MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR BITUMINOUS SURFACING

LOCATED ON C.S.A.H. 36 BETWEEN TH 52 AND C.R. 143 (GEOGRAPHIC DESCRIPTION)

FROM 1268' N. & 783' W. OF COMMON CORNER 21-22-28-27 T106N, R13W TO 587' N. & 1657' W. OF CTR. SEC. 17, T106N, R13W (LEGAL DESCRIPTION)

PROJECT NO. C36-00-04

GROSS LENGTH	11,920	feet	2.258	miles
BRIDGE-LENGTH	0	feet	0	miles
EXCEPTIONS-LENGTH	0	feet	0	miles
NET LENGTH	11,920	feet	2.258	miles

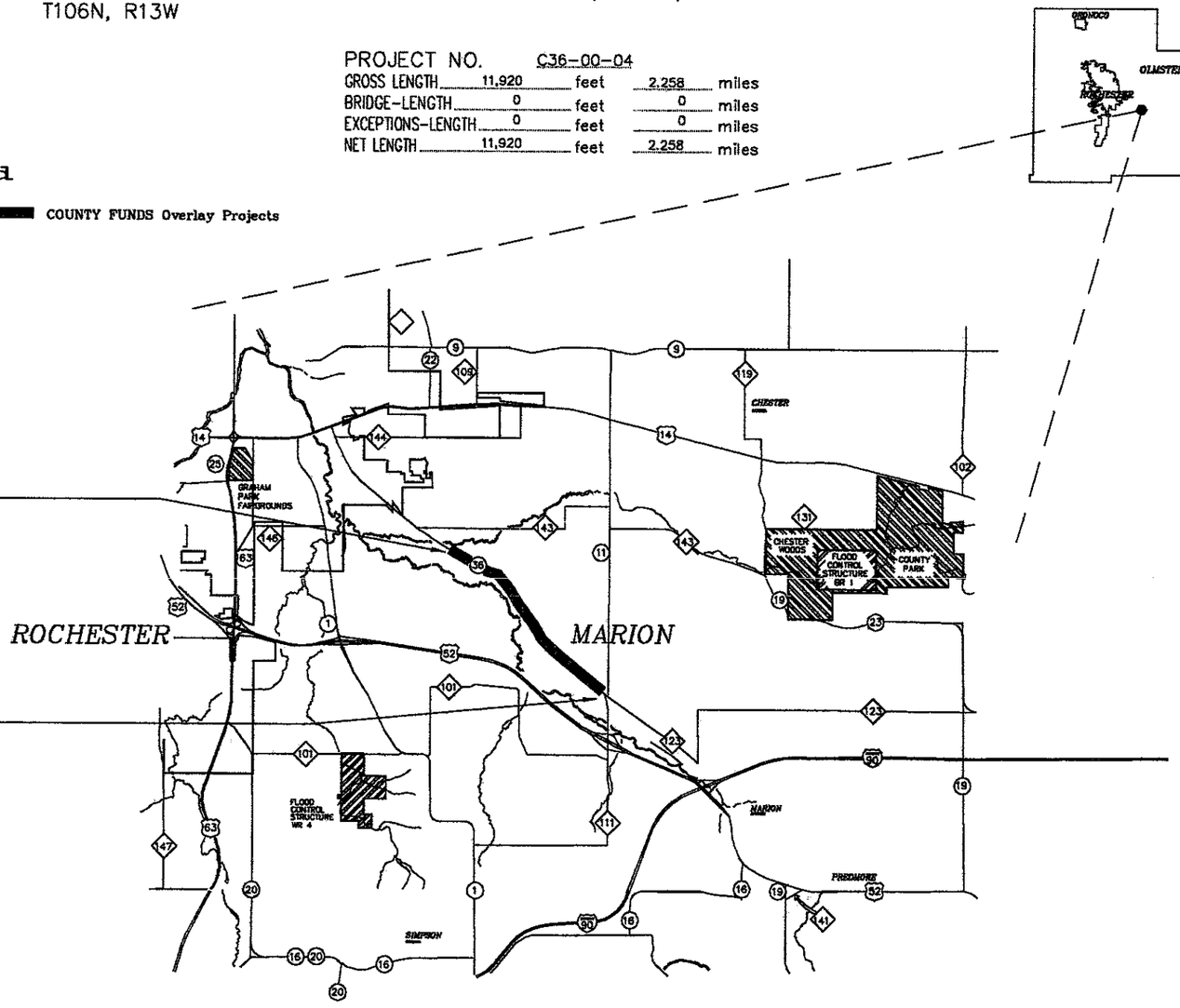
N

Legend

- Interstate Highway
- U.S. Highway
- Minnesota State Highway
- County State Aid Highway
- County Road
- City Limits
- COUNTY FUNDS Overlay Projects

END: C36-00-04
151+70

BEGIN: C36-00-04
32+50



C36-00-04 C.S.A.H. 36

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.	DESCRIPTION
SHEET NO. 1	TITLE SHEET
SHEET NO. 2	ESTIMATED QUANTITIES
SHEET NO. 3	TYPICAL SECTIONS
SHEET NO. 4	DETAILS
SHEET NO. 5	EDGE DROP-OFF DETAIL
SHEET NO. 6-7	TRAFFIC CONTROL

THIS PLAN CONTAINS 7 SHEETS

PROJECT: C36-00-04

DESIGN DESIGNATION: C.S.A.H. 36

R = ESN18(20)
ADT (Current Year) = 3846 (2000) Design Speed ____ mph
ADT (Future Year) = 5154 (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) = STA. TO STA. mph
SUBGRADE = STA. TO STA. mph

SHOULDER WIDTH 8.0 ft.

FUNCTIONAL CLASSIFICATION: COLLECTOR

SOIL FACTOR = 130%

10 ton DESIGN

AS-BUILT

MAR 03 2003

ENGINEERING

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 7/21/00 REGISTRATION NUMBER 19917

Kaye M Brenneke

APPROVED: COUNTY DESIGN ENGINEER

DATE 7/21/00 REGISTRATION NUMBER 10397

Michael Sheehan

APPROVED: OLMSTED COUNTY ENGINEER

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL
	2221.501	AGGREGATE SHOULDERING CLASS 2	TON	400
	2331.603	SAWED/SEALED JOINT	L.F.	7800
①	2350.609	TYPE MV4 WEARING COURSE MIXTURE	TON	3005
②	2350.609	TYPE MV4 NON WEARING COURSE MIXTURE	TON	4740
	2350.609	TYPE LV4 WEARING COURSE MIXTURE	TON	2910
	2563.601	TRAFFIC CONTROL	L.S.	1
	2564.603	4" SOLID LINE WHITE-EPOXY	L.F.	25840
	2564.603	4" BROKEN LINE YELLOW-EPOXY	L.F.	2165
	2564.603	4" SOLID LINE YELLOW-EPOXY	L.F.	5235
	2564.603	4" DOUBLE SOLID LINE YELLOW-EPOXY	L.F.	1105
	2580.502	TEMPORARY LANE MARKING	L.F.	2860

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CONSTRUCTION NOTES:

① INCLUDES 380 TONS FOR 14 ROAD APPROACHES AND 8 RT. TURN LANES
② INCLUDES 365 TONS FOR 8 RT. TURN LANES

BASIS OF PLANNED QUANTITIES

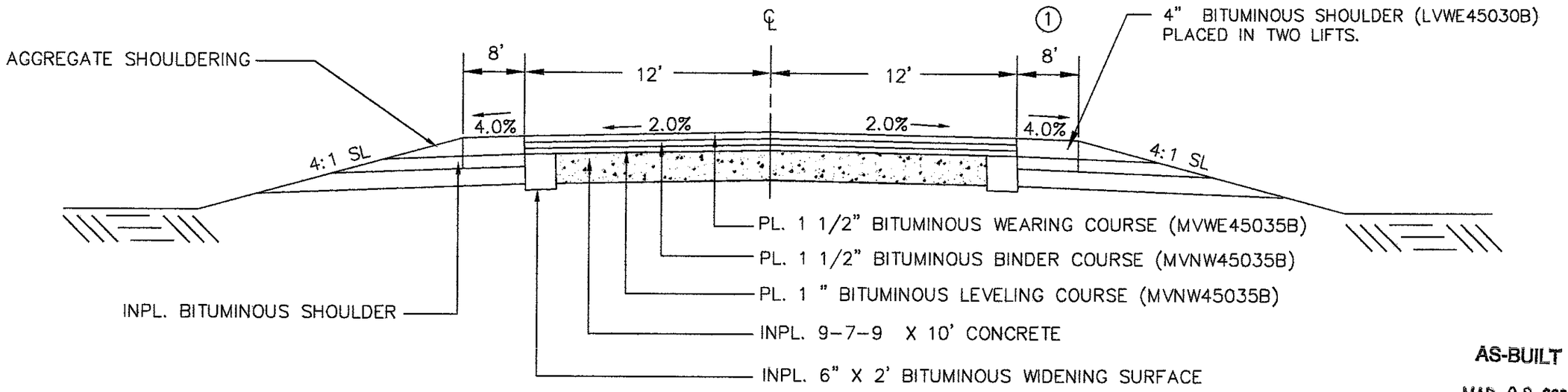
2350 BITUMINOUS MIXTURE – 146.67 LBS./FT.^{3} (OR) 110 LBS./SQ. YD./INCH OF DEPTH
BITUMINOUS MATERIAL FOR TACK COAT –.051 GALLONS/YD^2
AGGREGATE SHOULDERING CLASS 2 – 140 LBS./FT.^{3}

ESTIMATED QUANTITIES

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C.S.A.H. 36

STA. 32+50 TO STA. 151+70



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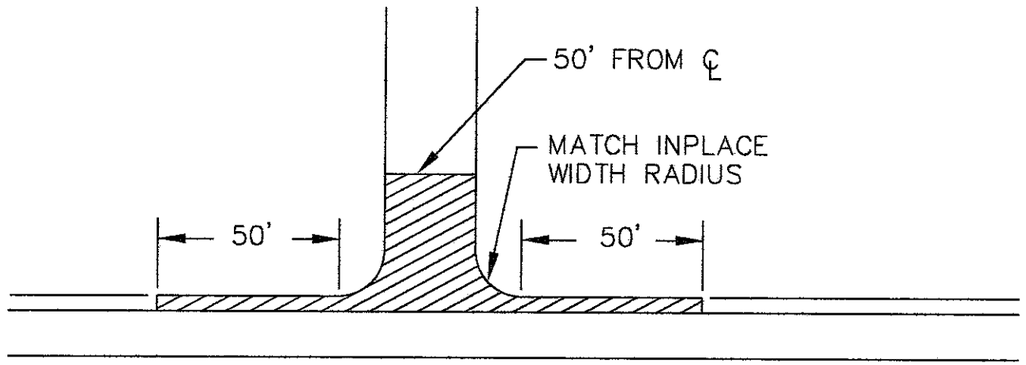
① AT 8 LOCATIONS, RT. TURN LANES 12' WIDE X 250' LONG
PL. 1 1/2" BITUMINOUS WEARING COURSE (MVWE45035B)
PL. 2 1/2 " BITUMINOUS LEVELING COURSE (MVNW45035B)

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C.S.A.H. 36 TYPICAL SECTION

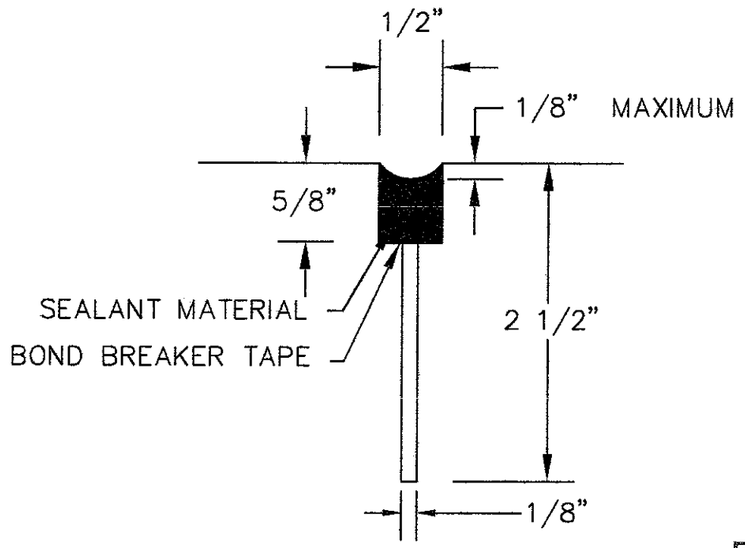
C36-00-04 | SHEET 3 OF 7 SHEETS

ROAD APPROACHES



PLACE 2" THICK WEARING COURSE

TYPICAL JOIN SECTION



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SAW JOINTS OVER INPLACE CONCRETE JOINTS.

ROAD APPROACHES

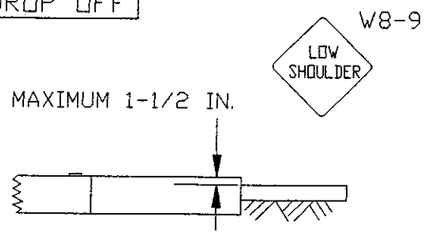
C.S.A.H. 36 14

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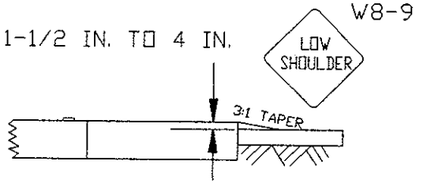
ENTRANCE DETAILS

C36-00-04 SHEET 4 OF 7 SHEETS

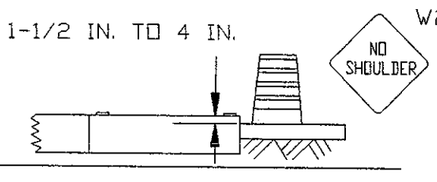
EDGE DROP OFF



EDGE DROP-OFF WITH TAPER

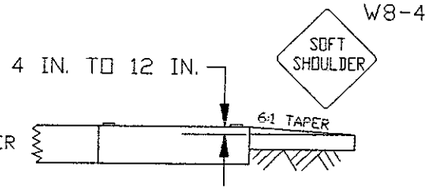


SHOULDER SHALL BE CLOSED WITH APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES AT A MAXIMUM OF 250 FT. SPACING



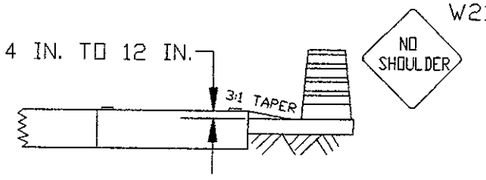
EDGE DROP-OFF WITH TAPER (SHOULDER - OPEN)

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.

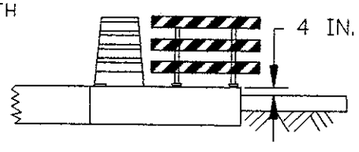


EDGE DROP-OFF WITH TAPER (SHOULDER - CLOSED)

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

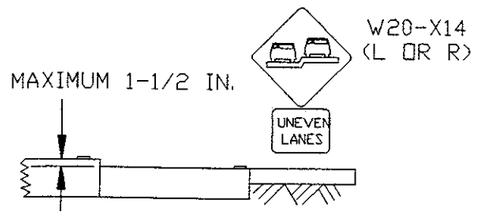


ADJACENT LANE SHALL BE CLOSED WITH APPROPRIATE LANE CLOSURE LAYOUT SHOWN IN APPENDIX B. CHANNELIZING DEVICES AT A MAXIMUM OF 250 FT. SPACING AND TYPE III BARRICADES EVERY 1000 FT.

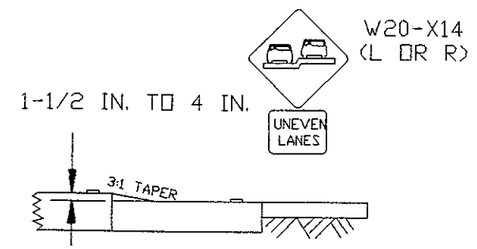


NOTE: SIGNS ARE REQUIRED ONLY ON THE SIDE OF THE ROAD THAT IS AFFECTED BY CONSTRUCTION (EXCEPT SIGNS THAT ARE FOR A LANE CLOSURE ON DIVIDED HIGHWAYS).

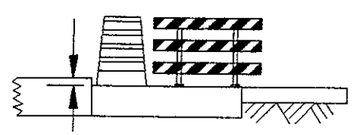
UNEVEN LANES



UNEVEN LANES WITH TAPER



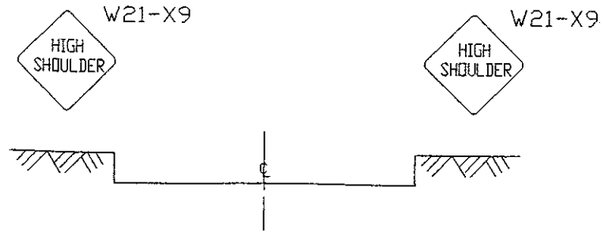
1-1/2 IN. TO 4 IN.



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



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

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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

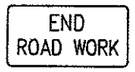
1. FOR DROP-OFFS OF 1/2 INCHES OR LESS, APPROPRIATE WARNING SHALL BE PROVIDED.
2. FOR DROP-OFFS GREATER THAN 1-1/2 INCHES UP TO 4 INCHES:
   - A - THE EDGE SHALL BE TAPERED AND COMPACTED AT A RATE OF 3:1 AND APPROPRIATE WARNING SIGNS SHALL BE PROVIDED; OR
   - B - IF THE TAPER IS NOT PROVIDED, TRAFFIC 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 APPROPRIATE 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 Kevin M Reinert PROFESSIONAL ENGINEER REG. NO 19917 7/21 2000

C36-00-04

ESTIMATE OF TRAFFIC CONTROL DEVICES

DEVICE	NUMBER	SIZE (INCHES)	COLOR	QUANTITY	DEVICE	NUMBER	SIZE (INCHES)	COLOR	QUANTITY
	R4-1	24 x 30	BLK/WH	4		W20-1	48 x 48	BLK/OR	18
	R4-2	24 X 30	BLK/WH	6		W21-X1	48 x 48	BLK/OR	SEE NOTE #5
	W8-9	48 x 48	BLK/OR	SEE NOTE #5					
	W8-11	48 x 48	BLK/OR	SEE NOTE #5		G20-2A	48 x 24	BLK/OR	2
	W8-12	48 x 48	BLK/OR	4		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 5. (THESE ITEMS ARE NOT INCLUDED IN THE ESTIMATE OF TRAFFIC CONTROL DEVICES.)

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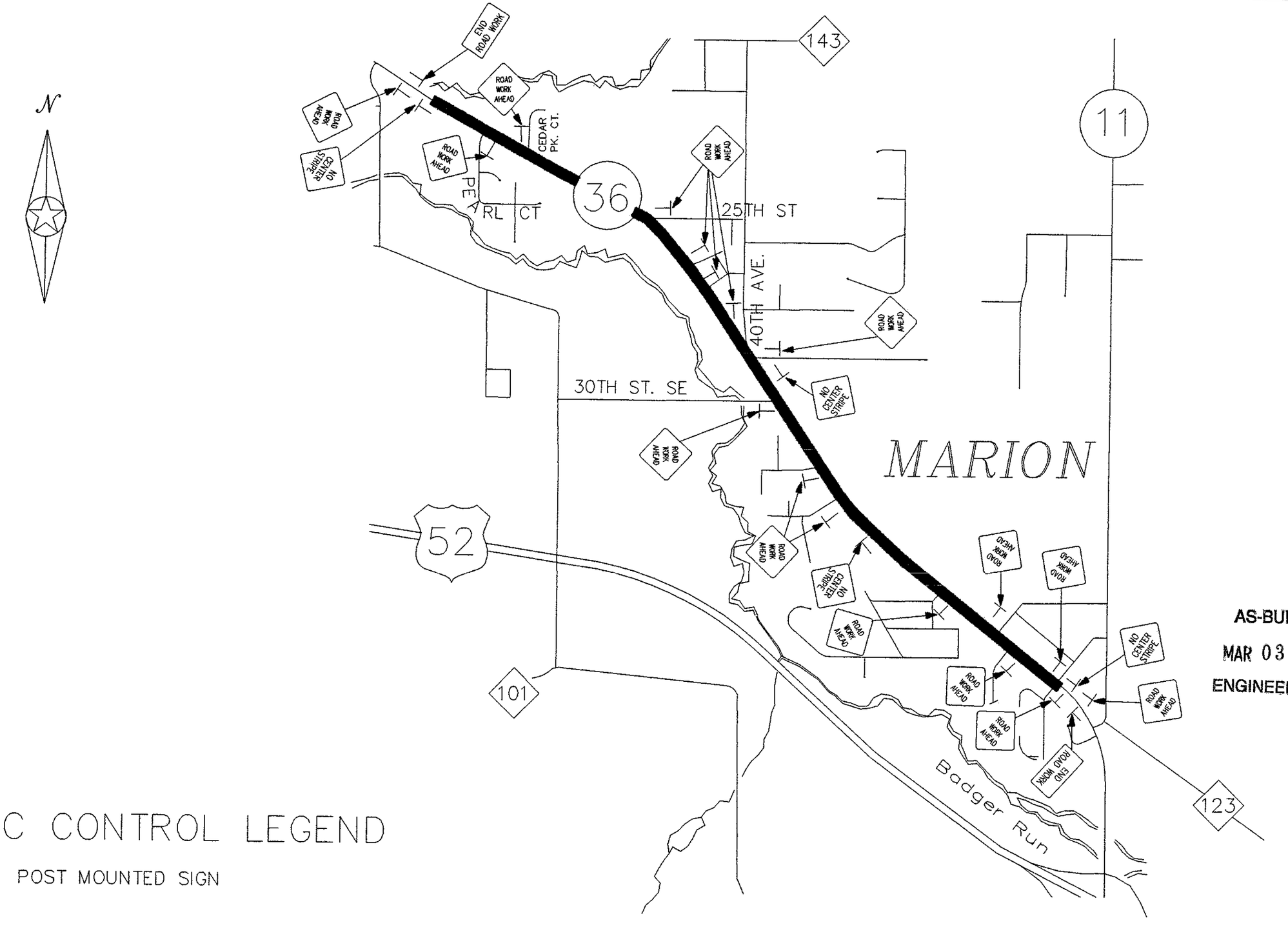
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TRAFFIC CONTROL

C36-00-04 | SHEET 6 OF 7 SHEETS



TRAFFIC CONTROL LEGEND

⊥ POST MOUNTED SIGN

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PROFESSIONAL ENGINEER

C.S.A.H. 36 TRAFFIC CONTROL	
C36-00-04	SHEET 7 OF 7 SHEETS