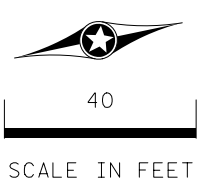


PLOTTED/REVISED: 24-OCT-2022



VIDEO DETECTION	
CAMERA DIRECTION	DETECTION PHASES
NB TH 61	2 AND 5
SB TH 61	6 AND 1
EB 152ND ST	4 AND 7
WB 152ND ST	8 AND 3

VIDEO DETECTORS					
CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	6' EXT & MOUNTING HARDWARE	CAMERA MOUNTED AT	MOUNTING HEIGHT
360(▲)	ENTIRE SIGNAL	POLE 4	YES	LUM EXTENSION	48'
V-1	NB TH 61	POLE 1	YES	ON MAST ARM	25'
V-2	SB TH 61	POLE 3	YES	ON MAST ARM	25'

NOTE: MOUNTING HEIGHT = APPROPRIATE HEIGHT ABOVE ADJACENT GROUND LINE.
360(▲) DENOTES FISH EYE / BELL CAMERA.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-1)
EXTEND INTO HH 4:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB6-2)
EXTEND INTO HH 4:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-1)
EXTEND INTO HH 5:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB8-2)
EXTEND INTO HH 5:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

2-3" CONDUITS
(1-EMPTY, FOR FUTURE USE)
3-6/C 14
4-4/C 14
1-3/C 14
2-2/C 14
1-3/C 20
1-CAT 5e CABLE (360 CAMERA)
1-3/C 14 (LUM)
1-1/C 6 (INS. GR.)

FIBER OPTIC SPLICE VAULT
SPLICE 6 SM FO PIGTAIL ONTO
36 SM FO BRANCH CABLE (SPLICE ENCLOSURE)
EXTEND INTO CONTROLLER CABINET:
1.5" CONDUIT
1-6 SM FO PIGTAIL

FO VAULT (152ND) TO FO VAULT (147TH)
1.5" CONDUIT
1-36 SM FO CABLE

2-3" CONDUITS (1-EMPTY, FOR FUTURE USE)
3-6/C 14
4-4/C 14
1-3/C 14
2-2/C 14
1-3/C 20
1-VIDEO CABLE (V-2)
1-3/C 14 (LUM)
1-1/C 6 (INS. GR.)

2-3" CONDUITS (1-EMPTY, FOR FUTURE USE)
3-6/C 14
4-4/C 14
1-3/C 14
3-2/C 14
1-3/C 20
1-VIDEO CABLE (V-2)
1-3/C 14 (LUM)
1-1/C 6 (INS. GR.)

3" CONDUIT
3-6/C 14
4-4/C 14
1-3/C 14
2-2/C 14
1-3/C 20
1-VIDEO CABLE (V-2)

3" CONDUIT (EMPTY-FOR FUTURE USE)
3-6/C 14
4-4/C 14
1-3/C 14
2-2/C 14
1-3/C 20
1-VIDEO CABLE (V-2)

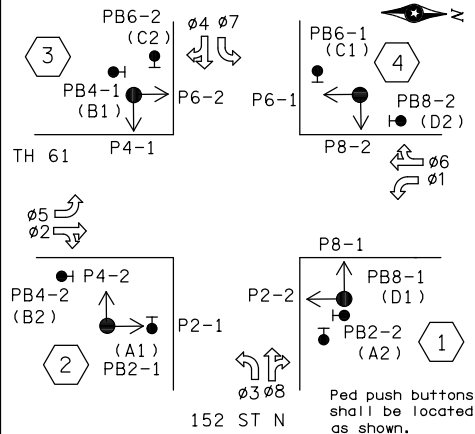
APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB8-1)
EXTEND INTO HH 1:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB2-2)
EXTEND INTO HH 1:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB4-2)
EXTEND INTO HH 3:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-1)
EXTEND INTO HH 2:
1" CONDUIT
1-2/C 14
1-1/C 6 (INS.GR.)

CONTROLLER PHASING, PEDESTRIAN INDICATIONS, AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5, 7 BEING FLASHING YELLOW ARROW SEQUENCING SELECTABLE BY TOD PROGRAMS.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

SIGNAL HEAD CHART

SIGNAL HEAD	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2	●	●		●
3-1, 3-2	←	←	←	←
4-1, 4-2	●	●		●
5-1, 5-2	←	←	←	←
6-1, 6-2	●	●		●
7-1, 7-2	←	←	←	←
8-1, 8-2	●	●		●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED.
-FYA DENOTES FLASHING YELLOW ARROW.
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELD.
-ALL BACKGROUND SHIELDS SHALL HAVE YELLOW RETROREFLECTIVE BORDER.

BY	DATE	REVISIONS	SYSTEM ID: 4186466	T.E. 36112	S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:
SJK	10/25/22	AS-BUILT PLAN SP 8206-52	METER ADDRESS: 15207 FOREST BLVD		CERTIFIED BY _____			
			OLD SYSTEM ID:		LICENSED PROFESSIONAL ENGINEER	LIC. NO. _____		DATE: _____
INTERSECTION LAYOUT T.H. 61 AT 152ND ST. N. IN HUGO, WASHINGTON COUNTY					STATE PROJ.NO. 8206-52 (T.H.61) SHEET NO. 1 OF 3 SHEETS			

DISTRICT *: Metro
PLOT NAME: layout
FILENAME: Projects\DM_PROS\06100001TrafficSignals\5300_152ND ST_N-4186466\T-4186466_sgl.dgn

PLOTTED/REVISED: 24-OCT-2022

DISTRICT *: Metro
 PLOT NAME: pole notes
 FILENAME: Projects\DM_FRO\06100001TrafficSignals\53.00_152ND ST_N-4186466\T-4186466.sgl.dgn

Ⓐ EQUIPMENT PAD (SEE DETAILS)
 CONTROLLER CABINET
 BBU SERVICE CABINET (SSB) (WITH NO BATTERIES)
 CONTROLLER CABINET TO HH 1:
 3" CONDUIT (EMPTY-FOR FUTURE USE)
 3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 4-2/C 14
 1-3/C 20
 1-1/C 6 INS. GR.

GROUND WIRE AND GROUND ROD - MIN 8' FROM PAD
 2-2" AND 1-3" CONDUITS STUBBED OUT (CAP BOTH ENDS)
 CONTROLLER CABINET TO FO VAULT:
 1.5" CONDUIT
 1-6 SM FO PIGTAIL
 CONTROLLER CABINET TO SERVICE CABINET:
 2" CONDUIT
 3-1/C 6
 2" CONDUIT
 1-6 Pr. 19 (COMMS)
 SERVICE CABINET TO SOP TRANSFORMER:
 2" CONDUIT
 3-1/C 2
 SERVICE CABINET TO HH 1:
 2" CONDUIT
 2-3/C 14 (LUM)
 SERVICE CABINET TO HH 6:
 2" CONDUIT
 2-3/C 14 (LUM)
 SERVICE CABINET TO EXTERNAL GROUND ROD:
 1" CONDUIT
 1-1/C 6 INS. GR. (SEE EQUIPMENT PAD LAYOUT)

3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 2-2/C 14
 1-3/C 20
 1-VIDEO CABLE (V-2)
 CONTROLLER CABINET TO HH 6:
 2-3" CONDUITS
 3" CONDUIT (EMPTY-FOR FUTURE USE)
 3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 1-2/C 14
 1-3/C 20
 1-VIDEO CABLE (V-1)
 1-CAT 5e CABLE (PTZ)
 1-1/C 6 INS. GR.

3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 1-2/C 14
 1-3/C 20
 1-CAT 5e CABLE (360 CAMERA)

Ⓐ PA100 POLE FOUNDATION
 TYPE PA100-A-40-X6-350 CAM 400 (DAVIT AT 350 DEG)
 VIDEO DETECTOR-MAST ARM MOUNTED (V-1)
 1-PTZ CAMERA, MOUNT, AND POWER SUPPLY
 LIGHTNING ROD PLATE, LIGHTNING ROD, AND 7/16"
 GROUND ROD FOR PTZ CAMERA (SEE DETAILS)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 12'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED AT 90/180 DEG
 2-ANGLE MOUNT C.D. PED HEADS-POLE MOUNTED
 90 DEG AND 180 DEG
 R10-X12 SIGN PANEL-ADJACENT TO 5-1
 TYPE D SIGN PANEL-OVERHEAD AT 28'
 ONE WAY EVP DETECTOR AND CONFIRMATION LIGHT AT 6' (Ø2,5)
 EXTEND INTO HH 6:
 3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 1-3/C 20
 1-CAT 5e CABLE (PTZ)
 1-VIDEO CABLE (FOR V-2)
 1-3/C 14 (LUM)
 1-1/C 6 INS. GR.

Ⓐ PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT 350 DEG)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90/180 DEG
 2-ANGLE MOUNT C.D. PED HEADS-POLE MOUNTED
 90 DEG AND 180 DEG
 R10-X12 SIGN PANEL-ADJACENT TO 7-1
 2-TYPE D SIGN PANELS OVERHEAD AT 16' AND 28'
 ONE WAY EVP DETECTOR AND CONFIRMATION LIGHT AT 6' (Ø4,7)
 EXTEND INTO HH 3:
 3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 1-3/C 20
 1-3/C 14 (LUM)
 1-1/C 6 INS. GR.

Ⓐ PA100 POLE FOUNDATION
 TYPE PA100-A-40-D40-9 (DAVIT 350 DEG)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 VIDEO DETECTOR-MAST ARM MOUNTED (V-2)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 12'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90/180 DEG
 2-ANGLE MOUNT C.D. PED HEADS-POLE MOUNTED
 90 DEG AND 180 DEG
 R10-X12 SIGN PANEL-ADJACENT TO 1-1
 TYPE D SIGN PANEL OVERHEAD AT 28'
 ONE WAY EVP DETECTOR AND CONFIRMATION LIGHT AT 6' (Ø6,1)
 EXTEND INTO HH 4:
 3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 1-3/C 20
 1-VIDEO CABLE (FOR V-3)
 1-3/C 14 (LUM)
 1-1/C 6 INS. GR.

Ⓐ PA100 POLE FOUNDATION
 TYPE PA100-A-45-D40-9 (DAVIT 350 DEG)
 VIDEO DETECTOR (FISHEYE/BELL)-LUMINAIRE EXTENSION MOUNTED
 (360 CAMERA)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 12'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90/180 DEG
 2-ANGLE MOUNT C.D. PED HEADS-POLE MOUNTED
 90 DEG AND 180 DEG
 R10-X12 SIGN PANEL-ADJACENT TO 3-1
 2-TYPE D SIGN PANELS OVERHEAD AT 16' AND 28'
 ONE WAY EVP DETECTOR AND CONFIRMATION LIGHT AT 6' (Ø8,3)
 EXTEND INTO HH 5:
 3" CONDUIT
 3-6/C 14
 4-4/C 14
 1-3/C 14
 1-3/C 20
 1-3/C 14 (LUM)
 1-CAT 5e CABLE
 1-1/C 6 INS. GR.

BY	DATE	REVISIONS
SJK	10/25/22	AS-BUILT PLAN SP 8206-52

SYSTEM ID: 4186466 T.E. 36112
 METER ADDRESS: 15207 FOREST BLVD
 OLD SYSTEM ID:

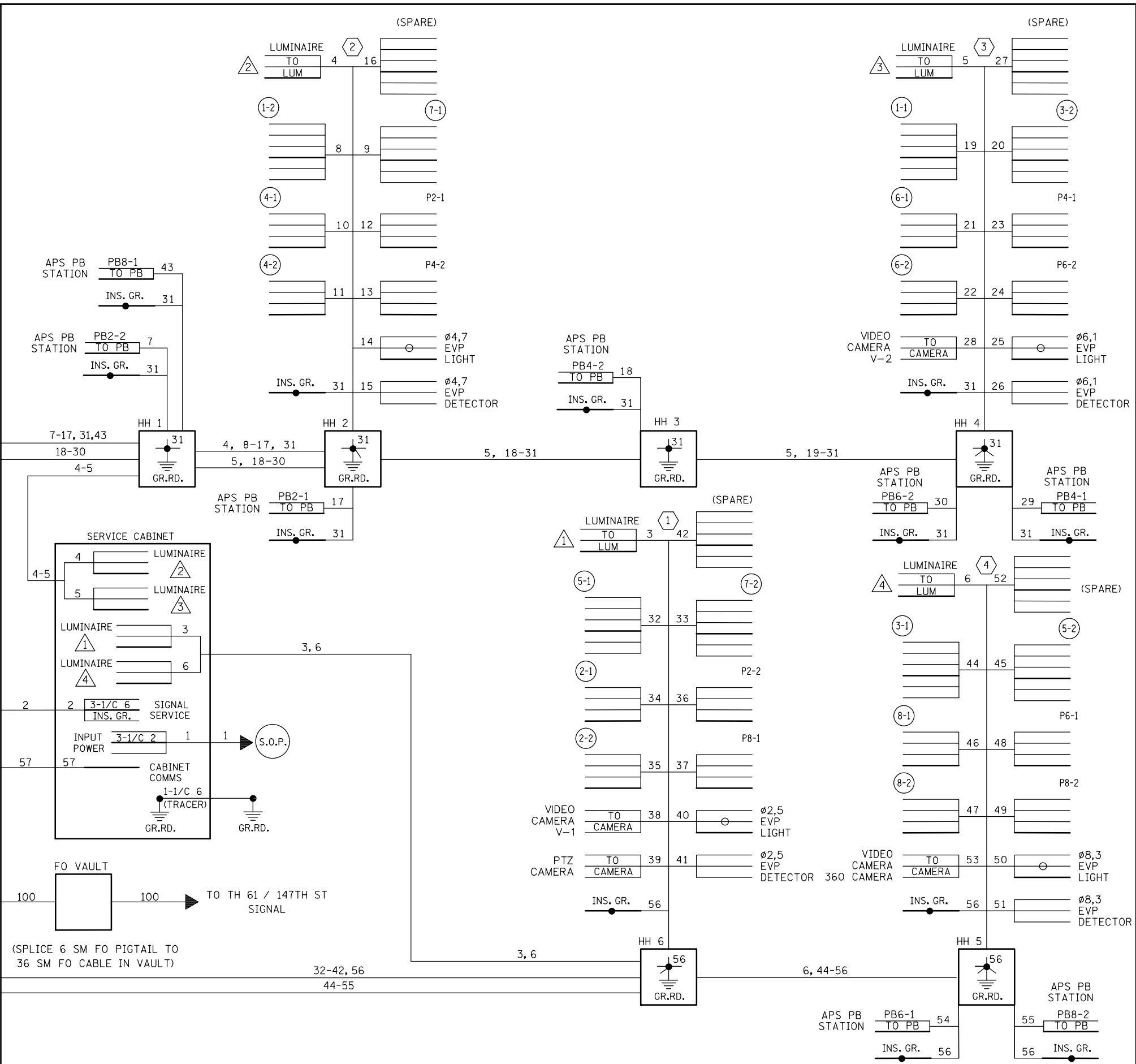
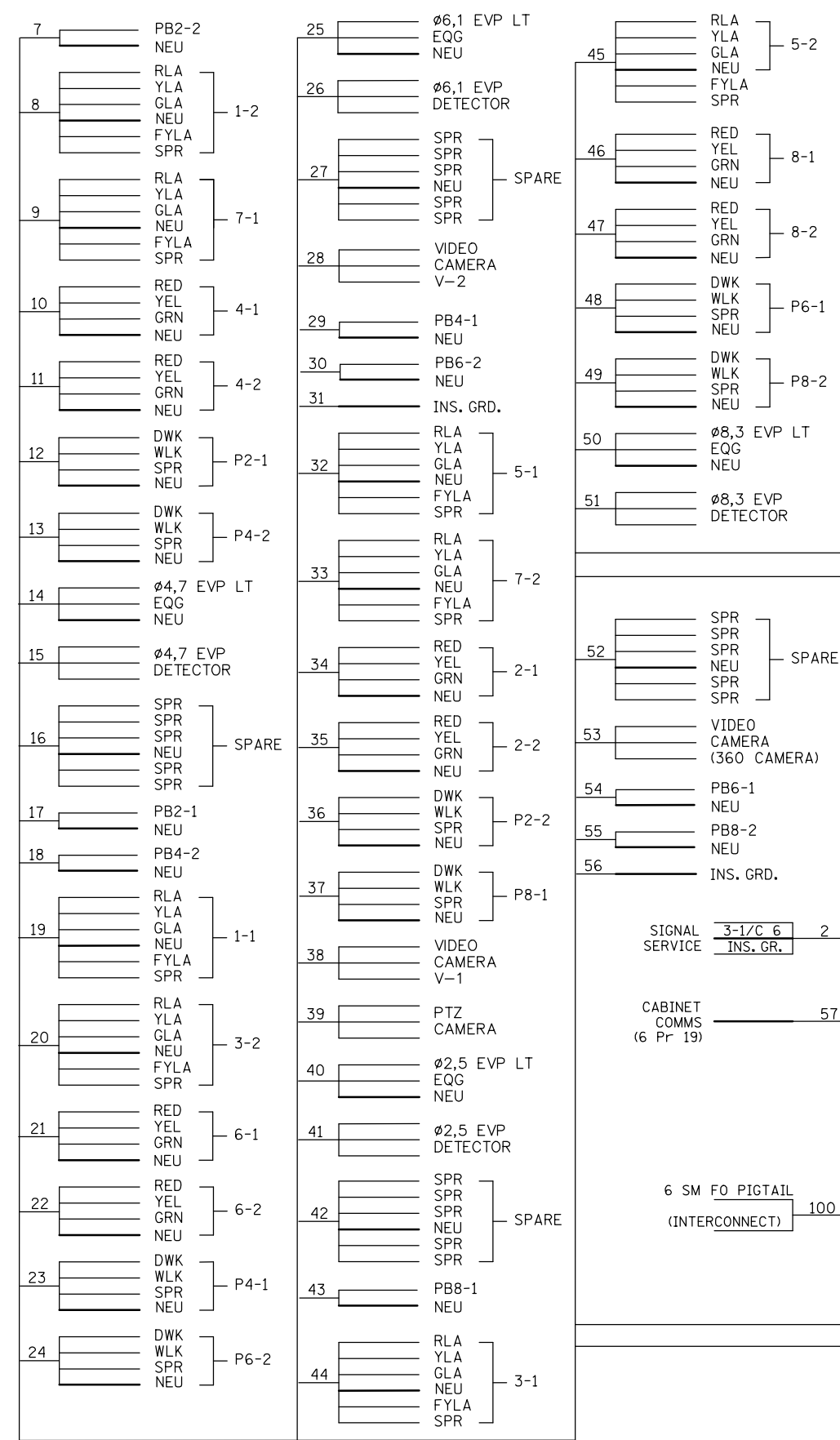
POLE NOTES
T.H. 61 AT 152ND ST. N.
IN HUGO, WASHINGTON COUNTY

S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:
CERTIFIED BY _____	LIC. NO. _____	DATE: _____	
STATE PROJ.NO. 8206-52 (T.H.61)		SHEET NO. 2 OF	3 SHEETS

PLOTTED/REVISED: 24-OCT-2022

DISTRICT *: Metro
PLOT NAME: wiring diagram
FILENAME: Projects\DM_FOS\06100001TrafficSignals\53.00_152ND ST.N-4186466\T-4186466_sgl.dgn

CONTROLLER CABINET



BY	DATE	REVISIONS
SJK	10/25/22	AS-BUILT PLAN SP 8206-52

SYSTEM ID: 4186466 T.E. 36112
 METER ADDRESS: 15207 FOREST BLVD
 OLD SYSTEM ID:

FIELD WIRING DIAGRAM
T.H. 61 AT 152ND ST. N.
IN HUGO, WASHINGTON COUNTY

S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:

CERTIFIED BY _____ LIC. NO. _____ DATE: _____
 LICENSED PROFESSIONAL ENGINEER

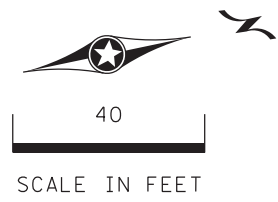
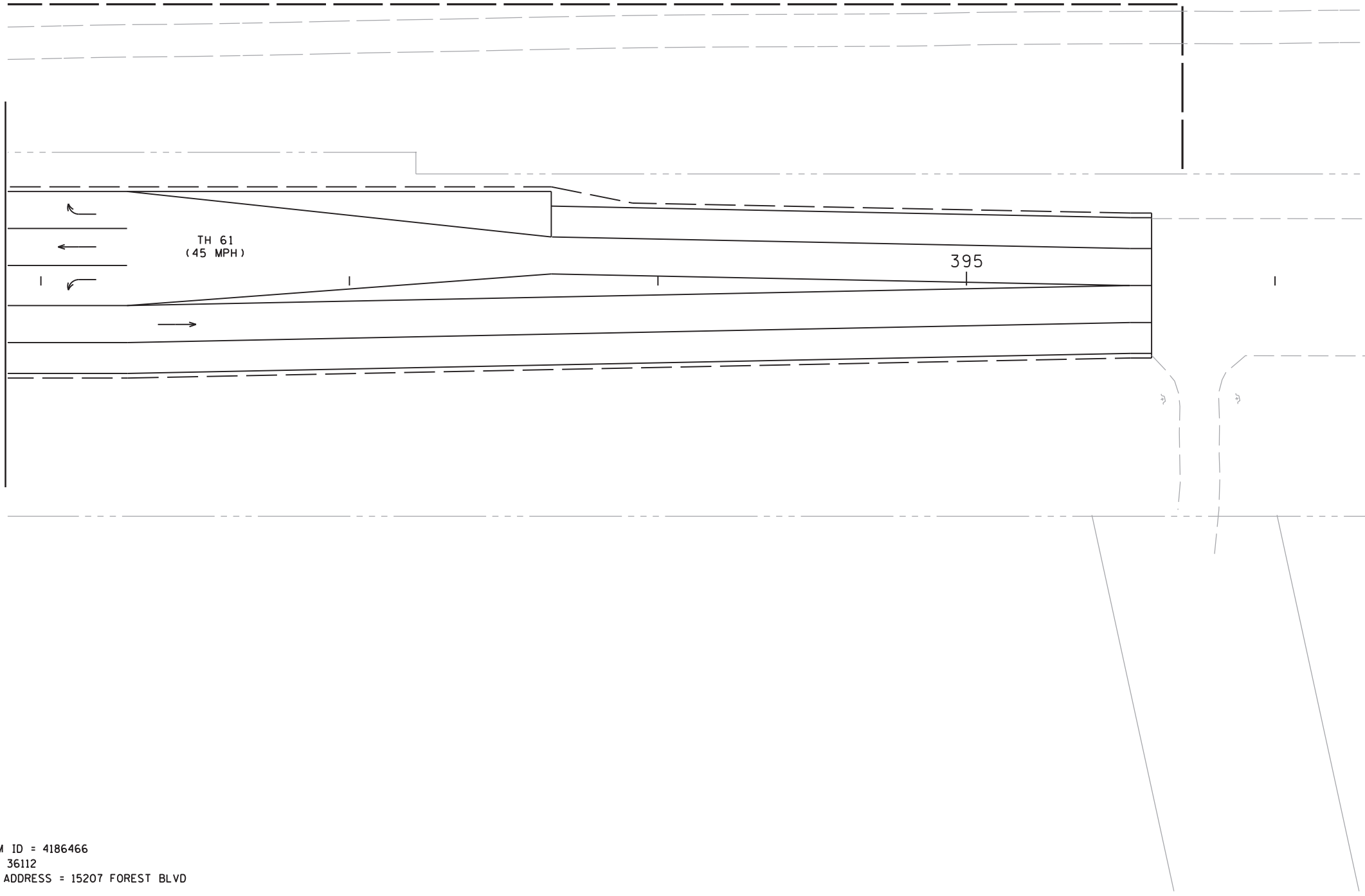
STATE PROJ. NO. 8206-52 (T.H.61) SHEET NO. 3 OF 3 SHEETS

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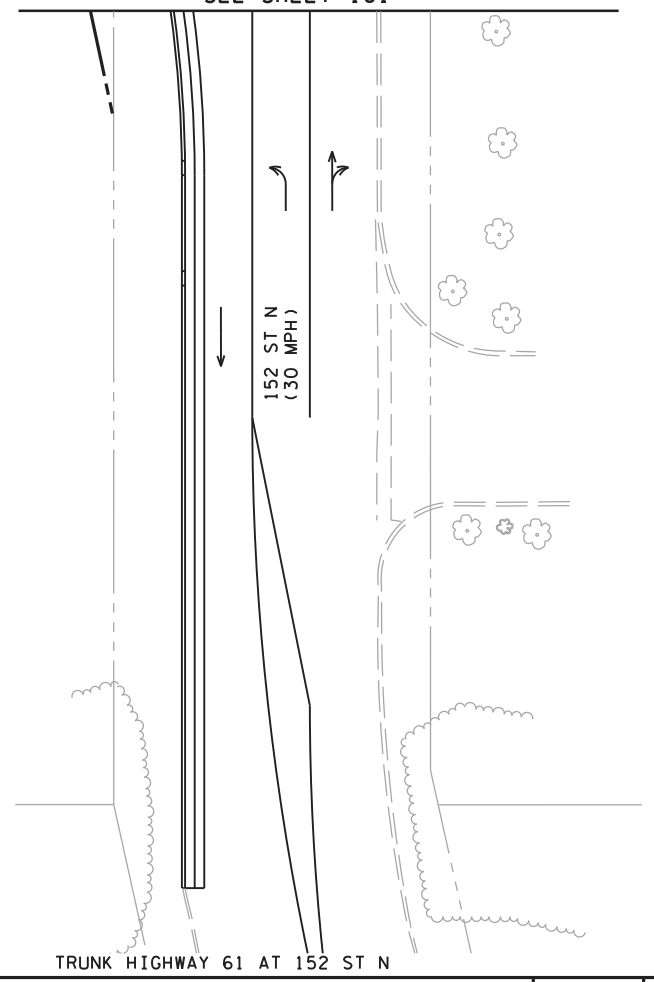
12/10/2021

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MATCHLINE T.H. 61 INP.
STA 391+88 - SEE SHEET 101



MATCHLINE A 152 ST N INP.
SEE SHEET 101

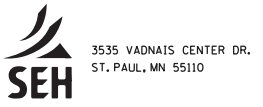


SYSTEM ID = 4186466
TE # = 36112
METER ADDRESS = 15207 FOREST BLVD

DESIGN TEAM				
DRAWN BY:	MRO			
DESIGNER:	MRO			
CHECKED BY:	JMG			
	NO.	BY	DATE	REVISIONS

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By: *[Signature]* Lic. No. 22457
 Licensed Professional Engineer
 Printed Name: JOHN M. GRAY Date: 12/10/2021



WASHINGTON COUNTY, MINNESOTA
 WHITE BEAR LAKE SCHOOL DISTRICT
T.H. 61/152 ST N
 S.P. 8206-52

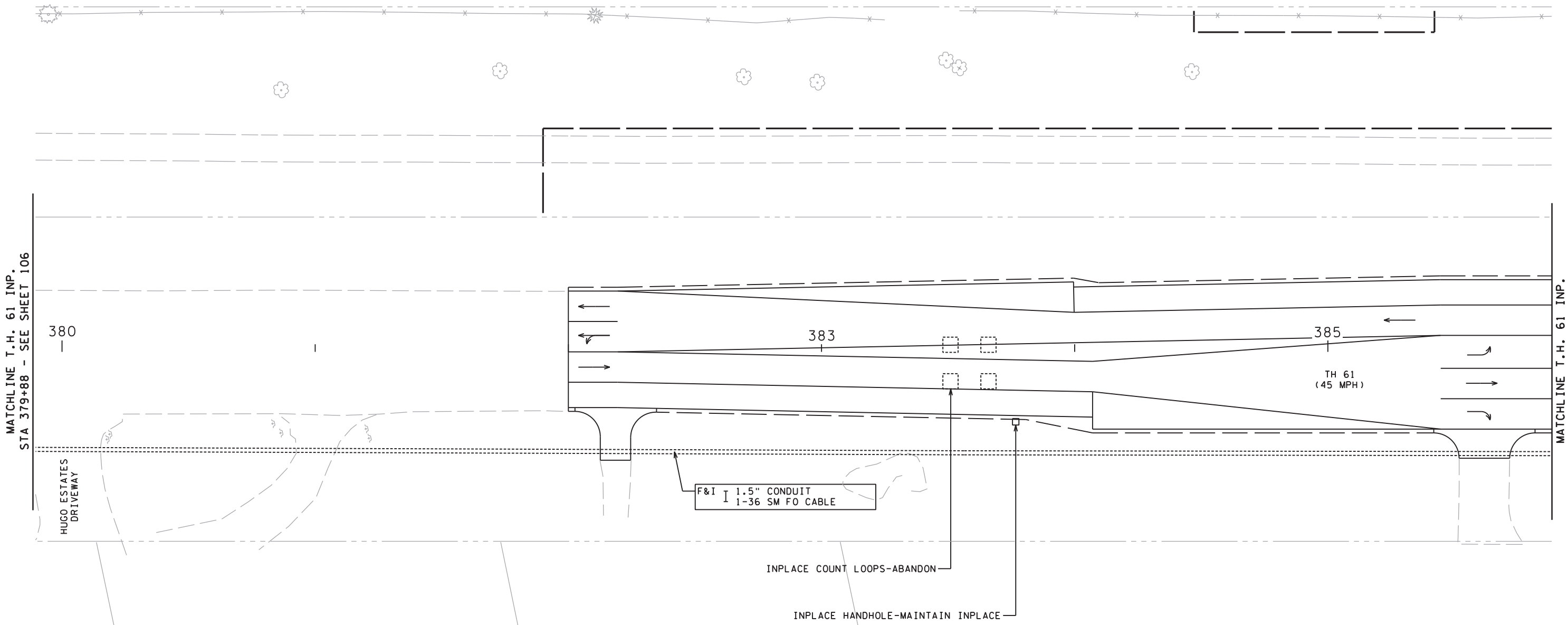
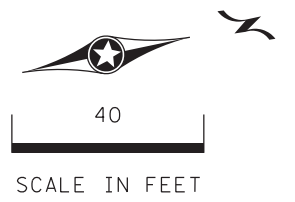
SIGNAL PLAN
 INTERSECTION LAYOUT

SEH FILE NO. ISDWB159762	104
SGL 18 OF SGL 25	111

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12/10/2021

FILE: X:\F\J\1\ISDWB\159762\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CT159762.sgl.dgn
MODEL: sgl19



MATCHLINE T.H. 61 INP.
STA 379+88 - SEE SHEET 106

MATCHLINE T.H. 61 INP.
STA 385+88 - SEE SHEET 101

SYSTEM ID = 4186466
TE # = 36112
METER ADDRESS = 15207 FOREST BLVD

INTERCONNECT NOTES:

- 1) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE 651-454-0002) AS REQUIRED BY MINN. STATUE 2160.
- 2) DISTANCE OFF CURB OR SHOULDER FOR NEW INTERCONNECT CONDUIT SHALL BE 4-6 FEET OR AS DIRECTED BY ENGINEER.
- 3) ALL NEW INTERCONNECT CONDUIT SHALL BE DIRECTIONALLY BORED UNDER EXISTING ROADWAYS AND SIDEWALKS (NO OPEN TRENCHING ALLOWED).

TRUNK HIGHWAY 61 AT BETWEEN 152 ST N AND 147 ST N

DESIGN TEAM			
DRAWN BY:	MRO		
DESIGNER:	MRO		
CHECKED BY:	JMG		
NO.	BY	DATE	REVISIONS

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By: *John M. Gray* Lic. No. 22457
 Licensed Professional Engineer
 Printed Name: JOHN M. GRAY Date: 12/10/2021



WASHINGTON COUNTY, MINNESOTA
 WHITE BEAR LAKE SCHOOL DISTRICT
T.H. 61/152 ST N
 S.P. 8206-52

SIGNAL PLAN
 INTERCONNECT LAYOUT

SEH
 FILE NO.
 ISDWB159762
 SGL 19
 OF SGL 25
105
111

3:56:00 PM

12/10/2021

FILE: X:\F\J\1\SDWB\159762\5-final-dsgn\51-drawings\40-Transhwy\Plansheets\CT159762_sgl.dgn
MODEL: sgl14

(TH 61 AT 147TH ST)
SIGNAL CONTROL
CABINET 1736709

FIBER OPTIC SCHEMATIC

(FOR SIGNAL COMMUNICATIONS)

(TH 61 AT 152ND ST)
SIGNAL CONTROL
CABINET 4186466

PIGTAIL ID#:

SIG XXXXX 6SM

m B _____
m E _____

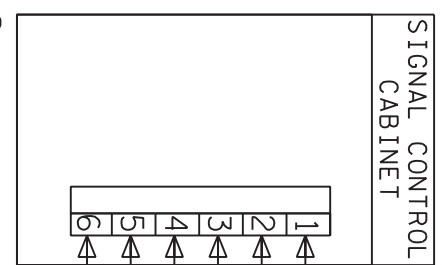
CABLE LABEL:

SIG 1736709 6SM

PIGTAIL ID#:

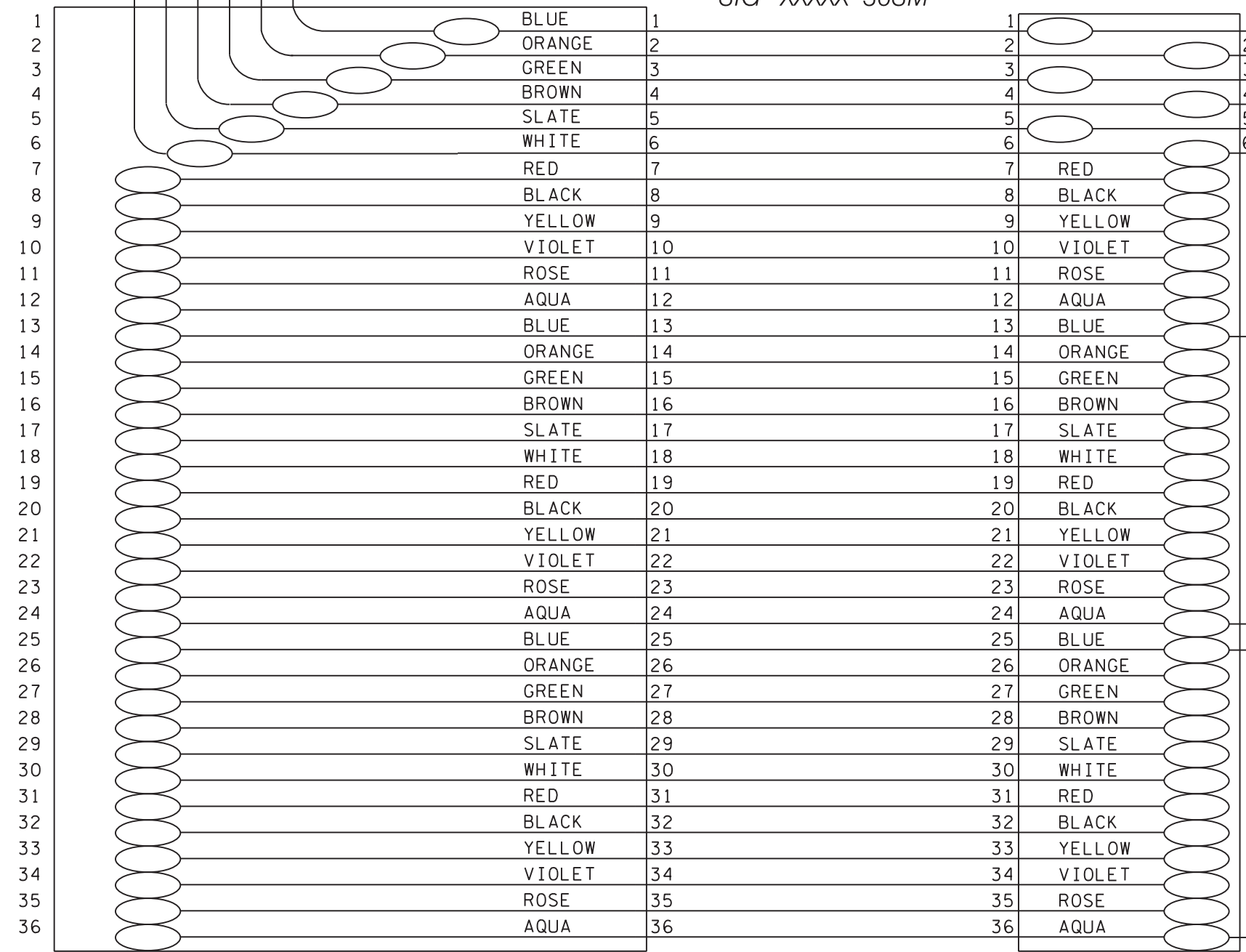
SIG XXXXX 6SM

m B _____
m E _____



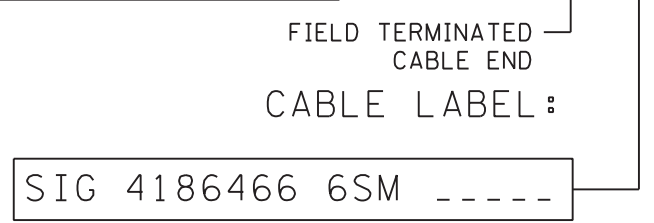
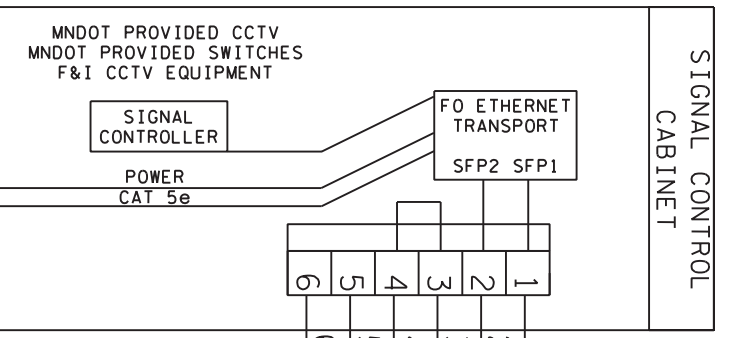
FIELD TERMINATED
CABLE END

SIG XXXXX 36SM



SPLICE VAULT
(TH 61 / 147TH)

SPLICE VAULT
(TH 61 / 152ND)



TUBE 2

TUBE 3

TRUNK HIGHWAY 61 AT 152 ST N

DESIGN TEAM			
DRAWN BY:	MRO		
DESIGNER:	MRO		
CHECKED BY:	JMG		
NO.	BY	DATE	REVISIONS

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Certified By: *[Signature]* Lic. No. 22457
Printed Name: JOHN M. GRAY Date: 12/10/2021



WASHINGTON COUNTY, MINNESOTA
WHITE BEAR LAKE SCHOOL DISTRICT
T.H. 61/152 ST N
S.P. 8206-52

SIGNAL PLAN
FIBER OPTIC SCHEMATICS

SEH FILE NO. ISDWB159762
SGL 14 OF SGL 25
100
111