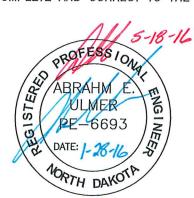
## BIG SKY ESTATES ADDITION SANITARY SEWER EXTENSION CITY PROJECT NO. 2015-18 MANDAN, NORTH DAKOTA

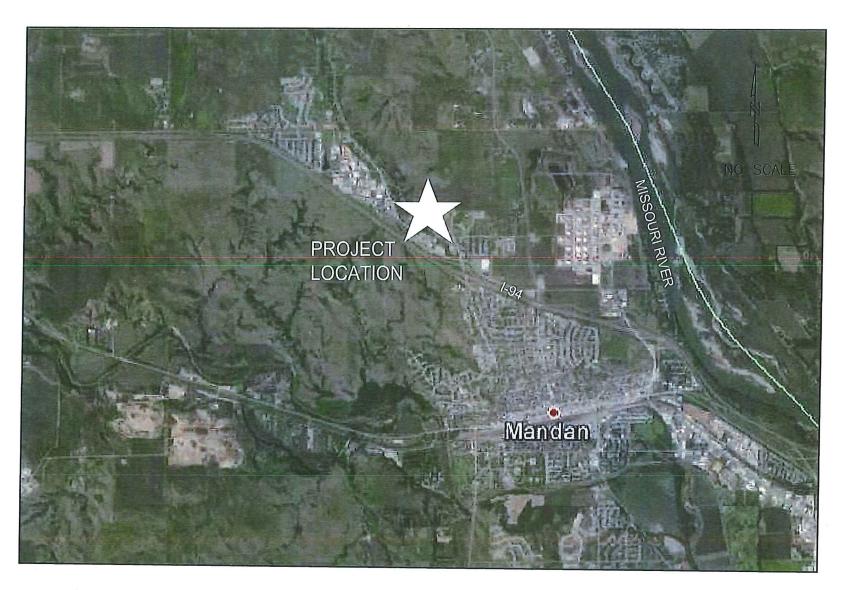
#### INDEX OF DRAWINGS

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4	DETAILS
3	SANITARY SEWER

DESIGN ENGINEER'S CERTIFICATE\_
I, ABRAHM E. ULMER, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NORTH DAKOTA, HEREBY CERTIFY THAT THE PLANS FOR THE SANITARY SEWER MODIFICTION IN BIG SKY ESTATES ADDITION, MANDAN, NORTH DAKOTA WERE PREPARED UNDER MY SUPERVISION AND ARE COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.



ABRAHM E. ULMER, P.E. REGISTERED PROFESSIONAL ENGINEER NORTH DAKOTA REGISTRATION NO. 6693



Contractor:

Weisz & SONS INC. 3310 Hamilton St. Bismarck, ND 58502 (701) 258-9770

# AS-BUILT



NO SCALE

\*CAUTION\*
UTILITY LOCATIONS ARE
APPROXIMATE. CONTRACTOR IS
RESPONSIBLE FOR VERIFYING
LOCATION PRIOR TO EXCAVATION



TOMAN ENGINEERING
501 1st Street NW, Mandan, ND 58554
Phone: 701-663-6483 \* Fax: 701-663-0923

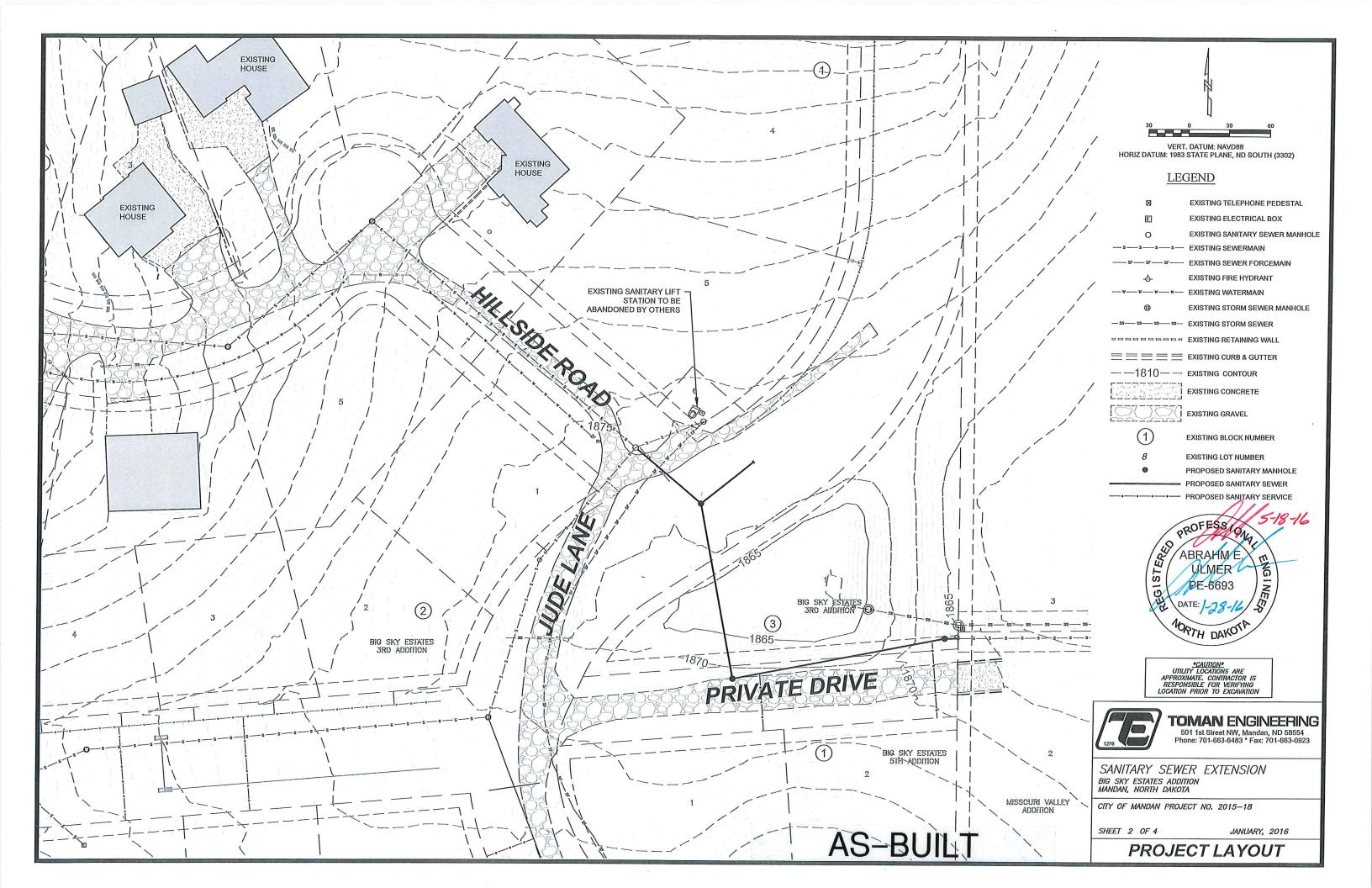
SANITARY SEWER EXTENSION BIG SKY ESTATES ADDITION MANDAN, NORTH DAKOTA

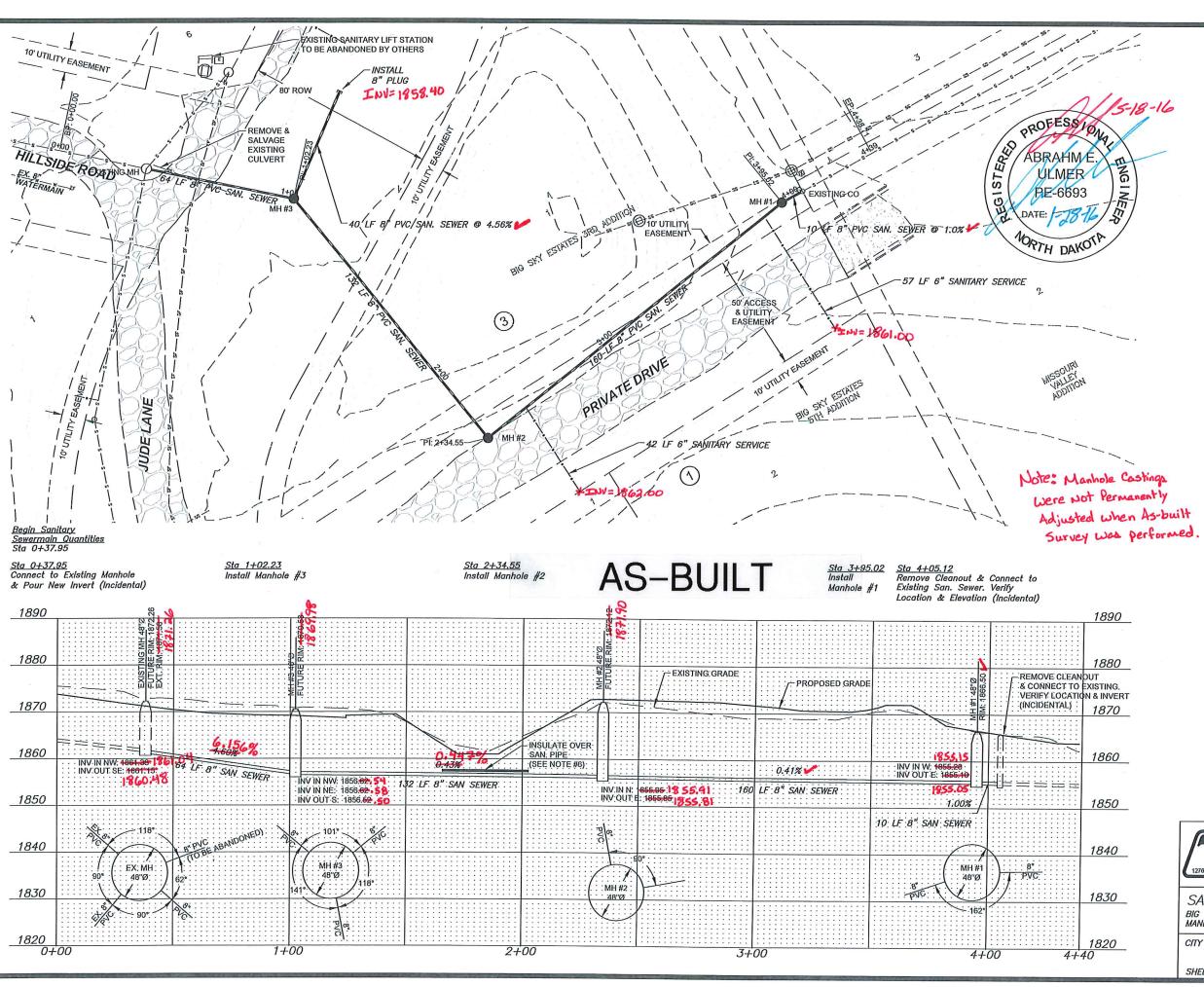
CITY OF MANDAN PROJECT NO. 2015-18

SHEET 1 OF

JANUARY, 2016

TITLE SHEET







VERT. DATUM: NAVD88 HORIZ DATUM: 1983 STATE PLANE, ND SOUTH (3302)

- I. EXISTING SANITARY LIFT STATION AND VALVE PIT WILL BE REMOVED BY OTHERS AFTER PROJECT IS COMPLETED.
- BACKFILL SHALL BE CLASS 'A' PER CITY OF MANDAN SPECIFICATIONS. MOISTURE REQUIREMENTS SHALL BE NO MORE THAN 3% ABOVE OR 2% BELOW OPTIMUM MOISTURE AS DETERMINED BY ASTMD-1557.
- 3. REMOVAL AND REPLACEMENT OF EXISTING GRAVEL AND TOPSOIL SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- 4. CONTRACTOR SHALL CORE INTO EXISTING MANHOLE AND RECONSTRUCT THE INVERT FOR POSITIVE FLOW. THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- 5. CONTRACTOR SHALL PLUG THE EXISTING PIPE THAT FLOWS TO THE LIFT STATION OUTSIDE OF THE EXISTING MANHOLE. THIS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT,
- 6. INSULATION SHALL BE INSTALLED FROM STA 1+70 TO STA 1+90 IN THE LOW AREA WHERE A MINIMUM COVER OF 4' CANNOT BE OBTAINED. THIS SHALL BE INSTALLED PER PLAN DETAIL AND PAID FOR AS PER PRICE BID "INSULATE SANITARY SEWER".
- 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SANITARY SERVICE TO ALL RESIDENTS DURING CONSTRUCTION. PLUGGING AND PUMPING THE EXISTING SANITARY SEWER SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- 8. EXISTING SANITARY FORCEMAIN SHOWN IS APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION & ELEVATION FOR CONSTRUCTION OF THE NEW SANITARY SEWER. (INCIDENTAL)
- 9. TRAFFIC CONTROL SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

#### APPROXIMATE QUANTITIES

Spec No.	Sanitary Sewermain Items	Quantit
801-4.2	8" Sanitary Sewermain	406 LF
801-4.51	8"x6" Wye Branch	2 Ea
801-4.60	Bedding Material	120 Ton
1205-4.1	Manhole	3 Ea
1209-4.2	6" Sanitary Sewer Pipe	99 LF
1209-4.7	6" - 45° Bend	2 Ea
SP #8	Insulate Sanitary Sewer	20 LF

\*CAUTION\*
UTILITY LOCATIONS ARE APPROXIMATE.
CONTRACTOR IS RESPONSIBLE FOR
VERIFYING LOCATION PRIOR TO
EXCAVATION



### TOMAN ENGINEERING 501 1st Street NW, Mandan, ND 58554

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SANITARY SEWER EXTENSION

BIG SKY ESTATES ADDITION MANDAN, NORTH DAKOTA

CITY OF MANDAN PROJECT NO. 2015-18

SHEET 3 OF 4

JANUARY, 2016

NOTE NO. 1 - MANHOLE CASTING AND COVER SHALL BE AS DEFINED IN SECTION 1205-2,5.

NOTE NO.2 - ALLOWANCE FOR ADJUSTMENT - 0" TO 6" - SEE STANDARD DETAIL NO. 1205-1.

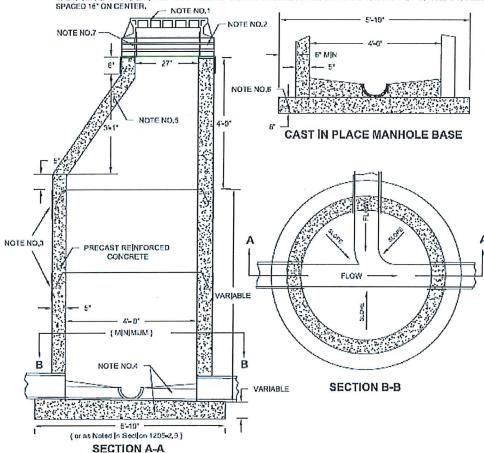
NOTE NO.3 - CRETEX P2 GASKETED JOINT FOR 48" MANHOLES, CRETEX CX-4 JOINT FOR ALL OTHER SIZES OF MANHOLES OR EXTERIOR SEAL BY PRESS-SEAL GASKET CORP, EZ WRAP AND EZ STIK NO. 4 PRIMER, CRETEX SPECIALTY PRODUCTS 'MAC WRAP', OR AN APPROVED EQUAL.

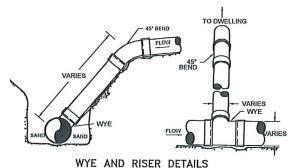
NOTE NO.4 - IF PRECAST MANHOLE BASE IS USED, FLOOR SHALL BE GROUTED AND SLOPED, AS SHOWN, FROM 1/2 THE DIAMETER OF THE FIFE, SEE SECTION 1/205-2,9 FOR FRECAST MANHOLE BASE REINFORCEMENT,

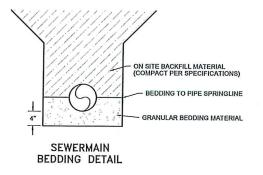
NOTE NO.6 - CAST IN PLACE MANHOLE BASES SHALL BE OIMENSIONED AS SHOWN UNLESS OTHERWISE INDICATED, BASES SHALL BE REINFORCED WITH NO.4 REBAR SPACED 15' ON CENTER BOTH WAYS,

NOTE NO.7 - If BARRIER AS MANUFACTURED BY APIM PERMAFORM OR AN APPROVED EQUAL.

NOTE NO,6 - STEPS SHALL NOT BE PLACED IN SANITARY SEWER, STORM SEWER OR AIR RELEASE MANHOLES. OR INLETS UNLESS SPECIFIED, IF SPECIFIED, THE MANHOLE STEPS SHALL BE DELTA SUREFOOT OR APPROVED EQUAL, STEPS SHALL BE

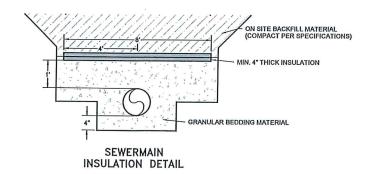








SAND CUSHION BEDDING-SUPPORT ENTIRE LENGTH OF PIPE SPECIAL COMPACTION REQUIRED TO PIPE SPRING LINE



NOTES:

1. 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 BRODEFILE OF ADDICE

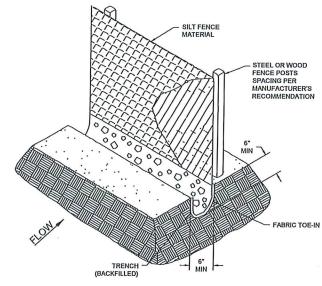
D. PREMANUFACTURED SILT FENCE MEETING
EQUAL PROPERTIES OF ABOVE.

2. SILT FENCE FABRIC SHALL HAVE A
MINIMUM BURSTING STRENGTH 150 PSI
3. SILT FENCE FABRIC SHALL HAVE EDGES
TREATED TO PREVENT UNRAVELING.

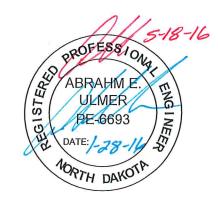
4. MINIMUM HEIGHT OF THE SILT FENCE TO BE 2'-6" WITH
A MINIMUM OF 6" CLEARANCE BETWEEN THE TOP OF THE
SILT FENCE AND THE TOP OF THE POSTS.

5. INSTAIL THE POSTS ON SIGHT ANGLE TOWARDS

INSTALL THE POSTS ON SLIGHT ANGLE TOWARDS THE ANTICIPATED RUNOFF SURFACE.



SILT FENCE





SANITARY SEWER EXTENSION BIG SKY ESTATES ADDITION MANDAN, NORTH DAKOTA

CITY OF MANDAN PROJECT NO. 2015-18

SHEET 4 OF 4

JANUARY, 2016

**DETAILS** 

AS-BUILT