MINNESOTA DEPARTMENT OF TRANSPORTATION
OLMSTED COUNTY

CONSTRUCTION PLAN FOR TRAFFIC CONTROL SIGNAL SYSTEM

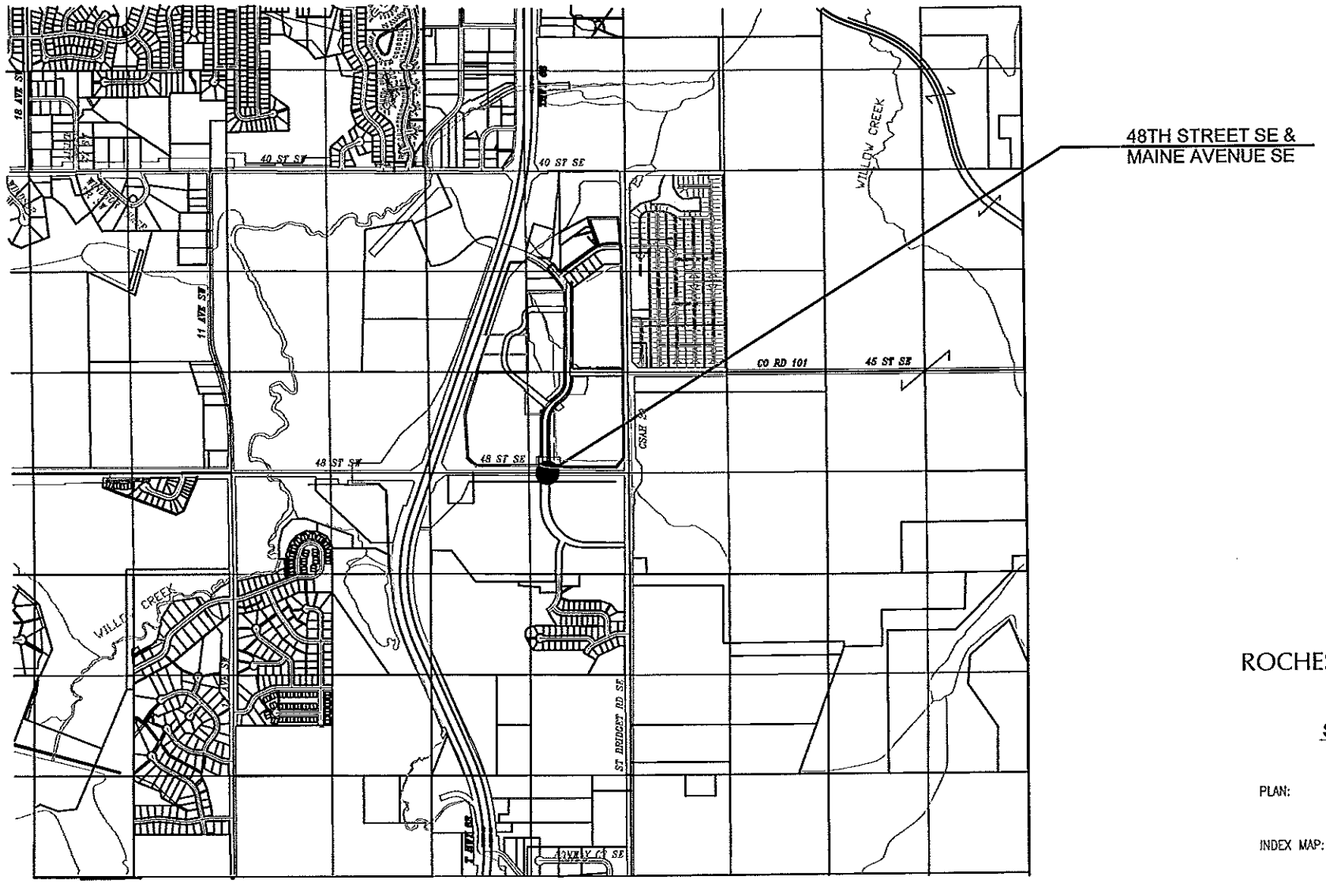
LOCATED AT THE INTRESECTION OF: 48TH STREET(CSAH 20) AND MAINE AVENUE SE
ROCHESTER, MN

COUNTY PROJ. NO. S.A.P. 55-620-04

CITY PROJ. NO. S.A.P. 159-020-14

GROSS LENGTH	N/A	FEET
BRIDGES--LENGTH	N/A	FEET
EXCEPTIONS--LENGTH	N/A	FEET
NET LENGTH	N/A	FEET

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-.2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."



STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM	UNITS	TOTAL ESTIMATED QUANTITIES	S.A.P. 55-620-04	S.A.P. 159-020-14
2104.503	REMOVE SIDEWALK	SQ FT	175.0	87.5	87.5
2104.603	SAWING CONCRETE WALK	LIN FT	60	30	30
2521.501	4" CONCRETE WALK	SQ FT	175.0	87.5	87.5
2564.531	SIGN PANELS TYPE C	SQ FT	19.0	9.5	9.5
2565.511	TRAFFIC CONTROL SIGNAL SYSTEM	SIG SYS	1.0	0.5	0.5
2582.502	12" STOP LINE WHITE - EPOXY	LIN FT	140	70	70
2582.502	4" DOTTED LINE WHITE - EPOXY	LIN FT	94	47	47

STANDARD PLATES

PLATE NUMBER	DESCRIPTION THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT
8106B	EQUIPMENT PAD B (CAST-IN-PLACE OR PRECAST)
8110D	TRAFFIC SIGNAL BRACKETING (POLE MOUNTED)
8114A	P.V.C. HANDHOLE/PULLBOX
8115D	PEDESTRIAN PUSH BUTTON INSTALLATION
8118C	SERVICE EQUIPMENT & POLE TRAFFIC CONTROL SIGNALS
8123E	POLE AND MAST ARM - LUMINAIRES AND TRAFFIC LIGHTS ASSEMBLY
8124E	MAST ARM SIGNAL HEAD MOUNTS
8126G	POLE FOUNDATION (PA90 AND PA100)

GOVERNING SPECIFICATIONS

THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET, ESTIMATED QUANTITIES, & STANDARD PLATES
2-6	SIGNAL PLAN
7-12	SIGNING AND PAVEMENT MARKING PLAN

THIS PLAN CONTAINS 12 SHEETS

AS-BUILT

FEB 19 2008

ENGINEERING

CITY OF
ROCHESTER, MINNESOTA

SCALES

PLAN: 1 20 FEET

INDEX MAP: 1 1,000 FEET



PROJECT LOCATION

COUNTY : OLMSTED COUNTY

DISTRICT : ROCHESTER 6

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

YAGGY COLBY ASSOCIATES
ENGINEERS
ARCHITECTS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

DESIGN ENGINEER:

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE: Chad W. Schuman — CHAD W. SCHUMAN
YAGGY COLBY ASSOCIATES

DATE: 2/20/07 — LICENSE NUMBER 26865

LOCAL AGENCY SIGNATURES:

Michael J. Sheehan — DATE: 2/20/07
APPROVED - OLMSTED COUNTY ENGINEER:

David W. Kuennen — DATE: 2/20/07
APPROVED - CITY OF ROCHESTER DIRECTOR OF PUBLIC WORKS:

STATE AID APPROVALS:

Cindy Schmidt — DATE: 2/26/07
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE-AID RULES/POLICY

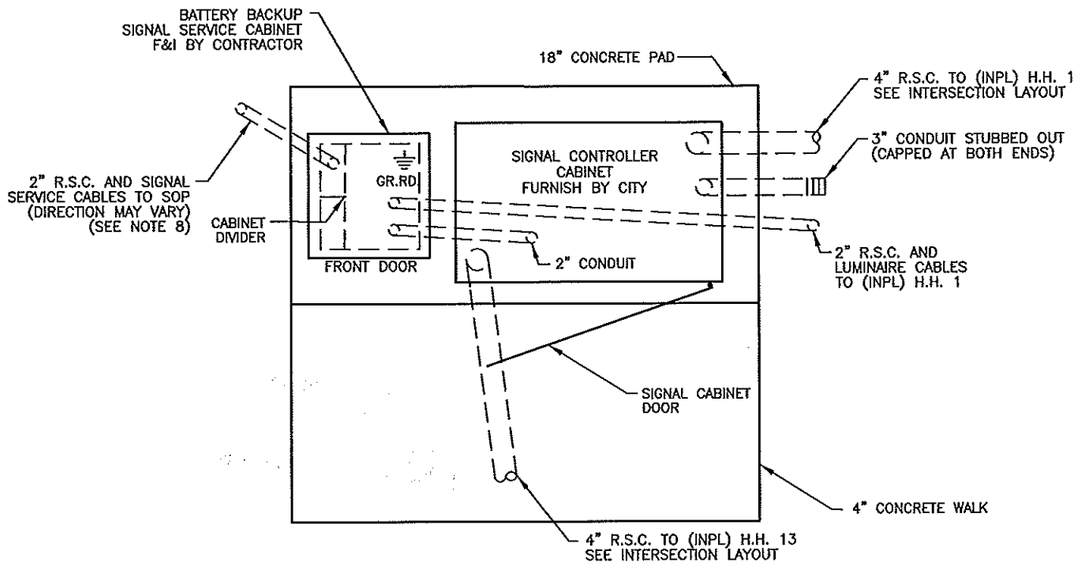
Cindy Schmidt — DATE: 2/26/07
STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

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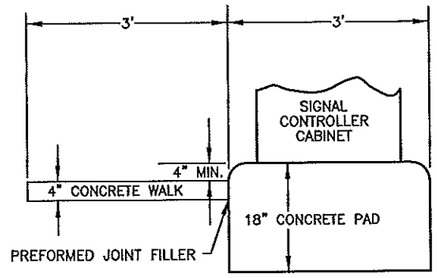
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

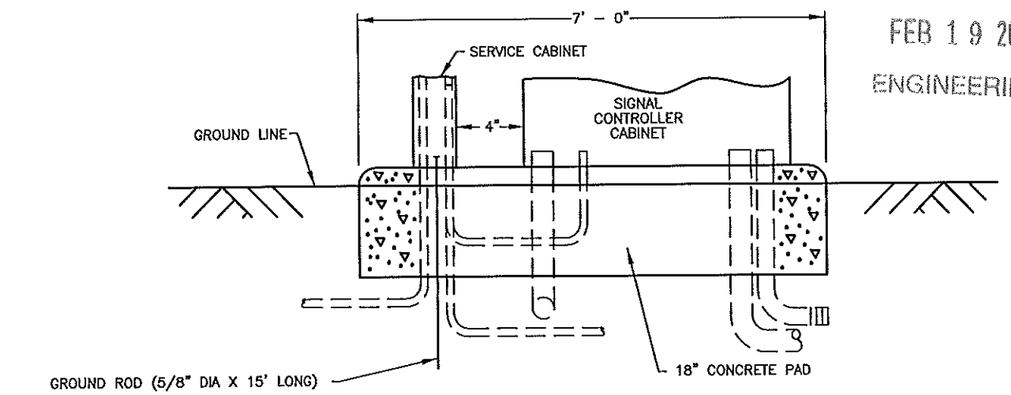
PLAN VIEW



SIDE VIEW



FRONT VIEW



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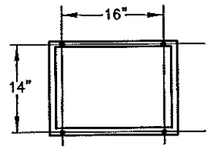
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ENGINEERING

NOTES:

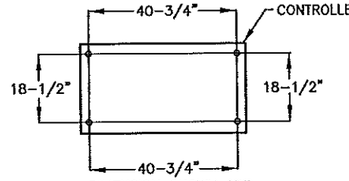
1. THE ANCHOR RODS, NUTS AND WASHERS FOR THE CONTROLLER CABINET SHALL BE FURNISHED BY MNDOT.
2. THE UPPER PART OF THE EQUIPMENT PAD SHALL BE BEVELLED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE THREADED AND CAPPED AFTER INSTALLATION (UNTIL CABLES ARE INSTALLED).
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3A32 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE INSTALLED BELOW THE CONCRETE.
7. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
8. PLACEMENT OF THIS CONDUIT IN PROPER LOCATION IS CRITICAL.

B.B. SERVICE CABINET BOLT PATTERN



DIMENSION SHOWN ARE
CENTER ROD TO CENTER ROD

CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN



DIMENSION SHOWN ARE
CENTER ROD TO CENTER ROD

NO	DATE	BY	CKD	REVISIONS

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YAGGY COLBY ASSOCIATES

ENGINEERS
ARCHITECTS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26865 2-29 2007

COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 J6025

DRAWN BY:	JMH
DESIGNED BY:	CWS
CHECKED BY:	CWS
YCA PROJ. NO.:	9934

CABINET DETAILS

48TH STREET & MAINE AVENUE SE

SHEET NO. 2 OF 12 SHEETS

INSTALL VIDEO DETECTORS (FURNISHED BY CITY)

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	10' POLE EXTENSION AND ASTRO BRACKET	CAMERA MOUNTED AT	MOUNTING HEIGHT
1	WB 48TH ST SE	POLE 1	YES	ON MASTARM	30'
2	NB MAINE AVE SE	POLE 2	YES	ON MASTARM	30'
3	EB 48TH ST SE	POLE 3	YES	ON MASTARM	30'
4	SB MAINE AVE SE	POLE 4	YES	ON MASTARM	30'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.

(A) EQUIPMENT PAD – SEE DETAILS
CONTROLLER AND CABINET (FUNISHED BY CITY)
SERVICE CABINET – SEE DETAIL
3" R.S.C. STUB OUT FOR FUTURE USE
(CAP BOTH ENDS)
CONTROL CABINET TO (INPL) H.H. 1
4" R.S.C.
5–12/C #14
2–3/C #14
4–2/C #14
2–3/C #20
2–COAXIAL CABLE (CAMERA)
CONTROL CABINET TO (INPL) H.H. 13
4" R.S.C.
4–12/C #14
4–3/C #14
5–2/C #14
2–3/C #20
2–COAXIAL CABLE (CAMERA)
SERVICE CABINET TO CONTROL CABINET
2" R.S.C.
2–1/C #6
SERVICE CABINET TO (INPL) H.H. 1
2" R.S.C.
4–3/C #12 (LUM.)
SERVICE CABINET TO H.H. 14
2" R.S.C.
3–1/C #2

(B) RPU – DESIGNATED POINT OF SERVICE
CONTACT RPU FOR LOCATION
S.O.P. TO CABINET
4" R.S.C.
3–1/C #2
(INPL) 4" R.S.C.
5–12/C #14
2–3/C #14
2–3/C #12 (LUM)
4–2/C #14
2–3/C #20
2–COAXIAL CABLE (CAMERA)

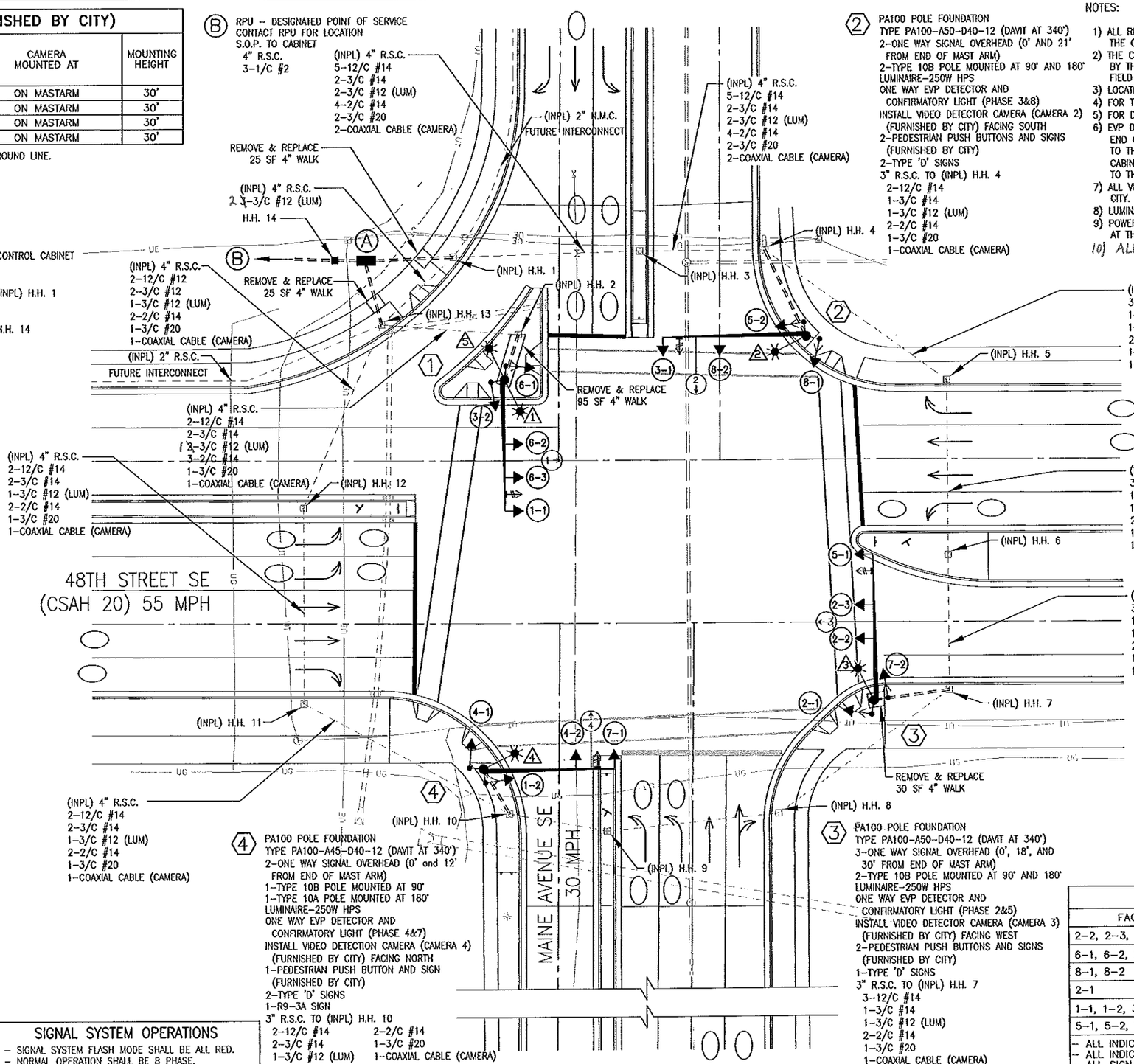
(1) PA100 POLE FOUNDATION
TYPE PA100–A45–D40–10–TWIN (DAVITS AT 160° & 340')
3–ONE WAY SIGNAL OVERHEAD (0', 12', AND 24'
FROM END OF MAST ARM)
1–TYPE 10A POLE MOUNTED AT 90°
1–TYPE 10B POLE MOUNTED AT 180°
2–LUMINAIRE–250W HPS
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 1&6)
INSTALL VIDEO DETECTOR CAMERA (CAMERA 1)
(FURNISHED BY CITY) FACING EAST
1–PEDESTRIAN PUSH BUTTON AND SIGN (FURNISHED
BY CITY)
1–TYPE 'D' SIGNS
1–R9–3A SIGN
3" R.S.C. TO (INPL) H.H. 2
2–12/C #14
2–3/C #14
2–3/C #12 (LUM)
3–2/C #14
1–3/C #20
1–COAXIAL CABLE (CAMERA)

(2) PA100 POLE FOUNDATION
TYPE PA100–A50–D40–12 (DAVIT AT 340')
2–ONE WAY SIGNAL OVERHEAD (0' AND 21'
FROM END OF MAST ARM)
2–TYPE 10B POLE MOUNTED AT 90° AND 180°
LUMINAIRE–250W HPS
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 3&8)
INSTALL VIDEO DETECTOR CAMERA (CAMERA 2)
(FURNISHED BY CITY) FACING SOUTH
2–PEDESTRIAN PUSH BUTTONS AND SIGNS
(FURNISHED BY CITY)
2–TYPE 'D' SIGNS
3" R.S.C. TO (INPL) H.H. 4
2–12/C #14
1–3/C #14
1–3/C #12 (LUM)
2–2/C #14
1–3/C #20
1–COAXIAL CABLE (CAMERA)

(3) PA100 POLE FOUNDATION
TYPE PA100–A50–D40–12 (DAVIT AT 340')
3–ONE WAY SIGNAL OVERHEAD (0', 18', AND
30' FROM END OF MAST ARM)
2–TYPE 10B POLE MOUNTED AT 90° AND 180°
LUMINAIRE–250W HPS
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 2&5)
INSTALL VIDEO DETECTOR CAMERA (CAMERA 3)
(FURNISHED BY CITY) FACING WEST
2–PEDESTRIAN PUSH BUTTONS AND SIGNS
(FURNISHED BY CITY)
1–TYPE 'D' SIGNS
3" R.S.C. TO (INPL) H.H. 7
3–12/C #14
1–3/C #14
1–3/C #12 (LUM)
2–2/C #14
1–3/C #20
1–COAXIAL CABLE (CAMERA)

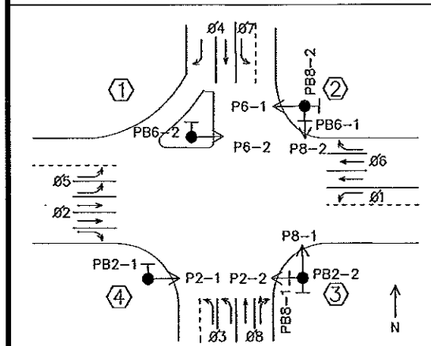
(4) PA100 POLE FOUNDATION
TYPE PA100–A45–D40–12 (DAVIT AT 340')
2–ONE WAY SIGNAL OVERHEAD (0' and 12'
FROM END OF MAST ARM)
1–TYPE 10B POLE MOUNTED AT 90°
1–TYPE 10A POLE MOUNTED AT 180°
LUMINAIRE–250W HPS
ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 4&7)
INSTALL VIDEO DETECTION CAMERA (CAMERA 4)
(FURNISHED BY CITY) FACING NORTH
1–PEDESTRIAN PUSH BUTTON AND SIGN
(FURNISHED BY CITY)
2–TYPE 'D' SIGNS
1–R9–3A SIGN
3" R.S.C. TO (INPL) H.H. 10
2–12/C #14
2–3/C #14
1–3/C #12 (LUM)
2–2/C #14
1–3/C #20
1–COAXIAL CABLE (CAMERA)

NOTES:
1) ALL REQUIRED BRACKETING AND HARDWARE IS THE RESPONSIBILITY OF THE CONTRACTOR.
2) THE CONTRACTOR SHALL INSTALL ELECTRICAL EQUIPMENT -- FURNISHED BY THE CITY -- IN THE EXISTING SIGNAL CABINET AND SHALL MAKE ALL FIELD CONNECTIONS TO MAKE THE SIGNAL SYSTEM OPERATIONAL.
3) LOCATIONS OF POLES SHALL BE STAKED BY TRAFFIC PERSONNEL.
4) FOR TYPE "D" SIGNS SEE SHEET NO. 6.
5) FOR DETAILS ON SERVICE CABINET SEE SHEET NO. 2.
6) EVP DETECTION & CONFIRMATORY LIGHTS SHALL BE MOUNTED 6' FROM END OF THE MAST ARM. A 1–3/C #20 CABLE SHALL BE WIRED DIRECT TO THE EVP DETECTOR -- CONTINUOUS WITHOUT SPLICES FROM THE CABINET. 2–1/C #14 SHALL BE WIRED FROM THE CONFIRMATORY LIGHT TO THE TERMINAL BLOCK IN EACH POLE BASE.
7) ALL VEHICLE AND PEDESTRIAN INDICATIONS SHALL BE FURNISHED BY THE CITY. SEE SPECIAL PROVISIONS FOR MORE INFORMATION.
8) LUMINAIRE EXTENSION AND MAST ARM SHALL BE GALVANIZED.
9) POWER FOR CAMERAS SHALL BE TAKEN FROM LUMINAIRE CONDUCTORS AT THE TERMINAL BLOCK IN EACH POLE BASE.
10) ALL Base have 5/8"x10' Copper Ground Rod



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CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE.

SIGNAL SYSTEM OPERATIONS

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE.
- ALL LEFT TURN PHASING SHALL BE PROTECTED ONLY.
- MIN RECALL WITH PHASES 2 & 6.

VIDEO DETECTION

CAMERA NUMBER	DETECTION PHASES
1	1 AND 6
2	3 AND 8
3	2 AND 5
4	4 AND 7

NOTE: ALL DETECTOR FUNCTIONS VIA CONTROLLER

◯ = DETECTION AREA

SIGNAL FACES

FACE	R	Y	G	RLTA	YLTA	GLTA	YRTA	GRTA
2–2, 2–3, 4–1, 4–2	●	●	●					
6–1, 6–2, 6–3	●	●	●					
8–1, 8–2	●	●	●					
2–1	●	●	●				→	→
1–1, 1–2, 3–1, 3–2				←	←	←		
5–1, 5–2, 7–1, 7–2				←	←	←		

- ALL INDICATIONS SHALL BE 12"
- ALL INDICATIONS SHALL BE LED
- ALL SIGNAL FACES SHALL HAVE BACKGROUND SHIELDS

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YAGGY COLBY ASSOCIATES
ENGINEERS
ARCHITECTS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER
LIC. NO. 26865 2-29 2007

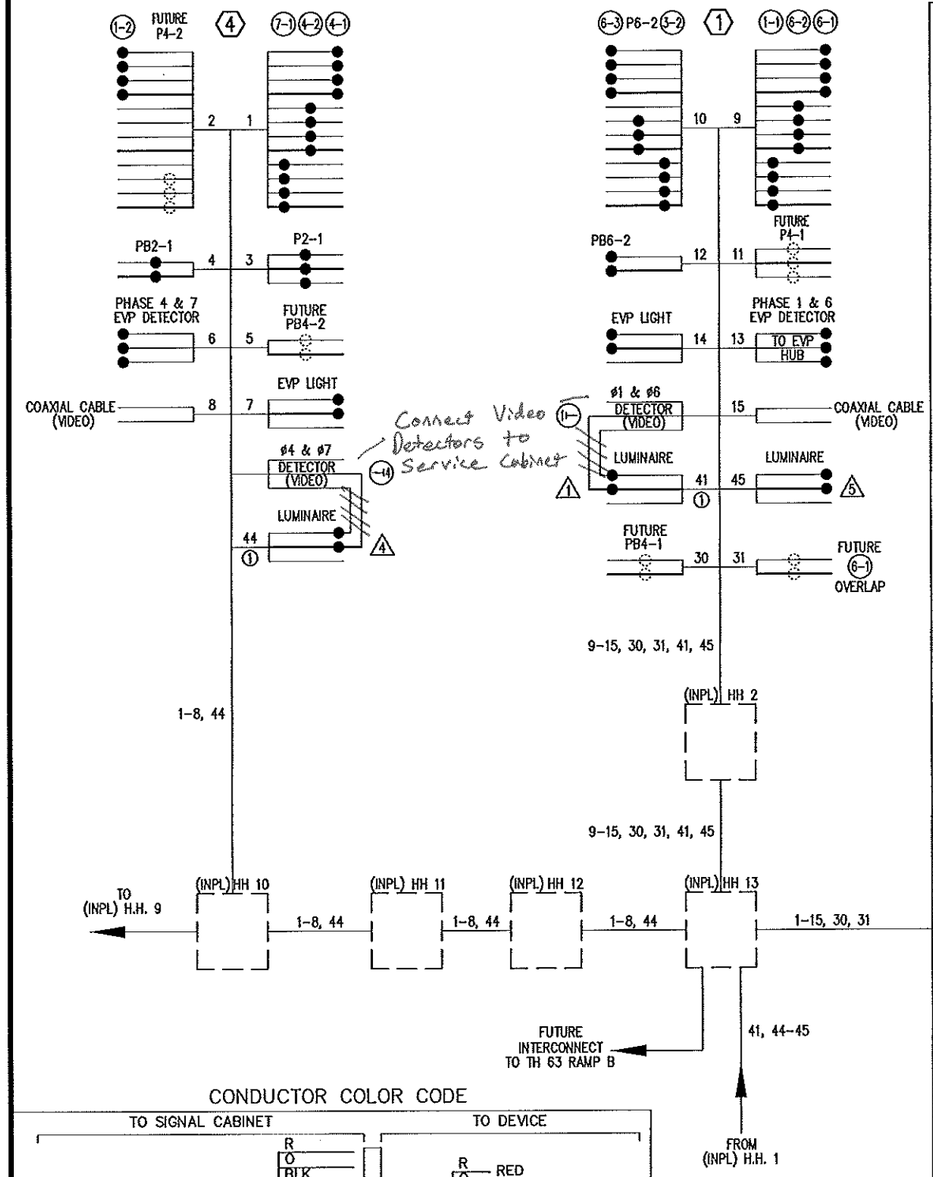
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DESIGNED BY:	CWS
CHECKED BY:	CWS
YCA PROJ. NO.:	9934

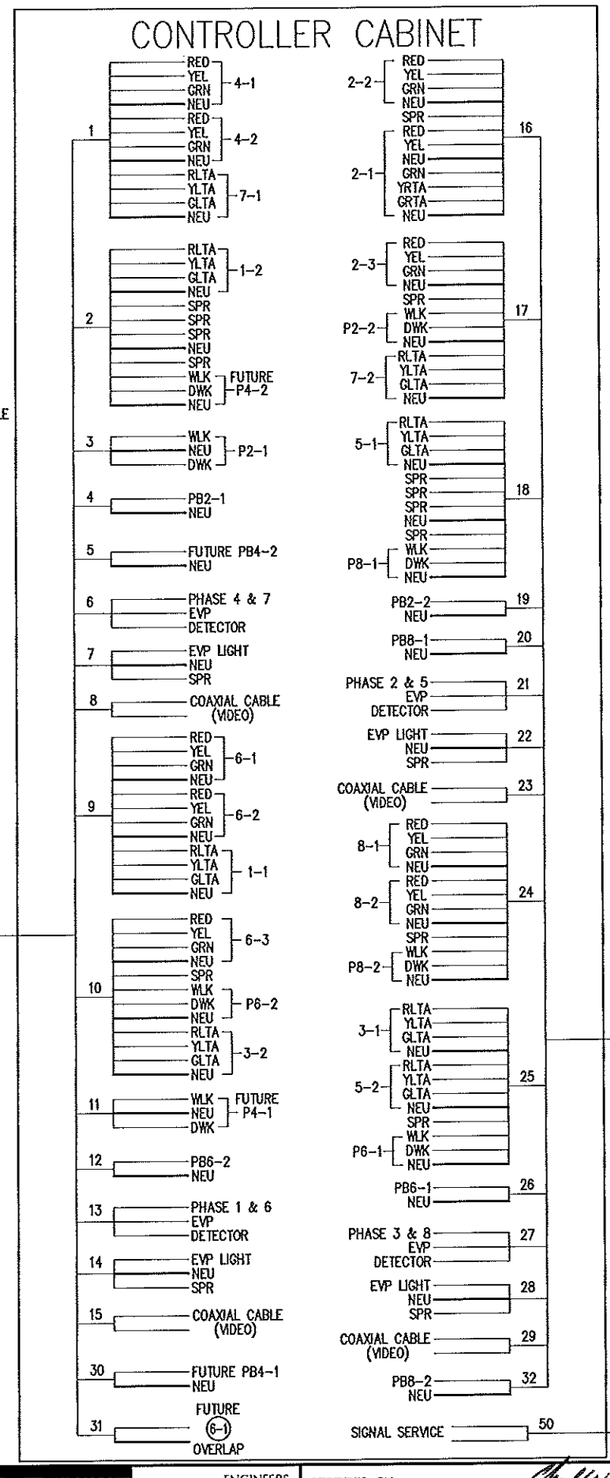
COUNTY S.A.P. 55–620–04 CITY S.A.P. 159–020–14 J6025

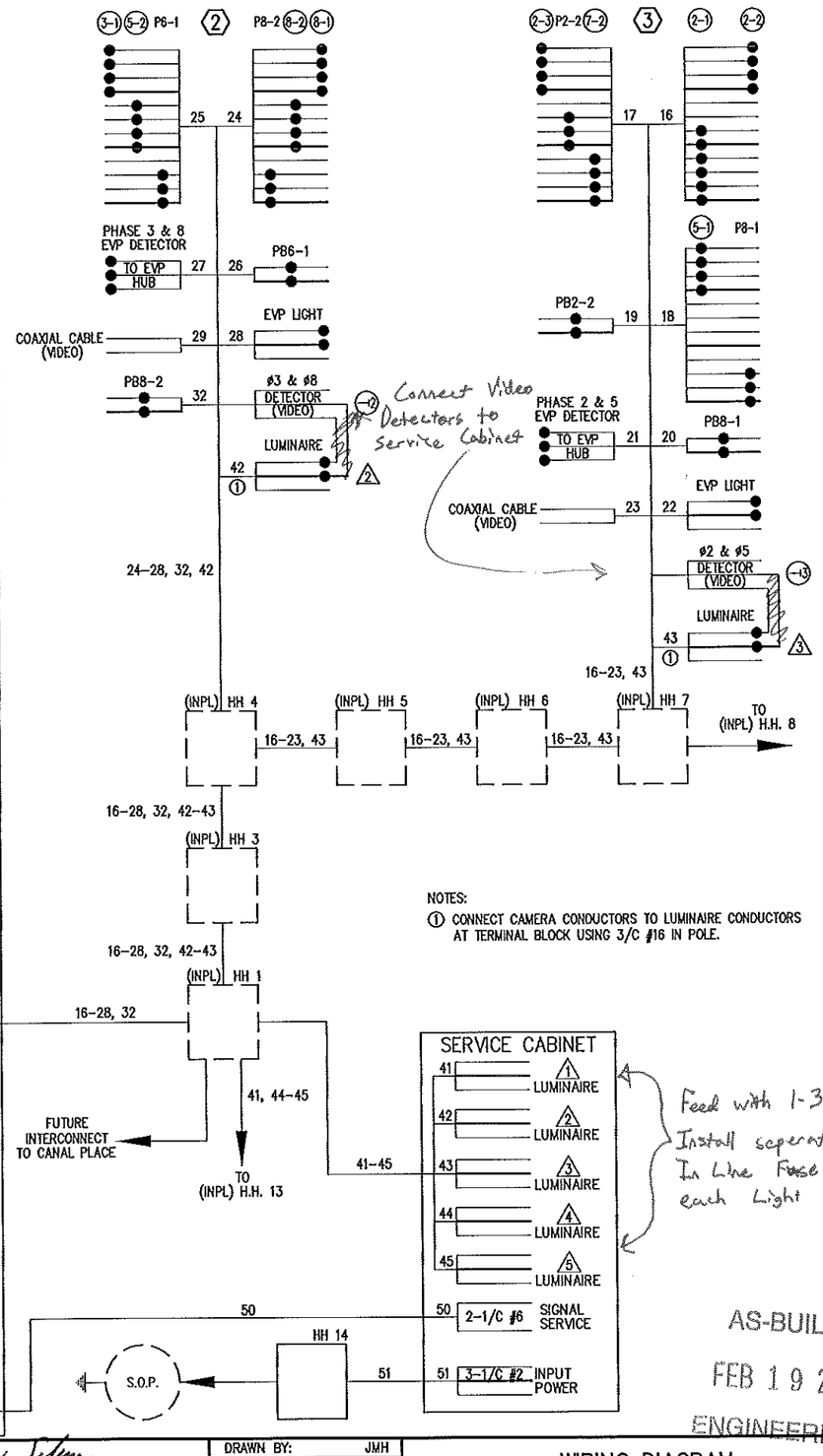
SIGNAL LAYOUT

48TH STREET & MAINE AVENUE SE

SHEET NO. 3 OF 12 SHEETS







NOTES:

① CONNECT CAMERA CONDUCTORS TO LUMINAIRE CONDUCTORS AT TERMINAL BLOCK USING 3/C #16 IN POLE.

CONDUCTOR COLOR CODE

TO SIGNAL CABINET			TO DEVICE		
		R		R	RED
		O		O	YEL
		BLK		BL	GRN
		WH	7/C#14 CABLE	WH	NEU
		R/BLK		Y	YLTA
		O/BLK		BLK	GLTA
		BL/BLK		BRN	SPR
		WH/BLK			
		BLK		R	RED
		BLK/WH		O	YEL
		BLK/R	5/C#14 CABLE	BL	GRN
		WH/R		WH	NEU
		R		BLK	GLTA
		O		R	DWK
		BLK		BL	WLK
		WH	4/C#14 CABLE	WH	NEU
		BLK/R		BLK	SPR
		R		BLK	
		WH	2/C#14 CABLE	WH	EVP/PB/FLASHER
		BLK			NEU
R OR O					
3/C#20 WH OR YEL / BLK OR BL					
2/C#14 BLK / CLR					
2-1/C BLK / WH					
6PR#19					
1-1/C#6					

BASE OF POLE OR PEDESTAL

7/C#14 CABLE	5-SECTION SIGNAL INDICATION
5/C#14 CABLE	3 & 4-SECTION SIGNAL INDICATION
4/C#14 CABLE	PEDESTRIAN INDICATION
2/C#14 CABLE	EVP/PB/FLASHER

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FEB 19 2008

ENGINEERING

NO	DATE	BY	CKD	REVISIONS

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YAGGY COLBY ASSOCIATES

ENGINEERS
ARCHITECTS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER

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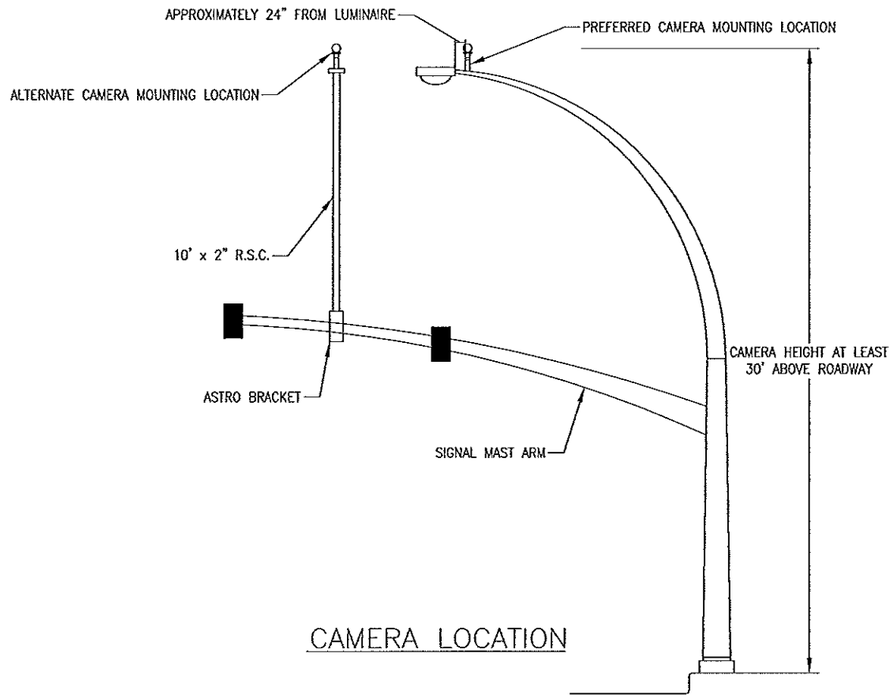
DRAWN BY:	JMH
DESIGNED BY:	CWS
CHECKED BY:	CWS
YCA PROJ. NO.:	9934

COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 J6025

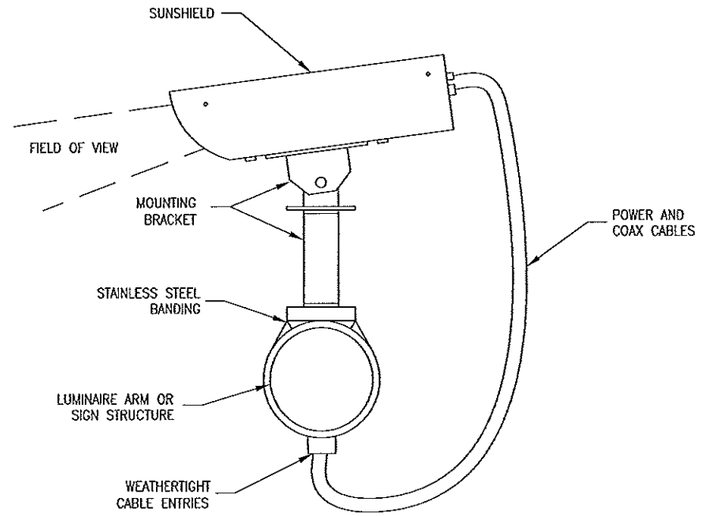
WIRING DIAGRAM

48TH STREET & MAINE AVENUE SE

SHEET NO. 4 OF 12 SHEETS

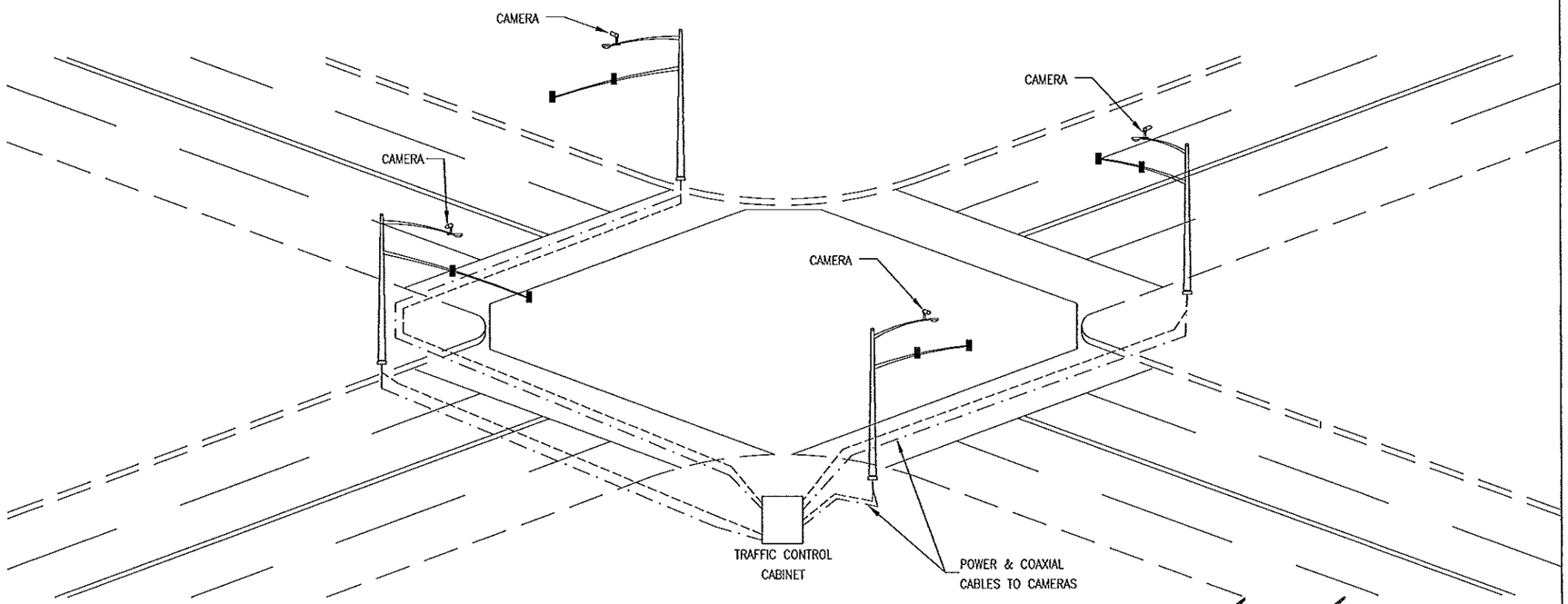


CAMERA LOCATION



INSTALLED CAMERA

TYPICAL INTERSECTION LAYOUT USING CAMERAS



NOTES:

ALL CAMERA DETECTION DEVICES WILL BE FURNISHED BY THE CITY OF ROCHESTER TRAFFIC DEPARTMENT. THE CONTRACTOR IS REQUIRED TO PROVIDE WIRE AND INSTALL CAMERAS ON LUMINAIRE EXT. OR MAST ARM ACCORDING TO SIGNAL LAYOUT AND FIELD ENGINEERS DIRECTION.

THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL BRACKETING AND HARDWARE REQUIRED TO MOUNT CAMERAS.

RUN ONE CONTINUOUS PULL (WITHOUT SPLICES) OF COAXIAL CABLE AND POWER CABLE BETWEEN THE CAMERA MOUNTING LOCATION AND THE TRAFFIC CONTROL CABINET, UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE CABLES NEED TO MEET THE FOLLOWING SPECIFICATION:

- BELDEN 8281 COAXIAL CABLE
- THREE-CONDUCTOR, 16AWG POWER CABLE

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ENGINEERING

NO	DATE	BY	CKD	REVISIONS

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YAGGY COLBY ASSOCIATES

ENGINEERS
ARCHITECTS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26865 2/15 2007

DRAWN BY:	JMH
DESIGNED BY:	CWS
CHECKED BY:	CWS
YCA PROJ. NO.:	9934

COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 J6025

CAMERA MOUNTING DETAILS

SHEET NO. 5 OF 12 SHEETS

MAST ARM MOUNTED SIGNS

SIGN PANEL	SIGNAL SYSTEM	POLE NO.	A (FEET)	SIZE (INCHES)	MOUNTING BRACKET NUMBER	MOUNTING BRACKET ① SPACING (IN.)	AREA/ SIGN (SQ. FT.)	NO. REQ.
D-1		2	30	42 X 54	2	36	15.75	1
D-2		2	42	72 X 24	3	30	12	1
D-3		1	34.5	102 X 24	4	30	17	1
D-1		4	23	42 X 54	2	36	15.75	1
D-2		4	37	72 X 24	3	30	12	1
D-3		3	39.5	102 X 24	4	30	17	1

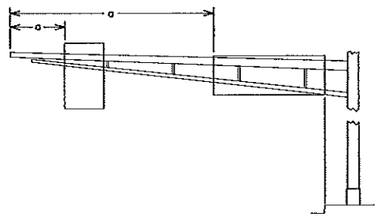
SPECIFIC NOTES:

① SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 8/22/05) FOR BRACKET SPACING REQUIREMENTS.

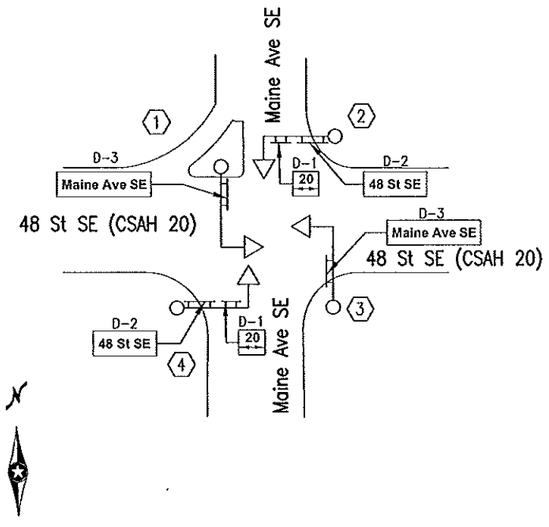
GENERAL NOTES:

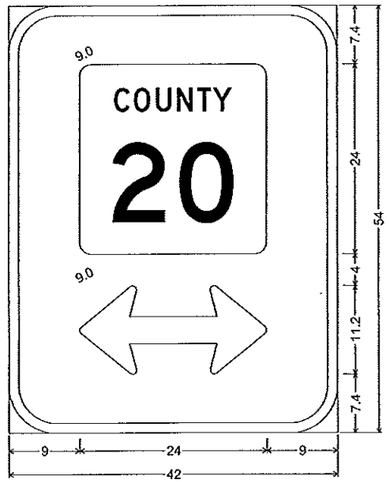
1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS SEE STANDARD SIGNS MANUAL, PAGE 105A.
4. FOR TYPE "D" STRINGER AND PANEL JOINT DETAILS SEE STANDARD SIGNS MANUAL, PAGE 105.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL TO THE SIGNAL SYSTEM PAY ITEM.

MAST ARM SIGN LOCATION



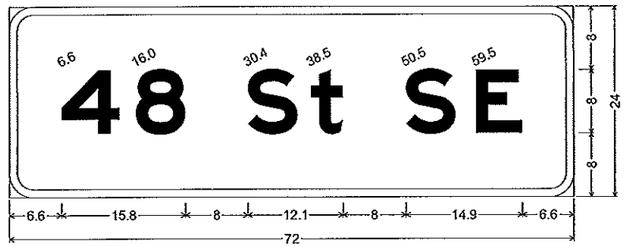
OVERLAYS				
CODE NO.	QTY	SIZE (IN)	LEGEND	SQ. FT. PER OVERLAY
M1-X4a	2	24 X 24	20	4





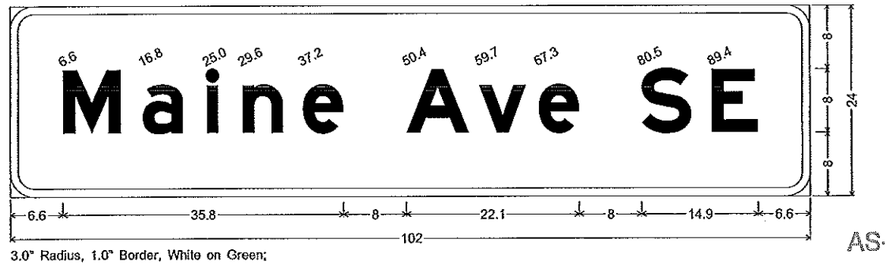
6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°;

D-1



3.0" Radius, 1.0" Border, White on Green;
[48 St SE] E Mod;

D-2



3.0" Radius, 1.0" Border, White on Green;
[Maine Ave SE] E Mod;

D-3

AS-BUILT

FEB 19 2008

ENGINEERING

NO	DATE	BY	CKD	REVISIONS

FILE: jhofmeis H:\9934\Cad\Civil\PlansF\9934DT01.dwg 01/15/2007

YAGGY COLBY ASSOCIATES

ENGINEERS
ARCHITECTS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER

LIC. NO. 26865 2/15 2007

DRAWN BY:	JMH
DESIGNED BY:	CWS
CHECKED BY:	CWS
YCA PROJ. NO.:	9934

MASTARM SIGNING DETAILS
48TH STREET & MAINE AVENUE SE

COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 J6025

SUMMARY OF SIGNING QUANTITIES

DESCRIPTION	UNIT	QUANTITY
SIGN PANELS TYPE C	SQ FT	18.75

SIGN PANELS TYPE C

	SIGN NO.	QUANT.	POSTS NO. & TYPE	POSTS KNEE BRACES EACH	POSTS LENGTH L.F.	MOUNTING HEIGHT ① FT.	SIZE IN.	PANEL AREA S.F.	TOTAL PANEL AREA S.F.	CODE NO.	PANEL LEGEND ②
③	C-1	3			13	7	30 x 30	6.25	18.75	R5-1	DO NOT ENTER
							TOTAL		18.75		

PAVEMENT MARKING TABULATION

ITEM	LIN FT	TOTAL
12" STOP LINE WHITE - EPOXY	140	140
4" DOTTED LINE WHITE - EPOXY	94	94

I HEREBY CERTIFY THAT THE SIGNING PORTION OF OF THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ENGR. Chad W. Schuman DATE: 2-29-07

CHAD W. SCHUMAN

LIC. NO. 26865

SPECIFIC NOTES:

① MOUNTING HEIGHT MINIMUM, SEE SHEET 10 FOR TYPICAL MOUNTING.

② FOR PUNCHING AND MOUNTING DETAILS, SEE SHEET 11.

③ MOUNT IN CONCRETE, SEE SHEET 12.

GENERAL NOTES:

1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE SHEETS 9 TO 11 FOR STRUCTURAL DETAILS.
3. SEE STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWING OF TYPE C SIGN PANELS.

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NO	DATE	BY	CKD	REVISIONS

FILE: jhofmeis H:\9934\Cad\Civil\PlansF\9934DT01.dwg 01/15/2007

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ARCHITECTS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

CERTIFIED BY Chad W. Schuman LICENSED PROFESSIONAL ENGINEER

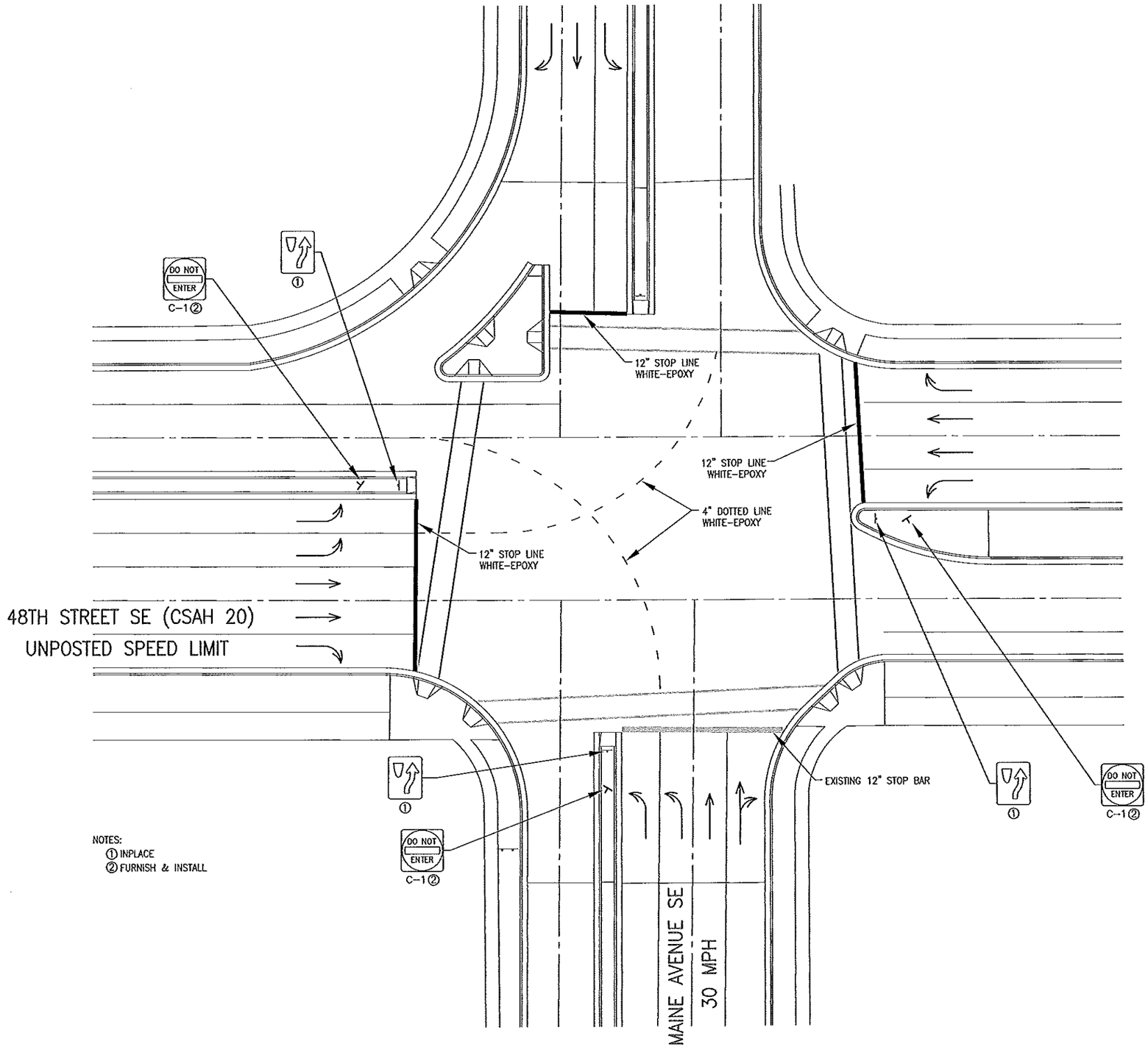
LIC. NO. 26865 2-29 2007

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DESIGNED BY:	CWS
CHECKED BY:	CWS
YCA PROJ. NO.:	9934

COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 J6025

SIGNING & PAVEMENT MARKING PLAN

48TH STREET & MAINE AVENUE SE



NOTES:
① INPLACE
② FURNISH & INSTALL

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0 10 20 40
SCALE IN FEET

NO	DATE	BY	CKD	REVISIONS

FILE: jhofmeis H:\9934\Cad\Civil\PlansF\9934SL01.dwg 01/15/2007

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SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

CERTIFIED BY _____ LICENSED PROFESSIONAL ENGINEER
LIC. NO. 26865 2/15 2007

COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 J6025

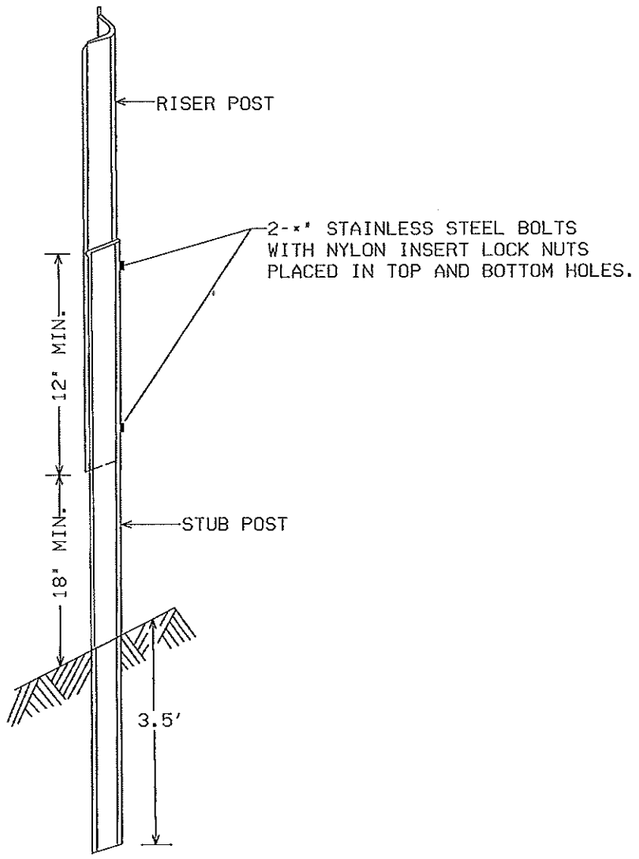
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SIGNING & PAVEMENT MARKING PLAN

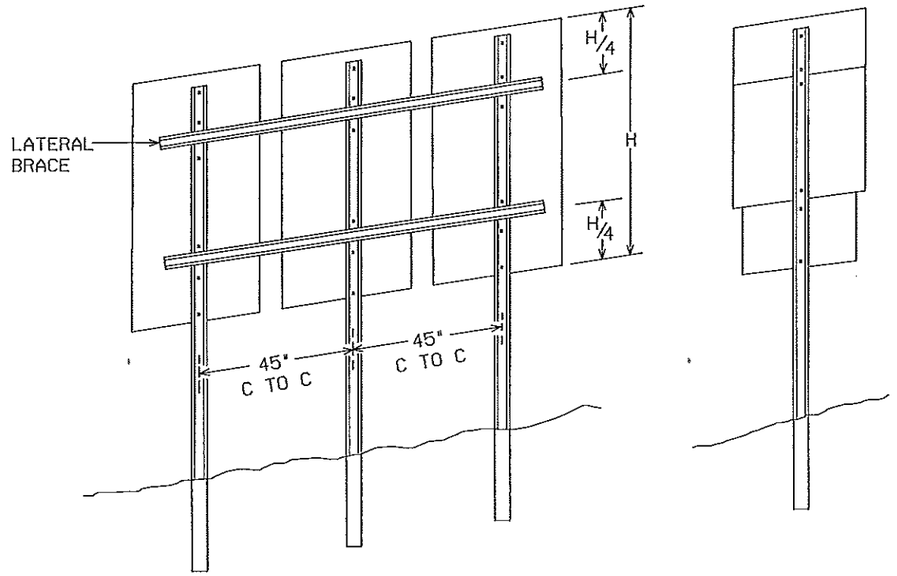
48TH STREET & MAINE AVENUE SE

SHEET NO. 8 OF 12 SHEETS

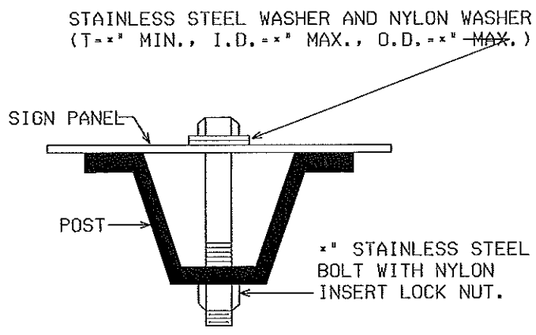
TYPE "C" & "D" POST



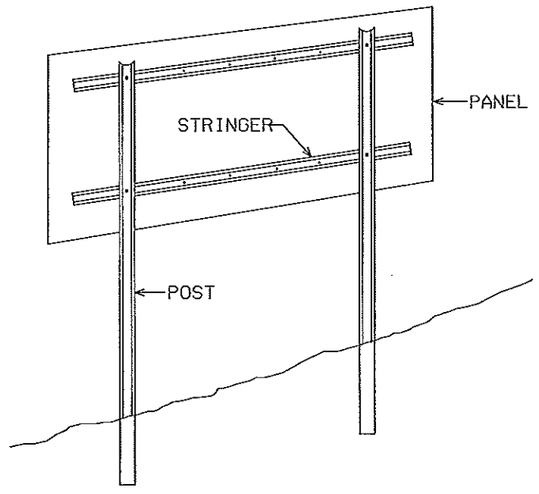
"U POST" SPLICE



TYPICAL TYPE "C" INSTALLATIONS



"U POST" MOUNTING
TYPE "C" SIGNS



TYPICAL TYPE "D" INSTALLATION

NOTES:

1. USE 3# STUB POSTS, RISER POSTS, STRINGERS, KNEE BRACES, LATERAL BRACES AND KNEE BRACE STUB POSTS. ALL SHALL CONFORM TO MN/DOT 3401.
2. FOR TYPE "D" SIGN POSTS LENGTHS AND SPACINGS, SEE SIGN DATA SHEET.
3. TYPE "D" SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH TYPE "D" STRINGER AND PANEL-JOINT DETAIL (SEE STANDARD SIGNS MANUAL).
4. MOUNTING (PUNCHING CODE) FOR TYPE "C" SIGN PANELS SHALL BE AS INDICATED IN THE STANDARD SIGNS MANUAL UNLESS OTHERWISE SPECIFIED.
5. ALL RISER (VERTICAL) "U POSTS" SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
6. USE STAINLESS STEEL 5/16" BOLTS, WASHERS, AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
7. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
8. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 3x'.
9. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MN/DOT 3306 AND GALVANIZED IN ACCORDANCE WITH MN/DOT 3394.
10. COLLARS SHALL BE USED TO SHIM OVERLAYS AND DEMOUNTABLE LEGEND AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MN/DOT 3352.2A5.
11. 2 AND 3 POST TYPE "C" SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
12. WHERE 2 OR MORE SINGLE POST SIGNS (TYPE "C") ARE MOUNTED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 POST SECTIONS, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN SKETCH.

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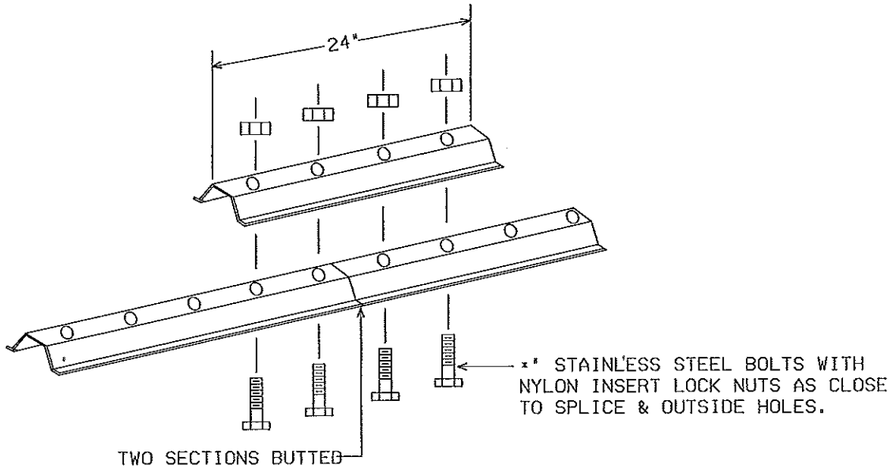
ENGINEERING

TYPE C & D SIGN STRUCTURAL DETAILS

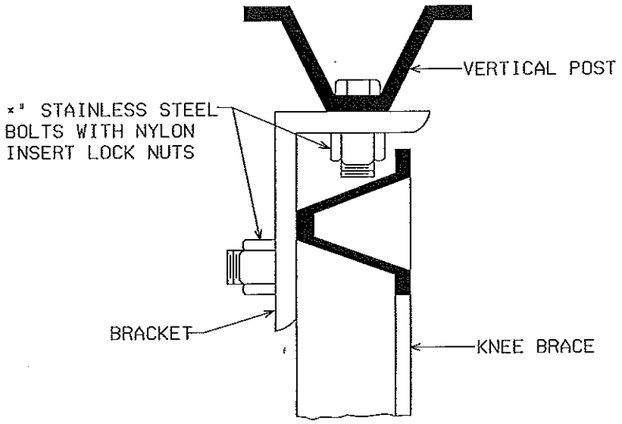
SHEET 1 OF 3

COSIGN.STR C01 6-18-99

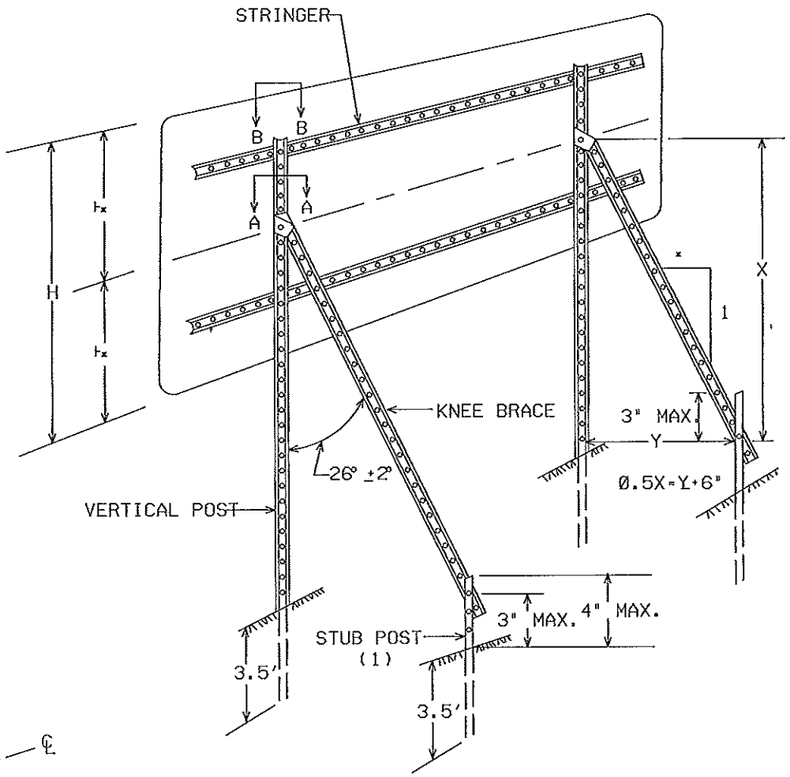
REVISED 7-25-01



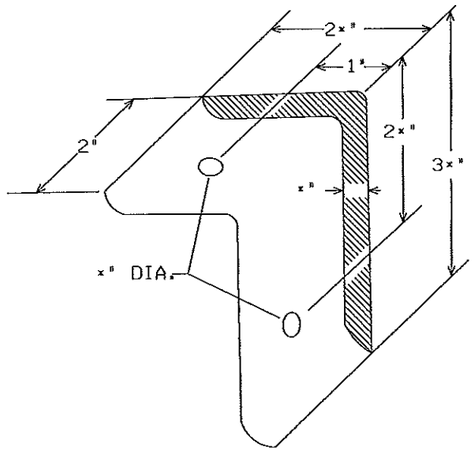
LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

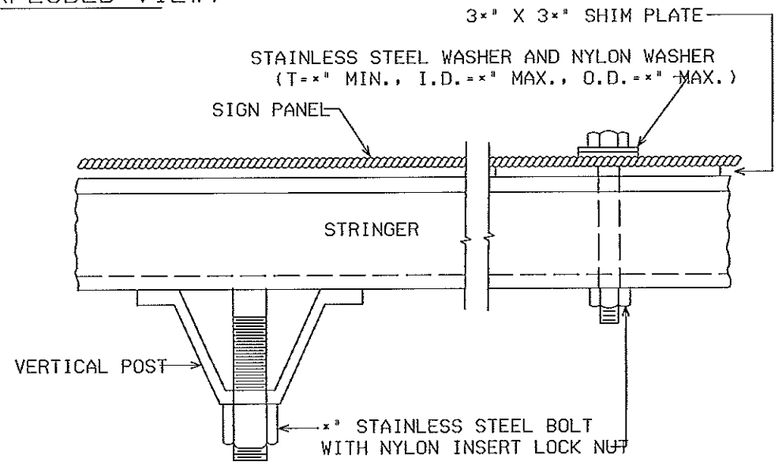


TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS

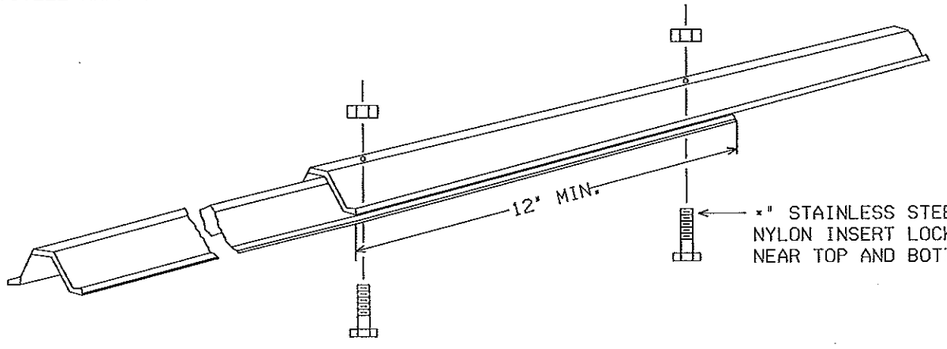


A-FRAME BRACKET

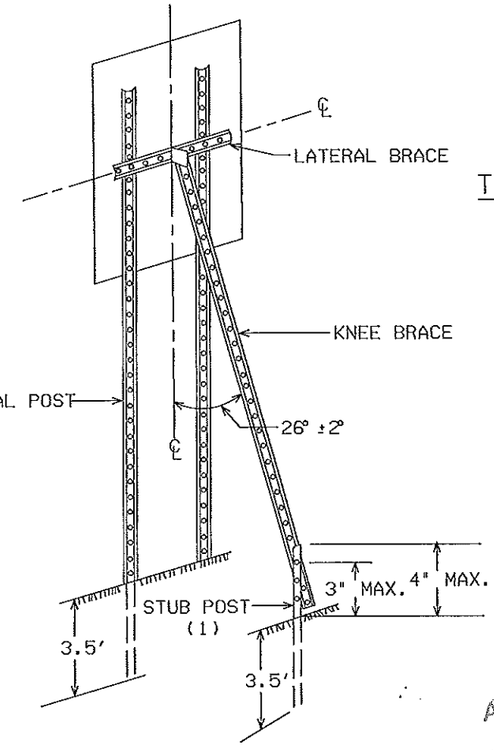
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



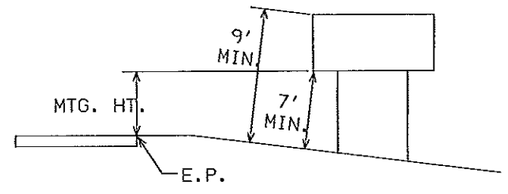
SECTION B-B



KNEE BRACE SPLICE



TYPICAL "A-FRAME" INSTALLATION
TYPE "C" SIGNS



TYPICAL MOUNTING

(1)OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

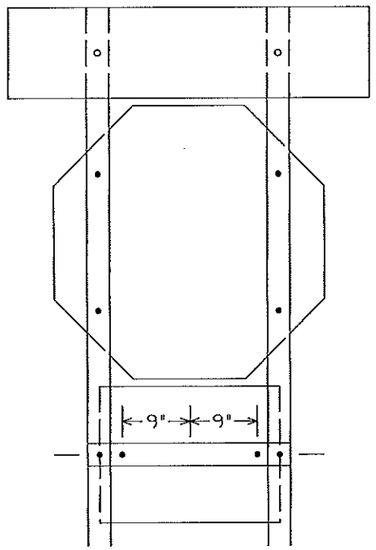
AS-BUILT
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TYPE C & D SIGN
STRUCTURAL DETAILS
SHEET 2 OF 3

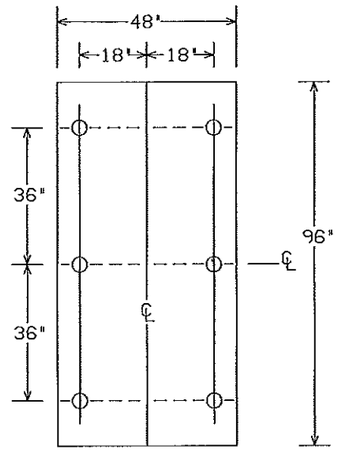
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REVISED 6-18-99

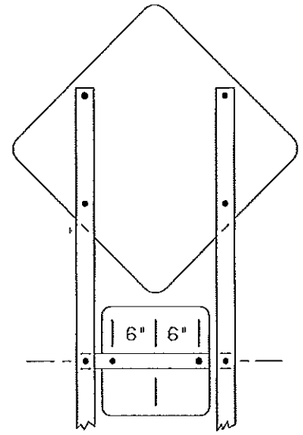
COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 CITY PROJ. NO. J6025 10 OF 12 SHEETS



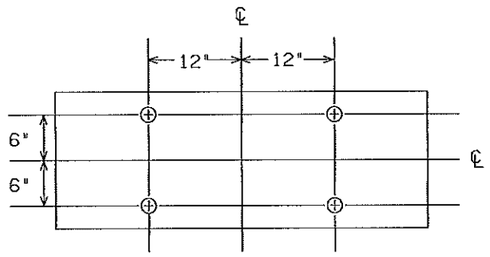
R6-1, R1-1 & (R6-3 OR R6-3A)
MOUNTING



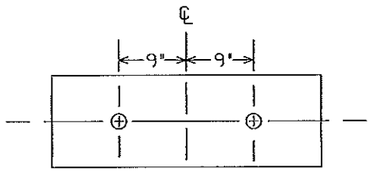
PUNCHING FOR R2-4B
SPEED LIMIT



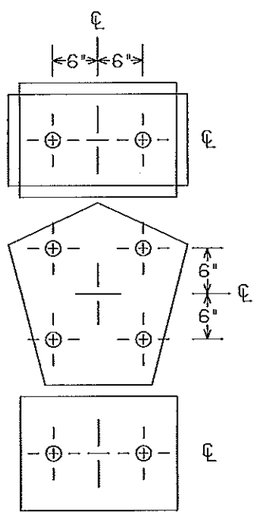
(W1-1, W1-2, W1-3, W1-4 OR W1-5) & W13-1
MOUNTING



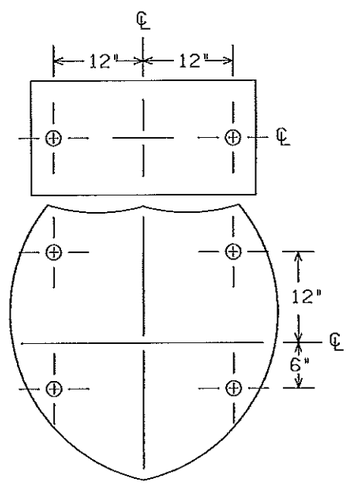
PUNCHING FOR R6-1(48"X18")



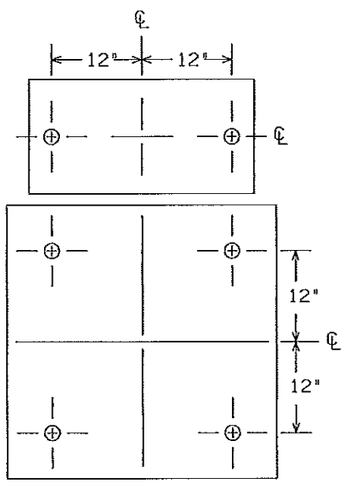
PUNCHING FOR R6-1(36"X12")



M2-1A [21"X15"] OR
(M3-1A, M3-2A, M3-3A OR M3-4A) [24"X12"] AND
M1-6 [24"X24"] AND
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A M6-4A, M6-5A OR M6-6A) [21"X15"]
PUNCHING



(M3-1A, M3-2A, M3-3A OR M3-4A) [30"X15"] AND
M1-1 [45"X36" OR 36"X36"]
PUNCHING



(M3-1, M3-1A, M3-2, M3-2A, M3-3, M3-3A M3-4 OR M3-4A) [30"X15"] AND (M1-4 OR M1-5A) [36"X36"]
PUNCHING

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TYPE C & D SIGN

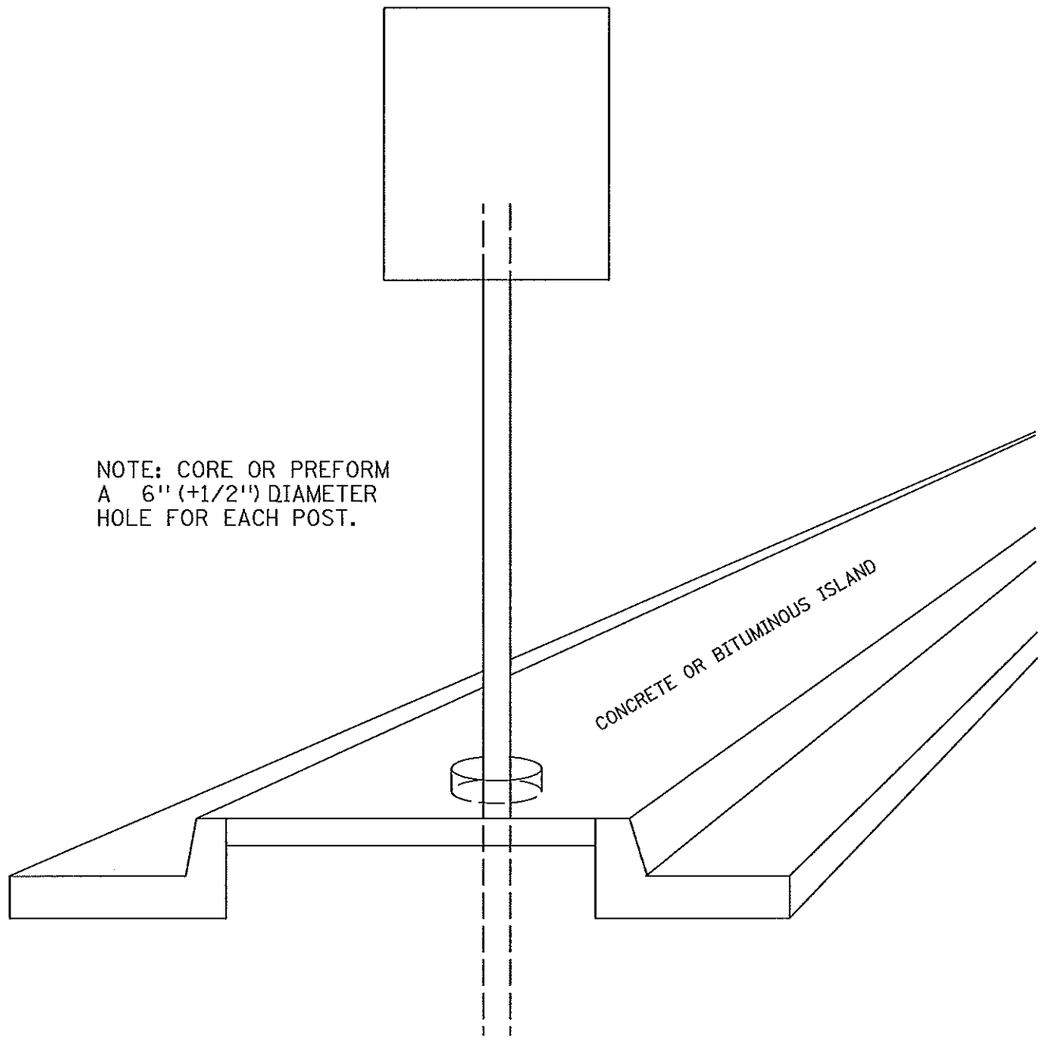
STRUCTURAL DETAILS

SHEET 3 OF 3

DESIGN.STR C03 6-18-99

REVISED 4-25-05

COUNTY S.A.P. 55-620-04 CITY S.A.P. 159-020-14 CITY PROJ. NO. J6025 11 OF 12 SHEETS



FLANGED CHANNEL POST MOUNTED THROUGH SURFACED MEDIAN OR SIDEWALK

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FEB 19 2008
ENGINEERING

Revised 12-23-97

C SIGN (SHT.64) 11-01-01