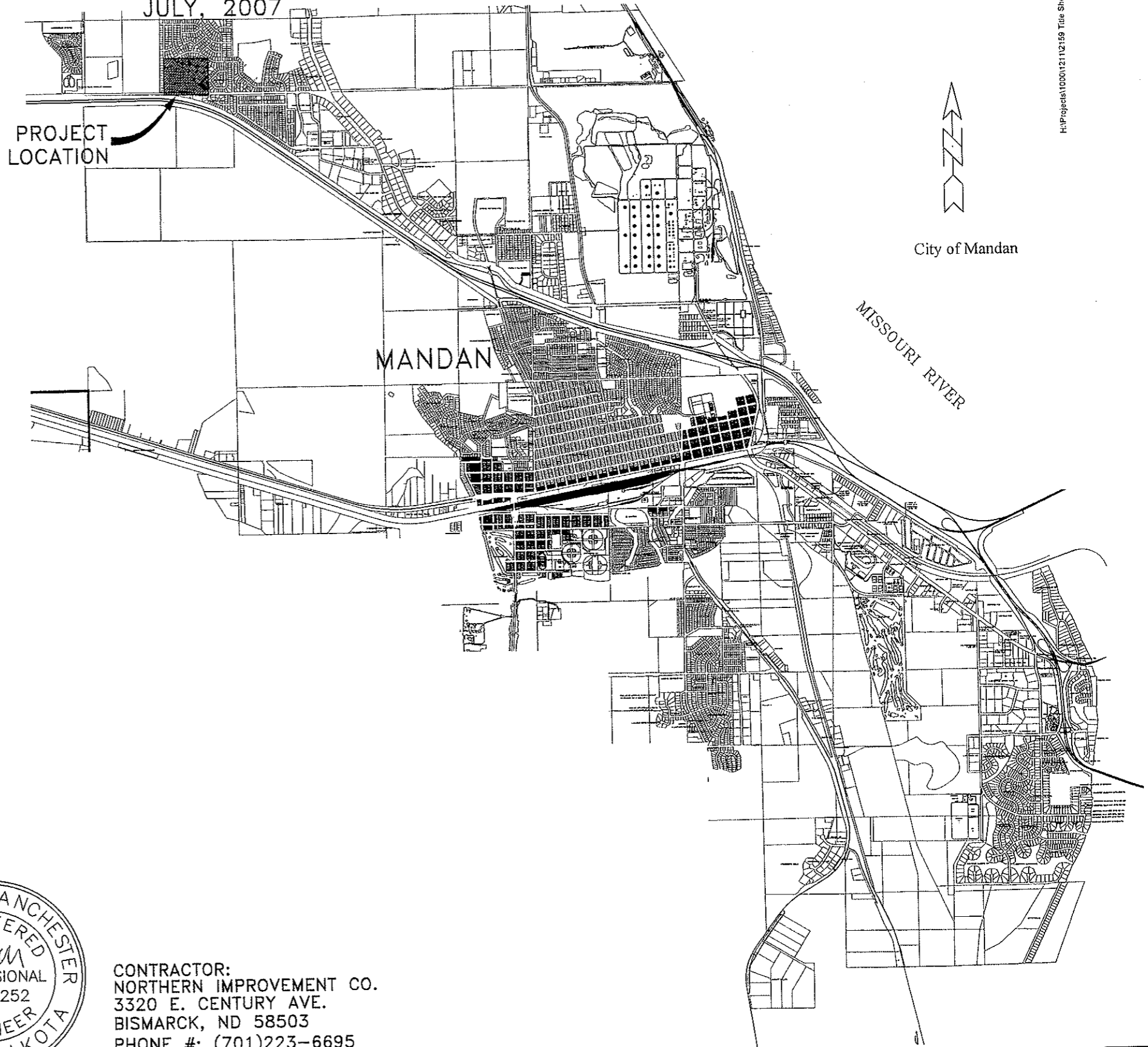


STREET IMPROVEMENT DISTRICT NO. 138 AREA "E" ASBUILT WEST HILL ESTATES, MANDAN, NORTH DAKOTA

CITY PROJECT NO. 2007-05
JULY, 2007

INDEX OF ASBUILT DRAWINGS

SHEET NO.	TITLE
1	TITLE SHEET
2	PROJECT LAYOUT AREA "E"
3	47TH AVENUE NW PLAN & PROFILE
4	IMPALA COURT NW PLAN & PROFILE
5	IMPALA COURT NW PLAN & PROFILE CONT.
6	NOVA AVENUE NW PLAN & PROFILE
7	STREET LIGHT LAYOUT
8	STREET LIGHT DETAILS
9	DETAILS
10	RIPRAP DETAILS



ASBUILT DRAWINGS

PREPARED BY:
TOMAN ENGINEERING

Ronald Manchester

RONALD MANCHESTER R.P.E. 3252

DATE: _____

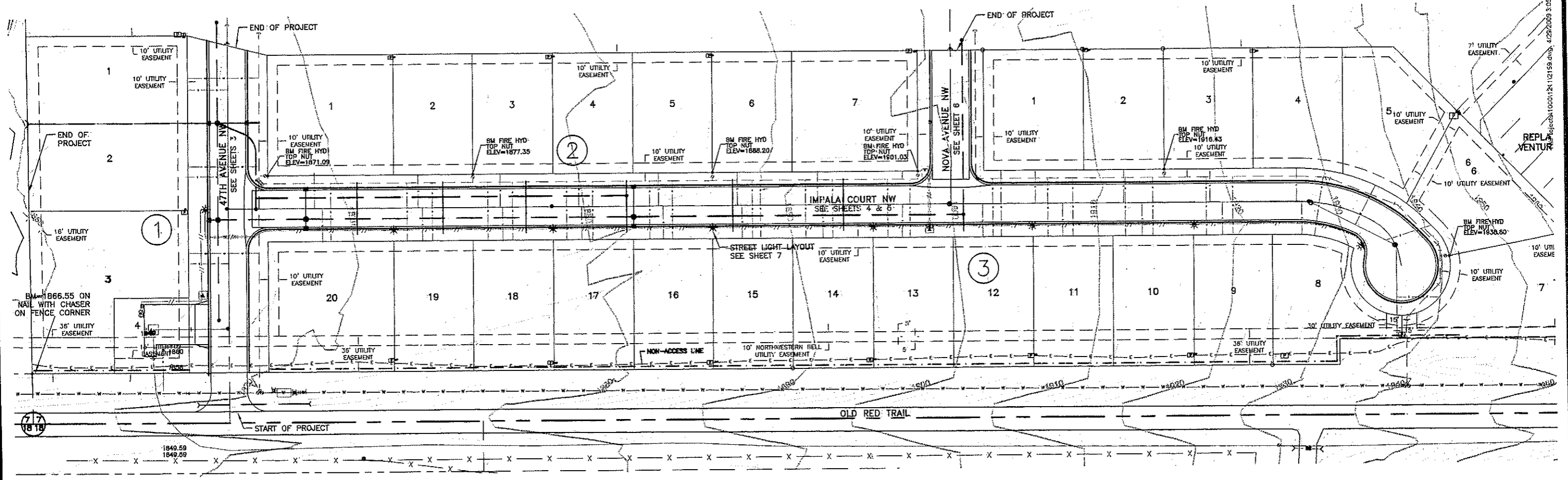


CONTRACTOR:
NORTHERN IMPROVEMENT CO.
3320 E. CENTURY AVE.
BISMARCK, ND 58503
PHONE #: (701)223-6695

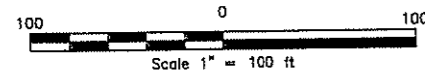
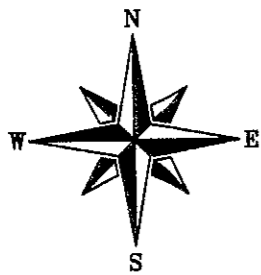


TOMAN ENGINEERING COMPANY
CONSULTING CIVIL ENGINEERS
501 1ST ST. N.W. • MANDAN, NORTH DAKOTA 58504 • 701-663-6463

PROJECT LAYOUT AREA "E" ASBUILT



- LEGEND**
- * EXISTING STREET LIGHT
 - [E] EXISTING ELECTRIC BOX
 - EXISTING PROPERTY CORNER
 - EXISTING CATCH BASIN
 - ▲ EXISTING SIGN
 - EXISTING WATER GATE VALVE
 - EXISTING SANITARY MANHOLE
 - ◆ EXISTING FIRE HYDRANT
 - EXISTING GUY WIRE
 - + EXISTING TELEPHONE POLE
 - INSTALLED FIRE HYDRANT
 - INSTALLED GATE VALVE
 - INSTALLED 8" TEE
 - Y INSTALLED BEND
 - INSTALLED PLUG
 - INSTALLED SANITARY MANHOLE
 - ▲ INSTALLED SIGN
 - * INSTALLED STREET LIGHT
 - [E] INSTALLED JUNCTION BOX
 - EXISTING 8" WATERMAIN
 - - - EXISTING 8" SANITARY SEWERMAIN
 - EXISTING CURB & GUTTER
 - INSTALLED 8" WATERMAIN
 - INSTALLED WATER SERVICE
 - INSTALLED 8" SANITARY SEWERMAIN
 - INSTALLED SEWER SERVICE
 - INSTALLED CONCRETE
 - INSTALLED CURB & GUTTER
 - INSTALLED ELECTRIC LINE
 - INSTALLED ELECTRIC CONDUIT



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



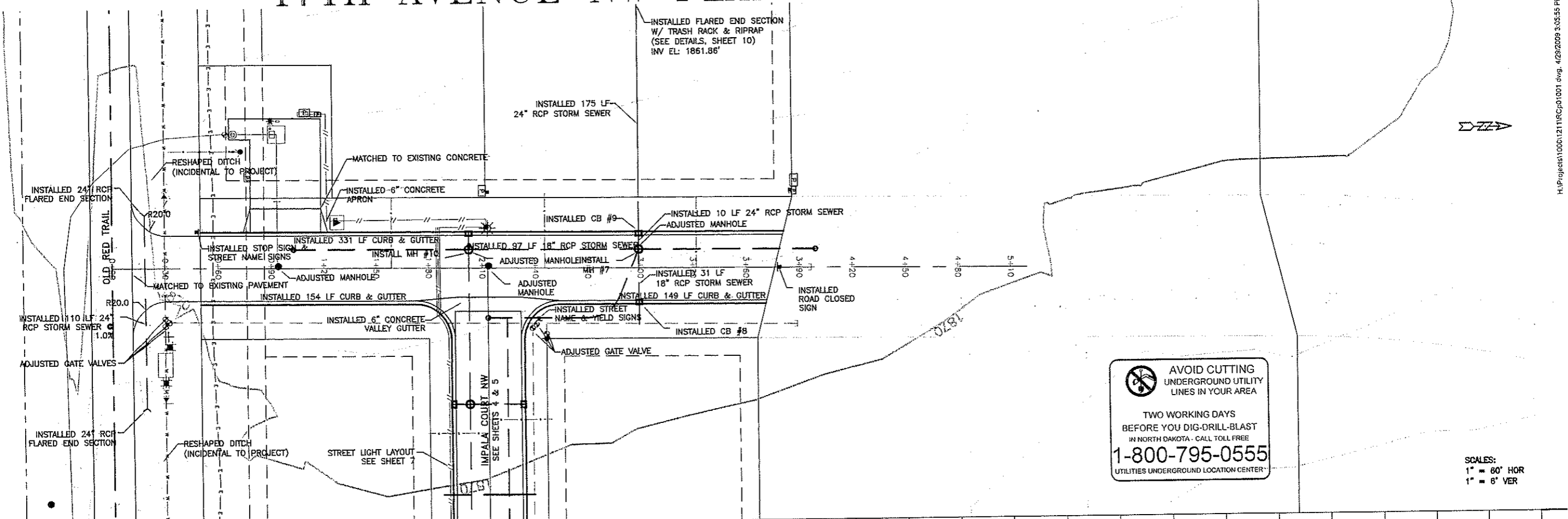
TOMAN ENGINEERING COMPANY
CONSULTING CIVIL ENGINEERS
501 1ST ST. N.W. • WARDEN, NORTH DAKOTA 58554 • (701) 665-6463

PROJECT: STREET IMPROVEMENT DISTRICT NO. 138 AREA "E"
WEST HILLS ESTATES 1ST ADDITION
PROJECT LAYOUT AREA "E" ASBUILT

NO.	DATE	BY	REVISIONS

SHEET NUMBER
2
OF 10 SHEETS

47TH AVENUE NW PLAN & PROFILE ASBUILT



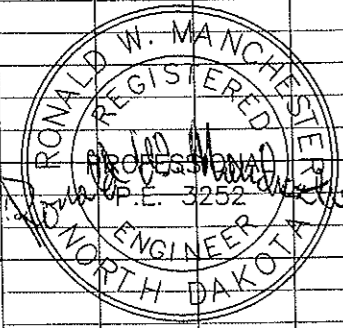
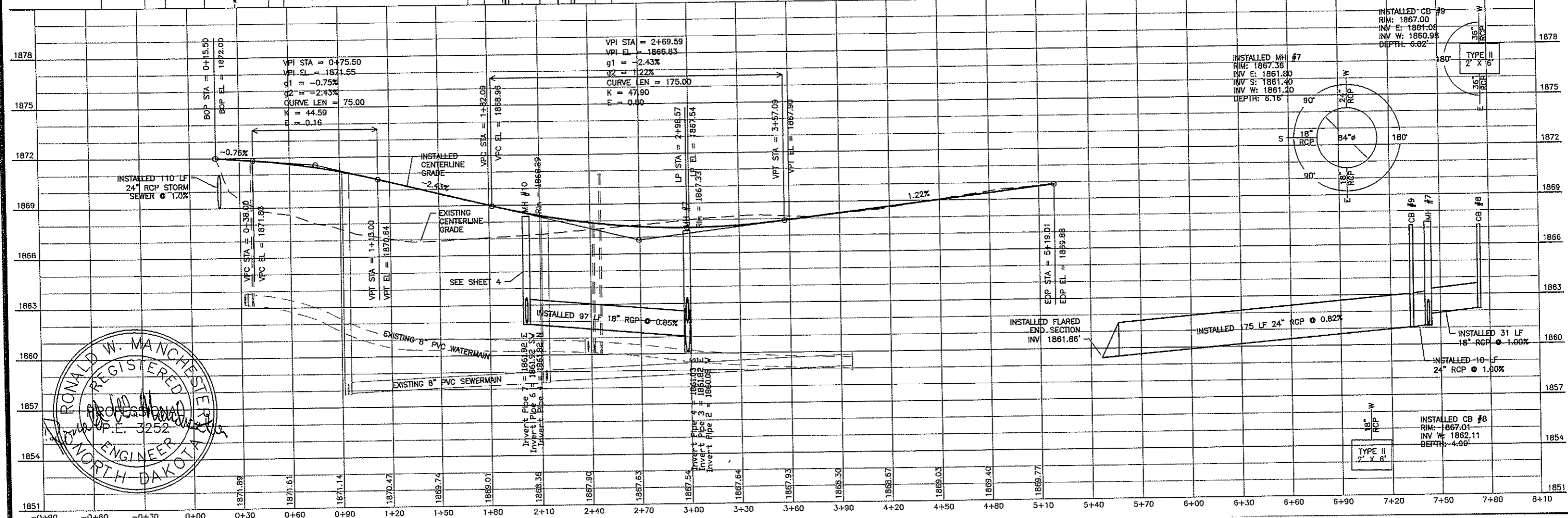
AVOID CUTTING UNDERGROUND UTILITY LINES IN YOUR AREA

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

1-800-795-0555

UTILITIES UNDERGROUND LOCATION CENTER

SCALES:
 1" = 60' HOR
 1" = 6' VER



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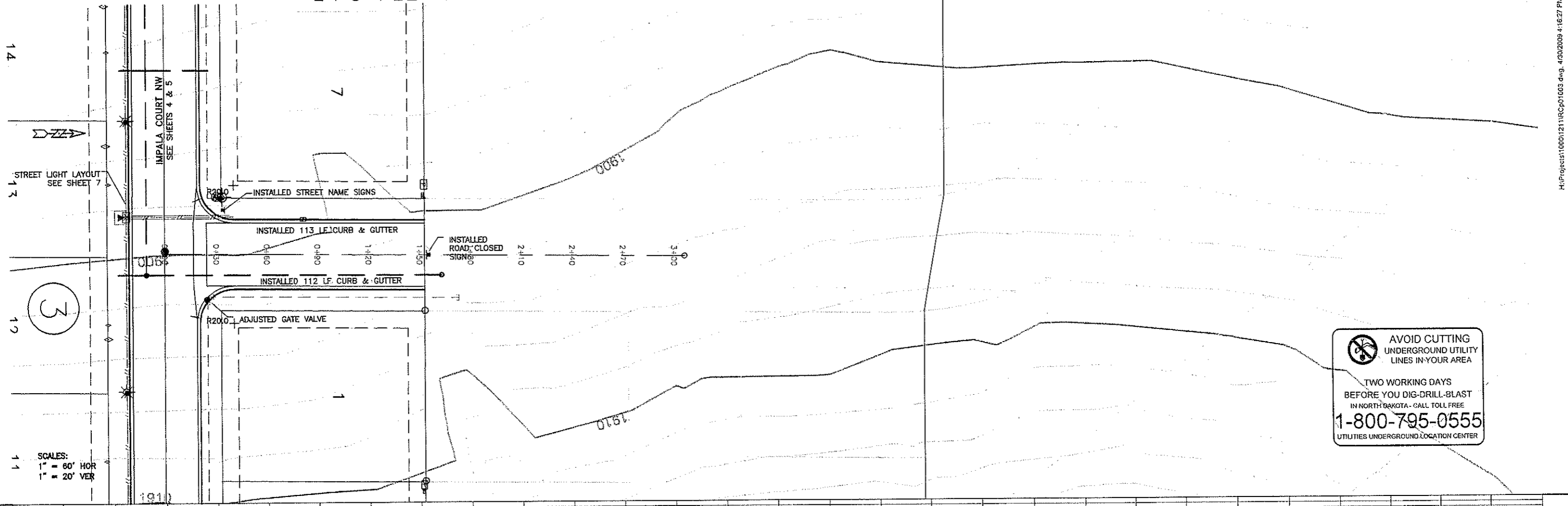
PROJECT: STREET IMPROVEMENT DISTRICT NO. 138 AREA "E"
 STREET IMPROVEMENT DISTRICT NO. 138 AREA "E"
 WEST HILLS ESTATES 1ST ADDITION
 47TH AVENUE NW PLAN & PROFILE ASBUILT

NO.	DATE	BY	REVISIONS

SHEET NUMBER
3
 OF 10 SHEETS

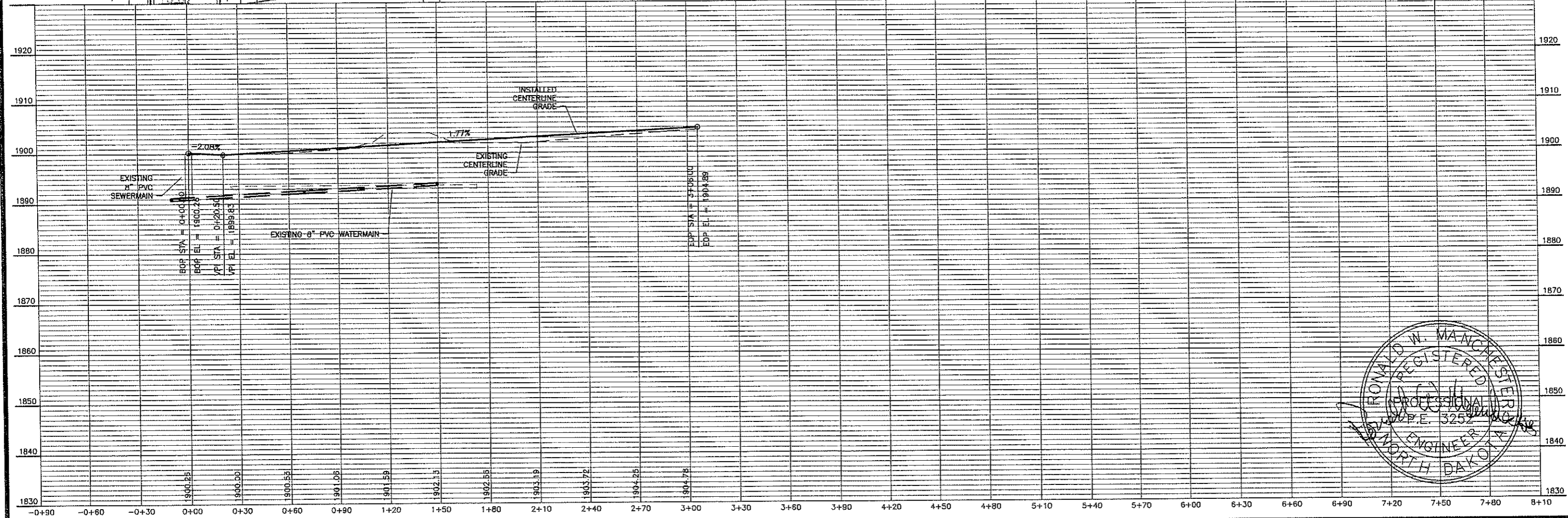
H:\Projects\1000121\11RCP\001.dwg, 4/29/2009 3:05:55 PM, 12

NOVA AVENUE NW PLAN & PROFILE ASBUILT



SCALES:
 1" = 60' HOR
 1" = 20' VER

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



NO.	DATE	BY	REVISIONS
1	03/07	RM	ISSUED FOR PERMIT
2	03/07	RM	REVISED PER COMMENTS

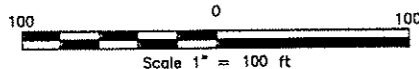
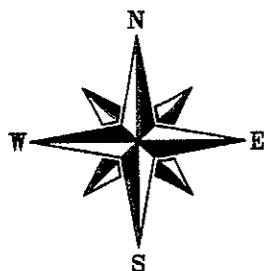
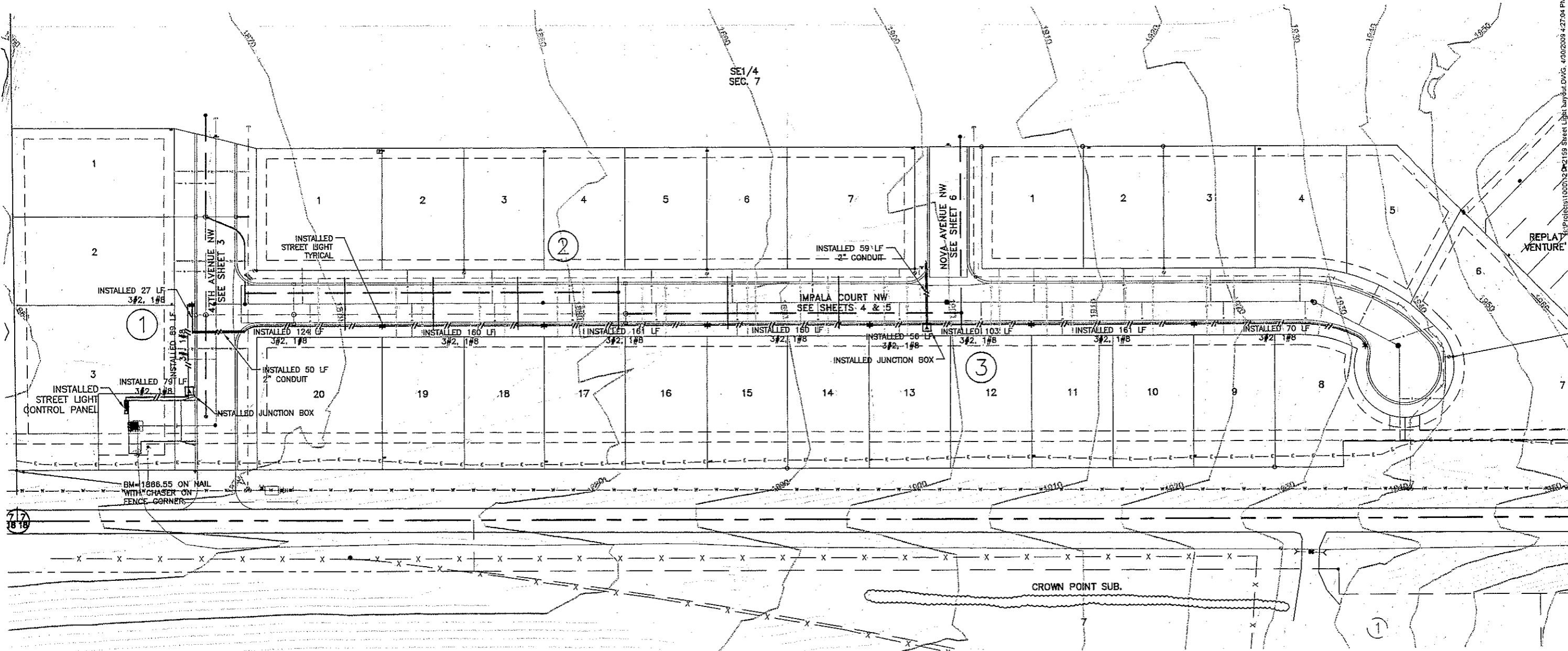
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 SHEET NUMBER: **6**
 OF 10 SHEETS

PROJECT: STREET IMPROVEMENT DISTRICT NO. 138 AREA "E"
 WEST HILLS ESTATES 1ST ADDITION
 NOVA AVENUE NW PLAN & PROFILE ASBUILT

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 CONSULTING CIVIL ENGINEERS
 901 1ST ST. N.W. • WANDAK, NORTH DAKOTA 58554 • (701) 863-4463

Hi-Project:100012114RCp01003 dwg. 4/30/2009 4:16:27 PM. 1.2

STREET LIGHT LAYOUT ASBUILT



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



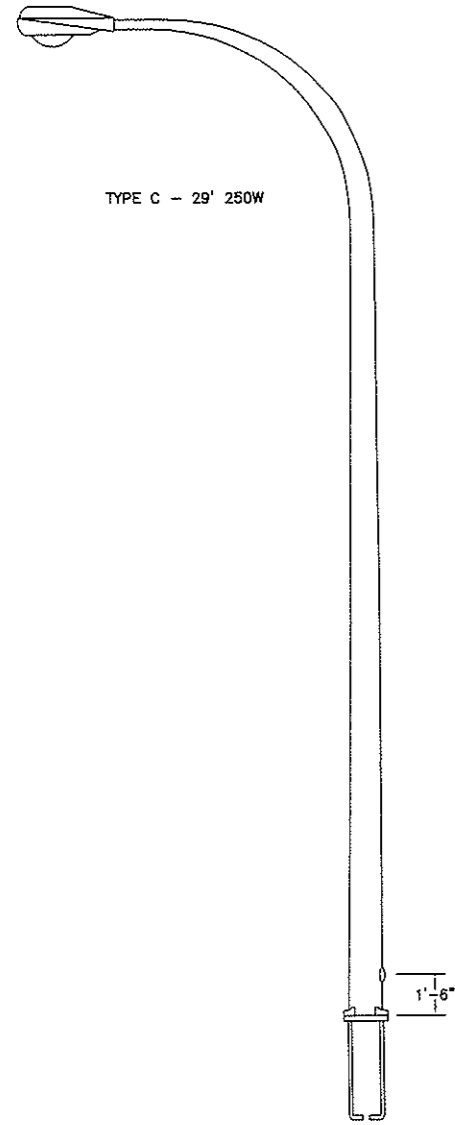
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NO.	DATE	BY	REVISIONS
1	03/07	REB	ISSUE FOR CONSTRUCTION
2			
3			

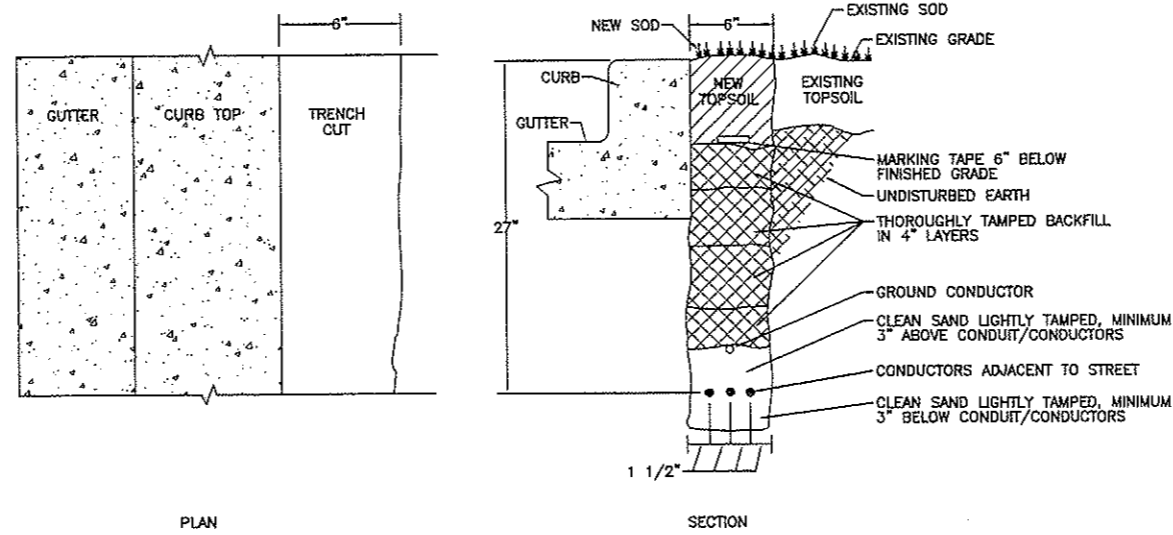
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7
OF 10 SHEETS

STREET LIGHT DETAILS ASBUILT

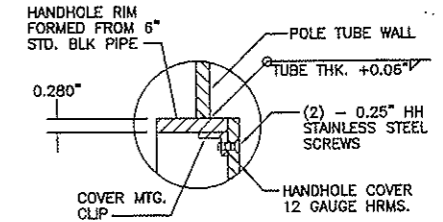
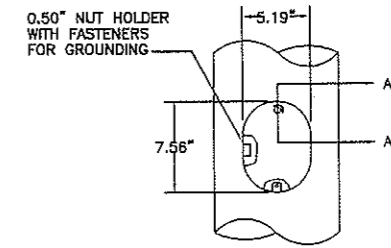
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TYPICAL
POLE DETAIL

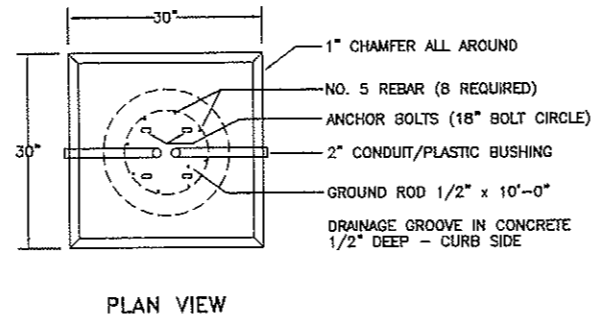


UNDERGROUND CABLE INSTALLATION

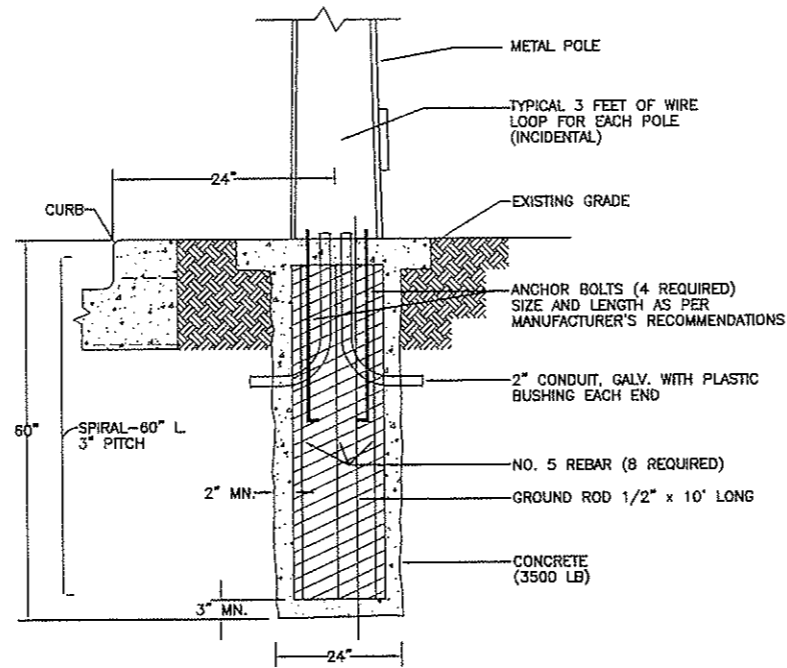


SECTION A-A
HANDHOLE DETAIL

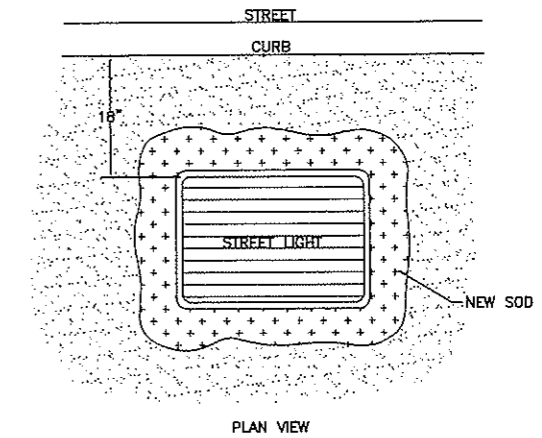

**AVOID CUTTING
UNDERGROUND UTILITY
LINES IN YOUR AREA**
 TWO WORKING DAYS
 BEFORE YOU DIG-DRILL-BLAST
 IN NORTH DAKOTA CALL TOLL FREE
1-800-795-0555
 UTILITIES UNDERGROUND LOCATION CENTER



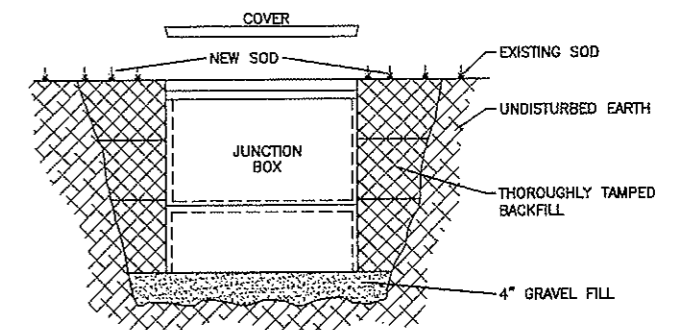
PLAN VIEW



SECTION
BASE DETAIL



PLAN VIEW



SECTION
JUNCTION BOX DETAIL
* PROVIDE MOUSE HOLES AS REQUIRED FOR EXISTING AND NEW CONDUCTORS



H:\Projects\1600\12112159 Street Light Details.dwg, 4/30/2009 4:41:37 PM, 1:1

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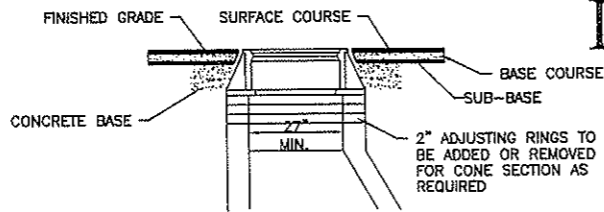
PROJECT: STREET IMPROVEMENT DISTRICT NO. 138 AREA "E"
 STREET IMPROVEMENT DISTRICT NO. 138 AREA "E"
 WEST HILLS ESTATES 1ST ADDITION
 STREET LIGHT DETAILS ASBUILT

NO.	REVISIONS	BY	DATE	ISSUE NO.	DATE	ISSUE NO.

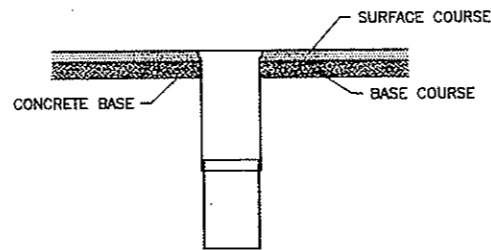
SHEET NUMBER
 8
 OF 10 SHEETS

DETAILS ASBUILT

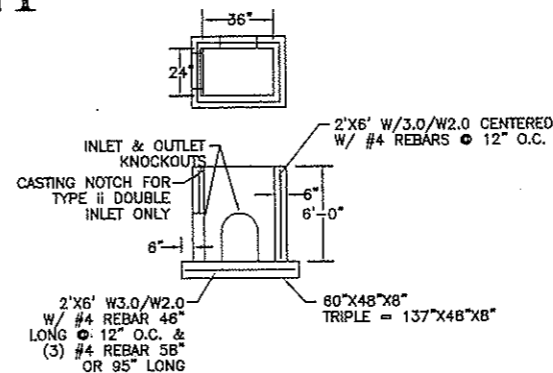
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TYPICAL MANHOLE ADJUSTMENT DETAIL



TYPICAL GATE VALVE BOX ADJUSTMENT SECTION

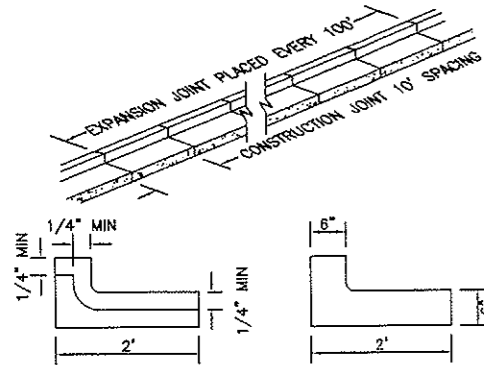


TYPE-2 CATCH BASIN DETAIL

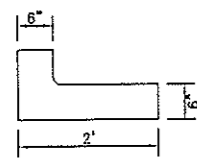
AVOID CUTTING UNDERGROUND UTILITY LINES IN YOUR AREA
 TWO WORKING DAYS BEFORE YOU DIG-DRILL-BLAST IN NORTH DAKOTA - CALL TOLL FREE
1-800-795-0555
 UTILITIES UNDERGROUND LOCATION CENTER

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

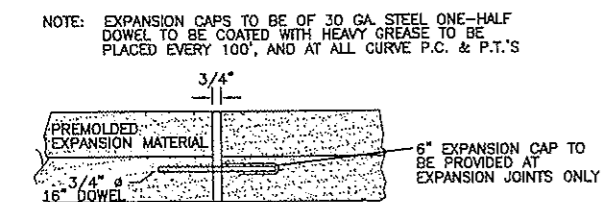
SIGN	MUTCD CODE
STOP SIGN	R1-1
STREET NAME SIGNS	R3-1 (8" SIGN, 6" CAPITAL LETTERS) STREET NAMES: 1. OLD RED TRAIL 2. 47TH STREET NW 2. IMPALA COURT NW 2. NOVA AVENUE NW
YIELD SIGN	R1-2
ROAD CLOSED SIGN	DIAMOND, 30" X 30"



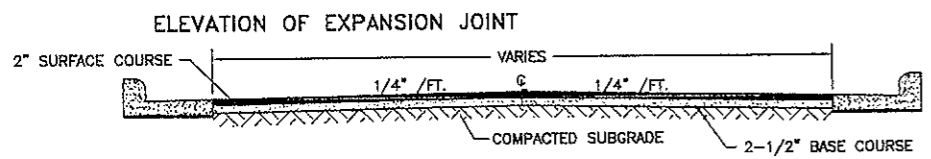
SECTION VIEW OF CONSTRUCTION JOINT (SAW CUT ON SLABS HAND EDGE ON CURB & GUTTER)



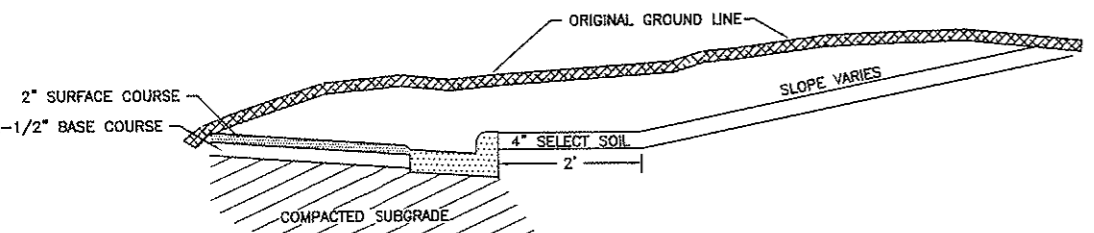
SECTION VIEW OF EXPANSION JOINT



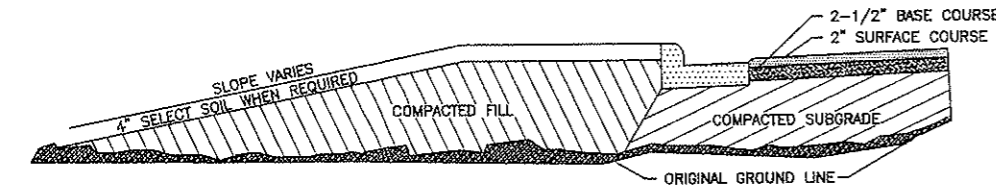
TYPICAL CURB & GUTTER



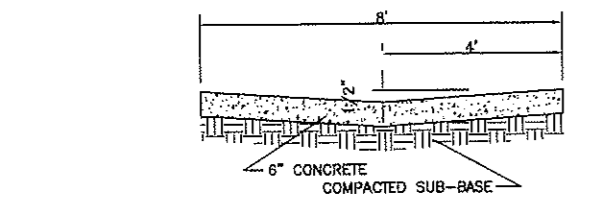
TYPICAL STREET SECTION



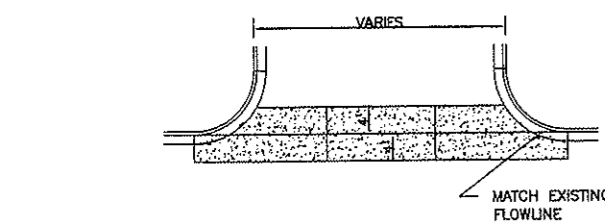
TYPICAL CUT SECTION



TYPICAL FILL SECTION

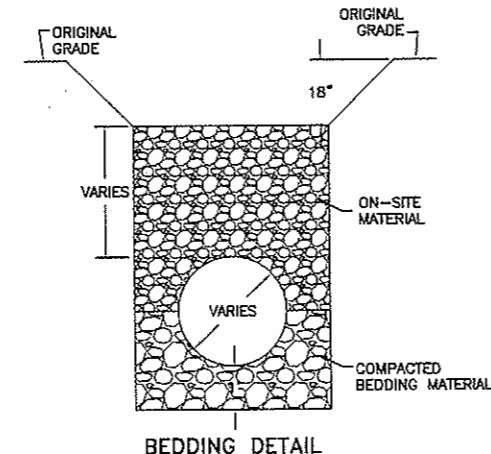


TYPICAL ASPHALT SECTION

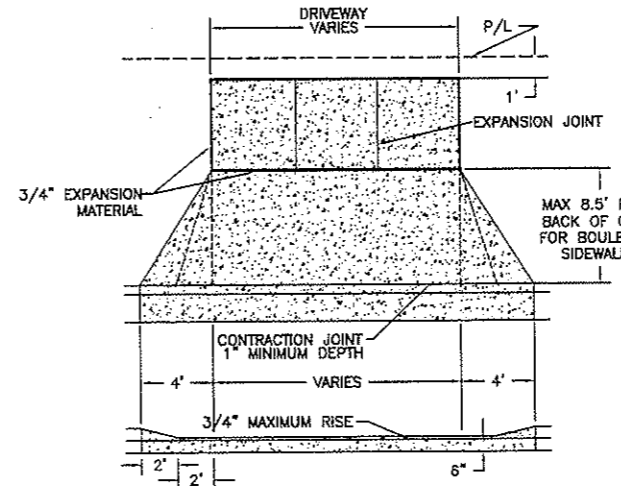


CONCRETE APRON DETAIL

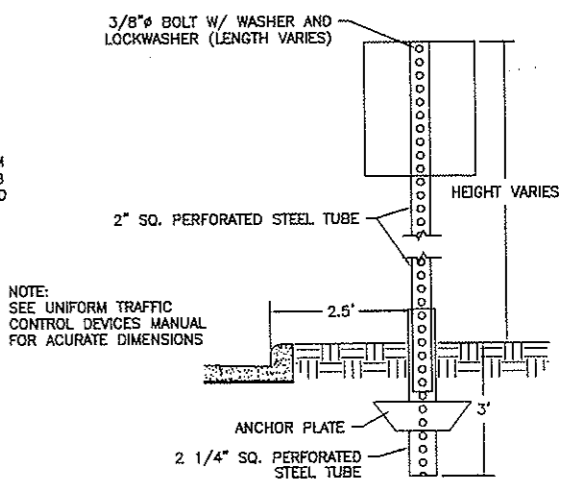
TYPICAL VALLEY GUTTER SECTION



BEDDING DETAIL

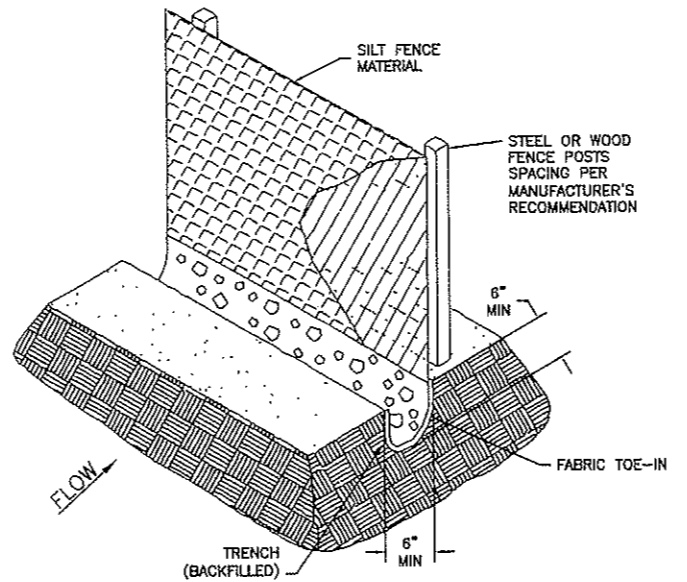


SIDEWALK & DRIVEWAY DETAIL

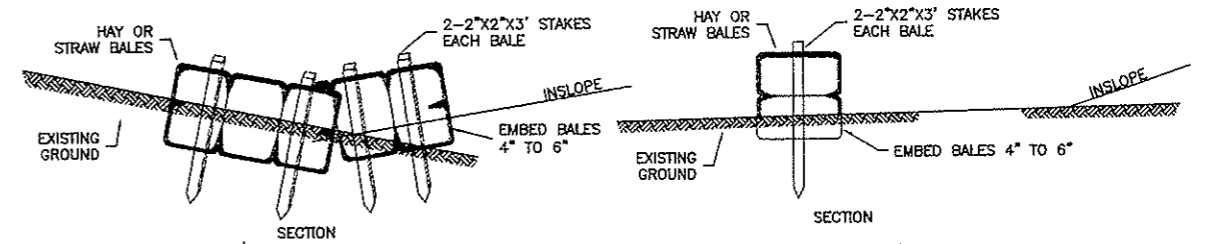


TYPICAL SIGN DETAIL

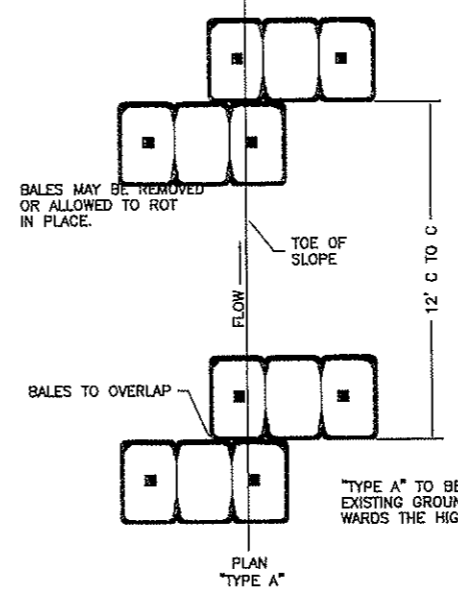
- NOTES:**
- SILT FENCE FABRIC SHALL BE ONE OF THE FOLLOWING:
 A. BURLAP: AASHTO M182
 B. POLYPROPYLENE FABRIC: ASTM D4397
 C. NYLON NETTING REINFORCED FABRIC
 D. PREMANUFACTURED SILT FENCE MEETING EQUAL PROPERTIES OF ABOVE.
 - SILT FENCE FABRIC SHALL HAVE A MINIMUM BURSTING STRENGTH 150 PSI
 - SILT FENCE FABRIC SHALL HAVE EDGES TREATED TO PREVENT UNRAVELING.
 - MINIMUM HEIGHT OF THE SILT FENCE TO BE 2'-6" WITH A MINIMUM OF 6" CLEARANCE BETWEEN THE TOP OF THE SILT FENCE AND THE TOP OF THE POSTS.
 - INSTALL THE POSTS AT SLIGHT ANGLE TOWARDS THE ANTICIPATED RUNOFF SURFACE.



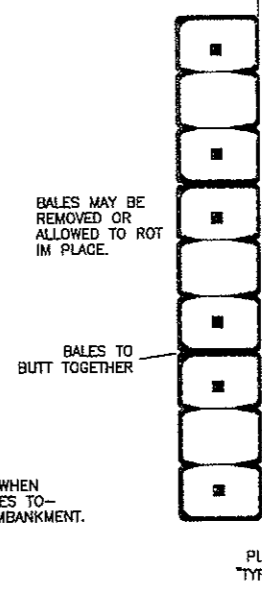
SILT FENCE



SECTION

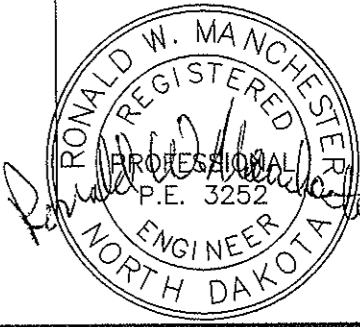


PLAN TYPE A



PLAN TYPE B

BALED HAY OR STRAW EROSION CHECKS



H:\Projects\100112112155 Street Details.dwg 4/30/2009 4:42:20 PM 12

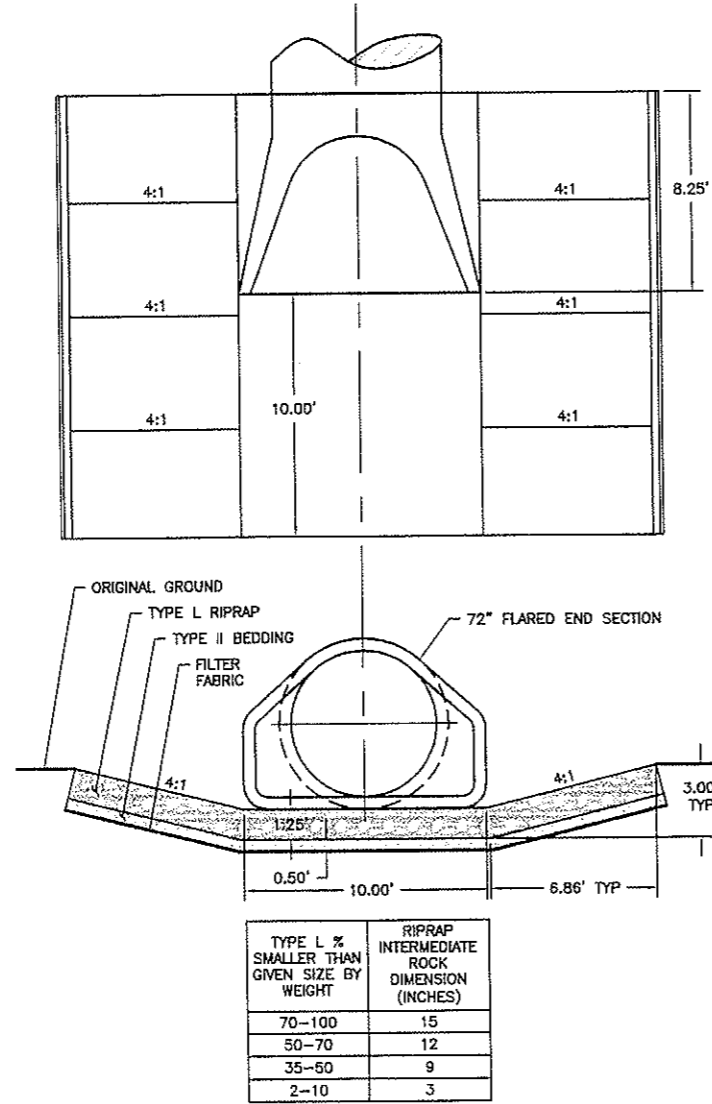
TOMAN ENGINEERING COMPANY
 CONSULTING CIVIL ENGINEERS
 501 1ST ST. N.W. - MINNAPOLIS, MINN. 55412 (763) 663-4403

PROJECT: STREET IMP. DIST. NO. - AREA - AREA - AREA
 WEST HILLS ESTATES 2ND ADDITION
 DETAILS ASBUILT

NO.	DATE	BY	REVISIONS
1	02/2008	RM	ISSUE FOR PERMITS
2	02/2008	RM	ISSUE FOR CONSTRUCTION

SHEET NUMBER
 11
 OF 11 SHEETS

RIPRAP DETAILS ASBUILT

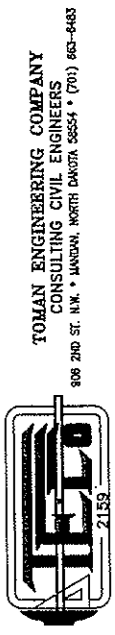


MANHOLE & CATCH BASIN SCHEDULE	
MANHOLE/CATCH BASIN	CASTING
MH #7	R-1733
MH #8	R-1733
MH #9	R-1733
MH #10	R-1733
CB #1	R-3295-3 W/ ND TYPE BOX
CB #2	R-3295-3 W/ ND TYPE BOX
CB #3	R-3295-2 W/ ND TYPE BOX
CB #4	R-3087 W/ ND TYPE BOX
CB #7	R-3087 W/ ND TYPE BOX
CB #8	R-3295-2 W/ ND TYPE BOX
CB #9	R-3295-2 W/ ND TYPE BOX

TYPE L % SMALLER THAN GIVEN SIZE BY WEIGHT	RIPRAP INTERMEDIATE ROCK DIMENSION (INCHES)
70-100	15
50-70	12
35-50	9
2-10	3



H:\Projects\100012112159 Riprap Details.dwg, 4/30/2009 4:42:45 PM, 1:1



PROJECT:
STREET IMP. DISTRICT NO. 138 AREA "E"
WEST HILLS ESTATES 1ST ADDITION
RIPRAP DETAILS ASBUILT

TITLE:	NO.	DATE	BY	DATE	REVISIONS
STREET IMPROVEMENT DISTRICT NO. 138 AREA "E"					

SHEET NUMBER
10
OF 10 SHEETS