

MINNESOTA DEPARTMENT OF TRANSPORTATION
LYON COUNTY

CONSTRUCTION PLAN FOR: BITUMINOUS OVERLAY, MILLING, AND AGGREGATE SHOULDERS.

COUNTY STATE AID HIGHWAY NO. 10

BETWEEN: CSAH 32 & E. COUNTY LINE
(0.0 MILES NORTH OF COTTONWOOD)

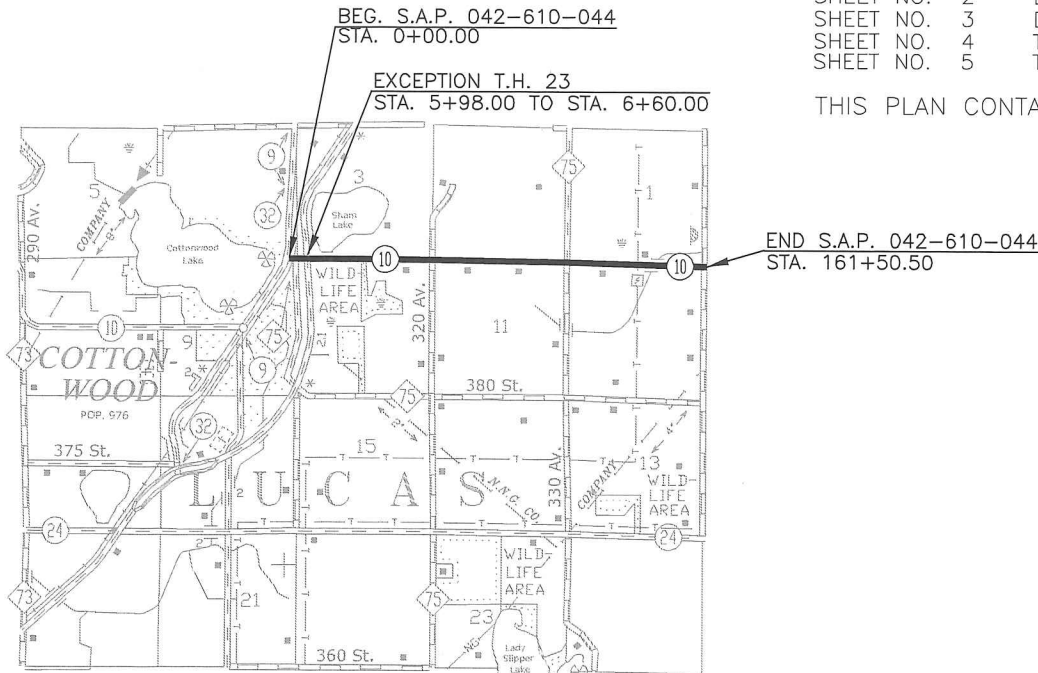
FROM: 230' WEST OF N.E. COR. SEC. 9 T113N-R40W
TO: N.E. COR. SEC. 12 T113N-R40W

STATE AID PROJECT 042-610-044

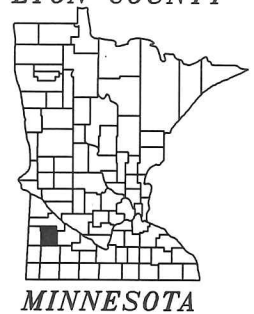
GROSS LENGTH	16150.50 FEET	3.059 MILES
BRIDGE LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS LENGTH	62.00 FEET	0.012 MILES
NET LENGTH	16088.50 FEET	3.047 MILES

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATED QUANTITY SHEET
SHEET NO. 3	DETAILS SHEET
SHEET NO. 4	TYPICAL SECTIONS SHEET
SHEET NO. 5	TRAFFIC CONTROL PLAN SHEET

THIS PLAN CONTAINS 5 SHEETS



LYON COUNTY



MINNESOTA

FUNCTIONAL CLASSIFICATION:
MAJOR COLLECTOR

POSTED SPEED: SEG. A 30 MPH

SEG. B & C 55 MPH

SEG.A: ADT (2025):1320 PROJ ADT (2045):1640

SEG.B: ADT (2025):1380 PROJ ADT (2045):1518

SEG.C: ADT (2025):650 PROJ ADT (2045):715

NO. OF TRAFFIC LANES:2

S.F. 130 %

R VALUE:10

TON DESIGN:10

ESALS (20 YR):475,000 (SEG.A)

ESALS (20 YR):465,000 (SEG.B)

ESALS (20 YR):216,000 (SEG.C)

SHOULDER WIDTH: 3' & 5'

STOPPING SITE DISTANCE BASED ON:

3.5' HEIGHT OF EYE

2.0' HEIGHT OF OBJECT

GRADED: 42-510-01 (1950)

42-610-27 (2003)

SURFACED: 42-510-03 (1955)

CP 85:10 (1985)

42-610-28 (2004)

42-610-33 (2006)

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.

Signature Aaron VanMoer 4/17/2025
Design Engineer

Printed name Aaron VanMoer License number 50428

Approved Aaron VanMoer 4/17/2025
LYON COUNTY ENGINEER

DISTRICT STATE AID ENGINEER: REVIEWED FOR
COMPLIANCE WITH STATE AID RULES/POLICY

APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

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

STATE AID PROJECT 042-610-044

SHEET 1 OF 5 SHEETS

	ITEM NO.	ITEM	UNIT	RURAL	TOTAL ESTIMATED QUANTITY
1	2016.601	QUALITY MANAGEMENT-THERMAL PROFILE	LUMP SUM	1	1
1	2016.601	QUALITY MANAGEMENT-INTELLIGENT COMPACTION	LUMP SUM	1	1
1	2021.501	MOBILIZATION	LUMP SUM	1	1
1	2051.501	MAINTENANCE & RESTORATION OF HAUL ROADS	LUMP SUM	1	1
2	2221.509	SHOULDER BASE AGGREGATE CLASS 5 MOD	TON	3125	3125
3	2232.504	MILL BITUMINOUS SURFACE (1.50")	SQ YD	275	275
4	2360.509	TYPE SP 4.75 WEAR COURSE MIXTURE (3,B)	TON	1950	1950
5	2360.509	TYPE SP 12.5 WEAR COURSE MIXTURE (3,B)	TON	4173	4173
6	2563.601	TRAFFIC CONTROL	LUMP SUM	1	1
7	2580.501	INTERIM PAVEMENT MARKING	LUMP SUM	1	1
8	2582.503	4" SOLID LINE PAINT	LIN FT	10632	10632
8	2582.503	6" SOLID LINE PAINT	LIN FT	32292	32292
8	2582.503	24" SOLID LINE PAINT	LIN FT	36	36
8	2582.503	4" BROKEN LINE PAINT	LIN FT	3019	3019

CONSTRUCTION NOTES

- TOTAL BID PRICE SHALL INCLUDE ALL OPERATIONS IN A SINGLE LUMP SUM BID.
- 1100 TONS INCLUDED IN TOTAL QUANTITY FOR CROSSROADS & FIELD APPROACHES.
#200 SIEVE MODIFIED TO 6-12%.
- MILL EXISTING BITUMINOUS SURFACE 8' WIDE X 1.5" DEEP AT INTERSECTIONS AS DIRECTED BY THE ENGINEER.
MILLINGS SHALL BECOME PROPERTY OF THE CONTRACTOR. TOTAL QUANTITY INCLUDES X-RDS AND DRIVEWAYS.
- PLACE LEVELING COURSE AS DIRECTED BY THE ENGINEER. CONSTRUCT LONGITUDINAL JOINT AS PER MnDOT SPECIFICATION 2360.3C.
- 30' SAFETY EDGE SHALL BE INCLUDED ON ALL LIFTS. BITUMINOUS SAFETY EDGE SHALL EXTEND AT A 30° ANGLE FROM THE TOP OF EACH COURSE.
BITUMINOUS TACK COAT SHALL BE INCLUDED WITH THE TOTAL BID PRICE. SUPPLY AND CONSTRUCT BITUMINOUS TACK COAT AS PER MnDOT SPECIFICATION 2357.
560 TONS INCLUDED IN TOTAL QUANTITY FOR AUXILIARY APPROACH PAVING ON TOP WEAR COURSE.
- TOTAL BID PRICE SHALL INCLUDE ALL TRAFFIC CONTROL OPERATIONS IN A SINGLE LUMP SUM BID. SEE SHEET 5 FOR DETAILS.
- INTERIM PAVEMENT MARKING SHALL BE APPLIED AFTER EACH DAYS PAVING OPERATIONS. INTERIM MARKINGS SHALL CONSIST OF CENTER LINE MARKINGS AND INCLUDE NO PASSING ZONES IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MN MUTCD).
- TOTAL PAINT PLACED.

CONSTRUCTION NOTES (GENERAL)

- THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL "D". THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."
- A RAILROAD CROSSING IS LOCATED WITHIN THE PROJECT LIMITS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT, COORDINATE AND REIMBURSE THE RAILROAD COMPANY AS DESCRIBED IN THE PROPOSAL. ALL COST FOR COMMUNICATION, INSURANCE, FLAGGING, ENGINEERING, INSPECTIONS, OTHER PROTECTIVE SERVICES AND DEVICES, AND ANY OTHER REQUIREMENTS SPECIFIED TO PROTECT THE RAILROAD COMPANY'S FACILITIES, PERSONNEL, EQUIPMENT AND TRAFFIC SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INCLUDING REIMBURSEMENT TO THE RAILROAD COMPANY.

STANDARD PLATES AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.	
STANDARD PLATES	
PLATE NO.	DESCRIPTION
8000 K	CHANNELIZERS
9000 E	APPROACHES AND ENTRANCES

CERTIFIED BY:  LIC. NO. 50428
LICENSED PROFESSIONAL ENGINEER

STATE AID PROJECT 042-610-044 SHEET 2 OF 5 SHEETS

BASIS FOR ESTIMATED QUANTITIES

WEAR COURSE MIXTURE

BITUMINOUS MATERIAL FOR MIXTURE (MAXIMUM DENSITY)
110LBS./SQ.YD./INCH OF DEPTH

TACK COAT

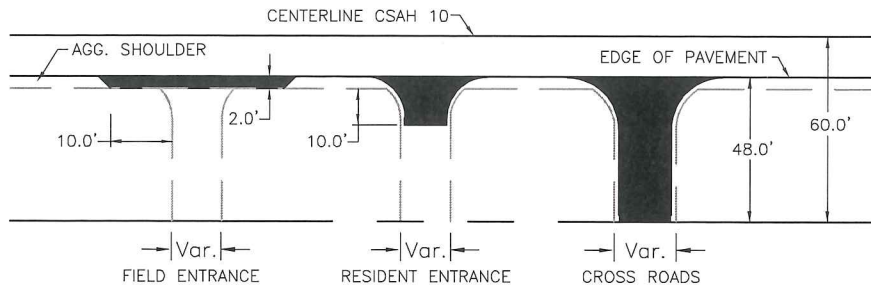
BITUMINOUS MATERIAL FOR TACK COAT .05 GALS. PER SQ.YD.

SHOULDER BASE AGGREGATE CL 5 MOD

140 POUNDS/CU.YD.
#200 SIEVE MODIFIED 6-12% PASSING
50 TON AT GRAVEL CROSS ROADS
25 TON AT ENTRANCES

TYPICAL AUXILIARY APPROACH PAVING

STANDARD PLATE 9000E SHALL APPLY. FIELD ADJUST AS DIRECTED BY THE ENGINEER.



ENTRANCE TYPE	#	EST. TONS
FIELD ENTRANCE (5 TON EA.)	16	80
ENTRANCE (20 TON EA.)	12	240
ROAD APPROACH (30 TON EA.)	8	240
		560

TYPICAL SECTION

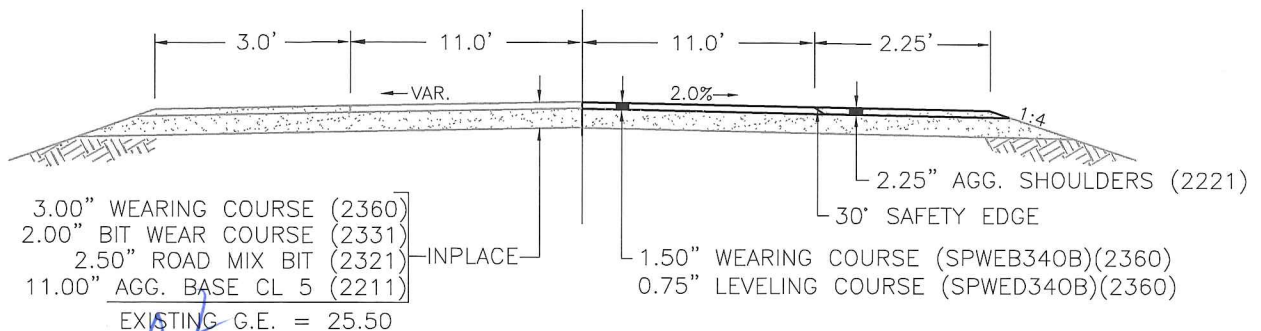
STA. 0+00.00 TO STA. 2+38.00

SEGMENT A
NOT TO SCALE

GRANULAR EQUIVALENT
10 TON
R VALUE: 10
ESAL'S: 475,000 (20 YR-FLEX)
REQUIRED G.E. 28.50
G.E. ON PLANS: 30.56

INPLACE

CONSTRUCT



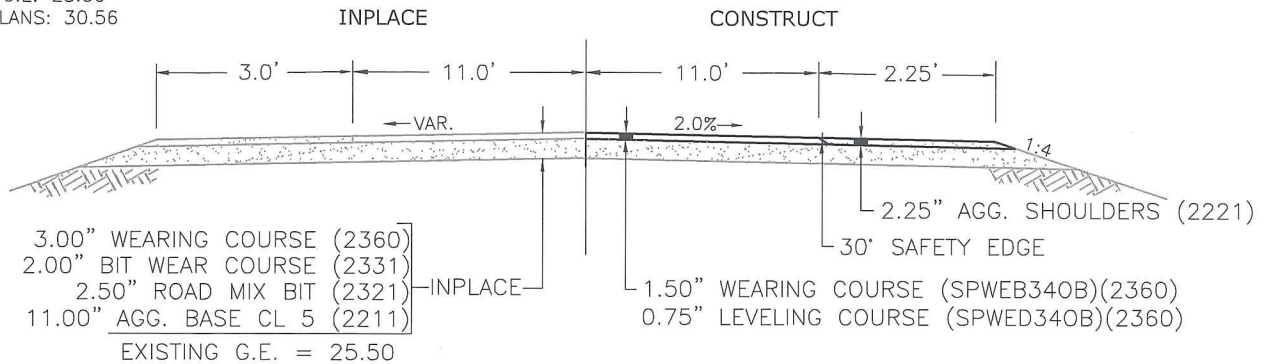
CERTIFIED BY: _____ LIC. NO. 50428

LICENSED PROFESSIONAL ENGINEER

STATE AID PROJECT 042-610-044 SHEET 3 OF 5 SHEETS

GRANULAR EQUIVALENT
10 TON
R VALUE: 10
ESAL'S: 465,000 (20 YR-FLEX)
REQUIRED G.E. 28.50
G.E. ON PLANS: 30.56

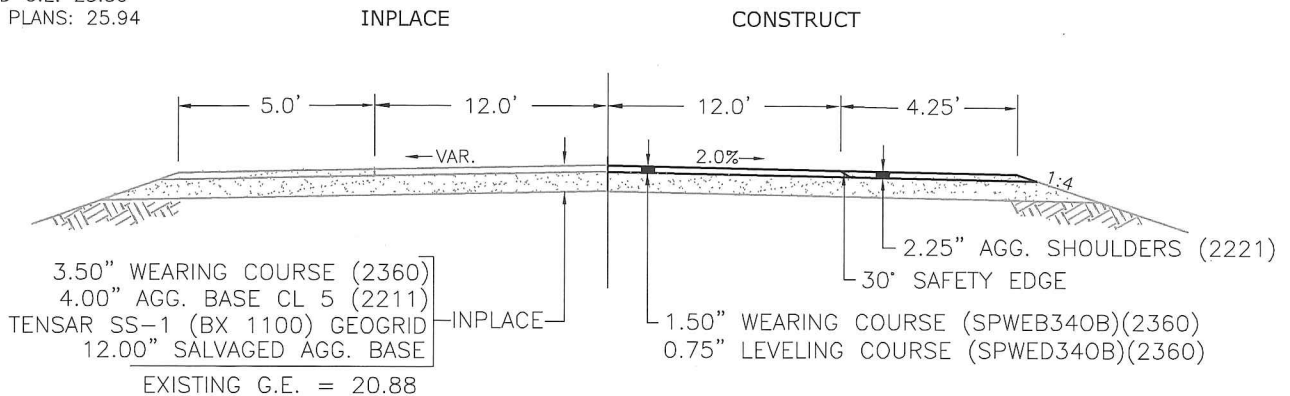
TYPICAL SECTION
STA. 2+38.00 TO STA. 5+98.00
SEGMENT A
NOT TO SCALE



EXCEPTION: T.H. 23 STA. 5+98.00 TO STA. 6+60.00 (62')

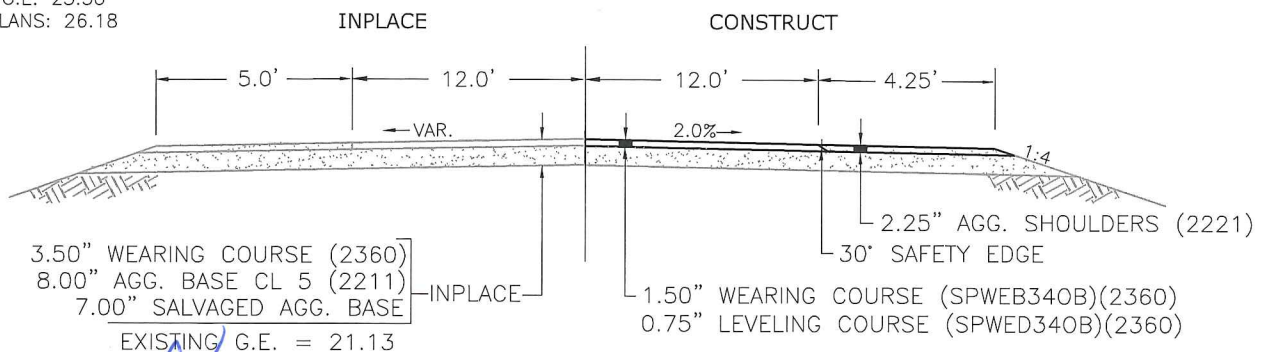
GRANULAR EQUIVALENT
10 TON
R VALUE: 10
ESAL'S: 216,000 (20 YR-FLEX)
REQUIRED G.E. 23.50
G.E. ON PLANS: 25.94

TYPICAL SECTION
STA. 6+60.00 TO STA. 23+23.50
SEGMENT B
NOT TO SCALE



GRANULAR EQUIVALENT
10 TON
R VALUE: 10
ESAL'S: 216,000 (20 YR-FLEX)
REQUIRED G.E. 23.50
G.E. ON PLANS: 26.18

TYPICAL SECTION
STA. 23+23.50 TO STA. 161+50.50
SEGMENT C
NOT TO SCALE

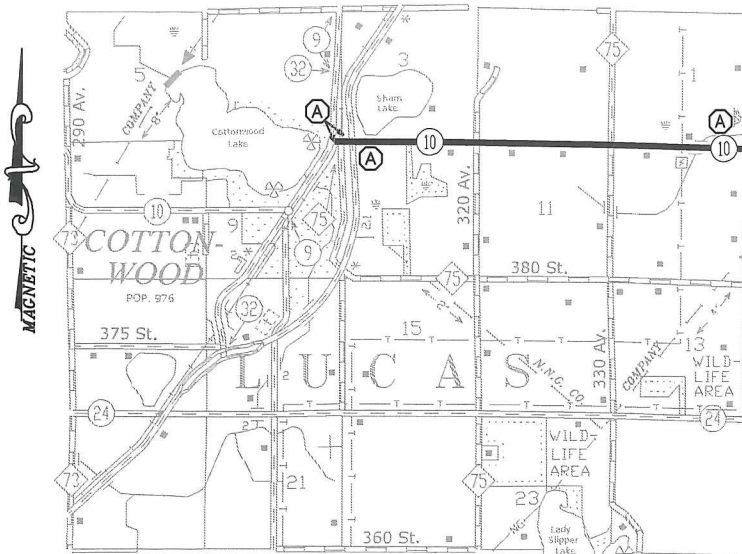


CERTIFIED BY:  LIC. NO. 50428

LICENSED PROFESSIONAL ENGINEER

STATE AID PROJECT 042-610-044 SHEET 4 OF 5 SHEETS

TEMPORARY TRAFFIC CONTROL PLAN



TEMPORARY TRAFFIC CONTROL SIGNS			
INSERT	SIGN	QUANTITY	NOTES
(A)	 G20-1 NEXT 3.0 MILES	4	INSTALL ON TYPE 3 BARRICADE BLACK ON ORANGE 48"x24" "NEXT 3.0 MILES"
	 W8-12	AS NEEDED	INSTALL 1/MILE MINIMUM BLACK ON ORANGE 48"x48"
	 W8-9	AS NEEDED	INSTALL 1/MILE MINIMUM BLACK ON ORANGE 48"x48"
	 W8-11	AS NEEDED	INSTALL 1/MILE MINIMUM BLACK ON ORANGE 48"x48"
	 W8-1A	AS NEEDED	BLACK ON ORANGE 48"x48"
	 W8-1A	AS NEEDED	BLACK ON ORANGE 48"x48"
	 W20-1	AS NEEDED	BLACK ON ORANGE 48"x48"
	 R4-1	AS NEEDED	INSTALL AT NO PASSING ZONE BLACK ON WHITE 24"x30"
	 R4-2	AS NEEDED	INSTALL AT NO PASSING ZONE BLACK ON WHITE 24"x30"

GENERAL TEMPORARY SIGNING NOTES:

1. TRAFFIC CONTROL LAYOUT FOR EACH OPERATION OF PAVING, SHOULDERING AND STRIPING SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE MnMUTCD, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST MnMUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
3. ALL NECESSARY TRAFFIC CONTROL DEVICES ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR THE IMMEDIATE REPAIR OR REPLACEMENT OF ALL TRAFFIC CONTROL DEVICES THAT BECOME DAMAGED, MOVED, OR DESTROYED.
4. ALL INPLACE REGULATORY AND WARNING SIGNS TO REMAIN INPLACE THROUGHOUT CONSTRUCTION.
5. THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND REMOVE ALL TRAFFIC CONTROL DEVICES REQUIRED TO PROVIDE SAFE MOVEMENT OF LOCAL VEHICULAR TRAFFIC THROUGHOUT THE PROJECT. THE ENGINEER WILL HAVE THE RIGHT TO MODIFY THE REQUIREMENTS OF TRAFFIC CONTROL AS DEEMED NECESSARY DUE TO FIELD CONDITIONS. THE STREET SHALL REMAIN OPEN TO LOCAL TRAFFIC AT ALL TIMES. TEMPORARY SIGNING AND TRAFFIC CONTROL SHALL BE A LUMP SUM MEASUREMENT, AND TOTAL NUMBER OF SIGNS AND HOURS OF FLAGGING SHALL VARY BASED ON THE CONTRACTORS OPERATION.

CERTIFIED BY: _____ LIC. NO. 50428

LICENSED PROFESSIONAL ENGINEER

STATE AID PROJECT 042-610-044 SHEET 5 OF 5 SHEETS