB Gammon.dgn

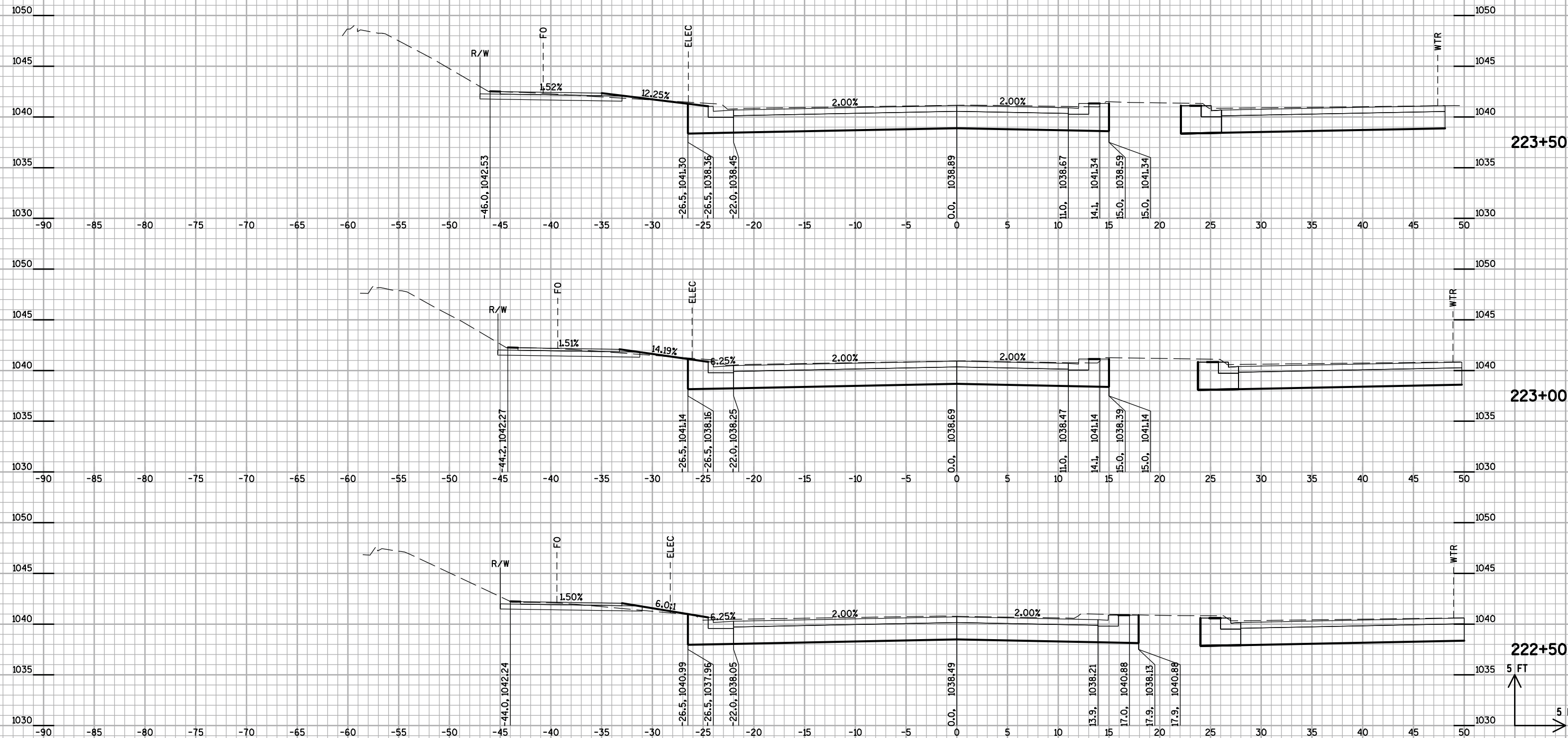
PLOT DATE : 5/10/2019

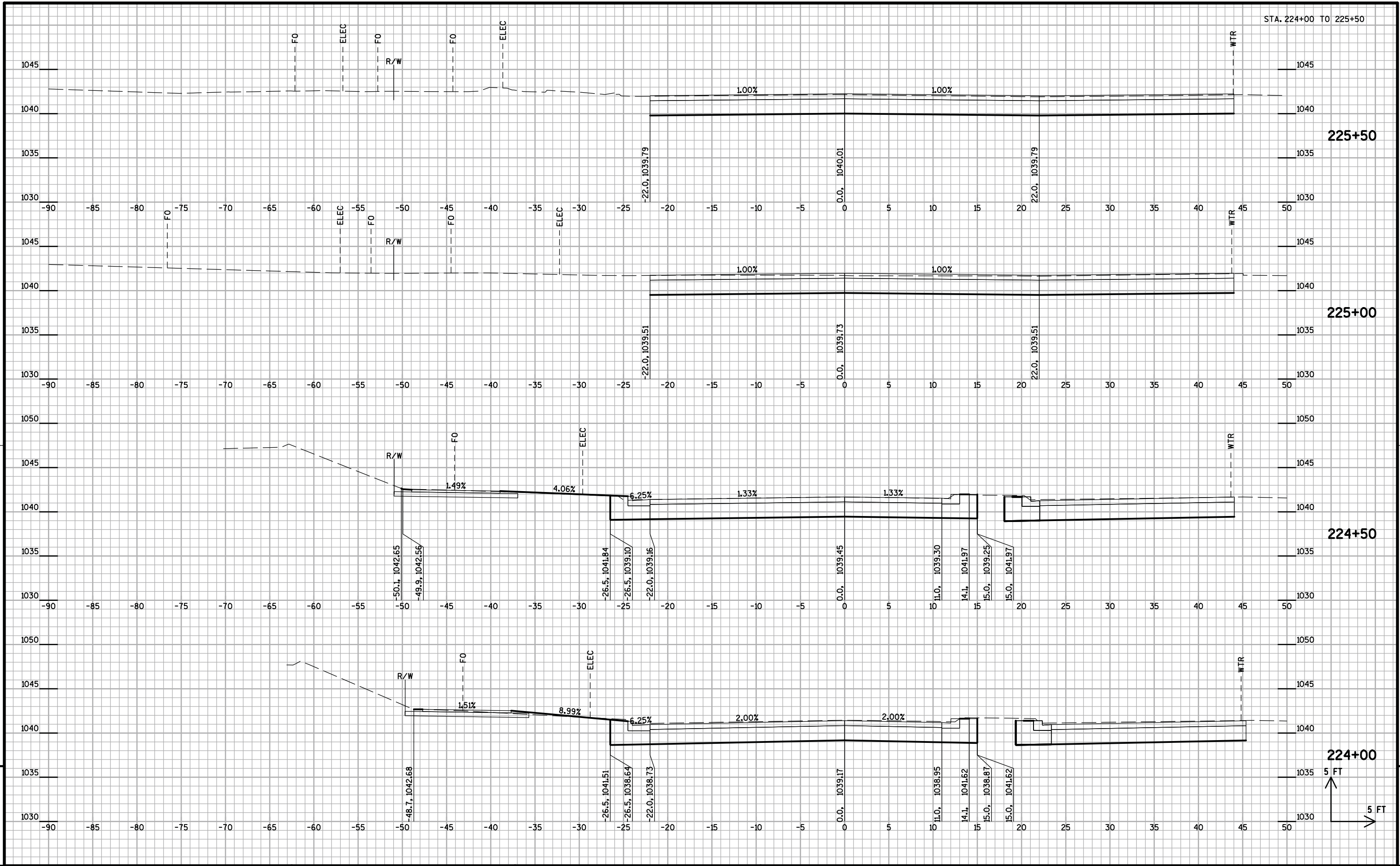
PLOT BY : kk226

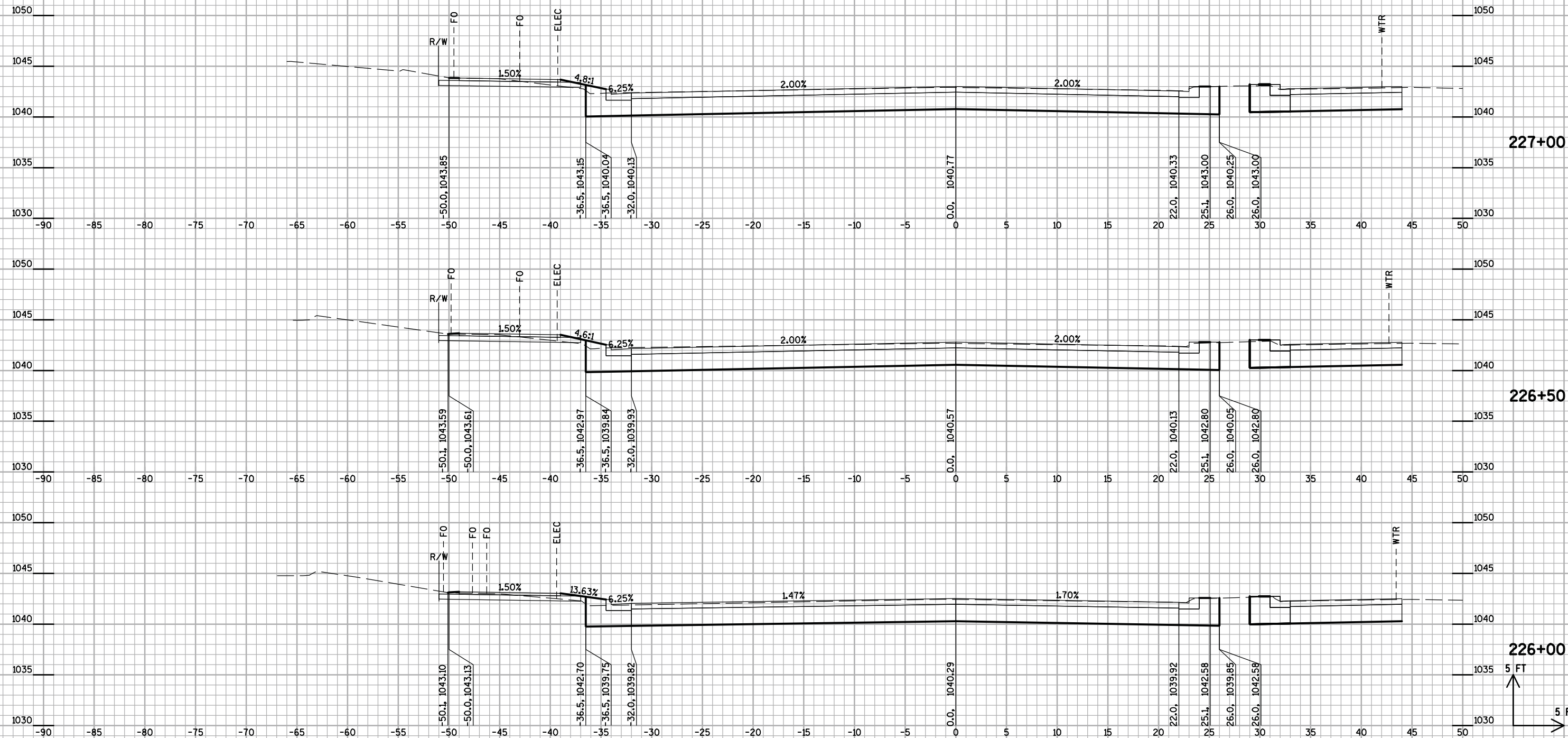
PLOT NAME :

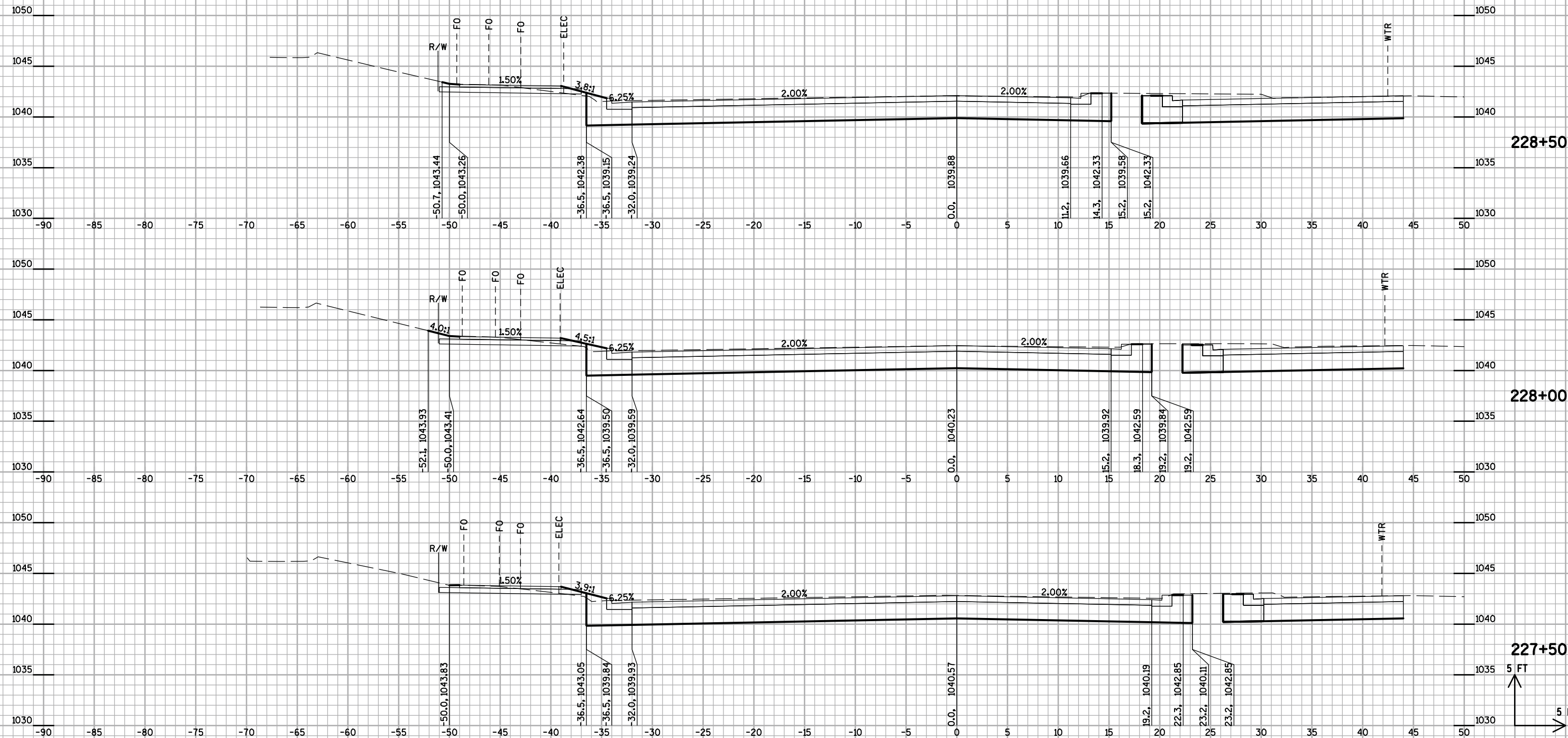
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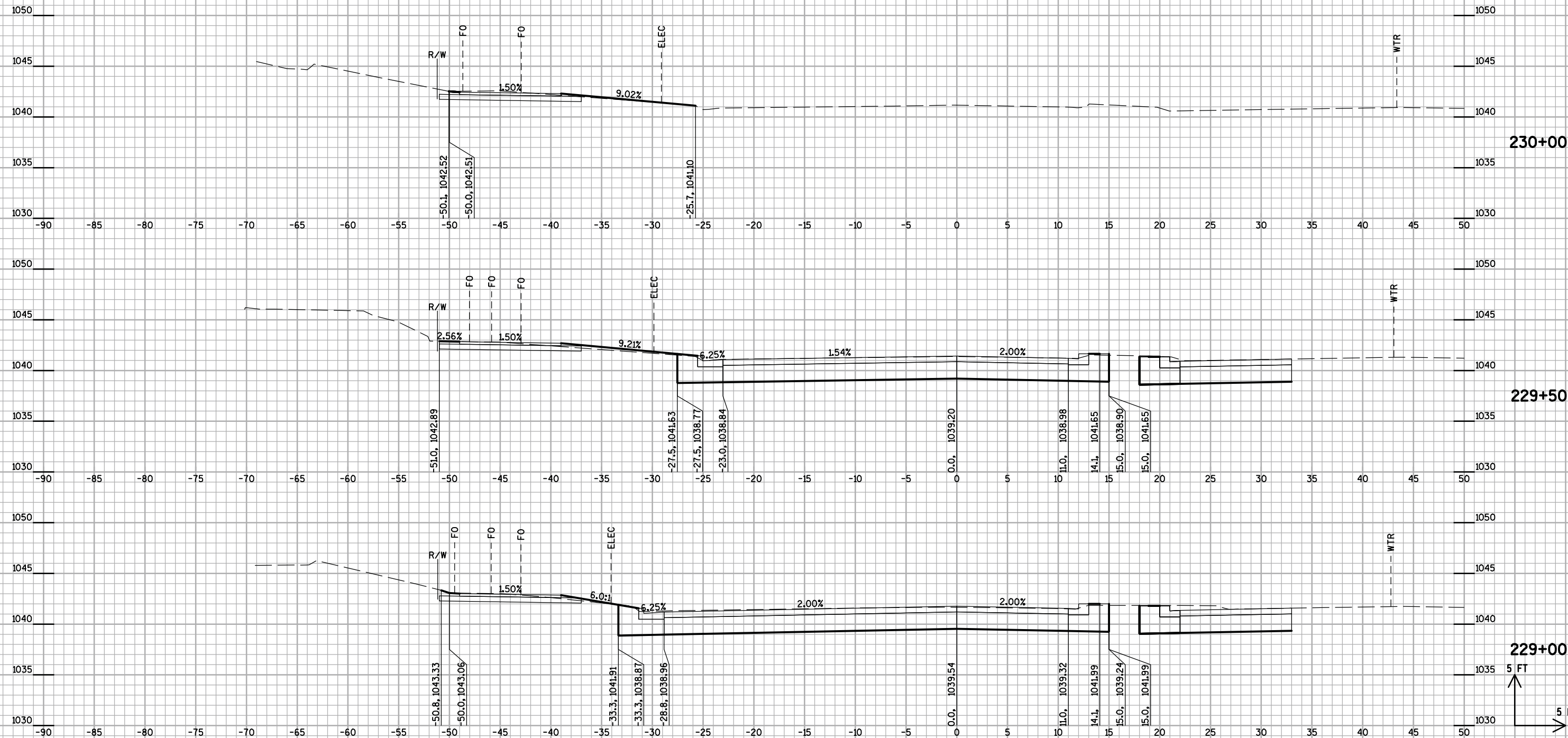
WISDOT/CADDs SHEET 21

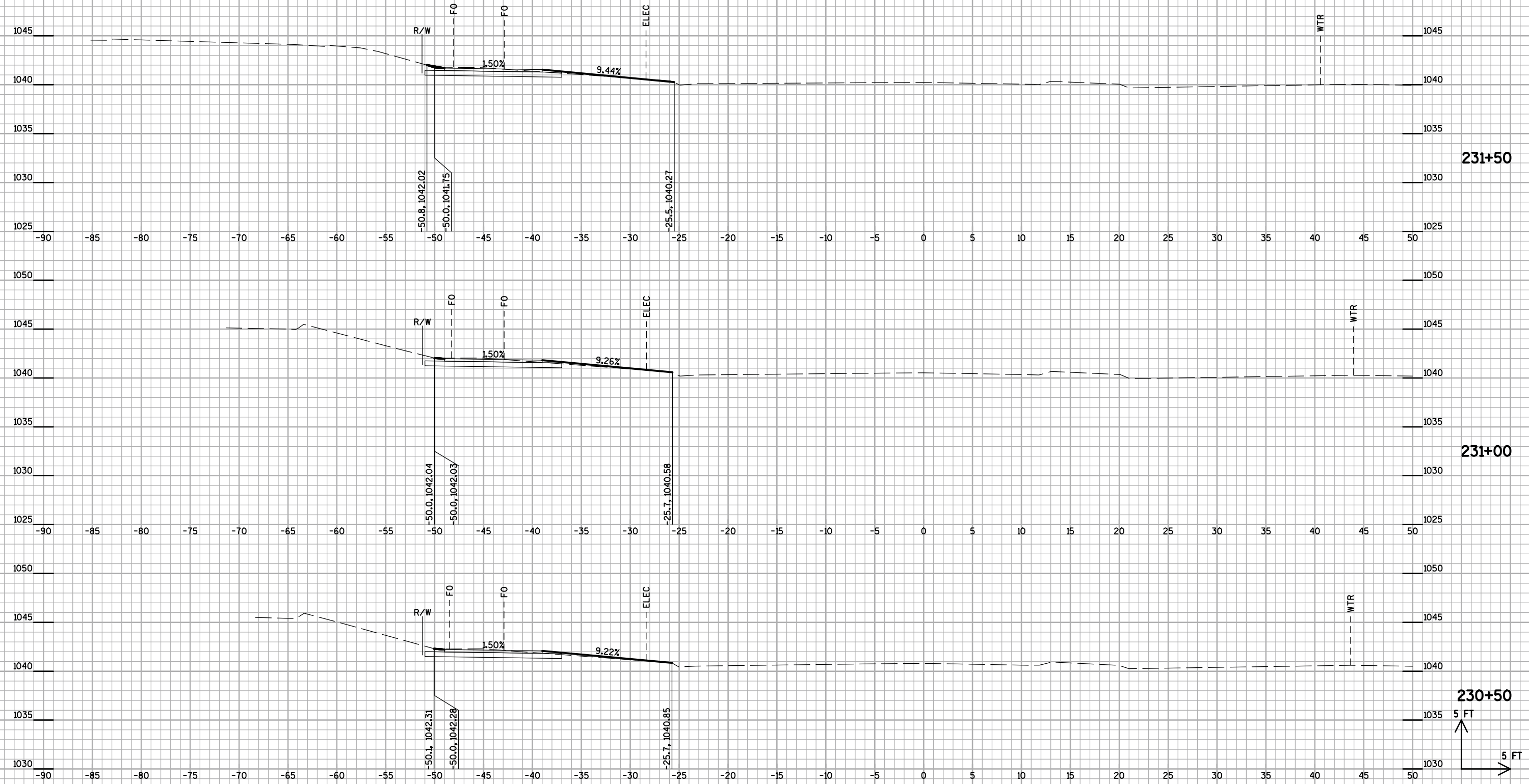




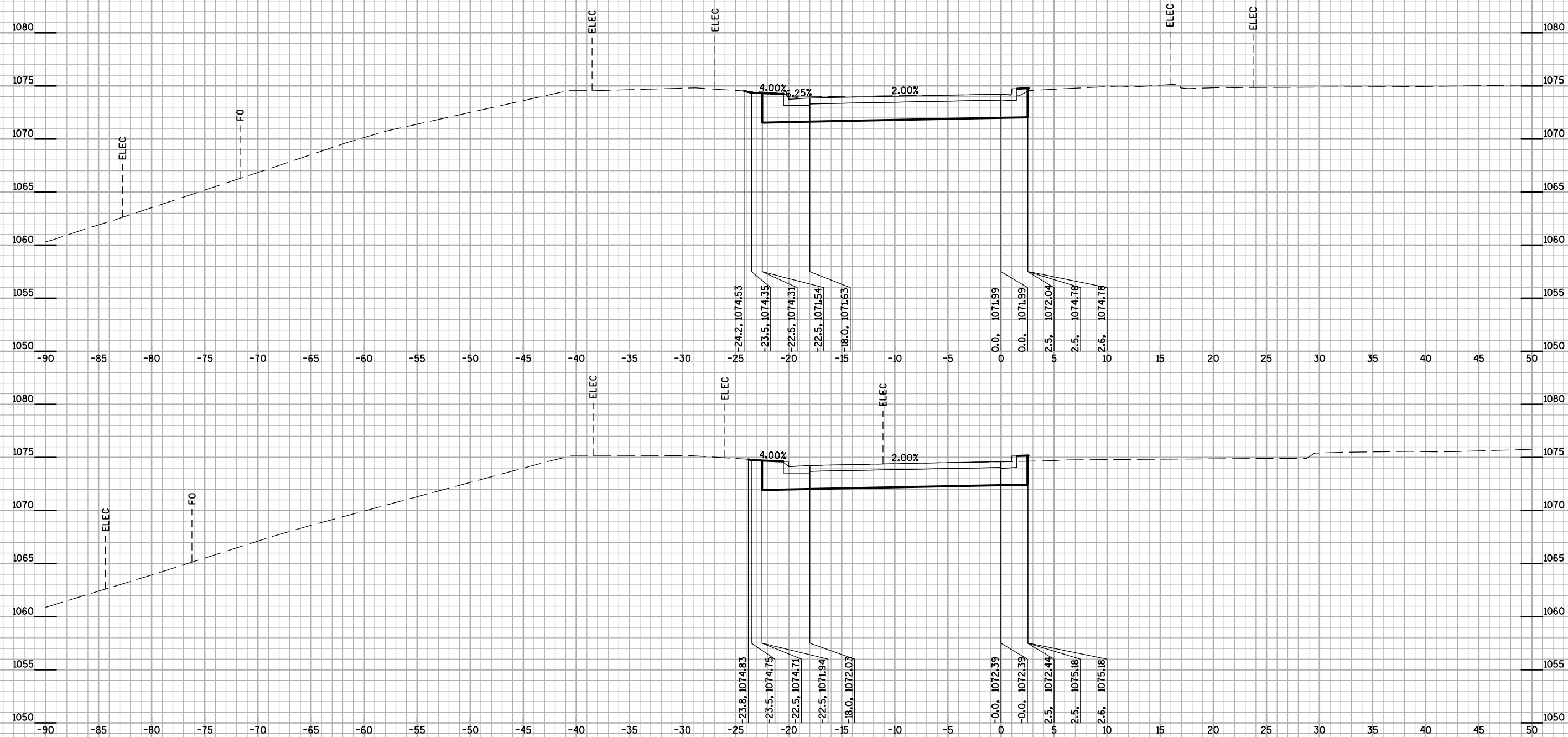












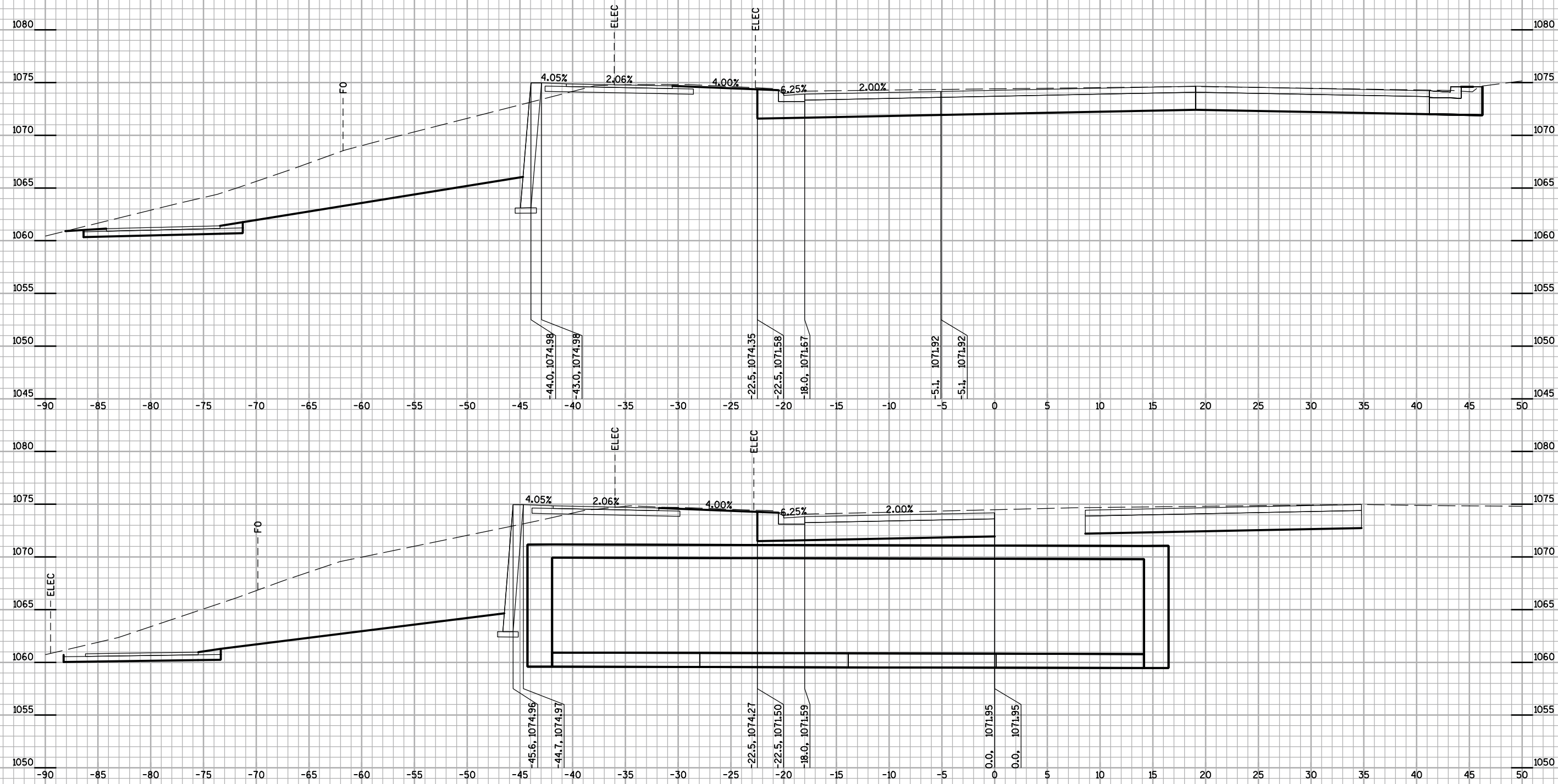
399+50

399+27

5 FT

5 FT

STA. 400+00 TO 400+50



400+50

400+00

5 FT

5 FT

PROJECT NO:5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'WBO' LINE

SHEET

PRE_138

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\Sheets\Plan\090203_XS_WBO.dgn

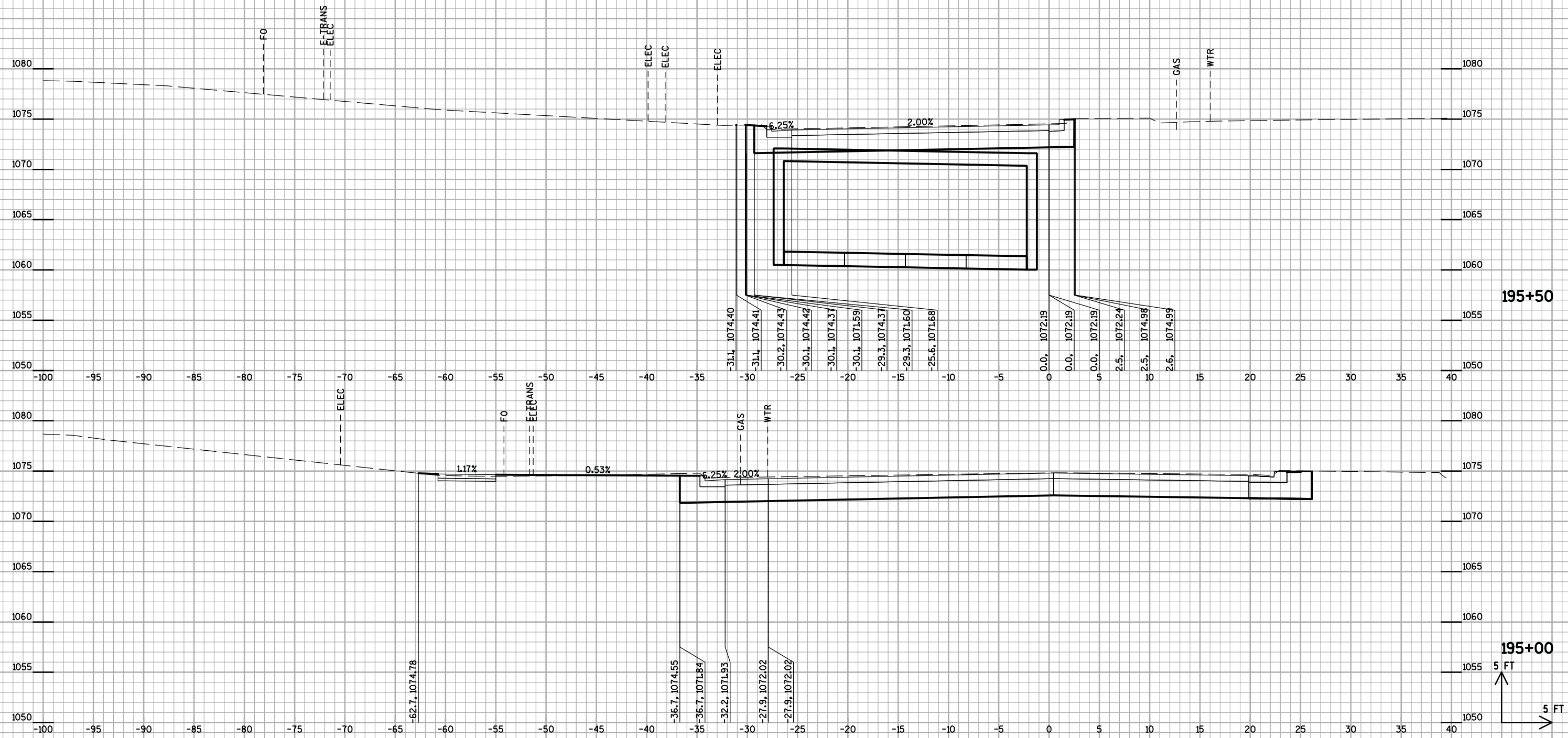
PLOT DATE : 5/10/2019

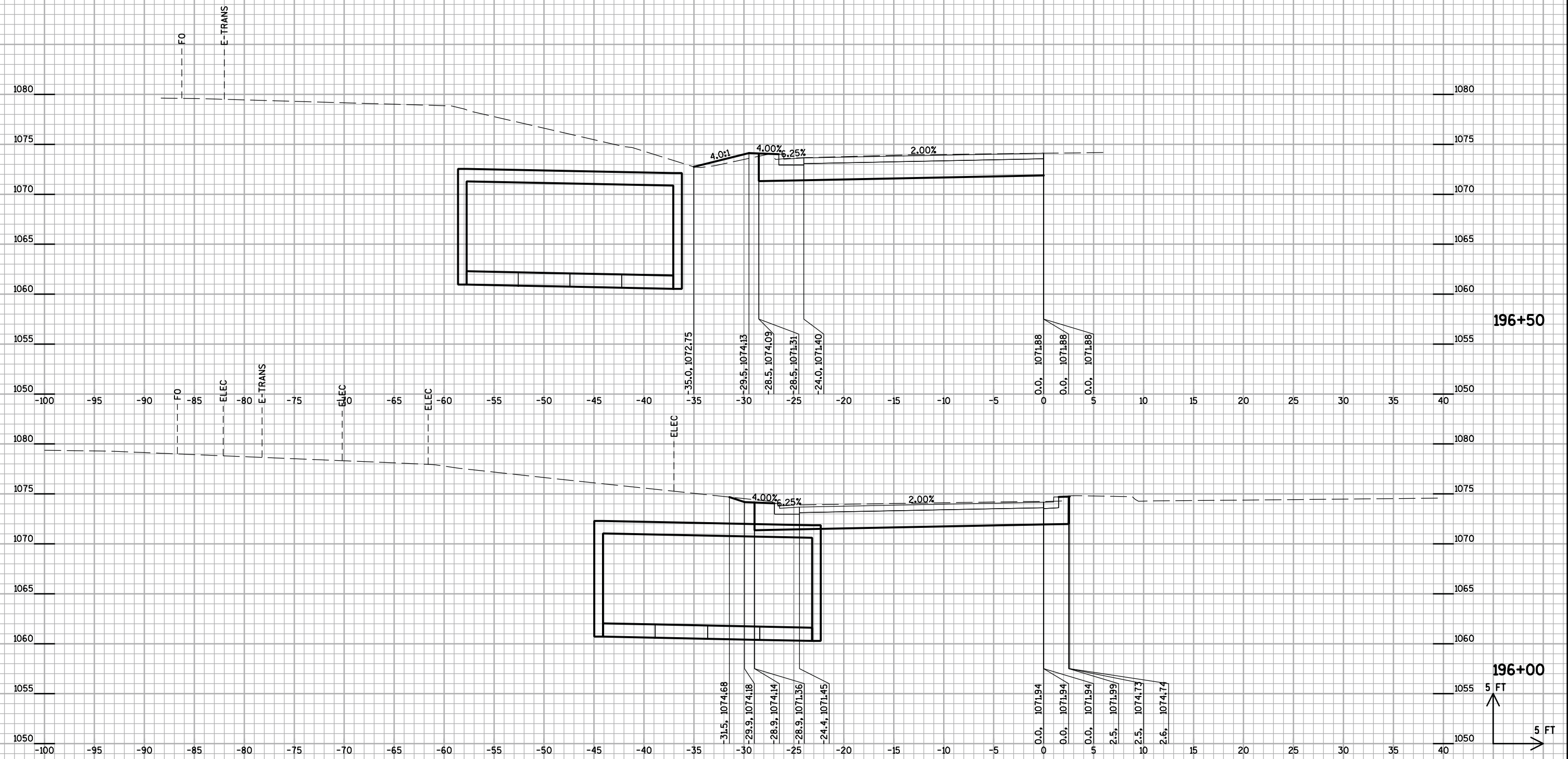
PLOT BY : kk226

PLOT NAME :

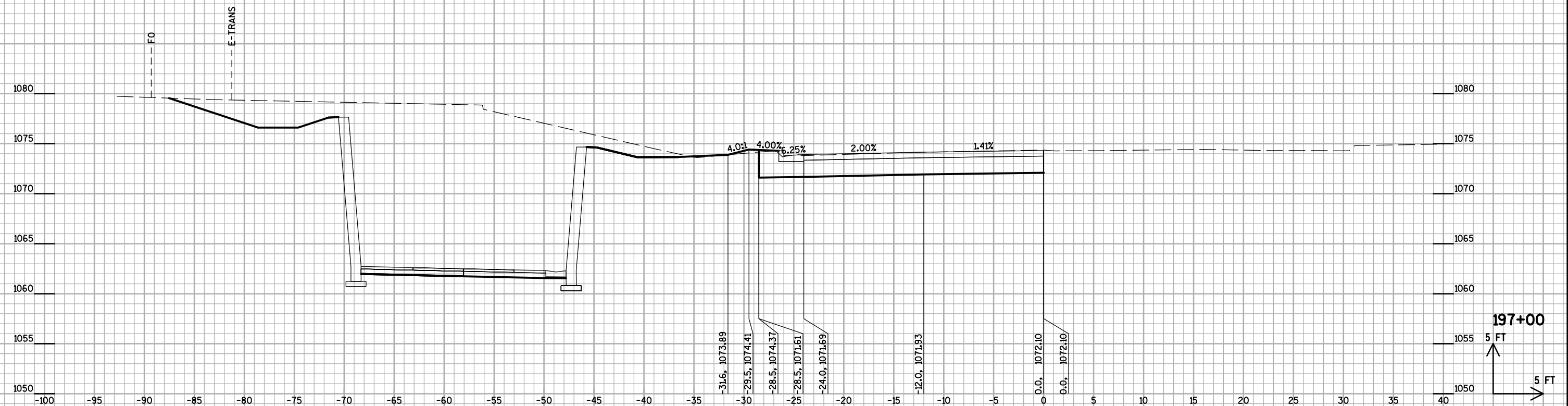
PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21





STA. 197+00 TO 197+00



PROJECT NO: 5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'WBF' LINE

SHEET

PRE_141

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090204_XS_WBF.dgn

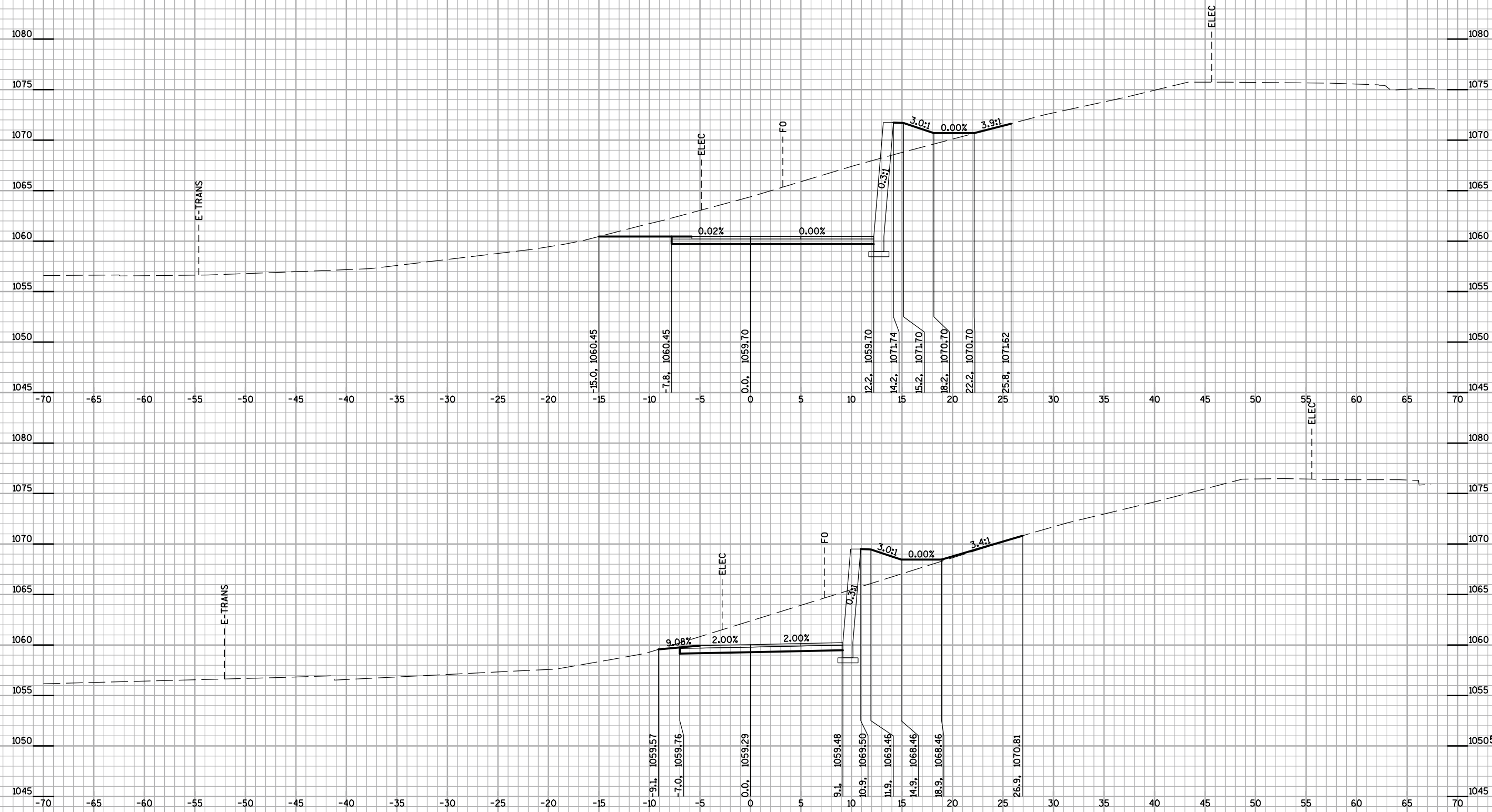
PLOT DATE : 5/10/2019

PLOT BY : kk226

PLOT NAME :

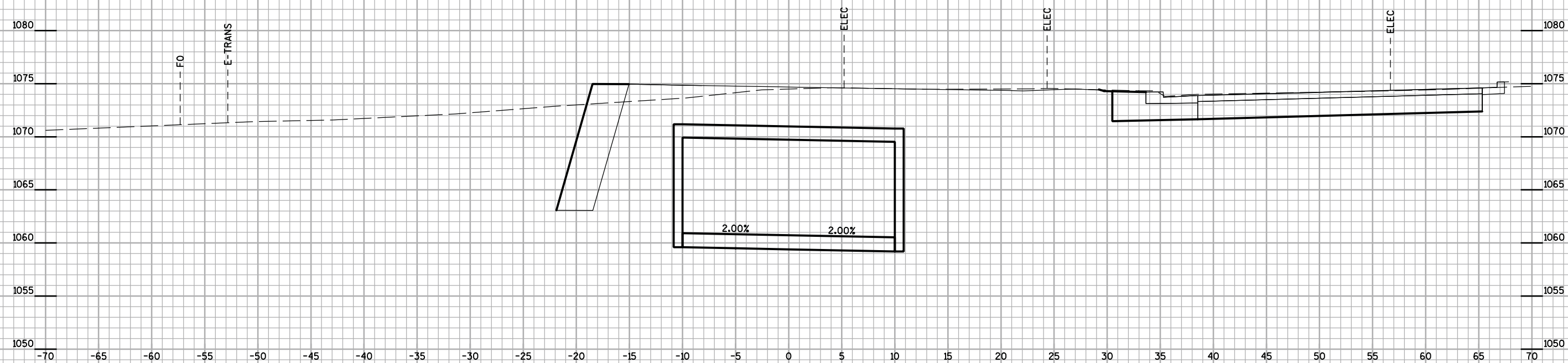
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WISDOT/CADDS SHEET 21

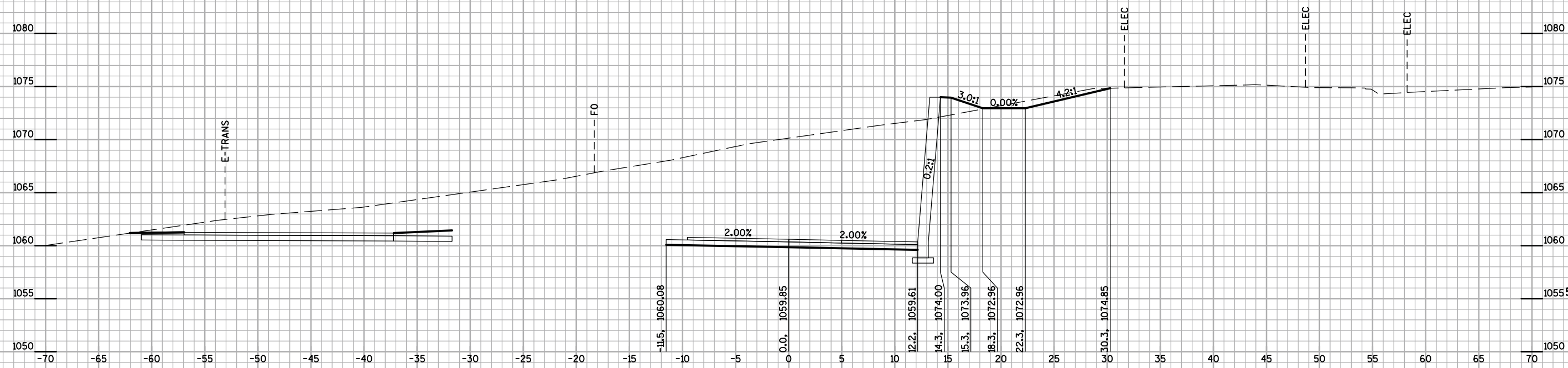


294+75

294+50



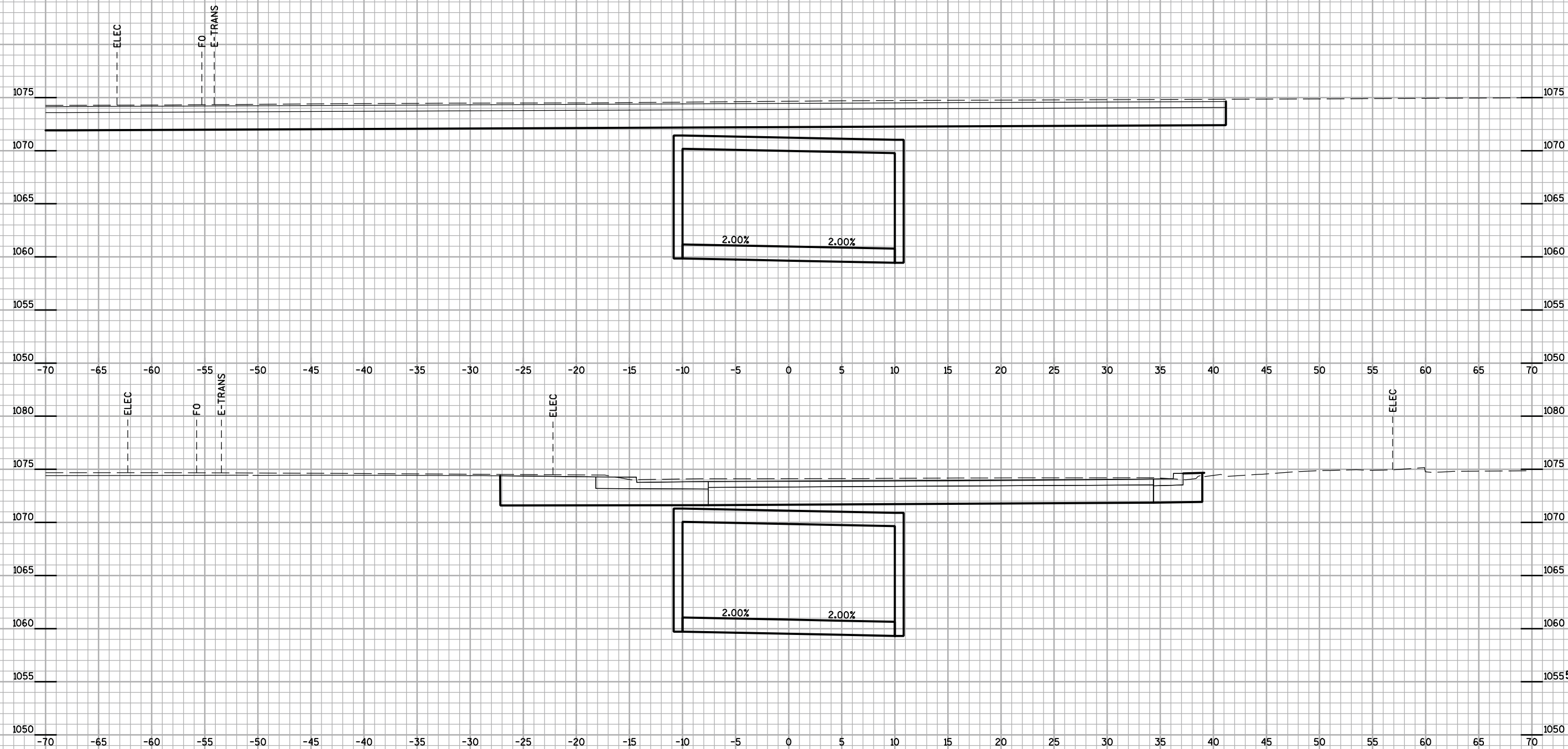
295+25



295+00

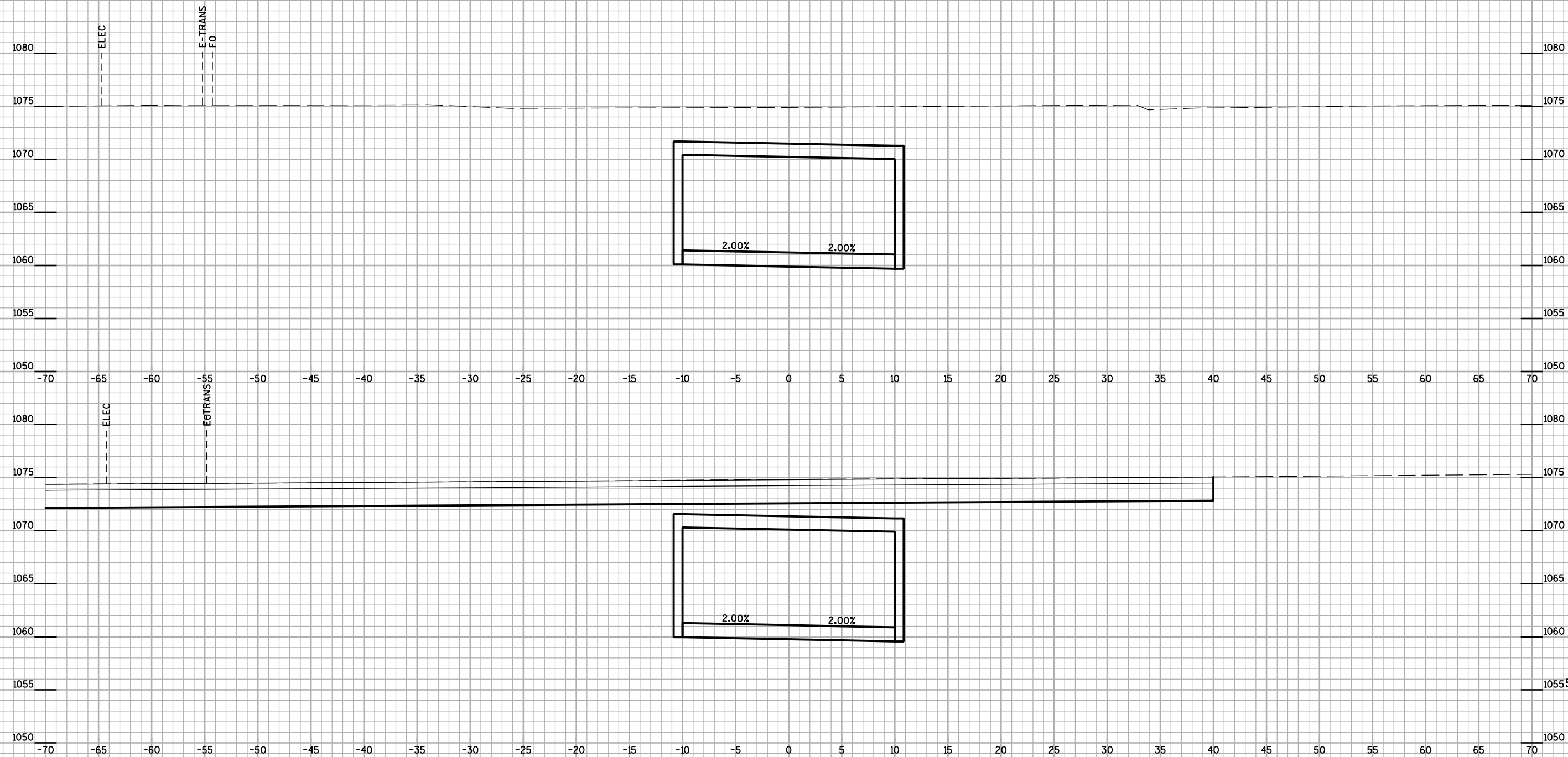
5 FT

5 FT



9

9

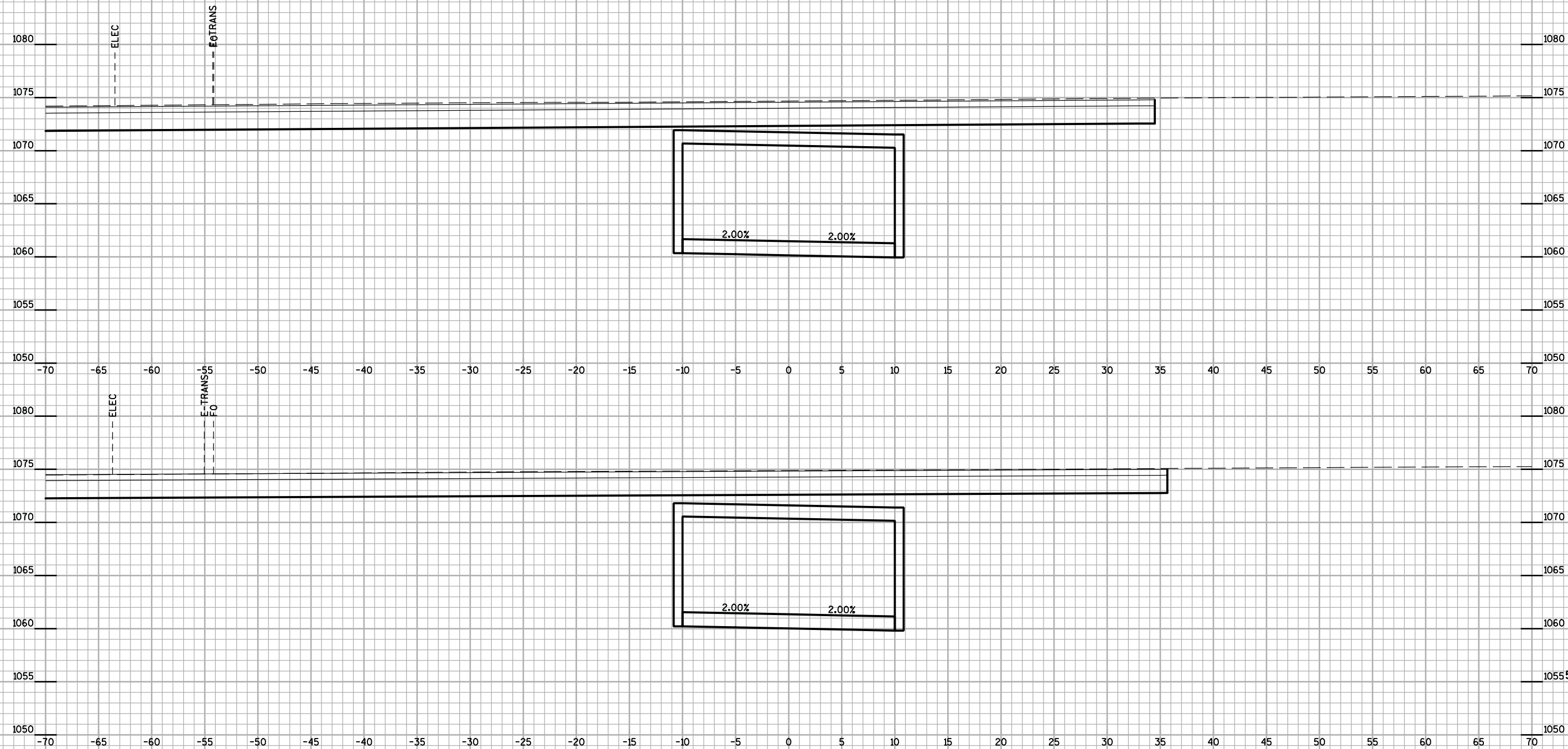


296+25

296+00

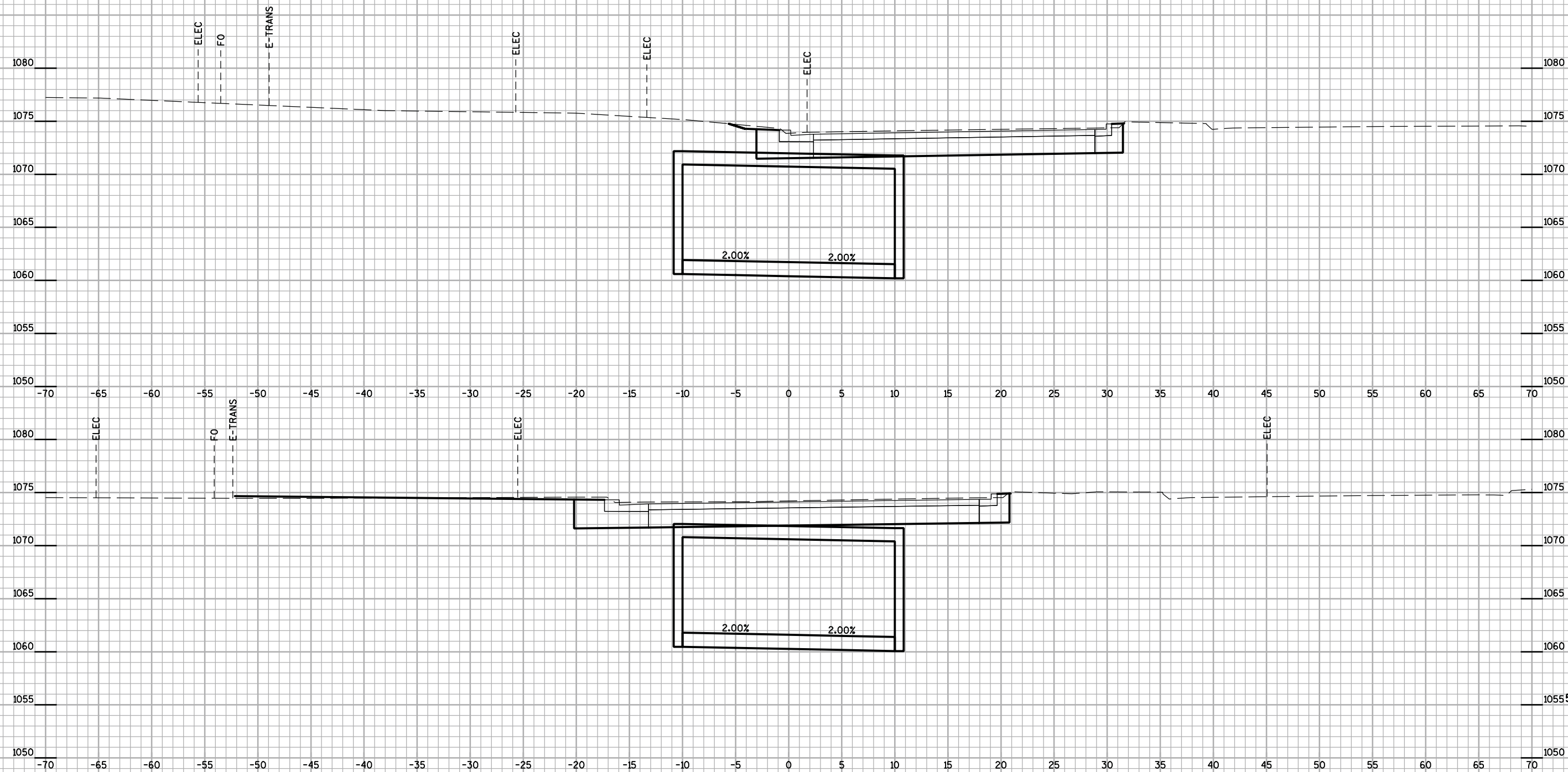
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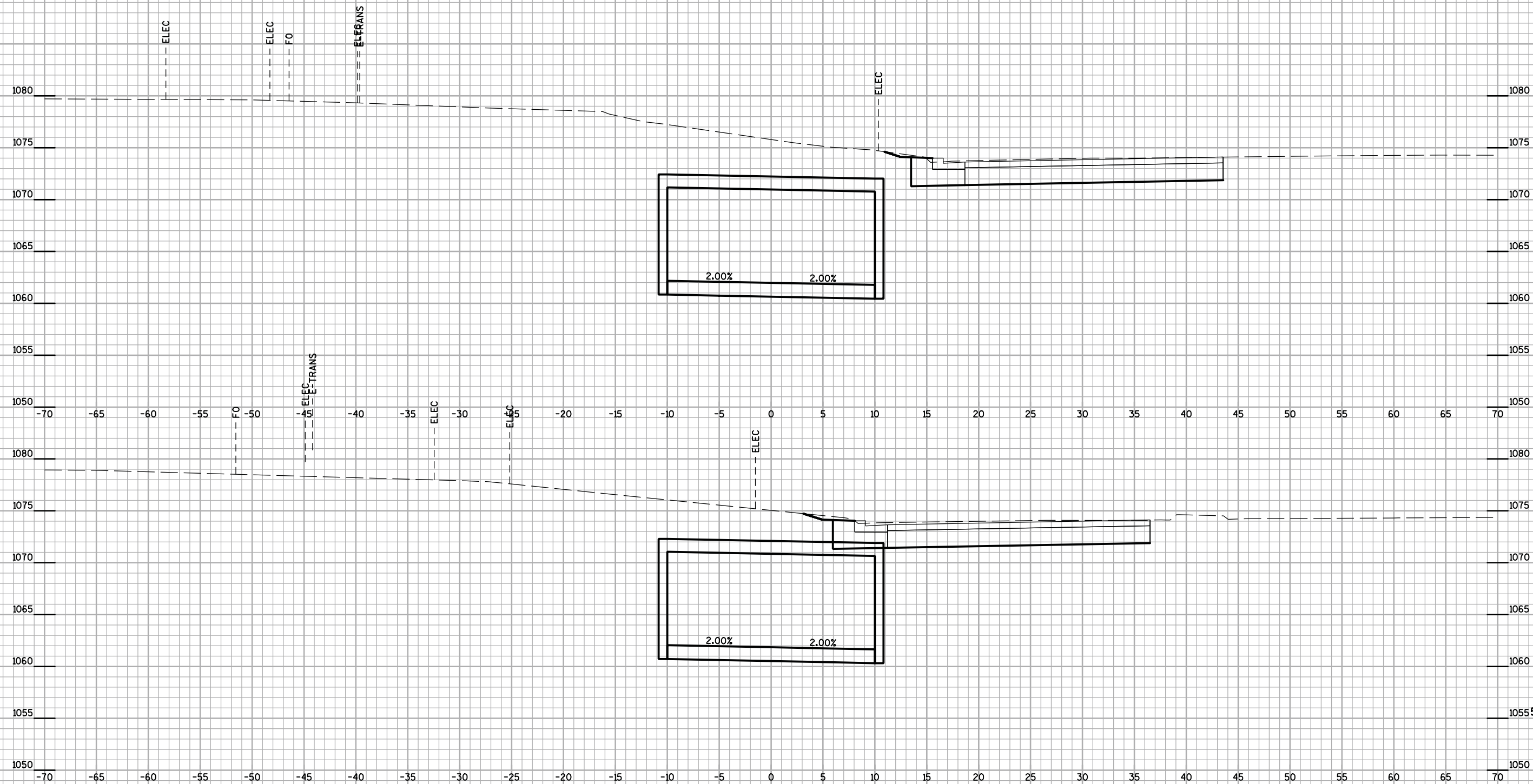
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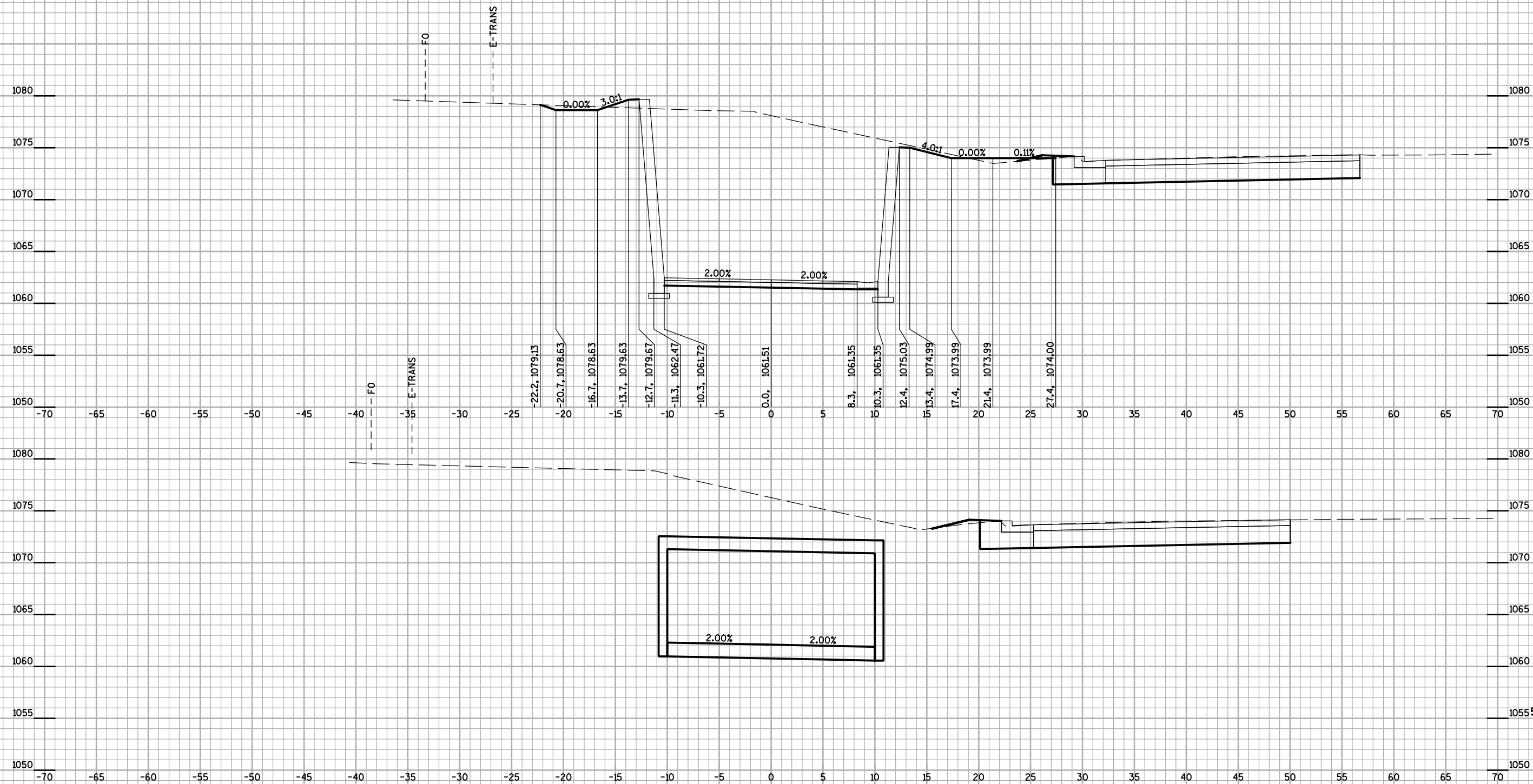
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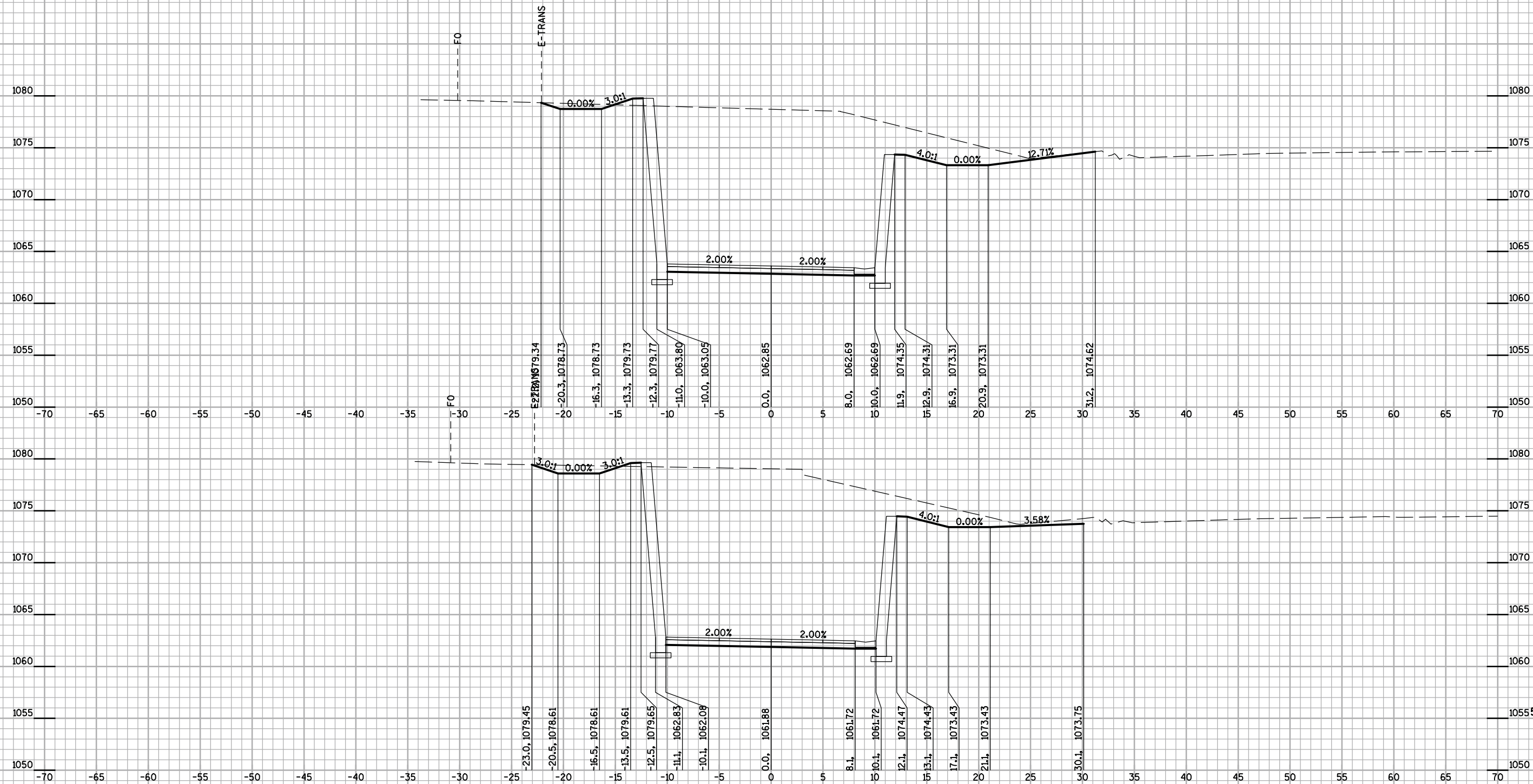


298+30

298+00

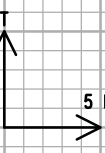
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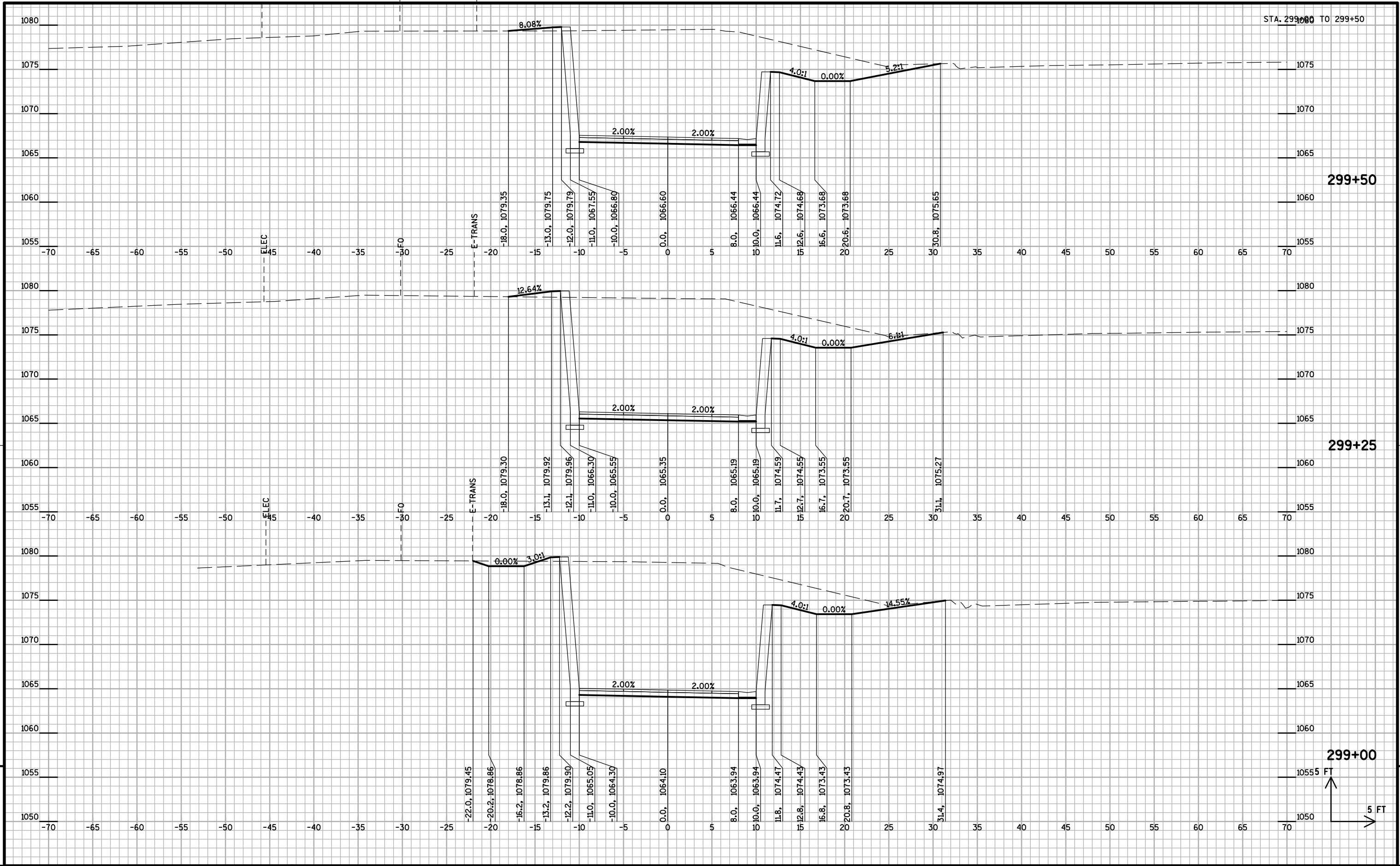


298+75

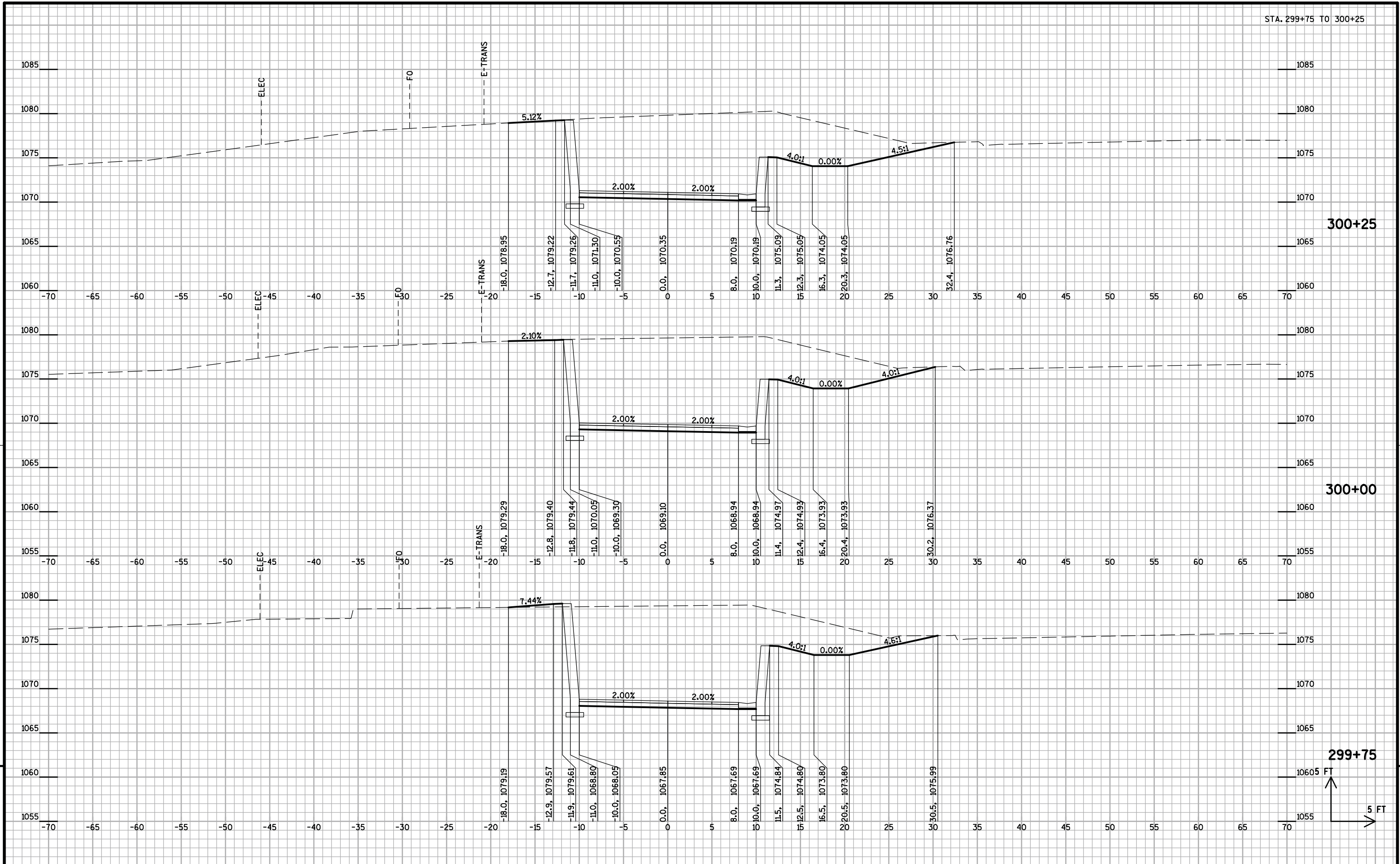
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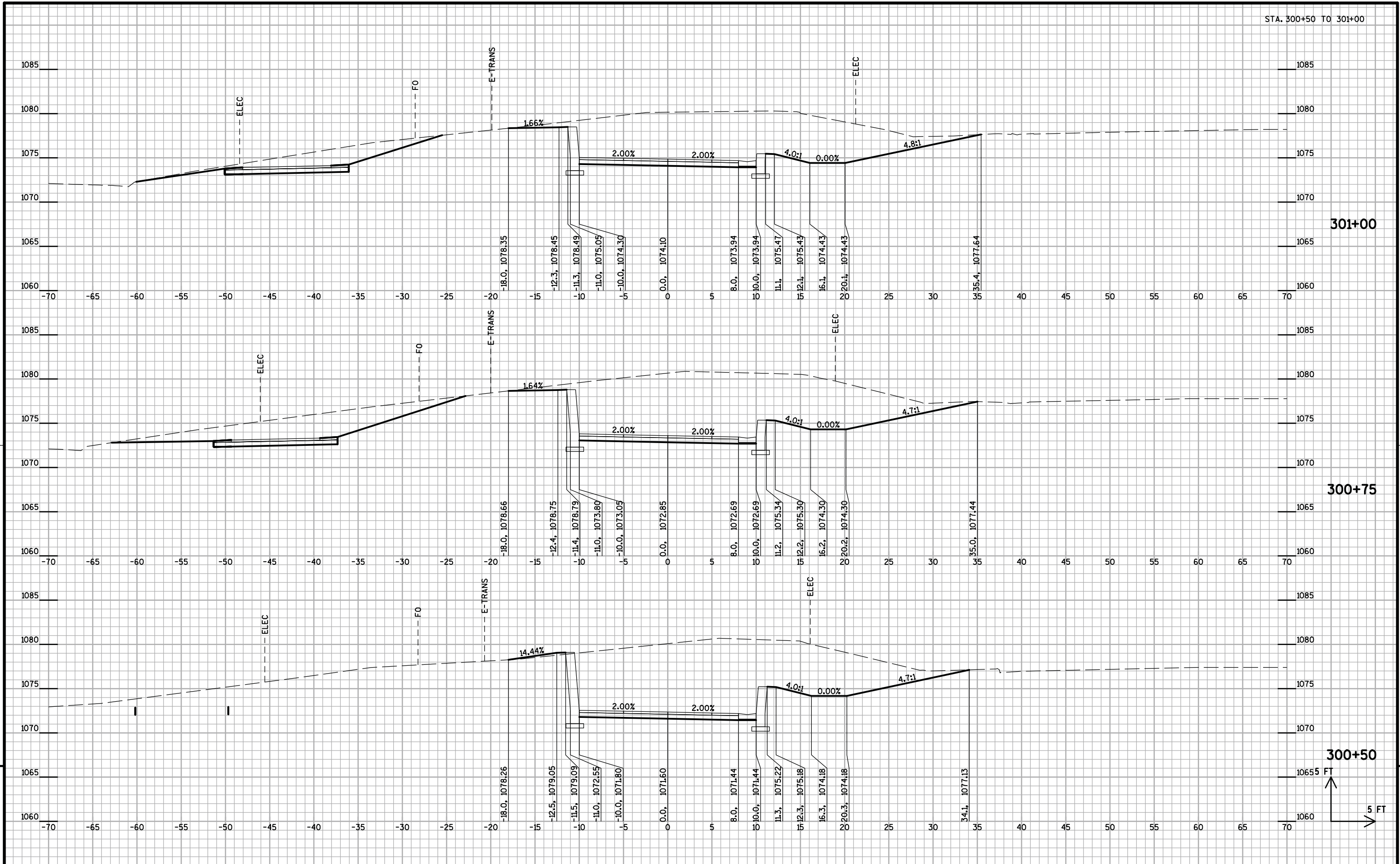


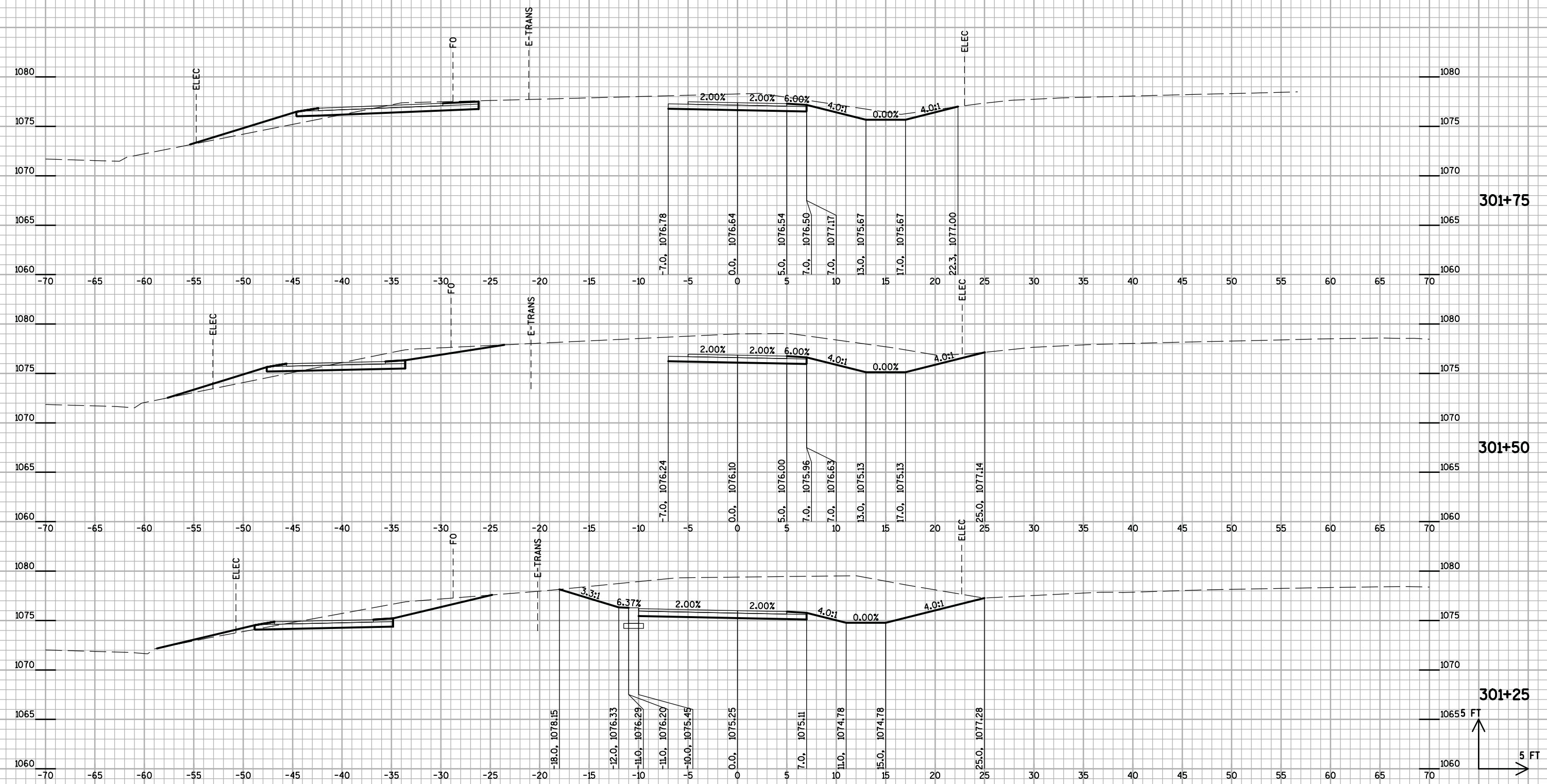
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9

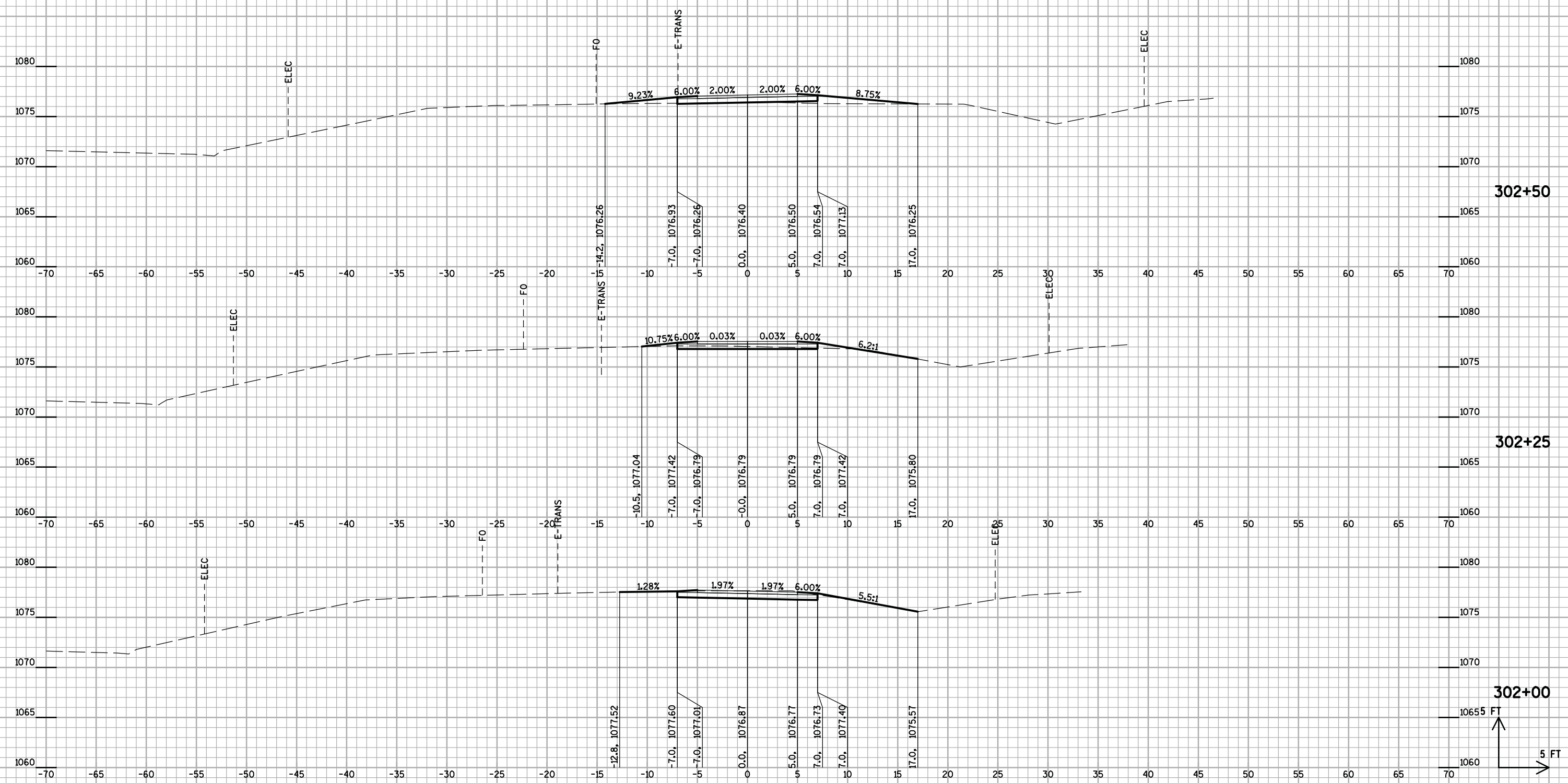


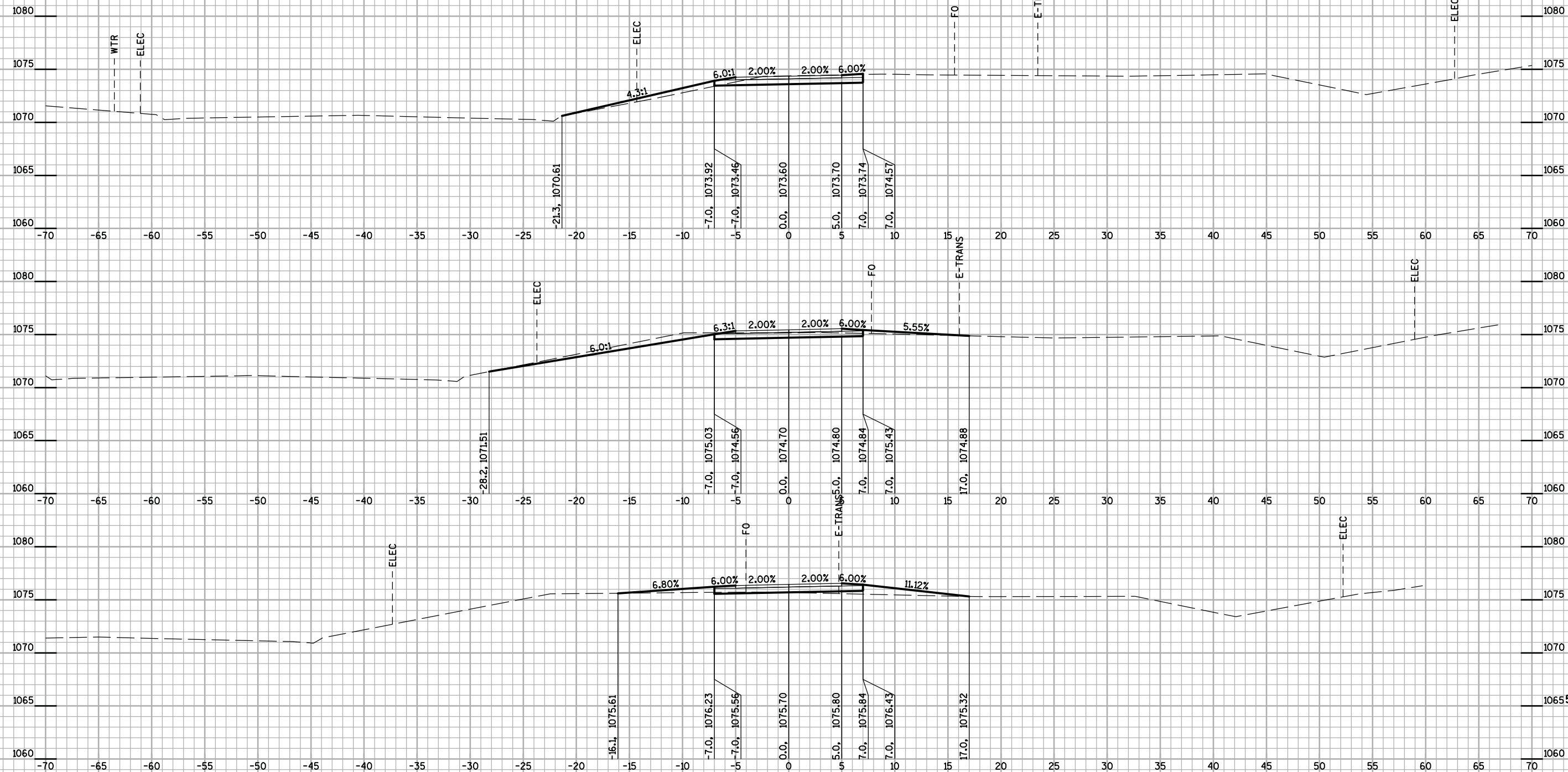




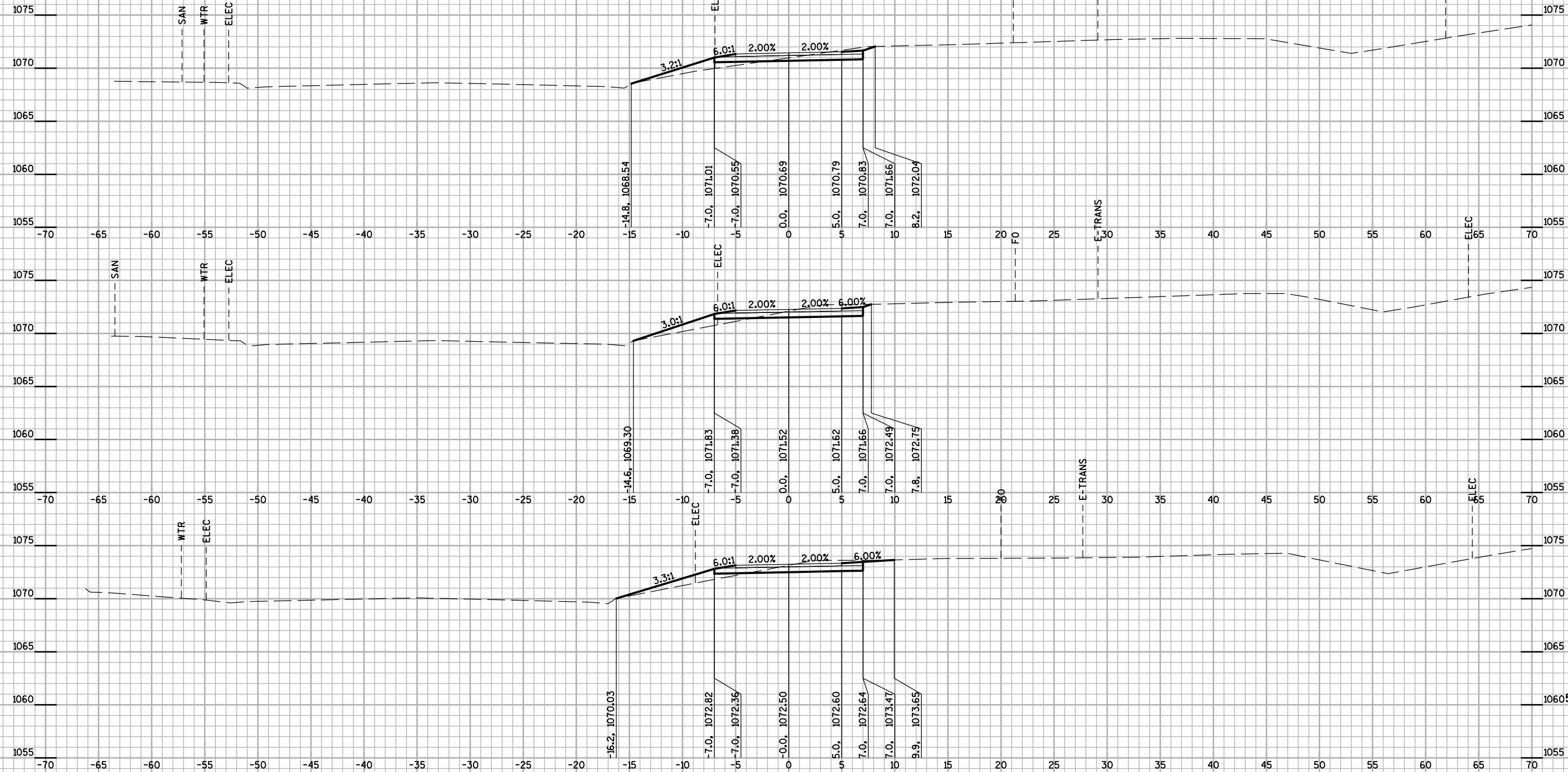
9

9





STA. 303+50 TO 304+00



304+00

303+75

303+50

1060.5 FT

5 FT

PROJECT NO: 5992-10-31

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'BP' LINE

SHEET

PRE_157

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\Sheets\Plan\090210_XS_BP Line.dgn

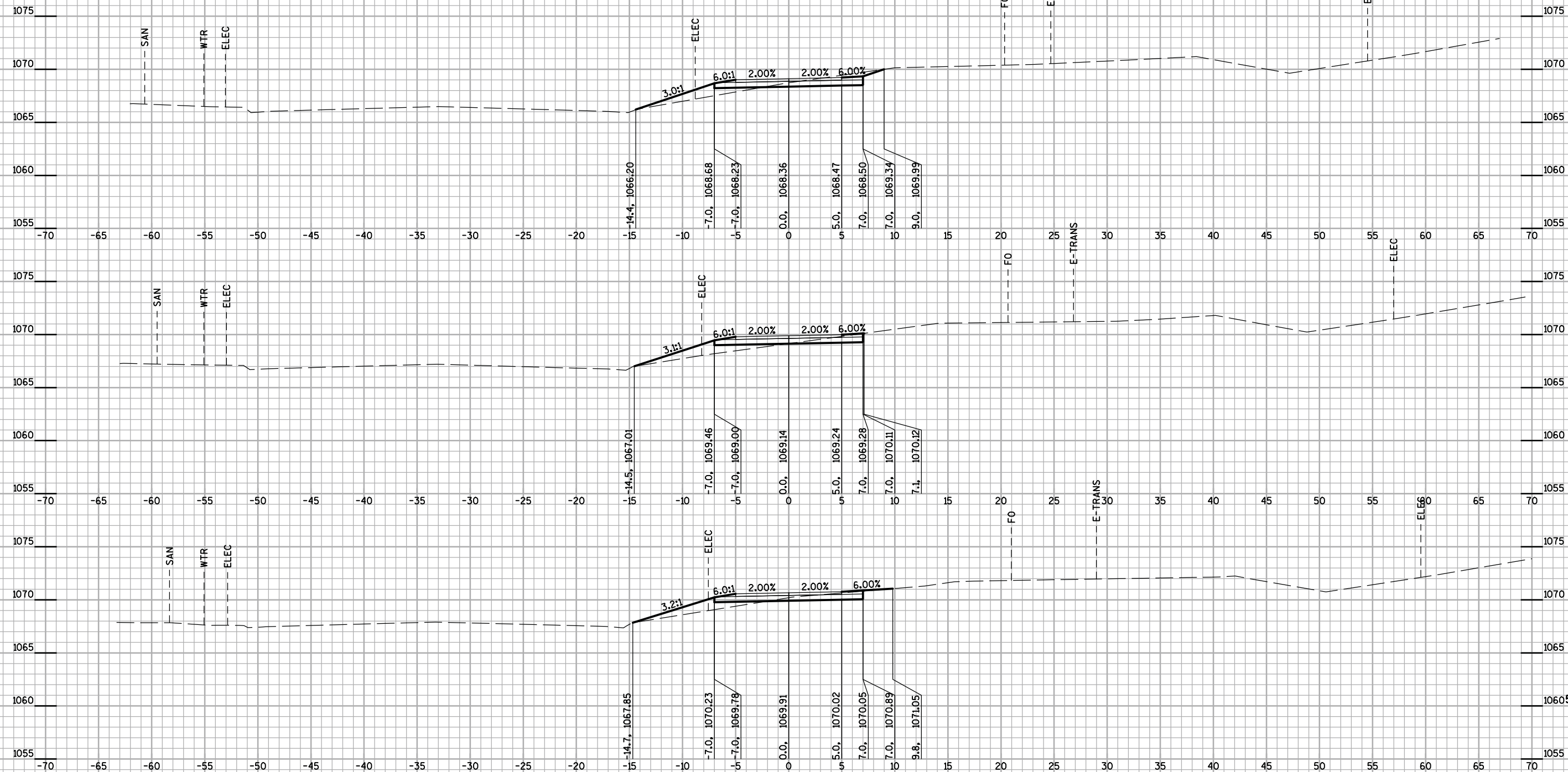
PLOT DATE : 5/13/2019

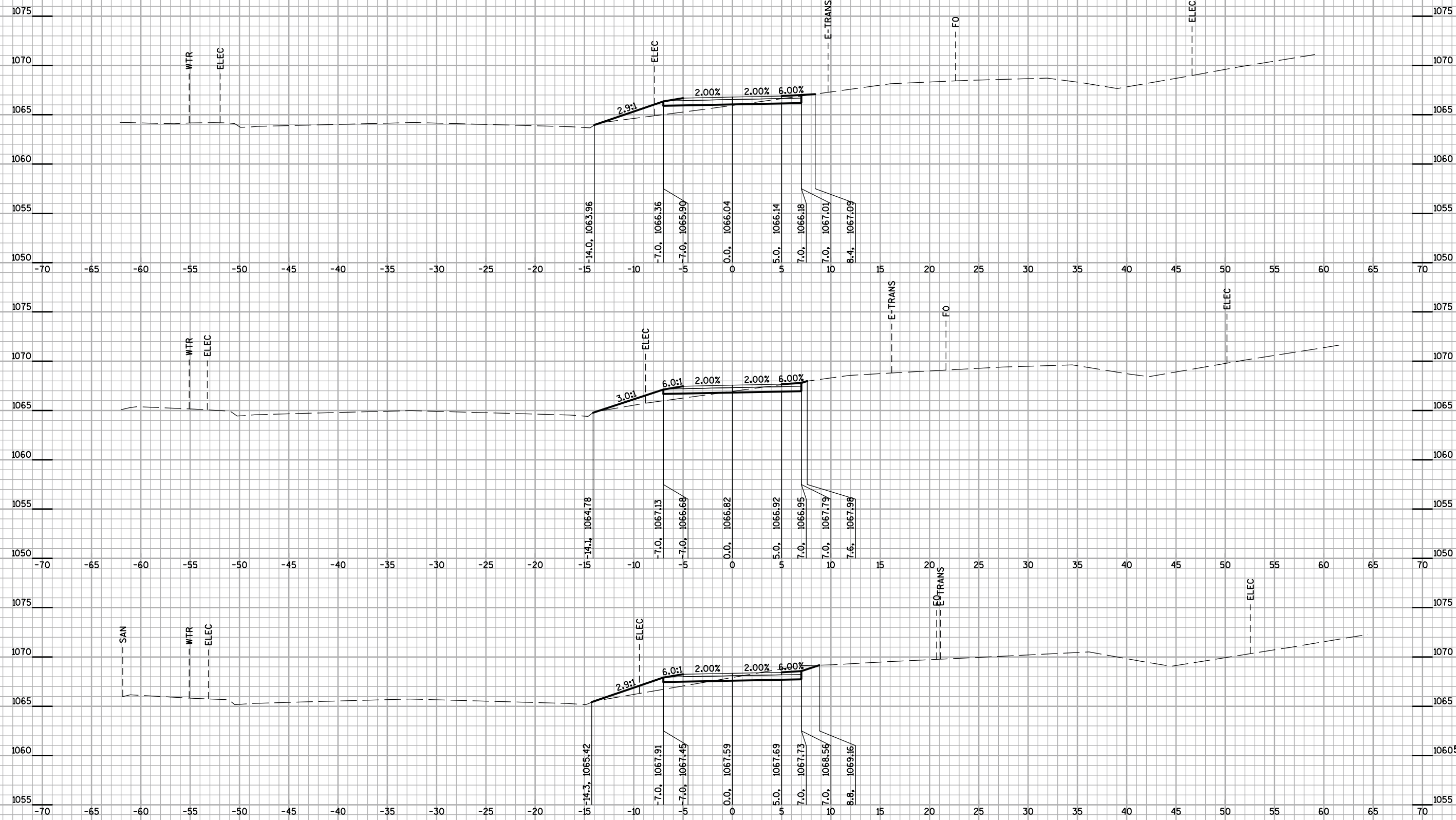
PLOT BY : kk226

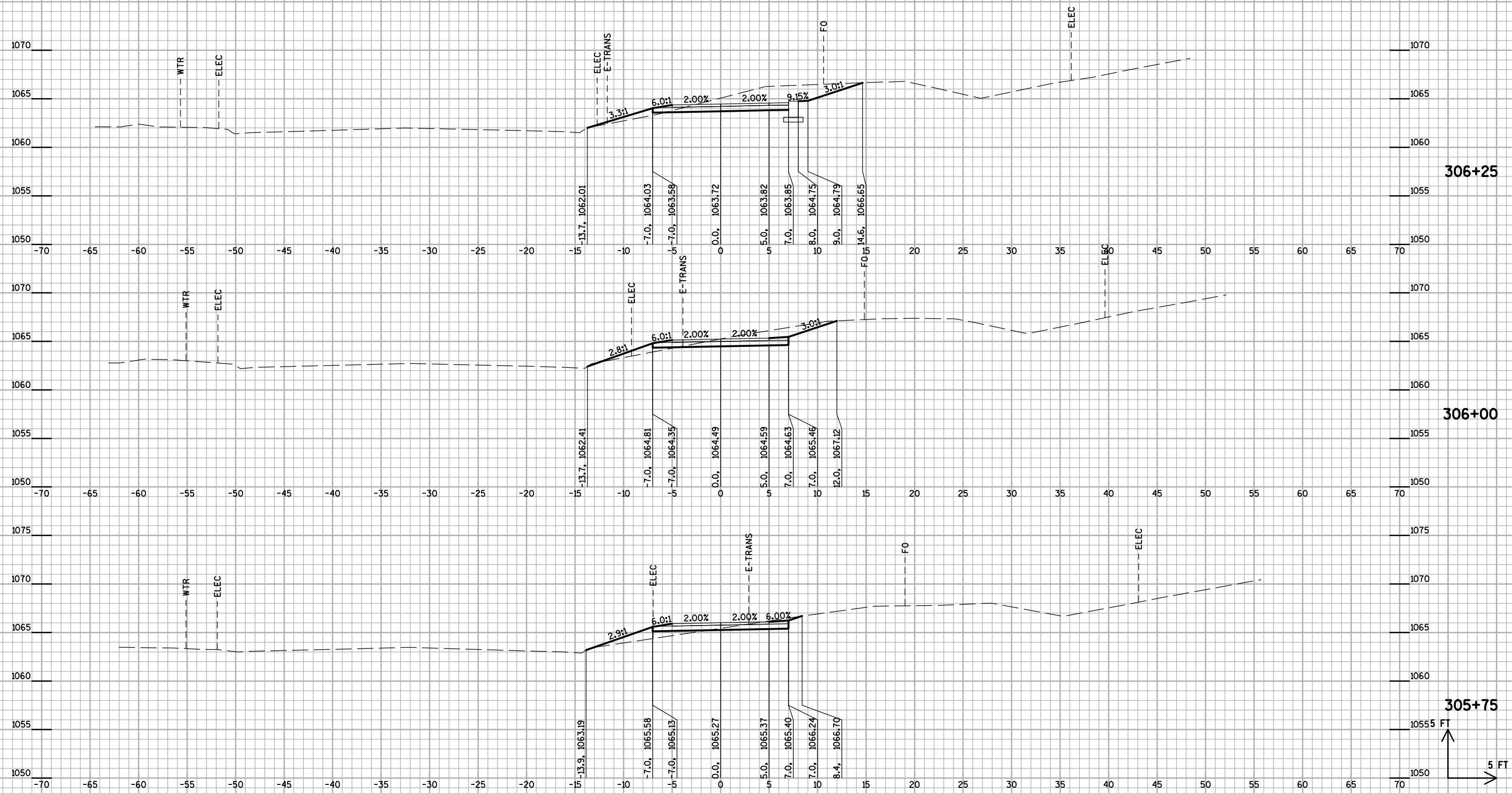
PLOT NAME :

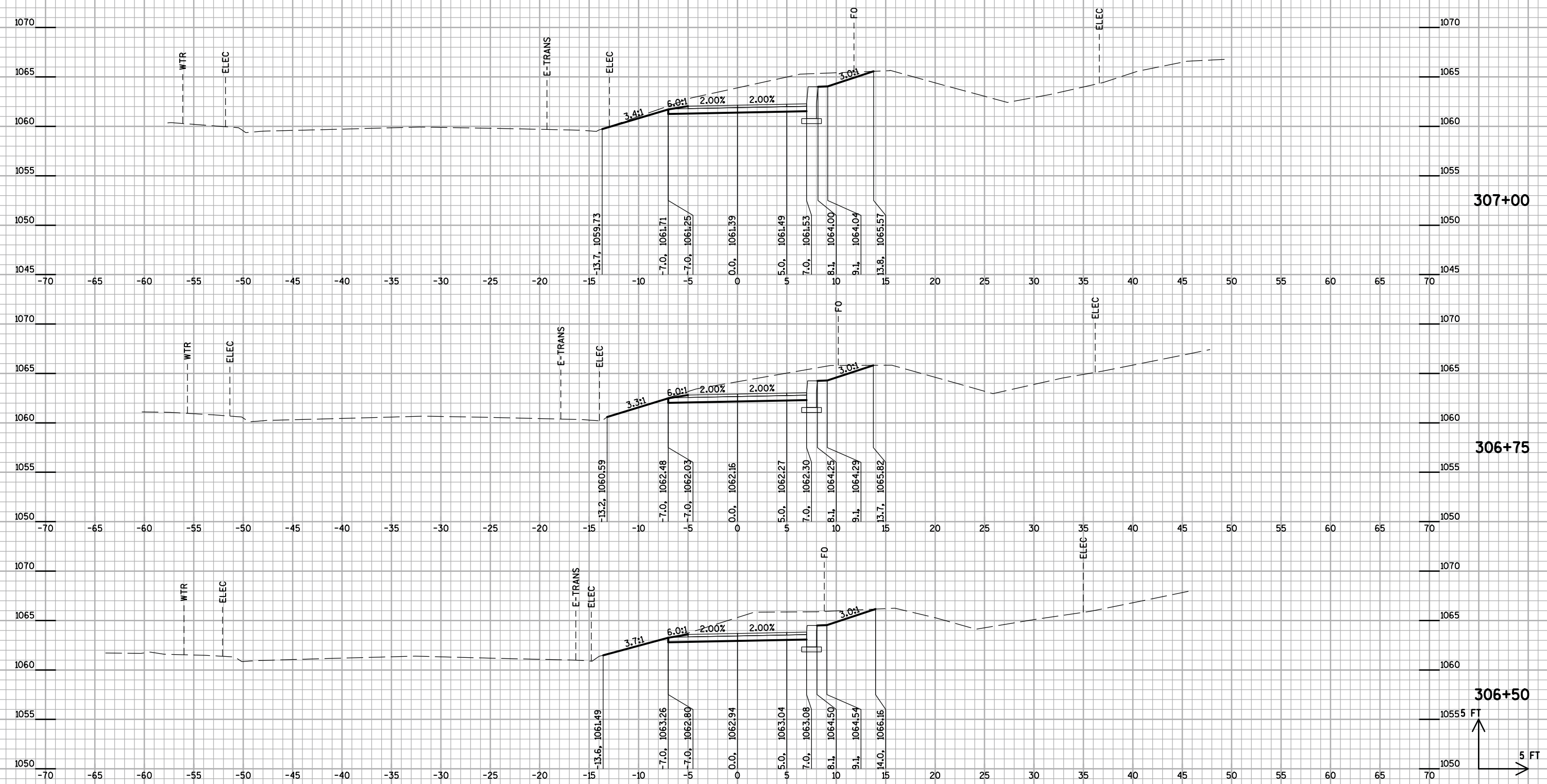
PLOT SCALE : 1:10

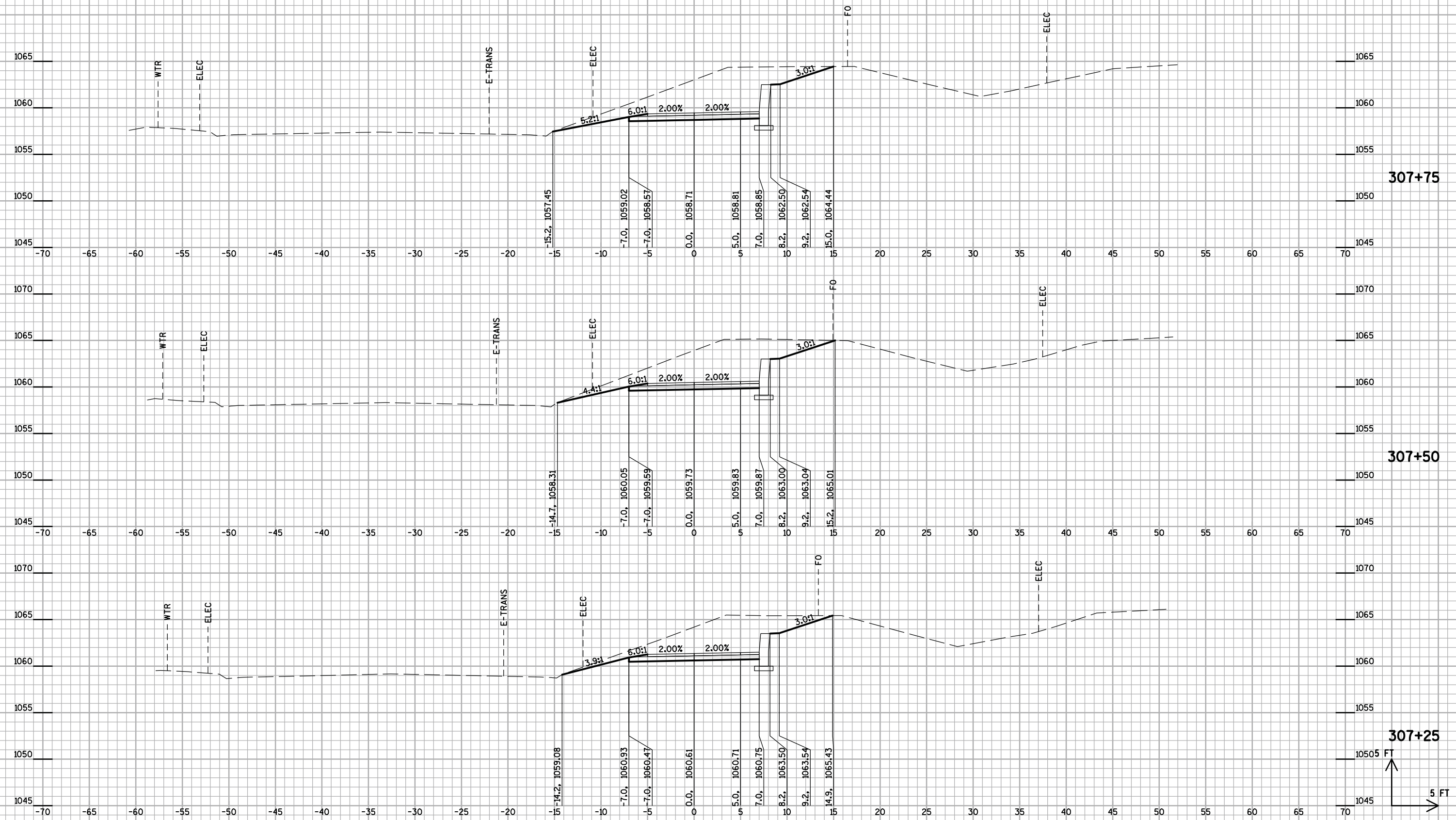
WISDOT/CADDs SHEET 21







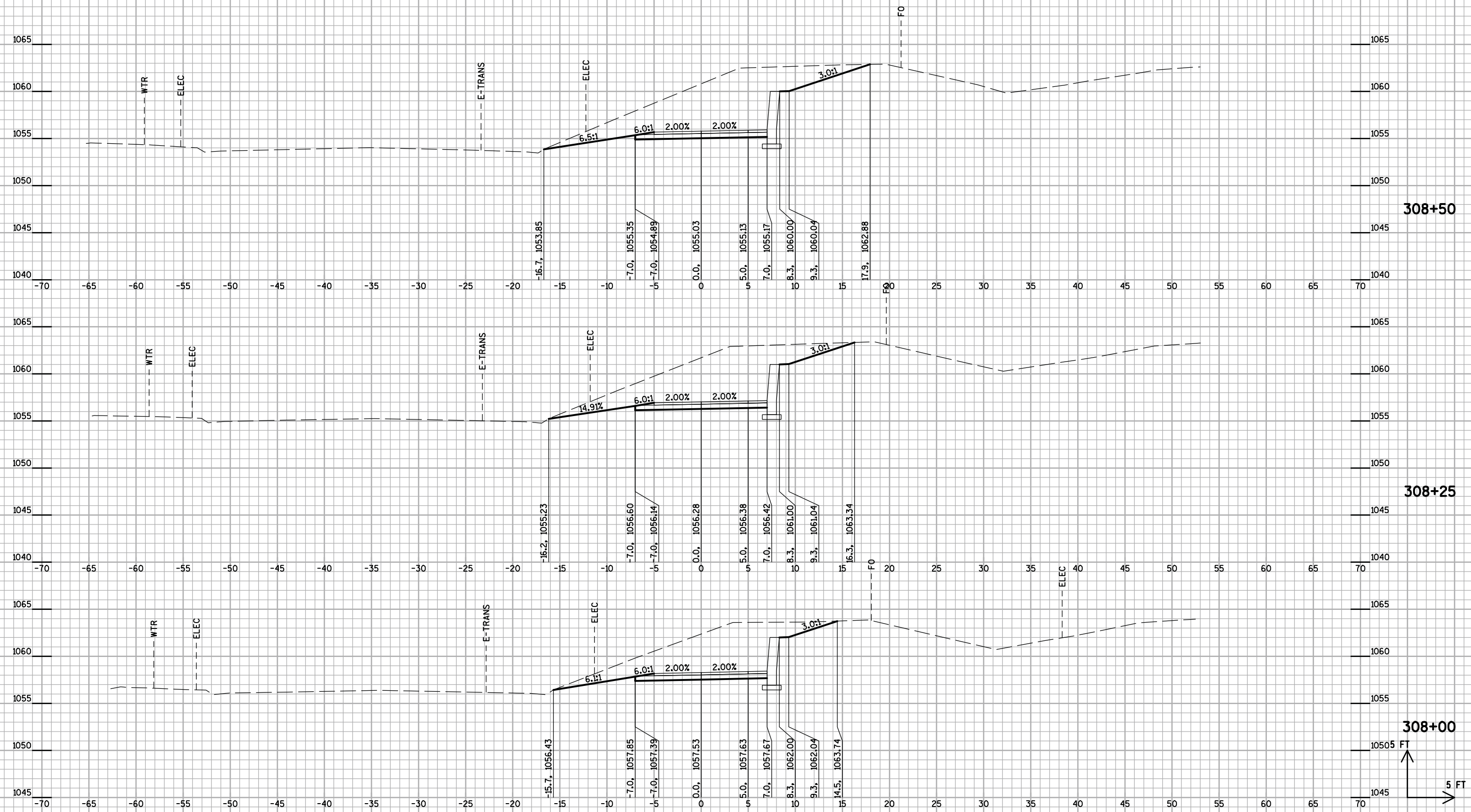




9

9

STA. 308+00 TO 308+50



PROJECT NO:5992-10-31

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'BP' LINE

SHEET

PRE_163

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\Sheets\Plan\090210_XS_BP Line.dgn

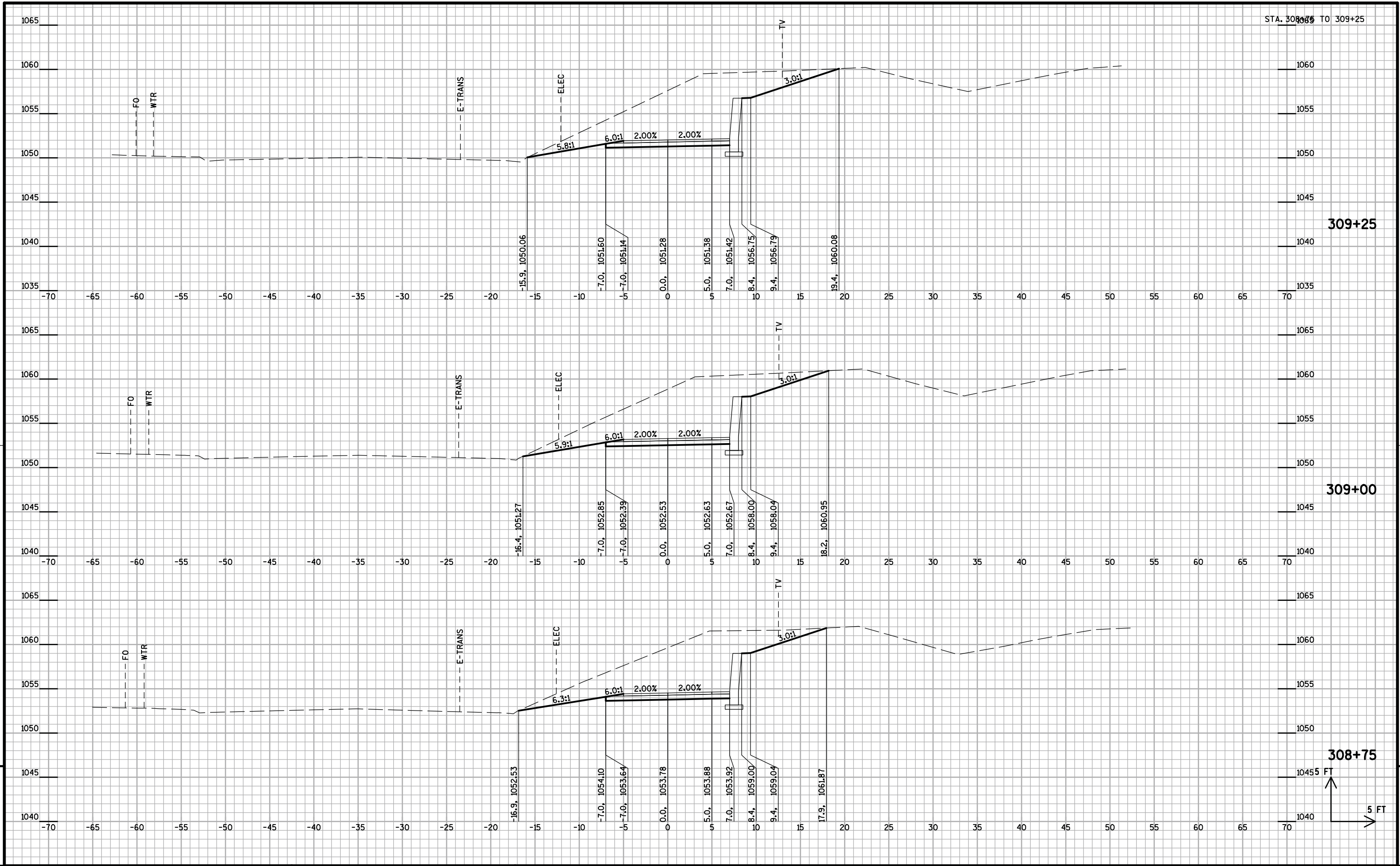
PLOT DATE : 5/13/2019

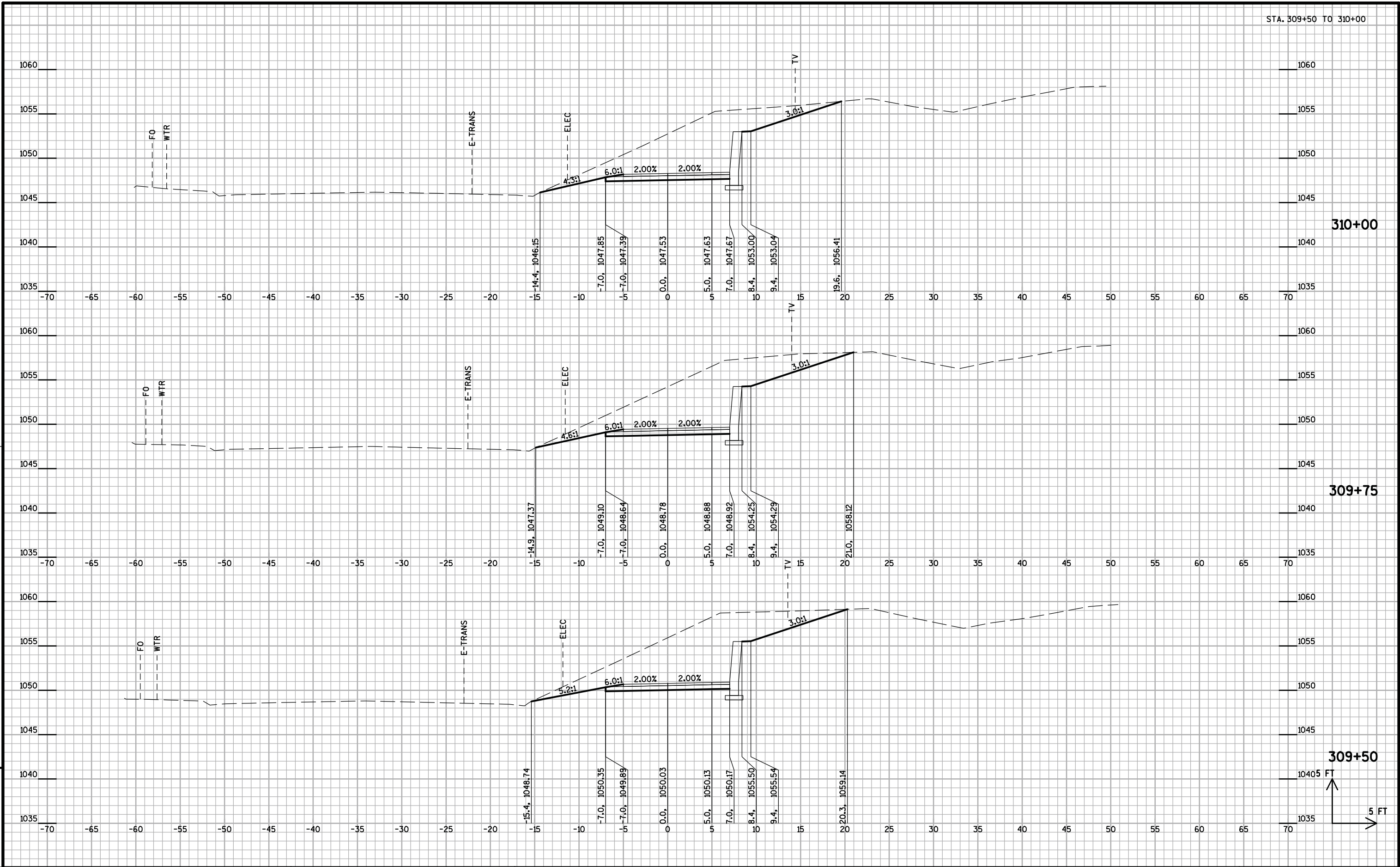
PLOT BY : kk226

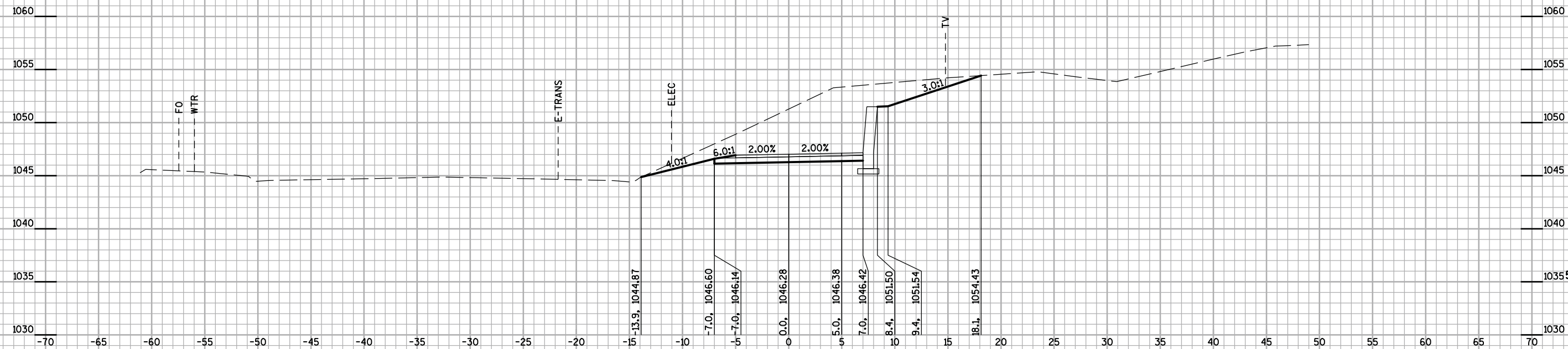
PLOT NAME :

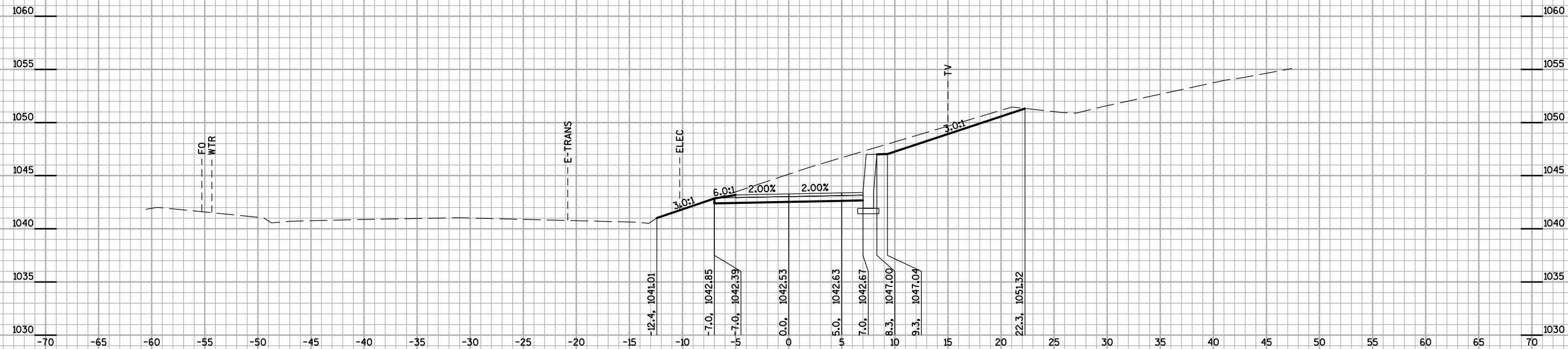
PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21

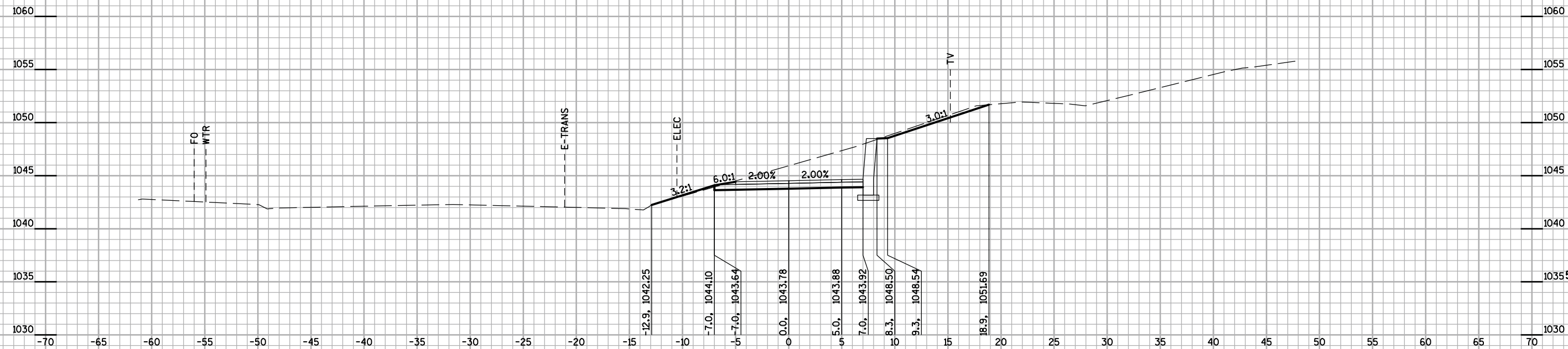




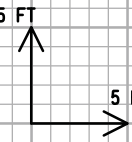


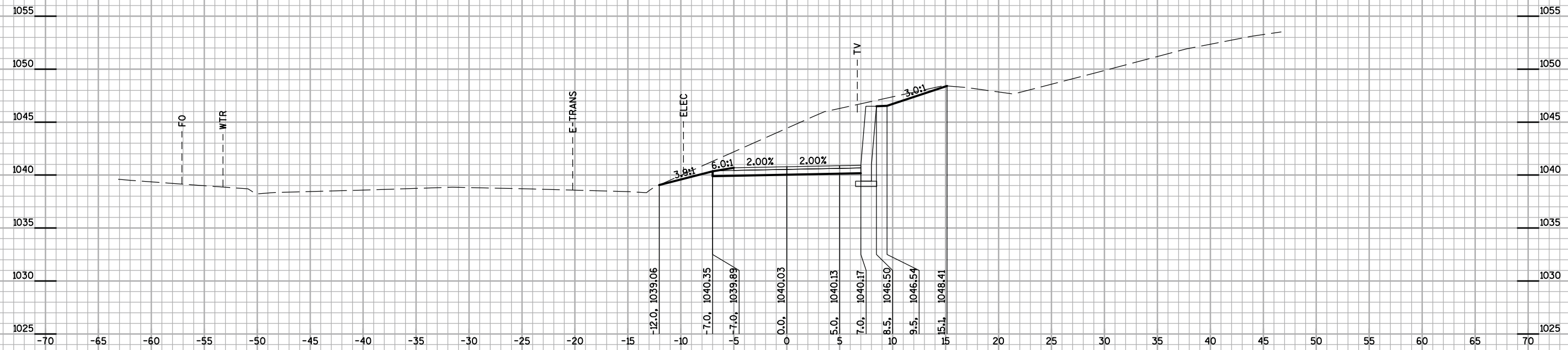


311+00

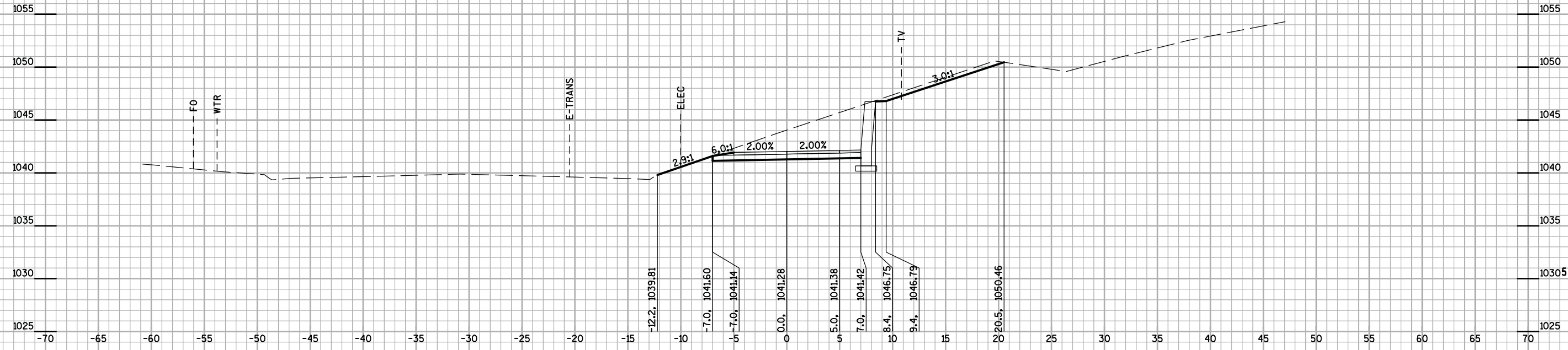


310+75

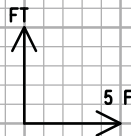


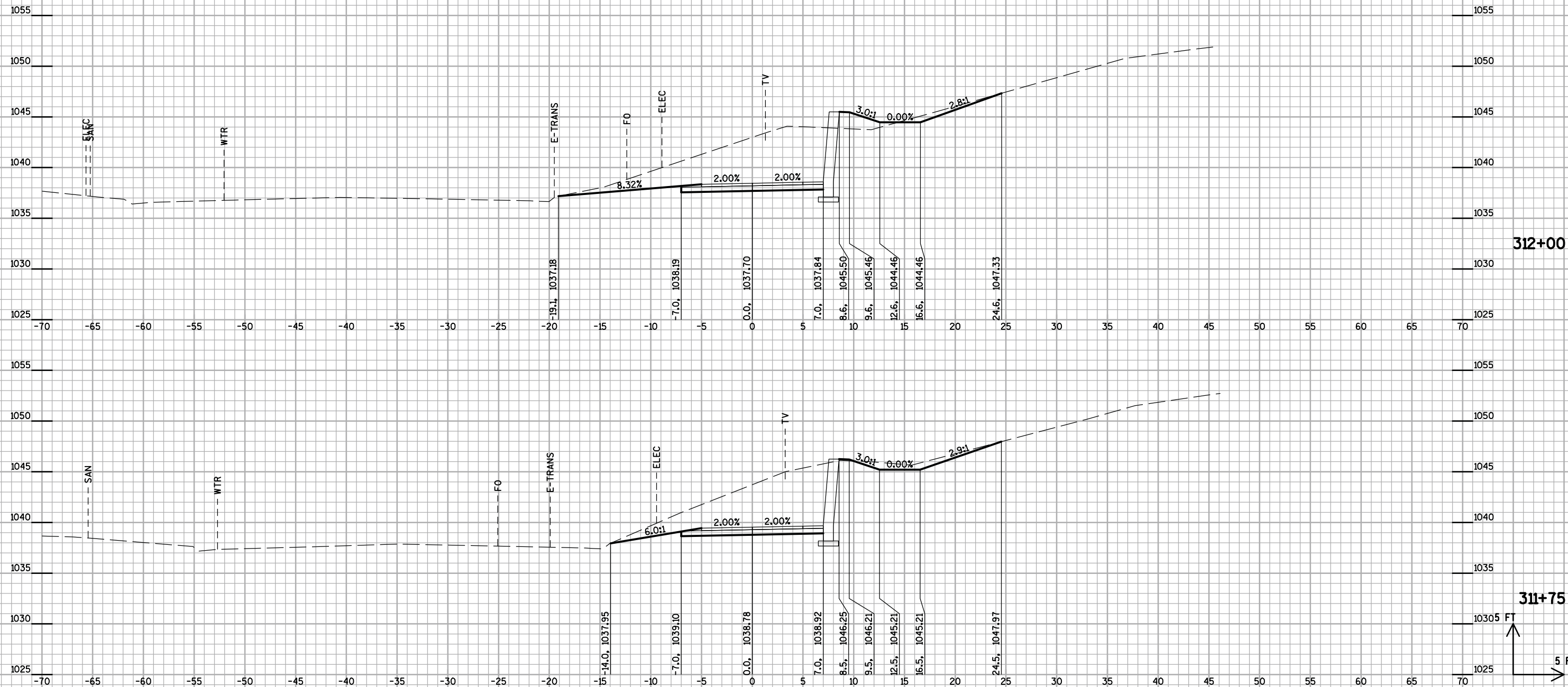


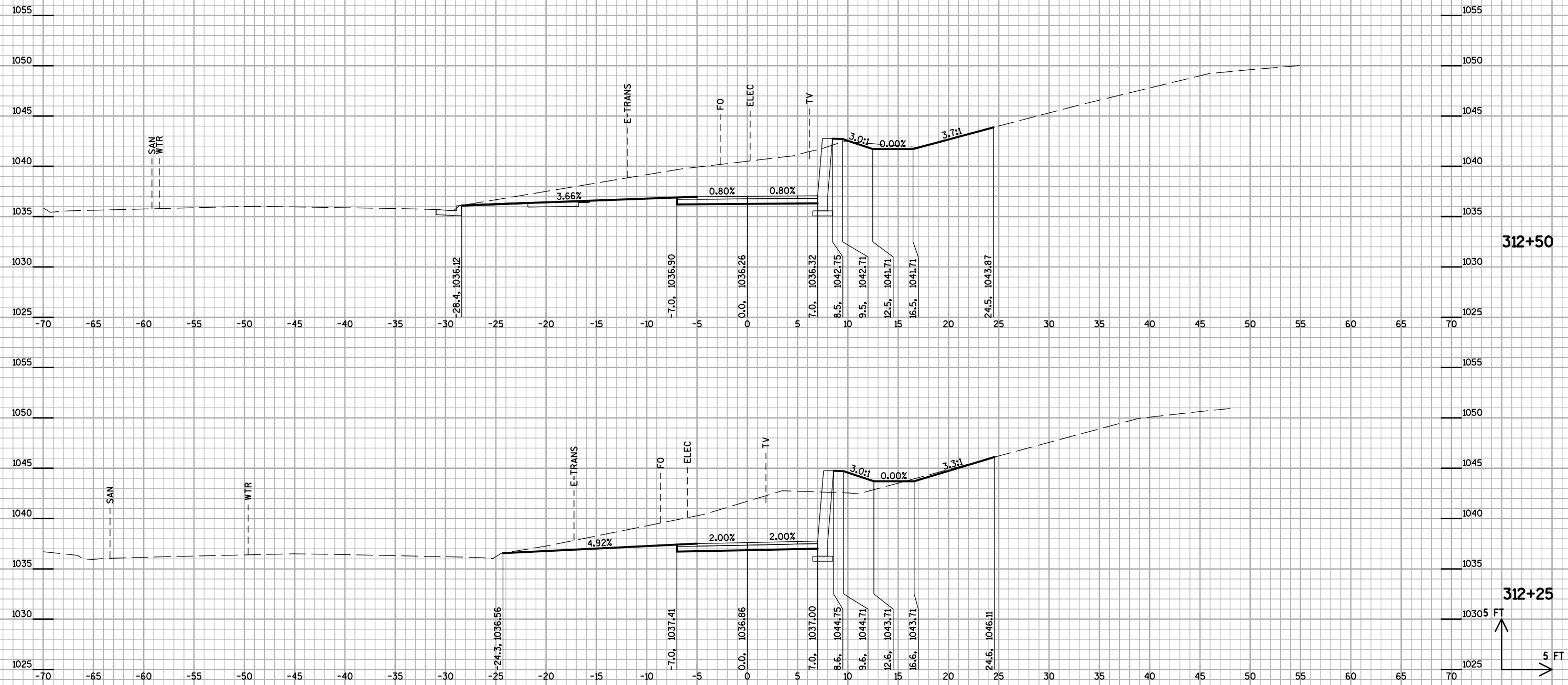
311+50

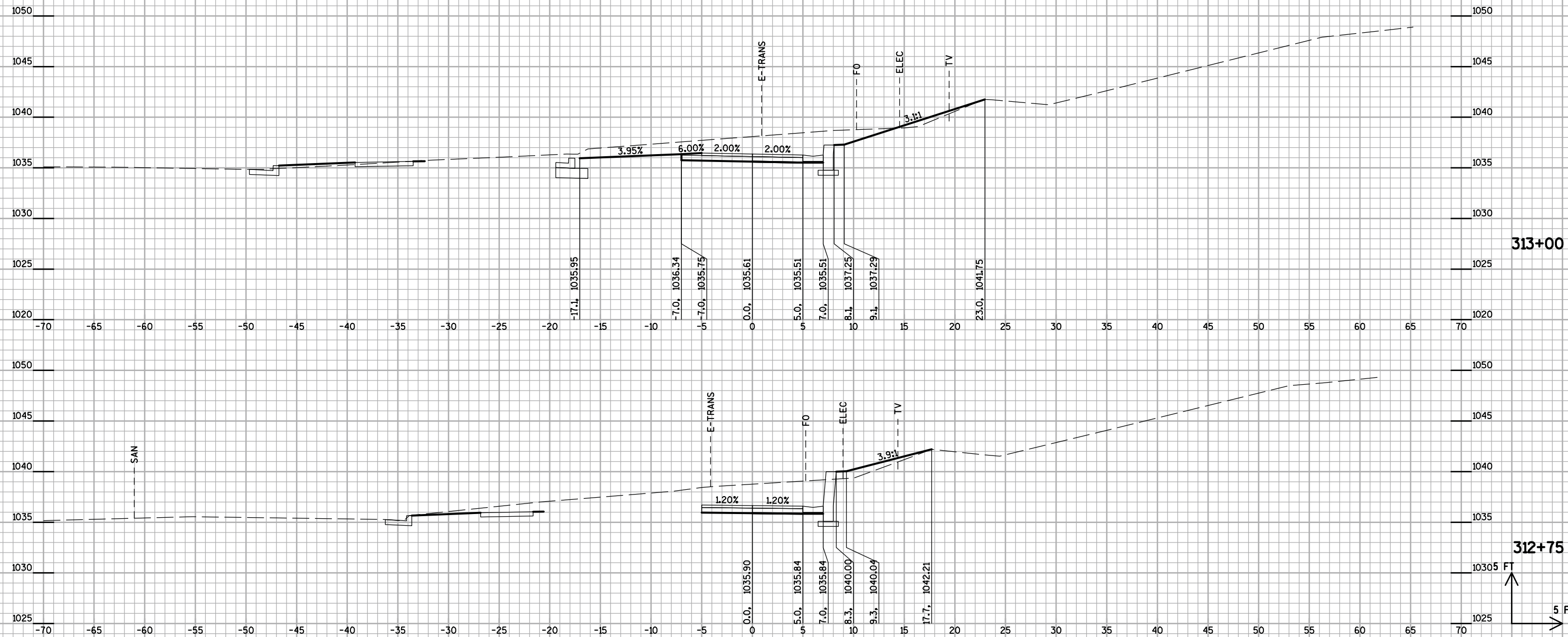


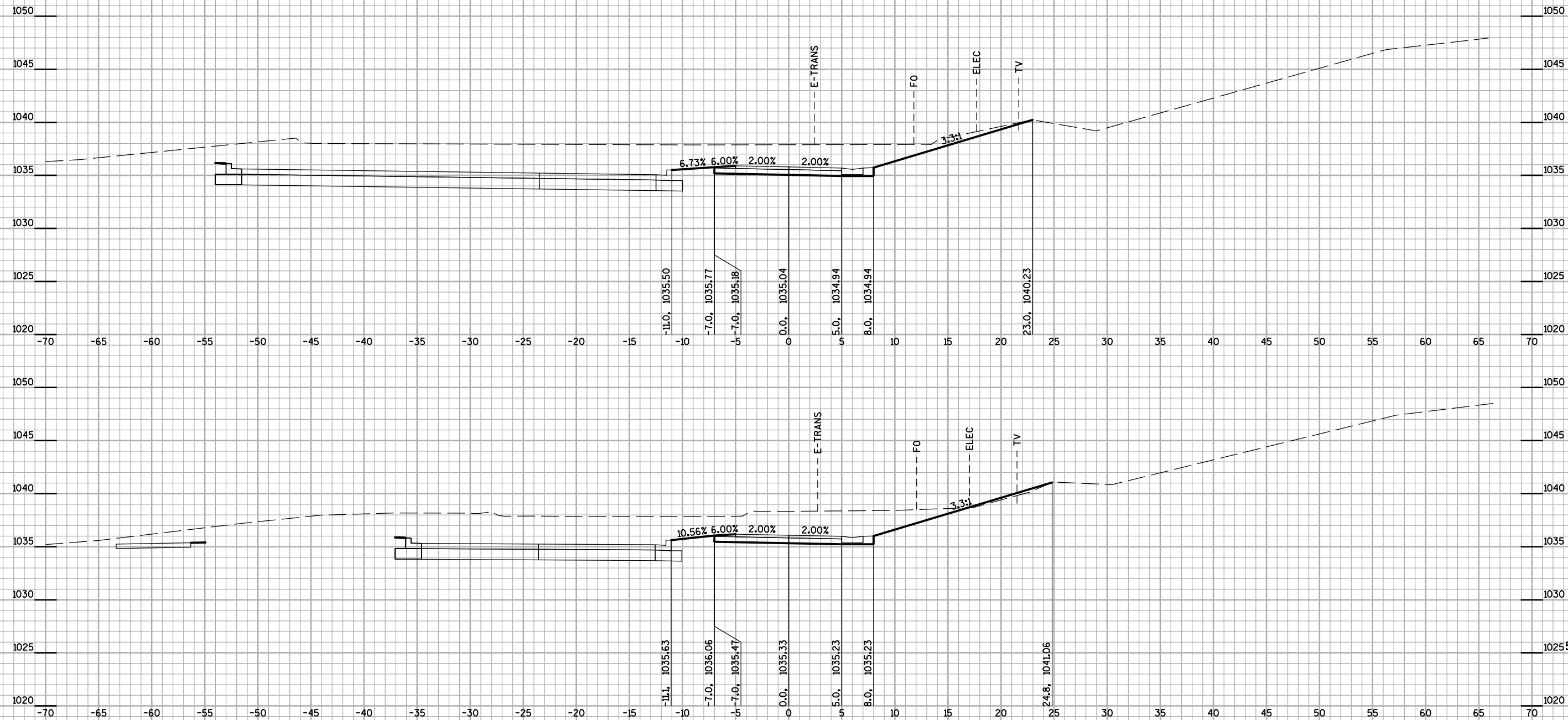
311+25





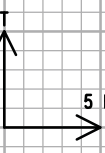


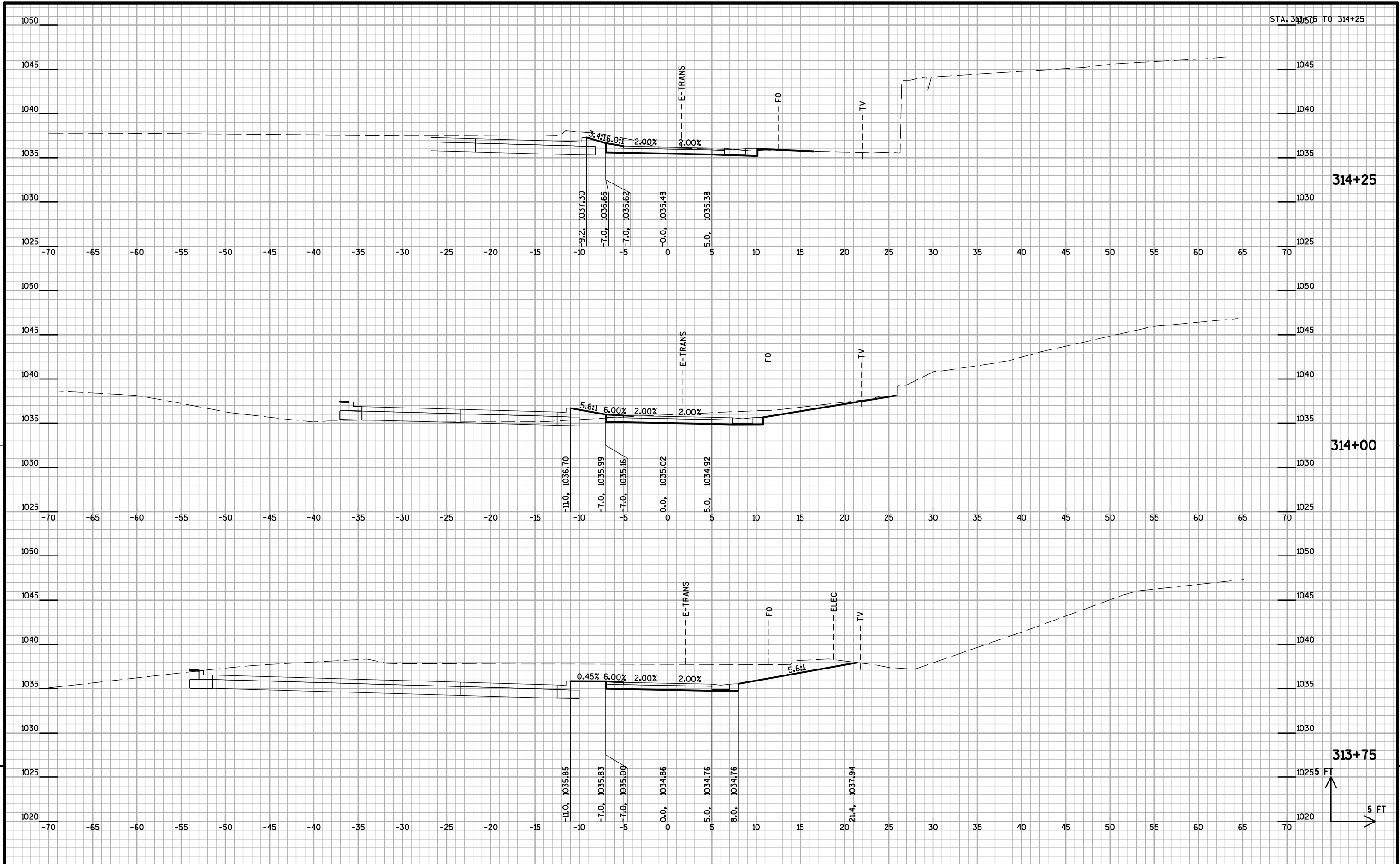


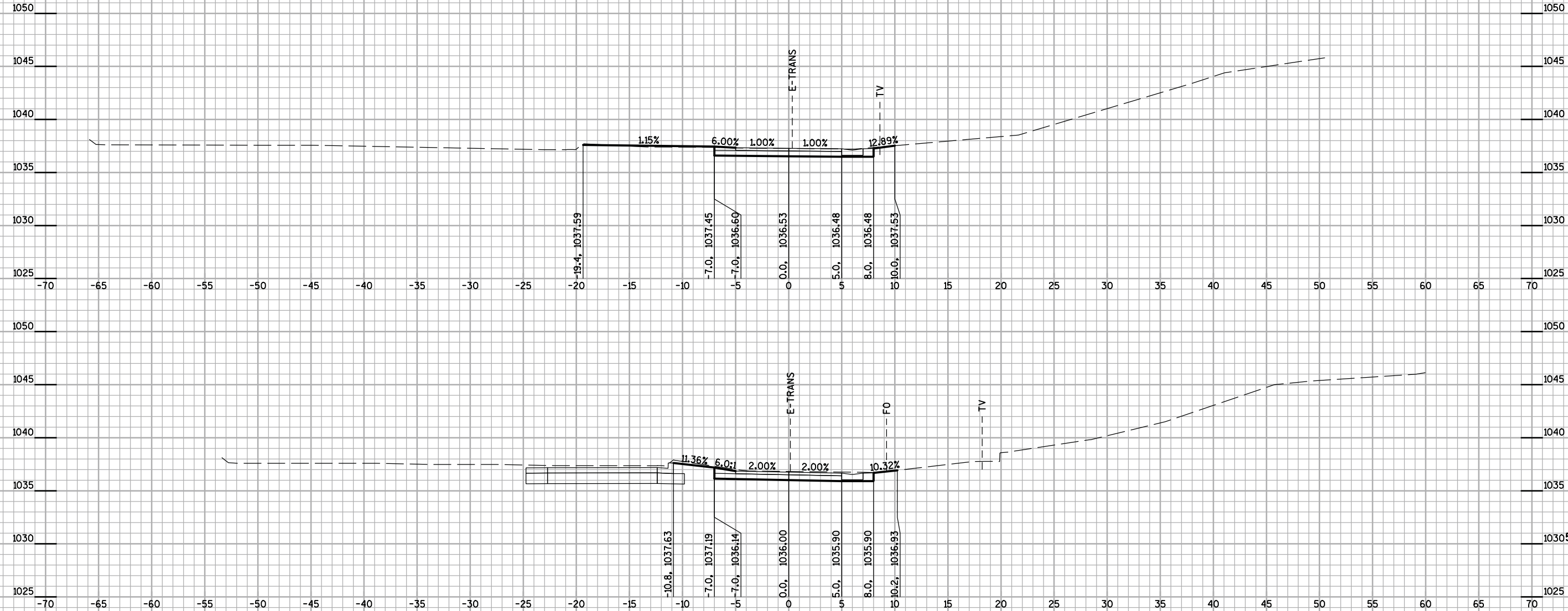


313+50

313+25





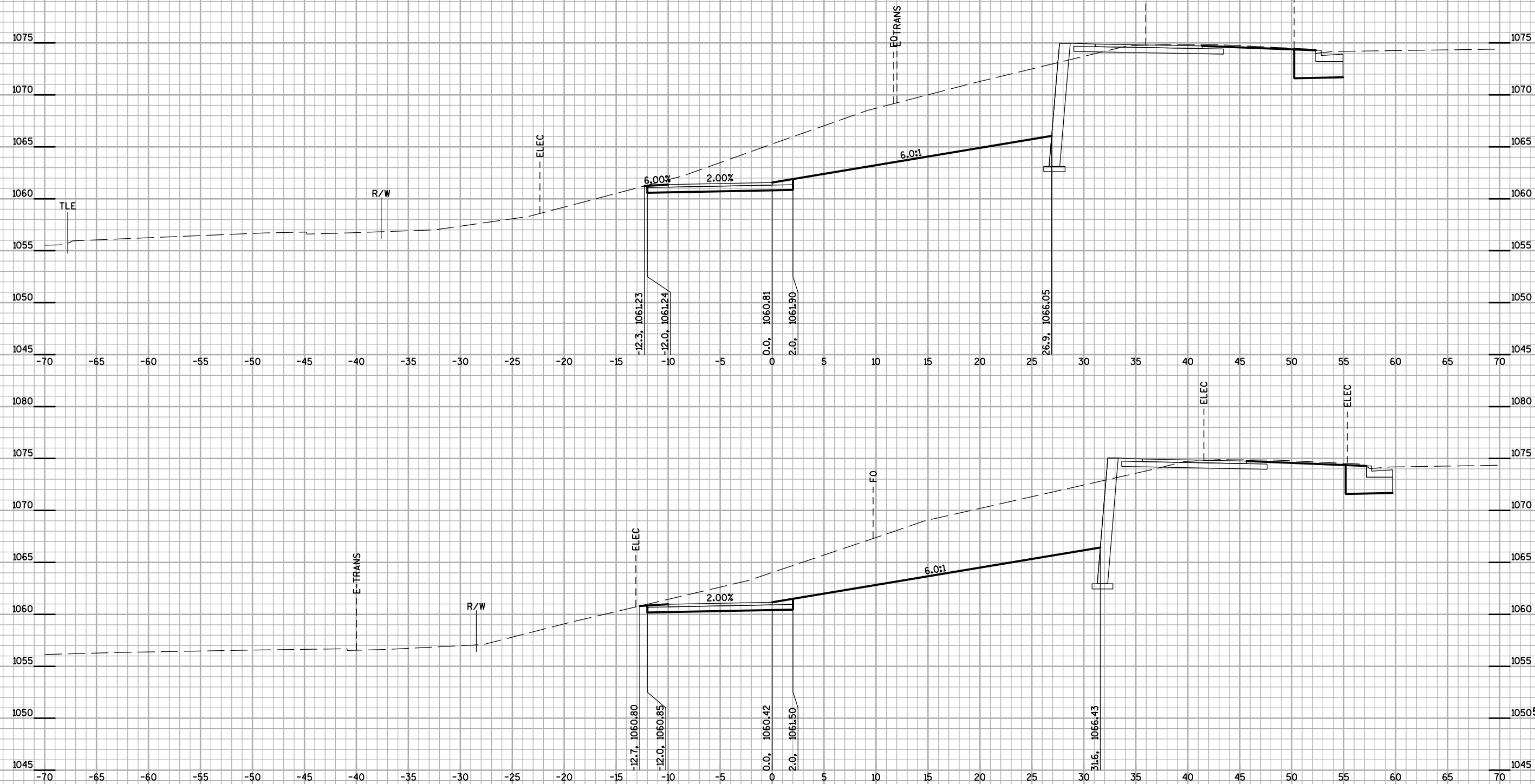


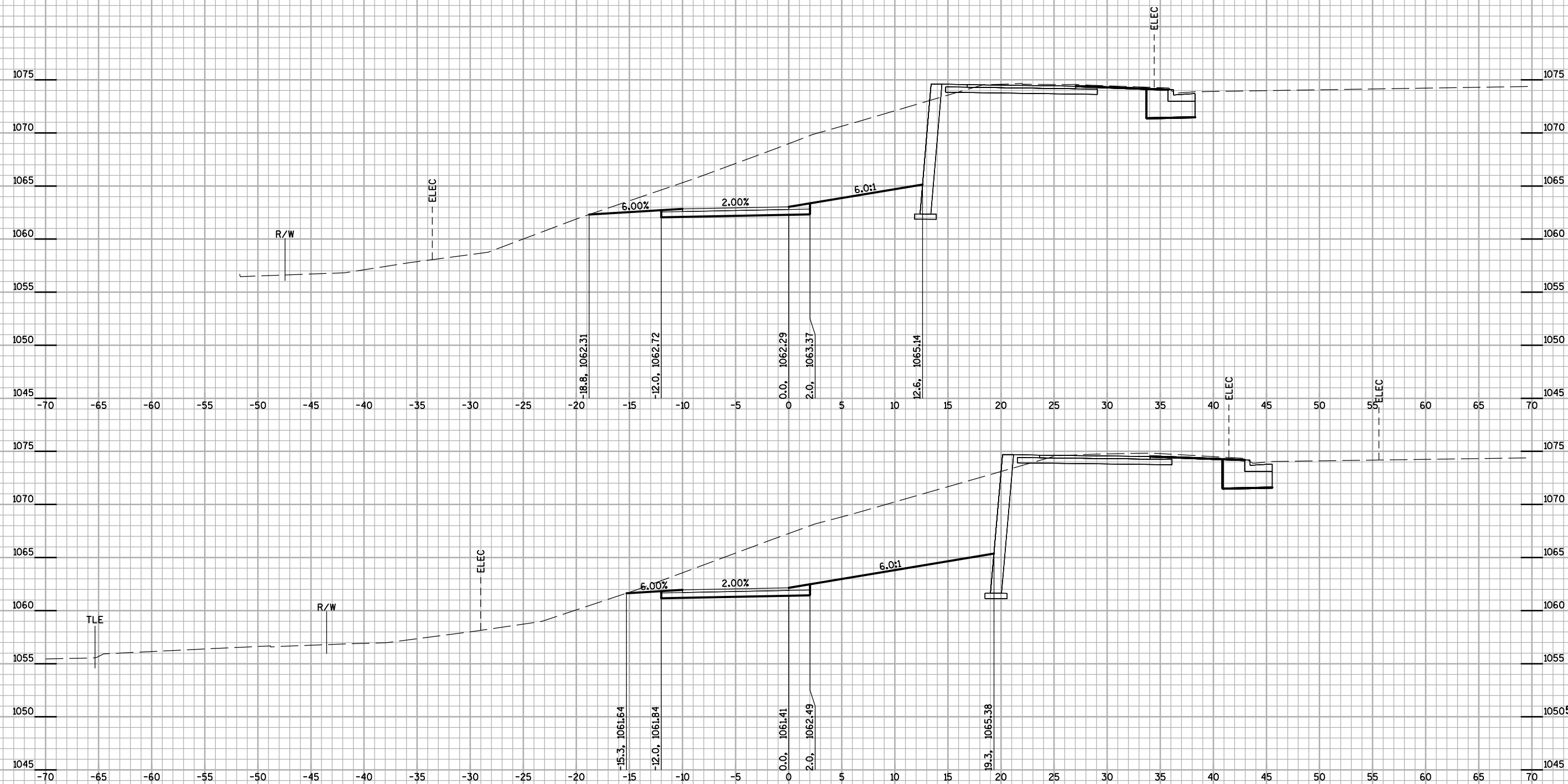
314+75

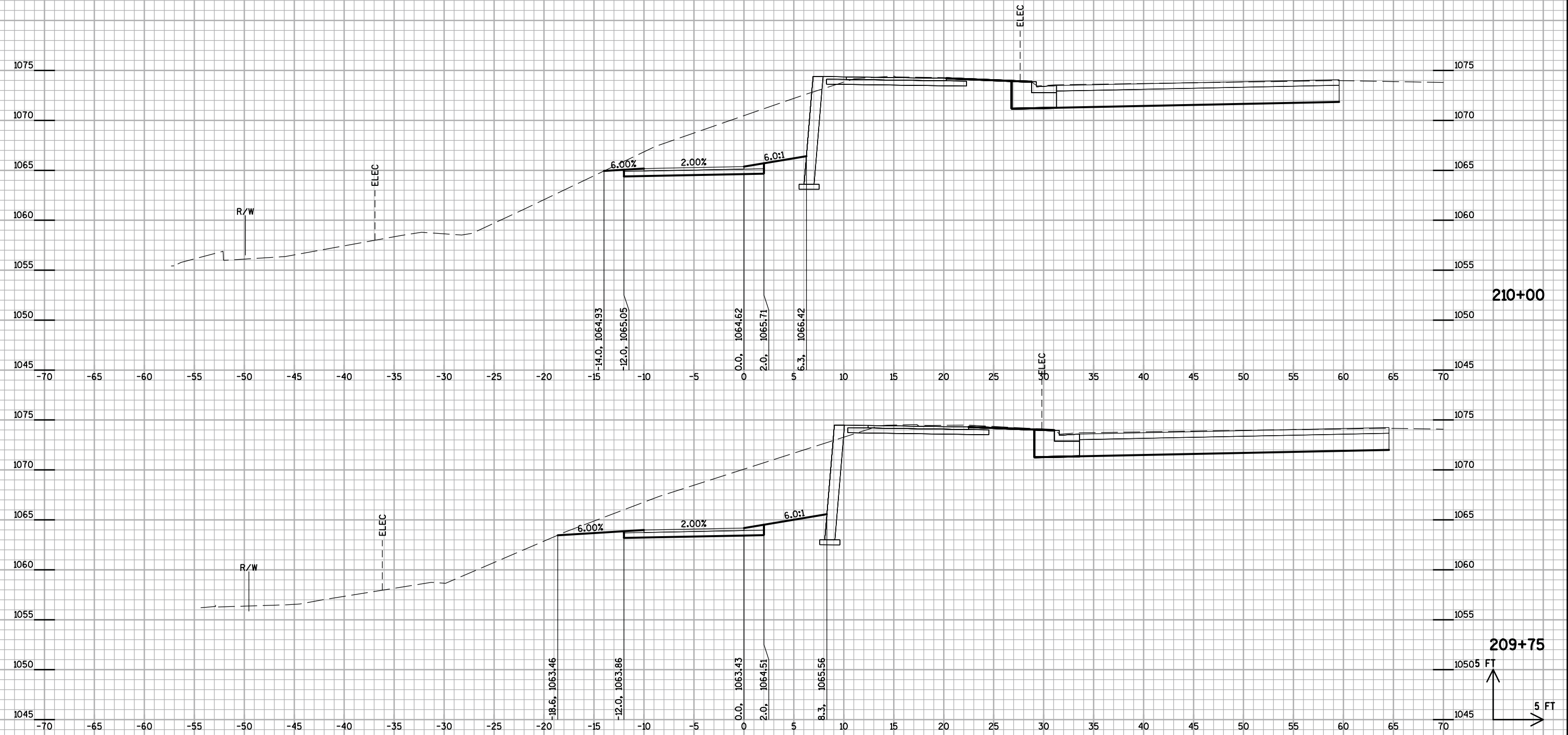
314+50

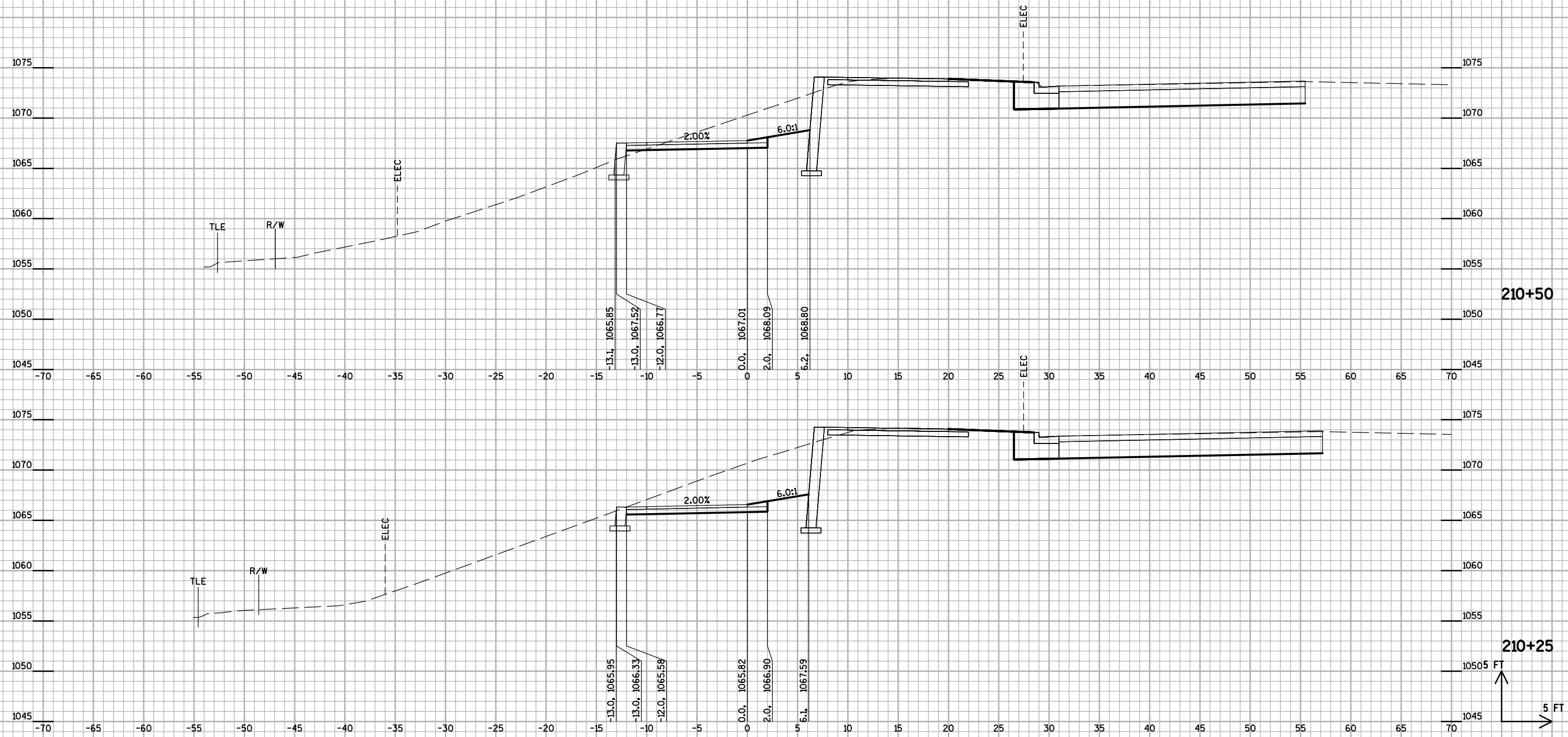
5 FT

5 FT

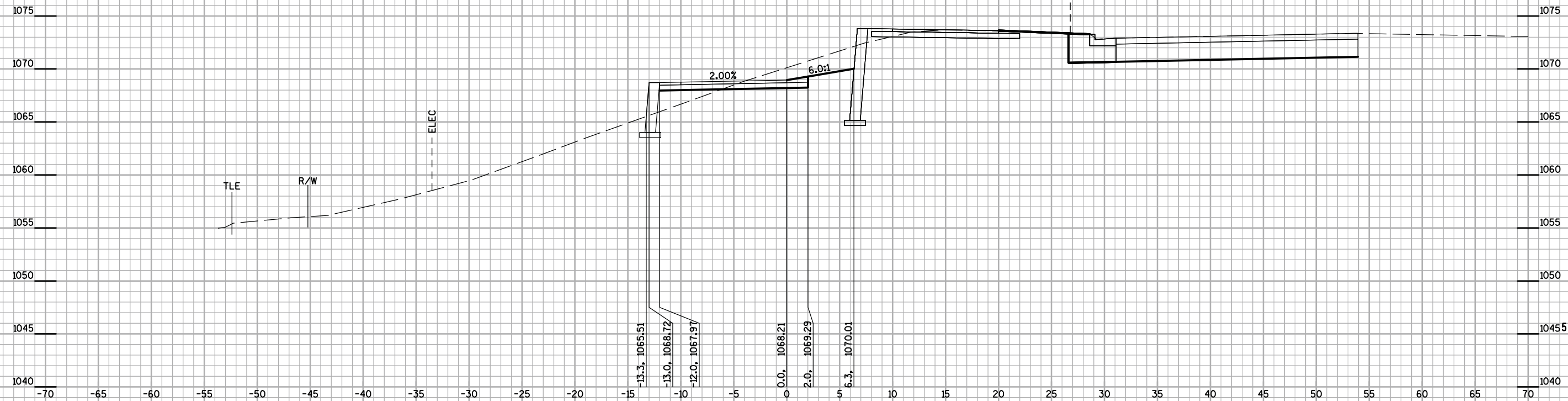
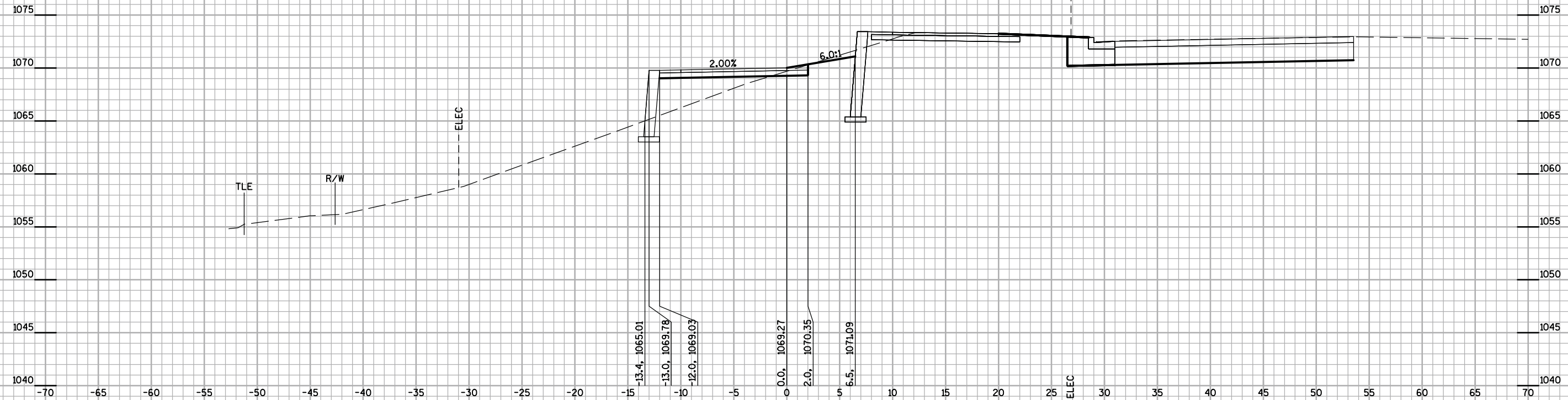








STA. 210+75 TO 211+00



210+75

10455 FT

5 FT

PROJECT NO:5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'BC' LINE

SHEET

PRE_179

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090211_XS_BC Line.dgn

PLOT DATE : 5/10/2019

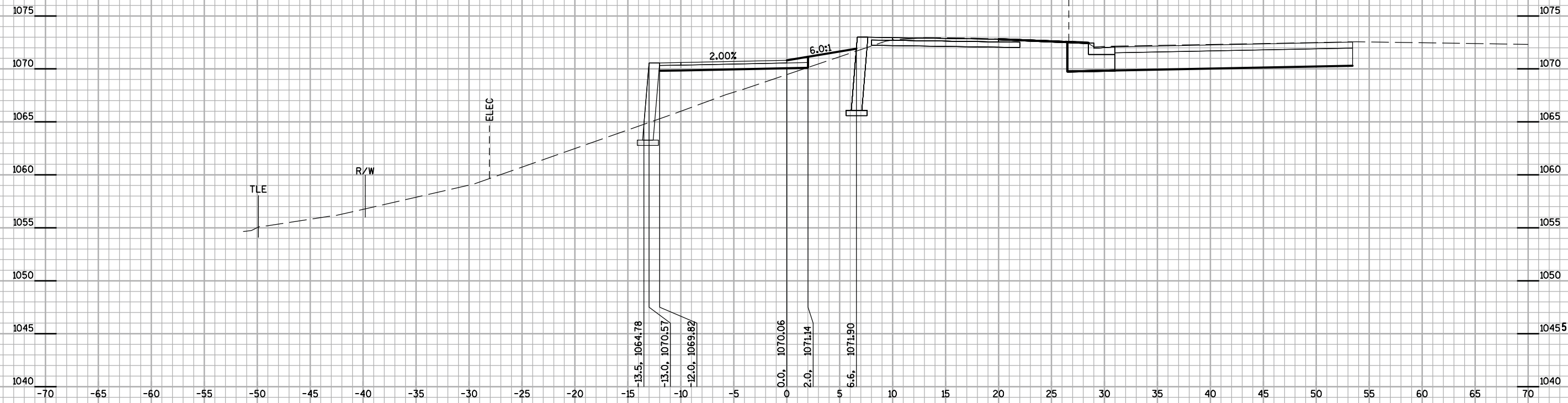
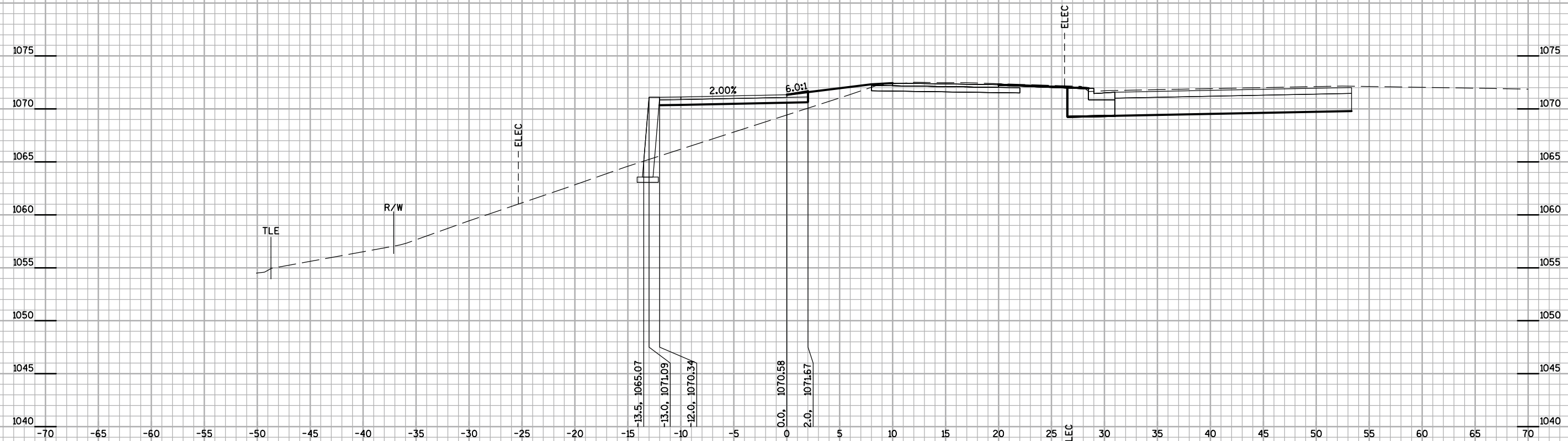
PLOT BY : kk226

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADS SHEET 21

STA. 211+25 TO 211+50



PROJECT NO: 5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'BC' LINE

SHEET

PRE_180

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\Sheets\Plan\090211_XS_BC Line.dgn

PLOT DATE : 5/10/2019

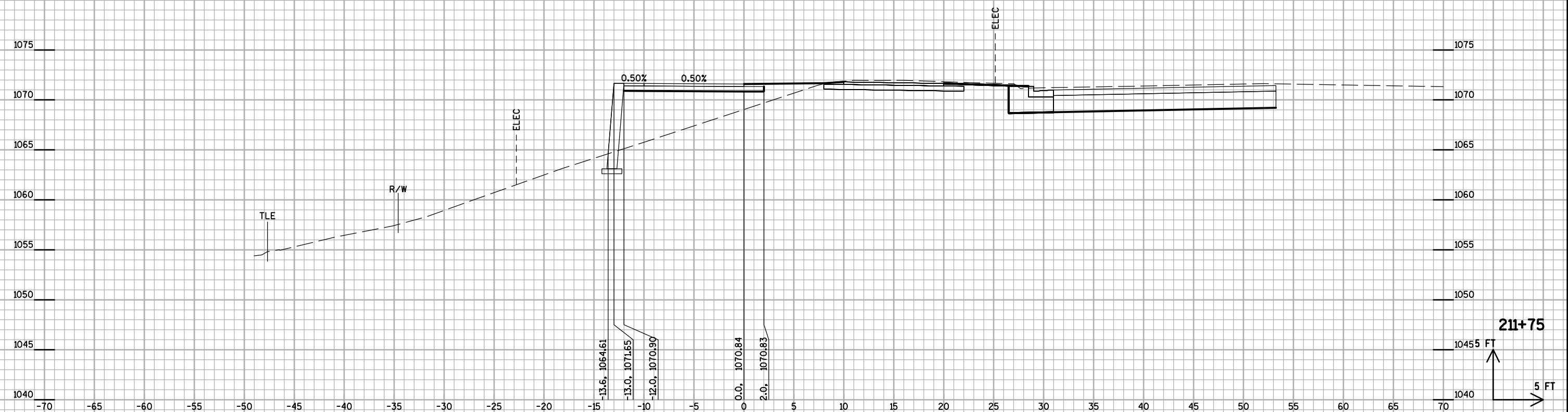
PLOT BY : kk226

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADS SHEET 21

STA. 211+75 TO 211+75



PROJECT NO: 5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'BC' LINE

SHEET

PRE_181

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090211_XS_BC Line.dgn

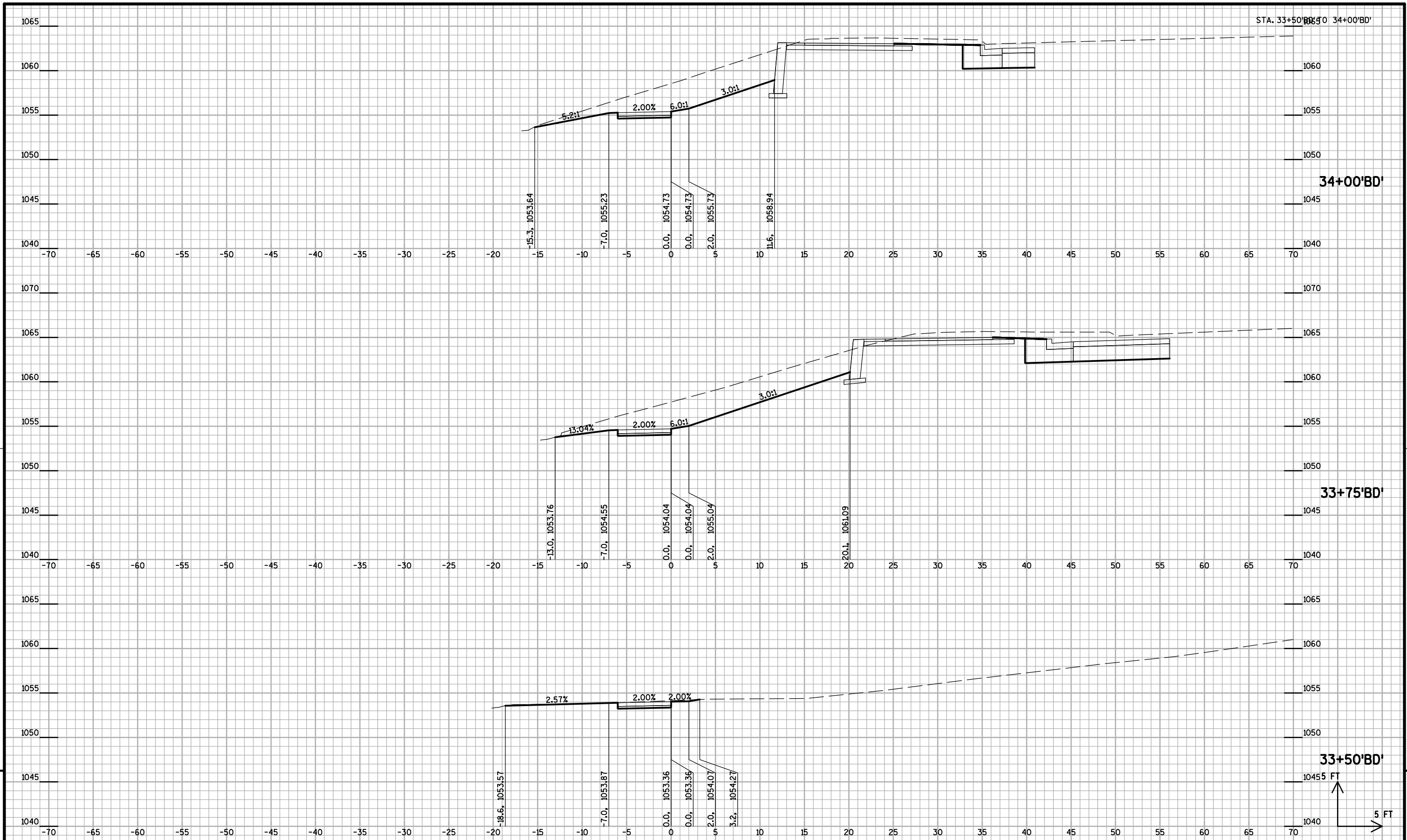
PLOT DATE : 5/10/2019

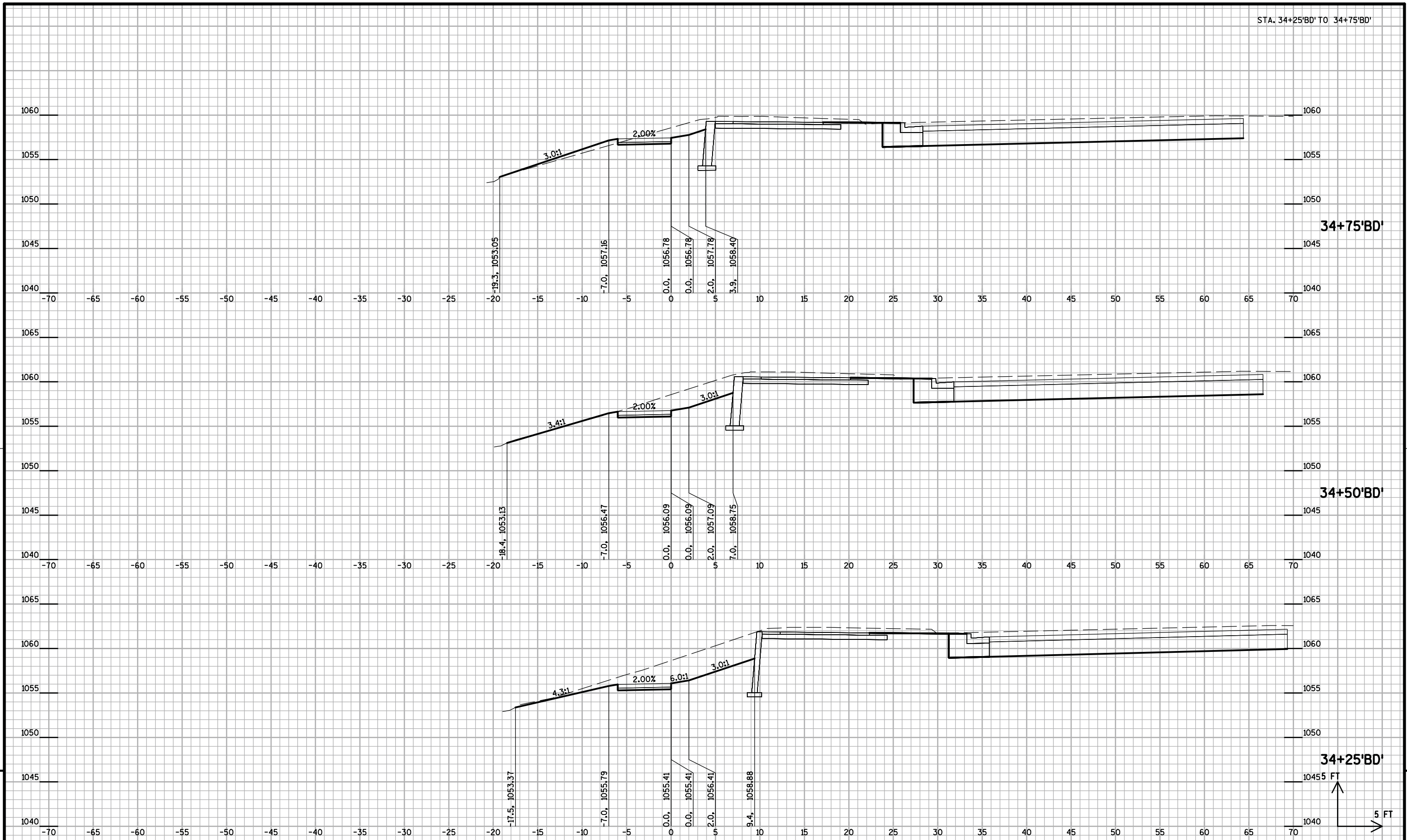
PLOT BY : kk226

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADDS SHEET 21





PROJECT NO:5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'BD' LINE

SHEET

PRE_183

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090212_XS-BD Line.dgn

PLOT DATE : 5/10/2019

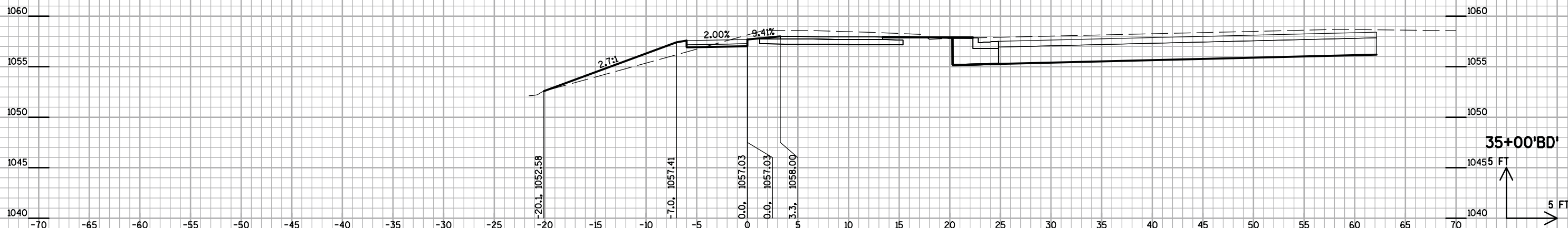
PLOT BY : kk226

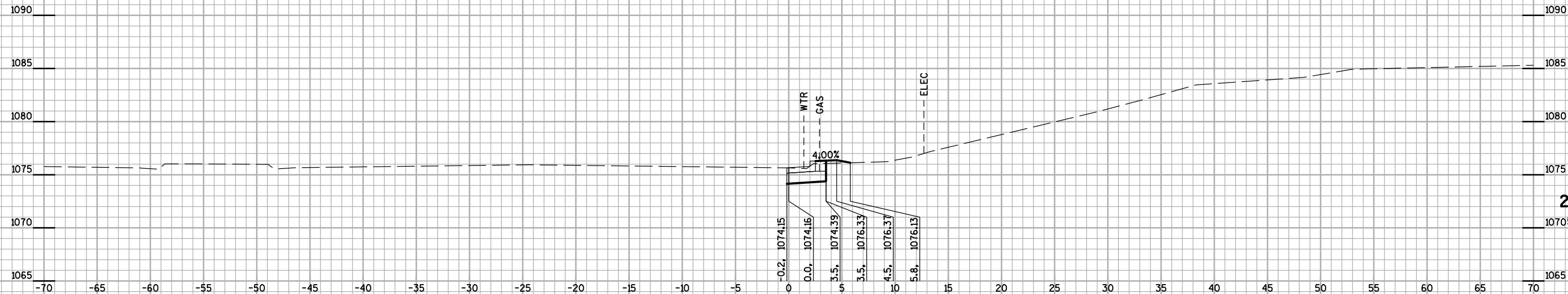
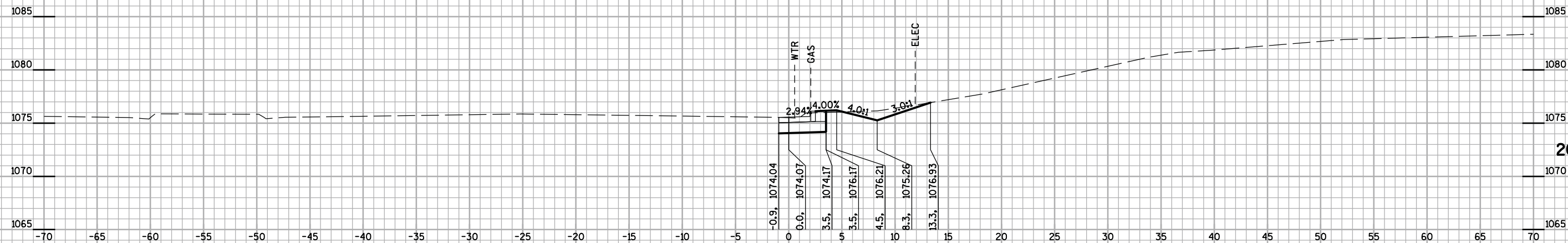
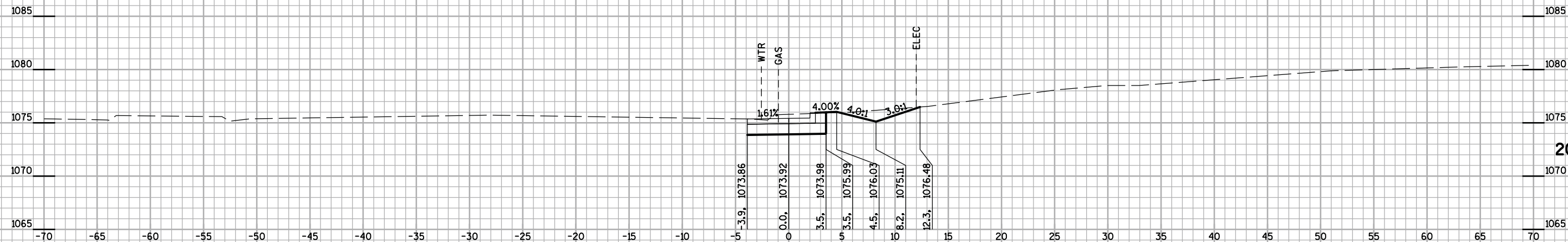
PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21

STA. 35+00'BD' TO 35+00'BD'

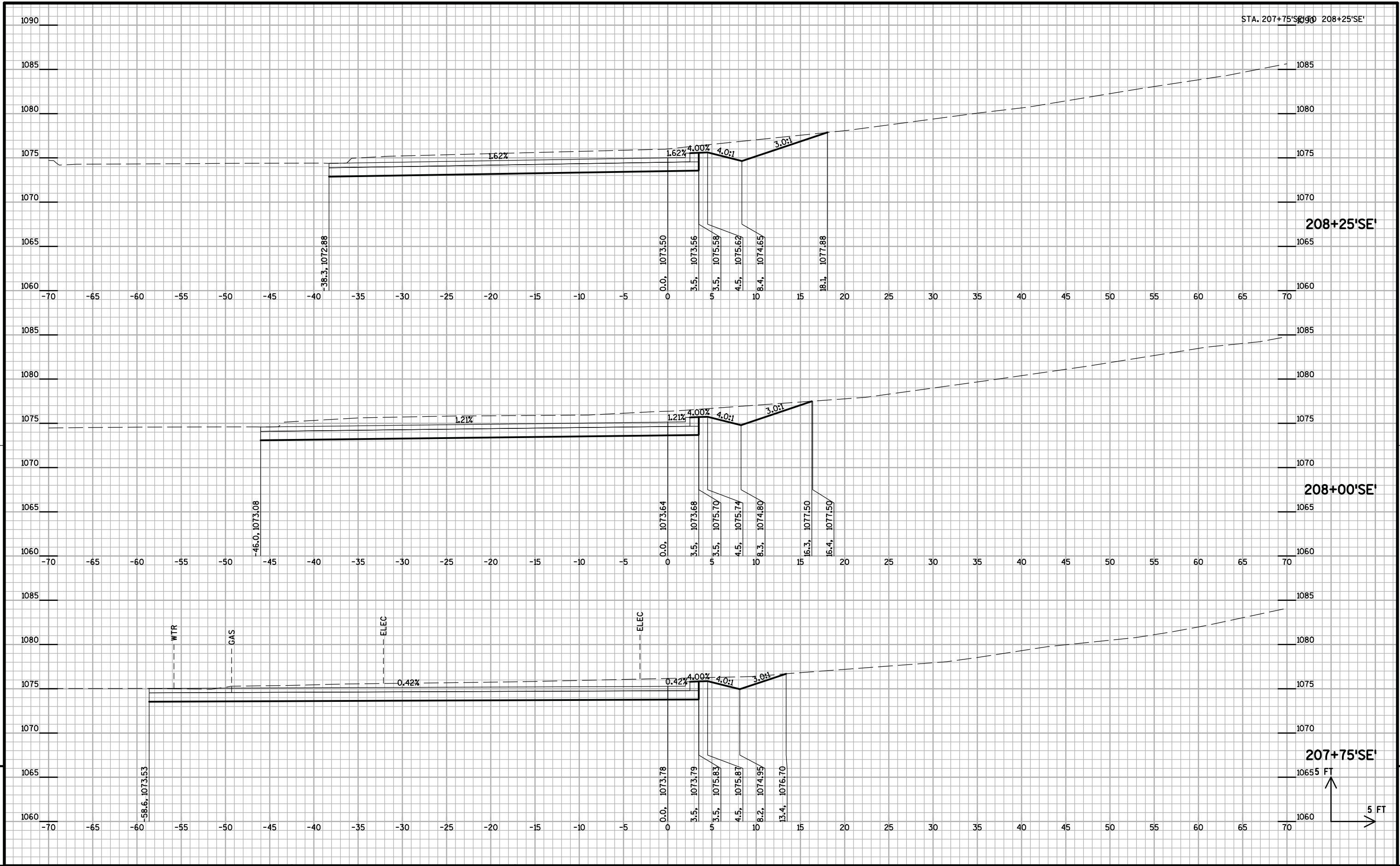


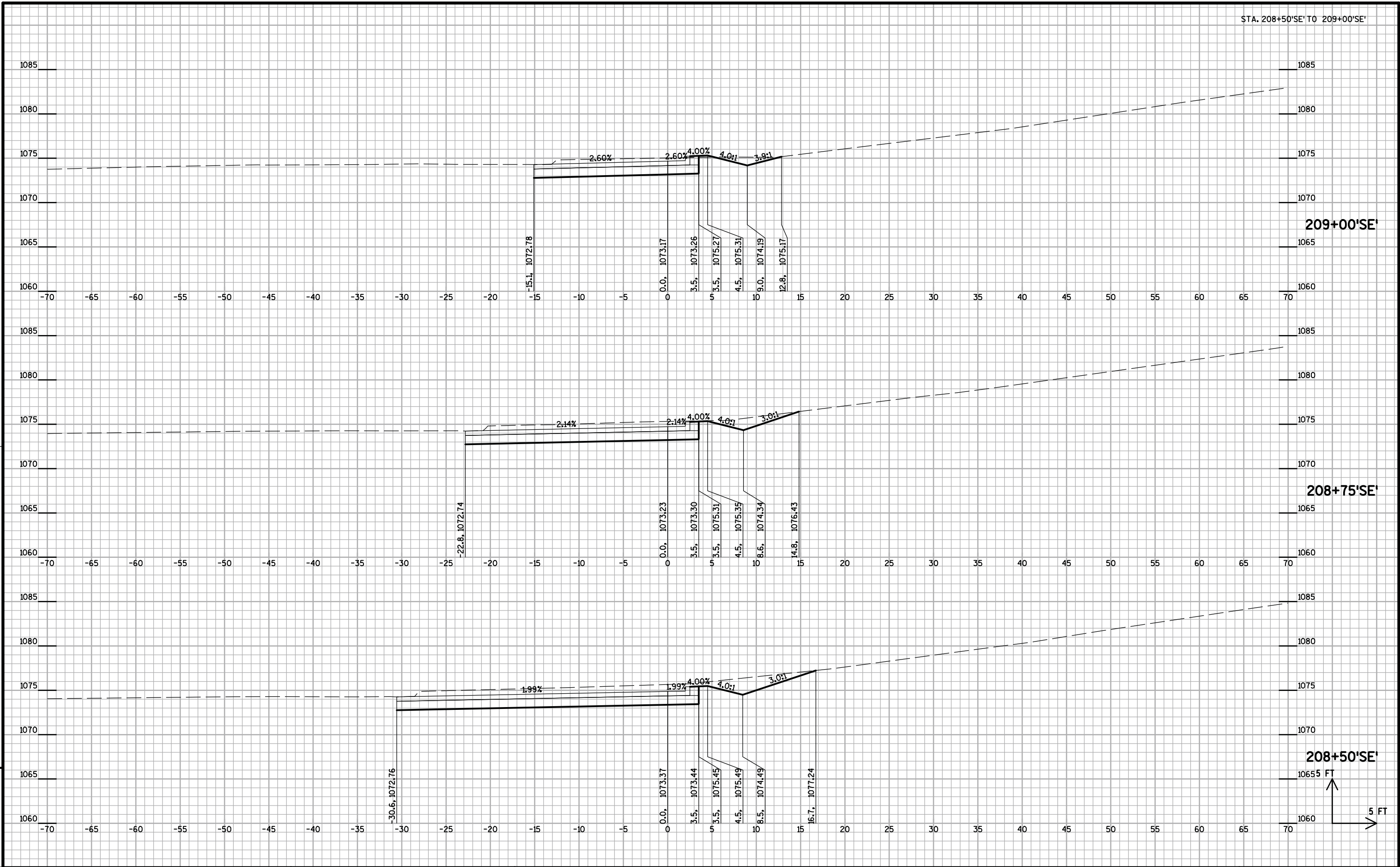


207+10'SE'

1070.5 FT

5 FT





STA. 209+25'SE' TO 209+25'SE'



PROJECT NO:5992-10-32

HWY:GAMMON ROAD

COUNTY:DANE

CROSS SECTIONS: 'STAGE WIDENING 'SE' LINE

SHEET

PRE_188

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090220_XS_Stage Widening.dgn

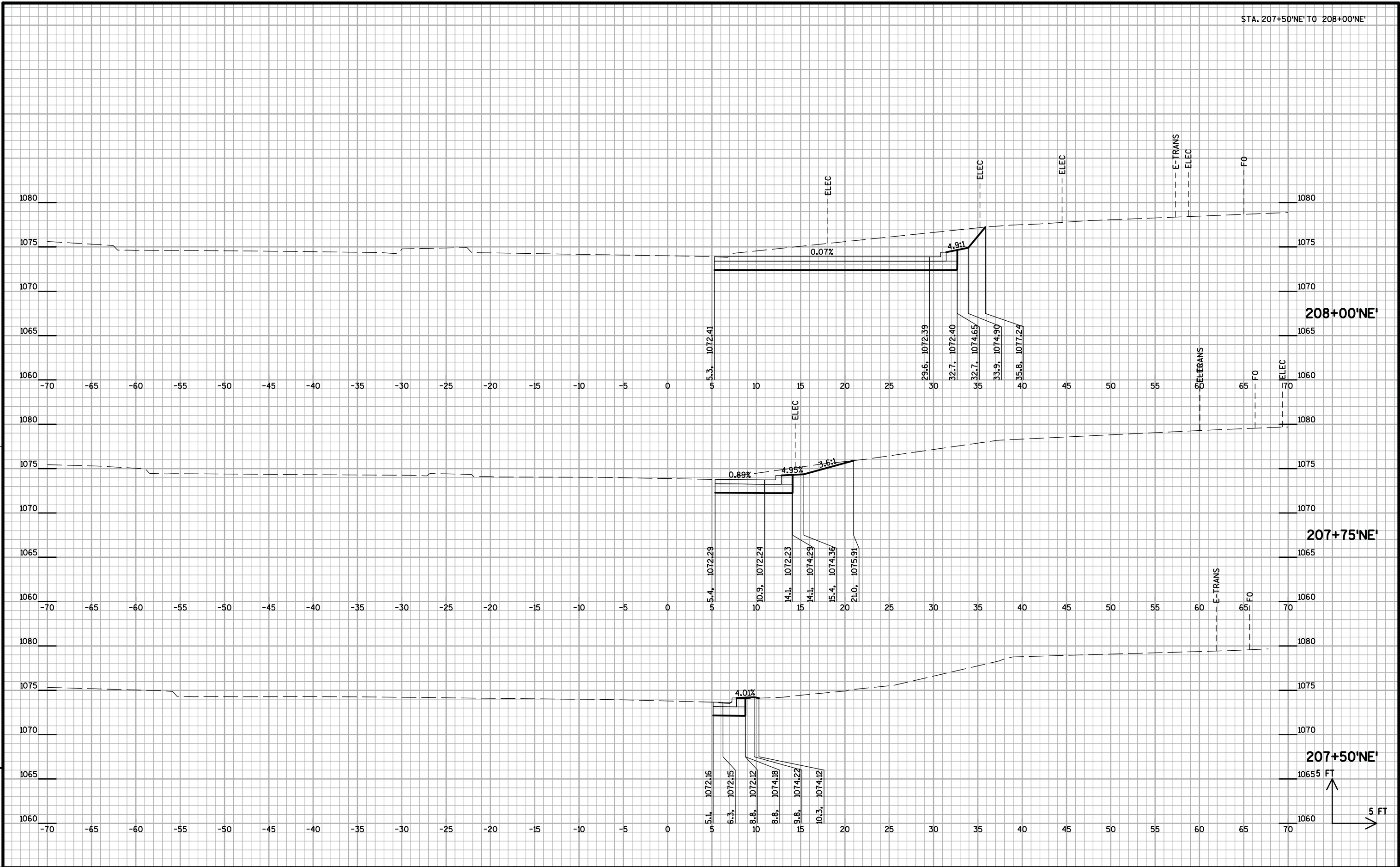
PLOT DATE : 5/9/2019

PLOT BY : kk226

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21



PROJECT NO:5992-10-32

HWY:GAMMON ROAD

COUNTY:DANE

CROSS SECTIONS: 'STAGE WIDENING 'NE' LINE

SHEET

PRE_189

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090220_XS_Stage Widening.dgn

PLOT DATE : 5/9/2019

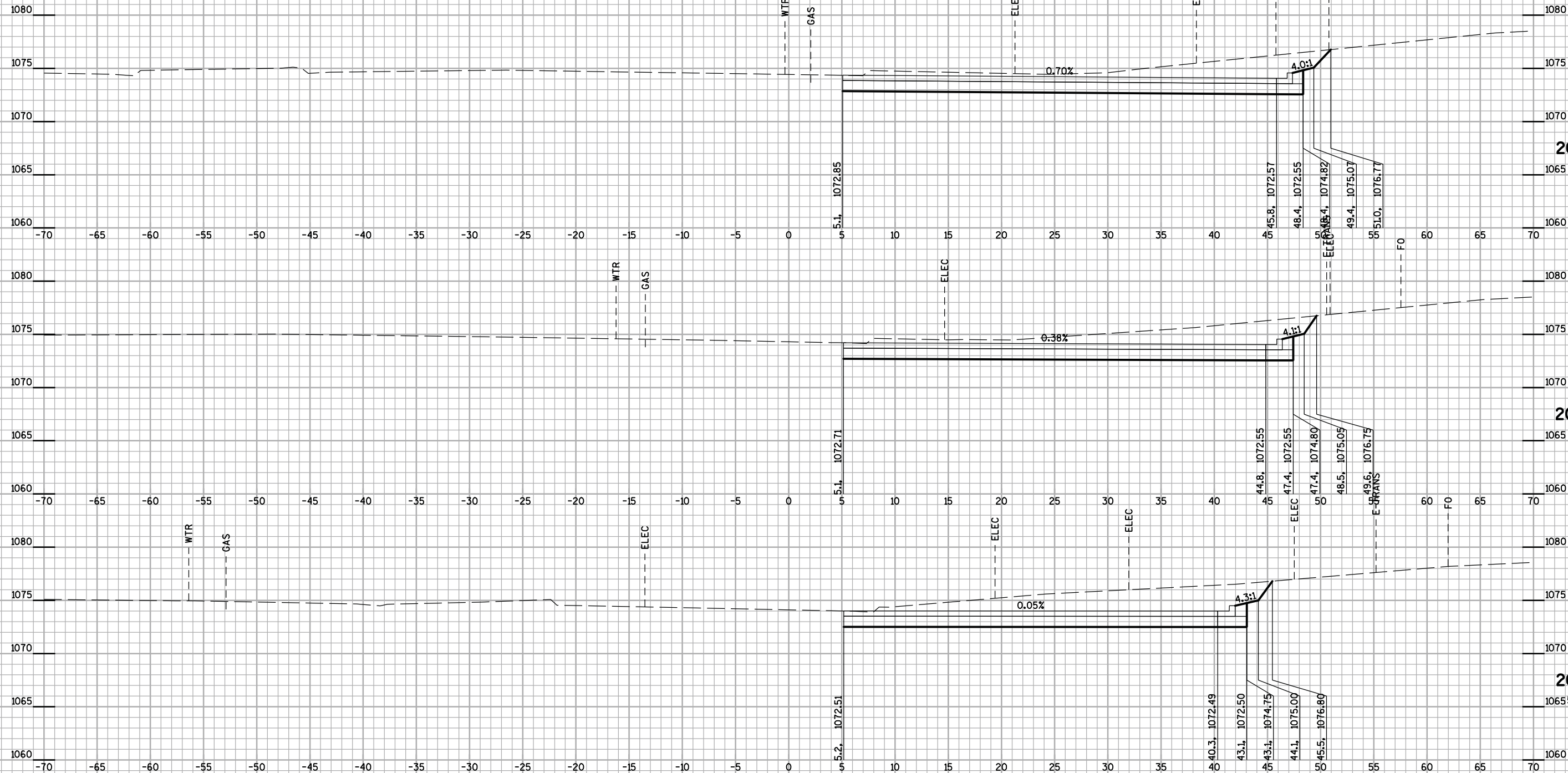
PLOT BY : kk226

PLOT NAME :

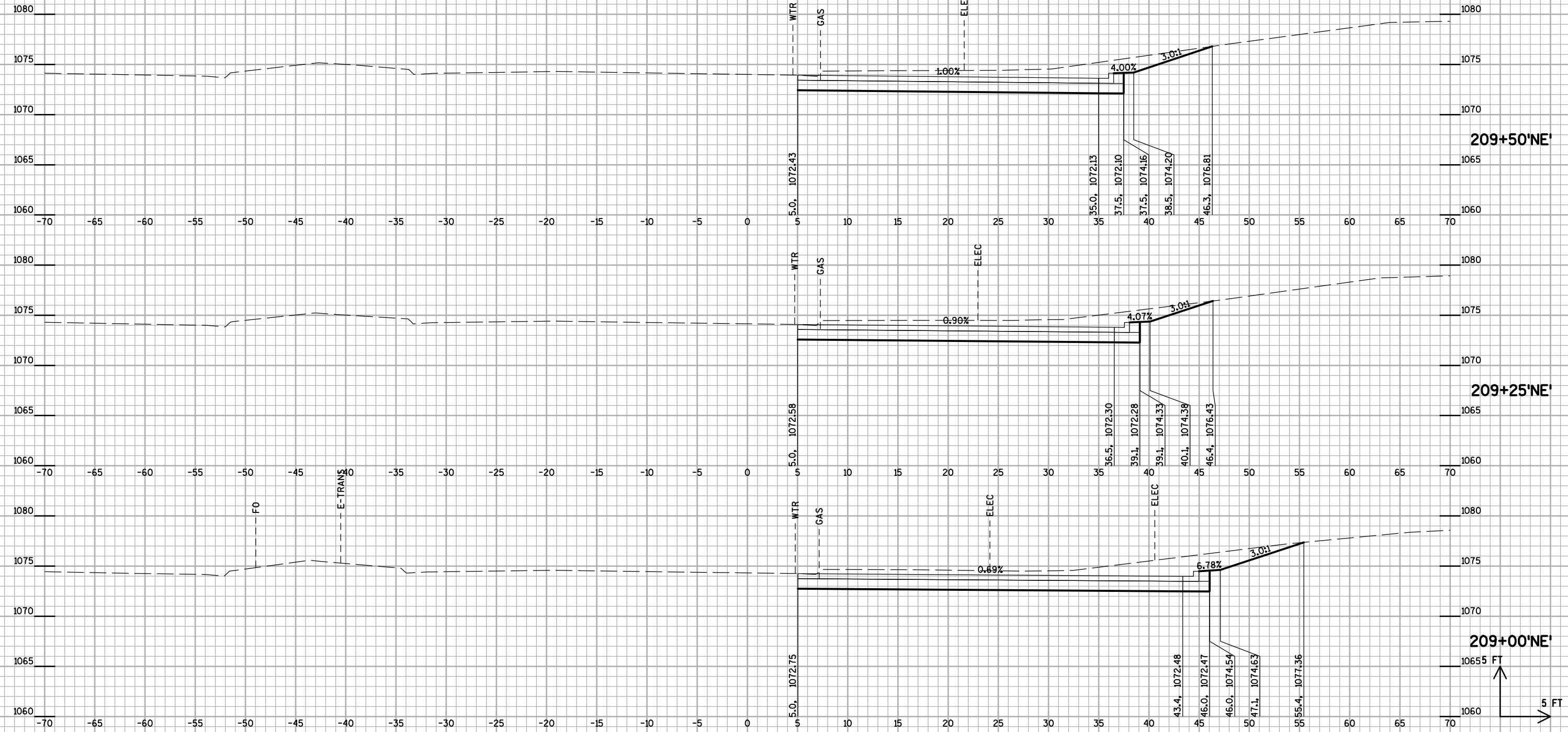
PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21

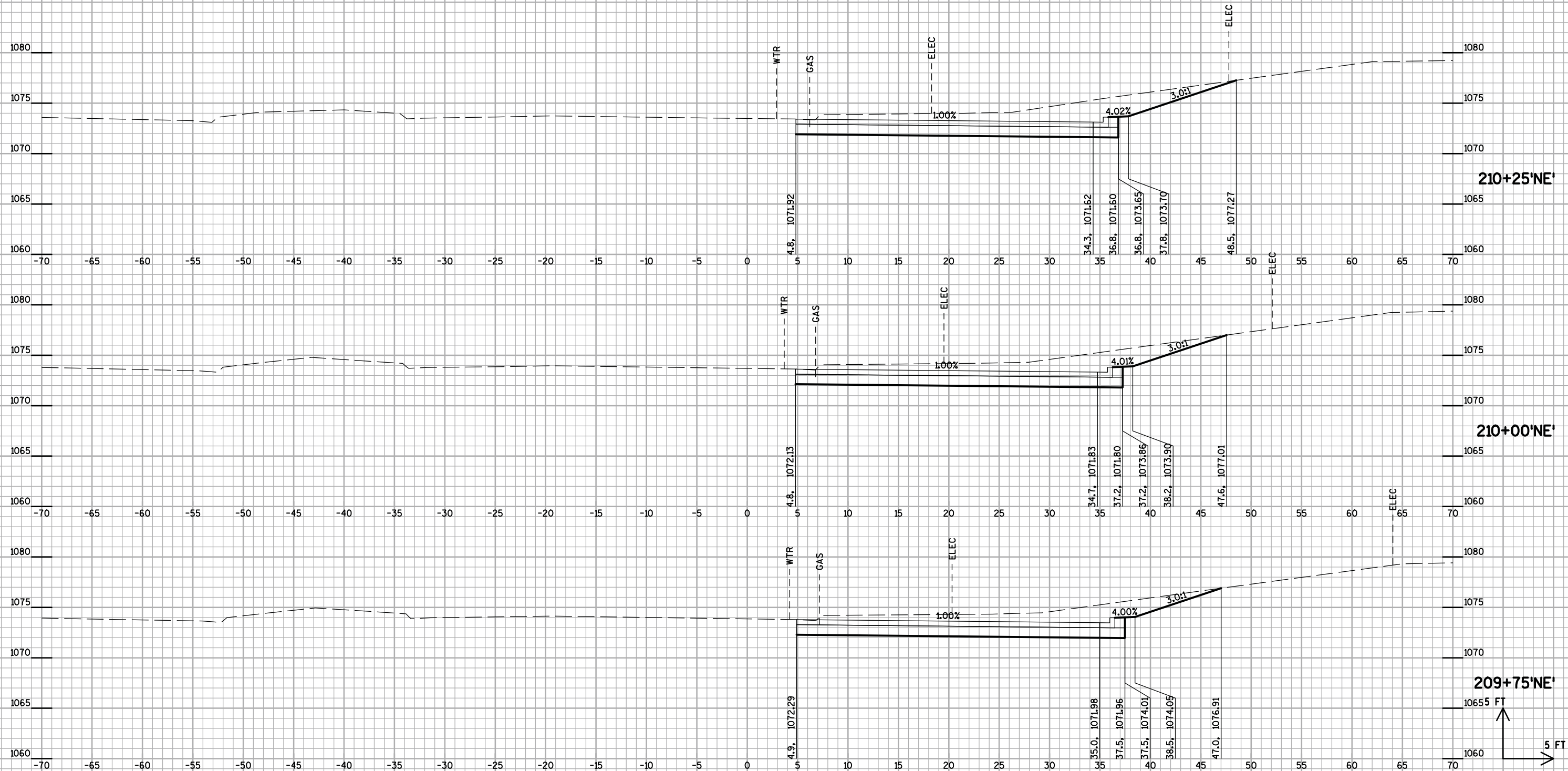
STA. 208+25'NE' TO 208+75'NE'

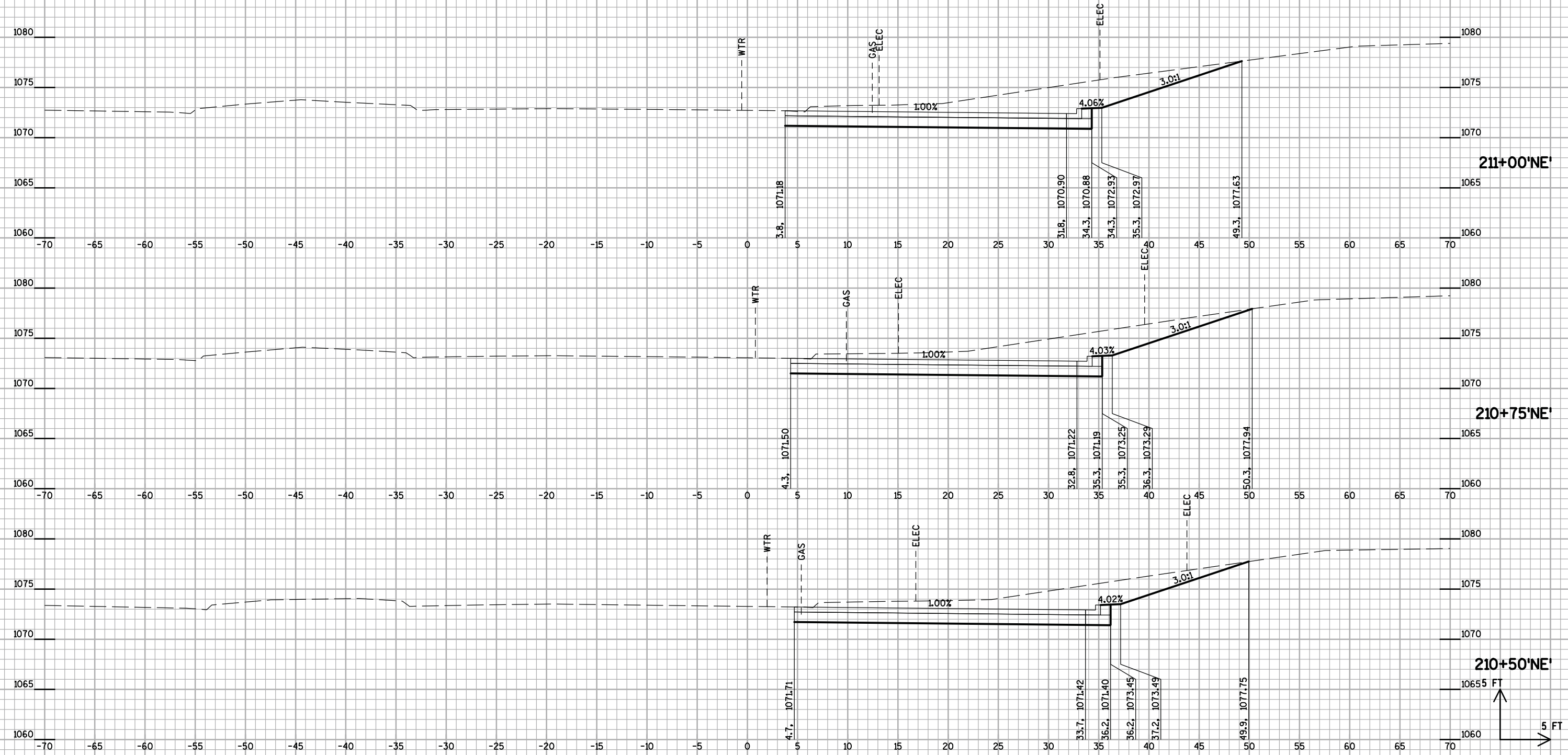


STA. 209+00'NE' TO 209+50'NE'

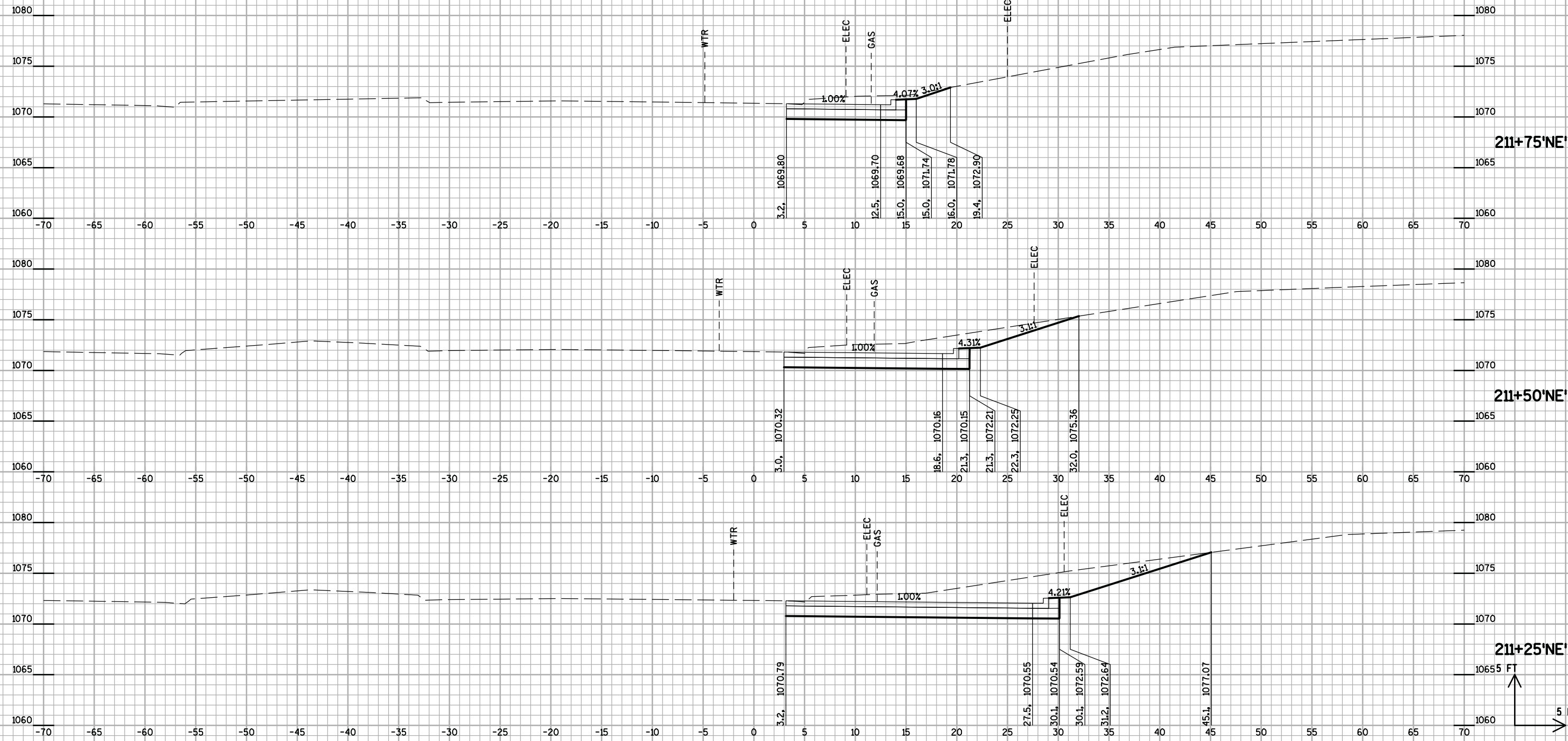


STA. 209+75'NE' TO 210+25'NE'





STA. 211+25'NE' TO 211+75'NE'



9

9

PROJECT NO:5992-10-32

HWY: GAMMON ROAD

COUNTY: DANE

CROSS SECTIONS: 'STAGE WIDENING 'NE' LINE

SHEET

PRE_194

E

FILE NAME : N:\410737 - Gammon Road\Roadway\DGN\SheetsPlan\090220_XS_Stage Widening.dgn

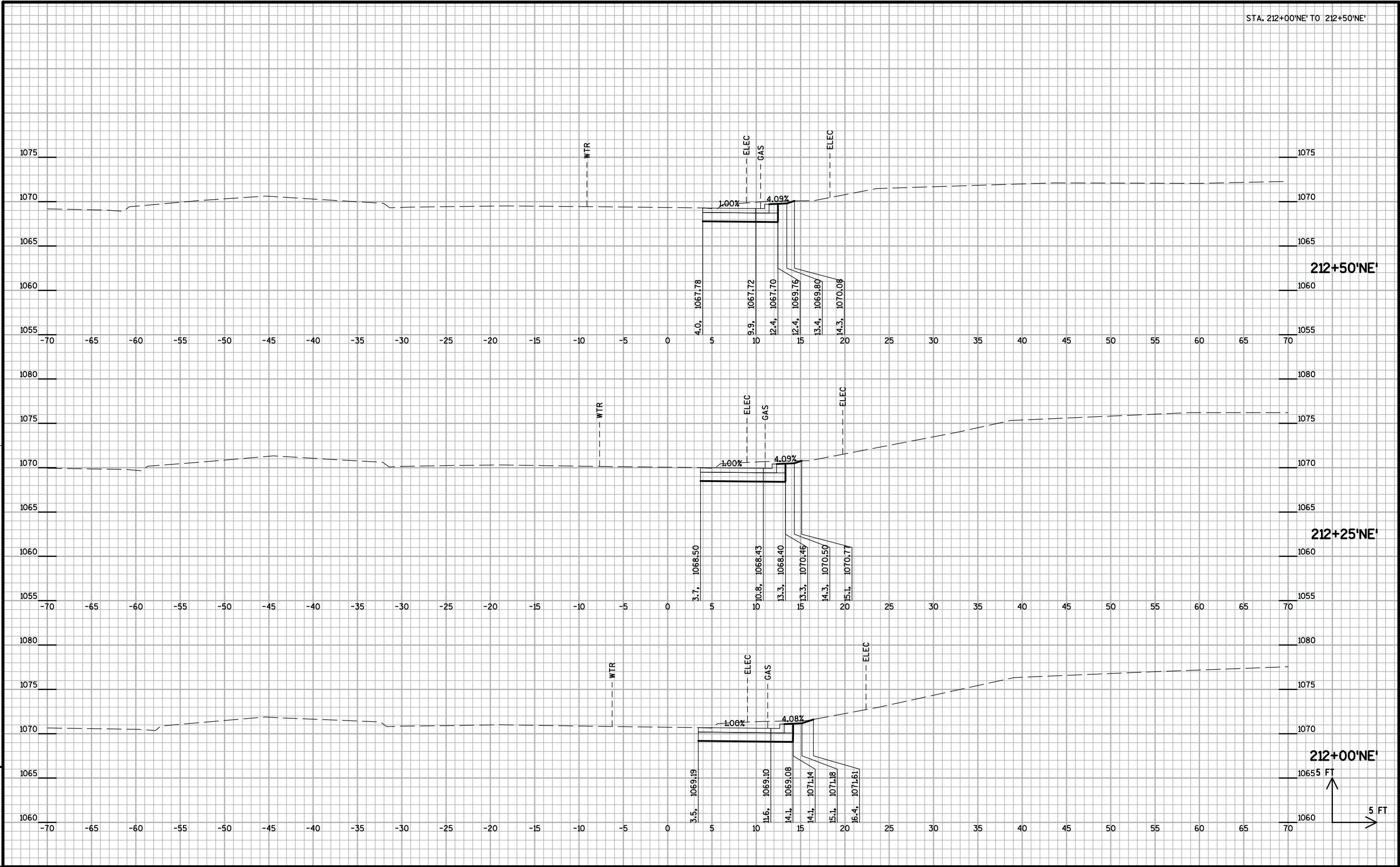
PLOT DATE : 5/9/2019

PLOT BY : kk226

PLOT NAME :

PLOT SCALE : 1:10

WISDOT/CADDs SHEET 21



EPlans Preliminary Sheet Numbering Tool

This sheet: ftp://ftp.dot.state.wi.us/transp/roads/eplans/prelim_sheet_numbers.pdf

Notes

- Acrobat 5 or higher is required to use this tool.
- The Bureau of Highway Construction places sheet numbers in the final plan.
- This sheet is for placing preliminary sheet numbers with a "PRE_" prefix.
- If a plan contains multiple projects, number each plan individually.
- Leave this sheet in the plan.

TO ADD PRELIMINARY SHEET NUMBERS

1. Insert this sheet at the end of the plan

- a. With the plan open in Acrobat, select Document > Insert Pages.
- b. In the Select File to Insert dialog box, select this file (prelim_sheet_numbers.pdf)
- c. In the Insert dialog box, choose After for Location and Last page for Page.
- d. Click OK.

2. Click the Place Preliminary Sheet Numbers button

- a. Go to the last sheet of the plan.
- b. Click the Place Preliminary Sheet Numbers button once.
(The preliminary sheet number appears in the bottom right corner of the sheets.
The number should match the page number in the Acrobat Status bar).

3. Re-Save the PDF

- a. Select File > Save As and save the PDF.

TO REMOVE PRELIMINARY SHEET NUMBERS

Remove