WKE

OCTOBER 2022

PROJECT ID: 1370-17-70

WITH:

COUNTY: WAUKESHA

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 = 70

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1370-17-70	WISC 2022487	1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

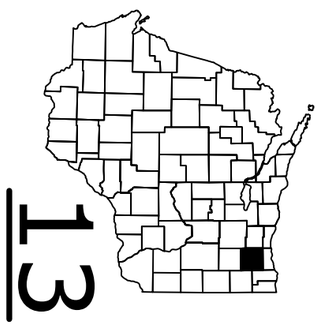
PLAN OF PROPOSED IMPROVEMENT

STH 16

5800' WEST OF STH 83 TO STH 190

STH 16
WAUKESHA COUNTY

STATE PROJECT NUMBER
1370-17-70



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BEGIN PROJECT
STA 284+00
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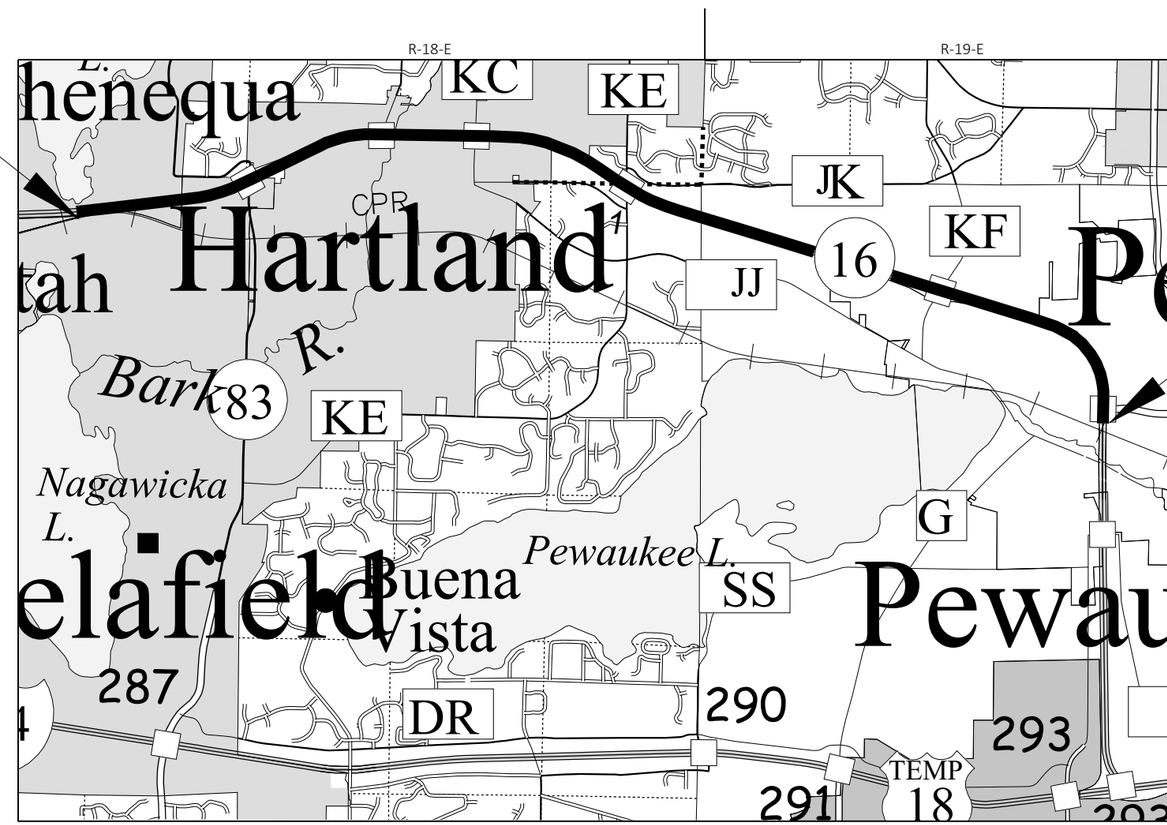
X=642522.695



END PROJECT
STA 685+00

DESIGN DESIGNATION

A.A.D.T.	(2020)	=	37,717
A.A.D.T.		=	
D.H.V.		=	8.2%
D.D.		=	58/42
T.		=	10.2%
DESIGN SPEED		=	70 MPH
ESALS		=	

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE (300'EB')
- 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) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 — 1 MI

TOTAL NET LENGTH OF CENTERLINE = 7.595 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WCCS, WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT
Designer	STEVEN ROTIER
Project Manager	ROBERT BELLIN
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	BENEDICT ERUCHALU

APPROVED FOR THE DEPARTMENT
DATE: 5/1/2022 Robert A. Bellin (Signature)

E

GENERAL NOTES

1) THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. COORDINATE CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
2) CONTACT THE PROJECT ENGINEER AND SEWRPC AT LEAST TWO WEEKS BEFORE WORKING NEAR ANY SECTION CORNER MONUMENT.
3) SAWCUT EXISTING ASPHALT AND CONCRETE PAVEMENT AT THE MATCHLINE AS INDICATED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.
4) RESHAPE, RESTORE AND FINISH ALL PREVIOUSLY GRASSED AREAS DISTURBED BY OPERATIONS OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS AT NO EXPENSE TO THE DEPARTMENT
5) DISTURBED AREAS WITHIN THE RIGHT OF WAY ARE TO BE TOPSOILED, FERTILIZED, SEEDED, AND MULCHED WITHIN 5 DAYS OR AS DIRECTED BY THE ENGINEER.
6) CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED.

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
UTILITY AND OTHER CONTACTS
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS AND EROSION CONTROL
PLAN DETAILS
TRAFFIC CONTROL
ALIGNMENT
SOIL BORINGS

2

UTILITY CONTACTS

AT&T WISCONSIN - COMMUNICATION LINE
Tom Crowley
435 South 95th Street
Milwaukee, WI 53214-1226
(262) 896-7427
tc1657@att.com

ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION
Chris Dailey
PO Box 47
Waukesha, WI 53187
(262) 506-6864
cdailey@atcllc.com

EVERSTREAM - COMMUNICATION LINE
Shad Garcia
324 E. Wisconsin Ave, Suite 730
Milwaukee, WI 53202
(414) 522-6685
sgarcia@everstream.net

LEVEL 3 COMMUNICATIONS LLC - COMMUNICATION LINE
Brahim Gaddour
32353 Intertech Dr
Brookfield, WI 53045
(414) 908-1027
brahim.gaddour@lumen.com

TDS METROCOM LLC - COMMUNICATION LINE
Matthew Shulte
525 Junction Rd
Madison, WI 53717
(262) 754-3063
matt.schulte@tdstelecom.com

SPECTRUM - COMMUNICATION LINE
Neal Long
1320 N Dr Martin Luther King Jr Dr
Milwaukee, WI 53212
(414) 277-4271
neal.long@charter.com

VILLAGE OF HARTLAND - SEWER & WATER
Dave Felkner
210 Cottonwood Ave
Hartland, WI 53029
(262) 367-2714
davef@villageofhartland.com

WE ENERGIES - GAS/PETROLEUM
Jacob Spencer
S13 W33800 STH 18
Delafield, WI 53018
(262) 968-7009
Dispatch: (800) 261-5325
jacob.spencer@we-energies.com

WE ENERGIES - ELECTRIC
Eric Kickhaver
500 S 116th Street
West Allis, WI 53214
(414) 944-5917
Dispatch: (800) 662-4797
eric.kickhaver@we-energies.com

OTHER CONTACTS

VILLAGE OF HARTLAND - ROADWAY
Dave Felkner
210 Cottonwood Ave
Hartland, WI 53029
(262) 367-2714
davef@villageofhartland.com

WISDNR
Craig Webster
2300 N. Dr. Martin Luther King Jr. Dr.
Milwaukee, Wi 53212
(262) 574-2141
craig.webster@wisconsin.gov

WISDOT ATR PULL BOXES - ELECTRICAL
Russell Lewis
3625 Pierstoff St
Madison, WI 53704
(608) 516-5754
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WISDOT HIGHWAY MAINTENANCE
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141 NW Barstow Street
Waukesha, WI 53187-0798
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WISDOT SIGNALS
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WISDOT DESIGN LEADER
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WISDOT PROJECT MANAGER
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(262) 521-4405
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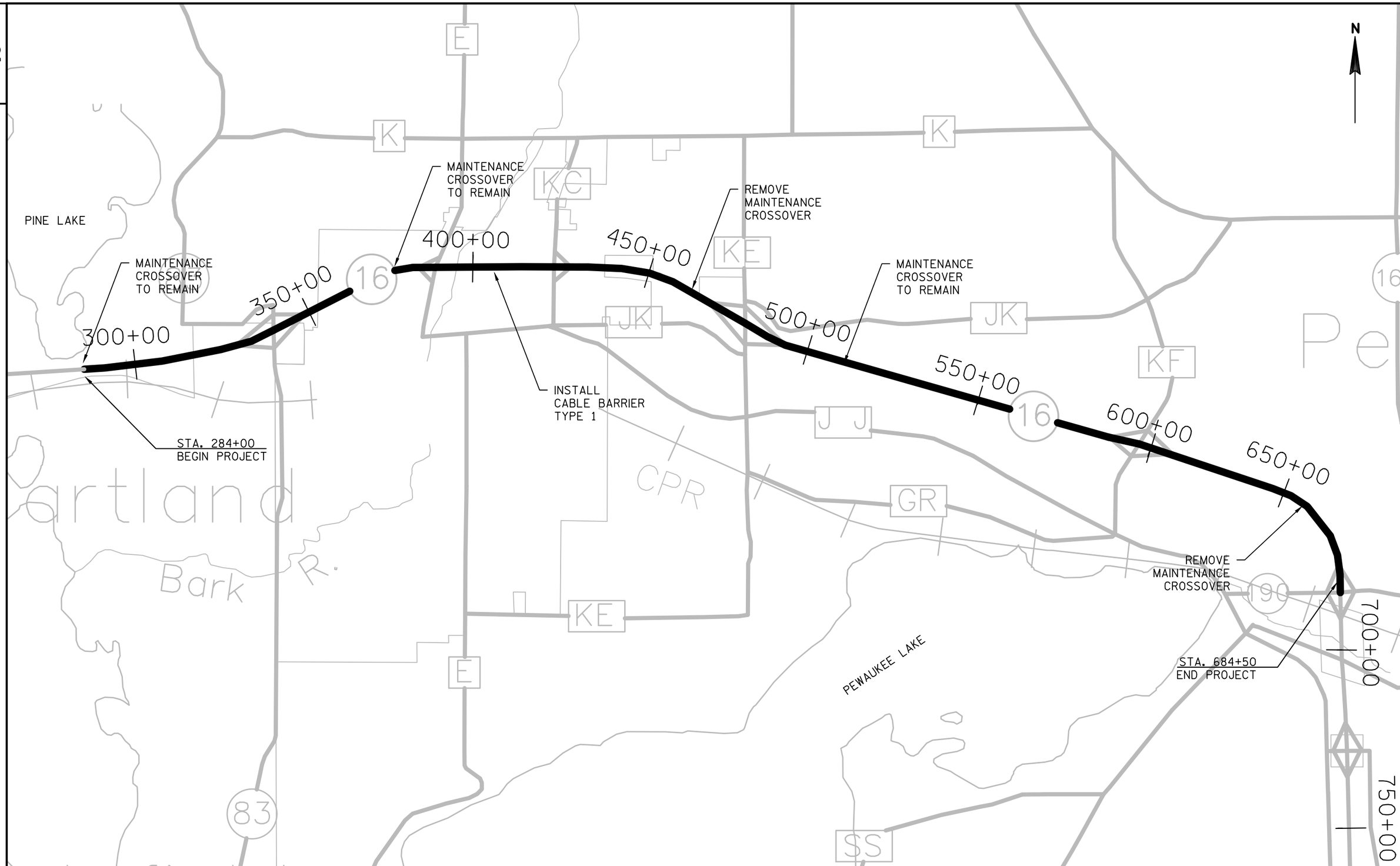
SEWRPC
Rob Merry
W239 N1812 Rockwood Dr, PO Box 1607
Waukesha, WI 53187
(262) 953-4295
rmerry@sewrpc.org

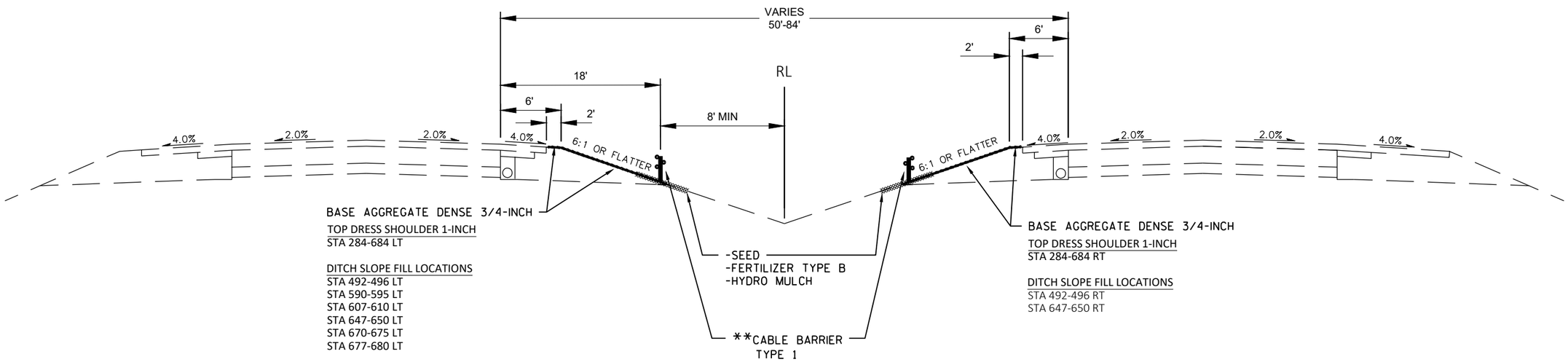
DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com



PROJECT NO:1370-17-70	HWY:STH 16	COUNTY:WAUKESHA	PROJECT OVERVIEW	SHEET 3	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\020201_PO.DWG
LAYOUT NAME - 020201_PO
PLOT DATE : 5/11/2022 9:42 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:100 FT

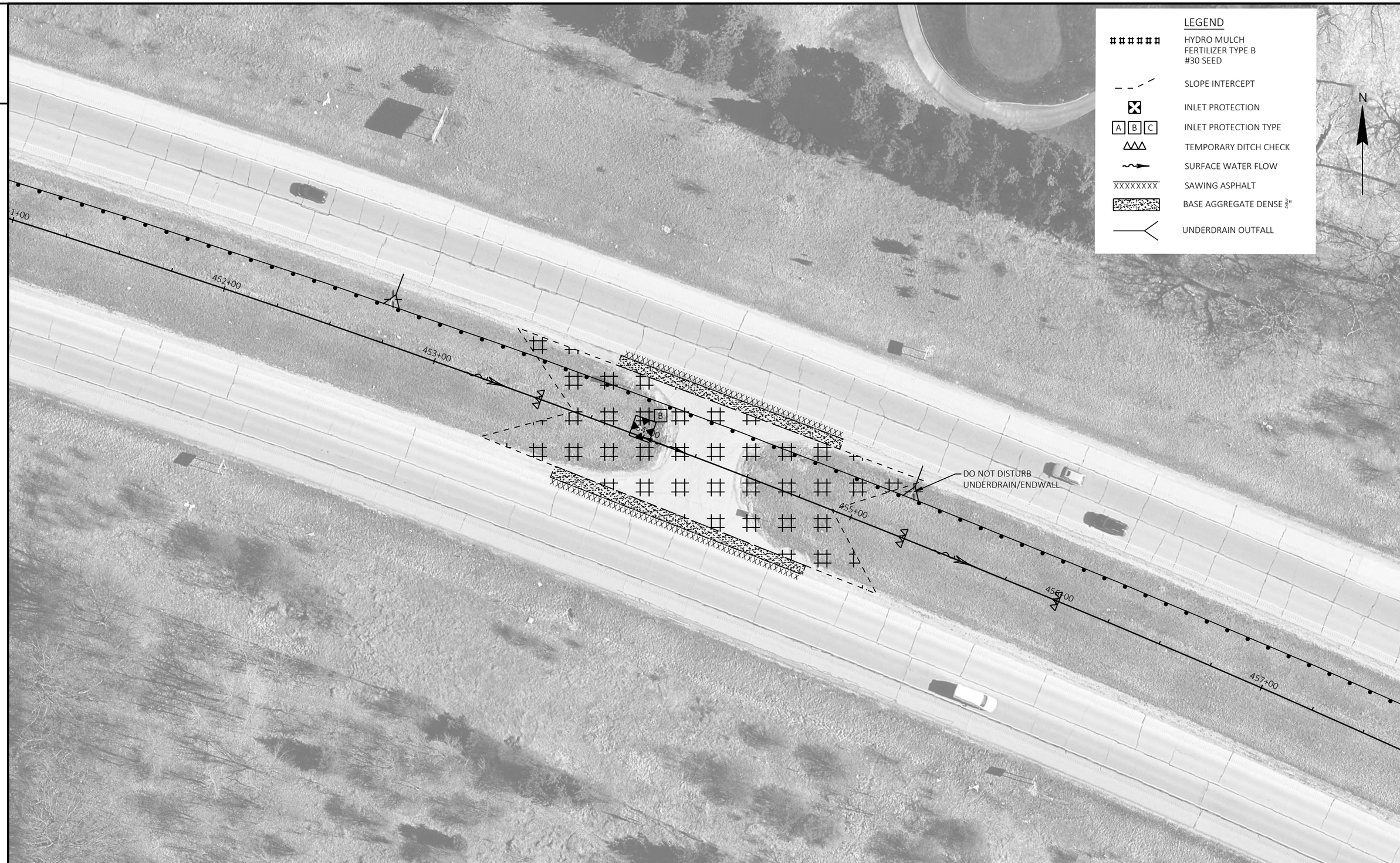
WISDOT/CADDS SHEET 42



** SEE PLAN DETAILS FOR LOCATION LEFT OR RIGHT OF DITCH

STH 16
TYPICAL FINISHED SECTION

STA 284+00 TO 685+00



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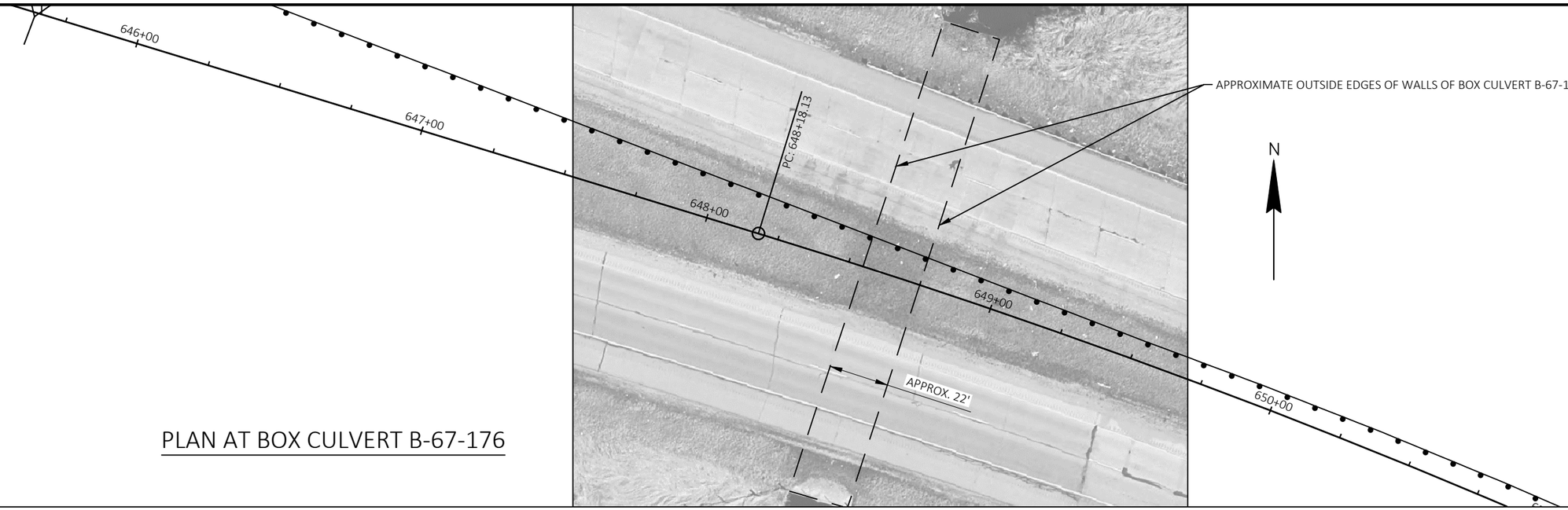
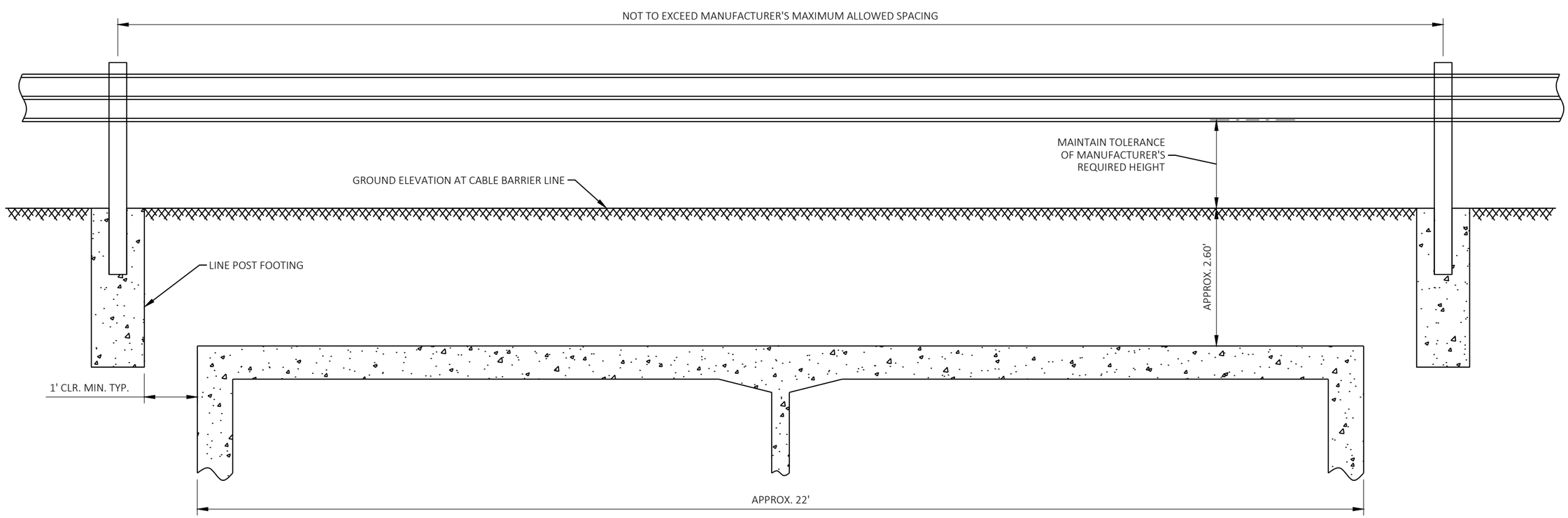
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CONSTRUCTION & EROSION CONTROL DETAILS - MEDIAN REMOVAL STA 454+30	SHEET 5	E

2

PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CONSTRUCTION & EROSION CONTROL DETAILS - MEDIAN REMOVAL STA 654+62	SHEET 6	E

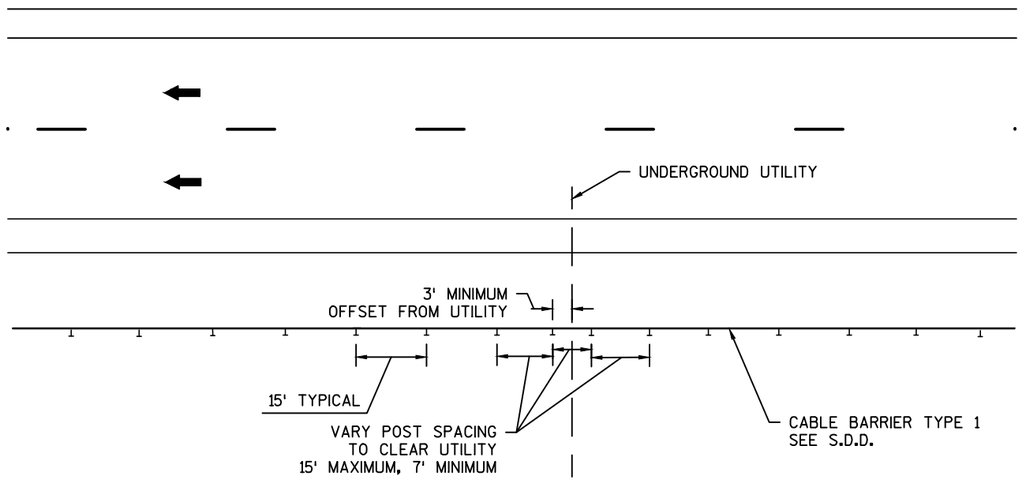


PLAN AT BOX CULVERT B-67-176

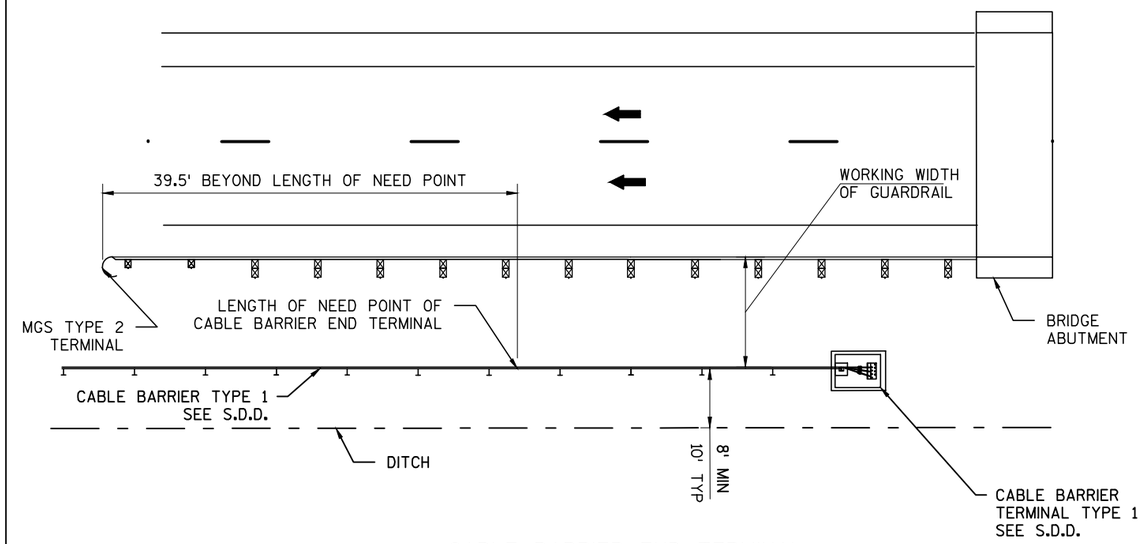


ELEVATION AT BOX CULVERT B-67-176

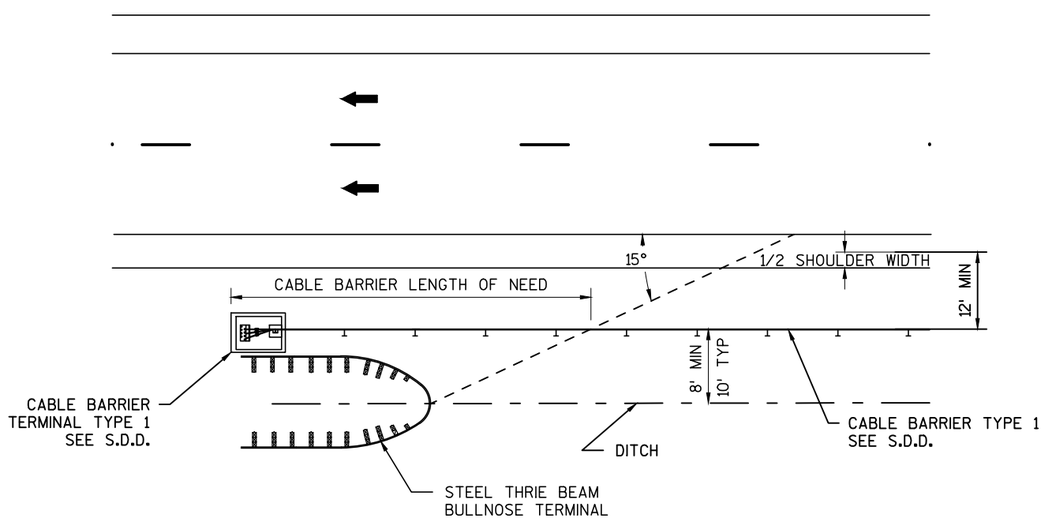
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CONSTRUCTION DETAIL - LONG SPAN AT B-67-176, APPROX. STA. 648+55 - 648+75	SHEET 7	E



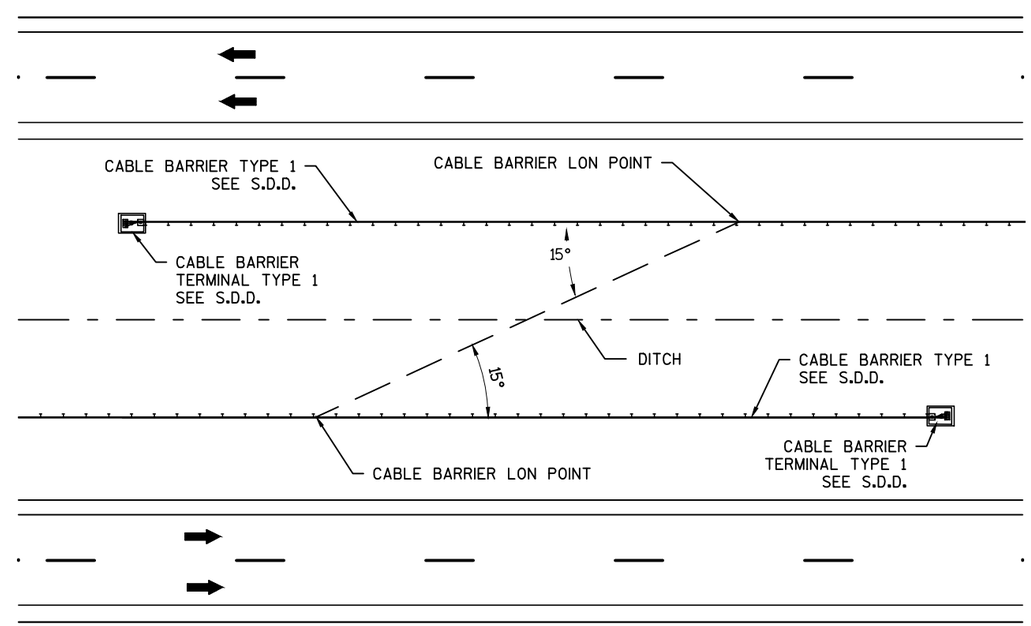
CABLE BARRIER AT
UNDERGROUND UTILITY



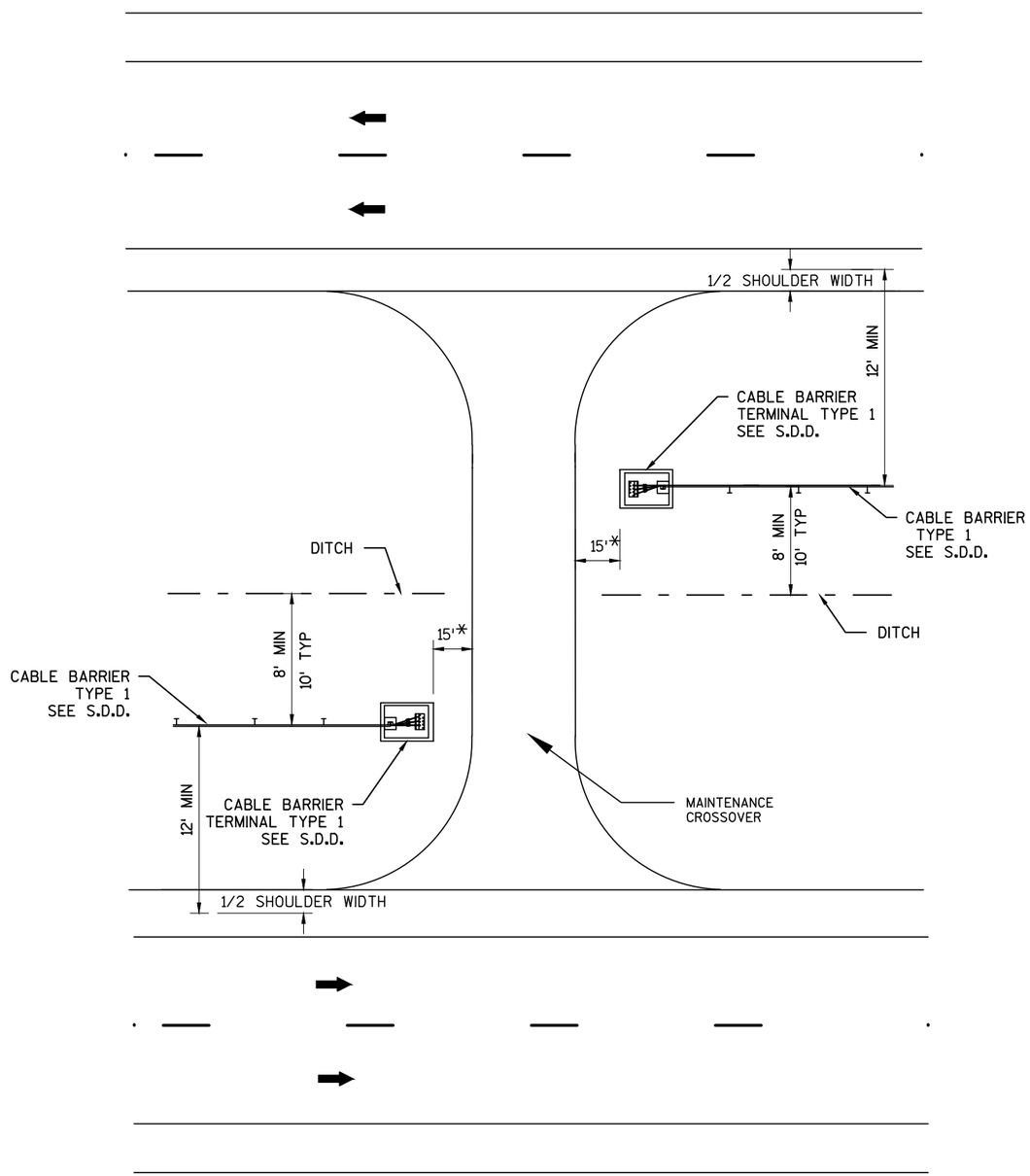
CABLE BARRIER END TERMINAL
AT BRIDGE ABUTMENT



CABLE BARRIER AT
THRIE BEAM BULLNOSE TERMINAL



OVERLAPPING CABLE BARRIER
END TERMINALS



CABLE BARRIER END TERMINAL
AT MAINTENANCE CROSSOVER

* DISTANCE MEASURED FROM
EDGE OF ASPHALT

2

2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2040	STA 283+99 RT	CP CHISLED +	919.27
2039	STA 295+99 RT	CP CHISLED +	928.21

2

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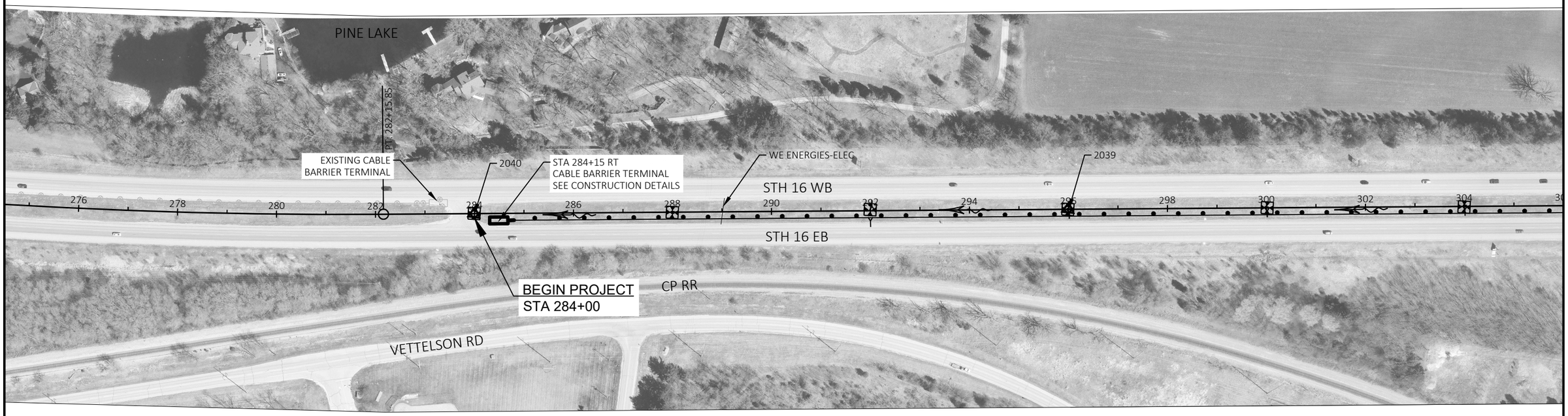


LEGEND

- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

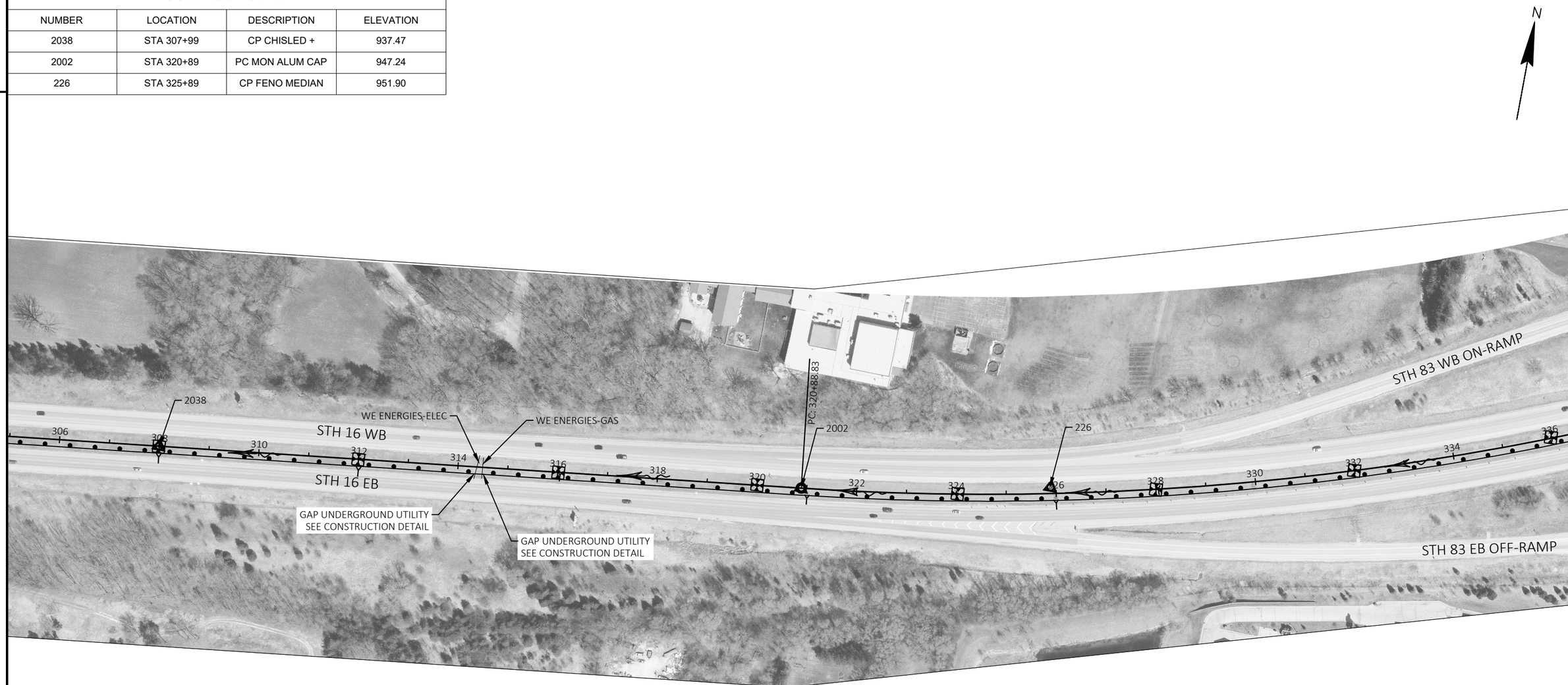
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 10	E

2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2038	STA 307+99	CP CHISLED +	937.47
2002	STA 320+89	PC MON ALUM CAP	947.24
226	STA 325+89	CP FENO MEDIAN	951.90

2



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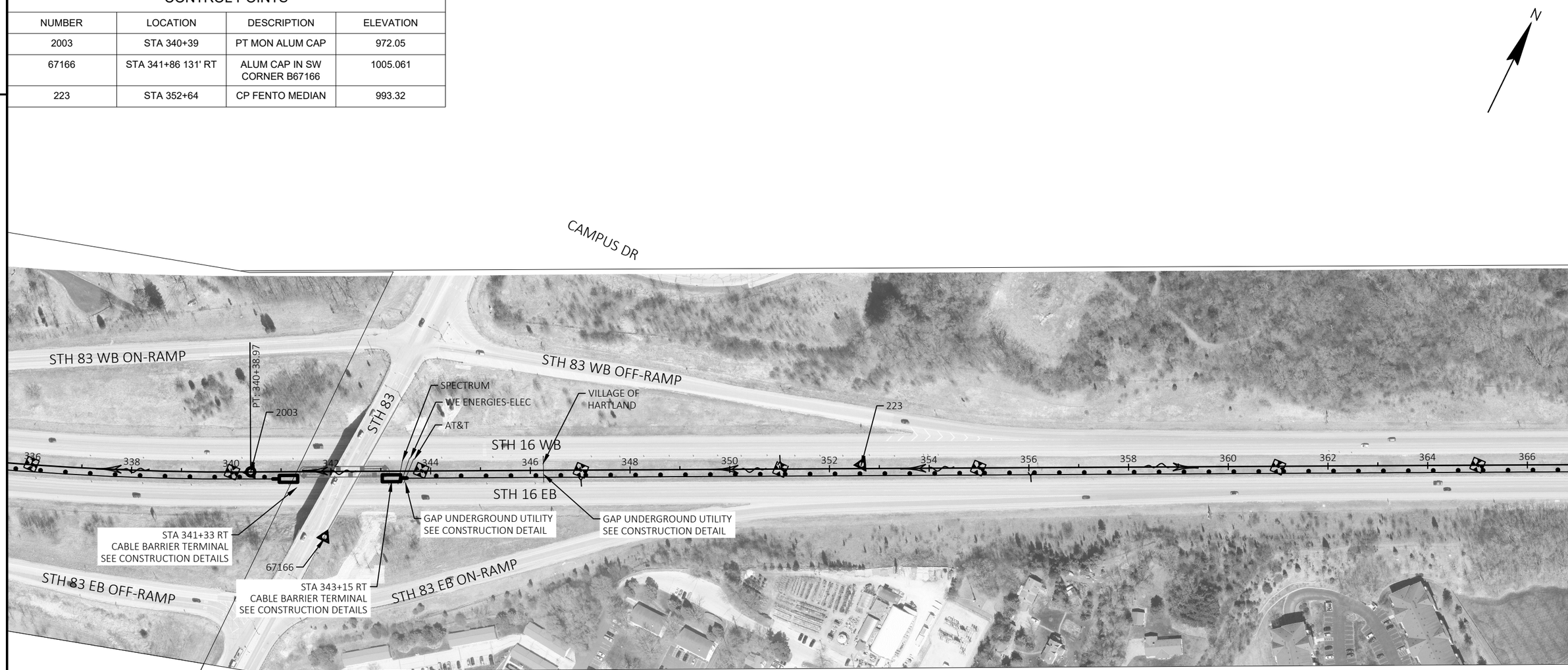
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 11	E

2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2003	STA 340+39	PT MON ALUM CAP	972.05
67166	STA 341+86 131' RT	ALUM CAP IN SW CORNER B67166	1005.061
223	STA 352+64	CP FENTO MEDIAN	993.32

2



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2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2004	STA 369+88	PC MON ALUM CAP	985.28
2037	STA 378+02	CP CHISLED +	971.39
388	STA 387+90.5	PT MON ALUM CAP	953.10
1007	STA 390+65 67.67' RT	BM BRIDGE DISK B-67-170-76	952.04

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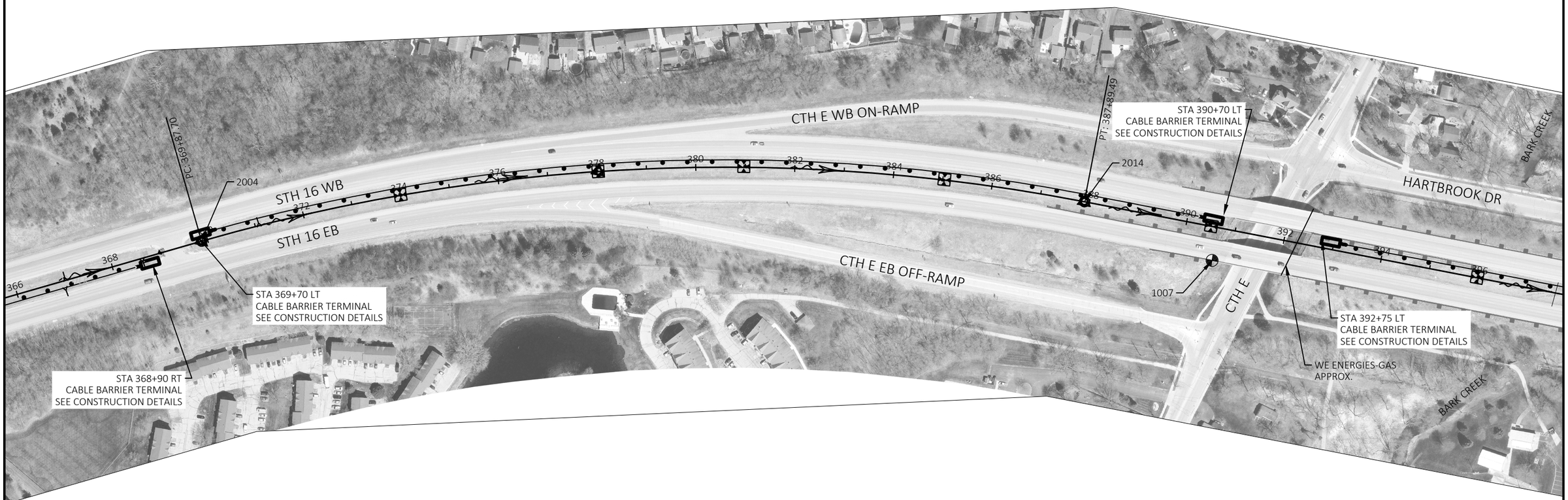

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CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2036	STA 400+03	CP CHISLED +	930.68
2013	STA 411+99.76	PT MON ALUM CAP	923.95
1005	STA 423+93 134.3' LT	BM BRIDGE DISK B-67-172-76	958.86
1006	STA 424+68 139.12' RT	BM BRIDGE DISK B-67-172-76	962.17

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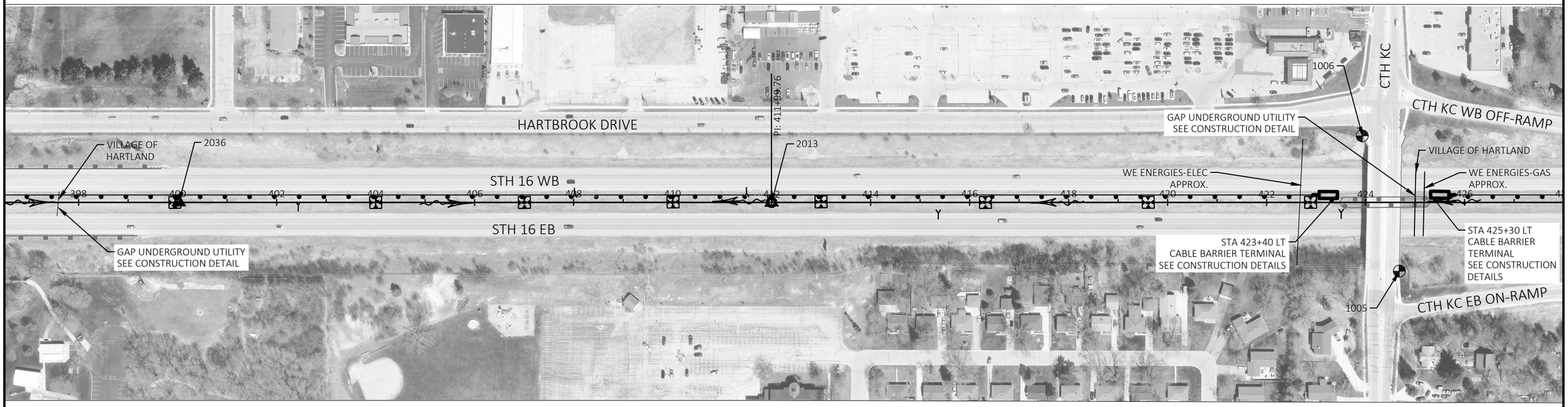

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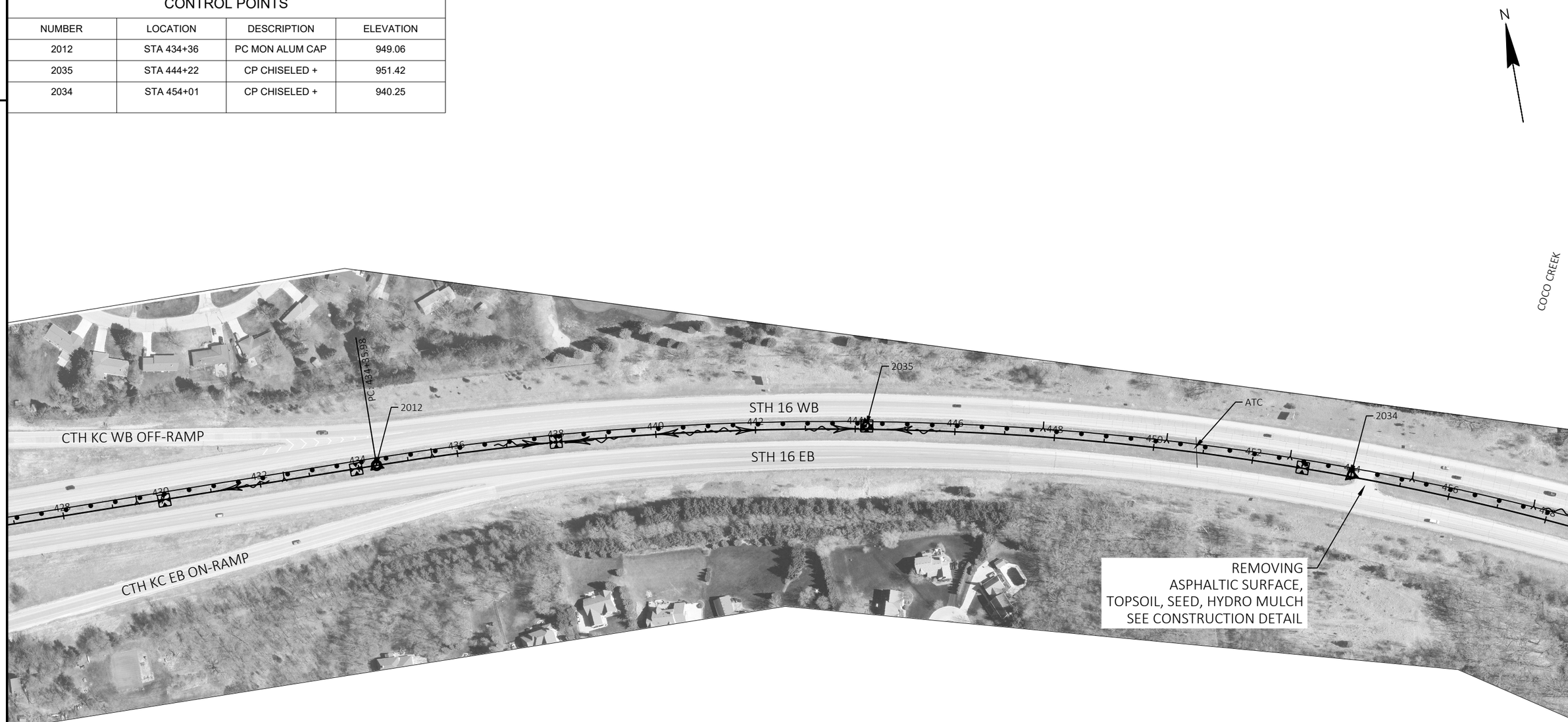
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 14	E

2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2012	STA 434+36	PC MON ALUM CAP	949.06
2035	STA 444+22	CP CHISELED +	951.42
2034	STA 454+01	CP CHISELED +	940.25

2



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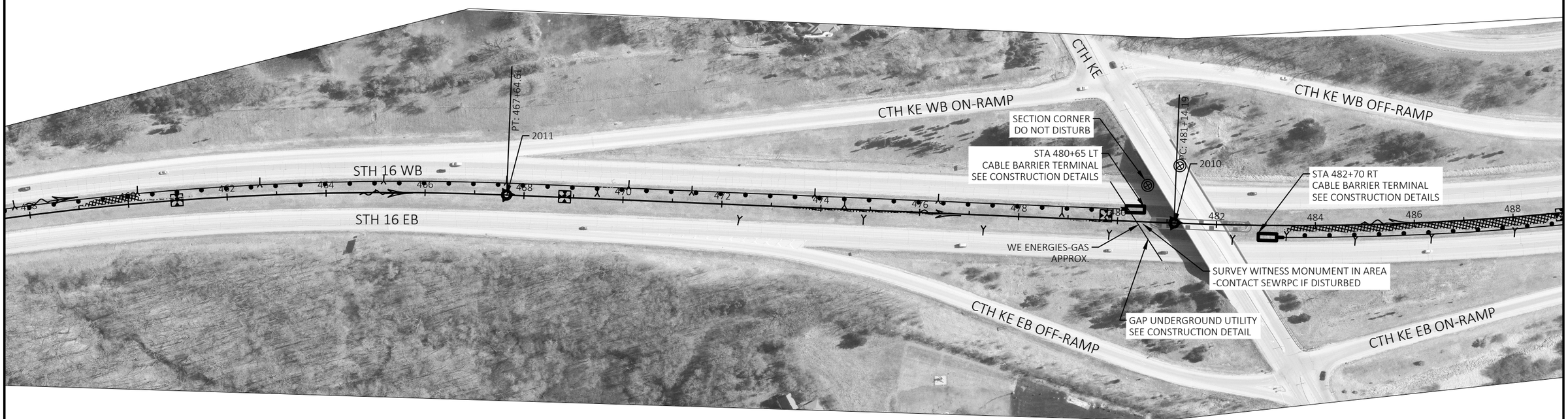
CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2011	STA 467+64	PT MON ALUM CAP	918.31
2010	STA 481+14	PC MON ALUM CAP	897.65

2



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CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2009	STA 498+33	PT MON ALUM CAP	869.72
2033	STA 508+03	CP CHISELED +	863.47

2

LEGEND

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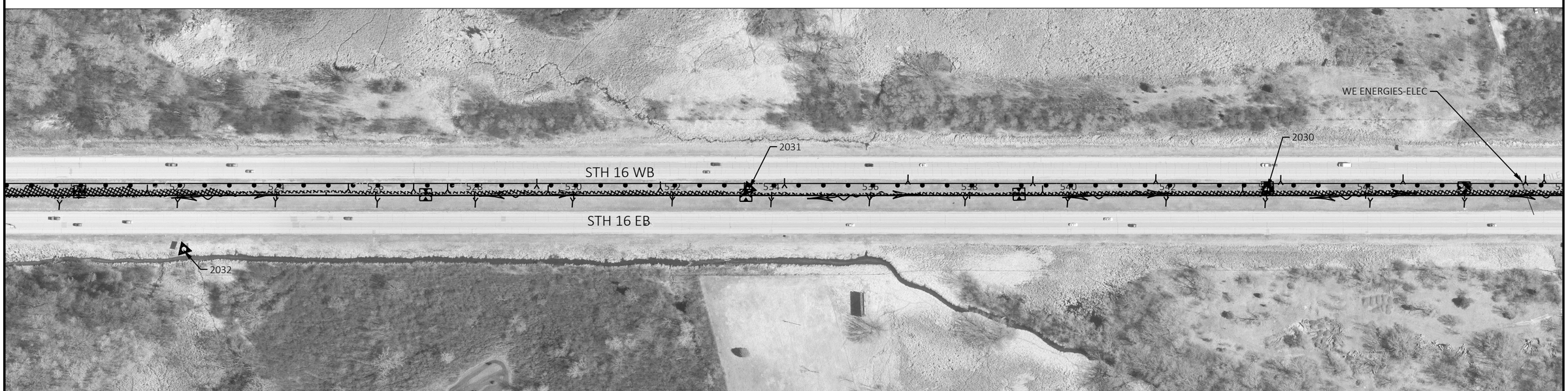
CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2032	STA 522+13 108.74' RT	CP CHISELED + SOUTH SIGN BASE	860.90
2031	STA 533+54	CP CHISELED +	860.59
2030	STA 544+00	CP CHISELED +	859.93

2



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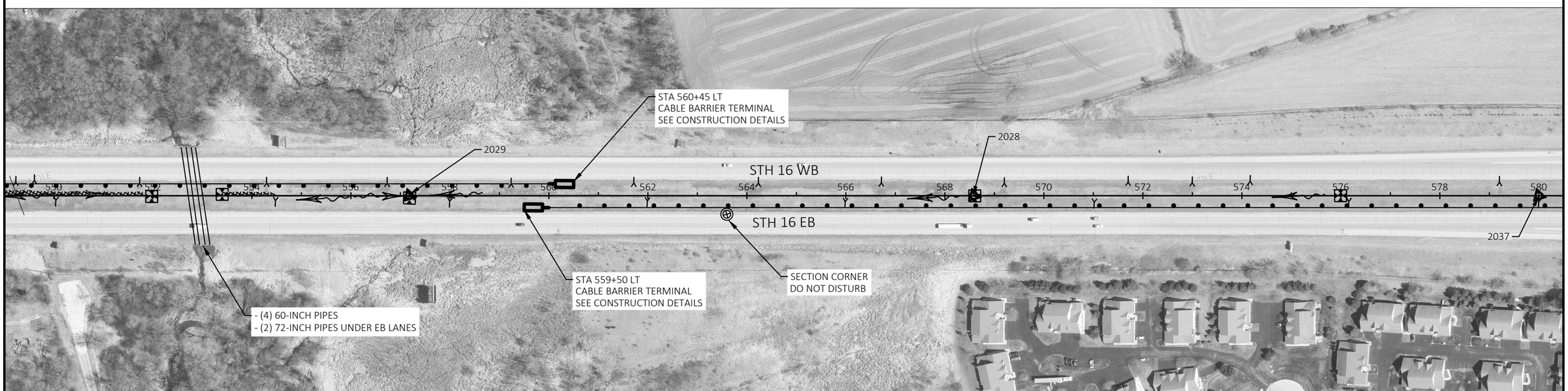
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 18	E

2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2029	STA 557+18	CP CHISELED +	858.86
2028	STA 568+59	CP CHISELED +	869.75
2027	STA 579+99.72	PC MON ALUM CAP	879.54



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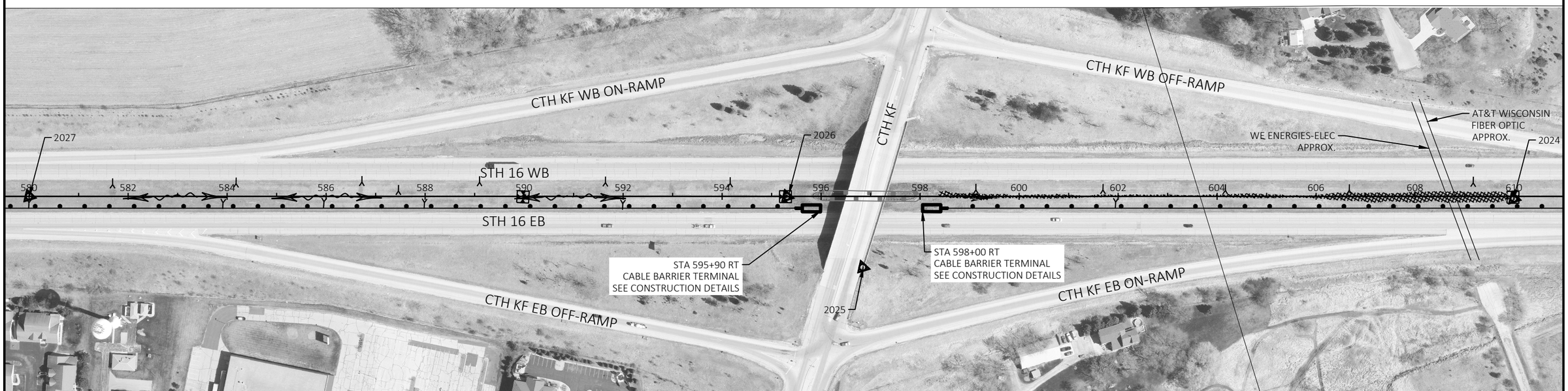
NUMBER	LOCATION	DESCRIPTION	ELEVATION
2027	STA 579+99.72	PT MON ALUM CAP	879.54
2026	STA 595+31	CP CHISELED +	876.73
2025	STA 596+84	ALUM CAP B-67-174	904.11
2024	STA 609+99	CP CHISELED +	875.02

N



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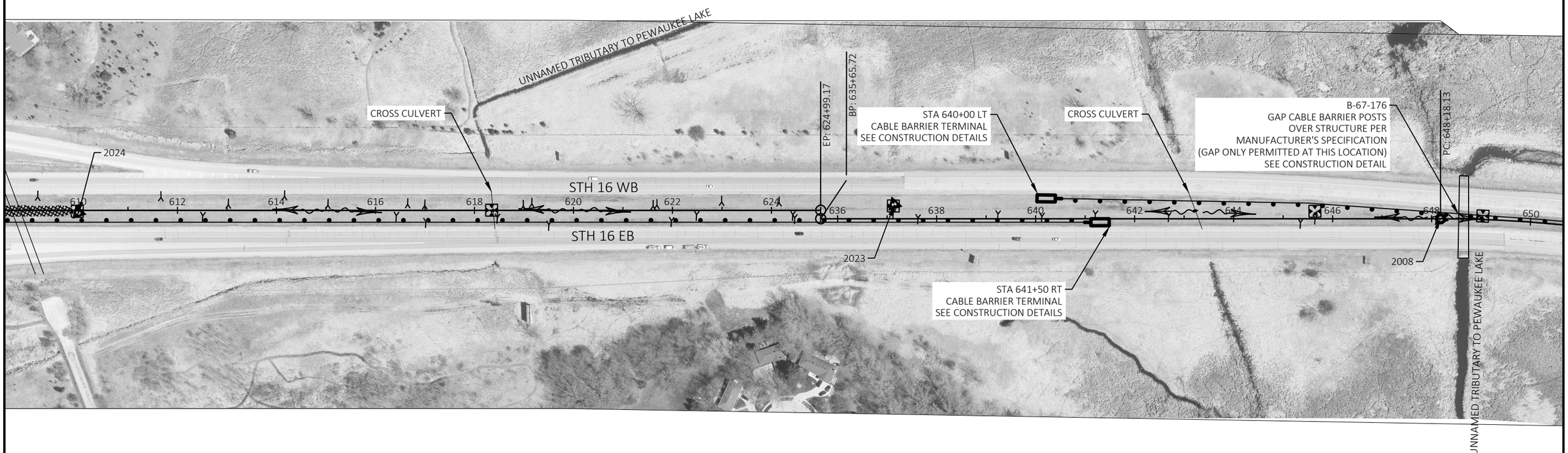
CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2024	STA 609+99	CP CHISELED +	875.02
2023	STA 637.14	CP CHISELED +	849.91
2008	STA 648+18	MON ALUM CAP	851.00

2



LEGEND

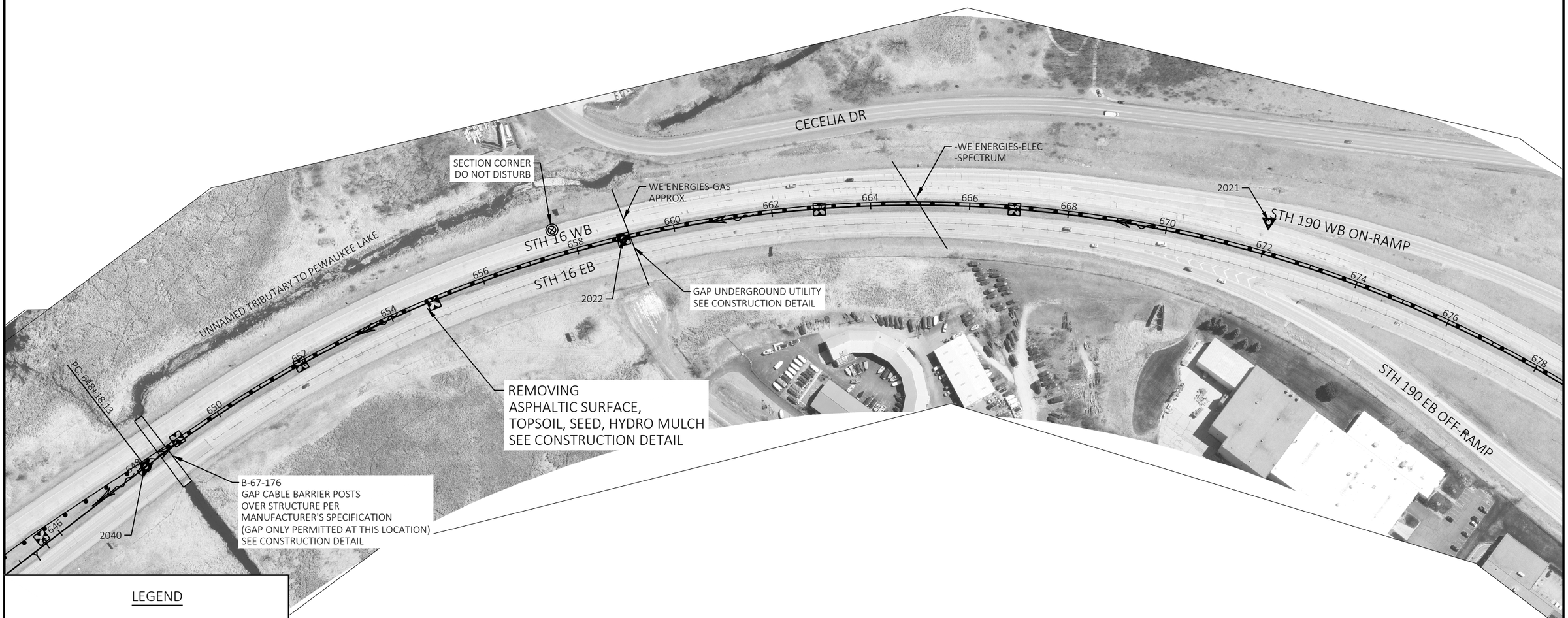
- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2008	STA 648+18	MON ALUM CAP	851.00
2022	STA 658+94.5	CP CHISELED +	852.20
2021	STA 671+95 65.45' LT	CP CHISELED +	867.46

2



LEGEND

- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

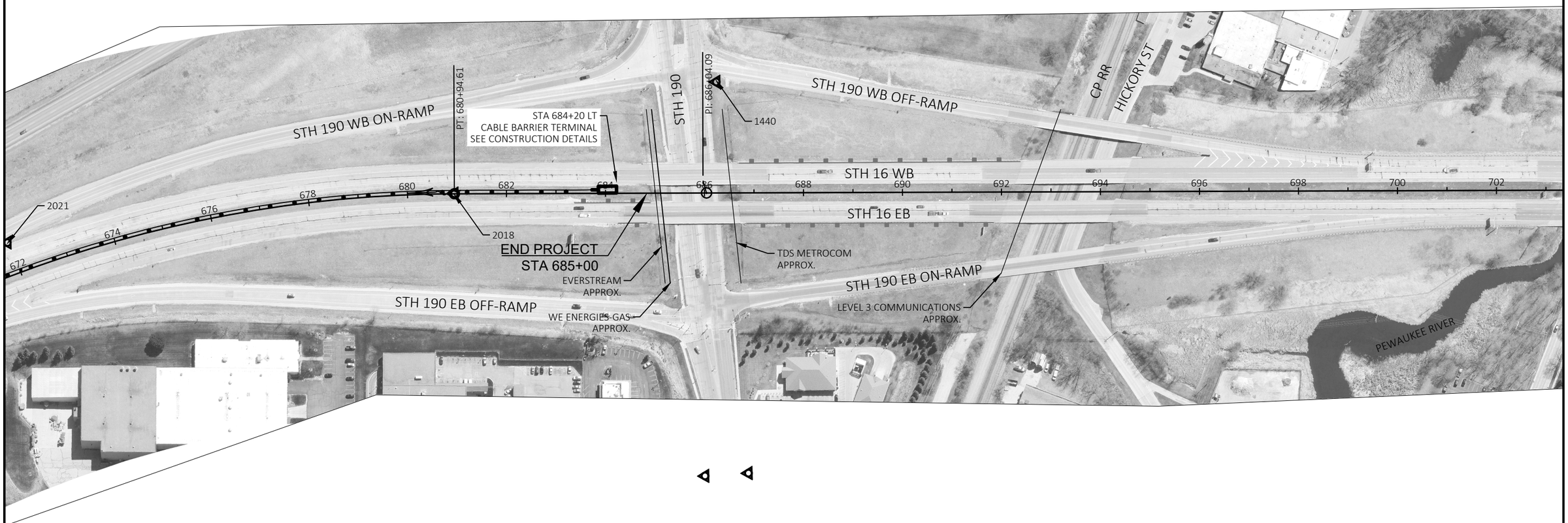
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 22	E

2

CONTROL POINTS

NUMBER	LOCATION	DESCRIPTION	ELEVATION
2021	STA 671+95 65.45' LT	CP CHISELED +	867.46
2018	STA 680+95	PT MON ALUM CAP	881.17
1440	STA 684+23 224.35' LT	FENO MON WITH PK	868.267

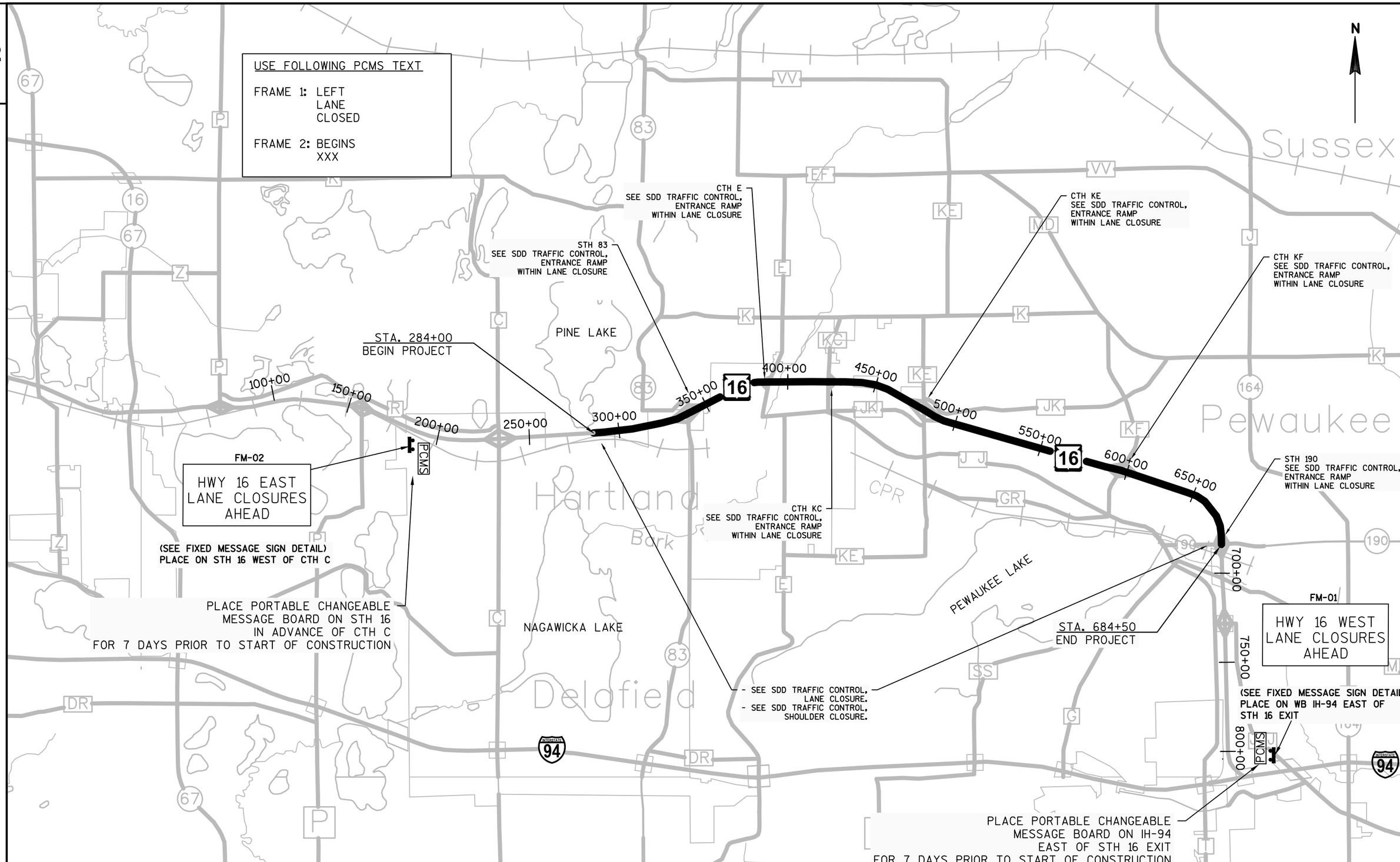
2



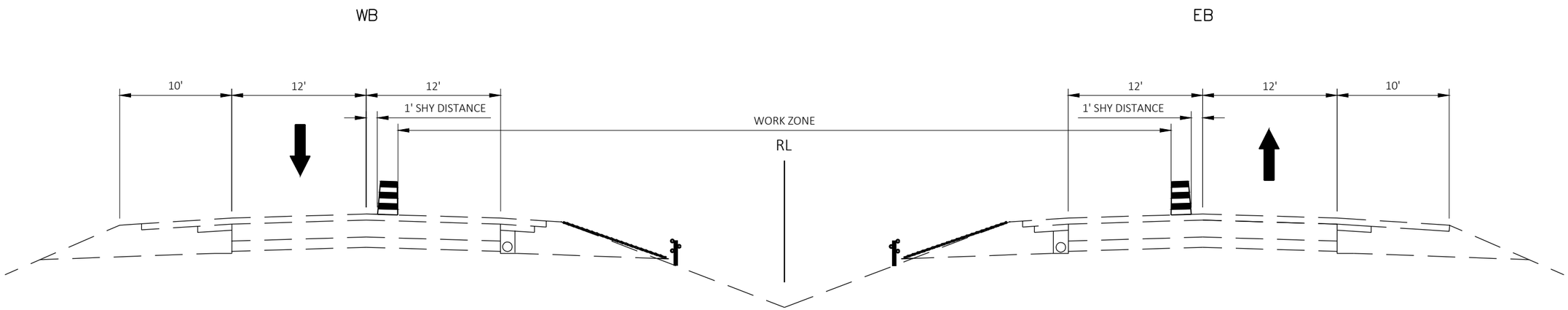
LEGEND

- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 23	E



PROJECT NO:1370-17-70	HWY:STH 16	COUNTY:WAUKESHA	TRAFFIC CONTROL OVERVIEW	SHEET 24	E



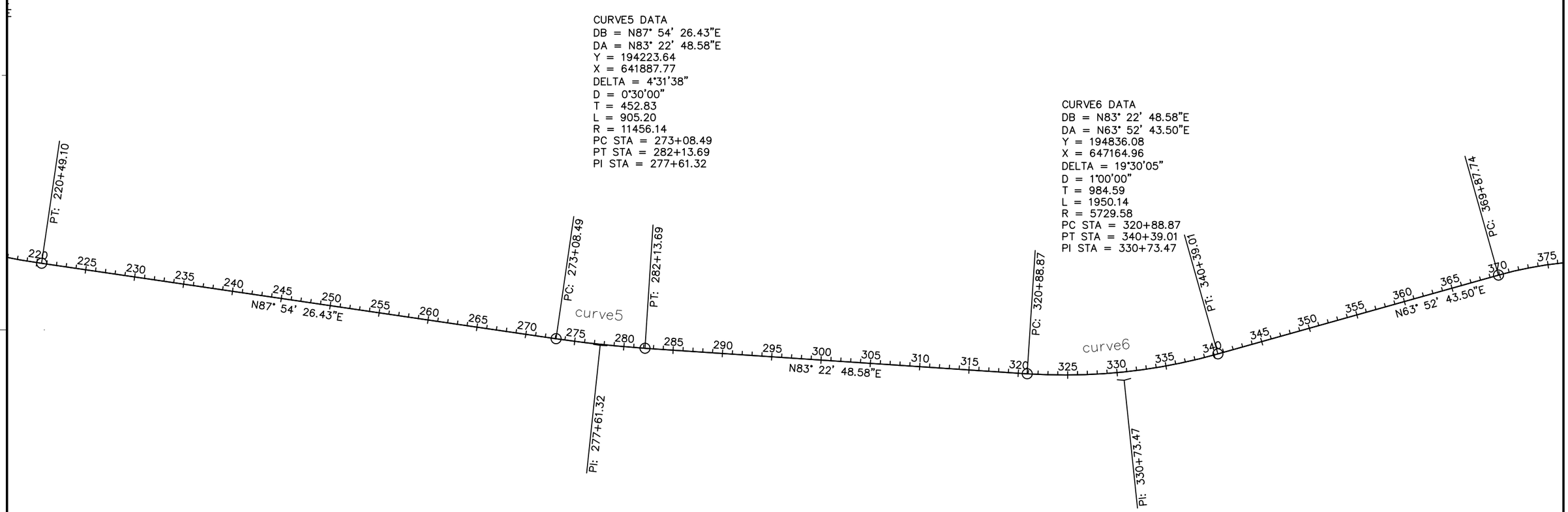
STH 16
STAGING TYPICAL SECTION OFF PEAK HOURS

SINGLE LANE CLOSURES PERMITTED DURING OFF PEAK HOURS. SEE SPECIAL PROVISIONS.

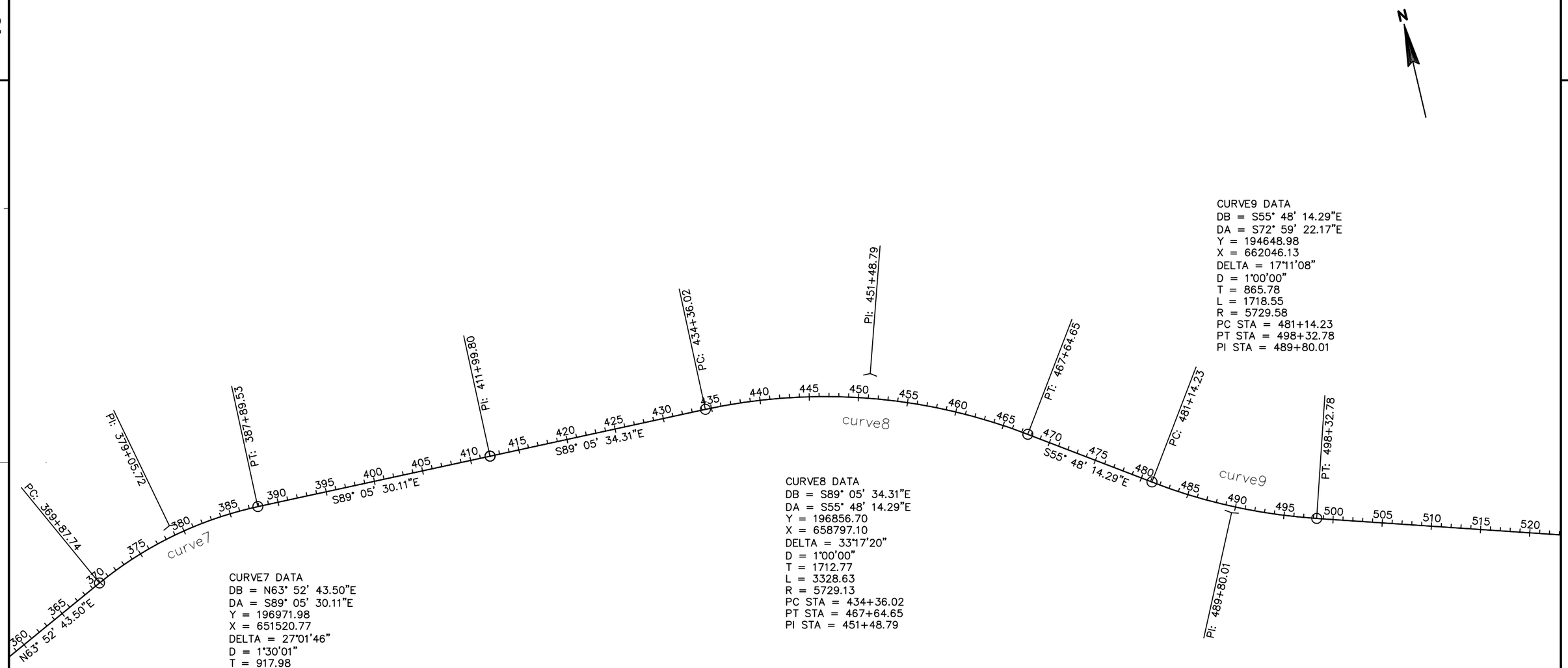
2

CURVE5 DATA
DB = N87° 54' 26.43"E
DA = N83° 22' 48.58"E
Y = 194223.64
X = 641887.77
DELTA = 4°31'38"
D = 0°30'00"
T = 452.83
L = 905.20
R = 11456.14
PC STA = 273+08.49
PT STA = 282+13.69
PI STA = 277+61.32

CURVE6 DATA
DB = N83° 22' 48.58"E
DA = N63° 52' 43.50"E
Y = 194836.08
X = 647164.96
DELTA = 19°30'05"
D = 1°00'00"
T = 984.59
L = 1950.14
R = 5729.58
PC STA = 320+88.87
PT STA = 340+39.01
PI STA = 330+73.47



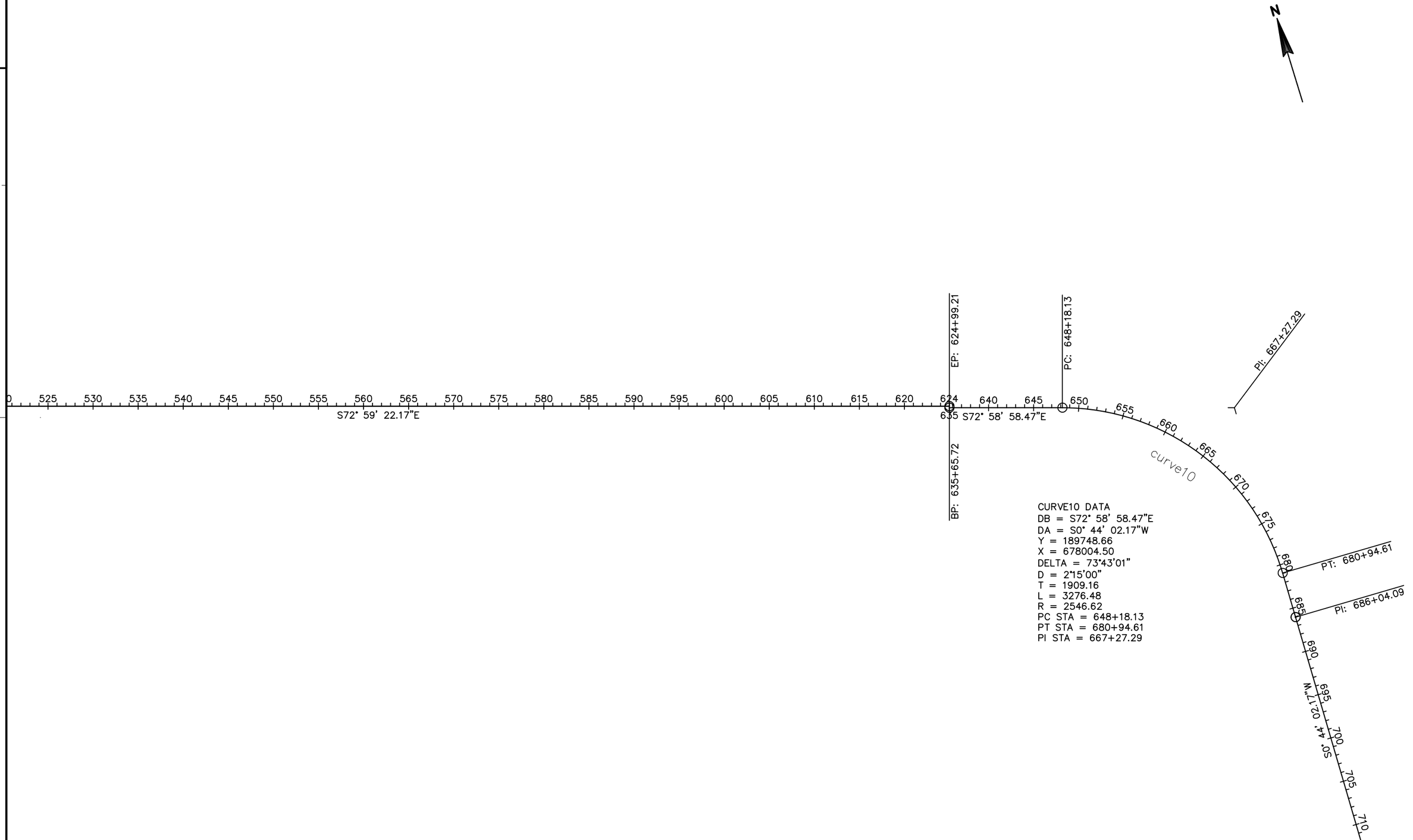
PROJECT NO:1370-17-70	HWY:STH 16	COUNTY:WAUKESHA	PLAN DETAILS	SHEET 26	E



CURVE9 DATA
DB = S55° 48' 14.29"E
DA = S72° 59' 22.17"E
Y = 194648.98
X = 662046.13
DELTA = 17°11'08"
D = 1°00'00"
T = 865.78
L = 1718.55
R = 5729.58
PC STA = 481+14.23
PT STA = 498+32.78
PI STA = 489+80.01

CURVE8 DATA
DB = S89° 05' 34.31"E
DA = S55° 48' 14.29"E
Y = 196856.70
X = 658797.10
DELTA = 33°17'20"
D = 1°00'00"
T = 1712.77
L = 3328.63
R = 5729.13
PC STA = 434+36.02
PT STA = 467+64.65
PI STA = 451+48.79

CURVE7 DATA
DB = N63° 52' 43.50"E
DA = S89° 05' 30.11"E
Y = 196971.98
X = 651520.77
DELTA = 27°01'46"
D = 1°30'01"
T = 917.98
L = 1801.79
R = 3819.34
PC STA = 369+87.74
PT STA = 387+89.53
PI STA = 379+05.72



CURVE10 DATA
DB = S72° 58' 58.47"E
DA = S0° 44' 02.17"W
Y = 189748.66
X = 678004.50
DELTA = 73°43'01"
D = 2°15'00"
T = 1909.16
L = 3276.48
R = 2546.62
PC STA = 648+18.13
PT STA = 680+94.61
PI STA = 667+27.29

2

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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-01
PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 195307.59	EASTING: 648132.43
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS	
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA	
STATION 341+83	OFFSET 0'	TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION:	975.75 ft	

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Graphic	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	6	D				0.5 Topsoil (6") 975.3						HSA	
						Dark Gray fine SAND,some silt, little clay, trace gravel; stiff							
SS 1	7	D	4-12-12 (24)	1, 2		SS-1 Rootlets Present	A-2-5	1.25					
SS 2	3	D	5-8-7 (15)	3, 4, 5		SS-2 Rootlets Present		1.25					
						6.0 969.8							
SS 3	8	D	5-5-5 (10)	6, 7		Brown SAND, some gravel, little silt; firm	A-3						
SS 4	16	D	7-7-6 (13)	8, 9, 10		10.0 965.8							

End of Boring at 10.0 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: NE	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐	
WATER LEVEL AT COMPLETION: NE	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐	

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

J:\COUNTIES\WAUKESHA\STH 16\1370-17-00 STH 16 2021 CABLE GUARD\1370-17-00 STH 16 CABLE BARRIER.GPJ 1370-17-00 STH 16 Cable Barrier 4/20/22

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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-02
PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 196565.5	EASTING: 650698.89
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS	
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA	
STATION 369+90	OFFSET 0'	TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION:	985.09 ft	

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Graphic	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	6					0.4 5" Topsoil 984.7						HSA	
						Brown GRAVEL, few sand, firm							
SS 1	1	D	4-8-7 (15)	1, 2		(Possible large gravel and/or cobbles; crushed rock fragments included with sample)	A-1-a						
						2.3 982.8							
						Brown GRAVEL, little sand, trace silt; firm							
SS 2	1	D	13-17-13 (30)	3, 4, 5			A-1-a						
SS 3	2	D	5-9-10 (19)	6, 7		7.3 977.8							
						Brown GRAVEL, some sand, trace silt; firm							
SS 4	7	D	10-11-11 (22)	8, 9, 10		10.0 975.1	A-1-a						

End of Boring at 10.0 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: NE	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐	
WATER LEVEL AT COMPLETION: NE	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐	

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-03
PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 196947.59	EASTING: 652929.34
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS	
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA	

STATION 392+75 OFFSET 0' TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION: 944.42 ft

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Graphic	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	6	D				Gray/brown GRAVEL, some sand,trace silt, loose to firm						HSA	
SS 1	7	D	3-11-9 (20)	1 2			A-1-a						
				3		3.0 941.4 Brown/gray GRAVEL, some sand, little silt, loose to firm							
SS 2	5	D	5-5-3 (8)	4		(Possible large gravel and/or cobbles; crushed rock fragments included with sample)	A-1-a						
				5		5.0 939.4 Dark brown silty CLAY, trace sand; stiff							
SS 3	16	M	2-6-8 (14)	6 7			A-6	1.5					
				8		7.9 936.5 Dark Brown SAND, some gravel, little silt, trace clay; firm							
SS 4	6	M	6-5-6 (11)	9 10		10.0 934.4	A-2-4						

End of Boring at 10.0 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: NE	CAVE - IN DEPTH AT COMPLETION: NMR	WET DRY	
WATER LEVEL AT COMPLETION: NE	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET DRY	

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-04
PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 195163.37	EASTING: 661288.01
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS	
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA	

STATION 423+40 OFFSET 0' TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION: 932.89 ft

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Graphic	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	6					Topsoil (10")						HSA	
						0.8 932.1 Brown with gray GRAVEL, little sand; loose							
SS 1	6	D	1-4-6 (10)	1 2		(Possible large gravel and/or cobbles; crushed rock fragments included with sample)	A-1-a						
						2.8 930.1 Brown GRAVEL, some sand, trace silt; firm							
SS 2	8	D	6-12-14 (26)	3 4 5			A-1-a						
SS 3	9	D	9-8-12 (20)	6 7		SS-3 Mixed Color, brown with gray, trace red and black							
						7.9 925.0 Whitish gray GRAVEL, little sand, trace silt; very dense							
SS 4	14	D	21-35-31 (66)	8 9 10		SS-4 Possible cobbles; rock fragments in sample jar 10.0 922.9	A-1-a						

End of Boring at 10.0 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: NE	CAVE - IN DEPTH AT COMPLETION: NMR	WET DRY	
WATER LEVEL AT COMPLETION: NE	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET DRY	

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-05
PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 195163.37	EASTING: 661288.01
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS	
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA	

STATION 480+65 OFFSET 0' TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION: 897.96 ft

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	8			Topsoil (8") 0.7 / 897.3						HSA	
SS 1	15		1-1-3 (4)	Brown CLAY, little sand, trace silt and gravel, stiff (FILL)	A-6	2.0					
SS 2	13		1-3-4 (7)	4.5 / 893.5		2.75					
				Black silty CLAY, trace sand and organics (possible buried topsoil); very stiff	A-6						
SS 3	5		1-2-2 (4)	6.0 / 892.0							
				Brown with gray silty CLAY, little sand; medium	A-6	0.75					
SS 4	18		4-5-8 (13)	7.5 / 890.5							
				Brown silty CLAY, few sand, trace gravel; hard	A-6	4.5					
SS 5	18		9-14-17 (31)	12.5 / 885.5		>4.5					

End of Boring at 12.5 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: 9ft.	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
WATER LEVEL AT COMPLETION: 5ft.	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-06
PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 193843.03	EASTING: 664659.33
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS	
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA	

STATION 517+00 OFFSET 0' TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION: 863 ft

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	8			Topsoil (8") 0.7 / 862.3						HSA	
SS 1	10	M	4-5-5 (10)	Brown SAND, little silt, few gravel; loose 3.0 / 860.0	A-3						
SS 2	5	M	0-2-3 (5)	Gray silty CLAY, trace sand; medium to very stiff		3.0					
SS 3	5	D	1-2-3 (5)		A-6	1.25					
SS 4	4	D	1-1-3 (4)			1.0					
				10.5 / 852.5							
				Brown SAND, trace gravel, silt, clay; firm							
SS 5	14	M	5-7-7 (14)	SS-5 Black Sand seam (< 2") present	A-2-4						
SS 6	18	W	6-9-18 (27)	15.0 / 848.0							

End of Boring at 15.0 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: 11.5ft.	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
WATER LEVEL AT COMPLETION: 12ft.	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

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J:\COUNTIES\WAUKESHA\STH 16\1370-17-00 STH 16 2021 CABLE GUARD\1370-17-00 STH 16 CABLE BARRIER.GPJ 1370-17-00 STH 16 Cable Barrier 4/20/22

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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-07

PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE: / LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 192590.46 / EASTING: 668771.99
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984 / VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA

STATION: 560+00 OFFSET: 0' TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION: 860.51 ft

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	8				Topsoil (8") 0.7 / 859.9							
SS 1	18	M	1-6-6 (12)	1 2	Orange brown fine SAND, little silt, clay, trace gravel; very stiff	A-2-4	3.0					
				3	3.0 / 857.5 Color gray in SS-2							
SS 2	18	M	3-5-4 (9)	4 5	Gray brown silty CLAY, some fine sand; very stiff	A-6	2.25					
					5.5 / 855.0							
SS 3	18	W	3-2-7 (9)	6 7	Gray SILT, trace clay and fine sand; loose							
				8	8.0 / 852.5							
SS 4	18	W	1-2-2 (4)	9 10	Gray clayey SILT, little sand, very loose							
					10.5 / 850.0							
SS 5	18	M	1-2-1 (3)	11 12 13	Gray silty CLAY; stiff	A-6	1.0					
SS 6	18	M	1-1-2 (3)	14 15	15.0 / 845.5		1.0					

End of Boring at 15.0 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: 7ft.	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
WATER LEVEL AT COMPLETION: 10ft.	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

L:\COUNTIES\WAUKESHA\STH 16\1370-17-00 STH 16 2021 CABLE GUARD\1370-17-00 STH 16 CABLE BARRIER.GPJ 1370-17-00 STH 16 Cable Barrier 4/20/22

WI Dept. of Transportation
3502 Kinsman Blvd.
Madison, WI 53704

WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-08

PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE: / LONGITUDE:
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 191538.78 / EASTING: 672194.5
DATE STARTED: 12/20/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS
DATE COMPLETED: 12/20/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984 / VERTICAL DATUM: MSL
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA

STATION: 595+80 OFFSET: 0' TOWNSHIP: RANGE: SECTION: 1/4 SECTION: 1/4 1/4 SECTION: SURFACE ELEVATION: 877.7 ft

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	12				Topsoil (12") 1.0 / 876.7						HSA	
SS 1	18	D	7-13-16 (29)	1 2	Gray clayey SILT, trace sand and gravel; hard		>4.5					
				3	3.0 / 874.7							
SS 2	16	D	11-21-16 (37)	4 5	Gray with white SAND, some gravel, few silt; dense	A-1-b						
					5.4 / 872.3							
SS 3	18	D	10-30-50 (80)	6 7	Gray silty CLAY, trace sand and gravel; hard		>4.5					
				8	8.0 / 869.7							
SS 4	18	D	22-42-50 (92)	9 10	Gray clayey SILT, little sand, few gravel; very dense							
					10.0 / 867.7							

End of Boring at 10.0 ft.

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: NE	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐
WATER LEVEL AT COMPLETION: NE	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

L:\COUNTIES\WAUKESHA\STH 16\1370-17-00 STH 16 2021 CABLE GUARD\1370-17-00 STH 16 CABLE BARRIER.GPJ 1370-17-00 STH 16 Cable Barrier 4/20/22

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WI Dept. of Transportation
3502 Kinsman Blvd.
Madison, WI 53704

WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-09

PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:	
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 190505.61	EASTING: 675517.95	
DATE STARTED: 12/21/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS		
DATE COMPLETED: 12/21/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL	
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA		
STATION 640+00	OFFSET 0'	TOWNSHIP: / RANGE: / SECTION: / 1/4 SECTION: / 1/4 1/4 SECTION:	SURFACE ELEVATION: 852.43 ft		

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	6				Topsoil (6") 0.5 / 851.9						HSA	
				1	Brown clayey SILT, some clay, little sand, trace gravel; firm							
SS 1	13	D	8-13-13 (26)	2								
				3	2.8 / 849.6 Dark Brown silty CLAY, little sand, trace gravel; medium to stiff							
SS 2	13	D	9-13-9 (22)	4			1.0					
				5								
SS 3	18	M	1-1-1 (2)	6			1.0					
				7								
				8	8.0 / 844.4 Gray/orange clayey SILT, little fine sand; stiff							
SS 4	18	M	0-1-2 (3)	9			1.25					
				10	10.0 / 842.4 End of Boring at 10.0 ft.							

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: NE	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐	
WATER LEVEL AT COMPLETION: NE	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐	

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

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Madison, WI 53704

WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

BORING ID: B-10

PAGE NO: 1 of 1

WISDOT PROJECT NAME: 1370-17-00 STH 16 Cable Barrier	CONSULTANT: Gestra	CONSULTANT PROJECT NO:	LATITUDE:	LONGITUDE:	
ROADWAY NAME: STH 16	DRILLING CONTRACTOR: GESTRA	DRILLING CONTRACTOR PROJECT NO:	NORTHING: 187514.48	EASTING: 677977.17	
DATE STARTED: 12/21/21	CREW CHIEF: A. Woerpel	DRILL RIG:	COORDINATE SYSTEM: WCCS		
DATE COMPLETED: 12/21/21	LOGGED BY:	HOLE SIZE: in	HORIZONTAL DATUM: WGS 1984	VERTICAL DATUM: MSL	
COUNTY: Waukesha	LOG QC BY:	HAMMER TYPE:	STREAMBED ELEVATION: NA		
STATION 684+20	OFFSET 0'	TOWNSHIP: / RANGE: / SECTION: / 1/4 SECTION: / 1/4 1/4 SECTION:	SURFACE ELEVATION: 886.48 ft		

SAMPLE TYPE NUMBER	RECOVERY (in) (RQD)	Moisture	BLOW COUNTS (N VALUE)	Depth (ft)	Soil / Rock Description and Geological Origin for Each Major Unit / Comments	USCS / AASHTO	Strength Qp (tsf)	Liquid Limit (%)	Plasticity Index (%)	Boulders	Drilling Method	Notes
AU	12				Grayish Brown clayey SILT, trace sand and gravel; very stiff						HSA	
				1								
SS 1	17	D	3-7-6 (13)	2			3.0					
				3	3.0 / 883.5 Gray clayey SILT, trace sand and gravel; very stiff							
SS 2	15	D	1-2-4 (6)	4			3.25					
				5	5.4 / 881.1 Gray clayey SILT, little gravel, trace sand; very stiff							
SS 3	3	D	8-6-4 (10)	6			3.0					
				7								
				8								
SS 4	1	D	4-10-16 (26)	9								
				10	10.0 / 876.5 End of Boring at 10.0 ft.							

WATER LEVEL & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING: NE	CAVE - IN DEPTH AT COMPLETION: NMR	WET ☐ DRY ☐	
WATER LEVEL AT COMPLETION: NE	CAVE - IN DEPTH AFTER 0 HOURS: NMR	WET ☐ DRY ☐	

NOTES: 1) Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.
2) NE = Not Encountered; NMR = No Measurement Recorded

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J:\COUNTIES\WAUKESHA\STH 16\1370-17-00 STH 16 2021 CABLE GUARD\1370-17-00 STH 16 CABLE BARRIER.GPJ 1370-17-00 STH 16 Cable Barrier 4/20/22

1370-17-70

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	40.000	40.000
0004	205.0100	Excavation Common	CY	345.000	345.000
0006	213.0100	Finishing Roadway (project) 01. 1370-17-70	EACH	1.000	1.000
0008	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,940.000	1,940.000
0010	613.1100.S	Cable Barrier Type 1	LF	39,125.000	39,125.000
0012	613.1200.S	Cable Barrier End Terminal Type 1	EACH	20.000	20.000
0014	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1370-17-70	EACH	1.000	1.000
0016	619.1000	Mobilization	EACH	1.000	1.000
0018	624.0100	Water	MGAL	33.000	33.000
0020	625.0100	Topsoil	SY	950.000	950.000
0022	625.0500	Salvaged Topsoil	SY	950.000	950.000
0024	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0026	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0028	628.7010	Inlet Protection Type B	EACH	70.000	70.000
0030	628.7504	Temporary Ditch Checks	LF	120.000	120.000
0032	629.0210	Fertilizer Type B	CWT	43.000	43.000
0034	630.0130	Seeding Mixture No. 30	LB	1,205.000	1,205.000
0036	630.0200	Seeding Temporary	LB	55.000	55.000
0038	630.0500	Seed Water	MGAL	1,510.000	1,510.000
0040	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	5.000	5.000
0042	637.2210	Signs Type II Reflective H	SF	20.000	20.000
0044	637.2230	Signs Type II Reflective F	SF	20.000	20.000
0046	638.2102	Moving Signs Type II	EACH	5.000	5.000
0048	638.2602	Removing Signs Type II	EACH	5.000	5.000
0050	638.3000	Removing Small Sign Supports	EACH	5.000	5.000
0052	642.5201	Field Office Type C	EACH	1.000	1.000
0054	643.0300	Traffic Control Drums	DAY	42,500.000	42,500.000
0056	643.0420	Traffic Control Barricades Type III	DAY	2,200.000	2,200.000
0058	643.0705	Traffic Control Warning Lights Type A	DAY	2,000.000	2,000.000
0060	643.0715	Traffic Control Warning Lights Type C	DAY	1,600.000	1,600.000
0062	643.0800	Traffic Control Arrow Boards	DAY	200.000	200.000
0064	643.0900	Traffic Control Signs	DAY	3,100.000	3,100.000
0066	643.1000	Traffic Control Signs Fixed Message	SF	110.000	110.000
0068	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0070	643.4100.S	Traffic Control Interim Lane Closure	EACH	120.000	120.000
0072	643.5000	Traffic Control	EACH	1.000	1.000
0074	646.1041.S	Marking Replace Line Wet Reflective Epoxy 4-Inch	LF	1,000.000	1,000.000
0076	650.8000	Construction Staking Resurfacing Reference	LF	40,100.000	40,100.000
0078	650.9910	Construction Staking Supplemental Control (project) 01. 1370-17-70	LS	1.000	1.000
0080	650.9920	Construction Staking Slope Stakes	LF	300.000	300.000
0082	690.0150	Sawing Asphalt	LF	700.000	700.000
0084	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,100.000	2,100.000
0086	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	5,400.000	5,400.000
0088	SPV.0180	Special 01. Hydro Mulch	SY	66,970.000	66,970.000

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REMOVAL

LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY
STA 654+62, RT	29
STA 654+62, LT	11
TOTAL	40

FINISHING ROADWAY

LOCATION	213.0100 FINISHING ROADWAY EA
PROJECT	1
TOTAL	1

CABLE BARRIER

STA	TO	STA	613.1100.S CABLE BARRIER TYPE 1 LF	613.1200.S CABLE BARRIER END TERMINAL TYPE 1 EACH
284+15	TO	341+33	5,725	2
343+15	TO	368+90	2,575	2
369+71	TO	390+70	2,100	2
392+75	TO	423+40	3,075	2
425+30	TO	480+65	5,525	2
482+70	TO	515+90	3,325	2
516+80	TO	560+45	4,375	2
559+50	TO	595+90	3,650	2
598+00	TO	641+50	4,350	2
640+00	TO	684+20	4,425	2
		TOTAL	39,125	20

MOBILIZATION

LOCATION	619.1000 MOBILIZATION EA
PROJECT	1
TOTAL	1

INLET PROTECTION

DESCRIPTION	STATION	-	STATION	628.7010 INLET PROTECTION TYPE B EA
STH 16	284+00		684+50	70
			TOTAL	70

BASE AGGREGATE

LOCATION			305.0110 BASE AGGREGATE DENSE 3/4 INCH TON	624.0100 WATER MGAL
MEDIAN REMOVAL AREAS				
STA 454+00			40	0.6
STA 654+00			35	0.5
STH 16 DITCH SLOPE FILL AREAS				
STA 492+00	-	STA 496+00	138	2.1
STA 590+00	-	STA 595+00	123	1.8
STA 607+00	-	STA 610+00	133	2.0
STA 647+00	-	STA 650+00	104	1.6
STA 670+00	-	STA 675+00	222	3.3
STA 677+00	-	STA 680+00	135	2.0
STH 16 EB INSIDE SHOULDERS				
STA 284+00	-	STA 369+00	105	1.6
STA 369+50	-	STA 390+60	25	0.4
STA 392+50	-	STA 454+00	75	1.1
STA 454+50	-	STA 516+00	75	1.1
STA 516+50	-	STA 654+00	170	2.6
STA 655+00	-	STA 684+00	35	0.5
STH 16 WB INSIDE SHOULDERS				
STA 284+00	-	STA 369+00	105	1.6
STA 369+50	-	STA 390+60	25	0.4
STA 392+50	-	STA 454+00	75	1.1
STA 454+50	-	STA 516+00	75	1.1
STA 516+50	-	STA 654+00	170	2.6
STA 655+00	-	STA 684+00	35	0.5
UNDISTRIBUTED			40	4.0
		TOTAL	1,940	33

MAINTENANCE AND REPAIR OF HAUL ROADS

PROJECT	618.0100 MAINTENANCE AND REPAIR OF HAUL ROADS EA
1370-17-70	1
TOTAL	1

MOBILIZATIONS EROSION CONTROL

	628.1905 MOBILIZATIONS EROSION CONTROL EA	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EA
STH 16	1	2
TOTAL	1	2

EROSION CONTROL

DESCRIPTION	STATION	-	STATION	628.7504 TEMPORARY DITCH CHECK LF
STH 16	453+00		456+00	30
	652+00		657+00	30
	PROJECT			60
			TOTAL	120

RESTORATION

STA	TO	STA	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	630.0500 SEED WATER MGAL	SPV.0180.01 HYDRO MULCH SY	NOTES
284+15	TO	341+33	-	-	6	172	-	-	9,550	
343+15	TO	368+90	-	-	3	77	-	-	4,300	RESTORE DISTURBED GROUND FOR
369+71	TO	390+70	-	-	2	63	-	-	3,500	LENGTH OF CABLE BARRIER
392+75	TO	423+40	-	-	3	92	-	-	5,130	INSTALLATION
425+30	TO	480+65	-	-	6	166	-	-	9,210	
453+00	TO	456+00	480	480	1	17	26	22	950	MEDIAN CROSSOVER REMOVAL AREA
482+70	TO	515+90	-	-	3	100	-	-	5,550	
516+80	TO	560+45	-	-	5	131	-	-	7,300	RESTORE DISTURBED GROUND FOR
559+50	TO	595+90	-	-	4	110	-	-	6,090	LENGTH OF CABLE BARRIER
598+00	TO	641+50	-	-	5	131	-	-	7,250	INSTALLATION
640+00	TO	684+20	-	-	5	133	-	-	7,380	
652+00	TO	657+00	380	380	1	14	21	18	760	MEDIAN CROSSOVER REMOVAL AREA
PROJECT			90	90	-	-	8	1,470		
		TOTAL	950	950	43	1,205	55	1,510	66,970	

FIELD OFFICE

LOCATION	642.5201 FIELD OFFICE TYPE C EA
PROJECT	1
TOTAL	1

CAT 0010

3

TRAFFIC CONTROL

STA	TO	STA	643.5000 (PROJECT) 1370-17-70 EACH	# OF DAYS	643.0300 DRUMS *EACH	DAY	643.0420 BARRICADES TYPE III *EACH	DAY	643.0705 WARNING LIGHTS TYPE A *EACH	DAY	643.0715 WARNING LIGHTS TYPE C *EACH	DAY	643.0800 ARROW BOARDS *EACH	DAY	643.0900 SIGNS *EACH	DAY	643.1050 SIGNS PCMS DAY
284+00	TO	685+00	--	50	850	42,500	44	2,200	40	2,000	32	1,600	4	200	62	3,100	14
PROJECT			1			--		--		--		--		--		--	--
TOTAL			1		42,500		2,200		2,000		1,600		200		3,100		14

NOTES:

* FOR INFORMATION ONLY

SAWING

DESCRIPTION	STATION	-	STATION	690.0150 SAWING ASPHALT LF
STH 16	453+00		456+00	230
	652+00		657+00	470
			TOTAL	700

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643.1000 TRAFFIC CONTROL FIXED MESSAGE SIGNS

SIGN	SF
FM01	55
FM02	55
TOTAL	110

643.4100.S TRAFFIC CONTROL INTERIM LANE CLOSURE

	EA
PROJECT	120
TOTAL	120

PAVEMENT MARKING

646.1041.S
MARKING REPLACE LINE WET
REFLECTIVE EPOXY 4-INCH

LOCATION	LF	NOTES
STA 454+30	200	REFRESH EDGELINE PAVEMENT MARKING AS NEEDED PER FIELD ENGINEER
STA 654+52	500	
UNDISTRIBUTED	300	
TOTAL	1,000	

CONSTRUCTION STAKING

PROJECT	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL LS	650.9920 SLOPE STAKES LF
STH 16	40,100	1	300
TOTAL	40,100	1	300

CAT 0010

TYPE II PERMANENT SIGNING 1370-17-70

SIGN NO.	SIGN CODE & SIZE	SIGN MESSAGE	SIGN SIZE W x H [IN.] x [IN.]	637.2210 SIGNS TYPE II REFLECTIVE H [SF]	637.2230 SIGNS TYPE II RELFECTIVE F [SF]	638.2102 MOVING SIGNS TYPE II [EA]	638.2602 REMOVING SIGNS TYPE II (EA)	638.3000 REM SMALL SIGN SUP [EA]	634.0618 POSTS WOOD 4" X 6" X 18' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS / NEW SIGN LOCATION
		UNDISTRIBUTED		20.000	20.000	5	5	5	5		
		TOTALS		20.000	20.000	5	5	5	5		

SHEET: 1 OF 1

3

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION CUT (2)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (3)	AVAILABLE MATERIAL (4)	UNEXPANDED FILL	EXPANDED FILL (5) FACTOR 1.25	MASS ORDINATE +/- (6)	WASTE	COMMENT
DIVISION 1										
WEST MEDIAN	453+50 - 455+00	MEDIAN	168	43	125	12	15	153	153	
DIVISION 1 SUBTOTAL			168	43	125	12	15	153		
DIVISION 2										
EAST MEDIAN	656+25 - 657+72	MEDIAN	73	45	28	22	28	46	46	
DIVISION 2 SUBTOTAL			73	45	28	22	28	46		
DIVISION 3										
UNDISTRIBUTED	284+00-685+00	MEDIAN	104	0	104	83	104	104	104	
DIVISION 3 SUBTOTAL			104	0	104	83	104	104		
GRAND TOTAL			345	88	257	117	147	199	303	
TOTAL COMMON EXC			345							

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) SALVAGED/UNUSABLE PAVEMENT MATERIAL

(4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL

(5) EXPANDED FILL FACTOR = 1.25

EXPANDED FILL = (UNEXPANDED FILL - EXPANDED ROCK - REDUCED MARSH - REDUCED EBS) * FILL FACTOR

(6) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

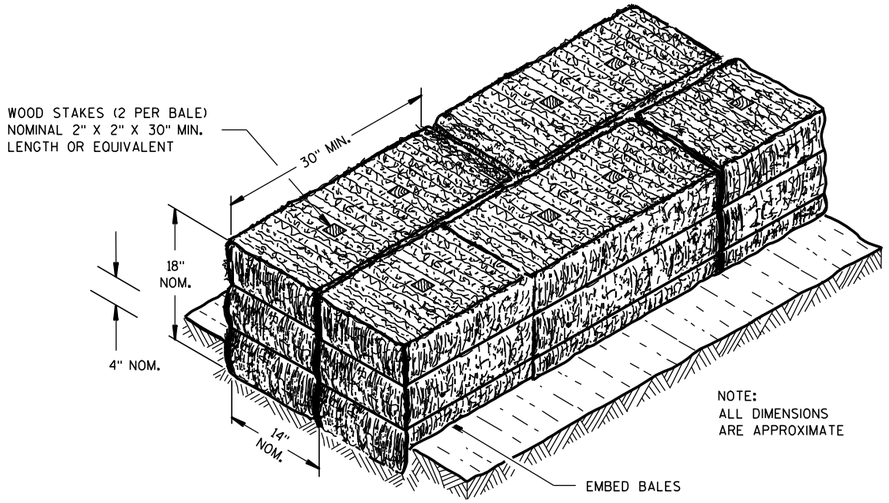
(7) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

Standard Detail Drawing List

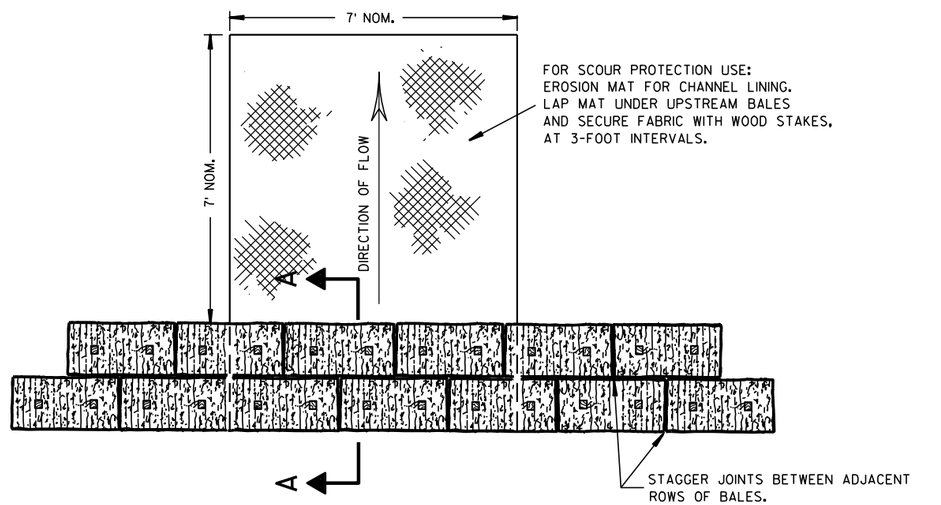
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E10-02	INLET PROTECTION TYPE A, B, C AND D
14B52-02A	CABLE BARRIER TYPE 1 LAYOUT
14B52-02B	CABLE BARRIER TYPE 1 LAYOUT
14B52-02C	CABLE BARRIER TYPE 1 LAYOUT
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15D12-10A	TRAFFIC CONTROL, LANE CLOSURE
15D15-06B	TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE
15D27-03	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH

6

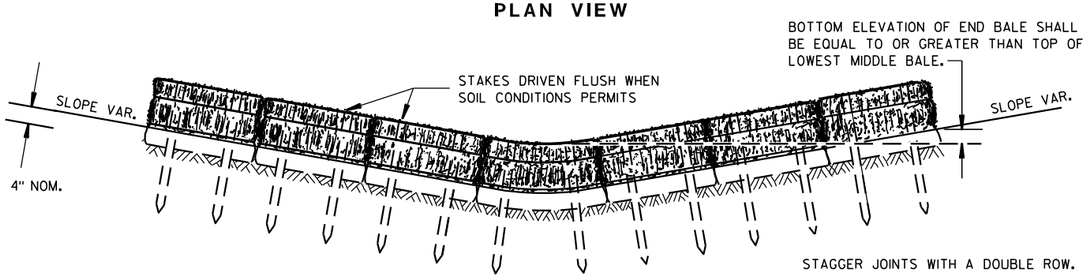
6



SECTION A-A



PLAN VIEW



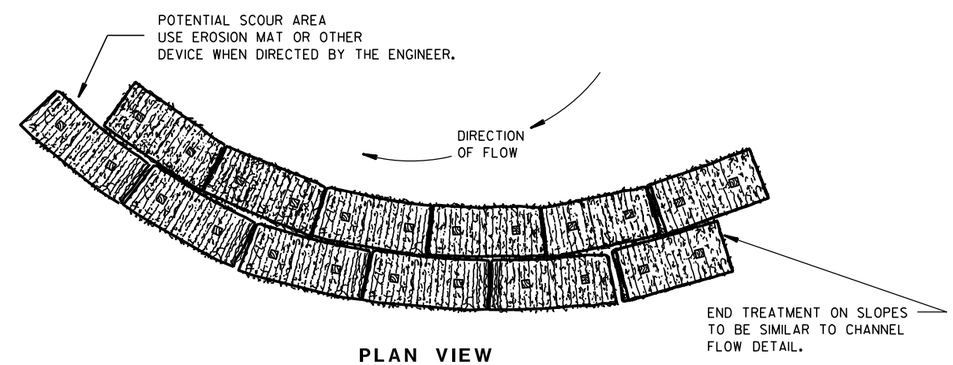
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

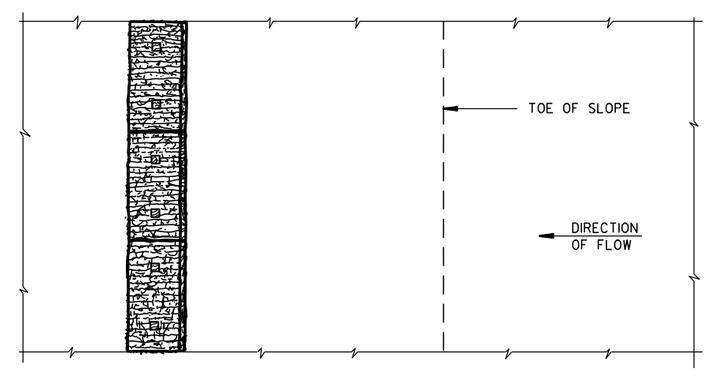
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

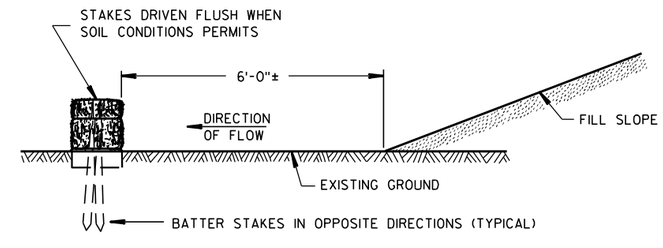


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 — DATE
/S/ Beth Cann — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

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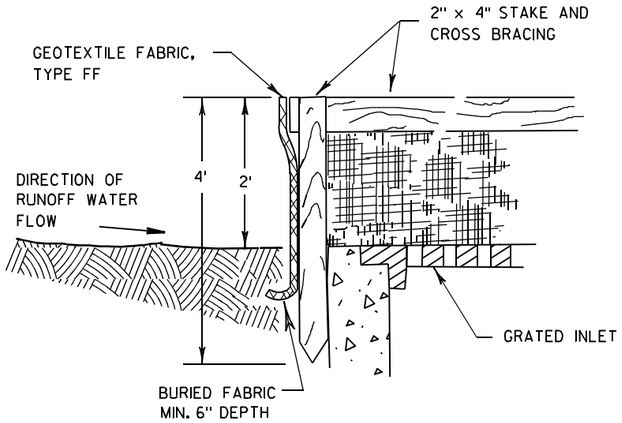
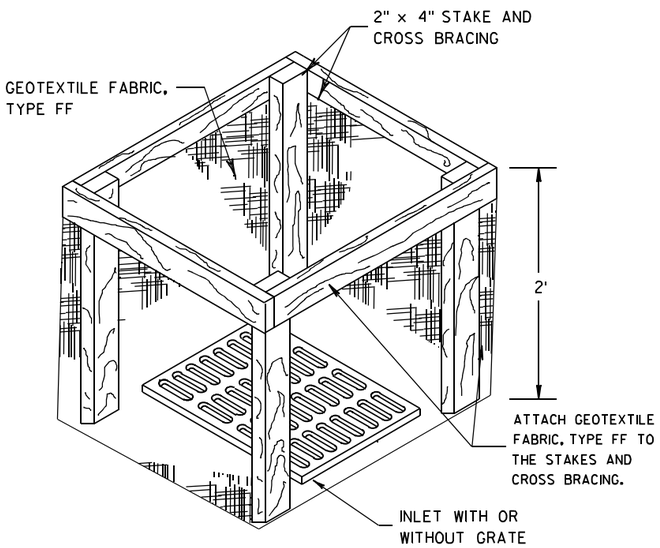
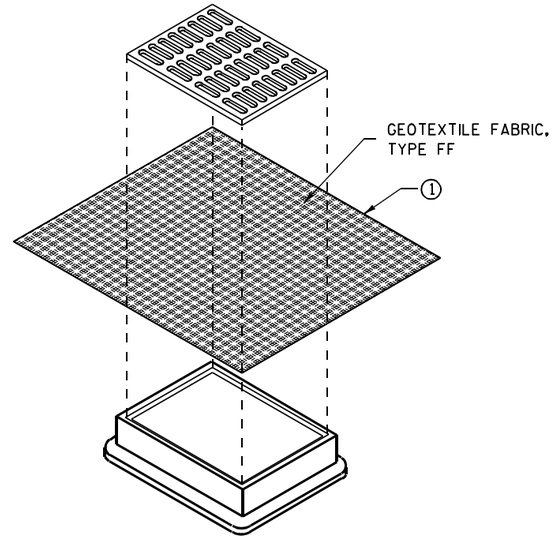
S.D.D. 8 E 8-3

S.D.D. 8 E 8-3



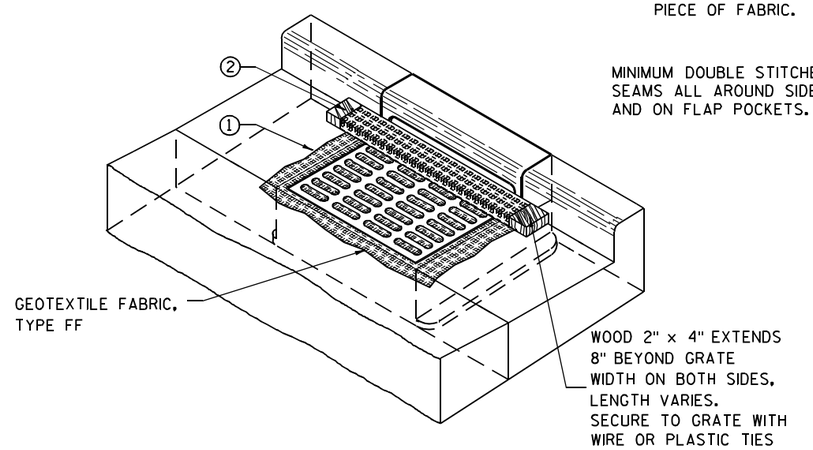


INLET PROTECTION, TYPE A

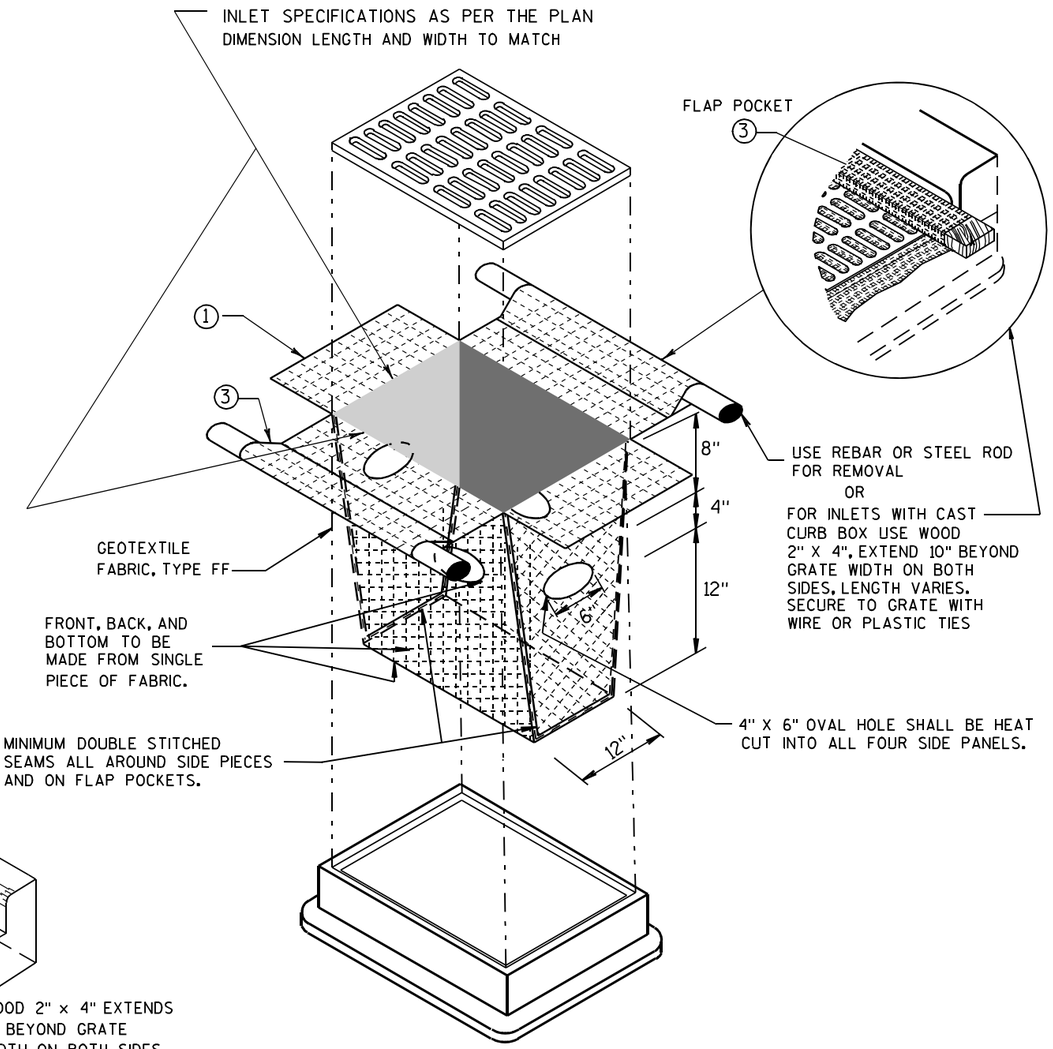


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

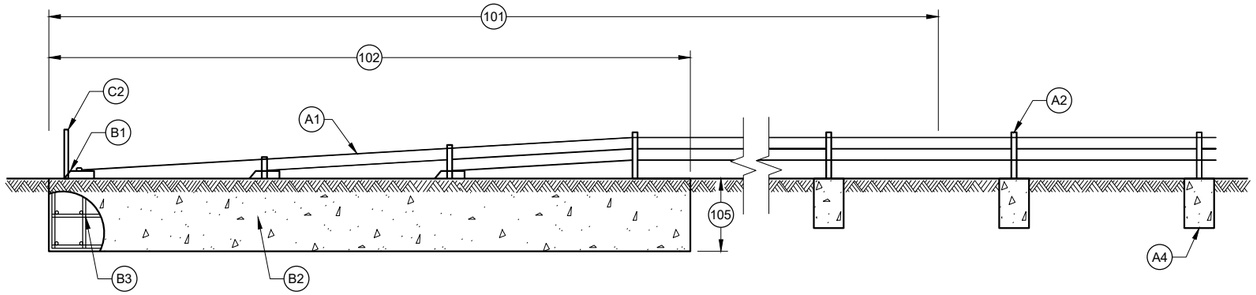
INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

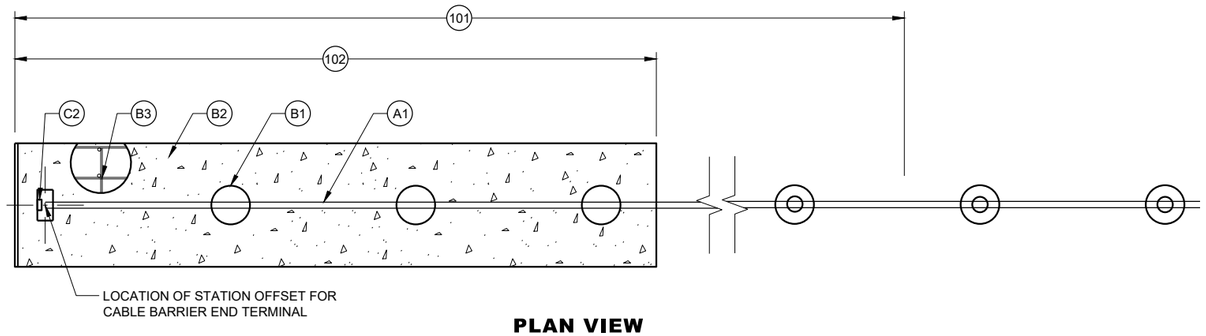
APPROVED
10/16/02 — DATE
/S/ Beth Cann[illegible] — CHIEF ROADWAY DEVELOPM[illegible] ENGINEER
FHWA

6

S.D.D. 8 E 10-2

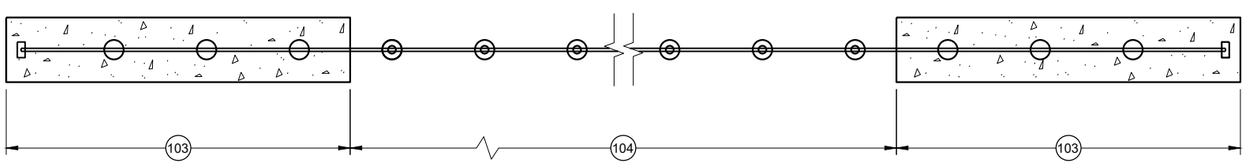


PROFILE VIEW

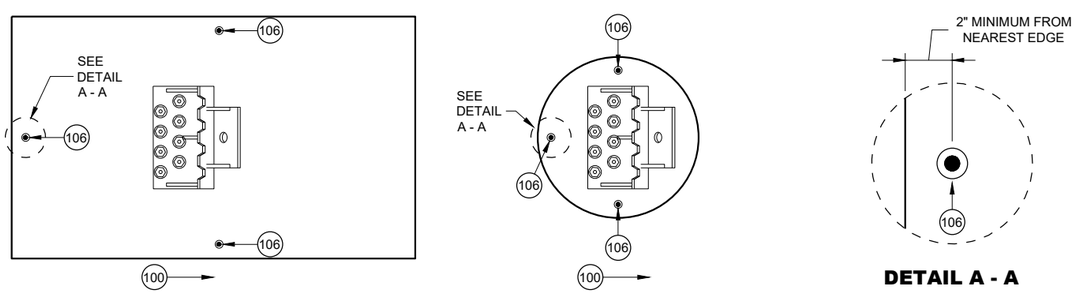


PLAN VIEW

TRANSITION FROM CABLE BARRIER TERMINAL TO CABLE BARRIER LINE POSTS



TYPICAL PLAN VIEW



DETAIL A - A

ANCHOR MONITOR POINTS FOR CABLE BARRIER END TERMINAL ANCHORS

GENERAL NOTES

DRAWINGS ARE GENERAL IN NATURE. SEE MANUFACTURER'S INFORMATION FOR MORE DETAIL.

PROVIDE 2 INCH CLEAR COVER FROM OUTER EDGE OF CONCRETE FOOTINGS TO REINFORCEMENT.

INSTALL LINE POSTS PLUMB. LINE POSTS ARE TO BE EASILY REMOVED BY HAND AND HOLD CABLES AT THE PROPER ELEVATION.

PROVIDE CABLE BARRIER SYSTEM FROM APPROVED PRODUCT LIST.

PROVIDE A SYSTEM TO HAVE THE WORKING WIDTH INDICATED IN PLAN.

PROVIDE DOCUMENTATION HOW POST SPACING, RADIUS OF CURVE AND ANCHOR SPACING INFLUENCES WORKING WIDTH TO CONSTRUCTION STAFF.

CONSTRUCT SHAFTS VERTICALLY. VERTICAL TOLERANCE OF SHAFT IS $\frac{1}{8}$" PER FOOT OF DEPTH. SHAFTS ARE TO MINIMIZE DISTURBANCE TO ADJACENT SOILS.

SECURE STEEL REINFORCEMENT AND STEEL SLEEVE PRIOR TO PLACEMENT OF CONCRETE. MAINTAIN CLEAR DISTANCE BETWEEN SOIL AND REINFORCEMENT CAGE.

PLACE CONCRETE IN ONE CONTINUOUS POUR FOR EACH FOOTING. USE VIBRATION TO CONSOLIDATE CONCRETE.

PROVIDE CASING AS NECESSARY TO PREVENT INTRUSION OF UNCONSOLIDATED MATERIALS OR WATER. USE CASINGS WHEN THERE IS 3 OR MORE INCHES OF WATER IN EXCAVATION.

PROVIDE WISCONSIN PROFESSIONAL ENGINEER SIGNED AND APPROVED FOOTING DESIGN USING A CASING AND CONSTRUCTION SEQUENCE. PROJECT ENGINEER WILL REVIEW AND APPROVED CASING DESIGN AND CONSTRUCTION SEQUENCE. CASING IS TO HAVE INTIMATE CONTACT WITH SHAFT SIDEWALL. CASING IT TO WITHSTAND INSERTION STRESS, REMOVAL STRESS, CONCRETE PRESSURE AND SOIL PRESSURE. REMOVE CASING DURING CONCRETE PLACEMENT OR IMMEDIATELY AFTER CONCRETE PLACEMENT. NO TEMPORARY CASING MAY REMAIN IN-PLACE.

PROVIDE WISCONSIN PROFESSIONAL ENGINEER SIGNED AND APPROVED FOOTING DESIGN AND CONSTRUCTION SEQUENCE WHEN OVER EXCAVATION IS REQUIRED NEAR A FOOTING. PROJECT ENGINEER WILL REVIEW AND APPROVED DESIGN AND CONSTRUCTION SEQUENCE.

FINISH TOP OF FOOTINGS TO THE DIMENSIONS INDICATED IN PLAN. REMOVE EXCESS CONCRETE.

DESIGN POST FOOTINGS SO THAT LINE POST FOOTING MOVE LESS THAN 1 INCH WHEN LINE POST IS IMPACTED BY A NCHRP TL-3 SMALL CAR.

USE MARINE GRADE ANTI-SEIZE LUBRICANT FOR THREADING FITTINGS THAT IS ACCEPTABLE FOR USE ON GALVANIZED STEEL.

100 DIRECTION THAT THE CABLE PULLS THE END ANCHOR FOOTING

101 LOCATION OF LENGTH OF NEED POINT FOR CABLE BARRIER END TERMINAL VARIES. (SEE MANUFACTURER'S INFORMATION)

102 PAY LIMIT FOR CABLE BARRIER END TERMINAL. LENGTH OF CABLE BARRIER END TERMINAL VARIES. (SEE MANUFACTURER'S INFORMATION)

103 CABLE BARRIER END TERMINAL

104 CABLE BARRIER AND LINE POSTS

105 IN SOIL MINIMUM DEPTH OF CABLE BARRIER END TERMINAL FOOTING IS 60 INCHES. DEEPER FOOTINGS PER MANUFACTURER'S RECOMMENDATION ARE ACCEPTABLE.

106 ANCHOR MONITOR POINTS ARE GALVANIZED SURVEY NAIL, OR MASONRY NAIL, PLACED INTO CONCRETE FOOTING BEFORE HARDENING. IF THERE ARE MULTIPLE ANCHOR POINTS WITHIN A PAY LIMIT FOR A CABLE BARRIER END TERMINAL, EACH ANCHOR POINT NEEDS THREE ANCHOR MONITOR POINTS.

CABLE BARRIER TYPE 1 LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

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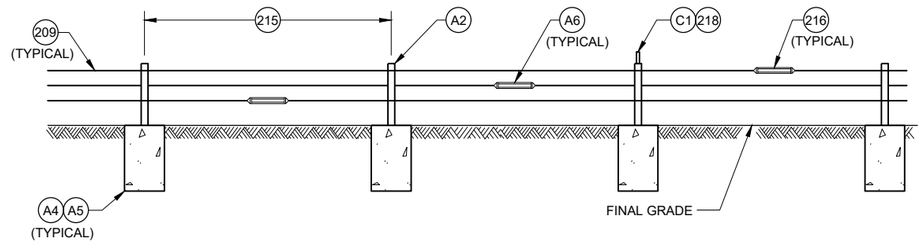
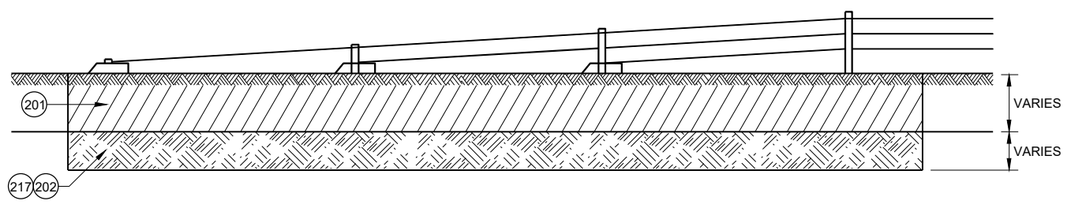
SDD 14B52 - 02a



PROFILE VIEW
LINE POST INSTALLATION



CABLE BARRIER END TERMINAL ROCK EXCAVATION DETAIL

GENERAL NOTES

201 SOIL TO BE EXCAVATED FOR CABLE BARRIER END TERMINAL (VARIES)

202 ROCK TO BE EXCAVATED FOR CABLE BARRIER END TERMINAL (VARIES)

203 SOIL TO BE EXCAVATED FOR LINE POST (VARIES)

204 ROCK TO BE EXCAVATED FOR LINE POST (VARIES)

205 EXCAVATE AND GRADE LINE FOR LINE POST FOOTINGS. INSTALL LINE POST FOOTING TO MINIMIZE 4 INCH TALL OBJECT ON 5 FOOT CHORD.

206 2 INCHES OF CLEAR COVER FROM EDGE OF CONCRETE TO REINFORCEMENT.

207 DIAMETER OF LINE POST FOOTING VARIES. SEE MANUFACTURERS' INFORMATION.

208 MINIMUM DEPTH OF LINE POST FOOTING IS 4' - 0" IN SOIL. DEEPER FOOTINGS PER MANUFACTURER'S RECOMMENDATION ARE ACCEPTABLE.

209 NUMBER AND LOCATION OF CABLES VARY. SEE MANUFACTURERS' INFORMATION.

210 LINE POST DIMENSIONS AND CONNECTION HARDWARE VARY. SEE MANUFACTURERS' INFORMATION.

211 LANE OF ROADWAY (VARIES). SEE PLAN FOR MORE INFORMATION.

212 PAVED SHOULDER (VARIES). SEE PLAN FOR MORE INFORMATION.

213 GRAVEL SHOULDER (VARIES). SEE PLAN FOR MORE INFORMATION.

214 CABLE BARRIER OFFSET FROM CENTERLINE OF MEDIAN DITCH (8 FOOT MINIMUM). SEE PLAN FOR MORE INFORMATION.

215 MAXIMUM POST SPACING IS 15 FEET.

216 STAGGER TURNBUCKLES (TYPICAL).

217 SEE MANUFACTURER'S DESIGN WHEN ROCK IS ENCOUNTERED.

218 LINE POST DELINEATOR SPACING IS 100 FEET.

219 MINIMUM LINE POST FOOTING REINFORCEMENT SHOWN. MANUFACTURER IS TO INDICATE REINFORCEMENT IS ADEQUATE FOR THEIR SYSTEM. IF REINFORCEMENT IS NOT ADEQUATE, PROVIDE FOOTING DESIGN WITH A ADEQUATE REINFORCEMENT.

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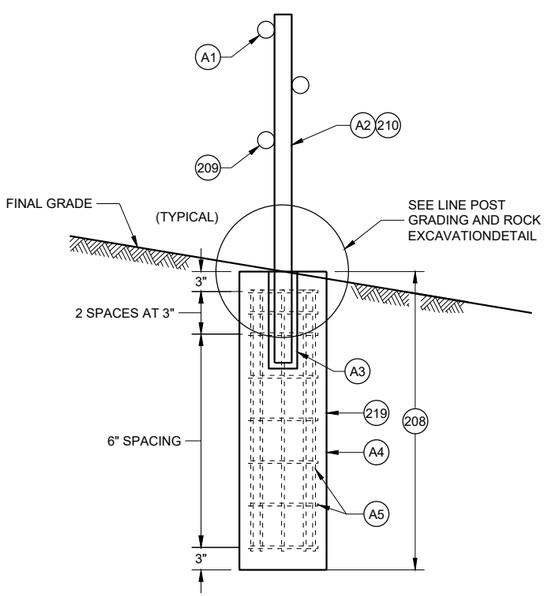
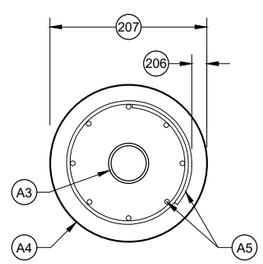
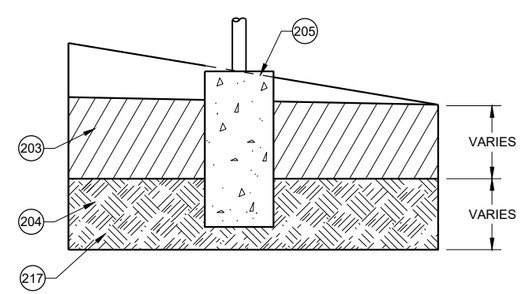


CROSS SECTION

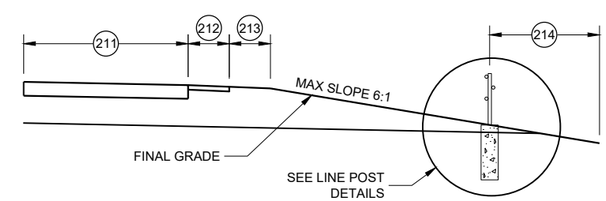


PROFILE VIEW
(LINE POSTS AND CABLES NOT SHOWN)

LINE POST DETAILS



LINE POST GRADING AND ROCK EXCAVATION DETAIL



CABLE BARRIER OFFSET FROM DITCH LINE

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SDD 14B52 - 02b

CABLE BARRIER TYPE 1 LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTAT

SDD 14B52 - 02b

BILL OF MATERIALS

PART NUMBER	QTY.	DESCRIPTION	MATERIALS SPECIFICATIONS
A1	3 OR 4	¾" 3x7 PRESTRECHED GALVANIZED STEEL WIRE ROPE	AASHTO M30 TYPE 1 CLASS A OR ASTM A741 TYPE 1 CLASS A WITH MINIMUM BREAKING STRENGTH = 39 KIPS (173.5 KN)
A2	1 PER LINE POST	GALVANIZED REMOVABLE STEEL LINE POST	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
			ASTM A123 (GALVANIZATION).
A3	1 PER LINE POST	GALVANIZED STEEL SLEEVE	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
			ASTM A123 (GALVANIZATION).
A4	VARIES	CONCRETE FOR LINE POST FOOTING	A, A-FA.A-T, OR A-IP OF STANDARD SPECIFICATION 501.2 OR AS MANUFACTURER SPECIFIES.
			STANDARD SPECIFICATION 716 QMP FOR CLASS II ANCILLARY CONCRETE
			SEE MANUFACTURER'S INFORMATION ON DIMENSIONS.
A5	VARIES	EPOXY COATED STEEL REINFORCEMENT	STANDARD SPECIFICATION 505.
			ALL BARS ARE NO. 4 BARS
A6	VARIES	TURNBUCKLES AND OTHER CABLE CONNECTING HARDWARE	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS.
			MINIMUM BREAKING STRENGTH OF TURNBUCKLES AND CONNECTION HARDWARE IS EQUAL TO CABLE.
			TURNBUCKLES AND OTHER CABLE CONNECTION HARDWARE IS FIELD SWAGED PER MANUFACTURER'S RECOMMENDATION AND DETAILS.
			PROVIDE DOCUMENTATION THAT THE FITTINGS ARE STRONGER THAN THE CABLE BARRIER. DOCUMENTATION IS TO INCLUDE: MANUFACTURER NAME, TESTING RESULTS, AND DATE OF TESTING.
B1	VARIES	CABLE CONNECTION TO CABLE BARRIER END TERMINAL	SEE MANUFACTURER'S INFORMATION ON DIMENSIONS AND MATERIAL REQUIREMENTS.
B2	VARIES	CONCRETE FOR CABLE BARRIER END TERMINAL	A, A-FA.A-T, OR A-IP OF STANDARD SPECIFICATION 501.2.
			STANDARD SPECIFICATION 716 QMP FOR CLASS II ANCILLARY CONCRETE
B3	VARIES	EPOXY COATED STEEL REINFORCEMENT	STANDARD SPECIFICATION 505.
C1	VARIES	LINE POST DELINEATOR	REFLECTIVE SHEETING TYPE SH. SEE APPROVED PRODUCT LIST YELLOW.
C2	VARIES	CABLE BARRIER END TERMINAL DELINEATOR	REFLECTIVE SHEETING TYPE SH. SEE APPROVED PRODUCT LIST OBJECT MARKER TYPE 3 PATTERN

6

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SDD 14B52 - 02c

CABLE BARRIER TYPE 1 LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

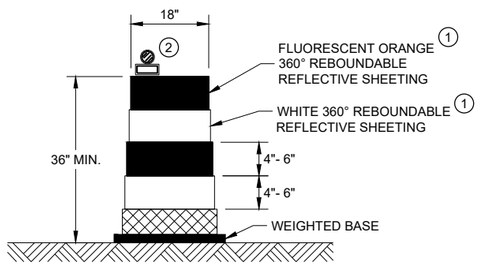
APPROVED
May 2021 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS DEVE ENGINEER

FHWA

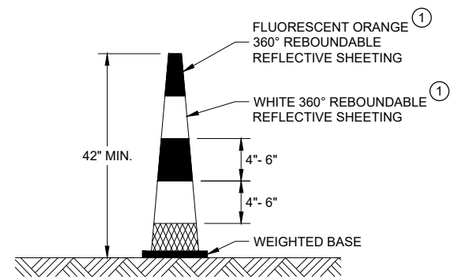
SDD 14B52 - 02c

GENERAL NOTES

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

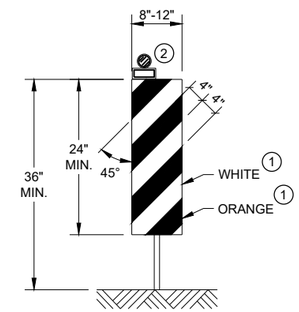


DRUM



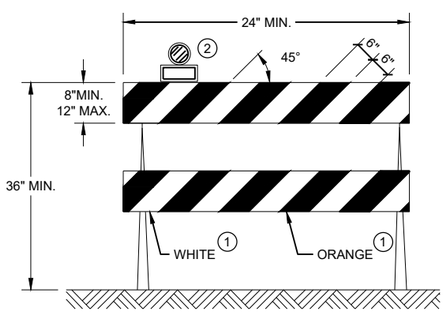
42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



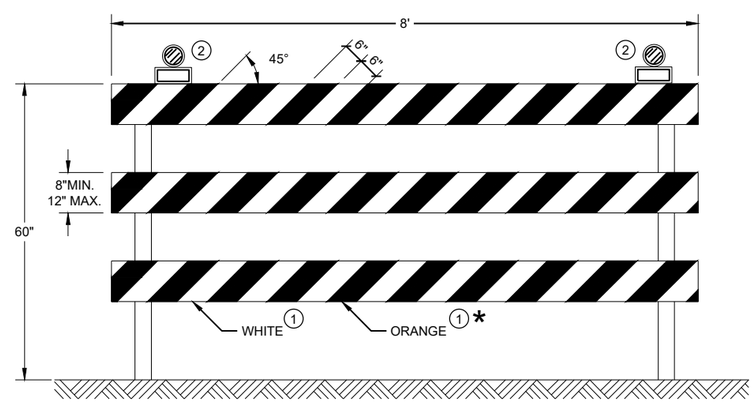
VERTICAL PANEL

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



TYPE II BARRICADE

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



TYPE III BARRICADE

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

* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEE
FHWA

6

SDD 15C11 - 09b

GENERAL NOTES

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

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

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

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

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

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

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

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

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

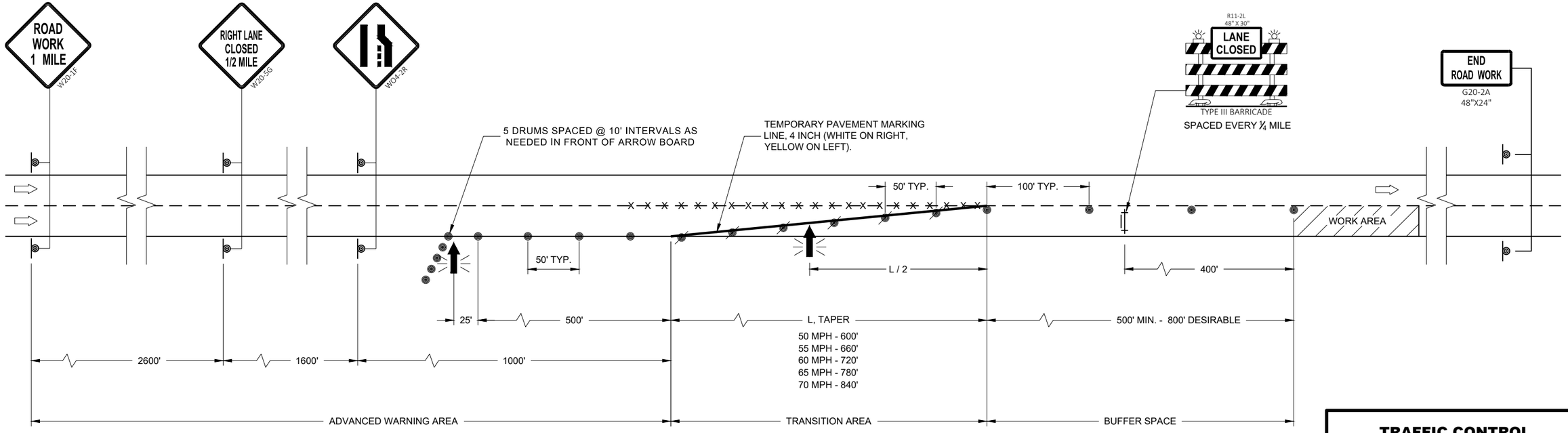
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

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

LEGEND

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



TRAFFIC CONTROL LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEE
FHWA

6

SDD 15D12 - 10a

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2L "LANE CLOSED" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS /OR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

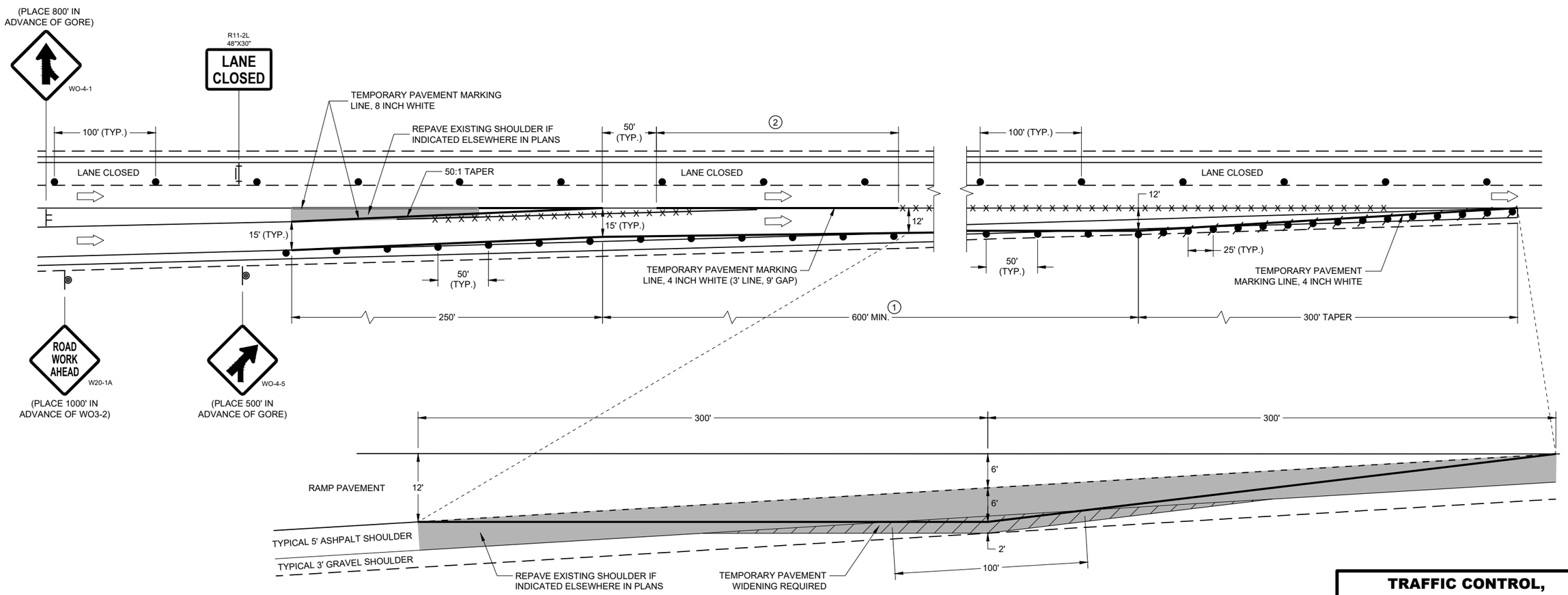
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

(1) EXTEND THE LENGTH OF THE MERGE AREA IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.

(2) END TEMPORARY PAVEMENT MARKING LINE AT ½ THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.



TEMPORARY PAVEMENT DETAIL

(EXISTING RAMP DIMENSIONS MAY VARY, ADJUST TEMPORARY PAVEMENT ACCORDINGLY)

TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2022 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEE
FHWA

6

6

SDD 15D15 - 06b

SDD 15D15 - 06b

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- FLASHING ARROW BOARD
- WORK AREA

GENERAL NOTES

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

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

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

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

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

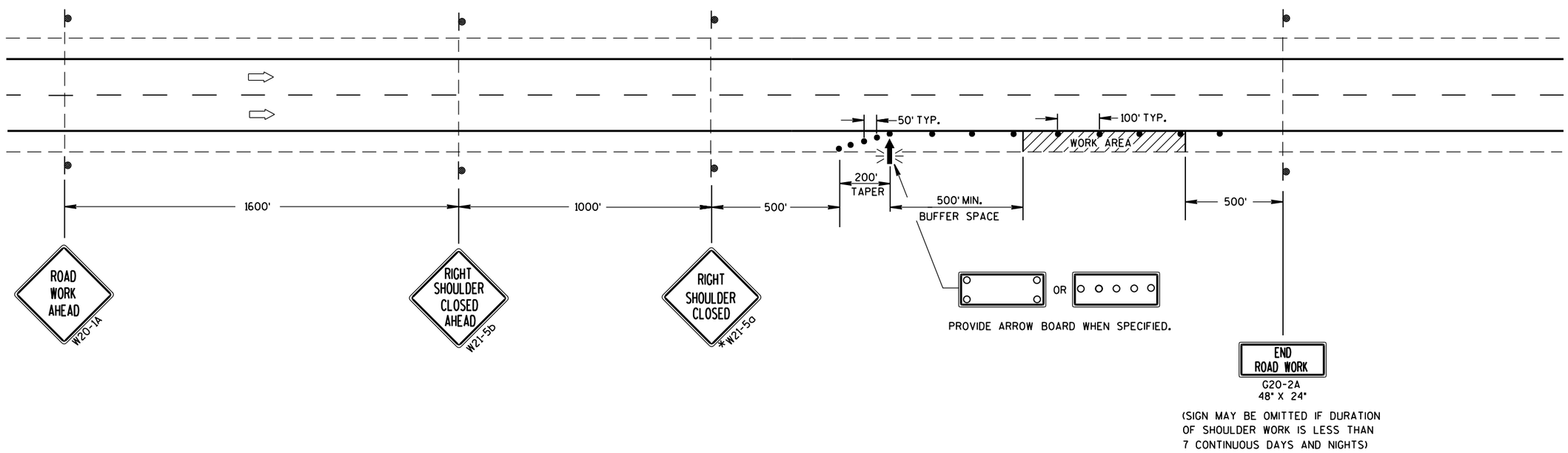
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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



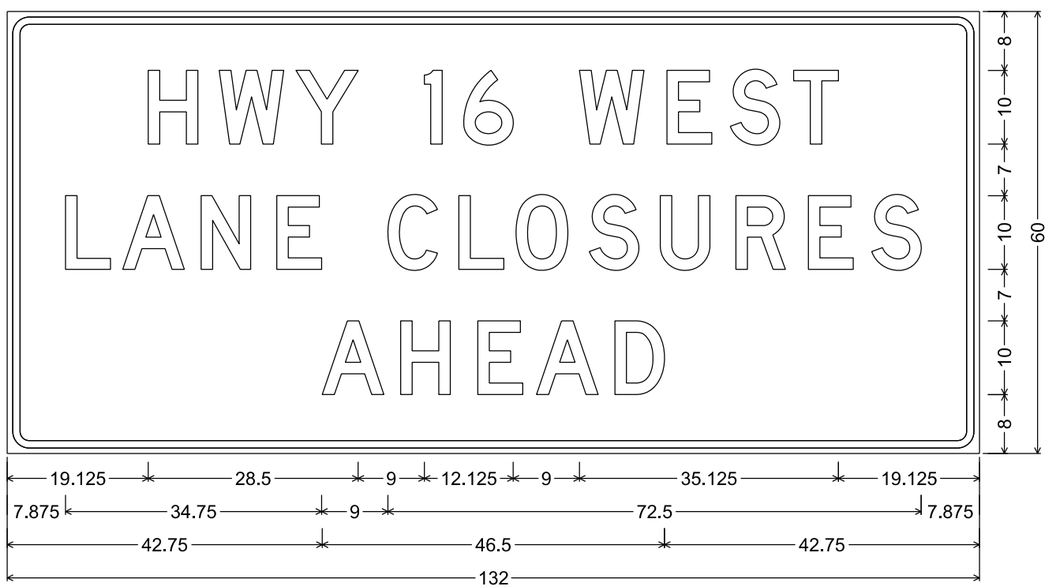
TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
June 2016	/S/ Peter Amakobe Atepe
DATE	STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

6

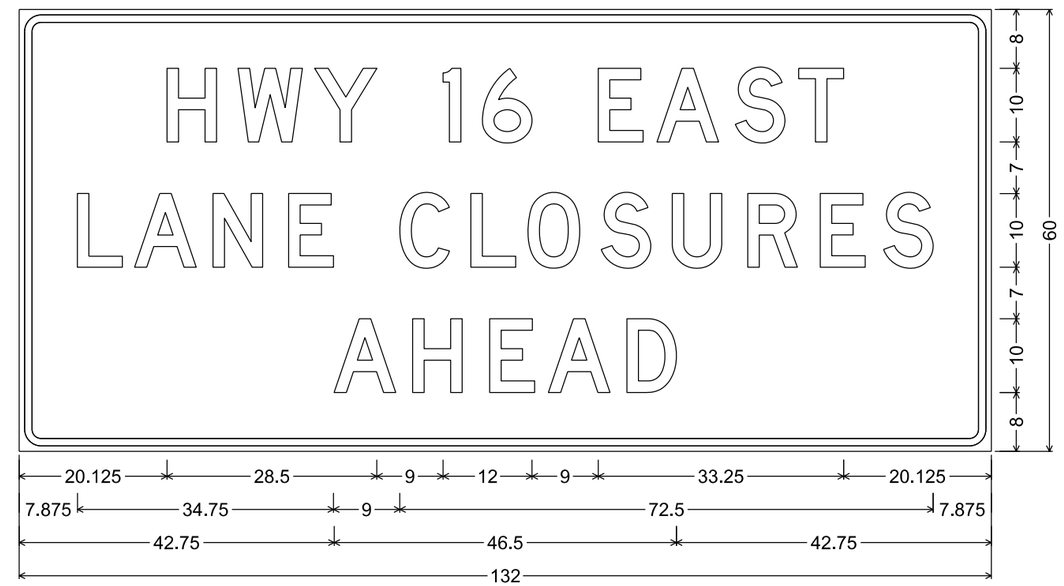
S.D.D. 15 D 27-3

NOTES

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



3.000" Radius, 1.000" Border, 0.750" Indent

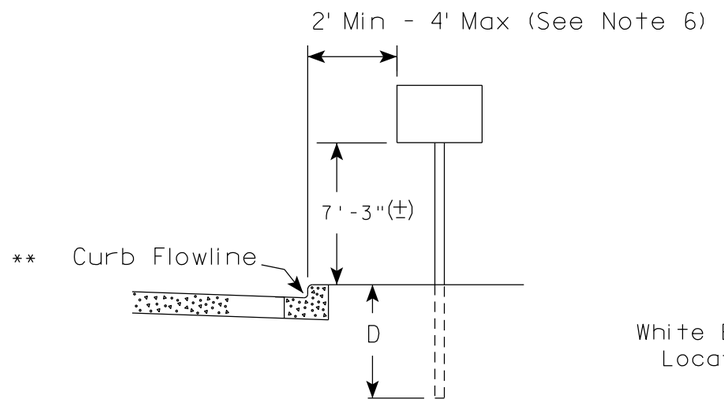


3.000" Radius, 1.000" Border, 0.750" Indent

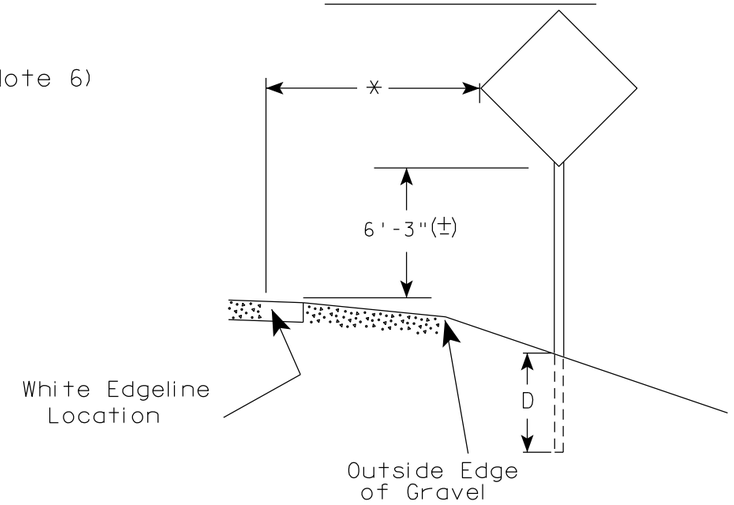
7

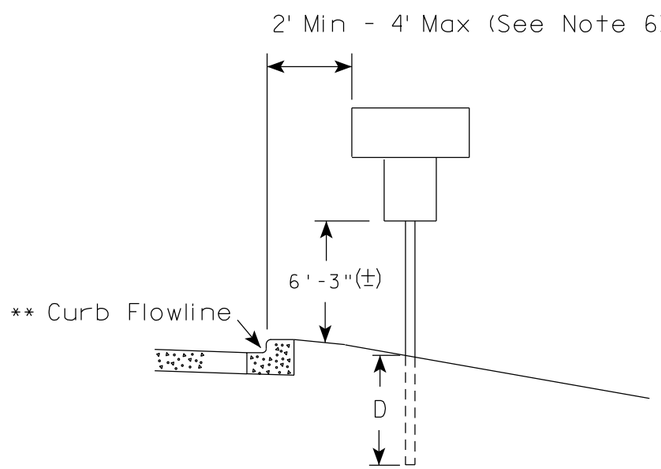
7

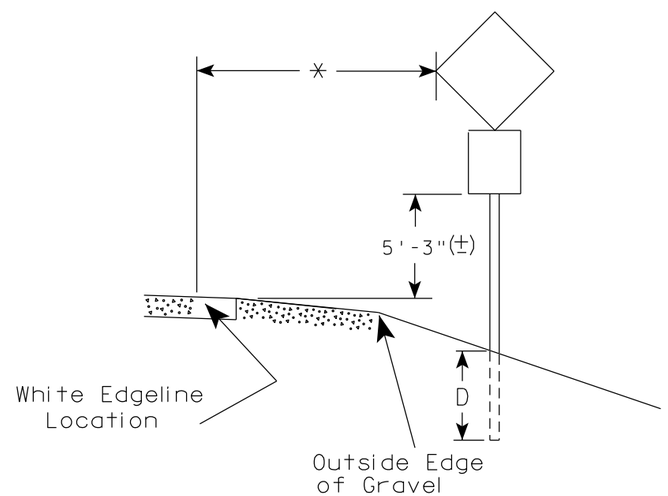
URBAN AREA



RURAL AREA (See Note 2)







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

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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

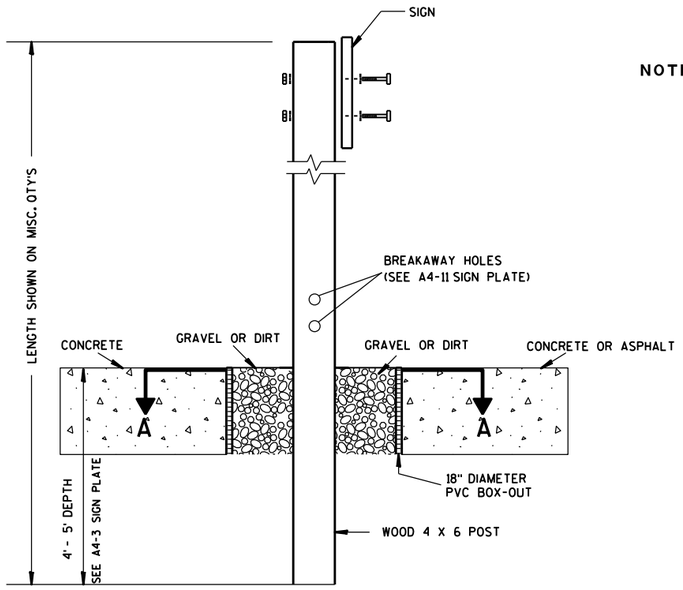
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 5/13/2020 PLATE NO. A4-3.22

7

7

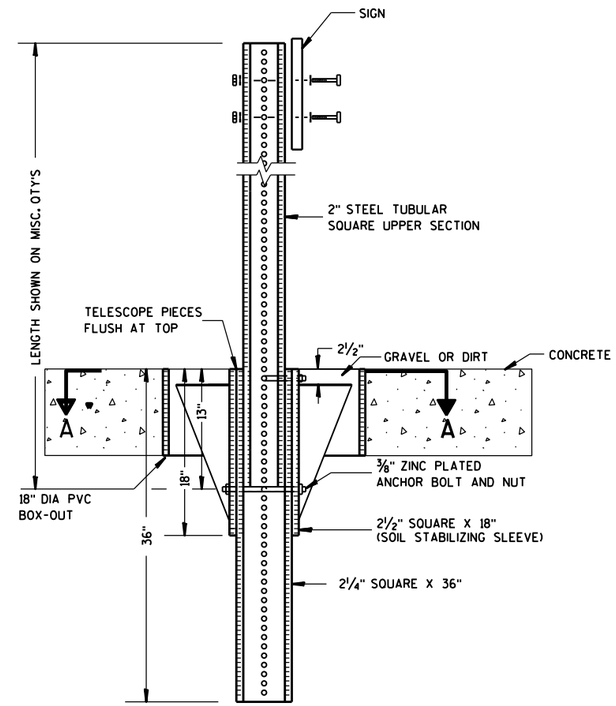
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 50	E



ELEVATION VIEW

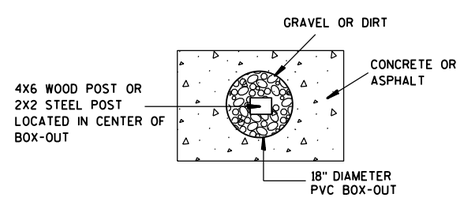
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

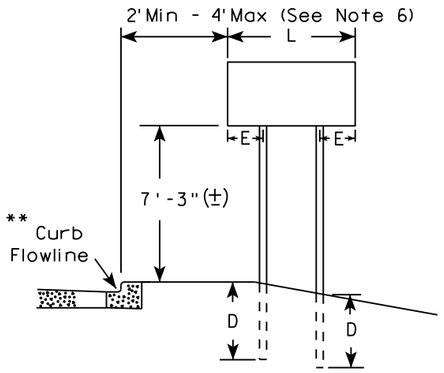
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

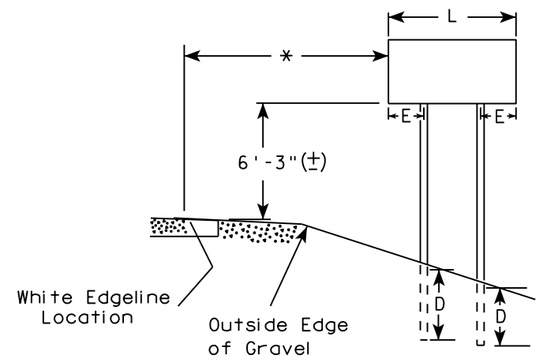
DATE 1/27/14 PLATE NO. A4-3B.1

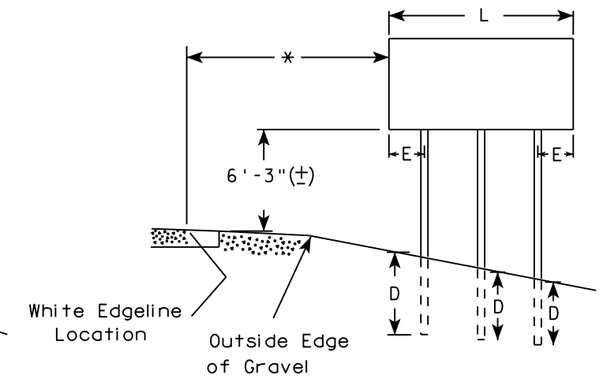
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

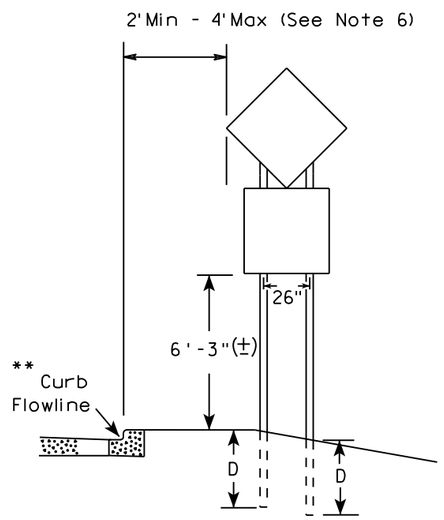
URBAN AREA



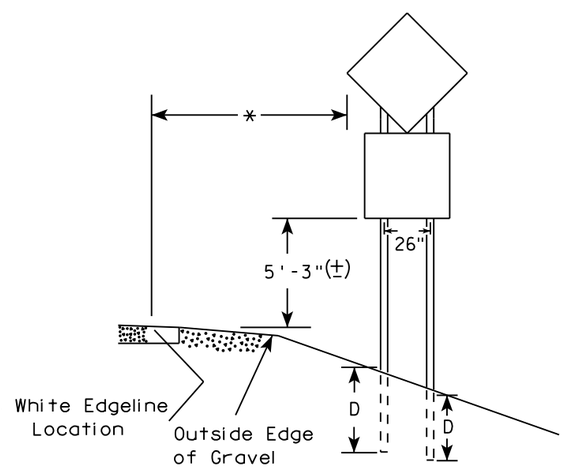
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

GENERAL NOTES

1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4"-3" (±).

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

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

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

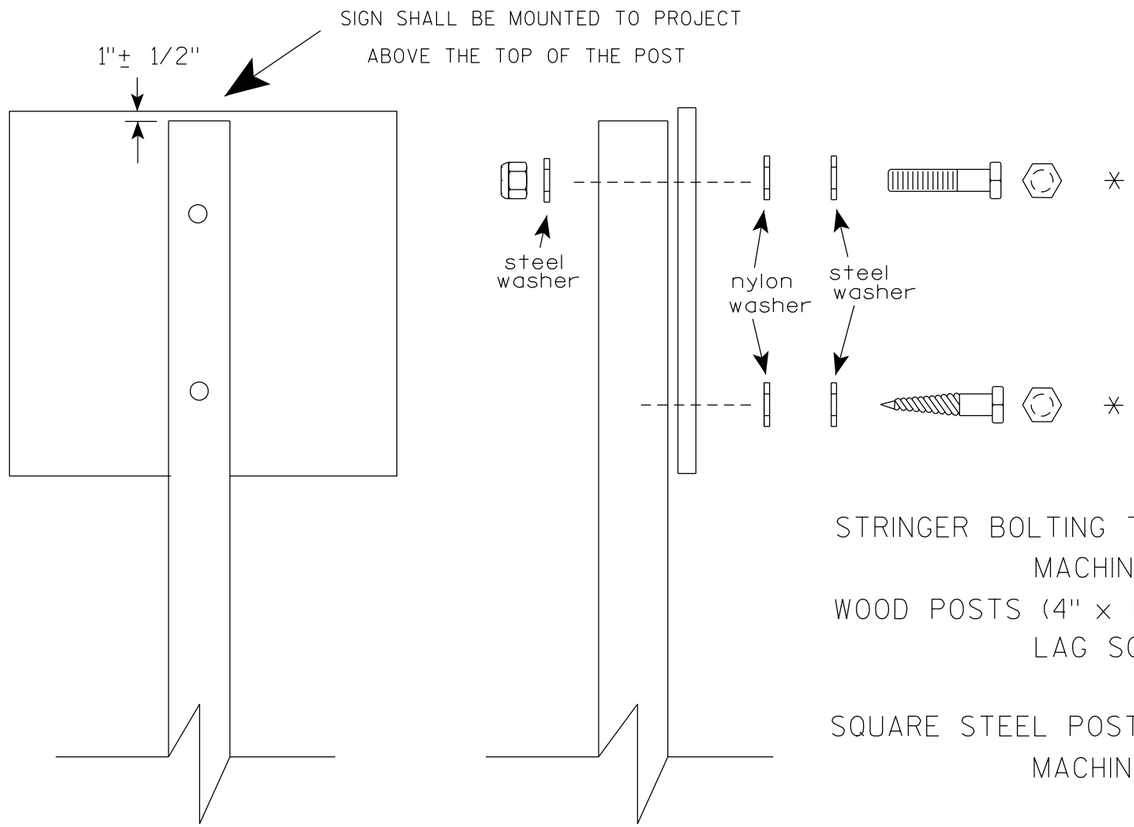
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 52	E



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

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

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

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -

1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON

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

ATTACHMENT OF SIGNS TO POSTS

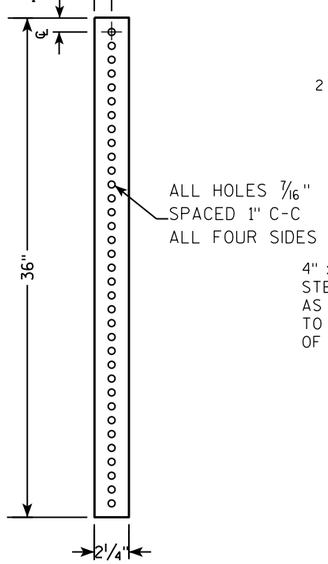
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

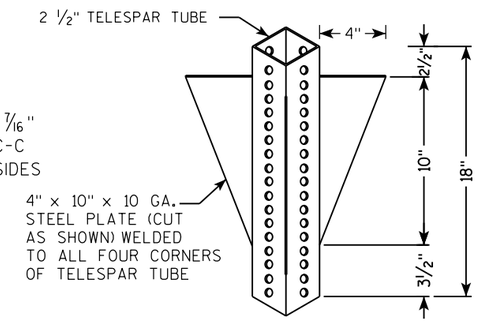
DATE 4/1/2020 PLATE NO. A4-8.9

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

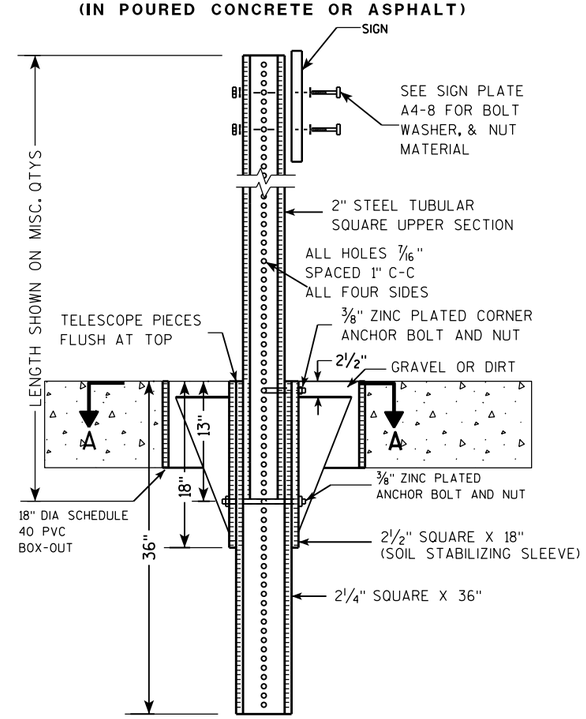
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



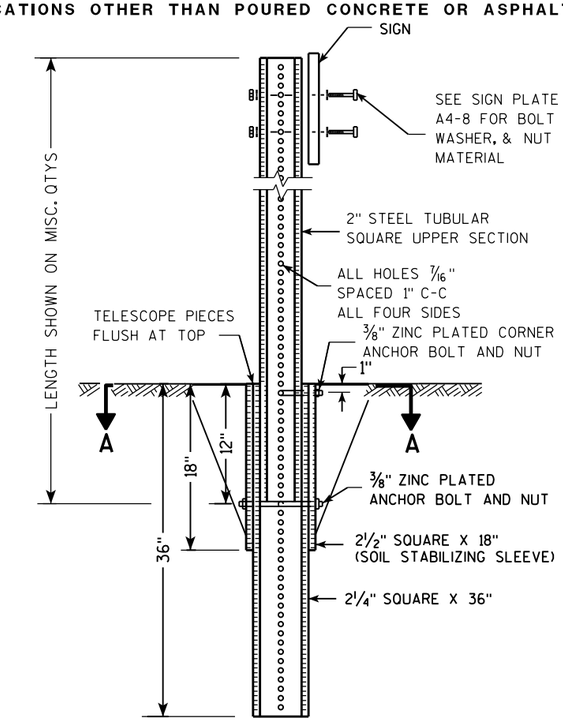
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

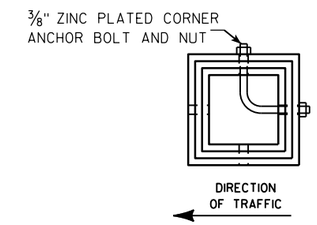


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

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

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

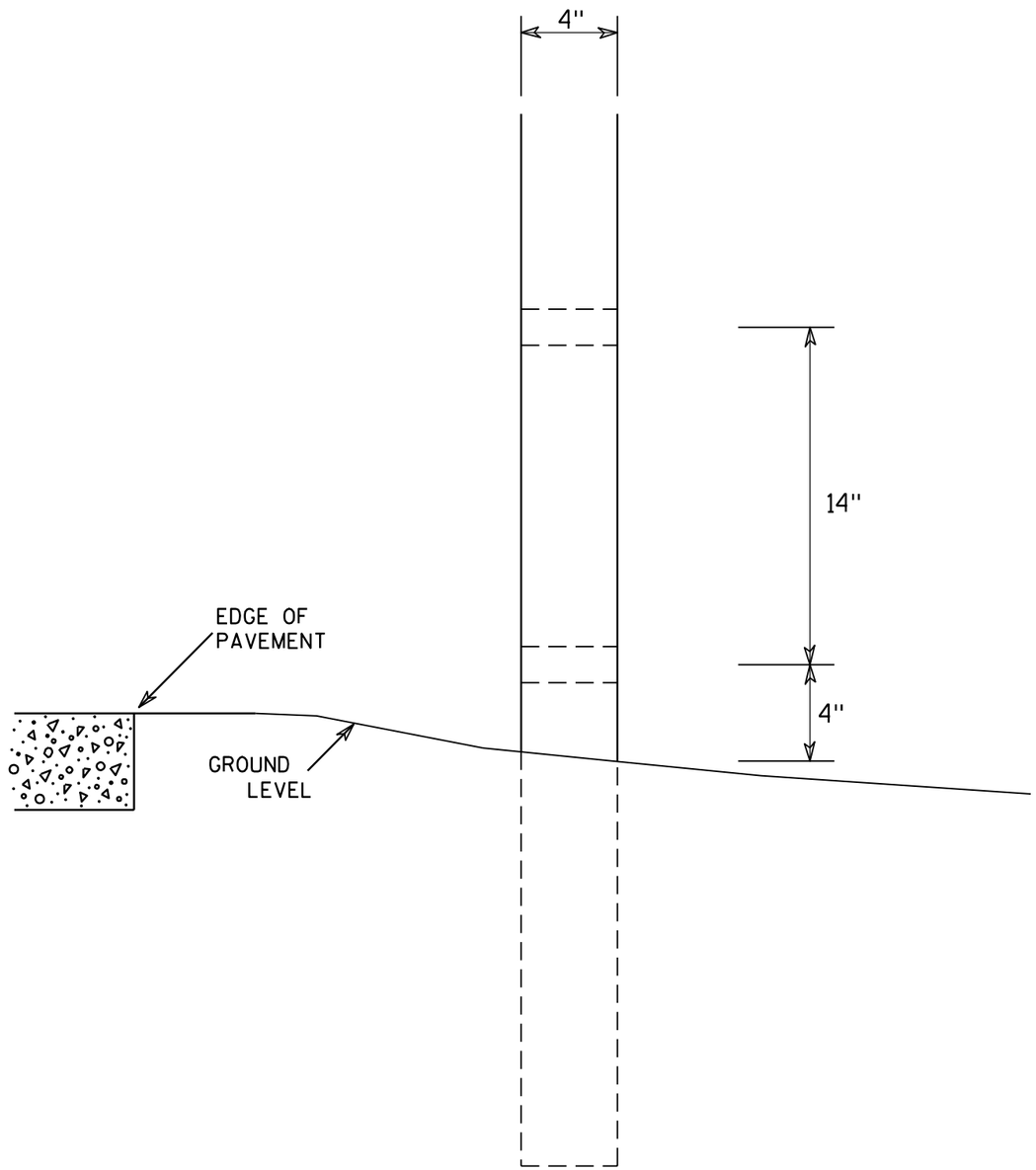
APPROVED *Matthew R Rauch*
for State Traffic Engineer

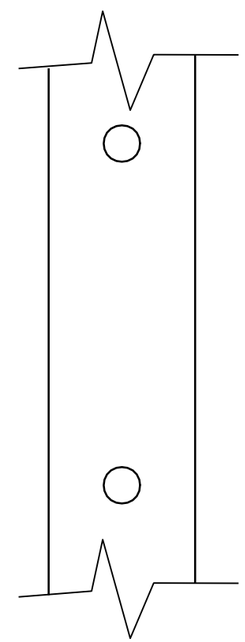
DATE 2/05/15 PLATE A4-9.9

7

7

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E





SIDE VIEW

GENERAL NOTES

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

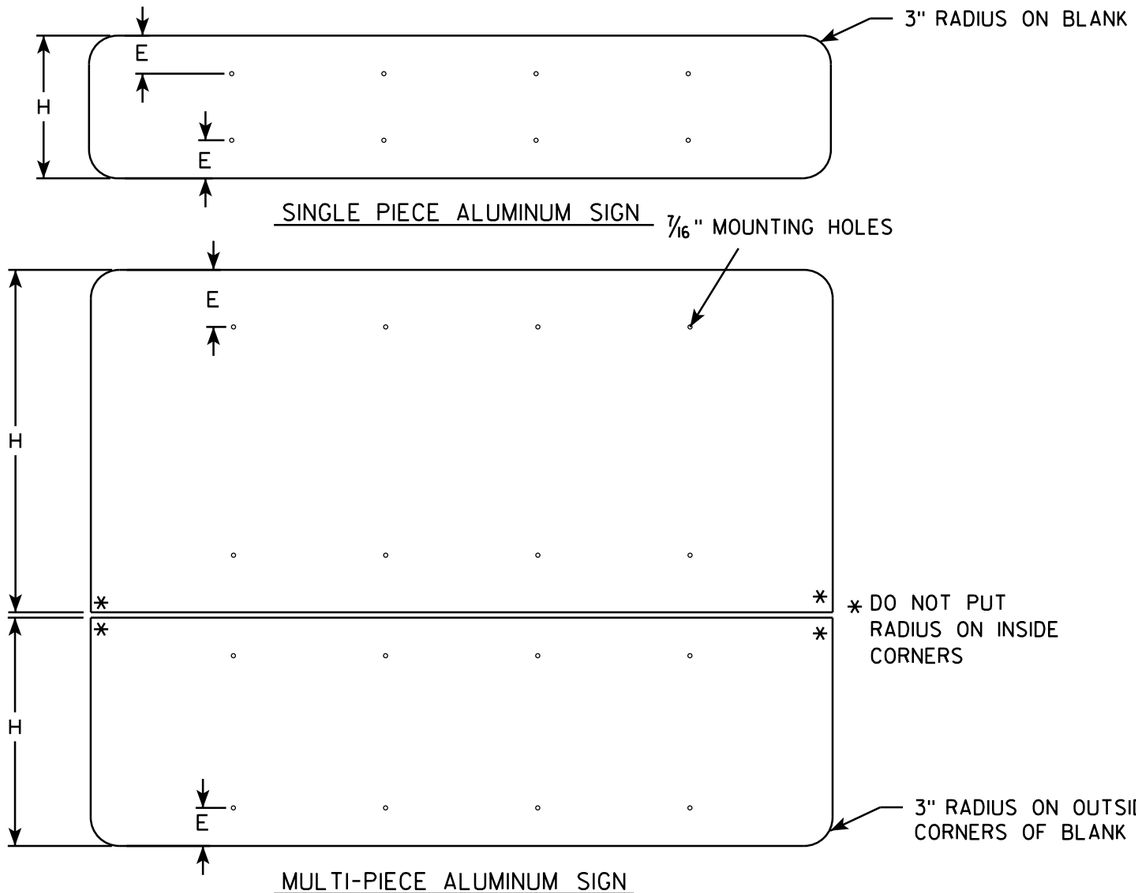
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

DATE 3/27/97 PLATE NO. A4-11.2

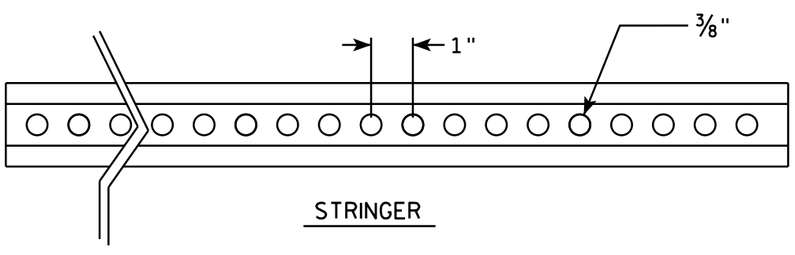
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 55	E

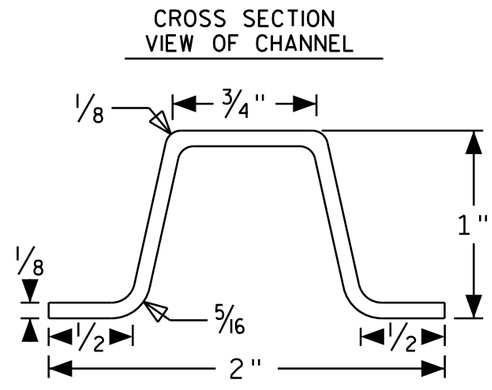


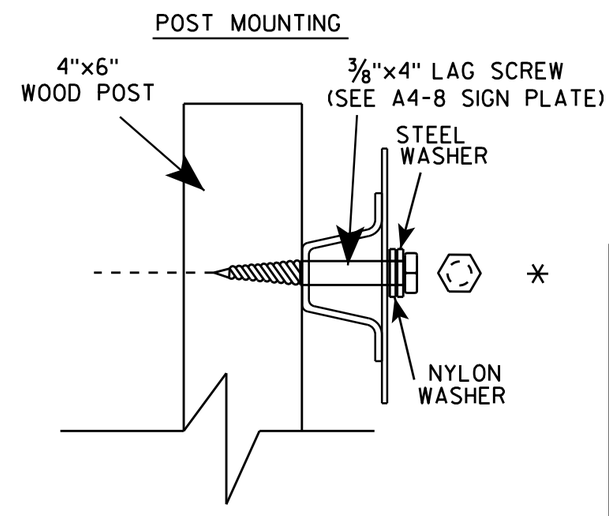
GENERAL NOTES

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

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







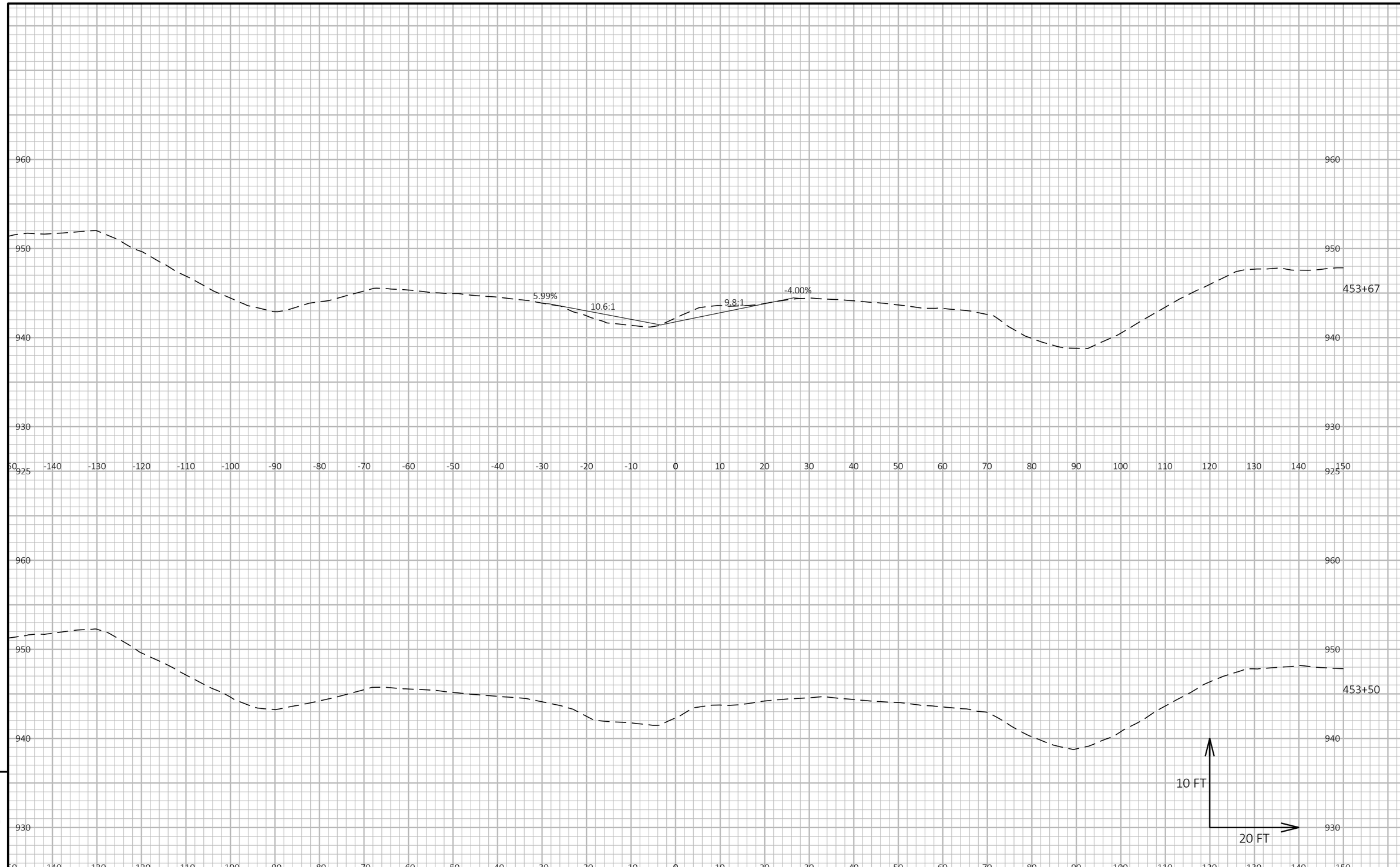
SIGN STRINGER MOUNTING REQUIREMENTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/26/16 PLATE NO A4-18.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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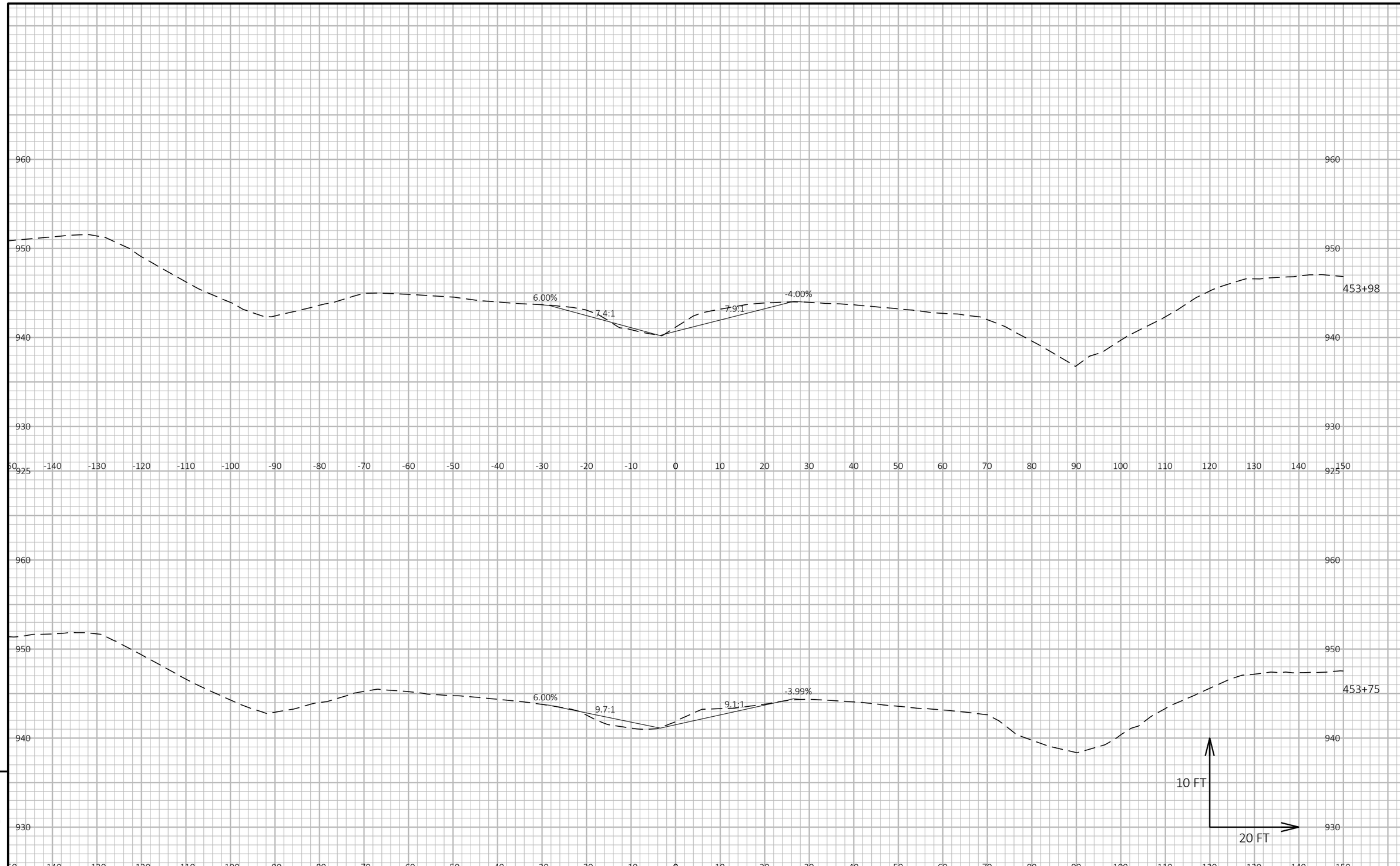
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 454+30	SHEET 57	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 01
PLOT DATE : 5/11/2022 9:50 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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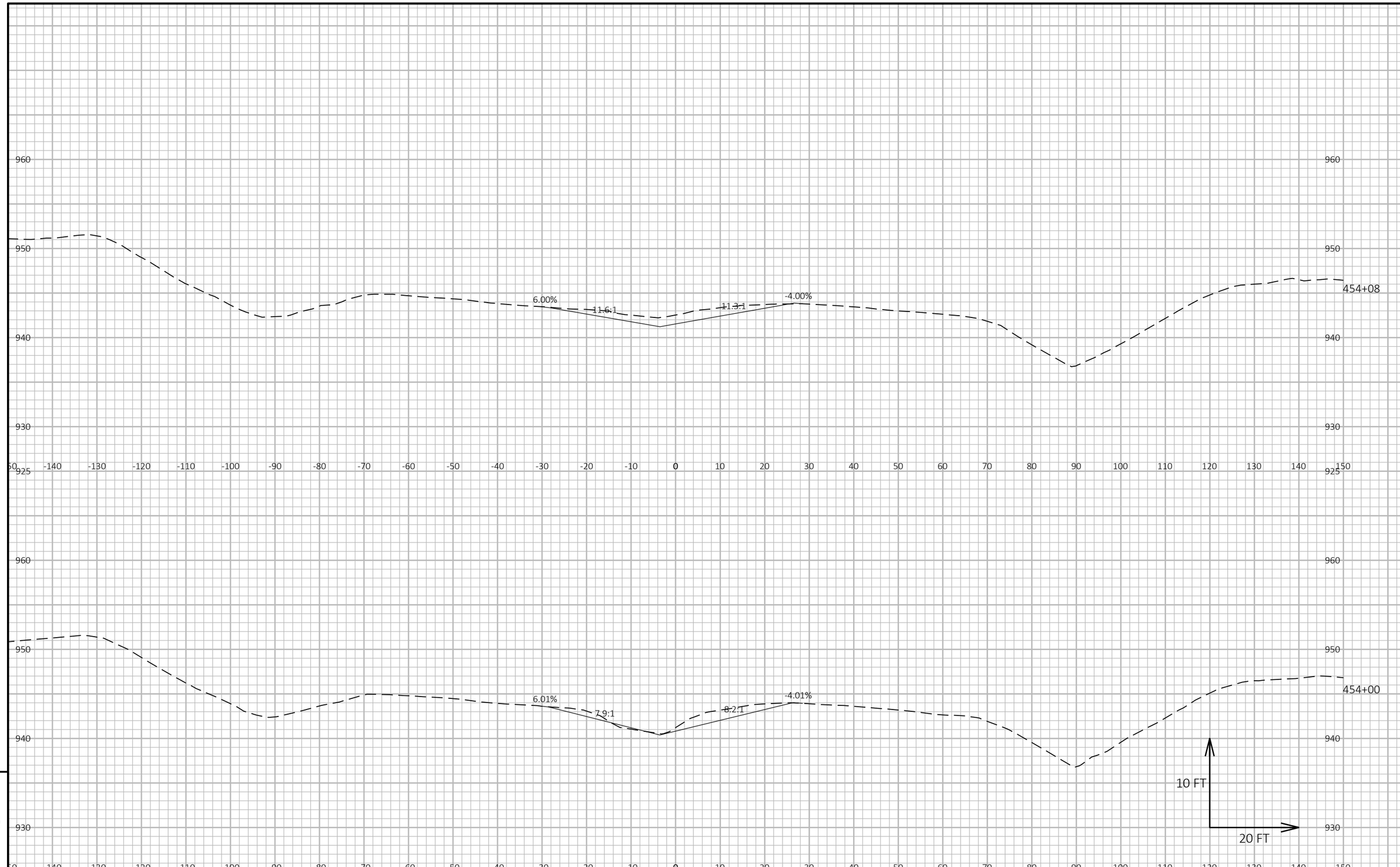
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 454+30	SHEET 58	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 02
PLOT DATE : 5/11/2022 9:50 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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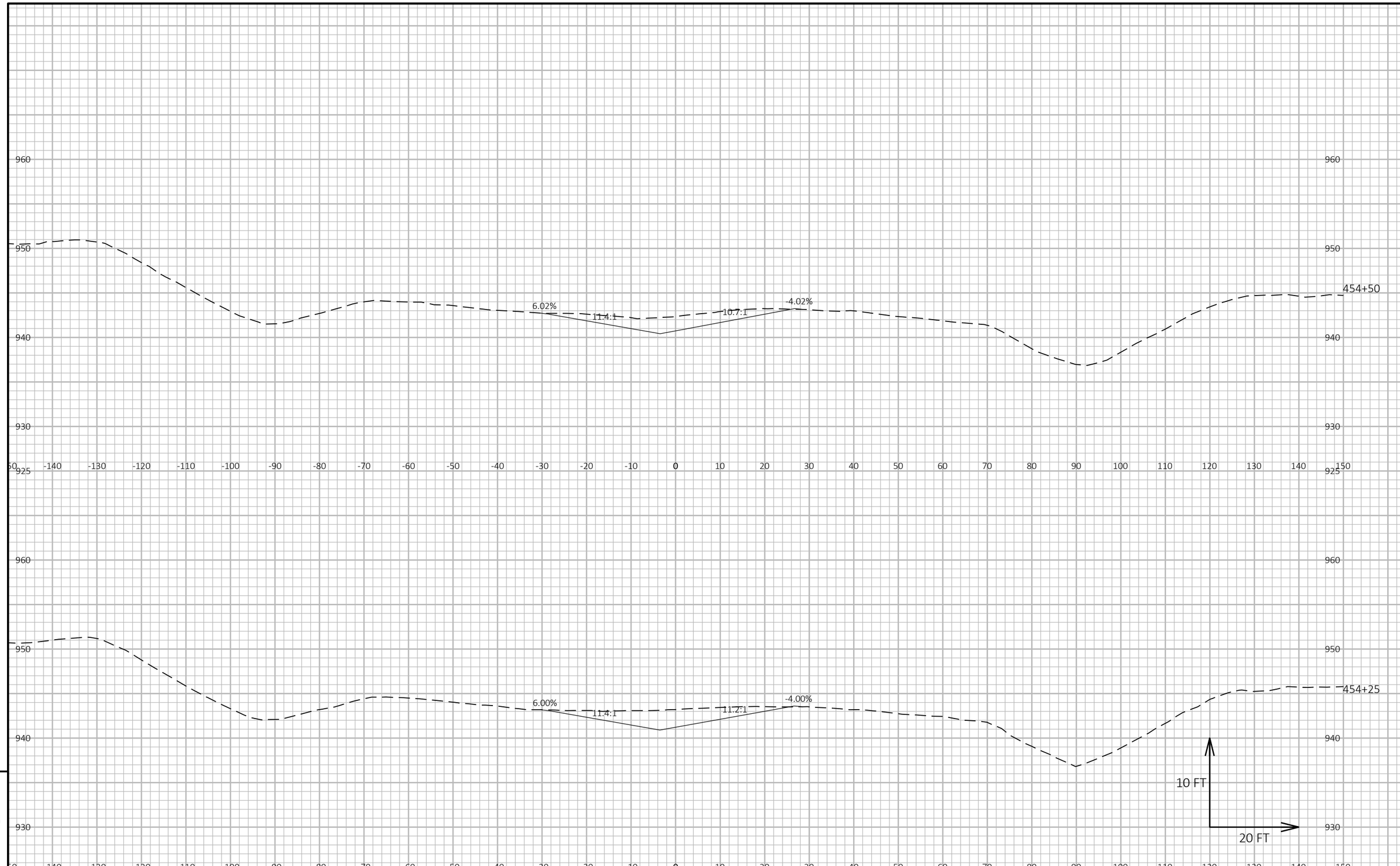
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 454+30	SHEET 59	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 03
PLOT DATE : 5/11/2022 9:51 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.



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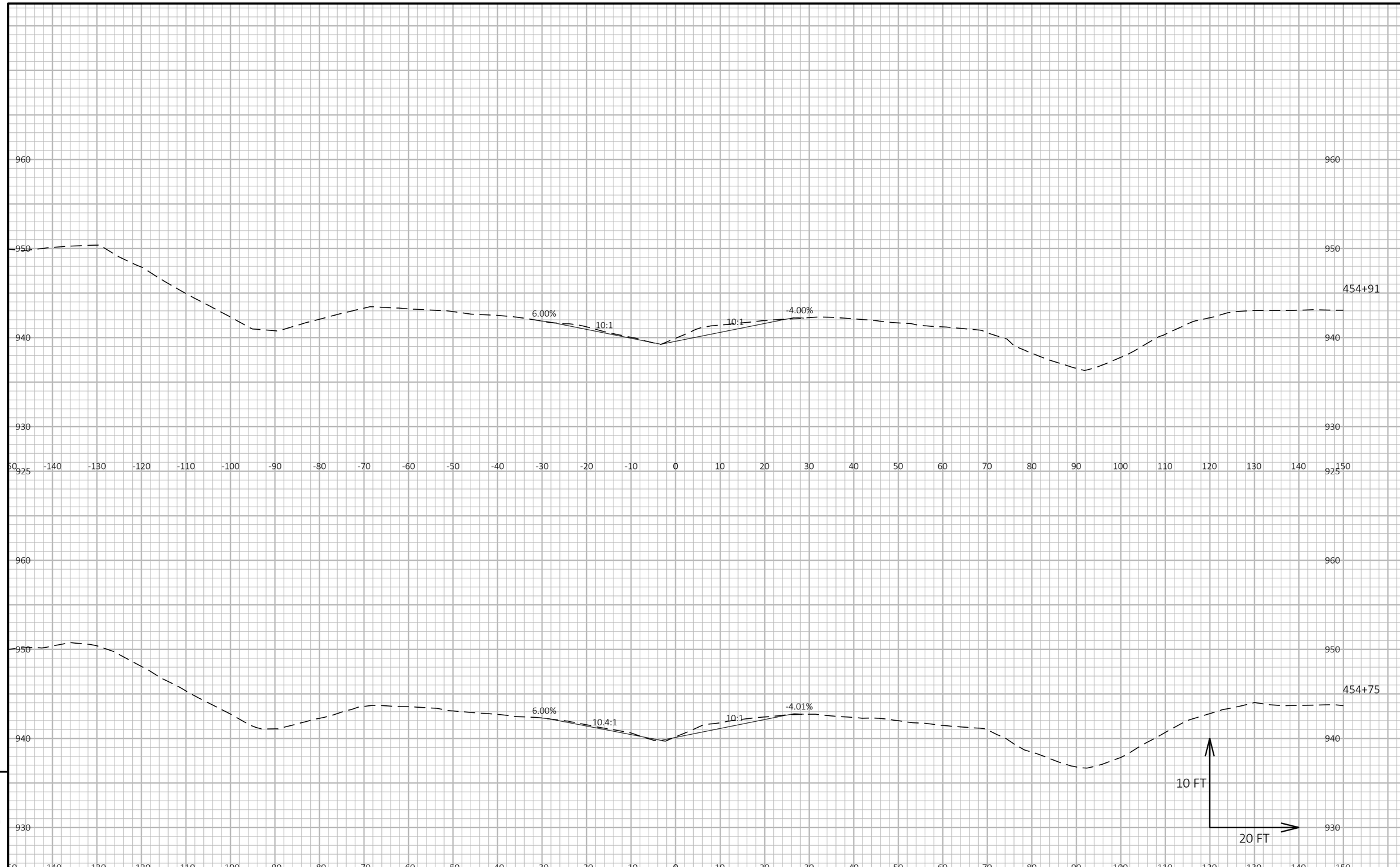
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 454+30	SHEET 60	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 04
PLOT DATE : 5/11/2022 9:51 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 454+30	SHEET 61	E

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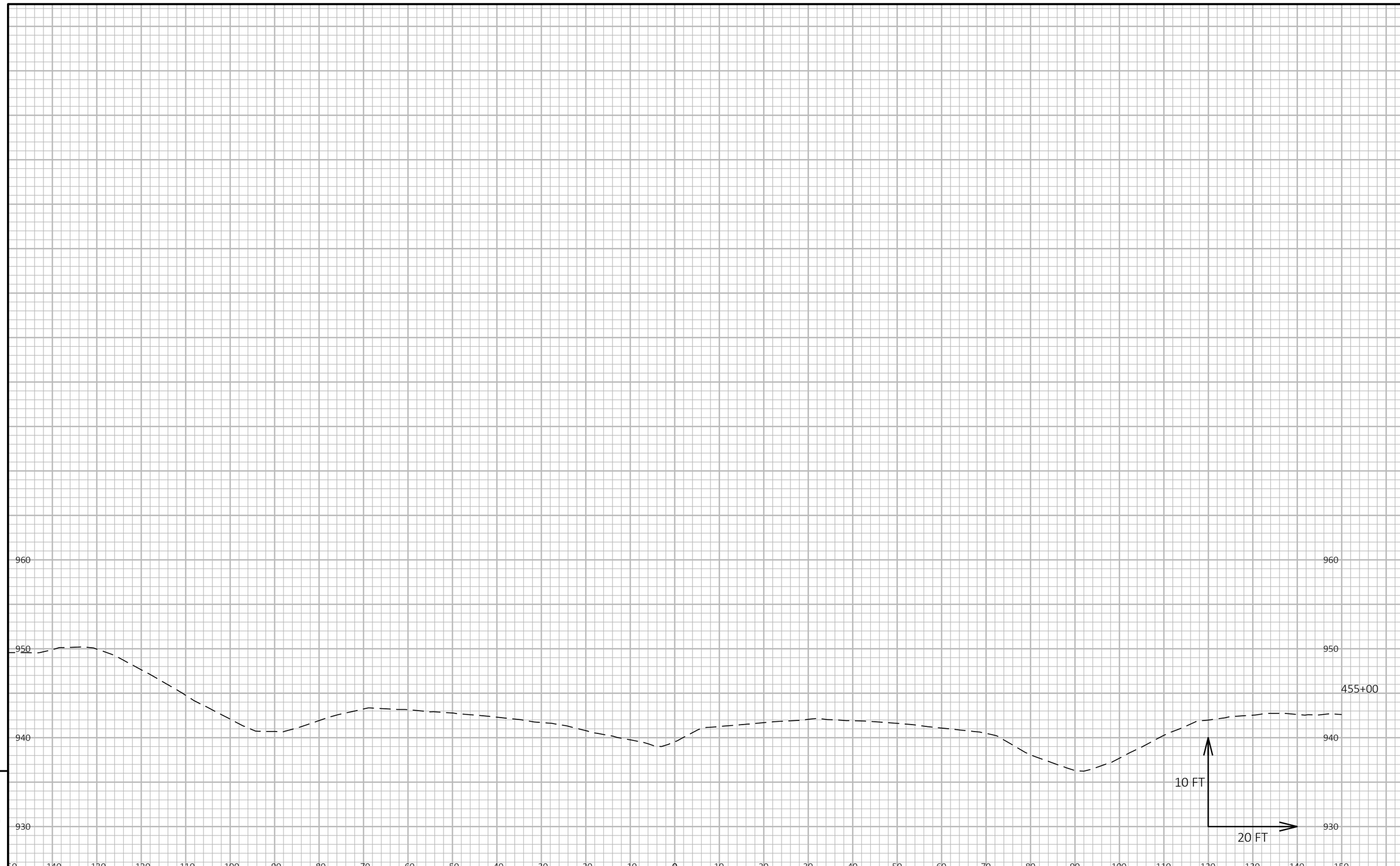
LAYOUT NAME - 05
PLOT DATE : 5/11/2022 9:52 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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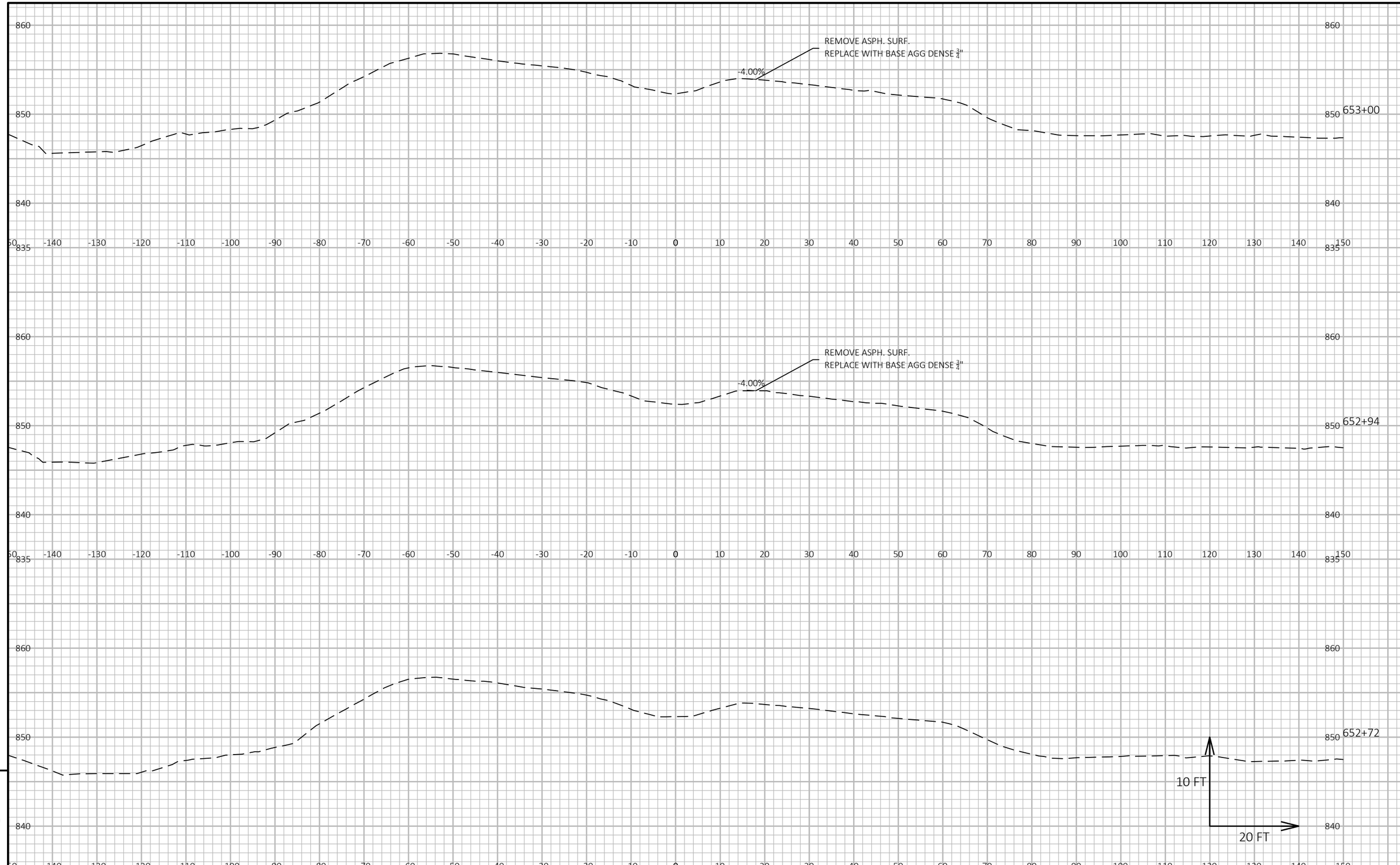
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 454+30	SHEET 62	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 06
PLOT DATE : 5/11/2022 9:52 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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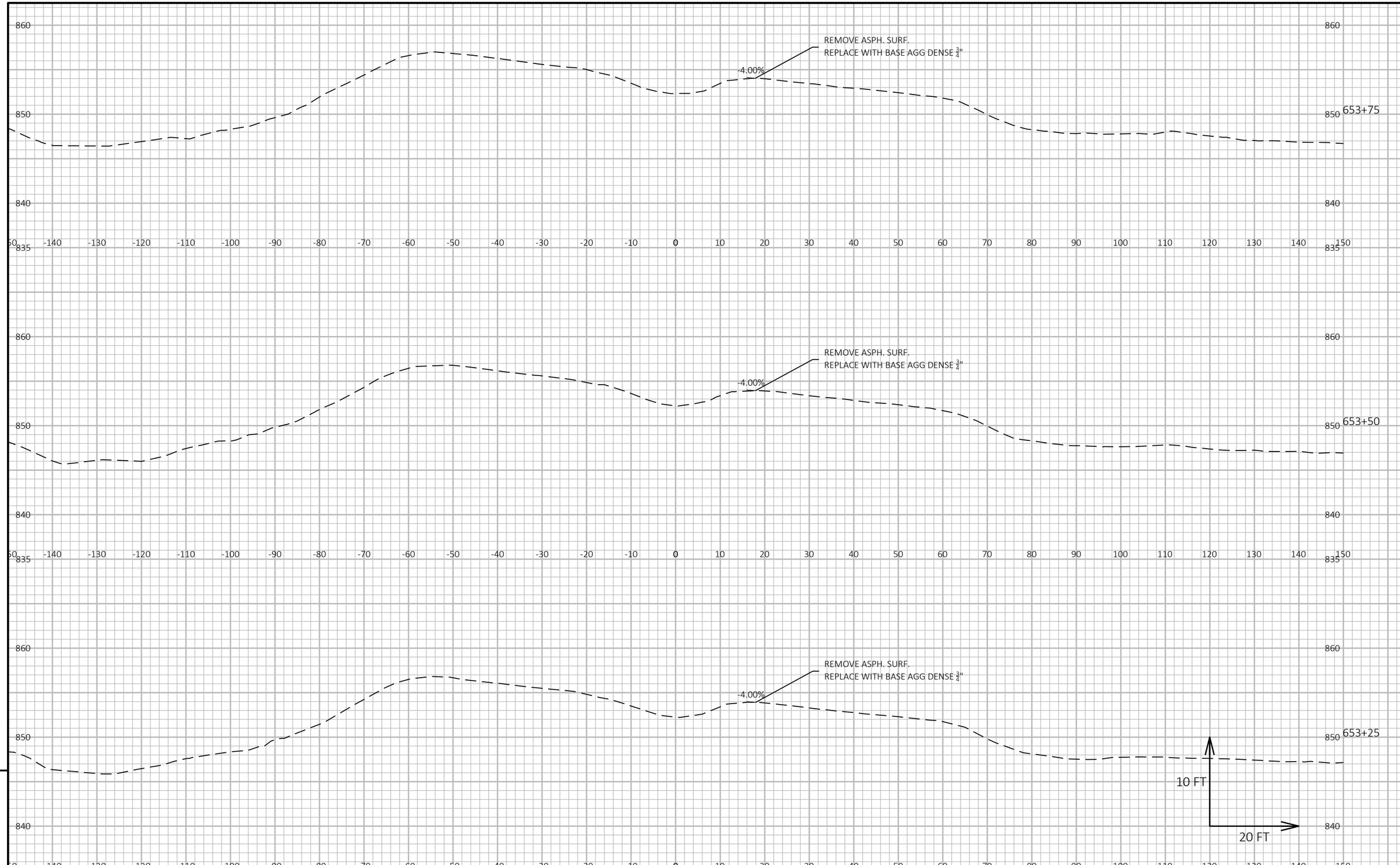
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62	SHEET 63	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 07
PLOT DATE : 5/11/2022 9:52 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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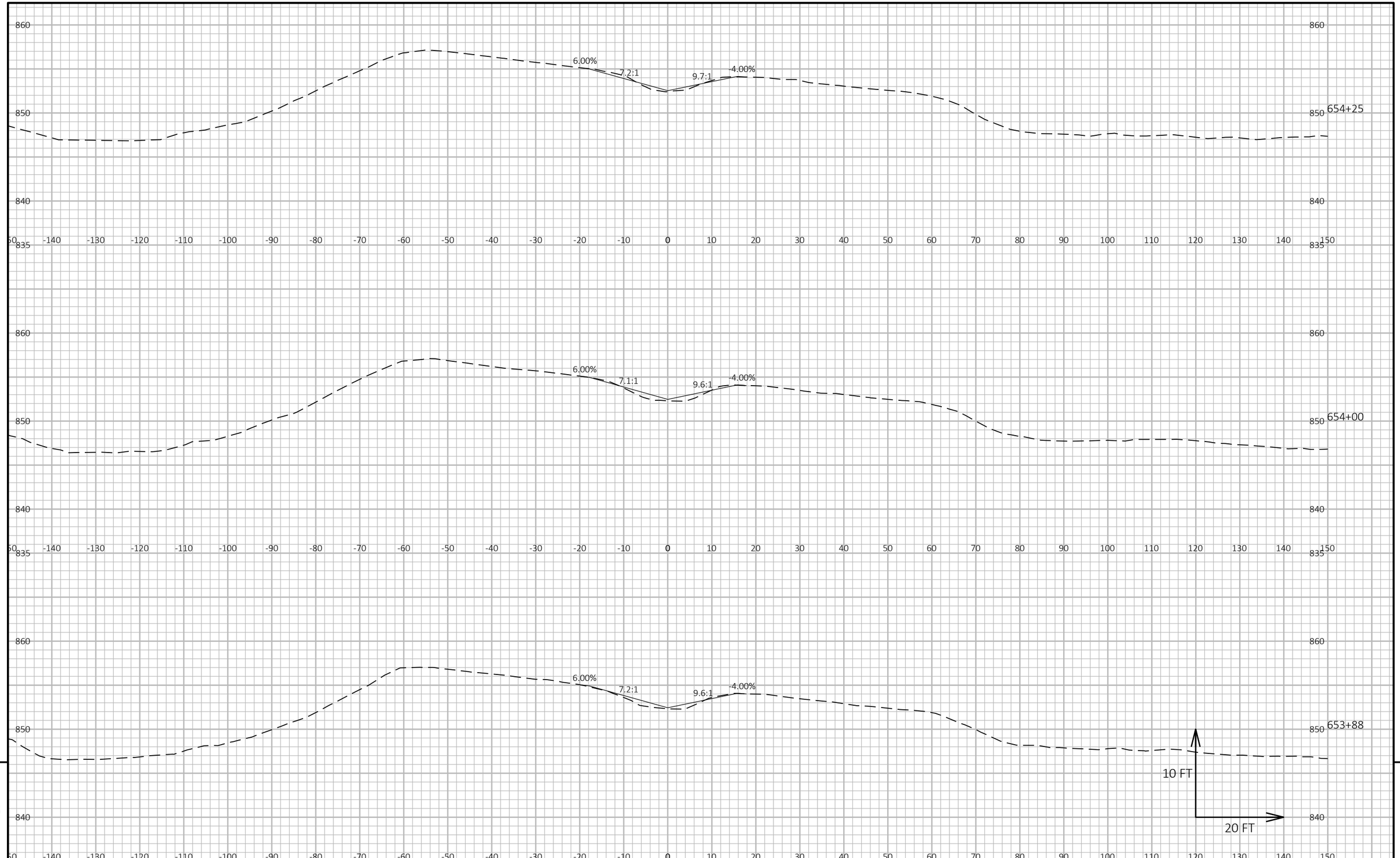
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62	SHEET 64	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 08
PLOT DATE : 5/11/2022 9:53 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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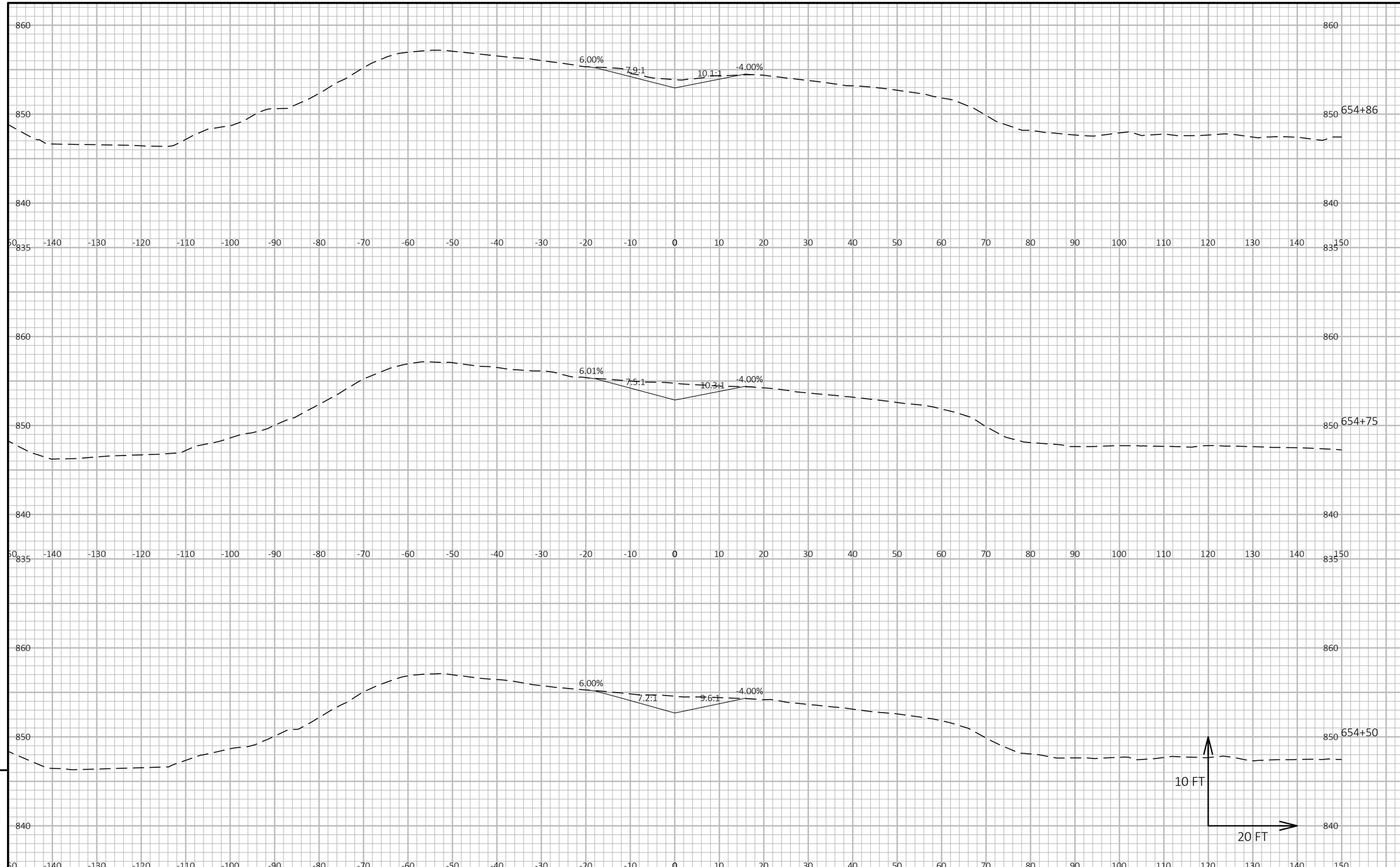
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62	SHEET 65	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 09
PLOT DATE : 5/11/2022 9:53 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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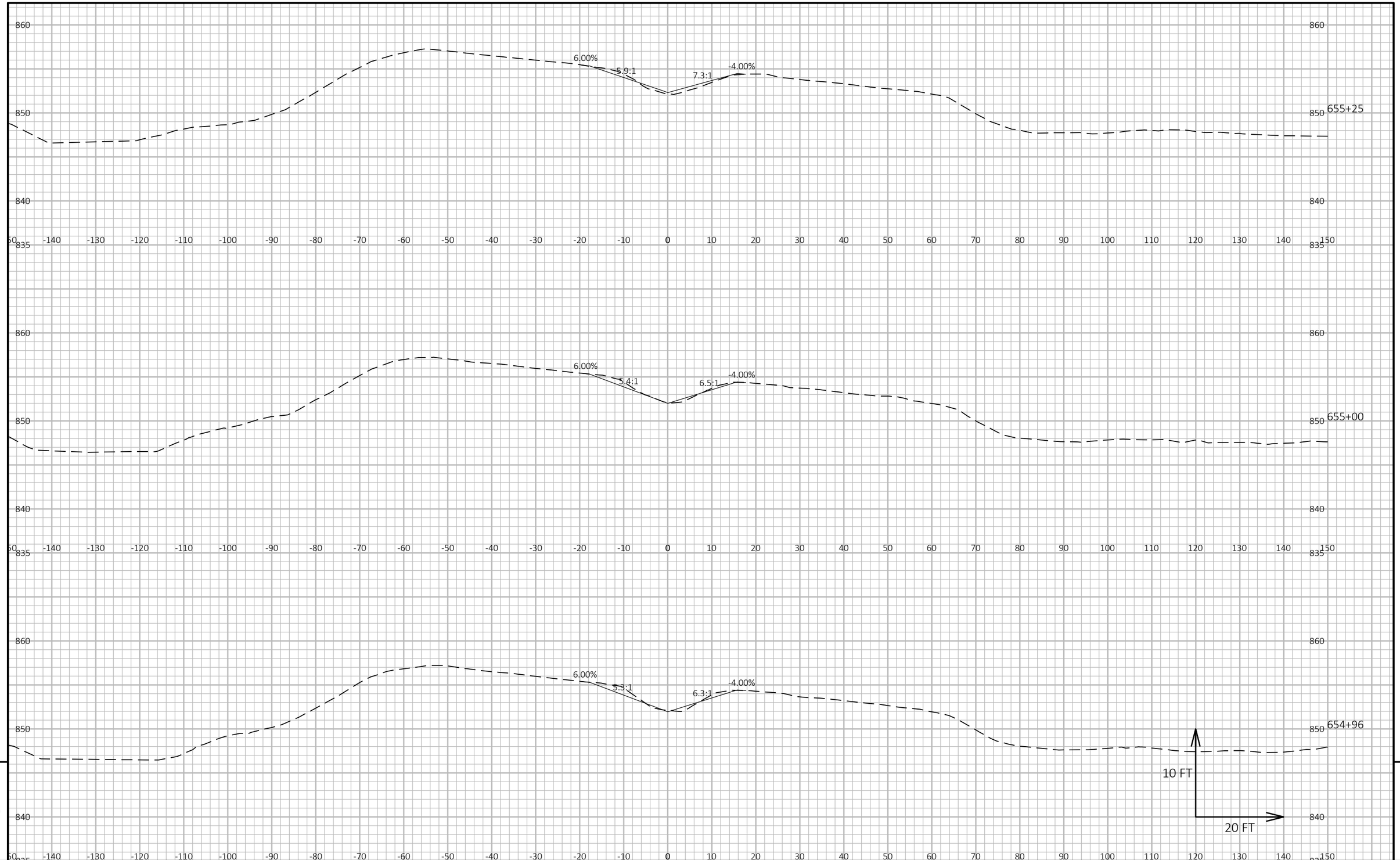
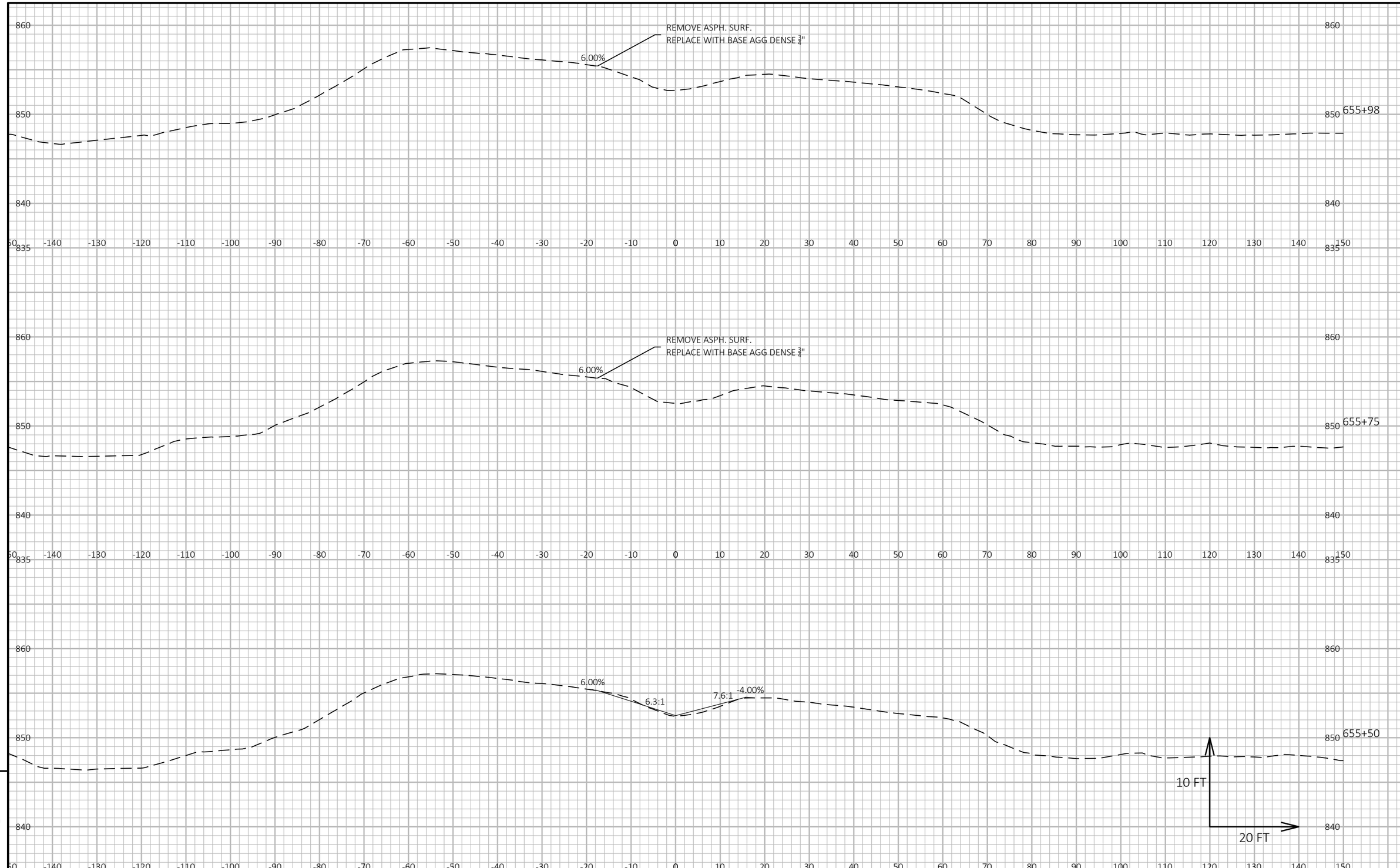
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62	SHEET 66	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 10
PLOT DATE : 5/11/2022 9:54 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62	SHEET 67	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 11
PLOT DATE : 5/11/2022 9:55 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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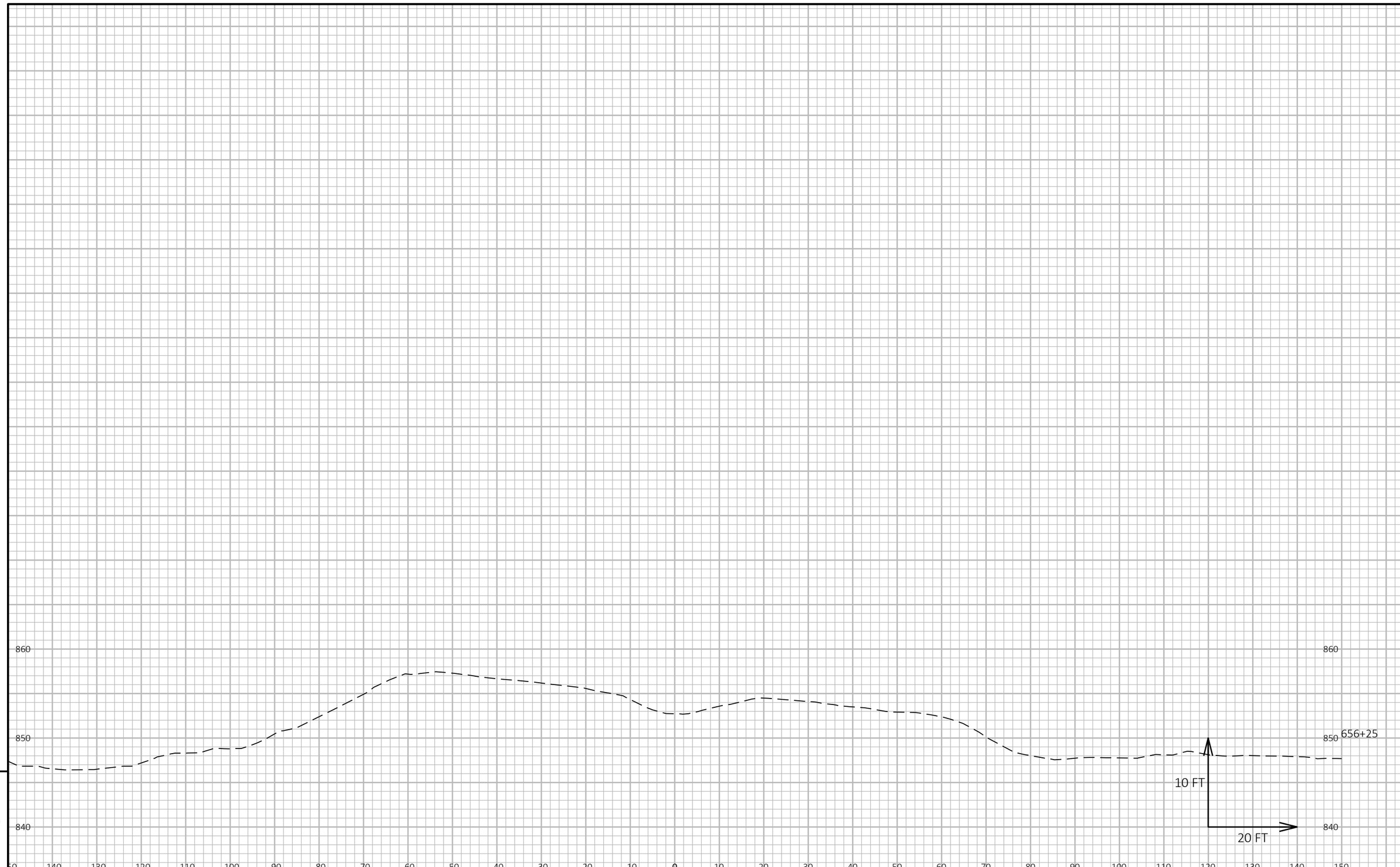
PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62	SHEET 68	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 12
PLOT DATE : 5/11/2022 9:55 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.
WISDOT/CADDS SHEET 49



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PROJECT NO: 1370-17-70	HWY: STH 16	COUNTY: WAUKESHA	CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62	SHEET 69	E

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 13

PLOT DATE : 5/11/2022 9:56 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49

Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

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