Level 2 LAYOUT APPROVAL

Programmed Letting Date FEBRUARY 26, 2016

Prepared By	[signature]	TKDA	5/6, 2015
Reviewed By	[signature]	District Design	5/15 2015
Reviewed By	[signature]	District Traffic Engineer	5/12 2015
Approved By	[signature]	District Design Engineer	5/15 2015

LICENSED UNDER THE LAWS OF MINNESOTA THIS LAYOUT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

NAME [signature] LIC. NO. 48250 DATE 5/6, 2015

LAYOUT No. 3 COPY No. 1

T.H. 250 VICINITY OF CITY OF LANESBORRO

A.T.R.P. 00+00.955 AND

A.T.R.P. 03+00.354

Prepared MAY 2015 Scale: Hor: 1 Inch = 50 ft.

By TKDA

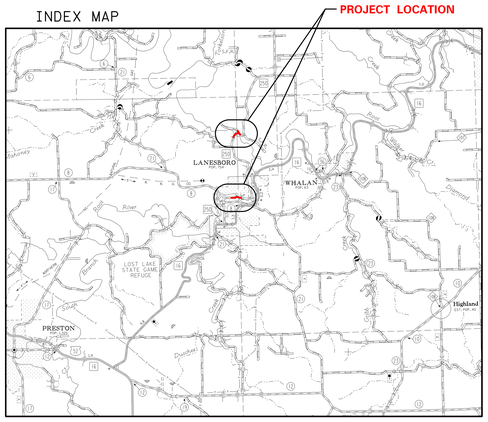
The alignment and grades shown on this layout are tentative and subject to change without notice.	Staff Approval Date:	The traffic volume shown on this layout is based on the traffic forecast for the year 2036.	Prepared by MnDOT in March, 2014.

S.P. 2319-16	T.H. 250	A.I.I.E46LO	PPMS Activity 1140
S.P.	T.H.	A.I.I.	PPMS Activity
S.P.	T.H.	A.I.I.	PPMS Activity

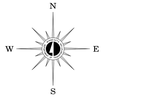
Copy To: For

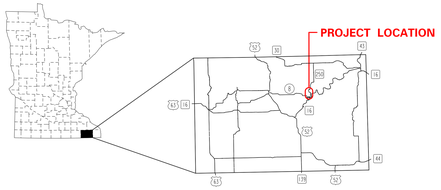
DESIGN FILE: K:\Proj-en\MN\DOT\12546700\Hwy-bridge\Hwy\layout\lo023916_lo.dgn
DATE: 5/13/2015

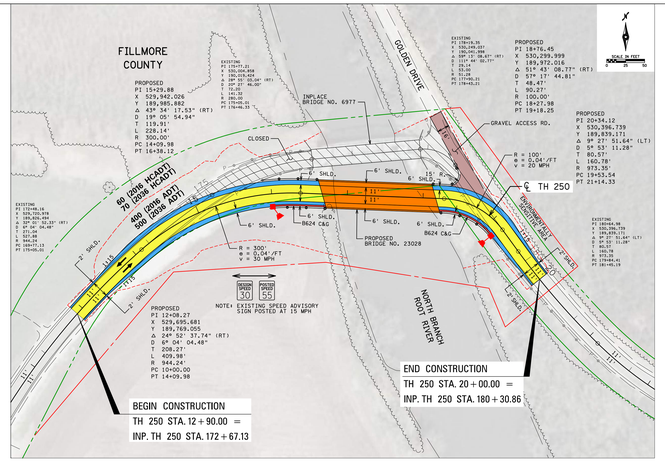
INDEX MAP



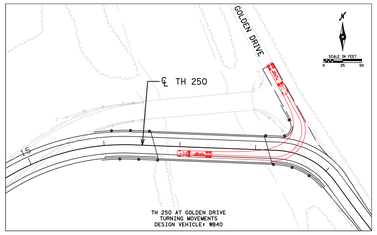
FILLMORE COUNTY

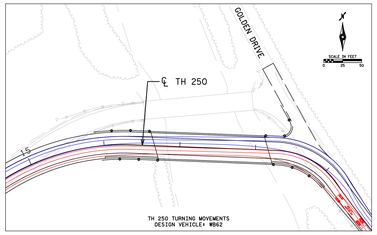


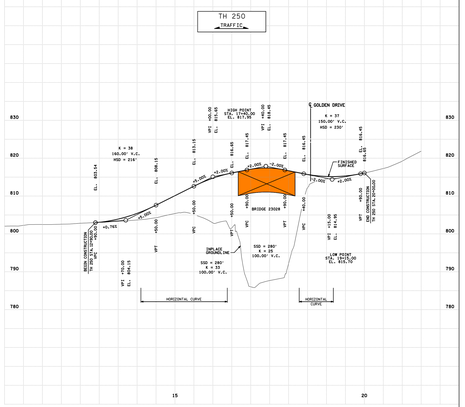


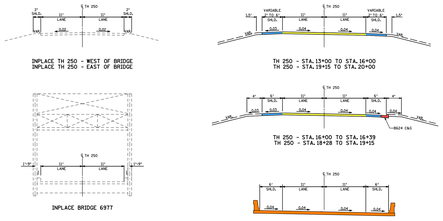


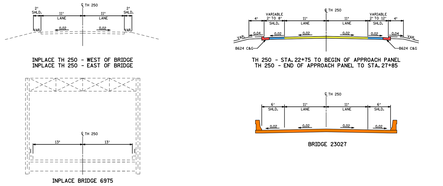
NORTH BRIDGE NO. 23028 AND ROADWAY APPROACHES











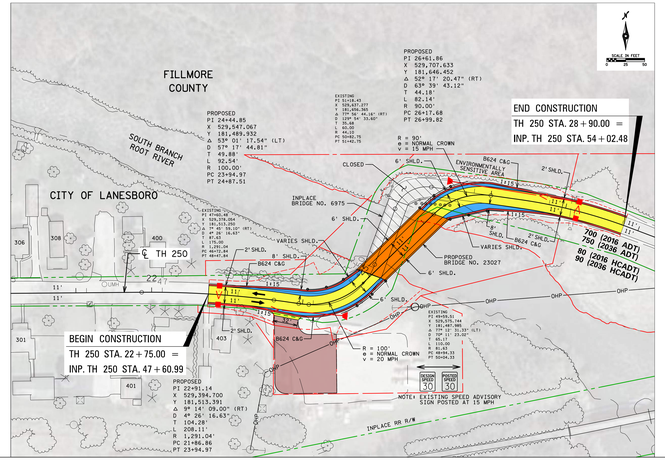
DESIGN EXCEPTIONS:

1. HORIZONTAL ALIGNMENT, RADIUS. PER TM NO. 12-11-TS-05, THE MINIMUM HORIZONTAL RADIUS FOR 30 MPH AND USING 0.04 SUPERELEVATION SHOULD BE 300'. A RADIUS OF 100' IS BEING PROPOSED.
2. SUPERELEVATION, PER TM 12-11-TS-05, A SUPERELEVATION OF 0.06-0.08 IS NEEDED FOR A 250' RADIUS. AT THE SECOND CURVE A 0.04 SUPERELEVATION IS BEING PROPOSED WITH A 100' RADIUS.

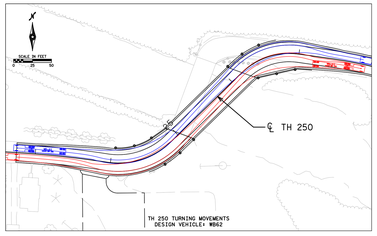
   NOTE: THE HORIZONTAL SIGHT DISTANCE IS ALSO NOT MEETING THE STANDARD OF 215'. A SIGHT DISTANCE OF 130' IS BEING PROPOSED, WITH THE CRITICAL LINE OF SIGHT BEING AT THE BRIDGE RAIL CORNER.

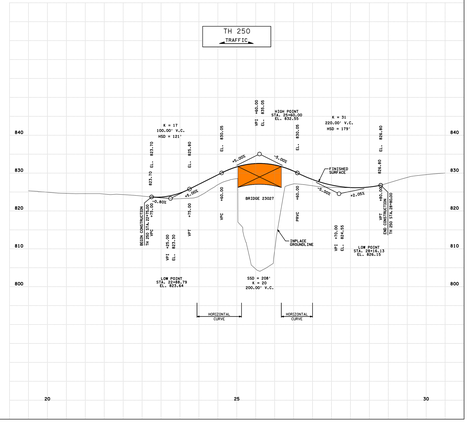
LEGEND

- PAVED ROADWAY
- PAVED SHOULDER
- CONCRETE MEDIAN & CURB
- AGGREGATE SURFACE
- BRIDGE
- INPLACE R/W
- PROPOSED R/W OR PERMANENT EASEMENT
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS
- STORM SEWER
- TRAFFIC FLOW



SOUTH BRIDGE NO. 23027 AND ROADWAY APPROACHES





DESIGN EXCEPTIONS:

1. STOPPING SIGHT DISTANCE. PER ROAD DESIGN MANUAL (RDM) TABLE 2.508B, AND USING A 30 MPH SPEED WITH A 6% GRADE, THE MINIMUM SIGHT DISTANCE SHOULD BE 215'. A SIGHT DISTANCE OF 208' IS BEING PROPOSED.

   NOTE: THE HORIZONTAL SIGHT DISTANCE IS ALSO NOT MEETING THE STANDARD. A SIGHT DISTANCE OF 101'IS BEING PROPOSED, WITH THE CRITICAL LINE OF SIGHT BEING AT THE BRIDGE RAIL CORNER.
2. HORIZONTAL ALIGNMENT, RADIUS PER TM NO. 12-11-TS-05, THE MINIMUM HORIZONTAL RADIUS FOR 30 MPH AND USING NORMAL CROWN SHOULD BE 300'. A RADIUS OF 90' IS BEING PROPOSED.
3. VERTICAL ALIGNMENT K VALUE, SAG PER RDM FIGURE 3-4.04C, THE MINIMUM K VALUE SHOULD BE 36 BASED ON 30 MPH. A K VALUE OF 17 IS BEING PROPOSED.

LAYOUT HISTORY:

BACKGROUND

THE STATE IDENTIFIED THE NEED FOR THE REPLACEMENT OF 2 STEEL TRUSS BRIDGES (BRIDGE NOS. 6975 AND 6977) ON TRUNK HIGHWAY 250 (TH 250) NEAR LANESBORO. THE ROADWAY APPROACHES AND BRIDGES WERE DESIGNED TO MINIMIZE IMPACTS TO EXISTING FLOODPLAINS/FLOODWAYS AND OTHER ENVIRONMENTAL FEATURES. CURRENTLY TH 250 TURNS SHARPLY NEAR EACH OF THE BRIDGES. ROADWAY APPROACH ALIGNMENTS AND BRIDGE ALTERNATIVES WERE DEVELOPED CONCURRENTLY AND SCREENED ACCORDING TO PROJECT GOALS AND DESIGN PARAMETERS TO DEVELOP LAYOUT 1.

LAYOUT 1 (MARCH, 2015)

THIS LAYOUT INCLUDES RECONSTRUCTION OF THE ROADWAY APPROACHES AND REPLACEMENT OF THE TWO BRIDGES . THE ROADWAY APPROACHES WERE REALIGNED TO PROVIDE FOR FLATTER CURVES AT THE BRIDGE ENDS AND ALSO UTILIZE 6' SHOULDERS TO HELP WITH OFF TRACKING OF VEHICLES. ADDITIONALLY, THE PROFILE WAS RAISED TO HELP WITH HYDRAULIC MODELING AND MINIMIZE FLOOD IMPACTS TO THE ROOT RIVER.

LAYOUT 2 (APRIL, 2015)

LAYOUT 3 WAS REVISED BASED ON COMMENTS RECEIVED FROM M+DOT DISTRICT 6 OFFICE AND THE GEOMETRIC DESIGN SUPPORT UNIT. SIGNIFICANT CHANGES ARE AS FOLLOWS:

SOUTH BRIDGE NO. 23027:

- SECOND SAG VERTICAL CURVE INCREASED, GEOMETRICS UPDATED, AND CONSTRUCTION LIMITS MODIFIED
- ADDED WB-62 AUTOTURN MOVEMENTS
- CURVE DATA ADDED
- PROPOSED RIGHT OF WAY AND EASEMENT INFORMATION ADDED

NORTH BRIDGE NO. 23028:

- BOTH SAG VERTICAL CURVES INCREASED, GEOMETRICS UPDATED, AND CONSTRUCTION LIMITS MODIFIED
- CHANGED SUPERELEVATION FROM 0.02 TO 0.04
- ADDED WB-62 AUTOTURN MOVEMENTS
- CURVE DATA ADDED
- PROPOSED RIGHT OF WAY AND EASEMENT INFORMATION ADDED

LAYOUT 3 (MAY, 2015)

LAYOUT 2 WAS REVISED BASED ON COMMENTS RECEIVED FROM M+DOT DISTRICT 6 OFFICE. SIGNIFICANT CHANGES ARE AS FOLLOWS:

SOUTH BRIDGE NO. 23027:

- WIDENED INSIDE SHOULDER ON THE CURVE SOUTH OF THE BRIDGE
- WIDENED INSIDE SHOULDER ON THE CURVE NORTH OF THE BRIDGE
- UPDATED AUTOTURN MOVEMENTS

LAYOUT NOTES:

1) THE PROPOSED PROJECT WILL CONSTRUCT
   - TWO 11' LANES WITH 6' SHOULDERS (TAPERING TO 2')
2) THE PROPOSED PROJECT WILL NOT IMPACT ACCESS OR LAND USE. THE LAND USE ALONG THE PROJECT IS A MIXTURE OF RESIDENTIAL, FARM, AND FOREST.
3) REPLACE TWO BRIDGES:

OLD BRIDGE NO.	NEW BRIDGE NO.	LOCATION
6975	23027	SOUTH BRANCH ROOT RIVER
6977	23028	NORTH BRANCH ROOT RIVER

TKDA

MINNESOTA DEPARTMENT OF TRANSPORTATION