

CITY PROJECT 12-28

CONSTRUCTION PLANS FOR RUM RIVER HILLS STORM SEWER REPLACEMENT

CITY OF RAMSEY

GOVERNING SPECIFICATIONS

THE 2005 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.

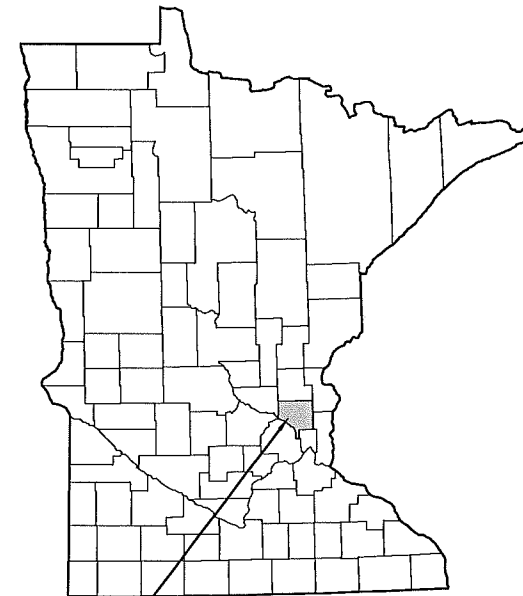
WORK SHALL CONFORM TO THE STANDARD UTILITY SPECIFICATIONS AS PUBLISHED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA, 1999 REVISION.

ALL REQUIREMENTS OF THE PROJECT MANUAL FOR THE 2012 STREET MAINTENANCE PROJECT.

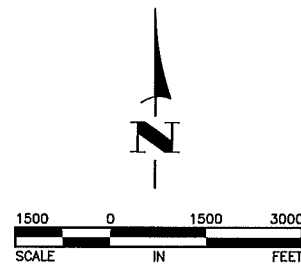
SHEET INDEX

THIS PLAN CONTAINS 8 SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	DETAILS AND ESTIMATED QUANTITIES
3	DETAILS
4	OVERALL SITE PLAN
5-8	STORM SEWER PLAN
X1-X2	DITCH GRADING CROSS SECTIONS



CITY OF RAMSEY
ANOKA COUNTY, MINNESOTA



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.

RONALD J. WAGNER, P.E.
HAKANSON ANDERSON
DESIGN ENGINEER

26052 DATE XX
LIC. NO.

APPROVED

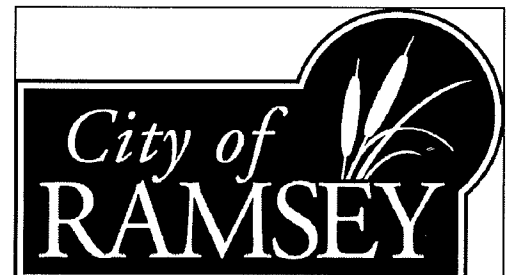
SHANE M. NELSON, P.E.
CITY OF RAMSEY ENGINEER

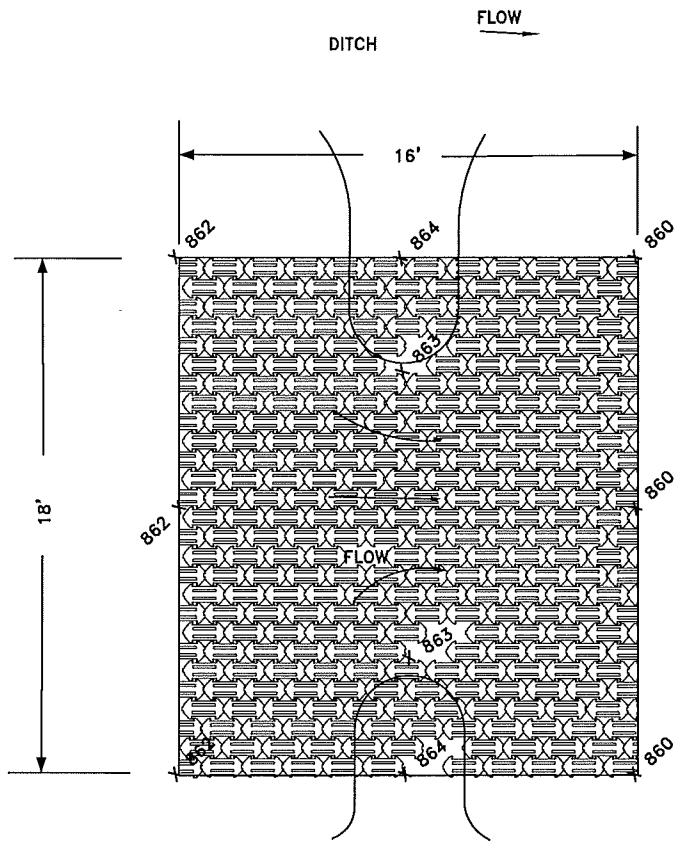
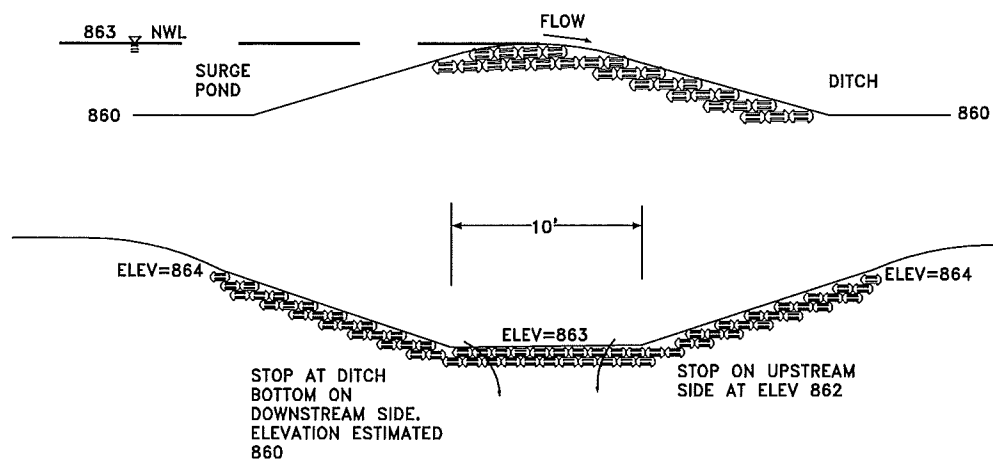
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LIC. NO.

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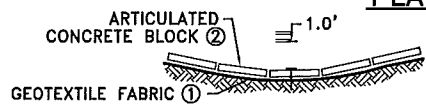
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

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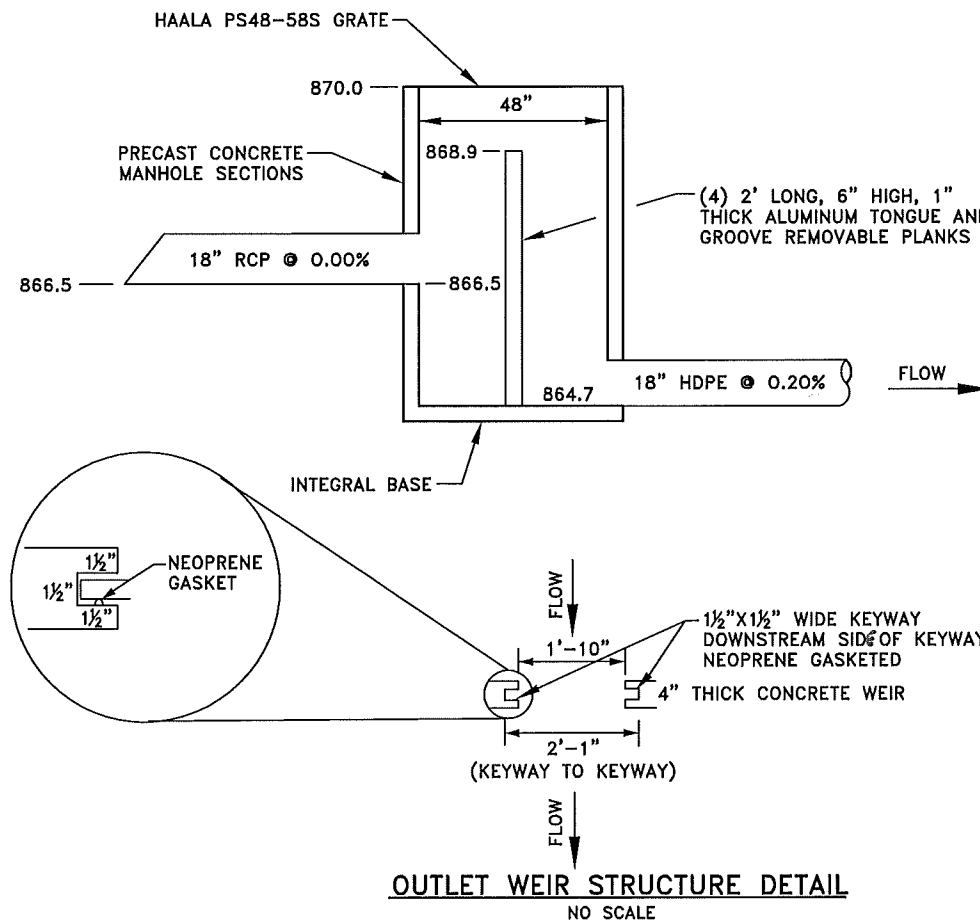


PLAN VIEW

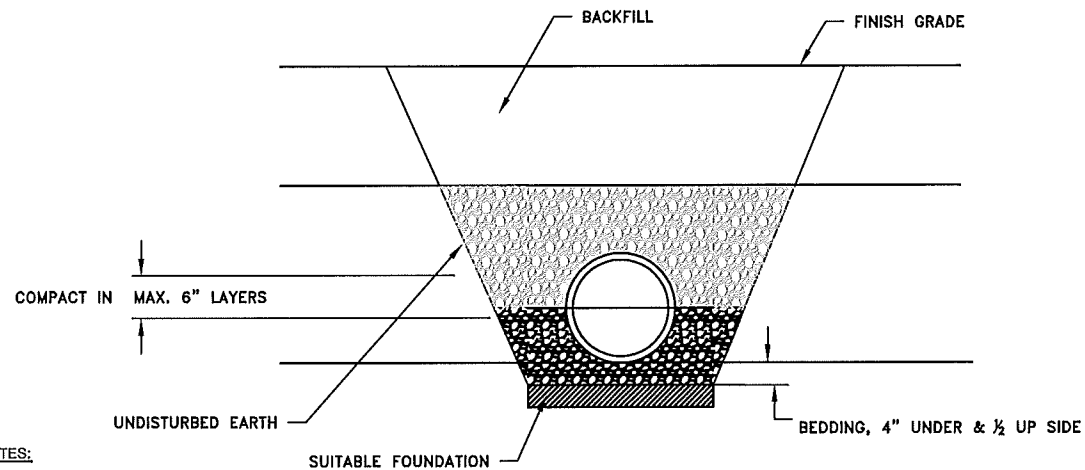


- ARTICULATED CONCRETE BLOCK SHALL BE A HANDPLACED INTERLOCKING CONCRETE BLOCK SYSTEM OR CABLE CONNECTED CONCRETE BLOCK MAT.
- ① GEOTEXTILE FABRIC PER Mn/DOT SPEC. 3733. FABRIC SHALL COVER THE AREA OF THE ARTICULATED BLOCK MAT.
 - ② IF A CABLE CONCRETE SYSTEM IS USED, MULTIPLE MATS MUST BE TIED TOGETHER PER MANUFACTURERS SPEC. AND ALL CABLES PROTRUDING BEYOND THE FINISHED EDGES SHALL BE CUT FLUSH TO THE BLOCK.

SURGE POND OVERFLOW DETAIL
NO SCALE



OUTLET WEIR STRUCTURE DETAIL
NO SCALE



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION
3. **FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. **BEDDING:** SUITABLE MATERIAL SHALL BE CLASS III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" UNDER THE PIPE.

HDPE PIPE INSTALLATION DETAIL
NO SCALE

ESTIMATED QUANTITIES

Schedule "A" - Removals and General Construction

Item No.	Description	Unit	Total Estimated Quantity
1	MOBILIZATION	LUMP SUM	1
2	CLEARING & GRUBBING (SEE NOTES)	LUMP SUM	1
3	COMMON EXCAVATION	CU YD	500
4	DITCH CLEAN (ROCK SLOPE DIRT BOTTOM)	LIN FT	550
5	DITCH CLEAN (ROCK BOTTOM)	LIN FT	200
6	DITCH CLEAN (DIRT BOTTOM & SLOPES W/SMALL TREES)	LIN FT	300
7	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	78
8	REMOVE BITUMINOUS PAVEMENT	SQ FT	2,386
9	REMOVE MANHOLE OR CATCH BASIN	EACH	1
10	REMOVE 15" HDPE PIPE	LIN FT	50
11	REMOVE 12" HDPE PIPE	LIN FT	430
12	REMOVE 15" CM PIPE	LIN FT	69
13	AGGREGATE BASE CLASS 5	TON	65
14	TYPE LV2350B WEARING COURSE MIXTURE	SQ FT	2,386
15	SOD (FAIRWAYS)	SQ YD	386

Schedule "B" - Storm Sewer

Item No.	Description	Unit	Total Estimated Quantity
16	F&I 12" HDPE APRON	EACH	2
17	F&I 12" HDPE PIPE	LIN FT	32
18	F&I 15" HDPE APRON	EACH	6
19	F&I 15" HDPE PIPE	LIN FT	196
20	F&I 18" HDPE APRON	EACH	11
21	F&I 18" HDPE PIPE	LIN FT	1,052
22	F&I 24" HDPE APRON	EACH	12
23	F&I 24" HDPE PIPE	LIN FT	150
24	F&I 18" RC APRON	EACH	1
25	F&I 18" RC PIPE	LIN FT	9
26	CONSTRUCT WEIR MANHOLE	EACH	1
27	CONSTRUCT STORM MANHOLE	EACH	1
28	OVERFLOW-ARTICULATED CONCRETE BLOCK MAT	SQ YD	50
29	LOWER METAL DAM OVERFLOW	EACH	1
30	CONSTRUCT BULKHEAD	EACH	1

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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.

RONALD J. WAGNER, P.E.
Date 8/22/12 Lic. No. 26052

DESIGNED BY: RJW
DRAWN BY: JAP
CHECKED BY: TAE

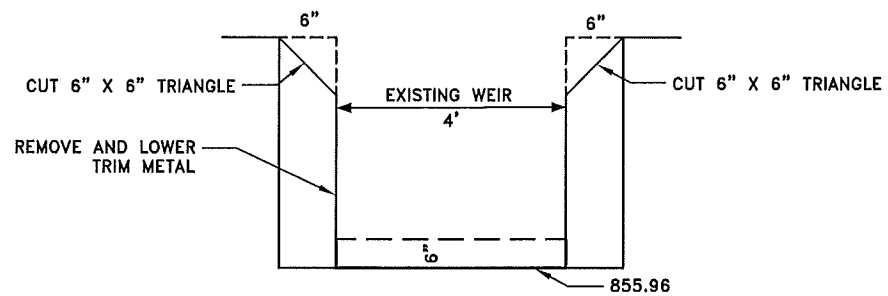


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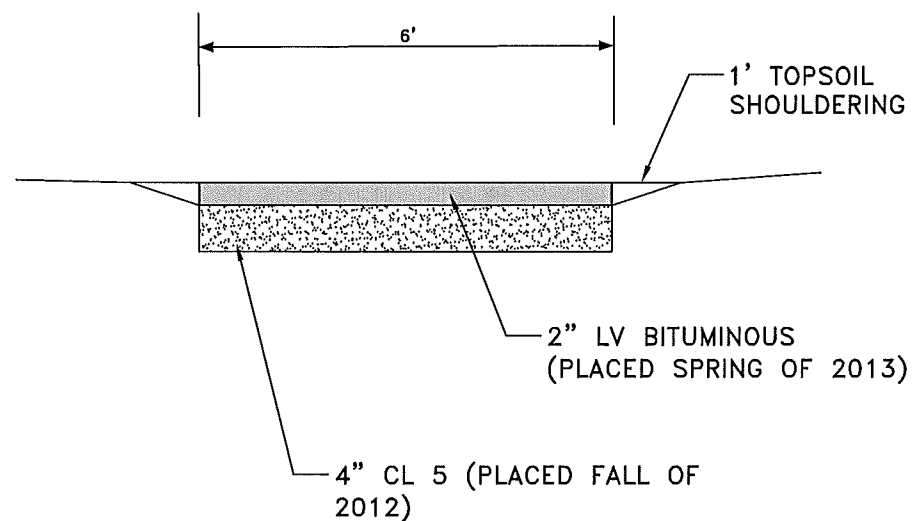
DETAILS AND ESTIMATED QUANTITIES
CITY PROJECT 12-28
RUM RIVER HILLS STORM SEWER REPLACEMENT
CITY OF RAMSEY, MINNESOTA

SHEET 2 OF 8 SHEETS
RA433



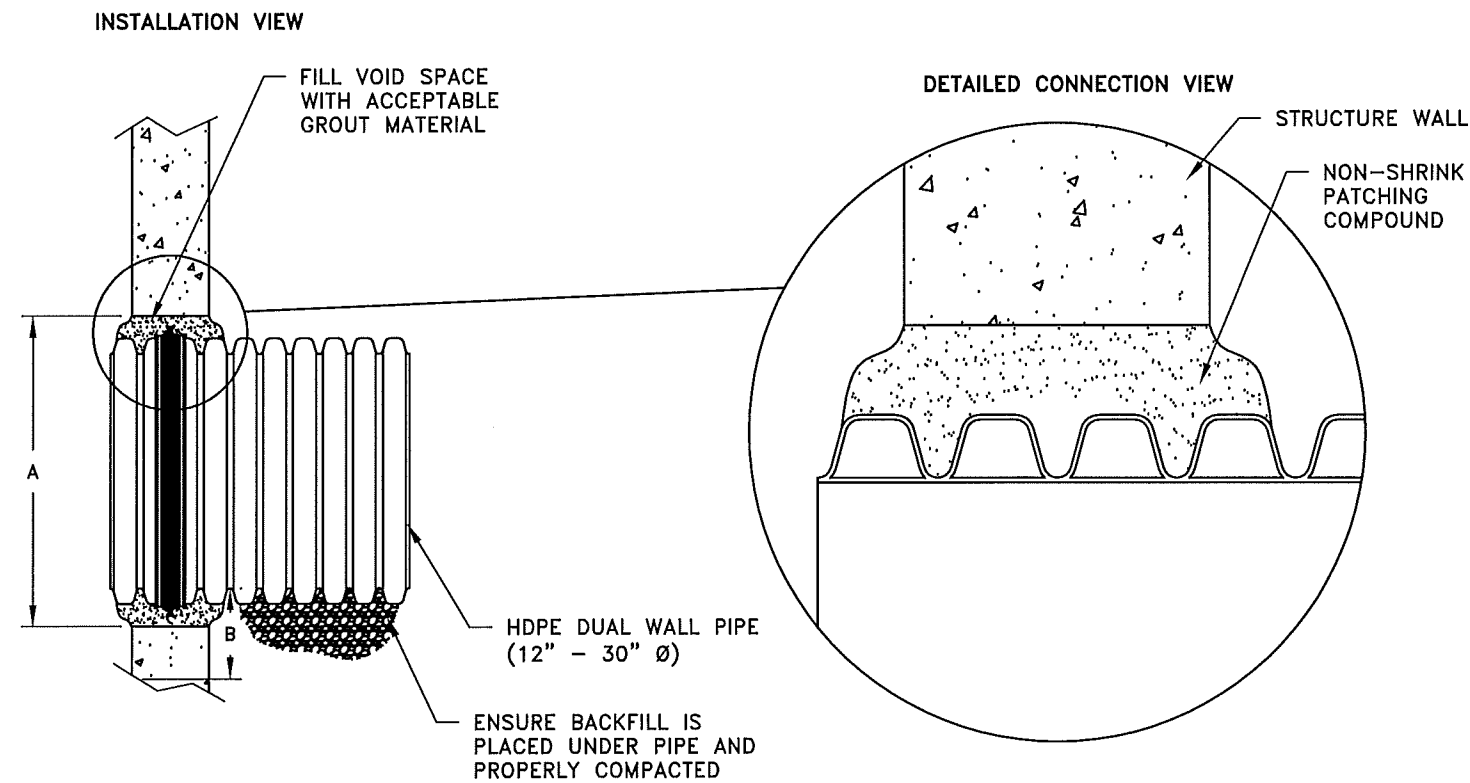
NOTE: PAINT ALL BARE METAL TO MATCH EXISTING.

WEIR STRUCTURE EXPANSION
NO SCALE



PATH DETAIL
NO SCALE

12"-60" HDPE STORM WATER GROUDED MANHOLE CONNECTION (DUAL WALL)



PIPE SIZE (IN)	PIPE OD (IN)	"A" MIN. HOLE Ø (IN)	"B" MIN. DISTANCE PIPE INVERT TO STRUCTURE INVERT (IN)
12	14.5	19.50	3.7
15	17.6	23.00	4.0
18	21.2	26.50	4.2
24	27.8	33.25	4.5
30	35.1	40.50	5.2
36	41.1	47.00	5.5
42	47.7	53.00	5.7
48	53.6	59.00	5.7
60	66.3	72.00	6.4

GROUDED WATERSTOP MANHOLE CONNECTION
NO SCALE

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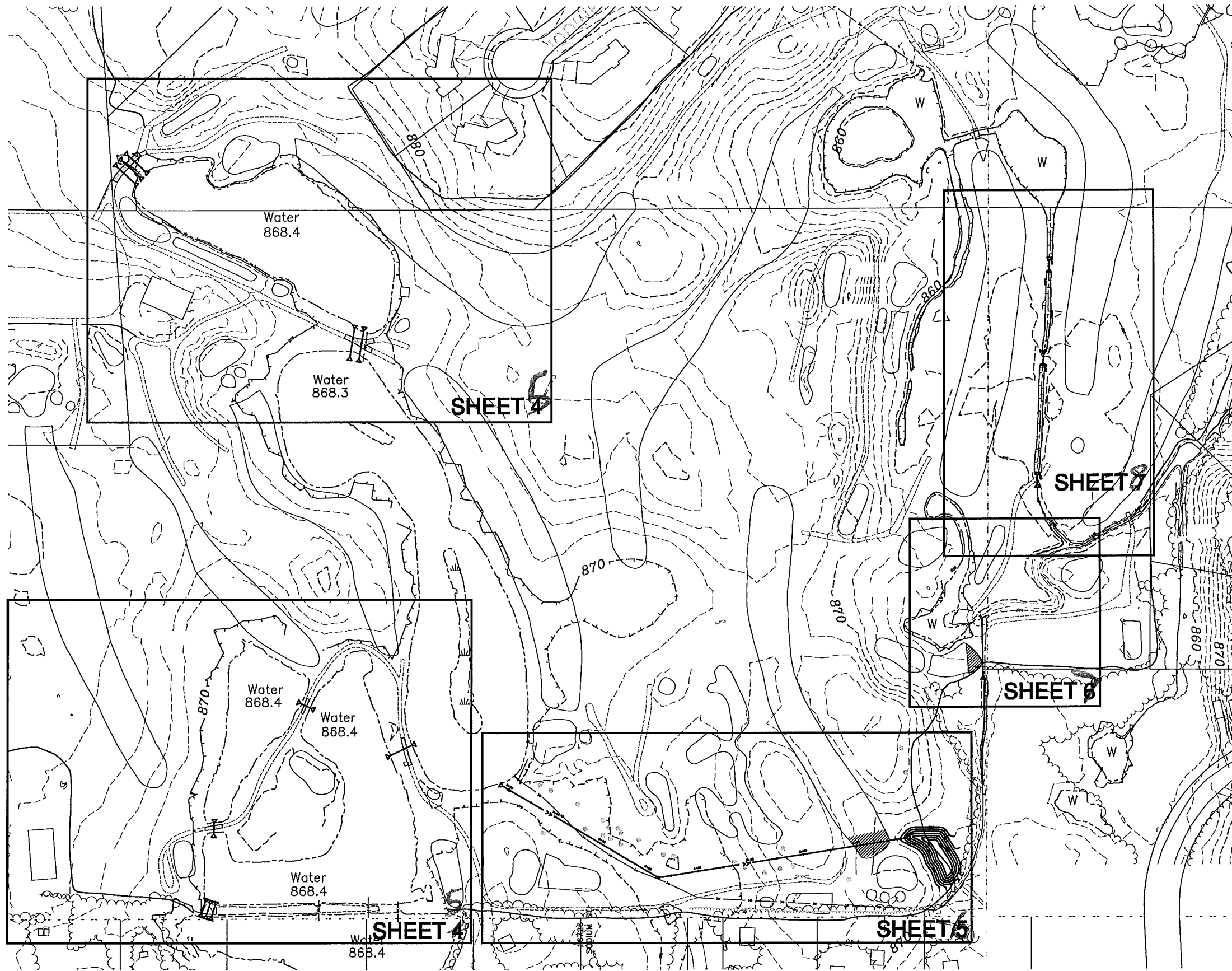


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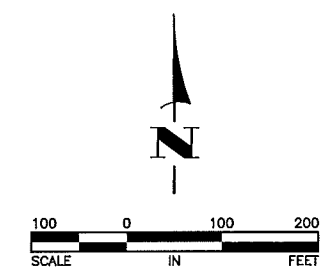


DETAILS
 CITY PROJECT 12-28
 RUM RIVER HILLS STORM SEWER REPLACEMENT
 CITY OF RAMSEY, MINNESOTA

SHEET 3 OF 8 SHEETS
 RA433



- LEGEND**
- 863--- DENOTES EXISTING CONTOUR
 - >->- DENOTES EXISTING STORM SEWER LINE
 - >->- DENOTES PROPOSED STORM SEWER LINE
 - ▷ DENOTES PROPOSED FLARED END SECTION

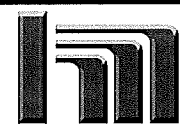


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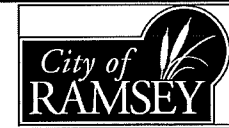
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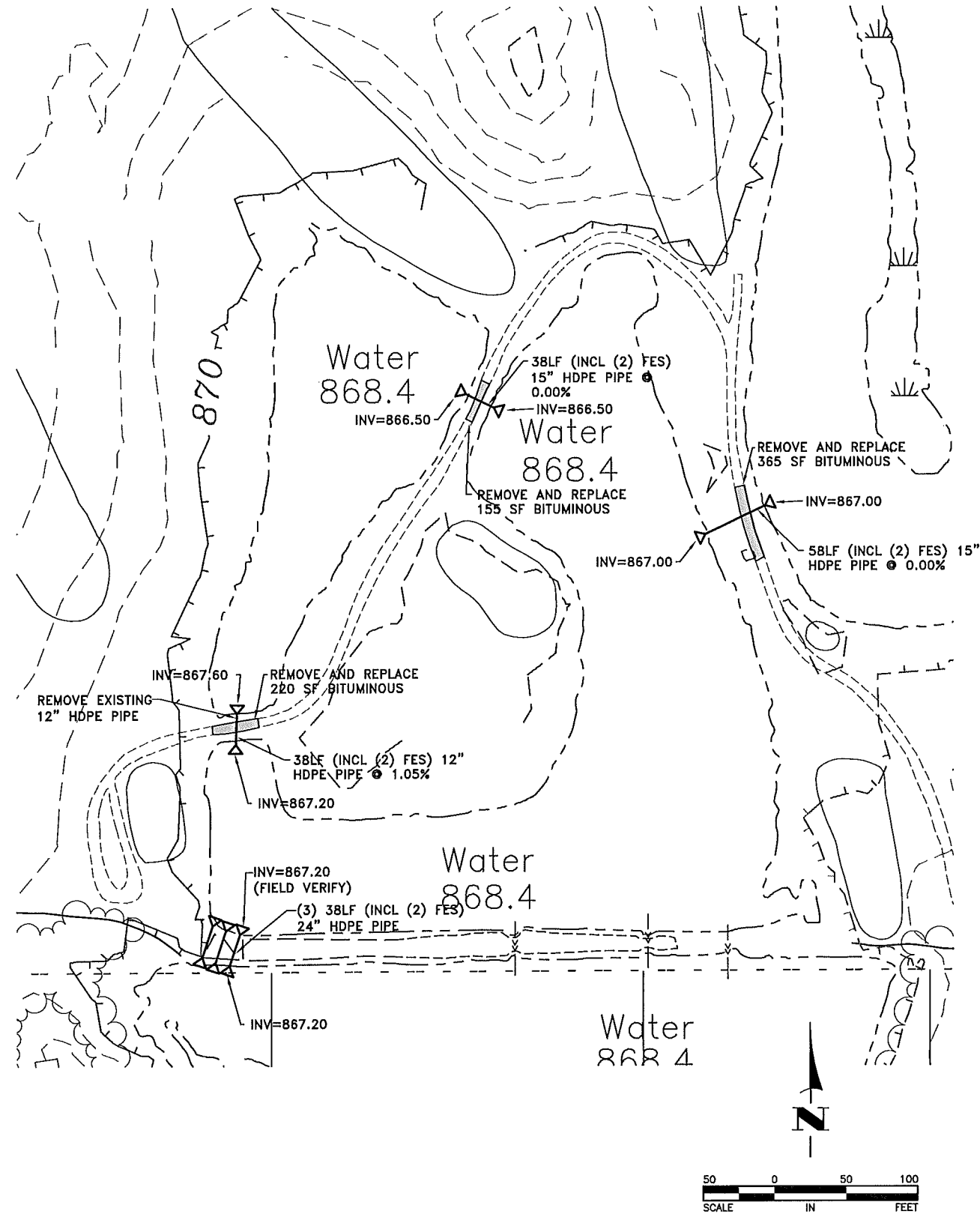
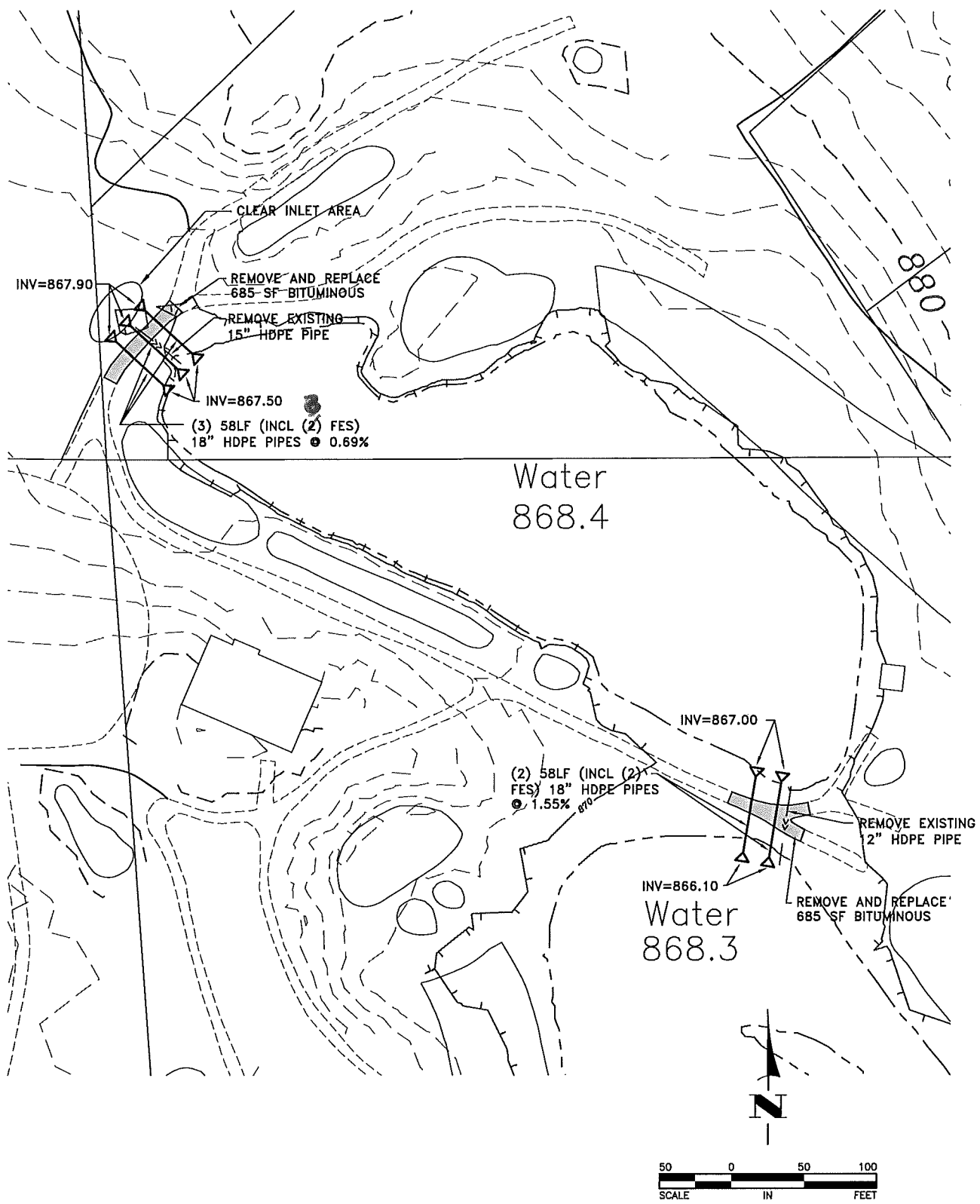


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OVERALL PLAN
 CITY PROJECT 12-28
 RUM RIVER HILLS STORM SEWER REPLACEMENT
 CITY OF RAMSEY, MINNESOTA

SHEET 4 OF 8 SHEETS
 RA433

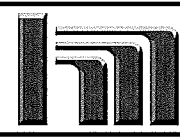


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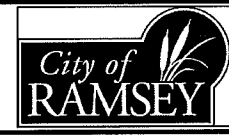
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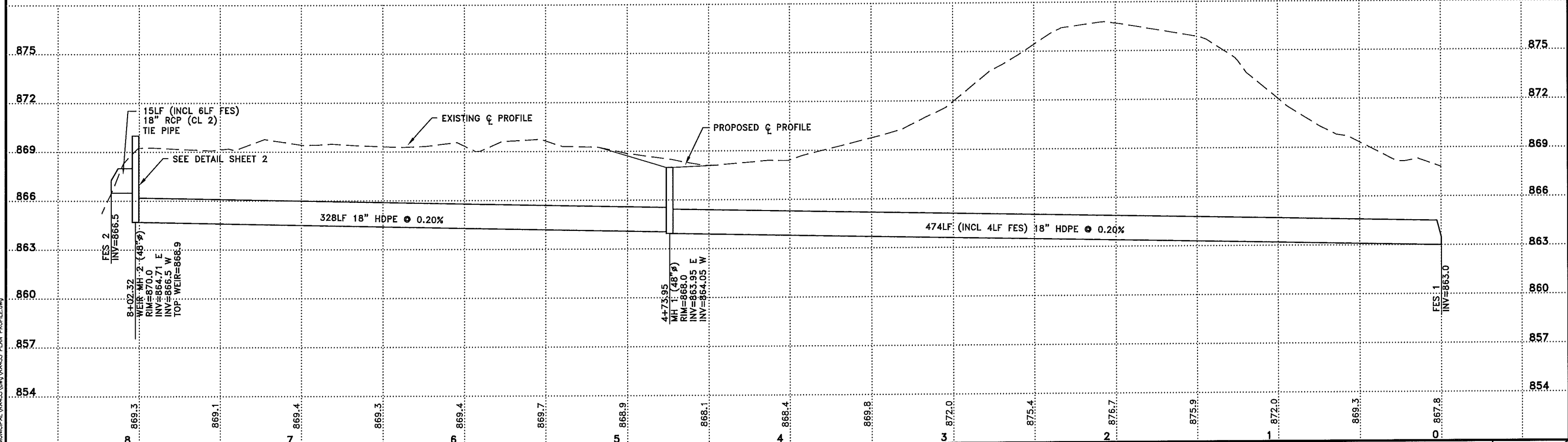
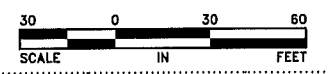
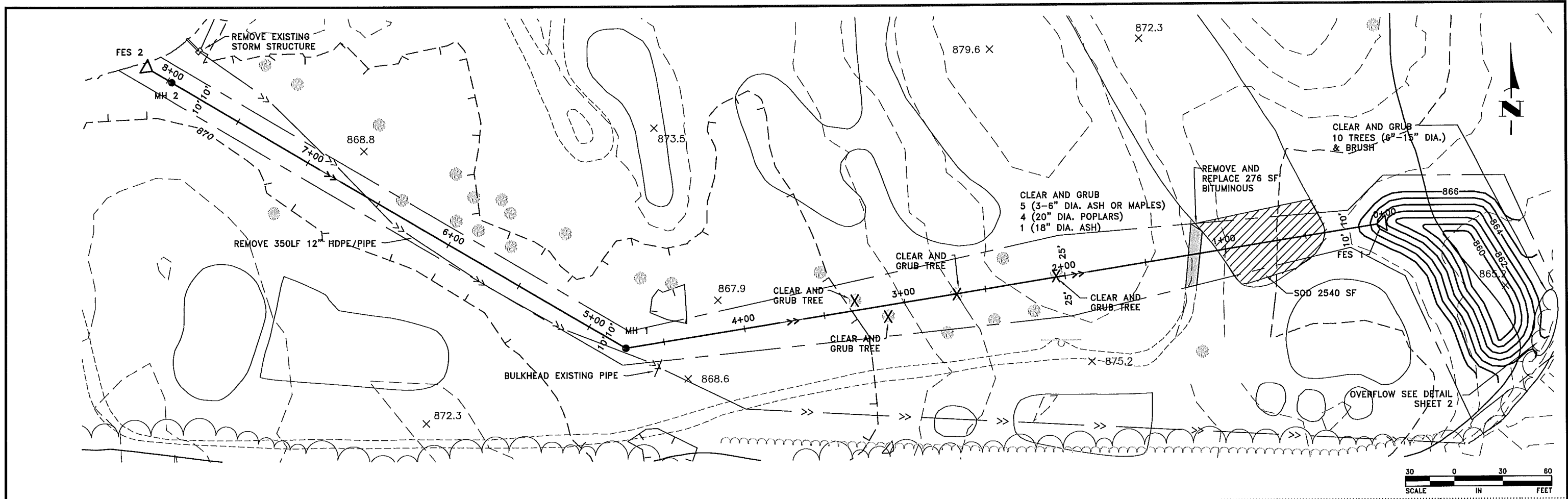


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STORM SEWER PLAN
 CITY PROJECT 12-28
 RUM RIVER HILLS STORM SEWER REPLACEMENT
 CITY OF RAMSEY, MINNESOTA

SHEET 5 OF 8 SHEETS
 RA433



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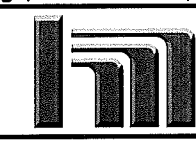
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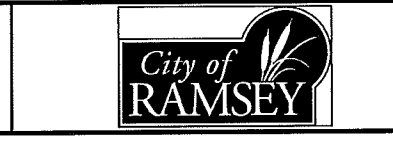
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ROBERT J. WAGNER, P.E.
 Date XX/XX/XX Lic. No. 26052

DESIGNED BY: RJW
 DRAWN BY: DMS
 CHECKED BY: RJW

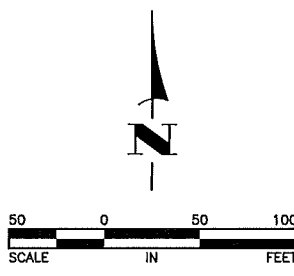
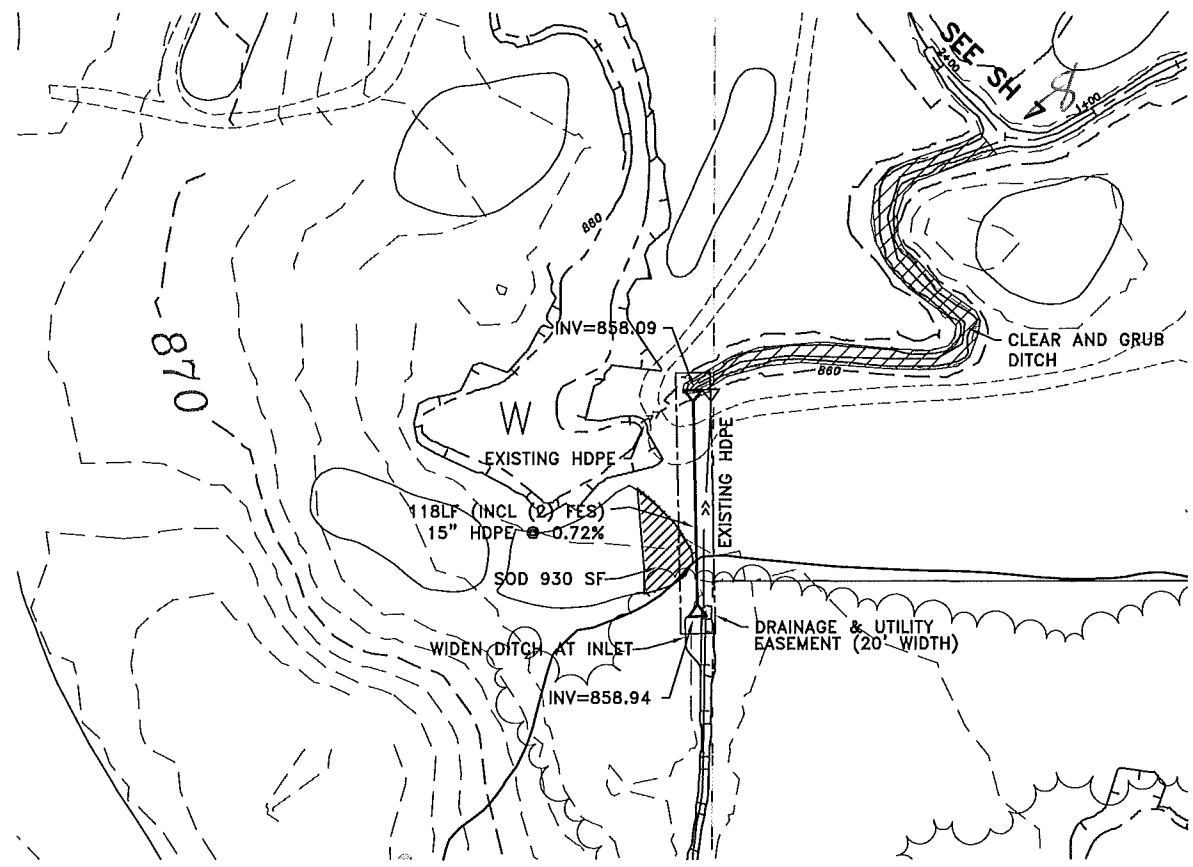


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STORM SEWER REPLACEMENT
 CITY PROJECT 12-28
 RUM RIVER HILLS STORM SEWER REPLACEMENT
 CITY OF RAMSEY, MINNESOTA

SHEET 6 OF 8 SHEETS
 RA433



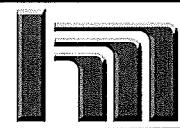
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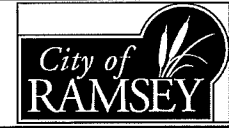
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RONALD J. WAGNER, P.E.
 Date 8/22/12 Lic. No. 26052

DESIGNED BY: **RJW**
 DRAWN BY: **JAP**
 CHECKED BY: **TAE**



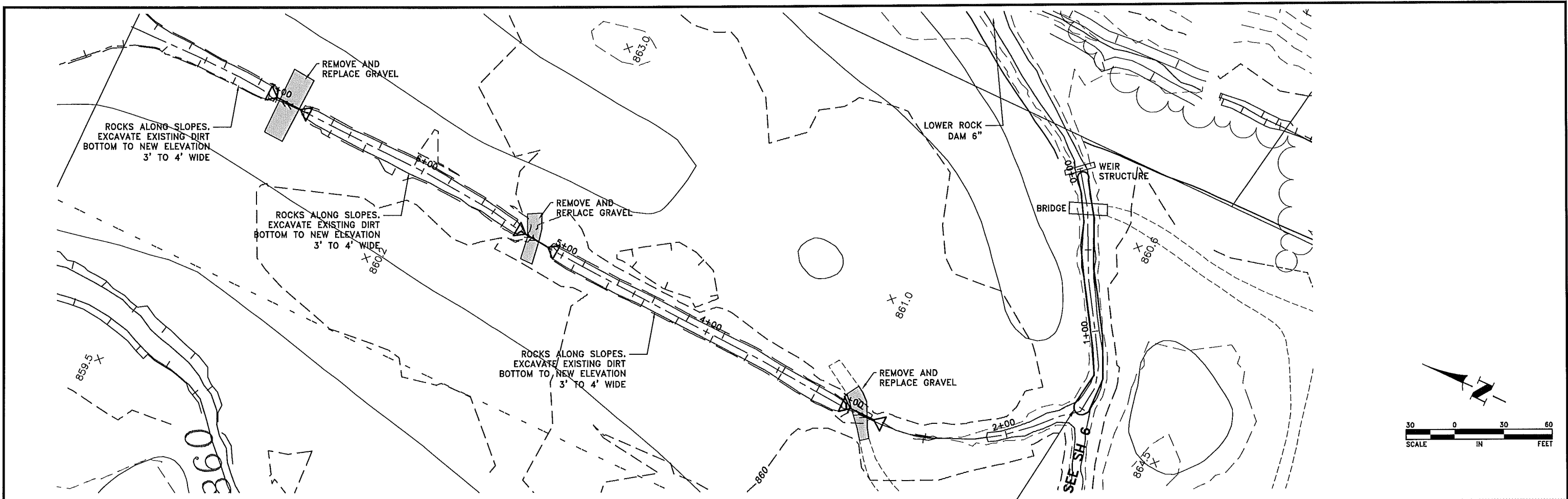
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STORM SEWER PLAN
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CITY OF RAMSEY, MINNESOTA

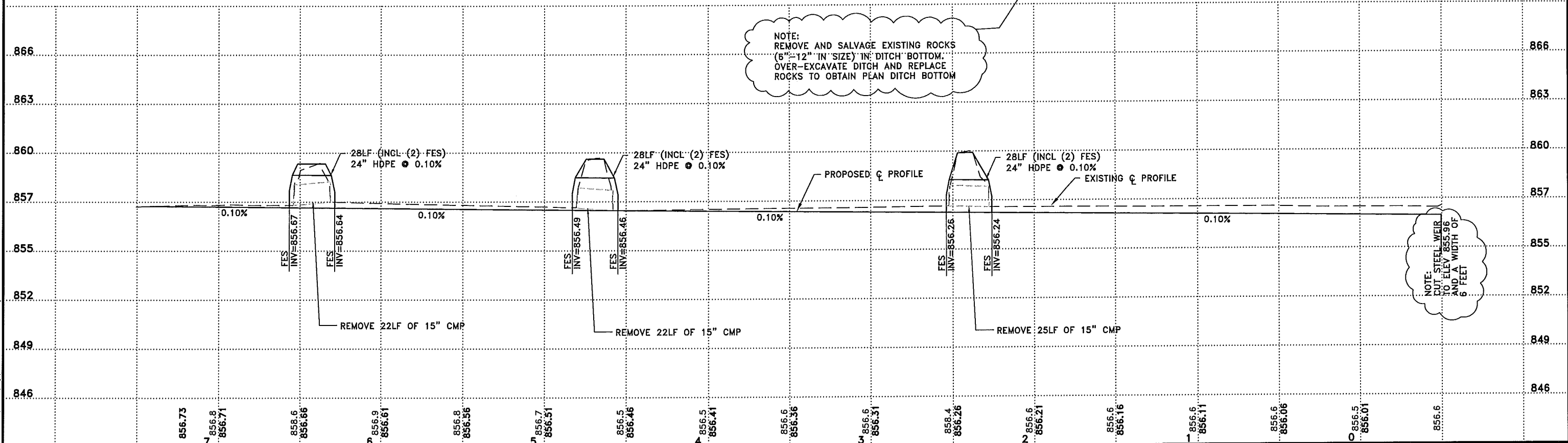
SHEET **7** OF **8** SHEETS

RA433



NOTE:
REMOVE AND SALVAGE EXISTING ROCKS (6"-12" IN SIZE) IN DITCH BOTTOM. OVER-EXCAVATE DITCH AND REPLACE ROCKS TO OBTAIN PLAN DITCH BOTTOM

NOTE:
CUT STEEL WEIR TO ELEV 855.96 AND A WIDTH OF 6 FEET



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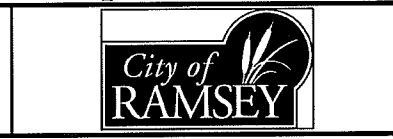
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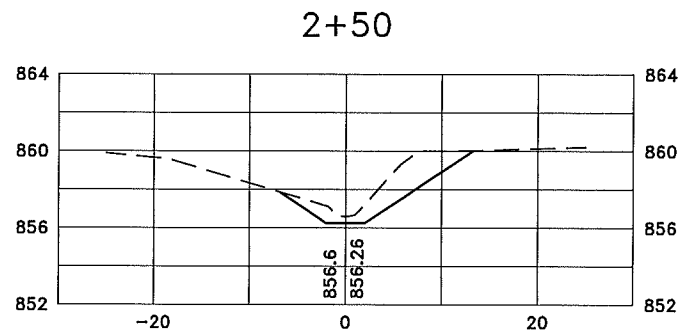
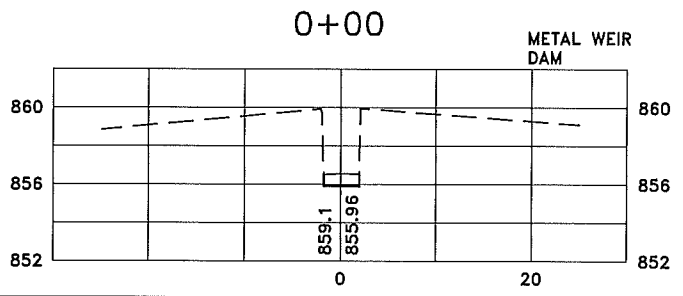
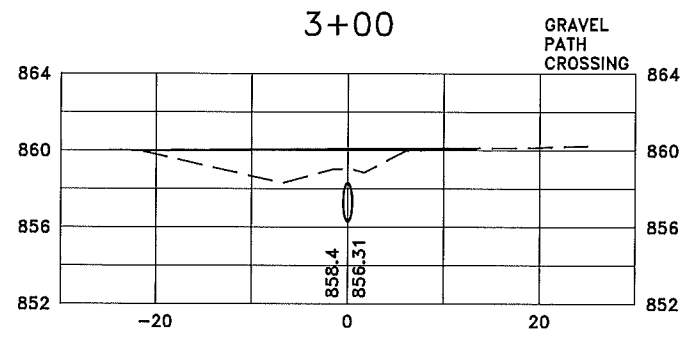
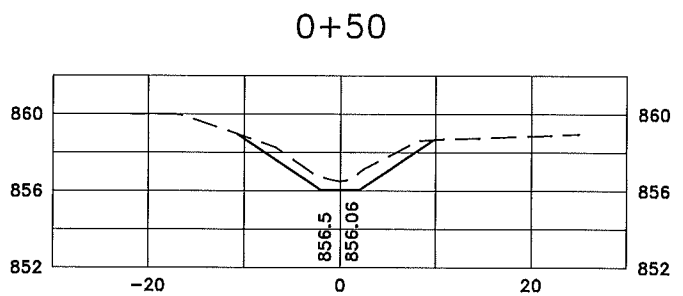
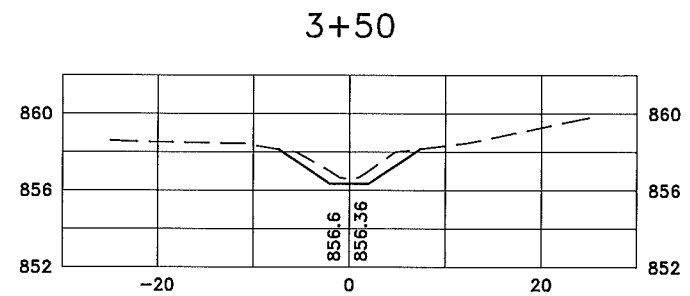
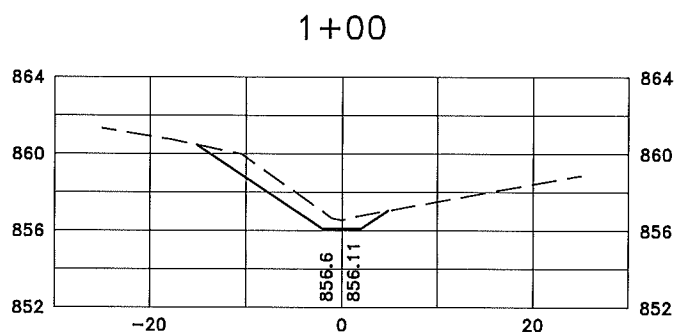
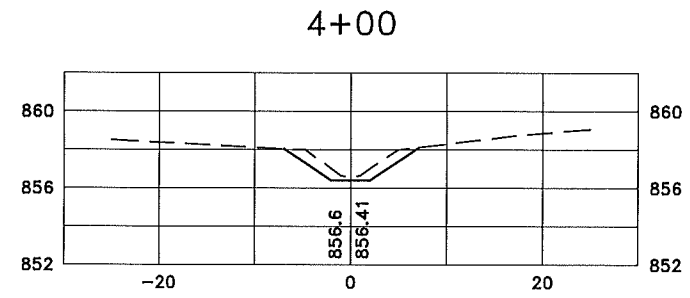
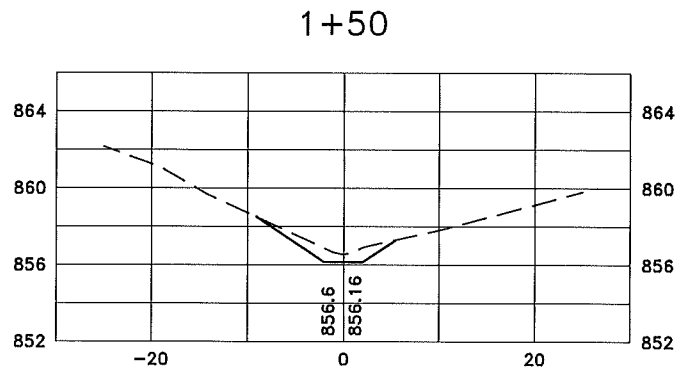
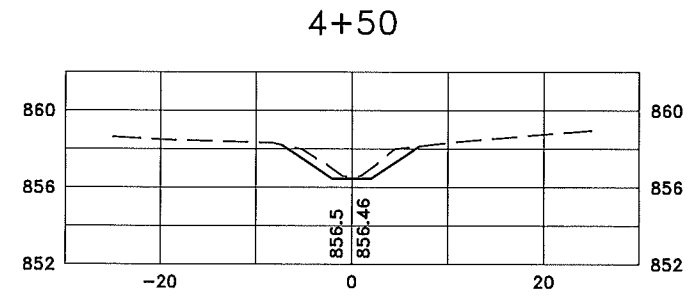
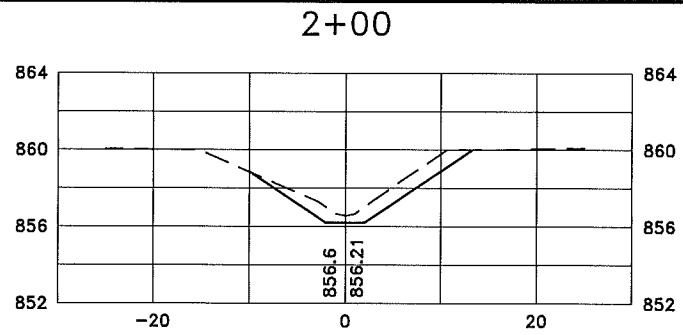
DESIGNED BY: RJW
 DRAWN BY: DMS
 CHECKED BY: RJW

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DITCH GRADING PLAN
 CITY PROJECT 12-28
 RUM RIVER HILLS STORM SEWER REPLACEMENT
 CITY OF RAMSEY, MINNESOTA

SHEET 8 OF 8 SHEETS
 RA433



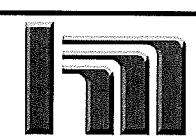
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DATE	REVISION

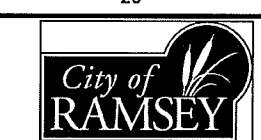
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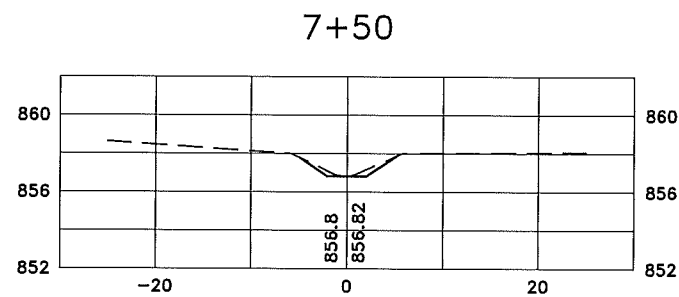
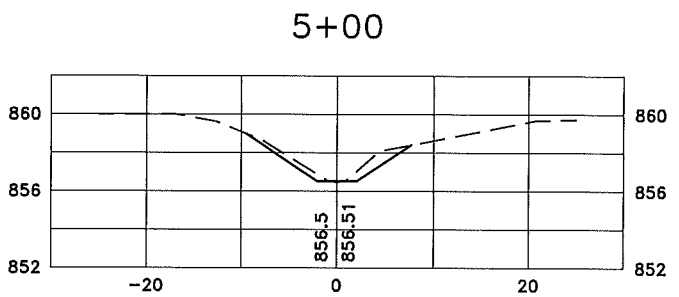
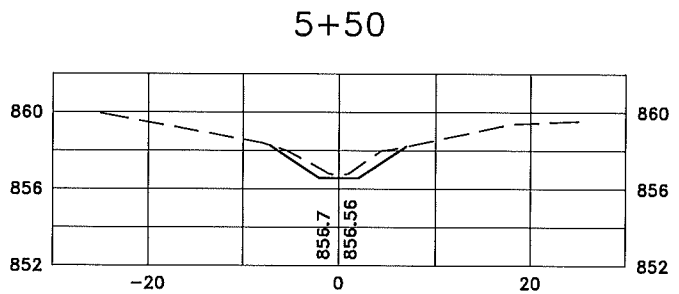
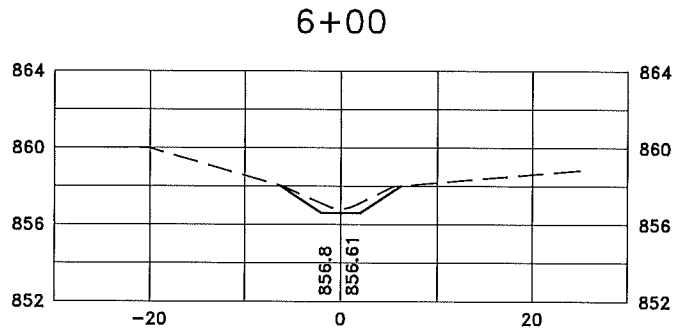
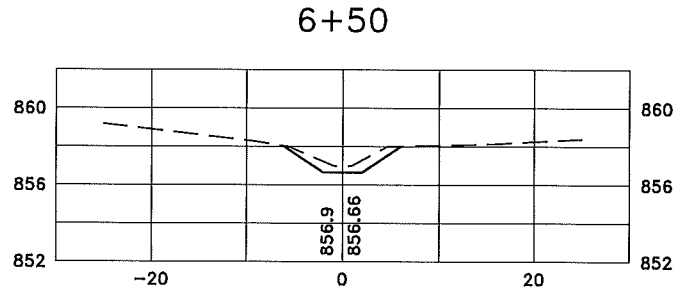
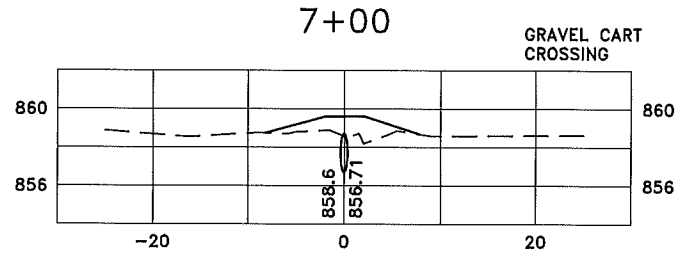


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 CITY PROJECT 12-28
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SHEET **X1** OF **X2**
 SHEETS

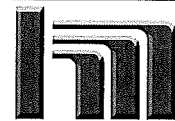


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DATE	REVISION

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.
 RONALD J. WAGNER, P.E.
 Date 8/22/12 Lic. No. 26052

DESIGNED BY: RJW
 DRAWN BY: JAP
 CHECKED BY: TAE



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SHEET X2
 OF X2
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