

# MINNESOTA DEPARTMENT OF TRANSPORTATION CONSTRUCTION PLANS FOR BITUMINOUS SURFACING, DRAINAGE IMPROVEMENTS, SANITARY SEWER WATERMAIN AND MISCELLANEOUS CONSTRUCTION

LOCATED ON SUNWOOD DRIVE NW FROM CSAH 83 TO CO RD 56  
AND ON RHINESTONE STREET NW FROM SUNWOOD DR NW TO CO RD 116  
AND ON ANOKA COUNTY ROADS 56 AND 116 AND ANOKA C.S.A.H. 83  
CITY OF RAMSEY PROJECT NO. 03-29

## GOVERNING SPECIFICATIONS

THE 2000 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL APPLY.  
ALL FEDERAL, STATE AND LOCAL LAWS, REGULATIONS, AND ORDINANCES SHALL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

## SHEET INDEX

THIS PLAN CONTAINS 166 SHEETS

### SUNWOOD DRIVE(S.A.P. 199-104-07) AND RHINESTONE STREET(S.A.P. 199-109-01) - 113 SHEETS

| SHEET NO. | DESCRIPTION                                 |
|-----------|---|
| 1         | TITLE SHEET                                 |
| 2         | GENERAL LAYOUT                              |
| 3-6       | STATEMENT OF ESTIMATED QUANTITIES           |
| 7         | CONSTRUCTION NOTES AND STANDARD PLATES      |
| 8-10      | DRAINAGE TABULATIONS                        |
| 11-12     | TYPICAL SECTIONS                            |
| 13-18     | DETAIL SHEETS                               |
| 19-25     | SUNWOOD - STREET & STORM SEWER PLANS        |
| 26        | ARMSTRONG - SAN. SEWER & WATERMAIN PLANS    |
| 27-33     | SUNWOOD - SAN. SEWER & WATERMAIN PLANS      |
| 34        | RAMSEY - SAN. SEWER & WATERMAIN PLANS       |
| 35-37     | RHINESTONE - STREET & STORM SEWER PLANS     |
| 38-40     | RHINESTONE - SAN. SEWER & WATERMAIN PLANS   |
| 41-53     | INTERSECTION DETAILS                        |
| 54-67     | CONCRETE PAVING PLANS                       |
| 68-69     | ARMSTRONG TRAFFIC CONTROL PLAN              |
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| 80-113    | SUNWOOD AND RHINESTONE CROSS SECTIONS       |

### BUNKER LAKE BOULEVARD - CO. RD. 116 (S.A.P. 199-109-01) - 21 SHEETS

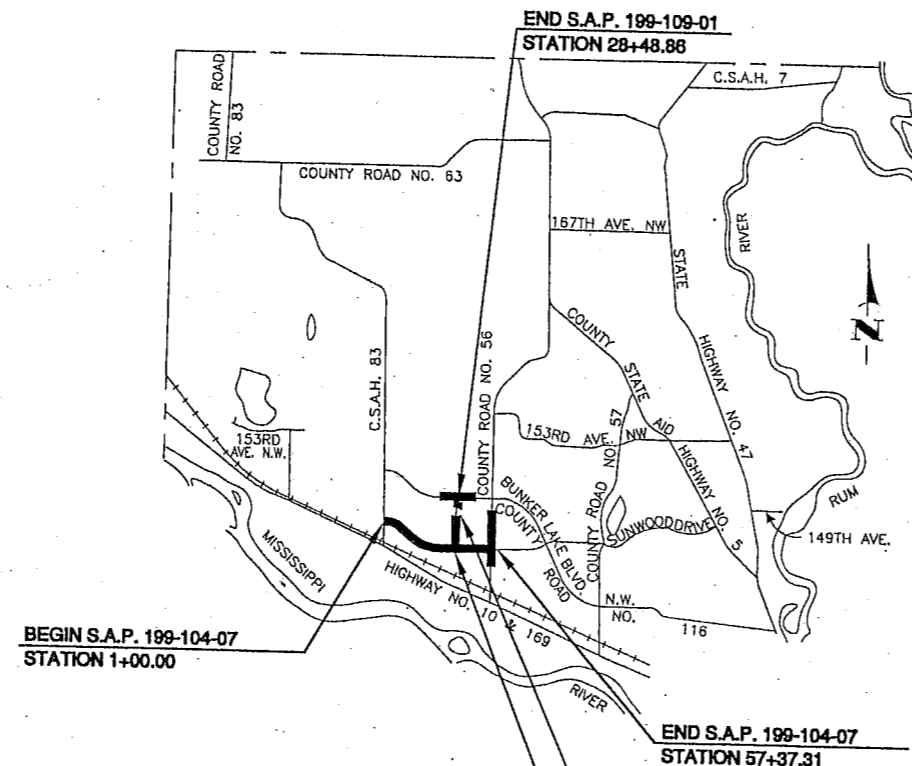
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|---------|--|
| 1B      | TYPICAL SECTIONS                                   |
| 2B-9B   | REMOVAL PLANS, STREET PLANS, AND STORM SEWER PLANS |
| 10B     | INTERSECTION DETAILS                               |
| 11B-12B | TRAFFIC CONTROL PLANS                              |
| 13B-15B | SIGNING AND STRIPING PLANS                         |
| 16B-21B | CROSS SECTIONS                                     |

### RAMSEY BOULEVARD - CO. RD. 56 (S.A.P. 199-104-07) - 32 SHEETS

|         |  |
|---------|--|
| 1R-2R   | TYPICAL SECTIONS                                   |
| 3R-12R  | REMOVAL PLANS, STREET PLANS, AND STORM SEWER PLANS |
| 13R-14R | INTERSECTION DETAILS                               |
| 15R-16R | TRAFFIC CONTROL PLANS                              |
| 17R-19R | SIGNING AND STRIPING PLANS                         |
| 20R-21R | SIGNAL PLANS                                       |
| 22R-32R | CROSS SECTIONS                                     |

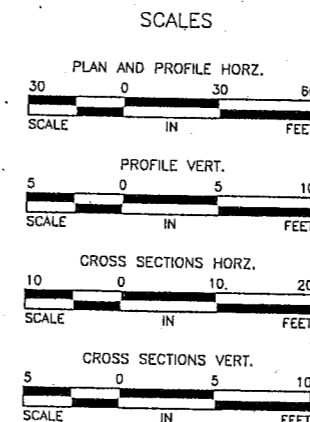
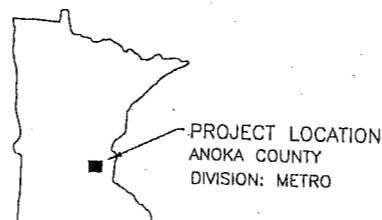
### LEGEND

|         |                                    |
|---------|------------------------------------|
| — UGE — | UNDERGROUND ELECTRIC LINES         |
| — OHE — | OVERHEAD ELECTRIC LINES            |
| - - -   | EXISTING CONTOUR                   |
| - - -   | EXISTING STORM SEWER               |
| - - -   | EXISTING SAN SEWER                 |
| - - -   | EXISTING WATERMAIN                 |
| - - -   | PROPOSED STORM SEWER               |
| - - -   | PROPOSED SAN SEWER                 |
| - - -   | PROPOSED WATERMAIN                 |
| - - -   | SILT FENCE                         |
| - - -   | WETLAND BOUNDARY                   |
| ●       | CURB INLET                         |
| ⊕       | HYDRANT                            |
| ⊗       | WATER VALVE                        |
| ⊙       | SAN SEWER MANHOLE                  |
| ⊙       | STORM SEWER MANHOLE                |
| ⊗       | DENOTES DETAIL                     |
| ⊗       | DENOTES SHEET DETAIL IS LOCATED ON |



| PROJECT NO.                       | SAP 199-104-07<br>SUNWOOD DRIVE NW                | SAP 199-109-01<br>RHINESTONE ST NW                | SAP 199-104-01<br>BUNKER LAKE BLVD                | SAP 199-104-07<br>RAMSEY BLVD                     |
|-----------------------------------|---|---|---|---|
| <b>DESIGN DATA</b>                |   |   |   |   |
| GROSS LENGTH                      | 5,611.60 FT.                                      | 2,532.90 FT.                                      | 800.00 FT.  | 1,750.00 FT.                                      |
| BRIDGE LENGTH                     | 0   | 137 FT.   | 0   | 0   |
| EXCEPTION LENGTH                  | 0   | 0   | 0   | 0   |
| NET LENGTH                        | 5,611.60 FT.                                      | 2,395.90 FT.                                      | 800.00 FT.  | 1,750.00 FT.                                      |
| ADT (2004)                        | 0   | 0   | 0   | 0   |
| ADT (2024)                        | 17,600  | 5,400   | 11,700  | 27,800  |
| DESIGN SPEED                      | 30 Miles/hr                                       | 30 Miles/hr                                       | 55 Miles/hr                                       | 55 Miles/hr                                       |
| R-VALUE                           | 70  | 70  | 70  | 70  |
| ESAL                              | 3,350,000   | 1,650,000   | 2,250,000   | 5,320,000   |
| STRUCTURAL DESIGN                 | 10 ton  | 10 ton  | 10 ton  | 10 ton  |
| FUNCTIONAL CLASSIFICATION         | LOCAL COLLECTOR                                   | LOCAL COLLECTOR                                   | COUNTY COLLECTOR                                  | COUNTY COLLECTOR                                  |
| NUMBER OF TRAFFIC LANES           | 2-4   | 2   | 2-4   | 2-4   |
| NUMBER OF PARKING LANES           | 1   | 2   | 0   | 0   |
| SHOULDER WIDTH                    | 0 FT.   | 0 FT.   | 0 FT.   | 0 FT.   |
| STOPPING SIGHT DISTANCE BASED ON: | 3.5 FT. HEIGHT OF EYE<br>0.5 FT. HEIGHT OF OBJECT | 3.5 FT. HEIGHT OF EYE<br>0.5 FT. HEIGHT OF OBJECT | 3.5 FT. HEIGHT OF EYE<br>0.5 FT. HEIGHT OF OBJECT | 3.5 FT. HEIGHT OF EYE<br>0.5 FT. HEIGHT OF OBJECT |

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.



**Hakanson Anderson Assoc., Inc.**  
Civil Engineers and Land Surveyors  
3801 Thurston Ave., Anoka, Minnesota 55303  
763-427-5960 FAX 763-427-0520

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
CITY OF RAMSEY ENGINEER

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
ANOKA COUNTY ENGINEER

\_\_\_\_\_  
METRO DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

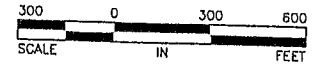
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

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.

*Peter R. Raatikka* 11586 3/24/04  
PETER R. RAATIKKA, P.E. LIC. NO. DATE  
HAKANSON ANDERSON ASSOCIATES, INC. DESIGN ENGINEER

S.A.P. 199-104-07  
S.A.P. 199-109-01

CITY OF RAMSEY



LEGEND

- DENOTES EXISTING FEATURES
- DENOTES NEW CONSTRUCTION
- DENOTES PAVEMENT TO BE REMOVED

SHEET SEQUENCE

- = STREET/STORM SEWER PLAN SHEET NO.
- = SANITARY SEWER/WATERMAIN PLAN SHEET NO.

ARMSTRONG BLVD. (CO. RD. NO. 83)

BEGIN S.A.P. 199-104-07  
SUNWOOD DRIVE STA. 1+00.00

END S.A.P. 199-109-01  
RHINESTONE STREET STA. 28+48.86

BUNKER LAKE BLVD. (CO. RD. NO. 116)

END S.A.P. 199-104-07  
SUNWOOD DRIVE STA. 57+37.31

BEGIN S.A.P. 199-109-01  
RHINESTONE STREET STA. 9+78.92

CONTRACTOR FIELD OFFICE  
STAGING AREA

| DATE    | REVISION  |
|---------|---|
| 2/24/04 | REVISED COUNTY ROAD GEOMETRICS                  |
| 3/24/04 | ADDED COUNTY ROAD SHEET SHAPES & ARMSTRONG STA. |

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.

*Peter R. Raatikka*  
PETER R. RAATIKKA, P.E.  
Date 1/28/04 Lic. No. 11586

|                     |                    |
|---------------------|--------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>10/15/03  |
| DRAWN BY:<br>RAA    | FILE NO.<br>RA3171 |
| CHECKED BY:<br>PRR  |                    |



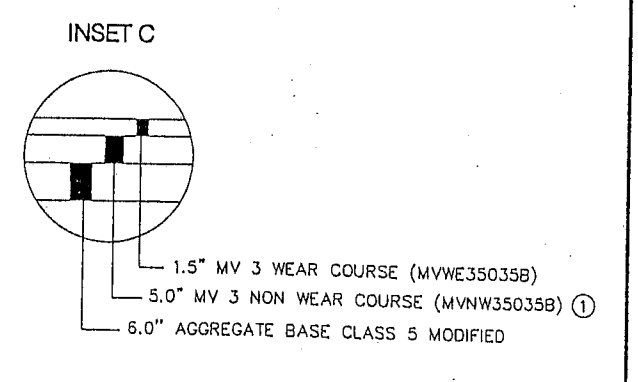
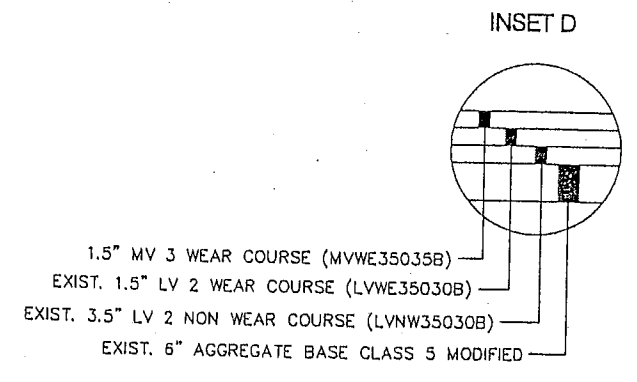
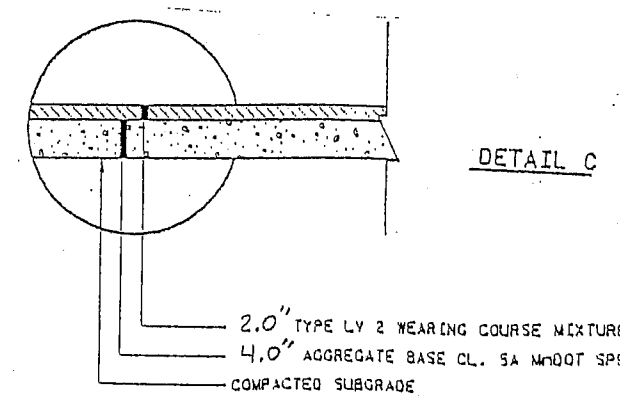
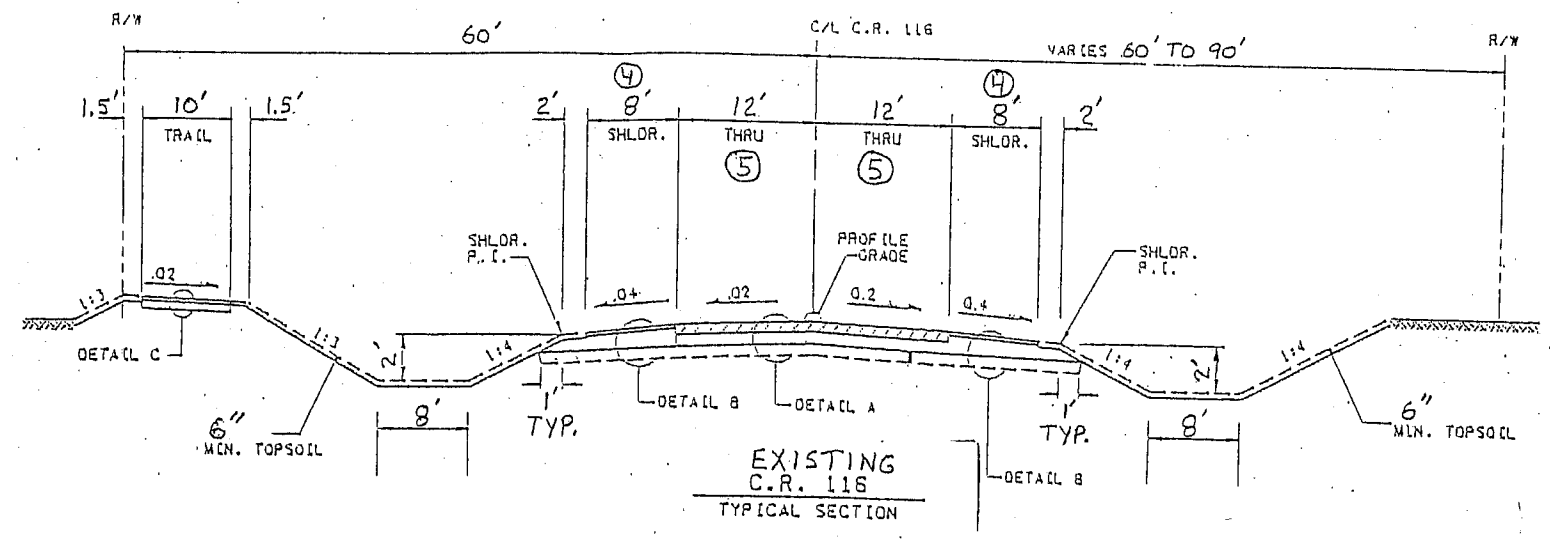
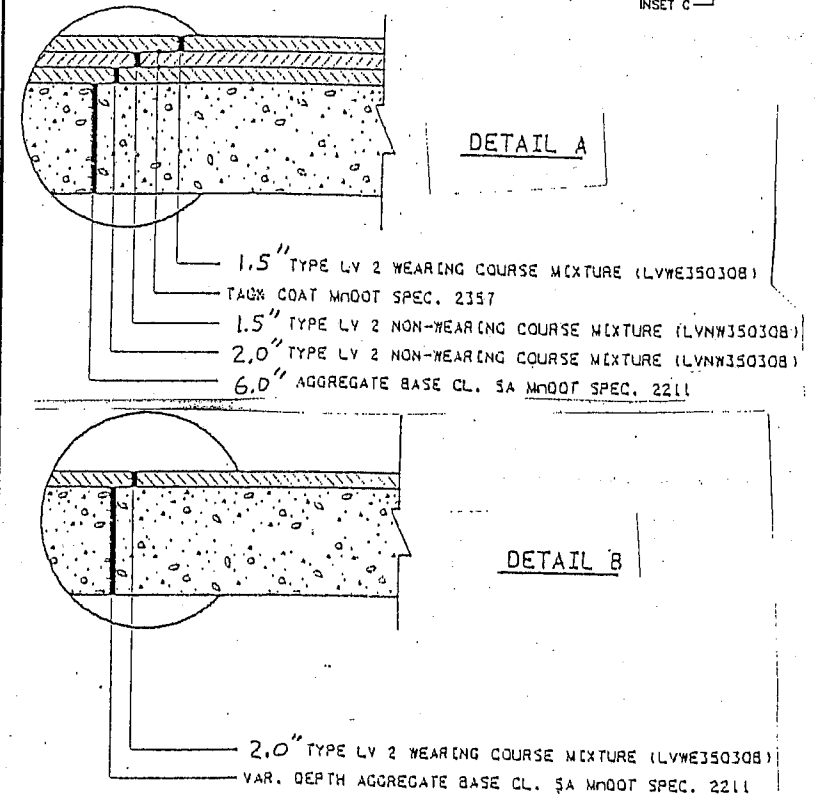
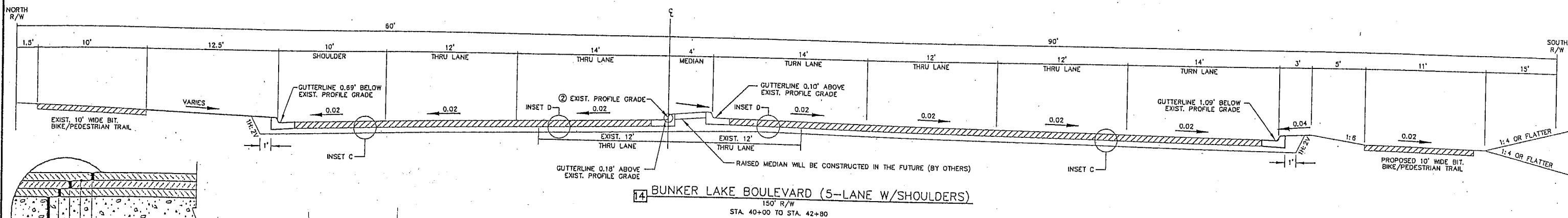
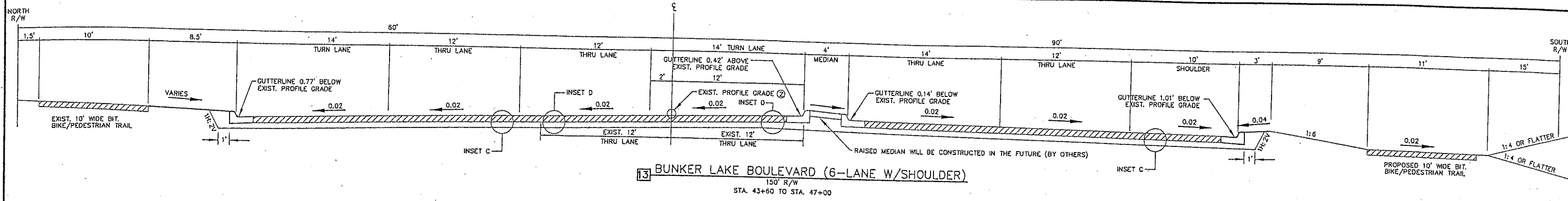
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763-427-5860 FAX 763-427-0520  
www.hakanson-anderson.com

S.A.P. 199-104-07  
S.A.P. 199-109-01

GENERAL LAYOUT

CITY OF RAMSEY, MINNESOTA

SHEET  
2  
OF  
166  
SHEETS



- NOTES:**
- PLACE IN 2 LIFTS (3.0" MAX. LIFT THICKNESS)
  - FINISHED CENTERLINE ELEVATION WILL BE 1.5" ABOVE EXISTING PROFILE GRADE DUE TO 1.5" BITUMINOUS OVERLAY (WEAR COURSE) OVER ENTIRE WIDTH.
  - ALL CROSS SLOPES ARE IN FT. PER FT.
  - EXIST. SHOULDERS (BITUMINOUS AND GRAVEL BASE) TO BE SALVAGED FOR PROPOSED PAVEMENT WIDENING.
  - PORTIONS OF THE EXIST. BITUMINOUS PAVEMENT WILL NEED TO BE SAW CUT(FULL-DEPTH) AND REMOVED TO FACILITATE MEDIAN CONSTRUCTION WITH B424 CONCRETE CURB & GUTTER - SEE STREET PLANS FOR MORE DETAILS.

| DATE   | REVISION |
|--|----------|
| Mar 29, 2004 - 3:09pm  |          |
| K:\cond_eng\land projects-2004\RA3172\dwg\RA3172-TYPSECT.dwg |          |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|                  |                 |
|------------------|-----------------|
| DESIGNED BY: JEJ | DATE: 02/05/04  |
| DRAWN BY: RAA    | FILE NO. RA3172 |
| CHECKED BY: PRR  |                 |

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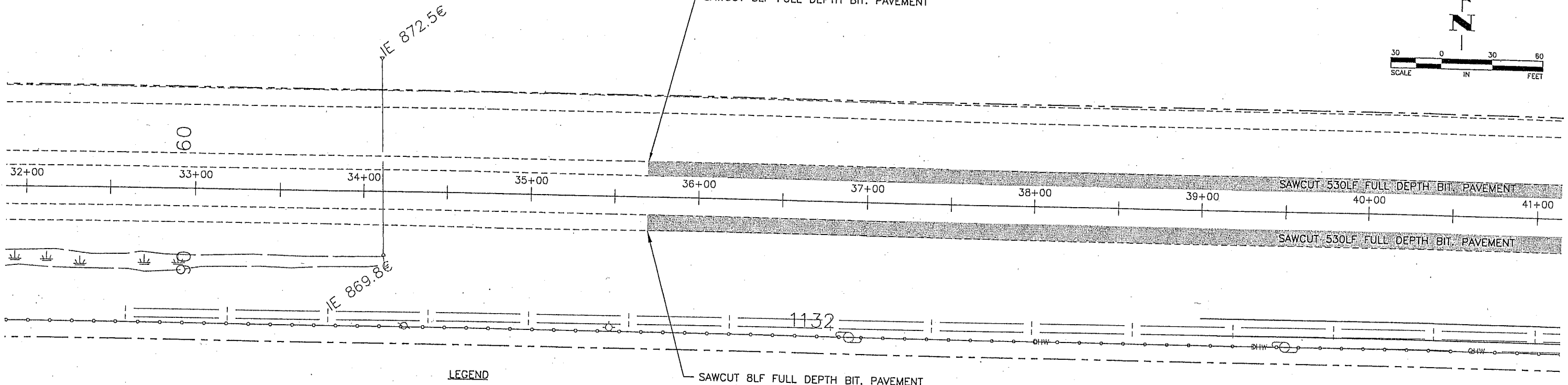
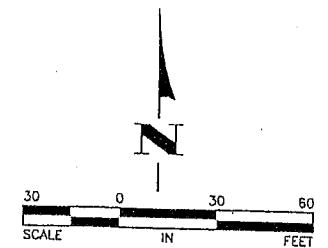
S.A.P. 199-109-01

TYPICAL SECTIONS  
 BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 18 OF 166 SHEETS

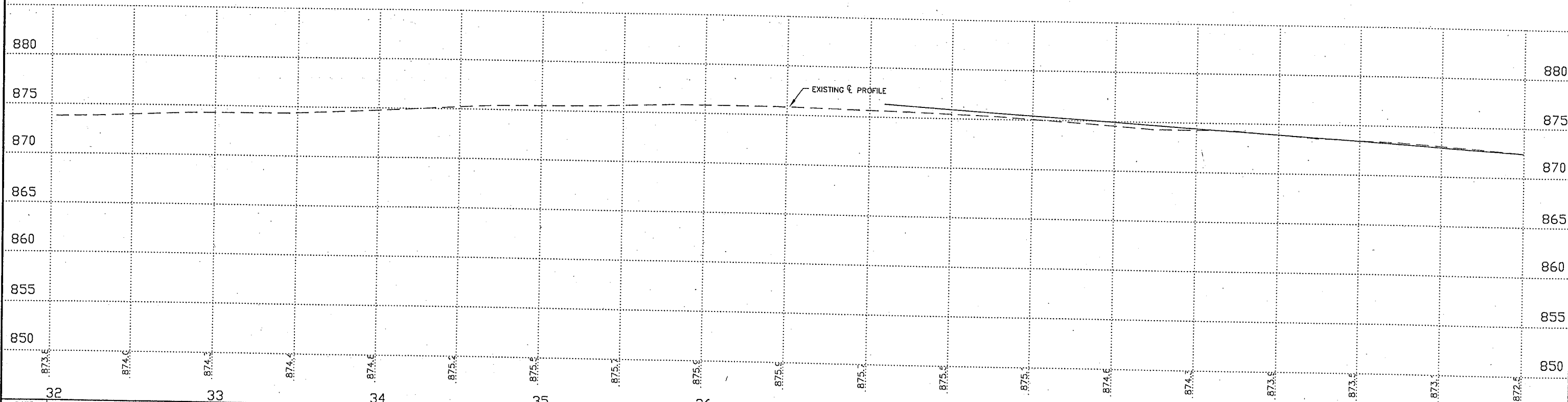
# BUNKER LAKE BOULEVARD

BEGIN PAVEMENT REMOVAL  
BUNKER LAKE STA. 35+70.00  
SAWCUT 8LF FULL DEPTH BIT. PAVEMENT



**LEGEND**

|                    |                       |                                   |
|--------------------|-----------------------|-----------------------------------|
| CONCRETE REMOVAL   | REMOVE SANITARY SEWER | EXISTING SANITARY SEWER TO REMAIN |
| BITUMINOUS REMOVAL | REMOVE STORM SEWER    | EXISTING STORM SEWER TO REMAIN    |
| CURB REMOVAL       | REMOVE WATER MAIN     | EXISTING WATER MAIN TO REMAIN     |
|                    | REMOVE WATER SERVICE  | EXISTING FORCE MAIN TO REMAIN     |



| DATE | REVISION |
|------|----------|
|      |          |
|      |          |
|      |          |
|      |          |

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PETER R. RAATIKKA, P.E.  
Date: 3/24/04 Lic. No. 11586

|                     |                   |
|---------------------|-------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>01/29/04 |
| DRAWN BY:<br>RAA    | FILE NO.:         |
| CHECKED BY:<br>PRR  | RA3172            |

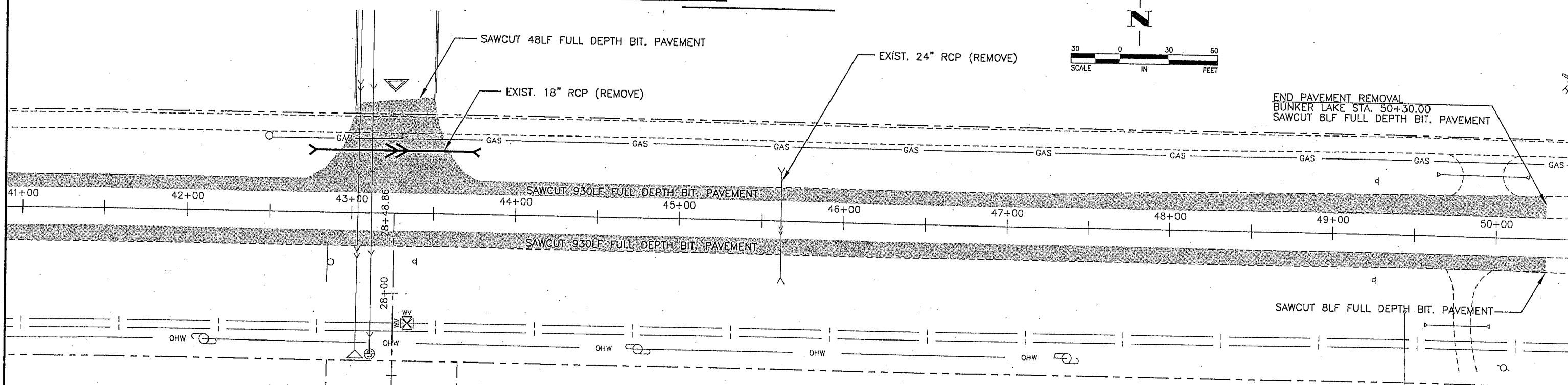
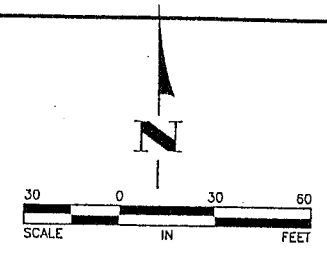
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S.A.P. 199-109-01

EXISTING UTILITIES/REMOVALS  
BUNKER LAKE BOULEVARD  
CITY OF RAMSEY, MINNESOTA

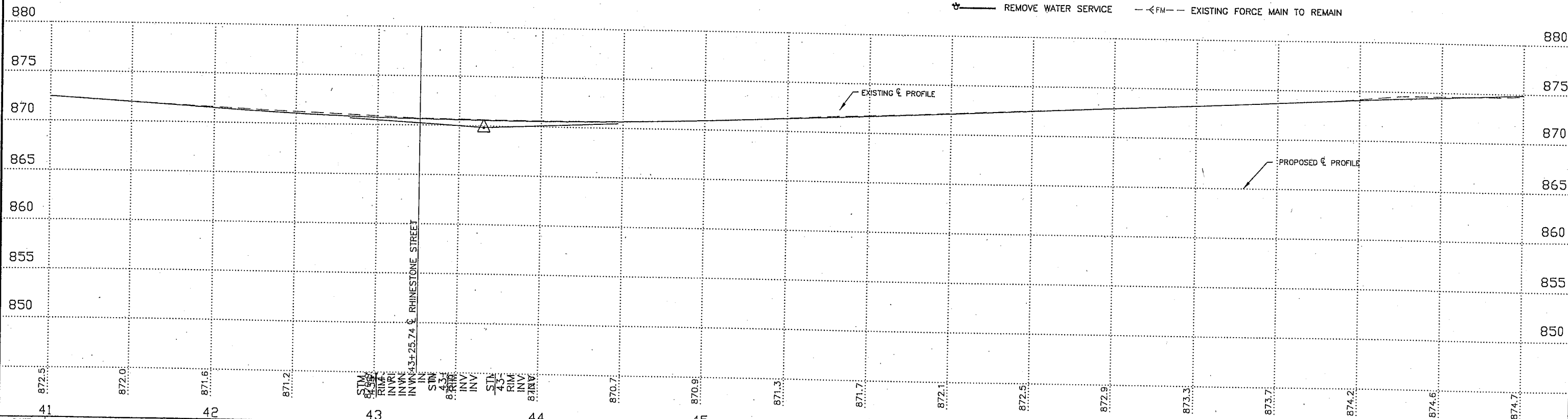
SHEET 2B OF 166 SHEETS

# BUNKER LAKE BOULEVARD



**LEGEND**

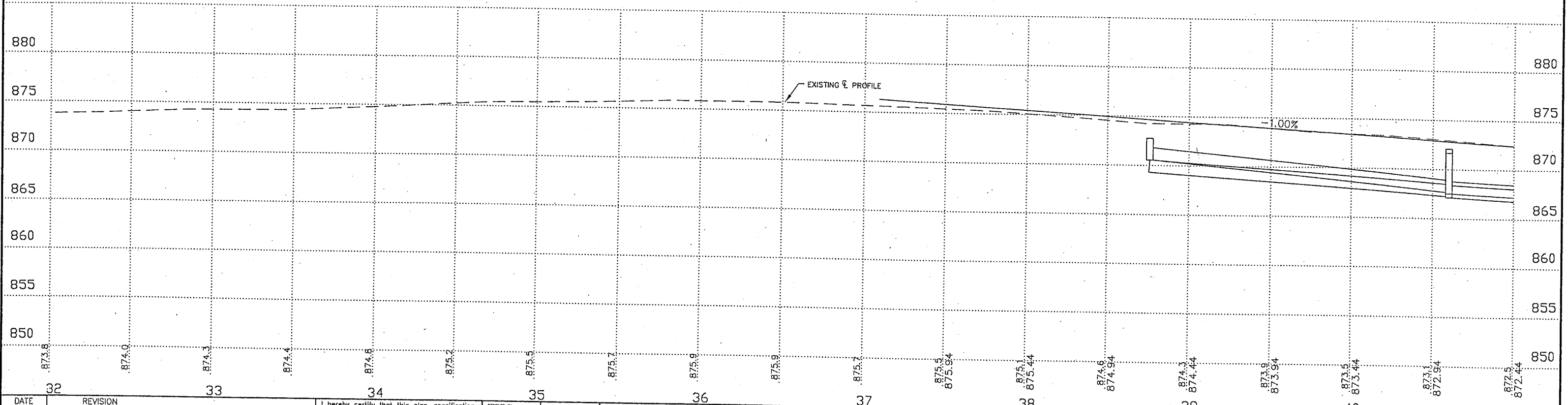
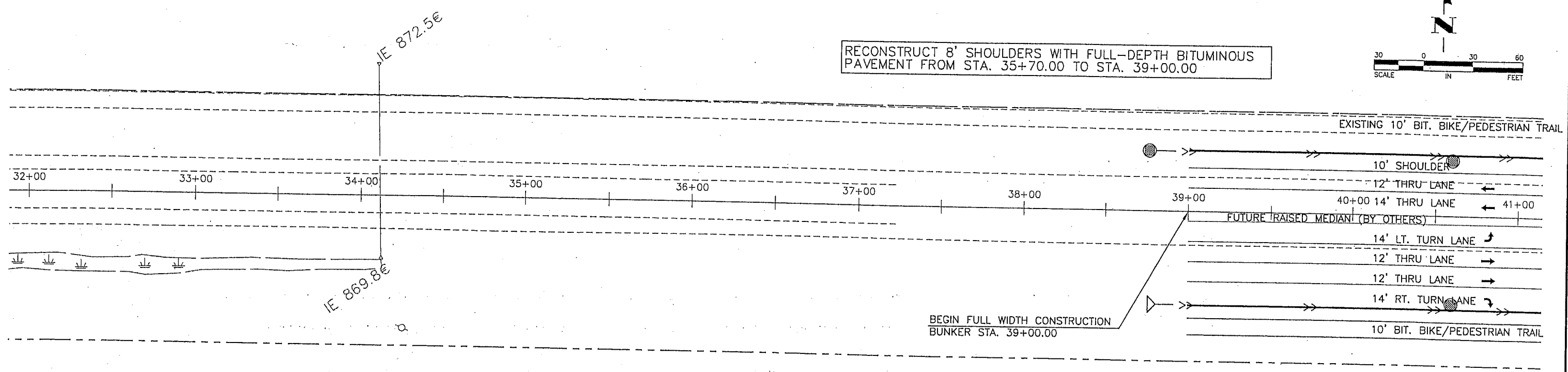
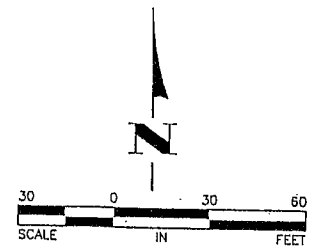
|                    |                       |                                   |
|--------------------|-----------------------|-----------------------------------|
| CONCRETE REMOVAL   | REMOVE SANITARY SEWER | EXISTING SANITARY SEWER TO REMAIN |
| BITUMINOUS REMOVAL | REMOVE STORM SEWER    | EXISTING STORM SEWER TO REMAIN    |
| CURB REMOVAL       | REMOVE WATER MAIN     | EXISTING WATER MAIN TO REMAIN     |
|                    | REMOVE WATER SERVICE  | EXISTING FORCE MAIN TO REMAIN     |



| <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table> | DATE              | REVISION |  |  |  |  | <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 Licensed Professional Engineer under the laws of the State of Minnesota.</p> <p><i>Peter R. Raatikka</i><br/>         PETER R. RAATIKKA, P.E.<br/>         Date 3/24/04 Lic. No. 11586</p> | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>DESIGNED BY:<br/>JEJ</td> <td>DATE:<br/>01/29/04</td> </tr> <tr> <td>DRAWN BY:<br/>RAA</td> <td>FILE NO.:</td> </tr> <tr> <td>CHECKED BY:<br/>PRR</td> <td>RA3172</td> </tr> </table> | DESIGNED BY:<br>JEJ | DATE:<br>01/29/04 | DRAWN BY:<br>RAA | FILE NO.: | CHECKED BY:<br>PRR | RA3172 | <p><b>Hakanson Anderson Assoc., Inc.</b><br/>         Civil Engineers and Land Surveyors<br/>         3601 Thurston Ave., Anoka, Minnesota 55303<br/>         763-427-5860 FAX 763-427-0520<br/>         www.hakanson-anderson.com</p> | <p>S.A.P. 199-109-01</p> | <p>EXISTING UTILITIES/REMOVALS</p> <p>BUNKER LAKE BOULEVARD<br/>         CITY OF RAMSEY, MINNESOTA</p> | <p>SHEET<br/>         3B<br/>         OF<br/>         166<br/>         SHEETS</p> |
|---|-------------------|----------|--|--|--|--|--|--|---------------------|-------------------|------------------|-----------|--------------------|--------|--|--------------------------|--|---|
| DATE  | REVISION          |          |  |  |  |  |  |  |                     |                   |                  |           |                    |        |  |                          |  |   |
|   |                   |          |  |  |  |  |  |  |                     |                   |                  |           |                    |        |  |                          |  |   |
|   |                   |          |  |  |  |  |  |  |                     |                   |                  |           |                    |        |  |                          |  |   |
| DESIGNED BY:<br>JEJ   | DATE:<br>01/29/04 |          |  |  |  |  |  |  |                     |                   |                  |           |                    |        |  |                          |  |   |
| DRAWN BY:<br>RAA  | FILE NO.:         |          |  |  |  |  |  |  |                     |                   |                  |           |                    |        |  |                          |  |   |
| CHECKED BY:<br>PRR  | RA3172            |          |  |  |  |  |  |  |                     |                   |                  |           |                    |        |  |                          |  |   |

# BUNKER LAKE BOULEVARD

RECONSTRUCT 8' SHOULDERS WITH FULL-DEPTH BITUMINOUS PAVEMENT FROM STA. 35+70.00 TO STA. 39+00.00



| DATE | REVISION |
|------|----------|
|      |          |
|      |          |
|      |          |

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.

*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|                     |                   |
|---------------------|-------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>01/29/04 |
| DRAWN BY:<br>RAA    | FILE NO.:         |
| CHECKED BY:<br>PRR  | RA3172            |

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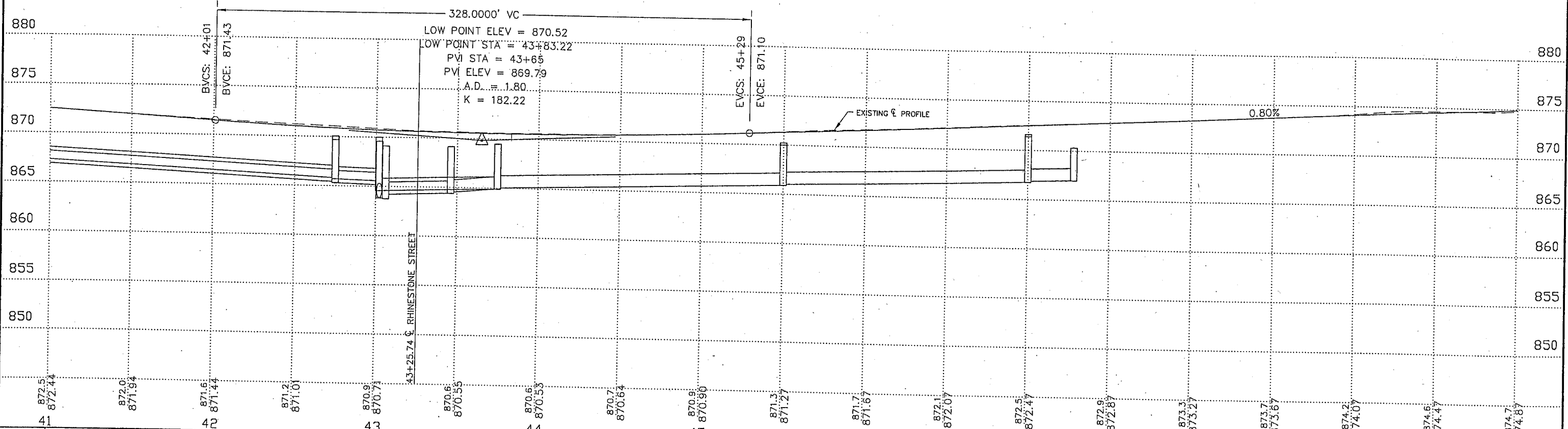
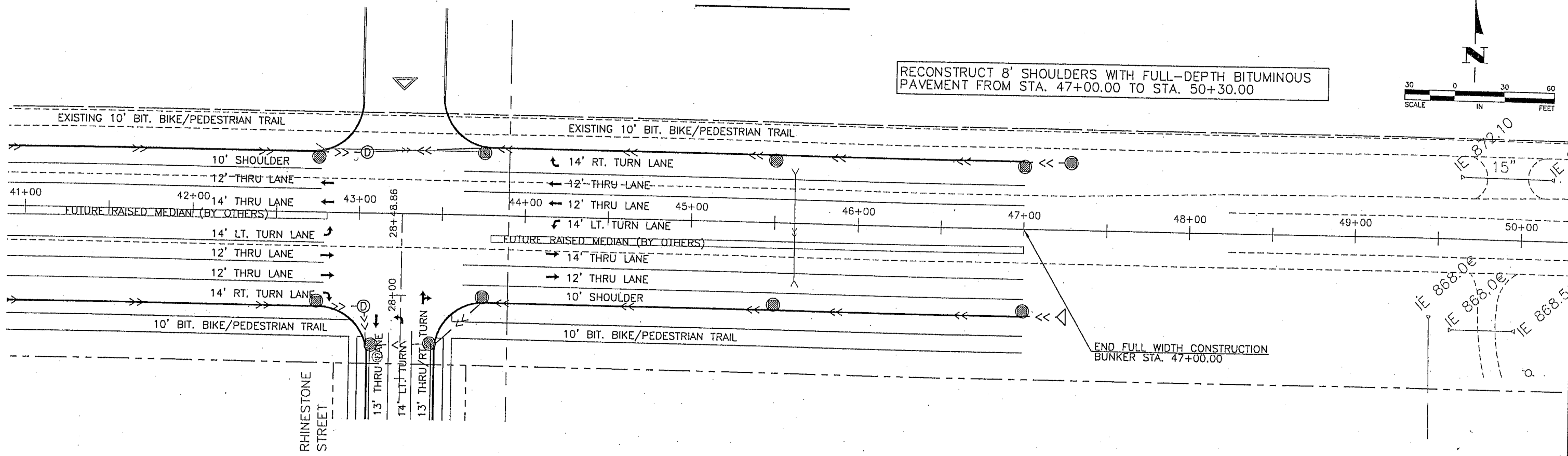
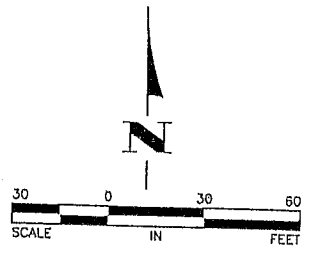
S.A.P. 199-109-01

STREET PLAN  
 BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 4B  
 OF  
 166  
 SHEETS

# BUNKER LAKE BOULEVARD

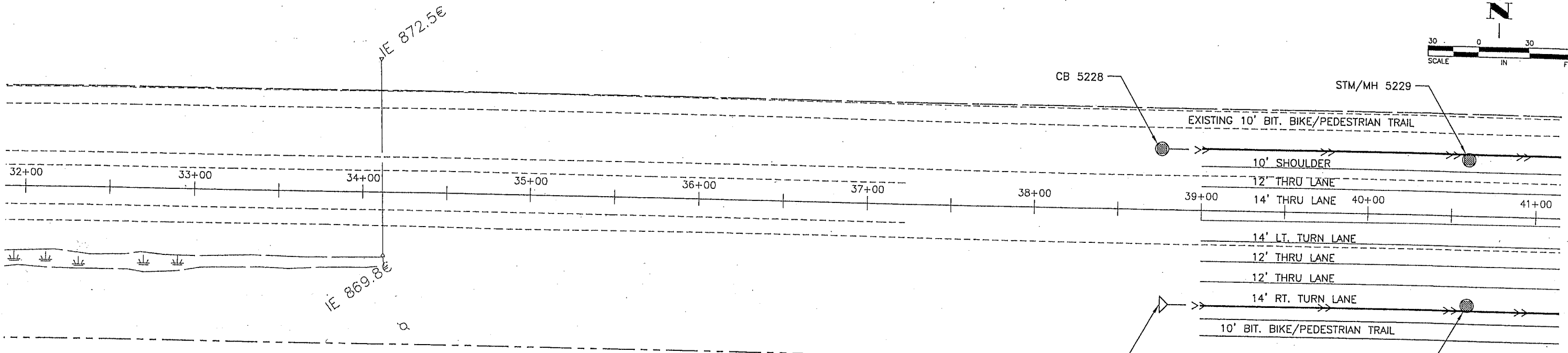
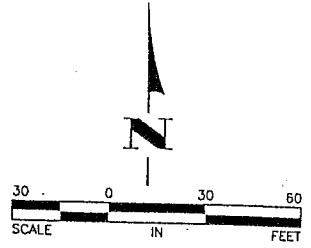
RECONSTRUCT 8' SHOULDERS WITH FULL-DEPTH BITUMINOUS PAVEMENT FROM STA. 47+00.00 TO STA. 50+30.00



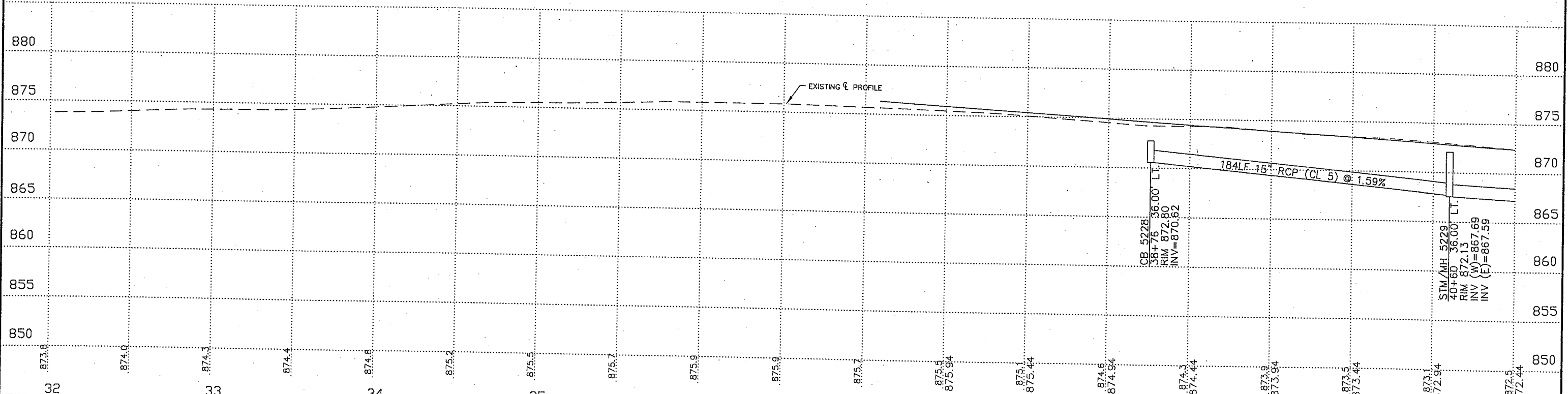
| DATE  | REVISION | DESIGNED BY:   | DATE:    | SHEET             |
|---|----------|--|----------|-------------------|
| Mar 29, 2004 - 4:31pm   |          | JEJ  | 01/29/04 | 5B                |
| K:\cad_eng\land projects-2004\RA3172\dwg\RA3172-BUNKER-PP.dwg   |          | RAA  | FILE NO. | OF                |
|   |          | PRR  | RA3172   | 166               |
| <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 Licensed Professional Engineer under the laws of the State of Minnesota.</p> <p><i>Peter R. Raatikka</i><br/>                 PETER R. RAATIKKA, P.E.<br/>                 Date: 3/24/04 Lic. No. 11586</p> |          | <p><b>Hakanson Anderson Assoc., Inc.</b><br/>                 Civil Engineers and Land Surveyors<br/>                 3601 Thurston Ave., Anoka, Minnesota 55303<br/>                 763-427-5860 FAX 763-427-0520<br/>                 www.hakanson-anderson.com</p> |          | S.A.P. 199-109-01 |
| STREET PLAN<br>BUNKER LAKE BOULEVARD<br>CITY OF RAMSEY, MINNESOTA   |          |  |          | SHEETS            |



# BUNKER LAKE BOULEVARD



- NOTE:**
1. FRAME, CURB BOX AND GRATE FOR CURB INLETS SHALL MEET THE REQUIREMENTS OF Mn/DOT STANDARD PLATES 4125D, 4134A, AND 4154B, RESPECTIVELY.
  2. FRAME AND CASTING FOR STORM MANHOLES SHALL MEET THE REQUIREMENTS OF Mn/DOT STANDARD PLATES 4101D AND 4110F, RESPECTIVELY.



|             |                 |                               |  |                            |   |                   |                          |  |             |
|-------------|-----------------|-------------------------------|--|----------------------------|---|-------------------|--------------------------|--|-------------|
| <b>DATE</b> | <b>REVISION</b> | <b>DESIGNED BY:</b><br>J.E.J. |  | <b>DATE:</b><br>01/29/04   | <b>Hakanson Anderson Assoc., Inc.</b><br>Civil Engineers and Land Surveyors<br>3601 Thurston Ave., Anoka, Minnesota 55303<br>763-427-5860 FAX 763-427-0520<br>www.hakanson-anderson.com | S.A.P. 199-109-01 | (NORTH) STORM SEWER PLAN | BUNKER LAKE BOULEVARD<br>CITY OF RAMSEY, MINNESOTA | SHEET<br>6B |
|             |                 | <b>DRAWN BY:</b><br>RAA       |  | <b>FILE NO.:</b><br>RA3172 |   |                   |                          |  | OF          |
|             |                 | <b>CHECKED BY:</b><br>PRR     |  |                            |   |                   |                          |  | 166         |
|             |                 |                               |  |                            |   |                   |                          |  | SHEETS      |

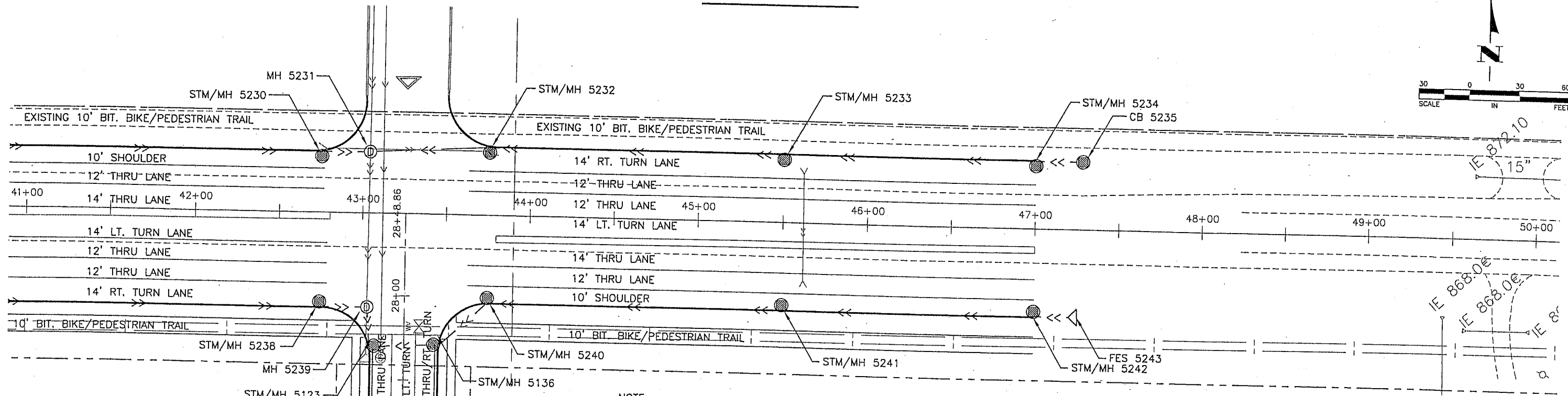
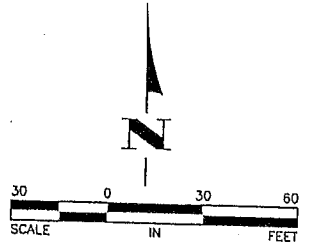
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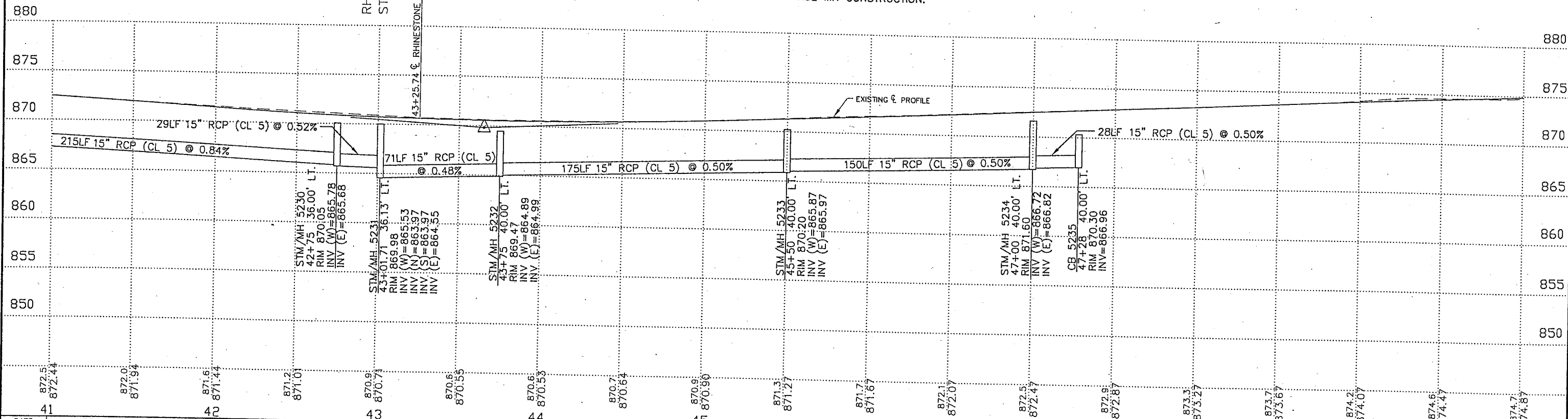
*Peter R. Raatikka*  
PETER R. RAATIKKA, P.E.  
Date 3/24/04 Lic. No. 11586



# BUNKER LAKE BOULEVARD



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  3. CONTRACTOR TO VERIFY LOCATION OF EXISTING 18" RCP STORM SEWER BEFORE COMMENCING DRAINAGE MH CONSTRUCTION.



| DATE | REVISION   |
|------|--|
| 41   | 872.5<br>872.44  |
| 42   | 872.0<br>871.94  |
| 43   | 871.6<br>871.44<br>871.2<br>871.01<br>870.9<br>870.71<br>870.6<br>870.55 |
| 44   | 870.6<br>870.53  |
| 45   | 870.7<br>870.64  |
| 46   | 871.3<br>871.27<br>871.7<br>871.67                                       |
| 47   | 872.1<br>872.07<br>872.5<br>872.47<br>872.9<br>872.87                    |
| 48   | 873.3<br>873.27  |
| 49   | 873.7<br>873.67<br>874.2<br>874.07                                       |
| 50   | 874.6<br>874.47<br>874.7<br>874.67                                       |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

DESIGNED BY: JEJ  
 DRAWN BY: RAA  
 CHECKED BY: PRR  
 DATE: 01/29/04  
 FILE NO.: RA3172



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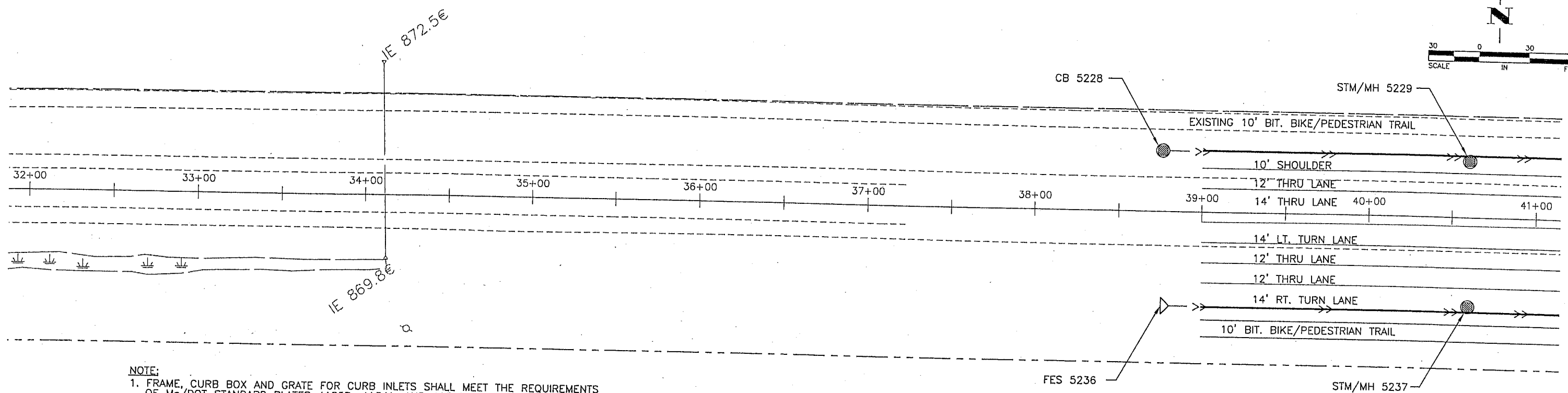
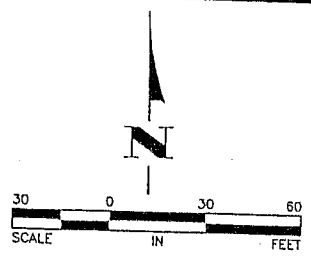
S.A.P. 199-109-01

(NORTH) STORM SEWER PLAN

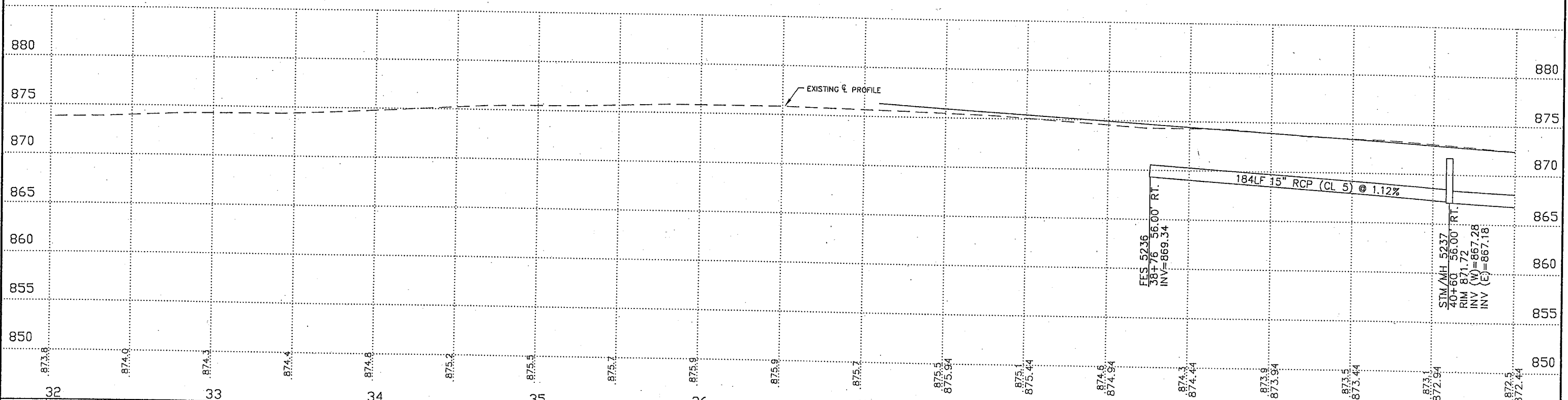
BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 7B OF 166 SHEETS

# BUNKER LAKE BOULEVARD



- NOTE:**
1. FRAME, CURB BOX AND GRATE FOR CURB INLETS SHALL MEET THE REQUIREMENTS OF Mn/DOT STANDARD PLATES 4125D, 4134A, AND 4154B, RESPECTIVELY.
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| DATE | REVISION |
|------|----------|
|      |          |
|      |          |
|      |          |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date: 3/24/04 Lic. No. 11586

|                     |                   |
|---------------------|-------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>01/29/04 |
| DRAWN BY:<br>RAA    | FILE NO.:         |
| CHECKED BY:<br>PRR  | RA3172            |

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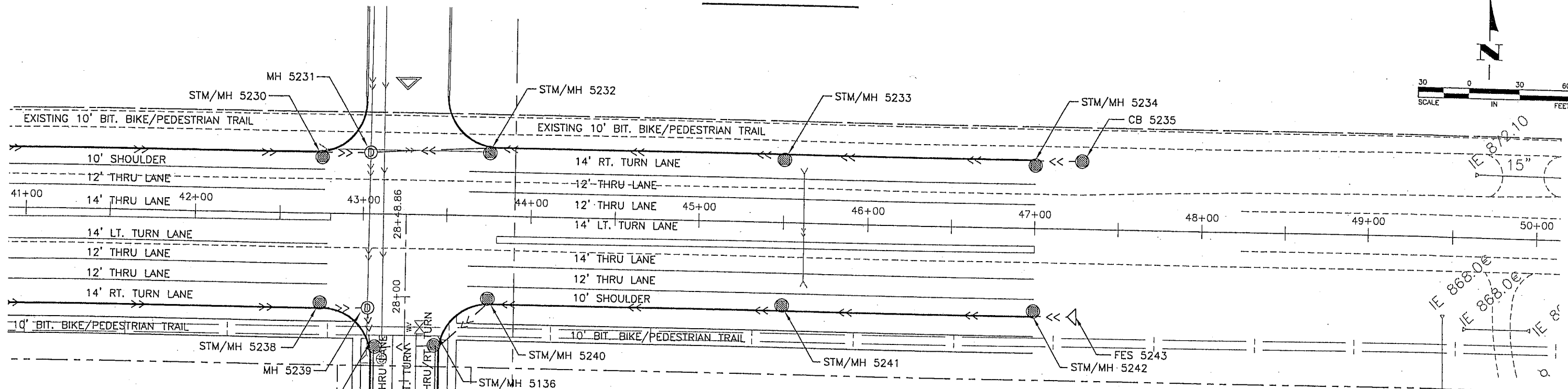
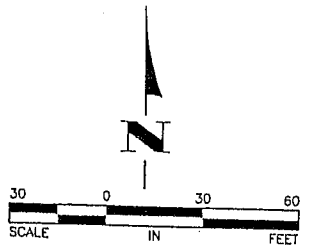
S.A.P. 199-109-01

(SOUTH) STORM SEWER PLAN

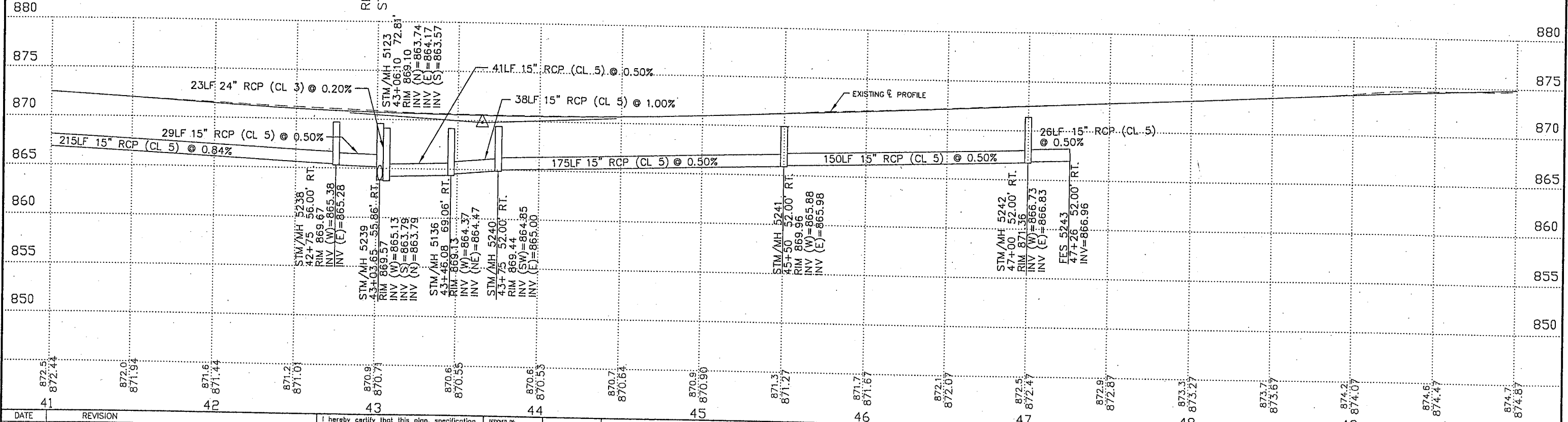
BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 8B  
 OF  
 166  
 SHEETS

# BUNKER LAKE BOULEVARD



- NOTE:**
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| DATE | REVISION        |
|------|-----------------|
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| 42   | 871.94          |
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| 50   | 871.3<br>871.27 |
|      | 871.7<br>871.67 |
|      | 872.1<br>872.07 |
|      | 872.5<br>872.47 |
|      | 872.9<br>872.87 |
|      | 873.3<br>873.27 |
|      | 873.7<br>873.67 |
|      | 874.2<br>874.07 |
|      | 874.6<br>874.47 |
|      | 874.7<br>874.87 |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|                  |                 |
|------------------|-----------------|
| DESIGNED BY: JEJ | DATE: 01/29/04  |
| DRAWN BY: RAA    | FILE NO. RA3172 |
| CHECKED BY: PRR  |                 |

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 3601 Thurston Ave., Anoka, Minnesota 55303  
 763-427-5860 FAX 763-427-0520  
 www.hakanson-anderson.com

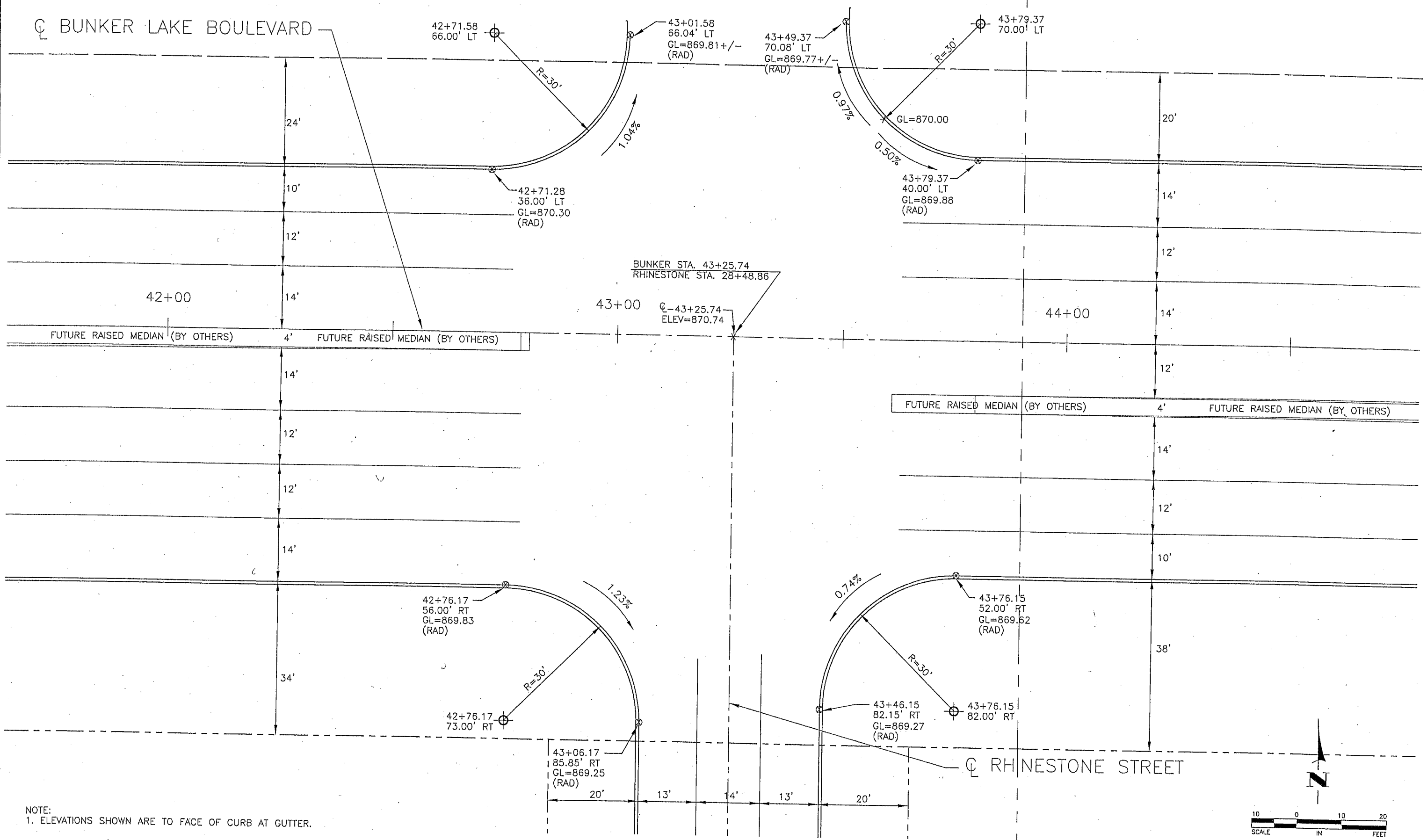
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(SOUTH) STORM SEWER PLAN

BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 9B OF 166 SHEETS

CL BUNKER LAKE BOULEVARD



NOTE:  
1. ELEVATIONS SHOWN ARE TO FACE OF CURB AT GUTTER.

| DATE | REVISION |
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|      |          |
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|      |          |
|      |          |

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*Peter R. Raatikka*  
PETER R. RAATIKKA, P.E.  
Date 3/24/04 Lic. No. 11586

|                     |                    |
|---------------------|--------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>XXXX      |
| DRAWN BY:<br>RAA    | FILE NO.<br>RA3172 |
| CHECKED BY:<br>PRR  |                    |



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S.A.P. 199-109-01

INTERSECTION DETAILS  
BUNKER LAKE BLVD (CO. RD. 116)  
AND RHINESTONE STREET NW  
CITY OF RAMSEY, MINNESOTA

SHEET 10B OF 166 SHEETS

| M. U. T. C. D. CODE | SIZE      | INSERT | QUANTITY         |  | M. U. T. C. D. CODE | SIZE      | INSERT | QUANTITY         |  |
|---------------------|-----------|--------|------------------|--|---------------------|-----------|--------|------------------|--|
|                     |           |        | BUNKER LAKE BLVD |  |                     |           |        | BUNKER LAKE BLVD |  |
| W20-2               | 48" X 48" |        | 1                |  | G20-X2              | 96" X 84" |        | 0                |  |
| W20-3               | 48" X 48" |        | 0                |  | G20-X2              | 96" X 84" |        | 0                |  |
| W20-1               | 48" X 48" |        | 1                |  | G20-X2              | 96" X 84" |        | 1                |  |
| W20-100P            | 36" X 24" |        | 1                |  | M3-2                | 24" X 12" |        | 12               |  |
| W20-100P            | 36" X 24" |        | 0                |  | M3-3                | 24" X 12" |        | 0                |  |
| W20-100P            | 36" X 24" |        | 0                |  | M3-4                | 24" X 12" |        | 6                |  |
| W20-100P            | 36" X 24" |        | 0                |  | M4-8                | 24" X 12" |        | 20               |  |
| R11-4               | 60" X 30" |        | 0                |  | M3-1                | 24" X 12" |        | 0                |  |
| TYPE III            | 8 FOOT    |        | 0                |  | M1-6                | 24" X 24" |        | 0                |  |
| TYPE III            | 8 FOOT    |        | 2                |  | M1-6                | 24" X 24" |        | 20               |  |
| M4-10               | 48" X 18" |        | 2                |  | M4-6                | 24" X 12" |        | 2                |  |
| TYPE III            | 8 FOOT    |        | 2                |  | M5-1L               | 21" X 15" |        | 4                |  |
| R11-2               | 48" X 30" |        | 2                |  | M5-1R               | 21" X 15" |        | 2                |  |
| TYPE III            | 8 FOOT    |        | 2                |  | M6-1L               | 21" X 15" |        | 3                |  |
|                     |           |        |                  |  | M6-1R               | 21" X 15" |        | 2                |  |
|                     |           |        |                  |  | M6-3                | 21" X 15" |        | 3                |  |

- NOTES:
1. ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS
  2. ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES
  3. ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
  4. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 2001
  5. ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS APPROVED BY THE ENGINEER

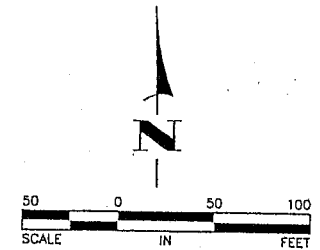
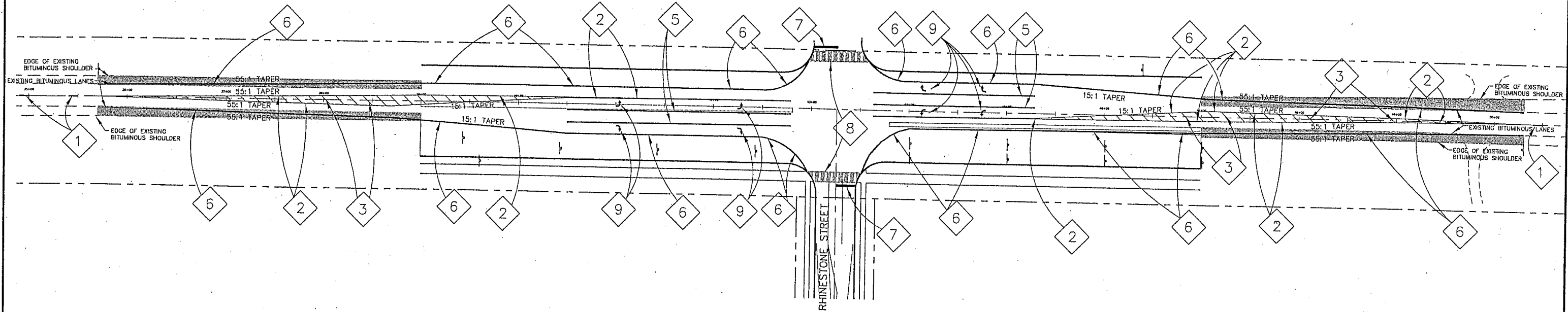
|      |          |  |                     |                  |                  |                    |  |                   |   |                           |                                     |
|------|----------|--|---------------------|------------------|------------------|--------------------|--|-------------------|---|---------------------------|-------------------------------------|
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|      |          |  | CHECKED BY:<br>PRR  |                  |                  |                    |  |                   |   |                           |                                     |







# BUNKER LAKE BOULEVARD



| DATE  | REVISION |
|---|----------|
| Mar 29, 2004 -- 4:35pm  |          |
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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|              |         |
|--------------|---------|
| DESIGNED BY: | J E J   |
| DRAWN BY:    | RAA     |
| CHECKED BY:  | PRR     |
| DATE:        | 2/18/04 |
| FILE NO.:    | RA3172  |

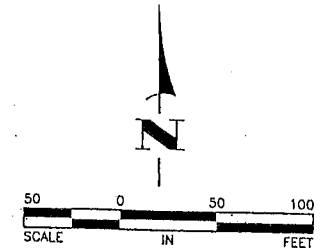
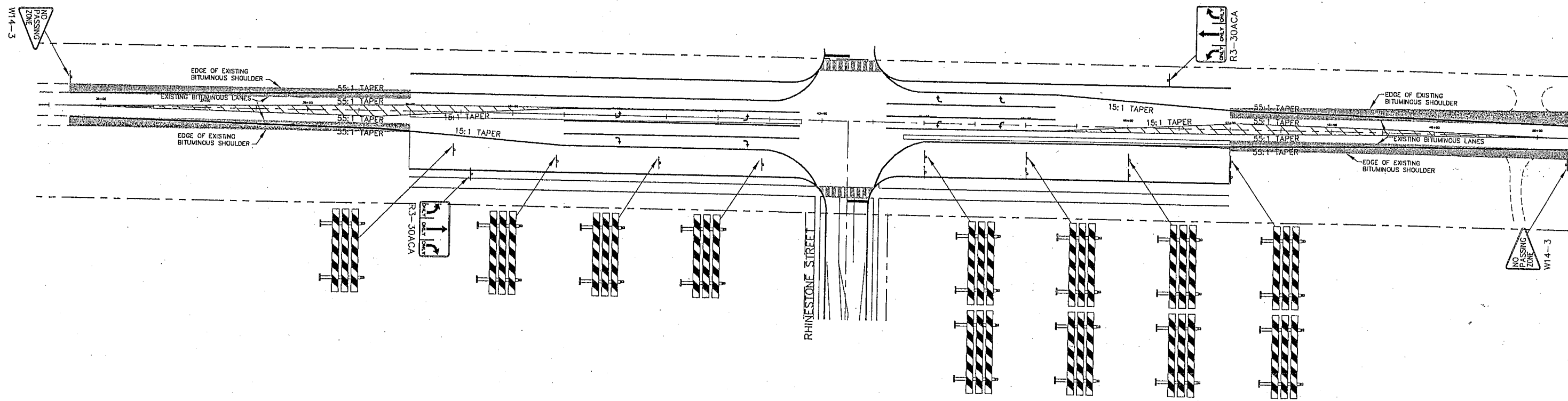
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S.A.P. 199-109-01

PAVEMENT MARKING PLANS  
 BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 14B OF  
 166 SHEETS

# BUNKER LAKE BOULEVARD



| DATE   | REVISION |
|--|----------|
| Mar 29, 2004 - 4:35pm  |          |
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 Date 3/24/04 Lic. No. 11586

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| DRAWN BY:    | RAA     |
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| CHECKED BY:  | PRR     |
| FILE NO.:    | RA3172  |

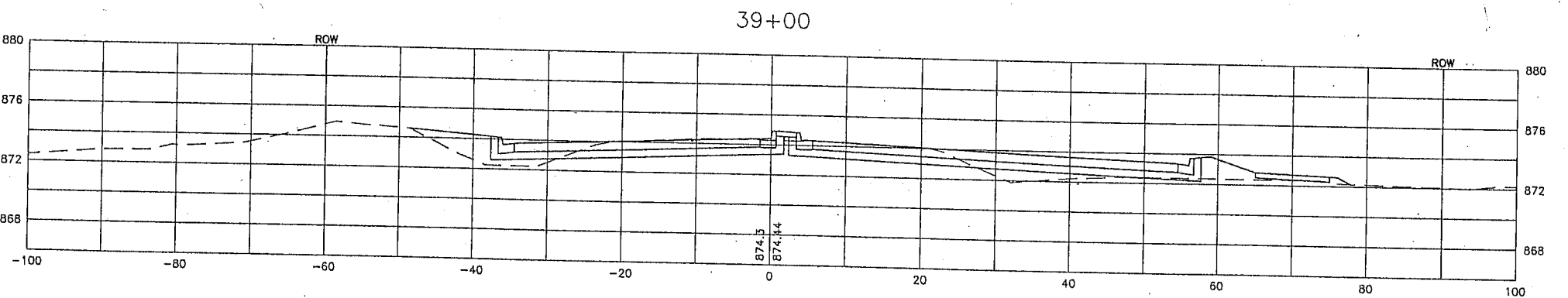
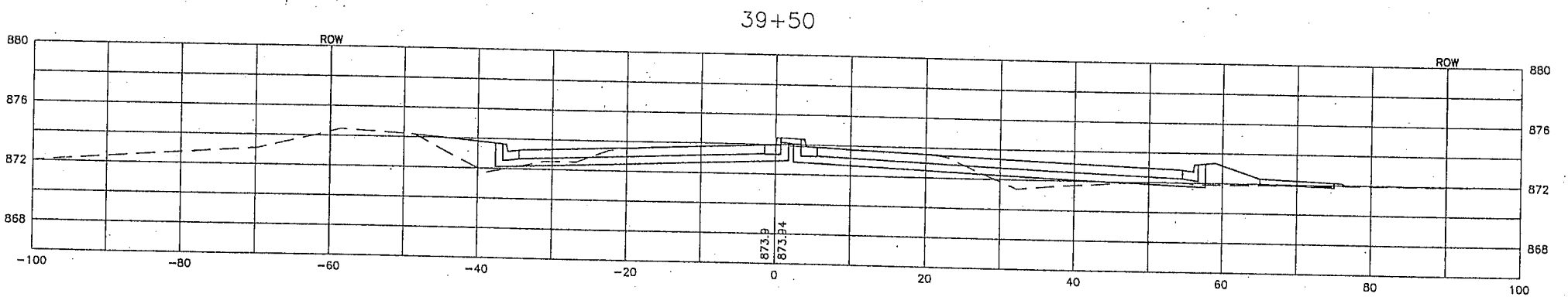
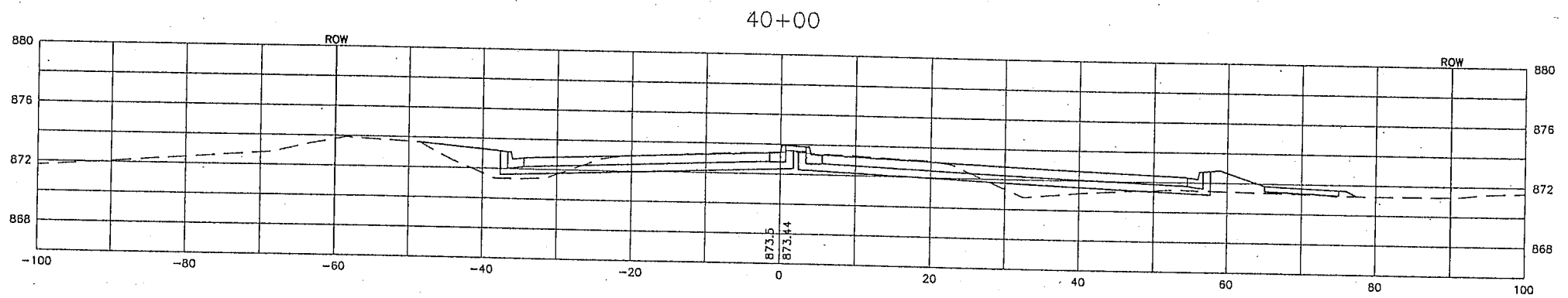
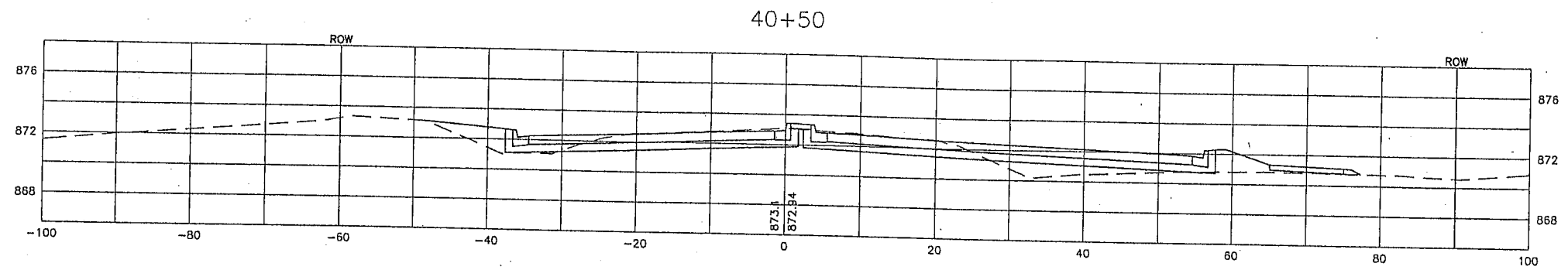


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SIGNING PLANS  
 BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 15B OF  
 166 SHEETS



NOTE: RAISED MEDIAN WILL BE CONSTRUCTED IN THE FUTURE (BY OTHERS)

| DATE  | REVISION |
|---|----------|
| Mar 29, 2004 - 4:39pm   |          |
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DESIGNED BY: JEJ  
 DRAWN BY: DMS  
 CHECKED BY: PRR  
 DATE: 3/24/04  
 FILE NO: RA3172

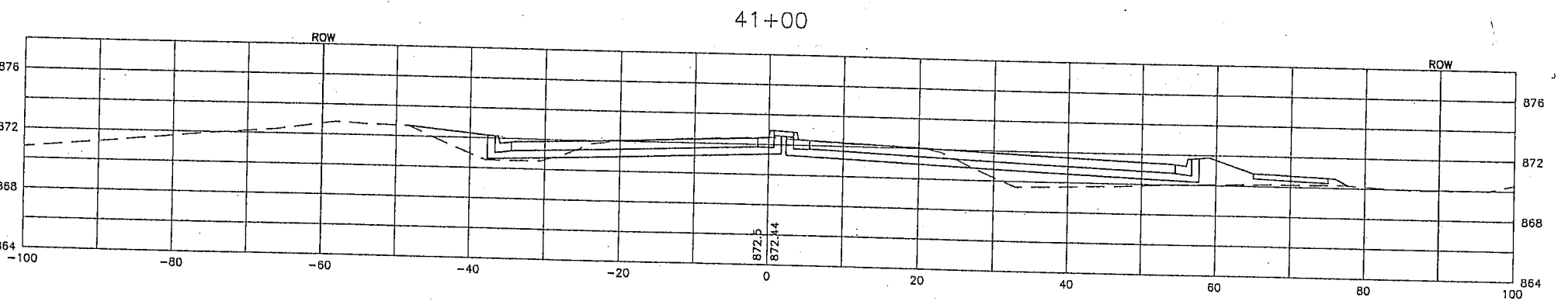
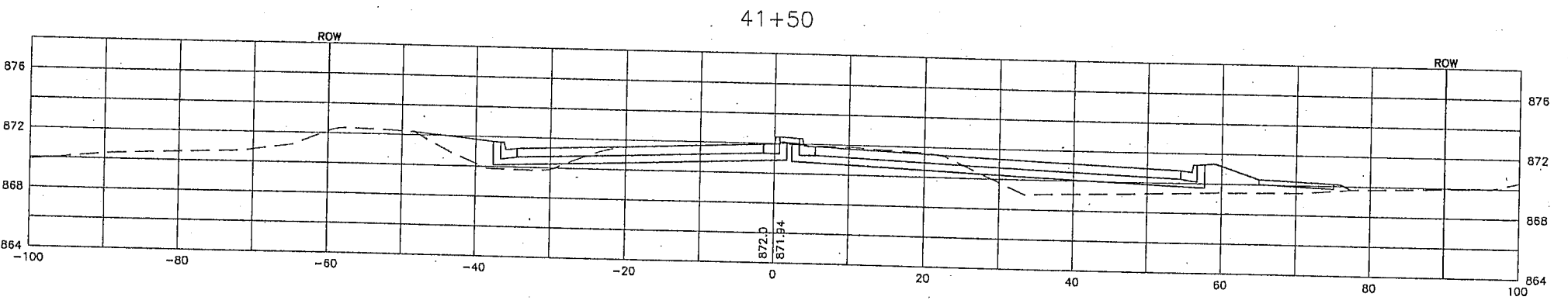
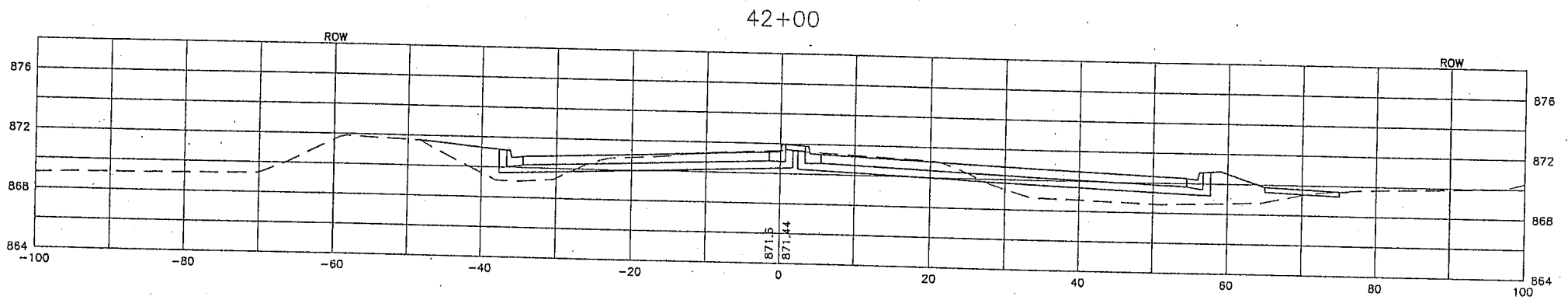
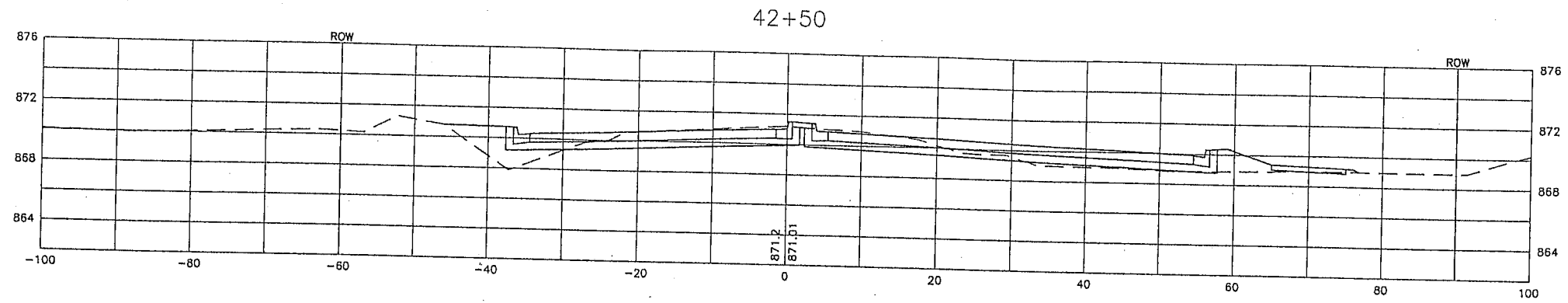


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CROSS SECTIONS  
 BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 16B OF 166 SHEETS



NOTE: RAISED MEDIAN WILL BE CONSTRUCTED IN THE FUTURE (BY OTHERS)

| DATE | REVISION |
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DESIGNED BY:  
JEJ  
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DATE:  
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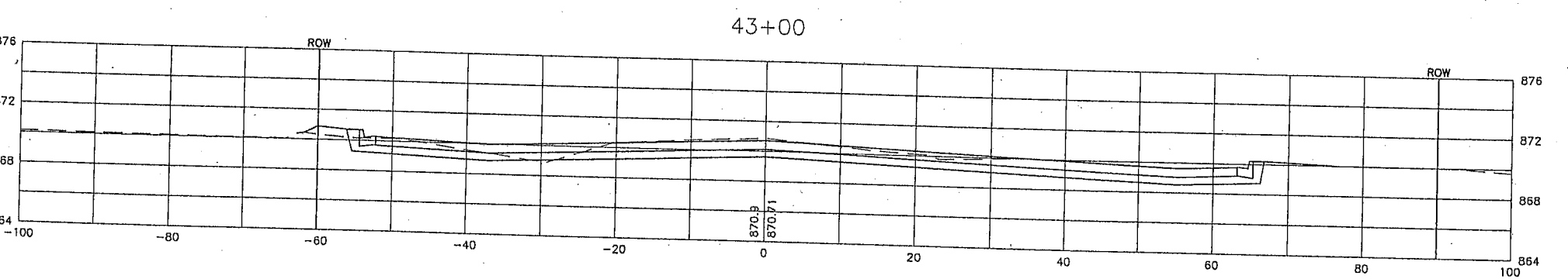
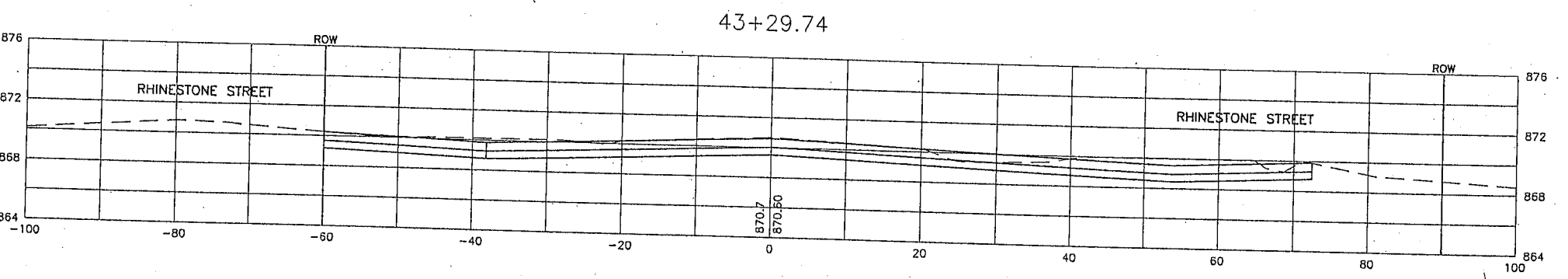
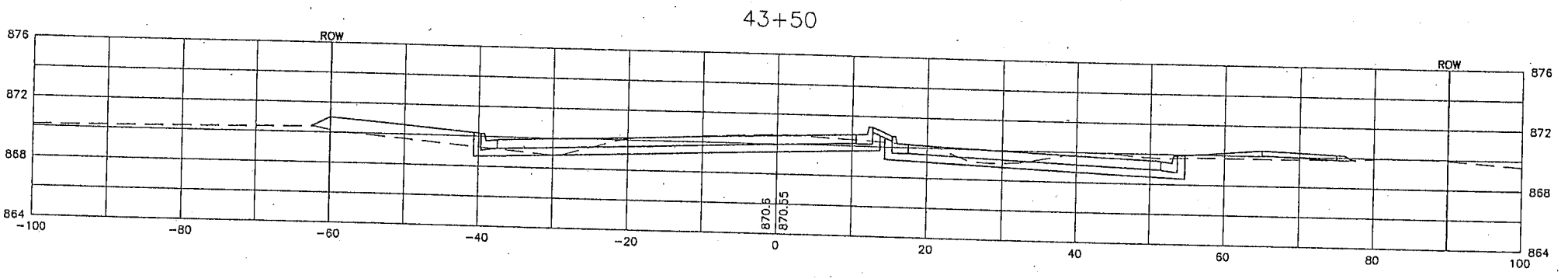
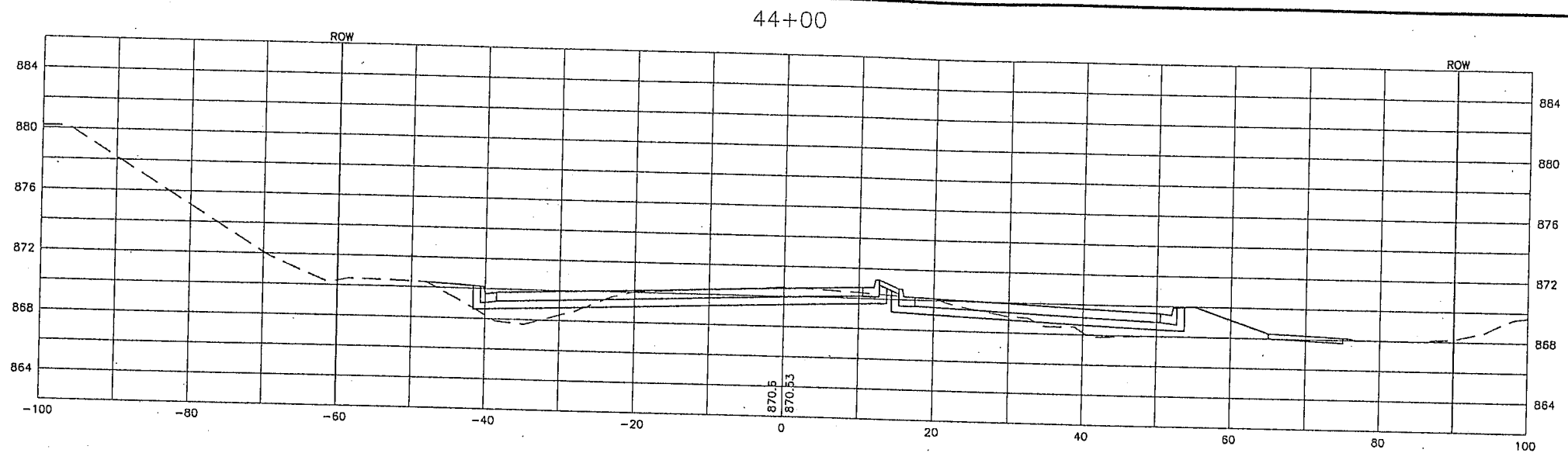


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CROSS SECTIONS  
BUNKER LAKE BOULEVARD  
CITY OF RAMSEY, MINNESOTA

SHEET  
17B  
OF  
166  
SHEETS



NOTE: RAISED MEDIAN WILL BE CONSTRUCTED IN THE FUTURE (BY OTHERS)

| DATE | REVISION |
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 DRAWN BY: DMS  
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 DATE: 3/24/04  
 FILE NO.: RA3172

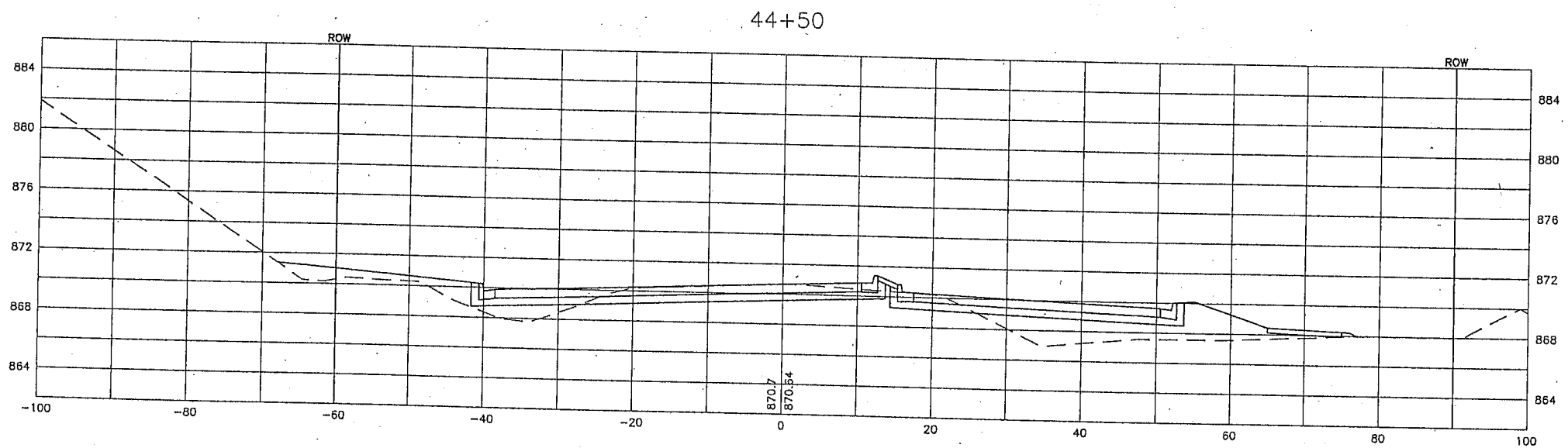
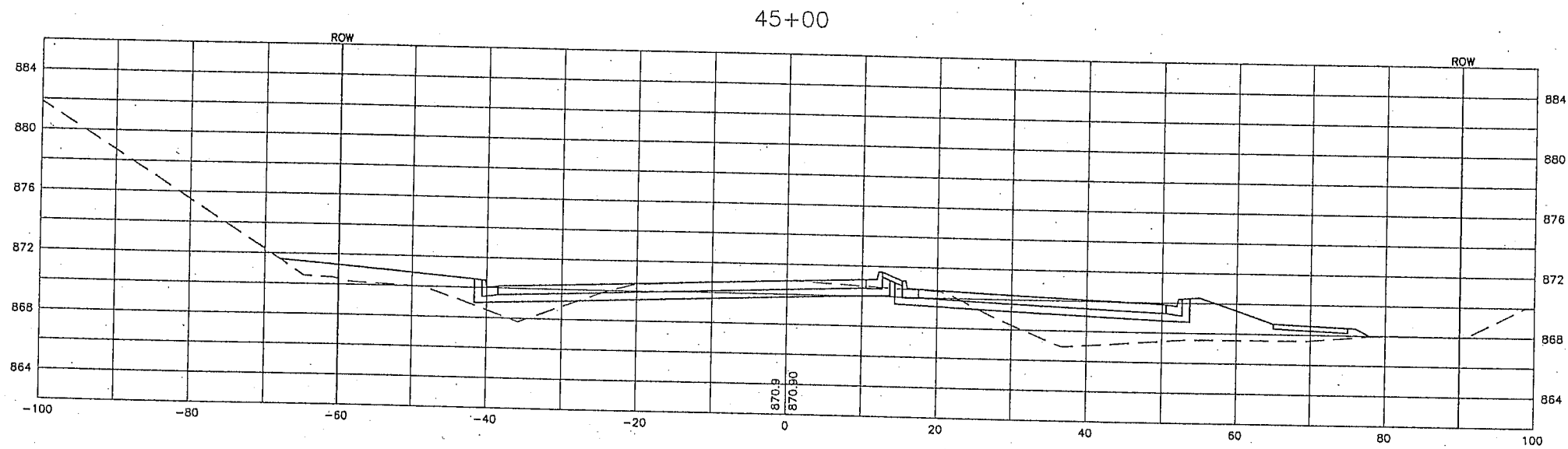


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S.A.P. 199-109-01

CROSS SECTIONS  
 BUNKER LAKE BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 18B OF 166 SHEETS



NOTE: RAISED MEDIAN WILL BE CONSTRUCTED IN THE FUTURE (BY OTHERS)

| DATE | REVISION |
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DESIGNED BY:  
JEJ  
DRAWN BY:  
DMS  
CHECKED BY:  
PRR

DATE:  
3/24/04  
FILE NO.  
RA3172

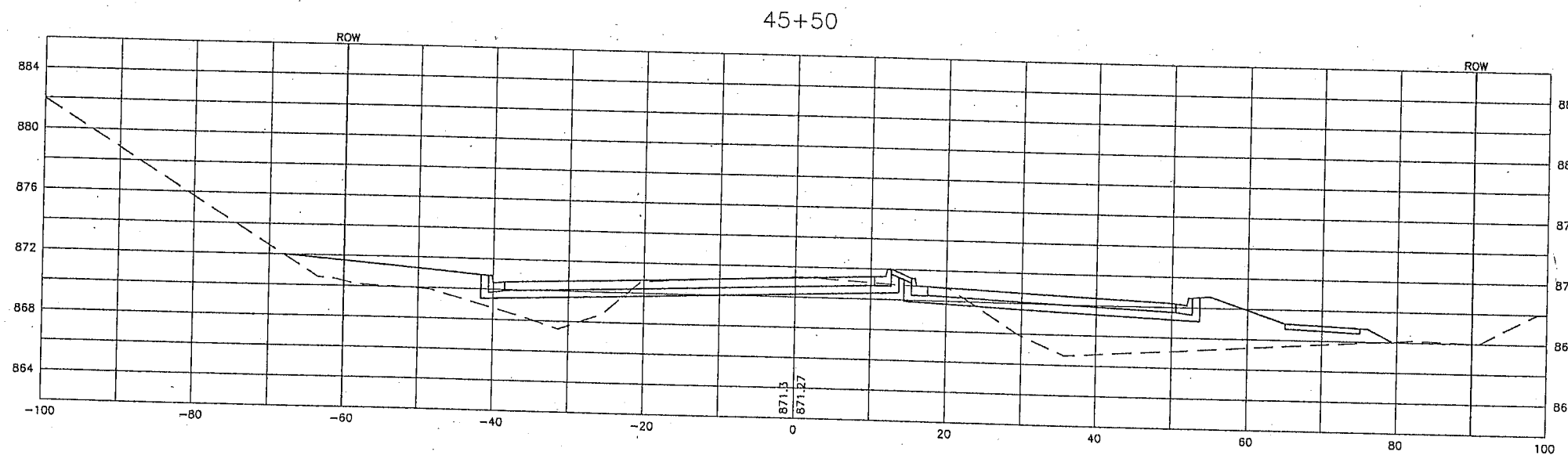
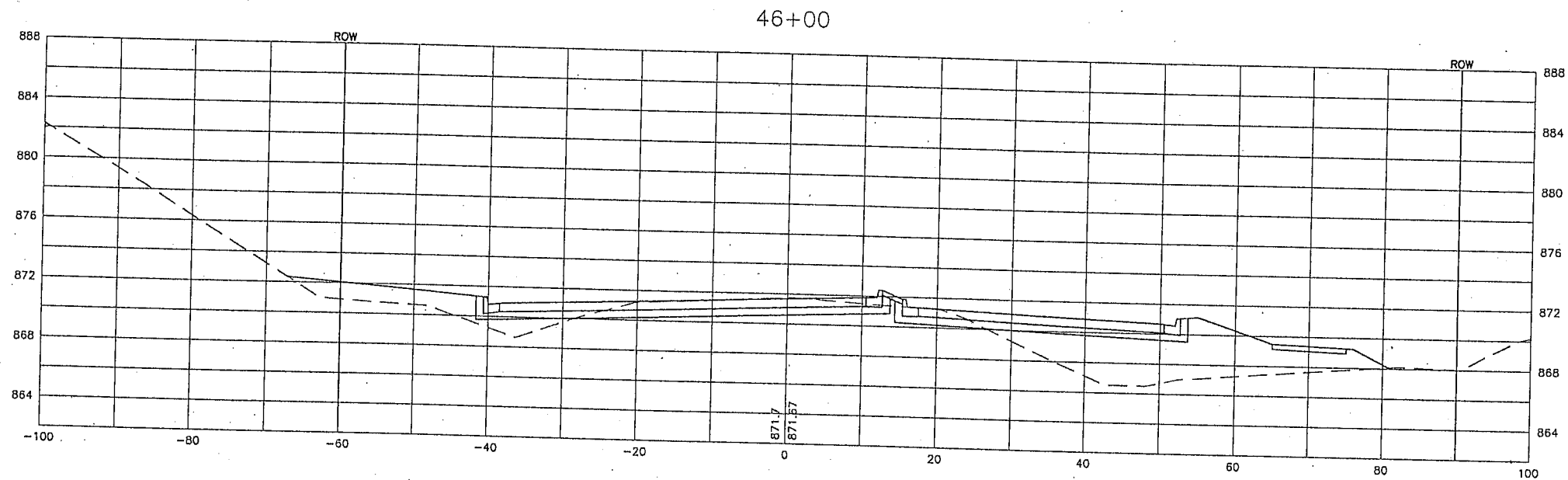


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CROSS SECTIONS  
BUNKER LAKE BOULEVARD  
CITY OF RAMSEY, MINNESOTA

SHEET  
19B  
OF  
166  
SHEETS



NOTE: RAISED MEDIAN WILL BE CONSTRUCTED IN THE FUTURE (BY OTHERS)

| DATE | REVISION |
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DESIGNED BY:  
J.E.J.  
DRAWN BY:  
DMS  
CHECKED BY:  
PRR

DATE:  
3/24/04  
FILE NO.  
RA3172



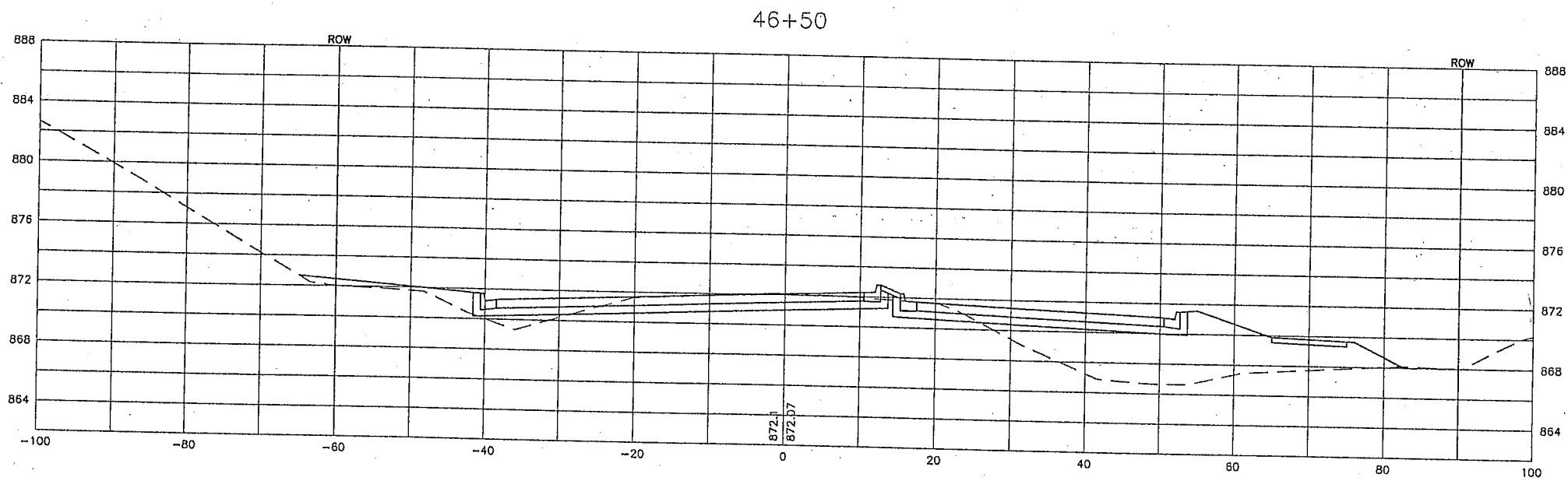
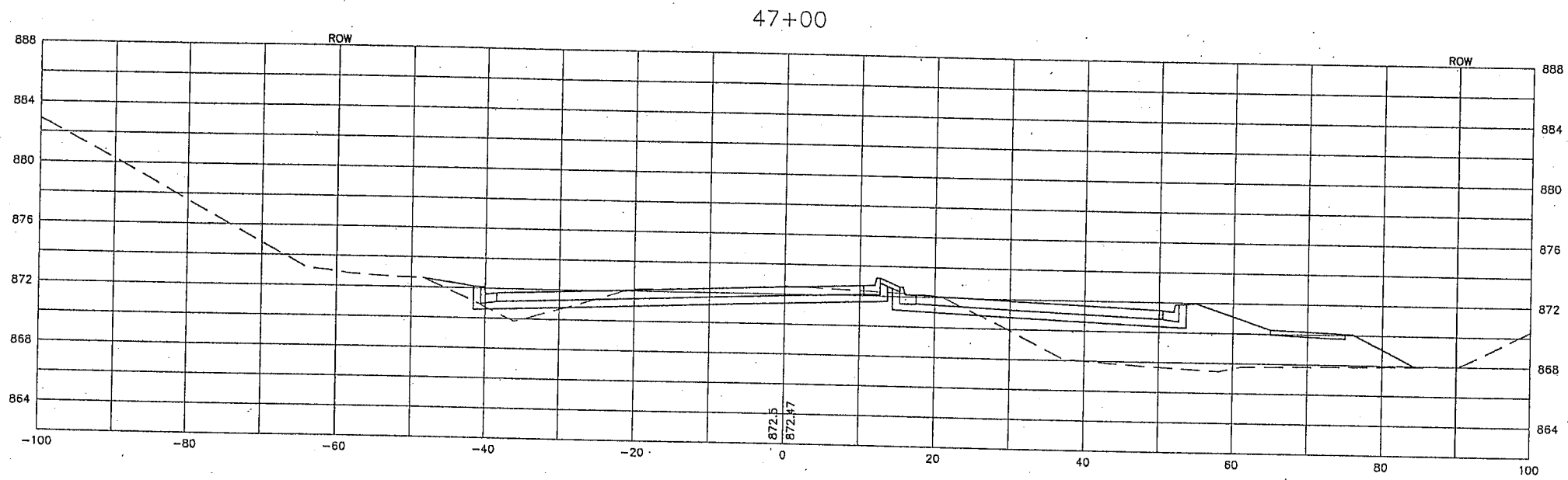
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CROSS SECTIONS  
BUNKER LAKE BOULEVARD  
CITY OF RAMSEY, MINNESOTA

SHEET  
20B  
OF  
166  
SHEETS





NOTE: RAISED MEDIAN WILL BE CONSTRUCTED IN THE FUTURE (BY OTHERS)

| DATE | REVISION |
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DESIGNED BY:  
JEJ  
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CHECKED BY:  
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DATE:  
3/24/04  
FILE NO.  
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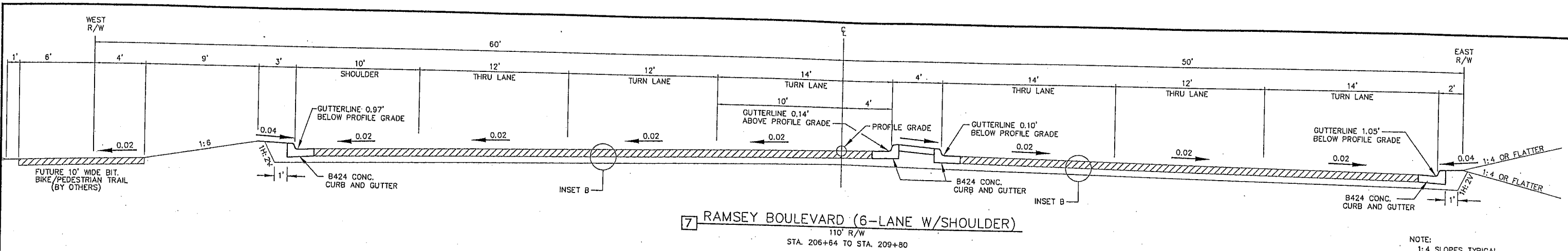


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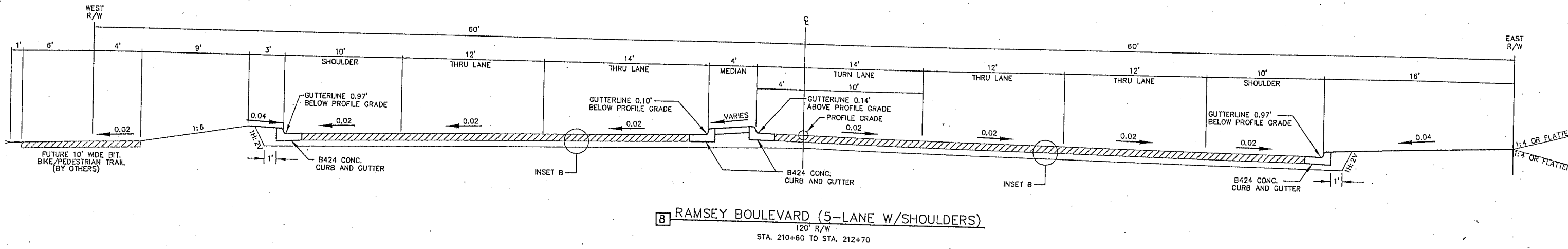
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BUNKER LAKE BOULEVARD  
CITY OF RAMSEY, MINNESOTA

SHEET  
21B  
OF  
166  
SHEETS

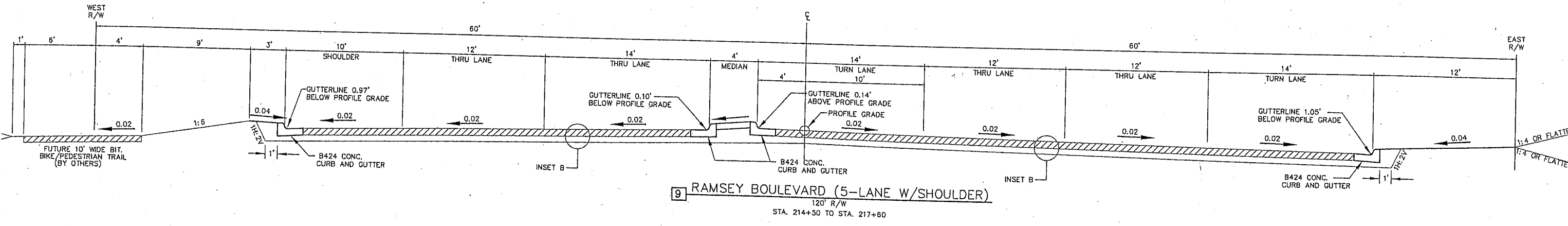


7 RAMSEY BOULEVARD (6-LANE W/SHOULDER)  
110' R/W  
STA. 206+64 TO STA. 209+80

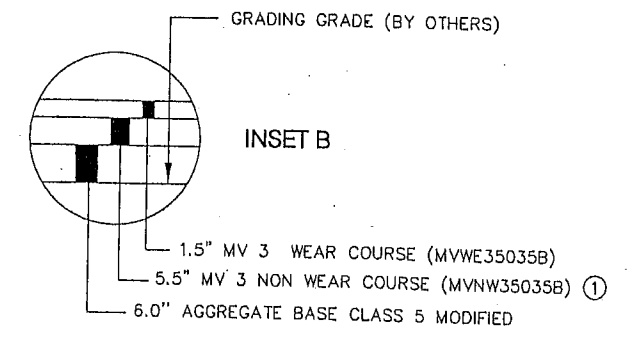
NOTE:  
1:4 SLOPES TYPICAL  
ON ALL SECTIONS



8 RAMSEY BOULEVARD (5-LANE W/SHOULDERS)  
120' R/W  
STA. 210+60 TO STA. 212+70

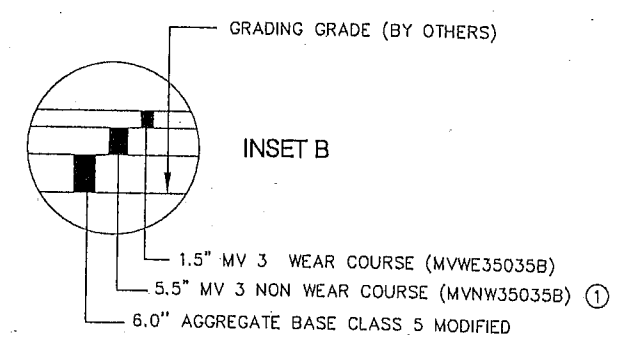
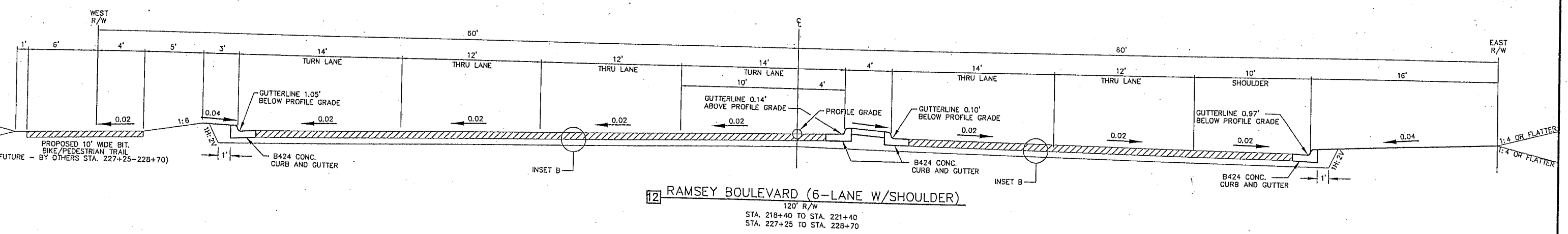
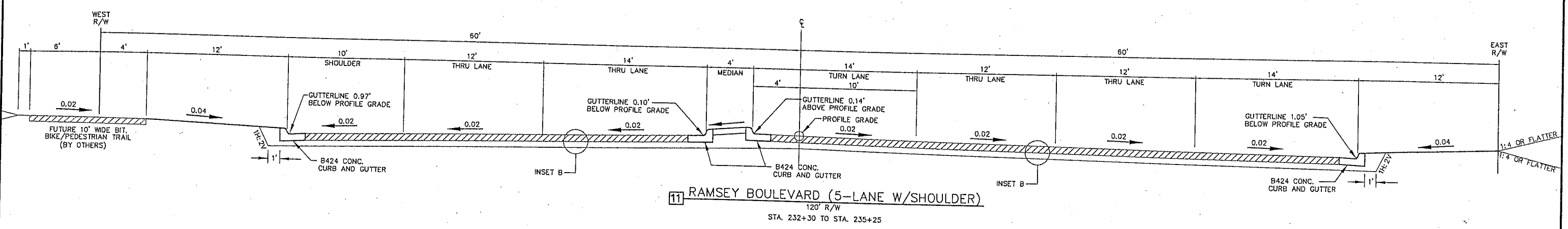
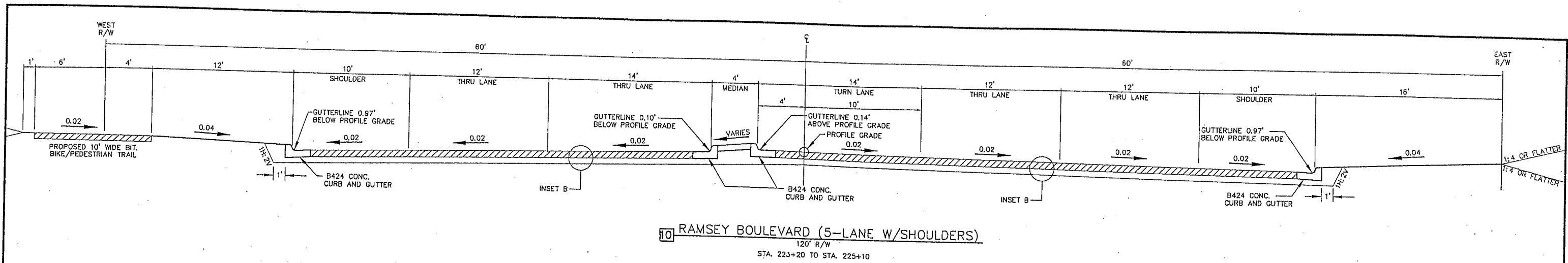


9 RAMSEY BOULEVARD (5-LANE W/SHOULDER)  
120' R/W  
STA. 214+50 TO STA. 217+60



NOTES:  
① PLACE IN 2 LIFTS (3.0" MAX. LIFT THICKNESS)

|      |          |  |                     |  |                   |   |                                    |                    |
|------|----------|--|---------------------|--|-------------------|---|------------------------------------|--------------------|
| DATE | REVISION | 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.<br><br>PETER R. RAATIKKA, P.E.<br>Date 3/24/04 Lic. No. 11586 | DESIGNED BY:<br>JEJ |  Hakanson Anderson Assoc., Inc.<br>Civil Engineers and Land Surveyors<br>3601 Thurston Ave., Anoka, Minnesota 55303<br>763-427-5860 FAX 763-427-0520<br>www.hakanson-anderson.com | S.A.P. 199-104-07 | TYPICAL SECTIONS<br>RAMSEY BOULEVARD<br>CITY OF RAMSEY, MINNESOTA | SHEET<br>1R<br>OF<br>166<br>SHEETS |                    |
|      |          |  | DRAWN BY:<br>RAA    |  |                   |   |                                    | DATE:<br>02/11/04  |
|      |          |  | CHECKED BY:<br>PRR  |  |                   |   |                                    | FILE NO.<br>RA3172 |
|      |          |  |                     |  |                   |   |                                    |                    |



NOTES:  
① PLACE IN 2 LIFTS (3.0" MAX. LIFT THICKNESS)

| DATE  | REVISION |
|---|----------|
| Mar 29, 2004 - 3:05pm                                       |          |
| K:\cod_eng\land projects-2004\RA3172\dwg\RA3172-TYPSECT.dwg |          |

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.

*Peter R. Raatikka*  
PETER R. RAATIKKA, P.E.  
Date 3/24/04 Lic. No. 11586

|                     |                    |
|---------------------|--------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>02/11/04  |
| DRAWN BY:<br>RAA    | FILE NO.<br>RA3172 |
| CHECKED BY:<br>PRR  |                    |

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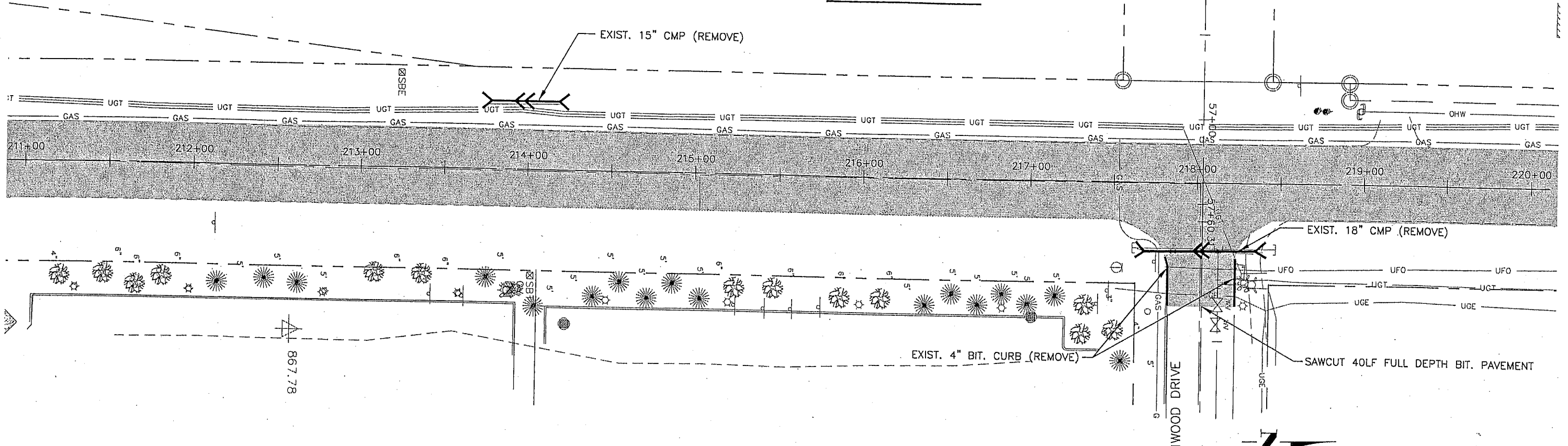
S.A.P. 199-104-07

TYPICAL SECTIONS  
RAMSEY BOULEVARD  
CITY OF RAMSEY, MINNESOTA

SHEET  
2R  
OF  
166  
SHEETS

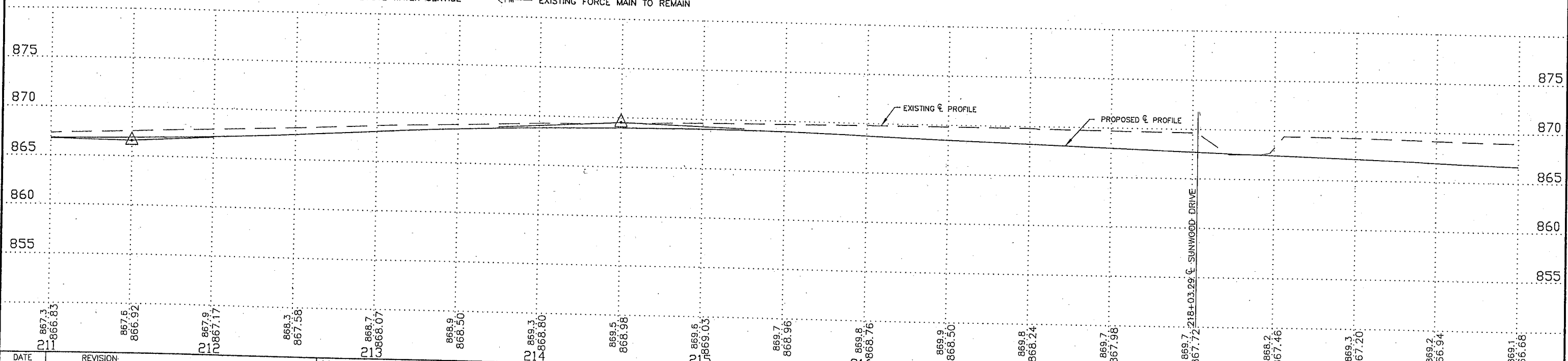
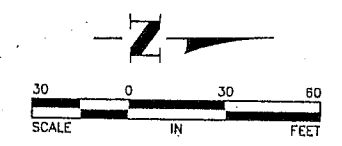


# RAMSEY BOULEVARD



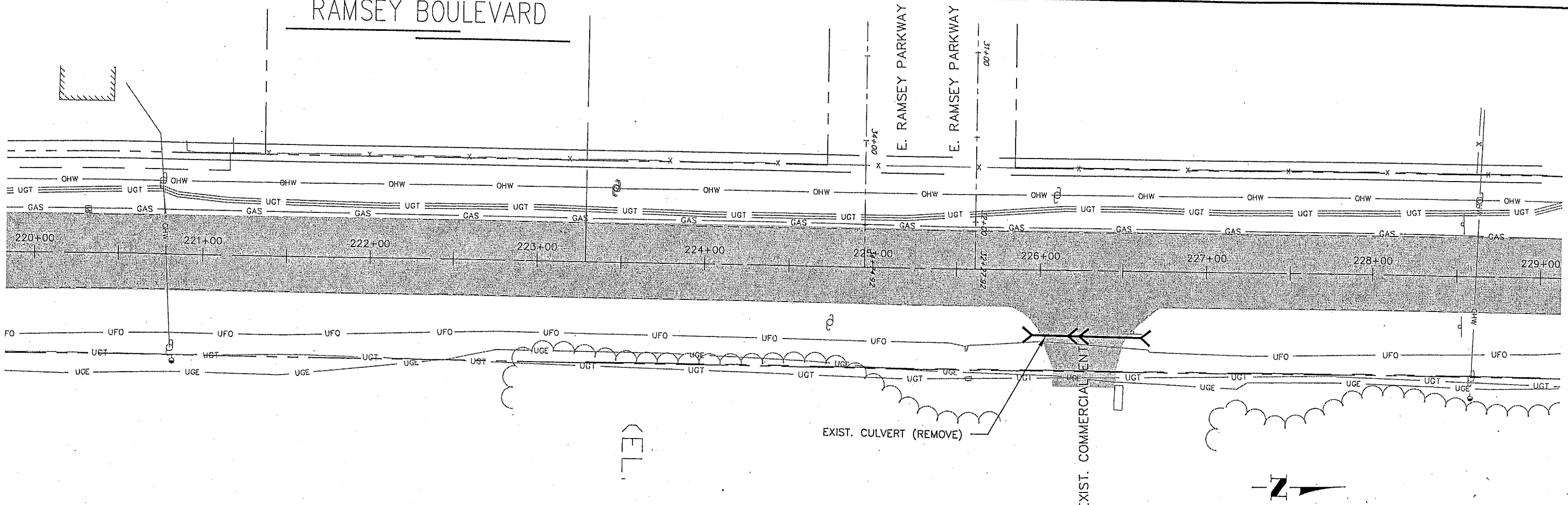
**LEGEND**

|                    |                       |                                   |
|--------------------|-----------------------|-----------------------------------|
| CONCRETE REMOVAL   | REMOVE SANITARY SEWER | EXISTING SANITARY SEWER TO REMAIN |
| BITUMINOUS REMOVAL | REMOVE STORM SEWER    | EXISTING STORM SEWER TO REMAIN    |
| CURB REMOVAL       | REMOVE WATER MAIN     | EXISTING WATER MAIN TO REMAIN     |
|                    | REMOVE WATER SERVICE  | EXISTING FORCE MAIN TO REMAIN     |



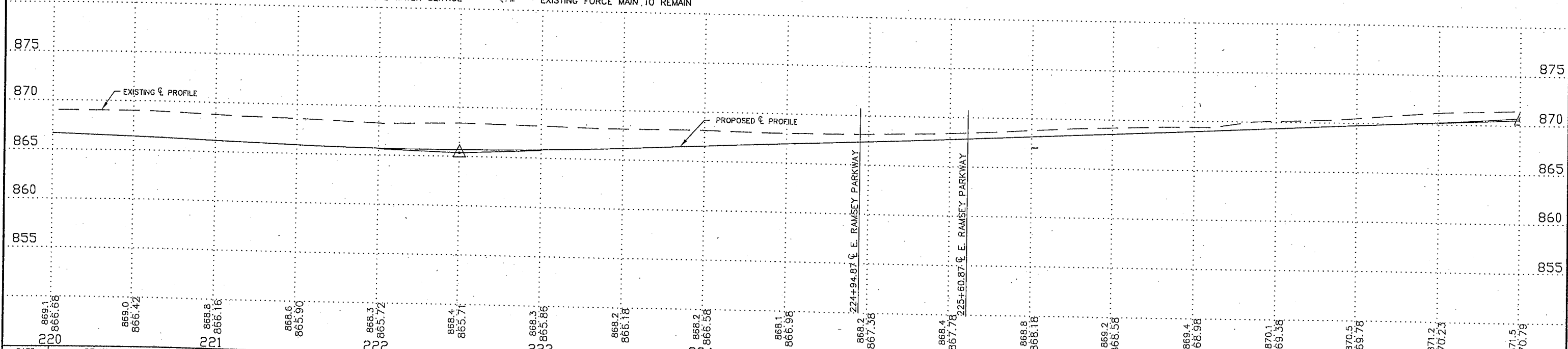
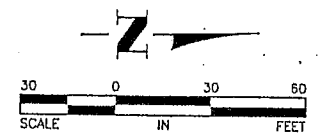
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DATE</th> <th>REVISION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table> | DATE              | REVISION |  |  |  |  |  |  |  |  | <p style="font-size: small;">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.</p> <p style="text-align: center;"><b>PETER R. RAATIKKA, P.E.</b><br/>Date <u>3/24/04</u> Lic. No. <u>11586</u></p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>DESIGNED BY:<br/>JEJ</td> <td>DATE:<br/>01/29/04</td> </tr> <tr> <td>DRAWN BY:<br/>RAA</td> <td>FILE NO.:</td> </tr> <tr> <td>CHECKED BY:<br/>PRR</td> <td>RA3172</td> </tr> </table> | DESIGNED BY:<br>JEJ | DATE:<br>01/29/04 | DRAWN BY:<br>RAA | FILE NO.: | CHECKED BY:<br>PRR | RA3172 | <p><b>Hakanson Anderson Assoc., Inc.</b><br/>Civil Engineers and Land Surveyors<br/>3601 Thurston Ave., Anoka, Minnesota 55303<br/>763-427-5860 FAX 763-427-0520<br/>www.hakanson-anderson.com</p> | <p>S.A.P. 199-104-07</p> | <p>EXISTING UTILITIES/REMOVALS</p> <p>RAMSEY BOULEVARD<br/>CITY OF RAMSEY, MINNESOTA</p> | <p>SHEET<br/>4R<br/>OF<br/>166<br/>SHEETS</p> |
|--|-------------------|----------|--|--|--|--|--|--|--|--|--|---|---------------------|-------------------|------------------|-----------|--------------------|--------|--|--------------------------|--|---|
| DATE   | REVISION          |          |  |  |  |  |  |  |  |  |  |   |                     |                   |                  |           |                    |        |  |                          |  |   |
|  |                   |          |  |  |  |  |  |  |  |  |  |   |                     |                   |                  |           |                    |        |  |                          |  |   |
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|  |                   |          |  |  |  |  |  |  |  |  |  |   |                     |                   |                  |           |                    |        |  |                          |  |   |
| DESIGNED BY:<br>JEJ  | DATE:<br>01/29/04 |          |  |  |  |  |  |  |  |  |  |   |                     |                   |                  |           |                    |        |  |                          |  |   |
| DRAWN BY:<br>RAA   | FILE NO.:         |          |  |  |  |  |  |  |  |  |  |   |                     |                   |                  |           |                    |        |  |                          |  |   |
| CHECKED BY:<br>PRR   | RA3172            |          |  |  |  |  |  |  |  |  |  |   |                     |                   |                  |           |                    |        |  |                          |  |   |

# RAMSEY BOULEVARD



### LEGEND

- CONCRETE REMOVAL
- BITUMINOUS REMOVAL
- CURB REMOVAL
- REMOVE SANITARY SEWER
- REMOVE STORM SEWER
- REMOVE WATER MAIN
- REMOVE WATER SERVICE
- EXISTING SANITARY SEWER TO REMAIN
- EXISTING STORM SEWER TO REMAIN
- EXISTING WATER MAIN TO REMAIN
- EXISTING FORCE MAIN TO REMAIN



| DATE | REVISION        |
|------|-----------------|
| 2/20 | 869.1<br>866.68 |
|      | 869.0<br>866.42 |
| 2/21 | 868.8<br>866.16 |
|      | 868.6<br>865.90 |
| 2/22 | 868.3<br>865.72 |
|      | 868.4<br>865.71 |
| 2/23 | 868.3<br>865.86 |
|      | 868.2<br>866.18 |
| 2/24 | 868.2<br>866.58 |
|      | 868.1<br>866.98 |
| 2/25 | 868.2<br>867.38 |
|      | 868.4<br>867.78 |
| 2/26 | 868.8<br>868.18 |
|      | 869.2<br>868.58 |
| 2/27 | 869.4<br>868.98 |
|      | 870.1<br>869.38 |
| 2/28 | 870.5<br>869.78 |
|      | 871.2<br>870.23 |
| 2/29 | 871.5<br>870.79 |

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.

*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date: 3/24/04 Lic. No. 11586

DESIGNED BY: JEJ  
 DRAWN BY: RAA  
 CHECKED BY: PRR  
 DATE: 01/29/04  
 FILE NO.: RA3172



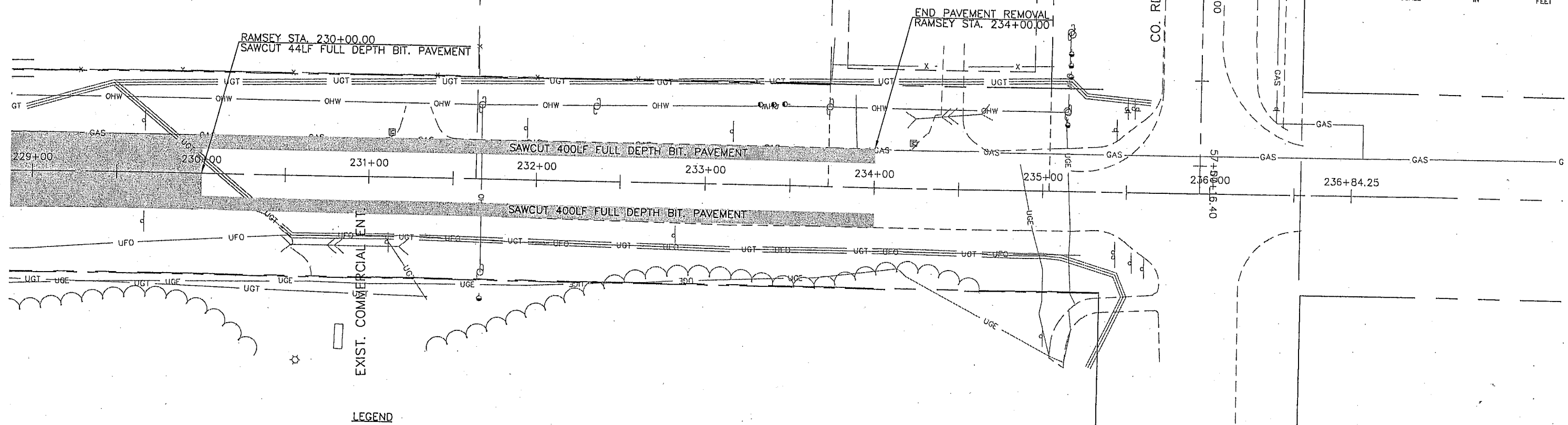
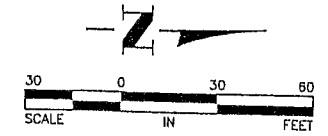
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S.A.P. 199-104-07

EXISTING UTILITIES/REMOVALS  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 5R OF 166 SHEETS

# RAMSEY BOULEVARD



- LEGEND**
- CONCRETE REMOVAL
  - BITUMINOUS REMOVAL
  - CURB REMOVAL
  - REMOVE SANITARY SEWER
  - REMOVE STORM SEWER
  - REMOVE WATER MAIN
  - REMOVE WATER SERVICE
  - EXISTING SANITARY SEWER TO REMAIN
  - EXISTING STORM SEWER TO REMAIN
  - EXISTING WATER MAIN TO REMAIN
  - EXISTING FORCE MAIN TO REMAIN

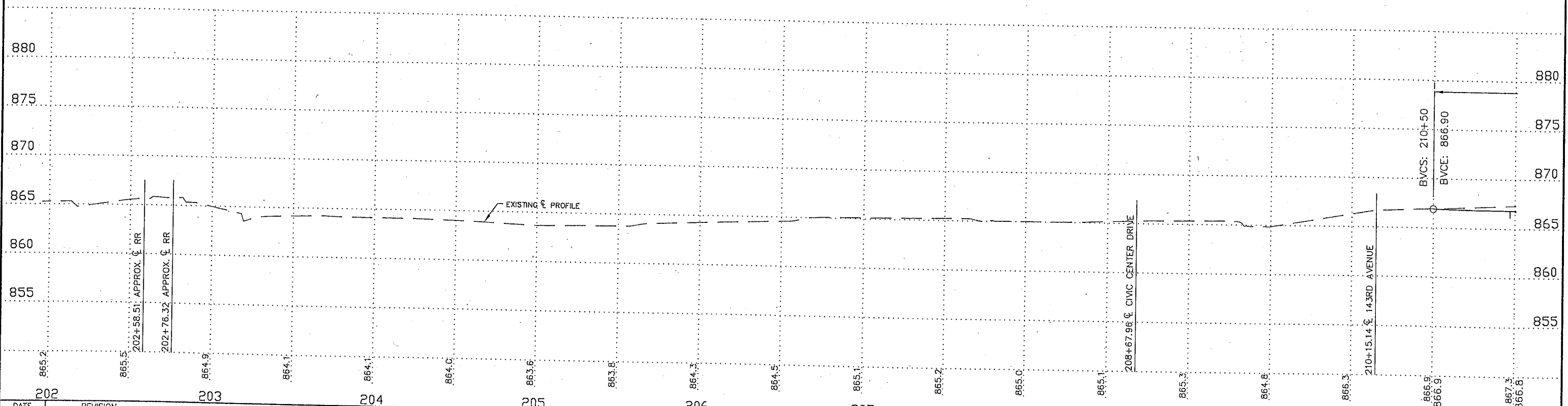
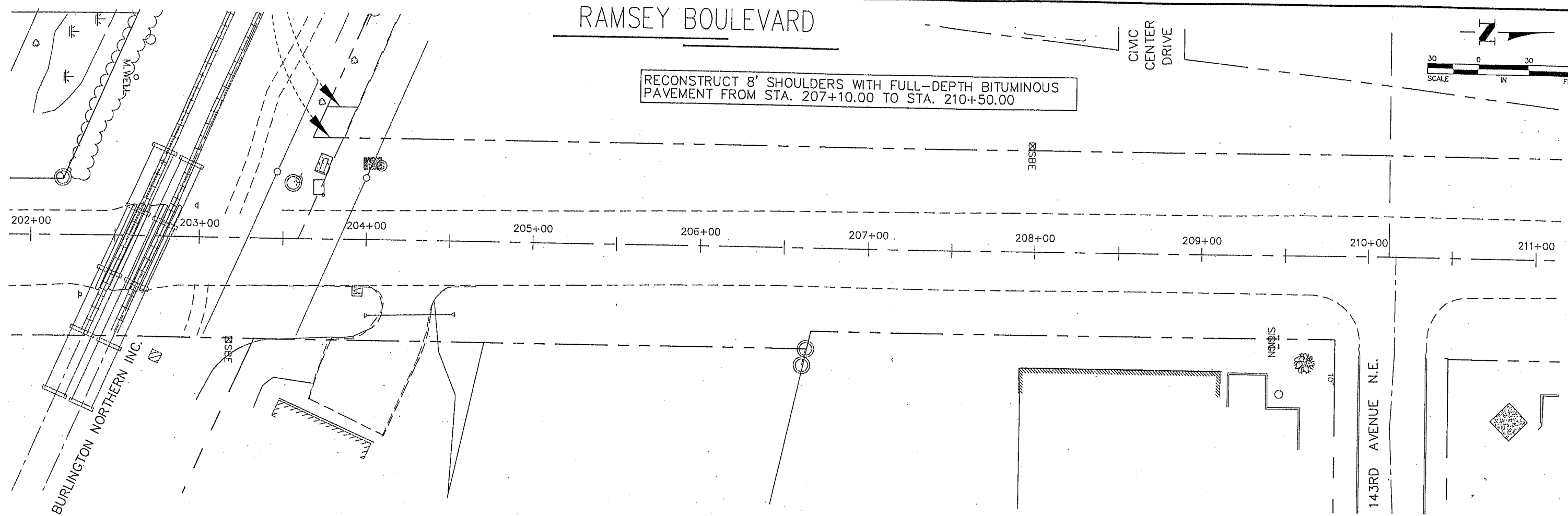
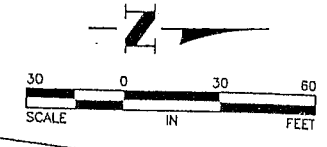


|             |                 |  |  |  |   |                   |   |                                    |
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|-------------|-----------------|--|--|--|---|-------------------|---|------------------------------------|



# RAMSEY BOULEVARD

RECONSTRUCT 8' SHOULDERS WITH FULL-DEPTH BITUMINOUS PAVEMENT FROM STA. 207+10.00 TO STA. 210+50.00



| DATE | REVISION |
|------|----------|
|      |          |
|      |          |
|      |          |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date: 3/24/04 Lic. No. 11586

|              |          |
|--------------|----------|
| DESIGNED BY: | J E J    |
| DRAWN BY:    | RAA      |
| CHECKED BY:  | PRR      |
| DATE:        | 01/29/04 |
| FILE NO.:    | RA3172   |



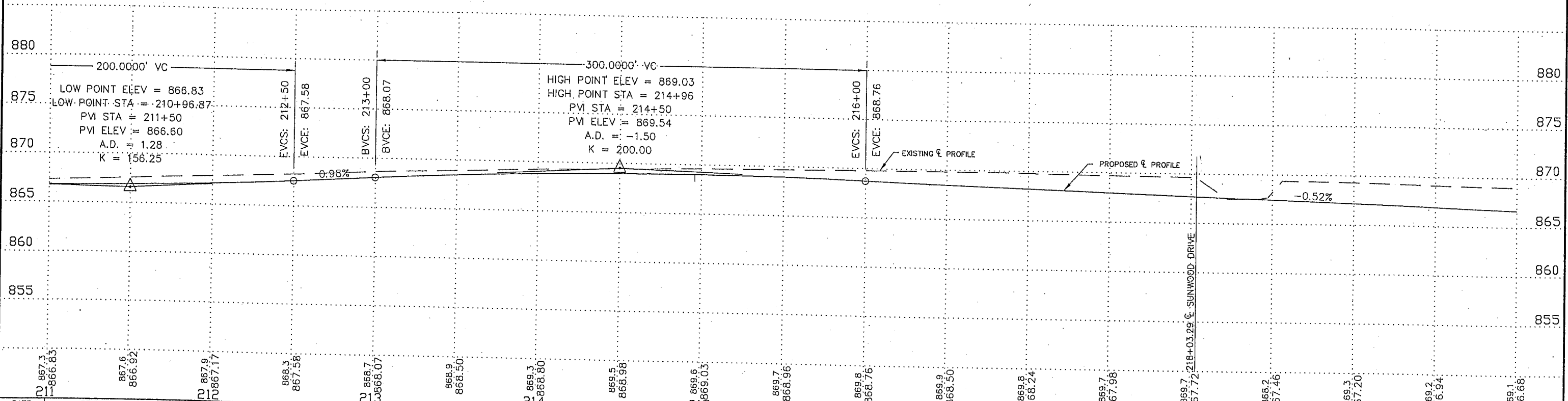
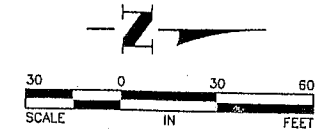
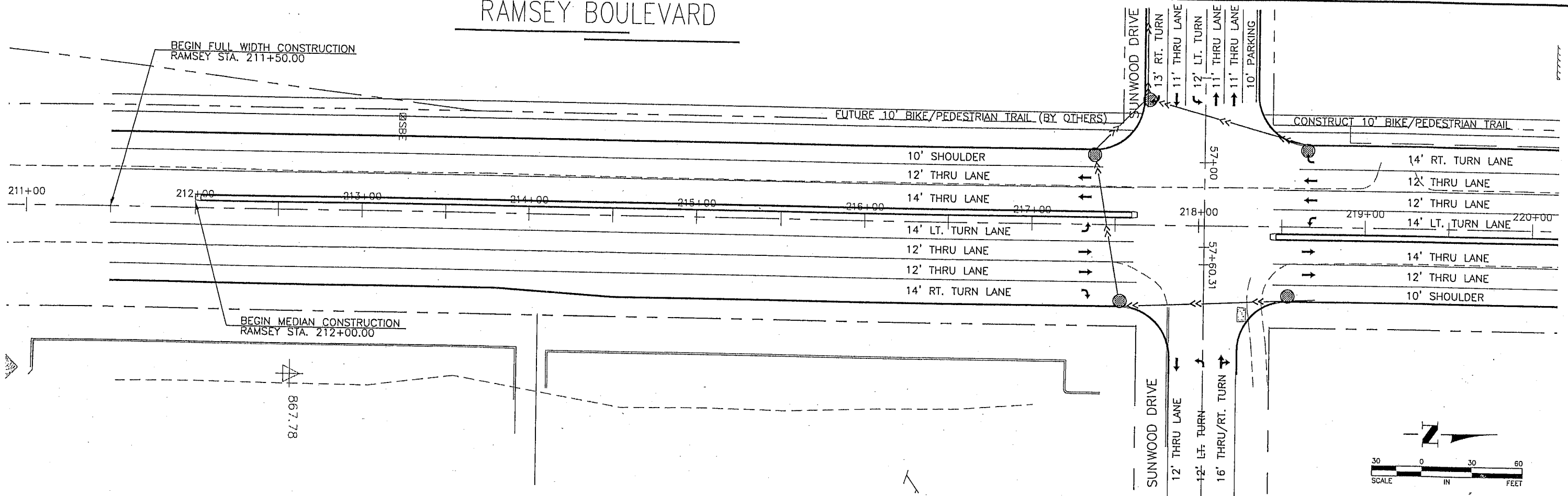
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S.A.P. 199-104-07

STREET PLAN  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 7R  
 OF  
 166  
 SHEETS

# RAMSEY BOULEVARD



| DATE | REVISION |
|------|----------|
|      |          |
|      |          |
|      |          |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|                  |                 |
|------------------|-----------------|
| DESIGNED BY: JEJ | DATE: 01/29/04  |
| DRAWN BY: RAA    | FILE NO. RA3172 |
| CHECKED BY: PRR  |                 |

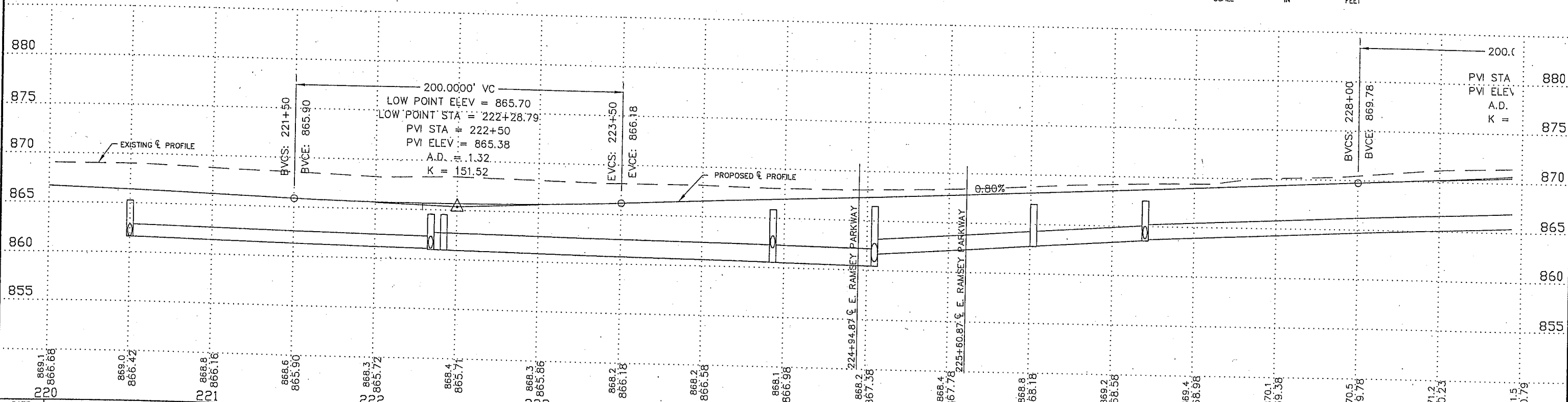
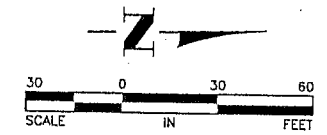
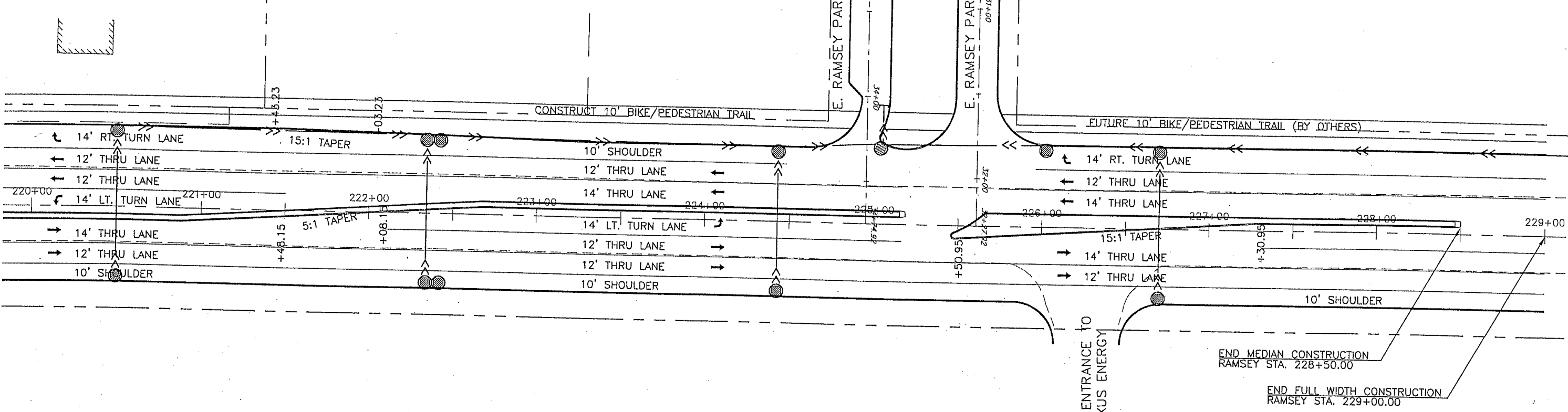
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STREET PLAN  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 8R OF 166 SHEETS

# RAMSEY BOULEVARD



| DATE         | REVISION |
|--------------|----------|
| 869.1<br>220 | 866.68   |
| 869.0<br>221 | 866.42   |
| 868.8<br>222 | 866.16   |
| 868.6<br>223 | 865.90   |
| 868.3<br>224 | 865.72   |
| 868.4<br>225 | 865.71   |
| 868.3<br>226 | 865.86   |
| 868.2<br>227 | 866.18   |
| 868.2<br>228 | 866.58   |
| 868.1<br>229 | 866.98   |
| 868.2<br>220 | 867.58   |
| 868.4<br>221 | 867.78   |
| 868.8<br>222 | 868.18   |
| 869.2<br>223 | 868.58   |
| 869.4<br>224 | 868.98   |
| 870.1<br>225 | 869.38   |
| 870.5<br>226 | 869.78   |
| 871.2<br>227 | 870.23   |
| 871.5<br>228 | 870.79   |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

DESIGNED BY: JEJ  
 DRAWN BY: RAA  
 CHECKED BY: PRR  
 DATE: 01/29/04  
 FILE NO.: RA3172



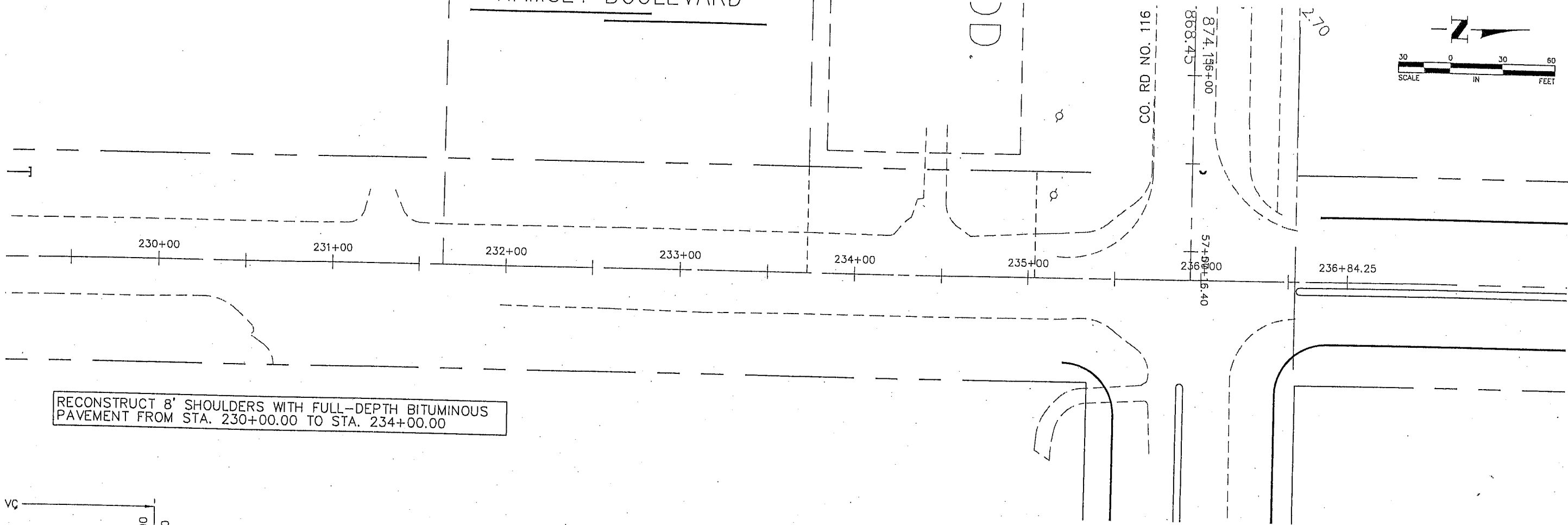
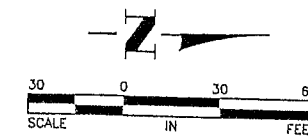
**Hakanson Anderson Assoc., Inc.**  
 Civil Engineers and Land Surveyors  
 3601 Thurston Ave., Anoka, Minnesota 55303  
 763-427-5860 FAX 763-427-0520  
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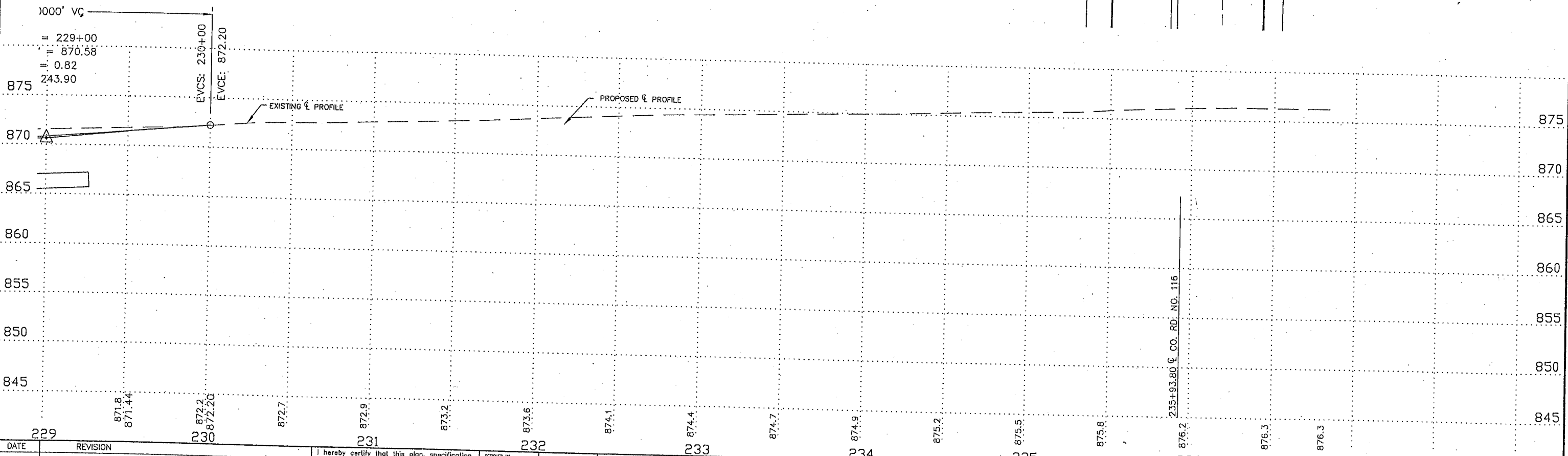
STREET PLAN  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 9R OF 166 SHEETS

# RAMSEY BOULEVARD



RECONSTRUCT 8' SHOULDERS WITH FULL-DEPTH BITUMINOUS PAVEMENT FROM STA. 230+00.00 TO STA. 234+00.00



| DATE                  | REVISION |
|-----------------------|----------|
| Mar 29, 2004 - 4:27pm |          |

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.

*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|                     |                    |
|---------------------|--------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>01/29/04  |
| DRAWN BY:<br>RAA    | FILE NO.<br>RA3172 |
| CHECKED BY:<br>PRR  |                    |

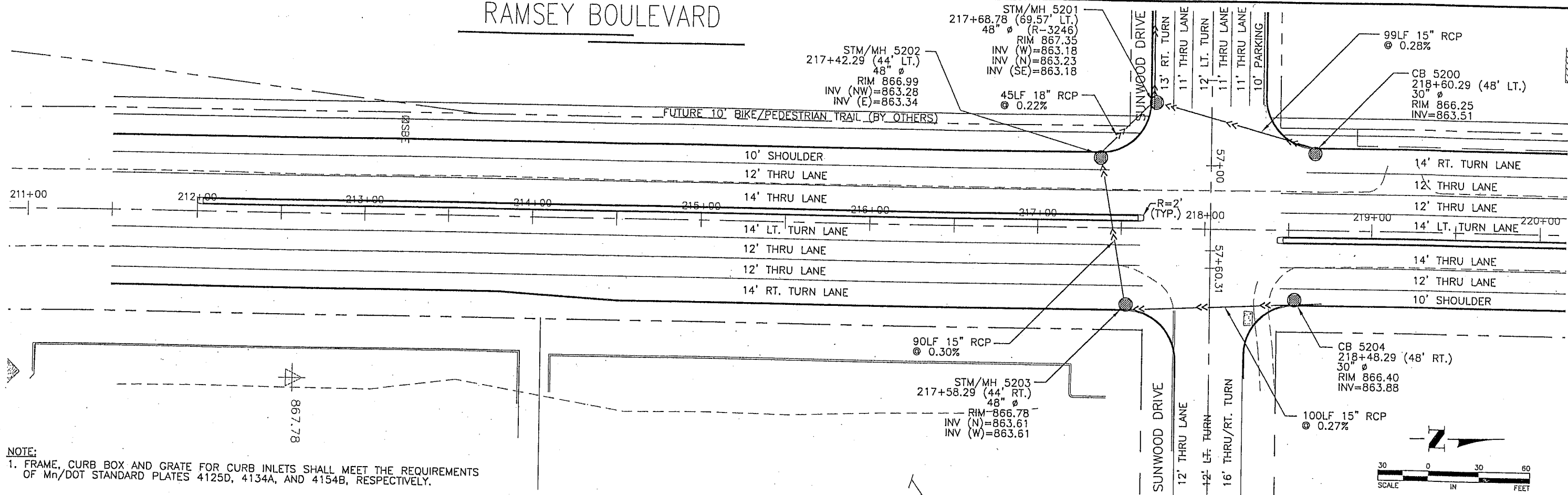
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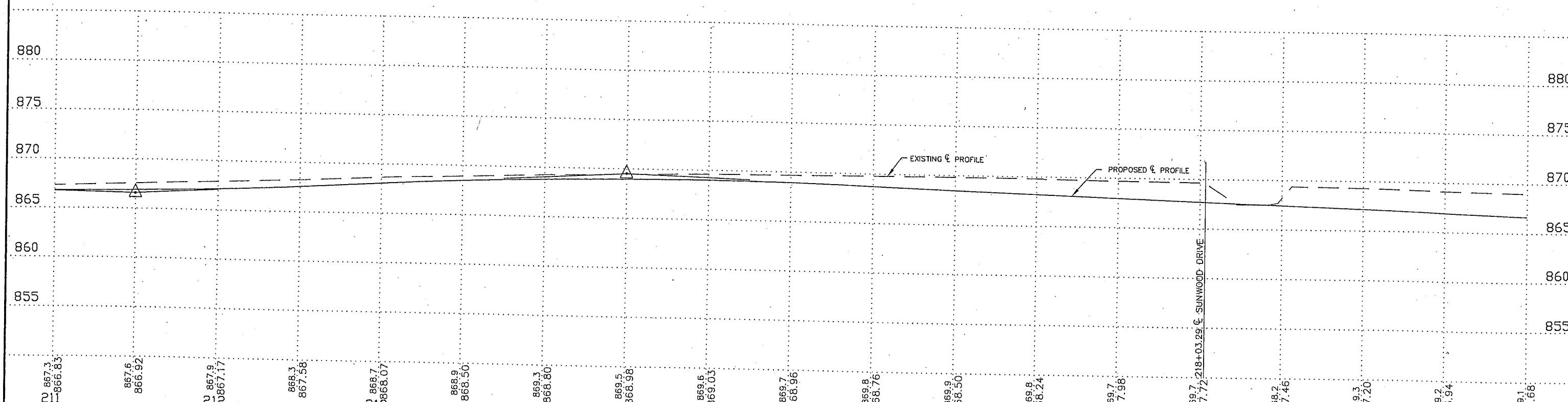
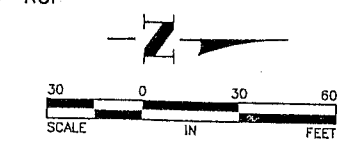
STREET PLAN  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 10R OF 166 SHEETS

# RAMSEY BOULEVARD

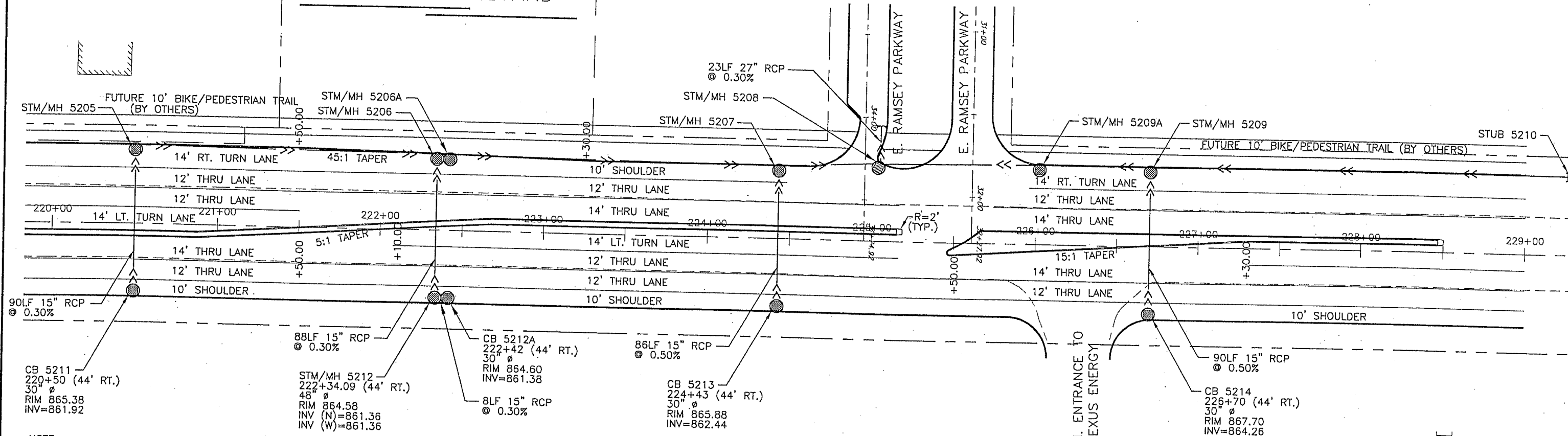


**NOTE:**  
 1. FRAME, CURB BOX AND GRATE FOR CURB INLETS SHALL MEET THE REQUIREMENTS OF Mn/DOT STANDARD PLATES 4125D, 4134A, AND 4154B, RESPECTIVELY.

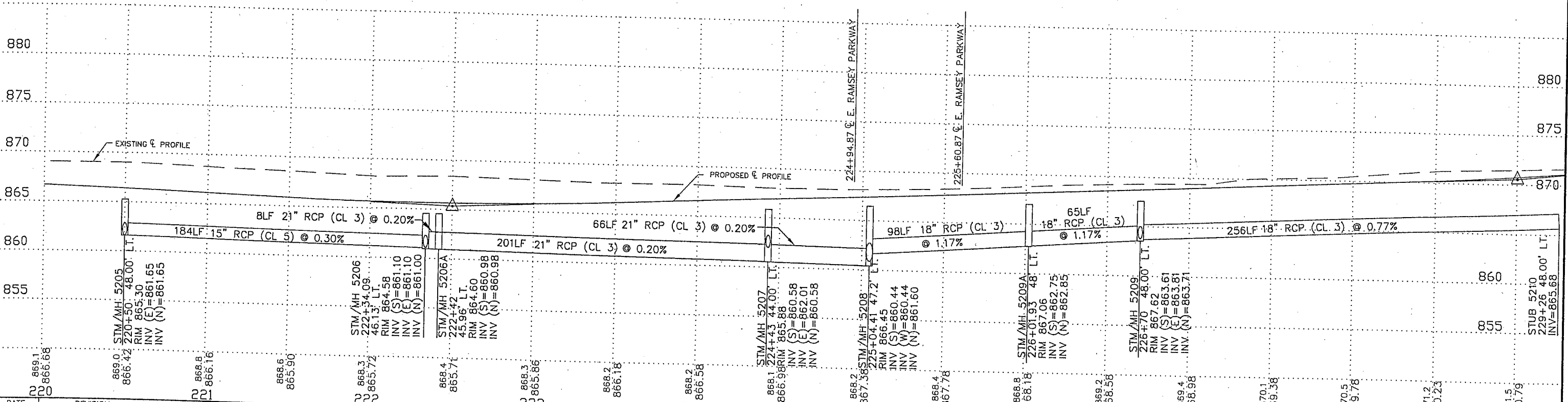
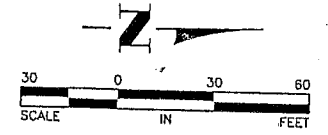


|      |          |   |   |   |                   |   |                                     |
|------|----------|---|---|---|-------------------|---|-------------------------------------|
| DATE | REVISION | I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.<br><br>PETER R. RAATIKKA, P.E.<br>Date 3/24/04 Lic. No. 11586 | DESIGNED BY:<br>J.E.J.                  | <br><b>Hakanson Anderson Assoc., Inc.</b><br>Civil Engineers and Land Surveyors<br>3601 Thurston Ave., Anoka, Minnesota 55303<br>763-427-5860 FAX 763-427-0520<br>www.hakanson-anderson.com | S.A.P. 199-104-07 | STORM SEWER PLAN<br>RAMSEY BOULEVARD<br>CITY OF RAMSEY, MINNESOTA | SHEET<br>11R<br>OF<br>166<br>SHEETS |
|      |          |   | DRAWN BY:<br>RAA                        |   |                   |   |                                     |
|      |          |   | CHECKED BY:<br>PRR                      |   |                   |   |                                     |
|      |          |   | DATE:<br>01/29/04<br>FILE NO.<br>RA3172 |   |                   |   |                                     |

# RAMSEY BOULEVARD



**NOTE:**  
 1. FRAME, CURB BOX AND GRATE FOR CURB INLETS SHALL MEET THE REQUIREMENTS OF Mn/DOT STANDARD PLATES 4125D, 4134A, AND 4154B, RESPECTIVELY.



| DATE | REVISION        |
|------|-----------------|
| 220  | 869.1<br>866.68 |
| 221  | 868.8<br>866.16 |
| 222  | 868.3<br>865.72 |
| 223  | 868.3<br>865.86 |
| 224  | 868.2<br>866.18 |
| 225  | 868.2<br>866.58 |
| 226  | 868.8<br>868.18 |
| 227  | 869.4<br>866.98 |
| 228  | 870.5<br>869.78 |
| 229  | 871.2<br>870.23 |
|      | 871.5<br>870.79 |

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.  
 PETER R. RAATIKKA, P.E.  
 Date: 3/24/04 Lic. No. 11586

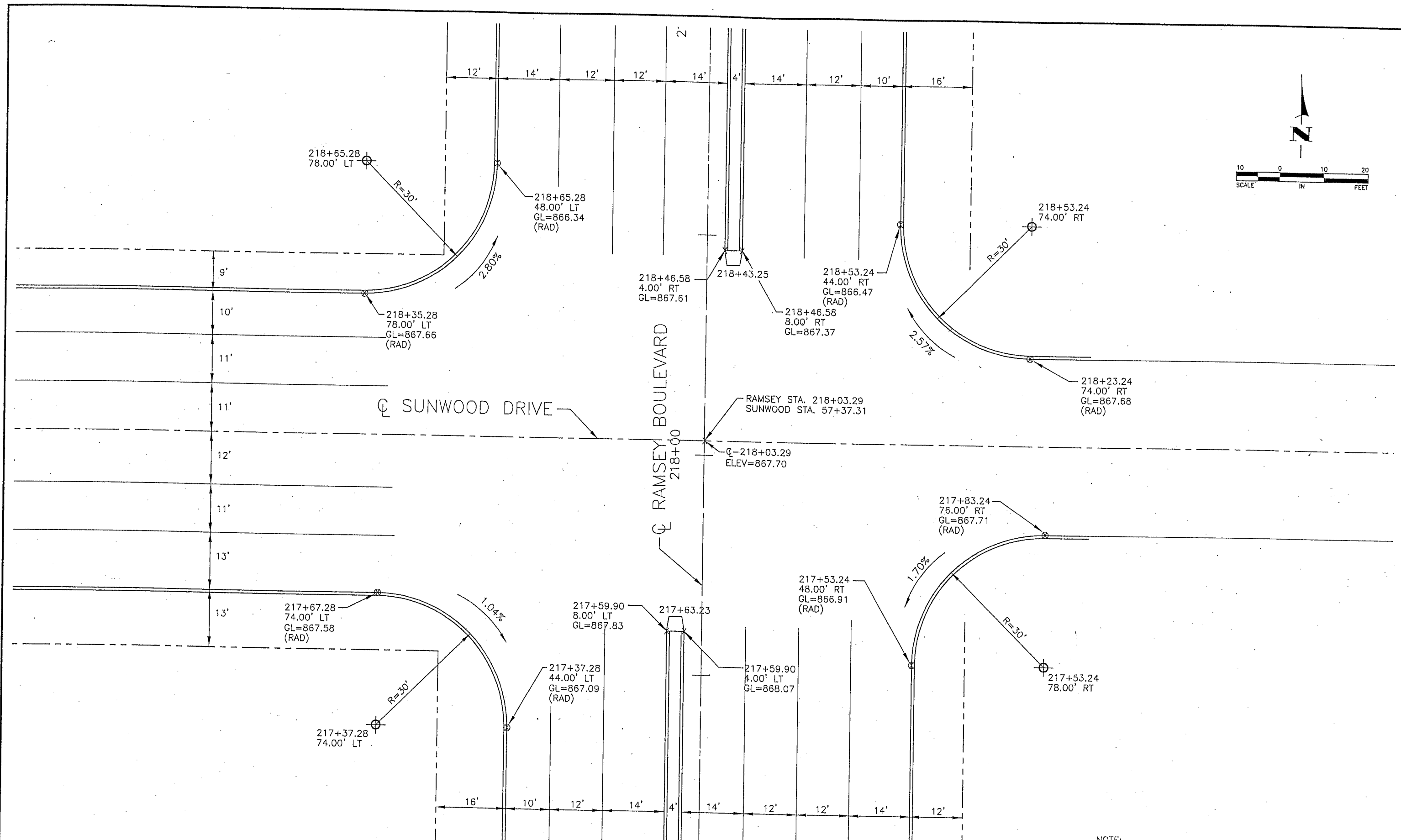
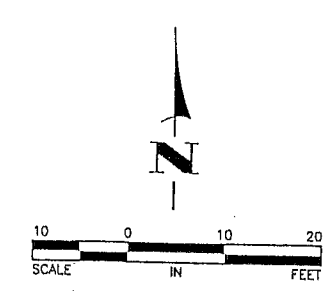
DESIGNED BY: JEJ  
 DRAWN BY: RAA  
 CHECKED BY: PRR  
 DATE: 01/29/04  
 FILE NO.: RA3172

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S.A.P. 199-104-07

**STORM SEWER PLAN**  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET 12R OF 166 SHEETS



NOTE:  
1. ELEVATIONS SHOWN ARE TO FACE OF CURB AT GUTTER.

| DATE | REVISION |
|------|----------|
|      |          |
|      |          |
|      |          |
|      |          |

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.  
*Peter R. Raatikka*  
PETER R. RAATIKKA, P.E.  
Date 3/24/04 Lic. No. 11586

|                     |                    |
|---------------------|--------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>3/24/04   |
| DRAWN BY:<br>RAA    | FILE NO.<br>RA3172 |
| CHECKED BY:<br>PRR  |                    |



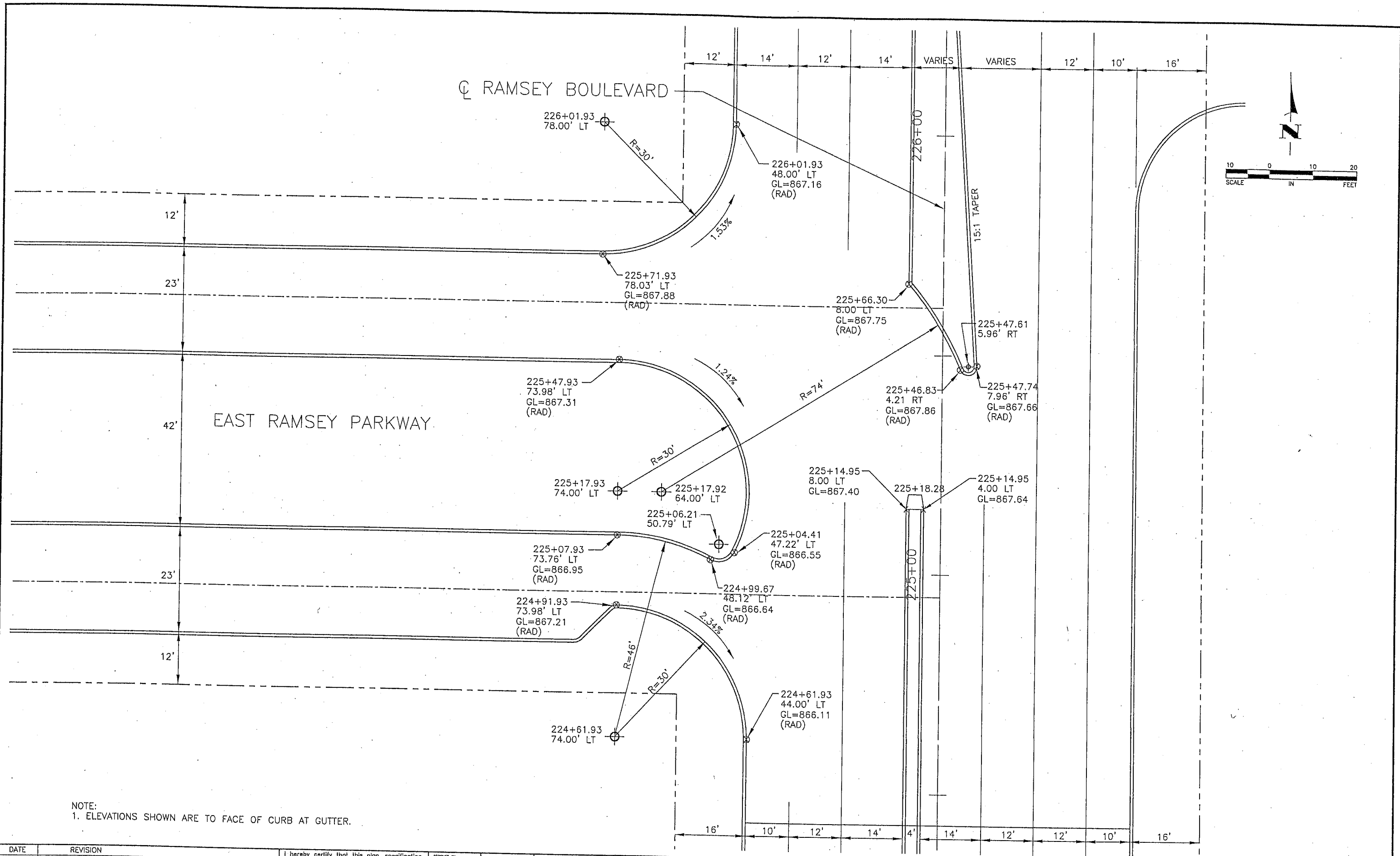
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S.A.P. 199-104-07

INTERSECTION DETAILS  
RAMSEY BOULEVARD AND  
SUNWOOD DRIVE  
CITY OF RAMSEY, MINNESOTA

SHEET  
13R  
OF  
166  
SHEETS





NOTE:  
1. ELEVATIONS SHOWN ARE TO FACE OF CURB AT GUTTER.

| DATE  | REVISION |
|---|----------|
| Mar 29, 2004 - 4:33pm   |          |
| K:\cad_eng\land_projects-2004\RA3172\dwg\RA3172-INTERSECT-DETAILS.DWG |          |

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.

*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|                     |                    |
|---------------------|--------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>3/24/04   |
| DRAWN BY:<br>RAA    | FILE NO.<br>RA3172 |
| CHECKED BY:<br>PRR  |                    |

**Hakanson Anderson Assoc., Inc.**  
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S.A.P. 199-104-07

INTERSECTION DETAILS  
 RAMSEY BOULEVARD AND  
 EAST RAMSEY PARKWAY  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 14R  
 OF  
 166  
 SHEETS

| M. U. T. C. D. CODE | SIZE      | INSERT | QUANTITY    |  |  |
|---------------------|-----------|--------|-------------|--|--|
|                     |           |        | RAMSEY BLVD |  |  |
| W20-2               | 48" X 48" |        | 1           |  |  |
| W20-3               | 48" X 48" |        | 2           |  |  |
| W20-1               | 48" X 48" |        | 1           |  |  |
| W20-100P            | 36" X 24" |        | 1           |  |  |
| W20-100P            | 36" X 24" |        | 0           |  |  |
| W20-100P            | 36" X 24" |        | 1           |  |  |
| W20-100P            | 36" X 24" |        | 1           |  |  |
| R11-4               | 60" X 30" |        | 5           |  |  |
| TYPE III            | 8 FOOT    |        |             |  |  |
| TYPE III            | 8 FOOT    |        | 6           |  |  |
| M4-10               | 48" X 18" |        | 1           |  |  |
| TYPE III            | 8 FOOT    |        |             |  |  |
| R11-2               | 48" X 30" |        | 3           |  |  |
| TYPE III            | 8 FOOT    |        |             |  |  |

| M. U. T. C. D. CODE | SIZE      | INSERT | QUANTITY    |  |  |
|---------------------|-----------|--------|-------------|--|--|
|                     |           |        | RAMSEY BLVD |  |  |
| G20-X2              | 96" X 84" |        | 2           |  |  |
| G20-X2              | 96" X 84" |        | 0           |  |  |
| G20-X2              | 96" X 84" |        | 0           |  |  |
| M3-2                | 24" X 12" |        | 0           |  |  |
| M3-3                | 24" X 12" |        | 6           |  |  |
| M3-4                | 24" X 12" |        | 0           |  |  |
| M4-8                | 24" X 12" |        | 24          |  |  |
| M3-1                | 24" X 12" |        | 16          |  |  |
| M1-6                | 24" X 24" |        | 24          |  |  |
| M1-6                | 24" X 24" |        | 0           |  |  |
| M1-6                | 24" X 24" |        | 0           |  |  |
| M4-6                | 24" X 12" |        | 2           |  |  |
| M5-1L               | 21" X 15" |        | 4           |  |  |
| M5-1R               | 21" X 15" |        | 3           |  |  |
| M6-1L               | 21" X 15" |        | 3           |  |  |
| M6-1R               | 21" X 15" |        | 3           |  |  |
| M6-3                | 21" X 15" |        | 5           |  |  |

- NOTES:
1. ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS
  2. ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES
  3. ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
  4. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED JANUARY 2001
  5. ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS APPROVED BY THE ENGINEER


| DATE  | REVISION |
|---|----------|
| Mar 29, 2004 - 4:34pm                                       |          |
| K:\cad_eng\land projects-2004\RA3172\dwg\RA3172-TRAFFIC.dwg |          |

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.

PETER R. RAATIKKA, P.E.  
Date 3/24/04 Lic. No. 11586

DESIGNED BY: JEJ  
DRAWN BY: DMS  
CHECKED BY: PRR

DATE: 3/24/04  
FILE NO.: RA3172



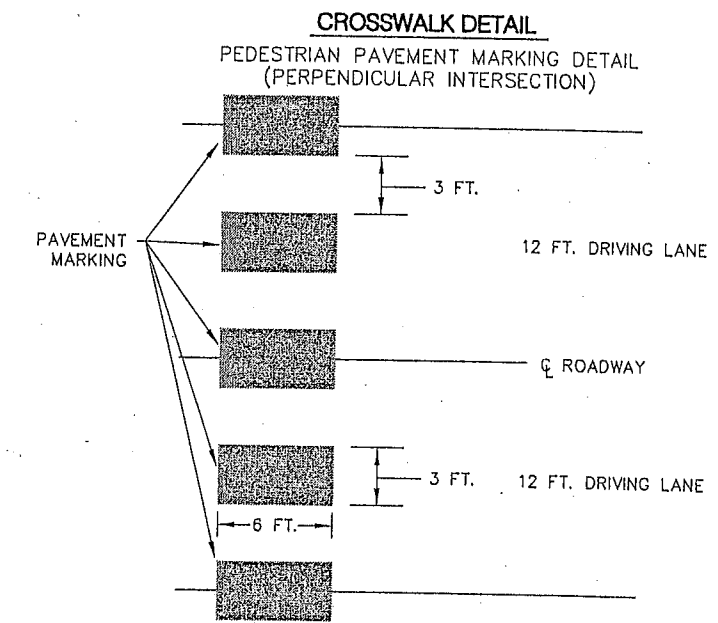
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S.A.P. 199-104-07

TRAFFIC CONTROL PLAN  
RAMSEY BOULEVARD  
CITY OF RAMSEY, MINNESOTA

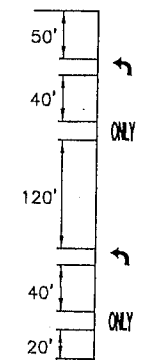


| SIGN LEGEND | SIGN NO.           | SIGN SIZE (INCHES) | SIGN MESSAGE              | SIGN COLOR                | REMARKS                             | ESTIMATED QUANTITY |  |
|-------------|--------------------|--------------------|---------------------------|---------------------------|-------------------------------------|--------------------|--|
|             |                    |                    |                           |                           |                                     | RAMSEY BLVD.       |  |
|             | R3-X1              | 30"x30"            | RIGHT TURN LANE           | BLACK ON WHITE            |                                     | 4                  |  |
|             | R3-X2              | 30"x30"            | LEFT TURN LANE            | BLACK ON WHITE            |                                     | 3                  |  |
|             | R4-7               | 24"x30"            | "KEEP RIGHT" SYMBOL SIGN  | BLACK ON WHITE            |                                     | 6                  |  |
|             | W4-2R              | 36"x36"            | LANE REDUCTION TRANSITION | BLACK ON YELLOW           |                                     | 2                  |  |
|             | W6-2               | 36"x36"            | DIVIDED HIGHWAY ENDS      | BLACK ON YELLOW           |                                     | 2                  |  |
|             | W6-3               | 36"x36"            | TWO WAY TRAFFIC           | BLACK ON YELLOW           |                                     | 2                  |  |
|             | W9-1R              | 36"x36"            | RIGHT LANE ENDS           | BLACK ON YELLOW           |                                     | 2                  |  |
|             | W14-3              | 36"x48"x48"        | NO PASSING ZONE           | BLACK ON YELLOW           |                                     | 2                  |  |
|             | X4-2               | 18"x18"            | HAZARD MARKER PLATE H-1   | YELLOW ON YELLOW OR BLACK |                                     | 2                  |  |
|             | TYPE III BARRICADE | 60"x48"            |                           | BLACK ON ORANGE           | SET IN PIPE SLEEVES 3" Ø X 24" LONG | 16                 |  |
| TOTAL       |                    |                    |                           |                           |                                     | 25                 |  |



- CROSSWALK AND STOP LINE MARKINGS SHALL BE EPOXY.
- CROSSWALK MARKINGS TO BE CENTERED AND ALIGNED ON CENTER LINE AND LANE LINES. MAKE ADJUSTMENTS IN MEDIAN AREA.
- FOR CROSSWALK MARKINGS, A MINIMUM OF 18" CLEAR DISTANCE MUST BE LEFT ADJACENT TO CURB.
- AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES.
- REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.

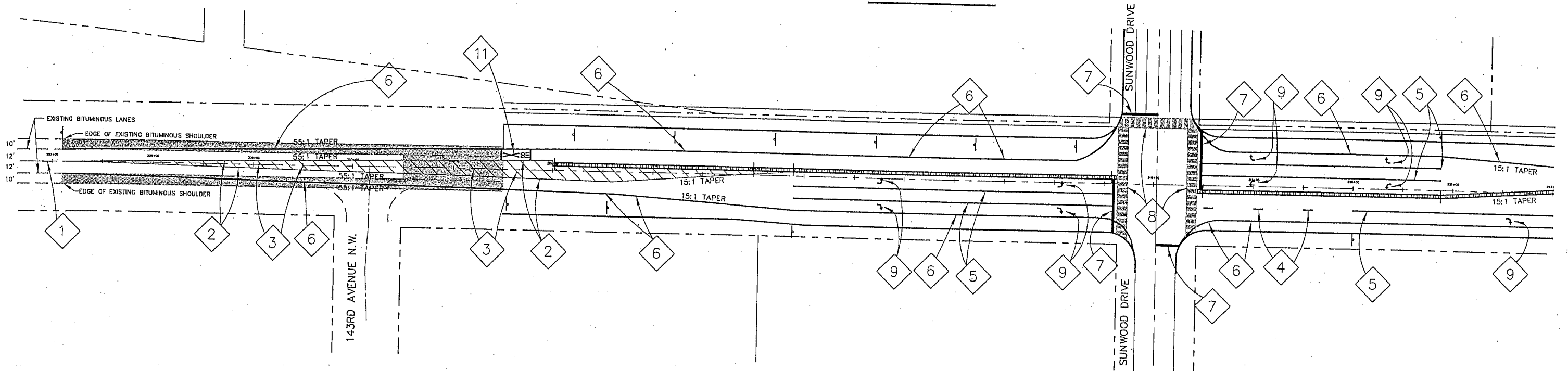
| PAVEMENT MARKING LEGEND | LINE TYPE                      | LINE WIDTH (INCHES) | LINE COMPOSITION AND COLOR  | REMARKS                                       |
|-------------------------|--------------------------------|---------------------|-----------------------------|---|
| 1                       | CENTER LINE                    | 4"                  | SINGLE BROKEN (SKIP) YELLOW | 10' STRIPE + 40' GAP                          |
| 2                       | CENTER LINE FOR PAINTED MEDIAN | 4"                  | DOUBLE SOLID YELLOW         | 6" SEPARATION BETWEEN LINES                   |
| 3                       | PAINTED MEDIAN CROSS HATCHING  | 24"                 | SOLID YELLOW                | 45° DIAGONAL WITH 20' SPACING                 |
| 4                       | LANE LINE                      | 4"                  | SINGLE BROKEN (SKIP) WHITE  | 10' STRIPE + 40' GAP                          |
| 5                       | LANE LINE                      | 4"                  | SINGLE SOLID WHITE          |   |
| 6                       | PAVEMENT EDGE LINE             | 4"                  | SINGLE SOLID WHITE          |   |
| 7                       | STOP BAR                       | 24"                 | SINGLE SOLID WHITE          |   |
| 8                       | CROSSWALK MARKING              | 3'x6'               | SOLID WHITE BLOCKS          | 3' SPACING BETWEEN BLOCKS                     |
| 9                       | PAVEMENT ARROWS                |                     | SOLID WHITE ARROW           | FOR AUXILIARY RIGHT & LEFT TURN LANES 7' HIGH |
| 10                      | PAVEMENT MESSAGE               |                     | SOLID WHITE LETTERING       | "ONLY" 8' HIGH                                |
| 11                      | PAVEMENT MESSAGE               | 16"                 | SOLID WHITE LETTERING       | "RR" 3'x6' "X" 8'x20'                         |



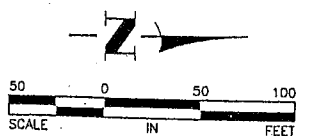
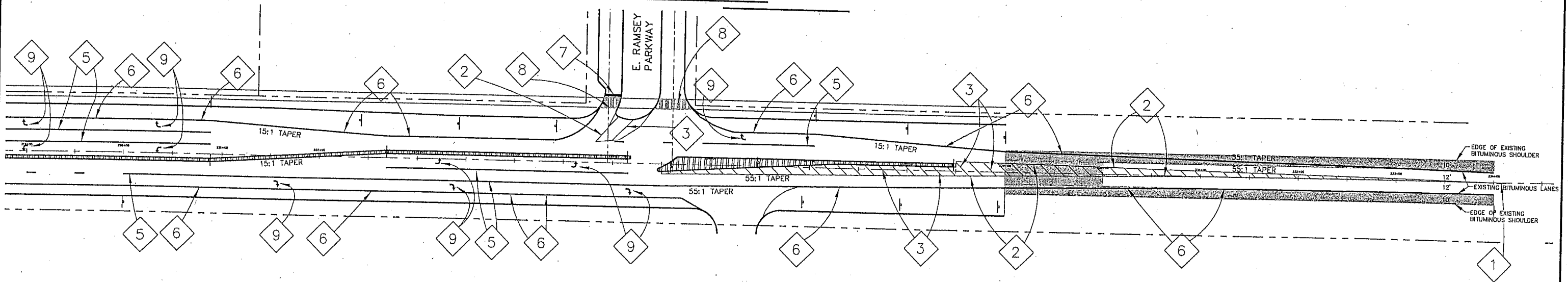
- ARROWS - 7'-0" HIGH  
WORDS - 8'-0" HIGH
- INITIAL SPACING-50 FT. RECOMMENDED. RANGE OF 30-80 FT. DEPENDING ON APPROACH SPEED AND LENGTH OF TURN LANE.
  - MESSAGE SPACING-40 FT. RECOMMENDED. MINIMUM OF 25 FT. FOR SHORT TURN LANES.
  - INTERMEDIATE SPACING-RECOMMEND A MINIMUM OF 100 FT. AND A MAXIMUM OF 150 FT. DEPENDING ON APPROACH SPEED AND LENGTH OF TURN LANE.
  - FINAL SPACING-RECOMMEND 20 FT. OR AS CLOSE AS POSSIBLE WITH RESPECT TO THE SPACING CRITERIA LISTED ABOVE.
  - NUMBER OF MESSAGE UNITS-FOR TURN LANES LESS THAN 200 FT. IN LENGTH ONE SHOULD BE SUFFICIENT AND FOR TURN LANES GREATER THAN 200 FT. IN LENGTH TWO SHOULD BE SUFFICIENT. IN RURAL AREAS ONE MESSAGE UNIT MAY BE SUFFICIENT REGARDLESS OF THE LENGTH. IT IS RECOMMENDED THAT IN THIS CASE THE HEAD OF THE ARROW BE LOCATED AT OR NEAR THE MIDPOINT OF THE TURN LANE.

|      |          |  |                  |               |                 |               |                 |   |                   |   |                                     |
|------|----------|--|------------------|---------------|-----------------|---------------|-----------------|---|-------------------|---|-------------------------------------|
| DATE | REVISION | 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.<br><i>Peter R. Raatikka</i><br>PETER R. RAATIKKA, P.E.<br>Date: 3/24/04 Lic. No. 11586 | DESIGNED BY: JEJ | DRAWN BY: RAA | CHECKED BY: PRR | DATE: 2/18/04 | FILE NO. RA3172 | <b>Hakanson Anderson Assoc., Inc.</b><br>Civil Engineers and Land Surveyors<br>3601 Thurston Ave., Anoka, Minnesota 55303<br>763-427-5860 FAX 763-427-0520<br>www.hakanson-anderson.com | S.A.P. 199-104-07 | SIGNING AND STRIPING<br>TABLES AND DETAILS<br>RAMSEY BOULEVARD<br>CITY OF RAMSEY, MINNESOTA | SHEET<br>17R<br>OF<br>166<br>SHEETS |
|------|----------|--|------------------|---------------|-----------------|---------------|-----------------|---|-------------------|---|-------------------------------------|

# RAMSEY BOULEVARD



# RAMSEY BOULEVARD



| DATE  | REVISION |
|---|----------|
| Mar 30, 2004 - 8:21am   |          |
| K:\cad_eng\land_projects-2004\RA3172\dwg\RA3172-SIGN-STRIPE.dwg |          |

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.  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

DESIGNED BY: JEJ  
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 CHECKED BY: PRR  
 DATE: 2/18/04  
 FILE NO.: RA3172



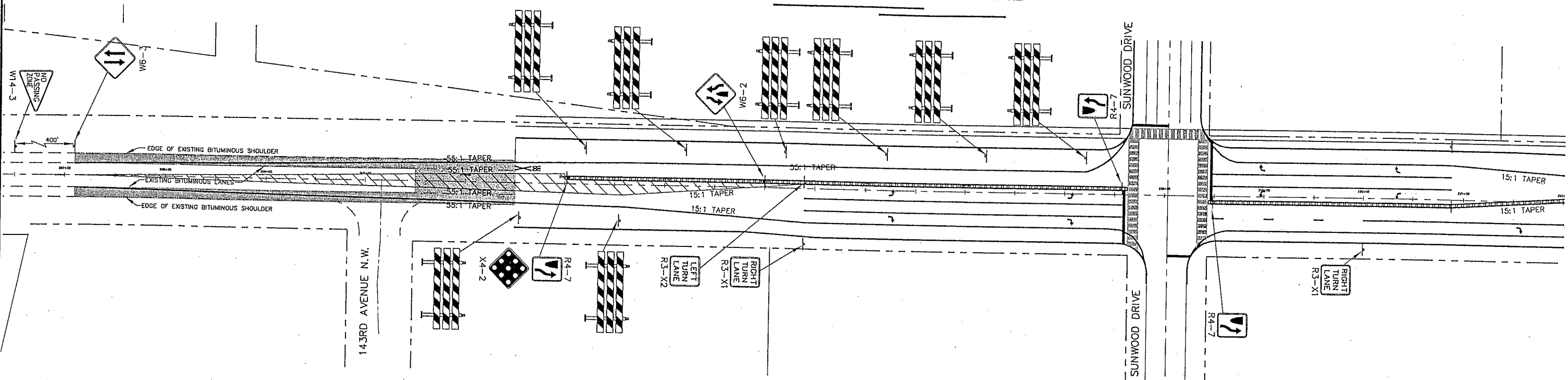
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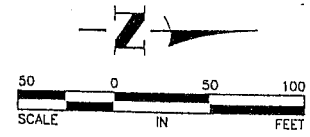
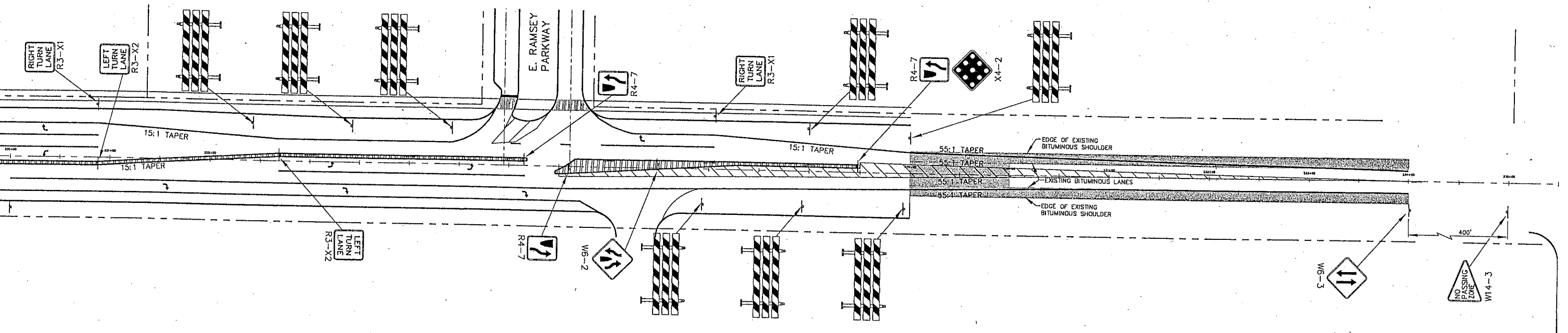
PAVEMENT MARKING PLANS  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 18R  
 OF  
 166  
 SHEETS

# RAMSEY BOULEVARD



# RAMSEY BOULEVARD



| DATE   | REVISION |
|--|----------|
| Mar 28, 2004 - 4:36pm  |          |
| K:\cad_eng\land projects-2004\RA3172\dwg\RA3172-SIGN-STRIPES.dwg |          |

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*Peter R. Raatikka*  
 PETER R. RAATIKKA, P.E.  
 Date 3/24/04 Lic. No. 11586

|                     |                  |
|---------------------|------------------|
| DESIGNED BY:<br>JEJ | DATE:<br>2/18/04 |
| DRAWN BY:<br>RAA    | FILE NO.:        |
| CHECKED BY:<br>PRR  | RA3172           |



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S.A.P. 199-104-07

SIGNING PLANS  
 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

SHEET  
 19R  
 OF  
 166  
 SHEETS

① PA 100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 (DAVIT AT 350')  
 1-ONE WAY SIGNAL OVERHEAD AT 5' FROM  
 END OF MAST ARM  
 2-TYPE 10B POLE MOUNTED AT 90° AND 180°  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT - PHASES 3 AND 6.  
 LUMINAIRE-250 W HPS  
 2-PED PUSH BUTTONS AND SIGNS (R10-4b)  
 EXTEND TO HH 1:  
 3" RSC  
 2 - 12/C #12  
 5 - 3/C #12  
 1 - 3/C #20

③ PA 85 POLE FOUNDATION  
 TYPE PA85-A-25-D40-9 (DAVIT AT 350')  
 1-ONE WAY SIGNAL OVERHEAD AT 5' FROM  
 END OF MAST ARM  
 2-TYPE 10B POLE MOUNTED AT 90° AND 180°  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT - PHASES 4 AND 7.  
 LUMINAIRE-250 W HPS  
 2-PED PUSH BUTTONS AND SIGNS (R10-4b)  
 EXTEND TO HH 7:  
 3" RSC  
 2 - 12/C #12  
 5 - 3/C #12  
 1 - 3/C #20

Ⓐ CONTROLLER AND CABINET  
 (TO BE FURNISHED BY COUNTY).  
 SEE SHEET \_\_\_\_  
 EXTEND INTO HH 14:  
 METERED SIGNAL SERVICE  
 2" RSC  
 2-1/C #6  
 1-1/C #6 INS. GR.  
 EXTEND TO HH 1:  
 4" RSC  
 4-12/C #12  
 9-3/C #12  
 9-2/C #14  
 2-3/C #20  
 EXTEND TO HH 13:  
 4" RSC  
 4-12/C #12  
 9-3/C #12  
 11-2/C #14  
 2-3/C #20  
 3" RSC STUBBED OUT  
 (THEADED AND CAPPED  
 BOTH ENDS)

Ⓑ SIGNAL SERVICE CABINET - SEE SHEET \_\_\_\_  
 CABINET FOUNDATION  
 EXTEND INTO HH 14:  
 2" RSC  
 METERED SIGNAL SERVICE  
 3-1/C #6  
 UNMETERED STREET LIGHT SERVICE  
 4-3/C #12 (LUM)  
 EXTEND INTO HH 15:  
 2" RSC  
 3-1/C #2  
 Ⓒ SOP - PROPOSED TRANSFORMER  
 (BY CONNEXUS ENERGY)  
 EXTEND INTO HH 15:  
 2" RSC  
 3-1/C #2

② PA 100 POLE FOUNDATION  
 TYPE PA100-A-45-D40-9 (DAVIT AT 350')  
 2-ONE WAY SIGNALS OVERHEAD AT 5' AND 17'  
 FROM END OF MAST ARM  
 2-TYPE 10B POLE MOUNTED AT 90° AND 180°  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT - PHASES 2 AND 5.  
 LUMINAIRE-250 W HPS  
 2-PED PUSH BUTTONS AND SIGNS (R10-4b)  
 EXTEND TO HH 4:  
 3" RSC  
 2 - 12/C #12  
 6 - 3/C #12  
 1 - 3/C #20

④ PA 100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350')  
 2-ONE WAY SIGNALS OVERHEAD AT 5' AND 17'  
 FROM END OF MAST ARM  
 2-TYPE 10B POLE MOUNTED AT 90° AND 180°  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT - PHASES 1 AND 6.  
 LUMINAIRE-250 W HPS  
 2-PED PUSH BUTTONS AND SIGNS (R10-4b)  
 EXTEND TO HH 11:  
 3" RSC  
 2 - 12/C #12  
 6 - 3/C #12  
 1 - 3/C #20

| SIGNAL PHASES                  |   |   |   |      |      |      |
|--------------------------------|---|---|---|------|------|------|
| ALL INDICATIONS SHALL BE 12".  |   |   |   |      |      |      |
| ALL INDICATIONS SHALL BE LIGHT |   |   |   |      |      |      |
| EMITTING DIODE (LED) TYPE      |   |   |   |      |      |      |
| FACE                           | R | Y | G | RLTA | YLTA | GLTA |
| 2-1                            | • | • | • |      |      |      |
| 2-2                            | • | • | • |      |      |      |
| 2-3                            | • | • | • |      |      |      |
| 2-4                            | • | • | • | ←    | ←    | ←    |
| 4-1                            | • | • | • |      |      |      |
| 4-2                            | • | • | • | ←    | ←    | ←    |
| 4-3                            | • | • | • | ←    | ←    | ←    |
| 6-1                            | • | • | • |      |      |      |
| 6-2                            | • | • | • | ←    | ←    | ←    |
| 6-3                            | • | • | • | ←    | ←    | ←    |
| 6-4                            | • | • | • | ←    | ←    | ←    |
| 8-1                            | • | • | • |      |      |      |
| 8-2                            | • | • | • | ←    | ←    | ←    |
| 8-3                            | • | • | • | ←    | ←    | ←    |

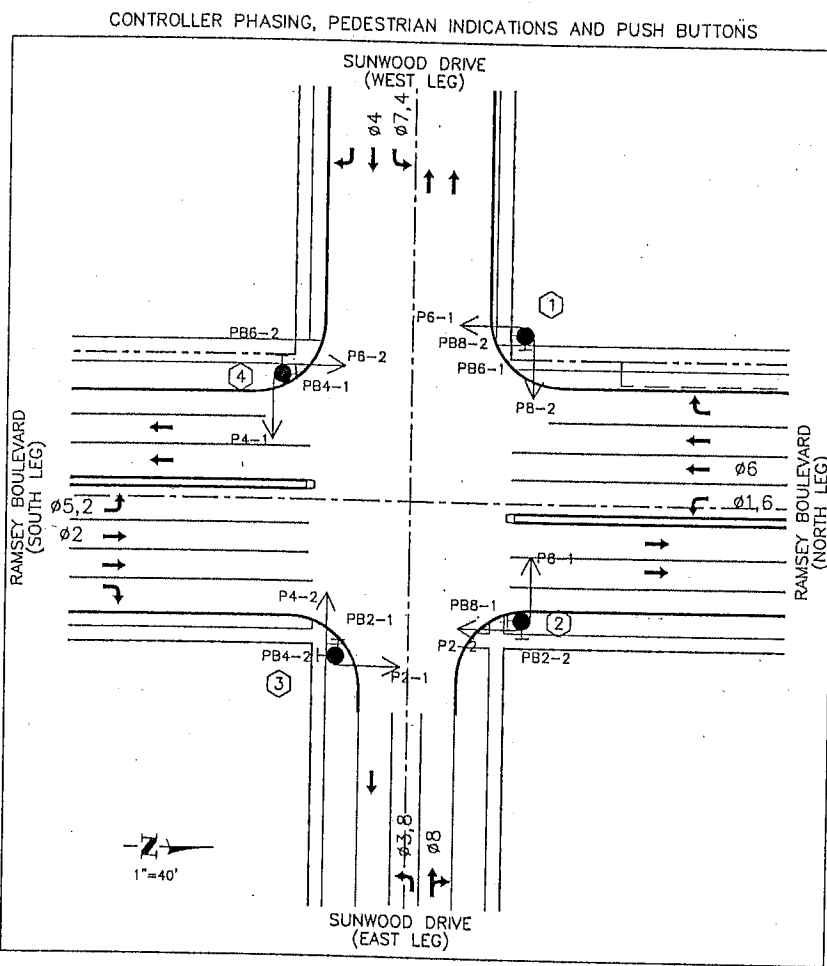
| NMC LOOP DETECTORS |             |           |          |
|--------------------|-------------|-----------|----------|
| NUMBER             | SIZE (FEET) | LOCATION  | FUNCTION |
| *D1-1              | 6'X6'       | 40'       | 1        |
| *D1-2              | 6'X6'       | 10'       | 1        |
| *D2-1              | 6'X6'       | 475'      | 1        |
| *D2-2              | 6'X6'       | 475'      | 1        |
| *D3-1              | 2-6'X6'     | 20' & 50' | 1        |
| *D3-2              | 2-6'X6'     | 5' & 35'  | 1        |
| *D4-1              | 6'X6'       | 120'      | 1        |
| *D4-2              | 6'X6'       | 20'       | 7        |
| *D4-3              | 6'X6'       | 20'       | 1        |
| *D4-4              | 6'X6'       | 20'       | 1        |
| *D4-5              | 6'X6'       | 5'        | 7        |
| *D5-1              | 6'X6'       | 5'        | 1        |
| *D5-2              | 6'X6'       | 40'       | 1        |
| *D6-1              | 6'X6'       | 10'       | 1        |
| *D6-2              | 6'X6'       | 475'      | 1        |
| *D6-3              | 6'X6'       | 475'      | 1        |
| *D7-1              | 2-6'X6'     | 20' & 50' | 1        |
| *D7-2              | 2-6'X6'     | 5' & 35'  | 1        |
| *D8-1              | 6'X6'       | 120'      | 3        |
| *D8-2              | 6'X6'       | 20'       | 7        |
| *D8-3              | 6'X6'       | 5'        | 7        |

LOCATION = DISTANCE FROM STOP BAR TO DETECTOR IN FEET.

LOOP DETECTOR FUNCTIONS  
 1=CALL AND EXTEND  
 3=EXTEND ONLY  
 7=DELAY CALL - IMMEDIATE EXTEND

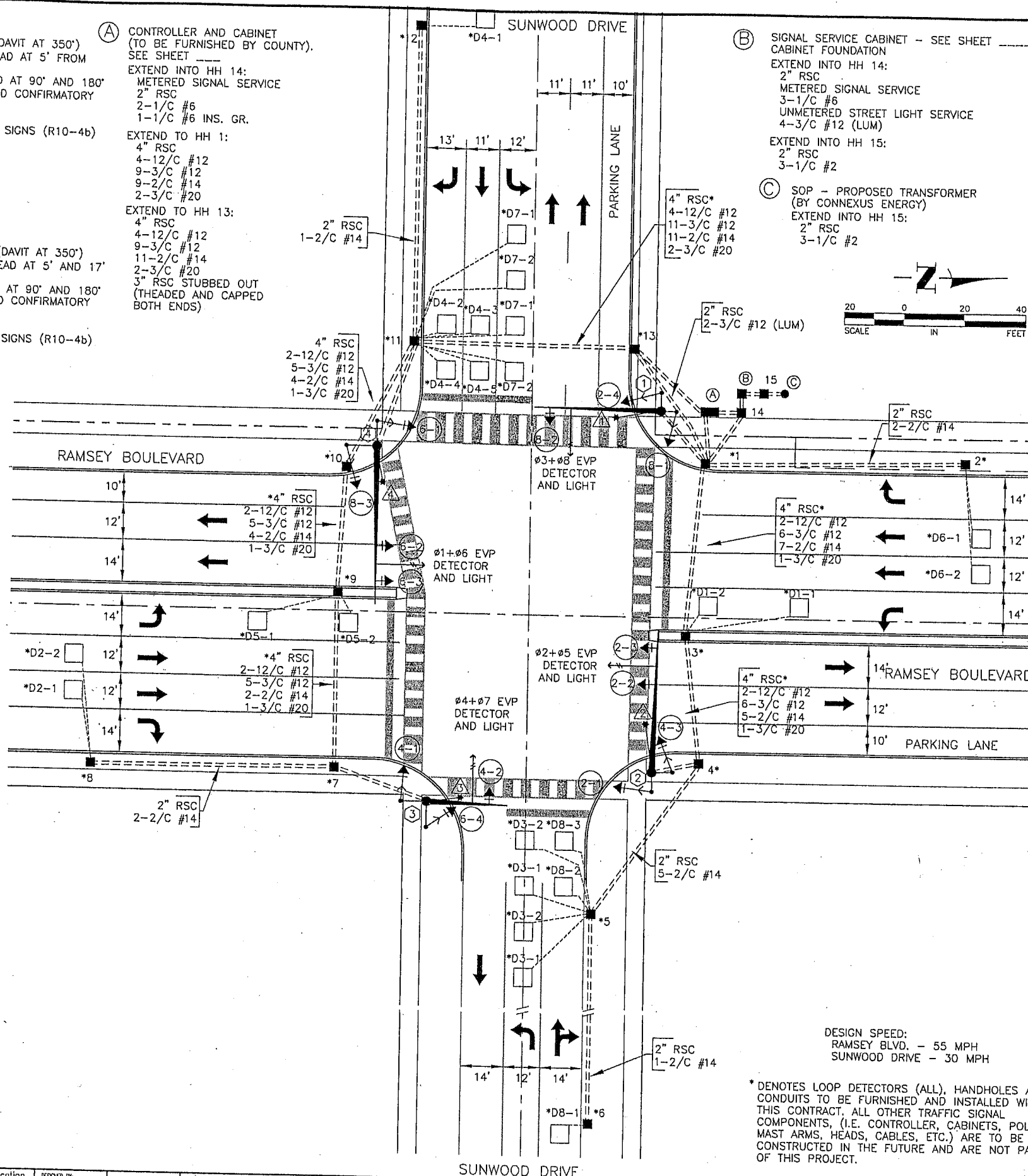
NOTES

- SEE SPECIAL PROVISIONS FOR PEDESTRIAN INDICATIONS, LED INDICATIONS, AND COUNTY FURNISHED MATERIALS.
- EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- LOCATIONS OF POLES, PEDESTALS, HANDHOLES AND LOOP DETECTORS SHALL BE DETERMINED BY TRAFFIC ENGINEERING PERSONNEL FROM ANOKA COUNTY HIGHWAY DEPARTMENT
- FOR TYPE "D" SIGNS AND R6-1 SIGNS SEE SHEETS \_\_\_\_ AND \_\_\_\_ FOR PAVEMENT MARKINGS SEE SHEETS \_\_\_\_ AND \_\_\_\_
- 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE FURNISHED AND INSTALLED APPROXIMATELY 11" FROM THE END OF MAST ARMS 1,2,3, AND 4.
- ALL LOOP DETECTORS SHALL BE NON-METALLIC CONDUCT (NMC) TYPE. FOR NMC LOOP DETAILS SEE SHEET \_\_\_\_
- FINISHED GROUNDLINE SHALL BE WITHIN 6" OF THE TOP OF THE CONCRETE SIGNAL POLE FOUNDATIONS. PROVIDE AND PLACE FILL AS NECESSARY.
- ALL HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS.



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE  
 SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASES WITH PHASES 1,3,5, AND 7 BEING PROTECTED LEFT TURN PHASES FOLLOWED BY PERMISSIVE LEFT TURNS.
- PHASES 2 & 6 SHALL BE ON VEHICLE RECALL.



DESIGN SPEED:  
 RAMSEY BLVD. - 55 MPH  
 SUNWOOD DRIVE - 30 MPH

\* DENOTES LOOP DETECTORS (ALL), HANDHOLES AND CONDUITS TO BE FURNISHED AND INSTALLED WITH THIS CONTRACT. ALL OTHER TRAFFIC SIGNAL COMPONENTS, (I.E. CONTROLLER, CABINETS, POLES, MAST ARMS, HEADS, CABLES, ETC.) ARE TO BE CONSTRUCTED IN THE FUTURE AND ARE NOT PART OF THIS PROJECT.

| DATE   | REVISION |
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| Mar 29, 2004   | 4:40pm   |
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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.  
 JAMES E. JOHNSON  
 Date 3/24/04 Lic. No. 12651

|                  |                 |
|------------------|-----------------|
| DESIGNED BY: JEJ | DATE: 3/22/04   |
| DRAWN BY: DMS    | FILE NO. RA3172 |
| CHECKED BY: PRR  |                 |



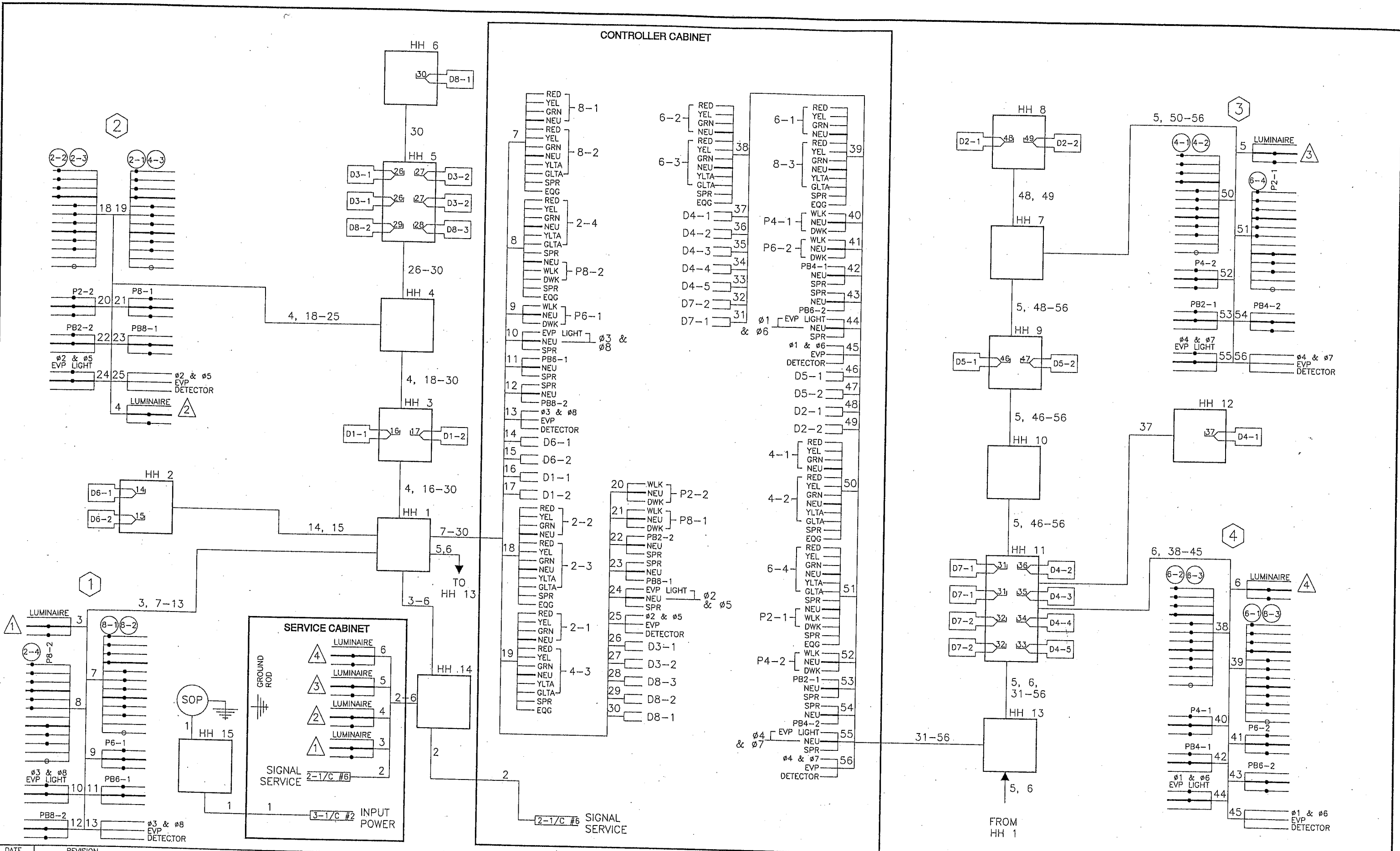
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S.A.P. 199-104-07

INTERSECTION LAYOUT PLAN  
 TRAFFIC CONTROL SIGNAL SYSTEM  
 RAMSEY BOULEVARD AND SUNWOOD DRIVE  
 CITY OF RAMSEY, MINNESOTA

SHEET 20R  
 OF 166 SHEETS





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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.

JAMES E. JOHNSON  
Date 3/24/04 Lic. No. 12651

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DRAWN BY: DMS  
CHECKED BY: PRR

DATE: 3/22/04  
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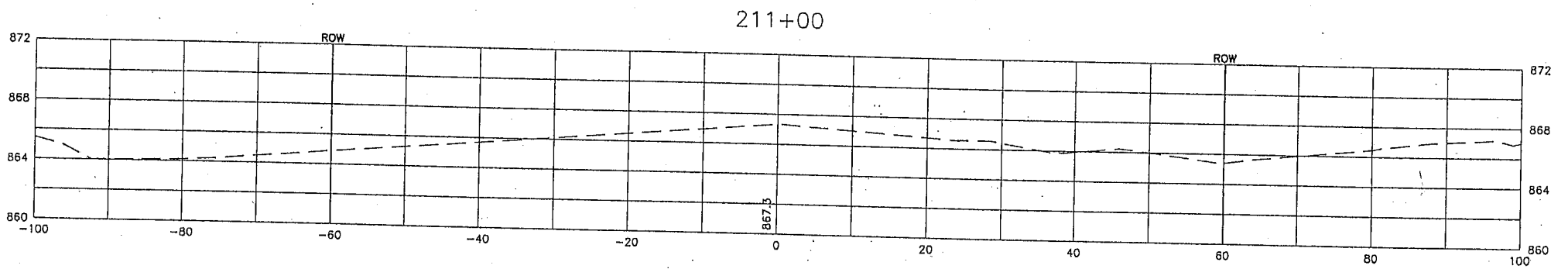
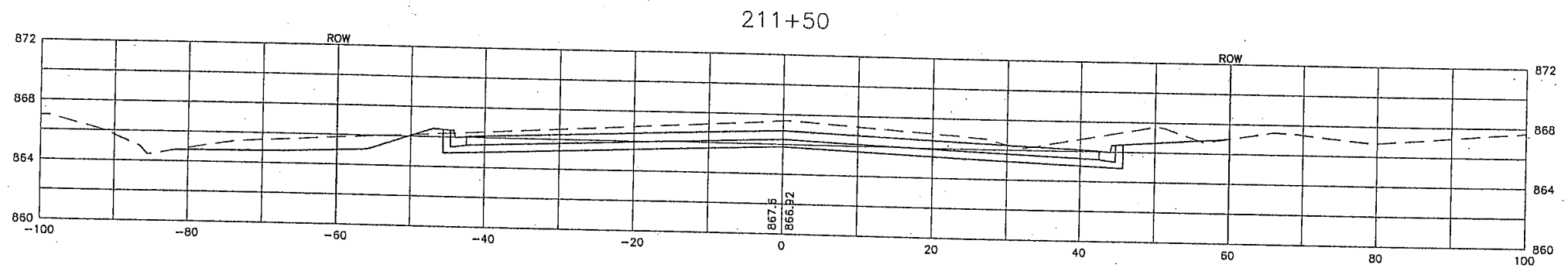
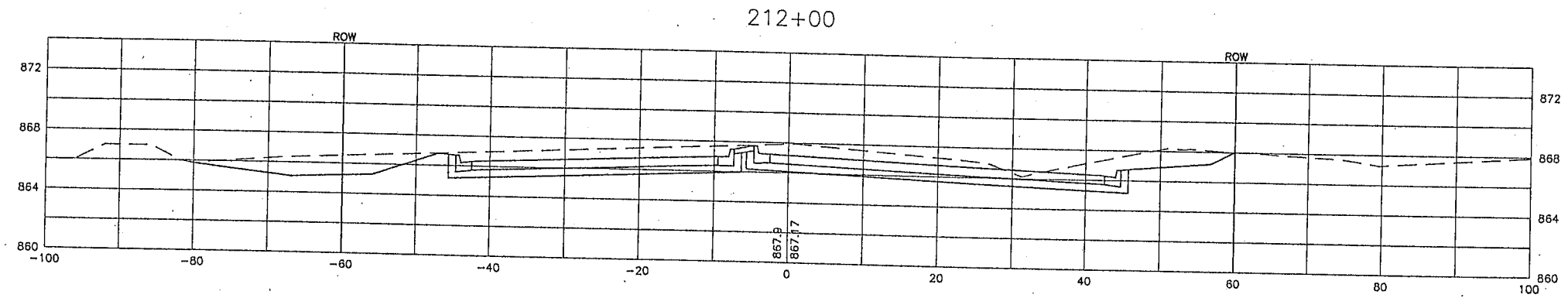
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FIELD WIRING DIAGRAM  
TRAFFIC CONTROL SIGNAL SYSTEM  
RAMSEY BOULEVARD AND SUNWOOD DRIVE  
CITY OF RAMSEY, MINNESOTA

SHEET 21R OF 166 SHEETS





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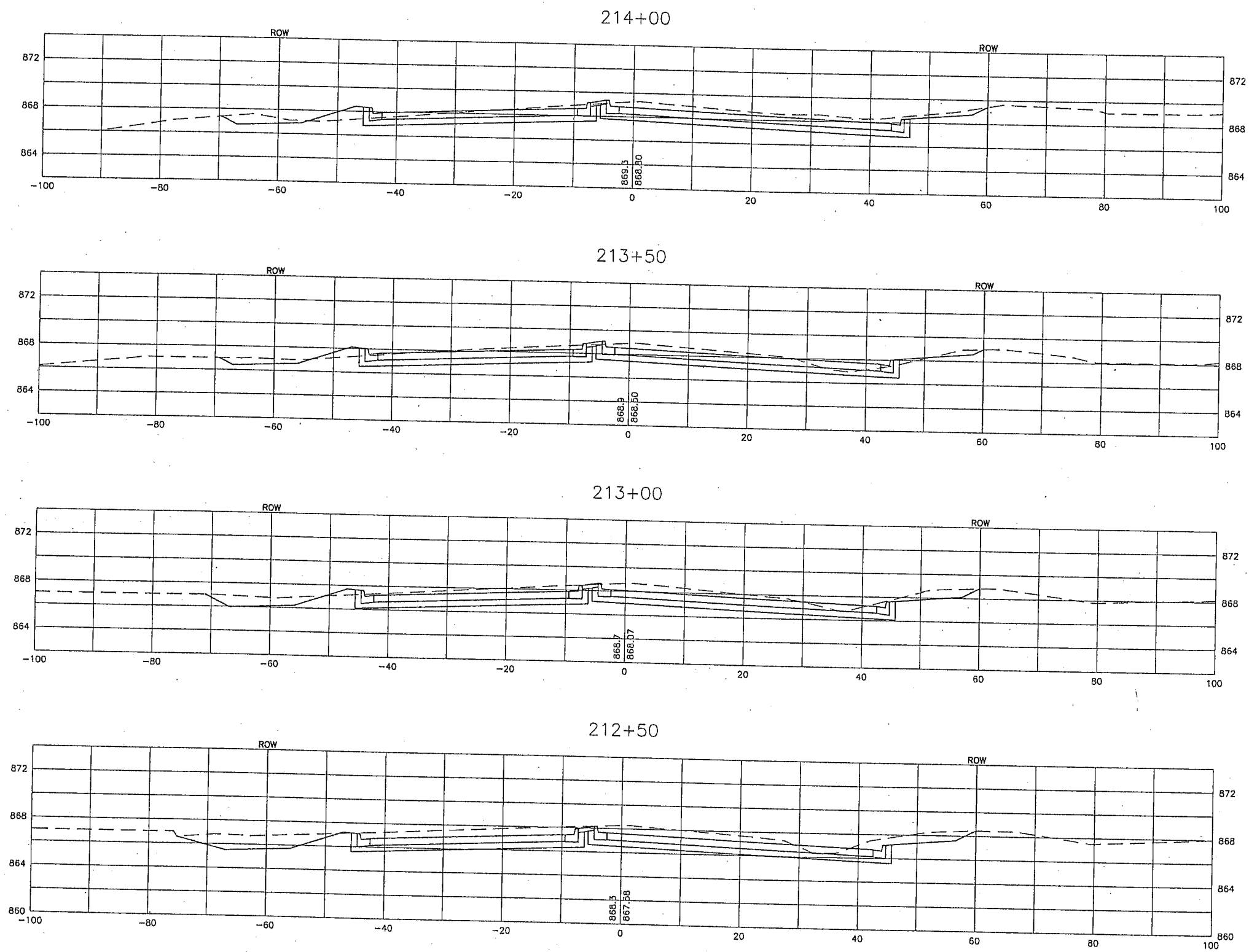


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 RAMSEY BOULEVARD  
 CITY OF RAMSEY, MINNESOTA

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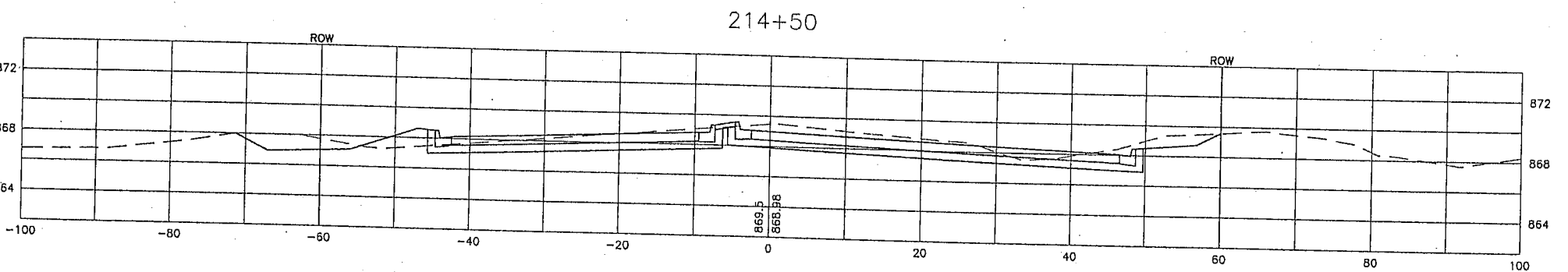
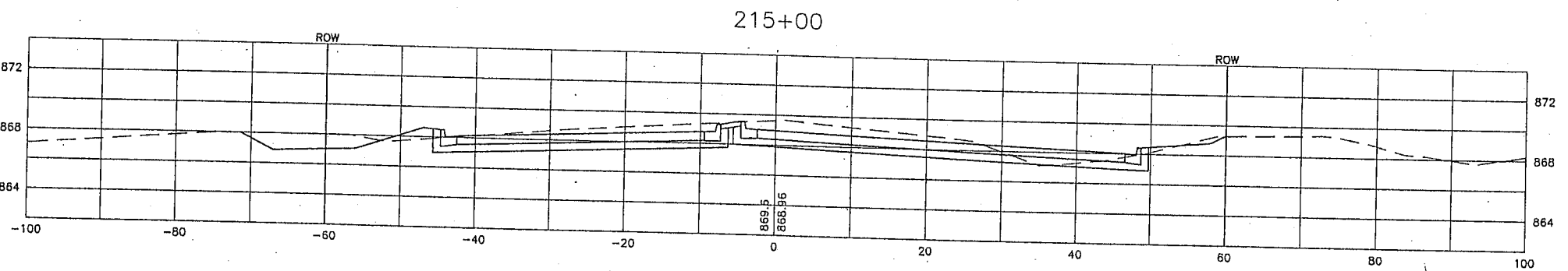
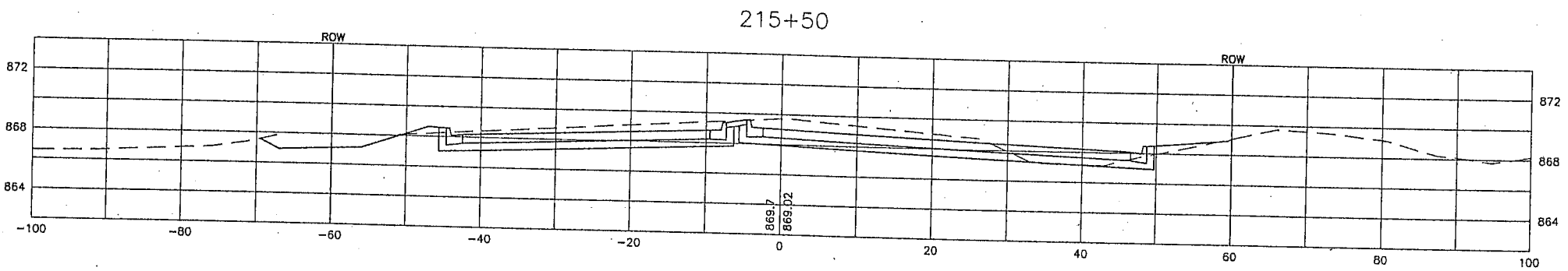
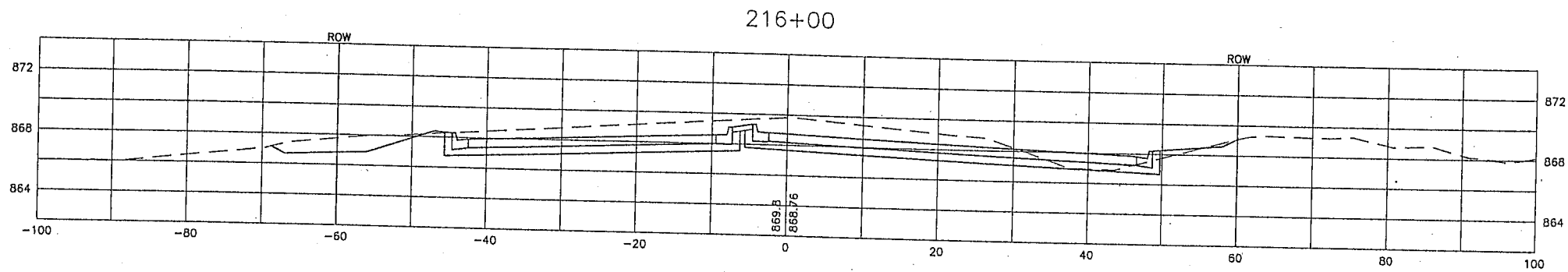


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 CITY OF RAMSEY, MINNESOTA

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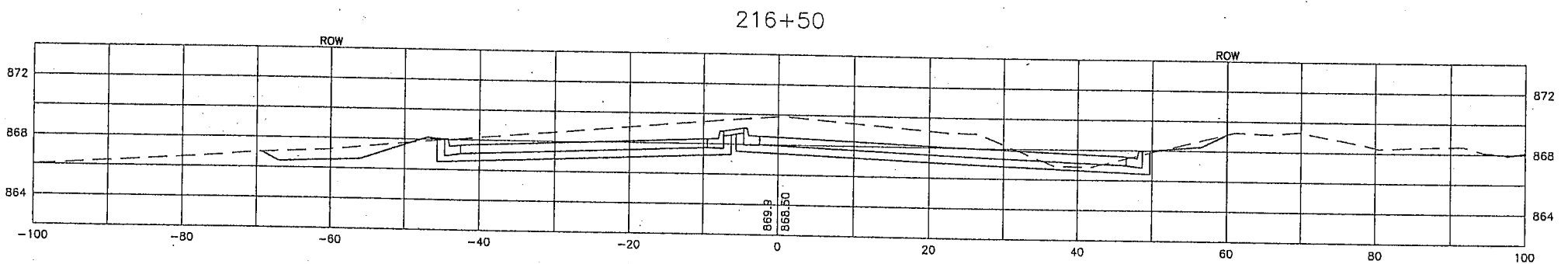
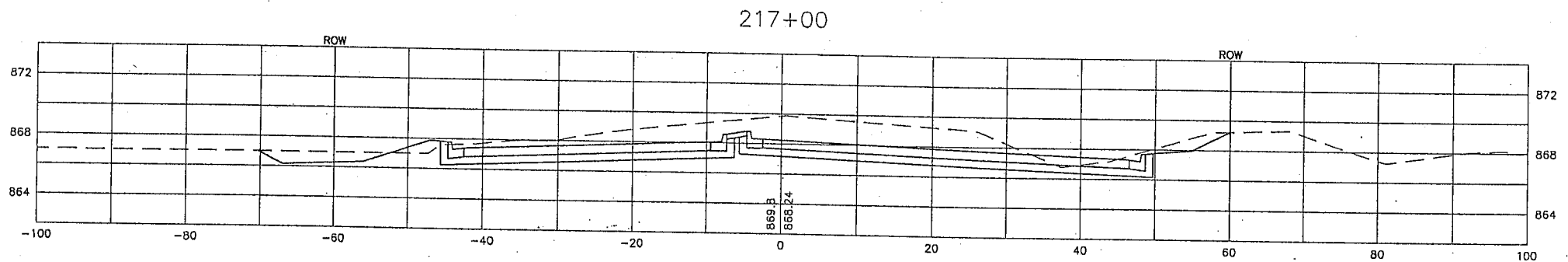
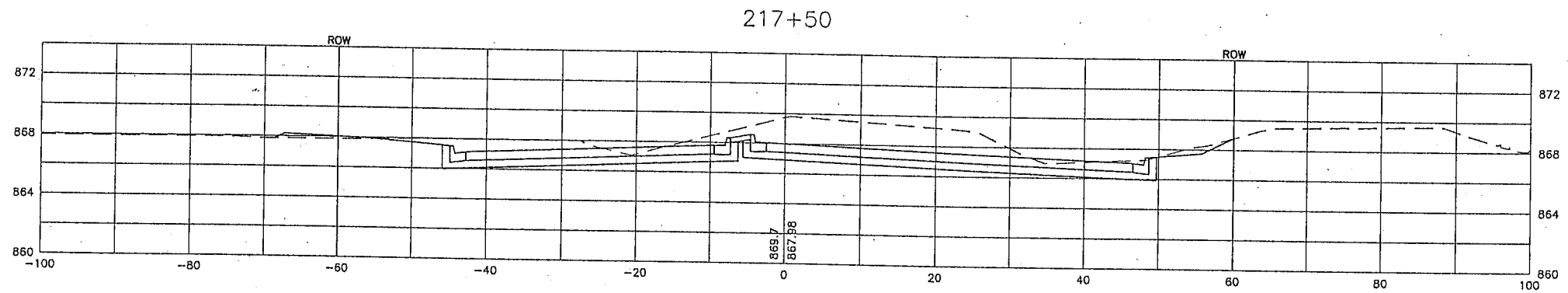
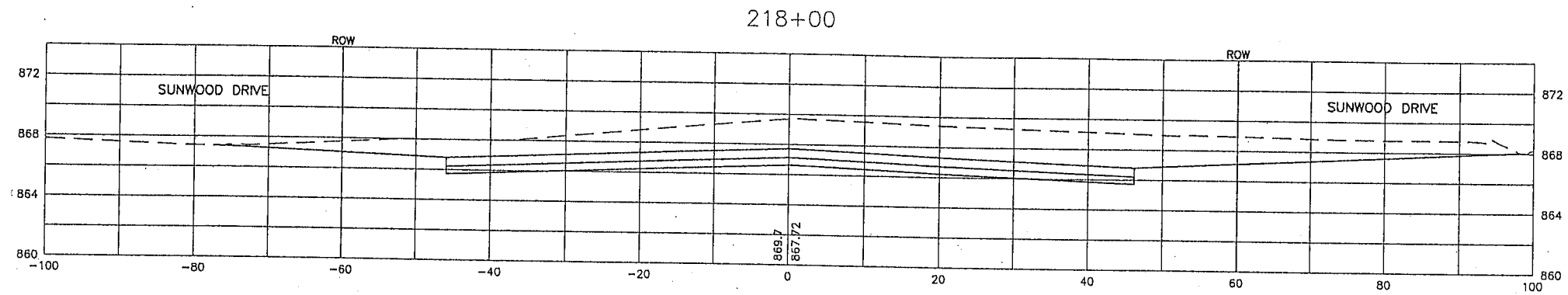


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CITY OF RAMSEY, MINNESOTA

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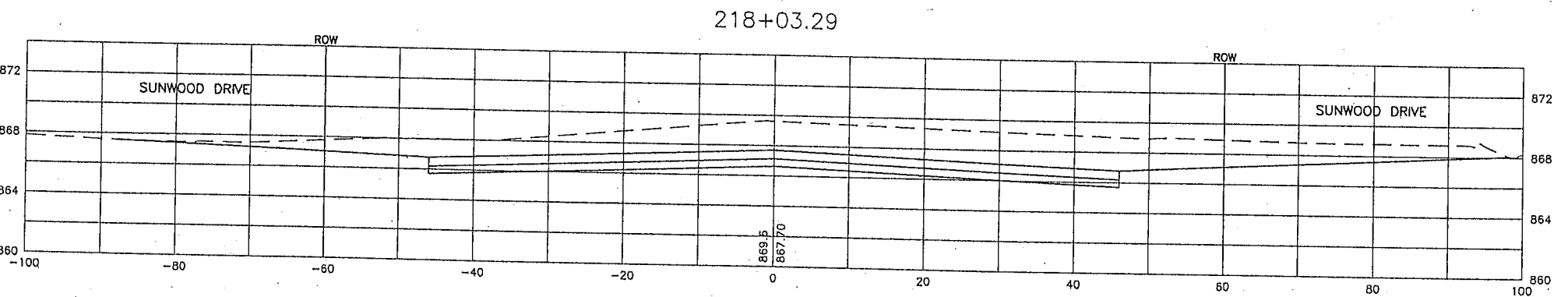
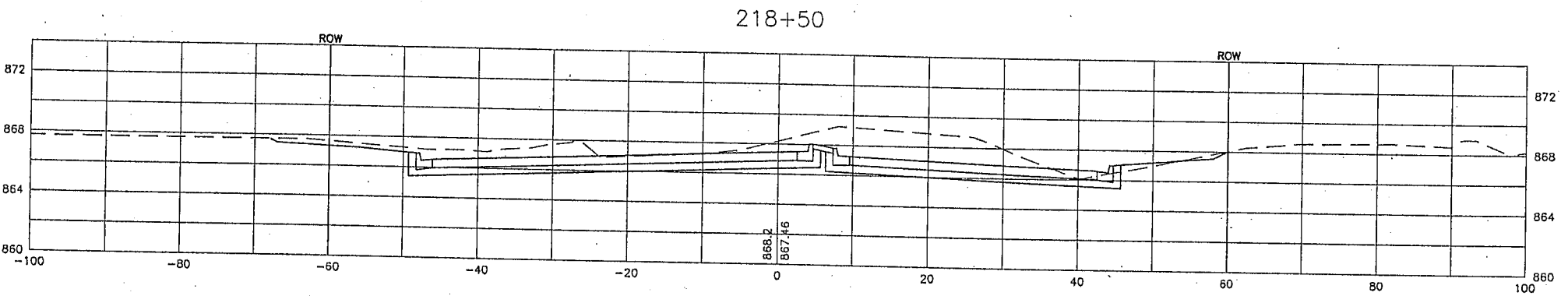
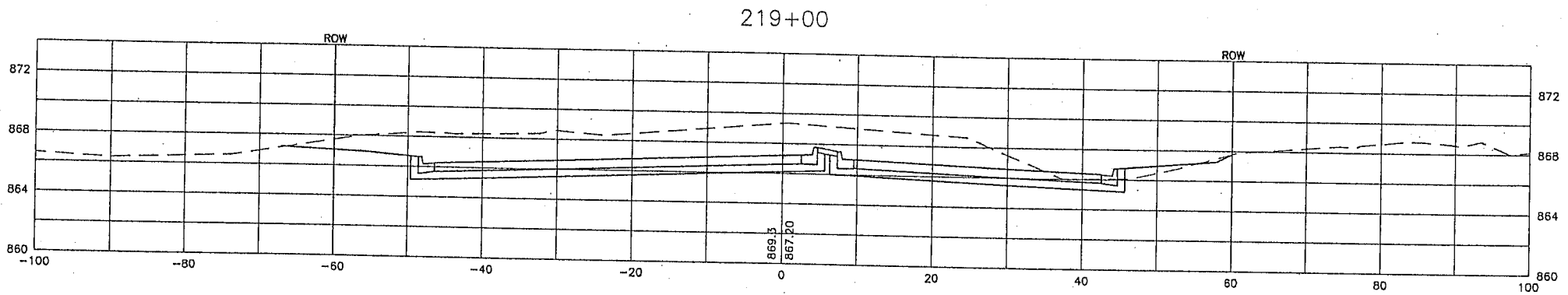
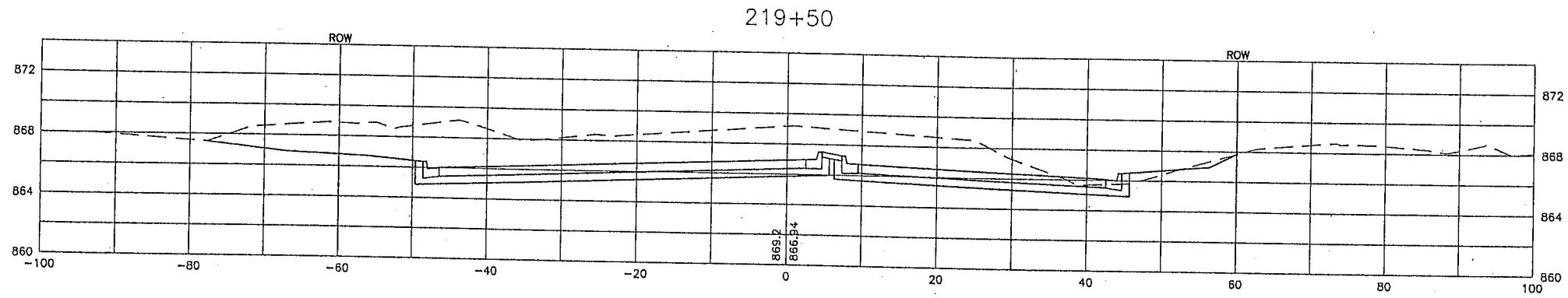


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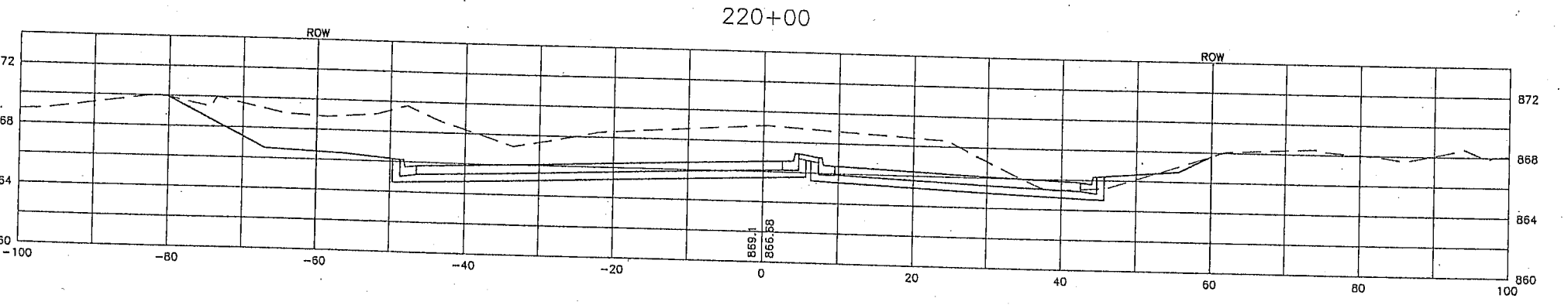
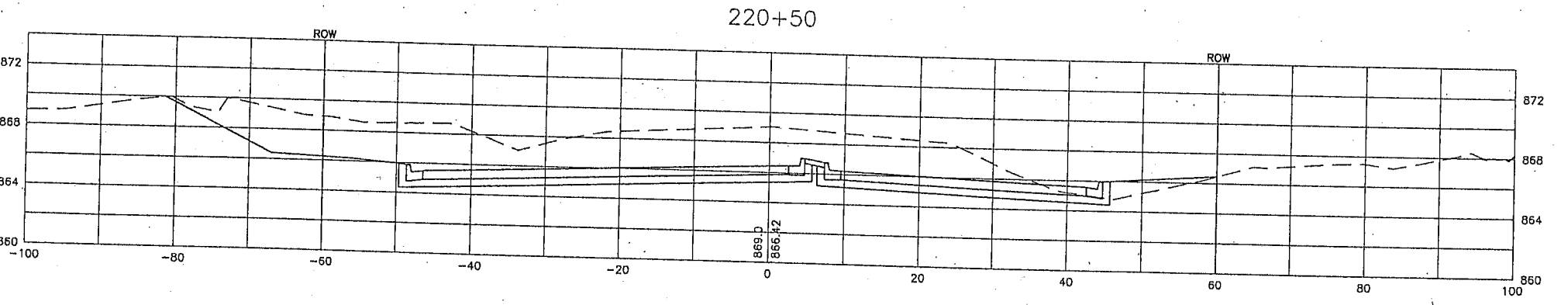
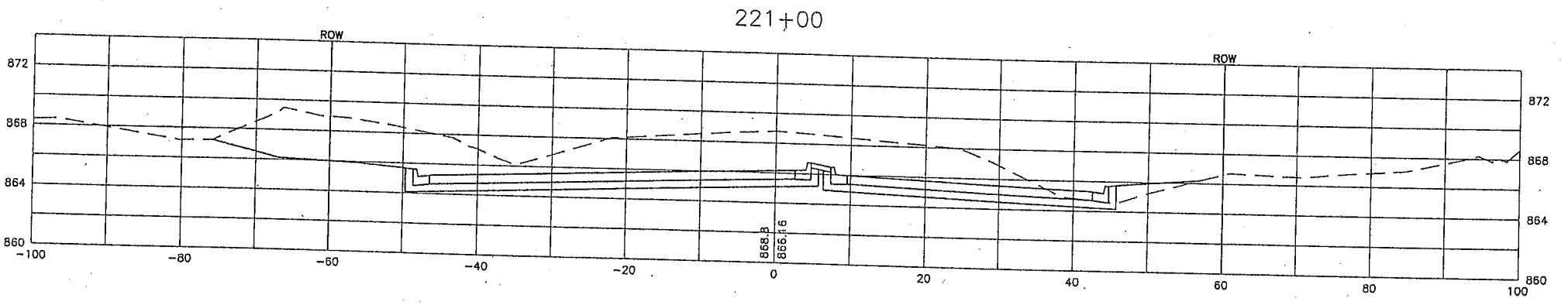
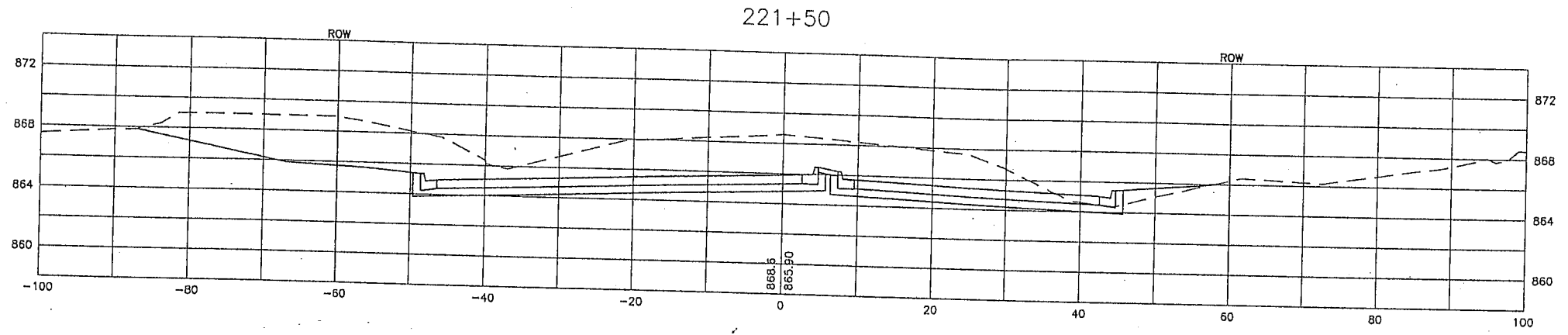


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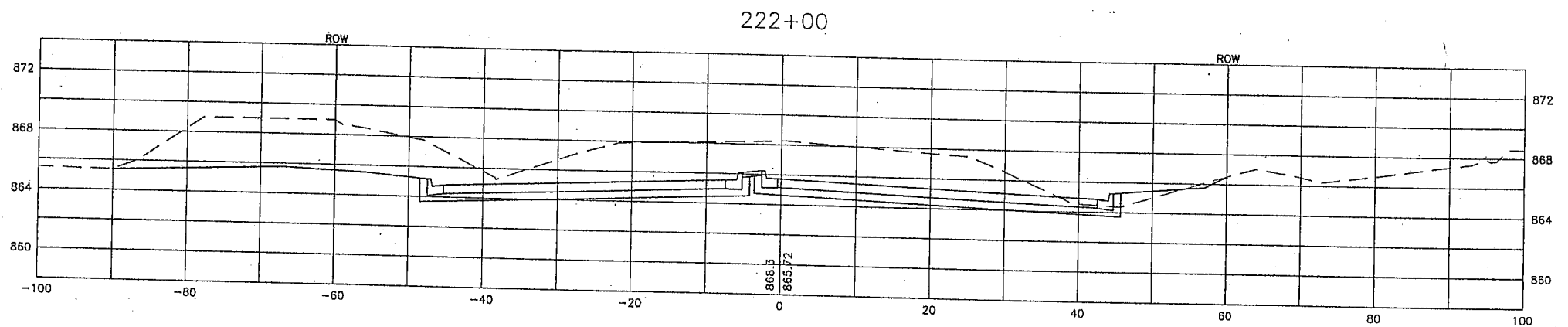
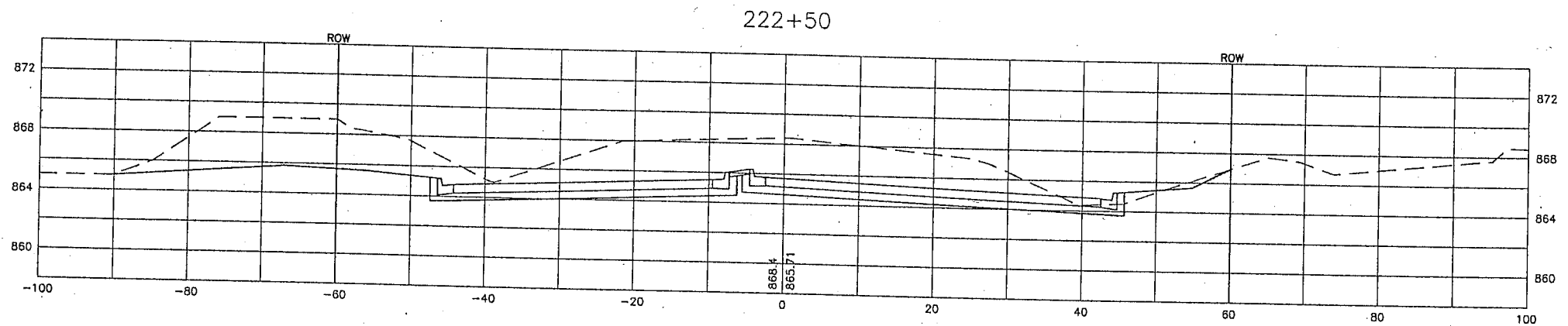
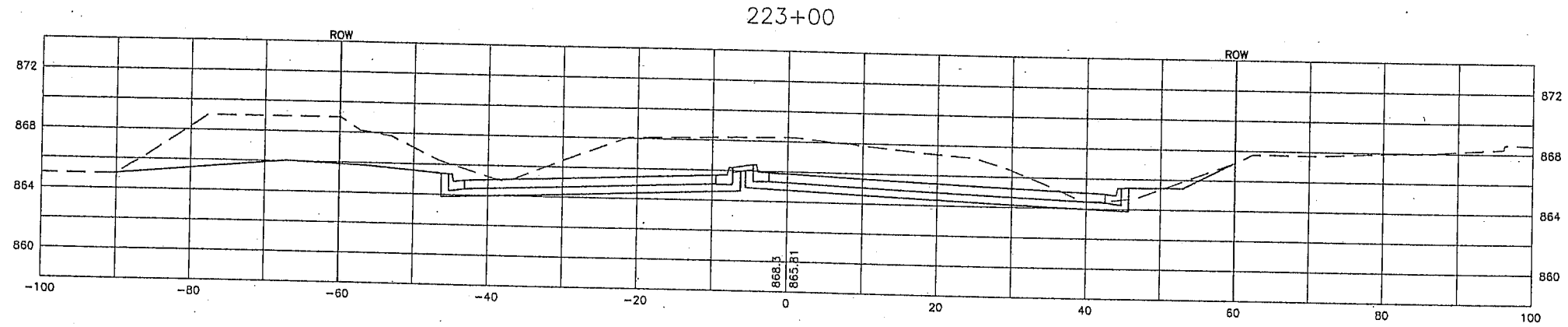


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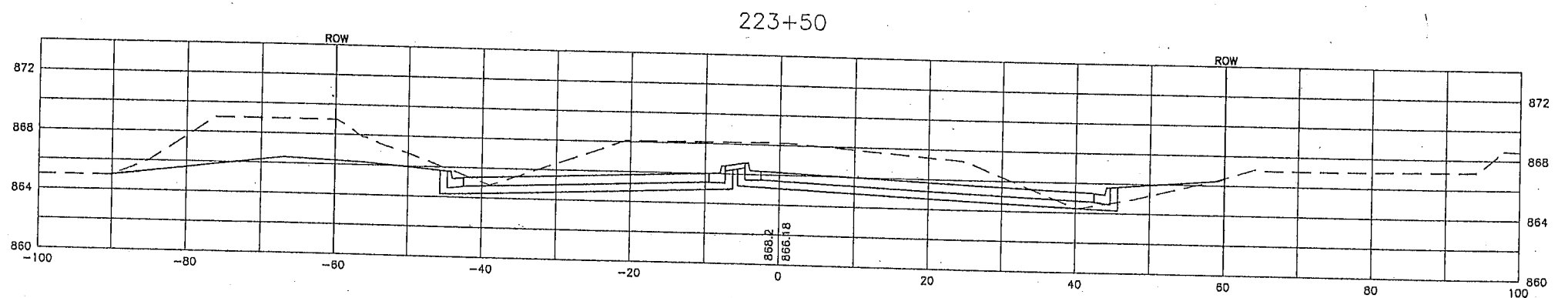
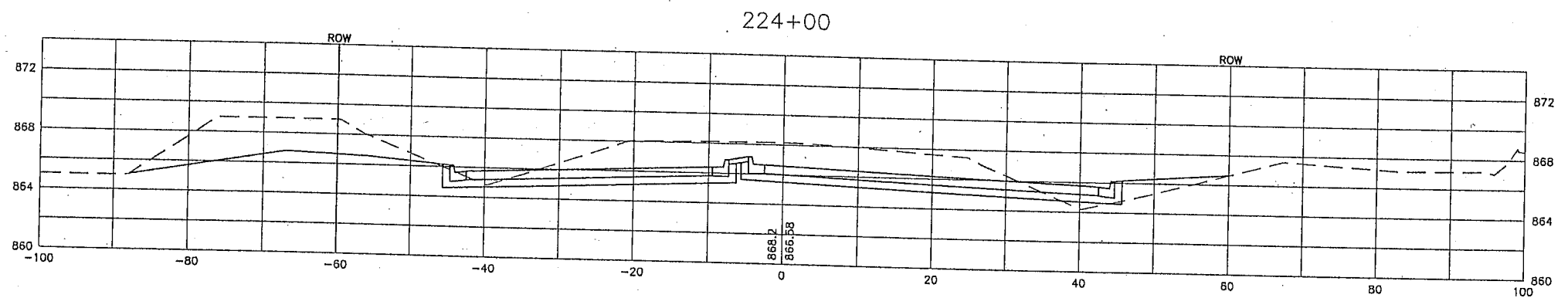
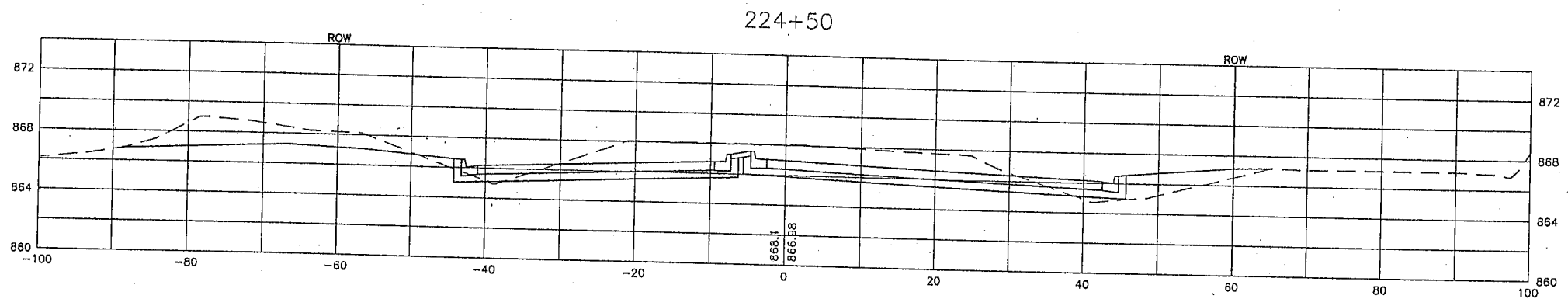
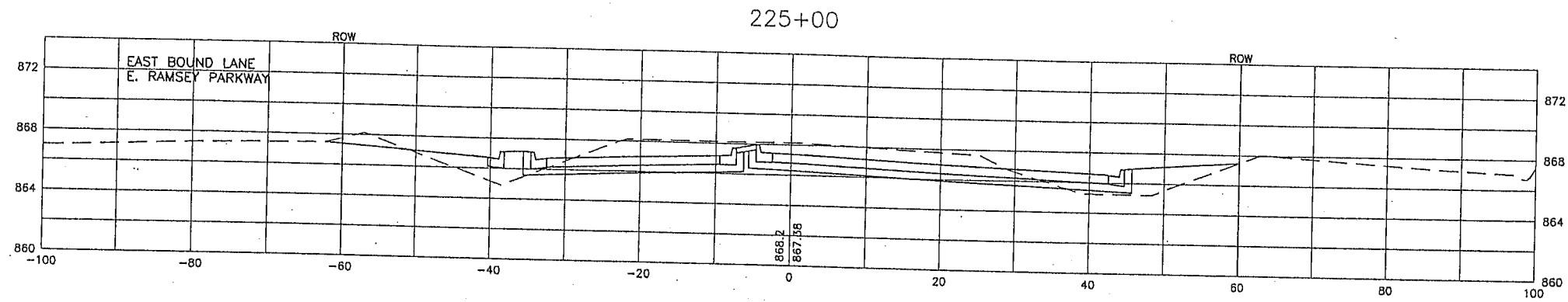


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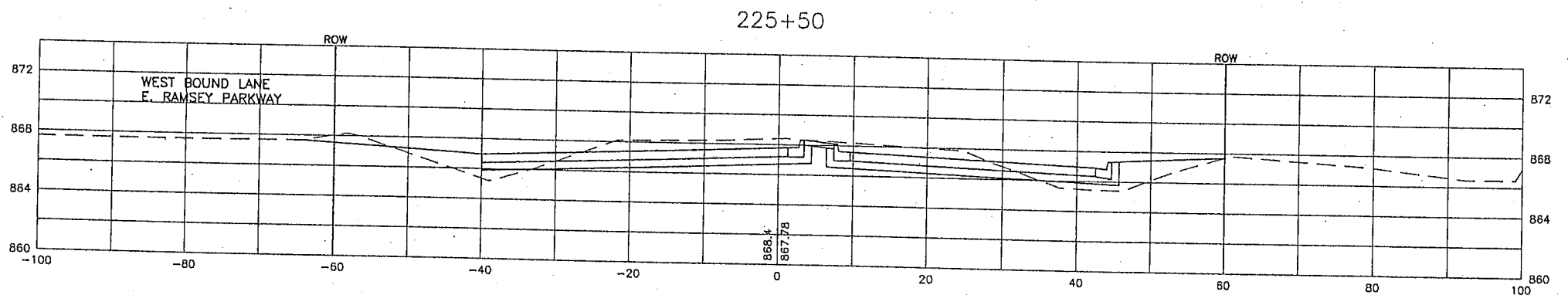
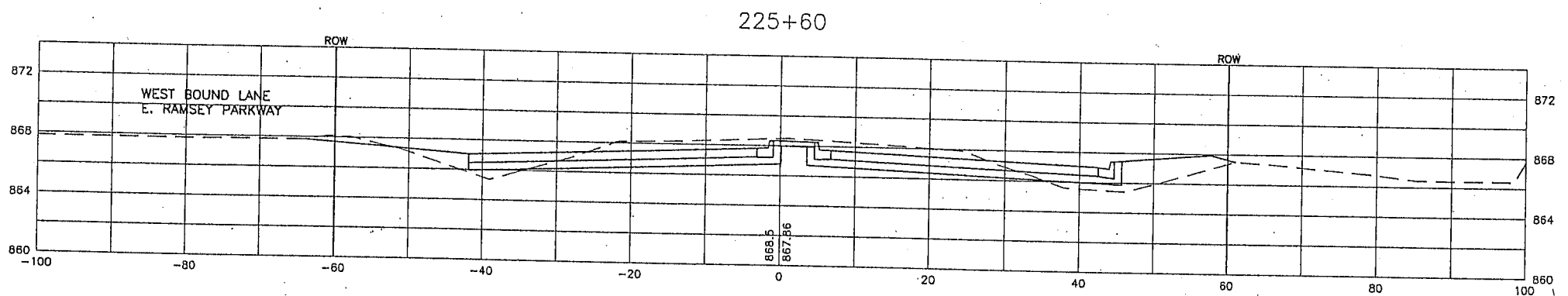
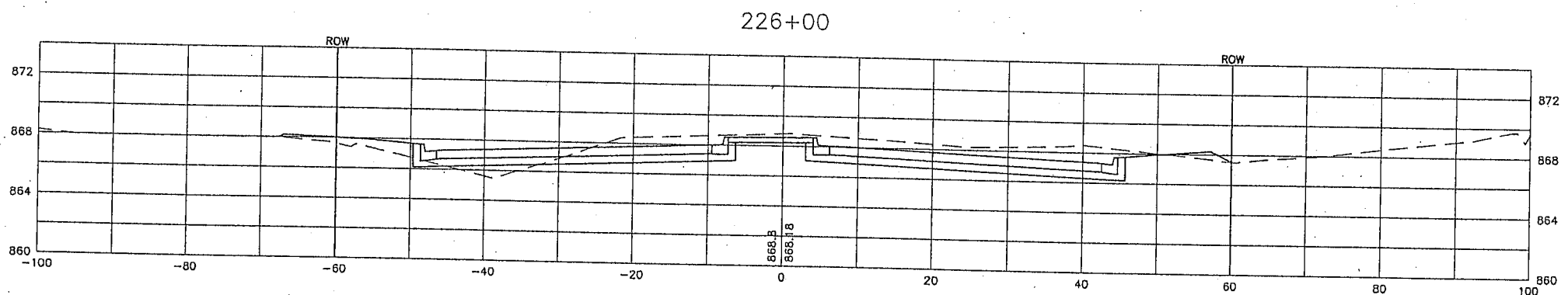
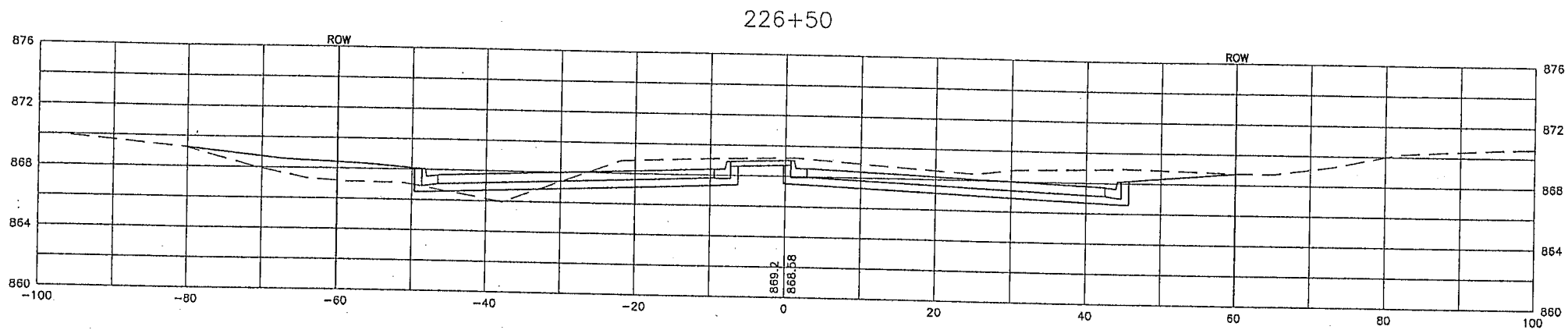
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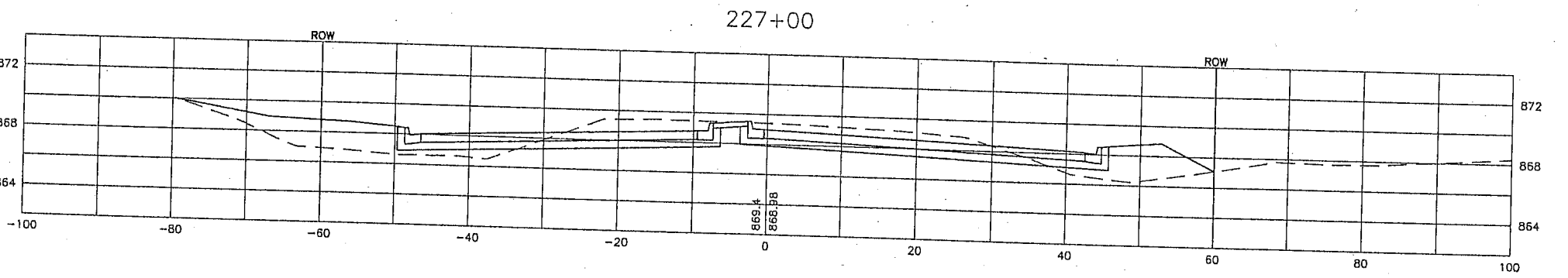
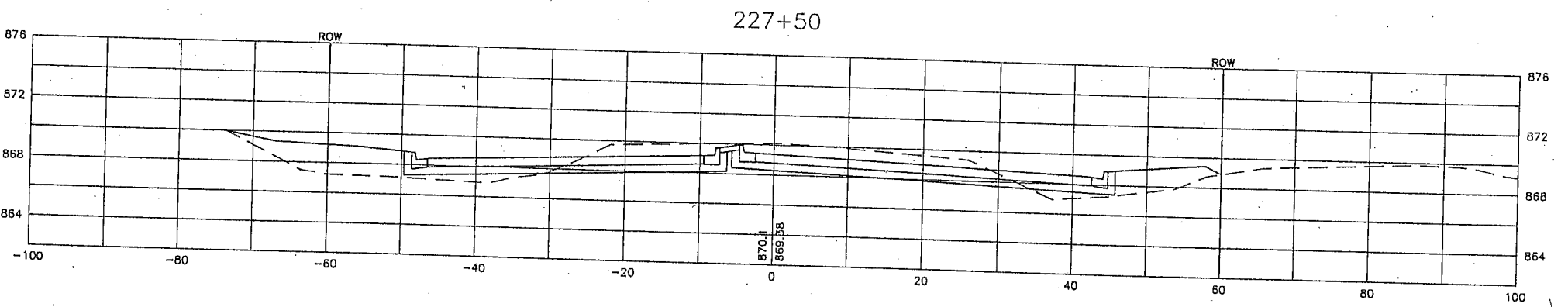
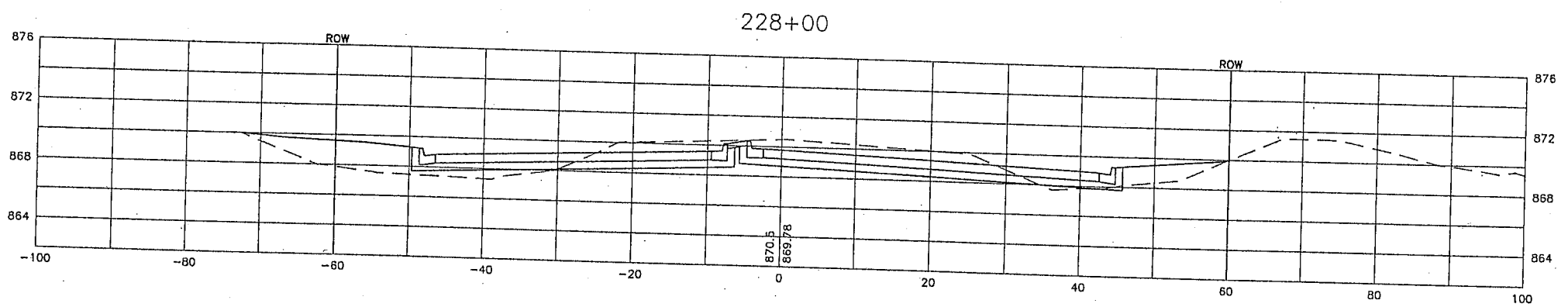
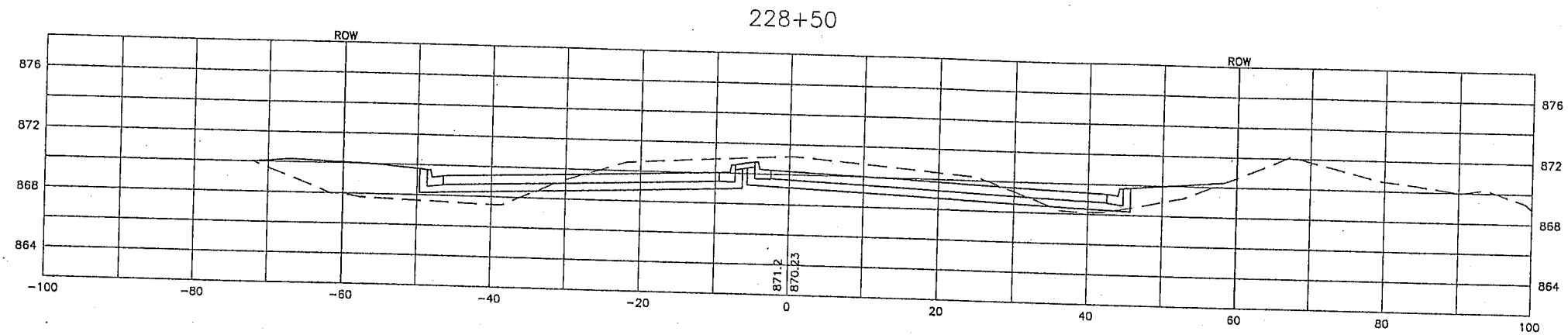


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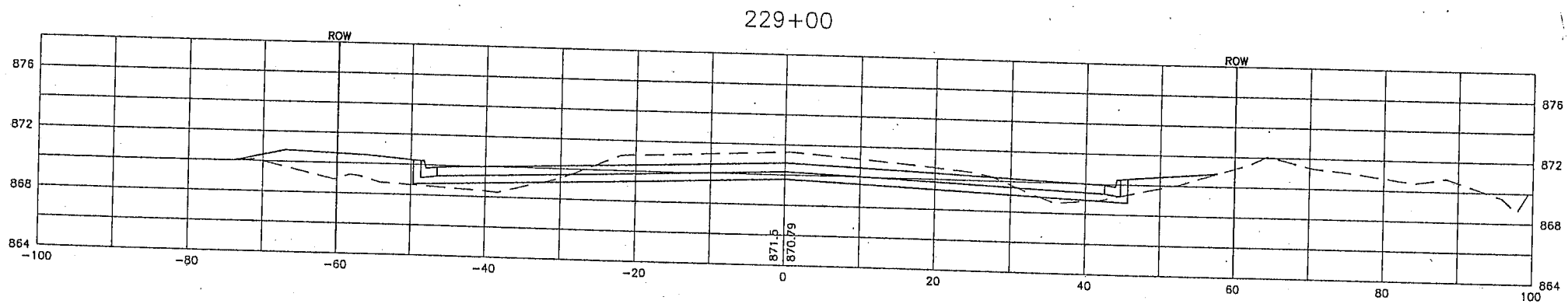
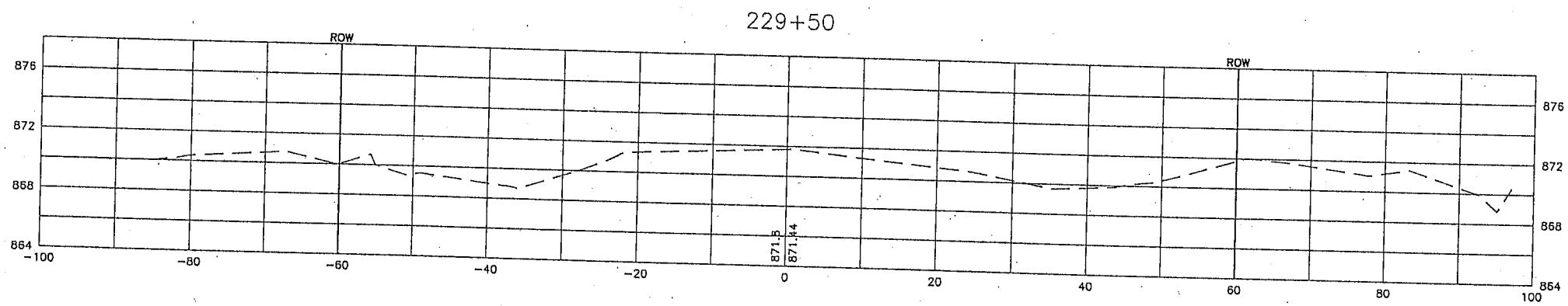
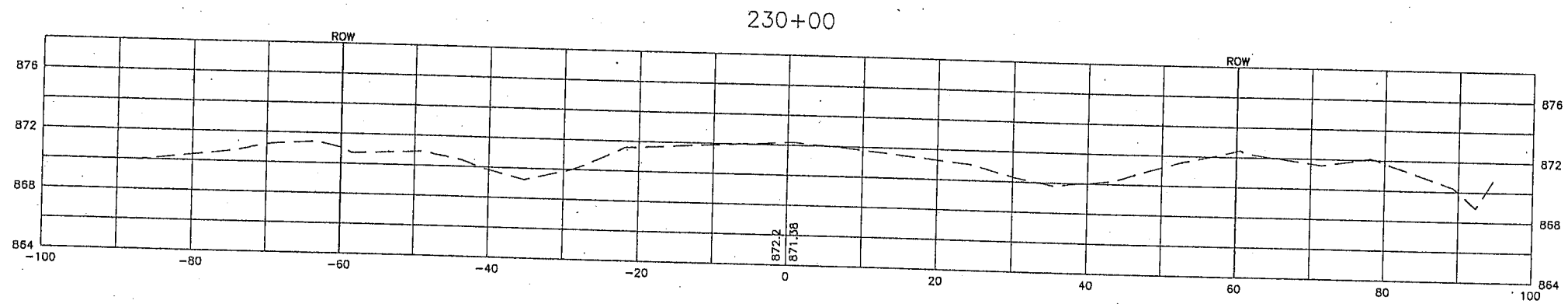


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