

# MINNESOTA DEPARTMENT OF TRANSPORTATION LYON COUNTY

CONSTRUCTION PLAN FOR:  
BITUMINOUS PAVING, PAVED SHOULDERS, RUMBLE STRIPS, AND PAVEMENT MARKINGS.

**COUNTY STATE AID HIGHWAY NO. 24**

**BETWEEN:** C.S.A.H. 10 (1.0 MILES E. OF MINNEOTA) AND U.S. 59  
**FROM:** N.E. COR. SEC. 30 T113N-R42W  
**TO:** N. 1/4 COR. SEC. 21 T113N-R41W

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

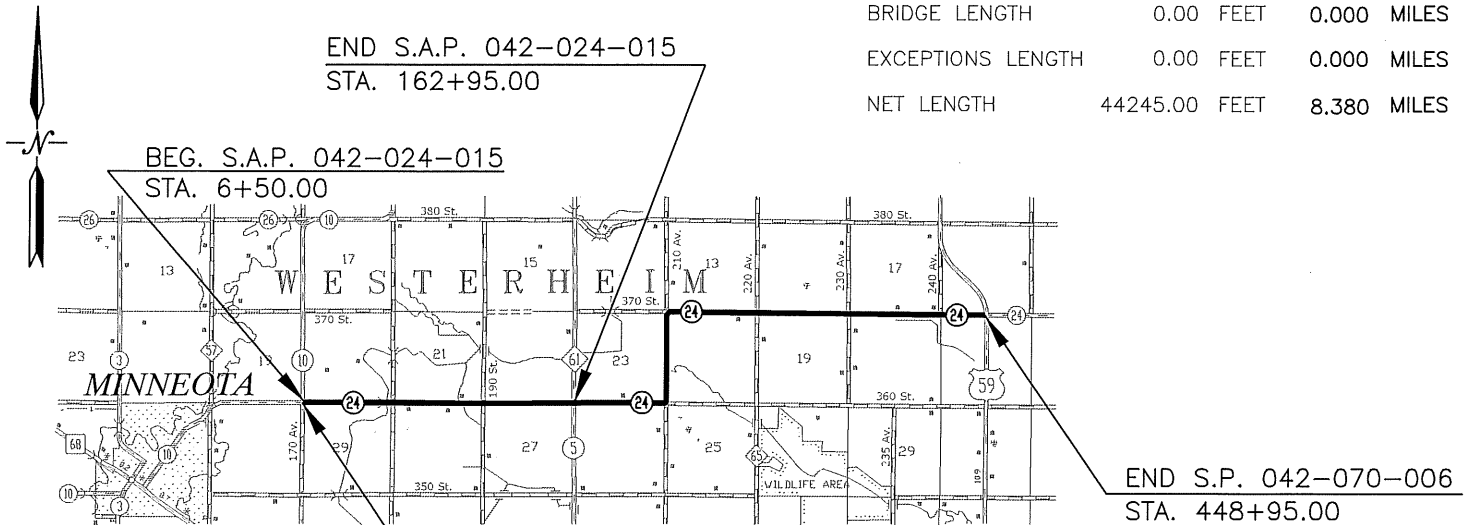
THIS PLAN CONTAINS 5 SHEETS

**STATE AID PROJECT NO. 042-624-015**

GROSS LENGTH 15645.00 FEET 2.963 MILES  
BRIDGE LENGTH 0.00 FEET 0.000 MILES  
EXCEPTIONS LENGTH 0.00 FEET 0.000 MILES  
NET LENGTH 15645.00 FEET 2.963 MILES

**STATE PROJECT NO. 042-070-006**

GROSS LENGTH 44245.00 FEET 8.380 MILES  
BRIDGE LENGTH 0.00 FEET 0.000 MILES  
EXCEPTIONS LENGTH 0.00 FEET 0.000 MILES  
NET LENGTH 44245.00 FEET 8.380 MILES



**SP 042-070-006**  
STA. 162+95 TO STA. 448+95

**BEG. S.P. 042-070-006**  
STA. 6+50.00

**FUNCTIONAL CLASSIFICATION:**

**RURAL MAJOR COLLECTOR**  
DESIGN SPEED: 50 MPH  
ADT: 360 (2014)  
PROJ ADT: 550 (2034)  
NO. OF TRAFFIC LANES: 2  
NO. OF PARKING LANES: 0  
S.F. 130 %  
SHOULDER WIDTH: 4.0'  
LANE WIDTH: 12.0'

I HEREBY CERTIFY THAT THIS PLAN 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.

Signature: *Aaron VanMoer* Typed Name: Aaron VanMoer  
Design Engineer

Date: 6/10/14 License No.: 50428

*Aaron VanMoer* Date: 6/10/14  
Approved County Engineer

*Erin Ovens* Date: 6/11/14  
District State Aid Engineer:  
Reviewed for Compliance with State Aid Rules/Policy

*James H. ...* Date: 6/16/14  
Approved for State Aid and Federal Aid Funding  for State Aid Engineer

STOPPING SITE DISTANCE BASED ON:  
3.5' HEIGHT OF EYE  
2.0' HEIGHT OF OBJECT

GRADED: SAP 042-624-004  
SURFACED: SAP 042-624-013

**SAP 042-624-015 & 042-070-006**  
STA. 6+50 TO STA. 162+95

**FUNCTIONAL CLASSIFICATION:**

**RURAL MAJOR COLLECTOR**  
DESIGN SPEED: 55 MPH  
ADT: 480 (2014)  
PROJ ADT: 660 (2034)  
NO. OF TRAFFIC LANES: 2  
NO. OF PARKING LANES: 0  
S.F. 130 %  
SHOULDER WIDTH: 5.0'  
LANE WIDTH: 12.0'

STOPPING SITE DISTANCE BASED ON:  
3.5' HEIGHT OF EYE  
2.0' HEIGHT OF OBJECT

GRADED: SAP 042-624-014

**GOVERNING SPECIFICATIONS**

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION".

NOTE	ITEM NO.	ITEM	UNIT	S.P. 042-070-006		S.A.P. 042-624-015	TOTAL ESTIMATED QUANTITY
				PARTICIPATING	NON-PART.		
	2021.501	MOBILIZATION	LUMP SUM	0.30		0.70	1.00
	2051.501	MAINT. & REST. OF HAUL ROADS	LIMP SUM	0.30		0.70	1.00
1	2105.619	MINOR GRADING	RD STA		288.00		288.00
2	2112.501	SUBGRADE PREPARATION	RD STA			157.00	157.00
3	2123.503	MOTOR GRADER	HOUR			10.00	10.00
	2221.501	SHOULDER BASE AGGREGATE CLASS 5 MOD	TON			4500.00	4500.00
4	2232.603	MILLED RUMBLE STRIPS-INTERMITTENT	LIN FT	80700.00			80700.00
5	2360.501	TYPE SP12.5 WEARING COURSE MIX (3,C)	TON	2500.00		14000.00	16500.00
5	2360.501	TYPE SP12.5 NON-WEARING COURSE MIX (3,B)	TON	2500.00			2500.00
6	2563.601	TRAFFIC CONTROL	LUMP SUM	0.30		0.70	1.00
7	2575.501	SEEDING	ACRE			5.80	5.80
	2575.502	SEED MIXTURE 25-142	POUND			261.00	261.00
	2575.511	MULCH MATERIAL TYPE 1	TON			11.60	11.60
	2575.519	DISK ANCHORING	ACRE			5.80	5.80
	2582.502	4" SOLID LINE YELLOW-EPOXY (WR)	LIN FT		13850.00	11850.00	25700.00
	2582.502	6" SOLID WHITE-EPOXY (WR)	LIN FT	87500.00			87500.00

### CONSTRUCTION NOTES

1. MINOR GRADING SHALL INCLUDE ALL MATERIALS AND LABOR TO NOTCH AND SHAPE THE EXISTING AGGREGATE SHOULDERS PRIOR TO PAVING. STOCKPILING, PLACING, SHAPING AND ROLLING THE REMOVED AGGREGATE AFTER PAVEMENT IS COMPLETED SHALL ALSO BE INCLUDED IN THE TOTAL BID PRICE OF 2105.619 (MINOR GRADING). STA. 162+95.00 TO STA. 448+95.00.
2. THE CONTRACTOR SHALL SHAPE, WATER, AND COMPACT THE AGGREGATE SURFACE TO THE TYPICAL SECTION PRIOR TO BITUMINOUS PAVING. STA. 6+50.00 TO STA. 162+95.00.
3. THE CONTRACTOR SHALL PULL UP INPLACE TOPSOIL TO THE FINISHED SHOULDER P.I. PRIOR TO SEEDING OPERATIONS. STA. 6+50.00 TO STA. 162+95.00.
4. MILLED RUMBLE STRIP SHALL BE 8". RUMBLE STRIP SHALL BE OMITTED 250' ON EACH SIDE OF A RESIDENTIAL ENTRANCE AND 50' BEYOND THE TURNING RADIUS OF ALL CROSS ROADS. STA. 6+50.00 TO STA. 448+95.00.
5. 30° SAFETY EDGE SHALL BE INCLUDED. BITUMINOUS SAFETY EDGE SHALL EXTEND AT A 30° ANGLE FROM THE TOP OF EACH COURSE. STA. 6+50.00 TO STA. 448+95.00. BITUMINOUS TACK COAT SHALL BE INCLUDED IN THE TOTAL BID PRICE.
6. SEE SHEET 4.
7. SEEDING WIDTH SHALL NOT EXCEED 8.0'. STA. 6+50.00 TO STA. 162+95.00.

CERTIFIED BY:



LIC. NO. 50428

S.A.P. NO. 042-624-015  
S.P. NO. 042-070-006

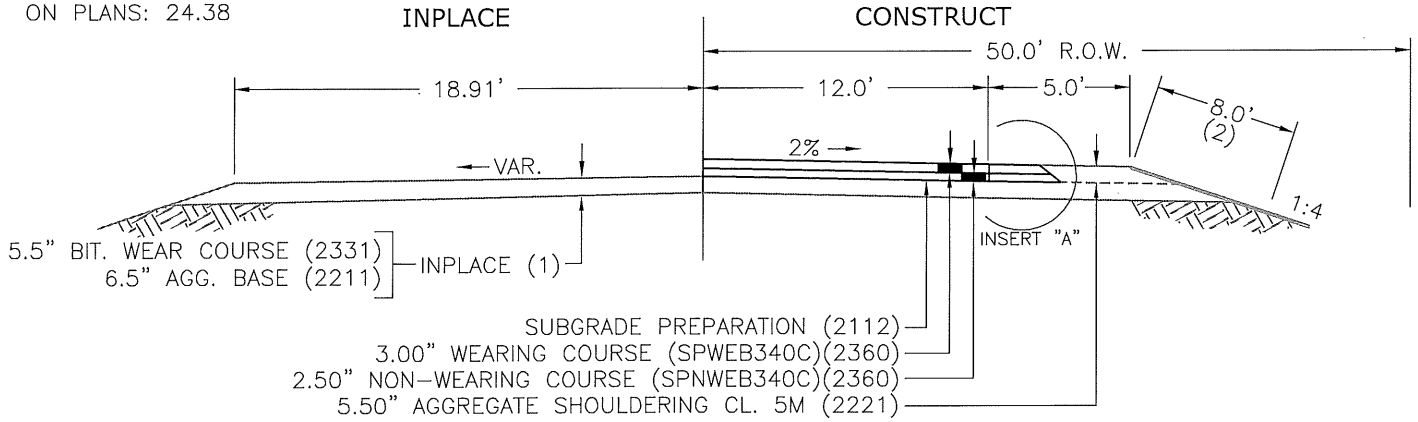
SHEET 2 OF 5 SHEETS

# TYPICAL SECTIONS

10 TON DESIGN  
 R VALUE: 10  
 ESALS: 233,000  
 REQUIRED G.E.: 24.00  
 ON PLANS: 24.38

## S.A.P. 042-624-015 (C.S.A.H. 10 TO C.S.A.H. 5)

STA. 6+50.00 TO STA. 162+95.00  
 NOT TO SCALE



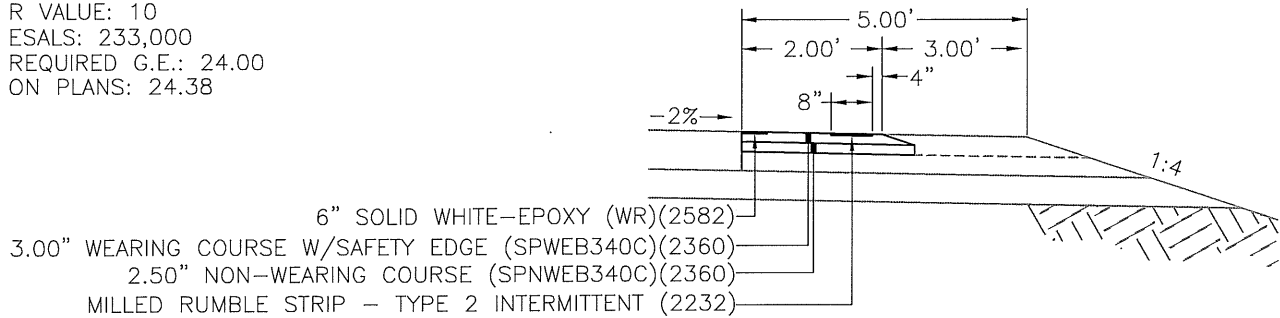
**NOTES:**

- (1) EXISTING SECTION PULVERIZED UNDER CONTRACT S.A.P. 042-624-014.
- (2) MOTOR GRADER HOURS PROVIDED TO PULL UP INPLACE TOPSOIL TO FINISHED SHOULDER P.I. PRIOR TO SEEDING.

## INSERT A - S.P. 042-070-006 (C.S.A.H. 10 TO C.S.A.H. 5)

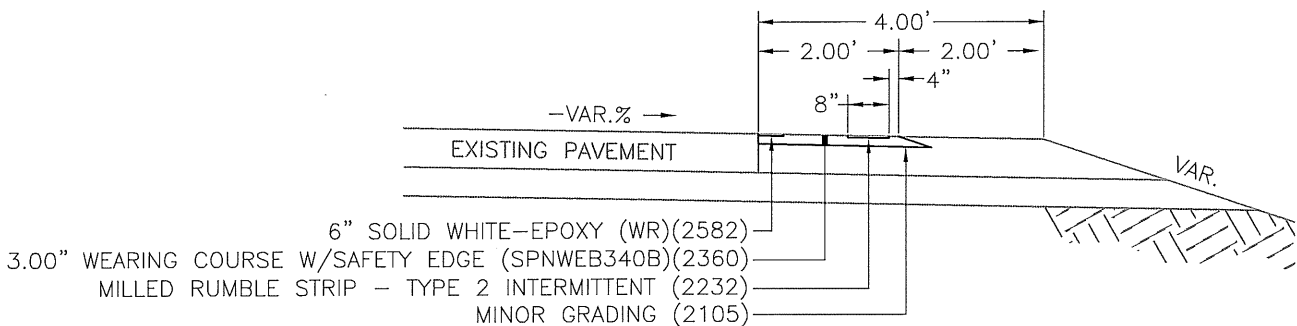
STA. 6+50.00 TO STA. 162+95.00  
 TYPICAL BOTH SIDES  
 NOT TO SCALE

10 TON DESIGN  
 R VALUE: 10  
 ESALS: 233,000  
 REQUIRED G.E.: 24.00  
 ON PLANS: 24.38



## S.P. 042-070-006 (C.S.A.H. 5 TO U.S. 59)

STA. 162+65.00 TO STA. 448+95.00  
 TYPICAL BOTH SIDES  
 NOT TO SCALE



CERTIFIED BY:

LICENSED PROFESSIONAL ENGINEER

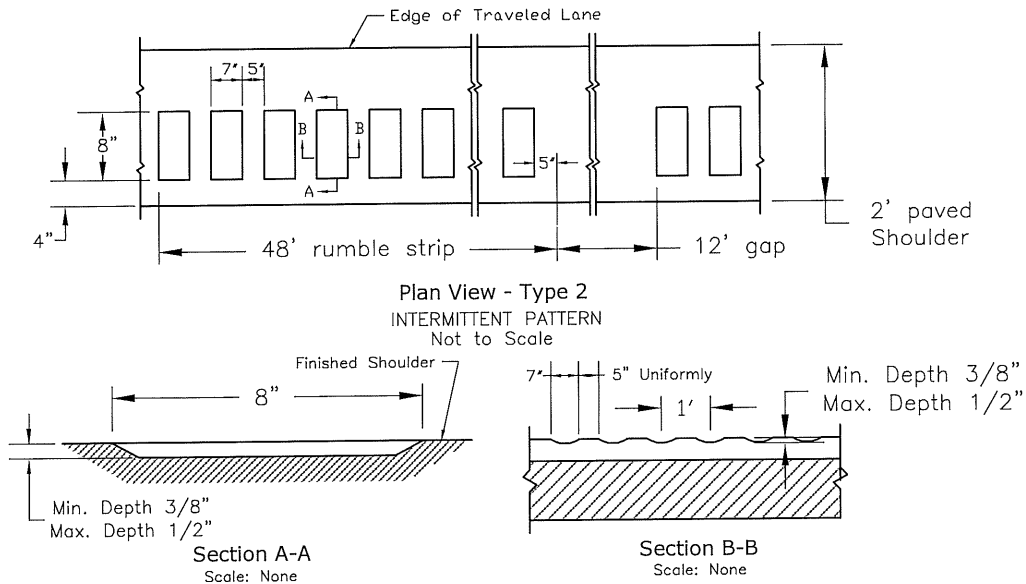
LIC. NO. 50428

S.A.P. NO. 042-624-015  
 S.P. NO. 042-070-006

SHEET 3 OF 5 SHEETS

## Milled Rumble Strip Detail

STA. 6+50.00 TO STA. 162+95.00 (S.P. 042-070-006)  
 (WITH 2'-0" PAVED SHOULDERS - 5.0' TOTAL WIDTH)  
 STA. 162+95.00 TO STA. 448+95.00 (S.P. 042-070-006)  
 (WITH 2'-0" PAVED SHOULDERS - 4.0' TOTAL WIDTH)  
 Not to Scale



NOTE: MEASUREMENT WILL BE MADE THE LENGTH OF THE INTERMITTENT RUMBLE STRIP CONSTRUCTED ON EACH SHOULDER, INCLUDING GAPS AND EXCLUDING ENTRANCES, RAMPS AND TURNLANES.

## BASIS FOR ESTIMATED QUANTITIES

### NON-WEARING COURSE MIXTURE (2360)

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

### WEARING COURSE MIXTURE (2360)

BITUMINOUS MATERIAL FOR MIXTURE (MAXIMUM DENSITY)  
 110LBS./SQ.YD./INCH OF DEPTH  
 1000 TONS FOR ENTRANCES (PROJECT S.A.P. 042-624-015)

### BITUMINOUS TACK COAT (2360)

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

### SEEDING (2575)

8' INSLOPE AREA  
 SEED MIXTURE 25-142: 45 LBS./ACRE

### MULCH - TYPE 1 (2575)

2 TONS/ACRE

### SHOULDER BASE AGGREGATE CL.5M (2221)

SHOULDER BASE AGGREGATE CL. 5 MOD. 140 LBS/CU.FT.  
 350 TONS FOR ENTRANCES (PROJECT S.A.P. 042-624-015)

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

### STANDARD PLATES

PLATE NO.	DESCRIPTION
8000 I	STANDARD BARRICADES
9000 E	APPROACHES AND ENTRANCES

CERTIFIED BY:

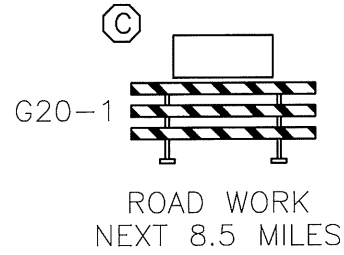
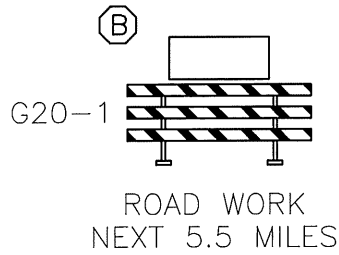
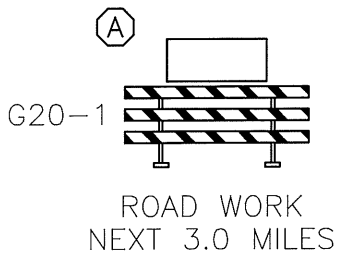
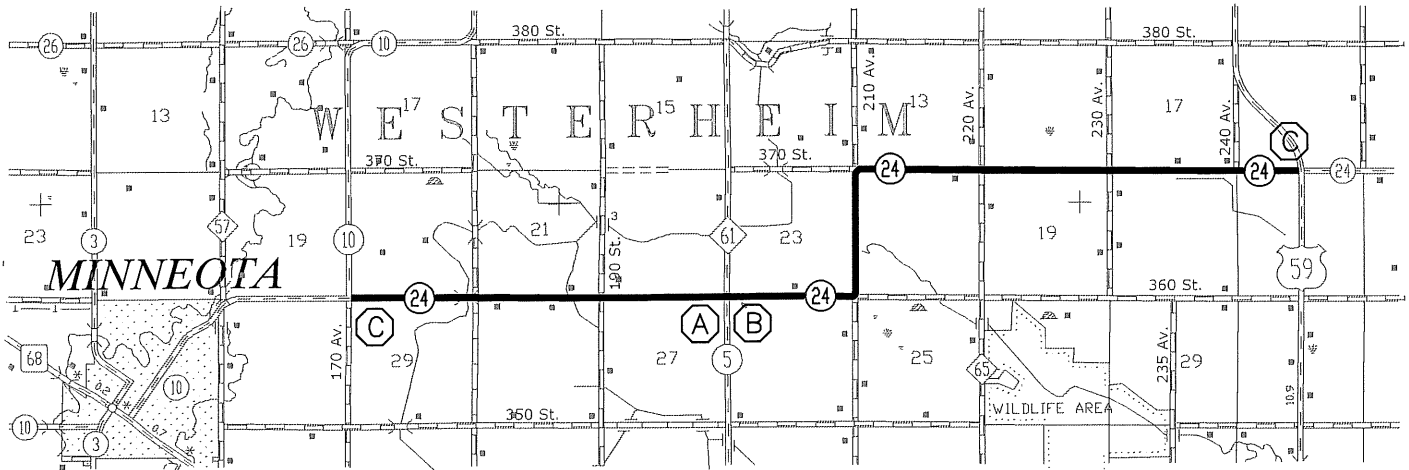
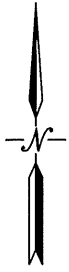
*[Signature]*  
 LICENSED PROFESSIONAL ENGINEER

LIC. NO. 50428

S.A.P. NO. 042-624-015  
 S.P. NO. 042-070-006

SHEET 4 OF 5 SHEETS

# TRAFFIC CONTROL PLAN



**NOTES:**

1. TRAFFIC CONTROL SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE MnMUTCD, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
2. 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.
3. ALL INPLACE REGULATORY AND WARNING SIGNS TO REMAIN INPLACE THROUGHOUT CONSTRUCTION.
4. 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.
5. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN TO THE ENGINEER 48 HOURS PRIOR TO CONSTRUCTION. THE TRAFFIC CONTROL PLAN SHALL BE INCLUDED WITH THE TOTAL BID PRICE OF 2563.601 (TRAFFIC CONTROL). TRAFFIC CONTROL DEVICES INCLUDE, BUT ARE NOT LIMITED TO, BARRICADES, WARNING SIGNS, FLASHERS, DRUMS, CONES, AND FLAG PERSONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO IMPLEMENT THE TRAFFIC CONTROL PLAN PRIOR TO CONSTRUCTION. TRAFFIC CONTROL PLAN IS IN ADDITION TO THE SIGNS AND BARRICADES LISTED ABOVE.