WKE

AUGUST 2022

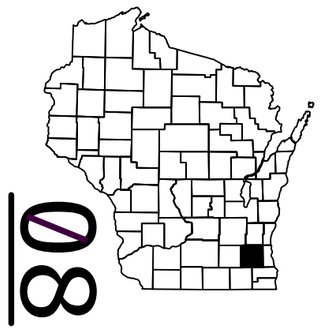
PROJECT ID: 1370-17-70

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



N

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

# STATE OF WISCONSIN
# DEPARTMENT OF TRANSPORTATION

**PLAN OF PROPOSED IMPROVEMENT**

# STH 16

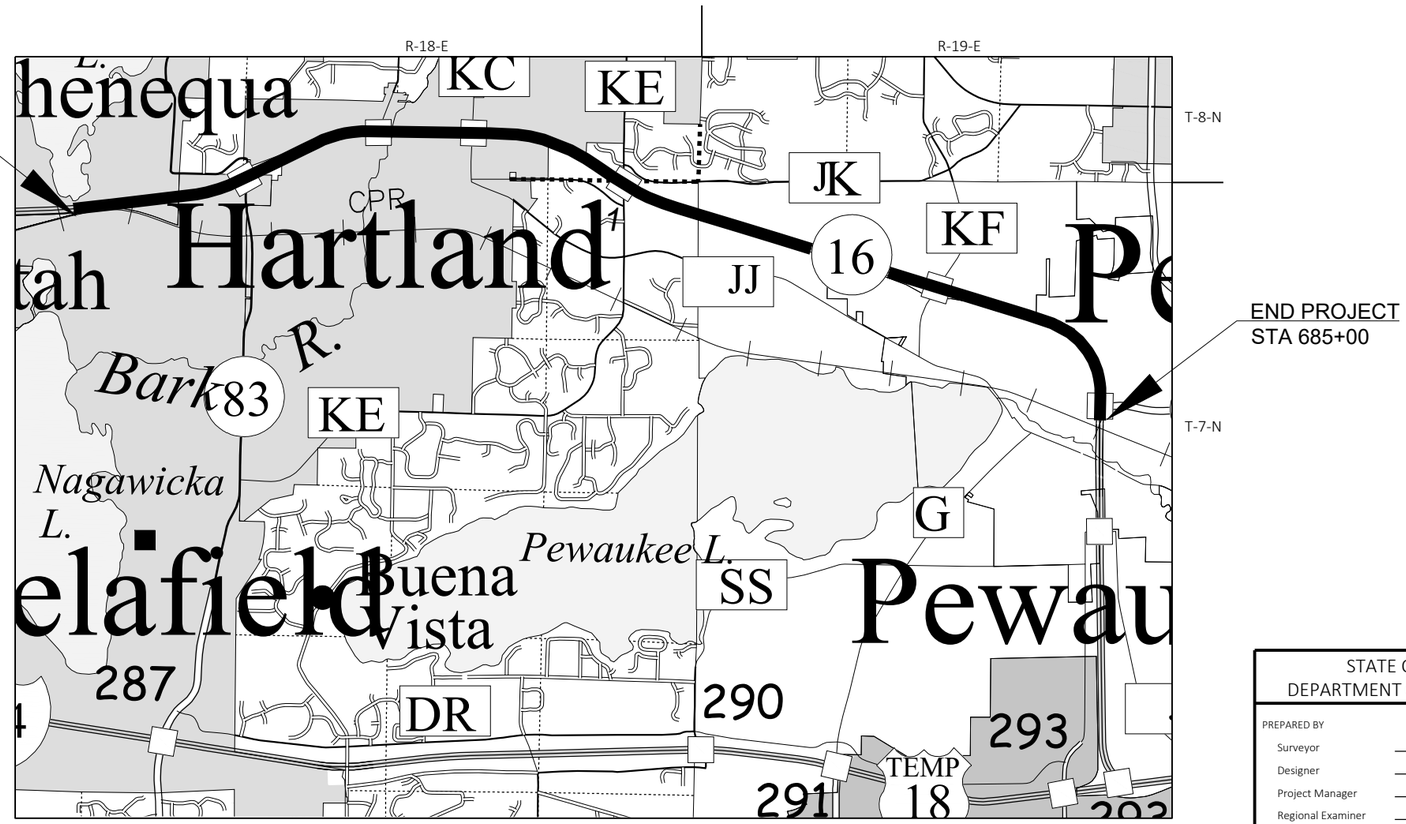
**5800' WEST OF STH 83 TO STH 190**

## STH 16
## WAUKESHA COUNTY

| STATE PROJECT NUMBER |
|---|
| 1370-17-70 |

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

BEGIN PROJECT
STA 284+00
Y=194297.323
X=642522.695




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

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\01 - TITLE\010101_TI.DWG PLOT DATE : 5/11/2022 9:42 AM PLOT BY : ROTIER, STEVEN J PLOT NAME :

## 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
russell.lewis@dot.wi.gov

**WISDOT HIGHWAY MAINTENANCE**
Gary Wolf
141 NW Barstow Street
Waukesha, WI 53187-0798
(414) 750-2715
gary1.wolf@dot.wi.gov

**WISDOT SIGNALS**
Jarrett Gates
141 NW Barstow Street
Waukesha, WI 53188
(262) 548-5894
jarrett.gates@dot.wi.gov

**WISDOT DESIGN LEADER**
Steven Rotier
141 NW Barstow Street, PO Box 798
Waukesha, WI 53188
(262) 548-5679
seven.rotier@dot.wi.gov

**WISDOT PROJECT MANAGER**
Robert Bellin
141 NW Barstow Street, PO Box 798
Waukesha, WI 53188
(262) 521-4405
robert.bellin@dot.wi.gov

**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

2

N

PINE LAKE

MAINTENANCE CROSSOVER TO REMAIN

300+00

350+00

400+00

MAINTENANCE CROSSOVER TO REMAIN

INSTALL CABLE BARRIER TYPE 1

450+00

REMOVE MAINTENANCE CROSSOVER

500+00

MAINTENANCE CROSSOVER TO REMAIN

550+00

600+00

650+00

REMOVE MAINTENANCE CROSSOVER

700+00

750+00

STA. 284+00
BEGIN PROJECT

STA. 684+50
END PROJECT

PEWAUKEE LAKE

CPR

Bark R.

K

KC

KE

JK

J J

KF

GR

SS

E

16

83

90

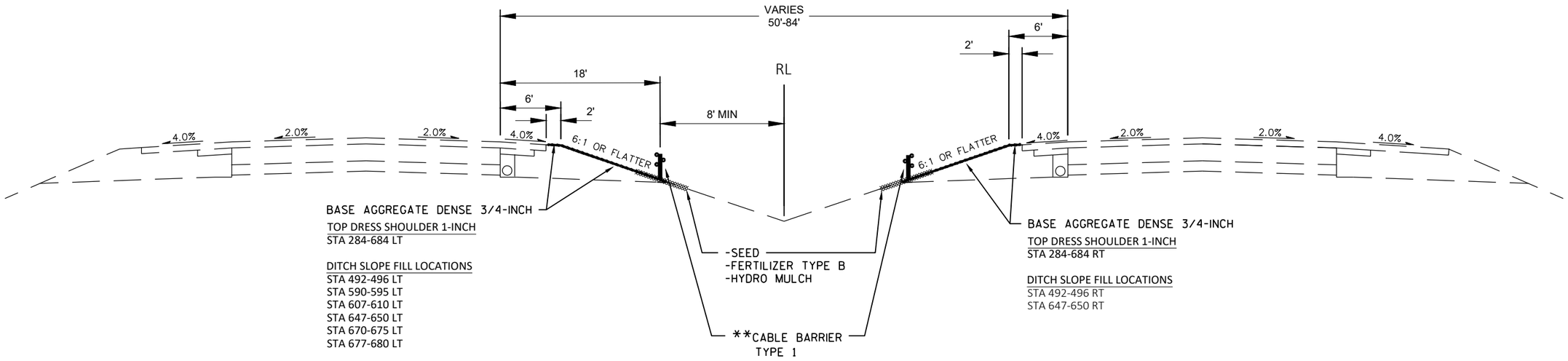
| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | PROJECT OVERVIEW | SHEET 3 E |
|---|---|---|---|---|

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

2

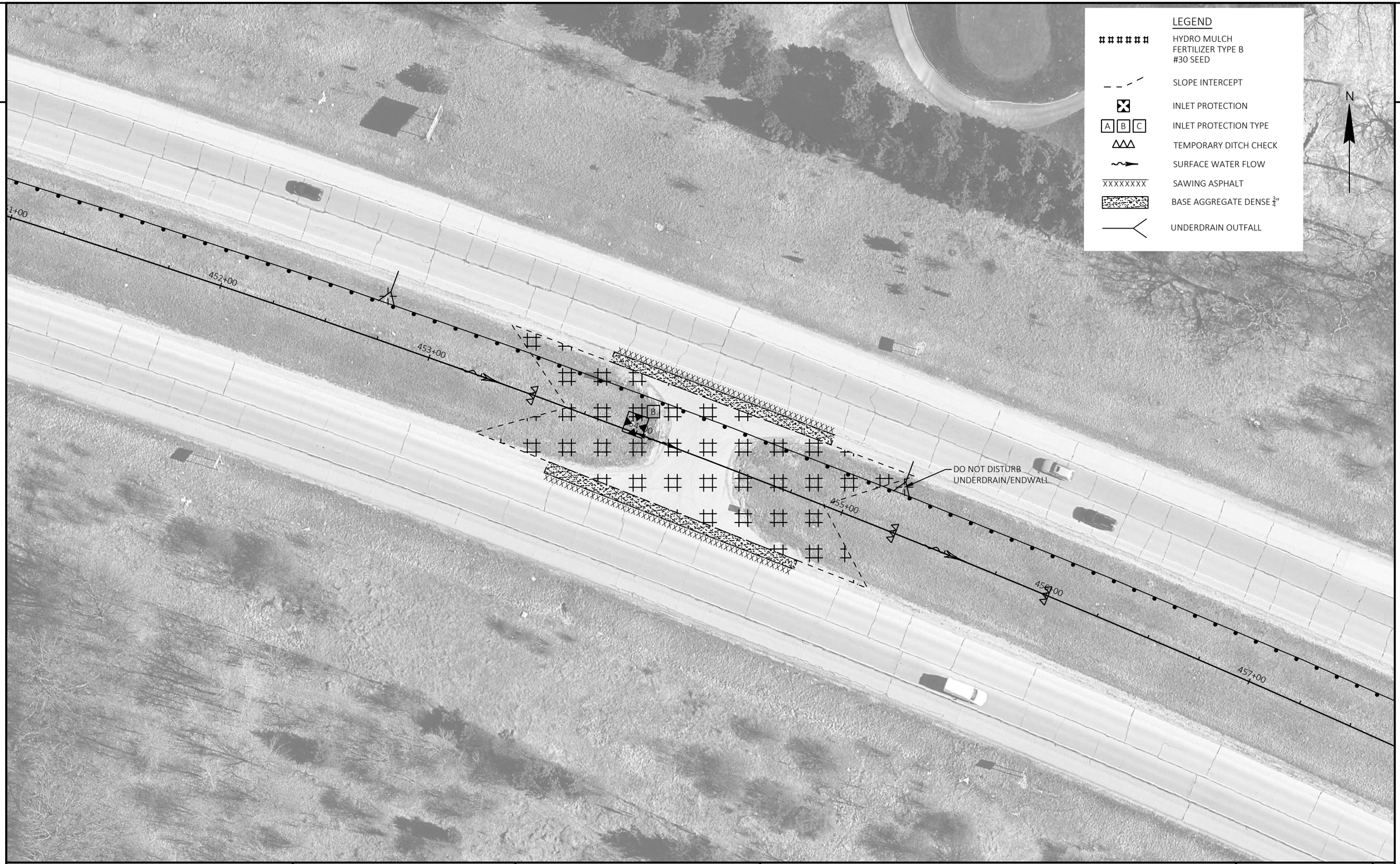



** SEE PLAN DETAILS FOR LOCATION LEFT OR RIGHT OF DITCH

STH 16
TYPICAL FINISHED SECTION
STA 284+00 TO 685+00

| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | TYPICAL SECTION | SHEET 4 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\020301_TS.DWG
LAYOUT NAME - 020301-ts 1in-10ft
PLOT DATE : 5/11/2022 9:42 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42




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

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\021003_CD.DWG
LAYOUT NAME - 01

PLOT DATE : 5/11/2022 9:43 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

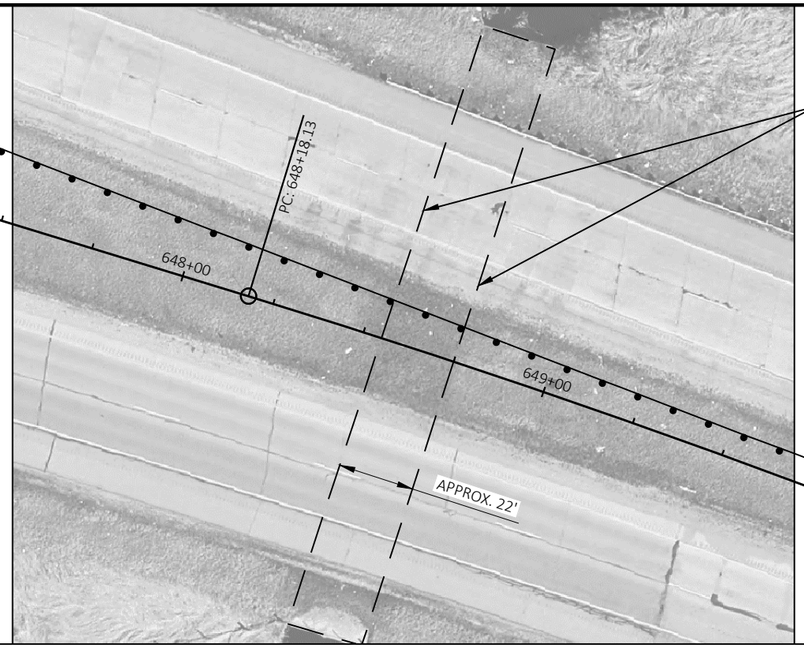



| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | CONSTRUCTION & EROSION CONTROL DETAILS - MEDIAN REMOVAL STA 654+62 | SHEET 6 | E |
|---|---|---|---|---|---|

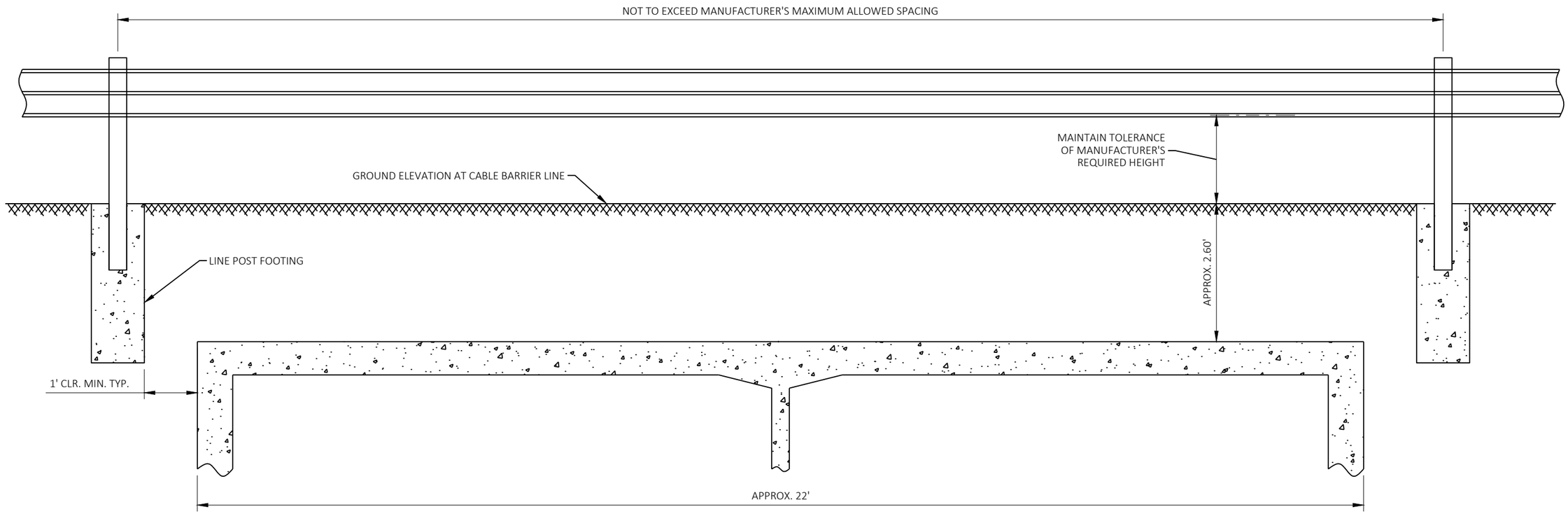
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LAYOUT NAME - 02

PLOT DATE : 5/11/2022 9:43 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:40 FT

2



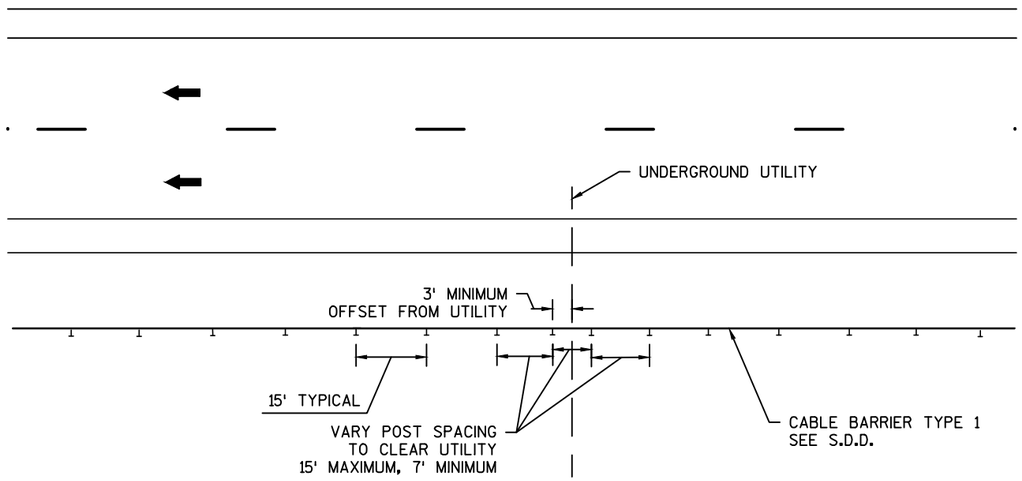

PLAN AT BOX CULVERT B-67-176



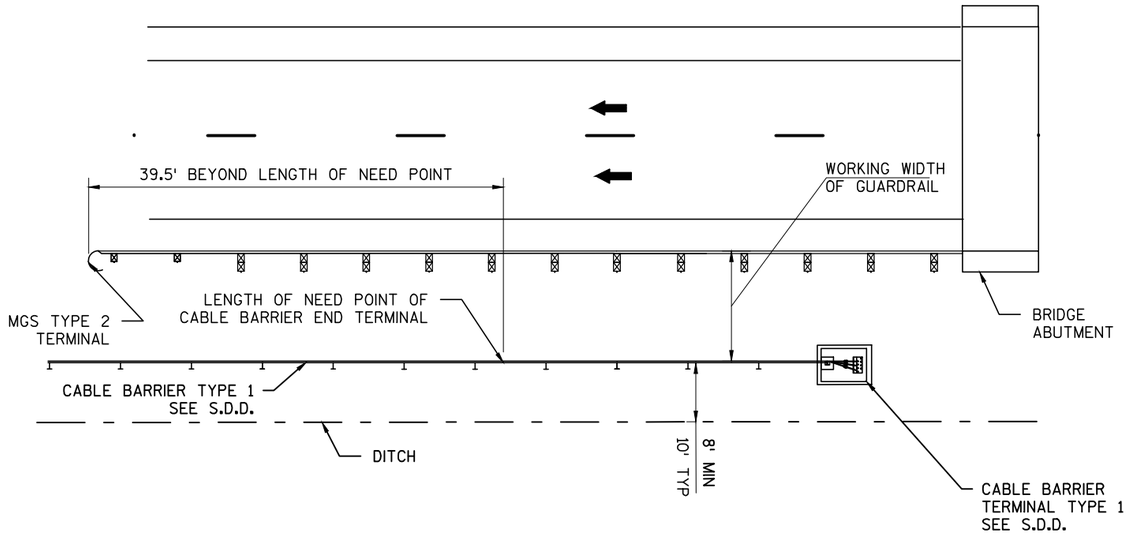

ELEVATION AT BOX CULVERT B-67-176

| 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 |
|---|---|---|---|---|---|

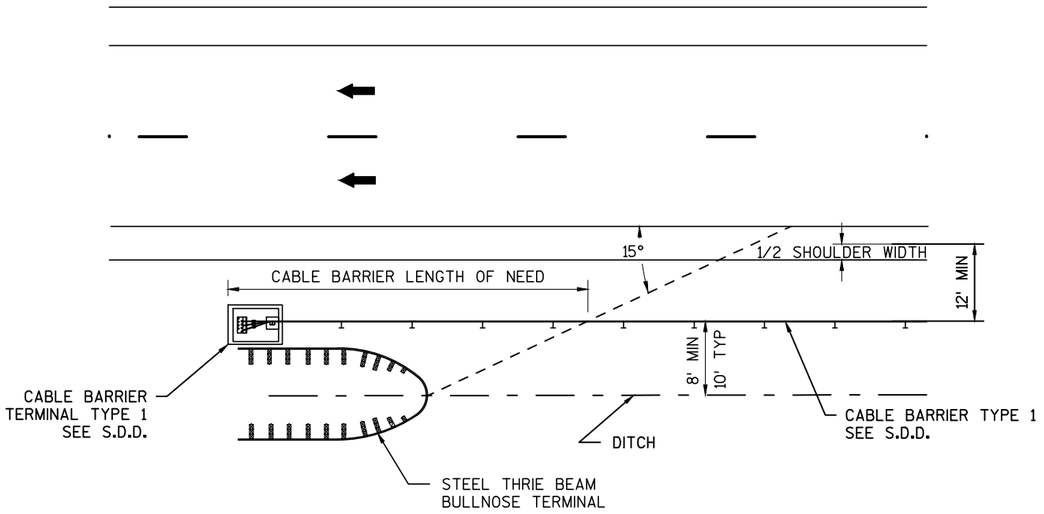
FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\021005_CD.DWG
LAYOUT NAME - 05
PLOT DATE : 5/11/2022 9:43 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 42



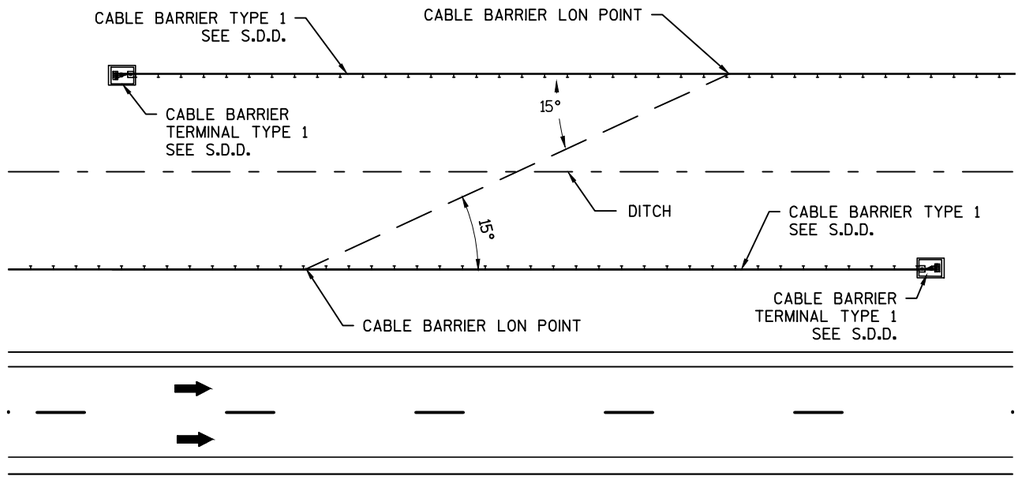

CABLE BARRIER AT
UNDERGROUND UTILITY



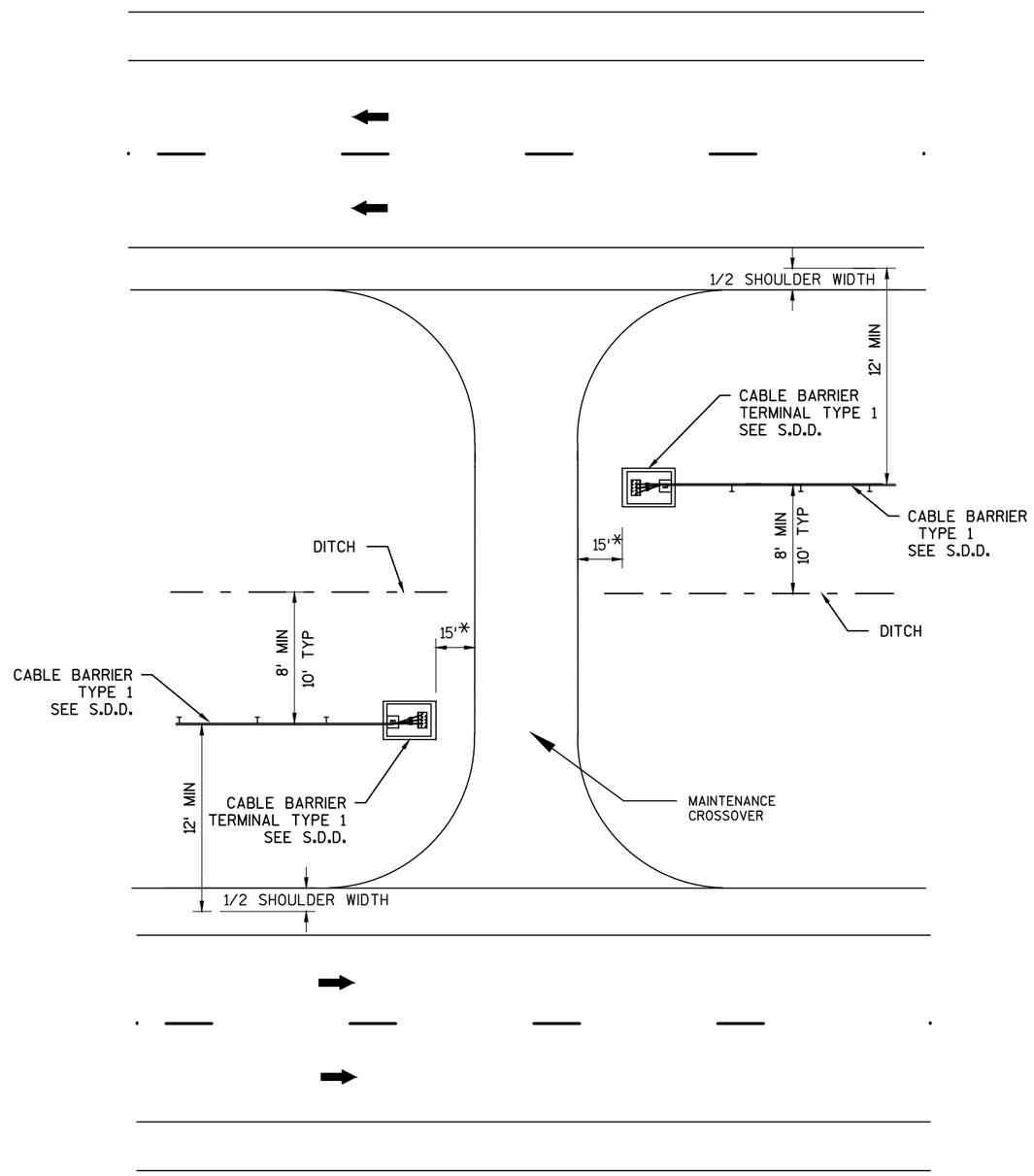

CABLE BARRIER END TERMINAL
AT BRIDGE ABUTMENT




CABLE BARRIER AT
THRIE BEAM BULLNOSE TERMINAL




OVERLAPPING CABLE BARRIER
END TERMINALS




CABLE BARRIER END TERMINAL
AT MAINTENANCE CROSSOVER

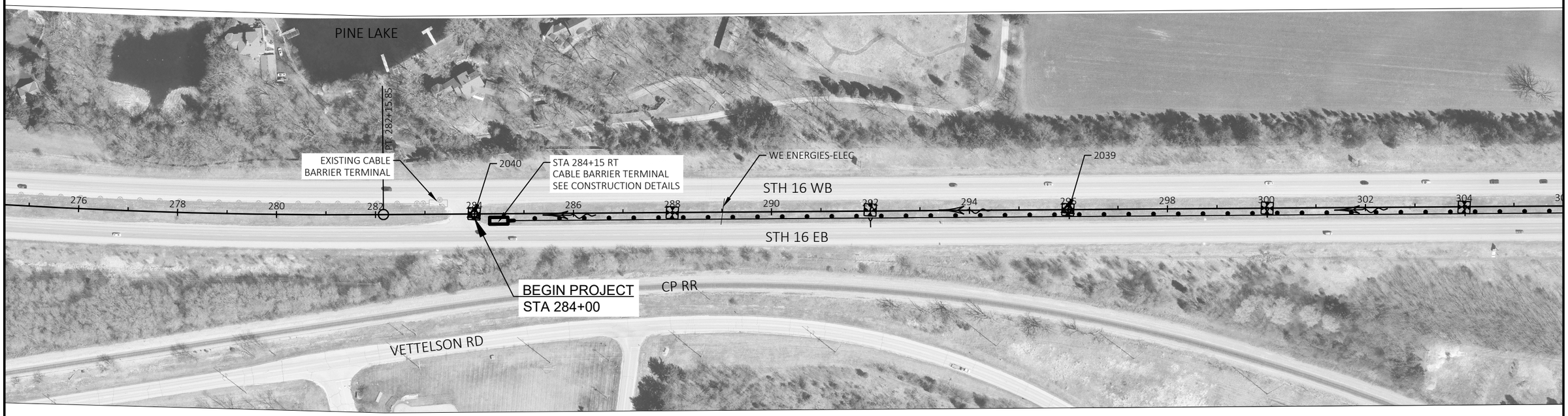
* DISTANCE MEASURED FROM
EDGE OF ASPHALT

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



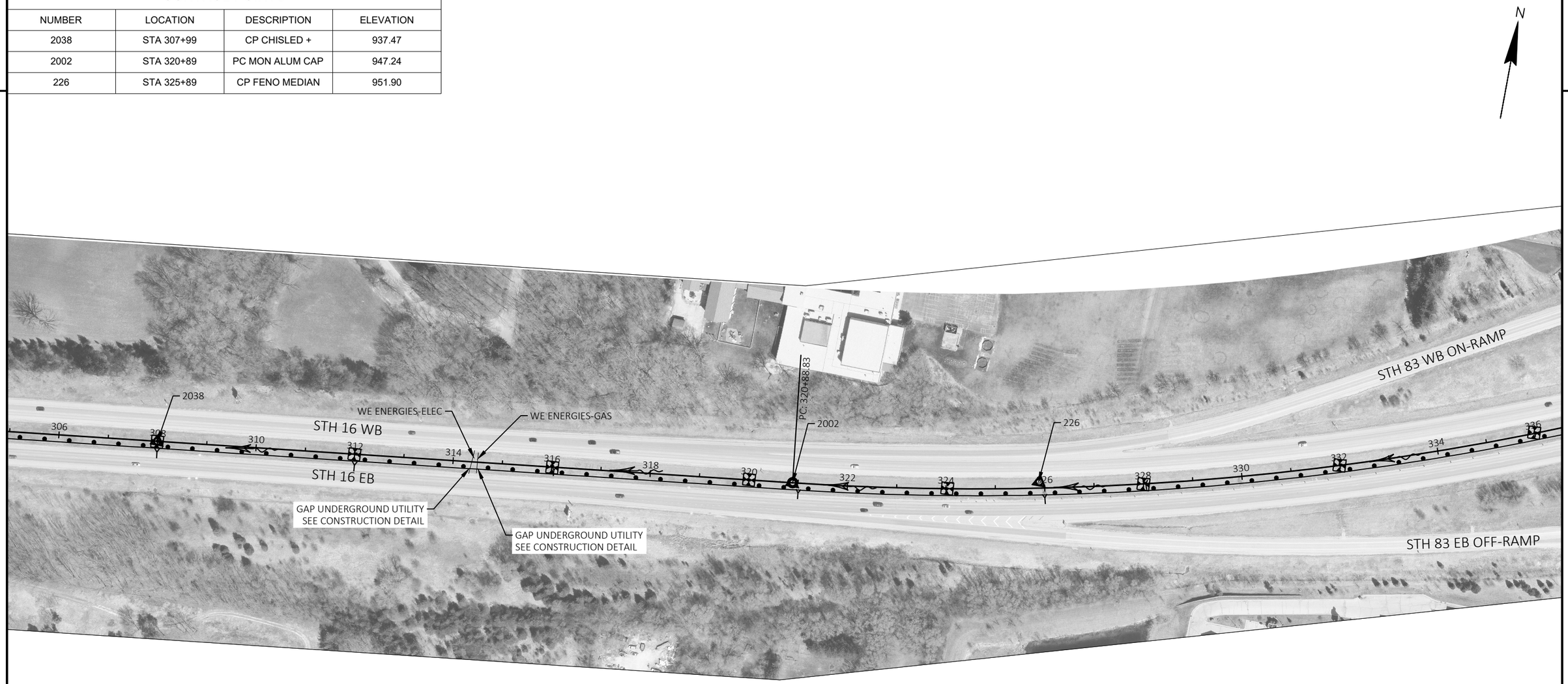

LEGEND

- 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 |
|---|---|---|---|
| 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

### LEGEND

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

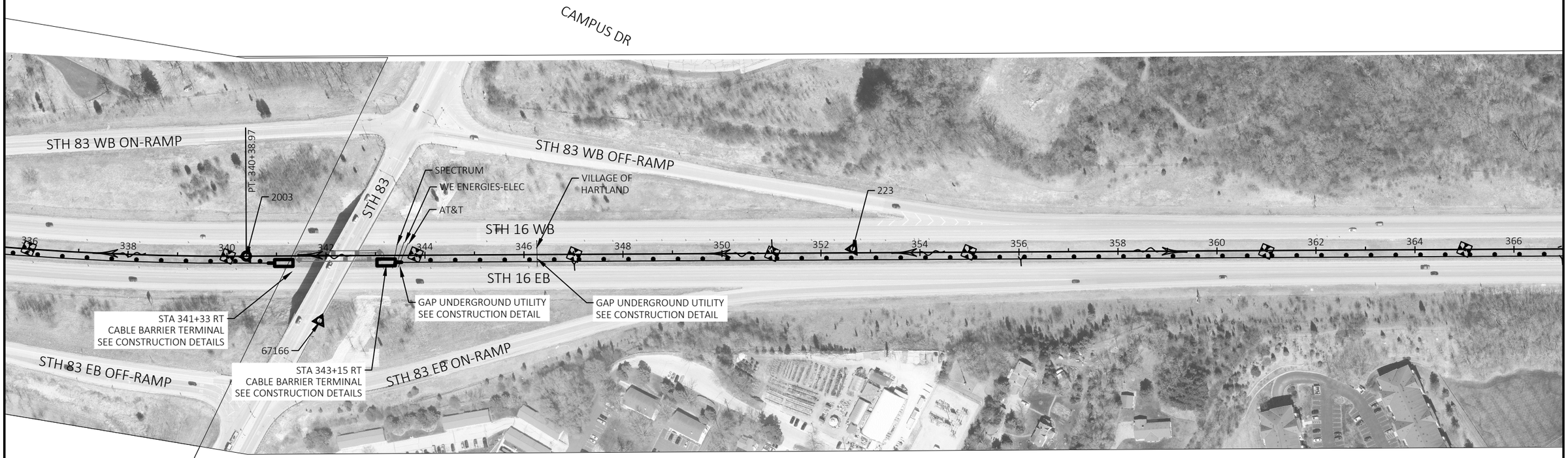
| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | PLAN DETAILS | SHEET 11 | E |
|---|---|---|---|---|---|

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



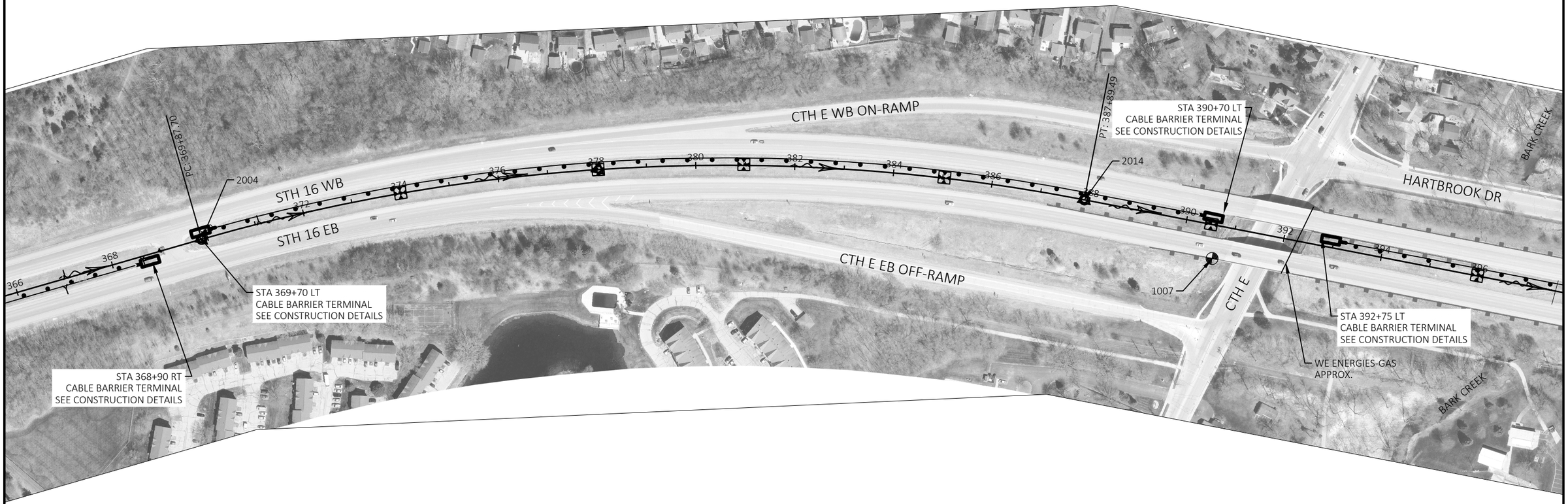

LEGEND

- 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 |
|---|---|---|---|
| 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 |




### LEGEND

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

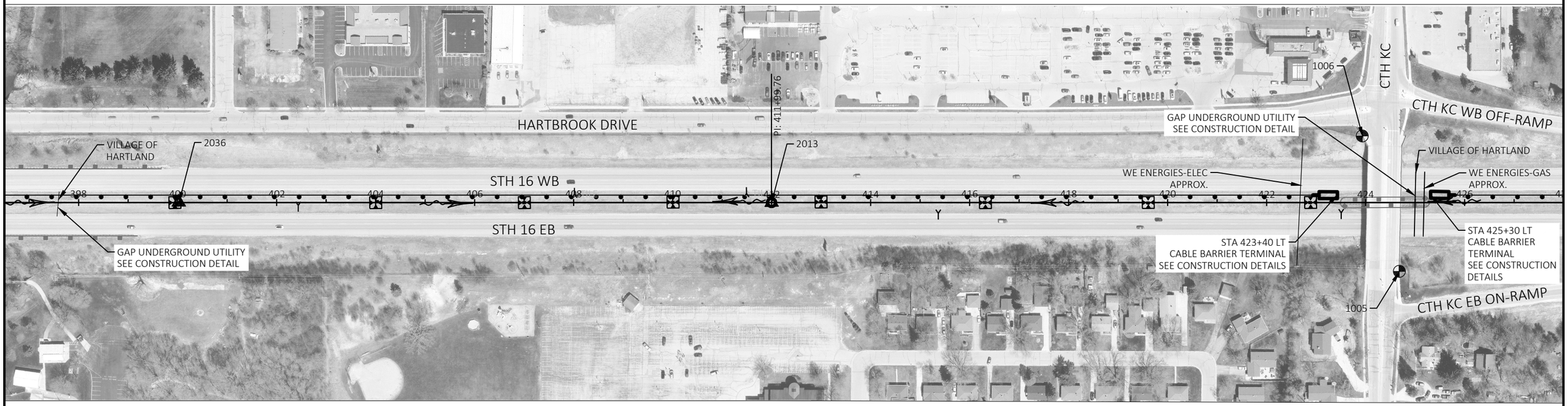
| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | PLAN DETAILS | SHEET 13 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\021201_PD.DWG
LAYOUT NAME - Sheet - (4)
PLOT DATE : 5/11/2022 9:46 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:200 FT

2

## 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 |



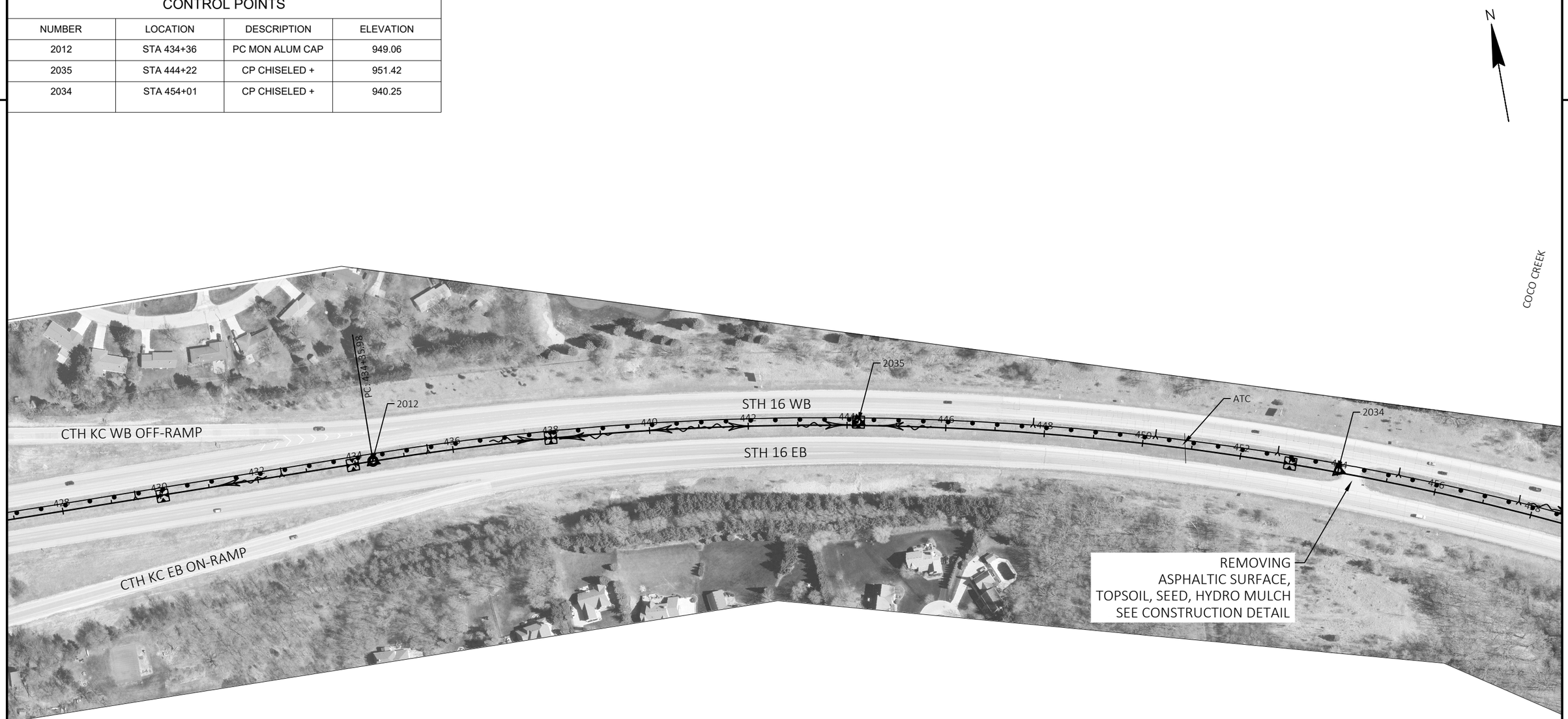

### LEGEND

- 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 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 |




LEGEND

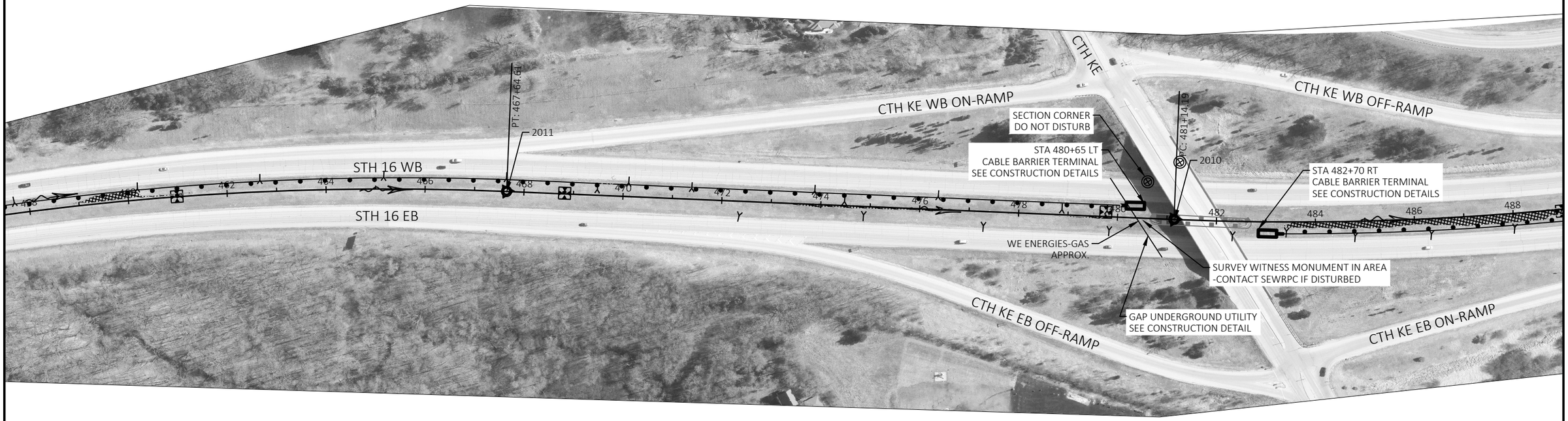
- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | PLAN DETAILS | SHEET 15 | E |
|---|---|---|---|---|---|

2

## 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 |




## 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 16 | E |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\021201_PD.DWG
LAYOUT NAME - Sheet - (7)

PLOT DATE : 5/11/2022 9:46 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42

2

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




LEGEND

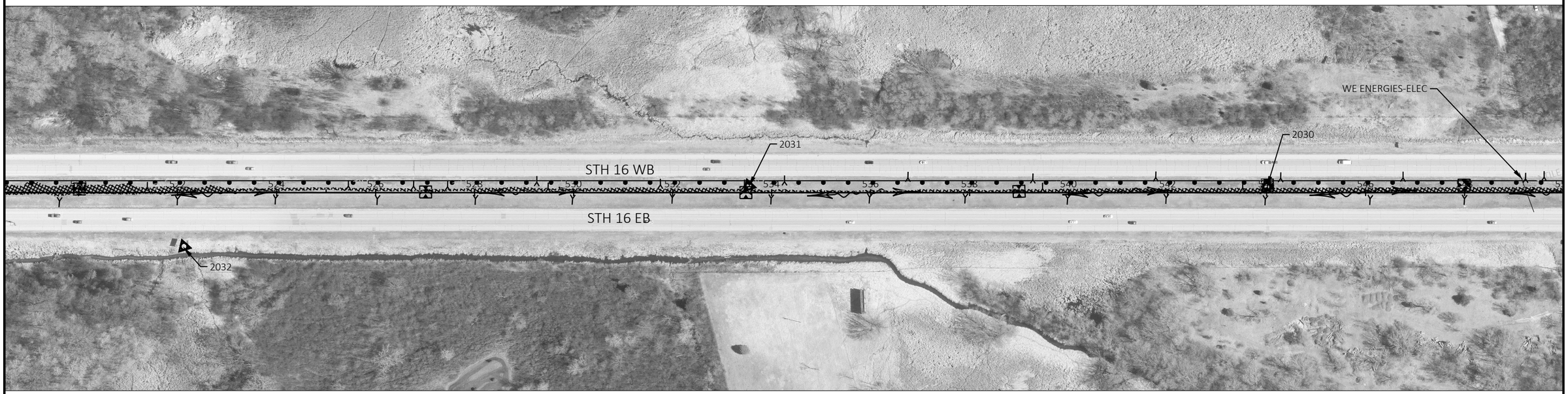
- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

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

2

## CONTROL POINTS

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




LEGEND

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

2

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

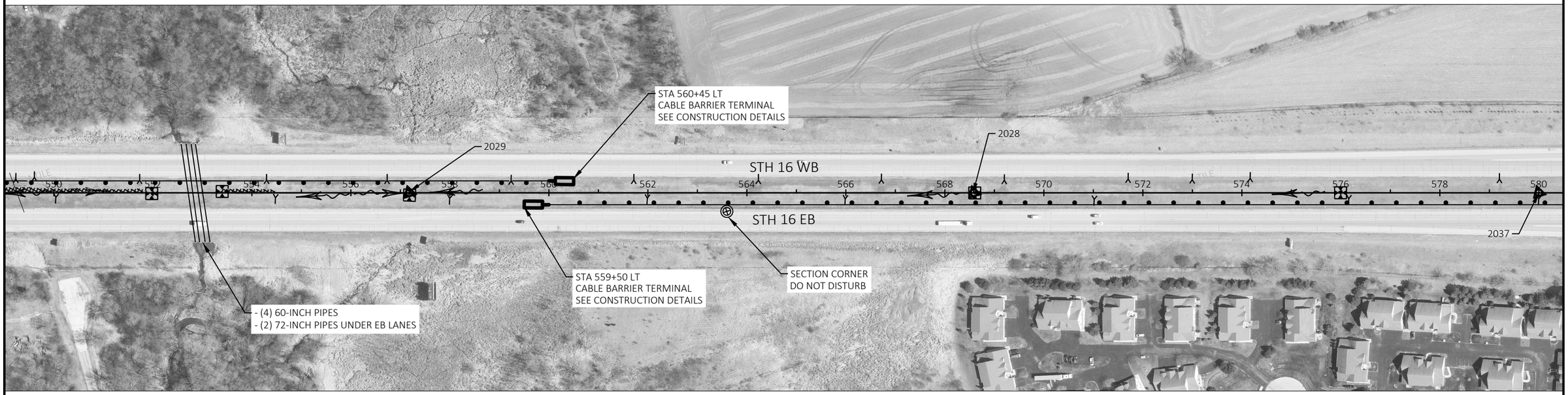

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\021201_PD.DWG
LAYOUT NAME - Sheet - (9)
PLOT DATE : 5/11/2022 9:46 AM
PLOT BY : ROTIER, STEVEN J
PLOT NAME :
PLOT SCALE : 1 IN:200 FT
WISDOT/CADDS SHEET 42

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 |

2



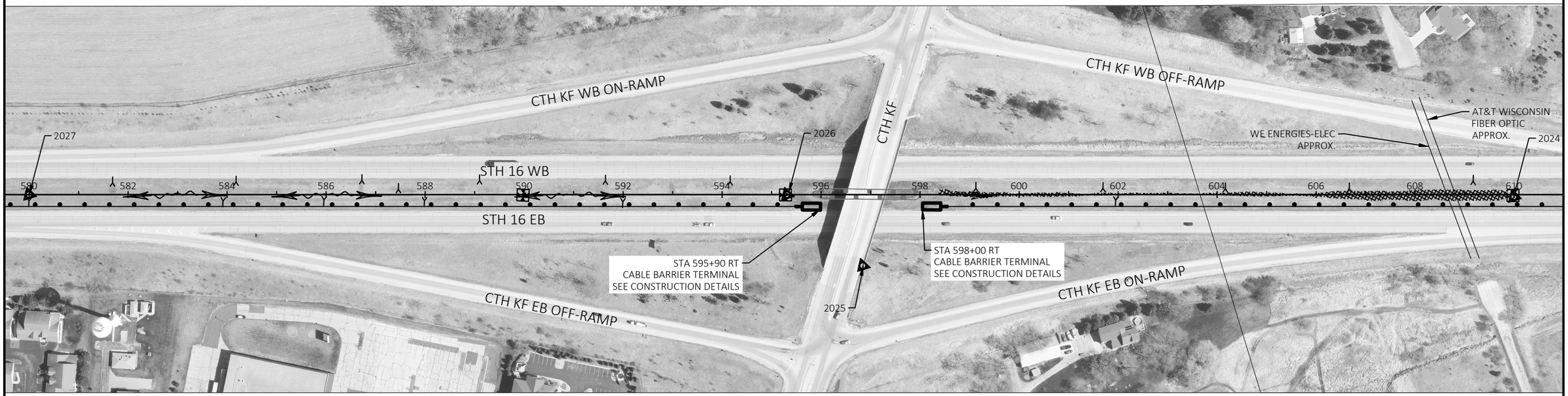

LEGEND

- 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 |
|---|---|---|---|
| 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 |




### LEGEND

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

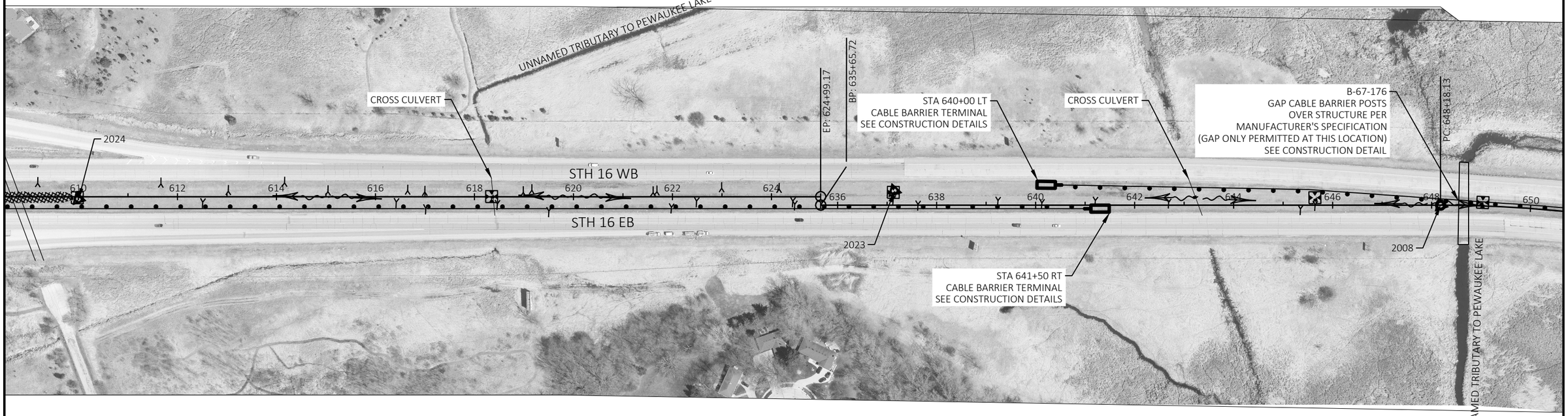
| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | PLAN DETAILS | SHEET 20 | E |
|---|---|---|---|---|---|

2

## 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

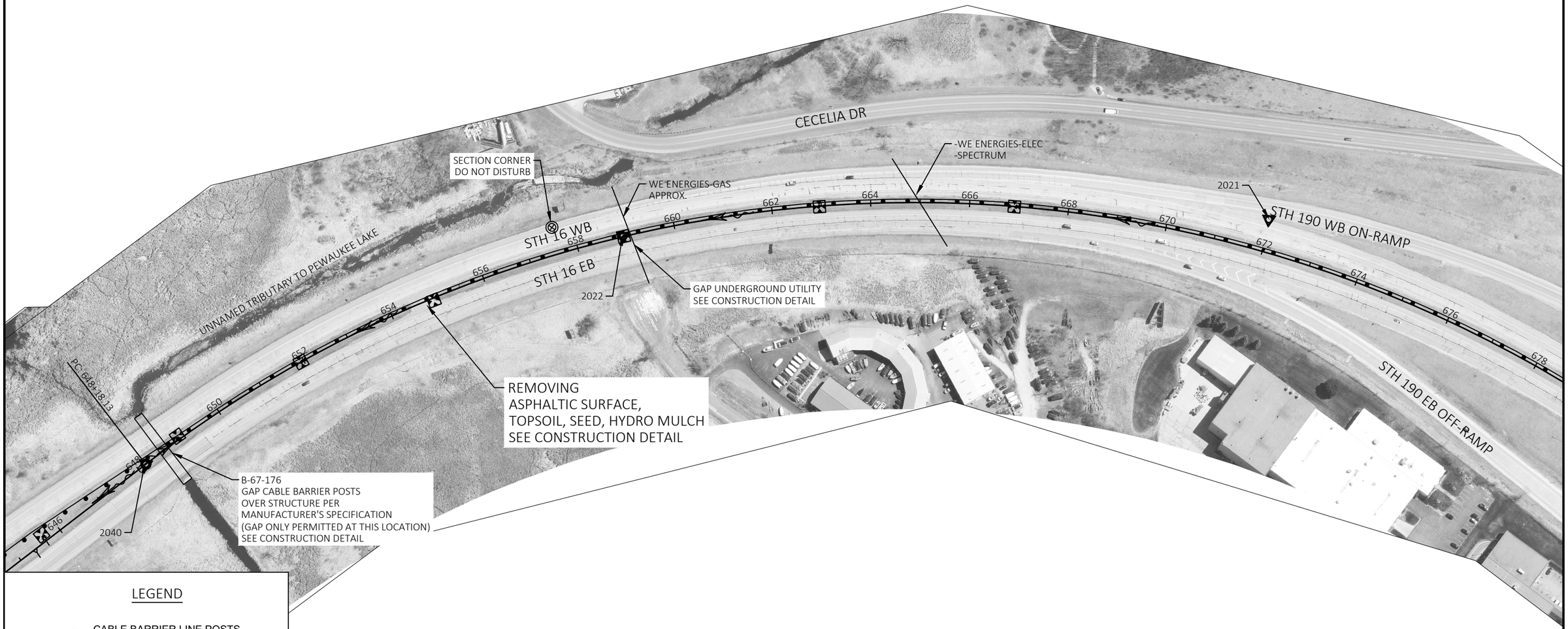
- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | PLAN DETAILS | SHEET 21 | E |
|---|---|---|---|---|---|

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 |




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 |
|---|---|---|---|---|---|

FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\021201_PD.DWG
LAYOUT NAME - Sheet - (13)

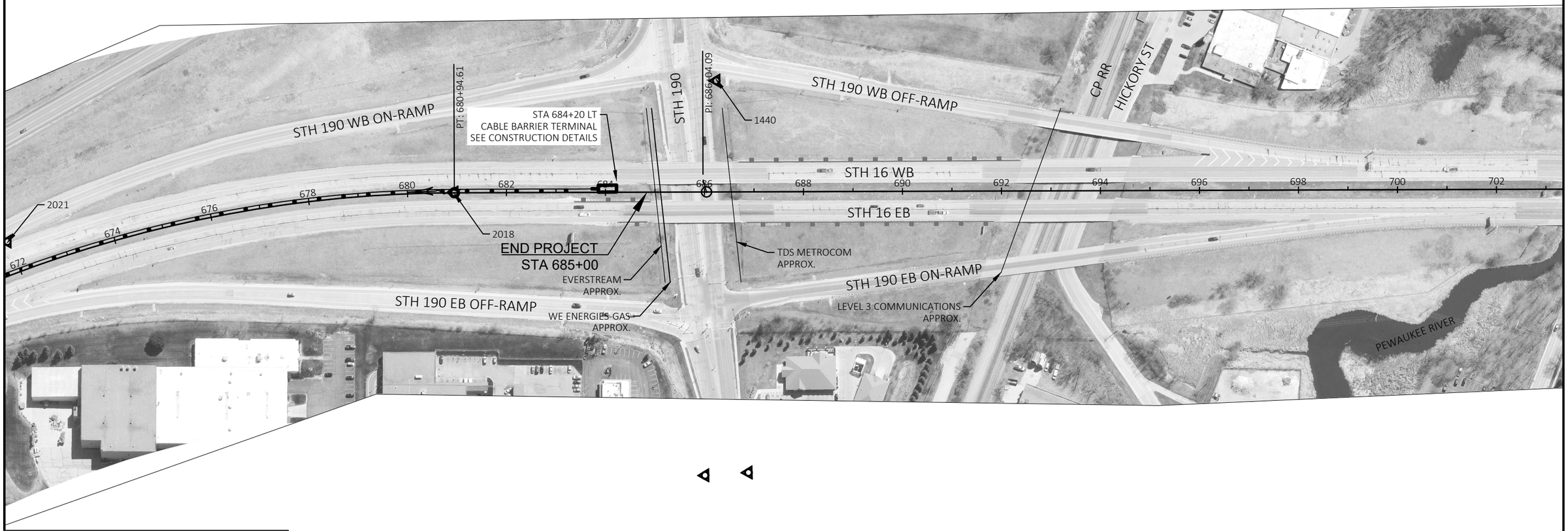
PLOT DATE : 5/11/2022 9:46 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:200 FT

WISDOT/CADDS SHEET 42

2

## CONTROL POINTS

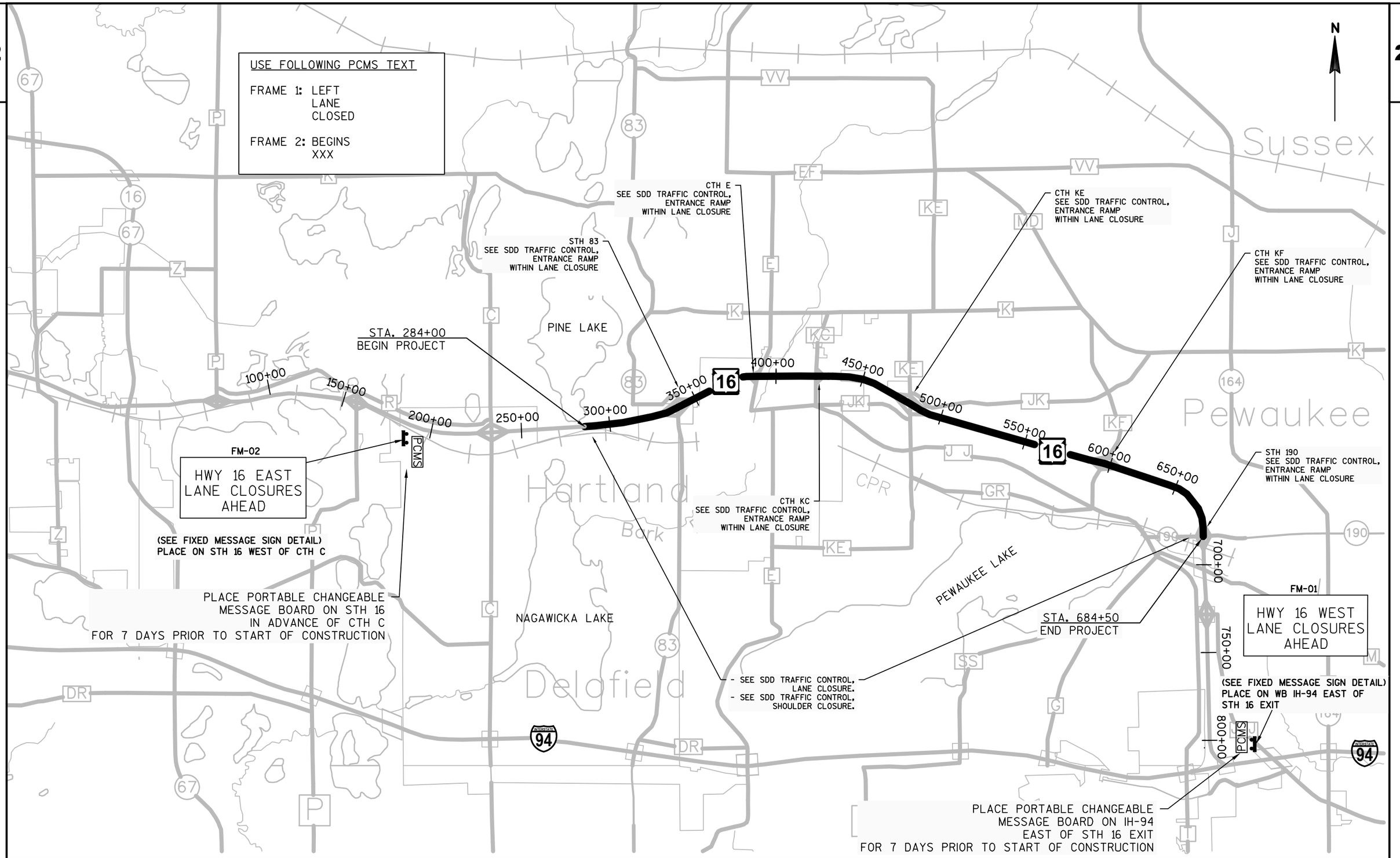
| NUMBER | LOCATION | DESCRIPTION | ELEVATION |
|---|---|---|---|
| 2021 | STA 671+95<br>65.45' LT | CP CHISELED + | 867.46 |
| 2018 | STA 680+95 | PT MON ALUM CAP | 881.17 |
| 1440 | STA 684+23<br>224.35' LT | FENO MON WITH PK | 868.267 |




### LEGEND

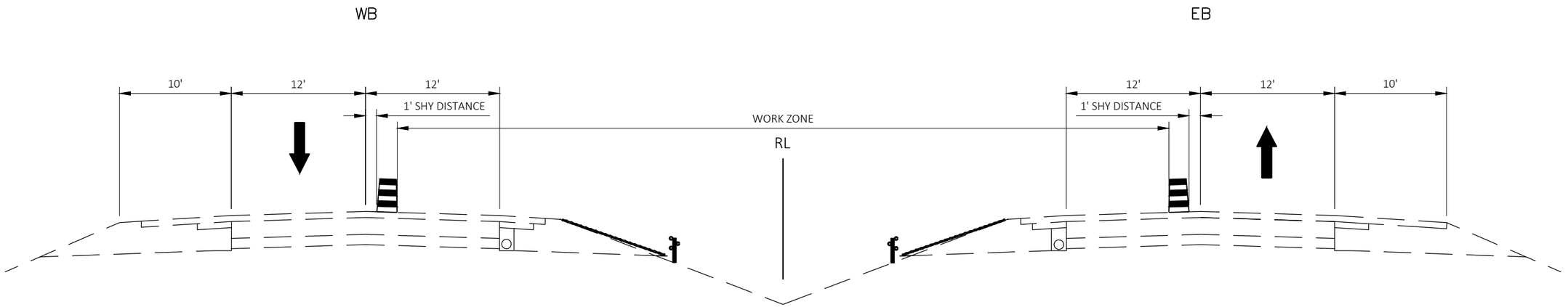
- CABLE BARRIER LINE POSTS
- CABLE BARRIER TERMINAL
- EXISTING INLET/INLET PROTECTION TYPE B
- WETLAND
- DITCH FLOW
- UNDERDRAIN OUTFALL

| 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 |
|---|---|---|---|---|

2




STH 16

STAGING TYPICAL SECTION OFF PEAK HOURS

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

| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | TRAFFIC CONTROL TYPICAL SECTION | SHEET 25 | E |
|---|---|---|---|---|---|

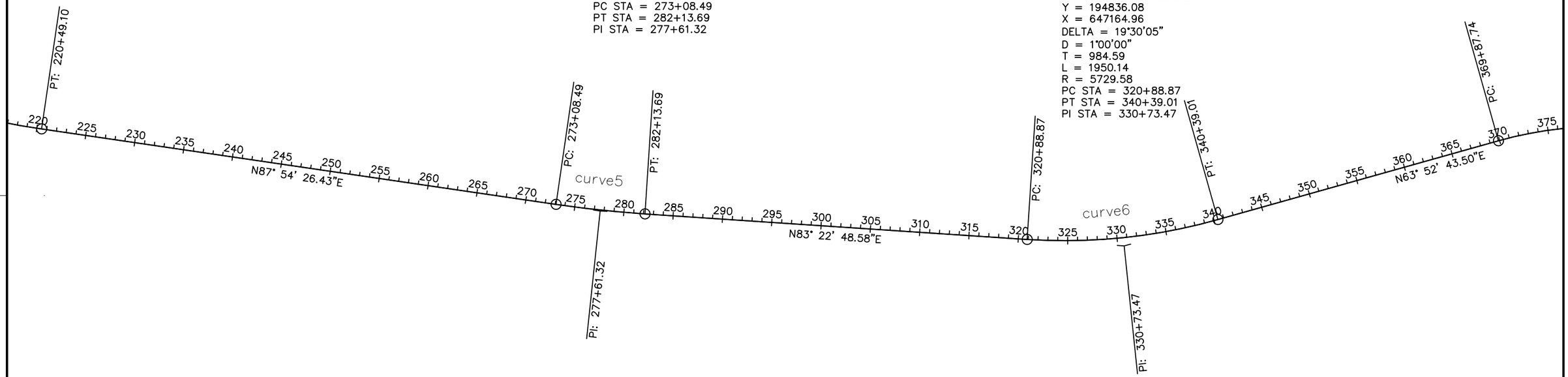
FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\02 - TYP SECT, DETAILS, AND EC\025100-TC.DWG
LAYOUT NAME - TRAFFIC CONTROL TYPICAL SECTION
PLOT DATE : 5/11/2022 9:47 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1 IN:10 FT
WISDOT/CADDS SHEET 42

2

N

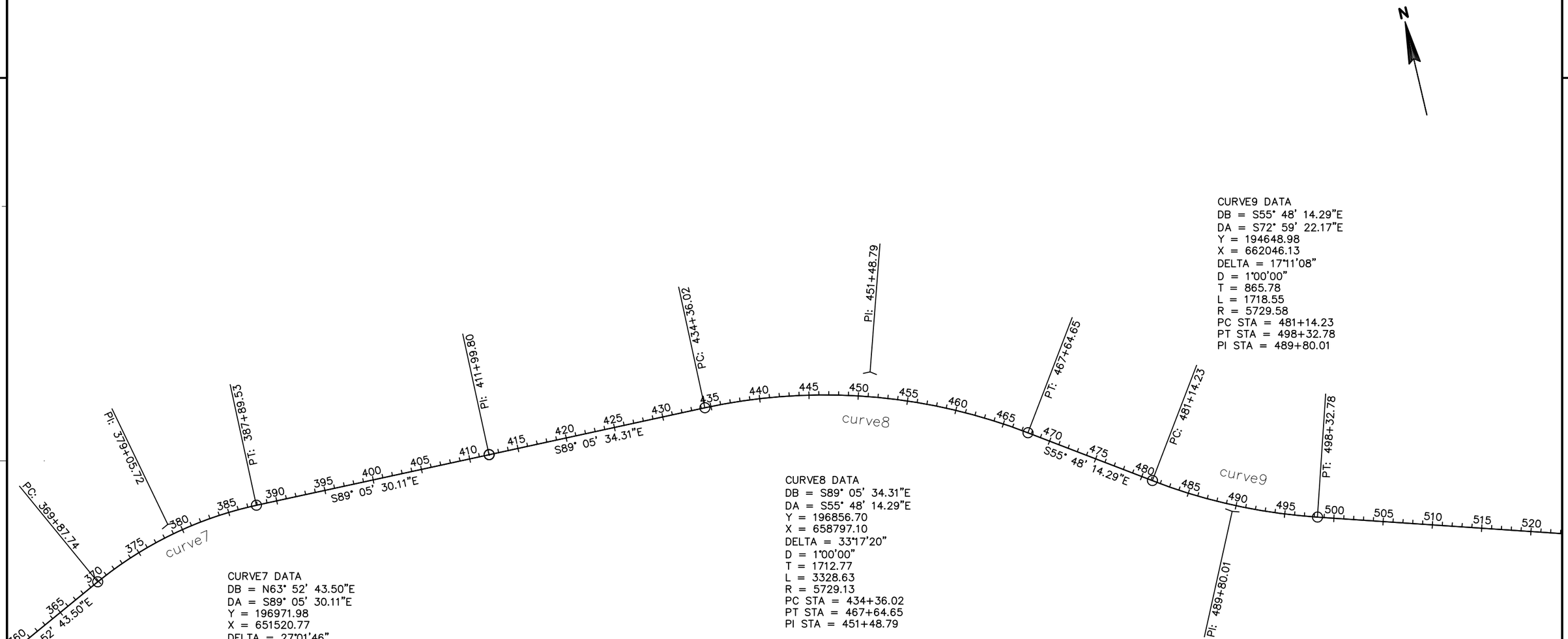
CURVE5 DATA
DB = N87° 54' 26.43"E
DA = N83° 22' 48.58"E
Y = 194223.64
X = 641887.77
DELTA = 4°31'38"
D = 0°30'00"
T = 452.83
L = 905.20
R = 11456.14
PC STA = 273+08.49
PT STA = 282+13.69
PI STA = 277+61.32

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 |
|---|---|---|---|---|---|

2

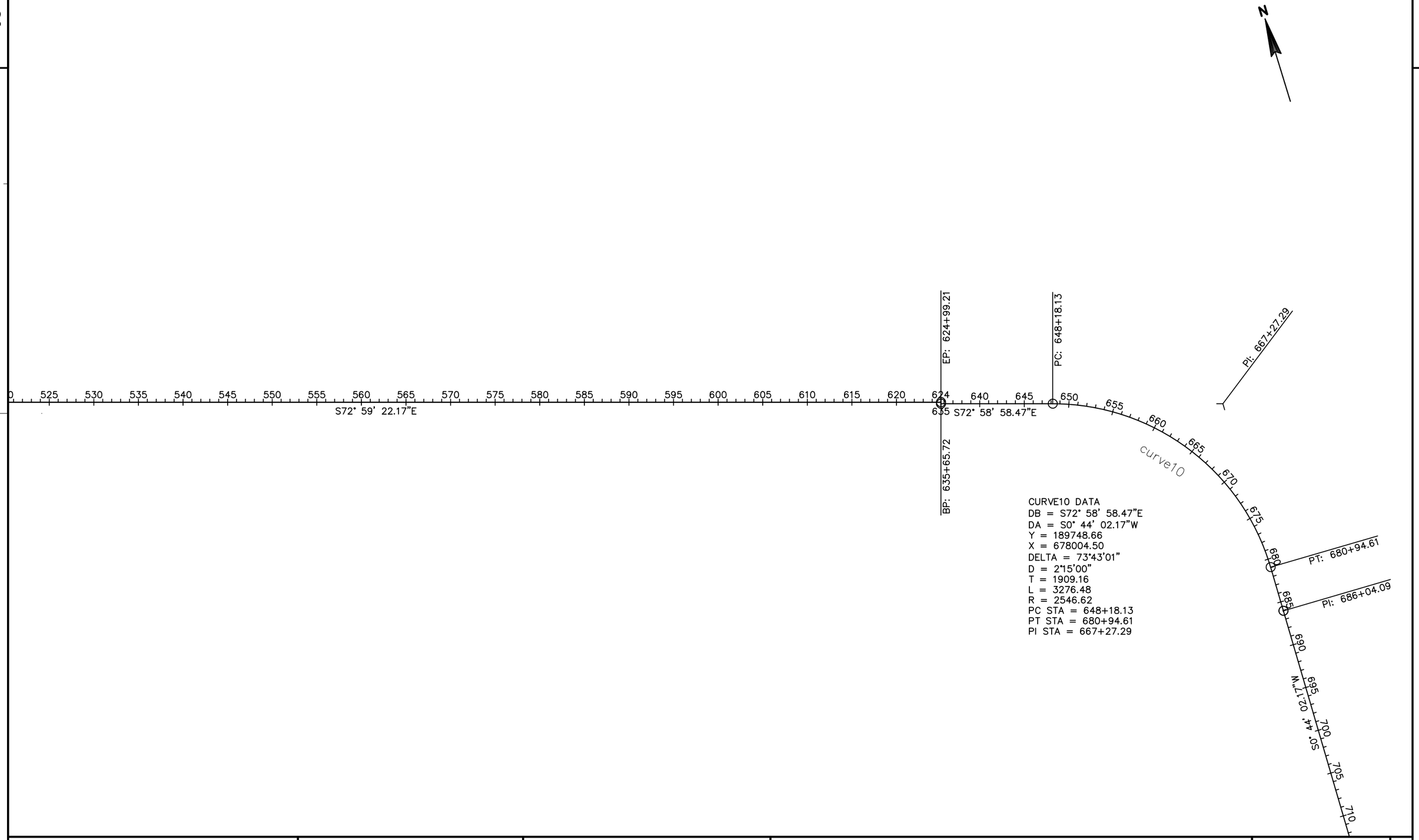



CURVE7 DATA
DB = N63° 52' 43.50"E
DA = S89° 05' 30.11"E
Y = 196971.98
X = 651520.77
DELTA = 27°01'46"
D = 1°30'01"
T = 917.98
L = 1801.79
R = 3819.34
PC STA = 369+87.74
PT STA = 387+89.53
PI STA = 379+05.72

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

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

2




| PROJECT NO:1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | PLAN DETAILS | SHEET 28 | E |
|---|---|---|---|---|---|

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

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 | | Topsoil (6") | | | | | | HSA | |
| | | | | 0.5 | | 975.3 | | | | | | | |
| | | | | 1 | | Dark Gray fine SAND,some silt, little clay, trace gravel; stiff | | | | | | | |
| SS 1 | 7 | D | 4-12-12 (24) | 2 | | SS-1 Rootlets Present | | 1.25 | | | | | |
| | | | | 3 | | | A-2-5 | | | | | | |
| SS 2 | 3 | D | 5-8-7 (15) | 4 | | SS-2 Rootlets Present | | 1.25 | | | | | |
| | | | | 5 | | | | | | | | | |
| | | | | 6 | | 6.0 969.8 | | | | | | | |
| SS 3 | 8 | D | 5-5-5 (10) | 7 | | Brown SAND, some gravel, little silt; firm | A-3 | | | | | | |
| | | | | 8 | | | | | | | | | |
| SS 4 | 16 | D | 7-7-6 (13) | 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*

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

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 | | 0.4 5" Topsoil 984.7 | | | | | | HSA | |
| | | | | 1 | | Brown GRAVEL, few sand, firm | A-1-a | | | | | | |
| SS 1 | 1 | D | 4-8-7 (15) | 2 | | (Possible large gravel and/or cobbles; crushed rock fragments included with sample) | | | | | | | |
| | | | | 3 | | 2.3 982.8 Brown GRAVEL, little sand, trace silt; firm | | | | | | | |
| SS 2 | 1 | D | 13-17-13 (30) | 4 | | | A-1-a | | | | | | |
| | | | | 5 | | | | | | | | | |
| | | | | 6 | | | | | | | | | |
| SS 3 | 2 | D | 5-9-10 (19) | 7 | | 7.3 977.8 Brown GRAVEL, some sand, trace silt; firm | | | | | | | |
| | | | | 8 | | | A-1-a | | | | | | |
| SS 4 | 7 | D | 10-11-11 (22) | 9 | | | | | | | | | |
| | | | | 10 | | 10.0 975.1 | | | | | | | |
| | | | | | | 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

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

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 | | 0 | | Gray/brown GRAVEL, some sand,trace silt, loose to firm | | | | | | HSA | |
| SS 1 | 7 | D | 3-11-9 (20) | 3.0 / 941.4 | | Brown/gray GRAVEL, some sand, little silt, loose to firm | A-1-a | | | | | | |
| SS 2 | 5 | D | 5-5-3 (8) | 5.0 / 939.4 | | (Possible large gravel and/or cobbles; crushed rock fragments included with sample) Dark brown silty CLAY, trace sand; stiff | A-1-a | | | | | | |
| SS 3 | 16 | M | 2-6-8 (14) | 7.9 / 936.5 | | Dark Brown SAND, some gravel, little silt, trace clay; firm | A-6 | 1.5 | | | | | |
| SS 4 | 6 | M | 6-5-6 (11) | 10.0 / 934.4 | | End of Boring at 10.0 ft. | A-2-4 | | | | | | |

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*

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

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 | | | 0 | | Topsoil (10") | | | | | | HSA | |
| | | | | 0.8 / 932.1 | | Brown with gray GRAVEL, little sand; loose | | | | | | | |
| SS 1 | 6 | D | 1-4-6 (10) | 2.8 / 930.1 | | (Possible large gravel and/or cobbles; crushed rock fragments included with sample) Brown GRAVEL, some sand, trace silt; firm | A-1-a | | | | | | |
| SS 2 | 8 | D | 6-12-14 (26) | | | | A-1-a | | | | | | |
| SS 3 | 9 | D | 9-8-12 (20) | 7.9 / 925.0 | | SS-3 Mixed Color, brown with gray, trace red and black Whitish gray GRAVEL, little sand, trace silt; very dense | | | | | | | |
| SS 4 | 14 | D | 21-35-31 (66) | 10.0 / 922.9 | | SS-4 Possible cobbles; rock fragments in sample jar End of Boring at 10.0 ft. | A-1-a | | | | | | |

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*

I:\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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Madison, WI 53704

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) | 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 | 8 | | | 0 | | Topsoil ( 8") | | | | | | HSA | |
| | | | | 0.7 | | 897.3 | | | | | | | |
| | | | | 1 | | Brown CLAY, little sand, trace silt and gravel, stiff (FILL) | | | | | | | |
| SS 1 | 15 | | 1-1-3 (4) | 2 | | | A-6 | 2.0 | | | | | |
| | | | | 3 | | | | | | | | | |
| SS 2 | 13 | | 1-3-4 (7) | 4 | | | | | | | | | |
| | | | | 4.5 | | 893.5 | | 2.75 | | | | | |
| | | | | 5 | | Black silty CLAY, trace sand and organics (possible buried topsoil); very stiff | A-6 | | | | | | |
| | | | | 6 | | 892.0 | | | | | | | |
| SS 3 | 5 | | 1-2-2 (4) | 6 | | Brown with gray silty CLAY, little sand; medium | A-6 | 0.75 | | | | | |
| | | | | 7 | | 890.5 | | | | | | | |
| | | | | 7.5 | | Brown silty CLAY, few sand, trace gravel; hard | | | | | | | |
| | | | | 8 | | | | | | | | | |
| SS 4 | 18 | | 4-5-8 (13) | 9 | | | A-6 | 4.5 | | | | | |
| | | | | 10 | | | | | | | | | |
| | | | | 11 | | | | | | | | | |
| SS 5 | 18 | | 9-14-17 (31) | 12 | | | | >4.5 | | | | | |
| | | | | 12.5 | | 885.5 | | | | | | | |

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) | 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 | 8 | | | 0 | | Topsoil (8") | | | | | | HSA | |
| | | | | 0.7 | | 862.3 | | | | | | | |
| | | | | 1 | | Brown SAND, little silt, few gravel; loose | | | | | | | |
| SS 1 | 10 | M | 4-5-5 (10) | 2 | | | A-3 | | | | | | |
| | | | | 3 | | 860.0 | | | | | | | |
| | | | | | | Gray silty CLAY, trace sand; medium to very stiff | | | | | | | |
| SS 2 | 5 | M | 0-2-3 (5) | 4 | | | | 3.0 | | | | | |
| | | | | 5 | | | | | | | | | |
| | | | | 6 | | | | | | | | | |
| SS 3 | 5 | D | 1-2-3 (5) | 7 | | | A-6 | 1.25 | | | | | |
| | | | | 8 | | | | | | | | | |
| | | | | 9 | | | | | | | | | |
| SS 4 | 4 | D | 1-1-3 (4) | 10 | | | | 1.0 | | | | | |
| | | | | 10.5 | | 852.5 | | | | | | | |
| | | | | 11 | | Brown SAND, trace gravel, silt, clay; firm | | | | | | | |
| | | | | 12 | | SS-5 Black Sand seam (< 2") present | A-2-4 | | | | | | |
| SS 5 | 14 | M | 5-7-7 (14) | 13 | | | | | | | | | |
| | | | | 14 | | | | | | | | | |
| SS 6 | 18 | W | 6-9-18 (27) | 15 | | | | | | | | | |
| | | | | 15 | | 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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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

**BORING ID: B-07**

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| | | | | |
|---|---|---|---|---|
| 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) | 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 | 8 | | | 0 | | Topsoil (8") | | | | | | | |
| | | | | 0.7 | | 859.9 | | | | | | | |
| | | | | 1 | | Orange brown fine SAND, little silt, clay, trace gravel; very stiff | | | | | | | |
| SS 1 | 18 | M | 1-6-6 (12) | 2 | | | A-2-4 | 3.0 | | | | | |
| | | | | 3 | | 857.5 | | | | | | | |
| | | | | | | Color gray in SS-2 | | | | | | | |
| SS 2 | 18 | M | 3-5-4 (9) | 4 | | Gray brown silty CLAY, some fine sand; very stiff | A-6 | 2.25 | | | | | |
| | | | | 5 | | 855.0 | | | | | | | |
| | | | | 5.5 | | Gray SILT, trace clay and fine sand; loose | | | | | | | |
| SS 3 | 18 | W | 3-2-7 (9) | 6 | | | | | | | | | |
| | | | | 7 | ▽ | | | | | | | | |
| | | | | 8 | | 852.5 | | | | | | | |
| | | | | | | Gray clayey SILT, little sand, very loose | | | | | | | |
| SS 4 | 18 | W | 1-2-2 (4) | 9 | | | | | | | | | |
| | | | | 10 | ▼ | | | | | | | | |
| | | | | 10.5 | | 850.0 | | | | | | | |
| | | | | | | Gray silty CLAY; stiff | | | | | | | |
| SS 5 | 18 | M | 1-2-1 (3) | 11 | | | A-6 | 1.0 | | | | | |
| | | | | 12 | | | | | | | | | |
| | | | | 13 | | | | | | | | | |
| SS 6 | 18 | M | 1-1-2 (3) | 14 | | | | 1.0 | | | | | |
| | | | | 15 | | 845.5 | | | | | | | |
| | | | | | | 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 ☐ |

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

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| | | | | |
|---|---|---|---|---|
| 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) | 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 | 12 | | | 0 | | Topsoil (12") | | | | | | HSA | |
| | | | | 1.0 | | 876.7 | | | | | | | |
| | | | | 1 | | Gray clayey SILT, trace sand and gravel; hard | | | | | | | |
| SS 1 | 18 | D | 7-13-16 (29) | 2 | | | | >4.5 | | | | | |
| | | | | 3 | | 874.7 | | | | | | | |
| | | | | | | Gray with white SAND, some gravel, few silt; dense | | | | | | | |
| SS 2 | 16 | D | 11-21-16 (37) | 4 | | | A-1-b | | | | | | |
| | | | | 5 | | 872.3 | | | | | | | |
| | | | | 5.4 | | Gray silty CLAY, trace sand and gravel; hard | | | | | | | |
| SS 3 | 18 | D | 10-30-50 (80) | 6 | | | | >4.5 | | | | | |
| | | | | 7 | | | | | | | | | |
| | | | | 8 | | 869.7 | | | | | | | |
| | | | | | | Gray clayey SILT, little sand, few gravel; very dense | | | | | | | |
| SS 4 | 18 | D | 22-42-50 (92) | 9 | | | | | | | | | |
| | | | | 10 | | 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*

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

**BORING ID: B-09**
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| | | | | |
|---|---|---|---|---|
| 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) | 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 | | Topsoil (6") 0.5 / 851.9 | | | | | | HSA | |
| SS 1 | 13 | D | 8-13-13 (26) | 1 | | Brown clayey SILT, some clay, little sand, trace gravel; firm | | | | | | | |
| | | | | 2 | | 2.8 / 849.6 | | | | | | | |
| SS 2 | 13 | D | 9-13-9 (22) | 3 | | Dark Brown silty CLAY, little sand, trace gravel; medium to stiff | | 1.0 | | | | | |
| | | | | 4 | | | | | | | | | |
| SS 3 | 18 | M | 1-1-1 (2) | 5 | | | | | | | | | |
| | | | | 6 | | | | | | | | | |
| | | | | 7 | | | | 1.0 | | | | | |
| | | | | 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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WISDOT PROJECT ID: 1370-17-00 STH 16
WISDOT STRUCTURE ID:

**BORING ID: B-10**
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| | | | | |
|---|---|---|---|---|
| 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) | 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 | 12 | | | 0 | | Grayish Brown clayey SILT, trace sand and gravel; very stiff | | | | | | HSA | |
| SS 1 | 17 | D | 3-7-6 (13) | 1 | | | | 3.0 | | | | | |
| | | | | 2 | | | | | | | | | |
| | | | | 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 | | | | | | | | | |
| | | | | 7 | | | | 3.0 | | | | | |
| | | | | 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*

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 |

3

## 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

## TRAFFIC CONTROL

| | | | | | 643.5000 | | 643.0300 | | 643.0420 | | 643.0705 | | 643.0715 | | 643.0800 | | 643.0900 | | 643.1050 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | (PROJECT) 1370-17-70 | | DRUMS | | BARRICADES TYPE III | | WARNING LIGHTS TYPE A | | WARNING LIGHTS TYPE C | | ARROW BOARDS | | SIGNS | | SIGNS PCMS |
| STA | TO | STA | | # OF DAYS | EACH | | *EACH | DAY | *EACH | DAY | *EACH | DAY | *EACH | DAY | *EACH | DAY | *EACH | DAY | 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 |

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

| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | MISCELLANEOUS QUANTITIES | SHEET 36 | E |
|---|---|---|---|---|---|

TYPE II PERMANENT SIGNING 1370-17-70

| SIGN NO. | SIGN CODE & SIZE | SIGN MESSAGE | SIGN SIZE W [IN.] x H [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 | | |
| | | | | | | | | | | | |

3

3

SHEET: 1 OF 1

| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | MISCELLANEOUS QUANTITIES – PERMANENT SIGNING | SHEET: 37 | E |
|---|---|---|---|---|---|

FILE NAME : N:\SPO\Operations\Signing\Miscellaneous Quantities\1370-17-70\030501_MQ.pptx PLOT DATE : 1/23/2022 PLOT BY : DOTTAH PLOT NAME : 030501_MQ.pdf PLOT SCALE : 1:1

| 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.

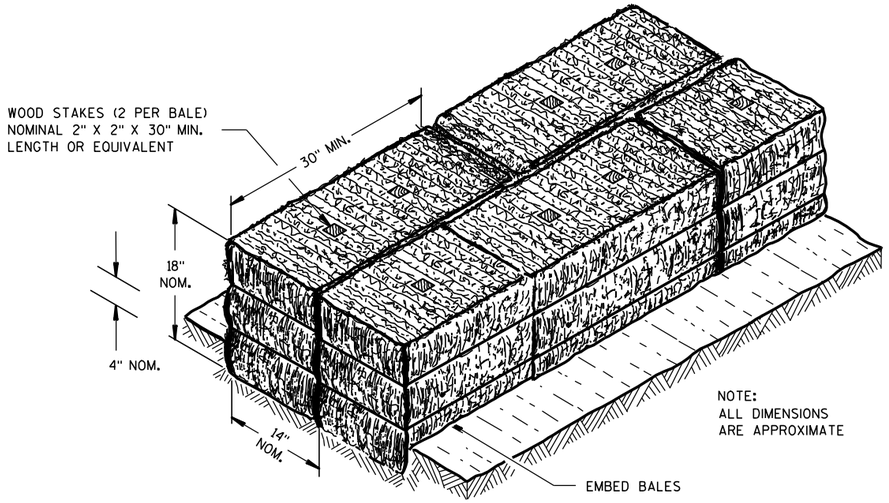
CAT 0010



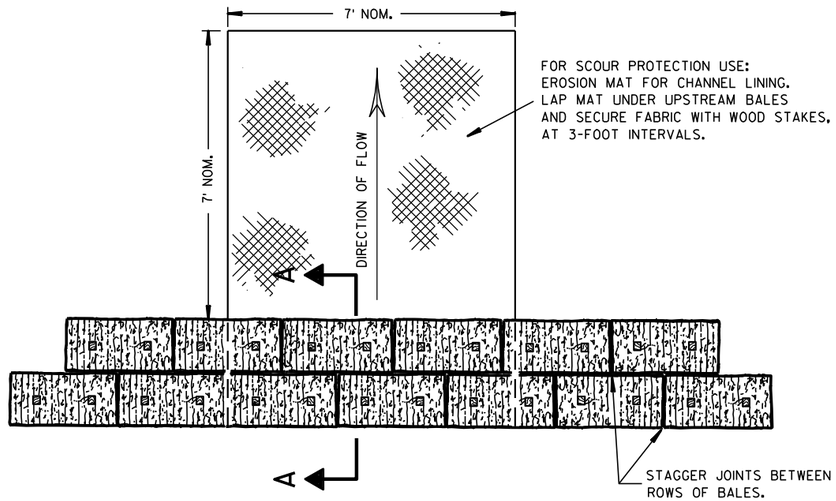
FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\03 - MISC QTY\030202-MQ.DWG
LAYOUT NAME - 02-EW
PLOT DATE : 5/11/2022 9:48 AM PLOT BY : ROTIER, STEVEN J PLOT NAME : PLOT SCALE : 1" = 1'
WISDOT/CADDS SHEET 42

# Standard Detail Drawing List

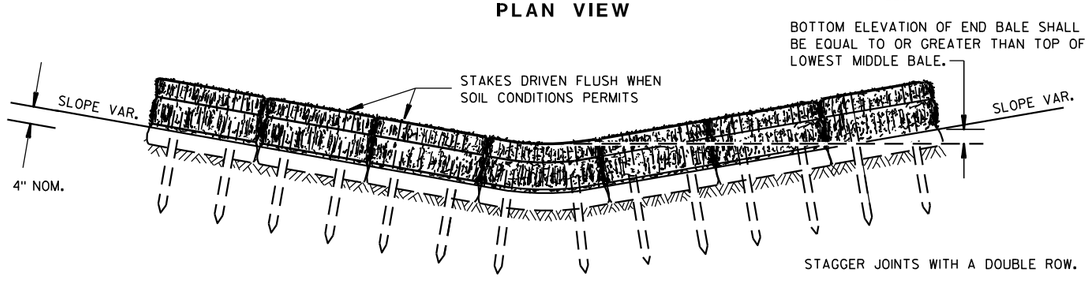
| | |
|---|---|
| 08E08-03 | TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS |
| 08E10-02 | INLET PROTECTION TYPE A, B, C AND D |
| 14B52-02A | CABLE BARRIER TYPE 1 LAYOUT |
| 14B52-02B | CABLE BARRIER TYPE 1 LAYOUT |
| 14B52-02C | CABLE BARRIER TYPE 1 LAYOUT |
| 15C11-09B | CHANNELIZING 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 |




SECTION A-A




PLAN VIEW



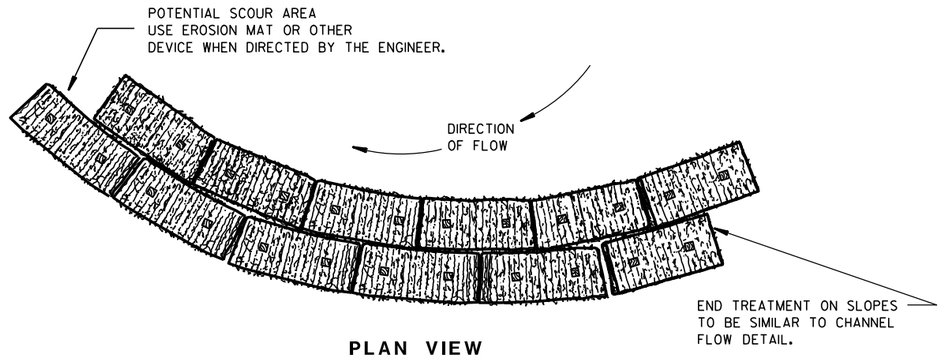

FRONT ELEVATION

## TEMPORARY DITCH CHECK USING EROSION BALES (1)

## GENERAL NOTES

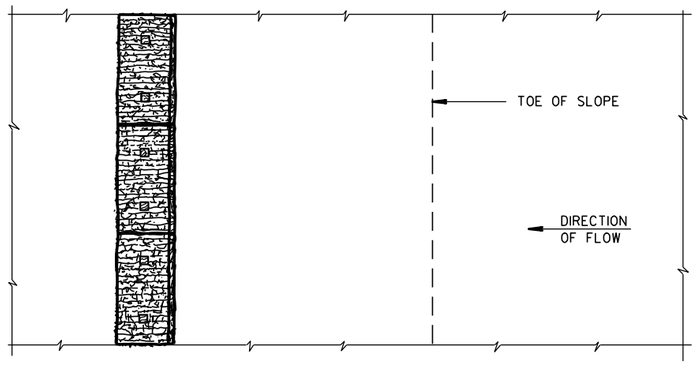
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

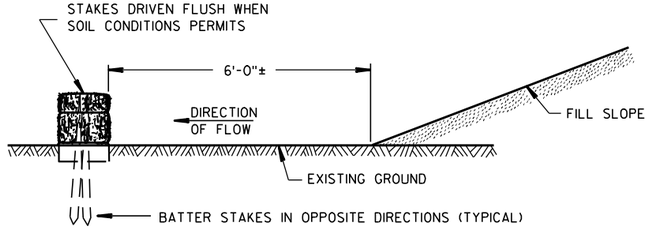



PLAN VIEW

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 Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

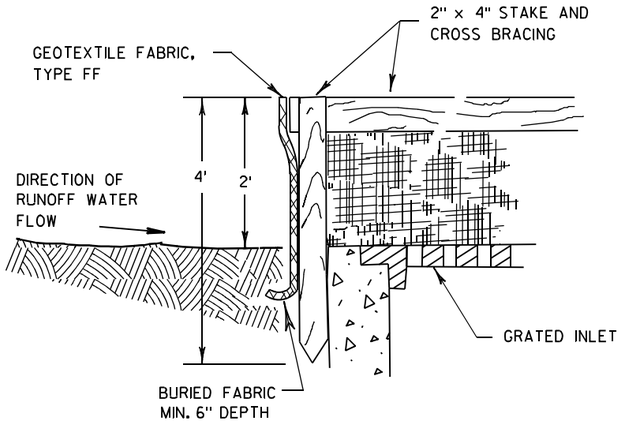


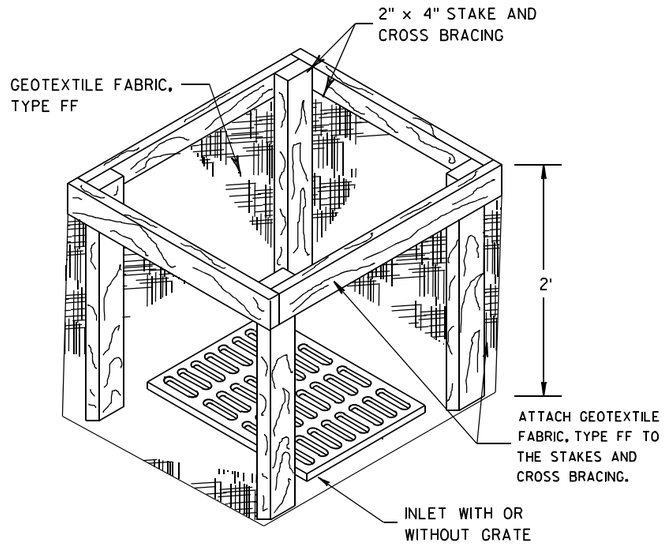




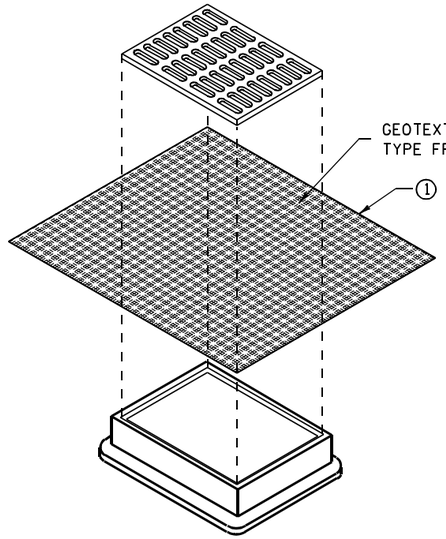
6

S.D.D. 8 E 8-3



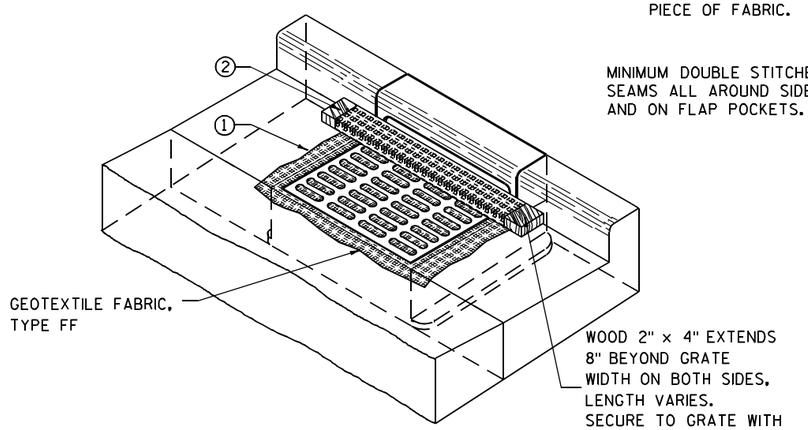




## INLET PROTECTION, TYPE A

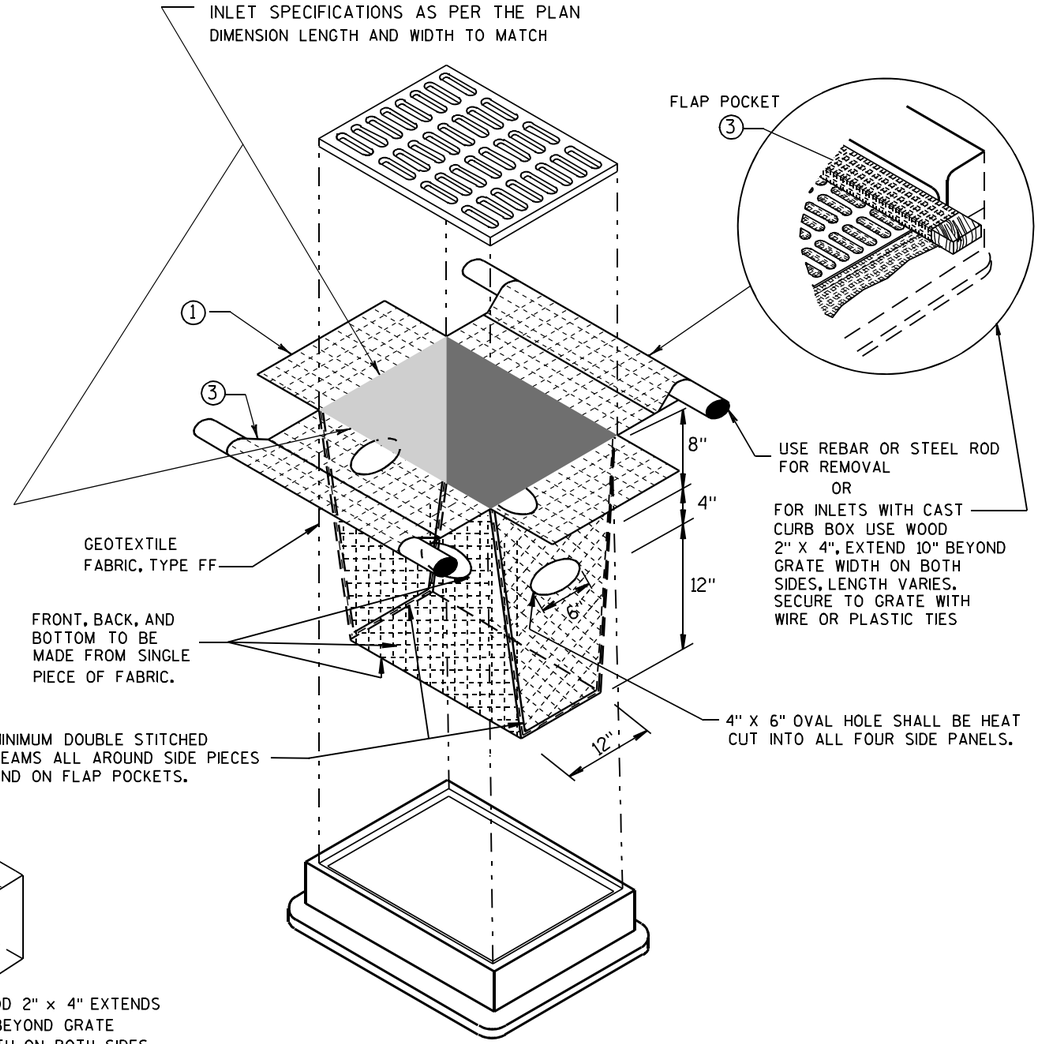



## INLET PROTECTION, TYPE B
## (WITHOUT CURB BOX)

(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 Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

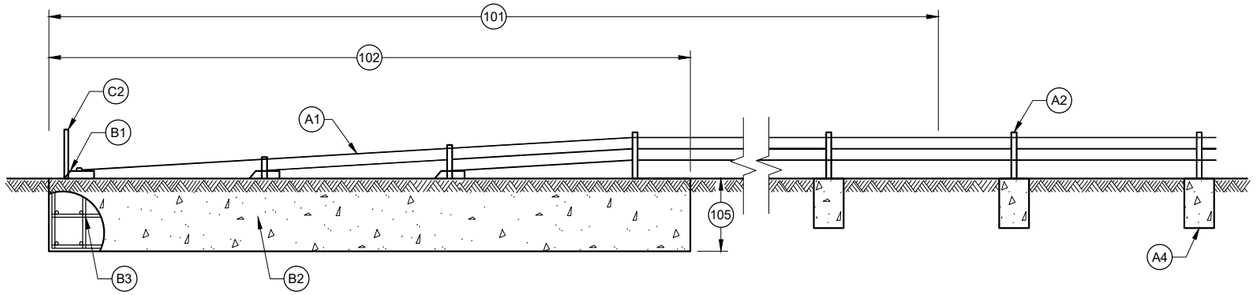
FHWA



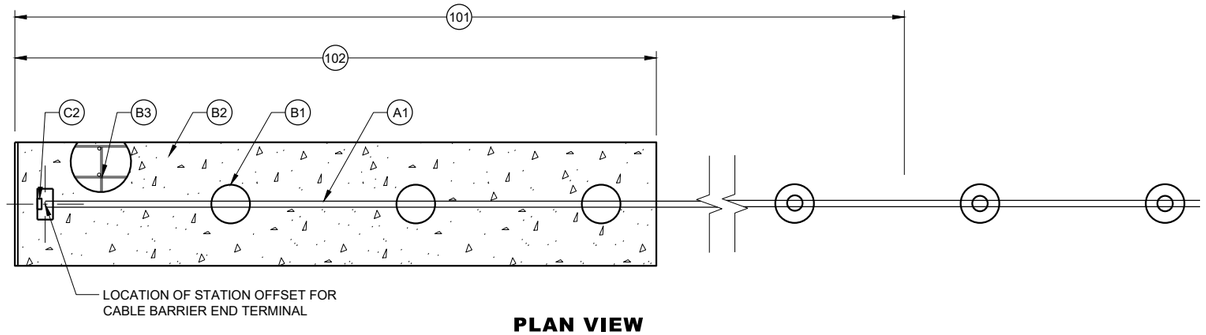


6

S.D.D. 8 E 10-2

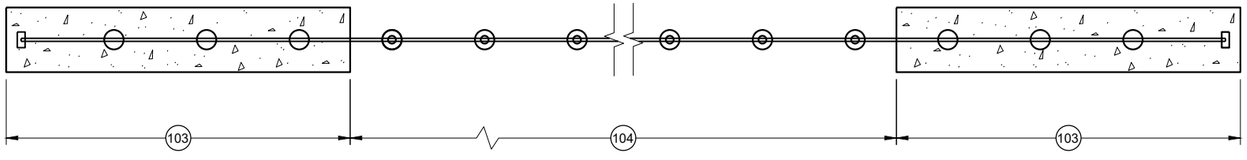



**PROFILE VIEW**

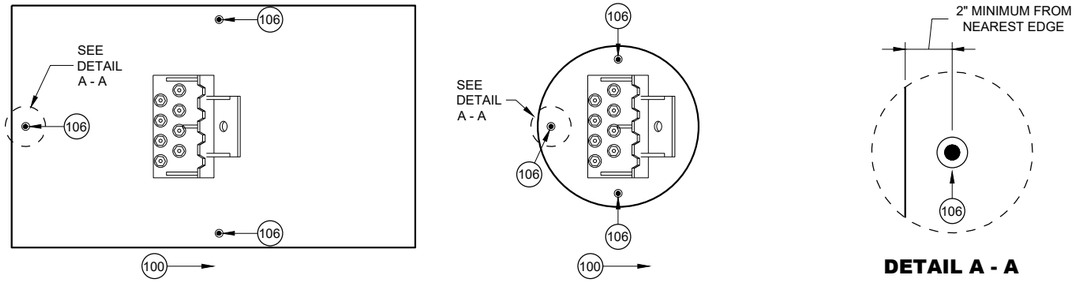



**PLAN VIEW**

## 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.

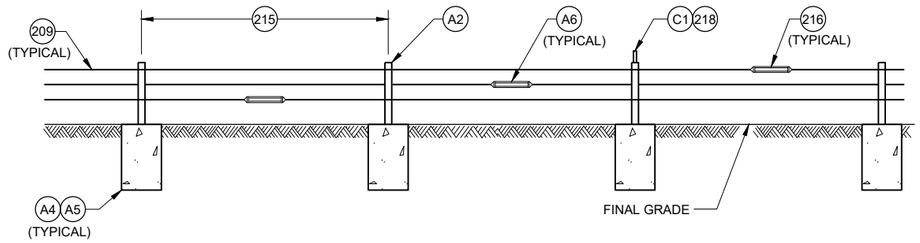
**CABLE BARRIER TYPE 1 LAYOUT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

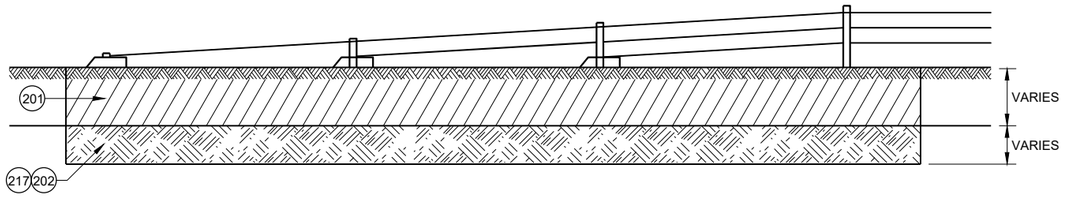



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SDD 14B52 - 02a
SDD14B52 - 02a




**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.

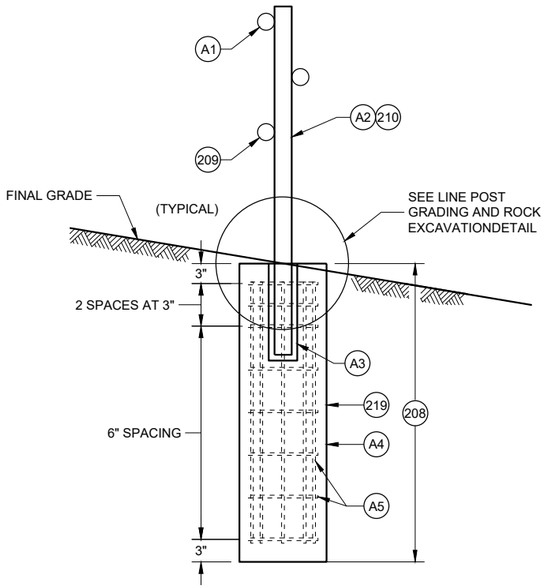
215 MAXIMUM POST SPACING IS 15 FEET.

216 STAGGER TURNBUCKLES (TYPICAL).

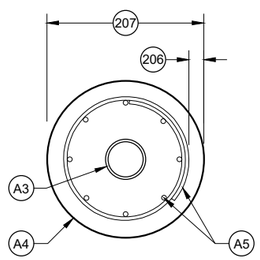
217 SEE MANUFACTURER'S DESIGN WHEN ROCK IS ENCOUNTERED.

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.

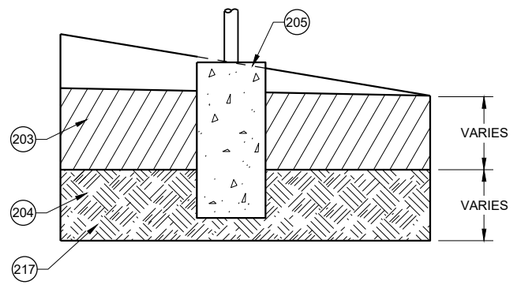



**CROSS SECTION**

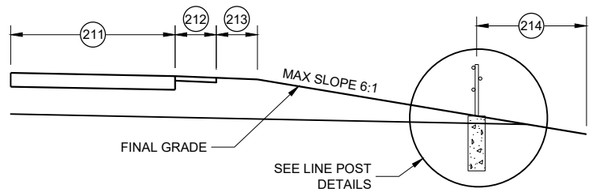



**PROFILE VIEW**
(LINE POSTS AND CABLES NOT SHOWN)

**LINE POST DETAILS**




**LINE POST GRADING**
**AND ROCK EXCAVATION DETAIL**




**CABLE BARRIER OFFSET FROM DITCH LINE**

**CABLE BARRIER**
**TYPE 1 LAYOUT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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SDD 14B52 - 02b

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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.<br>SEE APPROVED PRODUCT LIST YELLOW. |
| (C2) | VARIES | CABLE BARRIER END TERMINAL DELINEATOR | REFLECTIVE SHEETING TYPE SH.<br>SEE APPROVED PRODUCT LIST OBJECT MARKER TYPE 3 PATTERN |

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SDD 14B52 - 02c

SDD 14B52 - 02c

**CABLE BARRIER TYPE 1 LAYOUT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

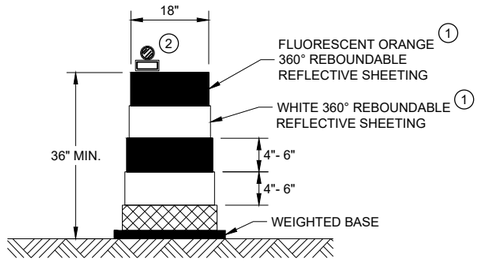
May 2021
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVE ENGINEER

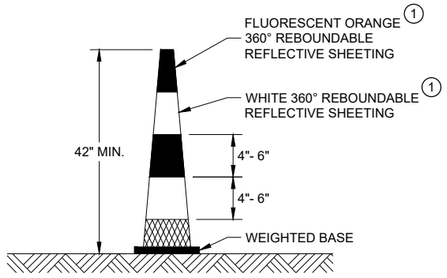
FHWA

## 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.

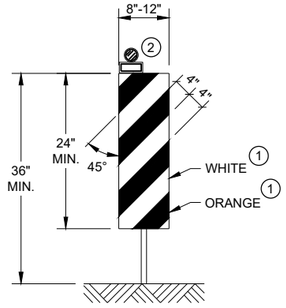



### DRUM



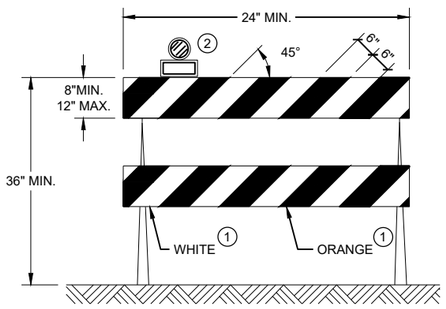

### 42" CONE

DO NOT USE IN TAPERS
½ SPACING OF DRUMS



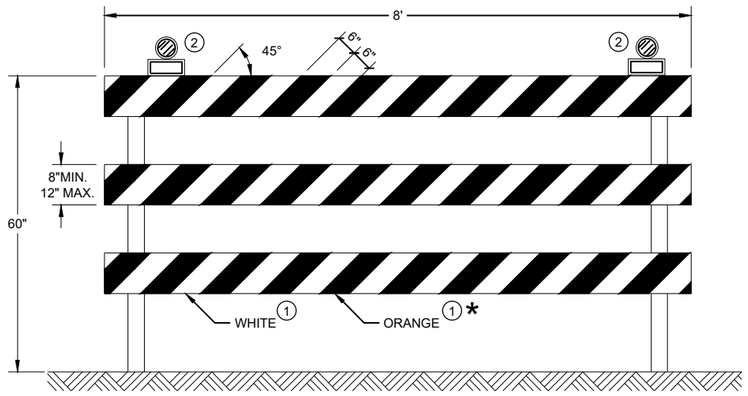

### VERTICAL PANEL

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

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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.

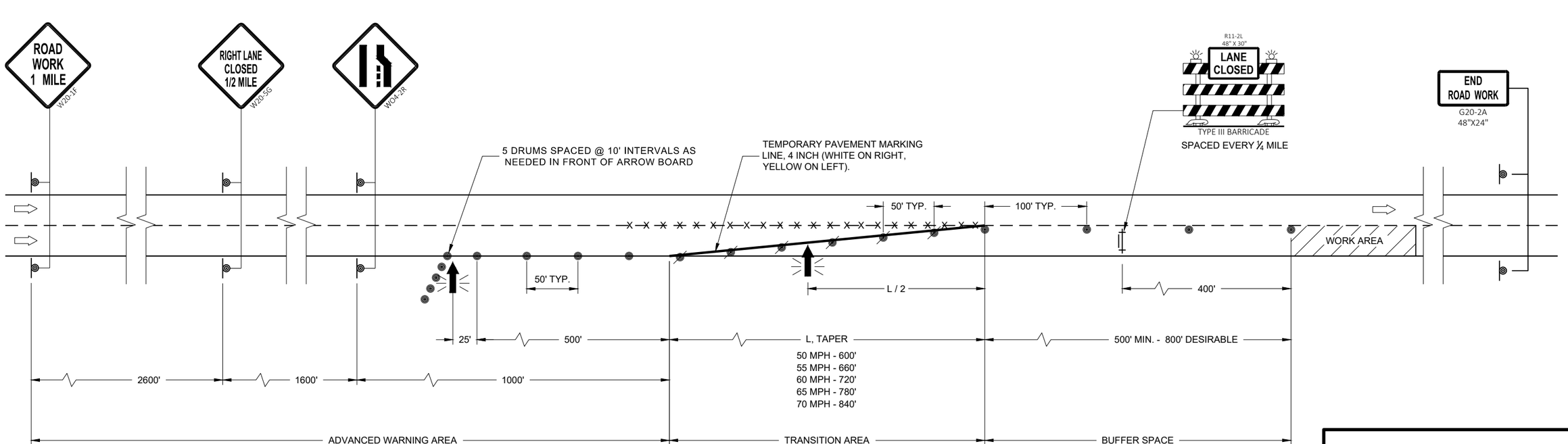
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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



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SDD 15D12 - 10a

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SDD15D12 - 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.

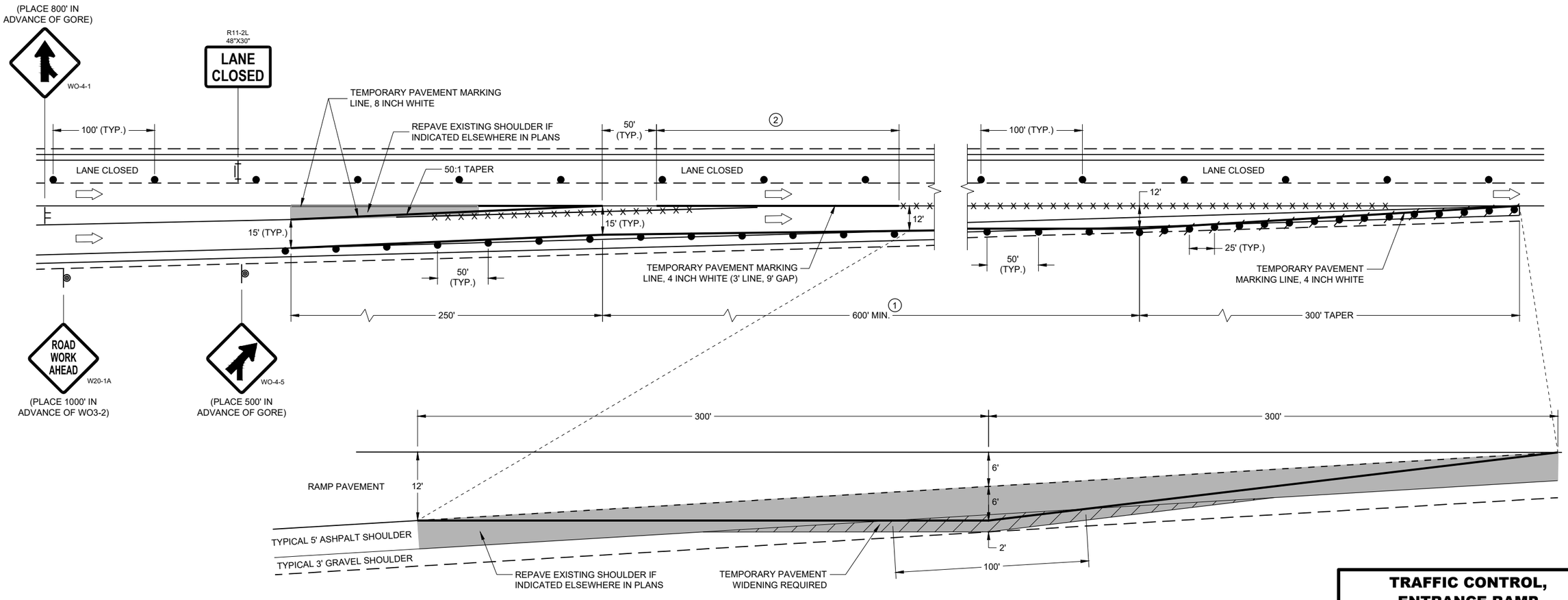
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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



SDD 15D15 - 06b

SDD15D15 - 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.

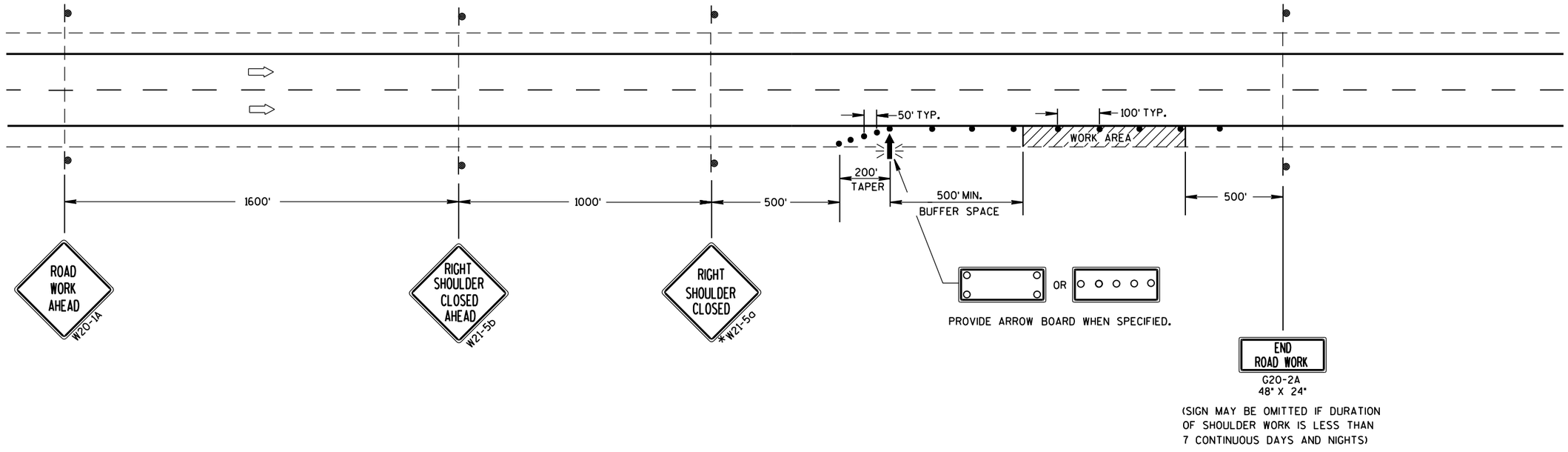
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible] SAFETY ENGI[illegible]

FHWA

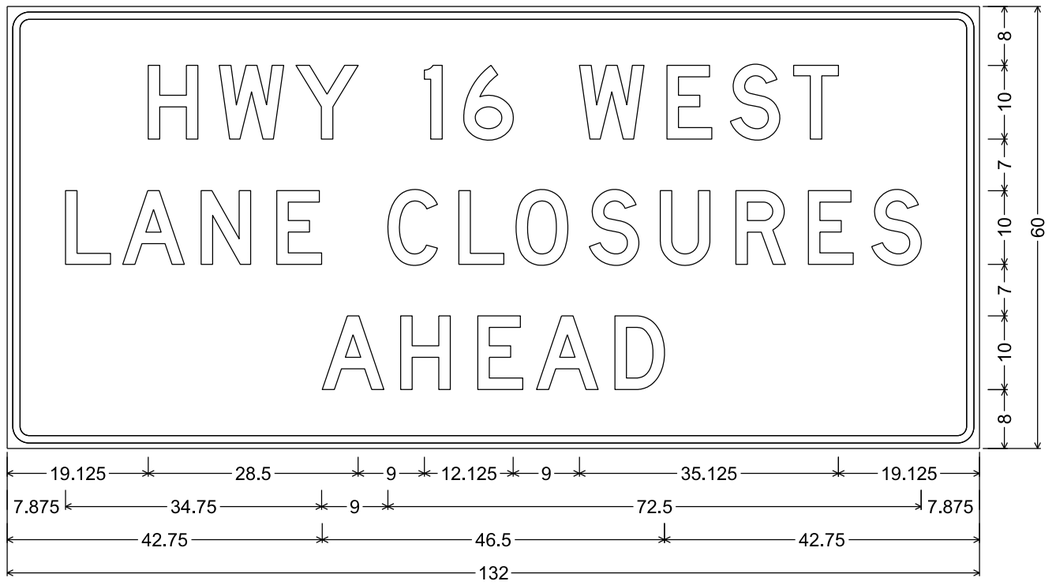



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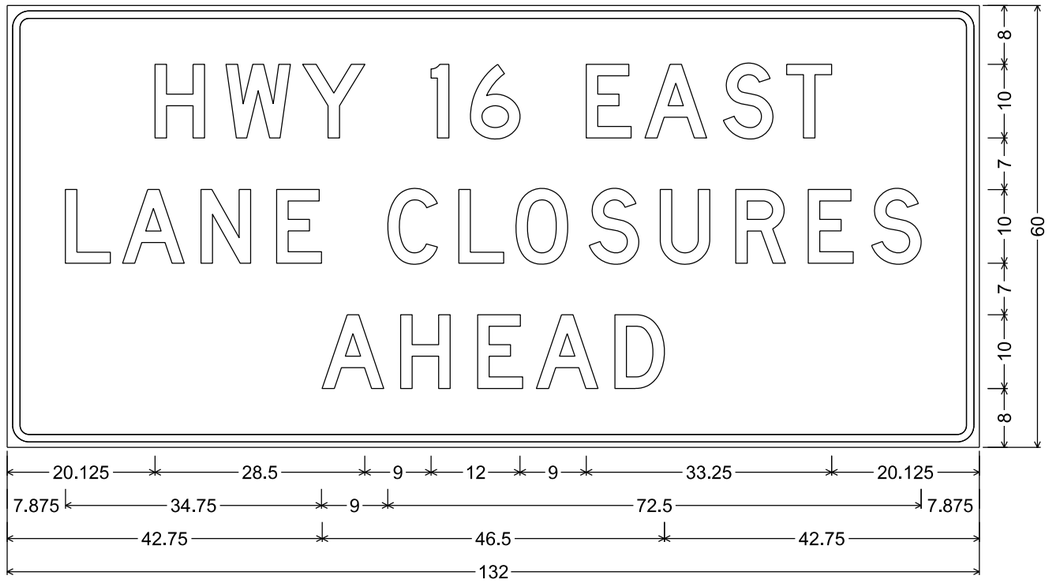

S.D.D. 15 D 27-3

NOTES

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

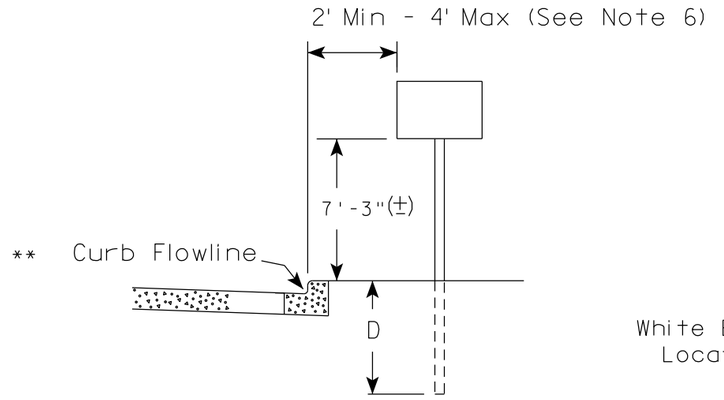



3.000" Radius, 1.000" Border, 0.750" Indent

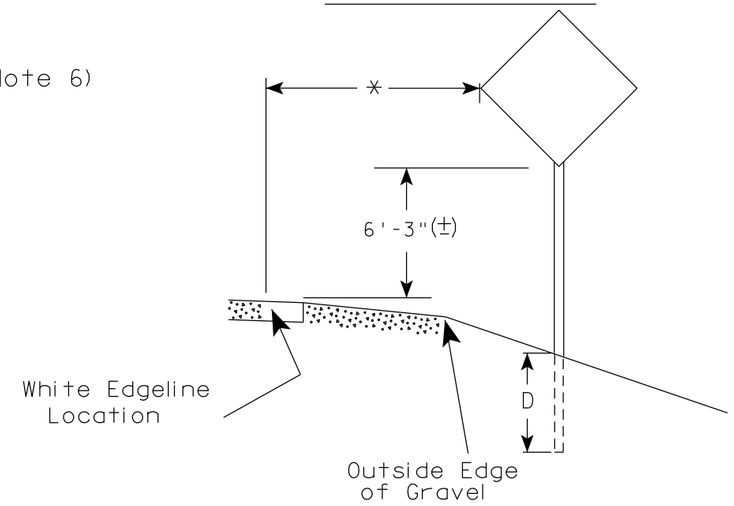


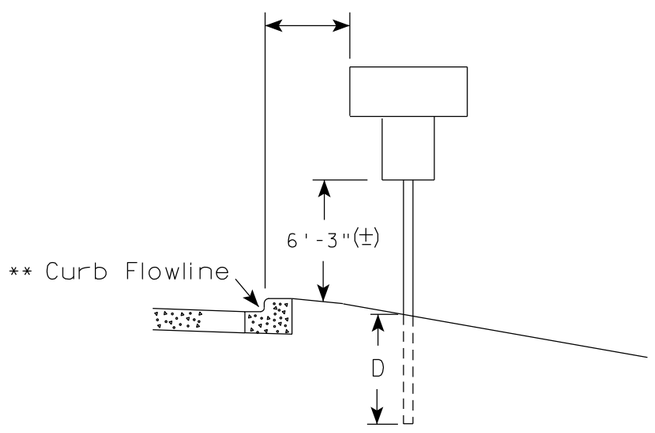

3.000" Radius, 1.000" Border, 0.750" Indent

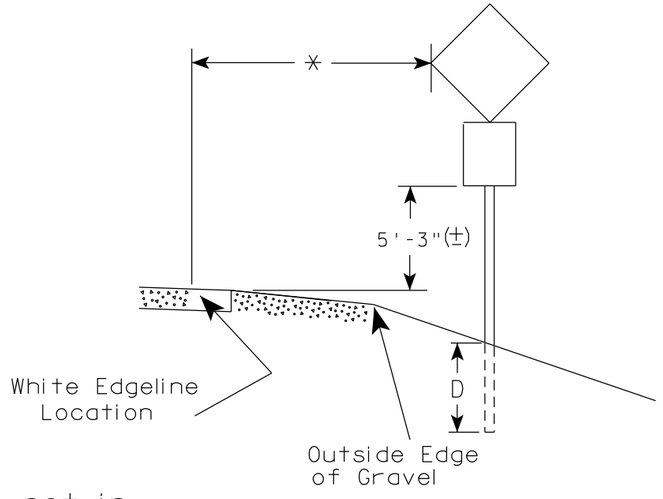
## URBAN AREA




## 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.

### POST EMBEDMENT DEPTH

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

### 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.

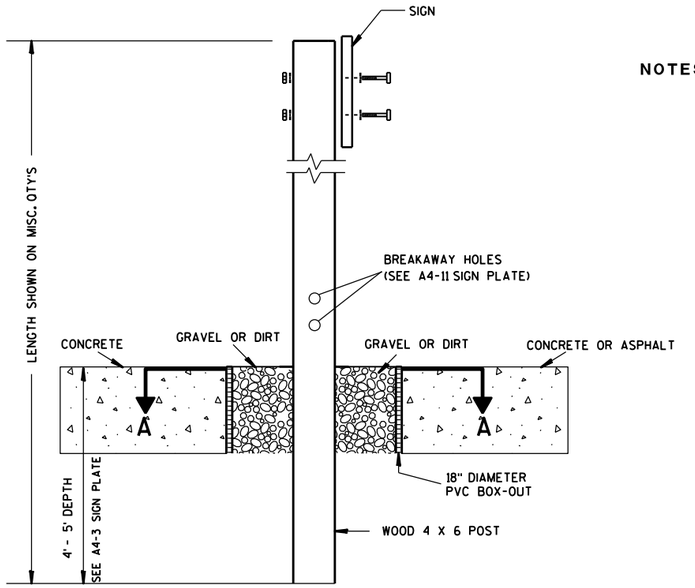
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

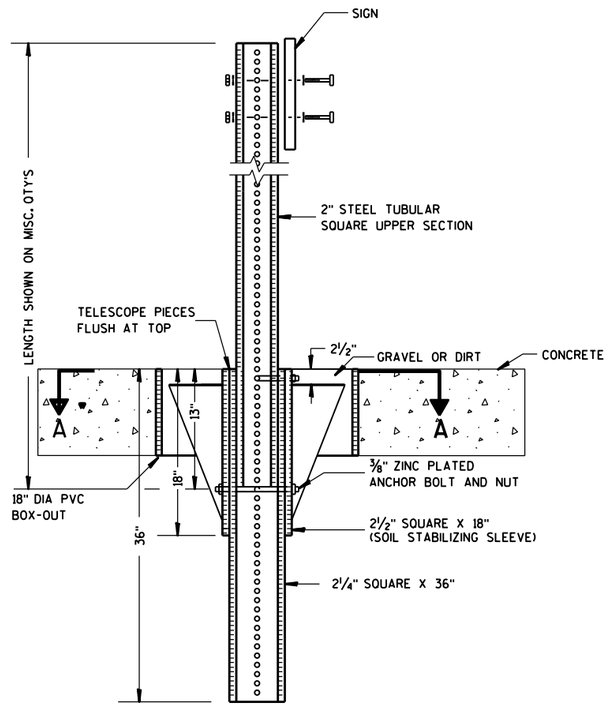
| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 50 | E |
|---|---|---|---|---|---|




**ELEVATION VIEW**

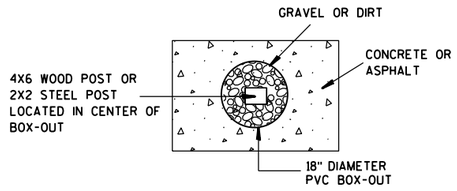
**DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT**

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

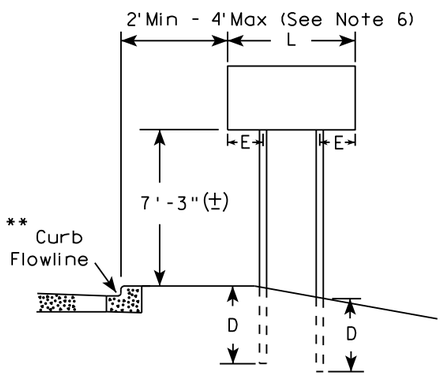
DATE 1/27/14 PLATE NO. A4-3B.1

| PROJECT NO: | HWY: | COUNTY: | | SHEET NO: | E |
|---|---|---|---|---|---|

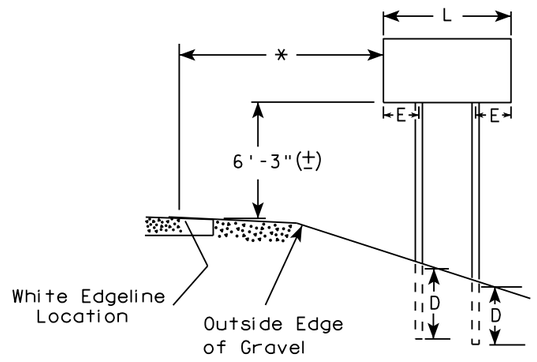


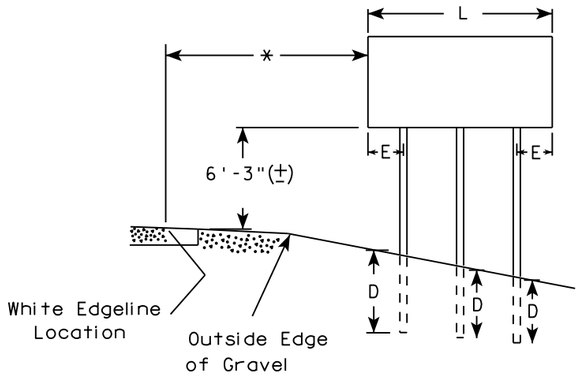
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

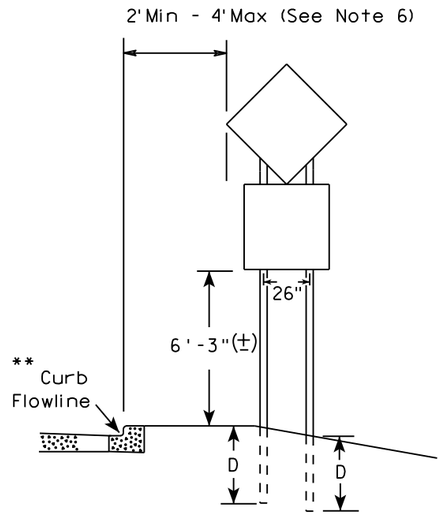
URBAN AREA



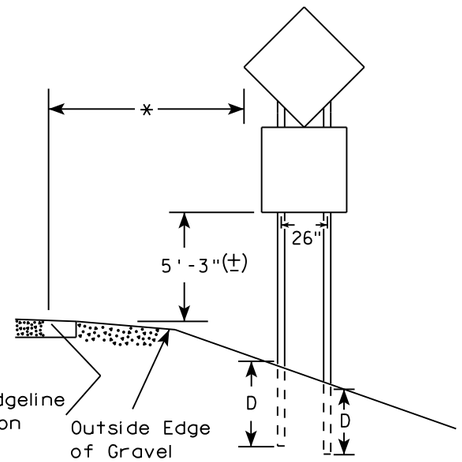

RURAL AREA (See Note 3)




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' |

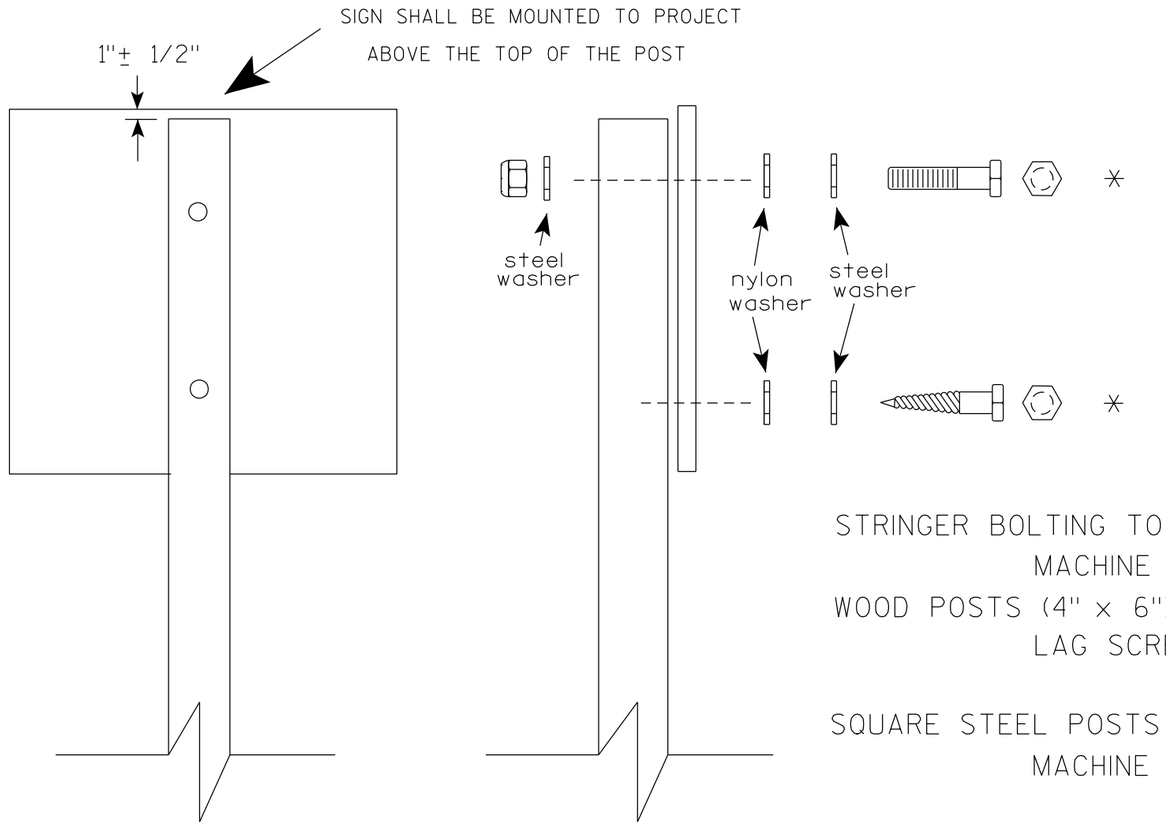
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
For State Traffic Engineer

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

| 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

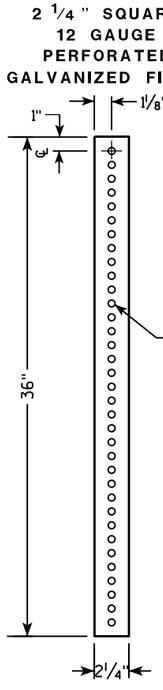
DATE 4/1/2020 PLATE NO. A4-8.9

PROJECT NO:

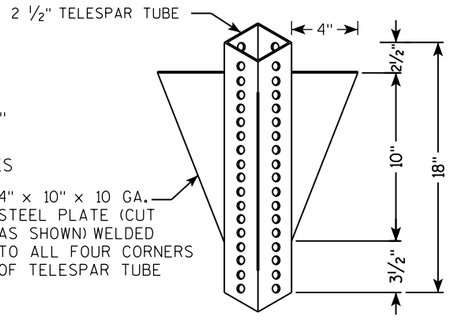
SHEET NO: 53 E

## TELESCOPIC TUBING ANCHORS
## TWO PIECE SYSTEM

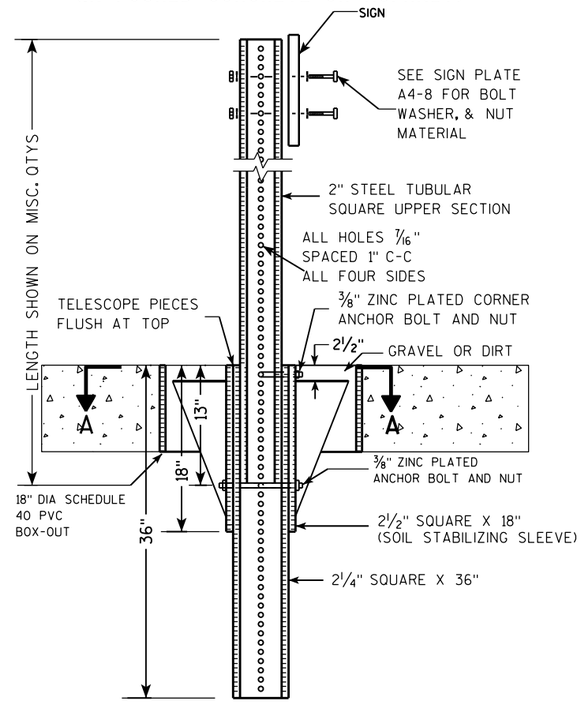
**2 1/4 " SQUARE**
**12 GAUGE**
**PERFORATED**
**GALVANIZED FINISH**



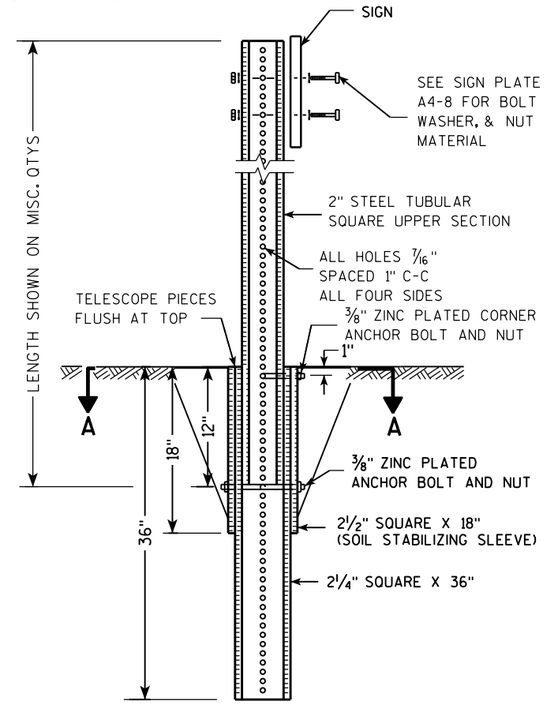

**2 1/2 " SQUARE**
**12 GAUGE**
**OMNI-DIRECTIONAL**
**PERFORATED**
**SOIL STABILIZING SLEEVE**
**GALVANIZED FINISH**

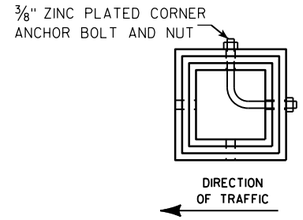



## DETAIL OF TUBULAR STEEL SIGN POST
**(IN POURED CONCRETE OR ASPHALT)**




## 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).**

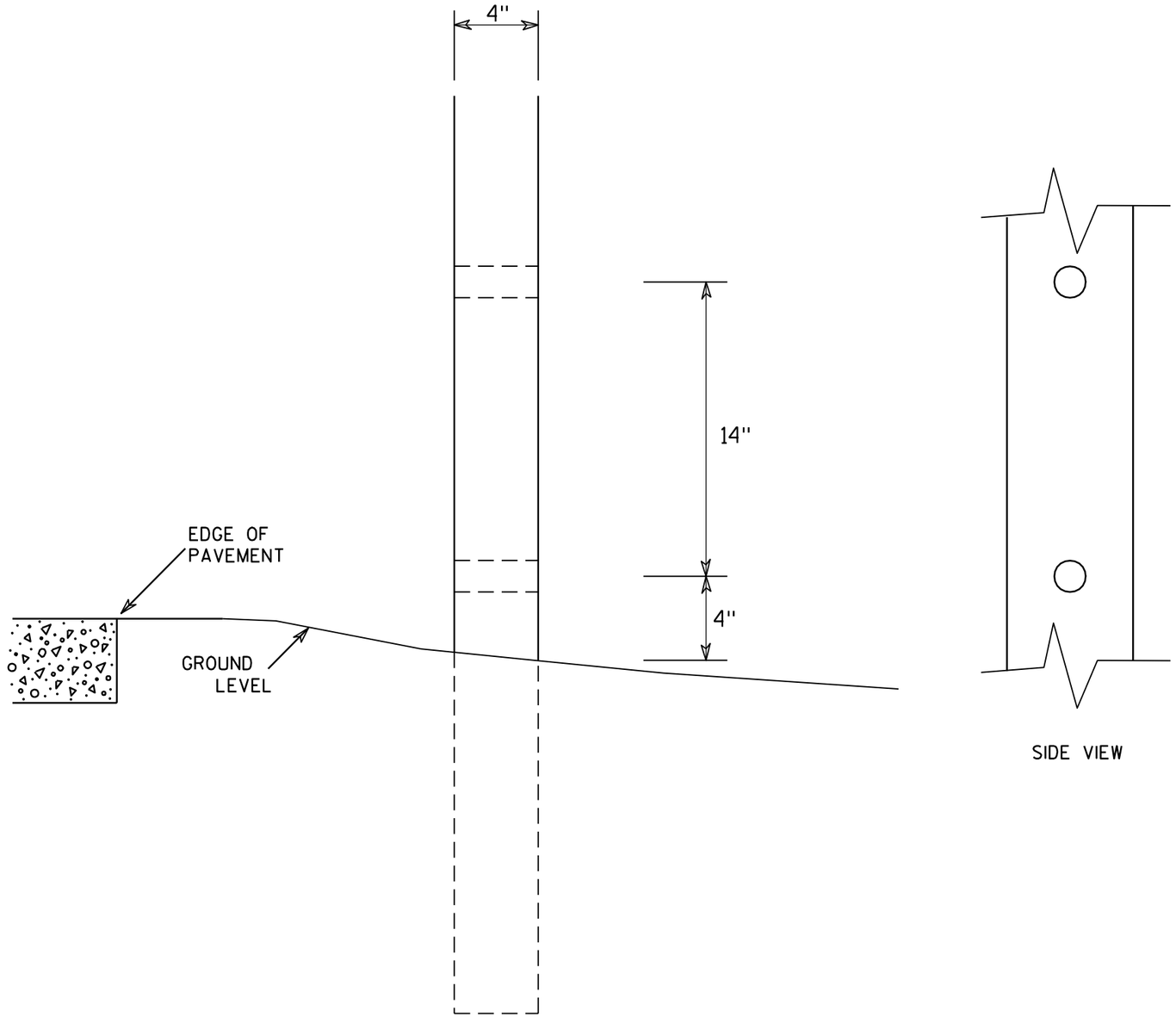
TUBULAR STEEL
SIGN POST
A4-9

*WISCONSIN DEPT OF TRANSPORTATION*

APPROVED Matthew R Rauch
*for* State Traffic Engineer

DATE 2/05/15 PLATE 54 A4-9.9

| 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.

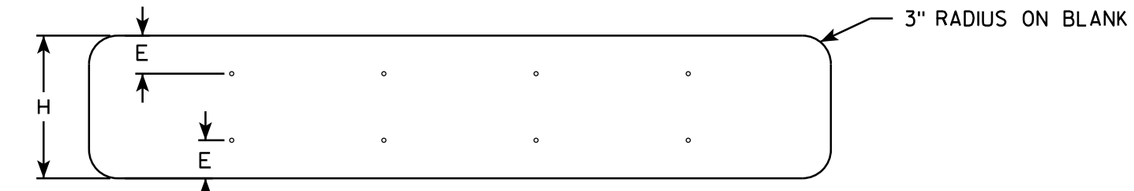
# 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

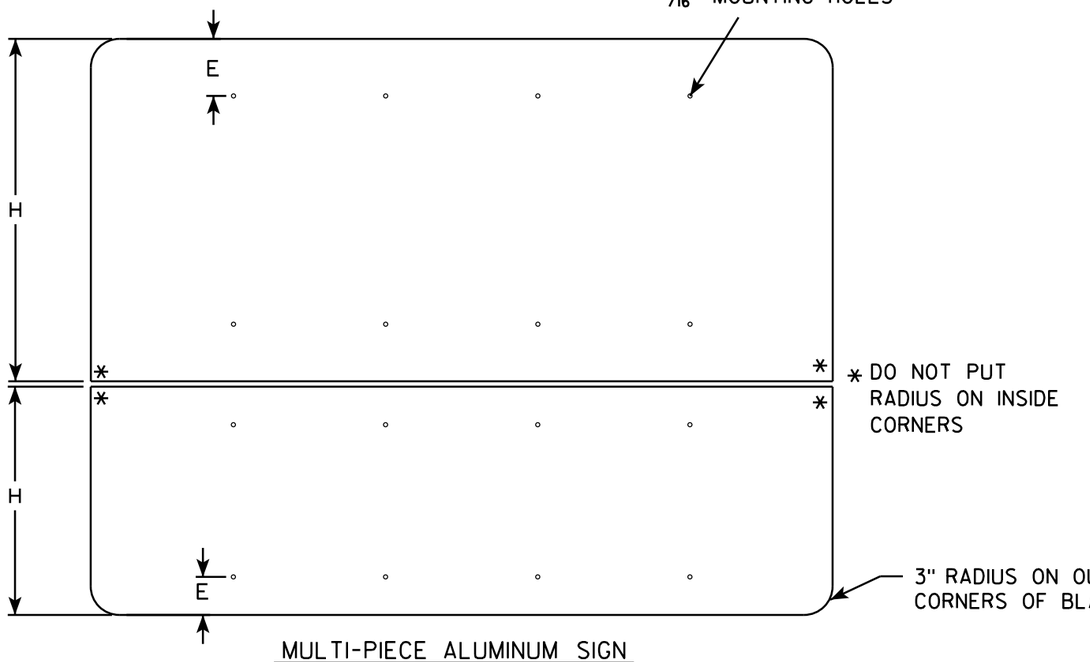
APPROVED Chester J Spang for State Traffic Engineer

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

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




SINGLE PIECE ALUMINUM SIGN

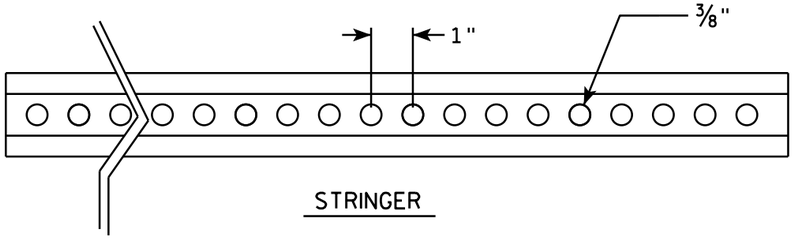



MULTI-PIECE ALUMINUM SIGN

# GENERAL NOTES

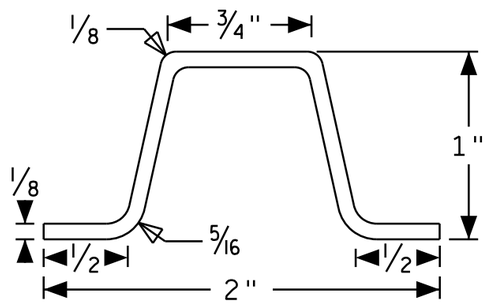
- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 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" | 16½" 33½" 50½" 67½" |
| 90" | 72" | 2 | 18" | 18" 36" 54" 72" |
| 96" | 90" | 2 | 19" | 19½" 38½" 57½" 76½" |
| 102" | 90" | 2 | 20" | 21" 41" 61" 81" |
| 108" | 90" | 2 | 21" | 22½" 43½" 64½" 85½" |
| 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" |

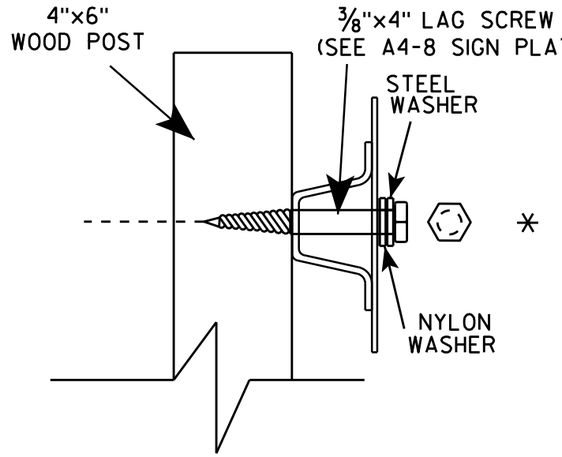



STRINGER

CROSS SECTION VIEW OF CHANNEL




POST MOUNTING




## 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 |
|---|---|---|---|---|---|



FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A418.dgn PLOT DATE : 27-APR-2016 13:56 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 41.805205:1.000000 WISDOT/CADDS SHEET 42

960
950
940
930
925
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
5.99%
10.6:1
9.8:1
-4.00%
453+67
453+50
10 FT
20 FT

9

| 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.

960
950
940
930
925
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
6.00%
7.4:1
7.9:1
-4.00%
453+98

960
950
940
930
925
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
6.00%
9.7:1
9.1:1
-3.99%
453+75
10 FT
20 FT

9 9

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

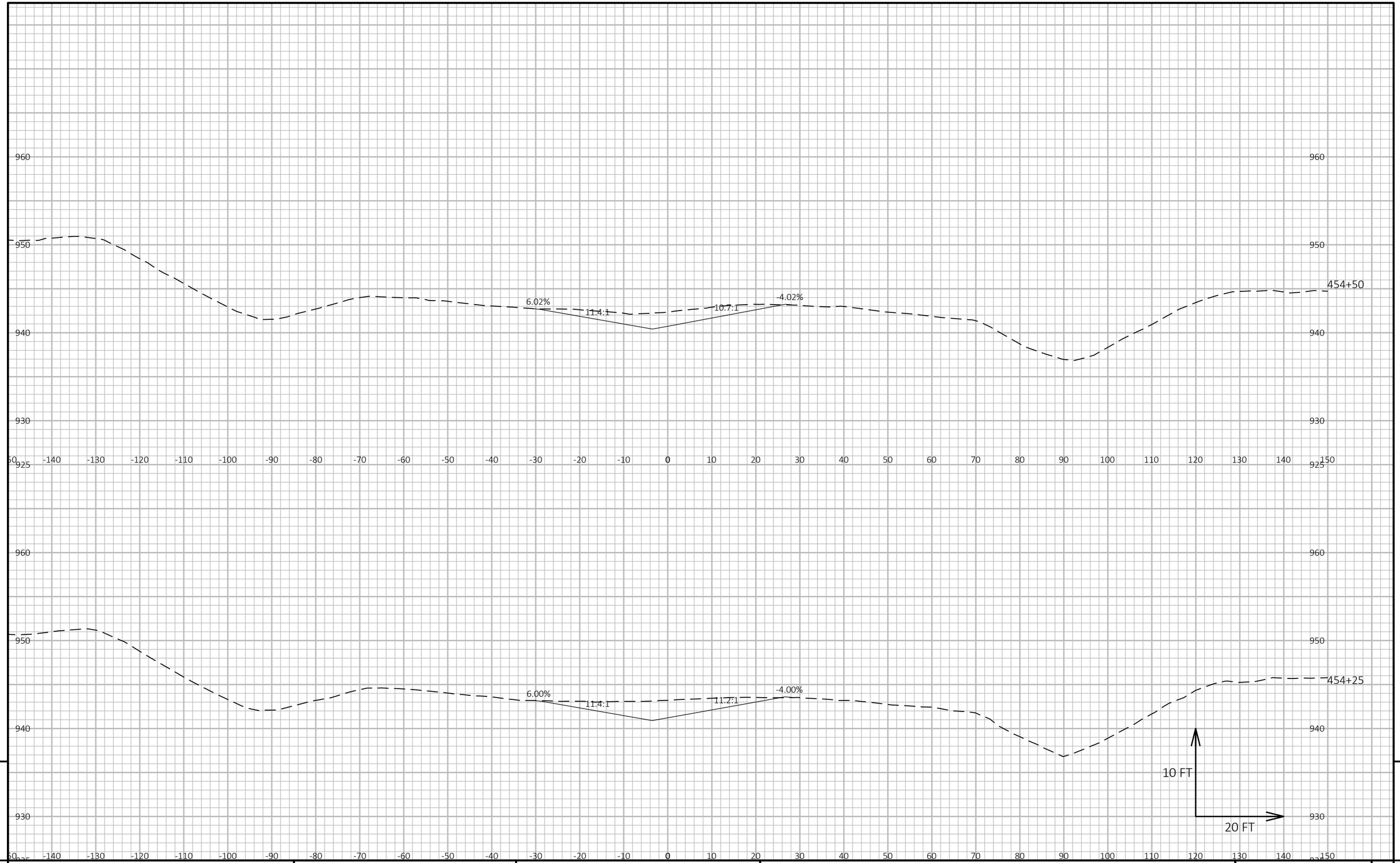
FILE NAME : N:\PDS\C3D\13701700\SHEETSPLAN\DWG\09B - XS\090201-XS.DWG
LAYOUT NAME - 02

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.

960
950
940
930
925
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
6.00%
11.6:1
11.3:1
-4.00%
454+08
960
950
940
930
925
6.01%
7.9:1
8.2:1
-4.01%
454+00
10 FT
20 FT
9
9

| 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.




9

9

| 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.

960
950
940
930
925
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
6.00%
10:1
10:1
-4.00%
454+91

960
950
940
930
925
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
6.00%
10.4:1
10:1
-4.01%
454+75
10 FT
20 FT

9

9

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

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

960
950
940
930
455+00
10 FT
20 FT
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

9 9

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

860
850
840
835
-140 -130 -120 -110 -100 -90 -80 -70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

REMOVE ASPH. SURF.
REPLACE WITH BASE AGG DENSE $\frac{3}{4}$"

-4.00%

653+00

652+94

652+72

10 FT

20 FT

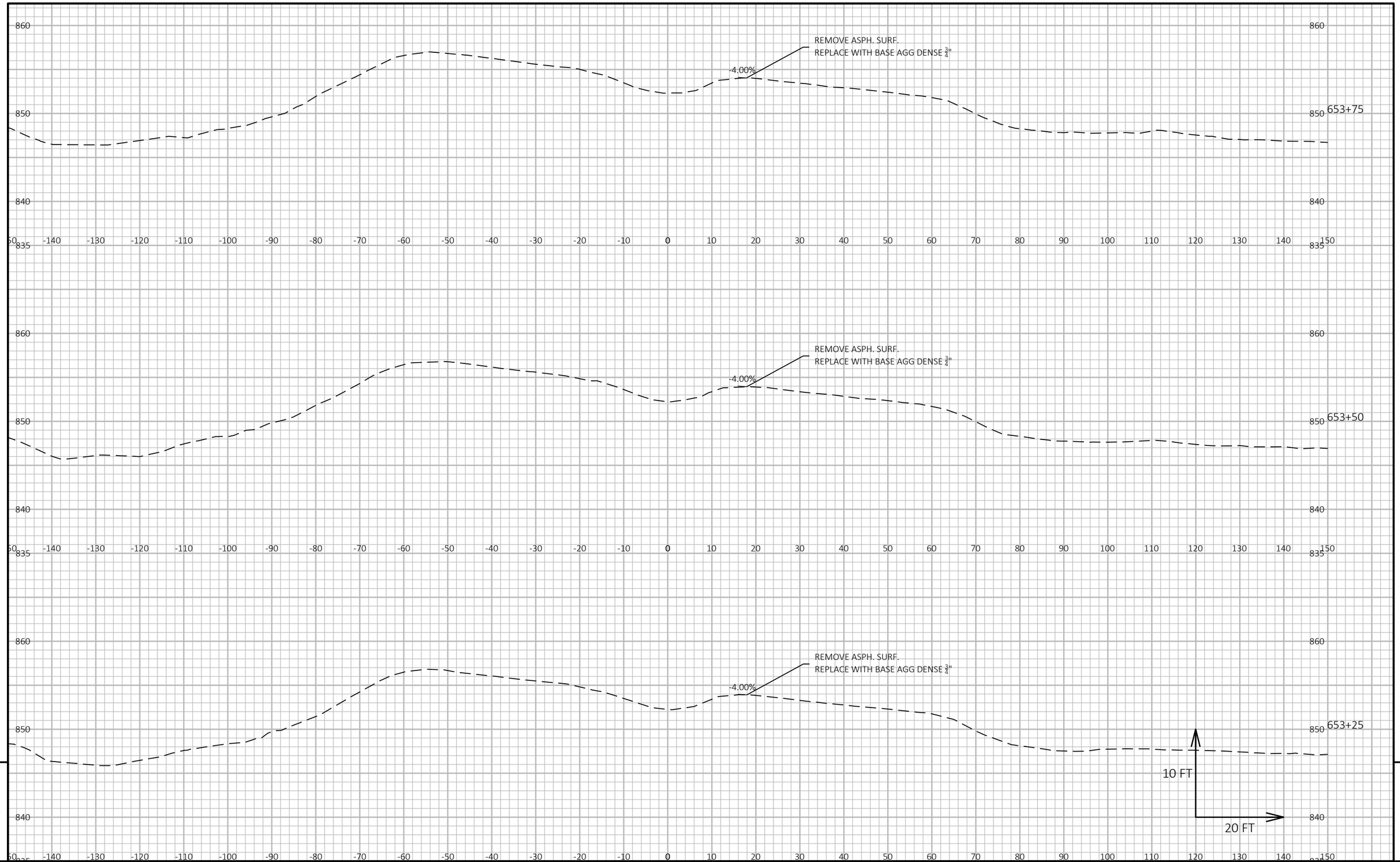
9

9

| 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.




9

9

| 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

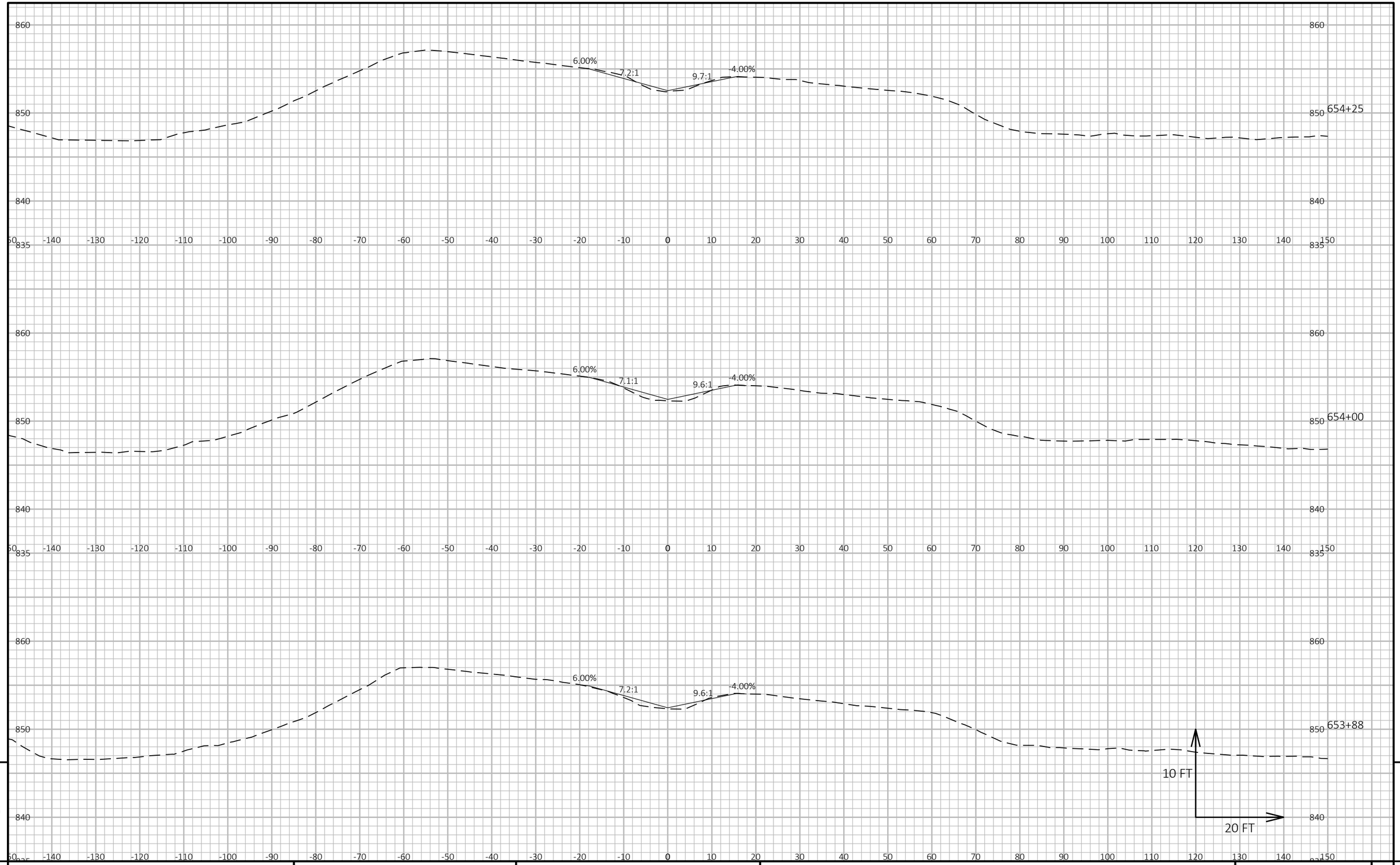
PLOT DATE : 5/11/2022 9:53 AM

PLOT BY : ROTIER, STEVEN J

PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:10 FT VERT.

WISDOT/CADDS SHEET 49




9

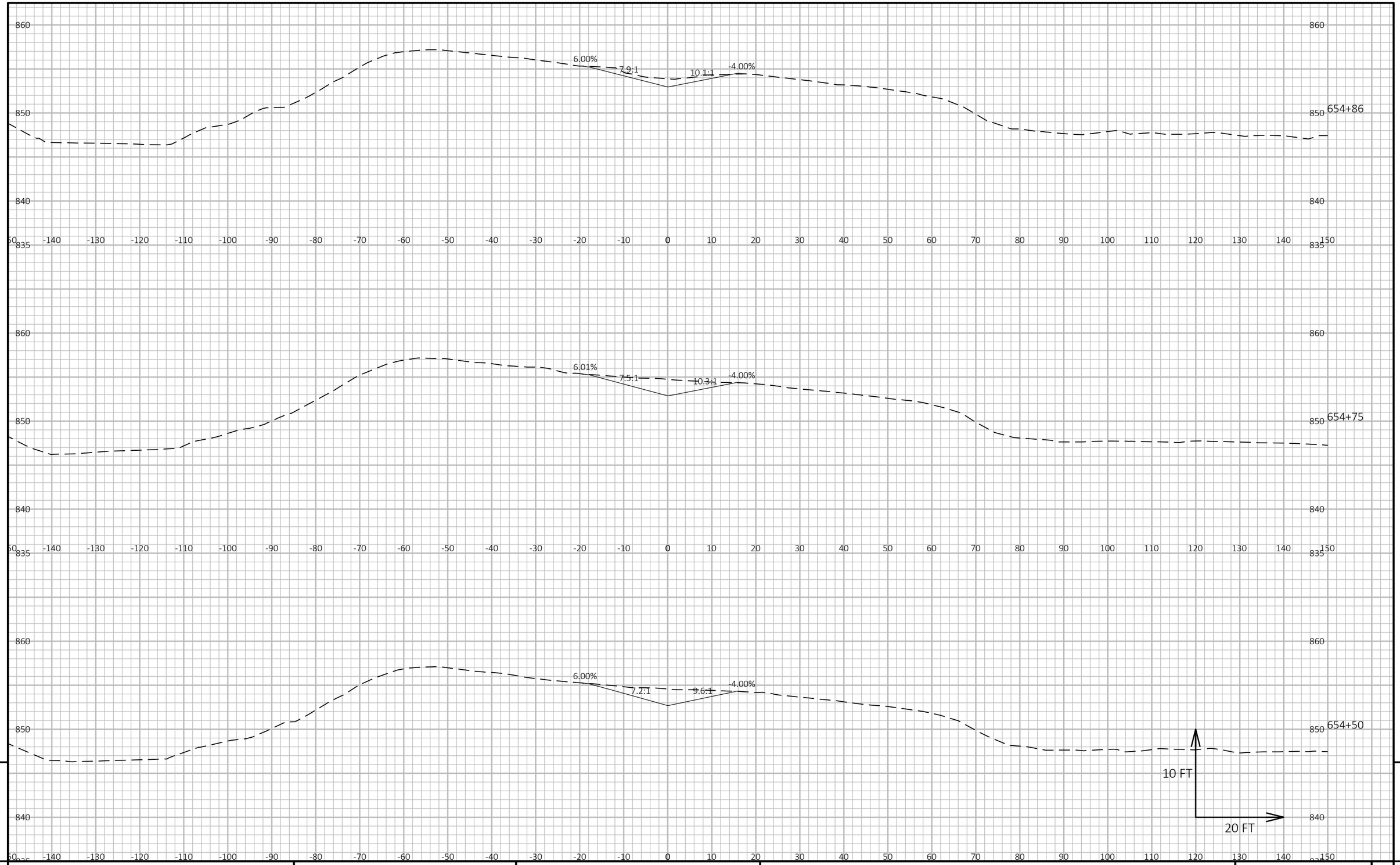
9

| 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




9

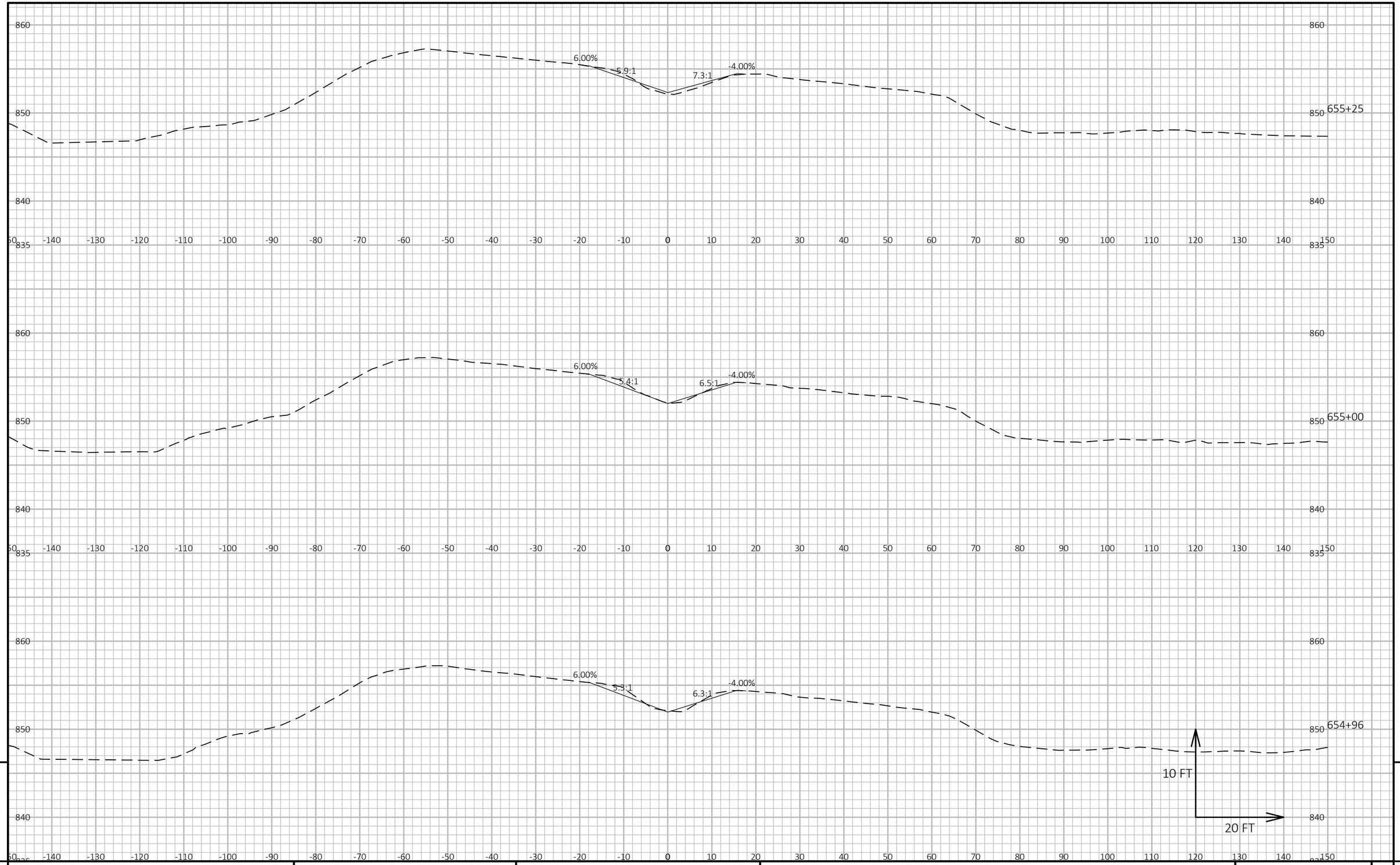
9

| 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




9

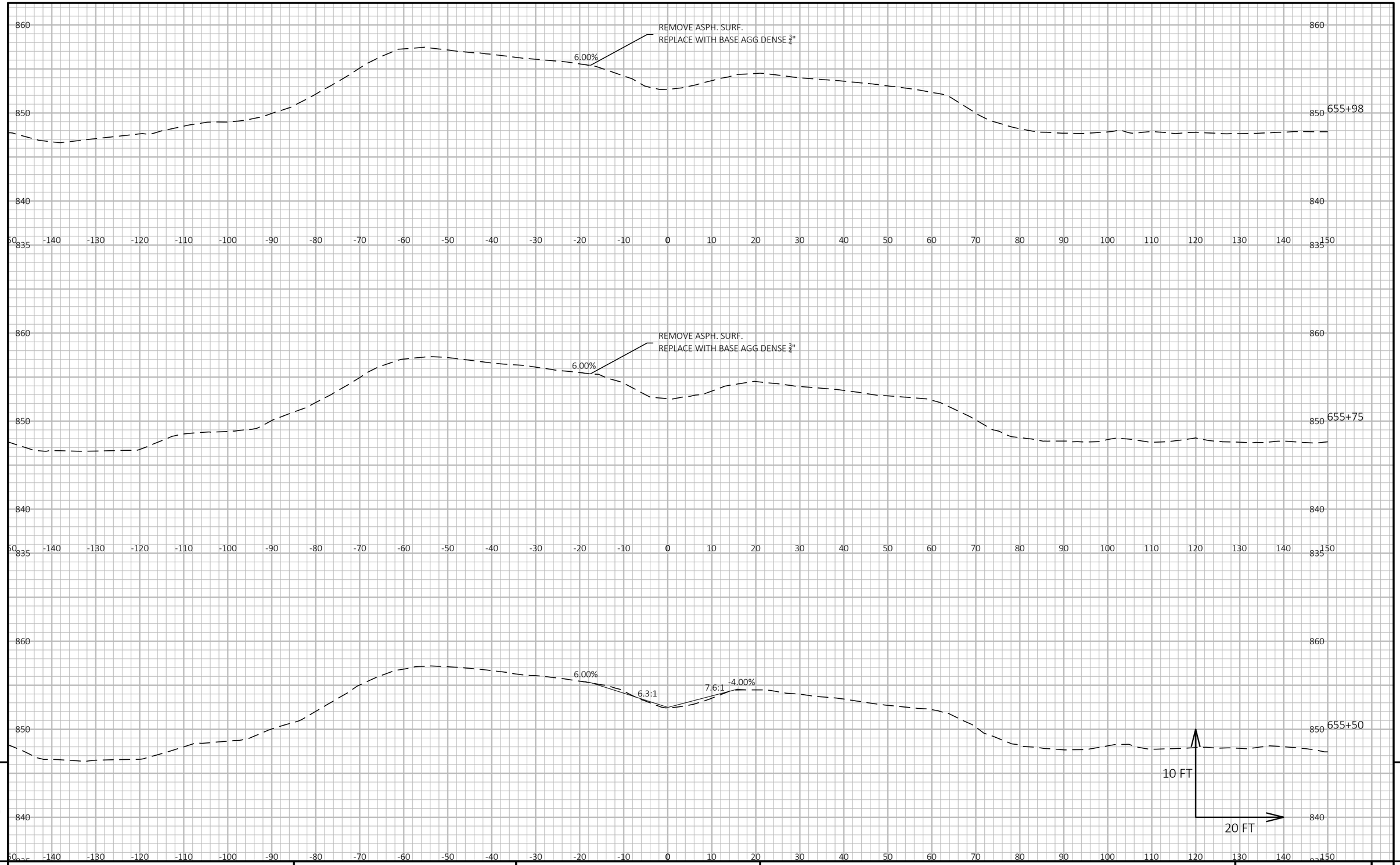
9

| 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




9

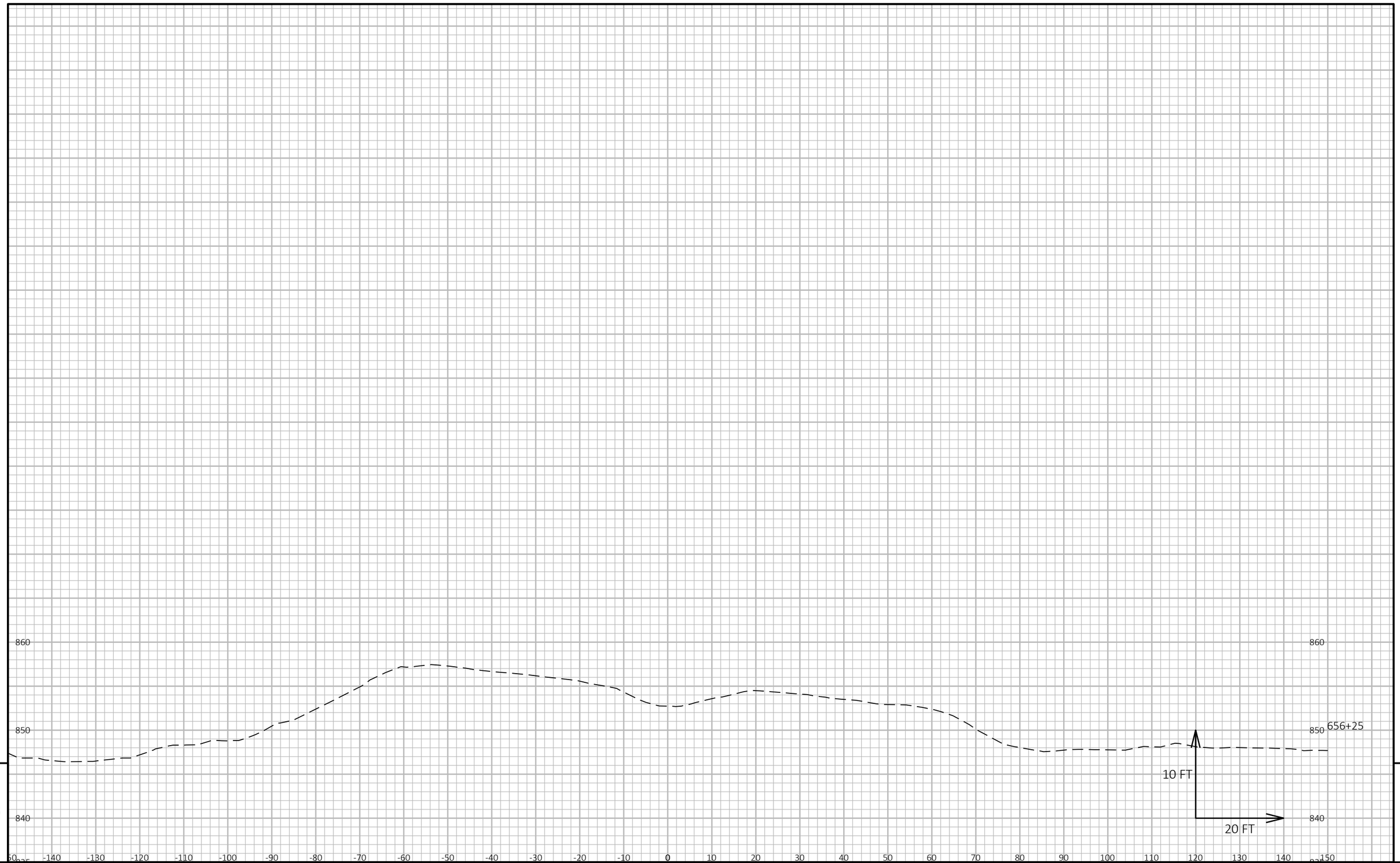
| PROJECT NO: 1370-17-70 | HWY: STH 16 | COUNTY: WAUKESHA | CROSS SECTIONS: STH 16 - MEDIAN REMOVAL STA 654+62 | SHEET 68 | E |
|---|---|---|---|---|---|

9

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




9

9

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

**Wisconsin Department of Transportation**

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through innovation and exceptional service.

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