

MINNESOTA DEPARTMENT OF TRANSPORTATION
BIG STONE COUNTY

MINN. PROJ. NO. _____

GOVERNING SPECIFICATIONS

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES, STANDARD PLATES AND TYPICAL SECTIONS
3	TRAFFIC CONTROL

THIS PLAN CONTAINS 3 SHEETS

UTILITY NOTICE

The subsurface utility information in this plan is utility level D. This
quality level was determined according to the guidelines of C/ASCE
38-22, entitled "Standard Guidelines for Investigating and
Documenting Existing Utilities".

LOCAL AGENCY SIGNATURES:

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.
License number: 60399

Jordan Roggenbuck Date: 4/28/25
Approved: County Engineer Jorden Roggenbuck, P.E.

STATE AID APPROVALS:

Nathan M.R. Damm Date: 4/29/25
District State Aid Engineer: Reviewed for Compliance
with State-Aid and/or Federal Aid Rules/Policy

Nathan M.R. Damm Date: 4/29/25
State Aid Engineer: Approved for State-Aid and/or
Federal Aid Funding.

CONSTRUCTION PLAN FOR _____ BITUMINOUS MILL, BITUMINOUS OVERLAY, AND AGGREGATE SHOULDERING
LOCATED ON _____ CSAH 21 BETWEEN _____ CSAH 10 AND _____ CSAH 6 (Geographic Description)
FROM _____ A POINT AT OR NEAR SW CORNER OF SECTION 15, T122 N, R 45 W TO _____ A POINT AT OR NEAR NW CORNER OF SECTION 22, T123N, R45W (Legal Description)

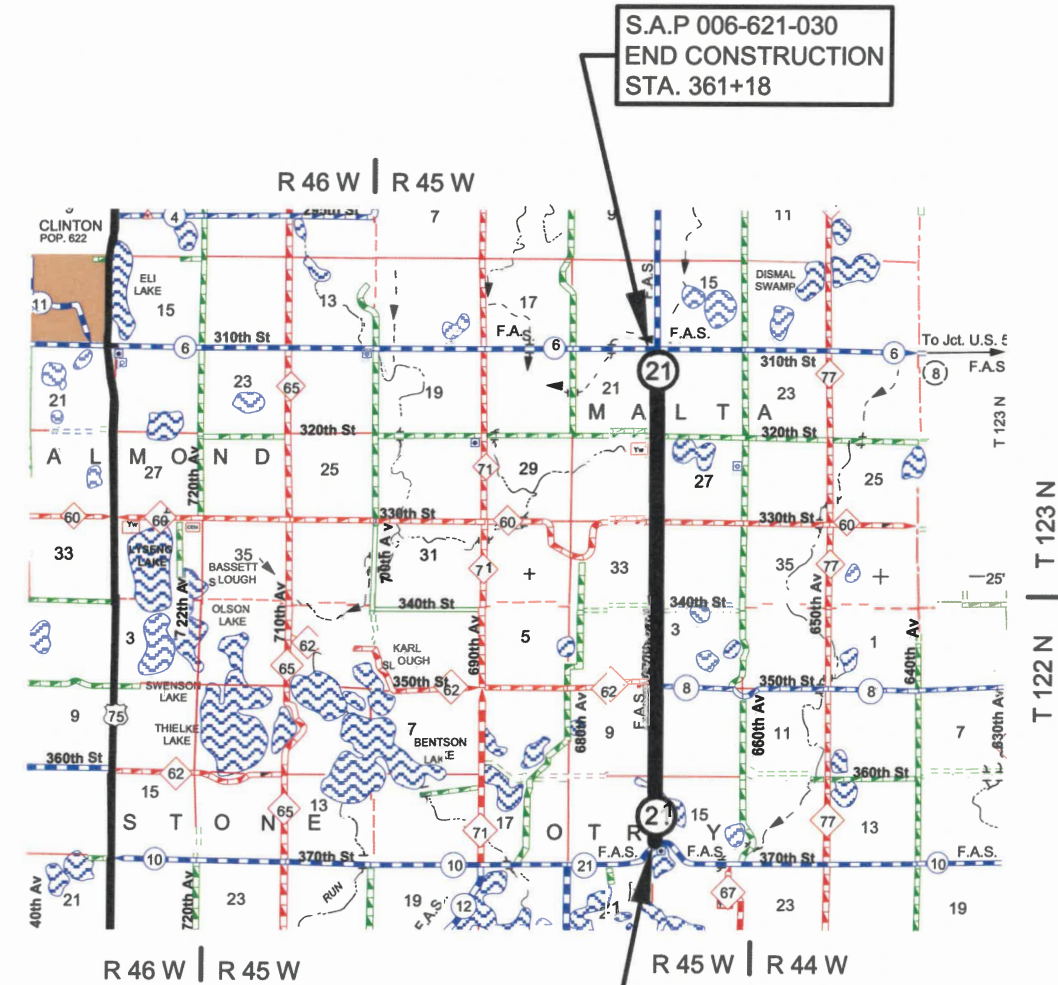
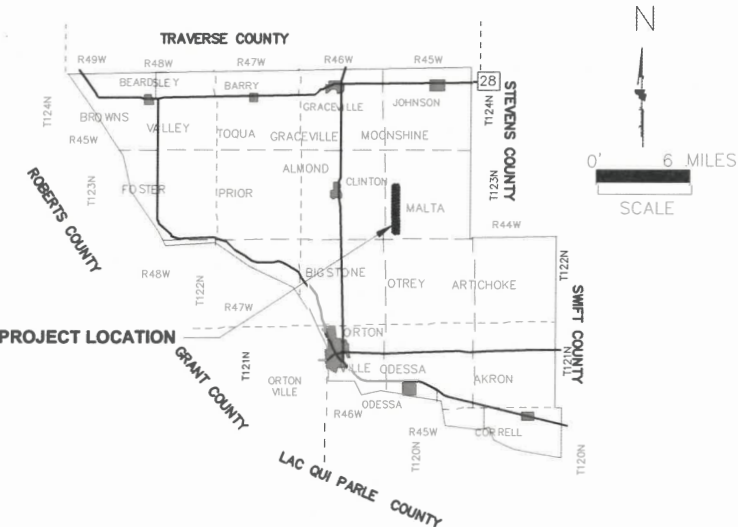
GROSS LENGTH	30491.00	FEET	5.775	MILES
BRIDGES-LENGTH	0.00	FEET	0.000	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	30491.00	FEET	5.775	MILES

STATE AID PROJ. NO. _____ 006-621-030

DESIGN DESIGNATION CSAH 21

STOPPING SIGHT DISTANCE BASED ON:

HEIGHT OF EYE: 3.5'
HEIGHT OF OBJECT: 2.0'
SOIL FACTOR: 130%
ADT (CURRENT YEAR): 410 (2025)
ADT (FUTURE YEAR): 510 (2045)
PROJECTION FACTOR: 1.2
HCADT: <150
R-VALUE : 12
ESALS: 145,000
DESIGN TON: 10
NO. OF TRAFFIC LANES: 2
LANE WIDTH: 12'
SHOULDER WIDTH: 3'
POSTED SPEED: 55 MPH
ROAD CLASSIFICATION: RURAL MAJOR COLLECTOR



ROAD HISTORY

1928-GRADED
1949-REGRADED JOB NO. ?? SEG 04
1959-REGRADED AND PAVED JOB NO. 5918 SEG 05
1963-OVERLAYED JOB NO. ??
1986-OVERLAYED (06-621-16)
2002-BIT OVERLAY AND AGG SHOULDERING (06-621-20)

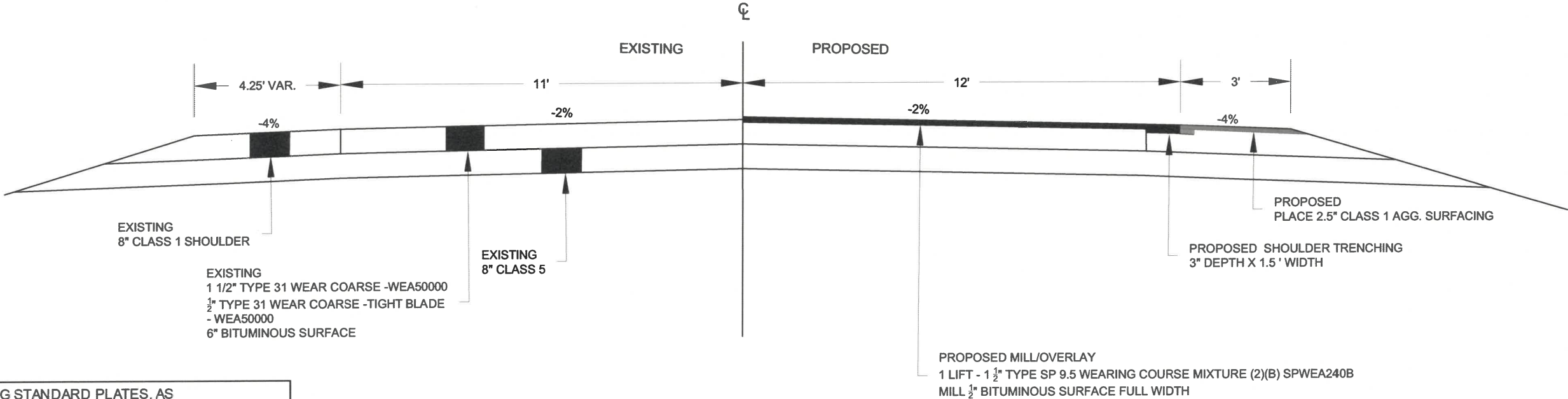
COUNTY SYSTEM: BIG STONE COUNTY
HORIZONTAL DATUM: NAD-83-96 ADJUSTMENT
VERTICAL DATUM: NAVD-88

ITEM NO.	MNDOT NO.	ESTIMATED QUANTITIES	UNIT	TOTAL ESTIMATED QUANTITY
		SAP 006-621-030 ITEM DESCRIPTION		
1	2021.501	MOBILIZATION	LS	1
2	2051.501	MAINT. & RESTORATION OF HAUL ROADS	LS	1
3	2106.619	SHOULDER TRENCHING	RDST	305
4	2118.509	AGGREGATE SURFACING CLASS 1	TON	4,635
5	2232.504	MILL BITUMINOUS SURFACE (1/2")	SY	75,393
6	2360.509	TYPE SP 9.5 WEAR COURSE MIX (2,B)	TON	7,614
7	2563.601	TRAFFIC CONTROL	LS	1
8	2580.501	INTERIM PAVEMENT MARKING	LS	1
9	2582.503	4" SOLID LINE PAINT	LF	3,503
10	2582.503	6" SOLID LINE PAINT	LF	60,532
11	2582.503	4" BROKEN LINE PAINT	LF	6,098

BASIS OF ESTIMATED QUANTITIES

3. SHOULDER TRENCHING STA 56+27 TO 361+18, SHALL INCLUDE BOTH LANES 3" DEPTH X 1.5' WIDTH ALONG EDGE OF EXISTING BITUMINOUS. MATERIAL REMOVED FROM TRENCH MAY BE USED FOR SHOULDERING MATERIAL.
4. AGGREGATE SURFACING CLASS 1 (135 LBS / CU FT). AGGREGATE SHALL BE PLACED WITH A SHOULDERING MACHINE APPROVED BY THE ENGINEER. INCLUDES QUANTITIES FOR 28 FIELD ENTRANCES, 5 DRIVEWAYS, AND 6 INTERSECTIONS.
5. MILL BITUMINOUS SURFACE FULL WIDTH AT 1/2" DEPTH. INCLUDES QUANTITIES FOR 3' BUMP OUT AT 28 FIELD ENTRANCES, 5 DRIVEWAYS AND 6 INTERSECTING ROADS. MILL PROFILE AND SLOPE CORRECTION AT 2 LOCATIONS, APPROXIMATELY 100' EACH, AS MARKED BY COUNTY. MILLINGS BECOME PROPERTY OF CONTRACTOR, AND MAY BE USED IN BITUMINOUS MIXTURE. MILL BITUMINOUS SURFACE JOINT AT BEGINING AND END OF PROJECT 1.5" AND TAPER TO 0.5" AS DIRECTED BY THE ENGINEER.
6. TYPE SP 9.5 WEARING COURSE MIXTURE (2)(B) (110 LBS/IN*SQ.YD.) CSS-1H OR CQS-1H FOR TACK COAT SHALL BE INCLUDED IN BID PRICE FOR 2360.509 AND APPLIED IN ACCORDANCE WITH SPEC. 2357.
7. SIGNING SHALL BE INSTALLED AND APPROVED BY THE ENGINEER AT LEAST 24 HOURS BEFORE ANY WORK IS STARTED.
8. INTERIM PAVEMENT MARKING (4' LONG WITH 50' INTERVALS) PLACE AFTER BITUMINOUS MILLING. FINAL LIFT SHALL BE TEMPORARY RAISED PAVEMENT MARKERS. SHALL BE INCLUDED IN BID PRICE FOR 2580.501. REMOVAL OF TEMPORARY RAISED PAVEMENT MARKERS SHALL BE INCLUDED IN THE BID PRICE FOR 2580.501.
9. YELLOW - LATEX
10. WHITE - LATEX
11. YELLOW- LATEX (10' STRIPE WITH 40' SKIP)

PROPOSED BITUMINOUS OVERLAY AND AGGREGATE SHOULDERING
10 TON DESIGN
GRAVEL EQUIVALENT 23.6"
STATION 56+27 TO 361+18



THE FOLLOWING STANDARD PLATES, AS
APPROVED BY THE FHWA SHALL APPLY

8000K	TEMPORARY CHANNELIZERS
9000E	APPROACHES AND ENTRANCES

ESTIMATED QUANTITIES, STANDARD PLATES AND TYPICAL SECTION

CERTIFIED BY <i>[Signature]</i>	LIC. NO. 60399	4/28/25
STATE AID PROJ. NO. S.A.P. 006-621-030	SHEET 2	OF 3

TRAFFIC CONTROL NOTES:

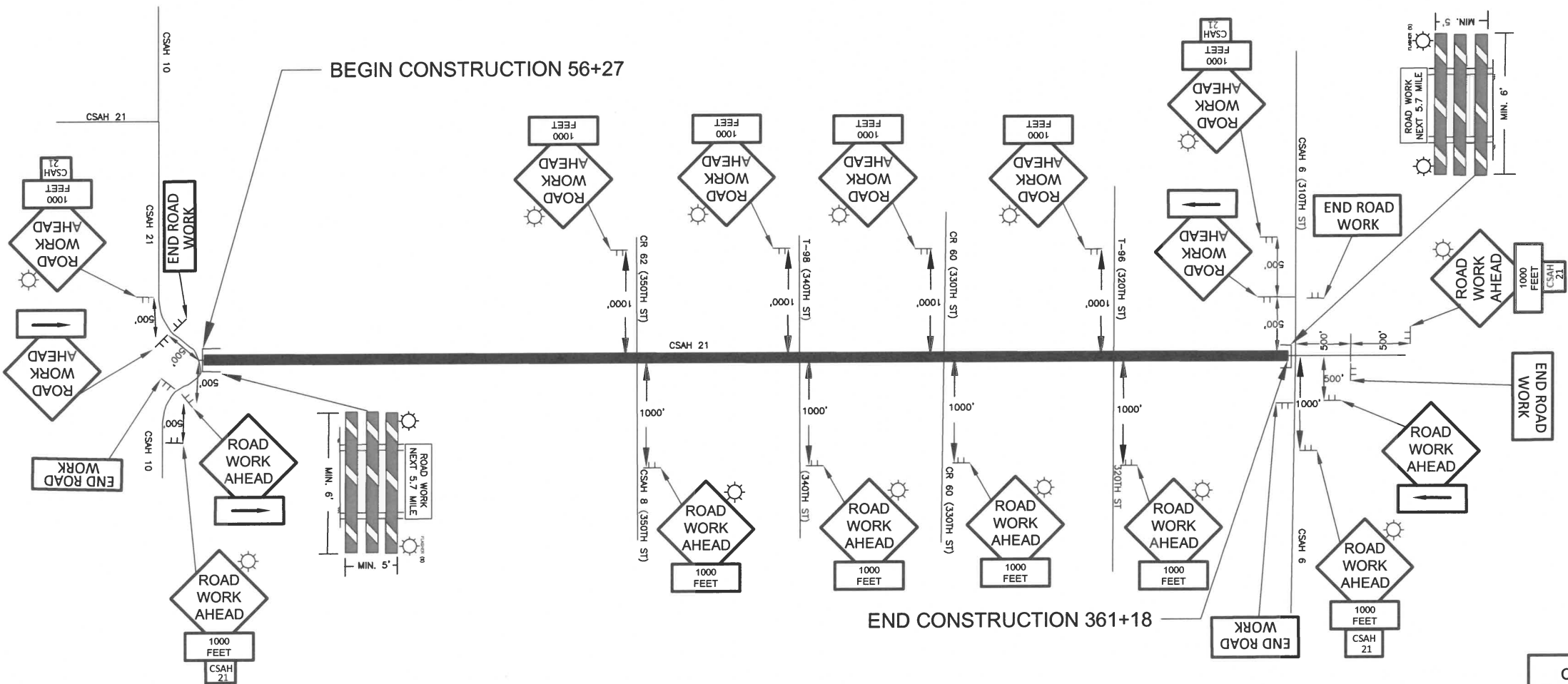
1. ALL TRAFFIC CONTROL SIGNING AND DEVICES SHALL CONFORM TO MOST RECENT EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". (INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS)
2. CONSTRUCTION ZONE SIGNING WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE NUMBER AND LOCATION OF THESE SIGNS WILL BE DETERMINED BY THE CONTRACTOR'S OPERATIONS.
3. CONSTRUCTION SIGNS AND BARRICADES THAT ARE PERIODICALLY REQUIRED TO BE MOVED DUE TO CONSTRUCTION OPERATIONS, SHALL BE PLACED AT LOCATIONS WHERE THEY GIVE SUFFICIENT WARNING TO MOTORISTS AND PEDESTRIANS OF THE CONDITIONS AHEAD AND SHALL BE RELOCATED AS NEEDED TO KEEP SIGNING CURRENT AT REQUIRED LOCATIONS.
4. THE CONTRACTOR SHALL PROTECT AND RESTRICT ALL PEDESTRIANS FROM WORK AREAS.
5. THE EXACT LOCATION OF ALL TRAFFIC CONTROL DEVICES SHALL BE DETERMINED AT THE SITE.
6. ALL SIGNS SHALL BE MOUNTED ON FIXED SUPPORTS UNLESS APPROVED BY THE ENGINEER EXCEPT TYPE I, II, & III BARRICADES. SIGNS WHICH ARE WIDER THAN 36 INCHES OR LARGER THAN 10 SQUARE FEET IN AREA SHALL BE MOUNTED ON TWO POSTS.
7. ALL WARNING SIGNS SHALL BE 48"X48" UNLESS APPROVED BY THE ENGINEER.
8. ALL FIRST WARNING SIGNS SHALL HAVE A TYPE A FLASHER IN ALL LOCATIONS.
9. SIGNING SHALL BE INSTALLED AND APPROVED BY THE ENGINEER 24 HOURS BEFORE ANY WORK IS STARTED.

NOT TO SCALE

SIGN LEGEND

⊥ MULTI POST
⊥ TYPE III

SIGN LEGEND				
SIGN OR DEVICE	SIGN NO.	COLOR	SIZE	ESTIMATED QUANTITY
	W20-1	BLACK ON ORANGE	48"X48"	17
	W16-2P	BLACK ON ORANGE	24"X18"	13
	G20-1	BLACK ON ORANGE	60"X24"	2
	FLASHER TYPE A	YELLOW	----	17
	TYPE III BARRICADE	ORANGE ON WHITE	8'	2
	G20-2	BLACK ON ORANGE	48"X24"	5
	M1-X4A	BLACK ON ORANGE	18"X18"	5
	W1-6	BLACK ON ORANGE	48"X24"	4



TRAFFIC CONTROL

CERTIFIED BY *John P. [Signature]* LIC. NO. 60399 4/28/25
STATE AID PROJ. NO. S.A.P. 006-621-030 SHEET 3 OF 3