

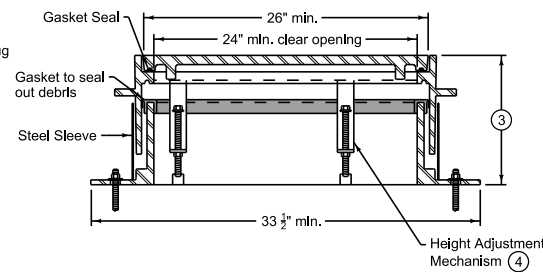
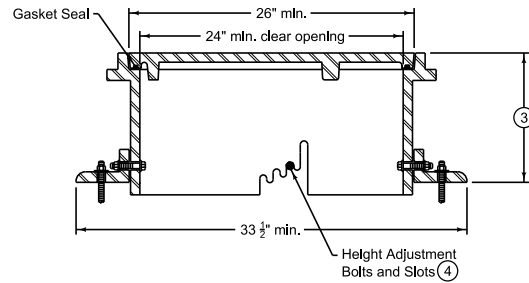
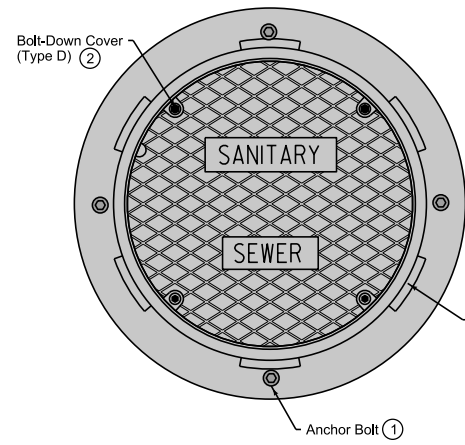






**TYPE B: PCC**  
Three-piece floating casting for use  
in PCC paving and PCC boxouts

**TYPE D: PCC**  
Three-piece floating casting with bolt-down cover  
for use in PCC paving and PCC boxouts



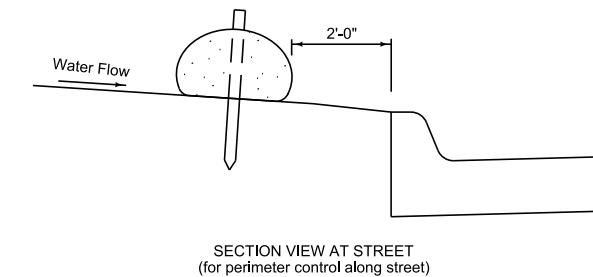
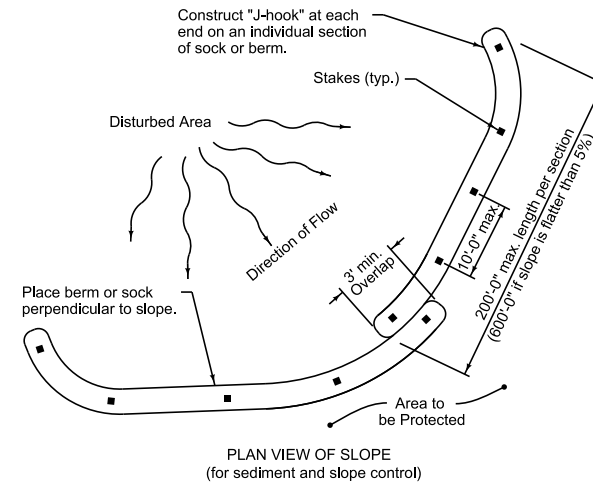
TYPICAL SECTION ⑤

**Frame Notes:**  
Size, spacing, and number of lugs and flanges may vary.

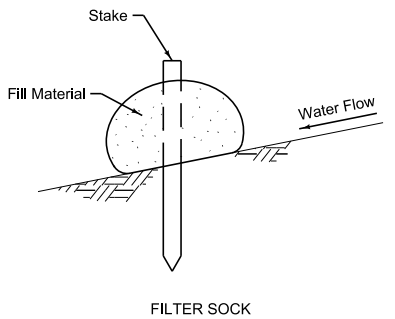
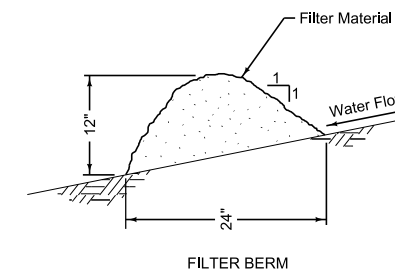
**Cover Notes:**  
Roughness pattern and text style may vary. Minimum one concealed pickhole.

- Anchor the lower frame of all three-piece castings to the manhole structure. When specified in the contract documents, anchor the frame of two-piece castings to the manhole structure. If casting frame does not include anchor holes or slots, drill four 7/8 inch diameter holes, equally spaced around the frame.
- If specified, furnish bolt down frame and cover with four 1/2 inch minimum diameter stainless steel, hex nut, recessed cap screws. Secure cover with screws, washers, and rubber gasket seals.
- Casting height varies. Minimum adjustment range of 4 inches.
- Set casting at proper grade using the adjustment slots or adjustment mechanism. Remove bolts or mechanism upon completion of paving.
- Height adjustment method may vary; two options are shown.

|   |                    |              |
|---|--------------------|--------------|
|   |                    | REVISION     |
|   |                    | 4 04-21-20   |
| FIGURE 6010.601                                 | STANDARD ROAD PLAN | SW-601       |
| REVISIONS: Add option for Science HMA casting   |                    | SHEET 2 of 2 |
| SUDAS DIRECTOR: PERSON METHODS ENGINEER         |                    |              |
| <b>CASTINGS FOR<br/>SANITARY SEWER MANHOLES</b> |                    |              |



TYPICAL PLACEMENT OF BERM OR SOCK

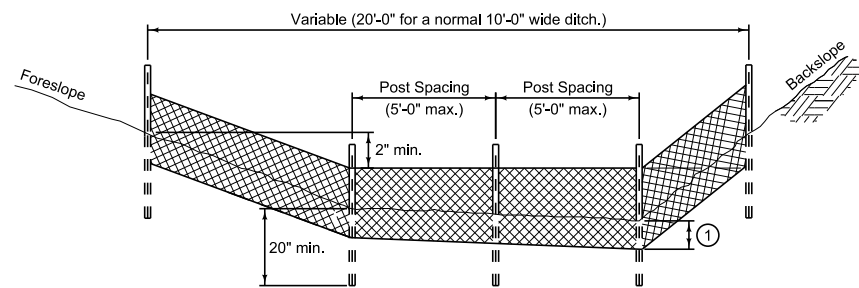


Berm shown is typical for slopes flatter than 3:1. For steeper slopes, increase berm size as directed by the Engineer.

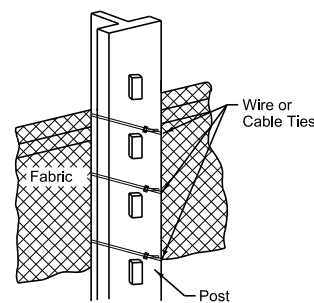
Place berm in uncompacted windrow perpendicular to the slope at locations specified in the contract documents.

Filter sock diameter as specified in the contract documents.

|                                      |          |
|--------------------------------------|----------|
|                                      | REVISION |
|                                      | 10-17-17 |
| FIGURE 9040.102                      | 9040.102 |
| SHEET 1 of 1                         |          |
| <b>SUDAS Standard Specifications</b> |          |
| <b>FILTER BERM AND FILTER SOCK</b>   |          |

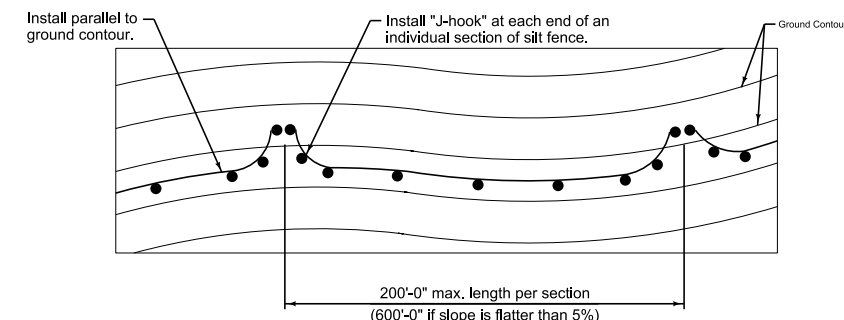


TYPICAL SILT FENCE DITCH CHECK

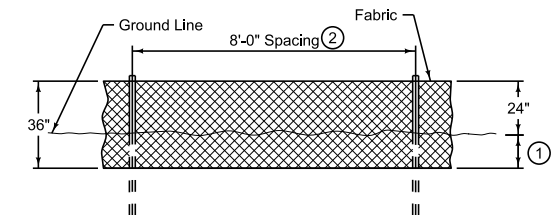


ATTACHMENT TO POST

- Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).

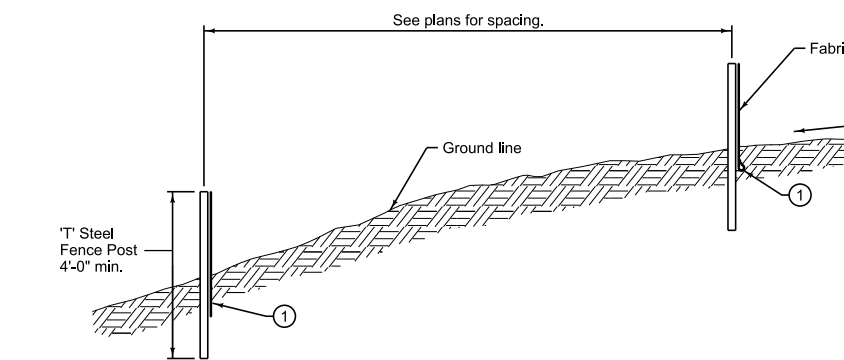


TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES (Plan View)



DETAILS OF SILT FENCE ON LONGITUDINAL SLOPES

- Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).
- Reduce post spacing to 5'-0" at water concentration areas, or as required to adequately support fence.



TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES (Profile View)

|                                      |          |
|--------------------------------------|----------|
|                                      | REVISION |
|                                      | 10-21-14 |
| FIGURE 9040.119                      | 9040.119 |
| SHEET 1 of 2                         |          |
| <b>SUDAS Standard Specifications</b> |          |
| <b>SILT FENCE</b>                    |          |

|                                      |          |
|--------------------------------------|----------|
|                                      | REVISION |
|                                      | 10-21-14 |
| FIGURE 9040.119                      | 9040.119 |
| SHEET 2 of 2                         |          |
| <b>SUDAS Standard Specifications</b> |          |
| <b>SILT FENCE</b>                    |          |

FIGURE 6010.601 SHEET 2 OF 2

FIGURE 9040.119 SHEET 1 OF 2

CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: D. VERBOCKEL CHECKED BY: A. FLOY DRAWN BY: D. VERBOCKEL  
 LETTING DATE: 1/31/2023 CAD DATE: 12/27/2022 10:59:07 AM  
 CAD FILE: c:\pw\_workdir\pw\_leimj\11d056405810022A004.00\_B\_SHT.dgn

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**NORTH FOUR MILE CREEK TRUNK SEWER**

**STANDARD DETAILS**

ANKENY

SHEET NO.

**B.2**



**ESTIMATED ROADWAY QUANTITIES  
(1 DIVISION PROJECT)**

| Item No.   | Item Code    | Item   | Unit | Total | As Built Qty. |
|--|--------------|--|------|-------|---------------|
| <b>DIVISION 1 - GENERAL</b>                            |              |  |      |       |               |
|  |              | NOT USED   |      |       |               |
| <b>DIVISION 2 - EARTHWORK</b>                          |              |  |      |       |               |
| 2.1  | 2010-C-1000  | CLEARING AND GRUBBING  | ACRE | 7.3   |               |
| <b>DIVISION 3 - TRENCH AND TRENCHLESS CONSTRUCTION</b> |              |  |      |       |               |
|  |              | NOT USED   |      |       |               |
| <b>DIVISION 4 - SEWERS AND DRAINS</b>                  |              |  |      |       |               |
| 4.1  | 4010-A-1118  | SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 18 IN.                         | LF   | 420   |               |
| 4.2  | 4010-A-1130  | SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 30 IN.                         | LF   | 2291  |               |
| 4.3  | 4010-A-2130  | SANITARY SEWER GRAVITY MAIN, TRENCHLESS, PVC, 30 IN.                       | LF   | 1382  |               |
| 4.4  | 4010-B-2130  | SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHLESS, PVC, 30 IN.      | LF   | 110   |               |
| <b>DIVISION 5 - WATERMAINS AND APPURTENANCES</b>       |              |  |      |       |               |
|  |              | NOT USED   |      |       |               |
| <b>DIVISION 6 - STRUCTURES FOR SANITARY AND STORM</b>  |              |  |      |       |               |
| 6.1  | 6010-A-1060  | MANHOLE, SANITARY SEWER, SW-301, 60 IN.                                    | EA   | 13    |               |
| 6.2  | 6010-G-1000  | CONNECTION TO EXISTING SANITARY MANHOLE                                    | EA   | 1     |               |
| <b>DIVISION 7 - STREETS AND RELATED WORK</b>           |              |  |      |       |               |
|  |              | NOT USED   |      |       |               |
| <b>DIVISION 8 - TRAFFIC CONTROL</b>                    |              |  |      |       |               |
|  | 8030-A-1000  | TRAFFIC CONTROL  | LS   | 1     |               |
| <b>DIVISION 9 - SITE WORK AND LANDSCAPING</b>          |              |  |      |       |               |
| 9.1  | 9010-A-1100  | CONVENTIONAL SEEDING & FERTILIZING TYPE 2 ( PERMANENT COOL SEASON MIXTURE) | ACRE | 6.5   |               |
| 9.2  | 9010-A-1107  | WETLAND SEEDINIG   | ACRE | 0.8   |               |
| 9.3  | 9010-A-1104  | CONVENTIONAL SEEDING & FERTILIZING TYPE 4 ( URBAN TEMPORARY MIXTURE)       | ACRE | 7.3   |               |
| 9.4  | 9010-A-1110  | MULCHING, BONDED FIBER MATRIX  | ACRE | 14.6  |               |
| 9.5  | 9040-D-1000  | FILTER SOCK, INSTALLATION  | LF   | 2500  |               |
| 9.6  | 9040-D-3000  | FILTER SOCK, REMOVAL OF DEVICE   | LF   | 2500  |               |
| 9.7  | 9040-N-1000  | SILT FENCE, INSTALLATION   | LF   | 4000  |               |
| 9.8  | 9040-N-3000  | SILT FENCE, REMOVAL OF DEVICE  | LF   | 4000  |               |
| 9.9  | SPECIAL      | SURFACE RESTORATION HAUL ROUTES  | LS   | 1     |               |
| <b>DIVISION 10 - DEMOLITION</b>                        |              |  |      |       |               |
|  |              | NOT USED   |      |       |               |
| <b>DIVISION 11 - MISCELLANEOUS</b>                     |              |  |      |       |               |
| 11.1   | 11010-A-1000 | CONSTRUCTION SURVEY  | LS   | 1     |               |
| 11.2   | 11020-A-1000 | MOBILIZATION   | LS   | 1     |               |

**ESTIMATE REFERENCE INFORMATION**

| Item No.  | Item Code   | Description  |
|---|-------------|--|
| <b>DIVISION 2 - EARTHWORK</b>                               |             |  |
| 2.1   | 2010-C-1000 | <b>CLEARING &amp; GRUBBING</b><br>Refer to RR Sheets for disturbance limits. Disturbance limits are equal to the seeding limits. Areas outside of seeding limits shall not be disturbed. Burning will not be allowed. Wood chips shall be hauled off site. Incidental to this item is the removal of all rock, debris, tree trimming, tree stumps and abandoned utilities encountered during construction. Contractor shall be responsible for protecting utility poles and lines during tree removal and trimming activities. Coordinate with the City at least 7 days in advance of any construction requiring the removal of signs. Item includes removal of all riprap and granular material as denoted in the plans.  |
| <b>DIVISION 3 - TRENCH AND TRENCHLESS CONSTRUCTION</b>      |             |  |
|   |             | (NOT USED)   |
| <b>DIVISION 4 - SEWERS AND DRAINS</b>                       |             |  |
| 4.1   | 4010-A-1118 | <b>SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 18 IN.</b>  |
| 4.2   | 4010-A-1130 | <b>SANITARY SEWER GRAVITY MAIN, TRENCHED, PVC, 30 IN.</b><br>Refer to D-sheets for locations and details. PVC pipe shall meet the requirements of Section 4010, Part 2.01 D. Compact to a minimum of 95% Standard Proctor Density. The Contractor will provide density testing. These items also included granular bedding and backfill material to a minimum of 1.0 foot above the top of pipe. Unit price includes all concrete collars and vertical pipe supports. Unit price includes, but is not limited to, trench excavation, dewatering, furnishing bedding material, waterstops, placing bedding and backfill material, wyes and other fittings, pipe joints, testing, and inspection. Water stops shall be included in accordance with detail 3010.904. Refer to B-sheets. Removing and disposing of non-desirable backfill material and replacing with suitable material from elsewhere on the project site is considered incidental to this item. Unit price includes video inspection of sanitary sewer line. Video inspection shall be in accordance with Section 4060 of the Urban Standard Specifications.   |
| 4.3   | 4010-A-2130 | <b>SANITARY SEWER GRAVITY MAIN, TRENCHLESS, PVC, 30 IN.</b>  |
| 4.4   | 4010-B-2130 | <b>SANITARY SEWER GRAVITY MAIN WITH CASING PIPE, TRENCHLESS, PVC, 30 IN.</b><br>Refer to D-Sheets for locations and details. Items shall be installed per SUDAS Section 3040. Trenchless methods shall be Auger Boring, Open-Ended Pipe Ramming, or Pipe Jacking. Horizontal tolerance shall be +/-1.0 ft per 100 ft. Vertical tolerance shall be +/-0.2 ft up to 100 feet; an additional +/-0.1 foot per 100 feet thereafter. Backfall or sags in pipes are not allowed. Steel casing inside diameter shall be 42-inches and have a minimum wall thickness of 0.344-inches. Contractor shall fill annular space between the carrier and casing pipe with CLSM. Unit price includes furnishing and installing both carrier pipe and casing pipe; trenchless installation materials and equipment; pit excavation; dewatering; and placing and compacting backfill material; casing spacers; furnishing and installing annular space fill material; pipe connections; testing; and inspection. incidental to this item. Gasketed pipes and connections to existing pipes are considered incidental to this bid item. Removing and disposing of non-desirable backfill material and replacing with suitable material from elsewhere on the project site is considered incidental to this item. Unit price includes video inspection of sanitary sewer line. Video inspection shall be in accordance with Section 4060 of the Urban Standard Specifications. The Contractor will provide density testing. |
| <b>DIVISION 6 - STRUCTURES FOR SANITARY AND STORM SEWER</b> |             |  |
| 6.1   | 6010-A-1060 | <b>MANHOLE, SANITARY SEWER, SW-301, 60 IN.</b><br>This item includes all material and equipment necessary for excavation, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, Precast units (if used), chimney seals, castings, and adjustment rings. Refer to the D sheets for locations and B sheets for additional details. Compact trenches to 95% Standard Proctor density. Type A castings will be allowed. Cretex Pro-ring, or approved equal, expanded polypropylene (EPP) adjustment rings are required. Sealant material will be required with EPP adjustment ring installation. The maximum height of adjustment rings allowed for manhole castings is 12 inches. Infi-shield unit-band molded barrier shield are required for all sanitary manholes with Type A castings.   |
| 6.2   | 6010-G-1000 | <b>CONNECTION TO EXISTING SANITARY MANHOLE</b><br>This bid item includes all material and equipment necessary to core out the existing structure wall and floor as necessary to connect new sanitary sewer. New opening shall be core drilled. Refer to tabulation in C-sheets and D-Sheets for location information. Refer to SUDAS section 6010, 3.05. Incidental to this item is the testing of the existing manhole. Contractor to verify flowlines of existing sanitary prior to laying new pipe and core drilling. Notify Engineer if elevations differ from those in the plans.   |
| <b>DIVISION 7 - STREETS AND RELATED WORK</b>                |             |  |
|   |             | (NOT USED)   |
| <b>DIVISION 8 - TRAFFIC CONTROL</b>                         |             |  |
| 8.1   | 8030-A-1000 | <b>TRAFFIC CONTROL</b><br>This bid item shall include all signs and barricades as detailed here on and as required by the engineer and all other work necessary to control traffic during construction. All traffic control signs shall be fluorescent orange VIP sheeting. All traffic control shall meet the requirements of the City of Ankeny and the Manual for Uniform Traffic Control Devices (MUTCD). Refer to Sheet J.1 for additional details.   |

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**ESTIMATE REFERENCE INFORMATION**

| Item No.                                     | Item Code    | Description   |
|--|--------------|---|
| <b>DIVISION 9 - SITework AND LANDSCAPING</b> |              |   |
| 9.1  | 9010-A-1100  | CONVENTIONAL SEEDING & FERTILIZING, TYPE 2 (PERM. COOL SEASON MIX)  |
| 9.2  | 9010-A-1107  | WETLAND SEEDING<br>Prepare seed bed in accordance with SUDAS Section 9010. Use seed drill or approved slit seeding method. Broadcast seeding will not be allowed. Refer to RR Sheets for seeding locations. Seeding of disturbed areas beyond limits shown in plans shall be the responsibility of the Contractor and completed at no additional cost to the City. Wetland Seeding shall be placed in all wetland impact areas.   |
| 9.3  | 9010-A-1400  | CONVENTIONAL SEEDING & FERTILIZING TYPE 4 (URBAN TEMPORARY MIXTURE)<br>Item to be used at the direction of the Engineer to stabilize disturbed areas during periods outside of the specified seeding dates. Fertilizer will not be required. Use seed drill or approved slit seeding method. Broadcast seeding will not be allowed. Seeded area calculated to the limits of disturbed areas. Refer to RR Sheets for locations. Seeding of disturbed area beyond these limits shall be the responsibility of the Contractor and completed at no additional cost to the City. |
| 9.4  | 9010-A-1110  | MULCHING, BONDED FIBER MATRIX<br>Install Bonded Fiber Matrix per Section 9010, 2.07B. Item includes quantity for temporary and permanent restoration of all areas within the construction limits as shown in the plans. Mulching areas outside the disturbance limits shall be responsibility of the Contractor at no additional cost to the City. Contractor shall provide mulch bags for quantity verification after each application.  |
| 9.5  | 9040-D-1000  | FILTER SOCK, INSTALLATION   |
| 9.6  | 9040-D-3000  | FILTER SOCK, REMOVAL OF DEVICE<br>Item to be used at the direction of the Engineer.   |
| 9.7  | 9040-N-1000  | SILT FENCE, INSTALLATION  |
| 9.8  | 9040-N-3000  | SILT FENCE, REMOVAL OF DEVICE<br>Refer to RR-Sheets for locations and details.  |
| 9.9  | SPECIAL      | SURFACE RESTORATION HAUL ROUTES<br>Bid item includes all costs associated with delineating, maintaining, and restoring haul route to preconstruction conditions satisfactory to owner.  |
| <b>11 - MISCE</b>                            |              |   |
| 11.1   | 11010-A-1000 | CONSTRUCTION SURVEY<br>This item shall be performed in accordance with SUDAS Section 11,010. Incidental to this item is all material and equipment required for survey and staking for construction.  |
| 11.2   | 11020-A-1000 | MOBILIZATION<br>This item shall be performed in accordance with SUDAS Section 11,020. This item will be lump sum, with partial payments equal to percentage of dollar amount paid on overall contract amount.   |

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# SANITARY SEWER

4010-01  
01-01-16

\* Bid Item  
\*\* For SW-545

| UTILITY ACCESS |                             |                             |           |             |                    | PIPE                          |             |            |       |           |           |            |               |        |                 |                  |                 |                        |       |  |
|----------------|-----------------------------|-----------------------------|-----------|-------------|--------------------|-------------------------------|-------------|------------|-------|-----------|-----------|------------|---------------|--------|-----------------|------------------|-----------------|------------------------|-------|--|
| No.            | Location Station and Offset | Type or Standard Road Plan* | RIM Grade | Bottom Well | Extension Length** | Notes                         | Line Number | Access No. |       | Class "D" | Pipe Dia. | Bid Length | Design Length | Slope% | Flow Lines      |                  |                 | Pipe Profile Sheet No. | Notes |  |
|                |                             |                             | Elev.     | Elev.       | FT                 |                               |             | From       | To    |           | IN        | FT         | FT            |        | Inlet Elevation | Outlet Elevation | Other Elevation |                        |       |  |
| EX-1           | +00.00                      | EXISTING                    | 923.00    | 905.50      |                    | EXISTING                      | SA-1        | EX-1       | MH-2  | PVC       | 30"       | 255.0      | 250.0         | 0.150% | 906.4           | 906.0            |                 |                        |       |  |
| MH-2           | 2+54.94                     | SW-301                      | 921.07    | 905.88      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-2        | MH-2       | MH-3  | PVC       | 30"       | 401.0      | 396.0         | 0.150% | 907.1           | 906.5            |                 |                        |       |  |
| MH-3           | 6+55.45                     | SW-301                      | 921.94    | 906.57      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-3        | MH-3       | MH-4  | PVC       | 30"       | 330.0      | 325.0         | 0.150% | 907.7           | 907.2            |                 |                        |       |  |
| MH-4           | 9+85.45                     | SW-301                      | 922.81    | 907.16      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-4        | MH-4       | MH-5  | PVC       | 30"       | 264.0      | 259.0         | 0.150% | 908.1           | 907.8            |                 |                        |       |  |
| MH-5           | 12+49.77                    | SW-301                      | 923.23    | 907.65      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-5        | MH-5       | MH-6  | PVC       | 30"       | 264.0      | 259.0         | 0.150% | 908.6           | 908.2            |                 |                        |       |  |
| MH-6           | 15+14.09                    | SW-301                      | 924.31    | 908.13      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-6        | MH-6       | MH-7  | PVC       | 30"       | 267.0      | 262.0         | 0.150% | 909.1           | 908.7            |                 |                        |       |  |
| MH-7           | 17+81.05                    | SW-301                      | 924.98    | 908.63      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-7        | MH-7       | MH-8  | PVC       | 30"       | 150.0      | 145.0         | 0.150% | 909.4           | 909.2            |                 |                        |       |  |
| MH-8           | 19+31.13                    | SW-301                      | 922.70    | 908.95      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-8        | MH-8       | MH-9  | PVC       | 30"       | 344.0      | 339.0         | 0.150% | 910.1           | 909.6            |                 |                        |       |  |
| MH-9           | 22+75.00                    | SW-301                      | 924.77    | 909.55      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-9        | MH-9       | MH-10 | PVC       | 30"       | 258.0      | 253.0         | 0.150% | 910.5           | 910.2            |                 |                        |       |  |
| MH-10          | 25+33.27                    | SW-301                      | 925.32    | 910.03      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-10       | MH-10      | MH-11 | PVC       | 30"       | 400.0      | 395.0         | 0.150% | 911.2           | 910.6            |                 |                        |       |  |
| MH-11          | 29+32.87                    | SW-301                      | 931.98    | 910.73      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-11       | MH-11      | MH-12 | PVC       | 30"       | 425.0      | 420.0         | 0.150% | 912.0           | 911.3            |                 |                        |       |  |
| MH-12          | 33+57.87                    | SW-301                      | 936.36    | 911.46      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-12       | MH-12      | MH-13 | PVC       | 30"       | 425.0      | 420.0         | 0.150% | 912.7           | 912.1            |                 |                        |       |  |
| MH-13          | 37+82.87                    | SW-301                      | 938.05    | 912.19      |                    | 60" CIRCULAR TYPE 'C' CASTING | SA-13       | MH-13      | MH-14 | PVC       | 18"       | 420.0      | 415.0         | 0.200% | 914.0           | 913.2            |                 |                        |       |  |
| MH-14          | 42+02.87                    | SW-301                      | 941.17    | 913.52      |                    | 60" CIRCULAR TYPE 'C' CASTING |             |            |       |           |           |            |               |        |                 |                  |                 |                        |       |  |
|                |                             |                             |           |             |                    |                               |             |            |       |           |           | TOTALS:    |               |        |                 |                  |                 |                        |       |  |
|                |                             |                             |           |             |                    |                               |             |            |       |           |           | 18" PVC    | 420.0         | 415.0  |                 |                  |                 |                        |       |  |
|                |                             |                             |           |             |                    |                               |             |            |       |           |           | 30" PVC    | 3783.0        | 3723.0 |                 |                  |                 |                        |       |  |

PROJECT NO: 0022A004.01  
 PROJECT DATE: JANUARY 2023  
 CAD DATE: 12/12/2022 2:04:42 PM  
 CAD FILE: c:\pw\_workdir\pw\_ie\bas2\0588995\0022A004.00\_C\_SHT.xlsm

DESIGNED BY: B. SPOTTS  
 CHECKED BY: B. SPOTTS  
 DRAWN BY: B. SPOTTS

| NO | DATE | BY | REVISION DESCRIPTION |
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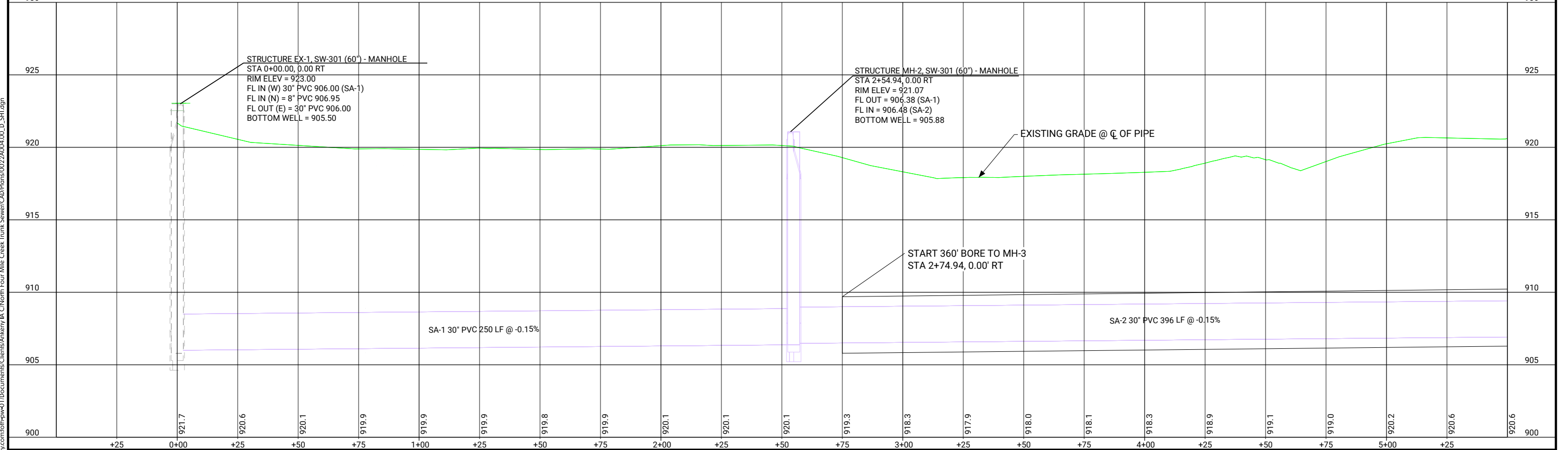
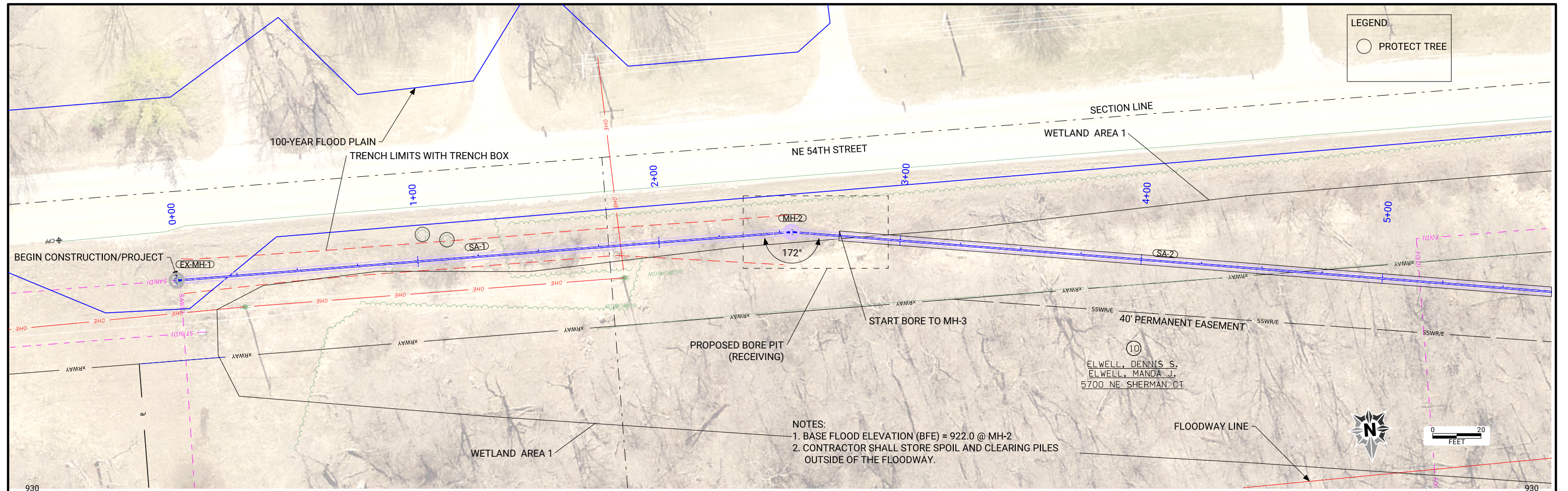
**NORTH FOUR MILE CREEK TRUNK SEWER**  
ANKENY, IA

ESTIMATED QUANTITIES

SHEET NO.  
**C.3**







CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: D.VERBOCKEL CHECKED BY: B.SPOITS DRAWN BY: D.VERBOCKEL  
 LETTING DATE: 1/31/2023 CAD DATE: 1/5/2023 8:14:58 AM  
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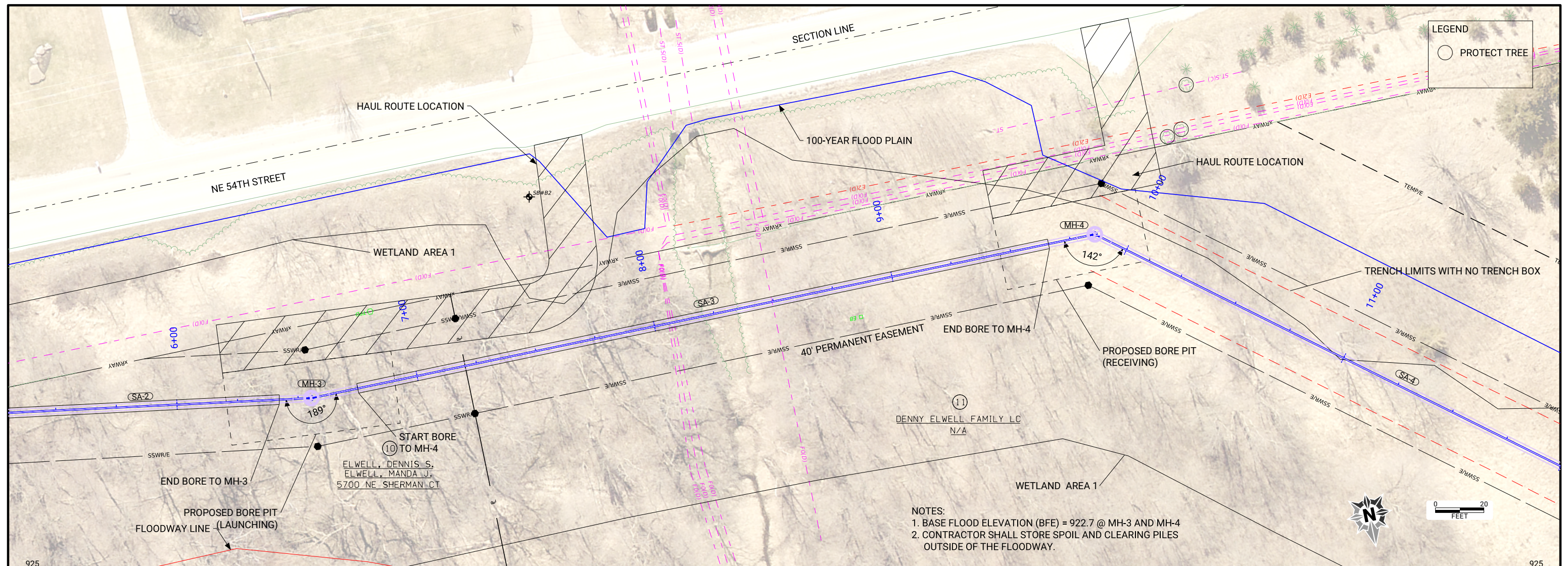


**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

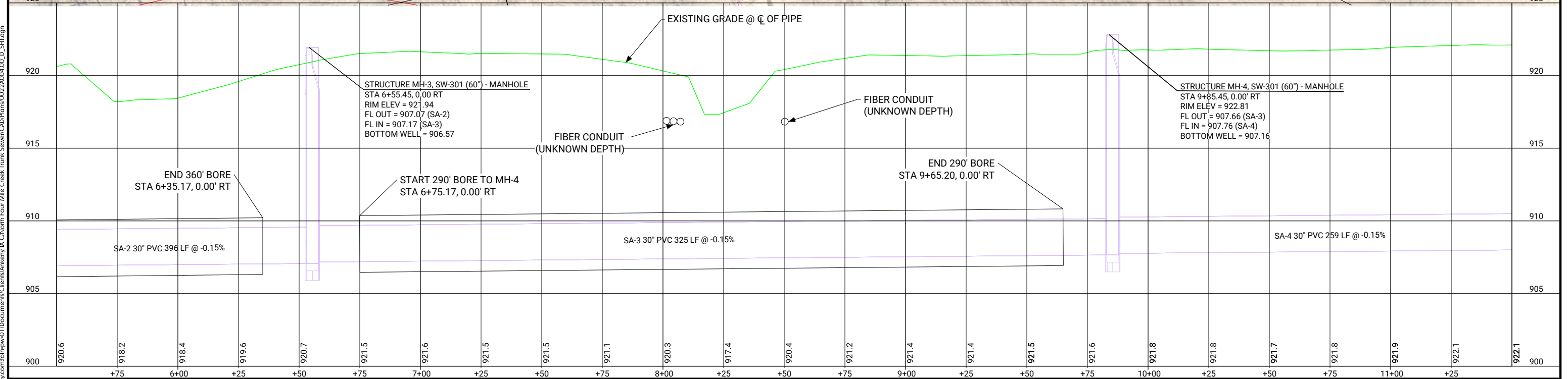
**PLAN AND PROFILE  
 SANITARY SEWER**

SHEET NO.  
**D.2**





- NOTES:  
 1. BASE FLOOD ELEVATION (BFE) = 922.7 @ MH-3 AND MH-4  
 2. CONTRACTOR SHALL STORE SPOIL AND CLEARING PILES OUTSIDE OF THE FLOODWAY.



CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: D.VERBOCKEL CHECKED BY: B.SPOITS DRAWN BY: D.VERBOCKEL  
 LETTING DATE: 1/31/2023 CAD DATE: 1/5/2023 8:15:01 AM  
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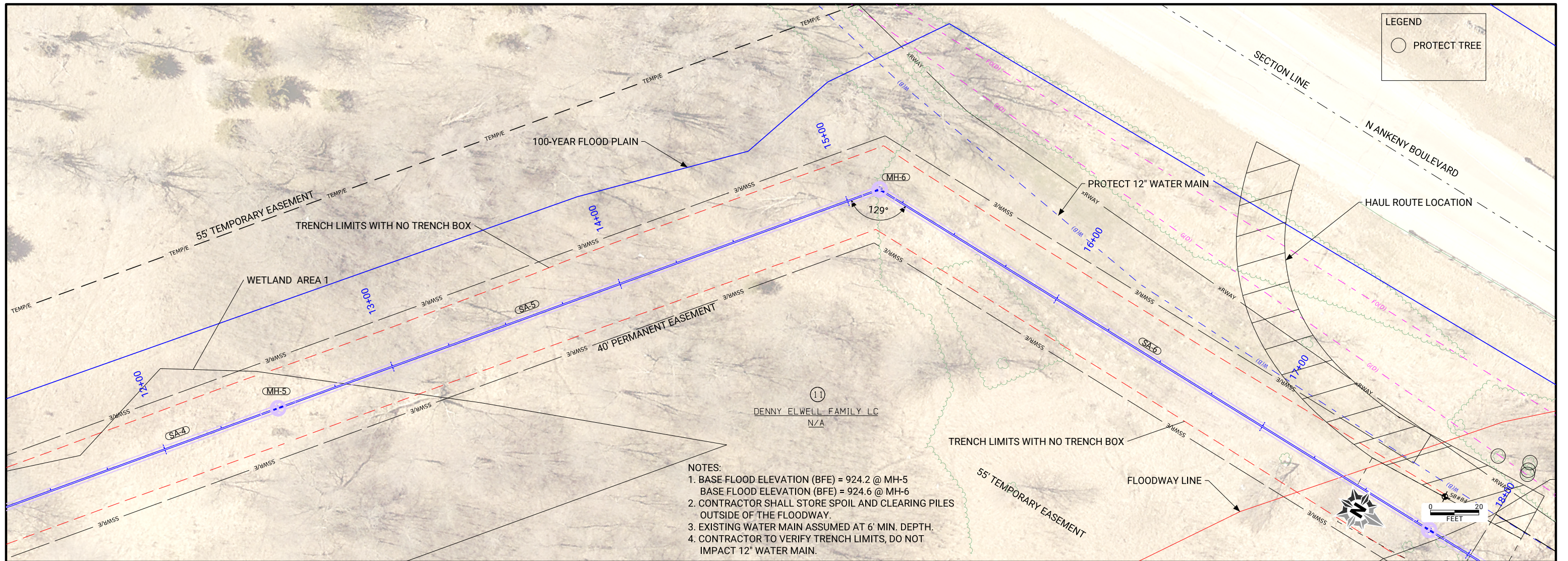


**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

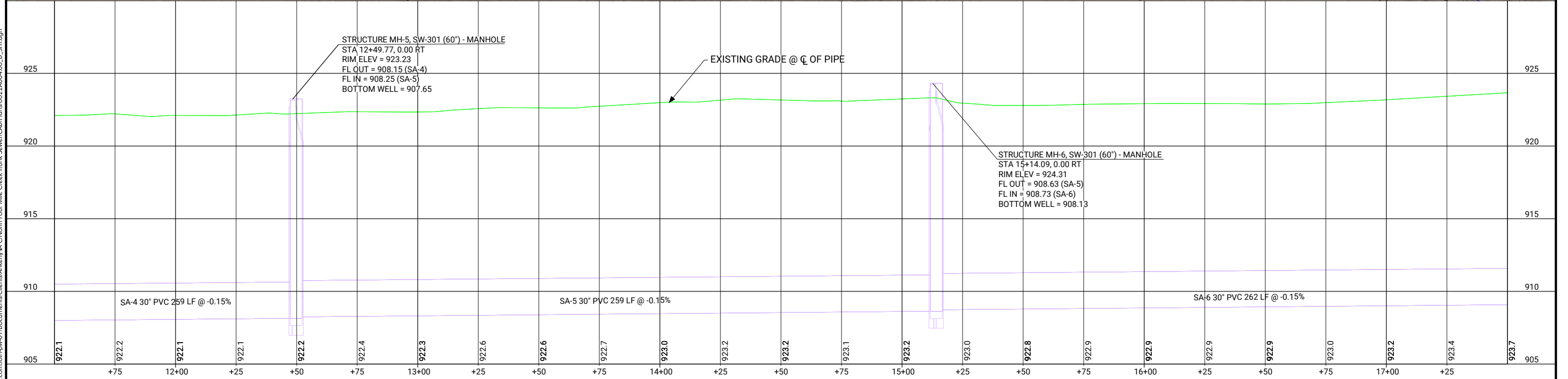
**PLAN AND PROFILE  
 SANITARY SEWER**

SHEET NO.  
**D.3**





- NOTES:
1. BASE FLOOD ELEVATION (BFE) = 924.2 @ MH-5  
BASE FLOOD ELEVATION (BFE) = 924.6 @ MH-6
  2. CONTRACTOR SHALL STORE SPOIL AND CLEARING PILES OUTSIDE OF THE FLOODWAY.
  3. EXISTING WATER MAIN ASSUMED AT 6' MIN. DEPTH.
  4. CONTRACTOR TO VERIFY TRENCH LIMITS, DO NOT IMPACT 12" WATER MAIN.



CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: D.VERBOCKEL CHECKED BY: B.SPOITS DRAWN BY: D.VERBOCKEL  
 LETTING DATE: 1/31/2023 CAD DATE: 1/5/2023 8:15:04 AM  
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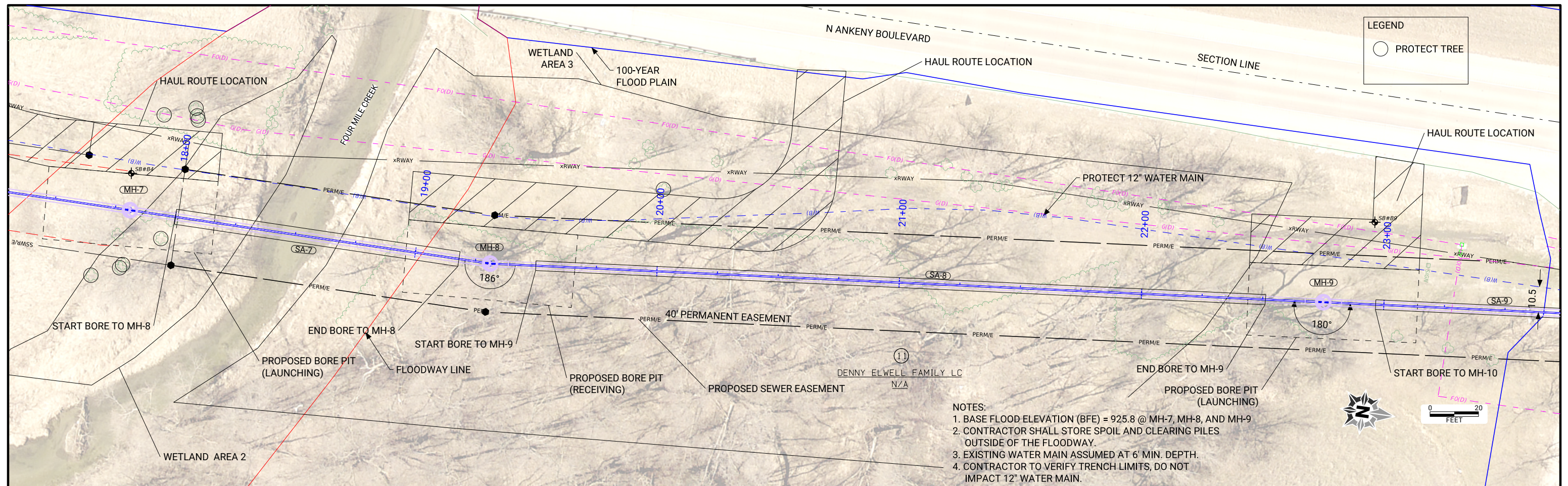


**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

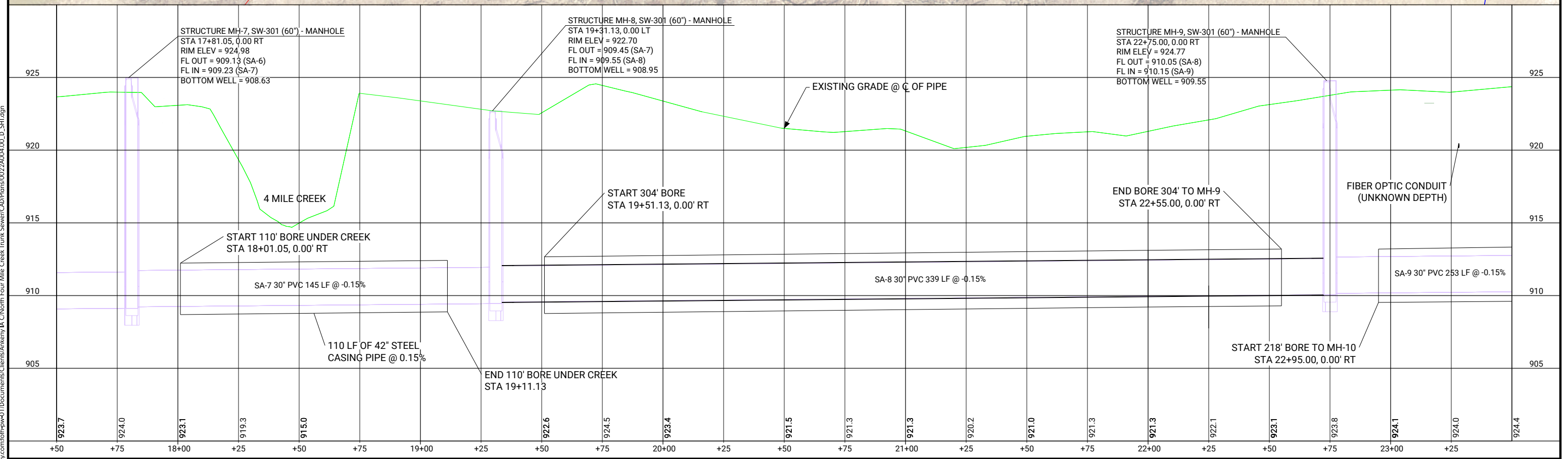
**PLAN AND PROFILE  
 SANITARY SEWER**

SHEET NO.  
**D.4**





- NOTES:
1. BASE FLOOD ELEVATION (BFE) = 925.8 @ MH-7, MH-8, AND MH-9
  2. CONTRACTOR SHALL STORE SPOIL AND CLEARING PILES OUTSIDE OF THE FLOODWAY.
  3. EXISTING WATER MAIN ASSUMED AT 6' MIN. DEPTH.
  4. CONTRACTOR TO VERIFY TRENCH LIMITS, DO NOT IMPACT 12" WATER MAIN.



CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: D.VERBOCKEL CHECKED BY: B.SPOITS DRAWN BY: D.VERBOCKEL  
 LETTING DATE: 1/31/2023 CAD DATE: 1/5/2023 8:15:06 AM  
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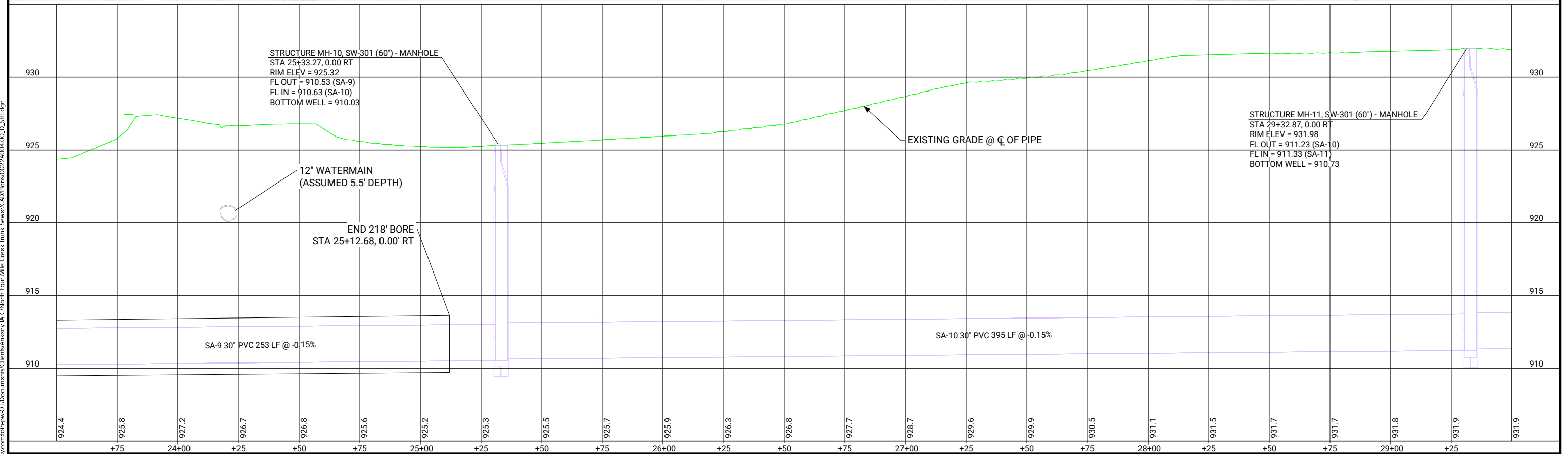
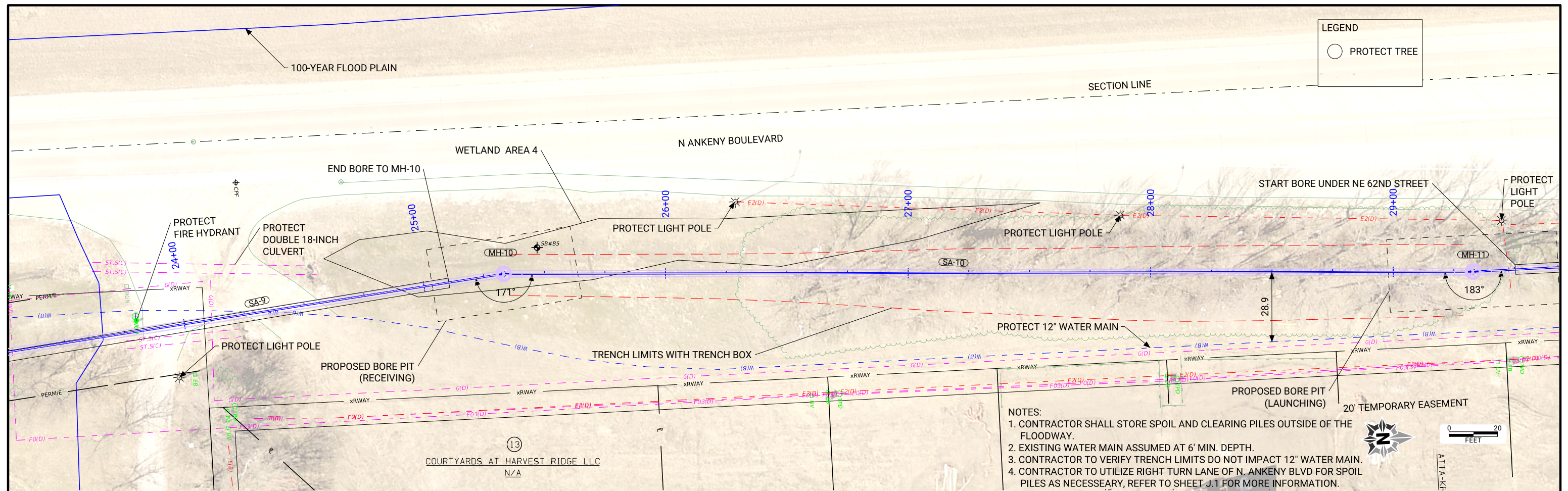


**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

**PLAN AND PROFILE  
 SANITARY SEWER**

SHEET NO.  
**D.5**





CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: D.VERBOCKEL CHECKED BY: B.SPOITS DRAWN BY: D.VERBOCKEL  
 LETTING DATE: 1/31/2023 CAD DATE: 1/5/2023 8:15:08 AM  
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**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

**PLAN AND PROFILE  
 SANITARY SEWER**

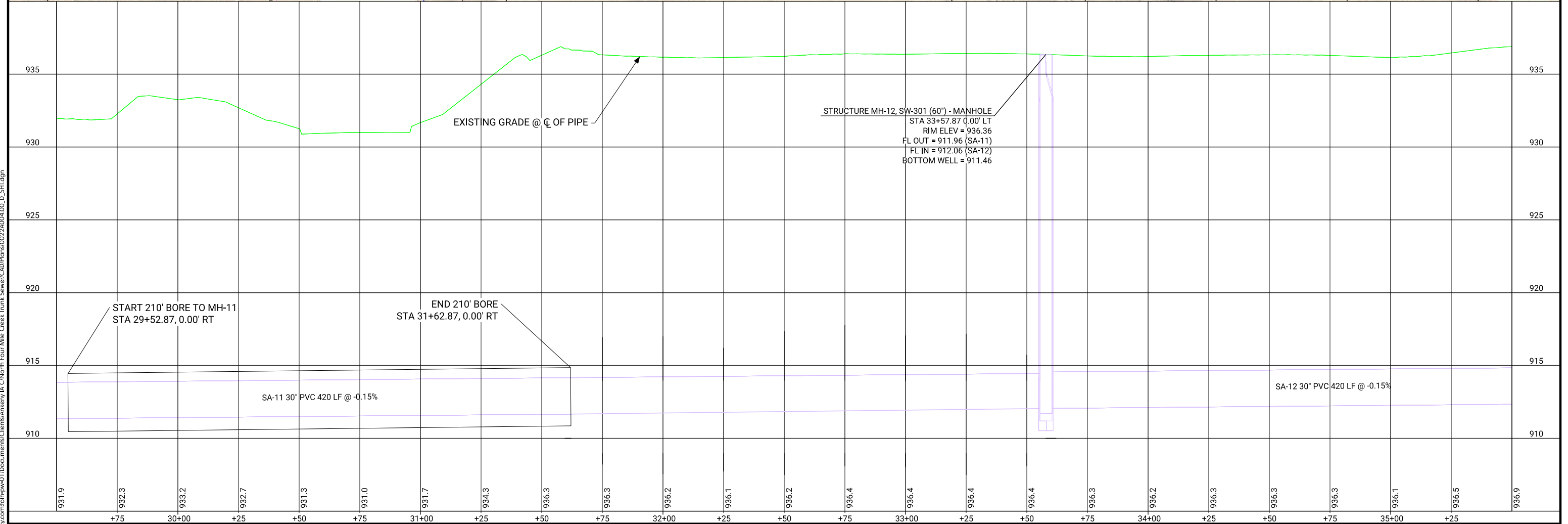
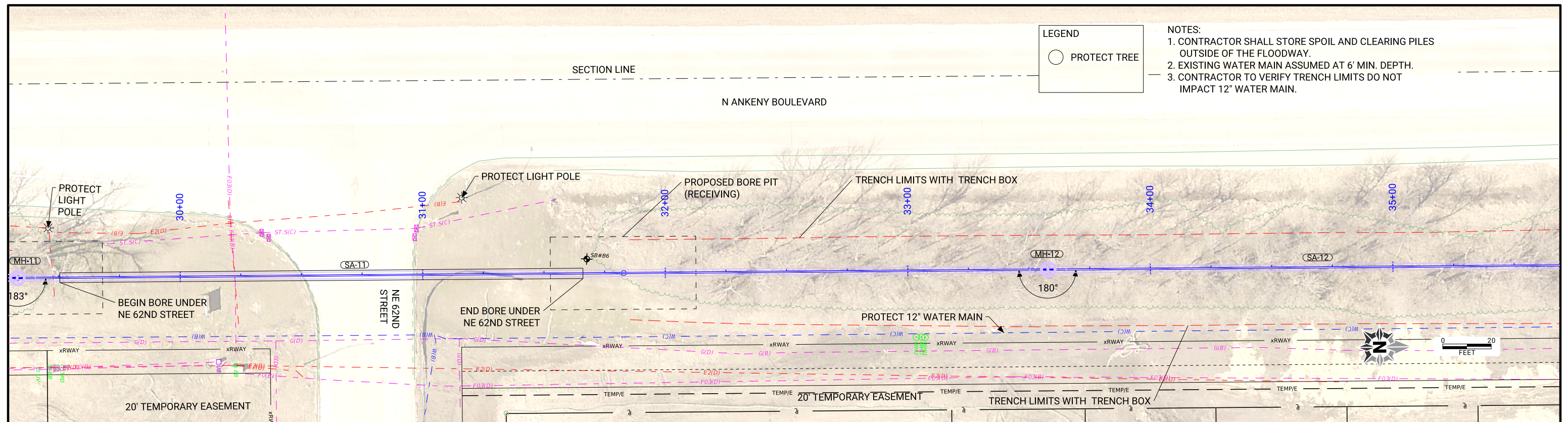
SHEET NO.  
**D.6**



**LEGEND**

○ PROTECT TREE

- NOTES:**
1. CONTRACTOR SHALL STORE SPOIL AND CLEARING PILES OUTSIDE OF THE FLOODWAY.
  2. EXISTING WATER MAIN ASSUMED AT 6' MIN. DEPTH.
  3. CONTRACTOR TO VERIFY TRENCH LIMITS DO NOT IMPACT 12" WATER MAIN.



CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
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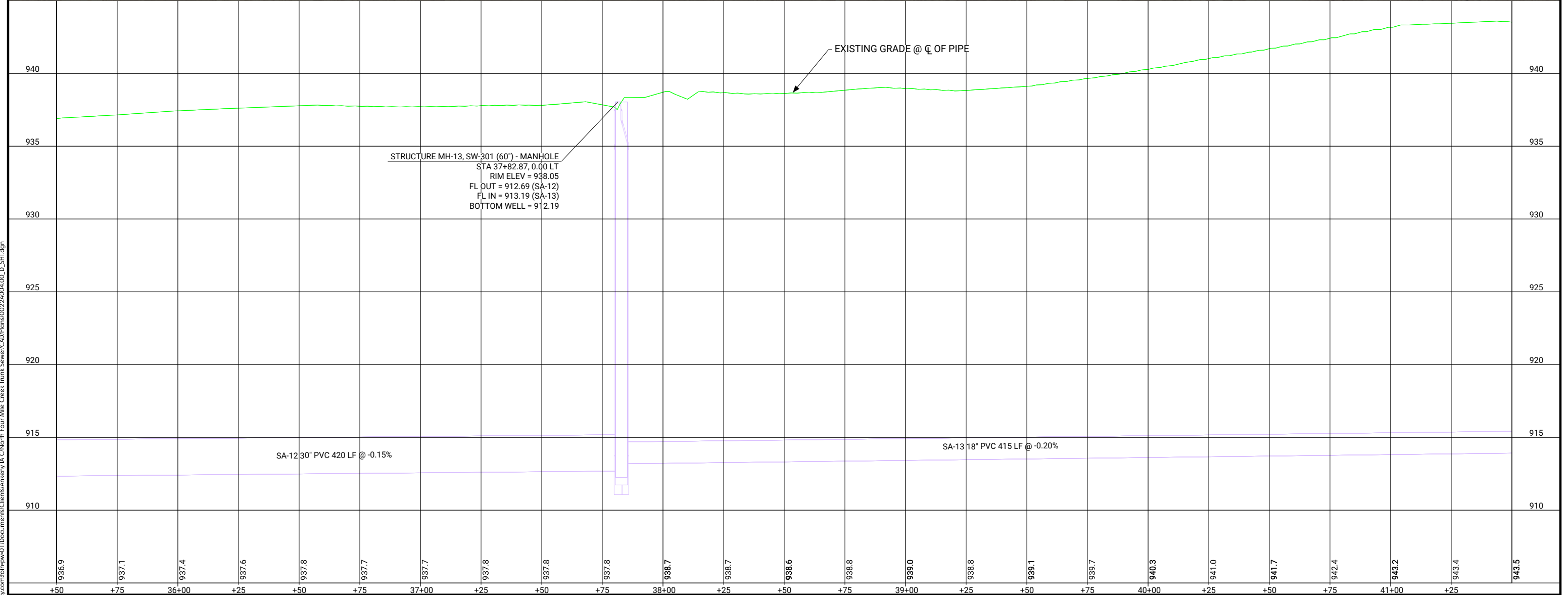
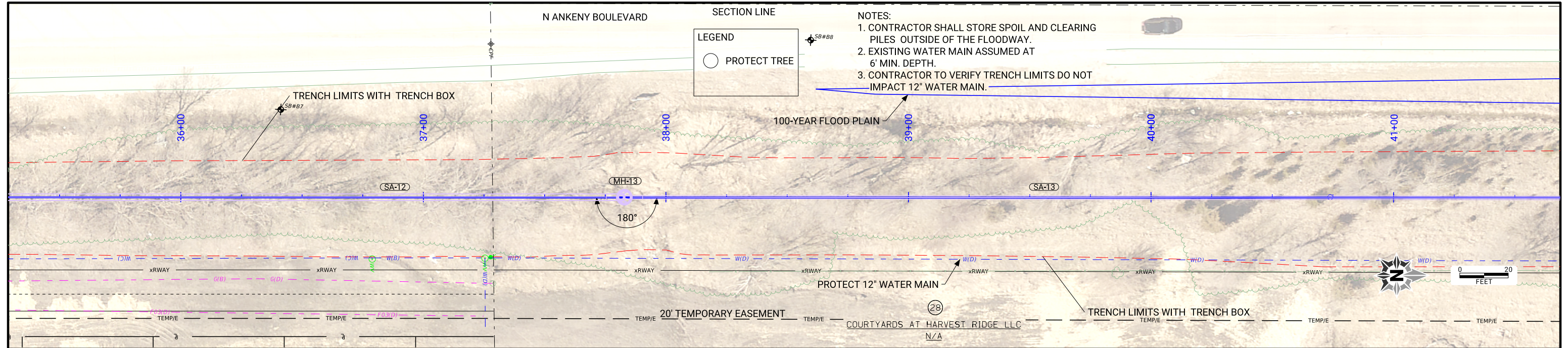
**NORTH FOUR MILE CREEK TRUNK SEWER**

ANKENY

**PLAN AND PROFILE SANITARY SEWER**

SHEET NO. **D.7**





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 LETTING DATE: 1/31/2023 CAD DATE: 1/5/2023 8:15:13 AM  
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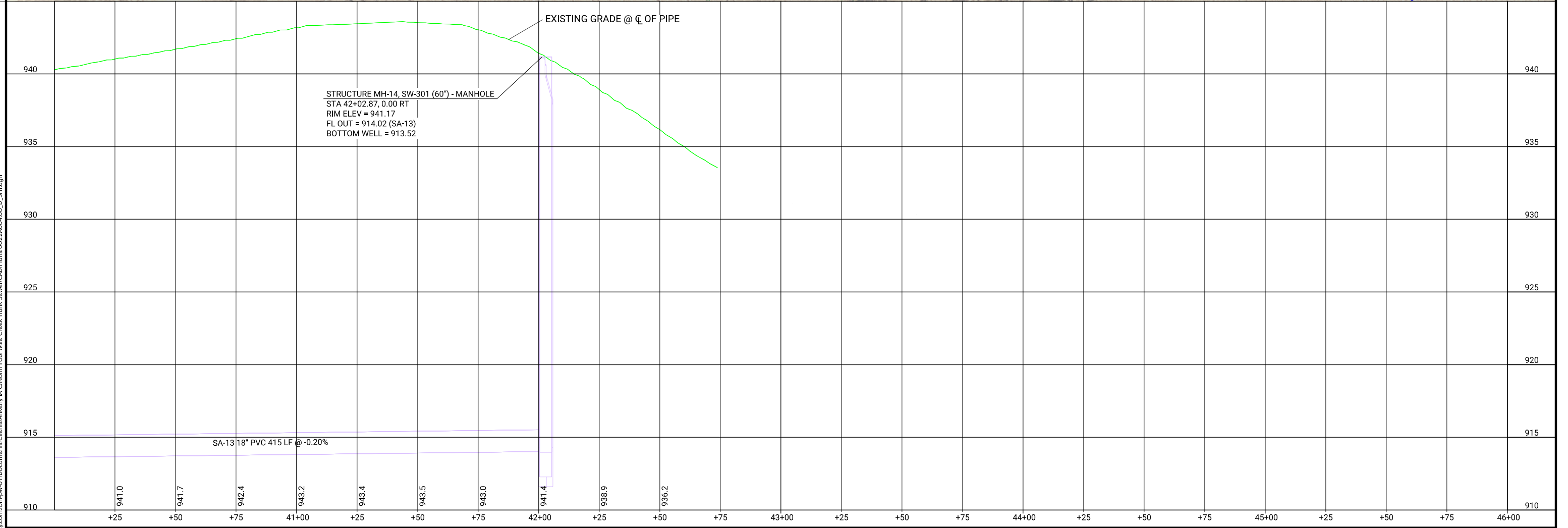
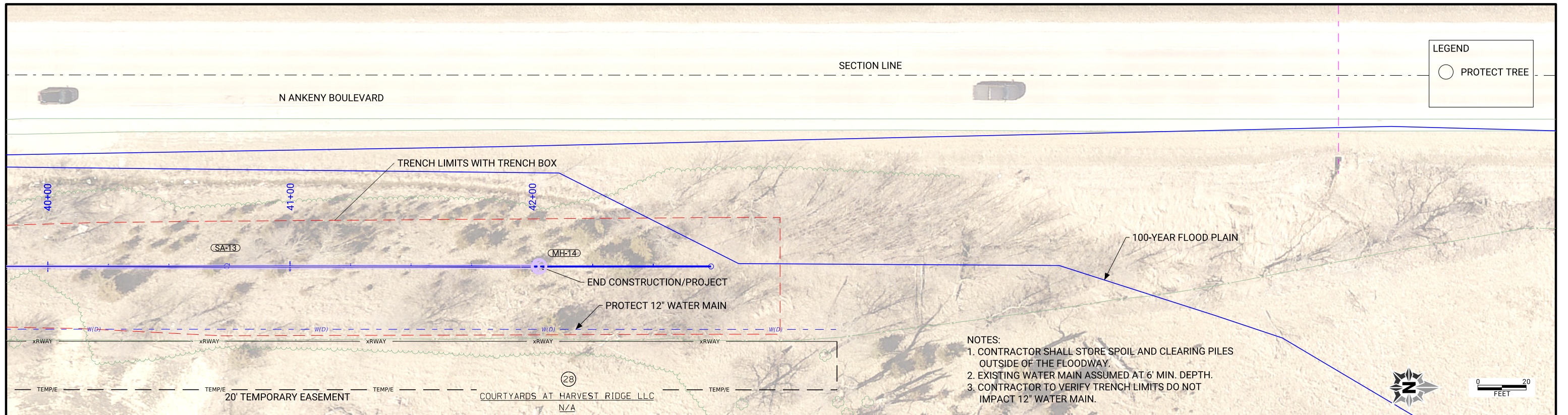


**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

**PLAN AND PROFILE**  
**SANITARY SEWER**

SHEET NO.  
**D.8**





CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: D.VERBOCKEL CHECKED BY: B.SPOTTS DRAWN BY: D.VERBOCKEL  
 LETTING DATE: 1/31/2023 CAD DATE: 1/5/2023 8:15:15 AM  
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**NORTH FOUR MILE CREEK TRUNK SEWER**

ANKENY

**PLAN AND PROFILE**  
**SANITARY SEWER**

SHEET NO.  
**D.9**



# SURVEY INFORMATION

## NORTH FOUR MILE CREEK TRUNK SEWER

### NORTHEAST 54TH STREET AND NORTHEAST 14TH STREET

### ANKENY, IOWA

General Information

The horizontal datum for the project is Iowa RCS, Zone 8.  
 All users of these plans must use the control point coordinates as noted when establishing horizontal locations.  
 The reference ellipsoid used is WGS-84, the GEOID Model is GEOID 18, and coordinates are in US survey foot.

Vertical Control

Vertical Datum for this survey is relative to NAVD88 (computed using Geoid 18 for the derived orthometric elevations listed).

Horizontal Control

City of Ankeny, Iowa  
 Iowa RCS, Zone 8  
 Horz. Datum: NAD83 (2011)  
 Vert. Datum: NAVD88  
 US Survey Feet  
 2022

## BENCHMARKS

| Point  | Elevation | Description   |
|--------|-----------|---|
| FENO 2 | 948.53    | FENO MONUMENT IN WEST FENCE LINE OF NE 14TH STREET APPROXIMATLY 350' SOUTH OF NE 126TH AVE. |
| BM1    | 936.24    | CUT TRIANGLE AT SOUTHEAST CORNER OF NE 14TH STREET BRIDGE.                                  |

## HORIZONTAL CONTROL

(REFER TO SHEET G.2 FOR LOCATIONS)

| Point | Northing   | Easting     | Elevation* | Station | Offset | Feature  | Description  |
|-------|------------|-------------|------------|---------|--------|----------|--|
| CP 1  | 7557664.88 | 18531706.51 | 928.3      | 24+30.0 | -54.3  | CUT "X"  | CUT "X" IN ASPHALT ON THE EAST SIDE OF NE 14TH STREET ON THE NORTH SIDE OF GRAVEL ENTRANCE.      |
| CP 2  | 7558967.44 | 18531712.00 | -          | 37+27.8 | -63.2  | CUT "X"  | CUT "X" IN ASPHALT ON THE EAST SIDE OF NE 14TH STREET ON LINE WITH FENCE AT NORTH PROPERTY LINE. |
| CP 8  | 7556347.07 | 18533253.93 | 927.4      | -       | -      | MAG NAIL | MAG NAIL IN FOG LINE IN ASPHALT ON THE NORTH SIDE OF NE 54TH STREET 350' WEST OF BRIDGE.         |

\*Elevations to be verified prior to construction

\*\*Site Control executed Summer of 2021

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| DESIGNED BY: A. LASTNAME  | CHECKED BY: B. LASTNAME | DRAWN BY: C. LASTNAME |
| LETTING DATE: 1/31/2023   | CAD DATE: 12/27/2022    | 9:44:08 AM            |
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**NORTH FOUR MILE CREEK TRUNK SEWER**

ANKENY

**SURVEY INFORMATION**

SHEET NO.

**G.1**





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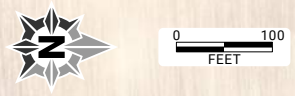
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**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

**CONTROL POINTS AND BENCHMARKS**

SHEET NO.  
**G.2**





| CONTROL LINE DATA - Alignment |           |                 |              |             |    |           |    |       |   |   |   |
|-------------------------------|-----------|-----------------|--------------|-------------|----|-----------|----|-------|---|---|---|
| POINT ID                      | BEARING   | DISTANCE (FEET) | NORTHING (Y) | EASTING (X) | PC | PI        | PT | DELTA | R | L | T |
| Alignment                     | S90.000°W | 254.941         | 7556367.435  | 18533206.63 |    | 0+00.000  |    |       |   |   |   |
|                               | N81.001°W | 400.507         | 7556367.435  | 18532951.69 |    | 2+54.941  |    |       |   |   |   |
|                               | S89.964°W | 329.999         | 7556430.081  | 18532556.11 |    | 6+55.447  |    |       |   |   |   |
|                               | N51.773°W | 528.645         | 7556429.872  | 18532226.11 |    | 9+85.447  |    |       |   |   |   |
|                               | N0.004°E  | 266.957         | 7556756.983  | 18531810.83 |    | 15+14.091 |    |       |   |   |   |
|                               | N0.002°E  | 150.083         | 7557023.94   | 18531810.84 |    | 17+81.048 |    |       |   |   |   |
|                               | N5.784°W  | 602.144         | 7557174.023  | 18531810.85 |    | 19+31.131 |    |       |   |   |   |
|                               | N3.033°E  | 399.591         | 7557773.101  | 18531750.17 |    | 25+33.275 |    |       |   |   |   |
|                               | N0.281°E  | 250             | 7558172.132  | 18531771.31 |    | 29+32.866 |    |       |   |   |   |
|                               | N0.281°E  | 891.026         | 7558422.129  | 18531772.53 |    | 31+82.866 |    |       |   |   |   |
|                               | N0.443°E  | 200             | 7559313.144  | 18531776.9  |    | 40+73.891 |    |       |   |   |   |
|                               |           |                 | 7559513.138  | 18531778.45 |    | 42+73.891 |    |       |   |   |   |

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CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
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**NORTH FOUR MILE CREEK TRUNK SEWER**

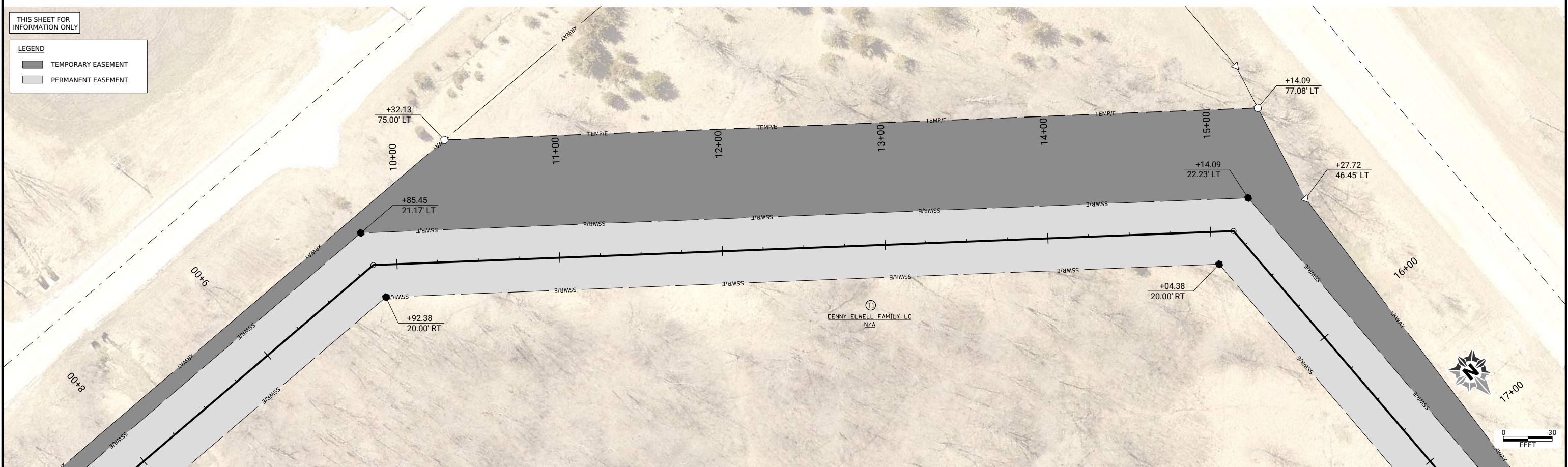
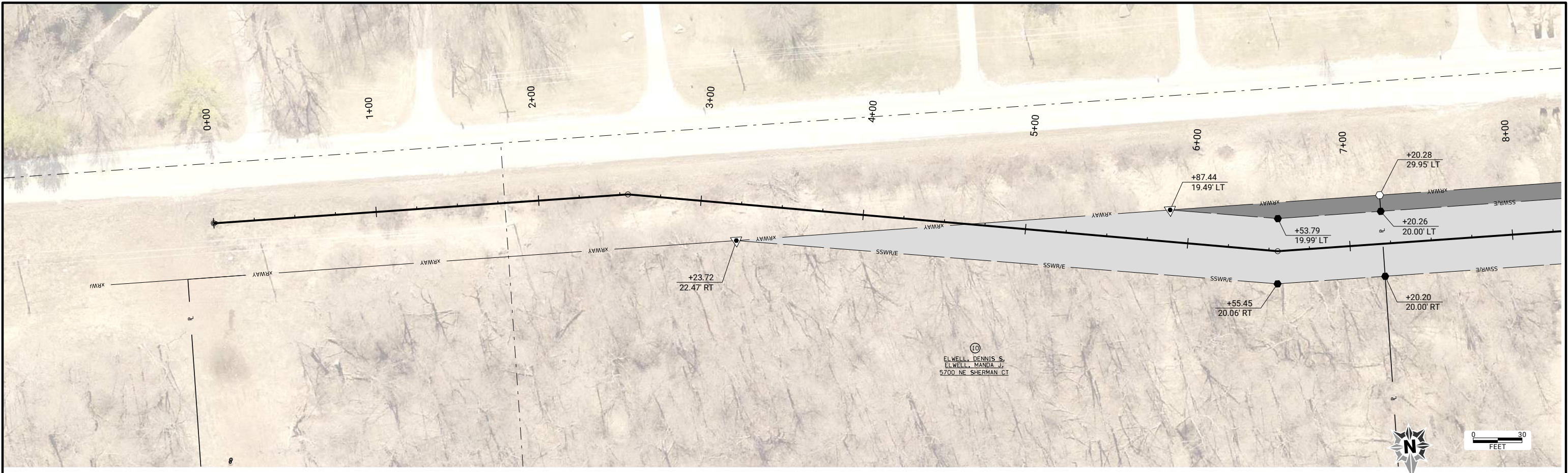
ANKENY

**HORIZONTAL ALIGNMENT INFORMATION**

SHEET NO.

**G.3**





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**LEGEND**

- TEMPORARY EASEMENT
- PERMANENT EASEMENT

CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
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 LETTING DATE: 1/31/2023 CAD DATE: 12/27/2022 9:44:22 AM  
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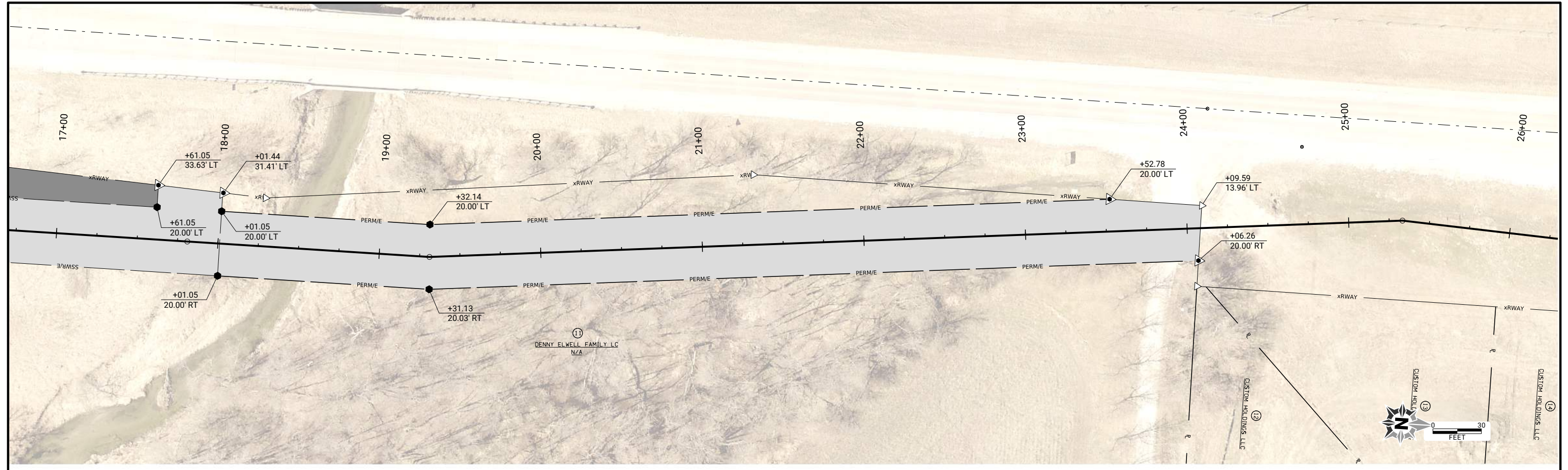
**NORTH FOUR MILE CREEK TRUNK SEWER**

**RIGHT OF WAY SHEETS**

ANKENY

SHEET NO.  
**H.1**

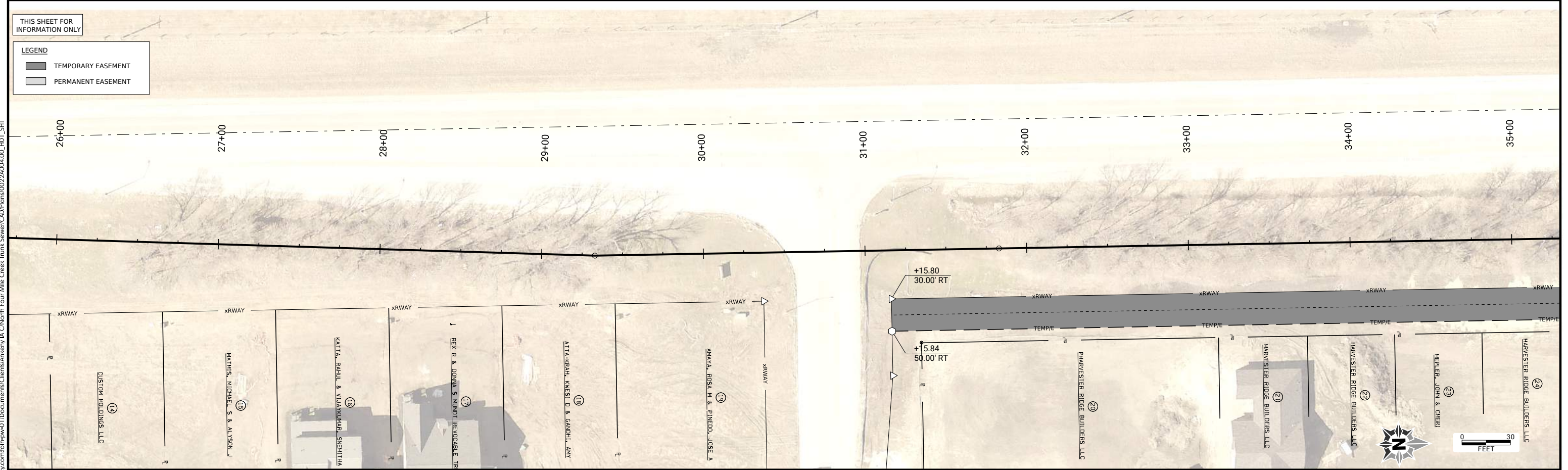




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INFORMATION ONLY

LEGEND

- TEMPORARY EASEMENT
- PERMANENT EASEMENT



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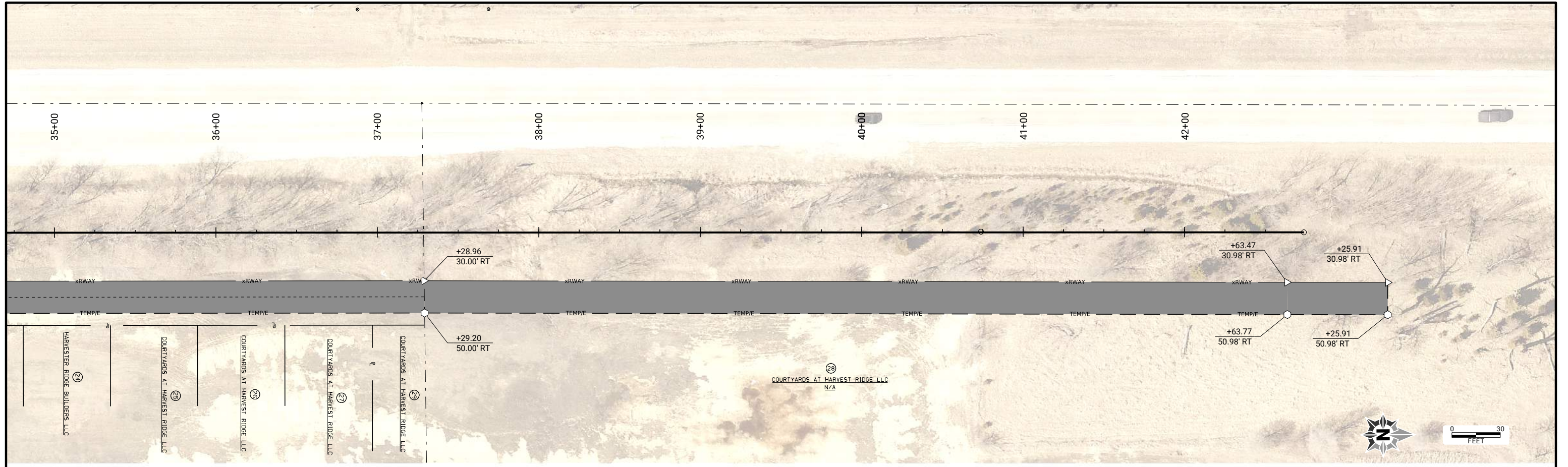
**NORTH FOUR MILE CREEK TRUNK SEWER**  
ANKENY

**RIGHT OF WAY SHEETS**

SHEET NO.  
**H.2**

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|  | PERMANENT EASEMENT |

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**NORTH FOUR MILE CREEK TRUNK SEWER**  
ANKENY

**RIGHT OF WAY SHEETS**

SHEET NO.  
**H.3**

### TRAFFIC CONTROL PLAN

**N. Ankeny Blvd.**

Maintain all lanes of traffic, both southbound and northbound, at all times during construction except as noted elsewhere in the traffic control plan.

Right turn lane closure on N. Ankeny Blvd. for eastbound NE 62nd St. will be allowed as necessary for storage of spoil piles during construction of the sanitary sewer directly adjacent to the turn lane. Material storage is not allowed from other areas of the project unless directed by the Engineer.

Refer to SUDAS Standard Figures 8030.101 and 8030.113 for details of turn lane closure.

**NE 54th St.**

Maintain all lanes of traffic, both eastbound and westbound at all times during construction.

**NE 62nd St.**

Maintain all lanes of traffic, both eastbound westbound, including turn lane onto N. Ankeny Blvd., at all times during construction.

**Driveway Access along N. Ankeny Blvd**

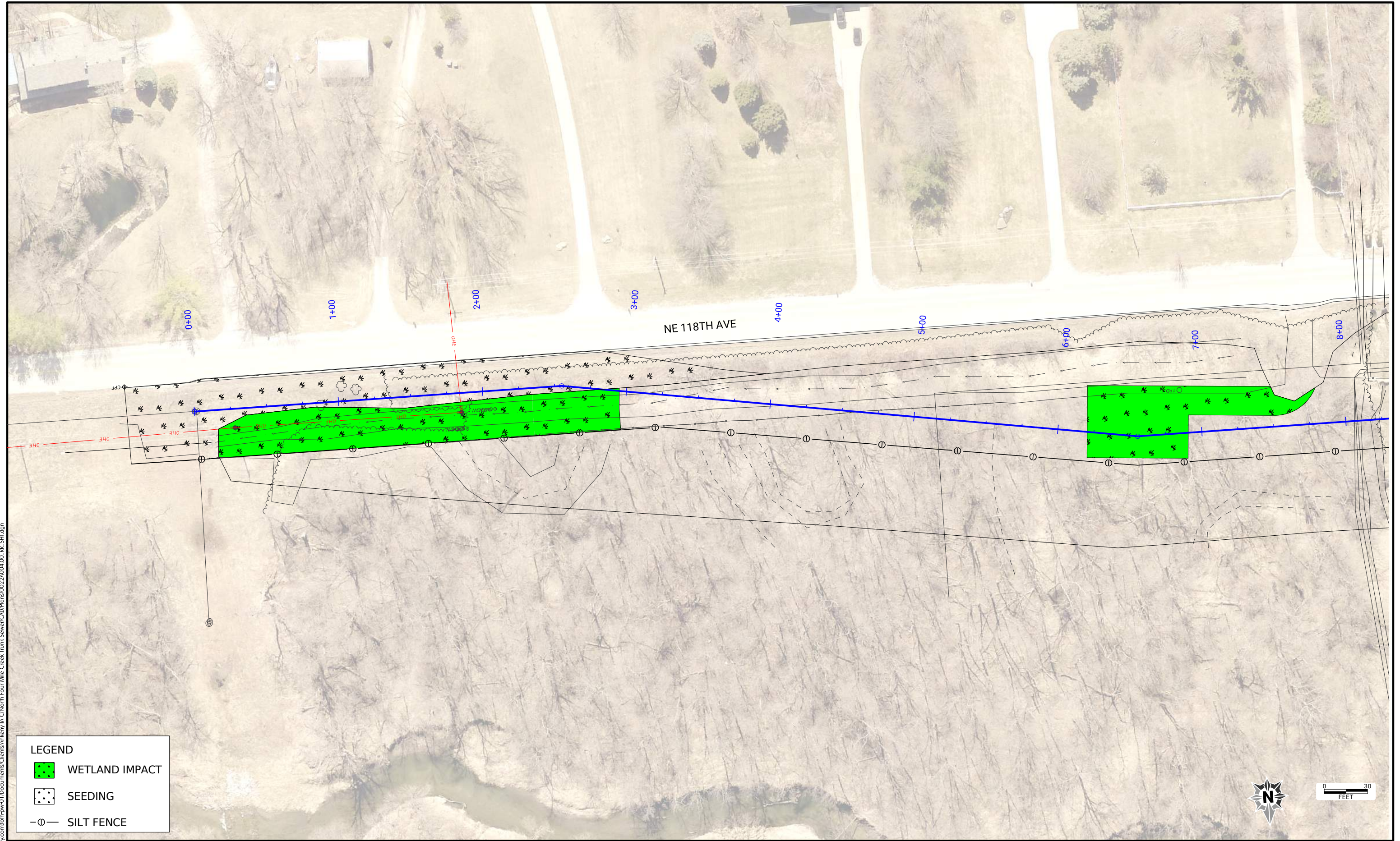
Maintain access to driveway located near station 24+00 at all times during construction.

Contractor to protect all light poles and all street signs. Damage shall be repaired by the Contractor at no cost to the City.

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**LEGEND**

|  |                |
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|  | WETLAND IMPACT |
|  | SEEDING        |
|  | SILT FENCE     |

CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
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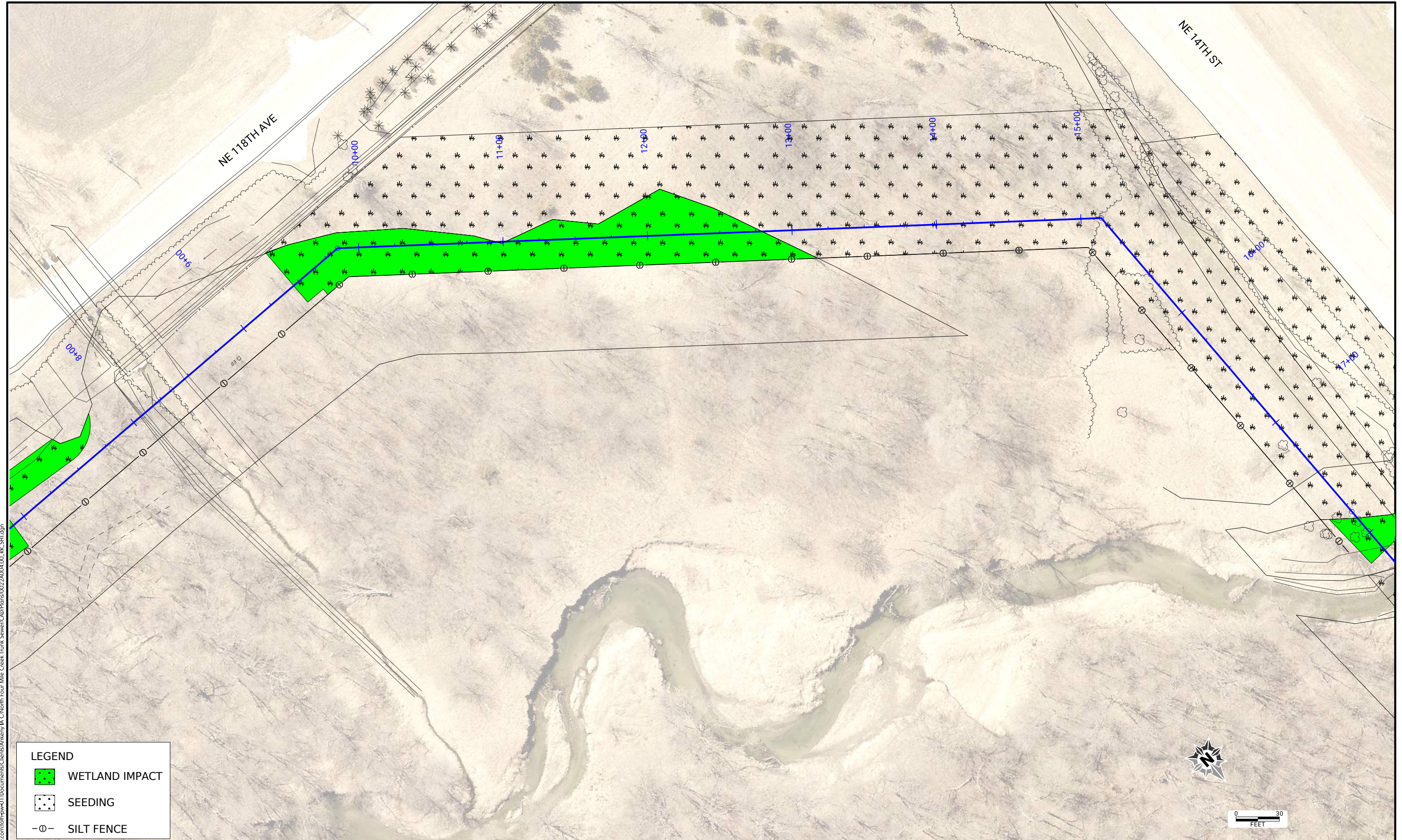
**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

**EROSION CONTROL**

SHEET NO.  
**RR.1**

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**LEGEND**

- WETLAND IMPACT
- SEEDING
- O- SILT FENCE

CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: B. SPOTTS CHECKED BY: A. FLOY DRAWN BY: M. LINCOLN  
 LETTING DATE: 1/31/2023 CAD DATE: 12/27/2022 9:45:26 AM  
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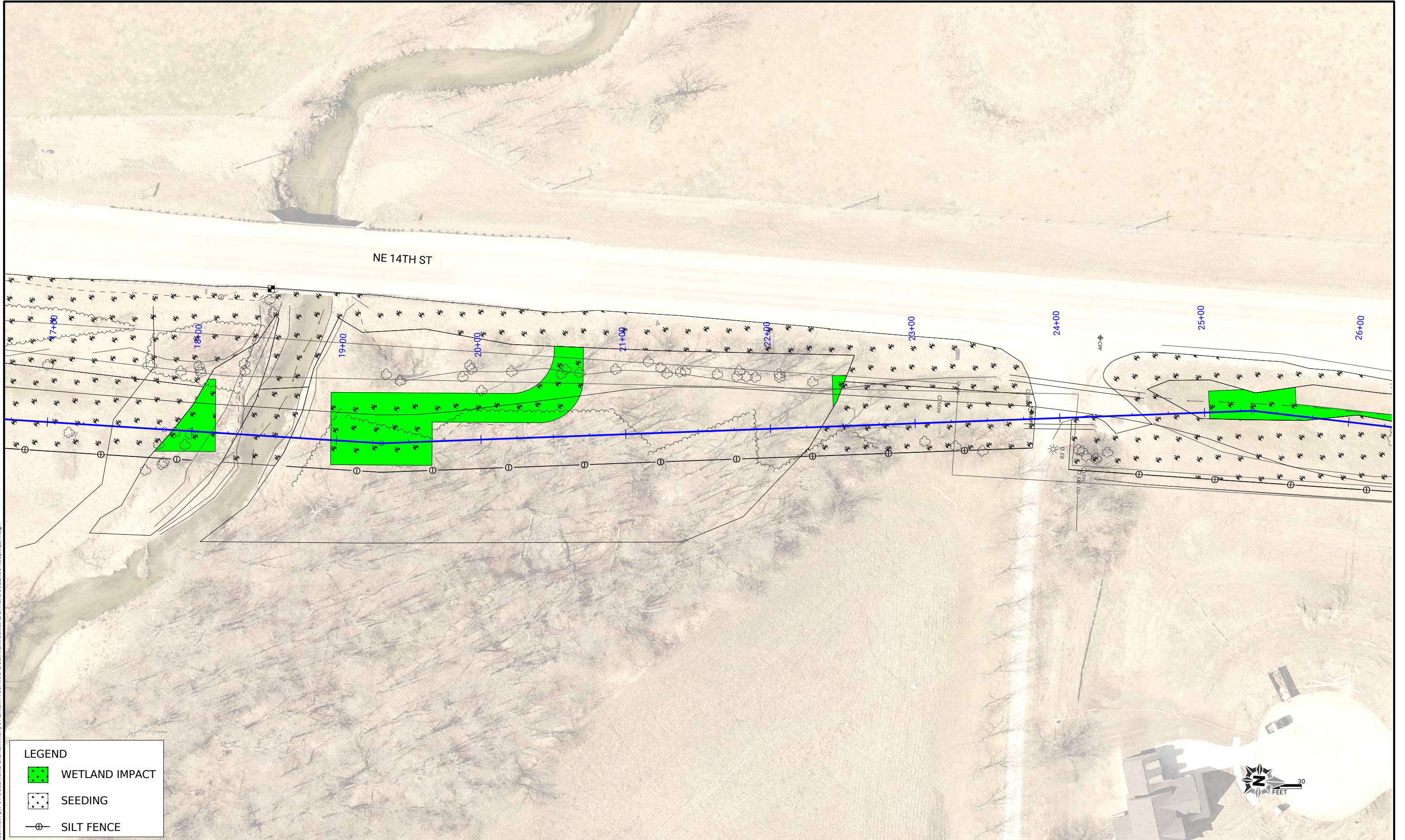
**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

**EROSION CONTROL**

SHEET NO.  
**RR.2**

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**LEGEND**

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|  | WETLAND IMPACT |
|  | SEEDING        |
|  | SILT FENCE     |

CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: B. SPOTTS CHECKED BY: A. FLOY DRAWN BY: M. LINCOLN  
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**NORTH FOUR MILE CREEK TRUNK SEWER**

ANKENY

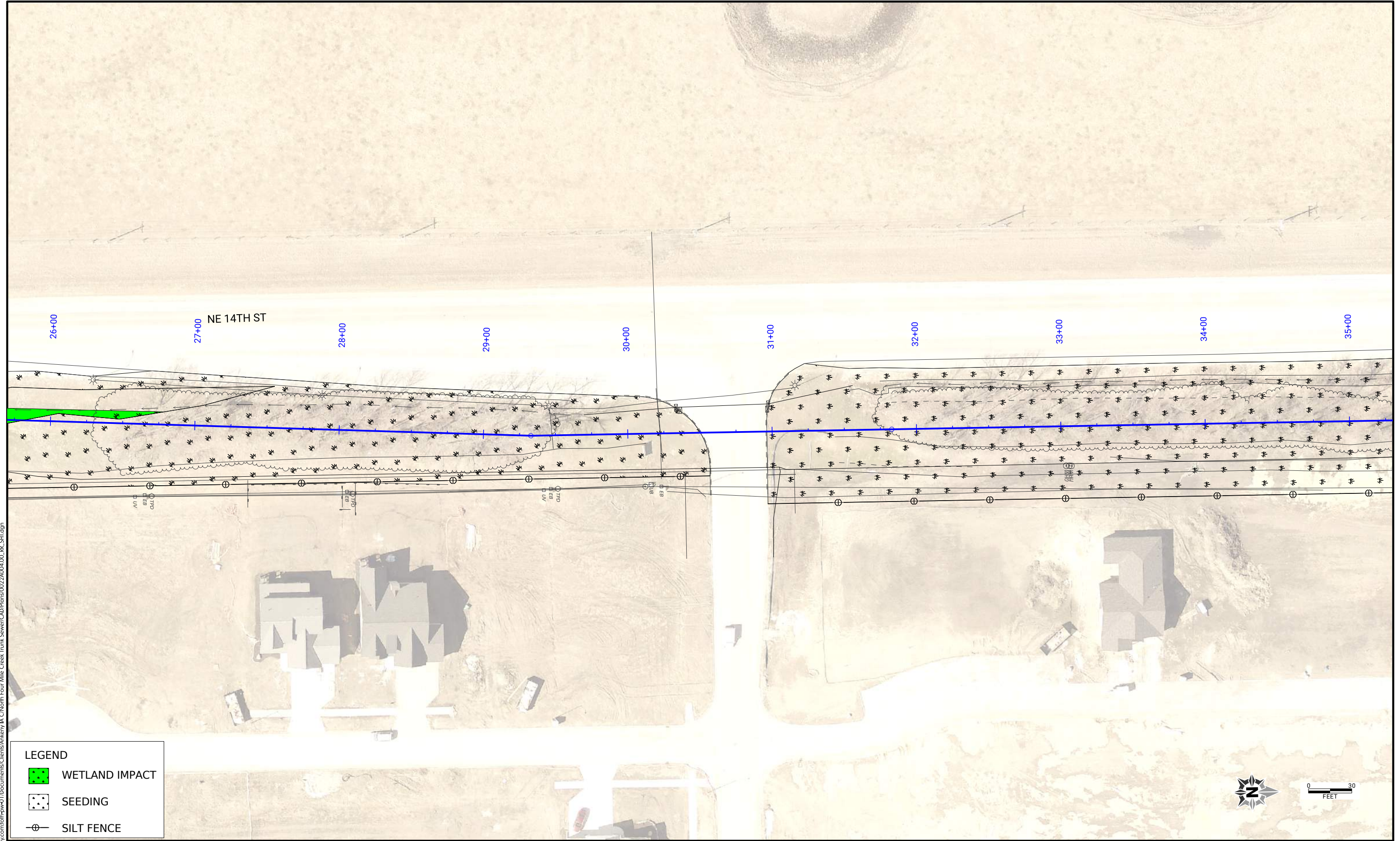
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SHEET NO.




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**LEGEND**

-  WETLAND IMPACT
-  SEEDING
-  SILT FENCE

CLIENT PROJECT NO: \_\_\_\_\_ FOTH PROJECT NO: 0022A004.00  
 DESIGNED BY: B. SPOTTS CHECKED BY: A. FLOY DRAWN BY: M. LINCOLN  
 LETTING DATE: 1/31/2023 CAD DATE: 12/27/2022 9:45:29 AM  
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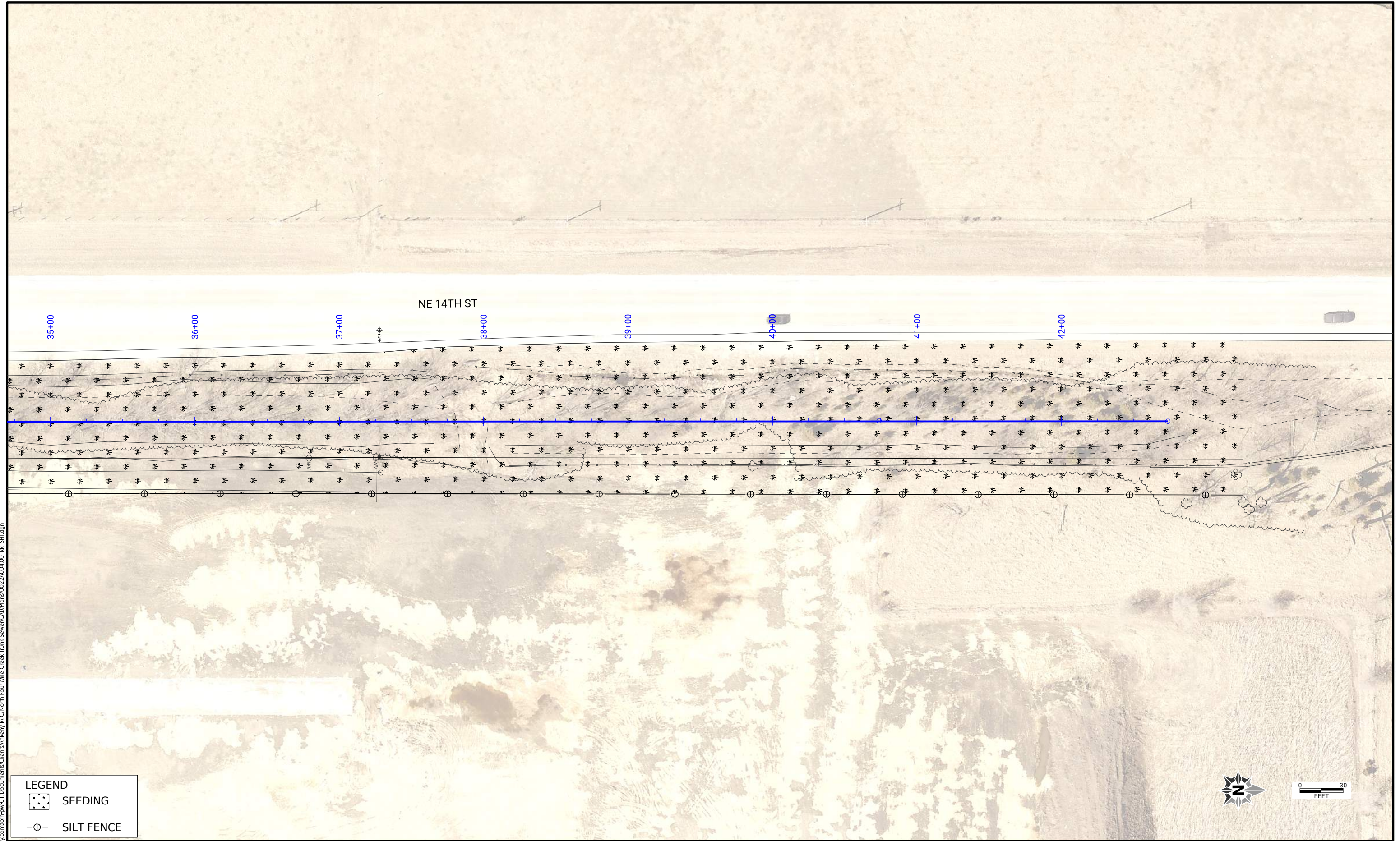
**NORTH FOUR MILE CREEK TRUNK SEWER**  
 ANKENY

**EROSION CONTROL**

SHEET NO.  
**RR.4**

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NE 14TH ST

35+00

36+00

37+00

38+00

39+00

40+00

41+00

42+00

**LEGEND**

|  |            |
|--|------------|
|  | SEEDING    |
|  | SILT FENCE |



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**NORTH FOUR MILE CREEK TRUNK SEWER**  
ANKENY

**EROSION CONTROL**

SHEET NO.  
**RR.5**