MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR BITUMINOUS OVERLAY, AGGREGATE BASE & BITUMINOUS SURFACING

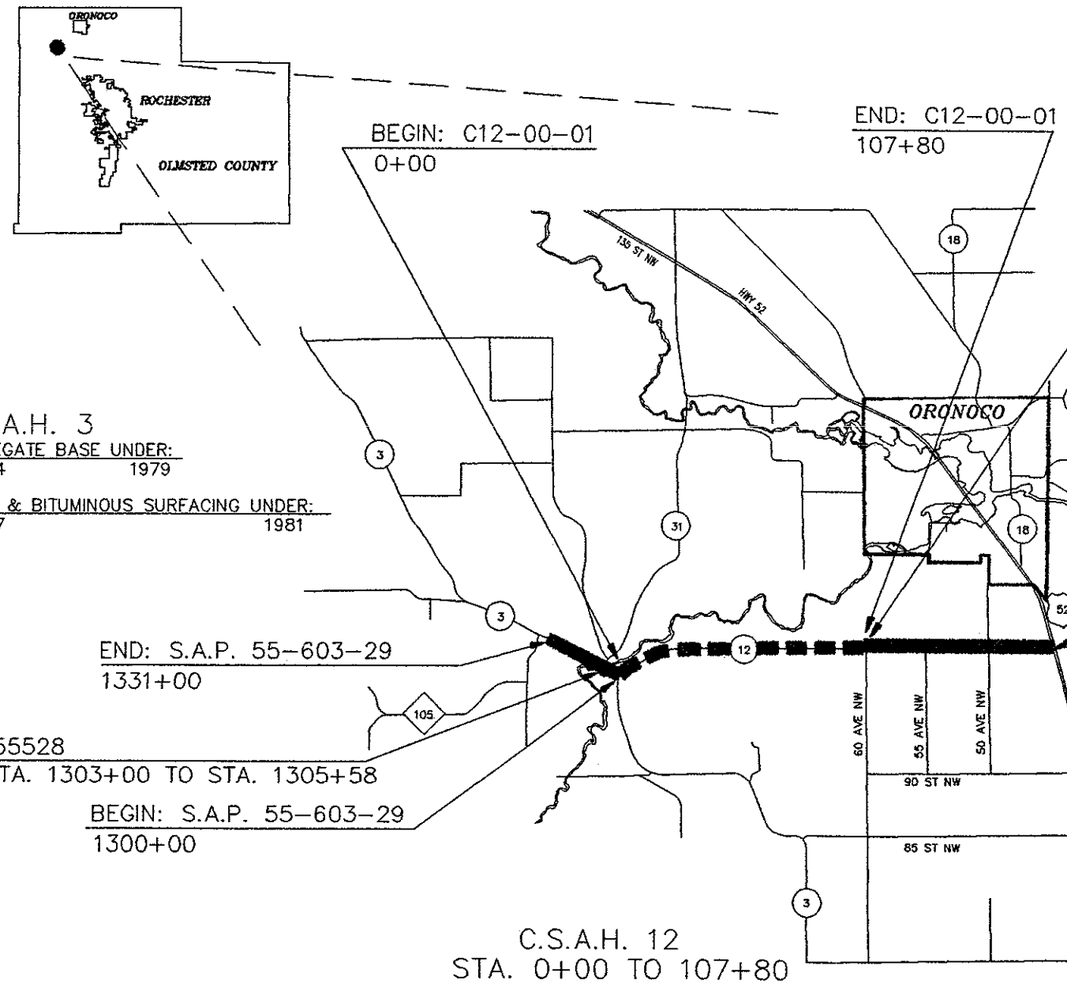
LOCATED ON C.S.A.H. 3 & C.S.A.H. 12 BETWEEN C.R. 105 AND T.H. 52 (GEOGRAPHIC DESCRIPTION)

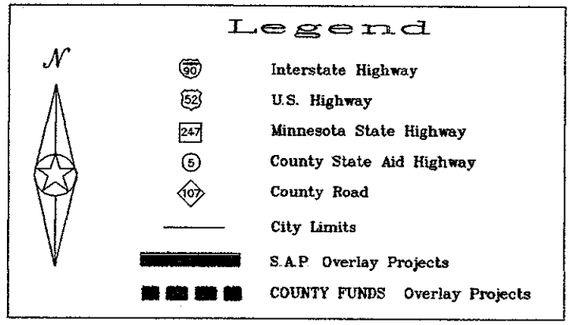
FROM 462' NORTH & 105' WEST OF S.E. COR. N.W. 1/4 SECTION 22, T108N, R15W TO CENTER SECTION 20 T108N, R14W (LEGAL DESCRIPTION)

S.A.P. NO.	S.A.P. 55-603-29		
GROSS LENGTH	3100.00	feet	0.587 miles
BRIDGE-LENGTH	258.00	feet	0.049 miles
EXCEPTIONS-LENGTH	258.00	feet	0.049 miles
NET LENGTH	2842.00	feet	0.538 miles

PROJECT NO.	C12-00-01		
GROSS LENGTH	10,780	feet	2.042 miles
BRIDGE-LENGTH		feet	miles
EXCEPTIONS-LENGTH		feet	miles
NET LENGTH	10,780	feet	2.042 miles

S.A.P. NO.	S.A.P. 55-612-16		
GROSS LENGTH	7830.00	feet	1.483 miles
BRIDGE-LENGTH		feet	miles
EXCEPTIONS-LENGTH		feet	miles
NET LENGTH	7830.00	feet	1.483 miles





C.S.A.H. 3

GRADED & AGGREGATE BASE UNDER:
S.A.P. 55-603-14 1979

AGGREGATE BASE & BITUMINOUS SURFACING UNDER:
S.A.P. 55-603-17 1981

C.S.A.H. 12
STA. 0+00 TO 107+80

GRADED & AGGREGATE BASE UNDER:
55-204 T-46-C 1946

GRADED & AGGREGATE BASE UNDER:
T-CA-57 1957

AGGREGATE BASE & BITUMINOUS SURFACE UNDER:
S.A.P. 55-612-02 1959

BITUMINOUS OVERLAY UNDER:
C 12-77-03 1973

C.S.A.H. 12
STA. 107+80 TO 186+10

GRADED, CULVERTS, & AGGREGATE BASE UNDER:
S.A.P. 55-612-14 1999

S.A.P. 55-603-29	C.S.A.H. 3
C12-00-01	C.S.A.H. 12
S.A.P. 55-612-16	C.S.A.H. 12

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", AS AMENDED BY THE MAY 2, 1994 SUPPLEMENT SPECIFICATION, SHALL GOVERN.

INDEX

SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATED QUANTITIES
SHEET NO. 3	TYPICAL SECTIONS
SHEET NO. 4-5	DETAILS
SHEET NO. 6-8	TRAFFIC CONTROL

THIS PLAN CONTAINS 8 SHEETS

S.A.P. 55-603-29
DESIGN DESIGNATION: C.S.A.H. 3

R ΣN18(20)
ADT (Current Year) = 820 (2000) Design Speed 50 mph
ADT (Future Year) = 1312 (2020) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5' Height of object 0.5'
D (Directional Distr.) = Design Speed not achieved at:
T (Heavy Commercial) = EST. % STA. TO STA. mph
SUBGRADE = K= STA. TO STA. mph

SHOULDER WIDTH 8.0 ft.
FUNCTIONAL CLASSIFICATION: COLLECTOR
SOIL FACTOR = 130%
7 ton DESIGN

PROJECT C12-00-01
DESIGN DESIGNATION: C.S.A.H. 12

R ΣN18(20)
ADT (Current Year) = 739 (2000) Design Speed 55 mph
ADT (Future Year) = 1182 (2020) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5 Height of object 0.5'
D (Directional Distr.) = Design Speed not achieved at:
T (Heavy Commercial) = EST. % STA. TO STA. mph
SUBGRADE = K= STA. TO STA. mph

SHOULDER WIDTH 2.0 ft.
FUNCTIONAL CLASSIFICATION: COLLECTOR
SOIL FACTOR = 130%
7 ton DESIGN

S.A.P. 55-612-16
DESIGN DESIGNATION: C.S.A.H. 12

R ΣN18(20)
ADT (Current Year) = 739 (2000) Design Speed 55 mph
ADT (Future Year) = 1182 (2020) Based on STOPPING Sight Distance
DHV (Design Hr. Vol.) = Height of eye 3.5 Height of object 0.5'
D (Directional Distr.) = Design Speed not achieved at:
T (Heavy Commercial) = EST. 4% STA. TO STA. mph
SUBGRADE = K=150 STA. TO STA. mph

SHOULDER WIDTH 5.5 ft.
FUNCTIONAL CLASSIFICATION: COLLECTOR
SOIL FACTOR = 130%
9 ton DESIGN

APPROVALS:

DESIGN ENGINEER: 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.

DATE 3/3/00 REGISTRATION NUMBER 19917
Kaye M Bruneck
APPROVED: COUNTY DESIGN ENGINEER

DATE 3/3/00 REGISTRATION NUMBER 10397
Michael L Keehan
APPROVED: OLMSTED COUNTY ENGINEER

STATE AID APPROVALS:

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

APPROVED FOR STATE AID FUNDING:
MN STATE AID ENGINEER
DATE: March 13, 00

S.A.P. 55-603-29 & S.A.P. 55-612-16 & C12-00-01
LOCATION C.S.A.H. 3 & C.S.A.H. 12 SHEET NO. 1 OF 8 SHEETS

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO	ITEM	UNIT	QUANTITIES							
				PARTICIPATING C S.A H. 3 S.A.P. 55-603-29	NON-PARTICIPATING C12-00-01	PARTICIPATING C S.A H. 12 S.A.P. 55-612-16		TOTAL PARTICIPATING	TOTAL NON-PARTICIPATING		TOTAL
	2104.513	SAWING BITUMINOUS PAVEMENT	L.F.			48		48			48
	2211.501	AGGREGATE BASE CLASS 5	TON			3475		3475			3475
①	2221.501	AGGREGATE SHOULDERING CLASS 2	TON	1035	1510	3725		4760	1510		6270
	2232.501	MILL BITUMINOUS SURFACE	S.Y.	450				450			450
	2331.603	SAWED/SEALED JOINT	L.F.			4710		4710			4710
②	2350.609	TYPE MV4 WEARING COURSE MIXTURE	TON	730	2705	1890		2620	2705		5325
	2350.609	TYPE MV4 NON WEARING COURSE MIXTURE	TON	625	2375	5170		5795	2375		8170
	2563.601	TRAFFIC CONTROL	L.S.	13%	50%	37%		50%	50%		1
	2564.603	4" SOLID LINE WHITE-EPOXY	L.F.	6200	21560	15660		21860	21560		43420
	2564.603	4" BROKEN LINE YELLOW-EPOXY	L.F.	650	1600	1570		2220	1600		3820
	2564.603	4" SOLID LINE YELLOW-EPOXY	L.F.	960	4160	4365		5325	4160		9485
	2564.603	4" DOUBLE SOLID LINE YELLOW-EPOXY	L.F.		3065				3065		3065
	2580.502	TEMPORARY LANE MARKING	L.F.	495	1725	1880		2375	1725		4100

CONSTRUCTION NOTES:

① INCLUDES 455 TON FOR 8 ROAD APPROACHES, 32 FARM/RESIDENTIAL ENTRANCES, AND 16 FIELD ENTRANCES

② INCLUDES 600 TON FOR 8 ROAD APPROACHES, 32 FARM/RESIDENTIAL ENTRANCES, 16 FIELD ENTRANCES, AND 2 TRAIL APPROACHES

BASIS OF PLANNED QUANTITIES

AGGREGATE SHOULDERING CLASS 2 – 140 LBS/FT^3

2350 BITUMINOUS MIXTURE – 146 67 LBS /FT^3 (OR) 110 LBS./SQ YD /INCH OF DEPTH

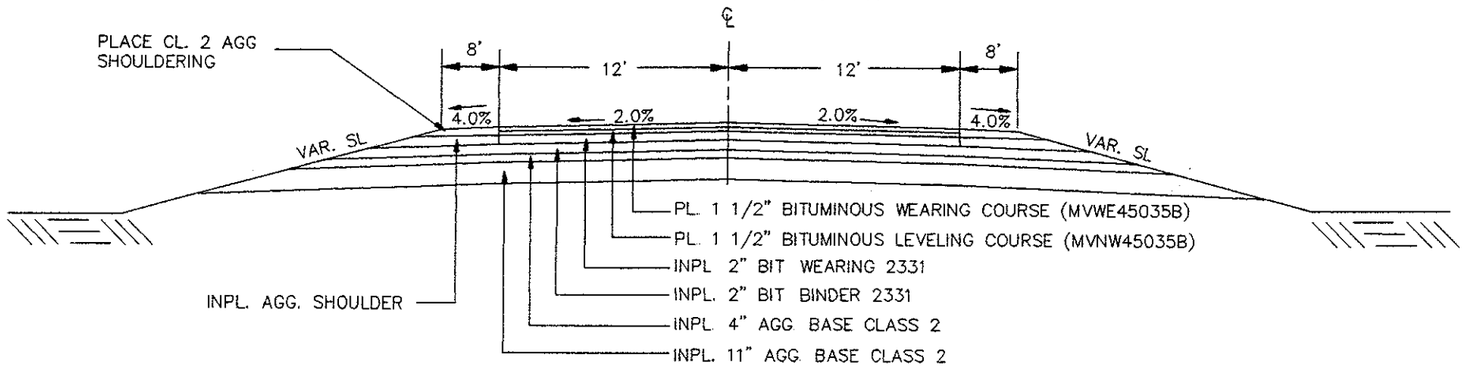
ESTIMATED QUANTITIES

CERTIFIED BY Kayel M Bruniek PROFESSIONAL ENGINEER REG NO 19917 3/3 2000

S.A.P. 55-603-29 C12-00-01 S.A.P. 55-612-16

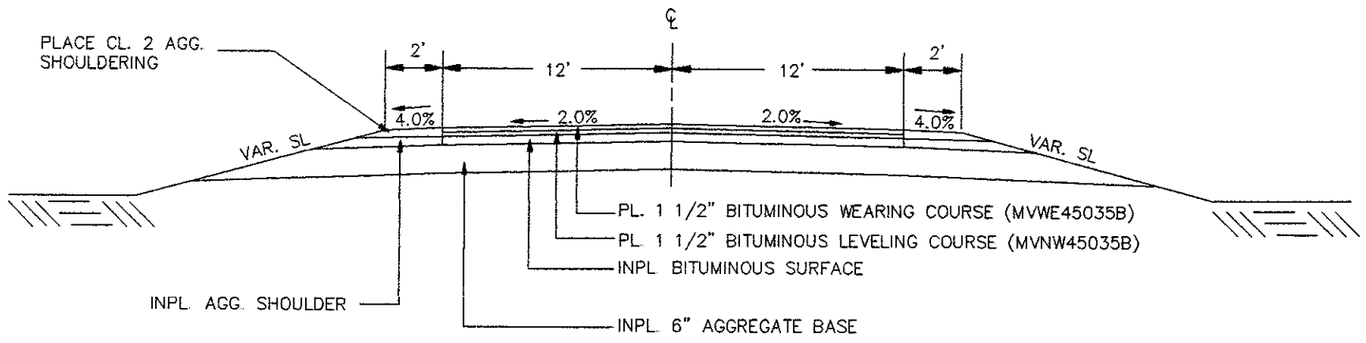
C.S.A.H. 3

STA. 1300+00 TO STA. 1303+00
STA. 1305+58 TO STA. 1331+00



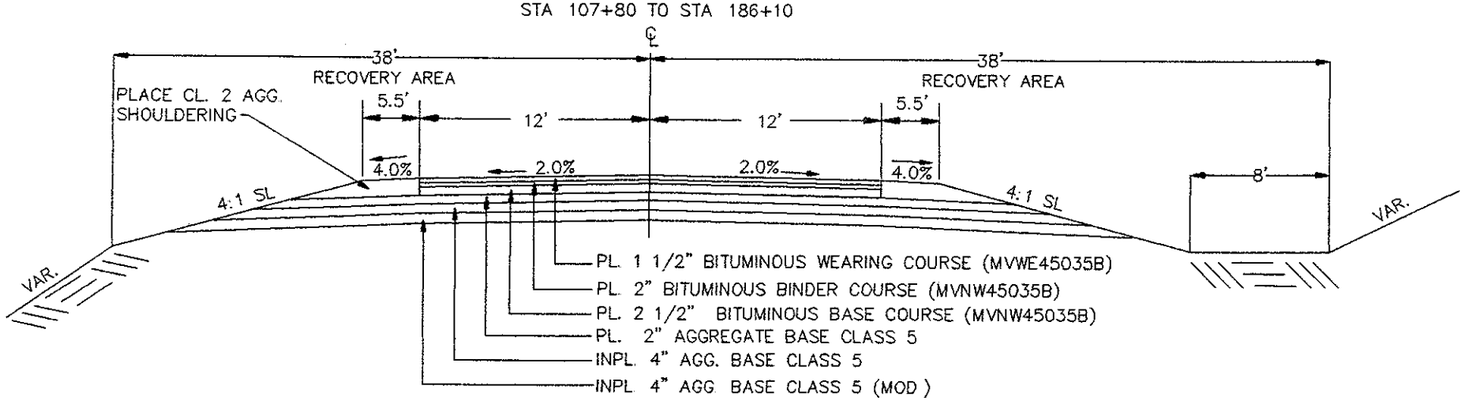
C.S.A.H. 12

STA. 0+00 TO STA 107+80



C.S.A.H. 12

STA 107+80 TO STA 186+10



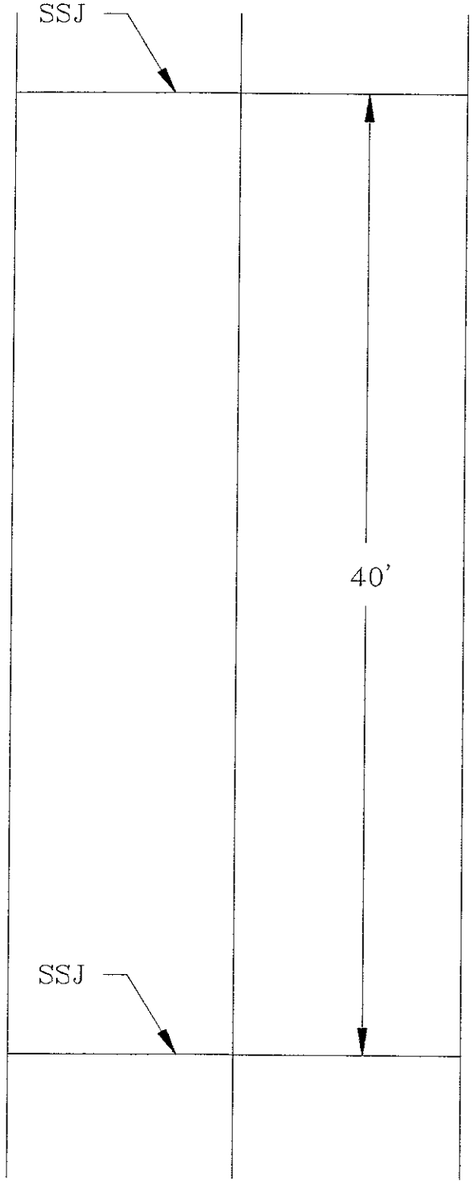
C.S.A.H. 12/ C.S.A.H. 3 TYPICAL SECTIONS

CERTIFIED BY Kaye M Bruneck PROFESSIONAL ENGINEER REG. NO 19917 3/3 2000

S.A.P. 55-603-29 & 55-612-16 & C12-00-01

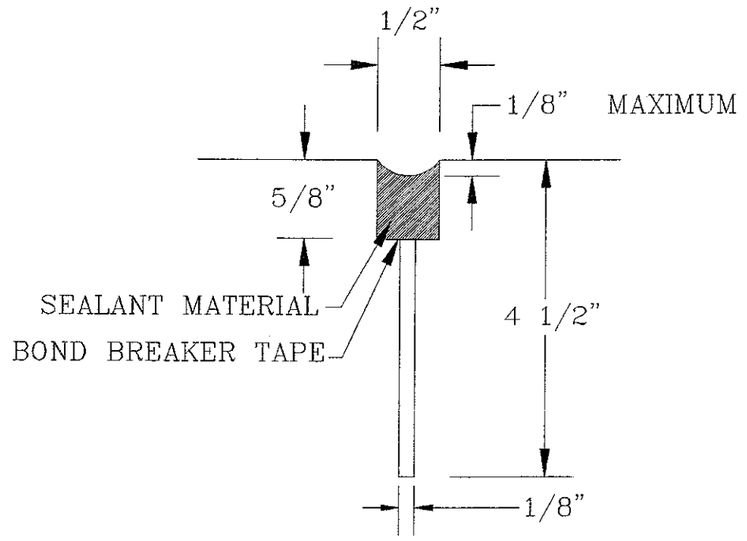
SHEET 3 OF 8 SHEETS

TYPICAL SAW CUT



C.S.A.H 12 STA 107+80 TO STA 186+10

TYPICAL JOINT SECTION



SAW/SEAL JOINT DETAIL

CERTIFIED BY Kayel M Brienick PROFESSIONAL ENGINEER REG. NO. 19917 3/3 2000

S.A.P. 55-612-16

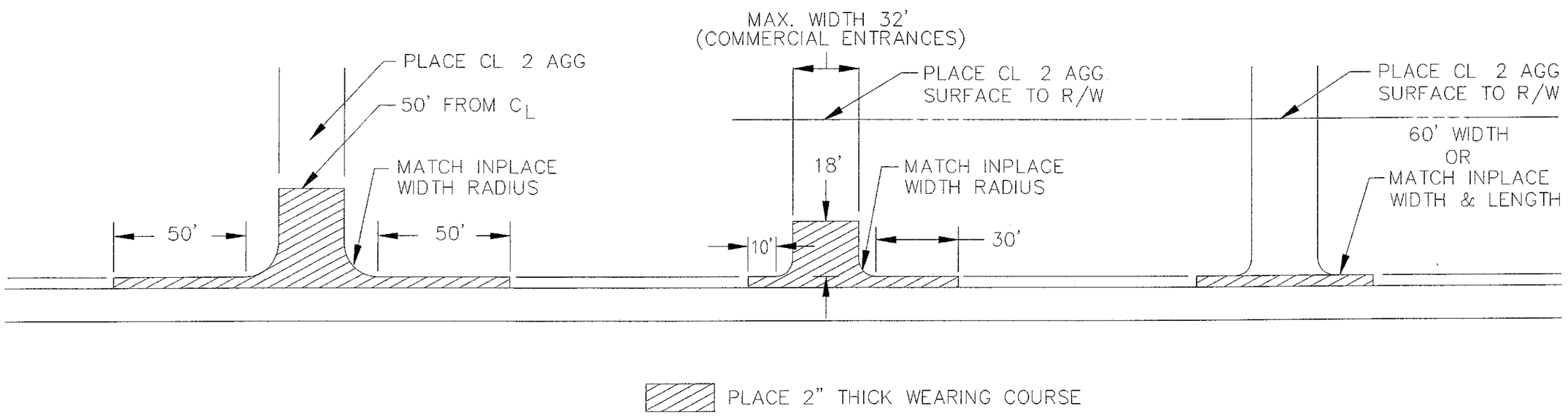
SHEET 4 OF 8 SHEETS

COMMERCIAL ENTRANCES

ROAD APPROACHES

FARM OR RESIDENTIAL ENTRANCES

FIELD ENTRANCES



	ROAD APPROACHES	FARM OR RESIDENTIAL ENTRANCES	TRAIL APPROACHES	FIELD ENTRANCES
C S A H 3	1	3	2	2
C S A H. 12 (CTY)	3	26		9
C S A.H. 12 (S A P.)	4	3		5

CERTIFIED BY Kaye M Bierneck REG NO 19917 3/3 2000
PROFESSIONAL ENGINEER

S.A.P. 55-603-29 & S.A.P. 55-612-16 & C12-00-01

ENTRANCE DETAILS

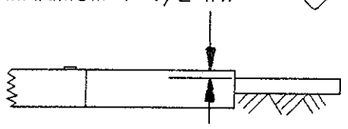
SHEET 5 OF 8 SHEETS

EDGE DROP OFF

W8-9

LOW SHOULDER

MAXIMUM 1-1/2 IN.

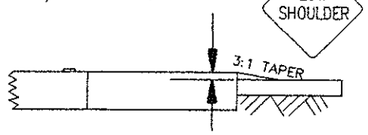


1-1/2 IN. TO 4 IN

W8-9

LOW SHOULDER

EDGE DROP-OFF WITH TAPER

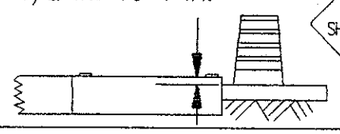


1-1/2 IN. TO 4 IN.

W21-X1

NO SHOULDER

SHOULDER SHALL BE CLOSED WITH APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES AT A MAXIMUM OF 250 FT. SPACING.



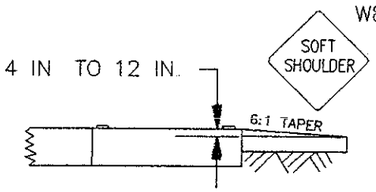
EDGE DROP-OFF WITH TAPER (SHOULDER - OPEN)

THIS CONDITION WILL NOT BE PERMITTED UNLESS THE 6:1 SLOPE IS COMPACTED SO THAT A VEHICLE MAY SAFELY DRIVE ONTO IT WITHOUT LOSING CONTROL AND IN THE OPINION OF THE ENGINEER THERE ARE NO OTHER HAZARDOUS CONDITIONS.

4 IN TO 12 IN.

W8-4

SOFT SHOULDER



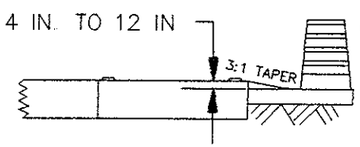
EDGE DROP-OFF WITH TAPER (SHOULDER - CLOSED)

SHOULDER SHALL BE CLOSED WITH APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES AT A MAXIMUM OF 250 FT SPACING.

4 IN. TO 12 IN

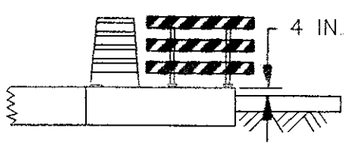
W21-X1

NO SHOULDER



ADJACENT LANE SHALL BE CLOSED WITH APPROPRIATE LANE CLOSURE LAYOUT SHOWN IN APPENDIX B. CHANNELIZING DEVICES AT A MAXIMUM OF 250 FT. SPACING AND TYPE III BARRICADES EVERY 1000 FT.

4 IN. TO 12 IN.



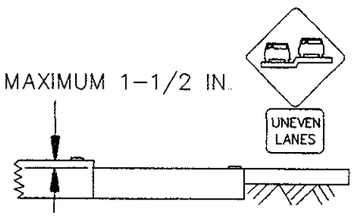
NOTE: SIGNS ARE REQUIRED ONLY ON THE SIDE OF THE ROAD THAT IS AFFECTED BY CONSTRUCTION (EXCEPT SIGNS THAT ARE FOR A LANE CLOSURE ON DIVIDED HIGHWAYS).

UNEVEN LANES

W20-X14 (L OR R)

MAXIMUM 1-1/2 IN.

UNEVEN LANES

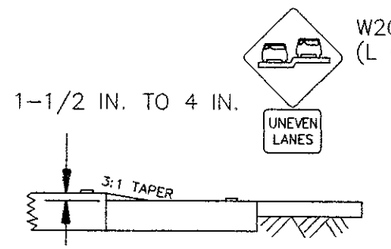


UNEVEN LANES WITH TAPER

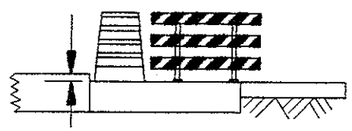
W20-X14 (L OR R)

1-1/2 IN. TO 4 IN.

UNEVEN LANES



1-1/2 IN. TO 4 IN.



LANE SHALL BE CLOSED WITH APPROPRIATE LANE CLOSURE FROM APPENDIX B. CHANNELIZING DEVICES AT A MAXIMUM OF 250 FT. SPACING AND A TYPE III BARRICADE EVERY 1000 FT.

NOTE: FOR DIVIDED HIGHWAYS, USE SIGNS ON RIGHT AND LEFT SIDE. SIGN SEQUENCE SHOWN FOR ONE DIRECTION ONLY; OTHER DIRECTION SHALL BE IDENTICAL.

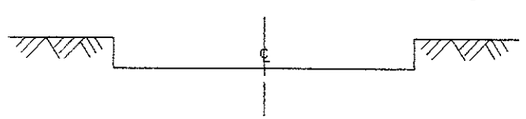
MILLED EDGE

W21-X9

HIGH SHOULDER

W21-X9

HIGH SHOULDER



NOTE: MILLED EDGES SHOULD BE TREATED WITH TAPERS, CHANNELIZERS, AND SIGNING AS SHOWN ON EDGE DROP-OFF DETAILS.

GUIDELINES

THESE GUIDELINES ARE INTENDED TO INCREASE TRAFFIC SAFETY USING TRAFFIC CONTROL DEVICES, SAFTEY RELATED APPURTENANCES, AND CONSTRUCTION TECHNIQUES FOR UNEVEN LANES. MILLED EDGES, AND EDGE DROP-OFFS THAT OCCUR IN HIGHWAY WORK ZONES. THE BEST WAY TO INCREASE TRAFFIC SAFETY IS TO MAKE EVERY ATTEMPT TO MINIMIZE EXPOSURE TO UNEVEN LANES, MILLED EDGES, AND EDGE DROP-OFFS; HOWEVER, IT IS REALIZED THAT THIS IS OFTEN NOT POSSIBLE OR FEASIBLE, ONLY WHEN UNEVEN LANES. MILLED EDGES, OR EDGE DROP-OFFS ARE DEEMED NECESSARY, SHALL THE APPROPRIATE PORTION(S) OF THESE GUIDELINES BE APPLIED TO ENHANCE TRAFFIC SAFETY

APPROPRIATE UNEVEN LANE WARNING SIGNS OR SHOULDER WARNING SIGNS SHALL BE REPEATED AFTER EACH INTERSECTION

MAXIMUM WARNING SIGN SHALL BE:
- A - 1 MILE WHEN THE SPEED LIMIT IS GREATER THAN 30 MPH AND
- B - 1/4 MILE WHEN THE SPEE LIMIT IS 30 MPH OR LESS.

WHEN SPACE PERMITS, MINIMUM WARNING SIGN SIZE SHALL BE:
- A - 48 IN x 48 IN WHEN THE SPEED LIMIT IS GREATER THEN 30 MPH AND
- B - 36 IN x 36 IN WHEN THE SPEED LIMIT IS 30 MPH OR LESS.

1. FOR DROP-OFFS OF 1/2 INCHES OR LESS, APPROPRIATE WARNING SHALL BE PROVIDED.
2. FOR DROP-OFFS GREATER THAN 1-1/2 INCHES UP TO 4 INCHES:
   - A - THE EDGE SHALL BE TAPERED AND COMPACTED AT A RATE OF 3:1 AND APPROPRIATE WARNING SIGNS SHALL BE PROVIDED; OR
   - B - IF THE TAPER IS NOT PROVIDED, TRAFFIC SHALL NOT BE PERMITTED TO CROSS THE DROP-OFF AND THAT PORTION OF THE ROADWAY SHALL BE CLOSED TO TRAFFIC WITH THE APPROPRIATE WARNING SIGNS AND DEVICES.
3. FOR DROP-OFFS GREATER THAN 4 INCHES UP TO 12 INCHES:
   - A - THE EDGE SHALL TAPERED AND COMPACTED AT A RATE OF 6:1 AND APPROPRIATE WARNING SIGNS SHALL BE PROVIDED. (6:1 TAPER SHALL NOT BE USED AS A TRAFFIC CARRYING LANE);
   - B - THE EDGE SHALL BE TAPERED AND COMPACTED AT A RATE OF 3:1, TRAFFIC SHALL NOT BE ALLOWED TO CROSS THE DROP-OFF, AND THAT PORTION OF THE ROADWAY SHALL BE CLOSED TO TRAFFIC WITH APPROPIATE WARNING SIGNS AND CHANNELIZING DEVICES; OR
   - C - IF A TAPER IS NOT PROVIDED, THE TRAFFIC OR AUXILIARY LANE ADJACENT TO THE DROP-OFF SHALL BE CLOSED TO TRAFFIC WITH THE APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES OR A POSITIVE BARRIER, SUCH AS A PORTABLE PRECAST CONCRETE BARRIER, SHALL BE PROVIDED TO PREVENT TRAFFIC FROM CROSSING THE DROP-OFF.
4. FOR SHOULDER EDGE DROP-OFFS:
   - A - 0-2 FOOT SHOULDER WIDTH AND A 0-12 IN. DROP-OFF; USE GUIDELINES AS SHOWN.
   - B - 2-8 FOOT SHOULDER WIDTH AND A 0-4 IN. DROP-OFF; INSTALL EDGELINE OR USE GUIDELINES AS SHOWN.
   - C - 8 FT. OR GREATER SHOULDER WIDTH AND A 0-4 IN. DROP-OFF; NO TRAFFIC CONTROL REQUIRED.
   - D - GREATER THAN 2 FOOT SHOULDER WIDTH AND A 4-12 IN DROP-OFF; USE GUIDELINES AS SHOWN.
5. DROP-OFFS GREATER THAN 4 IN. ADJACENT TO TRAFFIC CARRYING LANES ARE PERMITED WITHOUT TAPERS OR POSITIVE BARRIERS FOR:
   - A - PROJECTS WITHIN URBAN AREA WHEN THE SPEED LIMIT IS 30 MPH OR LESS; OR
   - B - SHORT TERM (7 CALENDAR DAYS OR LESS) CONCRETE OR UTILITY REPAIR LESS THAN 50 FT. IN LENGTH WHEN THE SPEED LIMIT IS GREATER THAN 30 MPH
6. AT NO TIME SHALL THERE BE MORE THAN ONE UNEVEN LANE CONDITION BETWEEN THE TRAFFIC CARRYING LANES WHICH INCLUDE AUXILIARY LANES, TURN LANES, AND RAMP ACCESS OR EGRESS AREA. WEATHER PERMITTING, ALL EXPOSED UNEVEN LANE CONDITIONS WITHIN THE TRAFFIC CARRYING LANES SHALL BE "MATCHED" WITHIN 24 HOURS.
7. MILLING OPERATIONS SHALL BE REQUIRED TO COMPLETE THE FULL WIDTH OF THE SECTION UNDER CONSTRUCTION AT THE END OF EACH WORK PERIOD

TRAFFIC CONTROL TREATMENT OF LONGITUDINAL JOINTS AND EDGE DROP-OFFS IN WORK ZONES

CERTIFIED BY Kayne M Brunick PROFESSIONAL ENGINEER REG. NO 19917 3/3 2000

ESTIMATE OF TRAFFIC CONTROL DEVICES

DEVICE	NUMBER	SIZE (INCHES)	COLOR	QUANTITY	DEVICE	NUMBER	SIZE (INCHES)	COLOR	QUANTITY
DO NOT PASS	R4-1	24 x 30	BLK/WH	15	ROAD WORK AHEAD	W20-1	48 x 48	BLK/OR	11
PASS WITH CARE	R4-2	24 X 30	BLK/WH	15	NO SHOULDER	W21-X1	48 x 48	BLK/OR	SEE NOTE #5
LOW SHOULDER	W8-9	48 x 48	BLK/OR	SEE NOTE #5	ROAD WORK NEXT MILES	G20-1	60 x 24	BLK/OR	2
UNEVEN LANES	W8-11	48 x 48	BLK/OR	SEE NOTE #5	END ROAD WORK	G20-2A	48 x 24	BLK/OR	4
NO CENTER STRIPE	W8-12	48 x 48	BLK/OR	7		REBOUNDABLE PLASTIC DRUM	APPROX. 36"	OR & WH	SEE NOTE #5

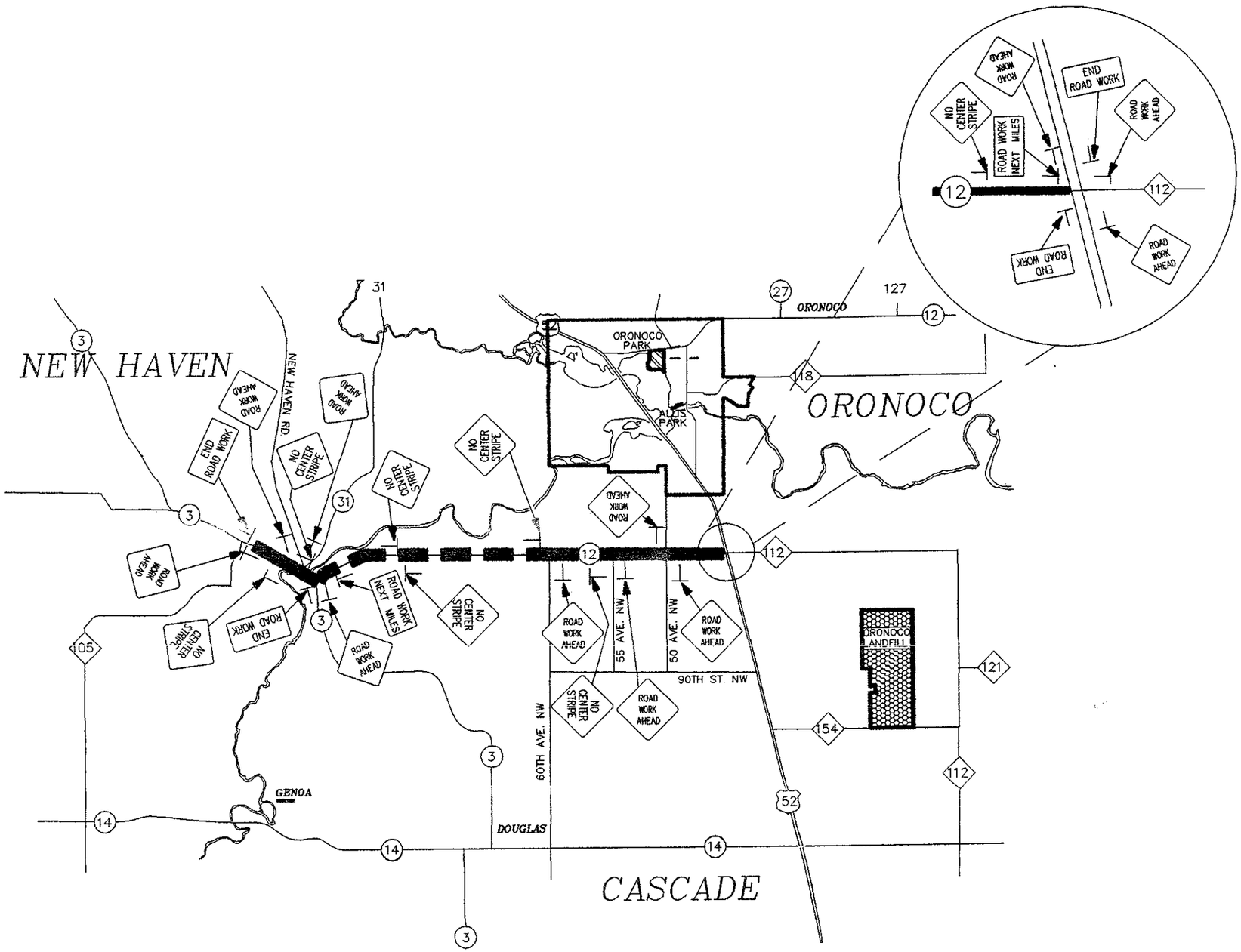
TRAFFIC CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL FOR THIS PROJECT
2. THE LOCATION OF SIGNS AND DEVICES WILL BE STAKED BY THE ENGINEER IN THE FIELD.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES INCLUDING THE TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL DATED JANUARY 1998
4. CONSTRUCTION ZONE SIGNING SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL INCLUDE, BUT NOT BE LIMITED TO SIGNS FOR LANE CLOSURES, MACHINERY AHEAD, BUMP, DIP, LOOSE GRAVEL, ETC. THE NUMBER AND LOCATION WILL BE DETERMINED BY THE CONTRACTORS OPERATION.
5. THE CONTRACTOR SHALL INSTALL TRAFFIC CONTROL DEVICES FOR EDGE DROP OFFS AT THE END OF EACH WORK SHIFT AS THE SITUATIONS EXIST AS SHOWN ON SHEET 6. (THESE ITEMS ARE NOT INCLUDED IN THE ESTIMATE OF TRAFFIC CONTROL DEVICES.)

CERTIFIED BY Kayne M Brenneke REG. NO 19917 3/3 2000
PROFESSIONAL ENGINEER

TRAFFIC CONTROL

S.A.P. 55-603-29 C12-00-01 S.A.P. 55-612-16



TRAFFIC CONTROL LEGEND

⊥ POST MOUNTED SIGN

C.S.A.H. 12 TRAFFIC CONTROL

CERTIFIED BY Kaye M Bruemmer REG. NO. 19917 3/3 2000
PROFESSIONAL ENGINEER

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SHEET 8 OF 8 SHEETS