

STREET IMPROVEMENT DISTRICT NO. 141 - AREA "B"

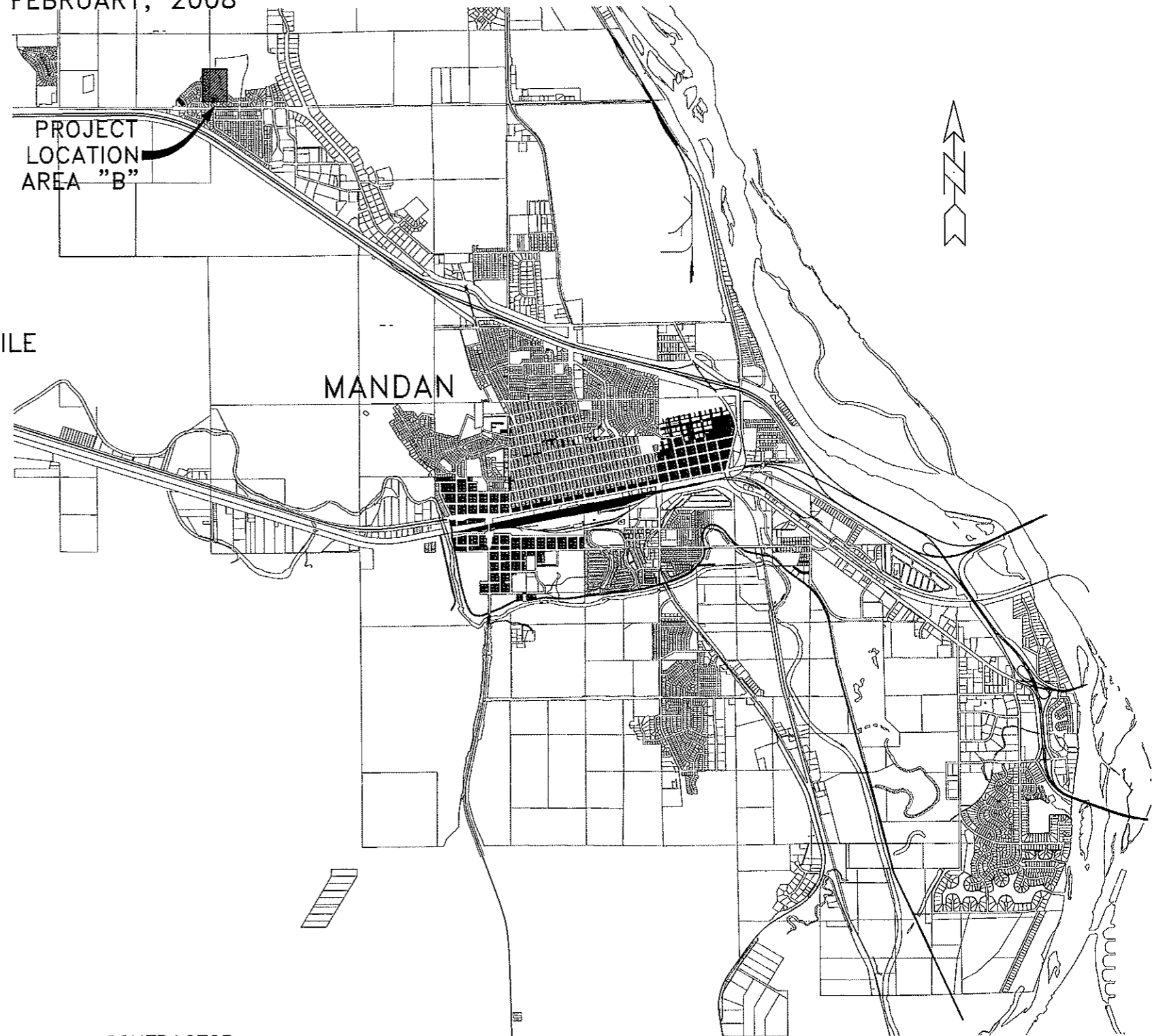
AS-BUILT

MANDAN, NORTH DAKOTA

CITY PROJECT NO. 2006-23
FEBRUARY, 2008

INDEX OF AS-BUILT DRAWINGS

SHEET NO.	TITLE
1	TITLE SHEET
2	PROJECT LAYOUT - AREA "B"
3	LEWIS ROAD PLAN & PROFILE
4	LEWIS ROAD PLAN & PROFILE CONT.
5	ALTERNATE 1 - 40TH AVENUE NW PLAN & PROFILE
6	DETAIL SHEET
7	STREET LIGHT DETAILS
8	WATERMAIN DETAIL SHEET



PREPARED BY:
TOMAN ENGINEERING

Ronald Manchester

RONALD MANCHESTER R.P.E. 3252

DATE: *MAR 9, 2009*

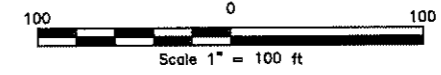
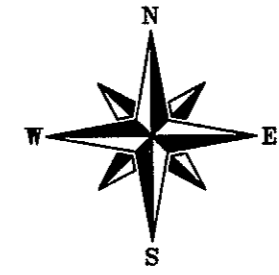
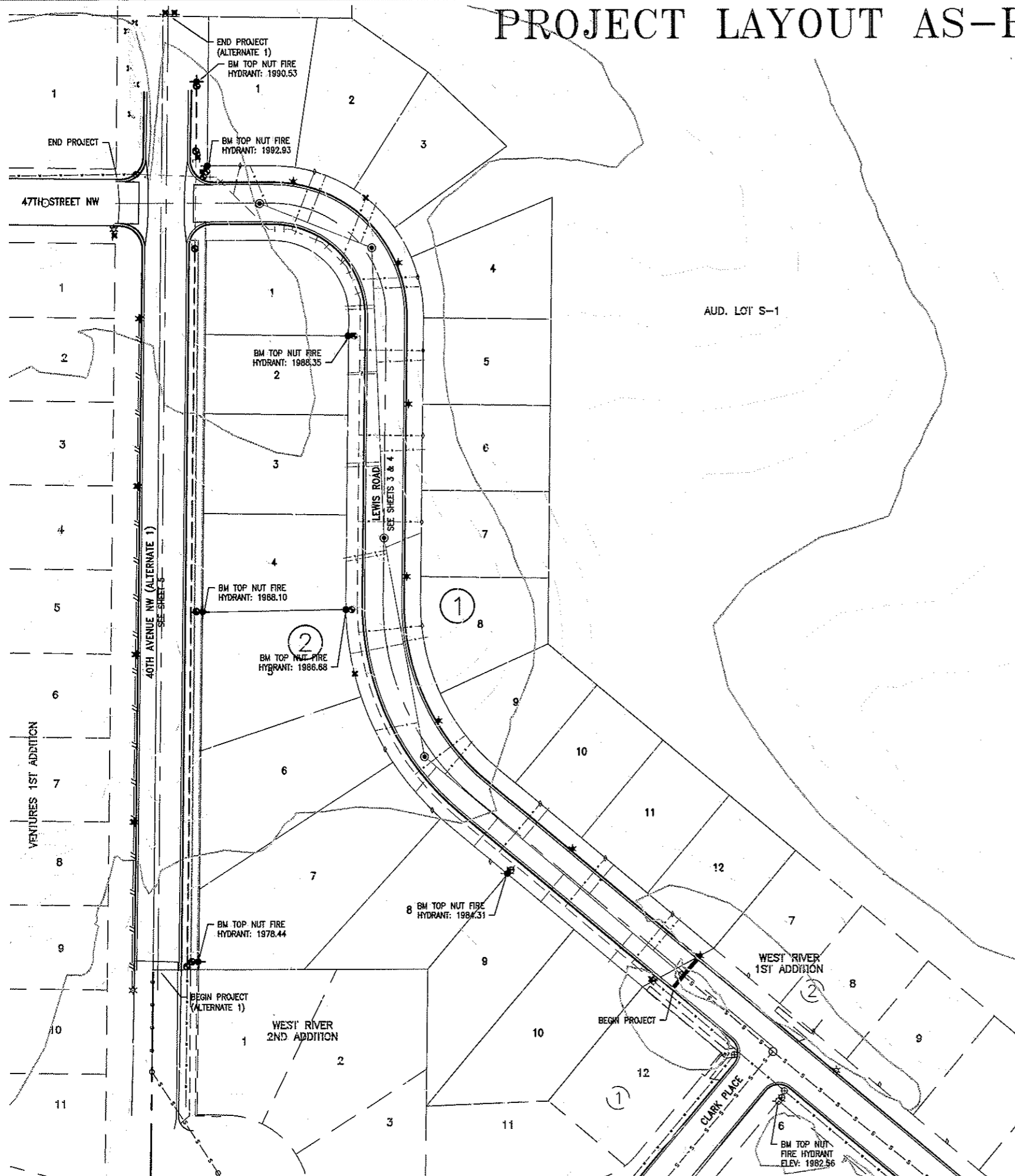


CONTRACTOR:
SAND CREEK (KEVIN SEHN)
PHONE: (701) 255-9084



TOMAN ENGINEERING COMPANY
CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS
501 1ST ST. N.W. • MANDAN, NORTH DAKOTA 58554 • 701-663-6483

PROJECT LAYOUT AS-BUILT



- LEGEND**
- ☆ EXISTING STREET LIGHT
 - ⊠ EXISTING JUNCTION BOX
 - ▲ EXISTING STREET SIGN
 - EXISTING STORM CATCH BASIN
 - EXISTING SANITARY MANHOLE
 - ◊ EXISTING SANITARY CLEANOUT
 - ┌ EXISTING WATER/SEWER CAP
 - ⊙ EXISTING FIRE HYDRANT
 - ⊕ EXISTING GATE VALVE
 - ◇ EXISTING CURB STOP
 - EXISTING CURB & GUTTER
 - - - EXISTING WATERMAIN
 - - - EXISTING SEWERMAIN
 - - - EXISTING CONCRETE
 - ⊙ INSTALLED SANITARY MANHOLE
 - ◆ INSTALLED FIRE HYDRANT
 - ⊕ INSTALLED GATE VALVE
 - └ INSTALLED 45° BEND
 - └ INSTALLED 22° BEND
 - INSTALLED CURB & GUTTER
 - - - INSTALLED WATERMAIN
 - - - INSTALLED 1" COPPER WATER SERVICE
 - - - INSTALLED SEWERMAIN
 - - - INSTALLED 4" PVC SEWER SERVICE
 - ▲ INSTALLED STREET SIGN
 - ☆ INSTALLED STREET LIGHT
 - //— INSTALLED UNDERGROUND ELECTRIC
 - - - INSTALLED ALTERNATE 1 WATERMAIN

AVOID CUTTING UNDERGROUND UTILITY LINES IN YOUR AREA

TWO WORKING DAYS BEFORE YOU DIG-DRILL-BLAST IN NORTH DAKOTA - CALL TOLL FREE

1-800-795-0555

UTILITIES UNDERGROUND LOCATION CENTER



H:\Projects\1000\12032153 AS-BUILT.dwg, 3/17/2009 2:36:32 PM, 1:1, PEB

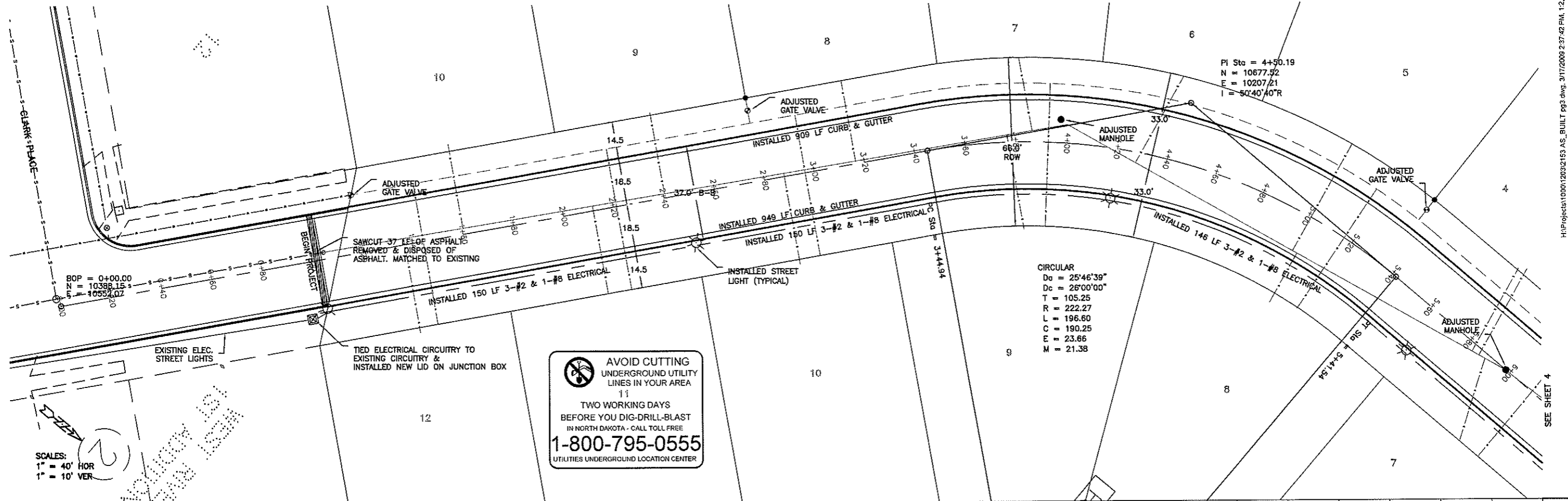
TOMAN ENGINEERING COMPANY
 CONSULTING CIVIL ENGINEERS
 501 1ST ST. N.W. • BANDA, NORTH DAKOTA 58554 • (701) 683-6463

PROJECT: STREET IMP. DISTRICT NO. 141 - AREA "B"
 WEST RIVER 3RD ADDITION
 PROJECT LAYOUT AS-BUILT

NO.	DATE	BY	REVISIONS

TITLE: STREET IMPROVEMENT DIST. NO. 141 - AREA "B"
 SHEET NUMBER: **2**
 OF 8 SHEETS

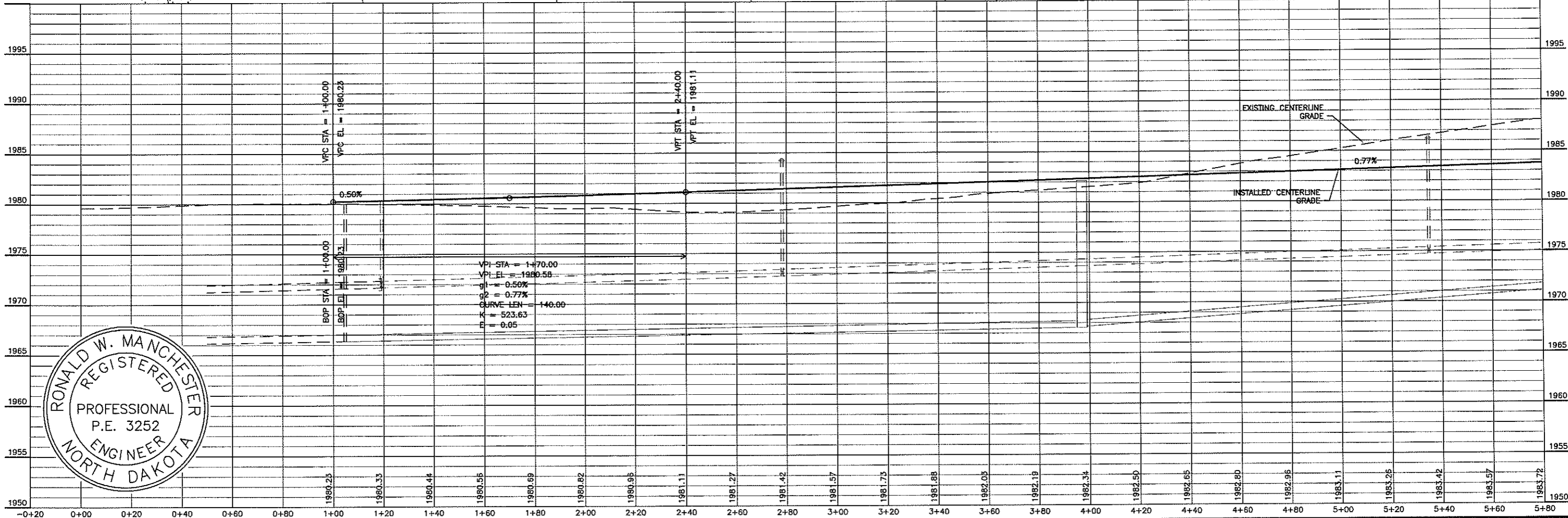
AS-BUILT LEWIS ROAD PLAN & PROFILE



AVOID CUTTING UNDERGROUND UTILITY LINES IN YOUR AREA
 TWO WORKING DAYS BEFORE YOU DIG-DRILL-BLAST IN NORTH DAKOTA - CALL TOLL FREE
1-800-795-0555
 UTILITIES UNDERGROUND LOCATION CENTER

SCALES:
 1" = 40' HOR
 1" = 10' VER

CIRCULAR
 Da = 25'46'39"
 Dc = 26'00'00"
 T = 105.25
 R = 222.27
 L = 196.60
 C = 190.25
 E = 23.66
 M = 21.38



RONALD W. MANCHESTER
 REGISTERED
 PROFESSIONAL
 P.E. 3252
 ENGINEER
 NORTH DAKOTA

H:\Projects\10001\2032153 AS-BUILT.dwg, 3/17/2009 2:37:42 PM, 1:2, FEB



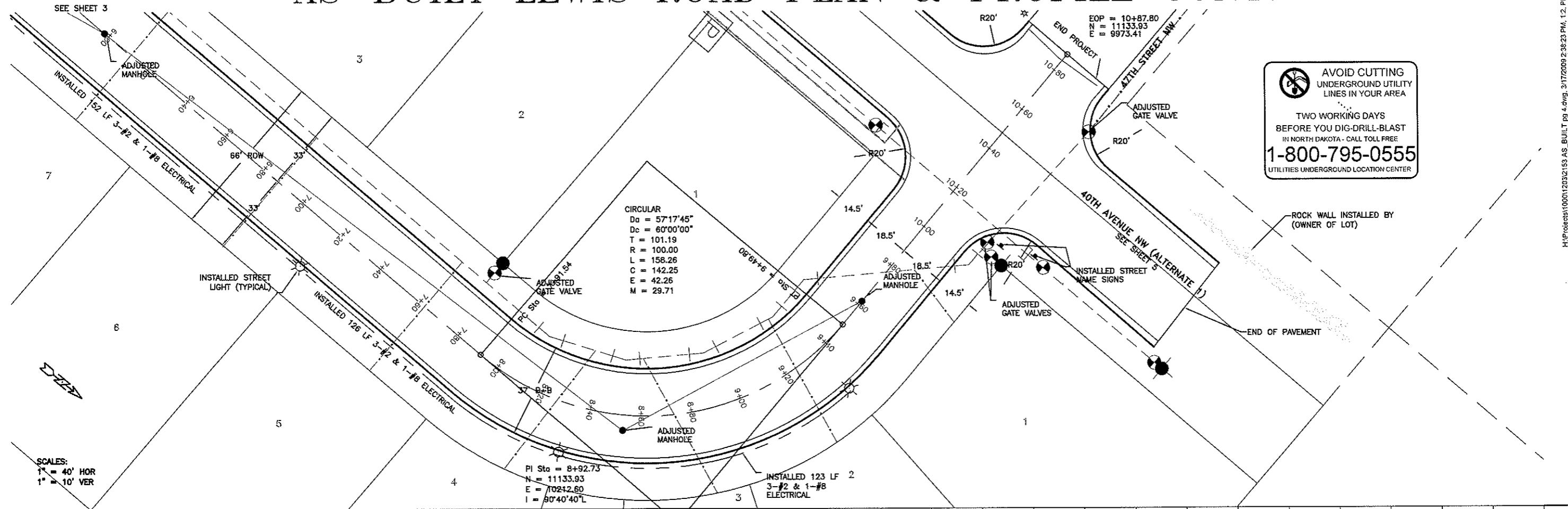
TOMAN ENGINEERING COMPANY
 CONSULTING CIVIL ENGINEERS
 501 1ST ST. N.W. • WARDEN, NORTH DAKOTA 58554 • (701) 843-6483

PROJECT: STREET IMP. DISTRICT NO. 141 - AREA "B"
 STREET IMP. DISTRICT NO. 141 - AREA "B"
 WEST RIVER 3RD ADDITION
 AS-BUILT LEWIS ROAD PLAN & PROFILE

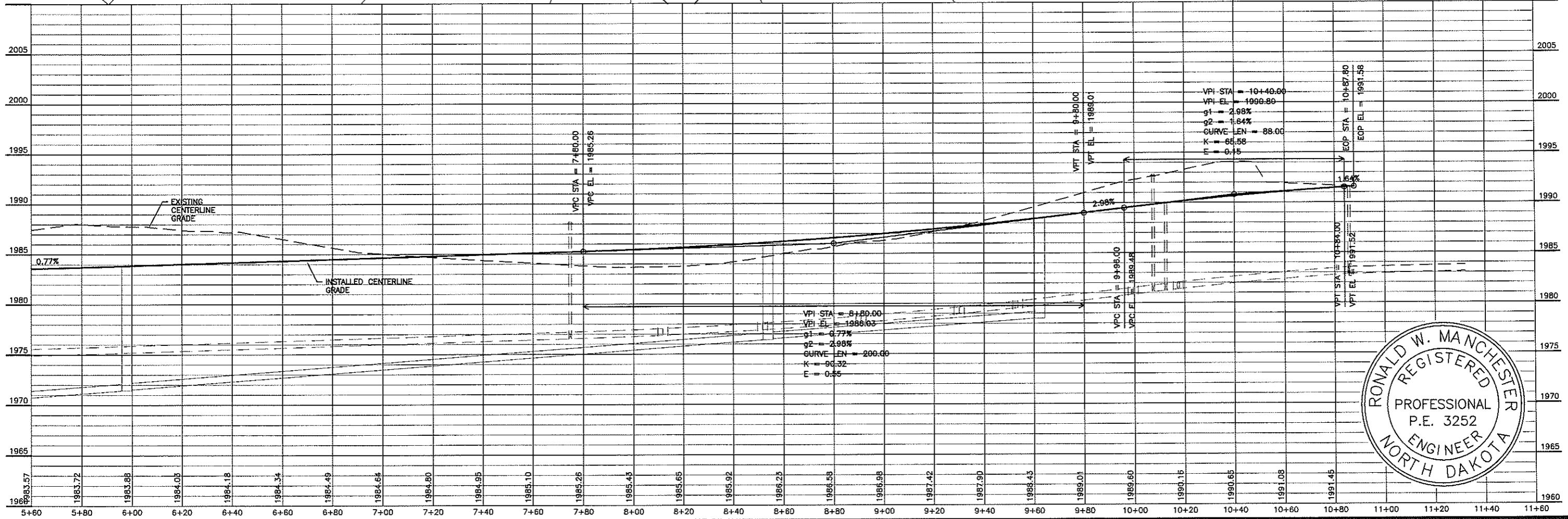
NO.	BY	DATE	REVISIONS
1	RAM	03/08	DATE
2	RAM	03/08	DATE
3	RAM	03/08	DATE

SHEET NUMBER
3
 OF 8 SHEETS

AS-BUILT LEWIS ROAD PLAN & PROFILE CONT.



SCALES:
 1" = 40' HOR
 1" = 10' VER



PROJECT: STREET IMP. DISTRICT NO. 141 - AREA "B"
 STREET IMP. DISTRICT NO. 141 - AREA "B"
 WEST RIVER 3RD ADDITION
 AS-BUILT LEWIS ROAD PLAN & PROFILE CONT.

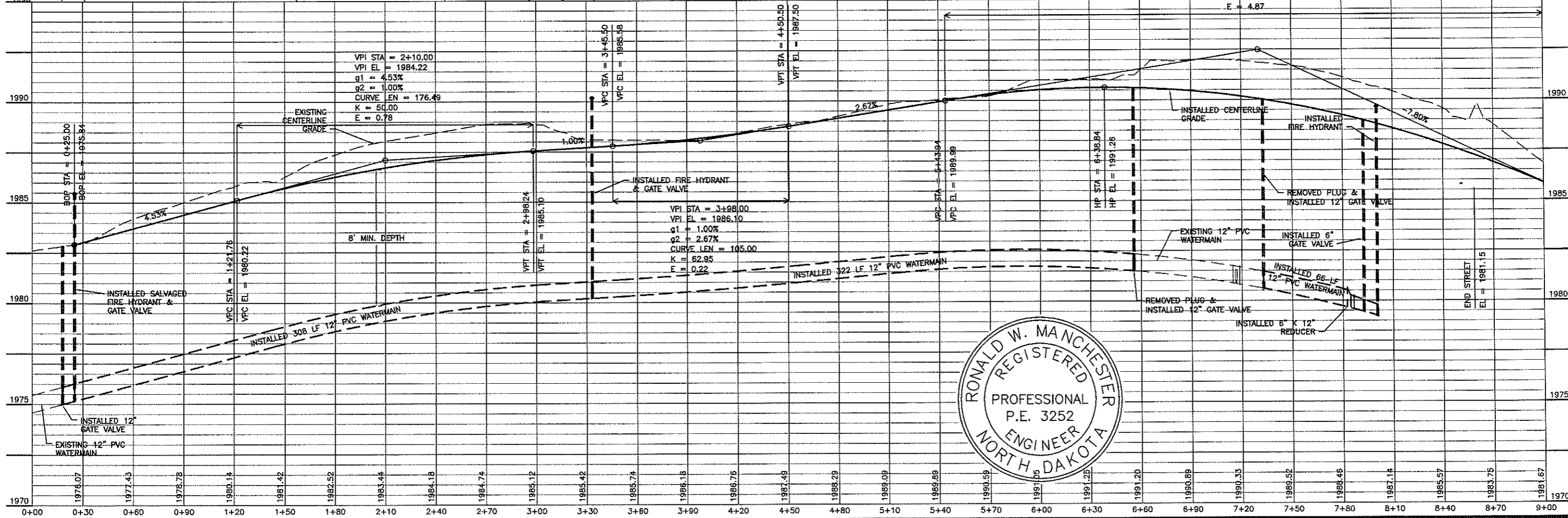
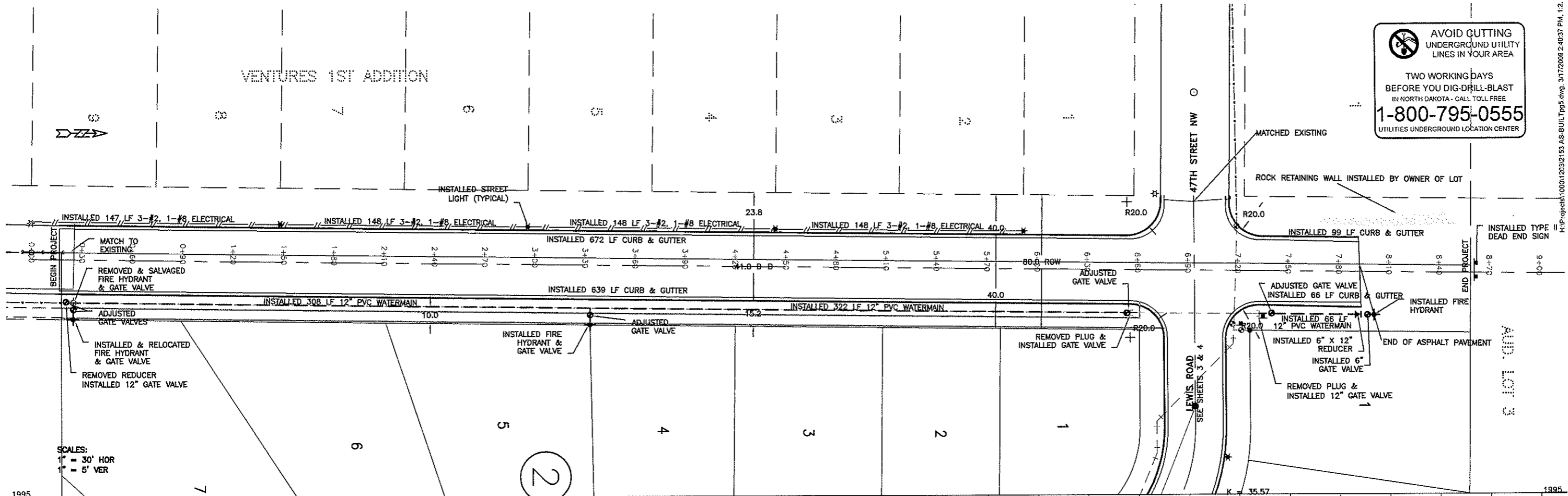
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1	03/08	RM	DATE
2	03/08	RM	DATE
3	03/08	RM	DATE
4	03/08	RM	DATE

SHEET NUMBER
4
 OF 8 SHEETS

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 501 1ST ST. N.W. • MAYNARD, NORTH DAKOTA 58554 • (701) 893-6483

AS-BUILT 40TH AVENUE NW STREET & WATER PLAN & PROFILE



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 CONSULTING CIVIL ENGINEERS
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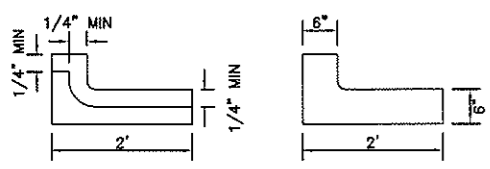
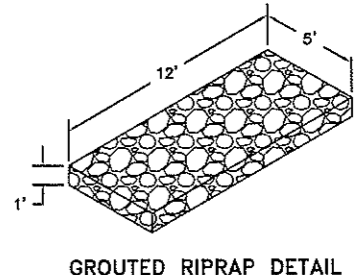
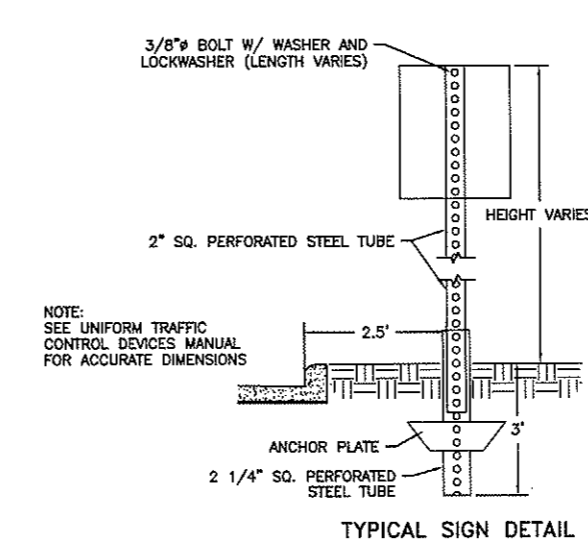
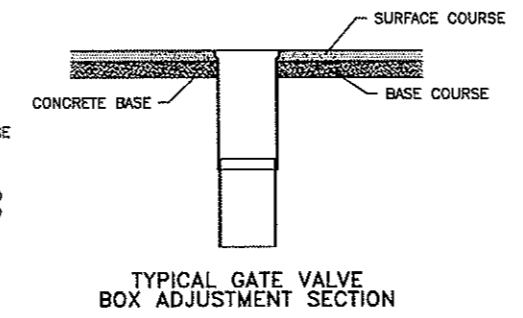
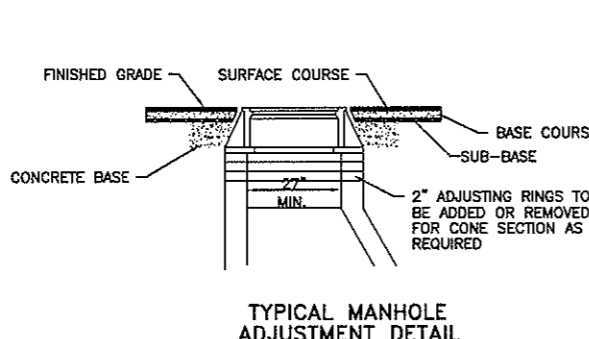
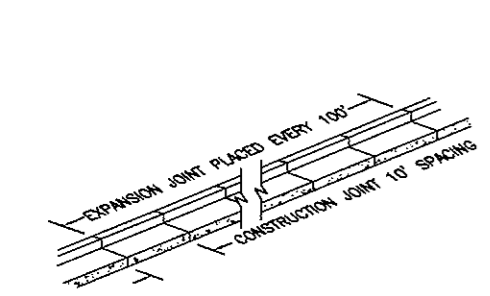
PROJECT: STREET IMPROVEMENT DIST. NO. 141 - AREA "B"
 STREET IMP. DISTRICT NO. 141 - AREA "B"
 WEST RIVER 3RD ADDITION - ALTERNATE 1
 AS-BUILT 40TH AVENUE NW STREET & WATER PLAN & PROFILE

NO.	DATE	BY	REVISIONS
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2	04/08		REVISED

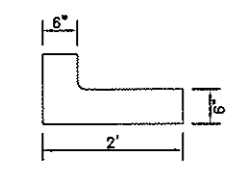
SHEET NUMBER **5**
 OF 8 SHEETS

AS-BUILT DETAIL SHEET

NO SCALE

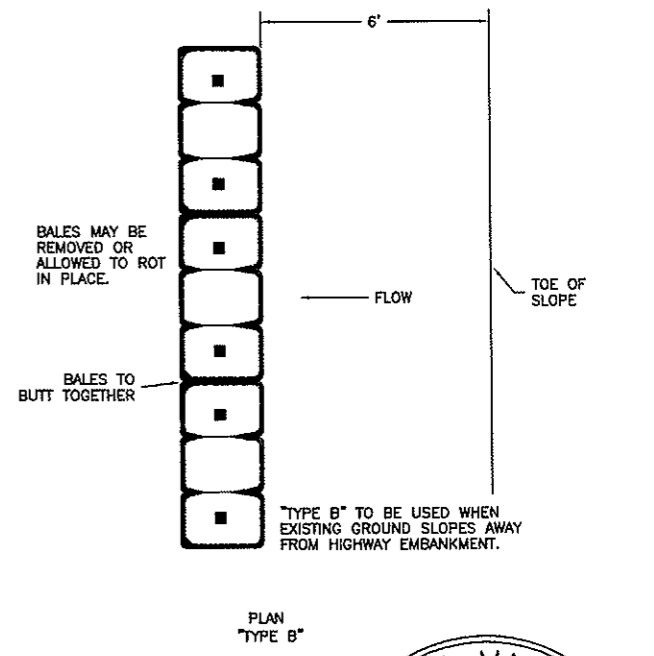
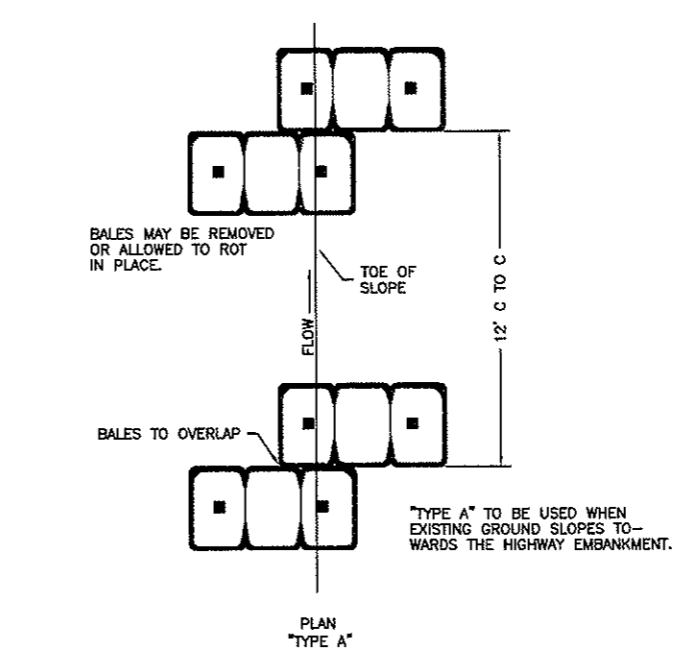
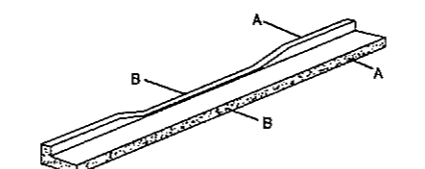
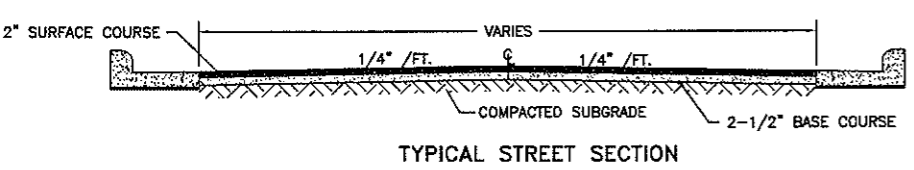
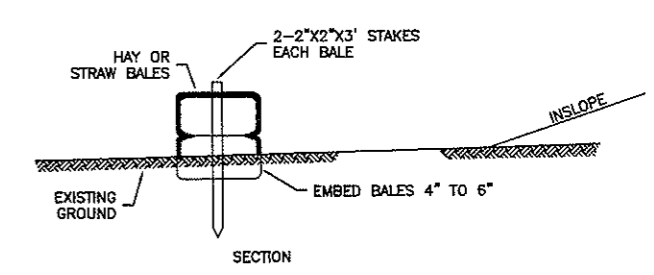
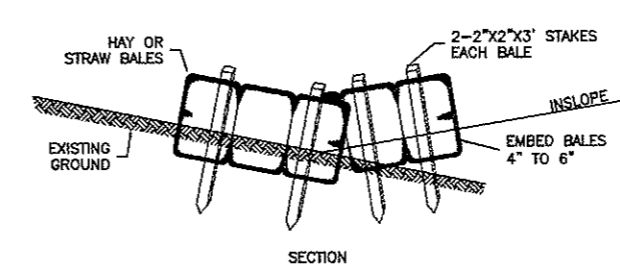
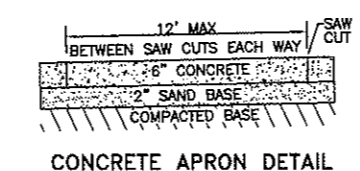
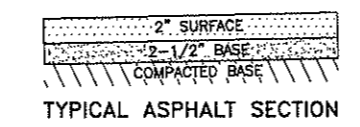
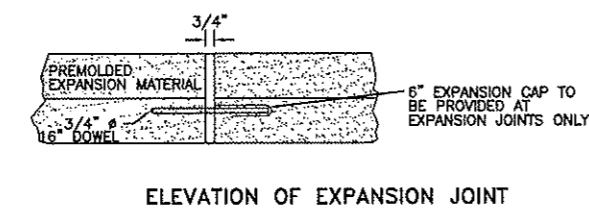


NOTE: CONSTRUCTION JOINT 10' SPACING
SECTION VIEW OF CONSTRUCTION JOINT
(SAW CUT ON SLABS HAND EDGE ON CURB & GUTTER)



NOTE: 3/4" FELT EXPANSION JOINT PLACED EVERY 100'
SECTION VIEW OF EXPANSION JOINT

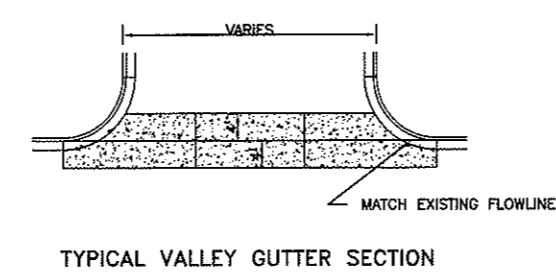
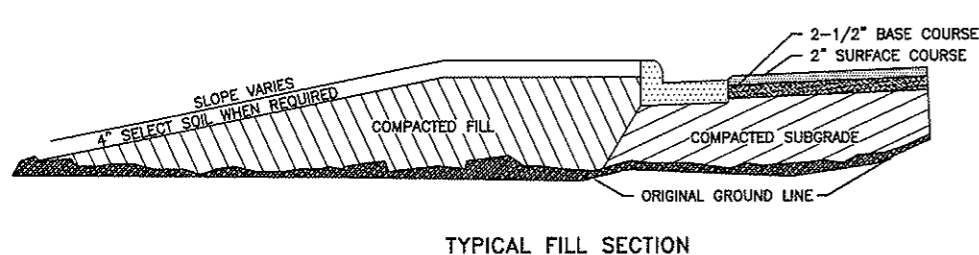
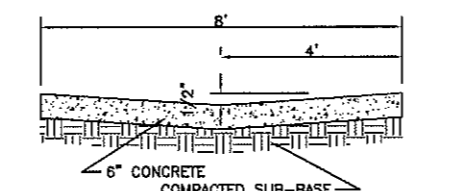
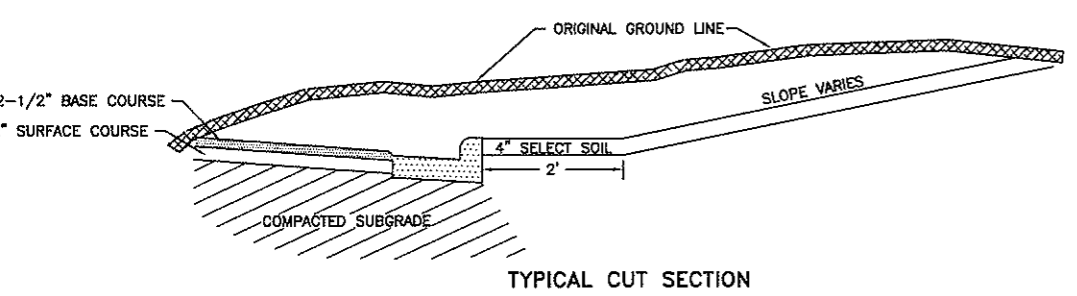
NOTE: EXPANSION CAPS TO BE OF 30 GA. STEEL ONE-HALF DOWEL TO BE COATED WITH HEAVY GREASE TO BE PLACED EVERY 100', AND AT ALL CURVE P.C. & P.T.'S



"TYPE A" TO BE USED WHEN EXISTING GROUND SLOPES TOWARDS THE HIGHWAY EMBANKMENT.

"TYPE B" TO BE USED WHEN EXISTING GROUND SLOPES AWAY FROM HIGHWAY EMBANKMENT.

BALED HAY OR STRAW EROSION CHECKS



AVOID CUTTING UNDERGROUND UTILITY LINES IN YOUR AREA

TWO WORKING DAYS BEFORE YOU DIG-DRILL-BLAST IN NORTH DAKOTA - CALL TOLL FREE 1-800-795-0555 UTILITIES UNDERGROUND LOCATION CENTER



PROJECT: STREET IMPROVEMENT DIST. NO. 141 - AREA "B"
 STREET WEST RIVER 3RD ADDITION
 AS-BUILT DETAIL SHEET

NO.	DATE	BY	REVISIONS
2153	03/06	AM	
2153	03/06	AM	

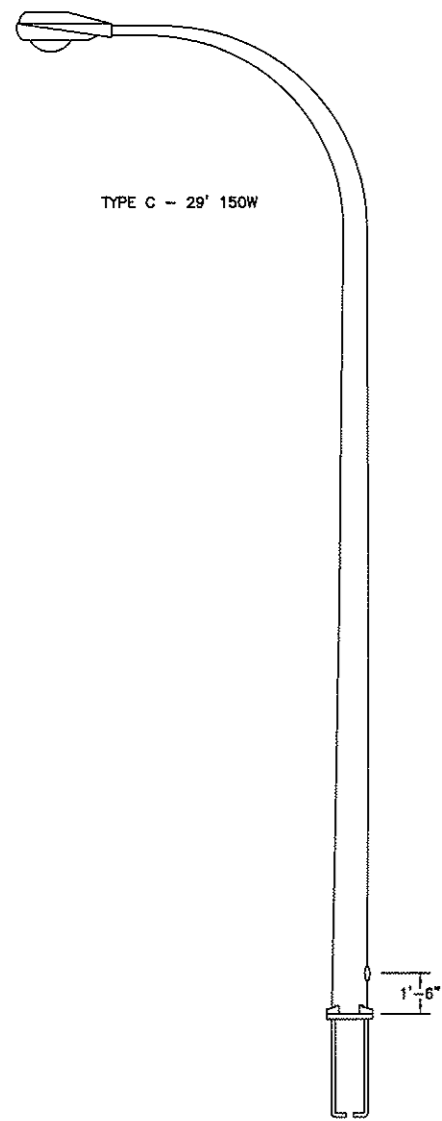
TITLE: STREET IMPROVEMENT DIST. NO. 141 - AREA "B"
 SHEET NUMBER 6 OF 8 SHEETS

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 901 1ST ST. N.W. • BANGOR, NORTH DAKOTA 58504 • (701) 482-0483

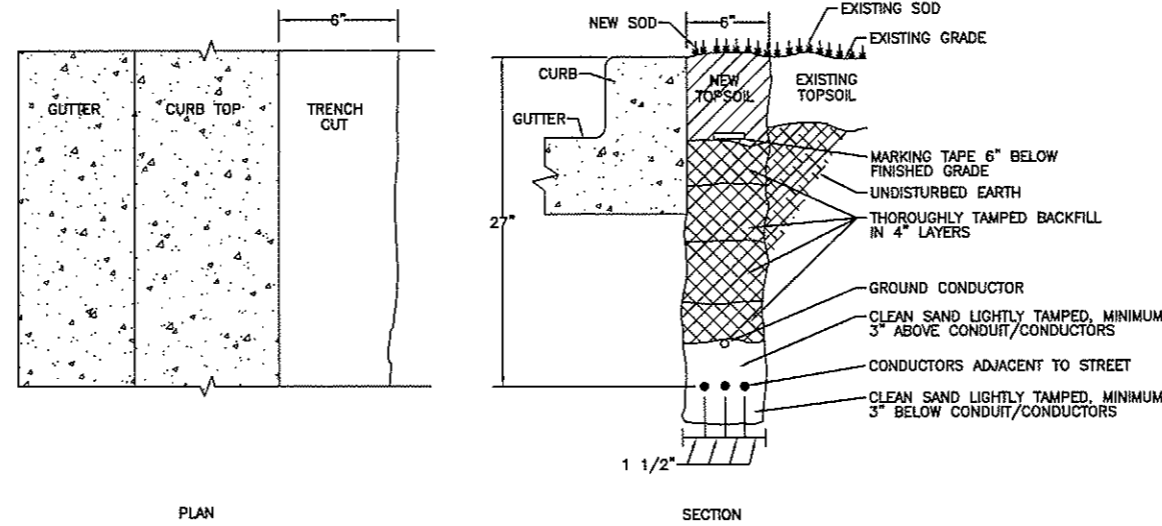
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AS-BUILT STREET LIGHT DETAILS

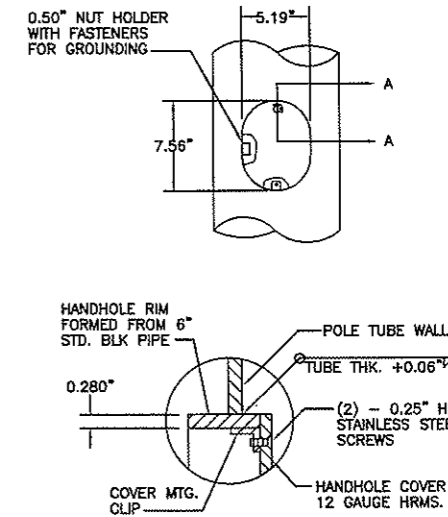
NO SCALE



TYPICAL POLE DETAIL



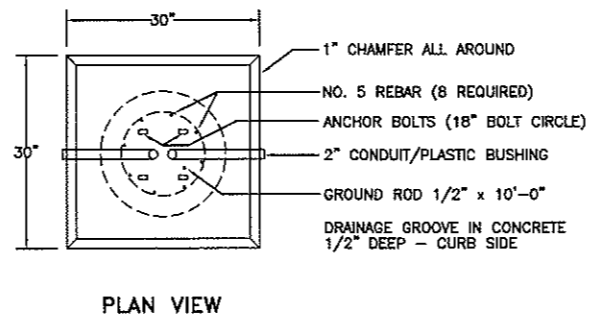
UNDERGROUND CABLE INSTALLATION



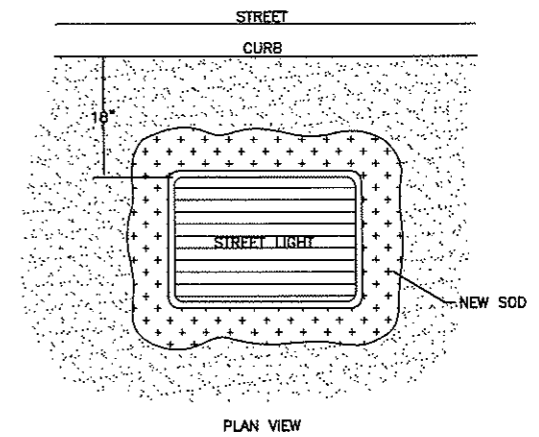
SECTION A-A
HANDHOLE DETAIL

AVOID CUTTING UNDERGROUND UTILITY LINES IN YOUR AREA

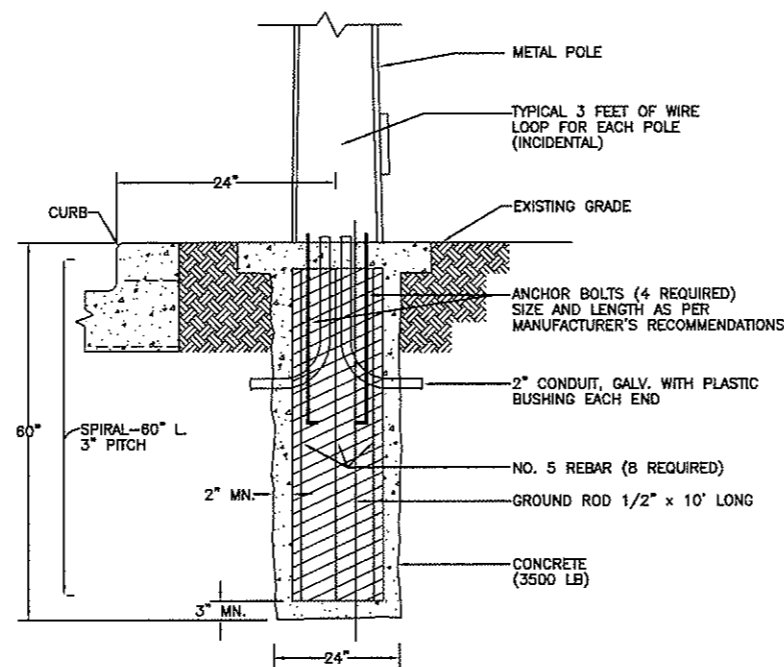
TWO WORKING DAYS BEFORE YOU DIG--DRILL--BLAST IN NORTH DAKOTA CALL TOLL FREE 1-800-795-0555 UTILITIES UNDERGROUND LOCATION CENTER



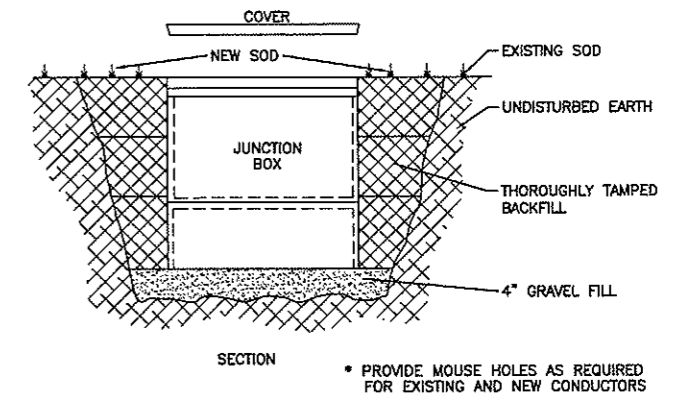
PLAN VIEW



PLAN VIEW



SECTION
BASE DETAIL



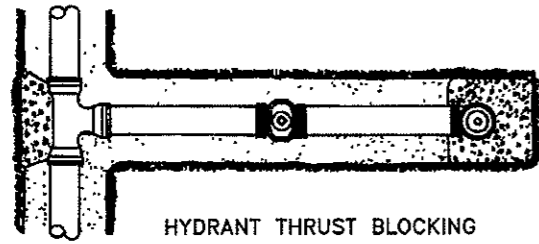
JUNCTION BOX DETAIL



NO.	REVISIONS	BY	DATE	ISSUED BY	DATE	APPROVED BY
1			03/06			
2			03/06			

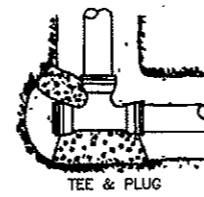
AS-BUILT WATERMAIN DETAIL SHEET

NO SCALE

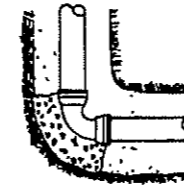


HYDRANT THRUST BLOCKING

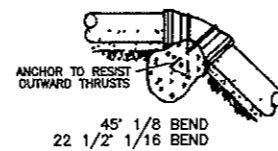
NOTE: (1) PIPE DEFLECTIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS
 (2) BEDDING REQUIREMENTS SHALL BE AS INDICATED HEREON UNLESS MODIFIED IN THE SPECIFICATIONS
 (3) CONCRETE FOR THRUST BLOCKS SHALL HAVE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI, AND MAX. SLUMP OF 3 INCHES AT TIME OF PLACEMENT.



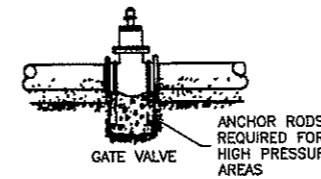
TEE & PLUG



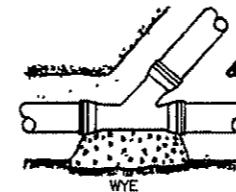
90° 1/4 BEND



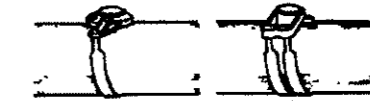
45° 1/8 BEND
22 1/2° 1/16 BEND



GATE VALVE
ANCHOR RODS REQUIRED FOR HIGH PRESSURE AREAS



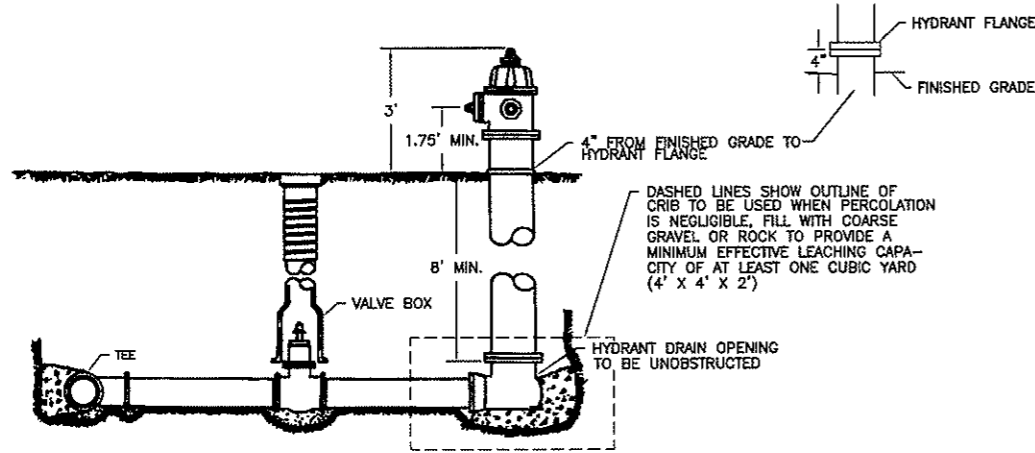
THRUST BLOCK DETAILS



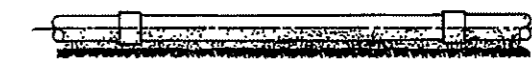
MAXIMUM SIZE OF OUTLET RECOMMENDED WITH SERVICE CLAMPS (INCHES)

NOMINAL PIPE SIZE	OUTLET SIZE (CLASSES 100-150-200)	
	SINGLE STRAP	COUPLE STRAP
4"	1"	1"
6"	1 1/2"	1 1/2"
8"	2"	2"
10"	2"	2"
12"	2"	2"
14"	2"	2"
16"	2"	2"

SADDLES FOR PVC WATERMAIN



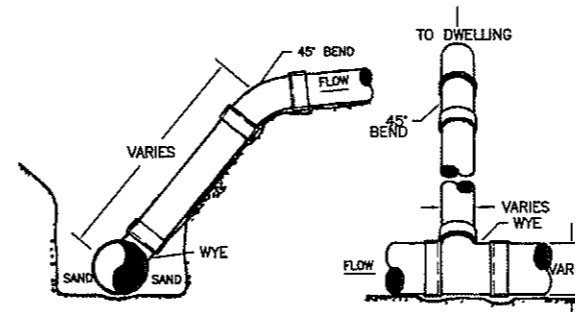
LAYOUT OF FIRE HYDRANT & VALVE



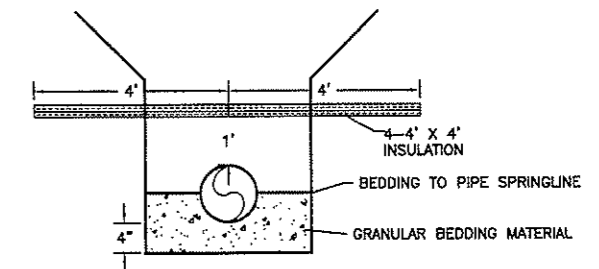
SAND CUSHION BEDDING-SUPPORT ENTIRE LENGTH OF PIPE
SPECIAL COMPACTION REQUIRED TO PIPE SPRING LINE



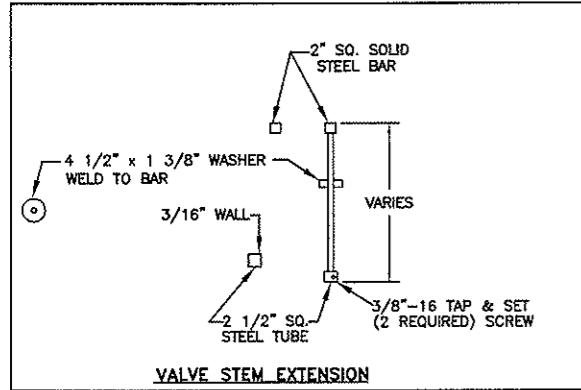
TYPICAL BEDDING TREATMENT USING APPROVED OR SITE MATERIAL SHAPED FOR PIPE



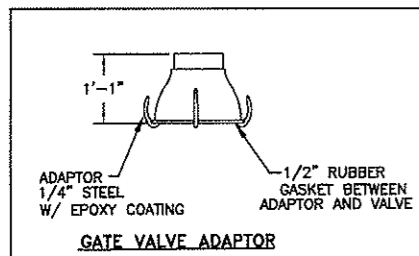
WYE AND RISER DETAILS



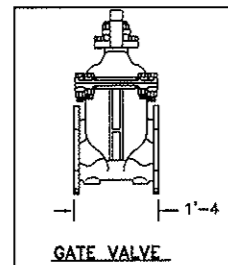
WATERMAIN & SEWERMAIN BEDDING & INSULATION DETAIL



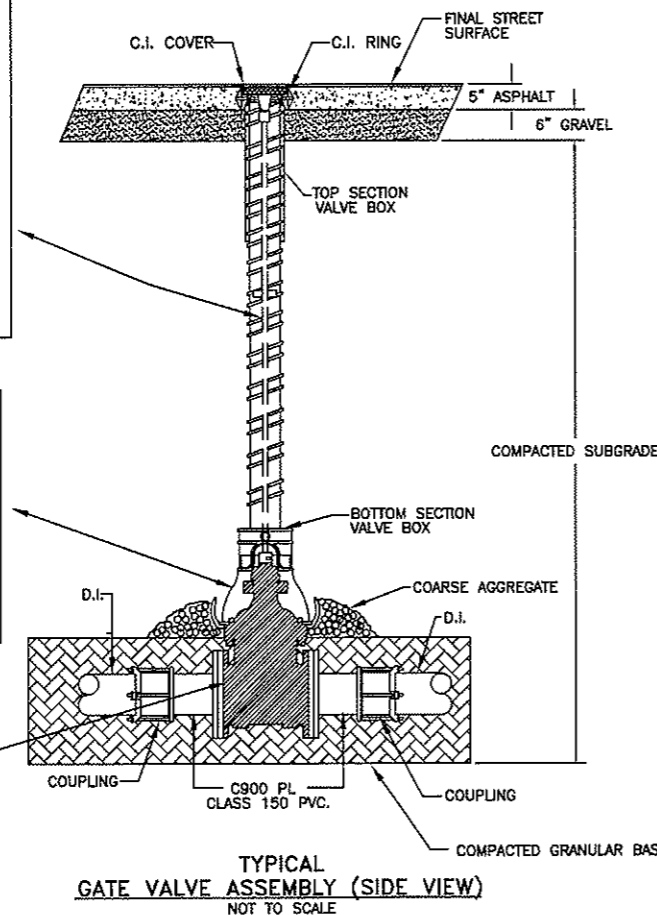
VALVE STEM EXTENSION



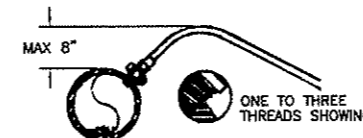
GATE VALVE ADAPTOR



GATE VALVE



TYPICAL GATE VALVE ASSEMBLY (SIDE VIEW)
NOT TO SCALE



SERVICE LINE CORPORATION COCK DIRECT TAP POSITION

AVOID CUTTING UNDERGROUND UTILITY LINES IN YOUR AREA

TWO WORKING DAYS BEFORE YOU DIG-DRILL-BLAST IN NORTH DAKOTA - CALL TOLL FREE

1-800-795-0555

UTILITIES UNDERGROUND LOCATION CENTER



PROJECT: STREET IMPROVEMENT DIST. NO. 141 - AREA "B"
 STREET WEST RIVER 3RD ADDITION
 AS-BUILT WATERMAIN DETAIL SHEET
 TITEL: STREET IMPROVEMENT DIST. NO. 141 - AREA "B"
 NO. 1203
 REVISIONS BY DATE
 2008-23
 DATE 03/08
 SHEET NO. 8 OF 8 SHEETS

H:\Projects\10011203\153AS-BUILT\T08.dwg, 3/17/2009 2:41:52 PM, 1,2, PEB

