

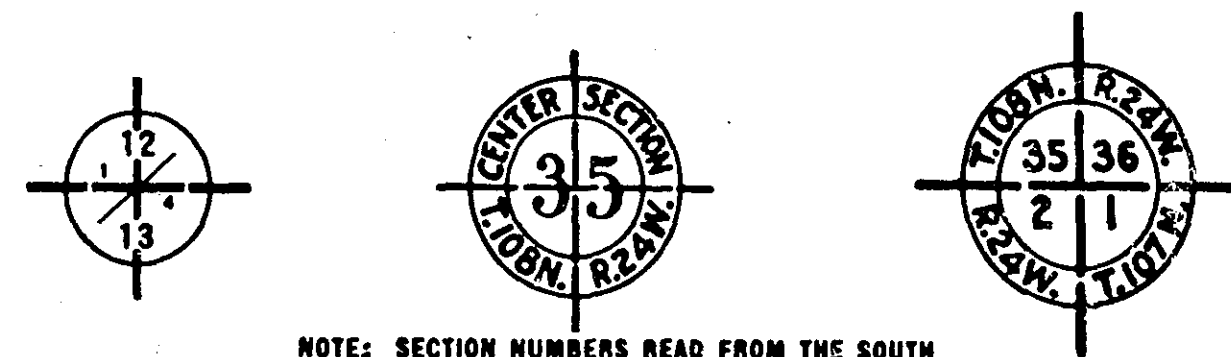
VILLAGE OF MAPLEWOOD

RAMSEY COUNTY, MINNESOTA

LEGEND

PROPOSED WATER MAIN.....	ORCHARD.....
PROPOSED SANITARY SEWER.....	ROCK LEDGE.....
PROPOSED STORM SEWER.....	SAND.....
RIGHT OF WAY.....	EDGE OF CUT.....
EXISTING WATER MAIN..... W.....	TOE OF EMBANKMENT.....
EXISTING SANITARY SEWER..... San. S.....	FIRE HYDRANT.....
EXISTING STORM SEWER..... SLS.....	MANHOLE.....
EXISTING GAS LINE..... G.....	LIGHT POLE.....
EXISTING BURIED TELEPHONE..... T.....	POWER OR TELEPHONE POLE.....
LIMITS OF BUILDINGS.....	CATCH BASIN.....
STONE WALL OR FENCE.....	TELEPHONE PEDESTAL.....
HEDGE.....	RAILROAD CROSSING SIGN.....
RETAINING WALL.....	RAILROAD CROSSING BELL.....
RAILROAD TRACK.....	ELECTRIC WARNING SIGN.....
WOODEN FENCE.....	CROSSING GATE.....
WIRE FENCE.....	CATTLE GUARD.....
GUARD RAIL.....	OVERHEAD (Highway Over).....
CREEK.....	UNDERPASS (Highway Under).....
RAPIDS OR WATERFALL.....	ABUTMENT, WALL & PIER.....
DRY RUN.....	BRIDGE.....
DRAINAGE DITCH.....	BUILDING (One Story Frame).....
CULVERT.....	F-FRAME C-CONCRETE.....
DROP INLET.....	S-STONE T-TILE.....
GRAVEL PIT.....	B-BRICK ST-STUCCO.....
SAND PIT.....	TEE.....
CLAY PIT.....	CROSS.....
ROCK QUARRY.....	
SPRINGS.....	
MARSH OR GRASS.....	
TIMBER.....	
BRUSH.....	
STONE MONUMENT.....	
GATE VALVE.....	

LEGEND FOR TRAFFIC SIGNALS ON SHEET 2



NOTE: SECTION NUMBERS READ FROM THE SOUTH



-SPECIFICATIONS-

THE MINNESOTA HIGHWAY DEPARTMENT "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION," DATED JANUARY 1, 1972 AND ALL ADDITIONS AND AMENDMENTS THERETO SHALL GOVERN.

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES SHALL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THESE PLANS WERE 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.

REG. NO. 6037 DATE 5-17-72

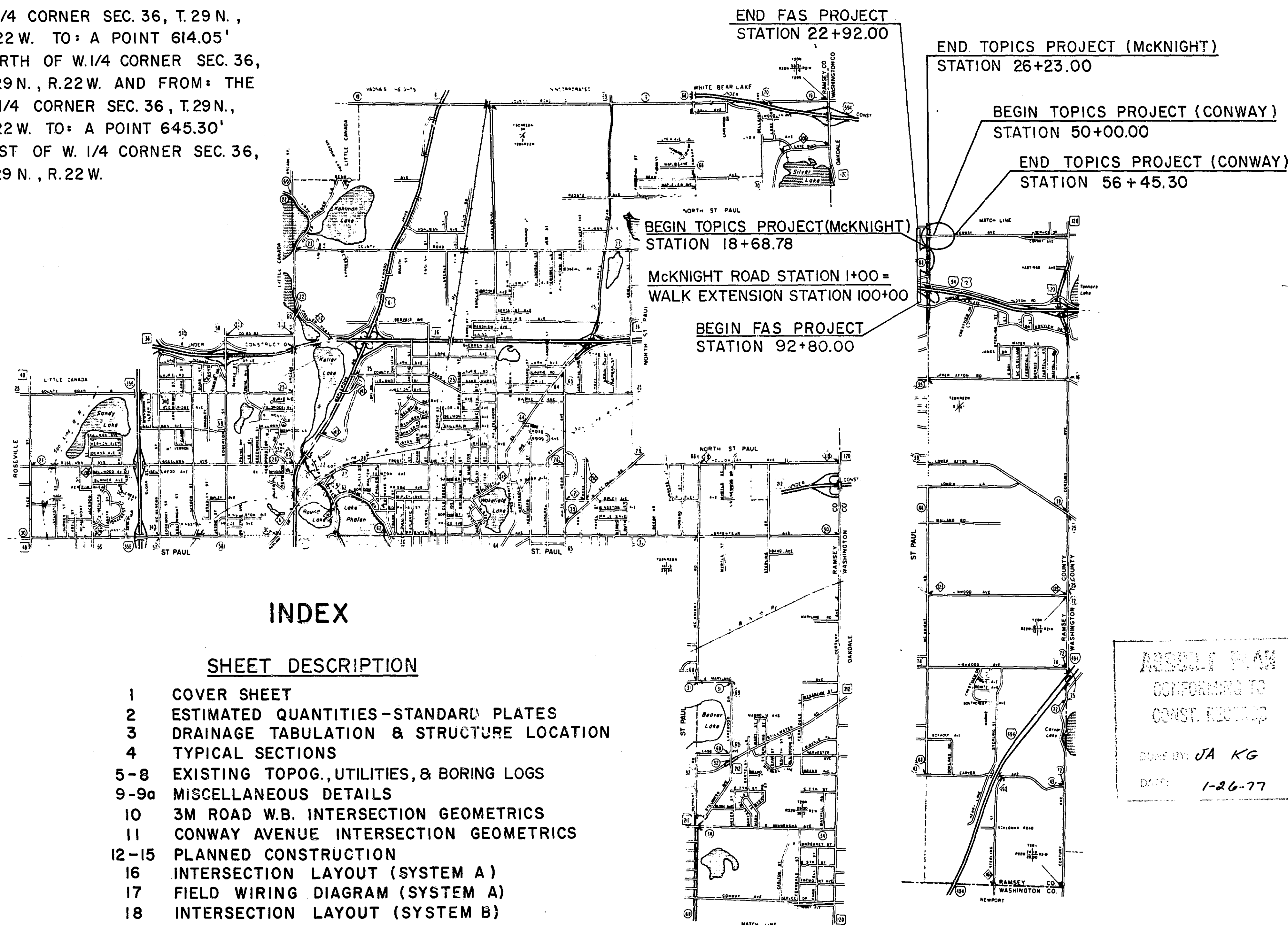
PLANS FOR
CONSTRUCTION OF GRADING,
PAVING, SIGNALIZATION AND
UTILITY ADJUSTMENTS
ON
CONWAY AVENUE AND
McKNIGHT ROAD NORTH
AND EAST OF THE
CONWAY McKNIGHT INTERSECTION
PROJECT NUMBERS (TOPICS)

SP 62-668-10
EHS-T 5007 (008)
VILLAGE OF MAPLEWOOD
PROJECT 72-5

TOPICS PROJECT
FROM: A POINT 140.17' SOUTH OF
W. 1/4 CORNER SEC. 36, T.29 N.,
R.22 W. TO: A POINT 614.05'
NORTH OF W. 1/4 CORNER SEC. 36,
T.29 N., R.22 W. AND FROM: THE
W. 1/4 CORNER SEC. 36, T.29 N.,
R.22 W. TO: A POINT 645.30'
EAST OF W. 1/4 CORNER SEC. 36,
T.29 N., R.22 W.

PLANS FOR
CONSTRUCTION OF GRADING,
PAVING, SIGNALIZATION AND
UTILITY ADJUSTMENTS
ON
McKNIGHT ROAD BETWEEN
INTERSTATE 94 AND CONWAY AVENUE
PROJECT NUMBERS (FAS)
SP 62-668-11
EHS-S 6363 (2)
VILLAGE OF MAPLEWOOD
PROJECT 72-5

FAS PROJECT
FROM: A POINT 2628.95 SOUTH OF W. 1/4
CORNER SEC. 36, T.29 N., R.22 W. TO: A
POINT 140.17' SOUTH OF W. 1/4 CORNER
SEC. 36, T.29 N., R.22 W.



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HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB-

FAS PROJECT

SP 62-668-11
EHS-S 6363 (2)
VILLAGE OF MAPLEWOOD PROJECT 72-5
GROSS LENGTH FEET 2912.00 MILES 0.552
NET LENGTH FEET 2912.00 MILES 0.552

McKNIGHT ROAD DESIGN CRITERIA

DESIGN SPEED 55 MPH
BASED ON STOPPING SIGHT DISTANCE
HEIGHT OF EYE 3.75'; HEIGHT OF OBJECT 6"
DESIGN SPEED NOT ACHIEVED AT
ADT (CURRENT YEAR) = 11,000
ADT (FUTURE YEAR) 1995 = 15,000 - 20,000
DHV (DESIGN HOUR VOLUME) = 2200
HCADT = 1100-1300
SOIL FACTOR = 75 %

TOPICS PROJECT

SP 62-668-10
EHS-T 5007 (008)
VILLAGE OF MAPLEWOOD PROJECT 72-5
GROSS LENGTH FEET 1399.52 MILES 0.265
NET LENGTH FEET 1399.52 MILES 0.265

CONWAY AVENUE DESIGN CRITERIA

DESIGN SPEED 55 MPH
BASED ON STOPPING SIGHT DISTANCE
HEIGHT OF EYE 3.75'; HEIGHT OF OBJECT 6"
DESIGN SPEED NOT ACHIEVED AT
ADT (CURRENT YEAR) = 5300
ADT (FUTURE YEAR) 1995 = 7000 - 10,000
DHV (DESIGN HOUR VOLUME) = 1100
HCADT = 600-1100
SOIL FACTOR = 75 %

Approved *[Signature]*, 19

Approved *[Signature]*, 19

Approved _____, 19

Approved *[Signature]*, 19
CHAIRMAN RAMSEY COUNTY BOARD

Approved *[Signature]*, 6-16, 1972

Approved *[Signature]*, 6/20, 1972
STATE AID ENGINEER

Approved _____, 19
DIVISION ENGINEER FEDERAL HIGHWAY ADMINISTRATION

Recommended for Approval *[Signature]*, 6-14, 1972

Recommended for Approval *[Signature]*, 19

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM.	UNIT	ESTIMATED QUANTITY				FINAL
			TOPICS	FAS	VILLAGE	TOTAL	
2021.501	Mobilization	Lz S.	.5	.5		1	1
2031.501	Field Office, Type D	Each	.5	.5		1	1
2101.502	Clearing	Tree	2	1		3	4
2101.507	Grubbing	Tree	3	2		5	5
2104.501	Remove Pipe Sewer	L. F.	138	124		262	263
2104.501	Remove Concrete Curb and Gutter	L. F.	18	490		508	618
2104.509	Remove Manhole & Catch Basin	Each	11	8		19	18
2105.501	Common Excavation	C. Y.	5,015	9,245		14,260	14,260
2105.521	Granular Borrow (L.V.)	C. Y.	850	1,340		2,190	2,100
2105.523	Common Borrow (L.V.)	C. Y.	540	1,343		1,883	1,548
2105.525	Topsoil Borrow (L.V.)	C. Y.	460	940		1,400	899
2211.503	Agg. Base Placed, Class 4	C. Y.		80		80	90
2211.503	Agg. Base Placed, Class 5	C. Y.	180	10		190	238
2341.504	Bituminous Material for Mixture	Ton	308	370		678	616.4
2341.508	Wearing Course Mixture	Ton	83	112		195	313
2341.510	Binder Course Mixture	Ton	840	1,130		1,970	2,422
2341.518	Bituminous Mixture For Base Course	Ton	4,090	6,780		10,870	10,469
2361.504	Asphalt Cement	Ton	34	46		80	79.29
2361.508	Wearing Course Mixture	Ton	380	515		895	1,032
2357.502	Bituminous Material for Tack Coat	Gallon	1,470	2,690		4,160	2,015
2503.511	12" R. C. Pipe Sewer, Class IV	L. F.	6	54		60	114
2503.511	15" R. C. Pipe Sewer, Class IV	L. F.	461	498		959	944
2506.506	Construct Manhole, Design F Type B	L. F.		6		6	11
2506.507	Construct Catch Basin, Design H	L. F.	38	52		90	103.8
2105.507	Subgrade Excavation	C.Y.	655	1030		1,685	1,586
2506.516	Casting Assemblies	Each	12	18		30	31
2506.522	Adjust Frame and Ring Casting	Each	6	3		9	10
2521.501	4" Concrete Walk	Sq. Ft.		12,565		12,565	12,435
2521.501	6" Concrete Walk	Sq. Ft.		420		420	825
2531.501	Concrete Curb and Gutter, Design B618	L. F.		132		132	86
2531.501	Concrete Curb and Gutter, Design B624	L. F.	3,108	5,964		9,072	9,134
2531.507	6" Concrete Driveway Pavement	S. Y.	70	71		141	178
2531.507	8" Concrete Driveway Pavement	S. Y.		65		65	79
2535.501	Bituminous Curb	L. F.	1,010	0		1,010	1,129
2575.505	Sodding	S. Y.	2,180	4,720		6,900	7,742
2575.531	Commercial Fertilizer, Analysis 12-12-12	Ton	.2	.2		.4	.4
504.601	20" Water Main, Ductile Iron	L. F.			188*	188	198
2545.521	2" Rigid Steel Conduit	L. F.	435	435		870	770
2565.501	Full Traffic-Actuated Traffic Control System, Sig. System "A"	Sig. Sym.	1			1	1
2565.501	Full Traffic-Actuated Traffic Control System, Sig. System "B"	Sig. Sym.		1		1	1
2104.523	Salvage Temporary Signals	Each	1			1	1

CONDUCTOR COLOR CODE

R - RED
O - ORANGE
BL - BLUE
WH - WHITE
R/BLK - RED WITH BLACK TRACER
O/BLK - ORANGE WITH BLACK TRACER
BL/BLK - BLUE WITH BLACK TRACER
WH/BLK - WHITE WITH BLACK TRACER
BLK - BLACK
BLK/WH - BLACK WITH WHITE TRACER
G/BLK - GREEN WITH BLACK TRACER
G - GREEN

ABBREVIATIONS

LTA - LEFT TURN ARROW
NEU - NEUTRAL
DNL - DOWNLIGHT
DA-I - DETECTOR-PHASE "A"
H.H. - HANDHOLE
P.E.C. - PHOTOELECTRIC CELL
S.O.P. - SOURCE OF POWER
E.Q.G. - EQUIPMENT GROUND
R.S.C. - RIGID STEEL CONDUIT
1/C - ONE CONDUCTOR

LEGEND OF SYMBOLS

CONTROLLER & CABINET.....
HANDHOLE.....
RIGID STEEL CONDUIT.....
SIGNAL FACE WITH BACKGROUND SHIELD.....
TRAFFIC SIGNAL PEDESTAL.....
TRAFFIC SIGNAL POLE & MAST ARM.....
MAST ARM & LUMINAIRE.....
WOOD POLE.....

STANDARD PLATES

PLATE NO.	DESCRIPTION
3000F	Reinforced Concrete Pipe
3006A	Gasket Joint for R.C. Pipe
4005I	Manhole or Catch Basin, Design F, Type B
4006H	Manhole or Catch Basin, Design H
4010D	Conc. Short Cone and Adjusting Ring
4011C	Precast Concrete Base
4101B	Ring Casting for Manhole or Catch Basin, (700-7)
4110D	Cover Casting for Manhole, No. 712
4126D	Catch Basin Frame Casting
4149C	Grate Casting for Catch Basin
4160C	Curb Box Casting for Catch Basin, No. 823A
4180F	Manhole Step Casting, No. 045
7035G	Concrete Walk and Curb Returns at Entrances
7065C	Bituminous Curb
7100D	Concrete Curb and Gutter, Design B
7110E	Curb and Gutter Construction at Catch Basin
7111D	Installation of Catch Basin Castings
8000C	Standard Barricades, Class II
8008D	Contractors' Sign
8110B	Traffic Signal Bracketing, (Pole Mounted)
8111A	Traffic Signal Bracketing, (Pedestal Mounted)
8112B	Pedestal Foundation
8116C	Steel Guard Post
8117C	Precast Concrete Handhole
8118B	Service Equipment and Pole Traffic Control Signals
8119B	Ground Mounted Cabinet Foundation
8122B	Pedestal and Pedestal Base
8123A	Pole and Mast Arm, (Luminaires and Traffic Lights)
8124B	Signal Head Mounts
8130B	Saw Cut Loop Detectors

* Municipality shown assumes entire cost of construction item.

Note:
(1) Includes 28 Catch Basin Castings
& 2 Manhole Castings.

			BY	DATE
			MADE	EJJ 5-1-72
			CHECKED	RLI 5-1-72
NO.	DATE	DESCRIPTION	APPR'D.	JOM 5-3-72
REVISIONS				

VILLAGE OF MAPLEWOOD ENGINEERING DEPARTMENT McKNIGHT ROAD AND CONWAY AVENUE	VILLAGE OF MAPLEWOOD PROJECT 72-5 TOPICS: SP 62-668-10 EHS-T 5007 (008) FAS: SP 62-668-II EHS-S 6363 (2) 19-106
ESTIMATED QUANTITIES STANDARD PLATES	

DRAINAGE STRUCTURES AND STORM SEWERS

STRUCTURE CODE NO.	STATION	LOCATION	CONSTRUCTION		EXISTING		PROPOSED		F & I CASTING	PIPE OUTFALL CODE NO.	OUTLETS TO STRUCTURE NO.	12		REMARKS			
			DESIGN	PAY HEIGHT	TOP OF CASTING	INVERT	TOP OF CASTING	INVERT				12	15				
															M H	C B	LIN. FT
MH 1	23+72	18' Rt.	Block				982.80	977.30	982.57	977.17		MH 2		Adjust			
CB 1a	23+73	14' Lt.			-0.49			982.24	979.06	982.31	977.30		MH 1		In place		
CB 1b	23+72	12' Rt.						982.15	978.53	982.15	978.53				Remove and repair pipe		
CB 1c	23+72	24.88' Rt.		H	2.44		982.24	979.43	982.44	977.97	801/832A	MH 1		Remove existing and construct			
CB 1d	23+72	33.12' Rt.		H	2.58				982.58	978.13	801/832A	CB 1c		Construct over existing pipe			
CB 1e	23+72	64.37' Rt.		H	2.39		981.94	979.58	982.22	979.43	801/832A	CB 1d		Remove existing and construct on existing pipe			
MH 2	23+31	1' Lt.	Block		-0.26		982.03	971.46	982.29	971.46		St. Paul		Adjust			
MH 3	22+90	17' Rt.			-0.29		982.24	976.74	981.55	976.74		MH 2		Adjust			
CB 3a	22+87	13' Lt.					981.67	978.27	981.67	978.27		MH 3		In place			
CB 3b	22+90	12' Rt.				981.58	977.68							Remove existing and repair pipe			
CB 3c	22+90	24.88' Rt.	Precast		-0.14		981.81	978.16	981.81	978.16		MH 3		Adjust			
CB 3d	22+90	33.12' Rt.		H	3.29				981.84	978.38	801/823A	CB 3e		Construct over existing pipe			
CB 3e	22+90	69.84' Rt.		H	2.24		981.52	979.27	981.68	977.59	801/823A	CB 3d	6	IV	Remove existing and construct new		
CB 3f	21+40	79.88' Rt.		H	3.43				982.64	979.14							
CB 3g	21+16	60.88' Rt.		H	3.67				979.04	801/823A	MH 3		162.7	IV	Construct		
MH 4	19+74	17' Rt.	Block		-0.56		986.32	979.50	983.56	978.41	810/823A	CB 3f		30.6	IV	Construct	
									985.76	978.50		MH 4e				Adjust	
										981.51						Invert from south	
CB 4a	19+54	12.88' Lt.		H	3.33		985.94	983.09	982.39	982.39	801/823A	CB 4b	-32	30.0	IV	Invert from east	
CB 4b	19+54	12.88' Rt.		H	3.73				985.94	981.99						Remove existing and construct new	
CB 4c	19+54	21.12' Rt.		H	3.83				981.89	801/823A	CB 4c		8.2	IV	Construct		
CB 4d	19+74	10' Rt.					985.94	982.54	985.74	981.91	801/823A	MH 4		20.4	IV	Construct	
MH 4e	20+10	20' Lt.	Block		-0.28		985.72	978.11	985.56	977.49		MH 4	-7			Remove	
								973.66		985.56	977.49		St. Paul				Adjust
CB 4h	19+58.65	105.92' Rt.			H	3.40				981.90	977.49						
CB 4i	18+39.65	97' Rt.		H	3.84				981.39	801/823A	MH 4		90.2	IV	Construct		
CB 4j	19+76	66' Rt.					985.33	984.15	981.83	981.50	801/823A	CB 4h		119.3	IV	Construct	
CB 4k	19+74	48' Rt.					985.86	982.79				CB 4k	-18			Remove	
CB 4l	19+74	24' Rt.					986.19	982.49				CB 4l	-24			Remove	
MH 5	15+74	17' Rt.	Brick		0.48		990.78	985.97	981.58	980.74		MH 4	-7			Remove	
CB 5a	15+74	12.88' Lt.			H	2.92		990.47	987.66	981.26	980.66	801/823A	MH 4				Adjust
CB 5b	15+74	12.88' Rt.			H	3.28				980.75	980.75	801/823A	MH 5				Remove existing and construct on existing pipe
CB 5c	15+74	33.12' Rt.		H	3.56				980.45	980.45	801/823A	MH 5	16		IV	Construct on existing pipe	
CB 5d	15+74	70.88' Rt.		H	3.00				980.54	981.39	801/823A	CB 5c	38		IV	Construct on new pipe	
CB 5e	15+74	48' Rt.					990.74	988.69	980.27	981.10		MH 5	-31			Remove	
MH 6	12+65.80	17' Rt.	F-B	6.00					985.75	988.78	700-7	MH 5		308.2	IV	Invert to MH5-Construct	
									985.32	989.15	712					Invert from CB 6b	
CB 6a	12+60	12.83' Lt.		H	3.32				990.95	989.73	801/823A	CB 6b		25.8	IV	Invert from CB 6c	
CB 6b	12+60	12.83' Rt.		H	3.66				985.06	981.58						Construct	
CB 6c	12+90.03	33.12' Rt.		H	3.61				984.85	980.54	801/823A	MH 6		7.1	IV	Construct	
CB 6d	13+25	58.83' Rt.		H	2.83				984.81	980.74	801/823A	MH 6		29.1	IV	Construct	
MH 7	7+52	17' Rt.	Brick		-0.68		991.92	987.39	983.77	980.69	801/823A	CB 6c	43.4		IV	Construct	
CB 7a	7+52	12.83' Lt.			H	3.33		991.84	988.77	983.56	980.75	801/823A	MH 6				Adjust
CB 7b	7+52	24.83' Rt.			H	3.43				983.49	980.49		MH 8				
CB 7c	7+52	33.12' Rt.		H	3.82				984.24	981.58	801/823A	MH 7	-32	30.0	IV	Remove existing and construct new	
CB 7d	7+52	58.83' Rt.		H	3.33				986.70	986.70				8.0	IV	Construct	
CB 7e	7+52	52' Rt.					991.75	988.87	981.13	980.49	801/823A	CB 7b		8.2	IV	Construct	
MH 8	4+27	17' Rt.			0.40		981.93	975.46	981.87	980.31	801/823A	CB 7c	25.8		IV	Construct	
CB 8a	4+41	21.26' Lt.		H	2.78		981.77	979.27	982.05	979.30	801/823A	MH 7	-35			Remove	
CB 8b	4+27	12.3' Rt.		H	3.46		981.57	977.97	982.87	979.30	801/823A	MH 8i	6.0	IV		Adjust	
CB 8c	4+27	22.5' Rt.		H	3.28		981.47	978.02	981.60	977.97	801/823A	MH 8				Remove existing and construct new	
CB 8d	3+09	60.2' Rt.		H	2.53				981.60	978.02	801/823A	MH 8				Remove existing, repair pipe, construct new on existing pipe	
MH 8e	3+09	66' Rt.					980.34	977.24	982.23	977.30	801/823A	MH 8e	6.0	IV		Construct	
CB 8f	4+46	60' Rt.					982.26	976.58	980.00	977.30	700-7/712	CB 8f				Convert existing CB to MH	
CB 8g	4+43	86' Rt.					983.55	977.92	980.50	977.24		MH 8				In place	
CB 8h	4+46	53' Lt.					980.63	978.83	982.26	976.58		CB 8f	-26			Remove	
MH 8i	4+27	14' Lt.					981.60	978.16	980.63	978.83		MH 8i				In place	
CB 4f	51+13	25' Rt.					985.73	978.26	981.60	978.16		CB 8b				In place	
												CB 4j	-50			Remove	

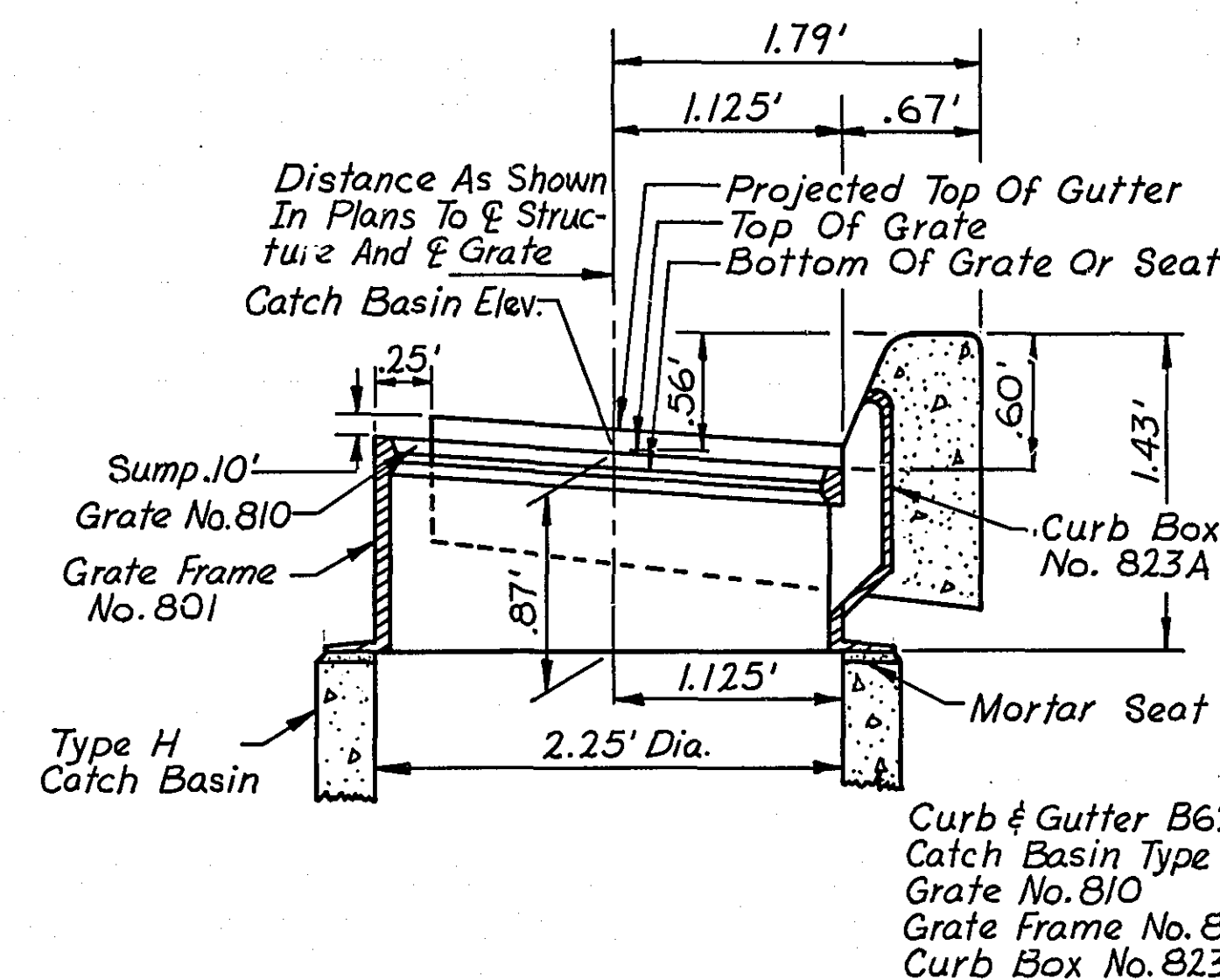
OTHER STRUCTURES

STRUCTURE CODE NO.	STATION	LOCATION	EXISTING TOP OF CASTING	PROPOSED TOP OF CASTING	REMARKS
T1	5+48	12' Rt.	986.47	985.84	Tel. MH adjusted down 0.63'
T2	12+66	24' Lt.			Tel. MH not on roadway
T3	13+09	13' Rt.	994.56	994.37	Tel. MH adjusted down 0.19'
T4	20+45	12' Rt.	985.34	984.82	Tel. MH adjusted down 0.52'
T5	20+49	21' Rt.	985.66	984.67	Tel. MH adjusted down 0.99'
G1	5+96	52' Rt.	987.88	987.96	Gas MH adjusted up 0.08'
G2	7+19	21' Rt.		990.35	Gas MH not found in survey
G3	23+82	59' Rt.	982.55	982.55	Gas MH no adjustment
E1	16+29	61' Rt.	990.91	989.92	Elect. MH adjust down 0.99'
E2	20+21	60' Rt.	985.82	985.47	Elect. MH adjust down 0.35'
E3	20+37	69' Rt.	985.76	985.39	Elect. MH adjust down 0.37'
E4	54+65	20' Lt.		987.00	Elect. MH
E5	23+03	39' Lt.			Elect. or gas MH not on rdwy.
San. 1	19+88	3' Rt.	986.93	985.79	Comb. sewer MH adj. down 0.34'
San. 2	19+88	88' Rt.		985.14	Comb. sewer MH adj.
San. 3	53+23	21' Rt.	986.31	985.33	Comb. sewer MH adj.

NOTE: The above table is based on survey topo, and the individual utility companies and the contractor will be responsible for the locating of all utilities in the field.
A (-) sign in the "Pay Height" column indicates the amount of downward adjustment required.

A (-) sign in the "Length of Pipe" column indicates the approximate length of pipe to be removed.

When the same Structure Code No. is used for the existing and the proposed structure, the station and location are that of the proposed structure.



TYPICAL SECTION CATCH BASIN IN GUTTER
No Scale

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

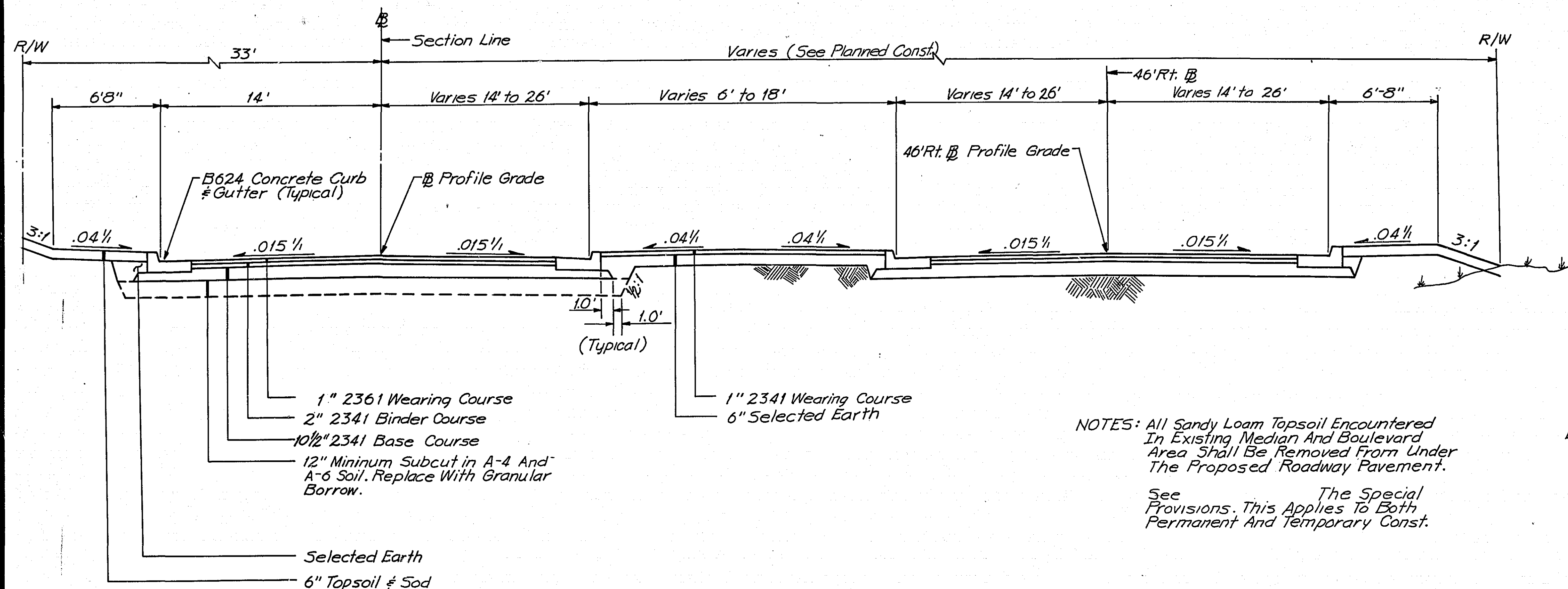
DONE BY: JA KG
DATE: 1-24-77

NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
				MADE	EJJ 5-5-72
				CHECKED	TLM 5-6-72
				APPR'D.	JOM 5-7-72

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
DRAINAGE TABULATION, 8
STRUCTURE LOCATION

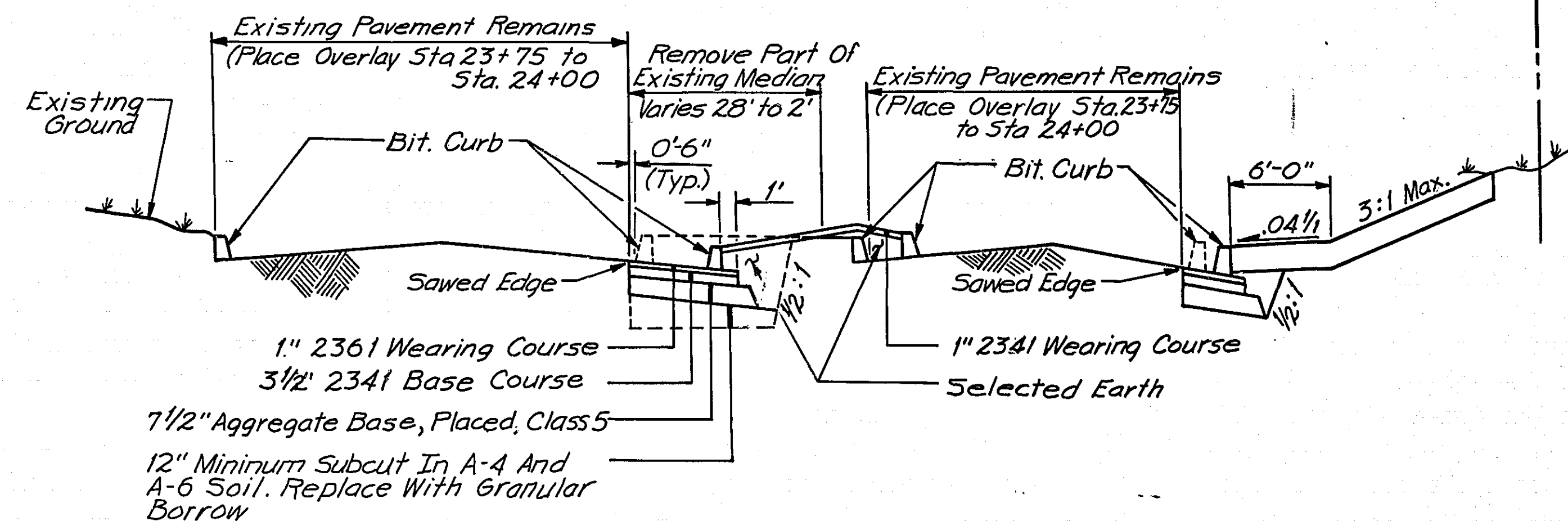
VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
SP 62-668-10
EHS-T 5007 (008)
FAS: SP 62-668-11
EHS-S 6363 (2) 1/9-106

HOWARD NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB

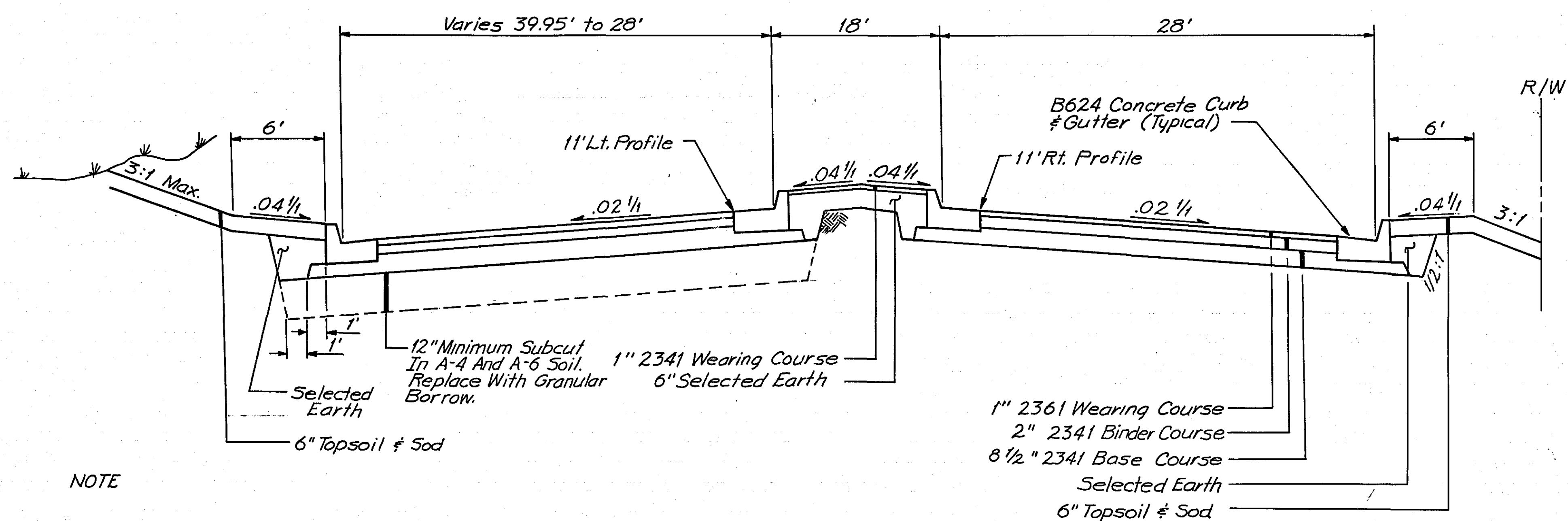


NOTES: All Sandy Loam Topsoil Encountered
In Existing Median And Boulevard
Area Shall Be Removed From Under
The Proposed Roadway Pavement.

See The Special
Provisions. This Applies To Both
Permanent And Temporary Const.



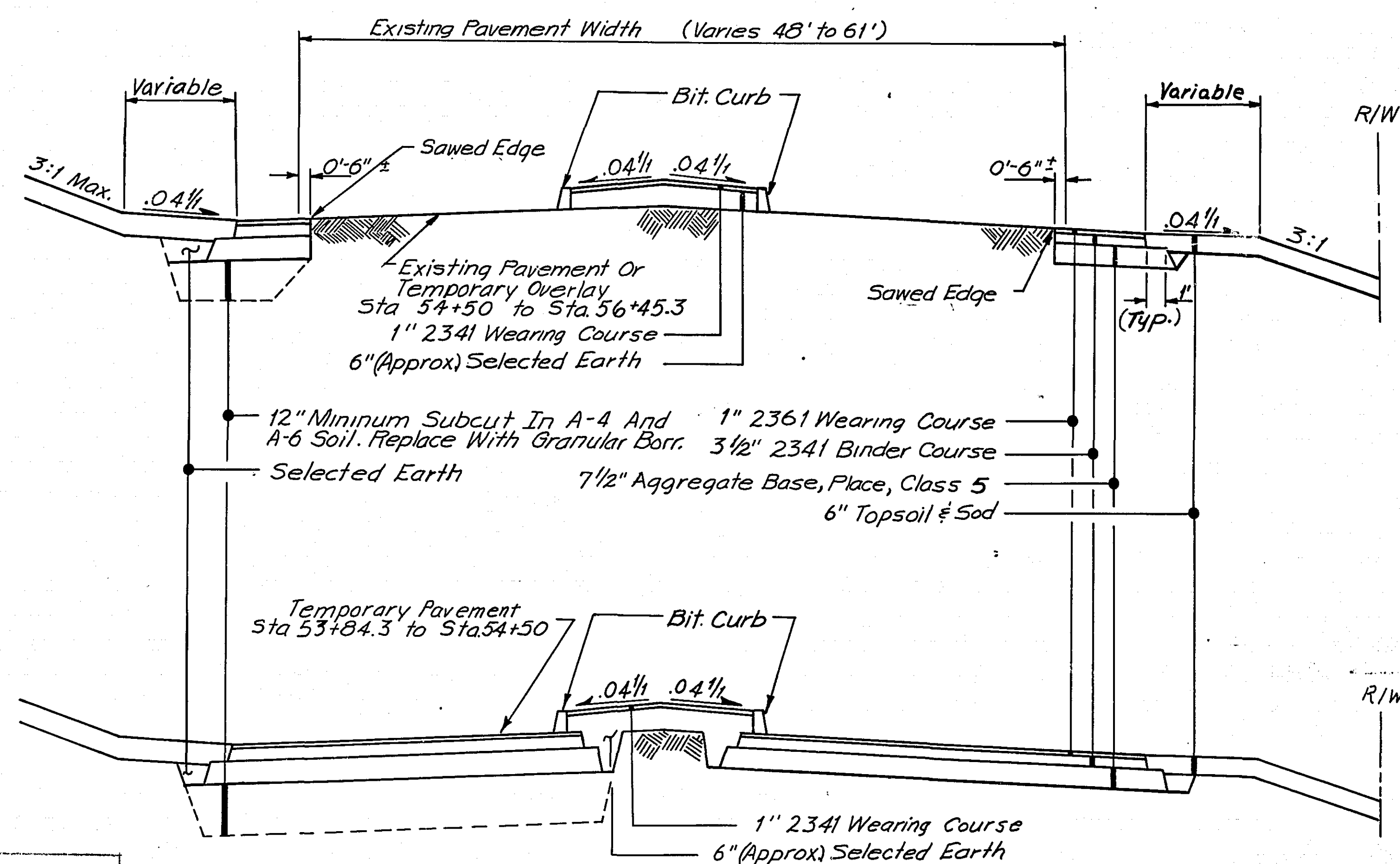
McKNIGHT ROAD TEMPORARY EXTENSION
NORTH OF STA. 23+75



NOTE

*All Sandy Loam Topsoil Encountered
In Existing Median And Boulevard
Area Shall Be Removed From Under
The Proposed Roadway Pavement
See The Special
Provisions. This Applies To Both Permanent
And Temporary Construction.*

TYPICAL SECTION CONWAY AVENUE
STA. 51+75 TO STA. 53+84.3



ADULT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: JA KG
DATE: 1-26-77

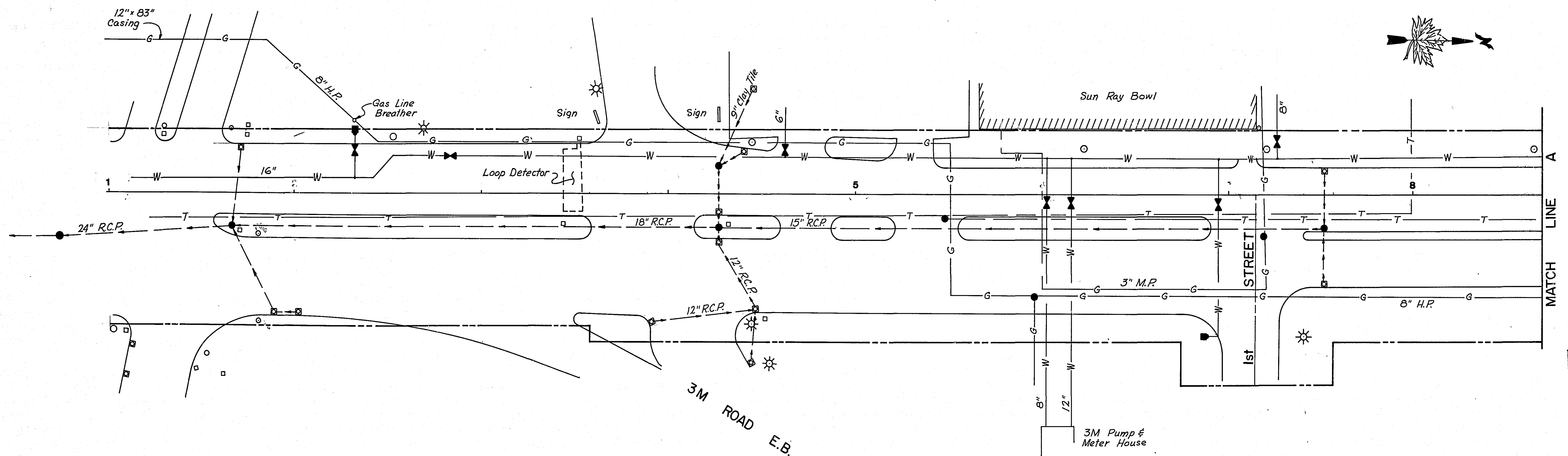
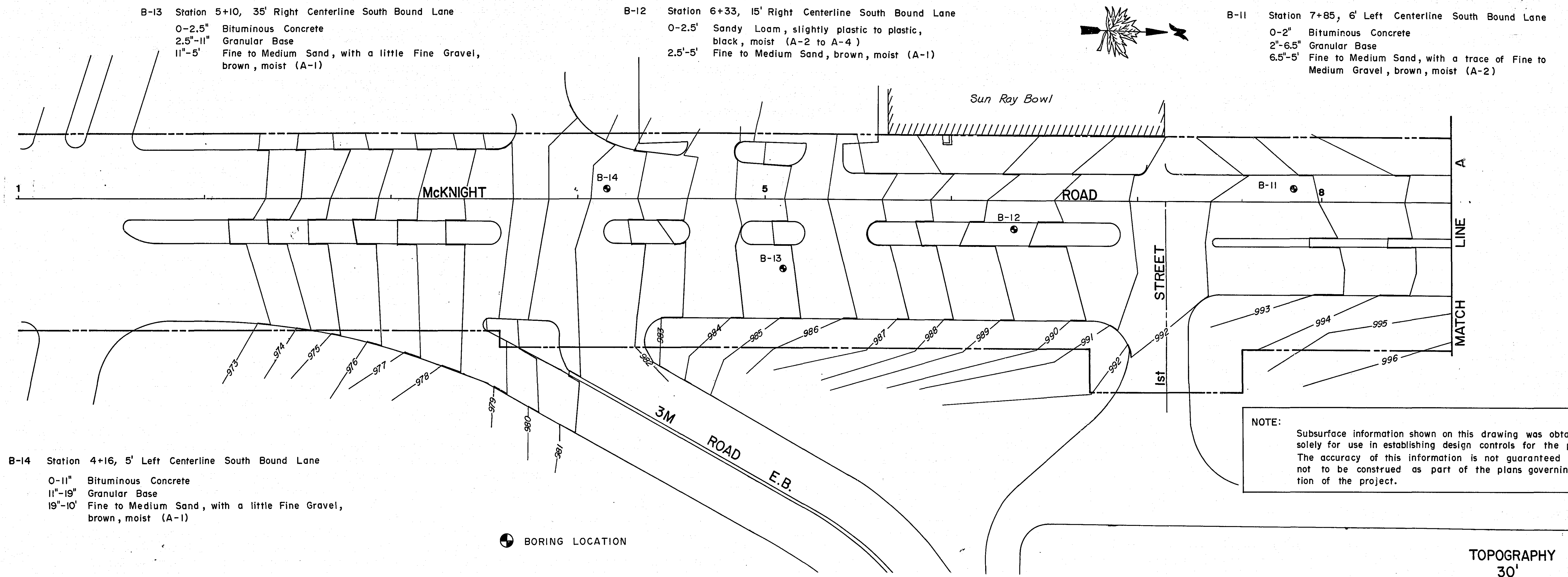
[illegible]

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
TYPICAL SECTIONS

VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
SP 62-668-10
EHS-T 5007 (008)
EAS: SP 62-668-11
EHS-S 6363(2) 19-10

HOWARD NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

SHEET 4 OF 37 SHEETS



ASBUILT PLAN
 CONFORMING TO
 CONST. RECORDS
 DONE BY: JA KB
 DATE: 1-27-77

NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
				MADE	LDH 4-21-72
				CHECKED	E J J 4-21-72
				APPR'D.	JOM 5-1-72

VILLAGE OF MAPLEWOOD
 ENGINEERING DEPARTMENT
 McKNIGHT ROAD AND CONWAY AVENUE
**EXISTING TOPOG.,
 UTILITIES & BORING LOGS**

VILLAGE OF MAPLEWOOD PROJECT 72-5
 FAS: SP 62-668-11
 EHS-S 6363 (2)
 19-106

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
 CONSULTING ENGINEERS

B-9 Station 12+18, 33' Right Centerline South Bound Lane

0-4.5" Bituminous Concrete
4.5"-9" Granular Base
9"-4' Fine to Medium Sand, with a little Fine Gravel, brown, moist (A-1)
4'-5' Clay Loam, brown, moist (A-6)

B-8 Station 13+85, 50' Right Centerline South Bound Lane

0-3' Sandy Loam, slightly plastic to plastic, black, moist (A-4)
3'-7' Clay Loam, brown, moist (A-6)
7'-10' Fine to Medium Sand, brown, moist (A-1)

B-7 Station 13+85, 33' Right Centerline South Bound Lane

0-2.5" Bituminous Concrete
2.5"-10" Granular base
10"-2' Sandy Loam, slightly plastic, dark brown, moist (A-2 to A-4)
2'-5' Fine to Medium Sand, brown, moist (A-1)

B-10 Station 9+21, 6' Left Centerline South Bound Lane

0-2.5" Bituminous Concrete
2.5"-7" Granular Base
7"-5' Fine to Medium Sand, with some Fine to Medium Gravel, brown, moist (A-1)

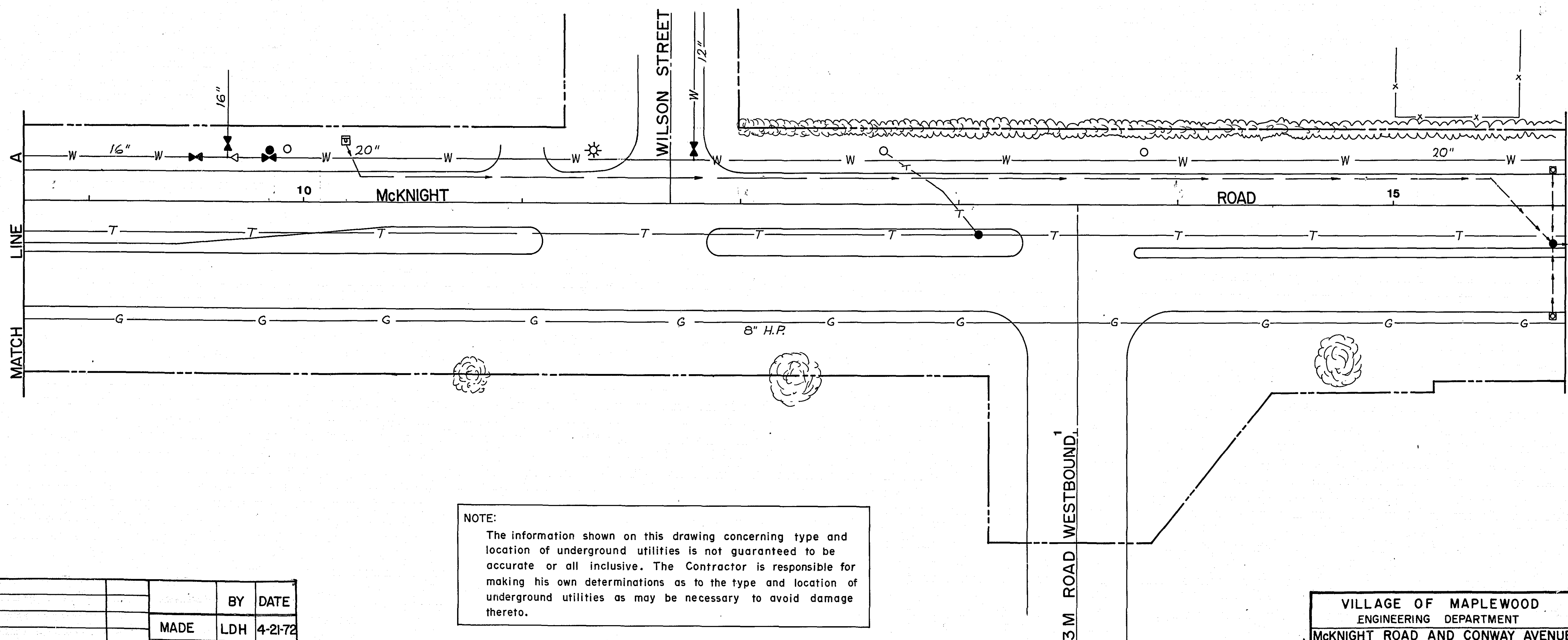
B-6 Station 15+01, 12' Left Centerline South Bound Lane

0-4" Bituminous Concrete
4"-5' Sandy Loam, slightly plastic to plastic, brown, moist (A-2 to A-4)

NOTE:
Subsurface information shown on this drawing was obtained solely for use in establishing design controls for the project. The accuracy of this information is not guaranteed and it is not to be construed as part of the plans governing construction of the project.

BORING LOCATION

TOPOGRAPHY
30'



NOTE:
The information shown on this drawing concerning type and location of underground utilities is not guaranteed to be accurate or all inclusive. The Contractor is responsible for making his own determinations as to the type and location of underground utilities as may be necessary to avoid damage thereto.

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JA KG
DATE: 1-26-77

UTILITIES
30'

NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
				MADE	LDH 4-21-72
				CHECKED	MAJ 5-1-72
				APPR'D.	JOM 5-3-72

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
EXISTING TOPOG.,
UTILITIES & BORING LOGS

VILLAGE OF MAPLEWOOD PROJECT 72-5
FAS: SP 62-668-11
EHS-S 6363 (2)
19-106

HOWARD NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB

SHEET 6 OF 37 SHEETS

B-4 Station 18+90, 52' Right of Centerline South Bound Lane

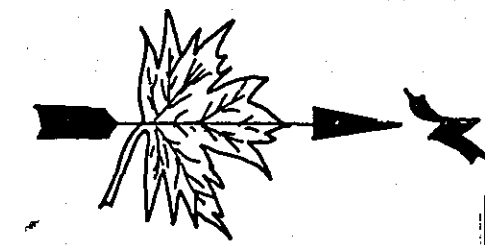
0-3' Sandy Loam, slightly plastic to plastic, black, moist (A-4)
3-5' Clay Loam, brown, moist (A-6)

B-3 Station 19+51, 3' Right of Centerline South Bound Lane

0-2.5" Bituminous Concrete
2.5"-8" Granular base
8"-5' Fine to Medium Sand, with a little Fine Gravel, brown, moist (A-1)

B-2 Station 20+85, 69' Right of Centerline South Bound Lane

0-3' Fine to Medium Sand, brown, moist
3-5' Fine to Medium Sand, with a trace of Fine to Medium Gravel, brown, moist (A-1)



B
LINE
MATCH

16

B-5

McKNIGHT

B-3

20

B-4

988

987

986

AVENUE

51

B-15

CONWAY

52

LINE C

ROAD

THIRD STREET

ROADWAY

EXISTING

MATCH

B-5 Station 16+90, 2' Right Centerline South Bound Lane

0-3.5" Bituminous Concrete
3.5"-9" Granular Base
9"-3.5' Fine to Medium Sand, with a little Fine Gravel brown, moist (A-1)
3.5'-4' Sandy Loam, slightly plastic to plastic, grey, moist (A-4)
4'-5' Clay Loam, brown, moist (A-6)

B-15 Station 51+15, 3' Right of Centerline of Conway Ave.

0-4.5" Bituminous Concrete
4.5"-10" Granular Base
10"-5' Fine to Medium Sand, with a little Fine to Medium Gravel, brown, moist (A-1)

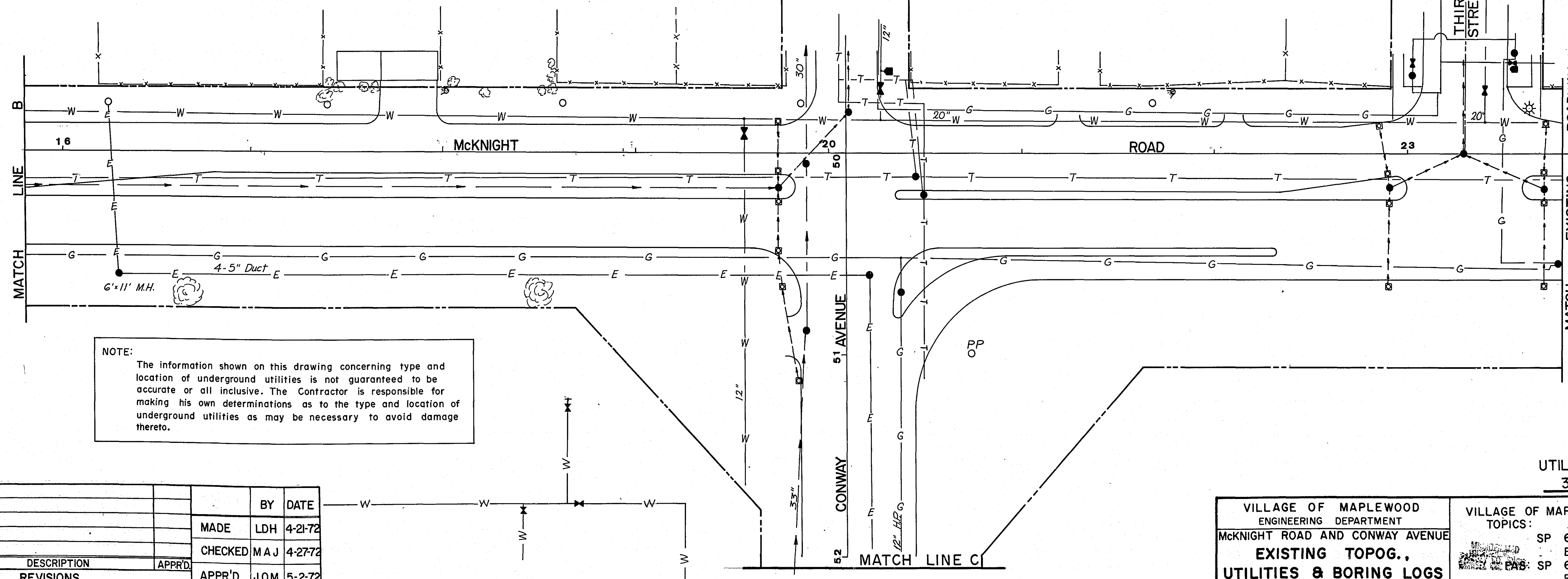
● BORING LOCATION

B-1 Station 23+00 Centerline South Bound Lane

0-2.5" Bituminous Concrete
2.5"-8" Granular base
8"-5' Sandy Loam, non to slightly plastic, with a little fine gravel, brown, moist (A-2 to A-4)

NOTE:
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TOPOGRAPHY
30'



NOTE:
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ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JA KG
DATE: 1-26-77

UTILITIES
30'

NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
				MADE	LDH 4-21-72
				CHECKED	MAJ 4-27-72
				APPR'D.	JOM 5-2-72

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
EXISTING TOPOG.,
UTILITIES & BORING LOGS

VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
SP 62-668-10
EHS-T 5007 (008)
SP 62-668-11
EHS-S 6363 (2) 19-106

HOWARD NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB

SHEET 7 OF 37 SHEETS

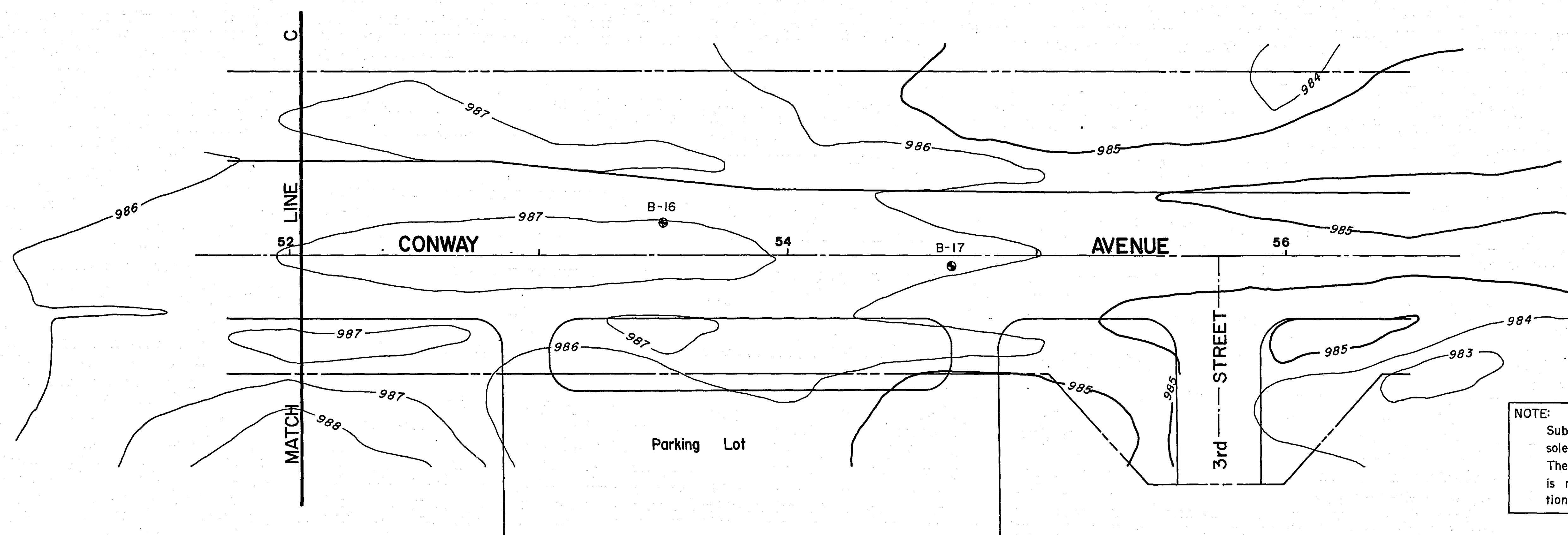


B-16 Station 53+50, 12' Left of Centerline of Conway Avenue

0-3.3" Bituminous Concrete
3.3"-10" Granular Base
10"-5' Fine to Medium Sand, with a little Fine Gravel,
brown, moist (A-1)

B-17 Station 54+66, 4' Right of Center of Conway Avenue

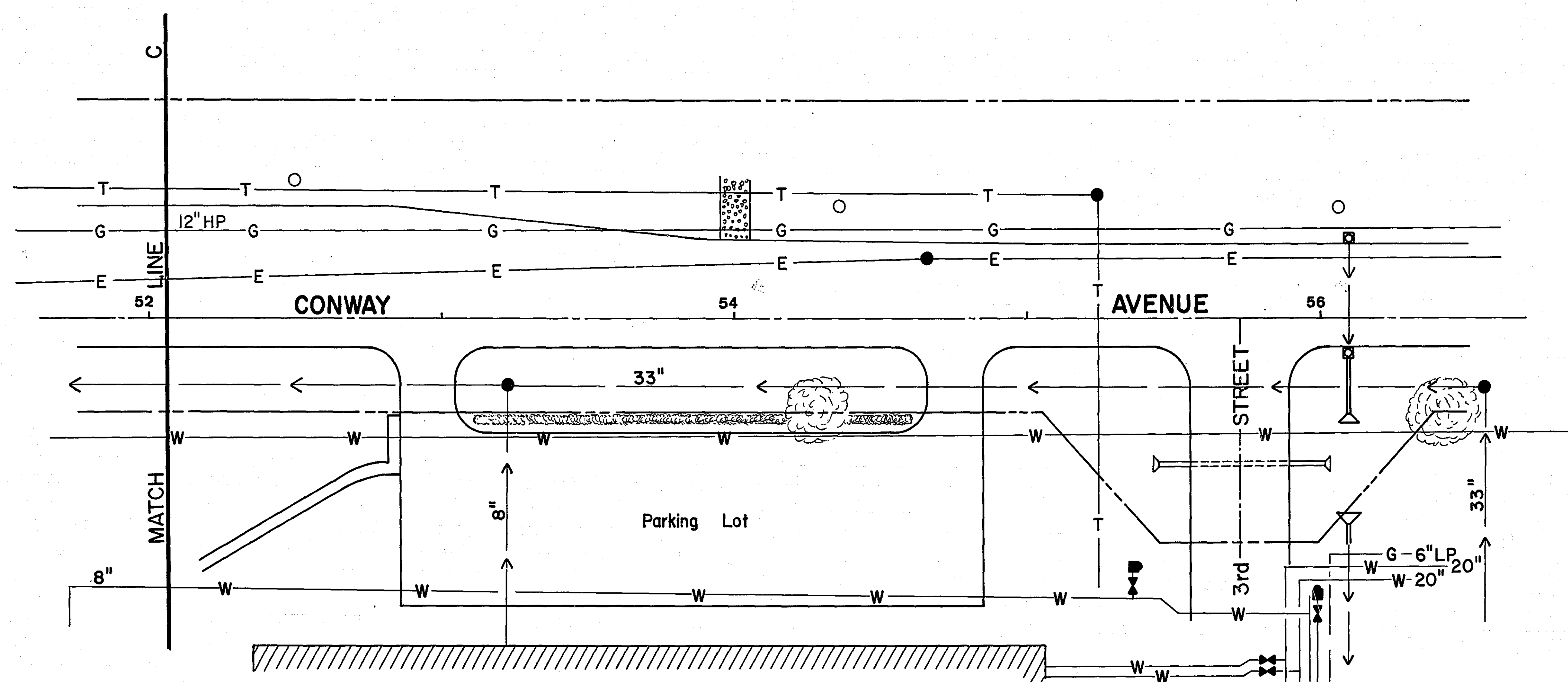
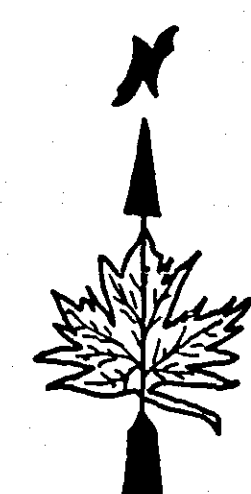
0-5" Bituminous Concrete
5"-12.5" Granular Base
12.5"-3' Fine to Medium Sand, with some Fine to Medium
Gravel, brown, moist (A-1)
3'-5' Loamy Sand, with a little Fine Gravel, brown, moist (A-2)



NOTE:
Subsurface information shown on this drawing was obtained
solely for use in establishing design controls for the project.
The accuracy of this information is not guaranteed and it
is not to be construed as part of the plans governing construction of the project.

● BORING LOCATION

TOPOGRAPHY
30'



NOTE:
The information shown on this drawing concerning type and
location of underground utilities is not guaranteed to be
accurate or all inclusive. The Contractor is responsible for
making his own determinations as to type and location of
underground utilities as may be necessary to avoid damage
thereto.

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JA KG.
DATE: 1-26-77

UTILITIES
30'

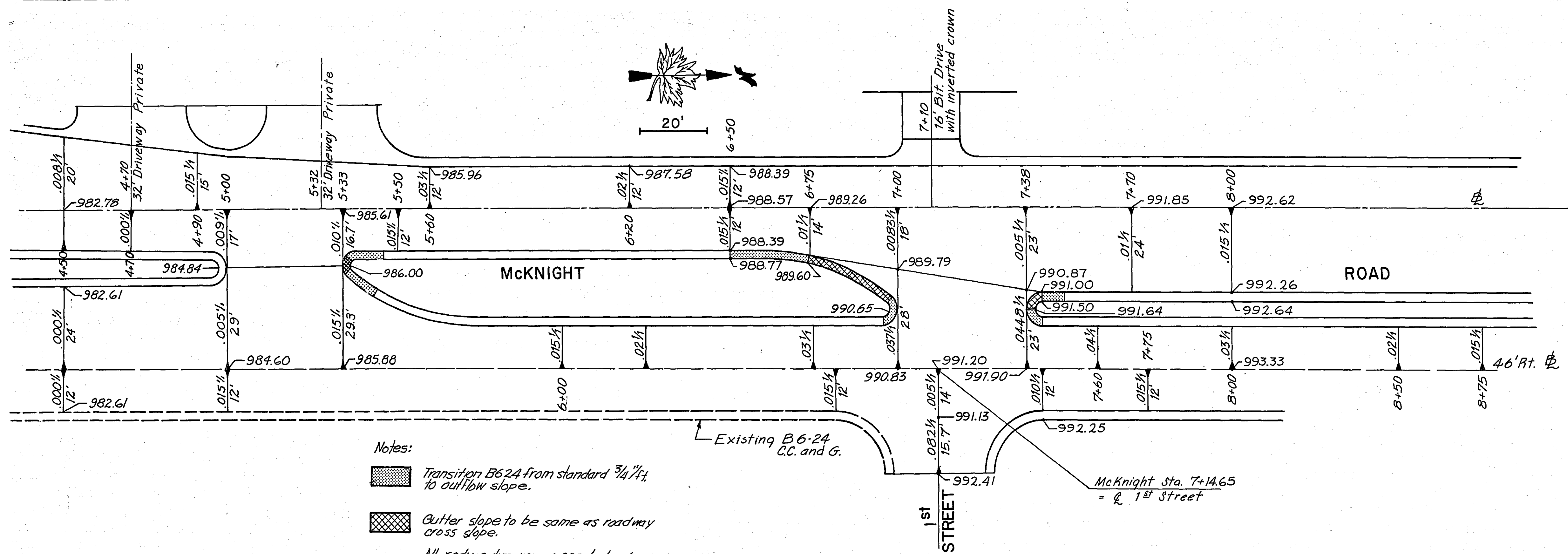
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				CHECKED	MAJ 4-27-72
				APPR'D.	JOM 5-1-72

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
EXISTING TOPOG.,
UTILITIES & BORING LOGS

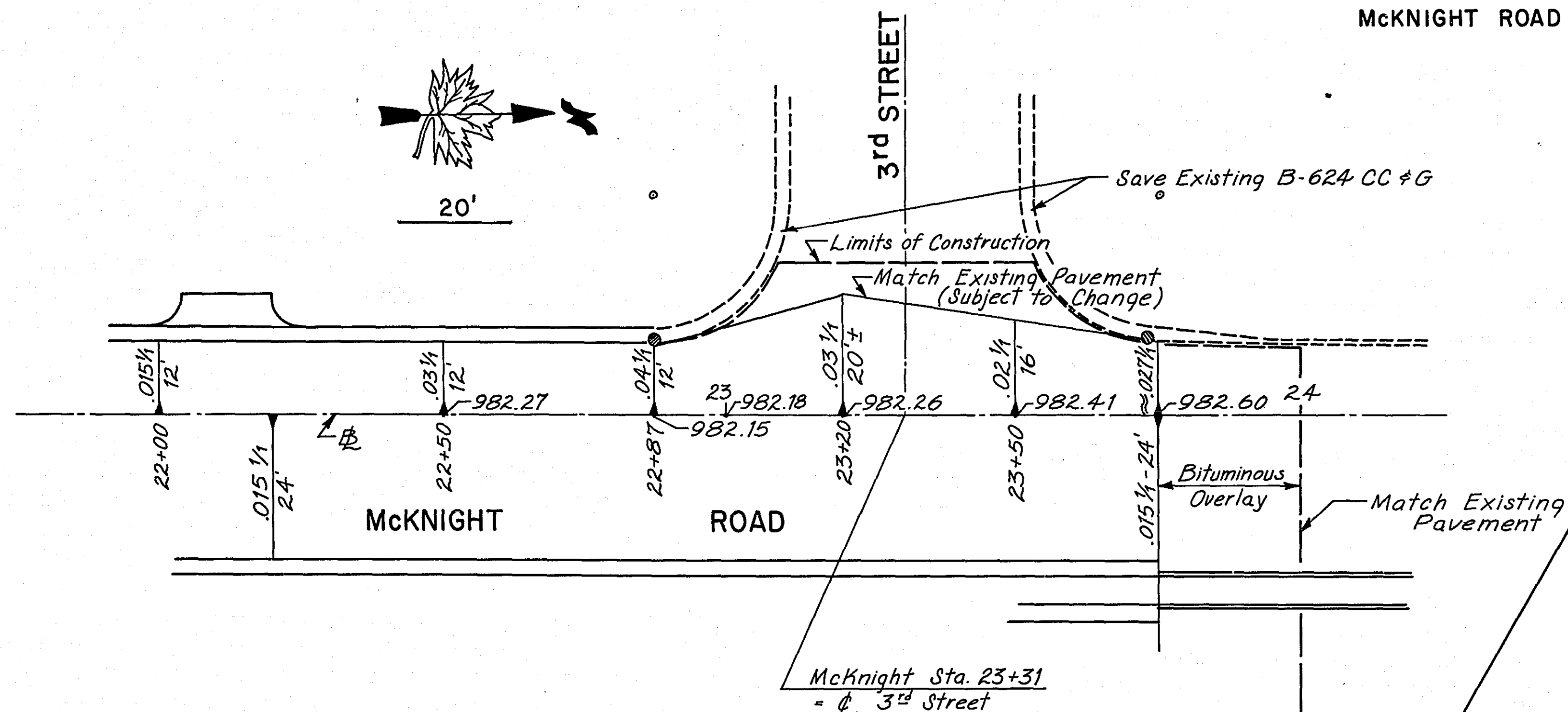
VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
SP 62-668-10
EHS-T 5007 (008)

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB

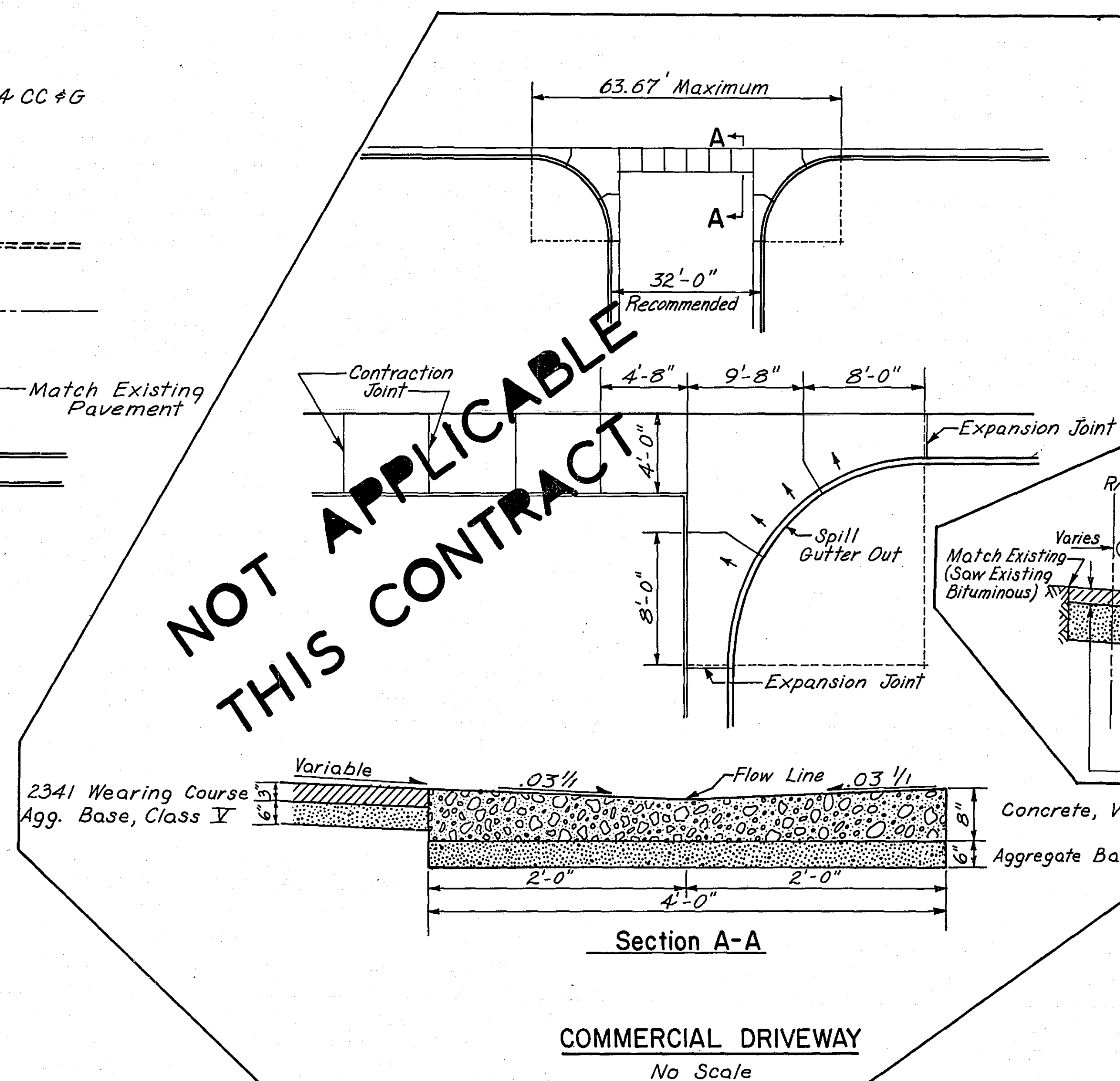
SHEET 8 OF 37 SHEETS



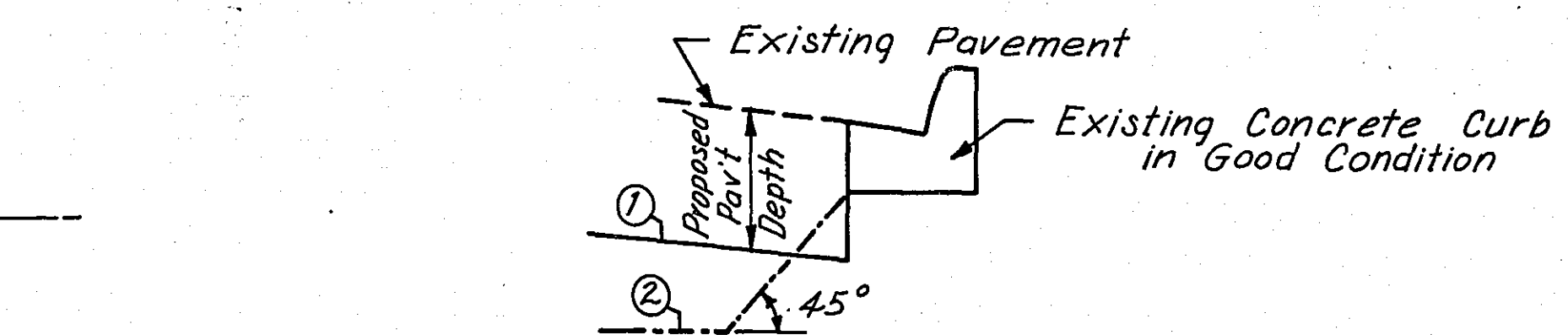
CROSS-SLOPE TRANSITION SECTION
McKNIGHT ROAD AT 1ST STREET



CROSS-SLOPE TRANSITION SECTION
McKNIGHT ROAD AT 3RD STREET



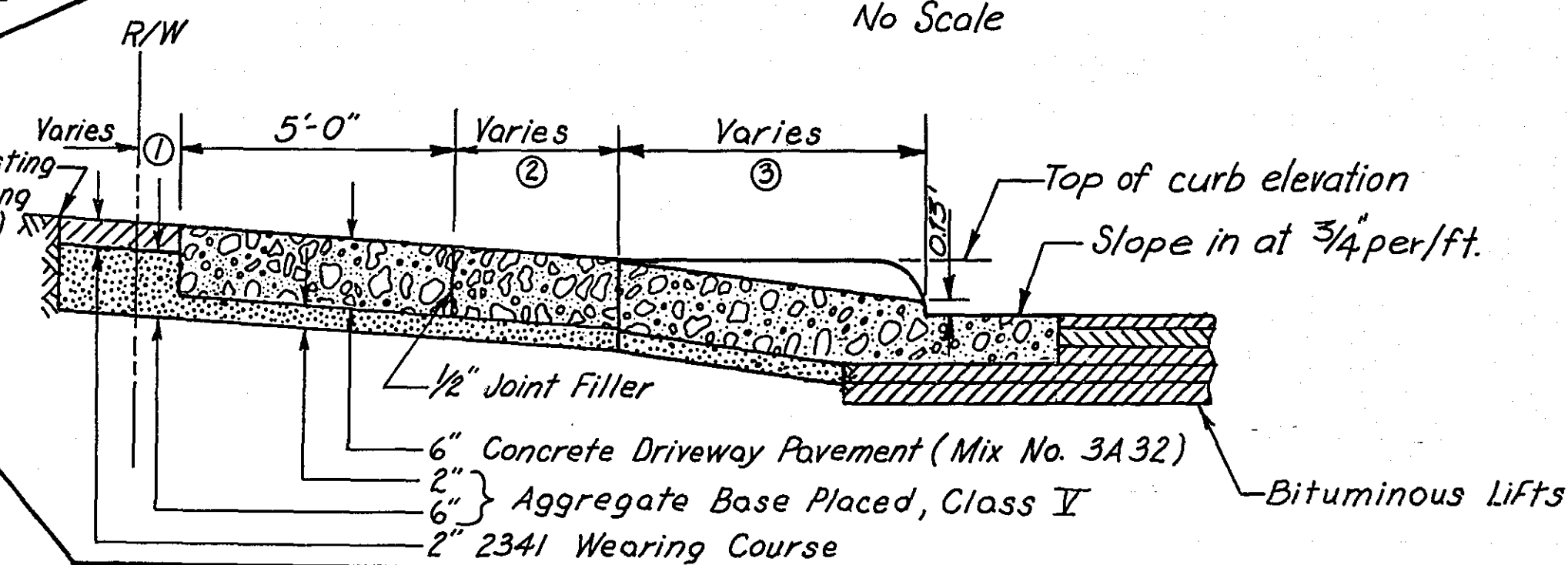
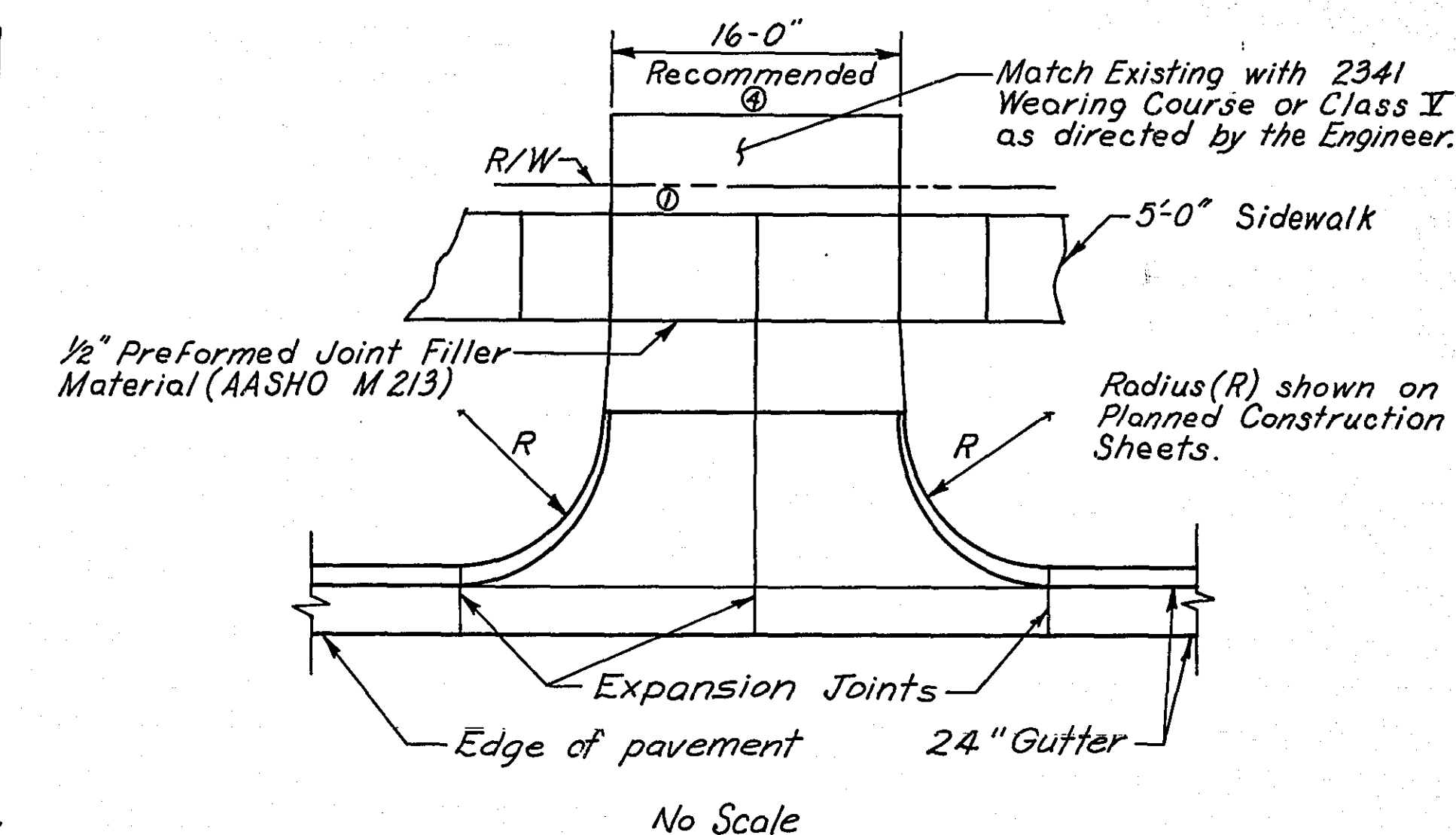
COMMERCIAL DRIVEWAY
No Scale



- ① Excavate to this line where good subgrade exists
- ② Excavate to this line in sub-cut areas

PAVEMENT REMOVAL
SALVAGE CONCRETE CURB

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JA KG
DATE: 1-26-77



Note:
Concrete Driveway Aprons
to end at radius points
in areas where no side-
walks are to be con-
structed.

* Build 7' Walk

Dimension	McKnight Station at E of Driveway
① 0'-0"	7+10
② 0'-0"	11+00
③ 0'-0"	17+90
④ 0'-0"	21+31
⑤ 0'-0"	22+12
⑥ 0'-0"	24+70
⑦ 0'-0"	25+32

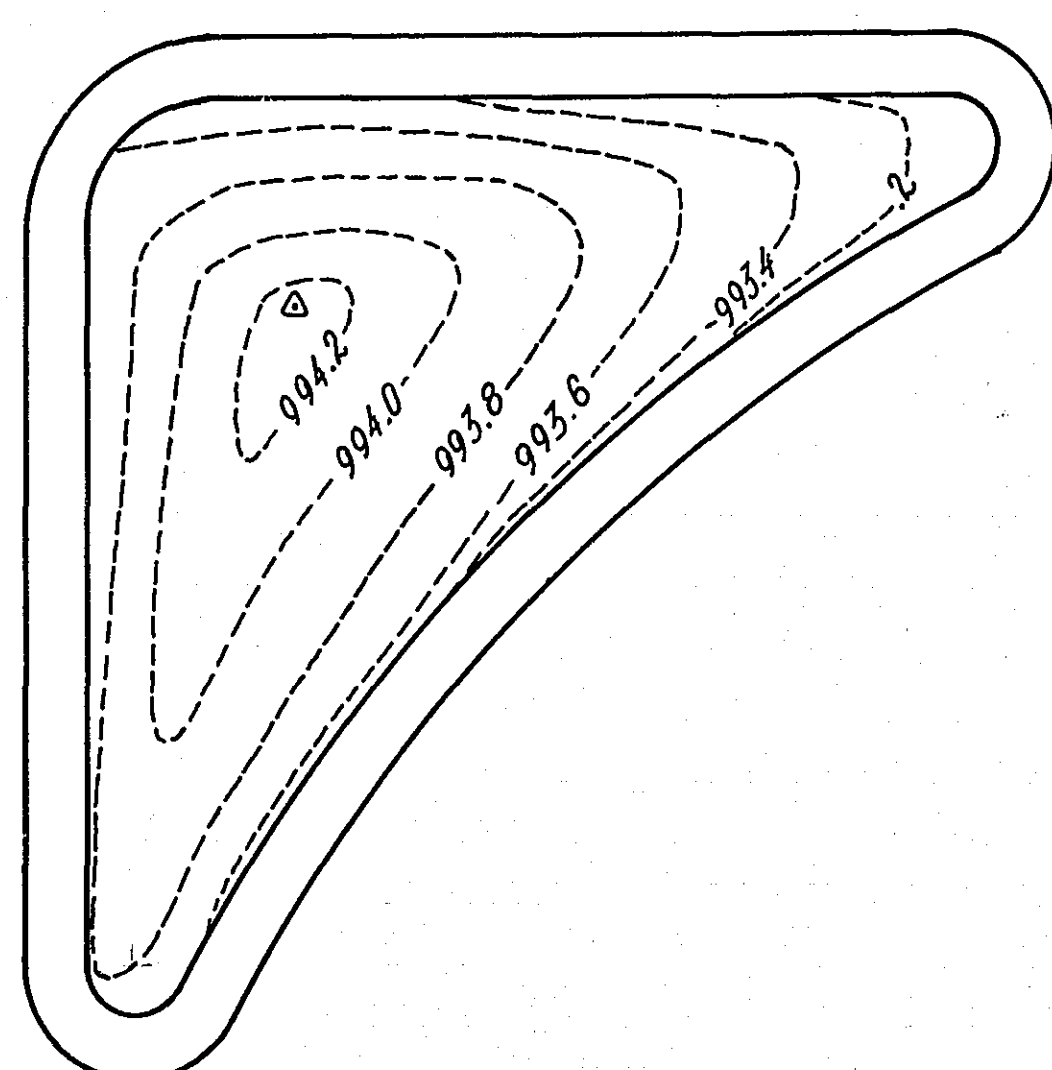
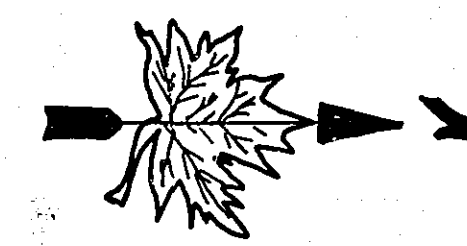
VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
MISCELLANEOUS DETAILS

VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
SP 62-668-10
EHS-T 5007 (008)
SP 62-668-11
EHS-S 6363 (2) 19-106

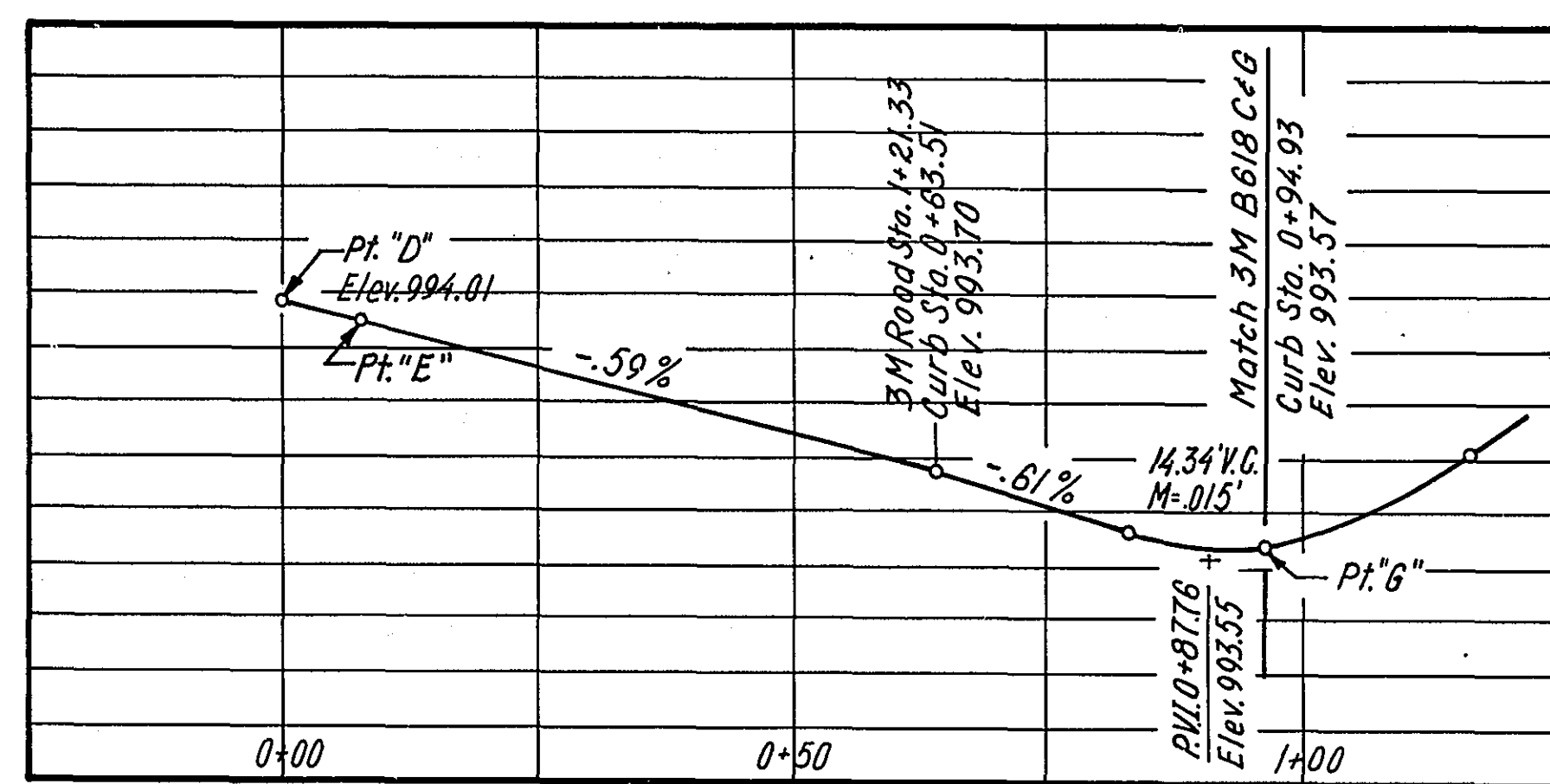
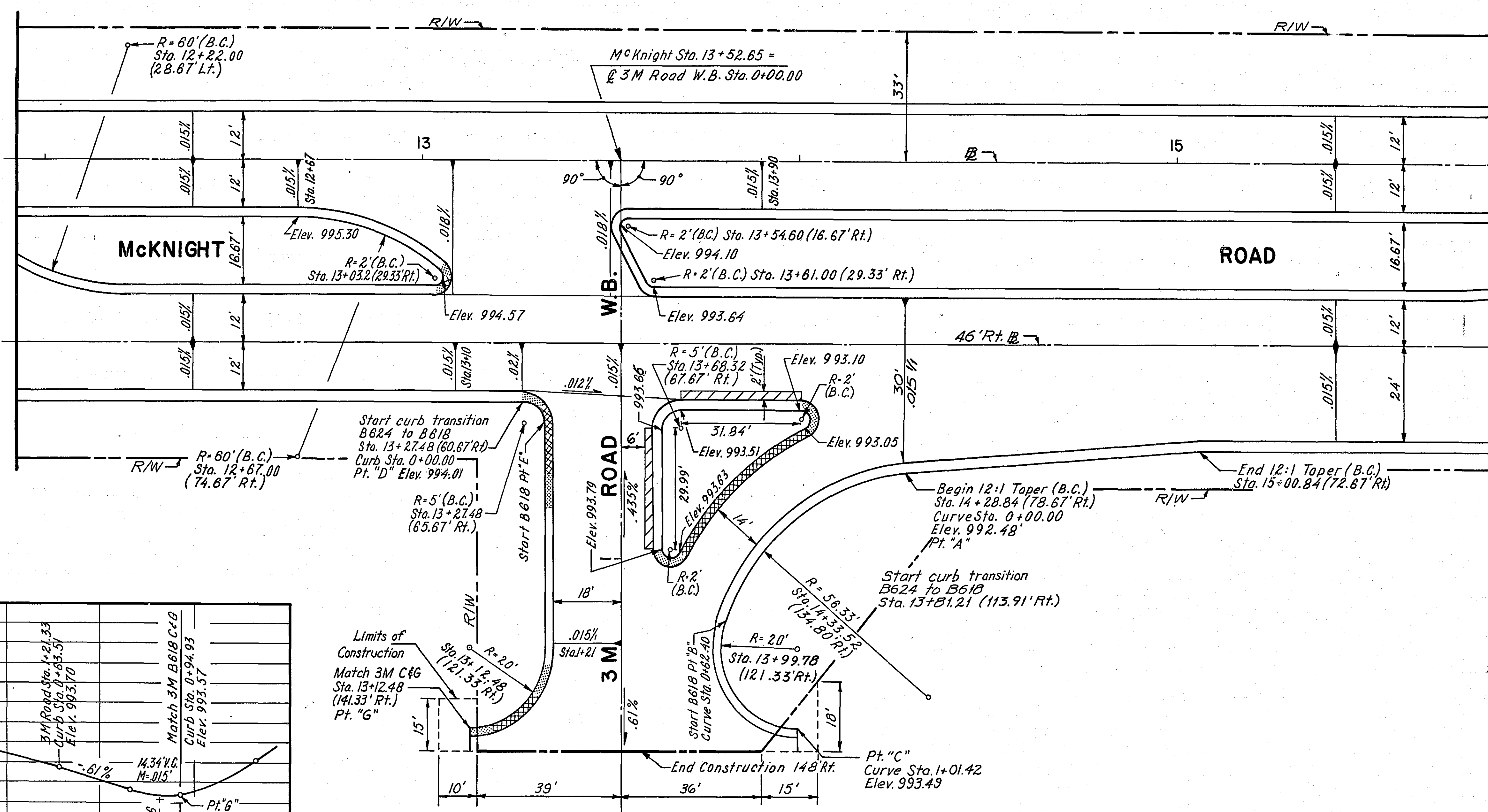
HOWARD NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB

SHEET 9 OF 37 SHEETS

NO.	DATE	DESCRIPTION	APPR'D.
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2	5-5-72	CHECKED	MAJ
3	5-7-72	APPR'D.	JOM

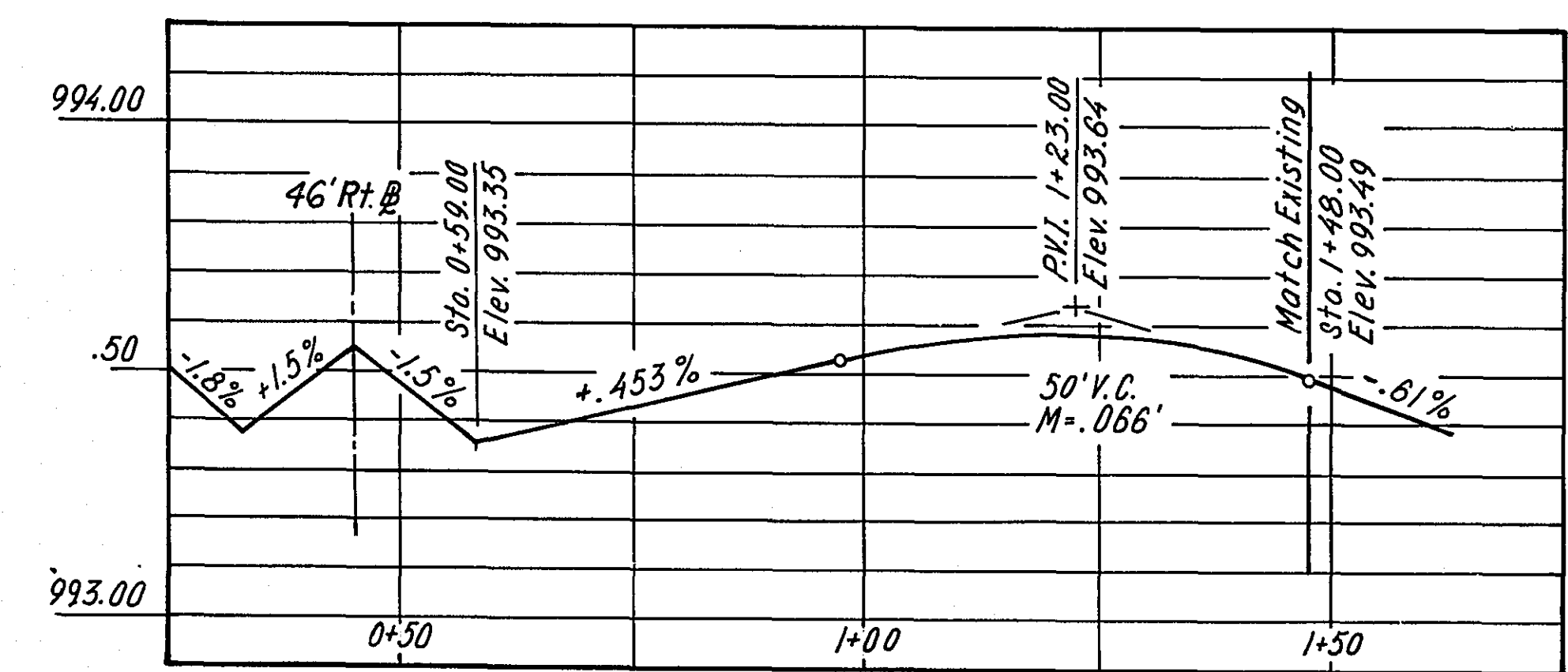


MEDIAN GRADING PLAN
1" = 10'

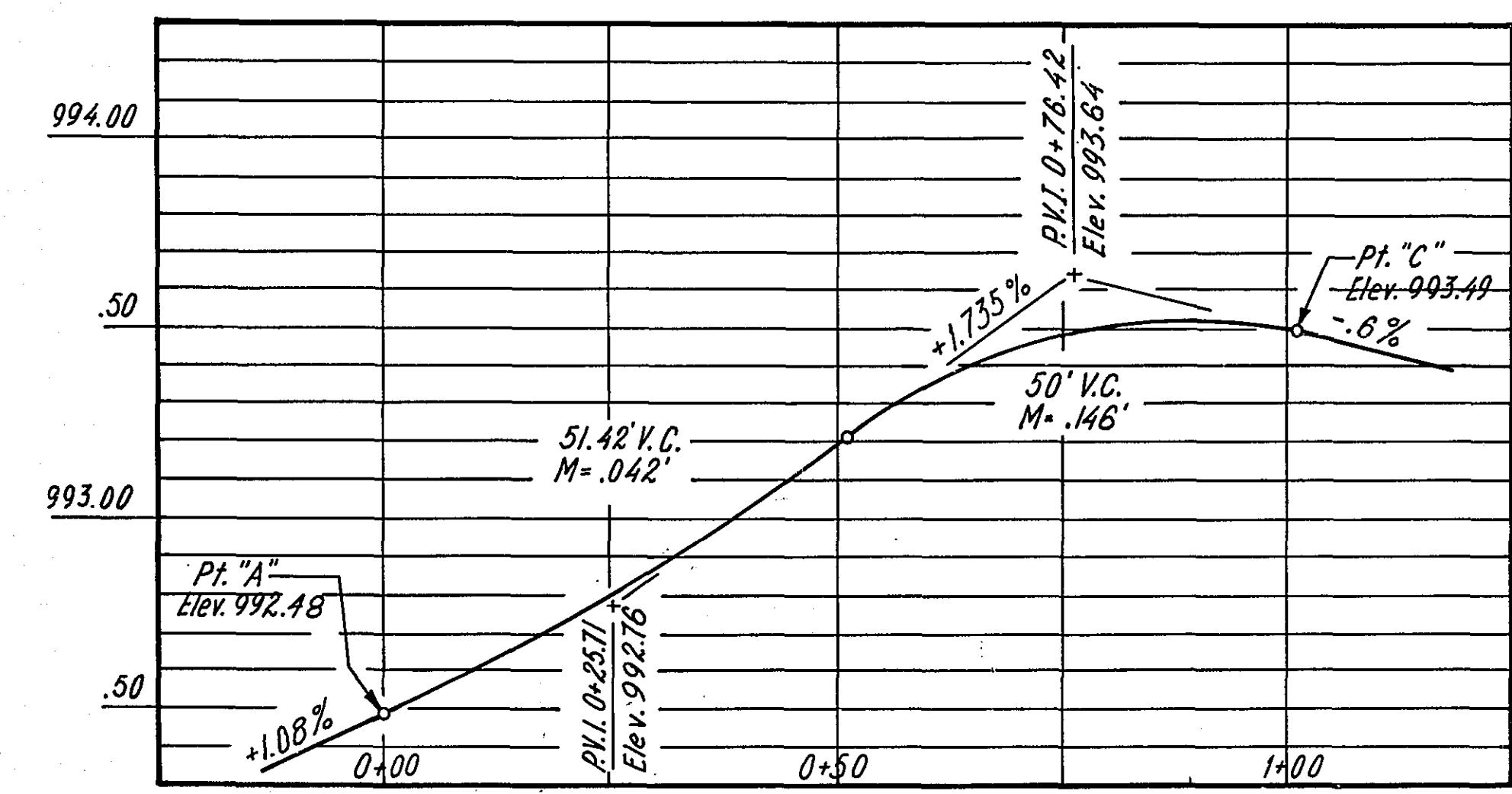


Back edge of curb profile
D = 60.87' Rt. Sta. 13+27.48
G = 141.33' Rt. Sta. 13+12.48

PROFILE D TO G



3M ROAD PROFILE



Back edge of curb profile
A = 78.87' Rt. Sta. 14+28.84
C = 141.33' Rt. Sta. 13+99.78

PROFILE A TO C.

- Notes:
- Transition B624 from standard 3/4" to outflow slope.
 - Gutter slope to be same as roadway cross slope.
 - All radius dimensions are to back of curb.

20'
SCALE

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JA KG
DATE: 1-26-77

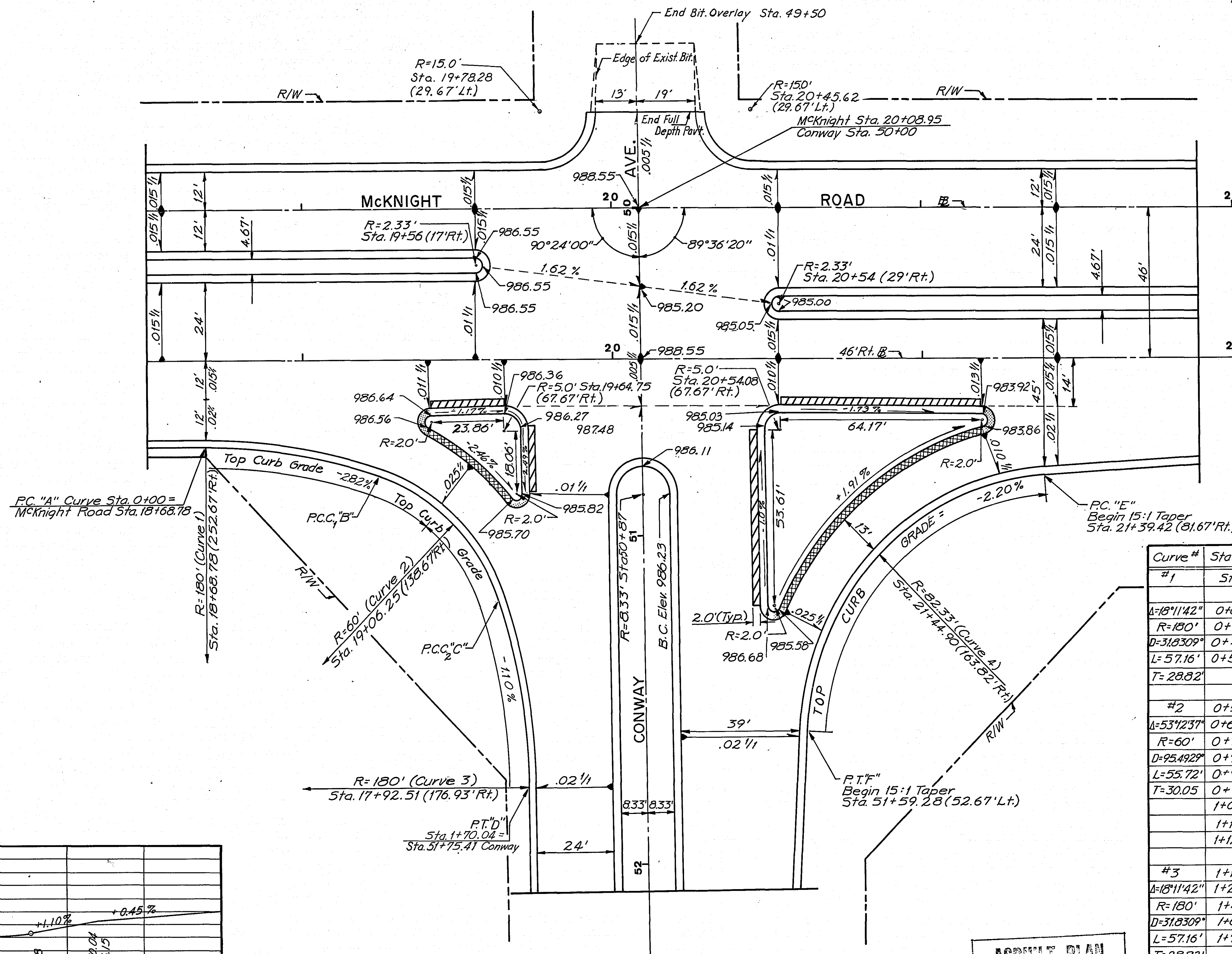
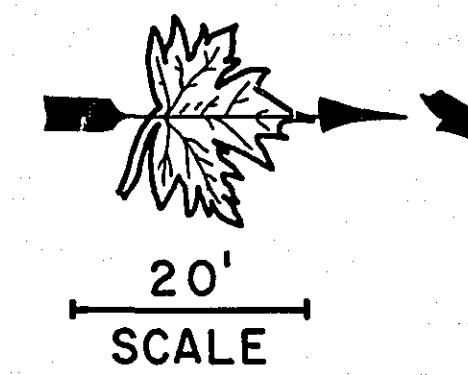
			BY	DATE
			MADE	GS 5-3-72
			CHECKED	RL 5-5-72
NO.	DATE	DESCRIPTION	APPR'D.	
		REVISIONS	APPR'D.	JOM 5-7-72

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
3M ROAD W.B.
INTERSECTION GEOMETRICS

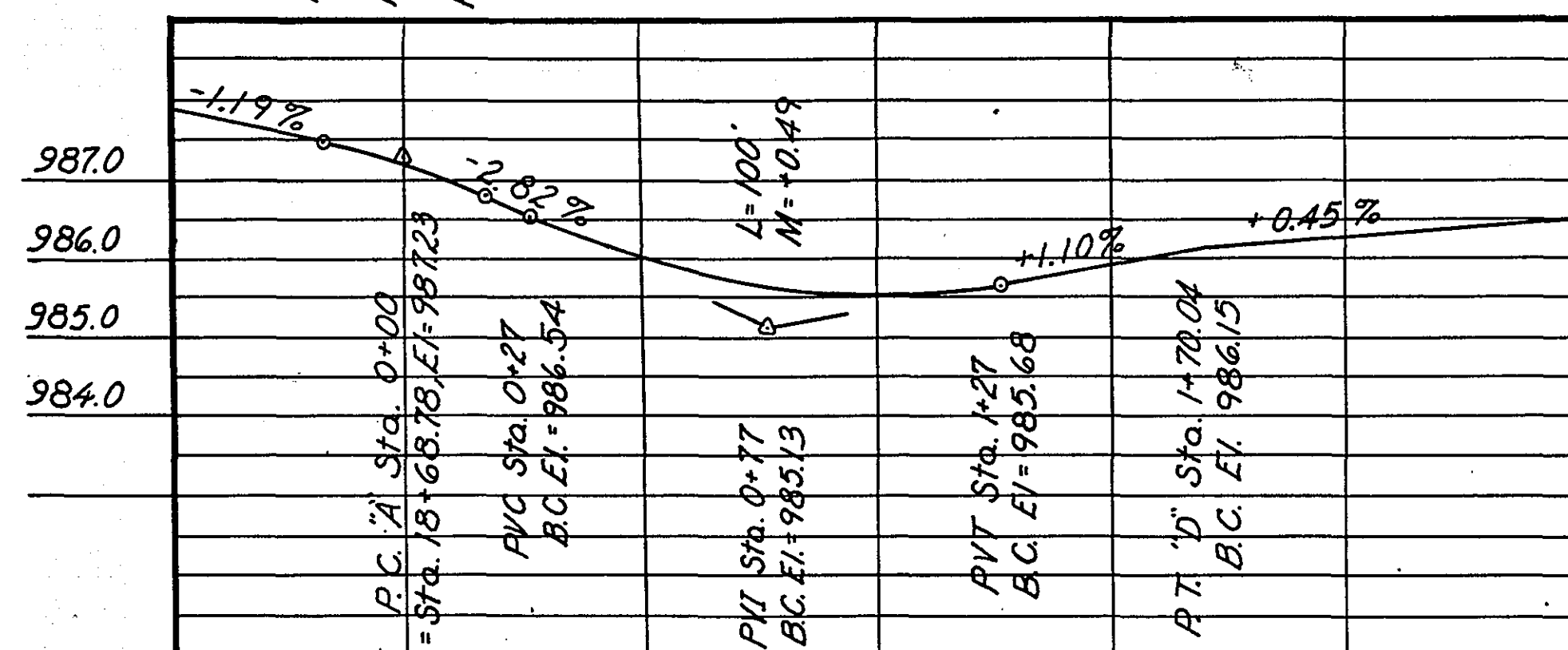
VILLAGE OF MAPLEWOOD PROJECT 72-5
FAS: SP 62-668-II
EHS-S 6363 (2)

HOWARD NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
HNTB

SHEET 10 OF 37 SHEETS



P.V.C. Sta. 18+51.78
E.I. = 987.50
P.V.I. Sta. 18+68.78, E.I. = 987.30
L = 34.00', M = -0.7'
P.V.T. Sta. 0+17, E.I. = 986.82



Back edge of curb profile
A = 72.67' Rt., McKnight Sta. 18+68.78
D = 37.67' Rt., Conway Sta. 51+75.41

PROFILE A TO D

NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
				MADE	MK 5-4-72
				CHECKED	RLL 5-5-72
				APPR'D.	JOM 5-7-72
REVISIONS					

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: J.A. K.G.
DATE: 1-26-77

Notes:

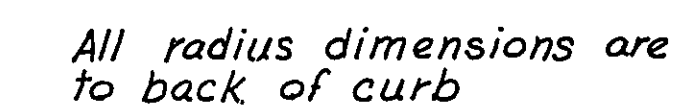
- Transition B624 from standard 3/4" ft. to outflow slope.
- Gutter slope to be same as roadway cross slope.
- All radius dimensions are to back of curb.

Curve #	Station	Grade	Elevation	Point	Defl. Δ	Σ Defl. Δ	Chord Dist.	Remark
#1	Sta. 0+00 = McKnight Sta. 18+68.78							
	0+00		987.23	P.C.				π on P.C. A
	0+20	-2.82%	986.74		3°10'59"	3°10'59"	20.00'	backsite on
	0+40		986.20		3°10'59"	6°21'58"	20.00'	Curbline,
	0+57.16		985.88	P.C.C.	2°43'53"	9°05'51"	17.16'	Plunge & Set P.I.
	T=28.82							
#2	0+57.16		985.88	P.C.C.1				
	0+60	-2.32%	985.82		1°21'22"	1°21'22"	2.84'	π on P.C.C.
	0+70		985.69		4°46'29"	6°07'51"	10.00'	backsite
	0+77		985.62	P.V.I.	3°20'32"	9°28'23"	7.00'	on P.I.
	0+90		985.54		6°12'26"	15°40'49"	13.00'	plunge &
	0+98.94		985.52	C.B.	4°18'59"	19°59'48"	8.94'	set P.I.
	1+00	+1.10%	985.52		0°27'30"	20°27'18"	1.06'	
	1+10		985.55		4°46'29"	25°13'47"	10.00'	
	1+12.88		985.56	P.C.C.2	1°22'31"	26°36'18"	2.88'	
#3	1+12.88		985.56	P.C.C.2				π on P.C.C.
	1+20		985.61		1°08'00"	1°08'00"	7.12'	backsite
	1+40	+1.10%	985.82		3°10'59"	4°18'59"	20.00'	on P.I.
	1+60		986.04		3°10'59"	7°29'58"	20.00'	
	1+70.04		986.15	P.T.	1°35'53"	9°05'51"	10.04'	
	T=28.82							
	Sta. 1+70.04 = Conway Sta. 51+75.41							
#4	0+00 = McKnight Sta. 21+39.42							
	0+00		983.15	P.C.				π on P.C.
	0+20		983.59		6°57'33"	6°57'33"	20.00'	backsite
	0+40		984.03		6°57'33"	13°55'06"	20.00'	on Curb,
	0+60	+2.20%	984.47		6°57'33"	20°52'39"	20.00'	plunge
	0+80		984.91		6°57'33"	27°50'12"	20.00'	
	1+00		985.35		6°57'33"	34°47'45"	20.00'	
	1+18.93		985.77	P.T.	6°35'13"	41°22'58"	18.93'	
	Sta. 1+18.93 = Conway Sta. 51+59.28							

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
CONWAY AVENUE
INTERSECTION GEOMETRICS

VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
MICROFILMED SP 62-668-10
EHS-T 5007 (008) 19-106

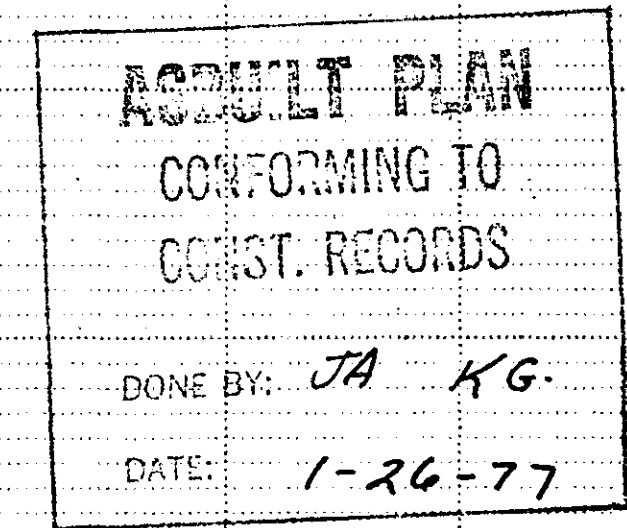
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB



NOTE
All 2" Ornamental Lighting Conduit
[-----] Shall Have 18" Cover And Be
Placed 2' Behind The Curb At
The Radius Points Of Each Inter-
section And Driveway.

PLAN ELEVATION = 3M DATUM + 694.21

PLANNED CONSTRUCTION
30'

[illegible]

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE

VILLAGE OF MAPLEWOOD PROJECT 72-5

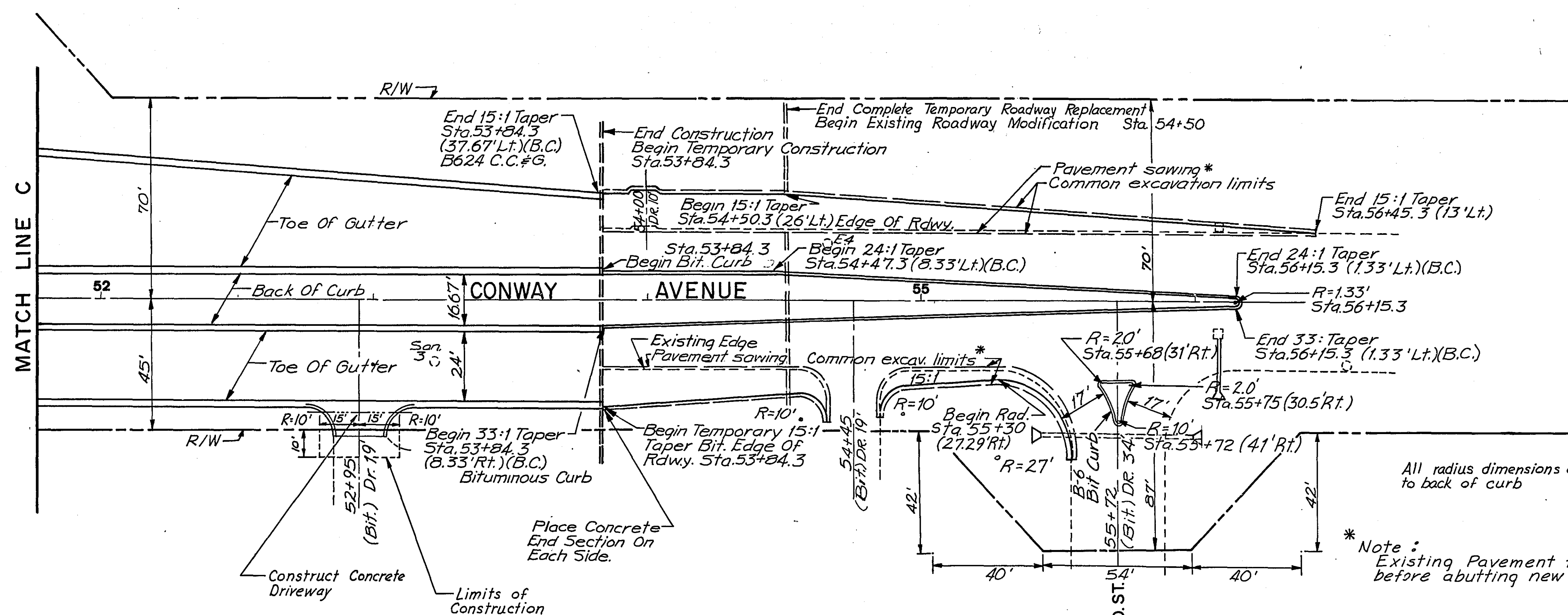
TOPICS:
SP 62-668-10
EHS-T 5007 (008)

PLANNED CONSTRUCTION

HOWARD, NEEDLES TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

HNTB

SHEET 14 OF 37 SHEETS



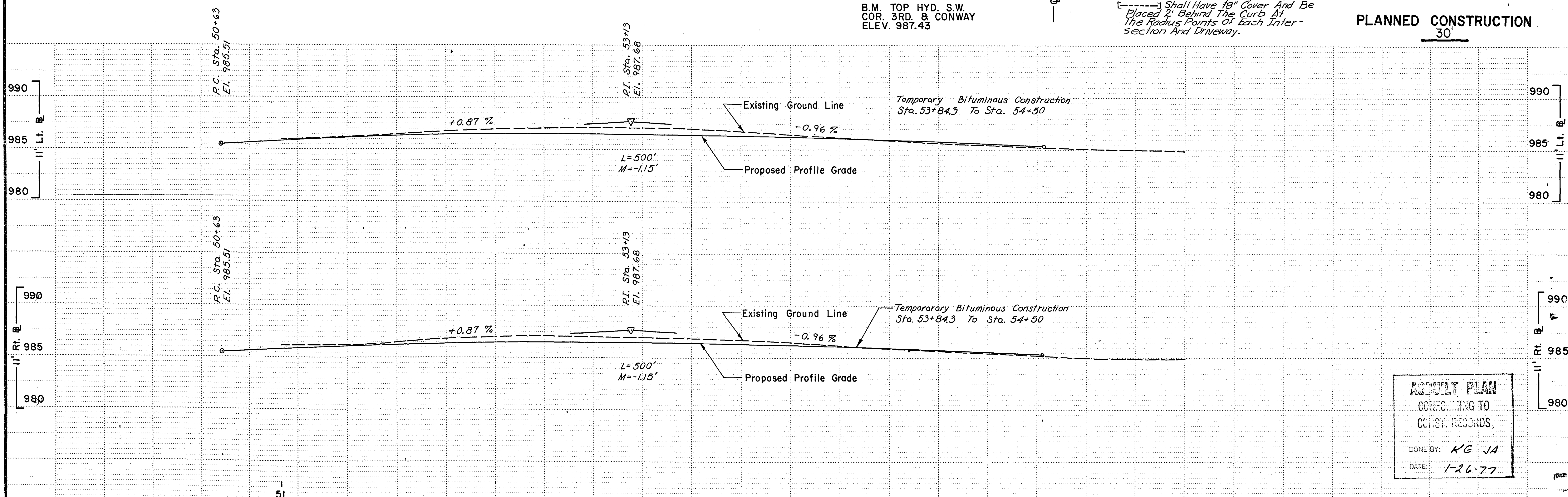
* Note :
Existing Pavement to be Sawed
before abutting new bituminous pavement.

B.M. TOP HYD. S.W.
COR. 3RD. & CONWAY
ELEV. 987.43

NOTE:
All 2" Ornamental Lighting Conduit
[-----] Shall Have 18" Cover And Be
Placed 2' Behind The Curb At
The Radius Points Of Each Inter-
section And Driveway.

PLAN ELEVATION = 3M DATUM + 694.21

PLANNED CONSTRUCTION
30'



DONE BY: *KG JA*
DATE: *1-26-7-*

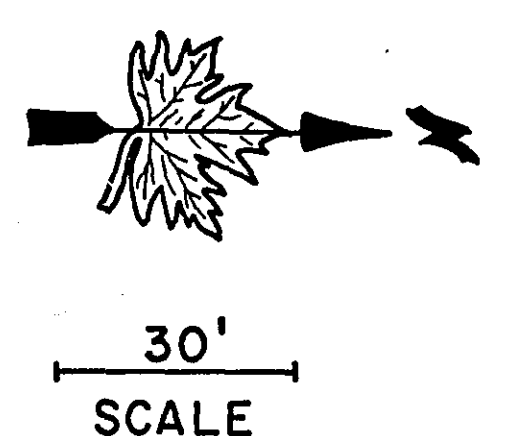
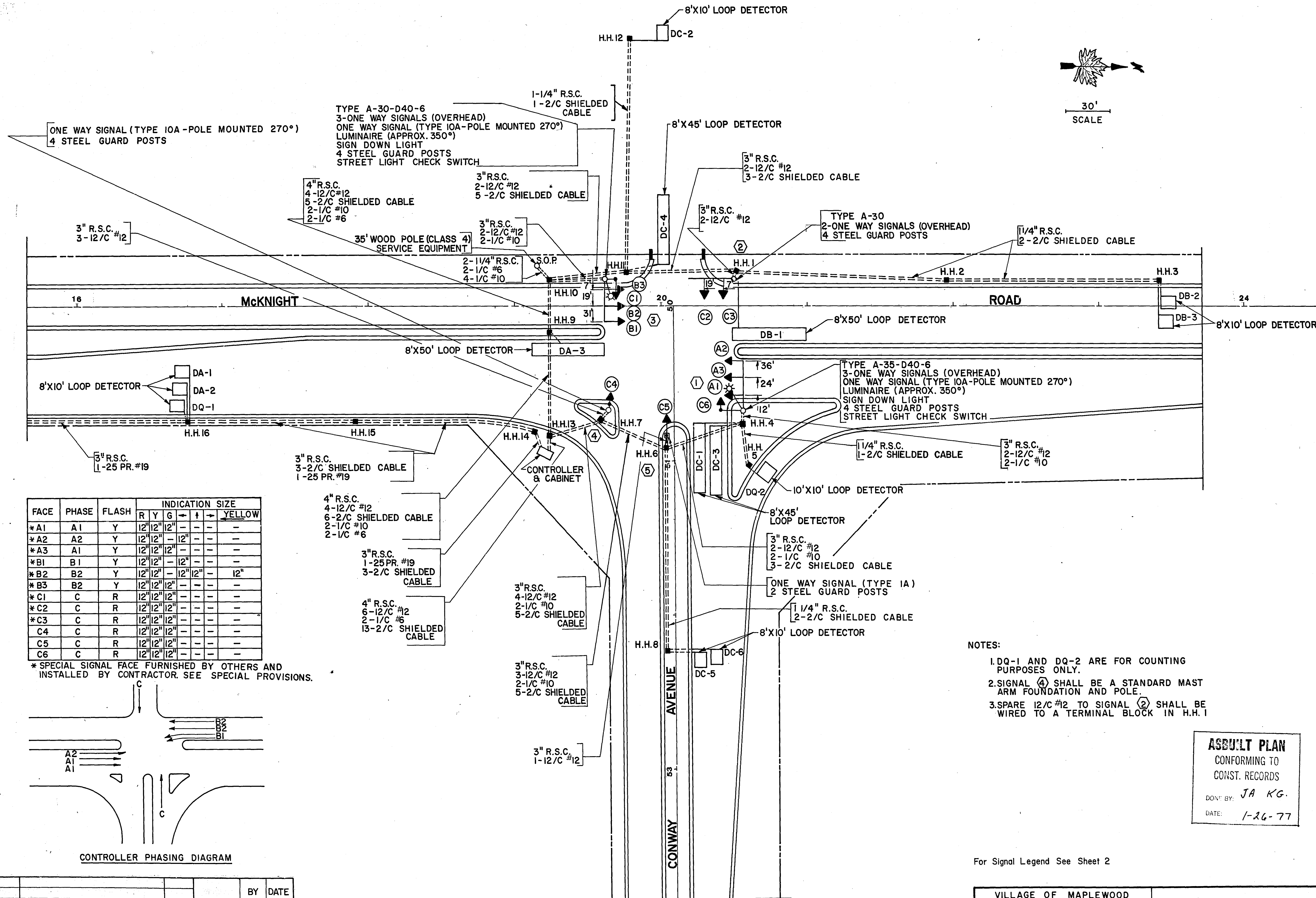
							BY	DATE
							MADE	MK 5-4-72
							CHECKED	TLM 5-5-72
NO.	DATE	DESCRIPTION			APPR'D.		APPR'D.	JOM 5-5-72
REVISIONS								

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND CONWAY AVENUE
PLANNED CONSTRUCTION

VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
~~WATER MAIN~~ SP 62-668-10
~~WATER MAIN~~ EHS-T 5007 (008)

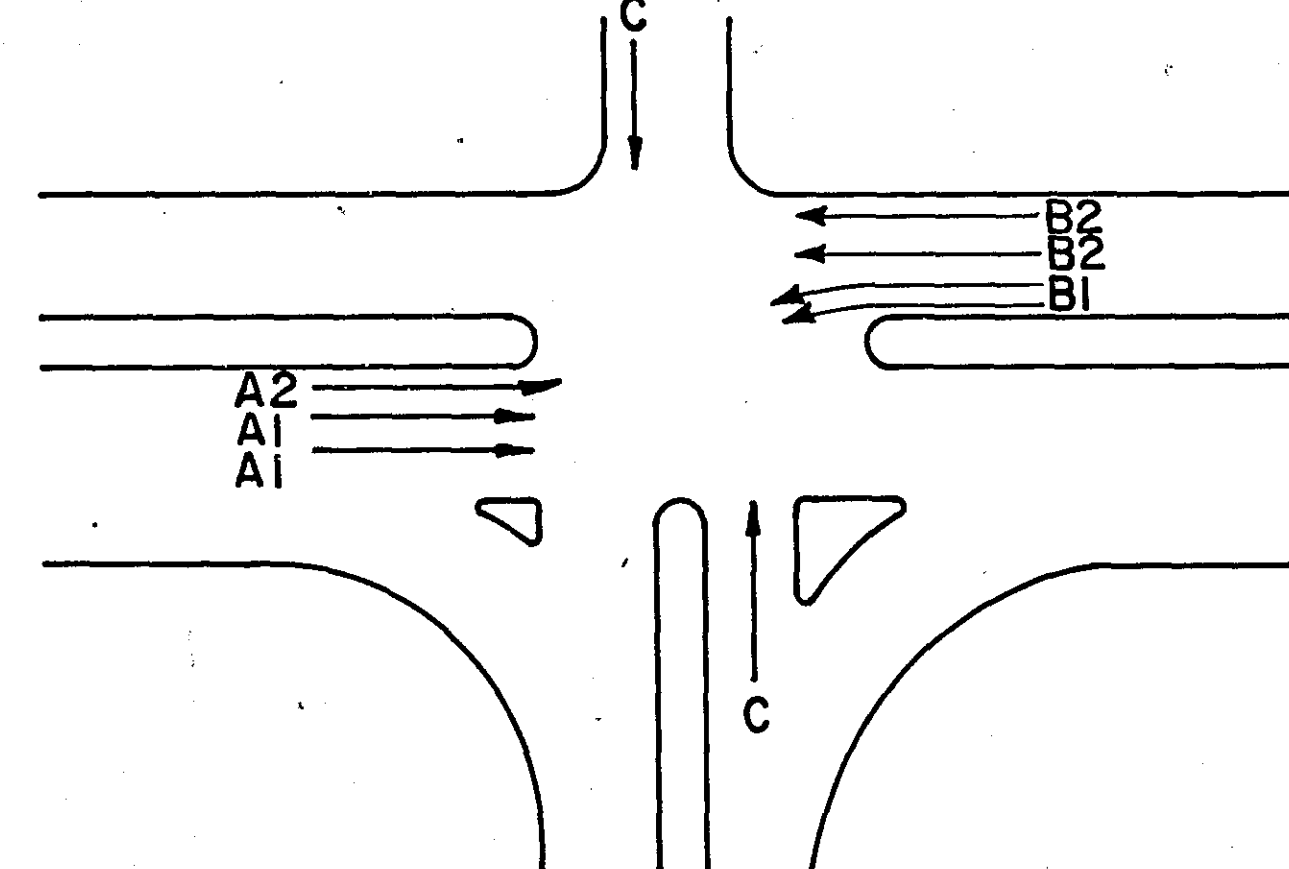
HOWARD. NEEDLES. TAMMEN & BERGENDOFF
CONSULTING ENGINEERS | HNTB

SHEET 15 OF 37 SHEETS



FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	→	YELLOW
*A1	A1	Y	12"	12"	12"	-	-	-
*A2	A2	Y	12"	12"	-	12"	-	-
*A3	A1	Y	12"	12"	12"	-	-	-
*B1	B1	Y	12"	12"	-	12"	-	-
*B2	B2	Y	12"	12"	-	12"	12"	-
*B3	B2	Y	12"	12"	12"	-	-	-
*C1	C	R	12"	12"	12"	-	-	-
*C2	C	R	12"	12"	12"	-	-	-
*C3	C	R	12"	12"	12"	-	-	-
C4	C	R	12"	12"	12"	-	-	-
C5	C	R	12"	12"	12"	-	-	-
C6	C	R	12"	12"	12"	-	-	-

* SPECIAL SIGNAL FACE FURNISHED BY OTHERS AND INSTALLED BY CONTRACTOR. SEE SPECIAL PROVISIONS.



CONTROLLER PHASING DIAGRAM

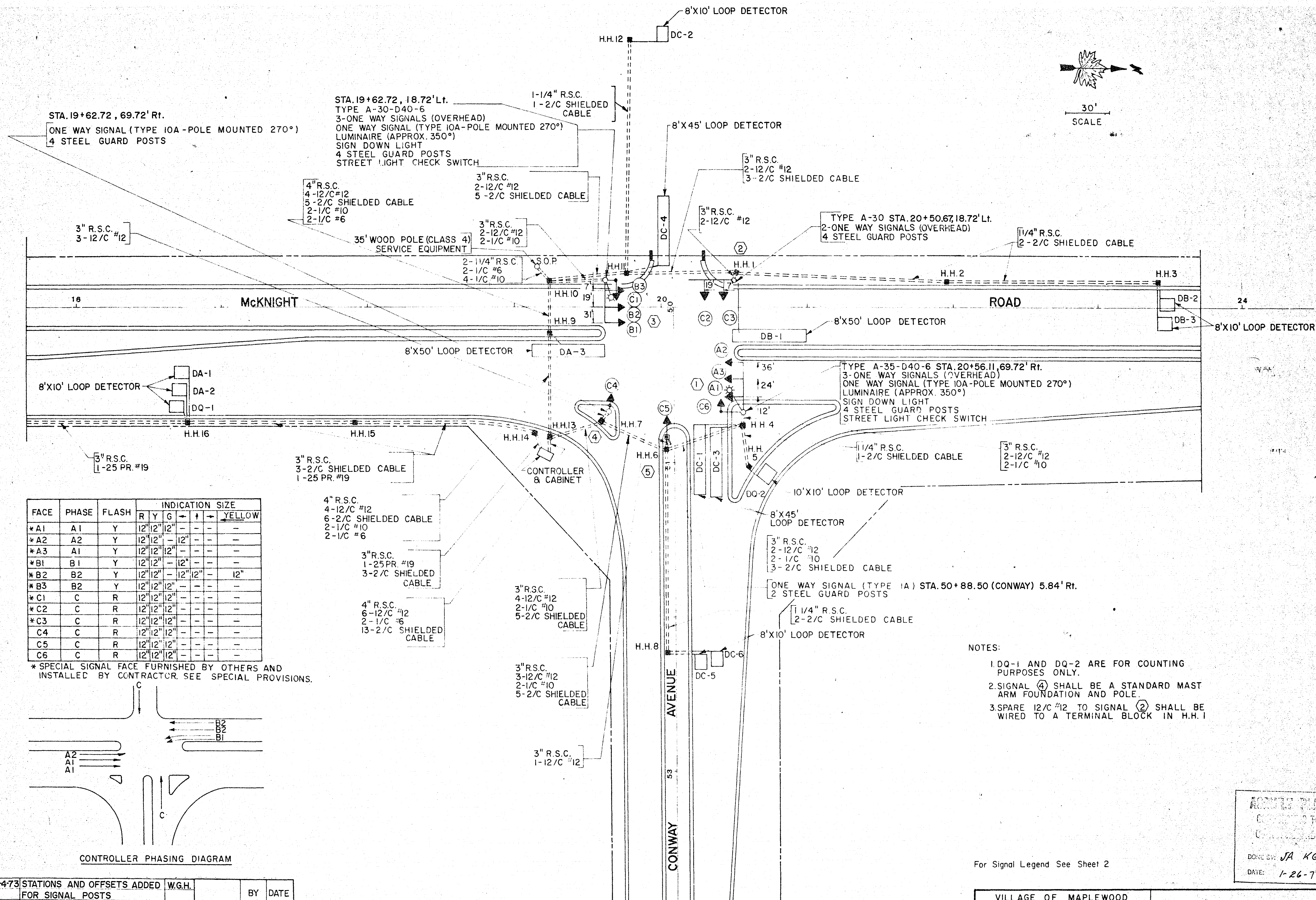
			BY	DATE
		MADE	LDH	4-21-72
		CHECKED	WGH	5-7-72
NO.	DATE	DESCRIPTION	APPR'D.	WGH
		REVISIONS		5-7-72

- NOTES:
1. DQ-1 AND DQ-2 ARE FOR COUNTING PURPOSES ONLY.
 2. SIGNAL ④ SHALL BE A STANDARD MAST ARM FOUNDATION AND POLE.
 3. SPARE 12/C #12 TO SIGNAL ② SHALL BE WIRED TO A TERMINAL BLOCK IN H.H. 1

ASBUILT PLAN
 CONFORMING TO
 CONST. RECORDS
 DRAWN BY: JA K.G.
 DATE: 1-26-77

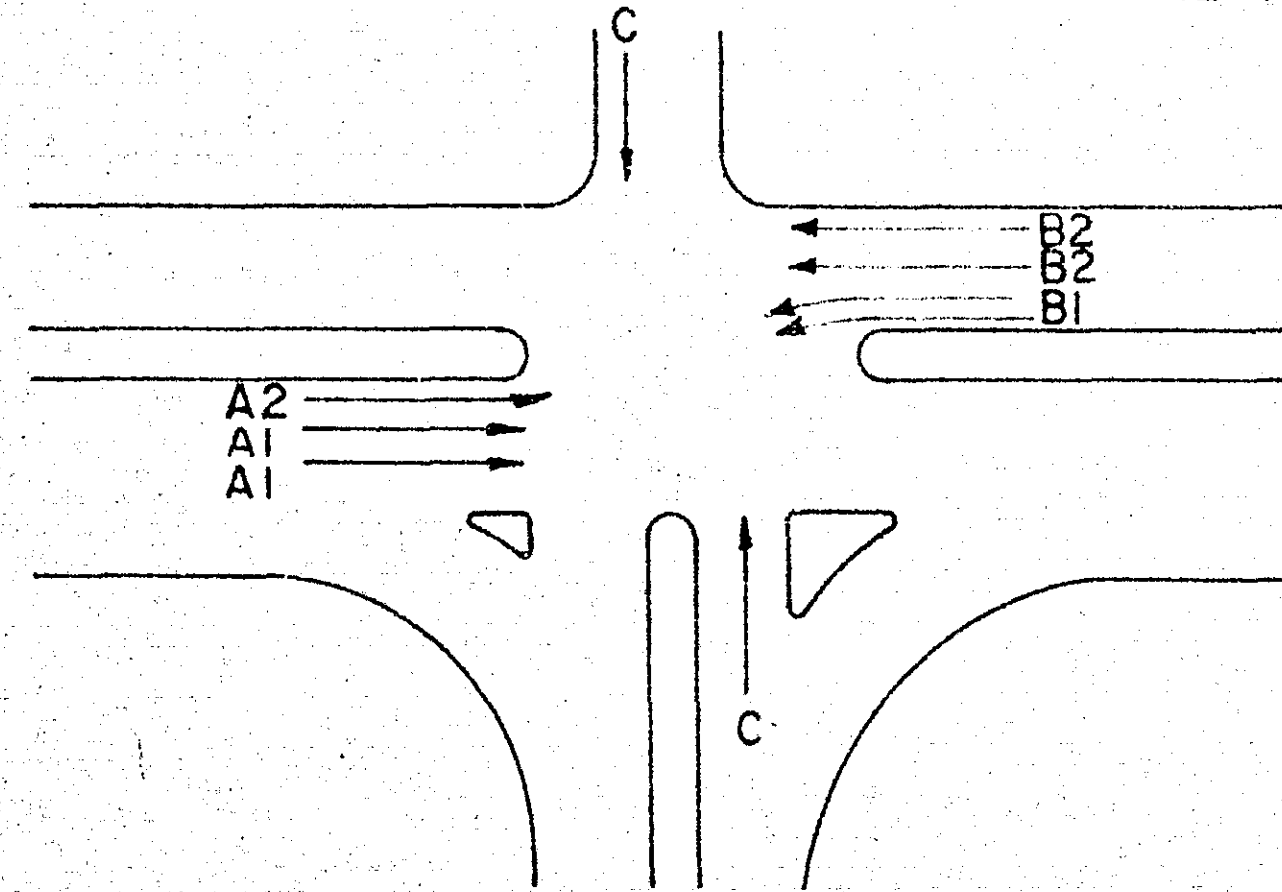
For Signal Legend See Sheet 2

VILLAGE OF MAPLEWOOD ENGINEERING DEPARTMENT McKNIGHT ROAD AND CONWAY AVENUE		VILLAGE OF MAPLEWOOD PROJECT 72-5 TOPICS:	
INTERSECTION LAYOUT (SYSTEM A)		SP 62-668-10 EHS-T 5007 (008)	
HOWARD, NEEDLES, TAMMEN & BERGENDOFF CONSULTING ENGINEERS		HNTB	
SHEET 16 OF 37 SHEETS			



FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	→	YELLOW
*A1	A1	Y	12"	12"	12"	-	-	-
*A2	A2	Y	12"	12"	12"	-	-	-
*A3	A1	Y	12"	12"	12"	-	-	-
*B1	B1	Y	12"	12"	12"	-	-	-
*B2	B2	Y	12"	12"	12"	-	-	12"
*B3	B2	Y	12"	12"	12"	-	-	-
*C1	C	R	12"	12"	12"	-	-	-
*C2	C	R	12"	12"	12"	-	-	-
*C3	C	R	12"	12"	12"	-	-	-
C4	C	R	12"	12"	12"	-	-	-
C5	C	R	12"	12"	12"	-	-	-
C6	C	R	12"	12"	12"	-	-	-

* SPECIAL SIGNAL FACE FURNISHED BY OTHERS AND INSTALLED BY CONTRACTOR. SEE SPECIAL PROVISIONS.



NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
1	4-4-73	STATIONS AND OFFSETS ADDED FOR SIGNAL POSTS		MADE	LDH 4-21-72
				CHECKED	WCH 5-7-72
				APPR'D.	WCH 5-7-72
REVISIONS					

For Signal Legend See Sheet 2

VILLAGE OF MAPLEWOOD ENGINEERING DEPARTMENT McKNIGHT ROAD AND CONWAY AVENUE	VILLAGE OF MAPLEWOOD PROJECT 72-5 TOPICS: MICROFILMED SP 62-668-10 RAMSEY CO. ENGR. EHS-T 5007 (008)
INTERSECTION LAYOUT (SYSTEM A)	
DATE: 1-26-77	

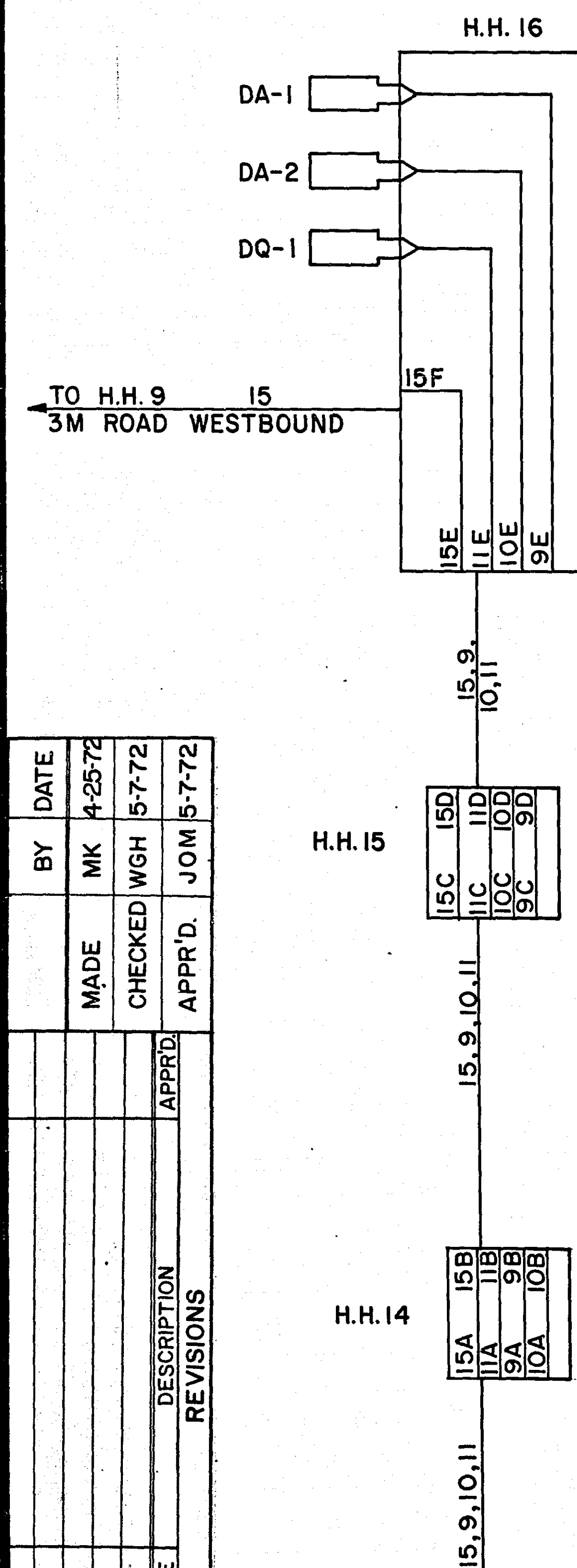
CONDUCTOR COLOR CODING

1	R
2	O
3	BL
4	WH
5	R/BL
6	O/BLK
7	BL/BLK
8	WH/BLK
9	BLK
10	BLK/WH
11	G/BLK
12	G

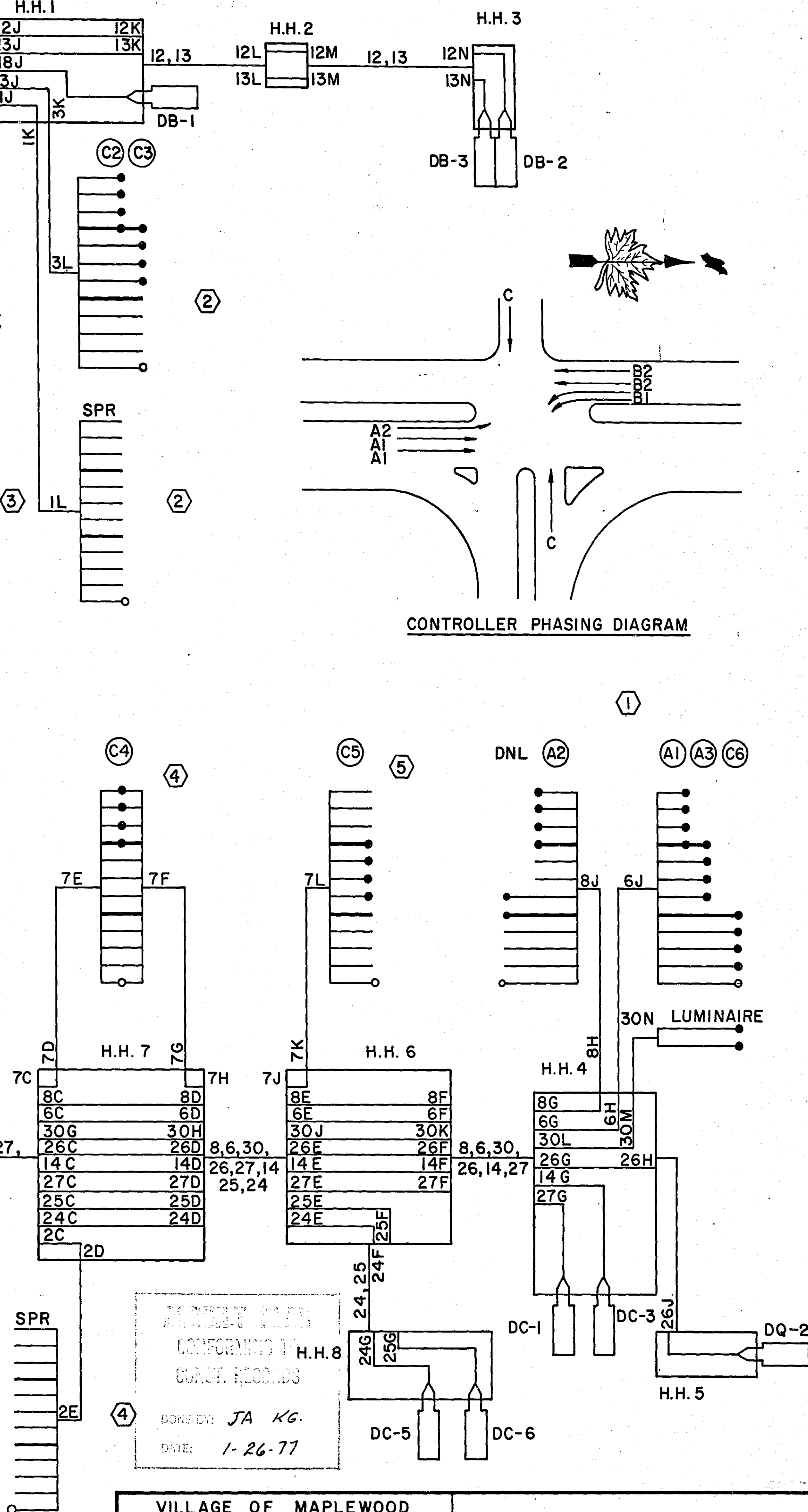
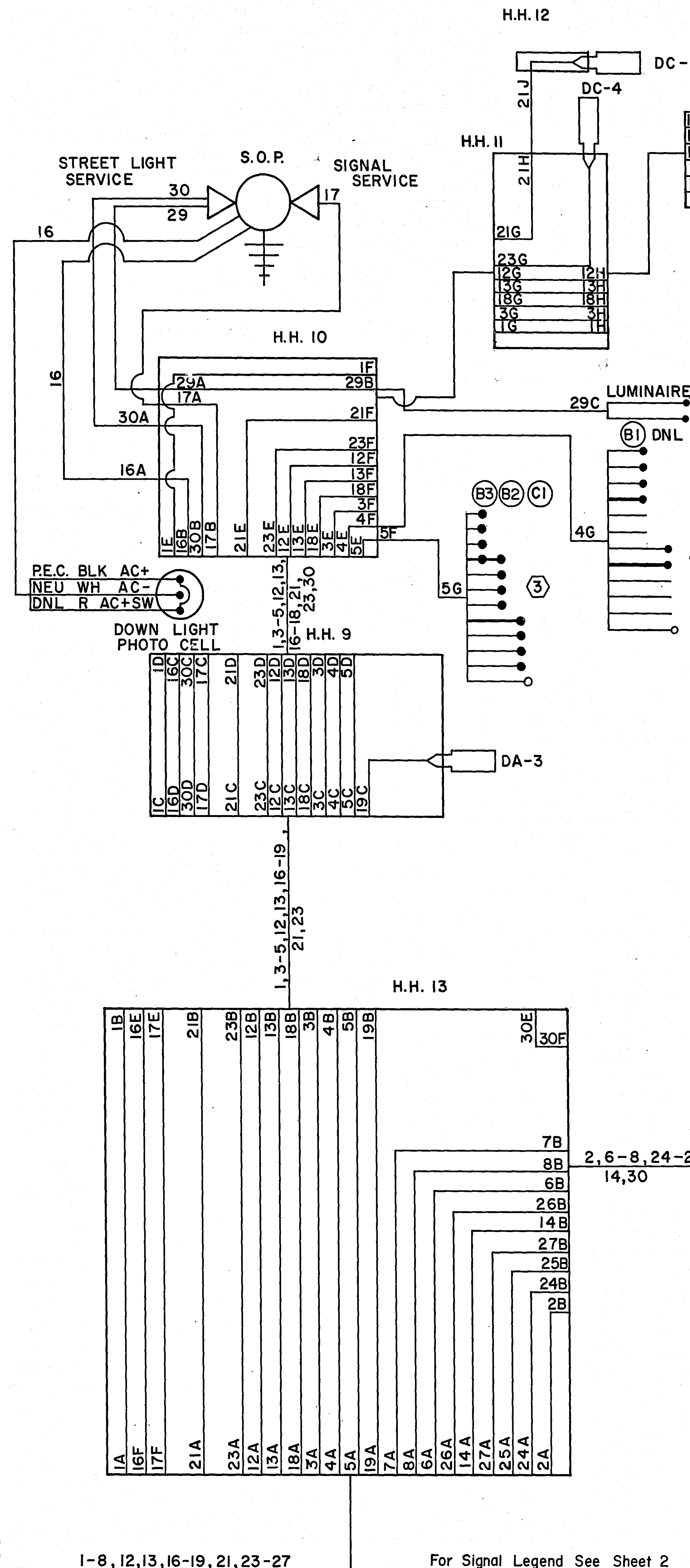
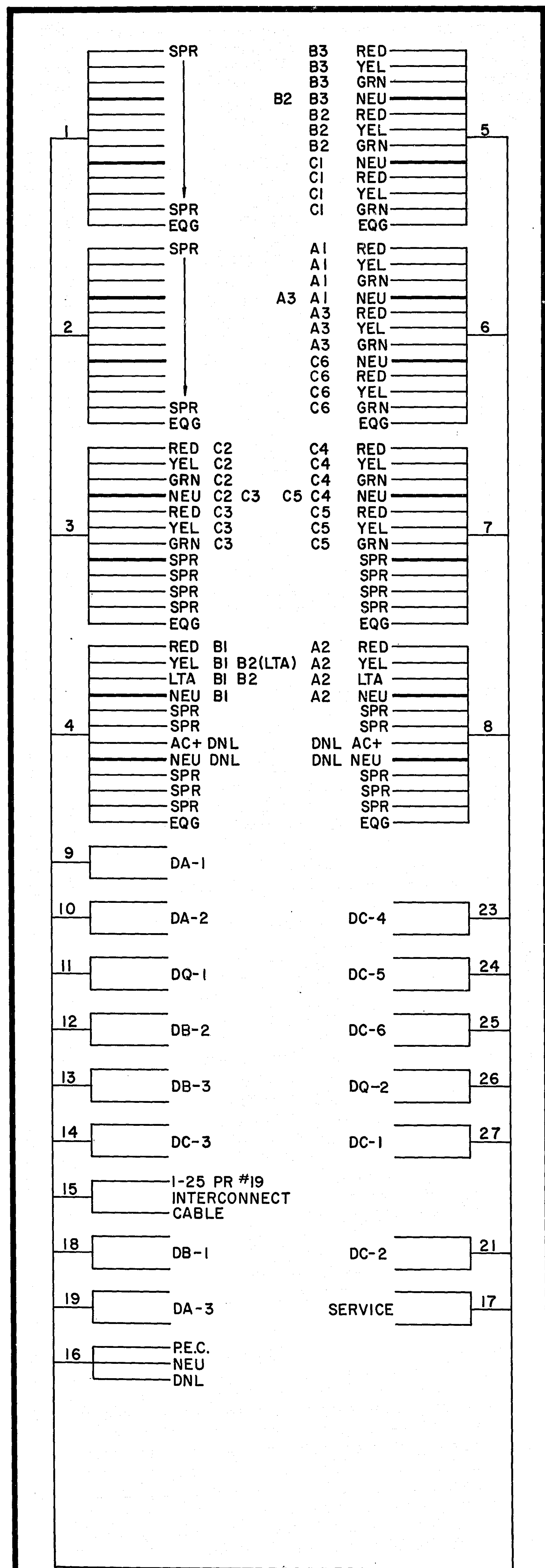
2/C	BLK
Shielded	CLEAR
Cable	BLK
2-1/C #6	RED
2-1/C #10	WH

NOTE: O- Equipment Ground To Base
Of Metal Poles

CONTROLLER CABINET



NO.	DATE	DESCRIPTION	REVISIONS
1	4-25-72	DATE	
2	5-7-72	BY	
3		MADE	
4		CHECKED	
5		WGH	
6		APPR'D.	
7		JOM	
8		5-7-72	

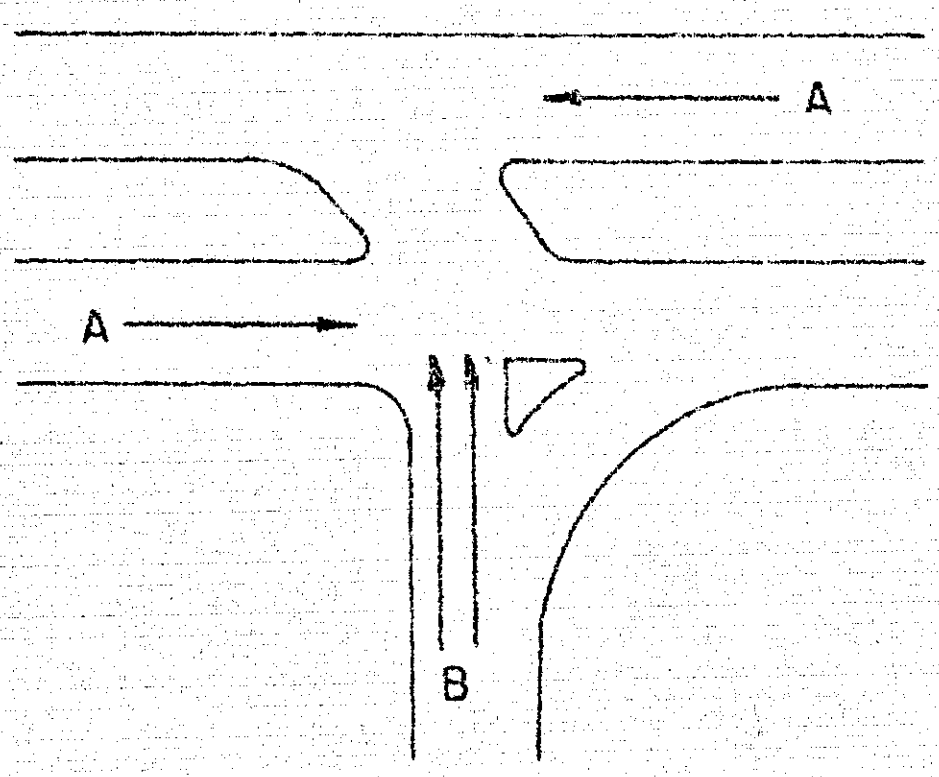
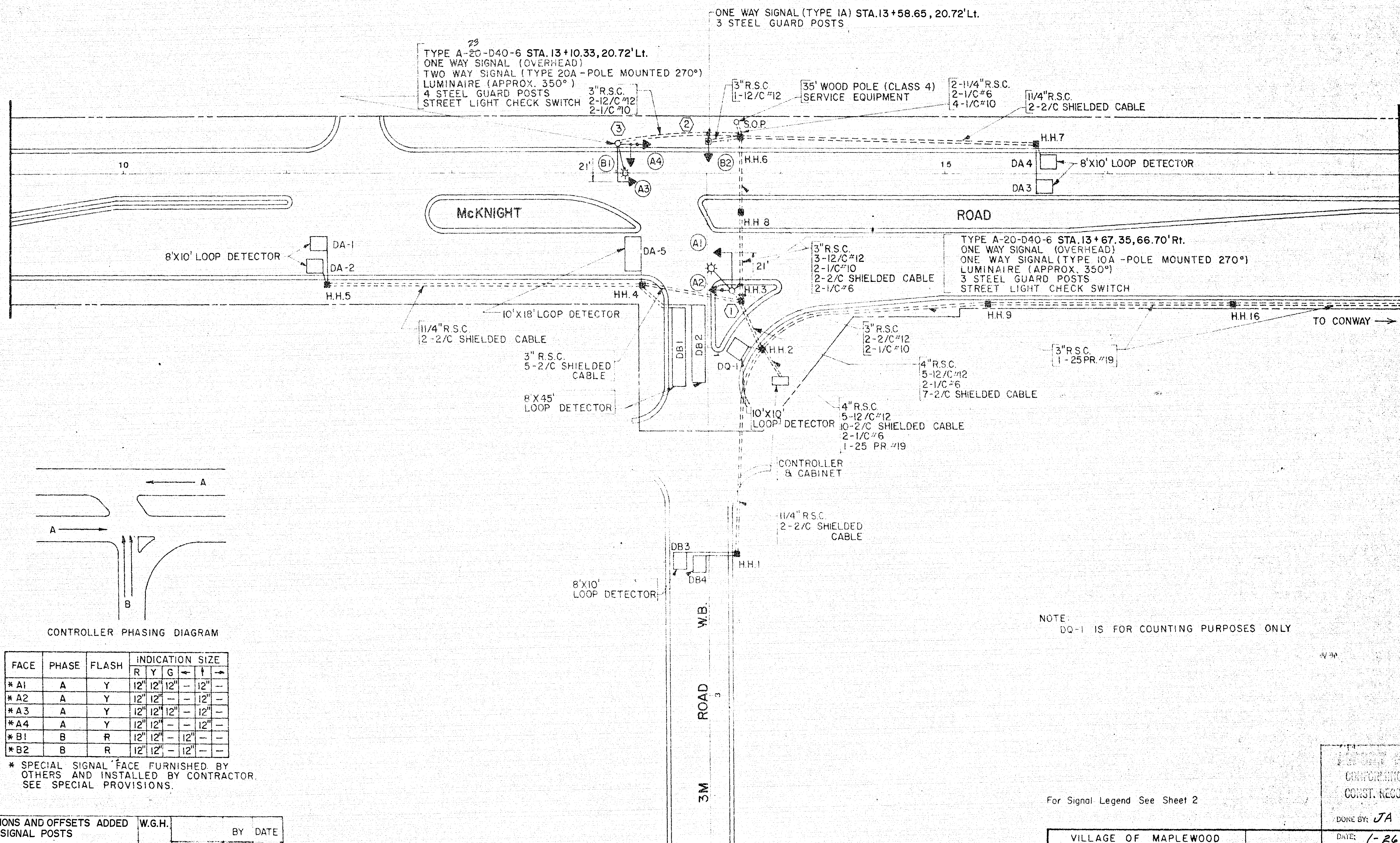
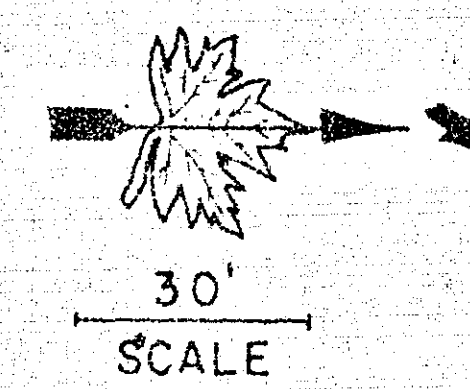


VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
MCKNIGHT ROAD AND CONWAY AVENUE
**FIELD WIRING DIAGRAM
(SYSTEM A)**

VILLAGE OF MAPLEWOOD PROJECT 72-5
TOPICS:
SP 62-668-10
EHS-T 5007 (008)
19-106

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS

SHEET 17 OF 37 SHEETS



CONTROLLER PHASING DIAGRAM

FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	↑	→
*A1	A	Y	12"	12"	12"	—	12"	—
*A2	A	Y	12"	12"	—	—	12"	—
*A3	A	Y	12"	12"	12"	—	12"	—
*A4	A	Y	12"	12"	—	—	12"	—
*B1	B	R	12"	12"	—	12"	—	—
*B2	B	R	12"	12"	—	12"	—	—

* SPECIAL SIGNAL FACE FURNISHED BY OTHERS AND INSTALLED BY CONTRACTOR. SEE SPECIAL PROVISIONS.

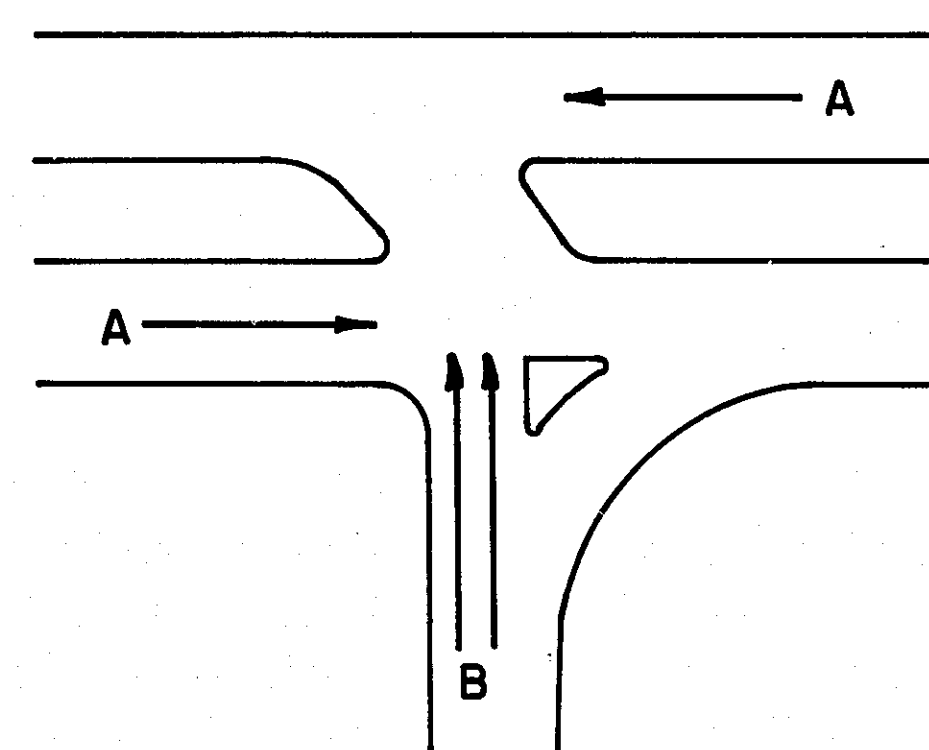
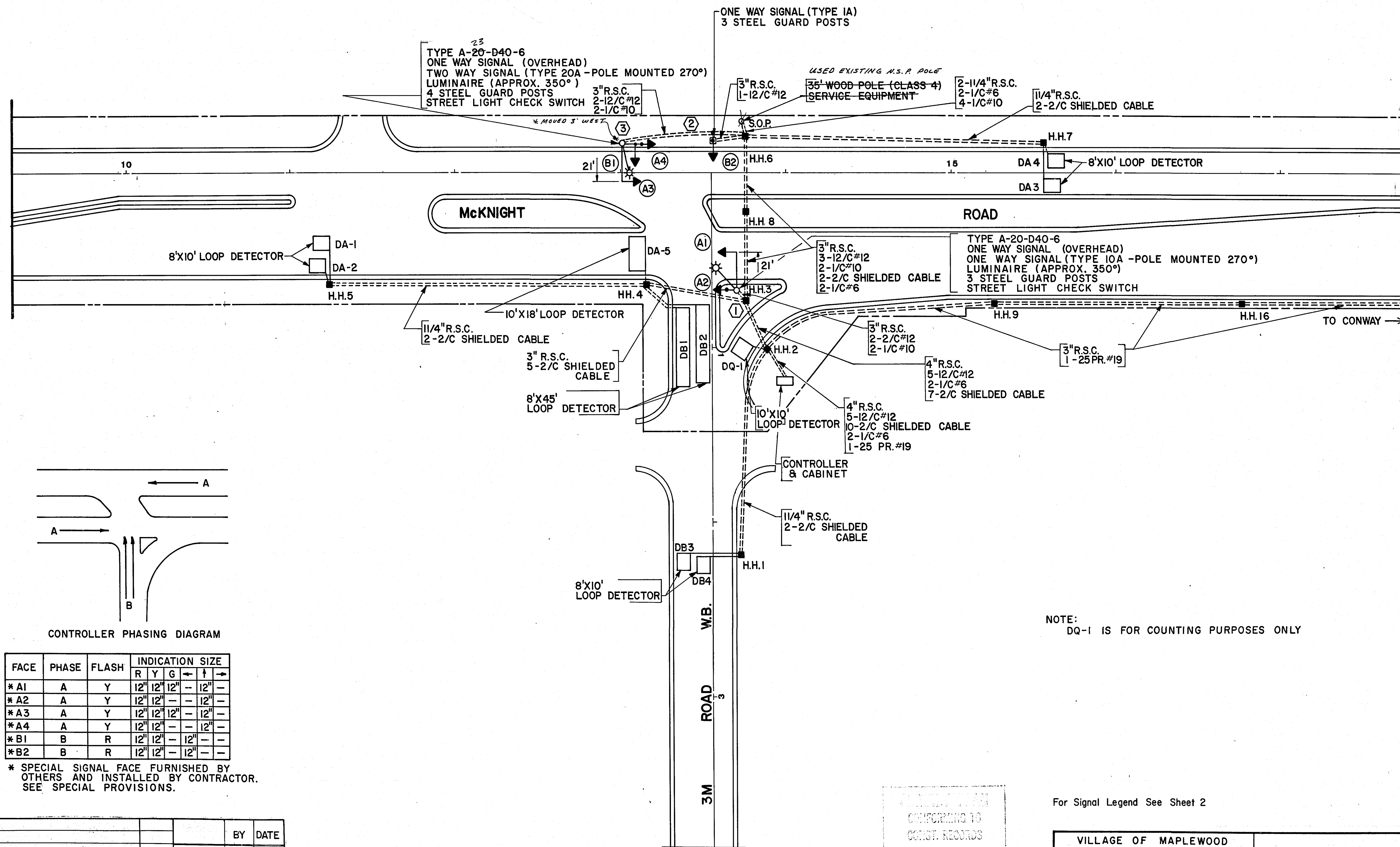
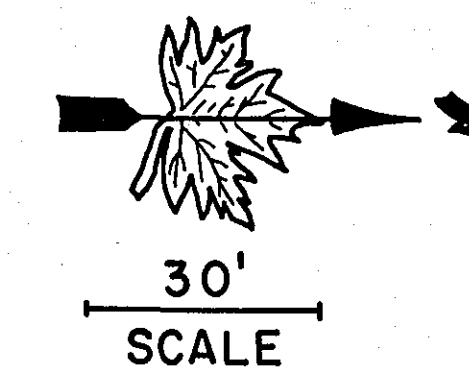
I 44-73 STATIONS AND OFFSETS ADDED FOR SIGNAL POSTS		W.G.H.	BY DATE
			MADE LDH 4-2-72
			CHECKED WGH 5-7-72
NO.	DATE	DESCRIPTION	APPR'D
REVISIONS			APPR'D WGH 5-7-72

For Signal Legend See Sheet 2

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND 3M ROAD W.B.
**INTERSECTION LAYOUT
(SYSTEM B)**

VILLAGE OF MAPLEWOOD PROJECT 72-5
FAS: SP 62-668-11
RAMSEY CO. ENGR
EHS-S 6363 (2)
19-106

DATE: 1-26-77
DONE BY: JA KG



CONTROLLER PHASING DIAGRAM

FACE	PHASE	FLASH	INDICATION SIZE			
			R	Y	G	SIZE
*A1	A	Y	12"	12"	12"	12"
*A2	A	Y	12"	12"	12"	12"
*A3	A	Y	12"	12"	12"	12"
*A4	A	Y	12"	12"	12"	12"
*B1	B	R	12"	12"	12"	12"
*B2	B	R	12"	12"	12"	12"

* SPECIAL SIGNAL FACE FURNISHED BY OTHERS AND INSTALLED BY CONTRACTOR. SEE SPECIAL PROVISIONS.

NOTE:
DQ-1 IS FOR COUNTING PURPOSES ONLY

CONFORMING TO
CONST. RECORDS

DONE BY: JA KG

DATE: 1-26-77

For Signal Legend See Sheet 2

NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
				MADE	LDH 4-2-72
				CHECKED	WGH 5-7-72
				APPR'D.	WGH 5-7-72

VILLAGE OF MAPLEWOOD
ENGINEERING DEPARTMENT
McKNIGHT ROAD AND 3M ROAD W.B.
**INTERSECTION LAYOUT
(SYSTEM B)**

VILLAGE OF MAPLEWOOD PROJECT 72-5
FAS: SP 62-668-11
EHS-S 6363 (2)

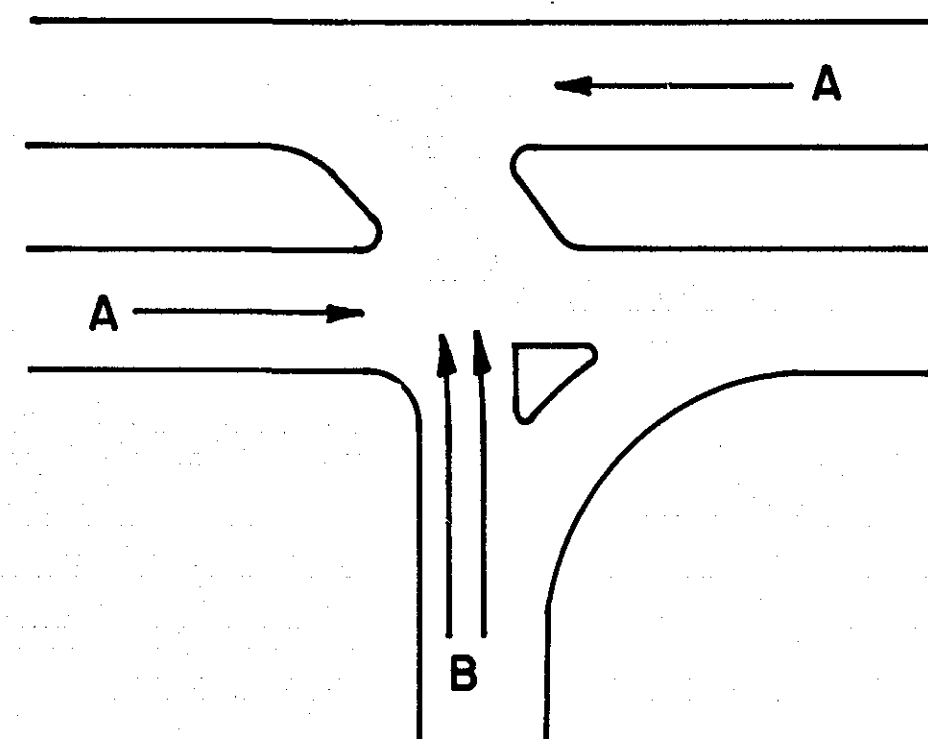
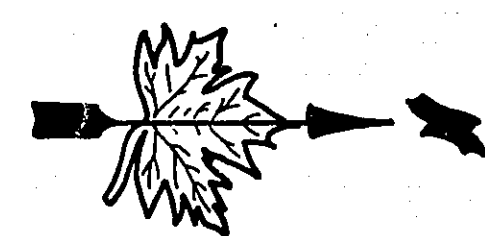
HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS HNTB

SHEET 18 OF 37 SHEETS

CONDUCTOR COLOR CODING

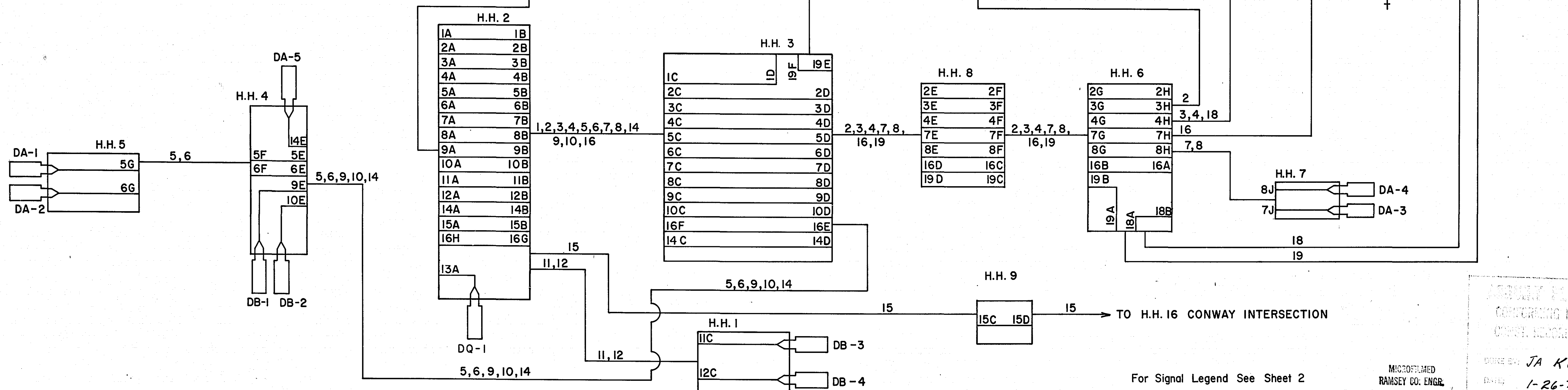
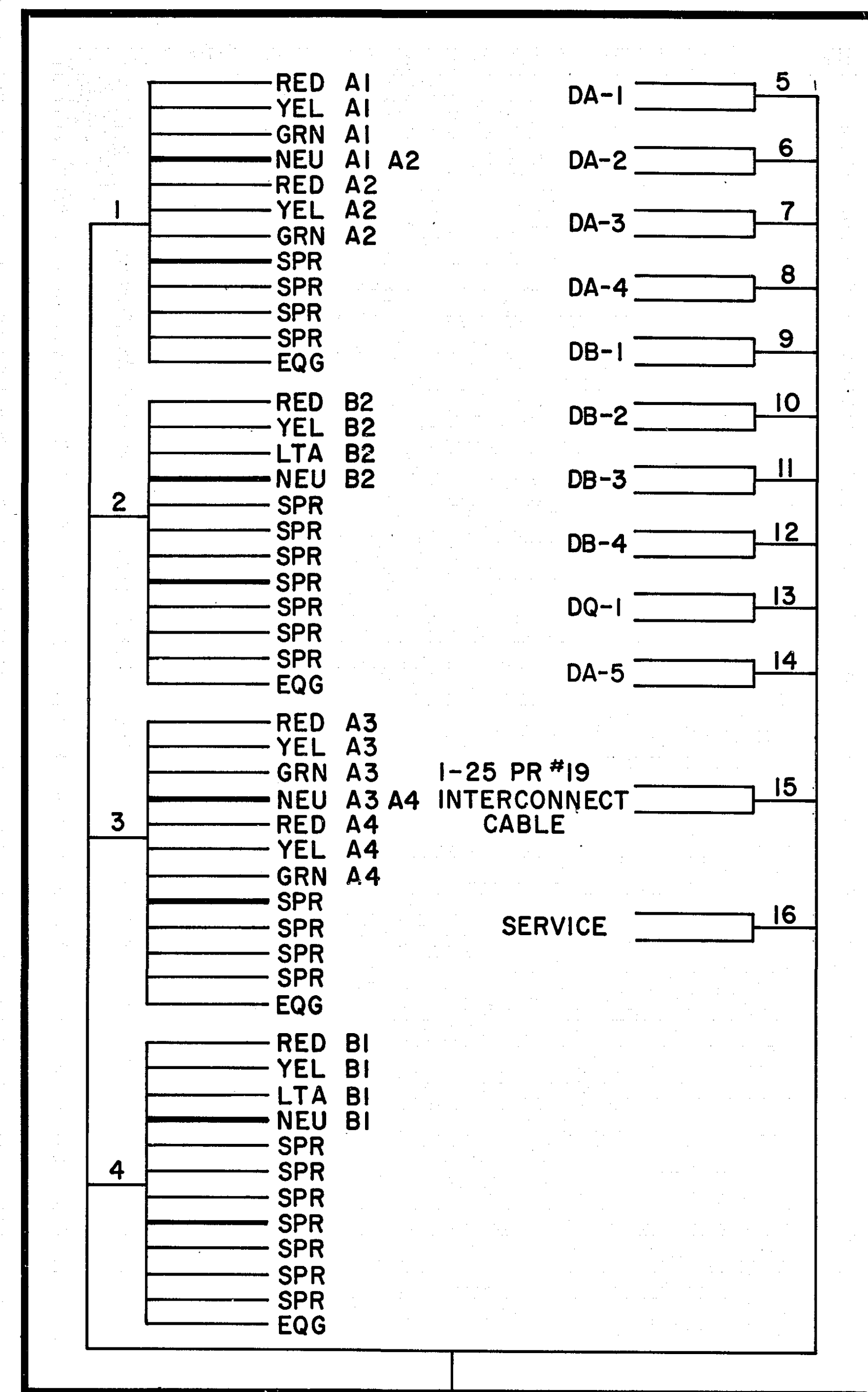
1	R
2	O
3	BL
4	WH
5	R/BL
6	O/BLK
7	BL/BLK
8	WH/BLK
9	BLK
10	BLK/WH
11	G/BLK
12	G
2/C	BLK
Shielded Cable	CLEAR
2-1/C #6	BLK
2-1/C #10	WH

NOTE: O- Equipment Ground To Base
Of Metal Poles



CONTROLLER PHASING DIAGRAM

CONTROLLER CABINET



NO.	DATE	DESCRIPTION	APPR'D.	BY	DATE
				MADE	LDH 4-20-72
				CHECKED	WGH 5-7-72
				APPR'D.	WGH 5-7-72

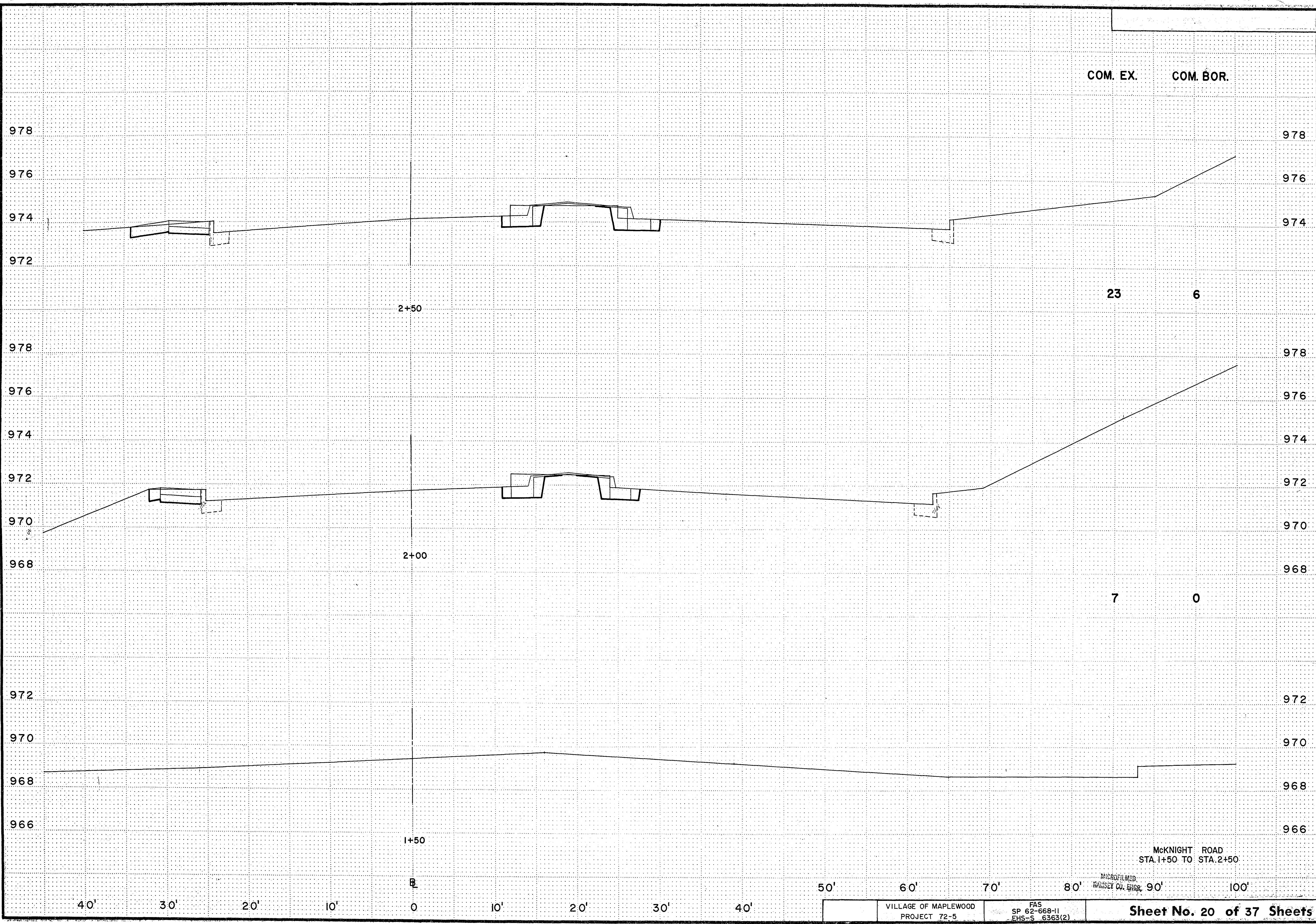
For Signal Legend See Sheet 2

MICROFILMED
RAMSEY CO. ENGR.

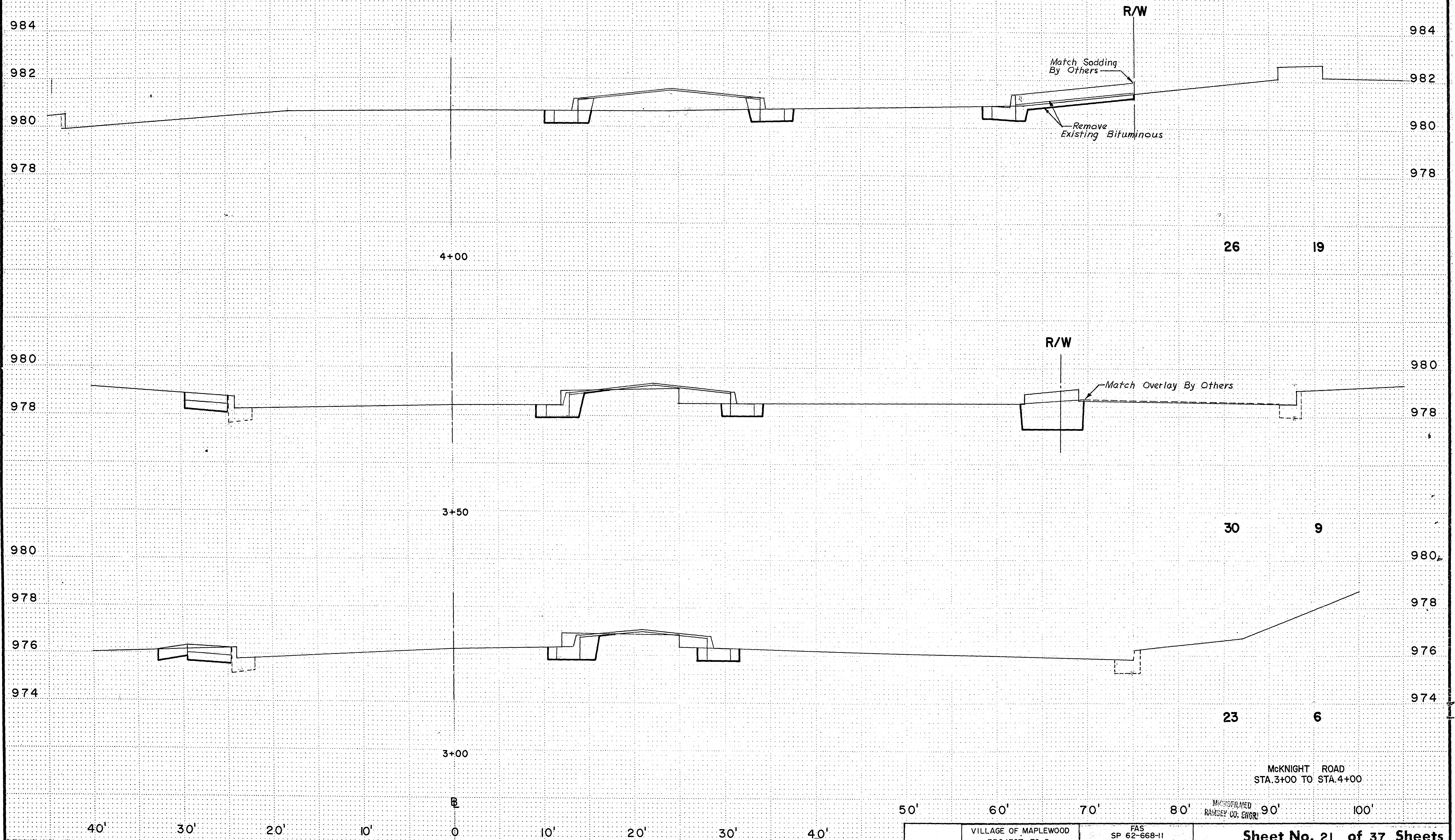
APPROVED
CONFORMING TO
CITY RECORDS
DATE BY JA KG
REV 1-26-77

VILLAGE OF MAPLEWOOD ENGINEERING DEPARTMENT McKNIGHT ROAD AND 3M ROAD W.B.	VILLAGE OF MAPLEWOOD PROJECT 72-5 FAS: SP 62-668-11 EHS-S 6363 (2)
FIELD WIRING DIAGRAM (SYSTEM B)	
HOWARD, NEEDLES, TAMMEN & BERGENOFF CONSULTING ENGINEERS	HNTB
SHEET 19 OF 37 SHEETS	19-106

NORSTAR & No. 101 ST. PAUL MINNEAPOLIS MINNESOTA



COM. EX. COM. BOR.



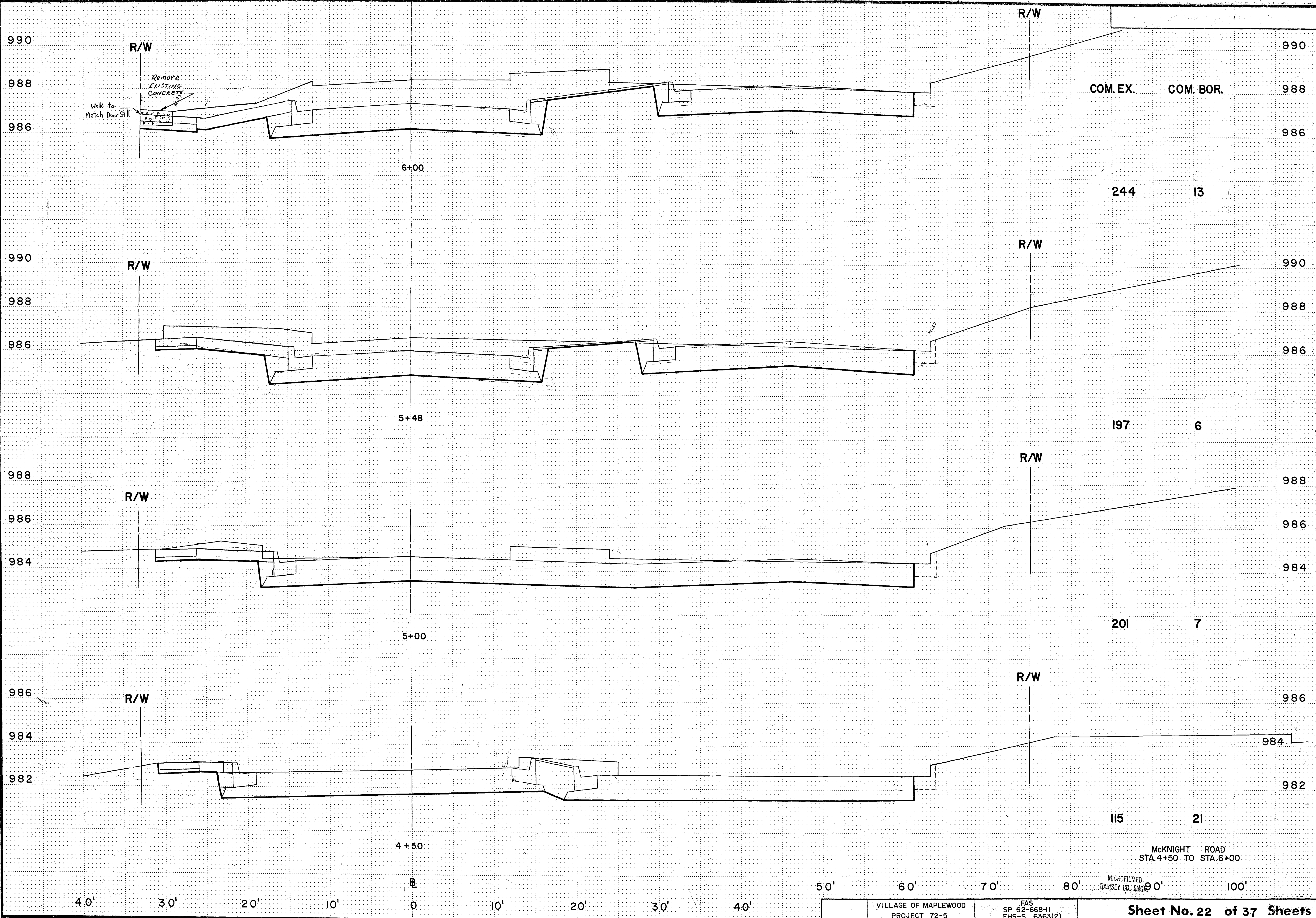
VILLAGE OF MAPLEWOOD
PROJECT 72-5

FAS
SP 62-668-11
EHS-S 6363(2)

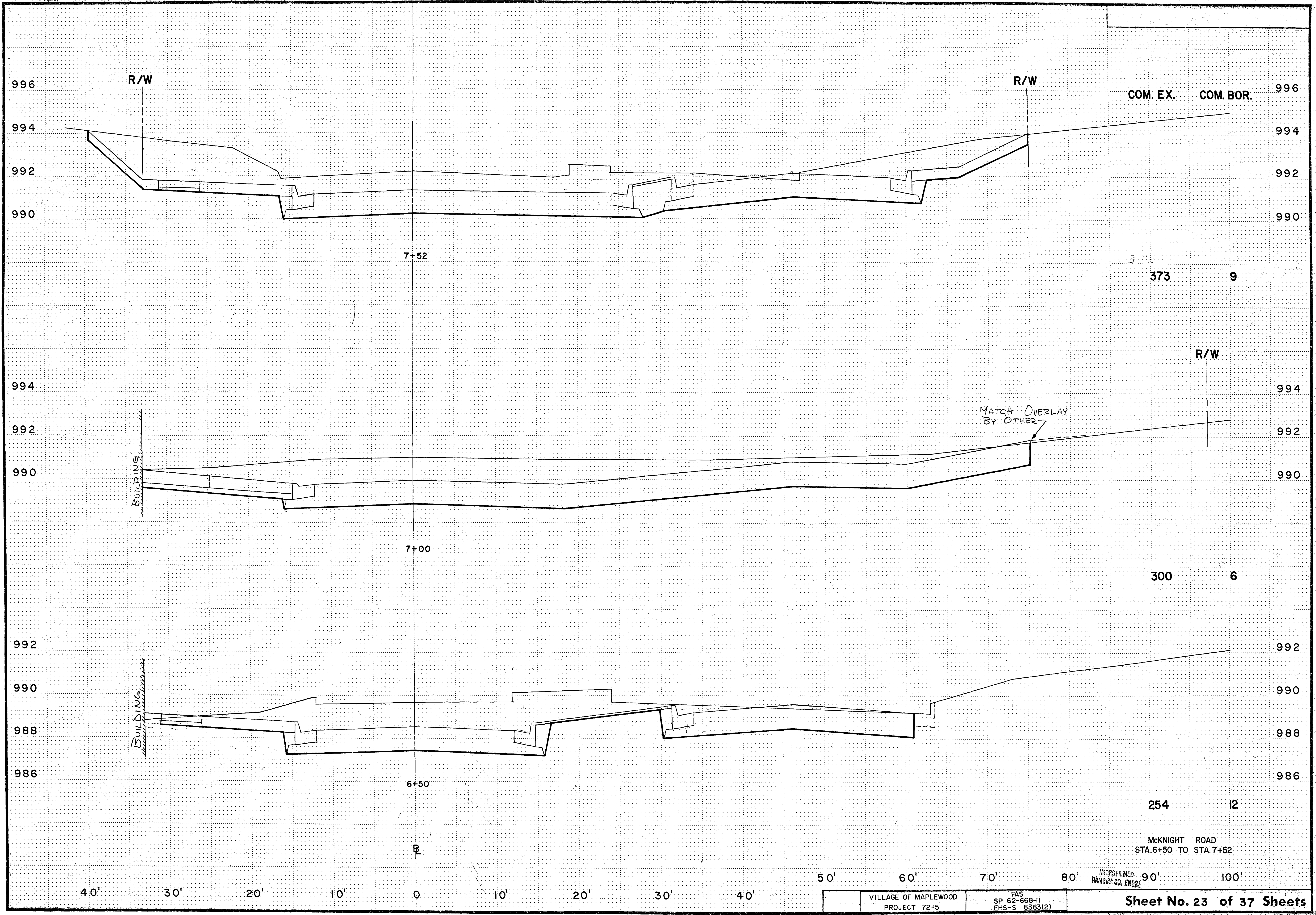
Sheet No. 21 of 37 Sheets

19-106

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NORSTAR © No. 101 ST. PAUL, MINNEAPOLIS, MINNESOTA ©



COM. EX. COM. BOR.

373 9

R/W

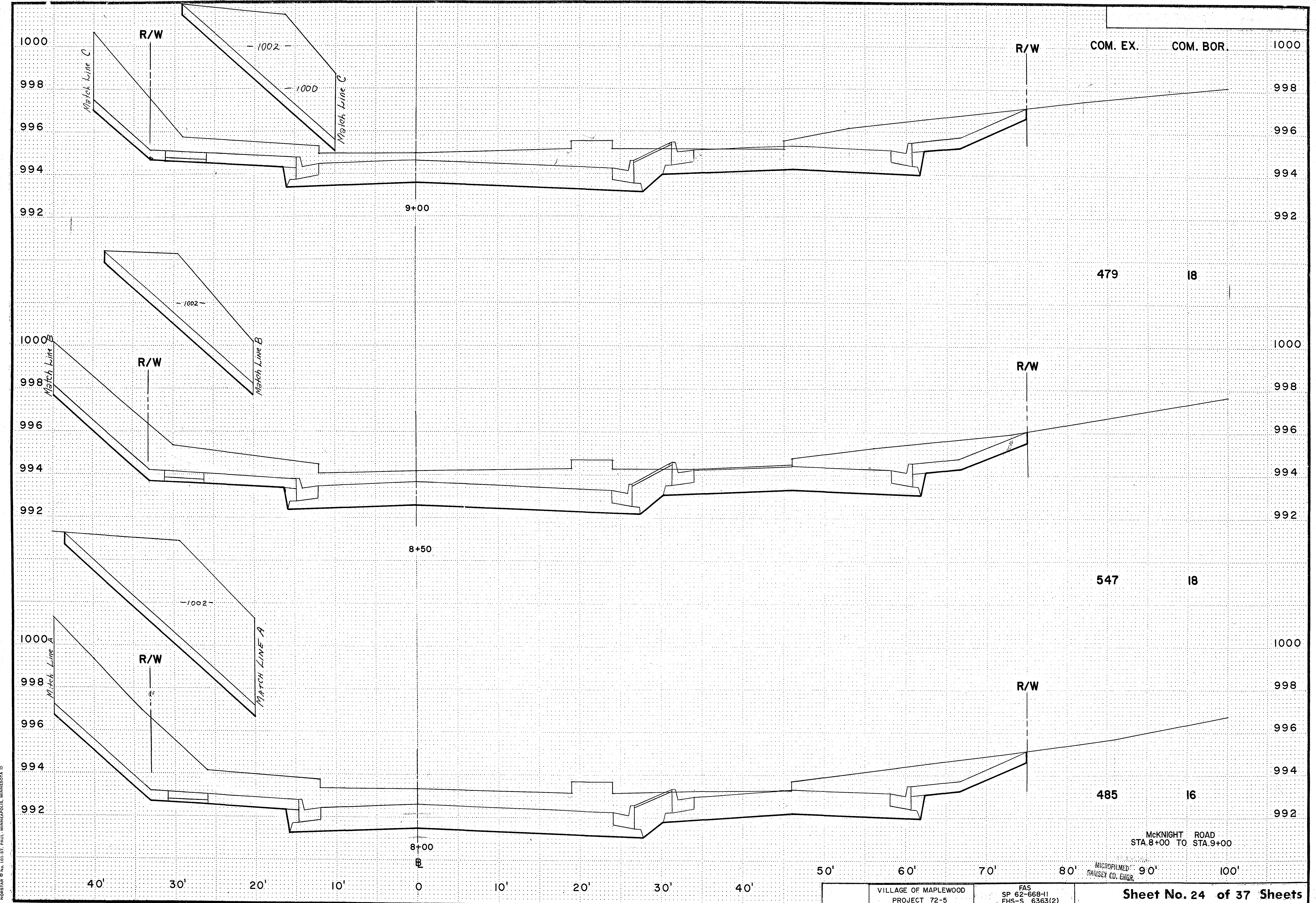
MATCH OVERLAY
BY OTHER

300 6

254 12

McKNIGHT ROAD
STA. 6+50 TO STA. 7+52

MICROFILMED
RANGEY CO. ENGR.



COM. EX. COM. BOR.

479 18

547 18

485 16

McKNIGHT ROAD
STA. 8+00 TO STA. 9+00

MICROFILMED
RANNEY CO. ENGR.

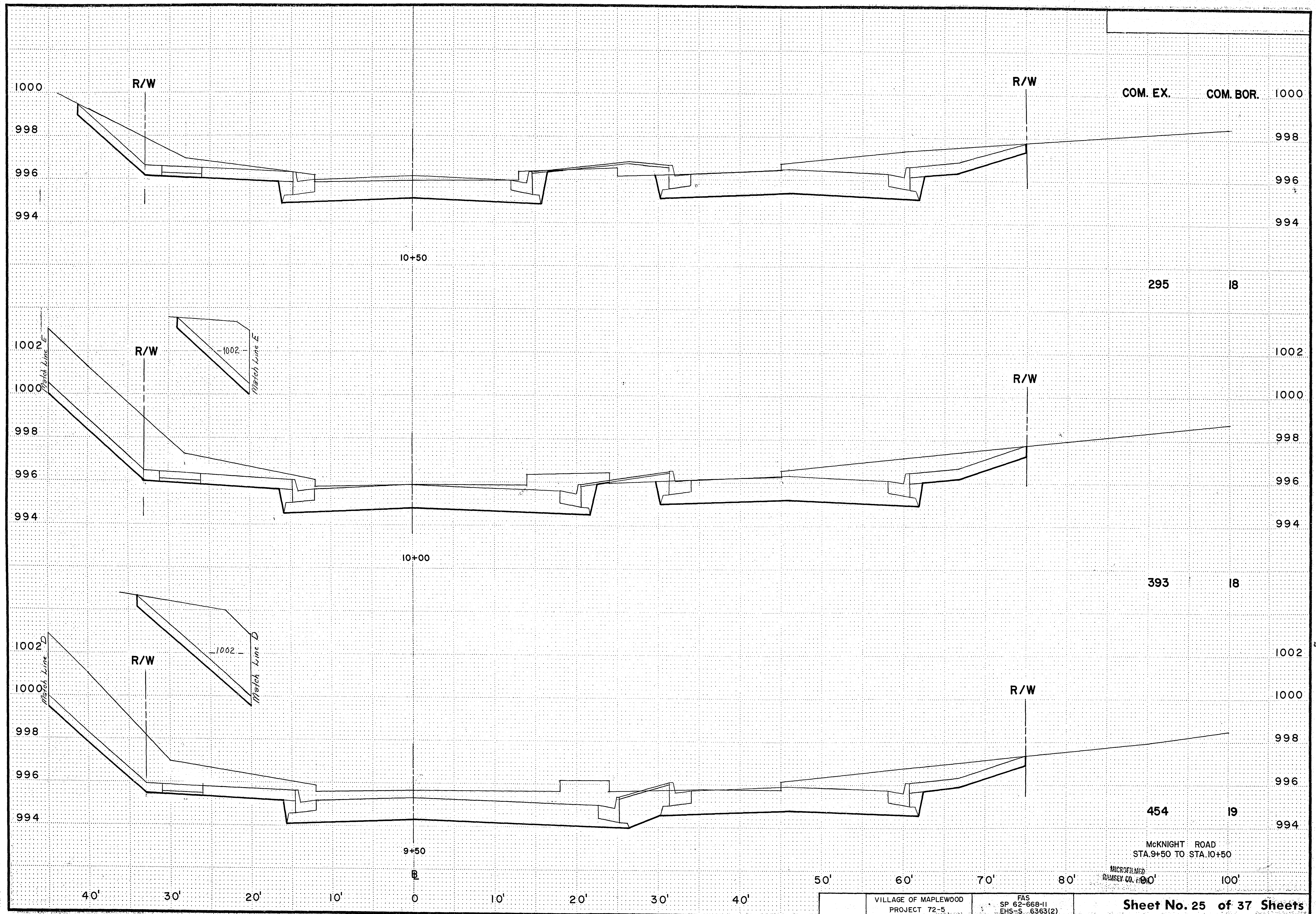
VILLAGE OF MAPLEWOOD
PROJECT 72-5

FAS
SP 62-668-11
EHS-S 6363(2)

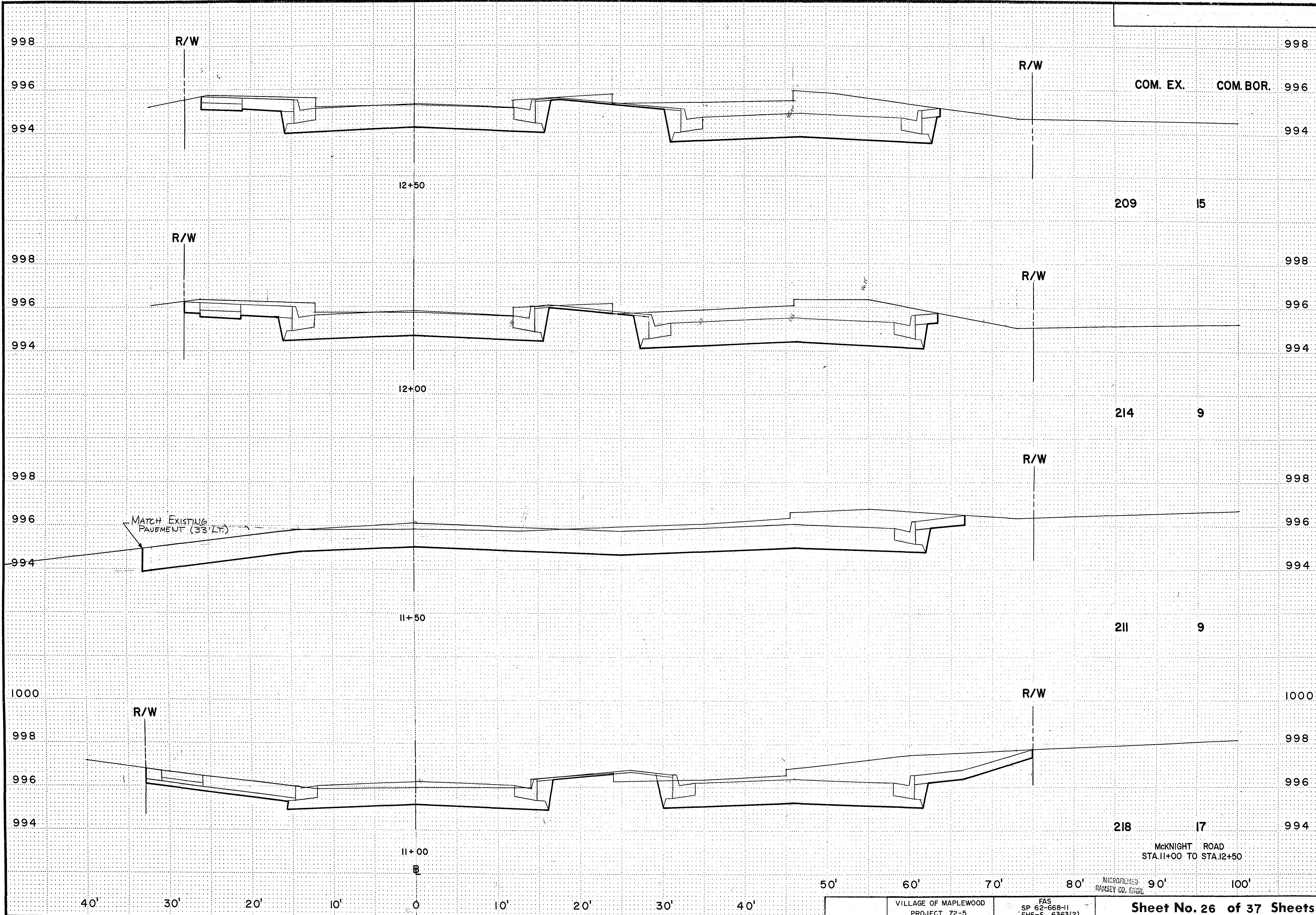
Sheet No. 24 of 37 Sheets

19-106

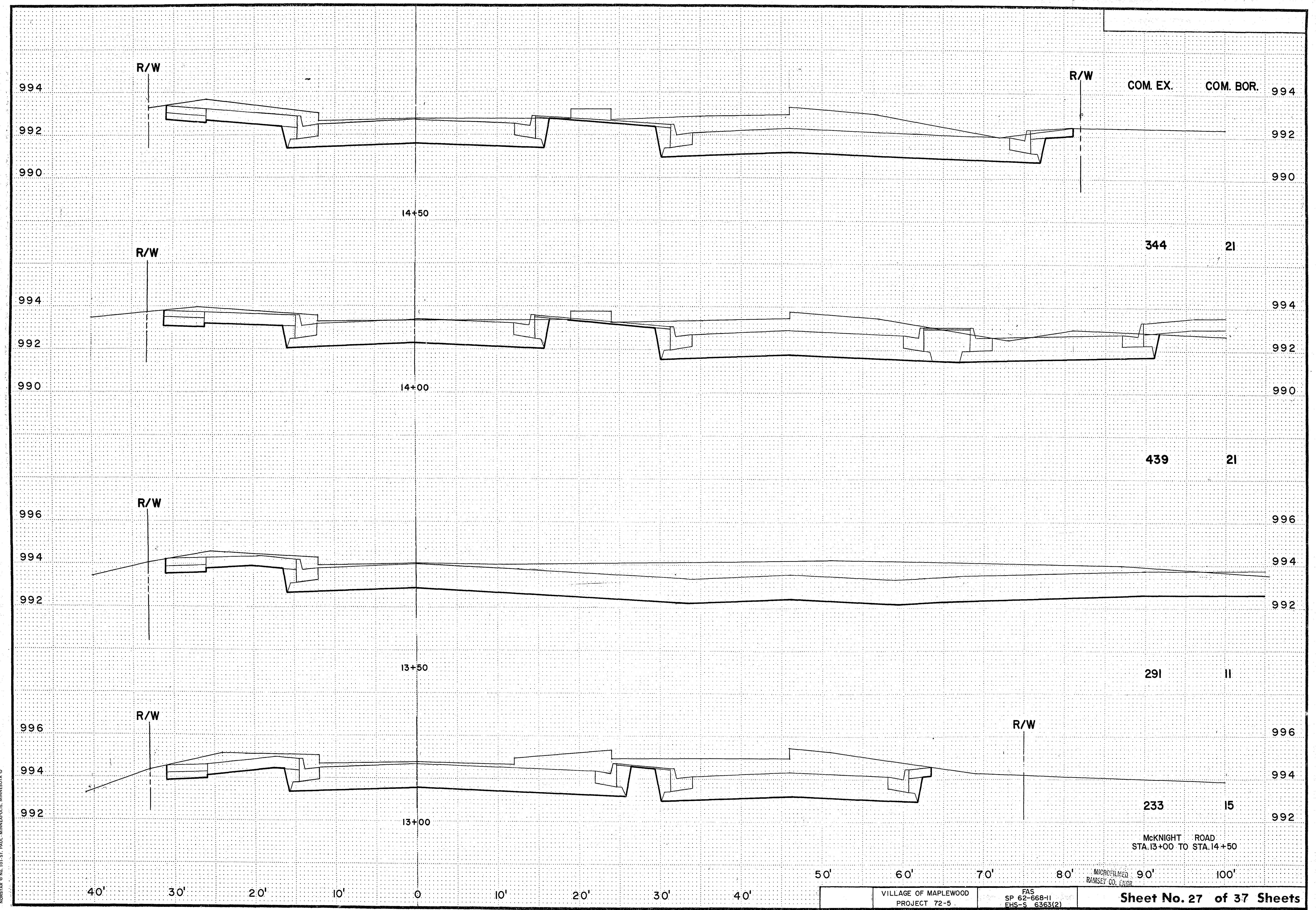
NORSTAR © No. 101-ST. PAUL, MINNESOTA ©



NORSTAR © No. 101 ST. PAUL, MINNEAPOLIS, MINNESOTA ©



NORSTAR © No. 101 ST. PAUL, MINNEAPOLIS, MINNESOTA ©



McKNIGHT ROAD
STA. 13+00 TO STA. 14+50

NORSTAR © No. 101 ST. PAUL, MINNEAPOLIS, MINNESOTA ©

R/W

992

990

988

16+50

R/W

COM. EX.

COM. BOR.

992

990

988

R/W

992

990

988

16+00

R/W

279

15

992

990

988

R/W

994

992

990

15+50

R/W

271

15

994

992

990

R/W

994

992

990

15+00

R/W

276

15

994

992

990

McKNIGHT ROAD
STA. 15+00 TO STA. 16+50

40'

30'

20'

10'

0

10'

20'

30'

40'

50'

60'

70'

80'

90'

100'

VILLAGE OF MAPLEWOOD
PROJECT 72-5

FAS
SP 62-668-11
-EHS-S 6363(2)

Sheet No. 28 of 37 Sheets

19-106

NORSTAR © No. 101 ST. PAUL, MINNEAPOLIS, MINNESOTA ©

R/W

990

988

986

18+50

R/W

COM. EX.

COM. BOR.

990

988

986

355

17

R/W

990

988

986

18+00

R/W

990

988

986

351

18

R/W

990

988

986

17+50

R/W

990

988

986

333

17

R/W

992

990

988

17+00

R/W

992

990

988

306

15

McKNIGHT ROAD
STA. 17+00 TO STA. 18+50

MICROFILMED
RAMSEY CO. ENGR.

40'

30'

20'

10'

0

10'

20'

30'

40'

50'

60'

70'

80'

90'

100'

VILLAGE OF MAPLEWOOD
PROJECT 72-5

FAS
SP 62-668-11
EHS-S 6363(2)

Sheet No. 29 of 37 Sheets

19-106

R/W

COM. EX.

COM. BOR.

986

986

984

984

982

982

20+50

382

17

988

988

986 MATCH EXISTING
PAVEMENT (50' L+)

986

984

984

SEE COUNSBY
X-SECTION

20+00

412

31

988

988

986

986

984

984

R/W

19+50

438

36

990

990

988

988

986

986

R/W

19+00

270

17

McKNIGHT ROAD
STA. 19+00 TO STA. 20+50

MICROFILMED

RAMSEY CO. ENGR.

40'

30'

20'

10'

0

10'

20'

30'

40'

50'

60'

70'

80'

90'

100'

VILLAGE OF MAPLEWOOD
PROJECT 72-5

TOPICS
SP 62-668-10
EHS-T 5007(008)

FAS
SP 62-668-11
SP EHS-S 6363(2)

Sheet No. 30 of 37 Sheets

19-106

NORSTAR © No. 101 ST. PAUL, MINNEAPOLIS, MINNESOTA ©

R/W

COM. EX.

COM. BOR.

984

984

982

982

980

980

22+50

408

17

R/W

984

984

982

982

980

980

22+00

465

17

R/W

986

986

984

984

982

982

21+50

R/W

986

986

984

984

982

982

21+00

403

18

McKNIGHT ROAD
STA. 21+00 TO STA. 22+50

355

18

3:1 MAX.

40'

30'

20'

10'

0

10'

20'

30'

40'

50'

60'

70'

80'

90'

100'

VILLAGE OF MAPLEWOOD
PROJECT 72-5

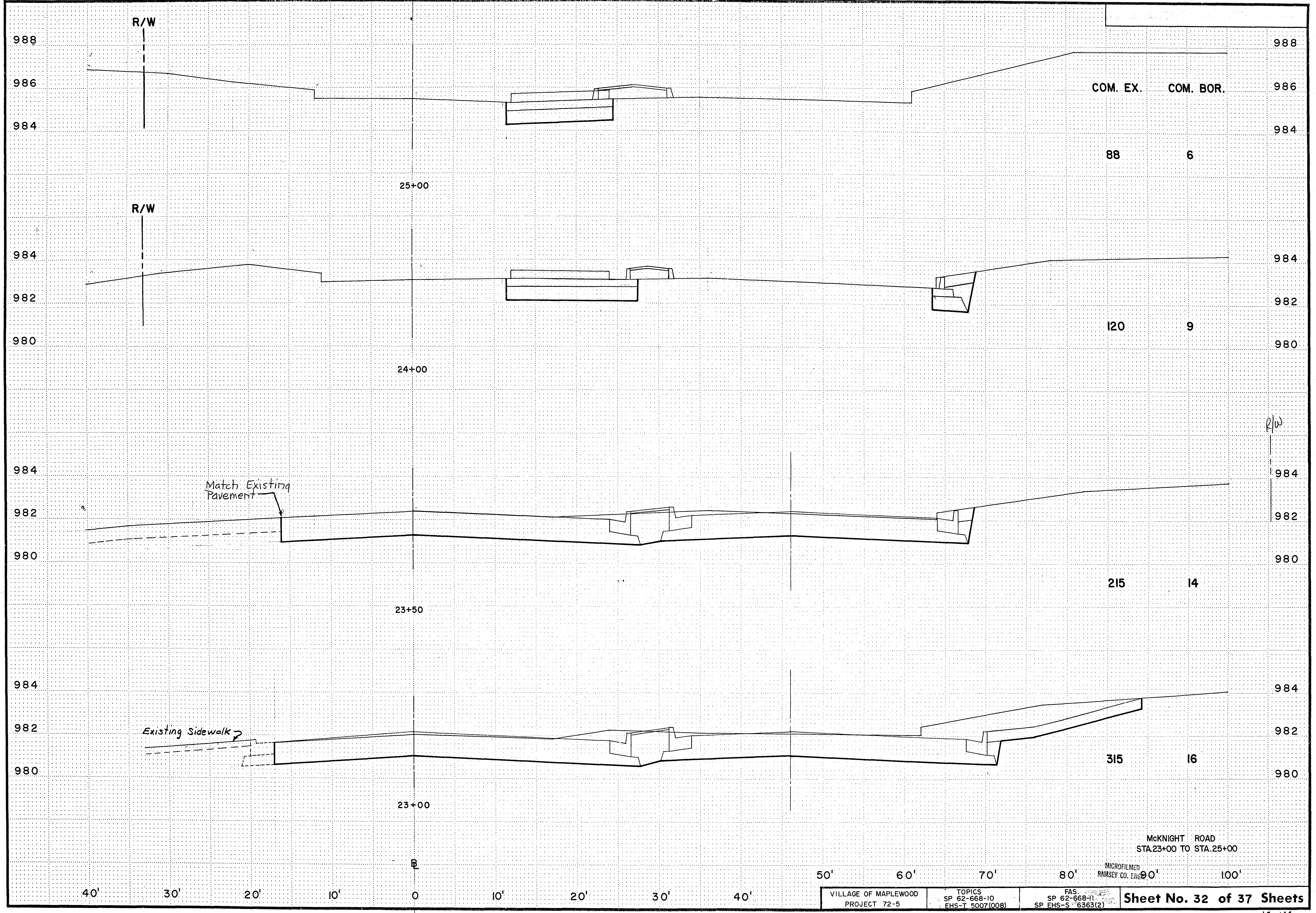
TOPICS
SP 62-668-10
SP EHS-T 5007(008)

FAS
SP 62-668-11
EHS-S 6363(2)

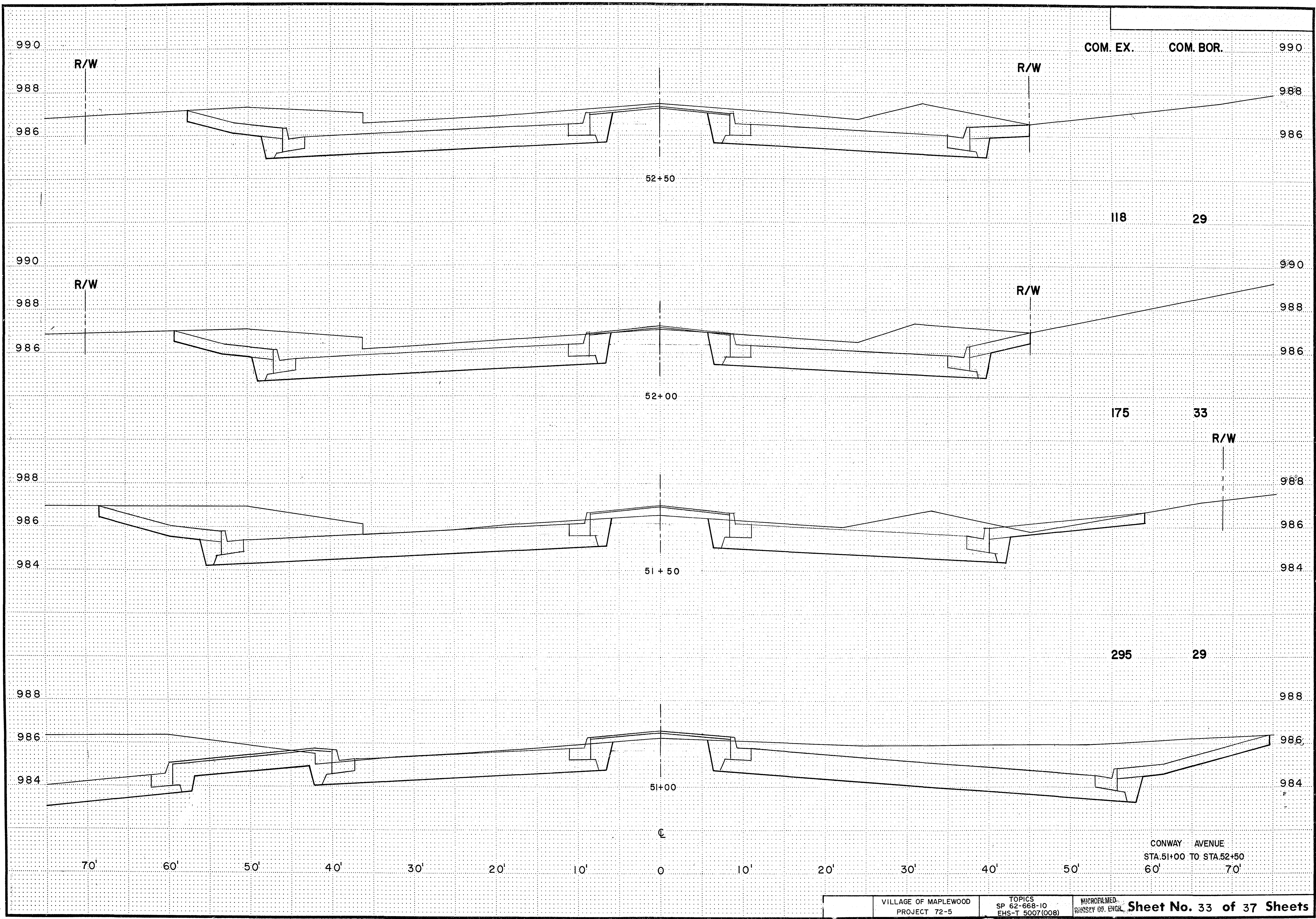
Sheet No. 31 of 37 Sheets

19-106

NORSTAR © No. 101-ST. PAUL, MINNEAPOLIS, MINNESOTA ©



HOUSTON & NO. 101 ST. PAUL, MINNEAPOLIS, MINNESOTA ©



988
986
984
988
986
984
988
986
984
988
986
984

R/W

COM. EX. COM. BOR.

988
986
984

R/W

54+50

106

13

R/W

R/W

54+00

95

25

R/W

R/W

53+50

77

30

R/W

R/W

53+00

94

26

CONWAY AVENUE
STA. 53+00 TO STA. 54+50
60' 70'

70' 60' 50' 40' 30' 20' 10' 0 10' 20' 30' 40' 50'

VILLAGE OF MAPLEWOOD
PROJECT 72-5

TOPICS
SP 62-668-10
EHS-T 5007(008)

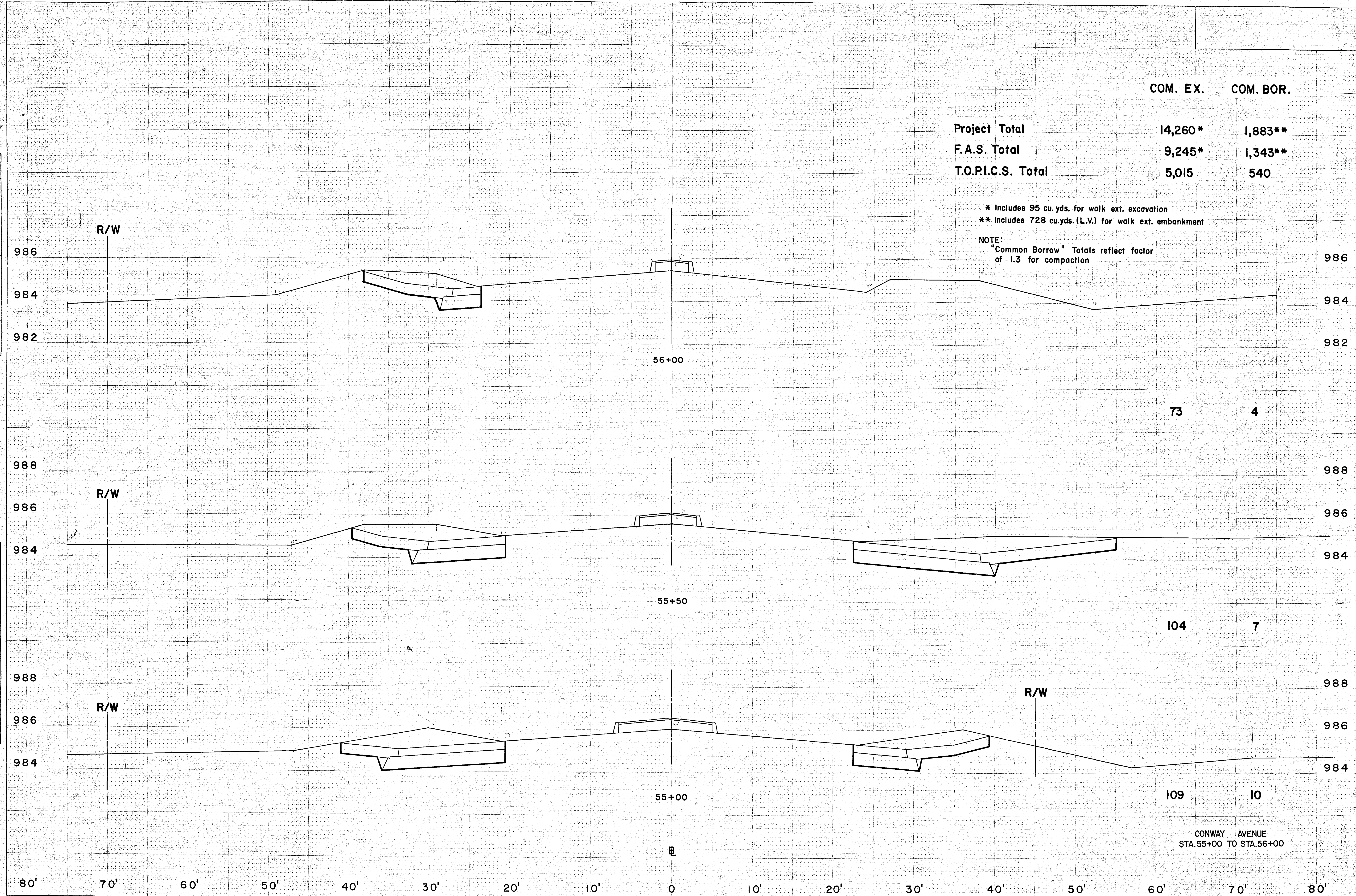
MICROFILMED
RAMSEY CO. ENGR.

Sheet No. 34 of 37 Sheets

19-106

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	NO.

DATE	BY
SURVEYED	PLOTTED
NOTE BOOK	NO.



FUNCTIONAL CROSS SECTION - OPEN DOTTED
H. A. ROGERS CO. - MINNEAPOLIS - ST. PAUL - DULUTH

VILLAGE OF MAPLEWOOD
PROJECT 72-5

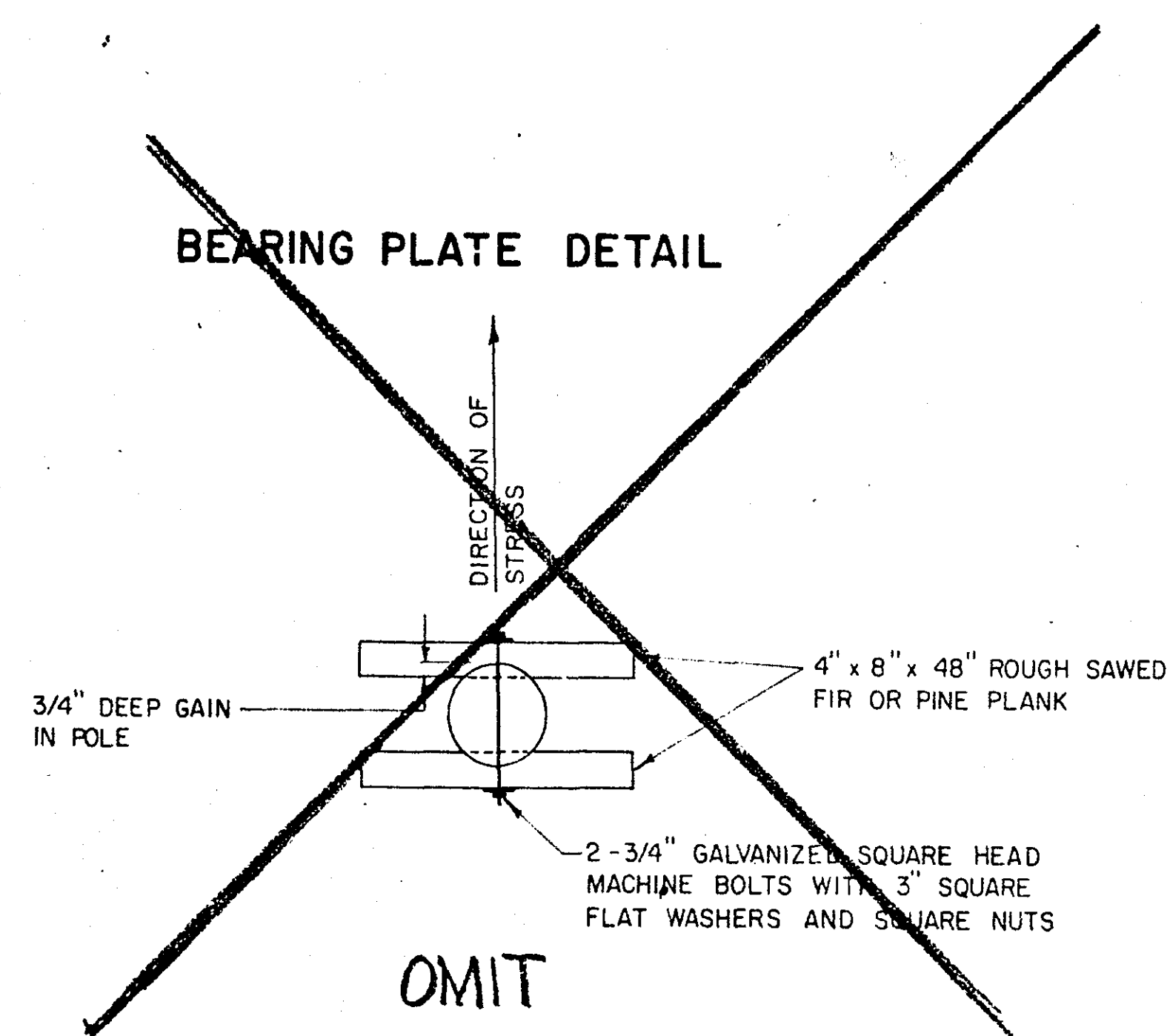
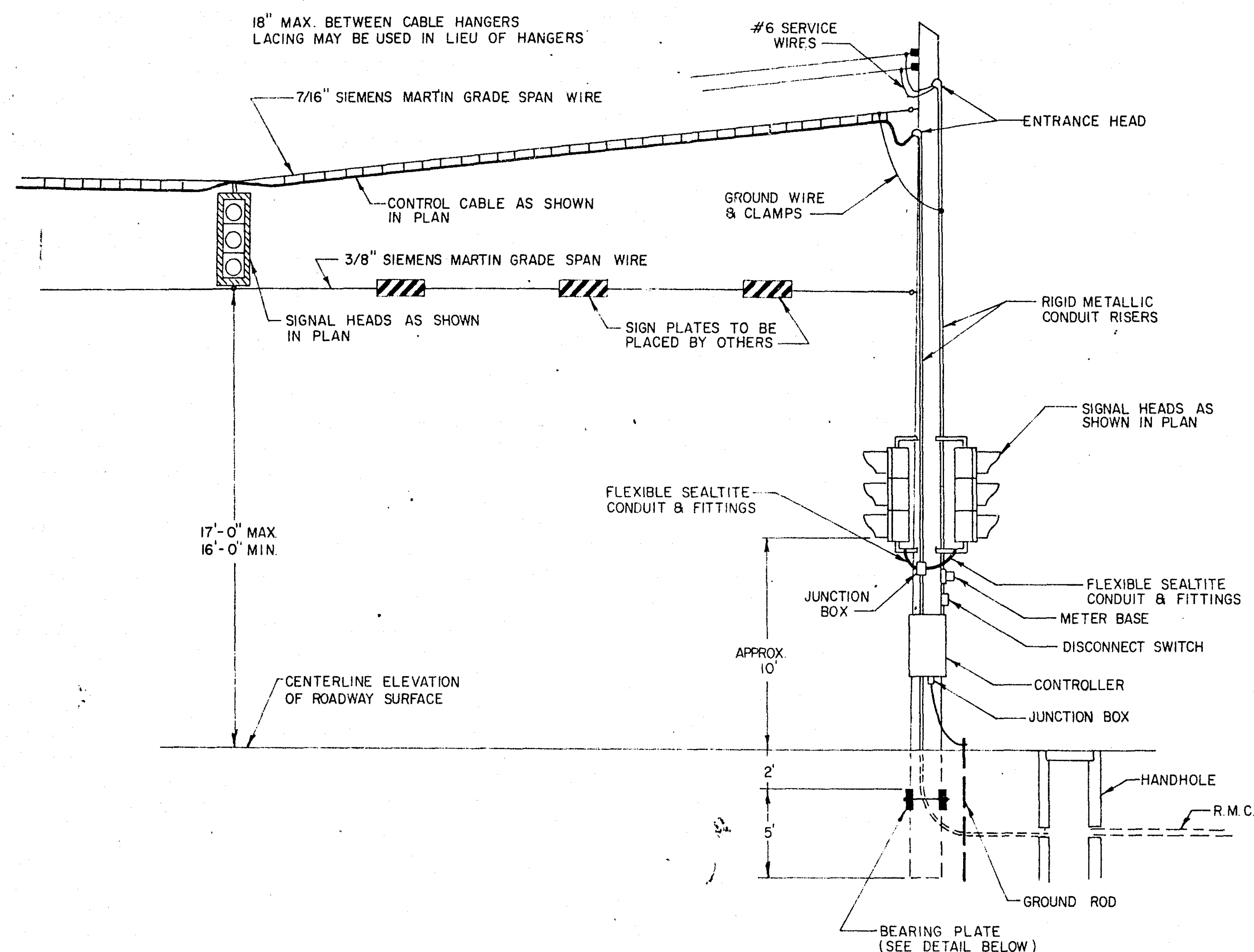
TOPICS
SP 62-668-10
EHS-T 5007(008)

PROJECT 72-5
MICROFILMED
RAMSEY CO. ENG.

Sheet No. 35 of 37 Sheets

19-106

TEMPORARY WOOD POLE TRAFFIC SIGNAL



ABBREVIATIONS

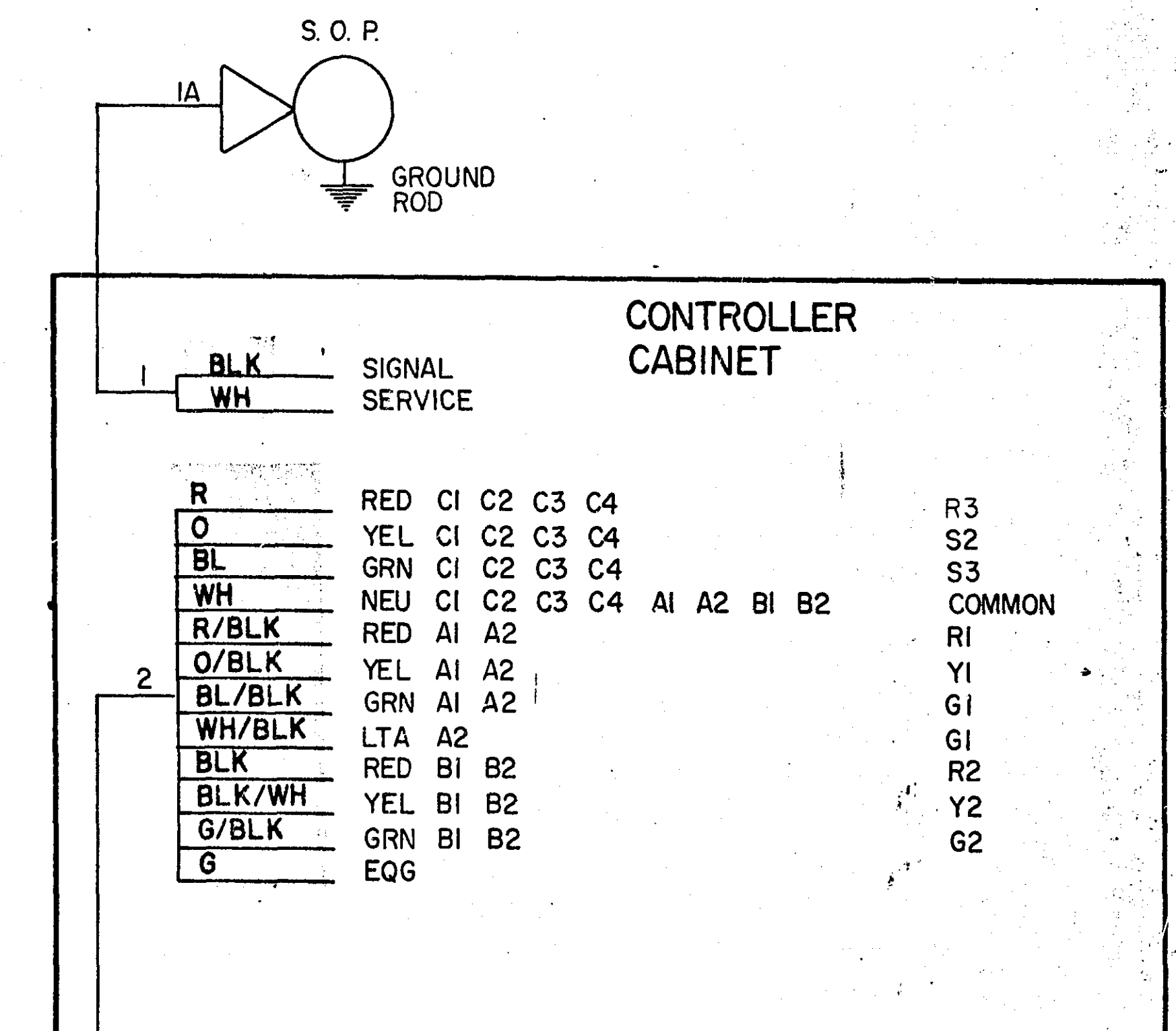
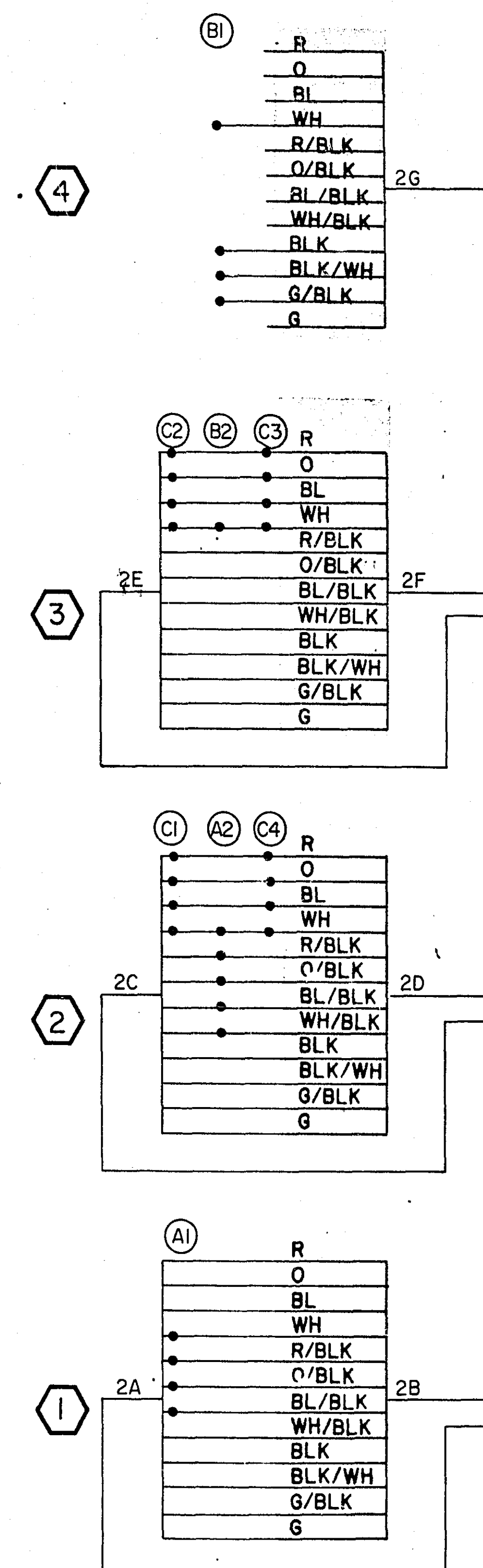
EQUIPMENT & INDICATIONS

RED - RED
YEL - YELLOW
GRN - GREEN
LTA - LEFT TURN ARROW
THA - THRU ARROW
RTA - RIGHT TURN ARROW
TRA - THRU AND RIGHT ARROW
WLK - WALK
NEU - NEUTRAL
DWK - DON'T WALK
SW - SWITCH
SWD - SWITCHED
LUM - LUMINAIRE
PA1(eg) - PEDESTRIAN INDICATION - "A" PHASE
PBB2(eg) - PUSH BUTTON - "B" PHASE
C3(eg) - SIGNAL HEAD - "C" PHASE
DA4(eg) - DETECTOR - "A" PHASE
H.H. - HANDHOLE
GR.R. - GROUND ROD
SERV. - SERVICE

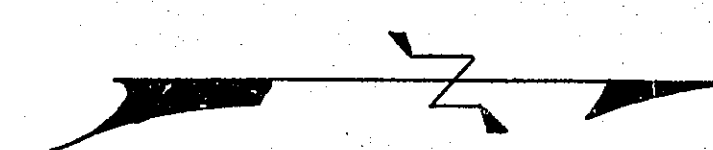
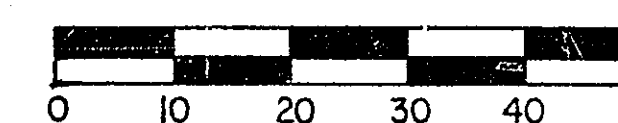
DNL - DOWNLIGHT
P.E.C. - PHOTOELECTRIC CELL
ST. LHT. - STREET LIGHT
CH. - CHECK
S.O.P. - SOURCE OF POWER
E.Q.G. - EQUIPMENT GROUND
SPR - SPARE CONDUCTOR

COLOR CODING OF CONDUCTORS

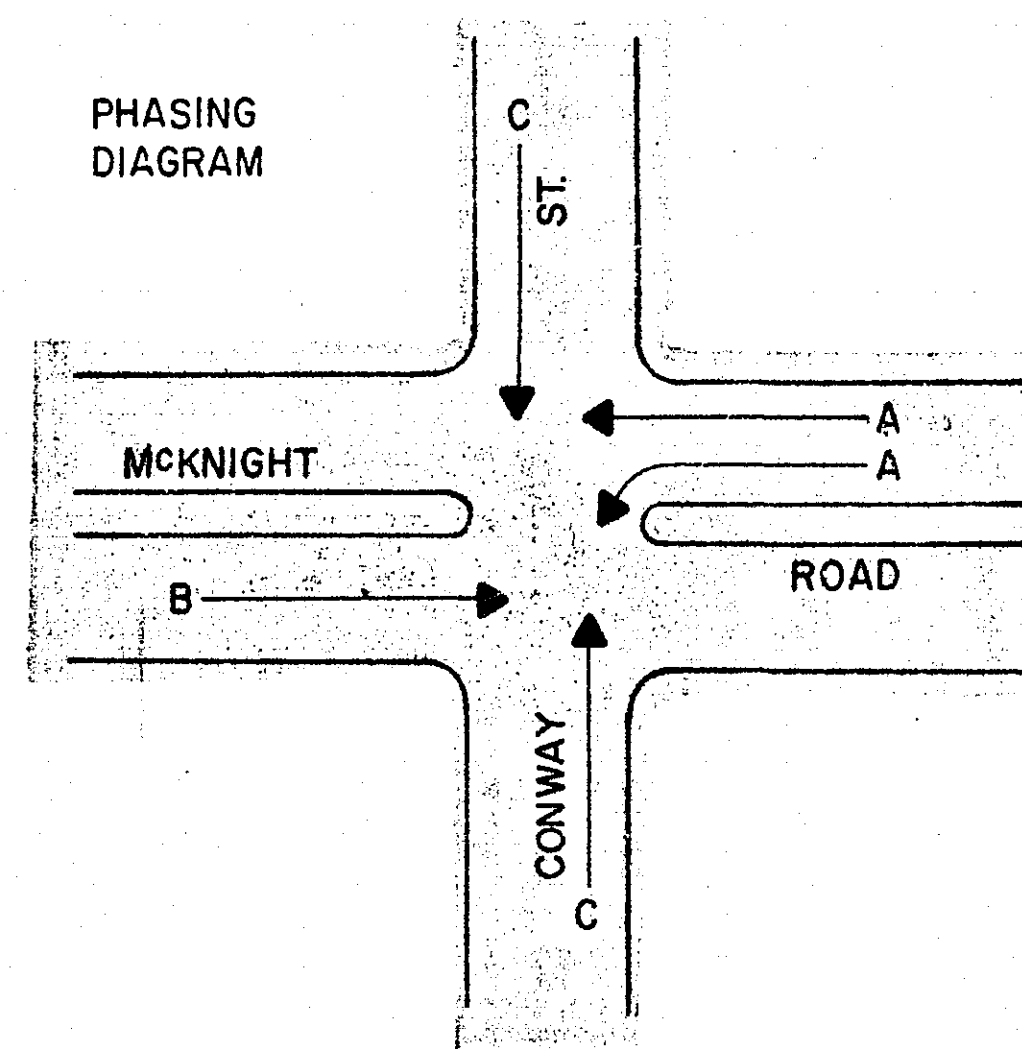
R - RED
O - ORANGE
BL - BLUE
WH - WHITE
R/BLK - RED WITH BLACK TRACER
O/BLK - ORANGE WITH BLACK TRACER
BL/BLK - BLUE WITH BLACK TRACER
WH/BLK - WHITE WITH BLACK TRACER
BLK - BLACK
BLK/WH - BLACK WITH WHITE TRACER
G/BLK - GREEN WITH BLACK TRACER
G - GREEN



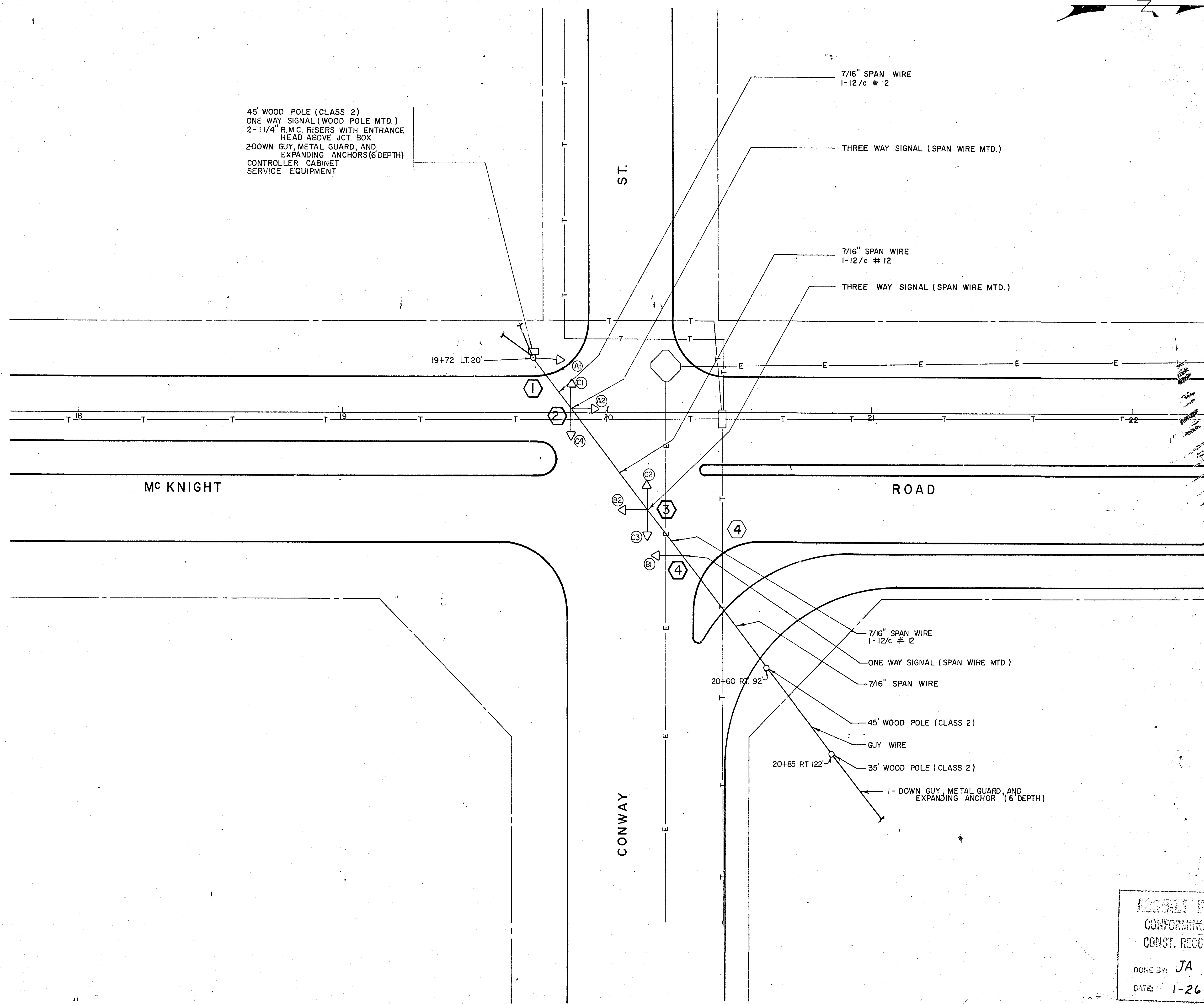
FIELD WIRING DIAGRAM



LEGEND OF SYMBOLS	
	CONTROLLER
	SIGNAL FACE
	SOURCE OF POWER (S.O.P.)
	WOOD POLE



45' WOOD POLE (CLASS 2)
ONE WAY SIGNAL (WOOD POLE MTD.)
2-1 1/4" R.M.C. RISERS WITH ENTRANCE
HEAD ABOVE JCT. BOX
2-DOWN GUY, METAL GUARD, AND
EXPANDING ANCHORS (6' DEPTH)
CONTROLLER CABINET
SERVICE EQUIPMENT



FACE	PHASE	FLASH	INDICATION SIZE					
			R	Y	G	←	↑	→
A1	A	Y	12"	12"	12"			
A2	A	Y	8"	8"	8"	12"		
B1	B	Y	12"	12"	12"			
B2	B	Y	8"	8"	8"			
C1	C	R	8"	8"	8"			
C2	C	R	8"	8"	8"			
C3	C	R	8"	8"	8"			
C4	C	R	8"	8"	8"			

ASBURY PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: JA KG
DATE: 1-26-77