

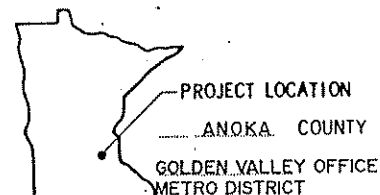
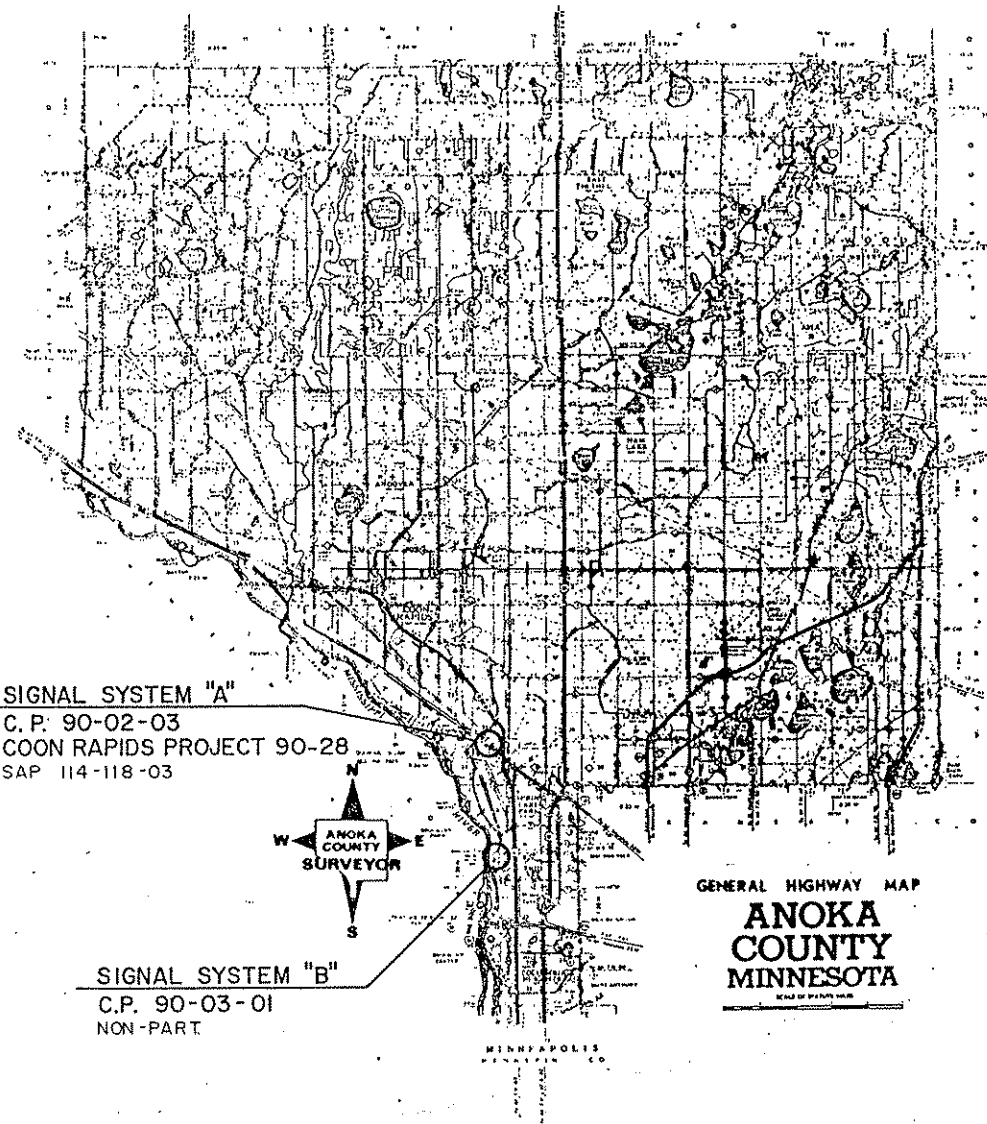
MINNESOTA DEPARTMENT OF TRANSPORTATION

ANOKA COUNTY

CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEMS

LOCATED AT: CO. RD. 3 (COON RAPIDS BLVD.)/93RD AVE. N.W., SYSTEM "A"
C.S.A.H. 1 (EAST RIVER ROAD)/77TH WAY, SYSTEM "B"

INDEX MAP 14,000'
 SIGNAL 30'



MINN. PROJ. NO. _____
 MINN. PROJ. NO. _____

GOVERNING SPECIFICATIONS

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES
3-7	INTERSECTION LAYOUTS AND WIRING DIAGRAMS
8-10	DETAILS
11-12	UTILITIES

THIS PLAN CONTAINS 12 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.

BRW, Inc.
 DATE 2/19/91 REG. NO. 18095 ENGR. *Eck Oehler*
 COUNTY ANOKA
 Recommended for Approval *Paul K. Lund* 2/22/91
 Anoka County Engineer
 Recommended for Approval *William R. O'Connell* 2-22-1991
 City of Coon Rapids
 Recommended for Approval *John Nelson* 2/22/91
 City of Fridley
 Recommended for Approval *P. E. Wuchsilbaum* 3/8/91
 District State Aid Engineer
 Recommended for Approval *James Skallman* 3/13/91
 State Aid Plan Review Engineer
 Approved *Daniel C. Carlson* 3/13/91
 State Aid Engineer

SYSTEM "A" ONLY
 STATE PROJ. NO. _____ AREA _____ JOB _____

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 AID PROJ. NO. 114-118-03
 STATE PROJ. NO. _____

SHEET NO. 1 OF 12 SHEETS

ESTIMATED QUANTITIES							
ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	90-02-03	90-28	90-03-01	
				ANOKA COUNTY	COON RAPIDS	ANOKA COUNTY	FRIDLEY
2104.501	REMOVE CURB AND GUTTER	L. F.	100	50	50		
2105.523	COMMON BORROW (LV)	CU. YD.	6			6	
2211.503	AGGREGATE BASE PLACED, CLASS 5	CU. YD.	3			3	
0331.601	2" THICK BITUMINOUS WEARING COURSE	SQ. YD.	10			10	
2531.501	CONCRETE CURB AND GUTTER	L. F.	85	42.5	42.5		
2531.602	PEDESTRIAN CURB RAMP	EA.	5	2.5	2.5		
2565.511	FULL-TRAFFIC-ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM "A"	SIGNAL SYSTEM	(2) 1	.25	.75		
2565.511	FULL-TRAFFIC-ACTUATED TRAFFIC CONTROL SIGNAL SYSTEM "B"	SIGNAL SYSTEM	1			1	
2521.501	4" CONCRETE WALK	SQ. FT.	400	200	200		
2575.501	ROADSIDE SEEDING (1)	L.S.	1			1	
2575.505	SODDING	SQ. YD.	400	150	150	100	
2104.505	REMOVE CONCRETE SIDEWALK	SQ. FT.	250	125	125		

(1) SEEDIN QUANTY 0.1 ACRES OR LESS.
(2) 25% SAP 114-118-03

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 State of Minnesota Statutes Sections 326.02 to 326.16. <i>Erik O. Rueler</i> Date <u>2/19/91</u> Minn. Reg. No. <u>18015</u>	 BRW, INC. PLANNING TRANSPORTATION ENGINEERING URBAN DESIGN THRESHIER SQUARE 700 BIRD STREET SOUTH WYOMING, MN 55415 PHONE: (612) 376-0700	ORIGINAL DATE: _____ REVISIONS: _____ _____ _____ _____ _____	ESTIMATED QUANTITIES C.P. 90-02-03 C.P. 90-03-01 COON RAPIDS PROJECT 90-28
		DESIGN BY: <u>EOR</u> DRAWN BY: <u>RG</u>	
SHEET <u>2</u> OF <u>12</u>			DESIGN FILE No. <u>40-9021</u>

① TYPE A100-A-50-D40-9 (DAVIT AT 350°)
 A100 POLE FOUNDATION
 THREE ONE WAY SIGNALS-OVERHEAD
 TYPE 10B POLE MOUNTED AT 90°
 TYPE 10B POLE MOUNTED AT 270°
 LUMINAIRE-200 WATT H.P.S.
 2 PEDESTRIAN PUSH BUTTONS
 PEDESTRIAN WALK AND PED. RAMP (SEE DETAIL "A")
 EXTEND 3" R.S.C. INTO HH 4 WITH:
 3-12/C #12
 1-3/C #12
 2-1/C #10

② TYPE P90-A-30-D40-9
 P90 POLE FOUNDATION
 ONE WAY SIGNAL-OVERHEAD
 TYPE 10B POLE MOUNTED AT 90°
 TYPE 10B POLE MOUNTED AT 270°
 LUMINAIRE-200 WATT H.P.S.
 2 PEDESTRIAN PUSH BUTTONS
 PEDESTRIAN WALK AND PED RAMP (SEE DETAIL "A")
 EXTEND 3" R.S.C. INTO HH 3 WITH:
 2-12/C #12
 1-3/C #12
 2-1/C #10

⑤ TYPE P90-A-25-D40-9
 P90 POLE FOUNDATION
 ONE WAY SIGNAL-OVERHEAD
 TYPE 10B POLE MOUNTED AT 90°
 TYPE 10B POLE MOUNTED AT 270°
 RELOCATE INPLACE DECORATIVE LIGHTING ASSEMBLY
 APPROXIMATELY 10' TO THE NORTH
 LUMINAIRE-200 WATT H.P.S.
 2 PEDESTRIAN PUSH BUTTONS
 PEDESTRIAN WALK AND PED RAMP (SEE DETAIL "A")
 EXTEND 3" R.S.C. INTO HH 5 WITH:
 2-12/C #12
 1-3/C #12
 4-1/C #10

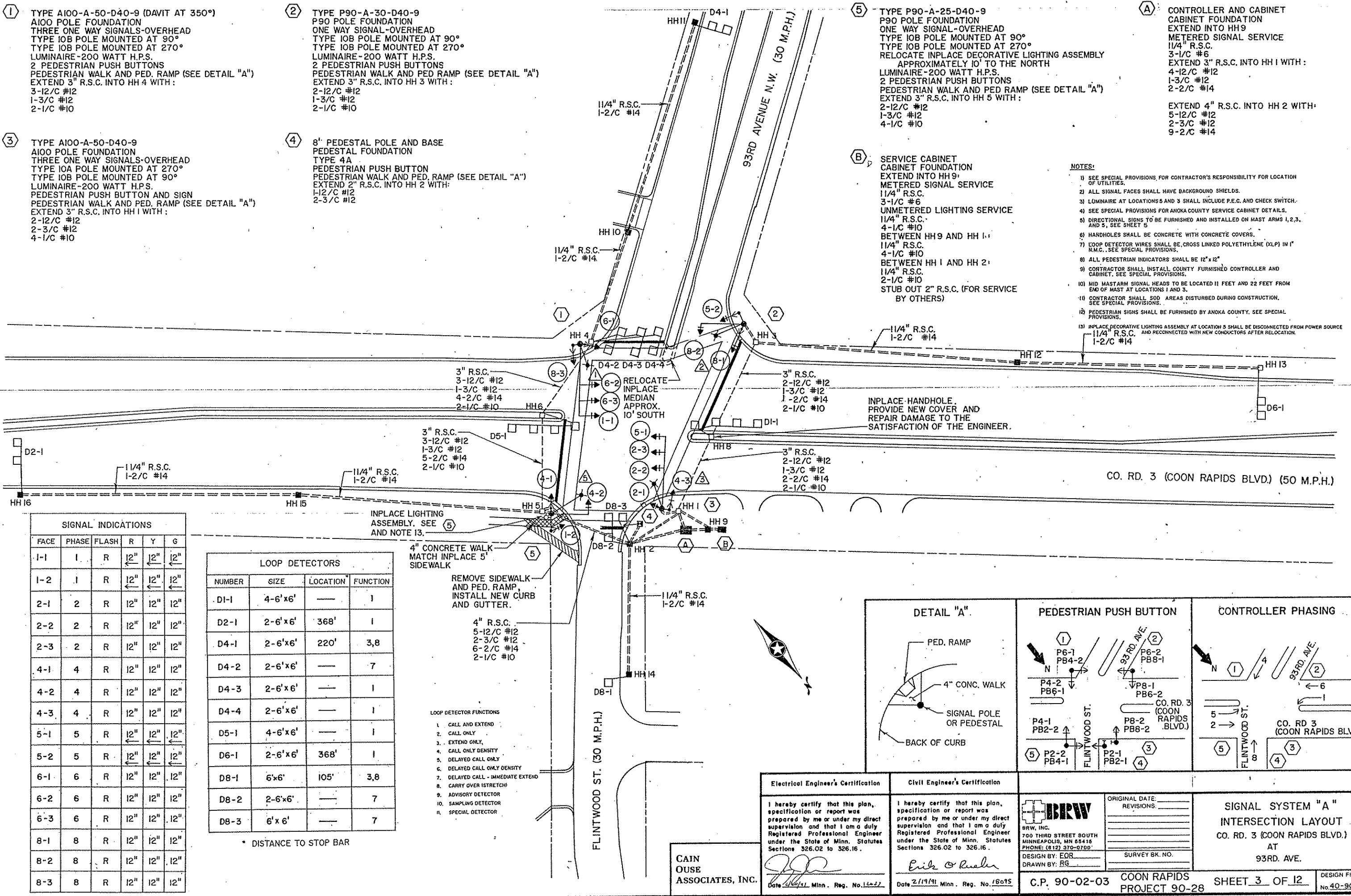
Ⓐ CONTROLLER AND CABINET
 CABINET FOUNDATION
 EXTEND INTO HH 9
 METERED SIGNAL SERVICE
 1 1/4" R.S.C.
 3-1/C #6
 EXTEND 3" R.S.C. INTO HH 1 WITH:
 4-12/C #12
 1-3/C #12
 2-2/C #14
 EXTEND 4" R.S.C. INTO HH 2 WITH:
 5-12/C #12
 2-3/C #12
 9-2/C #14

③ TYPE A100-A-50-D40-9
 A100 POLE FOUNDATION
 THREE ONE WAY SIGNALS-OVERHEAD
 TYPE 10A POLE MOUNTED AT 270°
 TYPE 10B POLE MOUNTED AT 90°
 LUMINAIRE-200 WATT H.P.S.
 PEDESTRIAN PUSH BUTTON AND SIGN
 PEDESTRIAN WALK AND PED. RAMP (SEE DETAIL "A")
 EXTEND 3" R.S.C. INTO HH 1 WITH:
 2-12/C #12
 2-3/C #12
 4-1/C #10

④ 8" PEDESTAL POLE AND BASE
 PEDESTAL FOUNDATION
 TYPE 4A
 PEDESTRIAN PUSH BUTTON
 PEDESTRIAN WALK AND PED. RAMP (SEE DETAIL "A")
 EXTEND 2" R.S.C. INTO HH 2 WITH:
 1-12/C #12
 2-3/C #12

Ⓑ SERVICE CABINET
 CABINET FOUNDATION
 EXTEND INTO HH 9
 METERED SIGNAL SERVICE
 1 1/4" R.S.C.
 3-1/C #6
 UNMETERED LIGHTING SERVICE
 1 1/4" R.S.C.
 4-1/C #10
 BETWEEN HH 9 AND HH 1:
 1 1/4" R.S.C.
 4-1/C #10
 BETWEEN HH 1 AND HH 2:
 1 1/4" R.S.C.
 2-1/C #10
 STUB OUT 2" R.S.C. (FOR SERVICE BY OTHERS)

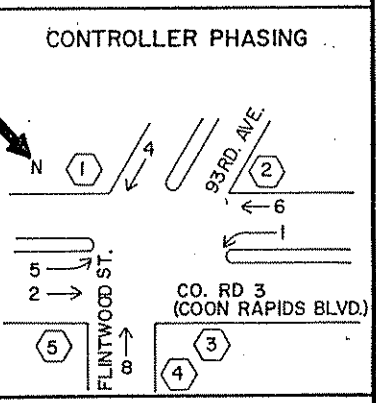
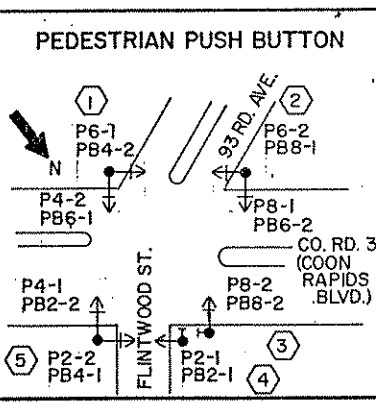
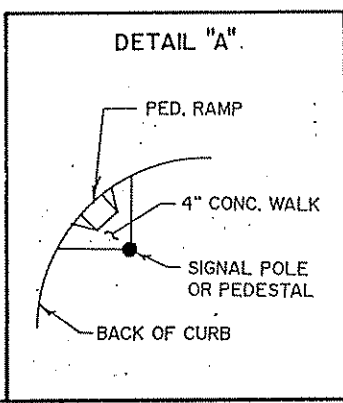
- NOTES:
- SEE SPECIAL PROVISIONS FOR CONTRACTOR'S RESPONSIBILITY FOR LOCATION OF UTILITIES.
 - ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
 - LUMINAIRE AT LOCATIONS 5 AND 3 SHALL INCLUDE P.E.C. AND CHECK SWITCH.
 - SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
 - DIRECTIONAL SIGNS TO BE FURNISHED AND INSTALLED ON MAST ARMS 1, 2, 3, AND 5, SEE SHEET 5.
 - HANDHOLES SHALL BE CONCRETE WITH CONCRETE COVERS.
 - LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" N.M.C. SEE SPECIAL PROVISIONS.
 - ALL PEDESTRIAN INDICATORS SHALL BE 12" x 12"
 - CONTRACTOR SHALL INSTALL COUNTY FURNISHED CONTROLLER AND CABINET. SEE SPECIAL PROVISIONS.
 - MID MASTARM SIGNAL HEADS TO BE LOCATED 11 FEET AND 22 FEET FROM END OF MAST AT LOCATIONS 1 AND 3.
 - CONTRACTOR SHALL SOD AREAS DISTURBED DURING CONSTRUCTION. SEE SPECIAL PROVISIONS.
 - PEDESTRIAN SIGNS SHALL BE FURNISHED BY ANOKA COUNTY. SEE SPECIAL PROVISIONS.
 - INPLACE DECORATIVE LIGHTING ASSEMBLY AT LOCATION 5 SHALL BE DISCONNECTED FROM POWER SOURCE 1 1/4" R.S.C. AND RECONNECTED WITH NEW CONDUCTORS AFTER RELOCATION.



SIGNAL INDICATIONS					
FACE	PHASE	FLASH	R	Y	G
1-1	1	R	12"	12"	12"
1-2	1	R	12"	12"	12"
2-1	2	R	12"	12"	12"
2-2	2	R	12"	12"	12"
2-3	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"
5-1	5	R	12"	12"	12"
5-2	5	R	12"	12"	12"
6-1	6	R	12"	12"	12"
6-2	6	R	12"	12"	12"
6-3	6	R	12"	12"	12"
8-1	8	R	12"	12"	12"
8-2	8	R	12"	12"	12"
8-3	8	R	12"	12"	12"

LOOP DETECTORS			
NUMBER	SIZE	LOCATION	FUNCTION
DI-1	4-6' x 6'	---	1
D2-1	2-6' x 6'	368'	1
D4-1	2-6' x 6'	220'	3, 8
D4-2	2-6' x 6'	---	7
D4-3	2-6' x 6'	---	1
D4-4	2-6' x 6'	---	1
D5-1	4-6' x 6'	---	1
D6-1	2-6' x 6'	368'	1
D8-1	6' x 6'	105'	3, 8
D8-2	2-6' x 6'	---	7
D8-3	6' x 6'	---	7

- LOOP DETECTOR FUNCTIONS
- CALL AND EXTEND
 - CALL ONLY
 - EXTEND ONLY
 - CALL ONLY DENSITY
 - DELAYED CALL ONLY
 - DELAYED CALL ONLY DENSITY
 - DELAYED CALL - IMMEDIATE EXTEND
 - CARRY OVER ISTRETCH
 - ADVISORY DETECTOR
 - SAMPLING DETECTOR
 - SPECIAL DETECTOR



Electrical Engineer's Certification
 I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.
 Date 2/19/91 Minn. Reg. No. 18015

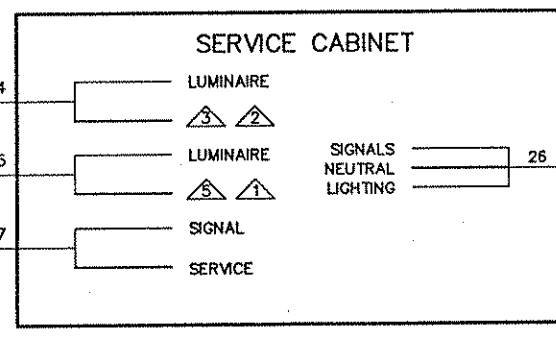
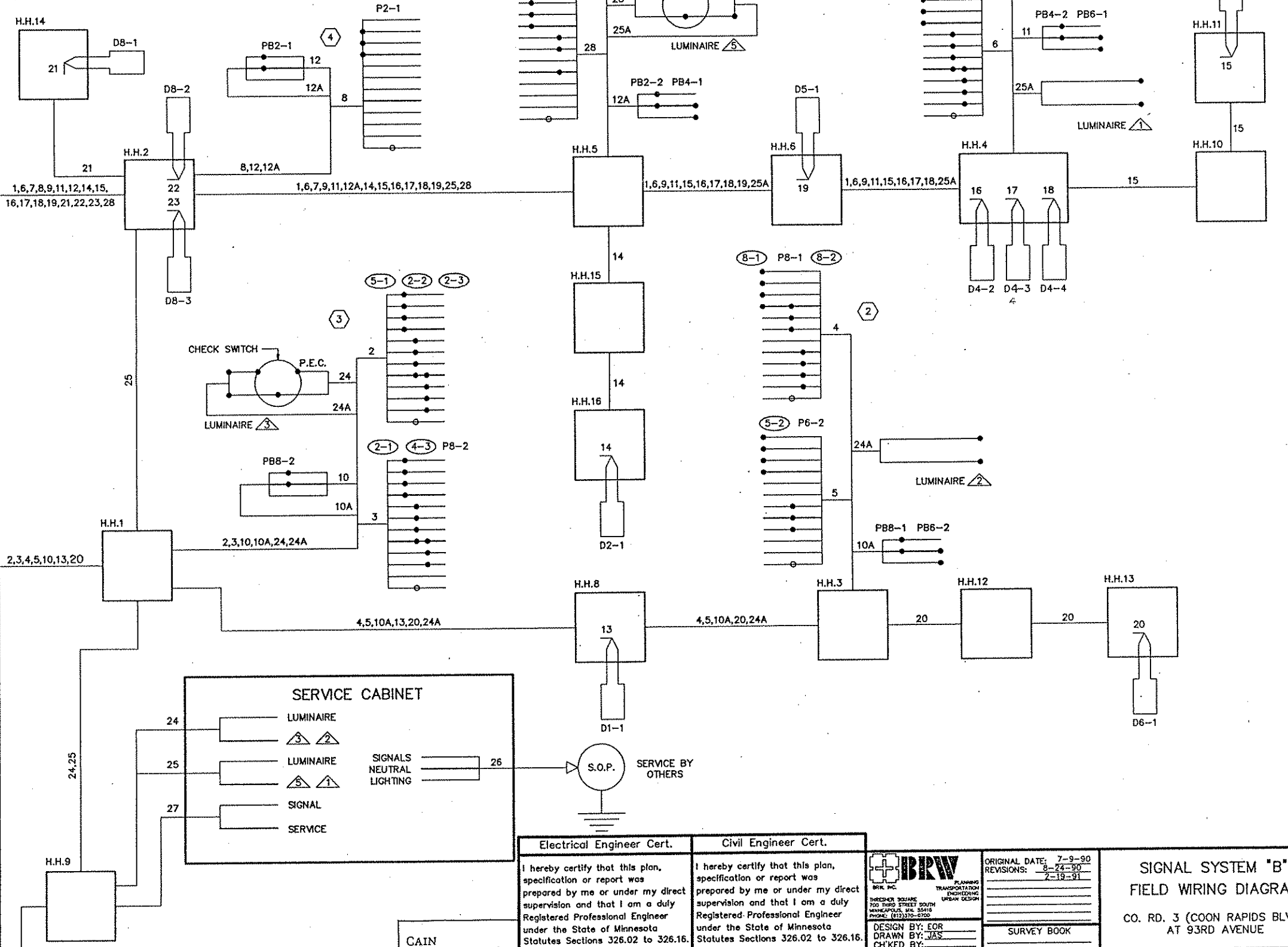
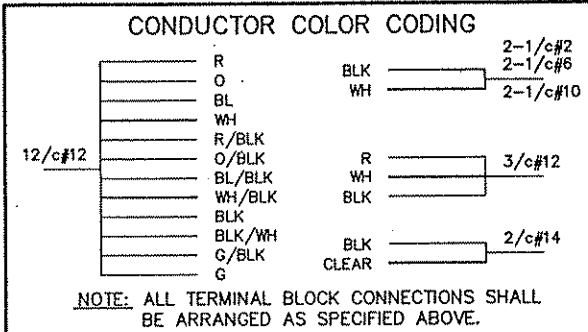
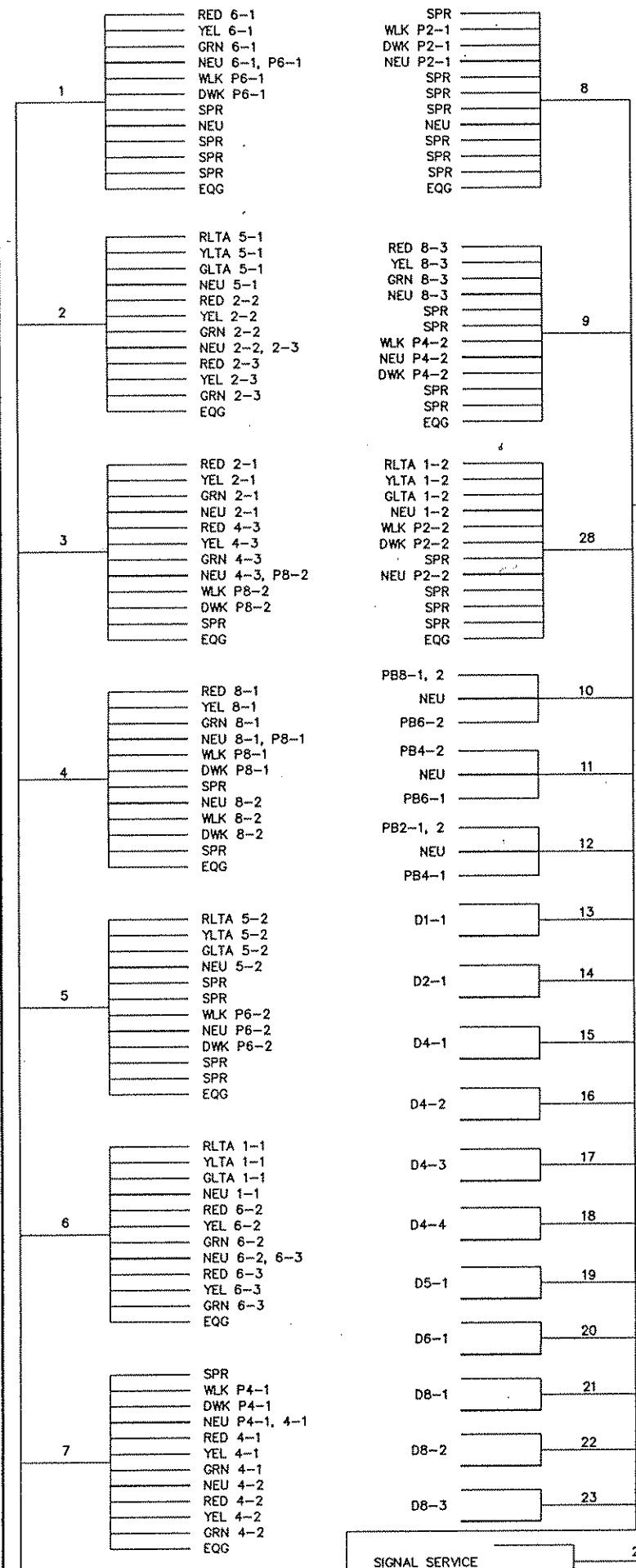
Civil Engineer's Certification
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 Date 2/19/91 Minn. Reg. No. 18015

BRW
 BRW, INC.
 700 THIRD STREET SOUTH
 MINNEAPOLIS, MN 55416
 PHONE: (612) 370-0700
 DESIGN BY: EOR
 DRAWN BY: RG

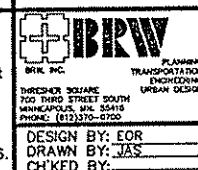
ORIGINAL DATE: _____
 REVISIONS: _____
 SURVEY BK. NO. _____
SIGNAL SYSTEM "A"
INTERSECTION LAYOUT
 CO. RD. 3 (COON RAPIDS BLVD.)
 AT
 93RD. AVE.
 C.P. 90-02-03 COON RAPIDS PROJECT 90-28 SHEET 3 OF 12 DESIGN FILE No. 40-9921

GAIN OUSE ASSOCIATES, INC.

CONTROLLER CABINET



<p>Electrical Engineer Cert.</p> <p>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minnesota Statutes Sections 326.02 to 326.16.</p> <p><i>[Signature]</i> Date: 2/19/91 Minn. Reg. No. 16632</p>	<p>Civil Engineer Cert.</p> <p>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minnesota Statutes Sections 326.02 to 326.16.</p> <p><i>[Signature]</i> Date: 2/19/91 Minn. Reg. No. 18095</p>
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ORIGINAL DATE: 7-9-90
 REVISIONS: 8-24-90
 2-19-91

SURVEY BOOK

SIGNAL SYSTEM "B"
 FIELD WIRING DIAGRAM

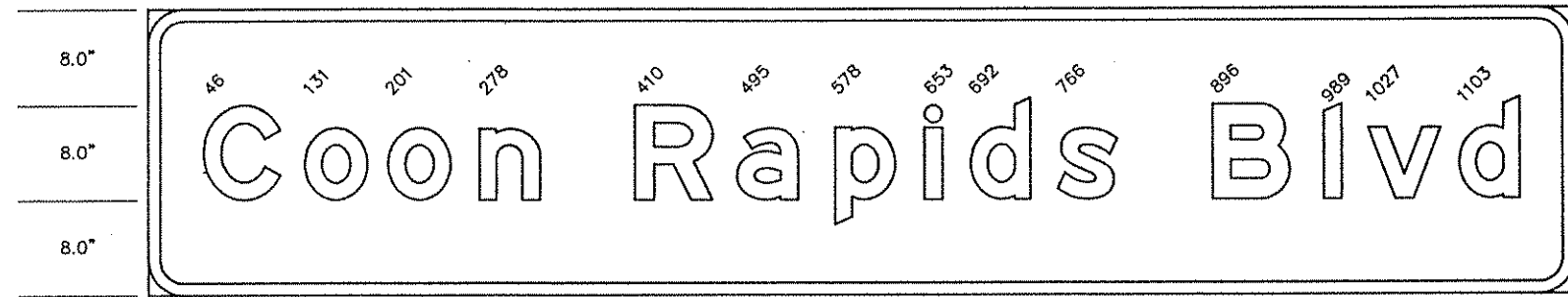
CO. RD. 3 (COON RAPIDS BLVD.)
 AT 93RD AVENUE

CAIN
 OUSE
 ASSOCIATES, INC.

C.P. 90-02-03

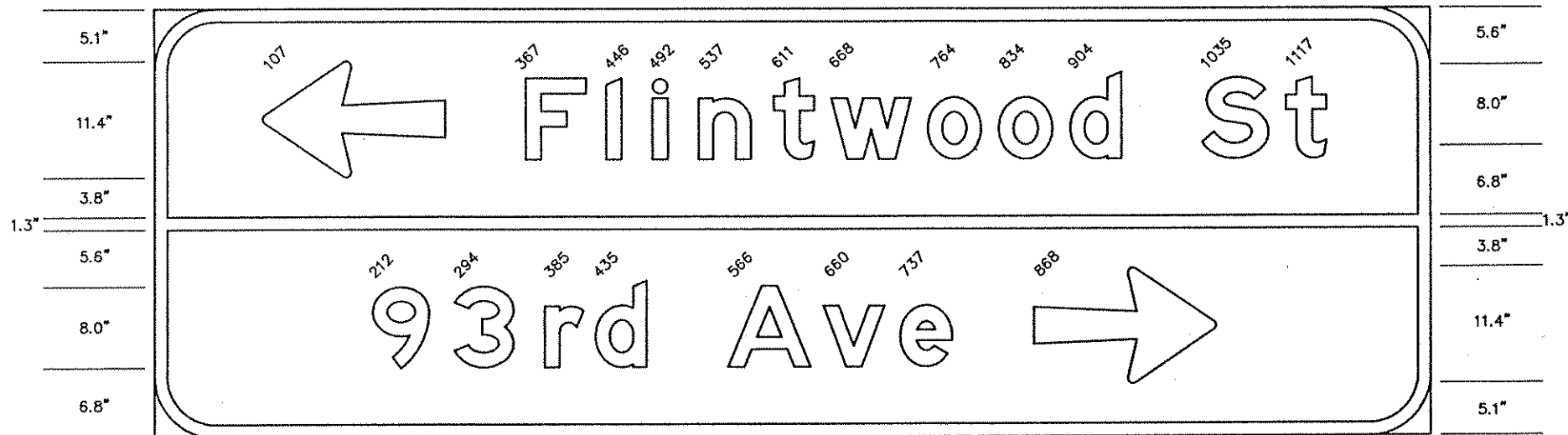
SHEET 4 OF 12

DESIGN FILE
 No. 40-9021



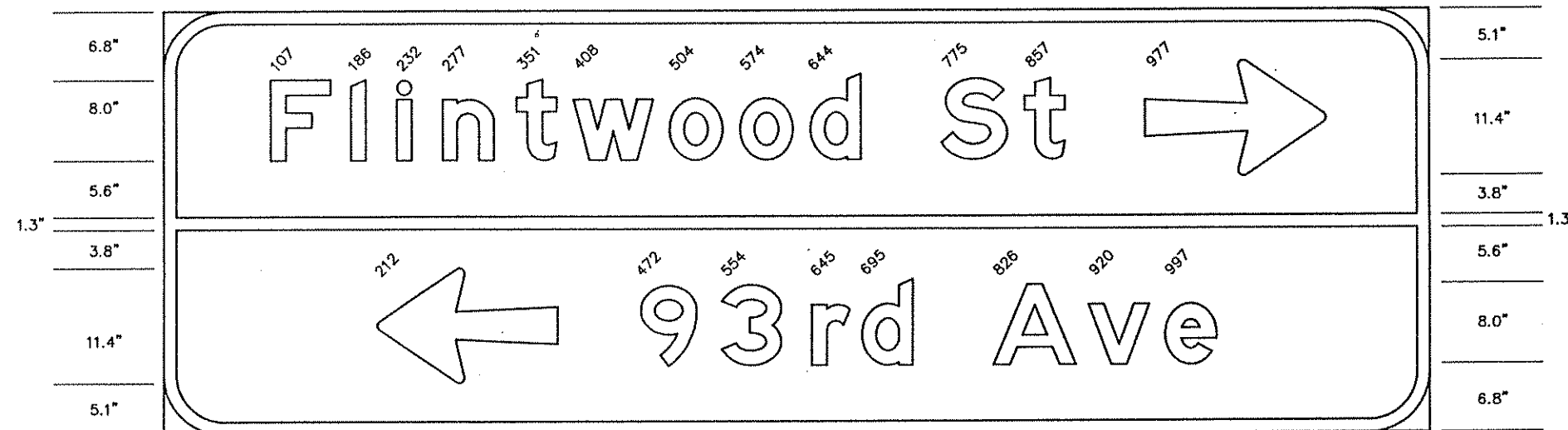
120" x 24" 3" RADIUS 1" BORDER
 LINE 1 110.8 : 8" E MOD.

D-2



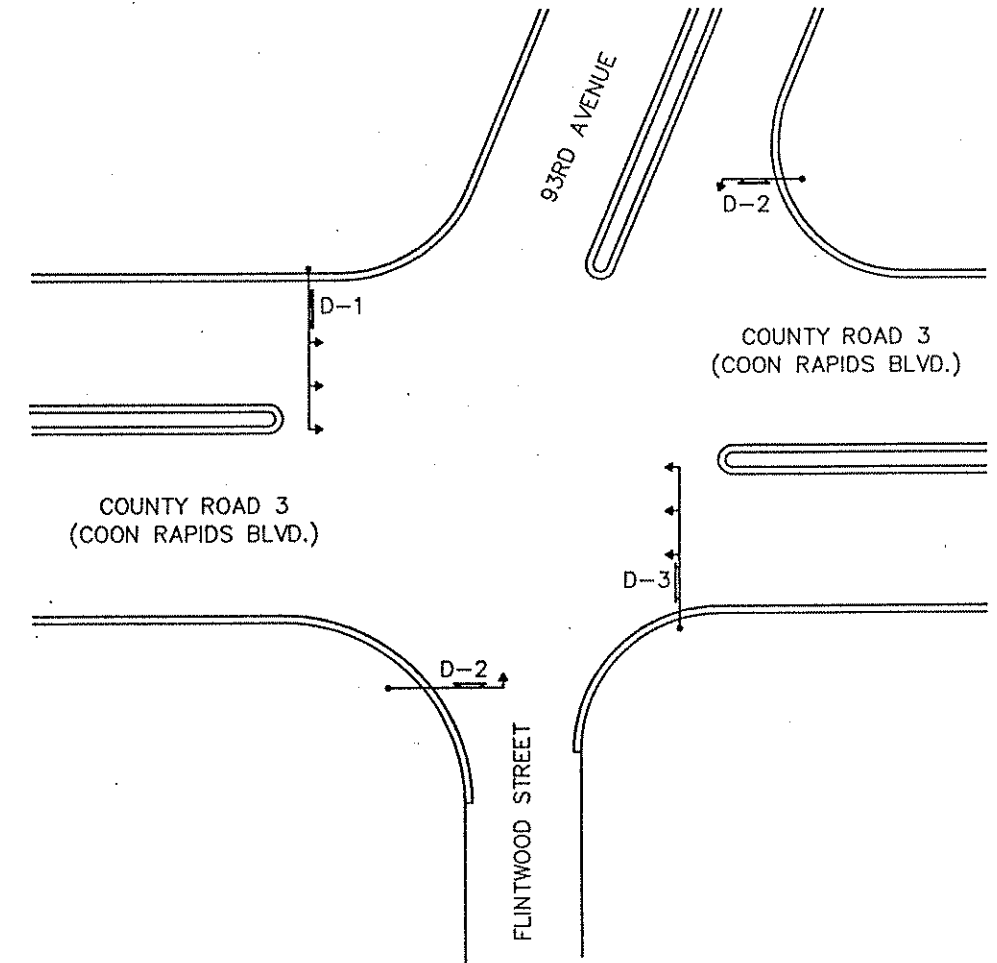
126" x 36" 6" RADIUS 1.25" BORDER
 LINE 1 105.1 :14-18 ARROW, 8" E MOD.
 LINE 2 83.6 : 8" E MOD., 14-18 ARROW

D-1



126" x 36" 6" RADIUS 1.25" BORDER
 LINE 1 105.1 :8" E MOD., 14-18 ARROW
 LINE 2 83.6 :14-18 ARROW, 8" E. MOD.

D-3



NOTES:

1. TYPE "D" SIGN PANELS SHALL HAVE WHITE LEGEND ON GREEN BACKGROUND.
2. CORNERS OF THE SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. SEE STANDARD SIGNS MANUAL FOR ARROW DETAILS.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16. <i>Erik O'Keefe</i> Date: 2/19/91, Minn. Reg. No. 18095		ORIGINAL DATE 07/05/90 REVISIONS _____ _____ _____	SIGNAL SYSTEM "A" TYPE "D" SIGNS COUNTY RD. 3 (COON RAPIDS BLVD.) AT 93RD AVENUE
		DESIGN BY: ER/TDM DRAWN BY: JDM CHECKED BY: _____ SURVEY BOOK _____	

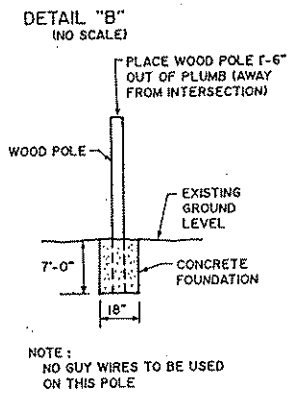
1 40' WOOD POLE-CL-2 CONCRETE FOUNDATION (SEE DETAIL "B")
 TYPE IOB MOUNTED AT 90°
 TYPE IOA MOUNTED AT 180°
 LUMINAIRE AND EXTENSION (BY OTHERS)
 PEDESTRIAN PUSH BUTTON AND SIGN
 JUNCTION BOX #1
 2" R.S.C. RISER AND WEATHERHEAD
 1-12/C #12
 1-3/C #12

2 35' WOOD POLE-CL-2
 TYPE IOA MOUNTED AT 90°
 TYPE IOA MOUNTED AT 180°
 TYPE IOB MOUNTED AT 270°
 2-DOWN GUY, GUARD, AND ANCHOR
 PEDESTRIAN PUSH BUTTON AND SIGN
 JUNCTION BOX #2
 2" R.S.C. RISER AND WEATHERHEAD
 3-12/C #12
 1-3/C #12
 2-2/C #14
 1 1/4" R.S.C. RISER BELOW JUNCTION BOX #2
 EXTEND INTO HH 6 WITH:
 2-2/C #14

3 40' WOOD POLE-CL-2
 FILL AS REQUIRED TO RAISE
 FOUNDATION ABOVE STREET GRADE
 TYPE 30A POLE MOUNTED AT 90°
 TYPE IOA MOUNTED AT 270°
 LUMINAIRE AND EXTENSION (BY OTHERS)
 2-DOWN GUY, GUARD, AND ANCHOR
 PEDESTRIAN PUSH BUTTON AND SIGN
 PEDESTRIAN WALK (SEE DETAIL "A")
 JUNCTION BOX #3
 2" R.S.C. RISER AND WEATHERHEAD
 1-12/C #12
 1-3/C #12
 4-2/C #14

4 6' PEDESTAL POLE AND BASE
 PEDESTAL FOUNDATION
 FILL AS REQUIRED TO RAISE
 FOUNDATION ABOVE STREET GRADE
 TYPE 4A
 PEDESTRIAN PUSH BUTTON AND SIGN
 PEDESTRIAN WALK (SEE DETAIL "A")
 2" R.S.C. EXTENDED INTO HH 3 WITH:
 1-12/C #12
 1-3/C #12

5 40' WOOD POLE-CL-2
 TYPE IOB POLE MOUNTED AT 0°
 TYPE 30A POLE MOUNTED AT 180°
 2-DOWN GUY, GUARD AND ANCHOR
 2-PEDESTRIAN PUSH BUTTONS AND SIGNS
 PEDESTRIAN WALK (SEE DETAIL "A")
 JUNCTION BOX #5
 2-2" R.S.C. RISERS
 EXTEND INTO HH 1 WITH:
 6-12/C #12
 3-3/C #12
 6-2/C #14
 3-3/c #20
 2-2" R.S.C. RISERS AND WEATHERHEADS
 ABOVE J.B. 5 WITH:
 5-12/c #12
 3-3/c #12
 6-2/c #14
 3-3/c #20

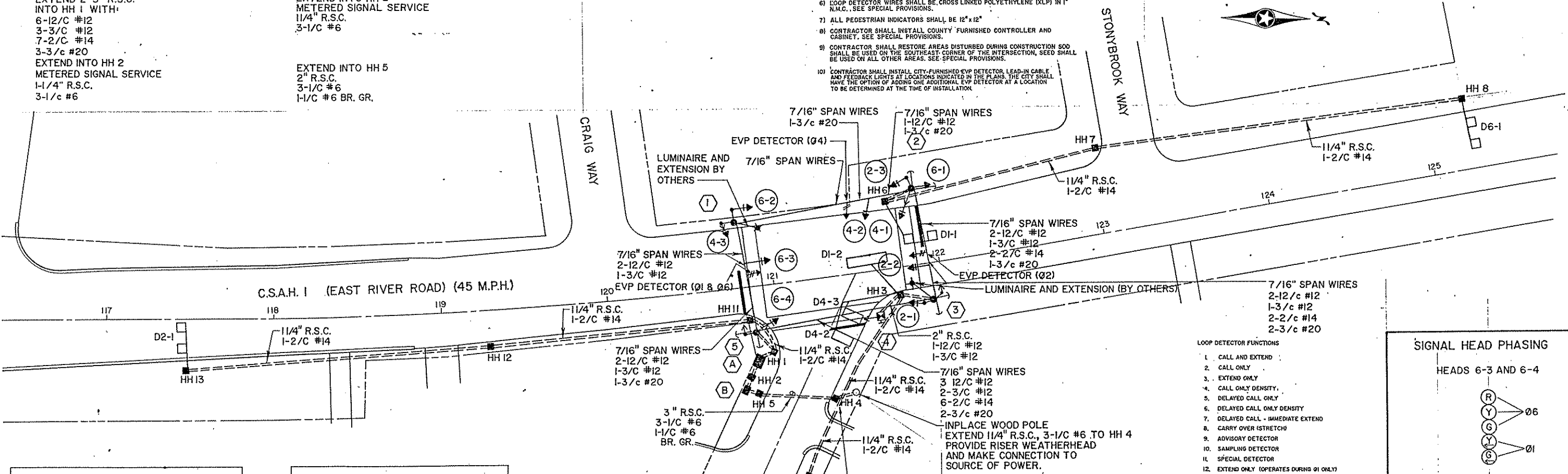


A CONTROLLER AND CABINET
 CABINET FOUNDATION
 EXTEND 2-3" R.S.C.
 INTO HH 1 WITH:
 6-12/C #12
 3-3/C #12
 7-2/C #14
 3-3/c #20
 EXTEND INTO HH 2
 METERED SIGNAL SERVICE
 1-1/4" R.S.C.
 3-1/c #6

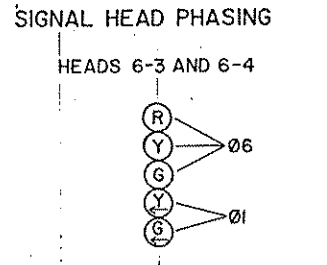
B SERVICE CABINET
 CABINET FOUNDATION
 EXTEND INTO HH 2
 METERED SIGNAL SERVICE
 1 1/4" R.S.C.
 3-1/C #6
 EXTEND INTO HH 5
 2" R.S.C.
 3-1/C #6
 1-1/C #6 BR. GR.

NOTES:

- SEE SPECIAL PROVISIONS FOR CONTRACTOR'S RESPONSIBILITY FOR LOCATION OF UTILITIES.
- ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS.
- LUMINAIRE AT LOCATIONS 1 AND 3 TO BE INSTALLED BY OTHERS.
- SEE SPECIAL PROVISIONS FOR ANOKA COUNTY SERVICE CABINET DETAILS.
- HANDHOLES SHALL BE CONCRETE WITH CONCRETE COVERS.
- LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) IN 1" R.M.C., SEE SPECIAL PROVISIONS.
- ALL PEDESTRIAN INDICATORS SHALL BE 12"x12"
- CONTRACTOR SHALL INSTALL COUNTY FURNISHED CONTROLLER AND CABINET. SEE SPECIAL PROVISIONS.
- CONTRACTOR SHALL RESTORE AREAS DISTURBED DURING CONSTRUCTION SOO SHALL BE USED ON THE SOUTHEAST CORNER OF THE INTERSECTION, SEED SHALL BE USED ON ALL OTHER AREAS. SEE SPECIAL PROVISIONS.
- CONTRACTOR SHALL INSTALL CITY-FURNISHED EVP DETECTOR, LEAD-IN CABLE AND FEEDBACK LIGHTS AT LOCATIONS INDICATED IN THE PLANS. THE CITY SHALL HAVE THE OPTION OF ADDING ONE ADDITIONAL EVP DETECTOR AT A LOCATION TO BE DETERMINED AT THE TIME OF INSTALLATION.



- LOOP DETECTOR FUNCTIONS
- CALL AND EXTEND
 - CALL ONLY
 - EXTEND ONLY
 - CALL ONLY DENSITY
 - DELAYED CALL ONLY
 - DELAYED CALL ONLY DENSITY
 - DELAYED CALL - IMMEDIATE EXTEND
 - CARRY OVER (STRETCH)
 - ADVISORY DETECTOR
 - SAMPLING DETECTOR
 - SPECIAL DETECTOR
 - EXTEND ONLY (OPERATES DURING 01 ONLY)



SIGNAL INDICATIONS							
FACE	PHASE	FLASH	R	Y	G	Y	G
2-1	2	R	12"	12"	12"		
2-2	2	R	12"	12"	12"		
2-3	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"		
6-1	6	R	12"	12"	12"		
6-2	6	R	12"	12"	12"		
6-3	1 & 6	R	12"	12"	12"	12"	12"
6-4	1 & 6	R	12"	12"	12"	12"	12"

LOOP DETECTORS			
NUMBER	SIZE	LOCATION	FUNCTION
D1-1	2-6'x6'	—	5
D1-2	6'x24'	—	12
D2-1	2-6'x6'	330'	1
D4-1	6'x12'	180'	3, 8
D4-2	6'x12'	—	7
D4-3	6'x12'	—	7
D6-1	2-6'x6'	330'	1

* DISTANCE TO STOP BAR

CAIN
 OUSE
 ASSOCIATES, INC.

Electrical Engineer's Certification
 I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.
 Date 2/19/91 Minn. Reg. No. 16095

Civil Engineer's Certification
 I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.
 Date 2/19/91 Minn. Reg. No. 16095

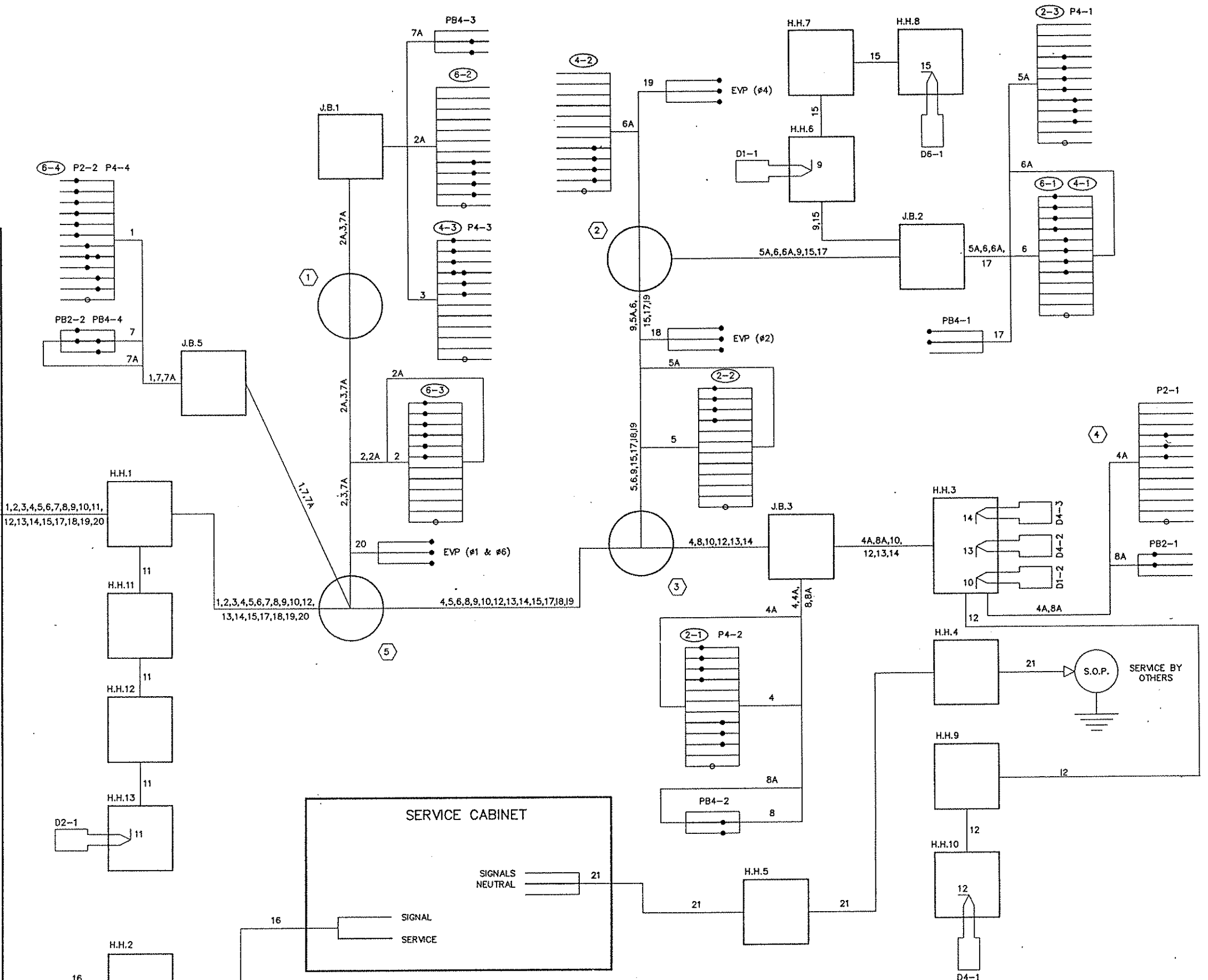
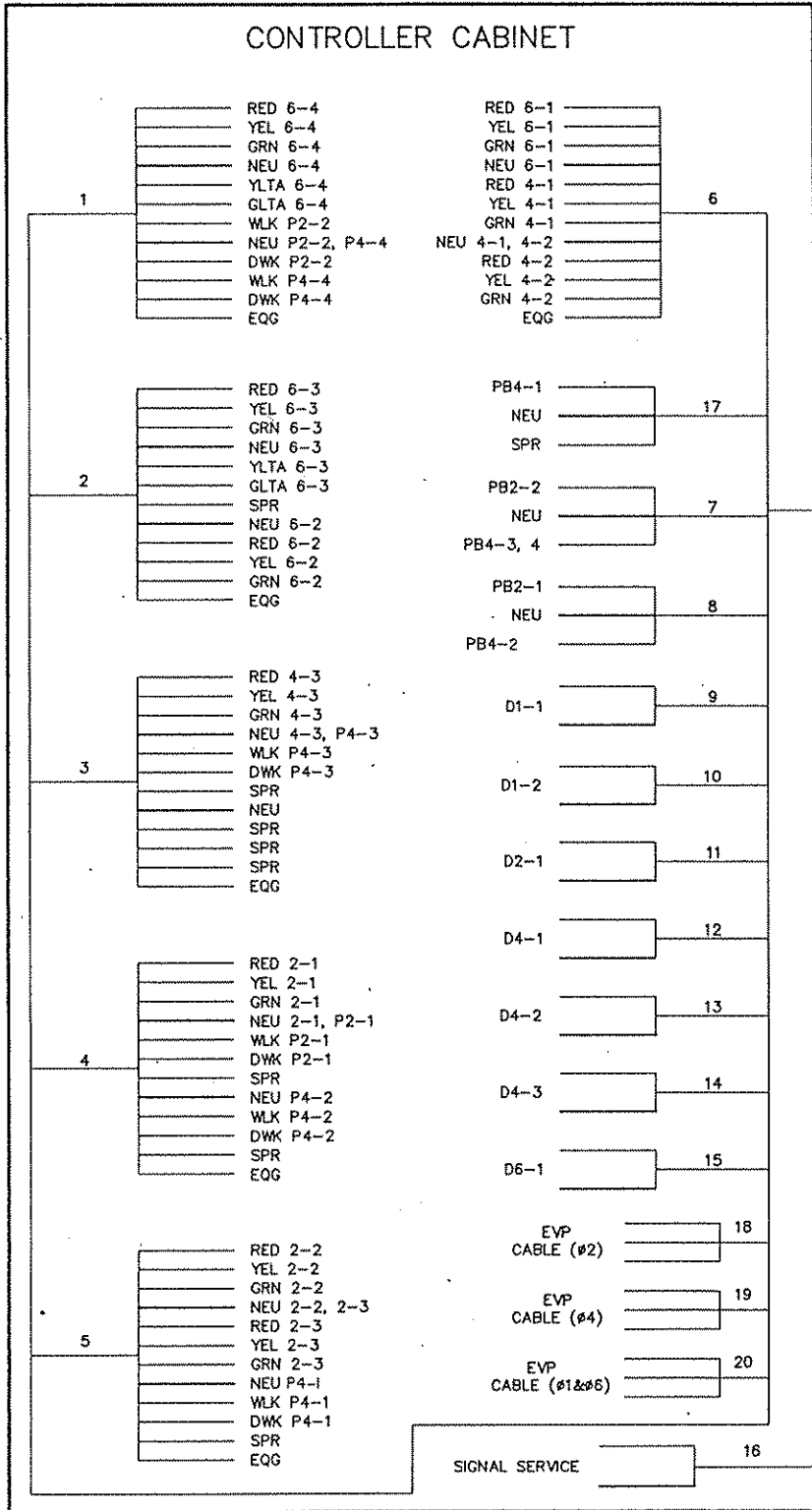
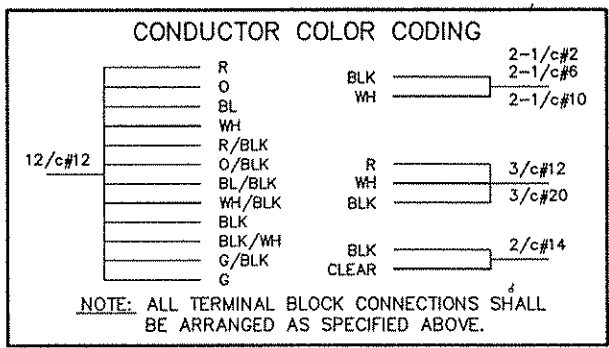
BRW
 BRW, INC.
 700 THIRD STREET SOUTH
 MINNEAPOLIS, MN 55416
 PHONE: (612) 370-0700
 DESIGN BY: FOR
 DRAWN BY: RG

ORIGINAL DATE:
 REVISIONS:
 SURVEY BK. NO.

SIGNAL SYSTEM "B"
 INTERSECTION LAYOUT
 C.S.A.H. I (EAST RIVER RD.)
 AT
 77TH WAY N.E.

C.P. 90-03-01

SHEET 6 OF 12
 DESIGN FILE No. 49-9021

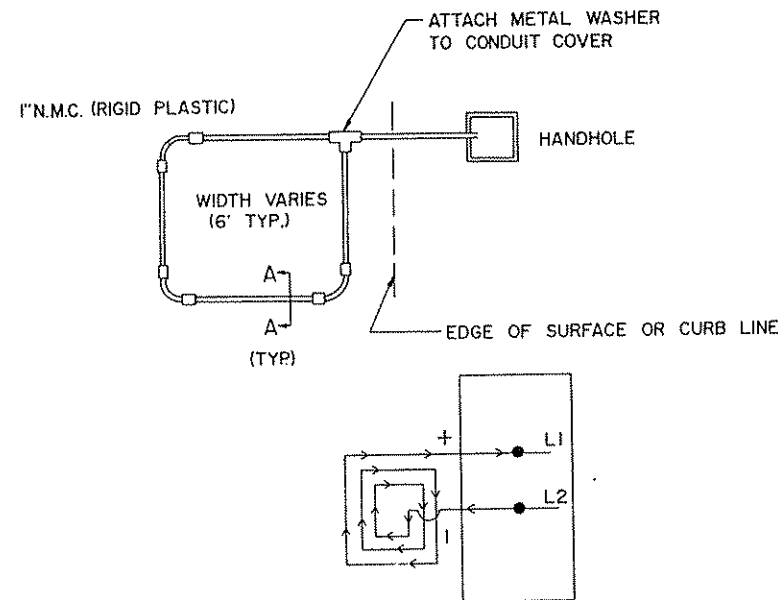


CAIN OUSE ASSOCIATES, INC. Electrical Engineer Cert. I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minnesota Statutes Sections 326.02 to 326.16. <i>[Signature]</i> Date: 1/17/91 Minn. Reg. No. 16827	Civil Engineer Cert. I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minnesota Statutes Sections 326.02 to 326.16. <i>[Signature]</i> Date: 2/1/91 Minn. Reg. No. 18095	 DRW INC. PLANNING TRANSPORTATION ENGINEERING URBAN DESIGN 700 THIRD STREET SOUTH MINNEAPOLIS, MN 55415 PHONE: (612) 372-0700 DESIGN BY: EOR DRAWN BY: JAS CHECKED BY:	ORIGINAL DATE: 7/9/90 REVISIONS: 3/24/90	SIGNAL SYSTEM "B" FIELD WIRING DIAGRAM CSAH 1 (EAST RIVER ROAD) AT 77TH WAY N.E.
			SURVEY BOOK	

DESIGN FILE No. 40-9021

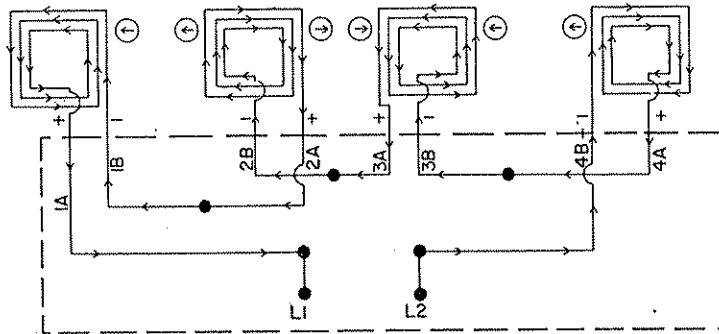
LOOP DETECTOR DETAIL "A"

PLAN VIEW
(NOT TO SCALE)



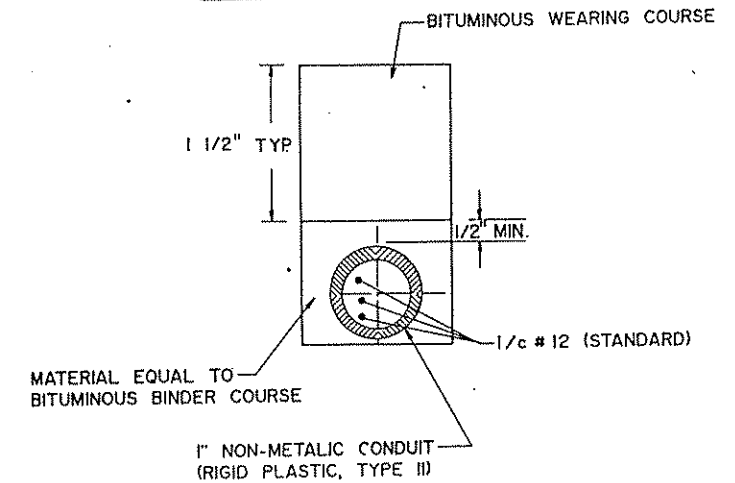
LOOP DETECTOR DETAIL "C"

PLAN VIEW (NOT TO SCALE)
(LOOP PHASING FOR SERIES CONNECTION)



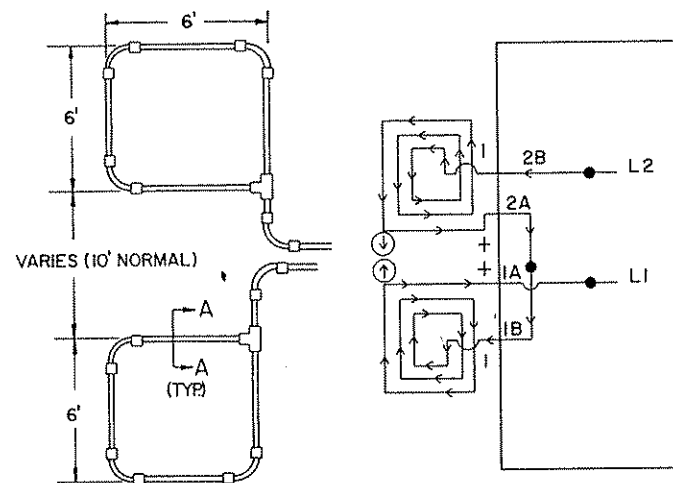
LOOP CONNECTIONS SHALL BE SPLICED IN THE HANDHOLE AS FOLLOWS:
L1 TO 1A, 1B TO 2A, 2B TO 3A, 3B TO 4A, AND 4B TO L2. SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ETC.)

CROSS SECTION A-A



CONDUIT INSTALLATION DETAIL FOR LOOP DETECTORS

LOOP DETECTOR CONDUITS ARE TO BE INSTALLED IN 3" CUT TRENCHES AS SHOWN ON PLANS. INSTALL EACH COMPLETE DETECTOR ASSEMBLY WITH THE DETECTOR WIRE PULLED THROUGH THE COMPLETE ASSEMBLY TO HANDHOLE. WHERE APPROPRIATE, PLACE DETECTOR CONDUIT IN BITUMINOUS BINDER COURSE PRIOR TO PLACEMENT OF THE WEARING COURSE. THE DEPTH OF THE TRENCH AND THE RESULTANT PLACEMENT OF THE DETECTOR CONDUIT SHALL BE SUCH THAT THE ENTIRE DETECTOR ASSEMBLY DRAINS INTO THE HANDHOLE. BACKFILL AND COMPACT THE TRENCHES WITH MATERIAL EQUIVALENT TO THE MATERIAL REMOVED.

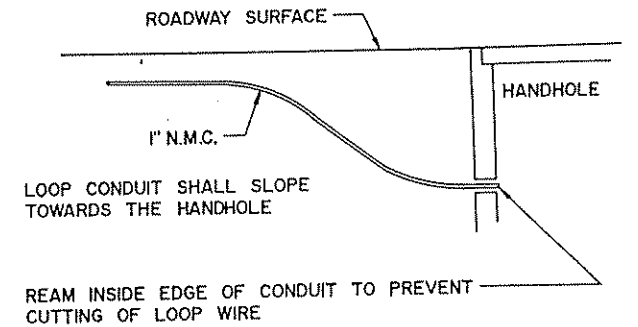
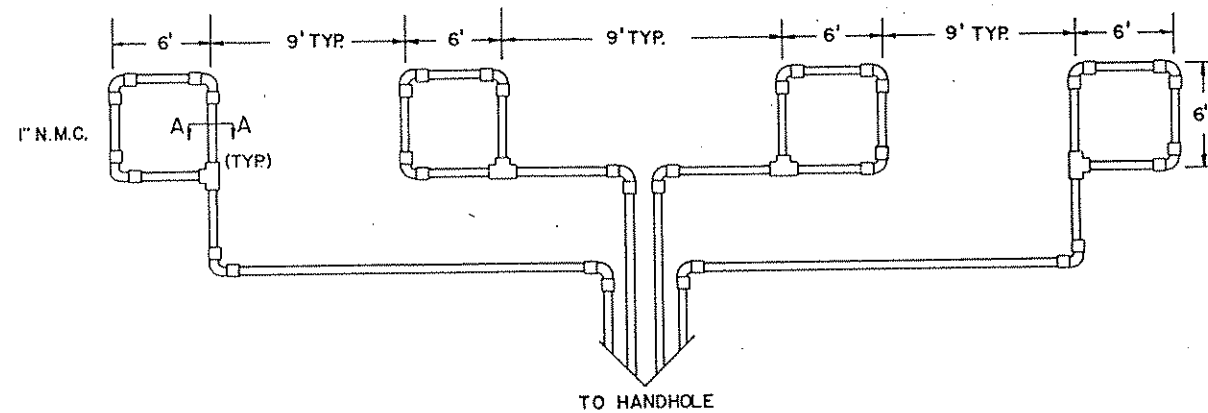


CONDUITS MAY BE PLACED IN COMMON TRENCH.

LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:
L1 TO 1A, 1B TO 2A, AND 2B TO L2.

LOOP DETECTOR DETAIL "B"

PLAN VIEW
(NOT TO SCALE)
(TYPICAL)



DRAINAGE DETAILS

NOTES:

- 1) ALL CORNERS SHALL BE STANDARD 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING THE SPLICE KIT METHOD. SEE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE CROSS LINKED POLYETHYLENE (XLP) SEE SPECIAL PROVISIONS.
- 4) LOOP WIRES SHALL BE TWISTED A MIN. OF 1 TURN PER 3 FEET FROM THE LOOP TO THE CONDUIT AND 3 TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) N.M.C. DESIGNATES NON-METALLIC CONDUIT (SPEC 3803).
- 6) LOOPS 6'x6' THRU 6'x14' SHALL HAVE THREE (3) TURNS.
- 7) LOOPS 6'x15' AND LARGER SHALL HAVE TWO (2) TURNS.

CAIN
OUSE
ASSOCIATES, INC.

<p>ELEC. ENGR. CERT.</p> <p>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.</p> <p><i>[Signature]</i> Date 2/17/91 Minn. Reg. No. 12537</p>	<p>CIVIL ENGR. CERT.</p> <p>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.</p> <p><i>[Signature]</i> Date 2/17/91 Minn. Reg. No. 18095</p>
---	---

DRW
INC.
PLANNING
TRANSPORTATION
ENGINEERING
URBAN DESIGN

THRESHOLD SQUARE
700 THIRD STREET SOUTH
MINNEAPOLIS, MN 55415
PHONE: (612)370-0700

DESIGN BY: EOR
DRAWN BY: KJM

ORIGINAL DATE: _____
REVISIONS: _____
SURVEY BK. NO. _____

DETECTOR DETAILS

C.P. 90-02-03
C.P. 90-03-01
COON RAPIDS PROJECT 90-28

STANDARD PLATES	
PLATE NO.	DESCRIPTION
* 8110 C	TRAFFIC SIGNAL BRACKETING - POLE MOUNTED
* 8111 B	TRAFFIC SIGNAL BRACKETING - PEDESTAL MOUNTED
* 8112 C	PEDESTAL FOUNDATION
* 8113 C	MAGNETIC VEHICLE DETECTOR INSTALLATION
* 8115 C	PEDESTRIAN PUSH BUTTON INSTALLATION
* 8117 F	PRECAST CONCRETE HANDHOLE
* 8118 C	SERVICE EQUIPMENT AND POLE
* 8119 C	GROUND MOUNTED CABINET FOUNDATION
* 8120 H	P-80 AND P-90 POLE FOUNDATION
* 8121 B	TRANSFORMER BASE WITH POLE BASE PLATE
* 8122 C	PEDESTAL AND PEDESTAL BASE
* 8123 B	POLE AND MAST ARM
* 8124 D	SIGNAL HEAD MOUNTS
* 8126 C	P-100 POLE FOUNDATION
* 8130 D	SAW CUT LOOP DETECTORS

* STANDARD PLATES APPLICABLE TO THIS PLAN

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
- W/BLK-WHITE WITH BLACK TRACER
- BLK-BLACK
- BLK/WH-BLACK WITH WHITE TRACER
- G/BLK-GREEN WITH BLACK TRACER
- G-GREEN

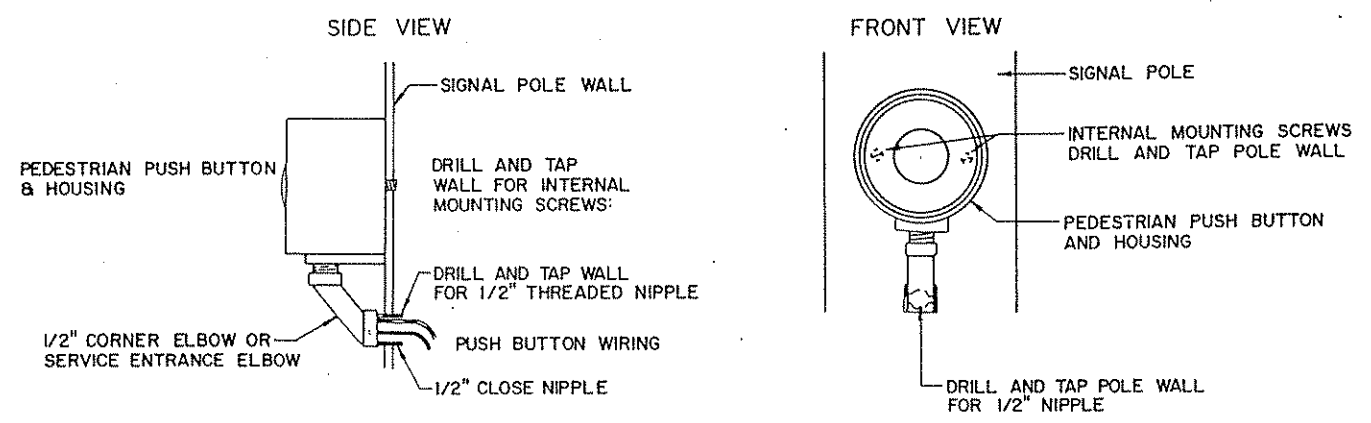
ABBREVIATIONS
EQUIPMENT AND INDICATIONS

- R,RED-RED
- Y,YEL-YELLOW
- G,GRN-GREEN
- WLK-WALK
- NEU-NEUTRAL
- DWK-DON'T WALK
- LUM-LUMINAIRE
- DNL-DOWNLIGHT
- H.H.-HANDHOLE
- EQG-EQUIPMENT GROUND
- R.S.C.-RIGID STEEL CONDUIT
- GLTA-GREEN LEFT TURN ARROW
- YRTA-YELLOW RIGHT TURN ARROW
- D2-1 (eg)-DETECTOR-PHASE "2"
- GR.R-GROUND ROD
- SER.-SERVICE
- P2-2 PEDESTRIAN INDICATIONS-PHASE "2"
- 2-1 (eg)-SIGNAL HEADS-PHASE "2"
- SPR.-SPARE CONDUCTORS
- N.M.C.-NON METALLIC CONDUIT
- E.V.P.-EMERGENCY VEHICLE PRE-EMPTION
- J.B.-JUNCTION BOX
- W.P.-WOOD POLE
- P.E.C.-PHOTOELECTRIC CELL
- Br.Gr.- BARE GROUND

LEGEND OF SYMBOLS

- CONTROLLER AND SERVICE EQPT. NO'S ----- [Symbol]
- SIGNAL BASE NO. ----- [Symbol]
- SIGNAL FACE NO. ----- [Symbol]
- LUMINAIRE NO. ----- [Symbol]
- CONTROLLER AND CABINET ----- [Symbol]
- CONTROLLER AND CABINET-IN PLACE ----- [Symbol]
- HANDHOLE ----- [Symbol]
- HANDHOLE-IN PLACE ----- [Symbol]
- RIGID STEEL CONDUIT (R.S.C.) ----- [Symbol]
- RIGID STEEL CONDUIT (R.S.C.)-IN PLACE ----- [Symbol]
- SIGNAL FACE WITH BACKGROUND SHIELD ----- [Symbol]
- SIGNAL FACE W/O BACKGROUND SHIELD ----- [Symbol]
- SIGNAL FACE-IN PLACE ----- [Symbol]
- PEDESTRIAN INDICATIONS ----- [Symbol]
- PEDESTRIAN INDICATIONS-IN PLACE ----- [Symbol]
- PEDESTRIAN PUSH BUTTON ON PEDESTAL OR POLE ----- [Symbol]
- PEDESTRIAN PUSH BUTTON STATION ----- [Symbol]
- TRAFFIC SIGNAL PEDESTAL ----- [Symbol]
- TRAFFIC SIGNAL PEDESTAL-IN PLACE ----- [Symbol]
- TRAFFIC SIGNAL POLE AND MAST ARM ----- [Symbol]
- TRAFFIC SIGNAL POLE AND MAST ARM-IN PLACE ----- [Symbol]
- STREET LIGHT POLE AND LUMINAIRE ----- [Symbol]
- STREET LIGHT POLE AND LUMINAIRE-IN PLACE ----- [Symbol]
- MAST ARM AND LUMINAIRE ----- [Symbol]
- MAST ARM AND LUMINAIRE-IN PLACE ----- [Symbol]
- WOOD POLE ----- [Symbol]
- WOOD POLE-IN PLACE ----- [Symbol]
- SOURCE OF POWER ----- [Symbol]
- RAILROAD SIGNAL-IN PLACE ----- [Symbol]
- RIGHT OF WAY LINE ----- [Symbol]
- CENTER LINE ----- [Symbol]
- EDGE OF ROADWAY ----- [Symbol]
- SHOULDER LINE ----- [Symbol]
- CURB LINE ----- [Symbol]
- STOP BAR ----- [Symbol]
- CROSSWALK ----- [Symbol]

PEDESTRIAN PUSH BUTTON MOUNTING DETAIL

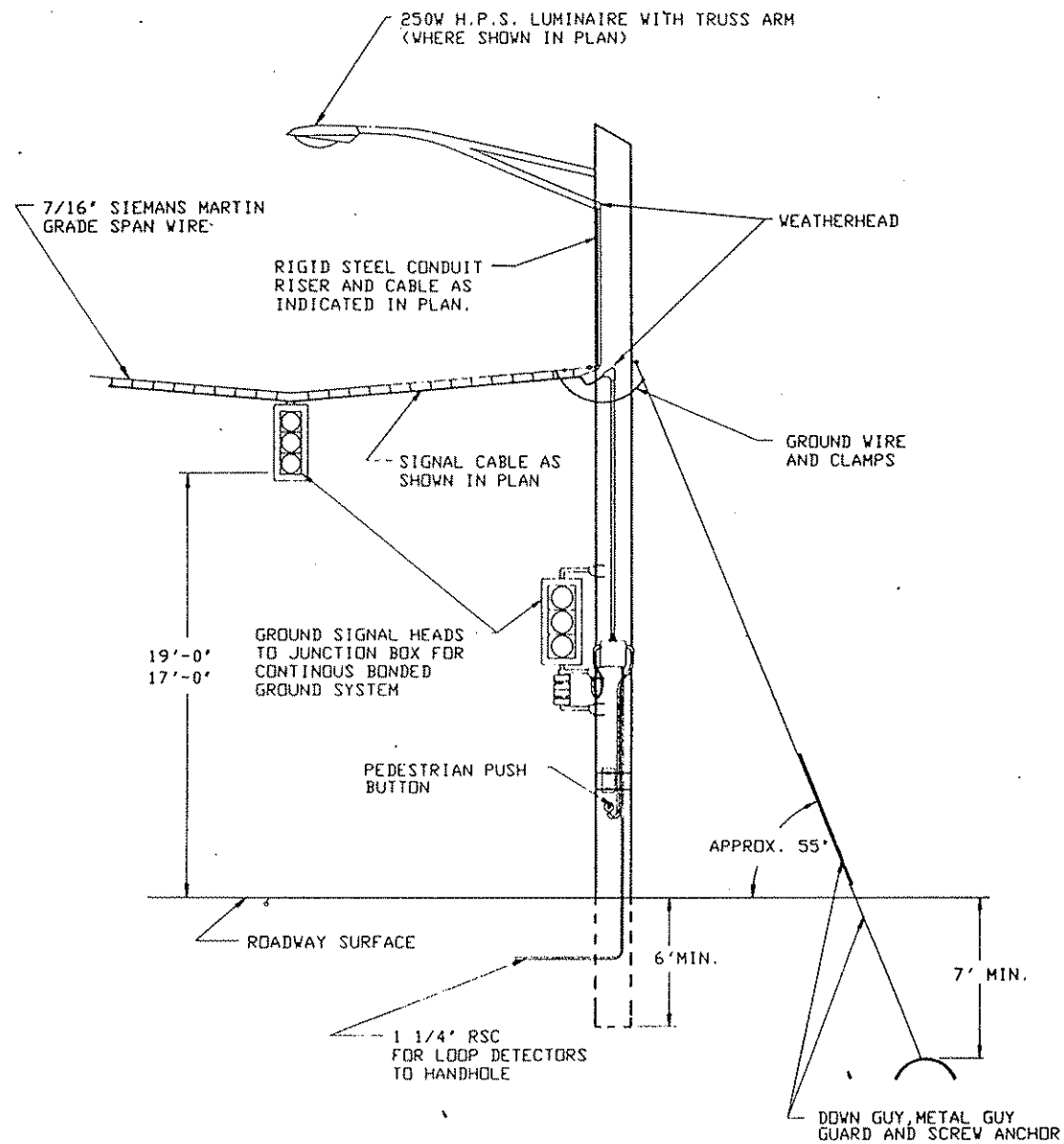


<p>ELEC. ENGR. CERT.</p> <p>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.</p> <p><i>[Signature]</i> Date 2/19/91 Minn. Reg. No. 12637</p>	<p>CIVIL ENGR. CERT.</p> <p>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.</p> <p><i>[Signature]</i> Date 2/19/91 Minn. Reg. No. 18095</p>	<p>BRW PLANNING TRANSPORTATION ENGINEERING URBAN DESIGN</p> <p>700 THIRD STREET SOUTH MINNEAPOLIS, MN 55415 PHONE: (612)570-0700</p> <p>DESIGN BY: FOR DRAWN BY: KJM</p>	<p>ORIGINAL DATE: _____</p> <p>REVISIONS: _____</p>	<p>DETAILS & LEGENDS</p> <p>C.P. 90-02-03 C.P. 90-03-01 COON RAPIDS PROJECT 90-28</p>
			<p>SURVEY BK. NO. _____</p>	

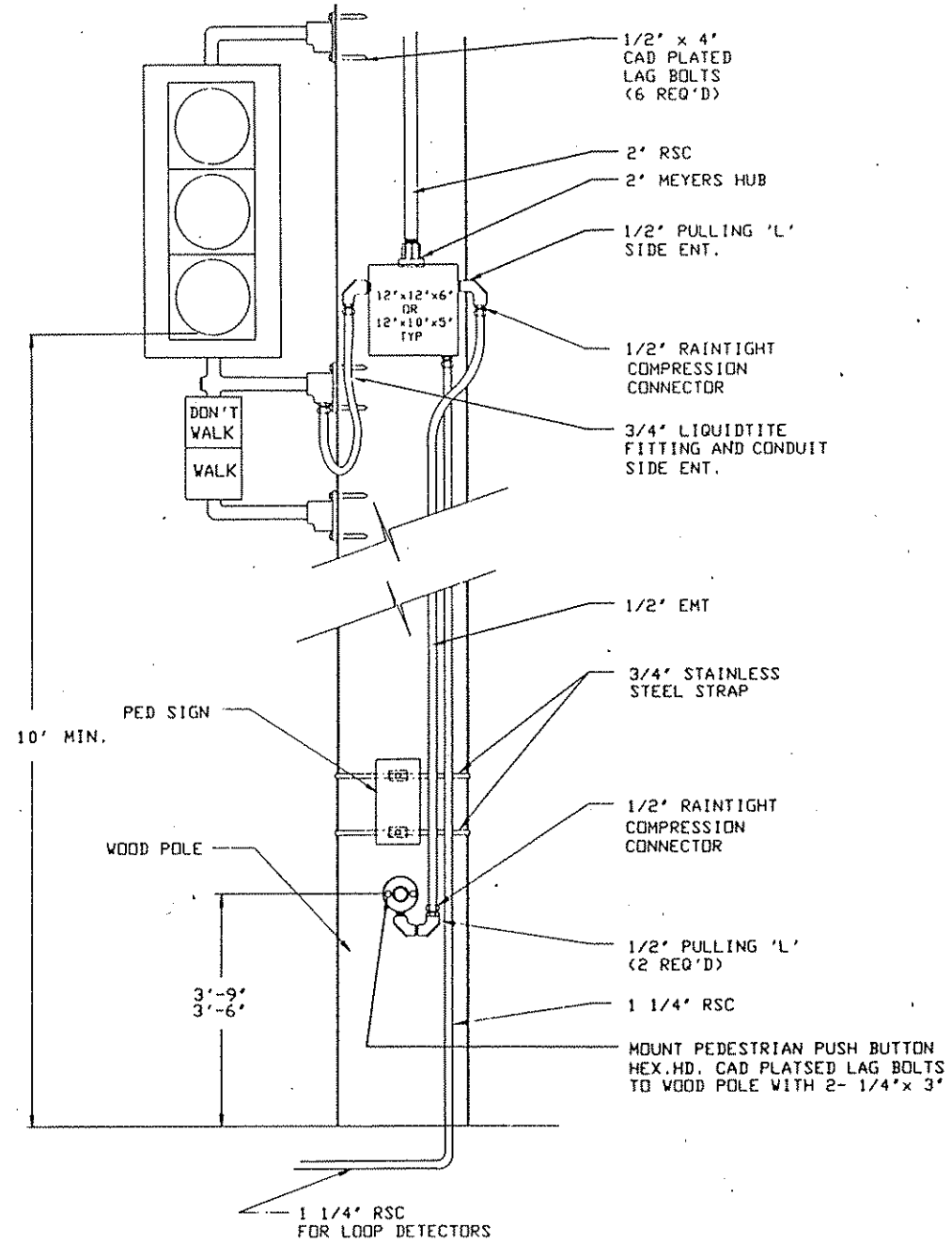
CAIN
OUSE
ASSOCIATES, INC.

DESIGN FILE
No. 90-902L

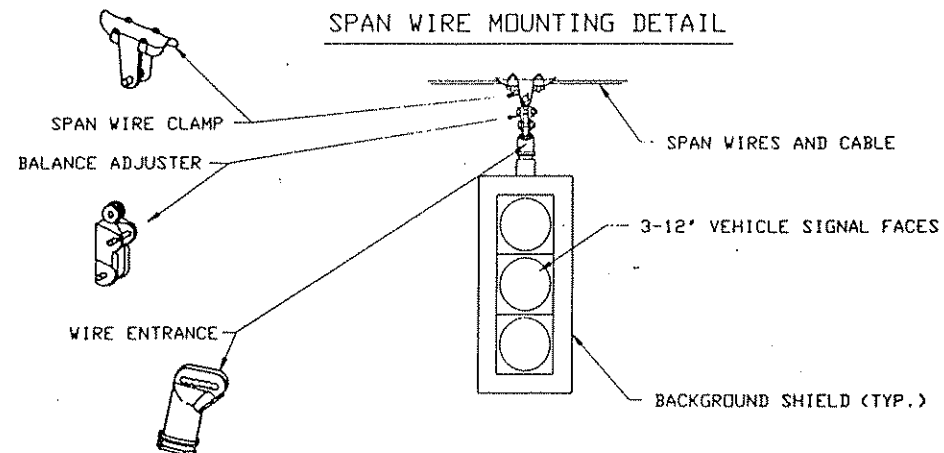
TEMPORARY POLE DETAIL



PED BUTTON WIRING DETAIL



SPAN WIRE MOUNTING DETAIL



Electrical Engineer's Certification	Civil Engineer's Certification
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.	I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.
<i>[Signature]</i>	<i>[Signature]</i>
Date <u>2/19/91</u> Minn. Reg. No. <u>L&17</u>	Date <u>2/19/91</u> Minn. Reg. No. <u>18095</u>

CAIN
OUSE
ASSOCIATES, INC.

BRW
PLANNING
TRANSPORTATION
ENGINEERING
URBAN DESIGN

THRESHER SQUARE
700 THIRD STREET SOUTH
MINNEAPOLIS, MN 55415
PHONE (612)370-0700

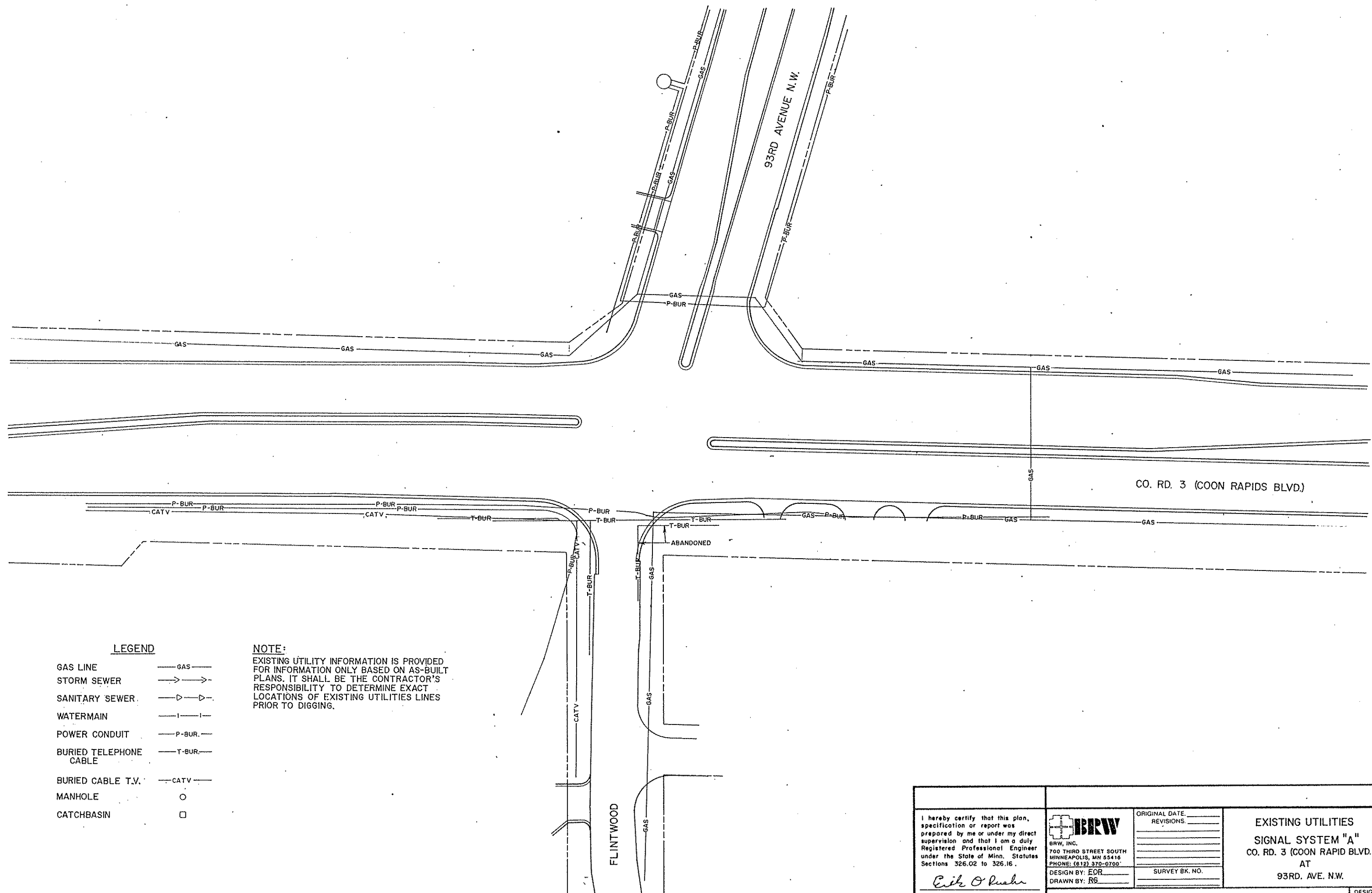
DESIGN BY EOR
DRAWN BY RS

ORIGINAL DATE	REVISIONS

SURVEY BK NO

TEMPORARY SIGNAL DETAIL

C.P. 90-03-01



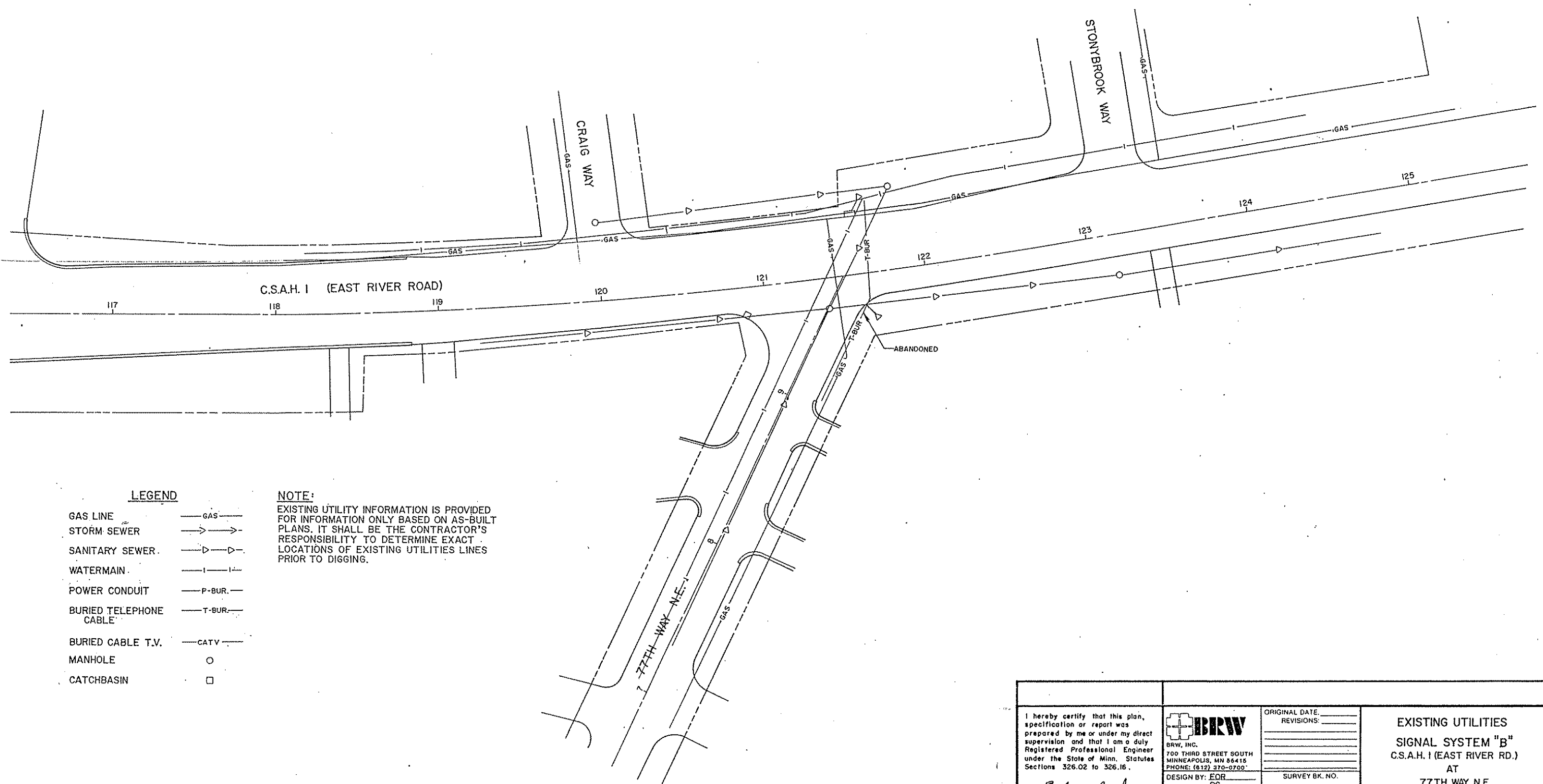
LEGEND

- GAS LINE ——— GAS ———
- STORM SEWER ———>——>
- SANITARY SEWER ———▷——▷
- WATERMAIN ———|——|
- POWER CONDUIT ———P-BUR——
- BURIED TELEPHONE CABLE ———T-BUR——
- BURIED CABLE T.V. ———CATV——
- MANHOLE ○
- CATCHBASIN □

NOTE:

EXISTING UTILITY INFORMATION IS PROVIDED FOR INFORMATION ONLY BASED ON AS-BUILT PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATIONS OF EXISTING UTILITIES LINES PRIOR TO DIGGING.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16. <i>Erik O'Rourke</i> Date <u>2/19/11</u> Minn. Reg. No. <u>18075</u>	 BRW BRW, INC. 700 THIRD STREET SOUTH MINNEAPOLIS, MN 55416 PHONE: (612) 370-0700 DESIGN BY: EOR DRAWN BY: RG	ORIGINAL DATE _____ REVISIONS _____ _____ _____ _____	EXISTING UTILITIES SIGNAL SYSTEM "A" CO. RD. 3 (COON RAPID BLVD.) AT 93RD. AVE. N.W.
		SURVEY BK. NO. _____	
SHEET <u>11</u> OF <u>12</u>			DESIGN FILE No. <u>40-9021</u>



LEGEND

- GAS LINE — GAS —
- STORM SEWER —>—>—
- SANITARY SEWER —▷—▷—
- WATERMAIN —|—|—
- POWER CONDUIT —P-BUR—
- BURIED TELEPHONE CABLE —T-BUR—
- BURIED CABLE T.V. —CATV—
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<p>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the State of Minn. Statutes Sections 326.02 to 326.16.</p> <p style="text-align: right;"><i>Eric O. Fisher</i></p> <p>Date <u>2/19/91</u> Minn. Reg. No. <u>18095</u></p>	<p>BRW BRW, INC. 700 THIRD STREET SOUTH MINNEAPOLIS, MN 55415 PHONE: (612) 370-0700</p>	<p>ORIGINAL DATE: _____</p> <p>REVISIONS: _____</p> <p>DESIGN BY: <u>EOR</u></p> <p>DRAWN BY: <u>RG</u></p> <p>SURVEY BK. NO. _____</p>	<p>EXISTING UTILITIES</p> <p>SIGNAL SYSTEM "B"</p> <p>C.S.A.H. 1 (EAST RIVER RD.)</p> <p>AT</p> <p>77TH WAY N.E.</p>	<p>DESIGN FILE</p> <p>No. 40:9021</p>
C.P. 90-03-01		SHEET <u>12</u> OF <u>12</u>		