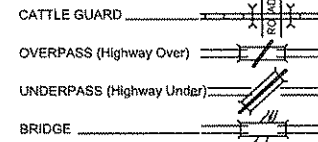
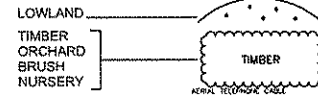


PLAN SYMBOLS

- COUNTY LINE _____
- TOWNSHIP OR RANGE LINE _____
- SECTION LINE _____
- QUARTER LINE _____
- SIXTEENTH LINE _____
- RIGHT OF WAY LINE _____
- SLOPE EASEMENT _____
- EXISTING RIGHT OF WAY _____
- PROPERTY LINE _____
- CORPORATE OR CITY LIMITS _____
- RETAINING WALL _____
- RAILROAD _____
- RAILROAD RIGHT OF WAY _____
- RIVER OR CREEK _____
- DRAINAGE DITCH _____
- CULVERT _____
- DROP INLET _____
- GUARD RAIL _____
- BARBED WIRE FENCE _____
- WOVEN WIRE FENCE _____
- CHAIN LINK FENCE _____
- WOOD FENCE _____
- STONE WALL OR FENCE _____
- HEDGE _____



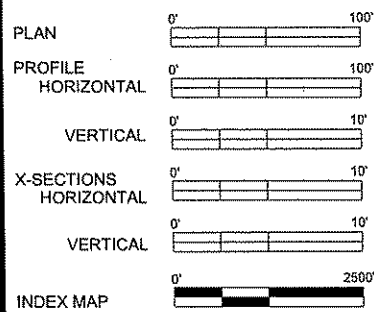
- BUILDING (One Story Frame) [I-S-F]
- F-FRAME C-CONCRETE
- S-STONE T-TILE
- B-BRICK ST-STUCCO

- RAILROAD CROSSING BELL
- RAILROAD CROSSING GATE
- MANHOLE
- CATCH BASIN
- FIRE HYDRANT
- CAST IRON MONUMENT
- IRON PIN
- GRAVEL PIT
- SAND PIT
- BORROW PIT
- ROCK QUARRY

UTILITY SYMBOLS

- POWER POLE LINE
- TELEPHONE OR TELEGRAPH POLE LINE
- JOINT TELEPHONE & POWER ON POWER POLES
- ON TELEPHONE POLES
- ANCHOR
- STEEL TOWER
- STREET LIGHT
- PEDESTAL (Cable Terminal)
- GAS MAIN
- WATERMAIN
- TELEPHONE CABLE IN CONDUIT
- ELECTRIC CABLE IN CONDUIT
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- BURIED TELEPHONE CABLE T-BUR
- BURIED ELECTRIC CABLE P-BUR
- SEWER (Sanitary or Storm)
- SEWER MANHOLE

SCALES



MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

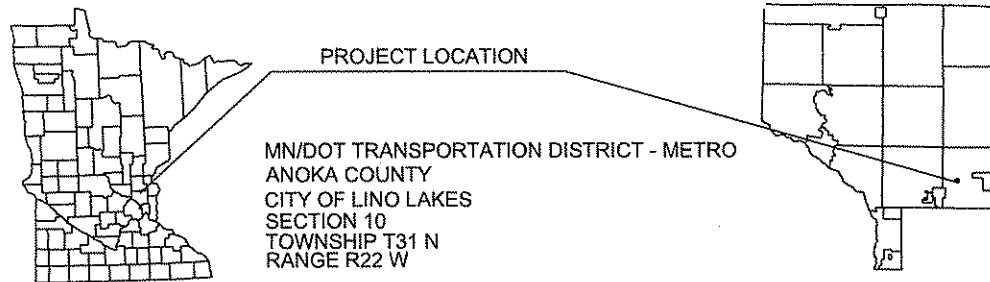
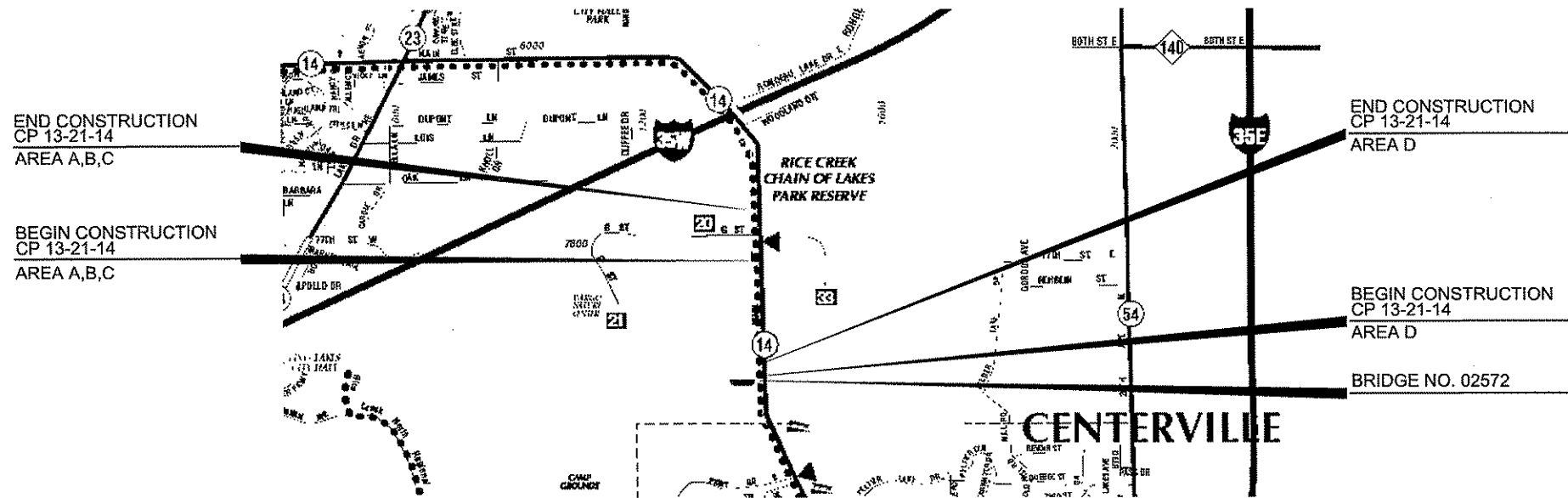
LINO LAKES

CONSTRUCTION PLAN FOR SPOT REPAIRS, MILLING, PAVING, SUBGRADE EXCAVATION, GEOGRID INSTALLATION, SLAB JACKING.

AREA A,B,C LOCATED ON CSAH 14 FROM 370' SOUTH OF ENT. TO WARGO PARK TO 650' NORTH OF ENT. TO WARGO PARK

AREA D LOCATED ON CSAH 14 FROM GEORGE WATCH LAKE BRIDGE TO 80' NORTH OF GEORGE WATCH LAKE BRIDGE

Area	Gross Length	Bridges-Length	Exceptions-Length	Net Length	Feet	Miles
AREA A,B,C	1120	0.00	0.00	1120	FEET	0.21 MILES
	0.00	0.00	0.00	0.00	FEET	0.00 MILES
	0.00	0.00	0.00	0.00	FEET	0.00 MILES
	1120	0.00	0.00	1120	FEET	0.21 MILES
AREA D	80	0.00	0.00	80	FEET	0.01 MILES
	0.00	0.00	0.00	0.00	FEET	0.00 MILES
	0.00	0.00	0.00	0.00	FEET	0.00 MILES
	80	0.00	0.00	80	FEET	0.01 MILES



PROJECT LOCATION

MN/DOT TRANSPORTATION DISTRICT - METRO
ANOKA COUNTY
CITY OF LINO LAKES
SECTION 10
TOWNSHIP T31 N
RANGE R22 W

MINN. PROJ. NO. _____

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), PART VI, AND THE MOST RECENT EDITION OF THE "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES / NOTES
3	CONSTRUCTION TABS
4	CONSTRUCTION OVERVIEW AREAS A,B,C
5	CONSTRUCTION OVERVIEW / PLAN AREA D
6 - 10	TYPICALS
11 - 13	STAGE CONSTRUCTION PLANS
14 - 18	TRAFFIC CONTROL
19 - 20	DETOUR

THIS PLAN CONTAINS 20 SHEETS

DESIGN DESIGNATION

ESAL 20	1,441,250
R VALUE	50
ADT (2011) =	6517
Proj. ADT (2031) =	10427
Proj. HCADT (2031) =	984
Soil Factor	NA
10 TON DESIGN	
Functional Classification	A-MINOR ARTERIAL
No. of Traffic Lanes	2
No. of Parking Lanes	0
Design Speed	50 MPH
Based on Stopping Sight Distance	---
Height of eye	3.5'
Height of object	2.0'
Design Speed not achieved at:	
STA. --- TO STA. --- MPH ---	

Approved ANOKA COUNTY ENGINEER 3/20/13

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\13-01-00\CSAH_14_Lightweight_Tires\Plan\1.TITL034840013 1:52:32 PM

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.

PRINT NAME: ANDREW WITTER
SIGNATURE:
DATE: 3/20/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013
DESIGN BY: JF DATE: 3/11/2013
CHECKED BY: HG DATE: 3/14/2013

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. CP 13-21-14

TITLE SHEET

Sheet 1 of 20 Sheets

STATEMENT OF ESTIMATED QUANTITIES						
ITEM NO.		ITEM	TAB	NOTE NO.	UNIT	TOTAL EST. QUANT.
2021.501	00010	MOBILIZATION			LUMP SUM	1
2104.501	00009	REMOVE CONCRETE FLUME	1	2	EACH	1
2104.501	00040	REMOVE GUARDRAIL	2	3	LIN FT	80
2104.505	00120	REMOVE BITUMINOUS PAVEMENT	3	4	SQ YD	2560
2104.513	00011	SAW BITUMINOUS PAVEMENT FULL DEPTH	4	5	LIN FT	1612
2105.507	00010	SUBGRADE EXCAVATION	5	6	CU YD	866
2105.604	00060	GEOGRID (TENSAR TRIAX TX160 GEOGRID)	6	7	SQ YD	4858
2112.603	00010	SHOULDER PREPERATION	7	8	LIN FT	1060
2211.503	00050	AGGREGATE BASE CLASS 5	8	9	CU YD	1344
2232.501	00050	MILL BITUMINOUS SURFACE (2")	9	10	SQ YD	6930
2301.545	00010	CONCRETE CORING	10	11	EACH	4
2301.604	00020	SLAB JACKING	11	12	SQ YD	12
2357.502	00010	BITUMINOUS MATERIAL FOR TACK COAT	12	13	GALLON	415
2360.501	24500	TYPE SP 12.5 WEARING COURSE MIX (4 , C)	13	14	TON	1378
2531.511	00020	CONCRETE FLUME	14	15	CU YD	1
2533.507	00020	PORTABLE PRECAST CONCRETE BARRIER. DES 8337-PINNED	15	16	LIN FT	600
2554.602	00005	IMPACT ATTENUATOR BARRELS	16	17	EACH	6
2554.603	00022	INSTALL GUARDRAIL	17	18	LIN FT	80
2563.601	00010	TRAFFIC CONTROL	18	19	LUMP SUM	1
2563.601	00200	DETOUR SIGNING	19	20	LUMP SUM	1
2563.602	00002	RAISED PAVEMENT MARKER TEMPORARY	20	21	EACH	1698
2563.613	01100	PORTABLE CHANGEABLE MESSAGE SIGN	21	22	UNIT DAY	14
2575.523	00013	EROSION CONTROL BLANKET CATEGORY 3	22	23	SQ YD	613
2581.501	00010	REMOVABLE PREFORMED PLASTIC MARKING	23	24	LIN FT	7717
2581.603	00020	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	24	1	LIN FT	7627

NOTES

- 1 PAVEMENT MARKING TEMP BLACK MASKING SHALL BE LAYED OUT BY THE ENGINEER. NOTE - ALL PERMANENT PAVEMENT MARKINGS SHALL BE PLACED BY ANOKA COUNTY AND ARE NOT INCLUDED IN PLAN QUANTITIES.
- 2 EXISTING FLUME IN N.E. CORNER OF BRIDGE APPROACH IS TO BE REMOVED FOR BITUMINOUS REPAIRS.
- 3 80' of GUARDRAIL IN N.E. CORNER OF BRIDGE APPROACH TO BE REMOVED AS TO ALLOW FOR BITUMINOUS REPAIRS.
- 4 METHOD OF REMOVAL SHALL BE AT THE DISCRETION OF THE CONTRACTOR AND WITH THE APPROVAL BY THE ENGINEER. REMOVED MATERIAL IS TO BE DISPOSED OF OFFSITE AND IS INCIDENTAL TO THE ITEM.
- 5 FOR BITUMINOUS REMOVAL AREAS AND PAVING JOINTS. SAWCUT LIMITS SHALL BE LAYED OUT BY THE ENGINEER.
- 6 SUBGRADE EXCAVATION INCLUDES AND IS LIMITED TO THE SUBGRADE BEING REMOVED BENEATH THE EXISTING CLASS-5. THE EXISTING CLASS 5 IS TO BE REMOVED AND STOCKPILED WITHIN CONSTRUCTION AREA IN A MANNER IN WHICH IT DOES NOT CREATE A HAZARD TO THRU TRAFFIC AND WILL BE RE-USED FOR CONSTRUCTION. CARE SHOULD BE TAKEN TO NOT CONTAMINATE THE CLASS 5 MATERIAL WITH SUBGRADE SAND MATERIAL. PAYMENT FOR PLACING SALVAGED AGG. WILL BE ITEM 2211.503 THE EXPOSED SUBGRADE SURFACE SHALL BE COMPACTED TO MEET THE SPECIFIED DENSITY METHOD. ALL OF THE MENTIONED CONSTRUCTION ACTIVITIES SHALL BE CONSIDERED INCIDENTAL TO THE ITEM.
- 7 TENSAR TRIAX TX160 GEOGRID OVERLAPS SHALL BE FASTENED WITH ZIP TIES OR EQUIVALENT ALONG THE EDGES. GRID SHALL BE SECURED TO COMPACTED SURFACE IN A MANNER TO KEEP IN PLACE WHILE CLASS-5 IS PLACED OVER THE TOP.
- 8 SHOULDER PREPERATION INCLUDES BLADING TOPSOIL MATERIAL FROM THE SHOULDER P.I. TO THE GRAVEL P.I. TOPSOIL SHOULD BE ROLLED OVER TO ALLOW FOR GEOGRID CONSTRUCTION. FOLLOWING COMPLETION OF GRID CONSTRUCTION TOPSOIL SHALL BE ROLLED BACK ONTO SHOULDER P.I. INSLOPE.
- 9 AGGREGATE BASE CLASS 5 SHALL BE USED TO REPLACE SUBGRADE EXCAVATION AREA. EACH LAYER OF CLASS 5 IS TO BE COMPACTED TO 100 PERCENT STANDARD MAXIMUM DENSITY PRIOR TO THE NEXT LAYERS CONSTRUCTION. TESTING WILL BE PREFORMED BY ANOKA COUNTY AND WILL REQUIRE THE CONTRACTOR TO COORDINATE SCHEDULING OF TESTS. NOTE - CLASS 5 QUANTITY HAS BEEN CALCULATED AND QUANTIFIED TO REFLECT USING ALL NEW CLASS 5 AND WILL BE PAID AS SUCH. THE CONTRACTOR MAY USE EXISTING CLASS 5 MATERIAL IF IT HAS NOT BEEN CONTAMINATED WITH SUB GRADE MATERIAL.
- 10 MILLINGS ARE TO BE REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF, THIS IS INCIDENTAL TO THE ITEM.
- 11 CORING WILL TAKE PLACE IN N.E. CORNER OF CONCRETE APPROACH PANEL AS ACCESS POINT TO PUMP LIGHT WEIGHT FILL INTO VOID UNDER APPROACH PANEL. AS DIRECTED BY ENGINEER.
- 12 SLAB JACKING WILL CONSIST OF PUMPING LOW DENSITY CELLULAR / FOAM CONCRETE FILL (CATEGORY III) INTO THE VOID BELOW N.E. BRIDGE APPROACH PANEL THROUGH HOLES CORED IN CONCRETE APPROACH PANEL. APPROACH PANEL TO BE RAISED TO MATCH BRIDGE DECK.
- 13 EACH LIFT OF BITUMINOUS OVER BITUMINOUS SHALL REQUIRE TACK AT A RATE OF .05 GAL PER SQ YD. TACK SHALL BE ALLOWED TIME TO SET UP PRIOR TO PAVING.
- 14 ALL BITUMINOUS SHALL BE PLACED IN 2" LIFTS.
- 15 CONCRETE FLUME TO BE CONSTRUCTED AT N.E. CORNER OF BRIDGE APPROACH PANEL, SAME LOCATION AS ONE REMOVED. CONSTRUCTED IN A MANNER IN WHICH IT DRAINS INTO EXISTING PVC OUTLET DRAIN, AS DIRECTED BY THE ENGINEER. APPROX AREA 8' LENGTH, 4' WIDE AND 8" DEEP.
- 16 CONCRETE BARRIER TO BE PLACED ALONG NORTH/SOUTH SAWCUTS OF AREA "C" IN THE CENTER OF ROADWAY IN STAGE 2. BARRIER TO BE MOVED AND USED ALONG NORTH/SOUTH SAWCUT OF AREA "C" STAGE 3. ONCOMING END OF BARRIER TO BE PROTECTED WITH APPROVED SAFETY END TREATMENT.
- 17 IMPACT ATTENUATOR BARRELS TO BE PLACED ON ONCOMING ENDS OF CONCRETE J-BARRIER. ITEM INCLUDES PLACEMENT, RELOCATING AND REMOVAL OF ITEM FOR EACH STAGE.
- 18 GUARDRAIL AND POSTS THAT HAVE BEEN REMOVED IS TO BE RE-INSTALLED IN THE SAME LOCATION AND AT THE SAME HEIGHT AS IT WAS REMOVED.
- 19 " ALL TRAFFIC CONTROL METHODS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. " DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE SIGNS TO BE INPLACE DURING MILLING / PAVING OPERATIONS.
- 20 DETOUR SIGNING SHALL INCLUDE ALL TRAFFIC RELATED ITEMS FOUND IN THE DETOUR LAYOUT OF THIS PLAN. CLOSER OF ROADWAY AND DETOUR NOT TO EXCEED 10 WORKING DAYS.
- 21 TRPMS TO BE USED IN TAPERS OF STAGE CONSTRUCTION IN CONJUNCTION WITH REMOVABLE PREFORMED PLASTIC MARKINGS.
- 22 2 - PORTABLE CHANGEABLE MESSAGE BOARDS, ONE ON EACH END OF THE PROJECT WILL BE INSTALLED 7-DAYS PRIOR TO ANY CONSTRUCTION. REFERENCE " TRAFFIC CONTROL QUANTITIES" SECTION OF THIS PLAN FOR DETAILS.
- 23 EROSION CONTROL BLANKET CAT. 3 (STRAW BLANKET) TO BE INSTALLED OVER DISTURBED TOPSOIL ON SHOULDER INSLOPE. SOIL PREPERATION, PLACEMENT, SEED AND FERTILIZER INCIDENTAL TO BLANKET. SEED MIXTURE 250 (RATE - 70 LBS PER ACRE) AND FERTILIZER TYP 3 (RATE - 350 LBS PER ACRE)
- 24 REMOVABLE PREFORMED PLASTIC MARKINGS (LANE TAPE) SHALL BE PLACED / MAINTAINED THROUGH CONSTRUCTION AREA FOR THE DURATION OF CONSTRUCTION ACTIVITIES AND REMOVED PRIOR TO FINAL STRIPING. ITEM INCLUDES MATERIALS, INSTALLATION, MAINTENANCE AND REMOVAL.

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\13-01-00\CSAH_14_(Lightweight_Tires)\Plant2_SEQ.dgn					
03/20/2013 10:27:03 AM					

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.

PRINT NAME: ANDREW WITTER

SIGNATURE: *[Signature]*

DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013

DESIGN BY: JF DATE: 3/11/2013

CHECKED BY: HG DATE: 3/14/2013



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 13-21-14

STATEMENT OF ESTIMATED QUANTITIES / NOTES

Sheet 2 of 20 Sheets

1 REMOVE CONCRETE FLUME		
AREA	QTY	
AREA D LNB	1	
	1	EACH

2 REMOVE GUARDRAIL		
AREA	LIN FT	
AREA D LNB	80	
	80	LIN FT

3 REMOVE BITUMINOUS PAVEMENT				
AREA	LENGTH	WIDTH	SQ FT	SQ YDS
AREA A	370	16	5920	658
AREA B	310	20	6200	689
AREA C	300	30	9000	1000
AREA D	80	24	1920	213
			2660	SQ.YDS.

4 SAW BITUMINOUS PAVEMENT FULL DEPTH	
AREA	LENGTH
AREA A	774
AREA B	359
AREA C	375
AREA D	104
	1612
	LIN FT

5 SUBGRADE EXCAVATION					
AREA	LENGTH	WIDTH	DEPTH	CU FT	CU YD
AREA A	370	16	0.5	2960	110
AREA B	310	24	0.5	3720	138
AREA C	300	35	1.5	15750	583
AREA D	80	24	0.5	960	36
				866	CU YDS

6 TENSAR TRIAX TR160 GEOGRID						
AREA	LENGTH	WIDTH	SQ FT	SUB SQ YDS	LAYERS	SQ YDS
AREA A	370	16	5920	658	1	658
AREA B	310	24	7440	827	2	1653
AREA C	300	35	10500	1167	2	2333
AREA D	80	24	1920	213	1	213
						4858
						SQ.YDS.

7 SHOULDER PREPERATION	
AREA	LENGTH
AREA A	370
AREA B	310
AREA C	300
AREA D	80
	1060
	LIN FT

8 AGGREGATE BASE CLASS 5					
AREA	LENGTH	WIDTH	DEPTH	CU FT	CU YD
AREA A	370	16	1.0	5920	219
AREA B	310	24	1.0	7440	276
AREA C	300	35	2.0	21000	778
AREA D	80	24	1.0	1920	71
					1344
					CU YDS

9 MILL BITUMINOUS SURFACE 2"		
AREAS	MICROSTATION AREA	SQ YDS
AREAS A,B,C		6574
AREA D		356
		6930
		SQ.YDS.

10 CONCRETE CORING		
AREA	QTY	
N-LNB APPROACH PANEL AREA D LNB	4	
	4	EACH

11 SLAB JACKING		
AREA	SQ YD	
AREA D NORTH APPROACH PANEL	12	
	12	SQ YD

12 BITUMINOUS MATERIAL FOR TACK						
AREA	LENGTH	WIDTH	SQ FT	SQ YDS	GAL/SQ YD	GAL
AREA A	370	16	5920	658	0.05	32.9
AREA B	310	20	6200	689	0.05	34.4
AREA C	300	30	9000	1000	0.05	50.0
MLL AREA A,B,C	MICR			5569	0.05	278.5
AREA D				214	0.05	10.7
MLL AREA D				178	0.05	8.9
						415
						GAL

13 TYPE SP 12.5 WEAR (SPWEB440 E)						
AREA	LENGTH	WIDTH	SQ FT	SQ YDS	INCHES	TONS
AREA A	370	16	5920	658	4	151.3
AREA B	310	20	6200	689	4	158.4
AREA C	300	30	9000	1000	4	230.0
MLL AREA A,B,C	MICR			6574	2	756.0
AREA D				178	4	40.9
MLL AREA D				356	2	40.9
						1378
						TONS

14 CONCRETE FLUME	
AREA	CU YD
N-LNB APP. PANEL AREA D LNB 8'X4'WX8"D	1
	1
	CU YD

15 PORTABLE PREC CONC BARRIER -8337- PINN	
AREA	LENGTH
AREA C	600
	600
	LIN FT

16 IMPACT ATTENUATOR BARRELS	
PLACED ON	EACH
ONCOMING END OF GUARDRAIL	6
	6
	EACH

17 INSTALL GUARDRAIL	
AREA	LENGTH
AREA D LNB N-OF APPROACH	80
	80
	LIN FT

18 TRAFFIC CONTROL	
EST. FROM	MILES
BRIDGE TO NORTH OF WARGO	1.0

19 DETOUR SIGNING	
SEE TRAFFIC PLANS	LUMP SUM
	1

20 RAISED PAVEMENT MARKING TEMPORARY	
STAGE	EACH
TRAFFIC LANE DELINEATION	1698
	1698
	EACH

21 PORTABLE CHANGEABLE MESSAGE SIGN	
LOCATION	UNIT DAY
1 NORTH OF WARGO, 1 SOUTH OF LK BRIDGE	14
	14
	UNIT DAY

22 EROSION CONTROL BLANKET CATOGORY 3				
AREA	LENGTH	WIDTH	SQ FT	SQ YDS
AREA B	310	8	2480	276
AREA C	300	8	2400	267
AREA D	80	8	640	71
				613
				SQ.YDS.

23 REMOVABLE PREFORMED PLASTIC MARKING	
STAGE	LIN FT
TRAFFIC LANE DELINEATION	7717
	7717
	LIN FT

24 REMOVABLE PREFORMED PLASTIC MASK (BLACK)	
STAGE	LIN FT
TRAFFIC LANE DELINEATION	7627
	7627
	LIN FT

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\13-01-00\CSAH_14_(Lightweight_Tires)\Plan\3_TABS.dgn 03/20/2013 10:23:53 AM

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.

PRINT NAME: ANDREW WITTER

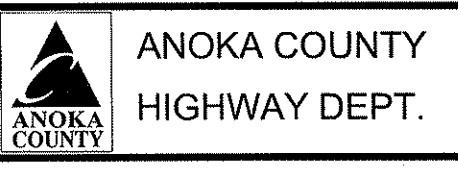
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DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013

DESIGN BY: JF DATE: 3/11/2013

CHECKED BY: HG DATE: 3/14/2013



STATE PROJECT NO. _____

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CITY PROJECT NO. _____

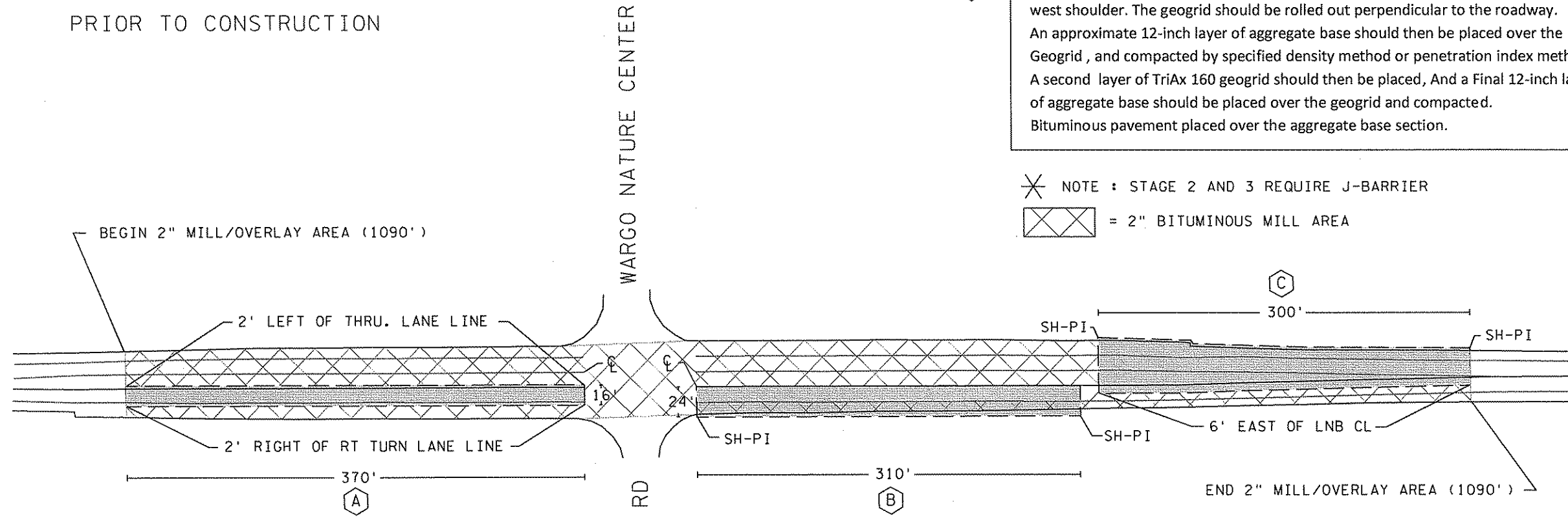
COUNTY PROJECT NO. CP 13-21-14

" STAGE 2 AND 3 "

NOTE: LIMITS OF EACH AREA TO BE DETERMINED BY THE ENGINEER PRIOR TO CONSTRUCTION

Affected pavement and aggregate base to be removed from the entire west lane and shoulder, as well as 10 ft east of the cracked section. Subgrade to be excavated as necessary to allow for 24 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base), this will require removing 18-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. Place a layer of TriAx Tx160 geogrid over the subgrade soils extending from 10 ft east of the crack to the west shoulder. The geogrid should be rolled out perpendicular to the roadway. An approximate 12-inch layer of aggregate base should then be placed over the Geogrid , and compacted by specified density method or penetration index method. A second layer of TriAx 160 geogrid should then be placed, And a Final 12-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section.

✱ NOTE : STAGE 2 AND 3 REQUIRE J-BARRIER
 [X] = 2" BITUMINOUS MILL AREA

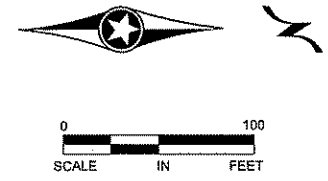


" STAGE 1 "

Affected pavement and aggregate base to be removed from the roadway. Subgrade to be excavated as necessary to allow for 12 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base, this will require removing 6-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. A 6-inch layer of aggregate base should than be placed over the subgrade and compacted by specified density method or penetration index method. A layer of TriAx 160 geogrid should then be placed, and a final 6-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section.

" STAGE 1 "

Affected pavement and aggregate base to be removed from the east lane of the roadway to the edge of the gravel shoulder(approximately 24 ft wide). Subgrade to be excavated as necessary to allow for 12 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base), this will require removing 6-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. Place a layer of TriAx Tx160 geogrid over the subgrade soils in the east lane . A 6-inch layer of aggregate base should than be placed over the subgrade and compacted by specified density method or penetration index method. A second layer of TriAx 160 geogrid should then be placed, and a Final 6-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section.



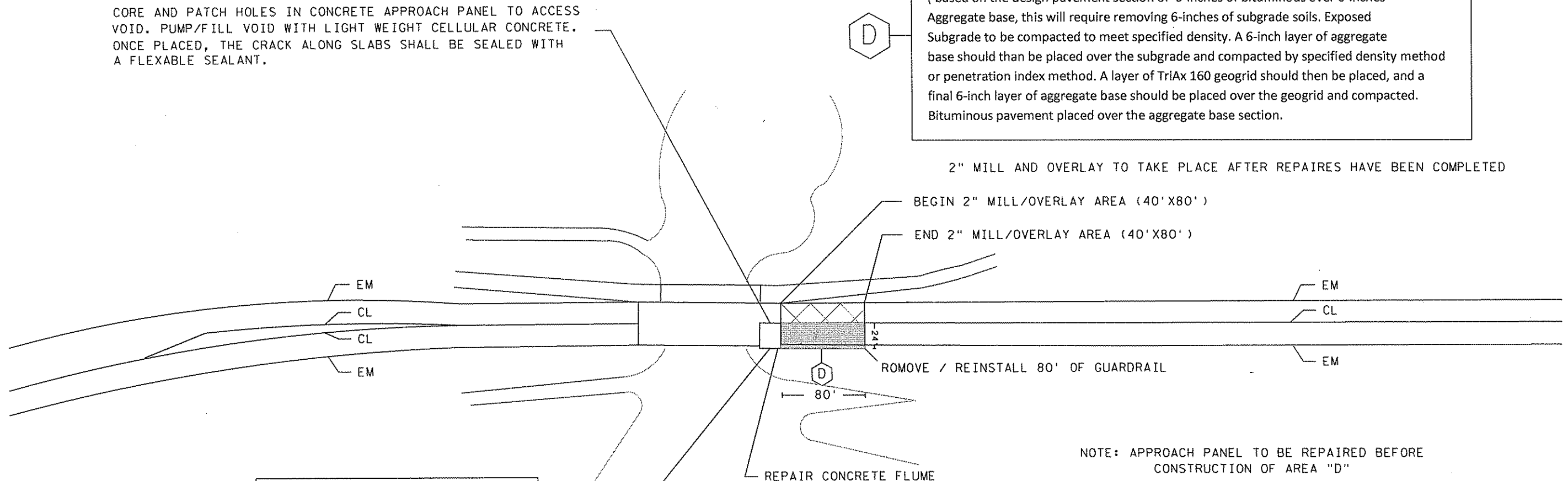
CONSTRUCTION PLAN AREA D
(24' X 80')

APPROACH PANEL REPAIR

CORE AND PATCH HOLES IN CONCRETE APPROACH PANEL TO ACCESS VOID. PUMP/FILL VOID WITH LIGHT WEIGHT CELLULAR CONCRETE. ONCE PLACED, THE CRACK ALONG SLABS SHALL BE SEALED WITH A FLEXIBLE SEALANT.

Affected pavement and aggregate base to be removed from the roadway. Subgrade to be excavated as necessary to allow for 12 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base, this will require removing 6-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. A 6-inch layer of aggregate base should than be placed over the subgrade and compacted by specified density method or penetration index method. A layer of TriAx 160 geogrid should then be placed, and a final 6-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section.

2" MILL AND OVERLAY TO TAKE PLACE AFTER REPAIRS HAVE BEEN COMPLETED




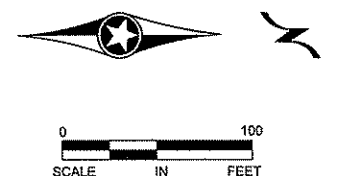
APPROACH PANEL REPAIR

ADD AND COMPACT ADDITIONAL CL-5 ON INSLOPE PRIOR TO FILLING VOID UNDER APPROACH PANEL IT WILL BE NECESSARY TO LAYDOWN PLYWOOD OVER COMPACTED CL-5 AND TEMPORARY OVERBURDEN PLYWOOD WITH GRANULAR MATERIAL TO HELP CONTAIN PRESSURE OF FILLING VOID UNDER APPROACH PANEL

NOTE: APPROACH PANEL TO BE REPAIRED BEFORE CONSTRUCTION OF AREA "D"

LIMITS OF AREA TO BE DETERMINED BY THE ENGINEER PRIOR TO CONSTRUCTION

 = 2" BITUMINOUS MILL AREA



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\13-01-00\CSAH_14_(Lightweight_Tires)\Plant5_CONST.OVERVIEW AREA D.dgn 03/18/2013 1:29:07 PM

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.
 PRINT NAME: ANDREW WITTER
 SIGNATURE: *Andrew Witter*
 DATE: 3/21/13 LICENSE NO. 42757

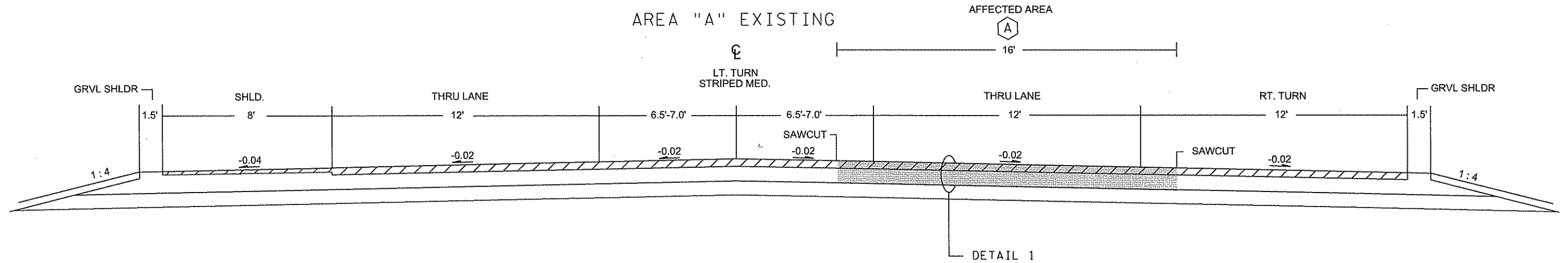
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 DESIGN BY: JF DATE: 3/11/2013
 CHECKED BY: HG DATE: 3/14/2013



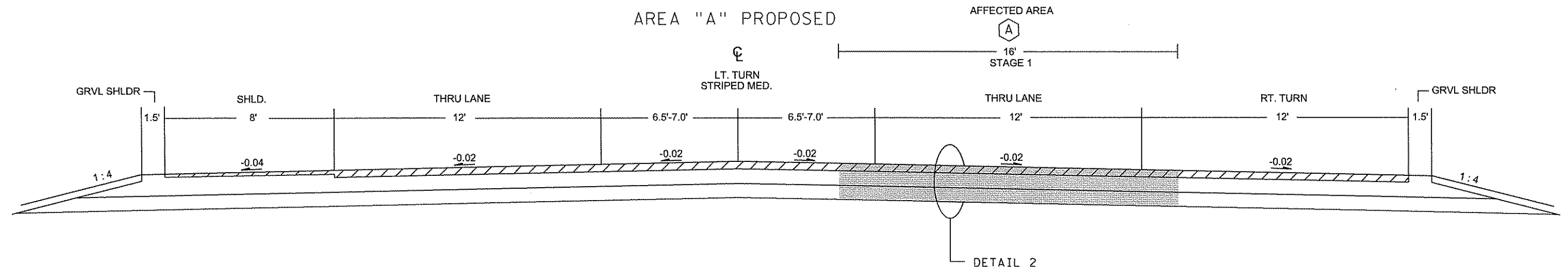
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 13-21-14

CONSTRUCTION OVERVIEW
 AREA D
 Sheet 5 of 20 Sheets

AREA "A" EXISTING



AREA "A" PROPOSED

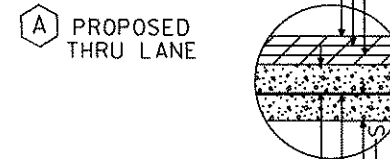


DETAIL 1



6" BITUMINOUS
6" BASE, CLASS-5
SUBGRADE

DETAIL 2



6" BASE, CLASS-5
TENSAR TRIAX TX160
6" BASE, CLASS-5
SUBGRADE

2" SPWEB440 C
2" SPWEB440 C
2" SPWEB440 C

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\13-01-00\CSAH_14 (Lightweight_Tires)\Plan\6_TYP A.dgn 03/18/2013 1:34:23 PM

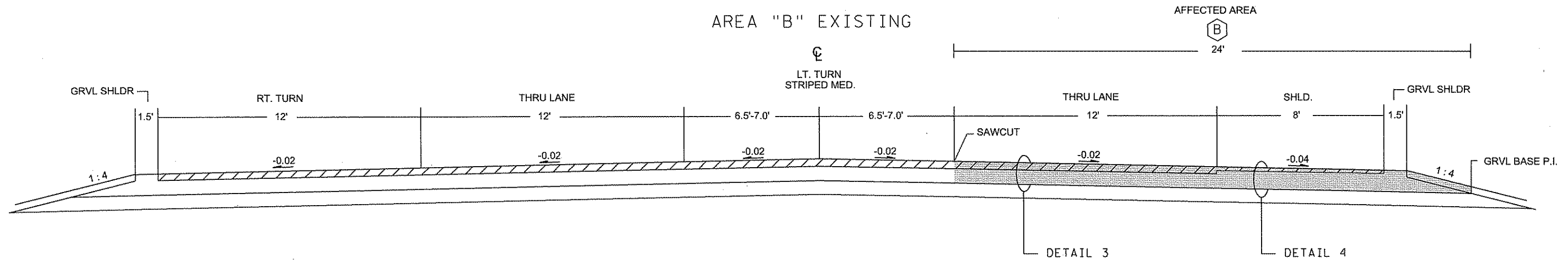
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ANDREW WITTER
 SIGNATURE: *[Signature]*
 DATE: 3/25/13 LICENSE NO. #YLINO

DRAWN BY: JF DATE: 3/11/2013
 DESIGN BY: JF DATE: 3/11/2013
 CHECKED BY: HG DATE: 3/14/2013

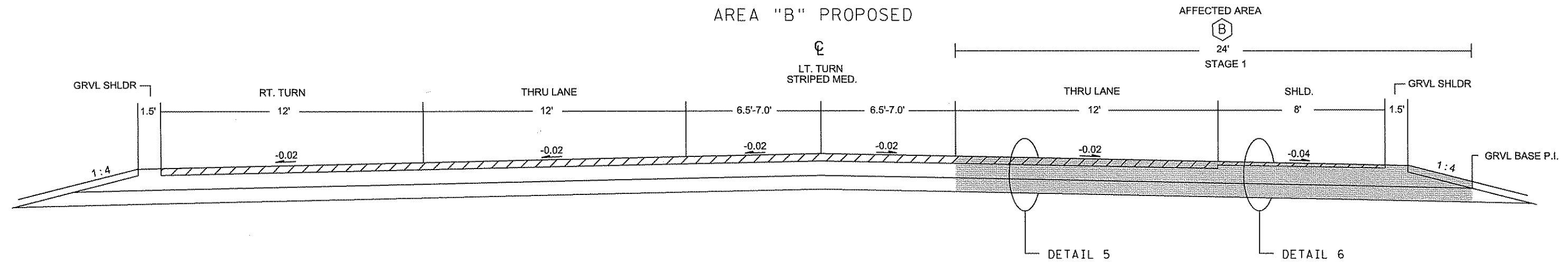


STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 13-21-14

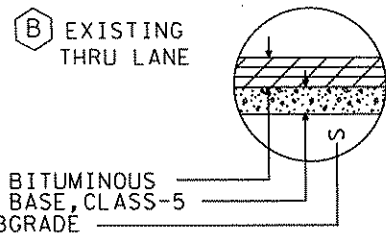
AREA "B" EXISTING



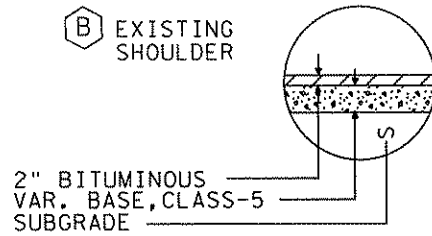
AREA "B" PROPOSED



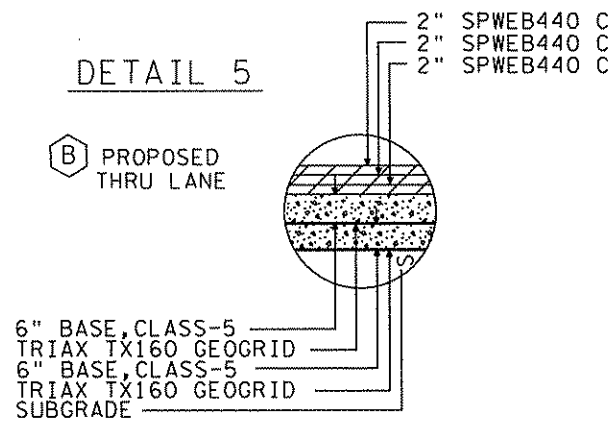
DETAIL 3



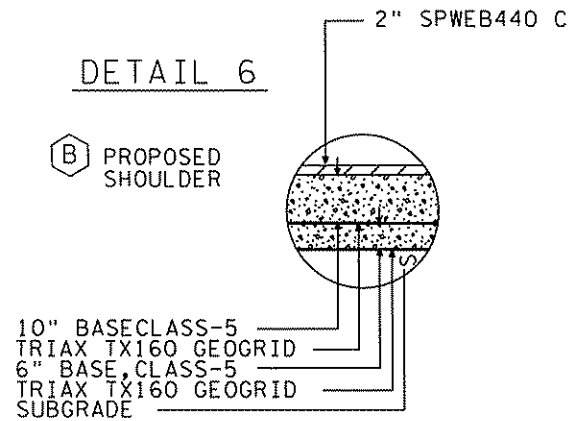
DETAIL 4



DETAIL 5



DETAIL 6



NO	DATE	BY	CKD	APPR	REVISION

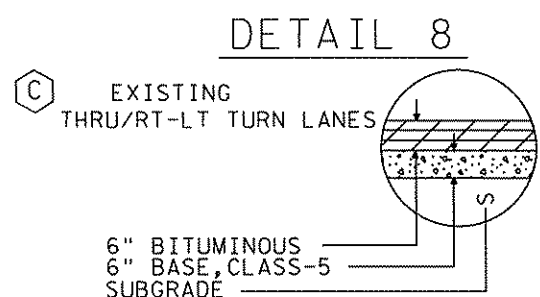
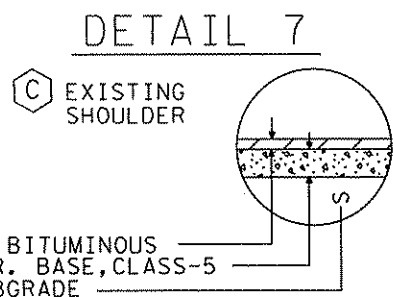
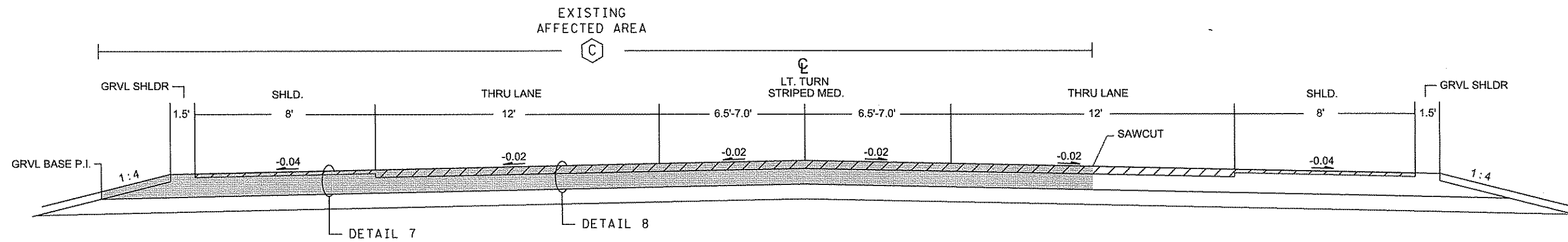
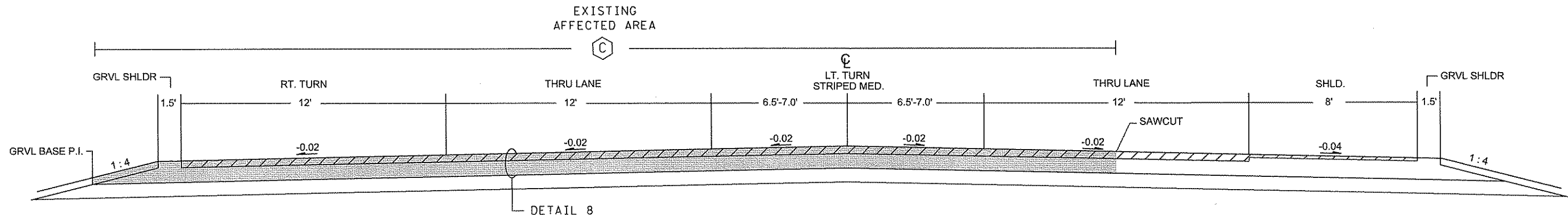
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: ANDREW WITTER
 SIGNATURE: *[Signature]*
 DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013
 DESIGN BY: JF DATE: 3/11/2013
 CHECKED BY: HG DATE: 3/14/2013



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 13-21-14



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\13-01-00\CSAH_14_(Lightweight_Tires)\Plan\8_TYP C EX.dgn 03/16/2013 1:38:01 PM

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.

PRINT NAME: ANDREW WITTER

SIGNATURE: *Andrew Witter*

DATE: 3/13/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013

DESIGN BY: JF DATE: 3/11/2013

CHECKED BY: HG DATE: 3/14/2013

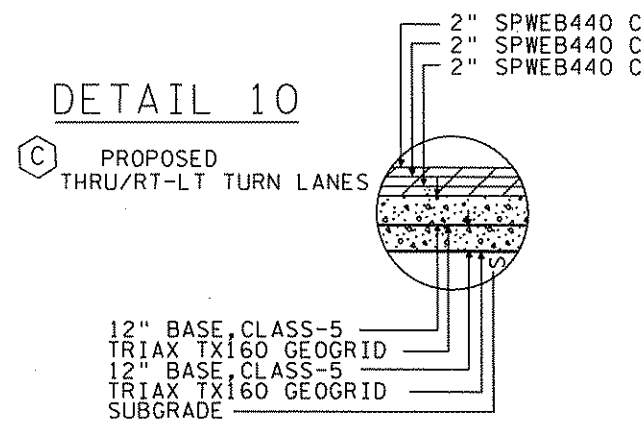
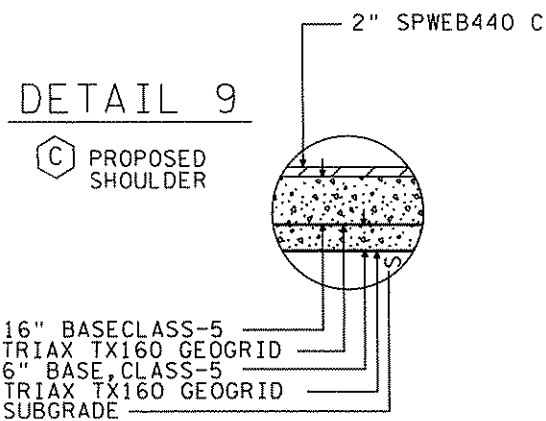
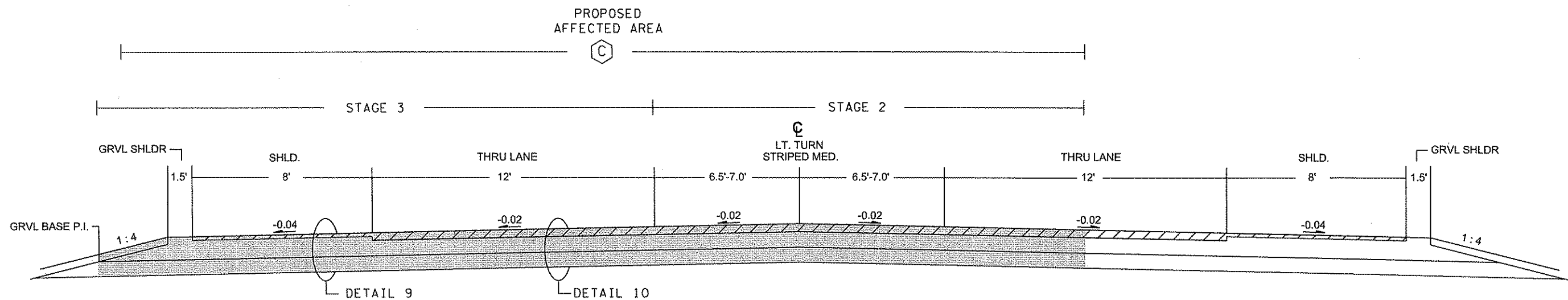
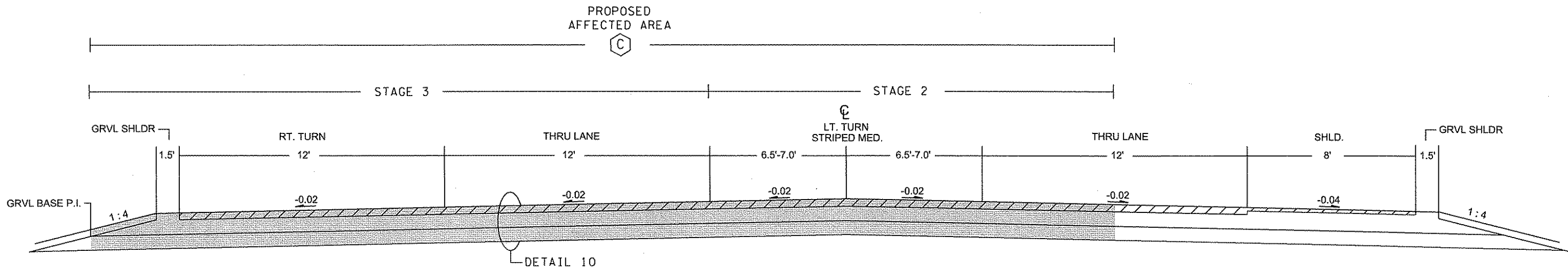


STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 13-21-14



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:113-01-00\CSAH_14_(Lightweight_Tires)\Plan9_TYP C PROP.dgn 03/18/2013 1:40:03 PM

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.

PRINT NAME: ANDREW WITTER

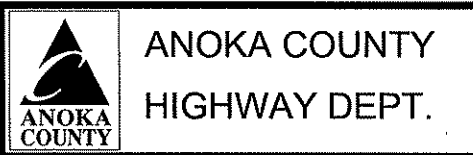
SIGNATURE: *[Signature]*

DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013

DESIGN BY: JF DATE: 3/11/2013

CHECKED BY: HG DATE: 3/14/2013



STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

CITY PROJECT NO. _____

COUNTY PROJECT NO. CP 13-21-14

TYPICAL AREA "C" PROPOSED

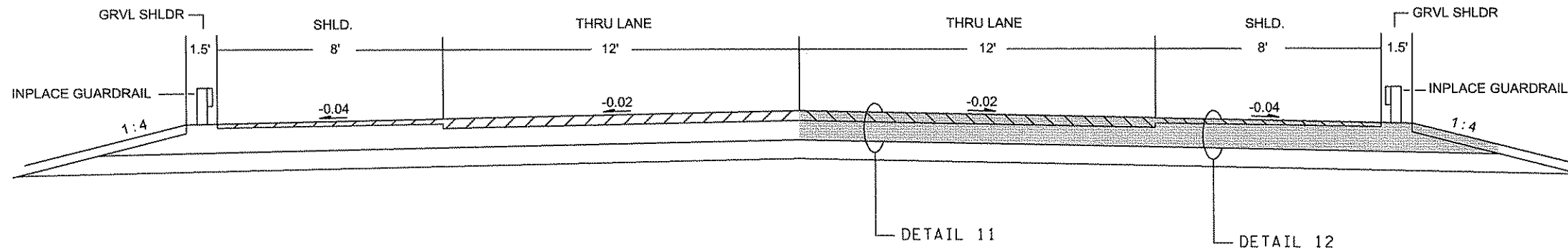
Sheet 9 of 20 Sheets

AREA "D" EXISTING

AFFECTED AREA



24'

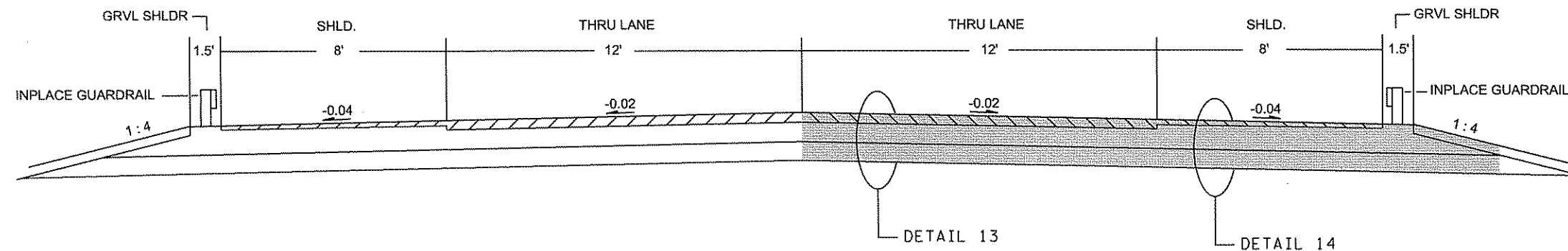


AREA "D" PROPOSED

AFFECTED AREA

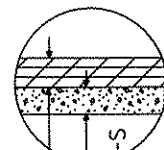


24'



DETAIL 11

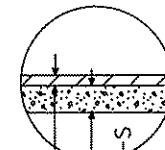
(B) EXISTING THRU LANE



6" BITUMINOUS
6" BASE, CLASS-5
SUBGRADE

DETAIL 12

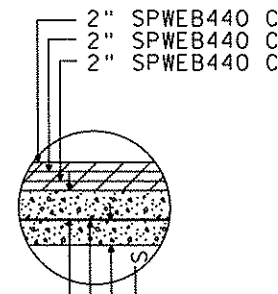
(B) EXISTING SHOULDER



2" BITUMINOUS
VAR. BASE, CLASS-5
SUBGRADE

DETAIL 13

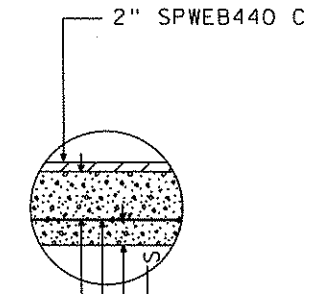
(B) PROPOSED THRU LANE



6" BASE, CLASS-5
TRIAx TX160 GEOGRID
6" BASE, CLASS-5
SUBGRADE

DETAIL 14

(B) PROPOSED SHOULDER



10" BASE CLASS-5
TRIAx TX160 GEOGRID
6" BASE, CLASS-5
SUBGRADE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\13-01-00\CSAH_14_(Lightweight_Tires)\Plan\10_TYP D.dgn 03/18/2013 1:42:10 PM

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.
 PRINT NAME: ANDREW WITTER
 SIGNATURE: *Andrew Witter*
 DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013
 DESIGN BY: JF DATE: 3/11/2013
 CHECKED BY: HG DATE: 3/14/2013



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 13-21-14

NOTE: LIMITS OF EACH AREA TO BE DETERMINED BY THE ENGINEER PRIOR TO CONSTRUCTION

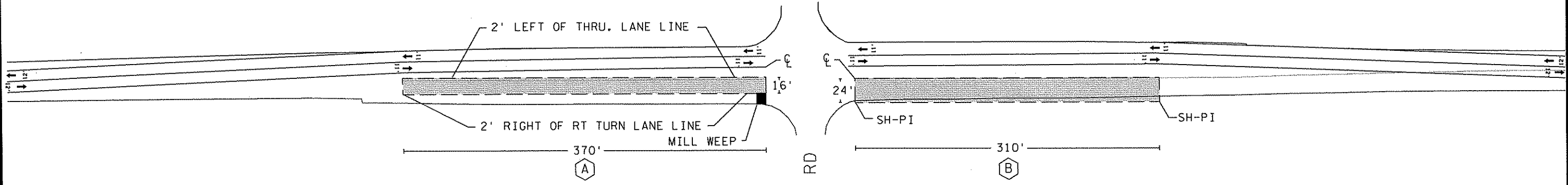
CONSTRUCTION PLAN STAGE 1

✱ NOTE : STAGE 1, NO J-BARRIER REQUIRED

LOCATION OF THRU TRAFFIC IS SHOWN FOR GENERAL FLOW OF TRAFFIC DURING STAGE. SEE TRAFFIC PLANS FOR LAYOUT OF TRAFFIC ITEMS.

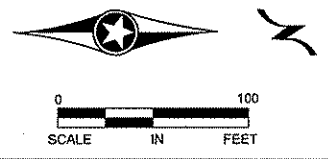
WARGO NATURE CENTER

HERITAGE LAB RD



Affected pavement and aggregate base to be removed from the roadway. Subgrade to be excavated as necessary to allow for 12 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base, this will require removing 6-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. A 6-inch layer of aggregate Base should than be placed over the subgrade and compacted by specified density method Or penetration index method. A layer of TriAx 160 geogrid should then be placed, and a Final 6-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section

B Affected pavement and aggregate base to be removed from the east lane of the roadway to the edge of the gravel shoulder(approximately 24 ft wide). Subgrade to be excavated as necessary to allow for 12 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base), this will require removing 6-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. Place a layer of TriAx Tx160 geogrid over the subgrade soils in the east lane . A 6-inch layer of aggregate base should than be placed over the subgrade and compacted by specified density method or penetration index method. A second layer of TriAx 160 geogrid should then be placed, and a Final 6-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section.

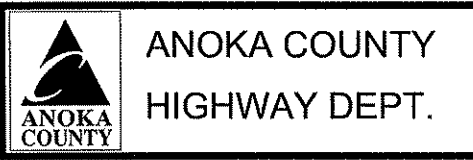


NO	DATE	BY	CKD	APPR	REVISION

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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.
 PRINT NAME: ANDREW WITTEB
 SIGNATURE: *[Signature]*
 DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY JF DATE 3/11/2013
 DESIGN BY JF DATE 3/11/2013
 CHECKED BY HG DATE 3/14/2013



STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 13-21-14

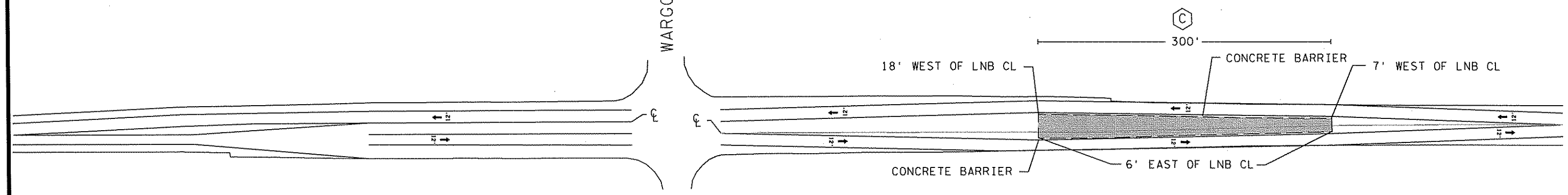
STAGE 1 CONSTRUCTION AREA "A AND B"
 Sheet 11 of 20 Sheets

NOTE: LIMITS OF EACH AREA TO BE DETERMINED BY THE ENGINEER PRIOR TO CONSTRUCTION

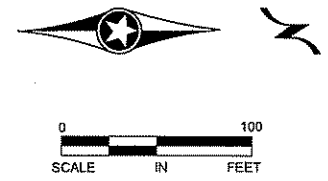
CONSTRUCTION PLAN STAGE 2

* NOTE : STAGE 2 AND 3 REQUIRE J-BARRIER
 LOCATION OF THRU TRAFFIC IS SHOWN FOR GENERAL FLOW OF TRAFFIC DURING STAGE. SEE TRAFFIC PLANS FOR LAYOUT OF TRAFFIC ITEMS.

WARGO NATURE CENTER
 HERITAGE LAB RD



Affected pavement and aggregate base to be removed from the entire west lane and shoulder, as well as 10 ft east of the cracked section. Subgrade to be excavated as necessary to allow for 24 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base), this will require removing 18-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. Place a layer of TriAx Tx160 geogrid over the subgrade soils extending from 10 ft east of the crack to the west shoulder. The geogrid should be rolled out perpendicular to the roadway. An approximate 12-inch layer of aggregate base should then be placed over the Geogrid , and compacted by specified density method or penetration index method. A second layer of TriAx 160 geogrid should then be placed, And a Final 12-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section.



C

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:113-01-001CSAH_14_(Lightweight_Tires)Plant12_STAGE 2.dgn 03/18/2013 1:30:47 PM

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.
 PRINT NAME: ANDREW WITTER
 SIGNATURE: *[Signature]*
 DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013
 DESIGN BY: JF DATE: 3/11/2013
 CHECKED BY: HG DATE: 3/14/2013

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. CP 13-21-14

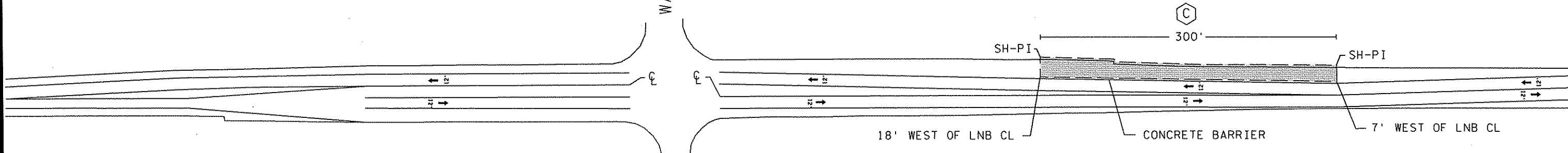
STAGE 2 CONSTRUCTION AREA "C"
 Sheet 12 of 20 Sheets

CONSTRUCTION PLAN STAGE 3

NOTE: LIMITS OF EACH AREA TO BE DETERMINED BY THE ENGINEER PRIOR TO CONSTRUCTION

Affected pavement and aggregate base to be removed from the entire west lane and shoulder, as well as 10 ft east of the cracked section. Subgrade to be excavated as necessary to allow for 24 inches of aggregate base (based on the design pavement section of 6-inches of bituminous over 6-inches Aggregate base), this will require removing 18-inches of subgrade soils. Exposed Subgrade to be compacted to meet specified density. Place a layer of TriAx Tx160 geogrid over the subgrade soils extending from 10 ft east of the crack to the west shoulder. The geogrid should be rolled out perpendicular to the roadway. An approximate 12-inch layer of aggregate base should then be placed over the Geogrid , and compacted by specified density method or penetration index method. A second layer of TriAx 160 geogrid should then be placed, And a Final 12-inch layer of aggregate base should be placed over the geogrid and compacted. Bituminous pavement placed over the aggregate base section.

WARGO NATURE CENTER
HERITAGE LAB RD



* NOTE : STAGE 2 AND 3 REQUIRE J-BARRIER
LOCATION OF THRU TRAFFIC IS SHOWN FOR GENERAL FLOW OF TRAFFIC DURING STAGE. SEE TRAFFIC PLANS FOR LAYOUT OF TRAFFIC ITEMS.

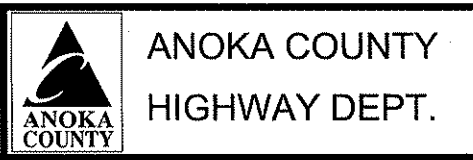


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\13-01-00\CSAH_14_(Lightweight_Tires)\Plan\13_STAGE 3.dgn 03/18/2013 1:32:22 PM

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.
PRINT NAME: ANDREW WITTER
SIGNATURE: *[Signature]*
DATE: 3/25/13 LICENSE NO. 42757

DRAWN BY: JF DATE: 3/11/2013
DESIGN BY: JF DATE: 3/11/2013
CHECKED BY: HG DATE: 3/14/2013



STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
CITY PROJECT NO. _____
COUNTY PROJECT NO. CP 13-21-14

STAGE 3 CONSTRUCTION AREA "C"
Sheet 13 of 20 Sheets

TEMPORARY PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS, ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

EPOXY:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

THE EPOXY MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FAHRENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

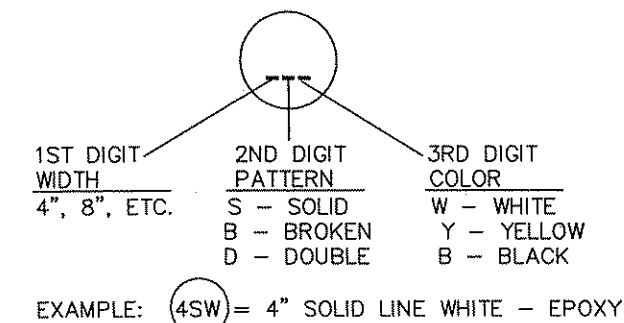
↶ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



TEMPORARY PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
RAISED PAVEMENT MARKER TEMPORARY	1698	EACH
REMOVABLE PREFORMED PLASTIC MARKING	7717	Lin Ft
REMOVABLE PREFORMED PLASTIC MASK (BLACK)	7627	Lin Ft

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\113-01-00\CSAH 231\Bases\TRAFFIC\Perm pvmt mrkg guide notes_guidelines.dwg

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.

PRINT NAME: ANDREW WITTE
SIGNATURE: *[Signature]*
DATE: 3/25/13 LICENSE NO. 42757

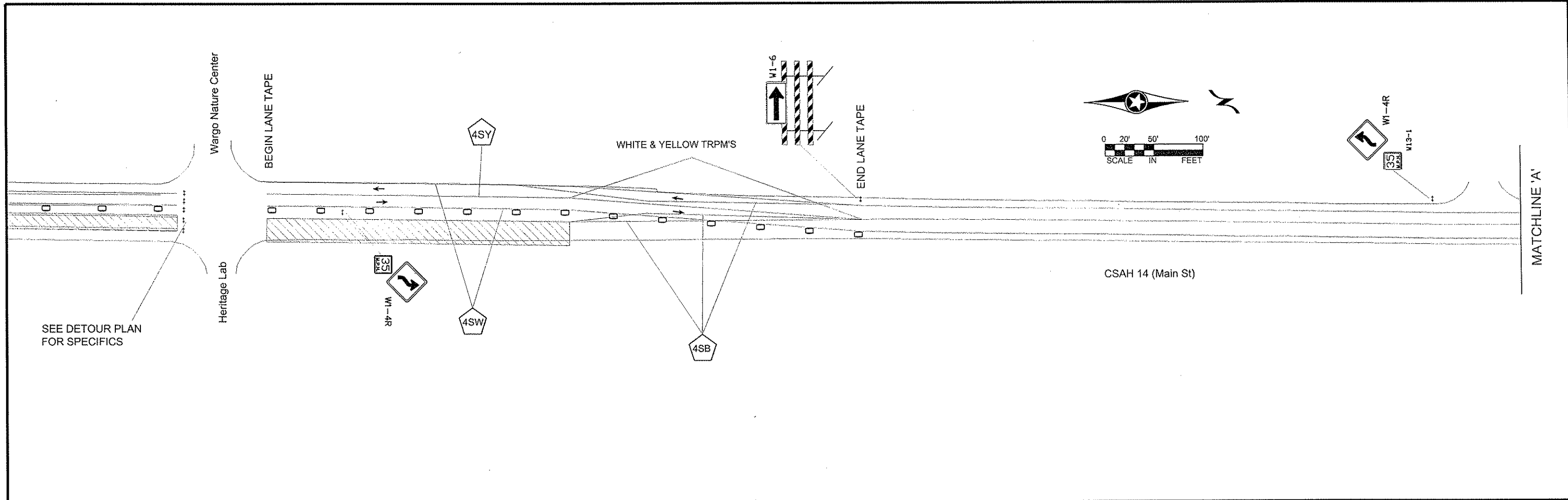
DRAWN BY: MTH DATE 3/13/2013
DESIGN BY: MTH DATE 3/13/2013
CHECKED BY: JR DATE 3/19/2013

ANOKA COUNTY
HIGHWAY DEPT.

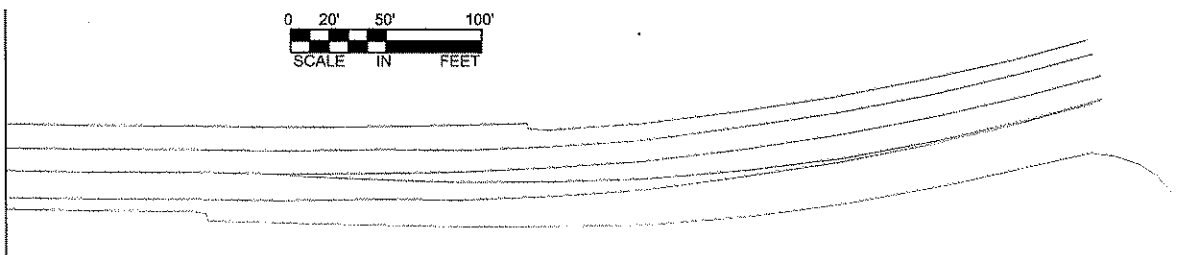
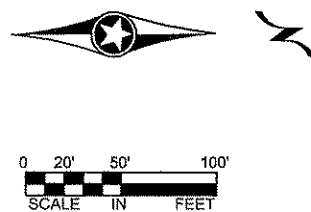
STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 13-21-14

TEMPORARY MARKING
TABULATION

Sheet 14 of 20 Sheets



MATCHLINE 'A'



STAGE 1 TRAFFIC CONTROL NOTES:

- CSAH 14 SOUTH OF WARGO NATURE CENTER IS DETOURED.
- TRAFFIC CONSISTS OF TWO ELEVEN FOOT LANES.
- SHIFT SOUTHBOUND TRAFFIC TO THE WEST TO ACCOMMODATE THE WORK AREA.
- COVER ALL CONFLICTING 4" CENTERLINE AND SOUTHBOUND 4" EDGELINE FROM WARGO NATURE CENTER ENTRANCE NORTH APPROXIMATELY 600 FEET WITH REMOVABLE PREFORMED PLASTIC MASK (BLACK).
- COVER ALL CONFLICTING 24" YELLOW PAVEMENT MESSAGES FROM WARGO NATURE CENTER ENTRANCE NORTH APPROXIMATELY 600 FEET WITH REMOVABLE PREFORMED PLASTIC MASK (BLACK).
- ADD 4" WHITE AND YELLOW LANE TAPE AS SHOWN ON DRAWING.
- ADD TRPM'S EVERY 10 FEET IN TAPER AREAS AND 50 FEET IN TANGENT AREAS.

NO	DATE	BY	CKD	APPR	REVISION

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.
 PRINT NAME: ANDREW WITTER
 SIGNATURE: [Signature]
 DATE: 3/25/13 REG. NO. 42757

DRAWN BY: MTH DATE: 03/08/13
 DESIGN BY: MTH DATE: 03/08/13
 CHECKED BY: RB DATE: 03/13/13

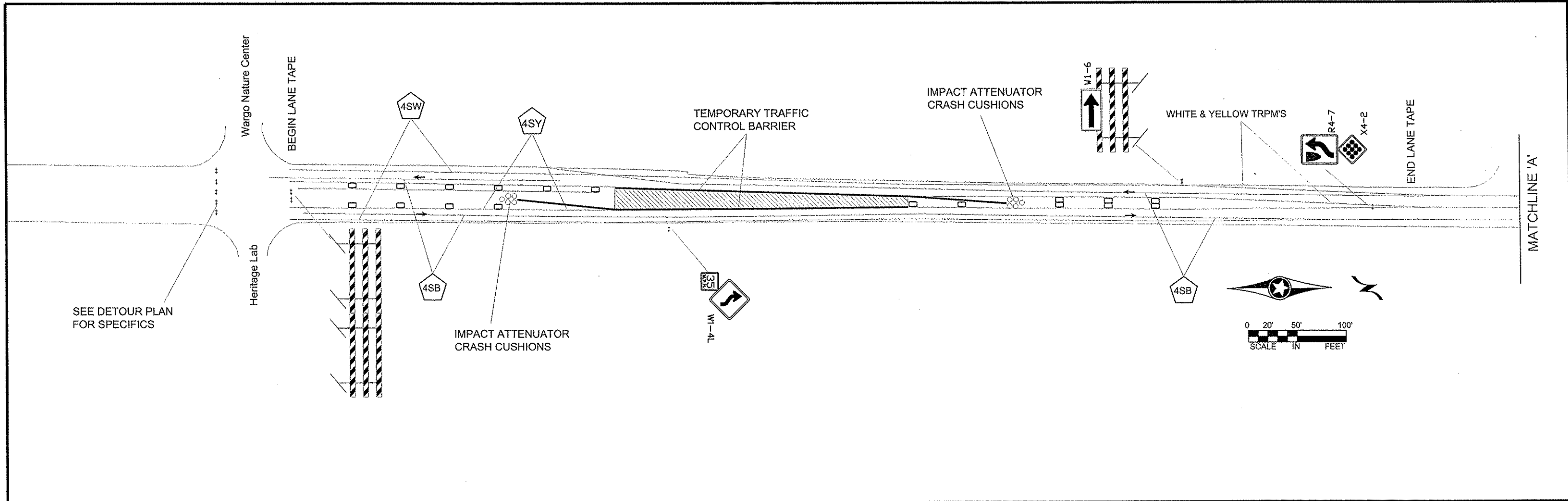


ANOKA COUNTY
 HIGHWAY DEPT.

COUNTY PROJECT NO. 13-21-14

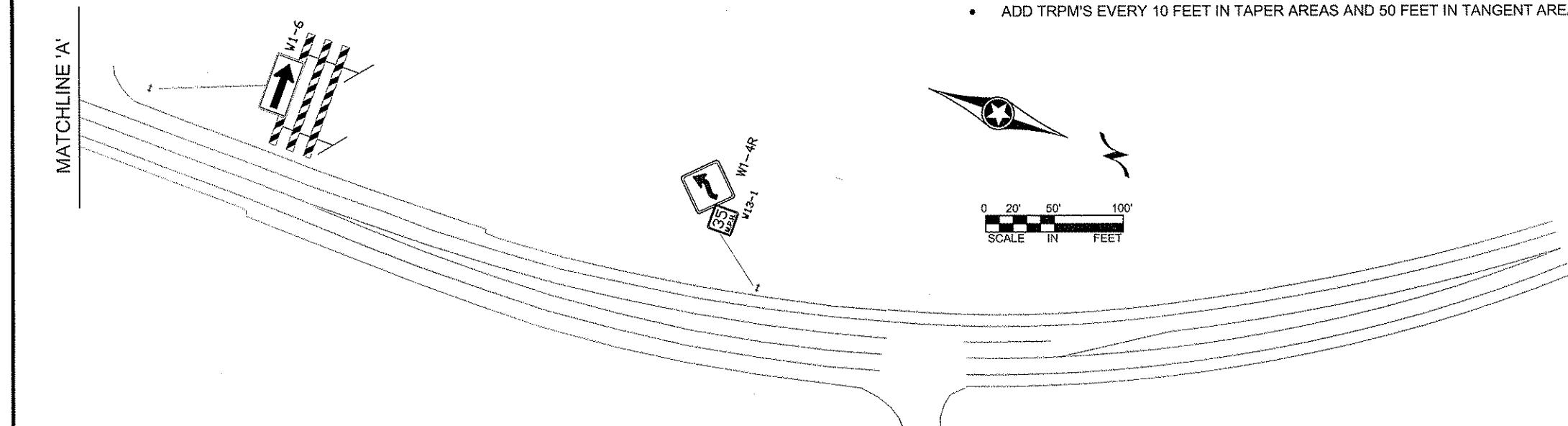
TRAFFIC CONTROL
 STAGE 1 LAYOUT

Sheet 15 of 20 Sheets



STAGE 2 TRAFFIC CONTROL NOTES:

- CSAH 14 SOUTH OF WARGO NATURE CENTER REMAINS DETOURED.
- TEMPORARY TRAFFIC CONTROL BARRIER IS REQUIRED IN WORK AREA. ALL UPSTREAM LEADING ENDS SHALL BE APPROPRIATELY FLARED OR PROTECTED WITH PROPERLY INSTALLED AND MAINTAINED CRASHWORTHY CUSHIONS.
- TRAFFIC CONSISTS OF ONE TWELVE FOOT SOUTHBOUND LANE AND ONE TWELVE FOOT NORTHBOUND LANE.
- SHIFT SOUTHBOUND TRAFFIC TO THE WEST TO ACCOMMODATE THE WORK AREA IN THE CENTER OF THE ROADWAY.
- BEGIN NORTHBOUND TRAFFIC TO THE EAST TO ACCOMMODATE THE WORK AREA IN THE CENTER OF THE ROADWAY.
- COVER ALL CONFLICTING NORTHBOUND AND SOUTHBOUND 4" SOLID LINE WHITE LANE PAINT WITH REMOVABLE PREFORMED PLASTIC MASK (BLACK)
- ADD 4" WHITE AND YELLOW LANE TAPE AS SHOWN ON DRAWING.
- ADD TRPM'S EVERY 10 FEET IN TAPER AREAS AND 50 FEET IN TANGENT AREAS.



NO	DATE	BY	CKD	APPR	REVISION

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.

PRINT NAME: **ANDREW WITTER**

SIGNATURE: *Andrew Witter*

DATE: **3/25/13** REG. NO. **42757**

DRAWN BY: **MTH** DATE **03/08/13**

DESIGN BY: **MTH** DATE **03/08/13**

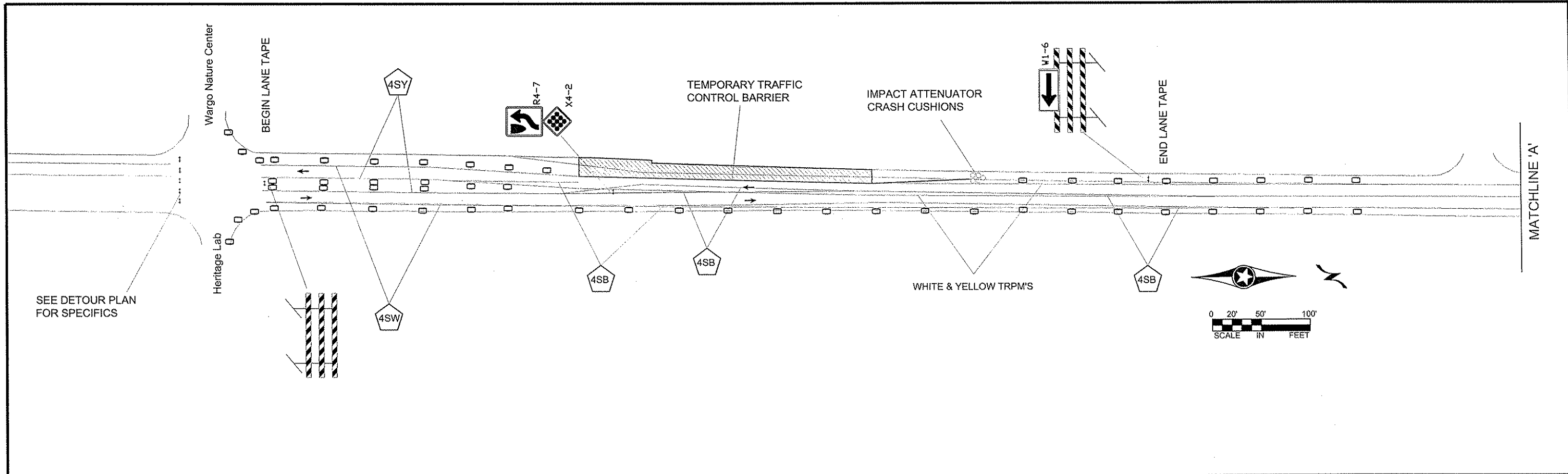
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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT NO. **13-21-14**

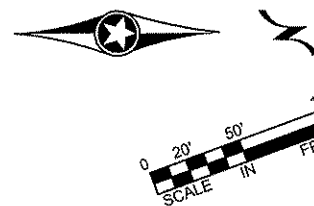
TRAFFIC CONTROL
STAGE 2 LAYOUT

Sheet **16** of **20** Sheets

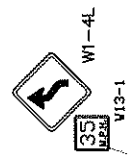


STAGE 3 TRAFFIC CONTROL NOTES:

- CSAH 14 SOUTH OF WARGO NATURE CENTER REMAINS DETOURED.
- TEMPORARY TRAFFIC CONTROL BARRIER IS REQUIRED IN WORK AREA. ALL UPSTREAM LEADING ENDS SHALL BE APPROPRIATELY FLARED OR PROTECTED WITH PROPERLY INSTALLED AND MAINTAINED CRASHWORTHY CUSHIONS.
- TRAFFIC CONSISTS OF ONE-TWELVE FOOT SOUTHBOUND LANE AND ONE TWELVE FOOT NORTHBOUND LANE.
- SHIFT SOUTHBOUND TRAFFIC 6 FEET TO THE EAST TO ACCOMODATE THE WORK AREA. TRANSITION TRAFFIC BACK TO EXISTING LANE AFTER WORK AREA.
- BEGIN NORTHBOUND TRAFFIC IN EXISTING LANE. SHIFT LANE EAST AS NECESSARY TO MAINTAIN TWO TWELVE FOOT LANES.
- COVER ALL CONFLICTING NORTHBOUND AND SOUTHBOUND 4" SOLID LINE WHITE AND 4" DOUBLE LINE YELLOW PAINT WITH REMOVABLE PREFORMED PLASTIC MASK (BLACK)
- COVER ALL CONFLICTING 24" YELLOW PAVEMENT MESSAGES NORTH OF WARGO NATURE CENTER WITH REMOVABLE PREFORMED PLASTIC MASK (BLACK)
- ADD 4" WHITE AND YELLOW LANE TAPE AS SHOWN ON DRAWING.
- ADD TRPM'S EVERY 10 FEET IN TAPER AREAS AND EVERY 50 FEET IN TANGENT AREAS.



MATCHLINE 'A'



NO	DATE	BY	CKD	APPR	REVISION

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.
 PRINT NAME: **ANDREW WITTER**
 SIGNATURE: *[Signature]*
 DATE: **3/25/13** REG. NO. **42757**

DRAWN BY: **MTH** DATE **03/08/13**
 DESIGN BY: **MTH** DATE **03/08/13**
 CHECKED BY: **RB** DATE **03/13/13**











**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT NO. **13-21-14**

**TRAFFIC CONTROL
STAGE 3 LAYOUT**



Sheet **17** of **20** Sheets

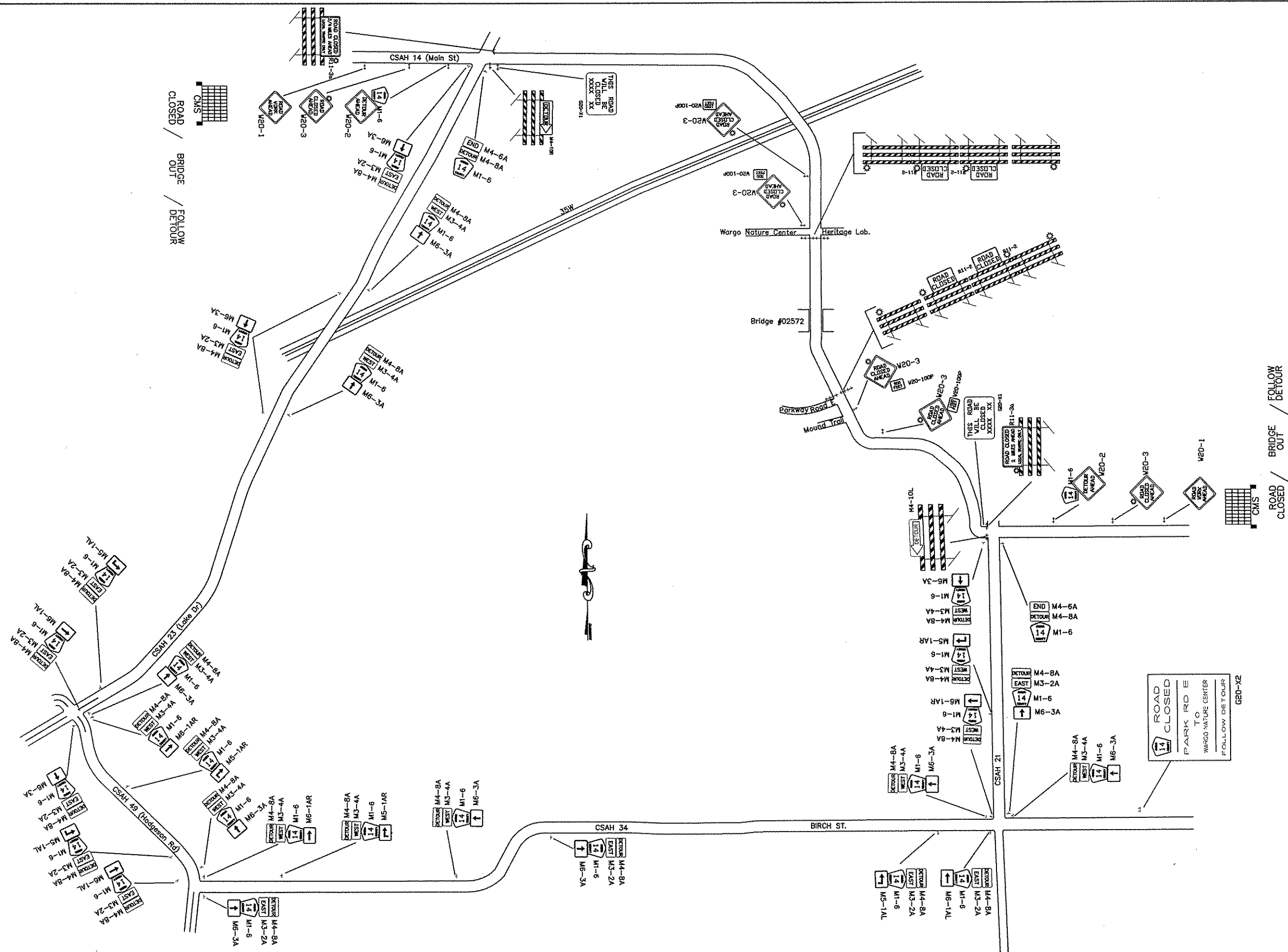
M.U.T.C.D. CODE	SIZE	INSERT	QTY. STG. 1	QTY. STG. 2	QTY. STG. 3
R4-7	24" x 30"		0	1	1
X4-2	18" x 18"		0	1	1
W1-4R	48" x 48"	 W1-4R	2	1	0
W1-4L	48" x 48"	 W1-4L	0	1	1
W13-1	24" x 24"	 W13-1	2	2	1
W1-6	48" x 24"	 W1-6	1	2	1
TYPE II	8 FOOT		1	4	2
REFLECTORIZED REBOUNDABLE DRUM			13	18	54

TEMPORARY PAVEMENT MARKING QUANTITIES		
Item	Quantity	Units
RAISED PAVEMENT MARKER TEMPORARY	1698	EACH
REMOVABLE PREFORMED PLASTIC MARKING	7717	Lin Ft
REMOVABLE PREFORMED PLASTIC MASK (BLACK)	7627	Lin Ft

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE M.U.T.C.D.

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. PRINT NAME: ANDREW WITTE SIGNATURE:  DATE: 3/25/13 REG. NO. 42757					DRAWN BY: MTH DATE: 3/14/13 DESIGN BY: MTH DATE: 3/14/13 CHECKED BY: RB DATE: 3/20/13	 ANOKA COUNTY HIGHWAY DEPT.	13-21-14	STAGING SIGN QUANTITIES Sheet 18 of 20 Sheets	
NO	DATE	BY	CKD	APPR	REVISION				
NAME: P:\02-601-046\Bose\TRAFFIC\STGQTY.dwg									



NO	DATE	BY	CKD	APPR	REVISION

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.

PRINT NAME: ANDREW WITTER

SIGNATURE: *Andrew Witter*

DATE: 3/25/13 REG. NO. 42757

DRAWN BY RLB DATE 03/13/13

DESIGN BY RLB DATE 03/13/13

CHECKED BY JR DATE 03/13/13



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

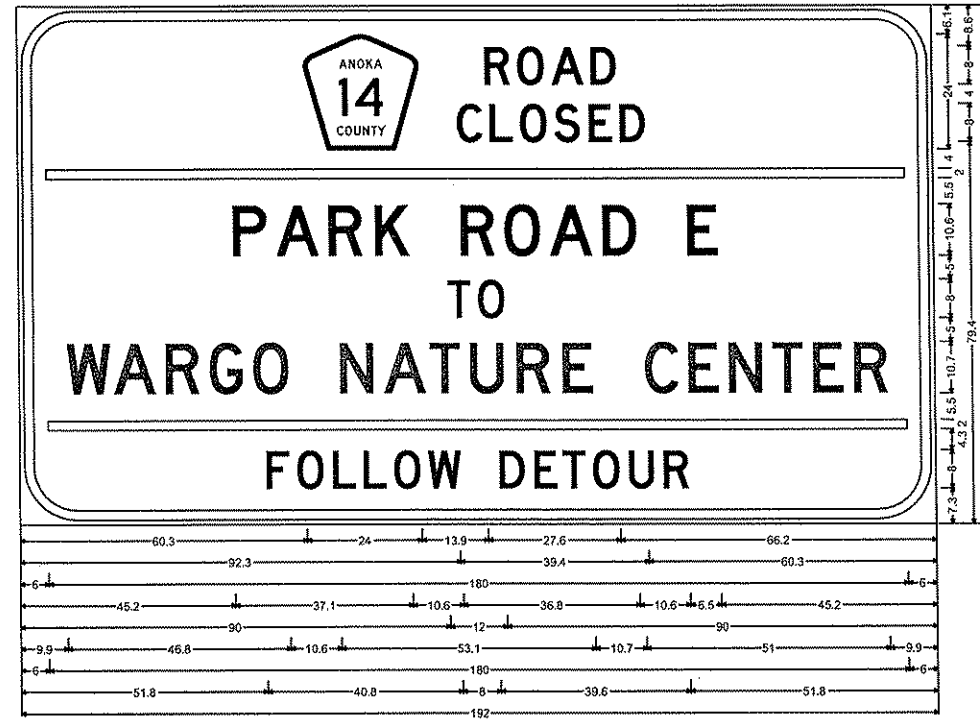
STATE AID PROJECT NO. _____

COUNTY PROJECT NO. 13-21-14

DETOUR PLAN

Sheet 19 of 20 Sheets

M.U.T.C.D. CODE	SIZE	INSERT	QTY.	M.U.T.C.D. CODE	SIZE	INSERT	QTY.
M4-10R	48"x18"		• 1	W21-4	48"x48"		• 2
TYPE III	8 FT.		• 1	M1-6	24"x24"		• 2
			• 1	W20-2	48"x48"		• 2
M4-10L	48"x18"		• 1	W20-3	48"x48"		• 6
TYPE III	8 FT.		• 1	W20-100P	24"x18"		• 2
			• 1	W20-100P	24"x18"		• 2
R11-3	96"x36"		• 1	G20-X2	138"x108"		• 1
TYPE III	8 FT.		• 1				
R11-3a	96"x36"		• 1	G20-X2	114" x 20"		• 1
TYPE III	8 FT.		• 1				
M4-8	24"x12"	M5-1L	• 0	G20-X1	84"x60"		• 2
M3-4	24"x12"	M5-1R	• 3				
M1-6	24"x24"	M6-1L	• 0	M4-6	24"x12"		• 2
	21"x15"	M6-1R	• 3	M4-8	24"x12"		• 2
		M6-3	• 8	M1-6	24"x24"		
M4-8	24"x12"	M5-1L	• 3				
M3-2	24"x12"	M5-1R	• 0				
M1-6	24"x24"	M6-1L	• 3				
	21"x15"	M6-1R	• 0				
		M6-3	• 7				
R11-2	48"x30"		• 4				
TYPE III	8 FT.		• 8				
			• 8				



G20-X2_132x108; 12.0" Radius, 2.0" Border, 1.0" Indent, Black on Orange:
 [ROAD] D; [CLOSED] D; [PARK ROAD E] D; [TO] D; [WARGO NATURE CENTER] D; [FOLLOW] D; [DETOUR] D;

INSTALL G20-X2 SIGNS 7 DAYS PRIOR WITH "BEGIN/DATE" PLATE;
 REMOVE PLATE AT START DATE OF CONSTRUCTION SO SIGN READS
 "FOLLOW DETOUR".

G20-X1 SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION.

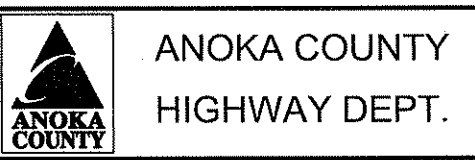
STANDARD TRAFFIC CONTROL NOTES:

- 1) LOCATIONS OF ALL SIGNS ARE APPROXIMATE, EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 2) ALL BARRICADES AND SIGNS SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
- 3) ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
- 4) ALL BARRICADES MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- 5) ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 6) ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

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.
 PRINT NAME: ANDREW WITTER
 SIGNATURE:
 DATE: 3/25/13 REG. NO. 42757

DRAWN BY: RLB DATE: 03/13/13
 DESIGN BY: RLB DATE: 03/13/13
 CHECKED BY: JLR DATE: 03/13/13



ANOKA COUNTY HIGHWAY DEPT.
 STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 13-17-34

DETOUR QUANTITIES
 Sheet 20 of 20 Sheets