WKE MAR 2018

PROJECT ID: With: n/a 2762-00-70

COUNTY: WAUKESHA

23

INDEX OF SHEETS

TOTAL SHEETS = 198

DESIGN DESIGNATION

A.A.D.T.	2012	= 9200
A.A.D.T.	2030	= 11,200
D.H.V.	-	= -
D.D.		= 59141
T.		= 9.9%
DESIGN SPEED		= 50 M.P.H.
ESALS		= 2,100,000

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
- 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

CTH KF

INTERSECTION WITH CTH JK

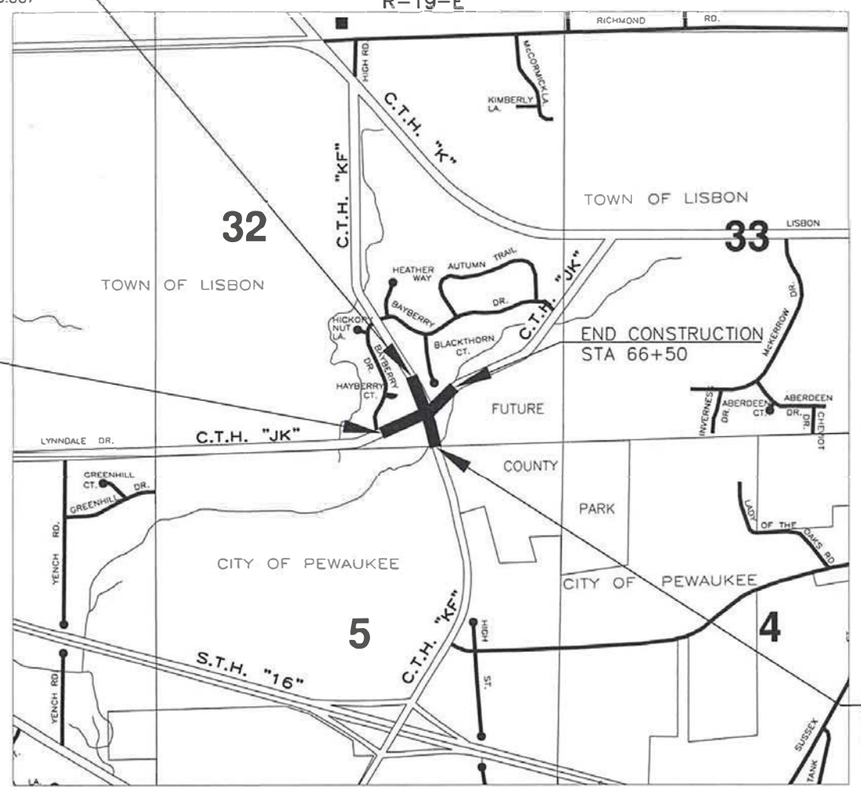
CTH KF

WAUKESHA COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2762-00-70	WISC 2018153	1

STATE PROJECT NUMBER
2762-00-70

END PROJECT
STA 111+70
Y = 196,184.343
X = 672,443.887



LAYOUT
SCALE 0 1/4

TOTAL NET LENGTH OF CENTERLINE = 0.2311 MI. (RURAL)

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ALL ELEVATIONS ON THIS PLAN ARE REFERENCED TO NAVD 88 (2012) IN US SURVEY FEET.

APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS

10-19-17 Date — Director

10/19/17 Date — Engineering Services Manager

ORIGINAL PLANS PREPARED BY

WISCONSIN
EDWARD A. HINRICHS
E-32391
PLYMOUTH WIS.
PROFESSIONAL ENGINEER

10/19/17 Date — Signature

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor

Designer WAUK. CO. DEPT. OF PUBLIC WORKS

Management Consultant DAAR ENGINEERING, INC.

C.O. Examiner

APPROVED FOR DISTRICT OFFICE

DATE: 10/24/17 — Management Consultant Signature

E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\010101-TI.DWG PLOT DATE : 08/15/2017 PLOT BY : SOEHNER, JIM

GENERAL NOTES

NO TREES OR SHRUBS ARE TO BE REMOVED UNLESS INDICATED FOR REMOVAL BY THE ENGINEER.

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

EXCAVATION BELOW SUBGRADE (EBS) SHALL NOT BE USED TO BALANCE YARDAGE. EBS IS NOT SHOWN ON THE CROSS SECTIONS, BUT WILL BE MEASURED AND PAID FOR AS EXCAVATION COMMON. THE PRECISE LOCATION OF THE EBS WILL BE DETERMINED BY THE ENGINEER.

PAVEMENTS ARE TO BE SAWCUT, AS INDICATED ON THE PLANS, TO PROVIDE A BUTT JOINT AT THE PROJECT LIMITS AND AT ALL ASPHALTIC DRIVEWAYS.

ROCK BAGS SHALL BE INSTALLED IN ALL EXISTING CULVERT INLETS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED IN PLACE UNTIL SUCH TIME AS THE ENGINEER DETERMINES THAT THEY ARE NO LONGER REQUIRED PAID FOR AS CULVERT PIPE CHECKS.

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

THE CRUSHED AGGREGATE FOR SHOULDERS ADJACENT TO THE HMA PAVEMENT SHALL NOT BE PLACED UNTIL AFTER THE SURFACE LAYER OF THE HMA PAVEMENT HAS BEEN LAID.

NEW 7-INCH HMA PAVEMENT SHALL CONSIST OF:
2 LIFTS - 2.25-INCH OF 19.0MM HMA PAVEMENT TYPE 3-MT PG 58-28S AS LOWER LAYER
2.50-INCH OF 9.5MM HMA PAVEMENT TYPE 5-MT PG 58-28S AS UPPER LAYER
4.00-INCH DRIVEWAY SHALL CONSIST OF HMA PAVEMENT TYPE 4-LT PG 58-28S.

ALL DISTURBED AREAS WITHIN THE RIGHT OF WAY SHALL BE COVERED WITH SALVAGED TOPSOIL OR TOPSOIL AND HYDROSEEDING.

THE CONTRACTOR SHALL NOTIFY DIGGER'S HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK TO DETERMINE THE LATEST STATUS OF UTILITY RELOCATIONS. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF A ONE-CALL SYSTEM MUST BE CONTACTED SEPARATELY.

INDEX OF SECTION 2 DRAWINGS

STANDARD ABBREVIATIONS

A.D.T.	AVERAGE DAILY TRAFFIC
AC.	ACRE(S)
ASPH.	ASPHALT
BM	BENCH MARK
C & G	CURB & GUTTER
CB	CATCH BASIN
C.S.C.P.	CORRUGATED STEEL CULVERT PIPE
C.Y.	CUBIC YARDS
℄	CENTERLINE
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
CWT.	HUNDREDWEIGHT
D	DEGREE OF CURVE
D.H.V.	DESIGN HOURLY VOLUME
DISCH.	DISCHARGE
E	EAST
EA.	EACH
E.B.	EASTBOUND
ESALS	EQUIVALENT SINGLE AXLE LOADS
ESMT.	EASEMENT
F.E.	FIELD ENTRANCE
FT.	FOOT (FEET)
G	GAS
I.P.	IRON PIPE
K	RATE OF VERTICAL CURVATURE
L	LENGTH
LB.	POUND(S)
L.F.	LINEAR FEET
LHF	LEFT HAND FORWARD
LS	LUMP SUM
LT.	LEFT
MH	MANHOLE
N	NORTH
N.B.	NORTHBOUND
NO.	NUMBER
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.L.	PROPERTY LINE
P.R.C.	POINT OF REVERSE CURVATURE
P.T.	POINT OF TANGENCY
PAV'T.	PAVEMENT
R	RADIUS
C.P.R.C.	CULVERT PIPE REINFORCED CONCRETE
RHF	RIGHT HAND FORWARD
RT.	RIGHT
R/W	RIGHT OF WAY
S	SOUTH
SAN	SANITARY
S.B.	SOUTHBOUND
S.D.D.	STANDARD DETAIL DRAWING
S.F.	SQUARE FEET
S.S.P.R.C.	STORM SEWER PIPE REINFORCED CONCRETE
STA.	STATION
S.Y.	SQUARE YARDS
T	TANGENT
T	TELEPHONE
T.L.E.	TEMPORARY LIMITED EASEMENT
VAR.	VARIES
V.P.C.	VERTICAL POINT OF CURVATURE
V.P.I.	VERTICAL POINT OF INTERSECTION
V.P.T.	VERTICAL POINT OF TANGENCY
W	WATER MAIN
W	WEST
W.B.	WESTBOUND
WV	WATER VALVE
YD.	YARDS

2

UTILITIES CONTACTS

A.T. & T., INC.
MR. ALPER KOLCU
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
262.970.8494 – PHONE
262.352.3791 – MOBILE
ak308x@att.com

WE–ENERGIES (ELECTRIC)
MR. BRYAN STOEHR
500 S. 116TH STREET
WEST ALLIS, WI 53214
414.944.5516
bryan.stoehr@we–energies.com

CHARTER COMMUNICATIONS/TIME WARNER CABLE
MR. STEVE CRAMER
1320 N. DR. MARTIN LUTHER KING JR. DR.
MILWAUKEE, WI 53212
414.908.4789
steven.cramer@twcable.com

WE–ENERGIES (GAS)
MR. JOE DABLE
500 S. 116TH STREET
WEST ALLIS, WI 53214
414.944.5543
joe.dable@we–energies.com

WDNR LIAISON

MR. CRAIG WEBSTER
ENVIRONMENTAL COORDINATOR – SOUTHEAST REGION
141 NW BARSTOW ROOM 180
WAUKESHA, WI 53188
(262) 574–2141
craig.webster@wisconsin.gov

OTHER CONTACTS

MS. ALLISON BUSSLER, DIRECTOR
WAUKESHA COUNTY DPW
515 W. MORELAND BLVD.
WAUKESHA, WI 53188
(262)548–7740

MR. ED HINRICHS, PROJECT MANAGER.
WAUKESHA COUNTY DPW
515 W. MORELAND BLVD.
WAUKESHA, WI 53188
(262)548–7740
ehinrichs@waukeshacounty.gov

MR. DAVE BENTFIELD
WAUKESHA COUNTY – HIGHWAY OPERATIONS
SIGN/SIGNAL MAINTENANCE
WAUKESHA WI 53188
WORK: (262)548–7736
MOBILE: (262)424–9129
dbentfield@waukeshacounty.gov

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

Call 811 3 Work Days Before You Dig
Or Toll Free (800) 242-8511
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

END PROJECT
STA. 111+70

END CONSTRUCTION
STA. 66+50

PT 65+00.00

PC 62+65.35

PT 60+38.02

PC 106+32.61

PC 56+30.35

PT 54+43.35

STA 105+58.01 CTH KF
STA 58+39.14 CTH JK

C.T.H. JK

C.T.H. KF

BAYBERRY DR.

BEGIN CONSTRUCTION
STA. 51+98

BEGIN PROJECT
STA. 99+50

Y = 195,057.465
X = 672,897.242

A CONCRETE MON.
WITH A SEWRPC
BRASS CAP

Y = 197879.761
X = 671806.652

A CONCRETE MON.
WITH A SEWRPC
BRASS CAP

Y = 195229.255
X = 671737.622

A CONCRETE MON.
WITH A SEWRPC
BRASS CAP

Y = 195229.174
X = 671794.042

A CONCRETE MON.
WITH A BRASS CAP

Y = 195232.052
X = 674377.853

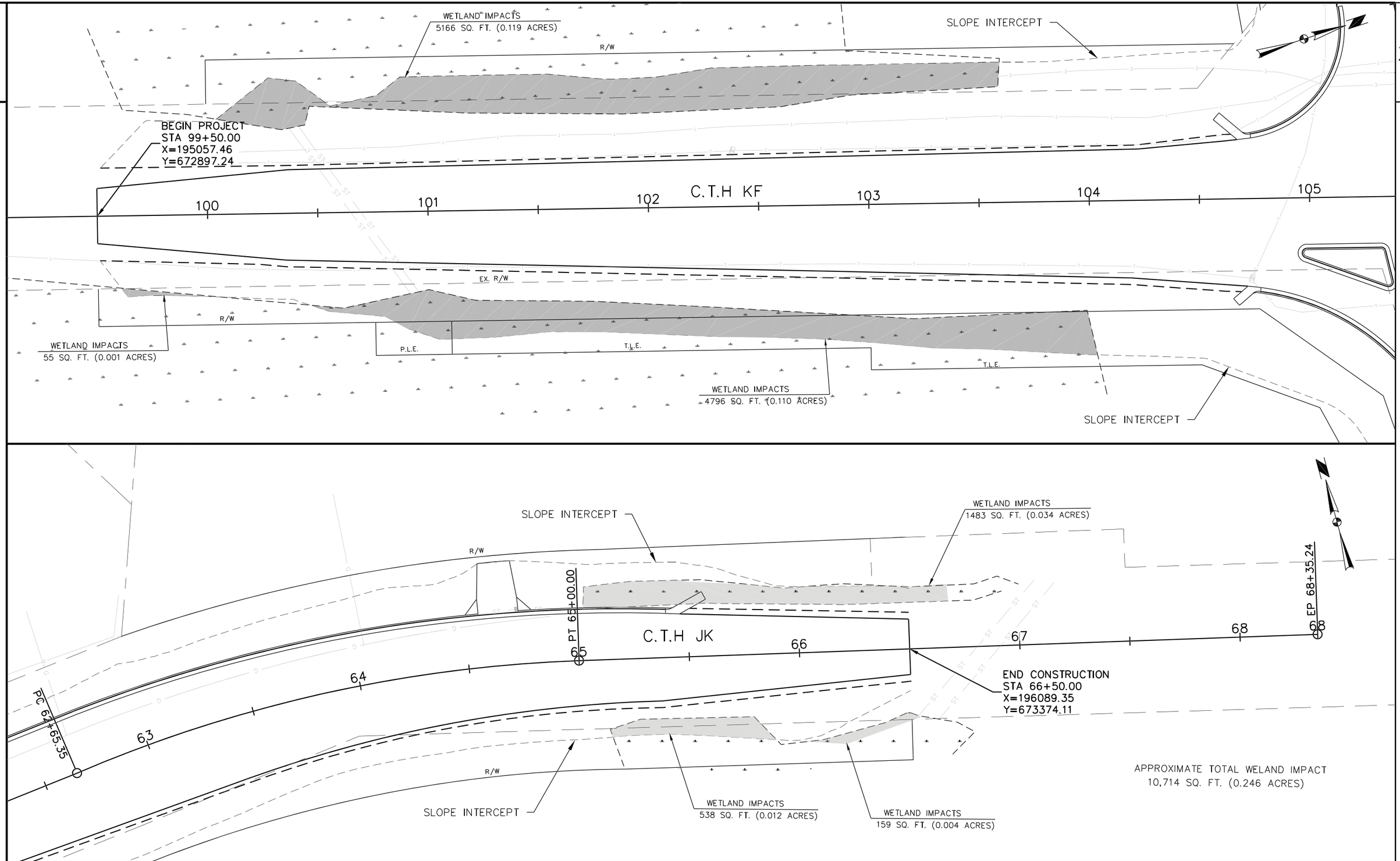
SOUTH LINE OF THE SE 1/4 OF SEC. 32-8-19
N 89°56'10" E 1047.40'

SOUTH LINE OF THE SE 1/4 OF SEC. 32-8-19
N 89°56'10" E 1536.41'

56.42'

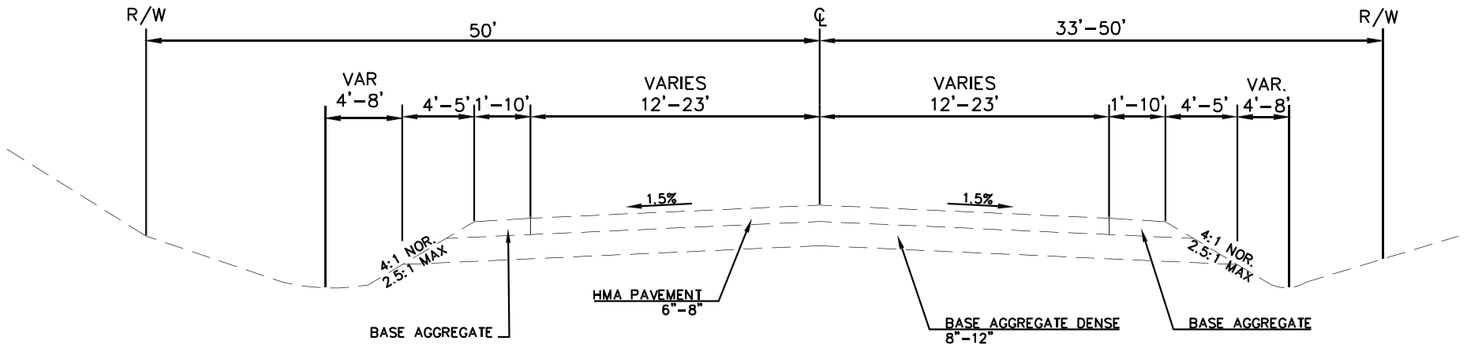
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 4

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\020201 - PO.DWG | PLOT DATE : 08/05/2017 | PLOT BY : SOEHNER, JIM | PLOT SCALE : 1"=150'

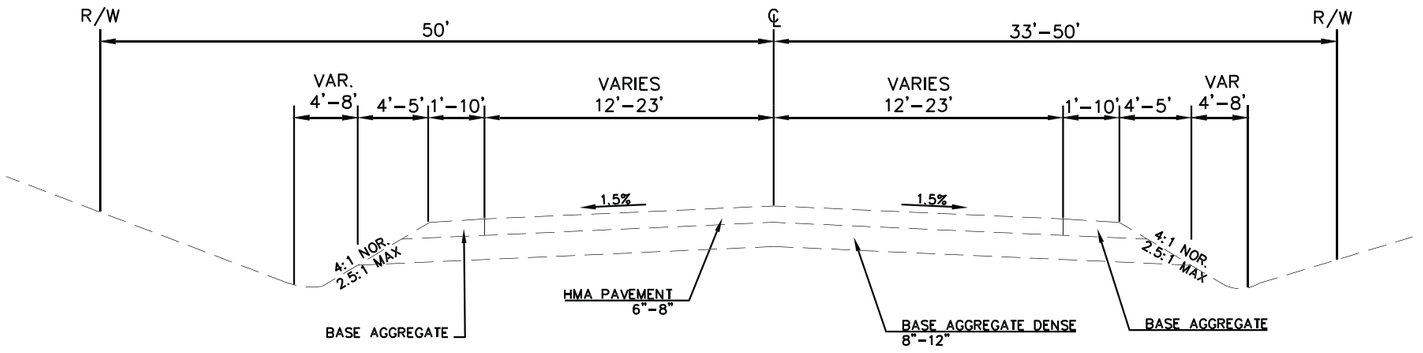


PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	WETLAND IMPACTS OVERVIEW	SHEET 5	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\020202-WO.DWG PLOT DATE : 10/27/2017 6:37 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'

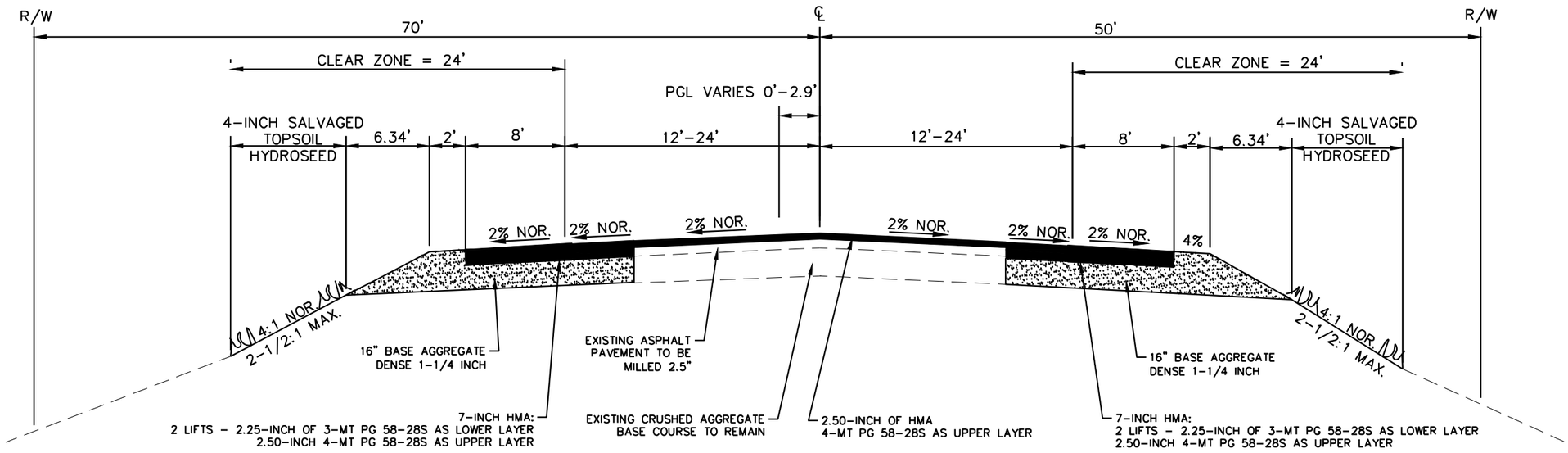


TYPICAL EXISTING SECTION
C.T.H. "KF"
STA 99+50 – STA 111+70

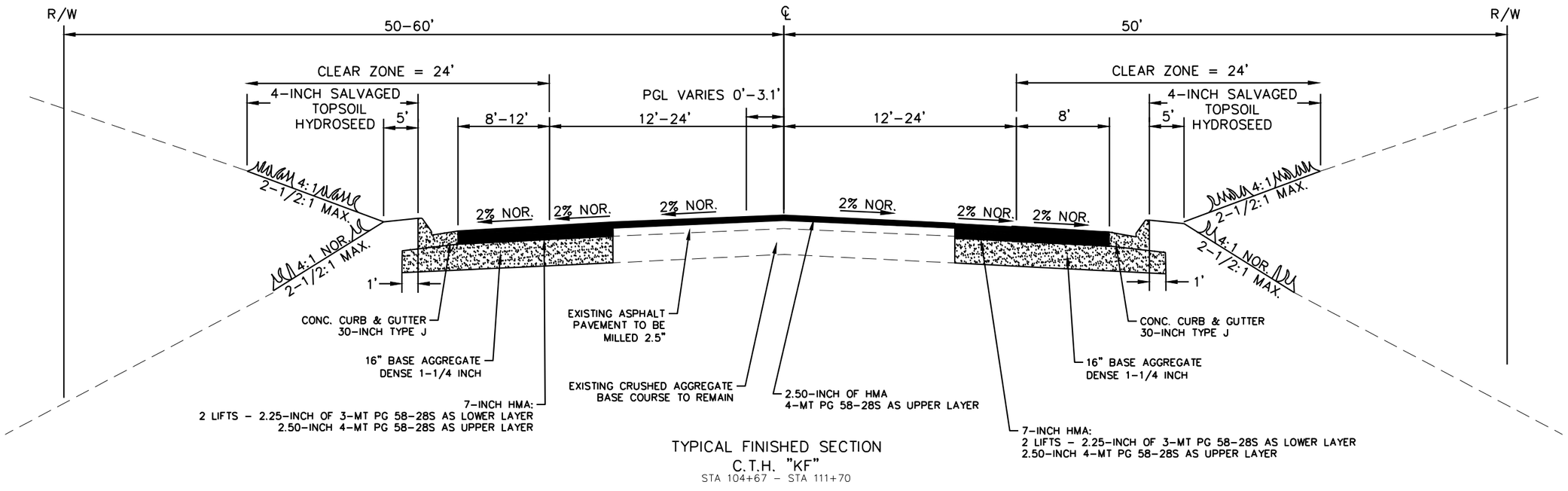


TYPICAL EXISTING SECTION
C.T.H. "JK"
STA 52+00 – STA 66+25

PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TYPICAL EXISTING SECTIONS	SHEET 6	E

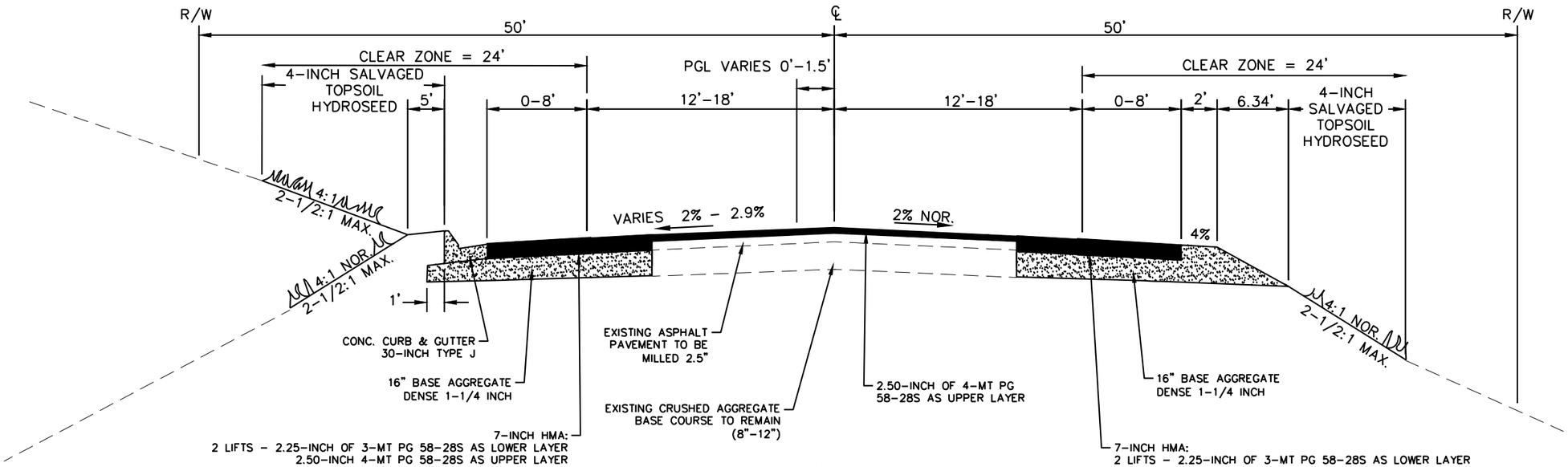


TYPICAL FINISHED SECTION
C.T.H. "KF"
STA 99+50 – STA 104+67

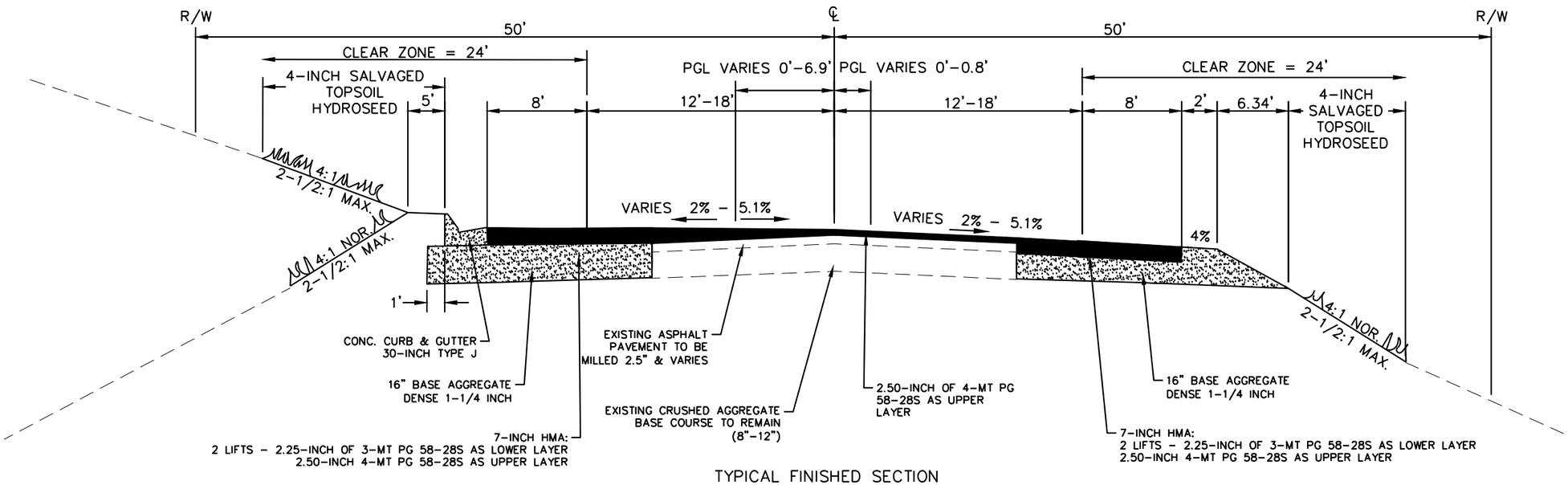


TYPICAL FINISHED SECTION
C.T.H. "KF"
STA 104+67 – STA 111+70

PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TYPICAL FINISHED SECTIONS	SHEET 7	E

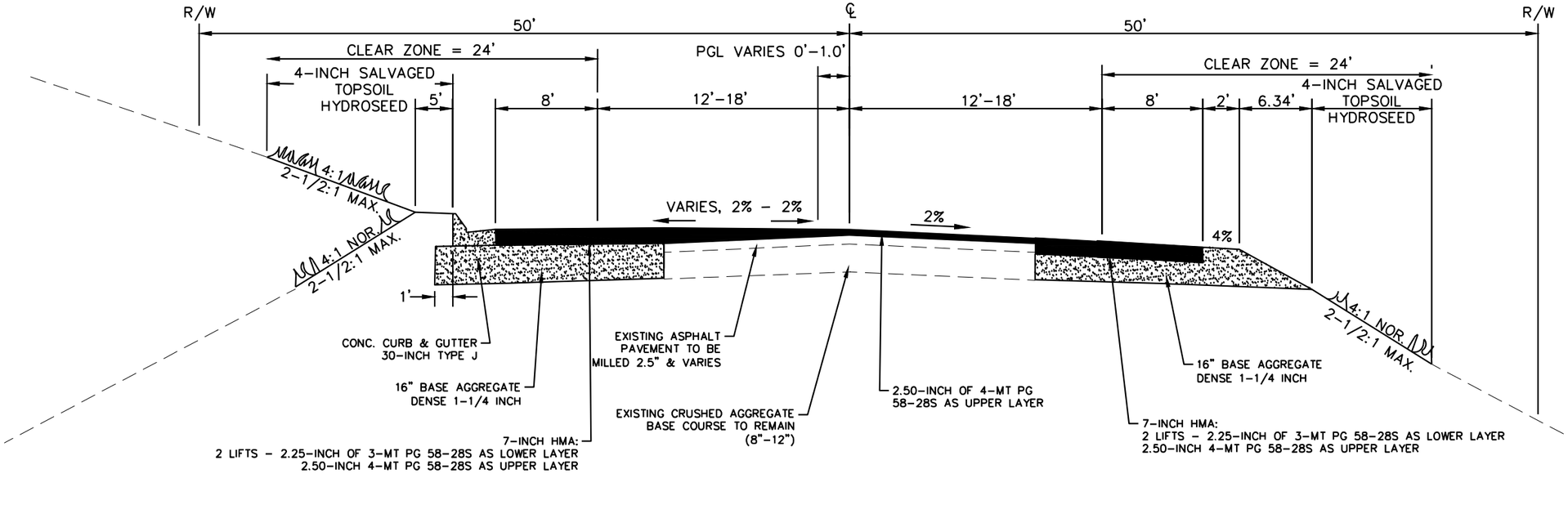


TYPICAL FINISHED SECTION
C.T.H. "JK"
STA 51+98 - STA 55+00



TYPICAL FINISHED SECTION
C.T.H. "JK"
STA 55+00 - STA 60+50

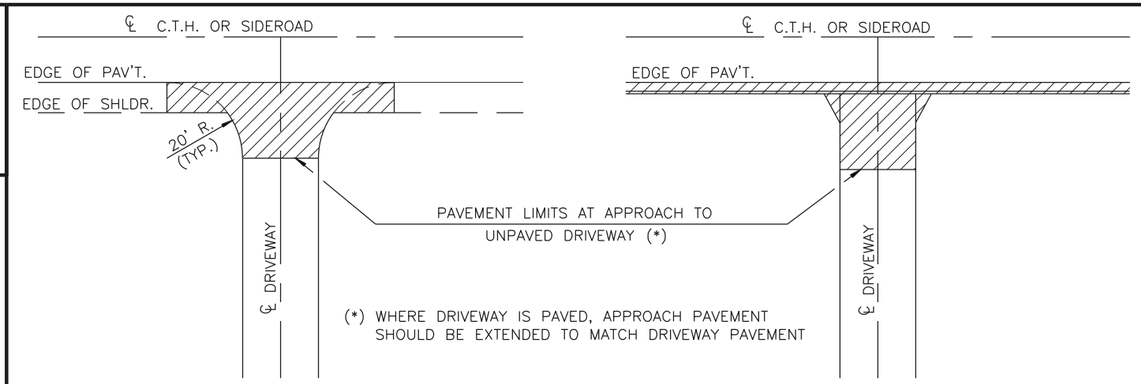
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	TYPICAL FINISHED SECTIONS	SHEET 8	E



TYPICAL FINISHED SECTION
C.T.H. "JK"
STA 60+50 - STA 66+68

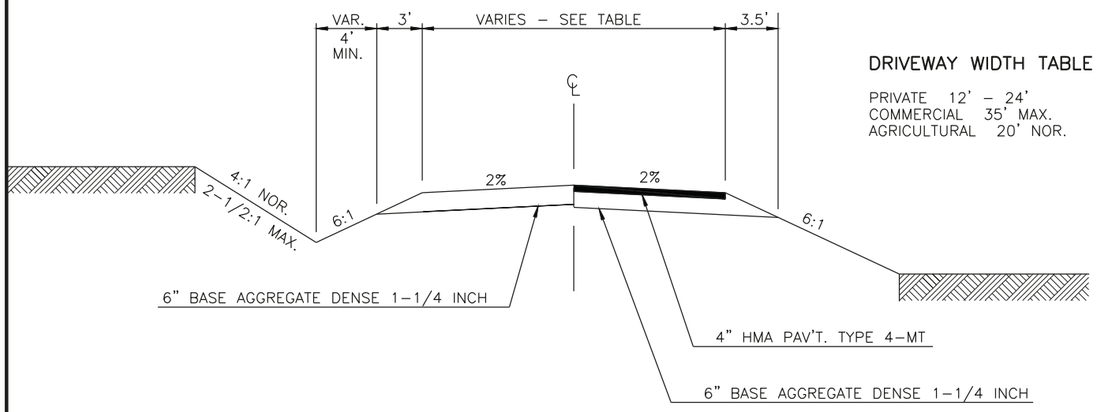
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	TYPICAL FINISHED SECTIONS	SHEET 9	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\020301-TS_PROPOSED.DWG PLOT DATE : 08/05/2017 PLOT BY : SOEHNER, JIM PLOT SCALE : N/A



PLAN VIEW

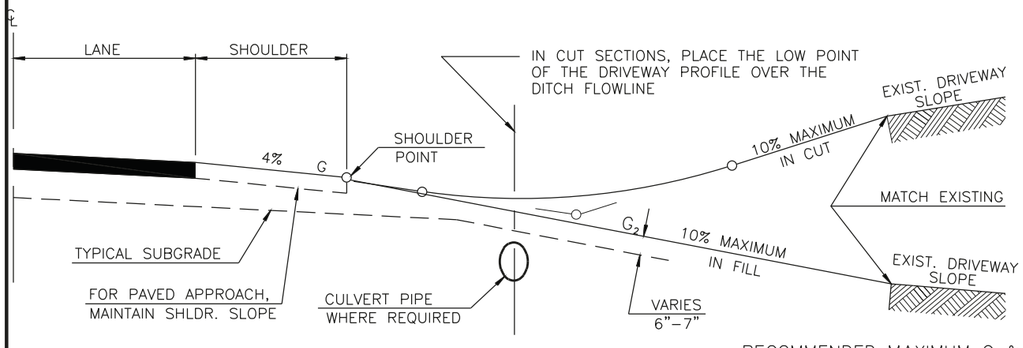
PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)



DRIVEWAY WIDTH TABLE

PRIVATE	12' – 24'
COMMERCIAL	35' MAX.
AGRICULTURAL	20' NOR.

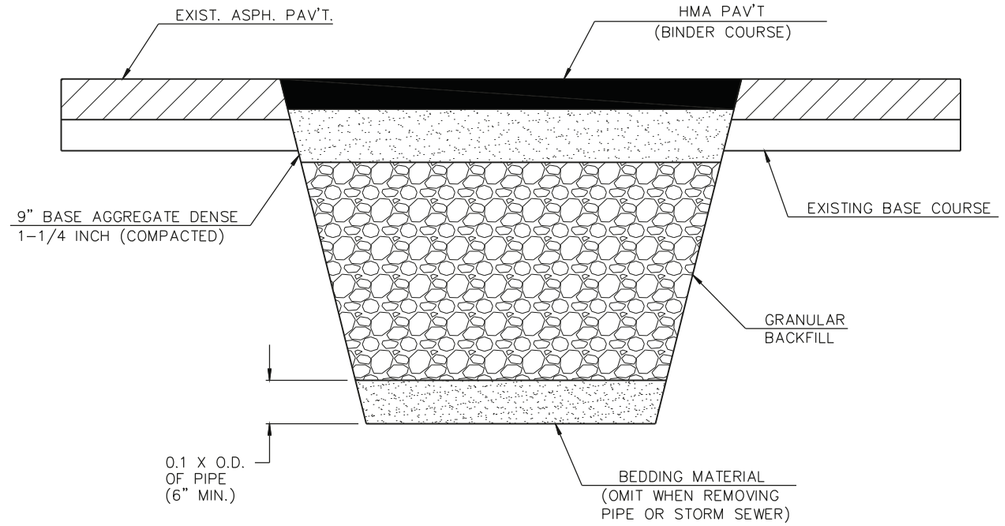
TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE



TYPICAL DRIVEWAY PROFILES

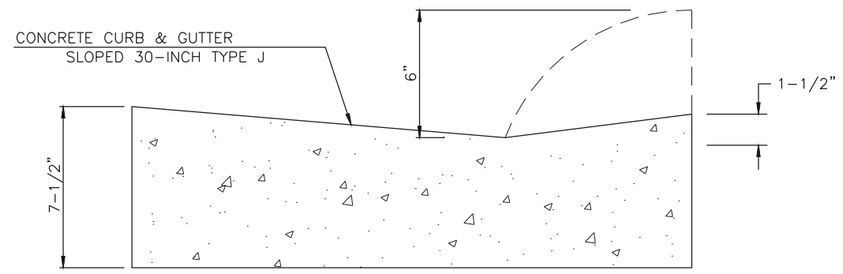
RECOMMENDED MAXIMUM G & G_2 = 15%
DESIRABLE MAXIMUM = 10%
MAXIMUM DIFFERENCE BEWEEEN G AND G_2 IN FILL = 14%

RURAL DRIVEWAY INTERSECTION DETAILS



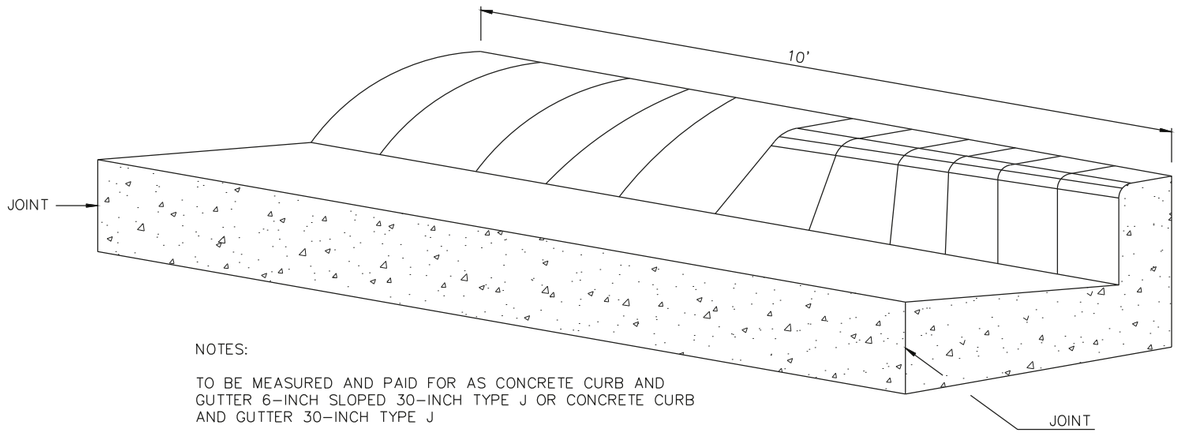
NOTE: ALL MATERIALS SHALL BE CONSIDERED INCIDENTAL TO THE ITEMS OF REMOVING SMALL PIPE CULVERTS OR REMOVING STORM SEWER PIPE (SIZE).

TRENCH RESTORATION DETAILS
STORM SEWER AND PIPE REMOVAL



CURB AND GUTTER DETAIL AT DRIVEWAYS

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 10	E



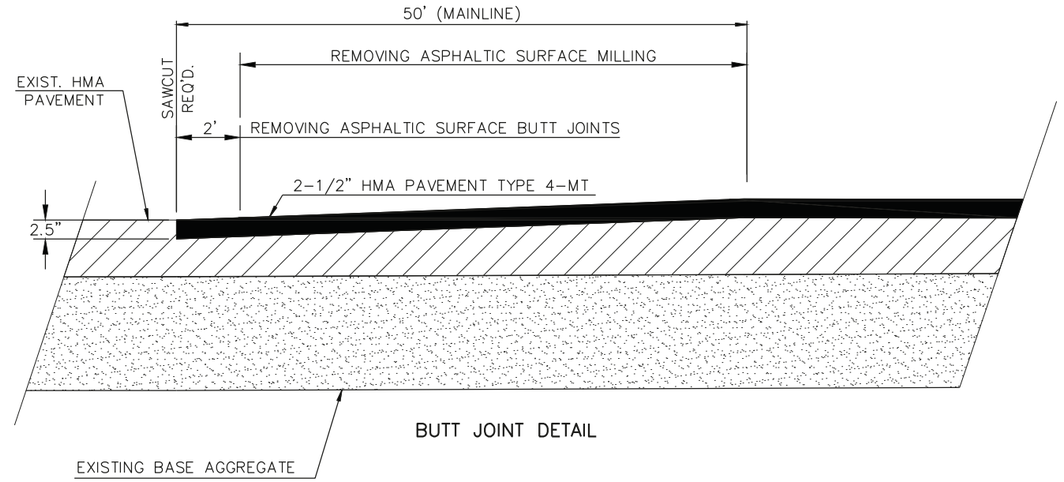
NOTES:

TO BE MEASURED AND PAID FOR AS CONCRETE CURB AND GUTTER 6–INCH SLOPED 30–INCH TYPE J OR CONCRETE CURB AND GUTTER 30–INCH TYPE J

TIE BARS REQUIRED WHEN TYING INTO EXISTING CURB AND GUTTER. COST FOR TIE BARS SHALL BE INCIDENTAL TO ITEMS OF CURB AND GUTTER.

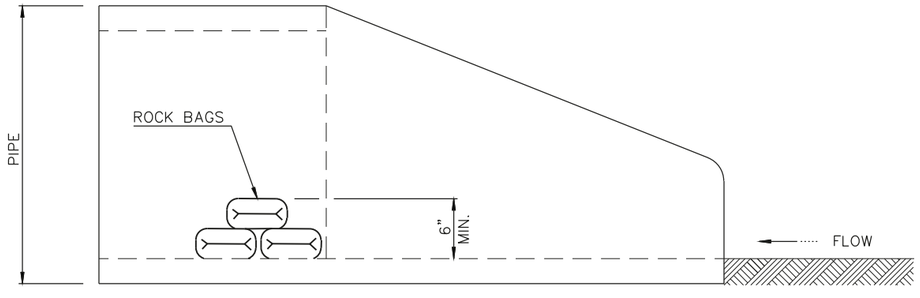
CURB AND GUTTER TRANSITIONS REQUIRED AT ALL STORM SEWER INLET CASTINGS. SEE STORM SEWER PLANS FOR LOCATIONS.

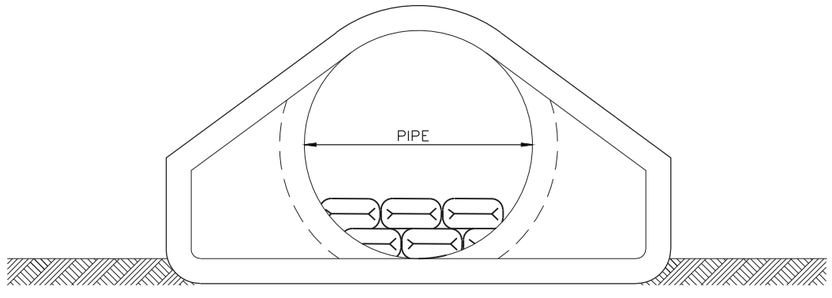
CONCRETE CURB & GUTTER TRANSITION DETAIL



BUTT JOINT DETAIL

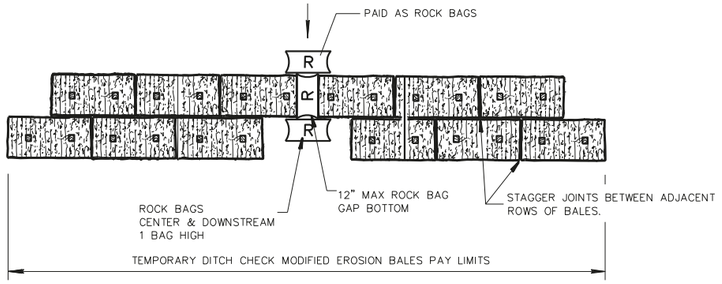
2



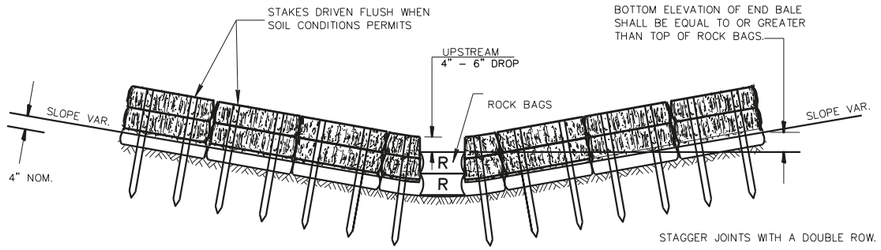


CULVERT PIPE CHECK DETAILS

PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	CONSTRUCTION DETAILS	SHEET 11	E



PLAN VIEW



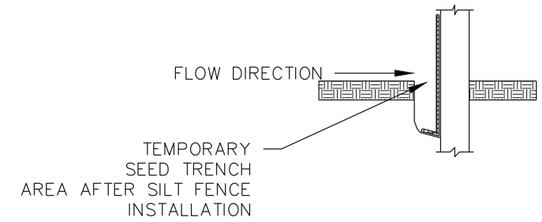
FRONT ELEVATION

GENERAL NOTES

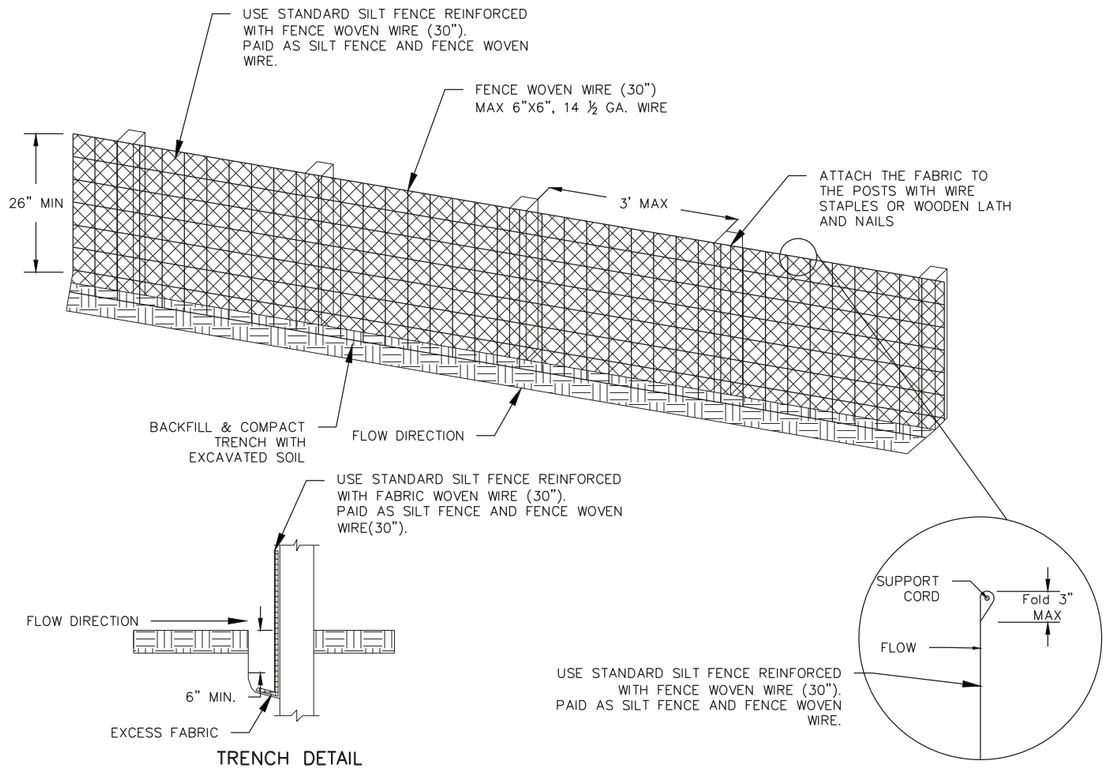
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

TEMPORARY DITCH CHECK, MODIFIED EROSION BALES

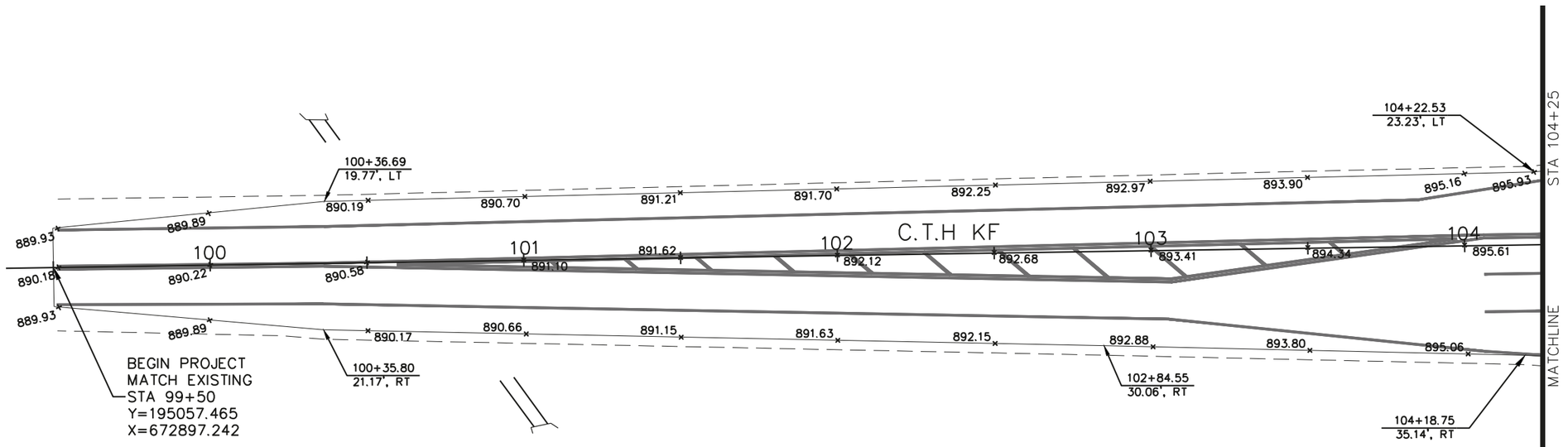


TEMPORARY SEEDING AT SILT FENCE



TRENCH DETAIL

HEAVY DUTY SILT FENCE DETAIL



GENERAL NOTES:

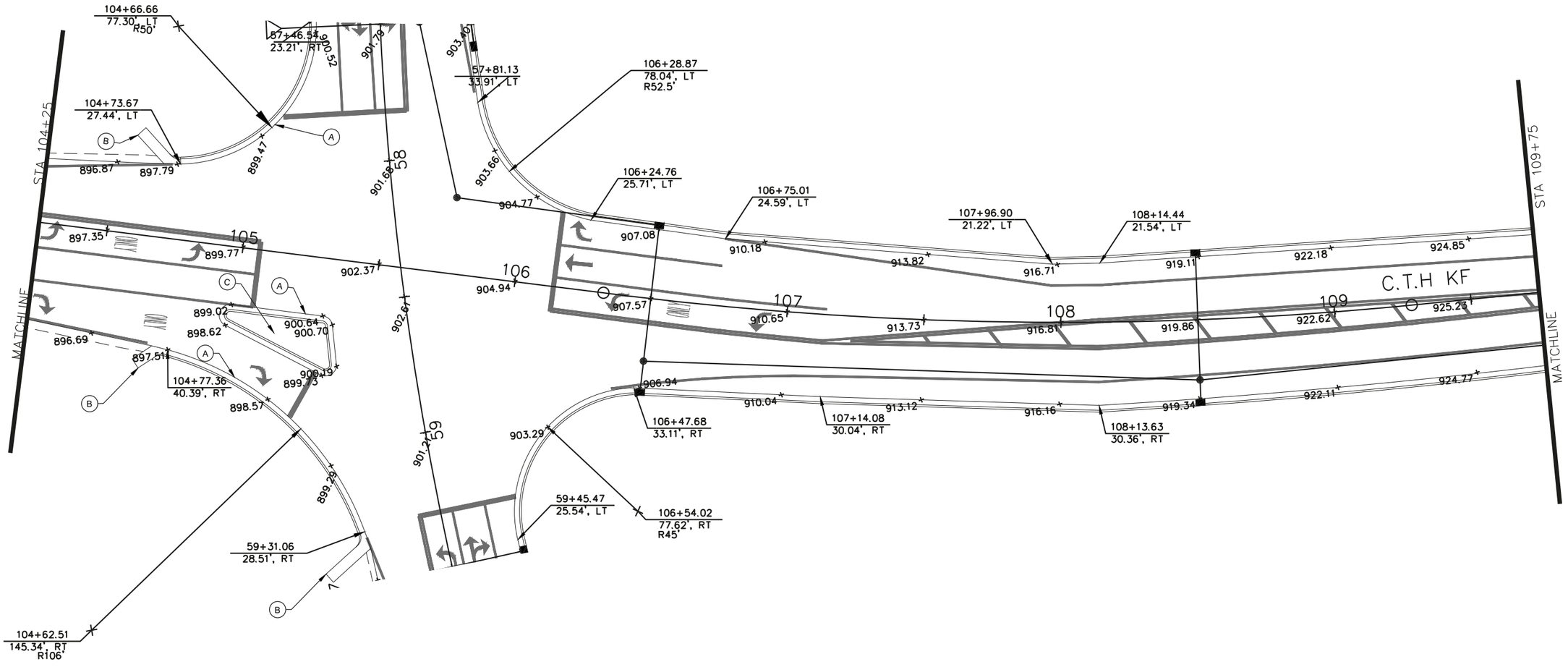
1. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF VARIABLE MILL AND VARIABLE ASPHALTIC PAVEMENT OVERLAY.
2. EDGE OF RECONSTRUCTION SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL BLADE OFF EXISTING EDGE OF PAVEMENT AND WIDEN TO POINTS CALLED OUT ON THIS PLAN.

LEGEND:

(A) CONCRETE CURB AND GUTTER 30-INCH TYPE J
(B) ASPHALTIC FLUME
(C) 5" CONCRETE SIDEWALK

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PAVING GRADES	SHEET 13	E

2



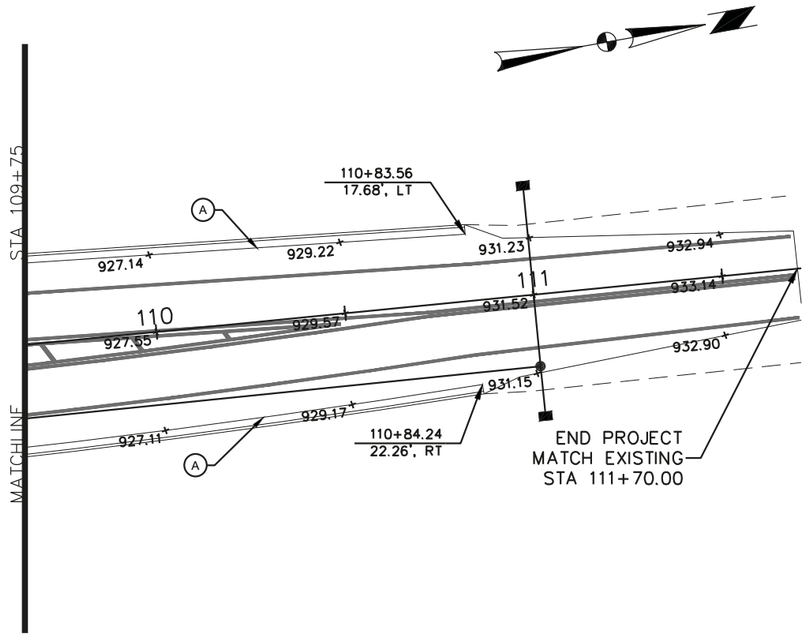
GENERAL NOTES:

1. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF VARIABLE MILL AND VARIABLE ASPHALTIC PAVEMENT OVERLAY.
2. EDGE OF RECONSTRUCTION SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL BLADE OFF EXISTING EDGE OF PAVEMENT AND WIDEN TO POINTS CALLED OUT ON THIS PLAN.

LEGEND:

- (A) CONCRETE CURB AND GUTTER 30-INCH TYPE J
- (B) ASPHALTIC FLUME
- (C) 5" CONCRETE SIDEWALK

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PAVING GRADES	SHEET 14	E



GENERAL NOTES:

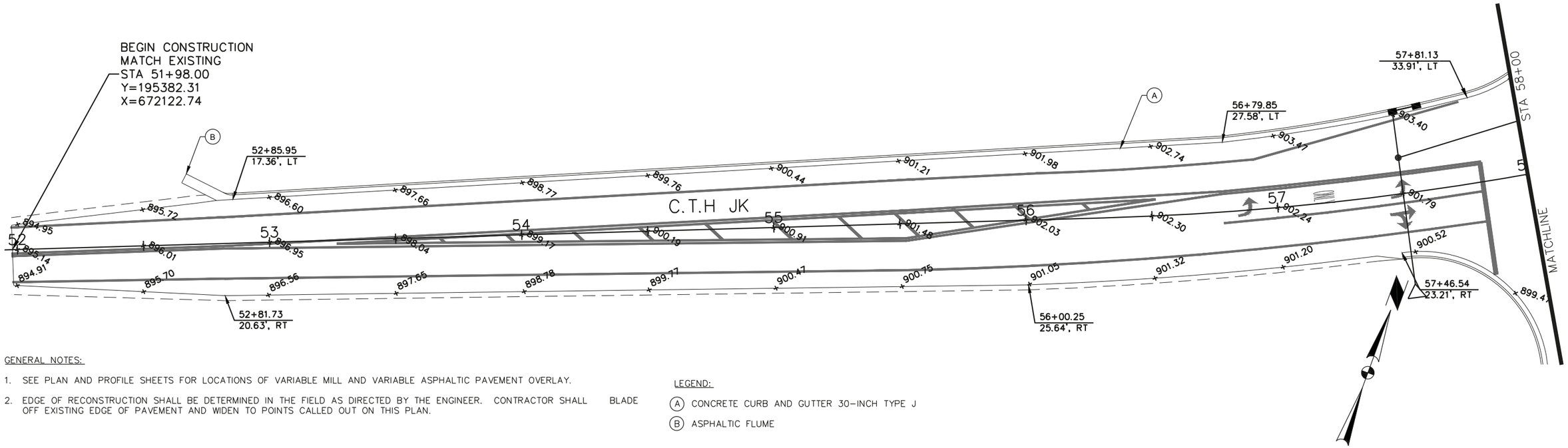
1. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF VARIABLE MILL AND VARIABLE ASPHALTIC PAVEMENT OVERLAY.
2. EDGE OF RECONSTRUCTION SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL BLADE OFF EXISTING EDGE OF PAVEMENT AND WIDEN TO POINTS CALLED OUT ON THIS PLAN.

LEGEND:

(A) CONCRETE CURB AND GUTTER 30-INCH TYPE J
(B) ASPHALTIC FLUME
(C) 5" CONCRETE SIDEWALK

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PAVING GRADES	SHEET 15	E

2



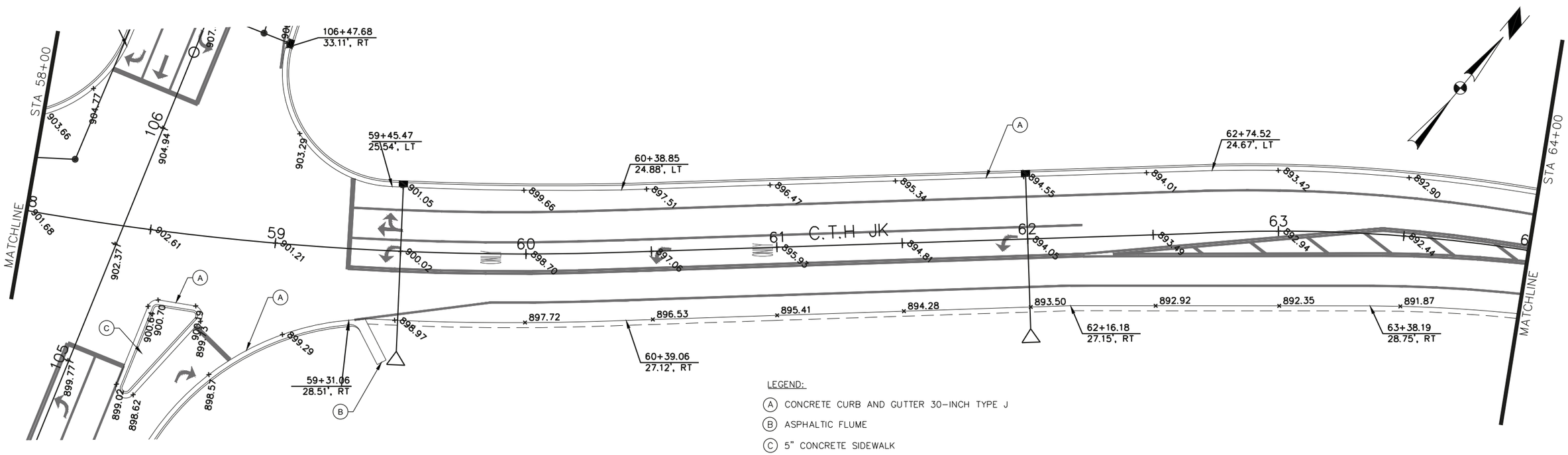
GENERAL NOTES:

1. SEE PLAN AND PROFILE SHEETS FOR LOCATIONS OF VARIABLE MILL AND VARIABLE ASPHALTIC PAVEMENT OVERLAY.
2. EDGE OF RECONSTRUCTION SHALL BE DETERMINED IN THE FIELD AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL BLADE OFF EXISTING EDGE OF PAVEMENT AND WIDEN TO POINTS CALLED OUT ON THIS PLAN.

LEGEND:

(A) CONCRETE CURB AND GUTTER 30-INCH TYPE J

(B) ASPHALTIC FLUME



LEGEND:

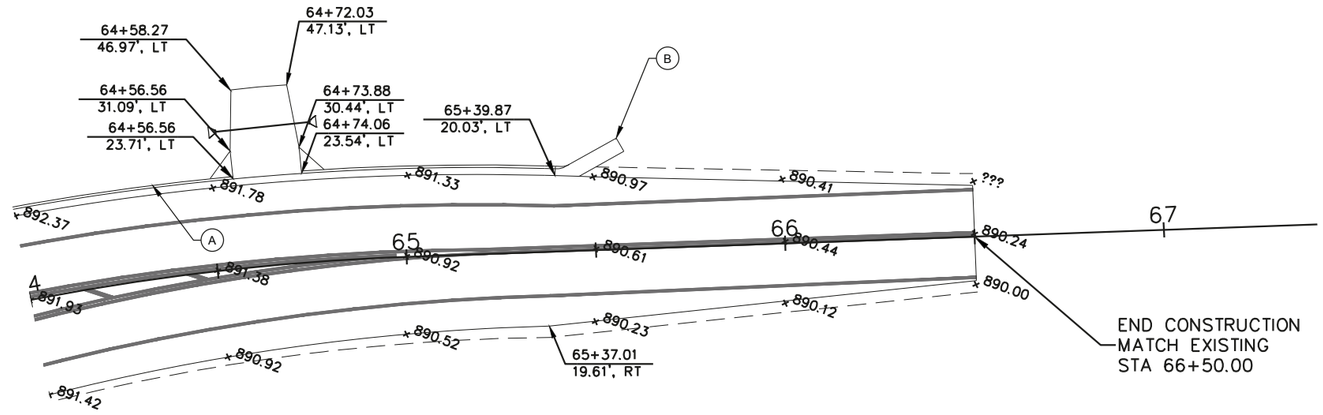
(A) CONCRETE CURB AND GUTTER 30-INCH TYPE J

(B) ASPHALTIC FLUME

(C) 5" CONCRETE SIDEWALK

PROJECT NO: 2762-00-70	HWY: CTH JK	COUNTY: WAUKESHA	PAVING GRADES	SHEET 16	E

2



GENERAL NOTES:

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LEGEND:

(A) CONCRETE CURB AND GUTTER 30-INCH TYPE J

(B) ASPHALTIC FLUME

PROJECT NO: 2762-00-70	HWY: CTH JK	COUNTY: WAUKESHA	PAVING GRADES	SHEET 17	E

SLOPE INTERCEPT

R/W

100 BEGIN PROJECT MATCH EXISTING STA 99+50.00

101 102 C.T.H KF 103 104 105

ASPH

T.L.E.

SLOPE INTERCEPT

GENERAL NOTES:

1. SEE TYPICAL SECTIONS FOR LOCATIONS OF HYDROSEEDING AND EROSION MAT ON SLOPES AND IN DITCHES.
2. CONTRACTOR SHALL APPLY HYDROSEED AT APPLICATION RATES FOR VARIOUS SLOPES AS SHOWN IN THE SPECIFICATIONS.
3. DISTURBED AREAS SHALL NOT BE LEFT EXPOSED FOR MORE THAN SEVEN (7) CALENDAR DAYS. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
4. USE WATTLES FOR TEMPORARY DITCH CHECKS IN LEAU OF HAY BALES.

END PROJECT MATCH EXISTING STA 111+70.00

106 107 108 C.T.H KF 109 110 111

C,D

B

SLOPE INTERCEPT

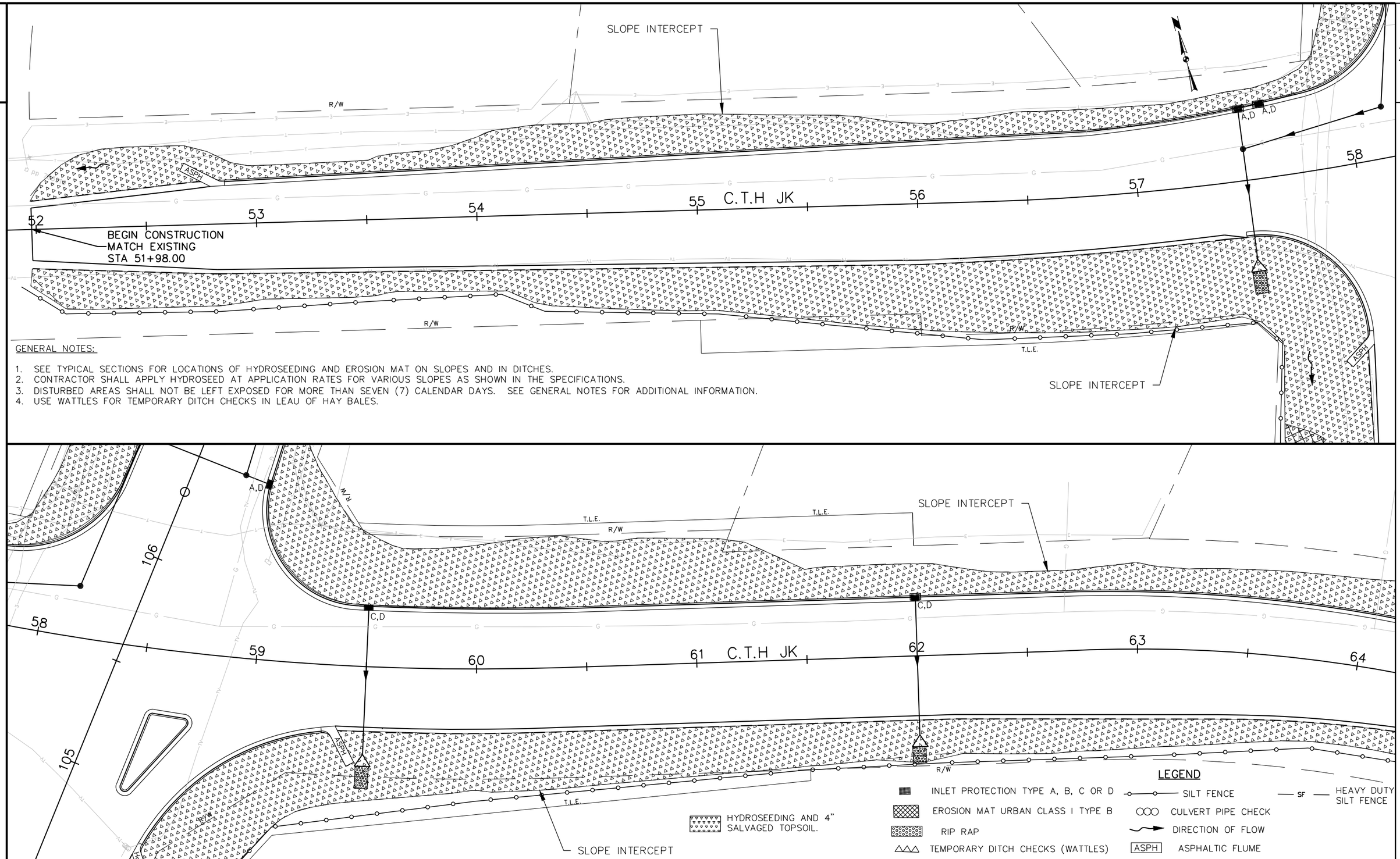
HYDROSEEDING AND 4" SALVAGED TOPSOIL.

LEGEND

- INLET PROTECTION TYPE A, B, C or D
- EROSION MAT URBAN CLASS I TYPE A
- RIP RAP
- TEMPORARY DITCH CHECKS (WATTLES)
- SF — HEAVY DUTY SILT FENCE
- SILT FENCE
- CULVERT PIPE CHECK
- DIRECTION OF FLOW
- ASPH — ASPHALTIC FLUME

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 18	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\022001-EC.DWG PLOT DATE : 1/9/2018 11:35 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'



GENERAL NOTES:

1. SEE TYPICAL SECTIONS FOR LOCATIONS OF HYDROSEEDING AND EROSION MAT ON SLOPES AND IN DITCHES.
2. CONTRACTOR SHALL APPLY HYDROSEED AT APPLICATION RATES FOR VARIOUS SLOPES AS SHOWN IN THE SPECIFICATIONS.
3. DISTURBED AREAS SHALL NOT BE LEFT EXPOSED FOR MORE THAN SEVEN (7) CALENDAR DAYS. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
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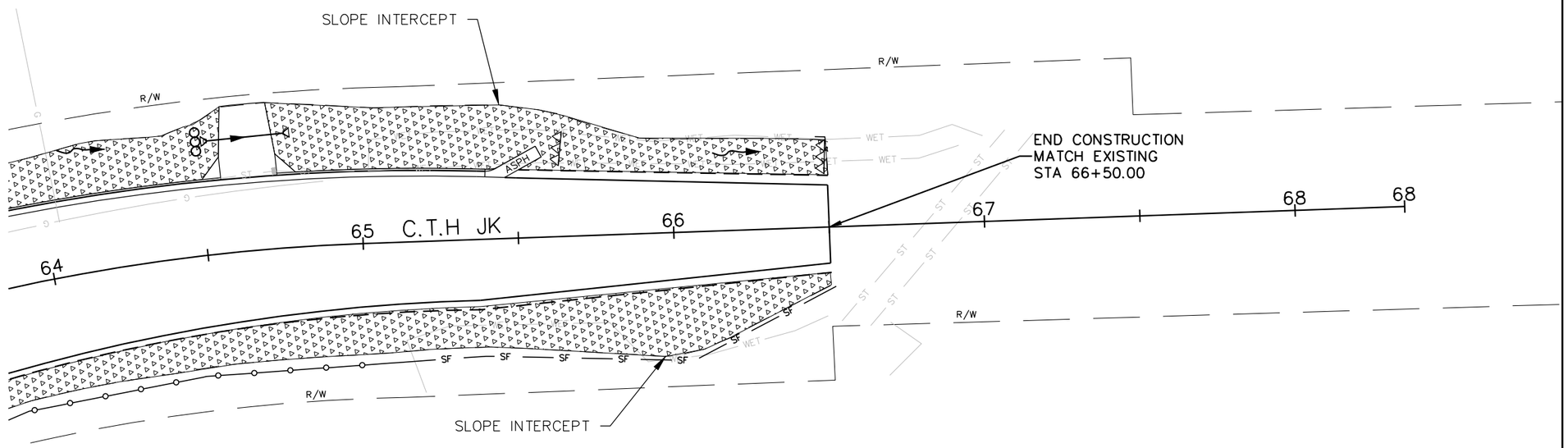
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 19	E

2



LEGEND

- INLET PROTECTION TYPE A, B, C OR D
- EROSION MAT URBAN CLASS I TYPE B
- RIP RAP
- TEMPORARY DITCH CHECKS (WATTLES)
- SILT FENCE
- SF — HEAVY DUTY SILT FENCE
- CULVERT PIPE CHECK
- DIRECTION OF FLOW
- ASPH — ASPHALTIC FLUME
- HYDROSEEDING AND 4" SALVAGED TOPSOIL.

GENERAL NOTES:

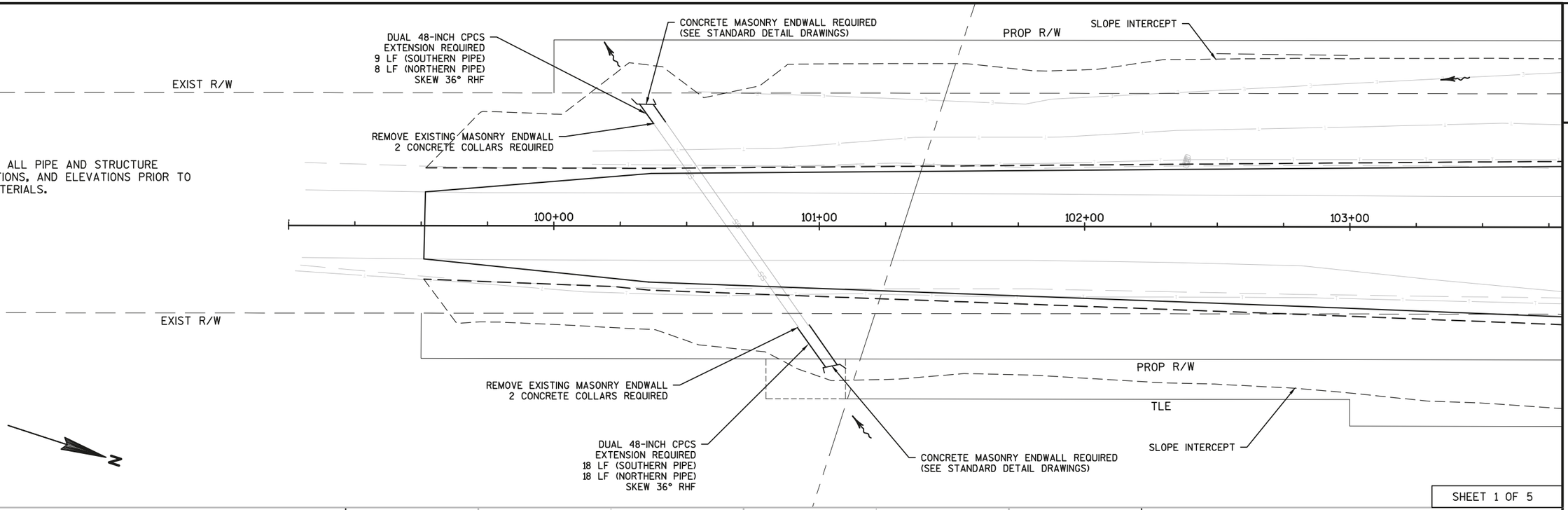
1. SEE TYPICAL SECTIONS FOR LOCATIONS OF HYDROSEEDING AND EROSION MAT ON SLOPES AND IN DITCHES.
2. CONTRACTOR SHALL APPLY HYDROSEED AT APPLICATION RATES FOR VARIOUS SLOPES AS SHOWN IN THE SPECIFICATIONS.
3. DISTURBED AREAS SHALL NOT BE LEFT EXPOSED FOR MORE THAN SEVEN (7) CALENDAR DAYS. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.
4. USE WATTLES FOR TEMPORARY DITCH CHECKS IN LEAU OF HAY BALES.

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 20	E

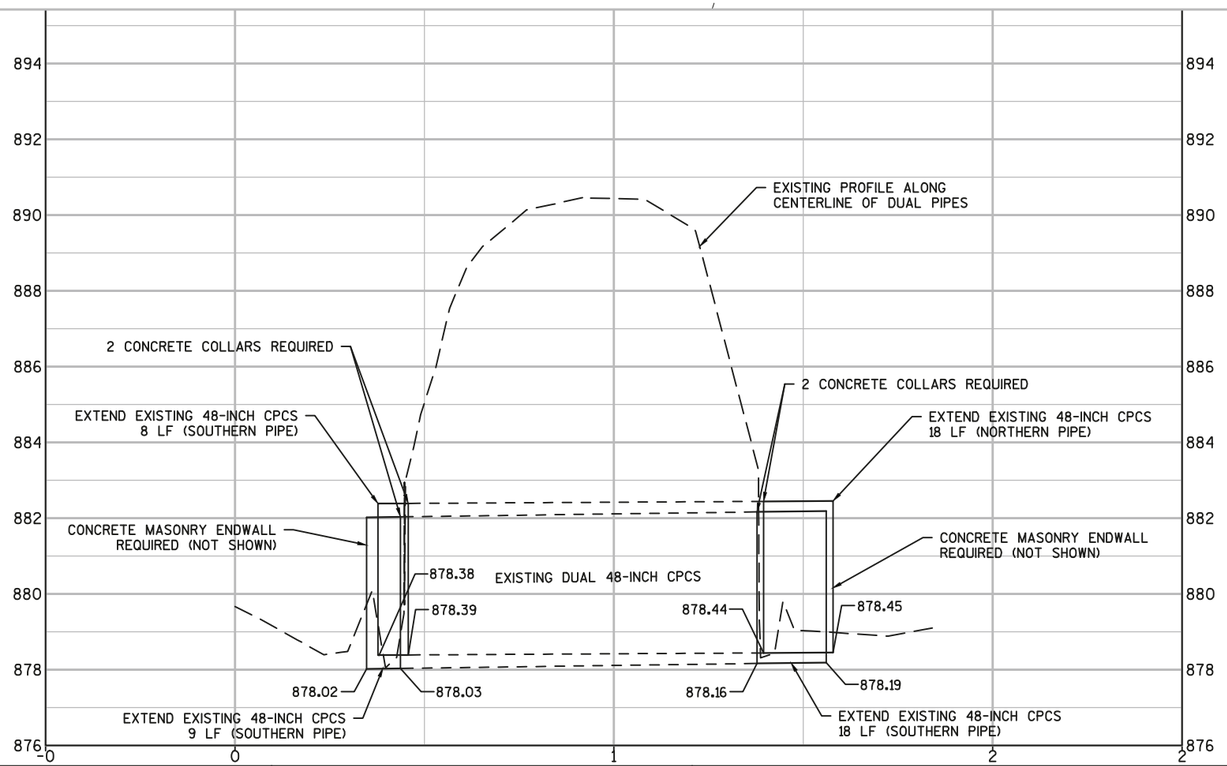
FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\022001-EC.DWG PLOT DATE : 1/9/2018 11:35 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'

NOTES

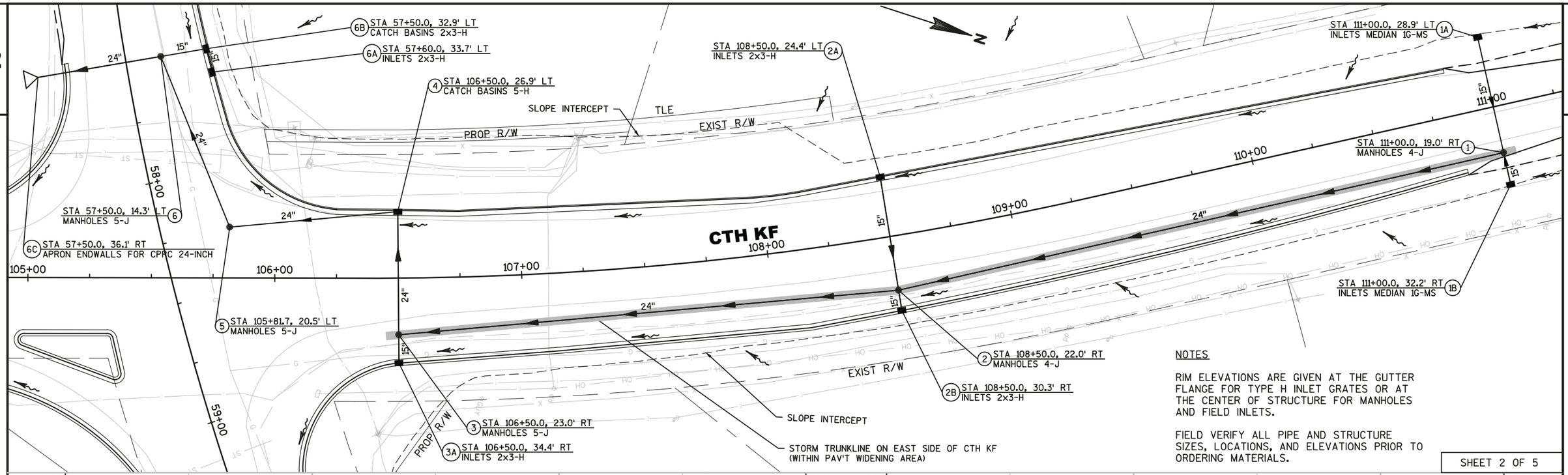
FIELD VERIFY ALL PIPE AND STRUCTURE SIZES, LOCATIONS, AND ELEVATIONS PRIOR TO ORDERING MATERIALS.



SHEET 1 OF 5



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	STORM SEWER	SHEET 21 E

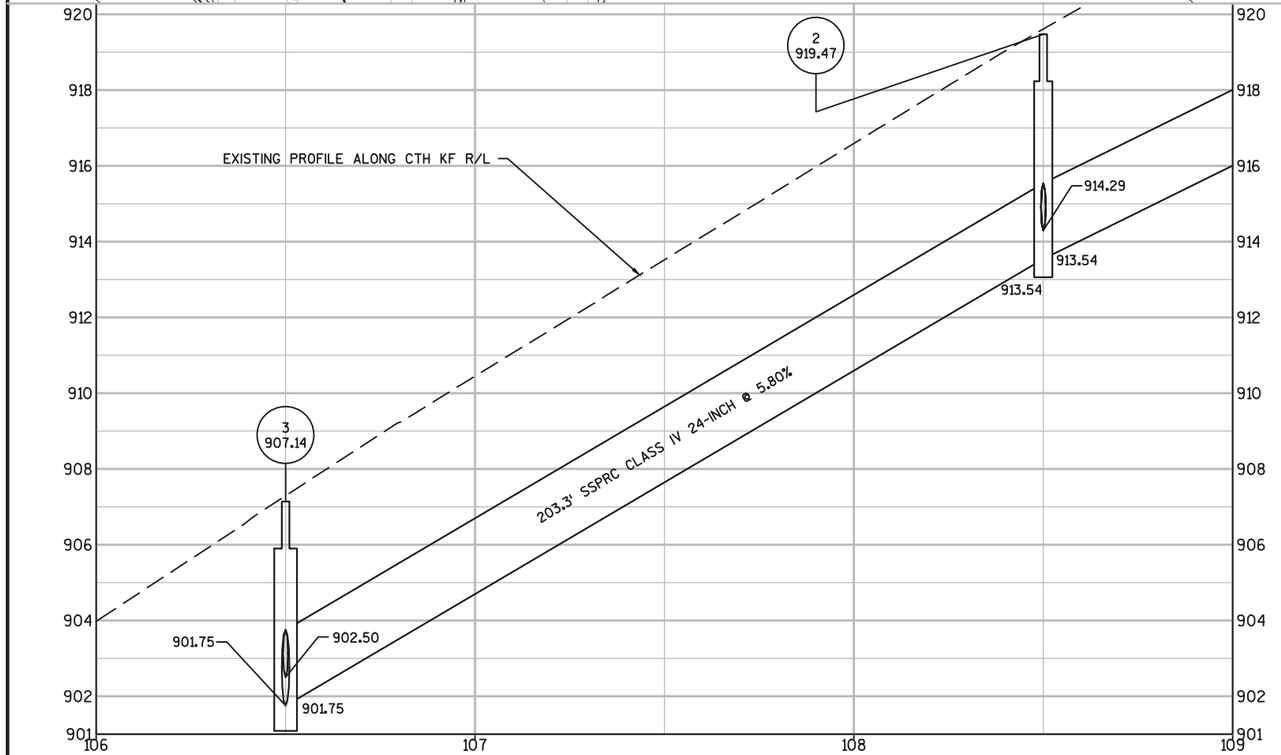


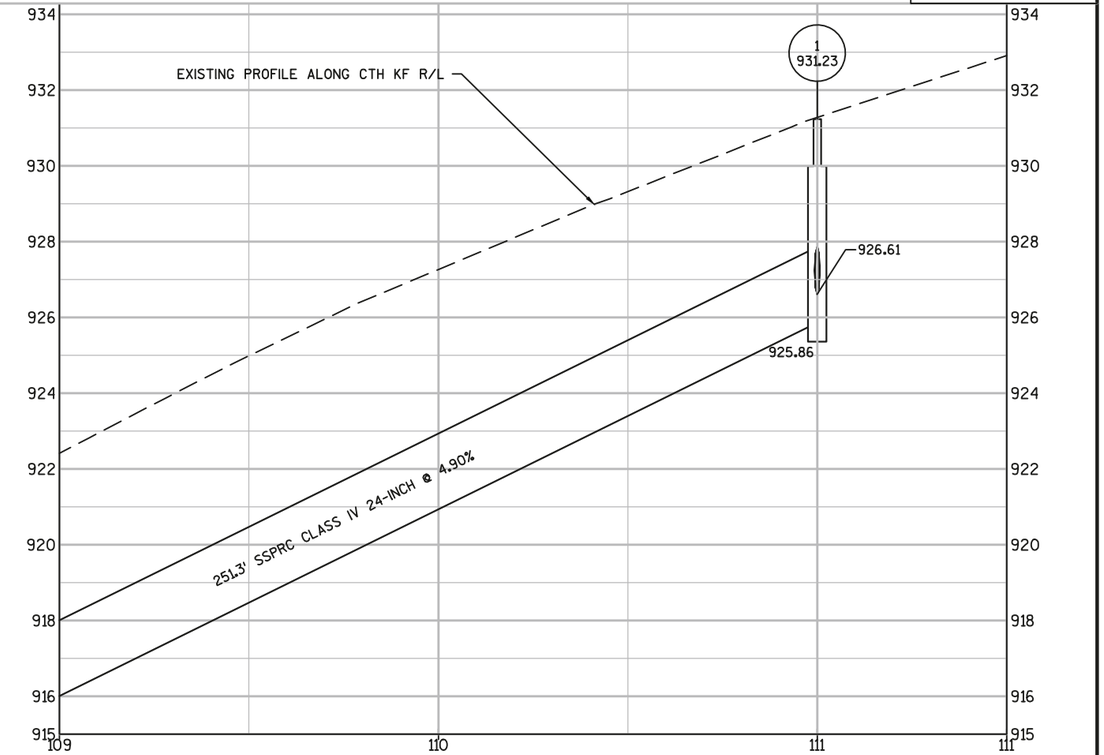
NOTES

RIM ELEVATIONS ARE GIVEN AT THE GUTTER FLANGE FOR TYPE H INLET GRATES OR AT THE CENTER OF STRUCTURE FOR MANHOLES AND FIELD INLETS.

FIELD VERIFY ALL PIPE AND STRUCTURE SIZES, LOCATIONS, AND ELEVATIONS PRIOR TO ORDERING MATERIALS.

SHEET 2 OF 5





PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	STORM SEWER	SHEET 22 E

2

6B STA 57+50.0, 32.9' LT
CATCH BASINS 2x3-H

6A STA 57+60.0, 33.7' LT
INLETS 2x3-H

4 STA 106+50.0, 26.9' LT
CATCH BASINS 5-H

STA 108+50.0, 24.4' LT
INLETS 2x3-H 2A

STA 111+00.0, 28.9' LT
INLETS MEDIAN 1G-MS 1A

SLOPE INTERCEPT

TLE

PROP R/W

EXIST R/W

STA 111+00.0, 19.0' RT
MANHOLES 4-J 1

STA 57+50.0, 14.3' LT
MANHOLES 5-J 6

6C STA 57+50.0, 36.1' RT
APRON ENDWALLS FOR CPRC 24-INCH

CTH KF

5 STA 105+81.7, 20.5' LT
MANHOLES 5-J

STA 111+00.0, 32.2' RT
INLETS MEDIAN 1G-MS 1B

2 STA 108+50.0, 22.0' RT
MANHOLES 4-J

2B STA 108+50.0, 30.3' RT
INLETS 2x3-H

3 STA 106+50.0, 23.0' RT
MANHOLES 5-J

3A STA 106+50.0, 34.4' RT
INLETS 2x3-H

SLOPE INTERCEPT

STORM TRUNKLINE ON EAST SIDE OF CTH KF
(WITHIN PAV'T WIDENING AREA)

105+00 106+00 107+00 108+00 109+00 110+00 111+00 58+00 59+00

24" 15"

NOTES

RIM ELEVATIONS ARE GIVEN AT THE GUTTER FLANGE FOR TYPE H INLET GRATES OR AT THE CENTER OF STRUCTURE FOR MANHOLES AND FIELD INLETS.

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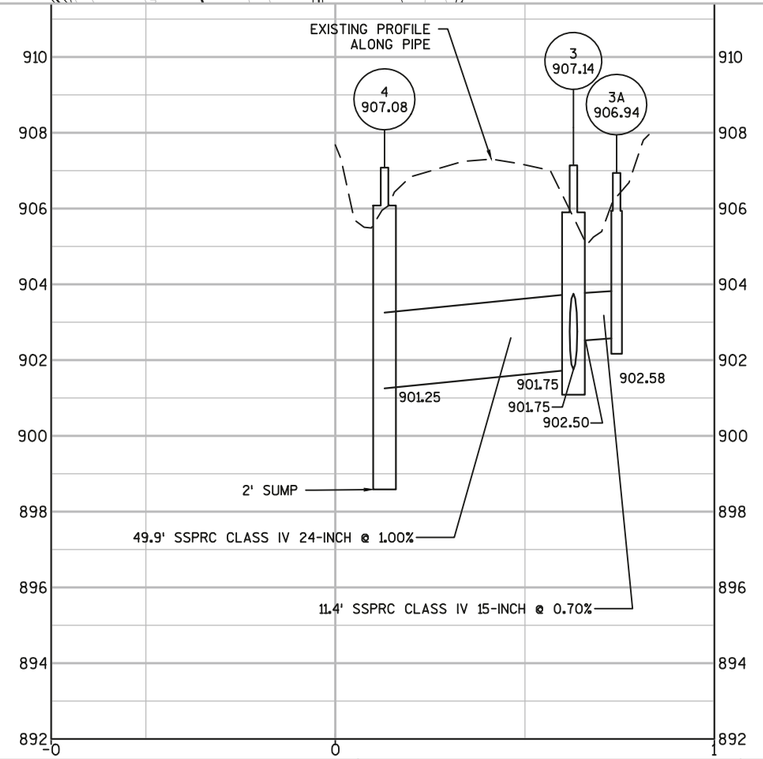
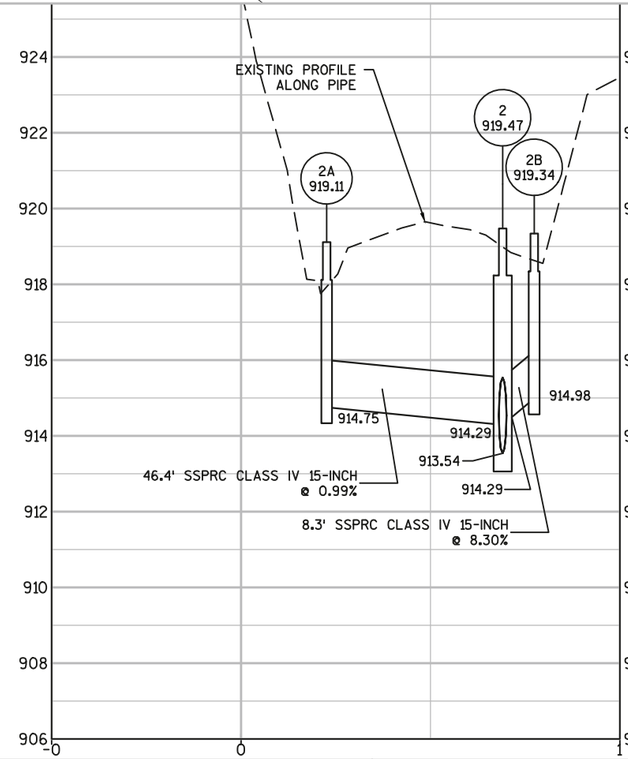
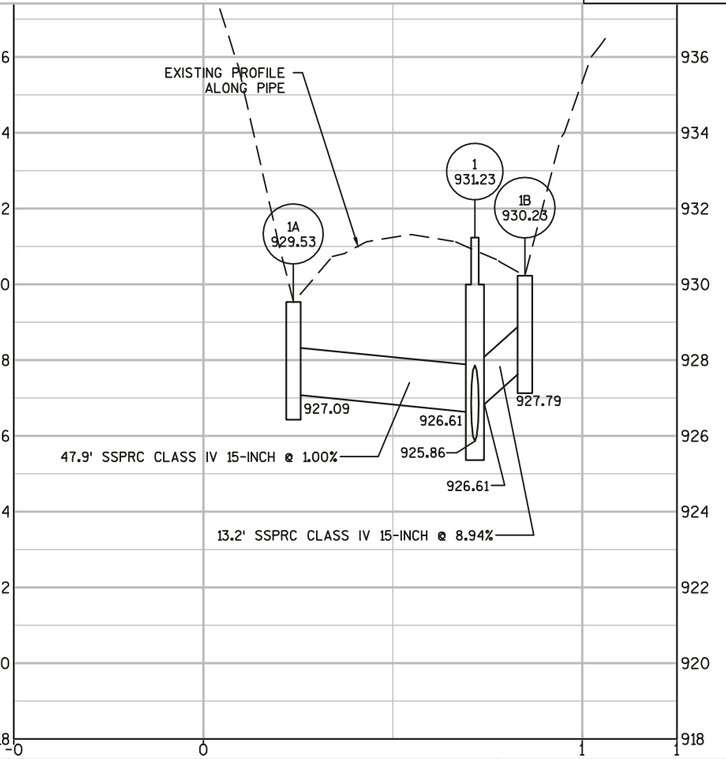
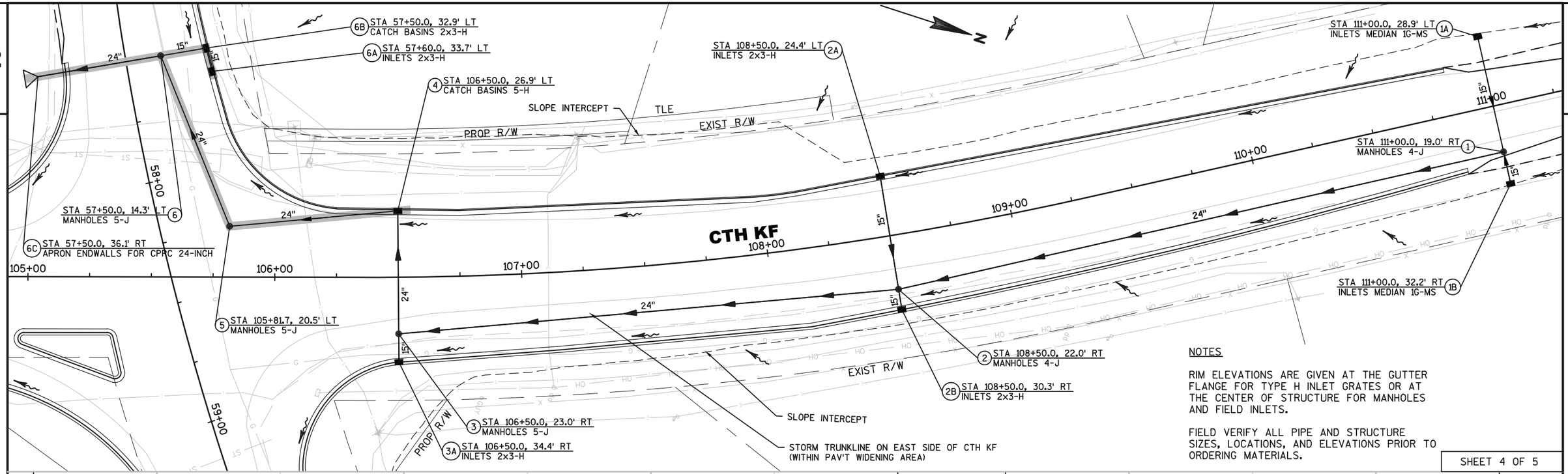






PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	STORM SEWER	SHEET 23	E

2



NOTES

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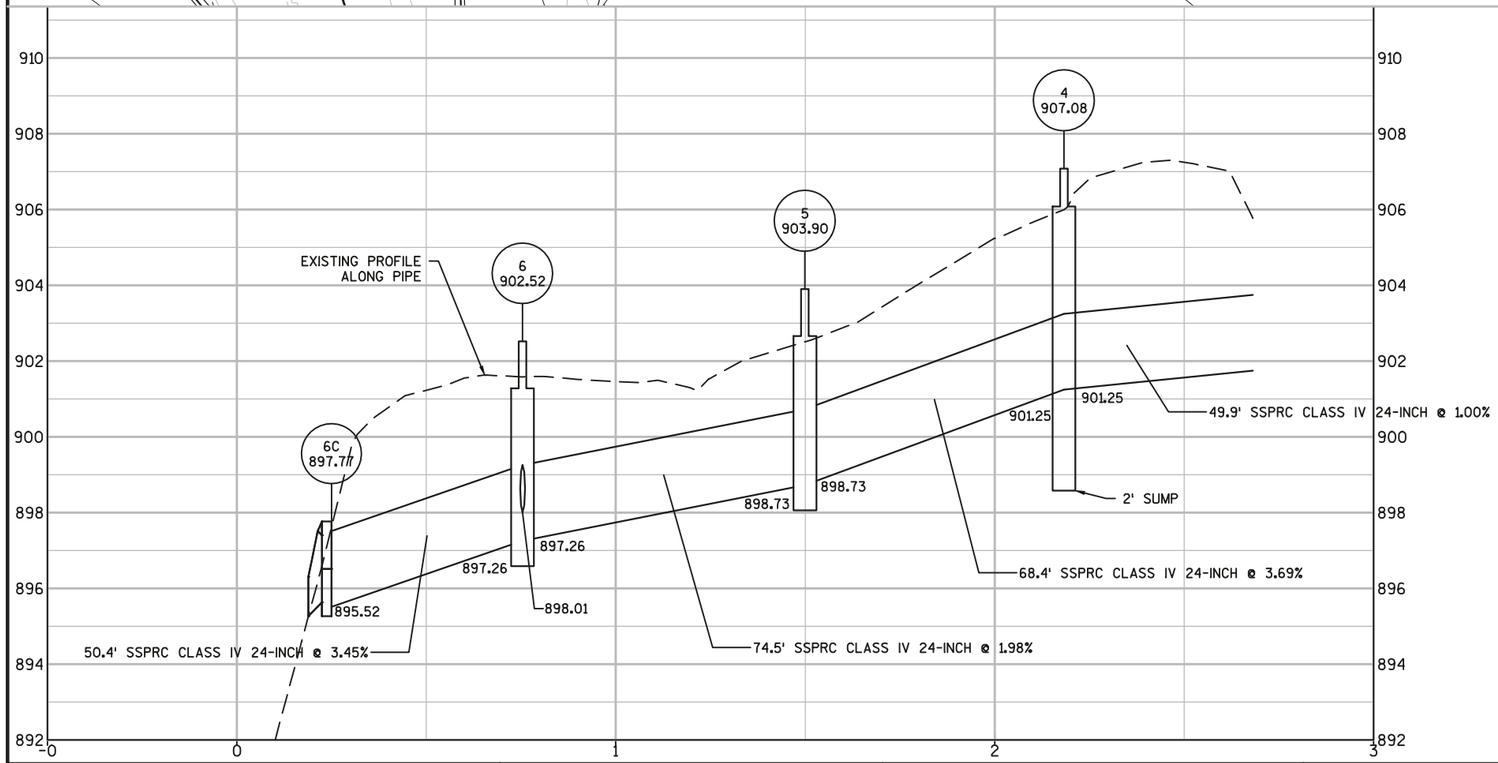
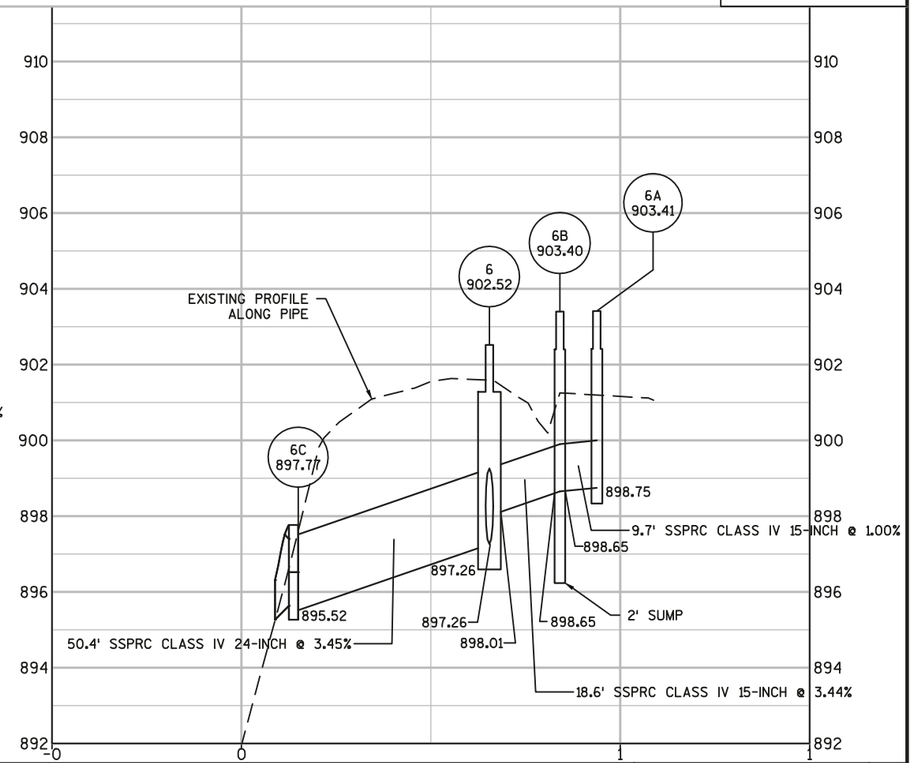
FIELD VERIFY ALL PIPE AND STRUCTURE SIZES, LOCATIONS, AND ELEVATIONS PRIOR TO ORDERING MATERIALS.

SHEET 4 OF 5





PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	STORM SEWER	SHEET 24	E

NOTES

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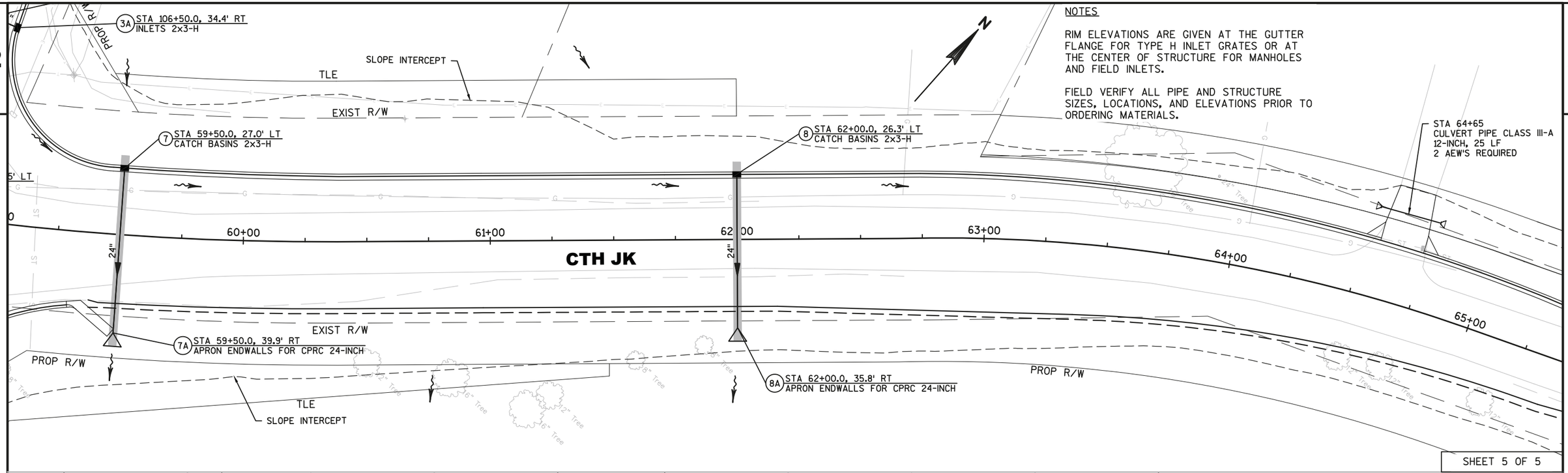
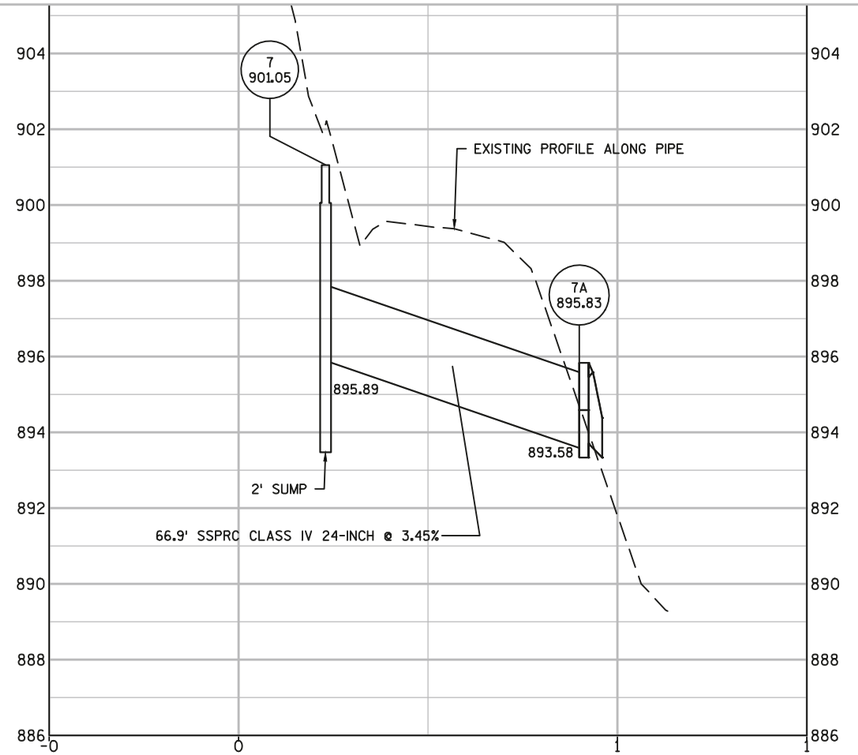
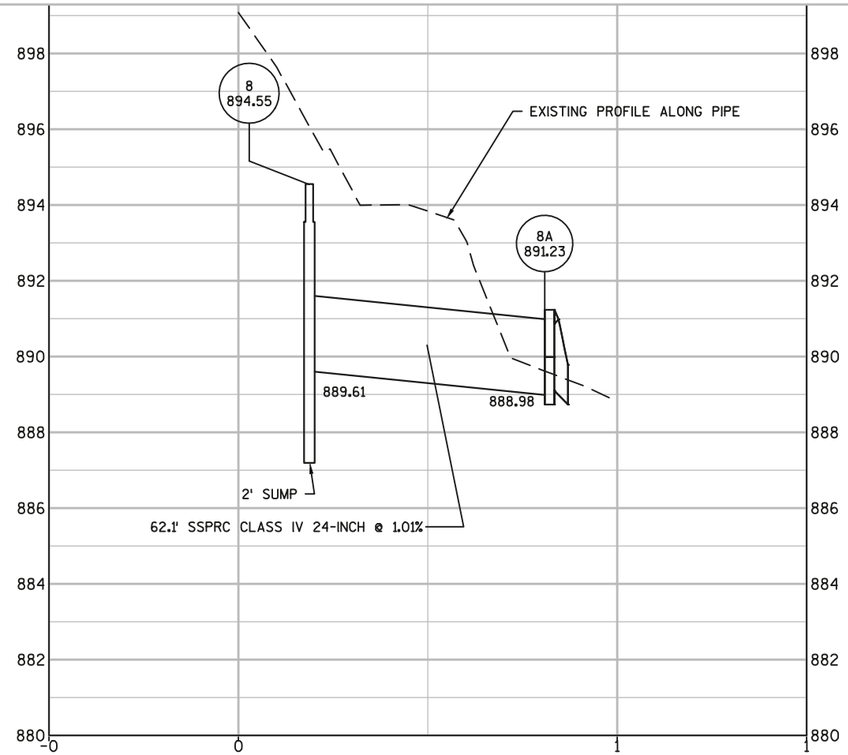
FIELD VERIFY ALL PIPE AND STRUCTURE SIZES, LOCATIONS, AND ELEVATIONS PRIOR TO ORDERING MATERIALS.



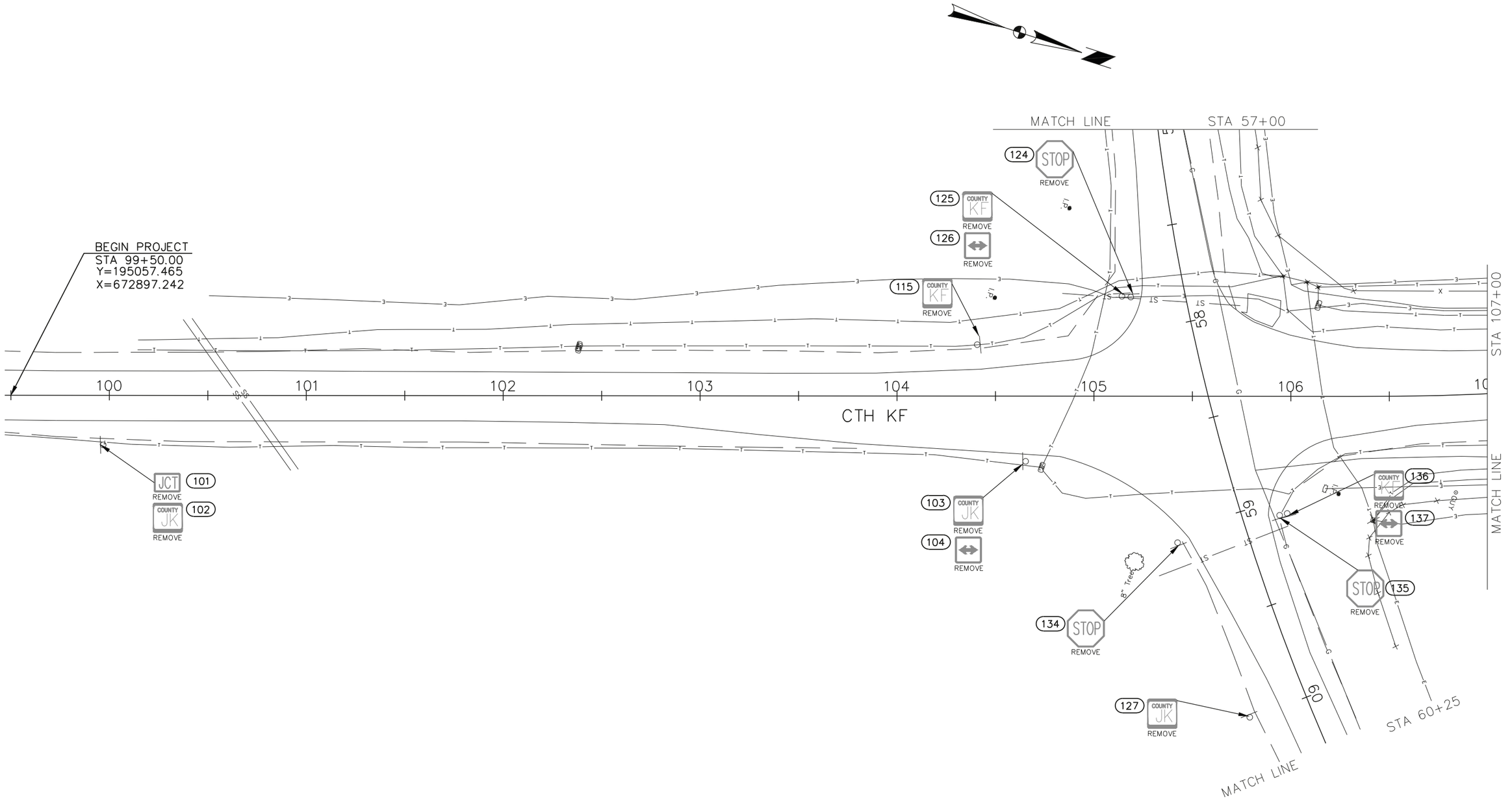
SHEET 5 OF 5





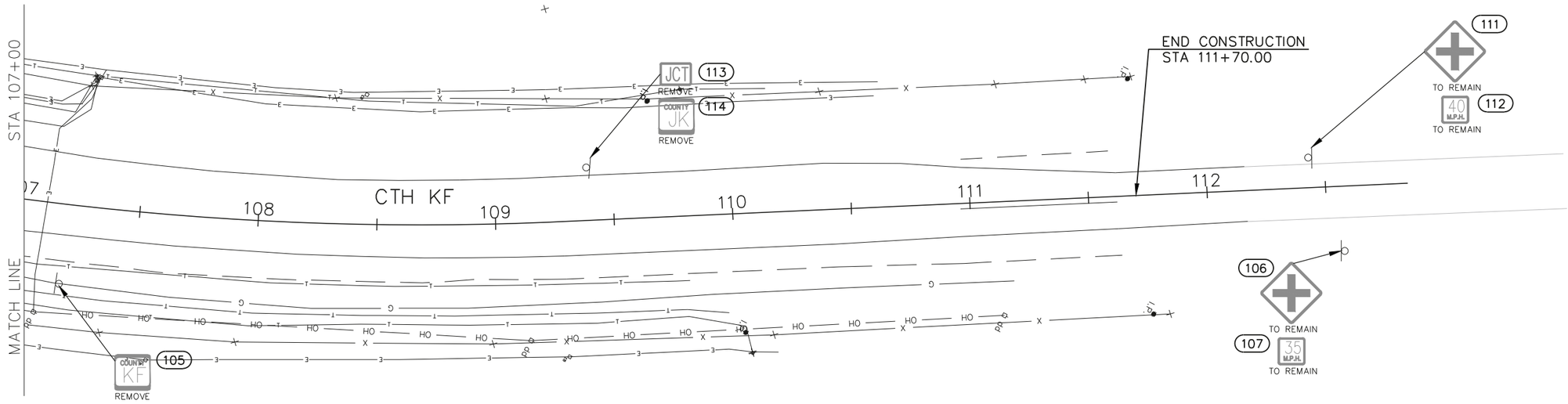
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	STORM SEWER	SHEET 25	E

2



NOTE: ALL SIGNS AND POSTS TO BE RETURNED TO THE WAUKESHA COUNTY DEPT OF PUBLIC WORKS.

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	SIGN REMOVAL	SHEET 26	E



LEGEND

SIGN

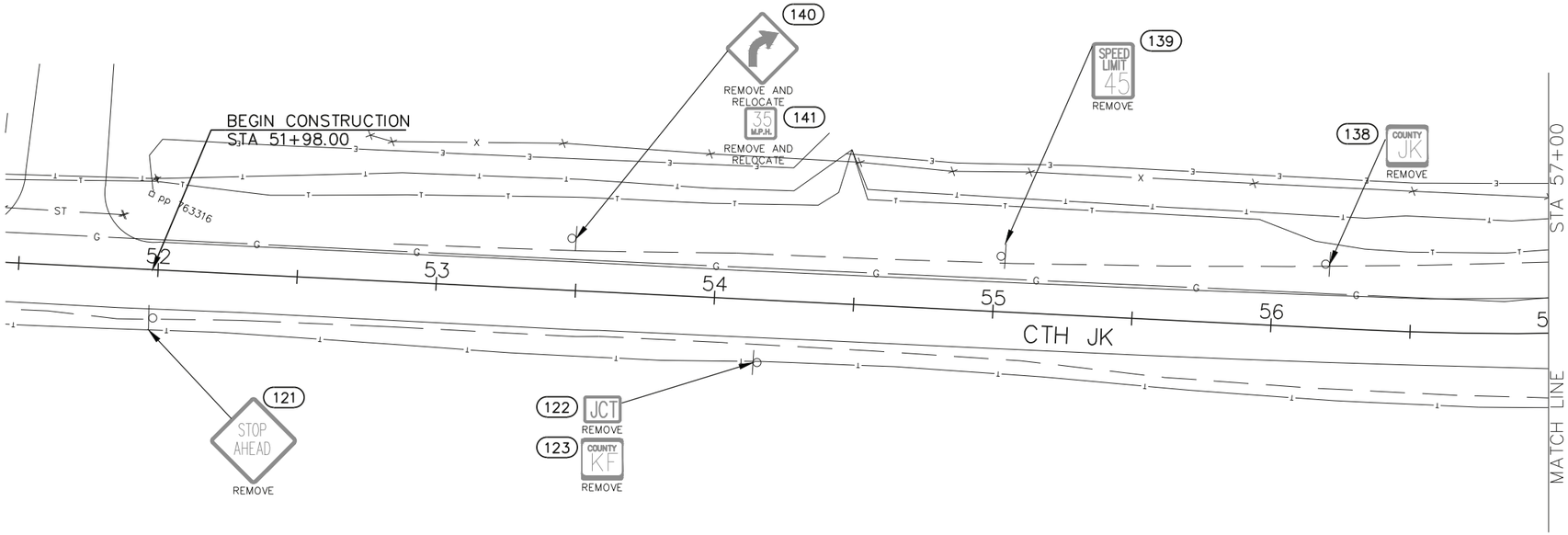
(101) SIGN NUMBER

NOTE: ALL SIGNS AND POSTS TO BE RETURNED TO THE WAUKESHA COUNTY DEPT OF PUBLIC WORKS.

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	SIGN REMOVAL	SHEET 27	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\023151-RS.DWG PLOT DATE : 10/27/2017 6:50 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

2



LEGEND

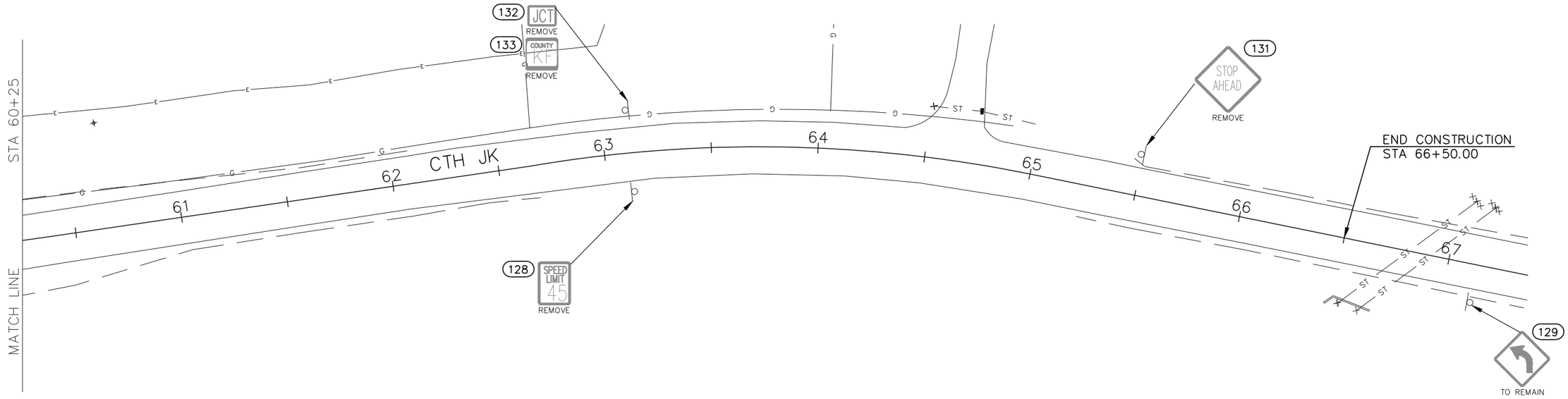
SIGN

(101) SIGN NUMBER

NOTE: ALL SIGNS AND POSTS TO BE RETURNED TO THE WAUKESHA COUNTY DEPT OF PUBLIC WORKS.

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	SIGN REMOVAL	SHEET 28	E

2



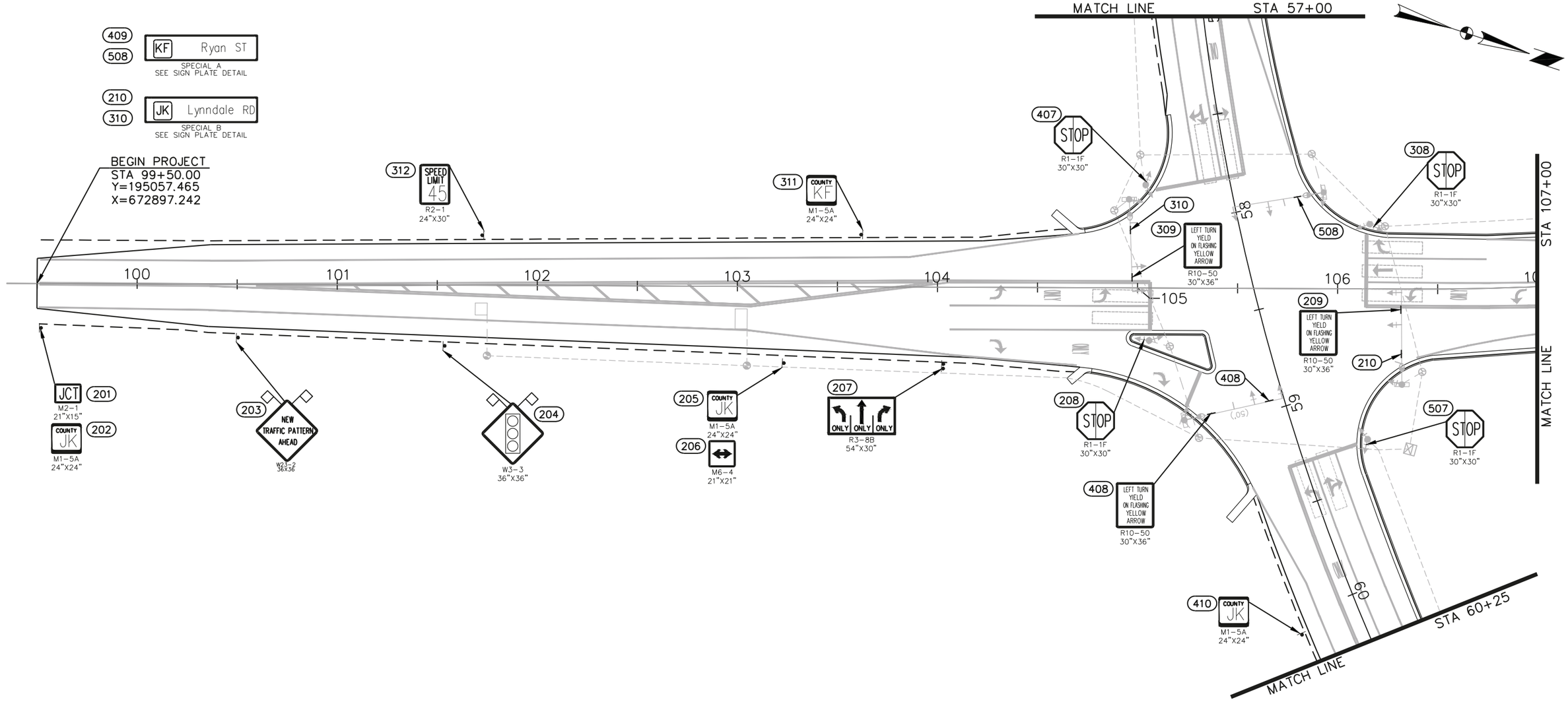
NOTE: ALL SIGNS AND POSTS TO BE RETURNED TO THE WAUKESHA COUNTY DEPT OF PUBLIC WORKS.

LEGEND

—○— SIGN

(101) SIGN NUMBER

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	SIGN REMOVAL	SHEET 29	E



LEGEND

- TYPE II SIGN(S) MOUNTED ON 1.75"X1.74" TUBULAR STEEL POST(S) WITH POST ANCHOR BASE
- (204) SIGN NUMBER
- 18"X18" ORANGE FLAGS

NOTES

THE ERECTION AND PLACEMENT OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

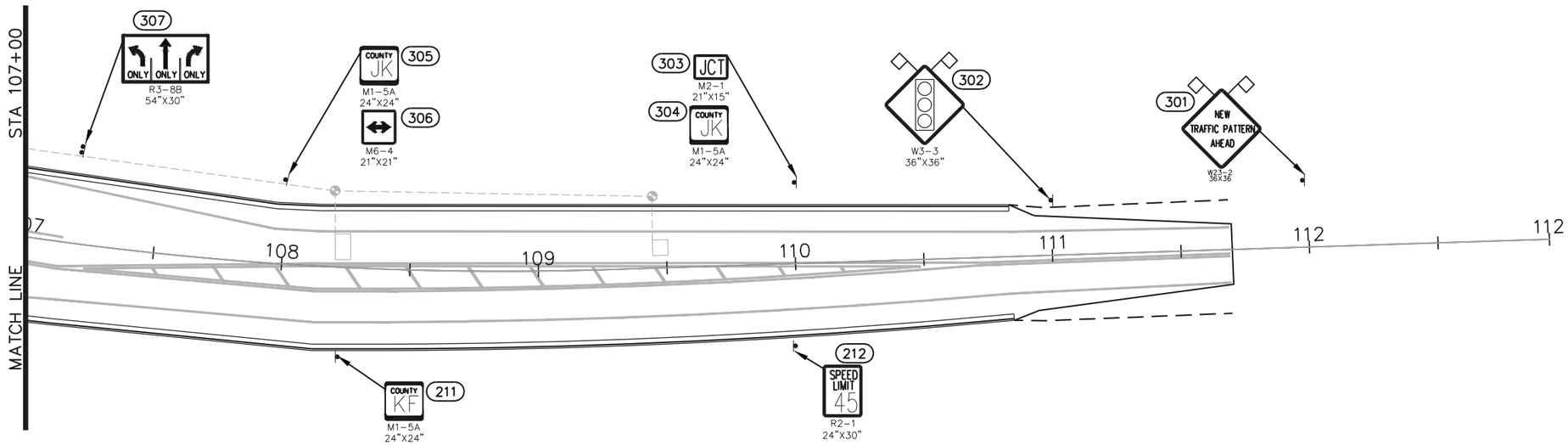
ALL SIGNS SHALL BE DIAMOND GRADE SHEETING.

FINAL LOCATION OF SIGNS SHALL BE DETERMINED BY THE FIELD ENGINEER AND ADJUSTED TO AVOID UTILITY CONFLICTS.

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 30	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\023201-PS.DWG PLOT DATE : 10/2/2017 8:08 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

2



LEGEND

- TYPE II SIGN(S) MOUNTED ON 1.75"X1.74" TUBULAR STEEL POST(S) WITH POST ANCHOR BASE
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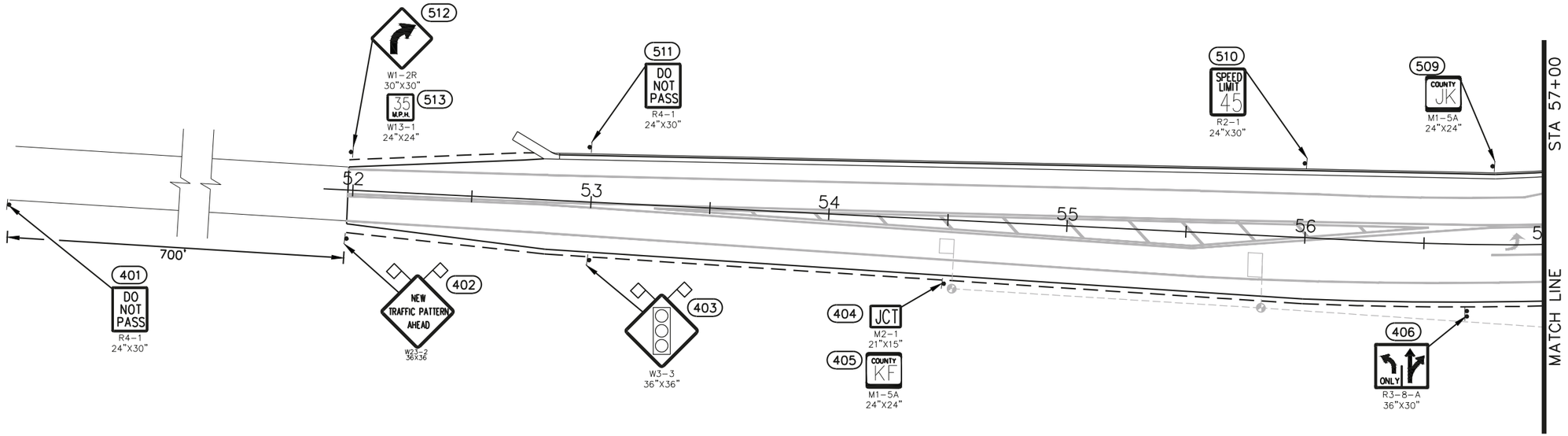

2

LEGEND

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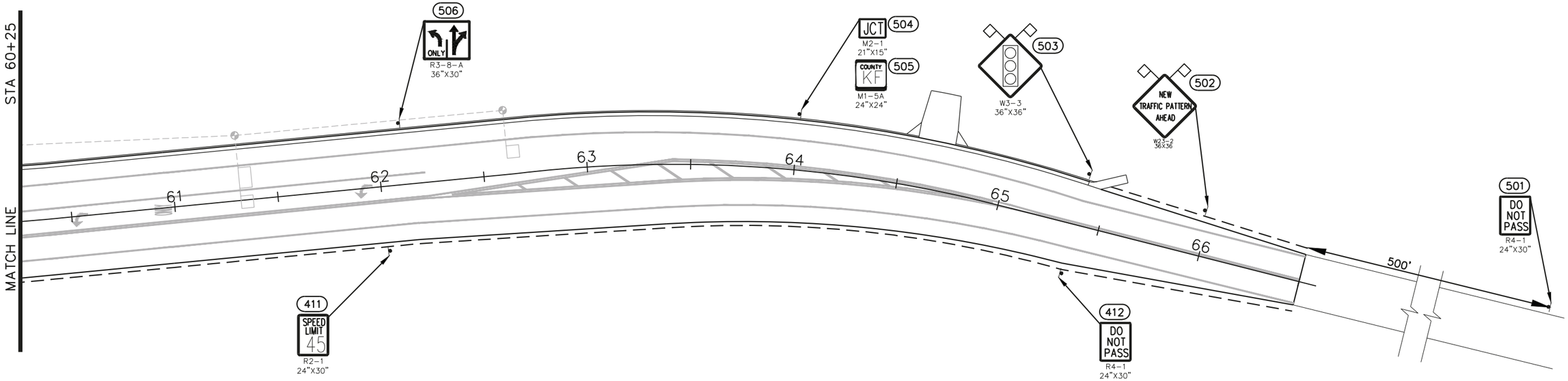
FINAL LOCATION OF SIGNS SHALL BE DETERMINED BY THE FIELD ENGINEER AND ADJUSTED TO AVOID UTILITY CONFLICTS.

2



LEGEND

- TYPE II SIGN(S) MOUNTED ON 1.75"X1.74" TUBULAR STEEL POST(S) WITH POST ANCHOR BASE
- (204) SIGN NUMBER
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FINAL LOCATION OF SIGNS SHALL BE DETERMINED BY THE FIELD ENGINEER AND ADJUSTED TO AVOID UTILITY CONFLICTS.

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 33	E

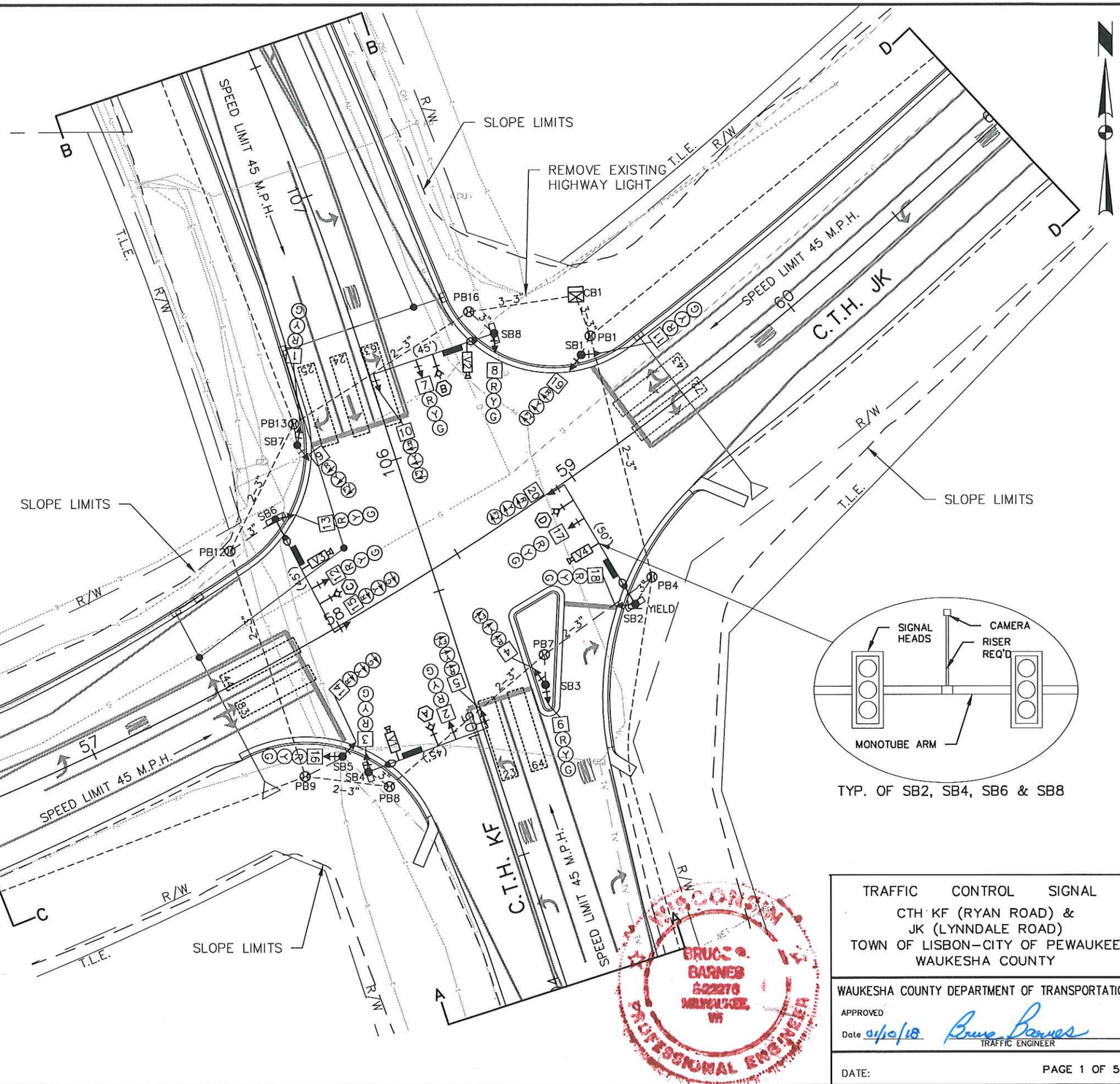
2

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2" (LOOP DETECTOR CONDUIT 1"); UNLESS OTHERWISE NOTED
- SIGNAL HEAD, STANDARD, PEDESTAL BASE
- SIGNAL HEAD, WITH BACKPLATE, STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 35'–55' ARM
- LED C LUMINAIRE, 10' ARM, MOUNTABLE POLE
- PULL BOX, 24" X 42"
- PULL BOX, 24" X 36"
- VIDEO DETECTION AREA
- DETECTOR LOOP
- VIDEO DETECTION CAMERA
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- OVERHEAD STREET NAME SIGN (SEE SIGNING PLANS & DETAILS)

- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- FLASHING YELLOW ARROW
- GREEN ARROW

NOTE: ALL LENSES ARE 12–INCHES
GRAYSHADE REPRESENTS EXISTING



TYP. OF SB2, SB4, SB6 & SB8

CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN.
2. ALL SIGNAL EQUIPMENT SHALL BE INSTALLED WITH A 2–FOOT MINIMUM, 3–FOOT DESIRABLE CLEARANCE TO THE FACE OF THE CURB UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
3. THE CONDUIT EMBEDDED IN A TYPE 10 OR TYPE 13 CONCRETE BASE SHALL BE 3" CONDUIT.
4. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED BEFORE PLACING SIGNAL CABLE INTO THE SYSTEM.
5. BOND ALL METAL PULL BOXES AND ASSOCIATED COVERS THAT CONTAIN CONDUCTORS CARRYING 50 VOLTS OR MORE.
6. TERMINATION OF BONDING JUMPERS IN PULL BOXES TO BE LUG AND BOLT CONNECTIONS AND ARE TO BE CAULKED (SILICONE) AFTER INSTALLATION.
7. ALL CONDUIT RUNS SHALL HAVE EXTRA PULL WIRE INSTALLED TO PULL FUTURE CABLE. THE COST SHALL BE INCIDENTAL TO TRAFFIC SIGNAL CABLE NO. 14.
8. ALL LUMNAIRES SHOWN ARE LED C, MOUNTED ON 10–FOOT LUMINARE ARMS.
9. SEE SIGNING PLAN FOR ADDITIONAL SIGNING DETAILS AND REQUIREMENTS.
10. VIDEO ZONES SHOWN ARE APPROXIMATE.

BRUCE A. BARNES
E-22276
MILWAUKEE, WI
WISCONSIN
PROFESSIONAL ENGINEER

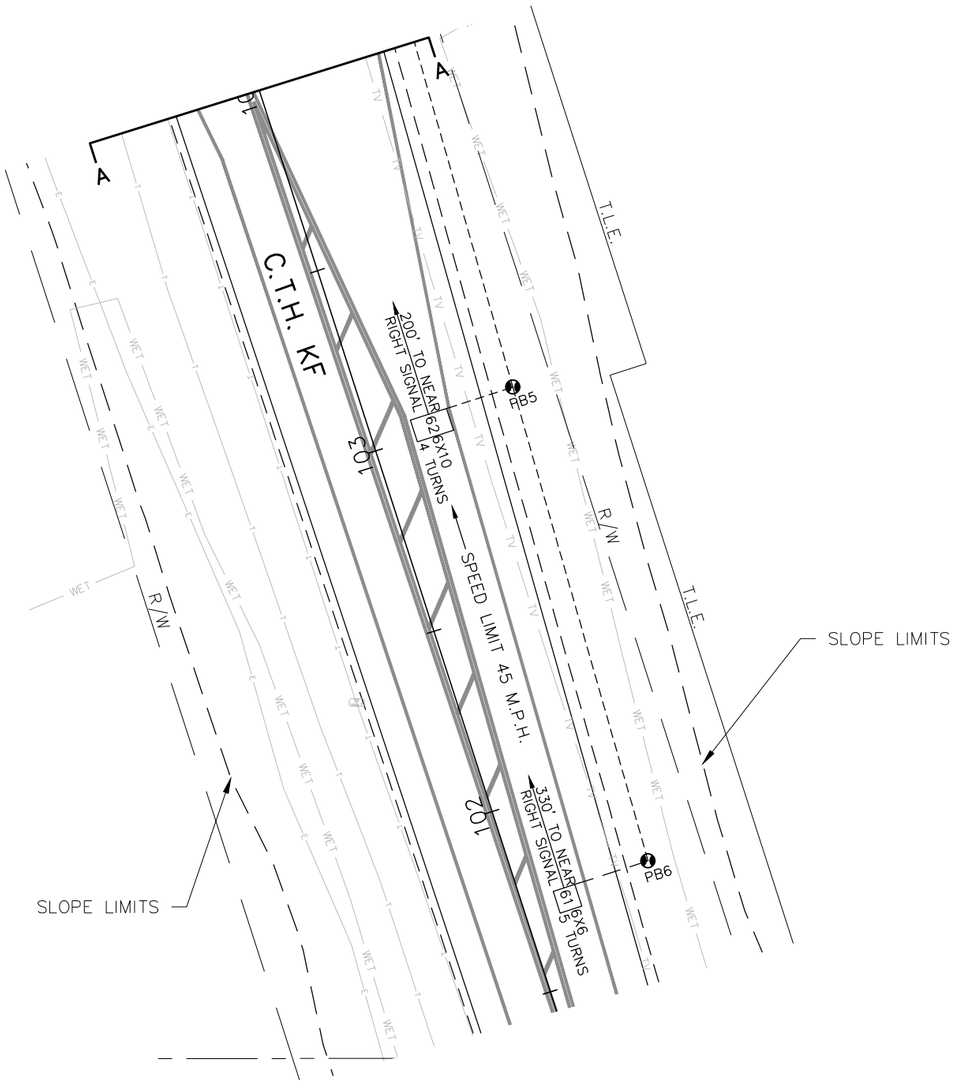
TRAFFIC CONTROL SIGNAL
CTH KF (RYAN ROAD) &
JK (LYNNDALE ROAD)
TOWN OF LISBON–CITY OF PEWAUKEE
WAUKESHA COUNTY

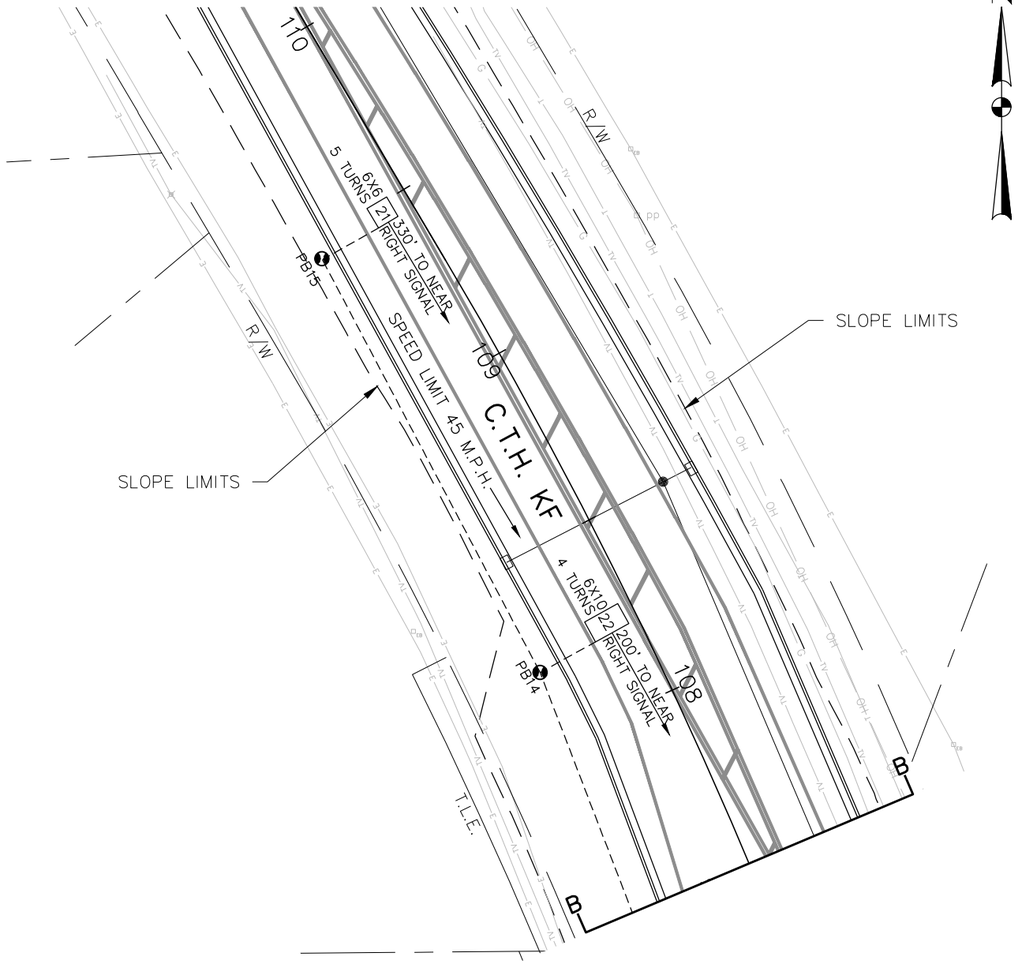
WAUKESHA COUNTY DEPARTMENT OF TRANSPORTATION
APPROVED
Date 01/10/18 Bruce Barnes TRAFFIC ENGINEER

DATE: PAGE 1 OF 5

PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 34	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762–00–00\ACAD\SHEETSPLAN\024201–SP.DWG PLOT DATE : 1/10/2018 7:04 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'





TRAFFIC CONTROL SIGNAL

CTH KF (RYAN ROAD) &
JK (LYNNDALE ROAD)
TOWN OF LISBON–CITY OF PEWAUKEE
WAUKESHA COUNTY

WAUKESHA COUNTY DEPARTMENT OF TRANSPORTATION

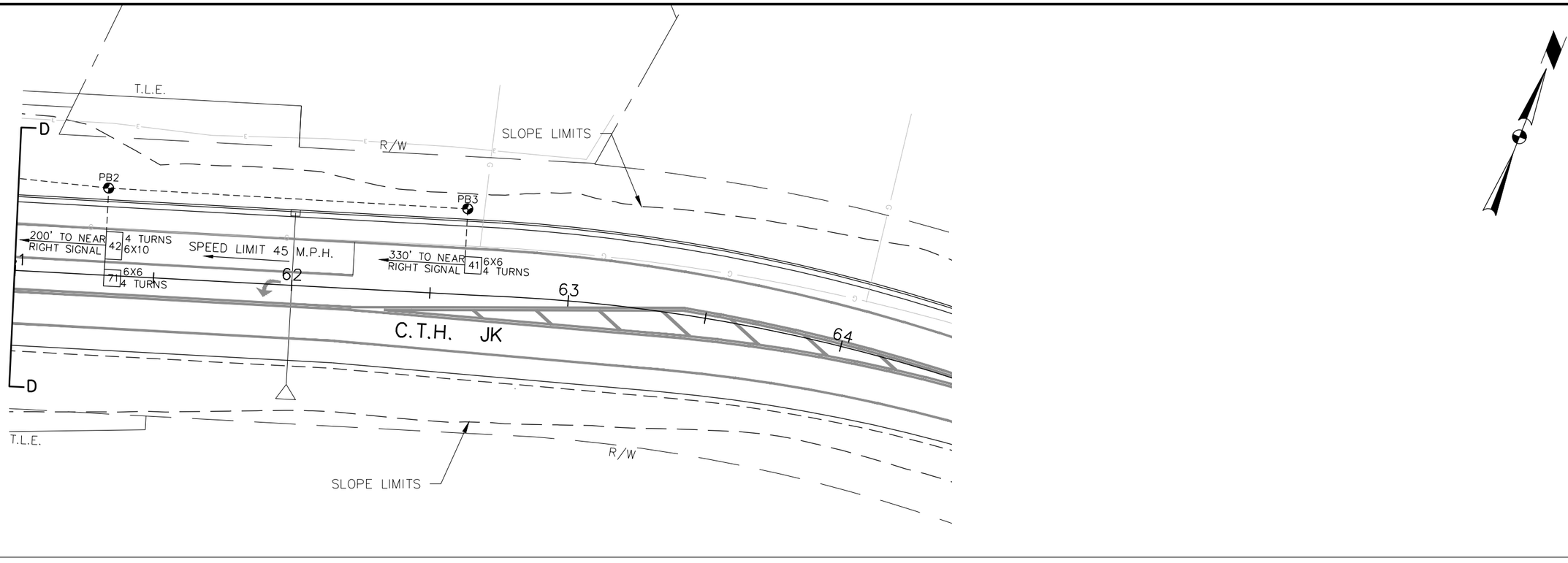
APPROVED

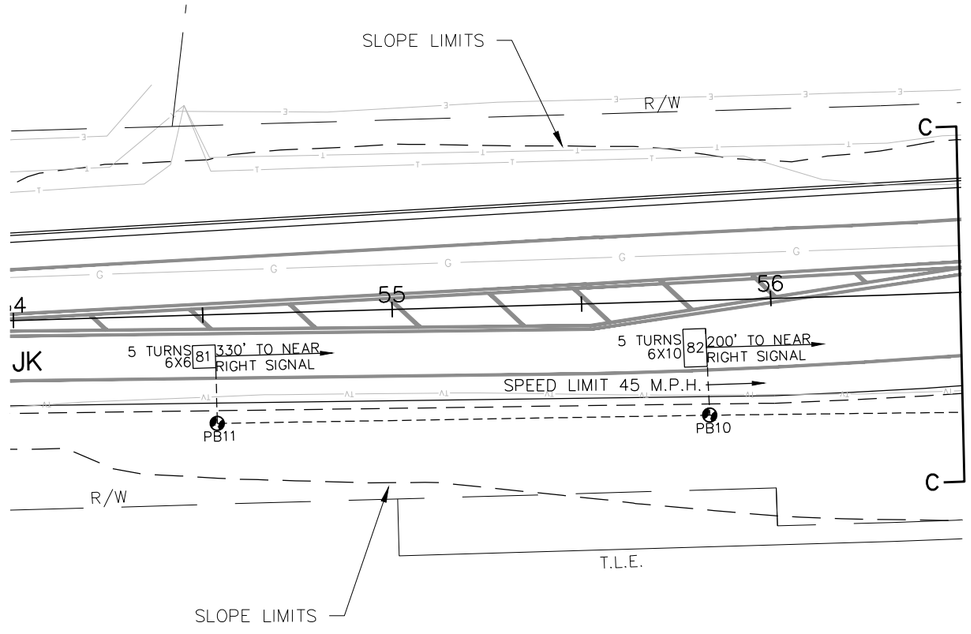
Date _____ _____
TRAFFIC ENGINEER

DATE:

PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 35	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762–00–00\ACAD\SHEETSPLAN\024201–SP.DWG PLOT DATE : 1/10/2018 7:04 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'





TRAFFIC CONTROL SIGNAL

CTH KF (RYAN ROAD) &
JK (LYNNDALE ROAD)
TOWN OF LISBON–CITY OF PEWAUKEE
WAUKESHA COUNTY

WAUKESHA COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED

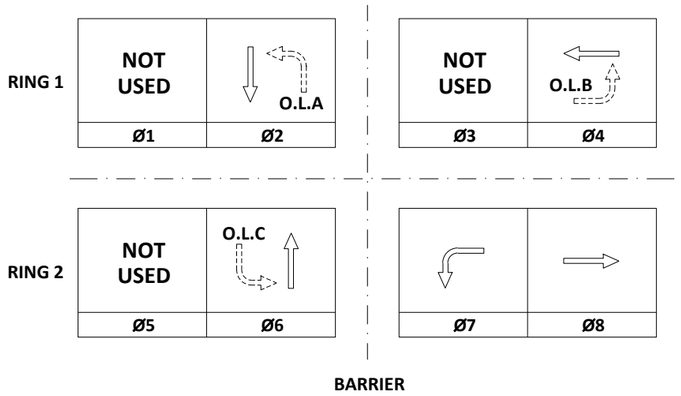
Date _____ _____
TRAFFIC ENGINEER

DATE: PAGE 3 OF 5

PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 36	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762–00–00\ACAD\SHEETSPLAN\024201–SP.DWG PLOT DATE : 1/10/2018 7:04 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'

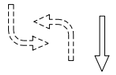
	HEAD NUMBER	FLASH
Ø1	-	-
Ø2	1,2,3	R
Ø3	-	-
Ø4	11,12,13	R
Ø5	-	-
Ø6	6,7,8	R
Ø7	14,15	R
Ø8	16,17,18	R
Ø2P	-	-
Ø4P	-	-
Ø6P	-	-
Ø8P	-	-
OLA	9,10	R
OLB	19,20	R
OLC	4,5	R
OLD	-	-



CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W/	PHASE RECALL	PHASE ACTIVE
1				
2	X	6	MIN	X
3				
4		8		X
5				
6	X	2	MIN	X
7		4		X
8		4		X

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTION	A	B	C	D
MOVEMENT				
PHASE	2 + 6	6 + 2	4 + 7	8 + 4

AFTER PREEMPTION SEQUENCE 2+6 OR 6+2, CONTROLLER SHALL RETURN TO PHASES 2+6.

AFTER PREEMPTION SEQUENCE 4+7 OR 8+4 CONTROLLER SHALL RETURN TO PHASES 4+8

GENERAL NOTES:

1. ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED
2. WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL
3. IF ANY OPPOSING THRU PHASES ARE TIMING CONCURRENTLY, THEY SHALL TERMINATE TOGETHER DUE TO PERMISSIVE LEFT TURN CONFLICT.

TYPE OF INTERCONNECT COMMUNICATION

NONE	X
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	

TYPE OF COORDINATION

NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO:	S-
SIGNAL SYSTEM NO:	SS-

TYPE OF LIGHTING

BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE LIGHTING CABINET	

TYPE OF PRE-EMPT

NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	
TOMAR	X
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

	(LOOP SENSORS)								(VIDEO SENSORS)								
DETECTOR LOGIC	3	1	7	5	11	9	15	13	19	17	23	21	27	25	31	29	DETECTOR LOGIC
PLAN LOOP DETECTOR*(S)	21	41	61	71	81				23	25	43	63	72	83			PLAN LOOP DETECTOR*(S)
ASSIGNED PHASE	2	4	6	7	8				2-A	2	4	6-C	7	8			ASSIGNED PHASE
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OPERATION MODE
SWITCH																	SWITCH
EXTEND	X	X	X	X	X				X	X	X	X	X	X			EXTEND
DELAY										X							DELAY
DETECTOR LOGIC	4	2	8	6	12	10	16	14	20	18	24	22	28	26	32	30	DETECTOR LOGIC
PLAN LOOP DETECTOR*(S)	22	42	62		82				24		44	64					PLAN LOOP DETECTOR*(S)
ASSIGNED PHASE	2	4	6		8				2		4-B	6					ASSIGNED PHASE
OPERATION MODE	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	VEH	OPERATION MODE
SWITCH																	SWITCH
EXTEND	X	X	X		X				X		X	X					EXTEND
DELAY																	DELAY

CTH KF (RYAN ROAD) &
JK (LYNNDALE ROAD)
TOWN OF LISBON–CITY OF PEWAUKEE
WAUKESHA COUNTY

SIGNAL NO: CABINET TYPE:

CONTROLLER TYPE:

DATE: PAGE 4 OF 5

PROJECT ID:	2762-00-70
INTERSECTION:	CTH KF & CTH JK

SIGNAL WIRE COLOR CODING	BLK-BLACK	RED-RED	GRN-GREEN
	WHT-WHITE	BLU-BLUE	ORG-ORANGE

CB1 TO	AWG 14 # OF CONDUCTORS	HEAD NO	SIGNAL INDICATION WIRE COLOR									
			RED	YELLOW	GREEN	<RED>	<YELLOW>	<GREEN>	FLASHING <YELLOW>	D/WALK	WALK	PED BUTTON
SB1	12											
		11	RED	ORG	GRN							
		19				RED/BLK	ORG/BLK		BLK/WHT			
SB2	12											
		17	RED	ORG	GRN							
		18	RED	ORG	GRN							
		20				RED/BLK	ORG/BLK		BLK/WHT			
SB3	12											
		1	RED	ORG	GRN							
		9				RED/BLK	ORG/BLK		BLK/WHT			
SB4	12											
		7	RED	ORD	GRN							
		8	RED	ORG	GRN							
		10				RED/BLK	ORG/BLK		BLK/WHT			
SB5	12											
		14				RED/BLK	ORG/BLK	GRN/BLK				
		16	RED	ORG	GRN							
SB6	12											
		12	RED	ORG	GRN							
		13	RED	ORG	GRN							
		15				RED/BLK	ORG/BLK	GRN/BLK				
SB7	12											
		4				RED/BLK	ORG/BLK		BLK/WHT			
		6	RED	ORG	GRN							
SB8	12											
		2	RED	ORG	GRN							
		3	RED	ORG	GRN							
		5				RED/BLK	ORG/BLK		BLK/WHT			

NOTES: *USE WHITE CONDUCTOR IN THE SIGNAL CABLE AS THE GROUNDED CONDUCTOR FOR ALL TRAFFIC SIGNAL INDICATIONS.
*ENSURE THE GROUNDED CONDUCTOR IN THE FEEDING CABLE AND THE POLE CABLES ARE BOTH 18" LONGER THAN THE UNGROUNDED CONDUCTORS.
*RECONNECT THE GROUNDED CONDUCTORS WHENEVER THE CIRCUIT HAS BEEN INTERRUPTED TO ENSURE THE GROUNDED CIRCUIT IS COMPLETE.

EQUIPMENT GROUNDING CONDUCTOR 10 AWG GRN XLP	
FROM	TO
CB1	SB1
SB1	SB2
SB2	SB3
SB3	SB4
SB4	SB5
SB5	SB6
SB6	SB7
SB7	SB8
SB8	CB1

PULL BOX BONDING JUMPER 10 AWG GRN XLP	
FROM	TO
PB1	SB1
PB4	SB2
PB7	SB3
PB8	SB4
PB9	SB5
PB12	SB6
PB13	SB7
PB16	SB8

LIGHTING UF 10 AWG W/GROUND	
FROM	TO
CB1	SB2
SB2	SB4
CB1	SB8
SB8	SB6

VIDEO DETECTION CABLE	
FROM	TO
CB1	V1 (SB8)
CB1	V2 (SB4)
CB1	V3 (SB6)
CB1	V4 (SB2)

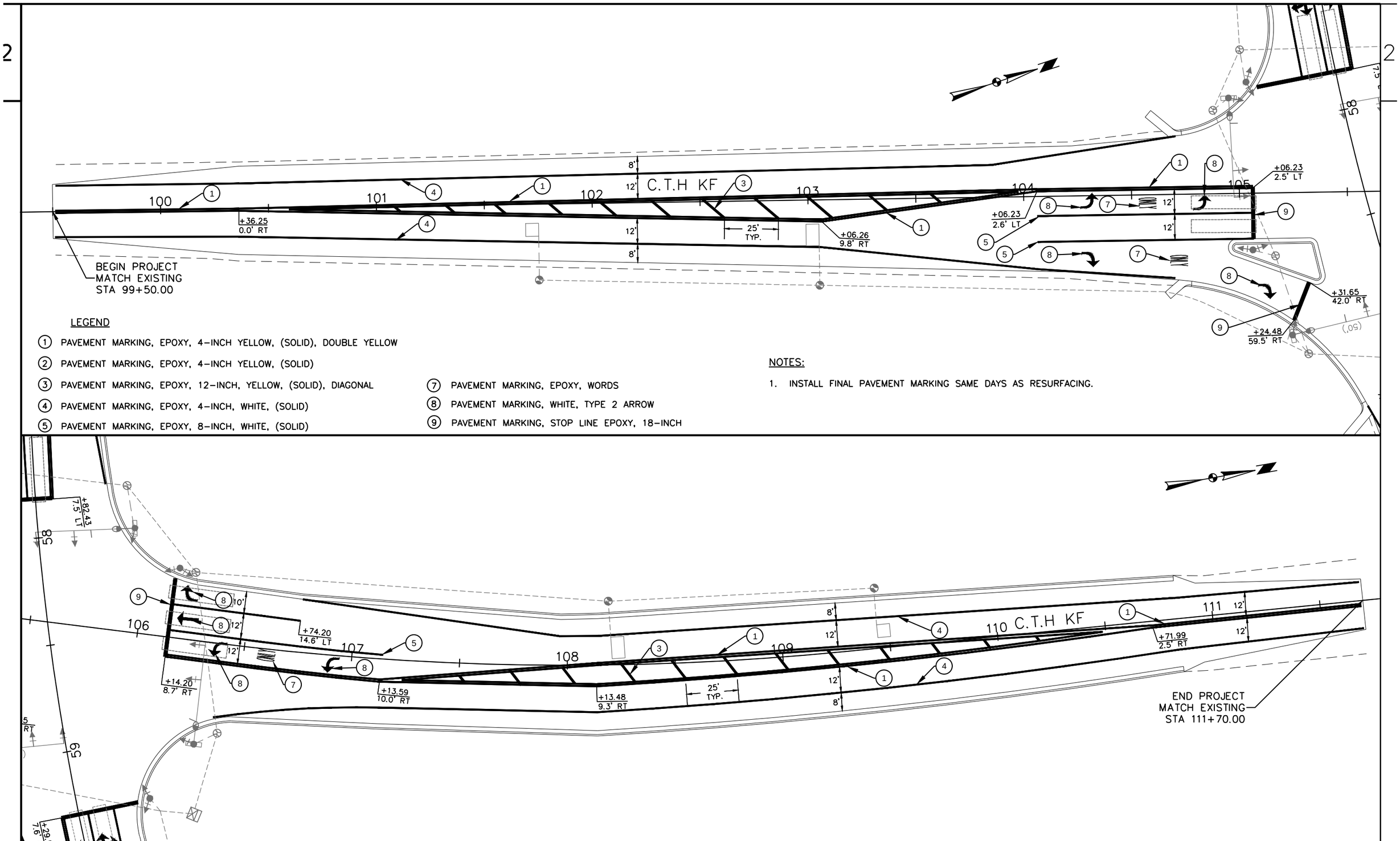
EMERGENCY VEHICLE PREEMPTION	
FROM	TO
CB1	HEAD A (SB4)
CB1	HEAD B (SB8)
CB1	HEAD C (SB6)
CB1	HEAD D (SB2)

CTH KF (RYAN ROAD) &
JK (LYNNDALE ROAD)
TOWN OF LISBON–CITY OF PEWAUKEE
WAUKESHA COUNTY

SIGNAL NO:

COUNTY CONTACT: BRUCE BARNES
DESIGNED BY:
REVISED BY:

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762–00–00\ACAD\SHEETSPLAN\024201–SP.DWG PLOT DATE : 1/10/2018 7:04 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



LEGEND

1. PAVEMENT MARKING, EPOXY, 4-INCH YELLOW, (SOLID), DOUBLE YELLOW
2. PAVEMENT MARKING, EPOXY, 4-INCH YELLOW, (SOLID)
3. PAVEMENT MARKING, EPOXY, 12-INCH, YELLOW, (SOLID), DIAGONAL
4. PAVEMENT MARKING, EPOXY, 4-INCH, WHITE, (SOLID)
5. PAVEMENT MARKING, EPOXY, 8-INCH, WHITE, (SOLID)
7. PAVEMENT MARKING, EPOXY, WORDS
8. PAVEMENT MARKING, WHITE, TYPE 2 ARROW
9. PAVEMENT MARKING, STOP LINE EPOXY, 18-INCH

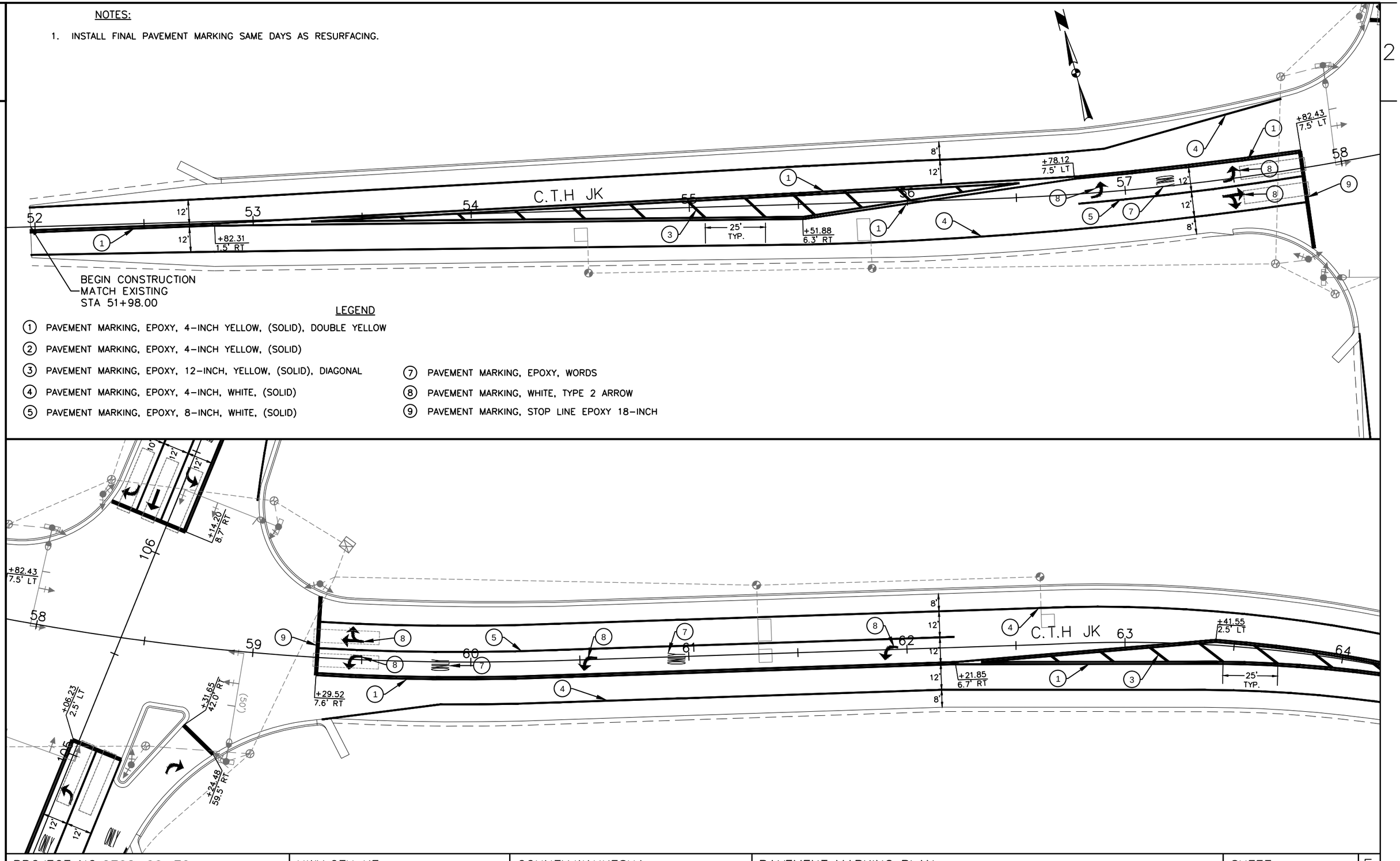
NOTES:

1. INSTALL FINAL PAVEMENT MARKING SAME DAYS AS RESURFACING.

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PAVEMENT MARKING PLAN	SHEET 39	E

NOTES:

1. INSTALL FINAL PAVEMENT MARKING SAME DAYS AS RESURFACING.



LEGEND

1. PAVEMENT MARKING, EPOXY, 4-INCH YELLOW, (SOLID), DOUBLE YELLOW
2. PAVEMENT MARKING, EPOXY, 4-INCH YELLOW, (SOLID)
3. PAVEMENT MARKING, EPOXY, 12-INCH, YELLOW, (SOLID), DIAGONAL
4. PAVEMENT MARKING, EPOXY, 4-INCH, WHITE, (SOLID)
5. PAVEMENT MARKING, EPOXY, 8-INCH, WHITE, (SOLID)
7. PAVEMENT MARKING, EPOXY, WORDS
8. PAVEMENT MARKING, WHITE, TYPE 2 ARROW
9. PAVEMENT MARKING, STOP LINE EPOXY 18-INCH

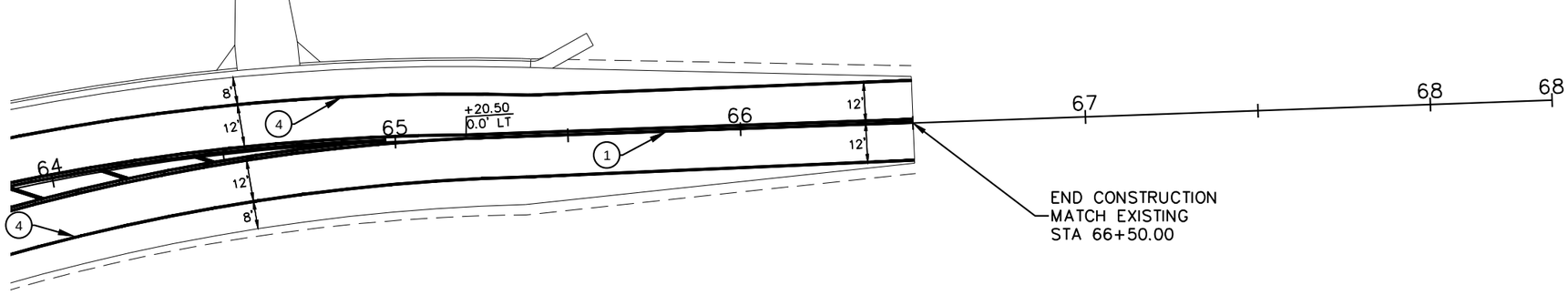
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PAVEMENT MARKING PLAN	SHEET 40	E

LEGEND

(1) PAVEMENT MARKING, EPOXY, 4-INCH YELLOW, (SOLID), DOUBLE YELLOW
(2) PAVEMENT MARKING, EPOXY, 4-INCH YELLOW, (SOLID)
(3) PAVEMENT MARKING, EPOXY, 12-INCH, YELLOW, (SOLID), DIAGONAL
(4) PAVEMENT MARKING, EPOXY, 4-INCH, WHITE, (SOLID)
(5) PAVEMENT MARKING, EPOXY, 8-INCH, WHITE, (SOLID)
(7) PAVEMENT MARKING, EPOXY, WORDS
(8) PAVEMENT MARKING, WHITE, TYPE 2 ARROW
(9) PAVEMENT MARKING, STOP LINE EPOXY 18-INCH

NOTES:

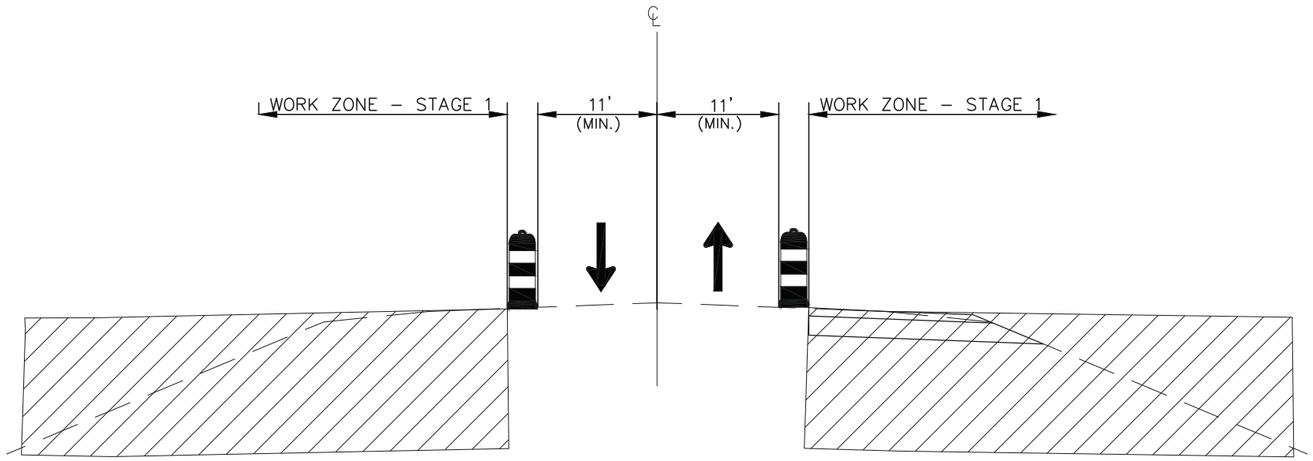
1. INSTALL FINAL PAVEMENT MARKING SAME DAYS AS RESURFACING.



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PAVEMENT MARKING PLAN	SHEET 41	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\024501-PM.DWG PLOT DATE : 1/9/2018 11:49 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=40'

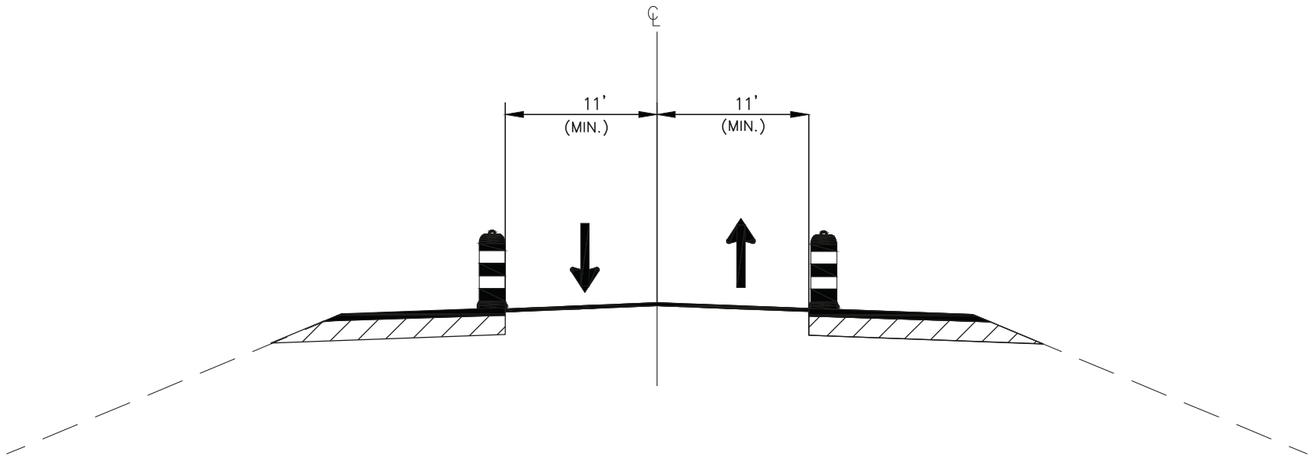
2



TRAFFIC CONTROL – STAGE 1
C.T.H. "KF" & "JK"

STAGE 1

1. MAINTAIN TRAFFIC ON EXISTING PAVEMENT
2. CONSTRUCTION RIGHT TURN LANES, WIDENING CURB AND GUTTER AND SHOULDERS.
3. COMPLETE TRAFFIC SIGNAL INSTALLATION



TRAFFIC CONTROL – STAGE 2
C.T.H. "KF" & "JK"

STAGE 2

1. MAINTAIN TRAFFIC ON CENTER 24' OF PAVEMENT
2. COMPLETE SURFACE & STRIPING USING FLAGGERS AS NEEDED.
3. FINAL RESTORATION & FINISHING

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC CONTROL – TYPICAL SECTIONS	SHEET 42	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\025001-TC.DWG PLOT DATE : 10/27/2017 7:07 AM PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=150'

2

CONSTRUCTION STAGING NOTES:

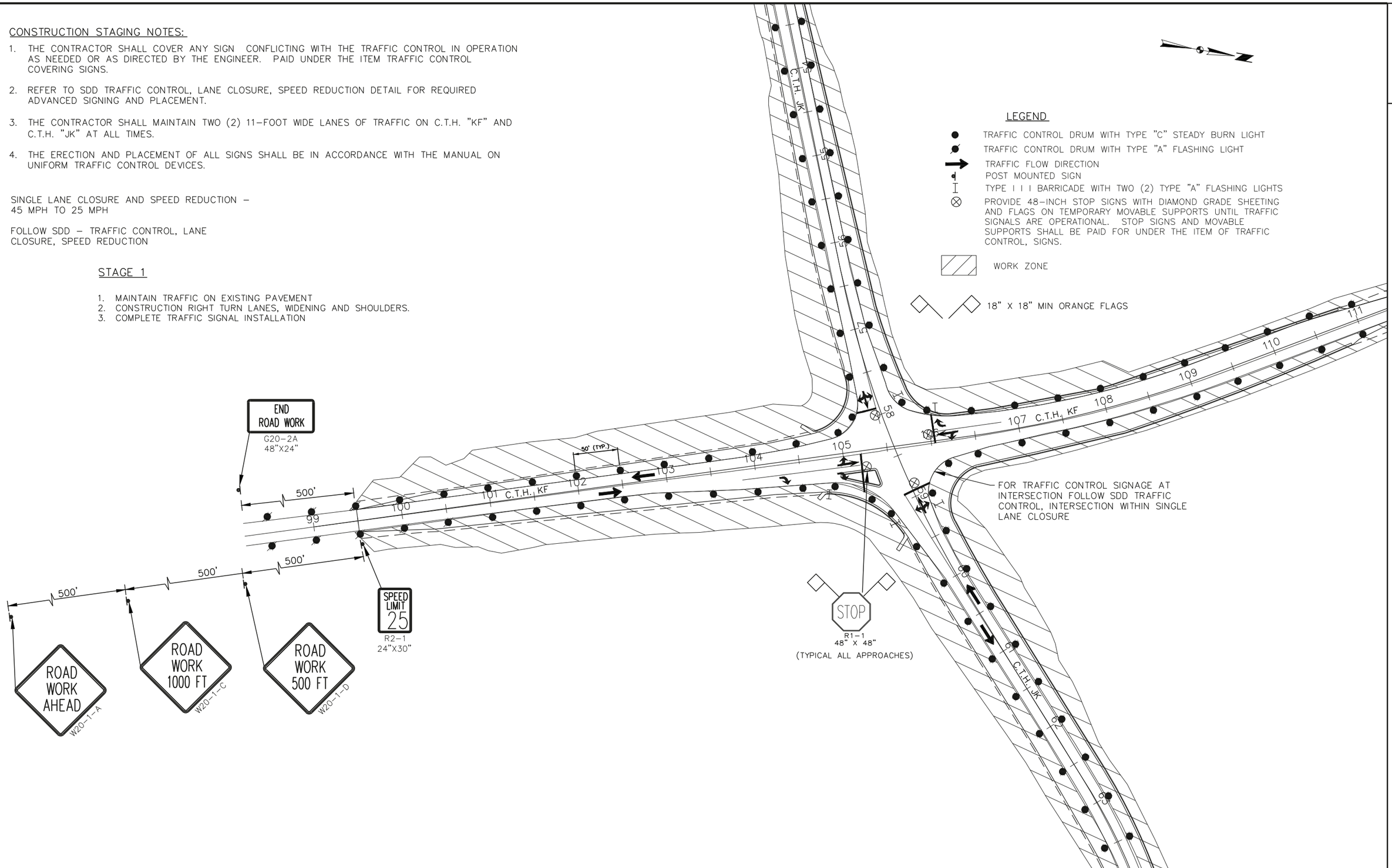
1. THE CONTRACTOR SHALL COVER ANY SIGN CONFLICTING WITH THE TRAFFIC CONTROL IN OPERATION AS NEEDED OR AS DIRECTED BY THE ENGINEER. PAID UNDER THE ITEM TRAFFIC CONTROL COVERING SIGNS.
2. REFER TO SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION DETAIL FOR REQUIRED ADVANCED SIGNING AND PLACEMENT.
3. THE CONTRACTOR SHALL MAINTAIN TWO (2) 11–FOOT WIDE LANES OF TRAFFIC ON C.T.H. "KF" AND C.T.H. "JK" AT ALL TIMES.
4. THE ERECTION AND PLACEMENT OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SINGLE LANE CLOSURE AND SPEED REDUCTION – 45 MPH TO 25 MPH

FOLLOW SDD – TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STAGE 1

1. MAINTAIN TRAFFIC ON EXISTING PAVEMENT
2. CONSTRUCTION RIGHT TURN LANES, WIDENING AND SHOULDERS.
3. COMPLETE TRAFFIC SIGNAL INSTALLATION



PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC CONTROL – STAGE 1	SHEET 43	E

2

CONSTRUCTION STAGING NOTES:

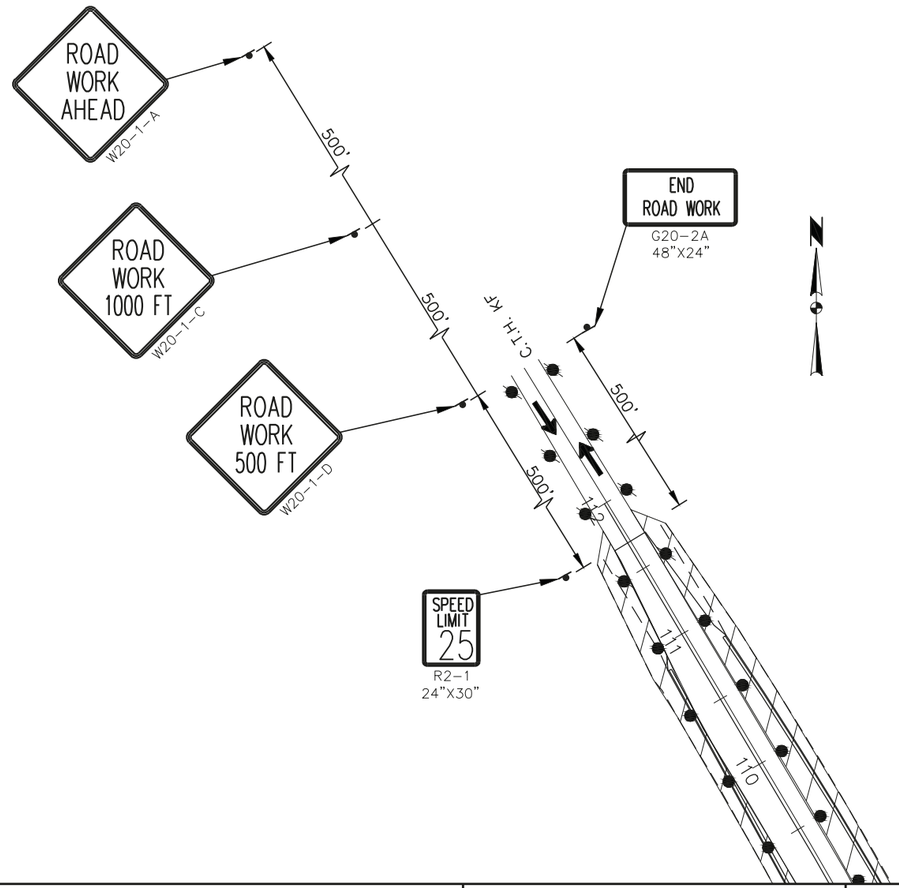
1. THE CONTRACTOR SHALL COVER ANY SIGN CONFLICTING WITH THE TRAFFIC CONTROL IN OPERATION AS NEEDED OR AS DIRECTED BY THE ENGINEER. PAID UNDER THE ITEM TRAFFIC CONTROL COVERING SIGNS.
2. REFER TO SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION DETAIL FOR REQUIRED ADVANCED SIGNING AND PLACEMENT.
3. THE CONTRACTOR SHALL MAINTAIN TWO (2) 11–FOOT WIDE LANES OF TRAFFIC ON C.T.H. "KF" AND C.T.H. "JK" AT ALL TIMES.
4. THE ERECTION AND PLACEMENT OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SINGLE LANE CLOSURE AND SPEED REDUCTION – 45 MPH TO 25 MPH

FOLLOW SDD – TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

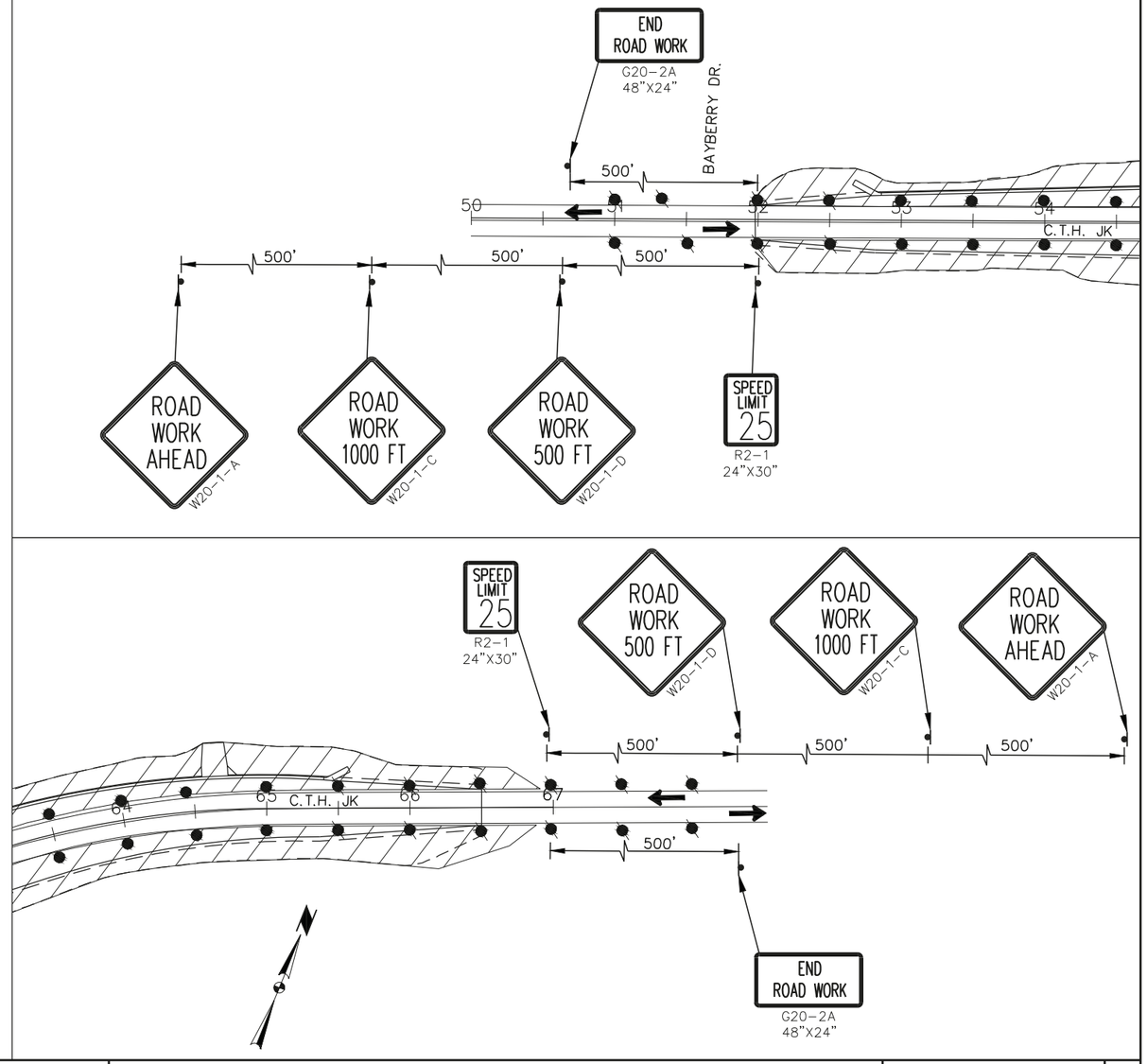
STAGE 1

1. MAINTAIN TRAFFIC ON EXISTING PAVEMENT
2. CONSTRUCTION RIGHT TURN LANES, WIDENING AND SHOULDERS.
3. COMPLETE TRAFFIC SIGNAL INSTALLATION



LEGEND

- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM WITH TYPE "A" FLASHING LIGHT
- TRAFFIC FLOW DIRECTION
- POST MOUNTED SIGN
- TYPE I I I BARRICADE WITH TWO (2) TYPE "A" FLASHING LIGHTS
- PROVIDE 48–INCH STOP SIGNS WITH DIAMOND GRADE SHEETING AND FLAGS ON TEMPORARY MOVABLE SUPPORTS UNTIL TRAFFIC SIGNALS ARE OPERATIONAL. STOP SIGNS AND MOVABLE SUPPORTS SHALL BE PAID FOR UNDER THE ITEM OF TRAFFIC CONTROL, SIGNS.
- WORK ZONE



2

PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC CONTROL – STAGE 1	SHEET 44	E

2

CONSTRUCTION STAGING NOTES:

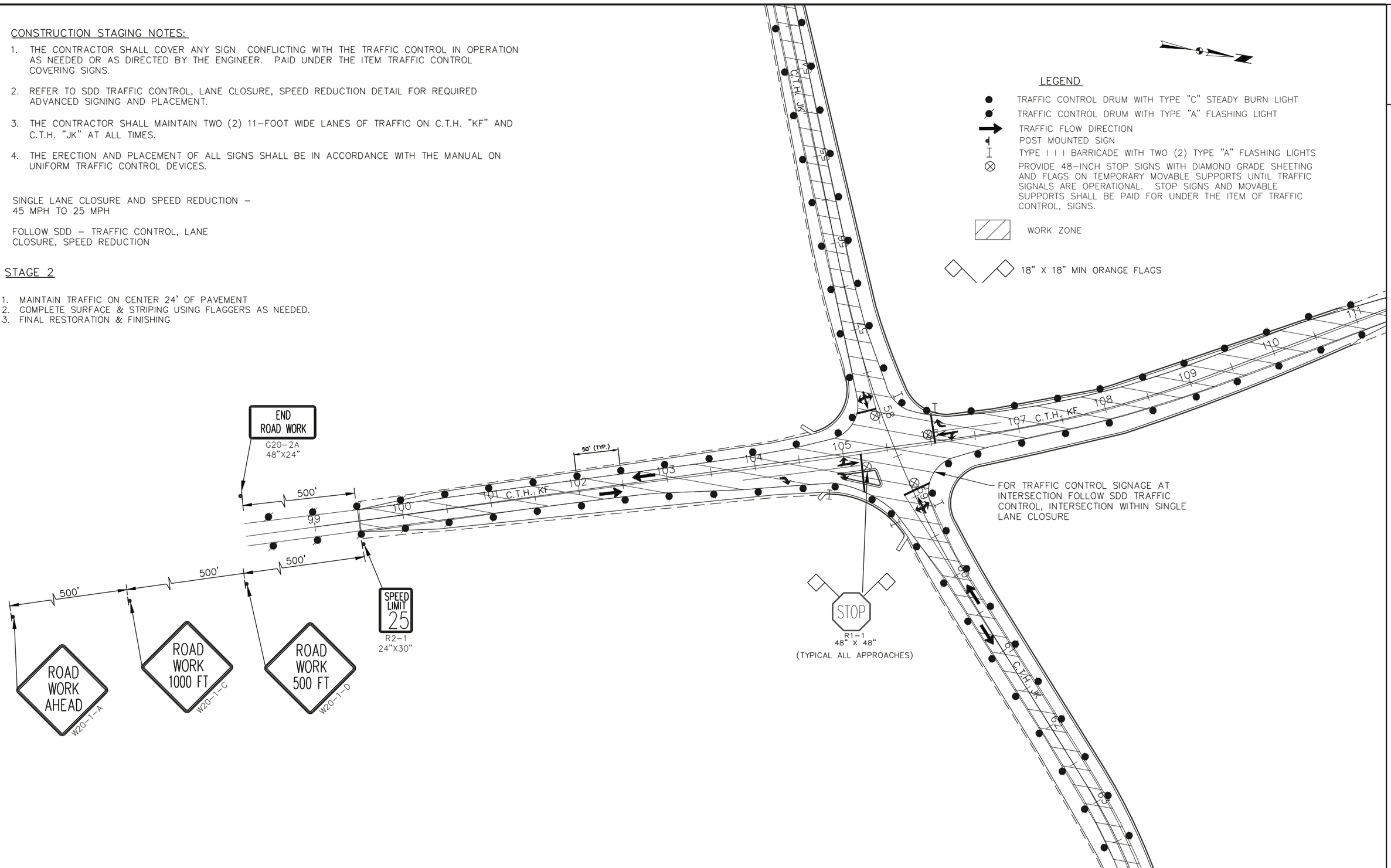
1. THE CONTRACTOR SHALL COVER ANY SIGN CONFLICTING WITH THE TRAFFIC CONTROL IN OPERATION AS NEEDED OR AS DIRECTED BY THE ENGINEER. PAID UNDER THE ITEM TRAFFIC CONTROL COVERING SIGNS.
2. REFER TO SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION DETAIL FOR REQUIRED ADVANCED SIGNING AND PLACEMENT.
3. THE CONTRACTOR SHALL MAINTAIN TWO (2) 11-FOOT WIDE LANES OF TRAFFIC ON C.T.H. "KF" AND C.T.H. "JK" AT ALL TIMES.
4. THE ERECTION AND PLACEMENT OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SINGLE LANE CLOSURE AND SPEED REDUCTION – 45 MPH TO 25 MPH

FOLLOW SDD – TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STAGE 2

1. MAINTAIN TRAFFIC ON CENTER 24' OF PAVEMENT
2. COMPLETE SURFACE & STRIPING USING FLAGGERS AS NEEDED.
3. FINAL RESTORATION & FINISHING



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC CONTROL – STAGE 2	SHEET 45	E

2

CONSTRUCTION STAGING NOTES:

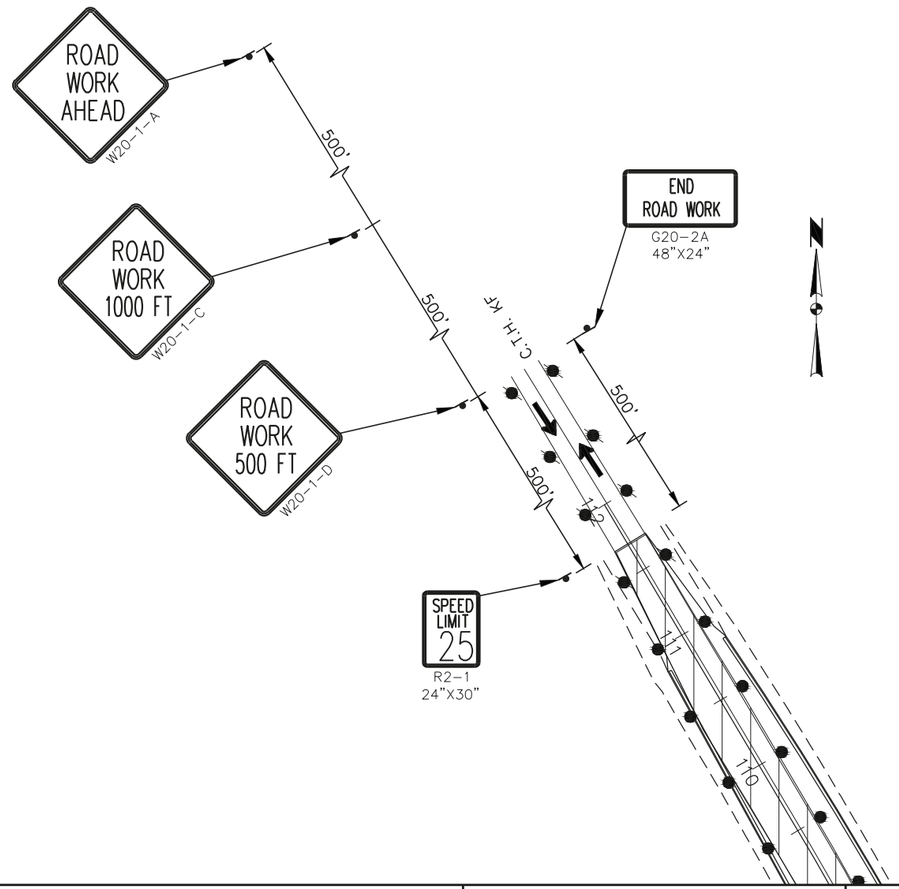
1. THE CONTRACTOR SHALL COVER ANY SIGN CONFLICTING WITH THE TRAFFIC CONTROL IN OPERATION AS NEEDED OR AS DIRECTED BY THE ENGINEER. PAID UNDER THE ITEM TRAFFIC CONTROL COVERING SIGNS.
2. REFER TO SDD TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION DETAIL FOR REQUIRED ADVANCED SIGNING AND PLACEMENT.
3. THE CONTRACTOR SHALL MAINTAIN TWO (2) 11–FOOT WIDE LANES OF TRAFFIC ON C.T.H. "KF" AND C.T.H. "JK" AT ALL TIMES.
4. THE ERECTION AND PLACEMENT OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

SINGLE LANE CLOSURE AND SPEED REDUCTION – 45 MPH TO 25 MPH

FOLLOW SDD – TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

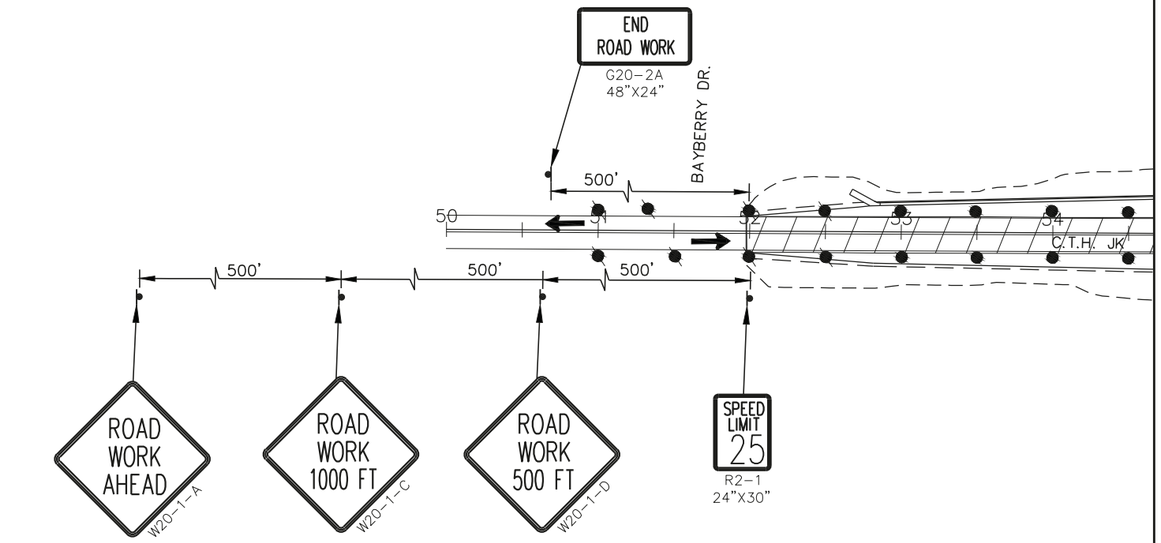
STAGE 2

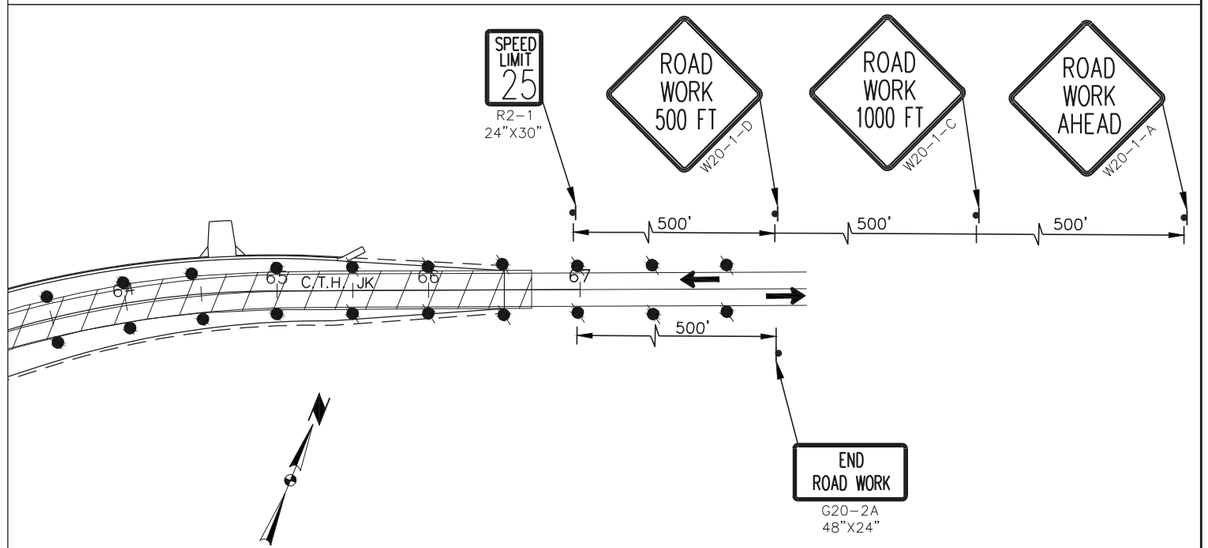
1. MAINTAIN TRAFFIC ON CENTER 24' OF PAVEMENT
2. COMPLETE SURFACE & STRIPING USING FLAGGERS AS NEEDED.
3. FINAL RESTORATION & FINISHING



LEGEND

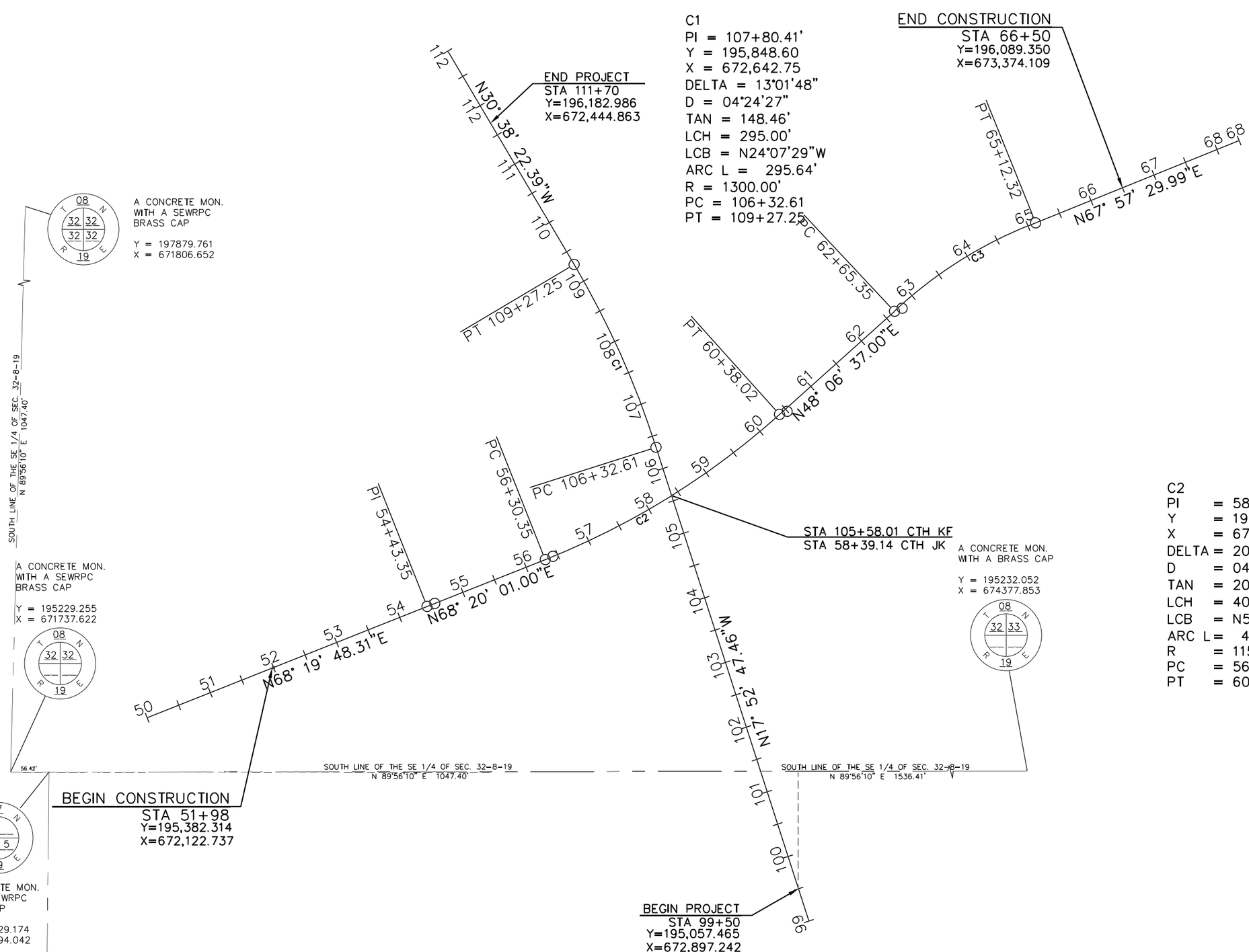
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM WITH TYPE "A" FLASHING LIGHT
- TRAFFIC FLOW DIRECTION
- POST MOUNTED SIGN
- TYPE I I I BARRICADE WITH TWO (2) TYPE "A" FLASHING LIGHTS
- PROVIDE 48–INCH STOP SIGNS WITH DIAMOND GRADE SHEETING AND FLAGS ON TEMPORARY MOVABLE SUPPORTS UNTIL TRAFFIC SIGNALS ARE OPERATIONAL. STOP SIGNS AND MOVABLE SUPPORTS SHALL BE PAID FOR UNDER THE ITEM OF TRAFFIC CONTROL, SIGNS.
- WORK ZONE





PROJECT NO: 2762–00–70	HWY: CTH KF	COUNTY: WAUKESHA	TRAFFIC CONTROL – STAGE 2	SHEET 46	E

2



C2
PI = 58+36.33
Y = 195,618.00
X = 672,715.96
DELTA = 20°13'24"
D = 04°57'39"
TAN = 205.98'
LCH = 405.56'
LCB = N58°13'21"E
ARC L = 407.67'
R = 1155.00
PC = 56+30.35
PT = 60+38.02

C3
PI = 63+88.80
Y = 195,990.47
X = 673,131.24
DELTA = 22°04'52"
D = 08°56'27"
TAN = 124.54'
LCH = 245.97
LCB = N57°54'15"E
ARC L = 246.97'
R = 640.84'
PC = 62+65.35
PT = 65+12.32

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 47

2762-00-70

Line	Item	Item Description	Unit	Total	Qty
0002	201.0110	Clearing	SY	1,210.000	1,210.000
0004	201.0120	Clearing	ID	151.000	151.000
0006	201.0210	Grubbing	SY	1,210.000	1,210.000
0008	201.0220	Grubbing	ID	151.000	151.000
0010	203.0100	Removing Small Pipe Culverts	EACH	3.000	3.000
0012	204.0115	Removing Asphaltic Surface Butt Joints	SY	580.000	580.000
0014	204.0120	Removing Asphaltic Surface Milling	SY	2,670.000	2,670.000
0016	204.0185	Removing Masonry	CY	6.000	6.000
0018	205.0100	Excavation Common	CY	4,167.000	4,167.000
0020	208.0100	Borrow	CY	3,417.000	3,417.000
0022	213.0100	Finishing Roadway (project) 01. 2762-00-70	EACH	1.000	1.000
0024	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	6,605.000	6,605.000
0026	312.0110	Select Crushed Material	TON	1,000.000	1,000.000
0028	455.0605	Tack Coat	GAL	718.000	718.000
0030	460.6223	HMA Pavement 3 MT 58-28 S	TON	1,497.000	1,497.000
0032	460.6224	HMA Pavement 4 MT 58-28 S	TON	2,083.000	2,083.000
0034	465.0315	Asphaltic Flumes	SY	45.000	45.000
0036	504.0900	Concrete Masonry Endwalls	CY	6.000	6.000
0038	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	2.000	2.000
0040	520.3312	Culvert Pipe Class III-A 12-Inch	LF	25.000	25.000
0042	520.8000	Concrete Collars for Pipe	EACH	4.000	4.000
0044	521.3148	Culvert Pipe Corrugated Steel 48-Inch	LF	53.000	53.000
0046	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	3.000	3.000
0048	601.0415	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type J	LF	2,234.000	2,234.000
0050	602.0410	Concrete Sidewalk 5-Inch	SF	41.000	41.000
0052	606.0200	Riprap Medium	CY	21.000	21.000
0054	608.0415	Storm Sewer Pipe Reinforced Concrete Class IV 15-Inch	LF	128.000	128.000
0056	608.0424	Storm Sewer Pipe Reinforced Concrete Class IV 24-Inch	LF	829.000	829.000
0058	611.0530	Manhole Covers Type J	EACH	4.000	4.000
0060	611.0624	Inlet Covers Type H	EACH	8.000	8.000
0062	611.0642	Inlet Covers Type MS	EACH	2.000	2.000
0064	611.1005	Catch Basins 5-FT Diameter	EACH	2.000	2.000
0066	611.1230	Catch Basins 2x3-FT	EACH	2.000	2.000
0068	611.2004	Manholes 4-FT Diameter	EACH	2.000	2.000
0070	611.2005	Manholes 5-FT Diameter	EACH	2.000	2.000
0072	611.3004	Inlets 4-FT Diameter	EACH	1.000	1.000
0074	611.3230	Inlets 2x3-FT	EACH	3.000	3.000

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Line	Item	Item Description	Unit	Total	Qty
0076	611.3901	Inlets Median 1 Grate	EACH	2.000	2.000
0078	616.0100	Fence Woven Wire (height) 01. 30-Inch	LF	1,061.000	1,061.000
0080	618.0100	Maintenance And Repair of Haul Roads (project) 01. 2762-00-70	EACH	1.000	1.000
0082	619.1000	Mobilization	EACH	1.000	1.000
0084	625.0100	Topsoil	SY	2,538.000	2,538.000
0086	625.0500	Salvaged Topsoil	SY	10,150.000	10,150.000
0088	628.1504	Silt Fence	LF	2,448.000	2,448.000
0090	628.1520	Silt Fence Maintenance	LF	2,448.000	2,448.000
0092	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0094	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0096	628.2006	Erosion Mat Urban Class I Type A	SY	470.000	470.000
0098	628.7010	Inlet Protection Type B	EACH	2.000	2.000
0100	628.7015	Inlet Protection Type C	EACH	8.000	8.000
0102	628.7020	Inlet Protection Type D	EACH	8.000	8.000
0104	628.7504	Temporary Ditch Checks	LF	44.000	44.000
0106	628.7555	Culvert Pipe Checks	EACH	3.000	3.000
0108	630.0200	Seeding Temporary	LB	30.000	30.000
0110	637.2210	Signs Type II Reflective H	SF	251.130	251.130
0112	638.2102	Moving Signs Type II	EACH	2.000	2.000
0114	638.2602	Removing Signs Type II	EACH	27.000	27.000
0116	638.3000	Removing Small Sign Supports	EACH	20.000	20.000
0118	642.5201	Field Office Type C	EACH	1.000	1.000
0120	643.0300	Traffic Control Drums	DAY	15,800.000	15,800.000
0122	643.0420	Traffic Control Barricades Type III	DAY	780.000	780.000
0124	643.0900	Traffic Control Signs	DAY	1,800.000	1,800.000
0126	643.0920	Traffic Control Covering Signs Type II	EACH	15.000	15.000
0128	643.1050	Traffic Control Signs PCMS	DAY	120.000	120.000
0130	643.5000	Traffic Control	EACH	1.000	1.000
0132	645.0120	Geotextile Type HR	SY	21.000	21.000
0134	646.1020	Marking Line Epoxy 4-Inch	LF	12,007.000	12,007.000
0136	646.3020	Marking Line Epoxy 8-Inch	LF	756.000	756.000
0138	646.5020	Marking Arrow Epoxy	EACH	15.000	15.000
0140	646.5120	Marking Word Epoxy	EACH	6.000	6.000
0142	646.6120	Marking Stop Line Epoxy 18-Inch	LF	160.000	160.000
0144	646.7120	Marking Diagonal Epoxy 12-Inch	LF	361.000	361.000
0146	650.4000	Construction Staking Storm Sewer	EACH	17.000	17.000
0148	650.4500	Construction Staking Subgrade	LF	2,672.000	2,672.000
0150	650.5000	Construction Staking Base	LF	2,672.000	2,672.000
0152	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	2,234.000	2,234.000

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Line	Item	Item Description	Unit	Total	Qty
0154	650.6000	Construction Staking Pipe Culverts	EACH	5.000	5.000
0156	650.8500	Construction Staking Electrical Installations (project) 01. 2672-00-70	LS	1.000	1.000
0158	650.9910	Construction Staking Supplemental Control (project) 01. 2762-00-70	LS	1.000	1.000
0160	650.9920	Construction Staking Slope Stakes	LF	5,344.000	5,344.000
0162	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	1,355.000	1,355.000
0164	652.0235	Conduit Rigid Nonmetallic Schedule 40 3-Inch	LF	390.000	390.000
0166	652.0615	Conduit Special 3-Inch	LF	750.000	750.000
0168	652.0800	Conduit Loop Detector	LF	425.000	425.000
0170	653.0135	Pull Boxes Steel 24x36-Inch	EACH	8.000	8.000
0172	653.0140	Pull Boxes Steel 24x42-Inch	EACH	8.000	8.000
0174	654.0101	Concrete Bases Type 1	EACH	4.000	4.000
0176	654.0113	Concrete Bases Type 13	EACH	4.000	4.000
0178	654.0217	Concrete Control Cabinet Bases Type 9 Special	EACH	1.000	1.000
0180	655.0230	Cable Traffic Signal 5-14 AWG	LF	825.000	825.000
0182	655.0260	Cable Traffic Signal 12-14 AWG	LF	1,615.000	1,615.000
0184	655.0320	Cable Type UF 2-10 AWG Grounded	LF	640.000	640.000
0186	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	1,340.000	1,340.000
0188	655.0610	Electrical Wire Lighting 12 AWG	LF	520.000	520.000
0190	655.0700	Loop Detector Lead In Cable	LF	3,365.000	3,365.000
0192	655.0800	Loop Detector Wire	LF	1,565.000	1,565.000
0194	655.0900	Traffic Signal EVP Detector Cable	LF	1,045.000	1,045.000
0196	656.0200	Electrical Service Meter Breaker Pedestal (location) 01. CTH KF at CTH JK	LS	1.000	1.000
0198	657.0100	Pedestal Bases	EACH	4.000	4.000
0200	657.0420	Traffic Signal Standards Aluminum 13-FT	EACH	3.000	3.000
0202	657.0425	Traffic Signal Standards Aluminum 15-FT	EACH	1.000	1.000
0204	658.0173	Traffic Signal Face 3S 12-Inch	EACH	20.000	20.000
0206	658.5069	Signal Mounting Hardware (location) 01. CTH KF at CTH JK	LS	1.000	1.000
0208	659.1125	Luminaires Utility LED C	EACH	4.000	4.000
0210	690.0150	Sawing Asphalt	LF	600.000	600.000
0212	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	800.000	800.000
0214	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	650.000	650.000
0216	SPV.0060	Special 01. Monotube Poles Type 13	EACH	4.000	4.000
0218	SPV.0060	Special 02. Monotube Arms 45-FT	EACH	3.000	3.000
0220	SPV.0060	Special 03. Monotube Arms 50-FT	EACH	1.000	1.000
0222	SPV.0060	Special 04. Luminaire Arms Steel 10-FT	EACH	4.000	4.000
0224	SPV.0060	Special 05. Traffic Signal Controller & Cabinet, 8 Phase Full Actuated CTH KF & CTH JK	EACH	1.000	1.000

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Line	Item	Item Description	Unit	Total	Qty
0226	SPV.0060	Special 06. EVP Detector Type I	EACH	4.000	4.000
0228	SPV.0060	Special 07. EVP Conformation Light Assembly Type I	EACH	4.000	4.000
0230	SPV.0060	Special 08. EVP Selector Phase Four Channel	EACH	1.000	1.000
0232	SPV.0060	Special 09. EVP Card Rack	EACH	1.000	1.000
0234	SPV.0060	Special 10. Utility Line Opening (ULO)	EACH	10.000	10.000
0236	SPV.0060	Special 11. Posts Tubular Steel 1.75x1.75-inch 12-foot	EACH	23.000	23.000
0238	SPV.0060	Special 12. Posts Tubular Steel 1.75x1.75-inch 14-foot	EACH	9.000	9.000
0240	SPV.0090	Special 02. Type UF Cable 2 Conductor No 14	LF	1,045.000	1,045.000
0242	SPV.0105	Special 01. Vehicle Video Detection System	LS	1.000	1.000
0244	SPV.0180	Special 01. Hydoseeding	SY	10,150.000	10,150.000

3

CLEARING AND GRUBBING

STA-STA	201.0110 CLEARING SY	201.0120 CLEARING ID	201.0210 GRUBBING SY	201.0220 GUBBING ID
99+50 - 105+50	210	-	210	-
105+50 - 111+69	100	-	100	-
51+98 - 58+00	885	-	885	-
58+00 - 64+00	15	35	15	35
64+00 - 66+50	-	116	-	116
TOTAL	1210	151	1210	151

REMOVING ASPHALTIC SURFACE MILLING
204.0120

STA-STA	SY
99+50 - 105+50	-
105+50 - 111+69	250
51+98 - 58+00	550
58+00 - 64+00	1870
64+00 - 66+50	-
TOTAL	2670

BASE AGGREGATE DENSE 1 1/4-INCH
305.0120

STA-STA	TON
99+50 - 105+50	1294
105+50 - 111+69	2022
51+98 - 58+00	1262
58+00 - 64+00	1545
64+00 - 66+50	482
TOTAL	6605

RIPRAP MEDIAM
606.0200

STA-STA	CY
54+49.94, 41.7' RT	7
59+49.82, 45.4' RT	7
61+99.56, 41.3' RT	7
TOTAL	21

3

REMOVING SMALL PIPE CULVERTS
203.0100

STA	SIZE	EACH
57+87.69	24	1
59+15.60	24	1
64+65	18	1
	TOTAL	3

SELECT CRUSHED MATERIAL
312.0110

LOCATION	TON
UNDISTIBUTED	1000
TOTAL	1000

MAINTENANCE AND REPAIR OF HAUL ROAD
CATIGORY 0020

LOCATION	618.0100
CTH KF-CTH JK	1
TOTAL	1

GEOTEXTILE TYPE HR
645.0120

STA-STA	SY
54+49.94, 41.7' RT	7
59+49.82, 45.4' RT	7
61+99.56, 41.3' RT	7
TOTAL	21

REMOVING ASPHALTIC SURFACE BUTT JOINTS
204.0115

STA-STA	SY
99+50 - 105+50	145
105+50 - 111+69	145
51+98 - 58+00	145
58+00 - 64+00	-
64+00 - 66+50	145
TOTAL	580

ASPHALT ITEMS

STA-STA	455.0605 TACK COAT GAL	460.6223 HMA PAVEMENT 3 MT 58-28S TON	460.6224 HMA PAVEMENT 4 MT 58-28S TON	465.0315 ASPHALT FLUMES SY
99+50 - 105+50	177	390	514	18
105+50 - 111+69	333	702	916	-
51+98 - 58+00	87	158	259	9
58+00 - 64+00	67	138	238	9
64+00 - 66+50	54	100	156	9
99+50 - 111+69 (WEDGE)	-	3	-	-
51+97 - 66+50 (WEDGE)	-	6	-	-
TOTAL	718	1497	2083	45

CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE J
601.0415

STA-STA	LF
99+50 - 105+50	83
105+50 - 111+70	1375
51+98 - 58+00	471
58+00 - 64+00	161
64+00 - 66+50	144
TOTAL	2234

CONCRETE SIDEWALK 5-INCH
602.0410

STA-STA	SY
99+50 - 105+50	41
TOTAL	41

EARTHWORKS SUMMARY

	From/To Station	Location	Common Excavation (1) Cut (2)	(item # 205.0100) EBS Excavation (3)	Salvaged/Unusable Pavement Material (4)	Available Material (5)	Marsh Excavation (6) (item #205.0500)	Reduced Marsh in Fill (8) Factor 0.60	Reduced EBS in Fill (9) Factor 0.80	Expanded Marsh Backfill (10) Factor 1.50	Expanded EBS Backfill (11) Factor 1.30	Unexpanded Fill	Expanded Fill (13) Factor 1.25	Mass Ordinate +/- (14)	Waste	Borrow (item #208.0100)	Comment:
1	99+50 - 117+70	CTH KF	1430	0	0	1430	0	0	0	0	0	3300	4125	-2695			
2	52+00 - 66+50	CTH JK	2062	0	0	2062	0	0	0	0	0	2227	2784	-722			
3	UNDISTRIBUTED		0	675	0	0	0	0	540	0	878	0	-675	0			
Subtotal			3492	675	0	3492	0	0	540	0	878	5527	6234	-3417		3417	
Grand Total			3492	675	0	3492	0	0	540	0	878	5527	6234	-3417		3417	

Total Common Exc 4167

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) EBS Excavation to be backfilled with Borrow material
4) Salvaged/Unusable Pavement Material
5) Available Material = Cut - Salvaged/Unusuable Pavement Material
6) Marsh Excavation - to be backfilled with Select Borrow Material.
8) Reduced Marsh in Fill - Excavated Marsh material is usuable in Fills outside the 1:1 slope. Marsh in Fill Reduction factor = 0.6
9) Reduced EBS in Fill - Excavated EBS material is usuable in Fills outside the 1:1 slope. EBS in Fill Reduction factor = 0.8
10) Expanded Marsh Backfill - This is to be filled with Select Borrow material. Marsh Backfill Factor = 1.5. Item number 208.0100
11) Expanded EBS Backfill - This is to be filled with Select Borrow material. EBS Backfill Factor = 1.3. Item number 208.0100
13) Expanded Fill. Factor = 1.25
14) 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.
15) Mass Ordinate = Available Material + Reduced Marsh in Fill + Reduced EBS in Fill - Expanded Marsh Backfill - Expanded EBS Backfill - Expanded Fill
16) Waste = 15% Common Excavation

STORM SEWER STRUCTURES

STRUCTURE	STATION	OFFSET*	LOCATION	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	611.0530 MANHOLE COVERS TYPE J EACH	611.0624 INLET COVERS TYPE H EACH	611.0642 INLET COVERS TYPE MS EACH	611.1005 CATCH BASINS 5-FT DIAMETER EACH	611.1230 CATCH BASINS 2X3-FT EACH	611.2004 MANHOLES 4-FT DIAMETER EACH	611.2005 MANHOLES 5-FT DIAMETER EACH	611.3004 INLETS 4-FT DIAMETER EACH	611.3230 INLETS 2X3-FT EACH	611.3901 INLETS MEDIAN 1 GRATE EACH	650.4000 CONSTRUCTION STAKING STORM SEWER EACH	RIM** ELEVATION	INVERT*** ELEVATION	DEPTH**** FT
1A	111+00.0	28.9' LT	CTH KF	---	---	---	1	---		---	---	---	---	1	1	929.53	927.09	2.63
1B	111+00.0	32.2' RT	CTH KF	---	---	---	1	---	---	---	---	---	---	1	1	930.23	927.79	2.62
1	111+00.0	19' RT	CTH KF	---	1	---	---	---	---	1	---	---	---	---	1	931.43	925.86	4.58
2A	108+50.0	24.4' LT	CTH KF	---	---	1	---	---	---	---	---	---	1	---	1	919.11	914.75	3.55
2B	108+50.0	30.3' RT	CTH KF	---	---	1	---	---	---	---	---	---	1	---	1	919.34	914.98	3.55
2	108+50.0	22' RT	CTH KF	---	1	---	---	---	---	1	---	---	---	---	1	919.47	913.54	4.94
3A	106+50.0	34.4' RT	CTH KF	---	---	1	---	---	---	---	---	---	1	---	1	906.94	902.62	3.51
3	106+50.0	23' RT	CTH KF	---	1	---	---	---	---	---	1	---	---	---	1	907.14	901.75	4.40
4	106+50.0	26.9' LT	CTH KF	---	---	1	---	1	---	---	---	---	---	---	1	907.08	899.25	6.83
5	105+91.6	27.6' LT	CTH KF	---	1	---	---	---	---	---	1	---	---	---	1	904.87	899.50	4.38
6	57+81.0	35.4' LT	CTH JK	---	---	1	---	---	---	---	---	1	---	---	1	903.57	898.19	4.63
7	57+50.0	32.9' LT	CTH JK	---	---	1	---	1	---	---	---	---	---	---	1	903.40	895.90	6.50
7A	57+50.0	36.1' RT	CTH JK	1	---	---	---	---	---	---	---	---	---	---	1	---	895.52	---
8	59+50.0	27' LT	CTH JK	---	---	1	---	---	1	---	---	---	---	---	1	901.06	893.89	6.17
8A	59+50.0	39.9' RT	CTH JK	1	---	---	---	---	---	---	---	---	---	---	1	---	893.58	---
9	62+00.0	26.3' LT	CTH JK	---	---	1	---	---	1	---	---	---	---	---	1	894.54	887.61	5.93
9A	62+00.0	35.8' RT	CTH JK	1	---	---	---	---	---	---	---	---	---	---	1	---	888.98	---
			TOTALS	3	4	8	2	2	2	2	2	1	3	2	17			

REMARKS

* STATIONS AND OFFSETS ARE TO CENTER OF STRUCTURE

**RIM ELEVATIONS ARE GIVEN AT THE GUTTER FLANGE FOR TYPE H INLET GRATES OR AT THE CENTER OF STRUCTURE FOR MANHOLES AND FIELD INLETS

*** FOR STRUCTURES WITH SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE SUMP. FOR STRUCTURES WITHOUT SUMPS, THE INVERT ELEVATION IS THE ELEVATION OF THE LOWEST PIPE FLOW LINE

**** DEPTH = RIM ELEV - INVERT ELEVATION - COVER HEIGHT - 6-INCH ADJUSTMENT RING HEIGHT + PIPE THICKNESS (FOR STRUCTURES WITHOUT SUMPS)

COVER HEIGHT = 9-INCHES FOR MANHOLE COVERS TYPE J; 6-INCHES FOR INLET COVERS TYPE H

PIPE THICKNESS = 2.25-INCHES FOR 15-INCH DIA. PIPE; 3-INCHES FOR 24-INCH DIA. PIPE

STORM SEWER PIPES

FROM	-	TO	LOCATION	608.0415 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 15-INCH LF	608.0424 STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	JOINT TIES* EACH	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT
1A	-	1	CTH KF	47.9	---	---	927.09	926.61	0.0100
1B	-	1	CTH KF	13.2	---	---	927.79	926.61	0.0894
1	-	2	CTH KF	---	251.3	---	925.86	913.54	0.0490
2A	-	2	CTH KF	46.4	---	---	914.75	914.29	0.0099
2B	-	2	CTH KF	8.3	---	---	914.98	914.29	0.0830
2	-	3	CTH KF	---	203.3	---	913.54	901.75	0.0580
3A	-	3	CTH KF	11.4	---	---	902.62	902.50	0.0105
3	-	4	CTH KF	---	49.9	---	901.75	901.25	0.0100
4	-	5	CTH KF	---	58.2	---	901.25	899.50	0.0301
5	-	6	CTH KF/CTH JK	---	37.8	---	899.50	898.19	0.0346
6	-	7	CTH JK	---	30.2	---	898.19	897.90	0.0096
7	-	7A	CTH JK	---	69.0	6	897.90	895.52	0.0345
8	-	8A	CTH JK	---	66.9	6	895.89	893.58	0.0345
9	-	9A	CTH JK	---	62.1	6	889.61	888.98	0.0101
			TOTALS	128	829	18			

* NON-BID ITEM: FOR INFORMATION ONLY

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CULVERT PIPES

LOCATION	INLET STATION	INLET OFFSET	INLET LT/RT	INLET ELEVATION	OUTLET STATION	OUTLET OFFSET	OUTLET LT/RT	OUTLET ELEVATION	SLOPE (FT/FT)	204.0185 REMOVING MASONRY CY	504.0900 CONCRETE MASONRY ENDWALLS CY	520.1012 APRON ENDWALLS FOR CULVERT PIPE 12-INCH EACH	520.3312 CULVERT PIPE CLASS III-A 12-INCH LF	520.8000 CONCRETE COLLARS FOR PIPE EACH	521.3148 CULVERT PIPE CORRUGATED STEEL 48-INCH LF	650.6000 CONSTRUCTION STAKING PIPE CULVERTS EACH
CTH KF	101+02.5	53.1	RT	878.19	100+91.8	38.2	RT	878.16	0.0300	3	3	---	---	1	9	1
CTH KF	101+06.8	52.2	RT	878.45	100+96.3	37.2	RT	878.44	0.0100			---	---	1	8	1
CTH KF	100+37.5	38.6	LT	878.03	100+32.3	45.9	LT	878.02	0.0100	3	3	---	---	1	18	1
CTH KF	100+42.0	39.2	LT	878.39	100+37.4	45.8	LT	878.38	0.0100			---	---	1	18	1
CTH JK	64+53.3	36.6	LT	889.93	64+76.9	36.9	LT	889.38	0.0220	---	---	2	25	---	---	1
									TOTALS	6	6	2	25	4	53	5

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SIGN NO.	LOCATION	STATION	OFFSET	SIGN CODE	MESSAGE	SIZE	TYPE 2 SIGNS SPV.0060.11 POSTS TUBULAR STEEL 1.75X1.75-INCH X 12-FT EACH	SPV.0060.12 POSTS TUBULAR STEEL 1.75X1.75-INCH X 14-FT EACH	637.2102 MOVING SIGNS TYPE II EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	REMARKS
201	CTH KF, SOUTH OF CTH JK	99+50	26.7' RT	M2-1	JUNCTION	21 X 15	1	-	-	2.188	REPLACE EXISTING
202	CTH KF, SOUTH OF CTH JK	99+50	26.7' RT	M1-6	COUNTY JK	24 X 24	-	-	-	4.000	REPLACE EXISTING. SAME POST AS SIGN 201.
203	CTH KF, SOUTH OF CTH JK	100+56	26.7' RT	W23-2	NEW TRAFFIC PATTERN AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
204	CTH KF, SOUTH OF CTH JK	101+74	30.3' RT	D1-5	TRAFFIC SIGNAL AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
205	CTH KF, SOUTH OF CTH JK	103+23	38.2' RT	M1-6	COUNTY JK	24 X 24	-	1	-	4.000	REPLACE EXISTING
206	CTH KF, SOUTH OF CTH JK	103+23	38.2' RT	M6-4	DIRECTIONAL ARROW	21 X 15	-	-	-	2.188	REPLACE EXISTING. SAME POST AS SIGN 205.
207	CTH KF, SOUTH OF CTH JK	104+03	39.7' RT	R3-8B	LANE CONTROL	54 X 30	2	-	-	11.250	
208	CTH KF, SOUTH OF CTH JK	105+04	26.2' RT	R1-1F	STOP-FOLDING	30 X 30	-	-	-	6.250	MOUNT ON TRAFFIC SIGNAL POST
209	CTH KF, SOUTH OF CTH JK	106+32	10.2' RT	R10-50	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30 X 36	-	-	-	7.500	MOUNT ON TRAFFIC SIGNAL MAST ARM
210	CTH KF, SOUTH OF CTH JK	106+32	32.4' RT	D1-5	SPECIAL 'B'	18 X 78	-	-	-	9.750	MOUNT ON TRAFFIC SIGNAL MAST ARM
211	CTH KF, NORTH OF CTH JK	108+23	34.7' RT	M1-6	COUNTY KF	24 X 24	1	-	-	4.000	REPLACE EXISTING
212	CTH KF, NORTH OF CTH JK	110 + 00	31.6' RT	R2-1 (45)	SPEED LIMIT	24 X 30	1	-	-	5.000	
301	CTH KF, NORTH OF CTH JK	111+98	25.6; LT	W23-2	NEW TRAFFIC PATTERN AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
302	CTH KF, NORTH OF CTH JK	111+00	24.3' LT	D1-5	TRAFFIC SIGNAL AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
303	CTH KF, NORTH OF CTH JK	110+01	31.8' LT	M2-1	JUNCTION	21 X 15	1	-	-	2.188	REPLACE EXISTING
304	CTH KF, NORTH OF CTH JK	110+01	31.8' LT	M1-6	COUNTY JK	24 X 24	-	-	-	4.000	REPLACE EXISTING. SAME POST AS SIGN 303.
305	CTH KF, NORTH OF CTH JK	107+99	32.9' LT	M1-6	COUNTY JK	24 X 24	-	1	-	4.000	REPLACE EXISTING
306	CTH KF, NORTH OF CTH JK	107+99	32.9' LT	M6-4	DIRECTIONAL ARROW	21 X 15	-	-	-	2.188	REPLACE EXISTING. SAME POST AS SIGN 305.
307	CTH KF, NORTH OF CTH JK	107+18	36.3' LT	R3-8B	LANE CONTROL	54 X 30	2	-	-	11.250	
308	CTH KF, NORTH OF CTH JK	106+17	31.7' LT	R1-1F	STOP-FOLDING	30 X 30	-	-	-	6.250	MOUNT ON TRAFFIC SIGNAL POST
309	CTH KF, NORTH OF CTH JK	105 + 00	5.26' LT	R10-50	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30 X 36	-	-	-	7.500	MOUNT ON TRAFFIC SIGNAL MAST ARM
310	CTH KF, NORTH OF CTH JK	105 + 00	29.3' LT	D1-5	SPECIAL 'B'	18 X 78	-	-	-	9.750	MOUNT ON TRAFFIC SIGNAL MAST ARM
311	CTH KF, SOUTH OF CTH JK	103+62	26.1' LT	M1-6	COUNTY JK	24 X 24	-	1	-	4.000	REPLACE EXISTING
312	CTH KF, SOUTH OF CTH JK	101+72	25.0' LT	R2-1 (45)	SPEED LIMIT	24 X 30	1	-	-	5.000	
401	CTH JK, WEST OF CTH KF	45+00	20.3' RT	R4-1	DO NOT PASS	24 X 30	-	1	-	5.000	
402	CTH JK, WEST OF CTH KF	52 +00	20.3' RT	W23-2	NEW TRAFFIC PATTERN AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
403	CTH JK, WEST OF CTH KF	53+00	24.3' RT	D1-5	TRAFFIC SIGNAL AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
404	CTH JK, WEST OF CTH KF	54+50	26.7' RT	M2-1	JUNCTION	21 X 15	1	-	-	2.188	REPLACE EXISTING
405	CTH JK, WEST OF CTH KF	54+50	26.7' RT	M1-6	COUNTY KF	24 X 24	-	-	-	4.000	REPLACE EXISTING. SAME POST AS SIGN 404.
406	CTH JK, WEST OF CTH KF	56+68	29.1' RT	R3-8-A	LANE CONTROL	36X30	1	-	-	7.500	
407	CTH JK, WEST OF CTH KF	57+76	40.9' RT	R1-1F	STOP-FOLDING	30 X 30	-	-	-	6.250	MOUNT ON TRAFFIC SIGNAL POST
408	CTH JK, WEST OF CTH KF	58+92	36.8' RT	D1-5	SPECIAL 'A'	54 X 18	-	-	-	6.750	MOUNT ON TRAFFIC SIGNAL MAST ARM
409	CTH JK, WEST OF CTH KF	58+95	7.5' RT	R10-50	LEFT TURN YIELD ON FLASHING YELLOW ARROW	30 X 36	-	-	-	7.500	MOUNT ON TRAFFIC SIGNAL MAST ARM
410	CTH JK, EAST OF CTH KF	60+00	31.0' RT	M1-6	COUNTY JK	24 X 24	-	1	-	4.000	REPLACE EXISTING
411	CTH JK, EAST OF CTH KF	62 + 00	31.3' RT	R2-1 (45)	SPEED LIMIT	24 X 30	1	-	-	-	REINSTALL EXISTING SIGN 128
412	CTH JK, EAST OF CTH KF	65+37	24.4' RT	R4-1	DO NOT PASS	24 X 30	-	1	-	5.000	
501	CTH JK, EAST OF CTH KF	71+50	22.2' LT	R4-1	DO NOT PASS	24 X 30	-	1	-	5.000	
502	CTH JK, EAST OF CTH KF	66+00	22.2' LT	W23-2	NEW TRAFFIC PATTERN AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
503	CTH JK, EAST OF CTH KF	65+39	25.3' LT	D1-5	TRAFFIC SIGNAL AHEAD WARNING	30 X 30	1	-	-	6.250	18'X18' ORANGE FLAGS
504	CTH JK, EAST OF CTH KF	64+00	27.2' LT	M2-1	JUNCTION	21 X 15	1	-	-	2.188	REPLACE EXISTING
505	CTH JK, EAST OF CTH KF	64+00	27.2' LT	M1-6	COUNTY KF	24 X 24	-	-	-	4.000	REPLACE EXISTING. SAME POST AS SIGN 504.
506	CTH JK, EAST OF CTH KF	62+12	30.0' LT	R3-8-A	LANE CONTROL	36 X 30	1	-	-	7.500	
507	CTH JK, EAST OF CTH KF	59+30	32.9' LT	R1-1F	STOP-FOLDING	30 X 30	-	-	-	6.250	MOUNT ON TRAFFIC SIGNAL POST
508	CTH JK, EAST OF CTH KF	57+99	31.6' LT	D1-5	SPECIAL 'A'	54 X 18	-	-	-	6.750	MOUNT ON TRAFFIC SIGNAL MAST ARM
509	CTH JK, WEST OF CTH KF	56+79	32.8' LT	M1-6	COUNTY JK	24 X 24	-	1	-	4.000	REPLACE EXISTING
510	CTH JK, WEST OF CTH KF	56+00	31.1' LT	R2-1 (45)	SPEED LIMIT	24 X 30	1	-	-	-	REINSTALL EXISTING SIGN 139
511	CTH JK, WEST OF CTH KF	53+00	23.0' LT	R4-1	DO NOT PASS	24 X 30	-	1	-	5.000	
512	CTH JK, WEST OF CTH KF	52+00	16.0' LT	W1-2 (RT)	CURVE AHEAD	30 X 30	-	-	1	-	REINSTALL EXISTING SIGN 140
513	CTH JK, WEST OF CTH KF	52+00	16.0' LT	M2-1	35 MPH ADVISORY SPEED (PLAQUE)	24 X 24	-	-	1	-	REINSTALL EXISTING SIGN 141. SAME POST AS SIGN 512.
					PROJECT TOTALS		23	9	2	251.13	

EROSION CONTROL ITEMS

STA-STA	616.0100 FENCE WOVEN WIRE 30-INCH LF	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENACE LF	628.1905 MOBILIZATION EROSION CONTROL EACH	628.1910 MOBILIZATION EMERGENCEY EROSION CONTROL EACH	628.2006 EROSION MAT URBAN CLASS I TYPE A SF	628.7010 INLET PROTECTION TYPE B EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7020 INLET PROTECTION TYPE D EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH
PROJECT	-	-	-	2	3	-	-	-	-	-	-
99+50 - 105+50	899	1,034	1,034	-	-	470	-	-	-	-	2
105+50 - 111+69	-	-	-	-	-	-	2	4	4	22	1
51+97 - 58+00	-	622	622	-	-	-	-	2	2	-	-
58+00 - 64+00	-	526	526	-	-	-	-	2	2	-	-
64+00 - 66+50	162	266	266	-	-	-	-	-	-	22	-
TOTAL	1061	2,448	2,448	2	3	470	2	8	8	44	3

FINISHING ITEMS

STA-STA	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	630.0200 SEEDING TEMPORARY LB	SPV.0180.01 HYDROSEEDING SY
PROJECT	-	-	30	-
99+50 - 105+50	-	3368	-	3368
105+50 - 111+69	-	2800	-	2800
51+98 - 58+00	-	1718	-	1718
58+00 - 64+00	-	1782	-	1782
64+00 - 66+50	-	482	-	482
UNDISTRIBUTED	2538	-		-
TOTAL	2538	10150	30	10150

REMOVING SIGNS TYPE II

SIGN NO.	LOCATION	STATION	OFFSET	SIGN CODE	MESSAGE	SIZE	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
101	CTH KF, SOUTH OF CTH JK	99+95	25' RT	M2-1	JUNCTION	21 X 15	1	1	
102	CTH KF, SOUTH OF CTH JK	99+95	25' RT	M1-6	COUNTY JK	24 X 24	1	-	SAME POST AS SIGN 101
103	CTH KF, SOUTH OF CTH JK	104+64	33' RT	M1-6	COUNTY JK	24 X 24	1	1	
104	CTH KF, SOUTH OF CTH JK	104+64	33' RT	M6-4	DIRECTIONAL ARROW	21 X 15	1	-	SAME POST AS SIGN 103
105	CTH KF, NORTH OF CTH JK	107+18	32' RT	M1-6	COUNTY KF	24 X 24	1	1	
106	CTH KF, NORTH OF CTH JK	112+55	27' RT	W2-1	INTERSECTION AHEAD WARNING	30 X 30	-	-	EXISTING TO REMAIN
107	CTH KF, NORTH OF CTH JK	112+55	27' RT	M2-1	35 MPH ADVISORY SPEED (PLAQUE)	24 X 24	-	-	EXISTING TO REMAIN
111	CTH KF, NORTH OF CTH JK	112+43	13' LT	W2-1	INTERSECTION AHEAD WARNING	30 X 30	-	-	EXISTING TO REMAIN
112	CTH KF, NORTH OF CTH JK	112+43	13' LT	M2-1	40 MPH ADVISORY SPEED (PLAQUE)	24 X 24	-	-	EXISTING TO REMAIN
113	CTH KF, NORTH OF CTH JK	109+39	22' LT	M2-1	JUNCTION	21 X 15	1	1	
114	CTH KF, NORTH OF CTH JK	109+39	22' LT	M1-6	COUNTY JK	24 X 24	1	-	SAME POST AS SIGN 114.
115	CTH KF, SOUTH OF CTH JK	104+42	26' LT	M1-6	COUNTY KF	24 X 24	1	1	
121	CTH JK, WEST OF CTH KF	51+95	17' RT	W3-1	STOP AHEAD WARNING	30 X 30	1	1	MAINTAIN UNTIL ACTIVATING NEW TRAFFIC SIGNAL
122	CTH JK, WEST OF CTH KF	54.15	22' RT	M2-1	JUNCTION	21 X 15	1	1	
123	CTH JK, WEST OF CTH KF	54+15	22' RT	M1-6	COUNTY KF	24 X 24	1	-	SAME POST AS SIGN 122.
124	CTH JK, WEST OF CTH KF	57+81	27' RT	R1-1	STOP	30 X 30	1	1	MAINTAIN UNTIL ACTIVATING NEW TRAFFIC SIGNAL
125	CTH JK, WEST OF CTH KF	57+81	27' RT	M1-6	COUNTY KF	24 X 24	1	1	
126	CTH JK, WEST OF CTH KF	57+81	27' RT	M6-4	DIRECTIONAL ARROW	21 X 15	1	-	SAME POST AS SIGN 125.
127	CTH JK, EAST OF CTH KF	60 + 00	30' RT	M1-6	COUNTY JK	24 X 24	1	1	
128	CTH JK, EAST OF CTH KF	63+10	18' RT	R2-1 (45)	SPEED LIMIT	24 X 30	1	1	SALVAGE AND RE-INSTALL (AS SIGN 411)
129	CTH JK, EAST OF CTH KF	67+11	18' RT	W1-2 (LT)	CURVE AHEAD	30 X 30	1	1	EXISTING TO REMAIN
131	CTH JK, EAST OF CTH KF	65 + 50	19' LT	W3-1	STOP AHEAD WARNING	30 X 30	1	1	MAINTAIN UNTIL ACTIVATING NEW TRAFFIC SIGNAL
132	CTH JK, EAST OF CTH KF	63+13	20' LT	M2-1	JUNCTION	21 X 15	1	1	
133	CTH JK, EAST OF CTH KF	63+13	20' LT	M1-6	COUNTY KF	24 X 24	1	-	SAME POST AS SIGN 132.
134	CTH JK, EAST OF CTH KF	59+07	35' RT	R1-1	STOP	30 X 30	1	1	MAINTAIN UNTIL ACTIVATING NEW TRAFFIC SIGNAL
135	CTH JK, EAST OF CTH KF	59+09	20' LT	R1-1	STOP	30 X 30	1	1	MAINTAIN UNTIL ACTIVATING NEW TRAFFIC SIGNAL
136	CTH JK, EAST OF CTH KF	59+09	20' LT	M1-6	COUNTY KF	24 X 24	1	1	
137	CTH JK, EAST OF CTH KF	59+09	20' LT	M6-4	DIRECTIONAL ARROW	21 X 15	1	-	SAME POST AS SIGN 125
138	CTH JK, WEST OF CTH KF	56+19	23' LT	M1-6	COUNTY JK	24 X 24	1	1	
139	CTH JK, WEST OF CTH KF	55+04	20' LT	R2-1 (45)	SPEED LIMIT	24 X 30	1	1	SALVAGE AND RE-INSTALL (AS SIGN 510)
140	CTH JK, WEST OF CTH KF	53+50	19' LT	W1-2 (RT)	CURVE AHEAD	30 X 30	1	1	SALVAGE AND RE-INSTALL (AS SIGN 512)
141	CTH JK, WEST OF CTH KF	53+50	19' LT	M2-1	35 MPH ADVISORY SPEED (PLAQUE)	24 X 24	-	-	SAME POST AS SIGN 140. SALVAGE AND RE-INSTALL (AS SIGN 513)
					PROJECT TOTALS		27	20	

FIELD OFFICE TYPE C

LOCATION	642.5201
CTH KF-CTH JK	1
TOTAL	1

TRAFFIC CONTROL

	SERVICE	643.0300 DRUMS		643.0420 BARRICADES TYPE III		643.0900 TRAFFIC CONTROL SIGNS		643.0920 COVERING SIGNS TYPE II		643.1050 TRAFFIC CONTROL PCMS		643.5000 TRAFFIC CONTROL
	DAYS	NO.	DAYS	NO.	DAYS	NO.	DAYS	EACH	CYCLES	NO.	DAYS	EACH
2762-00-70	-	-	-	-	-	-	-	-	-	-	-	1
STAGE 1	58	225	13050	10	580	25	1450	5	1	4	40	-
STAGE 2	10	225	2250	10	100	25	250	5	1	4	40	-
UNDISTRIBUTED	10	50	500	10	100	10	100	5	1	4	40	-
TOTAL			15800		780		1800	15			120	1

PAVEMENT MARKING

STA-STA	646.1020 MARKING LINE EPOXY 4-INCH LF	646.3020 MARKING LINE EPOXY 8-INCH LF	646.5020 MARKING ARROW EPOXY EA	646.5120 MARKING WORD EPOXY EA	646.6120 MARKING STOP LINE EPOXY 18-INCH LF	646.7120 MARKING DIAGONAL EPOXY 12-INCH LF
99+50 - 105+50	2,571	304	4	2	43	103
105+50 - 111+69	2,954	56	4	1	36	78
51+97 - 58+00	2,983	104	3	1	45	104
58+00 - 64+00	2,156	292	4	2	36	61
64+00 - 66+50	1,344	-	-	-	-	15
TOTAL	12,007	756	15	6	160	361

CONSTRUCTION STAKING

STA-STA	650.4500 CONSTRUCTION STAKING SUBGRADE LF	650.5000 CONSTRUCTION STAKING BASE LF	650.5500 CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	650.9910 CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	650.9920 CONSTRUCTION STAKING SLOPE STAKES LF
PROJECT	-	-	-	1	-
99+50 - 105+50	600	600	83	-	1200
105+50 - 111+70	620	620	1375	-	1240
51+98 - 58+00	602	602	471	-	1204
58+00 - 64+00	600	600	161	-	1200
64+00 - 66+50	250	250	144	-	500
TOTAL	2672	2672	2234	1	5344

CONSTRUCTION STAKING ELECTRICAL INSTALLATIONS INTERSECTION CTH KF & CTH JK

LOCATION	650.8500
CTH KF-CTH JK	1
TOTAL	1

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH LF	652.0615 CONDUIT SPECIAL 3-INCH LF
CB1	PB1	-	30	-
PB1	PB2	200	-	-
PB2	PB3	130	-	-
PB1	PB4	-	-	180
PB4	PB5	240	-	-
PB5	PB6	130	-	-
PB4	PB7	-	-	100
PB7	PB8	-	-	150
PB8	PB9	-	60	-
PB9	PB10	190	-	-
PB10	PB11	130	-	-
PB9	PB12	-	-	170
PB12	PB13	-	100	-
PB13	PB14	200	-	-
PB14	PB15	135	-	-
PB13	PB16	-	-	150
PB16	CB1	-	80	-
PB1	SB1	-	10	-
PB4	SB2	-	15	-
PB7	SB3	-	15	-
PB8	SB4	-	20	-
PB9	SB5	-	15	-
PB12	SB6	-	20	-
PB13	SB7	-	10	-
PB16	SB8	-	15	-
	TOTALS	1355	390	750

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\030201-MQ.DWG PLOT DATE : 1/9/2018 12:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

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3

LOOP DETECTOR

LOOP NO.	HOME RUN PB	STATION	LOCATION	SIZE	NO. OF TURNS	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR LF	655.0700 LOOP DETECTOR LEAD IN CABLE LF	655.0800 LOOP DETECTOR WIRE LF
21	PB15	109+53.60	27.9' LT	6' X 6'	5	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	45	335	175
22	PB14	108+19.40	29.5' LT	6' X 10'	4	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	50	325	180
41	PB3	62+62.04	31.1' LT	6' X 6'	4	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	45	355	140
42	PB2	61+32.12	31.5' LT	6' X 10'	4	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	50	225	170
71	PB2	61+32.12	31.5' LT	6' X 6'	4	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	45	235	145
61	PB6	101+75.00	35.2' RT	6' X 6'	5	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	45	485	180
62	PB5	103+04.93	39.6' RT	6' X 10'	4	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	55	355	180
81	PB11	54+53.03	27.7' RT	6' X 6'	5	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	40	590	195
82	PB10	55+83.02	30.3' RT	6' X 10'	5	LOOP DETECTOR INSTALLED PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)	50	460	200
						TOTALS	425	3365	1565

PULL BOXES STEEL

PULLBOX NO.	STATION	LOCATION	653.0135 PULL BOXES STEEL 24x36-inch EACH	653.0140 PULL BOXES STEEL 24X42-INCH EACH
PB1	59+35.65	37.3' LT	-	1
PB2	61+32.12	31.5' LT	1	-
PB3	62+62.04	31.1' LT	1	-
PB4	59+02.61	46.3' RT	-	1
PB5	103+04.93	39.6' RT	1	-
PB6	101+75.00	35.2' RT	1	-
PB7	105+16.31	29.2' RT	-	1
PB8	104+88.26	38.7' LT	-	1
PB9	57+63.36	41.5' RT	-	1
PB10	55+83.02	30.3' RT	1	-
PB11	54+53.03	28.7' RT	1	-
PB12	57+78.67	42.9' LT	-	1
PB13	106+23.49	31.3' LT	-	1
PB14	108+19.40	29.5' LT	1	-
PB15	109+53.60	27.9' LT	1	-
PB16	106+42.36	41.4' RT	-	1
	TOTALS		8	8

CONCRETE BASES

BASE NO.	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH	654.0113 CONCRETE BASES TYPE 13 EACH	HEIGHT INCREASE REQUIRED * (S.D.D. 9C13) TYPE 13	654.0217 CONCRETE CONTROL CABINET BASE TYPE 9 SPECIAL EACH
CB1	59+40.24	51.6' LT	-	-	-	1
SB1	59+28.78	33.8' LT	1	-	-	-
SB2	58+92.43	50.8' RT	-	1	-	-
SB3	105+05.87	26.3' RT	1	-	6" - 1'-0"	-
SB4	104+95.57	44.3' LT	-	1	6" - 1'-0"	-
SB5	57+78.06	41.6' RT	1	-	-	-
SB6	57+99.32	44.8' LT	-	1	-	-
SB7	106+15.87	32.4' LT	1	-	-	-
SB8	106+32.30	47.8' RT	-	1	-	-
		TOTALS	4	4	-	1

* INCIDENTAL

CABLE TRAFFIC SIGNAL

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5-14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12-14 AWG LF
CB1	SB1	-	55
SB1	HEAD 11	20	-
SB1	HEAD 19	20	-
CB1	SB2	-	165
SB2	HEAD 17	70	-
SB2	HEAD 18	30	-
SB2	HEAD 20	75	-
CB1	SB3	-	230
SB3	HEAD 4	20	-
SB3	HEAD 6	20	-
CB1	SB4	-	325
SB4	HEAD 2	65	-
SB4	HEAD 3	30	-
SB4	HEAD 5	70	-
CB1	SB5	-	340
SB5	HEAD 14	20	-
SB5	HEAD 16	20	-
CB1	SB6	-	245
SB6	HEAD 12	65	-
SB6	HEAD 13	30	-
SB6	HEAD 15	70	-
CB1	SB7	-	170
SB7	HEAD 1	25	-
SB7	HEAD 9	25	-
CB1	SB8	-	85
SB8	HEAD 7	55	-
SB8	HEAD 8	30	-
SB8	HEAD 10	65	-
	TOTALS	825	1615

3

3

ELECTRICAL WIRE LIGHTING 12-AWG

FROM	TO	655.0320 CABLE TYPE UF 2-10 AWG (W/GROUND) LF	655.0610 ELECTRICAL WIRE LIGHTING 12-AWG LF
CB1	SB2	165	-
SB2	LUMINAIRE	-	130
SB2	SB4	200	-
SB4	LUMINAIRE	-	130
CB1	SB8	85	-
SB8	LUMINAIRE	-	130
SB8	SB6	190	-
SB6	LUMINAIRE	-	130
	TOTALS	640	520

TRAFFIC SIGNAL EQUIPMENT

SIGNAL BASE NO.	657.0100 PEDESTAL BASES EA	657.0420 TRAFFIC SIGNAL STANDARDS ALUMINUM 13-FT EA	657.0425 TRAFFIC SIGNAL STANDARDS ALUMINUM 15-FT EA	659.1125 LUMINAIRES UTILITY LED C EA	SPV.0060.01 MONOTUBE POLES TYPE 13 EA	SPV.0060.02 MONOTUBE ARMS 45-FT EA	SPV.0060.03 MONOTUBE ARMS 50-FT EA	SPV.0060.04 LUMINAIRE ARM STEEL, 10-FT EA
SB1	1	1	-	-	-	-	-	-
SB2	-	-	-	1	1	-	1	1
SB3	1	1	-	-	-	-	-	-
SB4	-	-	-	1	1	1	-	1
SB5	1	1	-	-	-	-	-	-
SB6	-	-	-	1	1	1	-	1
SB7	1	-	1	-	-	-	-	-
SB8	-	-	-	1	1	1	-	1
TOTALS	4	3	1	4	4	3	1	4

ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG

FROM	TO	655.0515 LF
CB1	SB1	55
SB1	SB2	150
SB2	SB3	135
SB3	SB4	150
SB4	SB5	105
SB5	SB6	160
SB6	SB7	120
SB7	SB8	140
SB8	CB1	85
PB1	SB1	30
PB4	SB2	30
PB7	SB3	30
PB8	SB4	30
PB9	SB5	30
PB12	SB6	30
PB13	SB7	30
PB16	SB8	30
	TOTALS	1340

EVP DETECTOR CABLE

FROM	TO	655.0900 TRAFFIC SIGNAL EVP DETECTOR CABLE LF	SPV.0090.02 TYPE UF CABLE 2 CONDUCTOR NO 14 LF
CB1	SB4 (HEAD A)	380	380
CB1	SB8 (HEAD B)	140	140
CB1	SB6 (HEAD C)	300	300
CB1	SB2 (HEAD D)	225	225
		1045	1045

TRAFFIC SIGNAL

SIGNAL HEAD NO.	SIGNAL BASE NO.	658.0173 TRAFFIC SIGNAL FACE 3S 12-INCH EA	BACKPLATES SIGNAL FACE 3 SECTION 12-INCH * EA	LED MODULES* 12-INCH RED BALL * EA	LED MODULES 12-INCH YELLOW BALL * EA	LED MODULES 12-INCH GREEN BALL * EA	LED MODULES 12-INCH RED ARROW * EA	LED MODULES 12-INCH YELLOW ARROW * EA	LED MODULES 12-INCH GREEN ARROW * EA
1	SB3	1	1	1	1	1	-	-	-
2	SB8	1	1	1	1	1	-	-	-
3	SB8	1	1	1	1	1	-	-	-
4	SB7	1	1	-	-	-	1	2	-
5	SB8	1	1	-	-	-	1	2	-
6	SB7	1	1	1	1	1	-	-	-
7	SB4	1	1	1	1	1	-	-	-
8	SB4	1	1	1	1	1	-	-	-
9	SB3	1	1	-	-	-	1	2	-
10	SB4	1	1	-	-	-	1	2	-
11	SB1	1	1	1	1	1	-	-	-
12	SB6	1	1	1	1	1	-	-	-
13	SB6	1	1	1	1	1	-	-	-
14	SB5	1	1	-	-	-	1	1	1
15	SB6	1	1	-	-	-	1	1	1
16	SB5	1	1	1	1	1	-	-	-
17	SB2	1	1	1	1	1	-	-	-
18	SB2	1	1	1	1	1	-	-	-
19	SB1	1	1	-	-	-	1	2	-
20	SB2	1	1	-	-	-	1	2	-
	TOTALS	20	20	12	12	12	8	14	2

* FOR INFORMATION ONLY, PART OF PAY ITEM 658.0173

3

ELECTRICAL SERVICE METER PEDESTAL
INTERSECTION OF CTH KF & CTH JK

LOCATION	656.0200.01
CTH KF-CTH JK	1
TOTAL	1

SIGNAL MOUNTING HARDWARE
INTERSECTION OF CTH KF & CTH JK

LOCATION	658.5069
CTH KF-CTH JK	1
TOTAL	1

TRAFFIC SIGNAL CONTROLLER
AND CABINET (CTH KF & CTH JK)
8 PHASE FULLY ACTUATED

LOCATION	SPV.0060.05
CB1	1
TOTAL	1

VEHICLE VIDEO DETECTION CABLE
(INCIDENTAL - FOR INFORMATION ONLY)

FROM	TO	LF
CB1	SB2	165
SB2	VIDEO 4	80
SB2	SB4	215
SB4	VIDEO 1	80
CB1	SB8	85
SB8	VIDEO 2	70
SB8	SB6	215
SB6	VIDEO 3	70
	TOTALS	980

VIDEO CAMERA NUMBER
(INCIDENTAL - FOR INFORMATION ONLY)

	SIGNAL BASE NO.
V1	SB4
V2	SB8
V3	SB6
V4	SB2

EMERGENCY VEHICLE PREEMPTION SYSTEM
INTERSECTION OF CTH KF & CTH JK

LOCATION	SPV.0060.06 EVP DETECTOR TYPE 1 EACH	SPV.0060.07 EVP CONFIRMATION LIGHT ASSEMBLY TYPE 1 EACH	SPV.0060.08 EVP PHASE SELECTOR FOUR CHANNEL EACH	SPV.0060.09 EVP CARD RACK EACH
CB1	-	-	1	1
SB2	1	1	-	-
SB4	1	1	-	-
SB6	1	1	-	-
SB8	1	1	-	-
TOTAL	4	4	1	1

UTILITY LINE OPENING (ULO)
SPV.0060.10

LOCATION	EACH
UNDISTUBUTED	10
TOTAL	10

SAWING ASPHALT
690.0150

STA-STA	SY
64+65 LT (DRIVEWAY)	15
SE CORNER (ISLAND)	120
UNDISTRUBUTED	465
TOTAL	600

EVP DETECTOR CABLE
(INCIDENTAL - FOR INFORMATION ONLY)

FROM	TO	LF
CB1	SB2	165
SB2	EVP HEAD D	80
SB2	SB4	215
SB4	EVP HEAD A	80
CB1	SB8	85
SB8	EVP HEAD B	70
SB8	SB6	215
SB6	EVP HEAD C	70
	TOTALS	980

R/W PROJECT NUMBER 2762-00-00	SHEET NUMBER	TOTAL SHEETS
	4.1	4

PLAT OF RIGHT OF WAY REQUIRED FOR

C.T.H. "KF & C.T.H. "JK INTERSECTION IMPROVEMENTS

C.T.H "KF" & C.T.H. "JK"

CONSTRUCTION PROJECT NUMBER 2762-00-70

4

CONVENTIONAL SYMBOLS

SECTION LINE
QUARTER LINE
SIXTEENTH LINE
NEW REFERENCE LINE
NEW R/W LINE
EXISTING R/W LINE
PROPERTY LINE
LOT, TIE & OTHER MINOR LINES
CORPORATE LIMITS
UNDERGROUND FACILITY (COMMUNICATIONS, ELECTRIC, ETC)
FEE ACQUISITION AREA (HATCHING VARIES BY OWNER)
TEMPORARY LIMITED EASEMENT AREA
EASEMENT AREA (HIGHWAY, PERMANENT LIMITED, OR RESTRICTED DEVELOPMENT)
TRANSMISSION STRUCTURES
BUILDING
NATIONAL GEODETIC SURVEY MONUMENT
SIXTEENTH CORNER MONUMENT

SECTION CORNER
NOTATION FOR COMBUSTABLE FLUIDS
NOTATION FOR HIGH VOLTAGE TRANSMISSION LINES
BRIDGE

R/W MONUMENT
NON-MONUMENTED R/W POINT
FOUND IRON PIN
VALVE (GAS, WATER, ETC.)
SIGN
OFF-PREMISE SIGN

	COMPENSABLE	NON-COMPENSABLE
ELECTRIC POLE		
TELEPHONE POLE		
PEDESTAL (LABEL TYPE) (TV, TEL, ELEC, ETC.)		

ACCESS CONTROLLED BY ACQUISITION
NO ACCESS (BY STATUTORY AUTHORITY)
ACCESS RESTRICTED (BY PREVIOUS PROJECT OR CONTROL)

PARCEL NUMBER 25
UTILITY NUMBER 40

CONVENTIONAL ABBREVIATIONS

ACCESS RIGHTS	AR	POINT OF COMPOUND CURVE	PCC
ACRES	AC	POINT OF INTERSECTION	PI
AHEAD	AH	PROPERTY LINE	PL
ALUMINUM	ALUM	RECORDED AS	(100')
AND OTHERS	ET AL	REFERENCE LINE	R/L
BACK	BK	REMAINING	REM
BLOCK	BLK	RIGHT	RT
CENTERLINE	C/L	RIGHT OF WAY	R/W
CERTIFIED SURVEY MAP	CSM	SECTION	SEC
CONCRETE	CONC	SEPTIC VENT	SEPV
COUNTY	CO	SQUARE FEET	SF
COUNTY TRUNK HIGHWAY	CTH	STATE TRUNK HIGHWAY	STH
DISTANCE	DIST	STATION	STA
CORNER	COR	SUBDIVISION	SUBD
DOCUMENT NUMBER	DOC	TANGENT	TAN
EASEMENT	EASE	TELEPHONE PEDESTAL	TP
EXISTING	EX	TEMPORARY LIMITED EASEMENT	TLE
GAS VALVE	GV	TRANSPORTATION PROJECT PLAT	TPP
GRID NORTH	GN	UNITED STATES HIGHWAY	USH
HIGHWAY EASEMENT	HE	VOLUME	V
IDENTIFICATION	ID		
LAND CONTRACT	LC		
LEFT	LT		
MONUMENT	MON		
NATIONAL GEODETIC SURVEY	NGS		
NUMBER	NO		
OUTLOT	OL		
PAGE	P		
POINT OF TANGENCY	PT		
PERMANENT LIMITED EASEMENT	PLE		
POINT OF BEGINNING	POB		
POINT OF CURVATURE	PC		

CURVE DATA

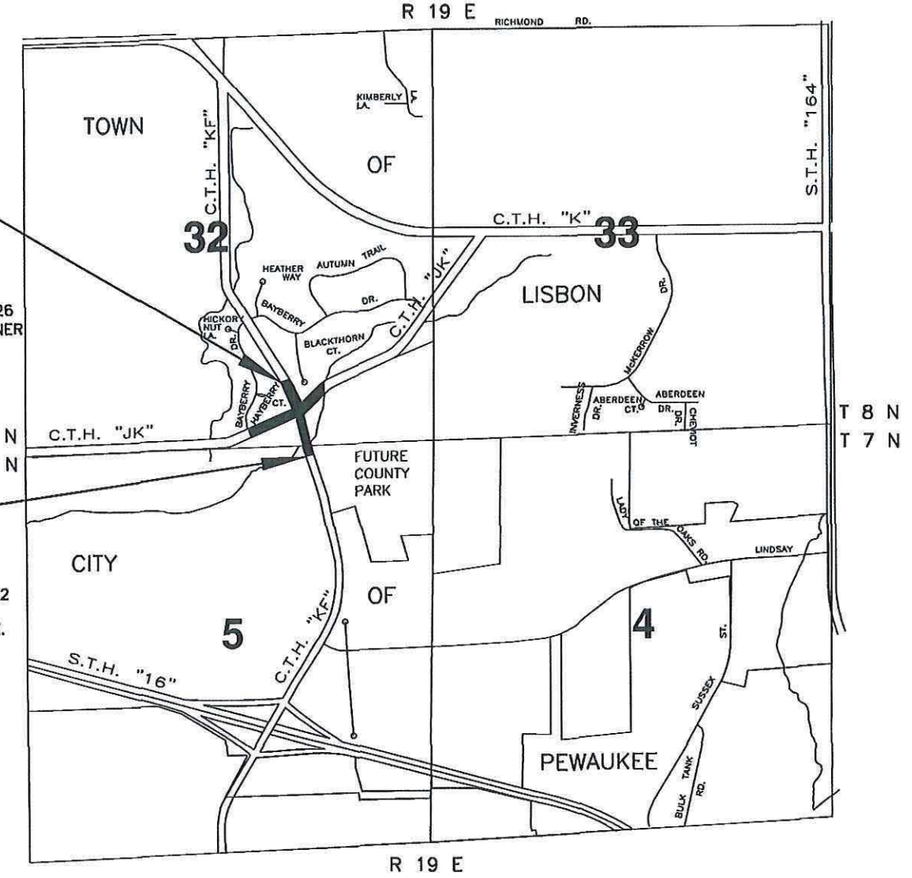
LONG CHORD	LC
LONG CHORD BEARING	LCB
RADIUS	R
DEGREE OF CURVE	D
CENTRAL ANGLE OR DELTA	Δ
LENGTH OF CURVE	L
TANGENT	T
DIRECTION AHEAD	DA
DIRECTION BACK	DB

CONVENTIONAL UTILITY SYMBOLS

WATER	W
GAS	G
TELEPHONE	T
OVERHEAD TRANSMISSION LINES	OH
ELECTRIC	E
CABLE TELEVISION	TV
FIBER OPTIC	FO
SANITARY SEWER	SAN
STORM SEWER	ST

END RELOCATION ORDER
PROJECT I.D. 2762-00-00
STA. 111+70.00
Y = 195,057.465
X = 672,897.242
955.09 FEET NORTH OF AND 706.26 FEET EAST OF THE SOUTH ¼ CORNER OF SEC. 32, T. 8N, R. 19E.

BEGIN RELOCATION ORDER
PROJECT I.D. 2762-00-00
STA. 99+50.00
Y = 196,184.343
X = 672,443.887
171.79 FEET SOUTH OF AND 1159.62 FEET EAST OF THE SOUTH ¼ CORNER OF SEC. 32, T. 8N, R. 19E.



Layout
0 0.25 0.50 MI.
Scale

TOTAL NET LENGTH OF CENTERLINE = 0.2311 MI. (RURAL)

NOTES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD

THE EXISTING HIGHWAY RIGHT OF WAY SHOWN HEREON IS BASED ON EXISTING CERTIFIED SURVEY MAPS, SUBDIVISION PLATS, AND OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING TO THE NEW RIGHT OF WAY IS MEASURED ALONG AND PERPENDICULAR TO THE CENTERLINE OF CONSTRUCTION.

ORIGINAL PLAT PREPARED BY
WAUKESHA COUNTY D.P.W.
515 W. MORELAND BLVD. RM 220
WAUKESHA, WI 53188

DATE: 4-24-17 James T. Mayer (Signature)

APPROVED FOR
WAUKESHA COUNTY
DEPARTMENT OF PUBLIC WORKS

DATE: 4-24-17 Allison Bussler DIRECTOR

DATE: 4/24/17 Gary A. Evans ENGINEERING SERVICES MANAGER

REVISION DATE	STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
06/07/2017	APPROVED FOR THE DEPARTMENT
	DATE: N/A (Signature)

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\RW\ROW_BASE.DWG PLOT DATE : 04/24/2017 PLOT BY : MAYER, JASON PLOT NAME :

SCHEDULE OF LANDS & INTERESTS REQUIRED

AREAS SHOWN IN THE TOTAL AREA MAY BE APPROXIMATE AND ARE DERIVED FROM TAX ROLLS OR OTHER AVAILABLE SOURCES AND MAY NOT INCLUDE LANDS OF THE OWNER WHICH ARE NOT CONTIGUOUS TO THE AREA TO BE ACQUIRED.

PARCEL NO.	SHEET NO.	OWNERS	INTEREST REQ'D.	TOTAL AREA ACRES	EASEMENT ACRES REQUIRED		R/W ACRES REQUIRED			TOTAL ACRES REM.
					T.L.E.	P.L.E.	NEW	EXIST.	TOTAL	
1	4.3, 4.4	NAHEY CHARITABLE FOUNDATION	FEE, T.L.E.	56.758	0.052	–	0.243	–	0.243	56.515
2	4.3, 4.4	MICHAEL & DEBRA CAMPBELL	T.L.E.	0.828	0.019	–	–	–	–	0.828
3 (2)	4.3, 4.4	KIM AND MARY HEMBROOK	FEE, T.L.E.	0.813	0.017	–	0.034	–	0.034	0.779
4 (2)	4.3, 4.4	THOMAS AND DOROTHY BIBO	FEE, T.L.E.	0.925	0.019	–	0.060	–	0.060	0.865
5	4.3, 4.4	DIEGO AND KATHRYN BETANCOURT	T.L.E.	0.714	0.029	–	–	–	–	0.714
6	4.4	STEVEN YENTER	FEE	16.000	–	–	0.118	0.282	0.400	15.600
7 (2)	4.3, 4.4	WAUKESHA COUNTY	FEE, T.L.E., P.L.E.	33.580	0.277	0.010	0.572	1.027	1.599	31.981
101	4.3, 4.4	WE-ENERGIES (ELECTRIC)	CONVEYANCE OF RIGHTS							
102 (2)	4.3, 4.4	TIME WARNER	CONVEYANCE OF RIGHTS							
103	4.3, 4.4	A.T. & T.	CONVEYANCE OF RIGHTS							

4

4

REVISION DATE: 06/21/17	DATE: 04/24/2017	SCALE, FEET N/A	HWY: CTH KF	CONSTRUCTION PROJECT NO.: 2762-00-70	
			COUNTY: WAUKESHA	R/W PROJECT NO.: 2762-00-00	PLAT SHEET NO.: 4.2 62 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\RW\ROW_BASE.DWG PLOT DATE : 04/24/2017 PLOT BY : MAYER, JASON

CITY OF

TOWN OF

PEWAUKEE

LISBON

4

4

A CONCRETE MON.
WITH A SEWRPC
BRASS CAP

Y = 195229.174
X = 671794.042

A CONCRETE MON.
WITH A SEWRPC
BRASS CAP

Y = 195229.255
X = 671737.622

56.42'

SOUTH LINE OF THE SE 1/4 OF SEC. 32-8-19
N 89°56'10" E 1047.43'

CURVE DATA (C/L "KF")

PI	= 107+80.41'
Y	= 195,848.60
X	= 672,642.76
DELTA	= 13°01'48"
D	= 04°24'27"
TAN	= 148.46'
LCH	= 295.00'
LCB	= N24°07'29"W
ARC L	= 295.64'
R	= 1300.00'
PC	= 106+32.61'
PT	= 109+27.25'

LOT 1, C.S.M. NO. 11150

① NAHEY CHARITABLE FOUNDATION
DOC. NO. 4071641
TAX KEY NO. PWC.881.993

(101) 15' WE ENERGIES EASEMENT
DOC. NO. 4128548

ANDREW & ALLISION BEYERL
DOC. NO. 4112571
TAX KEY NO. LSBT.272.015

③ KIM & MARY HEMBROOK
DOC. NO. 3603828
TAX KEY NO. LSBT.272.016

(101) (102) (103) 10' WEPCO AND
TELEPHONE EASEMENT
DOC. NO. 763922

② MICHAEL & DEBRA CAMPBELL
DOC. NO. 3237663
TAX KEY NO. LSBT.272.017

BAYBERRY CT.

BAYBERRY DR.

LYNNDALE FARMS EAST SUBD.

C.T.H. "JK"

C.T.H. "KF"

N 17°54'38" W

N 17°36'13" W

N 30°38'22" W

P.C.=STA. 106+32.61

P.T.=STA. 109+28.25

P.I.=STA. 107+80.41

P.I.=STA. 105+57.91 (C.T.H. "KF")

P.I.=STA. 58+38.78 (C.T.H. "JK")

RUSSELL INGBRETSON
TAX KEY NO. LSBT.272.079

(101) (102) (103) 10' WEPCO AND
TELEPHONE EASEMENT
DOC. NO. 763922

④ THOMAS & DOROTHY BIBO
R. 1535, I. 1386
TAX KEY NO. LSBT.272.078

⑤ DIEGO & KATHRYN BETANCOURT
R. 2759, I. 1628
TAX KEY NO. LSBT.272.077

⑦ WAUKESHA COUNTY D.P.L.U.
(FUTURE RYAN PARK)
R. 225, I. 689
TAX KEY NO. LSBT.272.997 & PWC.0881.999

SLOPE LIMITS

BLACKTHORN CT.

LYNNDALE FARMS EAST SUBD.

END RELOCATION ORDER
PROJECT I.D. 2762-00-00
STA. 111+70.00'
Y = 195,057.465
X = 672,897.242
955.09 FEET NORTH OF AND
706.26 FEET EAST OF THE
SOUTH ¼ CORNER OF SEC.
32, T. 8N, R. 19E.

BEGIN RELOCATION ORDER
PROJECT I.D. 2762-00-00
STA. 99+50.00'
Y = 196,184.343
X = 672,443.887
171.79 FEET SOUTH OF AND
1159.62 FEET EAST OF THE
SOUTH ¼ CORNER OF SEC.
32, T. 8N, R. 19E.

SOUTH LINE OF THE SE 1/4 OF SEC. 32-8-19
N 89°56'10" E 1536.38'

A CONCRETE MON.
WITH A BRASS CAP

Y = 195232.052
X = 674377.853

CURVE DATA (C1)
ARC LEN. = 37.50'
CHORD LEN. = 37.50'
CH. BR. = N 18°24'20" W
RADIUS = 1350.00'
I ANGLE = 01°35'29"

CURVE DATA (C2)
ARC LEN. = 108.84'
CHORD LEN. = 108.81'
CH. BR. = N 20°06'16" W
RADIUS = 1250.00'
I ANGLE = 04°59'21"

CURVE DATA (C3)
ARC LEN. = 112.04'
CHORD LEN. = 112.00'
CH. BR. = N 20°11'53" W
RADIUS = 1240.00'
I ANGLE = 05°10'37"

CURVE DATA (C4)
ARC LEN. = 113.64'
CHORD LEN. = 113.60'
CH. BR. = N 20°14'45" W
RADIUS = 1235.00'
I ANGLE = 07°03'11"

CURVE DATA (C5)
ARC LEN. = 85.18'
CHORD LEN. = 85.16'
CH. BR. = N 24°33'04" W
RADIUS = 1250.00'
I ANGLE = 05°10'37"

CURVE DATA (C6)
ARC LEN. = 80.31'
CHORD LEN. = 80.30'
CH. BR. = N 24°38'32" W
RADIUS = 1240.00'
I ANGLE = 03°42'40"

CURVE DATA (C16)
ARC LEN. = 5.11'
CHORD LEN. = 5.11'
CH. BR. = N 60°39'35" E
RADIUS = 1105.00'
I ANGLE = 00°15'53"

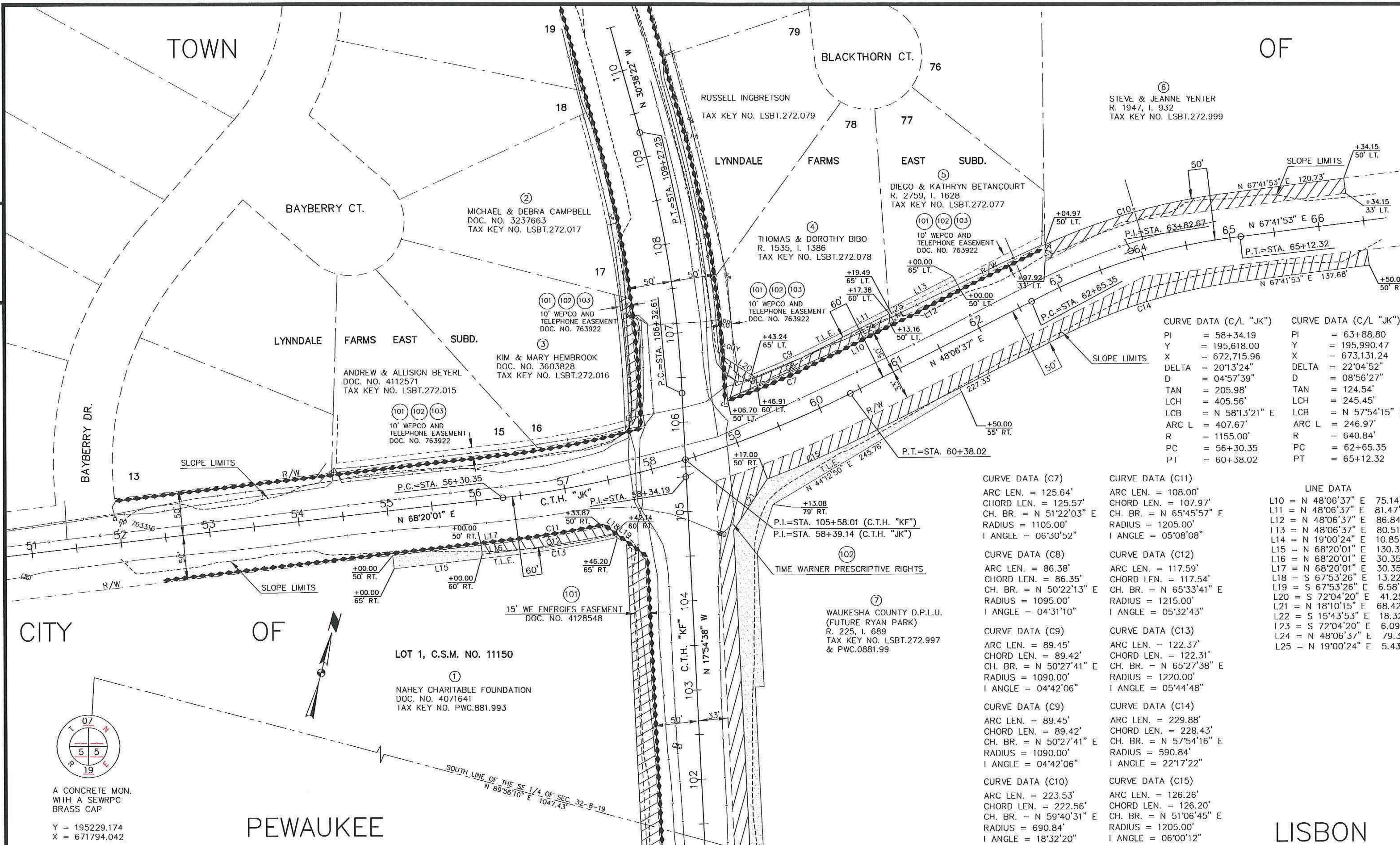
CURVE DATA (C17)
ARC LEN. = 10.23'
CHORD LEN. = 10.23'
CH. BR. = N 60°50'43" E
RADIUS = 1105.00'
I ANGLE = 00°31'49"

LINE DATA

L1	= N 17°36'35" W	8.27'
L2	= S 72°04'20" E	41.25'
L3	= N 17°36'35" W	35.21'
L4	= N 17°36'35" W	37.36'
L5	= N 17°36'35" W	38.40'
L6	= S 89°30'11" W	5.40'
L7	= S 89°30'11" W	5.40'
L8	= S 62°48'33" W	10.00'
L9	= N 67°53'26" W	26.12'

REVISION DATE: 06/21/17	DATE: 04/24/2017		HWY: CTH KF	CONSTRUCTION PROJECT NO.: 2762-00-70	
	SCALE = 1"=100'		COUNTY: WAUKESHA	R/W PROJECT NO.: 2762-00-00	PLAT SHEET NO.: 4.63 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\RW\ROW_BASE_KF.DWG PLOT DATE : 04/24/2017 PLOT BY : MAYER, JASON



CURVE DATA (C/L "JK")

PI	= 58+34.19
Y	= 195,618.00
X	= 672,715.96
DELTA	= 20°13'24"
D	= 04°57'39"
TAN	= 205.98'
LCH	= 405.56'
LCB	= N 58°13'21" E
ARC L	= 407.67'
R	= 1155.00'
PC	= 56+30.35
PT	= 60+38.02

CURVE DATA (C/L "JK")

PI	= 63+88.80
Y	= 195,990.47
X	= 673,131.24
DELTA	= 22°04'52"
D	= 08°56'27"
TAN	= 124.54'
LCH	= 245.45'
LCB	= N 57°54'15" E
ARC L	= 246.97'
R	= 640.84'
PC	= 62+65.35
PT	= 65+12.32

CURVE DATA (C7)
ARC LEN. = 125.64'
CHORD LEN. = 125.57'
CH. BR. = N 51°22'03" E
RADIUS = 1105.00'
I ANGLE = 06°30'52"

CURVE DATA (C8)
ARC LEN. = 86.38'
CHORD LEN. = 86.35'
CH. BR. = N 50°22'13" E
RADIUS = 1095.00'
I ANGLE = 04°31'10"

CURVE DATA (C9)
ARC LEN. = 89.45'
CHORD LEN. = 89.42'
CH. BR. = N 50°27'41" E
RADIUS = 1090.00'
I ANGLE = 04°42'06"

CURVE DATA (C9)
ARC LEN. = 89.45'
CHORD LEN. = 89.42'
CH. BR. = N 50°27'41" E
RADIUS = 1090.00'
I ANGLE = 04°42'06"

CURVE DATA (C10)
ARC LEN. = 223.53'
CHORD LEN. = 222.56'
CH. BR. = N 59°40'31" E
RADIUS = 690.84'
I ANGLE = 18°32'20"

CURVE DATA (C11)
ARC LEN. = 108.00'
CHORD LEN. = 107.97'
CH. BR. = N 65°45'57" E
RADIUS = 1205.00'
I ANGLE = 05°08'08"

CURVE DATA (C12)
ARC LEN. = 117.59'
CHORD LEN. = 117.54'
CH. BR. = N 65°33'41" E
RADIUS = 1215.00'
I ANGLE = 05°32'43"

CURVE DATA (C13)
ARC LEN. = 122.37'
CHORD LEN. = 122.31'
CH. BR. = N 65°27'38" E
RADIUS = 1220.00'
I ANGLE = 05°44'48"

CURVE DATA (C14)
ARC LEN. = 229.88'
CHORD LEN. = 228.43'
CH. BR. = N 57°54'16" E
RADIUS = 590.84'
I ANGLE = 22°17'22"

CURVE DATA (C15)
ARC LEN. = 126.26'
CHORD LEN. = 126.20'
CH. BR. = N 51°06'45" E
RADIUS = 1205.00'
I ANGLE = 06°00'12"

LINE DATA

L10	= N 48°06'37" E	75.14'
L11	= N 48°06'37" E	81.47'
L12	= N 48°06'37" E	86.84'
L13	= N 48°06'37" E	80.51'
L14	= N 19°00'24" E	10.85'
L15	= N 68°20'01" E	130.35'
L16	= N 68°20'01" E	30.35'
L17	= N 68°20'01" E	30.35'
L18	= S 67°53'26" E	13.22'
L19	= S 67°53'26" E	6.58'
L20	= S 72°04'20" E	41.25'
L21	= N 18°10'15" E	68.42'
L22	= S 15°43'53" E	18.32'
L23	= S 72°04'20" E	6.09'
L24	= N 48°06'37" E	79.36'
L25	= N 19°00'24" E	5.43'

REVISION DATE: 06/21/17	DATE: 04/24/2017	HWY: CTH JK	CONSTRUCTION PROJECT NO.: 2762-00-70	
	SCALE = 1"=100'	COUNTY: WAUKESHA	R/W PROJECT NO.: 2762-00-00	PLAT SHEET NO.: 4.64 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\RW\ROW_BASE_JK.DWG PLOT DATE : 04/24/2017 PLOT BY : MAYER, JASON

EXTEND CULVERTS

SLOPE INTERCEPT

NAHEY CHARITABLE FOUNDATION
W262 N4685 RYAN ST.

R/W

99 100 101 102 103 104 105 C.T.H. "KF" 106

BEGIN PROJECT
STA99+50
Y = 195057.465
X = 672897.242

P.L.E.

T.L.E.

R/W

EXTEND CULVERTS

SLOPE INTERCEPT

WAUKESHA COUNTY
515 W. MORELAND BLVD.

EMBROOK
YBERRY CT.

BENCH MARK

STATION	DESCRIPTION	ELEV.
106+27.1, 58.4' LT.	SE COR. OF TOP OF CONC. PAD FOR ATT VAULT	907.12

℄ C.T.H. KF
PROPOSED 2-1/2"
OVERLAY
PROFILE GRADE LINE

EXISTING GRADE (TYP.)

908 906 904 902 900 898 896 894 892 890 888

890.0 889.9 889.9 890.0 890.1 890.3 890.6 890.8 891.1 891.3 891.6 891.8 892.1 892.3 892.7 893.1 893.6 894.0 894.6 895.3 896.1 896.9 898.0 899.0 900.1 901.2 902.5 904.0 905.6 907.3 907.29

99+25 100+00 101+00 102+00 103+00 104+00 105+00 106+00 106+50

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PLAN AND PROFILE	SHEET 65

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\050101 - PP.DWG PLOT DATE : 8/22/2017 PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

KIM AND MARY HEMBROOK
N48 W26389 BAYBERRY CT.

RUSSELL INGBRETSON
W263 N4929 BLACKTHORN CT.

THOMAS & DOROTHY BIBO
W263 N4923 BLACKTHORN CT.

RUSSELL INGBRETSON
W263 N4929 BLACKTHORN CT.

R/W
T.L.E.
SLOPE INTERCEPT
C.T.H. "KF"
END PROJECT
STA 111+70.00
50

BENCH MARK

STATION	DESCRIPTION	ELEV.
106+27.1, 58.4' LT.	SE COR. OF TOP OF CONC. PAD FOR ATT VAULT	907.12

℄ C.T.H. KF
PROPOSED 2-1/2"
OVERLAY
PROFILE GRADE LINE

EXISTING GRADE (TYP.)

934 932 930 928 926 924 922 920 918 916 914 912 910 908 906

904.0 905.6 907.3 908.9 910.4 912.0 913.5 915.0 916.6 918.1 919.6 921.0 922.4 923.7 925.0 926.2 927.3 928.3 929.3 930.3 931.3 932.1 932.9 933.5 934.2

106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 113+50

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PLAN AND PROFILE	SHEET 5F

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\050101 - PP (KF-106+00-111-70).DWG PLOT DATE : 8/22/2017 PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

BAYBERRY DR.

RAMONA AUDLEY
W264 N4842 BAYBERRY DR.

ANDREW & ALLISON BEYERL
N48 W26395 BAYBERRY CT.

KIM AND MARY HEMBROOK
N48 W26389 BAYBERRY CT.

SLOPE INTERCEPT

R/W

I.P.

TW

ATT

CATV

52 53 54 55 56 57 58 59

C.T.H. "JK"

C.T.H. "KF"

BEGIN CONSTRUCTION
STA 51+98.00

SLOPE INTERCEPT

2" Tree

8" Tree

T.L.E.

890

895

900

106

(50')

ST

ONLY

NAHEY CHARITABLE FOUNDATION
W262 N4685 RYAN ST.

BENCH MARK

Y	X	DESCRIPTION	ELEV.
195,229.174	671,794.042	A CONCRETE MON. WITH A SEWRPC BRASS CAP	890.80

℄ C.T.H. KF
PROPOSED 2-1/2"
OVERLAY
PROFILE GRADE LINE

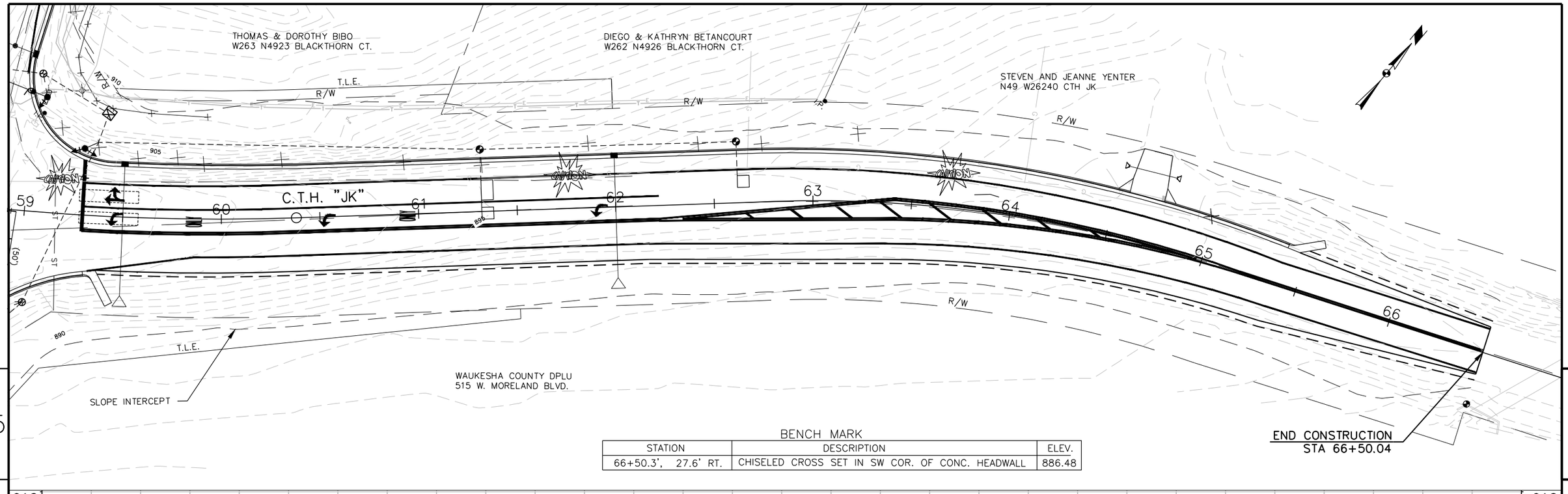
EXISTING GRADE (TYP.)

894.2 894.5 894.9 895.3 895.7 896.2 896.7 897.2 897.8 898.4 898.9 899.4 900.0 900.4 900.7 901.0 901.2 901.5 901.8 902.0 902.1 902.1 902.1 901.8 901.6 901.4 901.5 901.3 901.6 901.3 900.7

52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00

PROJECT NO: 2762-00-70	HWY: CTH JK	COUNTY: WAUKESHA	PLAN AND PROFILE	SHEET 5F

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\050101 - PP.DWG PLOT DATE : 8/22/2017 PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'



BENCH MARK

STATION	DESCRIPTION	ELEV.
66+50.3', 27.6' RT.	CHISELED CROSS SET IN SW COR. OF CONC. HEADWALL	886.48

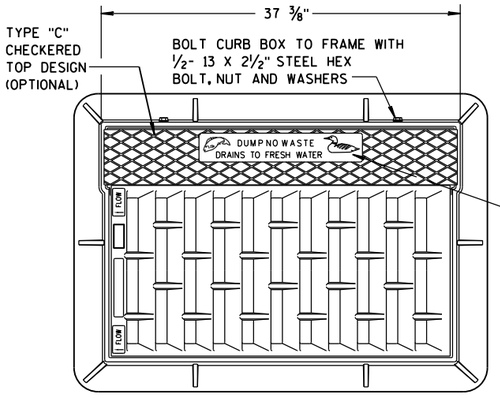
PROJECT NO: 2762-00-70	**HWY:** CTH JK	**COUNTY: WAUKESHA**	PLAN AND PROFILE	**SHEET** 5

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\SHEETSPLAN\050101 - PP.DWG PLOT DATE : 8/22/2017 PLOT BY : SOEHNER, JIM PLOT SCALE : 1"=50'

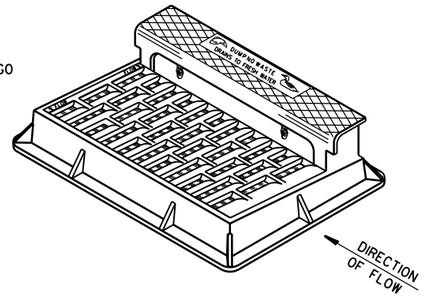
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08A08-02	CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER
08A09-02	CATCH BASINS 2X3-FT AND 2.5X3-FT
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C06-02	INLETS 3-FT AND 4-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-02	INLETS MEDIAN 1 AND 2 GRATE
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D16-10	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08D17-06	MANHOLES, MANHOLE & INLET COVERS
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-01	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
09B02-10	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09C06-07	CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL
09C12-08A	CONCRETE BASE TYPE 13
09C12-08B	CONCRETE BASE TYPE 13
09C13-02	CONCRETE BASE TYPE 10 & TYPE 13 EXTENSION
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09D02-03	SIGNAL CONTROL CABINET
09E01-14G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-05	NON-FREEWAY LIGHTING UNIT POLE WIRING
09E05-06	TRAFFIC SIGNAL STANDARD ORNAMENTAL BRACKET MOUNTINGS TYPICAL FOR 13 FT. OR 15 FT.
09E08-08D	TYPE 13 POLE 35'-55' MONOTBE ARM
09E08-08E	GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS
09F08-04	LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)
09F10-04	LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C07-14B	PAVEMENT MARKING WORDS
15C07-14C	PAVEMENT MARKING ARROWS
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C08-18B	PAVEMENT MARKING (TURN LANES)
15C18-04	MEDIAN ISLAND MARKING
15C27-02B	PAVEMENT MARKING (ISLANDS)
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D12-06B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D38-01A	TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS
15D38-02B	ATTACHMENT OF SIGNS TO POSTS

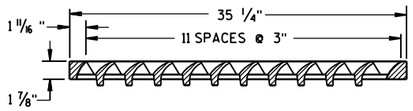
6

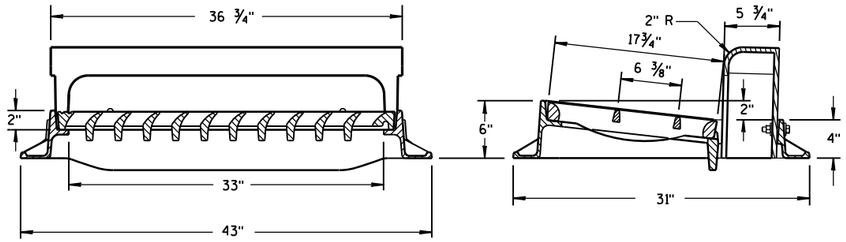


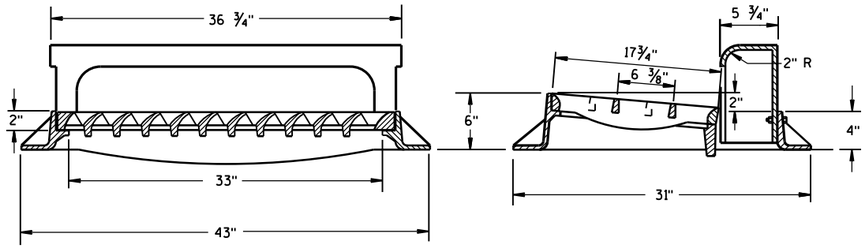
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

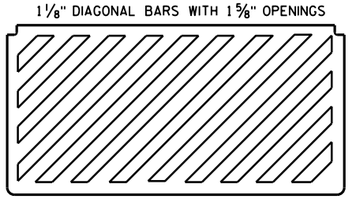






TYPE "H"

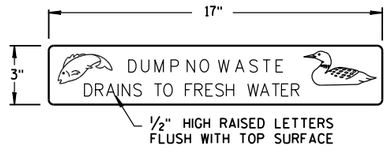
NOTE: EITHER CASTING IS ACCEPTABLE



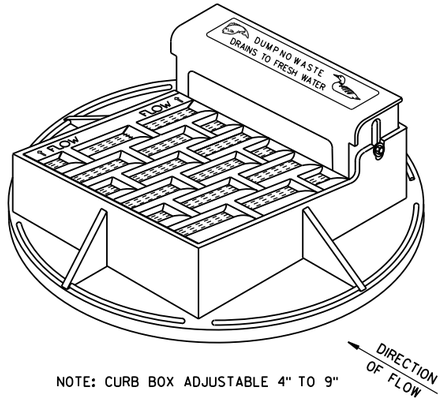
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

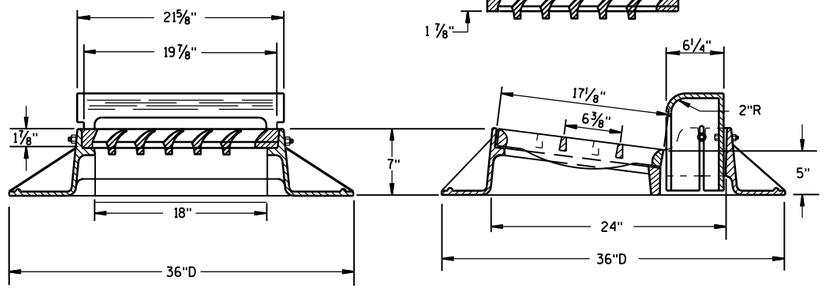


LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

NOTE:
GRATE IS REVERSIBLE.



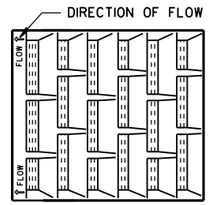
TYPE "A"

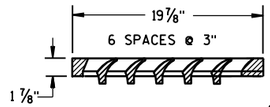
GENERAL NOTES

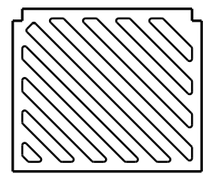
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

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



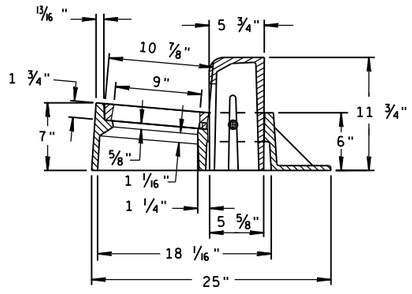


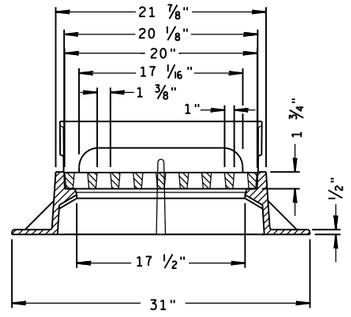


SPECIAL GRATE FOR TYPE "A" COVER

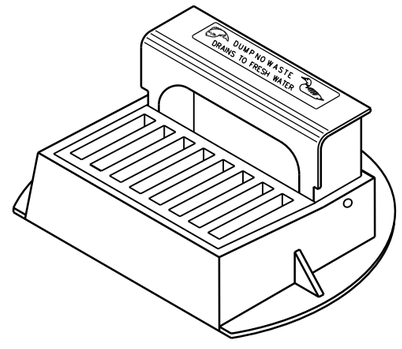
(MEASURES 19 3/4" X 17" X 1 7/8")

(NOTED AS TYPE A-S ON DRAINAGE TABLE)





TYPE "Z"



INLET COVERS TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

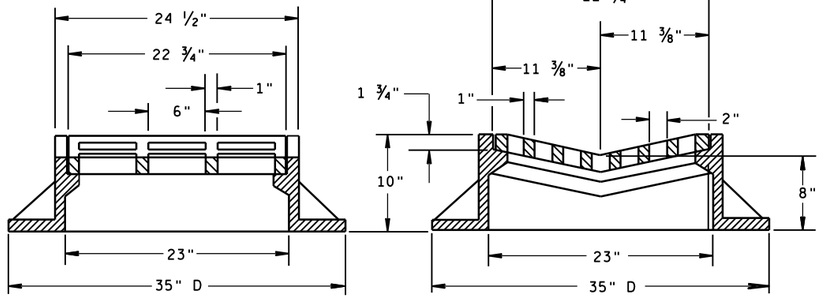
APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

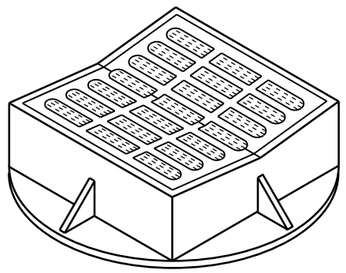
6

S.D.D. 8 A 5-19a

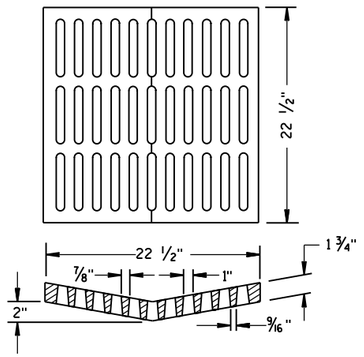
6

S.D.D. 8 A 5-19a



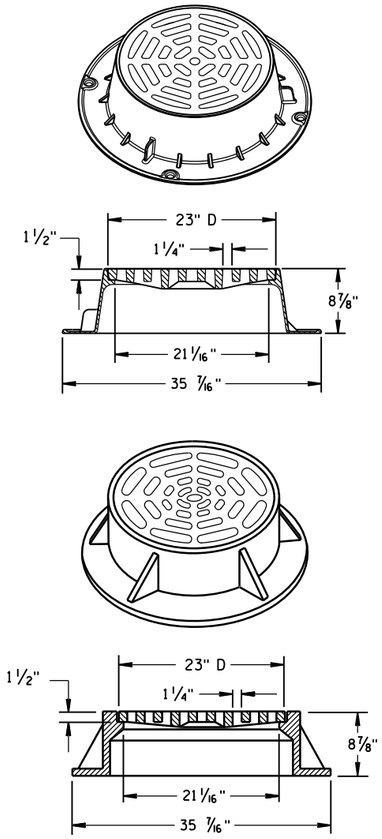


TYPE "B"



ALTERNATIVE GRATE FOR TYPE "B" COVER

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



TYPE "C"

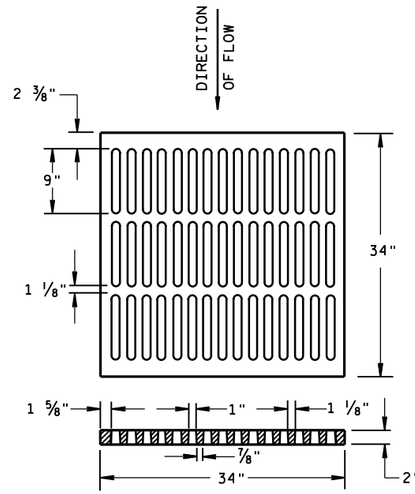
NOTE: EITHER CASTING IS ACCEPTABLE

GENERAL NOTES

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

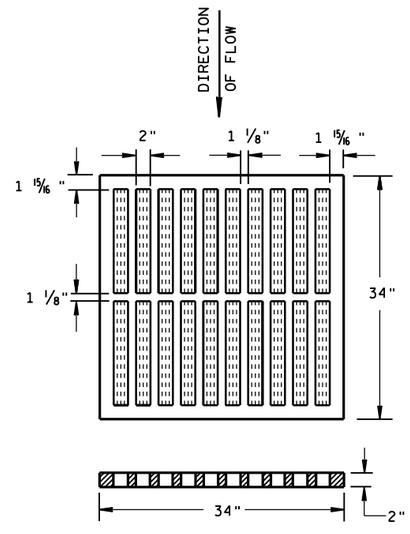
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



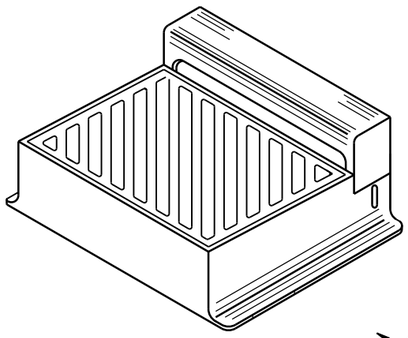
ALTERNATIVE TYPE "MS"

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

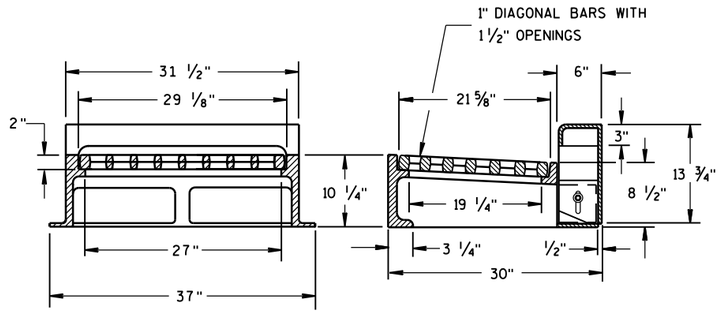


TYPE "MS"

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



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



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

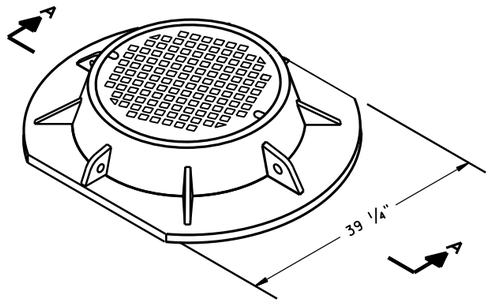
INLET COVERS
TYPE B, B-A, C, MS, MS-A, & WM

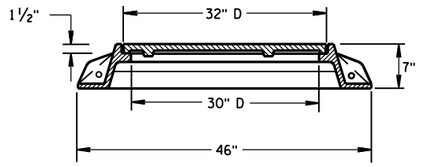
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

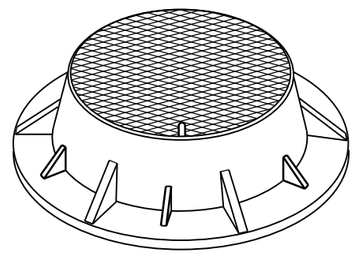
6

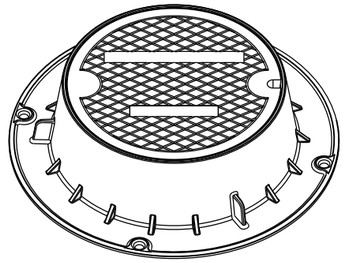
S.D.D. 8 A 5-19b

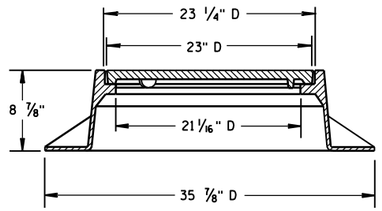


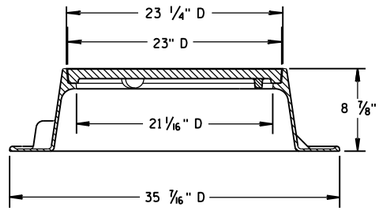


SECTION A-A
TYPE "K"









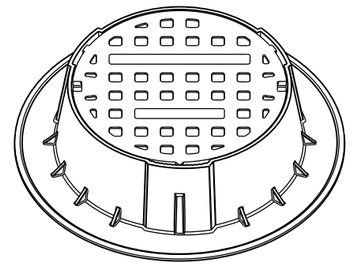
TYPE "J"
NOTE: EITHER CASTING IS ACCEPTABLE

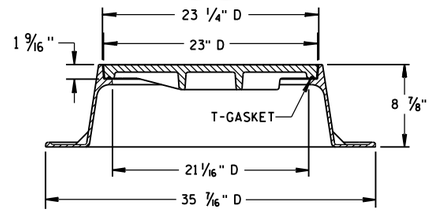
GENERAL NOTES

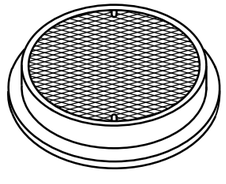
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

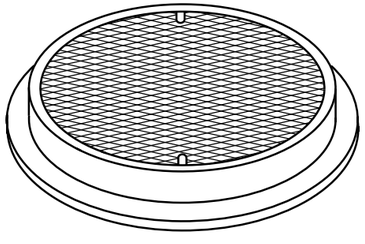
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

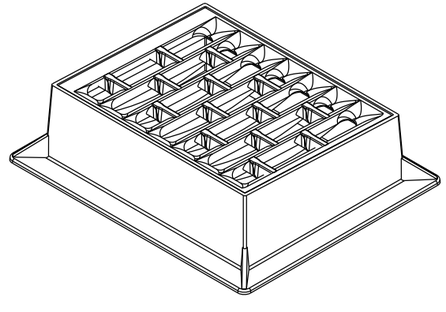
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

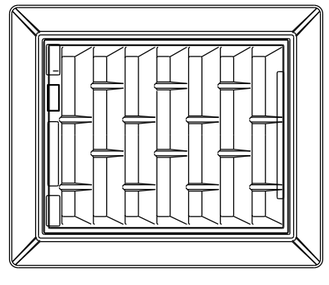


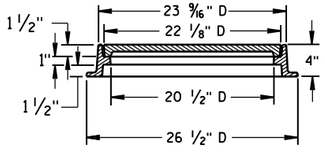




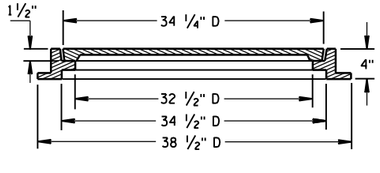




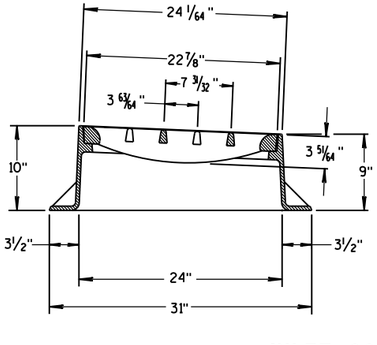


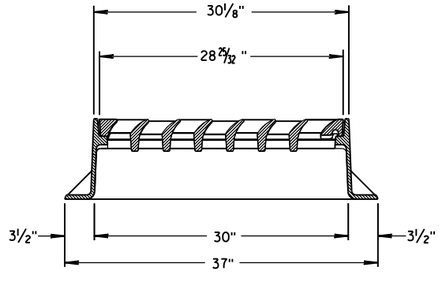


TYPE "L"

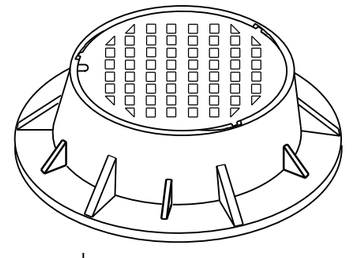


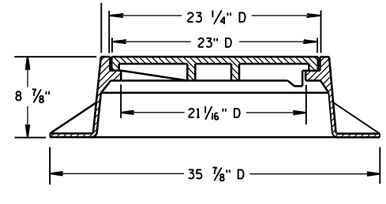
TYPE "M"





INLET COVER TYPE "BW"





TYPE "J" SPECIAL
TYPE "B" NON-ROCKING SELF-SEAL LID
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)
NOTE: EITHER CASTING IS ACCEPTABLE

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K, J, J-S, L & M

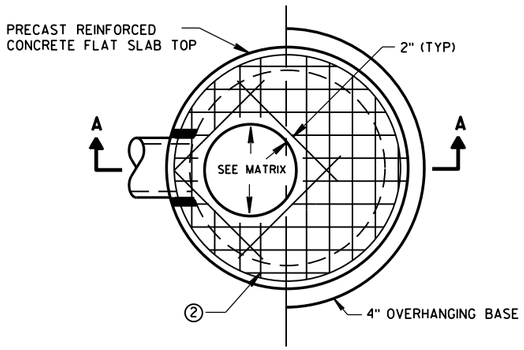
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

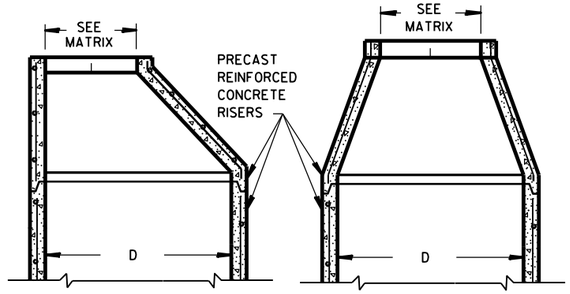
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

6

S.D.D. 8 A 5-19d

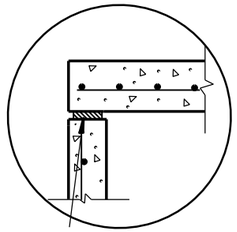


PLAN VIEW CIRCULAR OPENING

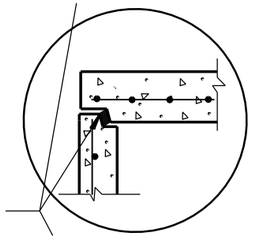


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

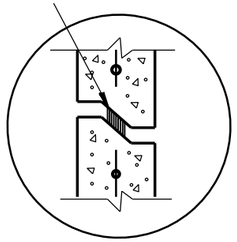
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT

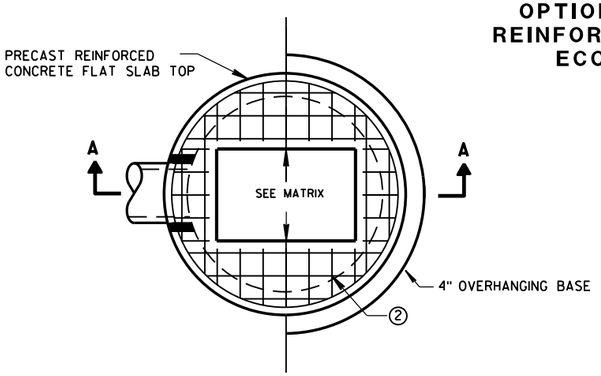


TOP WITH TONGUE AND GROOVE JOINT

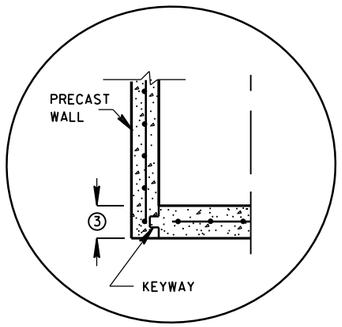


RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

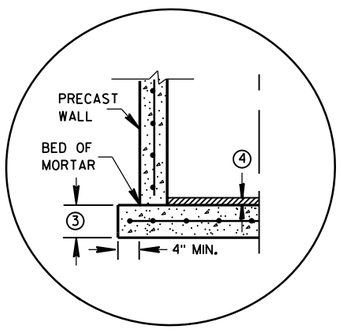


PLAN VIEW RECTANGULAR OPENING



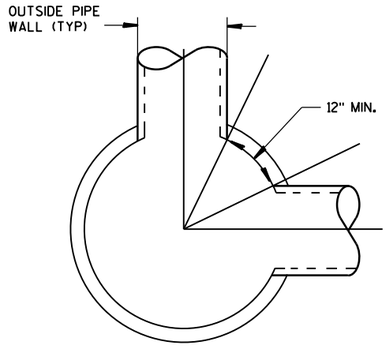
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)

PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

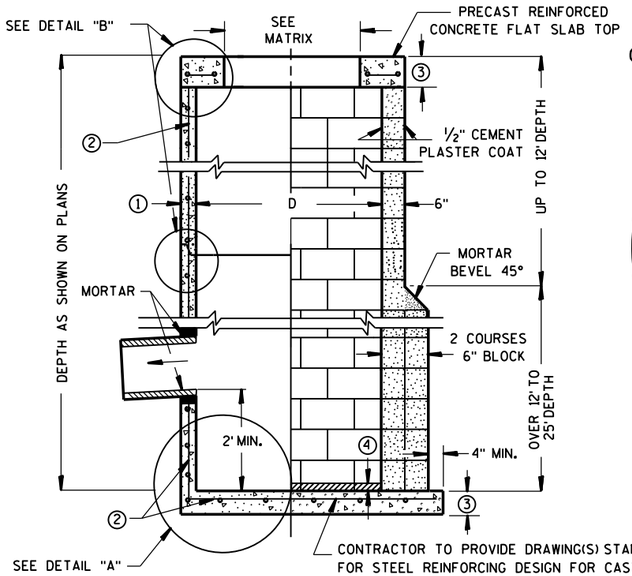


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



SECTION A-A

PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

GENERAL NOTES

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

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

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED CONCRETE CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED CONCRETE FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½ INCH AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT AND 7 INCHES FOR 6-FT DIAMETER PRECAST CATCH BASINS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

④ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER OPENING MATRIX

CATCH BASIN SIZE	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
	OPENING SIZE (FT)											
3-FT	2X2	X	X					X		X		
	2 DIA.				X							X
4-FT-6-FT	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2 DIA.				X							X
	2X3						X					
	2.5X3					X						

PIPE MATRIX

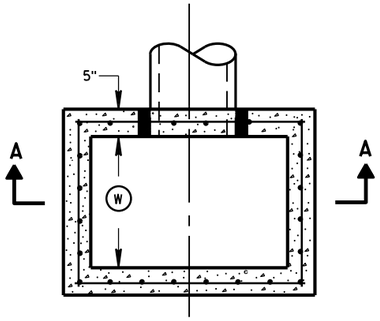
CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	30

CATCH BASINS 3-FT, 4-FT, 5-FT AND 6-FT DIAMETER

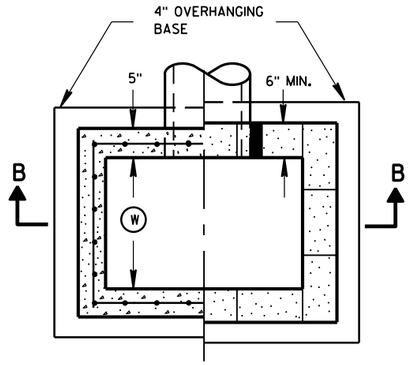
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVI...
FHWA

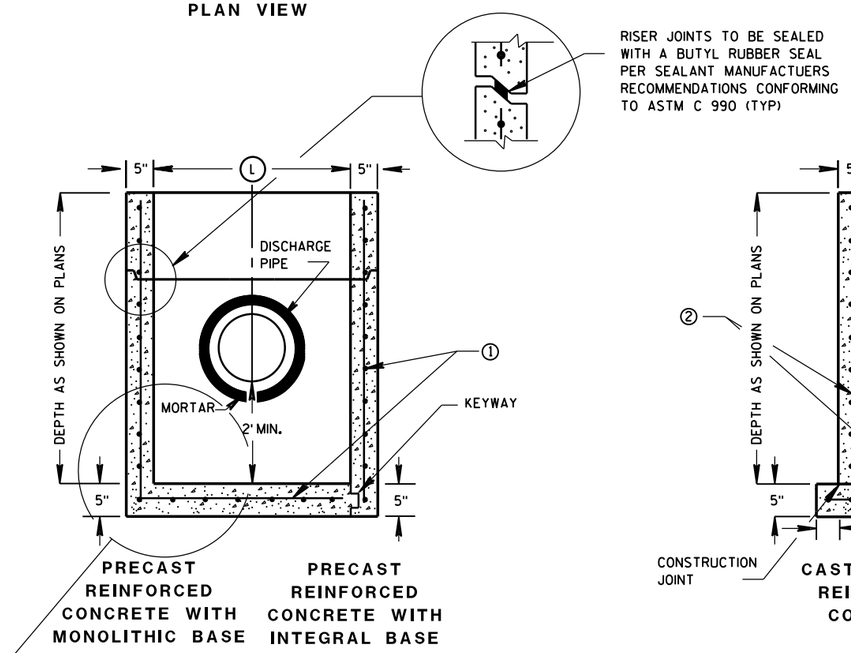
6
S.D.D. 8 A 8-2



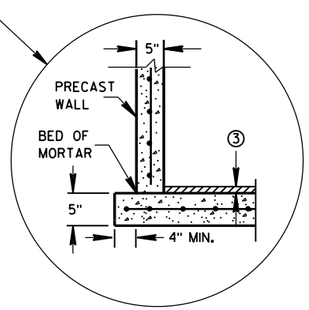
PLAN VIEW



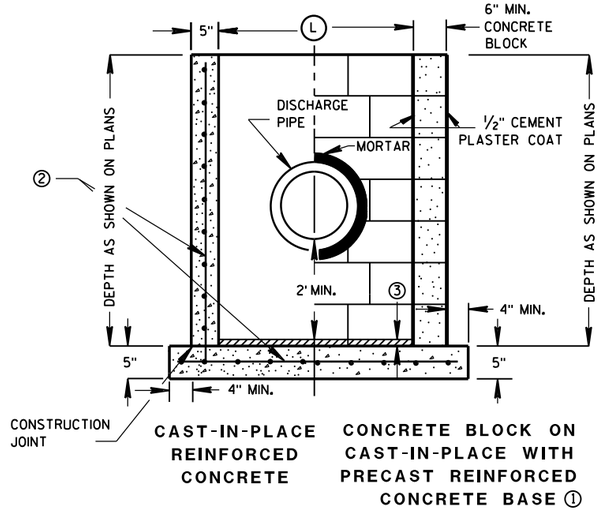
PLAN VIEW



SECTION A-A



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION



SECTION B-B

GENERAL NOTES

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

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

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

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

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

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

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

① FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

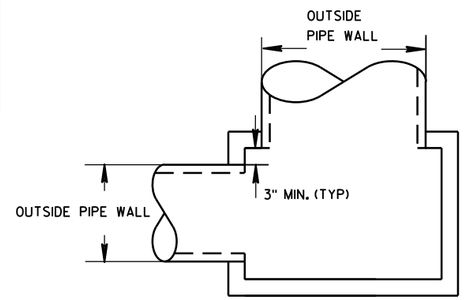
③ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER MATRIX

CATCH BASIN SIZE		INLET COVER TYPE	F	ALL H'S
	WIDTH (W) (FT)	LENGTH (L) (FT)		
2X3-FT	2	3		X
2.5X3-FT	2.5	3	X	

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

CATCH BASINS 2X3-FT AND 2.5X3-FT

CATCH BASINS 2X3-FT AND 2.5X3-FT

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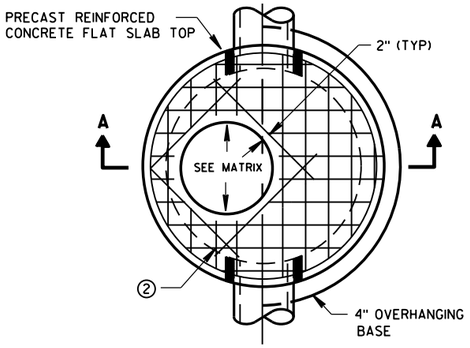
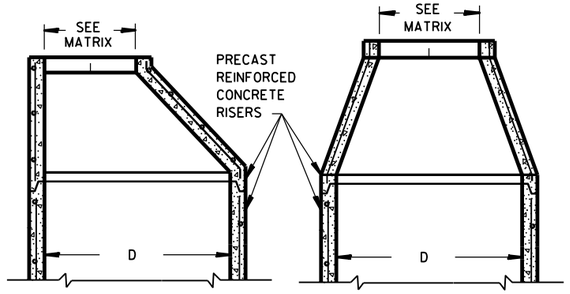
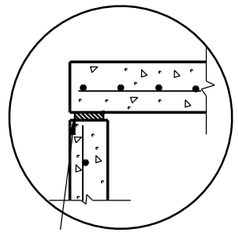


PLAN VIEW CIRCULAR OPENING

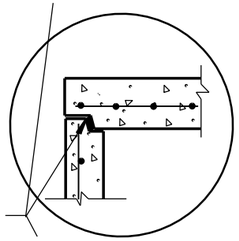


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

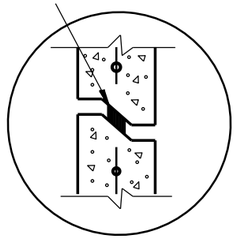


TOP WITH PLAIN END JOINT



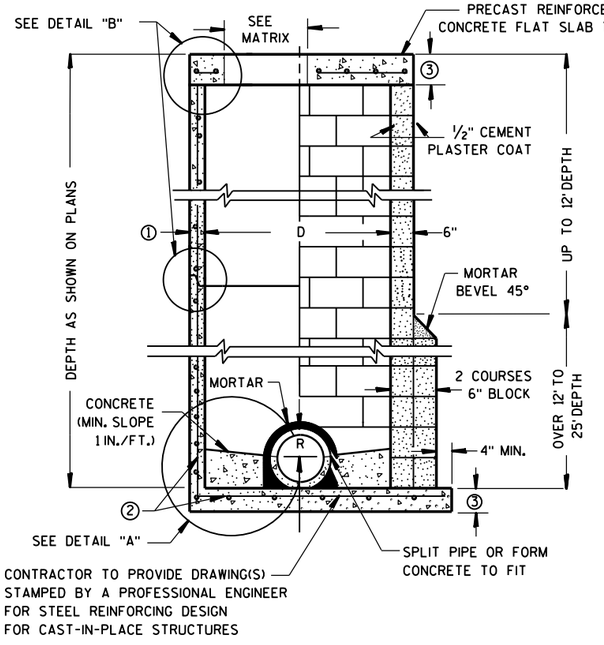
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



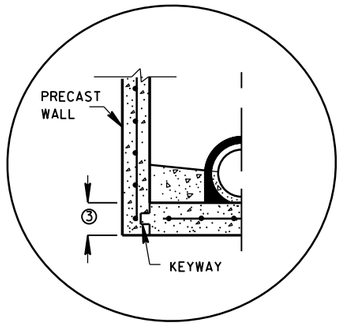
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

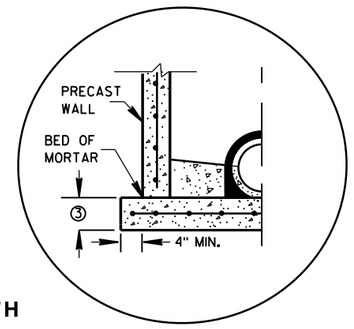


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

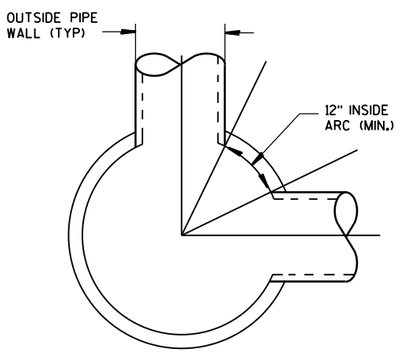


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

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.

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ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

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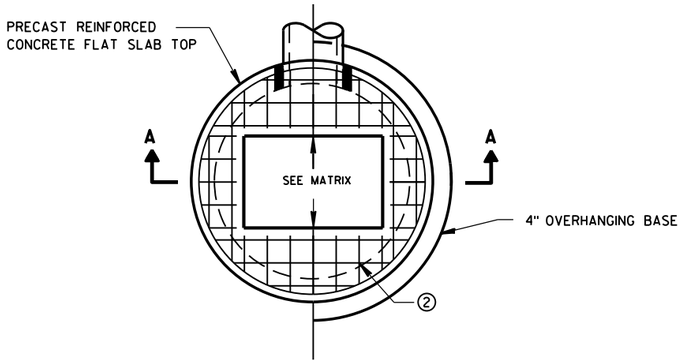
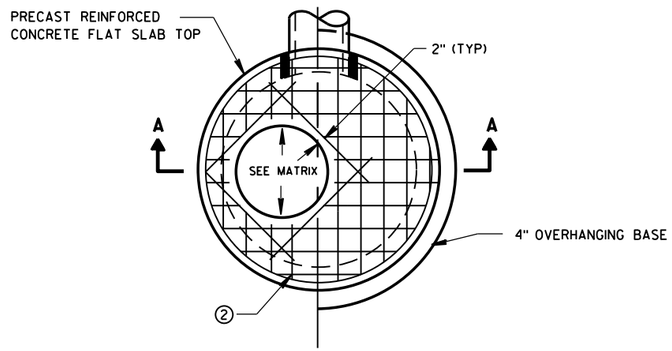
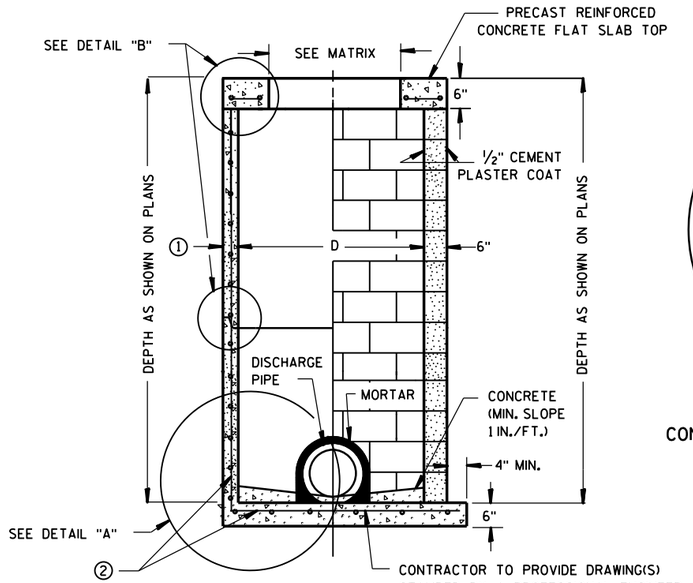


PLAN VIEW RECTANGULAR OPENING



PLAN VIEW CIRCULAR OPENING

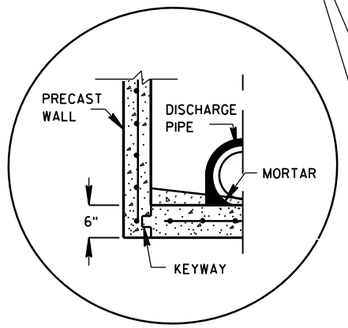


SECTION A-A

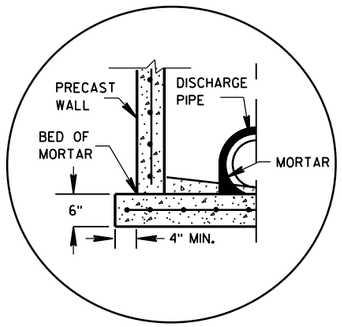
PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

CIRCULAR INLETS W/ FLAT TOP

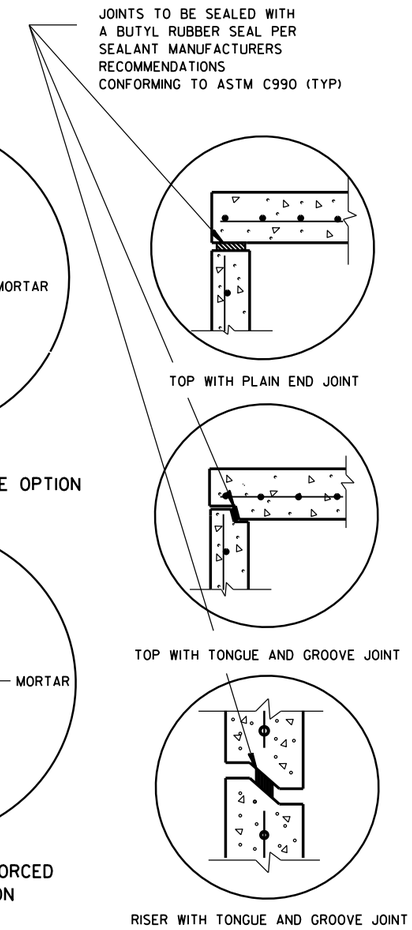


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "B"

GENERAL NOTES

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

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

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M199.

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

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

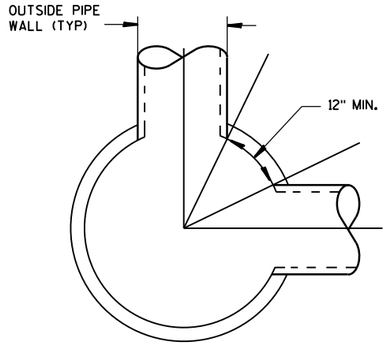
FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4-IN FOR 3-FT DIAMETER AND 5-IN FOR 4-FT DIAMETER PRECAST INLETS.

② FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

INLET COVER OPENING MATRIX

	INLET COVER TYPE	ALL A'S	ALL B'S	BW	C	F	ALL H'S	S	T	V	WM	Z
INLET SIZE	OPENING SIZE (FT)											
3-FT	2 DIA.				X							X
	2X2	X	X					X		X		
4-FT	2 DIA.				X							X
	2X2	X	X					X		X		
	2X2.5			X				X	X	X	X	
	2X3						X					
	2.5X3					X						



DETAIL "C"

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18

INLETS 3-FT AND 4-FT DIAMETER

STATE OF WISCONSIN
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INLETS 3-FT AND 4-FT DIAMETER

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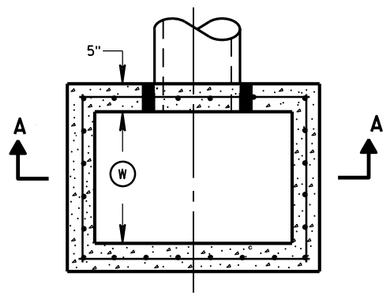
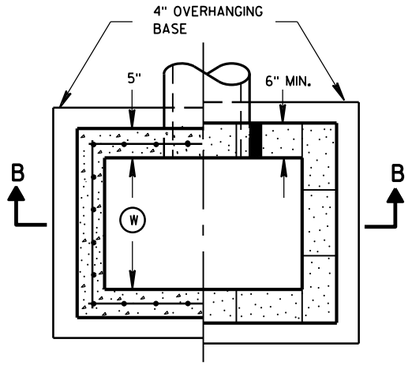
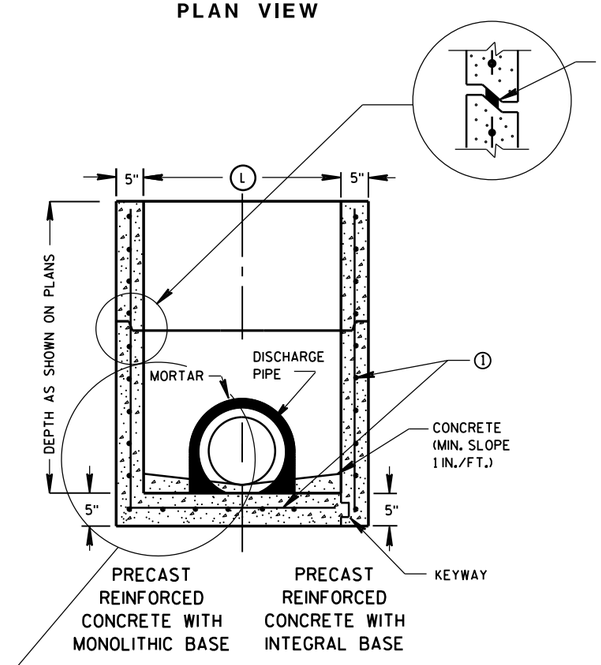


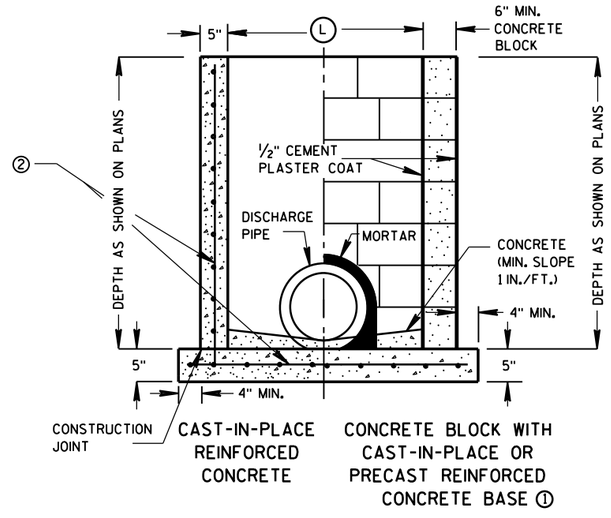
PLAN VIEW



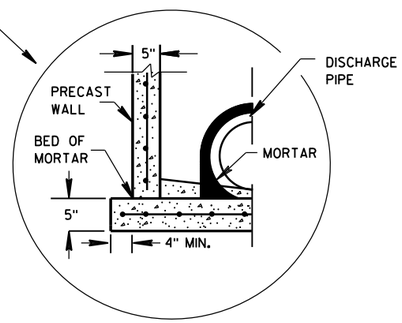
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

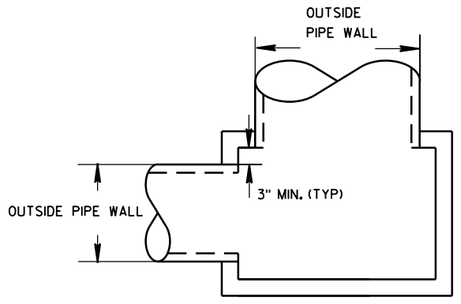
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
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/S/ Rodney Taylor
ROADWAY STANDARDS D IT UNIT SUPERVIS
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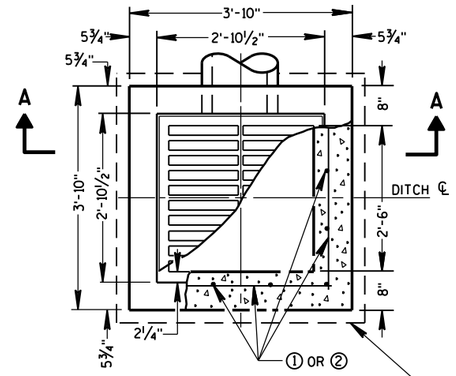
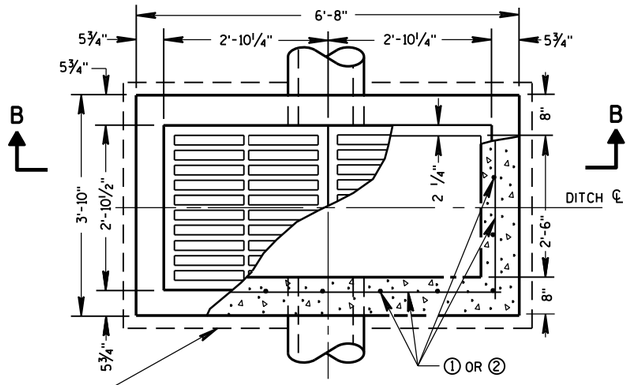
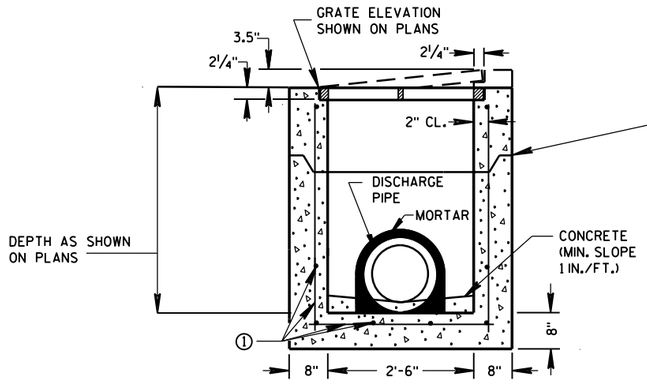


PLAN VIEW

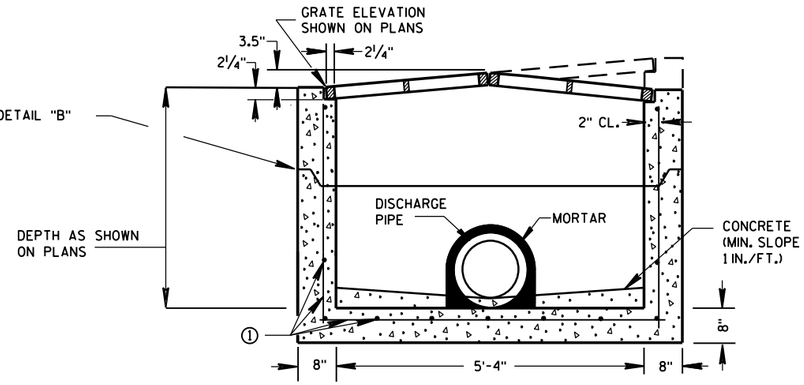


PLAN VIEW

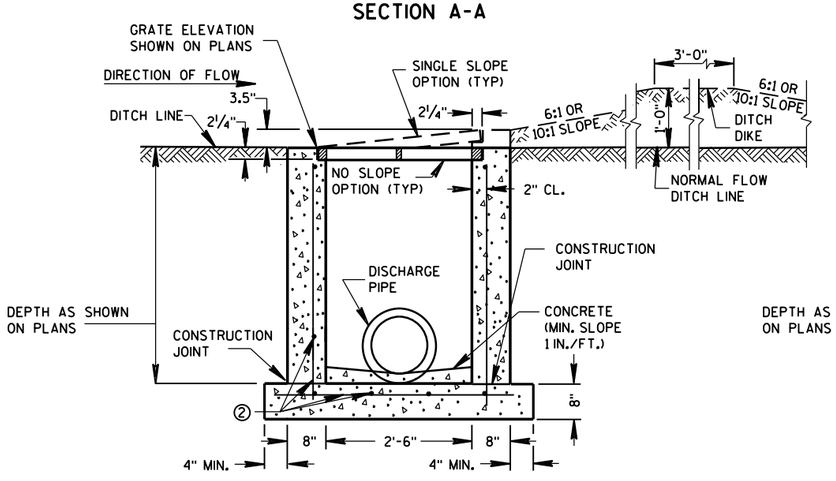
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



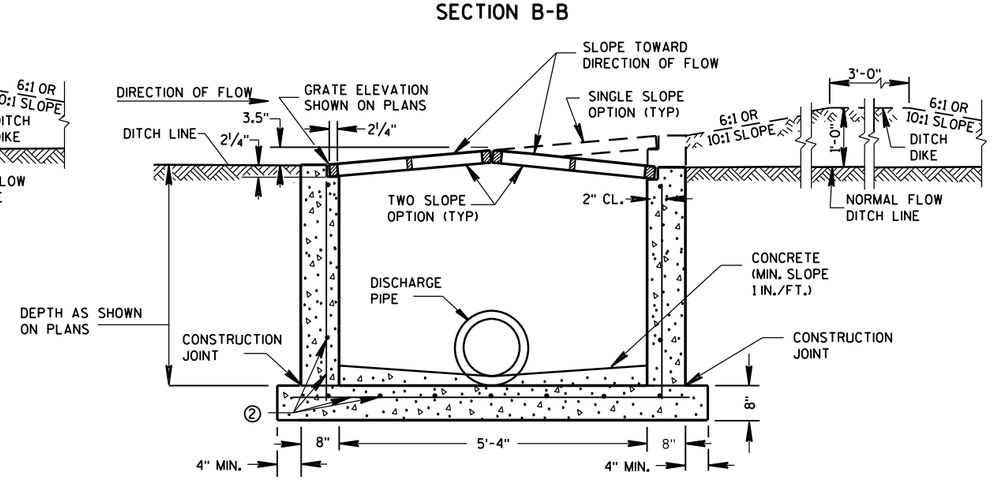
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

GENERAL NOTES

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

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

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

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

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

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

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

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

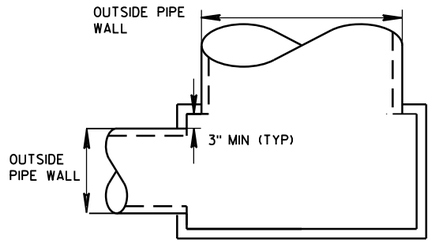
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

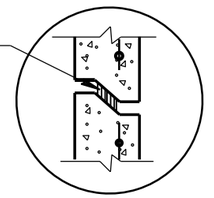
PIPE MATRIX

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



DETAIL "A"

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



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVI ENT
FHWA

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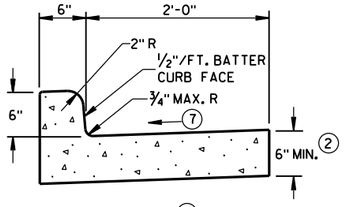
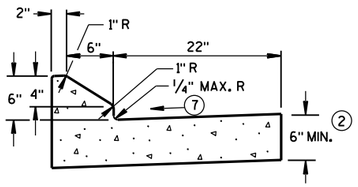
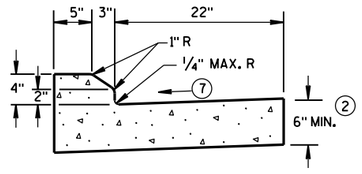
S.D.D. 8 C 8-2



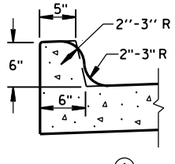
TYPES A (1) & D



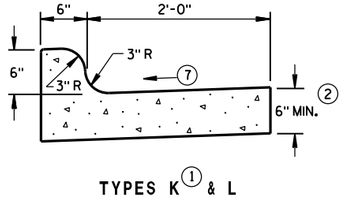
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

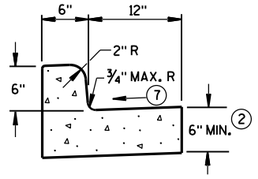


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



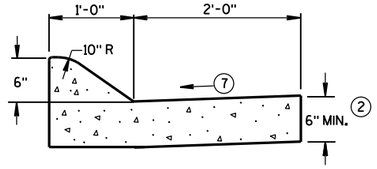
TYPES K (1) & L

CONCRETE CURB & GUTTER 30"

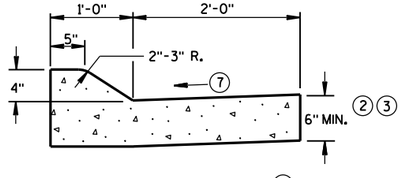


TYPES A (1) & D

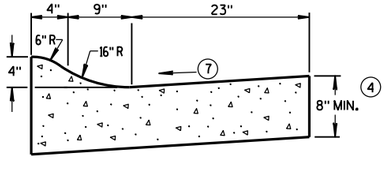
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

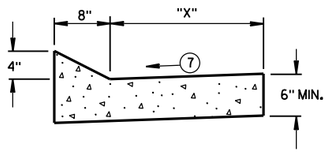


4" SLOPED CURB TYPES A (1) & D



4" SLOPED CURB TYPES R (1) & T (5)

CONCRETE CURB & GUTTER 36"



TYPES TBT & TBTT (1)

CONCRETE CURB & GUTTER

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

GENERAL NOTES

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

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

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

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(5) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

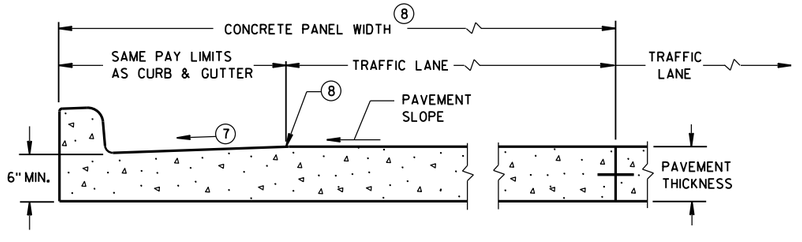
(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

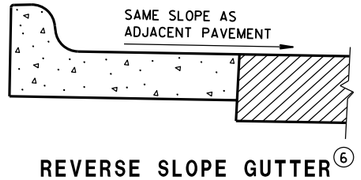
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT * WITH INTEGRAL CURB & GUTTER

* BIKE LANE IS NOT SHOWN.

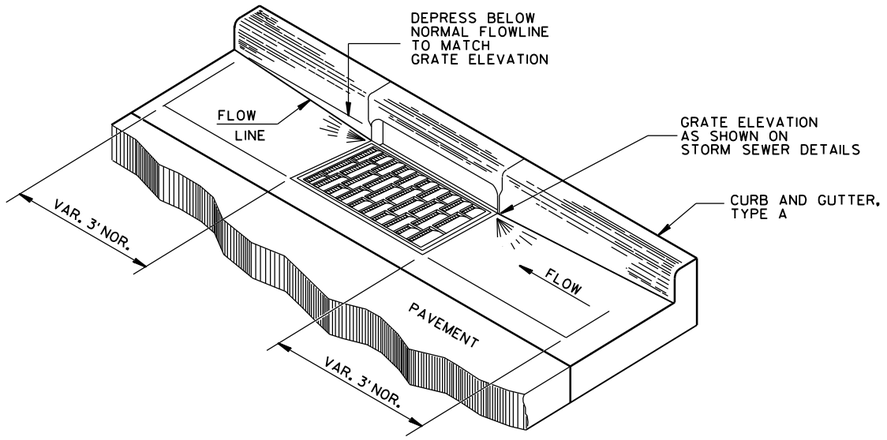


REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 8 D 1-20a



DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

GENERAL NOTES

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

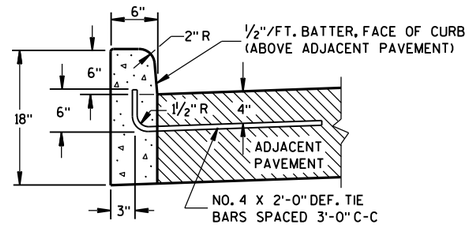
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

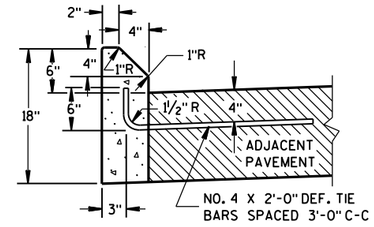
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(9) REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

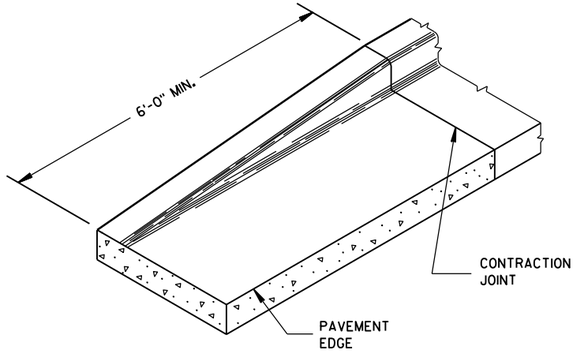


TYPES A(1) & D

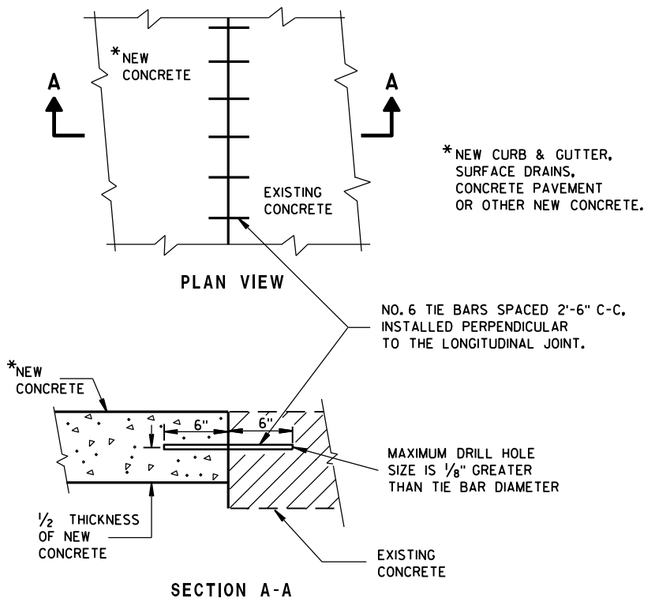


TYPES G(1) & J

CONCRETE CURB



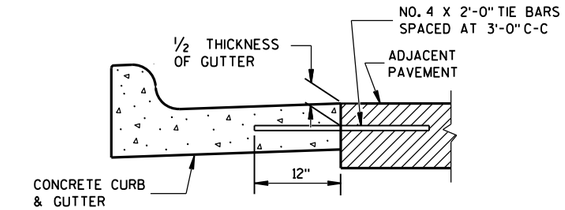
END SECTION CURB & GUTTER



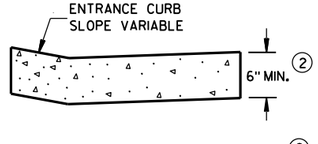
PLAN VIEW

SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS 80 UNIT SUPERVISOR — ENT
FHWA

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S.D.D. 8 D 1-20b

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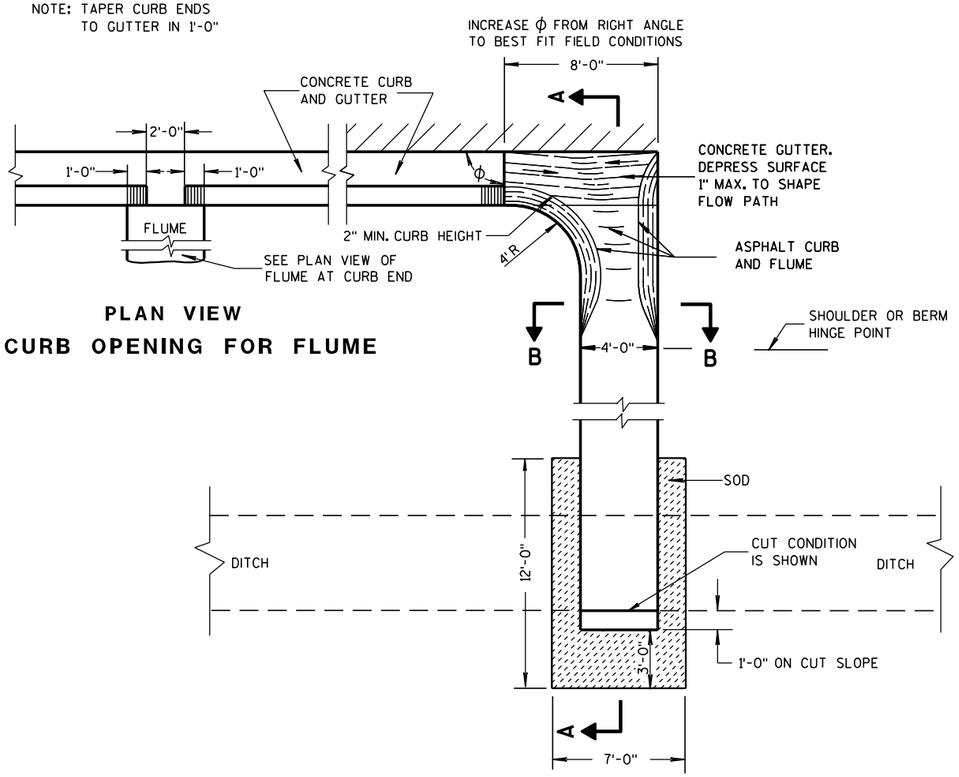
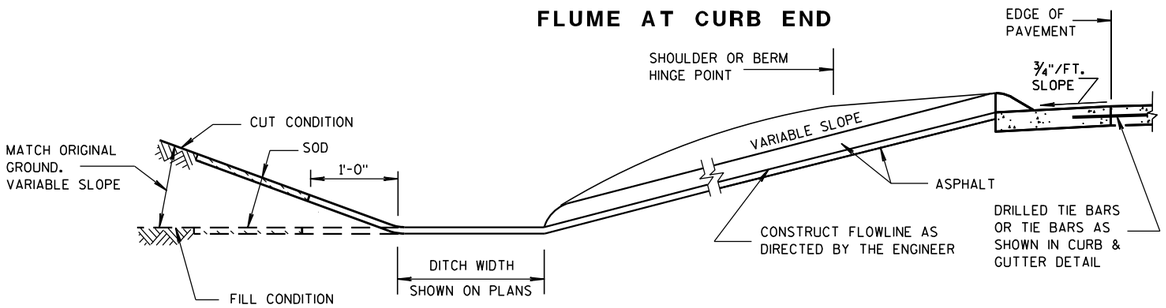
S.D.D. 8 D 1-20b

ASPHALTIC FLUME

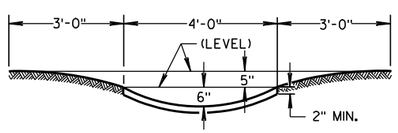


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

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

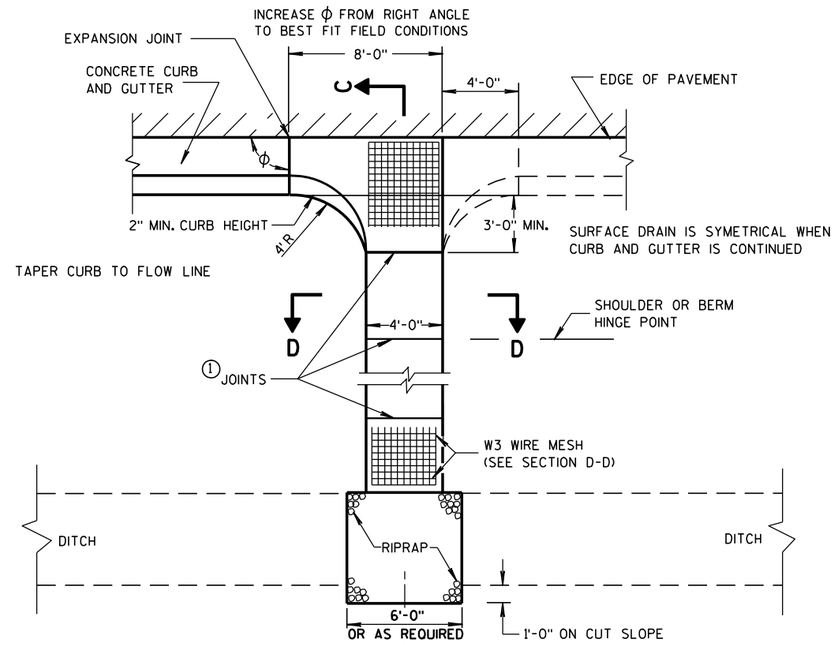
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

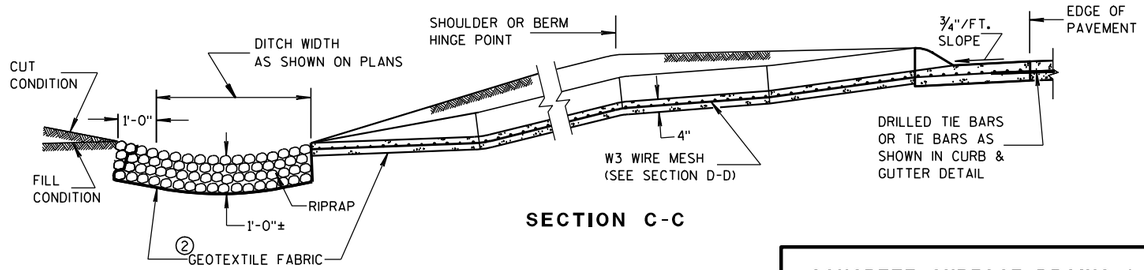
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

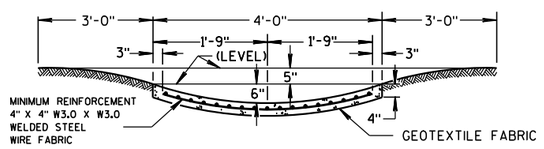
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA

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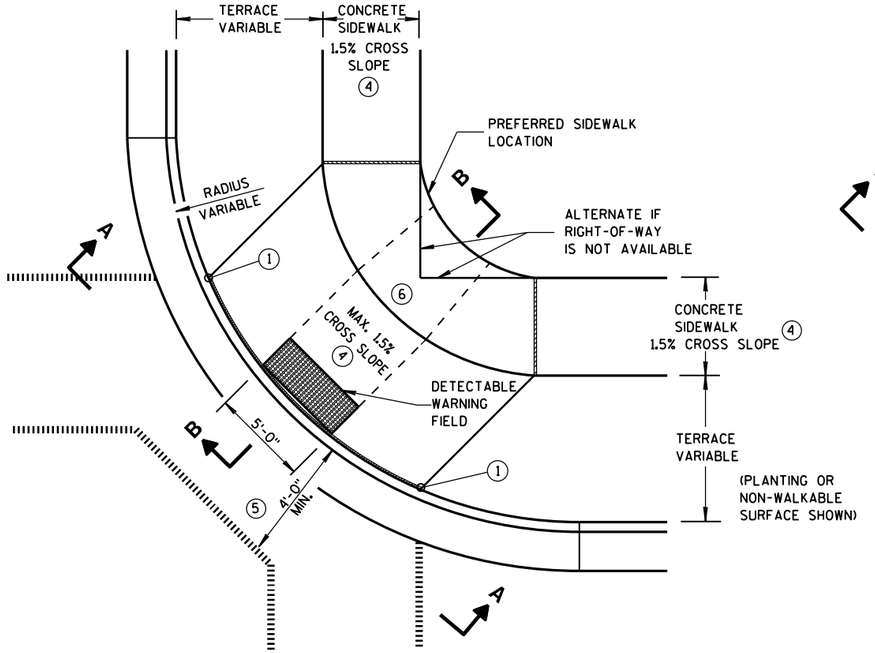
S.D.D. 8 D 4-5

6

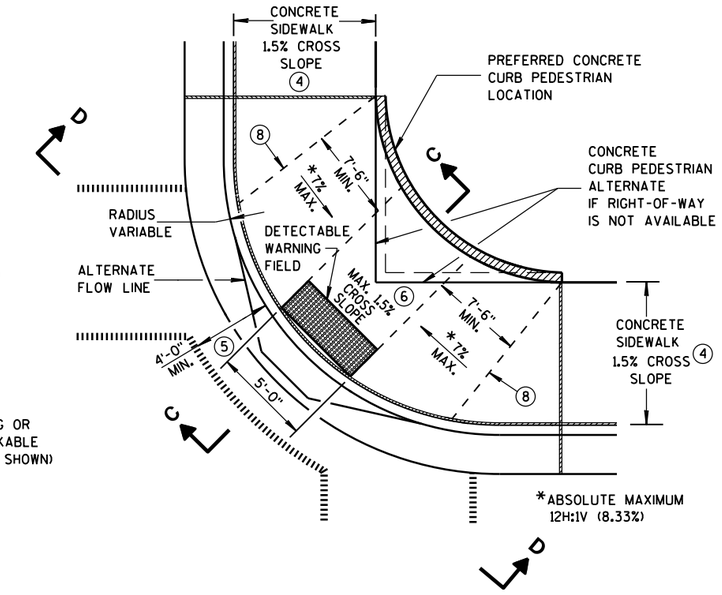
S.D.D. 8 D 4-5



PLAN VIEW

TYPE 1 RAMP

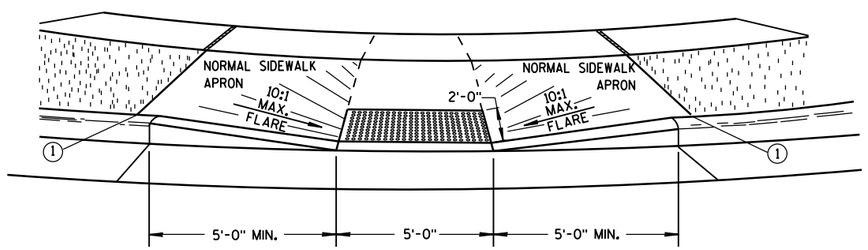
(CENTER OF CORNER RADIUS)



PLAN VIEW

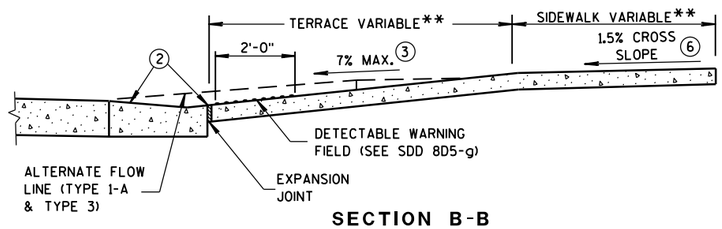
TYPE 1-A RAMP

(NO TERRACE)

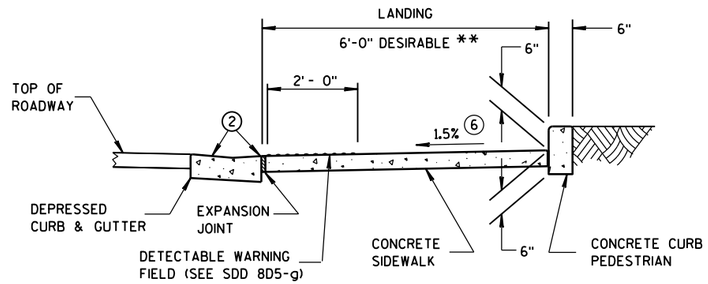


VIEW A-A

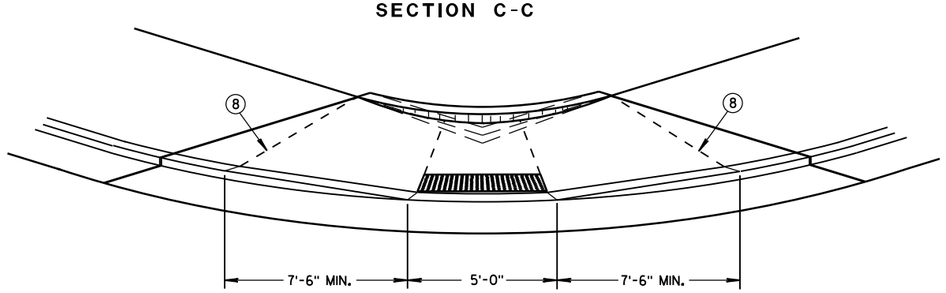
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

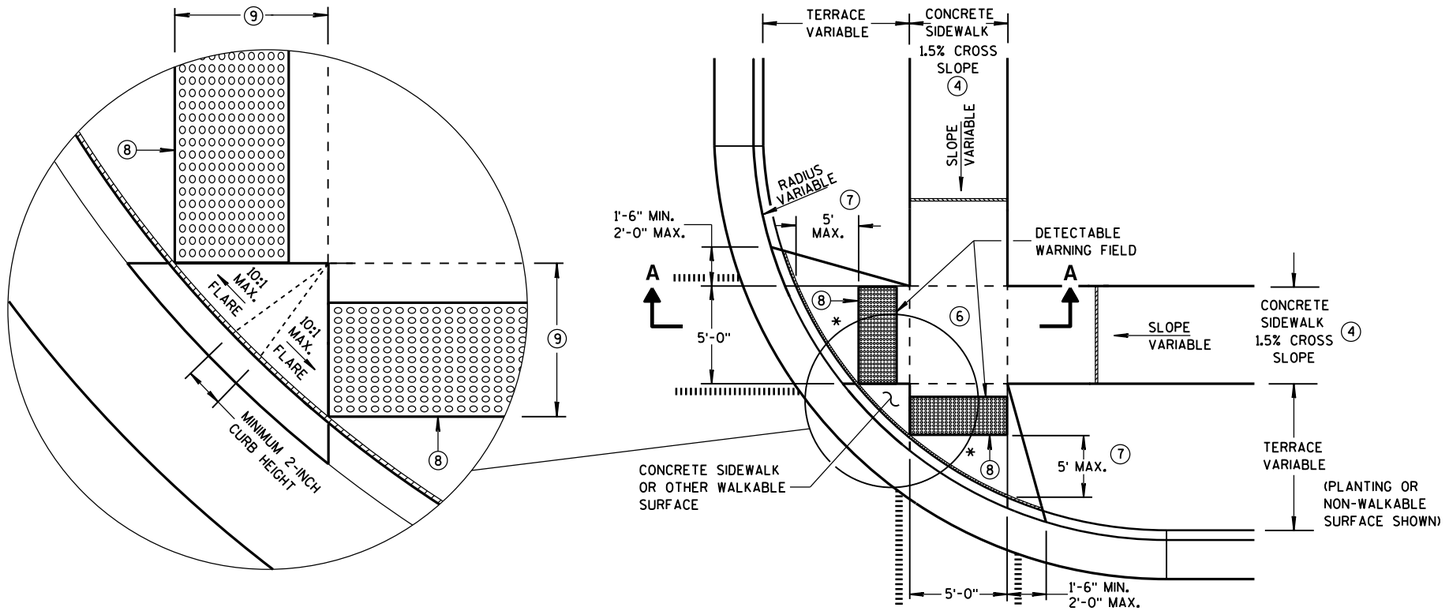
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

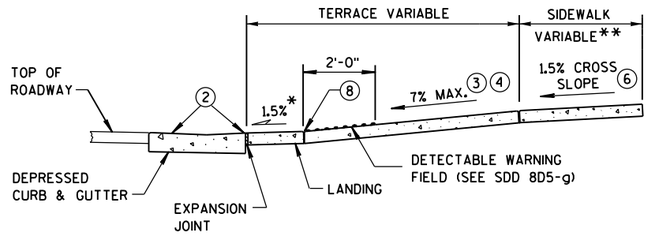
6

S.D.D. 8 D 5-19a



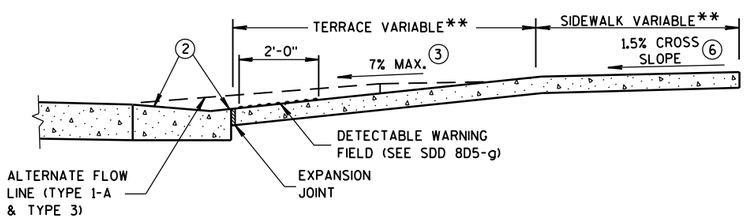
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

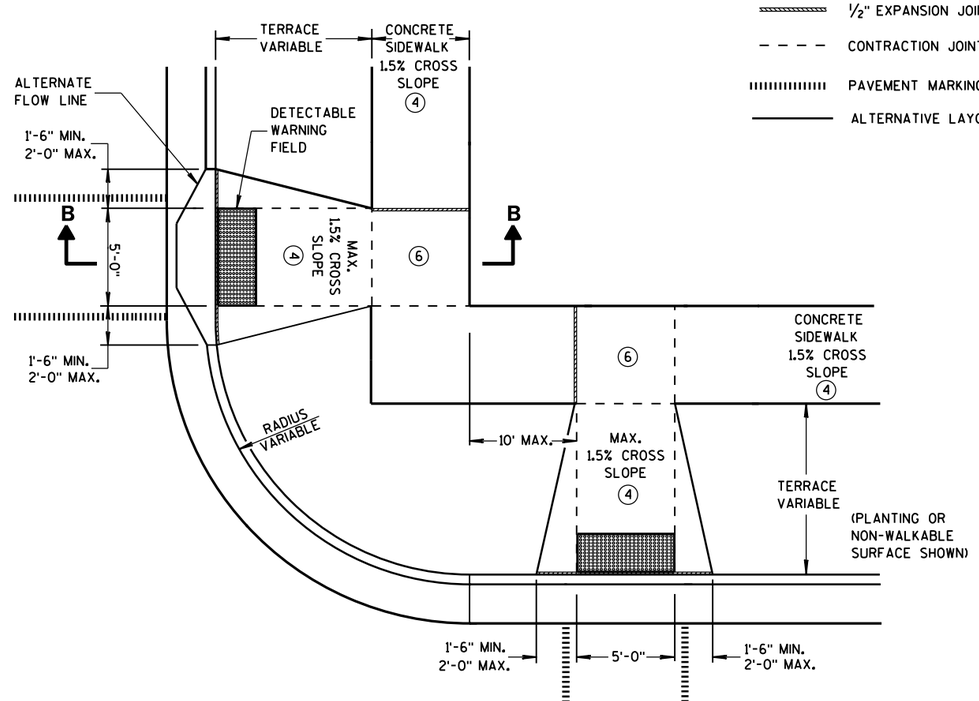


SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

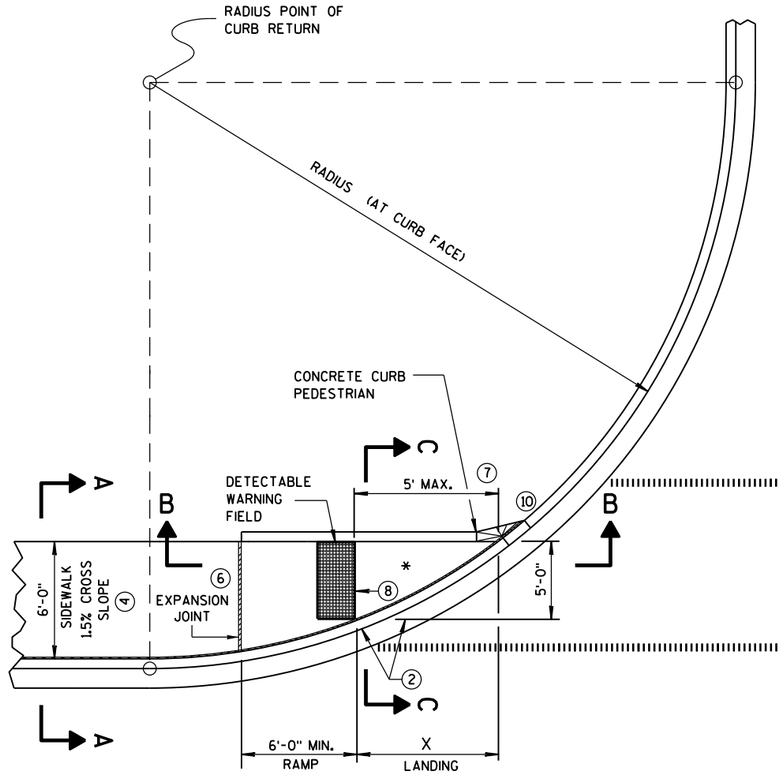
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

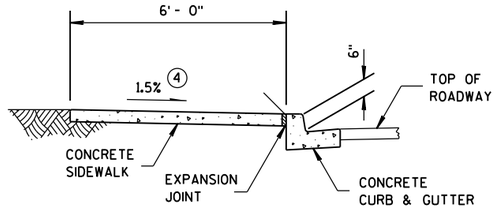
S.D.D. 8 D 5-19b



CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

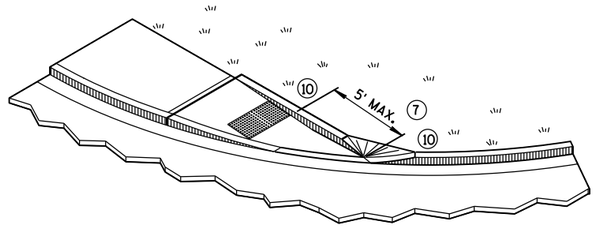
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

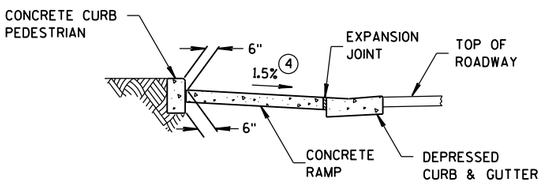
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

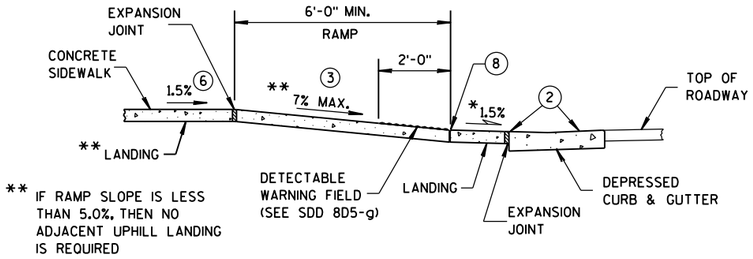


ISOMETRIC VIEW FOR TYPE 4A



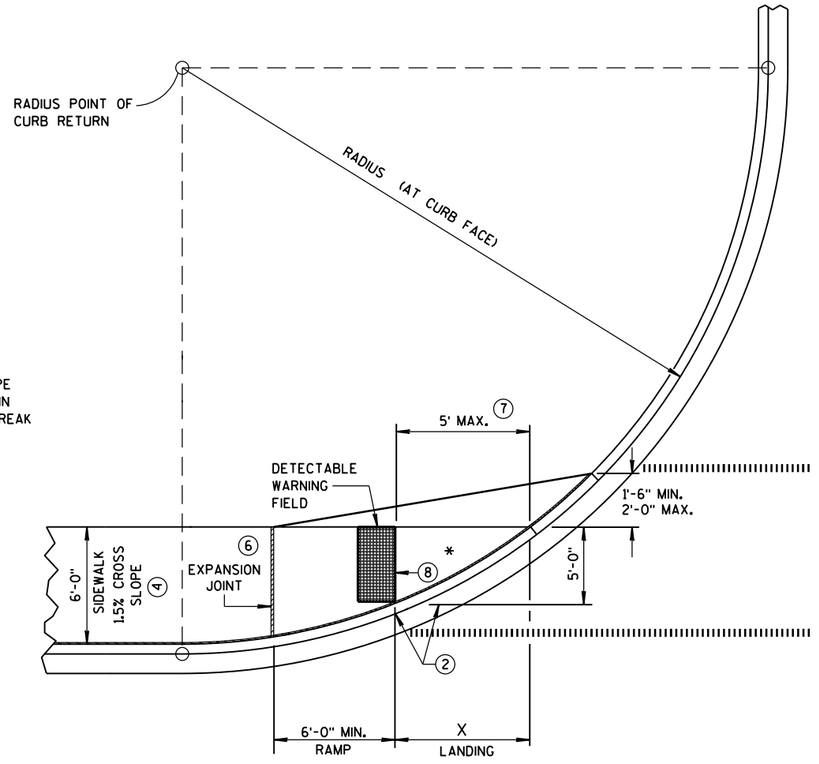
SECTION C-C FOR TYPE 4A

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

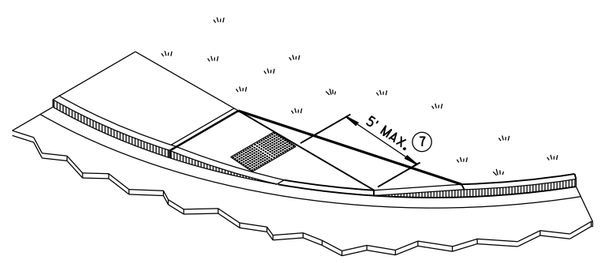


** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

SECTION B-B FOR TYPE 4A



CURB RAMP TYPE 4A1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

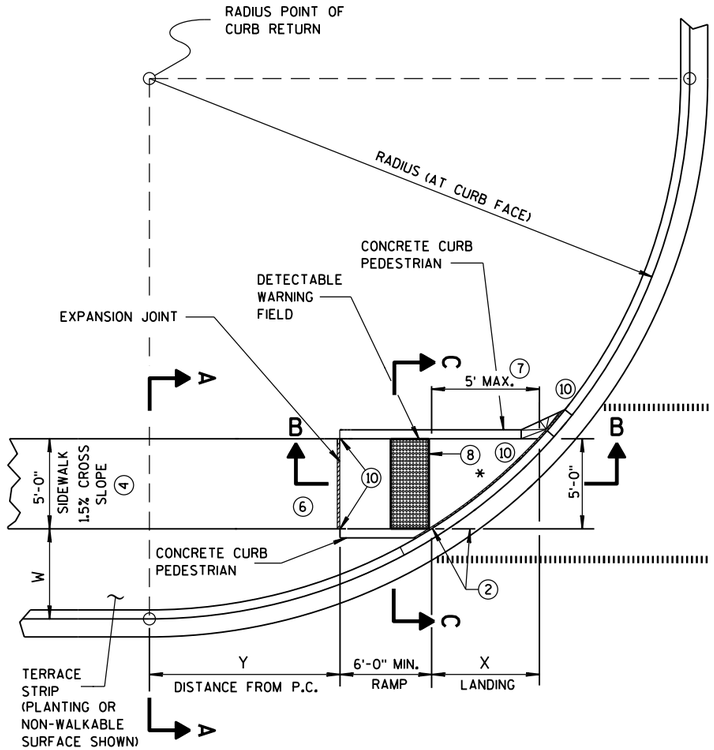
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

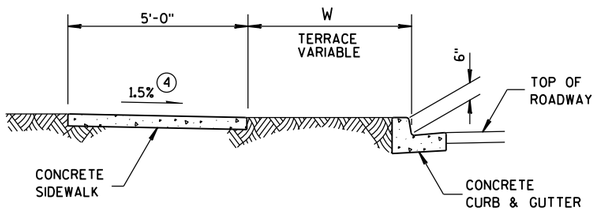
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

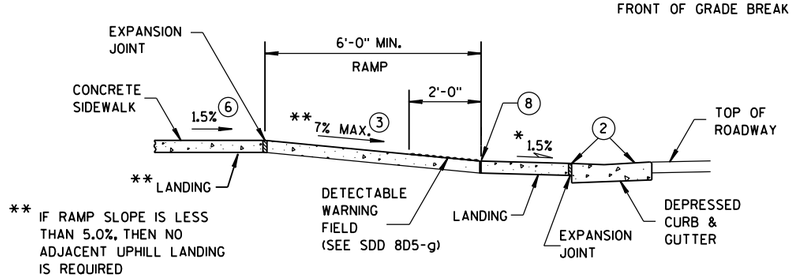
S.D.D. 8 D 5-19c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B

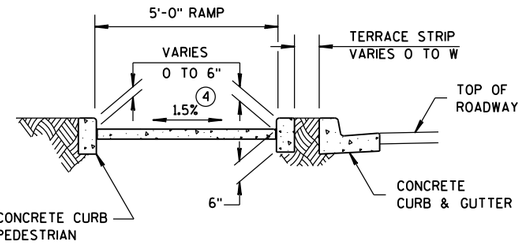


* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

SECTION B-B FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"		W = 8'-0"		W = 9'-0"		W = 10'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10¼"	0'-5"	2'-1"	1'-4½"	1'-5"	2'-1"	0'-10"	2'-7½"	0'-3¼"	3'-0¼"						
15 FEET	4'-6¾"	2'-1¾"	3'-9"	3'-5¼"	3'-1¼"	4'-6"	2'-6¾"	5'-4½"	2'-1"	6'-1"	1'-8"	6'-8½"	1'-3¼"	7'-2½"	0'-10¾"	7'-7¼"
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-7"	3'-3"	8'-6½"	2'-10"	9'-4½"	2'-5½"	10'-1¼"	2'-1¼"	10'-9"
30 FEET			6'-9¼"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"	4'-5½"	13'-7¾"	4'-0¾"	14'-8½"	3'-8½"	15'-8¼"
40 FEET									6'-1¾"	15'-8½"	5'-8"	17'-2"	5'-3"	18'-5¾"	4'-10¾"	19'-8¼"
50 FEET															5'-10¼"	23'-2"

INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH



SECTION C-C FOR TYPE 4B

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

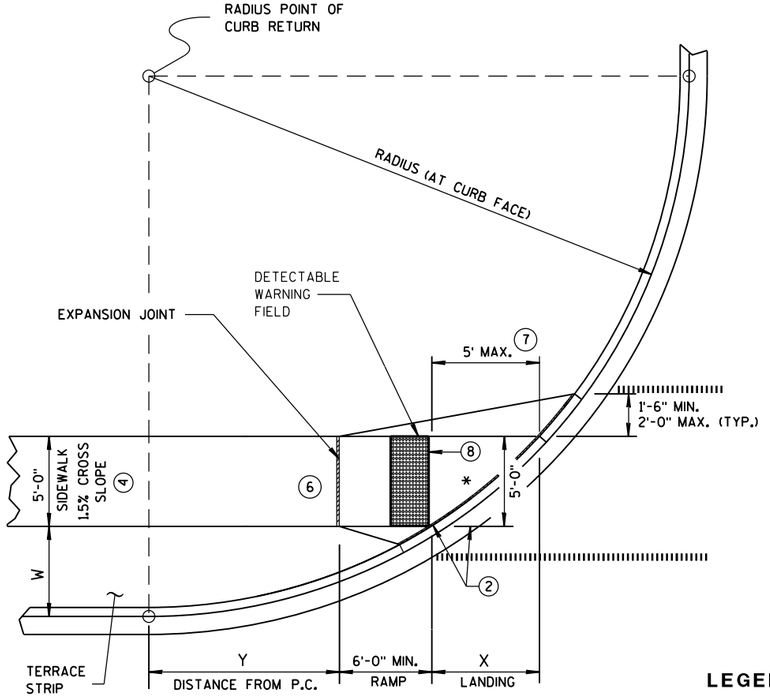
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

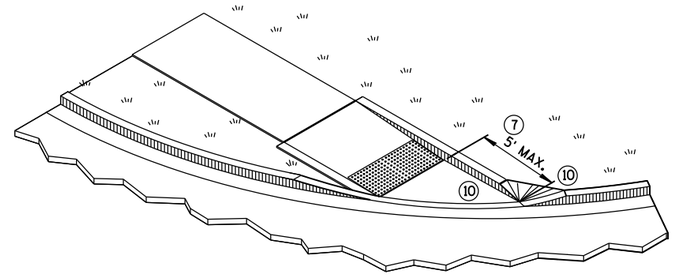
(7) WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

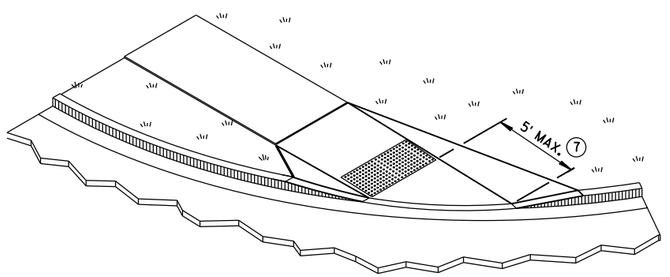
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



CURB RAMP TYPE 4B1
PLAN VIEW



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

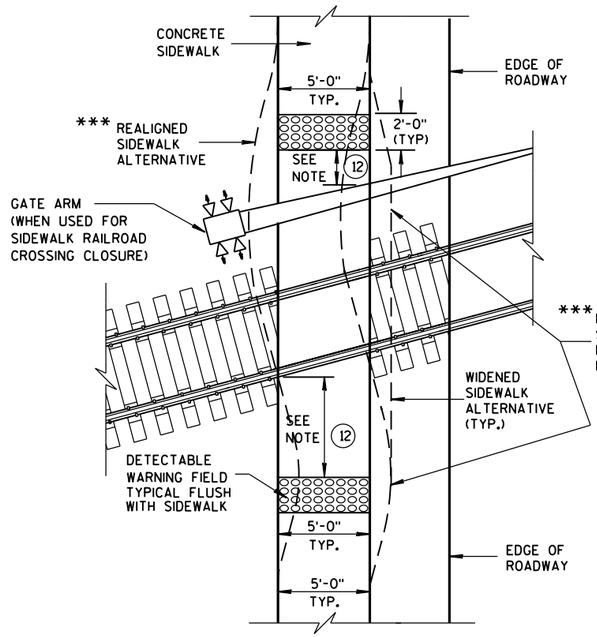
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

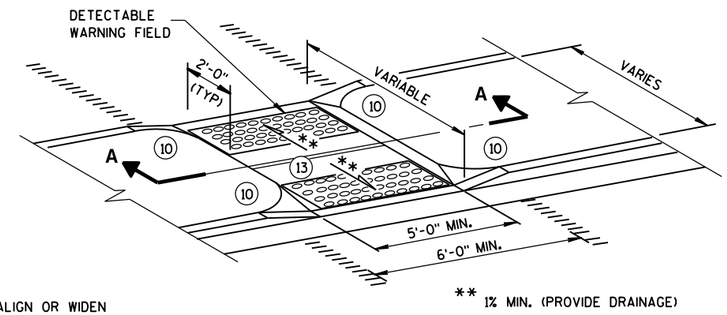
6

S.D.D. 8 D 5-19d



TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING

*** DETAILS TO BE DETERMINED BY DESIGNER



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

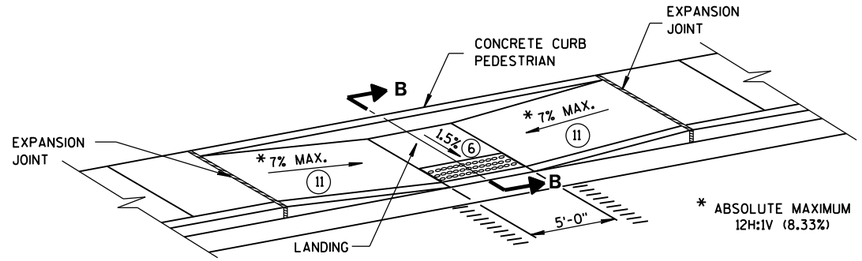
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

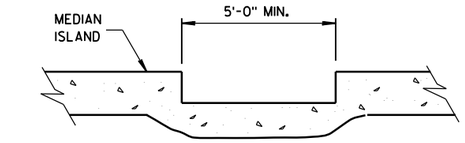
(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

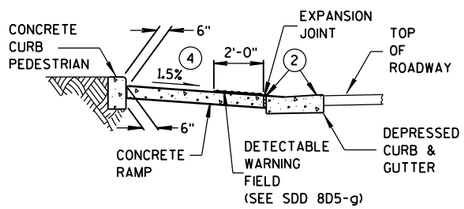
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



MID-BLOCK CROSSING
TYPE 7A

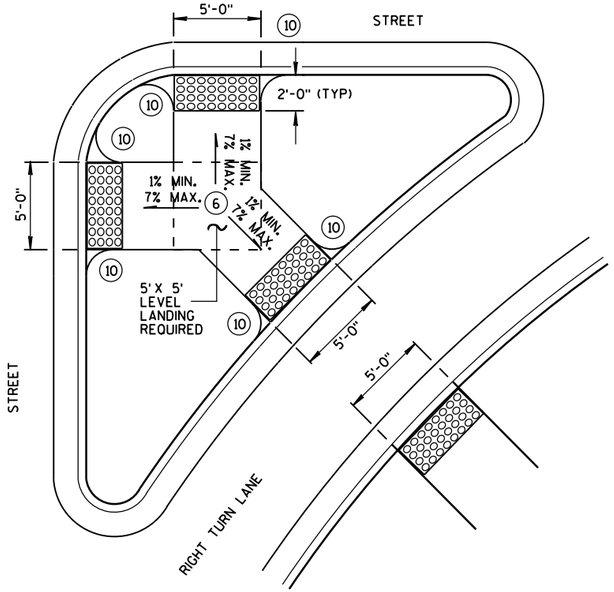


SECTION A-A

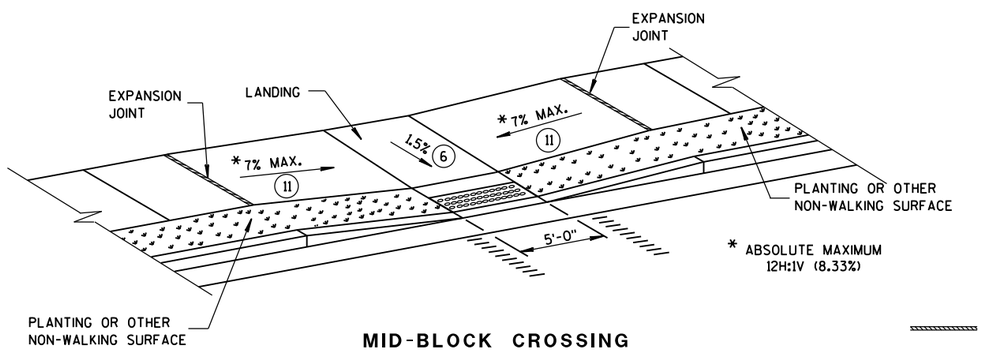


SECTION B-B

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

LEGEND

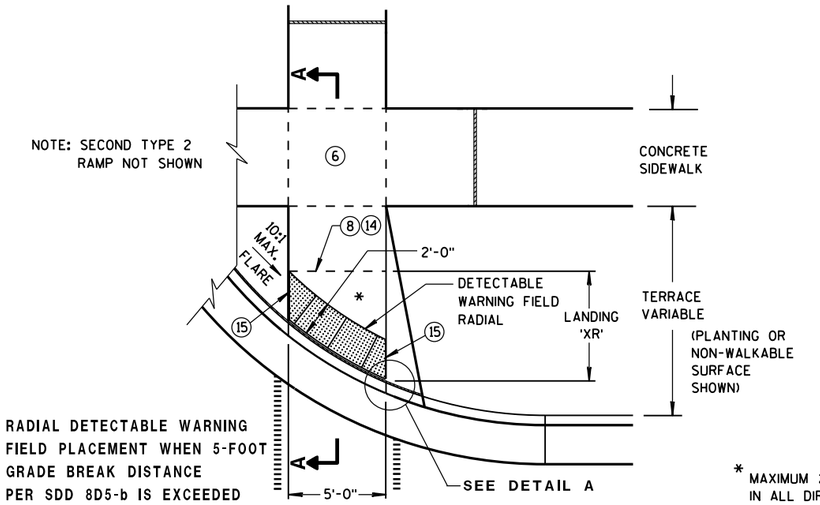
- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

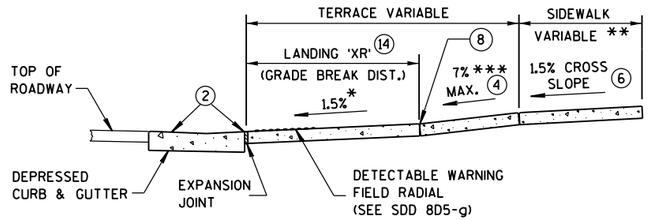
S.D.D. 8 D 5-19e



TYPE 2 RAMP
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



** WIDTH SHOWN ELSEWHERE IN THE PLANS

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION A-A

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS (DWFs) THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.

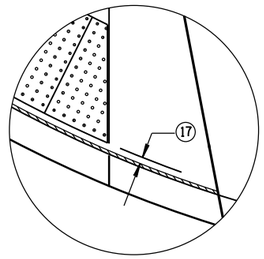
(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(14) CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.

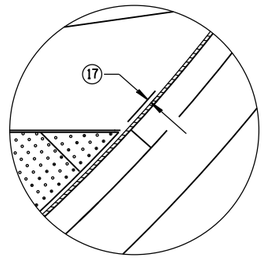
(15) FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

(16) USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.

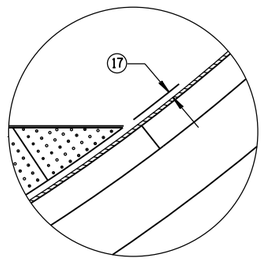
(17) A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.



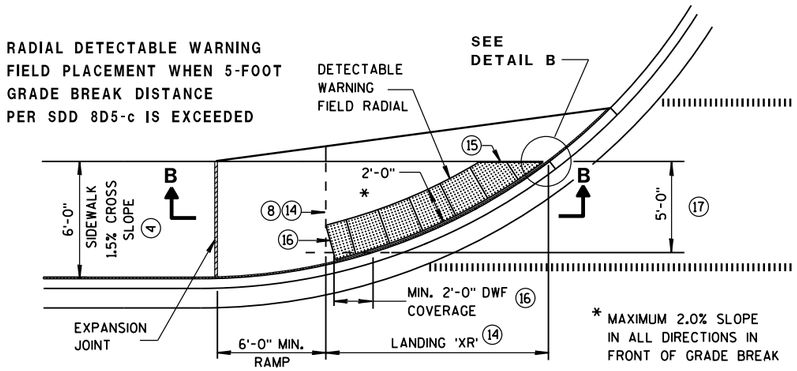
DETAIL A



DETAIL C

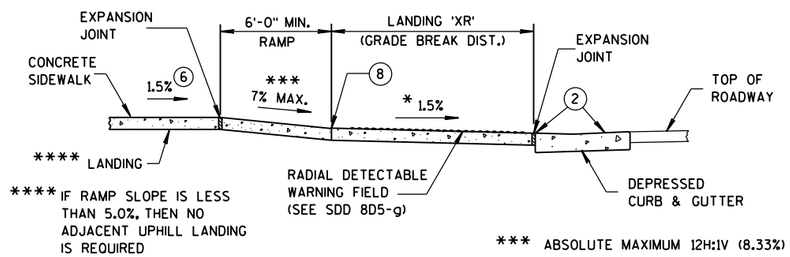


DETAIL B



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

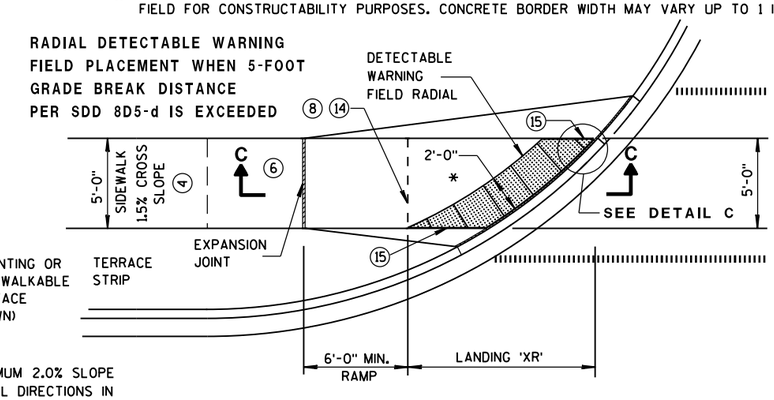
CURB RAMP TYPE 4A1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

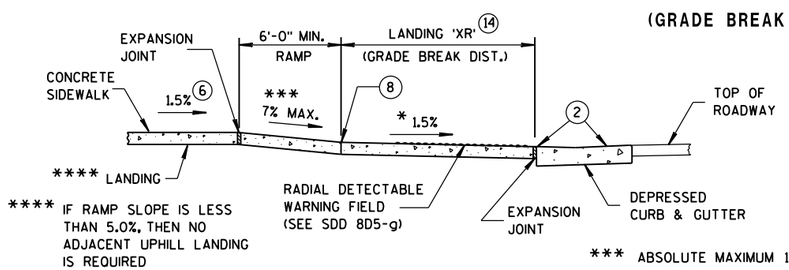
*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION B-B FOR TYPE 4A1



* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK

CURB RAMP TYPE 4B1
PLAN VIEW
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



**** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

*** ABSOLUTE MAXIMUM 12H:1V (8.33%)

SECTION C-C FOR TYPE 4B1

CURB RAMPS
RADIAL DETECTABLE WARNING FIELD APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 87

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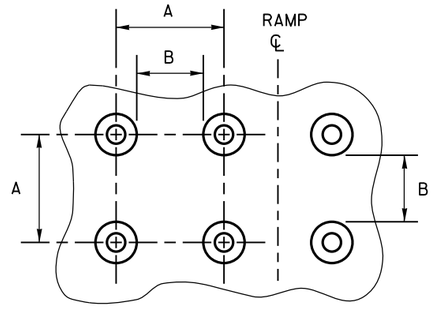
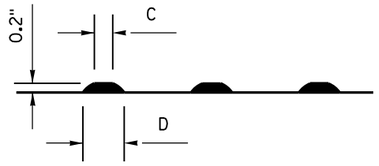
	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.



PLAN VIEW



ELEVATION VIEW

TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

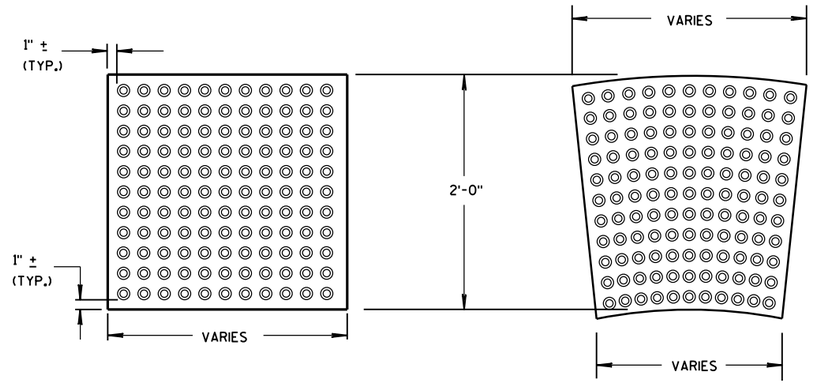
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

⑮ FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.

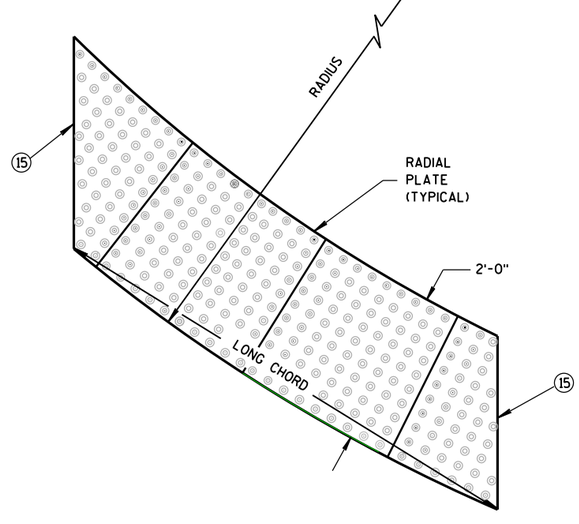


RECTANGULAR PLATES

RADIAL PLATES

DETECTABLE WARNING FIELDS (TYPICAL)

PLAN VIEW



RADIAL DETECTABLE WARNING FIELD ATTRIBUTES

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
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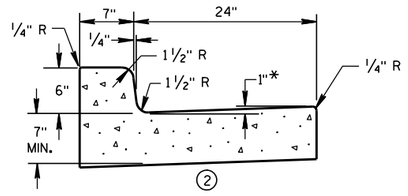
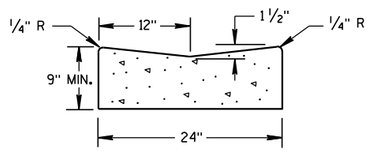
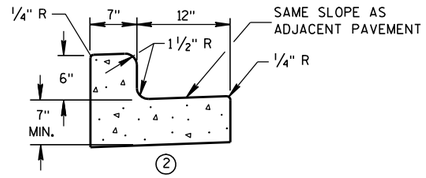


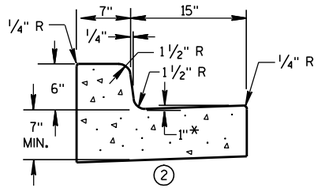
① CONCRETE CURB & GUTTER 31"



① CONCRETE GUTTER 24"

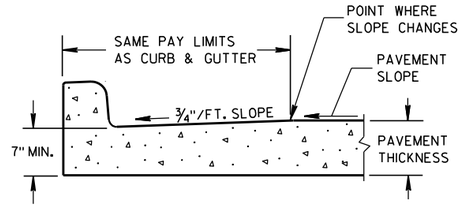


① CONCRETE CURB & GUTTER 19"



① CONCRETE CURB & GUTTER 22"

* TO BE MEASURED TO A MAXIMUM OF 3" WHERE DRAINAGE PROBLEMS EXIST.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER

GENERAL NOTES

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

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

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

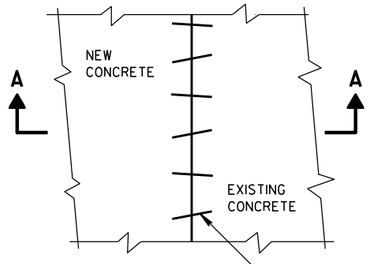
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE COURSE AND UNCLASSIFIED EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURB.

① WHEN PLACED ADJACENT TO NEW CONCRETE, TIE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".

② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MIMIMUM GUTTER THICKNESS IS MAINTAINED.

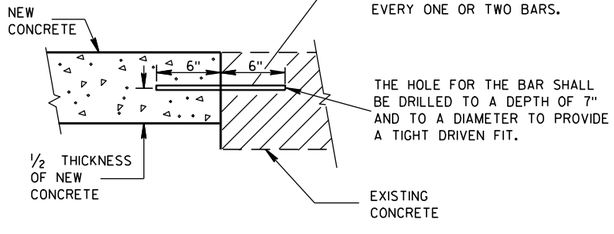
③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLAN.



PLAN VIEW

EXISTING AND NEW CONCRETE MAY BE CURB & GUTTER, SURFACE DRAIN, PAVEMENT OR OTHER CONCRETE STRUCTURE.

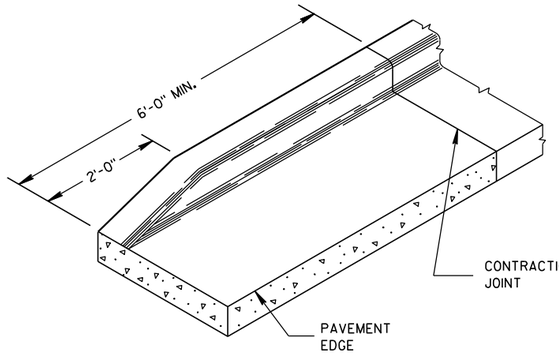
NO. 6 X 12" DEF. BARS SPACED 3'-0" C-C, INSTALLED ON 6:1 SKEW HORIZONTALLY. DIRECTION OF SKEW ALTERNATING AFTER EVERY ONE OR TWO BARS.



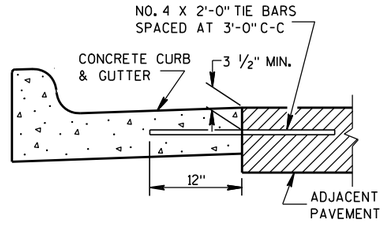
THE HOLE FOR THE BAR SHALL BE DRILLED TO A DEPTH OF 7" AND TO A DIAMETER TO PROVIDE A TIGHT DRIVEN FIT.

SECTION A-A

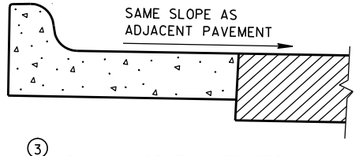
PAVEMENT TIES



END SECTION CURB & GUTTER



① TYPICAL TIE BAR LOCATION



③ HIGH SIDE SECTION

(TYPICAL FOR ALL CURB & GUTTER)

CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES

(For Optional Use in Milwaukee Co. Only)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/2/2010 — DATE

/S/ Jerry Zogg — ROADWAY STANDARDS ENGINEER

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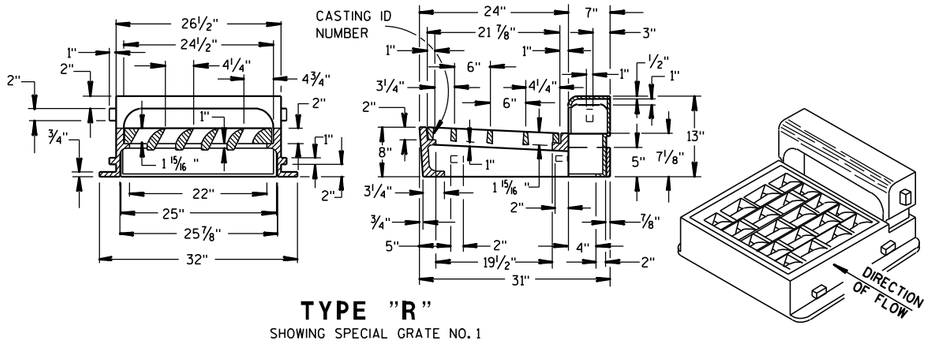
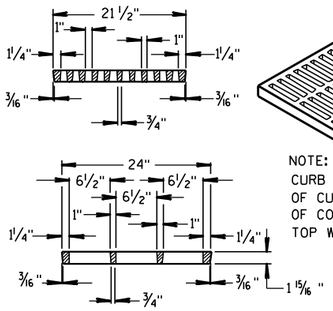
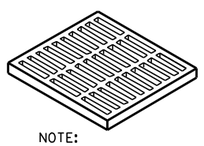
INLET COVERS



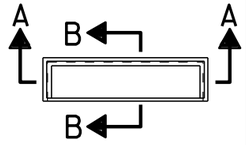
TYPE "R"

SHOWING SPECIAL GRATE NO. 1
(TO BE NOTED AS R-1 IN DRAINAGE TABLE)

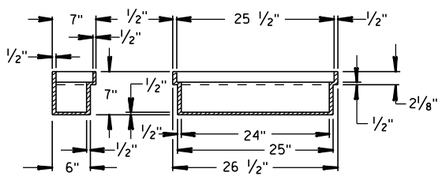




(APPROX. WEIGHT - 510 LBS.)
FRAME..... 245 LBS.
CURB..... 120 LBS.
GRATE..... 145 LBS.



NOTE:
CURB PLUG USED IN PLACE OF CURB BOX IN ABSENCE OF CONC. CURB. FILL TO TOP WITH CONCRETE.



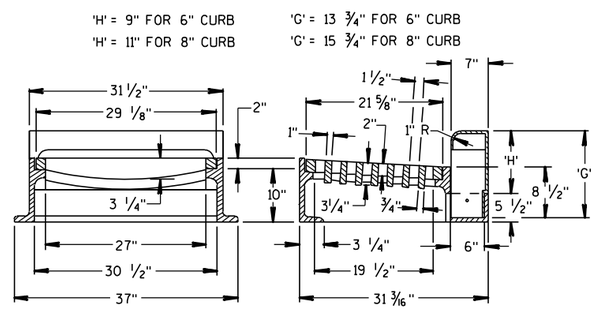
GRATE FOR TYPE "R" INLET COVER

(GRATE..... 150 LBS.)
(TO BE USED UNLESS OTHERWISE NOTED IN DRAINAGE TABLE)

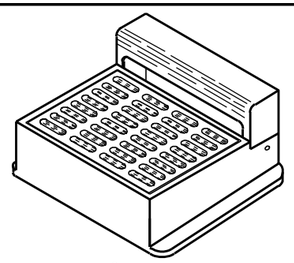
SECTION B-B SECTION A-A

SPECIAL CURB PLUG "P"

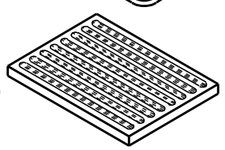
(CURB PLUG..... 85 LBS.)
(TO BE NOTED AS R-P IN DRAINAGE TABLE)



TYPE "W"

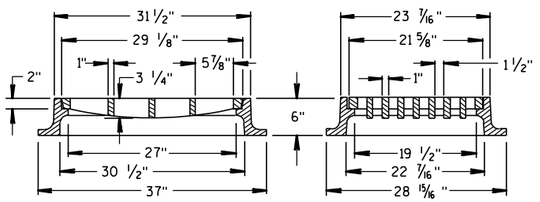


(APPROX. WEIGHT - 670 LBS.)
FRAME..... 350 LBS.
CURB BOX..... 135 LBS.
GRATE..... 185 LBS.



ALTERNATE GRATE
(FOR EXPRESSWAY RAMPS)

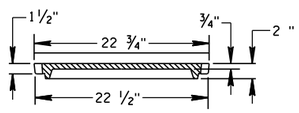
TYPES "W" & "X"



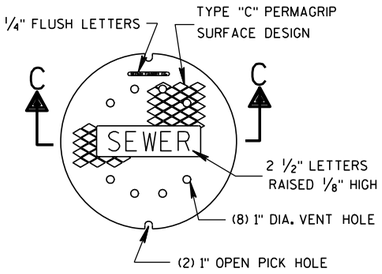
TYPE "X"

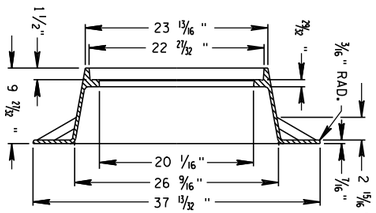
(APPROX. WEIGHT - 470 LBS.)

MANHOLE COVER



SECTION C-C

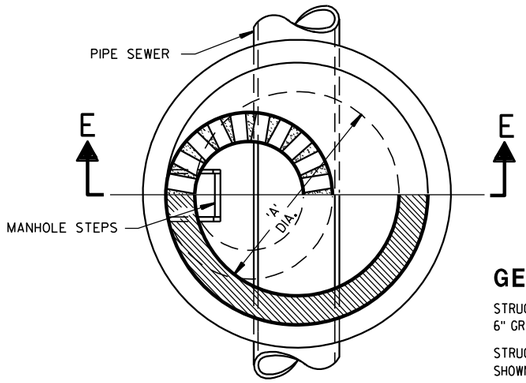




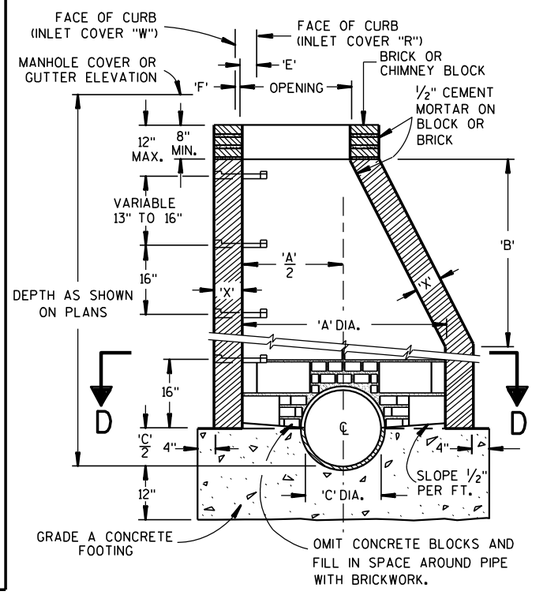
TYPE "Q"

(APPROX. WEIGHT - 290 LBS.)

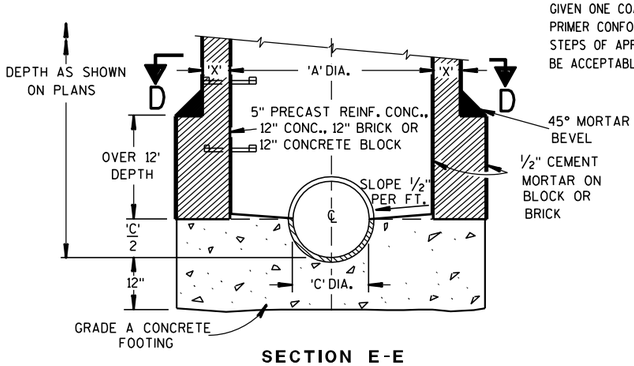
MANHOLE



HALF SECTION D-D



SECTION E-E



SECTION E-E

TYPES 11, 12, 13 & 14

TABLE OF OPENING DIMENSIONS

COVER TYPE	DESCRIPTION	OPENING	'E'	'F'
"O"	ROUND	2'-2" DIA.	—	—
"W"	CURB BOX	1'-8" X 2'-6"	—	1"
"X"	INLET	1'-10" X 2'-6"	—	—
"R"	CURB BOX	2'-0" X 2'-1"	4"	—

TABLE OF DIMENSIONS

TYPE	'A'	'B'	'C'
11	3'-6"	2'-8"	12" - 36"*
12	4'-0"	3'-8"	12" - 42"**
13	5'-0"	5'-8"	42" - 48"
14	6'-0"	7'-8"	54" - 60"

* 12" - 21" FOR PRECAST MANHOLES
** 12" - 24" FOR PRECAST MANHOLES

THE FIRST STEP SHALL BE PLACED 16" ABOVE THE BENCH.

GENERAL NOTES

STRUCTURE WALL THICKNESS 'X' TO BE 8" BRICK, 6" CONCRETE BLOCK, 6" GRADE A CONCRETE OR 5" PRECAST REINFORCED CONCRETE.

STRUCTURE FOOTINGS ARE TO BE GRADE A CONCRETE OF THE THICKNESS SHOWN IN THE DETAIL OR 5" PRECAST REINFORCED CONCRETE.

REINFORCEMENT FOR 5" PRECAST REINFORCED CONCRETE SHALL BE 6" X 6" W16 X W16 WELDED SREEL WIRE FABRIC AND SHALL BE EMBEDDED 2" CLEAR.

PRECAST INLET UNITS AND BASES SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

PRECAST CONCRETE FLAT SLAB TOPS MAY BE USED ON THE STRUCTURES. THE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

PRECAST REINFORCED BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6" IN DEPTH, WHICH MEETS THE REQUIREMENTS FOR GRANULAR BACK-FILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

SET FRAME ELEVATION 0.03 FT. LOWER THAN ELEVATION INDICATED ON THE PLANS.

THE CONTRACTOR MAY FORM AND POUR MONOLITHIC CONCRETE INVERT PROVIDED THE PIPE ENDS ARE EXTENDED INTO THE M.H. AND NOT TERMINATED WITHIN THE M.H. WALLS.

MANHOLE STEPS

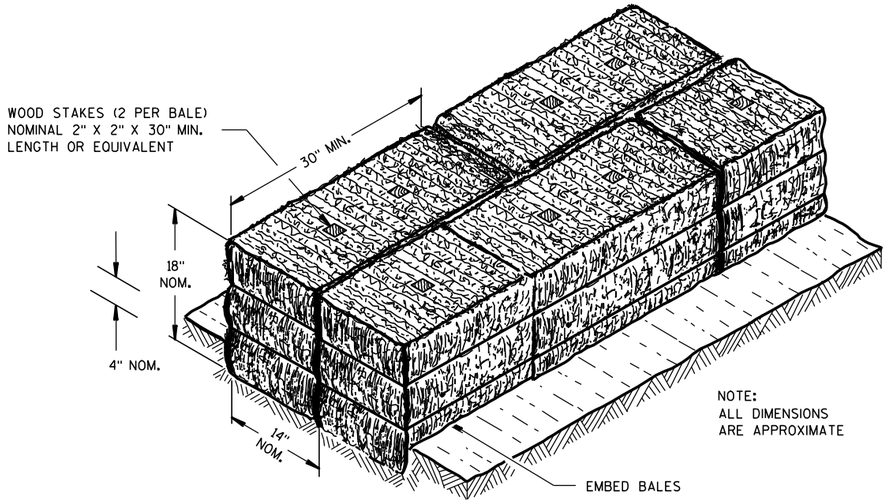
STEPS MEETING THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH; 16 INCH C-C MAX. SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM WALL EMBEDMENT OF 3 INCHES IN PRECAST MANHOLE AND 6 INCHES IN 8 INCH BRICK OR 6 INCH BLOCK MANHOLE; TREAD OF STEP SHALL HAVE A NON-SKID SURFACE AND BE FLANKED BY CLEATS, WITH A MINIMUM OF 10 INCHES CLEAR BETWEEN CLEATS, TO PREVENT FOOT SLIPPING OFF THE EDGE CLEATS SHALL BE A MINIMUM OF 3/4 INCH HIGH BY 3/4 INCH WIDE HAVING A MINIMUM THICKNESS OF 3/8 INCH. STEPS SHALL BE CAPABLE OF SUPPORTING A CONCENTRATED LOAD OF 300 LBS. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

SOLID ALUMINUM STEPS SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 0.75 INCH. ALUMINUM SURFACES TO BE EMBEDDED IN CONCRETE SHALL BE GIVEN ONE COAT OF SUITABLE QUALITY PAINT, SUCH AS ZINC CHROMATE PRIMER CONFORMING TO FEDERAL SPECIFICATION TT-P-645 OR EQUIVALENT. STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCING BAR WILL BE ACCEPTABLE.

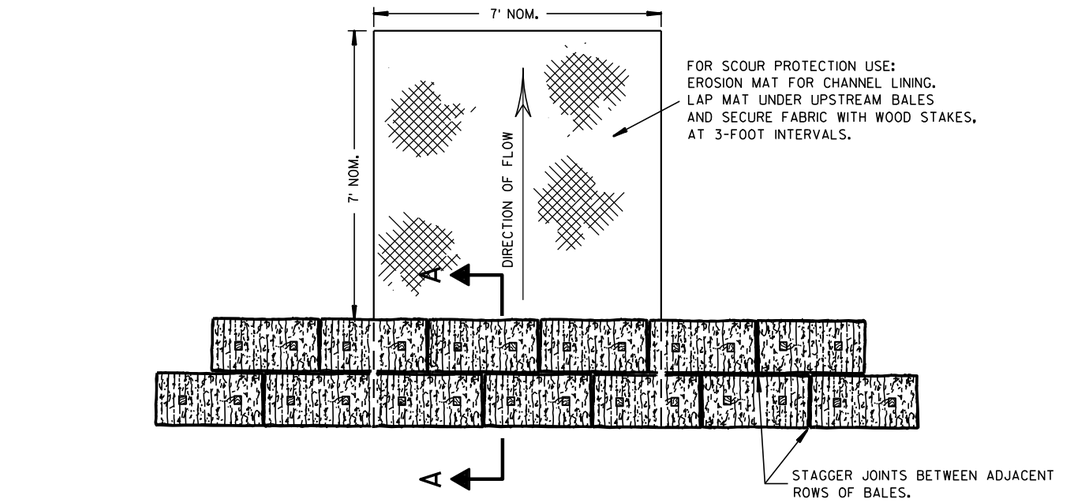
MANHOLES, MANHOLE & INLET COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

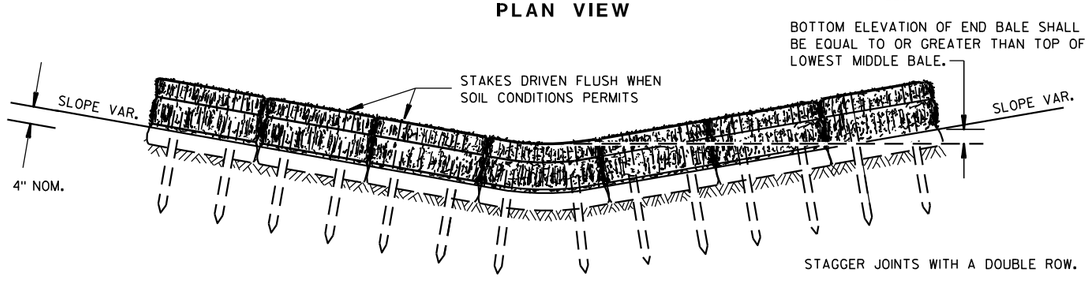
APPROVED
4/12/2011 — DATE
/S/ Jerry H. Zogg — ROADSIDE STANDARDS ENGINEER
FHWA



SECTION A-A



PLAN VIEW



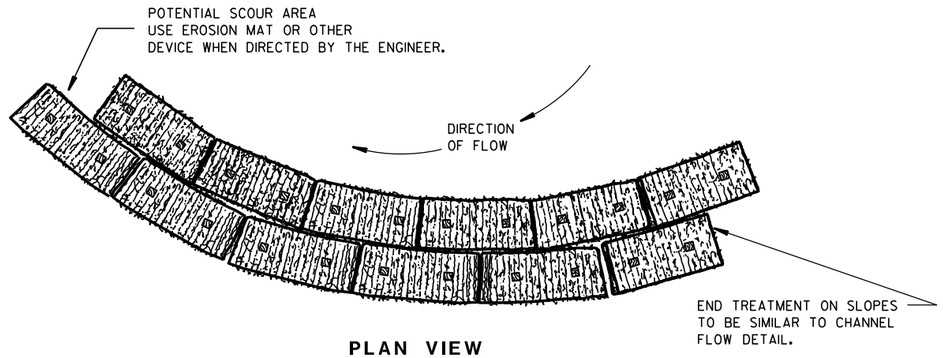
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

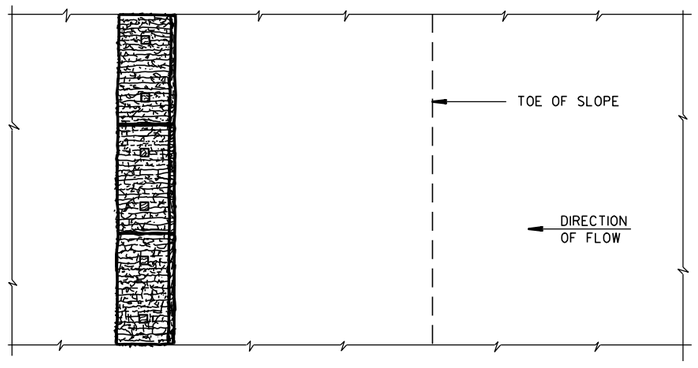
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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.

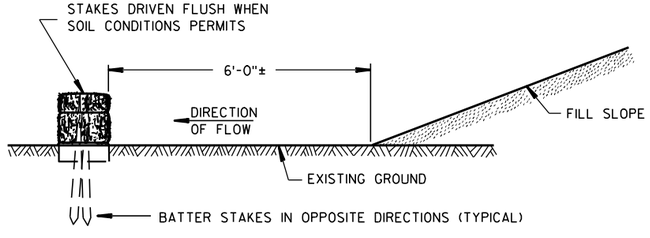


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

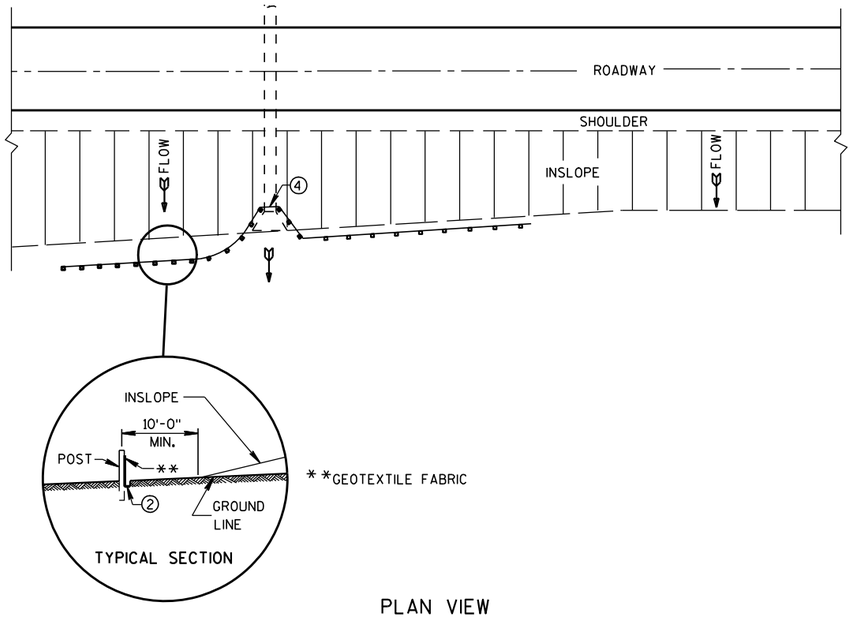
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

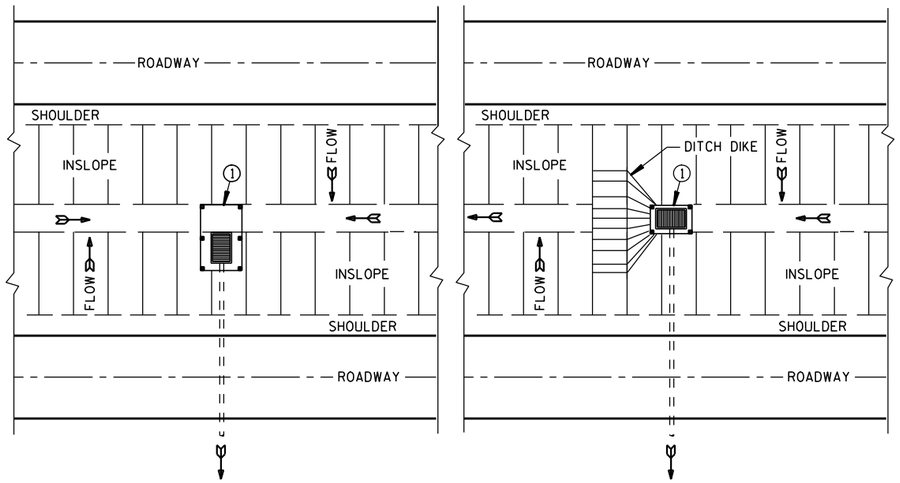
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

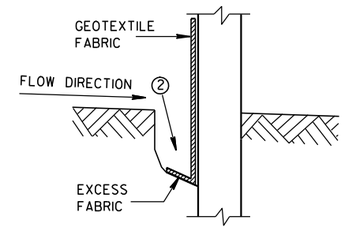
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

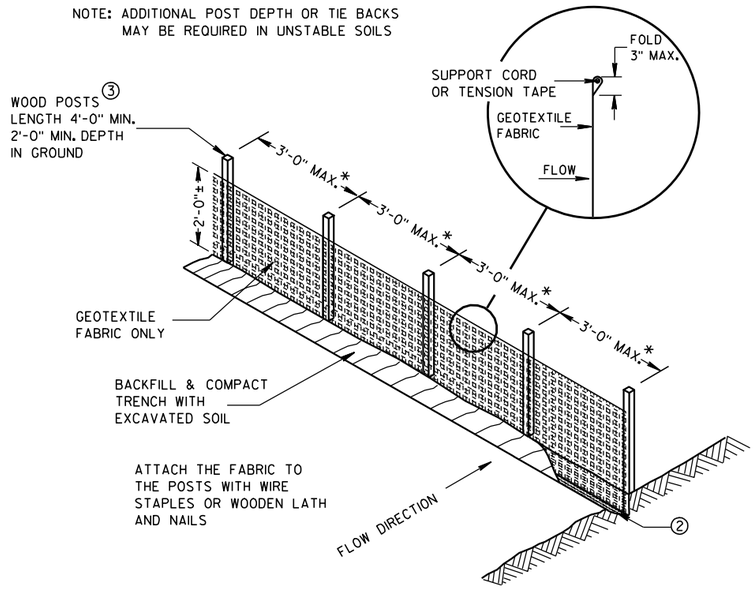
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

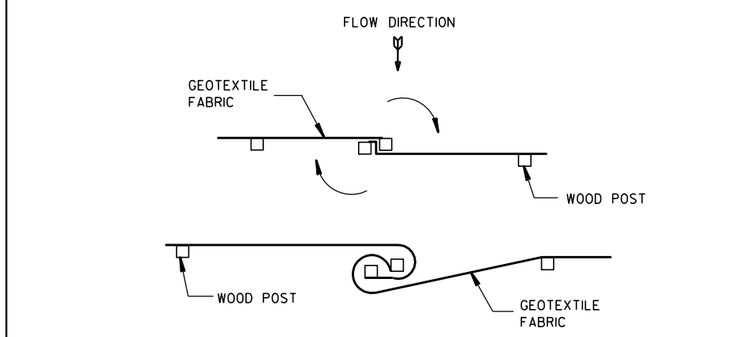
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



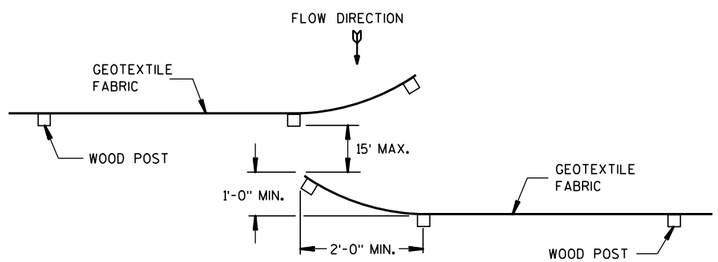
TRENCH DETAIL



SILT FENCE

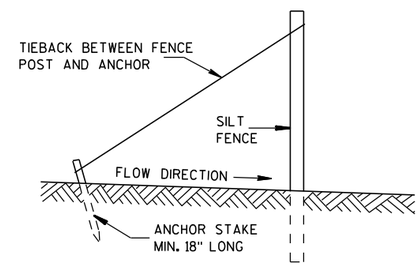


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

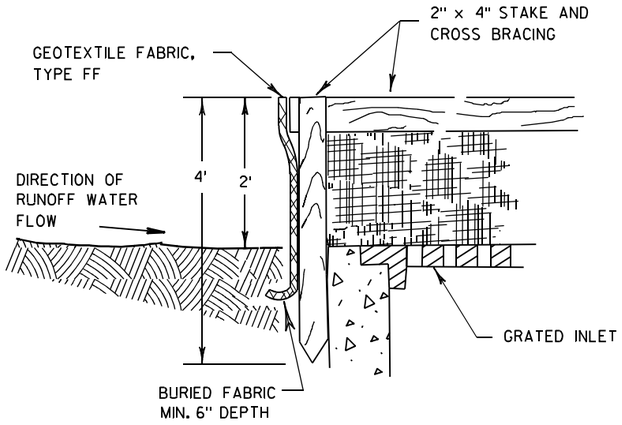
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

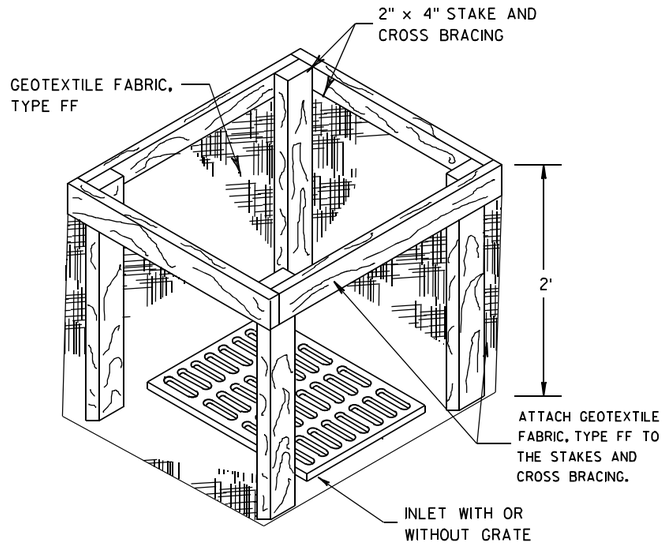
6

S.D.D. 8 E 9-6

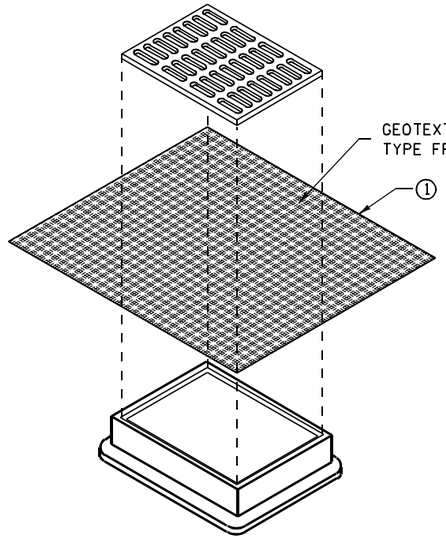
6

S.D.D. 8 E 9-6



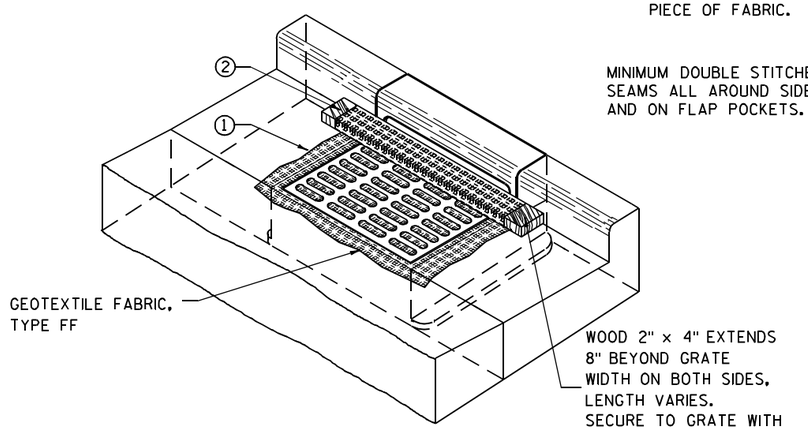


INLET PROTECTION, TYPE A

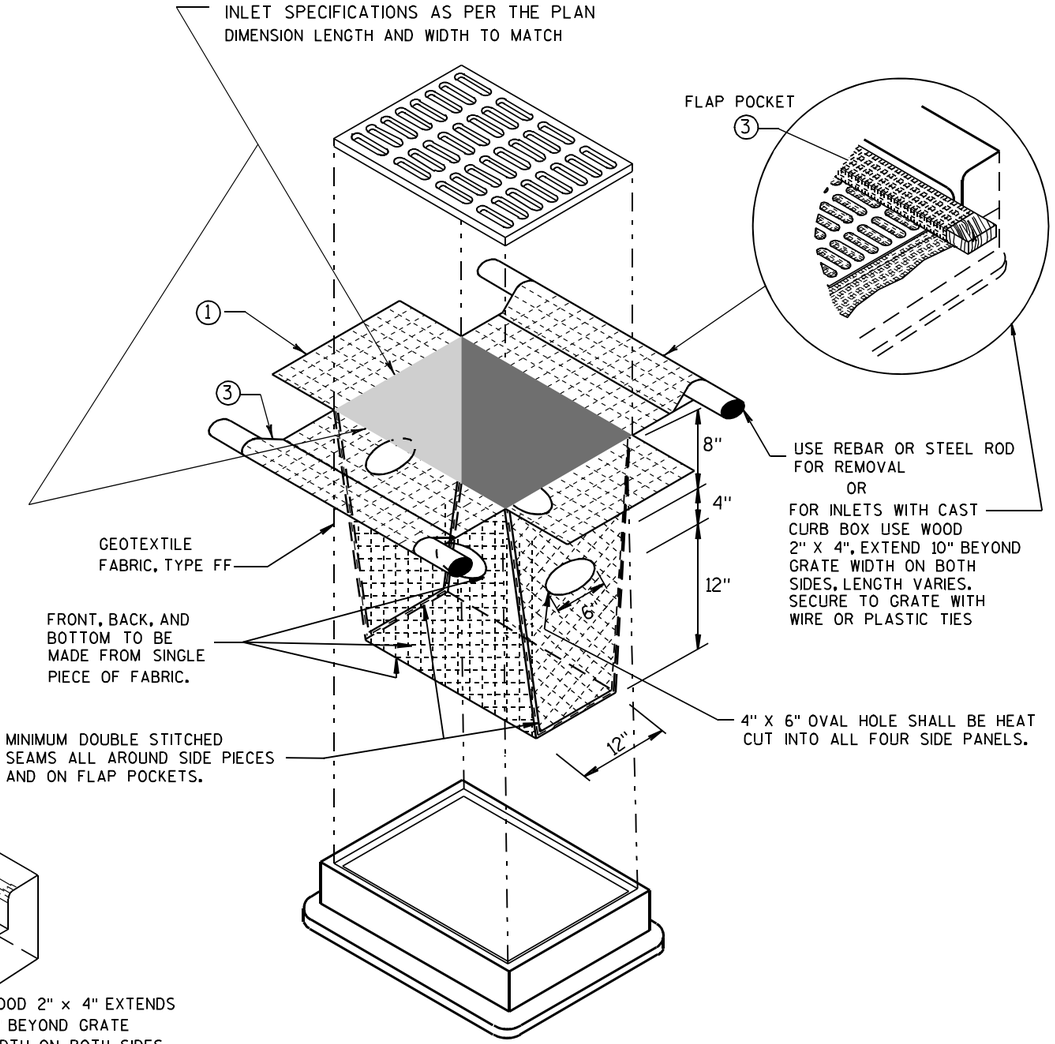


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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

6

S.D.D. 8 E 10-2

METAL APRON ENDWALLS

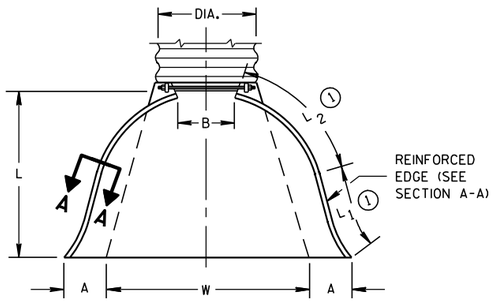
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4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

× EXCEPT CENTER PANEL SEE GENERAL NOTES

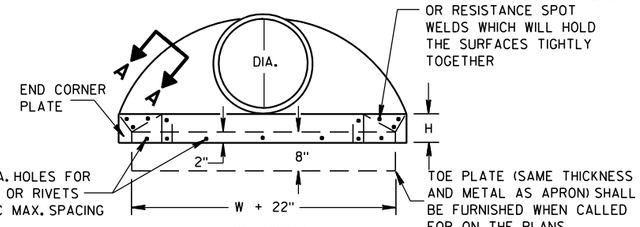
REINFORCED CONCRETE APRON ENDWALLS

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

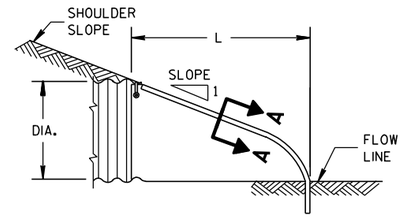
*MINIMUM
**MAXIMUM



PLAN VIEW

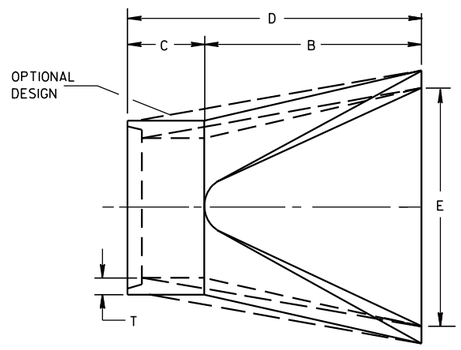


END VIEW

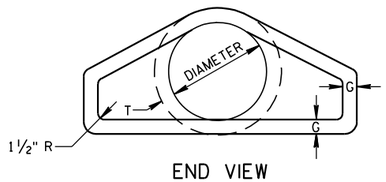


SIDE ELEVATION

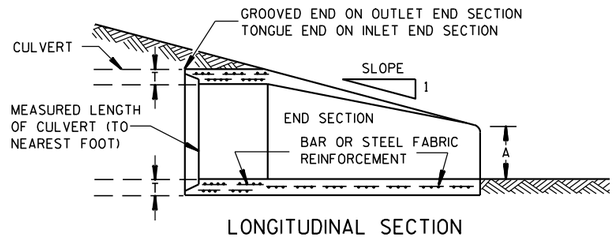
METAL ENDWALLS



PLAN

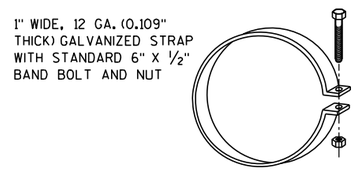


END VIEW



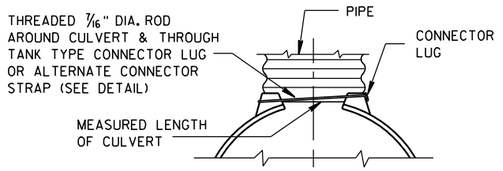
LONGITUDINAL SECTION

CONCRETE ENDWALLS

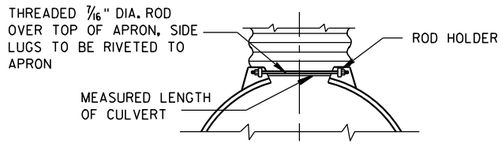


ALTERNATE FOR TYPE 1 CONNECTION

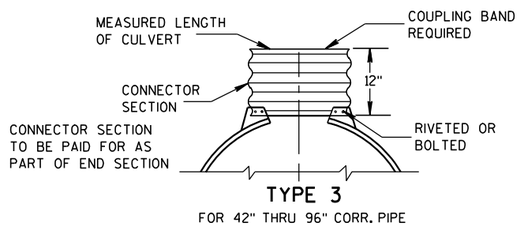
END SECTION CONNECTOR STRAP



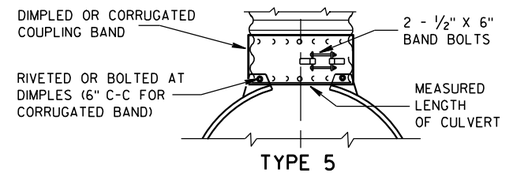
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

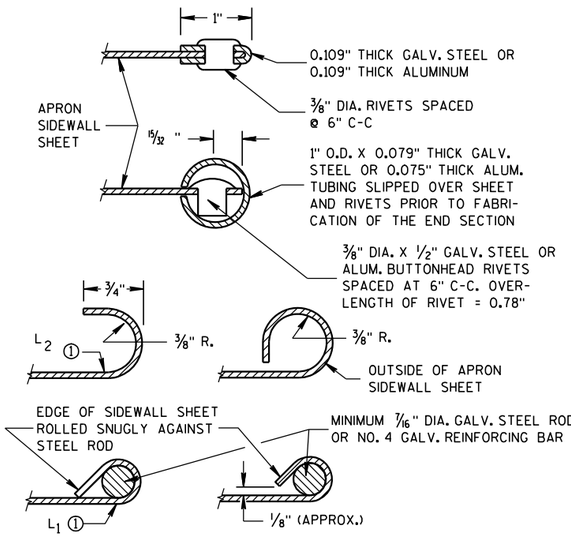
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 — DATE
/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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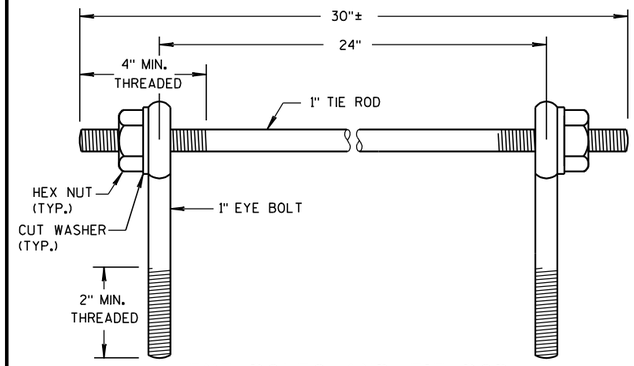
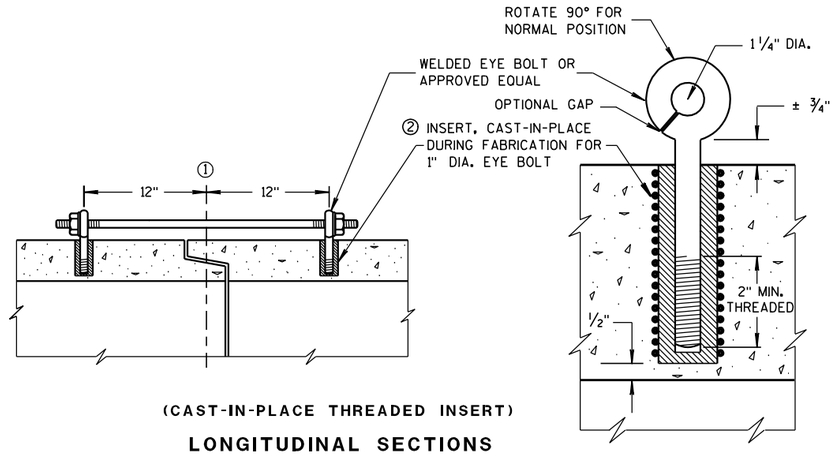
S.D.D. 8 F 1-11



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 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 APPLICABLE SPECIAL PROVISIONS.

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

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

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

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

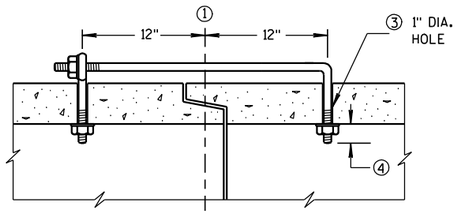
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

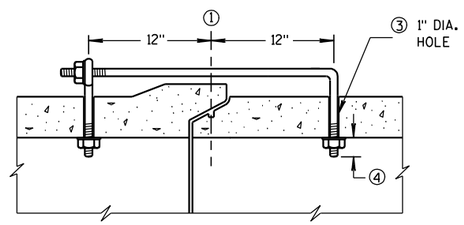
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

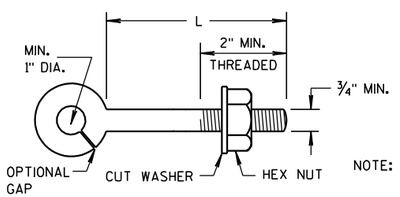


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

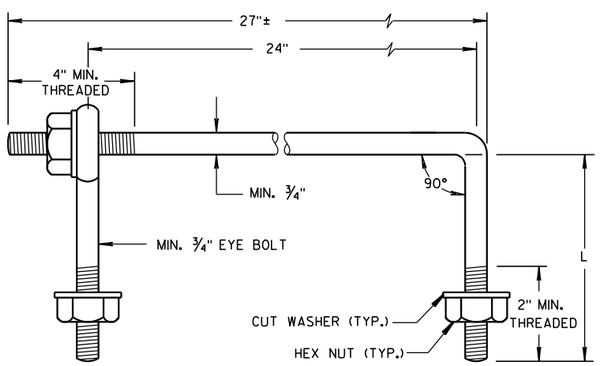
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

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



EYE BOLT AND TIE ROD

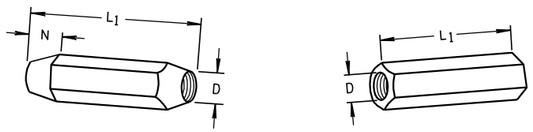
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

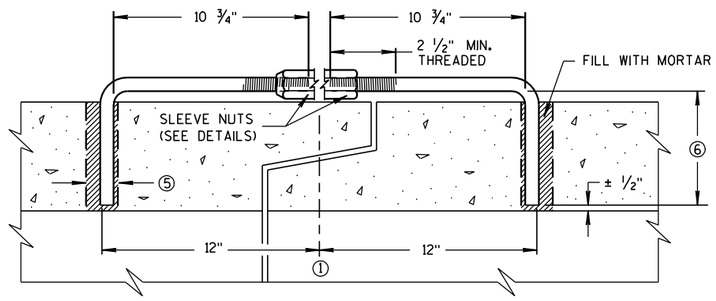
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

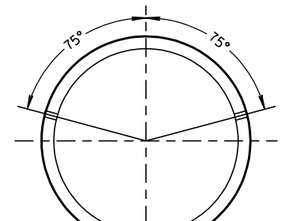
SLEEVE NUTS



LONGITUDINAL SECTION

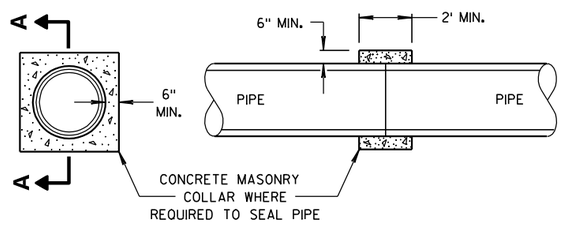
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
95 — 'MENT

FHWA

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S.D.D. 8 F 4-7

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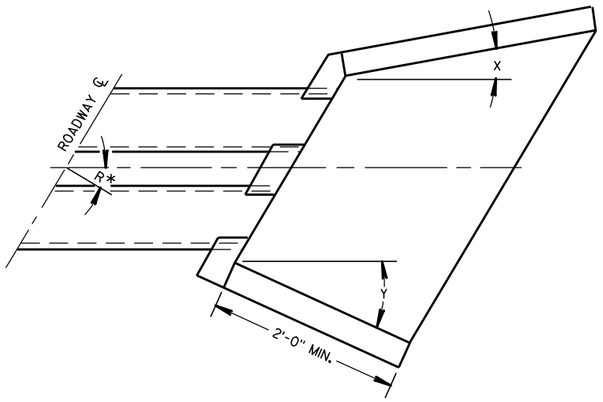
S.D.D. 8 F 4-7



WINGWALL ANGLE DETAILS

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	"	16 - 45°	10°	"
23 - 37°	20°	"	46 - 75°	5°	"
38 - 52°	15°	"	OVER 75°	0°	"
53 - 67°	10°	"			
68 - 82°	5°	"			
OVER 82°	0°	"			

*R = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

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.

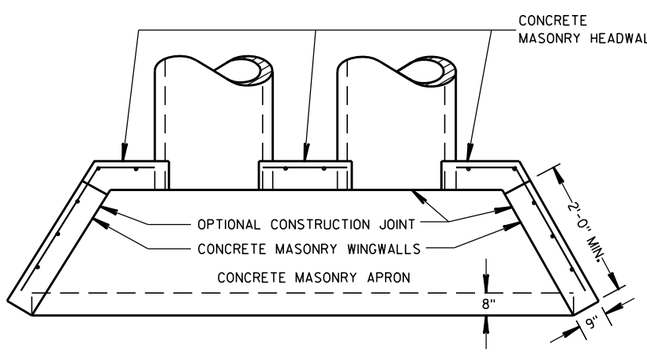
FILL SLOPES FLATTER THAN 2 ½:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

(1) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

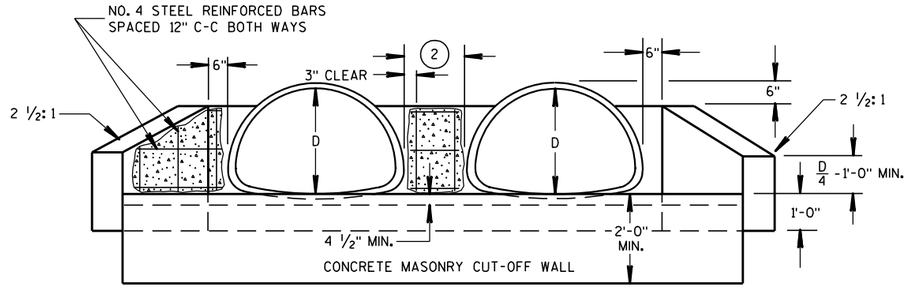
(2) THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2'-0"
OVER 48" TO 72"	½ DIA. OR SPAN
OVER 72"	3'-0"



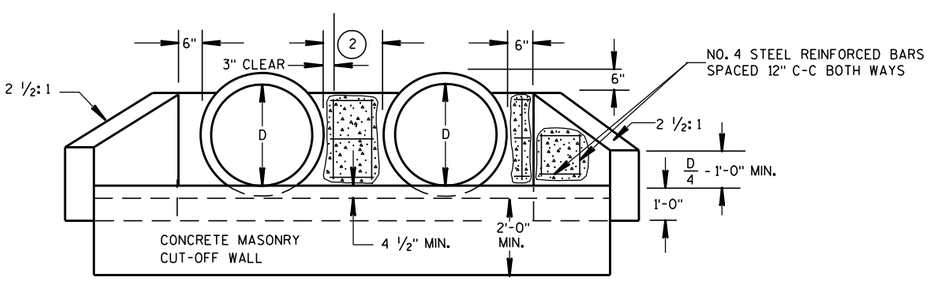
PLAN VIEW

CULVERT PIPE AND PIPE ARCH



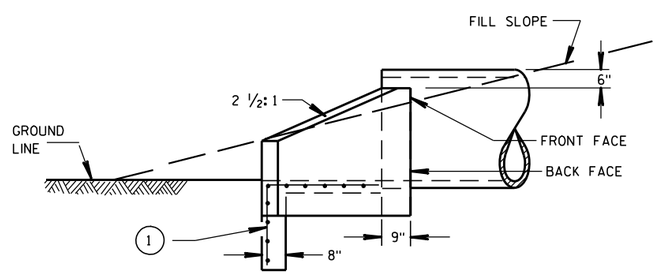
END ELEVATION

PIPE ARCH



END ELEVATION

CULVERT PIPE



SIDE ELEVATION

CULVERT PIPE AND PIPE ARCH

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/14/98 — DATE

/S/ Rory L. Rhinehart — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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S.D.D. 8 F 10-1

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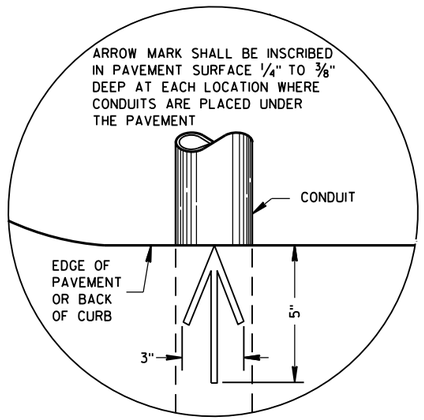
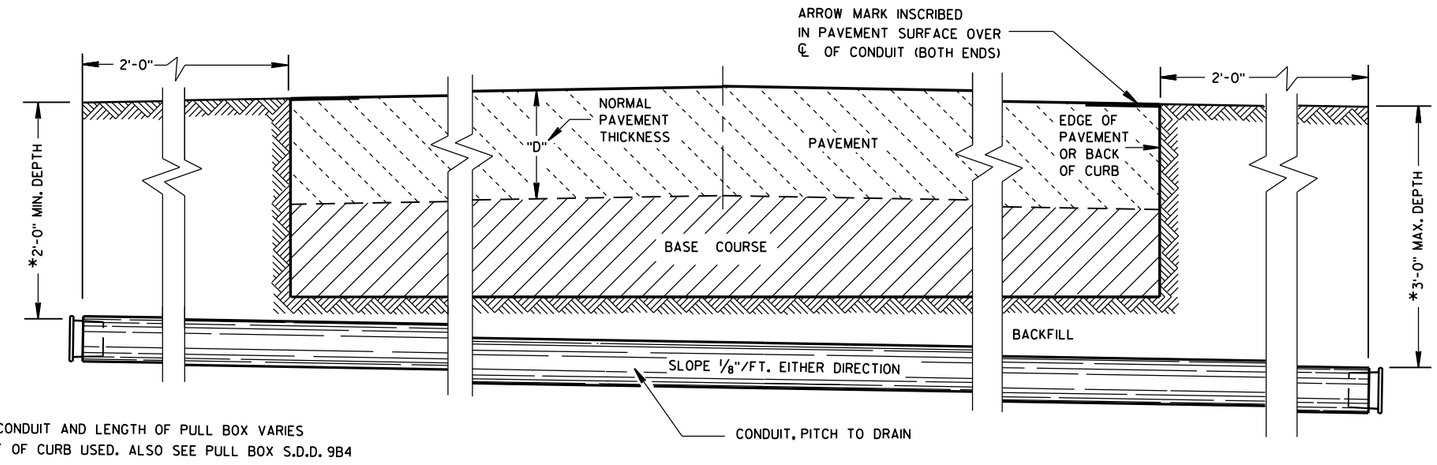
S.D.D. 8 F 10-1



PLAN VIEW

ARROW MARK



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

GENERAL NOTES

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

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL 97
FHWA

6

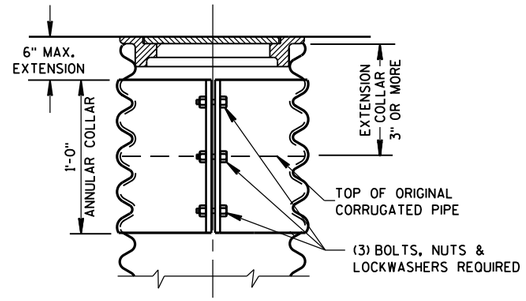
S.D.D. 9 B 2-10

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

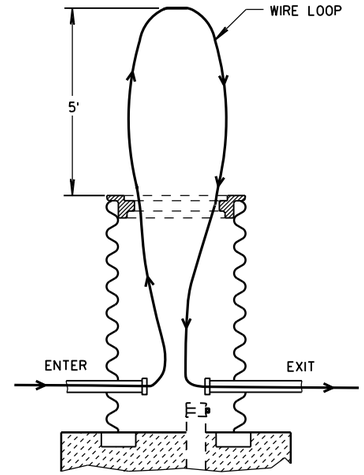
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

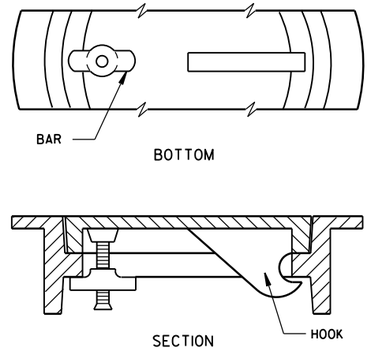
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

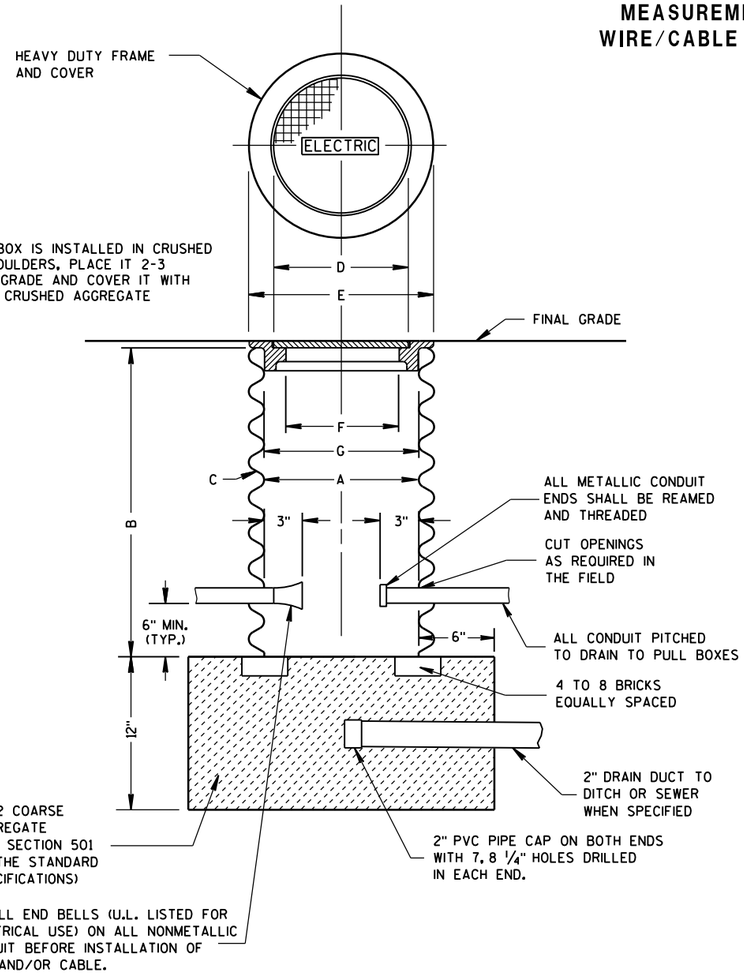


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



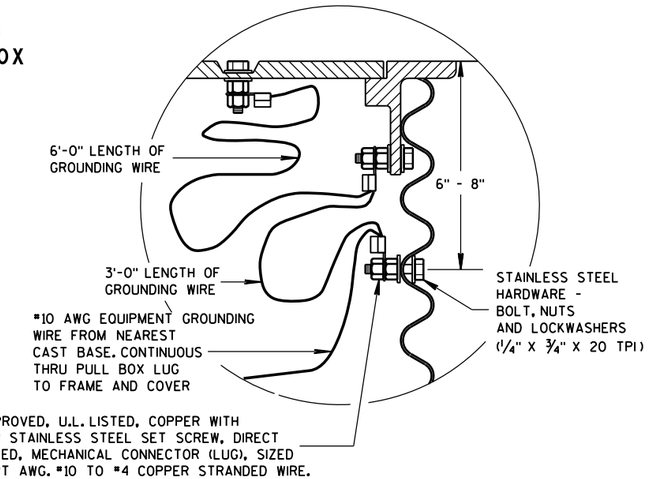
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

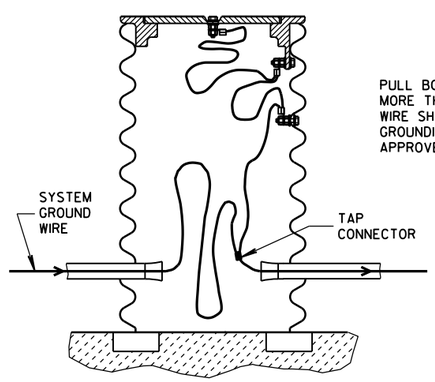


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

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

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

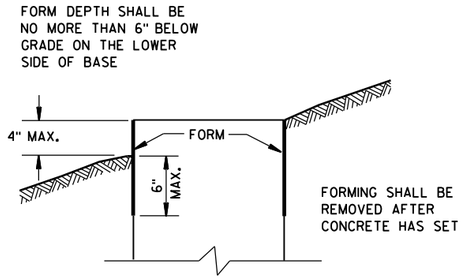
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 B 4-11



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES (CONTINUED)

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 OF THE STANDARD SPECIFICATIONS.

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

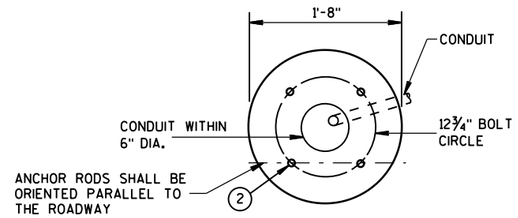
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

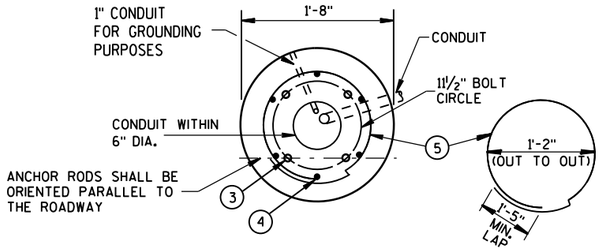
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

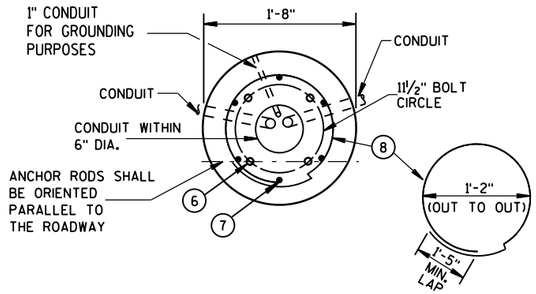
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

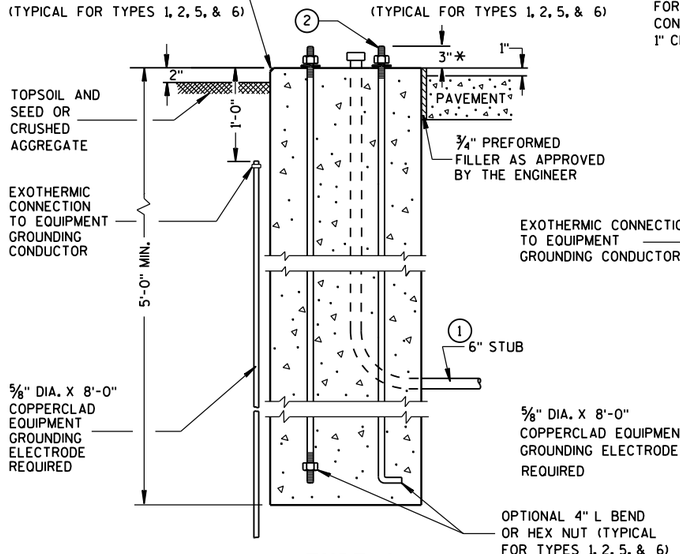




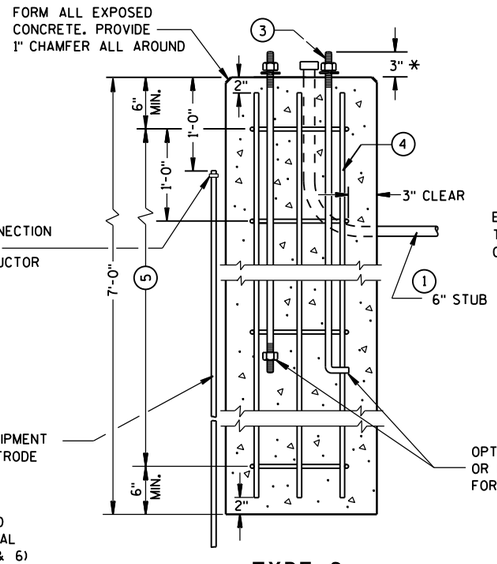


HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5, & 6)

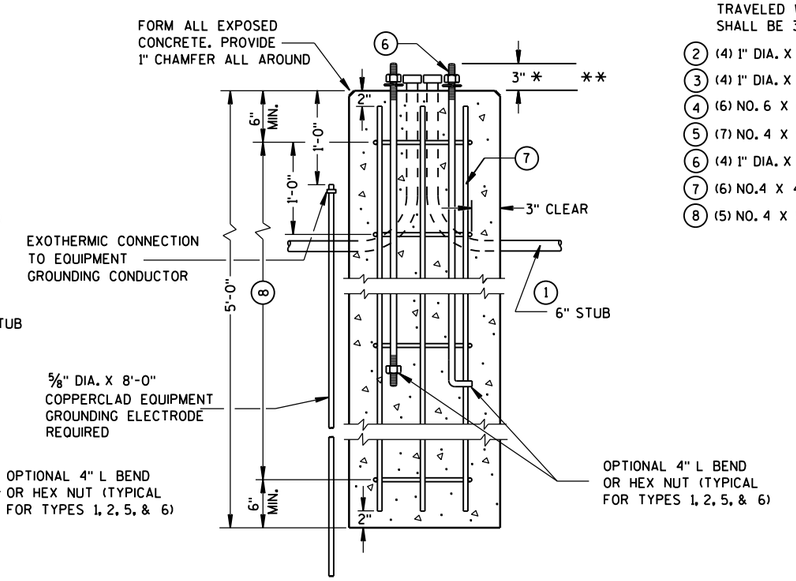
HALF SECTION IN PAVEMENT
(TYPICAL FOR TYPES 1, 2, 5, & 6)



TYPE 1



TYPE 2



TYPE 5 & 6

CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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S.D.D. 9 C 2-7

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S.D.D. 9 C 2-7

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

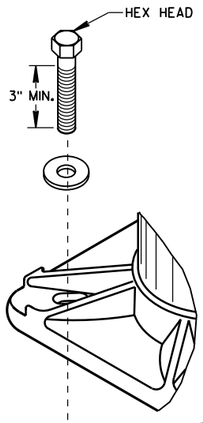
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

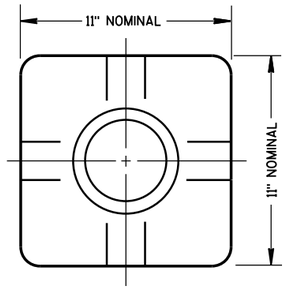
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

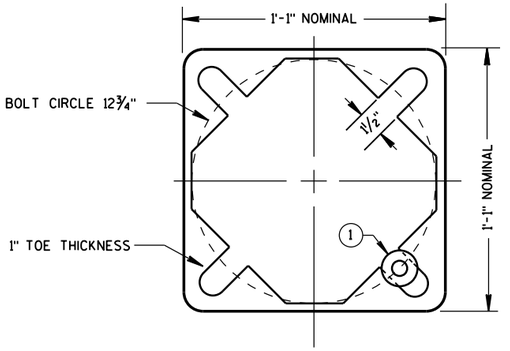
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

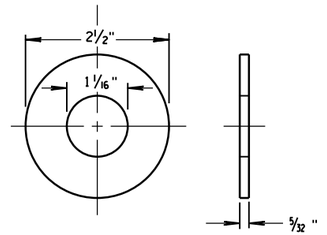




TOP VIEW
(PEDESTAL BASE)

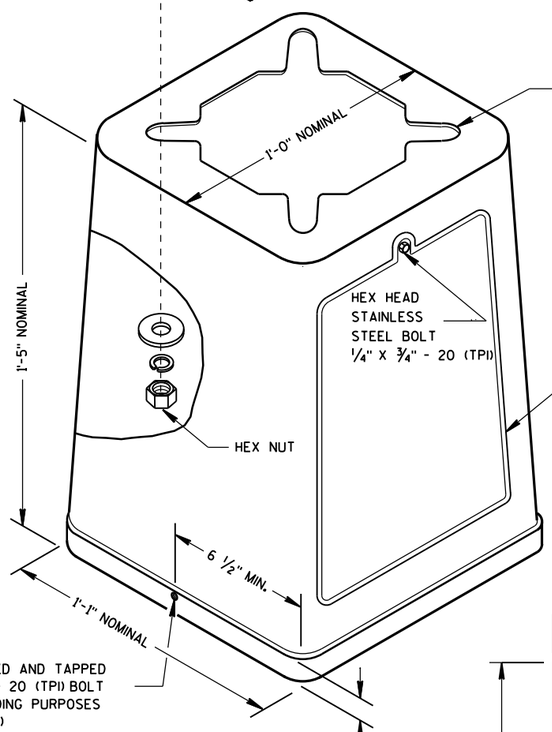


BOTTOM VIEW
(PEDESTAL BASE)

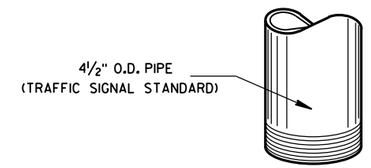


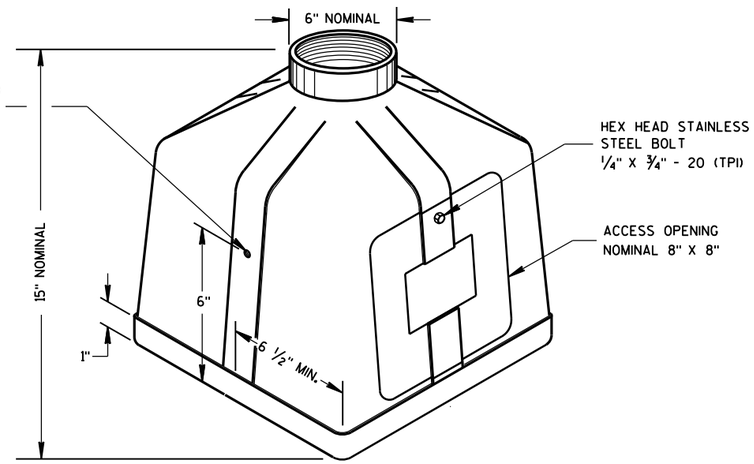
ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)



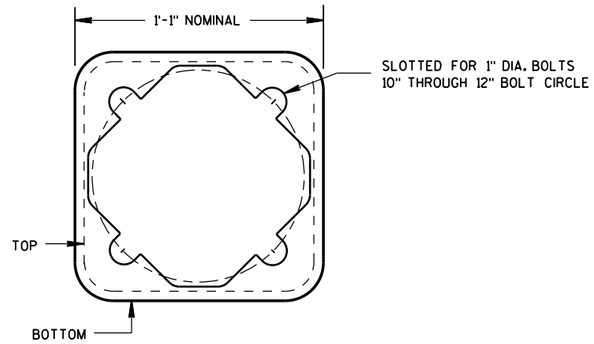
ISOMETRIC VIEW



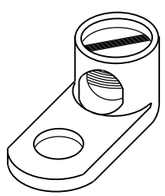


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

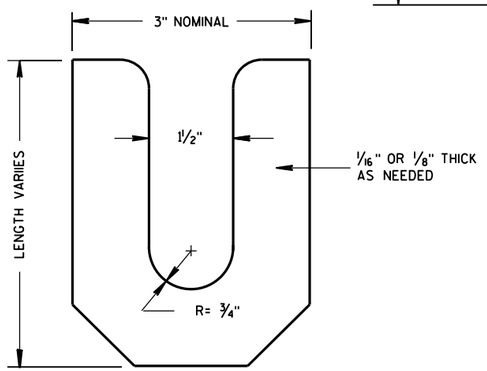


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
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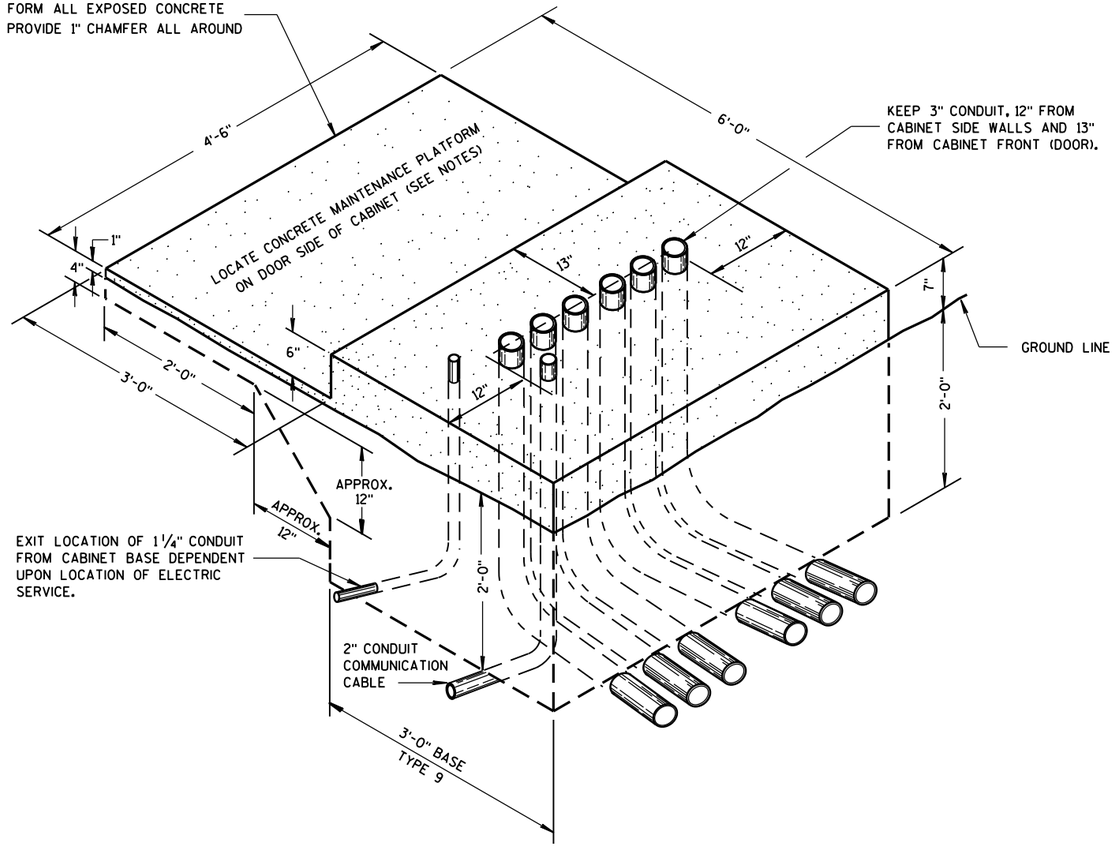
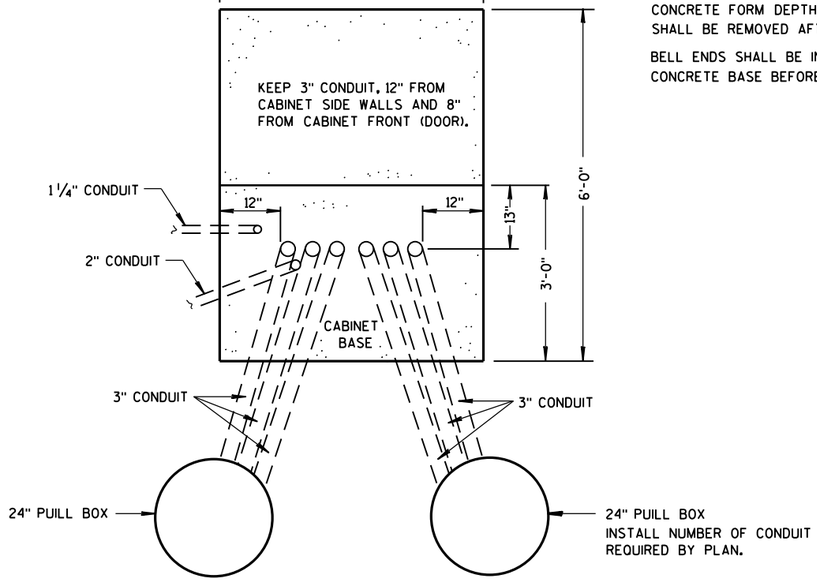


ISOMETRIC VIEW

TYPE 9, SPECIAL

(C.Y. CONCRETE = APPROX. 1.56)



PLAN VIEW

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

GENERAL NOTES

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

INSTALL FOUR ½ INCH MINIMUM DIAMETER X 4 INCH MINIMUM LENGTH STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS WITH A PULLOUT STRENGTH OF 9,000 LBS. TO ANCHOR THE CABINET TO TYPE 6, 7, 8, AND 9 BASES. THE ANCHOR STUDS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

CONCRETE CONTROL CABINET BASE, TYPE 9, SPECIAL

STATE OF WISCONSIN
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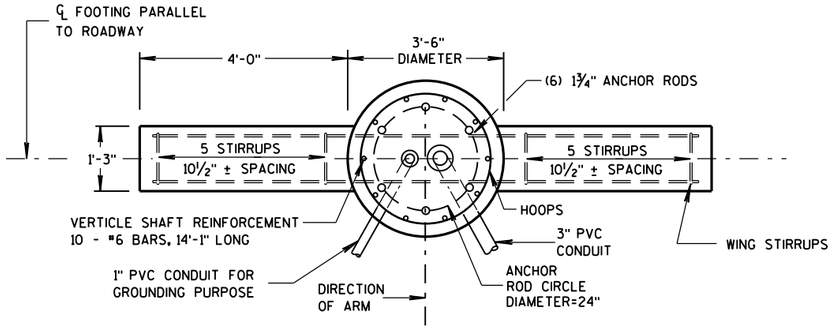
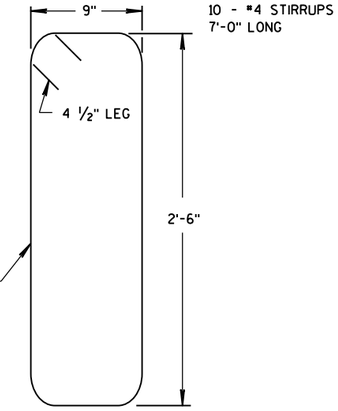
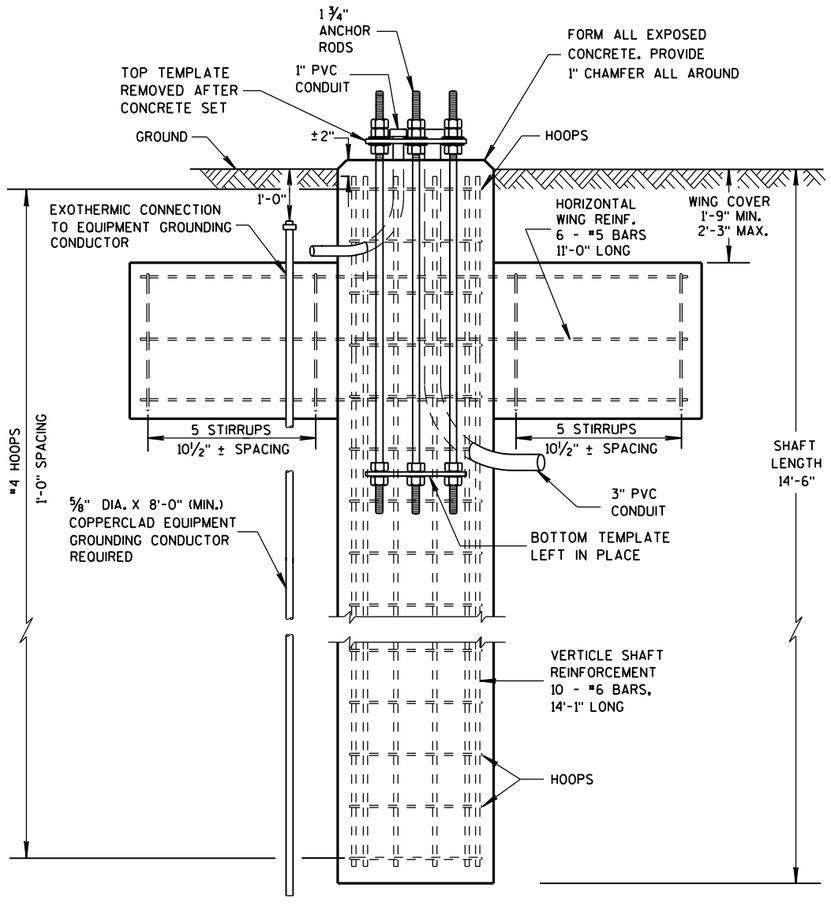


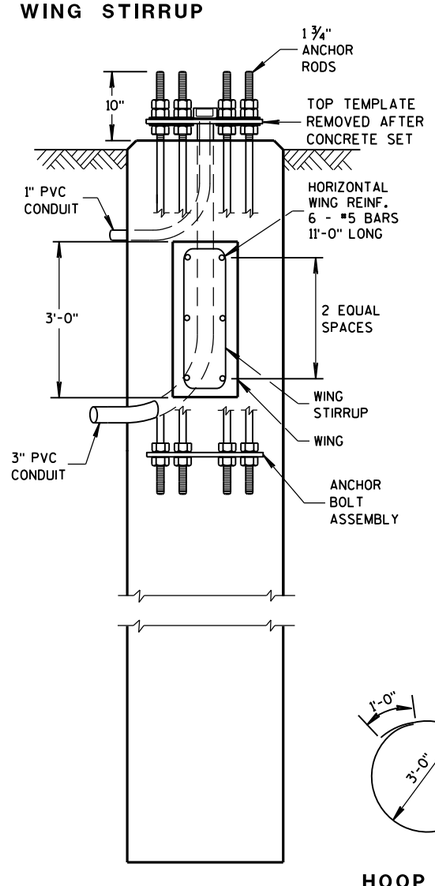
PLAN VIEW



WING STIRRUP

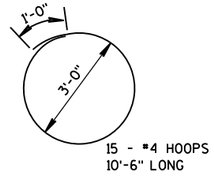


ELEVATION VIEW



SIDE VIEW

DOES NOT SHOW HOOPS OR VERTICAL SHAFT REINFORCEMENT



15 - #4 HOOPS 10'-6" LONG

HOOP DETAIL

GENERAL NOTES

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

ORIENT ANCHOR RODS IN FOOTING AND PROVIDE ANCHOR ROD PROJECTION ABOVE TOP OF CONCRETE FOOTING BASE PER THIS SHEET.

BENDING DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.

USE 3" CLEAR FOR ALL REINFORCEMENT UNLESS NOTED OTHERWISE.

THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

WELDING OF ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

BASES (SHAFT), BELOW THE WING, SHALL BE EXCAVATED BY THE USE OF A CIRCULAR AUGER. IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE SOIL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUNG THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

TOP SURFACE OF THE CONCRETE BASE SHALL BE TROWEL FINISHED AND LEVEL.

CONDUIT SIZE AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASE SHALL BE 4½" INCHES. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED. NONMETALLIC CONDUIT SHALL HAVE BELL ENDS INSTALLED. ALL CONDUIT SHALL SLOPE TO PULL BOX.

ALL CONDUIT ENDS AT THE TOP OF THE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTOR FITTINGS, UL LISTED FOR ELECTRICAL USE, SHALL BE USED.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE THROUGH A 1-INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4-FOOT COIL OF WIRE ABOVE THE CONCRETE BASE, THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS.

THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVEL WAY SHALL BE 24-INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18-INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36-INCHES, (GREATER THAN 36-INCHES IF INSTALLED IN BREAKER-RUN), EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

CONCRETE MASONRY	fc=3,500 p.s.i.
HIGH STRENGTH BAR STEEL REINFORCEMENT, GRADE 60	fy=60,000 p.s.i.
ANCHOR RODS, ASTM F1554 GRADE 55 (IN ACCORDANCE WITH SECTION 641.2.2.3 OF THE STANDARD SPECIFICATIONS	fy=55,000 p.s.i.
TEMPLATES, ASTM A709 GRADE 36	fy=36,000 p.s.i.

(FOR TYPE 12 & 13 POLES)

CONCRETE = 6.3 C.Y.
H.S. REINFORCEMENT = 433 LBS.

TO BE USED WHEN GROUND ELEVATION AT BASE EQUALS OR IS GREATER THAN HIGH POINT OF ROADWAY ELEVATION.
SEE S.D.D. 9C13-2 WHEN GROUND ELEVATION AT BASE IS LOWER THAN HIGH POINT OF ROADWAY ELEVATION.

CONCRETE BASE TYPE 13

STATE OF WISCONSIN
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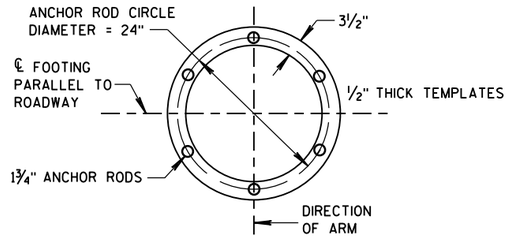
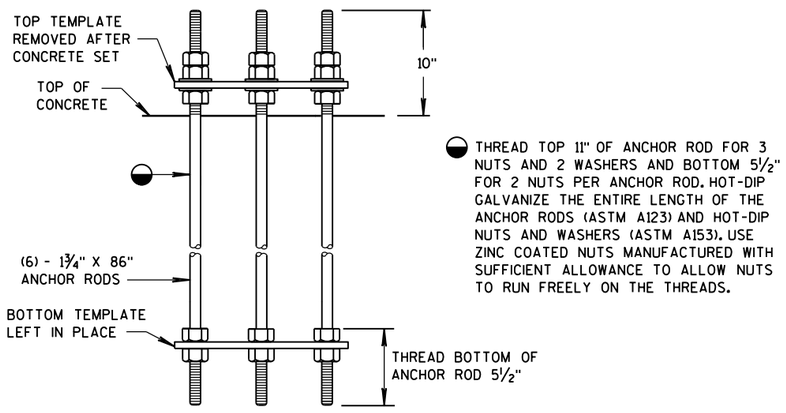
S.D.D. 9 C 12-8a
S.D.D. 9 C 12-8a

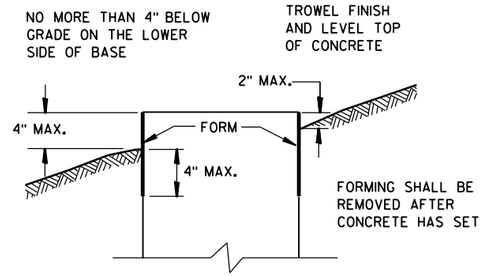


TOP AND BOTTOM TEMPLATES



ANCHOR BOLT ASSEMBLY DETAIL

CONCRETE BASE TYPE 13 ANCHOR ASSEMBLY



FORMING DETAIL

6

S.D.D. 9 C 12-8b

CONCRETE BASE TYPE 13

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016 — DATE
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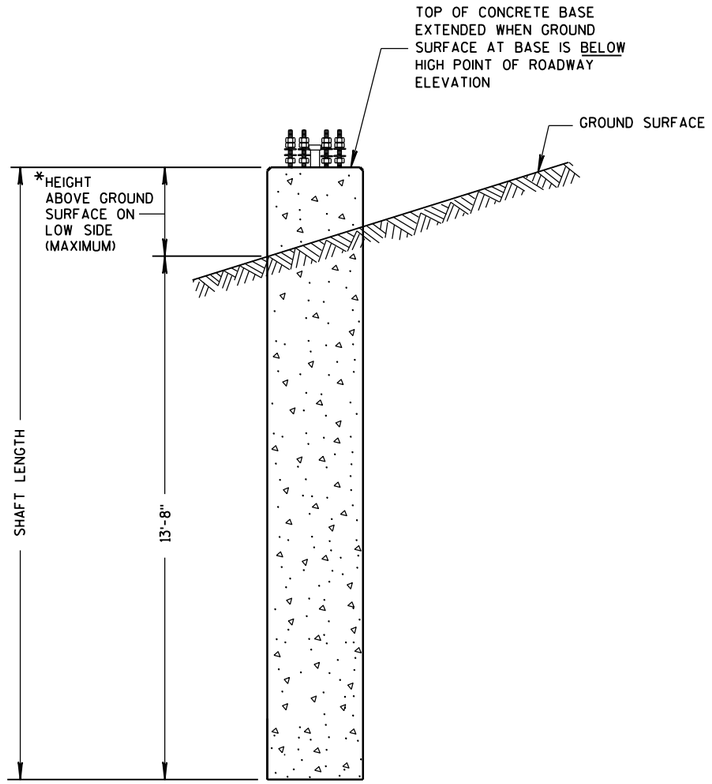
S.D.D. 9 C 12-8b

REINFORCEMENT AND CONCRETE QUANTITIES ADJUSTED FOR EXTENDED TYPE 10 CONCRETE BASE

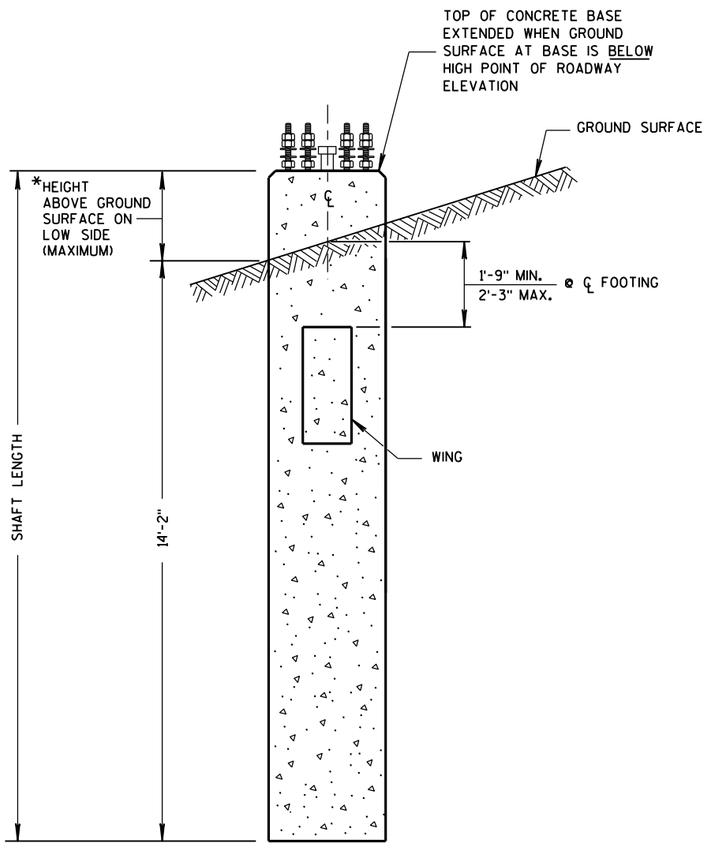
HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF HOOP BAR STEEL	LBS. OF VERTICAL BAR STEEL
>0" TO 6"	10"	14'-6"	14'-1"	16	2.6	78	127
>6" TO 1'-0"	1'-4"	15'-0"	14'-7"	16	2.7	78	131
>1'-0" TO 1'-6"	1'-10"	15'-6"	15'-1"	17	2.8	83	136
>1'-6" TO 2'-0"	2'-4"	16'-0"	15'-7"	17	2.9	83	141



CONCRETE BASE TYPE 10 (EXTENDED)

REINFORCEMENT AND CONCRETE QUANTITIES ADJUSTED FOR EXTENDED TYPE 13 CONCRETE BASE

HEIGHT INCREASE REQUIRED	* HEIGHT ABOVE GROUND SURFACE ON LOW SIDE (MAXIMUM)	SHAFT LENGTH	LENGTH OF #6 VERTICAL REINF.	NO. OF #4 HOOPS	C.Y. OF CONCRETE	LBS. OF H.S. BAR STEEL
>0" TO 6"	10"	15'-0"	14'-7"	16	6.5	447
>6" TO 1'-0"	1'-4"	15'-6"	15'-1"	16	6.6	454
>1'-0" TO 1'-6"	1'-10"	16'-0"	15'-7"	17	6.8	469
>1'-6" TO 2'-0"	2'-4"	16'-6"	16'-1"	17	7.0	476



CONCRETE BASE TYPE 13 (EXTENDED)

CONCRETE BASE
TYPE 10 & TYPE 13 EXTENSION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11-26-2013 DATE
/S/ Ahmet Demirbilek STATE ELECTRICAL
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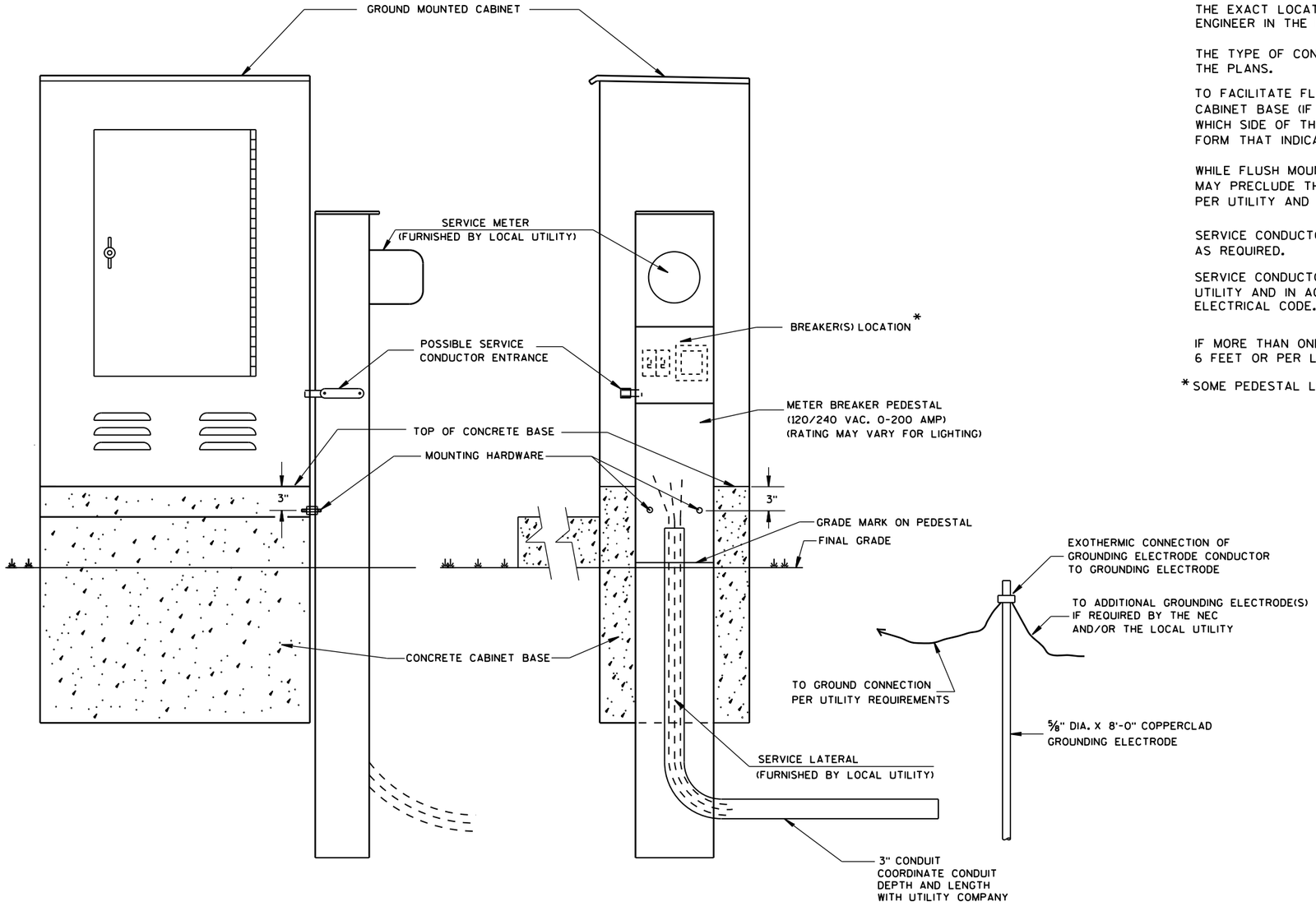

TYPICAL CABINET SERVICE INSTALLATION

GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE. CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH. THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT, NIPPLES AND/OR CONDULETS AS REQUIRED.

SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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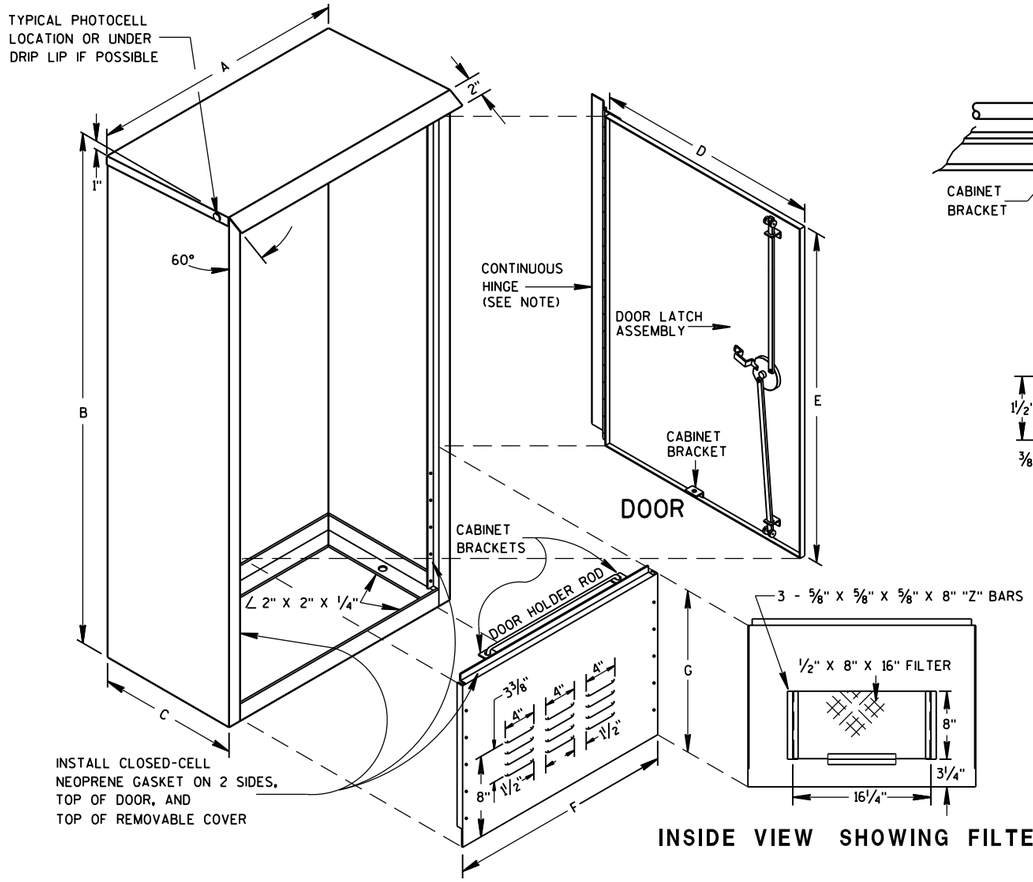
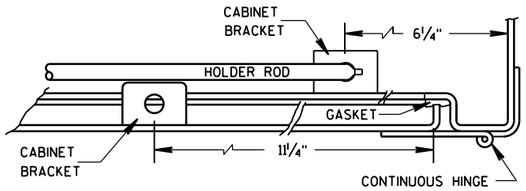
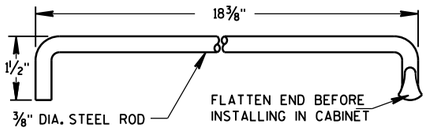


REMOVABLE COVER

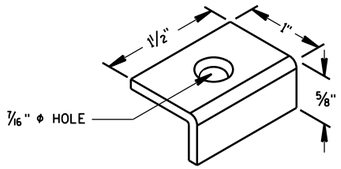
INSIDE VIEW SHOWING FILTER



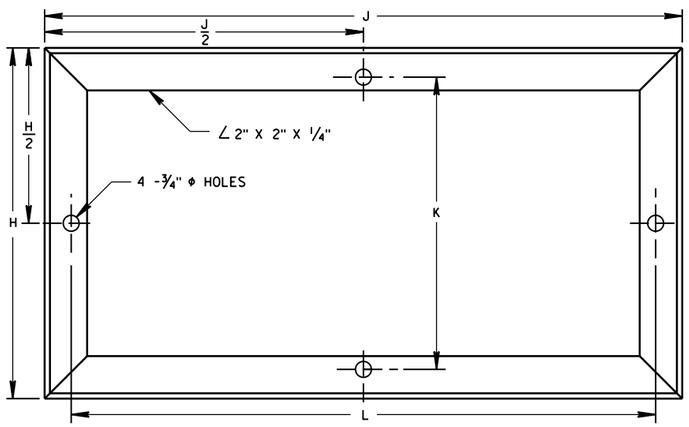
HINGE & DOOR HOLDER



HOLDER ROD



CABINET BRACKET



MOUNTING BASE

TABLE OF DIMENSIONS (INCHES)

MARK	CABINET TYPE		
	3060	3860	3866
A	30	38	38
B	60	60	66
C	16 1/2	16 1/2	24
D	26 1/2	34 3/4	33 3/4
E	38 3/4	38 3/4	38 3/4
F	26 1/2	34 3/4	33 3/4
G	19	19	25
H	16 1/2	16 1/2	24
H/2	8 1/4	8 1/4	12
J	30	38	38
J/2	15	19	19
K	13 3/4	13 3/4	21 1/4
L	27 1/2	35 1/2	35 1/2

GENERAL NOTES

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

PRIME WITH PHOSPHATE TREATMENT AND PRIMER.

FINISH EXTERIOR SURFACES WITH RUSTOLEUM #906 SILVER GRAY OR APPROVED EQUAL.

FINISH INTERIOR WITH RUSTOLEUM #2766 HIGH GLOSS WHITE ENAMEL OR APPROVED EQUAL.

ALL SHEET METAL PARTS SHALL BE .125 INCH THICK ALUMINUM.

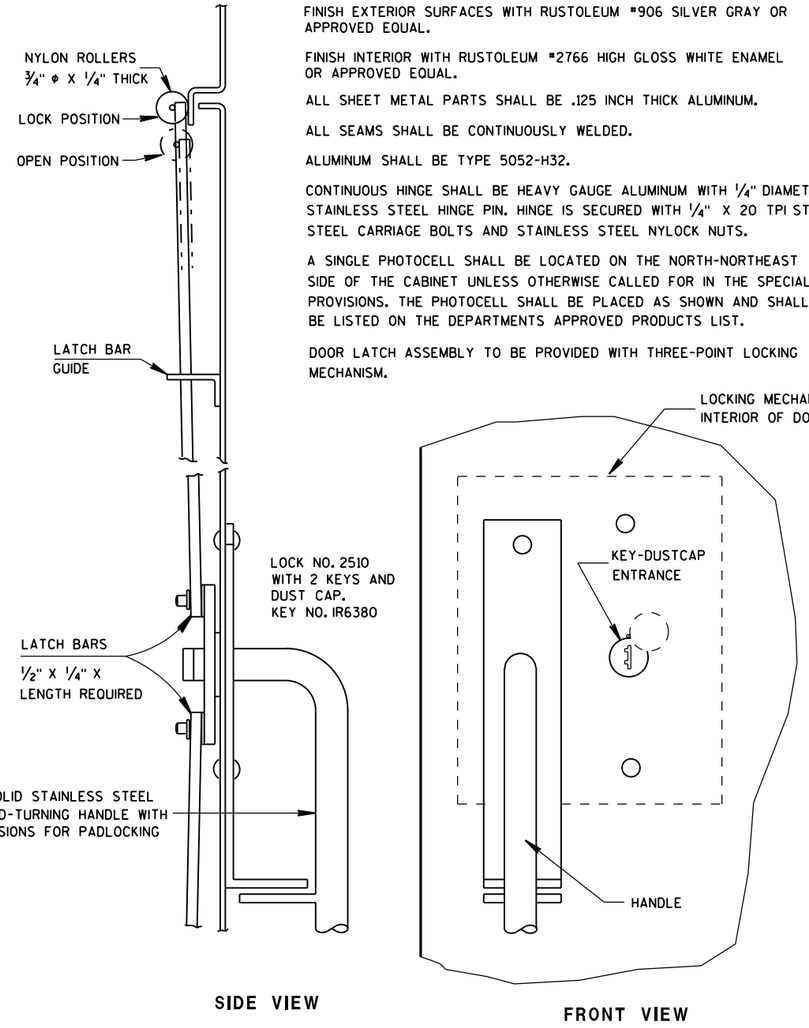
ALL SEAMS SHALL BE CONTINUOUSLY WELDED.

ALUMINUM SHALL BE TYPE 5052-H32.

CONTINUOUS HINGE SHALL BE HEAVY GAUGE ALUMINUM WITH 1/4" DIAMETER STAINLESS STEEL HINGE PIN. HINGE IS SECURED WITH 1/4" X 20 TPI STAINLESS STEEL CARRIAGE BOLTS AND STAINLESS STEEL NYLOCK NUTS.

A SINGLE PHOTOCELL SHALL BE LOCATED ON THE NORTH-NORTHEAST SIDE OF THE CABINET UNLESS OTHERWISE CALLED FOR IN THE SPECIAL PROVISIONS. THE PHOTOCELL SHALL BE PLACED AS SHOWN AND SHALL BE LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST.

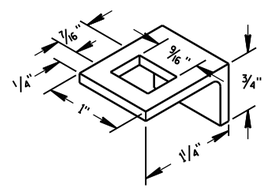
DOOR LATCH ASSEMBLY TO BE PROVIDED WITH THREE-POINT LOCKING MECHANISM.



SIDE VIEW

FRONT VIEW

LATCH ASSEMBLY



LATCH BAR GUIDE

SIGNAL CONTROL CABINET

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL

FHWA

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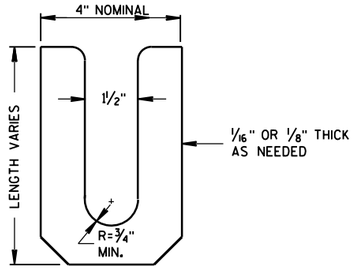
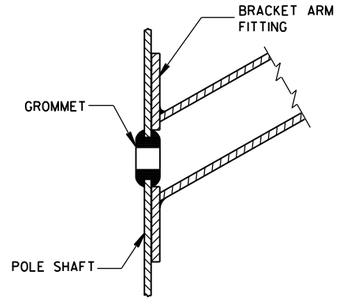
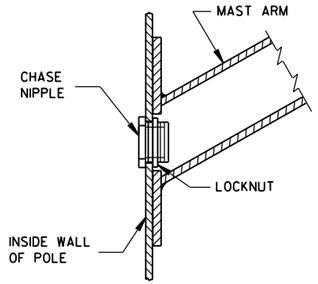


LEVELING SHIM (13)

SHALL BE ALUMINUM



TYPICAL APPLICATION OF GROMMET IN POLE SHAFT



TYPICAL APPLICATION OF CHASE NIPPLE IN POLE SHAFT

GENERAL NOTES

CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.

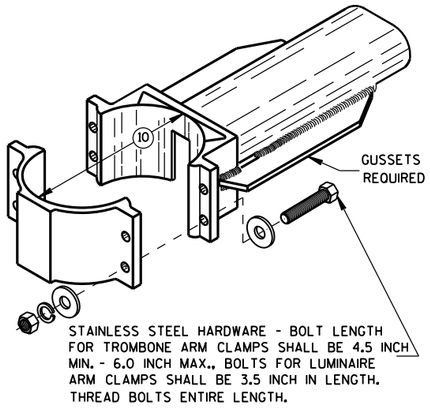
(10) 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.

(11) INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)

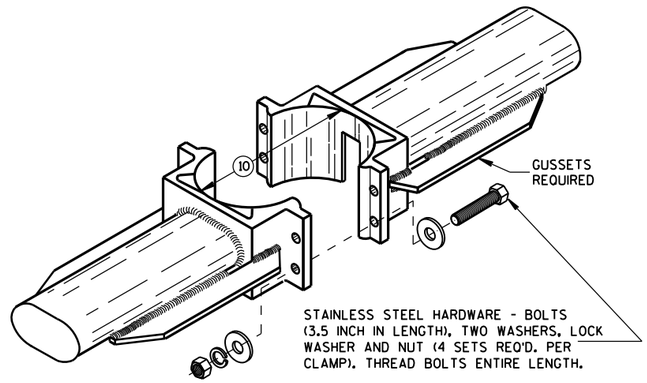
(12) BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.

(13) LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.

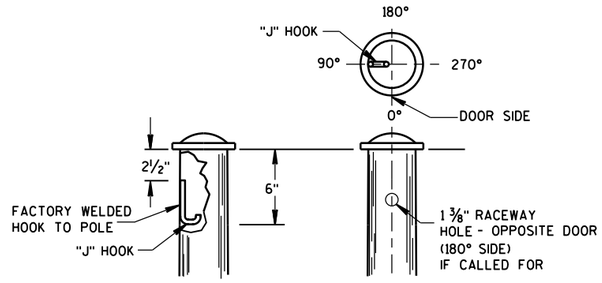
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.



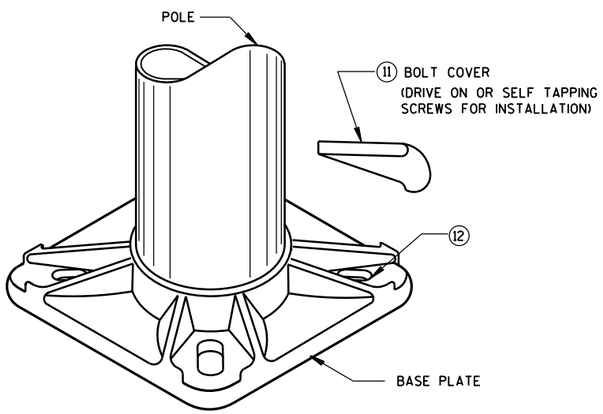
TYPICAL TROMBONE MAST ARM AND SINGLE LUMINAIRE MAST ARM MOUNTING CLAMP



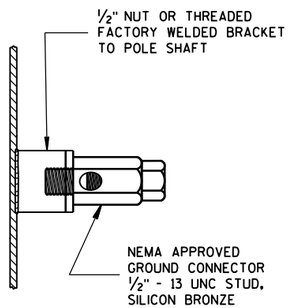
TYPICAL LUMINAIRE MAST ARM (DOUBLE) MOUNTING BRACKETS

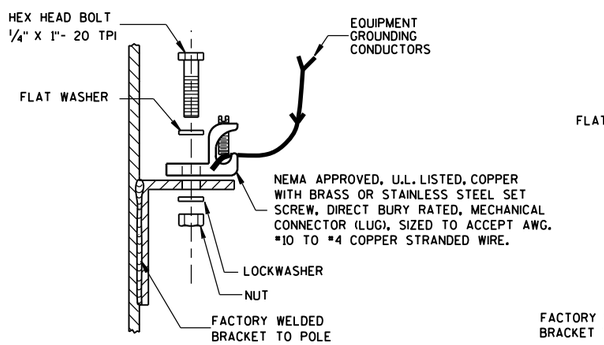


TYPICAL "J" HOOK LOCATION



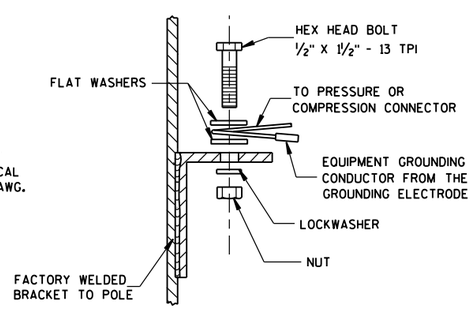
BASE PLATE





TYPICAL GROUNDING CONNECTIONS

NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL



HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Feb. 2015
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL

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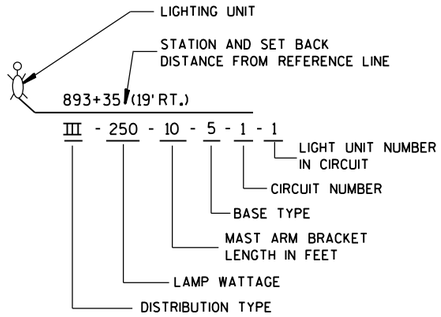
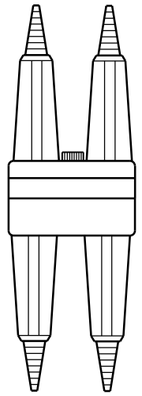
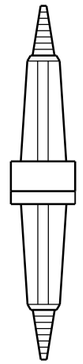


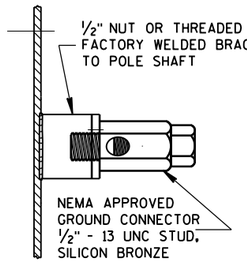
LIGHTING UNIT CODE
(TYPICAL)

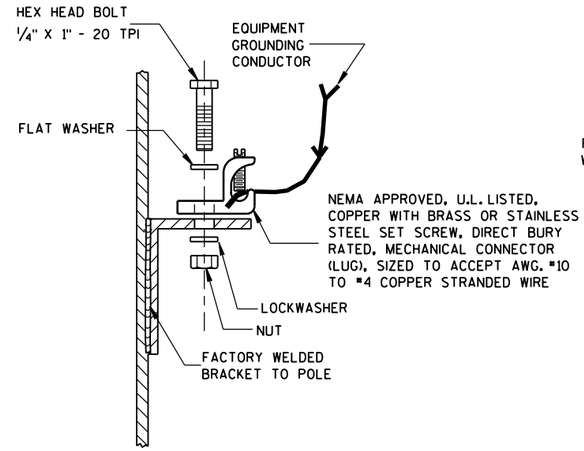


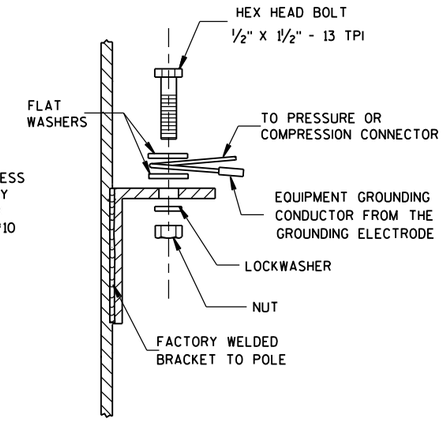
DETAIL "A"
BREAKAWY DOUBLE POLE WITH WATERPROOF INSULATING BOOT



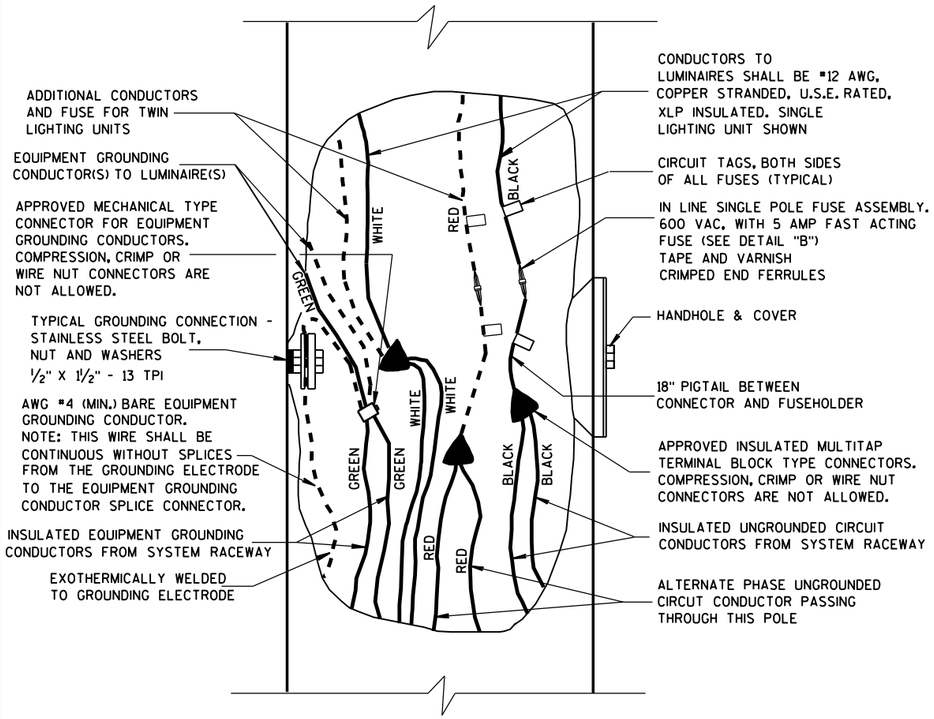
DETAIL "B"
BREAKAWY SINGLE POLE WITH WATERPROOF INSULATING BOOT



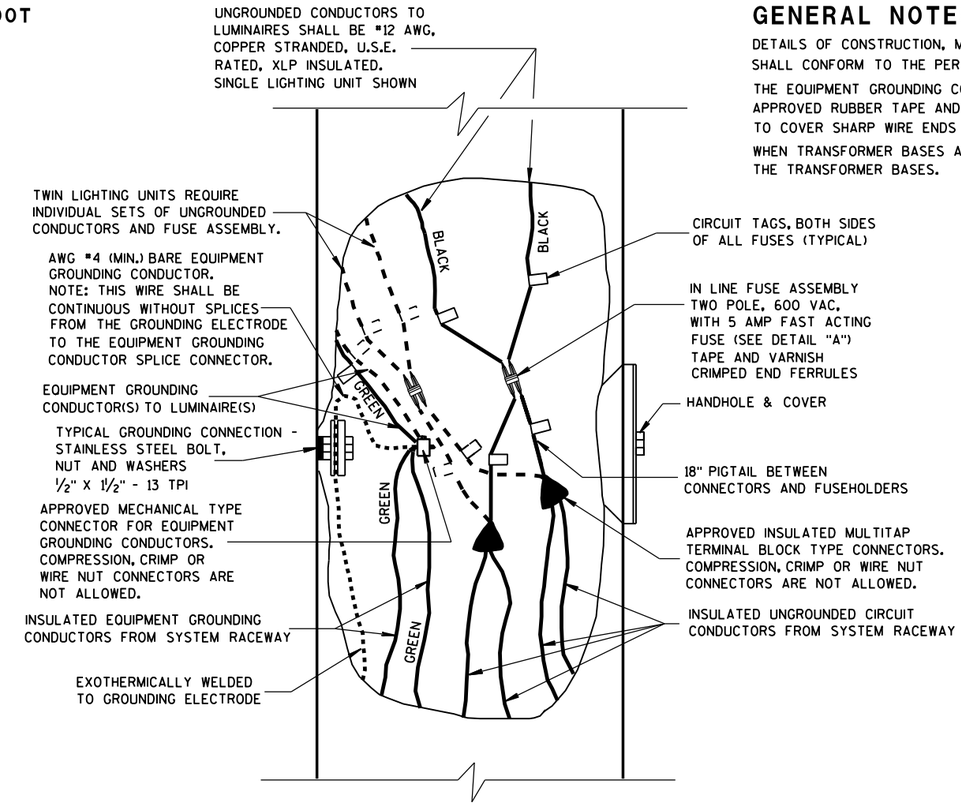




TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDED CONDUCTOR) WITH GROUNDED CONDUCTOR AND WITH EQUIPMENT GROUNDING CONDUCTOR



2 WIRE - 240 OR 480 VAC (UNGROUNDED CONDUCTORS) WITH EQUIPMENT GROUNDING CONDUCTOR

GENERAL NOTES

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

THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.

WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.

NON-FREEWAY LIGHTING UNIT POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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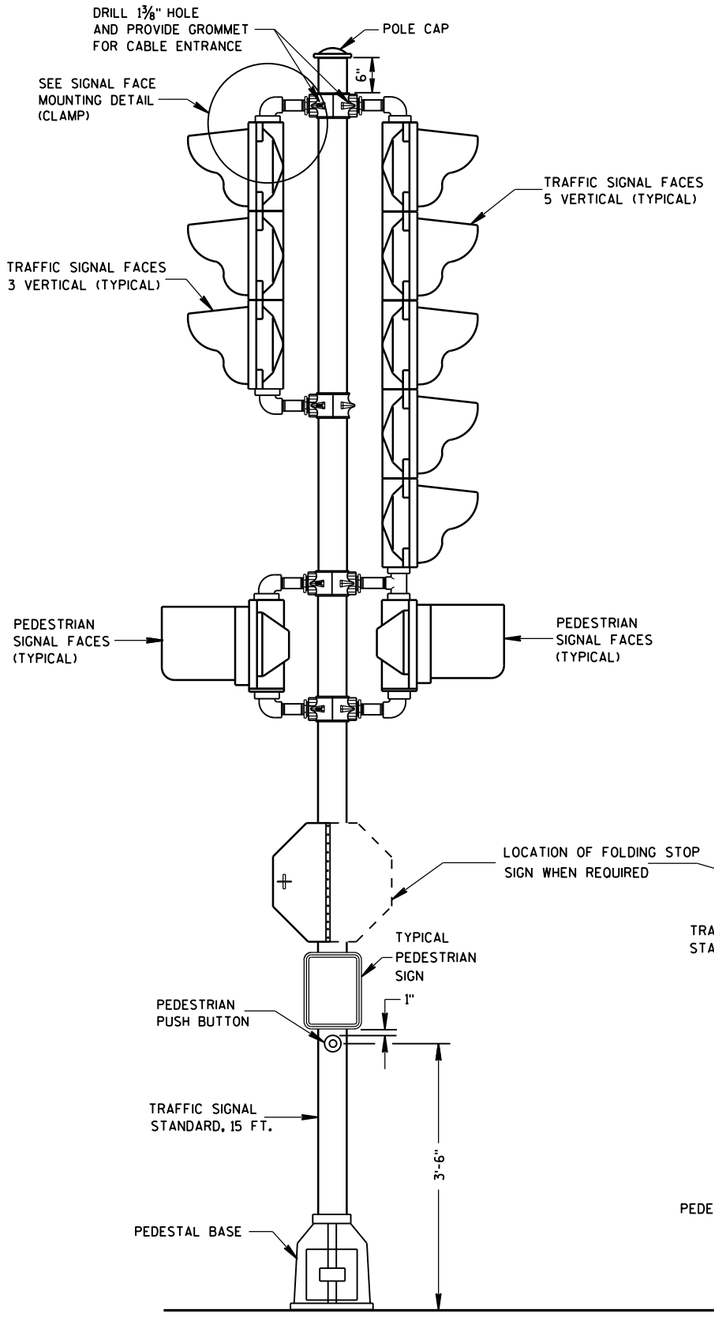
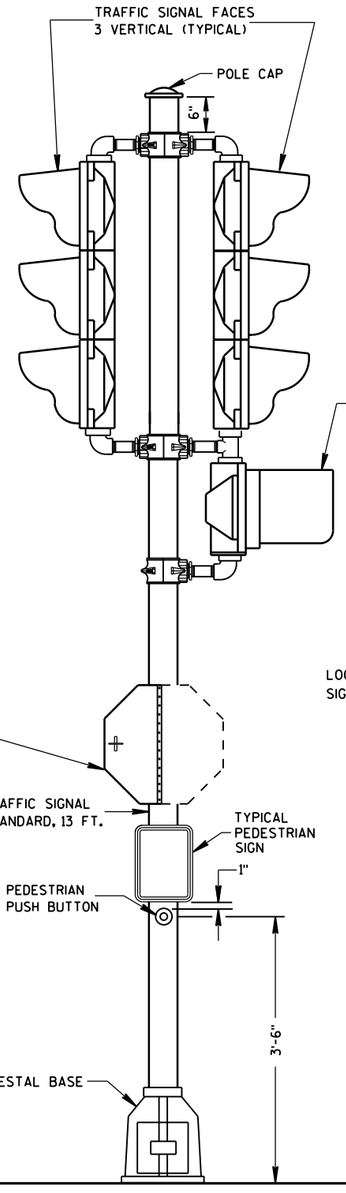
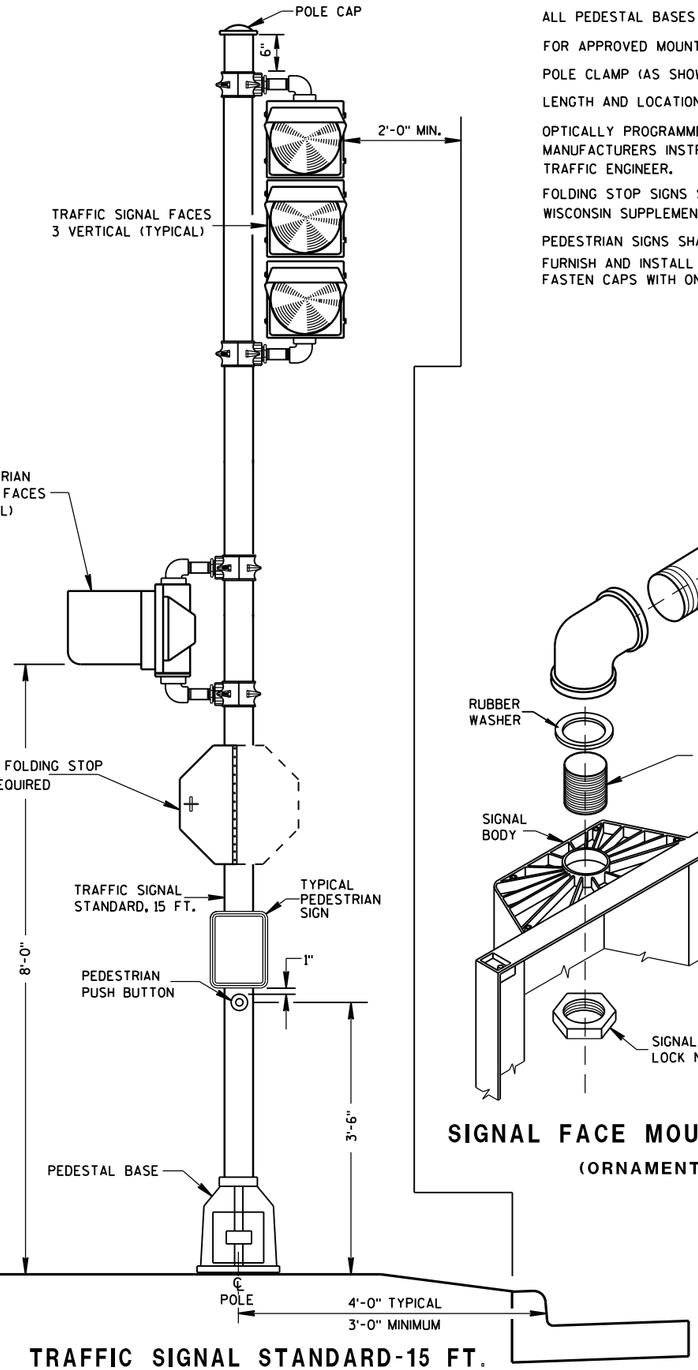


TRAFFIC SIGNAL STANDARD-15 FT.



TRAFFIC SIGNAL STANDARD-13 FT.



TRAFFIC SIGNAL STANDARD-15 FT.
3M MOUNTING (TYPICAL)

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIAL PROVISIONS.

POLE CLAMP (AS SHOWN) MOUNTING BRACKETS SHALL BE USED.

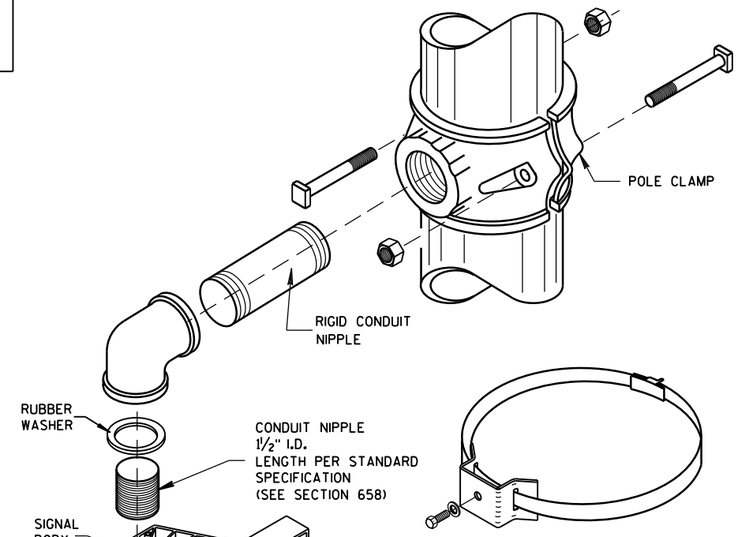
LENGTH AND LOCATION OF TRAFFIC SIGNAL STANDARDS SHALL BE AS SHOWN ON THE PLANS.

OPTICALLY PROGRAMMED SIGNAL FACES SHALL BE MASKED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS, AND UNDER THE DIRECTIONS OF THE REGION TRAFFIC ENGINEER.

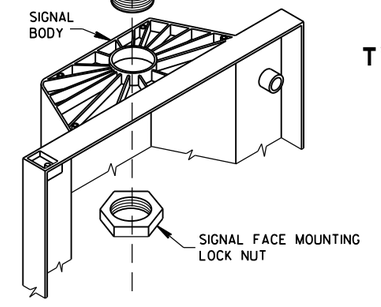
FOLDING STOP SIGNS SHALL BE IN ACCORDANCE WITH THE MUTCD AND/OR THE LATEST WISCONSIN SUPPLEMENT. THE SIGNS SHALL BE SIZED AND LOCATED AS CALLED FOR IN THE PLANS.

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) 1/4" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



SIGNAL FACE MOUNTING DETAIL
(ORNAMENTAL)

TRAFFIC SIGNAL STANDARD
ORNAMENTAL BRACKET MOUNTINGS
TYPICAL FOR 13 FT. OR 15 FT.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/28/2013 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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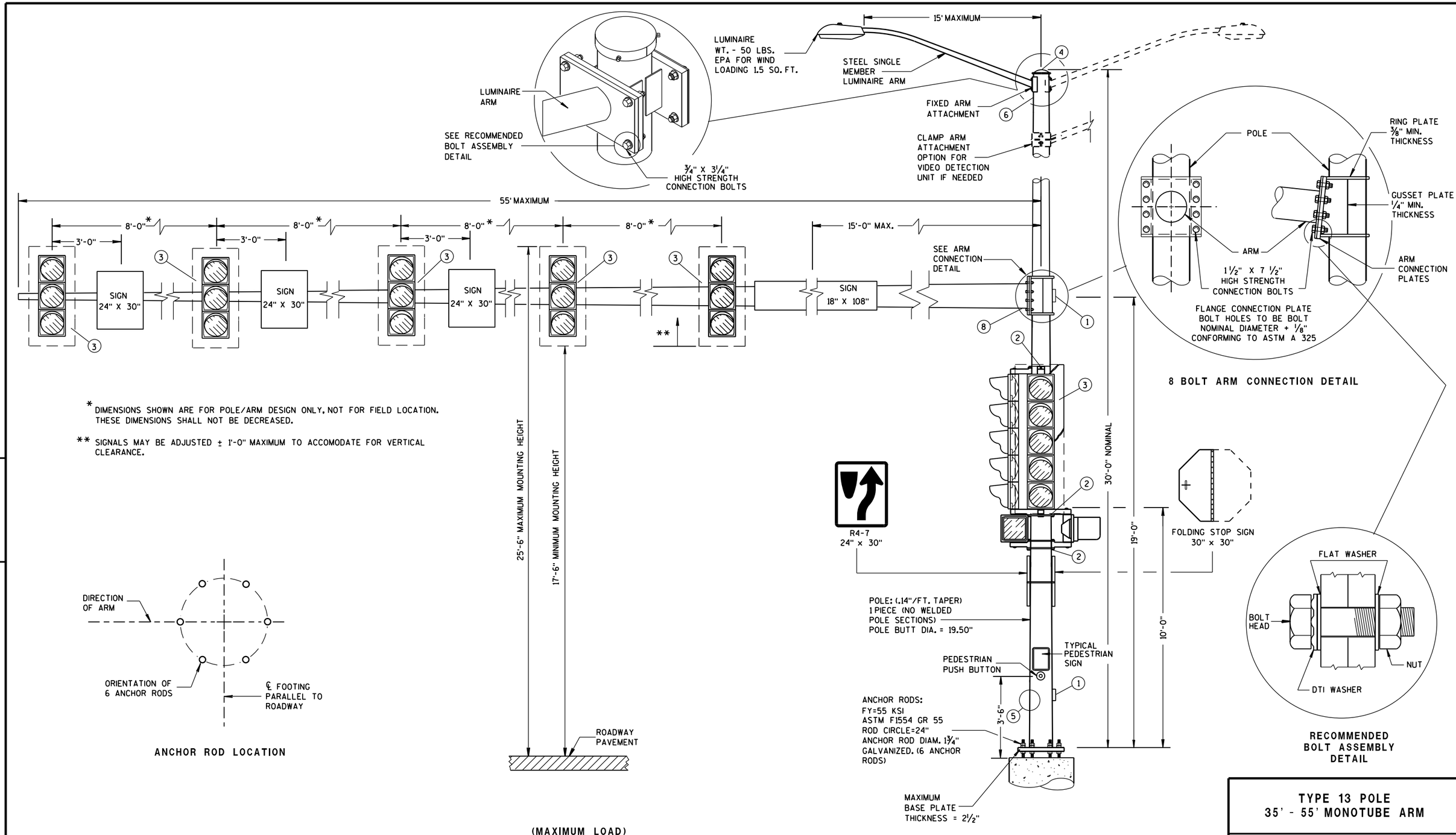
S.D.D. 9 E 5-6

S.D.D. 9 E 5-6



* DIMENSIONS SHOWN ARE FOR POLE/ARM DESIGN ONLY, NOT FOR FIELD LOCATION. THESE DIMENSIONS SHALL NOT BE DECREASED.

** SIGNALS MAY BE ADJUSTED ± 1'-0" MAXIMUM TO ACCOMODATE FOR VERTICAL CLEARANCE.

8 BOLT ARM CONNECTION DETAIL

RECOMMENDED BOLT ASSEMBLY DETAIL

ANCHOR ROD LOCATION

(MAXIMUM LOAD)

TYPE 13 POLE 35'- 55' MONOTUBE ARM

TYPE 13 POLE
35' - 55' MONOTUBE ARM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL

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S.D.D. 9 E 8-8d

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GENERAL NOTES

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

POLE TYPES 9 AND 10 ARE FOR ARM LENGTHS 15-FOOT TO 30-FOOT.

POLE TYPES 12 AND 13 ARE FOR ARM LENGTHS 35-FOOT TO 55-FOOT.

MONOTUBE POLE AND ARM SHALL BE GALVANIZED STEEL.

RING-STIFFENED BUILT-UP BOX TYPE OF ATTACHMENT FOR TRAFFIC SIGNAL ARM.

ONE (1) PIECE POLE CONSTRUCTION (NO WELDED POLE SECTIONS).

STANDARD STRAIGHT ARM DESIGN (3 % ± RISE).

SECTION 657, POLES OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

PROVIDE WIREWAY THRU POLE WALL AND ARM CONNECTION PLATES. PROVIDE ROUND, SMOOTH INSIDE SURFACE.

MANUFACTURER'S SUBMITTED POLE DESIGNS AND DRAWINGS SHALL BE SIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED AS BEING IN COMPLIANCE WITH THE AASHTO 2013 6TH EDITION AND ALL PERTINENT WISDOT SPECIFICATIONS AND DRAWINGS FOR TRAFFIC AND LIGHTING STRUCTURES AND AS FOLLOWS:

- CATEGORY III FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 9 AND TYPE 10 STRUCTURES.
- CATEGORY II FATIGUE LOADS OF GALLOPING, TRUCK GUSTS (AT 45 MPH VEHICLE VELOCITY) AND NATURAL WIND GUSTS FOR DESIGN OF TYPE 12 AND TYPE 13 STRUCTURES.
- 90 MPH (3-SECOND GUST) WIND SPEED AND A 50 YEAR DESIGN LIFE.

SECURE THE OPENING BELOW THE BASE PLATE WITH STAINLESS STEEL OR GALVANIZED STEEL MESH AND SECURE THE MESH WITH ¾" S.S. BANDING AROUND THE LEVELING NUTS.

INDENT PRINT (NOMINAL ½" HIGH) THE POLE LENGTH AND FIRST TWO LETTERS OF THE MANUFACTURERS NAME ON TWO SIDES OF THE BASE PLATE 180 DEGREES APART, BEFORE GALVANIZING. THE ARM SHALL BE IDENTIFIED WITH THE SAME INFORMATION BY INDENT PRINT.

SIGNAL FACE SHALL BE MOUNTED 6 INCHES (NOMINAL) FROM THE END OF THE MONOTUBE ARM OR AS SHOWN ON THE PLAN CONSTRUCTION DETAIL OR AS DIRECTED BY THE PROJECT ENGINEER/ELECTRICAL OPERATIONS PERSONNEL. MOUNT ALL LIKE HEADS AT SAME ELEVATION.

SIGN MOUNTING BRACKETS SHALL BE FURNISHED IN ACCORDANCE WITH SECTION 637 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

(1) DESIGN FOR MAXIMUM ALLOWABLE HANDHOLE WITH COVER ASSEMBLY WITH TWO ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLTS.

(2) SIGNAL MOUNTING BRACKETS FOR POLE MOUNTING, MOUNT WITH CAP SCREW AND BANDING, (SEE SPECIFICATIONS SEC. 658).

(3) SECURELY MOUNT BACKPLATES, PROJECTING 5" BEYOND ALL SIDES OF THE SIGNAL FACE HOUSING, PER MANUFACTURERS RECOMMENDATIONS.

(4) THE TOP OF THE POLE SHAFT AND THE END OF THE MONOTUBE ARM SHALL BE EQUIPPED WITH A REMOVABLE, VENTILATED CAP HELD SECURELY IN PLACE WITH SET SCREWS.

(5) FACTORY-WELDED BRACKET FOR GROUNDING LUG, OPPOSITE HANDHOLE, (LUG AND HARDWARE PAID UNDER SEPARATE ITEM). PROVIDE HOLE IN BRACKET FOR ¼" X ¾" - 20 TPI STAINLESS STEEL HEX HEAD BOLT.

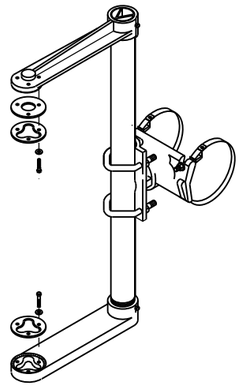
(6) FACTORY-WELDED "J" HOOK FOR STRAIN RELIEF FOR POLE LUMINAIRE WIRE.

(7) INSTALL STRUCTURAL IDENTIFICATION PLAQUES.

STRUCTURAL IDENTIFICATION PLAQUES SHALL BE PLACED ON THE POLES IN THE SAME DIRECTION AS THE ARM.

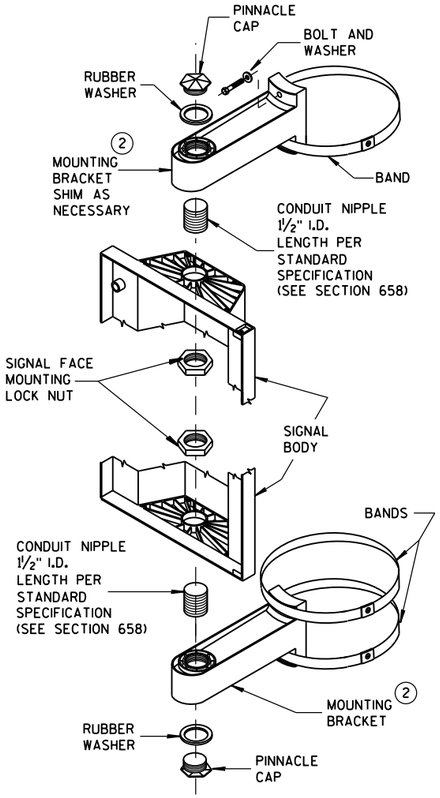
MOUNTING HEIGHT SHALL BE 6'-0" ABOVE THE CURB OR SHOULDER. ADJUST IF IT IS KNOWN THAT REQUIRED TRAFFIC SIGNS WILL BE OBSTRUCTED.

(8) FACTORY DRILLED ½" DRAIN HOLE 2" FROM FLANGE CONNECTION PLATE.

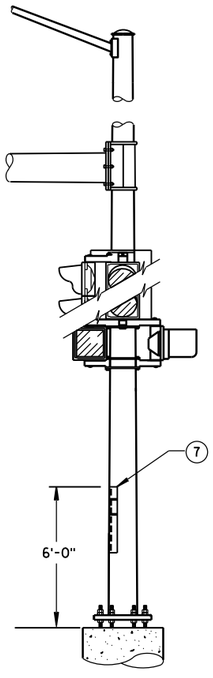


SIGNAL FACE MOUNTING BRACKET
DETAIL FOR MONOTUBE ARM

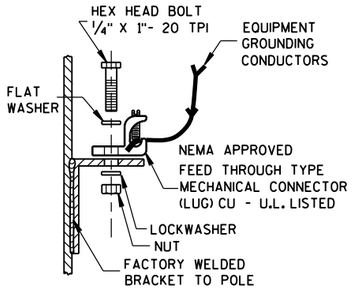
(MOUNT PER MANUFACTURER'S RECOMMENDATION)



SIGNAL FACE
VERTICAL MOUNTING DETAIL

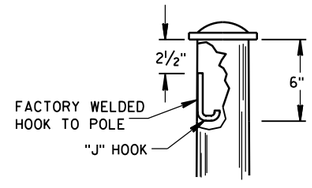


STRUCTURAL IDENTIFICATION
PLAQUE PLACEMENT



TYPICAL GROUNDING CONNECTIONS (5)

NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



"J" HOOK WIRE SUPPORT (6)

GENERAL NOTES AND HARDWARE DETAILS FOR TYPE 9, 10, 12 & 13 POLES WITH MONOTUBE ARMS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2016 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

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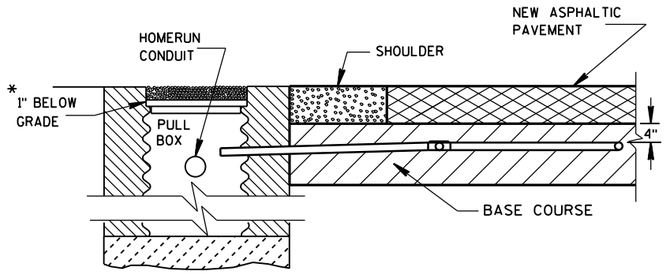
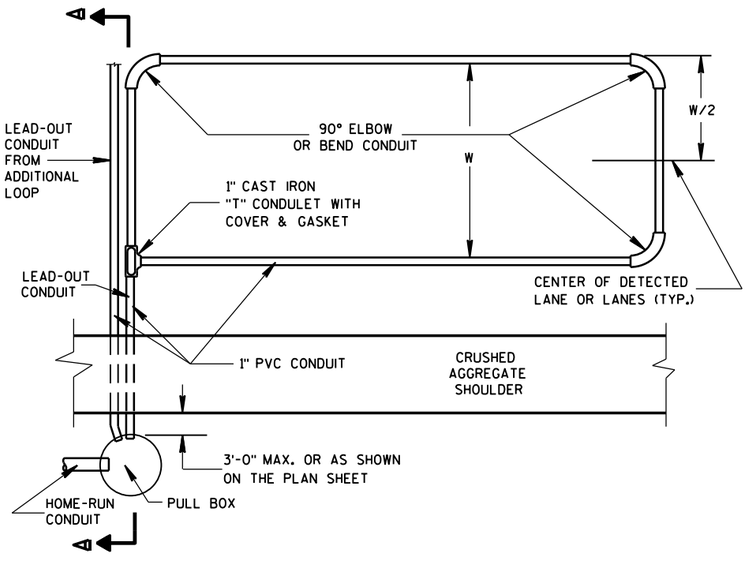


SECTION A-A
NO CURB & GUTTER

DETECTOR LOOP INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD-OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

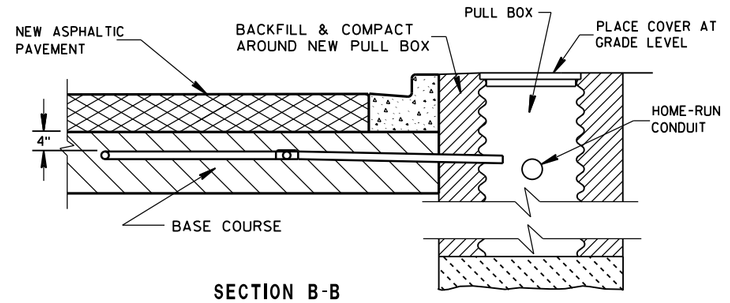
SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP DUCT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT AND CONDULET SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE THE ASPHALTIC PAVEMENT IS PLACED.

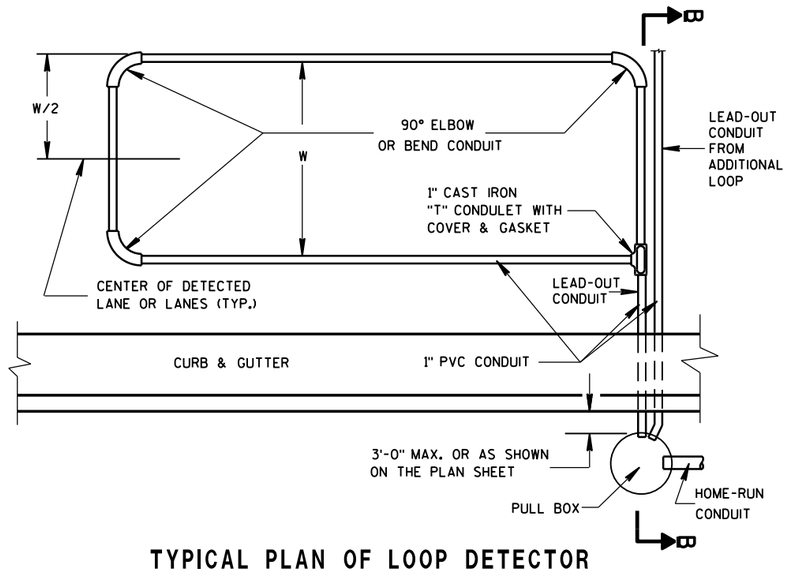
WHEN MULTIPLE LAYERS OF ASPHALTIC PAVEMENT ARE TO BE PLACED, LOOPS MAY BE INSTALLED BY SAWING A TWO INCH WIDE SLOT IN THE FIRST LAYER, DIG OUT THE ASPHALTIC MATERIAL AND BASE COURSE, PLACE THE LOOP, FILL THE SLOT WITH BASE COURSE MATERIAL AND NEW ASPHALTIC MATERIAL AND TAMP THE ASPHALTIC MATERIAL IN PLACE.

SHOULD TRAFFIC BE ALLOWED TO USE THE AREA OF ROADWAY WITH THE NEWLY INSTALLED LOOP BEFORE THE PLACEMENT OF THE NEXT LAYER OF ASPHALTIC PAVEMENT, THE SLOT/PAVEMENT OPENING SHALL BE SEALED WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".



SECTION B-B
CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR

LOOP DETECTOR PLACED IN CRUSHED AGGREGATE BASE (NEW ASPHALTIC PAVEMENT)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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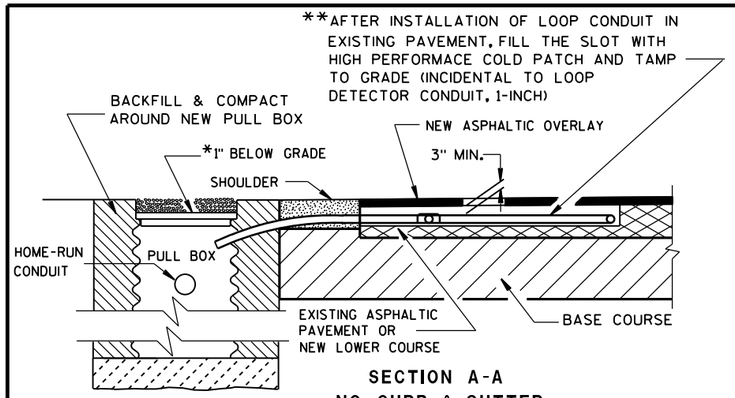
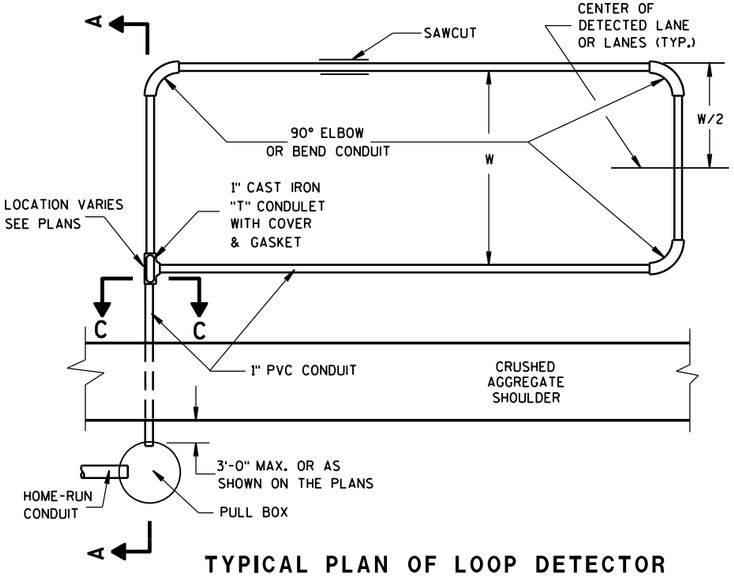


SECTION A-A

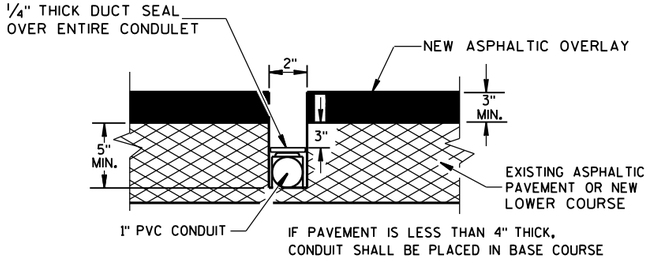
NO CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL

*RECESS PULL BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.



TYPICAL PLAN OF LOOP DETECTOR



SIDE VIEW

SECTION C-C

LOOP DETECTOR SLOT DETAIL

GENERAL NOTES

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

LOOP SIZE, LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

BEFORE PLACING THE 1 INCH CONDUIT IN THE CLEANED OUT SLOT, PLACE SOME OF THE TAR OR EPOXY SEALANT IN THE SLOT TO A DEPTH OF APPROXIMATELY ½ INCH. IF THE CONDUIT MUST BE PLACED IN THE BASE COURSE, DO NOT PLACE THE TAR OR EPOXY SEALANT IN THE SLOT.

ONCE THE 2" LOOP SLOT HAS BEEN CHIPPED OUT, THE LOOP INSTALLATION SHALL BE COMPLETED PRIOR TO OPENING THE LANE(S) TO TRAFFIC.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

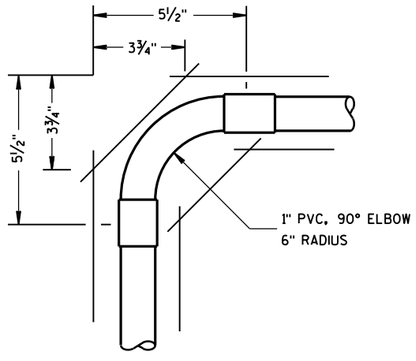
THE #12 AWG LOOP WIRE FROM THE LOOP TO THE ROADSIDE PULL BOX, SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE INSTALLATION.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL BOX, THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL BOX, AND BE INSTALLED IN ONE, NON-SPLICED, CONTINUOUS LENGTH.

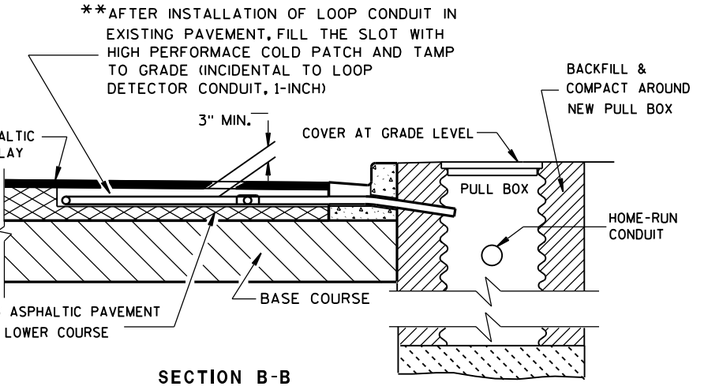
** AFTER THE HIGH PERFORMANCE COLD PATCH HAS BEEN TAMPED, SEAL THE SLOT/HIGH PERFORMANCE COLD PATCH/ PAVEMENT OPENING WITH HOT POURED ELASTIC TYPE MATERIAL CONFORMING TO THE REQUIREMENTS OF THE "SPECIFICATION FOR JOINT SEALANTS, HOT POURED, FOR CONCRETE AND ASPHALT PAVEMENTS, ASTM DESIGNATION: D3405".

IN THE EVENT HIGH PERFORMANCE COLD PATCH IS NOT AVAILABLE, AND FLEXIBLE TYPE EPOXY IS USED AS A LOOP SLOT FILLER, THE 2 INCH SLOT SHALL BE TOTALLY CLEAN AND DRY BEFORE ITS INSTALLATION. EPOXY USE SHALL BE APPROVED BY THE DISTRICT TRAFFIC ENGINEER AND THE FURNISHED EPOXY SHALL BE INSTALLED AFTER WRITTEN APPROVAL BY THE PROJECT ENGINEER.



TOP VIEW

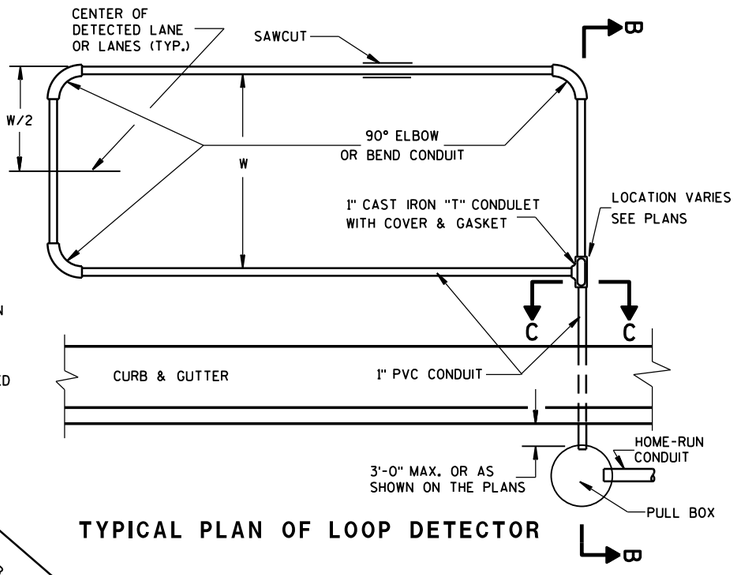
CORNER SAW SLOT DETAIL



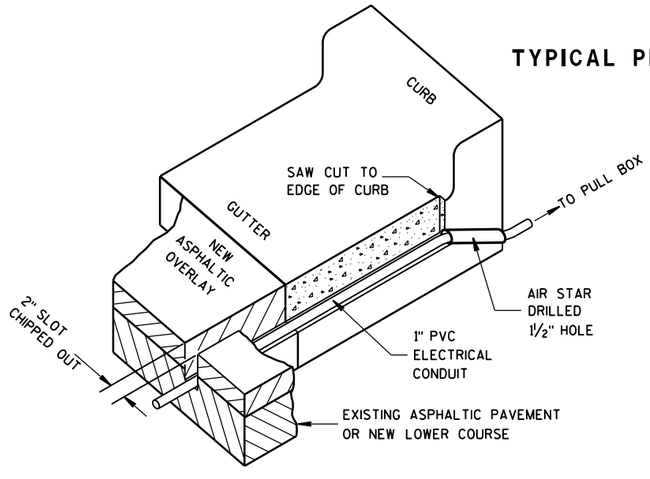
SECTION B-B

CURB & GUTTER

LOOP DETECTOR INSTALLATION DETAIL



TYPICAL PLAN OF LOOP DETECTOR



ISOMETRIC VIEW

TYPICAL SAW CUT DETAIL FOR LEAD-IN CONDUIT

LOOP DETECTOR INSTALLED IN EXISTING OR NEW ASPHALTIC PAVEMENT WITH NEW ASPHALTIC OVERLAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
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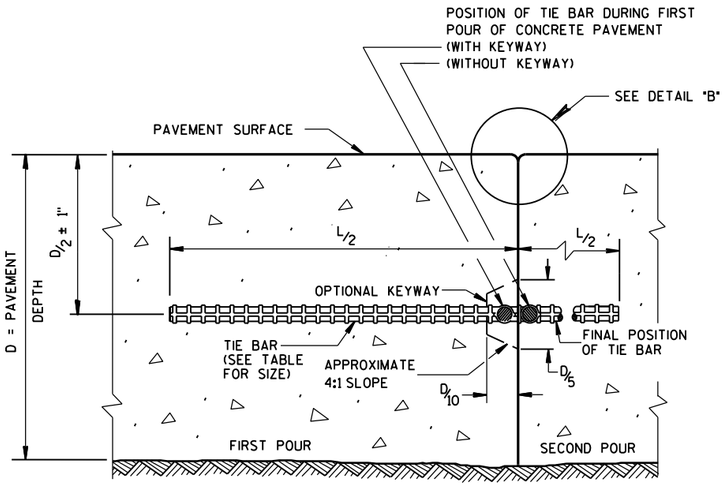
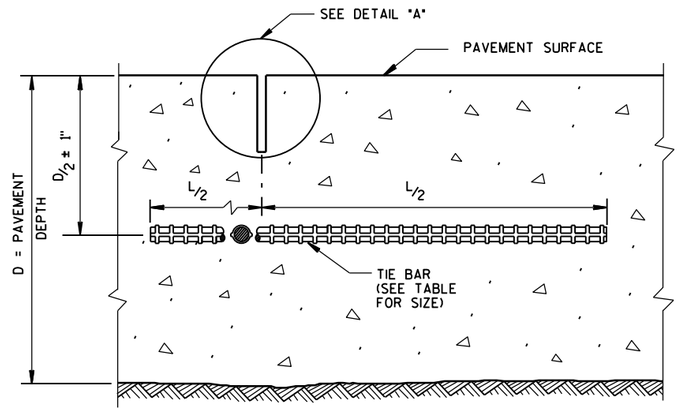


CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

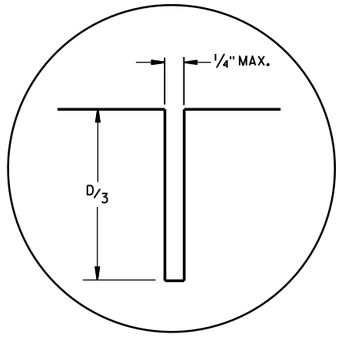
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

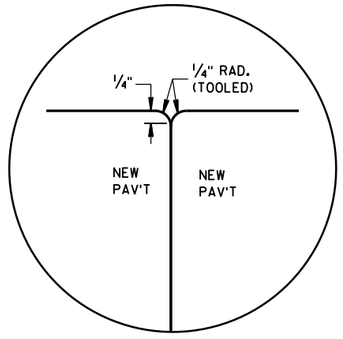
PLAN VIEW

SECTION A-A

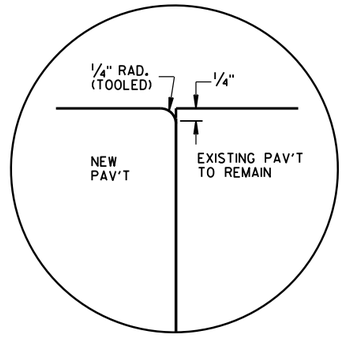
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



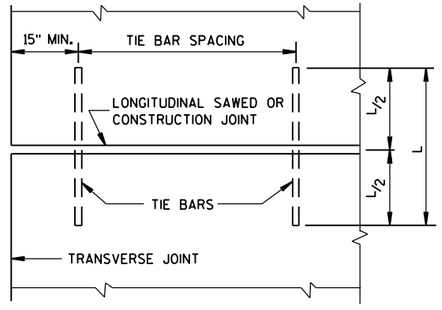
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

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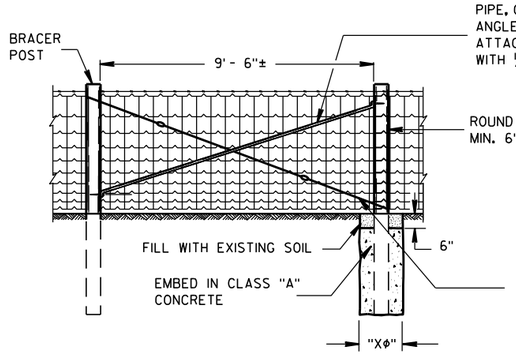
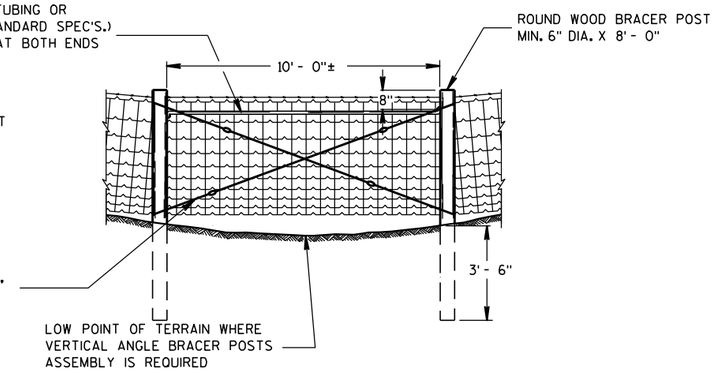
NOTE: PULL OR STRETCHER POST ASSEMBLIES SHALL BE PLACED MIDWAY BETWEEN END POSTS AND CORNER POSTS WHERE A RUN OF FENCE EXCEEDS 660' BUT IS LESS THAN 1,320'. FOR RUNS OF FENCE IN EXCESS OF 1,320' MAXIMUM SPACING OF PULL OR STRETCHER POST ASSEMBLIES SHALL BE 660'± C-C.

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



PULL OR STRETCHER POSTS ASSEMBLY



VERTICAL ANGLE BRACER POSTS ASSEMBLY

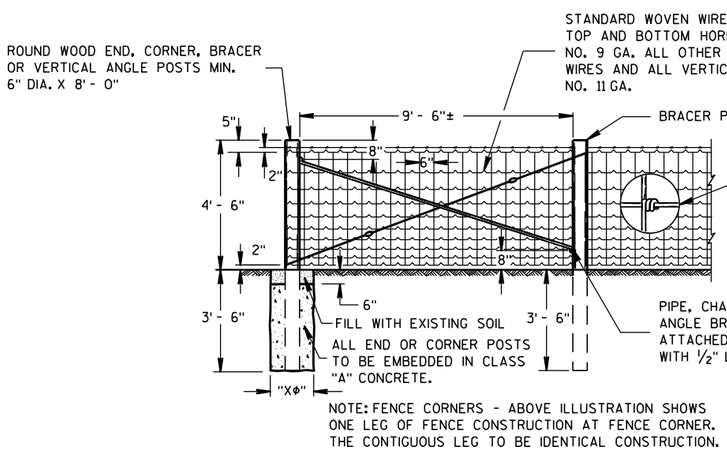
GENERAL NOTES

"XΦ" = DIAMETER OF THE POST PLUS 12".

FENCE STAPLES SHOULD NEVER BE DRIVEN VERTICALLY INTO WOOD POSTS (WITH BOTH LEGS PARALLEL WITH THE WOOD GRAIN). DOING SO CAN SEPARATE THE GRAIN AND SIGNIFICANTLY REDUCE THE HOLDING POWER. ROTATING THE STAPLES SLIGHTLY OFF VERTICAL STRADDLES THE GRAIN AND PROVIDES MORE RESISTANCE TO PULL-OUT.

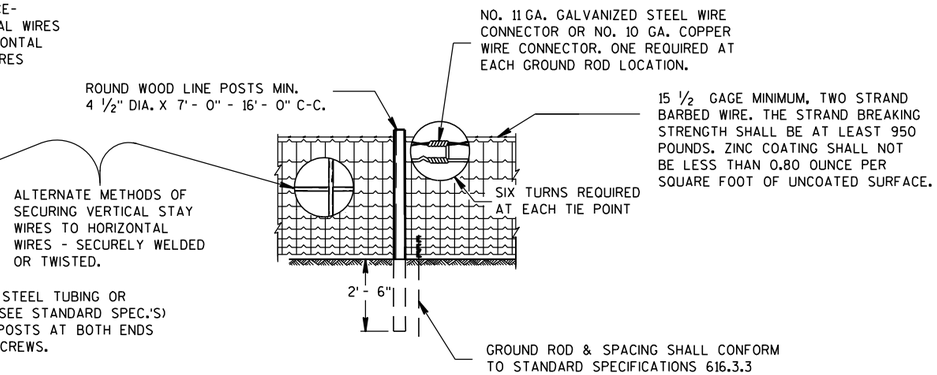
DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

FENCE SHALL BE LOCATED 3'-0" INSIDE THE RIGHT OF WAY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.



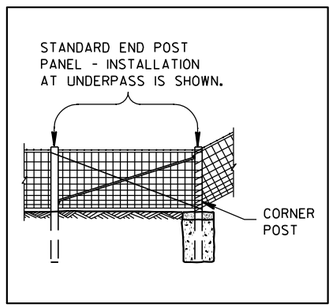
NOTE: FENCE CORNERS - ABOVE ILLUSTRATION SHOWS ONE LEG OF FENCE CONSTRUCTION AT FENCE CORNER. THE CONTIGUOUS LEG TO BE IDENTICAL CONSTRUCTION.

END OR CORNER POSTS ASSEMBLY

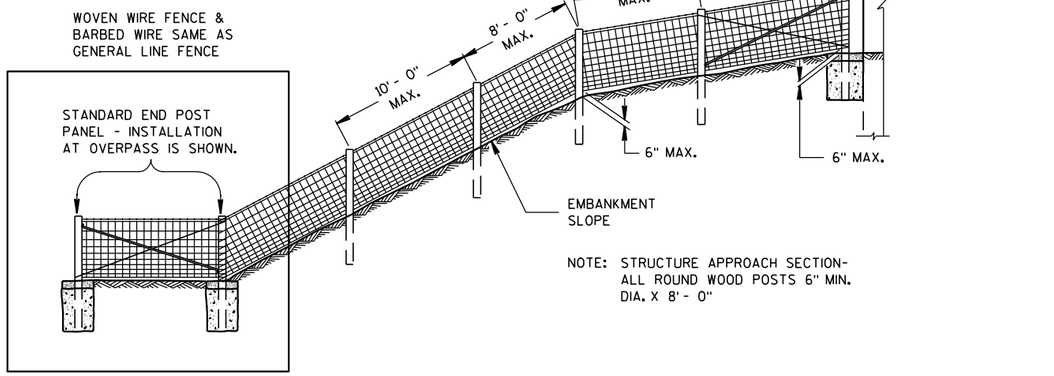


LINE FENCE CONSTRUCTION

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



NOTE: STRUCTURE APPROACH SECTION- ALL ROUND WOOD POSTS 6" MIN. DIA. X 8' - 0"

FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

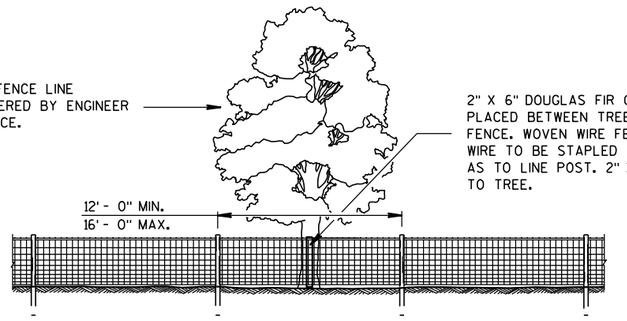
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

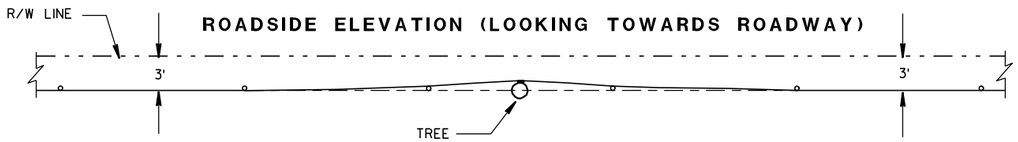
S.D.D. 15 B 1-8a

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.

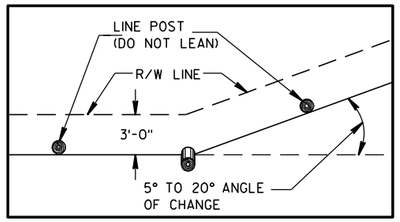


ROADSIDE ELEVATION (LOOKING TOWARDS ROADWAY)

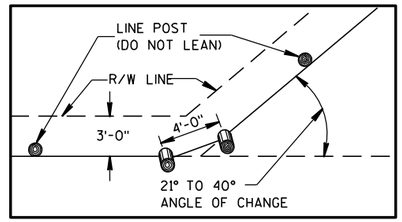


PLAN VIEW

FENCE DESIGN AT TREES REMAINING IN NORMAL FENCE LINE



PLAN VIEW
SINGLE POST CORNER

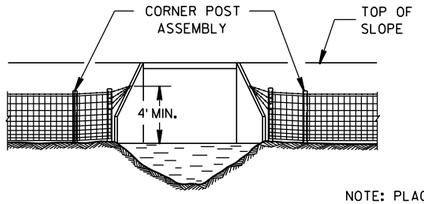


PLAN VIEW
DOUBLE POST CORNER

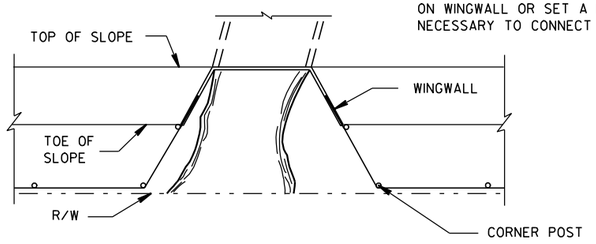
RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

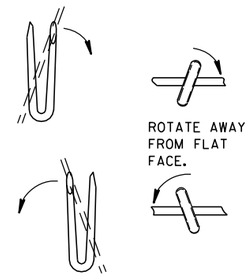
WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



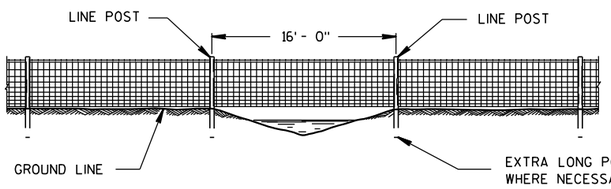
NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



FENCE INSTALLATION TO WINGWALLS

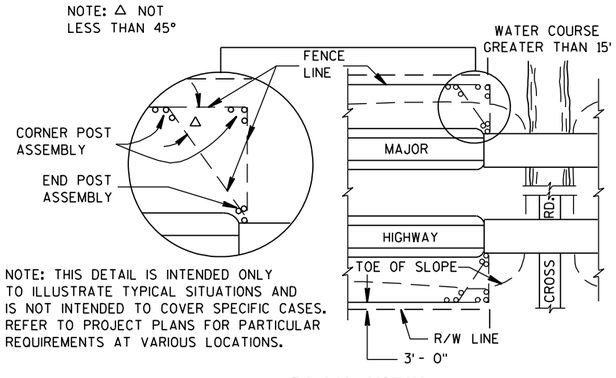


LINE POST



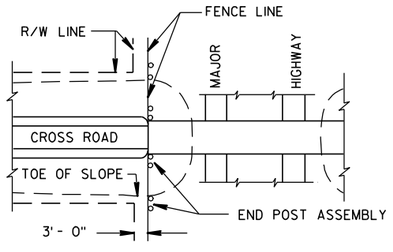
FENCE CONSTRUCTION OVER STREAM COURSES OF 15 FT. OR LESS IN WIDTH

NOTE: △ NOT LESS THAN 45°



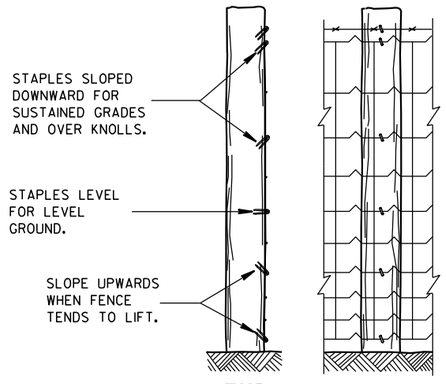
NOTE: THIS DETAIL IS INTENDED ONLY TO ILLUSTRATE TYPICAL SITUATIONS AND IS NOT INTENDED TO COVER SPECIFIC CASES. REFER TO PROJECT PLANS FOR PARTICULAR REQUIREMENTS AT VARIOUS LOCATIONS.

PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE CROSSING OF GREATER THAN 15 FT. IN WIDTH



PLAN VIEW
MAJOR HIGHWAY UNDERPASS

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.



END ELEVATION — FARM SIDE ELEVATION

FENCE MOUNTING DETAIL

FENCE LOCATION AT STRUCTURES

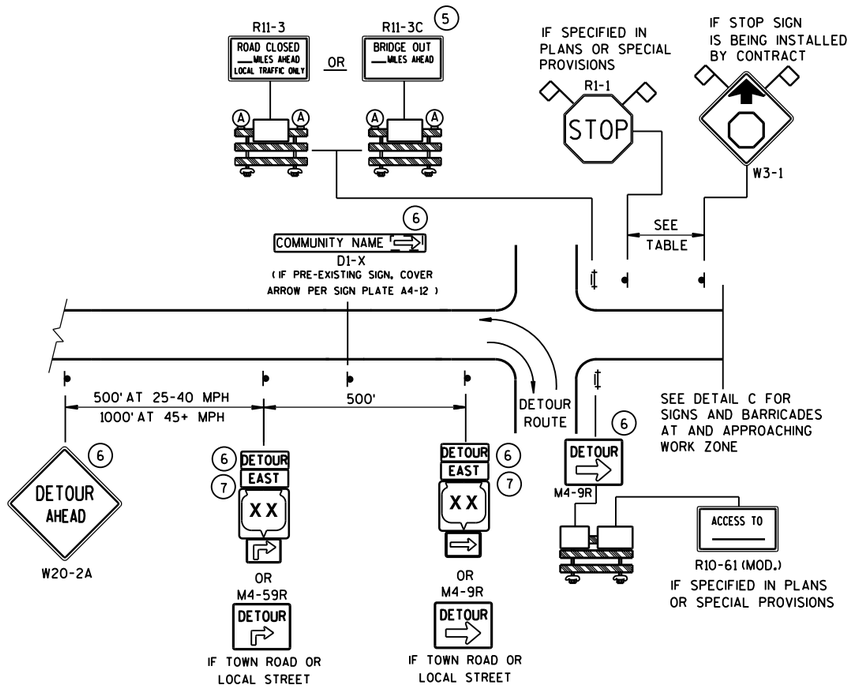
FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4/4/2008
DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS [illegible] ENGINEER
FHWA

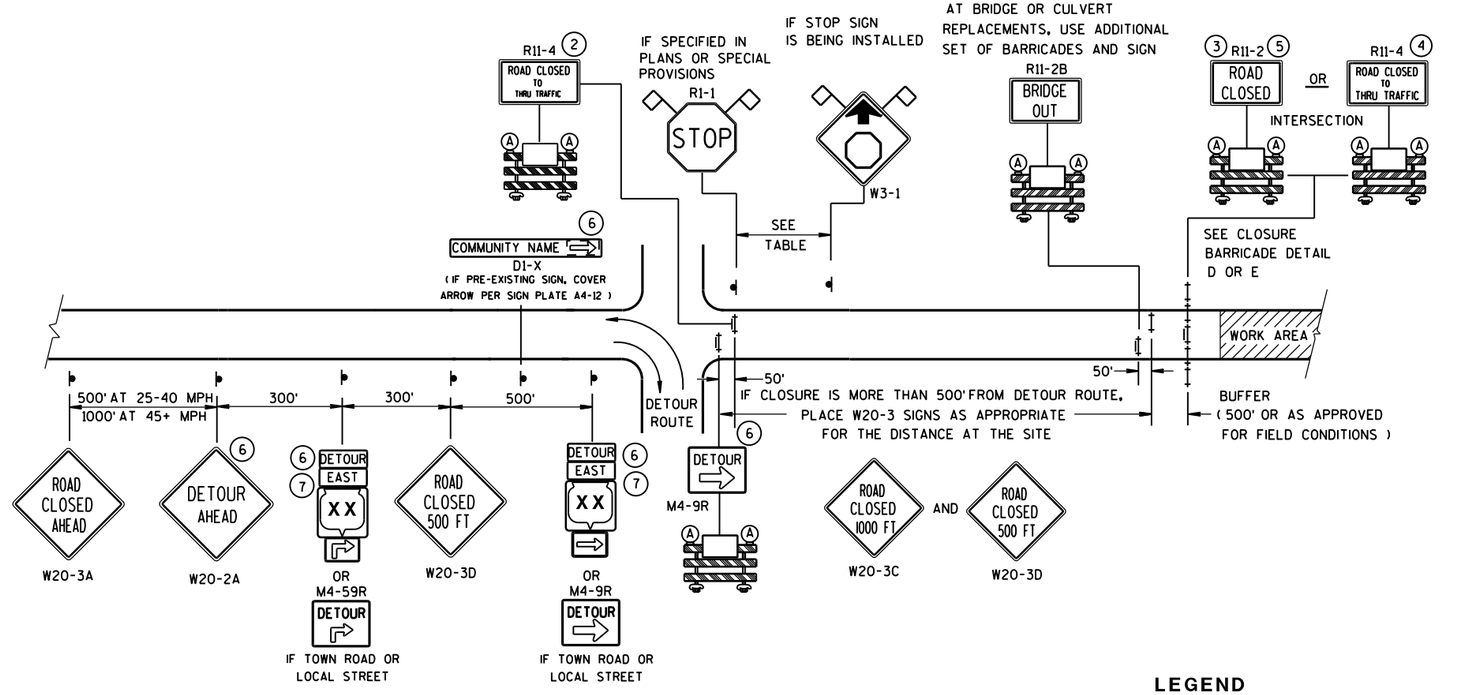
6

S.D.D. 15 B 1-8b



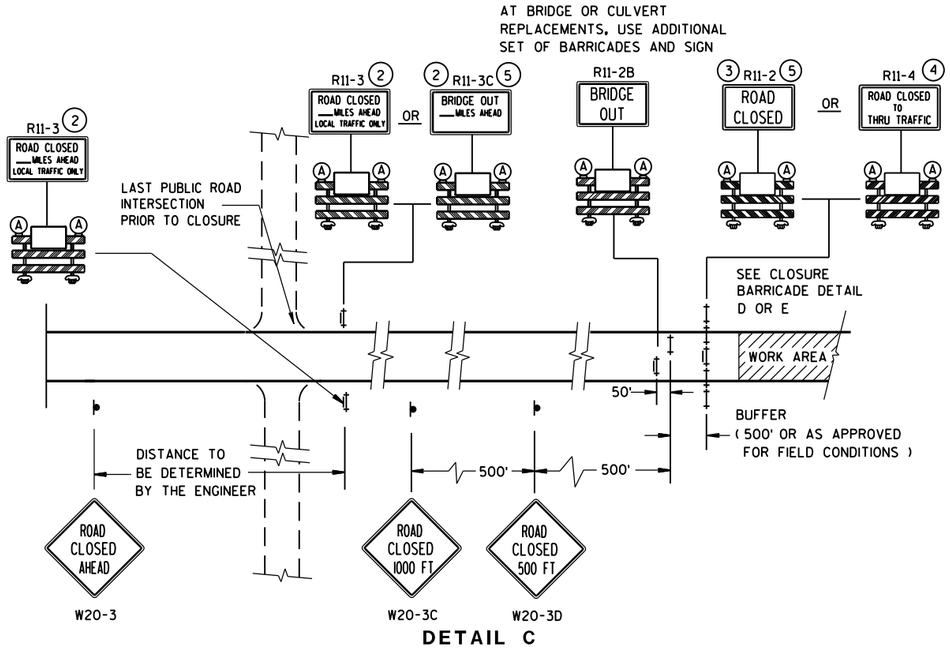
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

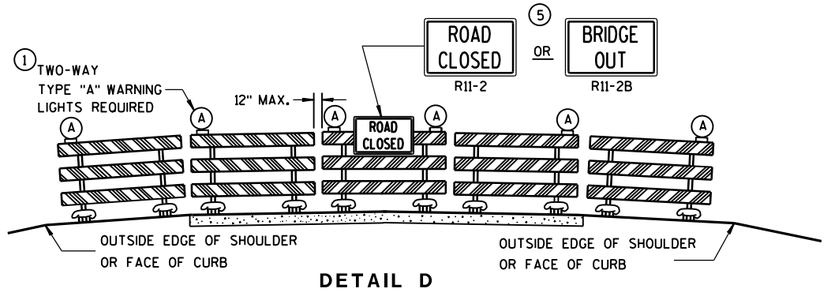
BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

S.D.D. 15 C 2-6a

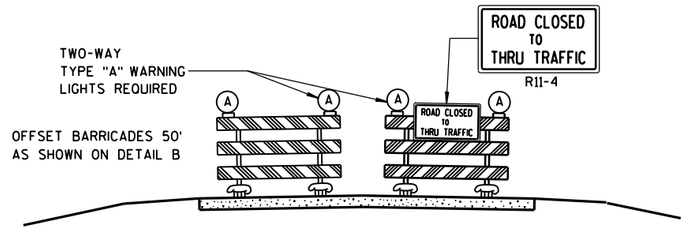
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI — FIC

FHWA

6

S.D.D. 15 C 2-6b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

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

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

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

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

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

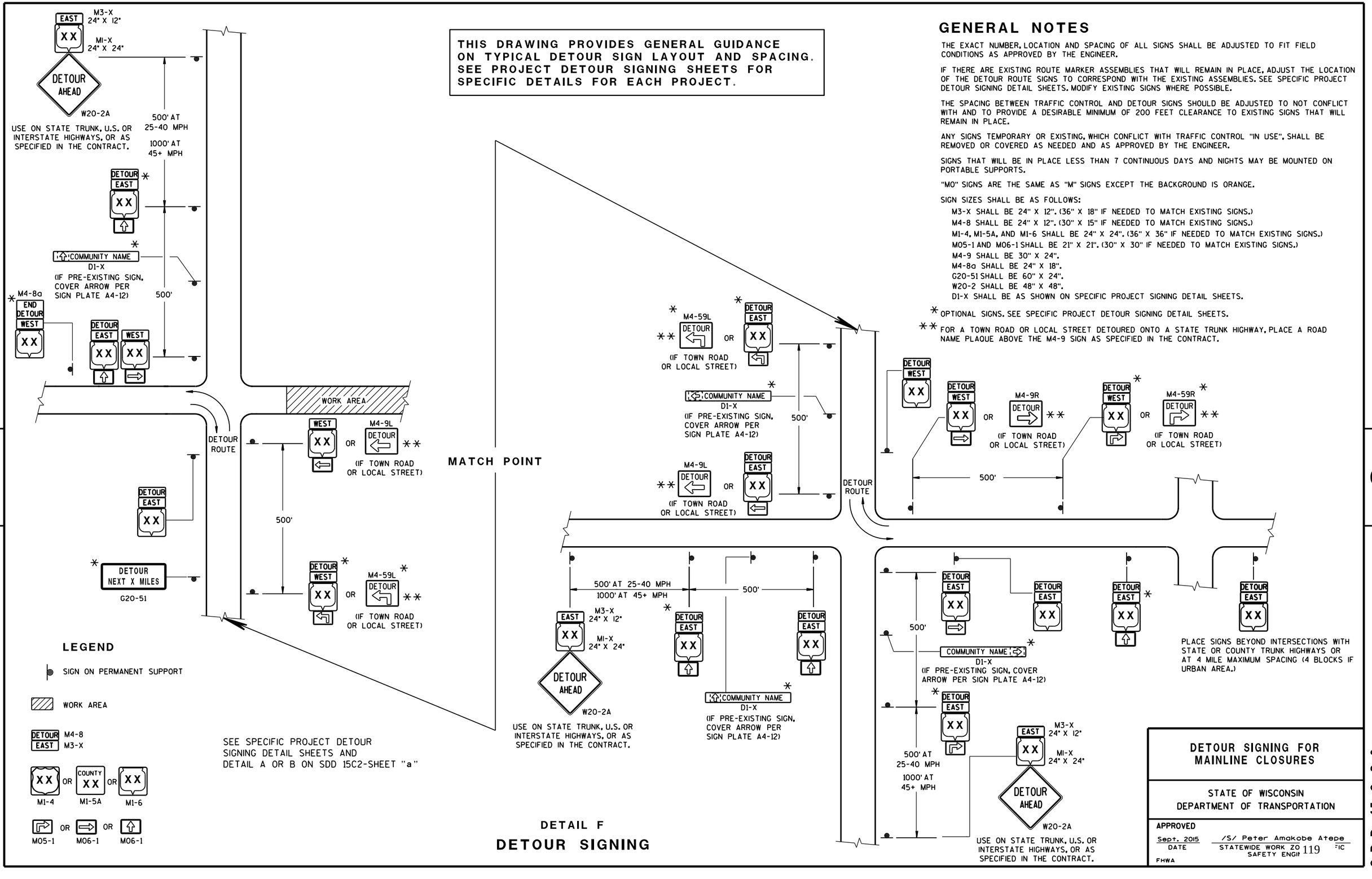
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

SIGN SIZES SHALL BE AS FOLLOWS:

- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- MO5-1 AND MO6-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-9 SHALL BE 30" X 24".
- M4-8a SHALL BE 24" X 18".
- G20-51 SHALL BE 60" X 24".
- W20-2 SHALL BE 48" X 48".
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



DETAIL F

DETOUR SIGNING

DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

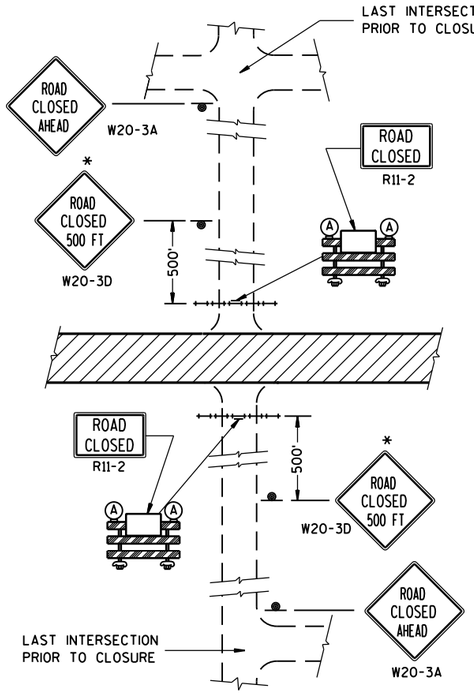
Sept. 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZO SAFETY ENGI FIC

FHWA

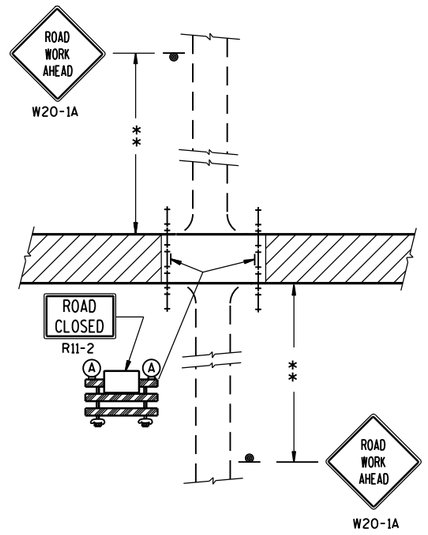
S.D.D. 15 C 2-6c

S.D.D. 15 C 2-6c



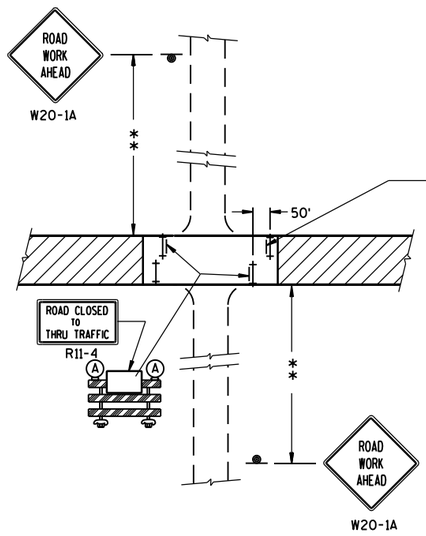
DETAIL 1

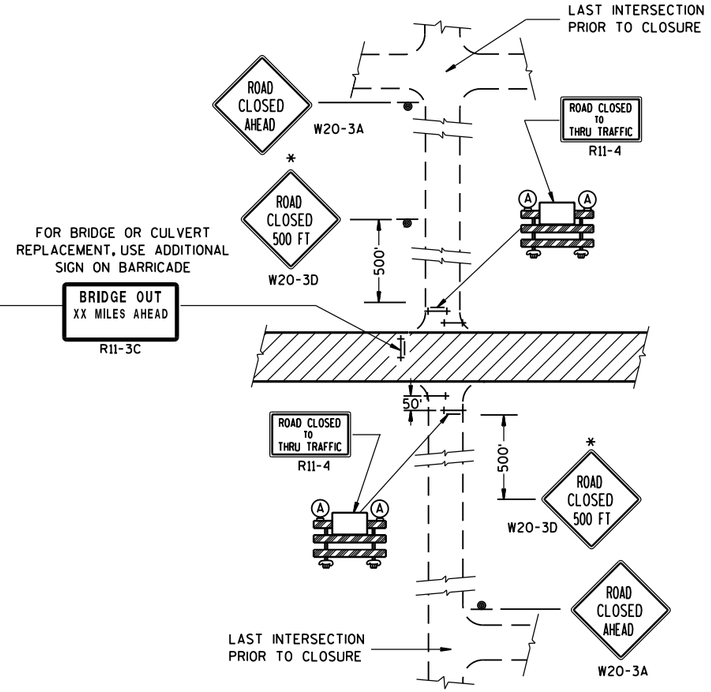
(NO ACCESS TO PROJECT)



DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).





DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).

DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

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

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

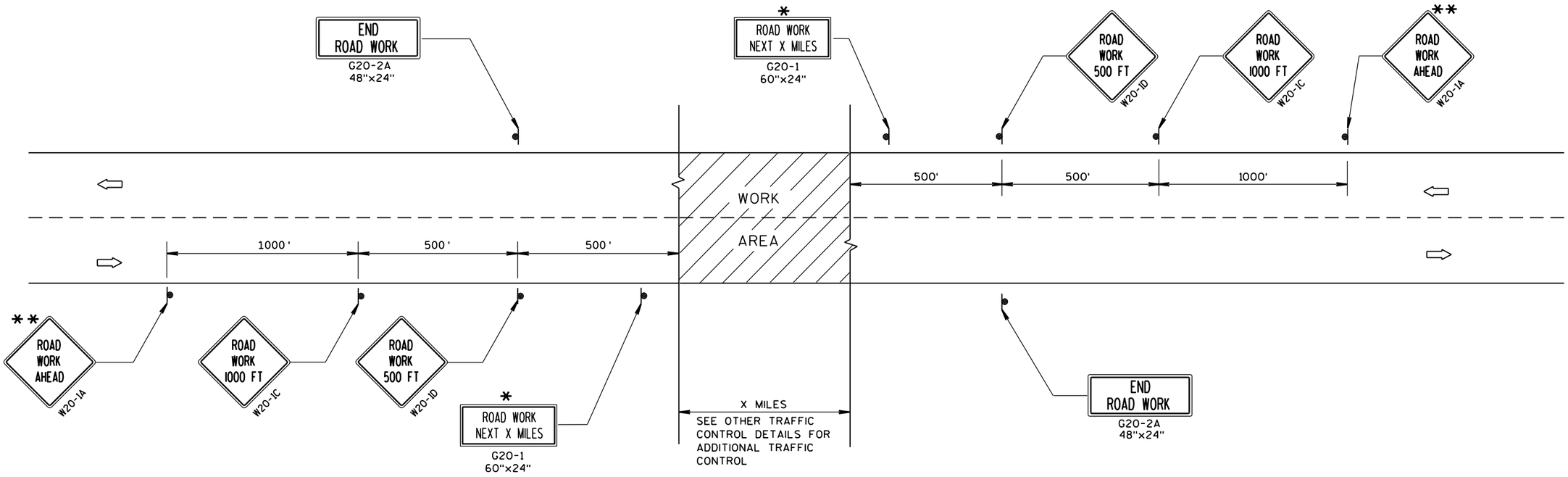
APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO[illegible]FIC SAFETY ENGI[illegible]
FHWA

6

S.D.D. 15 C 3-3

6

S.D.D. 15 C 3-3



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

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.

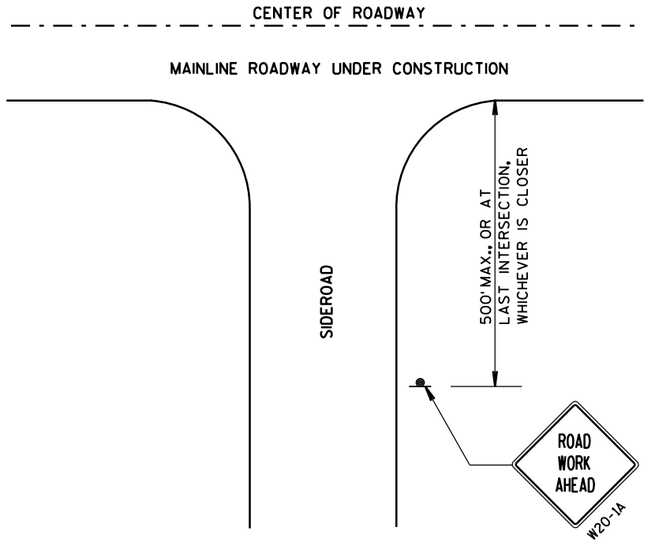
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER

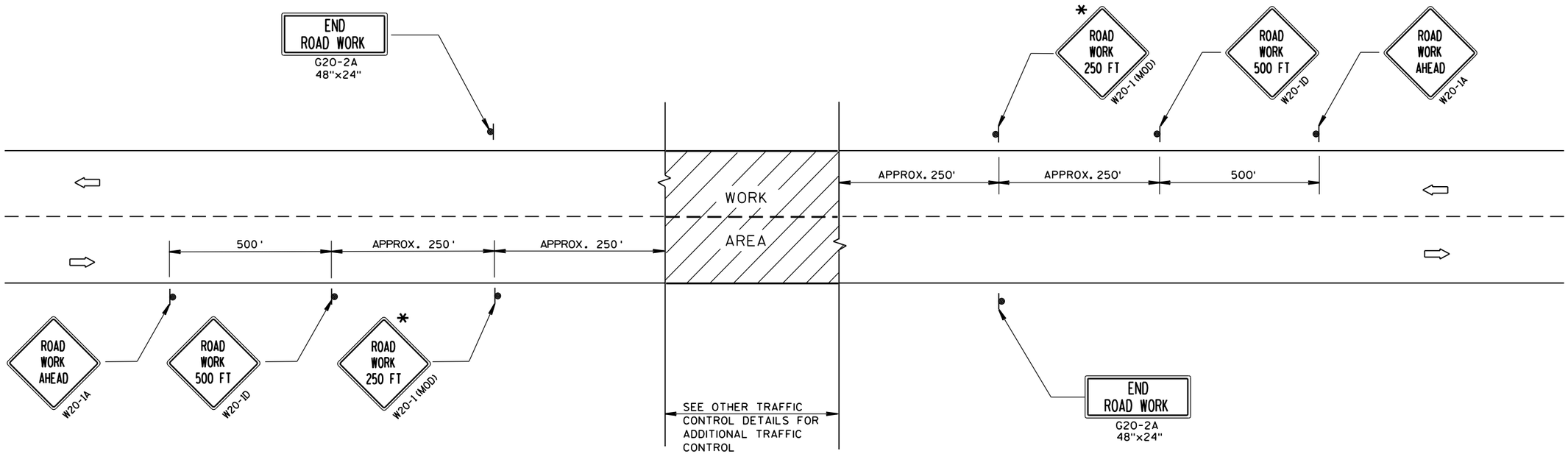
FHWA

6

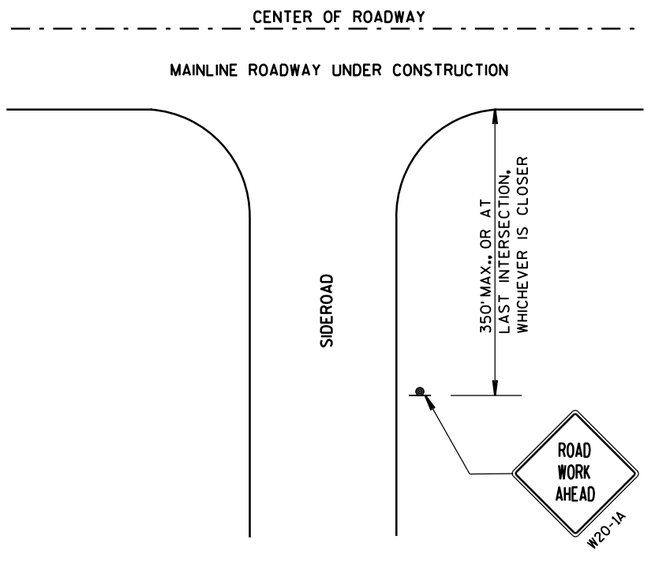
S.D.D. 15 C 4-3

6

S.D.D. 15 C 4-3



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZOI SAFETY ENGIN IC
FHWA

6

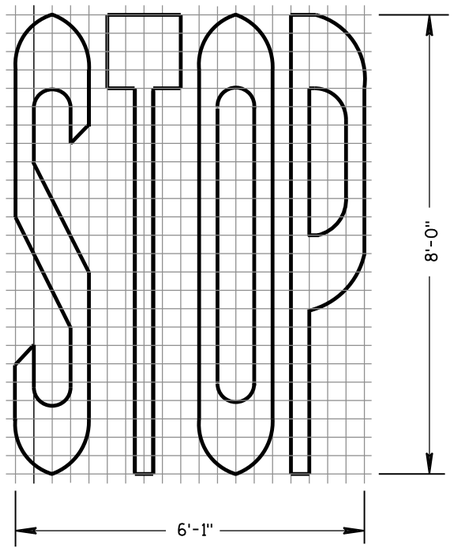
S.D.D. 15 C 5-3

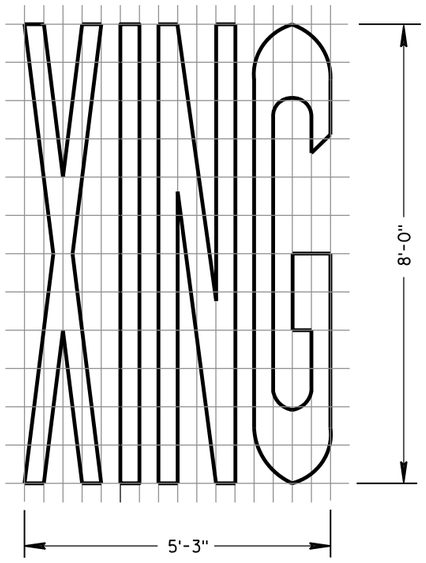
6

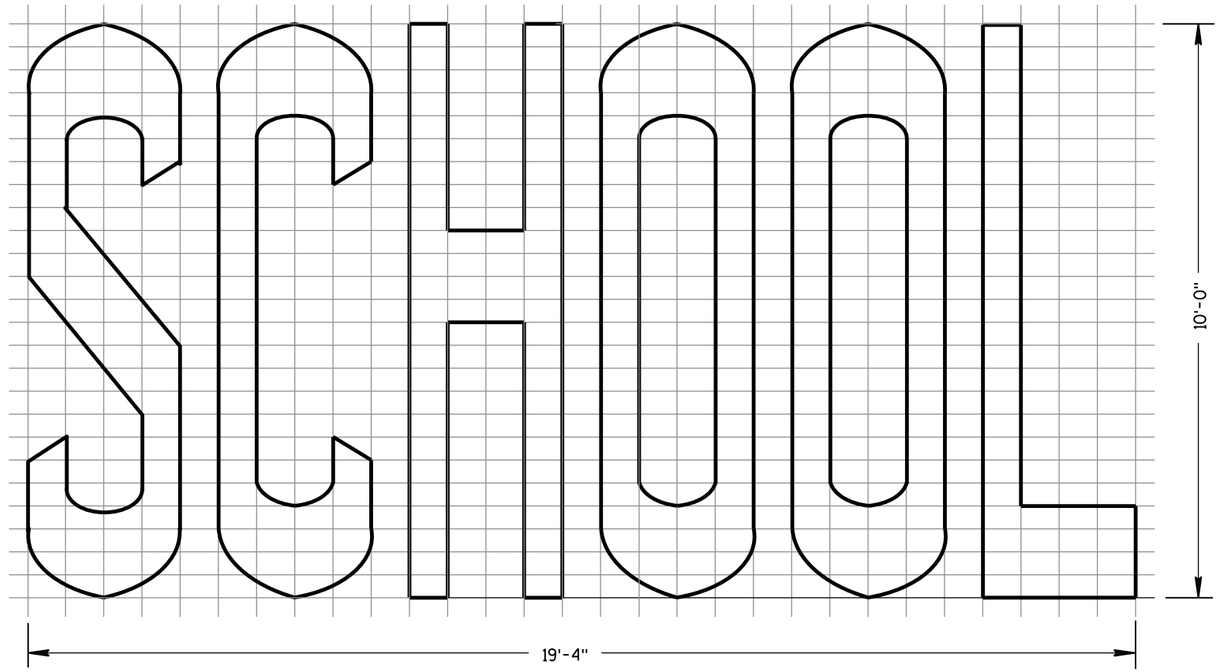
S.D.D. 15 C 5-3

GENERAL NOTES

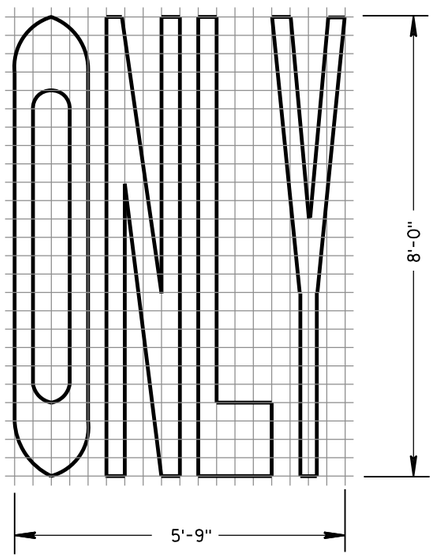
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

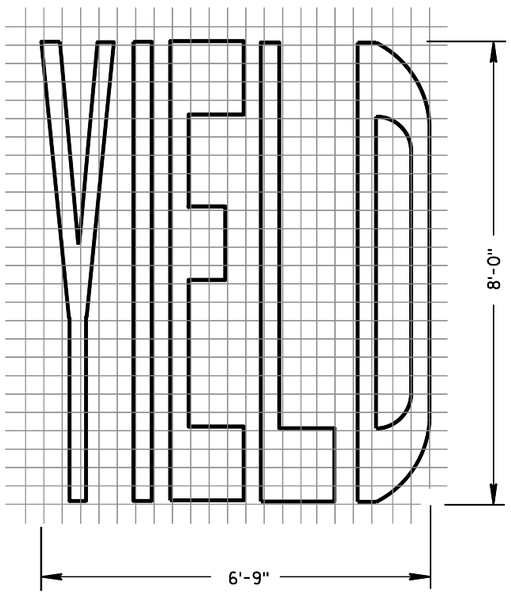


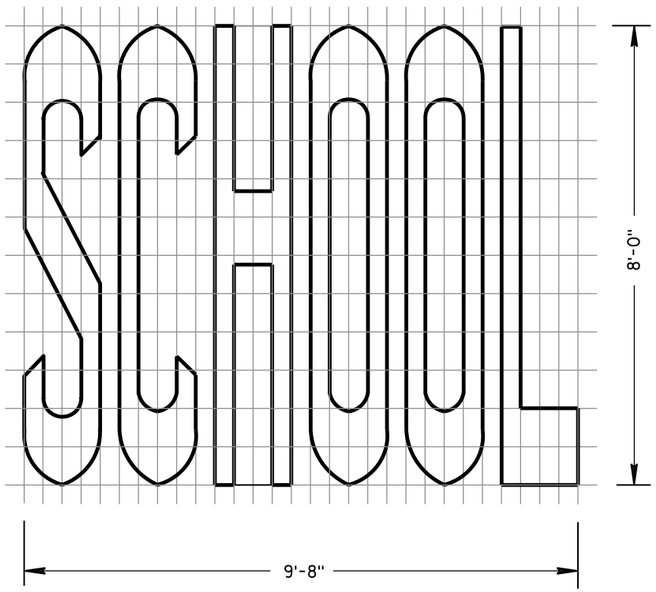




TWO-LANE







SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARK
EER
FHWA

6

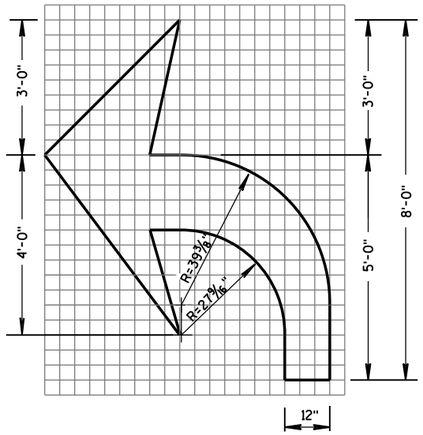
S.D.D. 15 C 7-14b

6

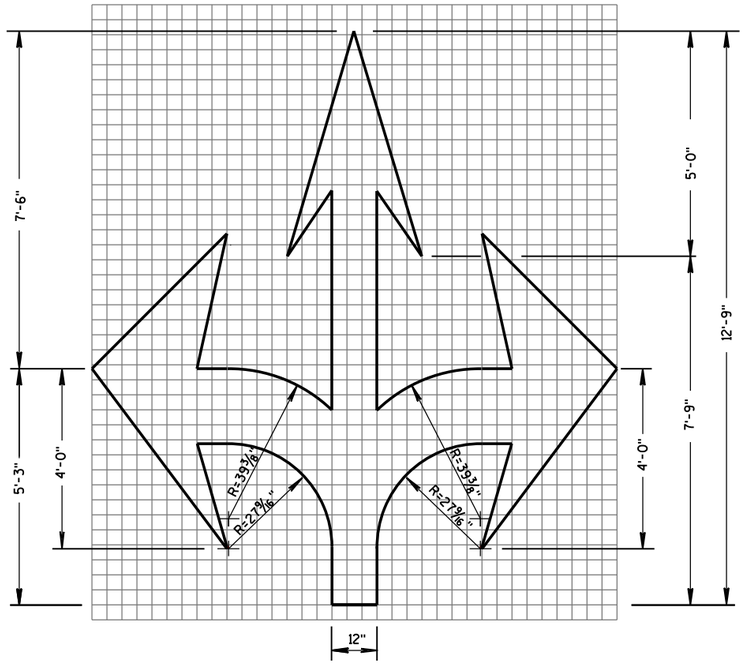
S.D.D. 15 C 7-14b

GENERAL NOTES

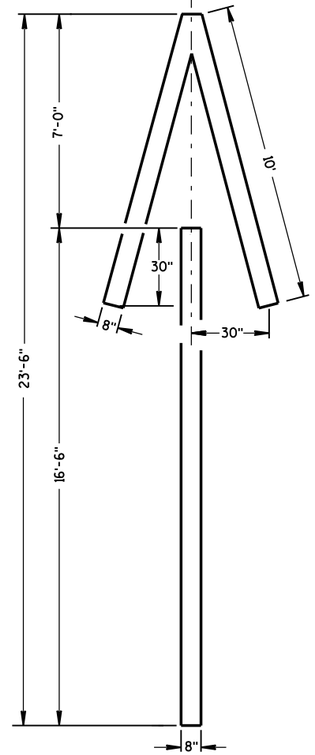
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



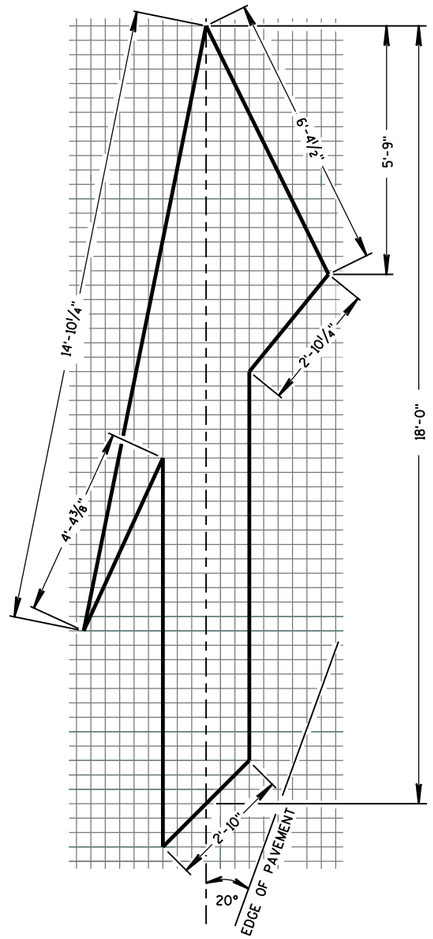
TYPE 2



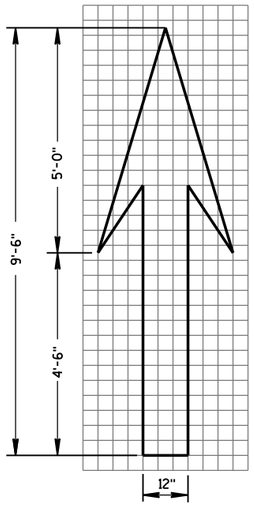
TYPE 6



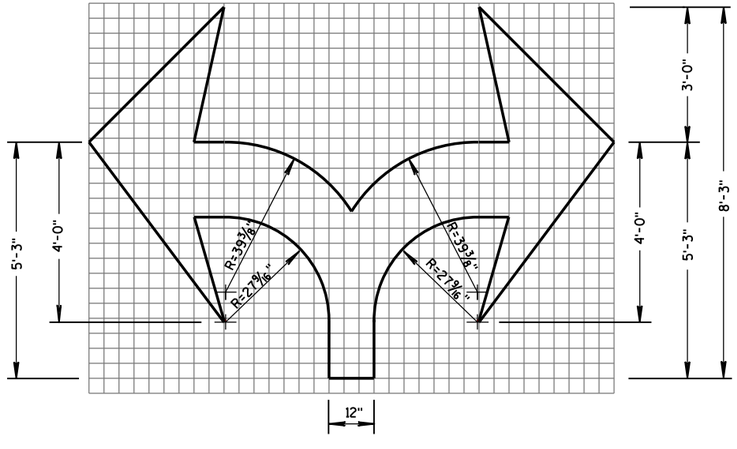
TYPE 4



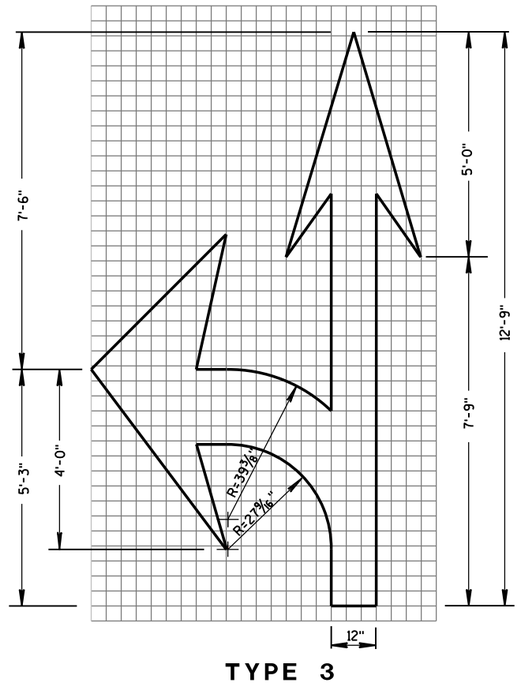
TYPE 5 LANE DROP ARROW



TYPE 1



TYPE 7



TYPE 3

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]NEER
FHWA

6

S.D.D. 15 C 7-14c

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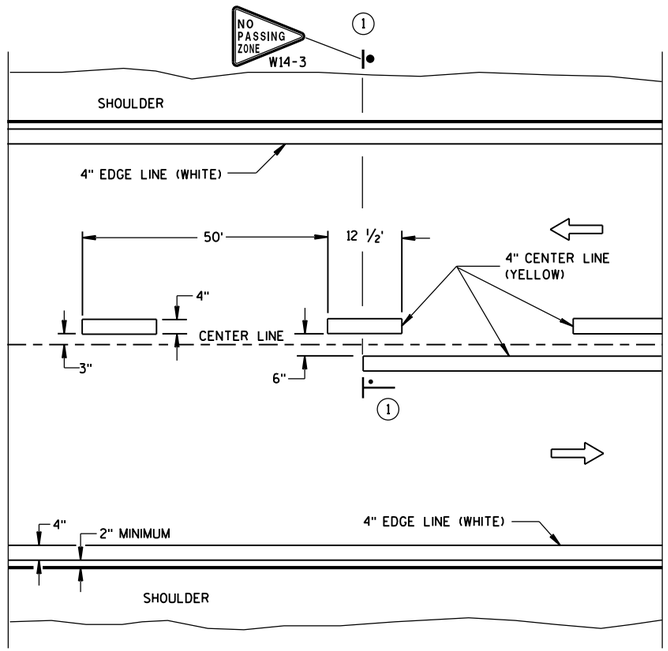
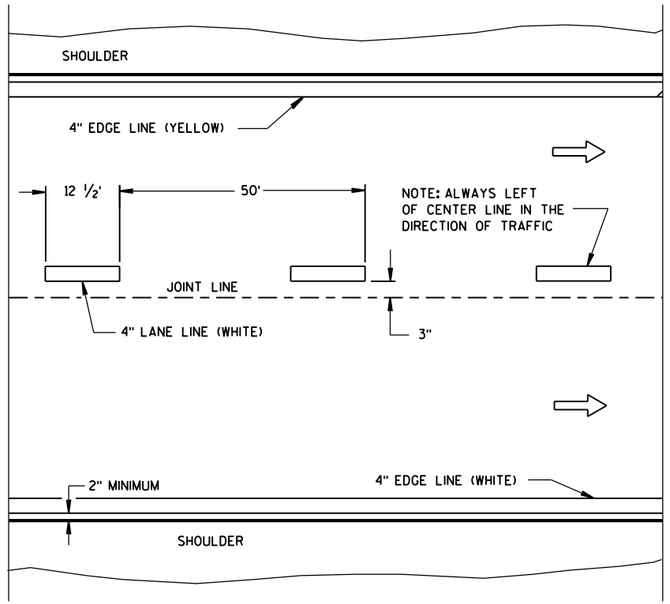
S.D.D. 15 C 7-14c



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

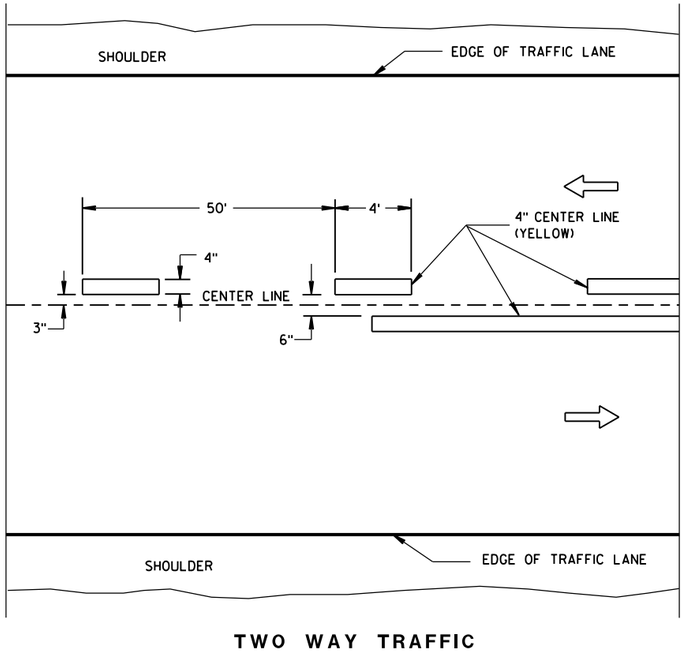
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

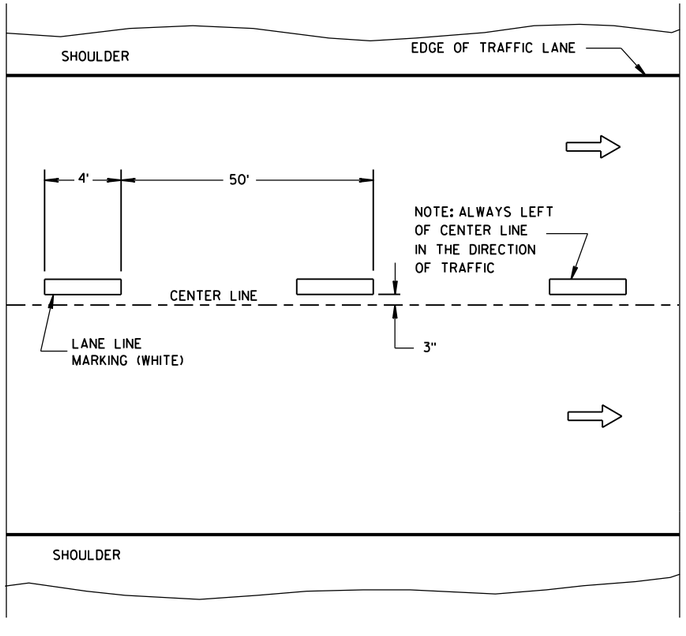
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR[illegible]INEER
FHWA

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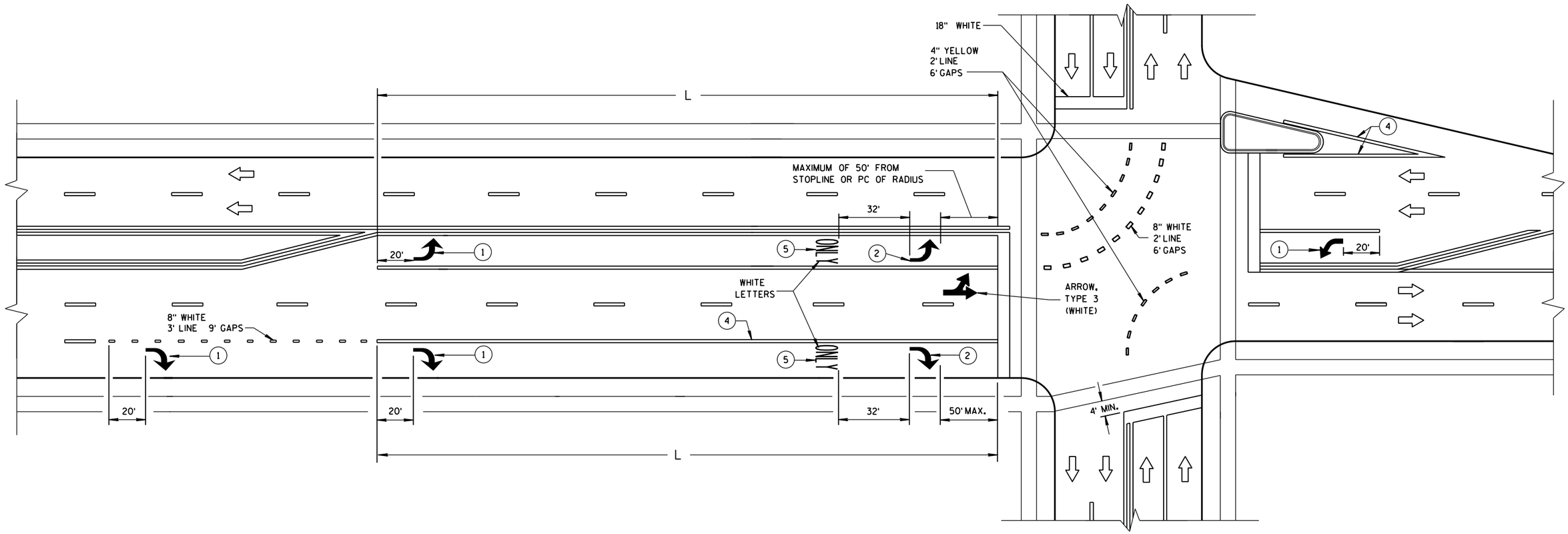
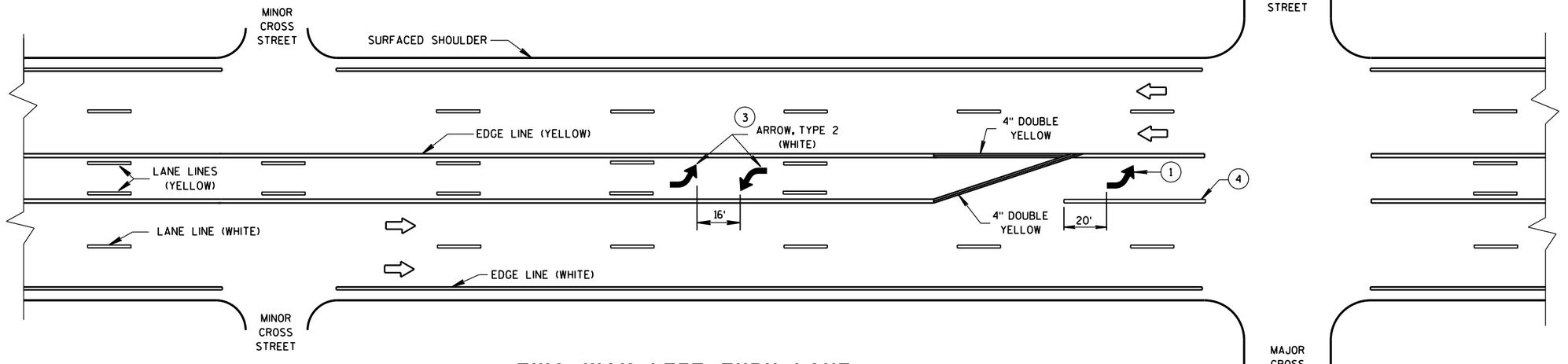
S.D.D. 15 C 8-18a





GENERAL NOTES

(1) REQUIRED ARROW, TYPE 2 (WHITE).

(2) REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.

(3) A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.

(4) 8" WHITE

(5) REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

TWO WAY LEFT TURN LANE

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL

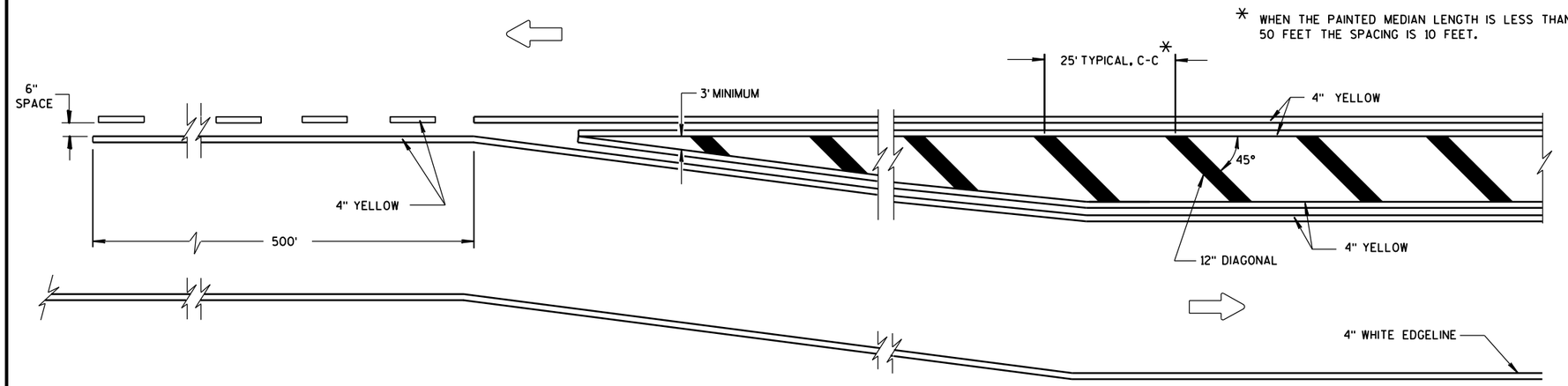
L = LENGTH OF TURN BAY

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 C 8-18b



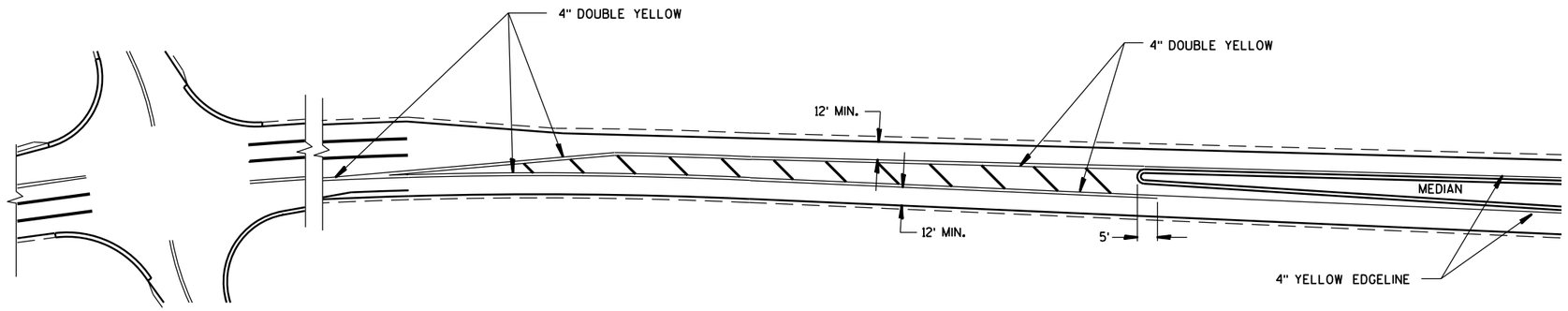
* WHEN THE PAINTED MEDIAN LENGTH IS LESS THAN 50 FEET THE SPACING IS 10 FEET.

MEDIAN ISLAND DETAIL

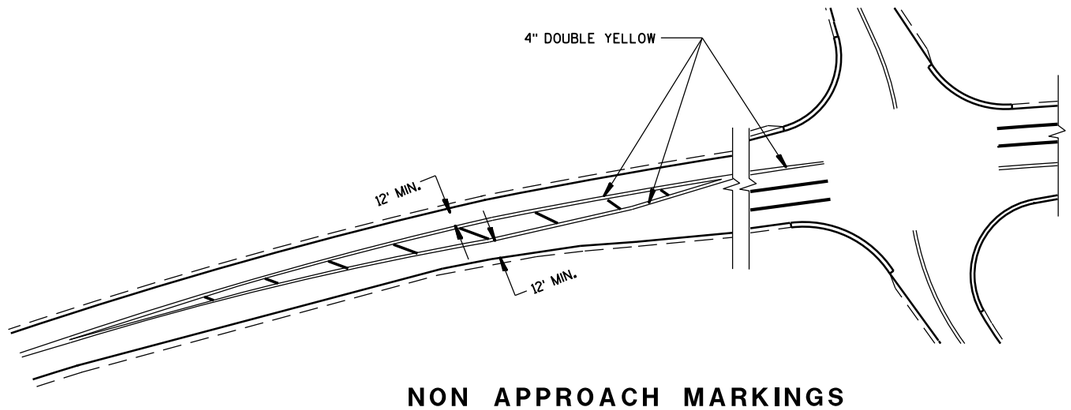
GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

DIRECTION OF TRAVEL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

MEDIAN ISLAND MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE FHWA	/S/ Matthew Rauch STATE SIGNING AND MARK[illegible]ER

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S.D.D. 15 C 18-4

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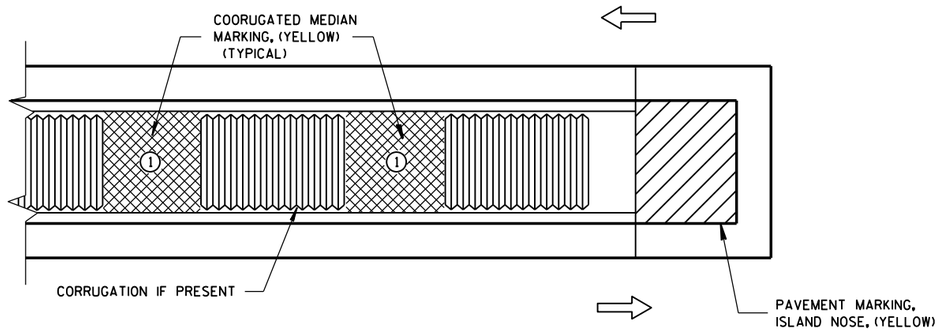
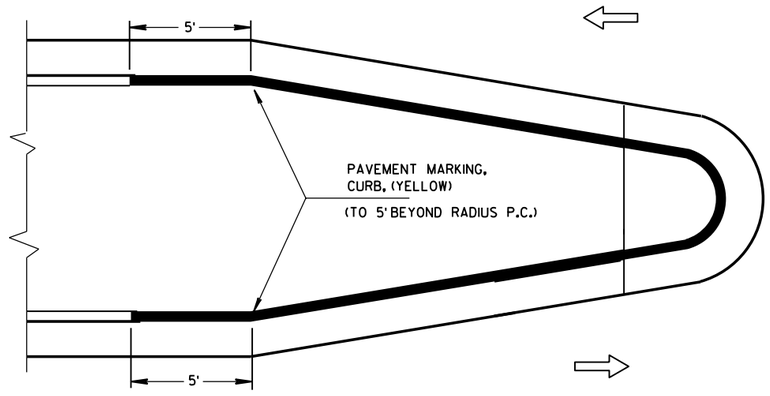
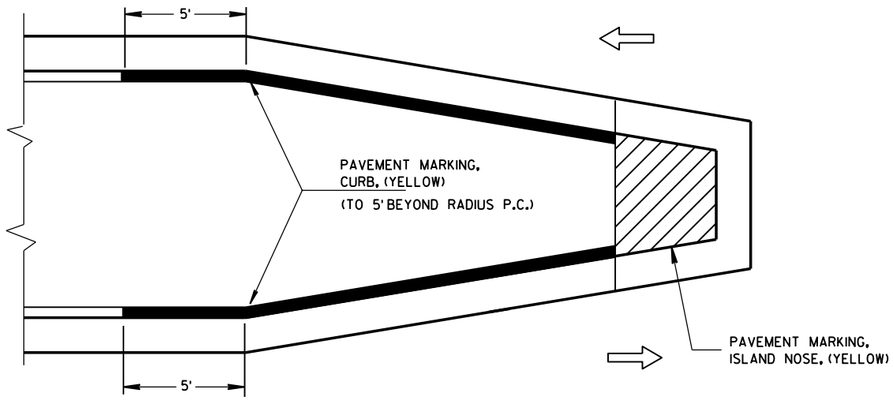
S.D.D. 15 C 18-4



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

(1) WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.

ISLAND NOSE MARKING

CURB MARKING

CORRUGATED MEDIAN MARKING

DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Matthew Rauch — STATE SIGNING AND MARK ENGINEER
FHWA

6

S.D.D. 15 C 27-2b

6

S.D.D. 15 C 27-2b

LEGEND

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

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 DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"x48" 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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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.

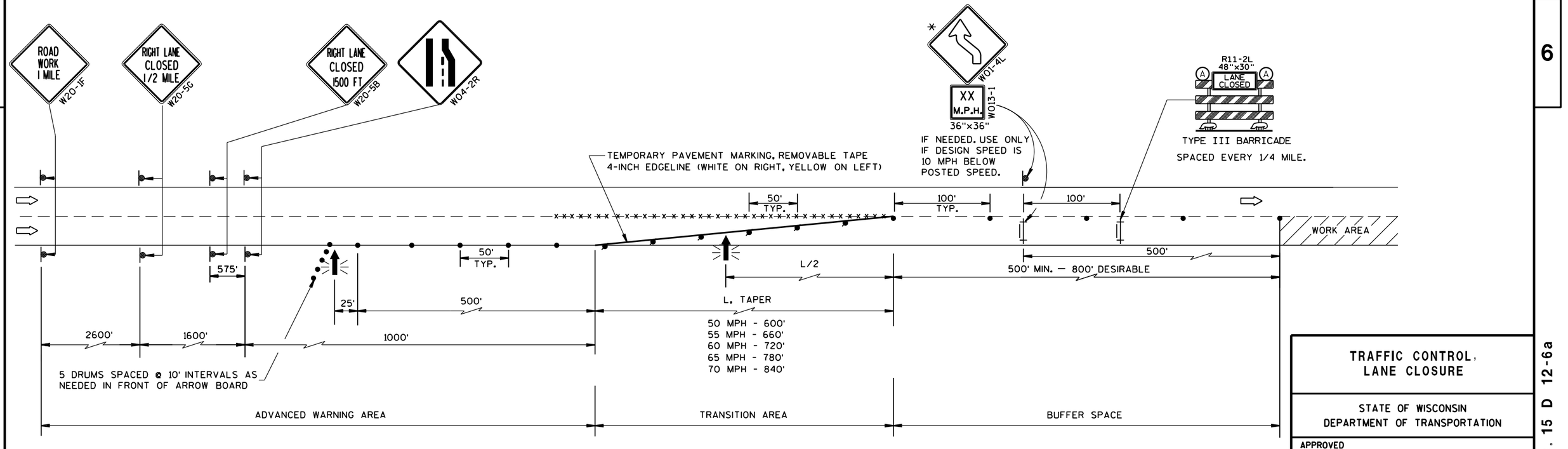
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST 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 1/2 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.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

6

S.D.D. 15 D 12-6a

LEGEND

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

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 DESIREABLE) DISTANCE TO EXISTING SIGNS.

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

ALL SIGNS ARE 48"×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 AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

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 IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

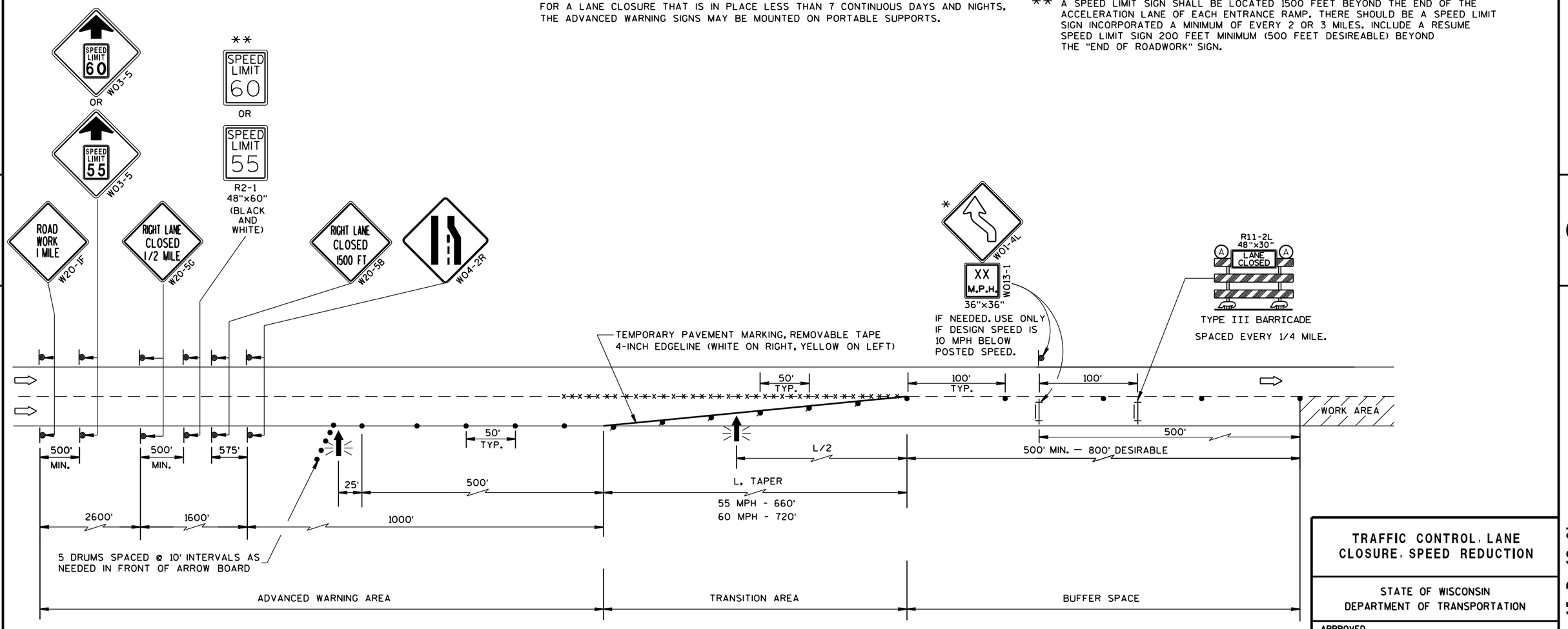
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST 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 1/2 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.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



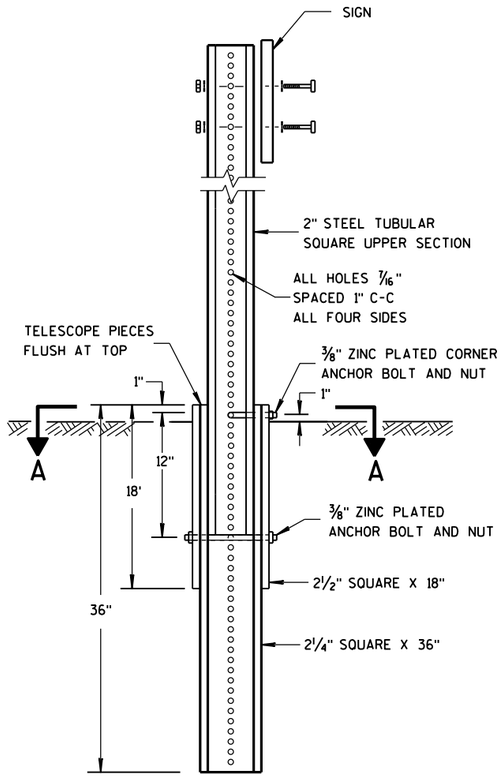
TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

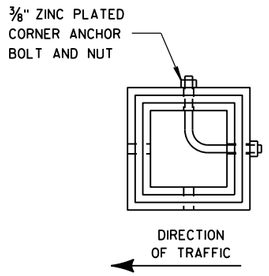
APPROVED
March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

6

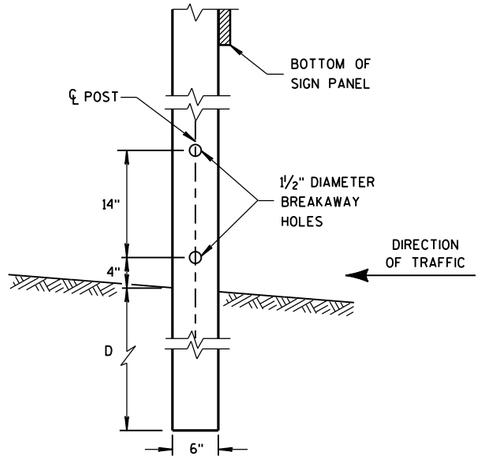
S.D.D. 15 D 12-6b



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



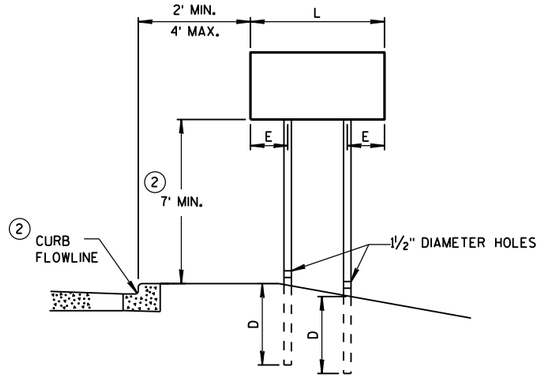
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

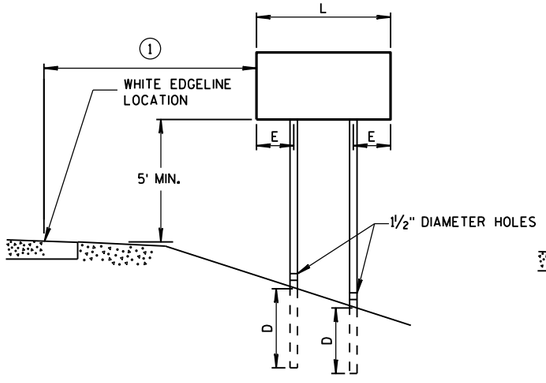
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

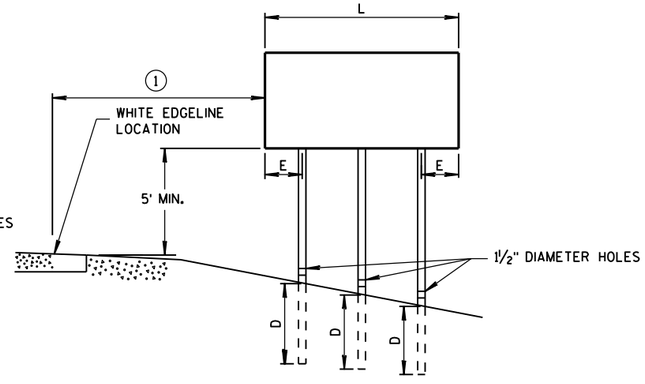
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL 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).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

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

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

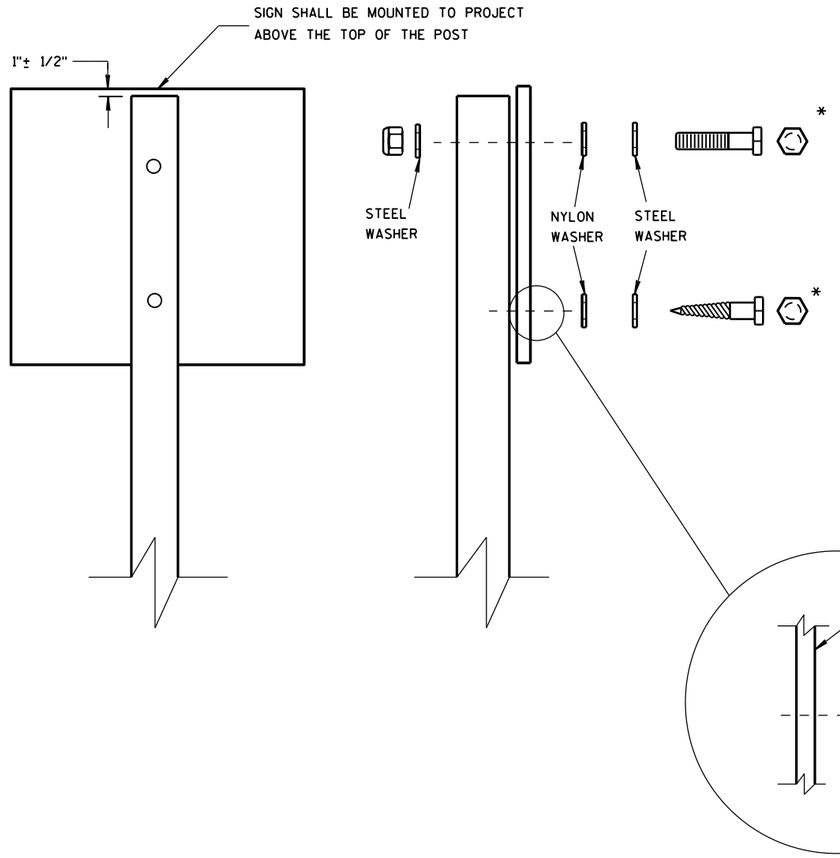
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

STATE OF WISCONSIN DEPARTMENT OF TRANSPOR

6

S.D.D. 15 D 38-1a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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.

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3"

MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS

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 FOR ALL TYPE H SIGNS

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

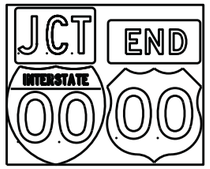
June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

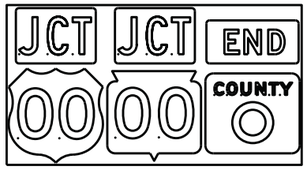
FHWA

TYPICAL ASSEMBLIES

J1-1

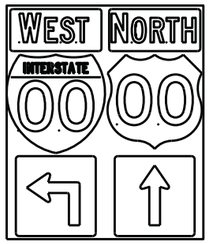


J1-2

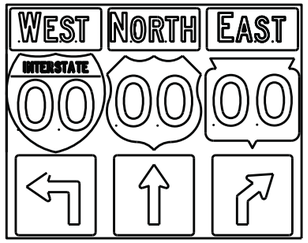


J1-3

J2-1



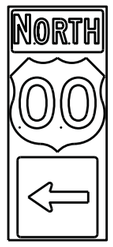
J2-2



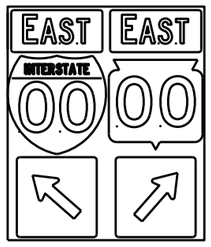
J2-3

JV

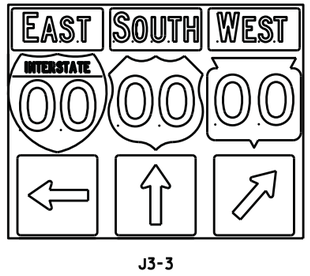
(Typical Vertical J-Assembly
See Note 10 and 11)



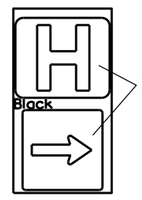
J3-1



J3-2

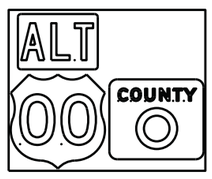


J3-3

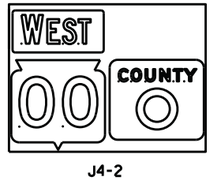


JH-1

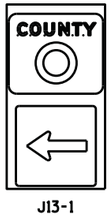
J4-1



J4-2



J4-2



J13-1

J12-1

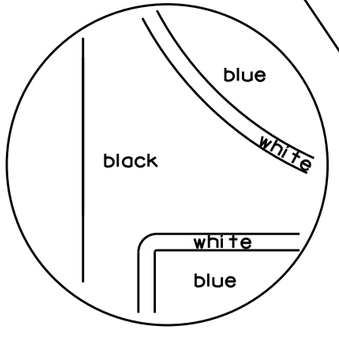
J32-1

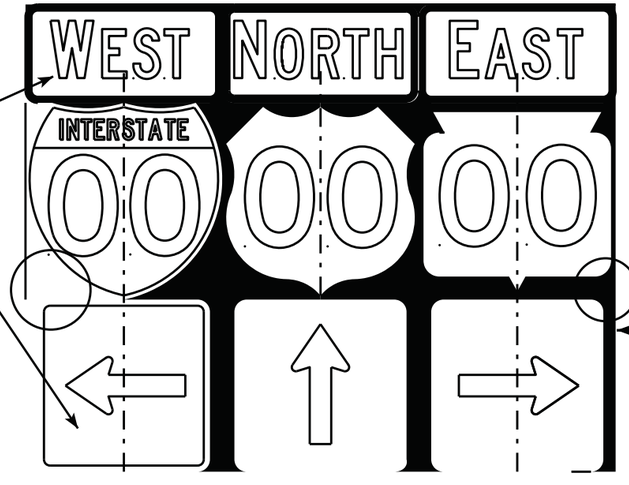
J33-1

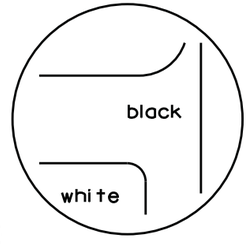
J23-1

J22-1

[blue background with interstate]







[black background]

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of Interstate and non Interstate shields, arrows and cardinals shall be white on blue.

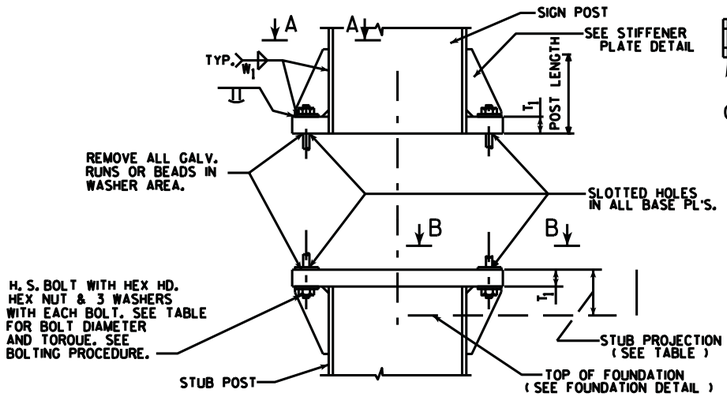
ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

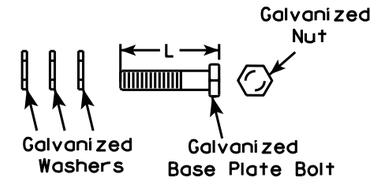
APPROVED Matthew R Rauch
for State Traffic Engineer

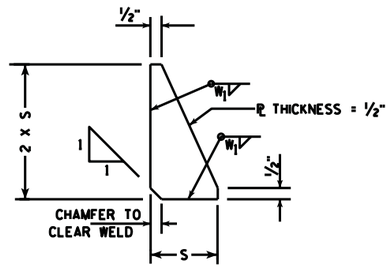
DATE 2/06/14 PL... A2-1S.8

PROJECT NO: | SHEET NO: E



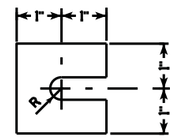
SIGN POST AND STUB POST ELEVATION





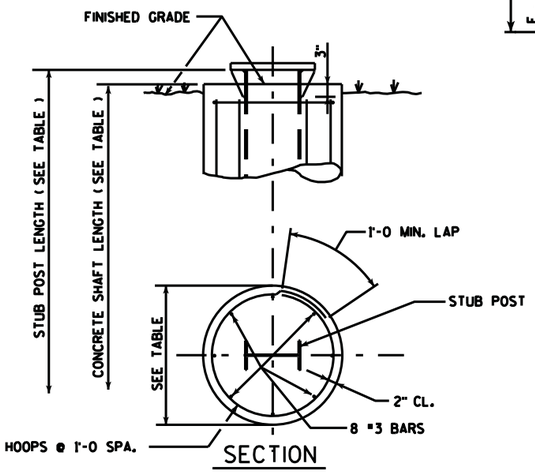
STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)

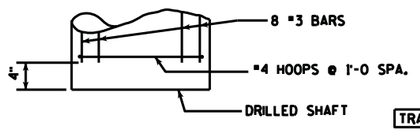


FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M.- B36.

SHIM DETAIL



SECTION



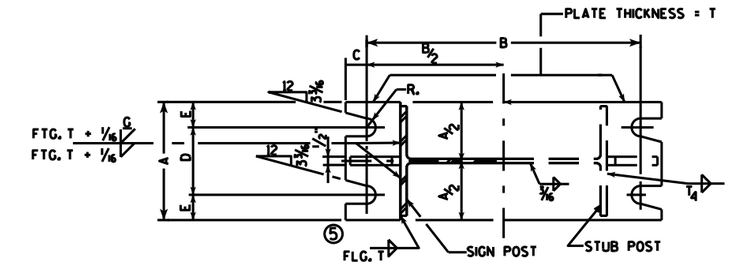
FOUNDATION DETAIL

QUANTITIES FOR 1 FOOTING		
	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
E	1.0	62

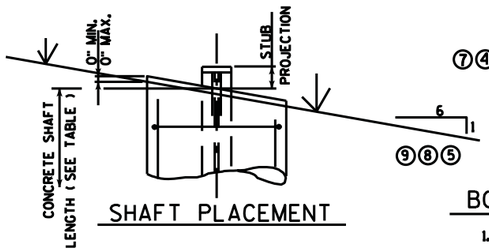
⑦

REINF.	TYPE	#3	#4
	A	8 @ 4'-5	5 @ 6'-3
	B	8 @ 6'-5	7 @ 6'-3
	C	8 @ 6'-11	7 @ 6'-3
	D	8 @ 7'-5	8 @ 6'-3
	E	8 @ 7'-11	9 @ 6'-3

⑦

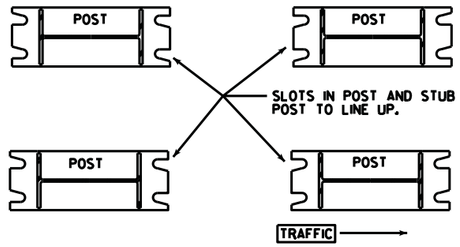


SECTION A-A SECTION B-B



⑦④ ⑨⑧⑤

SHAFT PLACEMENT



POST SLOT ORIENTATION ⑦

DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.

GROUP LOADS	PERCENT OF ALLOWABLE STRESS	
1. DEAD	100	
2. DEAD & WIND	140	
3. DEAD, ICE & ½ WIND△	140	△25 P.S.F. MIN.

ALLOWABLE SOIL PRESSURE = 1½T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

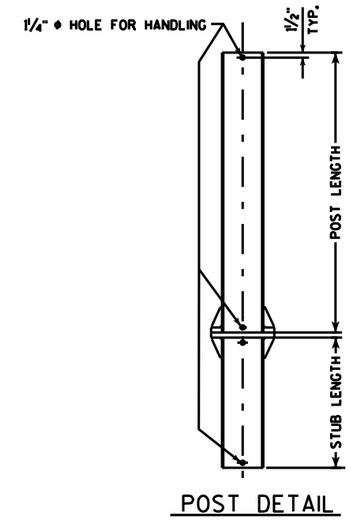
GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50, GALVANIZED IN ACCORDANCE WITH ASTM A123. ⑨
THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
FURNISH STEEL BOLTS, NUTS, AND WASHERS IN ACCORDANCE WITH SECTION 635 OF THE STANDARD SPECIFICATIONS.

BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. PRIOR TO BOLT TIGHTENING LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
4. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
5. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.



POST DETAIL

L	X	TYPE	DIMENSION / POST SIZE	BASE CONNECTION DATA TABLE: BOLT SIZE & TORQUE	A	B	C	D	E	T_1	T_4	W_1	R	S	FOUNDATION DATA: STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	② K
3 ¾	④	A	W10"X12.0 #/FT.	¾" ø @ 75"-FT.	5¼"	1'-0⅜"	⅞"	3½"	⅞"	1"	3/16"	5/16"	⅜"	2⅛"	3'-6	3"	2'-0 ø	5'-0	76.0" ④
4 ¾	④	B	W12"X16.0 #/FT.	⅞" ø @ 85"-FT.	5½"	1'-4¼"	1"	3½"	1"	1¼"	¼"	5/16"	⅜"	3"	5'-6	3"	2'-0 ø	7'-0	146.5" ④
5		C	W12"X19.0 #/FT.	⅞" ø @ 85"-FT.	5½"	1'-4¼"	1"	3½"	1"	1½"	5/16"	5/16"	⅜"	3"	6'-0	3"	2'-0 ø	7'-6	182.1"
5		D	W12"X22.0 #/FT.	⅞" ø @ 85"-FT.	5½"	1'-4¼"	1"	3½"	1"	1½"	⅜"	5/16"	⅜"	3"	6'-6	3"	2'-0 ø	8'-0	210.5"
5	③	E	W12"X26.0 #/FT.	1" ø @ 90"-FT.	7"	1'-4¼"	1¼"	4"	1½"	1½"	⅜"	5/16"	⅜"	3"	7'-0	3"	2'-0 ø	8'-6	293.0" ③

① ⑥ ①

STRUCTURAL CARBON STEEL PAY WTS. (1 POST) = K+ (POST LENGTH X POST WT.)
" K " INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/12/15 PLATE NO. A3-1.16

NO.	DATE	REVISION
⑩	1-21-14	LUBRICATION OF BASE BOLTS
⑨	4-26-11	REMOVE NON-GALVANIZED
⑧	10-30-96	NOT GALVANIZED/GALVANIZED
⑦	10-30-92	QUANT., A588 EXCEPT., ADD SLOT VIEW
⑥	8-24-87	BASE CONN. WELD
⑤	10-13-81	BASE CONN. WELD & FUSE PL WASHERS
④	10-19-79	POST A & B, A572 GR. 50, & K
②	11-28-78	"K" ③ 4-23-79 TYPE "E"
①	5-4-78	T_1 , T_2 & W_1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

TYPE A, B, C, D, & E

CONST. SPEC. 2011	DRAWN BY JPH	PLANS CK'D.

FTG. & SIGN SUPPORT DETAILS GROUND MOUNT BREAK-AWAY SIGNS

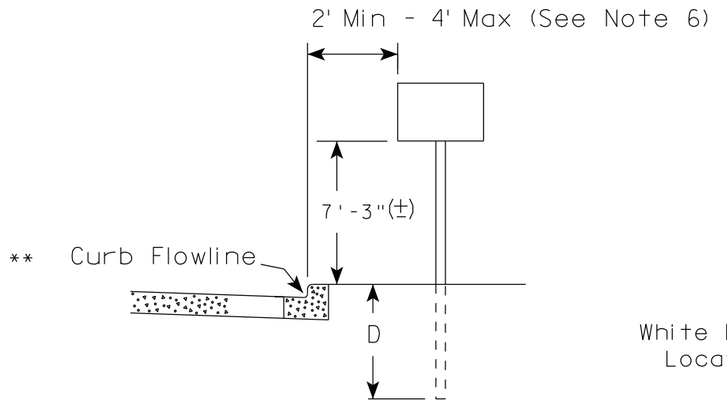
SHEET

PROJECT NO: | HWY: | COUNTY: | SHEET NO. 134 | E

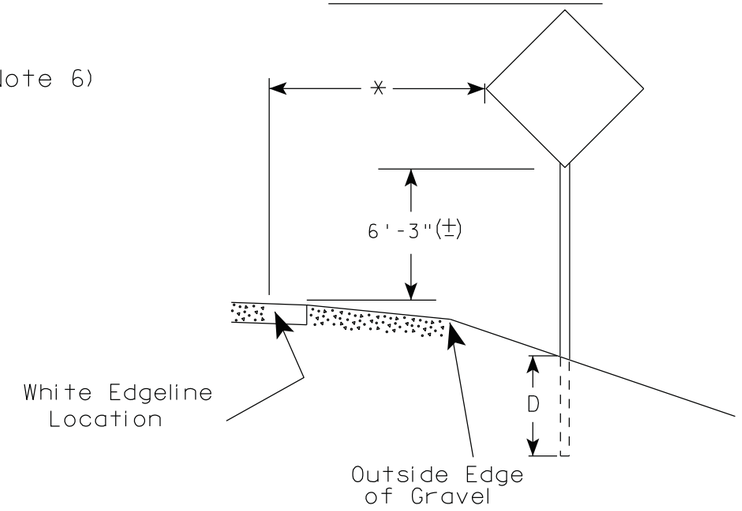
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\A31.DGN PLOT DATE : 12-NOV-2015 11:32 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 8.528262:1.000000

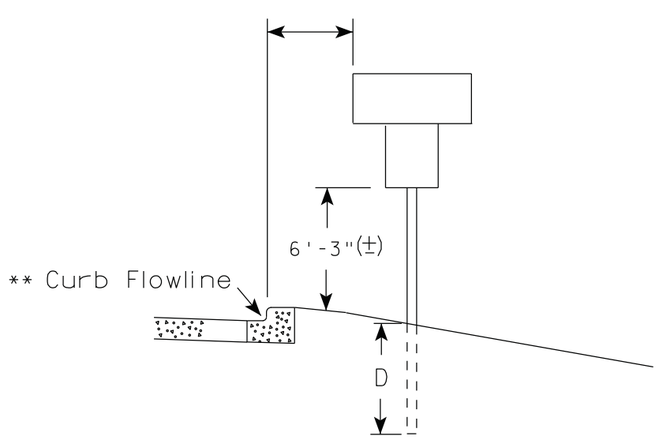
WISDOT/CADDS SHEET 42

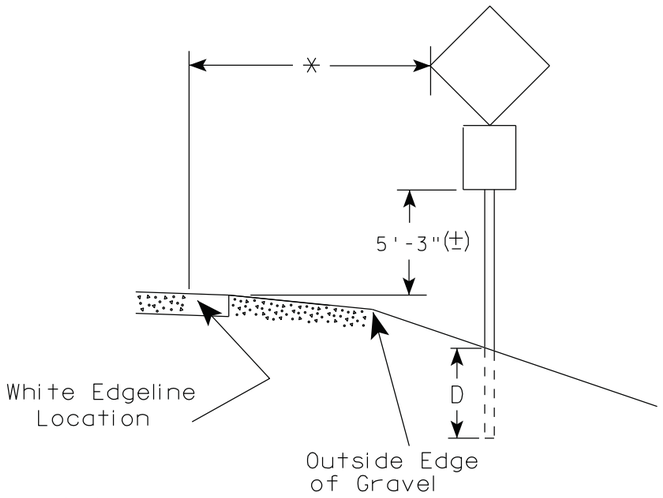
URBAN AREA



RURAL AREA (See Note 2)







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 barrier wall, see A4-10 sign plate.
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 J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directd by the Engineer.
9. 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), 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" (±).

POST EMBEDMENT DEPTH

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

** 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.

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

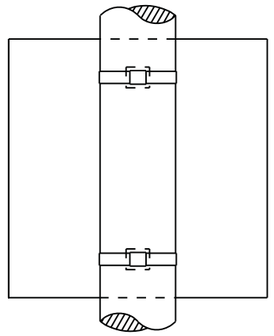
APPROVED Matthew R Rauch
for State Traffic Engineer

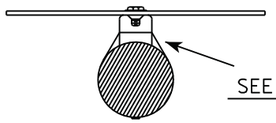
DATE 7/23/15 PLATE NO. A4-3.20

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

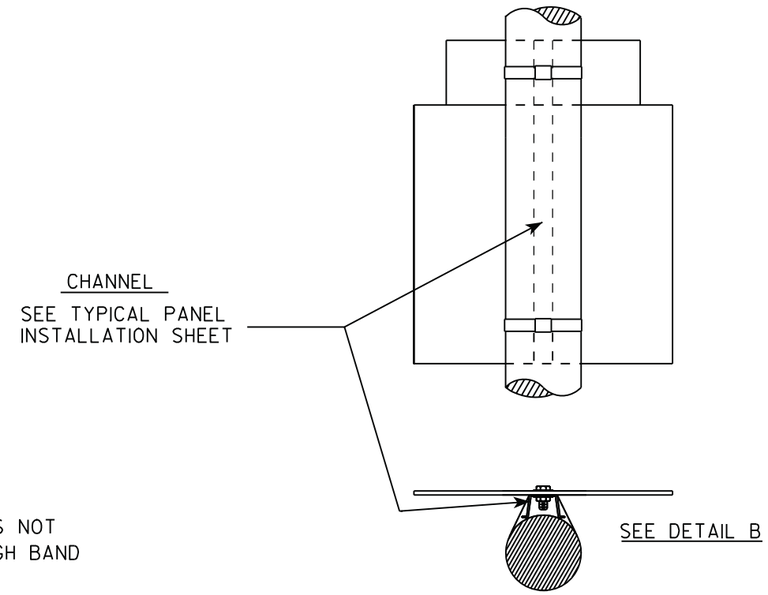
BANDING

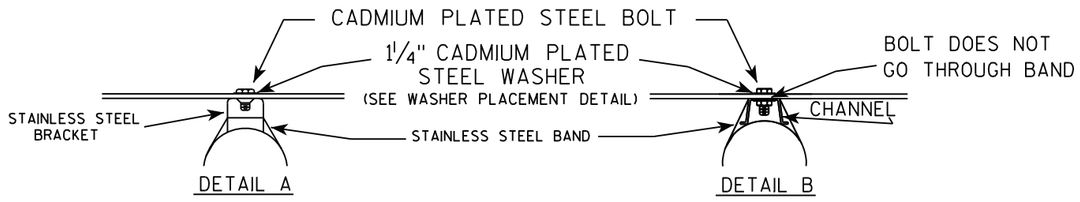
SINGLE SIGN



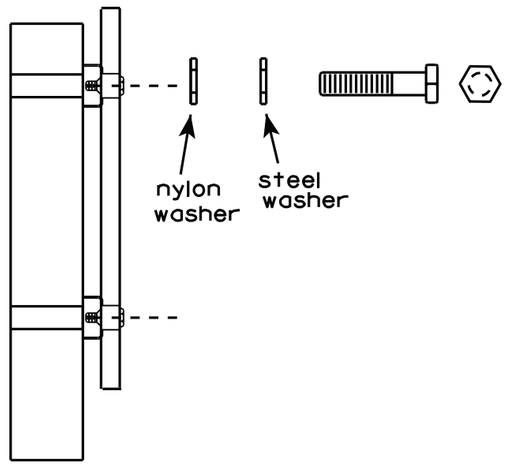


"J" ASSEMBLY





WASHER PLACEMENT



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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.

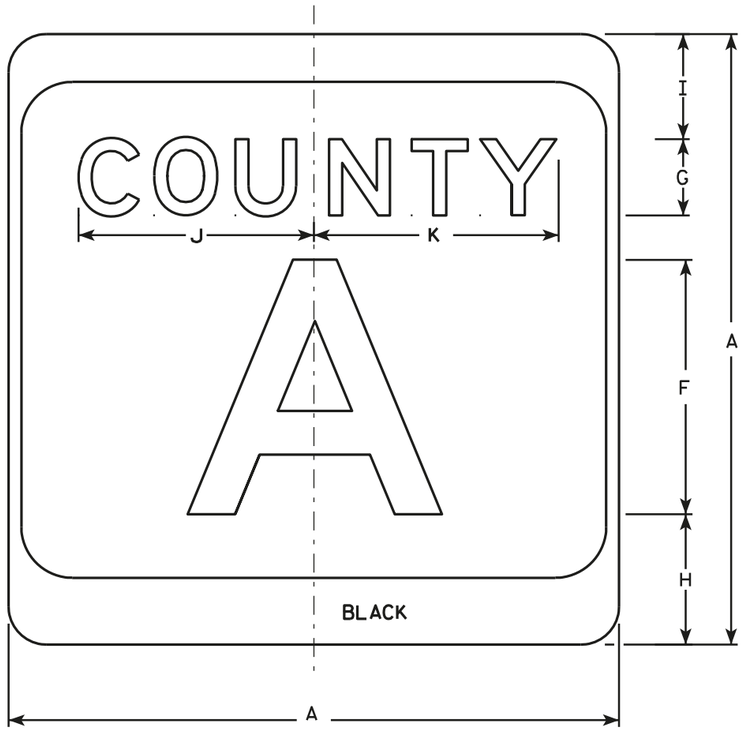
STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

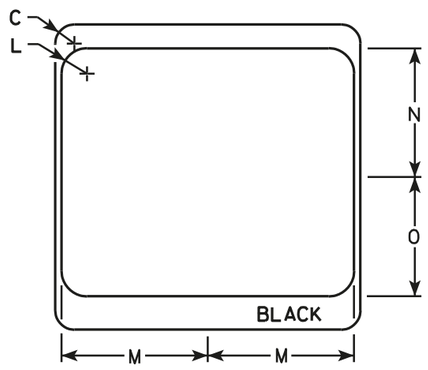
APPROVED Matthew R Rauch
for State Traffic Engineer

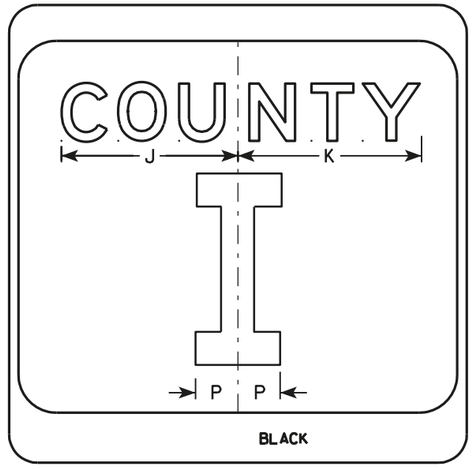
DATE 8/16/13 PLATE NO. A5-9.3

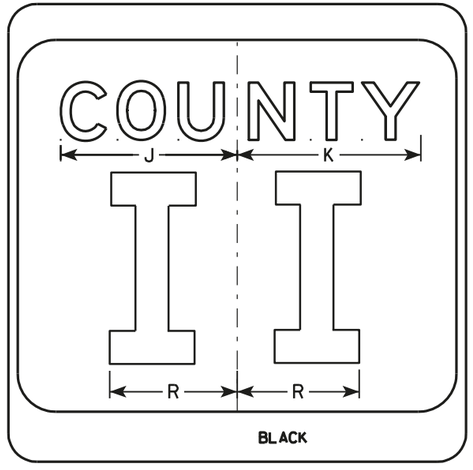
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 136	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

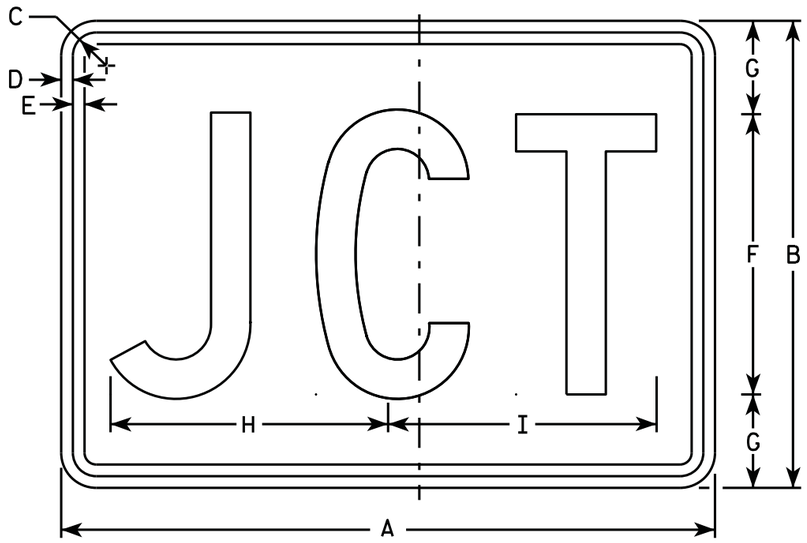
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 137	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\M15A.DGN PLOT DATE : 29-SEP-2011 11:25 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

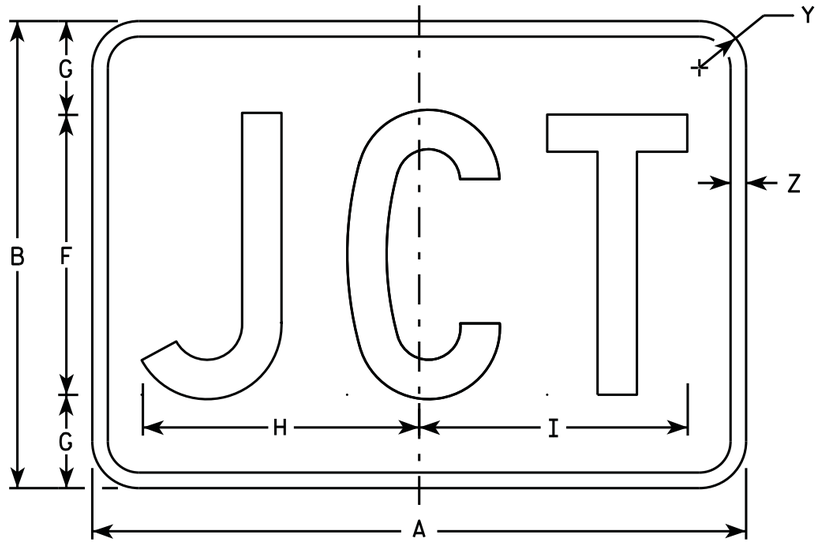
WISDOT/CADDS SHEET 42

7

7



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M2-1 Background - White
   Message - Black
   MB2-1 Background - Blue
   Message - White
   MK2-1 Background - Green
   Message - White
   MM2-1 Background - White
   Message - Green
   MN2-1 Background - Brown
   Message - White
   MP2-1 Background - White
   Message - Blue
   MR2-1 Background - Brown
   Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2-1

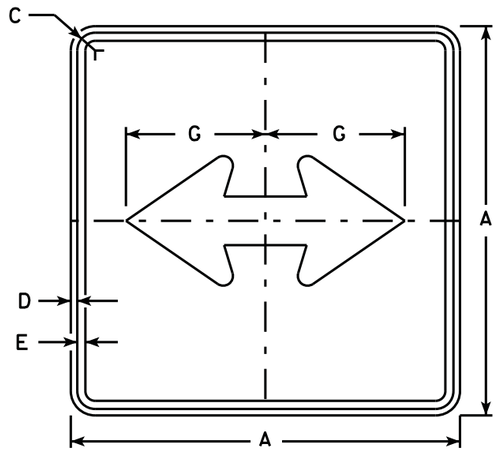
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

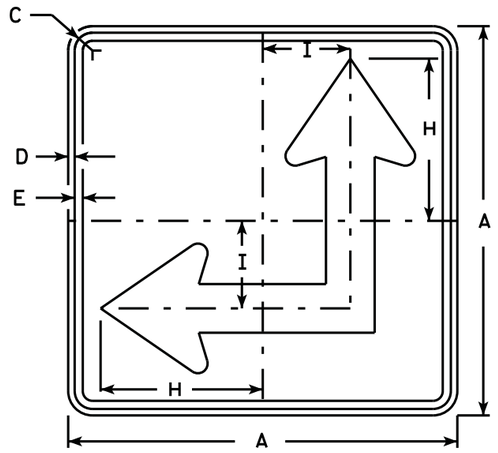
DATE 10/15/15 PLATE NO. M2-1.12

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

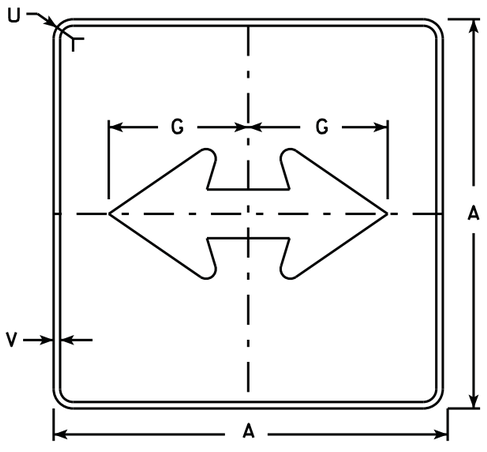
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M21.DGN PLOT DATE : 15-OCT-2015 11:46 PLOT BY : ss...plotuser...ss PLOT NAME : PLOT SCALE : 7.752961:1.000000 WISDOT/CADDS SHEET 42



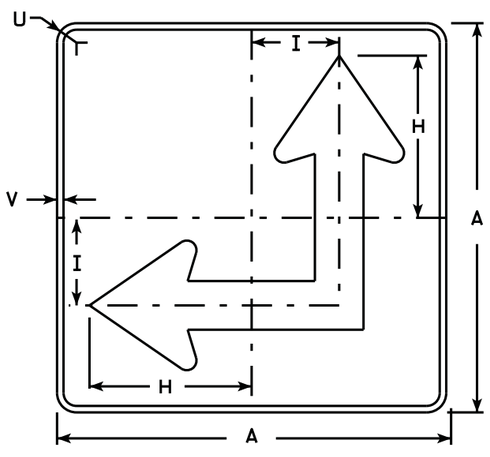
M6-4
MM6-4
MO6-4
MP6-4



M6-6
MM6-6
MO6-6
MP6-6



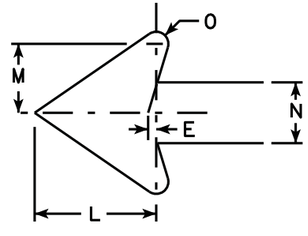
MB6-4
MK6-4
MN6-4
MR6-4



MB6-6
MK6-6
MN6-6
MR6-6

NOTES

1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White
   MK6-4 and MK6-6 Background - Green
   Message - White
   MM6-4 and MM6-6 Background - White
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White
   MO6-4 and MO6-6 Background - Orange - Type F Reflective
   Message - Black
   MP6-4 and MP6-6 Background - White
   Message - Blue
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow
5. M6-6R same as M6-6L except arrow points ahead and right.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

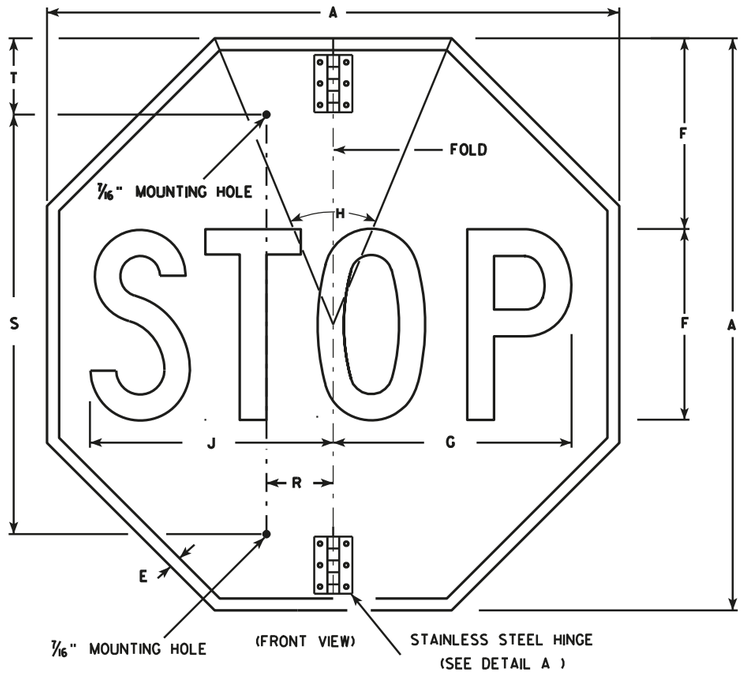
STANDARD SIGN M6-4 & M6-6 SERIES

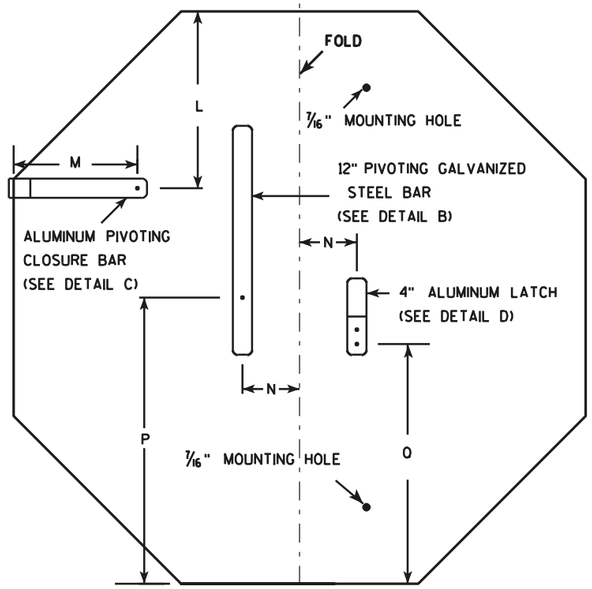
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO. M6-4.10

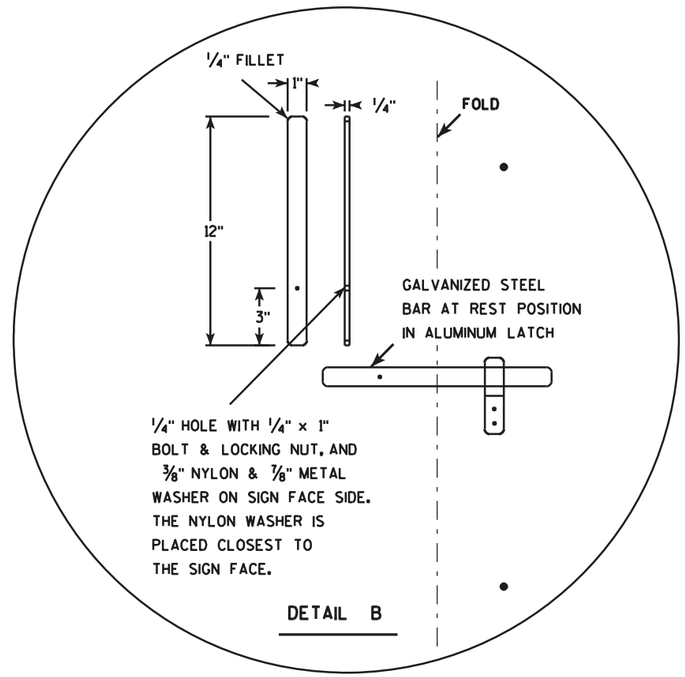
PROJECT NO: | HWY: | COUNTY: | SHEET NO. 139 | E



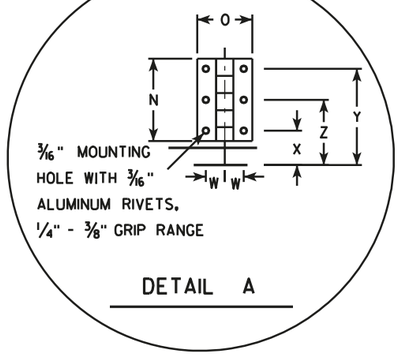


NOTES

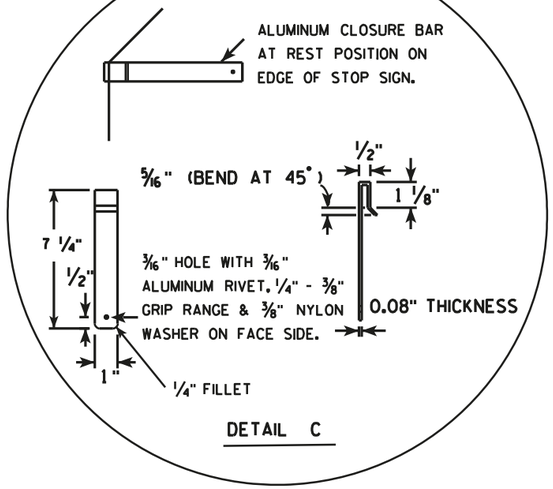
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



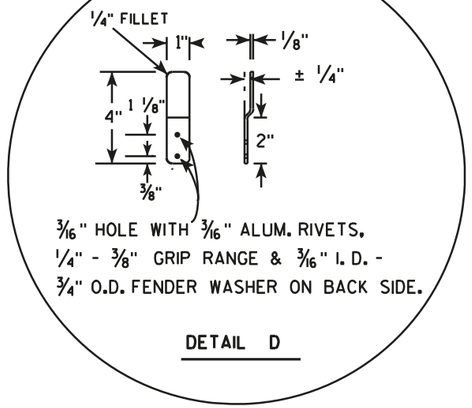
DETAIL B



DETAIL A



DETAIL C



DETAIL D

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			11/16	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

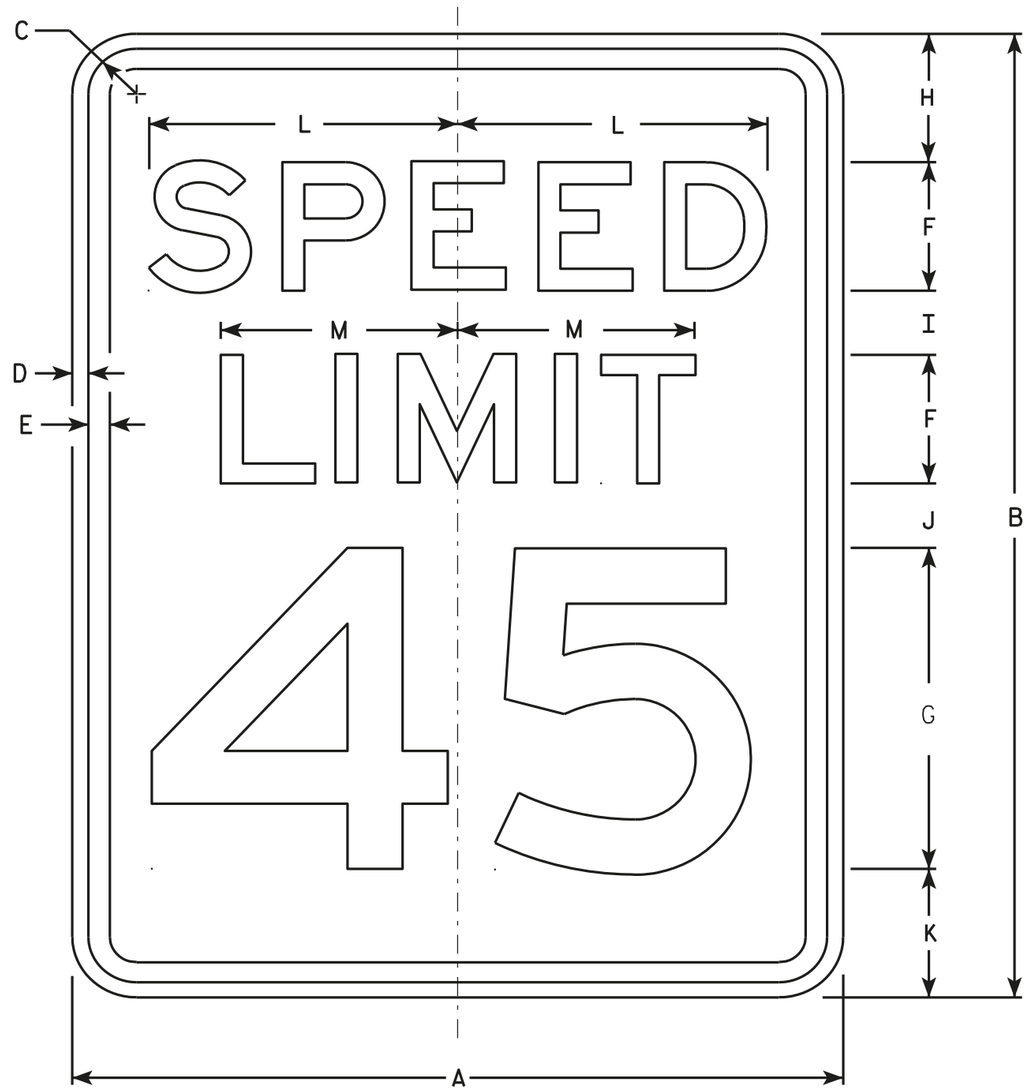
STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 140 | E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

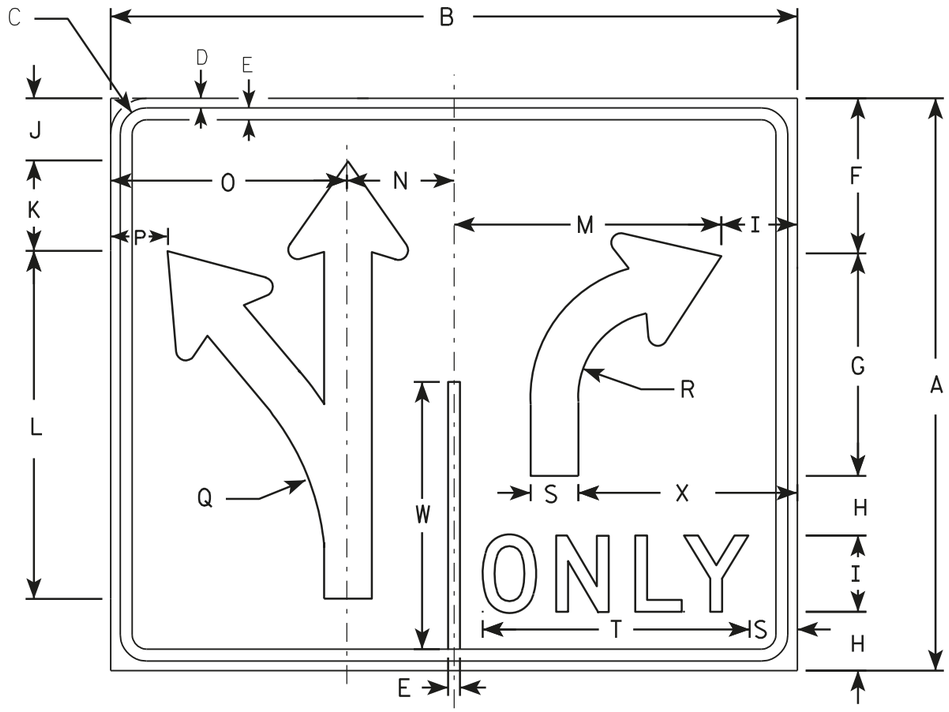
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

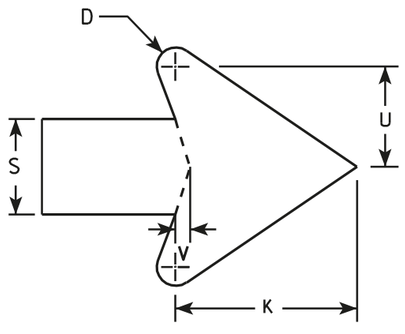
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 141 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN PLOT DATE : 28-MAY-2010 08:32 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 4.717577:1.000000

WISDOT/CADDS SHEET 42



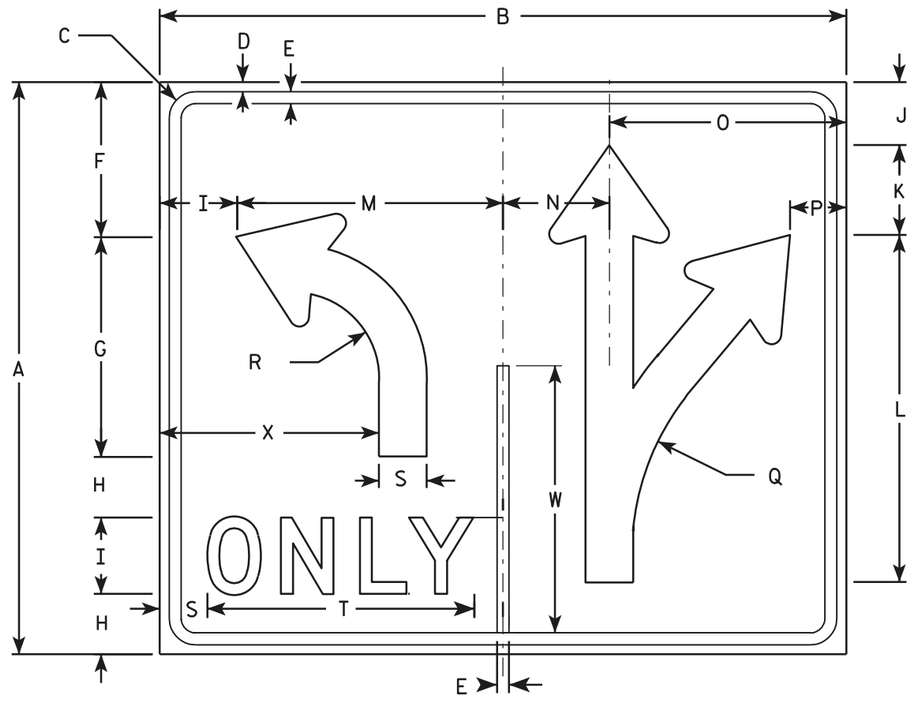
R3-8



ARROW DETAIL

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - WHITE
   Message - BLACK
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



R3-8A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	3 1/4	4 3/4	18 1/4	14	5 5/8	12 3/8	3	13 1/4	4 1/2	2 1/2	14	2 5/8	3/8	14	11 1/2			7.5
2M	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	3 1/4	4 3/4	18 1/4	14	5 5/8	12 3/8	3	13 1/4	4 1/2	2 1/2	14	2 5/8	3/8	14	11 1/2			7.5
3																											
4	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	5 1/4	7 1/8	29 1/8	21	8 3/8	18 5/8	4 3/8	21 7/8	7 1/4	3 3/4	20 5/8	4	5/8	22 3/8	17 1/4			18.0
5	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	5 1/4	7 1/8	29 1/8	21	8 3/8	18 5/8	4 3/8	21 7/8	7 1/4	3 3/4	20 5/8	4	5/8	22 3/8	17 1/4			18.0

STANDARD SIGN
R3-8 & R3-8A

WISCONSIN DEPT OF TRANSPORTATION

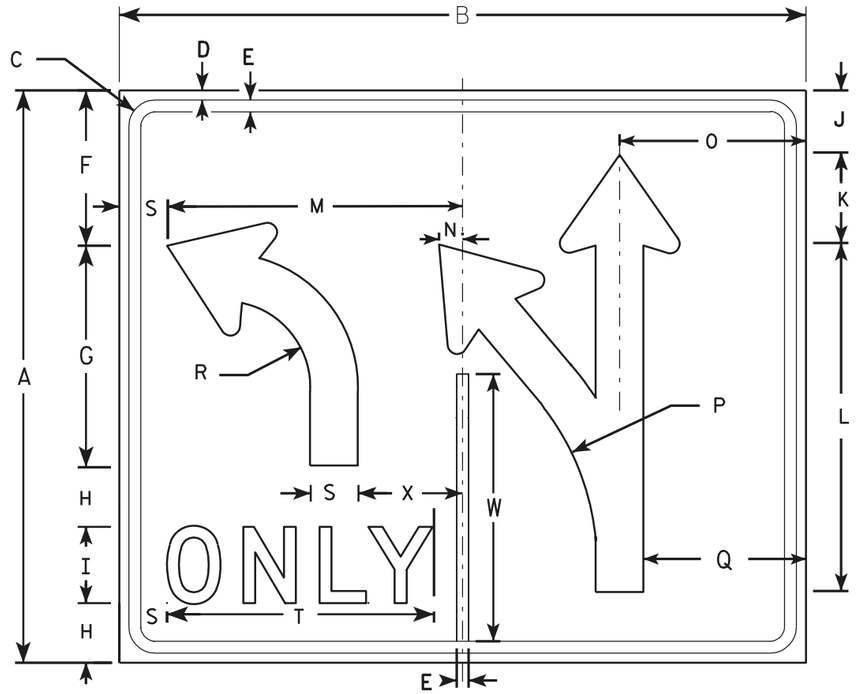
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8.5

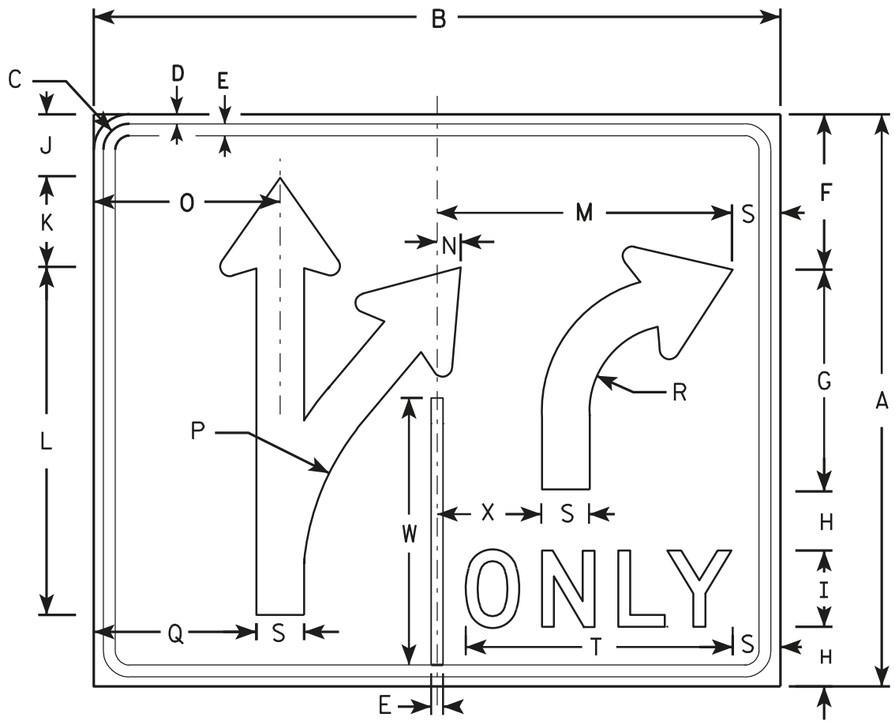
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 142	E

NOTES

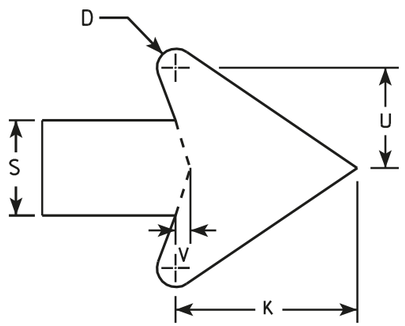
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - WHITE
   Message - BLACK
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R3-8B & R3-8C is the same but reversed.



R3-8B



R3-8C



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	3 1/4	4 3/4	18 1/4	15 1/2	1 1/4	9 3/4	13 1/4	8 1/2	4 1/2	2 1/2	14	2 5/8	3/8	14	5 1/4			7.5
2M	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	3 1/4	4 3/4	18 1/4	15 1/2	1 1/4	9 3/4	13 1/4	8 1/2	4 1/2	2 1/2	14	2 5/8	3/8	14	5 1/4			7.5
3																											
4	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	5 1/4	7 1/8	29 5/8	23 1/8	1 7/8	14 5/8	21 7/8	12 3/4	7 1/4	3 3/4	20 5/8	4	5/8	22 3/8	8 1/8			18.0
5	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	5 1/4	7 1/8	29 5/8	23 1/8	1 7/8	14 5/8	21 7/8	12 3/4	7 1/4	3 3/4	20 5/8	4	5/8	22 3/8	8 1/8			18.0

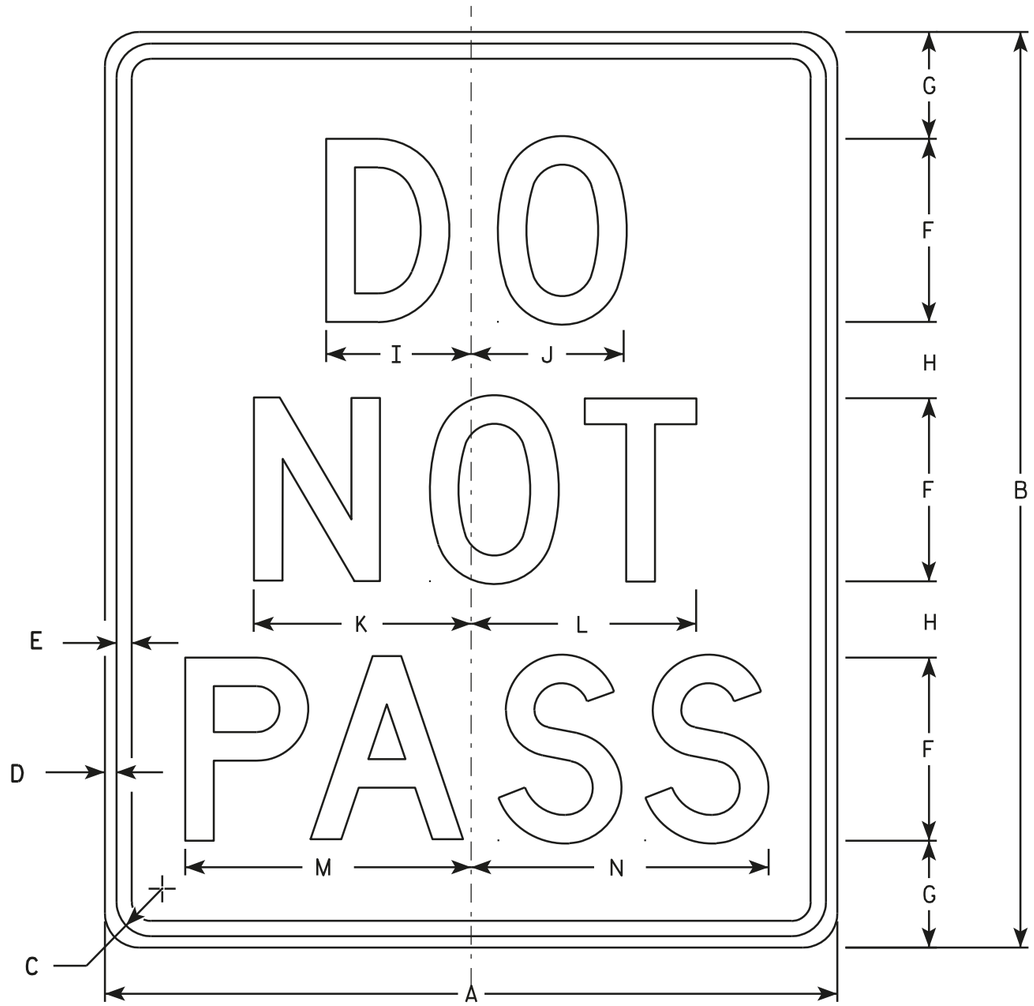
STANDARD SIGN
R3-8B & R3-8C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8B.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 143	E



R4-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	4	3 1/2	2 1/2	3 1/8	3 1/4	4 3/4	4 7/8	6 1/4	6 1/2													3.0
2S	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
2M	24	30	1 1/8	3/8	1/2	6	3 1/2	2 1/2	4 3/4	5	7 1/8	7 3/8	9 3/8	9 3/4													5.0
3																											
4	36	48	1 5/8	5/8	3/4	8	7	5	6 1/4	6 5/8	9 1/2	9 3/4	12 1/2	13													12.0
5	48	60	2 1/4	3/4	1	10	8	7	7 3/4	8 3/8	11 7/8	12 1/4	15 5/8	16 1/4													20.0

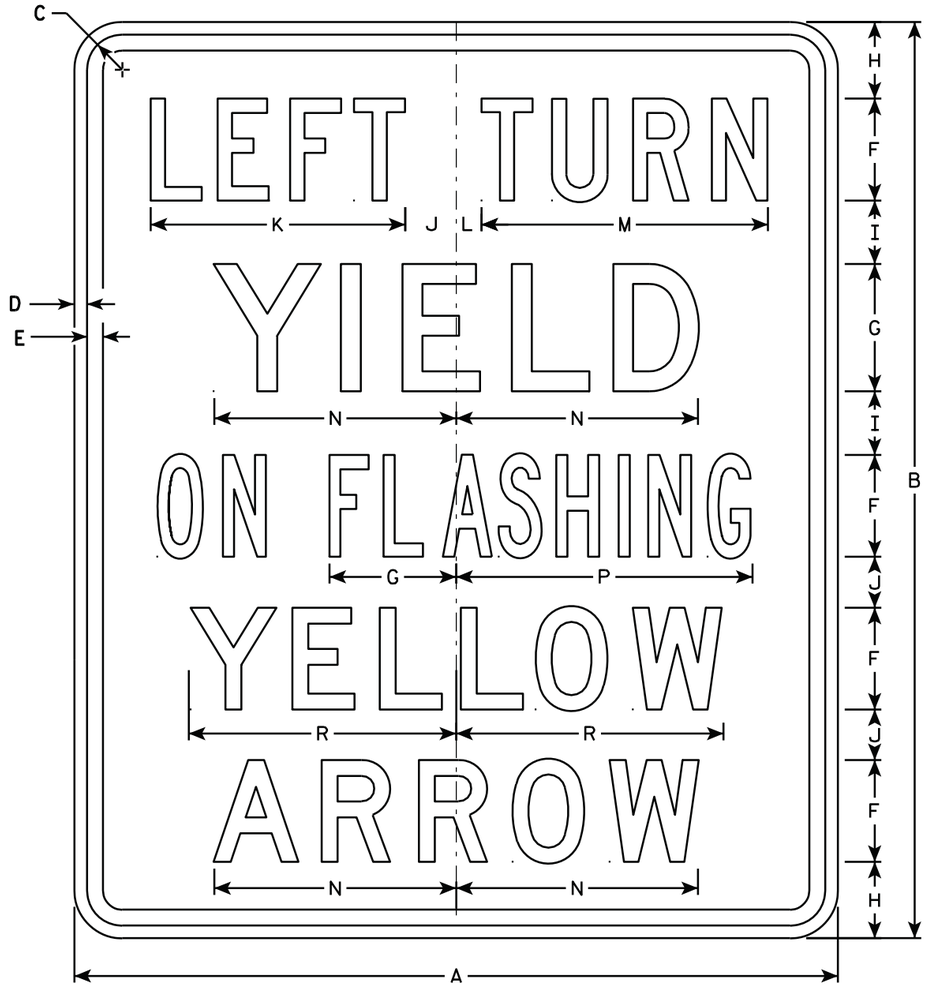
STANDARD SIGN
R4-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-1.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 144 | E

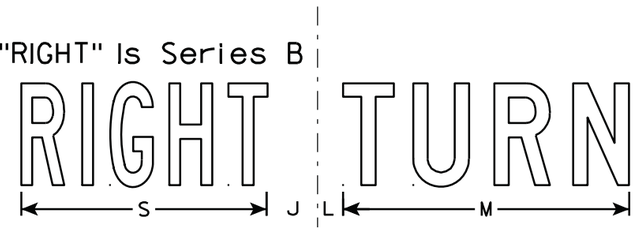


R10-50L

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1 is Series C.
   Lines 2, 4 and 5 are Series D.
   Line 3 is Series B.

"RIGHT" Is Series B



R10-50R

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
2M	30	36	1 3/8	1/2	5/8	4	5	3	2 1/2	2	10	1	11 1/4	9 1/2	4 1/4	11 5/8		10 1/2	9 5/8								7.5
3																											
4																											
5																											

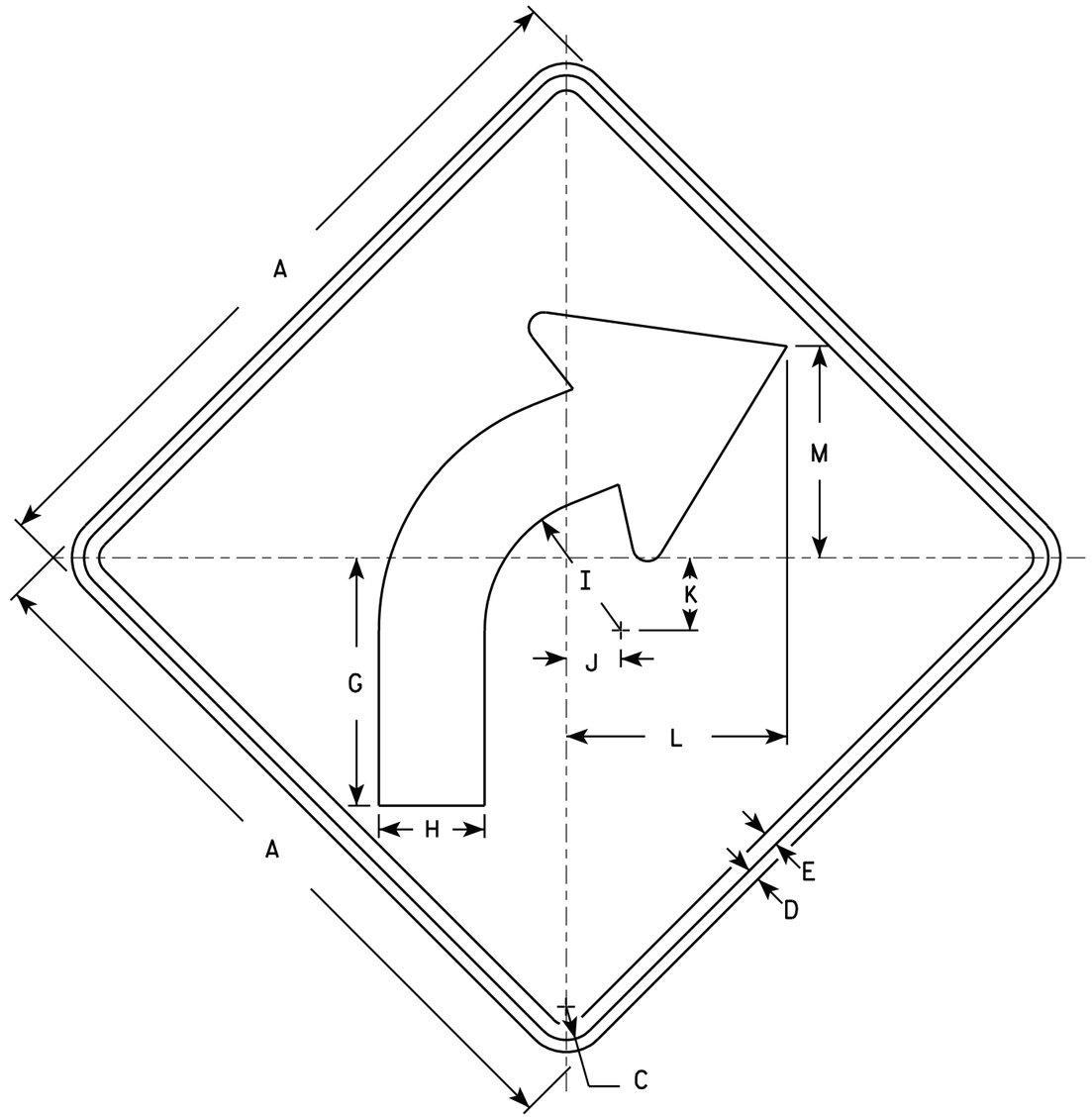
STANDARD SIGN
R10-50

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/11/13 PLATE NO. R10-50.2

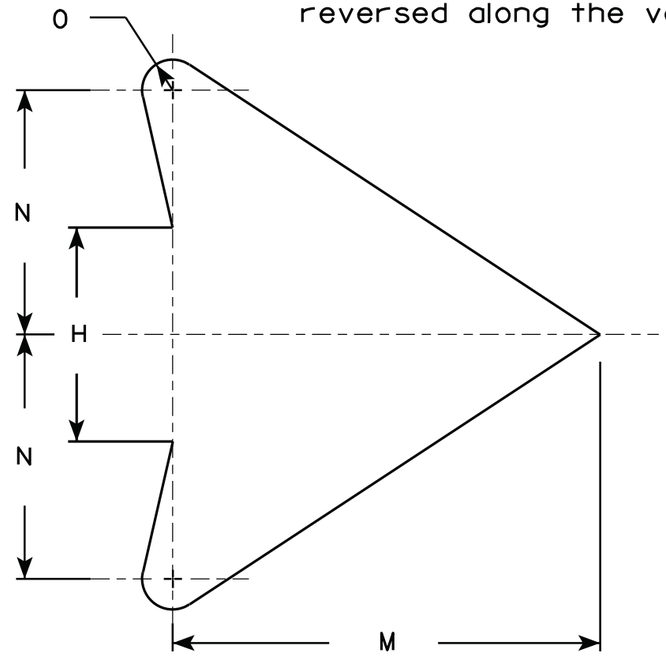
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 145	E



W1-2R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-2L is the same as W1-2R except the arrow is reversed along the vertical centerline.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		8 1/4	3 1/2	4 1/2	1 3/4	2 3/8	7 1/4	7	4	1/2												4.0
2S	30		1 3/8	1/2	5/8		10 1/4	4 3/8	5 5/8	2 1/4	3	9 1/8	8 3/4	5	5/8												6.25
2M	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
3	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
4	36		1 5/8	5/8	3/4		12 3/8	5 1/4	6 3/4	2 5/8	3 1/2	10 7/8	10 1/2	6	3/4												9.0
5	48		2 1/4	3/4	1		16 1/2	7	9	3 1/2	4 5/8	14 1/2	14	8	1												16.0

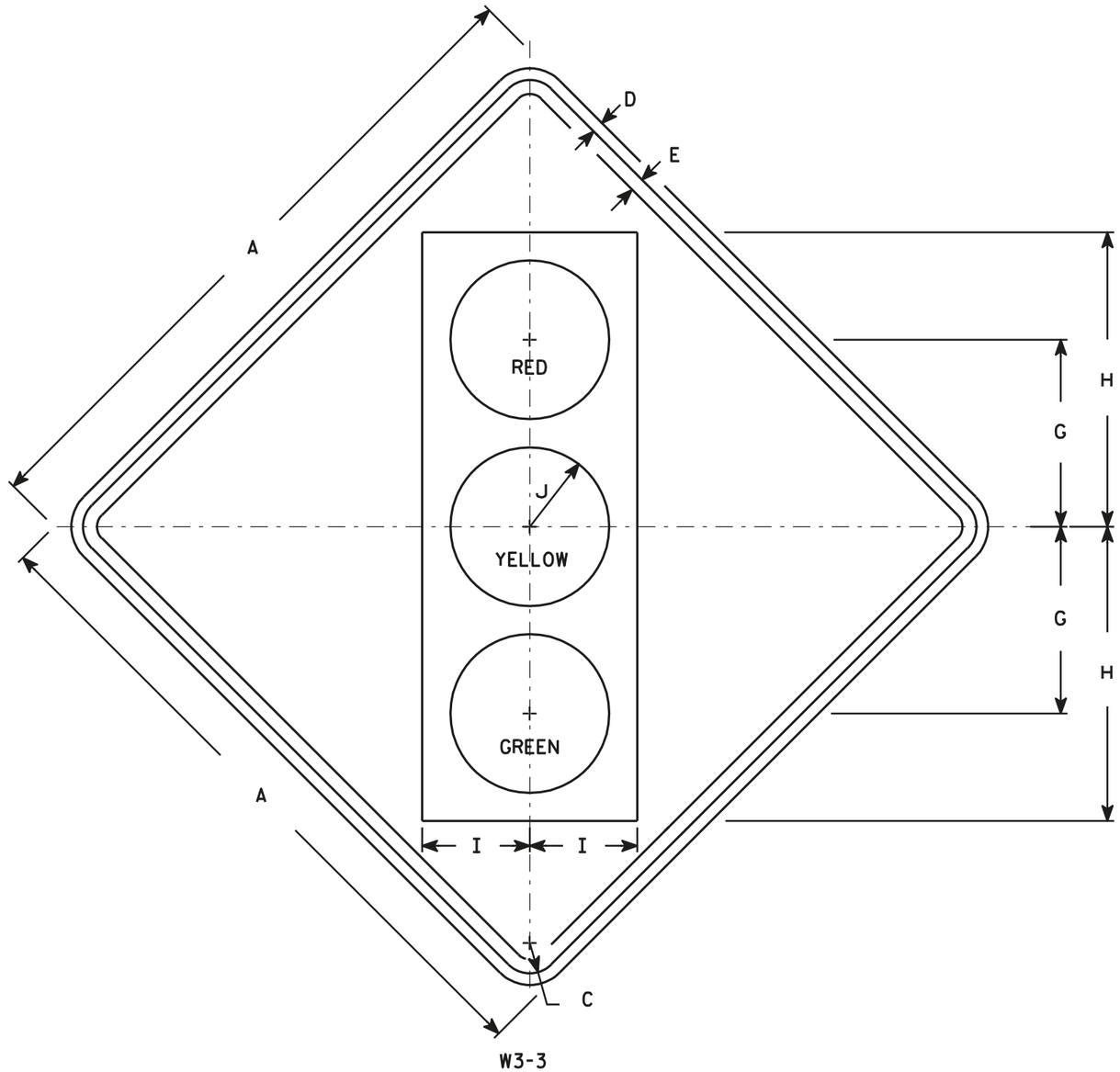
STANDARD SIGN
W1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-2.10

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 146	E



W3-3

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Symbol and border are non-reflective black.
   Top circle - Type H Reflectorized Red
   Center circle - Same as background
   Bottom circle - Type H Reflectorized Green

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

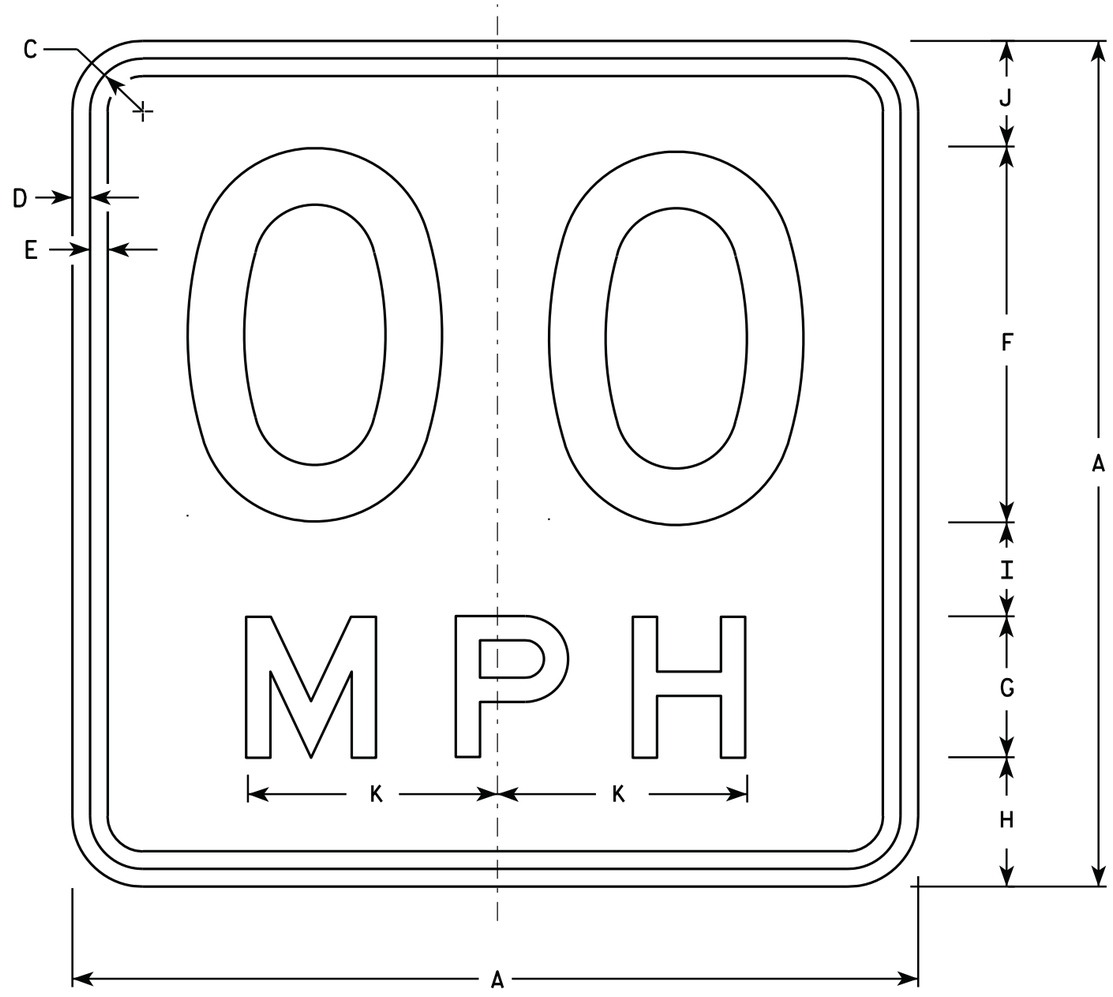
STANDARD SIGN
W3-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-3.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 147 | E



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

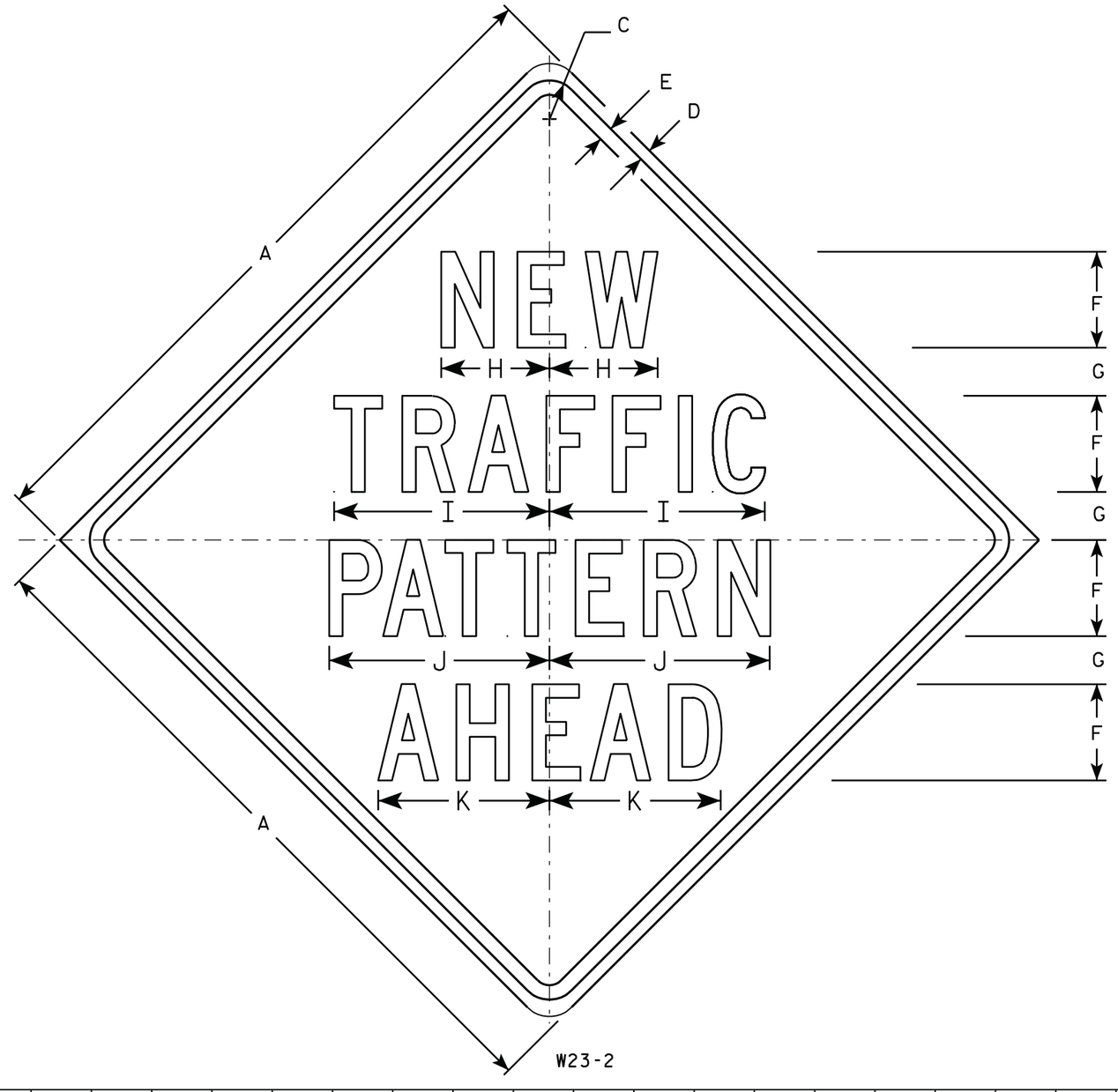
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

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



NOTES

1. Sign isType II - Type F Reflective - reference WIS DOT Standard Specification forHIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

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

STANDARD SIGN
W23-2

WISCONSIN DEPT OF TRANSPORTATION

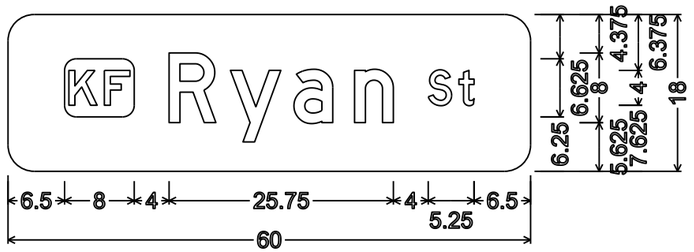
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W23-2.2

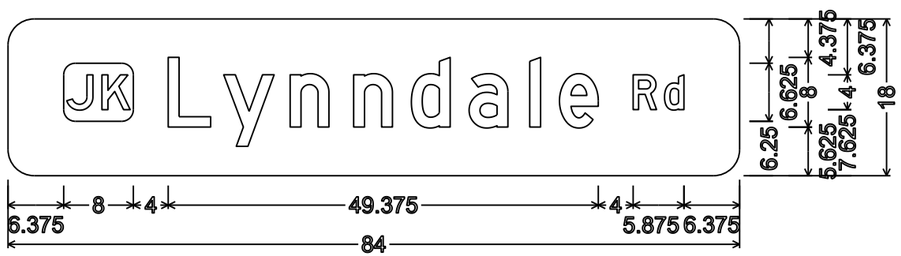
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 149 | E

NOTES

1. Signs are Type II- Type H Reflective
2. Color:
   Background - Green
   Message - White
3. Message Series - D
4. M1-94S base material is .125" aluminum



M1-94S;
3.000" Radius, No border



M1-94S; 3.000" Radius, No border

7

7

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET NO: 150	E

EARTHWORK TABLE FOR CTH KF

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)							
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Expanded Fill	Expanded Marsh Backfill	Expanded Rock	Expanded EBS Backfill	Reduced Marsh in Fill	Reduced EBS In Fill	Mass Ordinate
															1.00	1.25	1.5	1.1	1.3	0.6	0.8	
									Note 1	Note 2	Note 3				Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
99+50	9950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100+00	10000	50	2	0	7	0	0	0	2	0	7	0	0	0	2	8	0	0	0	0	0	-6
100+50	10050	50	25	0	24	0	0	0	26	0	29	0	0	0	28	44	0	0	0	0	0	-16
101+00	10100	50	27	0	165	0	0	0	49	0	175	0	0	0	76	262	0	0	0	0	0	-186
101+50	10150	50	26	0	129	0	0	0	49	0	272	0	0	0	125	603	0	0	0	0	0	-479
102+00	10200	50	23	0	127	0	0	0	45	0	237	0	0	0	170	898	0	0	0	0	0	-730
102+50	10250	50	26	0	155	0	0	0	45	0	261	0	0	0	215	1224	0	0	0	0	0	-1011
103+00	10300	50	28	0	149	0	0	0	49	0	281	0	0	0	264	1576	0	0	0	0	0	-1313
103+50	10350	50	30	0	174	0	0	0	53	0	299	0	0	0	317	1950	0	0	0	0	0	-1634
104+00	10400	50	38	0	182	0	0	0	62	0	329	0	0	0	379	2361	0	0	0	0	0	-1976
104+50	10450	50	41	0	200	0	0	0	72	0	353	0	0	0	452	2802	0	0	0	0	0	-2345
105+00	10500	50	40	0	140	0	0	0	75	0	315	0	0	0	526	3196	0	0	0	0	0	-2664
106+00	10600	100	1	0	62	0	0	0	76	0	375	0	0	0	602	3665	0	0	0	0	0	-3130
106+50	10650	50	59	0	26	0	0	0	55	0	81	0	0	0	657	3766	0	0	0	0	0	-3176
107+00	10700	50	74	0	15	0	0	0	123	0	38	0	0	0	780	3814	0	0	0	0	0	-3100
107+50	10750	50	70	0	14	0	0	0	133	0	27	0	0	0	914	3847	0	0	0	0	0	-3001
108+00	10800	50	56	0	16	0	0	0	117	0	28	0	0	0	1030	3883	0	0	0	0	0	-2920
108+50	10850	50	36	0	10	0	0	0	86	0	24	0	0	0	1116	3914	0	0	0	0	0	-2864
109+00	10900	50	33	0	11	0	0	0	64	0	19	0	0	0	1180	3937	0	0	0	0	0	-2824
109+50	10950	50	35	0	18	0	0	0	63	0	26	0	0	0	1243	3970	0	0	0	0	0	-2794
110+00	11000	50	33	0	22	0	0	0	63	0	36	0	0	0	1306	4016	0	0	0	0	0	-2779
110+50	11050	50	32	0	27	0	0	0	60	0	45	0	0	0	1366	4072	0	0	0	0	0	-2776
111+00	11100	50	4	0	0	0	0	0	33	0	25	0	0	0	1399	4104	0	0	0	0	0	-2774
111+50	11150	50	5	0	0	0	0	0	25	0	17	0	0	0	1424	4125	0	0	0	0	0	-2770
112+00	11200	50	0	0	0	0	0	0	6	0	0	0	0	0	1430	4125	0	0	0	0	0	-2764
								Column totals	1430	0	3300	0	0	0								

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]

9

9

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	EARTHWORK CTH KF	SHEET 151	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 10/2/2017 7:01 AM PLOT BY : SOEHNER, JIM PLOT SCALE :

EARTHWORK TABLE FOR CTH JK

STATION	Real Station	Distance	AREA (SF)						Incremental Vol (CY) (Unadjusted)						Cumulative Vol (CY)							
			Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut	Salvaged/Unusable Pavement Material	Fill	Marsh Exc	Rock Exc	EBS	Cut 1.00	Expanded Fill 1.25	Expanded Marsh Backfill 1.50	Expanded Rock 1.10	Expanded EBS Backfill 1.30	Reduced Marsh in Fill 0.60	Reduced EBS In Fill 0.80	Mass Ordinate
									Note 1	Note 2	Note 3				Note 1		Note 4		Note 5	Note 6	Note 7	Note 8
52+00	5200	0	0	0	0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52+50	5250	50	31	0	6	0.0	0.0	0.0	28	0	6	0	0	0	28	7	0	0	0	0	0	21
53+00	5300	50	20	0	6	0.0	0.0	0.0	47	0	11	0	0	0	75	21	0	0	0	0	0	54
53+50	5350	50	21	0	5	0.0	0.0	0.0	38	0	10	0	0	0	114	34	0	0	0	0	0	80
54+00	5400	50	25	0	2	0.0	0.0	0.0	43	0	7	0	0	0	156	43	0	0	0	0	0	114
54+50	5450	50	40	0	14	0.0	0.0	0.0	60	0	15	0	0	0	217	61	0	0	0	0	0	171
55+00	5500	50	49	0	20	0.0	0.0	0.0	83	0	32	0	0	0	300	101	0	0	0	0	0	214
55+50	5550	50	39	0	27	0.0	0.0	0.0	82	0	44	0	0	0	381	156	0	0	0	0	0	231
56+00	5600	50	19	0	61	0.0	0.0	0.0	53	0	82	0	0	0	435	257	0	0	0	0	0	182
56+50	5650	50	18	0	80	0.0	0.0	0.0	35	0	131	0	0	0	469	421	0	0	0	0	0	53
57+00	5700	50	18	0	94	0.0	0.0	0.0	33	0	162	0	0	0	503	623	0	0	0	0	0	-115
57+50	5750	50	26	0	43	0.0	0.0	0.0	41	0	127	0	0	0	544	782	0	0	0	0	0	-233
58+00	5800	50	19	0	51	0.0	0.0	0.0	42	0	88	0	0	0	585	892	0	0	0	0	0	-301
59+00	5900	100	47	0	87	0.0	0.0	0.0	173	0	321	0	0	0	758	1293	0	0	0	0	0	-529
59+50	5950	50	59	0	44	0.0	0.0	0.0	98	0	121	0	0	0	856	1444	0	0	0	0	0	-571
60+00	6000	50	128	0	28	0.0	0.0	0.0	173	0	67	0	0	0	1029	1527	0	0	0	0	0	-481
60+50	6050	50	159	0	48	0.0	0.0	0.0	266	0	70	0	0	0	1295	1615	0	0	0	0	0	-303
61+00	6100	50	97	0	66	0.0	0.0	0.0	237	0	106	0	0	0	1532	1747	0	0	0	0	0	-198
61+50	6150	50	52	0	66	0.0	0.0	0.0	138	0	123	0	0	0	1670	1900	0	0	0	0	0	-256
62+00	6200	50	56	0	51	0.0	0.0	0.0	100	0	108	0	0	0	1770	2035	0	0	0	0	0	-287
62+50	6250	50	30	0	41	0.0	0.0	0.0	80	0	85	0	0	0	1850	2141	0	0	0	0	0	-313
63+00	6300	50	14	0	41	0.0	0.0	0.0	41	0	76	0	0	0	1891	2236	0	0	0	0	0	-367
63+50	6350	50	16	0	34	0.0	0.0	0.0	28	0	70	0	0	0	1918	2323	0	0	0	0	0	-426
64+00	6400	50	13	0	32	0.0	0.0	0.0	27	0	62	0	0	0	1945	2400	0	0	0	0	0	-479
64+50	6450	50	18	0	30	0.0	0.0	0.0	29	0	57	0	0	0	1973	2471	0	0	0	0	0	-517
65+00	6500	50	12	0	40	0.0	0.0	0.0	28	0	64	0	0	0	2001	2552	0	0	0	0	0	-570
65+50	6550	50	11	0	37	0.0	0.0	0.0	21	0	72	0	0	0	1871	2231	0	0	0	0	0	-382
66+00	6600	50	10	0	34	0.0	0.0	0.0	20	0	66	0	0	0	1910	2318	0	0	0	0	0	-430
66+50	6650	50	9	0	19	0.0	0.0	0.0	18	0	48	0	0	0	1929	2379	0	0	0	0	0	-471
								Column totals	2061	0	2227	0	0	0								

Notes:	
1 - Cut	Cut includes Salvaged/Unusable Pavement material
2 - Salvaged/Unusable Pavement Material	This does not show up in cross sections
3 - Fill	Does not include Unusable Pavement Exc volume
4 - Expanded Marsh Backfill	Will be backfilled with Granular Backfill (or Cut, or Borrow)
5 - Expanded EBS	Will be backfilled with Granular Backfill (or Cut, or Borrow)
6 - Reduced Marsh in Fill	Reduced Marsh Excavation that can be used in Fill
7 - Reduced EBS in Fill	Reduced EBS Excavation that can be used in Fill
8 - Mass Ordinate	If Marsh or EBS to be backfilled with Cut or Borrow: [(Cut + Marsh Exc + EBS) - ((Fill - Reduced Marsh in Fill) - (Reduced EBS in Fill) - Expanded Rock) * Fill Factor)]

9

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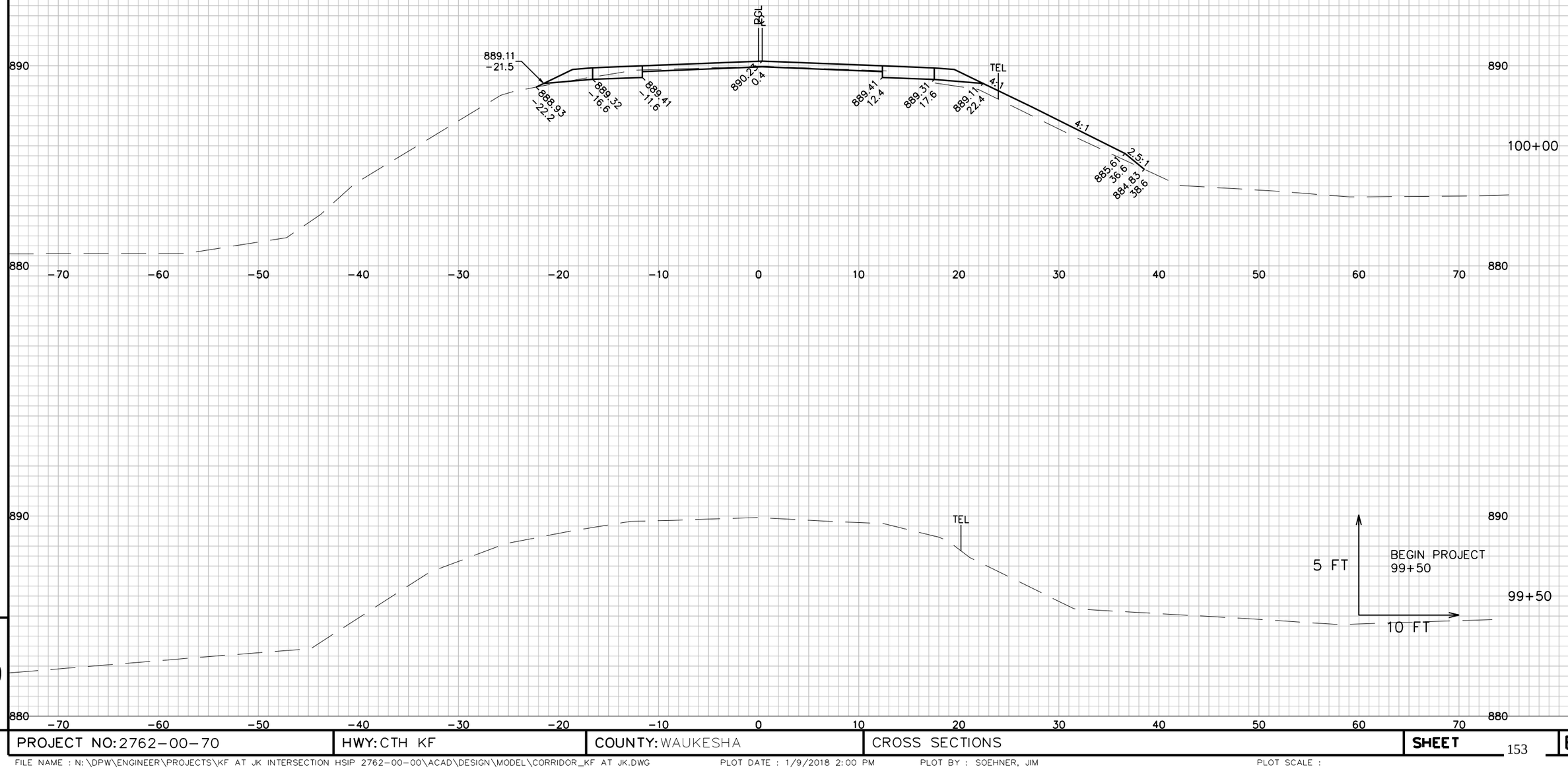
PROJECT NO: 2762-00-70 | HWY: CTH KF | COUNTY: WAUKESHA | EARTHWORK CTH JK | SHEET 152 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 10/2/2017 7:02 AM PLOT BY : SOEHNER, JIM PLOT SCALE :



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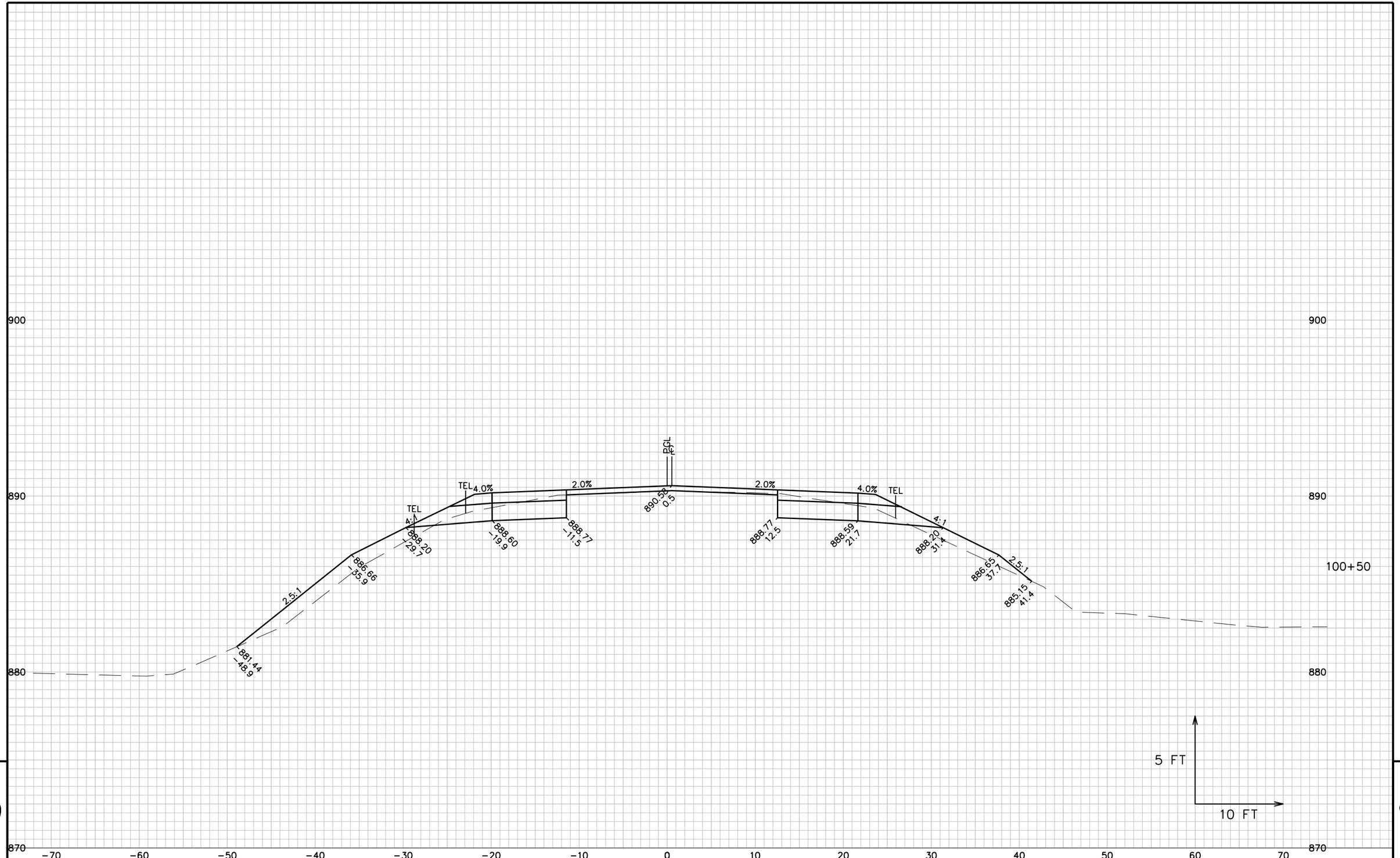
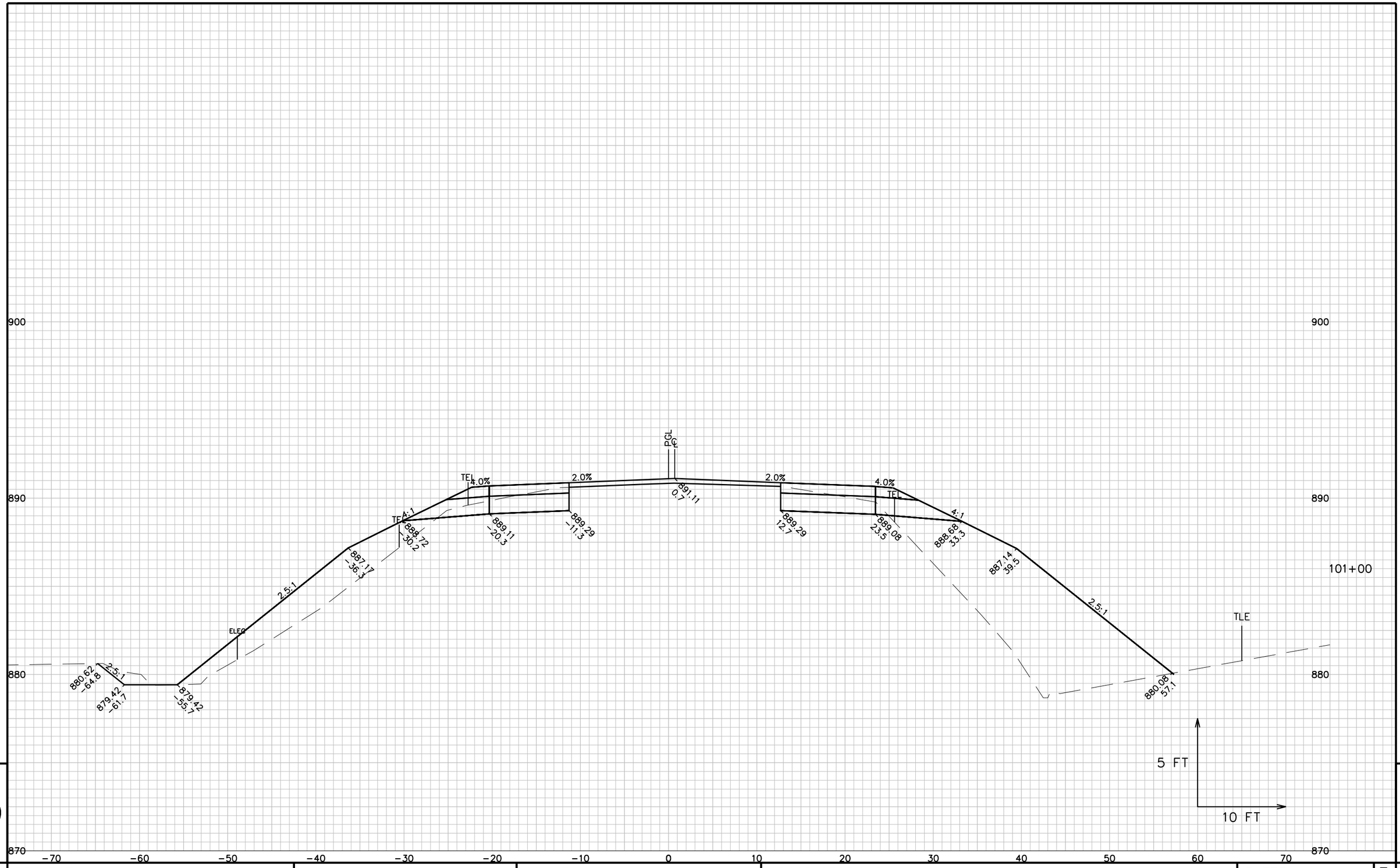
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 153	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:00 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



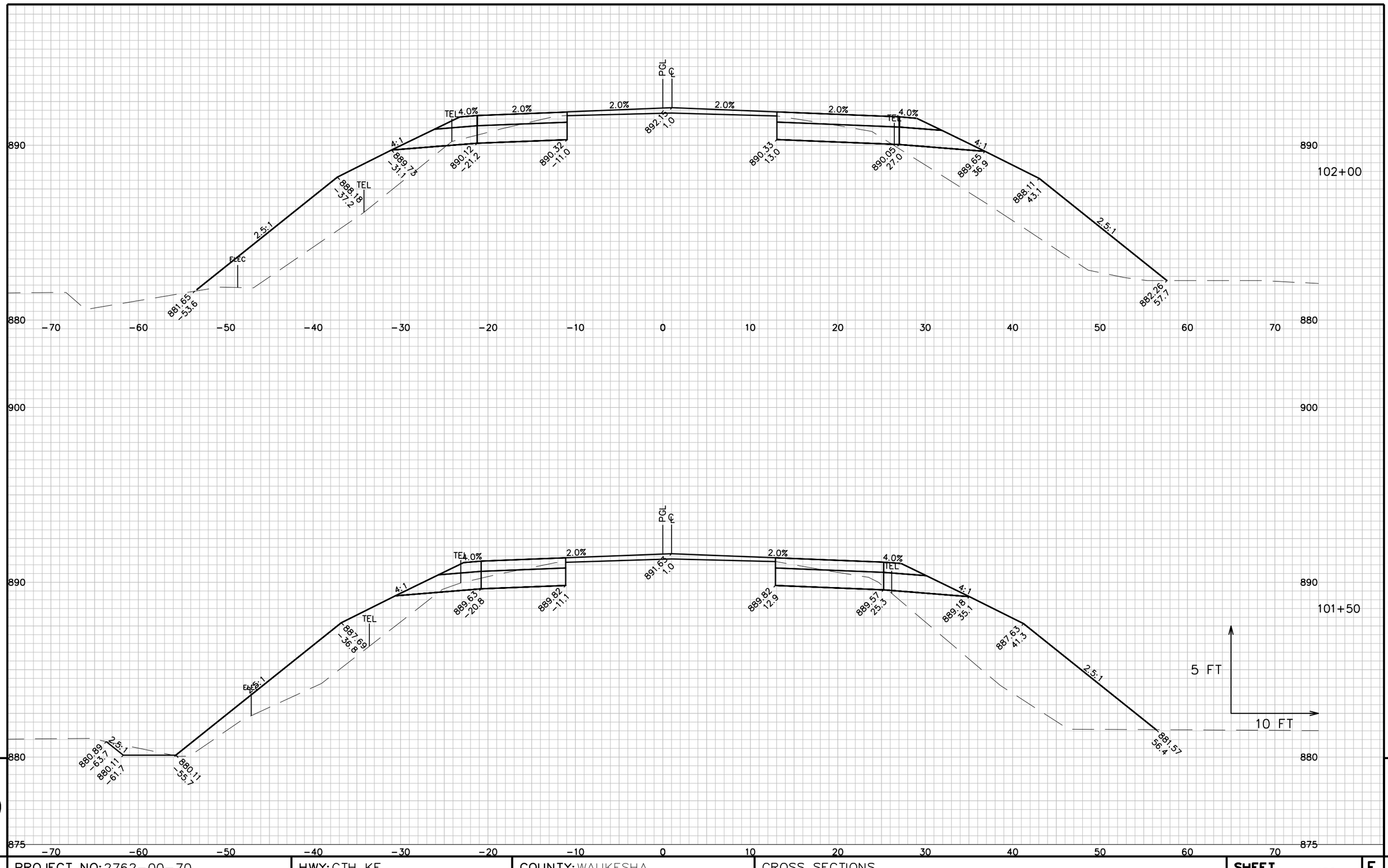
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 154 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:00 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 155 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 156 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

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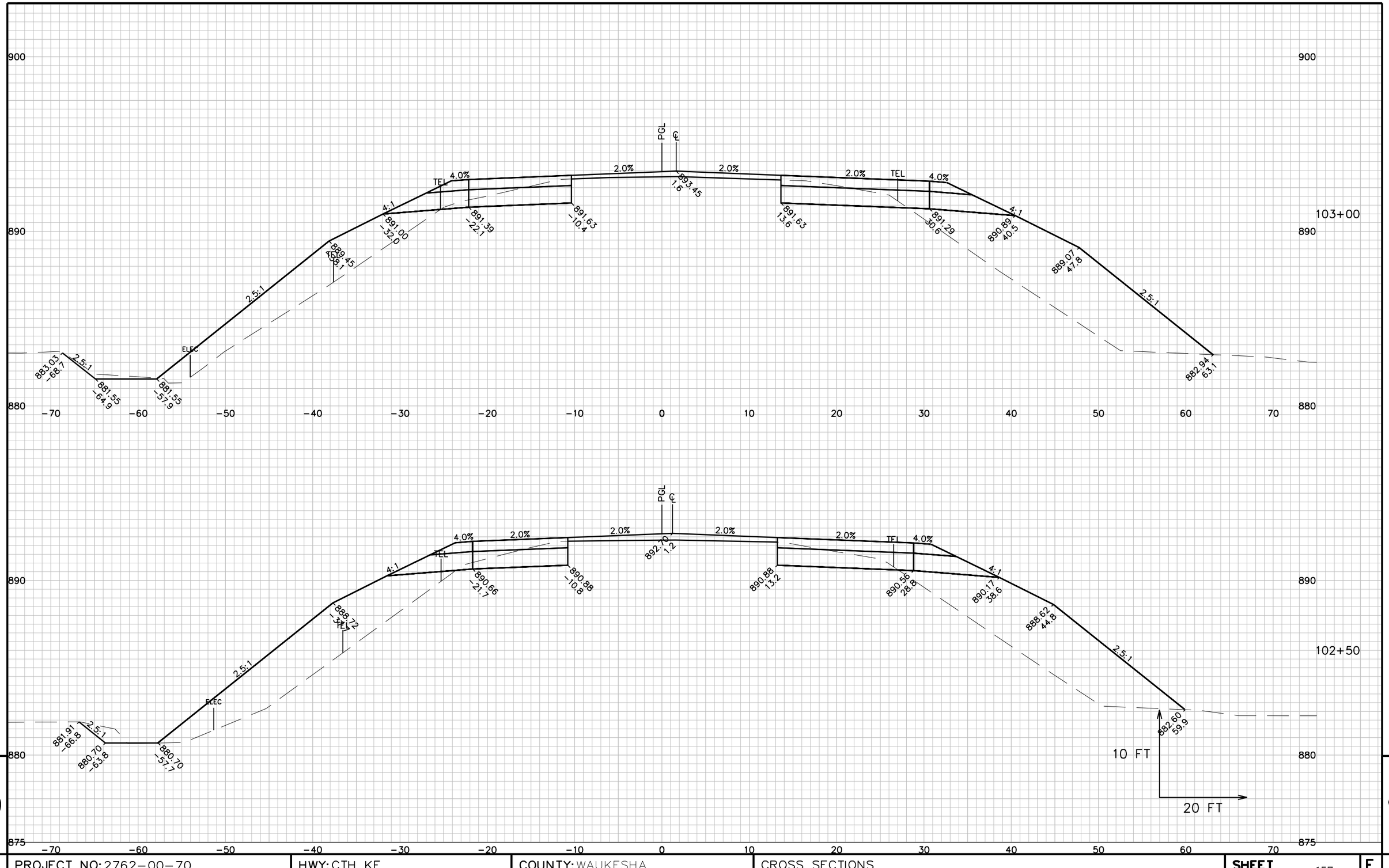
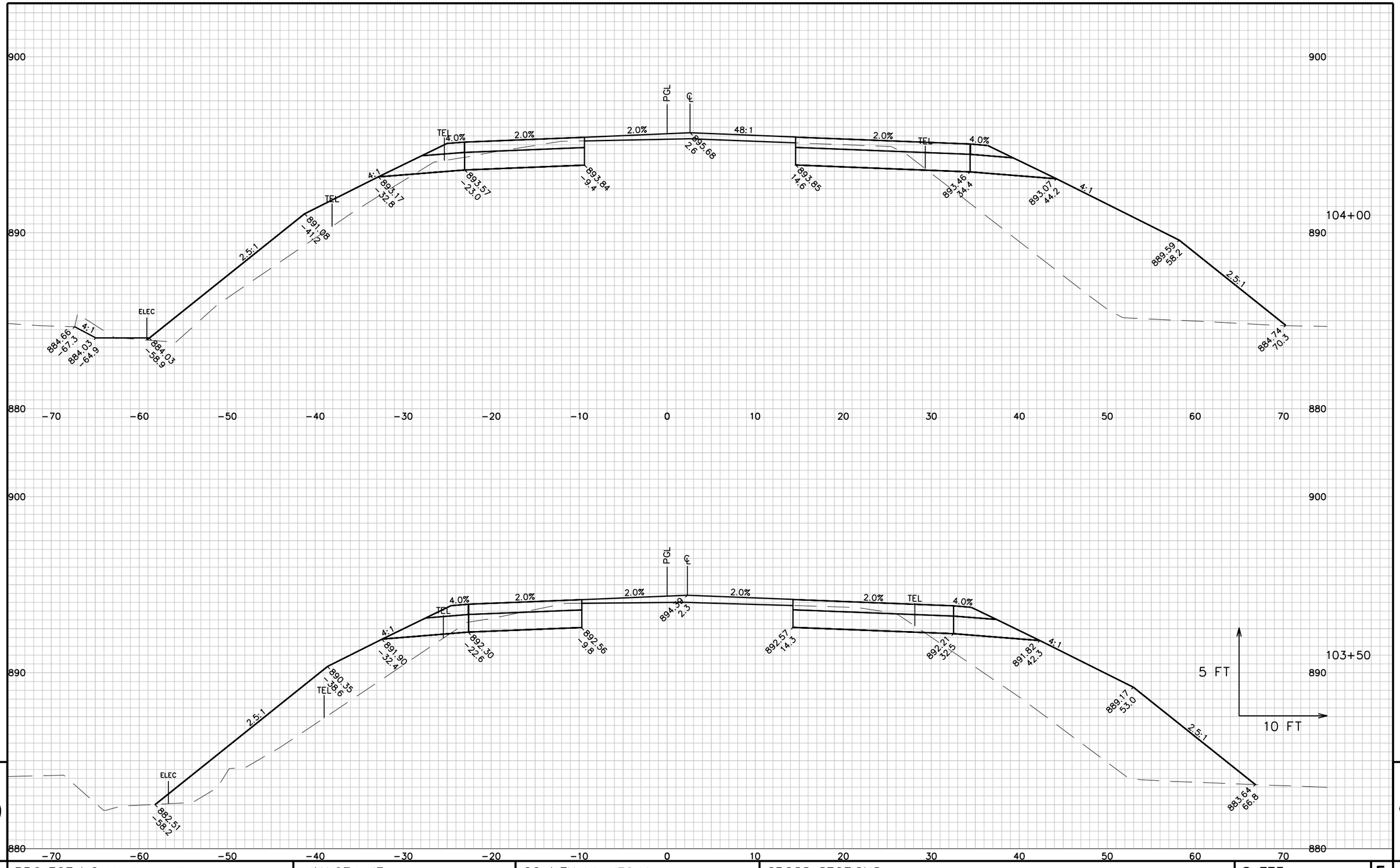


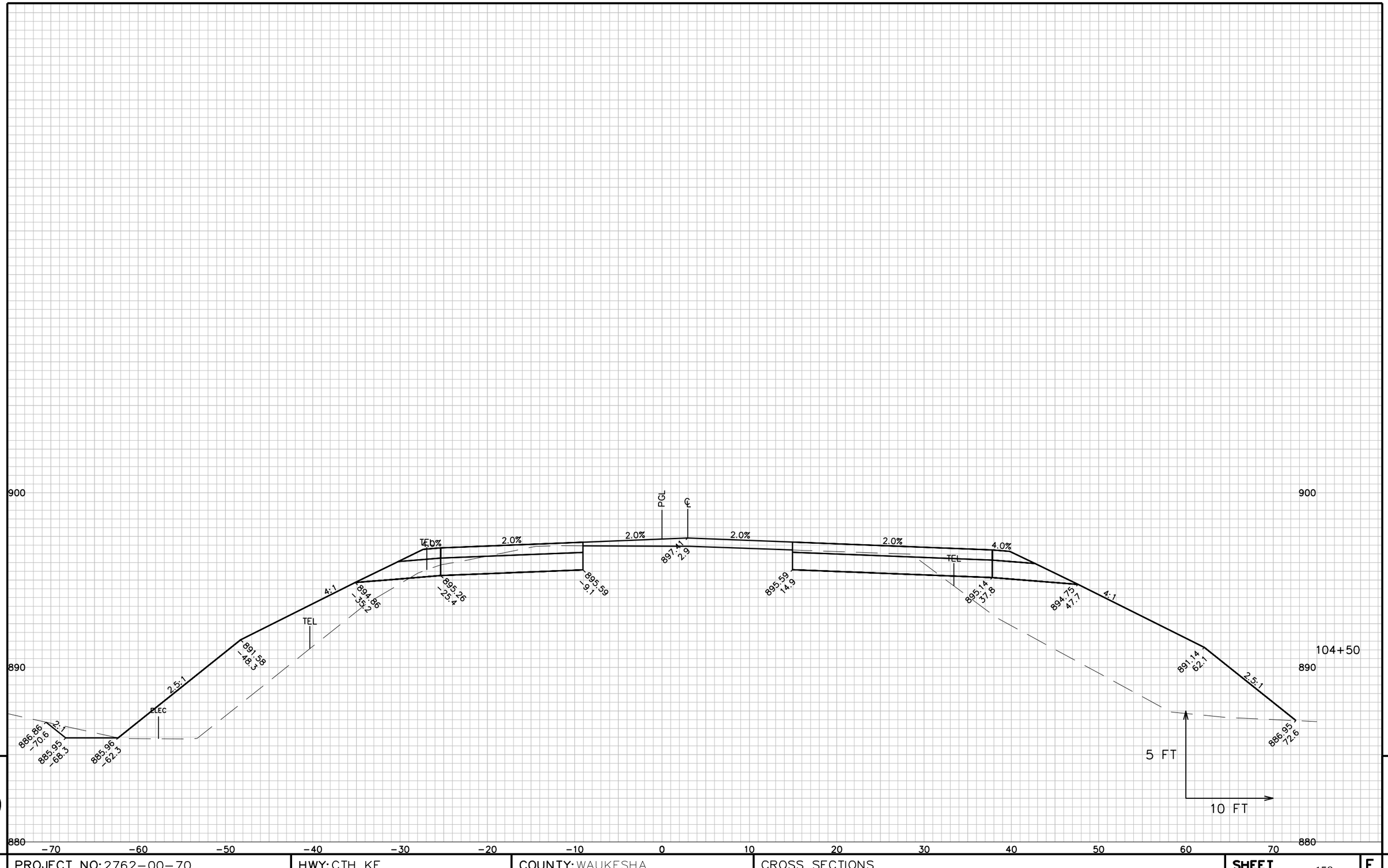
PROJECT NO: 2762−00−70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 157 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762−00−00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



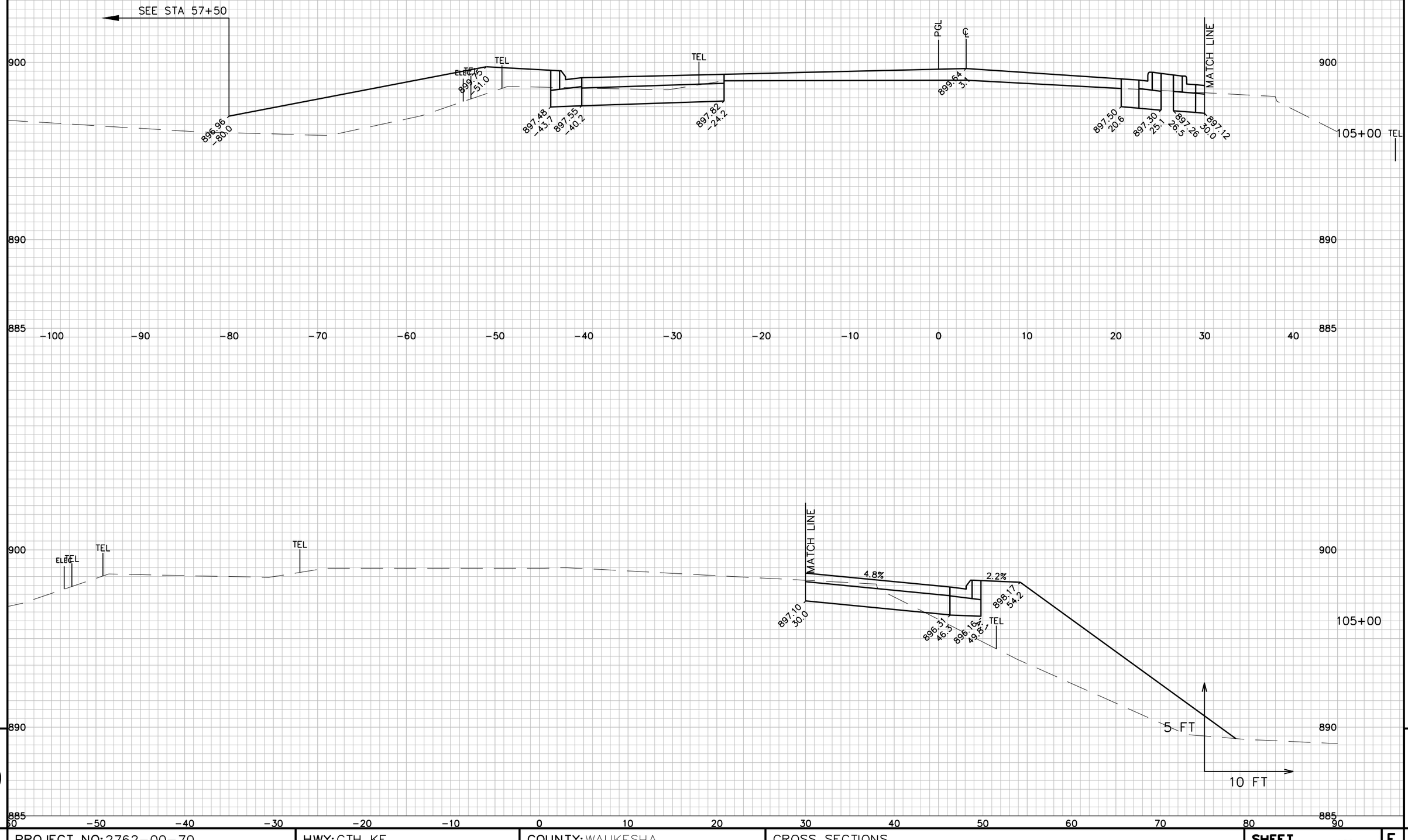
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 158 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



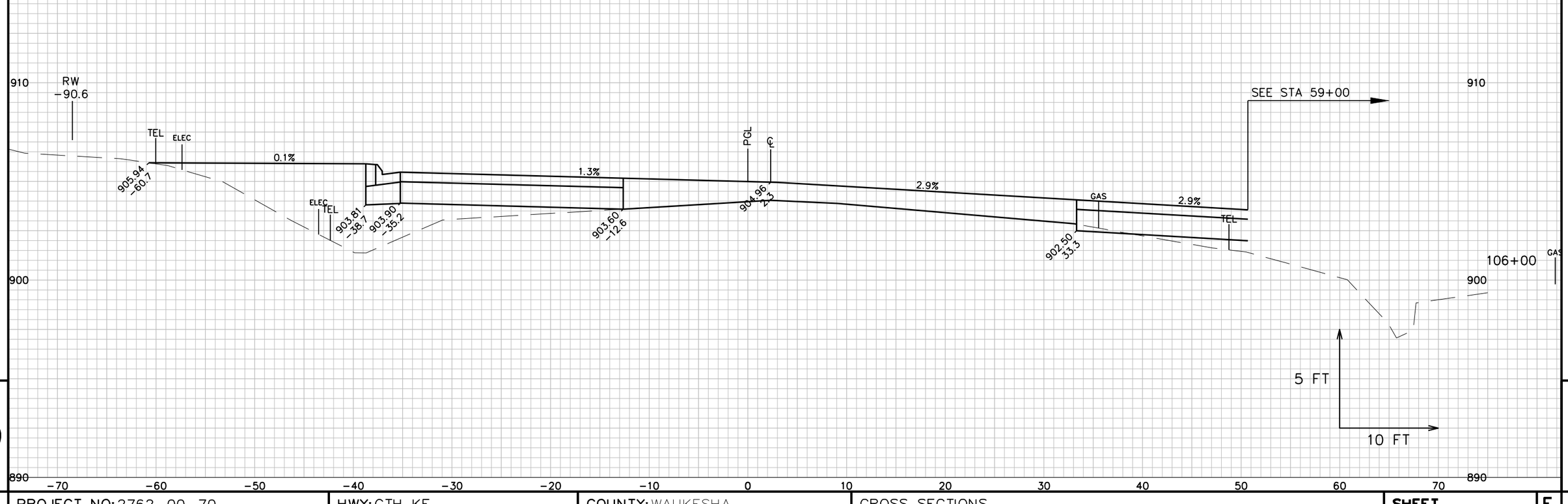
PROJECT NO: 2762−00−70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 159 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 160 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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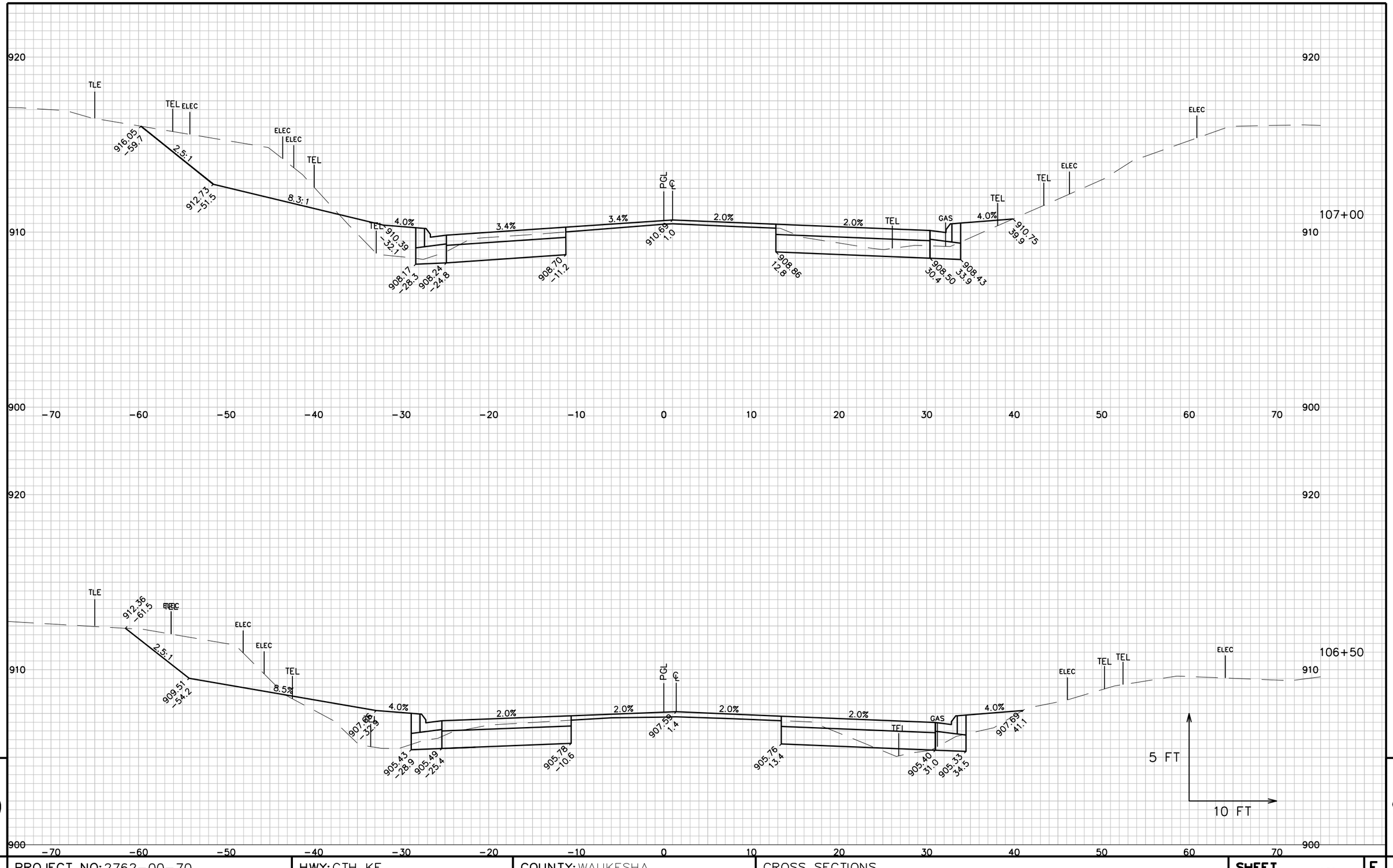
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 161 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

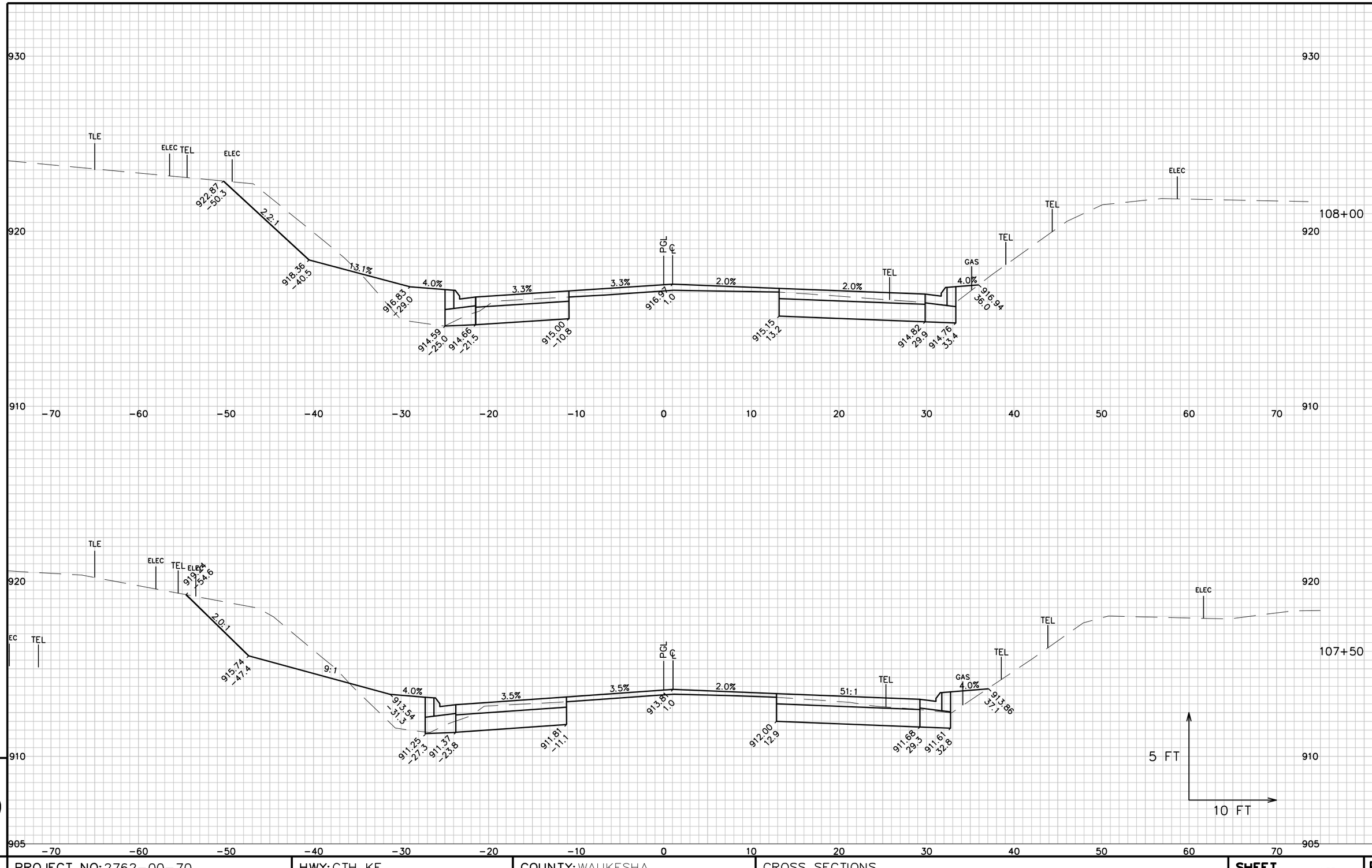


9

9

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 162 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 163 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

940 940

930 930

920 920

910 910

108+50

ELEC TEL ELEC

ELEC TEL TEL GAS TEL

PGL

℄

4.0% 3.2% 3.2% 2.0% 2.0% 4.0%

919.79 −32.8

917.46 −26.5

917.53 −23.0

917.93 −10.5

919.89 1.4

918.06 13.5

917.76 28.8

917.68 32.3

919.84 36.3

5 FT

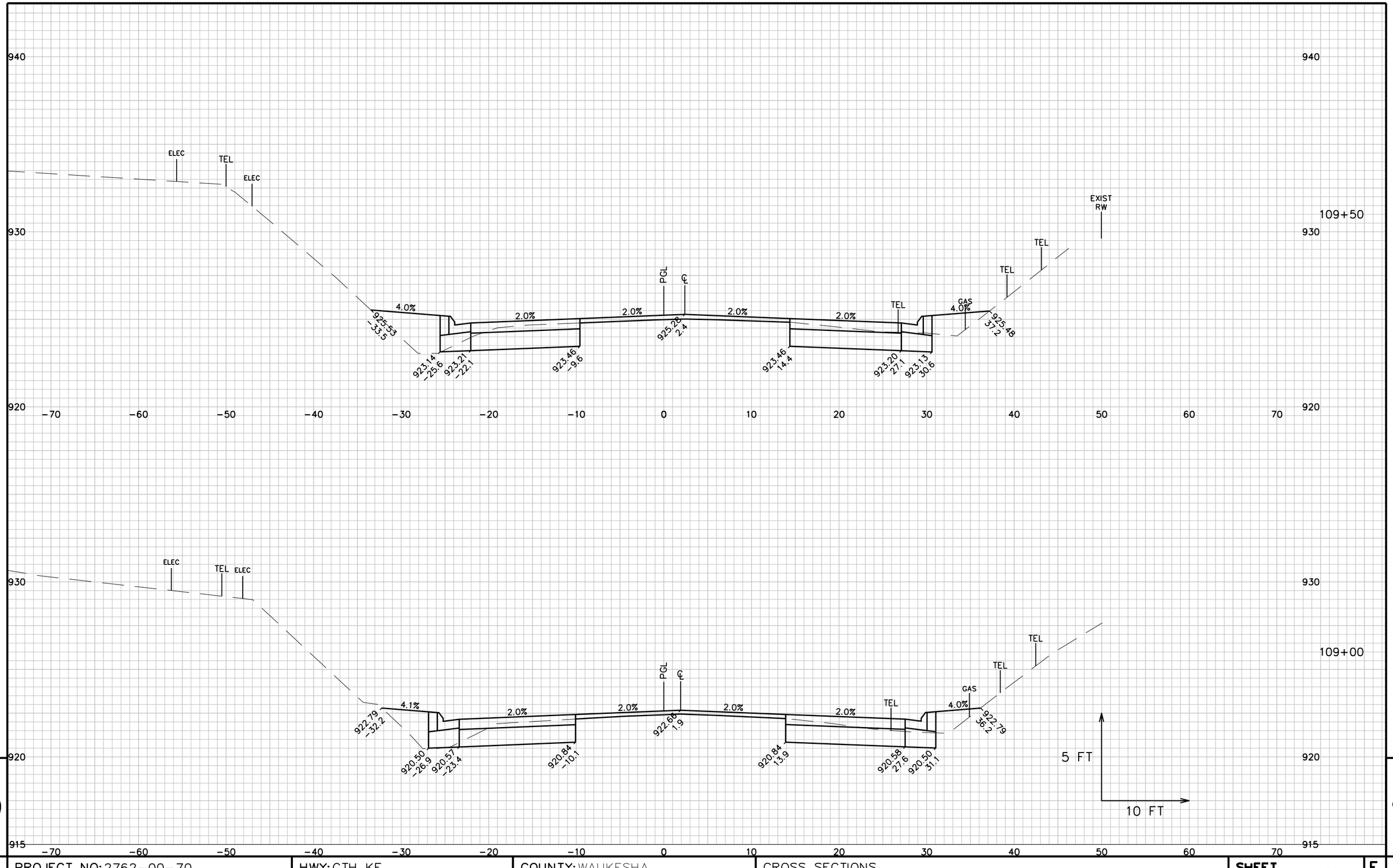
10 FT

−70 −60 −50 −40 −30 −20 −10 0 10 20 30 40 50 60 70

9 9

PROJECT NO: 2762−00−70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 164	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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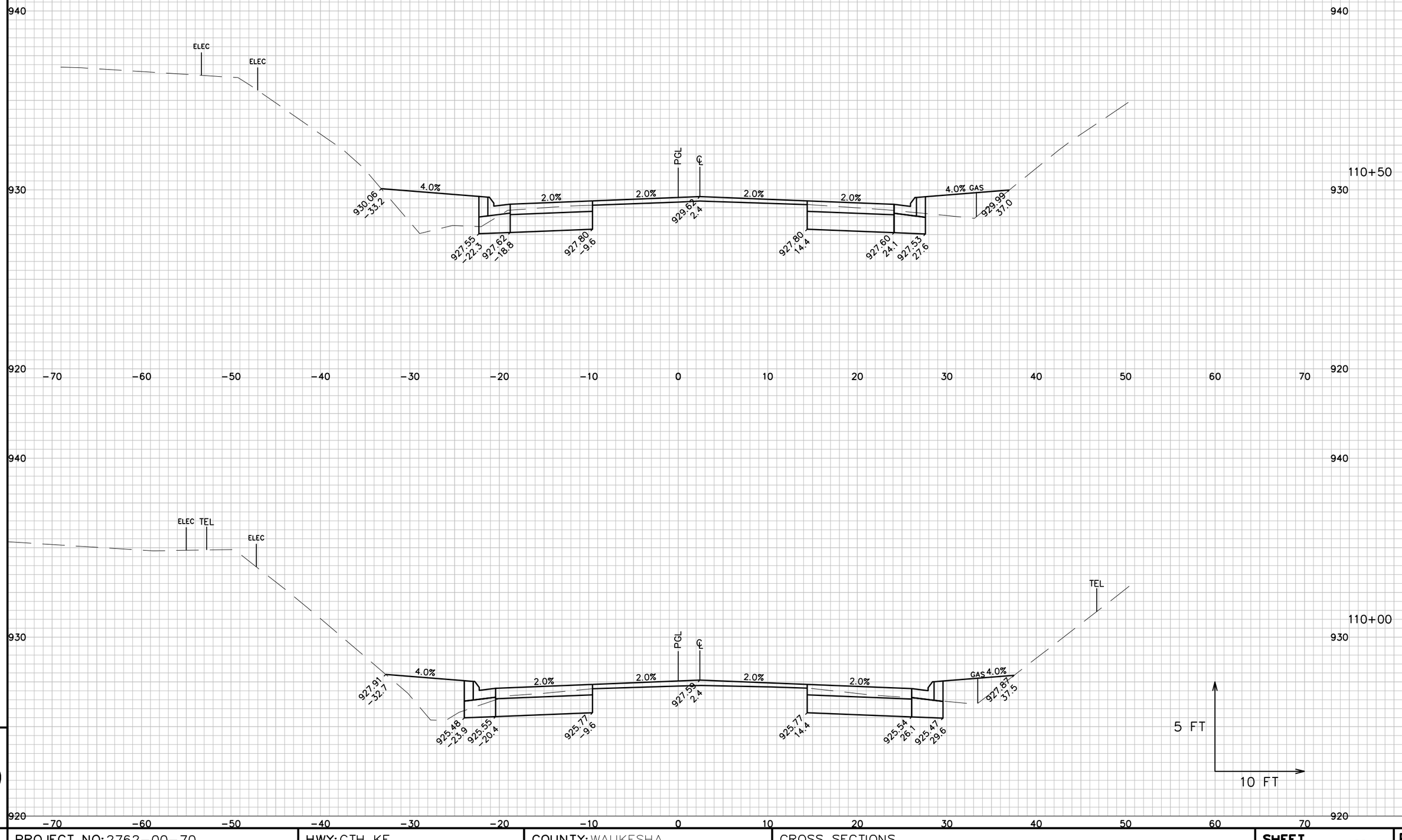
9

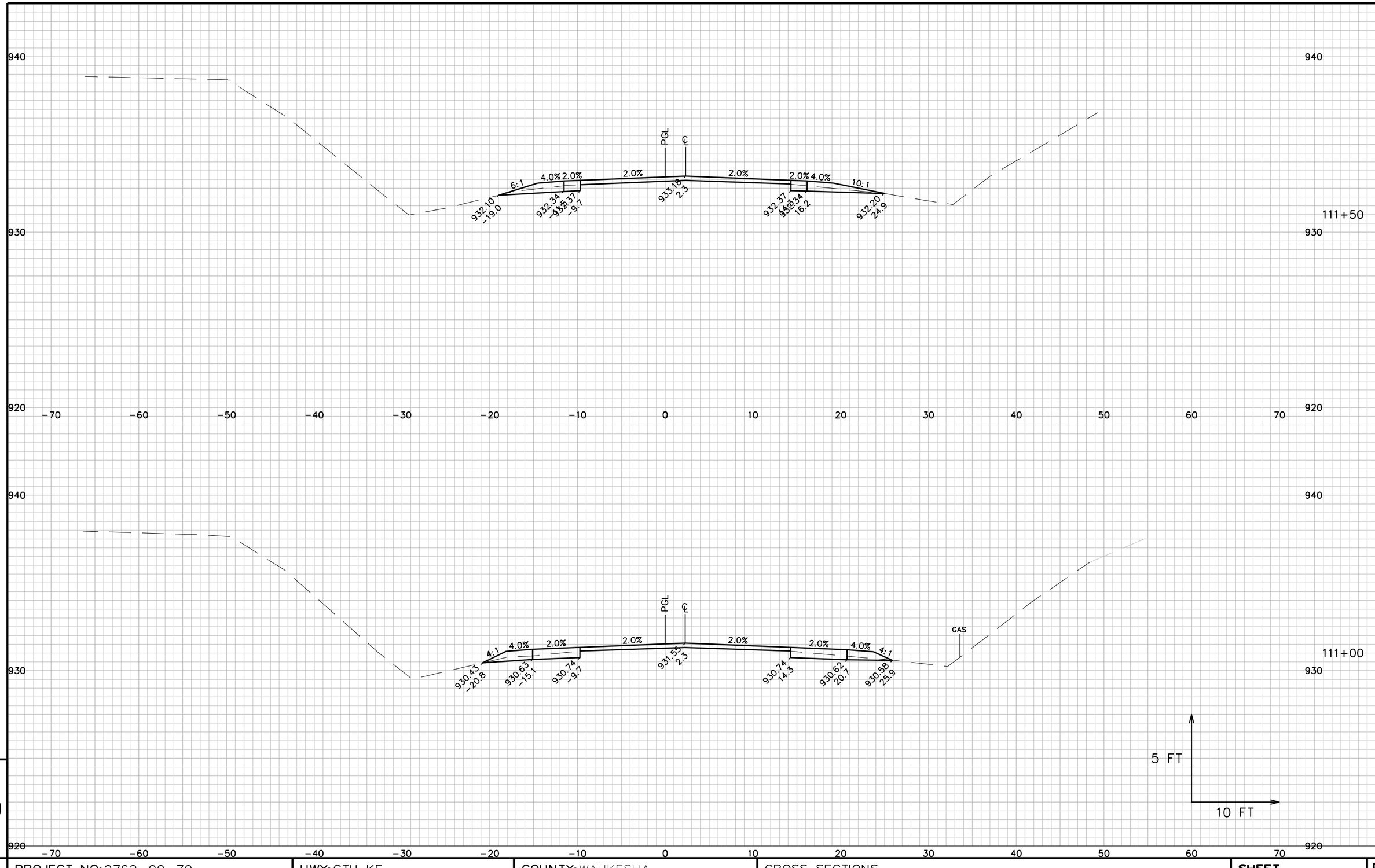
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 166 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762−00−70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 167 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:01 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

END PROJECT
111+70

940

940

112+00

5 FT

10 FT

℄

930

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

930

9

9

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 168	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

900

890

880

TEL TEL

GAS

TEL

51+50

BEGIN CONSTRUCTION
51+98

−70 −60 −50 −40 −30 −20 −10 0 10 20 30 40 50 60 70

5 FT

10 FT

9

9

PROJECT NO: 2762−00−70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 169	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762−00−00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

910

900

890

880

ELEC

TEL

TEL

GAS

894.41
-10.9

PGL

℄

895.16
1.5

894.00
16.8

TEL

52+00

5 FT

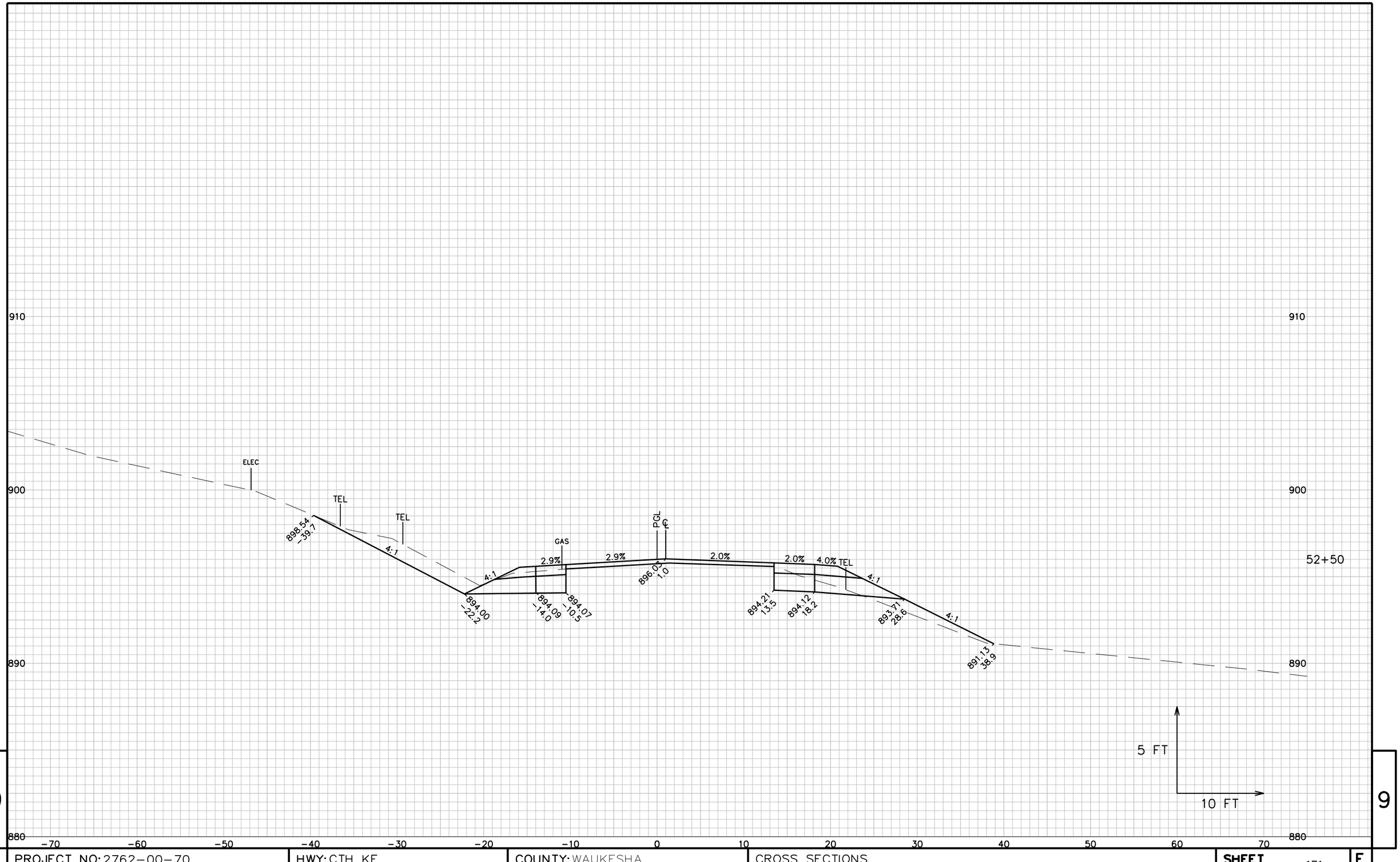
10 FT

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

9

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 170	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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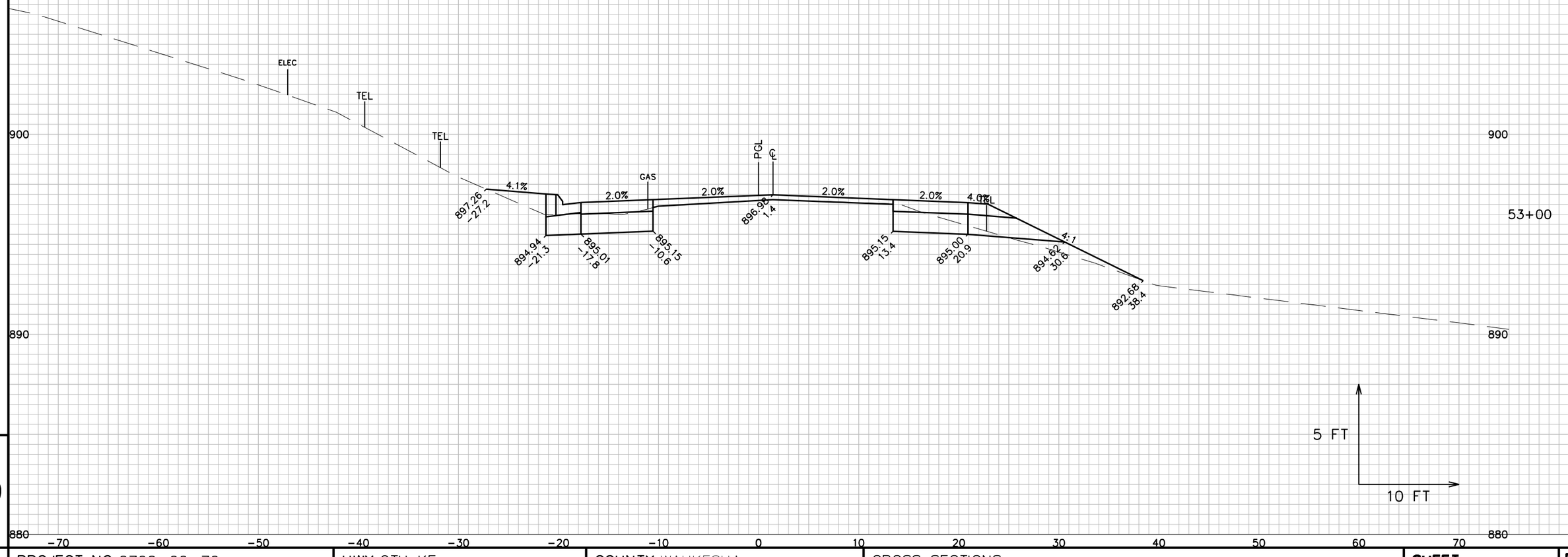
9

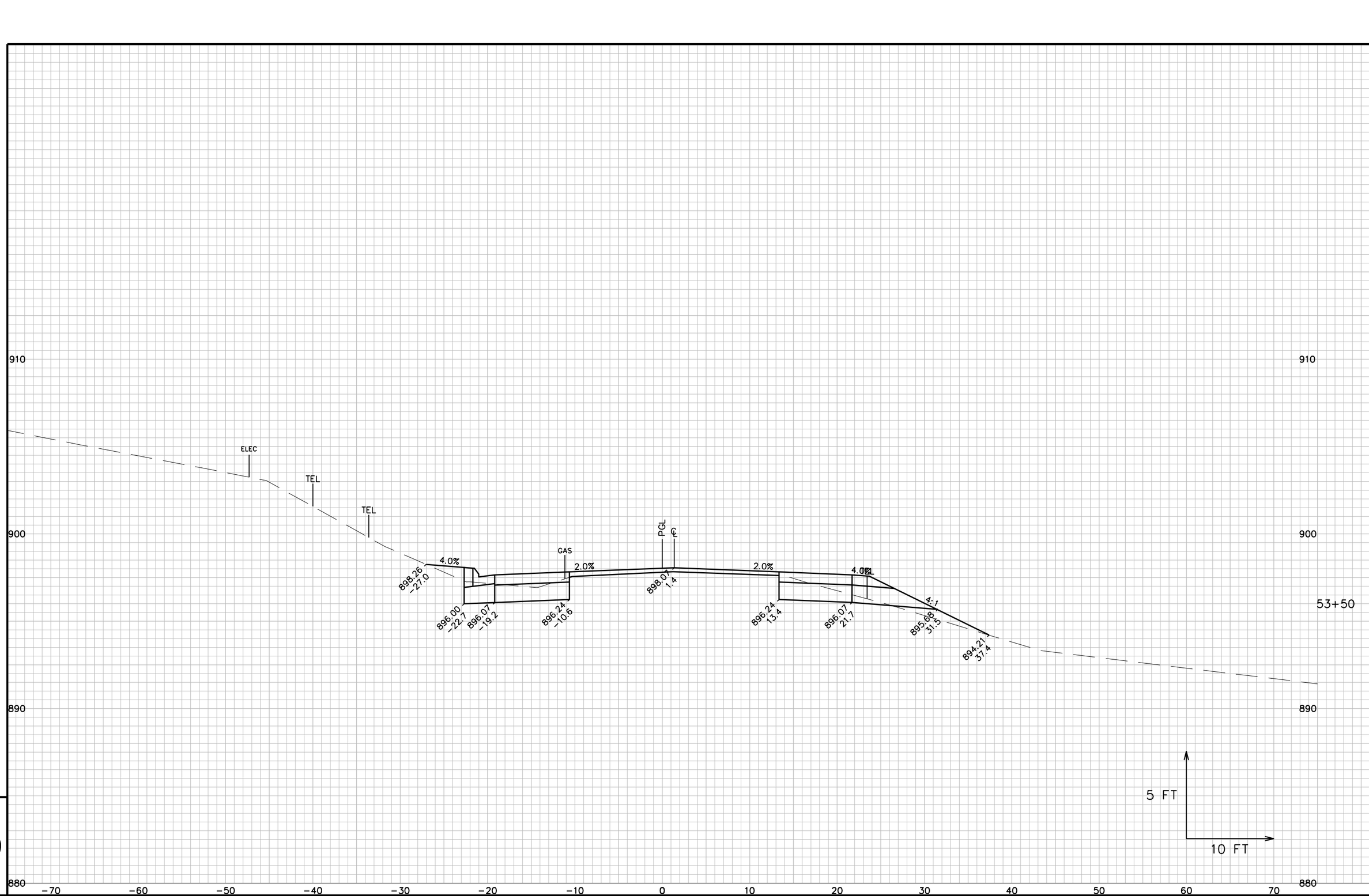
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



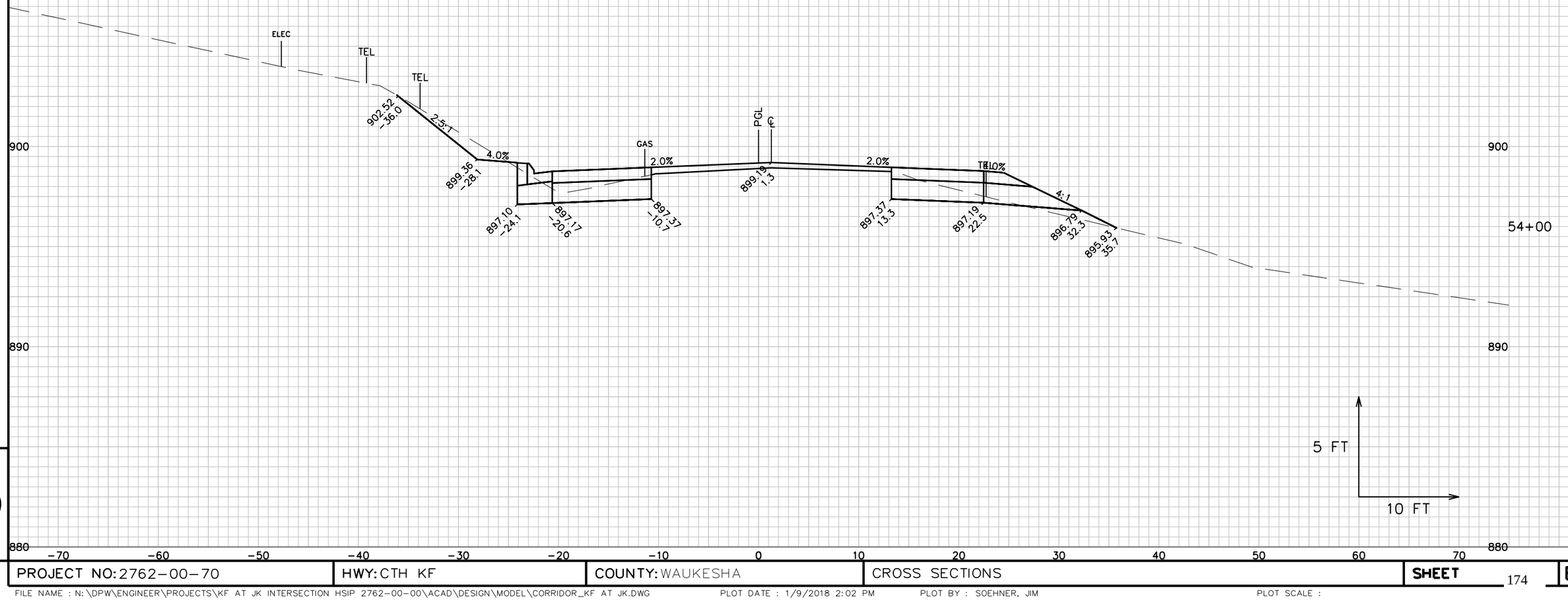
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 173 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

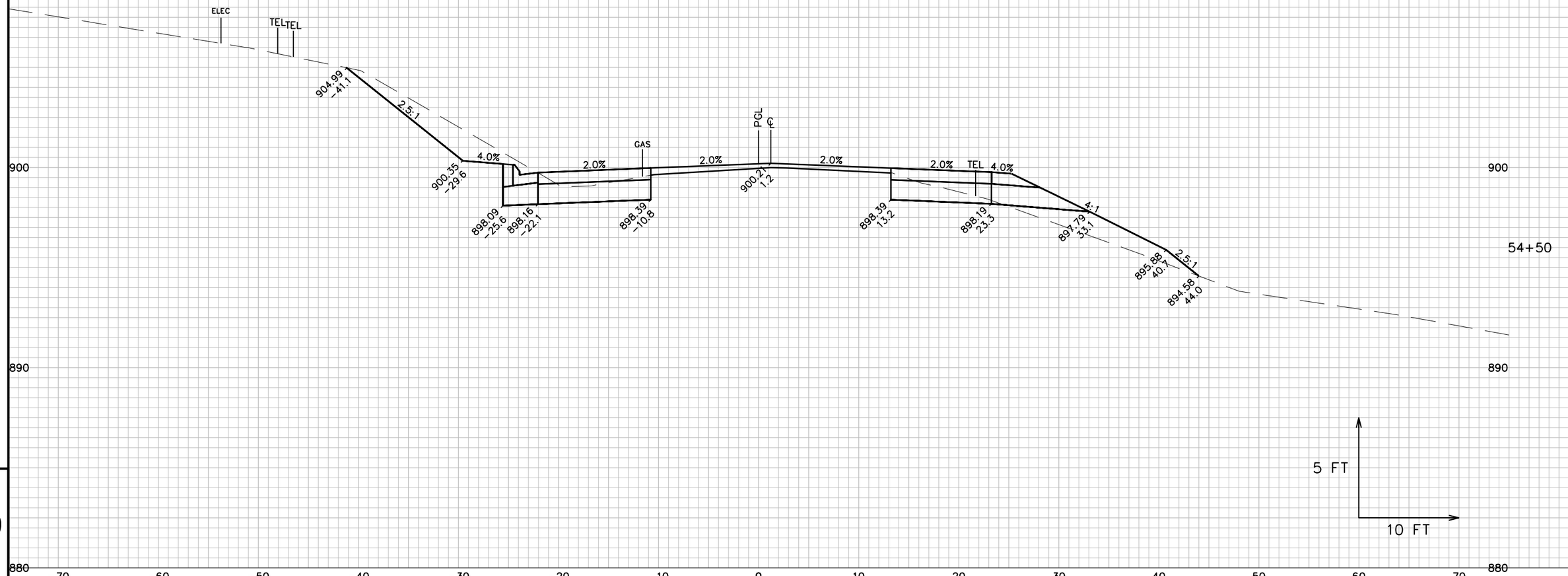


9

9

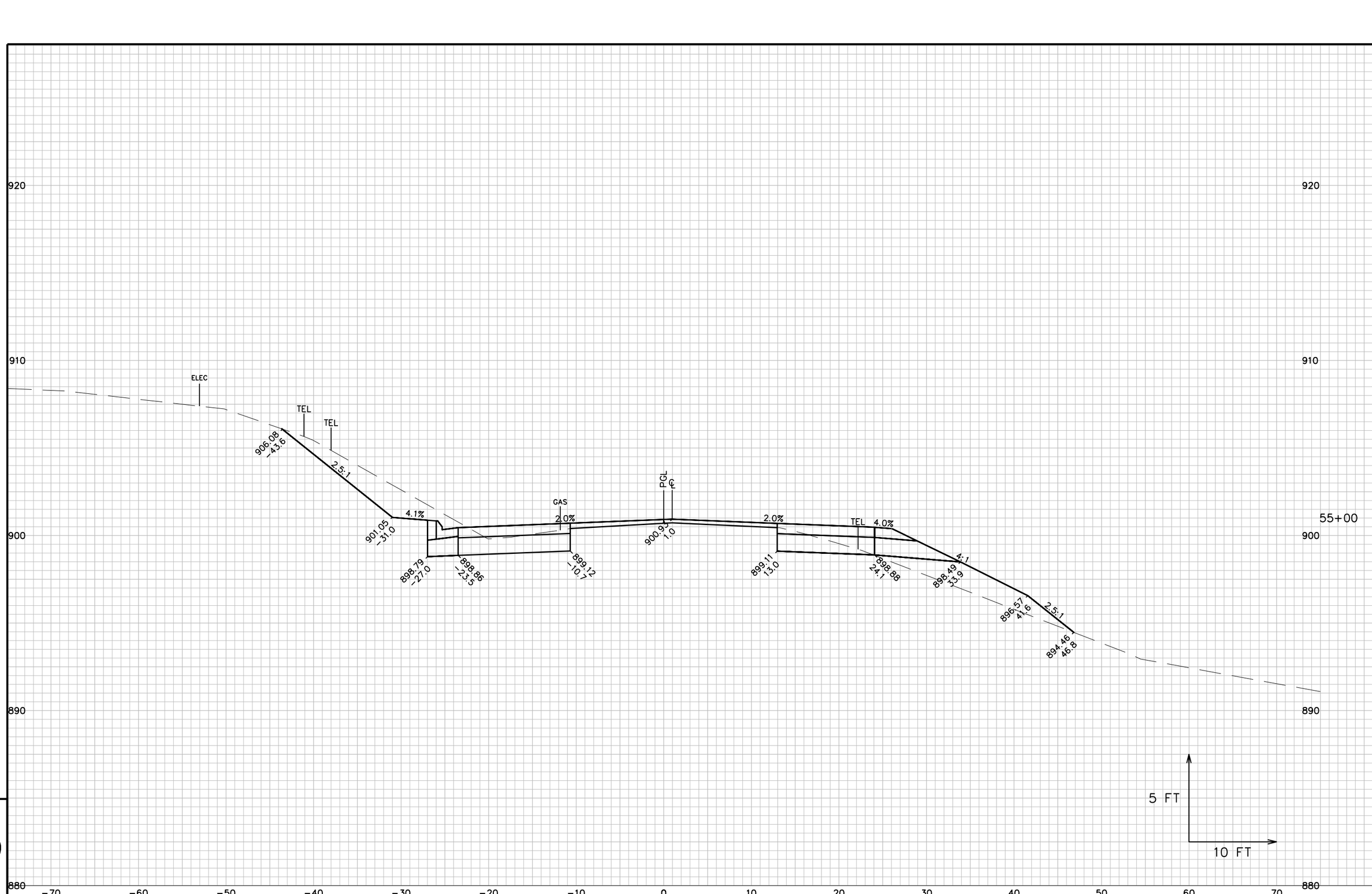
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 174	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



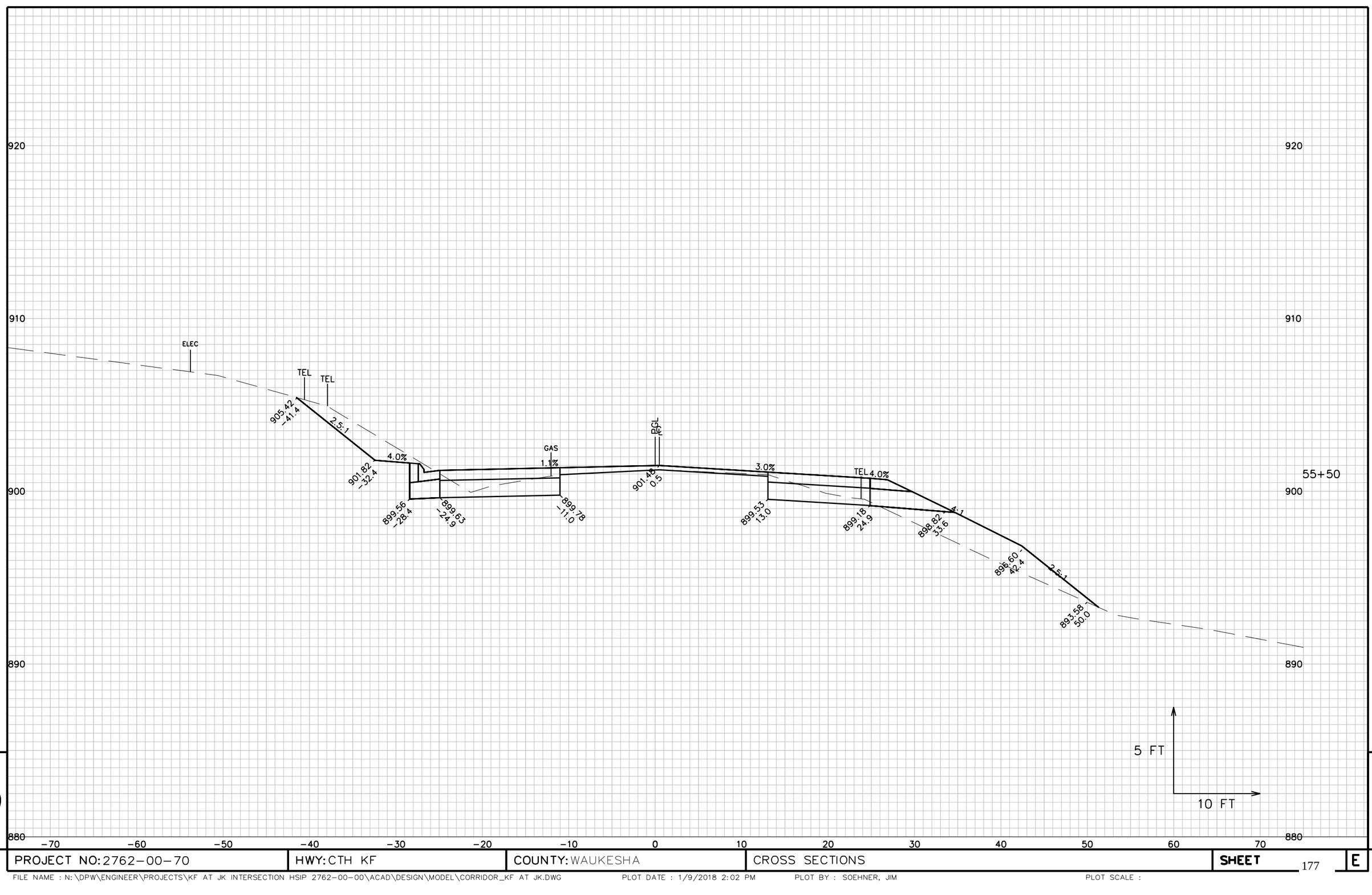
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 175	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



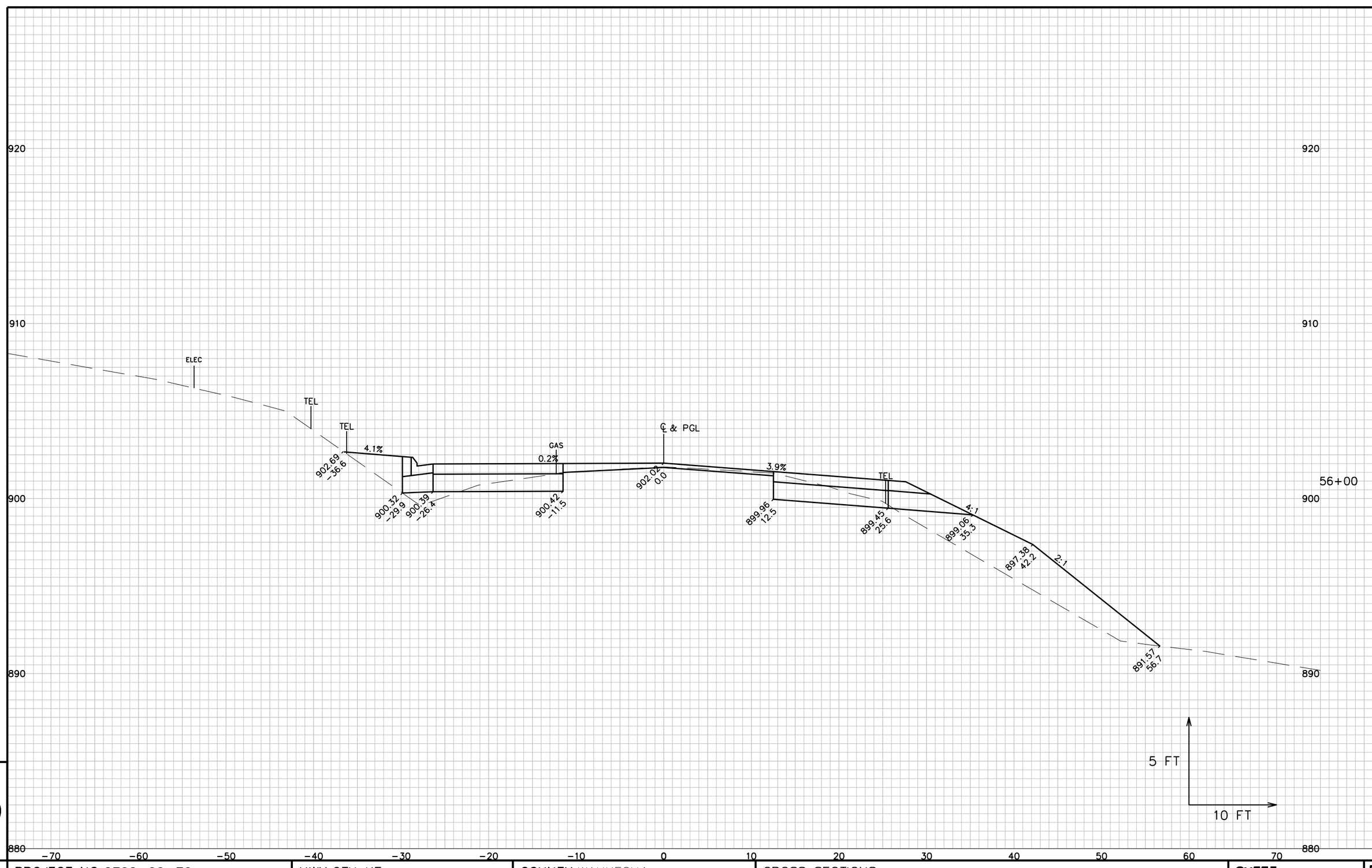
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 176 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 177	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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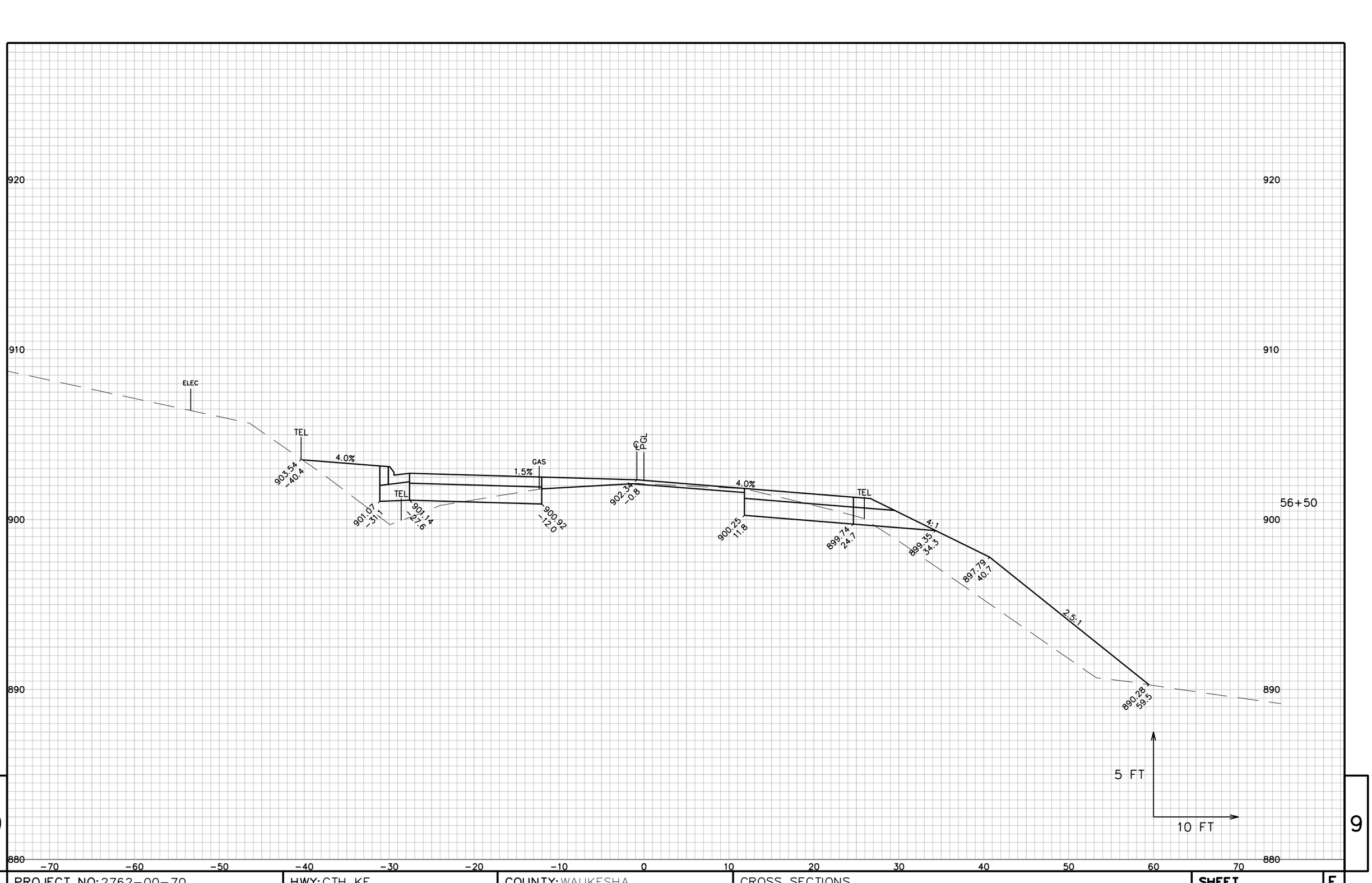
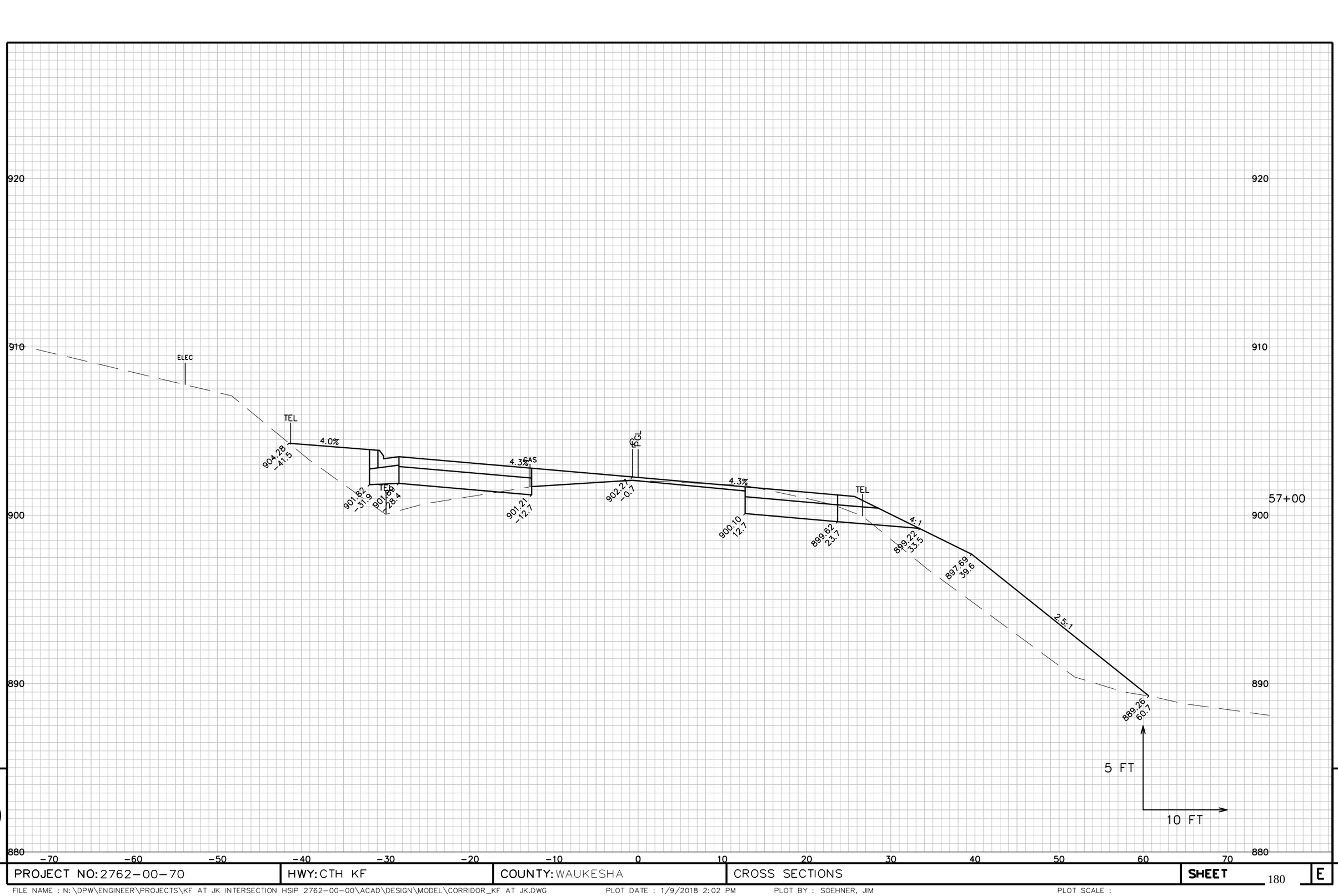
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 178	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



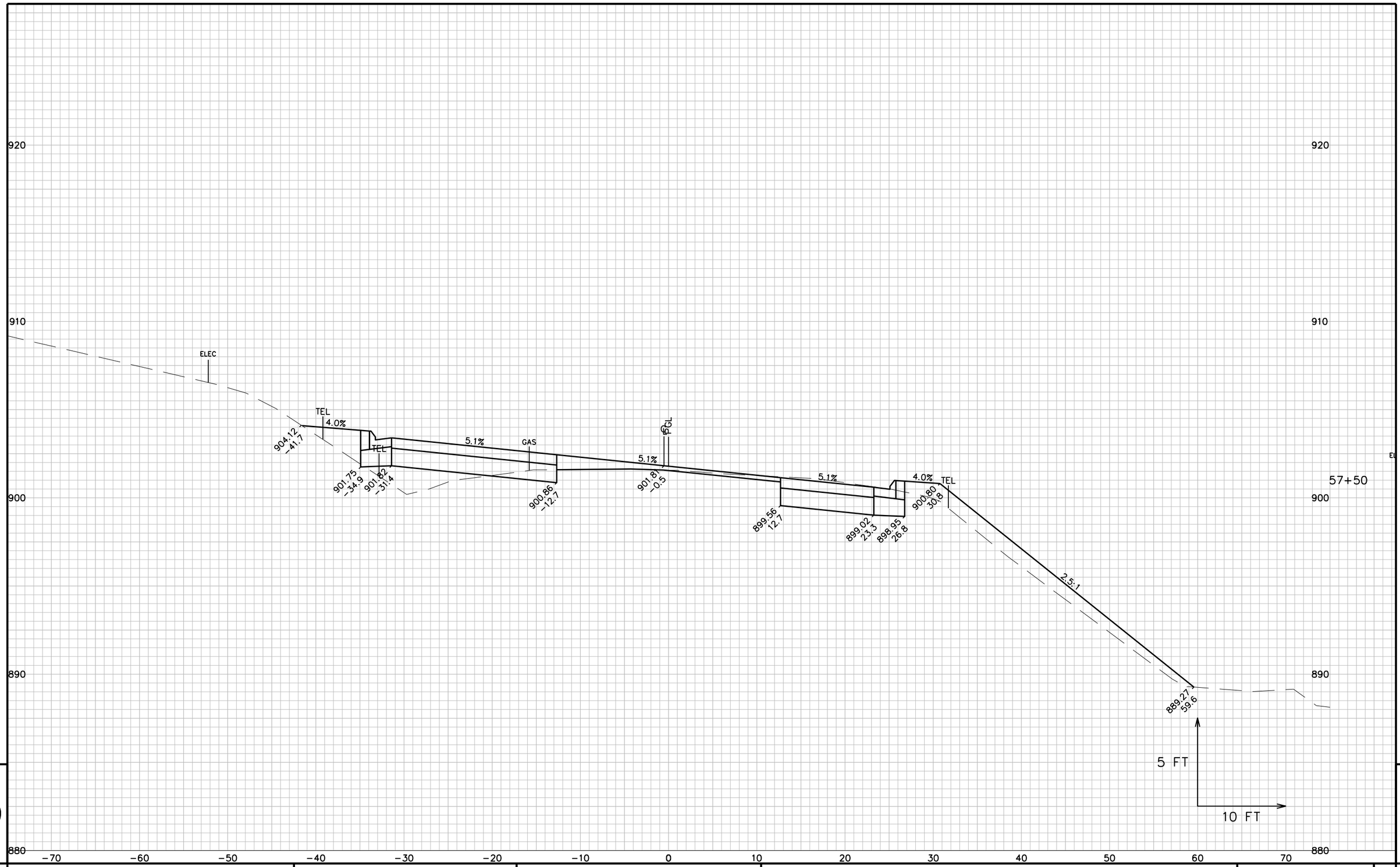
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 179	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



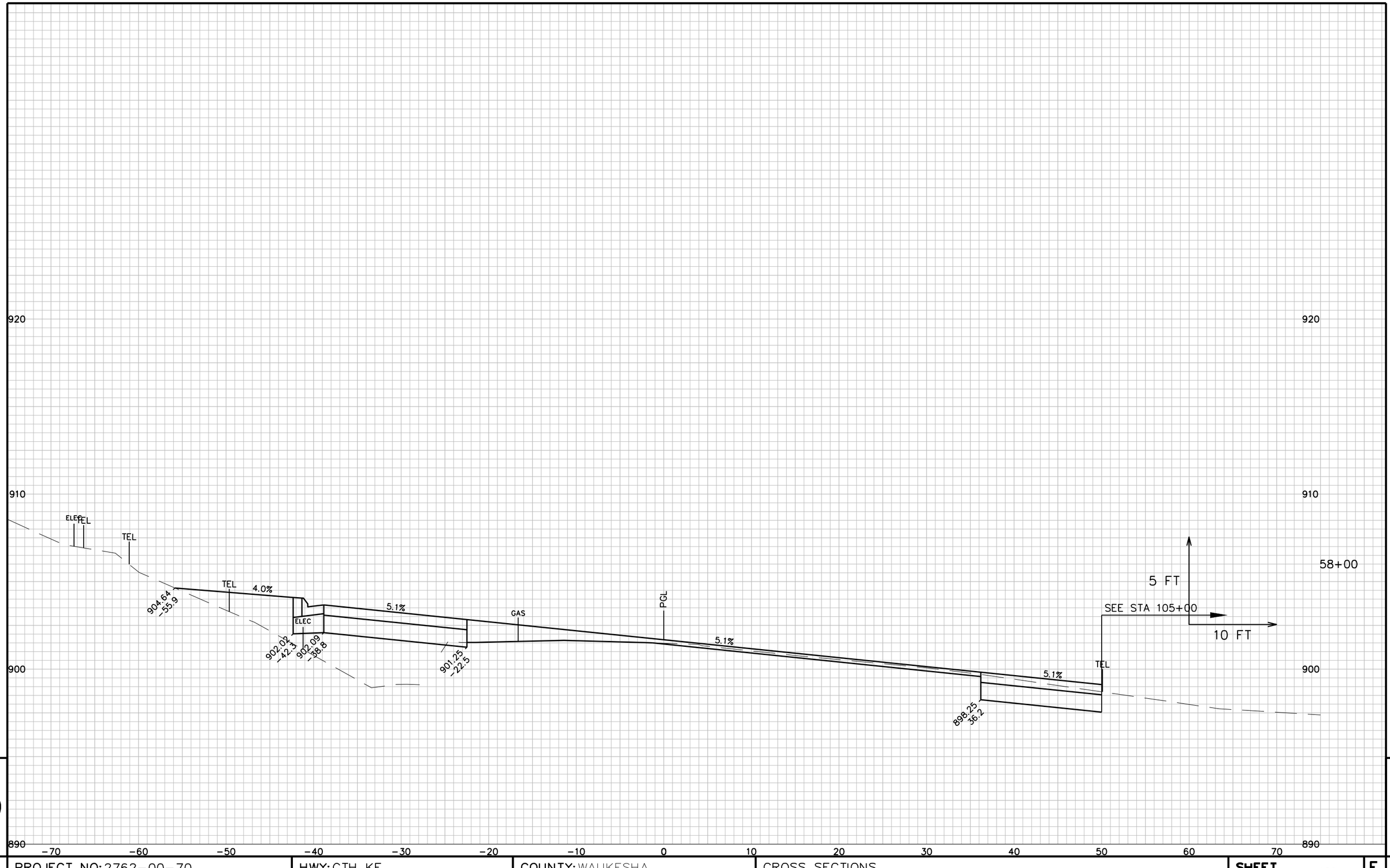
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:02 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 181 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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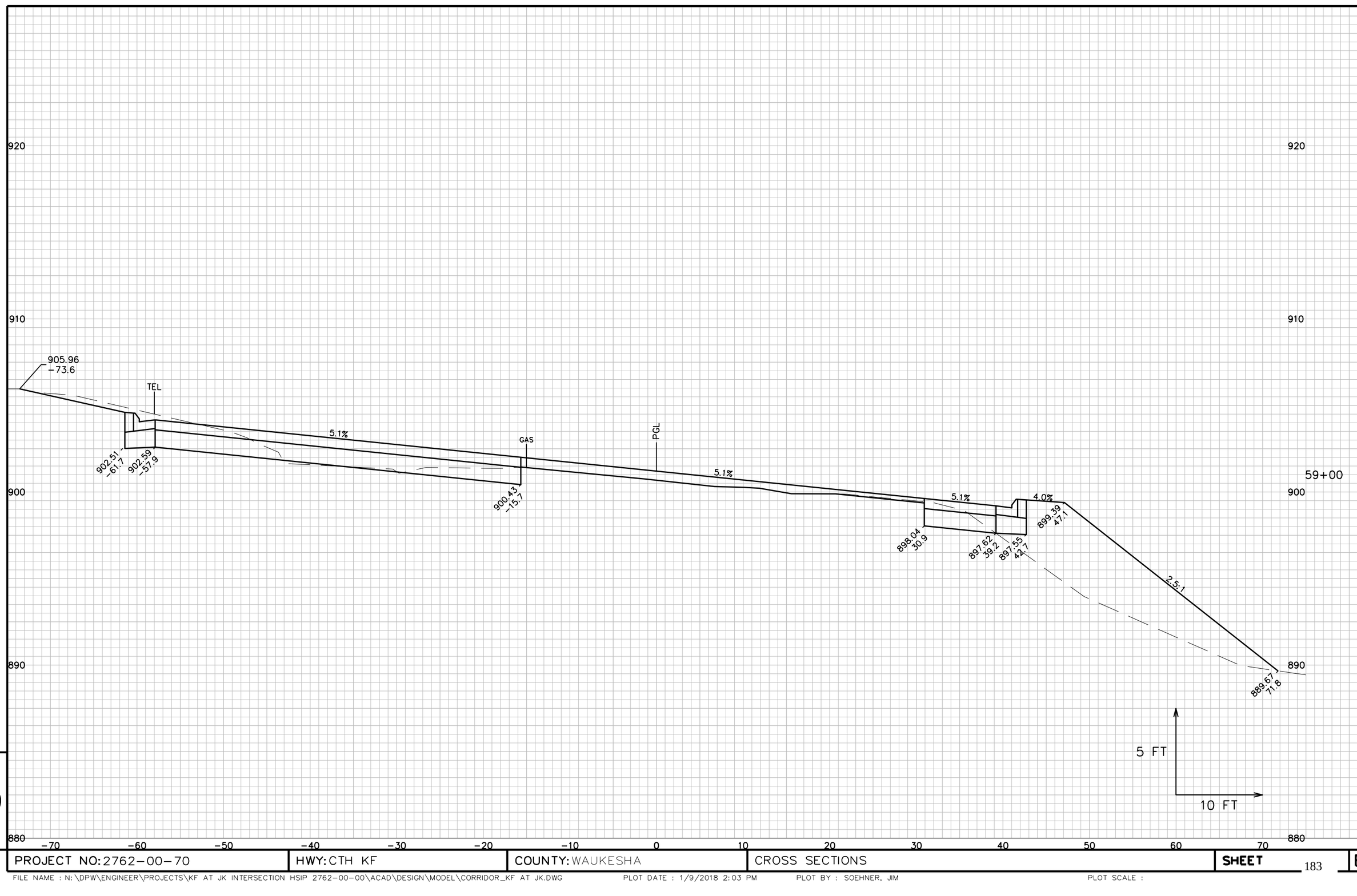
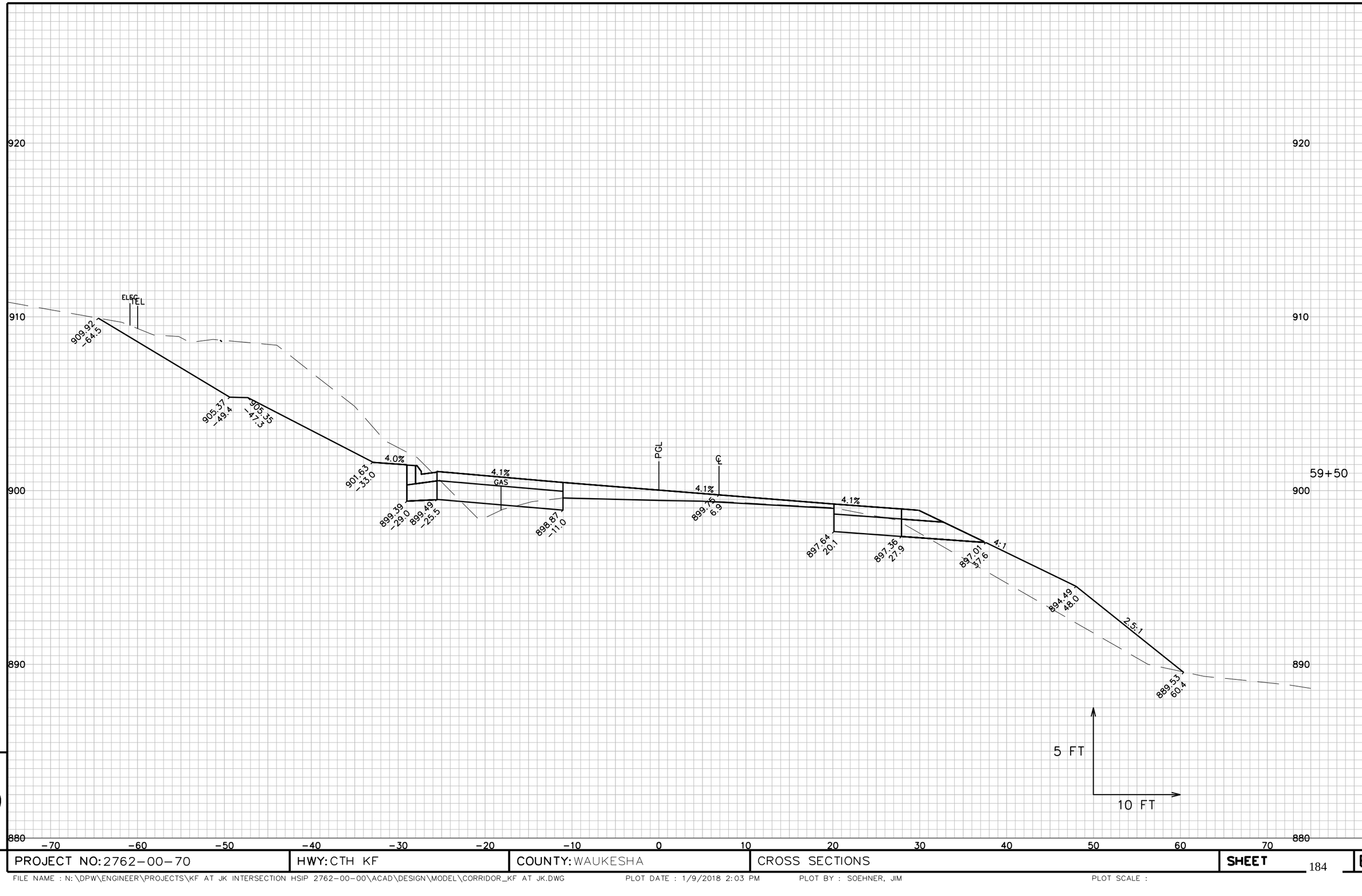
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 182	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 183	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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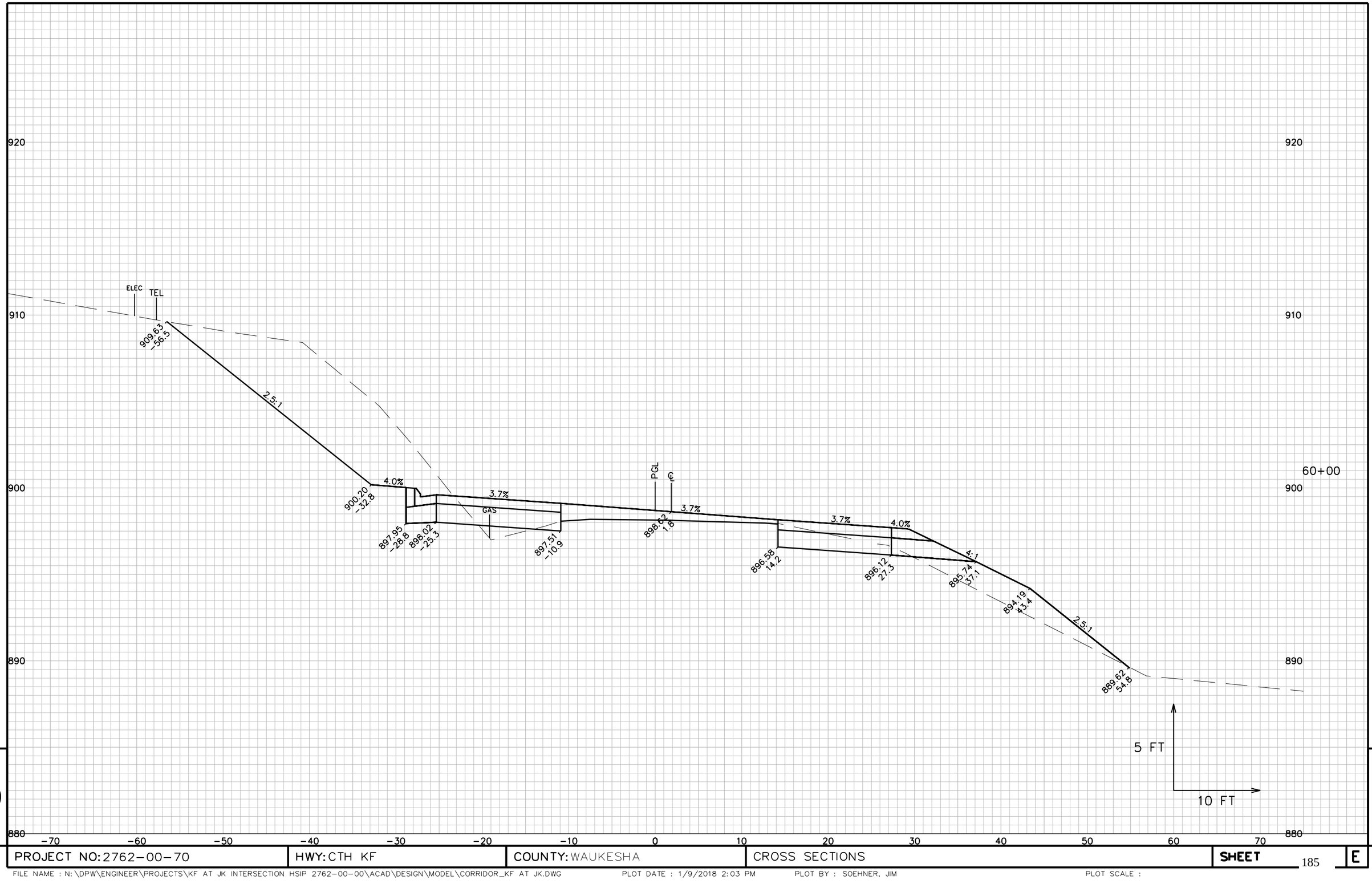
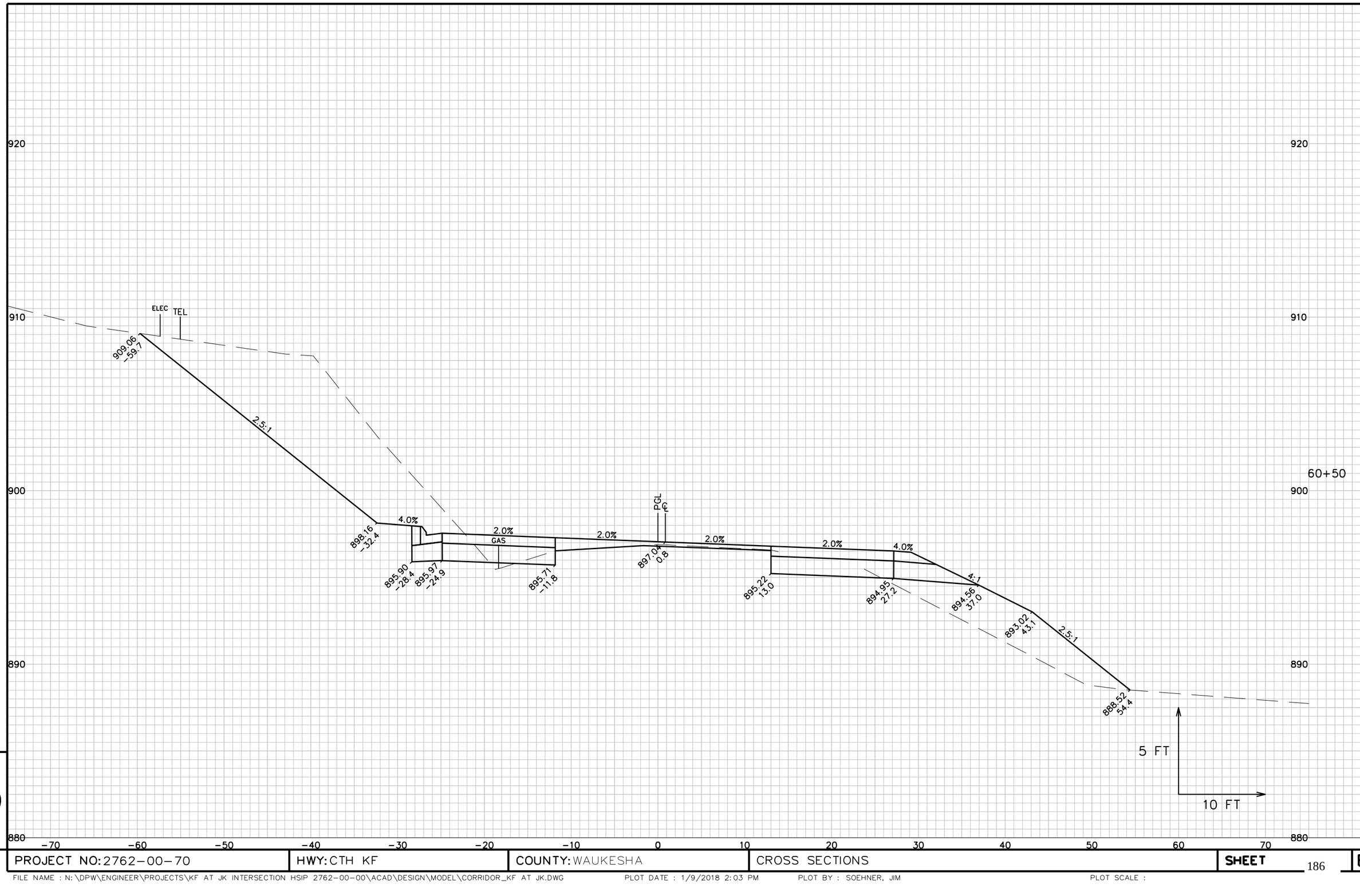
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 184	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



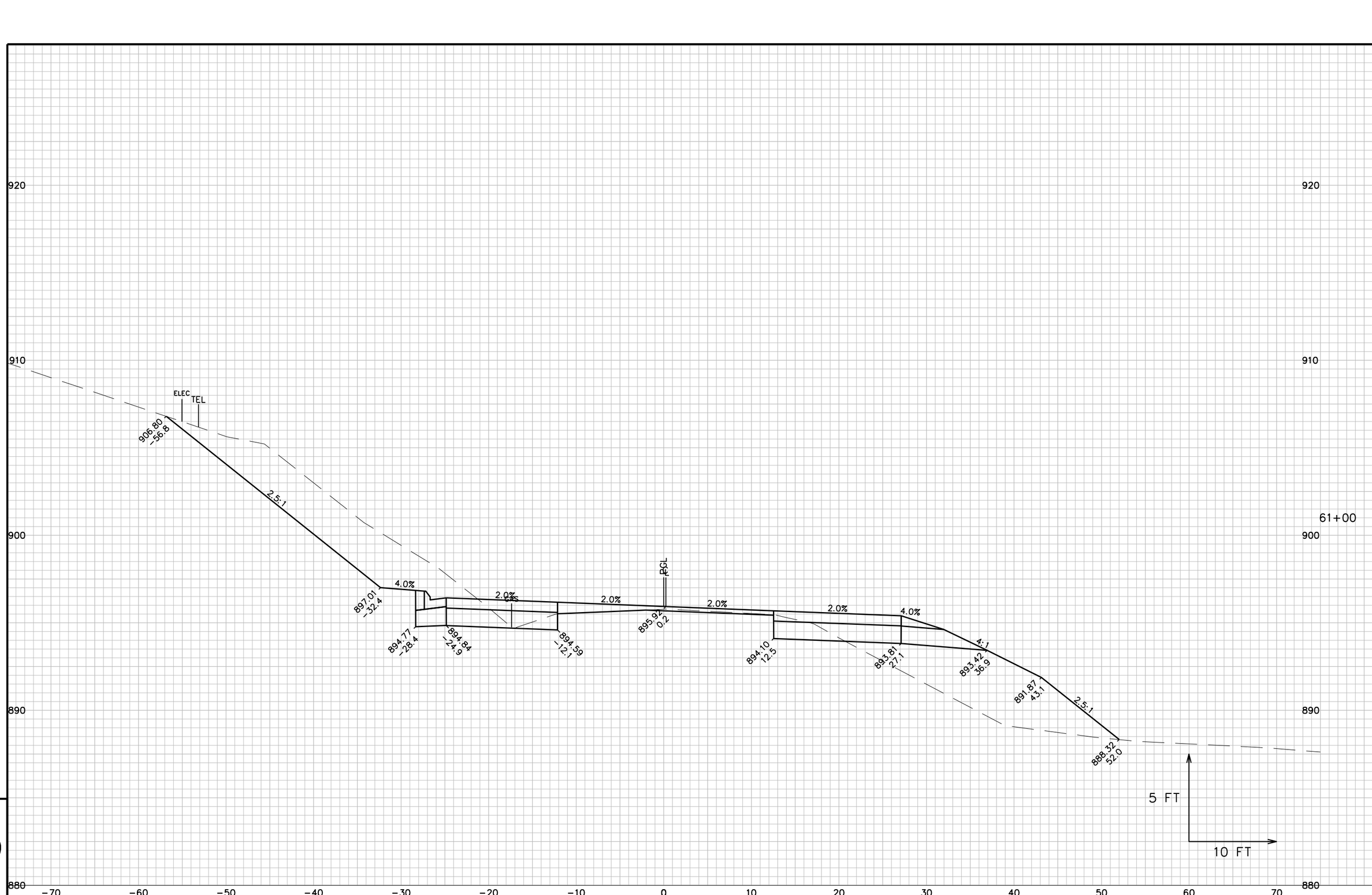
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



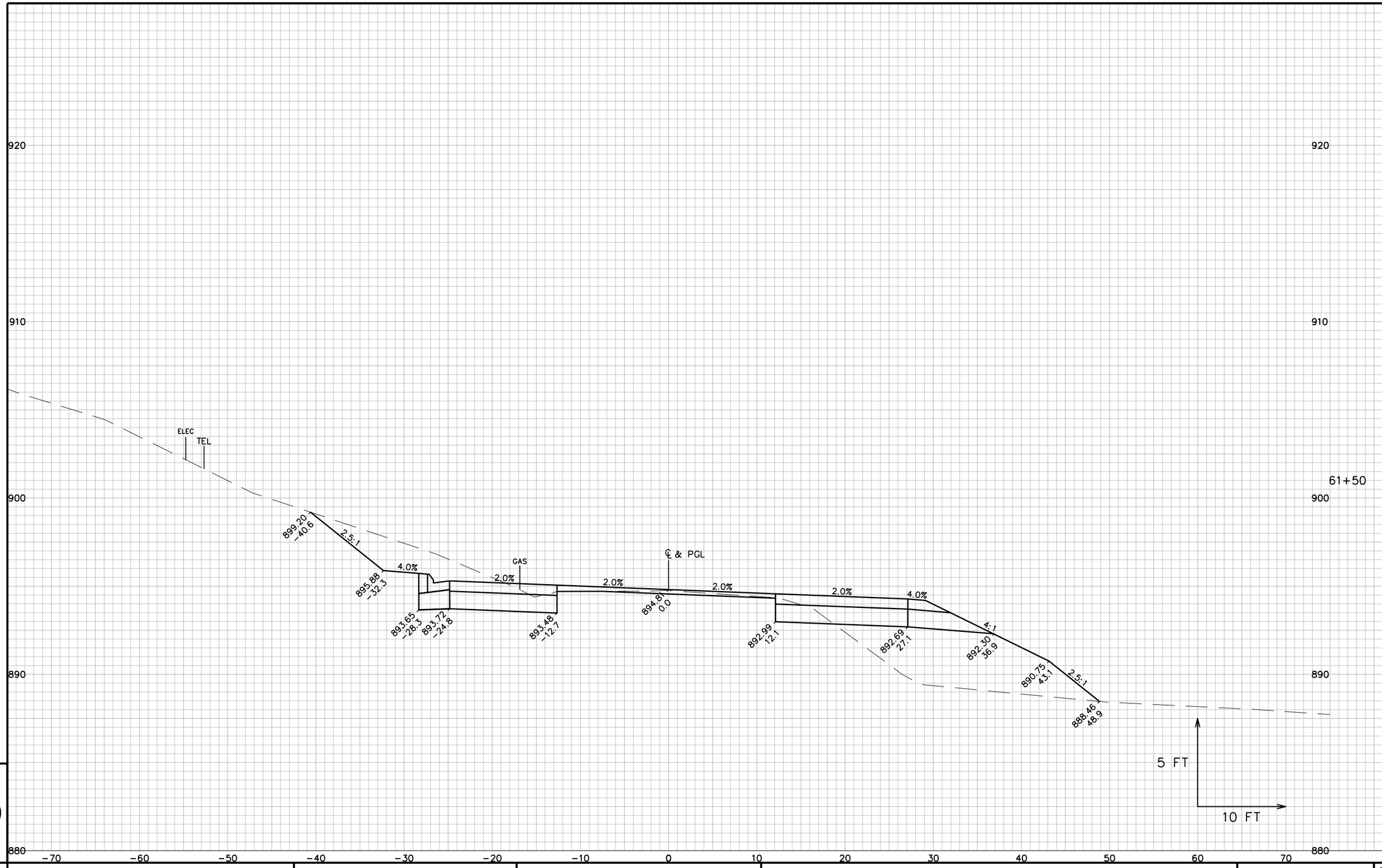
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 187 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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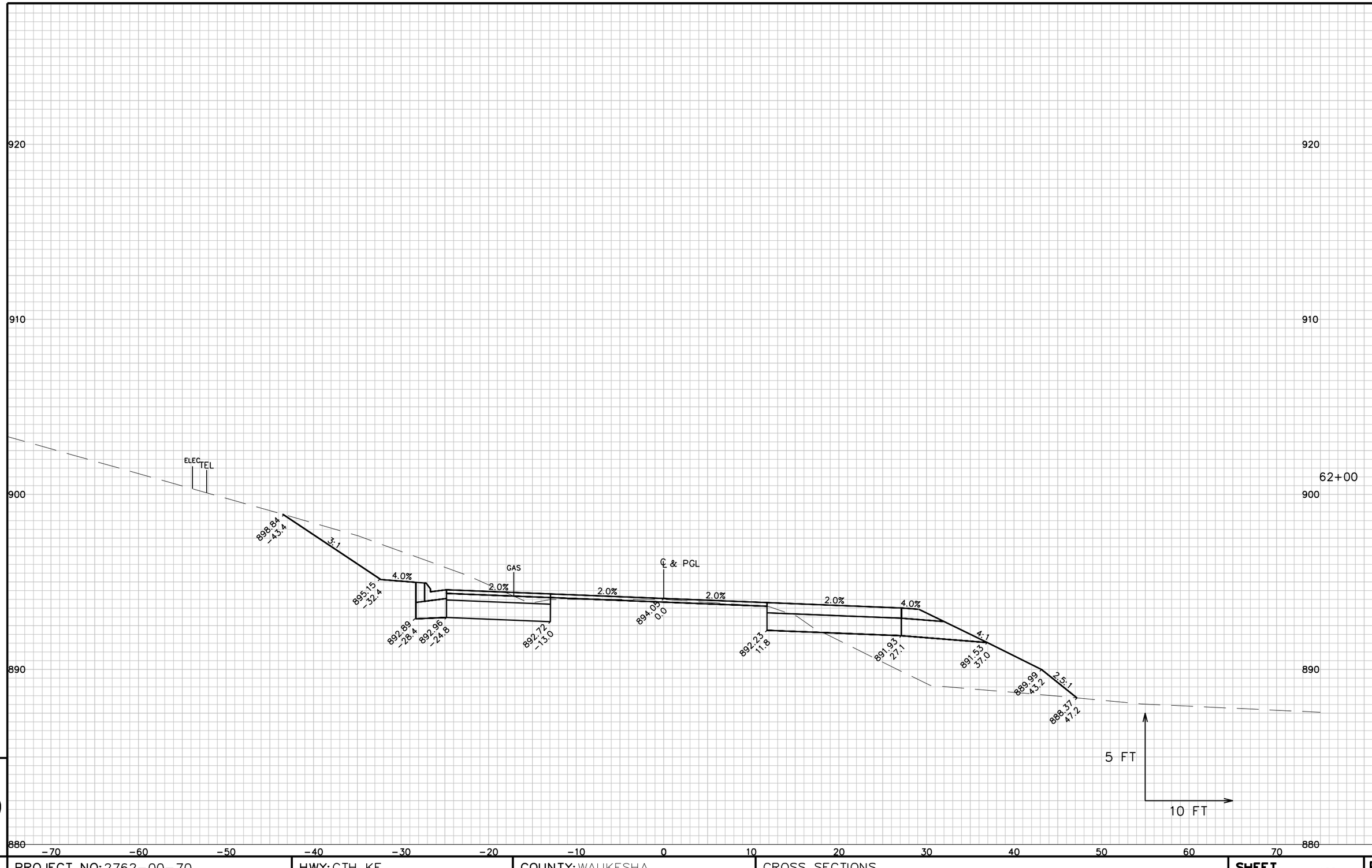
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 188	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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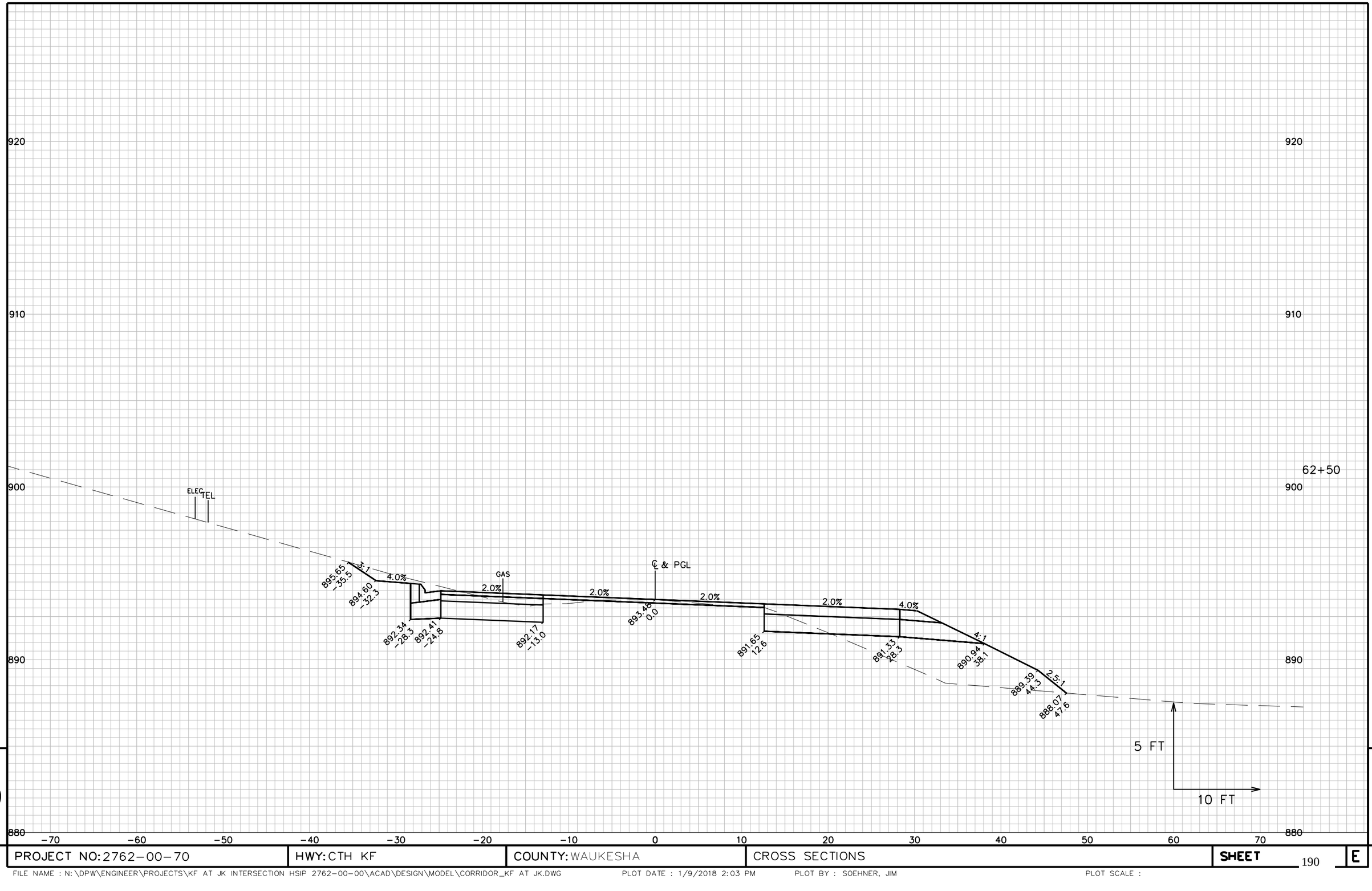
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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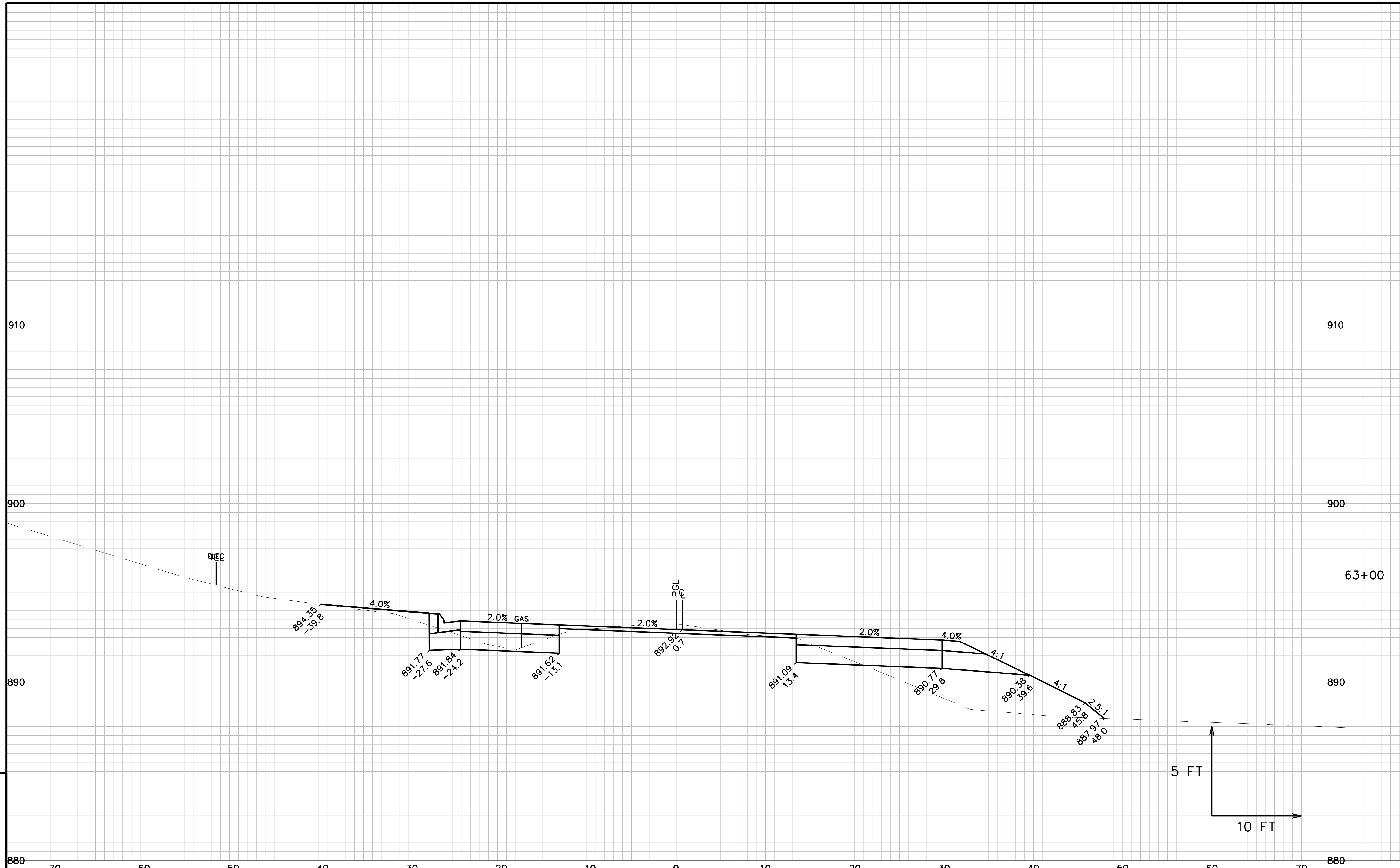
9

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 190 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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PROJECT NO: 2762-00-70 | HWY: CTH KF | COUNTY: WAUKESHA | CROSS SECTIONS | SHEET 191 | E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :

910 910

900 900

890 890

880 880

63+50

893.51
-30.8
4.0%
3:1
892.60
-33.5
2.0% GAS
891.24
-26.8
891.32
-23.3
891.09
-11.9
PGL
CL
2.0%
892.41
1.0
2.0%
890.59
13.1
2.0%
4.0%
890.29
28.1
4:1
889.90
38.0
2:5:1
888.36
44.2
887.98
45.1

5 FT

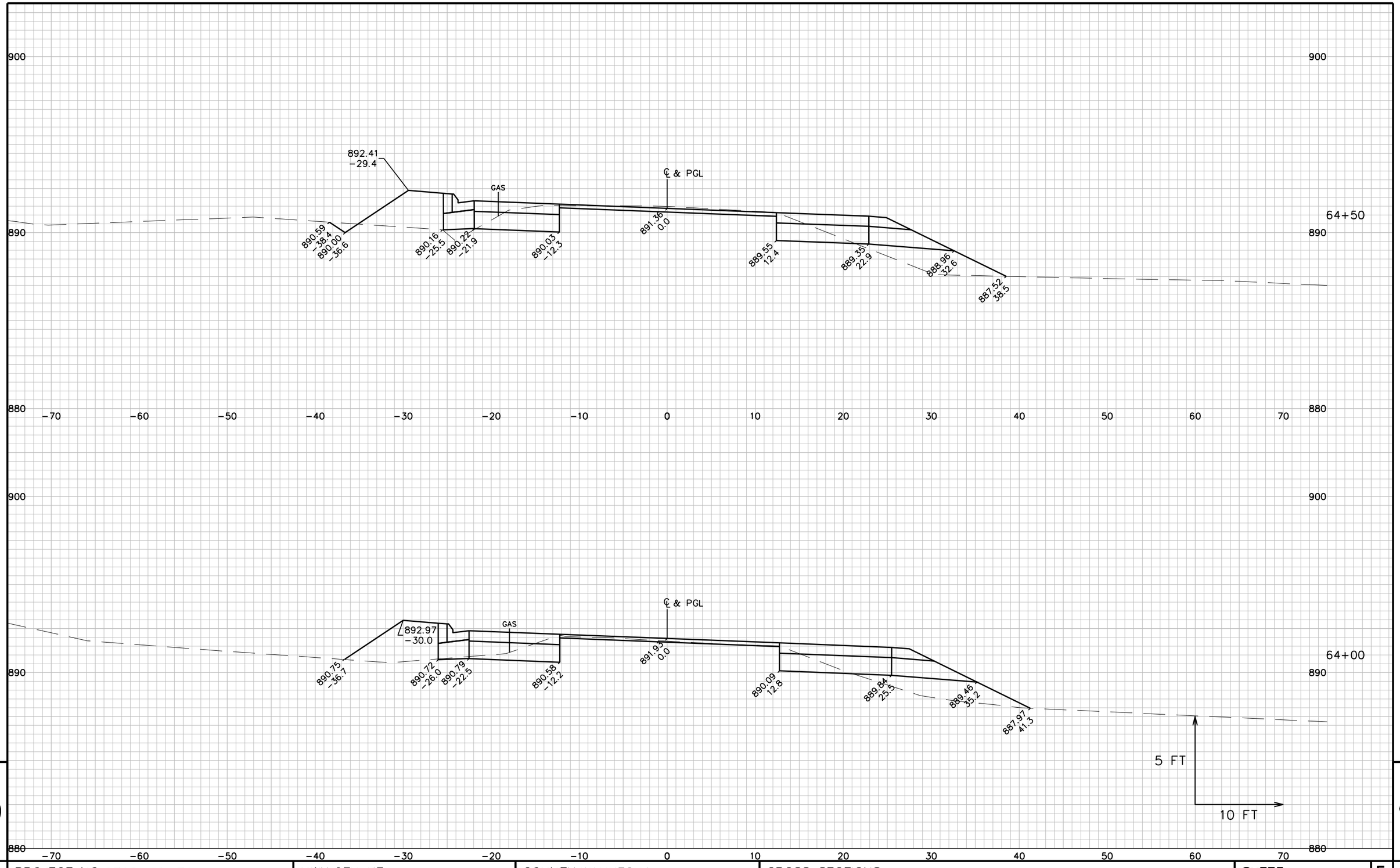
10 FT

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

9 9

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 192 E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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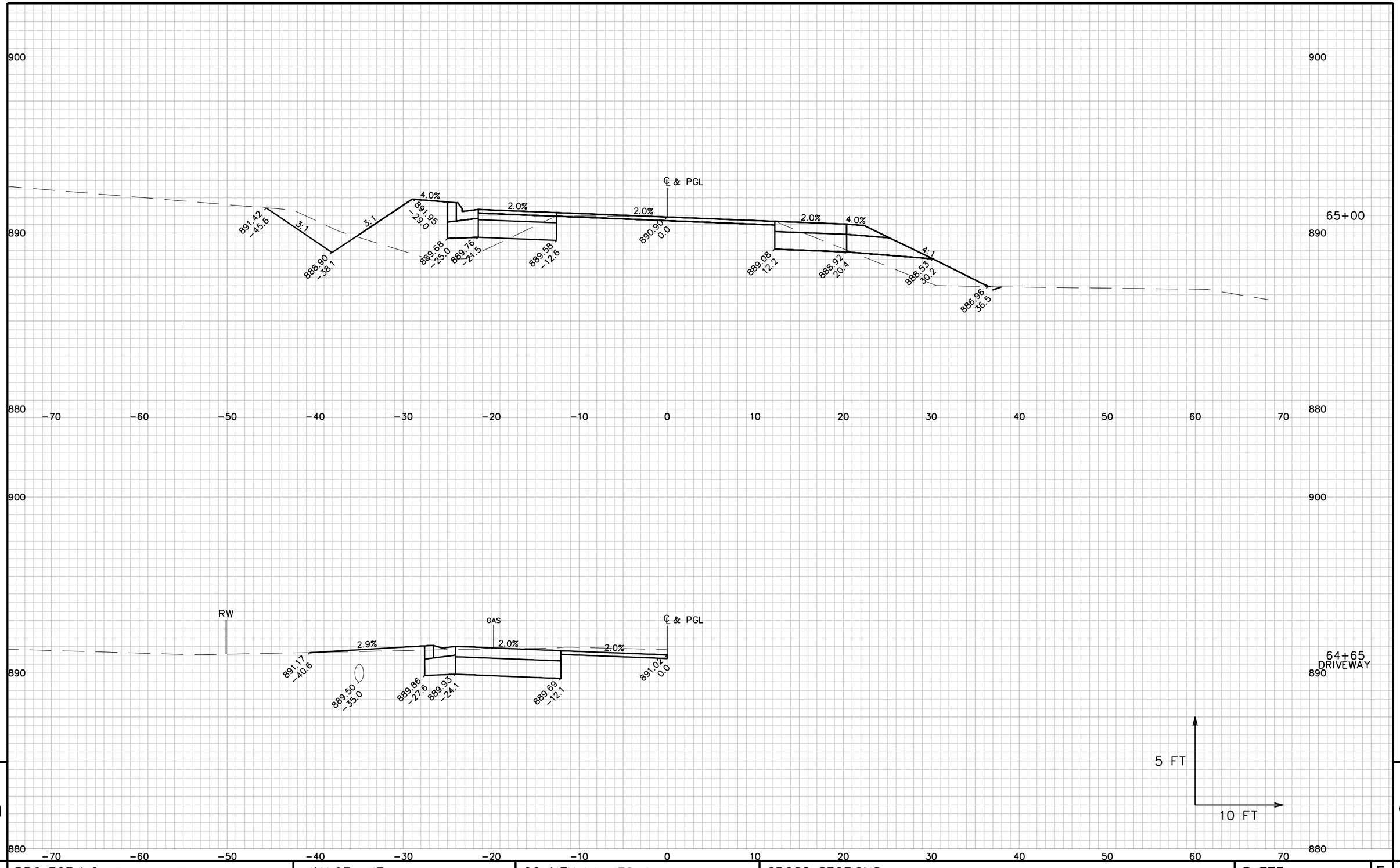
9

PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 193	E

FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:03 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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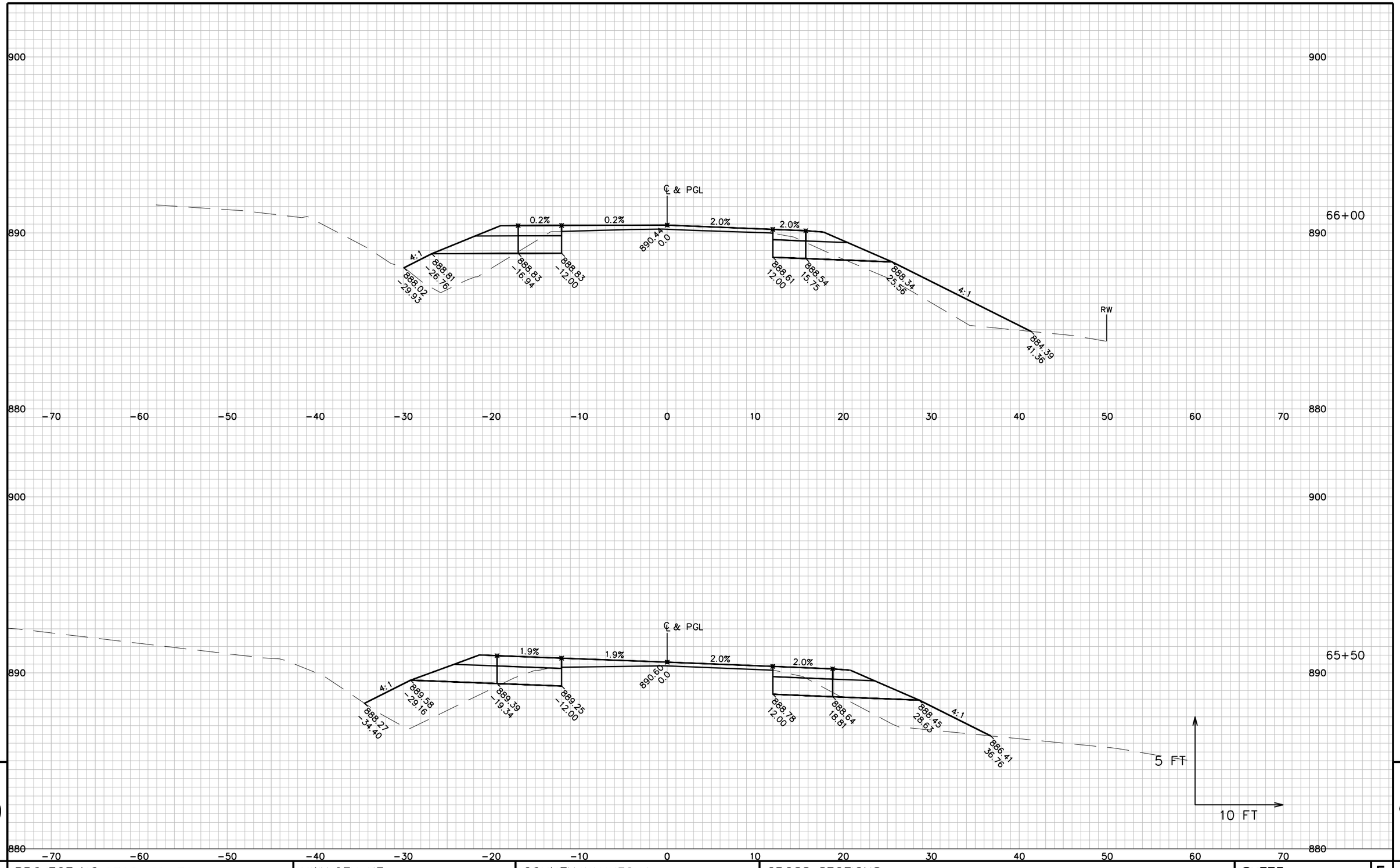
PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 194	E



9	PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 195 E

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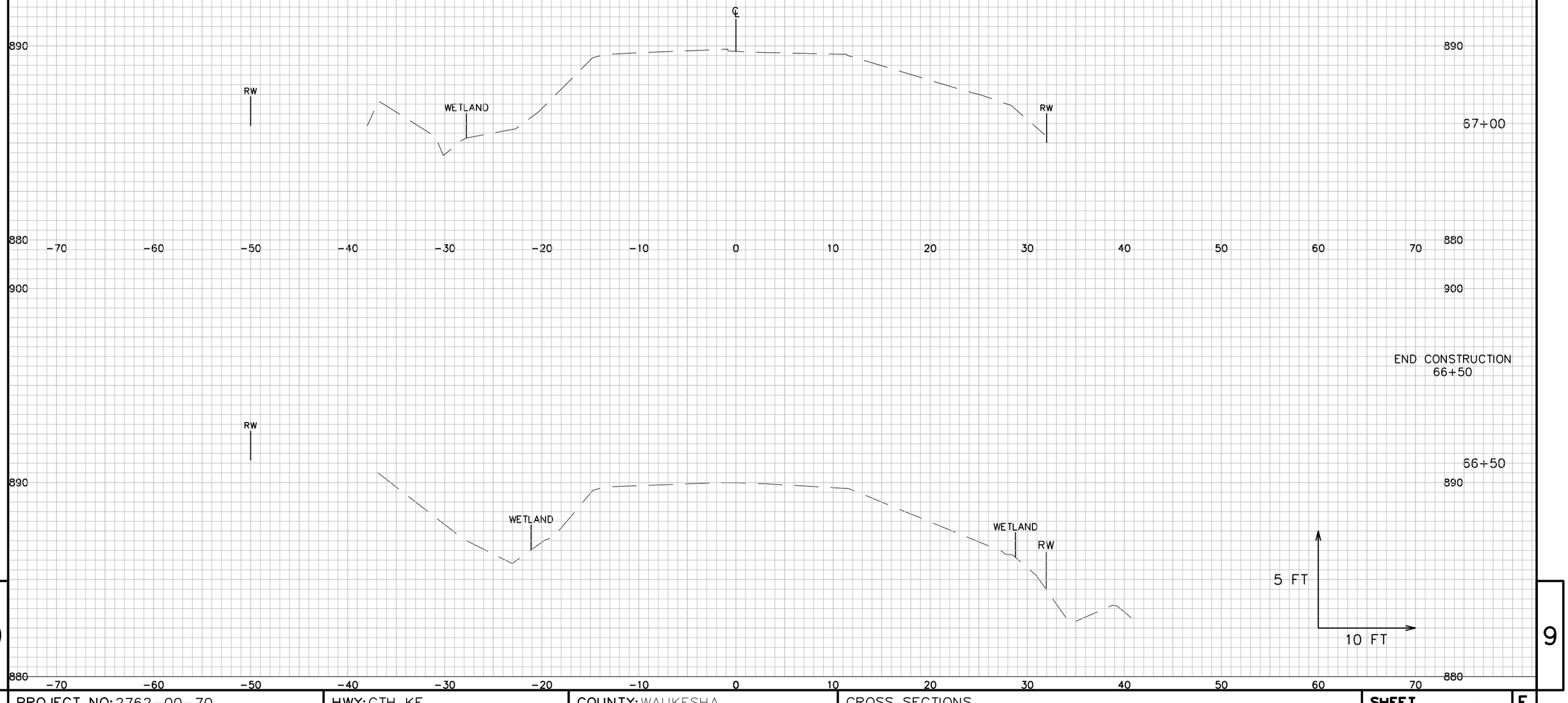
FILE NAME : N:\DPW\ENGINEER\PROJECTS\KF AT JK INTERSECTION HSIP 2762-00-00\ACAD\DESIGN\MODEL\CORRIDOR_KF AT JK.DWG PLOT DATE : 1/9/2018 2:04 PM PLOT BY : SOEHNER, JIM PLOT SCALE :



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PROJECT NO: 2762-00-70	HWY: CTH KF	COUNTY: WAUKESHA	CROSS SECTIONS	SHEET 196 E

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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