

**MINNESOTA DEPARTMENT OF TRANSPORTATION
LINCOLN COUNTY
CONSTRUCTION PLAN FOR BITUMINOUS MILL & OVERLAY
COUNTY STATE AID HIGHWAY NO. 5**

LOCATED ON CSAH 5 BETWEEN THE SOUTH CITY LIMITS OF IVANHOE AND THE INT. OF CSAH 17

(Geographic
Description)
(Legal
Description)

FROM 1616' SOUTH OF THE NE CORNER OF SECTION 3-T11N-R45W TO 70' SOUTH OF THE NE CORNER OF SECTION 22-T112N-R45W

INDEX

SHEET 1	TITLE SHEET / INDEX MAP
SHEET 2	ESTIMATED QUANTITIES / STANDARD PLATES
SHEET 3	QUANTITY TABLES
SHEET 4-5	TYPICAL SECTIONS
SHEET 6	TRAFFIC CONTROL

THIS PLAN CONTAINS 6 SHEETS

SAP 041-605-027

GROSS LENGTH	17430.4 FT.	3.301 MI.
BRIDGES LENGTH	0.0 FT.	0.000 MI.
EXCEPTIONS LENGTH	42.8 FT.	0.008 MI.
NET LENGTH	17387.6 FT.	3.293 MI.

DESIGN DESIGNATION

(STA. 251+42 TO STA. 264+18)

Design Strength	10 TON
R-VALUE	10 (ASSUMED)
ADT (2025)	276
PROJ. ADT (2045)	304
PROJ. HCA DT (2045)	18 (6%)
SOIL FACTOR	100
SHOULDER WIDTH	4.0 FT.

DESIGN DESIGNATION

(STA. 264+18 TO STA. 267+53.08)

Design Strength	10 TON
R-VALUE	10 (ASSUMED)
ADT (2025)	645
PROJ. ADT (2045)	710
PROJ. HCA DT (2045)	42 (6%)
SOIL FACTOR	100
PARKING LANE WIDTH	10.0 FT.

DESIGN DESIGNATION

(STA. 00+13.44 TO STA. 157+90)

Design Strength	10 TON
R-VALUE	10 (ASSUMED)
ADT (2025)	431
PROJ. ADT (2045)	474
PROJ. HCA DT (2045)	28 (6%)
SOIL FACTOR	100
PARKING LANE WIDTH	10.0 FT.

(STA. 0+13.44 TO STA. 15+85)

SHOULDER WIDTH	5.0 - 6.0 FT.
----------------	---------------

(STA. 15+85 TO STA. 157+90)

FUNCTIONAL CLASSIFICATION

MAJOR COLLECTOR STA. 251+42 TO STA. 264+18

MINOR COLLECTOR STA. 264+18 TO 267+53.08 &

STA. 00+13.44 TO 157+90

NO. OF TRAFFIC LANES 2 NO. OF PARKING LANES 0-2

POSTED SPEED 30 MPH STA. 251+42 TO STA. 267+53.08

30 MPH STA. 00+13.44 TO STA. 15+85

55 MPH STA. 15+85 TO STA. 157+90

BASED ON STOPPING SIGHT DISTANCE

HEIGHT OF EYE 3.5 FT. HEIGHT OF OBJECT 2.0 FT.

DESIGN SPEED NOT ACHIEVED AT:

STA. _____ TO STA. _____

SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

LAST PROJECTS:

CP 901-005-022 (BITUMINOUS OVERLAY 2022)

SAP 041-605-22 (BITUMINOUS OVERLAY 2007)

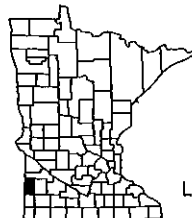
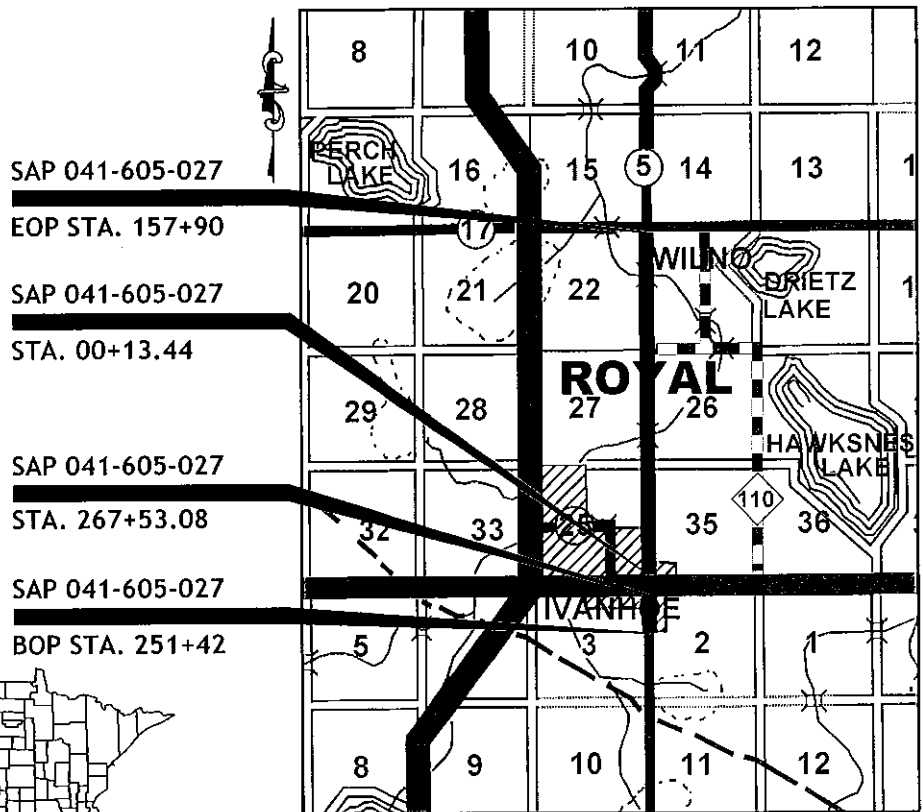
SAP 041-605-21 (BITUMINOUS OVERLAY 2003)

SAP 041-605-19 (SHOULDER WIDENING & CULVERTS 2002)

SAP 041-605-12 (GRADING-GRAVEL BASE-BIT. BASE-BIT. WEARING-CURB & GUTTER-STORM SEWER 1984)

SAP 041-605-05 (GRADING, GRAVEL SUBBASE, GRAVEL BASE, ROAD & PLANT MIXED BITUMINOUS SURFACE 1967)

CP 5337 (GRADING 1953)



LOCAL AGENCY SIGNATURES:

Signature: Joseph M. Wilson Typed or Printed Name: JOSEPH M. WILSON,
Design Engineer: I hereby certify that this plan was prepared by me
or under my direct supervision, and that I am a duly Licensed
Professional Engineer under the laws of the State of Minnesota.

Date: 2-24-25

License Number: 54947

Joseph M. Wilson 2-24-20 25
Approved: Lincoln County Engineer

District State-Aid Engineer: Reviewed for Compliance with State-Aid Rules/Policy

State-Aid Engineer: Approved for State-Aid Funding

ESTIMATED QUANTITIES / STANDARD PLATES

NOTES	ITEM NUMBER	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
	2016.601	QUALITY MANAGEMENT-THERMAL PROFILING	LUMP SUM	1
	2021.501	MOBILIZATION	LUMP SUM	1
1	2221.509	SHOULDER BASE AGGREGATE CLASS 1 MOD	TON	2159
2	2232.504	MILL BITUMINOUS SURFACE (1.5")	SQ YD	4341
3,4	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (2,B)	TON	4735
5	2506.502	ADJUST FRAME AND RING CASTING	EACH	1
	2563.601	TRAFFIC CONTROL	LUMP SUM	1
6	2582.503	4" SOLID LINE PAINT	LIN FT	63568
7	2582.503	4" BROKEN LINE PAINT	LIN FT	3416

NOTES:

- SHOULDER BASE AGGREGATE CLASS 1 MOD INCLUDES AN ADDITIONAL 80 TON PER LANE MILE TO ACCOUNT FOR THE EXISTING SHOULDER MATERIAL BEING LOW. SEE SPECIAL PROVISION 2211 FOR MODIFICATION OF THE SPECIFICATION FOR BID ITEM 2221.509.
- MILL 12 FT. WIDE AT A DEPTH OF 1.5" PERPENDICULAR TO CENTERLINE AND TAPER TO 0" AT 12 FT. FROM THE BOP STA. 251+42 AND EOP STA. 157+78. MILL 8 FT. WIDE AT A DEPTH OF 1.5" ALONG THE CURB AND GUTTER AND TAPER TO 0" AT 8FT. FROM CURB AND GUTTER STA. 256+50 TO STA. 267+41.08 AND STA. 0+25.44 TO STA. 12+65. MILL 12FT. WIDE AT A DEPTH OF 1.5" PERPENDICULAR TO CENTERLINE AND TAPER TO 0" AT 12FT. FROM THE INTERSECTION OF STATE HWY 19.
- BITUMINOUS TACK MATERIAL SHALL BE INCLUDED IN THE BID PRICE OF TYPE SP 12.5 WEARING COURSE MIXTURE (2,B). THE CONTRACTOR SHALL REFER TO APPLICATION RATES SPECIFIED IN TABLE 2357.3-1 IN THE MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- THE CONTRACTOR SHALL MILL BUTT JOINTS AT INTERSECTIONS AND AT APRONS THAT ADJOIN A LAND OWNERS PAVED DRIVEWAY. MILLINGS BECOME PROPERTY OF THE CONTRACTOR. MILLING BUTT JOINTS SHALL BE INCLUDED IN THE BID PRICE OF TYPE SP 12.5 WEARING COARSE MIXTURE (2B).
- THE NEWLY PAVED SURFACE SHALL MEET REQUIREMENTS SPECIFIED IN TABLE 2360.3-5 IN THE MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. ALL MATERIALS AND LABOR NEEDED FOR ADJUSTMENTS SHALL BE INCLUDED IN THE BID PRICE FOR ADJUST FRAME AND RING CASTING.
- QUANTITY CONTAINS 59206 LINEAR FEET OF WHITE PAINT AND 4362 LINEAR FEET OF YELLOW PAINT.
- QUANTITIES DO NOT INCLUDE 40' SKIP. 4" BROKEN LINE PAINT SHALL BE YELLOW IN COLOR.

THE FOLLOWING STANDARD PLATES APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

STANDARD PLATES	
PLATE NO.	DESCRIPTION
4010I	ADJUSTING RINGS FOR CATCH BASINS & MANHOLES
4108F	CONCRETE ADJUSTING RINGS
8000K	TEMPORARY CHANNELIZERS
9000E	APPROACHES AND ENTRANCES

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS THE UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CII/ASCE 38-22, ENTITLED, "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."

CERTIFIED BY

Joseph M. White
LICENSED ENGINEER

LIC. NO.

54947

DATE:

2-24-25

SAP 041-605-027

SHEET NO. 2 OF 6 SHEETS

QUANTITY TABLES

BASIS FOR PLANNED QUANTITIES

SHOULDER BASE AGGREGATE CLASS 1 MOD (CV)

140 LBS. / CUBIC FOOT (DRY WEIGHT)

TYPE SP 12.5 WEARING COURSE MIXTURE (2,B)

110 LBS. / INCH SQ. YD.

(2221) SHOULDER BASE AGGREGATE CLASS 1 MOD

STA. 251+42 TO STA. 256+50 MAINLINE

51

TON

STA. 15+85 TO STA. 157+90 MAINLINE

1816

TON

3 TWP. ROAD INTERSECTIONS @ 20 TON PER APP

60

TON

9 DRIVEWAYS @ 8 TON PER APP

72

TON

1 WIND TOWER DRIVEWAY @ 8 TON PER APP

8

TON

19 FIELD APPROACHES @ 8 TON PER APP

152

TON

(2232) MILL BITUMINOUS (1.5")

251+42 TO 251+54 MILL BITUMINOUS (12' WIDE AT BOP)

32

SQ YD

256+50 TO 267+41.08 MILL BITUMINOUS (8' WIDE ALONG LT. & RT. CURB AND GUTTER)

1940

SQ YD

267+41.08 TO 268+53.08 MILL BITUMINOUS (12' WIDE AT THE INT. OF STATE HWY. 19)

65

SQ YD

0+13.44 TO 0+25.44 MILL BITUMINOUS (12' WIDE AT THE INT. OF STATE HWY. 19)

74

SQ YD

0+25.44 TO 12+46.43 MILL BITUMINOUS (8' WIDE ALONG LT. & RT. CURB AND GUTTER)

2181

SQ YD

12+46.43 TO 12+65.00 MILL BITUMINOUS (8' WIDE ALONG LT. CURB AND GUTTER)

17

SQ YD

157+78 TO 157+90 MILL BITUMINOUS (12' WIDE AT EOP)

32

SQ YD

(2360) BITUMINOUS QUANTITIES

STA. 251+54.61 TO STA. 267+53.08 MAINLINE

557

TON

STA. 00+13.44 TO STA. 157+90 MAINLINE

3760

TON

3 TWP. ROAD INTERSECTIONS @ 30 TON PER APP

90

TON

2 CITY INTERSECTIONS @ 10 TON PER APP

20

TON

11 DRIVEWAYS @ 20 TON PER APP

220

TON

1 COMMERCIAL DRIVEWAY @ 20 TON PER APP

20

TON

1 WIND TOWER DRIVEWAY @ 2 TON PER APP

2

TON

1 FIELD APPROACH @ 20 PER APP

20

TON

18 FIELD APPROACHES @ 2 TON PER APP

36

TON

5 MAILBOXES @ 2 TON PER APP

10

TON

(2506) ADJUST FRAME AND RING CASTING

STA. 264+31.84 @ 1.70 RT.

1

EACH

CERTIFIED BY

Joseph M. Hiltner
LICENSED ENGINEER

LIC. NO. 54947

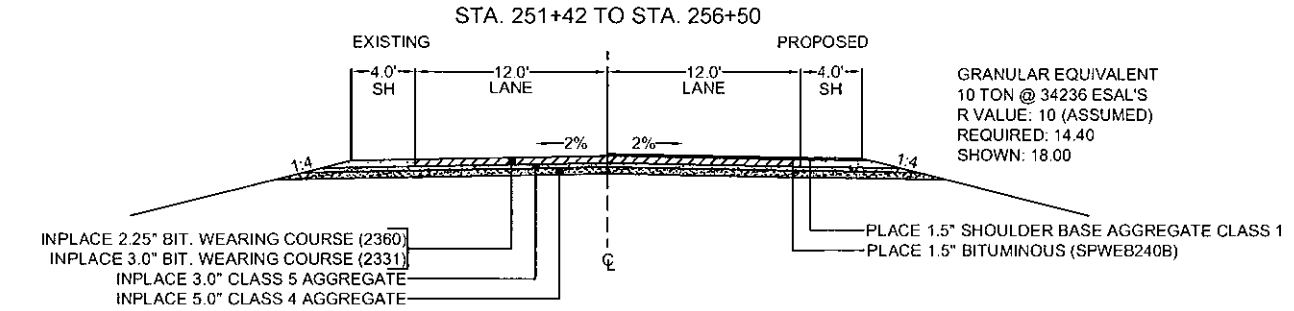
DATE: 2-24-25

SAP 041-605-027

SHEET NO. 3 OF 6 SHEETS

TYPICAL SECTIONS

NO SCALE

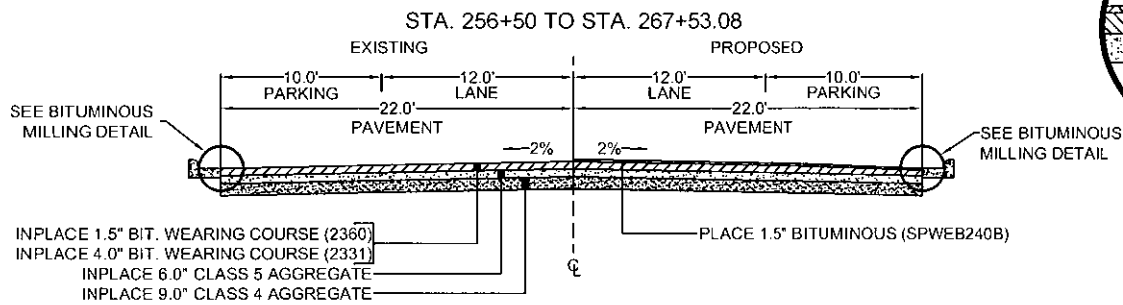
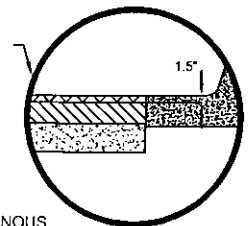


GRANULAR EQUIVALENT
(STA. 256+50 TO STA. 264+18):
10 TON @ 34236 ESAL'S
R VALUE: 10 (ASSUMED)
REQUIRED: 14.40
SHOWN: 24.38

GRANULAR EQUIVALENT
(STA. 264+18 TO STA. 267+28):
10 TON @ 80008 ESAL'S
R VALUE: 10 (ASSUMED)
REQUIRED: 17.62
SHOWN: 24.38

BITUMINOUS MILLING (AT C&G)
1.5" BELOW GUTTER X 8 FEET WIDE
(TAPER TO 0" AT 8 FEET)

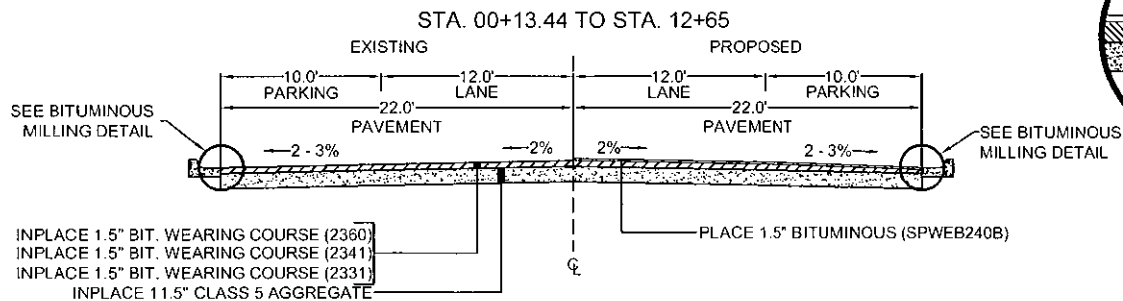
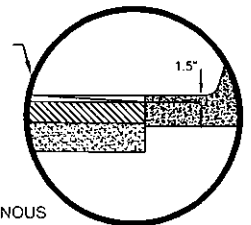
BITUMINOUS MILLING
DETAIL



GRANULAR EQUIVALENT
10 TON @ 53463 ESAL'S
R VALUE: 10 (ASSUMED)
REQUIRED: 15.95
SHOWN: 22.75

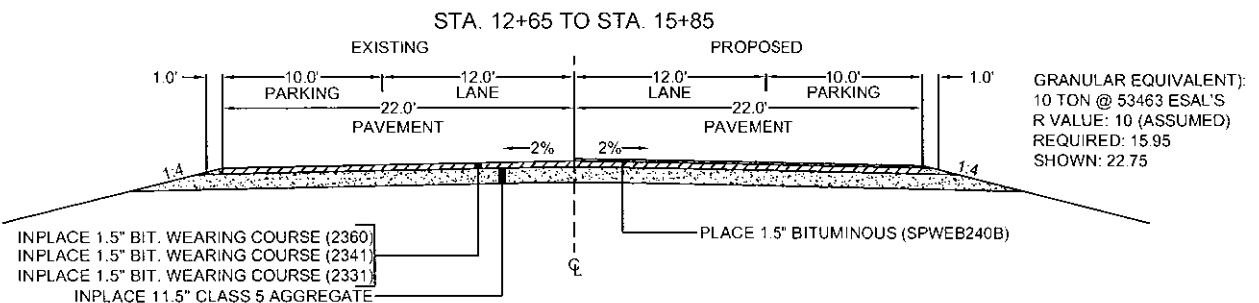
BITUMINOUS MILLING (AT C&G)
1.5" BELOW GUTTER X 8 FEET WIDE
(TAPER TO 0" AT 8 FEET)

BITUMINOUS MILLING
DETAIL



INPLACE 1.5" BIT. WEARING COURSE (2360)
INPLACE 1.5" BIT. WEARING COURSE (2341)
INPLACE 1.5" BIT. WEARING COURSE (2331)
INPLACE 11.5" CLASS 5 AGGREGATE

SEE BITUMINOUS MILLING DETAIL



CERTIFIED BY

Joseph M. Hildebrand
LICENSED ENGINEER

LIC. NO. 54947

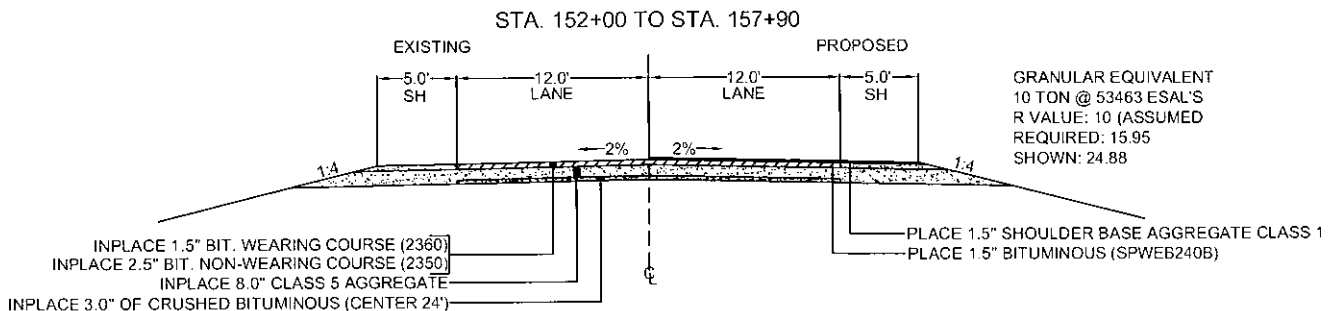
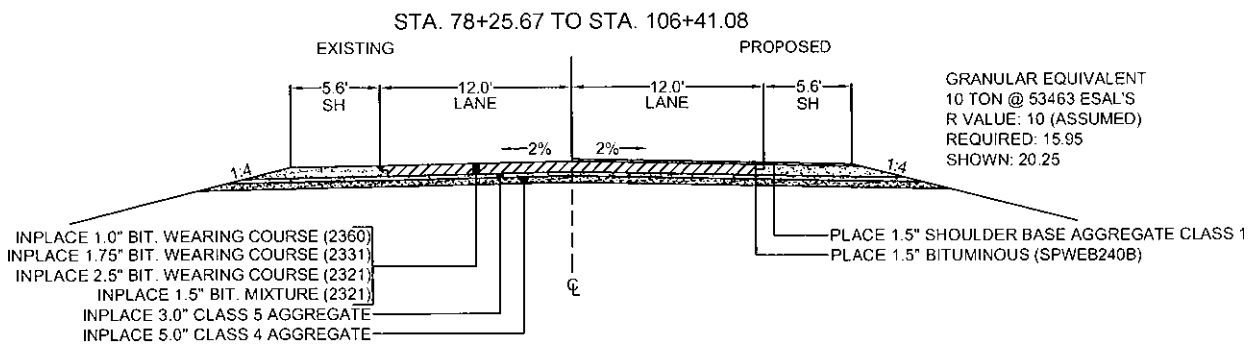
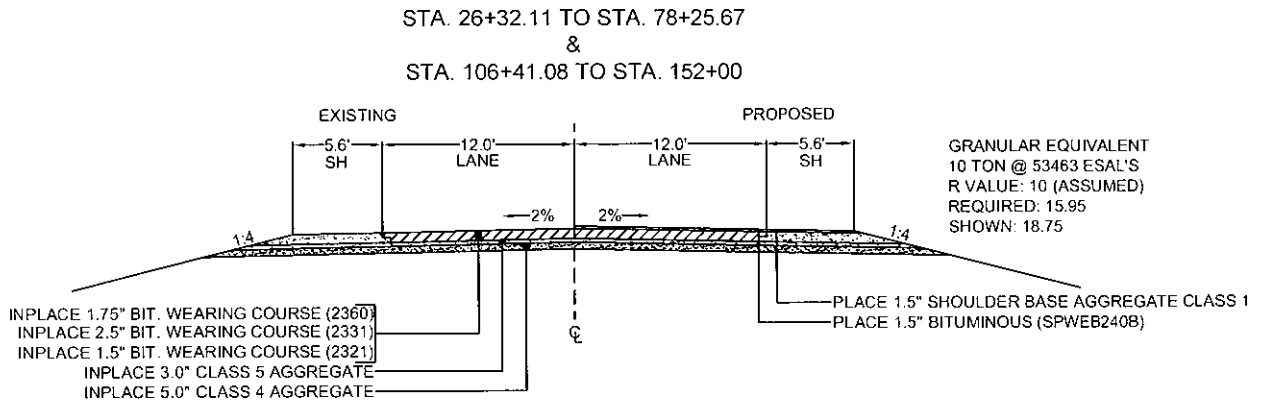
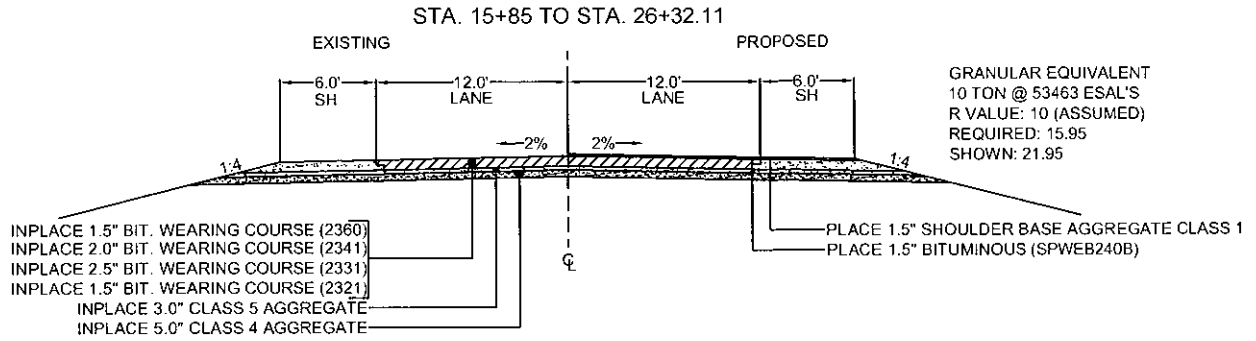
DATE: 2-24-25

SAP 041-605-027

SHEET NO. 4 OF 6 SHEETS

TYPICAL SECTIONS

NO SCALE



CERTIFIED BY

Joseph M. Wilson
LICENSED ENGINEER

LIC. NO. 54947

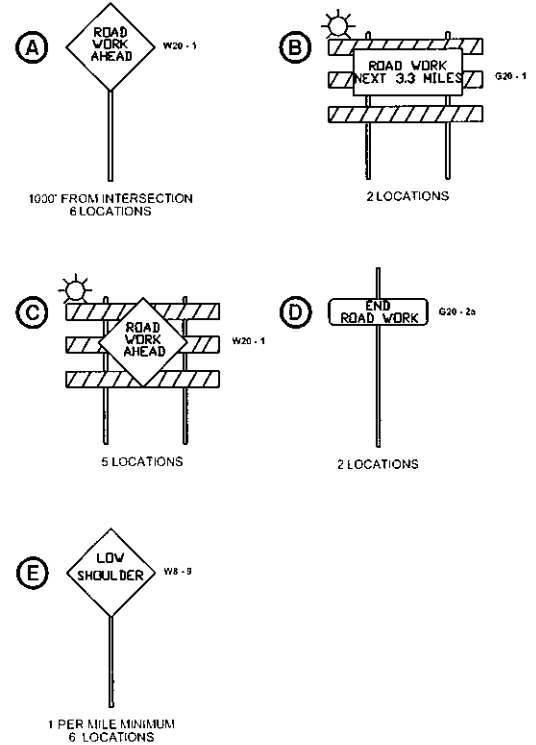
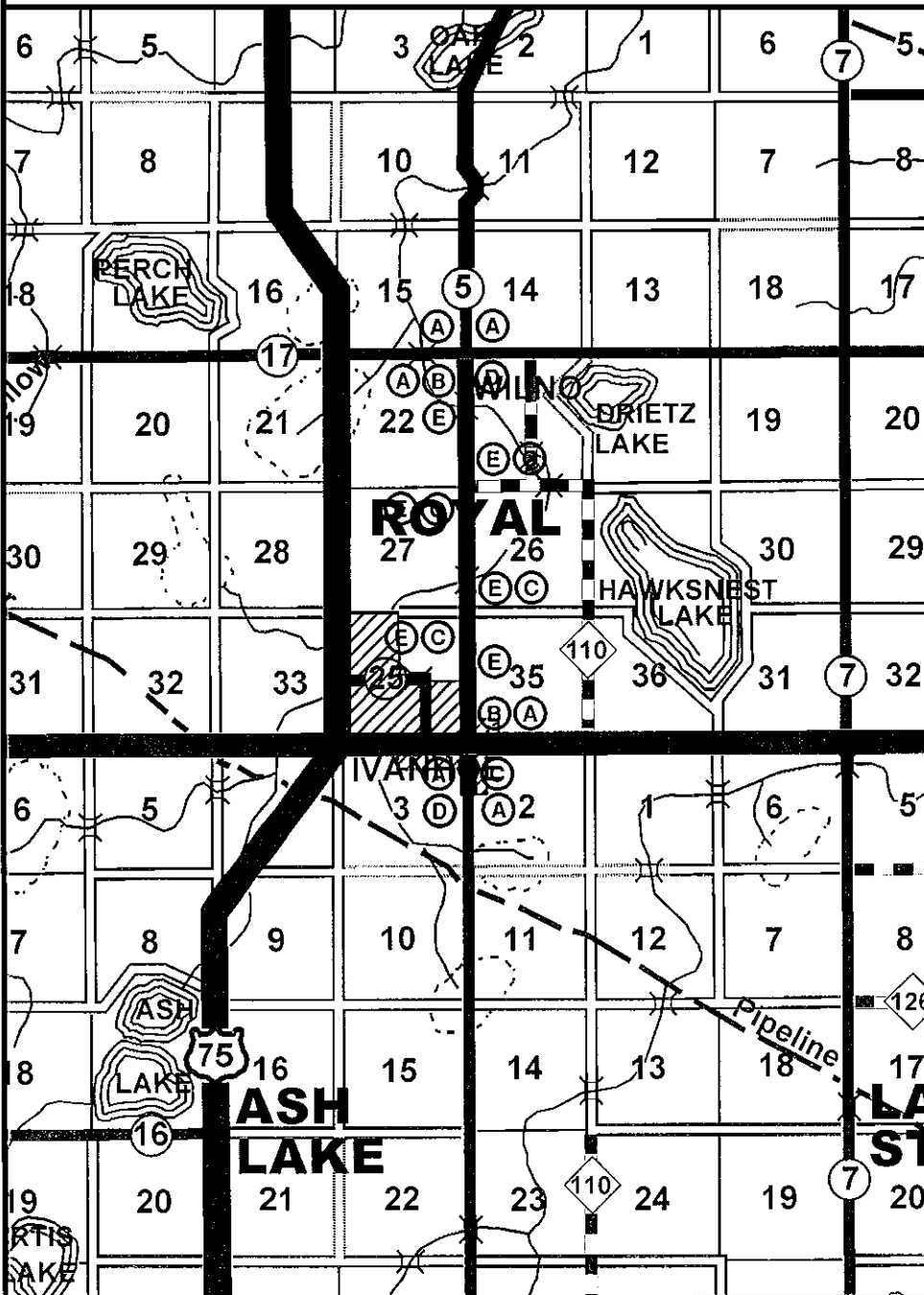
DATE: 2-24-25

SAP 041-605-027

SHEET NO. 5 OF 6 SHEETS

TRAFFIC CONTROL

NO SCALE



SIGN	SIGN NO.	QUANTITY	SIZE	COLOR	FLASHERS
	TYPE III BARRICADE	7	60" X 48"	ORANGE ON WHITE	7
	W20-1	11	36" X 36"	BLACK ON ORANGE	
	G20-1	2	60" X 24"	BLACK ON ORANGE	
	G20-2a	2	48" X 24"	BLACK ON ORANGE	
	W8-9	6	48" X 48"	BLACK ON ORANGE	

THE ATTACHED LAYOUT AND TABULATION SHOULD BE CONSIDERED A MINIMUM. ADDITIONAL SIGNING MAY BE REQUIRED TO MEET SAFETY STANDARDS BASED ON THE CONTRACTOR'S OPERATIONS.

ALL NECESSARY TRAFFIC CONTROL DEVICES ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST MnMUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

CERTIFIED BY

Joseph M. Wilson
LICENSED ENGINEER

LIC. NO. 54947

DATE: 2-24-25

SAP 041-605-027

SHEET NO. 6 OF 6 SHEETS