MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR MILL & BITUMINOUS OVERLAY

LOCATED ON T.H.242 FROM 1600' WEST OF UNIVERSITY AVE. TO 1000' EAST OF JEFFERSON STREET

STATE PROJ. NO. 0212-34(T.H.242=242)
MINN. PROJ. NO.

GROSS LENGTH	5365	FEET	1.021	MILES
BRIDGES-LENGTH	0	FEET	0	MILES
EXCEPTIONS-LENGTH	0	FEET	0	MILES
NET LENGTH	5365	FEET	1.021	MILES

REF. POINT 5+00.910 TO REF. POINT 6+00.931

STATE PROJ. NO.
MINN. PROJ. NO.

GROSS LENGTH	FEET		MILES
BRIDGES-LENGTH	FEET		MILES
EXCEPTIONS-LENGTH	FEET		MILES
NET LENGTH	FEET		MILES

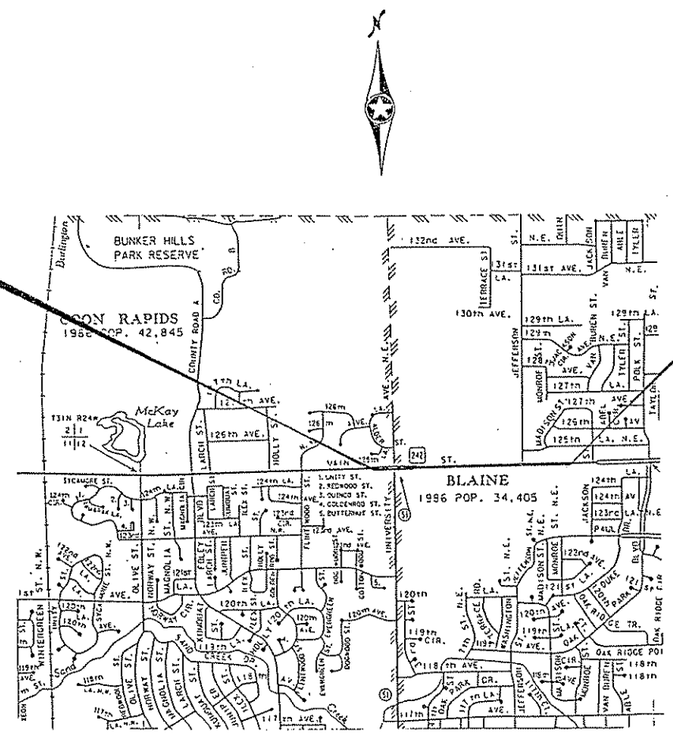
REF POINT TO REF. POINT

EQUATIONS

T.H. 242 STA. 330+37.37 = T.H. 242 STA. 330+36.79

BEGIN S.P. 0212-34(T.H. 242)
STA. 286+85

END S.P. 0212-34(T.H. 242)
STA. 340+50



SCALES

PLAN 50'
PROFILE
INDEX MAP 1600
GENERAL LAYOUT

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY
11-20-90	1,2,4,11.	RDS

DESIGN DESIGNATION TIER III

ADT (Current Year)	=	19300	Design Speed MPH
ADT (Future Year)	=		Based on Sight Distance
DHV (Design Hr. Vol.)	=		Height of eye Height of object
D (Directional Distr.)	=	%	Design Speed not achieved at:
T (Heavy Commercial)	=	%	STA. TO STA. MPH
			STA. TO STA. MPH

PROJECT LOCATION
ANOKA COUNTY
METRO DISTRICT
GOLDEN VALLEY

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	AREA	JOB
0212-34		

FED. PROJ. NO. STATE FUNDS

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION " STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

INDEX

THIS PLAN CONTAINS 13 SHEETS

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 Oct. 23 1990 REG. NO. 14380 ENGR. Keith L Shannon
DESIGN SQUAD LYNNETTE ROSHELL

Right of Way Approval 11-16 1990
DIRECTOR, RIGHT OF WAY OPERATIONS

Recommended for Approval Allan E. Dirt 10/23 1990
ASSISTANT DISTRICT ENGINEER

Recommended for Approval 19

Recommended for Approval William H. Mueller 11-14 1990
FOR DIRECTOR, PRE-LETTING ENGINEERING

Recommended for Approval Robert H Crawford 11-14 1990
FOR DIRECTOR, OFFICE OF TECHNICAL SUPPORT

Approved 11/16/1990 Leo A Hoffe
DEPUTY DIVISION DIRECTOR
TECHNICAL SERVICES DIVISION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE 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 REG. NO.

STATE PROJ. NO. S.P.0212-34(T.H.242=242) SHEET NO. 1 OF 13 SHEETS

A-5

Fed. Proj. No.

SOILS NOTES:

1. THE TYPE 31 LEVELING COURSE SHALL BE PLACED ON THE MILLED THROUGH LANE SURFACE BEFORE THE END OF THE WORK PERIOD IN WHICH THE MILLING WAS PERFORMED UNLESS WAIVED BY THE ENGINEER.
2. THE CONTRACTOR SHALL PROVIDE OUTLET TRENCHES AND TAKE OTHER MEASURES NECESSARY, AS DIRECTED BY THE ENGINEER, TO ALLOW SURFACE DRAINAGE OF THE MILLED SURFACE.
3. THE EDGE OF THE 3-1/2" DEEP MILLED SURFACE SHALL BE TAPERED TO A 45 DEGREE ANGLE OR FLATTER.
4. AFTER MILLING THE SURFACE TO THE REQUIRED DEPTH, AIR BLAST ANY DETERIORATED CRACKS AND SWEEP THE SURFACE TO REMOVE ANY LOOSE MATERIAL. THE AIR BLASTING SHALL BE DONE WITH HIGH PRESSURE 100±PSI) EQUIPMENT.
5. THE BITUMINOUS PATCHING MIXTURE SHALL MEET THE REQUIREMENTS OF THE TYPE 31 WEAR MIXTURE AND SHALL BE USED AT THE DIRECTION OF THE ENGINEER. PATCHING MAY REQUIRE THE USE OF A SMALL MILLING MACHINE.
6. DEPRESSIONS WHICH RESULTS AFTER AIR BLASTING OR SWEEPING OPERATIONS, WHICH ARE GREATER THAN 1" IN DEPTH AND WIDTH, SHALL BE FILLED WITH BITUMINOUS PATCHING MIXTURE. DEPRESSIONS WHICH ARE 1" OR LESS IN DEPTH SHALL BE FILLED WITH THE LEVEL OR BINDER COURSE.
7. THE UPPER 3/4"± OF THE MATERIAL TO BE REMOVED BY MILLING CONSISTS OF SPEC. 2361 WEAR AND WOULD BE EXCELLENT FOR USE IN TYPE 42 RECYCLED MIXTURE; HOWEVER, THE MATERIAL TO BE REMOVED BELOW THE UPPER 3/4" IS OF A LOWER QUALITY (ESPECIALLY REGARDING CRUSHING) AND AS SUCH IS MORE SUITABLE FOR REUSE IN TYPE 32 RECYCLED MIXTURES.
8. BITUMINOUS SURFACING REMOVED BY THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED (TO THE EXTENT ALLOWED) OR DISPOSED OF OFF THE PROJECT LIMITS.
9. USE TACK COAT BETWEEN ALL BITUMINOUS MIXTURES AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON THE EXISTING PAVEMENT. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.03 TO 0.05 GAL/SQ.YD. BETWEEN BITUMINOUS LAYERS AND 0.07 TO 0.10 GAL/SQ.YD. ON CONCRETE OR MILLED BITUMINOUS SURFACES PRIOR TO BEING OVERLAID. THE APPLICATION RATES ARE FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC AND RC LIQUID ASPHALTS. THE ASPHALT EMULSION MAY BE FUTHER DILUTED IN THE FIELD IN ACCORDANCE WITH SPEC. 2357.
10. COMPACTION OF THE TYPE 61 WEAR, TYPE 31 SHOULDER WEAR AND THE BITUMINOUS PATCHING MIXTURE SHALL BE BY THE "ORDINARY COMPACTION METHOD."
11. COMPACTION OF TYPE 41 BINDER AND TYPE 31 LEVEL SHALL BE BY THE "MODIFIED SPECIFIED DENSITY METHOD."

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

STANDARD PLATES	
PLATE NO.	DESCRIPTION
0005A	SPECIFICATION REFERENCE TO STANDARD PLATES (1988)
4108E	ADJUSTABLE MANHOLE RING
8000I	STANDARD BARRICADES
8130D	SAW CUT LOOP DETECTORS
8307N	STEEL PLATE BEAM GUARDRAIL

ESTIMATE OF QUANTITIES

SPEC. NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
2021.501	MOBILIZATION	LUMP SUM	1	
2051.501	MAINT. & RESTORATION OF HAUL ROADS	LUMP SUM	1	
2104.501	REMOVE CABLE GUARDRAIL	LIN. FT.	504	
2104.509	REMOVE TWISTED END TREATMENT	EACH	1	
2232.501	MILL BITUMINOUS SURFACE (1.5")	SQ. YD.	2223	
2232.501	MILL BITUMINOUS SURFACE (3.5")	SQ. YD.	10665	
2221.502	AGGREGATE SHOULDERING CLASS 2	CU. YD.	50	
2231.501	BITUMINOUS PATCHING MIXTURE	TON	10	
2340.501	CONTRACTOR TESTING	TON	4500	
2340.508	TYPE 61 - WEARING COURSE MIXTURE	TON	1520	
2340.508	TYPE 31 - WEARING COURSE MIXTURE	TON	566	
2340.510	TYPE 41 - BINDER COURSE MIXTURE	TON	1094	
2340.512	TYPE 31 - LEVELING COURSE MIXTURE	TON	1320	
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	4042	
0412.602	MAIL BOX SUPPORT ①	EACH	2	
2554.501	TRAFFIC BARRIER DESIGN 88307	LIN. FT.	1438	
2554.523	TWISTED END TREATMENT	EACH	3	
0563.601	TRAFFIC CONTROL	LUMP SUM	1	
0564.602	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	1	
0564.602	PAVT MESSAGE (PED XING) WHITE POLY PREF	EACH	2	
0564.604	CROSSWALK MARKING - POLY PREFORMED	SQ. FT.	126	
0564.603	24" SOLID LINE WHITE - POLY PREF	LIN. FT.	95	
0565.602	LOOP DETECTOR 6' x 6'	EACH	2	
2580.501	TEMPORARY LANE MARKING	ROAD STA	79	

NOTE: ANY DAMAGE TO TURF, CURB AND GUTTER, CONCRETE MEDIAN, ETC. RESULTING FROM CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR. THIS WORK SHALL BE CONSIDERED INCIDENTAL, FOR WHICH NO DIRECT PAYMENT WILL BE MADE.

NOTE:

① INCLUDES REMOVAL OF OLD SUPPORT AND INSTALLATION OF EXISTING MAIL BOX ON NEW SUPPORT.

ESTIMATE OF QUANTITIES
STANDARD PLATES
SOIL NOTES

REVISION APPROVED NOV. 20, 90

BITUMINOUS SUMMARY

STATION TO STATION		ALIGNMENT	DESIGN	LENGTH FT.	WIDTH FT.	AREA S.Y.	MILL 1 1/2" S.Y.	MILL 3-1/2" S.Y.	TYPE 61 BITUMINOUS WEARING COURSE MIXTURE TON	TYPE 31 BITUMINOUS WEARING COURSE MIXTURE TON	TYPE 41 BITUMINOUS BINDER COURSE MIXTURE TON	TYPE 31 BITUMINOUS LEVELING COURSE MIXTURE TON	BITUMINOUS TACK COAT GALLON	CLASS 2 AGGREGATE SHOULDERING CU. YD.
286+85	302+40	WB242	F	1555	10	1727.8				118.8			172.8	7.2
286+85	298+56	EB242	F	1171	10	1301.1				89.5			130.1	5.4
286+85	287+57	TH242	A	72	24	192.0		192.0	10.8		15.8	23.8	34.6	
287+57	293+58	TH242	A	601	31	2066.8		2066.8	116.8		170.5	255.8	372.0	
293+58	303+01	WB242	A	943	14	1466.9		1466.9	82.9		121.0	181.5	264.0	
293+58	294+18	EB242	A	60	17	113.0		113.0	6.4		9.3	14.0	20.3	
294+18	297+76	EB242	A	358	14	556.9		556.9	31.5		45.9	68.9	100.2	
297+76	303+01	EB242	A	525	12	700.0		700.0	39.6		57.8	86.6	126.0	
297+76	299+56	EB242	E	180	7	140.0			9.9				14.0	
298+56	304+80	EB242	E	624	13	901.3			63.7				90.1	2.9
299+56	303+01	EB242	E	345	14	536.7			37.9				53.7	
302+40	308+60	WB242	E	620	13	895.6			63.2				89.6	2.9
302+82	304+35	EB242	E	153	10	170.0			12.0				17.0	.7
303+00	304+45	WB242	E	145	10	161.1			11.4				16.1	.7
303+01	304+23	EB242	A	122	12	162.7		162.7	9.2		13.4	20.1	29.3	
303+01	304+23	WB242	A	122	12	162.7		162.7	9.2		13.4	20.1	29.3	
303+01	304+23	TH242	E	122	22	298.2			21.1				29.8	
304+23	313+54	EB242	A	931	14	1448.2		1448.2	81.8		119.5	179.2	260.7	
304+23	309+41	WB242	A	518	12	690.7		690.7	39.0		57.0	85.5	124.3	
304+23	307+61	WB242	E	338	14	525.8			37.1				52.6	
304+80	326+75	EB242	F	2195	10	2438.9				167.7			243.9	10.2
307+61	309+41	WB242	E	180	7	140.0			9.9				14.0	
308+60	328+50	WB242	F	1990	10	2211.1				152.0			221.1	9.2
309+41	312+91	WB242	A	350	14	544.4		544.4	30.8		44.9	67.4	98.0	
312+91	313+54	WB242	A	63	17	118.7		118.7	6.7		9.8	14.7	21.4	
313+54	319+60	TH242	A	606	31	2084.0		2084.0	117.7		171.9	257.9	375.1	
319+60	320+94	TH242	A	134	24	357.3		357.3	20.2		29.5	44.2	64.3	
320+94	328+50	TH242	B	756	24	2016.0	2016.0		113.9		194.0		282.2	
326+75	327+75	TH242	B	100	10	111.1	111.1		6.3		10.7		15.6	
327+75	328+50	TH242	B	75	11.5	95.8	95.8		5.4		9.2		13.4	
328+50	329+10	TH242	C	60	10.0	66.7			5.7				6.7	.3
329+10	331+60	TH242	C	250	20	555.6			47.1				55.6	1.2
328+50	337+00	TH242	C	850	37	3494.4			296.2				349.4	3.9
331+60	338+60	TH242	C	700	13	1011.1			85.7				101.1	3.2
337+00	340+50	TH242	C	350	24	933.3			79.1				93.3	
338+60	339+80	TH242	C	120	10	133.3			11.3				13.3	.6
337+00	340+50	TH242	D	350	10	388.9				32.1			38.9	1.6
339+80	340+50	TH242	D	70	10	77.8				6.4			7.8	.3
PROJECT TOTAL						30995.8	2222.9	10664.2	1519.3	566.4	1093.8	1319.7	4041.6	50.2

MAIL BOX SUPPORTS

STATION	OFFSET	ALIGNMENT	REPLACE MAIL BOX SUPPORT (EACH)
316+72	62' RT.	EBTH242	1
317+22	26' RT.	EBTH242	1
PROJECT TOTAL			2

BITUMINOUS SUMMARY
MAIL BOX SUPPORT TABULATION

PAVEMENT MARKINGS

STATION TO STATION ③		ALIGNMENT	CROSSWALK MARKING POLY PREF	24" SOLID WHITE LINE POLY PREF	PAVEMENT MESSAGE (PED XING) POLY PREF
326+05	326+38	TH242			1
329+50		TH242		25	
330+00	330+30	TH242		30	
330+75		TH242	126		
330+81		TH242			
331+00		TH242		40	
334+25	334+57	TH242			1
PROJECT TOTAL			126	95	2

TRAFFIC BARRIERS

LOCATION		OFFSET	INPLACE TRAFFIC BARRIERS: REMOVE GUARDRAIL 3 CABLE ⑦ (LIN FT)	INPLACE TRAFFIC BARRIERS: TRAFFIC BARRIER DES B8307 ⑧ (LIN FT)	INPLACE TRAFFIC BARRIERS: REMOVE TWISTED END TREATMENT (EACH)	CONSTRUCT TRAFFIC BARRIERS: TWISTED END TREATMENT (EACH)	CONSTRUCT TRAFFIC BARRIERS: TRAFFIC BARRIER DES B8307 (LIN FT)	REMARKS
323+91	328+95	RT.	504					①
327+78	329+78	LT.		150.0	① 1			
322+50	329+30	RT.				2	625.0	
319+65	328+28	LT.				1	812.5	②
PROJECT TOTAL			504	150.0	1	3	1437.5	

NOTES:

① CONTRACTOR RESPONSIBLE FOR DISPOSAL OFF PROJECT SITE.

② CONNECT TO EXISTING GUARDRAIL.

③ ALL STATIONS ARE APPROXIMATE, EXACT LOCATION TO BE DETERMINED IN FIELD BY ENGINEER.

④ ALL STATIONS TO APPROXIMATE NORTH EAST CORNER OF LOOP CONFIGURATION. EXISTING LOOPS SHOULD BE LOCATED PRIOR TO MILLING OPERATIONS.

⑤ REPLACE IF DAMAGED BY CONSTRUCTION OPERATIONS. REINSTALL IN EXISTING LOCATION.

⑥ REINSTALL IN EXISTING LOCATION.

⑦ INCLUDES ANCHORAGE ASSEMBLY.

⑧ LEAVE AS IS.

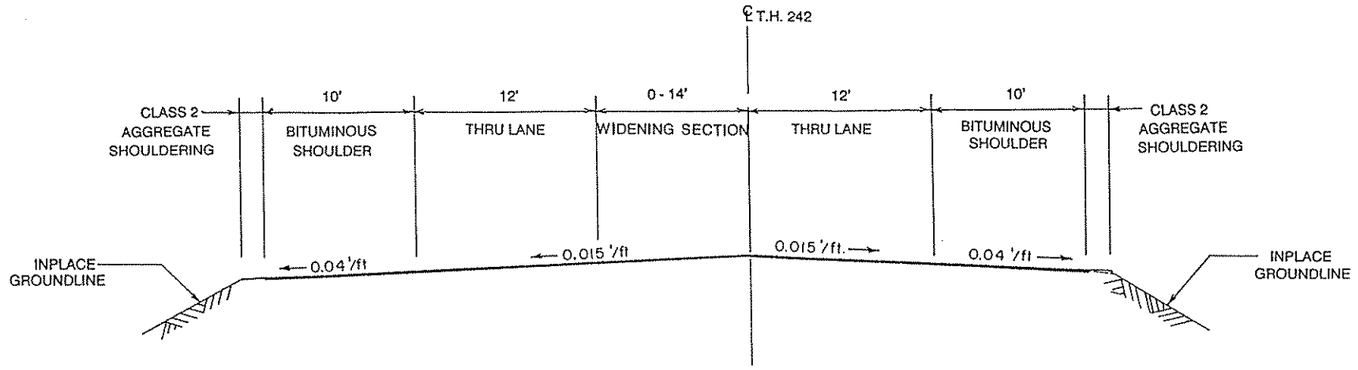
LOOP DETECTORS

STATION ④	ALIGNMENT	OFFSET	ITEM	REMARKS	OWNER
298 + 98	EBTH242	9 'RT	6'x 6' LOOP	⑥	MNDOT
303 + 00	EBTH242	3 'LT	4 - 6'x 6' LOOPS	⑤	MNDOT
304 + 25	WBTH242	9 'RT	4 - 6'x 6' LOOPS	⑤	MNDOT
308 + 40	WBTH242	3 'LT	6'x 6' LOOP	⑥	MNDOT
PROJECT TOTAL			2		

TRAFFIC BARRIER TABULATION
PAVEMENT MARKING TABULATION
LOOP DETECTOR TABULATION

TYPICAL SECTION NO. 1

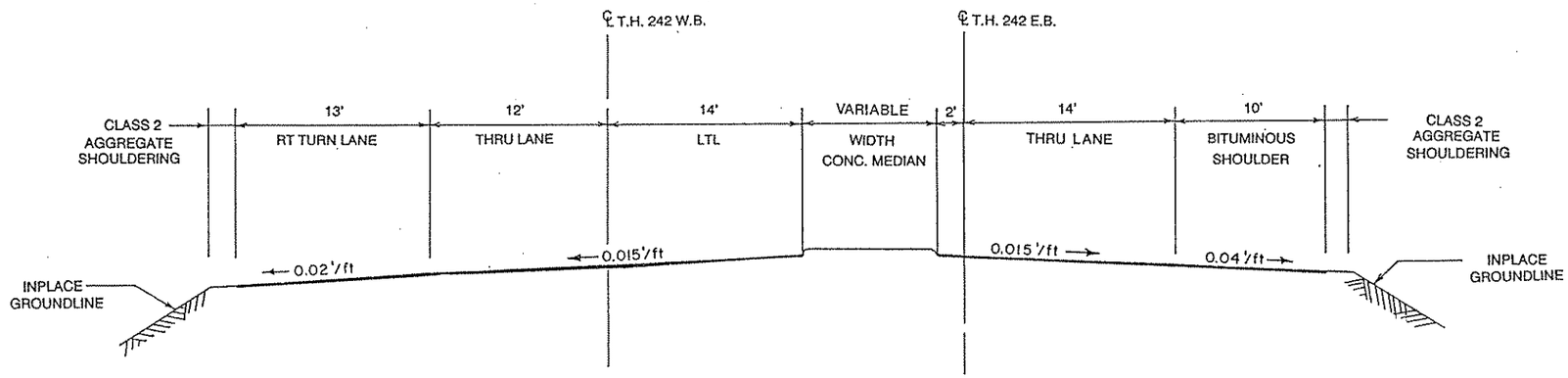
STA. 286+85 TO 293+58
STA. 313+54 TO 320+94



NOTE: SLOPES INDICATED ARE DESIREABLE.

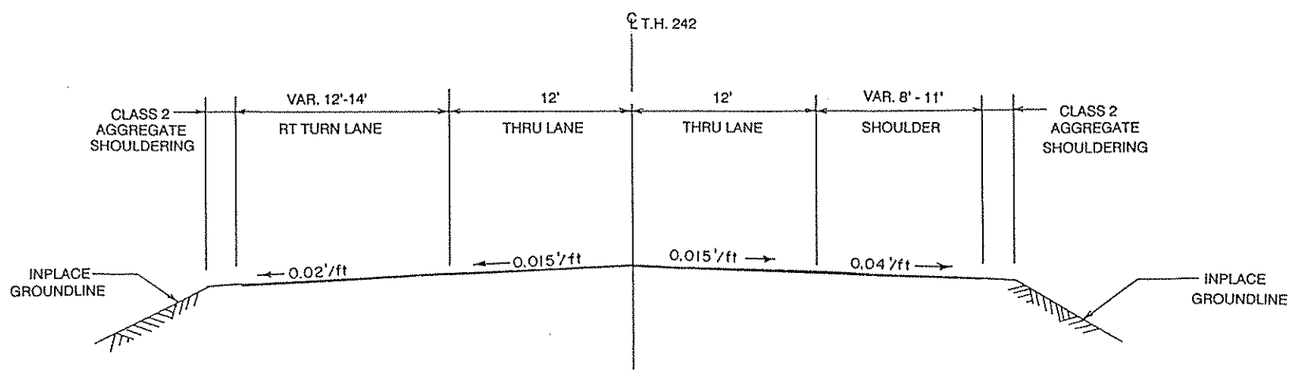
TYPICAL SECTION NO. 2

STA. 293+58 TO 313+54



TYPICAL SECTION NO. 3

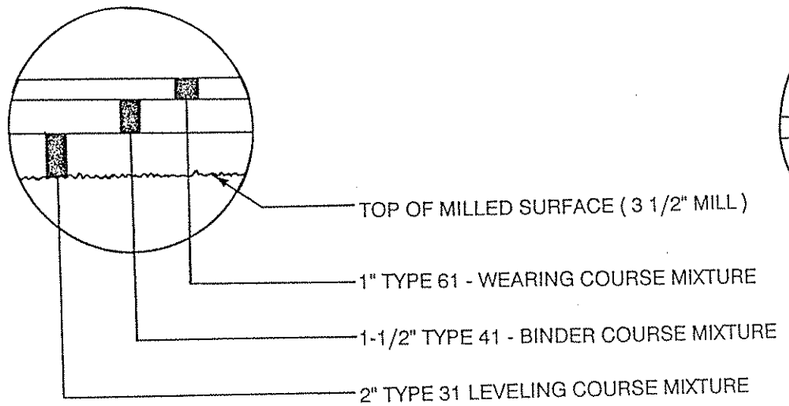
STA. 320+94 TO 340+50



TYPICAL SECTION

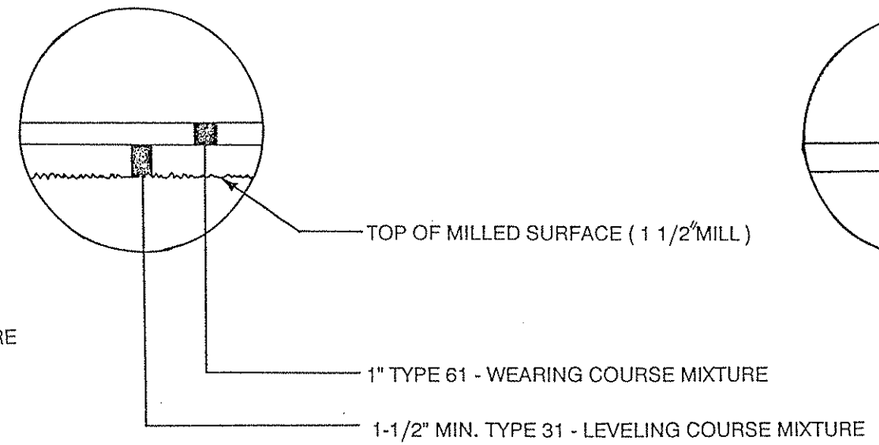
DESIGN A

MILL 3 1/2"



DESIGN B

MILL 1 1/2"



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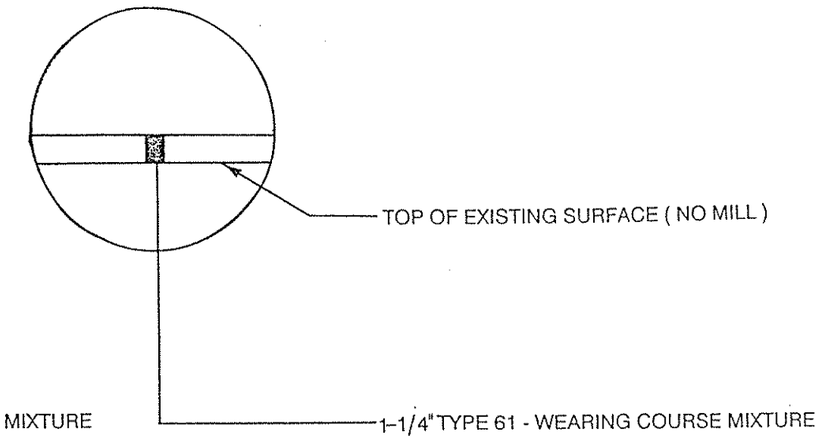
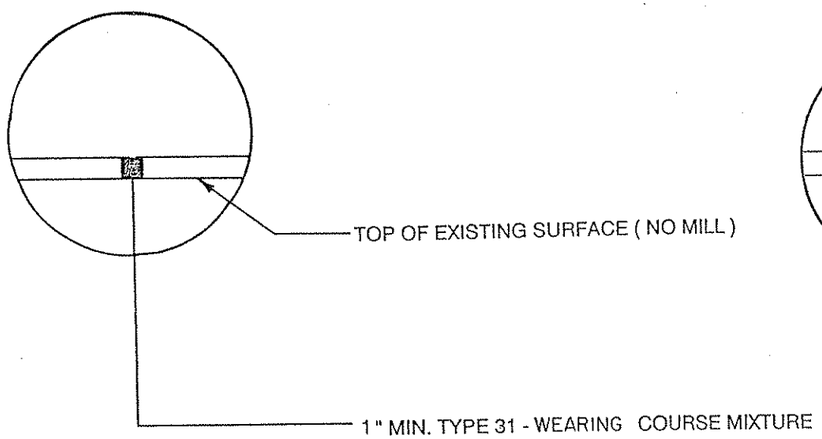


DESIGN D



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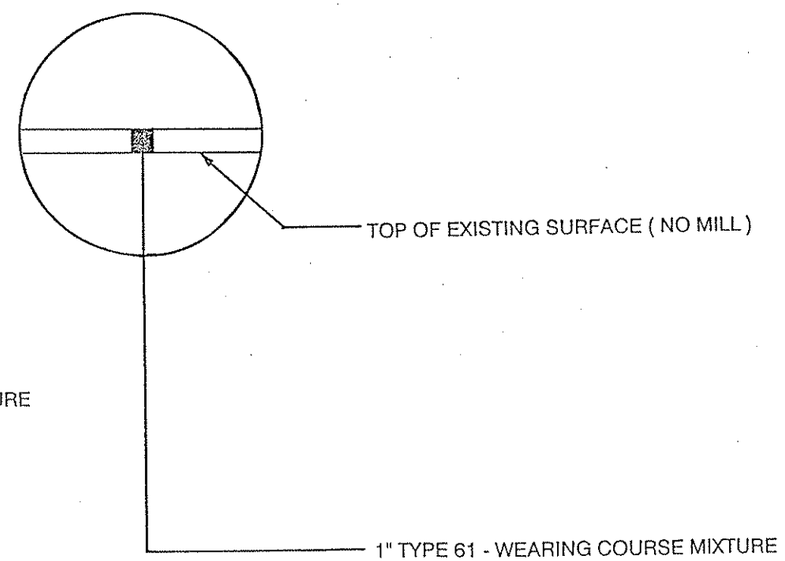
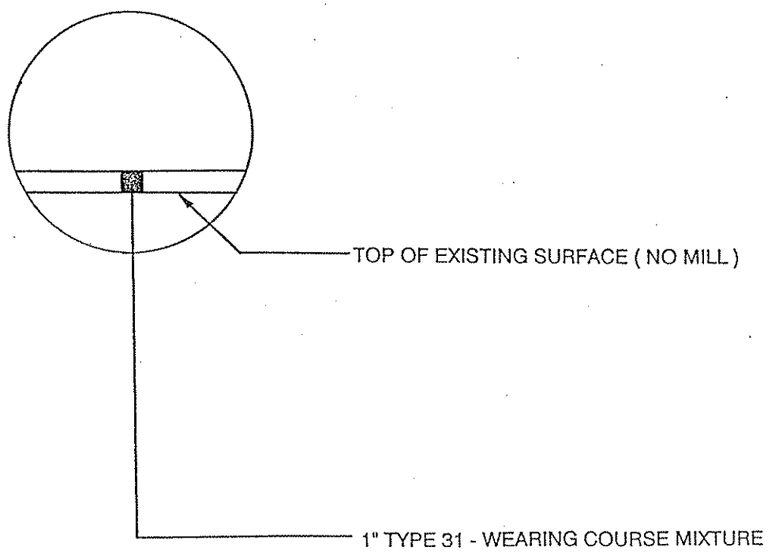


DESIGN F

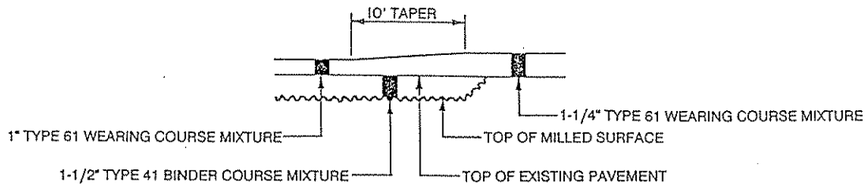


BITUMINOUS DESIGN DETAILS

Fed. Proj. No.

LONGITUDINAL MIX TRANSITIONS

DESIGN B TO DESIGN C



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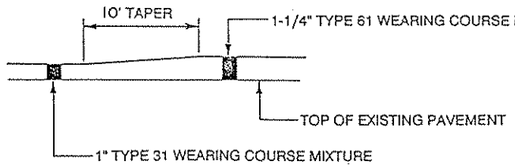
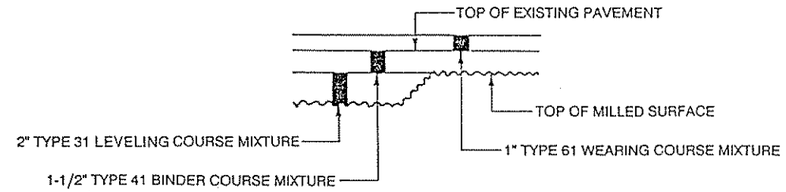
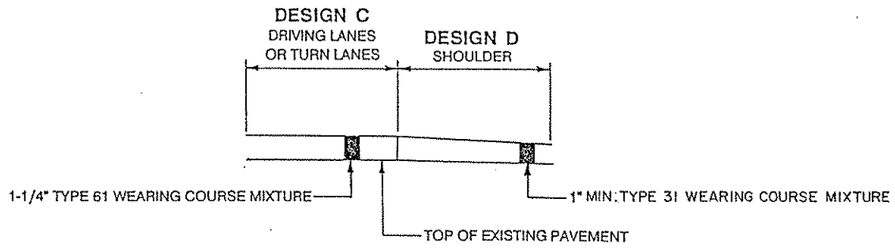
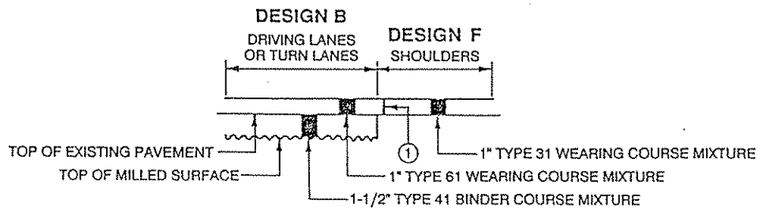


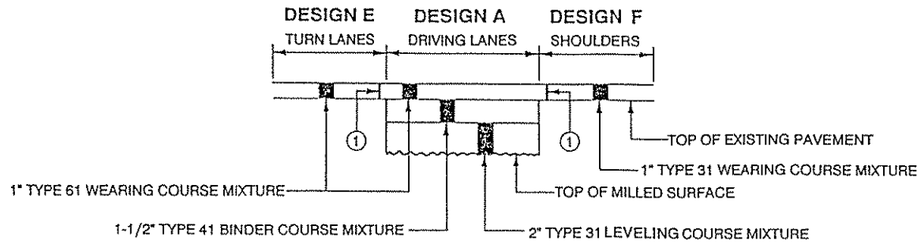
DESIGN A TO DESIGN B



TRANSVERSE MIX TRANSITIONS



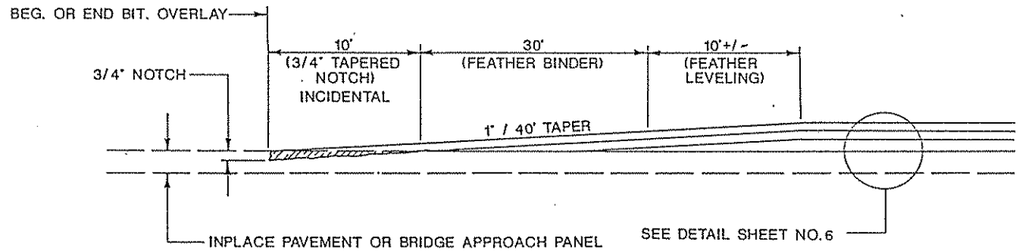




① DO NOT PLACE PAVEMENT JOINT DIRECTLY OVER MILL JOINT.

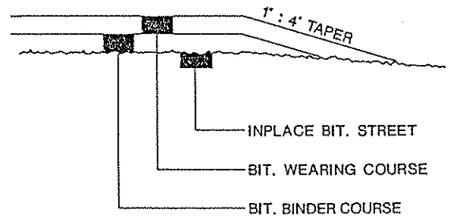
OVERLAY NOTCH & TAPER DETAIL

(LONGITUDINAL SECTION)

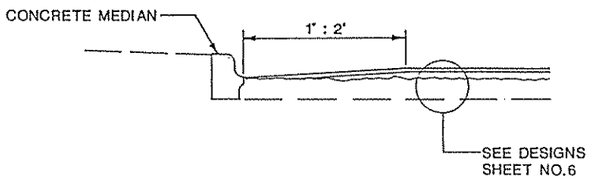


INDICATES BITUMINOUS MATERIAL TO BE REMOVED.

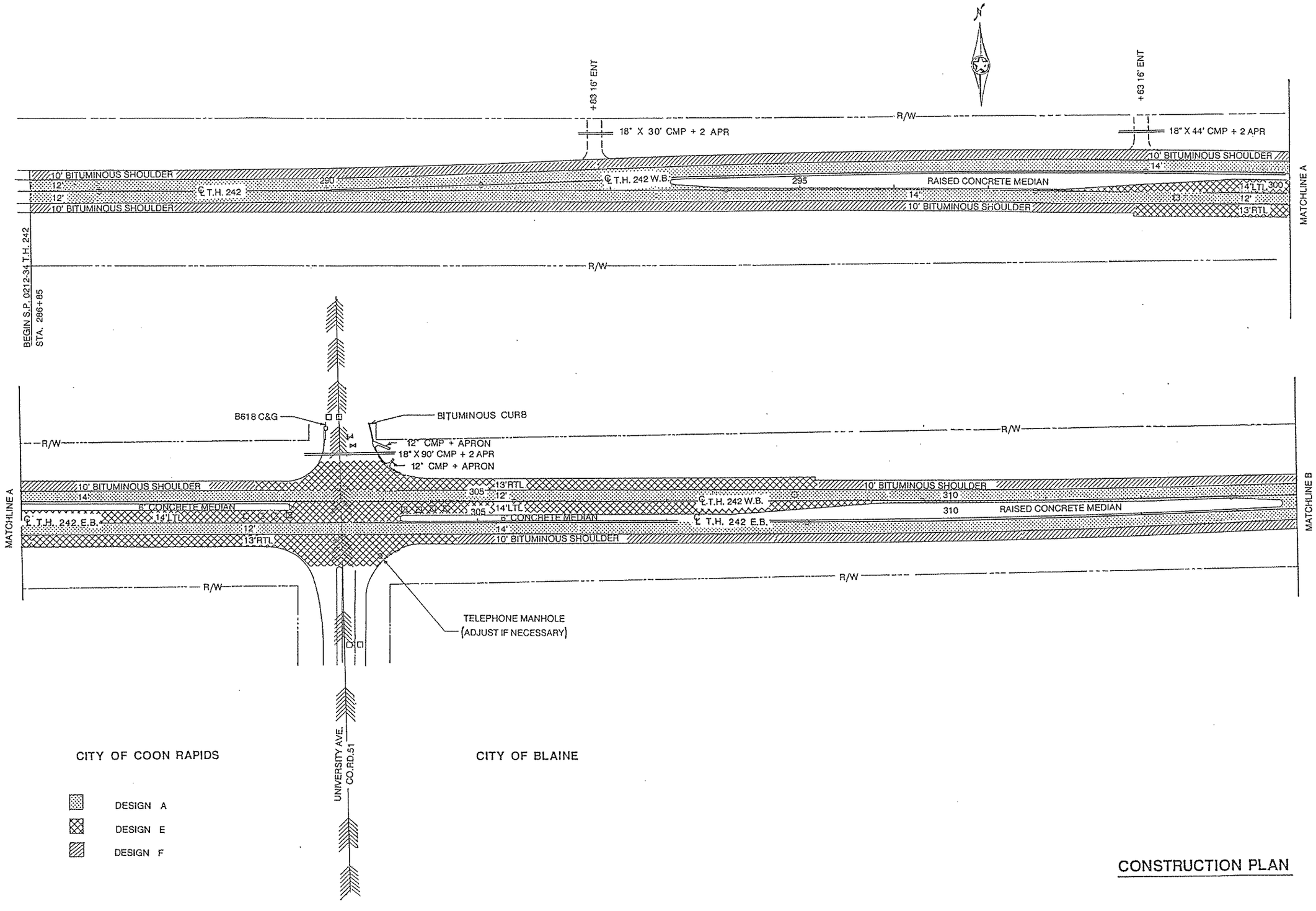
SIDESTREET OVERLAY TAPER DETAIL



TAPER DETAIL AT CONCRETE MEDIAN

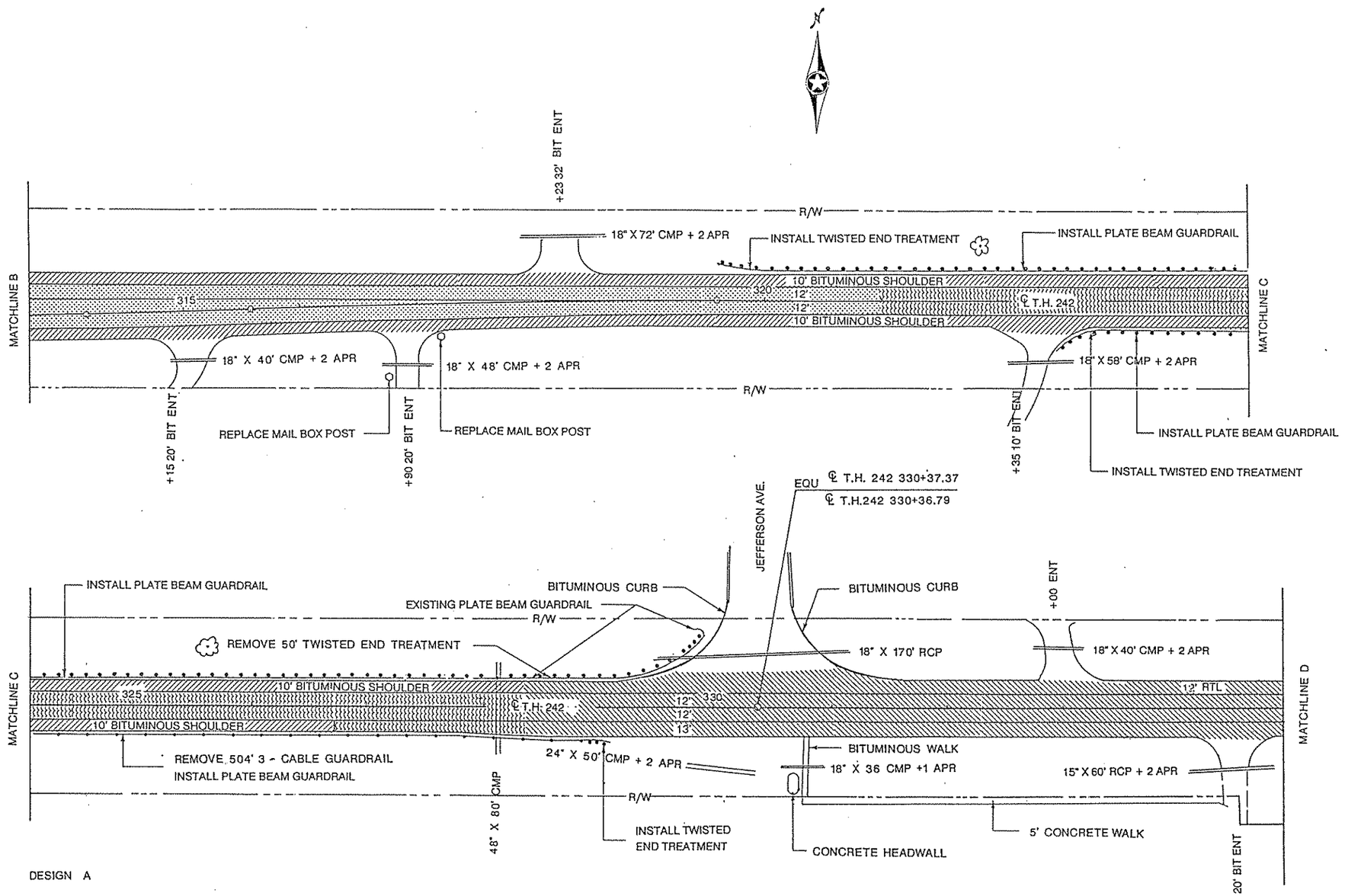


BITUMINOUS PAVING DETAILS



CONSTRUCTION PLAN

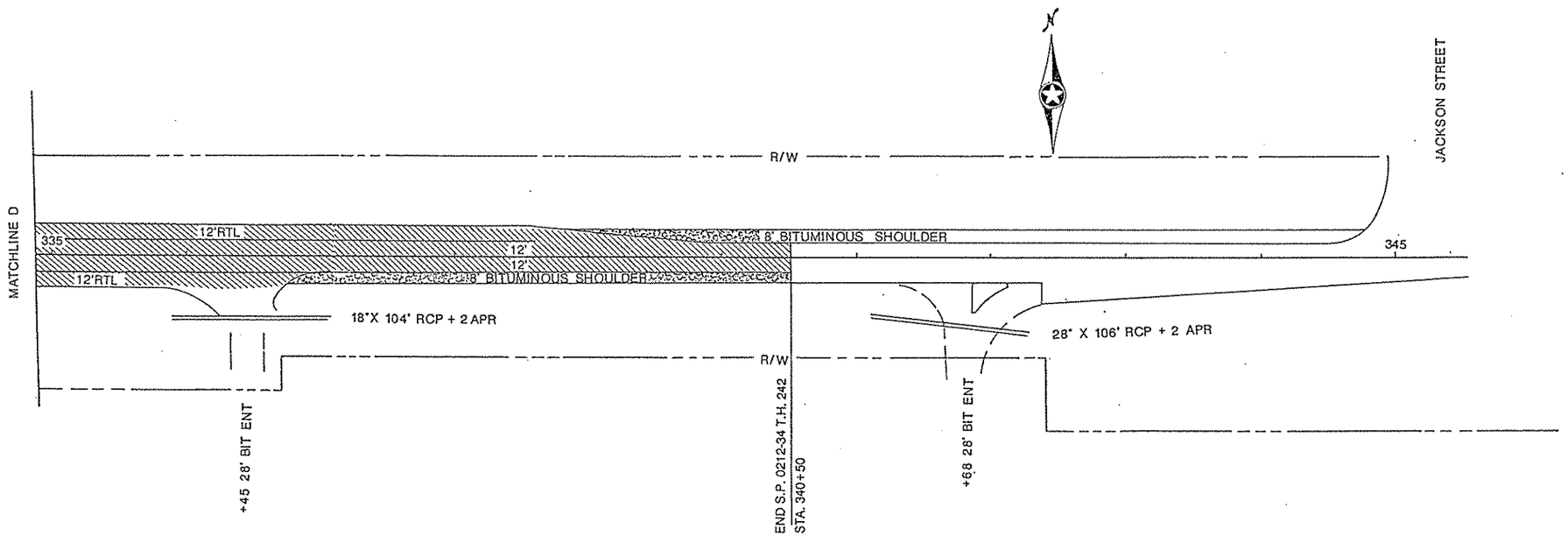
Fed. Proj. No.



CONSTRUCTION PLAN

State Proj. No. 0212-34(T.H.242) Sheet No. 9 of 13 Sheets

Fed. Proj. No.

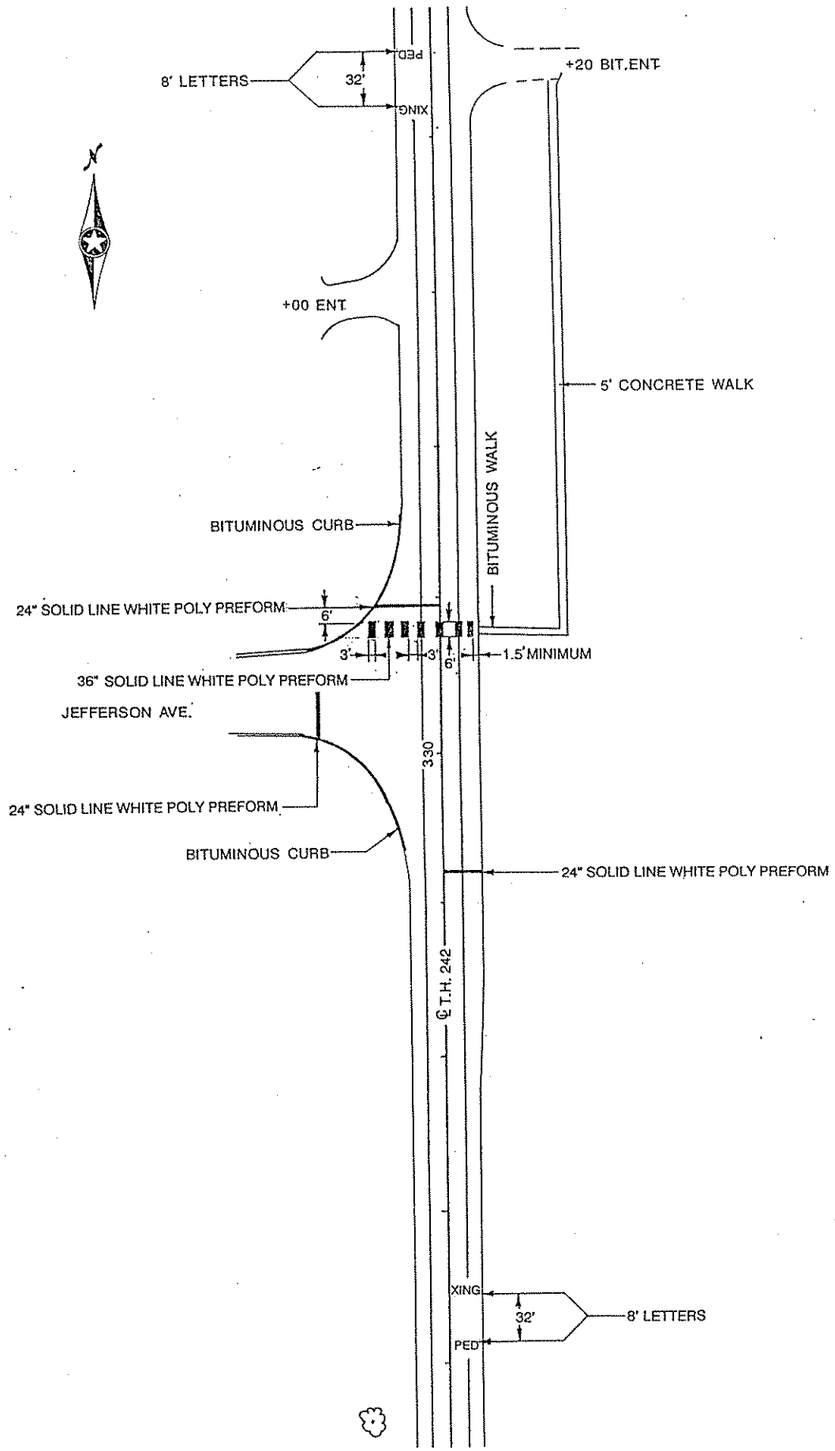


DESIGN C

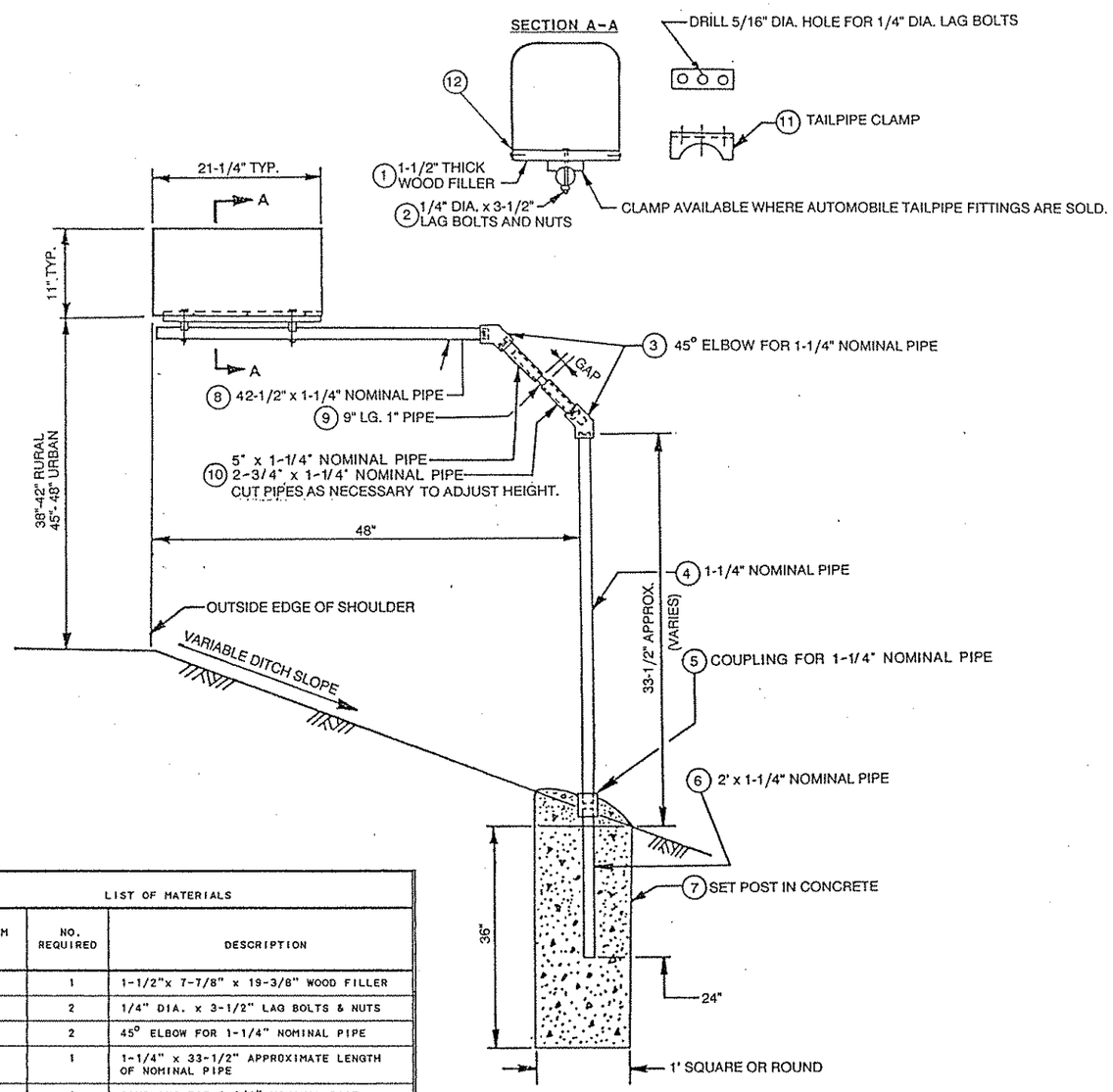
DESIGN D

CONSTRUCTION PLAN

MARKINGS FOR PEDESTRIAN CROSSWALK



RECOMMENDED MAIL BOX SUPPORT



LIST OF MATERIALS		
ITEM NO.	NO. REQUIRED	DESCRIPTION
1	1	1-1/2"x 7-7/8" x 19-3/8" WOOD FILLER
2	2	1/4" DIA. x 3-1/2" LAG BOLTS & NUTS
3	2	45° ELBOW FOR 1-1/4" NOMINAL PIPE
4	1	1-1/4" x 33-1/2" APPROXIMATE LENGTH OF NOMINAL PIPE
5	1	COUPLING FOR 1-1/4" NOMINAL PIPE
6	1	2' x 1-1/4" NOMINAL PIPE
7		0.10 CU. YD. CONCRETE
8	1	42-1/2" x 1-1/4" NOMINAL PIPE
9	1	9" LG. 1" PIPE
10	1 1	5" x 1-1/4" NOMINAL PIPE 2-3/4" x 1-1/4" NOMINAL PIPE
11	2	1-1/4" TAIL PIPE CLAMP
12	9	NO. 10 x 1" SHEET METAL SCREWS

NOTES:

A. ALL PIPE AND PIPE COUPLINGS SHALL CONFORM TO SPEC. 3362.
B. ALL FASTENERS SHALL CONFORM TO SPEC. 3391.
C. ALL MATERIALS SHALL BE GALVANIZED PER SPEC. 3392.

RECOMMENDED MAIL BOX SUPPORT
MARKINGS FOR PEDESTRIAN CROSSWALK

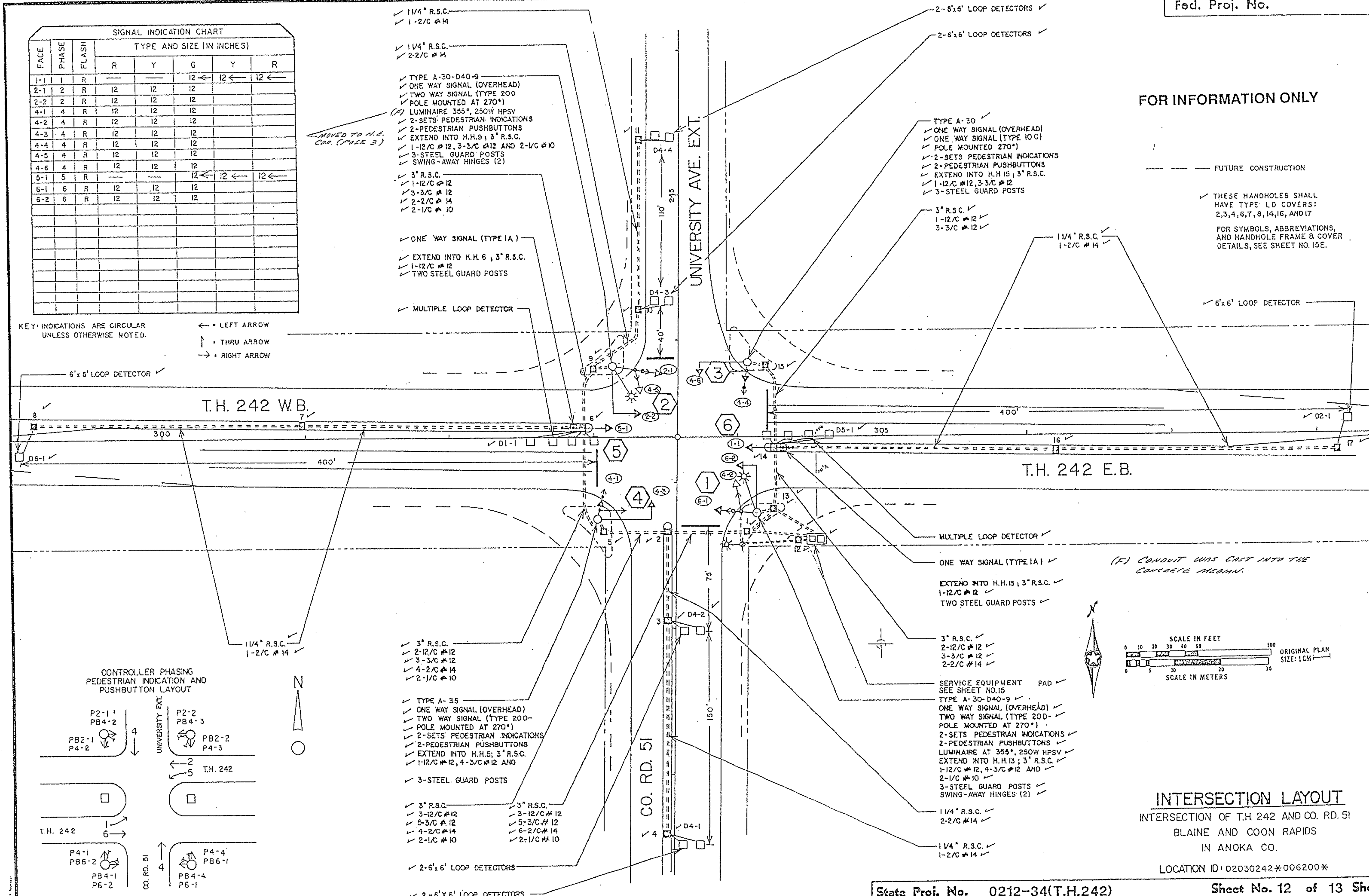
Fed. Proj. No.

FOR INFORMATION ONLY

SIGNAL INDICATION CHART							
FACE	PHASE	FLASH	TYPE AND SIZE (IN INCHES)				
			R	Y	G	Y	R
1-1	1	R	—	—	12 ←	12 ←	12 ←
2-1	2	R	12	12	12		
2-2	2	R	12	12	12		
4-1	4	R	12	12	12		
4-2	4	R	12	12	12		
4-3	4	R	12	12	12		
4-4	4	R	12	12	12		
4-5	4	R	12	12	12		
4-6	4	R	12	12	12		
5-1	5	R	—	—	12 ←	12 ←	12 ←
6-1	6	R	12	12	12		
6-2	6	R	12	12	12		

KEY: INDICATIONS ARE CIRCULAR UNLESS OTHERWISE NOTED.

← = LEFT ARROW
↑ = THRU ARROW
→ = RIGHT ARROW



1 1/4" R.S.C.
1-2/C #14
1 1/4" R.S.C.
2-2/C #14
TYPE A-30-D40-9
ONE WAY SIGNAL (OVERHEAD)
TWO WAY SIGNAL (TYPE 20D POLE MOUNTED AT 270°)
(F) LUMINAIRE 355°, 250W HPSV
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSHBUTTONS
EXTEND INTO H.H.9; 3" R.S.C.
1-12/C #12, 3-3/C #12 AND 2-1/C #10
3-STEEL GUARD POSTS
SWING-AWAY HINGES (2)
MOVED TO N.E. COR. (POLE 3)
3" R.S.C.
1-12/C #12
3-3/C #12
2-2/C #14
2-1/C #10
ONE WAY SIGNAL (TYPE 1A)
EXTEND INTO H.H. 6, 3" R.S.C.
1-12/C #12
TWO STEEL GUARD POSTS
MULTIPLE LOOP DETECTOR
2-6'x6' LOOP DETECTORS
2-6'x6' LOOP DETECTORS
TYPE A-30
ONE WAY SIGNAL (OVERHEAD)
ONE WAY SIGNAL (TYPE 10 C)
POLE MOUNTED 270°)
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSHBUTTONS
EXTEND INTO H.H 15; 3" R.S.C.
1-12/C #12, 3-3/C #12
3-STEEL GUARD POSTS
3" R.S.C.
1-12/C #12
3-3/C #12
1 1/4" R.S.C.
1-2/C #14
FUTURE CONSTRUCTION
THESE HANDHOLES SHALL HAVE TYPE LD COVERS: 2,3,4,6,7,8,14,16, AND 17
FOR SYMBOLS, ABBREVIATIONS, AND HANDHOLE FRAME & COVER DETAILS, SEE SHEET NO. 15E.
6'x6' LOOP DETECTOR
6'x6' LOOP DETECTOR
UNIVERSITY AVE. EXT.
D4-4
D4-3
110'
215
40'
T.H. 242 W.B.
T.H. 242 E.B.
300
400'
400'
305
D1-1
D5-1
D6-1
D2-1
1-1
2-1
2-2
4-1
4-2
4-3
4-4
4-5
4-6
5-1
6-1
6-2
1
2
3
4
5
6
7
8
9
10
12
13
14
15
16
17
1 1/4" R.S.C.
1-2/C #14
MULTIPLE LOOP DETECTOR
ONE WAY SIGNAL (TYPE 1A)
EXTEND INTO H.H.13; 3" R.S.C.
1-12/C #12
TWO STEEL GUARD POSTS
(F) CONDUIT WAS CAST INTO THE CONCRETE MEDIAN.
3" R.S.C.
2-12/C #12
3-3/C #12
2-2/C #14
SERVICE EQUIPMENT PAD SEE SHEET NO.15
TYPE A-30-D40-9
ONE WAY SIGNAL (OVERHEAD)
TWO WAY SIGNAL (TYPE 20D-POLE MOUNTED AT 270°)
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSHBUTTONS
LUMINAIRE AT 355°, 250W HPSV
EXTEND INTO H.H.13; 3" R.S.C.
1-12/C #12, 4-3/C #12 AND
2-1/C #10
3-STEEL GUARD POSTS
SWING-AWAY HINGES (2)
1 1/4" R.S.C.
2-2/C #14
1 1/4" R.S.C.
1-2/C #14
SCALE IN FEET
SCALE IN METERS
ORIGINAL PLAN SIZE: 1CM
3" R.S.C.
2-12/C #12
3-3/C #12
4-2/C #14
2-1/C #10
TYPE A-35
ONE WAY SIGNAL (OVERHEAD)
TWO WAY SIGNAL (TYPE 20D-POLE MOUNTED AT 270°)
2-SETS PEDESTRIAN INDICATIONS
2-PEDESTRIAN PUSHBUTTONS
EXTEND INTO H.H.5; 3" R.S.C.
1-12/C #12, 4-3/C #12 AND
3-STEEL GUARD POSTS
3" R.S.C.
3-12/C #12
5-3/C #12
4-2/C #14
2-1/C #10
3" R.S.C.
3-12/C #12
5-3/C #12
6-2/C #14
2-1/C #10
2-6'x6' LOOP DETECTORS
2-6'X6' LOOP DETECTORS
CO. RD. 51
D4-2
D4-1
75'
150'
CONTROLLER PHASING PEDESTRIAN INDICATION AND PUSHBUTTON LAYOUT
N
P2-1
PB4-2
PB2-1
P4-2
P2-2
PB4-3
PB2-2
P4-3
UNIVERSITY EXT.
T.H. 242
T.H. 242
P4-1
PB6-2
PB4-1
P6-2
P4-4
PB6-1
PB4-4
P6-1
CO. RD. 51

INTERSECTION LAYOUT

INTERSECTION OF T.H. 242 AND CO. RD. 51
BLAINE AND COON RAPIDS
IN ANOKA CO.

LOCATION ID: 02030242*006200*

State Proj. No. 0212-34(T.H.242)