

PLOTTED/REVISED: 21-JUN-2018

IPILOT NAME: T20767_sgl
PATH & FILENAME: Projects\DM_R05952A\0001\Traffic\Signals\20767 (W Moreland Ave)\20767_sgl.dgn

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

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONITE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

STA. 395+34.98 SB
20.20' LT
PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB4-1)
EXTEND INTO HH-7
1" CONDUIT
1-2/C #14
1-1/C #6 INS. GR.

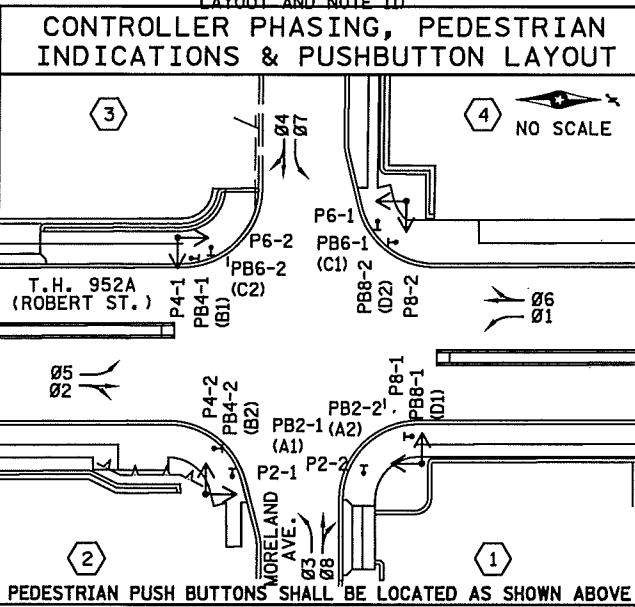
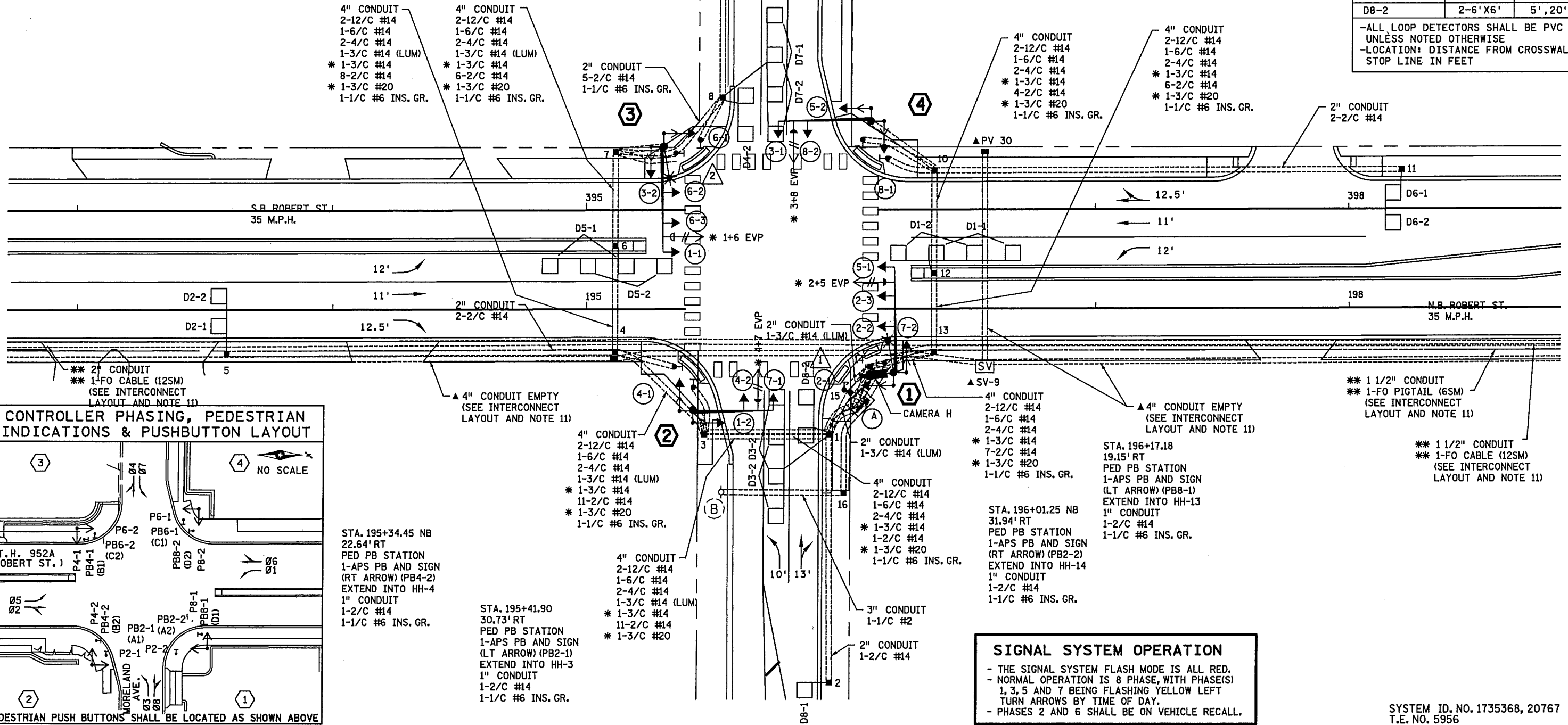
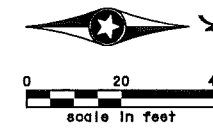
STA. 395+44.75 SB
27.60' LT
PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB6-2)
EXTEND INTO HH-8
1" CONDUIT
1-2/C #14
1-1/C #6 INS. GR.

STA. 396+08.61 SB
27.60' LT
PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB6-1)
EXTEND INTO HH-10
1" CONDUIT
1-2/C #14
1-1/C #6 INS. GR.

STA. 396+18.35 SB
20.16' LT
PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB8-2)
EXTEND INTO HH-10
1" CONDUIT
1-2/C #14
1-1/C #6 INS. GR.

| LOOP DETECTOR CHART | | |
|---------------------|----------|----------|
| DESIGNATION | QTY-SIZE | LOCATION |
| D1-1 | 2-6'X6' | 20',50' |
| D1-2 | 2-6'X6' | 5',35' |
| D2-1,D2-2 | 1-6'X6' | 180' |
| D3-1 | 2-6'X6' | 20',50' |
| D3-2 | 2-6'X6' | 5',35' |
| D4-1 | 1-6'X6' | 120' |
| D4-2 | 2-6'X6' | 5',20' |
| D5-1 | 2-6'X6' | 20',50' |
| D5-2 | 2-6'X6' | 5',35' |
| D6-1,D6-2 | 1-6'X6' | 200' |
| D7-1 | 2-6'X6' | 20',50' |
| D7-2 | 2-6'X6' | 5',35' |
| D8-1 | 1-6'X6' | 120' |
| D8-2 | 2-6'X6' | 5',20' |

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM CROSSWALK/STOP LINE IN FEET



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASE(S) 1, 3, 5 AND 7 BEING FLASHING YELLOW LEFT TURN ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SYSTEM ID. NO. 1735368, 20767
T.E. NO. 5956
METER ADDRESS 1250 S. ROBERT ST.

| NO | DATE | BY | CKD | APPR | REVISION |
|---------|------|-----|-----|------|---------------|
| 06-2018 | | SJK | | | AS-BUILT PLAN |

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.

Print Name: **ADRIAN S. POTTER**

Date: 08/06/2014 License # 42785

STATE PROJECT NO. 173-010-007, 019-608-002
019-614-012, 019-673-007

STATE PROJECT NO. 1908-84 (T.H. 952A)

COUNTY PROJECT NO. 97-136, 6-07

CITY PROJECT NO. 11-3

DRAWN BY R. W. SMITH
DESIGNED BY R. W. SMITH
CHECKED BY A. S. POTTER
COMM. NO. 0107294



ENGINEERS
PLANNERS
DESIGNERS

CITY OF WEST ST. PAUL
TRAFFIC SIGNAL PLANS AND DETAILS
ROBERT STREET IMPROVEMENT PROJECT
INTERSECTION LAYOUT SYSTEM "H" (SHEET 1 OF 2)
T.H. 952A (ROBERT ST.) AT MORELAND AVE.

SHEET
1106
OF
1320

PLOTTED/REVISED: 21-JUN-2018

IPLLOT NAME: T20767_sgl
PATH & FILENAME: Projects\DM_R05\952AV00001\Traffic\Signals\20767 (W Moreland Ave)\T20767_sgl.dgn

① STA. 196+20.56 NB
25.12' RT
PA100 POLE FOUNDATION
TYPE PA100-A-40-D35-8 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2+5)
LUMINAIRE-LED (250W HPS REPLACEMENT)
X6-350/CAM 400 EXTENSION
IP CAMERA (STATE FURNISHED)
1-R10-X12 SIGN ADJACENT TO HEAD (5-1)
1-TYPE D SIGN (D-9) (SEE SIGN DETAILS)
3" CONDUIT TO HH-14:
2-12/C #14
1-6/C #14
2-4/C #14
* 1-3/C #14
1-3/C #14 (LUM)
1-3/C #14 (CAMERA H POWER)
* 1-3/C #20
1-CAT 6
1-COAXIAL CABLE
1-1/C #6 INS. GR.

③ STA. 395+30.33 SB
25.11' LT
PA100 POLE FOUNDATION
TYPE PA100-A-40-D35-8 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 11' AND 23'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE-LED (250W HPS REPLACEMENT)
1-R10-X12 SIGN ADJACENT TO HEAD (1-1)
1-TYPE D SIGN (D-9) (SEE SIGN DETAILS)
3" CONDUIT TO HH-7:
2-12/C #14
1-6/C #14
2-4/C #14
* 1-3/C #14
1-3/C #14 (LUM)
* 1-3/C #20
1-1/C #6 INS. GR.

② STA. 195+41.71 NB
39.60' RT
PA100 POLE FOUNDATION
TYPE PA90-A-30
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4+7)
1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
1-R10-X12 SIGN ADJACENT TO HEAD (7-1)
3" CONDUIT TO HH-3:
2-12/C #14
1-6/C #14
2-4/C #14
* 1-3/C #14
* 1-3/C #20
1-1/C #6 INS. GR.

④ STA. 396+11.87 SB
34.85' LT
PA90 POLE FOUNDATION
TYPE PA90-A-35
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED IND AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3+8)
1-R10-X12 SIGN ADJACENT TO HEAD (3-1)
1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
3" CONDUIT TO HH-10:
2-12/C #14
1-6/C #14
2-4/C #14
* 1-3/C #14
* 1-3/C #20
1-1/C #6 INS. GR.

Ⓐ EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB)
CONTROLLER AND CABINET (STATE FURNISHED)

| | |
|--------------------|--------------------|
| 4" CONDUIT TO HH-1 | 4" CONDUIT TO HH-1 |
| 2-12/C #14 | 2-12/C #14 |
| 1-6/C #14 | 1-6/C #14 |
| 2-4/C #14 | 2-4/C #14 |
| * 1-3/C #14 | * 1-3/C #14 |
| 11-2/C #14 | 5-2/C #14 |
| * 1-3/C #20 | * 1-3/C #20 |
| | 1-1/C #6 INS. GR. |

| | |
|---------------------|----------------------------|
| 4" CONDUIT TO HH-14 | 4" CONDUIT TO HH-14 |
| 2-12/C #14 | 2-12/C #14 |
| 1-6/C #14 | 1-6/C #14 |
| 2-4/C #14 | 2-4/C #14 |
| * 1-3/C #14 | * 1-3/C #14 |
| 7-2/C #14 | 1-3/C #14 (CAMERA H POWER) |
| * 1-3/C #20 | 1-2/C #14 |
| | * 1-3/C #20 |
| | 1-CAT 6 |
| | 1-COAXIAL CABLE |
| | 1-1/C #6 INS. GR. |

** 1 1/2" CONDUIT TO PV-33
** 1-FO PIGTAIL (6SM)

2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
3/4" CONDUIT STUBBED OUT (FOR TELEPHONE LINE)
CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
2-1/C #6
1-1/C #6 INS. GR.
CONTROLLER CABINET TO SERVICE CABINET (COMMS):
2" CONDUIT
1-6PR #19
SERVICE CABINET TO INPLACE POLE MOUNTED TRANSFORMER
2" CONDUIT
1-6PR #19
SERVICE CABINET TO HH-16
2" CONDUIT
3-1/C #2
2" CONDUIT TO HH-15:
2-3/C #14 (LUM)

Ⓑ SOP-WOOD POLE (INPLACE)
2" CONDUIT INTO SERVICE CABINET
3-1/C #2

NOTES:

- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
- THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, EQUIPMENT PAD, AND PEDESTRIAN CURB RAMPS SHALL BE DETERMINED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
- FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
- FOR PAVEMENT MARKINGS SEE PAVEMENT MARKING PLANS.
- FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK, SEE ROADWAY PLANS.
- THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
- ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
- ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
- ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE INTERCONNECT SYSTEM A PAY ITEM.
- SEE JOINT TRENCH DETAIL ON SHEET #17 FOR TYPICAL PLACEMENT OF INTERCONNECT CONDUIT.
- ITEMS DENOTED WITH A ▲ ARE INCLUDED IN PAYMENT FOR THE INTERCONNECT SYSTEM B PAY ITEM.
- ALL HANDHOLES, SPLICE VAULTS, AND PULL BOXES LOCATED IN SIDEWALKS SHALL BE SET TO MATCH THE RUNNING SLOPE AND CROSS SLOPE OF THE SIDEWALK.

SYSTEM ID. NO. 1735368, 20767
T.E. NO. 5956
METER ADDRESS 1250 S. ROBERT ST.

| | | | |
|---------|------|----|---------------|
| 06-2018 | SJK | | AS-BUILT PLAN |
| NO | DATE | BY | CKD APPR |
| | | | REVISION |

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CITY PROJECT NO. 11-3

DRAWN BY R. W. SMITH
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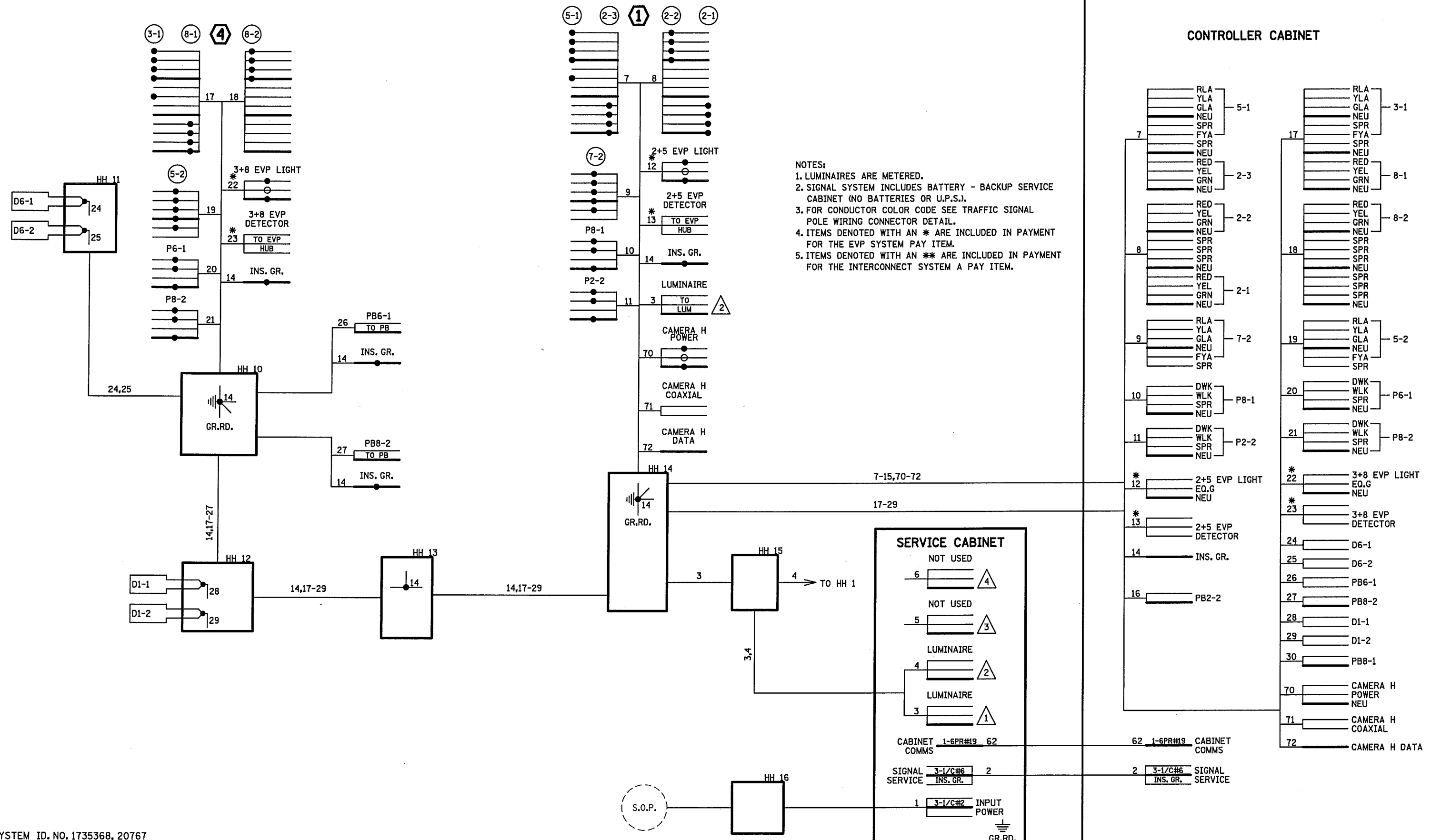
ENGINEERS
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CITY OF WEST ST. PAUL

TRAFFIC SIGNAL PLANS AND DETAILS
ROBERT STREET IMPROVEMENT PROJECT
INTERSECTION LAYOUT SYSTEM "H" (SHEET 2 OF 2)
T.H. 952A (ROBERT ST.) AT MORELAND AVE.

SHEET
1107
OF
1320

I/PLOT NAME: T20767.sgi
 PATH & FILENAME: Projects\DM_R05\952A\0000\Traffic\Signals\20767 (W Moreland Ave)\T20767.sgi.dgn
 PLOTTED/REVISED: 21-JUN-2018



- NOTES:**
1. LUMINAIRES ARE METERED.
 2. SIGNAL SYSTEM INCLUDES BATTERY - BACKUP SERVICE CABINET (NO BATTERIES OR U.P.S.).
 3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
 4. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 5. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE INTERCONNECT SYSTEM A PAY ITEM.

SYSTEM ID. NO. 1735368, 20767
 T.E. NO. 5956
 METER ADDRESS 1250 S. ROBERT ST.

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 STATE PROJECT NO. 1908-84 (T.H. 952A)
 COUNTY PROJECT NO. 97-136, 6-07
 CITY PROJECT NO. 11-3

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 DESIGNED BY: R. W. SMITH
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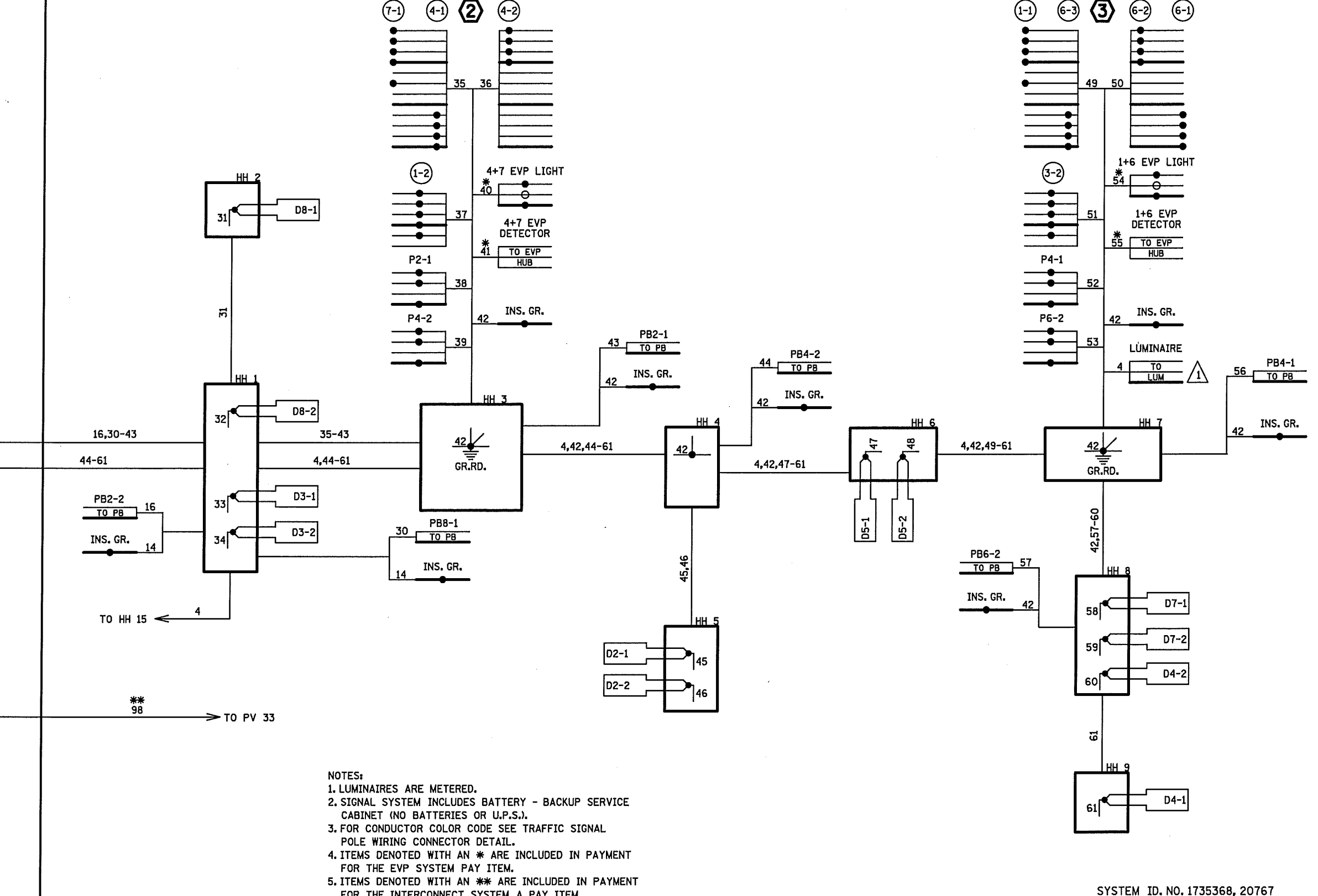
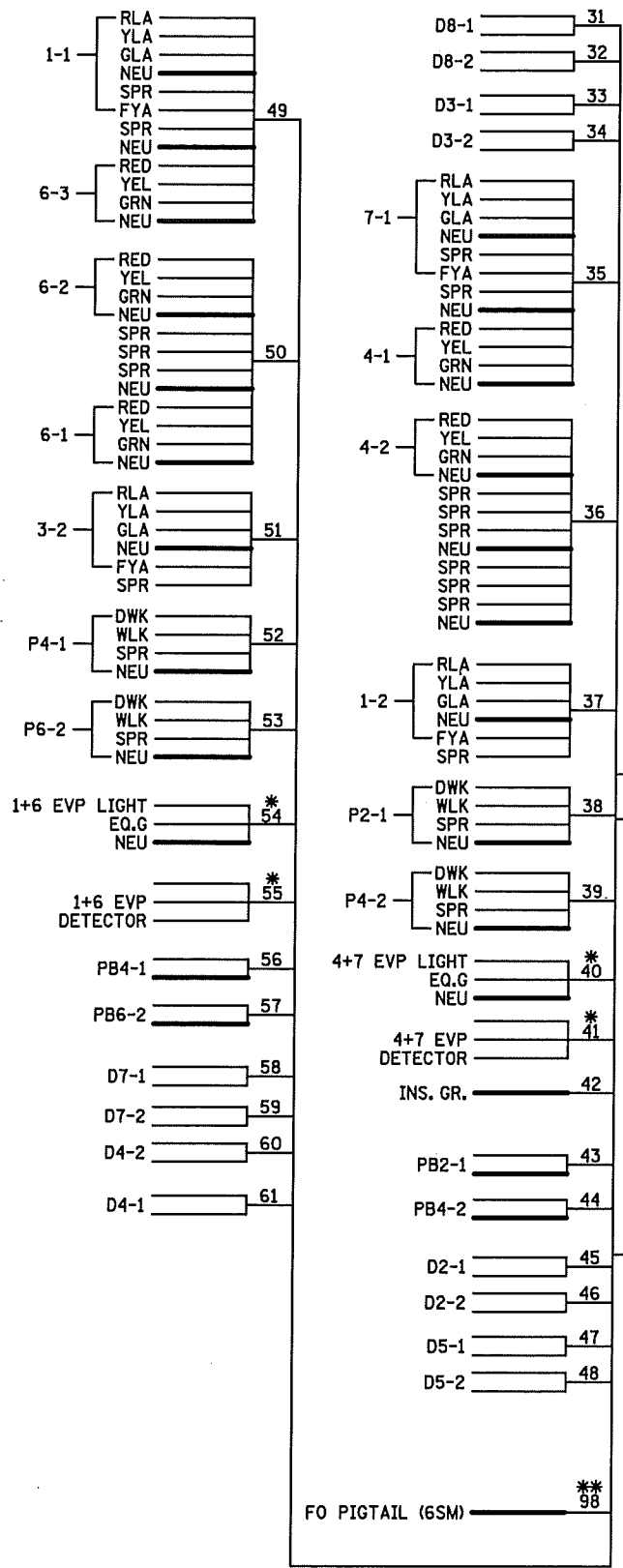


**ENGINEERS
 PLANNERS
 DESIGNERS**

CITY OF WEST ST. PAUL
 TRAFFIC SIGNAL PLANS AND DETAILS
ROBERT STREET IMPROVEMENT PROJECT
 FIELD WIRING DIAGRAM SYSTEM "H" (SHEET 1 OF 2)
 T.H. 952A (ROBERT ST.) AT MORELAND AVE.

**SHEET
 1108
 OF
 1320**

CONTROLLER CABINET



- NOTES:
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 - ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVL SYSTEM PAY ITEM.
 - ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE INTERCONNECT SYSTEM A PAY ITEM.

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019-614-012, 019-673-007

STATE PROJECT NO.
1908-84 (T.H. 952A)

COUNTY PROJECT NO.
97-136, 6-07

CITY PROJECT NO. 11-3

DRAWN BY
R. W. SMITH

DESIGNED BY
R. W. SMITH

CHECKED BY
A. S. POTTER

COMM. NO. 0107294



ENGINEERS
PLANNERS
DESIGNERS

CITY OF WEST ST. PAUL

TRAFFIC SIGNAL PLANS AND DETAILS

ROBERT STREET IMPROVEMENT PROJECT

FIELD WIRING DIAGRAM SYSTEM "H" (SHEET 2 OF 2)

T.H. 952A (ROBERT ST.) AT MORELAND AVE.

SHEET
1109
OF
1320