NOTICE OF MEETING OF THE WOODBURY COUNTY BOARD OF ADJUSTMENT

WOODBURY COUNTY BOARD OF ADJUSTMENT

Monday, March 2, 2026 at 5:00 PM

The Woodbury County Board of Adjustment will hold a public meeting on **Monday, March 2, 2026** at **5:00 PM** in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA to conduct business and public hearings. Please use the 7th St. entrance. Public access to the conversation of the meeting will also be made available during the meeting by telephone. Persons wanting to participate in the public meeting may attend in person or call: **(712) 454-1133** and enter the **Conference ID: 742 346 123#** during the meeting to listen or comment. It is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems.

	AGENDA
1	**CALL TO ORDER**
2	**ROLL CALL**
3	**PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA (INFORMATION ITEM)**
4	**APPROVAL OF PREVIOUS MEETING(S) MINUTES (ACTION ITEM)**
5	**ITEM(S) OF ACTION / BUSINESS**
»	**PUBLIC HEARING (ACTION ITEM): CONSIDERATION OF A CONDITIONAL USE PERMIT APPLICATION FROM THE CITY OF MOVILLE FOR A WATER SYSTEM IMPROVEMENT PROJECT , INCLUDING CONSTRUCTION OF A WATER TREATMENT PLANT, A 400,000-GALLON WATER STORAGE TOWER APPROXIMATELY 70 FEET ABOVE GRADE (AND SUBJECT TO CHANGES THROUGHOUT THE REVIEW PROCESS), AND TWO NEW WELLS ON PARCEL #894432400024.** **SUMMARY:** The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa for the consideration of a conditional use permit application submitted by Carleigh Noel, Development Services Coordinator, on behalf of the owner, the City of Moville. The application requests approval for a public use on city-owned property to support a water system improvement project, including construction of a water treatment plant, a water storage tower of approximately 400,000 gallons and subject to changes with an approximate height of 70 Feet above grade and subject to changes throughout the review process, and two new wells. The affected property consists of Lots 3, 4, 5, and 6 in Moville Heights Addition, an addition to Woodbury County, Iowa, identified as the combined Parcel #894432400024. The approximately 8-acre property is located in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 32, and lies about 1,500 feet south of the City of Moville, on the north side of 160th Street, south of Highway 20, and west of Humboldt Avenue. The owner and applicant is the City of Moville, located at 21 Main Street, P.O. Box 420, Moville, IA 51039, with contact information for Carleigh Noel, Development Services Coordinator, at 1725 Storm Lake Avenue North, Storm Lake, IA 50588.
»	**PUBLIC HEARING (ACTION ITEM): CONSIDERATION OF A VARIANCE APPLICATION FROM COREY AND SIERRA PARRY WHO SEEK REFLIEF FROM SECTION 4.12.2 OF THE WOODUBRY COUNTY ZONING ORDINANCE, WHICH PROHIBITS CONSTRUCTION OF AN ACCESSORY BUILDING UNTIL CONSTRUCTION OF THE PRINCIPAL BUILDING HAS COMMENCED ON PARCEL #894420476011. THE PROPERTY ADDRESS IS 1370 HIGHWAY 140, MOVILLE, IA 51039.** **SUMMARY:** The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa, to consider a variance request from Corey and Sierra Parry, who seek approval to construct an approximately 50' x 80' shed (subject to potential changes) before completing their principal structure, a single-family dwelling, on their property located at Lot Eleven (11), Block Two (2), Wood River Development, Woodbury County, Iowa (Parcel #894420476011), consisting of 2.49 acres in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 20, Northeast Quarter of the Southeast Quarter, situated more than 0.5 miles north of Moville just south of where Humbolt Avenue meets Highway 140, on the southeast side of Highway 140 and the west side of Humbolt Avenue. Although foundations for both the house and shed would begin at the same time, the applicants intend to prioritize and finish the shed first, seeking relief from Section 4.12.2 of the Woodbury County Zoning Ordinance (page 45), which prohibits construction of an accessory building until construction of the principal building has commenced. The owners and applicants are Corey and Sierra Parry, residing at 731 Florence Avenue, Sioux City, IA 51109.

6	**PUBLIC COMMENT ON MATTERS NOT ON THE AGENDA (INFORMATION ITEM)**
7	**STAFF UPDATE (INFORMATION ITEM)**
8	**BOARD MEMBER COMMENT OR INQUIRY (INFORMATION ITEM)**
9	**ADJOURN (ACTION ITEM)**

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Minutes - Woodbury County Board of Adjustment – February 2, 2026

The Board of Adjustment meeting convened on the 2nd of February 2026 at 5:00 PM in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse. The meeting was also made available for public access via teleconference.

Meeting Audio:
For specific content of this meeting, refer to the recorded video on the Woodbury County Board of Adjustment "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/board_of_adjustment/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=pKTt7yzRhpk

BA Members Present: Daniel Hair, Pam Clark, Larry Fillipi, Tom Thiesen, Doyle Turner
BA Members Absent: None
County Staff Present: Dan Priestley, Dawn Norton
Public Present: Kevin Alons

1. Call to Order & Roll Call

- **Time:** 5:00 PM
- **Action:** Chair Daniel Hair called the meeting to order and conducted roll call.
- **Details:** The meeting was audio-recorded, and minutes were to be prepared. Attendees were requested to silence cell phones or set them to vibrate and complete the attendance sheet. Chair Hair reviewed the board's procedures for the meeting, including handling housekeeping items, public hearings, staff reports, applicant presentations, public comments, board deliberations, motions, votes, and appeals (within 30 days to a court of record). He emphasized respectfulness, avoidance of repetitious or irrelevant comments, and the need to disclose any ex parte communications prior to deliberations. No ex parte communications were reported.

2. Election of Chair of the Board of Adjustment for 2026 (Action Item)

- **Action:** Nominations were opened.
- **Motion:** Doyle Turner nominated Daniel Hair for Chair.
- **Second:** Tom Thiesen seconded the nomination.
- **Discussion:** No further discussion was held.
- **Vote:** Unanimous approval (all present voted "Aye").
- **Outcome:** Daniel Hair was elected Chair of the Board of Adjustment for 2026.

3. Election of Vice-Chair of the Board of Adjustment for 2026 (Action Item)

- **Action:** Nominations were opened.
- **Motion:** Larry Fillipi nominated Doyle Turner for Vice-Chair (no second received).
- **Outcome:** The nomination died for lack of a second.
- **Motion:** Doyle Turner nominated Pam Clark for Vice-Chair.
- **Second:** Tom Thiesen seconded the nomination.
- **Discussion:** No further discussion was held.
- **Vote:** Unanimous approval (all present voted "Aye").
- **Outcome:** Pam Clark was elected Vice-Chair of the Board of Adjustment for 2026.

4. Public Comment on Matters Not on the Agenda

- **Action:** Chair Hair opened the floor for public comments on non-agenda items.
- **Outcome:** No public comments were received (including via telephone).

5. Approval of Previous Meeting Minutes

- **Agenda Item:** Approval of the minutes from the October 6, 2025 meeting.
- **Action:**
  - **Motion:** Pam Clark moved to approve the minutes from the October 6, 2025 meeting.

- **Second:** Tom Thiesen seconded the motion.
- **Discussion**: No further discussion was held.
- **Vote:** Unanimous approval (all present voted "Aye").

- **Outcome:** The minutes were approved as presented.

6. Public Hearing (Action Item): Consideration of a Variance Application from Kevin and Ngu Alons for a reduction of corner side yard and/or front yard setbacks and relief from accessory building placement and height requirements on Parcel #874733377004. The property address is 140 Galland St., Salix, IA 51052.

- **Public Hearing Opened: Chair Hair opened the public hearing.**
- **Summary (from Agenda and Packet):** The variance application, filed by Kevin and Ngu Alons, seeks approval to construct a two-story accessory building (approximately 24' x 30', roughly 28' high and subject to change) with vehicle storage on the main floor and a wood shop above. The relief is requested from Section 3.04 (Zoning District Dimensional Standards) of the Woodbury County Zoning Ordinance to reduce the Suburban Residential (SR) District's 15-foot corner side yard and/or 25-foot front yard setbacks, and from Sections 4.12.3 and 4.12.4 (Accessory Buildings) governing accessory structure placement in front of the principal structure and height limitations when the accessory structure may exceed the principal structure's height. The proposed building may be located within the corner side yard setback and/or front yard setback, potentially up to or on the southwest lot line or right-of-way line. The parcel is Lot 4 of Galland's Lakeview Second Sub-Division, a 0.54-acre lot in Section 33, T87N R47W (Liberty Township), located on the east side of Galland Street and the northwest side of 275th Street in the Suburban Residential (SR) Zoning District. The applicant asserts that the lot's triangular shape, existing house, garage and driveway locations, septic and well placement, and unusually large right-of-way areas uniquely constrain building placement and justify the requested variances. Owner/Applicant: Kevin and Ngu Alons, 140 Galland St., Salix, IA 51052.
- **Staff Report:** Dan Priestley, Zoning Coordinator, summarized the application, noting the unique lot configuration with excessive right-of-way widths (up to 60 feet in places versus the typical 33 feet) and the triangular shape, which creates practical difficulties for accessory building placement. He highlighted that the request aligns with recent Iowa Code amendments emphasizing practical difficulties rather than economic hardships, and that the applicant had explored options including potential acquisition of excess right-of-way from the county. Priestley displayed mapping and site plans, noting the proposed location provides strategic relief while respecting septic, well, and structure separation requirements. One written comment was received from neighbor Del Gehling opposing variances in general, stating that granting them undermines zoning regulations; no other public comments or concerns were received. Staff recommended consideration under the practical difficulty standard and suggested flexible motion wording to account for front/corner side ambiguity and right-of-way considerations.
- **Applicant Presentation:** Kevin Alons, 140 Galland St., Salix, IA (Applicant). Alons thanked staff for guidance and explained the excessive right-of-way on both Galland Street and the highway side constrains buildable area, compounded by the inherited house placement in the center of the triangular lot. He noted a non-permanent storage structure exists on the north edge and ongoing discussions with the county for potential right-of-way adjustment (depicted on plans). The proposed location aligns with his needs for vehicle storage and a wood shop, and he would accept the variance even if right-of-way acquisition does not occur, as it keeps the building within the property line with buffer space remaining. He emphasized no impact on road maintenance or public interest and expressed willingness to answer questions.
- **Board Questions and Discussion During Presentation:** Board members sought clarification on the proposed location relative to existing structures, potential relocation if right-of-way is acquired, driveway access, and whether the temporary structure's removal would allow shifts. Priestley and Alons confirmed the location is strategic, the variance seeks relief to the property line (with possible future gain from county), a short driveway connector is planned, and the site works as proposed without requiring further adjustment.
- **Public Comments:** No in-person or telephonic public comments were received. The written comment from Del Gallin was entered into the record.
- **Public Hearing Closed:**
  - **Motion:** Doyle Turner moved to close the public hearing.
  - **Second:** Pam Clark seconded the motion.
  - **Discussion:** No further discussion was held.
  - **Vote:** Unanimous approval (all present voted "Aye").
  - **Outcome:** The public hearing was closed.

- **Board Deliberation:** The board found the request straightforward, citing the unique lot shape and excessive right-of-way as clear practical difficulties under current standards. The proposed building would remain well set back from the road centerline, pose no public safety or utility concerns, and fit the residential character without setting problematic precedent. The single opposing comment was general and not site-specific.
- **Decision:**
    - **Motion:** Doyle Turner moved to approve the variance application as described in the variance application description on page 10 of the packet: "The applicant seeks approval to construct a two-story accessory building approximately 24' x 30', roughly 28 feet high, and subject to change within the corner side yard setback and/or front yard setback potentially up to or on the southwest lot line or the right-of-way line with vehicle storage on the main floor and a wood shop above. Relief is requested from Section 3.04 of the Zoning Ordinance (Zoning District Dimensional Standards) to reduce the Suburban Residential District's 15-foot corner side yard setback and/or 25-foot front yard setback and from Sections 4.12.3 and 4.12.4 (Accessory Buildings) governing accessory structure placement in front of the principal structure and height limitations when the accessory structure could exceed the principal structure's height."
    - Dan Priestley read the above description into the record to confirm inclusion, including the variance relief in terms of Section 3.04 for reduced setbacks up to the property line (right-of-way line), accessory structure placement in front of the house, and the ability for the accessory structure to exceed the principal structure's height while being lower than 45 ft.
    - **Second:** Larry Fillipi seconded the motion.
    - **Discussion:** No further discussion was held. Priestley noted post-approval paperwork would take a few days, including coordination with the chair for signature, after which building permits could proceed.
    - **Vote**: Unanimous approval (all present voted "Aye").
    - **Outcome:** The variance was approved as requested. The resolution will be prepared administratively.

7. Public Comment on Matters Not on the Agenda

- **Action:** Chair Hair opened the floor for additional public comments.
- **Outcome:** No comments were received.

8. Staff Update

- **Presenter:** Dan Priestley, Zoning Coordinator.
- **Details:** Priestley updated the board on recent Iowa legislation requiring training on the Sunshine Law (open meetings, notifications, and board interactions) for elected and appointed officials. Priestley had prepared an internal course but learned counties cannot self-train, so external providers must be used. He expressed disappointment but plans to distribute his prepared materials (including PowerPoint slides) informally for reference. Upcoming meetings will include at least one conditional use permit and variance. No action was taken.

9. Board Member Comment or Inquiry

- **Details:** Board members congratulated new officers. One member informed the board of upcoming potential limited attendance or telephonic participation at the April 6 meeting (if needed). Discussion occurred regarding the board's Rules of Procedure and recent meeting time change (now working well). No formal changes were requested.

10. Adjournment

- **Action:**
    - **Motion:** Doyle Turner moved to adjourn the meeting.
    - **Second:** Pam Clark seconded the motion.
    - **Discussion:** No further discussion was held.
    - **Vote:** Unanimous approval (all present voted "Aye").
- **Outcome:** The meeting was adjourned at approximately 5:40 PM.

WOODBURY COUNTY PLANNING & ZONING

620 Douglas Street, Sixth Floor, Sioux City, Iowa 51101
712.279.6609 – 712.279.6530 (Fax)

Daniel J. Priestley, MPA – Zoning Coordinator
dpriestley@woodburycountyiowa.gov

Dawn Norton – Senior Clerk
dnorton@woodburycountyiowa.gov

REPORT – FEBRUARY 26, 2026

APPLICATION DETAILS

Applicant(s)/Owner(s):	Carleigh Noel, Development Services Coordinator, on behalf of the owner, the City of Moville
Application Type:	Conditional Use Permit (CUP)
Zoning District:	Agricultural Estates (AE)
Total Acres:	8.00
Current Use:	Vacant lots
Proposed Use:	Water treatment plant
Pre-application Meeting:	April 11, 2025
Application Date:	Received October 1, 2025 – Dated: September 11, 2025
Legal Notice Date:	February 12 & February 24
Neighbor(s) Notice Date:	February 12 & February 18
Stakeholder(s) Notice Date:	February 2, 2026
Zoning Commission Review:	February 23, 2026
Board of Adjustment Public Hearing:	March 2, 2026

PROPERTY DETAILS

Parcel(s):	894432400024
Township/Range:	T89N R44W (Arlington)
Section:	32
Subdivision:	Moville Heights Addition, Lots Three (3), Four (4), Five (5), and Six (6)
Zoning District:	Agricultural Estates (AE)
Floodplain:	Zone X – Not in floodplain
Property Address:	None - TBD

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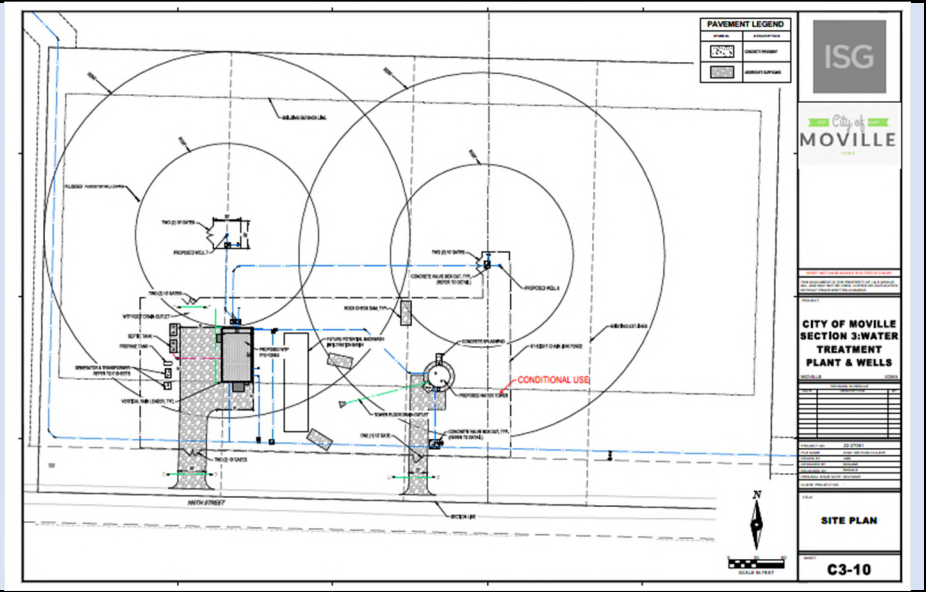
APPLICATON DESCRIPTION

Following a review for a recommendation by the Woodbury County Zoning Commission on February 23, 2026, the Woodbury County Board of Adjustment will hold a public hearing on March 2, 2026, pursuant to Section 335 of the Code of Iowa, to consider a conditional use permit application submitted by Carleigh Noel, Development Services Coordinator, on behalf of the owner, the City of Moville. The application requests approval for public use on city-owned property to support a water system improvement project, including construction of a water treatment plant, a water storage tower of approximately 400,000 gallons and subject to changes with an approximate height of 70 Feet above grade and subject to changes throughout the review process, and two new wells. The affected property consists of Lots 3, 4, 5, and 6 in Moville Heights Addition, an addition to Woodbury County, Iowa, identified as the combined Parcel #894432400024. The approximately 8-acre property is located in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 32, and lies about 1,500 feet south of the City of Moville, on the north side of 160th Street, south of Highway 20, and west of Humboldt Avenue. The owner and applicant is the City of Moville, located at 21 Main Street, P.O. Box 420, Moville, IA 51039, with contact information for Carleigh Noel, Development Services Coordinator, at 1725 Storm Lake Avenue North, Storm Lake, IA 50588.

AERIAL MAP

SITE PLAN EXCERPT



WOODBURY COUNTY
ZONING COMMISSION
WOODBURY COUNTY COURTHOUSE
620 DOUGLAS STREET
SIOUX CITY, IA 51101

To: Woodbury County Board of Adjustment
620 Douglas Street
Sioux City, Iowa 51101

From: Christine Zellmer Zant, Chair
Woodbury County Zoning Commission

Subject: Zoning Commission Recommendation City of Moville Water System Improvement Project Conditional Use Permit Application

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Dear Board of Adjustment:

This letter is to inform you that the Woodbury County Zoning Commission reviewed the conditional use permit application submitted by Carleigh Noel, on behalf of the City of Moville, for a water system improvement project, including construction of a water treatment plant, a 400,000-gallon water storage tower approximately 70 feet above grade (subject to changes), and two new wells on Parcel #894432400024. The property, situated in the Agricultural Estates (AE) Zoning District within T89N R44W (Arlington Township), Section 32, consists of combined Lots 3, 4, 5, and 6 in Moville Heights Addition, spans approximately 8 acres, and lies about 1,500 feet south of the City of Moville, on the north side of 160th Street, south of Highway 20, and west of Humboldt Avenue. The proposed project aims to secure a long-term water supply for the community. The review occurred at the regular meeting of the Woodbury County Zoning Commission on February 23, 2026.

Following the review, the Zoning Commission voted 5 to 0 to recommend approval of the application. The recommendation includes the following conditions for consideration:

- **Permit Requirements:** The applicant must obtain all necessary federal, state, and local permits prior to construction, including but not limited to grading and right-of-way permits from Woodbury County if applicable.

- **Security Fencing:** The security fencing as shown on the site plan must be installed and maintained for the life of the facility.

- **Setback Disclaimer**: In addition to the conditions outlined above, following the Woodbury County Assessor's combination of the four individual lots (3, 4, 5, & 6) into one unified "zoning lot," the following disclaimer should be included with this conditional use permit. This is due to discrepancies between the original Moville Heights Addition plat (2004), which specifies front yard setbacks of 100 feet, and the Woodbury County Zoning Ordinance's Zoning District Dimensional Standards, which require 75 feet for the Agricultural Estates (AE) Zoning District.

- **Definition of Zoning Lot:** *"A tract of contiguous land, under single or unified ownership or control, designated in an application for a building permit to be used, developed, or built upon in conformance with the requirements of this ordinance. A zoning lot need not coincide with a lot of record and may consist of: (a) a single lot of record; (b) a partial lot of record; or (c) a combination of complete and partial lots of record"* (p. 104).

- **Reference from the Ordinance:** *"Every building constructed or structurally altered shall be located on a zoning lot…"* (p. 43).

As per zoning staff, the Woodbury County Planning and Zoning Department issues building permits for structures on zoning lots based on the parameters of the Zoning Ordinance, including its Zoning District Dimensional Standards (setbacks) from Section 3.04, and includes the following disclaimer:

Disclaimer: The approval of this permit does not guarantee that your building project meets the requirements of your respective subdivision. The issuance of a county building permit signals compliance with the Woodbury County Zoning Ordinance, but it does not verify compliance with either plat conditions, subdivision regulations, or community covenants that may be applicable. It is imperative to abide by subdivision regulations, covenants, easements, and planning requirements before proceeding with your building plans. Be sure to call Iowa One Call before you begin your project to locate utilities.

Please refer to the draft copy of the Zoning Commission minutes for details about the Commission's recommendation(s).

Dated this 25 day of February, 2026.

Christine Zellmer Zant, Chair
Woodbury County Zoning Commission

Woodbury County Zoning Commission Meeting Minutes

Date: February 23, 2026
Time: 5:00 PM
Location: Board of Supervisors' Meeting Room, Basement, Woodbury County Courthouse, 620 Douglas Street, Sioux City, IA

MEETING AUDIO:

For specific content of this meeting, refer to the recorded video on the Woodbury County Zoning Commission "Committee Page" on the Woodbury County website:

- County Website Link:
  - https://www.woodburycountyiowa.gov/committees/zoning_commission/
- YouTube Direct Link:
  - https://www.youtube.com/watch?v=e2gHjWrlH9o

Attendees

- **Commissioners Present:** Chris Zellmer Zant – Chair, Tom Bride – Vice Chair, Jeff Hanson, Corey Meister, Steve Corey (Remotely)
- **Board of Supervisors Liaison(s):** Kent Carper
- **Staff Present:** Dan Priestley – Zoning Coordinator
- **Public Attendees:** Amanda Goodenow (Remotely)

Call to Order

The Woodbury County Zoning Commission meeting was called to order by Chair Christine Zellmer Zant at approximately 5:00 PM on January 26, 2026. The Chair noted that the meeting would be audio taped, and minutes prepared for all parties. Attendees were asked to turn off cell phones or set them to vibrate and to complete the attendance sheet. The Chair reviewed the Commission's procedures for the meeting, including handling of agenda items, public hearings, staff reports, applicant presentations, public comments (requiring speakers to state name and address at the microphone, avoid repetitious comments, and remain respectful), closing statements, closing of hearings by motion and vote, deliberation, and disclosure of any ex parte communications prior to deliberation.

Roll Call

Chair Christine Zellmer Zant conducted a roll call. Each Commissioner introduced themselves.

Public Comment on Matters Not on the Agenda

No public comments were received on matters not listed on the agenda, either in person or via phone.

Approval of Previous Meeting Minutes

The Commission reviewed the minutes from the previous meetings on December 22, 2025, and January 26, 2026.

- For the December 22, 2025, minutes: Commissioner Jeff Hanson made a motion to approve the minutes as presented. The motion was seconded by Commissioner Tom Bride. The vote was taken, with all in favor saying "aye" (Commissioners Zellmer Zant, Bride, Hanson, and Corey). Commissioner Corey Meister abstained, as he was absent from that meeting. No one opposed. The motion passed with a vote of 4-0-1 (4 ayes, 0 nays, 1 abstention).

- For the January 26, 2026, minutes: Commissioner Corey Meister made a motion to approve the minutes as presented. The motion was seconded by Commissioner Jeff Hanson. The vote was taken, with all in favor saying "aye" (Commissioners Zellmer Zant, Meister, and Hanson). Commissioners Tom Bride and Steve Corey abstained, as they were absent from that meeting. No one opposed. The motion passed with a vote of 3-0-2 (3 ayes, 0 nays, 2 abstentions).

Review of Conditional Use Permit Application: City of Moville Water System Improvement Project, Including Construction of a Water Treatment Plant, a 400,000 Gallon Water Storage Tower

Approximately 70 Feet Above Grade (and Subject to Changes Throughout the Review Process), and Two New Wells on Parcel #894432400024.

Chair Christine Zellmer Zant commenced with the conditional use permit review.

Zoning Coordinator Daniel Priestley presented the staff report on the conditional use permit application for public use on city-owned property, as detailed in the agenda and meeting packet (pages 8-80). The application, submitted by Carleigh Noel (Development Services Coordinator) on behalf of the owner/applicant City of Moville (21 Main Street, P.O. Box 420, Moville, IA 51039; contact: Carleigh Noel at 1725 Storm Lake Avenue North, Storm Lake, IA 50588), requests approval for a water system improvement project including a modern water treatment plant, a 400,000-gallon elevated water storage tower approximately 70 feet above grade (subject to changes), and two new wells. The property consists of combined Lots 3, 4, 5, and 6 in Moville Heights Addition (combined into an approximately 8-acre zoning lot, Parcel #894432400024), located in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 32. It lies about 1,500 feet south of the City of Moville, on the north side of 160th Street, south of Highway 20, and west of Humboldt Avenue. The project aims to secure a long-term water supply for the community, supporting growth and prosperity. The site was selected for its 8-acre footprint to accommodate all assets, with the Woodbury County Assessor combining the lots into one zoning lot.

Priestley noted this is a Zoning Commission public review meeting (not a formal public hearing; that occurs at the Board of Adjustment on March 2, 2026), for recommending to the Board of Adjustment. Notification included mailed letters to neighbors (twice), legal postings, and Facebook outreach for public input. The property is outside city limits, hence county jurisdiction. Key concerns: Setback discrepancies (subdivision plat from 2004 shows 100-foot setbacks, but zoning ordinance permits based on the combined zoning lot, eliminating internal setbacks and applying AE district standards); historical practice includes disclaimers on permits noting potential stricter subdivision covenants (e.g., "The approval of this permit does not guarantee that your building project meets the requirements of your respective subdivision... It is imperative to abide by subdivision regulations, covenants, easements and planning requirements"). Priestley recommended including this disclaimer in proceedings. The original proprietor (Larry Etler) provided a supportive statement in the packet, controlling most lots and endorsing the project despite original intent. Other requirements: Obtain all federal, state, and local permits (e.g., grading and right-of-way from County Engineer, who is aware and has coordinated on related pipe work); install and maintain security fencing for public/asset protection. The project fits conditional use criteria as necessary and desirable, located on the town's edge for potential growth, similar to other city water towers (e.g., in Sioux City). Minimal public input received to date; more expected at Board of Adjustment.

Amanda Goodnow of ISG (remote, assisting the City) elaborated on setbacks: The site layout includes 200-foot separation circles around wells from north/west property lines to comply with Iowa Code for public drinking water (avoiding no-spray agreements with farmers for chemical applications); 100-foot separation from wells to the treatment plant (for chemical storage); south edge of plant at exactly 75 feet from property line, optimizing for wellhead protection. No other additions beyond Priestley's report.

Commissioners had no questions. Priestley suggested conveying recommendations to the Board of Adjustment, such as required permits, fencing, and the disclaimer.

Tom Bride made a motion to receive a disclaimer into the record. Jeff Hanson seconded. All in favor voted "aye" (unanimous, 5-0). No opposition. Disclaimer Received: (*DISCLAIMER: Your subdivision community covenants, and plat map may be more restrictive than the local governing body. The approval of this permit does not guarantee that your building project meets the requirements of your subdivision. The issuance of a county building permit signals compliance with the county zoning ordinance but it does not verify compliance with plat conditions, subdivision regulations, easements, and community covenants that may be applicable. It is imperative to abide by the subdivision's regulations, covenants, easements, and platting requirements before proceeding with your building plans. Be sure to call IowaOneCall (811) before you begin your project to locate utilities.)*

Tom Bride made a motion to recommend approval to the Board of Adjustment with conditions: (1) Applicant must obtain all necessary federal, state, and local permits prior to construction, including but not limited to grading and right-of-way permits from Woodbury County if applicable; (2) Security fencing as shown on the site plan must be installed and maintained for the life of the facility; (3) Include the disclaimer provided and received into the record. Corey Meister seconded. No further discussion. All in favor voted "aye" (unanimous, 5-0, including Steve Corey). No oppositions. Priestley noted the Board of Adjustment hearing on March 2, 2026, at 5:00 PM in the same room. The Commissioner Christine Zellmer Zant thanked Goodnow for attending.

No public hearing was opened or closed for this item, as it was a review (not a formal hearing).

Public Comment on Matters Not on the Agenda

No additional public comments were received on matters not listed on the agenda, either in person or via phone.

Staff Update

Dan Priestley provided updates:

- **Open Meetings Law Training:** The legislature passed new training requirements for board members. While existing members are "grandfathered in," Priestley developed an internal training course that he submitted to the IPIB. He is also evaluating Iowa State Extension training opportunities.

Commissioner Comment or Inquiry

No Commissioners offered additional comments or inquiries.

Adjournment

Commissioner Corey Meister moved to adjourn the meeting, seconded by Commissioner Steve Corey. The motion passed unanimously with all Commissioners present voting "aye." (3-0) The meeting adjourned at approximately 5:29 PM.

DRAFT

ZONING ORDINANCE CRITERIA FOR BOARD APPROVAL

Conditional Use Permits are determined by a review of the following criteria by the Zoning Commission (ZC) and Board of Adjustment (BOA). The ZC makes a recommendation to the BOA which will decide following a public hearing before the Board.

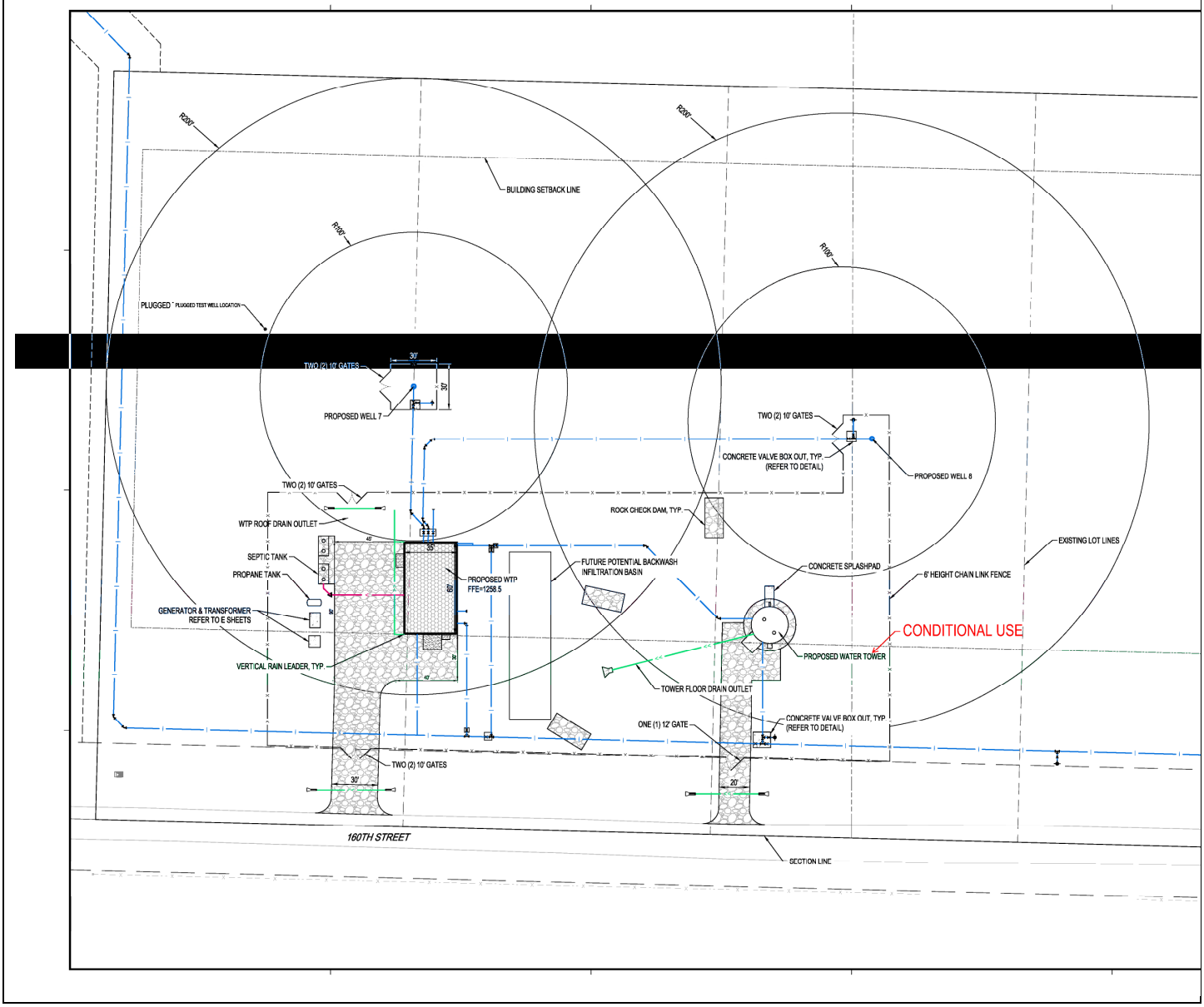
APPLICANT'S DESCRIPTION OF THE PROPOSED CONDITIONAL USE:

The City of Moville has seen increased demand for water since their current wells were put into service in 2001. Those wells are running at 75% capacity and have poor water quality, which led city officials to propose a water system improvement project involving a new water tower, a water treatment plant, and two new wells. The new 400,000-gallon tower, water treatment plant, and wells are all sized to accommodate future growth and projected demand. The project's aim is to address not only aesthetic problems with the city's water but also increase water pressure by approximately 5-10 PSI. The city has purchased land south of Highway 20 on 160th Street where two new access drives will be constructed leading to the secure site. Due to the proximity of this property away from city limits, the project also involves a substantial water main extension.

CONDITIONAL USE PERMIT REQUEST:

A Conditional Use Permit (CUP) is requested to accommodate the proposed public use of city-owned property located south of Highway 20 on 160th Street. The project is proposed to be located on Parcel #894432400024 within Section 32, Township 89 North, Range 44 West. The site is currently zoned as AE – Agricultural Estates, and no zoning changes are required to accommodate the proposed project. Per Article 3.03 Section 4 (Land Use Summary Table of Allowed Uses in each Zoning District) of the Woodbury County Zoning Ordinance, water storage tanks and their affiliated systems are a conditional use within this district; therefore, a CUP is required. As proposed, this project can meet all required county requirements.

MAP DRAWN TO SCALE, SHOWING THE SUBJECT PROPERTY, ALL STRUCTURES AND OTHER IMPROVEMENTS, WITH THE PROPOSED CONDITIONAL USE IDENTIFIED PER STRUCTURE OF IMPROVEMENT, PROVIDED BY ATTACHMENT



CRITERIA 1: The conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied (Woodbury County Zoning Ordinance, Sec. 2.02-9).

APPLICANT RESPONSE:

Sec 3.03-4. Land Use Summary Table of Allowed Uses in each Zoning District, under "Transportation, communication and public services," the "Utilities" category lists water storage tanks as a conditional use allowed in Zone AE – Agricultural Estates.

STAFF ANALYSIS:

The applicant correctly states that water storage tanks are listed as a conditional use in the Agricultural Estates (AE) Zoning District under Section 3.03(4) of the Zoning Ordinance, listed within the "Utilities" category. The Land Use Summary Table confirms that this use is allowed subject to conditional approval by the Board of Adjustment. The project can comply with applicable county and state regulations, and the applicant will need to obtain necessary permits for right-of-way work, grading, and site access. The proposed site is an 8.0-acre parcel (Lots 3, 4, 5, and 6 of the Moville Heights Addition subdivision, originally dedicated September 16, 2004). These lots were administratively combined by the Woodbury County Assessor into a single unified "Zoning Lot" to provide adequate space for the facility. For the AE district, the minimum lot size is 2 acres. The original subdivision plat specified 100-foot front-yard setbacks and 17.5-foot side-yard setbacks. The site now constitutes a single "Zoning Lot" under unified ownership/control. The standard practice of the county is to issue permits based upon the zoning ordinance's dimensional standards including setbacks for the Zoning District in which the lot is located (Section 3.04). (See the letter from the original subdivision proprietor, Larry Etler below.) The Zoning Ordinance defines a "Zoning Lot" (p. 104) as: "*a tract of contiguous land, under single or unified ownership or control, designated in an application for a building permit to be used, developed or built upon in conformance with the requirements of this ordinance. A zoning lot need not coincide with a lot of record and may consist of: (a) a single lot of record; (b) a partial lot of record; or (c) a combination of complete and partial lots of record.*" The ordinance does not impose any use-specific additional standards for water storage tanks beyond general zoning compliance. The applicant's environmental review completed as part of the State Revolving Fund (SRF) loan process further confirms that broader regulatory requirements can be satisfied. The criteria can be met pending further input from the public through the public hearing process.

CRITERIA 2: The proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan (Woodbury County Zoning Ordinance, Sec. 2.02-9).

APPLICANT RESPONSE:

The proposed conditional use is in harmony with the general purpose and intent of the ordinance based on Sec 3.03-1 B."Conditional uses, indicated by "C" in the table, are allowed in the zoning district upon approval by the Zoning Board of Adjustment based upon findings of compliance with the requirements of subsection 2.02-9 F. The proposed conditional use is in harmony with the general purpose and intent of the ordinance and aligns with ideals mentioned in the Woodbury County Vision Statement. The project aims to serve the community in the interest of public health, welfare, and quality.

STAFF ANALYSIS:

The applicant notes that conditional uses are allowed upon Board approval based on compliance and aligns the project with the Woodbury County Vision Statement's emphasis on public health, welfare, and quality. The ordinance's general purpose (Section 1.02) includes promoting public health, safety, and welfare, and facilitating orderly development, which this project supports by addressing water quality and pressure issues for an expanding community. Woodbury County's Comprehensive Plan encourages infrastructure that serves public needs without disrupting agricultural or estate character. The site's location on vacant agricultural land south of city limits harmonizes with these goals. The project scales facilities for future growth, aligning with long-term planning standards. The criteria can be met pending further input from the public through the public hearing process.

(https://www.woodburycountyiowa.gov/files/community_economic_development/woodbury_county_comprehensive_plan_2040_89417.pdf)

CRITERIA 3: The proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare (Woodbury County Zoning Ordinance, Sec. 2.02-9).

APPLICANT RESPONSE:

This public utility project aims to increase water pressure and accommodate future growth and needs of the city by providing a reliable, safe water supply, thereby positively impacting the general welfare of the public. No undue adverse effects upon the character of the neighborhood, existing traffic conditions or parking within the area are projected during construction or once the facility is in operation. The project will not contribute to excess traffic or require a high quantity of parking as the only users of the site and facility will be a limited number of City maintenance personnel. As required by Woodbury County, permits for right-of-way work, grading, and new site access points will be obtained to accommodate future operation of the facility and manage construction activities and traffic, both of which are projected to be low in nature.

STAFF ANALYSIS:

The applicant asserts that the project will positively impact public welfare by improving water supply reliability and pressure, with no adverse effects on neighborhood character, traffic, or parking. The surrounding area is zoned AP and AE and consists of open agricultural fields and with one adjacent residential property directly abutting on the neighboring lot to the east and homes to the west in excess of 1000 Feet. Traffic will be limited to occasional city maintenance vehicles, and the site plan shows two new access drives designed to handle low-volume use. Parking is not a significant factor, as the site is unmanned except for maintenance. The project enhances public health by resolving aesthetic and quality issues in the existing water system (e.g., wells at 75% capacity). Overall, the use promotes general welfare. The criteria can be met pending further input from the public through the public hearing process.

CRITERIA 4: The proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	APPLICANT RESPONSE: The surrounding lots are also Zoned as AE – Agricultural Estates and there are no existing structures on the neighboring lots. Additionally, the site will be secured by chain link fencing to both protect the public water source as well as to provide a level of screening to adjacent properties.
	STAFF ANALYSIS: The applicant notes the surrounding lots are vacant agricultural fields (with the exception of the new neighboring structure to the east and housing 1000 feet to the west), and the site will be secured with chain-link fencing for safety and screening. The site plan depicts a compact layout with the treatment plant, tower, and wells centralized on the 8-acre site, maintaining reasonable setbacks. The design avoids interference with neighboring agricultural uses, as the facility is low-impact and non-industrial in operation. Construction will comply with county permits to minimize disruption. The location, 1,500 feet south of Moville, supports orderly extension of utilities. This ensures compatibility and non-interference with surrounding property development. The criteria can be met pending further input from the public through the public hearing process.

CRITERIA 5: Essential public facilities and services will adequately serve the proposed use or development (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	APPLICANT RESPONSE: The water system improvement project will directly serve the residents of Moville and will address multiple concerns voiced at recent public meetings. The project will accommodate projected growth of the community by providing a safe, reliable water supply for this expanding community.
	STAFF ANALYSIS: The applicant states that the project will directly serve Moville residents by addressing water concerns raised in public meetings and accommodating community growth. Existing county roads (160th Street) provide access, and the project includes a water main extension to connect to city infrastructure. No additional public services (e.g., sewer, emergency access) appear to be overburdened, as the site is self-contained. As a public utility project, it enhances rather than strains essential services, ensuring reliable water for the area. The criteria can be met pending further input from the public through the public hearing process.

CRITERIA 6: The proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	APPLICANT RESPONSE: The proposed site and surrounding properties are open agricultural fields with no significant natural, scenic, or historic features. As part of the City's State Revolving Fund (SRF) loan, an environmental review is being completed for the entire project extents.
	STAFF ANALYSIS: The applicant describes the site and surroundings as open agricultural fields with no significant natural, scenic, or historic features. The site plan shows minimal land disturbance (e.g., grading for access and foundations), with no impacts to waterways or habitats. Adjacent properties are similarly undeveloped, so no adverse effects are anticipated. This low-impact design avoids unnecessary harm. The criteria can be met pending further input from the public through the public hearing process.

OTHER CONSIDERATION 1: The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	APPLICANT RESPONSE: The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community. The criteria can be met pending further input from the public through the public hearing process.
	STAFF ANALYSIS: The applicant emphasizes that the project addresses resident concerns about water quality and pressure, providing a reliable supply for growth. The site's location, ¼ mile south of Moville, was selected based on engineering analyses for water quality, reliability, and capacity. It is desirable for its proximity to the city while avoiding urban encroachment, contributing to public welfare by improving infrastructure in a rural-agricultural context. This aligns with the ordinance's public interest focus. The criteria can be met pending further input from the public through the public hearing process.

OTHER CONSIDERATION 2: All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development (Woodbury County Zoning Ordinance, Sec. 2.02-9).	
	APPLICANT RESPONSE: The project is designed to meet all local, state, and federal design guidelines and permitting requirements applicable to this project type and the zoning district in which it is located.
	STAFF ANALYSIS: The applicant states the project meets all local, state, and federal guidelines, with chain-link fencing for security and screening. The site plan includes setbacks, compact design, and low-profile structures to blend with the agricultural landscape. No additional landscaping is proposed, but the open setting minimizes visual impacts. Construction permits will address erosion and traffic, ensuring mitigation. Efforts appear sufficient given the site's rural nature.

OVERALL ANALYSIS (REVISED FOLLOWING ZONING COMMISSION REVIEW & RECOMMENDATION):
Pending further input from the public at the public hearing scheduled for March 2, 2026, this application demonstrates strong merits, as the project addresses critical public needs for improved water infrastructure in a growing community such as Moville. The Agricultural Estates (AE) Zoning District allows this use to be considered conditionally, and the applicant's responses, site plan, and supporting documents signal compliance with ordinance's basic requirements. The administrative lot combination and SRF review process add credibility. The project enhances public welfare, aligns with orderly development, fits the rural character, and is necessary and desirable.

It is important to be mindful of the Zoning Commission's recommendation to include the use of the disclaimer as this property was originally platted as four separate and independent lots within the Moville Heights Addition. Subsequent to the Woodbury County Assessor's combination of the four lots into one zoning lot, it left staff and the Zoning Commission with the recommendation to include the disclaimer with the expectation that the applicant and City of Moville keep in mind the platting conditions prior to commencing with their project as the disclaimer states the following:

> *DISCLAIMER: Your subdivision community covenants, and plat map may be more restrictive than the local governing body. The approval of this permit does not guarantee that your building project meets the requirements of your subdivision. The issuance of a county building permit signals compliance with the county zoning ordinance but it does not verify compliance with plat conditions, subdivision regulations, easements, and community covenants that may be applicable. It is imperative to abide by the subdivision's regulations, covenants, easements, and platting requirements before proceeding with your building plans. Be sure to call IowaOneCall (811) before you begin your project to locate utilities.*

STAFF RECOMMENDATION FOR BOARD OF ADJUSTMENT:
Based on the findings of this analysis, it is recommended to approve the Conditional Use Permit application pending further input from the public through the public hearing process. Potential conditions to be considered:

1. The applicant must obtain all other necessary federal, state, and local permits prior to construction, including but not limited to grading and right-of-way permits from Woodbury County, if applicable and provide copies to the Woodbury County Planning and Zoning office.
2. The security fencing shown on the site plan shall be installed and maintained for the life of the facility.
3. Include the referenced disclaimer within any resolution regarding the use of the Zoning Ordinance's setback requirements.
4. Make expectations clear to the city with a letter of explanation and resolution.

WOODBURY COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT

Zoning Ordinance
Section 2.02(9)

CONDITIONAL USE PERMIT APPLICATION

Owner Information:

Owner: City of Moville

Address: 21 Main Street, PO Box 420

Moville, IA 51039

Phone: 712-873-3545

Applicant Information:

Applicant: Carleigh Noel, Development Services Coordinator

Address: 1725 Storm Lake Ave North

Storm Lake, IA 50588

Phone: 712-732-7745

We, the undersigned, hereby apply to the Woodbury County Board of Adjustment for permission to:

request a Conditional Use Permit to accommodate the proposed public use of city-owned property to support their water system improvement project.

Property Information:

Special Note: Parcels combined via the County Assessor. The Property Parcel is now Parcel #894432400024

Property Address or Address Range: Lots South of Highway 20 on 160th Street

Quarter/Quarter: Lots 3, 4, 5, and 6 in Moville Heights Addition, an addition to Woodbury County Sec: 32 Twnshp/Range: T-89-N, R-44-W

Parcel ID #: 894432400017, 894432400018, 894432400019, 894432400020 GIS #: 861146, 861145, 861144, 861143 Total Acres: 8

Current Use: Vacant lots Proposed Use: Water treatment plant

Current Zoning: AE - Agricultural Estates Zoning District

The filing of this application is required to be accompanied with all items and information required pursuant to section 2.02(9)(C)(2) through (C)(4) of Woodbury County's zoning ordinances (see attached pages of this application for a list of those items and information).

A formal pre-application meeting is recommended prior to submitting this application.

Pre-app mtg. date: 04/11/25 Staff present: Kyle Gates & Daniel Priestley

The undersigned is/are the owners(s) of the described property on this application, located in the unincorporated area of Woodbury County, Iowa, assuring that the information provided herein is true and correct. I hereby give my consent for the Woodbury County Community and Economic Development staff, Zoning Commission and Board of Adjustment members to conduct site visits and photograph the subject property.

This Conditional Use Permit Application is subject to and shall be required, as a condition of final approval, to comply with all applicable Woodbury County ordinances, policies, requirements and standards that are in effect at the time of final approval.

Owner: _____ Applicant: Carleigh Noel

Date: _____ Date: 09/09/2025

Fee: $300* **Case #:** _____

Check #: _____

Receipt #: _____

Date Received

**Special note. The application was updated to reflect the subdivision lots and the correct section number. The original application is included on the next page.*

Docusign Envelope ID: 1E88E1C6-BA02-4290-873B-56A5B38D742C

WOODBURY COUNTY COMMUNITY AND ECONOMIC DEVELOPMENT

Zoning Ordinance
Section 2.02(9)

CONDITIONAL USE PERMIT APPLICATION

Owner Information:

Owner: City of Moville

Address: 21 Main Street, PO Box 420
Moville, IA 51039

Phone: 712-873-3545

Applicant Information:

Applicant: Carleigh Noel, Development Services Coordinator

Address: 1725 Storm Lake Ave North
Storm Lake, IA 50588

Phone: 712-732-7745

We, the undersigned, hereby apply to the Woodbury County Board of Adjustment for permission to:

request a Conditional Use Permit to accommodate the proposed public use of city-owned property to support their water system improvement project.

Property Information:

Special Note: Parcels combined via the County Assessor. The Property Parcel is now Parcel #894432400024

Property Address
or Address Range: Lots South of Highway 20 on 160th Street

Quarter/Quarter: SW 1/4 of the SE 1/4 Sec: 29 & 32 Twnshp/Range: T-89-N, R-44-W

Parcel ID #: 894432400017, 894432400018, 894432400019, 894432400020 GIS #: 861146, 861145, 861144, 861143 Total Acres: 8

Current Use: Vacant lots Proposed Use: Water treatment plant

Current Zoning: AE - Agricultural Estates Zoning District

The filing of this application is required to be accompanied with all items and information required pursuant to section 2.02(9)(C)(2) through (C)(4) of Woodbury County's zoning ordinances (see attached pages of this application for a list of those items and information).

A formal pre-application meeting is recommended prior to submitting this application.

Pre-app mtg. date: 04/11/25 Staff present: Kyle Gates & Daniel Priestley

The undersigned is/are the owners(s) of the described property on this application, located in the unincorporated area of Woodbury County, Iowa, assuring that the information provided herein is true and correct. I hereby give my consent for the Woodbury County Community and Economic Development staff, Zoning Commission and Board of Adjustment members to conduct site visits and photograph the subject property.

This Conditional Use Permit Application is subject to and shall be required, as a condition of final approval, to comply with all applicable Woodbury County ordinances, policies, requirements and standards that are in effect at the time of final approval.

Signed by:
Owner: Michaela Peterson
D7549229568748F...

Date: 9/11/2025

Applicant: Carleigh Noel

Date: 09/09/2025

Fee: $300* **Case #:** 7117

Check #: 73575

Receipt #:

Date Received
RECEIVED
OCT - 1 2025
WOODBURY COUNTY
PLANNING & ZONING

Docusign Envelope ID: 1E88E1C6-BA02-4290-873B-56A5B38D742C

PER SECTION 2.02(9)(C)(2 (d) PROVIDE A SPECIFIC DESCRIPTION OF THE PROPOSED CONDITIONAL USE: (Tab at the end of each line to continue)

To support the increased demand for water in the City of Moville, this proposal requests a conditional use permit to construct a water treatment facility across four city-owned parcels located south of Highway 20 on 160th Street. The city is working with the county assessor on an administrative lot combination to facilitate the proposed site plan.

PER SECTION 2.02(9) (C)(2)(e) PROVIDE A MAP DRAWN TO SCALE, SHOWING THE SUBJECT PROPERTY, ALL STRUCTURES AND OTHER IMPROVEMENTS, WITH THE PROPOSED CONDITIONAL USE IDENTIFIED PER STRUCTURE OR IMPROVEMENT . PROVIDE BY ATTACHMENT.

PER SECTION 2.02(9) (C)(2)(e) PROVIDE A STATEMENT IN RESPONSE TO EACH OF SIX BELOW CRITEREA AND STANDARDS FOR APPROVAL OF CONDITIONAL USES AS LISTED IN SECTION 2.02(9)F OF THE ORDINANCES. (Tab at the end of each line to continue)

(a) Provide a statement to why you feel the conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards described as part of that authorization have been or will be satisfied.

Please see attached CUP Narrative doc.

(b) Provide a statement to why the proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan. (Tab at the end of each line to continue)

Please see attached CUP Narrative doc.

(c) Provide a statement to why the proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare. (Tab at the end of each line to continue)

Please see attached CUP Narrative doc.

(d) Provide a statement to why the proposed use and development will be located, designed, constructed and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property. (Tab at the end of each line to continue)

Please see attached CUP Narrative doc.

Docusign Envelope ID: 1E88E1C6-BA02-4290-873B-56A5B38D742C

(e) Provide a statement to why essential public facilities and services will adequately serve the proposed use or development. (Tab at the end of each line to continue)

Please see attached CUP Narrative doc.

(f) Provide a statement to why the proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic or historic features of the subject property or adjacent properties. (Tab at the end of each line to continue)

Please see attached CUP Narrative doc.

SEPTEMBER 2, 2025

Daniel J. Priestley, MPA
Zoning Coordinator
Woodbury County
620 Douglass Street #609
Sioux City, IA 51101
dpriestley@woodburrycountyiowa.gov

RE: WATER SYSTEM IMPROVEMENT PROJECT FOR THE CITY OF MOVILLE, IA
PID 894432400017, 894432400018, 894432400019, 894432400020
LOCATED SOUTH OF HIGHWAY 20 ON 160TH STREET

Daniel,

Thank you for reviewing the following narrative and attached materials being submitted on behalf of the City of Moville in support of their water system improvement project. We have prepared the following narrative to describe the proposed project and outlined each request in detail to demonstrate how the project is compliant with Conditional Use Permit (CUP) criteria.

PROJECT DESCRIPTION

The City of Moville has seen increased demand for water since their current wells were put into service in 2001. Those wells are running at 75% capacity and have poor water quality, which led city officials to propose a water system improvement project involving a new water tower, a water treatment plant, and two new wells. The new 400,000-gallon tower, water treatment plant, and wells are all sized to accommodate future growth and projected demand. The project's aim is to address not only aesthetic problems with the city's water but also increase water pressure by approximately 5-10 PSI. The city has purchased land south of Highway 20 on 160th Street where two new access drives will be constructed leading to the secure site. Due to the proximity of this property away from city limits, the project also involves a substantial water main extension.

CONDITIONAL USE PERMIT REQUEST

A Conditional Use Permit (CUP) is requested to accommodate the proposed public use of city-owned property located south of Highway 20 on 160th Street. The project is proposed to span across four parcels numbered 894432400017, 894432400018, 894432400019, and 894432400020 within Section 32, Township 89 North, Range 44 West. The city is working with the County Assessor on an administrative lot combination to facilitate the proposed site plan. The site is currently zoned as AE – Agricultural Estates, and no zoning changes are required to accommodate the proposed project.

Per Article 3.03 Section 4 (Land Use Summary Table of Allowed Uses in each Zoning District) of the Woodbury County Zoning Ordinance, water storage tanks and their affiliated systems are a conditional use within this district; therefore, a CUP is required. As proposed, this project will meet all required county and state code requirements upon approval of the requested CUP.

Per Sec.2.02-9.F(1-2) of the Woodbury County Zoning Ordinance, the following review criteria must be addressed for any Conditional Use Permit. Below are the criteria with a response addressing each item:

1. The conditional use requested is authorized as a conditional use in the zoning district within which the property is located and that any specific conditions or standards are described as part of that authorization have been or will be satisfied.

Sec 3.03-4. Land Use Summary Table of Allowed Uses in each Zoning District, under "Transportation, communication and public services," the "Utilities" category lists water storage tanks as a conditional use allowed in Zone AE – Agricultural Estates.

2. The proposed use and development will be in harmony with the general purpose and intent of this ordinance and the goals, objectives and standards of the general plan.

The proposed conditional use is in harmony with the general purpose and intent of the ordinance based on Sec 3.03-1 B. "Conditional uses, indicated by "C" in the table, are allowed in the zoning district upon approval by the Zoning Board of Adjustment based upon findings of compliance with the requirements of subsection 2.02-9 F.

The proposed conditional use is in harmony with the general purpose and intent of the ordinance and aligns with ideals mentioned in the Woodbury County Vision Statement. The project aims to serve the community in the interest of public health, welfare, and quality.

3. The proposed use and development will not have a substantial or undue adverse effect upon adjacent property, the character of the neighborhood, traffic conditions, parking, utility facilities, and other factors affecting the public health, safety and general welfare.

This public utility project aims to increase water pressure and accommodate future growth and needs of the city by providing a reliable, safe water supply, thereby positively impacting the general welfare of the public. No undue adverse effects upon the character of the neighborhood, existing traffic conditions or parking within the area are projected during construction or once the facility is in operation.

The project will not contribute to excess traffic or require a high quantity of parking as the only users of the site and facility will be a limited number of City maintenance personnel. As required by Woodbury County, permits for right-of-way work, grading, and new site access points will be obtained to accommodate future operation of the facility and manage construction activities and traffic, both of which are projected to be low in nature.

4. The proposed use and development will be located, designed, constructed, and operated in such a manner that it will be compatible with the immediate neighborhood and will not interfere with the orderly use, development and improvement of surrounding property.

The surrounding lots are also Zoned as AE – Agricultural Estates and there are no existing structures on the neighboring lots. Additionally, the site will be secured by chain link fencing to both protect the public water source as well as to provide a level of screening to adjacent properties.

5. Essential public facilities and services will adequately serve the proposed use or development.

The water system improvement project will directly serve the residents of Moville and will address multiple concerns voiced at recent public meetings. The project will accommodate projected growth of the community by providing a safe, reliable water supply for this expanding community.

6. The proposed use or development will not result in unnecessary adverse effects upon any significant natural, scenic, or historic features of the subject property or adjacent properties.

The proposed site and surrounding properties are open agricultural fields with no significant natural, scenic, or historic features. As part of the City's State Revolving Fund (SRF) loan, an environmental review is being completed for the entire project extents.

7. The proposed use or development, at the particular location is necessary or desirable to provide a service or facility that is in the public interest or will contribute to the general welfare of the neighborhood or community.

Water quality and pressure concerns have been voiced by residents. This improvement project is the solution developed in response to these public concerns and is designed to improve the general welfare of the community. The proposed site is desirable due to its location ¼ mile south of Moville just outside of city limits, yet close enough to serve the community and accommodate for growth. Further, engineering analyses have been conducted to determine favorability of the location to provide a water source with adequate quality, reliability, capacity for the community.

8. All possible efforts, including building and site design, landscaping and screening have been undertaken to minimize any adverse effects of the proposed use or development.

The project is designed to meet all local, state, and federal design guidelines and permitting requirements applicable to this project type and the zoning district in which it is located.

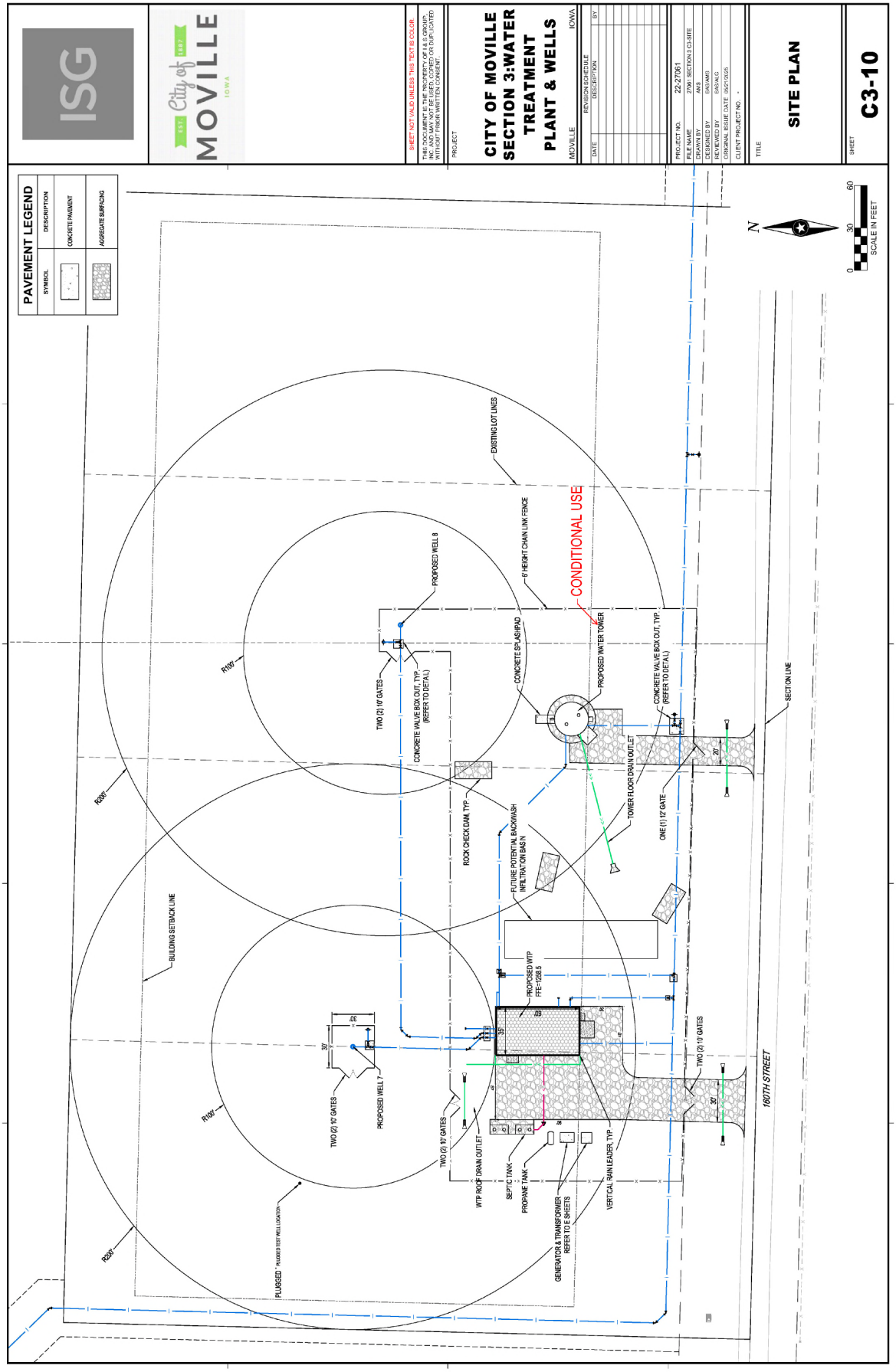
Please contact me at 515-243-9143 or via email at Carleigh.Noel@ISGInc.com with any questions or if there is any additional information we can provide in support of this project.

Sincerely,

Carleigh Noel

Carleigh Noel
Development Services Coordinator
Carleigh.Noel@ISGInc.com

SITE PLAN


ISG
City of MOVILLE
EST. 1887
IOWA
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PROJECT
CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS
MOVILLE IOWA
REVISION SCHEDULE
DATE DESCRIPTION BY
PROJECT NO. 22-27061
FILE NAME 27061 SECTION 3 C3-SITE
DRAWN BY AM3
DESIGNED BY BAS/AMS
REVIEWED BY BAS/ALG
ORIGINAL ISSUE DATE 05/27/2025
CLIENT PROJECT NO. -
TITLE
SITE PLAN
SHEET
C3-10
PAVEMENT LEGEND
SYMBOL
DESCRIPTION
CONCRETE PAVEMENT
AGGREGATE SURFACING
CONDITIONAL USE
EXISTING LOT LINES
6' HEIGHT CHAIN LINK FENCE
PROPOSED WELL 8
TWO (2) 10' GATES
CONCRETE VALVE BOX OUT, TYP (REFER TO DETAIL)
CONCRETE SPLASHPAD
PROPOSED WATER TOWER
CONCRETE VALVE BOX OUT, TYP (REFER TO DETAIL)
SECTION LINE
R100'
R200'
ROCK CHECK DAM, TYP
FUTURE POTENTIAL BACKWASH INFILTRATION BASIN
TOWER FLOOR DRAIN OUTLET
ONE (1) 12' GATE
BUILDING SETBACK LINE
PROPOSED WTP FFE=1258.5
160TH STREET
PROPOSED WELL 7
TWO (2) 10' GATES
WTP ROOF DRAIN OUTLET
SEPTIC TANK
PROPANE TANK
GENERATOR & TRANSFORMER REFER TO E SHEETS
VERTICAL RAIN LEADER, TYP
PLUGGED
N
0
30
60
SCALE IN FEET

December 19, 2025

City of Moville
21 Main Street
Moville, Iowa 51039

RE: State Revolving Fund (SRF) Update
SRF #FS-97-25-DWSRF-011
City of Moville – Water System Improvements
Woodbury County, Iowa
Moville USGS 7.5 Minute Quadrangle
Sections: 29, 32, 33, Township: 89 N, Range: 44 W

Honorable Mayor and Council:

I have written this letter to clarify your current position in our State Revolving Fund (SRF) process and to outline the next steps your City will have to take to get an SRF loan.

- ***Environmental Review***
  We issued a Finding of No Significant Impact (FNSI) for your Water System Improvements project on November 18, 2025. Thirty days have passed, and we have not received any comment from the public. Therefore, the environmental review is complete.

- ***Permitting***
  The Department must issue a construction permit before any construction takes place. For an update on your construction permit, please contact your DNR Project Manager, Anna Seeger, at (515) 452-9583 or Anna.Seeger@dnr.iowa.gov. *The City must obtain any necessary permits (local, state, federal) prior to construction.*

- ***SRF Front-end Documents***
  Before preparing bid specifications, please coordinate with your DNR Project Manager to determine the appropriate SRF front-end specifications to include.

- ***Loan Process***
  Prior to executing a construction loan, applicants must submit a pro forma financial analysis (completed by a registered municipal advisor) identifying all outstanding parity obligations and demonstrating system revenues can meet loan requirements. Additionally, applicants will need to demonstrate that appropriate action has been taken to implement the recommendations of their Municipal Advisor set forth in the pro-forma cash flow analysis. Questions on the process can be directed to Tony Toigo at the Iowa Finance Authority at (515) 452-0469 or Tony.Toigo@IowaFinance.com.

Note: **If any changes are made to the project scope and/or location, please let us know as soon as possible so a determination can be made if additional documentation and/or review is necessary for SRF eligibility.** ***If this SRF project receives federal funds from other sources, it is the responsibility of the SRF applicant to ensure all federal requirements are met for that funding.***

If you have any questions, please contact me at (515) 204-5672 or email me at Rebecca.FlynnKettman@dnr.iowa.gov.

Sincerely,

Rebecca Flynn Kettman

Digitally signed by Rebecca Flynn Kettman
Date: 2025.12.19 08:32:03 -06'00'

Rebecca Flynn Kettman
Environmental Specialist
6200 Park Ave, Suite 200
Des Moines, IA 50321

CC (by email): ISG, Inc.
Iowa Finance Authority

1/21/26

The city of Moville purchased four lots in the Moville Heights Development for a New Water Plant that will provide service to the City of Moville. The original plat has a special setback written into the covenants of 100ft; however, the County only requires 75ft for zoning. As the majority owner and adjacent landowner, I give my permission and consent to use the County Setback in lieu of the plated setback for this particular project that will serve the water needs of the City of Moville.

See the attached site plan for your reference.

Larry L. Etler
809 Meadow Drive
Moville, IA 51039

Sioux City Journal

AFFIDAVIT OF PUBLICATION

Sioux City Journal
2802 Castles Gate Drive
Sioux City 51106
(712) 293-4250

State of Florida, County of Orange, ss:

Edmar Corachia, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Sioux City Journal, printed and published by Journal Communications, in Sioux City in Woodbury County and issued daily and Sunday and that this affidavit is Page 1 of 1 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

PUBLICATION DATES:
Feb. 14, 2026

NOTICE ID: FWHABmxtKzlU4nPMdWw2
PUBLISHER ID: COL-IA-502824
NOTICE NAME: BoA_3-2-25_Public_Notice_for_Public_Hearings
Publication Fee: $61.57

Edmar Corachia
(Signed)_____

VERIFICATION

State of Florida
County of Orange

Subscribed in my presence and sworn to before me on this: 02/16/2026

_____
Notary Public
Notarized remotely online using communication technology via Proof.

PAMELA BAEZ
Notary Public - State of Florida
Commission # HH 732409
Expires on October 19, 2029

NOTICE OF PUBLIC HEARINGS BEFORE THE WOODBURY COUNTY BOARD OF ADJUSTMENT

The Woodbury County Board of Adjustment will hold public hearings on the following items, hereafter described in detail, on Monday, March 2, 2026, at 5:00 PM or as soon thereafter as the matters may be considered. Said hearings will be held in the Board of Supervisors' meeting room in the basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, Iowa. Copies of said items may now be examined at the office of the Woodbury County Community and Economic Development on the 6th Floor of the courthouse by any interested persons. All persons who wish to be heard in respect to the matters should appear at the aforesaid hearings in person or call 712-454-1133 and enter the Conference ID: 742 345 123# during the meeting to listen or comment. However, it is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems. You may forward your written comments by mail or email to: Woodbury County Community and Economic Development, 6th Floor, Woodbury County Courthouse, 620 Douglas St., Sioux City, IA 51101. Emails should be sent to Daniel Priestley at dpriestley@woodburycountyiowa.gov. Only signed comments will be considered and should be received no later than 10:00 AM on Friday, February 27, 2026.

Item One (1)

The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa, to consider a conditional use permit application submitted by Carleigh Noel, Development Services Coordinator, on behalf of the owner, the City of Moville. The application requests approval for a public use on city-owned property to support a water system improvement project, including construction of a water treatment plant, a water storage tower, and two new wells. The affected property consists of Lots 3, 4, 5, and 6 in Moville Heights Addition, an addition to Woodbury County, Iowa, identified as the combined Parcel #894432400024. The approximately 8-acre property is located in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 32, and lies about 1,500 feet south of the City of Moville, on the north side of 160th Street, south of Highway 20, and west of Humbolt Avenue. The owner and applicant is the City of Moville, located at 21 Main Street, P.O. Box 420, Moville, IA 51039, with contact information for Carleigh Noel, Development Services Coordinator, at 1725 Storm Lake Avenue North, Storm Lake, IA 50588.

Item Two (2)

The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa, to consider a variance request from Corey and Sierra Parry, who seek approval to construct an approximately 50' x 80' shed (subject to potential changes) before completing their principal structure, a single-family dwelling, on their property located at Lot Eleven (11), Block Two (2), Wood River Development, Woodbury County, Iowa (Parcel #894420476011), consisting of 2.49 acres in the Agricultural Estates (AE) Zoning District in Arlington Township (T88N R44W), Section 20, Northeast Quarter of the Southeast Quarter, situated more than 0.5 miles north of Moville just south of where Humbolt Avenue meets Highway 140, on the southeast side of Highway 140 and the west side of Humbolt Avenue. Although foundations for both the house and shed would begin at the same time, the applicants intend to prioritize and finish the shed first, seeking relief from Section 4.12.2 of the Woodbury County Zoning Ordinance (page 45), which prohibits construction of an accessory building until construction of the principal building has commenced. The owners and applicants are Corey and Sierra Parry, residing at 731 Florence Avenue, Sioux City, IA 51109.

COL-IA-502824

Sioux City Journal

AFFIDAVIT OF PUBLICATION

Sioux City Journal
2802 Castles Gate Drive
Sioux City 51106
(712) 293-4250

State of Florida, County of Orange, ss:

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PUBLICATION DATES:
Feb. 24, 2026

NOTICE ID: NY4PHrBnbpyP0sWwbw0a
PUBLISHER ID: COL-IA-502869
NOTICE NAME: BoA_3-2-26_2
Publication Fee: $64.21

Edmar Corachia
(Signed)_____

VERIFICATION

State of Florida
County of Orange

JESSICA GORDON-THOMPSON
Notary Public - State of Florida
Commission # HH301656
Expires on August 17, 2026

Subscribed in my presence and sworn to before me on this: 02/24/2026

_____
Notary Public
Notarized remotely online using communication technology via Proof.

NOTICE OF PUBLIC HEARINGS BEFORE THE WOODBURY COUNTY BOARD OF ADJUSTMENT

The Woodbury County Board of Adjustment will hold public hearings on the following items, hereafter described in detail, on Monday, March 2, 2026, at 5:00 PM or as soon thereafter as the matters may be considered. Said hearings will be held in the Board of Supervisors' meeting room in the basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, Iowa. Copies of said items may now be examined at the office of the Woodbury County Community and Economic Development on the 6th Floor of the courthouse by any interested persons. All persons who wish to be heard in respect to the matters should appear at the aforesaid hearings in person or call 712-454-1133 and enter the Conference ID: 742 346 123# during the meeting to listen or comment. However, it is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems. You may forward your written comments by mail or email to: Woodbury County Community and Economic Development, 6th Floor, Woodbury County Courthouse, 620 Douglas St., Sioux City, IA 51101. Emails should be sent to Daniel Priestley at dpriestley@woodburycountyiowa.gov. Only signed comments will be considered and should be received no later than 10:00 AM on Friday, February 27, 2026.

Item One (1)

The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa, to consider a conditional use permit application submitted by Carleigh Noel, Development Services Coordinator, on behalf of the owner, the City of Moville. The application requests approval for a public use on city-owned property to support a water system improvement project, including construction of a water treatment plant, a water storage tower of approximately 400,000 gallons and subject to changes with an approximate height of 70 Feet above grade and subject to changes throughout the review process, and two new wells. The affected property consists of Lots 3, 4, 5, and 6 in Moville Heights Addition, an addition to Woodbury County, Iowa, identified as the combined Parcel #894432400024. The approximately 8-acre property is located in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 32, and lies about 1,500 feet south of the City of Moville, on the north side of 160th Street, south of Highway 20, and west of Humboldt Avenue. The owner and applicant is the City of Moville, located at 21 Main Street, P.O. Box 420, Moville, IA 51039, with contact information for Carleigh Noel, Development Services Coordinator, at 1725 Storm Lake Avenue North, Storm Lake, IA 50588.

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COL-IA-502869

PROPERTY OWNER(S) NOTIFICATION

Property Owners within 500 Feet:	6
Notification Letter Date:	February 12, 2026 and February 12, 2026
Public Hearing Board:	Board of Adjustment
Public Hearing Date:	March 2, 2026
Phone Inquiries:	1 – Scott Gernhart about setbacks
Written Inquiries:	0
The names of the property owners are listed below.	
When more comments are received after the printing of this packet, they will be provided at the meeting.	

PROPERTY OWNER(S)	MAILING ADDRESS				COMMENTS
REJ Farm Enterprises Inc.	4620 Grant St.	Sioux City	IA	51108-1120	No comments received.
Jon R. Wahlberg & Gloria L. Wahlberg	2758 160th St.	Moville	IA	51039-8099	No comments received.
Larry Etler	809 Meadow Dr.	Moville	IA	51039	No comments received.
City of Moville	21 W. Main St.	Moville	IA	51039-7760	No comments received.
Paul Hallowell	2793 160th St.	Moville	IA	51039	No comments received.
Paul Hallowell	2179 Hancock Ave.	Moville	IA	51039	No comments received.
REJ Farm Enterprises Inc.	4620 Grant St.	Sioux City	IA	51108-1120	No comments received.

STAKEHOLDER COMMENTS

911 COMMUNICATIONS CENTER:	No comments received.
FIBERCOMM:	No comments received.
IOWA DEPARTMENT OF NATURAL RESOURCES (IDNR):	No comments received.
IOWA DEPARTMENT OF TRANSPORTATION (IDOT):	No comments received.
LOESS HILLS NATIONAL SCENIC BYWAY:	No comments received.
LOESS HILLS PROGRAM:	No comments received.
LONGLINES:	No comments received.
LUMEN:	No comments received.
MAGELLAN PIPELINE:	No comments received.
MIDAMERICAN ENERGY COMPANY (Electrical Division):	I have reviewed the following conditional use permit for MEC electric distribution and we have, no comments. The area in question is outside of our service territory. Have a great week! – Casey Meinen, 2/2/26.
MIDAMERICAN ENERGY COMPANY (Gas Division):	No comments received.
NATURAL RESOURCES CONSERVATION SERVICES (NRCS):	No comments received.
NORTHERN NATURAL GAS:	No comments received.
NORTHWEST IOWA POWER COOPERATIVE (NIPCO):	No comments received.
NUSTAR PIPELINE:	No comments received.
SIOUXLAND DISTRICT HEALTH DEPARTMENT:	**SEE EMAIL FROM IVY BREMER BELOW.**
WIATEL:	No comments received.
WOODBURY COUNTY ASSESSOR:	No comments received.
WOODBURY COUNTY CONSERVATION:	No comments received.
WOODBURY COUNTY EMERGENCY MANAGEMENT:	No comments received.
WOODBURY COUNTY EMERGENCY SERVICES:	No comments received.
WOODBURY COUNTY ENGINEER:	No comments received.
WOODBURY COUNTY RECORDER:	No comments received.
WOODBURY COUNTY RURAL ELECTRIC COOPERATIVE (REC):	No comments received.
WOODBURY COUNTY SOIL AND WATER CONSERVATION DISTRICT:	The WCSWCD has no comments regarding this application. – Neil Stockfleth, 2/2/26.
WOODBURY COUNTY TREASURER:	No comments received.

Daniel Priestley

From: Ivy Bremer
Sent: Monday, February 2, 2026 2:39 PM
To: Daniel Priestley
Cc: Jorden Osorio; Grace Perrin
Subject: RE: Comments Requested: Conditional Use Permit Application - City of Moville Water Treatment Plant, Tower, and Wells (South of Hwy 20 on 160th St)
Attachments: SDHD FILLABLE Septic Application.pdf; 2793 160th St.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dan,

Please be advised that there is a residential property (2793 160th Street) near the proposed location that has installed a private well and septic system. Based on my review, the required well setbacks for the future site appear to have been met; however, please ensure that all setbacks are maintained with respect to the existing private well and septic systems prior to construction of the new water treatment plant.

Additionally, I would like clarification on whether the owners of the vacant lots to be purchased will be connected to city water if the water treatment plant is completed before any new residences are constructed.

Lastly, it appears that a septic system installation is anticipated. Please note that an application to install a private septic system must be submitted, along with a $200 fee to initiate the process. Following this, a site evaluation will need to be conducted in coordination with the Siouxland District Health Department and the installer to determine appropriate sizing, setbacks, and design.

Please let me know if you have any questions or need further details.

Respectively,

Ivy Bremer
Environmental Specialist
Siouxland District Health Department
1014 Nebraska St Sioux City IA 51105
Ph: 712-279-6119 | Fax: 712-255-2604
ibremer@siouxlanddistricthealth.org
Visit us at: www.siouxlanddistricthealth.org

SIOUXLAND DISTRICT HEALTH DEPARTMENT
"A Healthy Community for All"

SEE SUMMARY AND EMAIL CONVERSATION ON THE SUBSEQUENT PAGES TO ADDRESS THE POINTS PRESENTED BY IVY BREMER OF SIOUXLAND DISTRICT HEALTH

Points from Email Exchanges below:

- The health department reviewed the geotechnical data and acknowledged the soil constraints that prevent installation of a conventional or alternative leach field.
- The corrected percolation rate is **187.5 minutes per inch**, as clarified in the addendum to the report.
- The proposed solution—a septic tank with a float and alarm system—was communicated and accepted as the current plan.
- Ivy Bremer (Siouxland District Health) indicated no objection to proceeding but suggested that a soil analysis with their department could be considered in the future to avoid high pumping costs. This is a recommendation, not a requirement.
- All setbacks and permitting responsibilities have been noted in the project plans, and the contractor will initiate the septic permitting process at a subsequent time.

Conclusion:
Based on the exchange, there are no outstanding issues preventing the applicant from moving forward. The Siouxland District Health (Ivy Bremer) has considered the plan and provided feedback without raising any concerns that would block the project.

Daniel Priestley

From: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Sent: Tuesday, February 17, 2026 2:53 PM
To: Daniel Priestley
Cc: Carleigh Noel
Subject: Fw: Moville WTP, Tower, & Wells - Siouxland District Health Questions

CAUTION: This email originated from **OUTSIDE** of the organization. Please verify the sender and use caution if the message contains any attachments, links, or requests for information as this person may NOT be who they claim. **If you are asked for your username and password, please call WCICC and DO NOT ENTER any data.**

Daniel,

See below correspondence with Ivy. I believe this wraps up the information you were wanting from the Siouxland District Health Department before Monday.

From: Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Sent: Tuesday, February 17, 2026 2:27 PM
To: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>
Subject: RE: Moville WTP, Tower, & Wells - Siouxland District Health Questions

Oh yes, sorry I had reviewed and then did not respond back. I would still encourage a soil analysis with our department instead of a holding tank as it gets very expensive to pump. However; we can do that when the time comes.

Ivy Bremer
Environmental Specialist
Siouxland District Health Department
1014 Nebraska St Sioux City IA 51105
Ph: 712-279-6119 | Fax: 712-255-2604
ibremer@siouxlanddistricthealth.org
Visit us at: www.siouxlanddistricthealth.org

SIOUXLAND DISTRICT HEALTH DEPARTMENT
"A Healthy Community for All"

Accredited Health Department · PHAB · Advancing Public Health Performance · Public Health Accreditation Board

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From: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Sent: Tuesday, February 17, 2026 1:38 PM
To: Brooke Sievers <Brooke.Sievers@ISGInc.com>; Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>
Subject: Re: Moville WTP, Tower, & Wells - Siouxland District Health Questions

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Ivy,

Is there any more information we can provide on the below correspondence? Daniel's asking if we'll have your clearance this week so our application can be on Monday's P&Z meeting.

From: Brooke Sievers <Brooke.Sievers@ISGInc.com>
Sent: Wednesday, February 11, 2026 9:12 AM
To: Ivy Bremer <ibremer@siouxlanddistricthealth.org>; Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>
Subject: RE: Moville WTP, Tower, & Wells - Siouxland District Health Questions

Ivy,

The addendum that Amanda provided in her previous email with the report clarifies that the average percolation rate is 187.5 minutes per inch. The 5.1 minutes per inch as stated in the report was incorrect; the Percolation Test Results in the appendix are correct and the addendum clarifies this discrepancy.

Thank you,
Brooke

ISG

Brooke Sievers, PE
Civil Engineer
Employee Owner

P 712.732.7745
C 712.240.0847
E Brooke.Sievers@ISGInc.com
W ISGInc.com

From: Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Sent: Tuesday, February 10, 2026 4:26 PM
To: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Subject: RE: Moville WTP, Tower, & Wells - Siouxland District Health Questions

Please be aware that the percolation results for Boring holes 1, 2 and 3 state they have an average percolation rate of 5.1 minutes per inch, which would allow a soil based leach field.

Ivy Bremer
Environmental Specialist
Siouxland District Health Department
1014 Nebraska St Sioux City IA 51105
Ph: 712-279-6119 | Fax: 712-255-2604
ibremer@siouxlanddistricthealth.org
Visit us at: www.siouxlanddistricthealth.org

From: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Sent: Tuesday, February 10, 2026 3:54 PM
To: Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Subject: Re: Moville WTP, Tower, & Wells - Siouxland District Health Questions

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Ivy,

All of that information should be included in the attached Geotechnical Report and associated Addendum. If you need more information, I will have to reach out to the geotechnical firm.

From: Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Sent: Tuesday, February 10, 2026 3:51 PM
To: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Subject: RE: Moville WTP, Tower, & Wells - Siouxland District Health Questions

Do you happen to have their procedures for their testing and the soil types present? I just completed a soil analysis near there and did not have the same soil types.

Thanks

Ivy Bremer
Environmental Specialist
Siouxland District Health Department
1014 Nebraska St Sioux City IA 51105
Ph: 712-279-6119 | Fax: 712-255-2604
ibremer@siouxlanddistricthealth.org
Visit us at: www.siouxlanddistricthealth.org

From: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Sent: Tuesday, February 10, 2026 3:17 PM
To: Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Subject: Re: Moville WTP, Tower, & Wells - Siouxland District Health Questions

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Ivy,

Per the geotechnical tests, the soil percolation results average 187.5 minutes/inch. According to IAC 567-69.9.b(3), this percolation rate is not suitable for either a conventional soil absorption system or an alternative soil absorption system (mound system).

There is a float + alarm system that will be installed in the tanks to ensure Owner awareness and adequate time for response for emptying the tanks prior to overflow.

From: Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Sent: Tuesday, February 10, 2026 12:54 PM
To: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Subject: RE: Moville WTP, Tower, & Wells - Siouxland District Health Questions

Can you provide more information regarding the soil restraints and not installing a leach field?

Ivy Bremer
Environmental Specialist
Siouxland District Health Department
1014 Nebraska St Sioux City IA 51105
Ph: 712-279-6119 | Fax: 712-255-2604
ibremer@siouxlanddistricthealth.org
Visit us at: www.siouxlanddistricthealth.org

From: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Sent: Tuesday, February 10, 2026 12:33 PM
To: Ivy Bremer <ibremer@siouxlanddistricthealth.org>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Subject: Re: Moville WTP, Tower, & Wells - Siouxland District Health Questions

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Ivy,

Daniel was checking in to see if we'd heard back from you on the below email string. It sounds like he needs to know that you're comfortable with these items before placing our application on the board agenda. Is there anything you need from us on the below items, or were the answers provided acceptable?

Get Outlook for iOS

From: Amanda Goodenow <Amanda.Goodenow@ISGInc.com>
Sent: Wednesday, February 4, 2026 8:31:59 AM
To: ibremer@siouxlanddistricthealth.org <ibremer@siouxlanddistricthealth.org>
Cc: Carleigh Noel <Carleigh.Noel@ISGInc.com>; Brooke Sievers <Brooke.Sievers@ISGInc.com>
Subject: Moville WTP, Tower, & Wells - Siouxland District Health Questions

Ivy,

We've received your comments related to the attached email regarding the City of Moville's Water Treatment Plant, Tower, and Wells project.

We acknowledge that all setbacks need to be maintained in regards to the existing private well and septic system.

The owners of the vacant lots adjacent to our project site will not be able to receive city water. The water tower elevation is not high enough to serve this area consistently.

You are correct that a septic system is planned to serve the water treatment plant. A septic tank will be used, but no leach field is planned due to constraints with soil properties. We have indicated in the project plans that the contractor is responsible for permitting the system with your department. The project is expected to be bid this spring, at which

time a contractor will be secured. We anticipate that the septic tank permitting process would be initiated fall of 2026 or spring 2027 by the chosen contractor.

Please let me know if there's anything else I can provide.

Amanda Goodenow, PE
Senior Civil Engineer
Employee Owner

P 712.732.7745
C 712.560.2067
E Amanda.Goodenow@ISGInc.com
W ISGInc.com

Municipal Matters Newsletter

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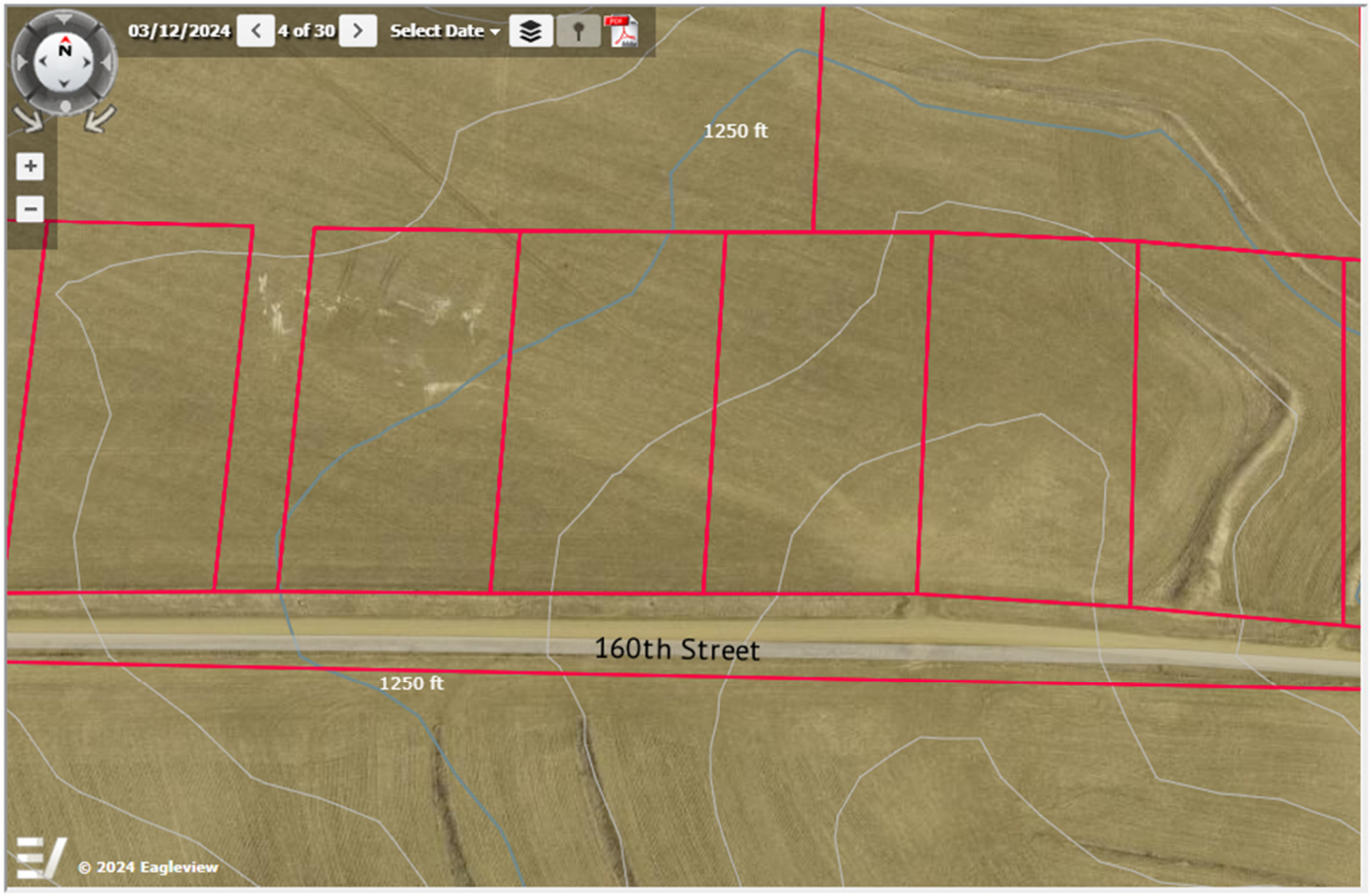
PICTOMETRY


03/12/2024
4 of 30
Select Date
1250 ft
160th Street
1250 ft
© 2024 Eagleview

Woodbury County, IA / Sioux City

Summary

Parcel ID	894432400024
Alternate ID	
Property Address	N/A
Sec/Twp/Rng	32-89-44
Brief Tax Description	MOVILLE HEIGHTS ADDN LOTS 3 THRU 6 (Note: Not to be used on legal documents)
Deed Book/Page	000021632 (1/13/2026)
Gross Acres	8.00
Exempt Acres	8.00
Net Acres	0.00
Zoning	AE - AGRICULTURAL ESTATES
District	0049 ARLINGTON/WD-C
School District	WOODBURY CENTRAL
Neighborhood	N/A

Owner

Deed Holder
MOVILLE CITY OF
21 W MAIN ST
MOVILLE IA 51039-7760
Contract Holder
Mailing Address
MOVILLE CITY OF
21 W MAIN ST
MOVILLE IA 51039-7760

Land

Lot Area 8.00 Acres ; 348,480 SF

Sales

Date	Seller	Buyer	Recording	Sale Condition - NUTC	Type	Multi Parcel	Amount
3/26/2025	ETLER LARRY, ETLER JOELLEN	MOVILLE CITY OF	2025-03794	No consideration	Deed	Y	$0.00
3/26/2025	ETLER LARRY, ETLER JOELLEN	MOVILLE CITY OF	2025-03794	No consideration	Deed	Y	$0.00
3/26/2025	ETLER LARRY, ETLER JOELLEN	MOVILLE CITY OF	2025-03794	No consideration	Deed	Y	$0.00
3/26/2025	ETLER LARRY, ETLER JOELLEN	MOVILLE CITY OF	2025-03794	Sale to/by Government/Exempt Organization	Deed	Y	$240,000.00

⊟ Show There are other parcels involved in one or more of the above sales:

Valuation

	Classification	2025 Residential
+	Assessed Land Value	$60,000
+	Assessed Building Value	$0
+	Assessed Dwelling Value	$0
=	Gross Assessed Value	$60,000
-	Exempt Value	$0
=	Net Assessed Value	$60,000

Sioux City Special Assessments and Fees

Click here to view special assessment information for this parcel.

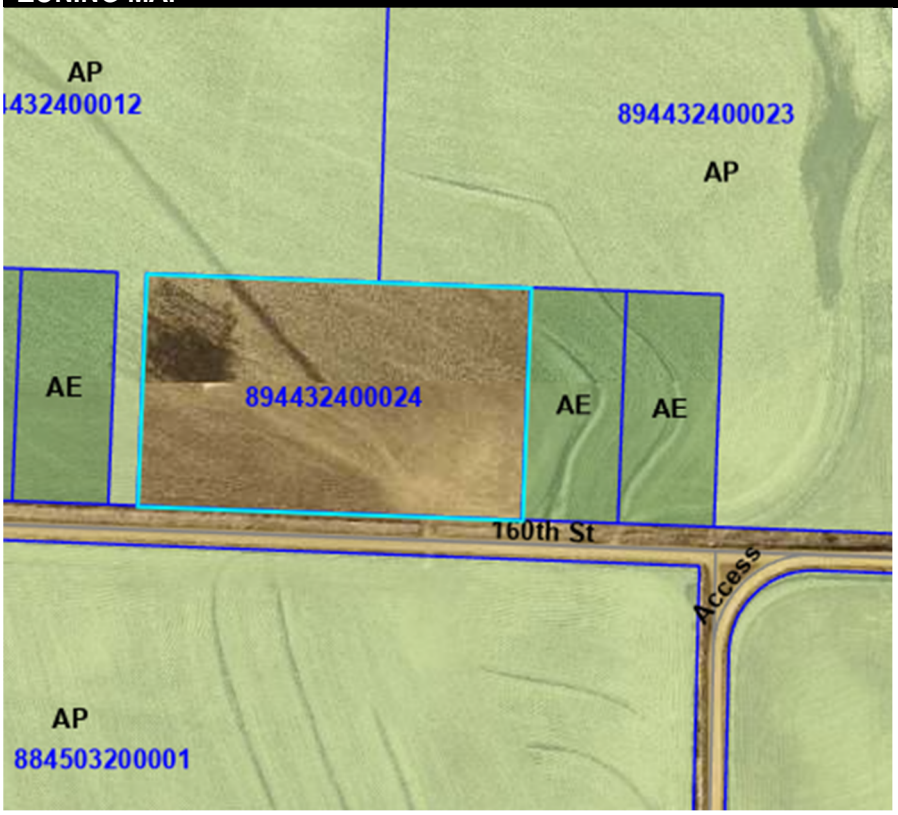
No data available for the following modules: Residential Dwellings, Commercial Buildings, Agricultural Buildings, Yard Extras, Permits, Woodbury County Tax Credit Applications, Sioux City Tax Credit Applications, Sioux City Board of Review Petition, Photos, Sketches.

The maps and data available for access at this website are provided "as is" without warranty or any representation of accuracy, timeliness, or completeness. There are no warranties, expressed or implied, as to the appropriate use of the maps and data or the fitness for a particular purpose. The maps and associated data at this website do not represent a survey. No liability is assumed for the accuracy of the data delineated on any map, either expressed or implied.
| User Privacy Policy | GDPR Privacy Notice
Last Data Upload: 2/18/2026, 9:05:25 PM

Contact Us

Developed by SCHNEIDER GEOSPATIAL

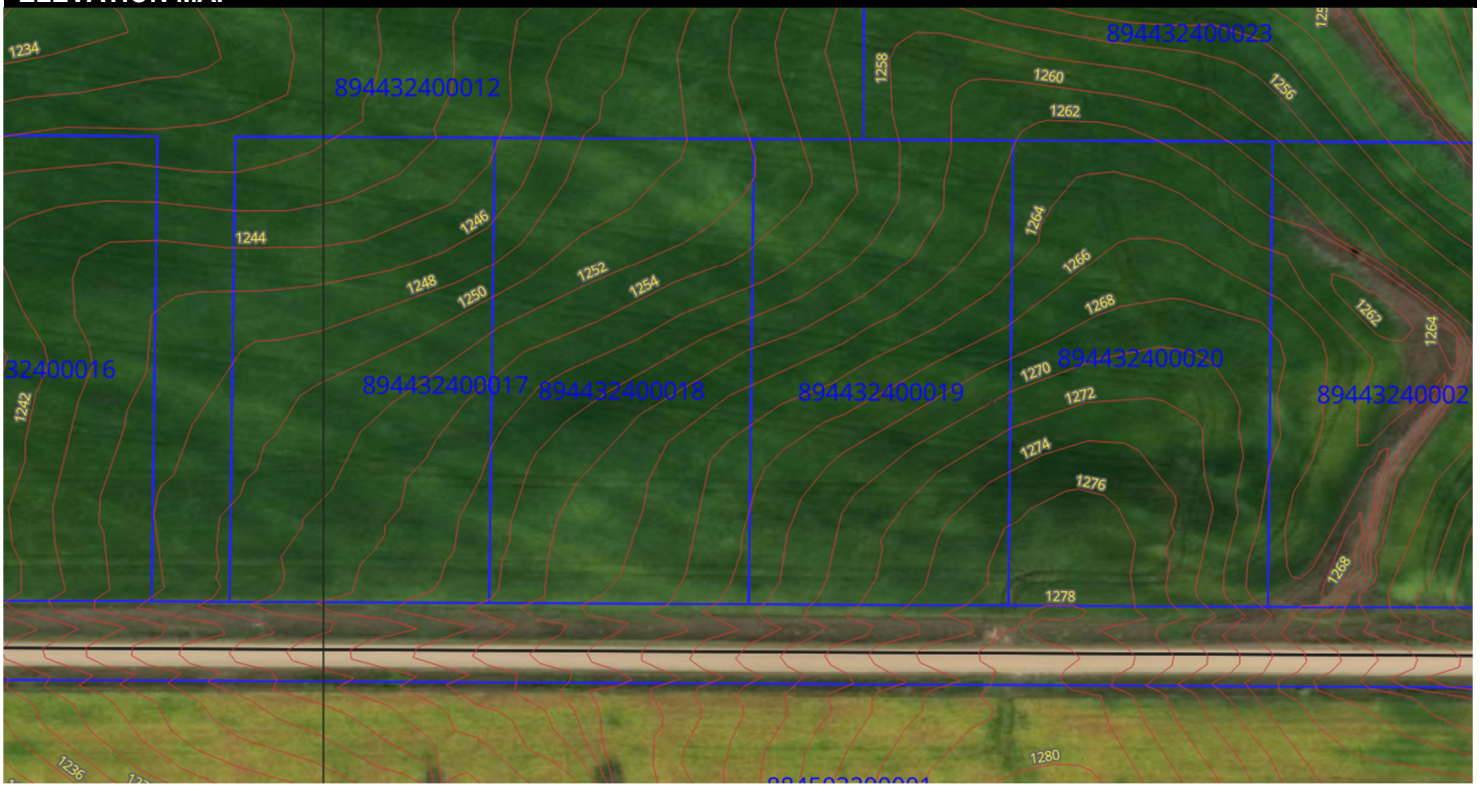
ZONING MAP



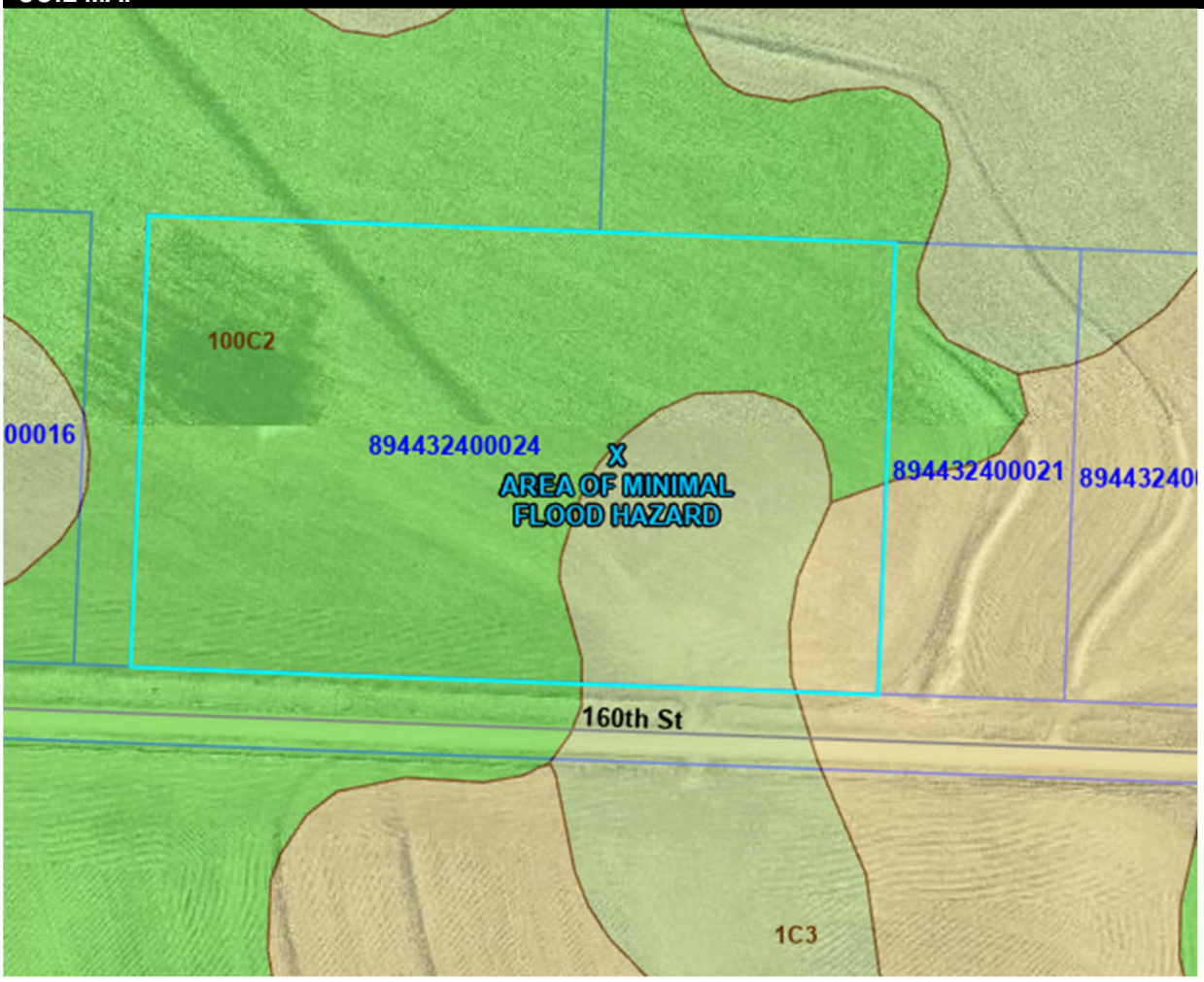
SPECIAL FLOOD HAZARD AREA (SFHA) MAP

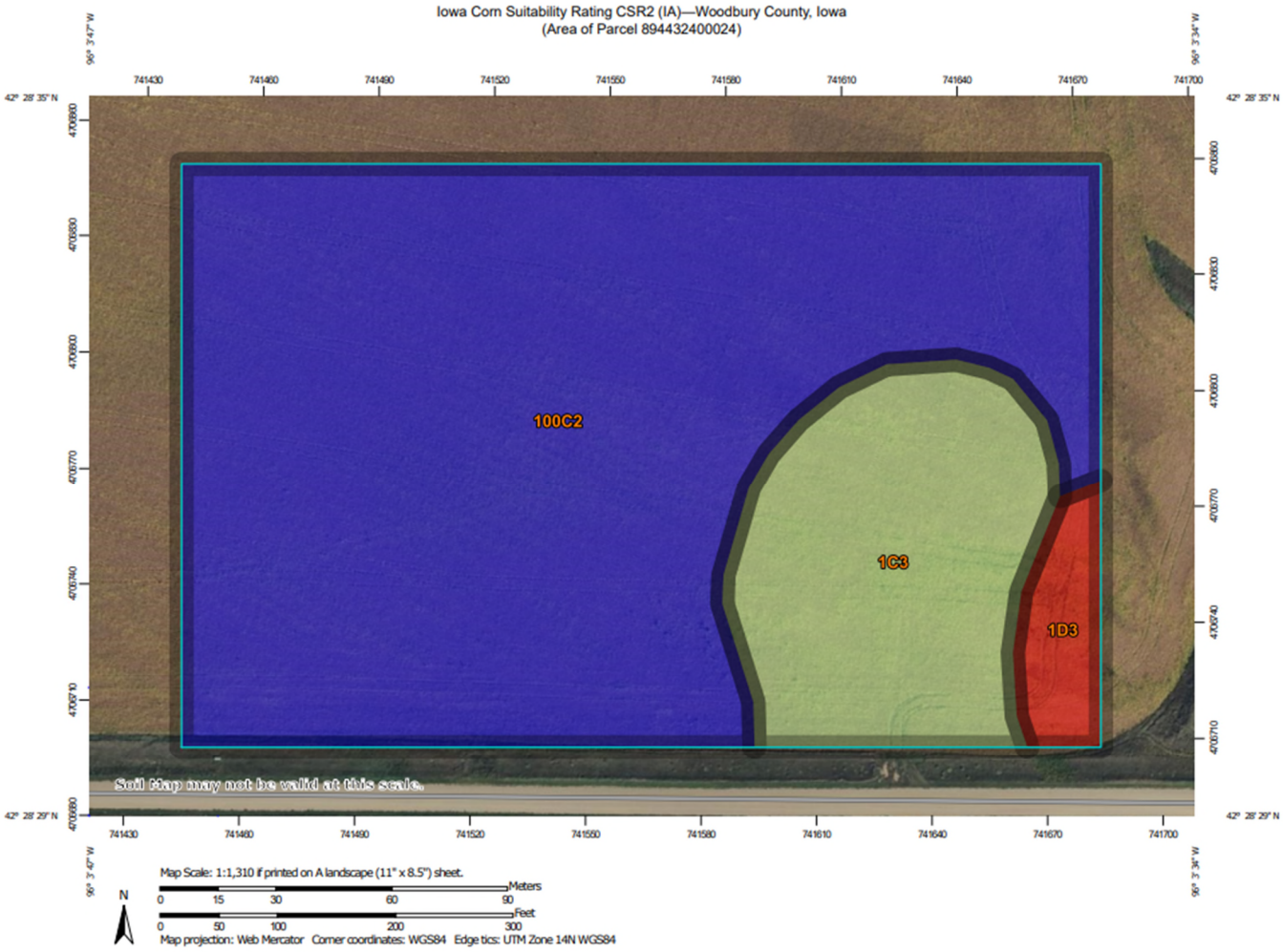
NOT IN THE FLOODPLAIN

ELEVATION MAP



SOIL MAP





USDA **Natural Resources Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

2/2/2026
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Background
- Aerial Photography

Soils

Soil Rating Polygons
- <= 32
- > 32 and <= 58
- > 58 and <= 85
- Not rated or not available

Soil Rating Lines
- <= 32
- > 32 and <= 58
- > 58 and <= 85
- Not rated or not available

Soil Rating Points
- <= 32
- > 32 and <= 58
- > 58 and <= 85
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Woodbury County, Iowa
Survey Area Data: Version 35, Sep 9, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 19, 2022—Sep 20, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Iowa Corn Suitability Rating CSR2 (IA)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1C3	Ida silt loam, 5 to 9 percent slopes, severely eroded	58	1.7	19.5%
1D3	Ida silt loam, 9 to 14 percent slopes, severely eroded	32	0.3	3.6%
100C2	Monona silty clay loam, 5 to 9 percent slopes, eroded	85	6.9	76.9%
Totals for Area of Interest			**8.9**	**100.0%**

Description

This attribute is only applicable to soils in the state of Iowa. Corn suitability ratings (CSR2) provide a relative ranking of all soils mapped in the State of Iowa according to their potential for the intensive production of row crops. The CSR2 is an index that can be used to rate the potential yield of one soil against that of another over a period of time. Considered in the ratings are average weather conditions and frequency of use of the soil for row crops. Ratings range from 100 for soils that have no physical limitations, occur on minimal slopes, and can be continuously row cropped to as low as 5 for soils that are severely limited for the production of row crops.

When the soils are rated, the following assumptions are made: a) adequate management, b) natural weather conditions (no irrigation), c) artificial drainage where required, d) no frequent flooding on the lower lying soils, and e) no land leveling or terracing. The weighted CSR2 for a given field can be modified by the occurrence of sandy spots, local deposits, rock and gravel outcrops, field boundaries, and noncrossable drainageways. Even though predicted average yields will change with time, the CSR2 values are expected to remain relatively constant in relation to one another over time.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Higher

WOODBURY COUNTY PLANNING & ZONING

620 Douglas Street, Sixth Floor, Sioux City, Iowa 51101
712.279.6609 – 712.279.6530 (Fax)

Daniel J. Priestley, MPA – Zoning Coordinator
dpriestley@woodburycountyiowa.gov

Dawn Norton – Senior Clerk
dnorton@woodburycountyiowa.gov

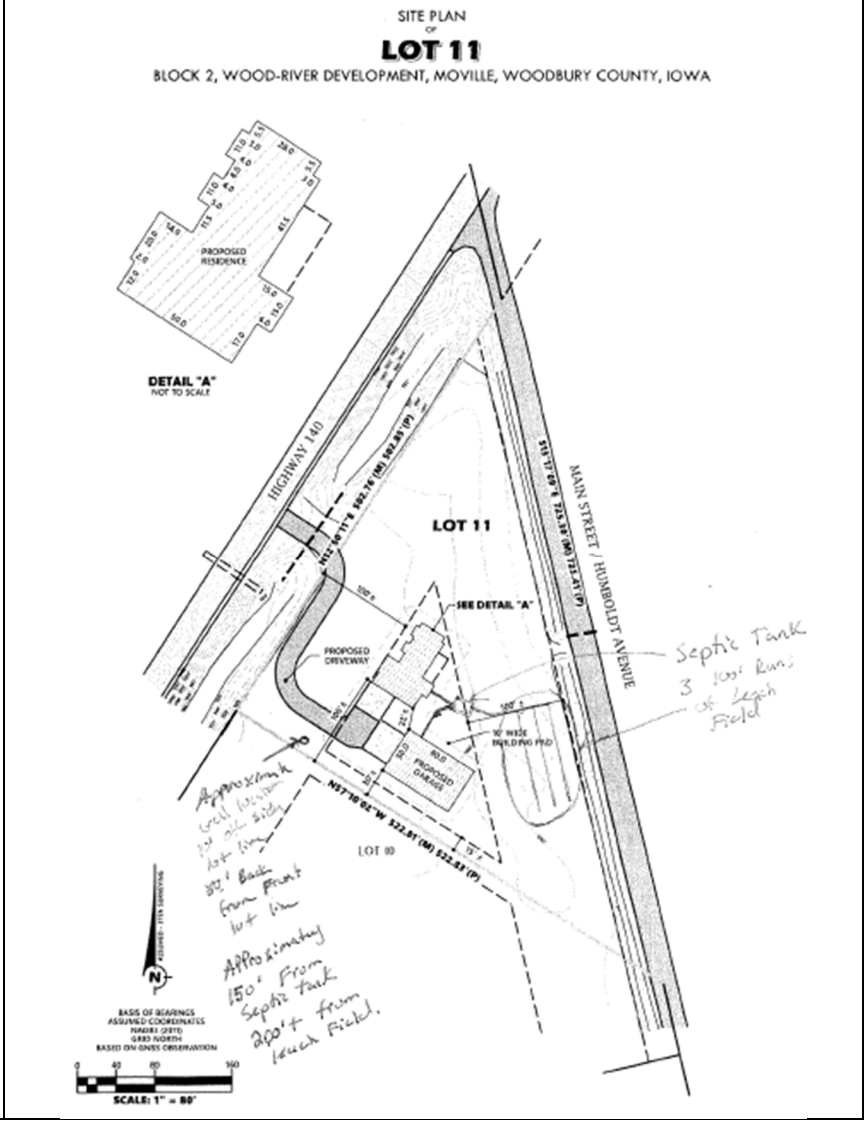
APPLICATION DETAILS	PROPERTY DETAILS	TABLE OF CONTENTS
Owner/Applicant(s): Corey and Sierra Parry **Application Type:** Variance to build shed before house **Zoning District:** Agricultural Estates (AE) **Total Acres:** 2.49 **Current Use:** AE (Empty Lot) **Proposed Use:** Primary Residence **Pre-application Meeting:** January, 2026 **Application Date:** February 1, 2026 **Legal Notice Date:** February 12, 2026 and February 24, 2026 **Stakeholders' (500') Letter Date:** February 12, 2026 **Board of Adjustment Public Hearing Date:** March 2, 2026	**Parcel(s):** 894420476011 **Township:** T89N R44W (Arlington) **Section:** 20 **Quarter:** NE ¼ of the SE ¼ **Subdivision:** Wood-River Development **Lot:** 11 **Zoning District:** Agricultural Estates (AE) **Floodplain District:** Zone X (Not in Floodplain) **Address:** 1370 Hwy 140, Moville, IA 51039 **Description:** Lot Eleven (11), Block Two (2), Wood River Development, Woodbury County, Iowa	**Property Layout** **Site Footprint** **Elevation** **Zoning Maps** **Soil Map** **City Regulations**

VARIANCE APPLICATION DESCRIPTION

The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa, to consider a variance request from Corey and Sierra Parry, who seek approval to construct an approximately 50' x 80' shed (subject to potential changes) before completing their principal structure, a single-family dwelling, on their property located at Lot Eleven (11), Block Two (2), Wood River Development, Woodbury County, Iowa (Parcel #894420476011), consisting of 2.49 acres in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 20, Northeast Quarter of the Southeast Quarter, situated more than 0.5 miles north of Moville just south of where Humbolt Avenue meets Highway 140, on the southeast side of Highway 140 and the west side of Humbolt Avenue. Although foundations for both the house and shed would begin at the same time, the applicants intend to prioritize and finish the shed first, seeking relief from Section 4.12.2 of the Woodbury County Zoning Ordinance (page 45), which prohibits construction of an accessory building until construction of the principal building has commenced. The owners and applicants are Corey and Sierra Parry, residing at 731 Florence Avenue, Sioux City, IA 51109.

LOCATION MAP

SITE PLAN EXCERPT



OFFICE OF PLANNING AND ZONING WOODBURY COUNTY

Zoning Ordinance
Section 2.02(8)
Page 1 of 3

Variance Application

Owner Information:

Owner: Corey & Sierra Parry
Address: 731 Florence Avenue
Sioux City, IA 51109
Phone: [redacted]

Applicant Information:

Applicant: Corey & Sierra Parry
Address: 731 Florence Avenue
Sioux City, IA 51109
Phone: [redacted]

Engineer/Surveyor: Jeremy Lichtenberg Phone: 712-253-3841

Property Information:

Property Address or Address Range: Hwy 140 Moville, IA 51039; Wood-River Development Lot 11 Block 2

Quarter/Quarter: Sec: 20-89-44 Twnshp/Range: Moville, IA; Woodbury

Parcel ID #: 894420476011 GIS #: Arlington Total Acres: 2.49

Current Use: AE Proposed Use: Primary Residence

Current Zoning: AE

Wood-River Dev. Addn. L11 B2

The filing of this application is required to be accompanied with all items and information required pursuant to section 2.02(8)(C)(2) through (C)(4) of Woodbury County's zoning ordinances (see attached pages of this application for a list of those items and information).

A formal pre-application meeting is recommended prior to submitting this application.

Pre-app mtg. date: 1-30-26 Staff present:

The undersigned is/are the owners(s) of the described property on this application, located in the unincorporated area of Woodbury County, Iowa, assuring that the information provided herein is true and correct. I hereby give my consent for the Woodbury County Planning and Zoning Office and Board of Adjustment members to conduct a site visit and photograph the subject property.

This Variance Application is subject to and shall be required, as a condition of final approval, to comply with all applicable Woodbury County ordinances, policies, requirements and standards that are in effect at the time of final approval.

Owner: Corey Parry Applicant: Corey + Sierra Parry

Date: 2-1-26 Date: 2-1-26

Fee: $300 **Case #:** 7140

Check #: 5234

Receipt #:

Date Received
RECEIVED
JAN 30 2026
WOODBURY COUNTY
PLANNING & ZONING

Owner/Applicant Information:
Corey & Sierra Parry
731 Florence Ave
Sioux City, IA 51109
712-212-4555

March 2, 2026

Proposed Variance Summary:

Corey & Sierra Parry have filed a variance application with the request to build an approximately 50' x 80' shed prior to finishing a principal structure (single-family dwelling). Although they would start building (foundations) on both structures at the same time, they would focus on finishing the shed first. Section 4.12.2 of the Woodbury County Zoning Ordinance required that "no accessory building shall be constructed upon a lot until the construction of the principal building has commenced..." (p. 45). The property owners have filed this variance to request relief from the requirement that the principal structure (house) must be built before the accessory structure (shed).

Reasoning for the Variance Request:

Corey & Sierra Parry will be the primary contractors of both the primary residence and accessory building. This will be their only residence and would like to focus on the shed, so they have a secure place for their personal belongings, tools, and equipment. As stated previously, foundations for both structures would be completed at the same time, but we would focus on the shed build first. We anticipate the shed will take roughly 3 months to complete and then focus on the primary residence.

Corey & Sierra Parry

In order to grant any variance the Board of Adjustment must determine that granting the variance will not be contrary to the public interest or the general intent and purpose of the ordinances:

(If filling out form online, tab at the end of each line to continue on next line.)

Section F. (1)(a)

(i) Explain below why granting the variance will not adversely impact nearby properties:

We want to construct a 50' x 80' shed this year before finishing our new home. We would start both projects at the same time (foundations) but would focus on constructing/enclosing/finishing the shed before proceeding on the house. Both structures would be constructed by my wife and I (including others as needed). This shed will be used for storage of building materials for future home, along with other personal items, tools, equipment. Construction on the shed will take 3 months. This shed will be located vegubd the house and within all county required setbacks.

(ii) Explain below why granting the variance will not substantially increases congestion of people, buildings or traffic:

Construction of the shed will take approximately 3 months. During this time, we will be living in a camper on the property. Our closest neighbor is 0.2 miles to the South and 0.1 miles to the North.

(iii) Explain below why granting the variance will not endanger public health or safety:

This will be a primary residence with nothing different than if we lived in the city limits. By living here full time, we will be able to take care of the property, by cleaning up landscaping/construction materials/weeds. As well as working on the home as timely as possible being onsite, eliminating commute time.

(iv) Explain below why granting the variance will not overburden public facilities or services:

Woodbury County has located the best entrance location and has installed the appropriate culvert per regulations. Electricity will be connected to the shed. We will utilize a private well and septic system onsite.

(v) Explain below why granting the variance will not impair the enjoyment, use or value of nearby property:

As previously stated, the shed will be within correct county setbacks per site overview. The shed and house will be newly constructed. The house will be dark green/brown in color with wood accents. The shed will be a dark gray/black accenting the house, very much conforming visually to neighboring homes/sheds within the development.

Section F. (1)(b)

In order to explain why granting the variance is necessary to assure that the owner does not suffer an economic hardship answer the below questions. (Note: Increased financial return or reduced costs to the applicant are not adequate cause for a finding of hardship.) A finding of economic hardship is based upon each of the following questions.

i) Explain below why the property cannot yield a reasonable return without the granting of the variance:

There are no current safe/secure structures on the property that would provide storage for our personal belongings, tools and equipment during the construction process. Due to the distance from Sioux City, we would also be living on site in a camper during construction. This would allow for better cleanliness/upkeep of the construction site, and better time management when we would need to meet subcontractors on site.

ii) Explain below why the property has unique physical constraints that result in its inability to be used without the granting of the variance:

The ground has been graded and is ready for the foundation work to being. Previously the land was used for crop/harvest. Us being on site would help with weed maintenance so it is not an eyesore for neighbors.

iii) Explain below why the hardship is not a result of actions or decisions by the owner:

We would be starting the shed and primary residence at the same time by pouring both foundations at the same time with the same crew. Once the foundations are poured, we would want to frame and enclose the shed first as this would be our safe/secure location for our personal belongings, tools, and equipment.

8. Variances

A. Authority. The Board of Adjustment shall hear and decide on requests for a variance pursuant to subsection 2.01-5. D subject to the procedures, standards and conditions set out in this subsection and Section 335 of the Iowa Code.

B. Purpose. A variance is intended to provide necessary relief from the requirements of the zoning provisions of this title that would create unnecessary hardships or practical difficulties.

C. Filing.

(1) Right to seek variance. A request for a zoning variance may be filed by any person aggrieved by a provision of the zoning ordinance that limits their intended use of property.

(2) Form of application. An application for a variance shall be submitted to the zoning director and shall include at least the following information:

(a) The name and address of the property owner and the applicant;

(b) The address, if any, and the legal description of the property;

(c) The current zoning district classification;

(d) A specific description of the proposed variance including the section of this title from which a variance is requested;

(e) A map, drawn to scale, showing the subject property, all structures and other improvements, with the proposed variance identified;

(f) Statements in response to the criteria and standards for approval of variances in subsection 2.02-8. F (1) below.

(3) Fee. A filing fee, as established by resolution of the Board of Supervisors to defray administrative costs, shall accompany the notice of appeal.

(4) A certified abstractor's listing of the names and mailing addresses of all owners of real property lying adjacent to the subject property.

D. Stay of Proceedings. A request for a variance appeal shall have the effect of a temporary suspension of enforcement of the provisions of these regulations that are the subject of the variance request until the conclusion of the variance process, unless the zoning director certifies that the suspension may cause imminent peril to life or property.

E. Review and decision-making process.

(1) Hearing required. The Board of Adjustment shall conduct a public hearing on the variance request in accordance with subsection 2.02-1. B.

(2) Notification. Public notification of the Board of Adjustment hearing on the variance request shall be as required by subsection 2.02-1. B(1). Such notices shall provide information on the time, date and location of the hearing and a brief de-scription of the requested variance.

(3) Decision. Within 10 days after the public hearing the Board of Adjustment shall approve, approve with conditions or limitations, or deny the requested variance. The Board of Adjustment shall set forth findings of fact addressing the points enumerated in subsection 2.02-8. F(1) below as a basis for its action.

F. Requirements for variances:

(1) In order to grant a variance, the Board of Adjustment must determine that:

(a) Granting the variance will not be contrary to the public interest or the general intent and purpose of this title in that it:

(i) Adversely impacts nearby properties;

(ii) Substantially increases congestion of people, buildings or traffic;

(iii) Endangers public health or safety;

(iv) Overburdens public facilities or services; or

(v) Impairs the enjoyment, use or value of nearby property.

(b) Granting the variance is necessary to assure that the owner does not suffer an economic hardship. (Note: Increased financial return or reduced costs to the applicant are not adequate cause for a finding of hardship.) A finding of economic hardship must be based on each of the following:

(i) The property cannot yield a reasonable return if used in compliance with the requirements of this title;

(ii) The property has unique physical constraints that result in its inability to be used in compliance with the requirements of this title; and

(iii) The hardship is not a result of actions by the owner.

(2) No variance shall be granted which would permit the establishment of a use within a given district which is prohibited therein;

(3) No variance shall be granted which is so commonly recurring that it is a defacto amendment of this ordinance; and

(4) No variance shall be granted that is more than the minimum relief needed.

(5) No variance shall be granted to the provisions of Section 5.03 relative to flood plain management requirements unless the Board of Adjustment considers the factors listed in subsection 5.03-9.C (4).

G. Conditional approval of variances. The Board of Adjustment may, as a condition related to approval of a variance, impose restrictions and safeguards upon the property and the variance granted if it determines the restrictions to be necessary to minimize ad-verse effects on other property or the public interest. Such conditions shall be set forth in the resolution of the Board of Adjustment granting the variance. Failure to comply with any conditions imposed on a variance approval is a violation of this title.

H. Appeal of the actions of the Board of Adjustment. Any interested party may appeal a variance decision of the Board of Adjustment in two ways.

(1) If the Board of Adjustment approves a variance, the Board of Supervisors pursu-ant to Section 335.10 of the Iowa Code may remand the matter to the Board of Adjustment for further consideration at any time within 30 days.

(2) Any aggrieved party may appeal a decision of the Board of Adjustment within 30 days as provided by Section 335.18 of the Iowa Code. Such an appeal sus-pends the effect of the action of the Board of Adjustment until the appeal has been resolved. Any construction or cost incurred during the period subject to appeal is at the risk of the applicant.

Below is reproduced the portion of Woodbury County, Iowa's fee schedule relative to zoning, subdivision and floodplain development variances.

Fee Schedule
Woodbury County Iowa
Department of Planning and Zoning
Effective August 01, 2003

Zoning Variance ----------$300.00

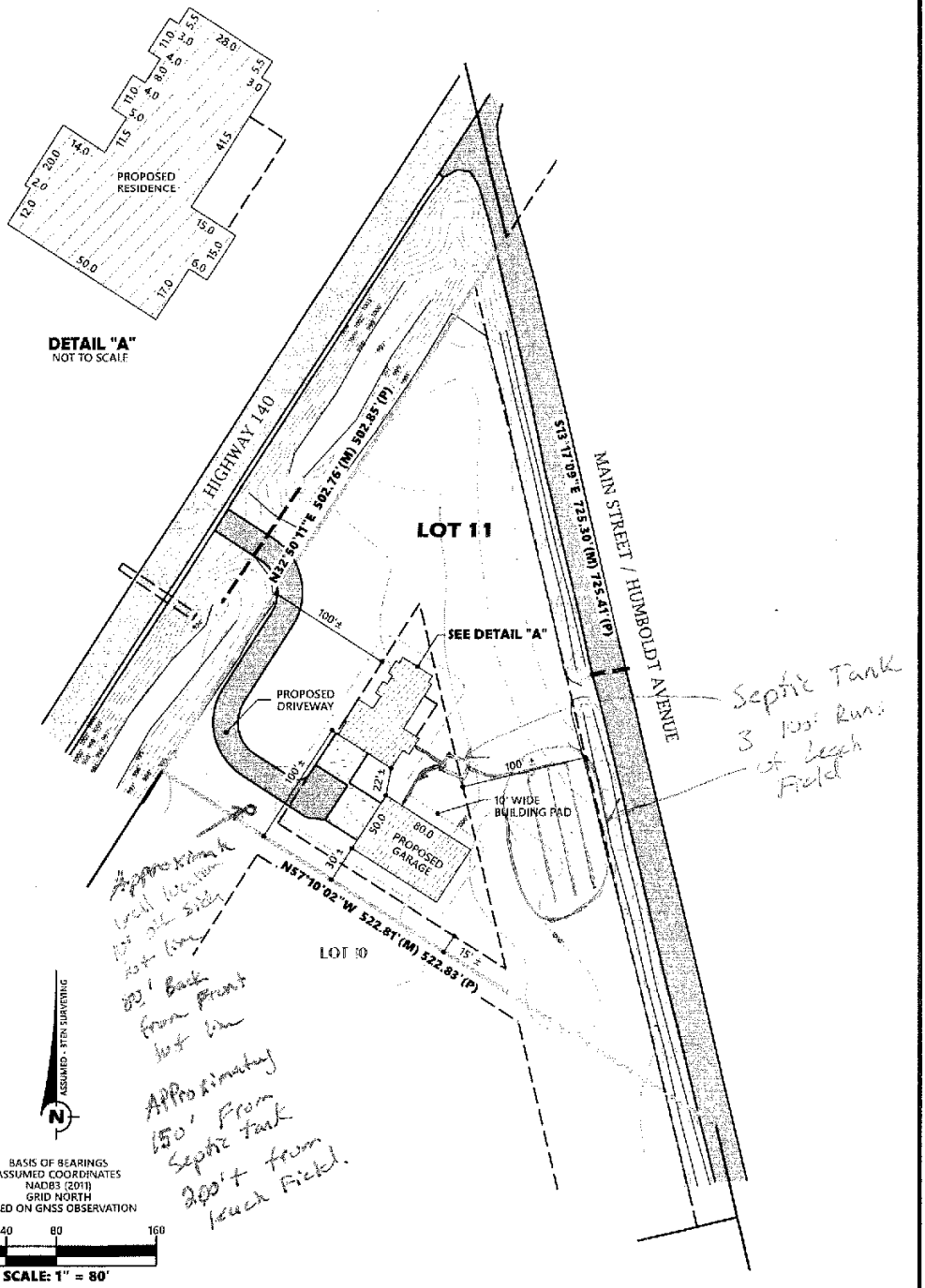
Subdivision Variance ----------$300.00
Floodplain Development Variance --------$300.00

Fees payable to the Woodbury County Treasurer

SITE PLAN
OF

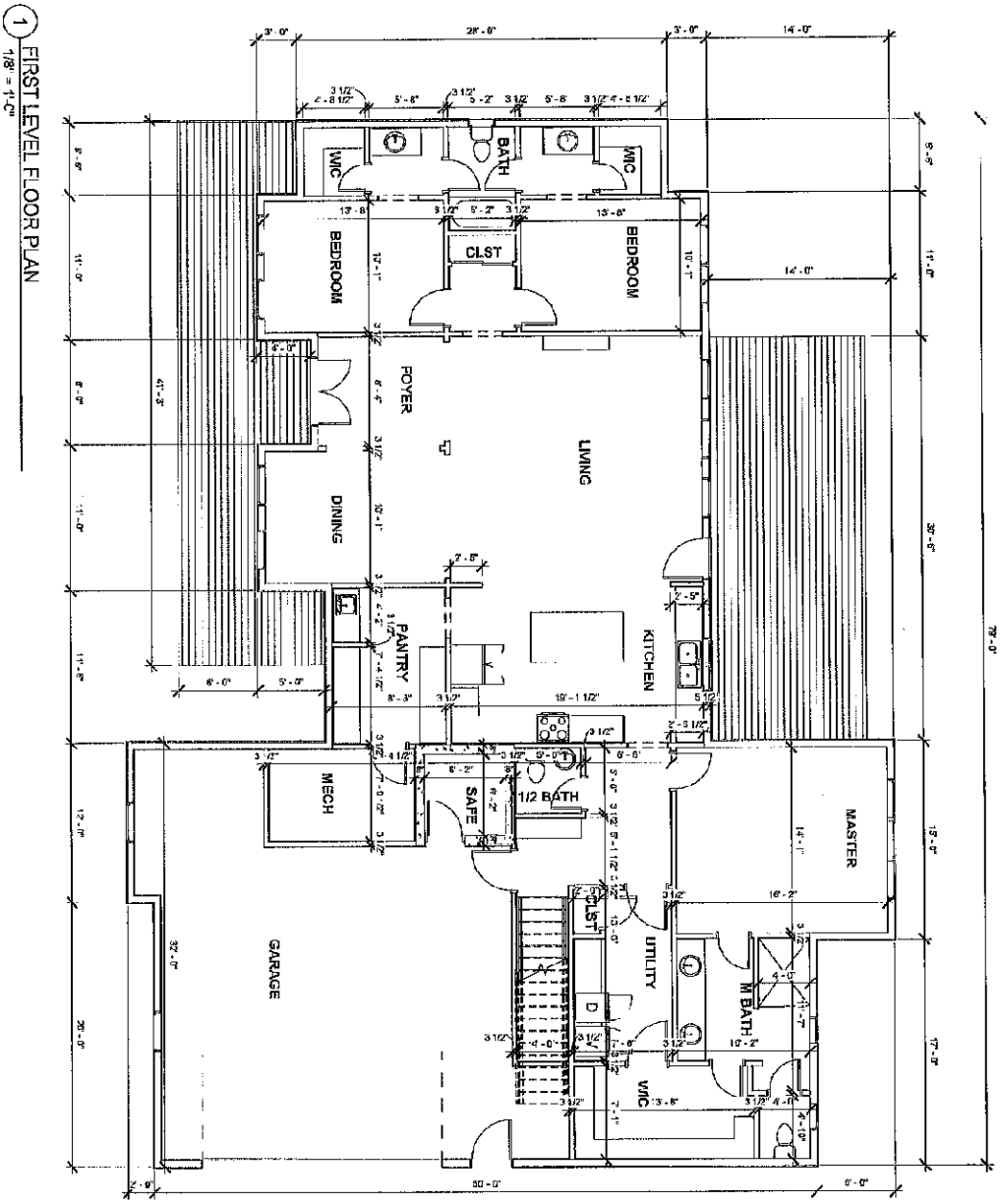
LOT 11

BLOCK 2, WOOD-RIVER DEVELOPMENT, MOVILLE, WOODBURY COUNTY, IOWA



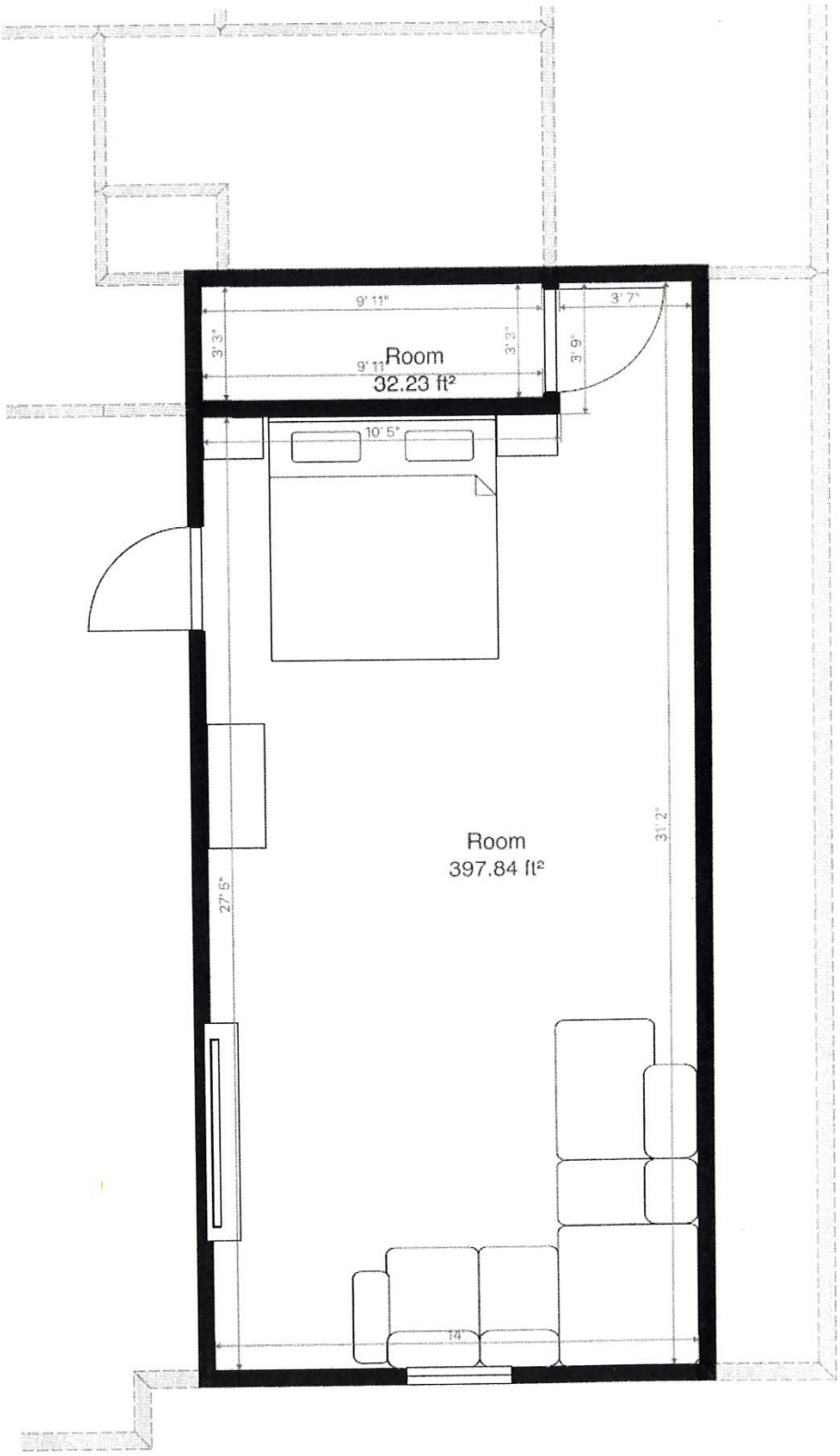
3TEN SURVEYING CONSULTING PLANNING MAPPING	3TEN SURVEYING, LLC DOUGLAS MORDHORST LS #10570 515 7TH STREET, SIOUX CITY, IA 51101 (712) 253-3841 JEREMYL@3TENLS.COM 3TENLS.COM	TYPE OF SURVEY: **SITE PLAN** CLIENT: **COREY PARRY**	PROJECT: SC25-0028 SCALE: 1" = 80' DATE: 2/13/2026 DRAWN BY: IIL PAPER: 11" x 17"

SHEET 1 OF 1

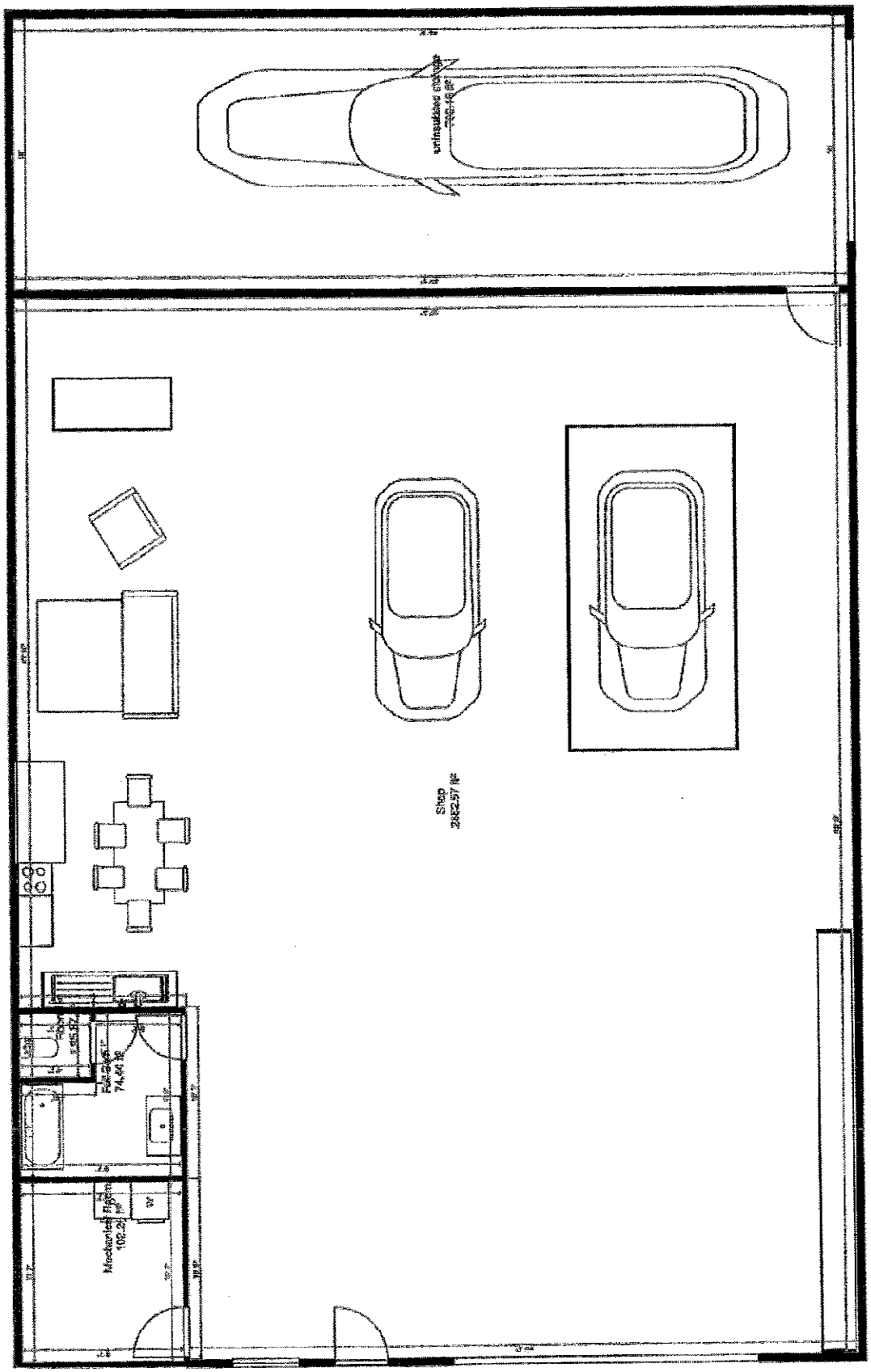


Perry House

First Level Floor Plan



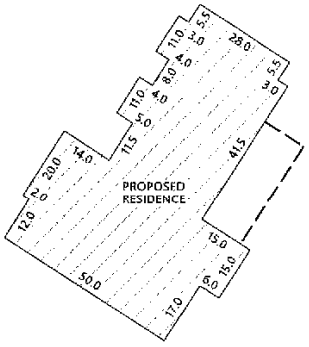
Bonus room above garage


Steg
38822,57 ft²

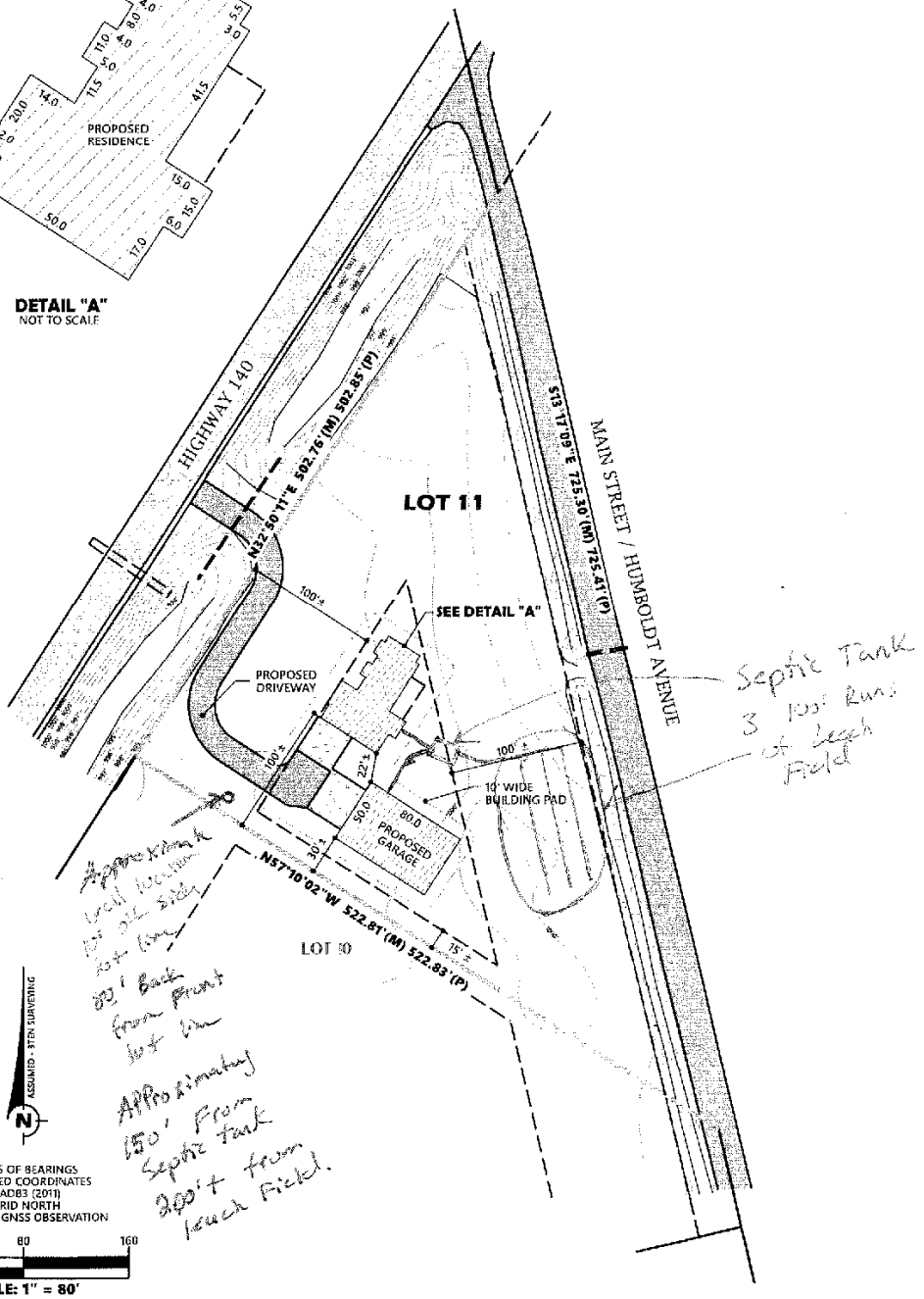
SITE PLAN
OF

LOT 11

BLOCK 2, WOOD-RIVER DEVELOPMENT, MOVILLE, WOODBURY COUNTY, IOWA



DETAIL "A"
NOT TO SCALE



BASIS OF BEARINGS
ASSUMED COORDINATES
NAD83 (2011)
GRID NORTH
BASED ON GNSS OBSERVATION

0 40 80 160

SCALE: 1" = 80'

3TEN SURVEYING CONSULTING PLANNING MAPPING	3TEN SURVEYING, LLC DOUGLAS MORDHORST LS #10570 515 7TH STREET, SIOUX CITY, IA 51101 (712) 253-3841 JEREMYL@3TENLS.COM 3TENLS.COM	TYPE OF SURVEY: **SITE PLAN** CLIENT: **COREY PARRY**	PROJECT: SC25-0028 SCALE: 1" = 80' DATE: 2/13/2026 DRAWN BY: JJL PAPER: 11" x 17"	SHEET 1 OF 1

SECTIONS OF ORDINANCE PERTAINING TO VARIANCE REQUEST

Section 4.12: Accessory Buildings

1. For the AP, AE, NR and SR zoning districts, side and rear yard setback requirements for accessory buildings are set forth in section 3.04.
2. No accessory building shall be constructed upon a lot until the construction of the principal building has commenced. In no event shall such building be used as a dwelling unless it is a facility designed for human habitation and a certificate of occupancy shall have been issued for such use.

REVIEW CRITERIA 1: (Section 2.02.8F1[A])

In terms of the variance application process, it is the duty of the Board of Adjustment to determine that the *granting of the variance will not be contrary to the public interest or the general intent and purpose of this title in it that it:*

1. ADVERSELY IMPACTS NEARBY PROPERTIES;

2. SUBSTANTIALLY INCREASES CONGESTION OF PEOPLE, BUILDINGS OR TRAFFIC;

3. ENDANGERS PUBLIC HEALTH OR SAFETY;

4. OVERBURDENS PUBLIC FACILITIES OR SERVICES OR;

5. IMPAIRS THE ENJOYMENT, USE OR VALUE OF NEARBY PROPERTY.

Applicant Response:

1. **Explain below why granting the variance will not adversely impact nearby properties:**
   - We want to construct a 50' x 80' shed this year before finishing our new home. We would start both projects/enclosing at the same time (foundations) before proceeding to focus on the house. Both structures (shed and house) would be constructed by my wife for future (including others as needed) personal items, tools, equipment. Construction on the house and shed will take 3 months total. The shed shall be located within all county required setbacks.

2. **Explain below why granting the variance will not substantially increase congestion of people, buildings or traffic:**
   - The construction of the shed/finishing the shed will take approximately 3 months. During this time, we will be living in a camper on the property. Our closest neighbor is 0.2 miles to the South and 0.1 miles to the North. The shed will be located vaguely but safely away from the house, very safely.

3. **Explain below why granting the variance will not endanger public health or safety:**
   - This will be a primary residence with nothing different than if we lived in the city limits. By living full time here, we will be able to take care of the property by cleaning up/landscaping/constructing materials/woods time. As well as working on the home as timely as possible.

4. **Explain below why granting the variance will not overburden public facilities or services:**
   - Woodbury County regulations has located the best entrance location and has installed the appropriate culvert. Electricity being well and septic system onsite. Electricity will be connected to the shed. The house will utilize a private well.

5. **Explain below why granting the variance will not impair the enjoyment, use or value of nearby property:**
   - As previously stated, the shed will be within correct county setbacks per site overview. The shed and house will be newly constructed. The shed/house/black accenting will be dark green/brown in color with wood accents. This will be a dark gray/black accenting, much conforming visually to neighboring homes/sheds within the development.

Staff Analysis:

The Board must determine that granting the variance will not adversely impact nearby properties, substantially increase congestion, endanger public health or safety, overburden public facilities or services, or impair the enjoyment, use, or value of nearby property. This aligns with Iowa Code § 335.15(4), which requires the variance not be contrary to public interest and that substantial justice be done, considering special conditions and practical difficulties.

- **Adverse Impacts on Nearby Properties**: The applicants state the shed will be within all required setbacks (as confirmed by the site plan, which places it safely away from property lines and the proposed house), and construction will last only 3 months. Neighbors are 0.1-0.2 miles away, minimizing visual or noise disturbances. The shed's design (dark green/brown with wood accents) will visually conform to neighboring homes and sheds in the Wood-River Development.
  - **Analysis:** This response complies, as the temporary construction and compliant placement pose no evident adverse impacts. Under HF652, the sequencing issue creates a practical difficulty in storing materials on-site for efficient building, but the variance enables the allowed residential use without harming neighbors. No evidence suggests otherwise, supporting compliance.
- **Substantial Increase in Congestion of People, Buildings, or Traffic**: The applicants note construction will take 3 months, with on-site living in a camper, but the rural location and distant neighbors limit traffic impacts.
  - **Analysis:** Minimal congestion is anticipated in this AE district. The variance allows simultaneous foundation work, reducing overall project duration and potential traffic from off-site storage runs. This meets the criterion, as the practical difficulty of sequencing (needing secure storage) is addressed without increasing congestion.

- **Endangerment of Public Health or Safety**: The applicants emphasize on-site presence for property maintenance (e.g., weed control, cleanup), a private well and septic system, and compliance with setbacks. The property will function as a primary residence.
    - **Analysis**: No health or safety risks are identified; on-site living could enhance safety by enabling timely oversight. HF652's focus on practical difficulties supports this, as strict enforcement would force off-site storage or delayed construction, potentially increasing risks like unsecured materials. Compliance is evident.
- **Overburdening Public Facilities or Services**: The applicants entrance and culvert installation, on-site well/septic, and electricity to the shed (house to follow). No public utilities are involved.
    - **Analysis:** The rural AE setting relies on private systems, so no overburdening occurs. The variance facilitates efficient use without straining services, aligning with the ordinance's intent to promote orderly rural development.
- **Impairment of Enjoyment, Use, or Value of Nearby Property**: The applicants reiterate setback compliance, and new construction quality.
    - **Analysis:** The development's character (rural residential with similar structures) remains unchanged. HF652 requires no significant alteration to the neighborhood's essential character, and the applicants demonstrate this through conforming design. No impairment is apparent, supporting approval.

Overall for Criteria 1: The applicants' responses adequately address each subpoint, showing the variance enables beneficial residential use. Integrated with HF652, the "special condition" is the need for secure on-site storage during construction in a rural area, creating practical difficulties that the variance resolves justly.

REVIEW CRITERIA 2: (Section 2.02.8F1[B])

The ordinance also states *that granting the variance is necessary to assure that the owner does not suffer an economic hardship. (Note: increased financial return or reduced costs to the applicant are not adequate cause for a finding for a hardship.) A finding of economic hardship must be based on each of the following:*

6. THE PROPERTY CANNOT YIELD A REASONABLE RETURN IF USED IN COMPLIANCE WITH THE REQUIREMENTS OF THIS TITLE;

7. THE PROPERTY HAS UNIQUE PHYSICAL CONSTRAINTS THAT RESULT IN ITS INABILITY TO BE USED IN COMPLIANCE WITH THE REQUIREMENTS OF THIS TITLE; AND

8. THE HARDSHIP IS NOT A RESULT OF ACTIONS BY THE OWNER.

Applicant Response:

6. **Explain below why the property cannot yield a reasonable return without the granting of the variance:**
    - There are no current safe/secure structures on the property that would provide storage for our personal belongings, tools and equipment during the construction process. This would allow better living onsite during construction, better cleanliness/upkeep of the construction site during management when we would need to meet subcontractors onsite, and better time management.

7. **Explain below why the property has unique physical constraints that result in its inability to be used without the granting of the variance:**
    - The ground has been graded and is ready for the foundation work to begin. Previously the land was used for crop/harvest. Being on site would help with weed maintenance so it is not an eyesore for neighbors.

8. **Explain below why the hardship is not a result of actions or decisions by the owner:**
    - We would be starting the shed and primary residence at the same time by pouring both shed foundations, we would want to frame and enclose the shed first crew. Once the foundations are poured with frame our personal belongings, this would be our safe/secure location for our personal belongings, and equipment.

Staff Analysis:

The ordinance requires a finding that the variance prevents economic hardship, based on: (i) no reasonable return without it; (ii) unique physical constraints; and (iii) hardship not self-created. Note: Increased returns or reduced costs alone are insufficient. HF652 shifts emphasis to "practical difficulties" in beneficial use due to special conditions (unique, not self-created), rather than purely economic terms, allowing variances for numerical limitations like accessory structure rules to ensure substantial justice.

- **No Reasonable Return Without Variance (Subpoint i)**: The applicants state the graded land (formerly cropped) is ready for foundations, and on-site presence aids maintenance to avoid eyesores. Without the variance, they imply inefficiency in construction (e.g., no secure storage).
    - **Analysis:** While not purely economic, the response ties to practical use—the property's value as a residential lot is diminished if construction is hampered. Under HF652, this qualifies as a practical difficulty in achieving the allowed single-family use, as strict sequencing prevents efficient development. Marginal compliance, but bolstered by state law.
- **Unique Physical Constraints (Subpoint ii)**: The applicants repeat the graded/cropped history and maintenance benefits of on-site living. The rural 2.49-acre lot lacks nearby storage options, making on-site needs unique. Site plan shows topography suitable for both structures but sequencing as a constraint.
    - **Analysis:** The property's isolation and size create a unique need for immediate storage during building. HF652 explicitly requires uniqueness, and this fits as a site-specific rural challenge. Compliance is reasonable.
- **Hardship Not Self-Created (Subpoint iii)**: The applicants explain simultaneous foundations but need the shed framed/enclosed first for secure storage of belongings/equipment. This stems from construction logistics, not prior actions.

- **Analysis:** The hardship arises from ordinance sequencing, not applicant choices (e.g., they didn't create the rule or site conditions). HF652 reinforces this, as difficulties must not be self-created. Strong compliance.

Overall for Criteria 2: Responses are somewhat repetitive but demonstrate practical difficulties in efficient use. HF652's broader "practical difficulties" lens strengthens the case, as the variance enables beneficial residential development without self-imposed issues.

REVIEW CRITERIA 3: (Section 2.02.8F2-5)

The ordinance also states that no variance shall be granted:

9. WHICH WOULD PERMIT THE ESTABLISHMENT OF A USE WITHIN A GIVEN DISTRICT WHICH IS PROHIBITED THEREIN;

10. WHICH IS SO COMMONLY RECURRING THAT IT IS A DE FACTO AMENDMENT OF THIS ORDINANCE; AND

11. THAT IS MORE THAN THE MINIMUM RELIEF NEEDED.

12. TO THE PROVISIONS OF SECTION 5.03 RELATIVE TO FLOOD PLAIN MANAGEMENT REQUIREMENTS UNLESS THE BOARD OF ADJUSTMENT CONSIDERS THE FACTORS LISTED IN SUBSECTION 5.03-9.C (4).

Staff Analysis:

- **No Establishment of Prohibited Use**: The shed and house are allowed in AE (accessory to residential). Variance only adjusts timing. Analysis: Compliant—no new use introduced.
- **Not a De Facto Amendment**: This is a one-time request for a specific rural lot. Analysis: As a unique case, it doesn't amend the ordinance broadly. Compliant.
- **Minimum Relief Needed**: The variance is narrowly for sequencing (complete shed before house), with simultaneous starts. Site plan confirms no excess relief. Analysis: This is the minimum to address storage needs. Compliant.
- **Floodplain Factors**: Not applicable (Zone X).

STAFF CONCLUSION

The application has merit and could be approved, as it meets ordinance criteria with enhancements from HF652. The core issue—construction sequencing—creates practical difficulties in a rural setting, where secure on-site storage is essential for efficient building without off-site hassles or delays. Applicants' plan (simultaneous foundations, 3-month timeline, compliant design/placement) minimizes impacts, preserves neighborhood character (rural residential with similar structures), and enables the allowed use justly. No evidence of self-creation or public harm exists; instead, it promotes orderly development. Denying it could impose undue hardship. Conditions could include a one-year completion deadline for the house to ensure intent. The site plan supports feasibility, reinforcing the case.

SUGGESTED MOTION

I move that the Woodbury County Board of Adjustment approve the variance request submitted by Corey and Sierra Parry for the property located at Parcel #894420476011 (Lot 11, Wood-River Development), in Section 20, Township 89 North, Range 44 West (Arlington Township), zoned Agricultural Estates (AE), to allow construction and completion of an approximately (and subject to changes) 50' x 80' accessory building (shed) prior to completion of the principal structure (single-family dwelling), as a waiver from the requirements of Section 4.12.2 of the Woodbury County Zoning Ordinance.

The approval is subject to the following conditions:

1. The principal dwelling (house) shall be completed within_____ months/years from the date of this approval.
2. The shed shall comply with all applicable setbacks, dimensional standards, and building permit requirements in the AE Zoning District.

Sioux City Journal

AFFIDAVIT OF PUBLICATION

Sioux City Journal
2802 Castles Gate Drive
Sioux City 51106
(712) 293-4250

State of Florida, County of Orange, ss:

Edmar Corachia, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Sioux City Journal, printed and published by Journal Communications, in Sioux City in Woodbury County and issued daily and Sunday and that this affidavit is Page 1 of 1 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

PUBLICATION DATES:
Feb. 14, 2026

NOTICE ID: FWHABmxtKzlU4nPMdWw2
PUBLISHER ID: COL-IA-502824
NOTICE NAME: BoA_3-2-25_Public_Notice_for_Public_Hearings
Publication Fee: $61.57

Edmar Corachia
(Signed)_____

VERIFICATION

State of Florida
County of Orange

Subscribed in my presence and sworn to before me on this: 02/16/2026

_____
Notary Public
Notarized remotely online using communication technology via Proof.

PAMELA BAEZ
Notary Public - State of Florida
Commission # HH 732409
Expires on October 19, 2029

NOTICE OF PUBLIC HEARINGS BEFORE THE WOODBURY COUNTY BOARD OF ADJUSTMENT

The Woodbury County Board of Adjustment will hold public hearings on the following items, hereafter described in detail, on Monday, March 2, 2026, at 5:00 PM or as soon thereafter as the matters may be considered. Said hearings will be held in the Board of Supervisors' meeting room in the basement of the Woodbury County Courthouse, 620 Douglas Street, Sioux City, Iowa. Copies of said items may now be examined at the office of the Woodbury County Community and Economic Development on the 6th Floor of the courthouse by any interested persons. All persons who wish to be heard in respect to the matters should appear at the aforesaid hearings in person or call 712-454-1133 and enter the Conference ID: 742 346 123# during the meeting to listen or comment. However, it is recommended to attend in person as there is the possibility for technical difficulties with phone and computer systems. You may forward your written comments by mail or email to: Woodbury County Community and Economic Development, 6th Floor, Woodbury County Courthouse, 620 Douglas St., Sioux City, IA 51101. Emails should be sent to Daniel Priestley at dpriestley@woodburycountyiowa.gov. Only signed comments will be considered and should be received no later than 10:00 AM on Friday, February 27, 2026.

Item One (1)

The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa, to consider a conditional use permit application submitted by Carleigh Noel, Development Services Coordinator, on behalf of the owner, the City of Moville. The application requests approval for a public use on city-owned property to support a water system improvement project, including construction of a water treatment plant, a water storage tower, and two new wells. The affected property consists of Lots 3, 4, 5, and 6 in Moville Heights Addition, an addition to Woodbury County, Iowa, identified as the combined Parcel #894432400024. The approximately 5-acre property is located in the Agricultural Estates (AE) Zoning District in Arlington Township (T89N R44W), Section 32, and lies about 1,500 feet south of the City of Moville, on the north side of 160th Street, south of Highway 20, and west of Humbolt Avenue. The owner and applicant is the City of Moville, located at 21 Main Street, P.O. Box 420, Moville, IA 51039, with contact information for Carleigh Noel, Development Services Coordinator, at 1725 Storm Lake Avenue North, Storm Lake, IA 50588.

Item Two (2)

The Woodbury County Board of Adjustment will hold a public hearing, pursuant to Section 335 of the Code of Iowa, to consider a variance request from Corey and Sierra Parry, who seek approval to construct an approximately 50' x 80' shed (subject to potential changes) before completing their principal structure, a single-family dwelling, on their property located at Lot Eleven (11), Block Two (2), Wood River Development, Woodbury County, Iowa (Parcel #894420476011), consisting of 2.49 acres in the Agricultural Estates (AE) Zoning District in Arlington Township (T88N R44W), Section 20, Northeast Quarter of the Southeast Quarter, situated more than 0.5 miles north of Moville just south of where Humbolt Avenue meets Highway 140, on the southeast side of Highway 140 and the west side of Humbolt Avenue. Although foundations for both the house and shed would begin at the same time, the applicants intend to prioritize and finish the shed first, seeking relief from Section 4.12.2 of the Woodbury County Zoning Ordinance (page 45), which prohibits construction of an accessory building until construction of the principal building has commenced. The owners and applicants are Corey and Sierra Parry, residing at 731 Florence Avenue, Sioux City, IA 51109.

COL-IA-502824

Sioux City Journal

AFFIDAVIT OF PUBLICATION

Sioux City Journal
2802 Castles Gate Drive
Sioux City 51106
(712) 293-4250

State of Florida, County of Orange, ss:

Edmar Corachia, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Sioux City Journal, printed and published by Journal Communications, in Sioux City in Woodbury County and issued daily and Sunday and that this affidavit is Page 1 of 1 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

PUBLICATION DATES:
Feb. 24, 2026

NOTICE ID: NY4PHrBnbpyP0sWwbw0a
PUBLISHER ID: COL-IA-502869
NOTICE NAME: BoA_3-2-26_2
Publication Fee: $64.21

Edmar Corachia

(Signed)_____

VERIFICATION

State of Florida
County of Orange

JESSICA GORDON-THOMPSON
Notary Public - State of Florida
Commission # HH301656
Expires on August 17, 2026

Subscribed in my presence and sworn to before me on this: 02/24/2026

_____
Notary Public
Notarized remotely online using communication technology via Proof.

NOTICE OF PUBLIC HEARINGS BEFORE THE WOODBURY COUNTY BOARD OF ADJUSTMENT

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COL-IA-502869

PROPERTY OWNER(S) NOTIFICATION

Property Owners within 500 Feet:	**7**
Notification Letter Date:	**February 12, 2026**
Public Hearing Board:	**Board of Adjustment**
Public Hearing Date:	**March 2, 2026 at 5:00 PM CT**
Phone Inquiries:	**0**
Written Inquiries:	**0**
The names of the property owners are listed below.	
When more comments are received after the printing of this packet, they will be provided at the meeting.	

PROPERTY OWNER(S)	MAILING ADDRESS				COMMENTS
Alvin Howe & David Howe	30778 K49	Hinton	IA	51024	No comments received.
David Howe	31202 K49	Hinton	IA	51024	No comments received.
Leslie R. Douglas & Linda J.	1367 Humbolt Ave.	Moville	IA	51039	No comments received.
Scott C. Watts & Lori R. Joint Revocable Trust	1374 Hwy 140	Moville	IA	51039	No comments received.
Corey A. Parry & Sierra	731 Florence Ave.	Sioux City	IA	51109	No comments received.
Carol U. Logan Revocable Trust	PO Box 189	Moville	IA	51039-0189	No comments received.
Travis Weitzel & Nicole	1357 Humbolt Avenue	Moville	IA	51039	No comments received.

STAKEHOLDER COMMENTS

911 COMMUNICATIONS CENTER:	No comments received.
CITY OF SALIX	No comments received.
FIBERCOMM:	No comments received.
IOWA DEPARTMENT OF NATURAL RESOURCES (IDNR):	No comments received.
IOWA DEPARTMENT OF TRANSPORTATION (IDOT):	**SEE EMAIL EXCHANGE BELOW**
LOESS HILLS NATIONAL SCENIC BYWAY:	No comments received.
LOESS HILLS PROGRAM:	No comments received.
LONGLINES:	No comments received.
LUMEN:	No comments received.
MAGELLAN PIPELINE:	No comments received.
MIDAMERICAN ENERGY COMPANY (Electrical Division):	I have reviewed the following application for variance for MEC electric and we have; No comments. – Casey Meinen, 2/10/26.
MIDAMERICAN ENERGY COMPANY (Gas Division):	No conflicts for the MEC "gas" department. The property owner/developer should be aware that extension of distribution facilities is subject to a customer contribution. Let me know if you have any questions or concerns. Thanks, - Tyler Ahlquist, 2/11/26.
NATURAL RESOURCES CONSERVATION SERVICES (NRCS):	No comments received.
NORTHERN NATURAL GAS:	No comments received.
NORTHWEST IOWA POWER COOPERATIVE (NIPCO):	Have reviewed this variance submitted by Corey and Sierra Parry. NIPCO has no issues with this request. We noticed that MidAmerican Energy has power lines close to this property. – Jeff Zettel, 2/17/26.
NUSTAR PIPELINE:	No comments received.
SIOUXLAND DISTRICT HEALTH DEPARTMENT:	No comments received.
WIATEL:	No comments received.
WOODBURY COUNTY ASSESSOR:	No comments received.
WOODBURY COUNTY CONSERVATION:	No comments received.
WOODBURY COUNTY EMERGENCY MANAGEMENT:	No comments received.
WOODBURY COUNTY EMERGENCY SERVICES:	No comments received.
WOODBURY COUNTY ENGINEER:	No comments received.
WOODBURY COUNTY RECORDER:	No comments received.
WOODBURY COUNTY RURAL ELECTRIC COOPERATIVE (REC):	No comments received.
WOODBURY COUNTY SOIL AND WATER CONSERVATION DISTRICT:	The WCSWCD has no comment on this variance request. – Neil Stockfleth, 2/11/26.
WOODBURY COUNTY TREASURER:	No comments received.

SEE "EMAIL CHAIN" BELOW INVOLVING COREY PARRY AND THE IOWA DEPARTMETN OF TRANSPORTATION:

The email exchange is a chain of correspondence involving **Corey Parry** (property owner/applicant), **Daniel Priestley** (Woodbury County Zoning Coordinator), and Iowa Department of Transportation (**Iowa DOT**) staff, primarily **Jared Raymer** (Engineering Operations Technician), **Shane Tymkowicz** (Assistant District Engineer), and **Michael Thayer**.

Chronological Summary of the Exchange

1. **Early February 2026 (around Feb 10–11)**:
    - Daniel Priestley (county zoning) sent a formal notice to stakeholders (including Iowa DOT) about the variance application, requesting comments/concerns by Feb 20, 2026.
    - Shane Tymkowicz (Iowa DOT) responded, noting the proposed change in access use (from agricultural to residential) and forwarded the matter to **Jared Raymer** (the EOT responsible for the area) to coordinate any necessary access permit and review work in the DOT right-of-way (ROW).
    - Shane requested the owners' (Corey/Sierra Parry) phone number to contact them directly for review.
    - Daniel Priestley replied, providing the phone number (redacted in the emails) and copying Corey Parry.

2. **Feb 11, 2026**:
    - Jared Raymer (Iowa DOT) emailed the group, stating that any property updates would need to align with the new access policy. He referenced entrance questions (likely in a prior/attached context).

3. **Corey Parry's response (Feb 11, 2026)**:
    - Corey informed the group that he researched and submitted the access permit application online via the Iowa DOT website.

4. **Latest update (Feb 25, 2026 – email from Corey Parry to Daniel Priestley)**:
    - Corey provided a status update on the DOT access permit:
        - Application submitted on **Feb 11, 2026** (changed from agricultural to residential use).
        - Received an automated email with a contact person and a promise of follow-up within 5 business days—no contact received.
        - Corey followed up multiple times without success.
        - On **Feb 20, 2026**, he contacted Jared Raymer (CC'd in the original chain).
        - Jared indicated he needed to **visit the site** to verify the access point location matches the site map and complies with DOT standards.
        - Jared planned to visit the following week (week of Feb 23–27, 2026).
        - Corey called Jared again on **Feb 24, 2026**—no visit yet; Jared estimated possibly by the end of that week (late Feb 2026).

    - Corey shared this as an update for the future home build/site plan.

Daniel Priestley

From: Corey Parry [redacted]
Sent: Wednesday, February 25, 2026 11:11 AM
To: Daniel Priestley
Subject: Parry site plane access permit with DOT

CAUTION: This email originated from **OUTSIDE** of the organization. Please verify the sender and use caution if the message contains any attachments, links, or requests for information as this person may NOT be who they claim. **If you are asked for your username and password, please call WCICC and DO NOT ENTER any data.**

Daniel, here is an update on the access permit with dot for our future home build.

Initial emailed from dot explained that the current access into the lot was zoned limited agriculture use and we would need to apply for an access permit to change it to residential. I completed that on 2-11-26. I received an automated email providing a person of contact for said access permit and it also said that that person would be in contact with me within 5 business days. I did not receive any contact from said person so I reached out multiple times with no success. I then reached out to Jarod with the DOT on 2-20-26 who was CC'd in the initial email string. We talked about the access and our site plan and ultimately came to the conclusion that he was going to have to go visit the site and verify that the access point is located where we show it on our site map and that it is in compliance with the DOT. He said he would go out the following week and take a look at it. I called him on 2-24-26 to check and see if he had been out there yet and he hadn't and said it would be maybe the end of the this week yet.

Daniel Priestley

From: [redacted]
Sent: Wednesday, February 11, 2026 11:53 AM
To: Raymer, Jared
Cc: Daniel Priestley; Tymkowicz, Shane; Thayer, Michael; Felix, Jessica; Tracy, Sarah
Subject: Re: Comments Requested Variance Application to Build Accessory Building before House - Hwy 140 & Humbolt Avenue (Parcel #894420476011)

CAUTION: This email originated from **OUTSIDE** of the organization. Please verify the sender and use caution if the message contains any attachments, links, or requests for information as this person may NOT be who they claim. **If you are asked for your username and password, please call WCICC and DO NOT ENTER any data.**

I did a little research and found where I need to request an access permit on the DOT website and just complete that. Let me know if there is anything else we need to do.

Thanks corey.

On Wed, Feb 11, 2026 at 11:28 AM Raymer, Jared <Jared.Raymer@iowadot.us> wrote:

> All,
>
> Any updates to the property would need to be updated to the new access policy. See all the entrance questions above in the email if needed.
>
> Thanks,
> Jared
>
> IOWA DOT
>
> Jared Raymer
>
> EOT
>
> 6409 Gordon Dr.
>
> Sioux City,IA 51106
>
> Email: jared.raymer@iowadot.us

Cell : 515-357-1796

Office: 712-274-5853

From: Daniel Priestley <dpriestley@woodburycountyiowa.gov>
Sent: Wednesday, February 11, 2026 8:00 AM
To: Tymkowicz, Shane <Shane.Tymkowicz@iowadot.us>
Cc: Thayer, Michael <Michael.Thayer@iowadot.us>; Raymer, Jared <Jared.Raymer@iowadot.us>; [redacted]
Subject: RE: Comments Requested Variance Application to Build Accessory Building before House - Hwy 140 & Humbolt Avenue (Parcel #894420476011)

CAUTION:

This email originated from outside the Iowa Department of Transportation.
Do not click links or open attachments unless you recognize the sender and know the content is safe.

Shane,

Thank you for the information. Corey and Sierra Parry's phone number is [redacted]. I have also copied Corey onto this email.

Corey – please see Shane's email below about the entrance.

Thanks,

Daniel J. Priestley, MPA

Woodbury County Zoning Coordinator

620 Douglas Street #609

Sioux City, IA 51101

Phone: 712-279-6609

Fax: 712-279-6530

Website: WoodburyCountyIowa.gov

From: Tymkowicz, Shane <Shane.Tymkowicz@iowadot.us>
Sent: Wednesday, February 11, 2026 7:09 AM
To: Daniel Priestley <dpriestley@woodburycountyiowa.gov>
Cc: Thayer, Michael <Michael.Thayer@iowadot.us>; Raymer, Jared <Jared.Raymer@iowadot.us>
Subject: RE: Comments Requested Variance Application to Build Accessory Building before House - Hwy 140 & Humbolt Avenue (Parcel #894420476011)

CAUTION: This email originated from **OUTSIDE** of the organization. Please verify the sender and use caution if the message contains any attachments, links, or requests for information as this person may NOT be who they claim. **If you are asked for your username and password, please call WCICC and DO NOT ENTER any data.**

Daniel,

This is a change in use for the access. I have forwarded the packet to Jared Raymer, who is the Engineering Operations Technician for the area. He would be the person who would coordinate the permit for a change in access type and any work done in the DOT ROW. If you could provide the phone number to Jared for Corey and Sierra Parry, we would be appreciative so we can make contact and review the entrance with them.

Thanks,

Shane

Shane Tymkowicz, P.E.

Assistant District Engineer

Field Operations Division

Iowa Department of Transportation

6409 Gordon Drive

Sioux City, IA 51106

712-274-5834 office

712-261-0405 mobile

Shane.Tymkowicz@iowadot.us

From: Daniel Priestley <dpriestley@woodburycountyiowa.gov>
Sent: Tuesday, February 10, 2026 3:24 PM
To: Daniel Priestley <dpriestley@woodburycountyiowa.gov>
Subject: Comments Requested Variance Application to Build Accessory Building before House - Hwy 140 & Humbolt Avenue (Parcel #894420476011)

CAUTION:
This email originated from outside the Iowa Department of Transportation.
Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Woodbury County Stakeholder:

Woodbury County Planning and Zoning has received a variance application from **Corey and Sierra Parry** for a property located at **Lot Eleven (11), Block Two (2), Wood-River Development, Woodbury County, Iowa** (**GIS Parcel #894420476011**). The property is located just north of Moville south of the point where Hwy 140 meets Humbolt Ave.

The application is for a variance from Section 4.12.2 of the Woodbury County Zoning Ordinance. The applicants are seeking relief from the requirement that prohibits construction of an accessory building until construction of the principal building has commenced. The purpose of the variance is to allow construction of an approximately 50' x 80' shed (subject to potential changes) before completing their principal structure, a single-family dwelling, on their 2.49-acre lot in the Agricultural Estates (AE) Zoning District.

The **Woodbury County Board of Adjustment** will hold a public hearing to consider this application at **5:00 PM on Monday, March 2, 2026.** The hearing will be held in the Board of Supervisors' meeting room in the Basement of the Woodbury County Courthouse at 620 Douglas St., Sioux City, IA 51101.

We kindly ask you to review the attached details of this application and provide any comments or concerns you may have. Your input is valuable and will be considered as part of the review process.

Please provide your signed comments no later than **10:00 AM on Friday, February 20, 2026**.

Thank you for your time and consideration.

Respectfully,

Daniel J. Priestley, MPA

Woodbury County Zoning Coordinator

620 Douglas Street #609

Sioux City, IA 51101

Phone: 712-279-6609

Fax: 712-279-6530

Website: WoodburyCountylowa.gov

Woodbury County, IA / Sioux City

Summary

Parcel ID	894420476011
Alternate ID	858121
Property Address	HWY 140 MOVILLE IA 51039
Sec/Twp/Rng	20-89-44
Brief Tax Description	WOOD-RIVER DEV ADDN LOT11 BLK2 (Note: Not to be used on legal documents)
Deed Book/Page	2023-08641 (9/11/2023)
Gross Acres	2.49
Net Acres	2.49
Adjusted CSR Pts	0
Zoning	AE - AGRICULTURAL ESTATES
District	0049 ARLINGTON/WD-C
School District	WOODBURY CENTRAL
Neighborhood	N/A

Owner

Deed Holder
PARRY COREY A & SIERRA
731 FLORENCE AVE
SIOUX CITY IA 51109
Contract Holder
Mailing Address
PARRY COREY A & SIERRA
731 FLORENCE AVE
SIOUX CITY IA 51109

Land

Lot Area 2.49 Acres ;108,464 SF

Sales

Date	Seller	Buyer	Recording	Sale Condition - NUTC	Type	Multi Parcel	Amount
9/6/2023	TERVEER TIMOTHY J JR & LYNDSAY R JOINT REVOCABLE TRUST	PARRY COREY A & SIERRA	2023-08641	Vacant lot	Deed		$45,000.00
9/28/2021	TERVEEHARRIS MARK A & SHERRI L	TERVEER TIMOTHY J JR & LYNDSAY R JOINT REVOCABLE TRUST	2021-13396	Vacant lot	Deed		$37,500.00
8/17/2010	LOGAN ROBERT L & CAROL U	HARRIS MARK A & SHERRI L	712/8736	Vacant lot	Deed		$25,000.00

Valuation

		2025	2024	2023	2022	2021
	Classification	Residential	Residential	Residential	Residential	Residential
+	Assessed Land Value	$54,430	$36,720	$36,720	$36,720	$36,720
+	Assessed Building Value	$0	$0	$0	$0	$0
+	Assessed Dwelling Value	$0	$0	$0	$0	$0
=	**Gross Assessed Value**	**$54,430**	**$36,720**	**$36,720**	**$36,720**	**$36,720**
-	Exempt Value	$0	$0	$0	$0	$0
=	**Net Assessed Value**	**$54,430**	**$36,720**	**$36,720**	**$36,720**	**$36,720**

Sioux City Special Assessments and Fees

Click here to view special assessment information for this parcel.

Woodbury County Tax Credit Applications

Apply for Homestead or Military Tax Credit

No data available for the following modules: Residential Dwellings, Commercial Buildings, Agricultural Buildings, Yard Extras, Permits, Sioux City Tax Credit Applications, Sioux City Board of Review Petition, Photos, Sketches.

The maps and data available for access at this website are provided "as is" without warranty or any representation of accuracy, timeliness, or completeness. There are no warranties, expressed or implied, as to the appropriate use of the maps and data or the fitness for a particular purpose. The maps and associated data at this website do not represent a survey. No liability is assumed for the accuracy of the data delineated on any map, either expressed or implied.
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Contact Us

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ELEVATION

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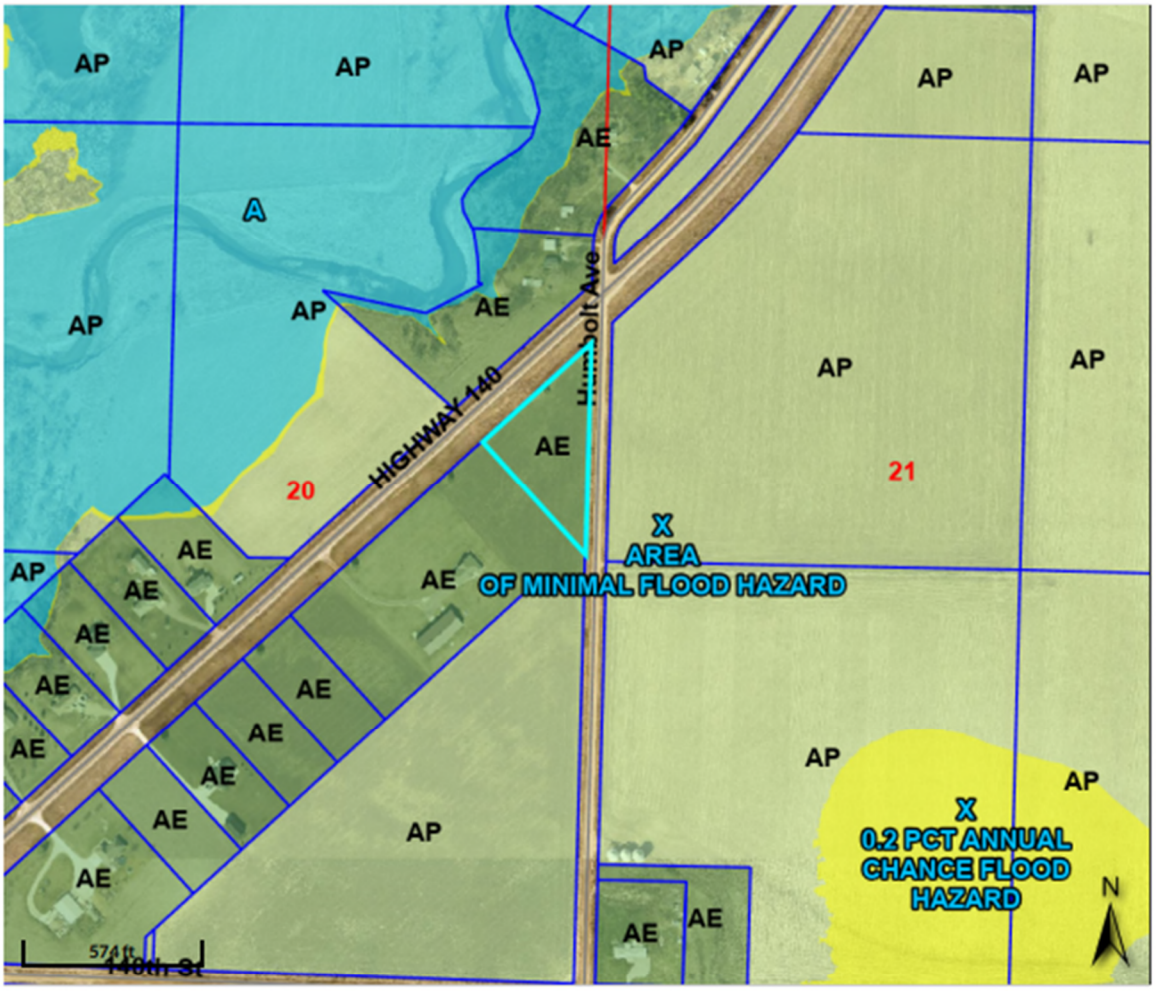
COUNTY ZONING MAP



Overview

Legend

- Roads
- Corp Boundaries
- Townships
- Parcels

County Zoning

- AE
- AP
- GC
- GC-PD
- GI
- LI
- LI-PD
- SR
- WR

Parcel ID	894420476011	**Alternate ID**	858121	**Owner Address**	PARRY COREY A & SIERRA
Sec/Twp/Rng	n/a	**Class**	R		731 FLORENCE AVE
Property Address	HWY 140 MOVILLE	**Acreage**	2.49		SIOUX CITY, IA 51109

District 0049

Brief Tax Description WOOD-RIVER DEV ADDN LOT11 BLK2

(Note: Not to be used on legal documents)

SPECIAL FLOOD HAZARD AREA (SFHA)

The property is not located within the floodplain.

SOIL MAP

Iowa Corn Suitability Rating CSR2 (IA)—Woodbury County, Iowa
(894420476011)
96° 3' 29" W
96° 3' 21" W
42° 30' 33" N
42° 30' 25" N
741690
741720
741750
741780
741810
741840
741870
4710540
4710510
4710480
4710450
4710420
4710390
4710360
4710330
4710300
Highway 140
140
700
Humboft Ave
Soil Map may not be valid at this scale.
Map Scale: 1:1,210 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 15 30 60 90
Feet
0 50 100 200 300
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- = 100
- Not rated or not available

Soil Rating Lines

- = 100
- Not rated or not available

Soil Rating Points

- = 100
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Woodbury County, Iowa
Survey Area Data: Version 35, Sep 9, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 19, 2022—Sep 20, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Iowa Corn Suitability Rating CSR2 (IA)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
700	Monona silty clay loam, terrace, 0 to 2 percent slopes	100	2.6	100.0%
Totals for Area of Interest			**2.6**	**100.0%**

Description

This attribute is only applicable to soils in the state of Iowa. Corn suitability ratings (CSR2) provide a relative ranking of all soils mapped in the State of Iowa according to their potential for the intensive production of row crops. The CSR2 is an index that can be used to rate the potential yield of one soil against that of another over a period of time. Considered in the ratings are average weather conditions and frequency of use of the soil for row crops. Ratings range from 100 for soils that have no physical limitations, occur on minimal slopes, and can be continuously row cropped to as low as 5 for soils that are severely limited for the production of row crops.

When the soils are rated, the following assumptions are made: a) adequate management, b) natural weather conditions (no irrigation), c) artificial drainage where required, d) no frequent flooding on the lower lying soils, and e) no land leveling or terracing. The weighted CSR2 for a given field can be modified by the occurrence of sandy spots, local deposits, rock and gravel outcrops, field boundaries, and noncrossable drainageways. Even though predicted average yields will change with time, the CSR2 values are expected to remain relatively constant in relation to one another over time.

Rating Options

Aggregation Method: No Aggregation Necessary

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The majority of soil attributes are associated with a component of a map unit, and such an attribute has to be aggregated to the map unit level before a thematic map can be rendered. Map units, however, also have their own attributes. An attribute of a map unit does not have to be aggregated in order to render a corresponding thematic map. Therefore, the "aggregation method" for any attribute of a map unit is referred to as "No Aggregation Necessary".

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

VARIANCE REGULATIONS FROM THE WOODBURY COUNTY ZONING ORDINANCE (Pages 18-20)

1. Variances

A. Authority. The Board of Adjustment shall hear and decide on requests for a variance pursuant to subsection 2.01-5. D subject to the procedures, standards and conditions set out in this subsection and Section 335 of the Iowa Code.

B. Purpose. A variance is intended to provide necessary relief from the requirements of the zoning provisions of this title that would create unnecessary hardships or practical difficulties.

C. Filing.

(1) Right to seek variance. A request for a zoning variance may be filed by any person aggrieved by a provision of the zoning ordinance that limits their intended use of property.

(2) Form of application. An application for a variance shall be submitted to the zoning director and shall include at least the following information:

(a) The name and address of the property owner and the applicant;

(b) The address, if any, and the legal description of the property;

(c) The current zoning district classification;

(d) A specific description of the proposed variance including the section of this title from which a variance is requested;

(e) A map, drawn to scale, showing the subject property, all structures and other improvements, with the proposed variance identified;

(f) Statements in response to the criteria and standards for approval of variances in subsection 2.02-8. F (1) below.

(3) Fee. A filing fee, as established by resolution of the Board of Supervisors to defray administrative costs, shall accompany the notice of appeal.

(4) A certified abstractor's listing of the names and mailing addresses of all owners of real property lying adjacent to the subject property.

D. Stay of Proceedings. A request for a variance appeal shall have the effect of a temporary suspension of enforcement of the provisions of these regulations that are the subject of the variance request until the conclusion of the variance process, unless the zoning director certifies that the suspension may cause imminent peril to life or property.

E. Review and decision-making process.

(1) Hearing required. The Board of Adjustment shall conduct a public hearing on the variance request in accordance with subsection 2.02-1. B.

(2) Notification. Public notification of the Board of Adjustment hearing on the variance request shall be as required by subsection 2.02-1. B(1). Such notices shall provide information on the time, date and location of the hearing and a brief description of the requested variance.

(3) Decision. Within 10 days after the public hearing the Board of Adjustment shall approve, approve with conditions or limitations, or deny the requested variance. The Board of Adjustment shall set forth findings of fact addressing the points enumerated in subsection 2.02-8. F(1) below as a basis for its action.

F. Requirements for variances:

(1) In order to grant a variance, the Board of Adjustment must determine that:

(a) Granting the variance will not be contrary to the public interest or the general intent and purpose of this title in that it:

(i) Adversely impacts nearby properties;

(ii) Substantially increases congestion of people, buildings or traffic;

(iii) Endangers public health or safety;

(iv) Overburdens public facilities or services; or

(v) Impairs the enjoyment, use or value of nearby property.

(b) Granting the variance is necessary to assure that the owner does not suffer an economic hardship. (Note: Increased financial return or reduced costs to the applicant are not adequate cause for a finding of hardship.) A finding of economic hardship must be based on each of the following:

(i) The property cannot yield a reasonable return if used in compliance with the requirements of this title;

(ii) The property has unique physical constraints that result in its inability to be used in compliance with the requirements of this title; and

(iii) The hardship is not a result of actions by the owner.

(2) No variance shall be granted which would permit the establishment of a use within a given district which is prohibited therein;

(3) No variance shall be granted which is so commonly recurring that it is a de facto amendment of this ordinance; and

(4) No variance shall be granted that is more than the minimum relief needed.

(5) No variance shall be granted to the provisions of Section 5.03 relative to flood plain management requirements unless the Board of Adjustment considers the factors listed in subsection 5.03-9.C (4).

G. Conditional approval of variances. The Board of Adjustment may, as a condition related to approval of a variance, impose restrictions and safeguards upon the property and the variance granted if it determines the restrictions to be necessary to minimize adverse effects on other property or the public interest. Such conditions shall be set forth in the resolution of the Board of Adjustment granting the variance. Failure to comply with any conditions imposed on a variance approval is a violation of this title.

H. Appeal of the actions of the Board of Adjustment. Any interested party may appeal a variance decision of the Board of Adjustment in two ways.

(1) If the Board of Adjustment approves a variance, the Board of Supervisors pursuant to Section 335.10 of the Iowa Code may remand the matter to the Board of Adjustment for further consideration at any time within 30 days.

(2) Any aggrieved party may appeal a decision of the Board of Adjustment within 30 days as provided by Section 335.18 of the Iowa Code. Such an appeal suspends the effect of the action of the Board of Adjustment until the appeal has been resolved. Any construction or cost incurred during the period subject to appeal is at the risk of the applicant.

SEE THE STATE OF IOWA'S CHANGES TO THE VARIANCE REQUIREMENTS BELOW:

STATE OF IOWA
KIM REYNOLDS
GOVERNOR

April 25, 2025

The Honorable Paul Pate
Secretary of State of Iowa
State Capitol
Des Moines, Iowa 50319

Dear Mr. Secretary,

I hereby transmit:

House File 652, an Act concerning county and city regulation of real property and the powers granted to a board of adjustment.

The above House File is hereby approved on this date.

Sincerely,

Kim Reynolds
Governor of Iowa

cc: Secretary of the Senate
Clerk of the House

House File 652

AN ACT

CONCERNING COUNTY AND CITY REGULATION OF REAL PROPERTY AND THE POWERS GRANTED TO A BOARD OF ADJUSTMENT.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF IOWA:

Section 1. Section 335.15, Code 2025, is amended by adding the following new subsection:

NEW SUBSECTION. 4. To authorize on appeal, in specific cases, such variance from the terms of the ordinance with respect to the area, dimensional, or other numerical limitations as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of the ordinance will result in practical difficulties to the property owner in making a beneficial use of the property allowed by the zoning ordinance, and so that the spirit of the ordinance shall be observed and substantial justice done. Area, dimensional, or other numerical limitations subject to variances include but are not limited to requirements for minimum lot size, setbacks, yard widths, height, bulk, sidewalks, fencing, signage, and off-street parking. To receive the requested area, dimensional, or other numerical variance, the property owner must prove that the practical difficulties faced are unique to the property at issue and not self-created and must also demonstrate that granting the variance will not significantly alter the essential character of the surrounding neighborhood.

Sec. 2. Section 414.12, Code 2025, is amended by adding the following new subsection:

NEW SUBSECTION. 4. To authorize on appeal, in specific cases, such variance from the terms of the ordinance with respect to the area, dimensional, or other numerical limitations as will not be contrary to the public interest, where owing to special conditions a literal enforcement of the provisions of the ordinance will result in practical difficulties to the property owner in making a beneficial use of the property allowed by the zoning ordinance, and so that the spirit of the ordinance shall be observed and substantial justice done. Area, dimensional, or other numerical limitations subject to variances include but are not limited to requirements for minimum lot size, setbacks, yard widths, height, bulk, sidewalks, fencing, signage, and off-street parking. To receive the requested area, dimensional, or other numerical variance, the property owner must prove that the practical difficulties faced are unique to the property at issue and not self-created and must also demonstrate that granting the variance will not significantly alter the essential character of the surrounding neighborhood.

PAT GRASSLEY
Speaker of the House

AMY SINCLAIR
President of the Senate

I hereby certify that this bill originated in the House and is known as House File 652, Ninety-first General Assembly.

MEGHAN NELSON
Chief Clerk of the House

Approved April 25th, 2025

KIM REYNOLDS
Governor

CITY OF MOVILLE

SECTION 2: WATER TOWER

CONSTRUCTION PLANS

MOVILLE, IOWA

ISG PROJECT # 22-27061

LOCATION MAP

0 1,000 2,000

SCALE IN FEET

SEAL

LICENSED PROFESSIONAL ENGINEER
BROOKE A. B. SIEVERS
P25078
IOWA

I hereby certify that this engineering document was prepared by me or under direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Brooke Sievers 05/28/2025

(signature) (date)

Printed or typed name BROOKE ANN BASCHE SIEVERS

License number P25078

My license renewal date is December 31, 12/31/2025

Pages or sheets covered by this seal:
C0-10, C0-11, C0-12, C0-13, C0-20, C0-21, C0-22, C0-23, C0-24, C1-30, C1-31, C2-20, C3-10, C3-30, C3-31, C4-10

SEAL

LICENSED PROFESSIONAL ENGINEER
SETH LAMB
P25040
IOWA

I hereby certify that this engineering document was prepared by me or under direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Seth Lamb 05/28/2025

(signature) (date)

Printed or typed name SETH LAMB

License number P25040

My license renewal date is December 31, 12/31/2025

Pages or sheets covered by this seal:
PP5-32, PP5-33

SEAL

LICENSED PROFESSIONAL ENGINEER
ROYAL STREED
P26593
IOWA

I hereby certify that this engineering document was prepared by me or under direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

05/28/2025

(signature) (date)

Printed or typed name ROYAL STREED

License number P26593

My license renewal date is December 31, 12/31/2026

Pages or sheets covered by this seal:
E2-00, E2-11, E4-11, E4-12

SEAL

LICENSED PROFESSIONAL ENGINEER
MATTHEW LARSEN
P24003
IOWA

I hereby certify that this engineering document was prepared by me or under direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

05/28/2025

(signature) (date)

Printed or typed name MATTHEW LARSEN

License number P24003

My license renewal date is December 31, 12/31/2026

Pages or sheets covered by this seal:
P2-11, M2-12

SHEET INDEX

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C0-11	LEGENDS, NOTES, AND UTILITIES
C0-12	CONSTRUCTION NOTES
C0-13	EROSION CONTROL NOTES
C0-20	SITE DETAILS
C0-21	SITE DETAILS
C0-22	SITE DETAILS
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C1-31	CONSTRUCTION STAGING AREAS
C2-20	EXISTING SITE AND REMOVAL PLAN
C3-10	SITE PLAN
C3-30	UTILITY PLAN AND PROFILE
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C4-10	OVERALL GRADING PLAN
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M2-12	HVAC PLAN
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E2-00	SITE POWER, LIGHTING, AND CONTROL PLAN
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E4-12	SCHEDULES

PROJECT INDEX:

OWNER:

CITY OF MOVILLE
21 MAIN STREET PO BOX 420
MOVILLE, IOWA 51039
PHONE: (712) 873-3545

PROJECT ADDRESS / LOCATION:

SECTION 32/T-89-N/R-44-W
WOODBURY COUNTY
XXXXX 160TH STREET

ARLINGTON TWP
MOVILLE, IOWA

MANAGING OFFICE:
I & S GROUP, INC. (ISG)

STORM LAKE OFFICE
1725 LAKE AVE. NORTH
STORM LAKE, IA 50588
PHONE: 712.732.7745

PROJECT MANAGER: AMANDA GOODENOW
EMAIL: AMANDA.GOODENOW@ISGINC.COM

SPECIFICATIONS REFERENCE

ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF MOVILLE REQUIREMENTS AND WITH THE 2025 EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) FOR PUBLIC IMPROVEMENTS, UNLESS DIRECTED OTHERWISE.

PROJECT DATUM

HORIZONTAL COORDINATES HAVE BEEN REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), ZONE 4, ON THE IOWA REGIONAL COORDINATE SYSTEM, IN U.S. SURVEY FEET. ELEVATIONS HAVE BEEN REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). RTK GPS METHODS WERE USED TO ESTABLISH HORIZONTAL AND VERTICAL COORDINATES FOR THIS PROJECT.

B.M. ELEVATION=1193.90
TOP OF OPERATING NUT OF FIRE HYDRANT AT 726 SUNNYBROOKE DRIVE

B.M. ELEVATION=1220.80
TOP OF OPERATING NUT OF FIRE HYDRANT NORTHWEST OF HUMBOLT AVENUE AND MAIN STREET INTERSECTION

TOPOGRAPHIC SURVEY

THIS PROJECT'S TOPOGRAPHIC SURVEY CONSISTS OF DATA COLLECTED IN AUGUST 2024 BY ISG INC.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811

SHEET NOT VALID UNLESS THIS TEXT IS COLOR.

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 G1-GENERAL
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

TITLE

SHEET

C0-10

SYMBOL LEGEND

EXISTING		PROPOSED
EX STM MH	STORM MANHOLE	
EX CB	STORM CATCH BASIN	
EX CO	STORM CLEANOUT	
	STORM CULVERT	
	DOWNSPOUT	
	ROOF DRAIN	
EX SAN MH	SANITARY MANHOLE	
EX CO	SANITARY CLEANOUT	
EX LIFT STATION	LIFT STATION	
	WATER REDUCER	
	WATER VALVE	
	WATER VALVE MAHOLE	
	WATER CURB STOP	
	WATER SHUT-OFF	
EX POST INDICATOR VALVE	POST INDICATOR VALVE	
	FIRE DEPARTMENT CONNECTION	
	WELL	
EX MW	MONITORING WELL	
	LAWN SPRINKLER BOX	
	LAWN SPRINKLER HEAD	
	HYDRANT	
EX YARD HYD	YARD HYDRANT	
	UTILITY POLE	
	LIGHT POLE	
	GROUND LIGHT	
	GUY WIRE	
	TRANSFORMER	
EX HH	HANDHOLE	
EX ELEC MH	ELECTRIC MANHOLE	
EM	ELECTRIC METER	
V	UTILITY VAULT	
AC	AIR CONDITIONER	
GM	GAS METER	
GGV	GAS VALVE	
SB-1	SOIL BORING	
	FLAG POLE	
MB	MAILBOX	
EX SIGNAL	TRAFFIC SIGNAL	
	SIGN	
	STREET SIGN	
	WHEEL STOP	
RR	RAILROAD CROSSING SIGN	
	POST	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
	BUSH	
	TREE STUMP	
	WETLAND / MARSH	
	ROCK / BOULDER	

NOTE:

CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES.

LINETYPE LEGEND

EXISTING		PROPOSED
>>	STORM DRAIN	>>
>	SANITARY SEWER	>
II>	SANITARY SEWER FORCEMAIN	II>
W	WATER MAIN	W
G	GAS	G
OE	OVERHEAD ELECTRIC	OE
UE	UNDERGROUND ELECTRIC	UE
UT	UNDERGROUND TELEPHONE	UT
UTV	UNDERGROUND TV	UTV
OHL	OVERHEAD UTILITY	OHL
UTL	UNDERGROUND UTILITY	UTL
FBO	FIBER OPTIC	FBO
WET	WETLAND	WET
W	WATER EDGE	
X X	FENCE LINE	X X
	TREE LINE	
	PROPERTY / LOT LINE	
	RIGHT OF WAY LINE	
	ACCESS CONTROL	
	EASEMENT LINE	

NOTE:

CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES.

ABBREVIATIONS:

ADA	AMERICANS WITH DISABILITIES ACT	IN	INCH
ADD	ADDENDUM	INV	INVERT
AFF	ABOVE FINISHED FLOOR	IP	IRON PIPE
AGG	AGGREGATE	IPS	IRON PIPE SIZE
APPROX	APPROXIMATE	J-BOX	JUNCTION BOX
ARCH	ARCHITECT, ARCHITECTURAL	JT	JOINT
BFE	BASEMENT FLOOR ELEVATION	LF	LINEAR FEET
BIT	BITUMINOUS	LIN	LINEAR
BLDG	BUILDING	LPS	LOW PRESSURE STEAM
BM	BENCHMARK	LS	LUMP SUM
CAD	COMPUTER-AIDED DESIGN	LSO	LOWEST STRUCTURAL OPENING
CB	CATCH BASIN	MAX	MAXIMUM
CFS	CUBIC FEET PER SECOND	MB	MAIL BOX
CF	CUBIC FOOT	MECH	MECHANICAL
CI	CAST IRON	MH	MANHOLE
CIP	CAST IRON PIPE	MIN	MINIMUM
CIPC	CAST IN PLACE CONCRETE	MISC	MISCELLANEOUS
CJ	CONTROL JOINT	NO	NUMBER
CL	CENTERLINE	NTS	NOT TO SCALE
CMP	CORRUGATED METAL PIPE	NWL	NORMAL WATER LEVEL
CO	CLEANOUT	OC	ON CENTER
CONC	CONCRETE	OCEW	ON CENTER EACH WAY
CONST	CONSTRUCTION	OH	OVERHEAD
CONT	CONTINUOUS	OHWL	ORDINARY HIGH WATER LEVEL
CR	COUNTY ROAD	OHD	OVERHEAD DOOR
CY	CUBIC YARD	OZ	OUNCE
C&G	CURB AND GUTTER	PCC	PORTLAND CEMENT CONCRETE
DEMO	DEMOLITION	PED	PEDESTAL, PEDESTRIAN
DI	DROP INTAKE	PERF	PERFORATED
DIA	DIAMETER	PL	PROPERTY LINE
DIM	DIMENSION	PP	POLYPROPYLENE
DS	DOWNSPOUT	PSI	POUNDS PER SQUARE INCH
EA	EACH	PVC	POLYVINYL CHLORIDE
ELEC	ELECTRICAL	PVMT	PAVEMENT
ELEV	ELEVATION	QTY	QUANTITY
EOF	EMERGENCY OVERFLOW	R	RIM
EQ	EQUAL	RAD	RADIUS
EX	EXISTING	RCP	REINFORCED CONCRETE PIPE
F/G	FORM GRADE	RD	ROOF DRAIN
FDC	FIRE DEPARTMENT CONNECTION	REBAR	REINFORCING BAR
FDN	FOUNDATION	REM	REMOVE
FES	FLARED END SECTION	ROW	RIGHT OF WAY
FFE	FINISHED FLOOR ELEVATION	R/W	RIGHT OF WAY
FPM	FEET PER MINUTE	SAN	SANITARY
FPS	FEET PER SECOND	SCH	SCHEDULE
FT	FOOT, FEET	SF	SQUARE FOOT
FTG	FOOTING	SPEC	SPECIFICATION
GA	GAUGE	SQ	SQUARE
GAL	GALLON	STA	STATION
GALV	GALVANIZED	STM	STORM
GC	GENERAL CONTRACTOR	SY	SQUARE YARD
GFE	GARAGE FLOOR ELEVATION	TEL	TELEPHONE
GL	GUTTER LINE	TEMP	TEMPORARY
GPM	GALLONS PER MINUTE	THRU	THROUGH
GV	GATE VALVE	TNFH	TOP NUT OF FIRE HYDRANT
HDPE	HIGH DENSITY POLYETHYLENE	TRANS	TRANSFORMER
HD	HEAVY DUTY	TV	TELEVISION
HH	HANDHOLE	T/W	TOP OF WALL
HMA	HOT MIX ASPHALT	TYP	TYPICAL
HORIZ	HORIZONTAL	UT	UTILITY, UNDERGROUND TELEPHONE
HR	HOUR	VCP	VITRIFIED CLAY PIPE
HWL	HIGH WATER LEVEL	W/O	WITHOUT
HWY	HIGHWAY	W/	WITH
HYD	HYDRANT	YD	YARD
I	INVERT	YR	YEAR
ID	INSIDE DIAMETER		

PROJECT GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS, AND CLARIFICATIONS ISSUED BY ARCHITECT/ENGINEER.
2. CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK.
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
4. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
5. DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
7. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
8. THE LOCATION AND TYPE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY AND ARE ACCURATE AND COMPLETE TO THE BEST OF THE KNOWLEDGE OF I & S GROUP, INC. (ISG). NO WARRANTY OR GUARANTEE IS IMPLIED. THE CONTRACTOR SHALL VERIFY THE SIZES, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM PLAN.
9. THE CONTRACTOR IS TO CONTACT "IOWA ONE CALL" FOR UTILITY LOCATIONS A MINIMUM OF 2 BUSINESS DAYS PRIOR TO ANY EXCAVATION / CONSTRUCTION (1-800-292-8989).

PROJECT CONTACTS

COMPANY NAME	CONTACT	PHONE NUMBER	EMAIL
MIDAMERICAN ELECTRIC	CODY PARMETER	712.233.4821	CODY.PARMETER@MIDAMERICAN.COM
MIDAMERICAN GAS	MYLES JOHNSON	712.233.4866	MYLES.JOHNSON@MIDAMERICAN.COM
CENTURYLINK	SADIE HULL	918.547.0147	SADIE.HULL@LUMEN.COM
AUREON NETWORK SERVICES	JEFF KLOCKO	515.830.0445	JEFF.KLOCKO@AUREON.COM
CITY OF MOVILLE, WATER, SANITARY, STORM SEWER	PAT SMITH	712.870.1361	PUBLICWORKS@WIATEL.NET
WOODBURY COUNTY RURAL ELECTRIC	NATE BAUER	712.873.3125	NBAUER@WOODBURYREC.COM
WESTERN IOWA TELEPHONE COMPANY	ERIN NELSON	712.944.5711	ENELSON@WIATEL.COM
WOODBURY COUNTY ENGINEER'S OFFICE	LAURA SIEVERS OR KYLE GATES	712.873.3215	

ISG

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 G1-GENERAL
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

LEGENDS, NOTES, AND UTILITIES

SHEET

C0-11

CONSTRUCTION NOTES:

GENERAL

1. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.
2. ALL PROPERTY PINS SHALL BE PROTECTED FROM GRADING OR OTHER OPERATIONS. ANY PINS DISTURBED SHALL BE RESET AT THE CONTRACTOR'S EXPENSE.
3. THE CURRENT EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) SHALL APPLY TO THE CONSTRUCTION WORK ON THE PROJECT. A FULL IOWA SUDAS SPECIFICATIONS MANUAL CAN BE FOUND ONLINE FOR FREE AT WWW.IOWASUDAS.ORG.

   a. DETAILS SHOWN IN PLAN SET ARE MEANT TO BE A GENERAL SAMPLING OF THOSE ANTICIPATED FOR THE PROJECT AND ARE NOT MEANT TO COVER ALL POSSIBLE SITUATIONS. CONTRACTOR SHALL REFERENCE SUDAS SPECIFICATION MANUAL FOR FULL LIST OF DETAILS.
4. THE RECOMMENDED STANDARDS FOR WATER WORKS (10 STATE STANDARDS), 2012 EDITION SHALL APPLY TO THE CONSTRUCTION WORK ON THE PROJECT.
5. THE WORK TO BE ACCOMPLISHED FOR THE CONSTRUCTION OF THIS PROJECT WILL OCCUR ON OWNER'S PROPERTY AND RIGHT-OF-WAY. THE CONTRACTOR SHALL CONFINE OPERATION, PEOPLE, AND EQUIPMENT TO THE OWNER'S PROPERTY AND RIGHT-OF-WAY.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIALS NOT TO BE INCORPORATED IN THE WORK INVOLVED IN THE PROJECT (UNSUITABLE EXCAVATION, WASTE PIPE, ETC.).
7. PROJECT ITEMS TO BECOME PROPERTY OF CONTRACTOR FOR PROPER DISPOSAL UNLESS OTHERWISE NOTED ON PLANS OR OWNER/ENGINEER NOTIFIES CONTRACTOR OTHERWISE.
8. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL NECESSARY TRAFFIC CONTROL SIGNS, DEVICES, ETC., AND TO PLACE, MAINTAIN, AND REMOVE SAME AS CONSTRUCTION COMMENCES AND IS COMPLETED IN ACCORDANCE WITH THE CURRENT EDITION OF THE IOWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS. FAILURE TO COMPLY WITH THIS PORTION OF THE SPECIFICATIONS WILL RESULT IN SUSPENSION OF WORK UNTIL THE SITUATION IS CORRECTED. A REDUCTION IN THE LUMP SUM TO BE PAID WILL BE MADE FOR EXCESSIVE NONCOMPLIANCE WITH REQUIRED TRAFFIC CONTROL. NO WORK SHALL COMMENCE IN ANY GIVEN AREA UNTIL ALL APPROPRIATE TRAFFIC CONTROL IS IN PLACE.
9. OWNER WILL SECURE THE SERVICES OF AN INDEPENDENT TESTING LABORATORY FOR ALL MATERIAL TESTING FOR THIS PROJECT. CONTRACTOR SHALL COORDINATE ALL TESTS WITH THE TESTING AGENCY AND INFORM ISG OF ALL SCHEDULED TESTS.
10. OWNER WILL PROVIDE CONSTRUCTION STAKING FOR PROJECT THROUGH ISG (I&S GROUP, INC.) AND CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE BEFORE STAKING IS REQUIRED.
11. THE CONTRACTOR SHALL GIVE THE WOODBURY COUNTY ENGINEER'S OFFICE 48 HOURS NOTICE OF INTENTION TO START CONSTRUCTION WITHIN ROW.

    CONTACT: LAURA SIEVERS OR KYLE GATES

    PHONE: 712-873-3215 or 712-279-6484
12. ALL WORK PERFORMED WITHIN THE ROW SHALL BE RESTRICTED TO A TIME FRAME OF 30 MINUTES AFTER SUNRISE TO 30 MINUTES BEFORE SUNSET.
13. ANY DEWATERING NECESSARY FOR CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO INDIVIDUAL CONSTRUCTION ITEM. PLEASE REFER TO SUBSURFACE EXPLORATION REPORT FOR ANTICIPATED SITE CONDITIONS. REPORT IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT GUARANTEE CONDITIONS TO BE EXPERIENCED.
14. THE CONTRACTOR SHALL INSPECT AND VERIFY SOIL CONDITIONS AS NECESSARY IN ORDER TO DETERMINE THE TYPE OF CONSTRUCTION TO EMPLOY. NATURAL OBSTRUCTIONS TYPICAL TO THIS AREA MAY BE ENCOUNTERED IN THE SOIL. THESE CONTRACT DOCUMENTS DO NOT WARRANT THE NATURE OR CONDITIONS OF THE SOILS, AND DO NOT WARRANT THAT NATURAL OBSTRUCTIONS WILL NOT BE ENCOUNTERED, NOR GUARANTEE THE EXTENT TO WHICH ROCKS, BOULDERS, OR OTHER OBSTRUCTIONS, REGARDLESS OF SIZE, MAY BE ENCOUNTERED DURING OPERATIONS. THE CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION FOR ANY NATURAL OBSTRUCTIONS TYPICAL TO THIS AREA ENCOUNTERED DURING CONSTRUCTION.
15. CONCRETE AND GROUT WASHOUT AREA SHALL REMAIN WITHIN CONFINES OF PROJECT AREA AND SHALL BE PROPERLY REMOVED UPON PROJECT COMPLETION.

UTILITIES

16. THE LOCATION AND TYPE OF ALL INPLACE UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY AND ARE ACCURATE AND COMPLETE TO THE BEST OF THE KNOWLEDGE OF ISG (I&S GROUP, INC.). NO WARRANTY OR GUARANTEE IS IMPLIED. THE CONTRACTOR SHALL VERIFY THE SIZES, LOCATIONS AND ELEVATIONS OF ALL INPLACE UTILITIES PRIOR TO CONSTRUCTION AND AVOID DAMAGE THERETO. NO CLAIM FOR ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM PLAN. ANY NECESSARY FIXTURE ADJUSTMENTS SHALL BE INCIDENTAL.
17. PUBLIC UTILITY FIXTURES ARE EXISTING WITHIN THE CONSTRUCTION AREA. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THESE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR ANY NECESSARY MODIFICATION OF SERVICES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.
18. ELEVATIONS GIVEN ON THE PLAN AND PROFILE SHEETS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
19. PROPOSED WATER DISTRIBUTION LINE SHALL BE INSTALLED WITH A MINIMUM OF SIX FEET (6') OF COVER.
20. THRUST BLOCKS SHALL BE POURED CONCRETE, INSTALLED BEHIND ALL BENDS, TEES AND DEAD ENDS IN ACCORDANCE WITH SPECIFICATIONS.
21. FLUSH WATER FROM DISINFECTION PROCESS SHALL BE DISPOSED OF BY DIRECTING FLUSH WATER INTO ROAD DITCH. ALL CHLORINATED WATER MUST BE DECHLORINATED PRIOR TO DISCHARGE.
22. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL SUBMIT TO ENGINEER A WRITTEN PLAN FOR PRESSURE TESTING, DISINFECTION, FLUSHING, AND BACTERIA SAMPLING.
23. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS OF ALL WATER CONNECTIONS.

PERMIT	RESPONSIBLE PARTY
WOODBURY COUNTY REZONE OR CONDITIONAL USE PERMIT	ISG
JOINT PERMIT (USACE/IDNR) FOR FLOODPLAIN CLEARANCE	ISG
WOODBURY COUNTY FLOODPLAIN DEVELOPMENT PERMIT	ISG
IDOT UTILITY ACCOMODATION & WORK WITHIN ROW PERMIT	ISG
GP#2 (SWPPP)	ISG
WWPPP (GP #6)	ISG HAS PREPARED THE PLAN. SECTION 3 CONTRACTOR IS RESPONSIBLE FOR GP6.
WOODBURY COUNTY GRADING PLAN REVIEW AND PERMIT	ISG
WOODBURY COUNTY ACCESS PERMIT (x2)	ISG
SIOUXLAND DISTRICT HEALTH DEPARTMENT SEPTIC SYSTEM PERMIT	SECTION 3 CONTRACTOR
WOODBURY COUNTY BUILDING PLAN REVIEW AND PERMIT	ISG
WOODBURY COUNTY FENCE PERMIT	ISG
WOODBURY COUNTY ENGINEERING WORK IN ROW AND UTILITY ACCOMMODATION PERMITS	ISG
DNR CONSTRUCTION PERMIT	ISG
STATE ELECTRICAL PERMIT	SECTION 3 CONTRACTOR

ISG

EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 G1-GENERAL
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

CONSTRUCTION NOTES

SHEET

C0-12

CONSTRUCTION ACTIVITY NOTES:

EROSION PREVENTION:
CONSTRUCTION OF SILT FENCE AND ALL OTHER EROSION CONTROL MEASURES SHALL BE COMPLETE BEFORE OTHER CONSTRUCTION ACTIVITY OCCURS.
USE PHASED CONSTRUCTION WHEREVER PRACTICAL AND ESTABLISH TURF AS SOON AS POSSIBLE TO MINIMIZE SEDIMENT TRANSPORT.
TURF ESTABLISHMENT OR TEMPORARY SEEDING OR MULCHING OF ALL EXPOSED SOIL NOT BEING ACTIVELY WORKED SHOULD BE PRACTICED FOLLOWING THE TABLE BELOW:

TYPE OF SLOPE OR DISTURBANCE AREA	TIME AREA CAN REMAIN OPEN WITHOUT BEING ACTIVELY WORKED:
STEEPER THAN 3:1	14 DAYS
10:1 TO 3:1	14 DAYS
FLATTER 10:1	14 DAYS
DITCHES	1 DAY
PIPE ENDS	1 DAY
WITHIN 200' OF SURFACE WATER	1 DAY
LAST 200' OF THE WETTED DITCH PERIMETER FROM THE DITCH OUTLET	1 DAY

ALL EXPOSED SOILS SHALL BE SEEDED OR SODDED AT THE EARLIEST POSSIBLE TIME TO PREVENT/REDUCE EROSION.
TEMPORARY COVER DURING CONSTRUCTION IS INCIDENTAL.
PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.

SEDIMENT CONTROL PRACTICES:
CONSTRUCTION OF SILT FENCE AND ALL OTHER EROSION CONTROL MEASURES SHALL BE COMPLETE PRIOR TO LAND DISTURBING ACTIVITIES OCCUR.
INLET EROSION PROTECTION SHALL BE INSTALLED AND MAINTAINED UNTIL TURF HAS BEEN ESTABLISHED.
THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL EROSION FROM LEAVING THE CONSTRUCTION ZONE. ALL ERODED MATERIAL THAT LEAVES THE CONSTRUCTION ZONE SHALL BE COLLECTED BY THE CONTRACTOR AND RETURNED TO THE SITE AT THE CONTRACTOR'S EXPENSE.
ALL STREETS MUST BE SWEPT WITHIN 24 HOURS WHEN ANY TRACKING OCCURS.
SILT FENCE OR OTHER EFFECTIVE EROSION CONTROL MEASURES MUST BE INSTALLED AROUND THE PERIMETER OF ANY SOIL STOCKPILES, INCLUDING TEMPORARY STOCKPILES. STOCKPILES CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES.
PERIMETER CONTROL SHALL BE INSTALLED ALONG THE BACK OF CURB IMMEDIATELY FOLLOWING CURB INSTALLATION AT ALL LOCATIONS WITH POSITIVE DRAINAGE TO PARKING LOT AND/OR STREETS, AND SHALL REMAIN UNTIL STABILIZATION IS ACHIEVED. THIS SHALL BE ACCOMPLISHED THROUGH THE USE OF SILT FENCE, BIOROLLS, ROCK LOGS, OR OTHER METHODS APPROVED BY THE ENGINEER.

DEWATERING AND BASIN DRAINING:
DEWATER SEDIMENT-LADEN WATER TO SEDIMENTATION BASINS IF POSSIBLE OR USE OTHER BMP'S TO PREVENT EROSION AND REMOVE SEDIMENT WHEN DISCHARGING TO SURFACE WATERS.
USE APPROPRIATE ENERGY DISSIPATION MEASURES ON ALL DISCHARGES.
DEWATERING PRACTICES CANNOT CAUSE NUISANCE CONDITIONS, EROSION OR IN RECEIVING CHANNELS OR INUNDATION OF WETLANDS RESULTING IN ADVERSE IMPACTS.

POLLUTION PREVENTION:
ALL SOLID WASTE COLLECTED FROM THE CONSTRUCTION SITE MUST BE DISPOSED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
ALL HAZARDOUS MATERIALS (OIL, GASOLINE, FUEL, PAINT, ETC) MUST BE PROPERLY STORED TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE, STORAGE AREAS SHALL PROVIDE SECONDARY CONTAINMENT AND A HAZARDOUS MATERIALS SPILL KIT. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
EQUIPMENT MAINTENANCE AREAS MUST BE LIMITED TO A DEFINED AREA OF THE SITE. ALL RUNOFF CONTAINING ANY HAZARDOUS MATERIAL MUST BE PROPERLY COLLECTED AND DISPOSED.
NO ENGINE DEGREASING SHALL BE ALLOWED ON SITE.
THE CONTRACTOR IS RESPONSIBLE FOR MONITORING AIR POLLUTION AND ENSURING IT DOES NOT EXCEED LEVELS SET BY LOCAL, STATE, OR FEDERAL REGULATIONS. THIS INCLUDES DUST CREATED BY WORK BEING PERFORMED ON THE SITE. AIR POLLUTION AND DUST CONTROL CORRECTION IS CONSIDERED INCIDENTAL TO THE UNIT BID PRICES FOR WHICH WORK IS BEING PERFORMED. ADDITIONAL DUST CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER.
CONCRETE WASHOUT ONSITE: ALL LIQUID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS
MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER. A COMPACTED
CLAY LINER THAT DOES NOT ALLOW WASHOUT LIQUIDS TO ENTER GROUND WATER IS CONSIDERED AN IMPERMEABLE LINER. THE LIQUID WASTE MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE CONCRETE WASHOUT OPERATIONS OR AREAS. LIQUID WASTE MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH CITY OF STORM LAKE, IOWA REGULATIONS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

INSPECTION AND MAINTENANCE:
THE PERMITTEES MUST ROUTINELY INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION.
ALL INSPECTIONS PERFORMED DURING CONSTRUCTION MUST BE RECORDED AND RECORDS RETAINED WITH THE EROSION CONTROL PLAN.
CONTRACTOR IS RESPONSIBLE FOR KEEPING A RECORD OF ALL RAINFALL INFORMATION & EROSION CONTROL MAINTENANCE UNTIL FINAL ESTABLISHMENT OF TURF.
ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE FENCE.
EROSION CONTROL, AND OTHER BMP'S MUST BE REPLACED, REPAIRED, OR SUPPLEMENTED WHEN THEY REACH 50% DESIGN LOAD.

FINAL STABILIZATION:
THE PERMITTEES MUST ENSURE FINAL STABILIZATION OF THE SITE. THE PERMITTEES MUST SUBMIT A NOTICE OF TERMINATION WITHIN 30 DAYS AFTER FINAL STABILIZATION IS COMPLETE OR CONTROL HAS BEEN PASSED TO ANOTHER OWNER.
ALL TEMPORARY EROSION CONTROL MEASURES AND BMP'S MUST BE REMOVED AS PART OF THE FINAL SITE STABILIZATION.
THE STORM WATER PERMIT FURTHER DEFINES FINAL STABILIZATION AND ITS REQUIREMENTS.

MAINTENANCE SCHEDULE:

THE FOLLOWING MAINTENANCE SCHEDULE HAS BEEN PROVIDED. THE INSPECTOR MUST PERFORM THE INSPECTIONS. THE OPERATOR/CONTRACTOR MUST PERFORM ALL NEEDED MAINTENANCE. FURTHERMORE, ALL EROSION CONTROL FEATURE REQUIRING MAINTENANCE MAY NOT BE LISTED BELOW. THE OPERATOR/CONTRACTOR AND INSPECTOR MUST PERFORM THEIR RESPECTIVE DUTIES ON ALL BMP'S THAT ARE NOT LISTED BELOW AS WELL.

1. CONSTRUCTION ENTRANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR MATERIALS DROPPED, WASHED OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
2. FILTER SOCKS – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (2.1) FILTER SOCKS SHALL BE INSPECTED WEEKLY; (2.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES; (2.3) NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF FILTER SOCKS SHALL BE ACCOMPLISHED PROMPTLY; (2.4) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH RAINFALL, THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE FILTER SOCK; AND (2.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE FILTER SOCK IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
3. SILT FENCE – THE MAINTENANCE MEASURES ARE AS FOLLOWS; (3.1) SILT FENCES SHALL BE INSPECTED WEEKLY, ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY; (3.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING. (3.3) SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY; (3.4) SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER; AND (3.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
4. STORM DRAIN INLET PROTECTION – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (4.1) STRUCTURES SHALL BE INSPECTED WEEKLY AND REPAIRS MADE AS NECESSARY AND (4.2) STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
5. TEMPORARY DIVERSION DIKE – THE MEASURE SHALL BE INSPECTED WEEKLY AND REPAIRS MADE TO THE DIKE, FLOW CHANNEL, OUTLET OR SEDIMENT TRAPPING FACILITY, AS NECESSARY. ONCE EVERY WEEK, WHETHER A STORM EVENT HAS OCCURRED OR NOT, THE MEASURE SHALL BE INSPECTED AND REPAIRS MADE IF NEEDED. DAMAGES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
6. TEMPORARY FILL DIVERSION – SINCE THE PRACTICE IS TEMPORARY AND UNDER MOST SITUATIONS WILL BE COVERED THE NEXT WORKING DAY. THE MAINTENANCE REQUIRED SHOULD BE LOW. IF THE PRACTICE IS TO REMAIN IN USE FOR MORE THAN ONE DAY, AN INSPECTION SHALL BE MADE AT THE END OF EACH WORKDAY AND REPAIRS MADE TO THE MEASURE IF NEEDED. THE OPERATOR/CONTRACTOR SHOULD AVOID THE PLACEMENT OF ANY MATERIAL OVER THE STRUCTURE WHILE IT IS IN USE. CONSTRUCTION TRAFFIC SHOULD NOT BE PERMITTED TO CROSS THE DIVERSION.
7. TEMPORARY SEDIMENT TRAP – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (7.1) SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN VOLUME OF THE WET STORAGE, SEDIMENT REMOVAL FROM THE BASIN SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS; (7.2) FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED. STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED; AND (7.3) THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT, THE HEIGHT OF THE STONE OUTLET SHOULD BE CHECKED TO ENSURE THAT ITS CENTER IS AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.
8. TEMPORARY SEDIMENT BASIN – THE BASIN EMBANKMENT SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE EMERGENCY SPILLWAY SHOULD BE CHECKED REGULARLY TO ENSURE THAT ITS LINING IS WELL ESTABLISHED AND EROSION-RESISTANT. THE BASIN SHOULD BE CHECKED AFTER EACH RUNOFF PRODUCING RAINFALL FOR SEDIMENT CLEANOUT AND TRASH REMOVAL. WHEN THE SEDIMENT REACHES THE CLEANOUT LEVEL, IT SHALL BE REMOVED AND PROPERLY DISPOSED OF.
9. TEMPORARY SEEDING – AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
10. PERMANENT SEEDING – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (10.1) IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANNING; (10.2) NEW SEEDLINGS SHALL BE SUPPLIED WITH ADEQUATE MOISTURE, SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY CONDITIONS, OR ON ADVERSE SITES, WATER APPLICATIONS SHALL BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF; (10.3) INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE; [10.3.A] IF STAND IS INADEQUATE FOR EROSION CONTROL, OVER SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED; [10.3.B] IF STAND IS 60% DAMAGED, RE-ESTABLISH FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS; [10.3.C] IF STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER, THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE, RE-ESTABLISH THE STAND FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS.
11. MULCHING – ALL MULCHES AND SOIL COVERINGS SHOULD BE INSPECTED PERIODICALLY (PARTICULARLY AFTER RAINSTORMS) TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED. NETS AND MATS SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NETTING OR MATTING AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. INSPECTIONS SHOULD TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE. REPAIR AS NEEDED.
12. SOIL STABILIZATION BLANKETS & MATTING – ALL SOIL STABILIZATION BLANKETS AND MATTING SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. CONTINUE TO MONITOR THESE AREAS UNTIL WHICH TIME THEY BECOME PERMANENTLY STABILIZED; AT THAT TIME AN ANNUAL INSPECTIONS SHOULD BE ADEQUATE.
13. STREET CLEANING / SWEEPING – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (13.1) EVALUATE ACCESS POINTS DAILY FOR SEDIMENT TRACKING; (13.2) WHEN TRACKED OR SPILLED SEDIMENT IS FOUND ON PAVED SURFACES, IT WILL BE REMOVED DAILY, DURING TIMES OF HEAVY TRACK-OUT, SUCH AS DURING RAINS, CLEANING MAY BE DONE SEVERAL TIMES THROUGHOUT THE DAY; (13.3) UNKNOWN SPILLS OR OBJECTS WILL NOT BE MIXED WITH THE SEDIMENT; AND (13.4) IF SEDIMENT IS MIXED WITH OTHER POLLUTANTS, IT WILL BE DISPOSED OF PROPERLY AT AN AUTHORIZED LANDFILL.

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

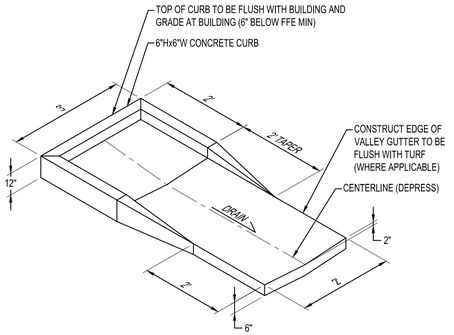
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 G1-GENERAL
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

EROSION CONTROL NOTES

SHEET

C0-13



NOTE:

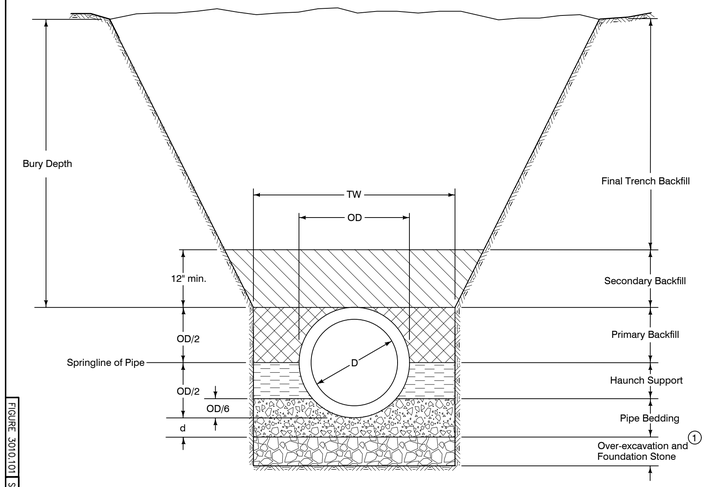
1. SPLASH BLOCK AND VALLEY GUTTER SHALL BE CONSTRUCTED ON COMPACTED 6" (MIN) SAND BASE

CONCRETE SPLASH BLOCK

NTS

Refer to the contract documents for specific material and placement requirements.

(1) Required only when specified in the contract documents or when directed by the Engineer.



Key

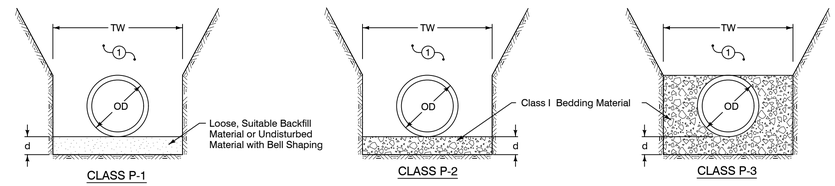
OD = Outside diameter of pipe
D = Inside diameter of pipe
TW = Trench width at top of pipe
d = Depth of bedding material below pipe

FIGURE 3010.101 SHEET 1 OF 1

SUDAS	IOWA DOT	REVISION
FIGURE 3010.101	STANDARD ROAD PLAN	NEW 04-17-18
REVISIONS: Replaced Iowa DOT and SUDAS logos.		SW-101
SUDAS DIRECTOR	DESIGN METHODS ENGINEER	SHEET 1 of 1

TRENCH BEDDING AND BACKFILL ZONES

BEDDING CLASSES



ALLOWABLE BURY DEPTH

DUCTILE IRON, AWWA C151, CLASS 52

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	40'	40'	40'
6	40'	40'	40'
8	40'	40'	40'
10	36'	40'	40'
12	31'	40'	40'
14	26'	40'	40'
16	23'	37'	40'
18	20'	34'	40'
20	18'	32'	40'
24	16'	29'	38
30	13'	23'	31'
36	13'	22'	30'
42	13'	21'	29'
48	13'	19'	27'
54	13'	19'	27'

PVC, AWWA C900 & C905, DR18

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	19'	23'	40'
6	19'	23'	40'
8	19'	23'	40'
10	19'	23'	40'
12	19'	23'	40'
14	19'	23'	40'
16	19'	23'	40'
18	19'	23'	40'
20	19'	23'	40'
24	19'	23'	40'

(1) Place remainder of bedding and backfill material as specified in the contract documents.

Key

OD = Outside diameter of pipe

TW = Trench width at top of pipe:
Min. = OD+18 inches OR 1.25xOD+12 inches
(whichever is greater)

d = Depth of bedding material below pipe:
Min. = OD/8 OR 4 inches
(whichever is greater)

FIGURE 3010.104 SHEET 1 OF 1

SUDAS	IOWA DOT	REVISION
FIGURE 3010.104	STANDARD ROAD PLAN	1 04-17-18
REVISIONS: Replaced Iowa DOT and SUDAS logos.		SW-104
SUDAS DIRECTOR	DESIGN METHODS ENGINEER	SHEET 1 of 1

PRESSURE PIPE TRENCH BEDDING

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C0-DETAILS
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

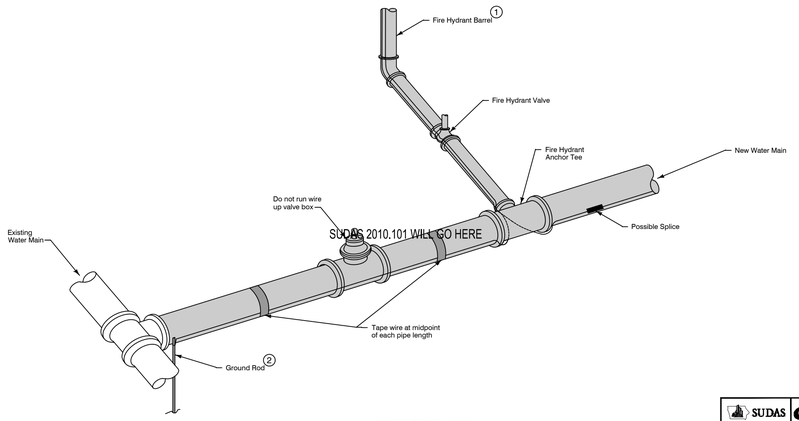
TITLE

SITE DETAILS

SHEET

C0-20

1. Extend tracer wire up fire hydrant barrel to internal terminals of tracer wire station and back down. Refer to WM-201 for details of fire hydrant assembly.
2. Clamp tracer wire to ground rod at system termination points.



TYPICAL INSTALLATION

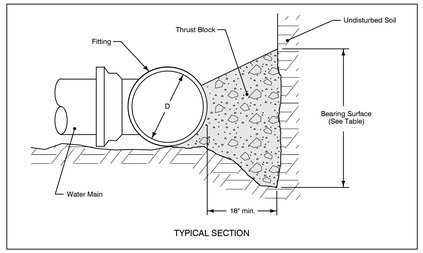
FIGURE 5010.102 SHEET 1 OF 1

SUDAS	IOWA DOT	REVISION 1 10-18-16
FIGURE 5010.102	STANDARD ROAD PLAN	WM-102
		SHEET 1 of 1

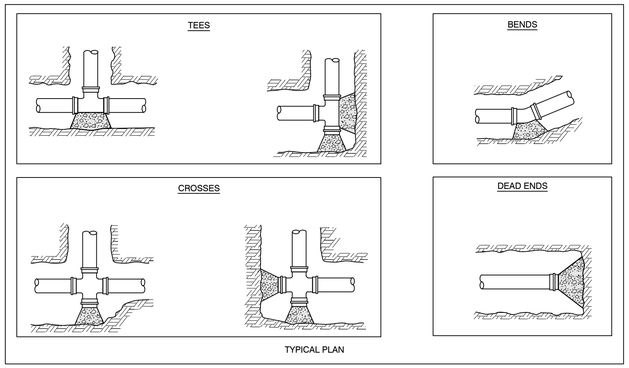
REVISIONS: Replaced Iowa DOT and SUDAS logos with new logos.

Paul D. Wiegand, SUDAS DIRECTOR — Brian Smith, DESIGN METHODS ENGINEER

TRACER SYSTEM



TYPICAL SECTION



TYPICAL PLAN

Extend thrust blocks to undisturbed soil. Excavation into trench wall may be necessary.

Form vertical surfaces of poured concrete thrust blocks except on bearing surface.

Encase all fittings in polyethylene wrap. Do not allow concrete to directly contact joints or fitting bolts.

Diameter of Pipe, D (inches)	MINIMUM BEARING SURFACE (sf)				
	Bends				Tees and Dead Ends
	11¼°	22½°	45°	90°	
4	1	1	2	4	3
6	1	2	4	8	6
8	2	4	7	14	10
10	3	6	11	21	15
12	4	8	16	29	21
14	5	11	21	39	28
16	7	14	27	50	36
18	9	17	34	63	45
20	11	21	42	78	55
24	15	31	60	111	78
30	24	47	92	171	120
36	34	67	132	244	173

Minimum surface area based on water pressure of 150 psi and allowable soil pressure of 1,000 psf.

FIGURE 5010.101 SHEET 1 OF 2

SUDAS	IOWA DOT	REVISION 1 10-18-16
FIGURE 5010.101	STANDARD ROAD PLAN	WM-101
		SHEET 1 of 2

REVISIONS: Replaced Iowa DOT and SUDAS logos with new logos.

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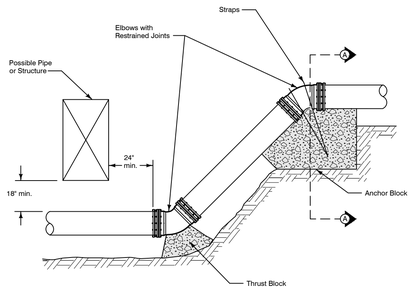
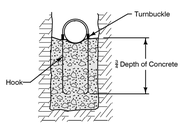
THRUST BLOCKS

CHANGES IN PIPE DEPTH



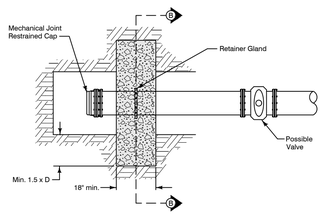
ELEVATION



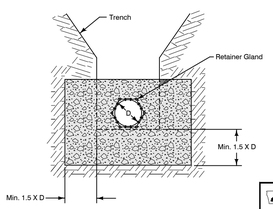
SECTION A-A

DEAD ENDS (ALTERNATE METHOD)

Use only when allowed by the Engineer, or when specified in the contract documents.



PLAN



SECTION B-B

FIGURE 5010.103 SHEET 2 OF 2

SUDAS	IOWA DOT	REVISION 1 10-18-16
FIGURE 5010.103	STANDARD ROAD PLAN	WM-101
		SHEET 2 of 2

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THRUST BLOCKS

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C0-DETAILS
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SITE DETAILS

SHEET

C0-21

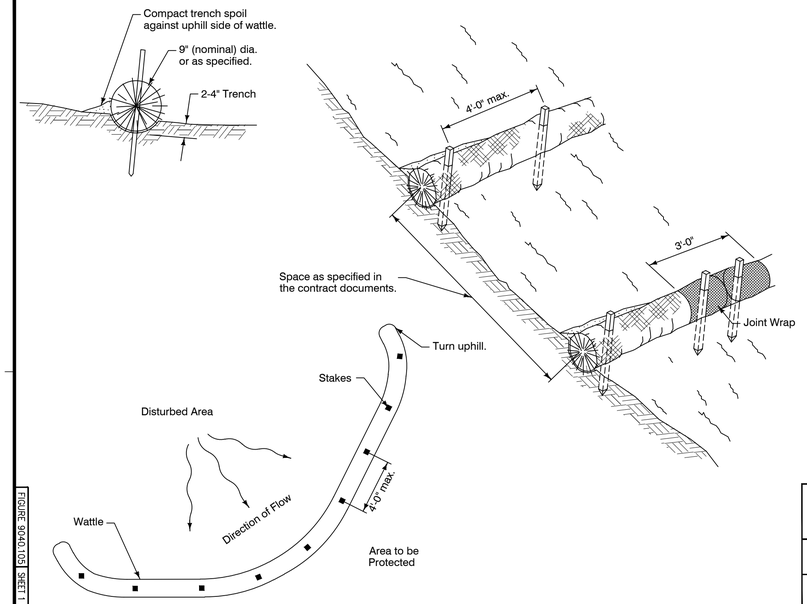
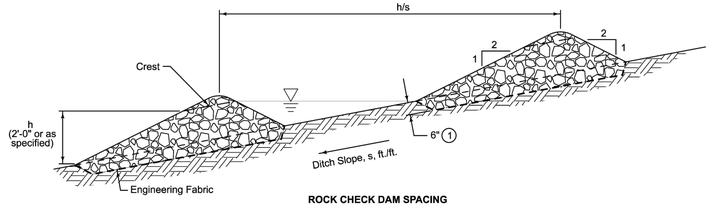


FIGURE 9040.105 SHEET 1 OF 1

SUDAS | REVISION 2 10-21-14 | 9040.105 | SHEET 1 of 1

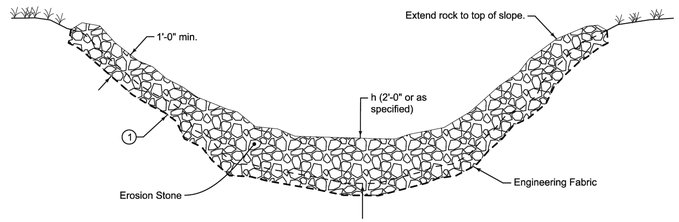
SUDAS Standard Specifications

WATTLE



ROCK CHECK DAM SPACING

(1) Key rock check dam into bottom and sides of the channel a minimum of 6 inches.

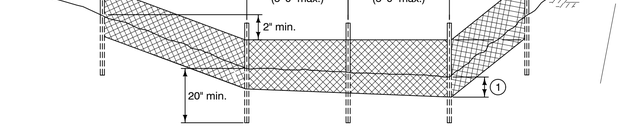


ROCK CHECK DAM SECTION

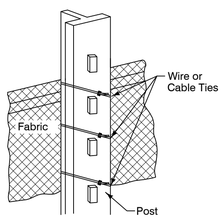
SUDAS | REVISION 3 2025 Edition | 9040.107 | SHEET 1 of 1

SUDAS Standard Specifications

ROCK CHECK DAM



TYPICAL SILT FENCE DITCH CHECK



ATTACHMENT TO POST

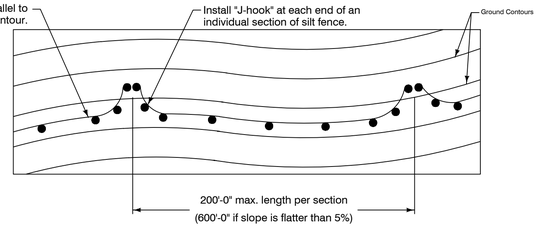
(1) Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).

FIGURE 9040.119 SHEET 1 OF 2

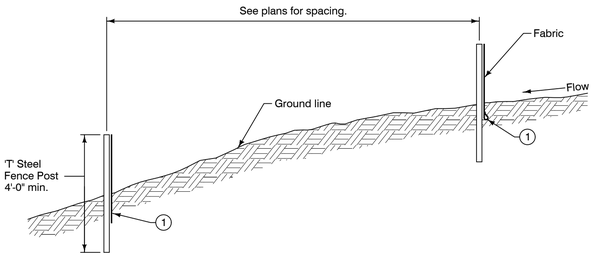
SUDAS | REVISION 2 10-21-14 | 9040.119 | SHEET 1 of 2

SUDAS Standard Specifications

SILT FENCE



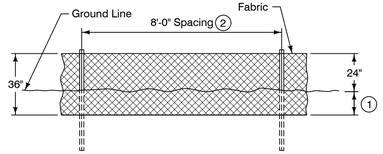
TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES
(Plan View)



TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES
(Profile View)

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

(2) Reduce post spacing to 5'-0" at water concentration areas, or as required to adequately support fence.



DETAILS OF SILT FENCE ON LONGITUDINAL SLOPES

FIGURE 9040.119 SHEET 2 OF 2

SUDAS | REVISION 2 10-21-14 | 9040.119 | SHEET 2 of 2

SUDAS Standard Specifications

SILT FENCE

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
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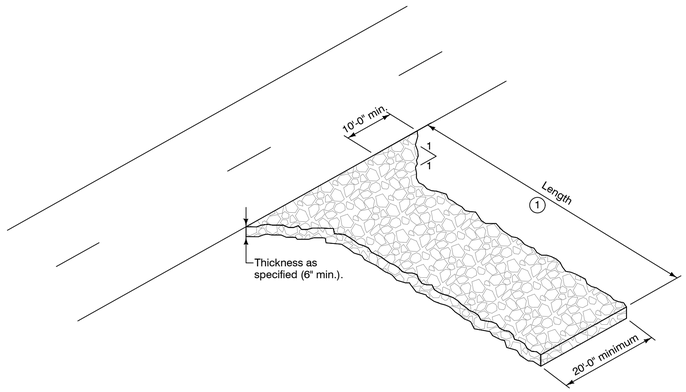
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SITE DETAILS

SHEET

C0-22



1 Entrance length: 50 foot minimum (30 foot for single family residential), or as specified in the contract documents. Length of entrance may be increased if sediment track-out occurs.

SUDAS

REVISION
2 10-21-14

9040.120

SHEET 1 of 1

SUDAS Standard Specifications

STABALIZED
CONSTRUCTION ENTRANCE

FHWAE 9040.120 SHEET 1 OF 1

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PROJECT

CITY OF MOVILLE

**SECTION 2:
WATER TOWER**

MOVILLE IOWA

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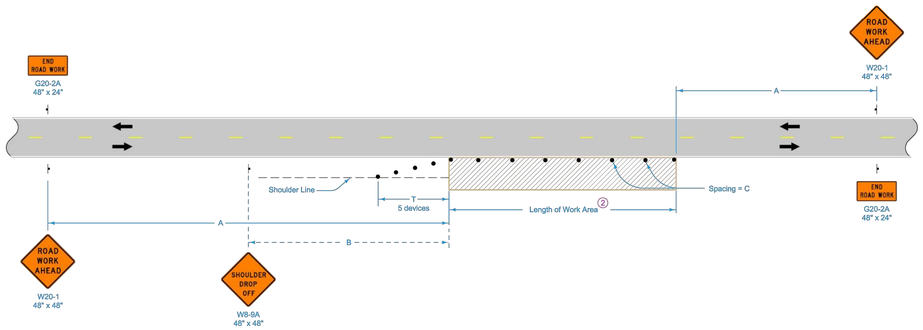
SITE DETAILS

SHEET

C0-23



When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement edge drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.K2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

① When the length of a pavement edge drop-off is 1000 feet or less, the temporary fillet requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.

② For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.

LEGEND

- Traffic Sign
- 42" Channelizer
- Work Area
- Direction of Traffic

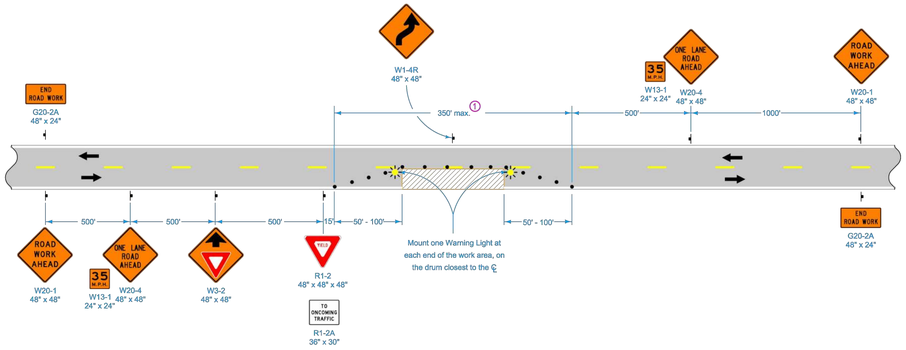
SPEED LIMIT (mph)*	A	B	C ②	T
35 or less	500'	250'	40'	100'
40 - 45	700'	350'	80' ①	200'
50 or greater	1000'	500'	100' ①	200'

* Speed Limit refers to regulatory speed limit before road work.

Possible Contract Item:
Traffic Control

IOWA DOT
STANDARD ROAD PLAN
TC-202
REVISION 10 4-18-23
SHEET 1 of 1
REVISIONS: Added speed limit note.
APPROVED BY DESIGN METHODS ENGINEER

WORK WITHIN 15 FT OF TRAVELED WAY



LEGEND

- Type 'A' Warning Light
- Traffic Sign
- Work Area
- Direction of Traffic
- 42" Channelizer

Do not use this layout when ADT exceeds 2000 vehicles.

Locate this layout at least 2,500 feet from any other work site layout.

Full-depth openings during non-working hours will not be allowed. Temporary plating, planking or filling may be necessary. Vehicles, unattended equipment, materials or stock-piled waste are not permitted between the shoulder lines during non-working hours.

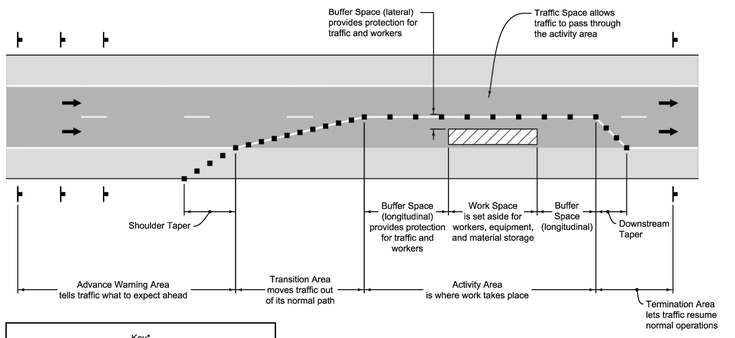
For bridge deck overlay projects: The night before overlay operations begin, a bridge deck finishing machine and necessary materials may be placed on the roadway.

① Do not use this layout if a No Passing Zone for the closed lane is located within this area.

Possible Contract Item:
Traffic Control

IOWA DOT
STANDARD ROAD PLAN
TC-211
REVISION 3 10-15-19
SHEET 1 of 1
REVISIONS: New logo.
APPROVED BY DESIGN METHODS ENGINEER

LANE CLOSURE ON LOW VOLUME ROADWAY



It may be necessary to combine two or more examples to adequately address the traffic control needed.

Utilize vehicle warning lights (amber, high-intensity rotating, flashing, oscillating, or strobe light) on all shadow and work vehicles.

Vehicle hazard lights may be used to supplement warning lights. Do not use hazard lights alone.

Flags may be used to call attention to the advanced warning signs.

If a closure extends overnight, utilize channelizing devices with retroreflective sheeting.

Speed limit refers to the legally established and signed speed limit.

If an arrow board is used on 2-lane roads, operate only in the caution mode.

Adjust the position of warning signs and channelizing devices for available sight distance.

Do not install temporary traffic control devices until work is ready to begin, and remove or cover all signs and devices promptly when they are not needed.

The END WORK (G20-2) signs shown on all figures are optional.

Key*

- Arrow Board
- Arrow Board Support or Trailer
- Channelizing Device
- Direction of Traffic
- Drum
- Flagger
- Pedestrian Channelizing Device
- Safety Fence
- Shadow Vehicle
- Sign (shown facing left)
- Type III Barricade
- Work Space
- Work Vehicle
- Vehicle Warning Light (amber, high-intensity rotating, flashing, oscillating, or strobe light)

*Applies to all Section 8030 figures

Distance Between Signs

Speed Limit (mph)	A
20-25	100
30-40	250
45-50	350
55	500

Channelizing Device Spacing

Speed Limit (mph)	Taper (ft)	Buffer (ft)	Work Space (ft)
20	20	40	40
25	25	50	50
30	30	60	60
35	35	70	70
40	40	80	80
45	45	90	90
50	50	100	100
55	55	110	110

Merging Taper Lengths for Lane Closure*

Speed Limit (mph)	Taper Length (L) (ft)	Number of Devices
20	80	5
25	125	6
30	180	7
35	245	8
40	320	9
45	540	13
50	600	13
55	660	13

*Values shown are for a 12 foot shift. Table does not apply to one-lane, two-way (flagger) tapers

SUDAS
REVISION New 10-17-17
8030.101
SHEET 1 of 1

SUDAS Standard Specifications

TEMPORARY TRAFFIC CONTROL GENERAL INFORMATION

FIGURE 8030.101 SHEET 1 OF 1

ISG

EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

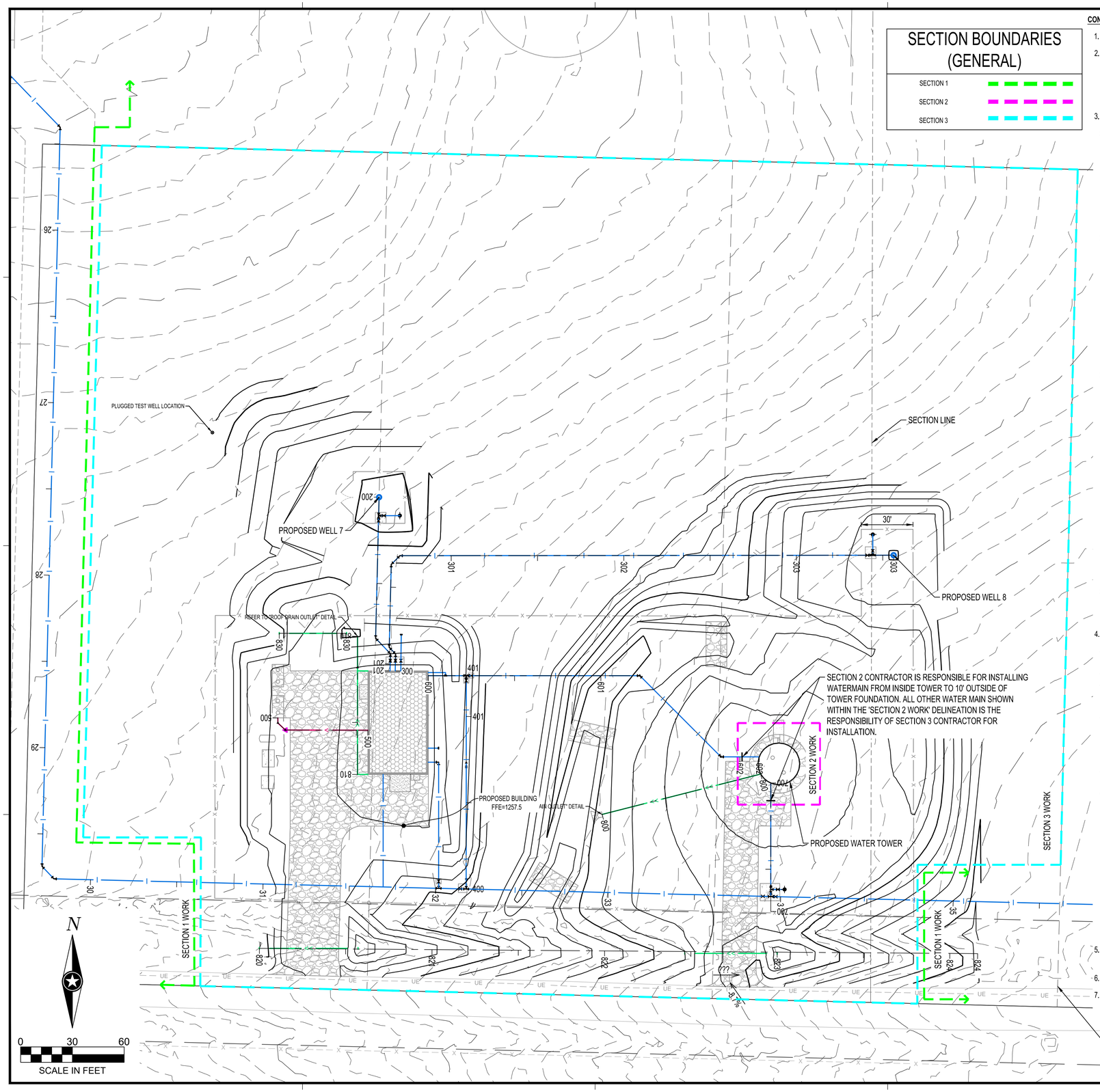
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C0-DETAILS
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SITE DETAILS

SHEET

C0-24



CONSTRUCTION STAGING:

1. INSTALL EROSION CONTROL DEVICES AND TRAFFIC CONTROL.
2. SECTION 3 CONTRACTOR PERFORMS GRADING OPERATIONS FOR ENTIRE SITE. GRADING SHALL BE COMPLETED TO WITHIN 12" OF THE FINAL PROPOSED GRADE ELEVATIONS AND SHALL INCLUDE ALL EMBANKMENT MATERIAL MOVING. TOP SOIL SHALL BE RESERVED UNTIL FINAL GRADING OPERATIONS UNDER STEP 5. SECTION 3 CONTRACTOR TO PERFORM TEMPORARY EROSION CONTROL MEASURES ONCE HE/SHE HAS COMPLETED THIS GRADING STEP AND WILL BE PAID ACCORDINGLY.
3. GENERAL SCOPE OF WORK

3.1. SECTION 1 WORK:

3.1.1. INCLUDES WATER MAIN EXTENSION FROM STATION 0+00 TO 30+82 AND STATION 34+81 TO 100+75. BOTH THE EASTERN AND WESTERN ALIGNMENTS SHALL BE CAPPED IF INSTALLED BEFORE SECTION 3 WATER MAIN IS INSTALLED.

3.1.2. IF SECTION 3 WATER MAIN IS INSTALLED BEFORE SECTION 1 WATER MAIN, CONNECTIONS TO THE SECTION 3 WATER MAIN SHALL BE INCLUDED.

3.1.3. SECTION 1 CONTRACTOR IS RESPONSIBLE FOR ALL SEEDING AND STABILIZATION RELATED TO SECTION 1 WORK. REFER TO SHEET C3-11 FOR ADDITIONAL STAGING AND SITE STABILIZATION INFORMATION.

3.2. SECTION 2 WORK:

3.2.1. INCLUDES THE WATER TOWER, SPLASH PAD, DOOR APRONS, AND FOUNDATION. INCLUDES EXTENDING WATER MAIN TO 10' OUTSIDE OF THE TOWER FOUNDATION FOR BOTH THE FILL AND EMPTY LINE OF THE TOWER AND EXTENDING THE FLOOR DRAIN TO 10' OUTSIDE THE TOWER FOUNDATION. BOTH WATER MAINS AND STORM DRAIN SHALL BE CAPPED IF INSTALLED BEFORE SECTION 3 WATER MAIN AND STORM DRAIN IS INSTALLED. IF SECTION 3 WATER MAIN IS INSTALLED BEFORE SECTION 2 WATER MAIN AND STORM DRAIN, CONNECTIONS TO SECTION 3 WATER MAIN AND STORM DRAIN SHALL BE INCLUDED.

3.2.2. SECTION 2 CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING TEMPORARY EROSION CONTROL SEEDING/GROUND STABILIZATION ONCE HIS/HER WORK IS CONSTRUCTED.

3.2.3. REFER TO SHEET C3-10 FOR ADDITIONAL STAGING AND SITE STABILIZATION INFORMATION.

3.3. SECTION 3 WORK:

3.3.1. INCLUDES THE WATER TREATMENT PLANT, TWO (2) WELLS, SITE YARD PIPING, SEPTIC TANK, FENCE, FINAL DRIVEWAY ACCESS TO BOTH WATER TOWER AND WATER TREATMENT PLANT, SITE GRADING AND ALL FINAL SEEDING AND EROSION CONTROL ON THE SITE (WITH EXCEPTION OF SECTION 1 BOUNDARIES).

3.3.2. WATER MAINS CONNECTING TO SECTION 1 AND/OR SECTION 2 WORK SHALL BE CAPPED IF INSTALLED BEFORE SECTION 1 AND/OR SECTION 2 WORK. IF SECTION 1 AND/OR SECTION 2 WORK IS INSTALLED BEFORE SECTION 3 WORK, CONNECTIONS TO SECTION 1 AND/OR SECTION 2 WATER MAINS SHALL BE INCLUDED.

3.3.3. SECTION 3 CONTRACTOR IS RESPONSIBLE FOR ALL GRADING. INITIAL MOVEMENT OF EMBANKMENT MATERIAL SHALL HAPPEN BEFORE SECTION 2 CONTRACTOR ARRIVES ON SITE, ACCORDING TO STEP 2.

3.3.4. SECTION 3 CONTRACTOR IS RESPONSIBLE FOR FINAL TOPSOIL PLACEMENT, ALL PERMANENT SEEDING AND ESTABLISHMENT, AND ALL FINAL EROSION CONTROL MEASURES (INSTALLATION & REMOVAL). IF SECTION 2 MOBILIZATION TO THE SITE IS IMMINENT WHEN SECTION 3 CONTRACTOR FINISHES INITIAL GRADING, SECTION 3 CONTRACTOR MAY NOT BE REQUIRED TO PLACE TEMPORARY STABILIZATION MATERIAL AND WILL BE PAID ACCORDINGLY TO THE UNIT PRICE FOR TEMPORARY STABILIZATION.

3.3.5. REFER TO SHEET C3-11 FOR ADDITIONAL STAGING AND SITE STABILIZATION INFORMATION.

3.4. *EACH SECTION CONTRACTOR IS RESPONSIBLE FOR COORDINATING WORK WITH OTHER SECTION CONTRACTORS AS NECESSARY ACCORDING TO SECTION DELINEATIONS SHOWN ON CONSTRUCTION PLAN SHEETS. PERFORM INTERMEDIATE AND PERMANENT SITE STABILIZATION ACCORDING TO GENERAL PERMIT NO. 2 REQUIREMENTS.

4. STARTUP, TESTING, AND SAMPLING:

4.1. *ALL SAMPLES COLLECTED FROM A HYDRANT SHALL BE COLLECTED VIA A HYDRANT-ADAPTED SMOOTH NOSE SAMPLE TAP.

4.1. WEEK A: DISINFECT WELLS AND RECEIVE PASSING BACTERIA SAMPLE RESULTS (SECTION 3).

4.2. WEEK B&C: PRESSURE TEST AND DISINFECT ALL WATER MAIN ON SITE AND WITHIN WATER TREATMENT PLANT AS DELINEATED ON SECTIONAL BREAKDOWN PLAN SHEETS. RECEIVE PASSING BACTERIA SAMPLE RESULTS (SECTION 3).

4.3. WEEK D: STARTUP WATER PLANT (SECTION 3), FILL AND DISINFECT WATER TOWER (SECTION 2). RECEIVE PASSING BACTERIA SAMPLE RESULTS FOR WATER TOWER (SECTION 2).

4.3.1. *IF TOWER DISINFECTION IS DONE VIA THE HIGH-CONCENTRATION METHOD, SECTION 3 CONTRACTOR SHALL COORDINATE WITH SECTION 1 CONTRACTOR TO REUSE CHLORINATED WATER IN SECTION 1 WATER MAIN TESTING.

4.4. WEEK E&F: PRESSURE TEST OFF-SITE WATER MAIN. DISINFECT WATER MAIN AND RECEIVE PASSING BACTERIA SAMPLE RESULTS ACCORDING TO IOWA DNR VARIANCE (SECTION 1).

4.5. WEEK G: COORDINATE SYSTEM TRANSFER WITH CITY. TRANSFER SHALL NOT OCCUR DURING WOODBURY COUNTY FAIR OR MOVILLE DAYS (1ST WEEKEND IN JUNE).

4.5.1. SECTION 1 CONTRACTOR TO CONNECT NEW WATER MAINS TO EXISTING WATER MAINS. VALVES ON NEW WATER MAIN SHALL REMAIN CLOSED.

4.5.2. CITY TO FILL NEW TOWER TO 35' RELATIVE ELEVATION OR 1305' REGIONAL ELEVATION.

4.5.3. CITY TO FILL EXISTING TOWER TO HIGH WATER LINE (101' RELATIVE ELEVATION OR 1305' REGIONAL ELEVATION).

4.5.4. CITY TO SHUT OFF EXISTING WELLS AND VALVE OFF EXISTING WATER TREATMENT PLANT.

4.5.5. SECTION 1 CONTRACTOR TO SLOWLY OPEN VALVES CONNECTING NEW WATER MAIN TO EXISTING WATER MAIN.

4.5.6. CITY TO VALVE OFF EXISTING WATER TOWER.

4.5.7. CITY TO POWER ON NEW WATER PLANT AND WELLS FOR NORMAL OPERATION.

4.5.8. TRANSFER IS COMPLETE. CITY CAN CONTINUE WITH SCHEDULED FLUSHING OF ENTIRE DISTRIBUTION SYSTEM.

5. SECTION 3 CONTRACTOR PERFORMS FINAL GRADING OPERATIONS, TOPSOIL PLACEMENT, AND PERMANENT SEEDING ESTABLISHMENT.
6. REMOVE TRAFFIC CONTROL.
7. ONCE DELINEATED SECTIONS HAVE ESTABLISHED PERMANENT GROUND COVER, EACH SECTION CONTRACTOR IS RESPONSIBLE FOR REMOVING EROSION CONTROL DEVICES ACCORDING TO THEIR SCOPE OF WORK.

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C1-SWPPP
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SECTIONAL BREAKDOWN

SHEET

C1-30

DEFINITIONS:
A. EROSION CONTROL MULCHING - FURNISHING MULCH AND TACKIFIER, PROVIDING EQUIPMENT SPECIFIC TO HYDROMULCHING, AND APPLYING THE MULCH TO A SPECIFIED AREA. THIS ITEM IS FOR THE PURPOSE OF PROVIDING STABILIZATION TO AREAS NOT BEING WORKED THROUGHOUT THE CONSTRUCTION SEASON AND WILL BE PAID AS NEEDED.
B. END OF SEASON TEMPORARY EROSION CONTROL - FURNISHING, PLACING, AND MAINTAINING THE END OF SEASON TEMPORARY EROSION CONTROL THROUGHOUT THE WINTER SEASON. THIS ITEM IS FOR THE PURPOSE OF PROVIDING STABILIZATION TO AREAS DURING THE WINTER SEASON AND WILL BE PAID AS NEEDED.

SECTION 3 CONTRACTOR IS ALLOWED TO UTILIZED DRIED AND INCORPORATED DRILLING MUD AS FILL MATERIAL IN NON-STRUCTURAL AREAS. REFER TO SECTION 1 NOTES.

SECTION 3 CONTRACTOR IS RESPONSIBLE FOR SECTION 3 STABILIZED CONSTRUCTION EXIT.

SECTION 2 CONTRACTOR WILL INHERIT A STABILIZED STAGING AREA WHEN THEY MOBILIZE TO THE SITE.

SECTION 2 CONTRACTOR SHALL:
-BE RESPONSIBLE FOR ANY TEMPORARY GROUND STABILIZATION MEASURES NECESSARY IN STAGING AREA ONCE SECTION 2 CONTRACTOR MOBILIZES THE SITE.
-BE RESPONSIBLE FOR PERFORMING TEMPORARY EROSION CONTROL SEEDING/GROUND STABILIZATION WHILE UTILIZING THE STAGING AREA.
-LEAVE THE STAGING AREA STABILIZED WHEN THEY DEMOBILIZE FROM THE SITE AND TURN THE AREA BACK OVER TO THE SECTION 3 CONTRACTOR FOR FINAL TOPSOIL PLACEMENT AND SEEDING.
-LEAVE SITE FREE OF DEBRIS GREATER THAN GOLF BALL SIZE AND SURFACE SHALL BE IN SIMILAR CONDITION TO WHEN THE CONTRACTOR MOBILIZED TO SITE, READY FOR TOPSOIL PLACEMENT.

IF SECTION 3 TOPSOIL PLACEMENT IS IMMINENT WHEN SECTION 2 CONTRACTOR LEAVES SITE, SECTION 2 CONTRACTOR MAY NOT BE REQUIRED TO PLACE TEMPORARY STABILIZATION MATERIAL AND WILL BE PAID ACCORDINGLY TO THE UNIT PRICE FOR TEMPORARY STABILIZATION.

SECTION 2 CONTRACTOR IS RESPONSIBLE FOR SECTION 2 STABILIZED CONSTRUCTION EXIT.

SECTION 1 CONTRACTOR WILL INHERIT A STABILIZED STAGING AREA WHEN THEY MOBILIZE THE SITE.

SECTION 1 CONTRACTOR SHALL:
-BE RESPONSIBLE FOR ANY TEMPORARY GROUND STABILIZATION MEASURES NECESSARY IN STAGING AREA ONCE SECTION 1 CONTRACTOR MOBILIZES TO THE STAGING AREA.
-BE RESPONSIBLE FOR PERFORMING TEMPORARY EROSION CONTROL SEEDING//GROUND STABILIZATION WHILE UTILIZING THE STAGING AREA.
-LEAVE THE STAGING AREA STABILIZED WHEN THEY DEMOBILIZE FROM THE SITE AND TURN THE AREA BACK OVER TO THE SECTION 3 CONTRACTOR FOR FINAL SEEDING.
LEAVE SITE FREE OF DEBRIS GREATER THAN GOLF BALL SIZE AND SURFACE SHALL BE IN SIMILAR CONDITION TO WHEN CONTRACTOR MOBILIZED TO SITE, READY FOR SEEDING.

IF SECTION 3 SEEDING IS IMMINENT WHEN SECTION 1 CONTRACTOR LEAVES THE STAGING AREA, SECTION 1 CONTRACTOR MAY NOT BE REQUIRED TO PLACE TEMPORARY STABILIZATION MATERIAL AND WILL BE PAID ACCORDINGLY TO THE UNIT PRICE FOR TEMPORARY STABILIZATION.

SECTION 1 CONTRACTOR IS ALLOWED TO UTILIZE STAGING AREA FOR DISPOSAL OF DRILLING MUD. EXISTING SITE TOPSOIL SHALL BE PRESERVED AND THE DRILLING MUD SHALL BE DRIED AND INCORPORATED INTO THE EXISTING SOILS BELOW THE TOPSOIL LAYER. STAGING AREA SHALL BE GRADED TO DRAIN AND TOPSOIL SHALL BE SALVAGED AND REPLACED. SECTION 3 CONTRACTOR IS ALLOWED TO UTILIZED DRIED AND INCORPORATED DRILLING MUD AS FILL MATERIAL IN NON-STRUCTURAL AREAS.

SECTION 1 CONTRACTOR IS RESPONSIBLE FOR SECTION 1 STABILIZED CONSTRUCTION EXIT.

PLUGGED TEST WELL LOCATION

REFER TO "ROOF DRAIN OUTLET" DETAIL

REFER TO "ROOF DRAIN OUTLET" DETAIL

40'
110'
117'

SECTION BOUNDARIES (GENERAL)

- SECTION 1
- SECTION 2
- SECTION 3

N

0 30 60
SCALE IN FEET

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EST. 1887
IOWA

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C1-SWPPP
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

CONSTRUCTION STAGING AREAS

SHEET

C1-31

EXISTING LOT LINE, TYP.

SETBACK LINE

PLUGGED TEST WELL LOCATION

QUARTER-QUARTER SECTION LINE

SECTION LINE

160TH STREET

N

0 30 60

SCALE IN FEET

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CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C2-EXIST
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

EXISTING SITE AND REMOVAL PLAN

SHEET

C2-20

PAVEMENT LEGEND	
SYMBOL	DESCRIPTION
	AGGREGATE SURFACING

QUARTER-QUARTER SECTION LINE

PLUGGED TEST WELL LOCATION

TWO (2) 10' GATES

30'

30'

PROPOSED WELL 7

PROPOSED WELL 8

TWO (2) 10' GATES

ROCK CHECKS, TYP

VERTICAL RAIN LEADER, TYP

45'

35'

SEPTIC TANKS

PROPANE TANK

GENERATOR CONCRETE PAD
REFER TO E SHEETS

TRANSFORMER CONCRETE PAD
REFER TO E SHEETS

90'

60'

30'

PROPOSED WTP
FFE=1258.50

FUTURE POTENTIAL BACKWASH
INFILTRATION BASIN

EXISTING LOT LINES

6' HEIGHT CHAIN LINK FENCE

SETBACK LINE

PROPOSED WATER TOWER
FFE=1270.00

CONCRETE VALVE BOX OUT, TYP.
(REFER TO DETAIL)

ONE (1) 12' GATE

20'

TWO (2) 10' GATES

30'

160TH STREET

N

0 30 60

SCALE IN FEET

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

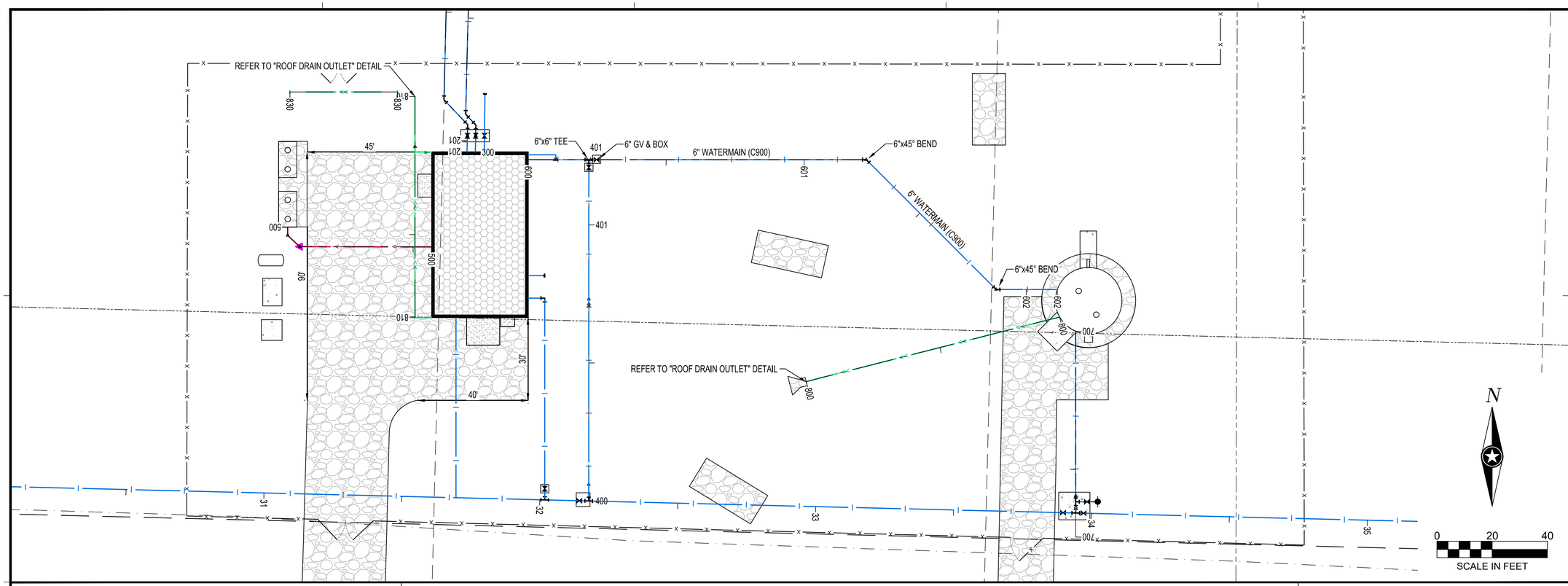
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C3-SITE
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

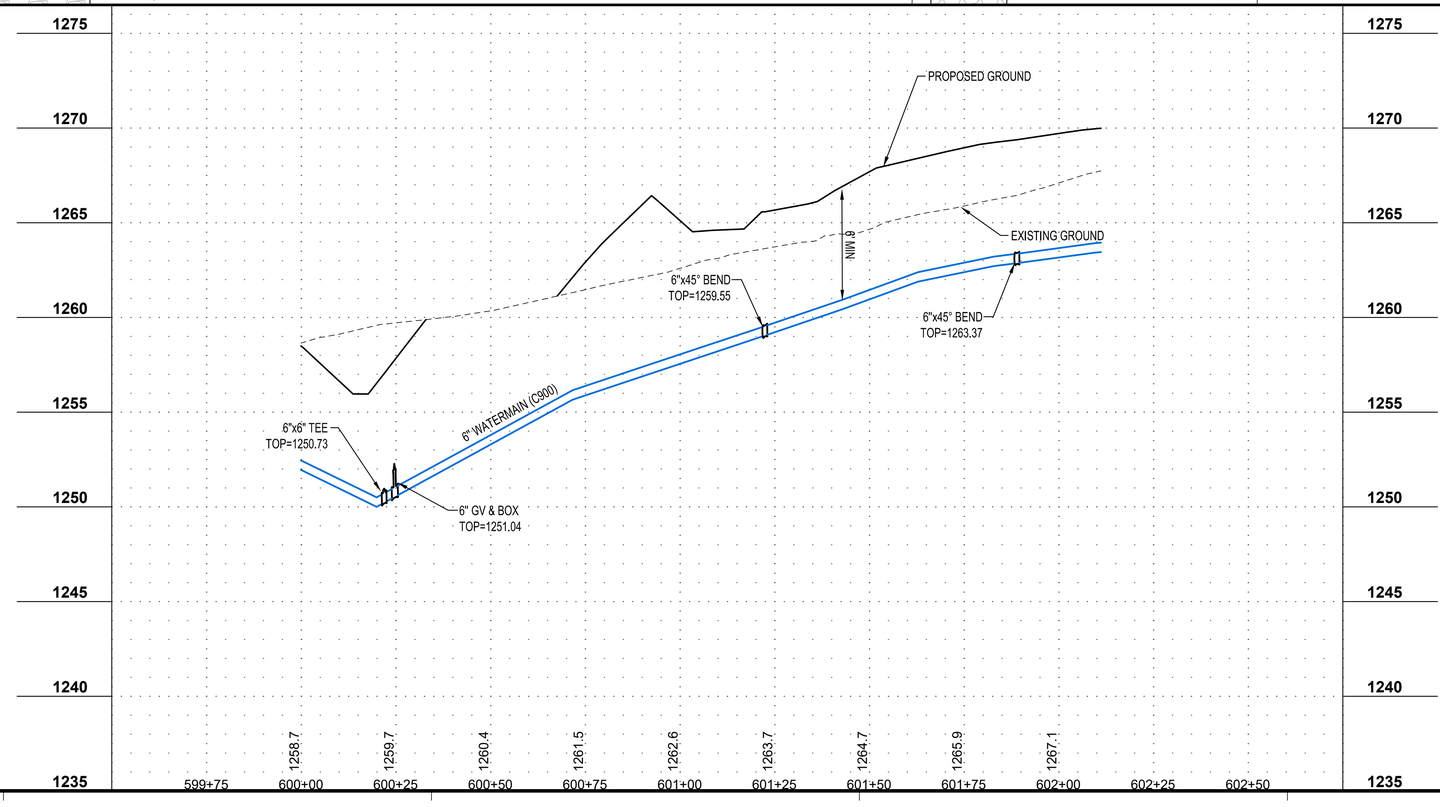
TITLE

SITE PLAN

SHEET

C3-10





NOTE:
XXX.X - EXISTING GROUND
XXX.XX - PROPOSED GROUND

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

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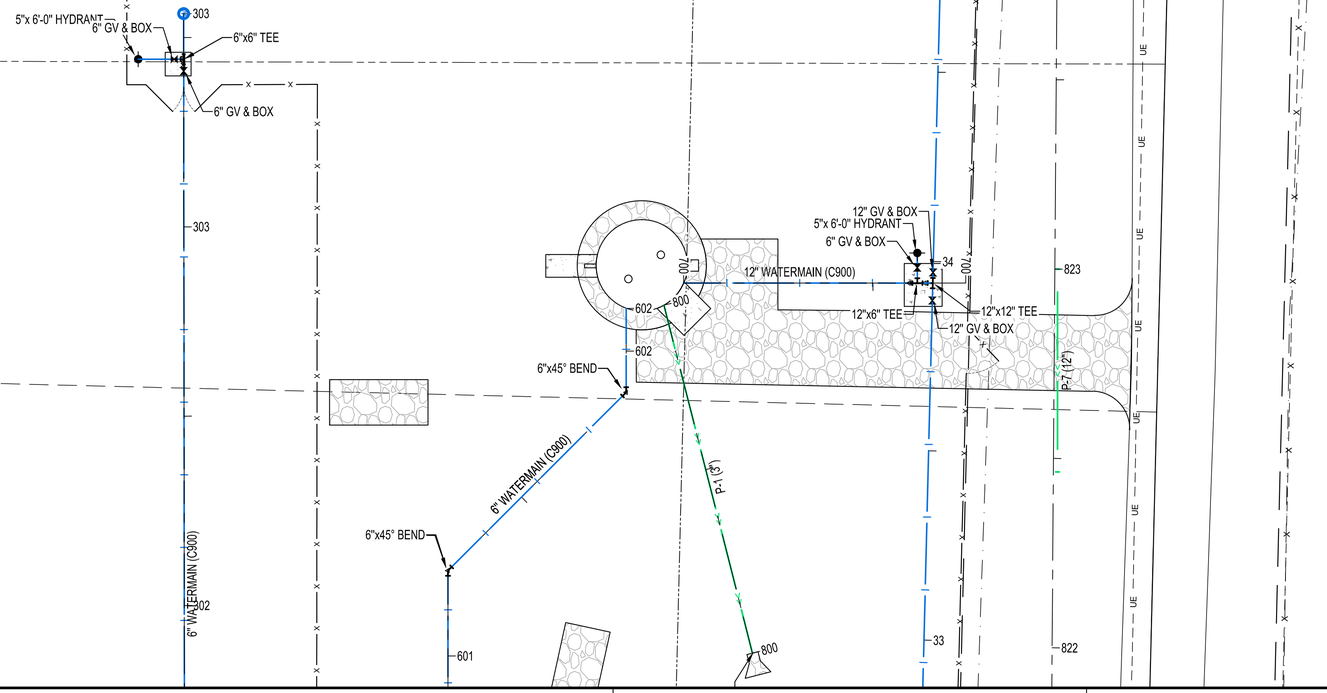
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C3-PROF - SITE
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

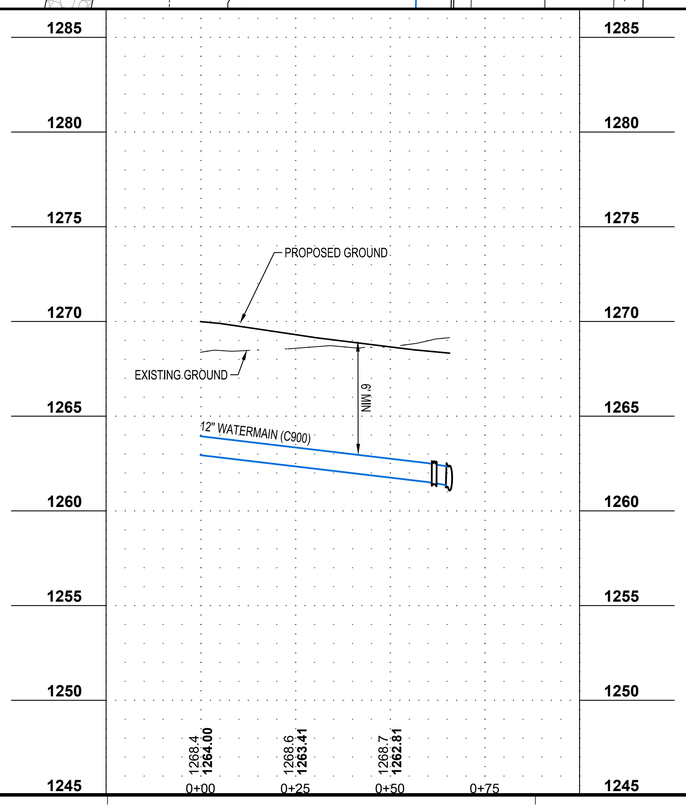
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-30





N

0 20 40

SCALE IN FEET

NOTE:
XXX.X - EXISTING GROUND
XXX.XX - PROPOSED GROUND

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

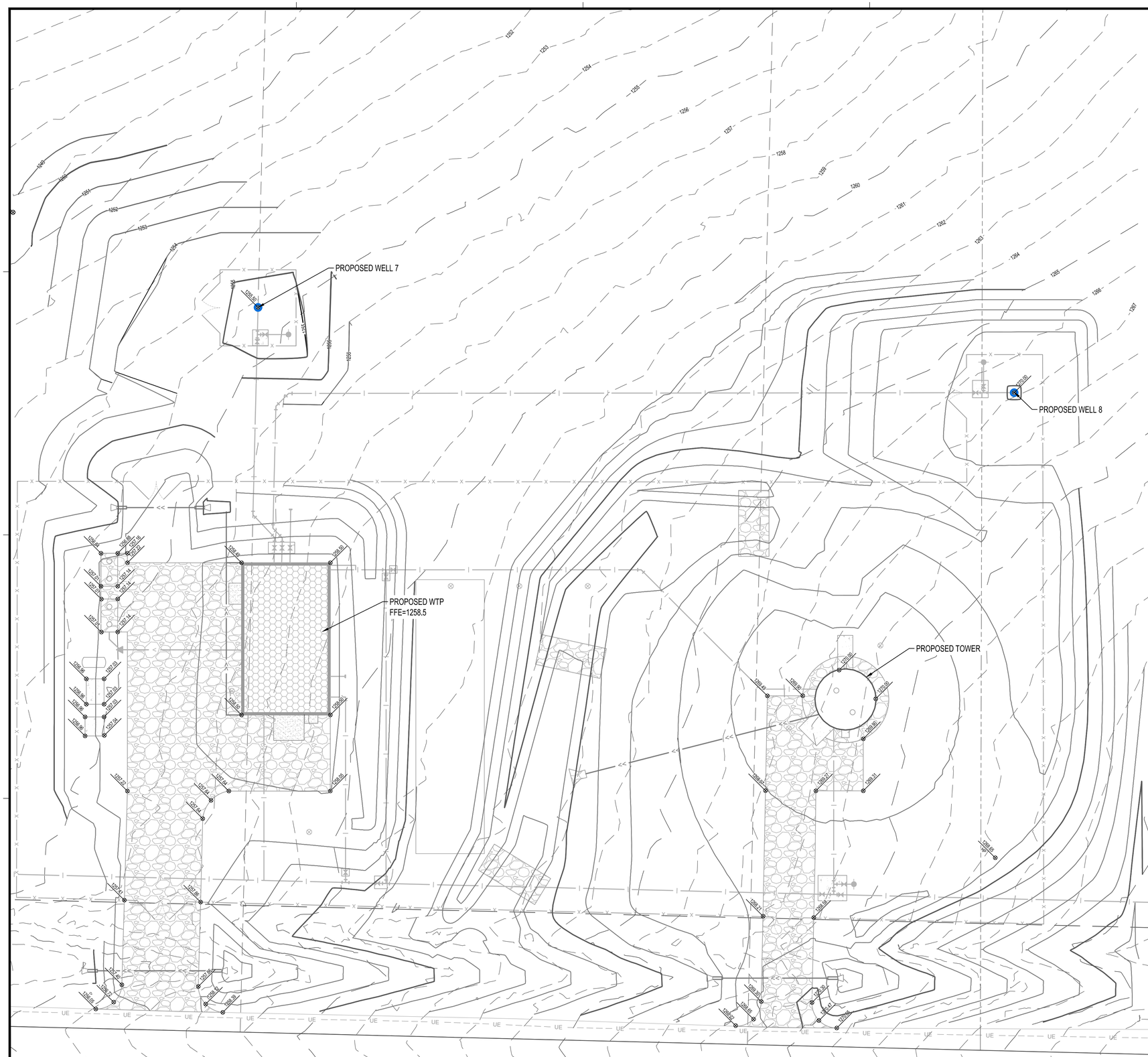
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C3-PROF - SITE
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-31



GRADING LEGEND

101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)
+ XXXX.XX	EXISTING SPOT ELEVATION
XXX.XX	PROPOSED SPOT ELEVATION
XXX.XX	PROPOSED TOP BACK OF CURB / TOP OF TURNDOWN WALK SPOT ELEVATION
XXX.XX TW XXX.XX BW	PROPOSED TOP OF RETAINING WALL (T/W) AND BOTTOM OF RETAINING WALL (B/W)
-X.X%	SURFACE GRADE / DIRECTION

GENERAL GRADING NOTES

PROPOSED CONTOURS SHOW FINISHED GRADE ELEVATIONS. BUILDING PAD AND PAVEMENT HOLD DOWNS ARE NOT INCLUDED. WHEN CONSTRUCTING BUILDING PADS WITH A HOLD DOWN, GRADE AREAS TO ENSURE POSITIVE BUILDING PAD DRAINAGE.

EARTHWORK - SITE BALANCE

TOPSOIL			
CUT/STRIP (EV):		2,118	CY
FILL (CV):		-4,017	CY
SHRINK LOSS	20%	-424	CY
BALANCE (CV):		-2,322	CY
EMBANKMENT			
CUT (EV):		2,994	CY
FILL (CV):		-246	CY
SHRINK LOSS	15%	-449	CY
BALANCE (CV):		2,299	CY
TOTAL SUMMARY			
TOPSOIL (CV):		-2,322	CY
CLAY (CV):		2,299	CY

NOTES:

1. SHRINK AND SWELL FACTORS WERE APPLIED TO CALCULATIONS. ESTIMATED QUANTITIES PROVIDED ABOVE ARE FOR INFORMATIONAL PURPOSES ONLY. NO GUARANTEE, EXPRESSED OR IMPLIED, IS MADE TO THEIR ACCURACY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO SUBMITTING A BID FOR THE PROJECT.
2. EARTHWORK QUANTITIES WITH A POSITIVE NUMBER ARE CUT OR MATERIAL GENERATED. A NEGATIVE NUMBER IS FILL OR MATERIAL APPLIED. A POSITIVE BALANCE INDICATES AN EXCESS IN MATERIAL. A NEGATIVE BALANCE INDICATES A SHORTAGE OF MATERIAL.
3. A SHRINKAGE FACTOR OF 15% (EMBANKMENT) AND 20% (TOPSOIL) WERE APPLIED TO ALL EXCAVATED MATERIAL WHEN DETERMINING SITE BALANCE.
4. 12" OF TOPSOIL WAS CALCULATED IN ALL TOPSOIL STRIP AREAS. ALL AREAS SHALL BE DRESSED WITH A MINIMUM OF 8" OF TOPSOIL.
5. THE SITE BALANCE PROVIDED ABOVE IS FOR INFORMATIONAL PURPOSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL QUANTITIES PRIOR TO SUBMITTING A BID FOR THE PROJECT.

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EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 2 C4-GRADE
DRAWN BY	AMS
DESIGNED BY	AMS, BAS
REVIEWED BY	BABS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

OVERALL GRADING PLAN

SHEET

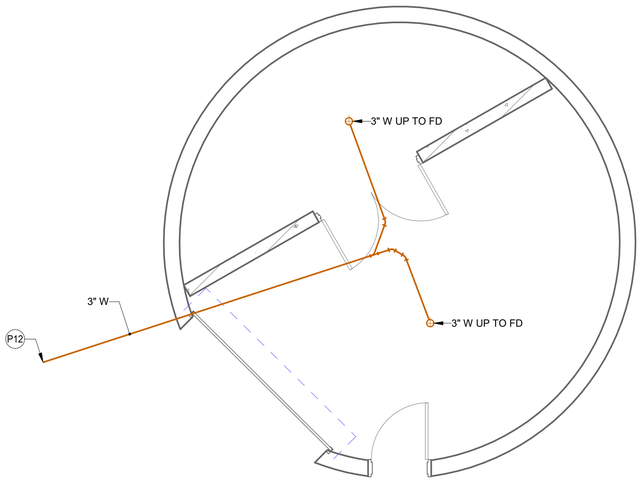
C4-10

PLUMBING FIXTURE SCHEDULE

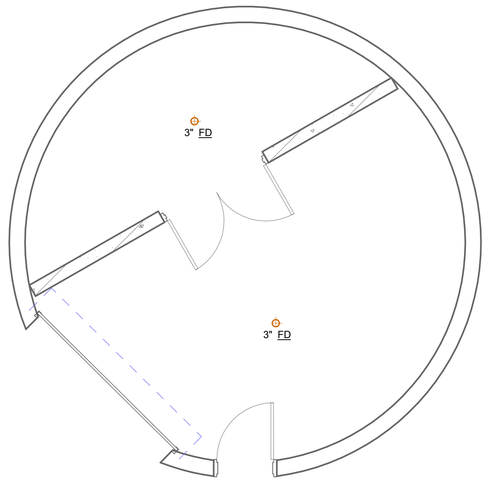
FIXTURE	MFR	MODEL	FINISH / COLOR	TRIM			WASTE	VENT	COLD WATER	HOT WATER	NOTES
				MFR	MODEL	TYPE					
FD	WADE	1100 SERIES	NICKEL BRONZE	WADE	TYPE 'A'	ROUND GRID TOP	VARIES				PROVIDE AND INSTALL UNIT FOR FINISHED FLOOR, ROUND NICKEL BRONZE TOP. PROVIDE AND INSTALL UNIT WITH NICKEL BRONZE STRAINER. FLOOR DRAINS SHALL BE SIZED PER PLANS.

KEYNOTE LEGEND

P12	REFERENCE CIVIL DRAWINGS FOR CONTINUATION AND ELEVATION OF SANITARY LINE.



1 FOUNDATION DRAIN, WASTE, VENT PLAN
1/4" = 1'-0"



2 FIRST FLOOR DRAIN, WASTE, VENT PLAN
1/4" = 1'-0"

N

0 1/4" 1/2" 1" 2"

5/28/2025 11:15:08 AM

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PROJECT

CITY OF MOVILLE SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	
DRAWN BY	MJN
DESIGNED BY	MJL
REVIEWED BY	MJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	

TITLE

PLUMBING PLAN

SHEET

P2-11

ELECTRIC WALL HEATER SCHEDULE

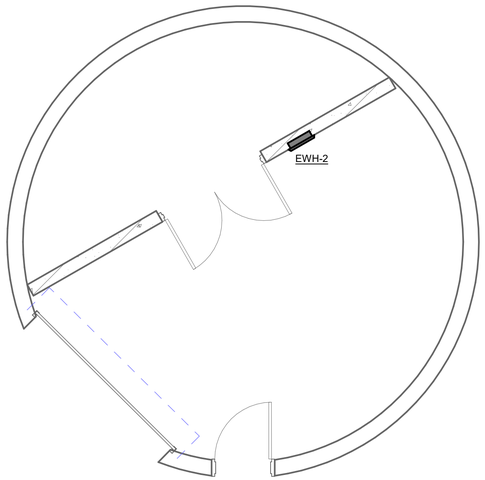
NOTES:
1. INSTALL AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE NON FUSED DISCONNECT. COORDINATE INSTALLATION WITH ELECTRICAL.
3. PROVIDE UNIT WITH SURFACE MOUNTING FRAME.

MARK	MFR	MODEL	LOCATION	CFM	WATTS	HEATING OUTPUT (BTU/H)	VOLTAGE / PH.	NOTES
EWH-2	QMARK	CWH1208DSF	WATER TOWER	65	2000 W	6,826	208/1	1, 2, 3

CONTROL SEQUENCE

EWH-2

WHEN SPACE TEMPERATURE DROPS BELOW 55°F, AS SENSED BY THE INTEGRAL THERMOSTAT, UNIT SHALL RUN TO MAINTAIN SETPOINT.



1 WATER TOWER - HVAC PLAN
1/4" = 1'-0"

N

0 1/4" 1/2" 1" 2"

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PROJECT

CITY OF MOVILLE SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

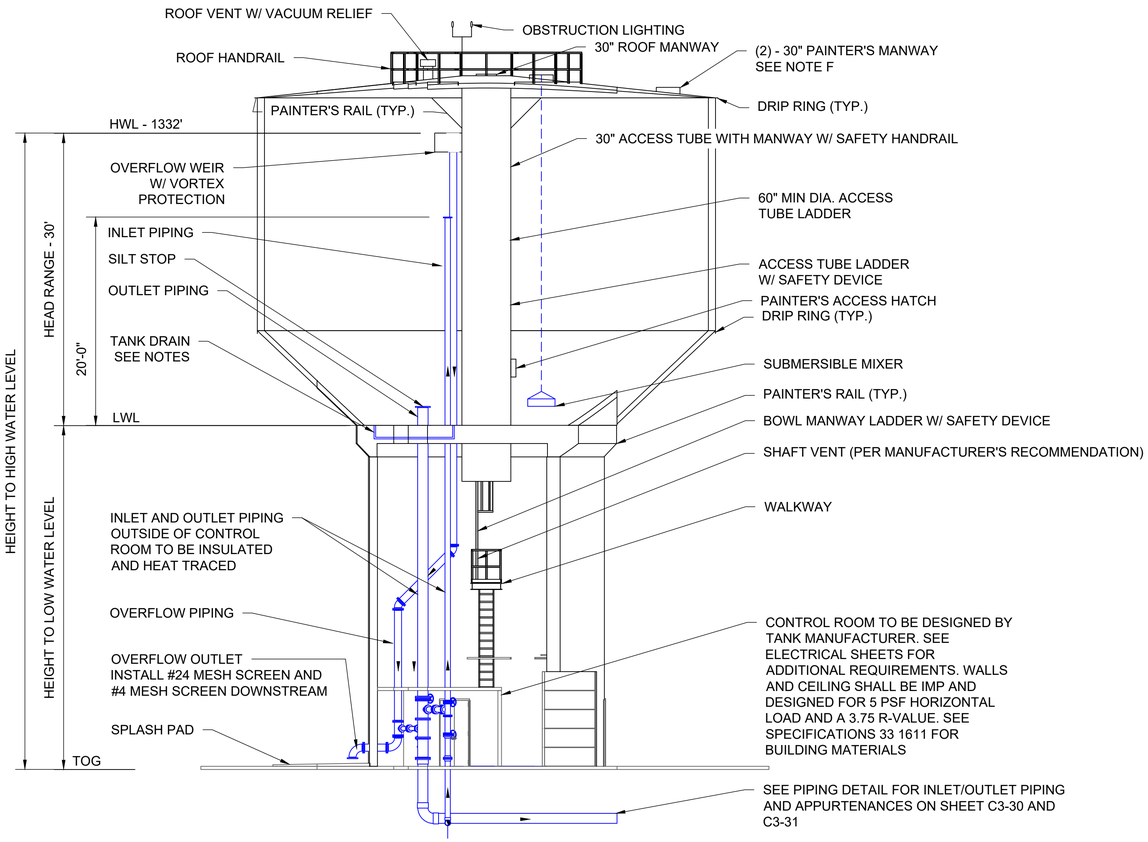
PROJECT NO.	25-27061
FILE NAME	
DRAWN BY	MJN
DESIGNED BY	MJL
REVIEWED BY	MJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	

TITLE

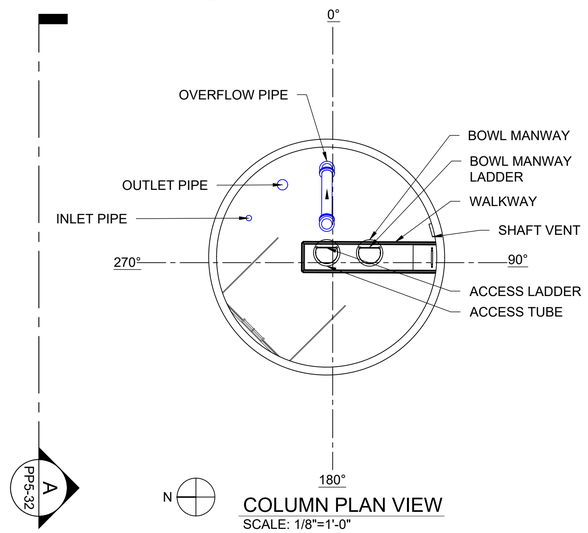
HVAC PLAN

SHEET

M2-12



A WATER TOWER SECTION VIEW
SCALE: 1/8"=1'-0"

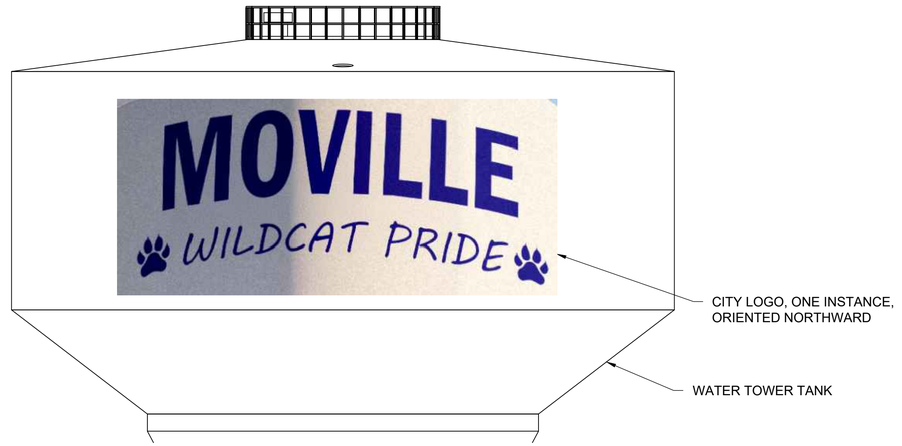


COLUMN PLAN VIEW
SCALE: 1/8"=1'-0"

TANK SIZING CRITERIA	
DESIGN VOLUME	400,000 GALLONS
OVERFLOW ELEVATION (HWL)	1332'
TOP OF GROUND ELEVATION (TOG)	1270'
INLET PIPE SIZE	6 INCH
OUTLET PIPE SIZE	12 INCH
RISER AND OVERFLOW CONNECTION PIPE	3 INCH
OVERFLOW PIPE SIZE	8 INCH
HEAD RANGE	30 FEET

NOTES:

A. SEE DESIGN CRITERIA TABLE AND SPECIFICATIONS FOR DESIGN CRITERIA AND DETAILS.
B. COMPOSITE ELEVATED STORAGE TANK SHALL BE DESIGNED, FABRICATED, AND ERECTED IN ACCORDANCE WITH AWWA D107, MOST RECENT VERSION.
C. TANK APPURTENANCES ARE ROTATED FOR CLARITY. DRAWINGS ARE NOT TO SCALE AND ARE FOR REFERENCE ONLY. TANK MANUFACTURER TO PROVIDE DESIGN DRAWINGS FOR REVIEW AND APPROVAL BY OWNER.
D. ALL LADDERS, LADDER SAFETY DEVICES, PLATFORMS, HANDRAILS, ETC. SHALL CONFORM TO CURRENT OSHA REGULATIONS.
E. ROOF HANDRAIL SHALL BE PIPE STYLE WITH MINIMUM 20 FOOT DIAMETER. HANDRAIL SHALL BE SIZED FOR ANTENNA LOADS.
F. INSTALL TWO (2) 30-INCH PAINTERS MANWAY, EQUALLY SPACED APART, ON THE ROOF PERIMETER.
G. SURFACE PREPARATION AND COATING REQUIREMENTS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
H. TANK SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C652-02.
I. TANK SHALL BE EQUIPPED WITH A 10-FT X 10-FT VEHICLE ACCESS DOOR AND 36-INCH X 84-INCH PERSONNEL DOOR. SECURED VIA KEYED AND KEYPAD ENTRY OPTIONS.
J. PROVIDE ADEQUATE FREEBOARD TO ENSURE ROOF PROJECTIONS AND PAINTER'S RAIL REMAIN ABOVE THE HIGH-WATER LEVEL.
K. FOUNDATION DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DESIGN SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS PROVIDED BY THE LICENSE GEOTECHNICAL ENGINEER AND THE LATEST VERSION OF AWWA D107.
L. FOUNDATION DESIGNED SHALL BE SIGNED BY A PROFESSIONAL ENGINEER LICENSED TO PERFORM WORK IN THE JURISDICTION INDICATED.
M. CONTRACTOR SHALL INSTALL PIPING AND APPURTENANCES A MINIMUM OF SIX (6) FEET DEEP. IF MINIMUM DEPTH CANNOT BE MET, CONTRACTOR SHALL INSTALL 4" RIGID FOAM INSULATION ON PIPE TO PREVENT FREEZING.
N. INLET/OUTLET PIPE ENTRANCE SAFETY PROTECTION FOR PIPE LARGER THAN 12 INCHES IN ACCORDANCE WITH AWWA D107.
O. RISER PIPES OVER EIGHT INCHES IN DIAMETER SHALL HAVE PROTECTIVE BARS OVER THE RISER OPENINGS INSIDE THE TANK.



CITY LOGO DETAIL
N.T.S

NOTE: ACTUAL LOGO SIZE AND LAYOUT SHALL BE BY THE TANK CONTRACTOR BASED ON THE TANK DIAMETER, LAYOUT SHOWN IS SCHEMATIC TO PROVIDE ORIENTATION, NUMBER OF LOGOS TO BE PAINTED, AND LOGO STYLE. SEE SPECIFICATIONS FOR PAINT COLORS AND LOGO DETAILS. CONTRACTOR SHALL VERIFY LOGO, COLOR, SIZE AND ORIENTATION WITH OWNER AND ENGINEER PRIOR TO PAINTING.

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	27061
FILE NAME	27061-PP5-32
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

TOWER PLAN & SECTION VIEWS

SHEET

PP5-32

S:\PROJECTS\27000 PROJ\27000-27099\27061 MOVILLE WATER SYSTEM IMPROVEMENTS-MOVILLE IA\27061 PLANT PROJECT\27061 MOVILLE WATER SYSTEM IMPROVEMENTS\ORTHOS\DWGS\27061-PP5-32.DWG

0 1/4"1/2" 1" 2"

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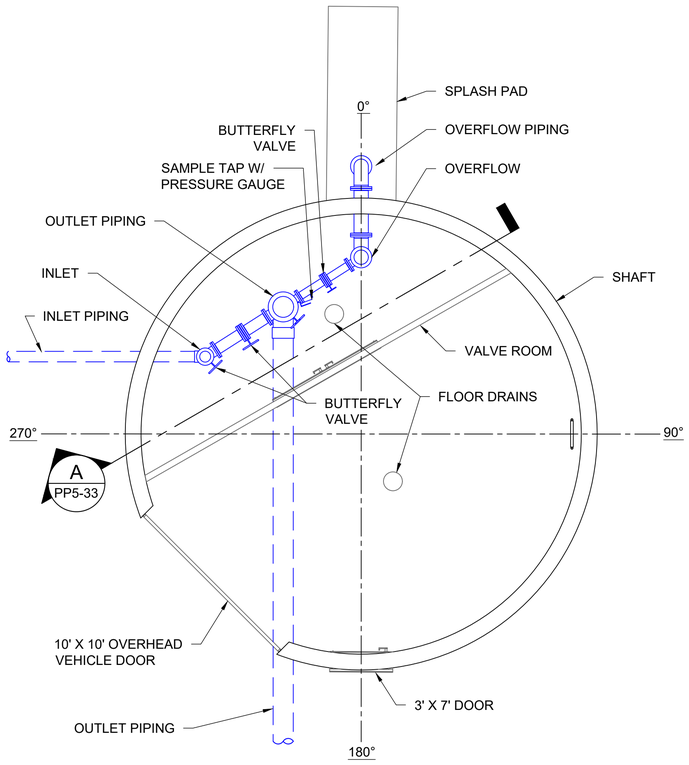
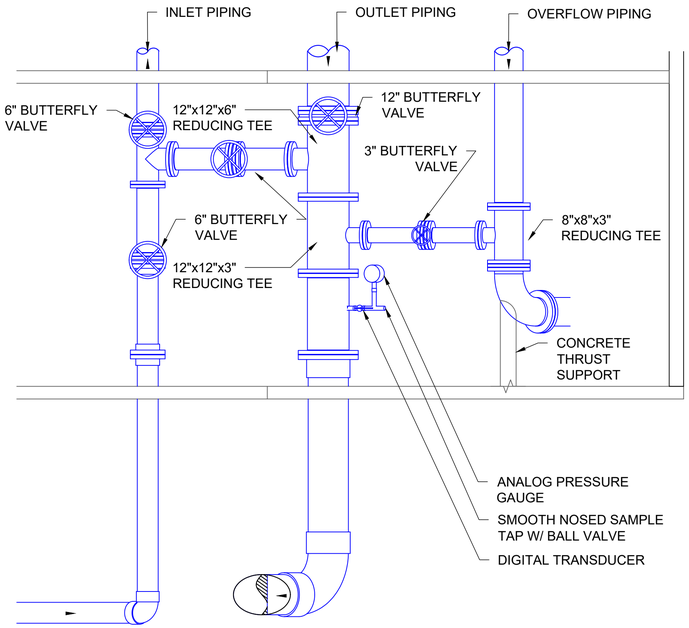
TANK SIZING CRITERIA	
DESIGN VOLUME	400,000 GALLONS
OVERFLOW ELEVATION (HWL)	1332'
TOP OF GROUND ELEVATION (TOG)	1270'
INLET PIPE SIZE	6 INCH
OUTLET PIPE SIZE	12 INCH
RISER AND OVERFLOW CONNECTION PIPE	3 INCH
OVERFLOW PIPE SIZE	8 INCH
HEAD RANGE	30 FEET

NOTES:

A. THIS LAYOUT IS SCHEMATIC AND FOR REFERENCE ONLY. FINAL LAYOUT SHALL BE COMPLETE BY THE TANK MANUFACTURER AND SUBMITTED TO OWNER AND ENGINEER FOR REVIEW.
B. ALL PIPE MATERIAL SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANY DIFFERENTIAL MOVEMENT.
C. CONNECT RISER AND OVERFLOW WITH A VALVED LATERAL FOR TANK DRAINING. MINIMUM 3 - INCH PIPING.
D. PROVIDE THRUST RESTRAINT AND SUPPORT AS REQUIRED.
E. INSTALL 3/4 - INCH TAPPINGS COMPLETE WITH BRONZE BALL VALVE AND PLUG ON INLET/OUTLET PIPE.
F. SLOPE SLAB MINIMUM 0.5% TO FLOOR DRAINS FOR DRAINAGE.
G. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED TO AVOID GALVANIC CORROSION.
H. CONTROL ROOM SHALL BE SIZED TO ACCOMMODATE ALL PIPING, APPURTENANCES, ELECTRICAL EQUIPMENT AND MECHANICAL EQUIPMENT. THERE SHALL BE A MINIMUM OF 5' OF WORKING SPACE ON EACH SIDE OF THE TANK CONTROL VALVE. CONTROL ROOM WALLS SHALL BE A MINIMUM OF 2 - FT FROM ALL PIPING TO ALLOW FOR MAINTENANCE SPACE. CONTROL ROOM SHALL INCLUDE AN EXTERIOR LADDER TO ACCESS THE INLET/OUTLET PIPING ON THE ROOF OF THE ROOM. A RAILING SHALL BE PROVIDED ON THE ROOF PER OSHA STANDARDS.



PLAN VIEW
SCALE: 1/4"= 1'-0"



A PIPING SECTION VIEW
SCALE: 1/2"= 1'-0"

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	27061
FILE NAME	27061-PP5-33
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

TOWER PLAN & SECTION VIEW 2

SHEET

PP5-33

S:\PROJECTS\27000 PROJ\27000-27099\27061 MOVILLE WATER SYSTEM IMPROVEMENTS-MOVILLE IA\27061 PLANT PROJECT\27061 MOVILLE WATER SYSTEM IMPROVEMENTS\ORTHOS\DWGS\27061-PP5-33.DWG

0 1/4"1/2" 1" 2"

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SHEET NOTES

1. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPATIBLE LIGHTING CONTROL DEVICES ARE SUPPLIED WITH LIGHTING PACKAGE.

2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.

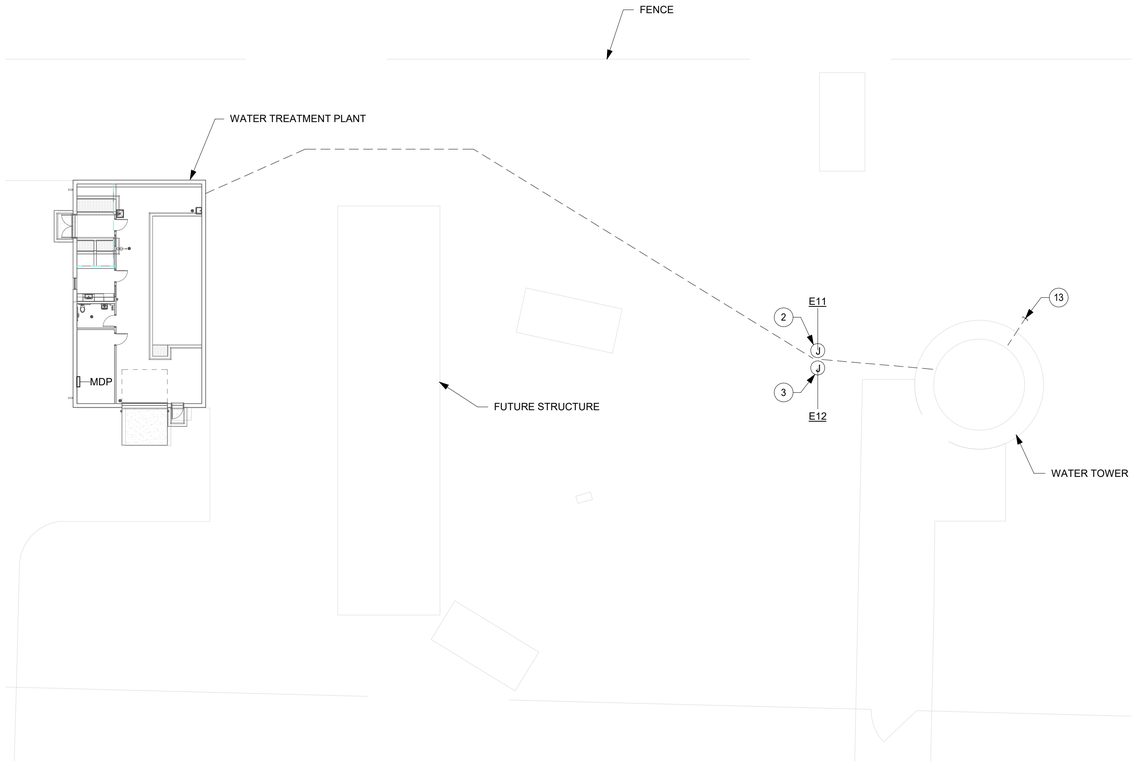
3. ALL LIGHTING SHALL COMPLY WITH LOCAL AND STATE ENERGY CODES.

4. ALL UNDERGROUND PVC CONDUIT SHALL TRANSITION TO GALVANIZED STEEL RIGID METAL CONDUIT PRIOR TO EMERGING FROM UNDERGROUND. REFER TO BELOW GRADE PVC CONDUIT DETAIL.

5. WHERE RIGID POLYVINYL (PVC) CONDUIT LARGER THAN 2 INCH (53 MM) TRADE SIZE IS PROVIDED, USE GALVANIZED STEEL RIGID METAL CONDUIT ELBOWS FOR BENDS.

ELECTRICAL KEYNOTE LEGEND

2	IN GRADE PULL BOX BY SECTION 3 CONTRACTOR FOR POWER. F&I UNDERGROUND CONDUIT FROM PULL BOX TO D11 FUSED DISCONNECT INSIDE TOWER BASE AND F&I CONDUCTORS FROM WATER PLANT PANELBOARD, REFER TO RISER DIAGRAM. COORDINATE INSTALLATION WITH SECTION 3 CONTRACTOR.
3	IN GRADE PULL BOX BY SECTION 3 CONTRACTOR FOR COMMUNICATIONS. F&I UNDERGROUND CONDUIT WITH PULL STRING FROM PULL BOX TO SPCP11 INSIDE TOWER BASE, REFER TO NETWORK ONE LINE DIAGRAM. COORDINATE INSTALLATION WITH SECTION 3 CONTRACTOR.
13	F&I (1) 1" EMPTY CONDUIT FROM TC11 TIME CLOCK FOR FUTURE TOWER SIGN LIGHTING. INSTALL CONDUIT UNDERGROUND AND STUB OUTSIDE TOWER BASE A MINIMUM OF 5 FEET AND CAP. F&I TRACER WIRE.



1 SITE POWER LIGHTING AND CONTROL PLAN
1" = 20'-0"

N

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EST. City of 1887
MOVILLE
IOWA

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

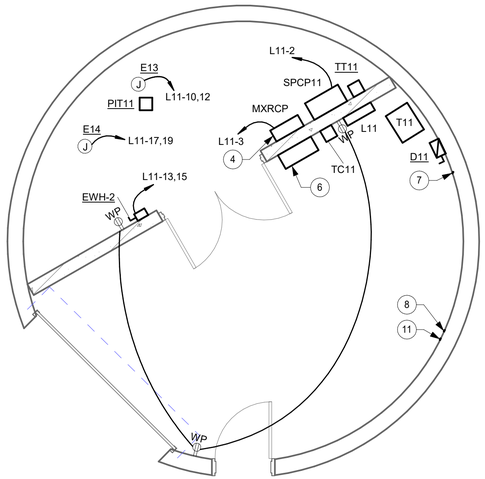
SITE POWER, LIGHTING, AND CONTROL PLAN

SHEET

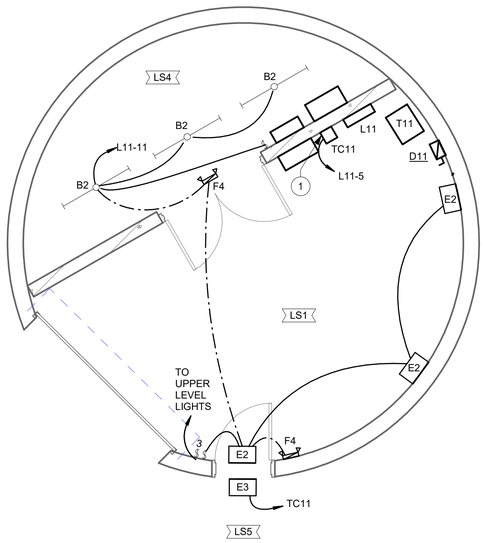
E2-00

0 1/4" 1/2" 1" 2"

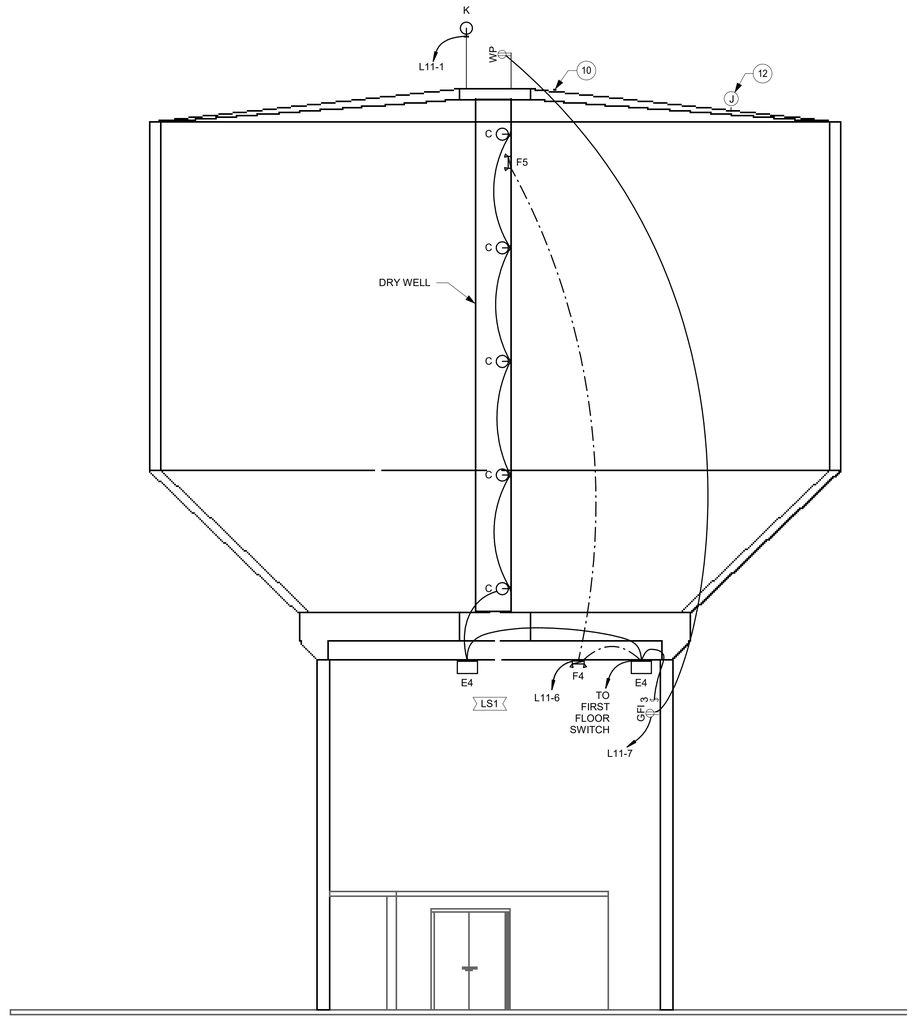
5/28/2025 9:18:39 AM



1 FIRST FLOOR POWER AND CONTROL PLAN
1/4" = 1'-0"



2 FIRST FLOOR LIGHTING PLAN
1/4" = 1'-0"



3 ELEVATION VIEW POWER AND LIGHTING PLAN
NOT TO SCALE

SHEET NOTES

1. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPATIBLE LIGHTING CONTROL DEVICES ARE SUPPLIED WITH LIGHTING PACKAGE.
2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
3. ALL LIGHTING SHALL COMPLY WITH LOCAL AND STATE ENERGY CODES.
4. PROVIDE UNSWITCHED HOT TO ALL EMERGENCY LIGHT FIXTURES.
5. COORDINATE WORK WITH OTHER TRADES.
6. ALL SPACES INSIDE WATER TOWER ARE CONSIDERED DAMP LOCATIONS.
7. EQUIPMENT SHOWN TO CONVEY DESIGN INTENT. COORDINATE FINAL LOCATIONS OF ALL QUIPMENT WITH TANK MANUFACTURER.
8. COORDINATE INSTALLATION WITH TANK MANUFACTURER. PROVIDE ALL NECESSARY SUPPORTS FOR ALL ELECTRICAL EQUIPMENT. ANY ADDITIONAL SUPPORTS TO TANK STRUCTURE SHALL BE APPROVED BY TANK MANUFACTURER.
9. WATER TOWER BASE DIAMETER IS APPROXIMATELY 24' AND OVERALL WATER TOWER HEIGHT IS APPROXIMATELY 69'. VERIFY EXACT TANK DIMENSIONS WITH TANK MANUFACTURER.

ELECTRICAL KEYNOTE LEGEND

1	PROVIDE 120VAC, 7 DAY, 24 HOUR, ASTRONOMICAL TIME CLOCK WITH MINIMUM OF (2) 20 AMP PROGRAMMABLE RELAY OUTPUTS.
4	INSTALL MIXER CONTROL PANEL BY EQUIPMENT SUPPLIER.
6	INSTALL CATHODIC PROTECTION SYSTEM RECOMMENDED BY TANK MANUFACTURER. FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS. F&I NECESSARY POWER CONDUCTORS IN CONDUIT FROM L11 PANELBOARD AND F&I RECOMMENDED OVERCURRENT PROTECTION DEVICE IN L11 PANELBOARD.
7	F&I (3) SPARE 2" CONDUITS. INSTALL MINIMUM OF 1 FOOT ABOVE FINISHED FLOOR AND CAP INSIDE TANK BASE. EXTEND CONDUITS UNDERGROUND A MINIMUM OF 3 FEET OUTSIDE WEST SIDE OF TANK BASE AND CAP CONDUITS UNDERGROUND. F&I TRACER WIRE WITH CONDUITS.
8	F&I (6) SPARE 4" CONDUITS. INSTALL MINIMUM OF 1 FOOT ABOVE FINISHED FLOOR AND CAP INSIDE TANK BASE. EXTEND CONDUITS UNDERGROUND A MINIMUM OF 3 FEET OUTSIDE EAST SIDE OF TANK BASE AND CAP CONDUITS UNDERGROUND. F&I TRACER WIRE WITH CONDUITS. COORDINATE LOCATION OF CONDUITS WITH PROPOSED CABLE LADDER.
10	F&I (6) 3" SPARE THREADED CONDUIT NIPPLES FROM ACCESS TUBE NEAR CABLE TRAY TO EXTERIOR OF TOWER. CAP CONDUIT NIPPLES.
11	F&I 12"X5-1/4" STAINLESS STEEL CABLE LADDER TRAY NEXT TO SPARE 4" CONDUITS. INSTALL CABLE TRAY FROM BASE TO TOP OF ACCESS TUBE. CABLE TRAY TO BE USED FOR FUTURE EQUIPMENT. CLEARLY MARK WITH "KEEP OFF - NOT INTENDED TO SUPPORT A PERSON".
12	F&I MIXER JUNCTION BOX AND INSTALL TANK MIXER CABLE TO JUNCTION BOX. F&I MINIMUM 3/4"C WITH CONDUCTORS RECOMMENDED BY MIXER MANUFACTURER FROM JUNCTION BOX TO MIXER CONTROL PANEL (MXRCP). F&I ALL NECESSARY CONDUCTORS AND TERMINATIONS AS RECOMMENDED BY MIXER MANUFACTURER TO MAKE A COMPLETE WORKING SYSTEM

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

POWER, LIGHTING, AND CONTROL PLANS

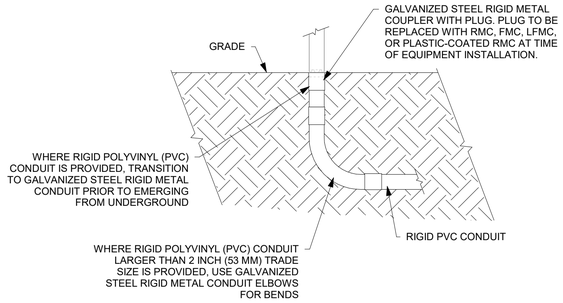
SHEET

E2-11

N

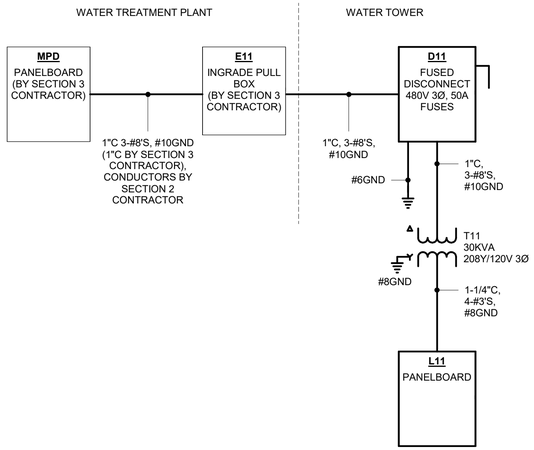
0 1/4" 1/2" 1" 2"

5/28/2025 9:18:40 AM



1 BELOW GRADE PVC CONDUIT DETAIL
NOT TO SCALE

NOTES: ALL SIZES SHOWN ARE MINIMUMS. F&I CONDUCTORS FROM H11 TO D11 WITHOUT SPLICES. COORDINATE INSTALLATION WITH SECTION 3 CONTRACTOR.

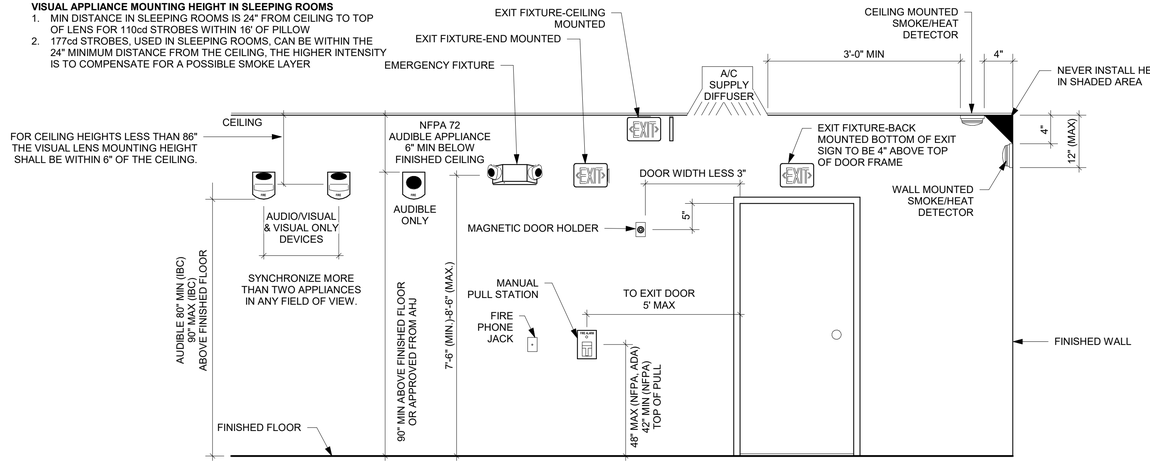


2 ELECTRICAL ONE LINE DIAGRAM
NOT TO SCALE

ELECTRICAL SYMBOLS LEGEND

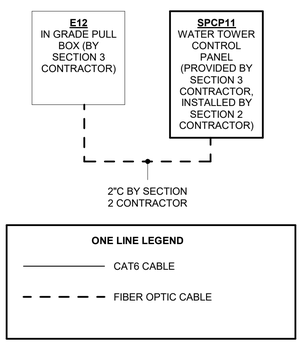
RECEPTACLES		SWITCHES		MISC. POWER SYMBOLS		FIRE PROTECTION SYSTEM		COMMUNICATIONS		ELECTRICAL PANELS		TAG DESCRIPTIONS	
	SIMPLEX	$S	SINGLE POLE		DISCONNECT	FACP	FIRE ALARM CONTROL PANEL		DATA JACK -WALL	P1	FLUSH MOUNT PANELBOARD	1LS97	LIGHTING SCENARIO
	DUPLEX	$S2	DOUBLE POLE		FUSED DISCONNECT	FAAP	FIRE ALARM ANNUNCIATOR PNL		FLOOR DATA JACK	P1	SURFACE MT PANELBOARD	P	KEYNOTE
IG	ISOLATED GROUND	$S3	3-WAY		FAN		SMOKE DETECTOR		DATA JACK -CEILING	PHONE	PHONE SYSTEM		
TR	TAMPER RESISTANT	$S4	4-WAY		ELECT. CONTROLLED VALVE		HEAT DETECTOR		TELEPHONE JACK- WALL				
WP	WEATHER PROOF W/GFI	$SE	EMERGENCY	F	FUSESTAT	F	HORN STROBE		DATA/VOICE JACK - WALL				WIRE TYPES
GFI	GROUND FAULT INTERRUPT	$SF	FAN		HAND DRYER		HORN ONLY	TV	TELEVISION JACK				
CR	CONTROLLED RECEPTACLE	$SK	KEY OPERATED		HAIR DRYER		STROBE ONLY (C = CLG MTD)	S	SPEAKER - CEILING				STANDARD
CTR	COUNTERTOP RECEPTACLE	$SLV	LOW VOLTAGE	H	HEATER	S	SPKR STROBE (C = CLG MTD)	S	SPEAKER - WALL/SURFACE				LOW-VOLTAGE
USB	COMBO RECEPTACLE / USB	$SP	PILOT LIGHT	J	JUNCTION BOX	F	EXTERIOR HORN W/ STROBE	C	CLOCK				UN-SWITCHED HOT
	HIGH VOLTAGE	$ST	TIMER	M	MOTOR	M	MINI HORN	B	BELL				
	SPLIT WIRE	$SCB	CIRCUIT BREAKER		MOTOR WITH DISCONNECT	A	ANSUL TIE		BUZZER				
	DOUBLE DUPLEX	$SD	DIMMER	R	RELAY	TS	SPRINKLER TAMPER SWITCH	IC	INTERCOM				
	220 VOLT	$SH	ILLUMINATED HANDLE		SOLENOID VALVE	FS	SPRINKLER FLOW SWITCH	M	MICROPHONE				
	SPECIAL PURPOSE	$SM	MOTOR		COMBINATION STARTER & DISC	WSF	WALL SPEAKER - FIRE		SPEAKER/CLOCK				
	CEILING MOUNTED RECPT	$SSC	SPEED CONTROLLER		MOTOR STARTER	SFA	CEILING SPEAKER - FIRE	TC	TIME CLOCK				
	CEILING MOUNTED SP RECPT	$SW	SPRING WOUND TIMER	T	THERMOSTAT		MAGNETIC DOOR HOLDER	WAP	WIRELESS ACCESS POINT				
	FLOOR BOX RECEPTACLE	$SMC	MOMENTARY CONTACT	SD	DUCT-TYPE SMOKE DETECTOR	F	MANUAL PULL STATION	TP	TOUCHPAD				
		$SWP	WEATHER PROOF		USB CHARGING STATION	AIM	ADDRESSABLE INPUT MODULE	PROJ	PROJECTOR				
		$SOS	OCCUPANCY SENSOR-WALL			AOM	ADDRESSABLE OUTPUT MOD.	BT	BLUETOOTH				
		$SVS	VACANCY SENSOR-WALL				ABORT SWITCH						
		OS	OCCUPANCY SENSOR-CLG			C	BELL-CHIME						
		VS	VACANCY SENSOR-CLG			EOLD	END OF LINE RESISTOR						
		PC	PHOTO CELL			FS	FIRE/SMOKE DAMPER						
			3-BUTTON SWITCH			S	SMOKE DAMPER						
		$SLT	LOW VOLTAGE SWITCH / TYPE			CO	CARBON MONOXIDE DETECTOR						

VISUAL APPLIANCE MOUNTING HEIGHT IN SLEEPING ROOMS
1. MIN DISTANCE IN SLEEPING ROOMS IS 24" FROM CEILING TO TOP OF LENS FOR 110cd STROBES WITHIN 16' OF PILLOW
2. 177cd STROBES, USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" MINIMUM DISTANCE FROM THE CEILING, THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER



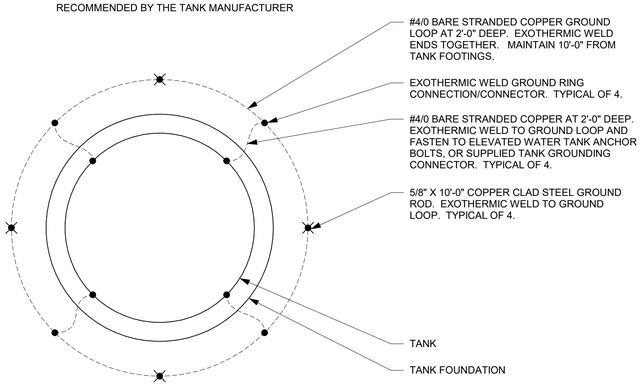
3 TYPICAL MOUNTING HEIGHTS
NOT TO SCALE

NOTES: FIBER OPTIC CABLE SUPPLIED AND INSTALLED BY SECTION 3 CONTRACTOR. COORDINATE FIBER OPTIC CABLE INSTALLATION WITH SECTION 3 CONTRACTOR.

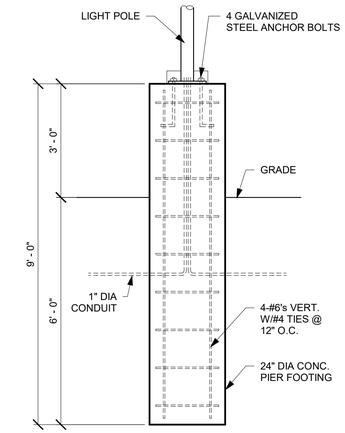


4 CONTROL NETWORK ONE LINE DIAGRAM
NOT TO SCALE

NOTES: MAKE CONNECTION TO TANK AS RECOMMENDED BY THE TANK MANUFACTURER



5 TANK GROUNDING DETAIL
NOT TO SCALE



** LIGHT POLE BASE INSTALLED AND PROVIDED BY ELECTRICAL CONTRACTOR

6 SITE POLE MOUNTING BASE
NOT TO SCALE

0 1/4" 1/2" 1" 2"

5/28/2025 9:18:42 AM

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EST. City of MOVILLE 1887 IOWA

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

SYMBOLS, DETAILS, AND ONE LINES

SHEET

E4-11

ELECTRICAL EQUIPMENT SCHEDULE

TAG	DESCRIPTION	POWER REQUIREMENTS					LOCATION	PNL - CKT	MINIMUM CONDUIT, WIRE SIZE, GROUND	STARTER		DISCONNECT		NOTES
		HP	VOLTS	POLES	FLA	VA				TYPE	BY	TYPE	BY	
E13	HEAT TRACE - OUTLET WATER LINE		208 V	2	15.0 A	3120 VA	PIPE ROOM 13	L11 - 10,12	3/4"C, 2-#10's, #10GND	(none)	(none)	(none)	(none)	VERIFY CIRCUIT SIZE AND VOLTAGE REQUIRED
E14	HEAT TRACE - INLET WATER LINE		208 V	2	15.0 A	3120 VA	PIPE ROOM 13	L11 - 17,19	3/4"C, 2-#10's, #10GND	(none)	(none)	(none)	(none)	VERIFY CIRCUIT SIZE AND VOLTAGE REQUIRED
EWH-2	ELECTRIC WALL HEATER		208 V	2	9.6 A	2000 VA	PIPE ROOM 13	L11 - 13,15	3/4"C, 2-#12's, #12GND	(none)	(none)	NF	WU	

STARTER TYPE
COMB - COMBINATION
ECM - ELECTRONICALLY CONTROLLED MOTOR
MAG - MAGNETIC STARTER
MAN - MANUAL STARTER
SS - SOFT STARTER
VFD - VARIABLE FREQUENCY DRIVE

STARTER BY
EC - ELECTRICAL CONTRACTOR
ES - EQUIPMENT SUPPLIER
MC - MECHANICAL CONTRACTOR
WU - WITH UNIT

DISCONNECT TYPE
BO - BY OTHERS
F - FUSED DISCONNECT
NF - NON-FUSED DISCONNECT
WU - WITH UNIT

DISCONNECT BY
EC - ELECTRICAL CONTRACTOR
ES - EQUIPMENT SUPPLIER
MC - MECHANICAL CONTRACTOR

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	WATTS	TYPE COMMENTS
B2	4FT LINEAR	LITHONIA	CLX-L48-3000LM-SEF-WDL-MVOLT-GZ10-40K-80CRI	3000 LM	32 W	INSTALL 8' A.F.F.. PROVIDE #MSD7 INTEGRAL OCCUPANCY SENSOR OPTION.
C	VAPOR TIGHT GENERAL PURPOSE	LITHONIA	OLVTWM	600 LM	15 W	
E2	WALL PACK	LITHONIA	DSXW1-LED-P4-40K-70CRI-TFTM-MVOLT-BBW-DBLXD	4214 LM	29 W	INSTALL 9' A.F.F.. PROVIDE #DDL DIFFUSED DROP LENS OPTION.
E3	WALL PACK	LITHONIA	DSXW1-LED-P4-40K-70CRI-T2M-MVOLT-BBW-DBLXD	4269 LM	29 W	INSTALL 9' A.F.G.. PROVIDE #PIR MOTION/AMBIENT SENSOR AND #BSW BIRD SPIKE OPTIONS.
E4	WALL PACK	LITHONIA	DSXW1-LED-P4-40K-70CRI-TFTM-MVOLT-BBW-DBLXD	4214 LM	29 W	INSTALL 9' ABOVE PLATFORM. PROVIDE #DDL DIFFUSED DROP LENS OPTION.
F4	EMERGENCY LIGHT - WET AREA	LITHONIA	INDL-SP640L-UVOLT-LTP-SDRT	640 LM	24 W	PROVIDE #EHO EXTRA HIGH-OUTPUT BATTERY AND #CW COLD WEATHER OPTIONS
F5	REMOTE EMERGENCY LIGHT - WET AREA	LITHONIA	INDRE-SP1100L-T	1100 LM	5 W	
K	OBSTRUCTION LIGHT	FLIGHT LIGHT	FL-810LNV-R-AC-D-PM-P	400 LM	4 W	PROVIDE PHOTOCELL OPTION

LIGHTING SCENARIO SCHEDULE

SCENARIO#	LIGHTING SCENARIO DESCRIPTION
LS1	MANUAL ON MANUAL OFF
LS4	OCCUPANCY SENSOR CONTROL AND MANUAL ON/OFF. OCCUPANCY SENSOR TO TURN LIGHTS ON WHEN SPACE IS OCCUPIED AND TURN LIGHTS OFF WHEN SPACE IS UNOCCUPIED FOR 30 MINUTES.
LS5	AUTOMATIC CONTROL OF EXTERIOR FIXTURES BASED UPON THE FOLLOWING SCHEDULE: 7-DAY PROGRAMMABLE ASTRONOMICAL TIME CLOCK SET FOR OPERATION FROM DUSK TO DAWN. AUTOMATIC ON DUSK TO DAWN WITH PHOTOCELL. LIGHT OUTPUT SHALL BE AUTOMATICALLY REDUCED BY 30% WHEN MOTION IS NOT DETECTED FOR 15 MINUTES. LIGHT OUTPUT SHALL AUTOMATICALLY INCREASE TO FULL OUTPUT WHEN MOTION IS DETECTED.

NOTES: CONTROL CONDUCTORS MAY BE COMBINED IN SINGLE CONDUIT, UPSIZE CONDUIT AS REQUIRED.

INPUT AND OUTPUT CONTROL SCHEDULE

ITEM#	DESCRIPTION	PANEL	MINIMUM CONDUIT, WIRE #, SIZE, GND	I/O	DEVICE BY	NOTES
MXRCP	TANK MIXER CONTROL PANEL	SPCP11	3/4"C, 6-#14'S	2 DI, DO	EC	
PIT11	TANK LEVEL PRESSURE TRANSMITTER	SPCP11	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	EC	
TT11	TEMPERATURE TRANSMITTER	SPCP11	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	EC	

I/O		DEVICE BY	
AI	ANALOG INPUT	BO	BY OWNER
AO	ANALOG OUTPUT	EC	ELECTRICAL CONTRACTOR
COM	COMMUNICATIONS	ES	EQUIPMENT SUPPLIER
DI	DIGITAL INPUT	MC	MECHANICAL CONTRACTOR
DO	DIGITAL OUTPUT	PC	PROCESS CONTRACTOR
ENET	ETHERNET/IP	WU	WITH UNIT

Branch Panel: L11

Location: TANK BASE 12
Supply From: T11
Mounting: Surface
Enclosure: Type 12

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

Notes:
Provide minimum 50kA nipple mounted surge protection device (SPD) and adjust SPD circuit breaker size as required. F&I circuit breaker for cathodic protection system, refer to plans. Provide permanent locking means in open position where LCK is indicated.

CKT	Circuit Description	Trip	Pole	A		B		C		Pole	Trip	Circuit Description	CKT
1	Obstruction Light	15 A	1	20	150					1	20 A	SPCP11	2
3	LCK - MXRCP Mixer	20 A	1			1380	0			1	20 A	SPARE	4
5	TC11 Lght Time Clock Exterior	20 A	1					29	187	1	20 A	Lighting Upper Tower	6
7	Receps Upper Tower	20 A	1	360	540					1	20 A	Receps Lower Tower Base	8
9	SPARE	20 A	1			0	1560			2	20 A	E13 Heat Trace - Inlet Line	10
11	Lighting - Exterior	20 A	1					230	1560				12
13	EUH-11 Unit Heater	20 A	2	1000	0					1	20 A	SPARE	14
15						1000	5			3	30 A	SPD	16
17	E14 Heat Trace - Outlet Line	20 A	2					1560	5				18
19				1560	5								20
21	SPARE	20 A	1			0	0			1	20 A	SPARE	22
23	SPARE	20 A	1					0	0	1	20 A	SPARE	24
25	SPARE	20 A	1	0	0					1	20 A	SPARE	26
27	BLANK	--	1			--	--			1	--	BLANK	28
29	BLANK	--	1					--	--	1	--	BLANK	30
		Total Load:		3635 VA		3945 VA		3571 VA					
		Total Amps:		30 A		33 A		30 A					

Legend:

0 1/4" 1/2" 1" 2"

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EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE

SECTION 2: WATER TOWER

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

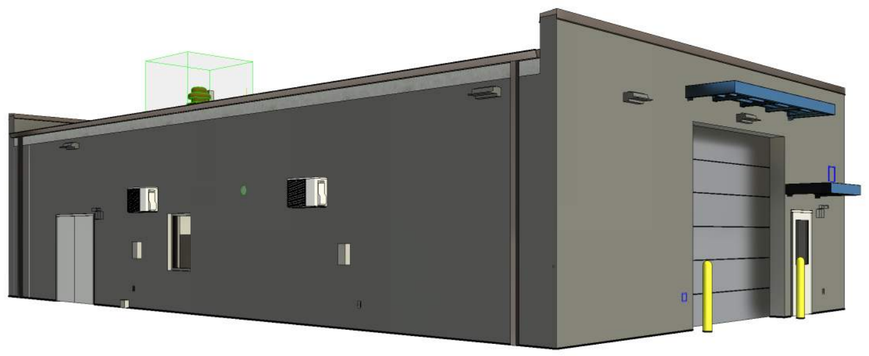
SCHEDULES

SHEET

E4-12

CITY OF MOVILLE
SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE, IOWA | **CONSTRUCTION PLANS** | **ISG PROJECT # 22-27061**



PROJECT GENERAL NOTES

A.	ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL AND SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS AND CLARIFICATIONS ISSUED BY THE ARCHITECT / ENGINEER.
B.	CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK. CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CORRELATING QUANTITIES AND DIMENSIONS.
C.	WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
D.	FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT / ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
E.	DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
F.	ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT / ENGINEER BEFORE PROCEEDING WITH THE WORK.
G.	LARGE-SCALE, MORE SPECIFIC DETAILS TAKE PRECEDENCE OVER SMALLER-SCALE, LESS SPECIFIC DETAILS AND INFORMATION. MORE STRINGENT REQUIREMENTS FOR CODE, PRODUCTS AND INSTALLATION TAKE PRECEDENCE OVER LESS STRINGENT REQUIREMENTS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
H.	PROVIDE CONTINUOUS SEALANT AROUND ALL MATERIALS AT ALL INTERIOR AND EXTERIOR WALL PENETRATIONS. REFER TO SPECIFICATIONS FOR APPROPRIATE SEALANT.
I.	ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
J.	SEAL ALL OPENINGS IN WALLS, FLOORS, CEILINGS, AND ROOFS, AROUND DUCTS, PIPES, VENTS, TRAPS, CONDUIT AND ALL OTHER PENETRATIONS WITH FIRE STOPPING AS SPECIFIED AND REQUIRED BY CODES. IF FIRE STOPPING IS NOT REQUIRED AT PENETRATIONS PER CODE, SEAL WITH CONTINUOUS SEALANT.
K.	PROVIDE TEMPORARY WALLS, ENCLOSURES, DUST SHIELDS AND WALK-OFF MATS AS REQUIRED TO SEPARATE DEMOLITION AND CONSTRUCTION FROM EXISTING BUILDING.
L.	PROVIDE BRACING AND SHORING AS REQUIRED TO PROTECT EXISTING STRUCTURE TO REMAIN. PROVIDE SECURE AND WEATHERPROOF ENCLOSURE OF TEMPORARY OPENINGS IN EXTERIOR WALLS. PROTECT ALL BUILDING COMPONENTS FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
M.	RESTORE ALL EXISTING AREAS AFFECTED BY DEMOLITION AND RELATED NEW CONSTRUCTION TO THEIR ORIGINAL CONDITION, INCLUDING BUT NOT LIMITED TO WALLS, FLOORS, AND CEILINGS AND THEIR ASSOCIATED FINISHES.
N.	PROVIDE SOLID WALL BACKING WITH METAL OR FIRE-RETARDANT WOOD BLOCKING BEHIND DOOR HARDWARE SUCH AS WALL STOPS, BUMPERS, HOLD OPENS, ETC. AND AT ALL ITEMS REQUIRING FASTENING THROUGH GYP BD. TO BLOCKING
O.	RENDERED IMAGES MAY NOT BE AN ACCURATE REPRESENTATION OF BUILDING CONDITIONS, REFER TO PLANS AND DETAILS CONTAINED WITHIN FOR SCOPE OF WORK.

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C0-11	CONSTRUCTION NOTES
C0-12	EROSION CONTROL & WWPPP NOTES & LEGEND
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C0-22	SITE DETAILS
C0-23	WELL SECTION
C0-24	SITE DETAILS
C0-25	WELL SECTION
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C3-35	UTILITY PLAN AND PROFILE
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SEAL

LICENSED PROFESSIONAL ARCHITECT — SETH J. LAMB — P25040 — IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 05/28/25

SETH J. LAMB
PRINTED SIGNATURE

P25040 — LICENSE NUMBER — 12/31/25 — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL:
PP1-01, PP1-02, PP1-10, PP3-30, PP5-10, PP5-30, PP5-31

SEAL

LICENSED PROFESSIONAL ENGINEER — ROYAL STREED — P26593 — IOWA

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SIGNATURE — DATE: 05/28/25

ROYAL STREED
PRINTED SIGNATURE

P26593 — LICENSE NUMBER — 12/31/26 — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL:
E2-00, E2-11, E2-12, E4-11, E4-12, E4-13, E5-11

SEAL

LICENSED PROFESSIONAL ENGINEER — MATTHEW J. LARSEN — 24003 — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 05/28/25

MATTHEW J. LARSEN
PRINTED SIGNATURE

24003 — LICENSE NUMBER — 12/31/26 — LICENSE RENEWAL DATE

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M0-01, P2-10, P2-21, P5-11, P6-11, M2-11, M4-11, M5-11

SEAL

LICENSED PROFESSIONAL ENGINEER — BRETT C. WALKER — P28162 — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 05/28/25

BRETT C. WALKER
PRINTED SIGNATURE

P28162 — LICENSE NUMBER — 12/31/26 — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL:
S1-00, S1-01, S1-11, S1-31, S2-11, S2-12, S4-11

SEAL

LICENSED PROFESSIONAL ENGINEER — BROOKE A. B. SIEVERS — 25078 — IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 05/28/25

BROOKE A. B. SIEVERS
PRINTED SIGNATURE

25078 — LICENSE NUMBER — 12/31/25 — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL:
C0-10, C0-11, C0-12, C0-13, C0-20, C0-21, C0-22, C0-23, C0-24, C0-25, C0-26, C0-27, C0-28, C1-10, C1-11, C1-30, C1-31, C1-40, C2-20, C3-10, C3-20, C3-30, C3-31, C3-32, C3-33, C3-34, C3-35, C3-36, C3-37, C3-38, C4-10, C5-10

SEAL

LICENSED PROFESSIONAL ARCHITECT — ALYSSA F CAMPBELL — 06595 — IOWA

I HEREBY CERTIFY THAT THE PORTION OF THIS TECHNICAL SUBMISSION DESCRIBED BELOW WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND RESPONSIBLE CHARGE. I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF IOWA.

SIGNATURE — DATE: 05/28/25

ALYSSA F CAMPBELL
PRINTED SIGNATURE

06595 — LICENSE NUMBER — 06/30/26 — LICENSE RENEWAL DATE

SHEETS COVERED BY THIS SEAL:
G1-10, G1-11, G1-21, A1-01, A1-21, A1-31, A2-11, A3-11, A3-21, A3-31, A4-11, A6-11

PROJECT INDEX:

OWNER:

CITY OF MOVILLE
21 MAIN STREET PO BOX 420
MOVILLE, IOWA 51039
712-873-3545

PROJECT ADDRESS:

SECTION 32 / T-90-N / R-44-W
XXXXX 160 TH STREET
MOVILLE, IOWA MOVILLE, IOWA 51039

MANAGING OFFICE:
I & S GROUP, INC. (ISG)

STORM LAKE OFFICE
1725 N LAKE AVE
STORM LAKE, IOWA 50588
PHONE: 712.732.7745
PROJECT MANAGER: AMANDA GOODENOW
EMAIL: AMANDA.GOODENOW@ISGINC.COM

ISG

EST. City of 1887 MOVILLE IOWA

IOWA ONE CALL SM
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	ESR
DESIGNED BY	ESR
REVIEWED BY	AFC
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE **TITLE SHEET, SHEET INDEX, PROJECT GENERAL NOTES**

SHEET **G1-10**

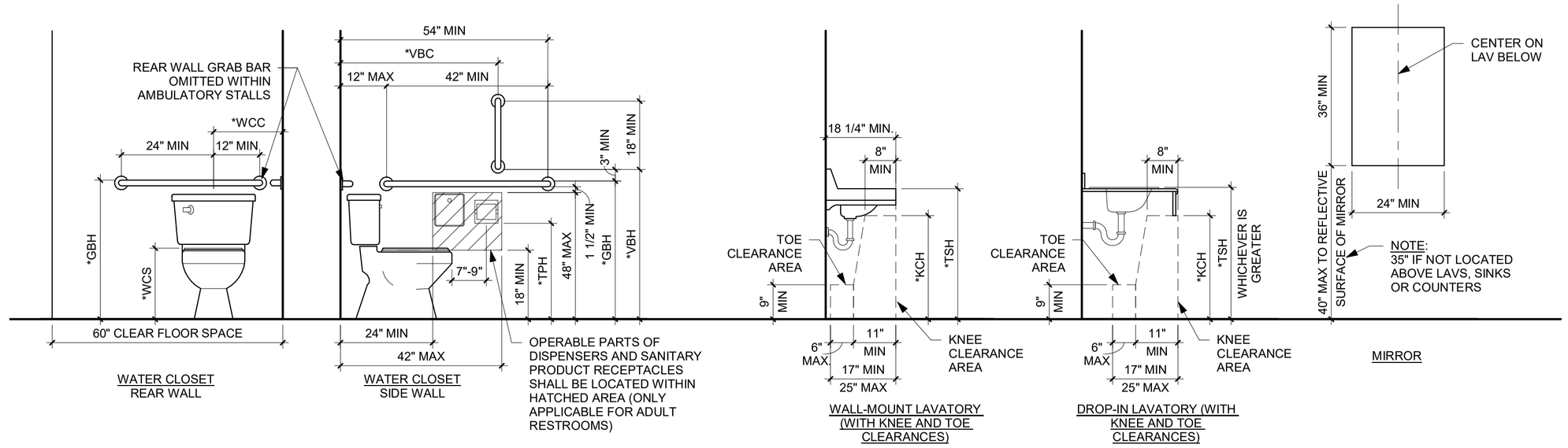
2" 1" 1/4" 1/2" 0

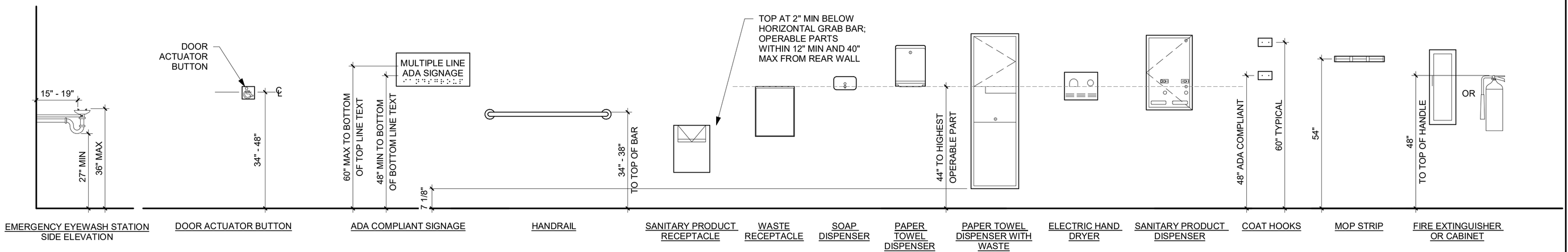
5/28/2025 11:04:33 AM

MOUNTING HEIGHTS AND STANDARDS

FIXTURE CLEARANCES

	DESCRIPTION	FIXTURE GROUPS R1 ADULTS (>12 YR) A ACCESSIBLE	S STANDARD
*WCC	WATER CLOSET CENTER LINE	17" - 18"	16" - 18"
*WCS	WATER CLOSET SEAT HEIGHT	17" - 19"	17" - 19"
*TPH	TOILET TISSUE DISPENSER HEIGHT	18" - 48"	18" - 48"
*GBH	GRAB BAR HEIGHT	33" - 36"	NA
*VBH	VERTICAL GRAB BAR HEIGHT	39" - 41"	NA
*VBC	VERTICAL GRAB BAR CENTERLINE	39" - 41"	NA
*URH	URINAL RIM HEIGHT	17"	24"
*TSH	TOP OF SINK OR COUNTER HEIGHT	34"	34"
*KCH	KNEE CLEARANCE HEIGHT	27"	27"
*HDH	HIGH DRINKING FOUNTAIN SPOUT HEIGHT	38" - 43"	38" - 43"
*LDH	LOW DRINKING FOUNTAIN SPOUT HEIGHT	36"	36"
*DSD	DRINKING FOUNTAIN SPOUT DEPTH	5"	5"





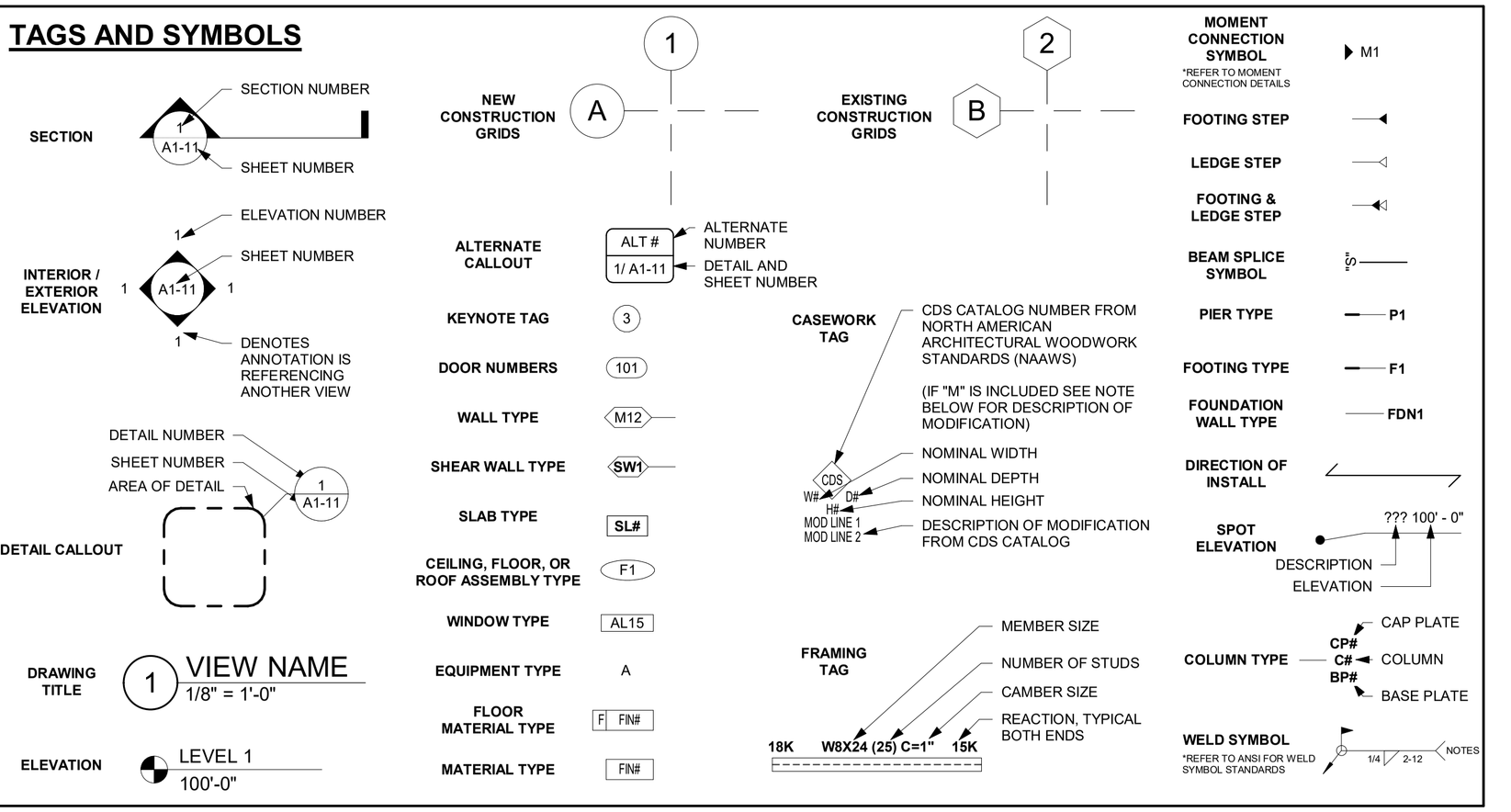
MATERIALS KEY

- BATT INSULATION
- BRICK
- CONCRETE (SECTION)
- CMU (SECTION)
- EARTH
- GRANULAR FILL
- GRAVEL
- GYPSUM BOARD OR SHEATHING
- RIGID INSULATION
- PLYWOOD
- SAND
- STEEL
- SYNTHETIC STUCCO
- WOOD
- SPRAY IN PLACE INSULATION

ABBREVIATIONS

#	POUND OR NUMBER	ENCL	ENCLOSURE	LB	POUND	RTE	REFER TO ELEVATION
@	AT	EPDM	ETHYLENE PROPYLENE DIENE MONOMER	LLH	LONG LEG HORIZONTAL	RTU	ROOF TOP UNIT
ACP	ACOUSTICAL CEILING PANEL	EPX	EPOXY	LLV	LONG LEG VERTICAL	SA	SUPPLY AIR
ACT	ACOUSTICAL CEILING TILE	EQ	EQUAL	LN	LINEAR	SC	SEALED CONCRETE
ADA	AMERICANS WITH DISABILITIES ACT	EQUIP	EQUIPMENT	LVT	LUXURY VINYL TILE	SF	SQUARE FOOT
ADD	ADDENDUM	ETC	ETCETERA	MATL	MATERIAL	SIM	SIMILAR
ADDL	ADDITIONAL	EWC	ELECTRIC WATER COOLER	MAX	MAXIMUM	SM	SURFACE MOUNTED
ADJ	ADJACENT	EWC	ELECTRIC WATER COOLER	MB	MARKER BOARD	SPEC	SPECIFICATION
AFF	ABOVE FINISH FLOOR	EX	EXISTING	MECH	MECHANICAL	SS	SOLID SURFACE
AFG	ABOVE FINISHED GRADE	EXP	EXPANSION, EXPOSED	MEP	MECHANICAL , ELECTRICAL, PLUMBING	SSTL	STAINLESS STEEL
AHU	AIR HANDLING UNIT	EXT	EXTERIOR	MEZZ	MEZZANINE	STD	STANDARD
ALT	ALTERNATE	F&I	FURNISH AND INSTALL	MFR	MANUFACTURER	STN	STONE
ALUM	ALUMINUM	FA	FRESH AIR	MH	MANHOLE	STOR	STORAGE
APPROX	APPROXIMATELY	FAAP	FIRE ALARM ANNUNCIATOR PANEL	MIN	MINIMUM	SUSP	SUSPENDED
ARCH	ARCHITECTURAL	FACP	FIRE ALARM CONTROL PANEL	MISC	MISCELLANEOUS	SV	SHEET VINYL
AWP	ACOUSTICAL WALL PANEL	FBO	FURNISHED BY OTHERS	MO	MASONRY OPENING	SY	SQUARE YARDS
B	BASE	FD	FLOOR DRAIN	MTD	MOUNTED	T&G	TONGUE AND GROOVE
BD	BOARD	FE	FIRE EXTINGUISHER	MTL	METAL	T&P	TEMPERATURE AND PRESSURE
BL	BROADLOOM CARPET	FEC	FIRE EXTINGUISHER CABINET	MULL	MULLION	TB	TACK BOARD
BLDG	BUILDING	FF	FLOOR FINISH	NA	NOT APPLICABLE	TBD	TO BE DETERMINED
BO	BOTTOM OF OR BY OWNER	FFE	FINISHED FLOOR ELEVATION	NIC	NOT IN CONTRACT	TD	TRENCH DRAIN
BR	BRICK	FRP	FIBERGLASS REINFORCED PLASTIC	NTS	NOT TO SCALE	TEC	TECTUM
BRG	BEARING	FRZ	FREEZER	OC	ON CENTER	TEL	TELEPHONE
BSMT	BASEMENT	FS	FLOOR SINK	OCEW	ON CENTER EACH WAY	TEMP	TEMPERATURE
C	CONDUIT	FT	FOOT OR FEET	OD	OUTSIDE DIAMETER	TER	TERRAZZO
CFS	COLD FORMED STEEL	FTG	FOOTING	OH	OVERHEAD	TO	TOP OF
CG	CORNER GUARD	GA	GAUGE	OHD	OVERHEAD DOOR	TOF	TOP OF FOOTING
CIP	CAST IN PLACE	GALV	GALVANIZED	OL	OVERALL LENGTH	TOL	TOP OF LEDGE
CJ	CONTROL JOINT OR CONSTRUCTION JOINT	GC	GENERAL CONTRACTOR	OPNG	OPENING	TOS	TOP OF STEEL
CL	CENTERLINE	GEN	GENERATOR	ORD	OVERFLOW ROOF DRAIN	TOW	TOP OF WALL
CLG	CEILING	GFCI	GROUND FAULT CIRCUIT INTERRUPT	OSB	ORIENTED STRAND BOARD	TR	TAMPER RESISTANT
CLR	CLEAR	GL	GLAZING	PC	PHOTO CELL, POLISHED CONCRETE	TS	TUBE STEEL / THRESHOLD / TRANSITION STRIP
CM	CORRUGATED METAL	GND	GROUND	PLAM	PLASTIC LAMINATE	TV	TELEVISION
CMU	CONCRETE MASONRY UNIT	GYP	GYPSUM	PLWP	PLASTIC LAMINATE WALL PANEL	TYP	TYPICAL
CO	CLEANOUT	HD	HUB DRAIN	PNT	PAINT	UG	UNDERGROUND
CONC	CONCRETE	HDG	HOT DIP GALVANIZED	PNT-#E	EPOXY PAINT	UH	UNIT HEATER
CONF	CONFERENCE	HDW	HARDWARE	POLYETH	POLYETHYLENE	UNO	UNLESS NOTED OTHERWISE
CONT	CONTINUOUS	HM	HOLLOW METAL	POLYISO	POLYISOCYANURATE	VCT	VINYL COMPOSITE TILE
CPT	CARPET	HORIZ	HORIZONTAL	PRV	POWER ROOF VENTILATOR	VERT	VERTICAL
CR	CHAIR RAIL	HSS	HOLLOW STRUCTURAL SECTION	PVC	POLYVINYL CHLORIDE	VEST	VESTIBULE
CRK	CORK	HT	HEIGHT	QT	QUARRY TILE	VF	VINYL FLOOR
CT	TILE	HVAC	HEATING VENTILATION AND AIR CONDITIONING	QTZ	QUARTZ	VIF	VERIFY IN FIELD
CURT	PRIVACY CURTAIN	ID	INSIDE DIAMETER	RA	RETURN AIR	VTR	VENT THROUGH ROOF
CY	CUBIC YARD	IG	ISOLATED GROUND	RB	RESILIENT BASE	VWP	VENEER WALL PANEL
DEMO	DEMOLITION	IMP	INSULATED METAL PANEL	RBR	RUBBER	W/	WITH
DF	DRINKING FOUNTAIN	INFO	INFORMATION	RCP	REFLECTED CEILING PLAN	W/O	WITHOUT
DH	DOOR HOLDER (MAGNETIC)	INP	IN-PLACE	RD	ROOF DRAIN	WC	WATER CLOSET
DIA	DIAMETER	INSUL	INSULATION	REF	REFRIGERATOR	WCG	WALL COVERING
DLS	DIMENSIONAL LETTER SIGNAGE	INT	INTERIOR	REINF	REINFORCED	WD	WOOD
EA	EACH	J	JUNCTION BOX	REQD	REQUIRED	WF	WINDOW FILM
EC	ELECTRICAL CONTRACTOR	JAN	JANITOR	RES	RESINOUS FLOOR	WG	WALL GUARD
EF	EXHAUST FAN	JBE	JOIST BEARING ELEVATION	REV	REVISION / REVISED	WH	WALL HYDRANT
EIFS	EXTERIOR INSULATION FINISH SYSTEM	JST	JOIST	RM	ROOM	WHTR	WATER HEATER
ELEC	ELECTRICAL	KES	KITCHEN EQUIPMENT SUPPLIER	RO	ROUGH OPENING	WP	WEATHERPROOF
ELEV	ELEVATION	kW	KILOWATT	ROW / RW	RIGHT OF WAY	WT	WINDOW TREATMENT
EMERG	EMERGENCY	LAV	LAVATORY	RP	RESIN PANEL	WWF	WELDED WIRE FABRIC
						XFMR	TRANSFORMER

TAGS AND SYMBOLS



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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	ESR
DESIGNED BY	ESR
REVIEWED BY	AFC
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

MOUNTING HEIGHTS, ABBREVIATIONS AND SYMBOLS

SHEET

G1-11

0 1/4" 1/2" 1" 2"

110

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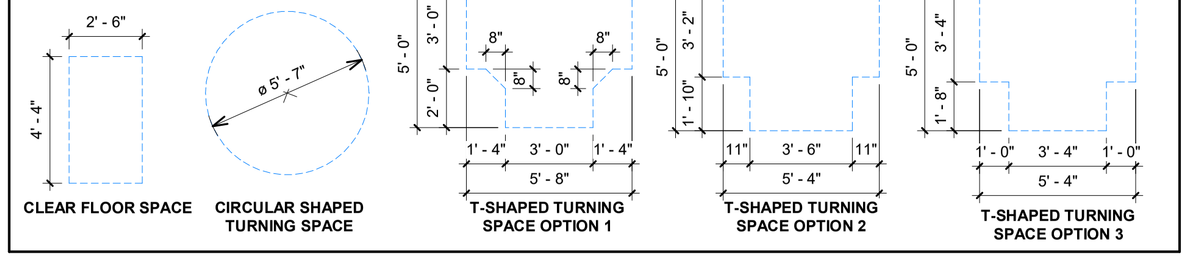
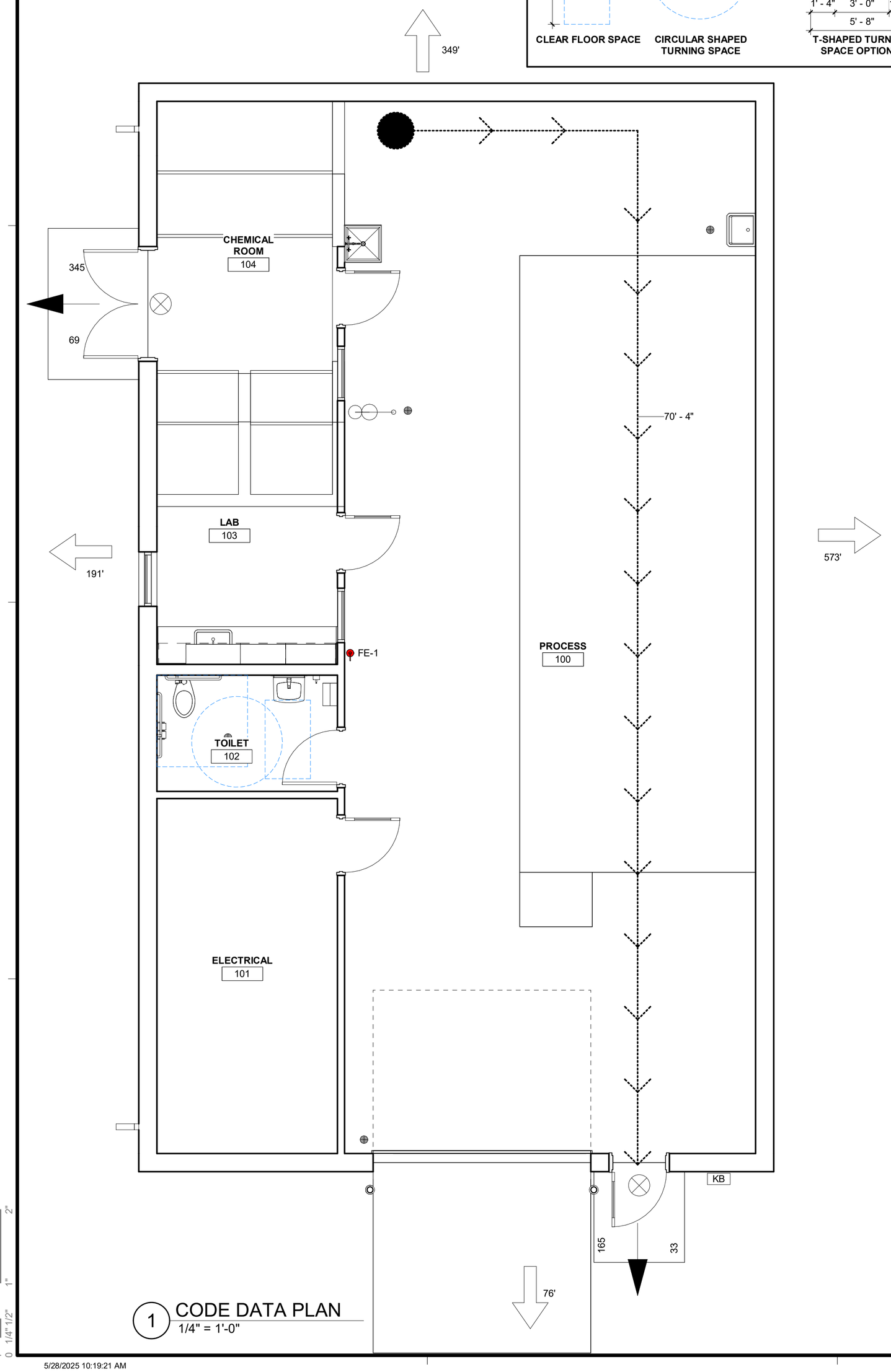
ANSI A117.1 2017 NEW BUILDING CLEARANCE LEGEND



CLEAR FLOOR SPACE | CIRCULAR SHAPED TURNING SPACE | T-SHAPED TURNING SPACE OPTION 1 | T-SHAPED TURNING SPACE OPTION 2 | T-SHAPED TURNING SPACE OPTION 3



1 CODE DATA PLAN
1/4" = 1'-0"

GENERAL CODE DATA

27061 – CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS – MOVILLE, IOWA
CODE DATA – FINAL – DECEMBER 2, 2024

BUILDING CODE

IOWA ADMINISTRATIVE CODE 661, CHAPTER 201 AND CHAPTER 301 STATE BUILDING CODE (BASED ON 2015 INTERNATIONAL BUILDING CODE)

2015 INTERNATIONAL BUILDING CODE AND LOCAL AMENDMENTS

ACCESSIBILITY CODE AND STANDARDS

IOWA ADMINISTRATIVE CODE 661, CHAPTER 302 ACCESSIBILITY OF BUILDINGS
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

OCCUPANCY CLASSIFICATION AND USE

FACTORY GROUP F-1

FIRE PROTECTION SYSTEMS

NONSPRINKLERED

CONSTRUCTION TYPE

TYPE VB
PRIMARY STRUCTURAL FRAME: 0 HOUR RATED
EXTERIOR BEARING WALLS: 0 HOUR RATED
INTERIOR BEARING WALLS: 0 HOUR RATED
EXTERIOR NONBEARING WALLS (BASED ON FIRE SEPARATION DISTANCE): *** HOUR RATED
INTERIOR NONBEARING WALLS: 0 HOUR RATED
FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0 HOUR RATED
ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 0 HOUR RATED

BUILDING HEIGHT

TABULAR ALLOWABLE HEIGHT: 1 STORIES / 40 FEET ABOVE GRADE PLANE
ACTUAL HEIGHT: 1 STORIES / 16.5 FEET ABOVE GRADE PLANE

BUILDING AREA

TABULAR ALLOWABLE AREA FACTOR FOR NONSPRINKLERED BUILDING (NS): 8,500 SF
ACTUAL AREA

FIRST FLOOR: 1914 SF

TOTAL ACTUAL AREA: 1914 SF

OCCUPANT LOAD

FIRST FLOOR
INDUSTRIAL: 1914 SF / 100 GROSS SF = 19.14 OCCUPANTS

TOTAL FIRST FLOOR: 20 OCCUPANTS

TOTAL OCCUPANT LOAD: 20 OCCUPANTS

MEANS OF EGRESS

MINIMUM NUMBER OF EXITS REQUIRED (BASED ON OCCUPANT LOAD) (NEED 2 BASED OFF TABLE 1006.3.2(2)

FIRST FLOOR: 1

ACTUAL NUMBER OF EXITS

FIRST FLOOR: 2

MINIMUM EGRESS WIDTH REQUIRED
FIRST FLOOR
OTHER EGRESS COMPONENTS: (20 OCCUPANTS)(0.20) = 4 INCHES

ACTUAL EGRESS WIDTH

FIRST FLOOR
OTHER EGRESS COMPONENTS: 102 INCHES

COMMON PATH OF EGRESS TRAVEL DISTANCE: 75 FEET MAXIMUM
EXIT ACCESS TRAVEL DISTANCE: 300 FEET MAXIMUM

PLUMBING FIXTURES REQUIRED

FACTORY AND INDUSTRIAL
20 OCCUPANTS / 2 = 10 MEN AND 10 WOMEN
10 / 100 = 0.1 WATER CLOSETS FOR MEN
10 / 100 = .01 WATER CLOSETS FOR WOMEN
10 / 100 = .01 LAVATORIES FOR MEN
10 / 100 = .01 LAVATORIES FOR WOMEN
10 / 400 = .025 DRINKING FOUNTAINS
TOTAL PLUMBING FIXTURES REQUIRED
0.1 (1) WATER CLOSETS FOR MEN
0.1 (1) WATER CLOSETS FOR WOMEN
0.1 (1) LAVATORIES FOR MEN
0.1 (1) LAVATORIES FOR WOMEN
.025 (0) ACCESSIBLE DRINKING FOUNTAINS (2 HIGH SPOUT AND 2 LOW SPOUT)
1 SERVICE SINK

PLUMBING FIXTURES PROVIDED

1 UNISEX TOILET ROOMS, WITH 1 WATER CLOSET AND 1 LAVATORY EACH
0 ACCESSIBLE DRINKING FOUNTAINS (0 HIGH SPOUT AND 0 LOW SPOUT)
1 SERVICE SINKS

CODE DATA PLAN KEY

30 / 150 — EGRESS WIDTH INCHES / EGRESS OCCUPANT CAPACITY
COMMON PATH OF TRAVEL
EXIT
FE-1 — FIRE EXTINGUISHER
FRONTAGE DISTANCE
KB — KNOX BOX
AB — DOOR ACTUATOR BUTTON
FIRE DEPARTMENT CONNECTION

N

ISG

EST. City of 1887 MOVILLE IOWA

SHEET NOT VALID UNLESS THIS TEXT IS COLOR.

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

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PROJECT NO.	22-27061
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TITLE

CODE DATA AND CODE DATA PLAN

SHEET

G1-21

0 1/4" 1/2" 1" 2"

111

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LOCATION MAP

0 500 1,000

SCALE IN FEET

CIVIL PLAN ABBREVIATIONS:

AC	ACRE	CMP	CORRUGATED METAL PIPE	FDN	FOUNDATION	HR	HOUR	MECH	MECHANICAL	QTY	QUANTITY	TEMP	TEMPORARY
ADA	AMERICANS WITH DISABILITIES ACT	CO	CLEANOUT	FES	FLARED END SECTION	HWL	HIGH WATER LEVEL	MH	MANHOLE	R	RIM	THRU	THROUGH
ADD	ADDENDUM	CONC	CONCRETE	FFE	FINISHED FLOOR ELEVATION	HWY	HIGHWAY	MIN	MINIMUM	RAD	RADIUS	TNFH	TOP NUT OF FIRE HYDRANT
AFF	ABOVE FINISHED FLOOR	CONST	CONSTRUCTION	FPM	FEET PER MINUTE	HYD	HYDRANT	MISC	MISCELLANEOUS	RCP	REINFORCED CONCRETE PIPE	TRANS	TRANSFORMER
AGG	AGGREGATE	CONT	CONTINUOUS	FPS	FEET PER SECOND	I	INVERT	NO	NUMBER	RD	ROOF DRAIN	TV	TELEVISION
APPROX	APPROXIMATE	CY	CUBIC YARD	FT	FOOT, FEET	ID	INSIDE DIAMETER	NTS	NOT TO SCALE	REBAR	REINFORCING BAR	T/W	TOP OF WALL
ARCH	ARCHITECT, ARCHITECTURAL	C&G	CURB AND GUTTER	FTG	FOOTING	IN	INCH	NWL	NORMAL WATER LEVEL	REM	REMOVE	TYP	TYPICAL
BFE	BASEMENT FLOOR ELEVATION	DEMO	DEMOLITION	GA	GAUGE	INV	INVERT	OC	ON CENTER	ROW	RIGHT OF WAY	UT	UTILITY, UNDERGROUND TELEPHONE
BIT	BITUMINOUS	DIA	DIAMETER	GAL	GALLON	IP	IRON PIPE	OCEW	ON CENTER EACH WAY	R/W	RIGHT OF WAY	VCP	VITRIFIED CLAY PIPE
BM	BENCHMARK	DIM	DIMENSION	GALV	GALVANIZED	IPS	IRON PIPE SIZE	OH	OVERHEAD	SAN	SANITARY	W/O	WITHOUT
CAD	COMPUTER-AIDED DESIGN	DS	DOWNSPOUT	GC	GENERAL CONTRACTOR	J-BOX	JUNCTION BOX	OHD	OVERHEAD DOOR	SCH	SCHEDULE	W/	WITH
CB	CATCH BASIN	EA	EACH	GFE	GARAGE FLOOR ELEVATION	JT	JOINT	OZ	OUNCE	SF	SQUARE FOOT	YD	YARD
CFS	CUBIC FEET PER SECOND	ELEC	ELECTRICAL	GL	GUTTER LINE	LF	LINEAR FEET	PED	PEDESTAL, PEDESTRIAN	SPEC	SPECIFICATION	YR	YEAR
CF	CUBIC FOOT	ELEV	ELEVATION	GPM	GALLONS PER MINUTE	LIN	LINEAR	PERF	PERFORATED	SQ	SQUARE		
CI	CAST IRON	EOF	EMERGENCY OVERFLOW	GV	GATE VALVE	LPS	LOW PRESSURE STEAM	PL	PROPERTY LINE	STA	STATION		
CIP	CAST IRON PIPE	EQ	EQUAL	HDPE	HIGH DENSITY POLYETHYLENE	LS	LUMP SUM	PP	POLYPROPYLENE	STM	STORM		
CIPC	CAST IN PLACE CONCRETE	EX	EXISTING	HD	HEAVY DUTY	LSO	LOWEST STRUCTURAL OPENING	PSI	POUNDS PER SQUARE INCH	SY	SQUARE YARD		
CJ	CONTROL JOINT	F/G	FORM GRADE	HH	HANDHOLE	MAX	MAXIMUM	PVC	POLYVINYL CHLORIDE	T/C	TOP OF CURB		
CL	CENTERLINE	FDC	FIRE DEPARTMENT CONNECTION	HORIZ	HORIZONTAL	MB	MAIL BOX	PVMT	PAVEMENT	TEL	TELEPHONE		

SITE SUMMARY

PROJECT ADDRESS/LOCATION:	XXXXX 160TH STREET MOVILLE, IOWA 51039
ZONING:	AE - AGRICULTURAL ESTATES
SITE/LOT AREA:	388,481 SF (8.9 AC)

REQUIRED SETBACKS

	BUILDING
FRONT YARD	75'-0"
SIDE YARD	20'-0"
SIDE YARD ACCESSORY STRUCTURES	10'-0"
REAR YARD	50'-0"
REAR YARD ACCESSORY STRUCTURES	10'-0"

PROJECT GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE CONTRACT DOCUMENTS, WHICH INCLUDE, BUT ARE NOT LIMITED TO, THE OWNER - CONTRACTOR AGREEMENT, THE PROJECT MANUAL (WHICH INCLUDES GENERAL SUPPLEMENTARY CONDITIONS AND SPECIFICATIONS), DRAWINGS OF ALL DISCIPLINES AND ALL ADDENDA, MODIFICATIONS, AND CLARIFICATIONS ISSUED BY ARCHITECT/ENGINEER.
2. CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK.
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
4. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
5. DETAILS SHOWN ARE INTENDED TO BE INDICATIVE OF THE PROFILES AND TYPE OF DETAILING REQUIRED THROUGHOUT THE WORK. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS, OR DESIGN INTENT CANNOT BE DETERMINED, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
6. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED, AND CONDITIONED ACCORDING TO MANUFACTURERS' INSTRUCTIONS. IN CASE OF DISCREPANCIES BETWEEN MANUFACTURERS' INSTRUCTIONS AND THE CONTRACT DOCUMENTS, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.
7. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
8. THE LOCATION AND TYPE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY AND ARE ACCURATE AND COMPLETE TO THE BEST OF THE KNOWLEDGE OF I & S GROUP, INC. (ISG). NO WARRANTY OR GUARANTEE IS IMPLIED. THE CONTRACTOR SHALL VERIFY THE SIZES, LOCATIONS, AND ELEVATIONS OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM PLAN.
9. THE CONTRACTOR IS TO CONTACT "IOWA ONE CALL" FOR UTILITY LOCATIONS A MINIMUM OF 2 BUSINESS DAYS PRIOR TO ANY EXCAVATION / CONSTRUCTION (1-800-292-8989).

SPECIFICATIONS REFERENCE

ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF MOVILLE REQUIREMENTS AND WITH THE 2025 EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) FOR PUBLIC IMPROVEMENTS, UNLESS DIRECTED OTHERWISE.

PROJECT DATUM

HORIZONTAL COORDINATES HAVE BEEN REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83), ZONE 4, ON THE IOWA REGIONAL COORDINATE SYSTEM, IN U.S. SURVEY FEET.
ELEVATIONS HAVE BEEN REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
RTK GPS METHODS WERE USED TO ESTABLISH HORIZONTAL AND VERTICAL COORDINATES FOR THIS PROJECT.

TOPOGRAPHIC SURVEY

THIS PROJECT'S TOPOGRAPHIC SURVEY CONSISTS OF DATA COLLECTED IN AUGUST 2024 BY ISG INC.

B.M. ELEVATION=1193.90
TOP OF OPERATING NUT OF FIRE HYDRANT AT 726 SUNNYBROOKE DRIVE

B.M. ELEVATION=1220.80
TOP OF OPERATING NUT OF FIRE HYDRANT NORTHWEST OF HUMBOLT AVENUE AND MAIN STREET INTERSECTION

LEGEND

EXISTING

- CITY LIMITS
- SECTION LINE
- QUARTER SECTION LINE
- RIGHT OF WAY LINE
- PROPERTY / LOTLINE
- EASEMENT LINE
- ACCESS CONTROL
- WATER EDGE
- WETLAND BOUNDARY
- WETLAND / MARSH
- FENCE LINE
- CULVERT
- STORM SEWER
- SANITARY SEWER
- SANITARY SEWER FORCEMAIN
- WATER
- GAS
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- OVERHEAD UTILITY
- UNDERGROUND UTILITY
- UNDERGROUND FIBER OPTIC
- CONTOUR (MAJOR)
- CONTOUR (MINOR)
- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE LINE
- MANHOLE/STRUCTURE
- CATCH BASIN
- HYDRANT
- VALVE
- CURB STOP
- POWER POLE
- UTILITY PEDESTAL / CABINET

PROPOSED

- LOT LINE
- RIGHT OF WAY
- EASEMENT
- CULVERT
- STORM SEWER
- STORM SEWER (PIPE WIDTH)
- SANITARY SEWER
- SANITARY SEWER (PIPE WIDTH)
- SANITARY SEWER FORCEMAIN
- WATER
- GAS
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND TV
- CONTOUR
- MANHOLE (STORM, SANITARY)
- CATCH BASIN
- HYDRANT
- VALVE

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C3-32	UTILITY PLAN AND PROFILE
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C3-35	UTILITY PLAN AND PROFILE
C3-36	UTILITY PLAN AND PROFILE
C3-37	UTILITY PLAN AND PROFILE
C3-38	UTILITY PLAN AND PROFILE
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C5-10	SITE RESTORATION PLAN

ISG

EST. City of MOVILLE 1887 IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 G1-GENERAL
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SITE DATA

SHEET

C0-10

CONSTRUCTION NOTES:

GENERAL

1. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.
2. ALL PROPERTY PINS SHALL BE PROTECTED FROM GRADING OR OTHER OPERATIONS. ANY PINS DISTURBED SHALL BE RESET AT THE CONTRACTOR'S EXPENSE.
3. THE CURRENT EDITION OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) SHALL APPLY TO THE CONSTRUCTION WORK ON THE PROJECT. A FULL IOWA SUDAS SPECIFICATIONS MANUAL CAN BE FOUND ONLINE FOR FREE AT WWW.IOWASUDAS.ORG.

   a. DETAILS LISTED IN PLAN SET ARE MEANT TO BE A GENERAL SAMPLING OF THOSE ANTICIPATED FOR THE PROJECT AND ARE NOT MEANT TO COVER ALL POSSIBLE SITUATIONS. CONTRACTOR SHALL REFERENCE SUDAS SPECIFICATION MANUAL FOR FULL LIST OF DETAILS.
4. THE RECOMMENDED STANDARDS FOR WATER WORKS (10 STATE STANDARDS), 2012 EDITION, AND THE RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES, 2014 EDITION, SHALL APPLY TO THE CONSTRUCTION WORK ON THE PROJECT.
5. THE WORK TO BE ACCOMPLISHED FOR THE CONSTRUCTION OF THIS PROJECT WILL OCCUR ON OWNER'S PROPERTY, EASEMENTS, AND RIGHT-OF-WAY. THE CONTRACTOR SHALL CONFINE OPERATION, PEOPLE, AND EQUIPMENT TO THE OWNER'S PROPERTY, EASEMENTS, AND RIGHT-OF-WAY.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIALS NOT TO BE INCORPORATED IN THE WORK INVOLVED IN THE PROJECT (UNSUITABLE EXCAVATION, WASTE PIPE, ETC.).
7. PROJECT ITEMS TO BECOME PROPERTY OF CONTRACTOR FOR PROPER DISPOSAL UNLESS OTHERWISE NOTED ON PLANS OR OWNER/ENGINEER NOTIFIES CONTRACTOR OTHERWISE.
8. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL NECESSARY TRAFFIC CONTROL SIGNS, DEVICES, ETC., AND TO PLACE, MAINTAIN, AND REMOVE SAME AS CONSTRUCTION COMMENCES AND IS COMPLETED IN ACCORDANCE WITH THE CURRENT EDITION OF THE IOWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS. FAILURE TO COMPLY WITH THIS PORTION OF THE SPECIFICATIONS WILL RESULT IN SUSPENSION OF WORK UNTIL THE SITUATION IS CORRECTED. A REDUCTION IN THE LUMP SUM TO BE PAID WILL BE MADE FOR EXCESSIVE NONCOMPLIANCE WITH REQUIRED TRAFFIC CONTROL. NO WORK SHALL COMMENCE IN ANY GIVEN AREA UNTIL ALL APPROPRIATE TRAFFIC CONTROL IS IN PLACE.
9. THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE CONSTRUCTION LIMITS, THE CONTRACTOR WILL NOT BE PERMITTED TO PARK SERVICE VEHICLES AND EQUIPMENT OR USE THESE AREAS FOR STORAGE OF MATERIALS. STORAGE, PARKING AND SERVICE AREA(S) WILL BE SUBJECT TO APPROVAL OF THE ENGINEER.
10. OWNER WILL SECURE THE SERVICES OF AN INDEPENDENT TESTING LABORATORY FOR ALL MATERIAL TESTING FOR THIS PROJECT. CONTRACTOR SHALL COORDINATE ALL TESTS WITH THE TESTING AGENCY AND INFORM ISG OF ALL SCHEDULED TESTS.
11. OWNER WILL PROVIDE CONSTRUCTION STAKING FOR PROJECT THROUGH ISG (I&S GROUP, INC.) AND CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE BEFORE STAKING IS REQUIRED.
12. THE CONTRACTOR SHALL GIVE THE WOODBURY COUNTY ENGINEER'S OFFICE 48 HOURS NOTICE OF INTENTION TO START CONSTRUCTION WITHIN RIGHT-OF-WAY.

    CONTACT: LAURA SIEVERS OR KYLE GATES

    PHONE: 712-873-3215
13. ALL WORK PERFORMED WITHIN THE RIGHT-OF-WAY SHALL BE RESTRICTED TO A TIME FRAME OF 30 MINUTES AFTER SUNRISE TO 30 MINUTES BEFORE SUNSET.
14. ANY DEWATERING NECESSARY FOR CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO INDIVIDUAL CONSTRUCTION ITEM. PLEASE REFER TO SUBSURFACE EXPLORATION REPORT FOR ANTICIPATED SITE CONDITIONS. REPORT IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT GUARANTEE CONDITIONS TO BE EXPERIENCED.
15. THE CONTRACTOR SHALL INSPECT AND VERIFY SOIL CONDITIONS AS NECESSARY IN ORDER TO DETERMINE THE TYPE OF CONSTRUCTION TO EMPLOY. NATURAL OBSTRUCTIONS TYPICAL TO THIS AREA MAY BE ENCOUNTERED IN THE SOIL. THESE CONTRACT DOCUMENTS DO NOT WARRANT THE NATURE OR CONDITIONS OF THE SOILS, AND DO NOT WARRANT THAT NATURAL OBSTRUCTIONS WILL NOT BE ENCOUNTERED, NOR GUARANTEE THE EXTENT TO WHICH ROCKS, BOULDERS, OR OTHER OBSTRUCTIONS, REGARDLESS OF SIZE, MAY BE ENCOUNTERED DURING OPERATIONS. THE CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION FOR ANY NATURAL OBSTRUCTIONS TYPICAL TO THIS AREA ENCOUNTERED DURING CONSTRUCTION.
16. CONCRETE AND GROUT WASHOUT AREA SHALL REMAIN WITHIN CONFINES OF PROJECT AREA AND SHALL BE PROPERLY REMOVED UPON PROJECT COMPLETION.
17. SEEDING AND FERTILIZING IS INCLUDED IN THIS CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR GRADING AND PREPARING AREAS DISTURBED BY CONTRACTOR'S OPERATIONS FOR SEEDING. ALL DEBRIS GREATER THAN GOLF BALL SIZE SHALL BE REMOVED AND AREA SHALL BE RAKED SMOOTH. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE OF THE OWNER'S PROPERTY, EASEMENT, AND RIGHT-OF-WAY DURING OPERATIONS AND SHALL MAKE A REASONABLE EFFORT TO NOT DISTURB AREAS GREATER THAN NECESSARY DURING CONSTRUCTION. AREAS OF NONGERMINATION WILL BE RESEEDED AND REFERTILIZED BY THE CONTRACTOR. COST IS TO BE CONSIDERED INCIDENTAL.

UTILITIES

18. THE LOCATION AND TYPE OF ALL INPLACE UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY AND ARE ACCURATE AND COMPLETE TO THE BEST OF THE KNOWLEDGE OF ISG (I&S GROUP, INC.). NO WARRANTY OR GUARANTEE IS IMPLIED. THE CONTRACTOR SHALL VERIFY THE SIZES, LOCATIONS AND ELEVATIONS OF ALL INPLACE UTILITIES PRIOR TO CONSTRUCTION AND AVOID DAMAGE THERETO. NO CLAIM FOR ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM PLAN. ANY NECESSARY FIXTURE ADJUSTMENTS SHALL BE INCIDENTAL.
19. PUBLIC UTILITY FIXTURES ARE EXISTING WITHIN THE CONSTRUCTION AREA. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THESE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR ANY NECESSARY MODIFICATION OF SERVICES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.
20. EXISTING STORM SEWERS, SANITARY SEWERS, AND WATER MAINS ARE LOCATED BASED ON CITY RECORDS AND ACTUAL LOCATION MAY VARY GREATLY FROM THAT SHOWN.
21. CONTRACTOR SHALL REPLACE AND REPAIR ALL EXISTING STORM SEWERS AND PRIVATE TILES THAT ARE ENCOUNTERED DURING CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATION. CONTRACTOR SHALL USE 2000D RCP WITH FLEXIBLE O-RING GASKET JOINTS, OR C900 PVC PIPE, PLACE PIPES SO JOINTS ARE NOT DIRECTLY OVER WATER MAIN, AND RECONNECT TO EXISTING STORM SEWER WITH REINFORCED FERNCO COUPLING.
22. ELEVATIONS GIVEN ON THE PLAN AND PROFILE SHEETS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
23. PROPOSED WATER DISTRIBUTION LINE SHALL BE INSTALLED WITH A MINIMUM OF SIX FEET (6') OF COVER.
24. WHEN FIELD CONDITIONS DIFFER FROM THE CONSTRUCTION PLANS AND IF THERE IS A SEPARATION DISTANCE OF LESS THAN TEN FEET (10') BETWEEN WATER MAIN AND GRAVITY SANITARY SEWER OR STORM SEWER, CONSULT THE PROJECT ENGINEER AND FOLLOW ALL REQUIREMENTS FROM IOWA ADMINISTRATIVE CODE 567 43.3.
25. THRUST BLOCKS SHALL BE POURED CONCRETE, INSTALLED BEHIND ALL BENDS, TEES AND DEAD ENDS IN ACCORDANCE WITH SPECIFICATIONS.
26. FLUSH WATER FROM DISINFECTION PROCESS SHALL BE DISPOSED OF BY DIRECTING FLUSH WATER TO ROAD DITCH. ALL CHLORINATED WATER MUST BE DECHLORINATED PRIOR TO DISCHARGE.
27. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL SUBMIT TO ENGINEER A WRITTEN PLAN FOR PRESSURE TESTING, DISINFECTION, FLUSHING, AND BACTERIA SAMPLING.
28. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS OF ALL WATER CONNECTIONS.
29. CONTRACTOR SHALL GIVE LANDOWNER'S MINIMUM 48 HOURS NOTICE OF ENTRANCE INTO THE EASEMENT WORK AREA. LANDOWNER'S SHALL BE GIVEN OPPORTUNITY TO MARK LOCATIONS OF PRIVATE TILE LINES. CONTRACTOR SHALL POTHOLE ALL PRIVATE TILES PRIOR TO WATER MAIN INSTALLATION. IF TILE DEPTHS ARE FOUND TO BE CONFLICTING WITH PROPOSED WATER MAIN, CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER. IF EXISTING PRIVATE TILES ARE DAMAGED, LANDOWNER SHALL HAVE THE OPTION TO REPAIR TILE WITH THEIR OWN CONTRACTOR. NO PRIVATE TILES HAVE BEEN REPORTED BY LANDOWNERS TO DATE.

WELLS

30. WELL CUTTINGS AND DRILLING MUD CAN BE DISPOSED OF ONSITE BUT SHALL BE EVENLY SPREAD THROUGHOUT THE OWNER'S PROPERTY. ENGINEER RESERVES THE RIGHT TO INSTRUCT CONTRACTOR FOR FURTHER ONSITE WORK TO INCLUDE BUT NOT LIMITED TO EXCAVATING, DISKING, AND GRADING SO THAT DISPOSAL DOES NOT INTERFERE WITH FUTURE LAND USE.
31. A WELL WATER POLLUTION PREVENTION PLAN (WWPPP) HAS BEEN DEVELOPED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING, UPDATING, INSPECTING, AND CERTIFYING THE WWPPP. CONTRACTOR SHALL SPREAD WASTEWATER FLOW AWAY FROM NEARBY BUILDINGS/OTHER PROPERTIES BUT STILL MAINTAIN PROPER FILTRATION AND INFILTRATION INTO THE GROUND. THE WWPPP AND GUIDANCE DOCUMENTS ARE PROVIDED AS A SEPARATE DOCUMENT.

UTILITY PROVIDERS

MIDAMERICAN ELECTRIC
CODY PARMETER
712.233.4821
CODY.PARMETER@MIDAMERICAN.COM

CITY OF MOVILLE, WATER, SANITARY, STORM SEWER, & STREETS
PAT SMITH
712.870.1361
PUBLICWORKS@WIATEL.NET

WOODBURY COUNTY RURAL ELECTRIC
NATE BAUER
712.873.3125
NBAUER@WOODBURYREC.COM

WESTERN IOWA TELEPHONE COMPANY
ERIN NELSON
712.944.5711
ENELSON@WIATEL.COM

MIDAMERICAN GAS
MYLES JOHNSON
712.233.4866
MYLES.JOHNSON@MIDAMERICAN.COM

CENTURYLINK
SADIE HULL
918.547.0147
SADIE.HULL@LUMEN.COM

AUREON NETWORK SERVICES
JEFF KLOCKO
515.830.0445
JEFF.KLOCKO@AUREON.COM

WOODBURY COUNTY ENGINEER'S OFFICE
LAURA SIEVERS OR KYLE GATES
712.873.3215

PERMIT	RESPONSIBLE PARTY
WOODBURY COUNTY REZONE OR CONDITIONAL USE PERMIT	ISG
JOINT PERMIT (USACE/IDNR) FOR FLOODPLAIN CLEARANCE	ISG
WOODBURY COUNTY FLOODPLAIN DEVELOPMENT PERMIT	ISG
IDOT UTILITY ACCOMODATION & WORK WITHIN ROW PERMIT	ISG
GP#2 (SWPPP)	ISG
WWPPP (GP(#6)	ISG HAS PREPARED THE PLAN, SECTION 3 CONTRACTOR IS RESPONSIBLE FOR GP6.
WOODBURY COUNTY GRADING PLAN REVIEW AND PERMIT	ISG
WOODBURY COUNTY ACCESS PERMIT (x2)	ISG
SIOUXLAND DISTRICT HEALTH DEPARTMENT SEPTIC SYSTEM PERMIT	SECTION 3 CONTRACTOR
WOODBURY COUNTY BUILDING PLAN REVIEW AND PERMIT	ISG
WOODBURY COUNTY FENCE PERMIT	ISG
WOODBURY COUNTY ENGINEERING WORK IN ROW AND UTILITY ACCOMMODATION PERMITS	ISG
DNR CONSTRUCTION PERMIT	ISG
STATE ELECTRICAL PERMIT	SECTION 3 CONTRACTOR

ISG

EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 G1-GENERAL
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

CONSTRUCTION NOTES

SHEET

C0-11

EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION
	EROSION STONE (IOWA DOT GRADATION 13)
PC	PERIMETER CONTROL
SF	SILT FENCE, PREASSEMBLED
TPF TPF	TREE PROTECTION FENCE
	STORM DRAIN INLET PROTECTION
	WATTLE
	STABILIZED CONSTRUCTION EXIT
	ROLLED EROSION CONTROL PRODUCT (RECP), TYPE ____
	TURF REINFORCEMENT MAT (TRM), TYPE ____
	CONCRETE WASHOUT AREA
	EXISTING DRAINAGE ARROW
	PROPOSED DRAINAGE ARROW
101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)

PERIMETER CONTROL CAN BE SILT FENCE OR WATTLE.

SEE SITE RESTORATION PLAN FOR FINAL TURF ESTABLISHMENT.

NOTE: EROSION CONTROL PLAN COVERAGE INCLUDES ELECTRIC, GAS, TELEPHONE, AND CABLE INSTALLATION. EACH COMPANY OR THEIR SUBCONTRACTOR IS RESPONSIBLE TO FOLLOW THE REQUIREMENTS OF THIS PLAN INCLUDING PROVIDING THEIR OWN RESTORATION IF INSTALLATION OCCURS AFTER PRIMARY INSTALLATION OF SEEDING/SODDING/MULCHING DURING CONSTRUCTION OF EACH UTILITY.

WWPPP LEGEND

	FRAC TANK
	TEMPORARY WATER LINE

WWPPP CONSTRUCTION ACTIVITIES & SCHEDULING

	SCHEDULE
Install all BMP's needed and associated with the Well Construction Phase such as silt fence and etceteras.	Prior to any construction.
Implement the installation of access drive and construction staging area.	Stabilization measures must be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
Proceed with construction in accordance with the well plan, while disturbing no more than necessary.	After Installing all BMP's needed and associated with the Well Construction Phase. Furthermore, INSPECTOR approval must be obtained before the start of any construction.
Proceed with removal of BMP's.	BMP's may not be removed until all construction is complete. Full development shall mean landscaping and fully established permanent seeding. Furthermore, INSPECTOR approval must be obtained before the removal of any BMP's.

BEST MANAGEMENTPRACTICES (BMPs)

CONTRACTOR IS TO VERIFY USE OF BEST MANAGEMENT PRACTICES (BMPs) FOR THE WELL WATER POLLUTION PREVENTION PLAN (WWPPP). SUGGESTED BMPs ARE FOR GUIDANCE ONLY AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE WATER IS TREATED PROPERLY BEFORE REACHING A WATER OF THE UNITED STATES. DEPENDENT ON TIME OF YEAR OF CONSTRUCTION, METHODS MAY NEED TO BE MODIFIED AND CARE SHOULD BE TAKEN TO LIMIT DISTURBANCE OF ANY CROPS IN SURROUNDING FIELDS. ALL METHODS SHALL BE REVIEWED WITH OWNER/ENGINEER PRIOR TO IMPLEMENTATION.

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

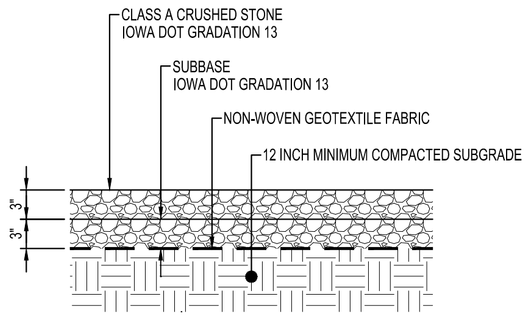
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 G1-GENERAL
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

EROSION CONTROL & WWPPP NOTES & LEGENDS

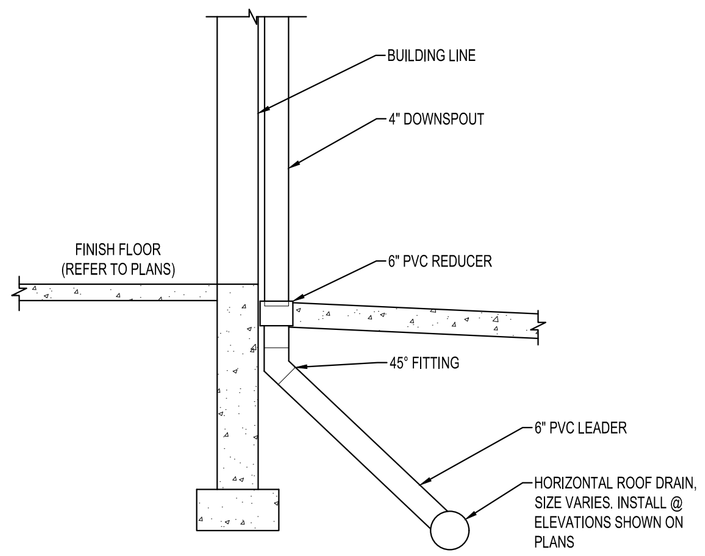
SHEET

C0-12



HEAVY DUTY 2 AGGREGATE SURFACE

NTS

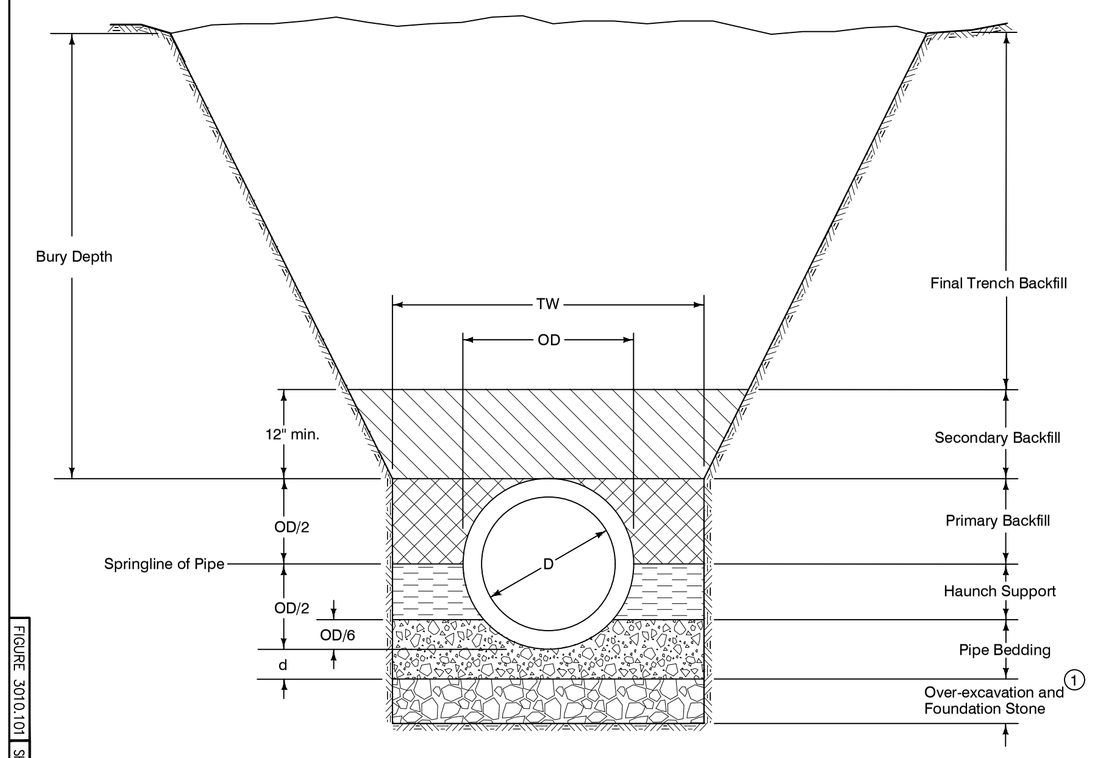


VERTICAL RAIN LEADER

NTS

Refer to the contract documents for specific material and placement requirements.

(1) Required only when specified in the contract documents or when directed by the Engineer.



Key

OD = Outside diameter of pipe
D = Inside diameter of pipe
TW = Trench width at top of pipe
d = Depth of bedding material below pipe

FIGURE 3010.101 SHEET 1 OF 1

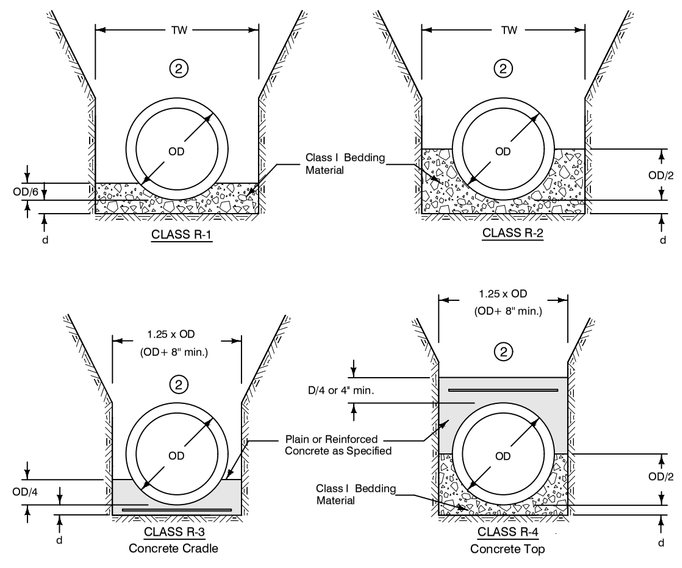
SUDAS	IOWA DOT	REVISION
FIGURE 3010.101	STANDARD ROAD PLAN	NEW 04-17-18
		SW-101
		SHEET 1 of 1

REVISIONS: Replaced Iowa DOT and SUDAS logos.

Paul D. Wiegand — SUDAS DIRECTOR; Brian Smith — DESIGN METHODS ENGINEER

TRENCH BEDDING AND BACKFILL ZONES

RCP AND VCP PIPE BEDDING (1)



REINFORCED CONCRETE ARCH AND ELLIPTICAL PIPE BEDDING

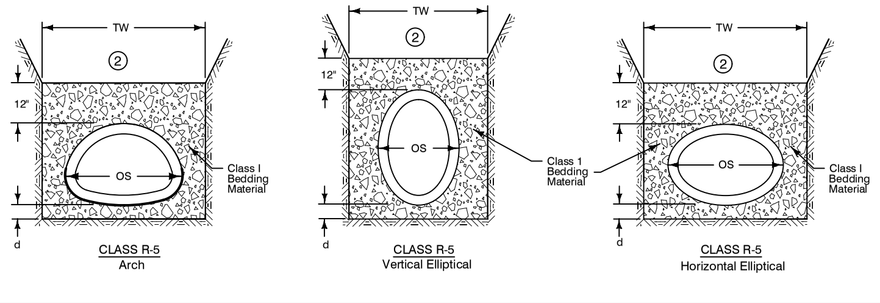


FIGURE 3010.102 SHEET 1 OF 2

Refer to sheet 2 for bury depth restrictions.

(1) Use Bedding Class R-1 or R-2 unless specified otherwise.

(2) Place remainder of bedding and backfill materials as specified in the contract documents.

Key

OD = Outside diameter of pipe
OS = Outside span of pipe
TW = Trench width at top of pipe:
Min. = OD+18 inches
Max.= 1.25xOD+12 inches OR
54 inches (whichever is greater)
d = Depth of bedding material below pipe:
OD/8 or OS/8, OR 4 inches
(whichever is greater)

SUDAS	IOWA DOT	REVISION
FIGURE 3010.102	STANDARD ROAD PLAN	2 04-18-17
		SW-102
		SHEET 1 of 2

REVISIONS: Changed title to RCP AND VCP "CIRCULAR" BEDDING. Changed title on bedding Class R-4 from Concrete Arch to Concrete "Top".

Paul D. Wiegand — SUDAS DIRECTOR; Brian Smith — DESIGN METHODS ENGINEER

RIGID GRAVITY PIPE TRENCH BEDDING

ALLOWABLE BURY DEPTH

CLASS III RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	7'	10'	15'	19'	27'
15	8'	10'	16'	19'	27'
18	8'	1 1'	16'	20'	40'
21	8'	1 1'	18'	26'	40'
24	8'	12'	23'	36'	40'
27	10'	15'	30'	40'	40'
30	1 1'	15'	29'	40'	40'
33	1 1'	15'	28'	40'	40'
36	1 1'	15'	27'	40'	40'
42	1 1'	15'	26'	38'	40'
48	1 1'	15'	26'	36'	40'
54	1 1'	15'	25'	34'	40'
60	1 1'	15'	25'	33'	40'
66	1 1'	15'	24'	32'	40'
72	1 1'	15'	24'	32'	40'

As = Area of Steel Reinforcing

CLASS IV RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	12'	15'	23'	28'	40'
15	12'	16'	23'	30'	40'
18	13'	16'	29'	40'	40'
21	13'	18'	40'	40'	40'
24	16'	23'	40'	40'	40'
27	19'	30'	40'	40'	40'
30	19'	29'	40'	40'	40'
33	19'	28'	40'	40'	40'
36	19'	28'	40'	40'	40'
42	18'	27'	40'	40'	40'
48	18'	26'	40'	40'	40'
54	18'	25'	40'	40'	40'
60	18'	25'	40'	40'	40'
66	18'	25'	40'	40'	40'
72	18'	24'	40'	40'	40'

As = Area of Steel Reinforcing

CLASS V RCP

Pipe Diameter (in)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	18'	23'	35'	40'	40'
15	19'	24'	40'	40'	40'
18	19'	30'	40'	40'	40'
21	25'	40'	40'	40'	40'
24	34'	40'	40'	40'	40'
27	40'	40'	40'	40'	40'
30	40'	40'	40'	40'	40'
33	40'	40'	40'	40'	40'
36	40'	40'	40'	40'	40'
42	37'	40'	40'	40'	40'
48	35'	40'	40'	40'	40'
54	33'	40'	40'	40'	40'
60	32'	40'	40'	40'	40'
66	31'	40'	40'	40'	40'
72	31'	40'	40'	40'	40'

As = Area of Steel Reinforcing

EXTRA STRENGTH VCP

Pipe Dia. (in)	Bedding Class				
	R-1	R-2	R-3 & R-4		
			No Steel	As=0.4%	As=1.0%
6	25'	30'	30'	30'	30'
8	20'	26'	30'	30'	30'
10	18'	23'	30'	30'	30'
12	16'	20'	30'	30'	30'
15	15'	19'	28'	30'	30'
18	14'	18'	30'	30'	30'
21	15'	22'	30'	30'	30'
24	18'	28'	30'	30'	30'
27	20'	30'	30'	30'	30'
30	19'	29'	30'	30'	30'
33	20'	30'	30'	30'	30'
36	20'	30'	30'	30'	30'
39	19'	29'	30'	30'	30'
42	18'	26'	30'	30'	30'

As = Area of Steel Reinforcing

CONCRETE ARCH PIPE

Pipe Size (inch by inch)	Equiv. Dia. (in)	Pipe Class	
		A-III	A-IV
18 x 1 1	15	6'	1 1'
22 x 13	18	6'	1 1'
26 x 15	21	6'	13'
29 x 18	24	7'	15'
36 x 22	30	8'	15'
44 x 27	36	8'	14'
51 x 31	42	8'	15'
58 x 36	48	8'	15'
65 x 40	54	8'	15'
73 x 45	60	8'	14'
88 x 54	72	9'	14'

Based on Class R-5 bedding

HORIZONTAL ELLIPTICAL RCP

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class	
		HE-III	HE-IV
14 x 23	18	12'	22'
19 x 30	24	15'	29'
22 x 34	27	15'	28'
24 x 38	30	15'	27'
27 x 42	33	15'	27'
29 x 45	36	15'	26'
32 x 49	39	15'	26'
34 x 54	42	15'	25'
38 x 60	48	15'	25'
43 x 68	54	15'	24'
48 x 76	60	15'	24'
53 x 83	66	15'	24'
58 x 91	72	15'	24'
63 x 98	78	15'	23'
68 x 106	84	15'	23'

Based on Class R-5 bedding

VERTICAL ELLIPTICAL RCP

Pipe Size (in x in)	Equiv. Dia. (in)	Pipe Class			
		VE-III	VE-IV	VE-V	VE-VI
23 x 14	18	10'	15'	22'	33'
30 x 19	24	10'	16'	34'	40'
34 x 22	27	11'	20'	40'	40'
38 x 24	30	12'	23'	40'	40'
42 x 27	33	15'	30'	40'	40'
45 x 29	36	15'	29'	40'	40'
49 x 32	39	15'	29'	40'	40'
54 x 34	42	15'	28'	40'	40'
60 x 38	48	15'	27'	40'	40'
68 x 43	54	15'	27'	40'	40'
76 x 48	60	15'	26'	40'	40'
83 x 53	66	15'	25'	40'	40'
91 x 58	72	15'	25'	40'	40'
98 x 63	78	15'	25'	40'	40'
106 x 68	84	15'	24'	40'	40'

Based on Class R-5 bedding

SUDAS	IOWA DOT	REVISION
FIGURE 3010.102	STANDARD ROAD PLAN	2 04-18-17
		SW-102
		SHEET 2 of 2

REVISIONS: Changed title to RCP AND VCP "CIRCULAR" BEDDING. Changed title on bedding Class R-4 from Concrete Arch to Concrete "Top".

Paul D. Wiegand — SUDAS DIRECTOR; Brian Smith — DESIGN METHODS ENGINEER

RIGID GRAVITY PIPE TRENCH BEDDING

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C0-DETAILS
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

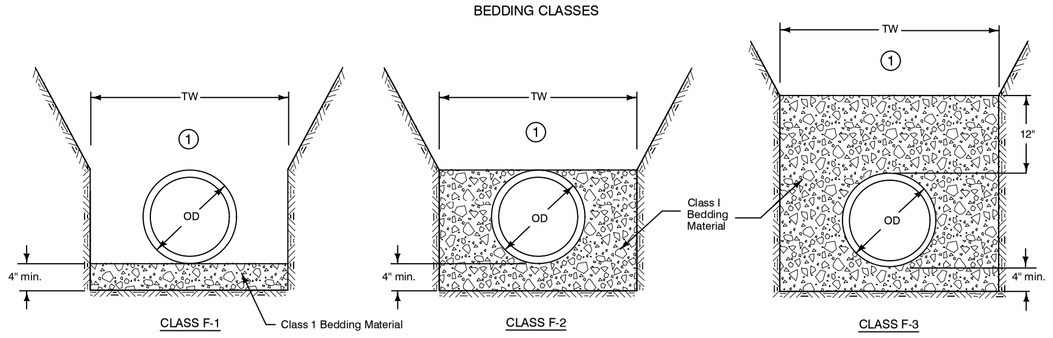
TITLE

SITE DETAILS

SHEET

C0-20

BEDDING CLASSES



1. Place remainder of bedding and backfill materials as specified in the contract documents.
2. Minimum depth of bury 12 inches or as specified by the manufacturer.

ALLOWABLE BEDDING CLASSES

PIPE MATERIAL	STORM SEWER	SANITARY SEWER
Ductile Iron	F-1, F-2, F-3	F-1, F-2, F-3
HDPE	F-2, F-3	Not allowed
Polypropylene	F-2, F-3	F-3
PVC	F-2, F-3	F-3

Key

OD = Outside diameter of pipe

TW = Trench width at top of pipe:
Min. = OD+18 inches OR 1.25xOD+12 inches
(whichever is greater)

ALLOWABLE BURY DEPTH (2)

PVC PIPE

Pipe Diameter (in)	ASTM D 3034			ASTM F 679	ASTM F 949	ASTM F 1803	ASTM D 2680
	Solid Wall			Solid Wall	Corrug. Exterior	Closed Profile	Composite (Truss Type)
	SDR 23.5	SDR 26	SDR 35	SDR 35			
8	30'	28'	24'	---	24'	---	32'
10	30'	28'	24'	---	24'	---	32'
12	30'	28'	24'	---	24'	---	32'
15	30'	28'	24'	---	24'	---	32'
18	---	---	---	24'	24'	---	---
21	---	---	---	24'	24'	24'	---
24	---	---	---	24'	24'	24'	---
27	---	---	---	24'	---	24'	---
30	---	---	---	24'	24'	24'	---
33	---	---	---	24'	---	---	---
36	---	---	---	24'	24'	24'	---
42	---	---	---	24'	---	24'	---
48	---	---	---	24'	---	24'	---
54	---	---	---	---	---	24'	---
60	---	---	---	---	---	24'	---

DUCTILE IRON, AWWA C151, CLASS 52

Pipe Diameter (in)	Class F-1 Bedding	Class F-2 Bedding	Class F-3 Bedding
4	40'	40'	40'
6	40'	40'	40'
8	40'	40'	40'
10	40'	40'	40'
12	37'	40'	40'
14	31'	40'	40'
16	28'	37'	40'
18	25'	34'	40'
20	23'	32'	40'
24	20'	29'	38
30	18'	23'	31'
36	18'	22'	30'
42	17'	21'	29'
48	16'	19'	27'
54	16'	19'	27'

HDPE PIPE

Pipe Diameter (in)	AASHTO M 294
12	8'
15	9'
18	9'
24	9'
30	9'
36	9'
42	8'
48	8'
54	8'
60	8'

POLYPROPYLENE PIPE

Pipe Diameter (in)	ASTM F 2736	ASTM F 2764
12	24'	---
15	25'	---
18	22'	---
24	20'	---
30	22'	22'
36	---	21'
42*	---	22'
48*	---	23'
54*	---	21'
60*	---	21'

*Storm Sewer Only

SUDAS | IOWADOT | REVISION 2 10-18-16 | FIGURE 3010.103 | STANDARD ROAD PLAN | SW-103 | SHEET 1 of 1

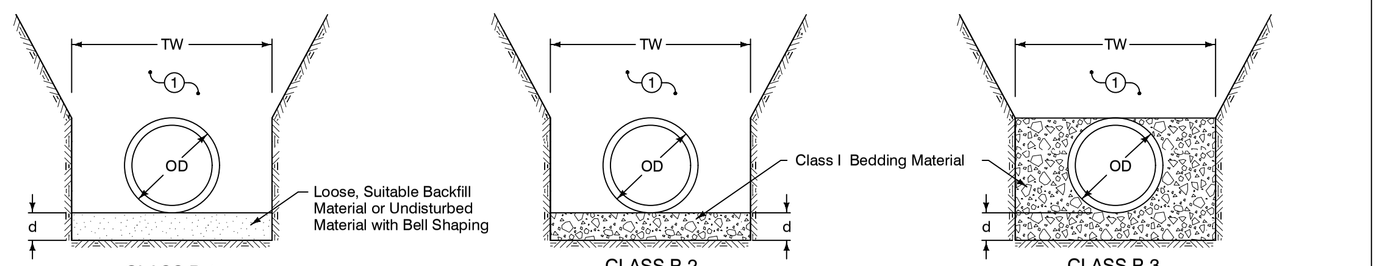
REVISIONS: Added polypropylene pipe for storm sewer applications.

Paul D. Wiegand, BUDGET, CREATIVITY | Brian Smith, DESIGN METHODS, ENGINEER

FLEXIBLE GRAVITY PIPE TRENCH BEDDING

FIGURE 3010.104 | SHEET 1 OF 2

BEDDING CLASSES



ALLOWABLE BURY DEPTH

DUCTILE IRON, AWWA C151, CLASS 52

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	40'	40'	40'
6	40'	40'	40'
8	40'	40'	40'
10	36'	40'	40'
12	31'	40'	40'
14	26'	40'	40'
16	23'	37'	40'
18	20'	34'	40'
20	18'	32'	40'
24	16'	29'	38
30	13'	23'	31'
36	13'	22'	30'
42	13'	21'	29'
48	13'	19'	27'
54	13'	19'	27'

PVC, AWWA C900 & C905, DR18

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	19'	23'	40'
6	19'	23'	40'
8	19'	23'	40'
10	19'	23'	40'
12	19'	23'	40'
14	19'	23'	40'
16	19'	23'	40'
18	19'	23'	40'
20	19'	23'	40'
24	19'	23'	40'

1. Place remainder of bedding and backfill material as specified in the contract documents.

Key

OD = Outside diameter of pipe

TW = Trench width at top of pipe:
Min. = OD+18 inches OR 1.25xOD+12 inches
(whichever is greater)

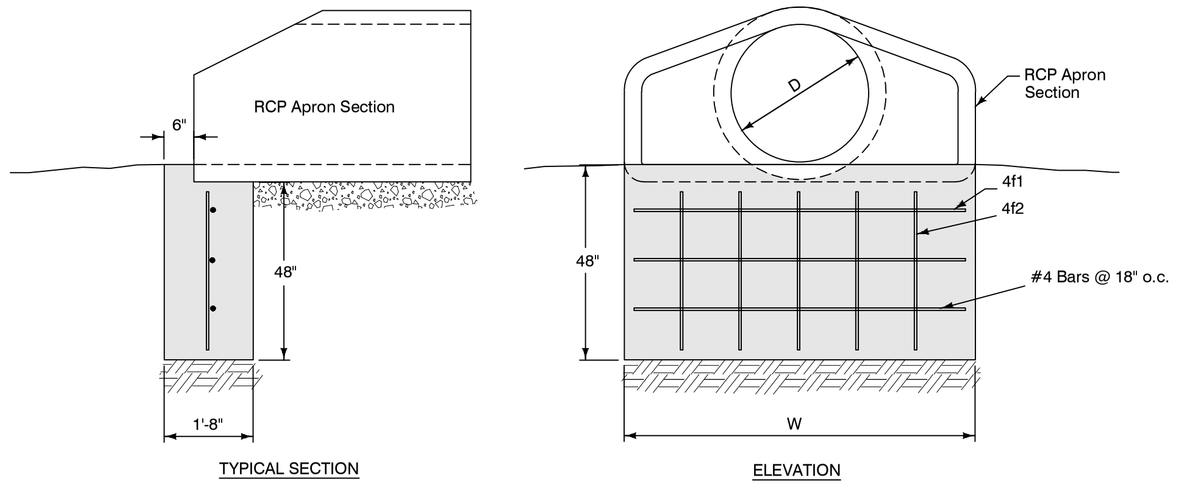
d = Depth of bedding material below pipe:
Min. = OD/8 OR 4 inches
(whichever is greater)

SUDAS | IOWADOT | REVISION 1 04-17-18 | FIGURE 3010.104 | STANDARD ROAD PLAN | SW-104 | SHEET 1 of 1

REVISIONS: Replaced Iowa DOT and SUDAS logos.

Paul D. Wiegand, BUDGET, CREATIVITY | Brian Smith, DESIGN METHODS ENGINEER

PRESSURE PIPE TRENCH BEDDING



TYPICAL SECTION

ELEVATION

REINFORCING BAR LIST

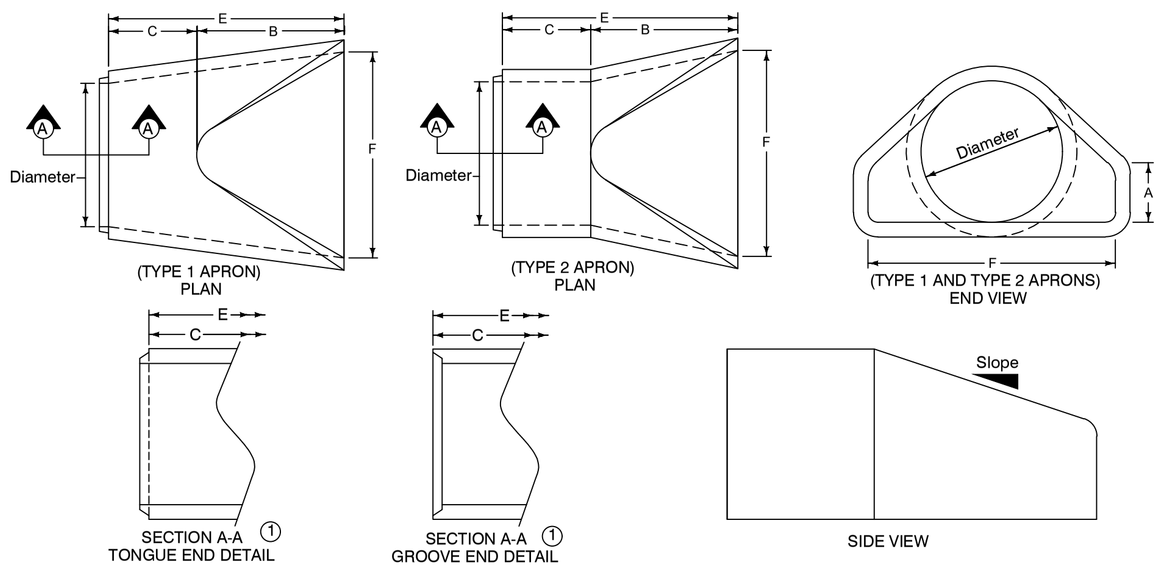
D	W	Mark	Size	Length	Count
12"	2'-4"	4f1	4	2'-0"	3
		4f2	4	3'-8"	2
15"	2'-10 ½"	4f1	4	2'-6 ½"	3
		4f2	4	3'-8"	2
18"	3'-5"	4f1	4	3'-1"	3
		4f2	4	3'-8"	3
24"	4'-6"	4f1	4	4'-2"	3
		4f2	4	3'-8"	3
30"	5'-7"	4f1	4	5'-3"	3
		4f2	4	3'-8"	4
36"	6'-8"	4f1	4	6'-4"	3
		4f2	4	3'-8"	5
42"	7'-3"	4f1	4	6'-11"	3
		4f2	4	3'-8"	5
48"	7'-10"	4f1	4	7'-6"	3
		4f2	4	3'-8"	6
54"	8'-5"	4f1	4	8'-1"	3
		4f2	4	3'-8"	6
60"	8'-11"	4f1	4	8'-7"	3
		4f2	4	3'-8"	6
66"	8'-11"	4f1	4	8'-7"	3
		4f2	4	3'-8"	6
72"	10'-0"	4f1	4	9'-8"	3
		4f2	4	3'-8"	7
78"	10'-7"	4f1	4	10'-3"	3
		4f2	4	3'-8"	7
84"	11'-1"	4f1	4	10'-9"	3
		4f2	4	3'-8"	8

SUDAS | REVISION 1 10-21-14 | FIGURE 4030.221 | 4030.221 | SHEET 1 of 1

SUDAS Standard Specifications

RCP APRON SECTION FOOTING

FIGURE 4030.221 | SHEET 1 OF 1



Dimension 'E' shown is the minimum and is considered the design length. Adjust for any difference between the actual length of concrete apron installed and the length indicated below for the length of concrete culvert pipe furnished.

1. Tongue end used on inlet end section. Groove end used on outlet end section.

TYPE 1 APRONS

DIAM.	SLOPE	A	B	MINIMUM C	MINIMUM E	F
12"	2.4:1	4"	2'-0"	4'-4 7/8"	6'-4 7/8"	2'-0"
15"	2.4:1	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	2.3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	2.4:1	9"	3'-0"	3'-11 3/4"	6'-1 3/4"	3'-5"
24"	2.5:1	9 3/4"	3'-7 3/4"	2'-6"	6'-1 3/4"	4'-0"
27"	2.5:1	10 3/4"	4'-1"	2'-0"	6'-1 3/4"	4'-4"
30"	2.5:1	12"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"
36"	2.5:1	15"	5'-3"	2'-9"	8'-0"	6'-0"
42"	2.5:1	21"	5'-3"	2'-9"	8'-0"	6'-6"
48"	2.5:1	24"	6'-0"	2'-0"	8'-0"	7'-0"
54"	1.8:1	27"	5'-0"	3'-0"	8'-0"	7'-6"
60"	1.6:1	29 3/4"	5'-0"	3'-0"	8'-0"	8'-0"
66"	1.7:1	30"	6'-0"	2'-3"	8'-3"	8'-0"
72"	1.6:1	30"	6'-6"	1'-9"	8'-3"	9'-0"
78"	1.8:1	36"	7'-6"	1'-9"	9'-3"	9'-6"
84"	1.3:1	29 3/4"	6'-9"	2'-6 3/4"	9'-3 3/4"	10'-0"

TYPE 2 APRONS

DIAM.	SLOPE	A	B	MINIMUM C	MINIMUM E	F
12"	2.4:1	4"	2'-0"	4'-4 7/8"	6'-4 7/8"	2'-0"
15"	2.4:1	6"	2'-3"	3'-10"	6'-1"	2'-6"
18"	2.3:1	9"	2'-3"	3'-10"	6'-1"	3'-0"
21"	2.4:1	9"	3'-0"	3'-11 3/4"	6'-1 3/4"	3'-5"
24"	2.5:1	9 3/4"	3'-7 3/4"	2'-6"	6'-1 3/4"	4'-0"
27"	2.5:1	10 3/4"	4'-1"	2'-0"	6'-1 3/4"	4'-4"
30"	2.5:1	12"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"
36"	2.5:1	15"	5'-3"	2'-9"	8'-0"	6'-0"
42"	2.5:1	21"	5'-3"	2'-9"	8'-0"	6'-6"
48"	2.5:1	24"	6'-0"	2'-0"	8'-0"	7'-0"
54"	1.9:1	24 3/4"	5'-5"	2'-7"	8'-0"	7'-6"
60"	1.4:1	24 3/4"	5'-0"	3'-0"	8'-0"	8'-0"
66"	1.7:1	30"	6'-0"	2'-3"	8'-3"	8'-0"
72"	1.4:1	24"	6'-6"	1'-9"	8'-3"	9'-0"
78"	1.8:1	36"	7'-6"	1'-9"	9'-3"	9'-6"
84"	1.5:1	23 3/4"	7'-6"	1'-9"	9'-3 3/4"	10'-0"

SUDAS | REVISION New 10-18-16 | FIGURE 4030.222 | 4030.222 | SHEET 1 of 1

SUDAS Standard Specifications

CIRCULAR CONCRETE APRONS

FIGURE 4030.222 | SHEET 1 OF 1

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

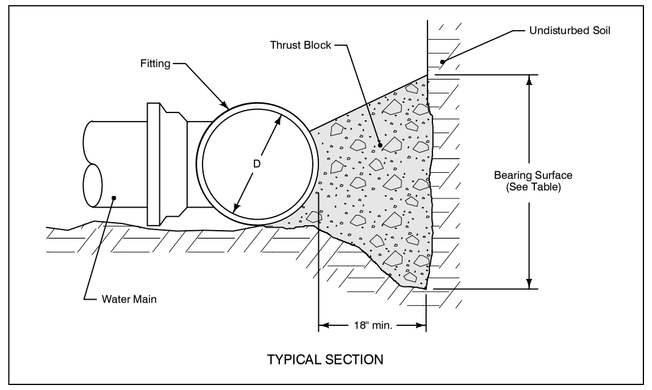
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C0-DETAILS
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

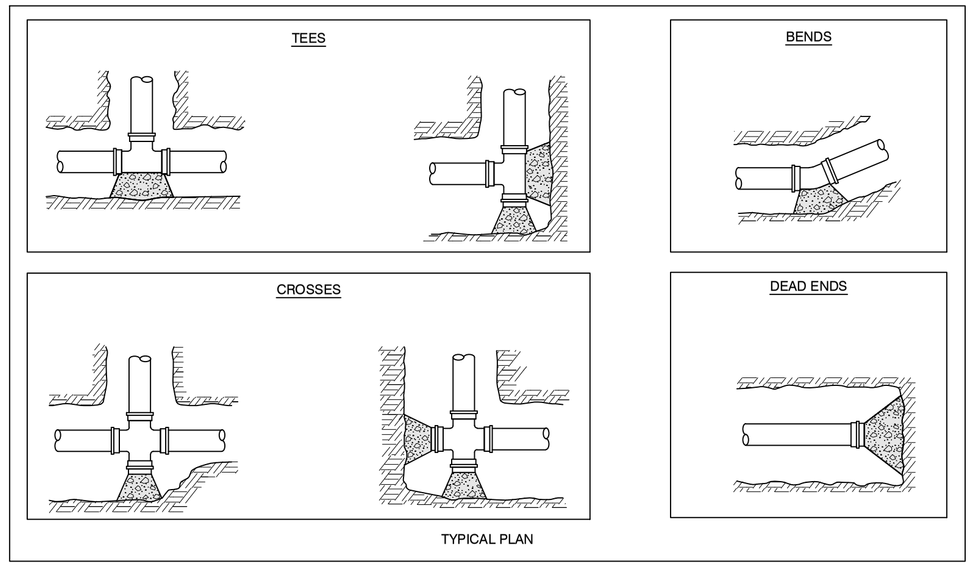
SITE DETAILS

SHEET

C0-21



TYPICAL SECTION



TYPICAL PLAN

Extend thrust blocks to undisturbed soil. Excavation into trench wall may be necessary.

Form vertical surfaces of poured concrete thrust blocks except on bearing surface.

Encase all fittings in polyethylene wrap. Do not allow concrete to directly contact joints or fitting bolts.

Diameter of Pipe, D (inches)	MINIMUM BEARING SURFACE (sf)				
	Bends				Tees and Dead Ends
	11¼°	22½°	45°	90°	
4	1	1	2	4	3
6	1	2	4	8	6
8	2	4	7	14	10
10	3	6	11	21	15
12	4	8	16	29	21
14	5	11	21	39	28
16	7	14	27	50	36
18	9	17	34	63	45
20	11	21	42	78	55
24	15	31	60	111	78
30	24	47	92	171	120
36	34	67	132	244	173

Minimum surface area based on water pressure of 150 psi and allowable soil pressure of 1,000 psf.

SUDAS	IOWA DOT	REVISION 1 10-18-16
FIGURE 5010.101	STANDARD ROAD PLAN	WM-101
		SHEET 1 of 2

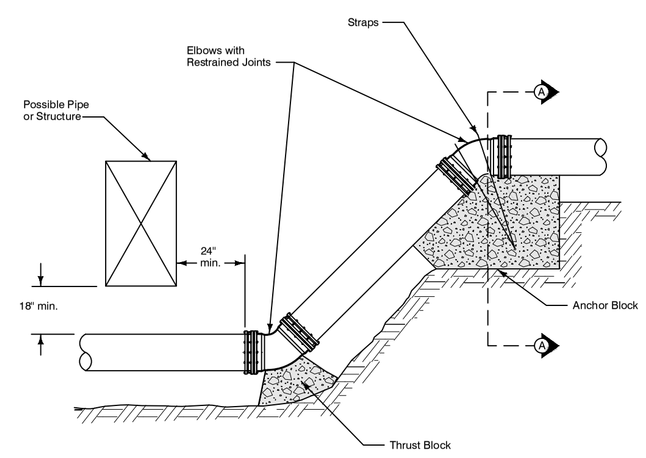
REVISIONS: Replaced Iowa DOT and SUDAS logos with new logos.

Paul D. Wiegand, SUDAS DIRECTOR — Brian J. Smith, DESIGN METHODS ENGINEER

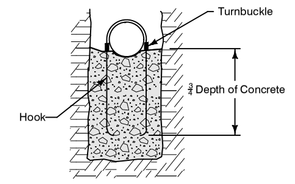
THRUST BLOCKS

FIGURE 5010.101 SHEET 1 OF 2

CHANGES IN PIPE DEPTH



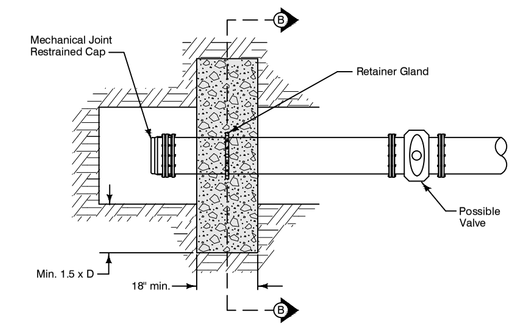
ELEVATION



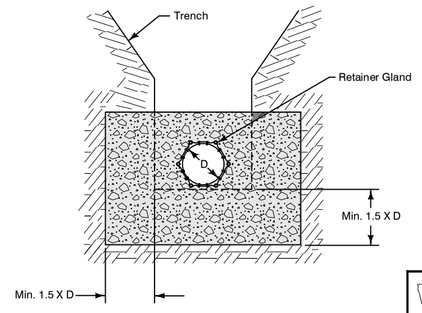
SECTION A-A

DEAD ENDS (ALTERNATE METHOD)

Use only when allowed by the Engineer, or when specified in the contract documents.



PLAN



SECTION B-B

SUDAS	IOWA DOT	REVISION 1 10-18-16
FIGURE 5010.101	STANDARD ROAD PLAN	WM-101
		SHEET 2 of 2

REVISIONS: Replaced Iowa DOT and SUDAS logos with new logos.

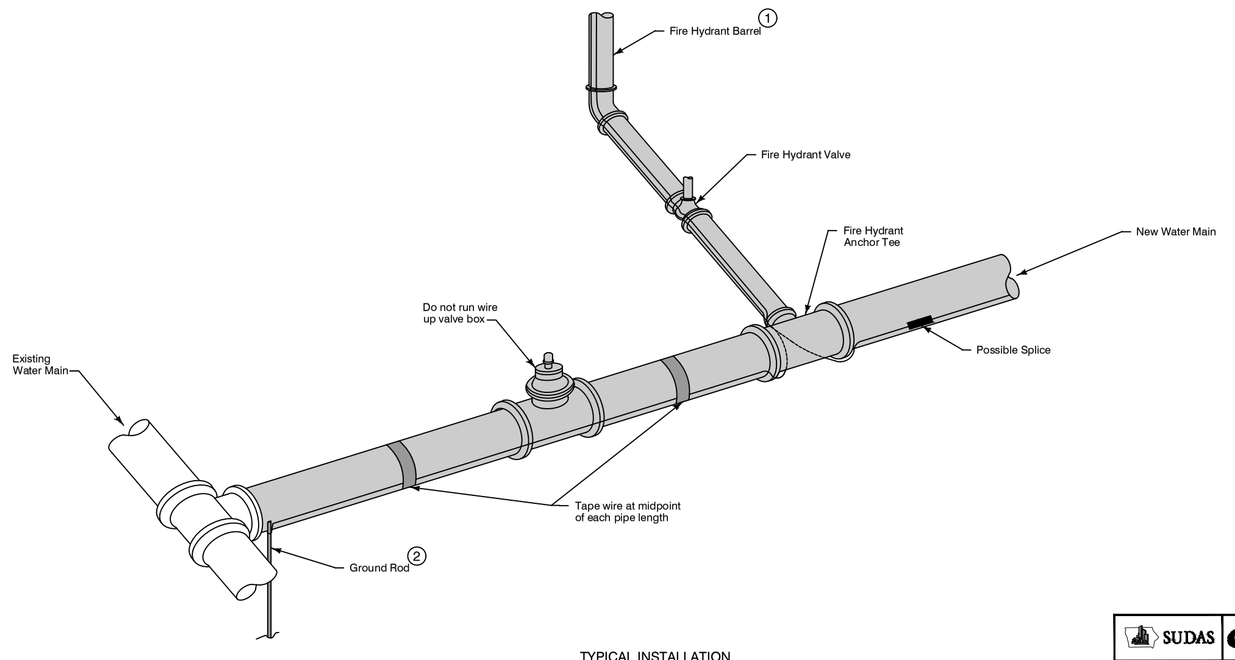
Paul D. Wiegand, SUDAS DIRECTOR — Brian J. Smith, DESIGN METHODS ENGINEER

THRUST BLOCKS

FIGURE 5010.101 SHEET 2 OF 2

① Extend tracer wire up fire hydrant barrel to internal terminals of tracer wire station and back down. Refer to WM-201 for details of fire hydrant assembly.

② Clamp tracer wire to ground rod at system termination points.



TYPICAL INSTALLATION

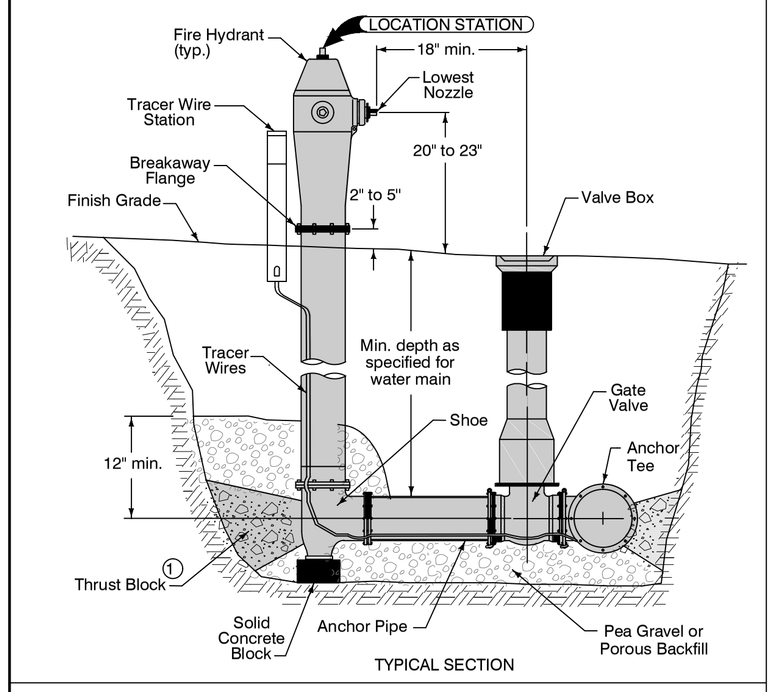
SUDAS	IOWA DOT	REVISION 1 10-18-16
FIGURE 5010.102	STANDARD ROAD PLAN	WM-102
		SHEET 1 of 1

REVISIONS: Replaced Iowa DOT and SUDAS logos with new logos.

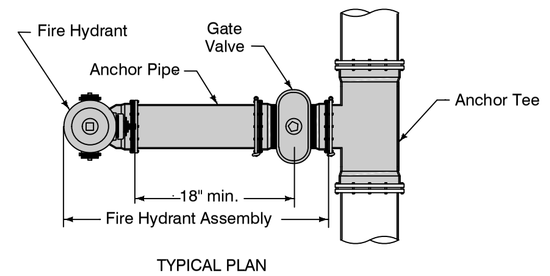
Paul D. Wiegand, SUDAS DIRECTOR — Brian J. Smith, DESIGN METHODS ENGINEER

TRACER SYSTEM

FIGURE 5010.102 SHEET 1 OF 1

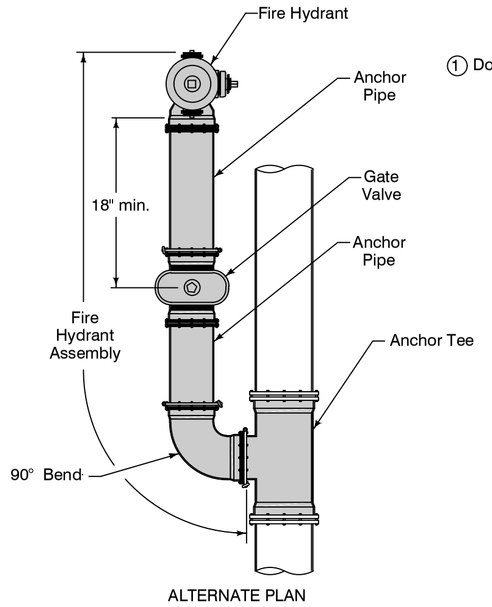


TYPICAL SECTION



TYPICAL PLAN

Use ductile iron pipe with restrained mechanical joints for fire hydrant assembly and anchor tee.



ALTERNATE PLAN

① Do not cover drain holes or tracer wire.

SUDAS	IOWA DOT	REVISION 2 04-18-17
FIGURE 5020.201	STANDARD ROAD PLAN	WM-201
		SHEET 1 of 1

REVISIONS: Updated SUDAS and DOT logos.

Paul D. Wiegand, SUDAS DIRECTOR — Brian J. Smith, DESIGN METHODS ENGINEER

FIRE HYDRANT ASSEMBLY

FIGURE 5020.201 SHEET 1 OF 1

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

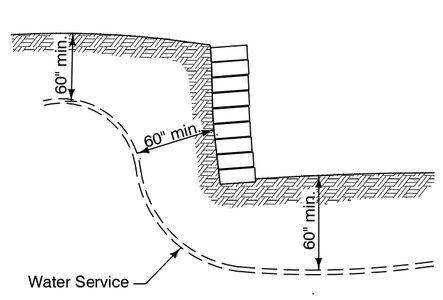
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C0-DETAILS
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

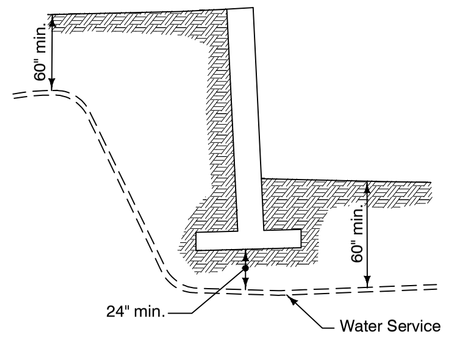
SITE DETAILS

SHEET

C0-22

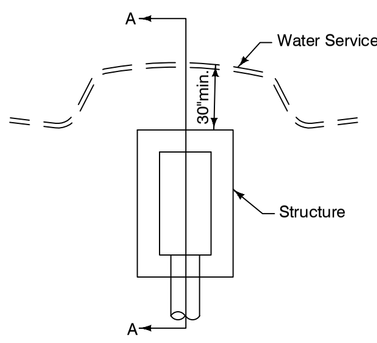


SECTION

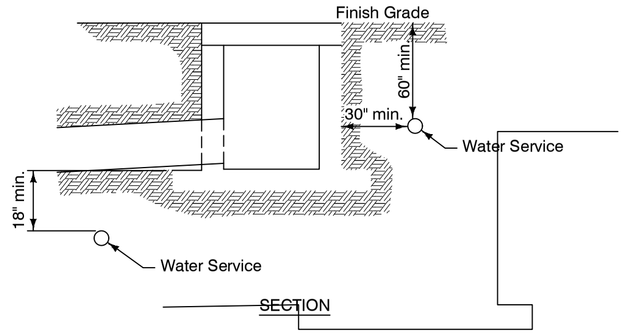


SECTION

This figure details minimum required clearances between structure and water service lines. Adjust location of water services as directed by the Engineer to maintain the clearances shown.



PLAN VIEW



SECTION

FIGURE 8030.101 SHEET 1 OF 1

SUDAS

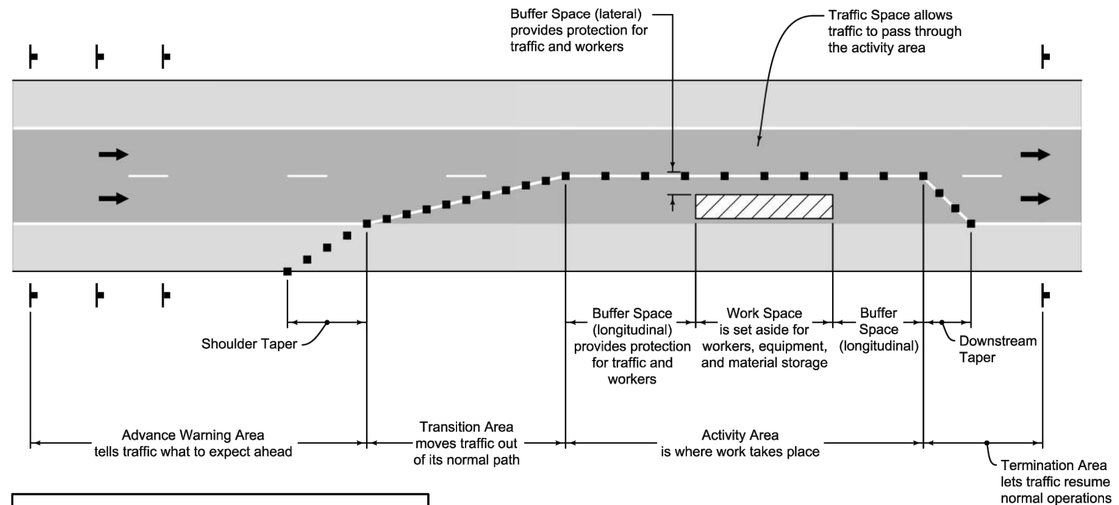
REVISION 1 10-21-14

5010.901

SHEET 1 of 1

SUDAS Standard Specifications

MINIMUM CLEARANCE BETWEEN WATER SERVICE AND STRUCTURE



Key*

- Arrow Board
- Arrow Board Support or Trailer
- Channelizing Device
- Direction of Traffic
- Drum
- Flagger
- Pedestrian Channelizing Device
- Safety Fence
- Shadow Vehicle
- Sign (shown facing left)
- Type III Barricade
- Work Space
- Work Vehicle
- Vehicle Warning Light (amber, high-intensity rotating, flashing, oscillating, or strobe light)

*Applies to all Section 8030 figures

Distance Between Signs

Speed Limit (mph)	A
20-25	100
30-40	250
45-50	350
55	500

Channelizing Device Spacing

Speed Limit (mph)	Taper (ft)	Buffer (ft)	Work Space (ft)
20	20	40	40
25	25	50	50
30	30	60	60
35	35	70	70
40	40	80	80
45	45	90	90
50	50	100	100
55	55	110	110

Merging Taper Lengths for Lane Closure*

Speed Limit (mph)	Taper Length (L) (ft)	Number of Devices
20	80	5
25	125	6
30	180	7
35	245	8
40	320	9
45	540	13
50	600	13
55	660	13

*Values shown are for a 12 foot shift. Table does not apply to one-lane, two-way (flagger) tapers

It may be necessary to combine two or more examples to adequately address the traffic control needed.

Utilize vehicle warning lights (amber, high-intensity rotating, flashing, oscillating, or strobe light) on all shadow and work vehicles.

Vehicle hazard lights may be used to supplement warning lights. Do not use hazard lights alone.

Flags may be used to call attention to the advanced warning signs.

If a closure extends overnight, utilize channelizing devices with retroreflective sheeting.

Speed limit refers to the legally established and signed speed limit.

If an arrow board is used on 2-lane roads, operate only in the caution mode.

Adjust the position of warning signs and channelizing devices for available sight distance.

Do not install temporary traffic control devices until work is ready to begin, and remove or cover all signs and devices promptly when they are not needed.

The END WORK (G20-2) signs shown on all figures are optional.

SUDAS

REVISION New 10-17-17

8030.101

SHEET 1 of 1

SUDAS Standard Specifications

TEMPORARY TRAFFIC CONTROL GENERAL INFORMATION

1 Secure blanket to ground according to manufacturer's recommended anchoring pattern and minimum shown in Table 1.

ANCHOR TRENCH
(12" min. anchor spacing)

EDGE LAP
(4'-0" min. anchor spacing)

END SPLICE
(18" min. anchor spacing)

TABLE 1

Max. slope	Min. anchors
≤ 3:1	1.5/yd²
2:1	2/yd²
1:1	2.5/yd²

FIGURE 9040.103 SHEET 1 OF 1

SUDAS

REVISION 2 10-21-14

9040.103

SHEET 1 of 1

SUDAS Standard Specifications

ROLLED EROSION CONTROL PRODUCT (RECP) INSTALLATION ON SLOPES

EDGE LAP
(4'-0" max. anchor spacing)

LONGITUDINAL SLOT
(3'-0" max. anchor spacing)

STAPLE CHECK

END LAP

ANCHOR SLOT
(1'-0" max. anchor spacing)

FIGURE 9040.104 SHEET 1 OF 1

SUDAS

REVISION 2 10-21-14

9040.104

SHEET 1 of 1

SUDAS Standard Specifications

ROLLED EROSION CONTROL PRODUCT (RECP) INSTALLATION IN CHANNEL

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

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TITLE

SITE DETAILS

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C0-23

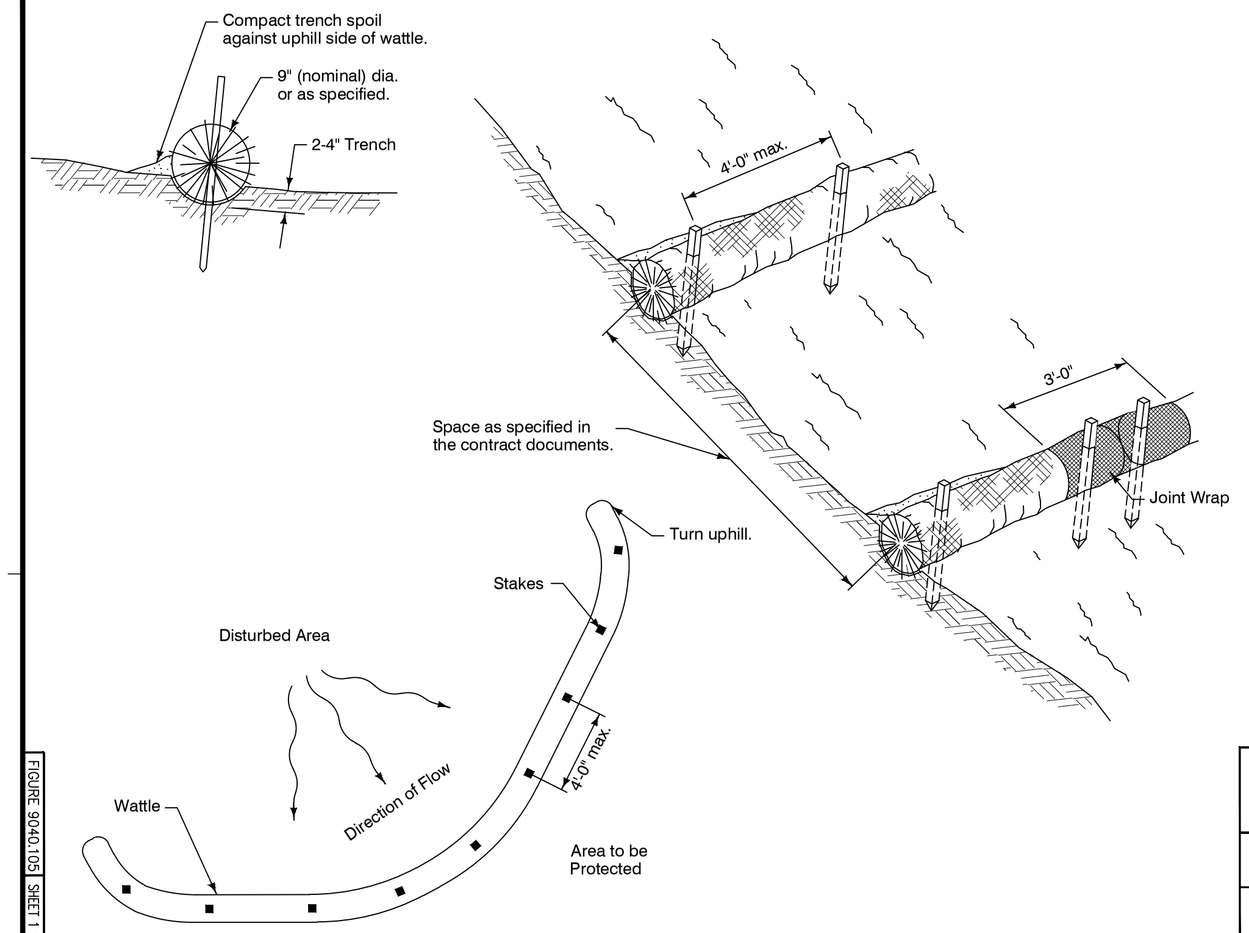
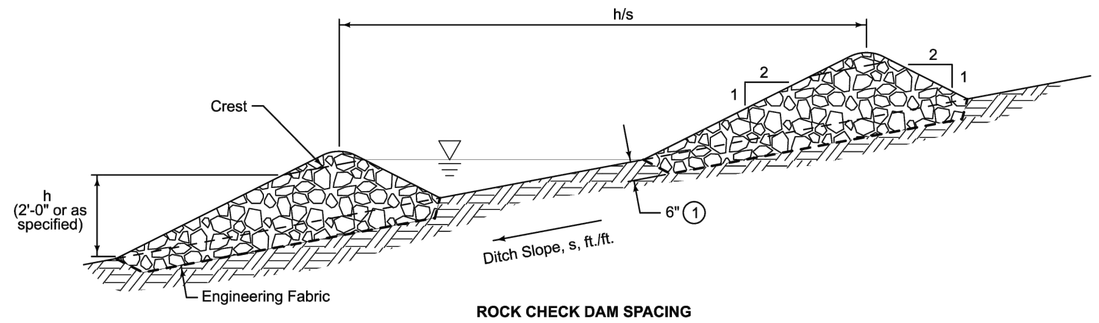


FIGURE 9040.105 SHEET 1 OF 1

SUDAS | REVISION 2 10-21-14 | 9040.105 | SHEET 1 of 1

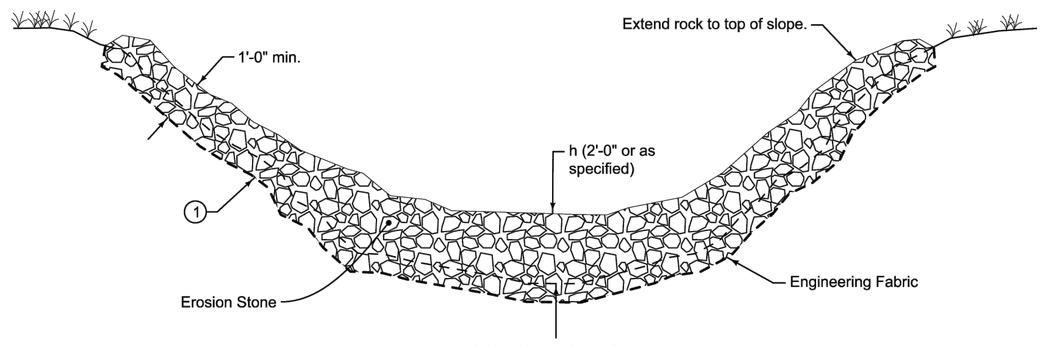
SUDAS Standard Specifications

WATTLE



ROCK CHECK DAM SPACING

(1) Key rock check dam into bottom and sides of the channel a minimum of 6 inches.

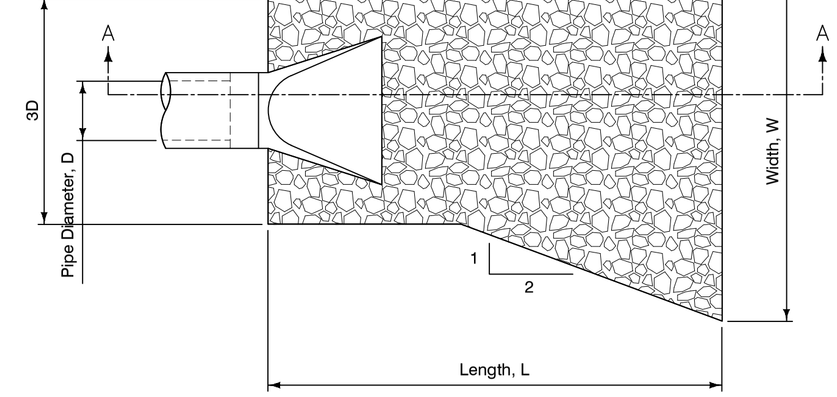


ROCK CHECK DAM SECTION

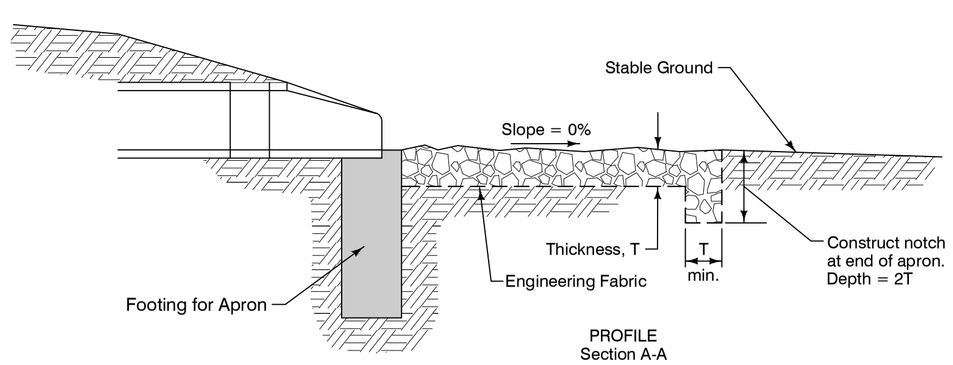
SUDAS | REVISION 3 2025 Edition | 9040.107 | SHEET 1 of 1

SUDAS Standard Specifications

ROCK CHECK DAM



PLAN



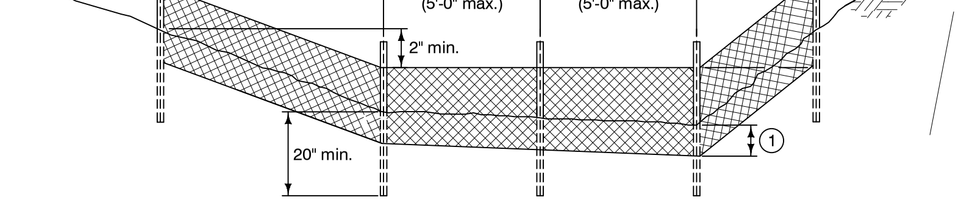
PROFILE
Section A-A

FIGURE 9040.110 SHEET 1 OF 1

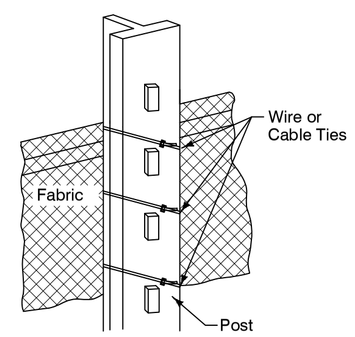
SUDAS | REVISION 3 10-21-14 | 9040.110 | SHEET 1 of 1

SUDAS Standard Specifications

RIP RAP FOR PIPE OUTLET ONTO FLAT GROUND



TYPICAL SILT FENCE DITCH CHECK



ATTACHMENT TO POST

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

FIGURE 9040.116 SHEET 1 OF 2

SUDAS | REVISION 2 10-21-14 | 9040.119 | SHEET 1 of 2

SUDAS Standard Specifications

SILT FENCE

ISG

EST. City of MOVILLE 1887 IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

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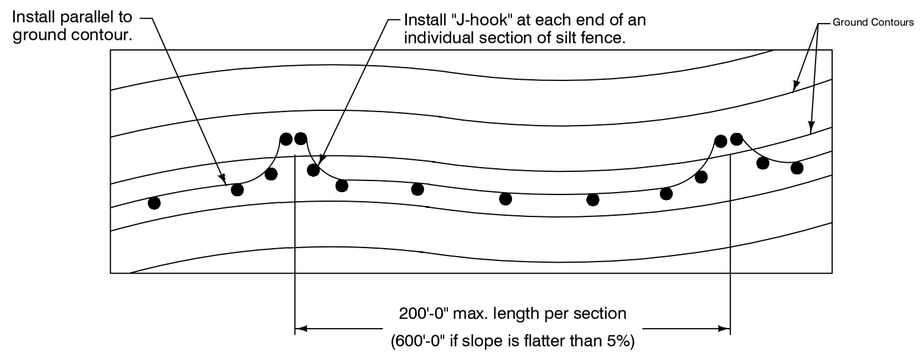
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

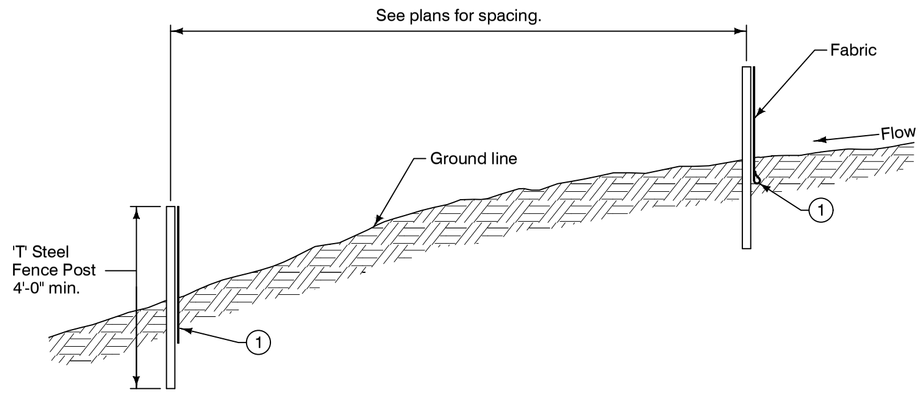
SITE DETAILS

SHEET

C0-24

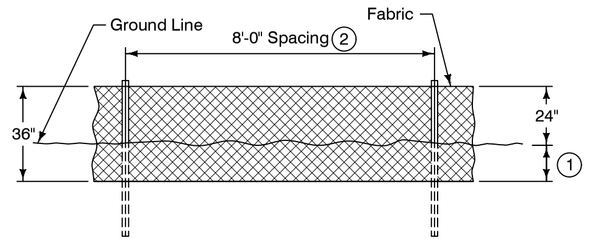


TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES
(Plan View)



TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES
(Profile View)

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

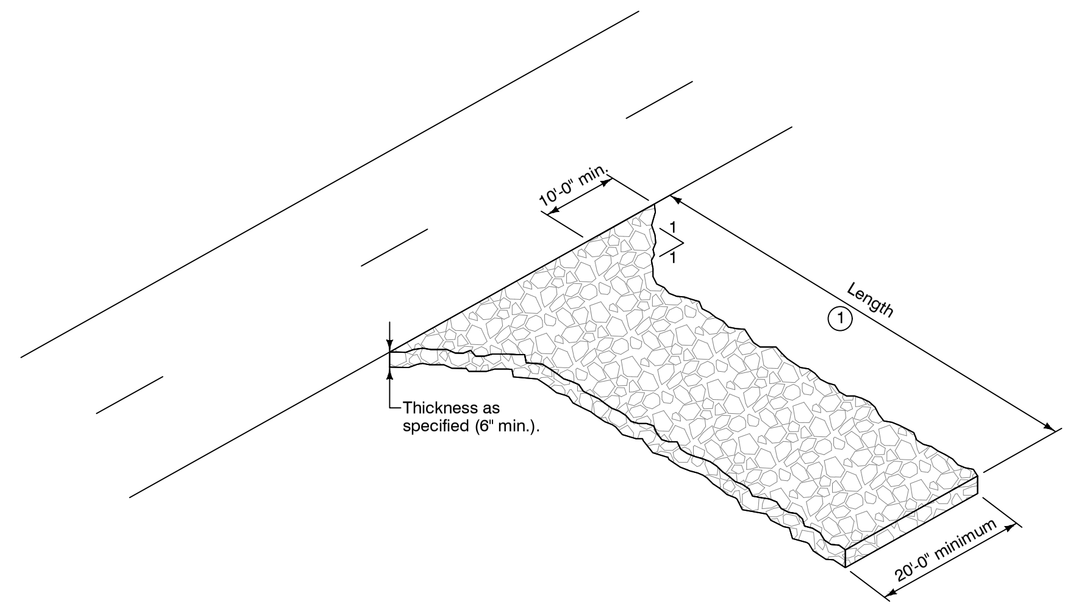


DETAILS OF SILT FENCE ON LONGITUDINAL SLOPES

SUDAS	REVISION 2 10-21-14
9040.119	SHEET 2 of 2
SUDAS Standard Specifications	
SILT FENCE	

FIGURE 9040.119 SHEET 2 OF 2

1. Entrance length: 50 foot minimum (30 foot for single family residential), or as specified in the contract documents. Length of entrance may be increased if sediment track-out occurs.



SUDAS	REVISION 2 10-21-14
9040.120	SHEET 1 of 1
SUDAS Standard Specifications	
STABALIZED CONSTRUCTION ENTRANCE	

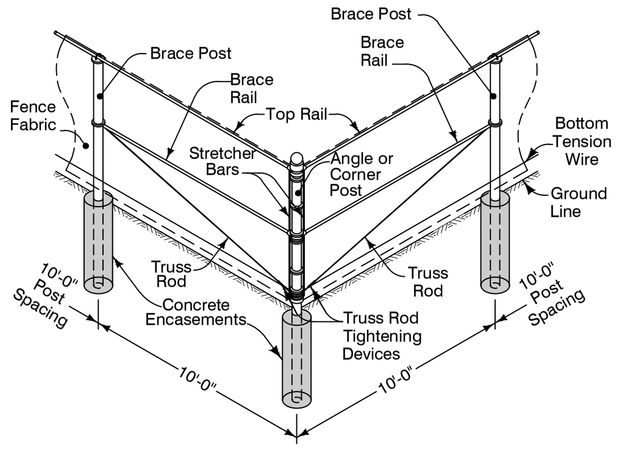
FIGURE 9040.120 SHEET 1 OF 1

POST INSTALLATION

PULL POST INSTALLATION

Place fence fabric on roadway side of post. For certain curves, stream crossings, or other locations, the Contractor has the option to place fabric on the side of the post away from the roadway.

1. Fabric width as specified in the contract documents.
2. For fence heights greater than 8 feet, the depth of the fence post footing is 3 feet plus 3 inches for each 1 foot in height over 8 feet.
3. Install the fence on the roadway side of the right-of-way when specified in the contract documents.

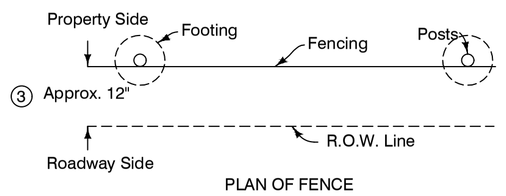


ANGLE OR CORNER POST INSTALLATION

FENCE POST FOOTING DEPTH AND DIAMETER

USE IN FENCE	FENCE HEIGHT					
	4'-0" and less		Over 4'-0" to 8'-0"		Over 8'-0"	
	X	Y	X	Y	X	Y
Line and Brace Posts	0'-8"	3'-0"	0'-10"	3'-0"	1'-0"	2
Terminal Post*	0'-10"	3'-0"	1'-0"	3'-0"	1'-4"	2

*Includes corner, angle, end, and pull posts.



PLAN OF FENCE

SUDAS	REVISION New 10-18-11
9060.101	SHEET 1 of 2
SUDAS Standard Specifications	
CHAIN LINK FENCE	

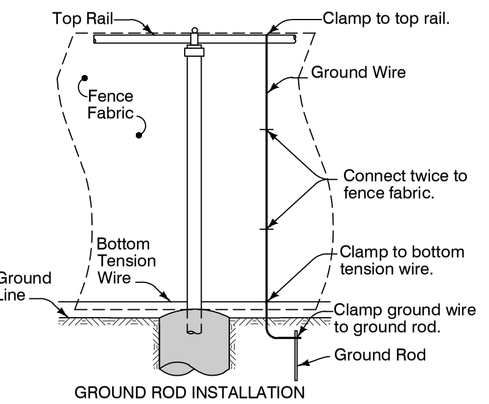
FIGURE 9060.101 SHEET 1 OF 2

ANGLE, CORNER, OR END POST ASSEMBLY

BRACE POST ASSEMBLY

RAIL SLEEVE

BOTTOM TENSION WIRE AND KNUCKLED SELVEDGE



GROUND ROD INSTALLATION

SUDAS	REVISION New 10-18-11
9060.101	SHEET 2 of 2
SUDAS Standard Specifications	
CHAIN LINK FENCE	

FIGURE 9060.101 SHEET 2 OF 2

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PROJECT

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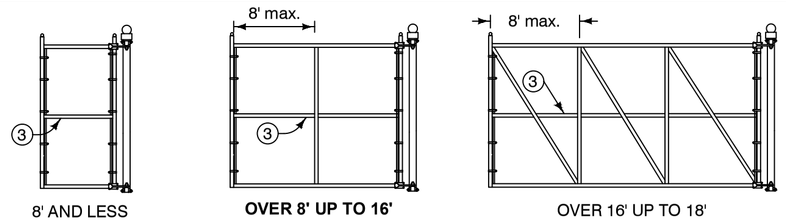
TITLE

SITE DETAILS

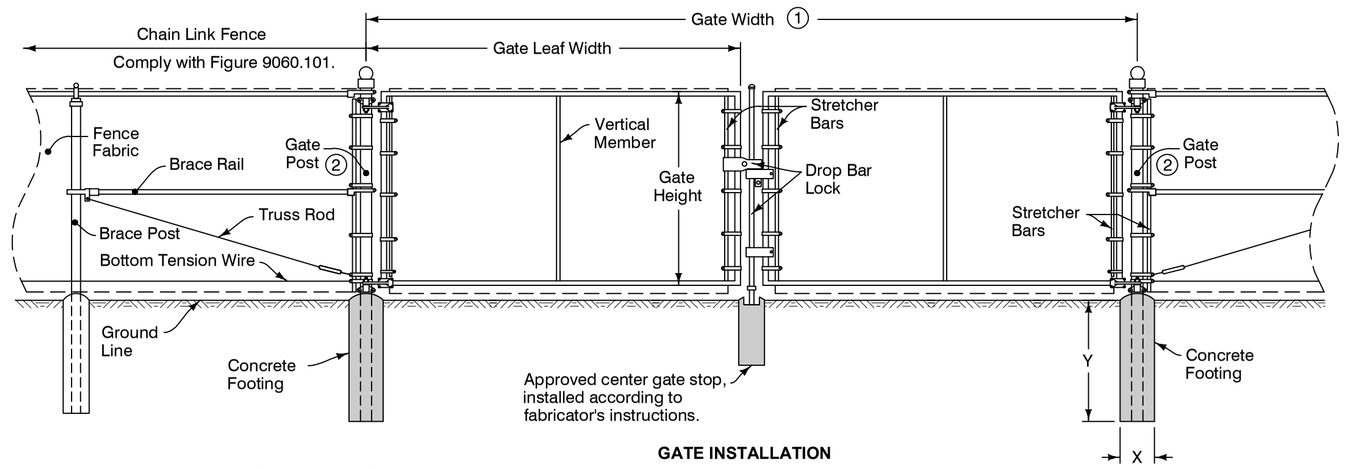
SHEET

C0-25



FRAME PATTERNS FOR VARIOUS GATE OPENINGS

1. Double swing gate is required only for widths greater than 16 feet. Exact details of gate design are subject to approval of the Engineer. Furnish gate with approved stop, latch, and means for locking. Install as recommended by the manufacturer.
2. End post used to terminate run of fence if no gate is proposed.
3. Horizontal members are required only if the fabric height is 8 feet or greater.



GATE INSTALLATION

GATE POST FOOTING DEPTH AND DIAMETER

GATE HEIGHT	GATE LEAF WIDTH	X	Y
6'-0" or less	4'-0" or less	0'-10"	3'-0"
6'-0" or less	over 4'-0" to 10'-0"	0'-12"	3'-0"
6'-0" or less	over 10'-0" to 18'-0"	1'-2"	3'-0"
over 6'-0"	6'-0" or less	0'-10"	3'-0"
over 6'-0"	over 6'-0" to 12'-0"	1'-0"	3'-0"
over 6'-0"	over 12'-0" to 18'-0"	1'-4"	3'-6"
over 6'-0"	over 18'-0" to 24'-0"	1'-6"	4'-0"

SUDAS

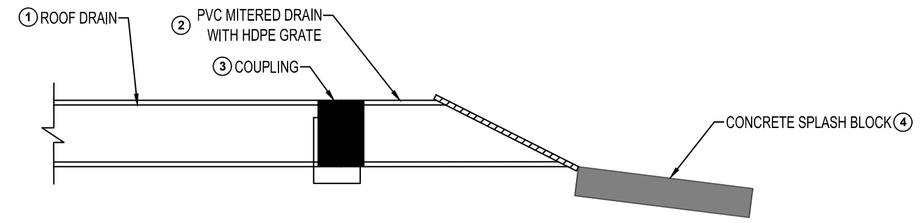
REVISION New 10-18-11

9060.102

SHEET 1 of 1

SUDAS Standard Specifications

CHAIN LINK GATE

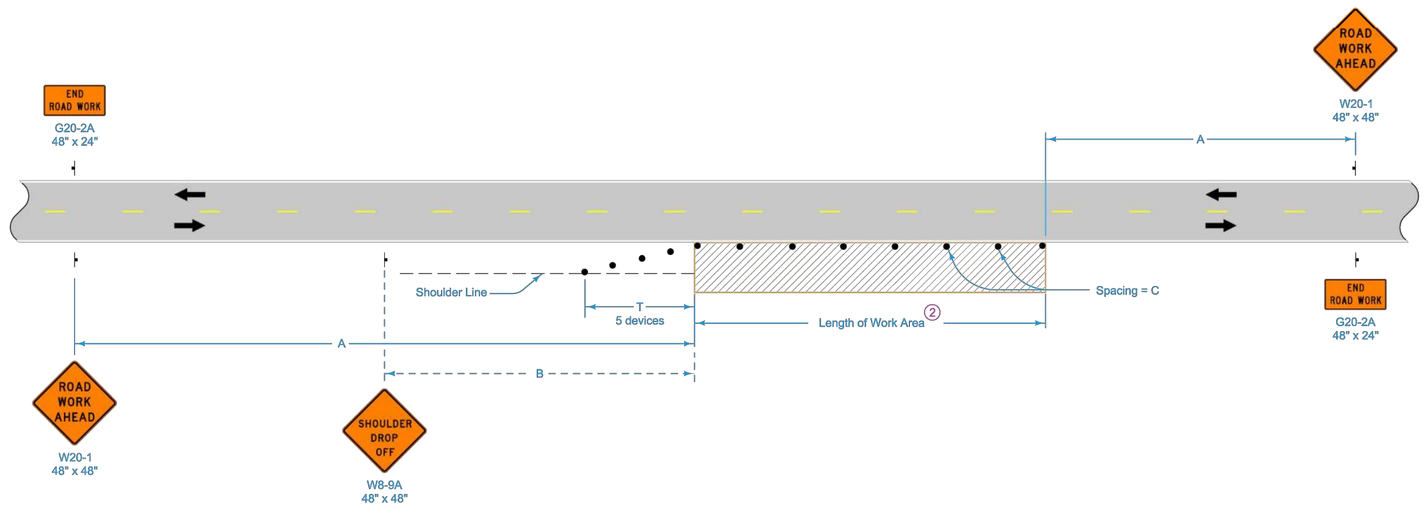


NOTES:

1. REFER TO PLANS.
2. DRAIN AND GRATE SHALL BE APPROVED BY ENGINEER. FOLLOW MANUFACTURER INSTRUCTIONS FOR INSTALLATION.
3. COUPLING SHALL BE A MANUFACTURED PRODUCT APPROVED OF BY THE ENGINEER.
4. SPLASH BLOCK SHALL BE CONCRETE AND A MINIMUM OF 12" BY 18" BY 5". SPLASH BLOCK SHALL BE PLACED ON CLAY PLUG. AREA AROUND SPLASH BLOCK SHALL BE PROTECTED BY EROSION CONTROL BLANKET. (INCIDENTAL TO INSTALLATION)

ROOF DRAIN OUTLET

NTS



LEGEND

- Traffic Sign
- 42" Channelizer
- Work Area
- Direction of Traffic

SPEED LIMIT (mph)*	A	B	C 2	T
35 or less	500'	250'	40'	100'
40 - 45	700'	350'	80' 1	200'
50 or greater	1000'	500'	100' 1	200'

* Speed Limit refers to regulatory speed limit before road work.

When a pavement edge drop-off exists, install a SHOULDER DROP-OFF sign.

No pavement edge drop-offs greater than pavement depth will be allowed during non-working hours.

Shoulder edge drop-offs shall be mitigated according to Article 1107.08.K2 of the Standard Specifications.

For work lasting less than one hour, refer to TC-1.

1. When the length of a pavement edge drop-off is 1000 feet or less, the temporary fillet requirement of Article 1107.08 of the Standard Specifications does not apply. Reduce channelizer spacing to 40 feet.
2. For work areas less than 200 feet long, use channelizers spaced at 20 foot centers or use a vehicle with an amber revolving light or amber strobe light.

Possible Contract Item:
Traffic Control

IOWA DOT

REVISION 10 4-18-23

STANDARD ROAD PLAN

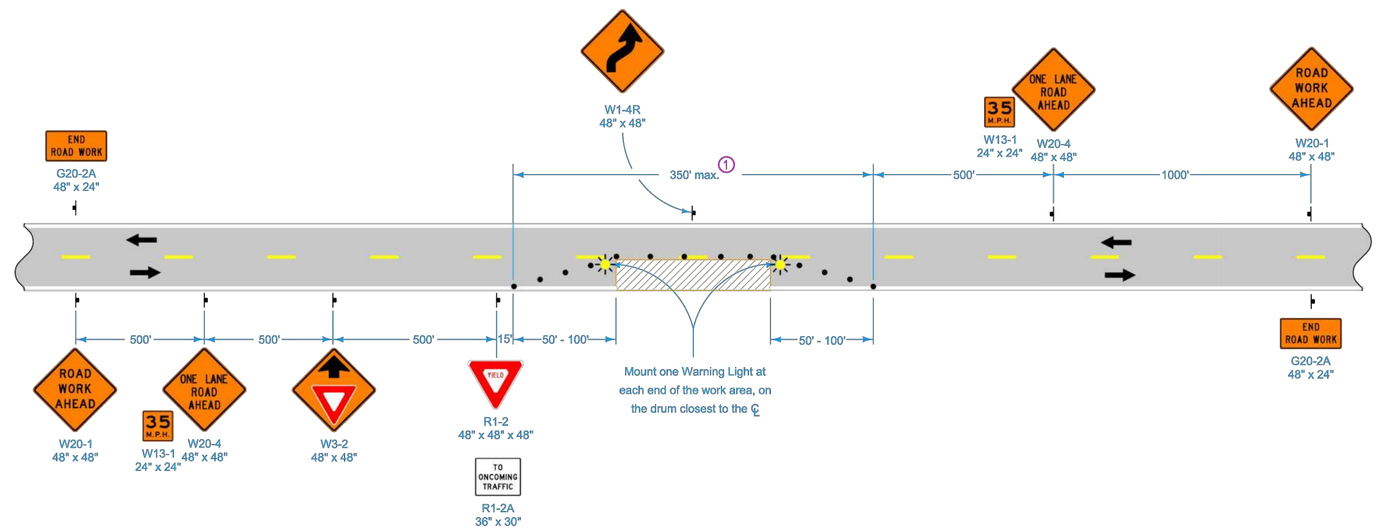
TC-202

SHEET 1 of 1

REVISIONS: Added speed limit note.

APPROVED BY DESIGN METHODS ENGINEER

WORK WITHIN 15 FT OF TRAVELED WAY



LEGEND

- Type 'A' Warning Light
- Traffic Sign
- Work Area
- Direction of Traffic
- 42" Channelizer

Do not use this layout when ADT exceeds 2000 vehicles.

Locate this layout at least 2,500 feet from any other work site layout.

Full-depth openings during non-working hours will not be allowed. Temporary plating, planking or filling may be necessary. Vehicles, unattended equipment, materials or stock-piled waste are not permitted between the shoulder lines during non-working hours.

For bridge deck overlay projects: The night before overlay operations begin, a bridge deck finishing machine and necessary materials may be placed on the roadway.

1. Do not use this layout if a No Passing Zone for the closed lane is located within this area.

Possible Contract Item:
Traffic Control

IOWA DOT

REVISION 3 10-15-19

STANDARD ROAD PLAN

TC-211

SHEET 1 of 1

REVISIONS: New logo.

APPROVED BY DESIGN METHODS ENGINEER

LANE CLOSURE ON LOW VOLUME ROADWAY

ISG

EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

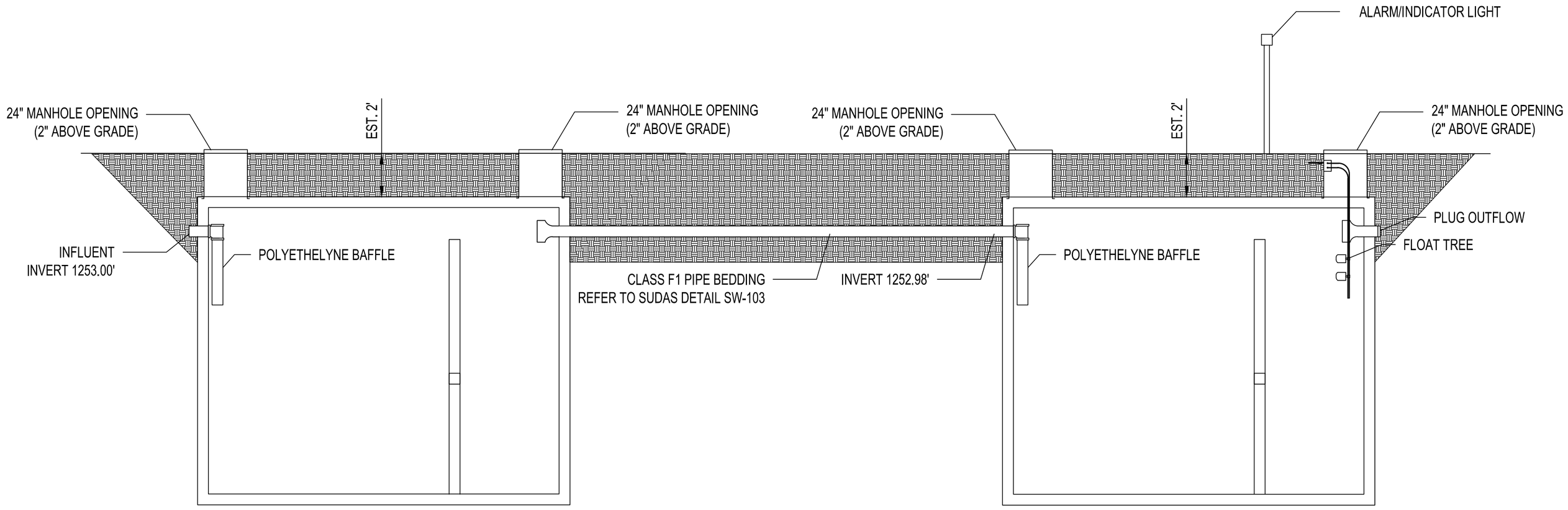
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C0-DETAILS
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SITE DETAILS

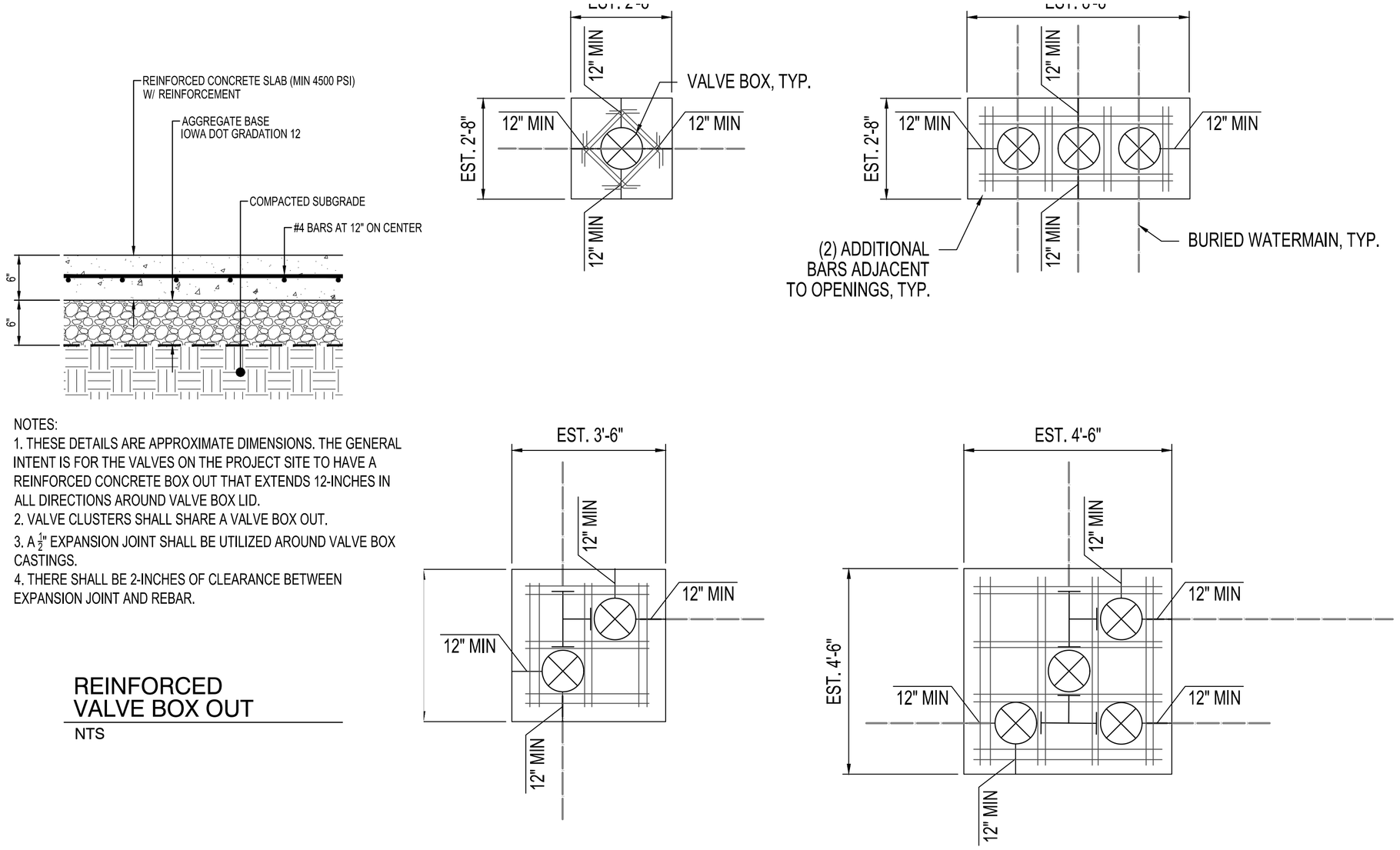
SHEET

C0-26



TWO (2) - 2,000 GALLON TWO COMPARTMENT SEPTIC TANKS IN PARALLEL

NTS



NOTES:
1. THESE DETAILS ARE APPROXIMATE DIMENSIONS. THE GENERAL INTENT IS FOR THE VALVES ON THE PROJECT SITE TO HAVE A REINFORCED CONCRETE BOX OUT THAT EXTENDS 12-INCHES IN ALL DIRECTIONS AROUND VALVE BOX LID.
2. VALVE CLUSTERS SHALL SHARE A VALVE BOX OUT.
3. A $\frac{3}{4}$" EXPANSION JOINT SHALL BE UTILIZED AROUND VALVE BOX CASTINGS.
4. THERE SHALL BE 2-INCHES OF CLEARANCE BETWEEN EXPANSION JOINT AND REBAR.

REINFORCED VALVE BOX OUT

NTS

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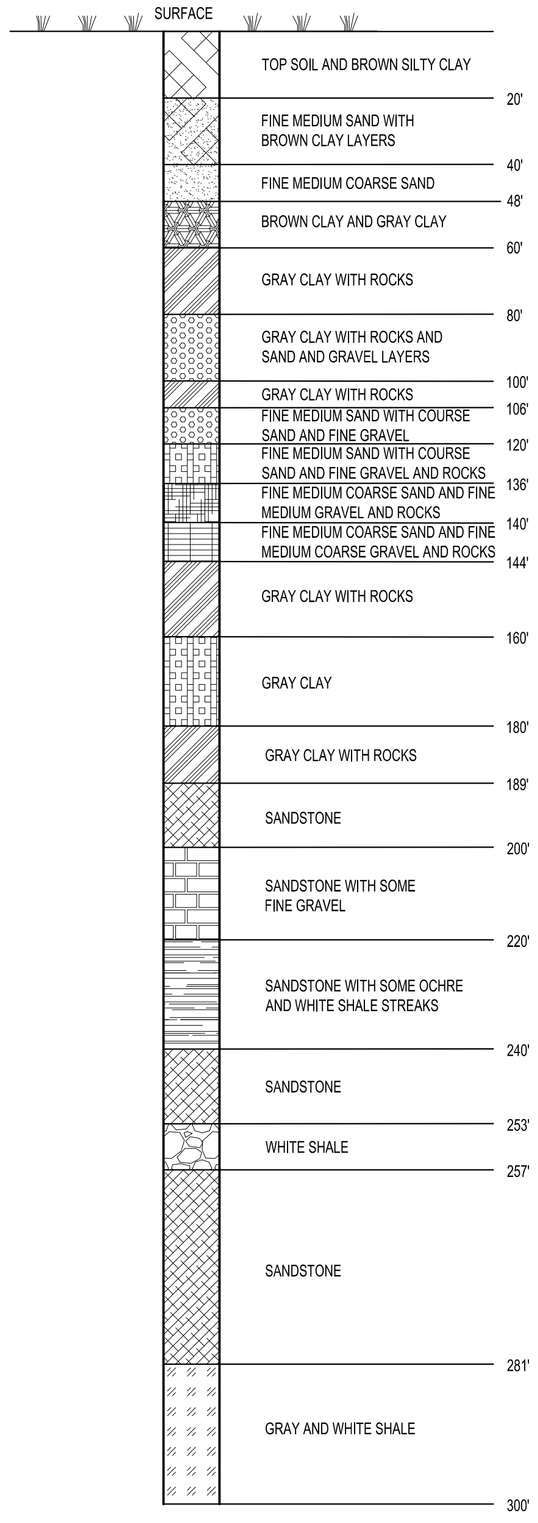
SHEET

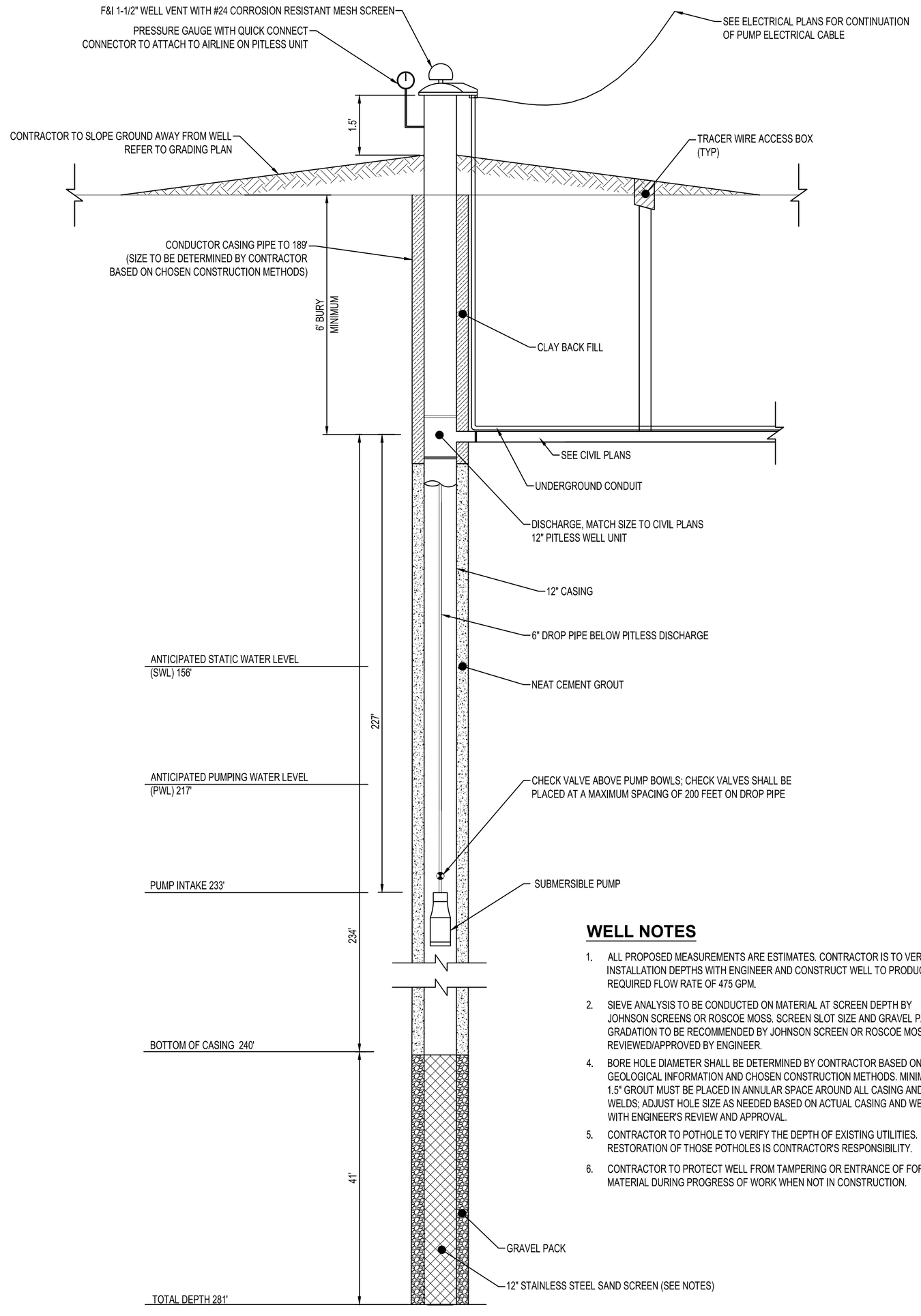
C0-27

NOTES

BORING LOG IS BASED ON TEST WELL LOCATED APPROXIMATELY 100 FEET WEST AND 40 FEET NORTH OF FINAL WELL #7 LOCATION.



ANTICIPATED BORING LOG
NTS



WELL NOTES

1. ALL PROPOSED MEASUREMENTS ARE ESTIMATES. CONTRACTOR IS TO VERIFY INSTALLATION DEPTHS WITH ENGINEER AND CONSTRUCT WELL TO PRODUCE REQUIRED FLOW RATE OF 475 GPM.
2. SIEVE ANALYSIS TO BE CONDUCTED ON MATERIAL AT SCREEN DEPTH BY JOHNSON SCREENS OR ROSCOE MOSS. SCREEN SLOT SIZE AND GRAVEL PACK GRADATION TO BE RECOMMENDED BY JOHNSON SCREEN OR ROSCOE MOSS AND REVIEWED/APPROVED BY ENGINEER.
4. BORE HOLE DIAMETER SHALL BE DETERMINED BY CONTRACTOR BASED ON GEOLOGICAL INFORMATION AND CHOSEN CONSTRUCTION METHODS. MINIMUM 1.5" GROUT MUST BE PLACED IN ANNULAR SPACE AROUND ALL CASING AND WELDS; ADJUST HOLE SIZE AS NEEDED BASED ON ACTUAL CASING AND WELDS WITH ENGINEER'S REVIEW AND APPROVAL.
5. CONTRACTOR TO POTHOLE TO VERIFY THE DEPTH OF EXISTING UTILITIES. RESTORATION OF THOSE POTHOLES IS CONTRACTOR'S RESPONSIBILITY.
6. CONTRACTOR TO PROTECT WELL FROM TAMPERING OR ENTRANCE OF FOREIGN MATERIAL DURING PROGRESS OF WORK WHEN NOT IN CONSTRUCTION.

NEW WELLS
NO BERM, WITH CASING
NTS

ISG

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TITLE

WELL SECTION

SHEET

C0-28

WELL WATER POLLUTION PREVENTION PLAN NOTES:

GENERAL PROJECT INFORMATION:

PROJECT NARRATIVE:

THIS PROJECT CONSISTS OF (TWO) NEW WELL CONSTRUCTION, DEVELOPMENT, TEST PUMPING, NEW WATER MAIN INSTALLATION, GRADING, AND SURFACE REPLACEMENT FOR THE PRIOR LISTED IMPROVEMENTS; PERIMETER AND OTHER EROSION AND SEDIMENT CONTROLS; AND PREPARATION FOR FINAL SEEDING.

PROJECT PHASING:

SEE CONSTRUCTION NOTES.

RESPONSIBLE PARTIES:

ENGINEER HAS STARTED WWPPP DOCUMENTS OF NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO. 6. CONTRACTOR MUST VERIFY WELL WATER POLLUTION PREVENTION AND SEDIMENT CONTROL BMP'S, SIGN ALL RELEVANT DOCUMENTS, COMPLETE AND SUBMIT FIELD OFFICE NOTIFICATION FORM, ROUTINELY INSPECT SITE FOR WWPPP COMPLIANCE, AND DOCUMENT AND MANAGE OVERALL WWPPP.

CONTRACTOR AND OWNER SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF WELL WATER POLLUTION PREVENTION AND SEDIMENT CONTROL BMP'S WHO WILL OVERSEE THE IMPLEMENTATION OF THE WWPPP.

COMPANY: CONTACT PERSON: PHONE:

COMPANY: CONTACT PERSON: PHONE:

OWNER SHALL IDENTIFY THE ENTITY RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE WELL WATER MANAGEMENT SYSTEM.

COMPANY: CONTACT PERSON: PHONE:

PROJECT AREA:

TOTAL PROJECT SIZE (DISTURBED AREA) = 8.92 ACRES

EXISTING AREA OF IMPERVIOUS SURFACE = 0.00 ACRES

POST CONSTRUCTION AREA OF IMPERVIOUS SURFACE = 0.06 ACRES

TOTAL NEW IMPERVIOUS SURFACE AREA CREATED = 0.06 ACRES

WELL WATER MANAGEMENT / BMP SELECTION:

TYPES OF WELL WATER MANAGEMENT THAT ARE PROPOSED ARE CHECKED BELOW. CONTRACTOR TO MAKE FINAL DETERMINATION OF BMPS.

[X] SILT FENCE [ ] STORM DRAIN INLET PROTECTION [X] FRAC TANK

[ ] STREET CLEANING / SWEEPING [X] PERMANENT SEEDING

RECEIVING WATERS:

SURFACE WATERS WHICH WILL RECEIVE WELL WATER FROM THE CONSTRUCTION SITE ARE AS FOLLOWS:

NAME OF WATER BODY	TYPE (DITCH, POND, WETLAND, LAKE, ETC.)
ROAD DITCH	DITCH
UNNAMED CREEK	CREEK
WEST FORK OF LITTLE SIOUX RIVER	RIVER
LITTLE SIOUX RIVER	RIVER
MISSOURI RIVER	RIVER
MISSISSIPPI RIVER	RIVER

SOIL TYPES:

HYDROLOGIC SOIL GROUP - SUMMARY BY MAP UNIT - WOODBURY COUNTY, IOWA			
MAP UNIT SYMBOL	MAP UNIT NAME	RATING	PERCENT OF AOI
1C3	IDA SILT LOAM, 5 TO 9 PERCENT SLOPES, SEVERELY ERODED	B	16%
100C2	MONONA SILTY CLAY LOAM, 5 TO 9 PERCENT SLOPES	C	67%
100D2	MONONA SILTY CLAY LOAM, 9 TO 14 PERCENT SLOPES, ERODED	C	17%

CONSTRUCTION / IMPLEMENTATION:

ONCE ALL ENTITIES HAVE AGREED AND SIGNED THE WWPPP, CONSTRUCTION OF THE PROJECT MAY BEGIN. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE APPROPRIATE IDNR REGIONAL FIELD SERVICES OFFICE. NOTIFICATION MUST BE PROVIDED NO EARLIER THAN 5 DAYS BEFORE WELL SERVICES ARE STARTED AND NO LATER THAN 24 HOURS FOLLOWING START. GENERAL PERMIT NO. 6 CAN ALSO BE REFERENCED FOR FURTHER INFORMATION. THE CONTRACTOR MUST ALSO DO THE FOLLOWING THINGS THAT ARE INDICATED IN THE WELL WATER POLLUTION PREVENTION PLAN:

1. IMPLEMENT CONTROLS
2. INSPECT AND MAINTAIN THE CONTROLS
3. UPDATE / CHANGE THE WWPPP TO KEEP IT CURRENT BASED ON THE WASTEWATER DISCHARGE QUANTITY AND QUALITY.
4. REPORT ANY HAZARDOUS CONDITION TO THE IOWA DNR FIELD SERVICES OFFICES IN WHICH FIELD OFFICE NOTIFICATIONS WERE SUBMITTED.

CONSTRUCTION ACTIVITY NOTES:
WELL WATER POLLUTION PREVENTION:

CONSTRUCTION OF SILT FENCE AND ALL OTHER POLLUTION CONTROL MEASURES SHALL BE COMPLETE BEFORE OTHER CONSTRUCTION ACTIVITY OCCURS.

USE PHASED CONSTRUCTION WHEREVER PRACTICAL TO MINIMIZE SEDIMENT TRANSPORT.

SEDIMENT CONTROL PRACTICES:

CONSTRUCTION OF SILT FENCE AND ALL OTHER WELL WATER POLLUTION CONTROL MEASURES SHALL BE COMPLETE PRIOR TO LAND DISTURBING ACTIVITIES OCCURRING.

A ROCK CONSTRUCTION EXIT OR OTHER APPROVED ALTERNATIVE MAY BE CONSTRUCTED AT THE ENTRY POINT TO THE WELL SITE TO NOT STRESS EXISTING GROUND. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY BROKEN PROPERTY.

SILT FENCE SHALL BE INSTALLED AND MAINTAINED UNTIL NEW WELL HAS BEEN PROPERLY CONSTRUCTED.

THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL EROSION FROM LEAVING THE CONSTRUCTION ZONE. ALL ERODED MATERIAL THAT LEAVES THE CONSTRUCTION ZONE SHALL BE COLLECTED BY THE CONTRACTOR AND RETURNED TO THE SITE AT THE CONTRACTOR'S EXPENSE.

SILT FENCE OR OTHER EFFECTIVE POLLUTION CONTROL MEASURES MUST BE INSTALLED AROUND THE PERIMETER OF ANY SOIL STOCKPILES, INCLUDING TEMPORARY STOCKPILES. STOCKPILES CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES.

CONSTRUCTION ACTIVITY NOTES:
SEQUENCE OF ACTIVITIES:

1. NOTIFY ENGINEER AND OWNER OF COMMENCEMENT OF CONSTRUCTION.
2. INSTALL ALL SITE PERIMETER AND SEDIMENTATION CONTROLS.
3. DRILL NEW WELL AND INSTALL ALL WATER MAIN PER PLANS. DEVELOP AND TEST.
4. INSTALL PERMANENT SEEDING, REPLACEMENT OF DISTURBED SURFACING, & WELLHEAD PROTECTION.
5. WHEN ALL CONSTRUCTION IS COMPLETED AND SITE IS STABILIZED, REMOVE SITE PERIMETER AND SEDIMENTATION CONTROLS.
6. SEE CONSTRUCTION STAGING PLAN SHEET FOR MORE DETAILED INFORMATION.

WELL WASTEWATER PRODUCTION:

DURING DRILLING, ONLY CLEAR WATER OR DRILLING MUD WILL BE USED DEPENDING ON APPROVAL BY ENGINEER. AS SUCH, A "MUD PIT" WILL BE USED IF DRILLING MUD IS UTILIZED. ANY DRILLING FLUID PRODUCED DURING THIS PHASE WILL BE EVENLY SPREAD ACROSS THE SITE AND PREPARED FOR FINAL SEEDING. BMPS SHALL BE PREPARED BY THE CONTRACTOR TO PREVENT ANY EROSION OR DAMAGE TO NEIGHBORING PROPERTIES.

DURING THE DEVELOPMENT PHASE (BAILING, SURGING, AND AIR LIFTING), WASTEWATER WILL BE GENERATED. THIS WATER WILL BE FILTERED VIA SILT FENCE, VEGETATION, AND GROUND INFILTRATION OR A FRAC TANK. THE AMOUNT OF WASTEWATER GENERATED DURING DEVELOPMENT IS DEPENDENT ON THE CONTRACTOR'S CHOSEN DRILLING METHODS. WASTEWATER FROM THE DEVELOPMENT PHASE MUST RECEIVE A MINIMUM OF 5 MINUTES OF RETENTION TIME. ADDITIONALLY, A REDUCING AGENT MUST BE APPLIED TO ANY HEAVILY CHLORINATED WATER.

THE DEVELOPMENT WASTEWATER WILL BE LOW QUALITY SEDIMENT LADEN WATER DURING THE EARLY PORTION OF DEVELOPMENT AND CLEARING TO SEMI-HIGH QUALITY WASTEWATER AT THE END OF DEVELOPMENT. THE DEVELOPMENT WASTEWATER WILL BE FILTERED VIA SILT FENCE, VEGETATION, AND GROUND INFILTRATION OR A FRAC TANK.

AFTER THE NEW WELL IS COMPLETED, TEST PUMPING WILL BE REQUIRED. WATER GENERATED DURING TEST PUMPING WILL BE OF SEMI-HIGH QUALITY WITH SOME SUSPENDED SOLIDS. IT IS ANTICIPATED THAT THE NEW WELL WILL BE TEST PUMPED AT APPROXIMATELY 750 GPM FOR 24 HOURS (OR MAXIMUM SUSTAINABLE YIELD). TEST PUMPING MAY PRODUCE UP TO 1,100,000 GALLONS OF WATER; OF WHICH, 100% IS EXPECTED TO REACH WATERS OF THE UNITED STATES.

ALL TEST PUMP WATER WILL BE PIPED TO A PORTABLE FRAC TANK WHERE IT WILL RECEIVE A MINIMUM OF 3 MINUTES OF RETENTION TIME. IT WILL THEN OUTLET TRAVELING OVER LAND TO WEST FORK OF LITTLE SIOUX RIVER.

CONSTRUCTION ACTIVITY NOTES:
POLLUTION PREVENTION:

ALL HAZARDOUS MATERIALS (OIL, GASOLINE, FUEL, PAINT, ETC) MUST BE PROPERLY STORED TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE, STORAGE AREAS SHALL PROVIDE SECONDARY CONTAINMENT AND A HAZARDOUS MATERIALS SPILL KIT. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.

EQUIPMENT MAINTENANCE AREAS MUST BE LIMITED TO A DEFINED AREA OF THE SITE. ALL RUNOFF CONTAINING ANY HAZARDOUS MATERIAL MUST BE PROPERLY COLLECTED AND DISPOSED. NO ENGINE DEGREASING SHALL BE ALLOWED ON SITE.

THE CONTRACTOR IS RESPONSIBLE FOR MONITORING AIR POLLUTION AND ENSURING IT DOES NOT EXCEED LEVELS SET BY LOCAL, STATE, OR FEDERAL REGULATIONS. THIS INCLUDES DUST CREATED BY WORK BEING PERFORMED ON THE SITE. AIR POLLUTION AND DUST CONTROL CORRECTION IS CONSIDERED INCIDENTAL TO THE BID PRICES FOR WHICH WORK IS BEING PERFORMED. ADDITIONAL DUST CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER.

INSPECTION AND MAINTENANCE:

CONTRACTOR'S QUALIFIED PERSONNEL (INSPECTOR) MUST ROUTINELY INSPECT THE CONSTRUCTION SITE ONCE EVERY SIX (6) HOURS AND FOLLOWING ANY STORM EVENT OF 0.5 INCHES OR GREATER AND AT LEAST ONCE EVERY 7 DAYS UNTIL COMPLETION OF WELL CONSTRUCTION.

ALL INSPECTIONS PERFORMED DURING CONSTRUCTION MUST BE RECORDED AND RECORDS RETAINED WITH THE WWPPP.

CONTRACTOR IS RESPONSIBLE FOR KEEPING A RECORD OF ALL RAINFALL INFORMATION & EROSION CONTROL MAINTENANCE UNTIL WELL CONSTRUCTION PROCEDURES HAVE COMMENCED.

ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES ½ OF THE HEIGHT OF THE FENCE.

EROSION CONTROL, AND OTHER BMP'S MUST BE REPLACED, REPAIRED, OR SUPPLEMENTED WHEN THEY REACH 50% DESIGN LOAD.

FINAL STABILIZATION:

THE PERMITTEES MUST ENSURE FINAL STABILIZATION OF THE SITE.

ALL TEMPORARY EROSION CONTROL MEASURES AND BMP'S MUST BE REMOVED AS PART OF THE FINAL SITE STABILIZATION.

NPDES GENERAL PERMIT NO. 6 FURTHER DEFINES FINAL STABILIZATION AND ITS REQUIREMENTS.

MAINTENANCE SCHEDULE

THE FOLLOWING MAINTENANCE SCHEDULE HAS BEEN PROVIDED. THE INSPECTOR MUST PERFORM THE INSPECTIONS. THE CONTRACTOR MUST PERFORM ALL NEEDED MAINTENANCE. FURTHERMORE, ALL EROSION CONTROL FEATURES REQUIRING MAINTENANCE MAY NOT BE LISTED BELOW. THE CONTRACTOR AND INSPECTOR MUST PERFORM THEIR RESPECTIVE DUTIES ON ALL BMP'S THAT ARE NOT LISTED BELOW AS WELL.

1. ACCESS DRIVE AND CONSTRUCTION STAGING AREA - THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR MATERIALS DROPPED, WASHED OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES. ACCESS DRIVE AND CONSTRUCTION STAGING AREA MUST PROTECT EXISTING SITE, CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING SITE.

2. SILT FENCE - THE MAINTENANCE MEASURES ARE AS FOLLOWS; (2.1) SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL, ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY; (2.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING; (2.3) SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY; (2.4) SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER; AND (2.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

3. PERMANENT SEEDING - THE MAINTENANCE MEASURES ARE AS FOLLOW: (3.1) IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANNING; (3.2) NEW SEEDLINGS SHALL BE SUPPLIED WITH ADEQUATE MOISTURE, SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY CONDITIONS, OR ON ADVERSE SITES, WATER APPLICATIONS SHALL BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF; (3.3) INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE; [3.3A] IF STAND IS INADEQUATE FOR EROSION CONTROL, OVER SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED; [3.3B] IF STAND IS 60% DAMAGED, RE-ESTABLISH FOLLOWING SEEDBED AND SEEDING RECOMMENDATION; [3.3C] IF STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER, THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE, RE-ESTABLISH THE STAND FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS. NO FERTILIZING SHALL TAKE PLACE WITHIN 200' OF A WELL.

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MOVILLE IOWA

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TITLE

WWPPP NOTES

SHEET

C1-10

CONSTRUCTION ACTIVITY NOTES:

EROSION PREVENTION:
CONSTRUCTION OF SILT FENCE AND ALL OTHER EROSION CONTROL MEASURES SHALL BE COMPLETE BEFORE OTHER CONSTRUCTION ACTIVITY OCCURS.
USE PHASED CONSTRUCTION WHEREVER PRACTICAL AND ESTABLISH TURF AS SOON AS POSSIBLE TO MINIMIZE SEDIMENT TRANSPORT.
TURF ESTABLISHMENT OR TEMPORARY SEEDING OR MULCHING OF ALL EXPOSED SOIL NOT BEING ACTIVELY WORKED SHOULD BE PRACTICED FOLLOWING THE TABLE BELOW:

TYPE OF SLOPE OR DISTURBANCE AREA	TIME AREA CAN REMAIN OPEN WITHOUT BEING ACTIVELY WORKED:
STEEPER THAN 3:1	14 DAYS
10:1 TO 3:1	14 DAYS
FLATTER 10:1	14 DAYS
DITCHES	1 DAY
PIPE ENDS	1 DAY
WITHIN 200' OF SURFACE WATER	1 DAY
LAST 200' OF THE WETTED DITCH PERIMETER FROM THE DITCH OUTLET	1 DAY

ALL EXPOSED SOILS SHALL BE SEEDED OR SODDED AT THE EARLIEST POSSIBLE TIME TO PREVENT/REDUCE EROSION.
TEMPORARY COVER DURING CONSTRUCTION IS INCIDENTAL.
PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.

SEDIMENT CONTROL PRACTICES:
CONSTRUCTION OF SILT FENCE AND ALL OTHER EROSION CONTROL MEASURES SHALL BE COMPLETE PRIOR TO LAND DISTURBING ACTIVITIES OCCUR.
INLET EROSION PROTECTION SHALL BE INSTALLED AND MAINTAINED UNTIL TURF HAS BEEN ESTABLISHED.
THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL EROSION FROM LEAVING THE CONSTRUCTION ZONE. ALL ERODED MATERIAL THAT LEAVES THE CONSTRUCTION ZONE SHALL BE COLLECTED BY THE CONTRACTOR AND RETURNED TO THE SITE AT THE CONTRACTOR'S EXPENSE.
ALL STREETS MUST BE SWEPT WITHIN 24 HOURS WHEN ANY TRACKING OCCURS.
SILT FENCE OR OTHER EFFECTIVE EROSION CONTROL MEASURES MUST BE INSTALLED AROUND THE PERIMETER OF ANY SOIL STOCKPILES, INCLUDING TEMPORARY STOCKPILES. STOCKPILES CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES.
PERIMETER CONTROL SHALL BE INSTALLED ALONG THE BACK OF CURB IMMEDIATELY FOLLOWING CURB INSTALLATION AT ALL LOCATIONS WITH POSITIVE DRAINAGE TO PARKING LOT AND/OR STREETS, AND SHALL REMAIN UNTIL STABILIZATION IS ACHIEVED. THIS SHALL BE ACCOMPLISHED THROUGH THE USE OF SILT FENCE, BIOROLLS, ROCK LOGS, OR OTHER METHODS APPROVED BY THE ENGINEER.

DEWATERING AND BASIN DRAINING:
DEWATER SEDIMENT-LADEN WATER TO SEDIMENTATION BASINS IF POSSIBLE OR USE OTHER BMP'S TO PREVENT EROSION AND REMOVE SEDIMENT WHEN DISCHARGING TO SURFACE WATERS.
USE APPROPRIATE ENERGY DISSIPATION MEASURES ON ALL DISCHARGES.
DEWATERING PRACTICES CANNOT CAUSE NUISANCE CONDITIONS, EROSION OR IN RECEIVING CHANNELS OR INUNDATION OF WETLANDS RESULTING IN ADVERSE IMPACTS.

POLLUTION PREVENTION:
ALL SOLID WASTE COLLECTED FROM THE CONSTRUCTION SITE MUST BE DISPOSED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
ALL HAZARDOUS MATERIALS (OIL, GASOLINE, FUEL, PAINT, ETC) MUST BE PROPERLY STORED TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE, STORAGE AREAS SHALL PROVIDE SECONDARY CONTAINMENT AND A HAZARDOUS MATERIALS SPILL KIT. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS.
EQUIPMENT MAINTENANCE AREAS MUST BE LIMITED TO A DEFINED AREA OF THE SITE. ALL RUNOFF CONTAINING ANY HAZARDOUS MATERIAL MUST BE PROPERLY COLLECTED AND DISPOSED.
NO ENGINE DEGREASING SHALL BE ALLOWED ON SITE.
THE CONTRACTOR IS RESPONSIBLE FOR MONITORING AIR POLLUTION AND ENSURING IT DOES NOT EXCEED LEVELS SET BY LOCAL, STATE, OR FEDERAL REGULATIONS. THIS INCLUDES DUST CREATED BY WORK BEING PERFORMED ON THE SITE. AIR POLLUTION AND DUST CONTROL CORRECTION IS CONSIDERED INCIDENTAL TO THE UNIT BID PRICES FOR WHICH WORK IS BEING PERFORMED. ADDITIONAL DUST CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER.
CONCRETE WASHOUT ONSITE: ALL LIQUID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS
MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER. A COMPACTED
CLAY LINER THAT DOES NOT ALLOW WASHOUT LIQUIDS TO ENTER GROUND WATER IS CONSIDERED AN IMPERMEABLE LINER. THE LIQUID WASTE MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE CONCRETE WASHOUT OPERATIONS OR AREAS. LIQUID WASTE MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH CITY OF STORM LAKE, IOWA REGULATIONS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

INSPECTION AND MAINTENANCE:
THE PERMITTEES MUST ROUTINELY INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION.
ALL INSPECTIONS PERFORMED DURING CONSTRUCTION MUST BE RECORDED AND RECORDS RETAINED WITH THE EROSION CONTROL PLAN.
CONTRACTOR IS RESPONSIBLE FOR KEEPING A RECORD OF ALL RAINFALL INFORMATION & EROSION CONTROL MAINTENANCE UNTIL FINAL ESTABLISHMENT OF TURF.
ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE FENCE.
EROSION CONTROL, AND OTHER BMP'S MUST BE REPLACED, REPAIRED, OR SUPPLEMENTED WHEN THEY REACH 50% DESIGN LOAD.

FINAL STABILIZATION:
THE PERMITTEES MUST ENSURE FINAL STABILIZATION OF THE SITE. THE PERMITTEES MUST SUBMIT A NOTICE OF TERMINATION WITHIN 30 DAYS AFTER FINAL STABILIZATION IS COMPLETE OR CONTROL HAS BEEN PASSED TO ANOTHER OWNER.
ALL TEMPORARY EROSION CONTROL MEASURES AND BMP'S MUST BE REMOVED AS PART OF THE FINAL SITE STABILIZATION.
THE STORM WATER PERMIT FURTHER DEFINES FINAL STABILIZATION AND ITS REQUIREMENTS.

MAINTENANCE SCHEDULE:

THE FOLLOWING MAINTENANCE SCHEDULE HAS BEEN PROVIDED. THE INSPECTOR MUST PERFORM THE INSPECTIONS. THE OPERATOR/CONTRACTOR MUST PERFORM ALL NEEDED MAINTENANCE. FURTHERMORE, ALL EROSION CONTROL FEATURE REQUIRING MAINTENANCE MAY NOT BE LISTED BELOW. THE OPERATOR/CONTRACTOR AND INSPECTOR MUST PERFORM THEIR RESPECTIVE DUTIES ON ALL BMP'S THAT ARE NOT LISTED BELOW AS WELL.

1. CONSTRUCTION ENTRANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR MATERIALS DROPPED, WASHED OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
2. FILTER SOCKS – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (2.1) FILTER SOCKS SHALL BE INSPECTED WEEKLY; (2.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES; (2.3) NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF FILTER SOCKS SHALL BE ACCOMPLISHED PROMPTLY; (2.4) SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH RAINFALL, THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE FILTER SOCK, AND (2.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE FILTER SOCK IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
3. SILT FENCE – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (3.1) SILT FENCES SHALL BE INSPECTED WEEKLY, ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY; (3.2) CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING; (3.3) SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY; (3.4) SEDIMENT DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER; AND (3.5) ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
4. STORM DRAIN INLET PROTECTION – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (4.1) STRUCTURES SHALL BE INSPECTED WEEKLY AND REPAIRS MADE AS NECESSARY AND (4.2) STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
5. TEMPORARY DIVERSION DIKE – THE MEASURE SHALL BE INSPECTED WEEKLY AND REPAIRS MADE TO THE DIKE, FLOW CHANNEL, OUTLET OR SEDIMENT TRAPPING FACILITY, AS NECESSARY. ONCE EVERY WEEK, WHETHER A STORM EVENT HAS OCCURRED OR NOT, THE MEASURE SHALL BE INSPECTED AND REPAIRS MADE IF NEEDED. DAMAGES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
6. TEMPORARY FILL DIVERSION – SINCE THE PRACTICE IS TEMPORARY AND UNDER MOST SITUATIONS WILL BE COVERED THE NEXT WORKING DAY. THE MAINTENANCE REQUIRED SHOULD BE LOW. IF THE PRACTICE IS TO REMAIN IN USE FOR MORE THAN ONE DAY, AN INSPECTION SHALL BE MADE AT THE END OF EACH WORKDAY AND REPAIRS MADE TO THE MEASURE IF NEEDED. THE OPERATOR/CONTRACTOR SHOULD AVOID THE PLACEMENT OF ANY MATERIAL OVER THE STRUCTURE WHILE IT IS IN USE. CONSTRUCTION TRAFFIC SHOULD NOT BE PERMITTED TO CROSS THE DIVERSION.
7. TEMPORARY SEDIMENT TRAP – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (7.1) SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN VOLUME OF THE WET STORAGE, SEDIMENT REMOVAL FROM THE BASIN SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS; (7.2) FILTER STONE SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED, STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED; AND (7.3) THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT, THE HEIGHT OF THE STONE OUTLET SHOULD BE CHECKED TO ENSURE THAT ITS CENTER IS AT LEAST 1 FOOT BELOW THE TOP OF THE EMBANKMENT.
8. TEMPORARY SEDIMENT BASIN – THE BASIN EMBANKMENT SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE EMERGENCY SPILLWAY SHOULD BE CHECKED REGULARLY TO ENSURE THAT ITS LINING IS WELL ESTABLISHED AND EROSION-RESISTANT. THE BASIN SHOULD BE CHECKED AFTER EACH RUNOFF PRODUCING RAINFALL FOR SEDIMENT CLEANOUT AND TRASH REMOVAL. WHEN THE SEDIMENT REACHES THE CLEANOUT LEVEL, IT SHALL BE REMOVED AND PROPERLY DISPOSED OF.
9. TEMPORARY SEEDING – AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RE-SEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
10. PERMANENT SEEDING – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (10.1) IN GENERAL, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL IT HAS BEEN MAINTAINED FOR ONE FULL YEAR AFTER PLANNING; (10.2) NEW SEEDLINGS SHALL BE SUPPLIED WITH ADEQUATE MOISTURE, SUPPLY WATER AS NEEDED, ESPECIALLY LATE IN THE SEASON, IN ABNORMALLY HOT OR DRY CONDITIONS, OR ON ADVERSE SITES, WATER APPLICATIONS SHALL BE CONTROLLED TO PREVENT EXCESSIVE RUNOFF; (10.3) INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, AND RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE; [10.3.A] IF STAND IS INADEQUATE FOR EROSION CONTROL, OVER SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED; [10.3.B] IF STAND IS 60% DAMAGED, RE-ESTABLISH FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS; [10.3.C] IF STAND HAS LESS THAN 40% COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER, THE SOIL MUST BE TESTED TO DETERMINE IF ACIDITY OR NUTRIENT IMBALANCES ARE RESPONSIBLE, RE-ESTABLISH THE STAND FOLLOWING SEEDBED AND SEEDING RECOMMENDATIONS.
11. MULCHING – ALL MULCHES AND SOIL COVERINGS SHOULD BE INSPECTED PERIODICALLY (PARTICULARLY AFTER RAINSTORMS) TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED. NETS AND MATS SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, REINSTALL NETTING OR MATTING AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. INSPECTIONS SHOULD TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE; REPAIR AS NEEDED.
12. SOIL STABILIZATION BLANKETS & MATTING – ALL SOIL STABILIZATION BLANKETS AND MATTING SHOULD BE INSPECTED PERIODICALLY FOLLOWING INSTALLATION, PARTICULARLY AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. ANY DISLOCATION OR FAILURE SHOULD BE REPAIRED IMMEDIATELY. IF WASHOUTS OR BREAKAGE OCCURS, REINSTALL THE MATERIAL. AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. CONTINUE TO MONITOR THESE AREAS UNTIL WHICH TIME THEY BECOME PERMANENTLY STABILIZED, AT THAT TIME AN ANNUAL INSPECTIONS SHOULD BE ADEQUATE.
13. STREET CLEANING / SWEEPING – THE MAINTENANCE MEASURES ARE AS FOLLOWS: (13.1) EVALUATE ACCESS POINTS DAILY FOR SEDIMENT TRACKING; (13.2) WHEN TRACKED OR SPILLED SEDIMENT IS FOUND ON PAVED SURFACES, IT WILL BE REMOVED DAILY, DURING TIMES OF HEAVY TRACK-OUT, SUCH AS DURING RAINS, CLEANING MAY BE DONE SEVERAL TIMES THROUGHOUT THE DAY; (13.3) UNKNOWN SPILLS OR OBJECTS WILL NOT BE MIXED WITH THE SEDIMENT; AND (13.4) IF SEDIMENT IS MIXED WITH OTHER POLLUTANTS, IT WILL BE DISPOSED OF PROPERLY AT AN AUTHORIZED LANDFILL.

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

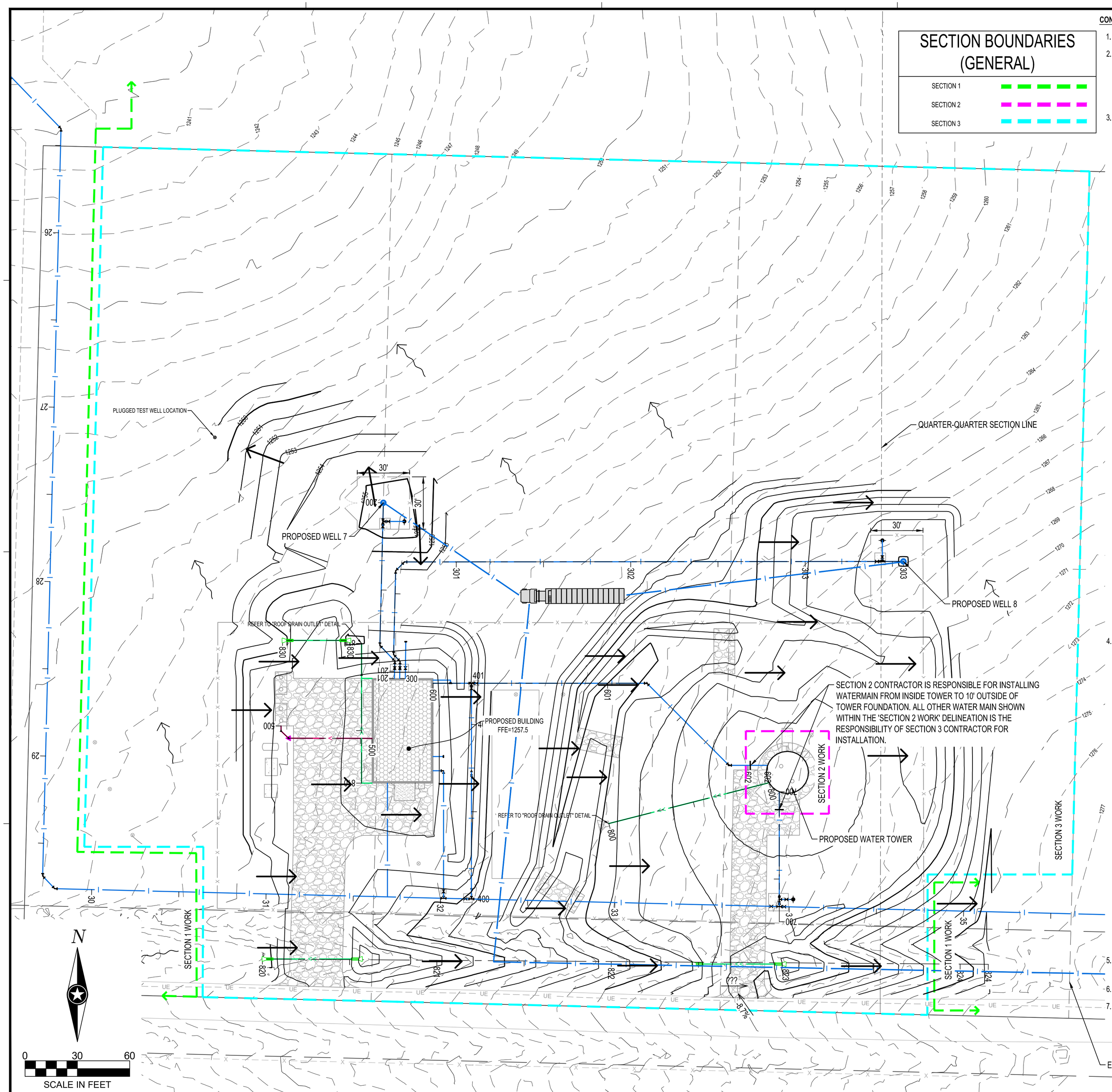
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C1-SWPPP
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

EROSION CONTROL NOTES

SHEET

C1-11



CONSTRUCTION STAGING:

1. INSTALL EROSION CONTROL DEVICES AND TRAFFIC CONTROL.
2. SECTION 3 CONTRACTOR PERFORMS GRADING OPERATIONS FOR ENTIRE SITE. GRADING SHALL BE COMPLETED TO WITHIN 12" OF THE FINAL PROPOSED GRADE ELEVATIONS AND SHALL INCLUDE ALL EMBANKMENT MATERIAL MOVING. TOP SOIL SHALL BE RESERVED UNTIL FINAL GRADING OPERATIONS UNDER STEP 5. SECTION 3 CONTRACTOR TO PERFORM TEMPORARY EROSION CONTROL MEASURES ONCE HE/SHE HAS COMPLETED THIS GRADING STEP AND WILL BE PAID ACCORDINGLY.
3. GENERAL SCOPE OF WORK

3.1. SECTION 1 WORK:

3.1.1. INCLUDES WATER MAIN EXTENSION FROM STATION 0+00 TO 30+82 AND STATION 34+81 TO 100+75. BOTH THE EASTERN AND WESTERN ALIGNMENTS SHALL BE CAPPED IF INSTALLED BEFORE SECTION 3 WATER MAIN IS INSTALLED.

3.1.2. IF SECTION 3 WATER MAIN IS INSTALLED BEFORE SECTION 1 WATER MAIN, CONNECTIONS TO THE SECTION 3 WATER MAIN SHALL BE INCLUDED.

3.1.3. SECTION 1 CONTRACTOR IS RESPONSIBLE FOR ALL SEEDING AND STABILIZATION RELATED TO SECTION 1 WORK. REFER TO SHEET C3-11 FOR ADDITIONAL STAGING AND SITE STABILIZATION INFORMATION.

3.2. SECTION 2 WORK:

3.2.1. INCLUDES THE WATER TOWER, SPLASH PAD, DOOR APRONS, AND FOUNDATION. INCLUDES EXTENDING WATER MAIN TO 10' OUTSIDE OF THE TOWER FOUNDATION FOR BOTH THE FILL AND EMPTY LINE OF THE TOWER AND EXTENDING THE FLOOR DRAIN TO 10' OUTSIDE THE TOWER FOUNDATION. BOTH WATER MAINS AND STORM DRAIN SHALL BE CAPPED IF INSTALLED BEFORE SECTION 3 WATER MAIN AND STORM DRAIN IS INSTALLED. IF SECTION 3 WATER MAIN IS INSTALLED BEFORE SECTION 2 WATER MAIN AND STORM DRAIN, CONNECTIONS TO SECTION 3 WATER MAIN AND STORM DRAIN SHALL BE INCLUDED.

3.2.2. SECTION 2 CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING TEMPORARY EROSION CONTROL SEEDING/GROUND STABILIZATION ONCE HIS/HER WORK IS CONSTRUCTED.

3.2.3. REFER TO SHEET C3-10 FOR ADDITIONAL STAGING AND SITE STABILIZATION INFORMATION.

3.3. SECTION 3 WORK:

3.3.1. INCLUDES THE WATER TREATMENT PLANT, TWO (2) WELLS, SITE YARD PIPING, SEPTIC TANK, FENCE, FINAL DRIVEWAY ACCESS TO BOTH WATER TOWER AND WATER TREATMENT PLANT, SITE GRADING AND ALL FINAL SEEDING AND EROSION CONTROL ON THE SITE (WITH EXCEPTION OF SECTION 1 BOUNDARIES).

3.3.2. WATER MAINS CONNECTING TO SECTION 1 AND/OR SECTION 2 WORK SHALL BE CAPPED IF INSTALLED BEFORE SECTION 1 AND/OR SECTION 2 WORK. IF SECTION 1 AND/OR SECTION 2 WORK IS INSTALLED BEFORE SECTION 3 WORK, CONNECTIONS TO SECTION 1 AND/OR SECTION 2 WATER MAINS SHALL BE INCLUDED.

3.3.3. SECTION 3 CONTRACTOR IS RESPONSIBLE FOR ALL GRADING. INITIAL MOVEMENT OF EMBANKMENT MATERIAL SHALL HAPPEN BEFORE SECTION 2 CONTRACTOR ARRIVES ON SITE, ACCORDING TO STEP 2.

3.3.4. SECTION 3 CONTRACTOR IS RESPONSIBLE FOR FINAL TOPSOIL PLACEMENT, ALL PERMANENT SEEDING AND ESTABLISHMENT, AND ALL FINAL EROSION CONTROL MEASURES (INSTALLATION & REMOVAL). IF SECTION 2 MOBILIZATION TO THE SITE IS IMMINENT WHEN SECTION 3 CONTRACTOR FINISHES INITIAL GRADING, SECTION 3 CONTRACTOR MAY NOT BE REQUIRED TO PLACE TEMPORARY STABILIZATION MATERIAL AND WILL BE PAID ACCORDINGLY TO THE UNIT PRICE FOR TEMPORARY STABILIZATION.

3.3.5. REFER TO SHEET C3-11 FOR ADDITIONAL STAGING AND SITE STABILIZATION INFORMATION.

3.4. *EACH SECTION CONTRACTOR IS RESPONSIBLE FOR COORDINATING WORK WITH OTHER SECTION CONTRACTORS AS NECESSARY ACCORDING TO SECTION DELINEATIONS SHOWN ON CONSTRUCTION PLAN SHEETS. PERFORM INTERMEDIATE AND PERMANENT SITE STABILIZATION ACCORDING TO GENERAL PERMIT NO. 2 REQUIREMENTS.

4. STARTUP, TESTING, AND SAMPLING:

4.1. *ALL SAMPLES COLLECTED FROM A HYDRANT SHALL BE COLLECTED VIA A HYDRANT-ADAPTED SMOOTH NOSE SAMPLE TAP.

4.1. WEEK A: DISINFECT WELLS AND RECEIVE PASSING BACTERIA SAMPLE RESULTS (SECTION 3).

4.2. WEEK B&C: PRESSURE TEST AND DISINFECT ALL WATER MAIN ON SITE AND WITHIN WATER TREATMENT PLANT AS DELINEATED ON SECTIONAL BREAKDOWN PLAN SHEETS. RECEIVE PASSING BACTERIA SAMPLE RESULTS (SECTION 3).

4.3. WEEK D: STARTUP WATER PLANT (SECTION 3). FILL AND DISINFECT WATER TOWER (SECTION 2). RECEIVE PASSING BACTERIA SAMPLE RESULTS FOR WATER TOWER (SECTION 2).

4.3.1. *IF TOWER DISINFECTION IS DONE VIA THE HIGH-CONCENTRATION METHOD, SECTION 3 CONTRACTOR SHALL COORDINATE WITH SECTION 1 CONTRACTOR TO REUSE CHLORINATED WATER IN SECTION 1 WATER MAIN TESTING.

4.4. WEEK E&F: PRESSURE TEST OFF-SITE WATER MAIN. DISINFECT WATER MAIN AND RECEIVE PASSING BACTERIA SAMPLE RESULTS ACCORDING TO IOWA DNR VARIANCE (SECTION 1).

4.5. WEEK G: COORDINATE SYSTEM TRANSFER WITH CITY. TRANSFER SHALL NOT OCCUR DURING WOODBURY COUNTY FAIR OR MOVILLE DAYS (1ST WEEKEND IN JUNE).

4.5.1. SECTION 1 CONTRACTOR TO CONNECT NEW WATER MAINS TO EXISTING WATER MAINS. VALVES ON NEW WATER MAIN SHALL REMAIN CLOSED.

4.5.2. CITY TO FILL NEW TOWER TO 35' RELATIVE ELEVATION OR 1305' REGIONAL ELEVATION.

4.5.3. CITY TO FILL EXISTING TOWER TO HIGH WATER LINE (101' RELATIVE ELEVATION OR 1305' REGIONAL ELEVATION).

4.5.4. CITY TO SHUT OFF EXISTING WELLS AND VALVE OFF EXISTING WATER TREATMENT PLANT.

4.5.5. SECTION 1 CONTRACTOR TO SLOWLY OPEN VALVES CONNECTING NEW WATER MAIN TO EXISTING WATER MAIN.

4.5.6. CITY TO VALVE OFF EXISTING WATER TOWER.

4.5.7. CITY TO POWER ON NEW WATER PLANT AND WELLS FOR NORMAL OPERATION.

4.5.8. TRANSFER IS COMPLETE. CITY CAN CONTINUE WITH SCHEDULED FLUSHING OF ENTIRE DISTRIBUTION SYSTEM.

5. SECTION 3 CONTRACTOR PERFORMS FINAL GRADING OPERATIONS, TOPSOIL PLACEMENT, AND PERMANENT SEEDING ESTABLISHMENT.
6. REMOVE TRAFFIC CONTROL.
7. ONCE DELINEATED SECTIONS HAVE ESTABLISHED PERMANENT GROUND COVER, EACH SECTION CONTRACTOR IS RESPONSIBLE FOR REMOVING EROSION CONTROL DEVICES ACCORDING TO THEIR SCOPE OF WORK.

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C1-SWPPP
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SECTIONAL BREAKDOWN

SHEET

C1-30

DEFINITIONS:
A. EROSION CONTROL MULCHING - FURNISHING MULCH AND TACKIFIER, PROVIDING EQUIPMENT SPECIFIC TO HYDROMULCHING, AND APPLYING THE MULCH TO A SPECIFIED AREA. THIS ITEM IS FOR THE PURPOSE OF PROVIDING STABILIZATION TO AREAS NOT BEING WORKED THROUGHOUT THE CONSTRUCTION SEASON AND WILL BE PAID AS NEEDED.
B. END OF SEASON TEMPORARY EROSION CONTROL - FURNISHING, PLACING, AND MAINTAINING THE END OF SEASON TEMPORARY EROSION CONTROL THROUGHOUT THE WINTER SEASON. THIS ITEM IS FOR THE PURPOSE OF PROVIDING STABILIZATION TO AREAS DURING THE WINTER SEASON AND WILL BE PAID AS NEEDED.

SECTION 3 CONTRACTOR IS ALLOWED TO UTILIZED DRIED AND INCORPORATED DRILLING MUD AS FILL MATERIAL IN NON-STRUCTURAL AREAS. REFER TO SECTION 1 NOTES.

SECTION 3 CONTRACTOR IS RESPONSIBLE FOR SECTION 3 STABILIZED CONSTRUCTION EXIT.

SECTION 2 CONTRACTOR WILL INHERIT A STABILIZED STAGING AREA WHEN THEY MOBILIZE TO THE SITE.

SECTION 2 CONTRACTOR SHALL:
-BE RESPONSIBLE FOR ANY TEMPORARY GROUND STABILIZATION MEASURES NECESSARY IN STAGING AREA ONCE SECTION 2 CONTRACTOR MOBILIZES THE SITE.
-BE RESPONSIBLE FOR PERFORMING TEMPORARY EROSION CONTROL SEEDING/GROUND STABILIZATION WHILE UTILIZING THE STAGING AREA.
-LEAVE THE STAGING AREA STABILIZED WHEN THEY DEMOBILIZE FROM THE SITE AND TURN THE AREA BACK OVER TO THE SECTION 3 CONTRACTOR FOR FINAL TOPSOIL PLACEMENT AND SEEDING.
-LEAVE SITE FREE OF DEBRIS GREATER THAN GOLF BALL SIZE AND SURFACE SHALL BE IN SIMILAR CONDITION TO WHEN THE CONTRACTOR MOBILIZED TO SITE, READY FOR TOPSOIL PLACEMENT.

IF SECTION 3 TOPSOIL PLACEMENT IS IMMINENT WHEN SECTION 2 CONTRACTOR LEAVES SITE, SECTION 2 CONTRACTOR MAY NOT BE REQUIRED TO PLACE TEMPORARY STABILIZATION MATERIAL AND WILL BE PAID ACCORDINGLY TO THE UNIT PRICE FOR TEMPORARY STABILIZATION.

SECTION 2 CONTRACTOR IS RESPONSIBLE FOR SECTION 2 STABILIZED CONSTRUCTION EXIT.

SECTION 1 CONTRACTOR WILL INHERIT A STABILIZED STAGING AREA WHEN THEY MOBILIZE THE SITE.

SECTION 1 CONTRACTOR SHALL:
-BE RESPONSIBLE FOR ANY TEMPORARY GROUND STABILIZATION MEASURES NECESSARY IN STAGING AREA ONCE SECTION 1 CONTRACTOR MOBILIZES TO THE STAGING AREA.
-BE RESPONSIBLE FOR PERFORMING TEMPORARY EROSION CONTROL SEEDING//GROUND STABILIZATION WHILE UTILIZING THE STAGING AREA.
-LEAVE THE STAGING AREA STABILIZED WHEN THEY DEMOBILIZE FROM THE SITE AND TURN THE AREA BACK OVER TO THE SECTION 3 CONTRACTOR FOR FINAL SEEDING.
LEAVE SITE FREE OF DEBRIS GREATER THAN GOLF BALL SIZE AND SURFACE SHALL BE IN SIMILAR CONDITION TO WHEN CONTRACTOR MOBILIZED TO SITE, READY FOR SEEDING.

IF SECTION 3 SEEDING IS IMMINENT WHEN SECTION 1 CONTRACTOR LEAVES THE STAGING AREA, SECTION 1 CONTRACTOR MAY NOT BE REQUIRED TO PLACE TEMPORARY STABILIZATION MATERIAL AND WILL BE PAID ACCORDINGLY TO THE UNIT PRICE FOR TEMPORARY STABILIZATION.

SECTION 1 CONTRACTOR IS ALLOWED TO UTILIZE STAGING AREA FOR DISPOSAL OF DRILLING MUD. EXISTING SITE TOPSOIL SHALL BE PRESERVED AND THE DRILLING MUD SHALL BE DRIED AND INCORPORATED INTO THE EXISTING SOILS BELOW THE TOPSOIL LAYER. STAGING AREA SHALL BE GRADED TO DRAIN AND TOPSOIL SHALL BE SALVAGED AND REPLACED. SECTION 3 CONTRACTOR IS ALLOWED TO UTILIZED DRIED AND INCORPORATED DRILLING MUD AS FILL MATERIAL IN NON-STRUCTURAL AREAS.

SECTION 1 CONTRACTOR IS RESPONSIBLE FOR SECTION 1 STABILIZED CONSTRUCTION EXIT.

PLUGGED TEST WELL LOCATION

REFER TO "ROOF DRAIN OUTLET" DETAIL

REFER TO "ROOF DRAIN OUTLET" DETAIL

110'

117'

40'

76'

128'

-8.17%

???

SECTION BOUNDARIES (GENERAL)

- SECTION 1
- SECTION 2
- SECTION 3

N

0 30 60

SCALE IN FEET

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C1-SWPPP
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
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CLIENT PROJECT NO.	-

TITLE

CONSTRUCTION STAGING AREAS

SHEET

C1-31

PLUGGED - PLUGGED TEST WELL LOCATION

ROCK CHECK DAM

CONTRACTOR TO ROUTE TEMPORARY WATER LINE THROUGH SITE IN A MANNER THAT AVOIDS CONFLICTS WITH SECTION 1 & 2 CONSTRUCTION AREAS. TEMPORARY WATER LINE SHALL OUTLET INTO DITCH AT THE TOP OF THE HILL SUCH THAT THE WATER IS DISCHARGED EAST THROUGH THE DITCH.

N

0 30 60

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TITLE **EROSION CONTROL AND WELL WATER POLLUTION PREVENTION PLAN**

SHEET **C1-40**

EXISTING LOT LINE, TYP.

SETBACK LINE

QUARTER-QUARTER SECTION LINE

PLUGGED TEST WELL LOCATION

EDGE OF RIGHT-OF-WAY

SECTION LINE

160TH STREET

1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277

UE

N

0 30 60

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CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

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DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
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ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

EXISTING SITE AND REMOVAL PLAN

SHEET

C2-20

PAVEMENT LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	AGGREGATE SURFACING

R200'
R200'
BUILDING SETBACK LINE
R100'
R100'
PLUGGED " PLUGGED TEST WELL LOCATION
TWO (2) 10' GATES
30'
30'
PROPOSED WELL 7
TWO (2) 10' GATES
CONCRETE VALVE BOX OUT, TYP. (REFER TO DETAIL)
PROPOSED WELL 8
TWO (2) 10' GATES
ROCK CHECK DAM, TYP.
WTP ROOF DRAIN OUTLET
45'
35'
SEPTIC TANK
PROPANE TANK
PROPOSED WTP FFE=1258.5
60'
85'
GENERATOR & TRANSFORMER REFER TO E SHEETS
VERTICAL RAIN LEADER, TYP.
30'
40'
FUTURE POTENTIAL BACKWASH INFILTRATION BASIN
CONCRETE SPLASHPAD
6' HEIGHT CHAIN LINK FENCE
EXISTING LOT LINES
PROPOSED WATER TOWER
TOWER FLOOR DRAIN OUTLET
ONE (1) 12' GATE
CONCRETE VALVE BOX OUT, TYP. (REFER TO DETAIL)
TWO (2) 10' GATES
30'
20'
160TH STREET
SECTION LINE

N

0 30 60
SCALE IN FEET

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EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C3-SITE
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

SITE PLAN

SHEET

C3-10

STORM DRAIN APRON SCHEDULE

APRON NO.	APRON SIZE (IN)	APRON MATERIAL	INVERT ELEVATION	PIPE NO.
FES-1	12	RC	1254.00	P-6
FES-2	12	RC	1255.50	P-6
FES-3	12	RC	1266.00	P-7
FES-4	12	RC	1267.40	P-7
FES-5	12	RC	1254.50	P-8
FES-6	12	RC	1255.00	P-8

STORM DRAIN PIPE SCHEDULE

PIPE NO.	DRAIN FROM	INLET ELEVATION	DRAIN TO	OUTLET ELEVATION	PIPE SIZE (IN)	MATERIAL	PIPE CLASS	PIPE GRADE	PIPE LENGTH (FT)
P-1	TOWER FLOOR DRAINS	1266.45	RODENT GUARD	1265.50	3	PVC	SDR 23.5	1.00%	95
P-2	8"x6" TEE	1255.27	RODENT GUARD	1255.00	8	PVC	SDR 23.5	1.37%	20
P-3	90° BEND	1256.00	8"X6" TEE	1255.28	8	PVC	SDR 23.5	1.21%	60
P-4	VERTICAL RAIN LEADER	1254.76	8"X6" TEE	1254.73	6	PVC	SDR 23.5	0.50%	6
P-5	VERTICAL RAIN LEADER	1255.06	90° BEND	1255.03	6	PVC	PVC	0.50%	6
P-6	FES-2	1255.50	FES-1	1254.00	12	RCP	2000D	2.63%	57
P-7	FES-4	1267.40	FES-3	1266.00	12	RCP	2000D	2.61%	54
P-8	FES-6	1255.00	FES-5	1254.50	12	CMP	2000D	1.28%	39

SANITARY SEWER PIPE SCHEDULE

PIPE NO.	DRAIN FROM	INLET ELEVATION	DRAIN TO	OUTLET ELEVATION	PIPE SIZE	MATERIAL	PIPE CLASS	PIPE GRADE	PIPE LENGTH (FT)
SP-1	45° BEND	1253.06	CONNECT TO SEPTIC TANK	1253.00	4"	PVC	SDR 23.5	2.00%	3
SP-2	CLEANOUT	1253.18	45° BEND	1253.06	4"	PVC	SDR 23.5	2.00%	6
SP-3	CONNECT TO WTP	1254.50	CLEANOUT	1253.18	4"	PVC	SDR 23.5	2.77%	48

SANITARY SEWER STRUCTURE SCHEDULE

STRUCTURE NO.	STRUCTURE TYPE	STRUCTURE SIZE (IN)	STRUCTURE MATERIAL	CASTING	STRUCTURE HEIGHT (LN FT)	TOP OF CASTING ELEVATION	INVERT ELEVATION	OUTLET PIPE
CLEANOUT	CLEANOUT	4 Ø	PVC	SEE SUDAS DETAIL 4010.203	3.98	1257.16	1253.18	SP-2

WATERMAIN FITTING SCHEDULE

ALIGNMENT	STATION	LOCATION	TYPE	SIZE	WEIGHT (LBS)
SECTION 1 WATER MAIN PIPE RUN	0+00	0	TEE	8"x8"	90
FUTURE WELL PIPE RUN	0+00	0	CAP	6"	18
SECTION 1 WATER MAIN PIPE RUN	0+05	0	REDUCER	12"x8"	57
SECTION 1 WATER MAIN PIPE RUN	0+07	0	TEE	12"x6"	119
WELL 7 PIPE RUN	0+11	0	TEE	6"x6"	66
WELL 8	0+12	0	TEE	6"x6"	66
WTP TO TOWER PIPE RUN	0+22	0	TEE	6"x6"	66
WATER TOWER MAIN 3 PIPE RUN	0+62	0	TEE	12"x6"	119
BACKWASH LINE PIPE RUN	0+73	0	BEND	8"x90°	64
WELL 7 PIPE RUN	0+82	0	BEND	6"x45°	36
WELL 7 PIPE RUN	0+94	0	BEND	6"x45°	36
WELL 8	2+86	0	BEND	6"x45°	36
WELL 8	2+93	0	BEND	6"x45°	36
WELL 8	3+41	0	BEND	6"x45°	36
WELL 8	3+47	0	BEND	6"x45°	36
SECTION 1 WATER MAIN PIPE RUN	10+08	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	10+13	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	16+91	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	16+96	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	24+96	0	BEND	12"x45°	108

WATERMAIN FITTING SCHEDULE

ALIGNMENT	STATION	LOCATION	TYPE	SIZE	WEIGHT (LBS)
SECTION 1 WATER MAIN PIPE RUN	25+40	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	29+69	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	29+79	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	32+02	0	TEE	12"x8"	126
SECTION 1 WATER MAIN PIPE RUN	32+18	0	TEE	12"x6"	119
SECTION 1 WATER MAIN PIPE RUN	33+94	0	TEE	12"x12"	171
SECTION 1 WATER MAIN PIPE RUN	35+86	0	TEE	12"x6"	119
SECTION 1 WATER MAIN PIPE RUN	46+38	0	BEND	12"x22.5°	81
SECTION 1 WATER MAIN PIPE RUN	46+53	0	BEND	12"x22.5°	81
SECTION 1 WATER MAIN PIPE RUN	47+10	0	BEND	12"x22.5°	81
SECTION 1 WATER MAIN PIPE RUN	47+21	0	TEE	12"x6"	119
SECTION 1 WATER MAIN PIPE RUN	47+35	0	BEND	12"x22.5°	81
SECTION 1 WATER MAIN PIPE RUN	59+20	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	59+53	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	67+13	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	67+41	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	70+21	0	TEE	12"x6"	119
SECTION 1 WATER MAIN PIPE RUN	73+05	0	TEE	12"x6"	119
SECTION 1 WATER MAIN PIPE RUN	73+67	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	74+21	0	BEND	12"x45°	108

WATERMAIN FITTING SCHEDULE

ALIGNMENT	STATION	LOCATION	TYPE	SIZE	WEIGHT (LBS)
SECTION 1 WATER MAIN PIPE RUN	79+56	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	79+63	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	79+73	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	79+80	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	93+56	0	TEE	12"x6"	119
SECTION 1 WATER MAIN PIPE RUN	98+61	0	BEND	12"x45°	108
SECTION 1 WATER MAIN PIPE RUN	100+73	0	REDUCER	12"x6"	64
SECTION 1 WATER MAIN PIPE RUN	100+77	0	TEE	6"x6"	66
WTP TO TOWER	601+23	0	BEND	6"x45°	36
WTP TO TOWER	601+89	0	BEND	6"x45°	36

HYDRANT & VALVE SCHEDULE

ALIGNMENT	STATION	TYPE	SIZE	NOTES
HYDRANT ASSEMBLY PIPE RUN - 1	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - 7	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - 6	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - 5	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - 4	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - 2	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - TOWER TO MAIN	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - 3	0+00	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
HYDRANT ASSEMBLY PIPE RUN - 4	0+03	GV & BOX	6"	6in Gate Valve
WELL 8 HYDRANT LEAD	0+03	GV & BOX	6"	6in Gate Valve
WELL 7 HYDRANT LEAD	0+03	GV & BOX	6"	6in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	0+03	GV & BOX	8"	8in Gate Valve
HYDRANT ASSEMBLY PIPE RUN - 7	0+04	GV & BOX	6"	6in Gate Valve
HYDRANT ASSEMBLY PIPE RUN - 6	0+04	GV & BOX	6"	6in Gate Valve
HYDRANT ASSEMBLY PIPE RUN - 2	0+04	GV & BOX	6"	6in Gate Valve
HYDRANT ASSEMBLY PIPE RUN - TOWER TO MAIN	0+04	GV & BOX	6"	6in Gate Valve
BACKWASH LINE PIPE RUN	0+04	GV & BOX	8"	8in Gate Valve
HYDRANT ASSEMBLY PIPE RUN - 5	0+05	GV & BOX	6"	6in Gate Valve
HYDRANT ASSEMBLY PIPE RUN - 3	0+05	GV & BOX	6"	6in Gate Valve
HYDRANT ASSEMBLY PIPE RUN - 1	0+06	GV & BOX	6"	6in Gate Valve
WELL 7 HYDRANT LEAD	0+12	HYDRANT	5"x 6'-0"	Hydrant 6'-0"

HYDRANT & VALVE SCHEDULE

ALIGNMENT	STATION	TYPE	SIZE	NOTES
WELL 8 HYDRANT LEAD	0+12	HYDRANT	5"x 6'-0"	Hydrant 6'-0"
WELL 7 PIPE RUN	0+14	GV & BOX	6"	6in Gate Valve
FUTURE WELL PIPE RUN	0+15	ACTUATED GV	6"	6in Gate Valve
WELL 8	0+15	GV & BOX	6"	6in Gate Valve
WTP TO TOWER PIPE RUN	0+25	GV & BOX	6"	6in Gate Valve
WELL 7 PIPE RUN	0+98	GV & BOX	6"	6in Gate Valve
WATER TOWER MAIN 1 PIPE RUN	1+21	GV & BOX	6"	6in Gate Valve
WELL 8	3+50	GV & BOX	6"	6in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	14+88	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	14+92	GV & BOX	12"	12in Air Release Valve
SECTION 1 WATER MAIN PIPE RUN	14+96	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	32+14	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	33+90	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	33+97	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	47+24	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	70+25	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	73+07	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	79+66	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	93+60	GV & BOX	12"	12in Gate Valve
SECTION 1 WATER MAIN PIPE RUN	100+75	GV & BOX	6"	6in Gate Valve

ROOF + TOWER FLOOR DRAIN NOTES:

- WATER TREATMENT PLANT ROOF DRAINS SHALL BE 8" PVC, SDR 23.5. INTEGRAL BELL AND SPIGOT TYPE RUBBER GASKET JOINTS COMPLYING WITH ASTM D 3212. PIPE BEDDING F-3 (REFER TO SUDAS DETAIL SW-103) SHALL BE PER SPECIFICATION. REFER TO SUDAS 4010.108.E. RODENT GUARD SHALL BE PROVIDED AT OUTFALL.
- TOWER FLOOR DRAIN PIPE OUTSIDE OF TOWER FOUNDATION SHALL BE 3" PVC, SDR 23.5. INTEGRAL BELL AND SPIGOT TYPE RUBBER GASKET JOINTS COMPLYING WITH ASTM D 3212. PIPE BEDDING SHALL BE PER SPECIFICATION. REFER TO SUDAS 4010.108.E. RODENT GUARD SHALL BE PROVIDED AT OUTFALL.

SANITARY SEWER SERVICE NOTES:

- SANITARY SERVICE SHALL BE 4" PVC, SDR 23.5, INTEGRAL BELL AND SPIGOT TYPE RUBBER GASKET JOINT COMPLYING WITH ASTM D 3212. PIPE BEDDING (REFER TO SUDAS DETAIL 4010.108.E) SHALL BE PER SPECIFICATIONS.

CULVERT NOTES:

- CULVERTS SHALL BE 12" RCP, CLASS III. REFER TO SUDAS 4030.108.A. ENGINEERING FABRIC OR BLACK MASTIC SHALL BE USED. PIPE BEDDING R-1 (REFER TO SUDAS DETAIL SW-102) SHALL BE PER SPECIFICATIONS.
- PIPE APRONS SHALL BE 12" RCP, 2000D. REFER TO SUDAS 4030.108.B. TIED JOINTS AND APRON GUARDS SHALL BE INCLUDED.
- CONCRETE PIPE APRON FOOTINGS SHALL BE PROVIDED. REFER TO SUDAS 4030.1.08.C.

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C3-SITE
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

UTILITY SCHEDULES

SHEET

C3-20

WATERMAIN SCHEDULE

ALIGNMENT	STATION	PIPE TYPE	** PIPE LENGTH (FT)	PIPE SIZE (IN)
HYDRANT ASSEMBLY PIPE RUN - 4	0+00 TO 0+02	C900	2	6
SAMPLE TAP SINK LINE	0+00 TO 0+02	PP	2	1/2
WELL 8 HYDRANT LEAD	0+00 TO 0+02	C900	2	6
HYDRANT ASSEMBLY PIPE RUN - 7	0+00 TO 0+03	C900	3	6
HYDRANT ASSEMBLY PIPE RUN - TOWER TO MAIN	0+00 TO 0+03	C900	3	6
HYDRANT ASSEMBLY PIPE RUN - 2	0+00 TO 0+03	C900	3	6
WELL 7 HYDRANT LEAD	0+00 TO 0+03	C900	2	6
HYDRANT ASSEMBLY PIPE RUN - 6	0+00 TO 0+04	C900	4	6
HYDRANT ASSEMBLY PIPE RUN - 3	0+00 TO 0+04	C900	4	6
HYDRANT ASSEMBLY PIPE RUN - 1	0+00 TO 0+05	C900	5	6
HYDRANT ASSEMBLY PIPE RUN - 5	0+00 TO 0+05	C900	5	6
WELL 7 PIPE RUN	0+00 TO 0+10	C900	10	6
EXISTING PIPE RUN 2	0+00 TO 0+11	C900	11	8
FUTURE WELL PIPE RUN	0+00 TO 0+11	C900	11	6
WELL 8	0+00 TO 0+12	C900	12	6
WTP TO TOWER PIPE RUN	0+00 TO 0+22	C900	22	6
WATER TOWER MAIN 3 PIPE RUN	0+00 TO 0+61	C900	61	12
WATER SERVICE	0+00 TO 0+65	PP	65	2
SECTION 1 WATER MAIN PIPE RUN	0+01 TO 0+02	C900	2	8
BACKWASH LINE PIPE RUN	0+01 TO 0+04	C900	3	8

WATERMAIN SCHEDULE

ALIGNMENT	STATION	PIPE TYPE	** PIPE LENGTH (FT)	PIPE SIZE (IN)
EXISTING PIPE RUN	0+01 TO 0+15	C900	15	8
WATER TOWER MAIN 1 PIPE RUN	0+01 TO 1+20	C900	120	6
SAMPLE TAP SINK LINE	0+02 TO 0+12	PP	10	1/2
HYDRANT ASSEMBLY PIPE RUN - 4	0+03 TO 0+05	C900	2	6
SECTION 1 WATER MAIN PIPE RUN	0+03 TO 0+05	C900	1	8
WELL 8 HYDRANT LEAD	0+03 TO 0+12	C900	9	6
WELL 7 HYDRANT LEAD	0+03 TO 0+12	C900	9	6
HYDRANT ASSEMBLY PIPE RUN - 7	0+04 TO 0+07	C900	3	6
HYDRANT ASSEMBLY PIPE RUN - TOWER TO MAIN	0+04 TO 0+07	C900	3	6
HYDRANT ASSEMBLY PIPE RUN - 2	0+04 TO 0+07	C900	3	6
HYDRANT ASSEMBLY PIPE RUN - 6	0+05 TO 0+07	C900	2	6
HYDRANT ASSEMBLY PIPE RUN - 3	0+05 TO 0+08	C900	3	6
BACKWASH LINE PIPE RUN	0+05 TO 0+73	C900	68	8
SECTION 1 WATER MAIN PIPE RUN	0+06 TO 0+06	C900	1	12
HYDRANT ASSEMBLY PIPE RUN - 1	0+06 TO 0+09	C900	3	6
HYDRANT ASSEMBLY PIPE RUN - 5	0+06 TO 0+10	C900	4	6
WELL 7 PIPE RUN	0+11 TO 0+13	C900	2	6
WELL 8	0+12 TO 0+15	C900	2	6
WELL 7 PIPE RUN	0+14 TO 0+81	C900	67	6
FUTURE WELL PIPE RUN	0+15 TO 0+21	DIP	6	6

WATERMAIN SCHEDULE

ALIGNMENT	STATION	PIPE TYPE	** PIPE LENGTH (FT)	PIPE SIZE (IN)
WELL 8	0+16 TO 2+86	C900	270	6
WTP TO TOWER PIPE RUN	0+22 TO 0+24	C900	2	6
WTP TO TOWER PIPE RUN	0+25 TO 1+22	C900	97	6
BACKWASH LINE PIPE RUN	0+74 TO 0+79	C900	5	8
WELL 7 PIPE RUN	0+82 TO 0+94	C900	12	6
WELL 7 PIPE RUN	0+95 TO 0+98	DIP	3	6
WELL 7 PIPE RUN	0+99 TO 1+04	DIP	5	6
WATER TOWER MAIN 1 PIPE RUN	1+21 TO 1+23	C900	2	6
WELL 8	2+86 TO 2+93	C900	6	6
WELL 8	2+94 TO 3+41	C900	47	6
WELL 8	3+42 TO 3+46	C900	5	6
WELL 8	3+47 TO 3+50	DIP	3	6
WELL 8	3+51 TO 3+56	DIP	5	6
SECTION 1 WATER MAIN PIPE RUN	10+09 TO 10+13	C900	4	12
SECTION 1 WATER MAIN PIPE RUN	10+14 TO 14+87	C900	473	12
SECTION 1 WATER MAIN PIPE RUN	14+88 TO 14+92	C900	3	12
SECTION 1 WATER MAIN PIPE RUN	14+93 TO 14+96	C900	3	12
SECTION 1 WATER MAIN PIPE RUN	14+97 TO 16+91	C900	194	12
SECTION 1 WATER MAIN PIPE RUN	16+92 TO 16+96	C900	4	12
SECTION 1 WATER MAIN PIPE RUN	16+97 TO 24+96	C900	799	12

WATERMAIN SCHEDULE

ALIGNMENT	STATION	PIPE TYPE	** PIPE LENGTH (FT)	PIPE SIZE (IN)
SECTION 1 WATER MAIN PIPE RUN	24+97 TO 25+40	C900	43	12
SECTION 1 WATER MAIN PIPE RUN	25+41 TO 29+68	C900	427	12
SECTION 1 WATER MAIN PIPE RUN	29+69 TO 29+78	C900	9	12
SECTION 1 WATER MAIN PIPE RUN	29+79 TO 32+01	C900	222	12
SECTION 1 WATER MAIN PIPE RUN	32+02 TO 32+14	C900	11	12
SECTION 1 WATER MAIN PIPE RUN	32+15 TO 32+17	C900	2	12
SECTION 1 WATER MAIN PIPE RUN	33+90 TO 33+94	C900	3	12
SECTION 1 WATER MAIN PIPE RUN	33+98 TO 35+86	C900	188	12
SECTION 1 WATER MAIN PIPE RUN	46+38 TO 46+52	C900	14	12
SECTION 1 WATER MAIN PIPE RUN	46+53 TO 47+10	C900	57	12
SECTION 1 WATER MAIN PIPE RUN	47+11 TO 47+21	C900	10	12
SECTION 1 WATER MAIN PIPE RUN	47+25 TO 47+35	C900	10	12
SECTION 1 WATER MAIN PIPE RUN	47+35 TO 59+19	C900	1184	12
SECTION 1 WATER MAIN PIPE RUN	59+20 TO 59+53	C900	33	12
SECTION 1 WATER MAIN PIPE RUN	59+54 TO 67+12	C900	758	12
SECTION 1 WATER MAIN PIPE RUN	67+14 TO 67+41	C900	27	12
SECTION 1 WATER MAIN PIPE RUN	67+42 TO 70+21	C900	279	12
SECTION 1 WATER MAIN PIPE RUN	67+91 TO 67+93	C900	1	12
SECTION 1 WATER MAIN PIPE RUN	70+21 TO 70+24	C900	3	12
SECTION 1 WATER MAIN PIPE RUN	70+25 TO 73+04	C900	279	12

WATERMAIN SCHEDULE

ALIGNMENT	STATION	PIPE TYPE	** PIPE LENGTH (FT)	PIPE SIZE (IN)
SECTION 1 WATER MAIN PIPE RUN	73+08 TO 73+67	C900	59	12
SECTION 1 WATER MAIN PIPE RUN	73+68 TO 74+21	DIP	53	12
SECTION 1 WATER MAIN PIPE RUN	74+22 TO 79+55	C900	533	12
SECTION 1 WATER MAIN PIPE RUN	79+56 TO 79+62	C900	6	12
SECTION 1 WATER MAIN PIPE RUN	79+64 TO 79+66	C900	2	12
SECTION 1 WATER MAIN PIPE RUN	79+67 TO 79+72	C900	6	12
SECTION 1 WATER MAIN PIPE RUN	79+74 TO 79+80	C900	6	12
SECTION 1 WATER MAIN PIPE RUN	79+81 TO 93+53	C900	1372	12
SECTION 1 WATER MAIN PIPE RUN	93+53 TO 93+56	C900	3	12
SECTION 1 WATER MAIN PIPE RUN	93+57 TO 93+59	C900	3	12
SECTION 1 WATER MAIN PIPE RUN	93+60 TO 98+61	C900	500	12
SECTION 1 WATER MAIN PIPE RUN	98+62 TO 100+71	C900	209	12
SECTION 1 WATER MAIN PIPE RUN	100+71 TO 100+72	C900	1	12
SECTION 1 WATER MAIN PIPE RUN	100+73 TO 100+75	C900	2	6
SECTION 1 WATER MAIN PIPE RUN	100+76 TO 100+77	C900	1	6
WTP TO TOWER	601+23 TO 601+89	C900	66	6
WTP TO TOWER	601+90 TO 602+11	C900	22	6

WATER MAIN NOTES:

- WATER MAIN SHALL BE C900 PVC AND CAN BE INSTALLED VIA TRENCHED OR TRENCHLESS INSTALLATION. WATER MAIN CAN BE PUSH-ON JOINT OR FUSIBLE. REFER TO SUDAS 5010.108.A FOR PUSH-ON JOINT WATER MAIN; REFER TO SUDAS 5011.108.A FOR FUSIBLE WATER MAIN. TRACER WIRE SHALL BE #12 AWG COPPER CLAD STEEL, HIGH STRENGTH WITH MINIMUM 450 LB BREAK LOAD, WITH MINIMUM 30 ML HDPE INSULATION THICKNESS. PIPE BEDDING P-1 (REFER TO SUDAS DETAIL SW-104) AND THRUST BLOCKS REQUIRED FOR ALL FITTINGS THAT RESULT IN A CHANGE IN DIRECTION.
    - FUSIBLE WATER MAIN: ALL JOINTS SHALL BE THERMALLY BUTT-FUSED. PIPE SHALL HAVE PLAIN ENDS CUT SQUARE TO THE PIPE, BE FREE OF ANY BEVEL OR CHAMFER, WITHOUT BELLS OR GASKETS OF ANY KIND, AND BE BLUE IN COLOR.
- ALL HYDRANTS SHALL BE MUELLER A423 SUPER CENTERION 3-WAY, TRAFFIC TYPE AND FURNISHED WITH MINIMUM 6' BURY DEPTH, OR AS SHOWN ON PLANS. HYDRANTS SHALL HAVE AUXILLARY 6" GATE VALVE, TWO 2-1/2" OPENINGS, AND ONE 5-1/4" PUMPER NOZZEL WITH NATIONAL STD. THREAD. AUXILLARY VALVES SHALL BE MUELLER RESILIENT WEDGE AND SHALL OPEN COUNTERCLOCKWISE.
- ALL VALVES SHALL BE MUELLER RESILIENT WEDGE AND SHALL OPEN COUNTERCLOCKWISE.
- WATER SERVICE, 2": SERVICE SERVING WATER TREATMENT PLANT SHALL BE 2" POLYETHELYNE PIPE, CLASS 200, ACCORDING TO AWWA C901. REFER TO SUDAS 5010.108.E.
- SAMPLE TAP LINE, 1/2": SAMPLE TAP LINE SERVING WATER TREATMENT PLANT SHALL BE 1/2" POLYETHELYNE PIPE, CLASS 200, ACCORDING TO AWWA C901. REFER TO SUDAS 5010.108.E.
- *ALL TEES WHERE THE BRANCH SIZE IS SMALLER THAN THE RUN SIZE MAY USE A TEE WITH THE SAME BRANCH AND RUN SIZES FOLLOWED BY A REDUCER CONNECTION TO THE BRANCH AT NO ADDITIONAL COST TO THE OWNER.

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

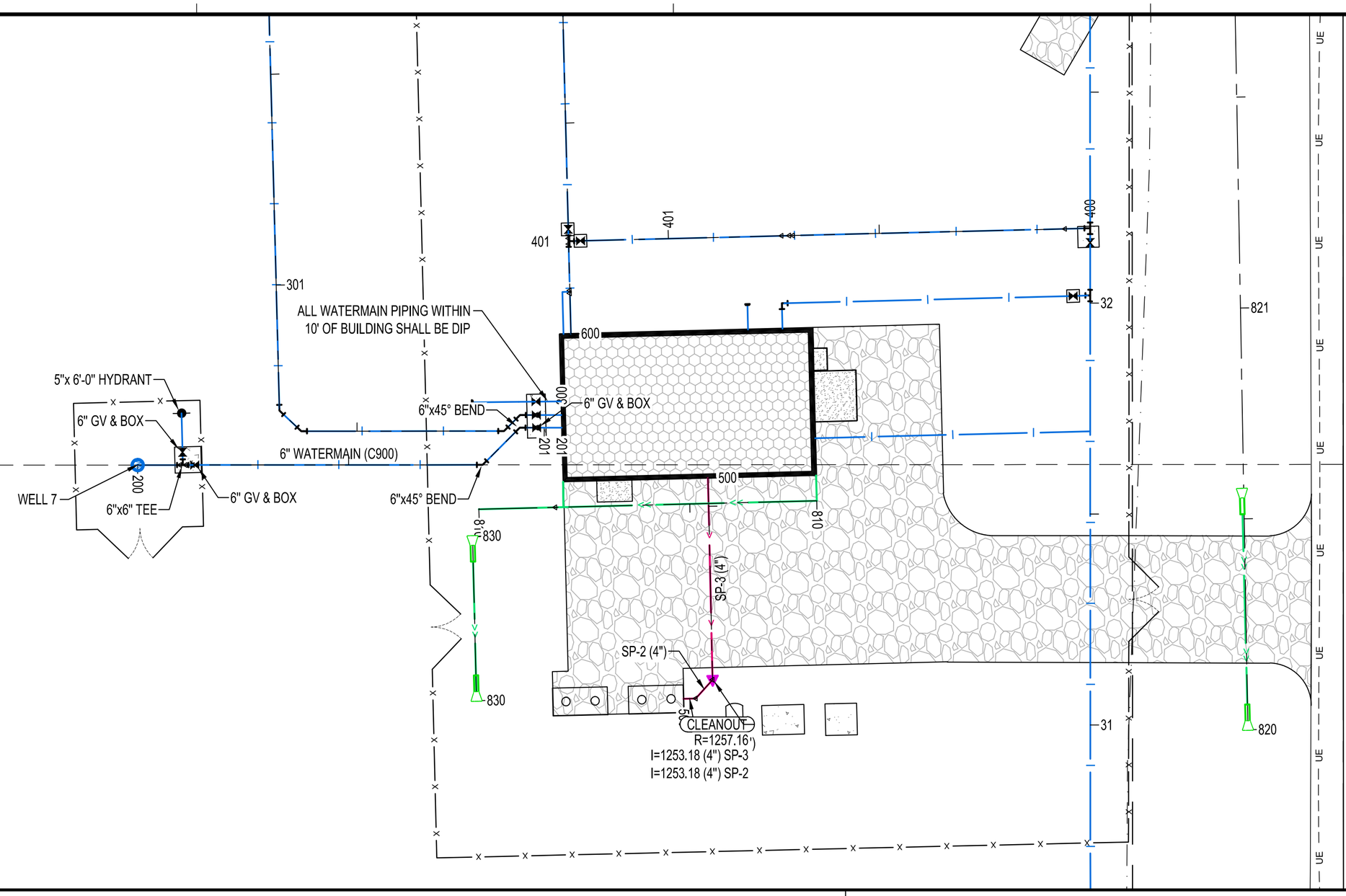
PROJECT NO.	22-27061
FILE NAME	27061 SECTION 3 C3-SITE
DRAWN BY	AMS
DESIGNED BY	BAS/AMS
REVIEWED BY	BAS/ALG
ORIGINAL ISSUE DATE	05/21/2025
CLIENT PROJECT NO.	-

TITLE

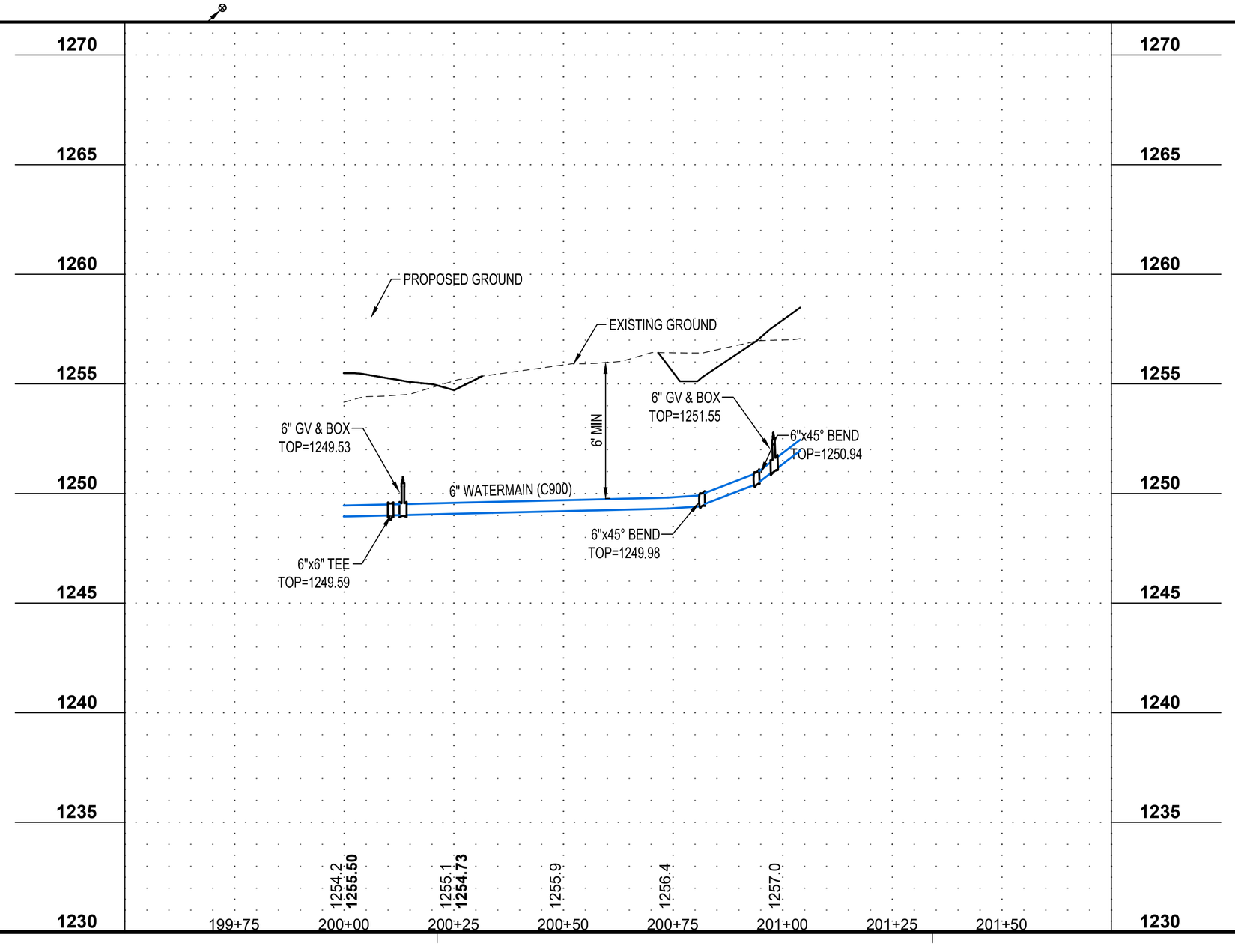
UTILITY SCHEDULES

SHEET

C3-21



NOTE:
XXX.X - EXISTING GROUND
XXX.XX - PROPOSED GROUND



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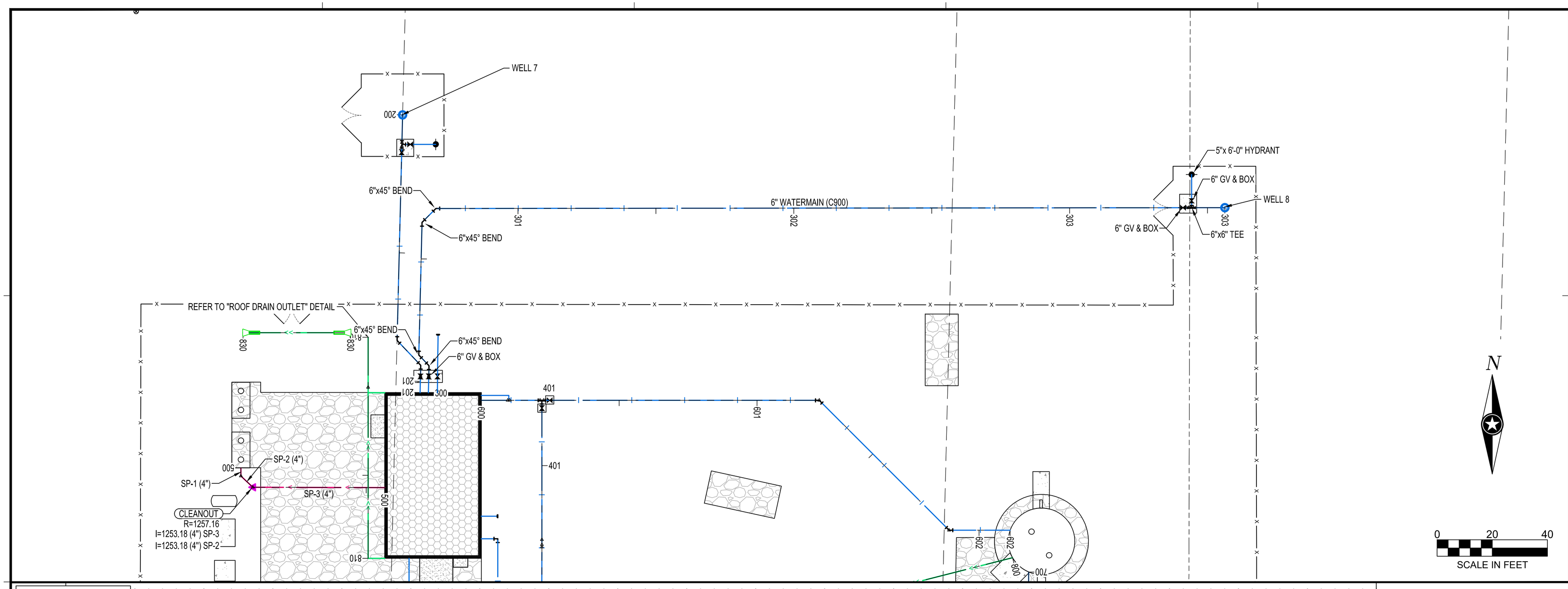
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-30



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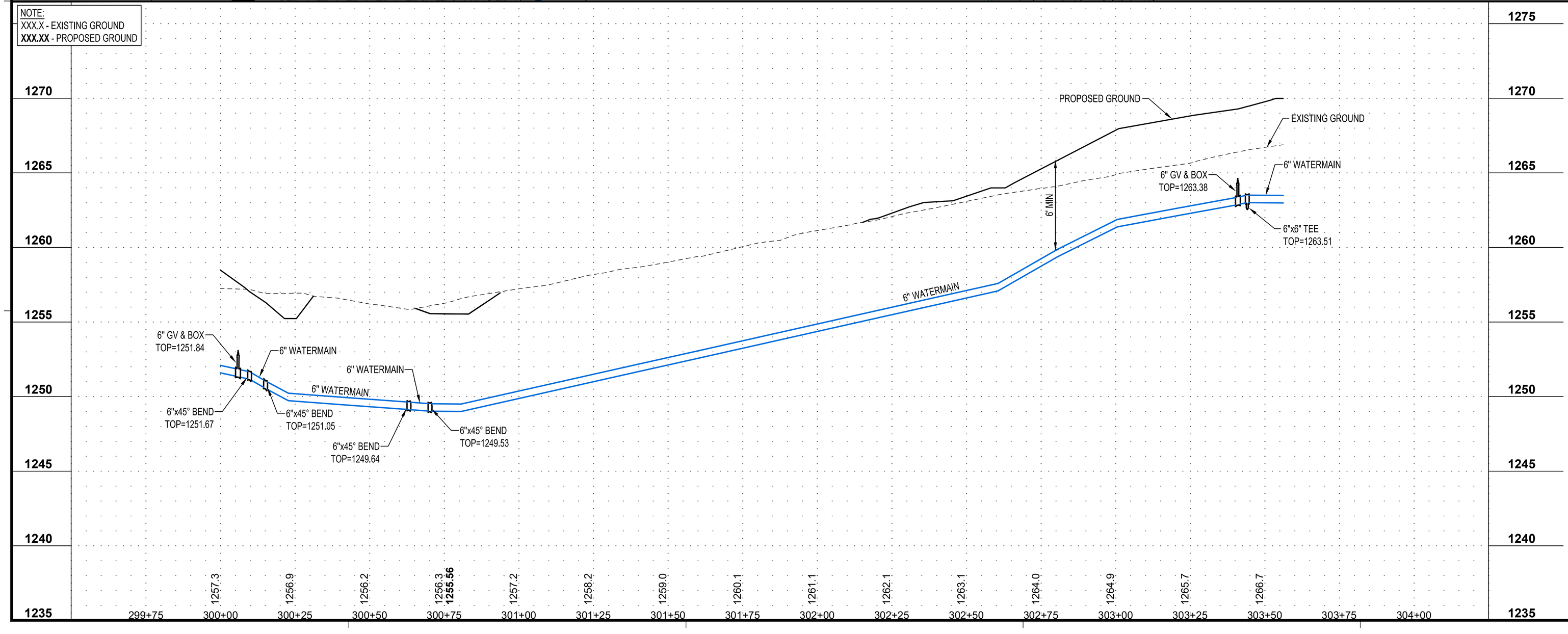

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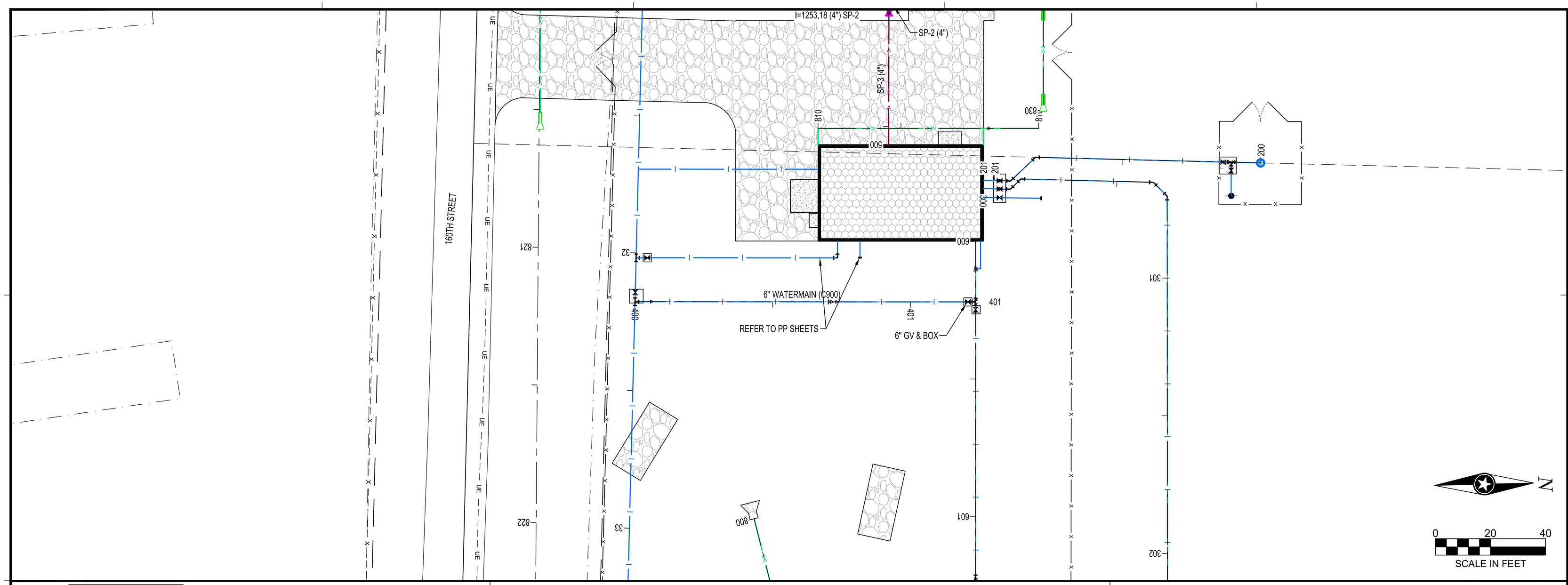
CLIENT PROJECT NO.	-

TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-31



NOTE:
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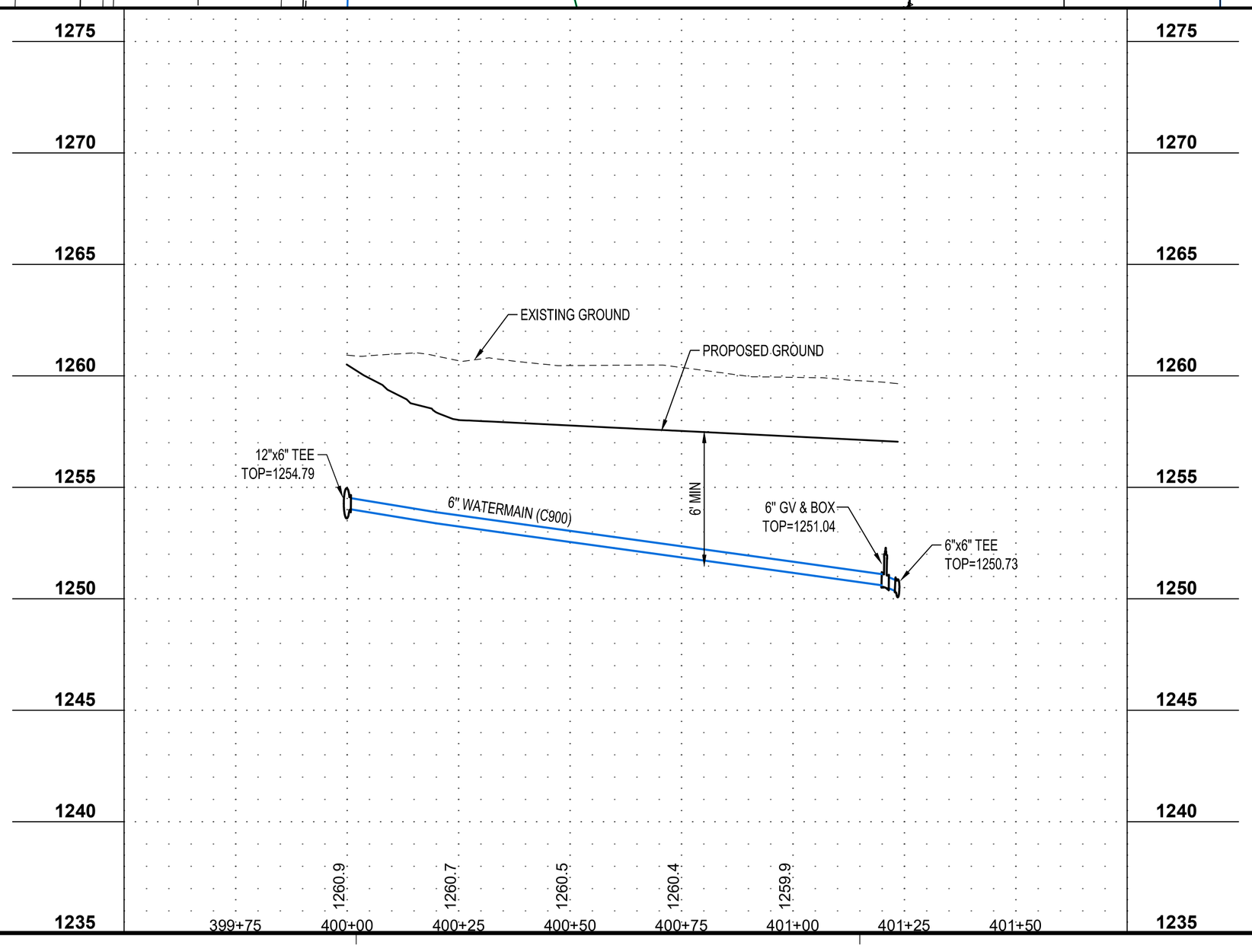

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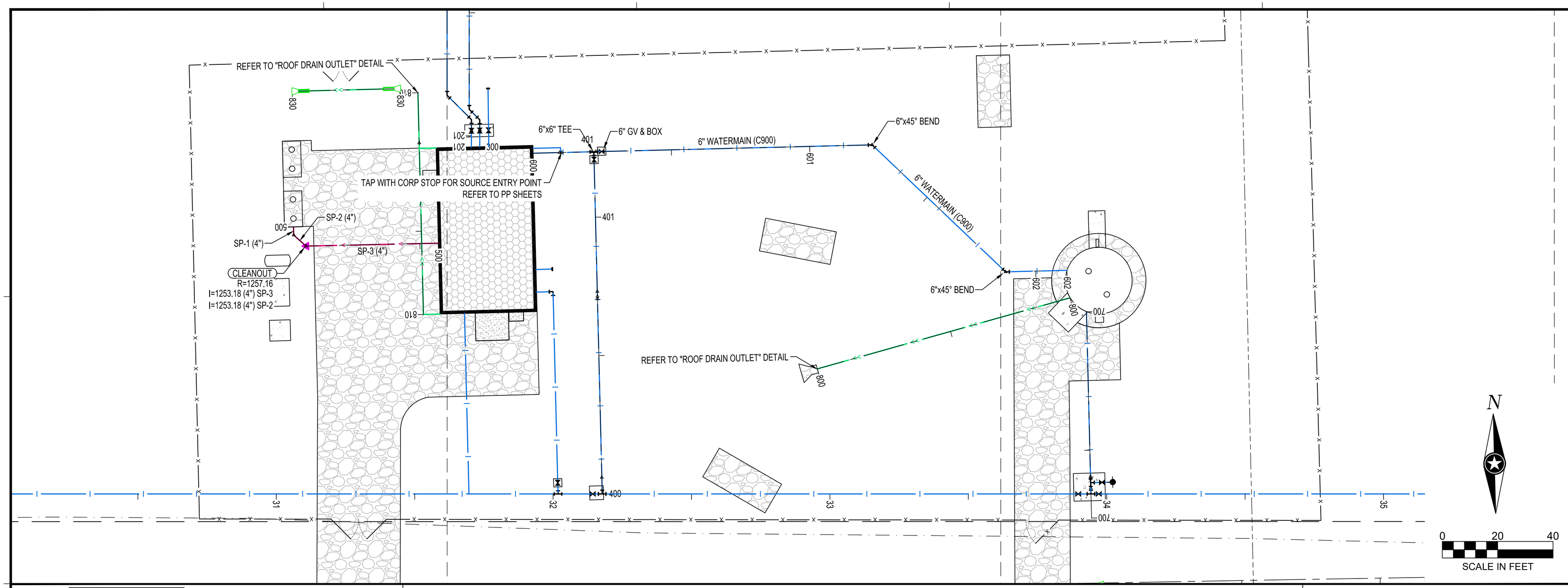
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-32



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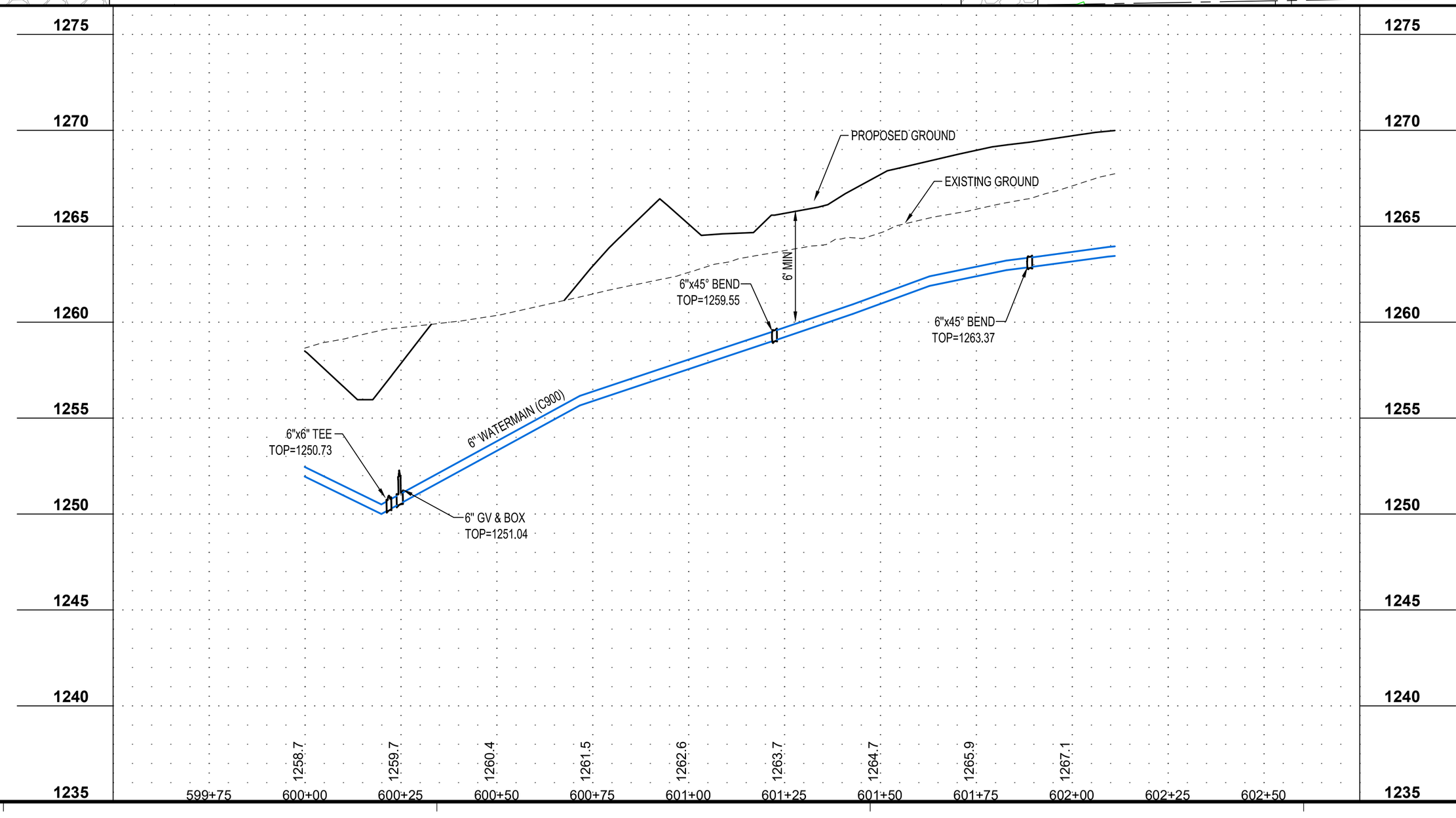

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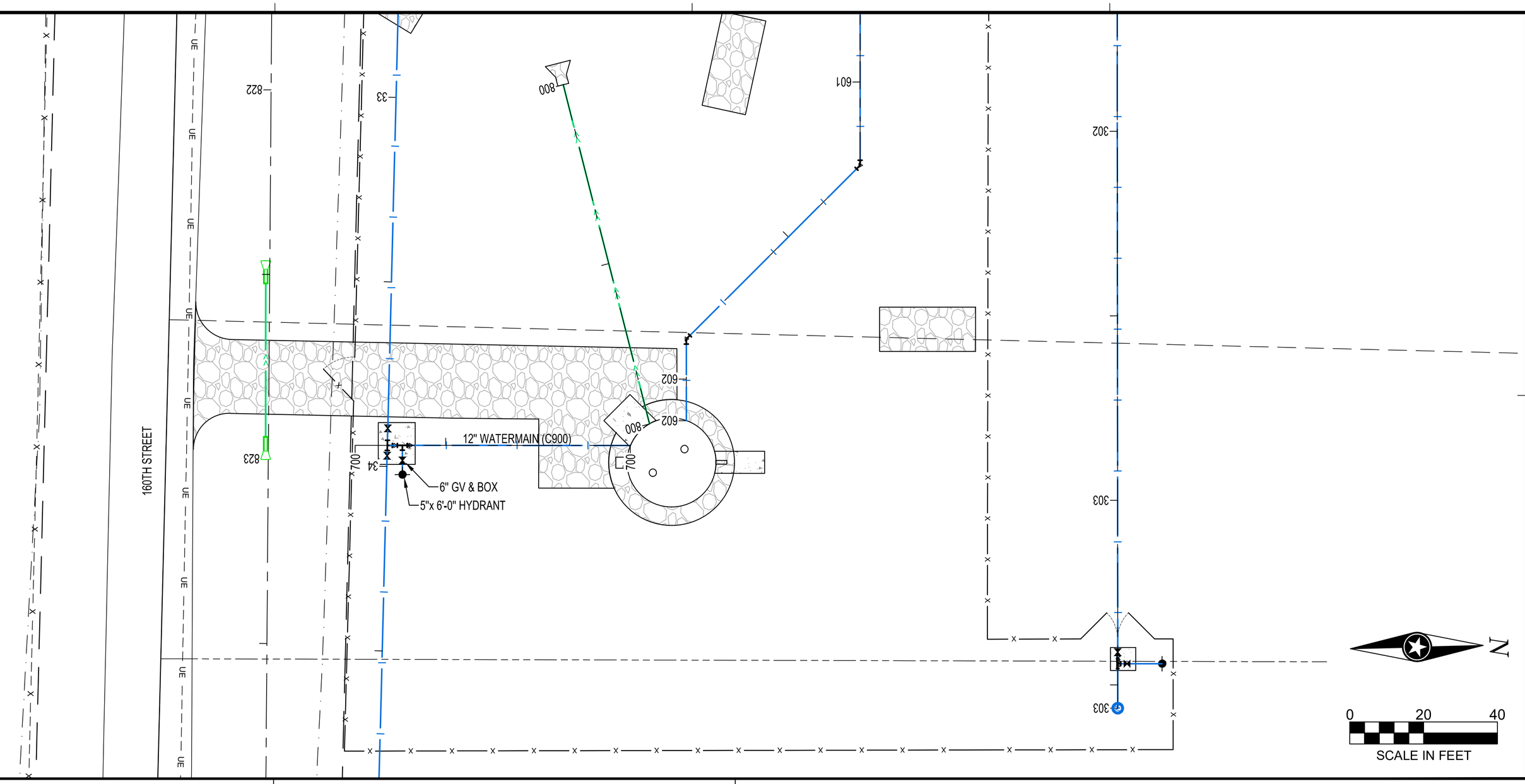
UTILITY PLAN AND PROFILE

SHEET

C3-33



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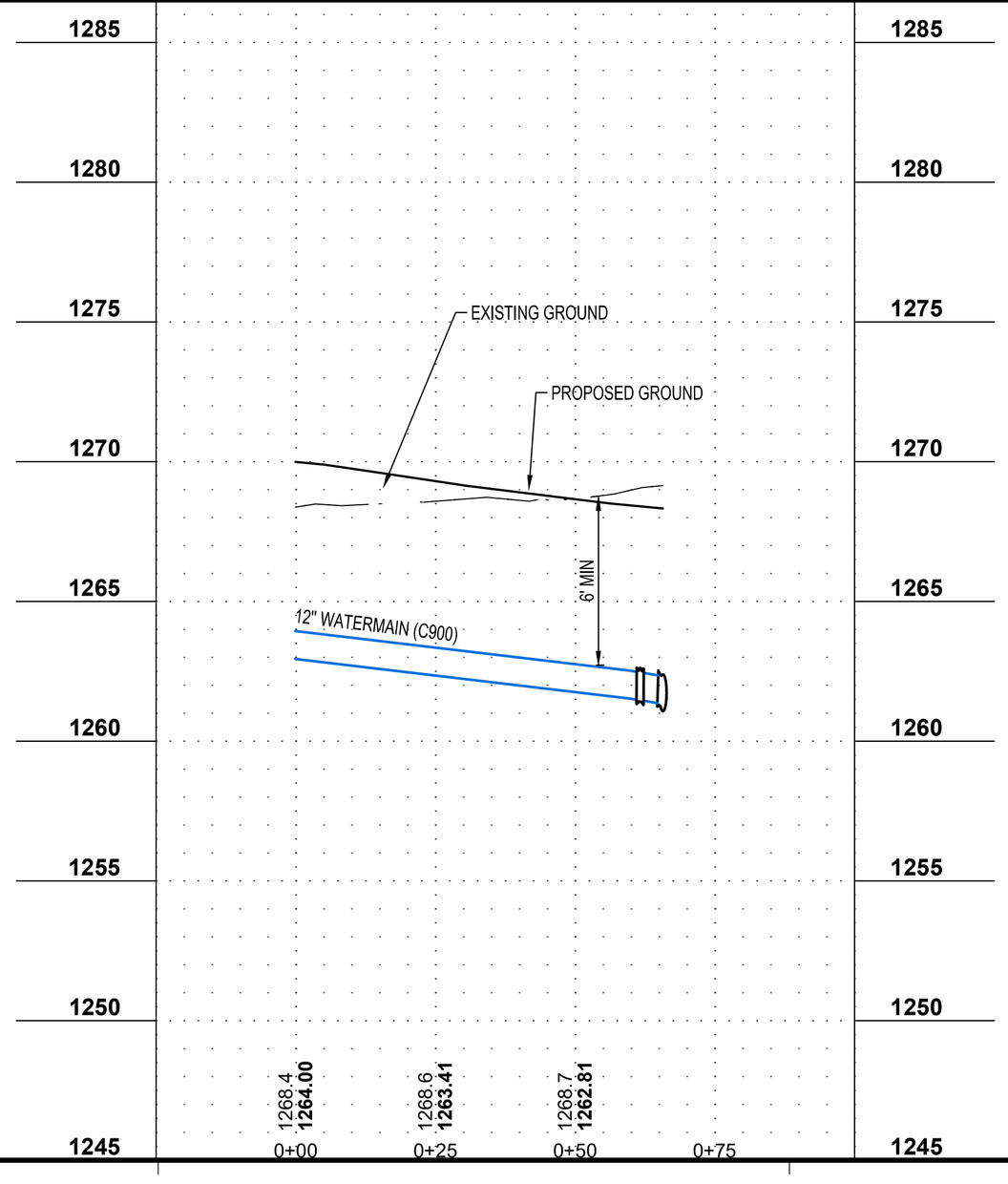
XXX.XX - PROPOSED GROUND



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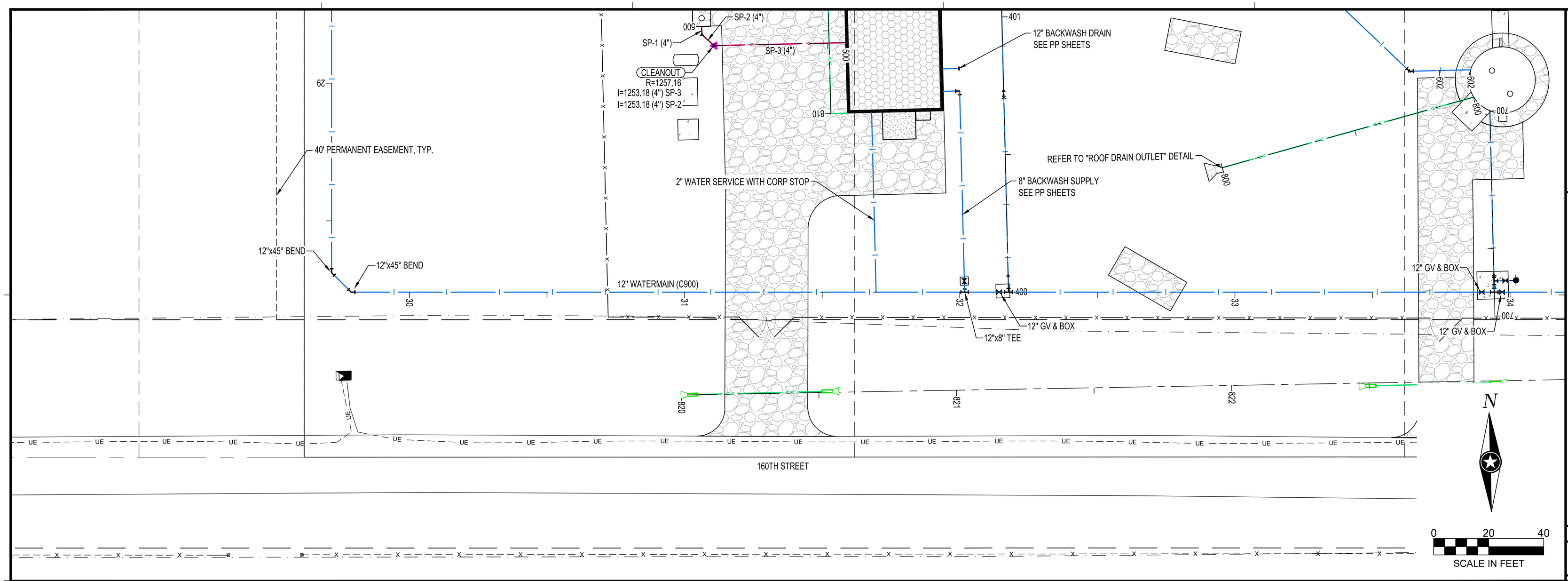
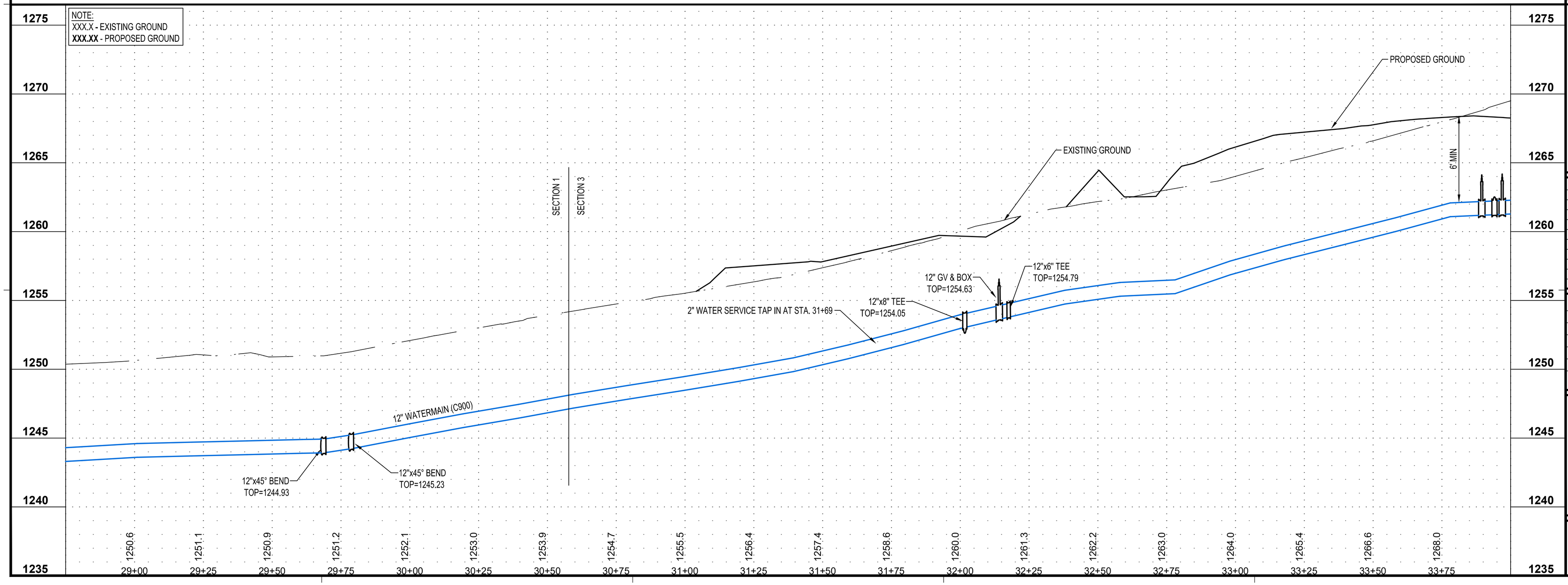
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-34





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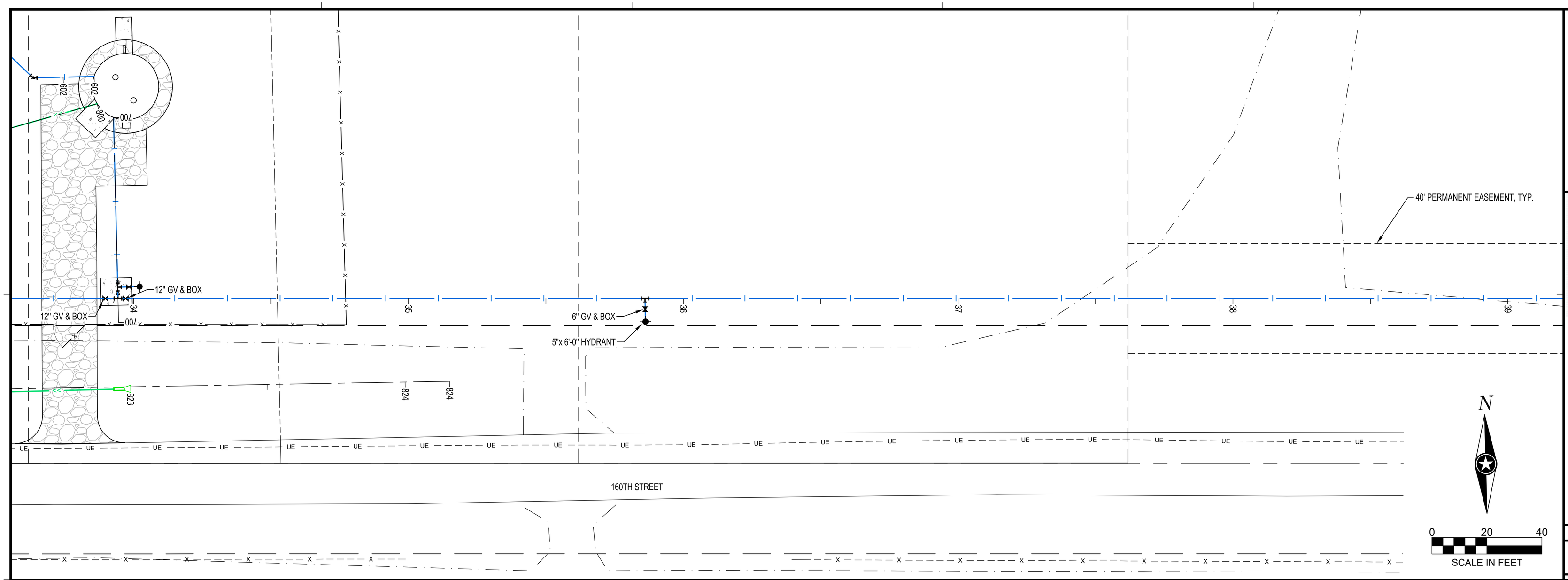
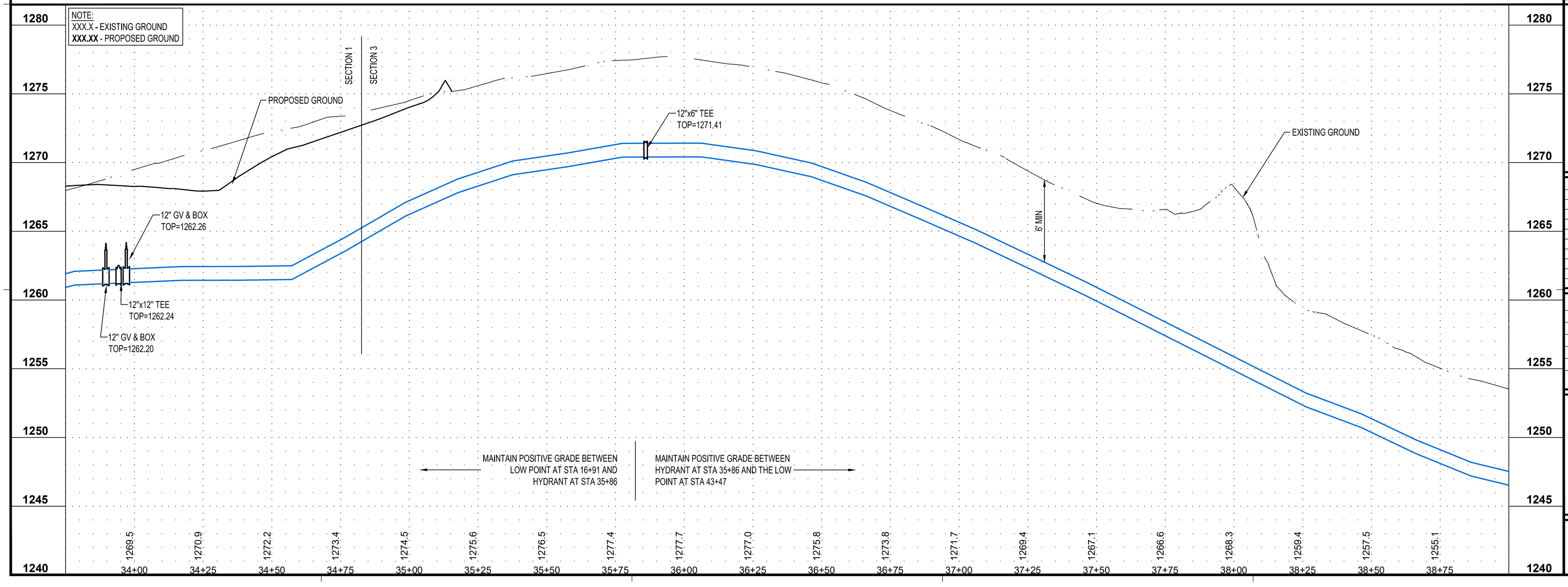
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-35





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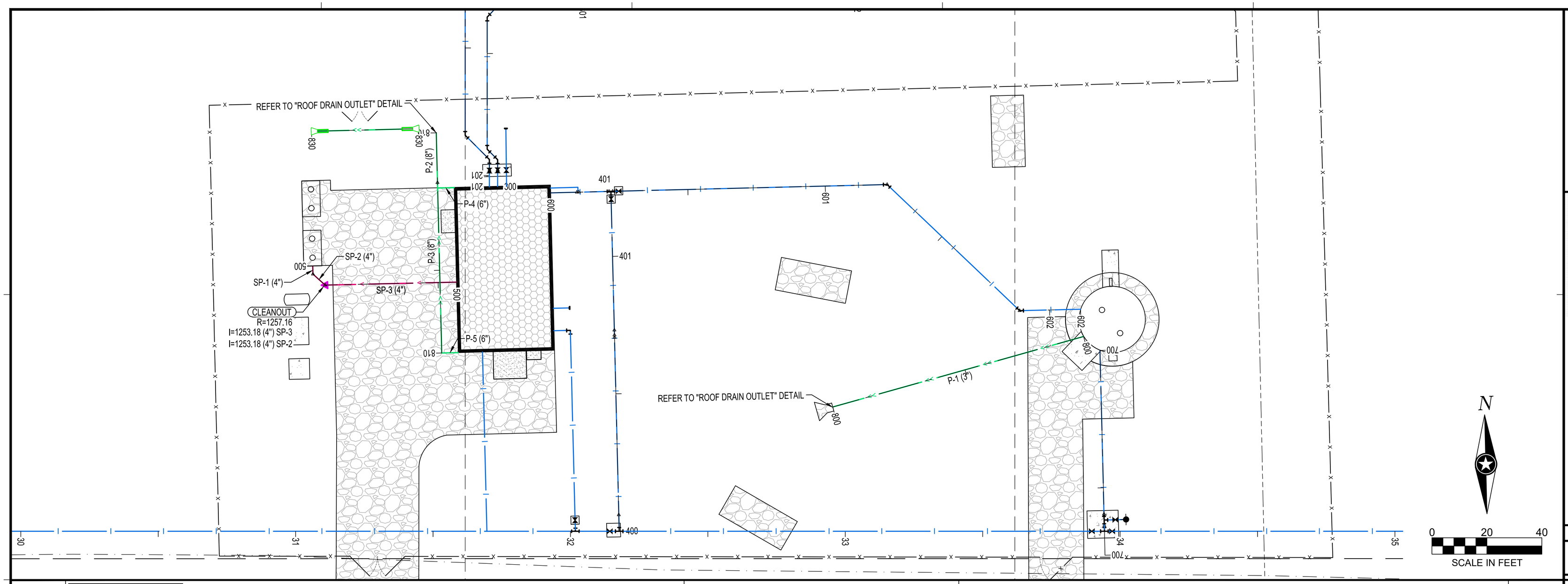
TITLE

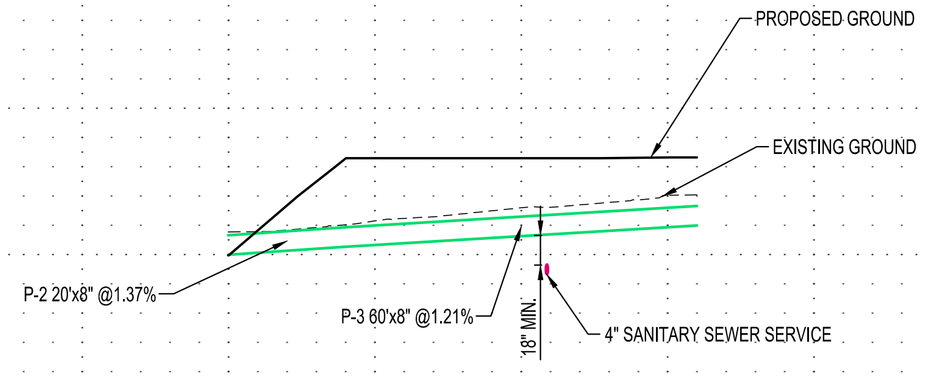
UTILITY PLAN AND PROFILE

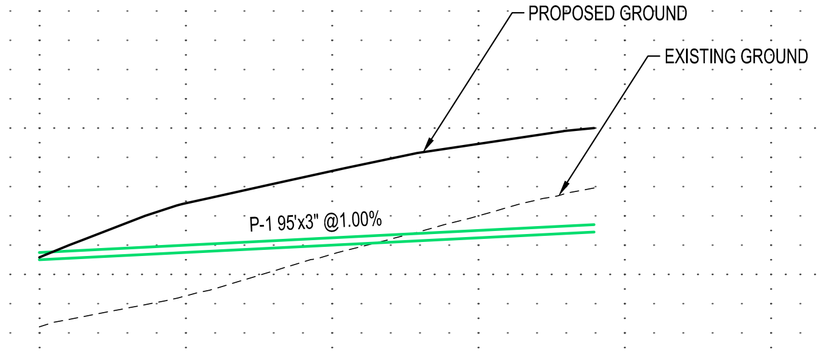
SHEET

C3-36



NOTE:
XXX.X - EXISTING GROUND
XXX.XX - PROPOSED GROUND





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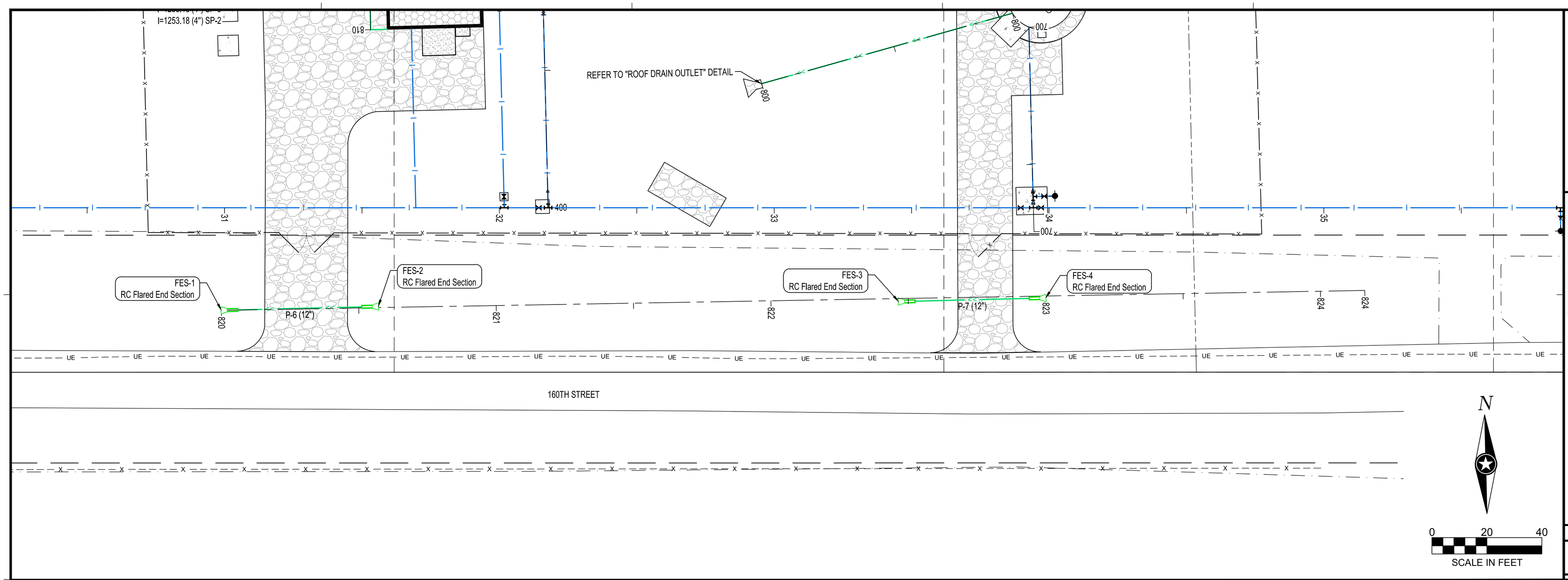
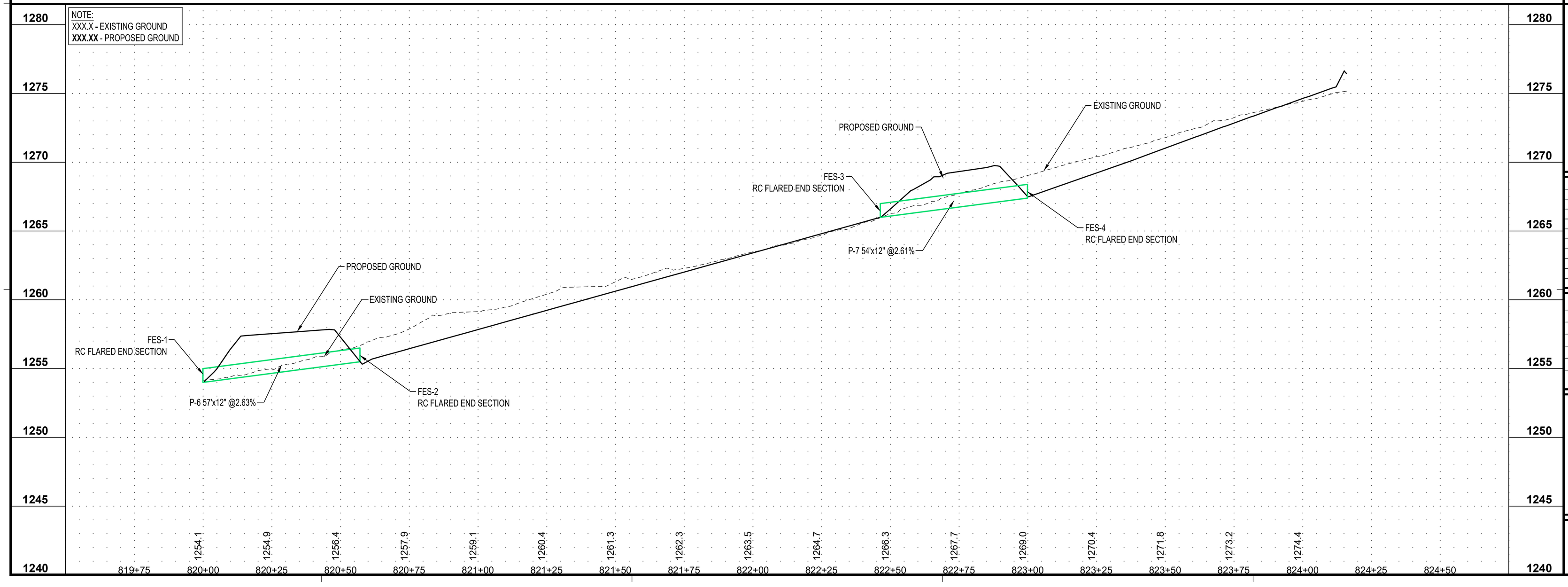
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-37





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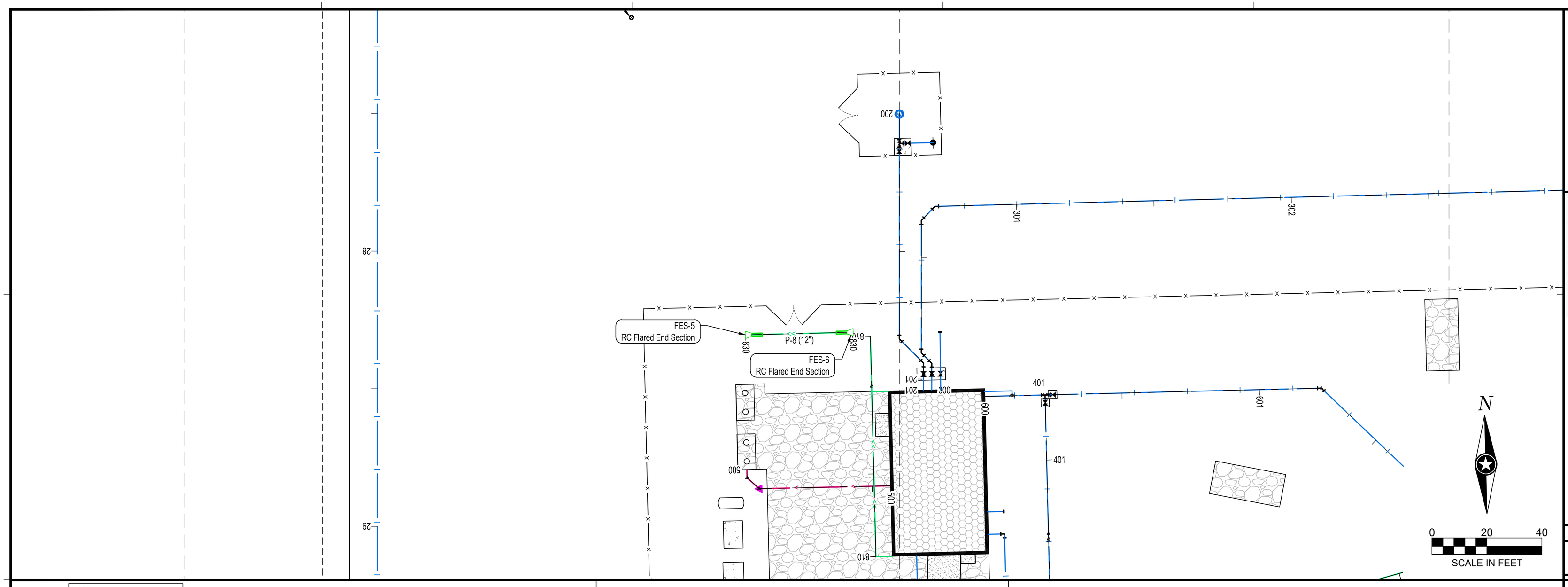
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-38



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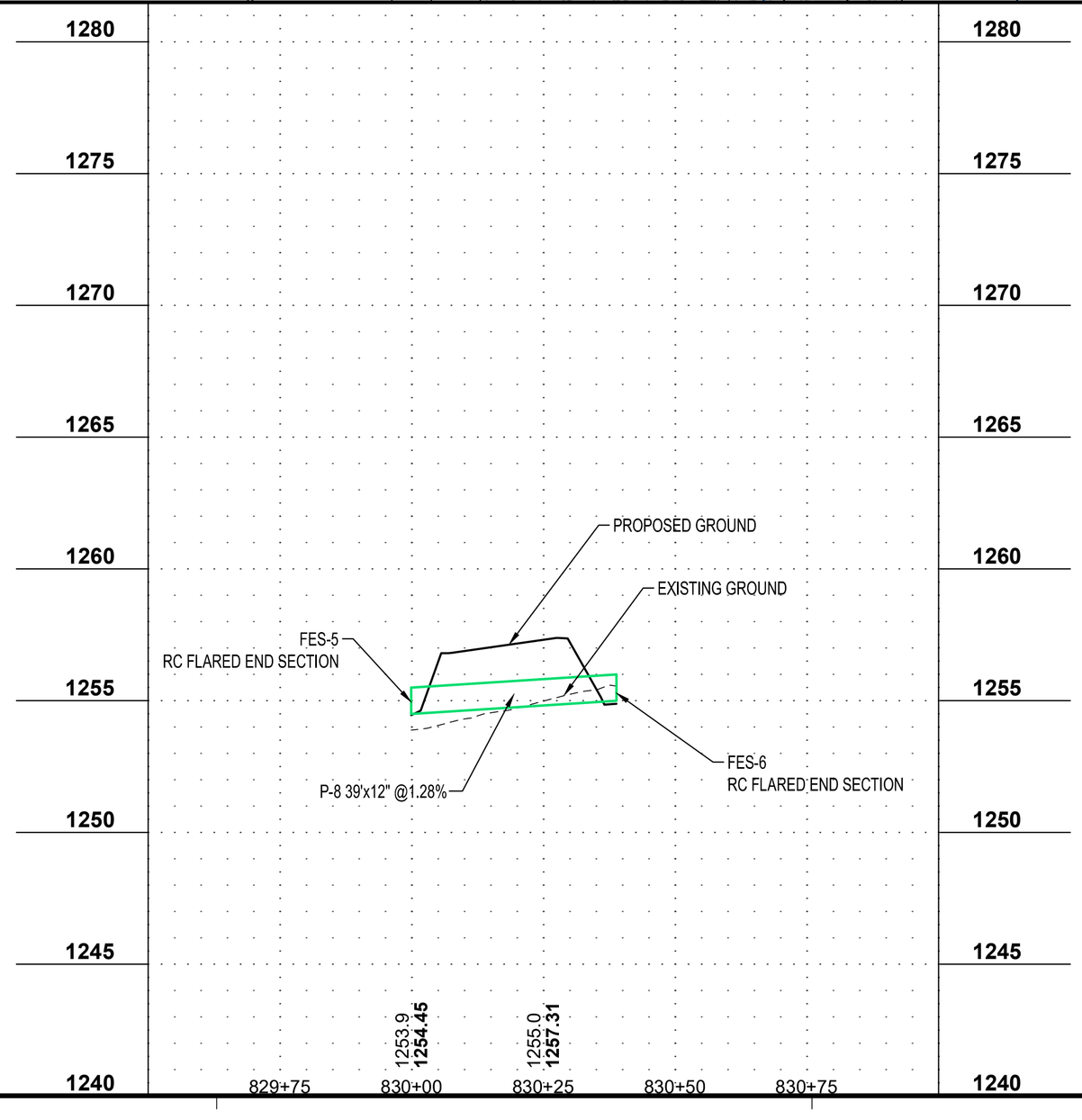

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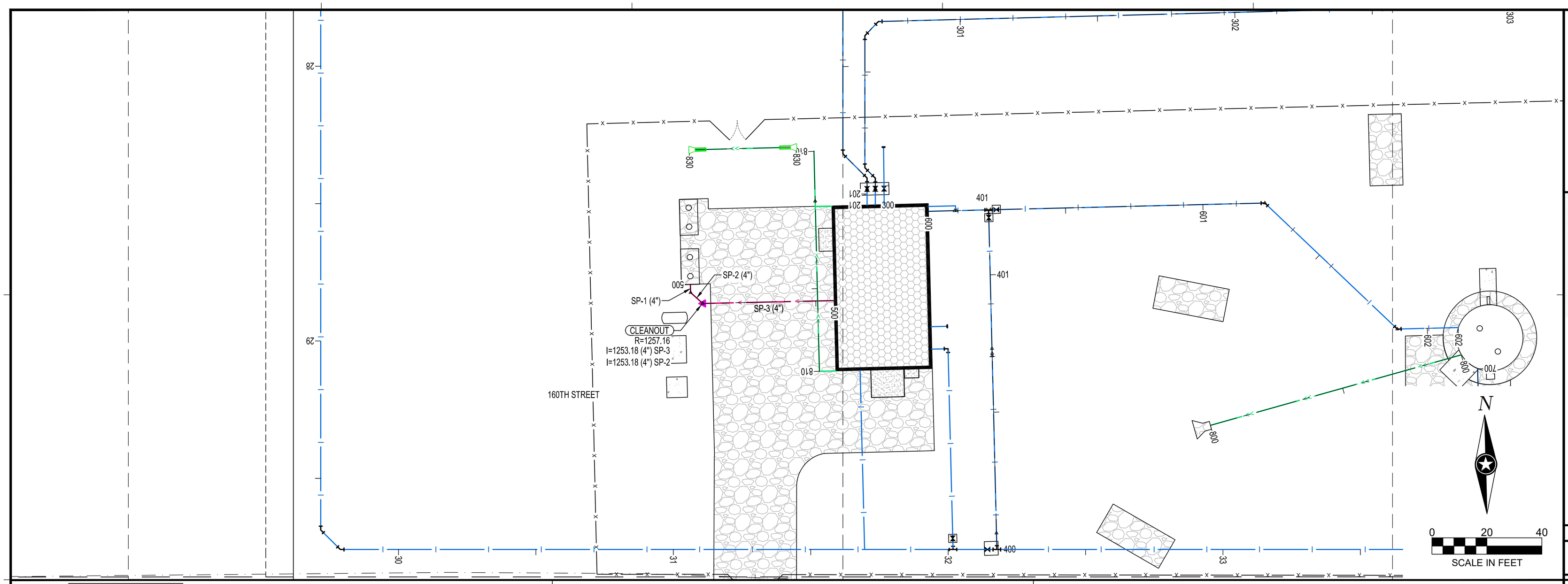
UTILITY PLAN AND PROFILE

SHEET

C3-39



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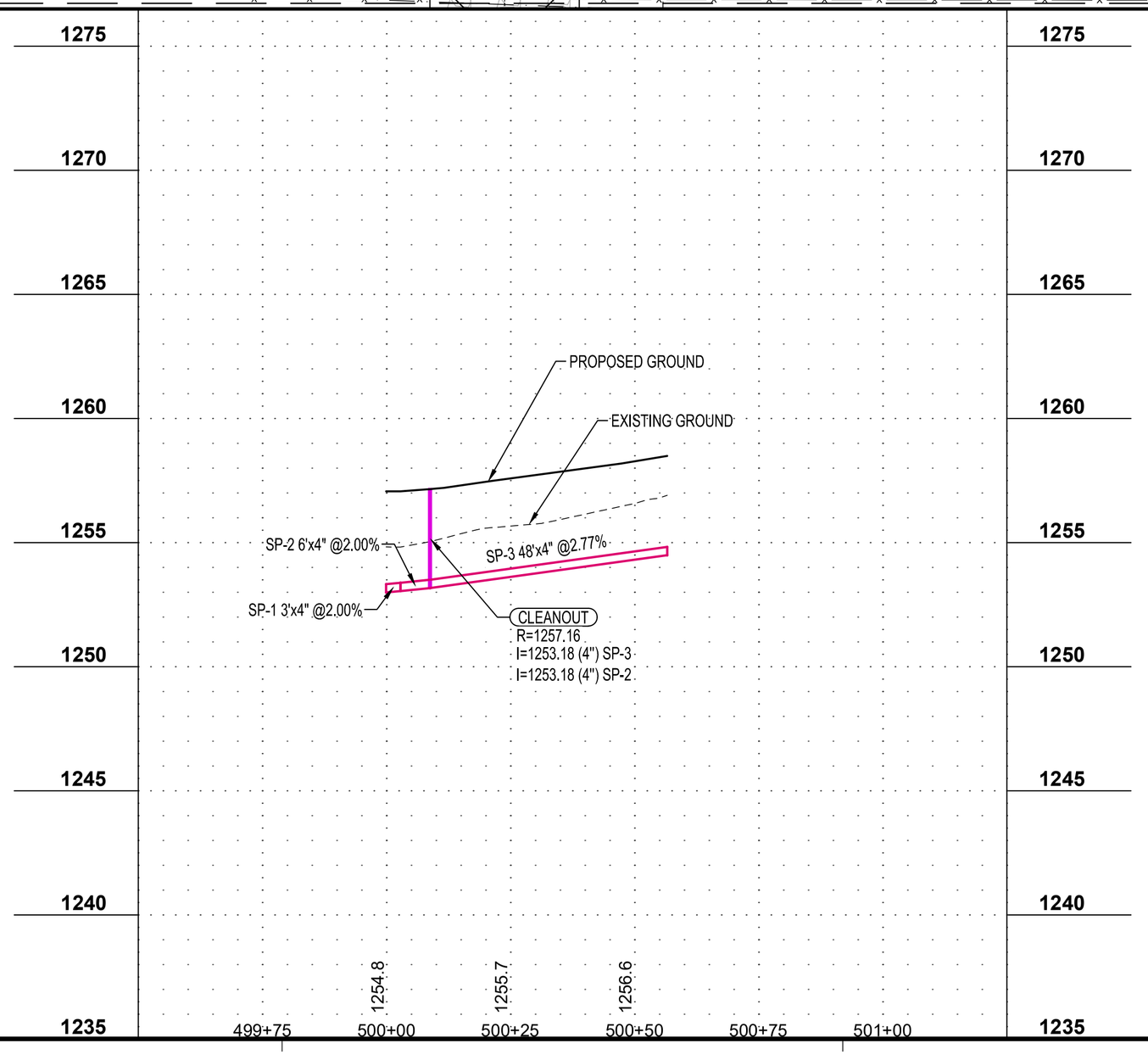

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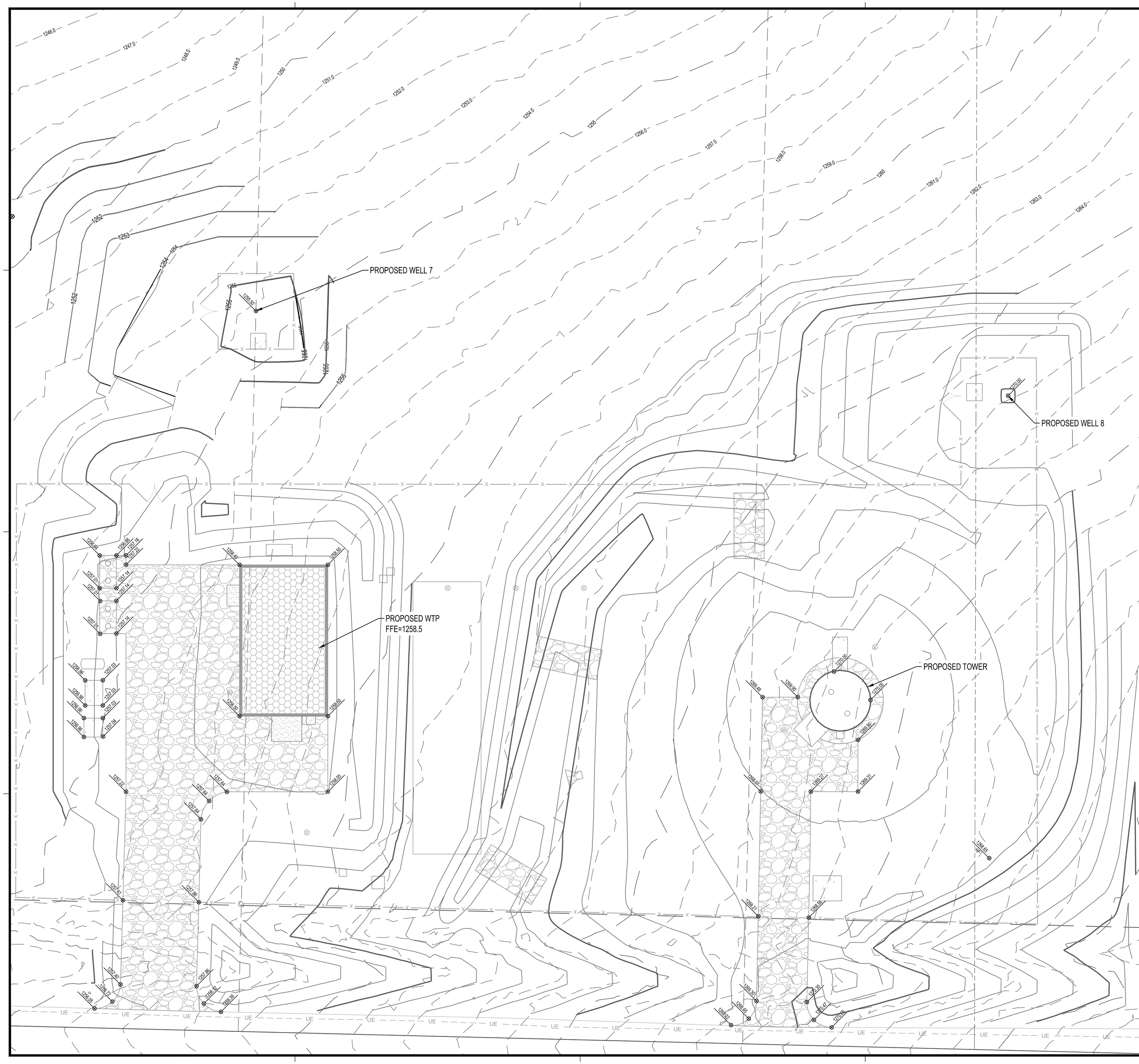
TITLE

UTILITY PLAN AND PROFILE

SHEET

C3-40



GRADING LEGEND

101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)
+ XXXX.XX	EXISTING SPOT ELEVATION
XXX.XX	PROPOSED SPOT ELEVATION
XXX.XX	PROPOSED TOP BACK OF CURB / TOP OF TURNDOWN WALK SPOT ELEVATION
XXX.XX TW XXX.XX BW	PROPOSED TOP OF RETAINING WALL (T/W) AND BOTTOM OF RETAINING WALL (B/W)
-X.X%	SURFACE GRADE / DIRECTION

GENERAL GRADING NOTES

PROPOSED CONTOURS SHOW FINISHED GRADE ELEVATIONS. BUILDING PAD AND PAVEMENT HOLD DOWNS ARE NOT INCLUDED. WHEN CONSTRUCTING BUILDING PADS WITH A HOLD DOWN, GRADE AREAS TO ENSURE POSITIVE BUILDING PAD DRAINAGE.

EARTHWORK - SITE BALANCE

TOPSOIL			
CUT/STRIP (EV):		2,118	CY
FILL (CV):		-4,017	CY
SHRINK LOSS	20%	-424	CY
BALANCE (CV):		-2,322	CY
EMBANKMENT			
CUT (EV):		2,994	CY
FILL (CV):		-246	CY
SHRINK LOSS	15%	-449	CY
BALANCE (CV):		2,299	CY
TOTAL SUMMARY			
TOPSOIL (CV):		-2,322	CY
CLAY (CV):		2,299	CY

NOTES:

1. SHRINK AND SWELL FACTORS WERE APPLIED TO CALCULATIONS. ESTIMATED QUANTITIES PROVIDED ABOVE ARE FOR INFORMATIONAL PURPOSES ONLY. NO GUARANTEE, EXPRESSED OR IMPLIED, IS MADE TO THEIR ACCURACY. THE CONTRACTOR SHALL VERIFY ALL QUANTITIES PRIOR TO SUBMITTING A BID FOR THE PROJECT.
2. EARTHWORK QUANTITIES WITH A POSITIVE NUMBER ARE CUT OR MATERIAL GENERATED. A NEGATIVE NUMBER IS FILL OR MATERIAL APPLIED. A POSITIVE BALANCE INDICATES AN EXCESS IN MATERIAL. A NEGATIVE BALANCE INDICATES A SHORTAGE OF MATERIAL.
3. A SHRINKAGE FACTOR OF 15% (EMBANKMENT) AND 20% (TOPSOIL) WERE APPLIED TO ALL EXCAVATED MATERIAL WHEN DETERMINING SITE BALANCE.
4. 12" OF TOPSOIL WAS CALCULATED IN ALL TOPSOIL STRIP AREAS. ALL AREAS SHALL BE DRESSED WITH A MINIMUM OF 8" OF TOPSOIL.
5. THE SITE BALANCE PROVIDED ABOVE IS FOR INFORMATIONAL PURPOSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL QUANTITIES PRIOR TO SUBMITTING A BID FOR THE PROJECT.

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TITLE

OVERALL GRADING PLAN

SHEET

C4-10

TURF RESTORATION LEGEND

SYMBOL	DESCRIPTION	UNITS	QUANTITY
	SEED, MIXTURE SUDAS TYPE 1	AC	1.36
	SEED, MIXTURE SUDAS TYPE 2	AC	6.39

TEMPORARY EROSION CONTROL MEASURES, INCLUDING PERIMETER CONTROL AND INLET PROTECTION MUST BE MAINTAINED UNTIL FINAL STABILIZATION MEASURES ARE IN PLACE AND APPROVED BY THE OWNERS REPRESENTATIVE. REFER TO THE EROSION CONTROL PLAN FOR ADDITIONAL INFORMATION.

REFER TO ROOF DRAIN OUTLET DETAIL

REFER TO ROOF DRAIN OUTLET DETAIL

SEED AND RESTORE DRIVEWAY ENTRANCE

N

0 40 80

SCALE IN FEET

ISG

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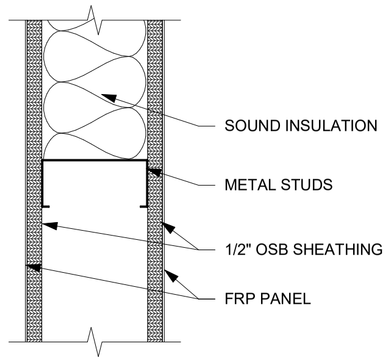
TITLE

SITE RESTORATION PLAN

SHEET

C5-10

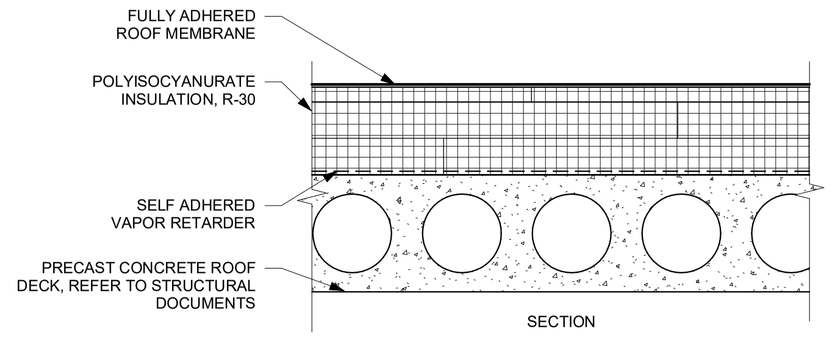


PLAN

WALL TYPE	STUD DESIGNATION	SPACING	MAX. HEIGHT (5 PSF, L/240)	SOUND TRANSMISSION (STC)	FIRE RATING / UL DESIGN
A3	362S125-30	16"	15'-6"		
A6	600S125-30	16"	22'-11"		

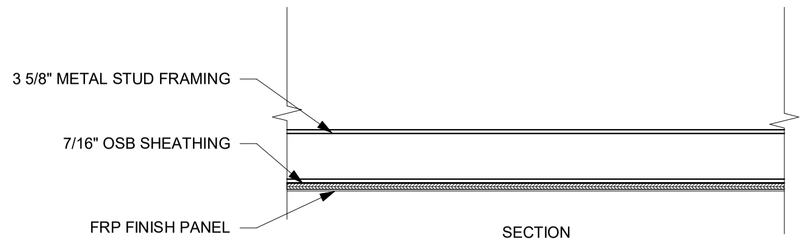
NOTES:

WALL TYPE A (METAL STUD PARTITION)
NOT TO SCALE



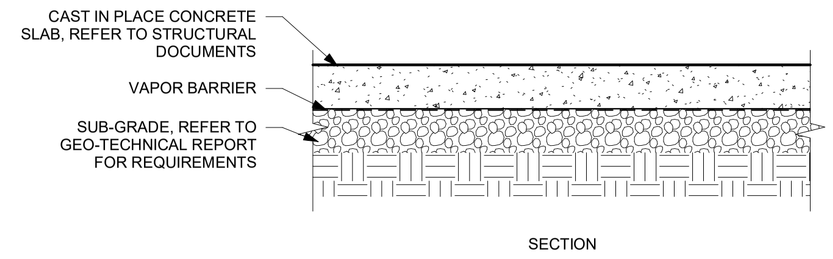
SECTION

ROOF/CEILING ASSEMBLY R1
NOT TO SCALE



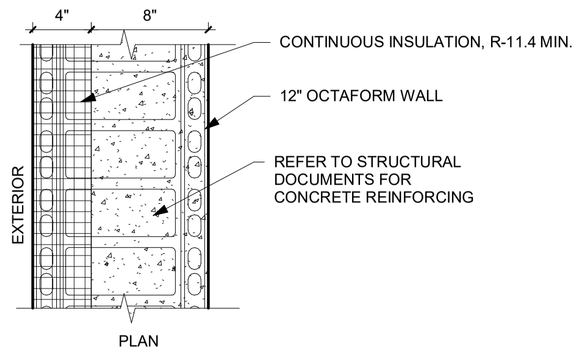
SECTION

CEILING ASSEMBLY C1
NOT TO SCALE



SECTION

SLAB ON GRADE ASSEMBLY SL1
NOT TO SCALE



PLAN

WALL TYPE	FIRE RATING / UL DESIGN
W2	

NOTES:

EXTERIOR WALL TYPE
NOT TO SCALE

GENERAL ASSEMBLY NOTES:

A. NOT ALL ASSEMBLY TYPES LISTED APPLY TO THIS PROJECT. REFER TO FLOOR PLANS FOR LOCATIONS AND ADDITIONAL NOTES.

B. LIGHT GAUGE STEEL FRAMING MEMBER DESIGNATION SYSTEM: (REFER TO STRUCTURAL NOTES)

600S125-54 (EQUIVALENT TO 6" x 16 GAUGE STUD OR JOIST WITH 1 1/4" FLANGES)

- MINIMUM BASE METAL THICKNESS IN MILS. EXAMPLE - .054 = 54 MILS)
  - 18 = 25 GAUGE
  - 27 = 22 GAUGE
  - 30 = 20 GAUGE (DRYWALL)
  - 33 = 20 GAUGE (STRUCTURAL)
  - 43 = 18 GAUGE
  - 54 = 16 GAUGE
  - 68 = 14 GAUGE
  - 97 = 12 GAUGE
- FLANGE WIDTH (1/100 INCHES): EXAMPLE - 125 = 1.25"
- STYLE: S = STUD OR JOIST SECTION (WITH FLANGE STIFFENERS) = [
  - T = TRACK SECTION = ⌴
  - U = CHANNEL SECTION (STUDS WITHOUT FLANGE STIFFENERS) = [
  - F = FURRING CHANNEL = ⌒
  - Z = ZEE SECTION = ⌐
- MEMBER DEPTH (1/100 INCHES): EXAMPLE - 600 = 6"

C. ALL PARTITIONS CONTAINING PLUMBING OR HAVING AN EXTERIOR FACE SHALL BE INSULATED.

D. REFERENCE FINISH PLANS FOR ADDITIONAL FINISHES NOT INDICATED ON PARTITION TYPES.

E. INCLUDE PAINTABLE ACOUSTIC SEALANT AT WALL PERIMETER (TOP, BOTTOM, AND SIDES) TERMINATIONS AND PENETRATIONS FOR ALL NON RATED ASSEMBLIES. TYPICAL BOTH SIDES OF ASSEMBLY.

F. PROVIDE FIRE-TREATED WOOD OR STEEL BACKING FOR ALL WALL-MOUNTED FINISH CARPENTRY, ARCHITECTURAL WOODWORK, TOILET PARTITIONS, ACCESSORIES AND OTHER SIMILAR ITEMS.

G. WOOD FRAMING MEMBERS IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

H. REFER TO STRUCTURAL DOCUMENTS FOR SHEAR WALL CRITERIA.

I. ALL NON-RATED WALLS TO BE CONSTRUCTED FULL HEIGHT TO THE UNDERSIDE OF FLOOR OR ROOF STRUCTURE ABOVE UNLESS NOTED OTHERWISE.

J. PROVIDE DOUBLE TOP PLATES AT ALL WOOD LOAD BEARING WALLS.

K. NON LOAD BEARING METAL STUD WALLS SHALL HAVE A SLOTTED TOP TRACK FOR DEFLECTION. FINISHES / SUBSTRATES SHALL NOT BE FASTENED TO THE TOP TRACK.

L. PROVIDE 1" GAP FOR DEFLECTION ALLOWANCE BETWEEN WALL FINISH, SUBSTRATE, AND STRUCTURE ABOVE. TYPICAL UNLESS NOTED OTHERWISE ON STRUCTURAL DOCUMENTS.

M. COLD FORMED FRAMING DESIGNED BY FRAMING CONTRACTOR; REFER TO STRUCTURAL NOTES FOR COMPONENTS AND CLADDING DESIGN REQUIREMENTS.

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	ESR
DESIGNED BY	ESR
REVIEWED BY	AFC
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

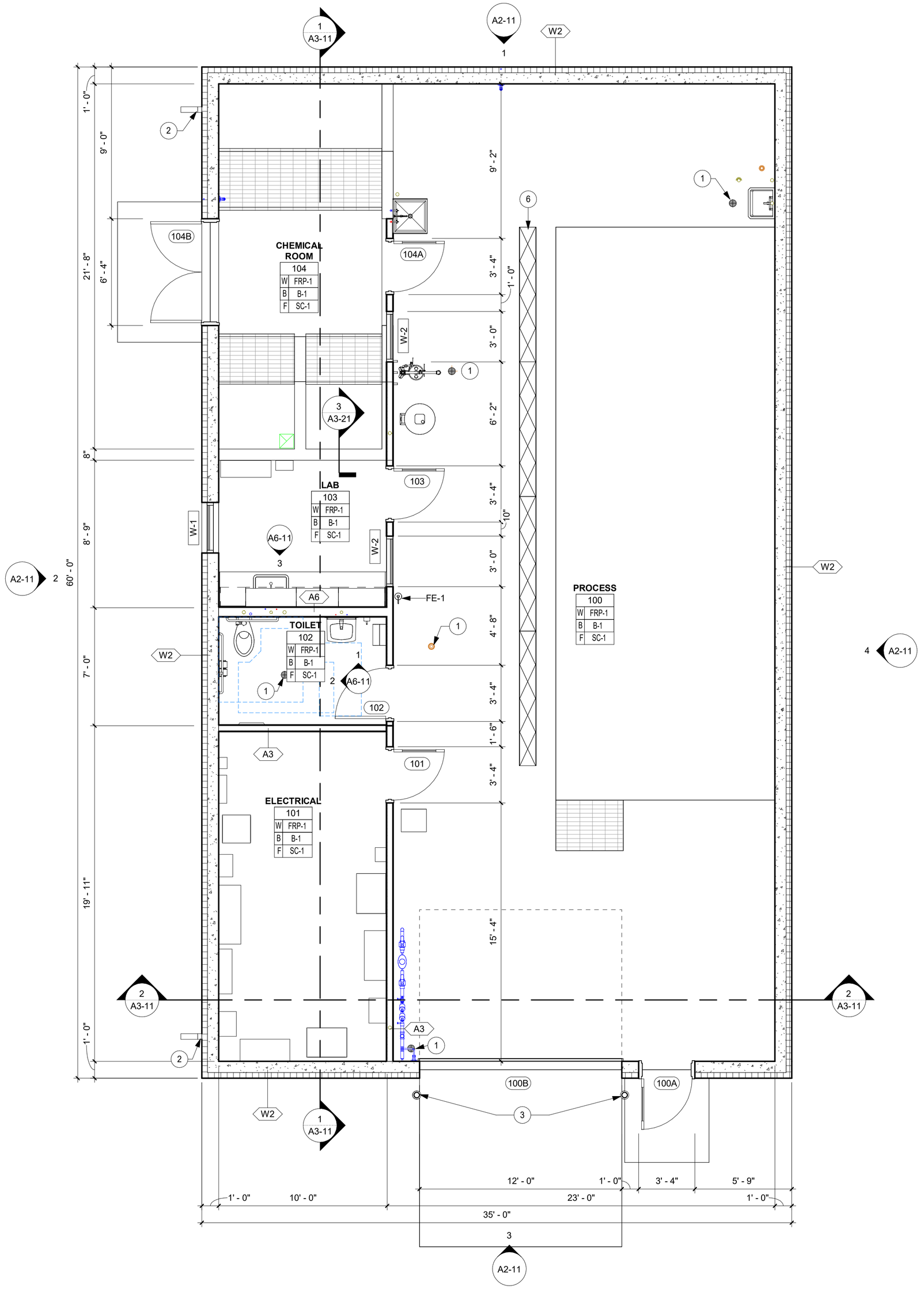
ASSEMBLY TYPES

SHEET

A1-01

2" 1" 1/4" 1/2" 0

5/28/2025 10:19:21 AM



1 FIRST FLOOR PLAN
1/4" = 1'-0"

FINISH NOTES

A.	SOME SPECIFIED PRODUCTS AND FINISHES MAY HAVE SUBSTANTIAL LEAD TIMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING ORDERS IN A MANNER TO ENSURE THEIR TIMELY ARRIVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXPENSES, INCLUDING DESIGN FEES, RELATED TO ANY RESELECTION REQUIRED DUE TO FAILURE TO ORDER PRODUCTS IN A TIMELY MANNER.
B.	ALL FINISH WORK SHALL BE PERFORMED IN COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS. SHOP DRAWINGS, SAMPLES, AND PRODUCT DATA SHALL BE SUBMITTED TO THE ARCHITECT FOR THEIR REVIEW & APPROVAL PRIOR TO BEGINNING WORK.
C.	"E" AT END OF PAINT TAG DESIGNATES TO USE EPOXY PAINT AT THIS LOCATION
D.	REFER TO REFLECTED CEILING PLANS FOR CEILING FINISHES AND LOCATIONS.
E.	EXTEND ALL FLOORING UNDER FURNITURE, DESKS AND COUNTERS, UNLESS NOTED OTHERWISE.
F.	ALL FLOORING TRANSITIONS TO BE CENTERED UNDER DOOR IN CLOSED POSITION, UNLESS NOTED OTHERWISE.
G.	COORDINATE ALL BRACKETS WITH OUTLET LOCATIONS UNDER COUNTER
H.	IN THE CASE OF NO FULL HEIGHT CASEWORK, INSTALL UPPER CASEWORK WITH THE TOP AT 84" AFF.
I.	CASEWORK TO BE INSTALLED WITH B-1 FOR THE TOE KICK, U.N.O.
J.	PAINT ALL EXPOSED METALS INCLUDING, BUT NOT LIMITED TO COLUMNS, RISERS, STRINGERS, HANDRAILS, GUARDRAILS, EXPOSED LINTELS AND FLOOR EDGES, UNLESS NOTED OTHERWISE.
K.	ALL GYPSUM BOARD WALLS TO RECEIVE FRP-1 & B-1. ALL OCTAFORM WALLS TO BE PREFINISHED.
L.	ALL INTERIOR REGULATORY SIGNAGE BY OWNER

FLOOR PLAN SHEET NOTES

- ALL INTERIOR PARTITION WALLS SHALL BE WALL TYPE A3 , UNLESS OTHERWISE NOTED.
- INTERIOR WALL DIMENSIONS ARE FROM FACE OF MASONRY/ CONCRETE AND FACE OF STUD, UNLESS NOTED OTHERWISE.
- INSTALL FIRE TREATED BLOCKING AS REQUIRED IN ALL PARTITIONS TO RECEIVE COUNTERS, SHELVING, MARKER BOARDS, TV'S, ETC.
- ALL WALL MOUNTED ITEMS TO SIT FLUSH ON A WALL SURFACE. IN INSTANCES WHERE A WALL MOUNTED ITEM IS TO BE INSTALLED ON TWO DIFFERENT FINISH THICKNESSES, PROVIDE A HARDBOARD BACKER FOR THE ITEM TO SIT FLUSH. PROVIDE SEALANT AROUND ALL EDGES OF BACKER AND PAINT TO MATCH ADJACENT SURFACE

KEYNOTE LEGEND

1	FLOOR DRAIN, REFER TO MECHANICAL DOCUMENTS
2	4" X 3" DOWNSPOUT
3	6" DIAMETER CONCRETE FILLED PIPE BOLLARD. 3'-0" ABOVE FINISHED FLOOR.
6	TRENCH DRAIN, REFER TO MECHANICAL DOCUMENTS.

ROOM / FINISH TAG

ROOM NAME

ROOM #	
C	CEILING
W	WALL
B	BASE
F	FLOOR

FINISHES LISTED IN ROOM TAG APPLY TO ALL ELEMENTS IN ROOM, UNLESS NOTED OTHERWISE

INTERIOR FINISH SCHEDULE

MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
CASEWORK						
EPX-1	EPOXY RESIN COUNTERTOP	WILSONART/DURCON	CLASSIC TOP FLAT-101 / 1"TH	BLACK	ADA SINGLE BASIN EPOXY SINK, 25"X15"	REFER TO ELEVATION
MTL-1	PAINTED STEEL CASEWORK	MOTT MANUFACTURING	PAINTED STEEL	STEEL GRAY	-	REFER TO ELEVATION
CEILING						
FRP-2	FIBER REINFORCED PLASTIC PANEL	CRANE COMPOSITES	VARIETEX (CLASS A)	COTTON WHITE	LINEN TEXTURE / 1/2" SUB PANEL / PROVIDE ALL REQ'D TRIM PIECES TO COMPLETE INSTALLATION AS REC. BY MANUF.	REFER TO RCP
PNT-1E	EPOXY PAINT	SHERWIN WILLIAMS	EG-SHEL	EXTRA WHITE	-	REFER TO RCP
FLOOR						
SC-1	SEALED CONCRETE	LATICRETE	DRESS & SEAL WB 30	NATURAL	ACRYLIC CURE, SEALER & DUSTPROOFER	REFER TO FLOOR PLANS
WALL						
FRP-1	FIBER REINFORCED PLASTIC PANEL	CRANE COMPOSITES	VARIETEX (CLASS A)	MORNING MIST GREY	LINEN TEXTURE / 1/2" SUB PANEL / PROVIDE ALL REQ'D TRIM PIECES TO COMPLETE INSTALLATION AS REC. BY MANUF.	REFER TO FLOOR PLANS AND FINISH NOTES
WALL BASE						
B-1	VINYL WALL BASE	JOHNSONITE	TRADITIONAL COVE 4"H	BLACK	INSTALL ON ALL CASEWORK TOE KICKS, U.N.O.	REFER TO FLOOR PLANS

MISCELLANEOUS SCHEDULE

MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
FRP DOORS	FRP DOORS	TIGER DOOR	FLUSH	MIST GRAY	-	REFER TO ARCH SPECS
HDW-1	COUNTERTOP BRACKET	A&M HARDWARE	CONCEALED BRACKETS	BLACK	-	-

N

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

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TITLE

FIRST FLOOR PLAN

SHEET

A1-21

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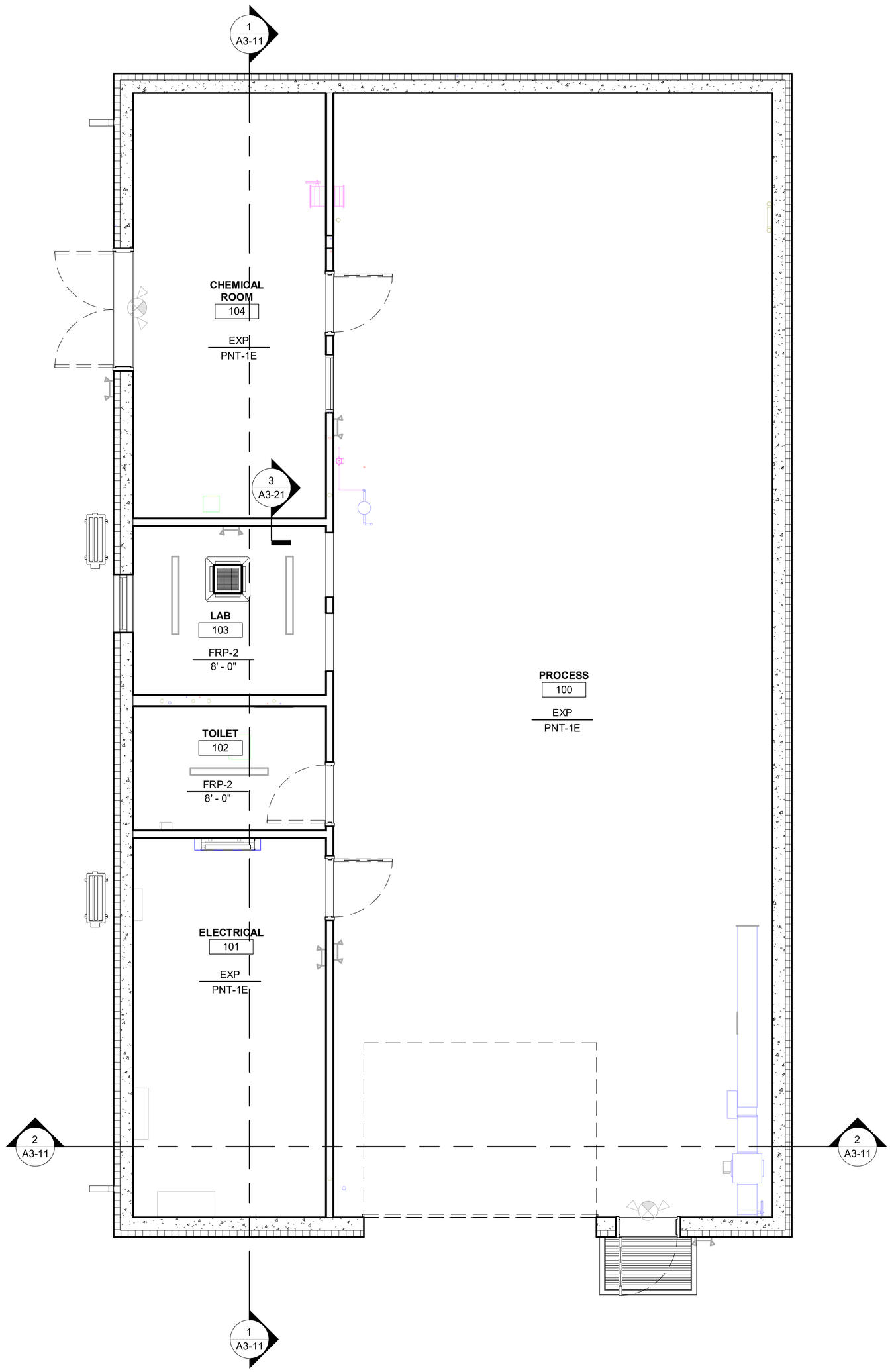
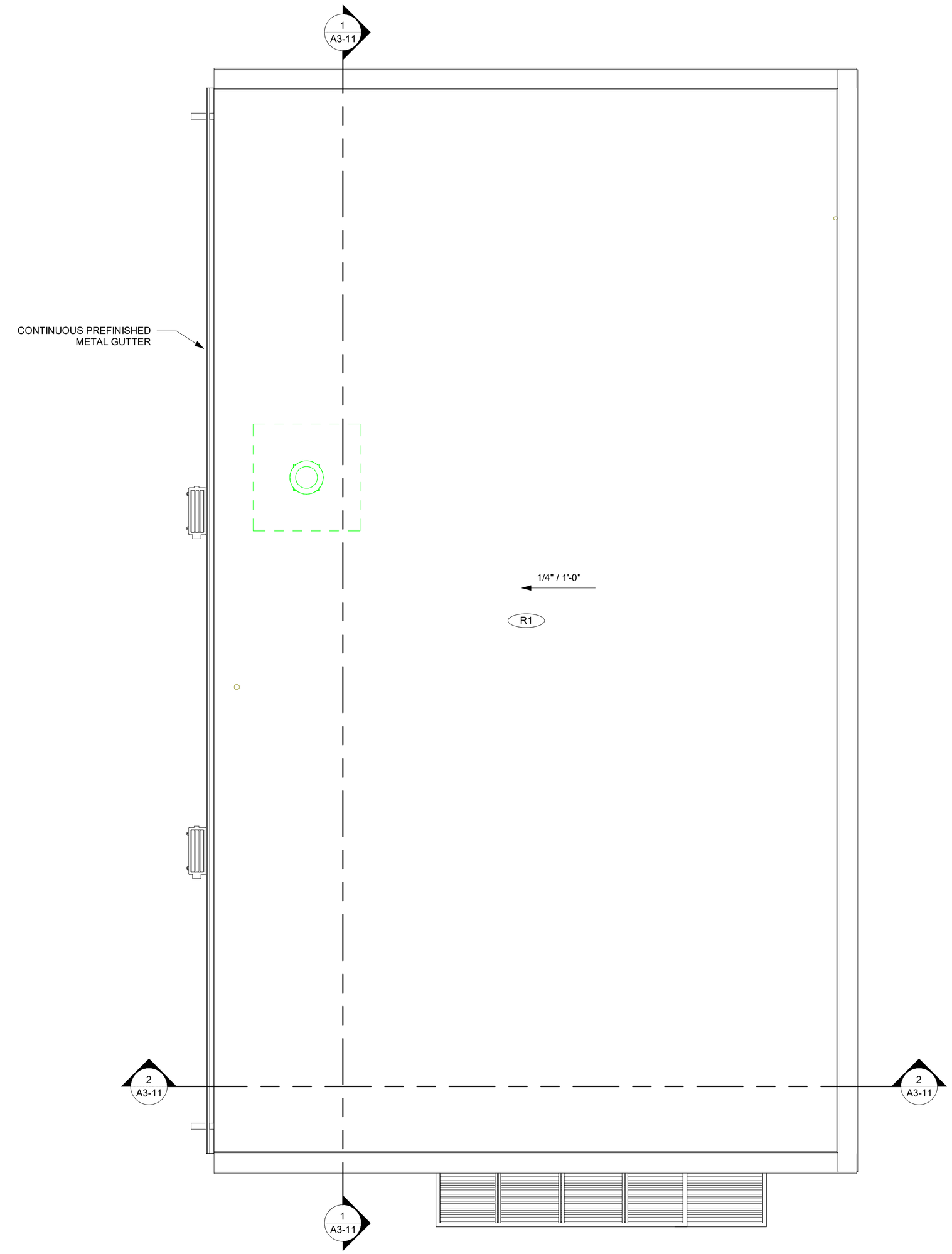


1 FIRST FLOOR REFLECTED CEILING PLAN
1/4" = 1'-0"



2 ROOF PLAN
1/4" = 1'-0"

N

148

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TITLE **FIRST FLOOR REFLECTED CEILING PLAN / ROOF PLAN**

SHEET **A1-31**

EXTERIOR FINISH SCHEDULE

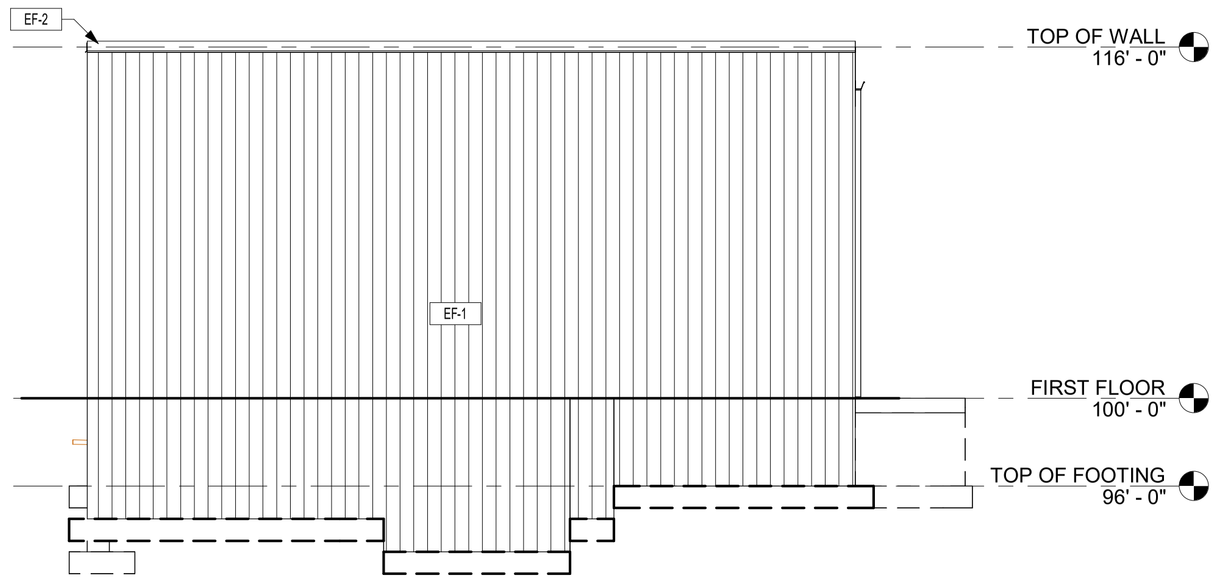
MARK	MATERIAL TYPE	MANUFACTURER	MODEL / SIZE	COLOR	ADDITIONAL INFORMATION	COMMENTS
EF-1	OCTAFORM OUTER FINISH			COLORS TO BE APPROVED BY OWNER		FACTORY FINISH
EF-2	PREFINISHED METAL PARAPET CAP					
EF-4	PREFINISHED ALUMINUM GUTTER		5" X 5"			24 GA. FACTORY FINISH

EXTERIOR ELEV. SHEET NOTES

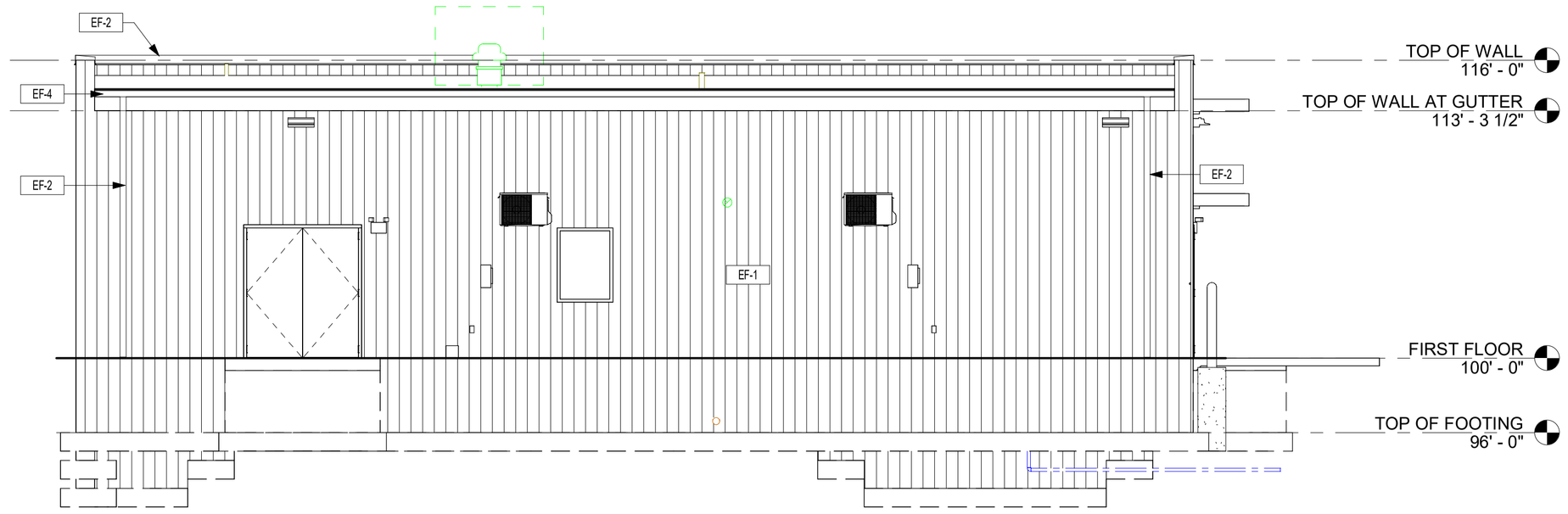
- PAINT ALL EXPOSED STEEL LINTELS TO MATCH ADJACENT FACADE MATERIAL COLOR.
- SEALANT COLORS TO MATCH ADJACENT FINISHED SURFACES.

KEYNOTE LEGEND

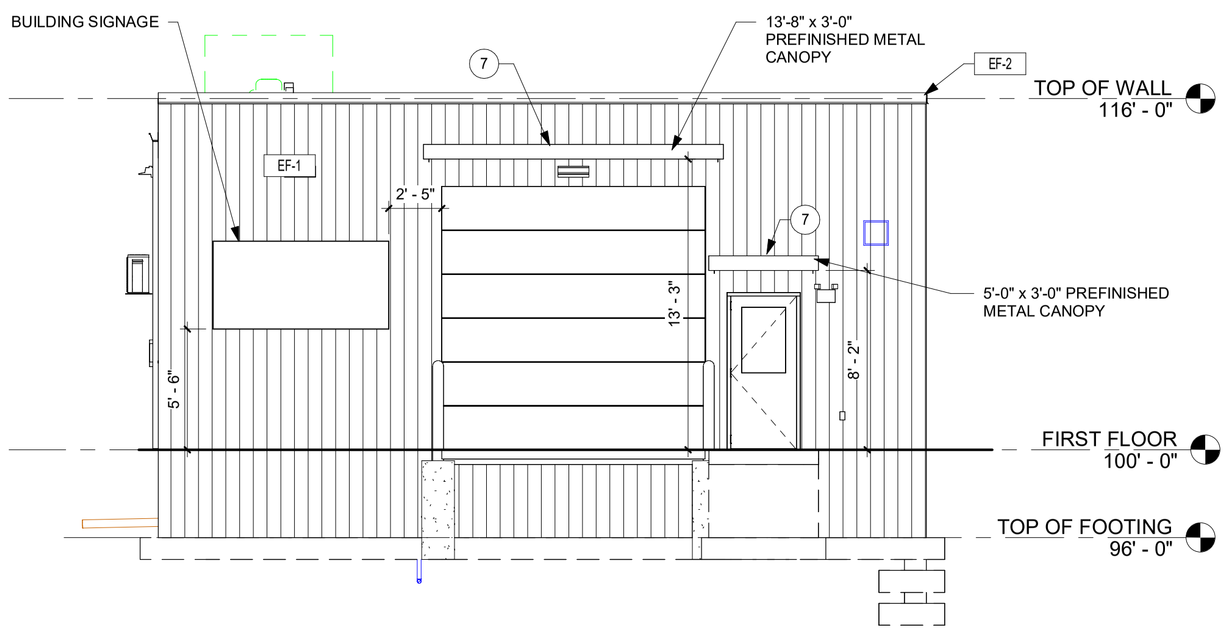
7	CANOPY ANCHORAGE BY MANUFACTURER



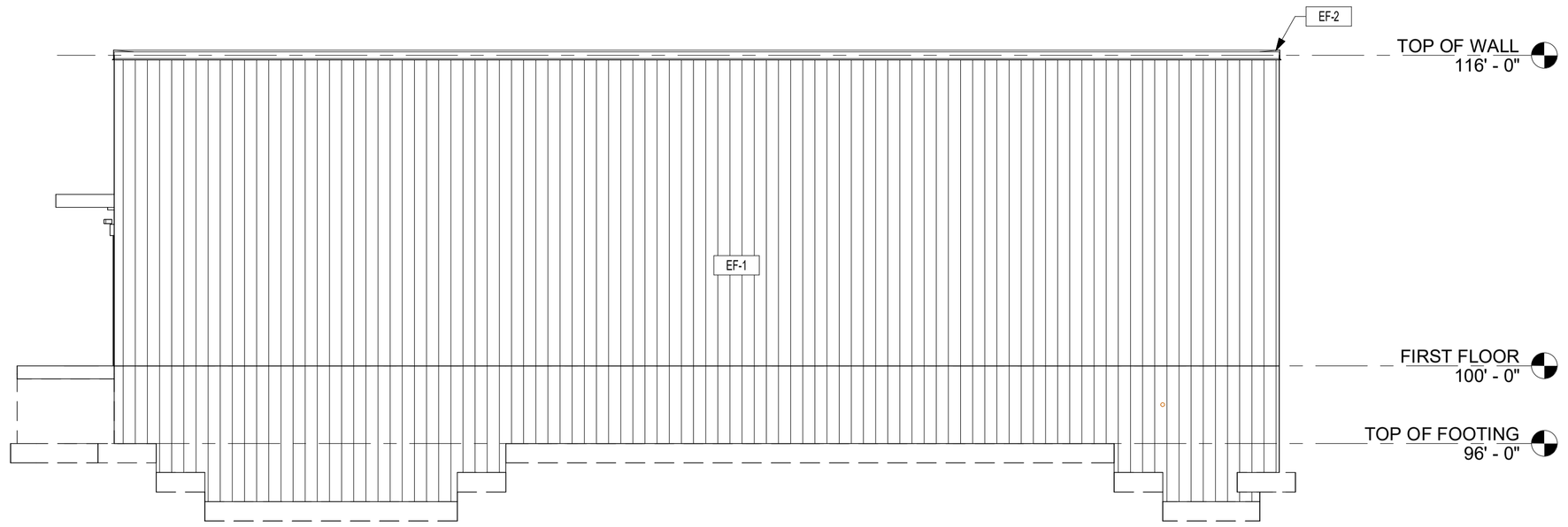
1 NORTH ELEVATION
3/16" = 1'-0"



2 WEST ELEVATION
3/16" = 1'-0"



3 SOUTH ELEVATION
3/16" = 1'-0"



4 EAST ELEVATION
3/16" = 1'-0"

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TITLE

EXTERIOR ELEVATIONS

SHEET

A2-11

0 1/4" 1/2" 1" 2"

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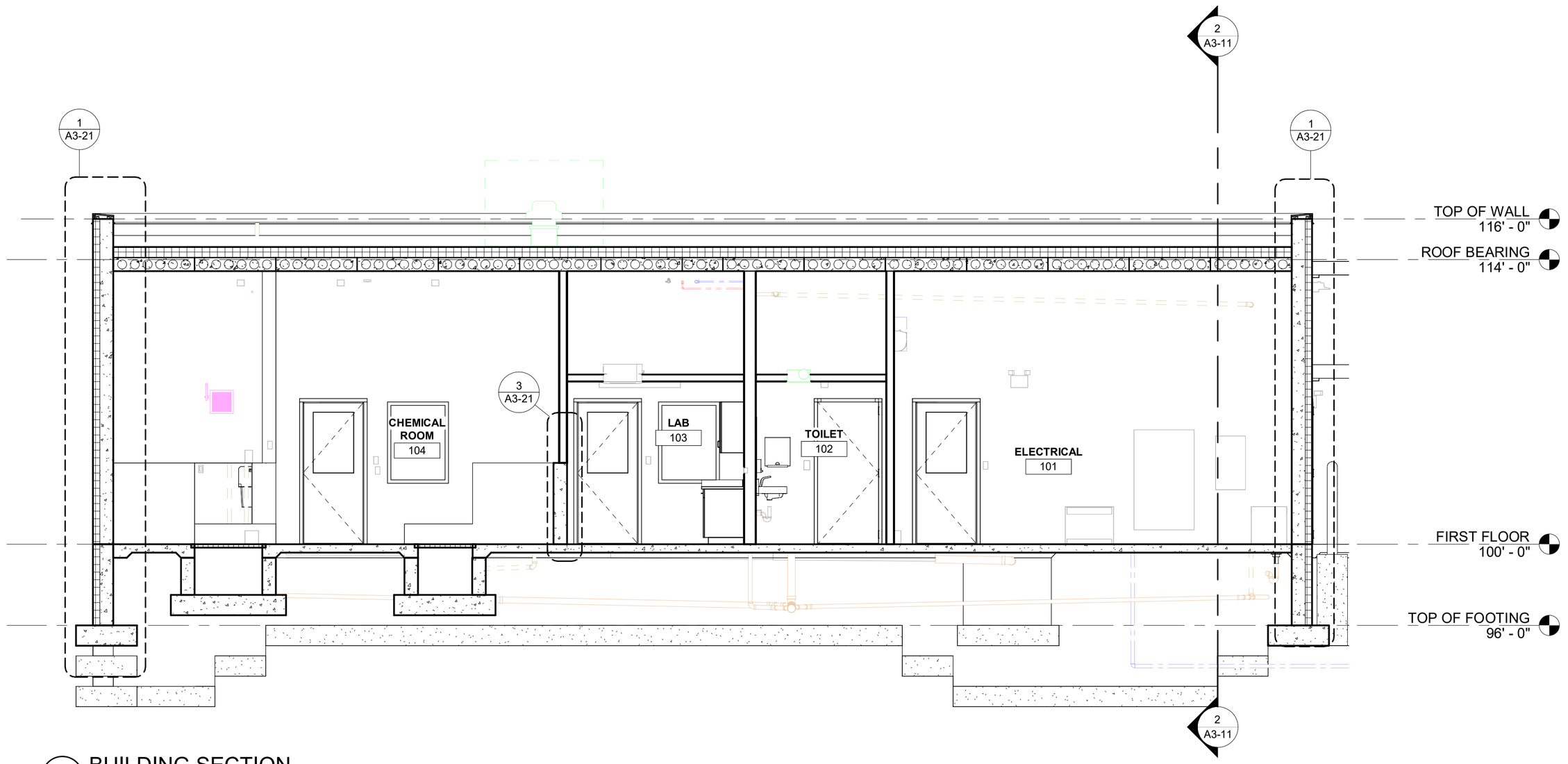
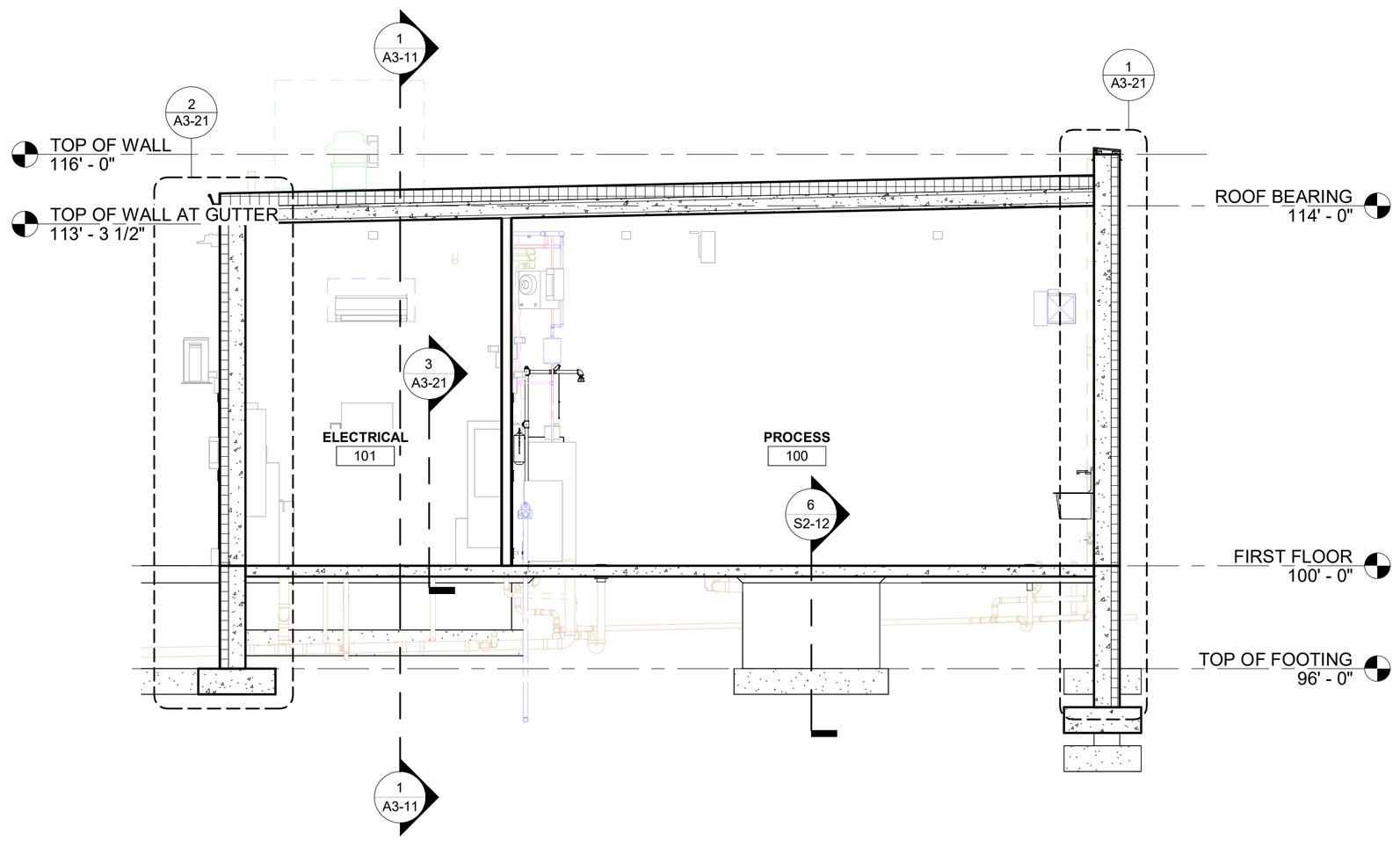


1 BUILDING SECTION
1/4" = 1'-0"



2 BUILDING SECTION
1/4" = 1'-0"

N

150

0 1/4" 1/2" 1" 2"

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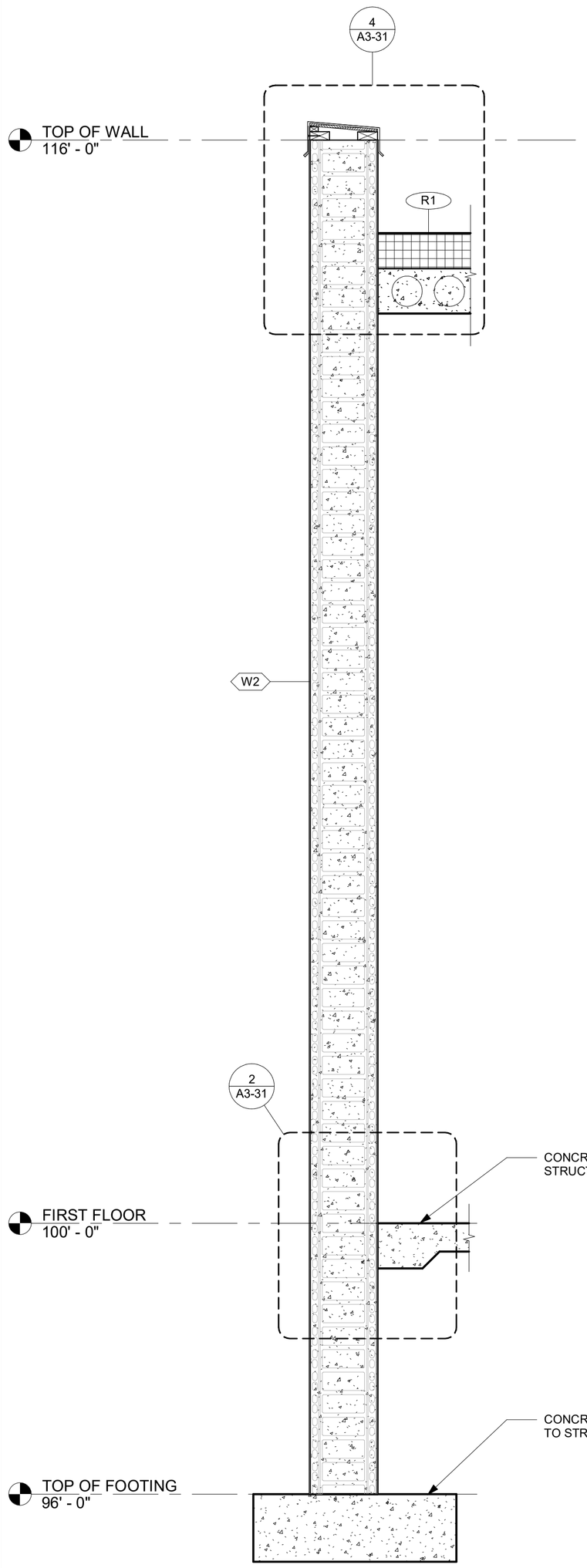
TITLE

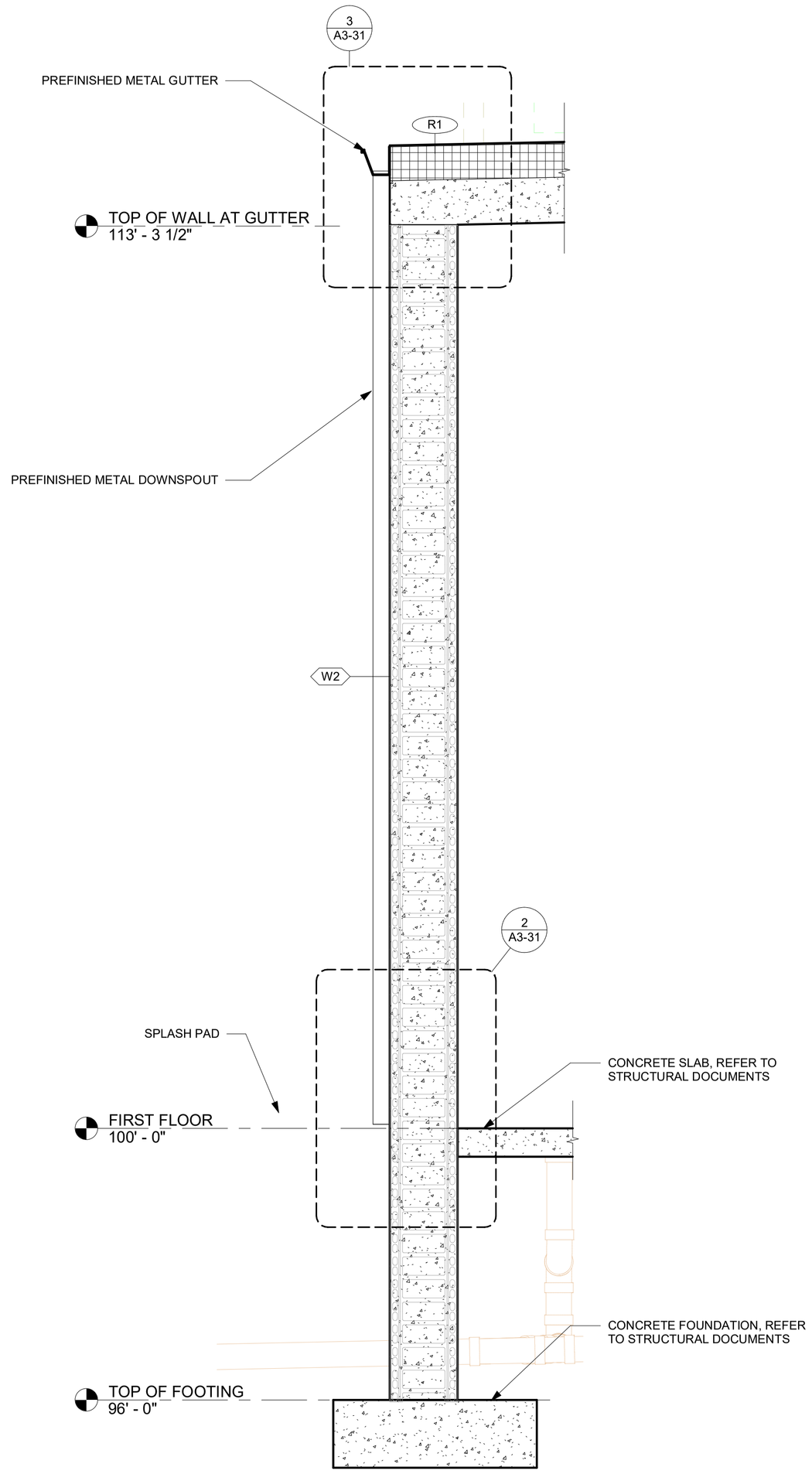
BUILDING SECTIONS

SHEET

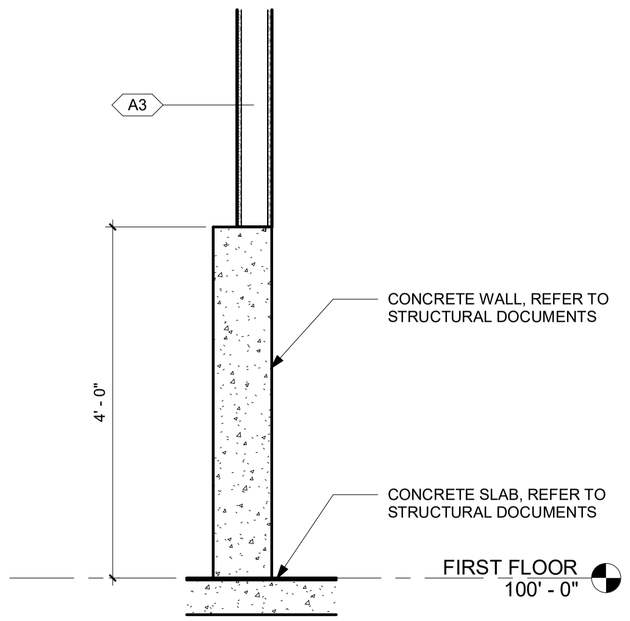
A3-11



1 WALL SECTION
3/4" = 1'-0"



2 WALL SECTION
3/4" = 1'-0"



3 CHEMICAL ROOM WALL SECTION
3/4" = 1'-0"

0 1/4" 1/2" 1" 2"

151

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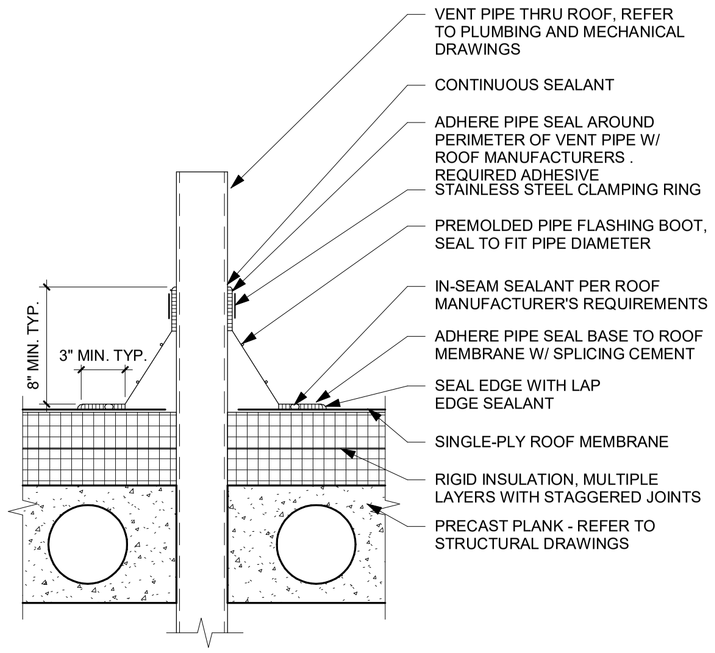
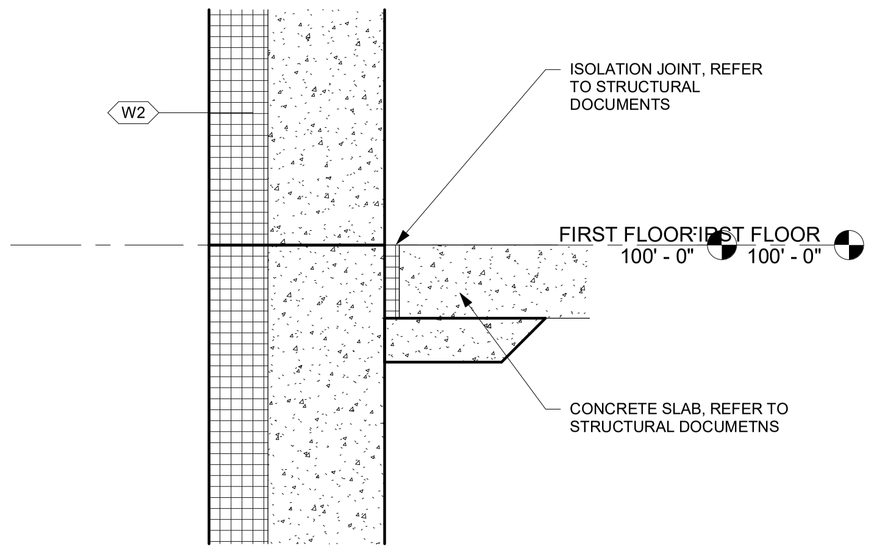
WALL SECTIONS

SHEET

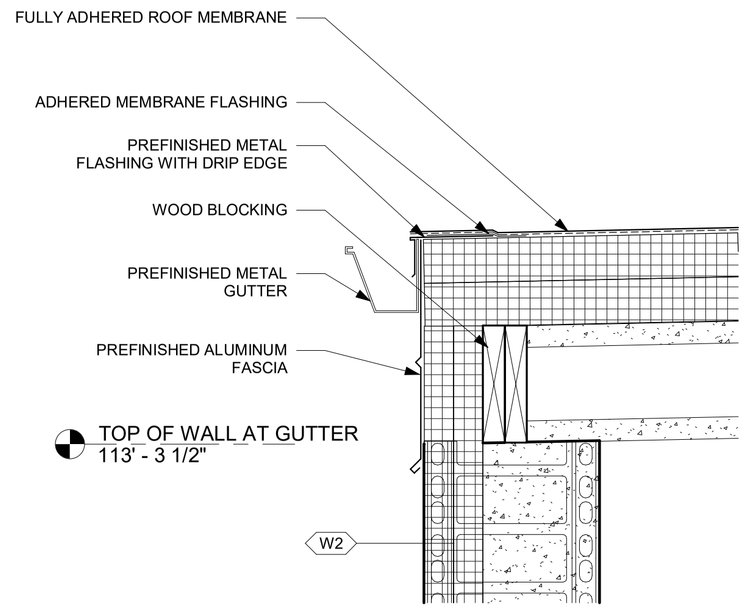
A3-21



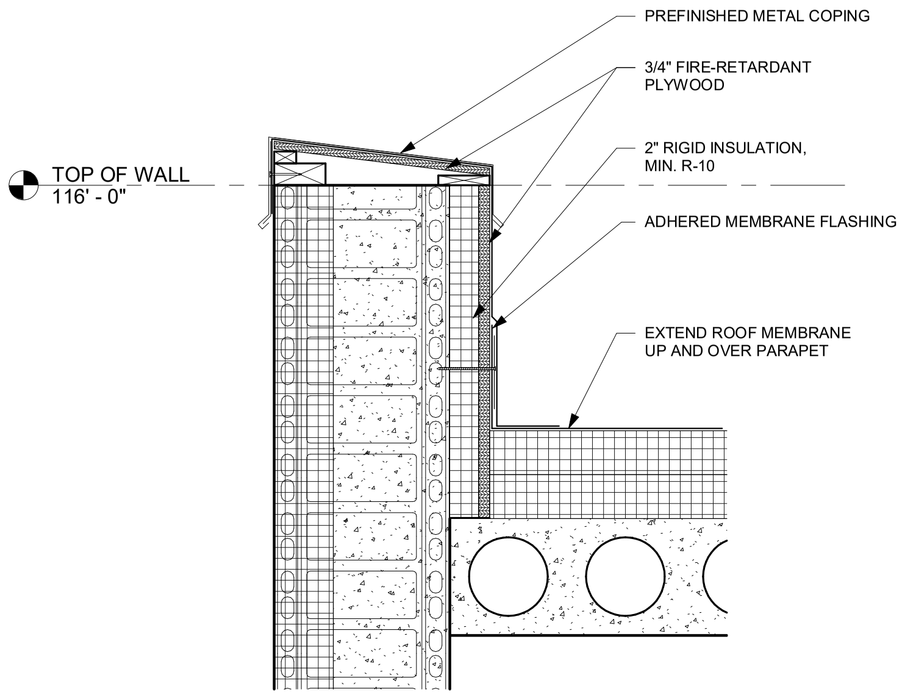
1 VENT PIPE FLASHING
1 1/2" = 1'-0"



2 WALL / FLOOR CONNECTION
1 1/2" = 1'-0"



3 GUTTER DETAIL
1 1/2" = 1'-0"



4 PARAPET DETAIL
1 1/2" = 1'-0"

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TITLE

DETAILS

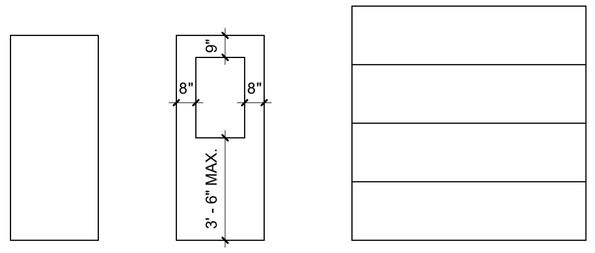
SHEET

A3-31

0 1/4" 1/2" 1" 2"

5/28/2025 10:19:33 AM

DOOR TYPES



FL
FLUSH

HG
HALF GLASS

OHD
OVERHEAD DOOR

DOOR SCHEDULE

MARK	ROOM NAME	WIDTH	HEIGHT	DOOR TYPE	DOOR MATERIAL	FRAME TYPE	FRAME MATERIAL	HARDWARE GROUP	COMMENTS
100A	PROCESS	3' - 0"	7' - 0"	HG	FRP	1	FRP	1	
100B	PROCESS	12' - 0"	12' - 0"	OHD	INSULATED STEEL	-	-	-	
101	ELECTRICAL	3' - 0"	7' - 0"	HG	FRP	1	FRP	5	
102	TOILET	3' - 0"	7' - 0"	FL	FRP	1	FRP	4	
103	LAB	3' - 0"	7' - 0"	HG	FRP	1	FRP	3	
104A	CHEMICAL ROOM	3' - 0"	7' - 0"	HG	FRP	1	FRP	5	
104B	CHEMICAL ROOM	6' - 0"	7' - 0"	FL	FRP	1	FRP	2	

GLAZING SCHEDULE

MARK	MATERIAL	THICKNESS	COMMENTS
INSULATED			
IG-1	INSULATED GLAZING UNIT	1"	VIRACON #: VE1-2M (CLEAR)
NON-INSULATED			
G-1	GLAZING UNIT	1/4"	

HARDWARE GROUP 1

-3 EA HINGE
-1 EA CYLIDRICAL LOCKSET - ENTRANCE FUNCTION
-1 EA CLOSER - OVERHEAD STOP - HOLD OPEN
-2 EA KICKPLATE
-1 EA WEATHERSTRIPPING
-1 EA THRESHOLD
-1 EA SWEEP
-1 EA DRIP
-1 EA KEYPAD

HARDWARE GROUP 2

-3 EA HINGE
-1 EA CYLIDRICAL LOCKSET - ENTRANCE FUNCTION (ONE LEAF)
-1 EA MANUAL FLUSH BOLT TOP AND BOTTOM (ONE LEAF)
-1 EA CLOSER - OVERHEAD STOP - HOLD OPEN
-2 EA KICKPLATE
-2 EA WEATHERSTRIPPING
-1 EA THRESHOLD
-2 EA SWEEP
-1 EA DRIP
-1 EA KEYPAD

HARDWARE GROUP 3

-3 EA HINGE
-1 EA CYLIDRICAL LOCKSET - CLASSROOM FUNCTION
-1 EA CLOSER
-1 EA SWEEP
-1 EA GASKETING

HARDWARE GROUP 4

-3 EA HINGE
-1 EA CYLIDRICAL LOCKSET - PRIVACY FUNCTION
-1 EA CLOSER
-1 EA GASKETING

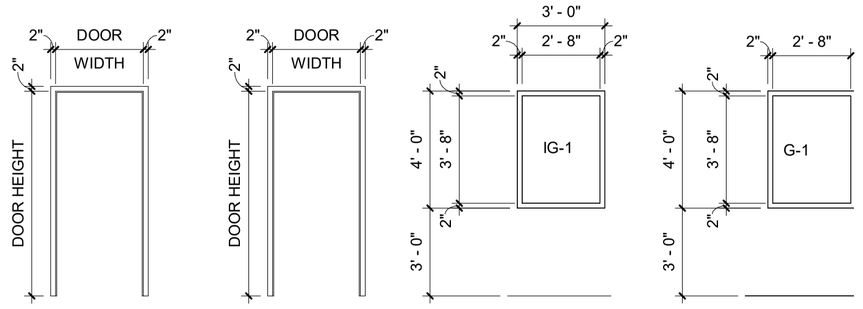
HARDWARE GROUP 5

-3 EA HINGE
-1 EA CYLIDRICAL LOCKSET - CLASSROOM FUNCTION
-1 EA GASKETING

HARDWARE GROUP 6

-3 EA HINGE
-1 EA CYLIDRICAL LOCKSET - PASSAGE FUNCTION
-1 EA GASKETING

FRAME TYPES

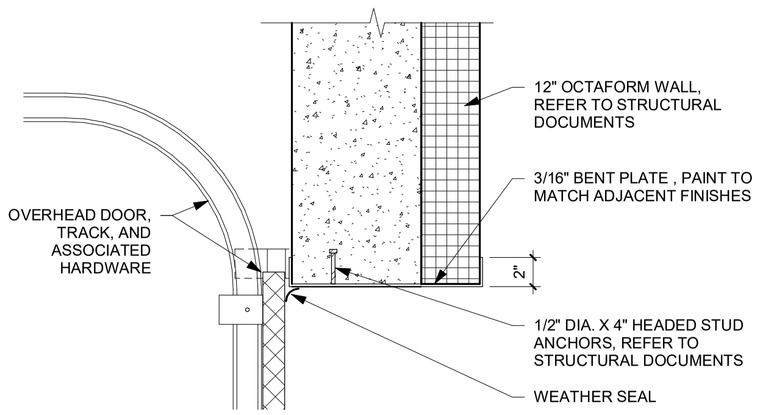


1
METAL FRAME

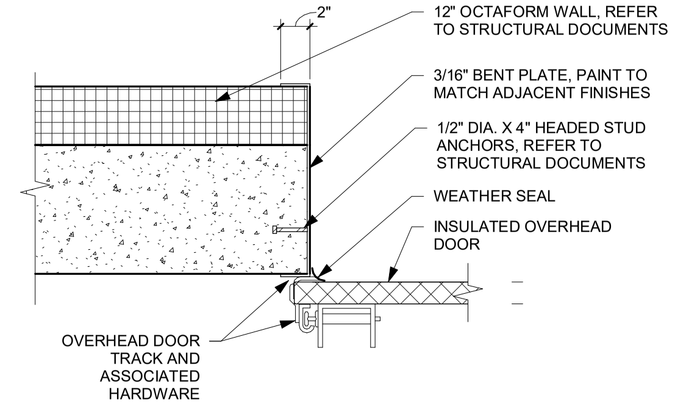
2
FRP FRAME

W-1

W-2

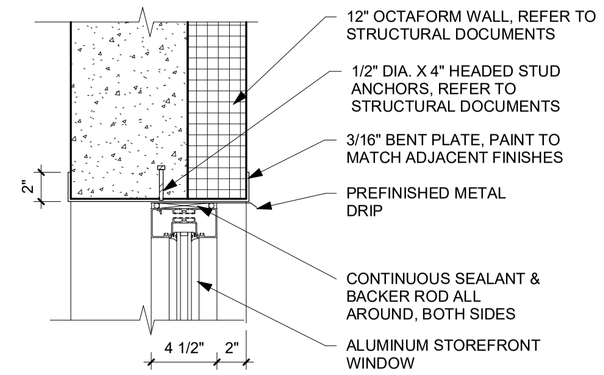


1 OH DOOR HEAD AT OCTAFORM
1 1/2" = 1'-0"

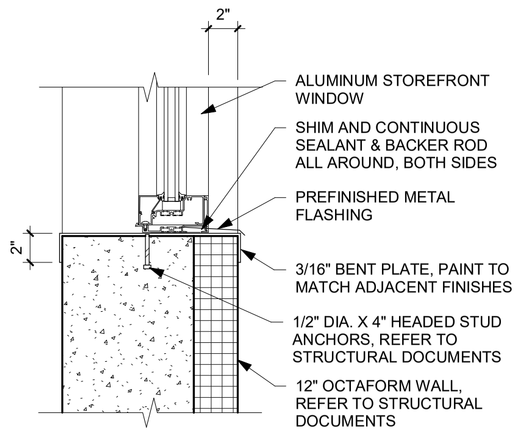


2 OH DOOR JAMB AT OCTAFORM
1 1/2" = 1'-0"

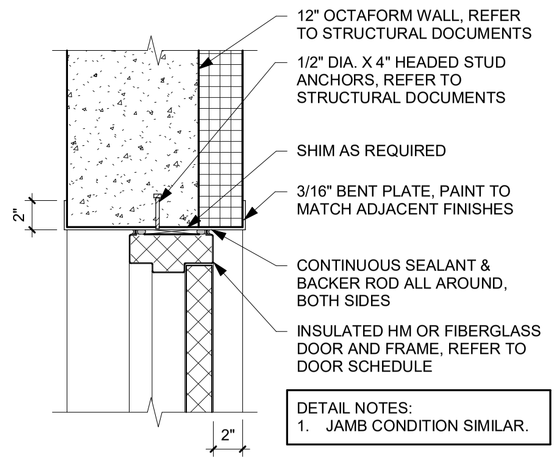
DETAIL NOTES:
1. JAMB CONDITION SIMILAR.



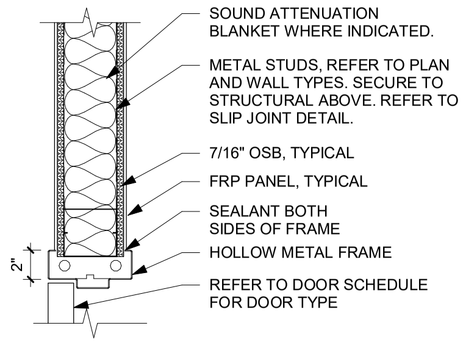
4 ALUM WINDOW HEAD AT OCTAFORM
1 1/2" = 1'-0"



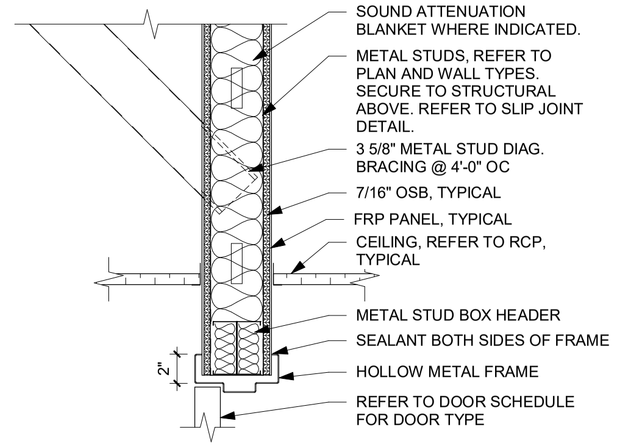
5 ALUM WINDOW SILL AT OCTAFORM
1 1/2" = 1'-0"



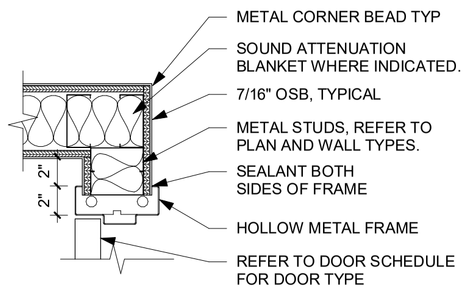
6 HM FRAME HEAD AT PRECAST
1 1/2" = 1'-0"



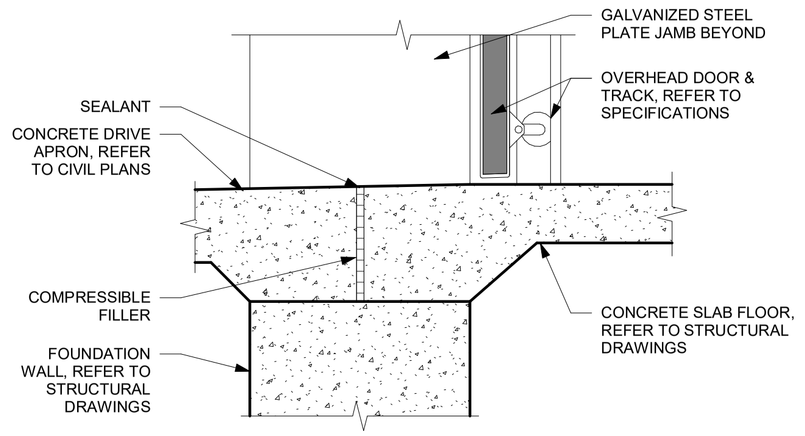
8 HM DOOR JAMB AT METAL STUDS
1 1/2" = 1'-0"



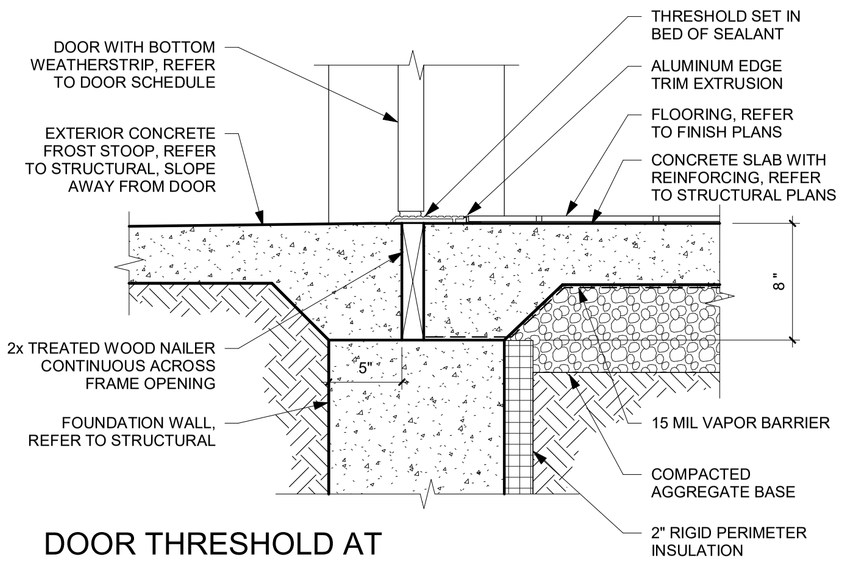
9 HM DOOR HEAD AT METAL STUDS
1 1/2" = 1'-0"



HM DOOR JAMB AT METAL STUDS - CORNER
10
1 1/2" = 1'-0"



11 OH DOOR SILL AT CONCRETE FLOOR
1 1/2" = 1'-0"



DOOR THRESHOLD AT CONCRETE FLOOR
12
1 1/2" = 1'-0"

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	ESR
DESIGNED BY	ESR
REVIEWED BY	AFC
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

DOOR SCHEDULE, DOOR AND FRAME TYPES

SHEET

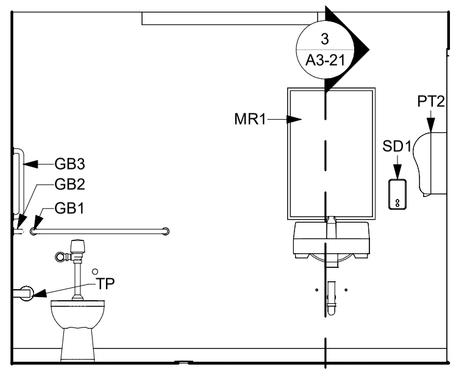
A4-11

0 1/4" 1/2" 1" 2"

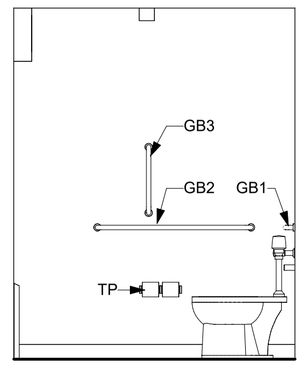
5/28/2025 10:19:35 AM

RESTROOM ACCESSORY SCHEDULE

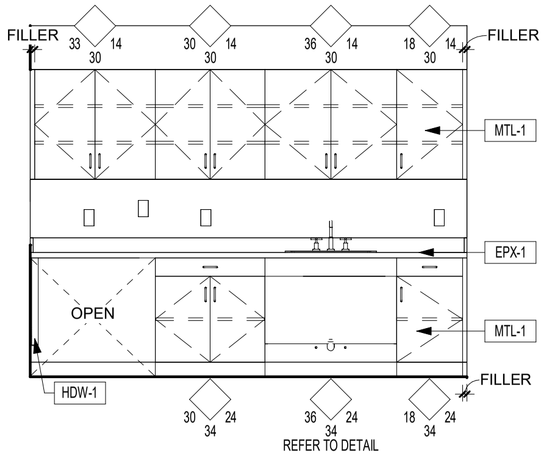
MARK	DESCRIPTION	PROVIDED BY	INSTALLED BY
GB1	36" HORIZONTAL GRAB BAR	CONTRACTOR	CONTRACTOR
GB2	42" HORIZONTAL GRAB BAR	CONTRACTOR	CONTRACTOR
GB3	18" VERTICAL GRAB BAR	CONTRACTOR	CONTRACTOR
MR1	MIRROR - 3' - 0" H X 2' - 0" W	CONTRACTOR	CONTRACTOR
PT2	PAPER TOWEL DISPENSER - ROLL	OWNER	OWNER
SD1	SOAP DISPENSER	OWNER	OWNER
TP	TOILET TISSUE DISPENSER - DOUBLE	OWNER	OWNER



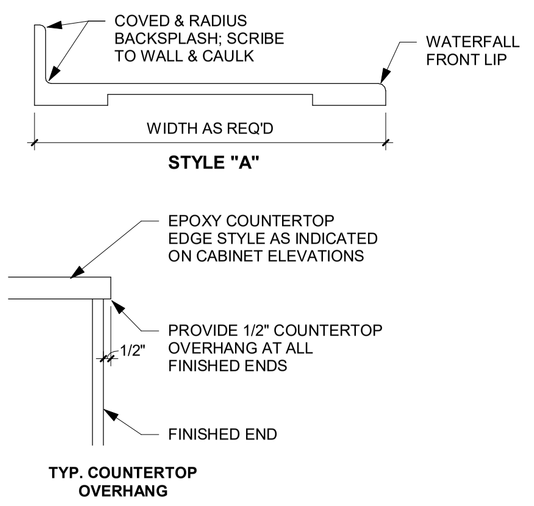
1 102 TOILET - NORTH
3/8" = 1'-0"



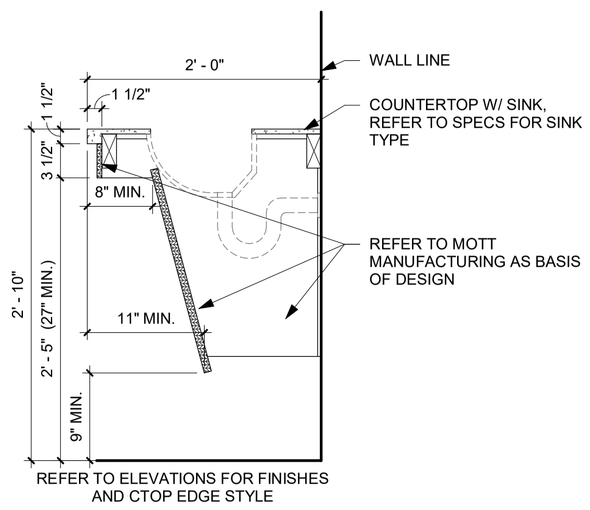
2 102 TOILET - WEST
3/8" = 1'-0"



3 103 LAB - SOUTH
3/8" = 1'-0"



5 COUNTERTOP STYLES
1 1/2" = 1'-0"



4 ADA SINK CABINET DETAIL
1" = 1'-0"

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	ESR
DESIGNED BY	ESR
REVIEWED BY	AFC
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE **INTERIOR ELEVATIONS / INTERIOR DETAILS**

SHEET **A6-11**

0 1/4" 1/2" 1" 2"

5/28/2025 10:19:38 AM

GENERAL NOTES

A. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS TAKE PRECEDENCE OVER THESE STANDARD STRUCTURAL NOTES. TYPICAL DETAILS SHALL BE USED WHENEVER APPLICABLE.

B. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK; AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED, IN WRITING, OF ANY DISCREPANCIES.

C. IN NO CASE SHALL DIMENSIONS BE SCALED FROM PLANS, SECTIONS, OR DETAILS ON THE STRUCTURAL DRAWINGS.

D. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF UTILITY SERVICES IN THE AREA TO BE EXCAVATED BEFORE BEGINNING EXCAVATION.

E. NO PIPES, DUCTS, SLEEVES, CHASES, ETC., SHALL BE PLACED IN SLABS OR WALLS, NOR SHALL ANY STRUCTURAL MEMBER BE CUT FOR PIPES, DUCTS, ETC.

F. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL TEMPORARY SHORING AND BRACING OF EXISTING STRUCTURAL ELEMENTS DURING CONSTRUCTION. ALL SHORING SHALL BE ADEQUATE TO SUPPORT ALL STRUCTURAL LOADS DURING THE REMOVAL OF THE EXISTING STRUCTURE. TEMPORARY SHORING MUST REMAIN IN PLACE UNTIL ALL NEW STRUCTURAL ELEMENTS ARE SECURED INTO PLACE PER CONSTRUCTION DOCUMENTS.

G. REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR REQUIREMENTS, DIMENSIONS AND EXACT LOCATIONS OF FLOOR DRAINS, TRENCHES, DRAIN TILE, PUMPS AND EQUIPMENT INCLUDING ANCHORING SYSTEMS AND HOUSEKEEPING PADS. GENERAL CONTRACTOR TO COORDINATE ALL OF THESE ITEMS WITH ALL DISCIPLINES INVOLVED.

H. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND MANUALS (LATEST ADOPTED EDITION):
1. STATE BUILDING CODE, WHEN APPLICABLE.
2. INTERNATIONAL BUILDING CODE (IBC).
3. AMERICAN CONCRETE INSTITUTE (ACI).
4. CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE (FOR PLACING AND DETAILING OF ALL REINFORCING).
5. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
6. AMERICAN WELDING SOCIETY (AWS) STANDARDS FOR WELDING AS MODIFIED BY AISC SPECIFICATION.

DESIGN LOADS CRITERIA

A. CODES USED:
1. 2015 INTERNATIONAL BUILDING CODE
2. 2010 AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD 7 (ASCE 7-10)

B. RISK CATEGORY: III

C. WIND LOAD CRITERIA:
1. ULTIMATE WIND SPEED. V = 120 MPH (3 SECOND GUST)
2. NOMINAL WIND SPEED, V = 90 MPH (3 SECOND GUST)
3. WIND LOAD EXPOSURE: C
4. INTERNAL PRESSURE COEFFICIENT: +/- 0.55 (PARTIALLY ENCLOSED BUILDING)
5. WIND TOPOGRAPHIC FACTOR: K_{zt} = 1.0
6. C & C WIND WALL PRESSURE: REFER TO COMPONENT AND CLADDING WIND PRESSURE TABLE

D. SNOW LOAD CRITERIA:
1. GROUND SNOW LOAD, P_G = 30 PSF
2. FLAT-ROOF SNOW LOAD (BALANCED), P_F = 23.1 PSF
3. SNOW LOAD IMPORTANCE FACTOR, I_S = 1.1
4. SLOPE FACTOR, C_S = 1.0
5. THERMAL FACTOR, C_T = 1.0
6. SNOW EXPOSURE FACTOR, C_E = 1.0
7. UNBALANCED SNOW LOAD: ON PLAN IF APPLICABLE

E. EARTHQUAKE LOAD CRITERIA
1. SEISMIC IMPORTANCE FACTOR: I_E = 1.25
2. MAPPED SPECTRAL RESPONSE ACCELERATIONS:
   - S_S = 7.4% g
   - S_1 = 3.8% g
3. SOIL SITE CLASS: D
4. SPECTRAL RESPONSE COEFFICIENT:
   - S_{DS} = 0.079
   - S_{D1} = 0.061
5. SEISMIC DESIGN CATEGORY = A
6. SEISMIC FORCE RESISTING SYSTEM: ORDINARY REINFORCED CONCRETE SHEAR WALLS
7. SEISMIC RESPONSE COEFFICIENT, C_S = 0.025
8. RESPONSE MODIFICATION FACTOR, R = 4.0
9. DESIGN BASE SHEAR, V = 11.2 KIP
10. ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL-FORCE ANALYSIS

F. LIVE LOADS
1. ROOF: 20 PSF
2. FLOOR: 100 PSF

G. DEAD LOADS
1. ROOF: 15 PSF
2. FRAMING: ACTUAL
3. MECHANICAL: SEE PLAN IF APPLICABLE

SHOP DRAWINGS

A. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR APPROVAL, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER RESPONSIBLE FOR ITS PREPARATION, WHO IS REGISTERED IN THE STATE WHICH THE PROJECT IS LOCATED.

B. PRIOR TO SUBMITTAL, THE CONTRACTOR SHALL REVIEW THE SHOP DRAWINGS AND MAKE ANY CORRECTIONS REQUIRED. THE CONTRACTOR SHALL STAMP AND SIGN THE SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE ENGINEER.

C. THE ENGINEER'S REVIEW OF SHOP DRAWINGS IS FOR GENERAL CONFORMANCE OF THE DESIGN CONCEPT. CONTRACTOR SHALL SUBMIT A SCHEDULE OF SHOP DRAWING SUBMITTALS THAT IS ACCEPTABLE TO BOTH CONTRACTOR AND ENGINEER. AFTER THE CONTRACTOR HAS REVIEWED THE SHOP DRAWINGS, PROMPT REVIEW BY THE ENGINEER WILL BE MADE OF ALL SUBMITTALS.

D. FOR LARGE SUBMITTALS, REASONABLE REVIEW TIME SHALL BE ALLOWED AND MAY EXCEED TWO WEEKS. THE CONTRACTOR SHALL SUBMIT NECESSARY REQUEST FOR INFORMATION (RFI's) DURING THE DETAILING PROCESS TO AVOID SUBMITTALS THAT ARE INCOMPLETE OR NEED SIGNIFICANT VERIFICATIONS. THE CONCURRENT SUBMITTAL OF MULTIPLE SHOP DRAWINGS ("DUMPING") WILL FURTHER EXTEND THE REVIEW PROCESS AND TIME FRAME NECESSARY TO PROPERLY REVIEW EACH SUBMITTAL.

E. UNLESS INDICATED OTHERWISE, THE GENERAL CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE FOLLOWING ITEMS FOR STRUCTURAL REVIEW. REFER TO SPECIFIC SECTION OF STRUCTURAL NOTES FOR ANY ADDITIONAL CRITERIA:
1. CONCRETE MIX DESIGNS
2. PRESTRESSED CONCRETE
3. STRUCTURAL STEEL
4. FRP GRATING
5. CONCRETE REINFORCING STEEL
6. ADDITIONAL STRUCTURAL SHOP DRAWINGS REQUESTED IN THE SPECIFICATIONS

F. A COPY OF ALL SHOP DRAWINGS SHALL BE MAINTAINED ON SITE AT ALL TIMES.

G. SHOP DRAWINGS SHALL INCLUDE COMPLETE DETAIL SCHEDULES, PROCEDURES, AND DIAGRAMS FOR FABRICATION AND ASSEMBLY OF STRUCTURAL MEMBERS AND SUBMIT PRIOR TO FABRICATION.

H. ERECTION PLANS ARE THE RESPONSIBILITY OF THE FABRICATOR.

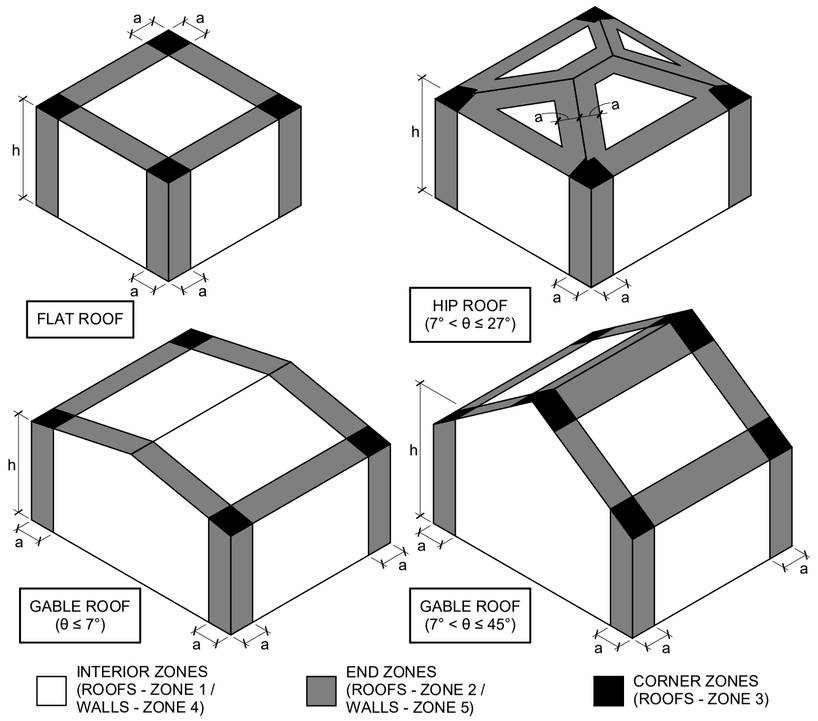
DELEGATED SUBMITTAL DOCUMENTS

A. FABRICATION DRAWINGS AND CALCULATIONS (SIGNED AND SEALED BY A PROFESSIONAL ENGINEER IN THE STATE WHERE THE PROJECT IS CONSTRUCTED, AS NOTED BELOW) SHALL BE SUBMITTED FIRST TO THE ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATION FOR THE FOLLOWING ITEMS:
1. PRECAST HOLLOWCORE CONCRETE (SIGNED AND SEALED CALCULATIONS)

COMPONENTS AND CLADDING WIND PRESSURES (PSF)

ZONE	TRIBUTARY AREA				
	10 sf or smaller	20 sf	50 sf	100 sf	150 sf or greater
WALL INTERIOR	+39.4 / -41.8	+38.1 / -40.5	+36.3 / -38.8	+35.0 / -37.5	+34.3 / -36.7
WALL END	+39.4 / -49.1	+38.1 / -46.5	+36.3 / -43.1	+35.0 / -40.5	+34.3 / -39.0
ROOF INTERIOR	+23.1 / -42.1	+22.3 / -41.2	+21.2 / -40.2	+20.4 / -39.4	+20.4 / -39.4
ROOF END	+23.1 / -63.8	+22.3 / -58.1	+21.2 / -50.5	+20.4 / -44.8	+20.4 / -44.8
ROOF CORNER	+23.1 / -90.9	+22.3 / -77.0	+21.2 / -58.7	+20.4 / -44.8	+20.4 / -44.8
PARAPET END	NA / NA	NA / NA	NA / NA	NA / NA	NA / NA
PARAPET CORNER	NA / NA	NA / NA	NA / NA	NA / NA	NA / NA
OVERHANG INTERIOR	-46.1	-45.3	-44.2	-43.4	-40.0
OVERHANG END	-46.1	-45.3	-44.2	-43.4	-40.0
OVERHANG CORNER	-76.0	-59.6	-38.0	-21.7	-21.7

NOTES:
1. REFER TO DESIGN CRITERIA FOR INFORMATION REGARDING GOVERNING BUILDING CODE.
2. PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY.
3. LINEAR INTERPOLATION IS PERMITTED FOR TRIBUTARY AREAS NOT SHOWN.
4. REFER TO FIGURE BELOW FOR ZONE DEFINITIONS.



NOTATION
a = 10% OF LEAST HORIZONTAL DIMENSION OR 0.4h, WHICHEVER IS SMALLER, BUT NOT LESS THAN EITHER 4% OF LEAST HORIZONTAL DIMENSION OR 3 FEET.
h = MEAN ROOF HEIGHT, IN FEET, EXCEPT THAT EAVE HEIGHT SHALL BE USED FOR ROOF ANGLES < 10°.
θ = ANGLE OF PLANE OF ROOF FROM HORIZONTAL, IN DEGREES.

FOOTINGS AND FOUNDATIONS

A. SOIL BEARING DESIGN VALUE:
1. 2000 PSF (CTS PROJECT NO. G7547).
2. BEARING VALUE TO BE VERIFIED IN FIELD BY GEOTECHNICAL ENGINEER.

B. PROTECT FOUNDATION EXCAVATIONS FROM FROST; DO NOT PLACE CONCRETE ON FROZEN GROUND.

C. FOUNDATION EXCAVATIONS SHALL BE KEPT FREE OF LOOSE MATERIAL AND STANDING WATER AND SHALL BE CHECKED AND APPROVED BY THE ENGINEER BEFORE THE PLACEMENT OF ANY CONCRETE.

D. DESIGN FROST PENETRATION DEPTH: 42 INCHES (HEATED) OR 60 INCHES (UNHEATED)

E. MINIMUM OF 6" COMPACTED GRANULAR BASE BELOW SLABS.

F. FOUNDATIONS TO BE PLACED ON A MINIMUM OF 2 FEET OF NEW STRUCTUURAL FILL, REFER TO GEOTECHNICAL REPORT.

MATERIAL COMPACTION CRITERIA	
LOCATION	MINIMUM RELATIVE COMPACTION PERCENTAGE (ASTM D698 STANDARD PROCTOR DENSITY (SPD))
BELOW FOUNDATION AND SLAB SUBGRADE ELEVATIONS	95%
BACKFILL AROUND BUILDING PERIMETER	93%
UTILITY TRENCHES	90%

CONCRETE

A. CONCRETE SHALL BE STANDARD WEIGHT MIX UNLESS NOTED OTHERWISE AND MEET THE FOLLOWING CRITERIA:

LOCATIONS	f'c @ 28 DAYS	AIR ENTRAINMENT	MAX. WATER/CEMENT RATIO
FOOTINGS	4500 PSI	6% ± 1.5%	0.45
INTERIOR SLABS ON GRADE	4000 PSI		0.50
EXTERIOR SLABS ON GRADE	4500 PSI	6% ± 1.5%	0.45
WALLS	4000 PSI		0.50

B. CRYSTALLINE WATERPROOFING ADMIXTURE: ADMIXTURE FORMULATED TO REDUCE PERMEABILITY TO LIQUID WATER, WITH NO ADVERSE EFFECTS ON CONCRETE PROPERTIES SHALL BE UTILIZED FOR CONCRETE REQUIRED TO BE LIQUID-TIGHT OR IN DIRECT CONTACT WITH WATER.
1. XYPEX ADMIX C-SERIES OR APPROVED EQUIVALENT.

C. CEMENT SHALL CONFORM TO ASTM C150, TYPE I / II OR ASTM C595 TYPE IL.

D. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C94.

E. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301 (LATEST EDITION) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", EXCEPT AS MODIFIED BY THESE NOTES.

F. ADMIXTURES MAY BE USED WITH PRIOR APPROVAL OF THE ENGINEER. ADMIXTURES SHALL COMPLY WITH ASTM C494 AND BE OF A TYPE THAT INCREASES THE WORKABILITY OF THE CONCRETE, BUT SHALL NOT BE CONSIDERED TO REDUCE THE SPECIFIED MINIMUM CEMENT CONTENT (CALCIUM CHLORIDE SHALL NOT BE USED).

G. CONTRACTOR SHALL SUBMIT MIX DESIGNS FOR APPROVAL 10 DAYS PRIOR TO FABRICATION AND INSTALLATION. ALL CONCRETE MIXES SHALL BE DESIGNED AND CERTIFIED BY A MATERIALS TESTING COMPANY.

H. PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC. SHALL BE FORMED WITH A 3/4" CHAMFER UNLESS DETAILED OR NOTED OTHERWISE.

I. PLACE A 15 MIL VAPOR BARRIER DIRECTLY BELOW FLOOR SLAB.

J. CONCRETE FLOOR SHALL BE CURED IN ACCORDANCE WITH ASTM C309. CONCRETE FLOOR SHALL BE PROTECTED FROM MOISTURE LOSS FOR A MINIMUM OF 14 DAYS, USING AN APPROVED SHEET MEMBRANE IN ACCORDANCE WITH C171.

K. FLOOR FLATNESS AND LEVELNESS TOLERANCES:
1. UNLESS NOTED OTHERWISE, FLOORS SHALL CONFORM TO THE FOLLOWING SURFACE PROFILE TOLERANCES:
   a. FLOOR FLATNESS NUMBER (F_F)
      - SPECIFIED OVERALL VALUE = 20
      - MINIMUM LOCAL VALUE = 15
   b. FLOOR LEVELNESS NUMBER (F_L)
      - SPECIFIED OVERALL VALUE = 20
      - MINIMUM LOCAL VALUE = 15
2. FLOOR TOLERANCE (F_F AND F_L) MEASUREMENTS SHALL BE TESTED IN ACCORDANCE WITH ASTM E 1155. ACTUAL OVERALL F-NUMBERS SHALL BE CALCULATED USING THE INFERIOR / SUPERIOR AREA METHOD.
3. CORRECT DEFECTIVE SLABS BY GRINDING OR REMOVING AND REPLACING DEFECTIVE WORK. RE-MEASURE CORRECTED AREAS BY THE SAME PROCESS.

L. PROVIDE AGGREGATES FREE OF SHALE AT ALL SLAB LOCATIONS, AND USE FINE AGGREGATE WITH A PROVEN HISTORY OF NOT BEING SUSCEPTIBLE TO POPOUTS, IMPORTED SAND IF NECESSARY.

M. FIBER REINFORCEMENT: INTERIOR SLAB ON GRADE
a. SHALL CONFORM TO ASTM C1116, TYPE III CONTAINING SYNTHETIC MACROFIBERS MEETING THE CRITERIA OF ASTM D7508 FOR MACRO-CHOPPED STRANDS OR HYBRID CHOPPED STRANDS WHERE INDICATED.
b. DOSAGE SHALL BE DESIGNED BY THE MANUFACTURER FOR A REPLACEMENT OF REINFORCEMENT RATIO OF 0.22%, BUT NOT LESS THAN 4LB/CY.

REINFORCING STEEL

A. BAR REINFORCEMENT SHALL BE ASTM A615, GRADE 60.

B. MINIMUM DEVELOPMENT LENGTH OF REINFORCING BARS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE.

MINIMUM LENGTH FOR STANDARD UN-COATED BARS IN NORMAL WEIGHT CONCRETE						
CONCRETE STRENGTH f'c IN PSI	DEVELOPMENT LENGTH (Ld) FOR STRAIGHT BARS (MIN. OF 12 INCHES)					FOR 90 DEGREE HOOKED BARS, HOOK DEVELOPMENT LENGTH
	TENSION CLASS A		TENSION CLASS B		COMPRESSION	
	#6 AND SMALLER	#7 TO #11	#6 & SMALLER	#7 TO #11	#18, #14, & #11 AND SMALLER	
3000	44 Db	55 Db	57 Db	71 Db	30 Db	22 Db
3500	41 Db	51 Db	53 Db	66 Db	30 Db	20 Db
4000	38 Db	47 Db	49 Db	62 Db	30 Db	19 Db
4500	36 Db	45 Db	47 Db	58 Db	30 Db	18 Db
5000	34 Db	42 Db	44 Db	55 Db	30 Db	17 Db
NOTE: Db = DIAMETER OF REINFORCEMENT. Ld = DEVELOPMENT LENGTH						

C. TYPICAL SPLICES: CLASS B AS DEFINED IN ACI 318, UNLESS NOTED OTHERWISE

D. ADJUSTMENT FACTORS FOR STRAIGHT BARS IN TENSION
1. LIGHTWEIGHT CONCRETE = 1.3.
2. EPOXY COATED = 1.2.
3. EPOXY COATED WITH COVER LESS THAN 3DB OR CLEAR SPACING LESS THAN 6 DB = 1.5.
4. HORIZONTAL "TOP" BARS WITH 12" OF CONCRETE CAST BELOW = 1.3
5. EPOXY COATED HORIZONTAL "TOP" BARS WITH 12" OF CONCRETE CAST BELOW = NOT GREATER THAN 1.7.

E. ADJUSTMENT FACTORS FOR STRAIGHT HOOKS IN TENSION
1. LIGHTWEIGHT CONCRETE = 1.3.
2. EPOXY COATED = 1.2.

F. REINFORCING STEEL SHALL BE PROVIDED WITH THE FOLLOWING AMOUNTS OF COVER FOR CAST-IN-PLACE CONCRETE UNLESS NOTED OTHERWISE:

MINIMUM CLEAR CONCRETE COVER FOR REINFORCING STEEL	
CONCRETE ON SOIL (DIRECT CONTACT)	3"
SLAB ON GRADE	CENTERED
WALLS, STRUCTURAL SLABS EXPOSED TO SOIL OR WEATHER #6 TO #18 REBAR #5 AND SMALLER REBAR	 2" 1 1/2"
WALLS, STRUCTURAL SLABS NOT EXPOSED TO EARTH OR WEATHER #11 AND SMALLER REBAR	 3/4"
COLUMNS AND PIERS (COVER TO STIRRUPS AND TIES)	1 1/2"

G. ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, AND INSERTS SHALL BE SECURED IN POSITION WITH WIRE POSITIONERS, OR EQUAL, BEFORE PLACING CONCRETE OR GROUT.

H. DOWELS BETWEEN FOOTINGS AND WALLS SHALL BE THE SAME GRADE, SIZE, AND SPACING AS VERTICAL WALL REINFORCING.

I. CONTRACTOR SHALL SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR APPROVAL A MINIMUM OF 10 DAYS PRIOR TO FABRICATION AND INSTALLATION.

J. BARS TO BE WELDED SHALL BE ASTM A706, GRADE 60. WELDING OF REINFORCING BARS SHALL CONFORM TO AWS D1.4.

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	BCW
DESIGNED BY	BCW
REVIEWED BY	JMB
ORIGINAL ISSUE DATE	05/21/25
CLIENT PROJECT NO.	

TITLE

STRUCTURAL NOTES

SHEET

S1-00

0 1/4" 1/2" 1" 2"

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PRESTRESSED CONCRETE

A. DESIGN PRECAST CONCRETE UNITS AND CONNECTIONS CAPABLE OF WITHSTANDING DESIGN LOAD CRITERIA, LOADS SHOWN ON PLANS AND ALL OTHER DEAD LOADS IN ACCORDANCE WITH PCI MNL 120, "PRECAST AND PRE-STRESSED CONCRETE" AND PCI MNL 123, "DESIGN AND TYPICAL DETAILS OF CONNECTIONS FOR PRECAST AND PRE-STRESSED CONCRETE."

B. PRECAST CONCRETE TO BE MANUFACTURED BY A PCI CERTIFIED PLANT IN ACCORDANCE WITH PCI MNL 116, "MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF STRUCTURAL CONCRETE PRODUCTS," PCI MNL 117, "MANUAL FOR QUALITY CONTROL FOR PLANTS AND PRODUCTION OF ARCHITECTURAL PRECAST CONCRETE PRODUCTS," AND PCI MNL 135, "TOLERANCE MANUAL FOR PRECAST AND PRE-STRESSED CONCRETE CONSTRUCTION."

C. PROVIDE NECESSARY CONNECTIONS TO RESTRAIN OR STABILIZE COMPONENTS. FOLLOW STRUCTURAL INTEGRITY REQUIREMENTS OF PCI MNL 120 AND ACI 318.

D. ALL HEADERS AT OPENINGS IN PRECAST AND PRE-STRESSED CONCRETE SHALL BE FURNISHED BY SUPPLIER.

E. PLACE OPENINGS NOT SHOWN ON PLANS BETWEEN WEBS IN PRECAST UNITS. VERIFY SIZE AND LOCATION WITH PRECAST SUPPLIER.

F. SHOP DRAWINGS
1. INDICATE ALL PRECAST MEMBER DESIGNS AND THEIR DESIGN LOADS.
2. SHOW THE ERECTION SEQUENCE, BRACING PLAN, ALL BEARING CONDITIONS AND ANCHORAGE DETAILS.
3. LOCATE AND DETAIL CONNECTIONS INCLUDING THEIR LOOSE HARDWARE AND ANCHORAGE ITEMS. INDICATE ITEMS TO BE EMBEDDED IN OR ATTACHED TO OTHER CONSTRUCTION AND WHO THEY ARE FURNISHED BY.

G. WELDING
1. ALL WELDING PROCEDURES AND PERSONNEL SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1, "STRUCTURAL WELDING CODE – STEEL," AND AWS D1.4, "STRUCTURAL WELDING CODE – REINFORCING."
2. ALL WELDERS SHALL BE CURRENTLY CERTIFIED AND REGISTERED BY LOCAL OFFICIALS AND/OR AWS, WITH THEIR CERTIFICATION AVAILABLE UPON REQUEST.
3. WELDING PROCEDURES AND SEQUENCES SHALL BE PLANNED TO MINIMIZE SPALLING INDUCED BY STEEL EXPANSION OR WELD SHRINKAGE.
4. ALL WELD FILLER MATERIAL SHALL BE AWS E70XX, UNLESS NOTED OTHERWISE.
5. ALL FIELD WELDS SHALL BE WIRE BRUSHED AND CLEANED, THEN TOUCHED UP PAINTED UNLESS PATCHED UNDER APPROPRIATE CONCRETE COVER PER ACI 318.

H. PRECAST ERECTION
1. ERECTOR SHALL BE PCI CERTIFIED AND HAVE A MINIMUM OF 5 YEARS EXPERIENCE IN THE ERECTION OF PRECAST CONCRETE SIMILAR TO THE REQUIREMENTS OF THE PROJECT.
2. ALL LIFTING, HANDLING, TRANSPORTATION AND DELIVERY, STORAGE AND SUPPORT, BRACING AND ERECTION OF PRECAST UNITS ARE TO BE PERFORMED BY QUALIFIED PERSONNEL USING METHODS AND EQUIPMENT APPROVED BY MANUFACTURER.
3. ERECT PRECAST UNITS LEVEL, PLUMB, SQUARE, TRUE AND IN ALIGNMENT IN ACCORDANCE WITH PCI MNL 127, "STANDARDS AND GUIDELINES FOR THE ERECTION OF PRECAST CONCRETE PRODUCTS," AND THE ERECTION TOLERANCES OF PCI MNL 135.
4. PRECAST AND PRE-STRESSED UNITS SHALL BE ESSENTIALLY PAST THE EFFECTS OF DEFORMATION DUE TO CREEP AND SHALL NOT HAVE CAMBER OVER 1/300 OF THE SPAN. PROVIDE FOR UNIFORM CAMBER OF UNITS IN ACCORDANCE WITH PCI MNL 135.

I. MATERIALS
1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI.
2. CEMENT SHALL CONFORM TO ASTM C150, TYPE I OR III.
3. ADMIXTURES SHALL CONFORM TO ASTM C260 AND ASTM C494.
4. AGGREGATES SHALL CONFORM TO ASTM C330 AND ASTM C33, EXCEPT THAT COARSE AGGREGATES FOR PRECAST CONCRETE SURFACES EXPOSED TO DAMP CONDITIONS SHALL CONTAIN ZERO IRON OXIDES.
5. READY MIX SHALL CONFORM TO ASTM C94.
6. STRAND SHALL BE GRADE 250KSI OR 270KSI, UNCOATED, 7-WIRE, STRESS RELIEVED STRAND CONFORMING TO ASTM A416.
7. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
8. SEE REINFORCING STEEL SECTION FOR REQUIREMENTS.
9. GROUT SHALL BE AS INDICATED ON DRAWINGS:
   a. "DRY PACK," GROUT SHALL BE TYPE I (ASTM C150) PORTLAND CEMENT, SAND AND WATER HAVING A MINIMUM OF 3,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS, AND A SAND CEMENT RATIO OF 3 TO 1.
   b. "NON-SHRINK" DRY PACK SHALL CONFORM TO ASTM C1107, BE TYPE III (ASTM C150) PORTLAND CEMENT, SAND AND WATER HAVING A MINIMUM OF 10,000PSI COMPRESSIVE STRENGTH AT 28 DAYS.
   c. TAMP DRY PACK GROUT BETWEEN BOTTOM OF PRECAST WALLS AND THEIR BEARING SURFACES FILLING THE ENTIRE AREA FREE OF VOIDS. RAKE JOINTS BACK AT LOCATIONS WHERE BACKER ROD AND SEALANT IS TO BE INSTALLED.

STRUCTURAL STEEL

A. SPECIFICATIONS:
1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE "STEEL CONSTRUCTION MANUAL", 14TH EDITION, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, UNLESS NOTED OTHERWISE.
2. STEEL MATERIALS SHALL MEET THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS, UNLESS NOTED OTHERWISE:

STRUCTURAL TYPE/SHAPE	ASTM DESIGNATION	MATERIAL STRENGTH
M, S, C, MC, AND L-SHAPES, PLATES AND BARS	A36	Fy = 36 KSI
WASHERS	F436	
WELDS		
E70XX ELECTRODES	A233	FU = 70 KSI
COLD ROLLED E60XX ELECTRODES	A233	FU = 60 KSI
STUD ANCHORS	A108	FU = 65 KSI

3. ALL STAINLESS STEEL SHALL BE TYPE S30400/S30403 DUAL CERTIFIED OR S30403 (S304L), UNLESS NOTED OTHERWISE.
4. CLEAN ALL EXTERIOR FIELD WELDS AND MEMBERS PER SSPC-SP3 AND PRIME PAINT WITH GRAY INORGANIC ZINC TO A 3-5 MIL THICKNESS.

A. WELDING:
1. ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1 STRUCTURAL WELDING CODE.
2. WELDER CERTIFICATION PROCEDURES SHALL BE AS FOLLOWS:
   a. ALL WELDERS SHALL BE CURRENTLY CERTIFIED AND REGISTERED BY THE LOCAL OFFICIALS AND/OR THE AMERICAN WELDING SOCIETY AND, IF REQUIRED, ALL WELDERS SHALL HAVE THEIR CERTIFICATION AVAILABLE TO THE ENGINEER.
3. ALL WELD FILLER METAL SHALL BE AWS E70XX WITH A MINIMUM CHARPY V-NOTCH (CVN TOUGHNESS OF 20FT-LB AT 0 DEG F, AS DETERMINED BY THE APPROPRIATE AWS A5 CLASSIFICATION TEST METHOD OR MANUFACTURER CERTIFICATION, UNLESS NOTED OTHERWISE.
4. WELDS DESIGNATED AS DEMAND CRITICAL (DC) SHALL BE MADE WITH A FILLER METAL CAPABLE OF PROVIDING A MINIMUM CVN TOUGHNESS OF 20 FT-LB AT -20 DEG F AND 40 FT-LB AT A TEMPERATURE OF 70DEG F AS DETERMINED BY THE MANUFACTURER'S CERTIFICATION, AISC 341-05 APPENDIX X, OR OTHER APPROVED METHOD. WELD FILLER METALS SHALL NOT BE USED FROM PACKAGING THAT HAS BEEN PUNCTURED OR TORN, OR IF THE MANUFACTURER'S RECOMMENDATIONS FOR EXPOSURE TIME OR DRYING PROCEDURES HAVE NOT BEEN FOLLOWED.
5. ALL BUTT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) WELDS, UNLESS NOTED OTHERWISE.
6. ALL GROOVE WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) WELDS, UNLESS NOTED OTHERWISE.
7. WELDING PROCEDURE AND SEQUENCES SHALL BE PLANNED TO MINIMIZE WELD SHRINKAGE THAT COULD RESULT IN LAMELLAR TEARING.
8. FIELD WELDING WILL BE ALLOWED ONLY WHERE SHOWN ON THE DRAWINGS.
9. EXISTING AND NEW STEEL SURFACES TO BE WELDED SHALL BE CLEANED OR PAINT, GREASE, SCALE, OR OTHER FOREIGN MATERIAL REMOVED.
10. ALL FIELD WELDS SHALL BE WIRE BRUSHED AND CLEANED, THEN TOUCHED-UP PAINTED.

B. MISCELLANEOUS METAL
1. WORK INCLUDES LINTELS, GUARDRAILS, POSTS, ETC.
2. FABRICATION:
   a. FIT AND SHOP ASSEMBLE GUARDRAIL COMPONENTS WHERE POSSIBLE. GRIND EXPOSED JOINTS FLUSH AND SMOOTH.
   b. SHOP PRIME WITH TWO COATS.

C. STRUCTURAL STEEL SHOP DRAWINGS SHALL INCLUDE CALCULATIONS THAT SUMMARIZE ANY CONNECTION REVISIONS.

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION PROGRAM SHALL CONFORM TO CHAPTER 17 OF THE IBC.
2. THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR TO PERFORM THE REQUIRED TESTS AND SPECIAL INSPECTIONS WITH QUALIFICATIONS DESCRIBED PER IBC CHAPTER 17 AND THE PROJECT SPECIFICATIONS.
3. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTIONS AND TESTS. SUFFICIENT NOTICE AND LEAD TIME MUST BE ALLOWED FOR THE INSPECTION AND TESTING TO BE PERFORMED WITHOUT IMPEDING CONSTRUCTION OPERATIONS.
4. SPECIAL INSPECTION REPORTS SHALL BE FURNISHED TO BUILDING OFFICIAL, OWNER, ARCHITECT, STRUCTURAL ENGINEER, AND CONTRACTOR.
5. WHEN DEFICIENCIES ARE IDENTIFIED, THE CONTRACTOR MUST TAKE CORRECTIVE ACTIONS TO COMPLY WITH THE CONTRACT DOCUMENTS OR REMEDY THE DEFICIENCIES AS DIRECTED BY THE REGISTERED DESIGN PROFESSIONAL.
6. THE SPECIAL INSPECTION AND QUALITY ASSURANCE PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS OR HER RESPONSIBILITY TO PERFORM QUALITY CONTROL.
7. THE CONTRACTOR IS RESPONSIBLE FOR TESTING SERVICES THAT ARE REQUIRED FOR MATERIAL SUBMITTALS AND THAT ARE NOT PART OF THE SPECIAL INSPECTION PROGRAM (E.G. AGGREGATE TESTS, CONCRETE MIX DESIGNS, TESTING OF CONTROLLED FILL MATERIALS, ETC.).
8. SPECIAL INSPECTOR SHALL SUBMIT A FINAL REPORT STATING THAT THE STRUCTURAL WORK WAS, TO THE BEST OF THE SPECIAL INSPECTOR'S KNOWLEDGE, PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

FABRICATED ITEMS (IBC 1704.2)

SPECIAL INSPECTION TYPE: FABRICATOR APPROVAL
SPECIAL INSPECTION IS NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM WORK WITHOUT SPECIAL INSPECTION PROVIDED THE FABRICATOR COMPLIES WITH IBC.

STRUCTURAL STEEL (IBC 1705.2)

SPECIAL INSPECTION TYPE	FREQUENCY
FABRICATOR CERTIFICATION/QUALITY CONTROL PROCEDURES: REVIEW SHOP FABRICATION AND QUALITY CONTROL PROCEDURES. AISC CERTIFICATION (TYPE BU) OF STEEL FABRICATOR REQUIRED	FABRICATOR EXEMPT
MATERIAL VERIFICATION OF STRUCTURAL STEEL. REVIEW CERTIFIED MILL TEST REPORTS AND IDENTIFICATION MARKING ON WIDE FLANGE SHAPES, HIGH STRENGTH BOLTS, NUTS AND WELDING ELECTRODES.	PERIODIC
SHOP AND FIELD WELDING: WELDING INSPECTION TO BE IN COMPLIANCE WITH AWS D1.1. ALL WELDS SHALL BE VISUALLY INSPECTED. ALL MATERIALS, WELDING PROCEDURES, AND QUALIFICATIONS OF WELDERS SHALL BE VERIFIED PRIOR TO THE START OF WORK.	
SINGLE PASS FIELD WELD LESS THAN OR EQUAL TO 5/16"	PERIODIC
FIELD WELDS GREATER THAN 5/16"	CONTINUOUS
MULTI-PASS FILLET WELDS	CONTINUOUS
PARTIAL/COMPLETE PENETRATION WELDS TESTED ULTRASONICALLY OR BY ANOTHER APPROVED METHOD	CONTINUOUS
LIGHT GAUGE METAL FRAMING WELDING	PERIODIC
FLOOR AND ROOF DECK WELDING	PERIODIC
INSPECT STEEL FRAME FOR COMPLIANCE WITH STRUCTURAL DRAWINGS, INCLUDING BRACING, MEMBER CONFIGURATION, AND CONNECTION DETAILS.	PERIODIC

CAST-IN-PLACE CONCRETE (IBC 1705.3)

SPECIAL INSPECTION TYPE	FREQUENCY
INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	PERIODIC
REINFORCING BAR WELDING:	
VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706.	PERIODIC
INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16".	PERIODIC
INSPECT ALL OTHER WELDS.	CONTINUOUS
INSPECT ANCHORS CAST IN CONCRETE.	PERIODIC
INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	
ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	CONTINUOUS
MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE.	PERIODIC
VERIFY USE OF REQUIRED DESIGN MIX.	PERIODIC
INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	CONTINUOUS
VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC
INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	PERIODIC
FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. SAMPLE FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 CUBIC YARDS OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000 SQUARE FEET OF SURFACE AREA FOR SLABS OR WALLS. A MINIMUM OF FIVE STRENGTH TESTS SHOULD BE MADE FOR A GIVEN PROJECT.	CONTINUOUS AT TIME OF TESTING

PRECAST CONCRETE (IBC 1705.3)

SPECIAL INSPECTION TYPE	FREQUENCY
PLANT CERTIFICATION/QUALITY CONTROL PROCEDURES: REVIEW PLANT OPERATIONS AND QUALITY CONTROL PROCEDURES. PCI CERTIFICATION OF PRECAST PLANT REQUIRED	PLANT EXEMPT
INSPECT ERECTION OF PRECAST CONCRETE MEMBERS INCLUDING MEMBER CONFIGURATION, CONNECTIONS, WELDING, AND GROUTING.	PERIODIC

SOILS (IBC 1705.6)

SPECIAL INSPECTION TYPE	FREQUENCY
VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	PERIODIC
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	PERIODIC
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	PERIODIC
VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL • SUBGRADE SOILS - MINIMUM OF TWO TESTS PER LIFT OR ONE TEST FOR EVERY 2,500 SQUARE FEET PER LIFT IN BUILDING AREAS, AND ONE TEST FOR EVERY 5,000 SQUARE FEET PER LIFT IN PAVEMENT AREAS. • UTILITY TRENCH BACKFILL - ONE TEST FOR EVERY 50 LINEAR FEET OF UTILITY TRENCH LENGTH PER LIFT.	CONTINUOUS
PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	PERIODIC

SPECIAL INSPECTIONS FOR WIND RESISTANCE (IBC 1705.11)

SPECIAL INSPECTION TYPE	FREQUENCY
WIND-RESISTING COMPONENTS:	
INSPECT FASTENING OF THE ROOF COVERING, ROOF DECK, AND ROOF FRAMING CONNECTIONS.	PERIODIC
INSPECT FASTENING OF THE EXTERIOR WALL COVERING AND WALL CONNECTIONS TO ROOF AND FLOOR DIAPHRAGMS AND FRAMING.	PERIODIC

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	BCW
DESIGNED BY	BCW
REVIEWED BY	JMB
ORIGINAL ISSUE DATE	05/21/25
CLIENT PROJECT NO.	

TITLE **STRUCTURAL NOTES & SPECIAL INSPECTIONS (PER IBC 2015)**

SHEET **S1-01**

0 1/4" 1/2" 1" 2"

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KEYNOTE LEGEND

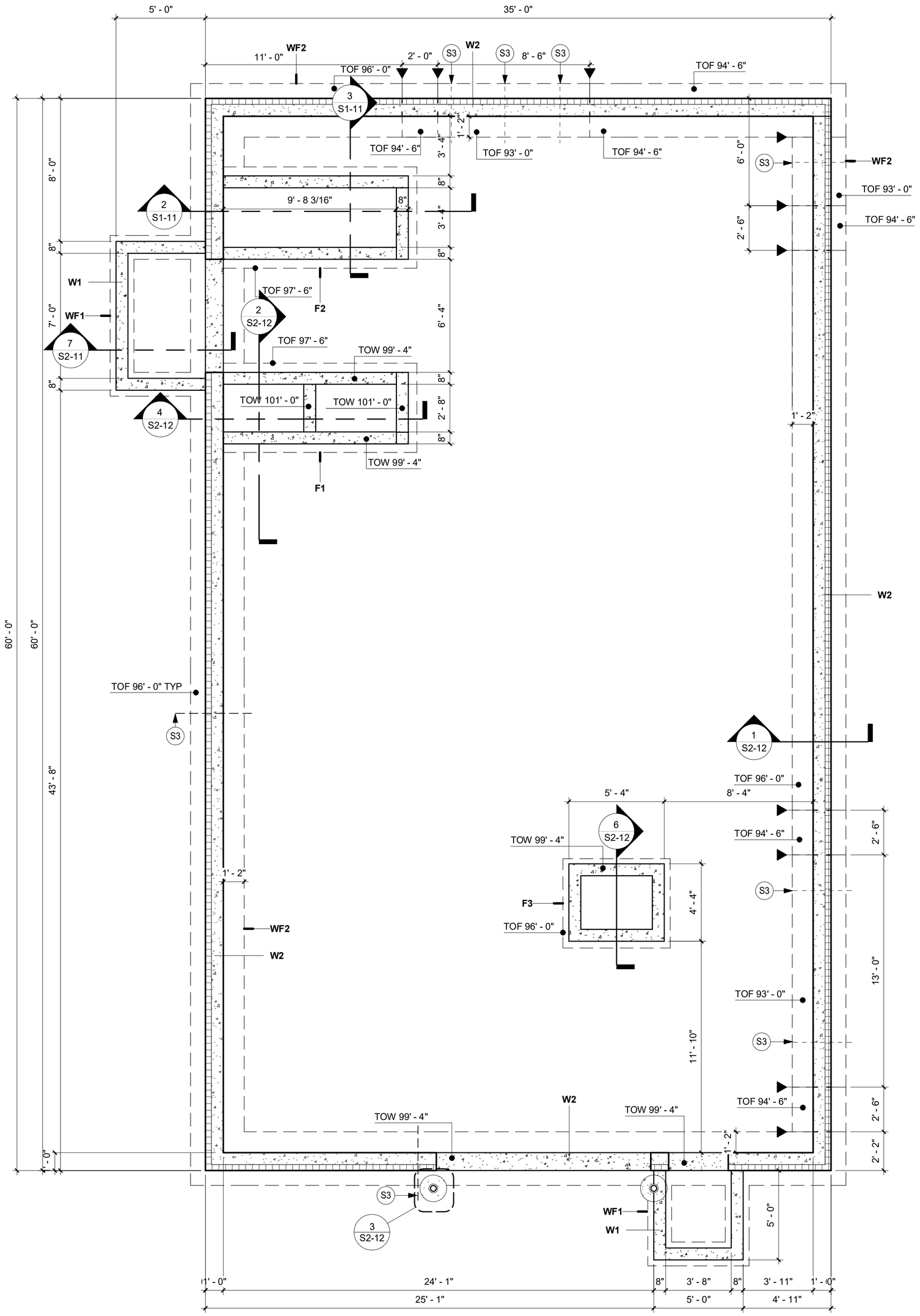
S3	PIPE THROUGH FOUNDATION WALL, REFER TO CIVIL DOCUMENTS FOR LOCATIONS AND ELEVATIONS. REFER TO FOUNDATION AND SLAB DETAILS FOR PENETRATIONS.

FOOTING SCHEDULE

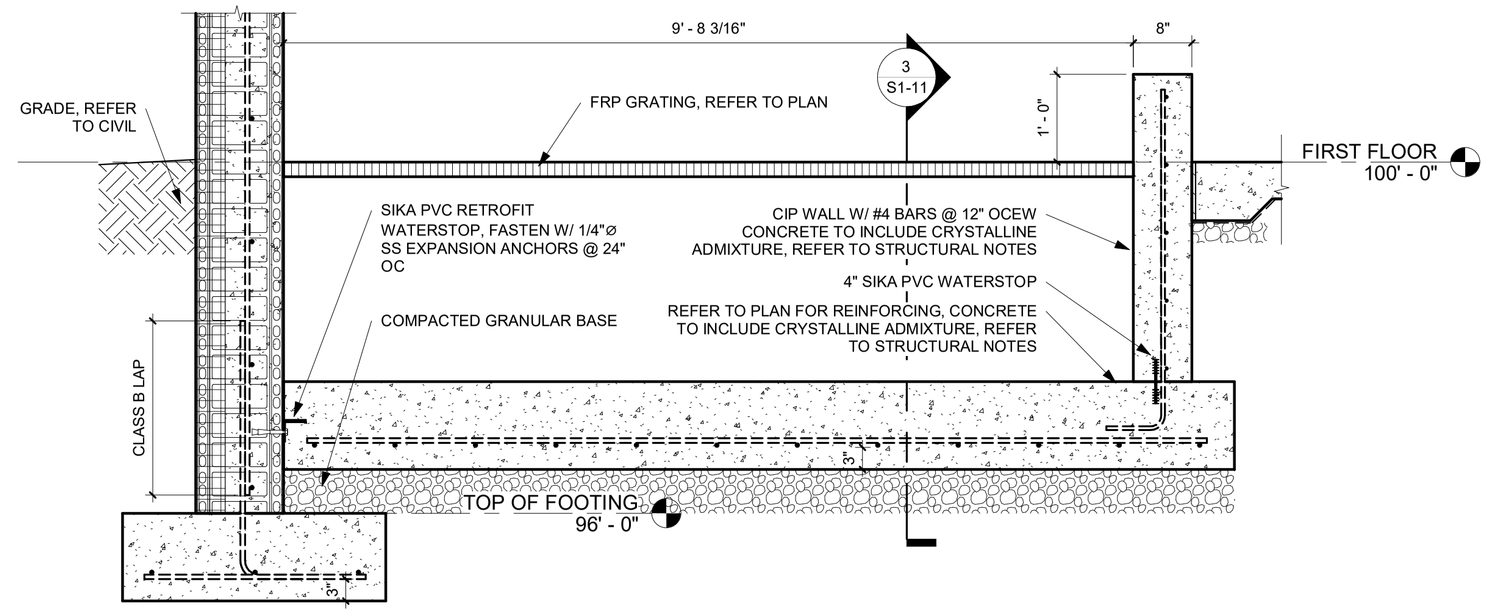
MARK	LENGTH	WIDTH	THICKNESS	REINFORCEMENT	COMMENTS
F1	5' - 0"	10' - 10"	1' - 0"	#5 BARS @ 12" OCEW	
F2	5' - 8"	10' - 10"	1' - 0"	#5 BARS @ 12" OCEW	
F3	5' - 0"	6' - 0"	1' - 0"	#5 BARS @ 12" OCEW	
WF1		1' - 4"	1' - 0"	(2) #5 BARS CONTINUOUS	
WF2		3' - 0"	1' - 0"	(3) #5 BARS CONTINUOUS W/ #5 TRANSVERSE BARS @ 12" OC	

CONCRETE FORMING SYSTEM SCHEDULE

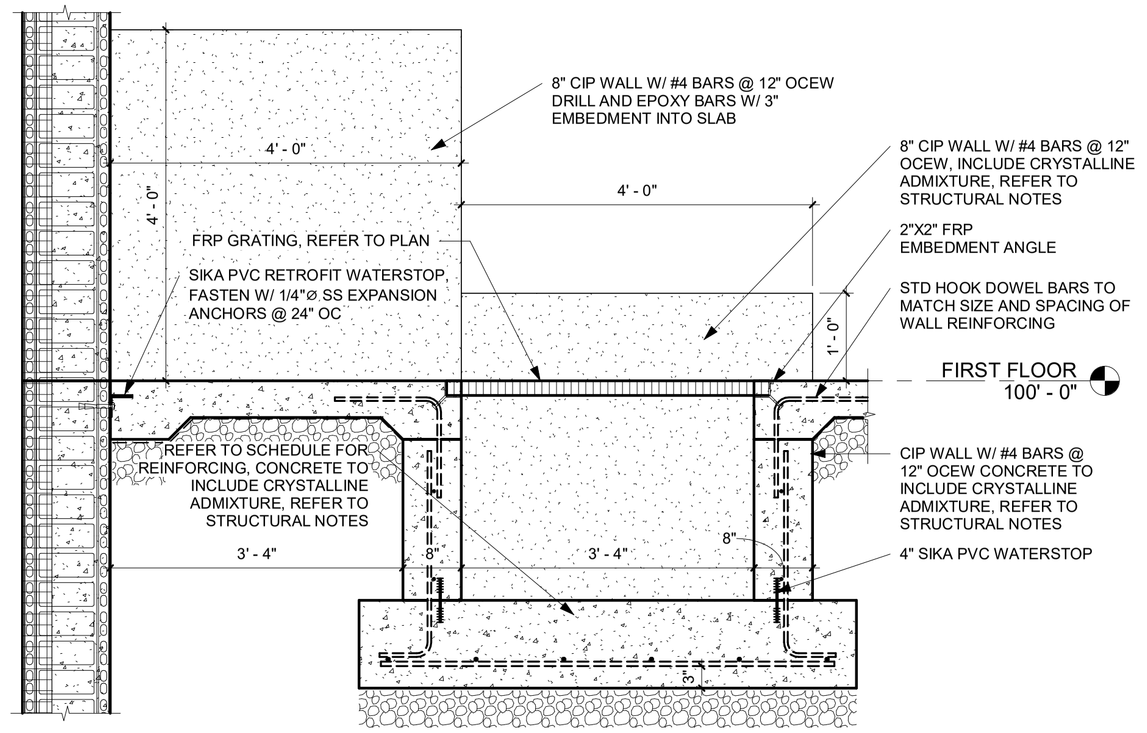
MARK	WIDTH	REINFORCEMENT	COMMENTS
W1	0' - 8"	#4 VERTICAL AND HORIZONTAL BARS @ 12" OC, CENTERED	
W2	1' - 0"	#5 VERTICAL BARS @ 14" OC AND #5 HORIZONTAL BARS @ 18" OC, CENTERED	4" INSULATION, 8" CONCRETE



1 FOUNDATION PLAN
1/4" = 1'-0"



2 NORTH CONTAINMENT SECTION 1
3/4" = 1'-0"



3 NORTH CONTAINMENT SECTION 2
3/4" = 1'-0"

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
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DRAWN BY	BCW
DESIGNED BY	BCW
REVIEWED BY	JMB
ORIGINAL ISSUE DATE	05/21/25
CLIENT PROJECT NO.	

TITLE

FOUNDATION PLAN

SHEET

S1-11

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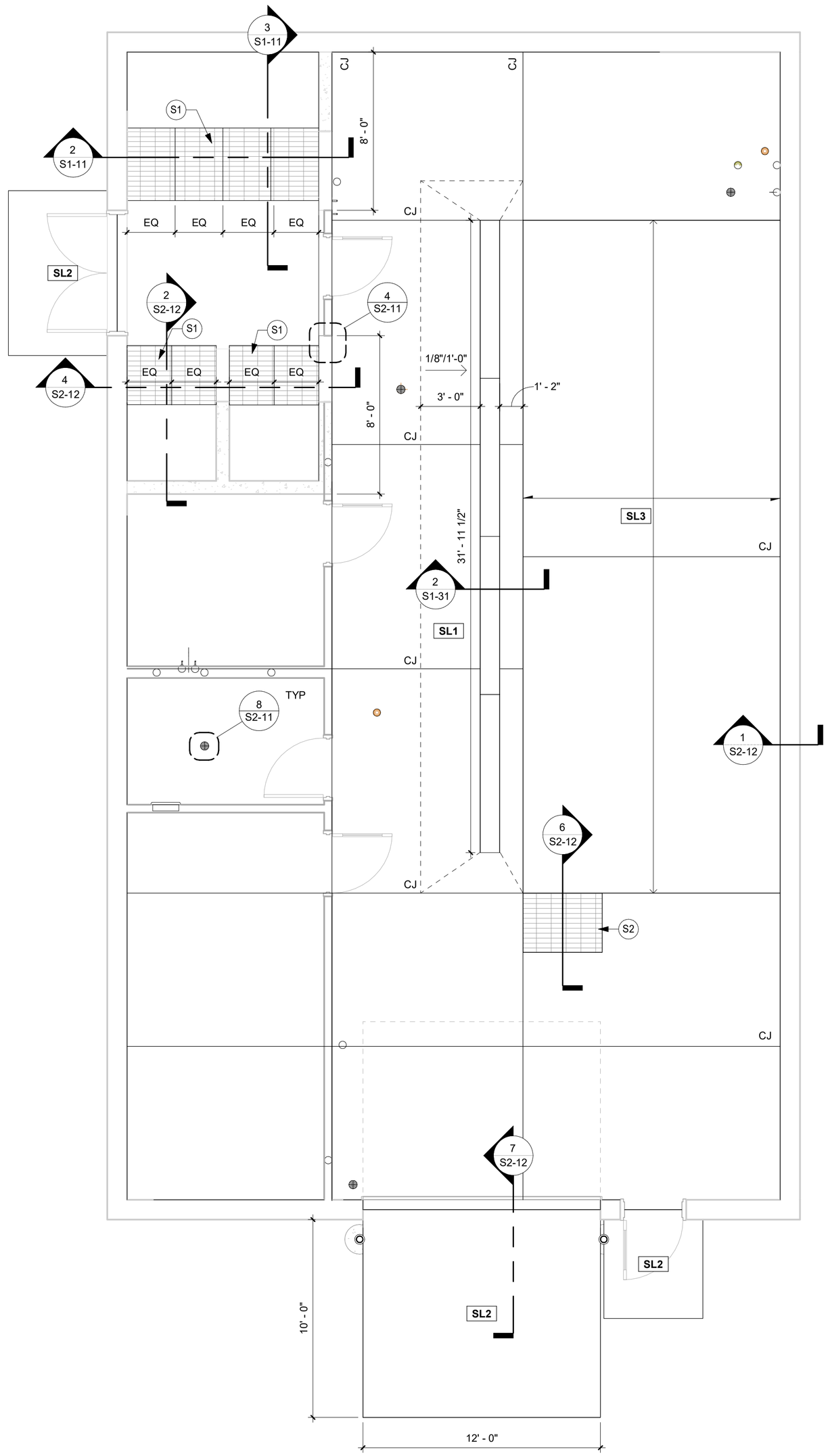
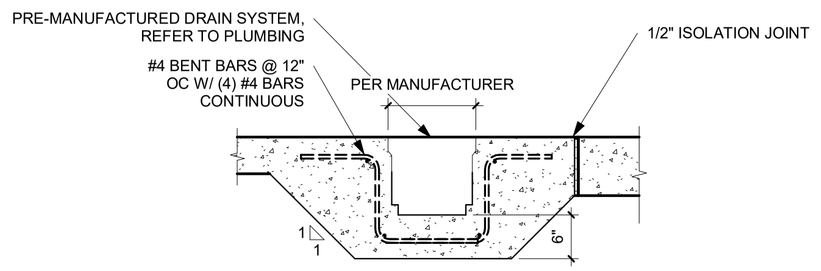


1 FIRST FLOOR SLAB PLAN
1/4" = 1'-0"



2 TRENCH DRAIN DETAIL
3/4" = 1'-0"

KEYNOTE LEGEND

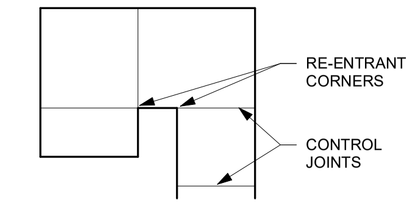
S1	2" ADA COMPLIANT FRP GRATING w/ DEFLECTION LIMIT OF L/240 OR 1/4" AND 125 PSF DESIGN LOAD. GRATING SEGMENTS REMOVEABLE AS SHOWN ON PLAN.
S2	FRP GRATING WITH AASHTO H-20 LOAD RATING AND 1/8" MAX DEFLECTION.

SLAB SCHEDULE

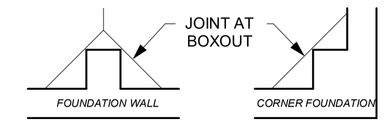
MARK	THICKNESS	REINFORCEMENT	COMMENTS
SL1	5"	SYNTHETIC MACROFIBER REINFORCING	REFER TO S1-00
SL2	5"	#4 BARS @ 18" OCEW, CENTERED	
SL3	8"	#5 BARS @ 14" OCEW TOP AND BOTTOM	

CONTROL JOINT PLACEMENT GUIDELINES

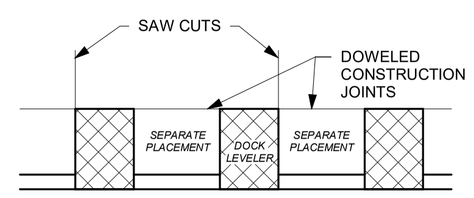
1. SPACE JOINTS (IN FEET) NO MORE THAN 2-3 TIMES THE SLAB THICKNESS (IN INCHES). FOR EXAMPLE, A 4" SLAB SHOULD HAVE JOINTS 8' TO 12' APART.
2. CUT JOINTS 25% OF THE DEPTH OF SLAB, MIN.
3. CUT JOINTS USING GROOVING TOOLS IN FRESH CONCRETE OR SAW CUTTING JOINTS AS SOON AS THE CONCRETE IS HARD ENOUGH THAT THE EDGES ABUTTING THE CUT DON'T CHIP FROM THE SAW BLADE.
4. IN HOT WEATHER, CONCRETE MIGHT CRACK IF JOINTS ARE NOT CUT WITHIN 6-12 HOURS AFTER FINISHING CONCRETE. PLAN ALTERNATE JOINT CUTTING EQUIPMENT ACCORDINGLY.
5. WHERE POSSIBLE, PLACE JOINTS UNDER PROPOSED NON-LOAD-BEARING WALL LOCATIONS OR UNDER CARPET AREAS.
6. MINIMIZE RE-ENTRANT CORNERS AND AVOID WHERE POSSIBLE.



EXAMPLE CONTROL JOINT PLAN



EXAMPLE PILASTER JOINT PLAN



EXAMPLE MULTIPLE DOCK LEVELER JOINT PLAN

N

ISG

City of MOVILLE
EST. 1887
IOWA

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	22-27061
FILE NAME	27061 ArchR24
DRAWN BY	BCW
DESIGNED BY	BCW
REVIEWED BY	JMB
ORIGINAL ISSUE DATE	05/21/25
CLIENT PROJECT NO.	

TITLE

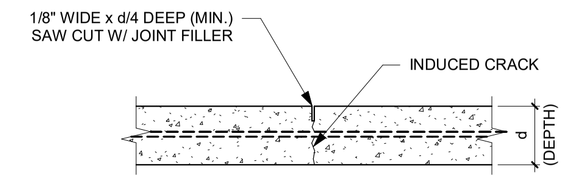
SLAB PLAN

SHEET

S1-31

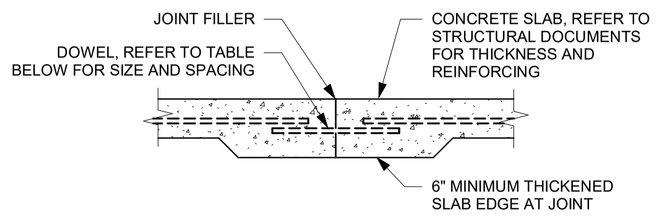
0 1/4" 1/2" 1" 2"

5/28/2025 10:24:31 AM



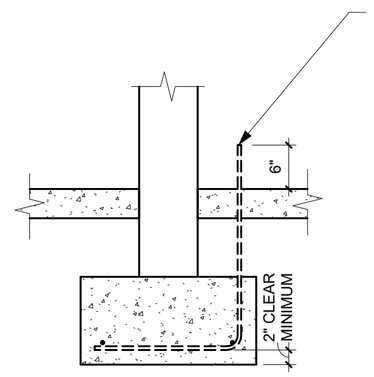
TYPICAL CONTROL JOINT SPACING AND JOINT DEPTH		
REINFORCED SLAB DEPTH	PREFERRED SPACING	CONTROL JOINT DEPTH (MIN.)
4"	8' TO 12'	1"
5"	10' TO 15'	1.25"
6"	12' TO 18'	1.5"
7"	14' TO 21'	1.75"
≥ 8"	16' TO 24'	2"
REFER TO CONTROL JOINT PLACEMENT GUIDE FOR ADDITIONAL CONTROL JOINT INFORMATION.		

1 TYPICAL CONTROL JOINT DETAIL
1" = 1'-0"



DOWEL SIZE AND SPACING FOR CONSTRUCTION JOINTS		
	DOWEL DIMENSIONS	DOWEL SPACING (CENTER-TO-CENTER)
SLAB DEPTH	PLATE DOWEL	PLATE DOWEL
5" TO 6"	M/R*	18"
7" TO 8"	M/R*	18"
9" TO 11"	M/R*	18"
*M/R = MANUFACTURER'S RECOMMENDATIONS. BECAUSE OF THE VARIOUS PLATE DOWEL GEOMETRIES AND INSTALLATION DEVICES AVAILABLE FROM DIFFERENT MANUFACTURERS, THE MANUFACTURERS SHOULD BE CONSULTED FOR THEIR RECOMMENDED PLATE DOWEL SIZE.		

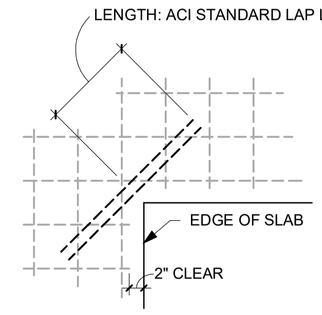
2 TYPICAL CONSTRUCTION JOINT DETAIL
1" = 1'-0"



NOTES:

1. PURPOSE OF DETAIL IS TO INDICATE TYPICAL GROUNDING ELECTRODE INFORMATION ONLY AND DOES NOT REFLECT ACTUAL FOUNDATION CONSTRUCTION; REFER TO PLANS, SECTIONS, AND DETAILS FOR FOUNDATION CONSTRUCTION INFORMATION.
2. SUPPLY AND INSTALL GROUNDING ELECTRODE FOR GROUNDING OF ELECTRICAL SERVICE AS REQUIRED BY ELECTRICAL DOCUMENTS.

3 GROUNDING ELECTRODE DETAIL
3/4" = 1'-0"

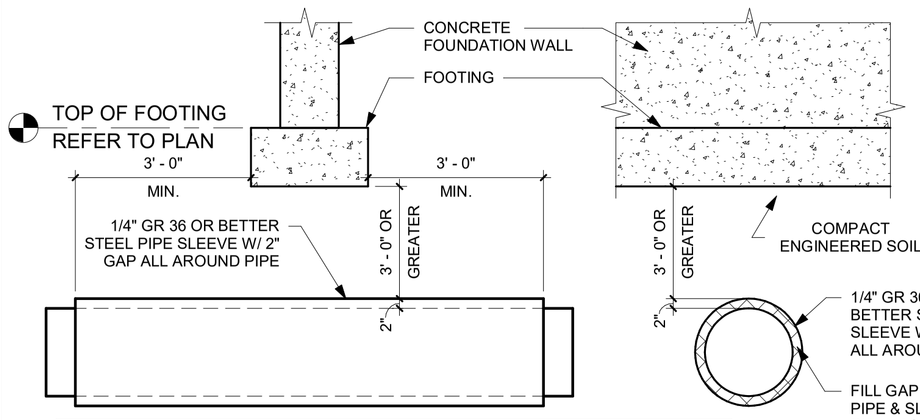


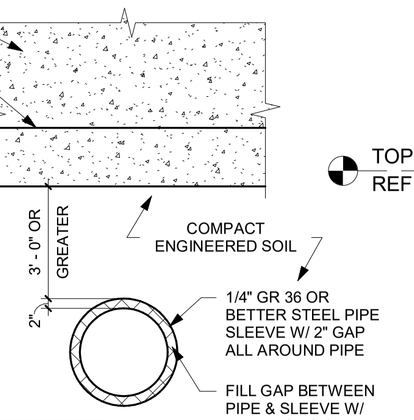
SLAB REINF BARS	ADDITIONAL CORNER BARS
WWF	(2) #4
#4	(2) #4
#5	(2) #5
#6	(2) #5
#7	(2) #5
#8	(2) #6
*USE LARGEST DIAMETER BAR IN EITHER DIRECTION FOR DETERMINING CORNER BARS.	

NOTE:
PROVIDE 2" CLEAR COVER OVER ALL BARS AT OPENINGS

ADDITIONAL CORNER BARS:
- WHEN SLAB HAS BOTTOM REINFORCEMENT LAYER ONLY, PLACE DIAGONAL BARS AT MID-DEPTH.
- WHEN SLAB HAS TOP REINFORCEMENT LAYER ONLY, PLACE DIAGONAL BARS BELOW TOP REINFORCEMENT.
- WHEN SLAB HAS TOP & BOTTOM REINFORCEMENT LAYERS, PLACE DIAGONAL BARS BETWEEN TOP & BOTTOM REINFORCEMENT (2-LAYERS)

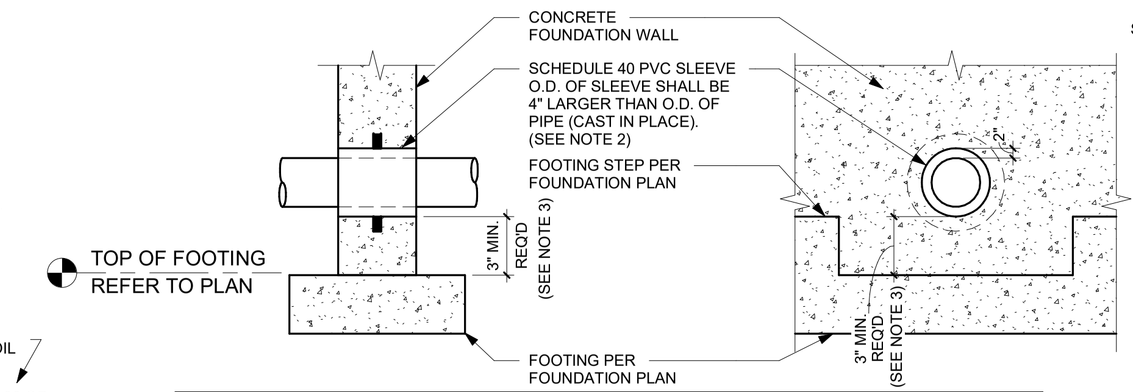
4 SLAB REENTRANT CORNER DETAIL1
3/4" = 1'-0"





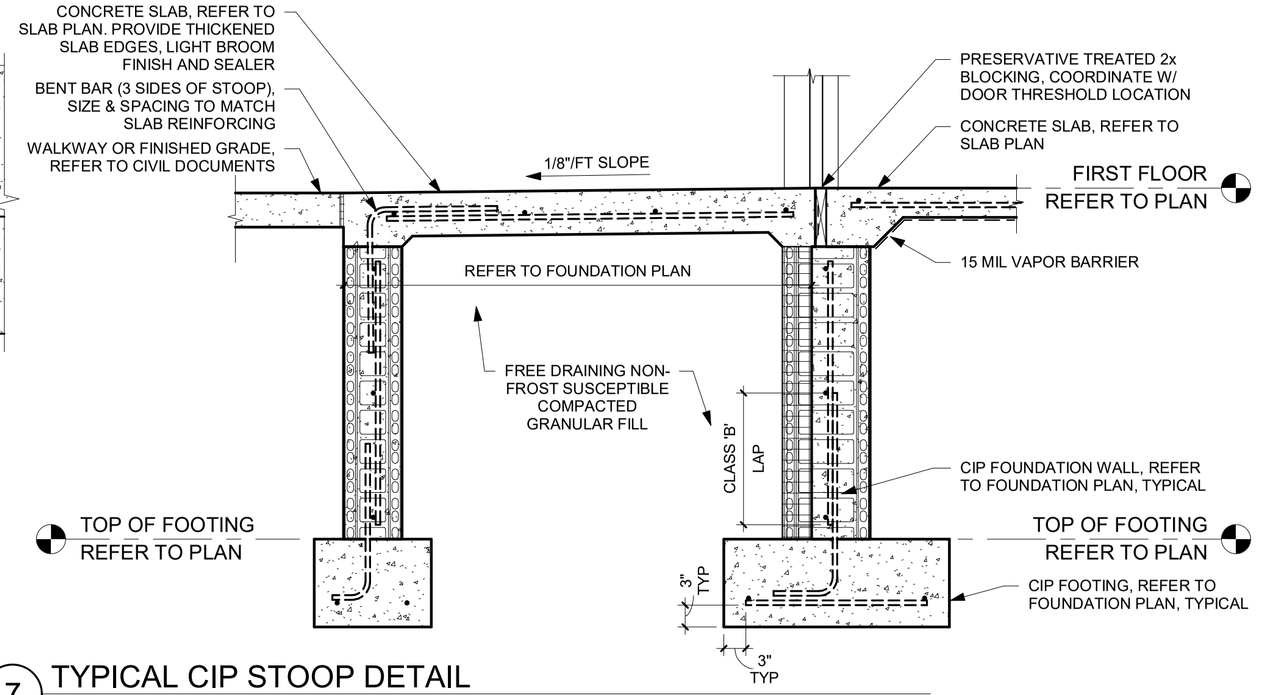
DETAIL NOTES:
1. COORDINATE SIZE, LOCATION, AND ELEVATION OF PIPES W/ CIVIL & MECHANICAL DRAWINGS AND CONTRACTORS PRIOR TO POURING CONCRETE.
2. SLEEVE REQUIRED FOR ALL PIPE SIZES AND MATERIALS.

5 MECHANICAL LINE AT OR GREATER THAN 3' - 0" BENEATH FOOTING DETAIL
1/2" = 1'-0"

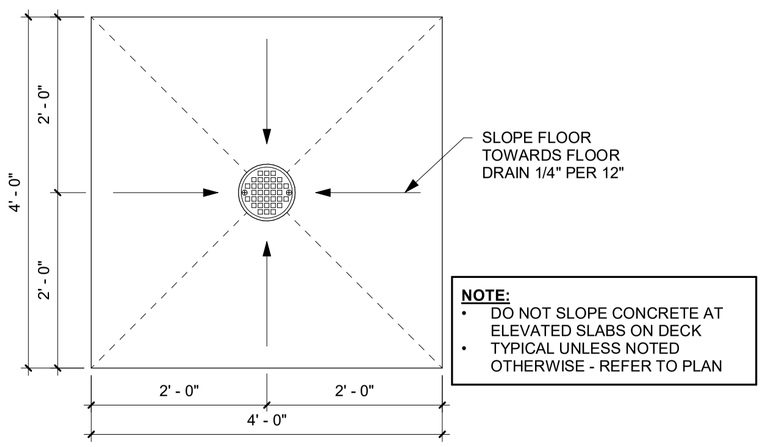


DETAIL NOTES:
1. COORDINATE SIZE, LOCATION, AND ELEVATION OF PIPES W/ CIVIL & MECHANICAL DRAWINGS AND CONTRACTORS PRIOR TO POURING CONCRETE.
2. PROVIDE 2" WATERSTOP FLANGE WHERE WATERSTOP IS REQUIRED AT THROUGH WALL PENETRATIONS.
3. WHERE PVC WATERSTOP REQUIRED, PROVIDE MINIMUM 12" CLEAR TO TOP OF FOOTING.

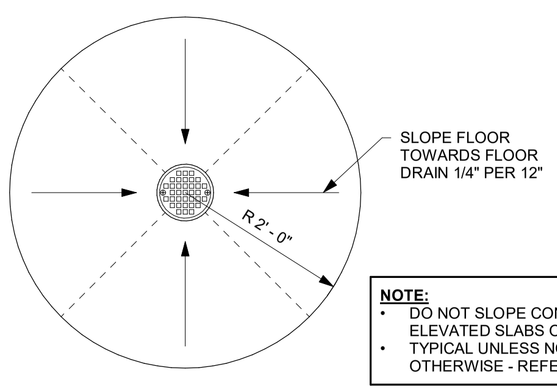
6 MECHANICAL LINE LESS THAN 3' - 0" BENEATH FOOTING DETAIL
1/2" = 1'-0"



7 TYPICAL CIP STOOP DETAIL
3/4" = 1'-0"



NOTE:
- DO NOT SLOPE CONCRETE AT ELEVATED SLABS ON DECK
- TYPICAL UNLESS NOTED OTHERWISE - REFER TO PLAN



NOTE:
- DO NOT SLOPE CONCRETE AT ELEVATED SLABS ON DECK
- TYPICAL UNLESS NOTED OTHERWISE - REFER TO PLAN

8 TYP SLAB DEPRESSION AT FLOOR DRAIN
3/4" = 1'-0"

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

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PROJECT NO.	22-27061
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DESIGNED BY	BCW
REVIEWED BY	JMB
ORIGINAL ISSUE DATE	05/21/25
CLIENT PROJECT NO.	

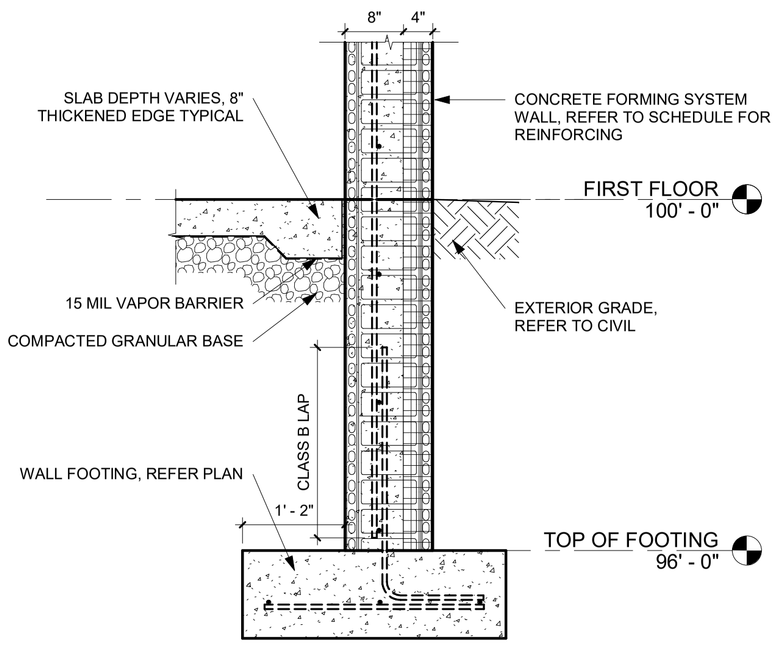
TITLE

FOUNDATION & SLAB DETAILS

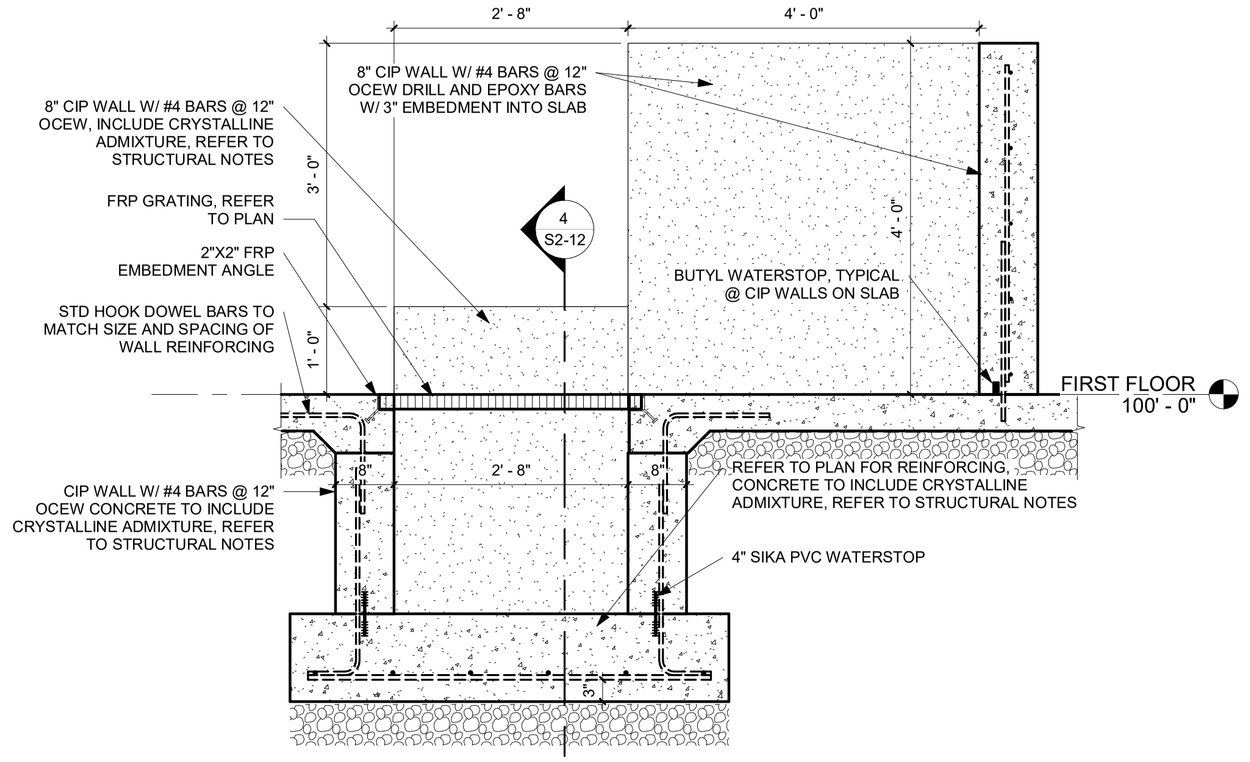
SHEET

S2-11

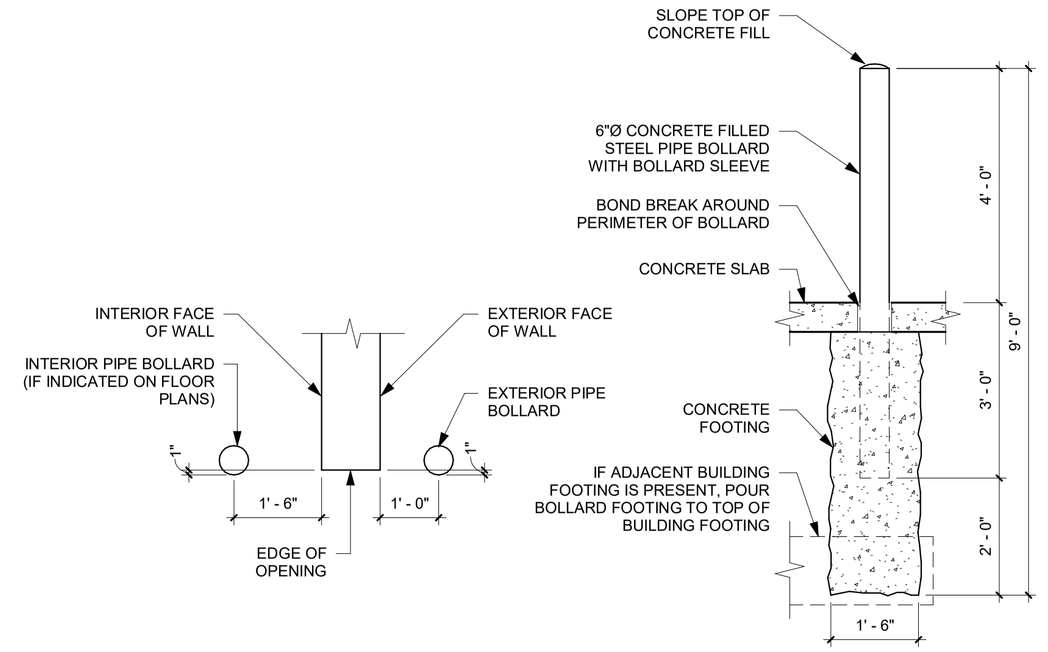
5/28/2025 10:24:32 AM



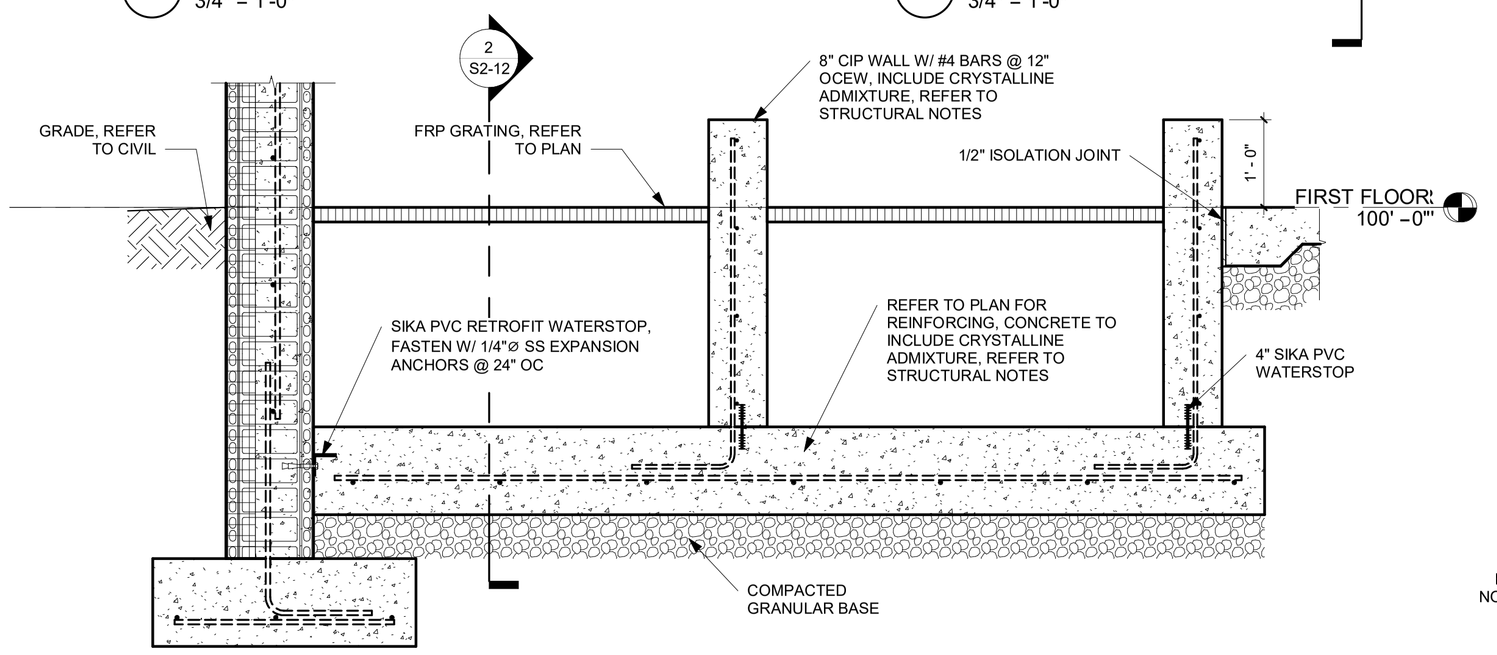
1 WALL FOOTING SECTION
3/4" = 1'-0"



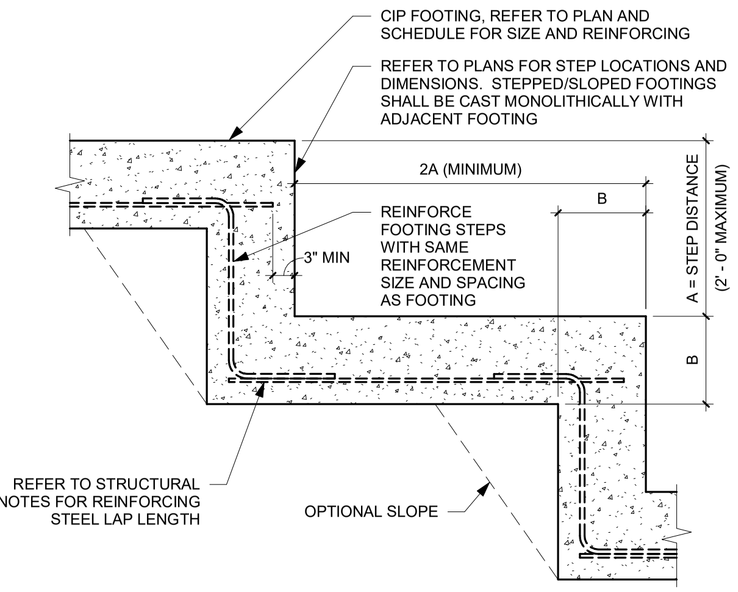
2 SOUTH CONTAINMENT SECTION 1
3/4" = 1'-0"



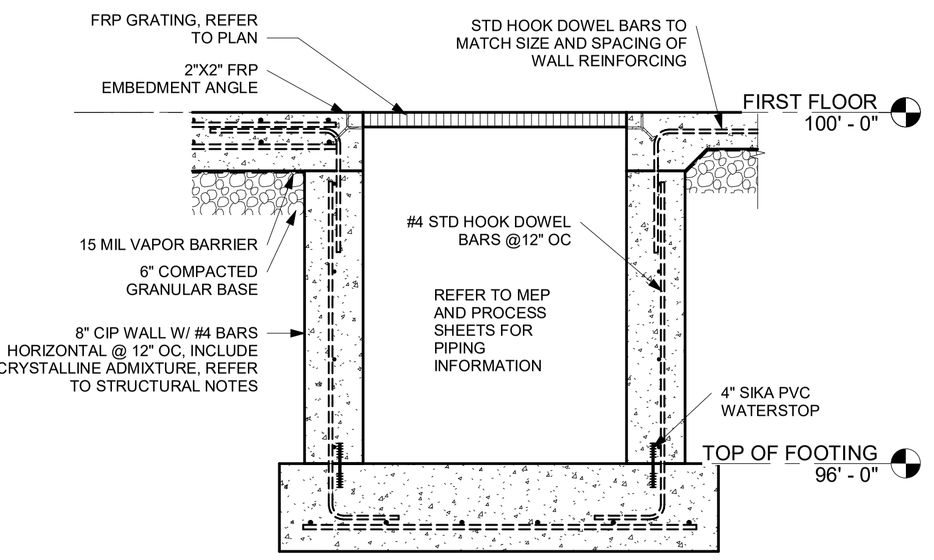
3 PIPE BOLLARD DETAIL
1/2" = 1'-0"



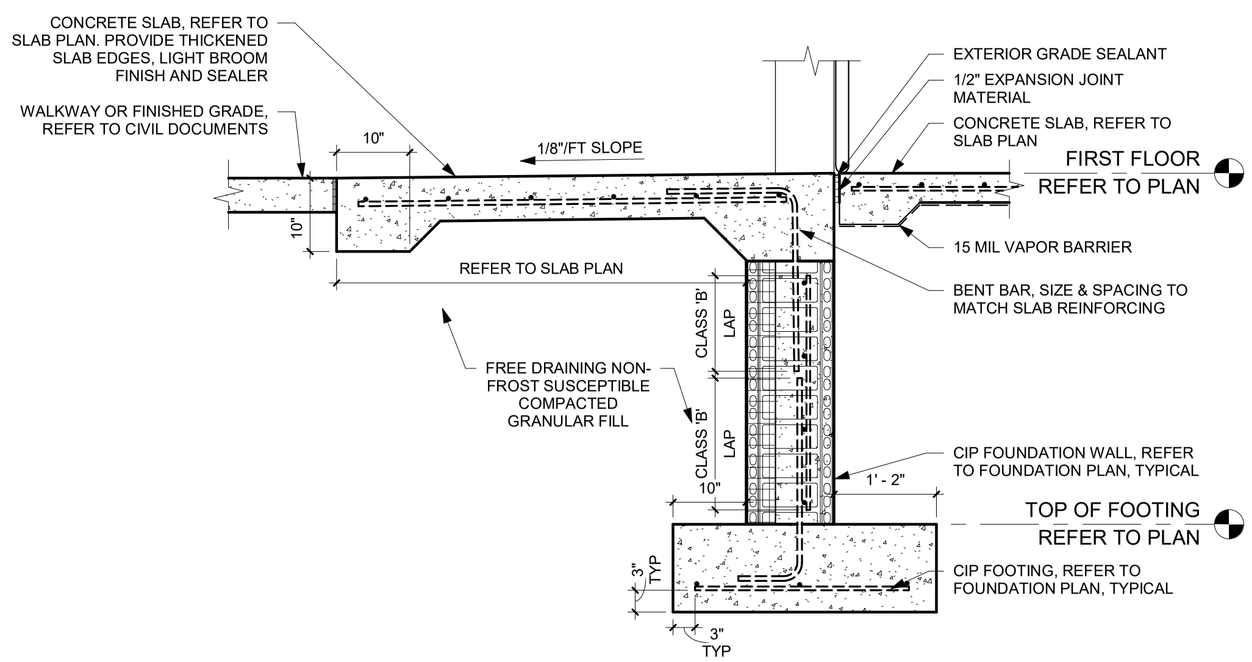
4 EXTERIOR CONTAINMENT SECTION 2
3/4" = 1'-0"



5 STEPPED FOOTING DETAIL
3/4" = 1'-0"



6 BACKWASH PIT SECTION
3/4" = 1'-0"



7 TYPICAL CIP APRON DETAIL AT OHD
3/4" = 1'-0"

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

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PROJECT NO.	22-27061
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DESIGNED BY	BCW
REVIEWED BY	JMB
ORIGINAL ISSUE DATE	05/21/25
CLIENT PROJECT NO.	

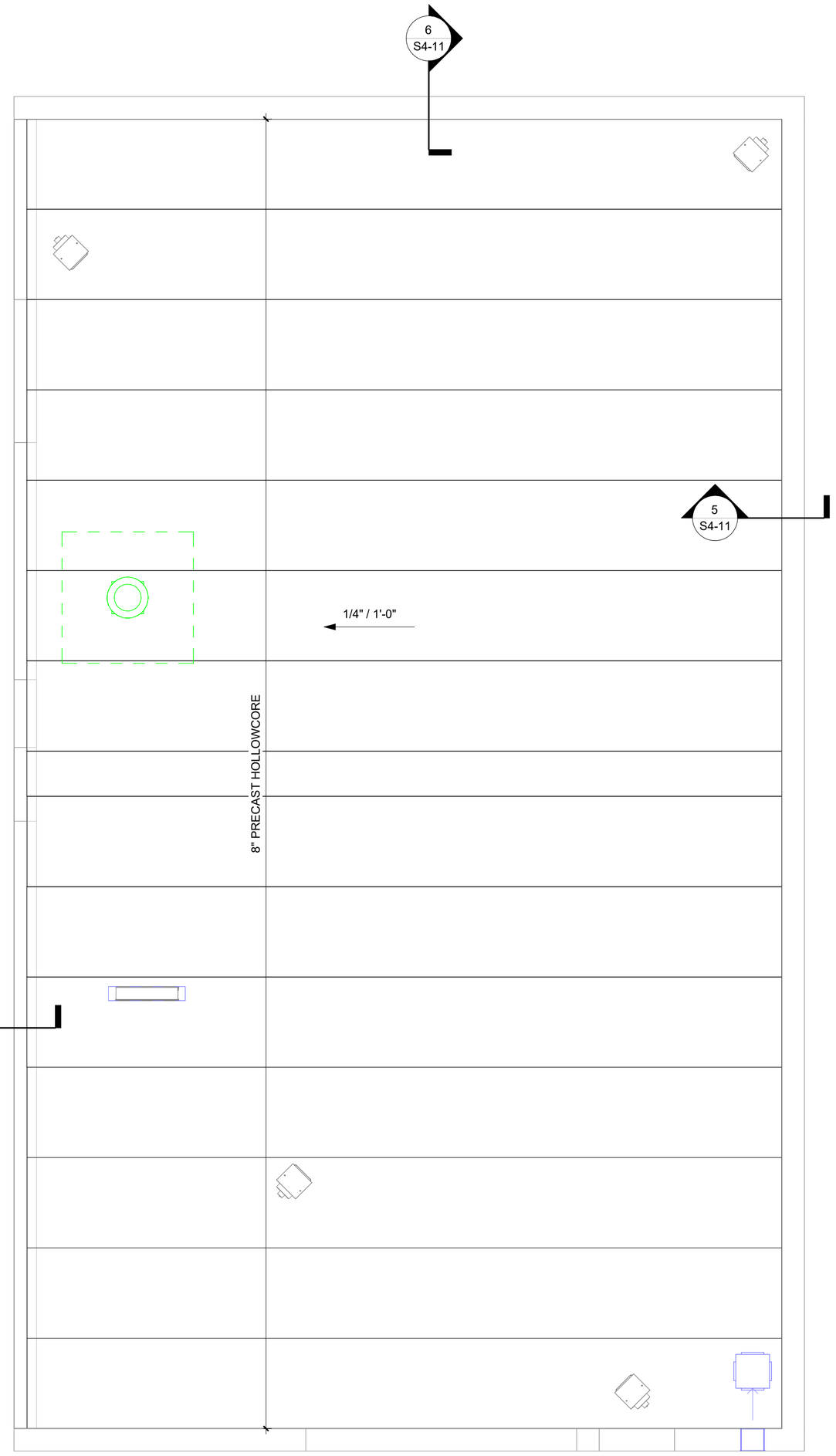
TITLE

FOUNDATION & SLAB DETAILS

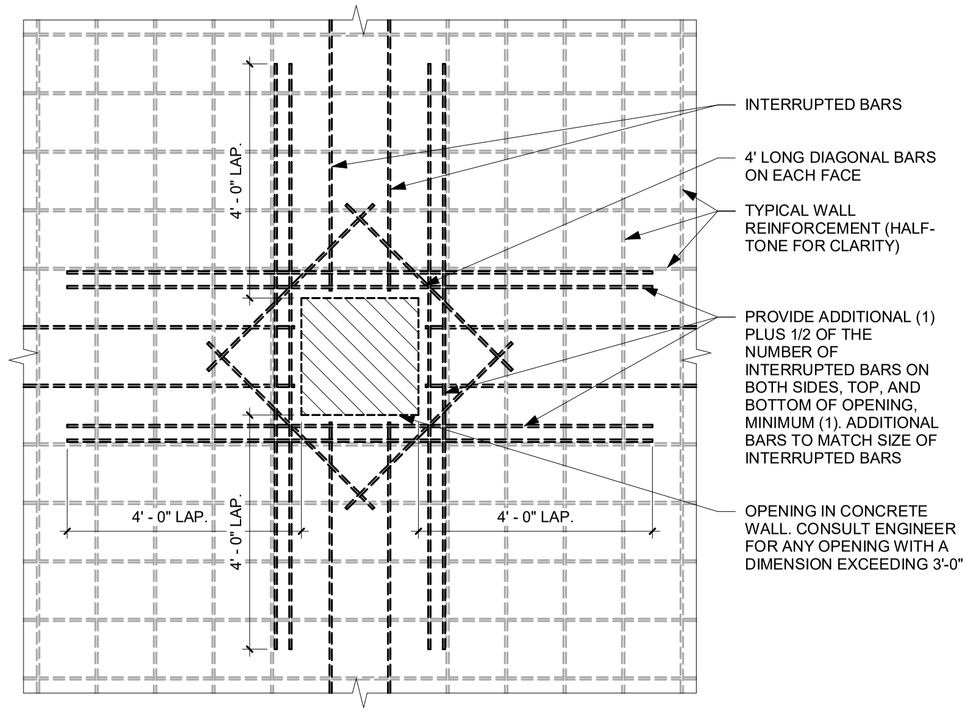
SHEET

S2-12

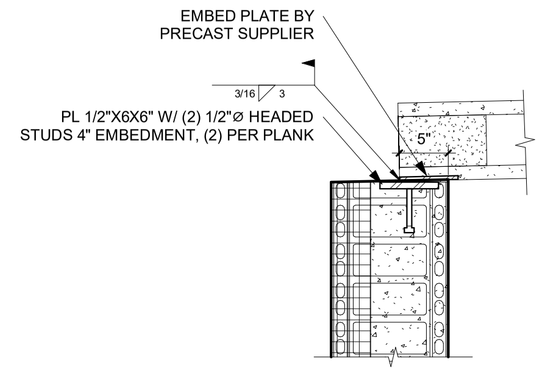
5/28/2025 10:24:34 AM



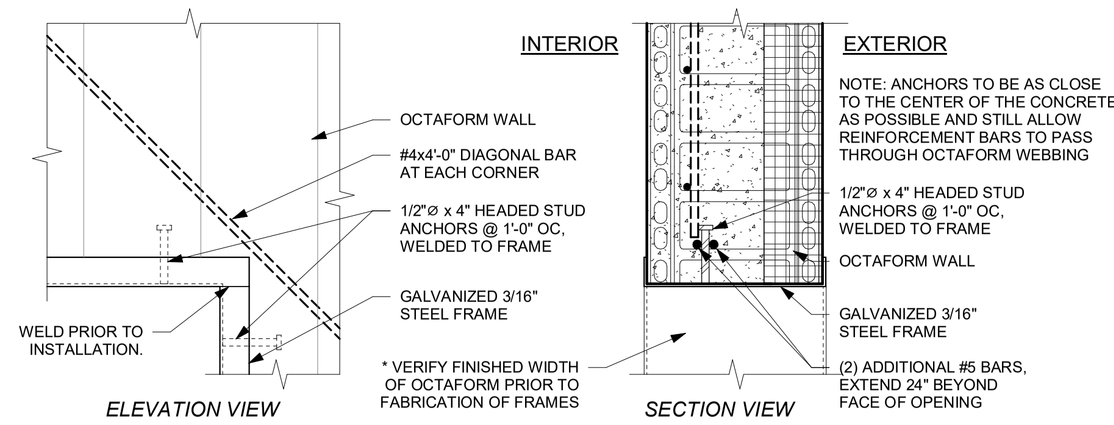
1 ROOF FRAMING PLAN
1/4" = 1'-0"



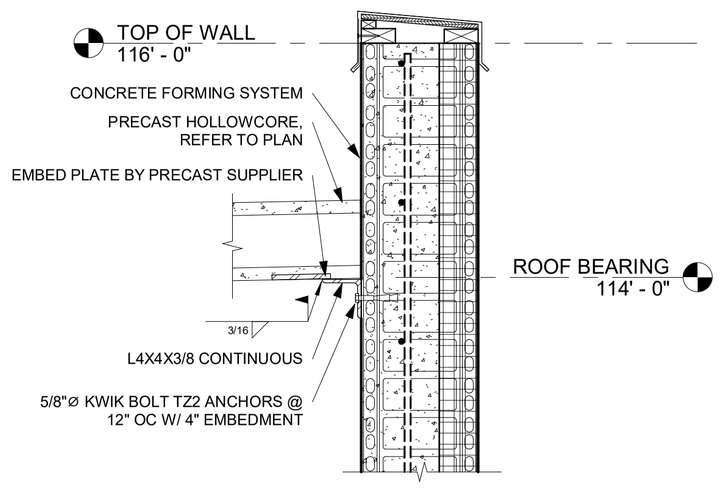
2 TYPICAL CONCRETE WALL PENETRATION
1/2" = 1'-0"



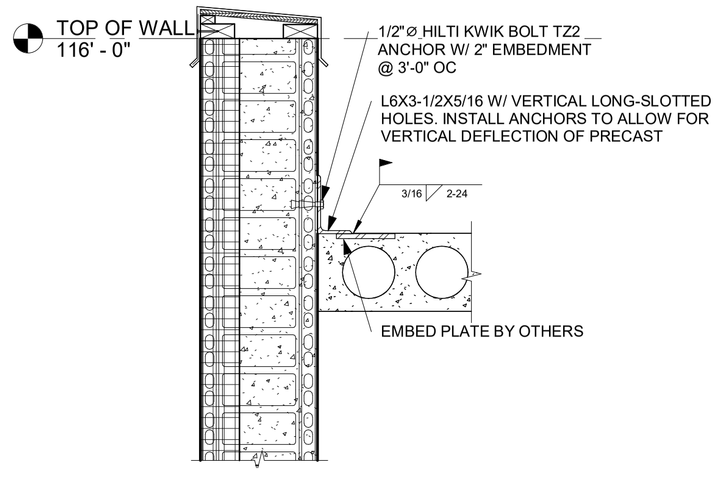
4 HOLLOW CORE BEARING
1" = 1'-0"



3 ROUGH OPENING FRAME FOR OCTAFORM
1 1/2" = 1'-0"



5 HOLLOW CORE BEARING
1" = 1'-0"



6 HOLLOW CORE SIDE CONNECTION
1" = 1'-0"

N

0 1/4" 1/2" 1" 2"

161

5/28/2025 10:24:37 AM

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City of MOVILLE
EST. 1887
IOWA

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PROJECT

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CLIENT PROJECT NO.	

TITLE

ROOF FRAMING PLAN

SHEET

S4-11

TYPICAL ANNOTATIONS

A	- AMPS
ACH	- AIR CHANGES PER HOUR
A.F.F.	- ABOVE FINISH FLOOR
BMS	- BUILDING MANAGEMENT SYSTEM
BOB	- BOTTOM OF BEAM
BOD	- BOTTOM OF DUCT
BOJ	- BOTTOM OF JOIST
BOP	- BOTTOM OF PIPE
BOS	- BOTTOM OF STEEL
BTU/H	- BRITISH THERMAL UNITS PER HOUR
CFM	- CUBIC FEET PER MINUTE
CL	- CENTERLINE
DIA	- DIAMETER
DB	- DECIBELS
DDC	- DIRECT DIGITAL CONTROL
DN	- DOWN
EA	- EXHAUST AIR
EAT	- ENTERING AIR TEMPERATURE (°F)
ESP	- EXTERNAL STATIC PRESSURE
EWT	- ENTERING WATER TEMPERATURE (°F)
FDC	- FIRE DEPARTMENT CONNECTION
FLA	- FULL LOAD AMPS
FPM	- FEET PER MINUTE
FT	- FEET
GC	- GENERAL CONTRACTOR
GPM	- GALLONS PER MINUTE
HD	- HEAD
HP	- HORSEPOWER
KW	- KILOWATT
LAT	- LEAVING AIR TEMPERATURE (°F)
LWT	- LEAVING WATER TEMPERATURE (°F)
MBH	- THOUSANDS OF BTUs PER HOUR
MC	- MECHANICAL CONTRACTOR
MCA	- MINIMUM CIRCUIT AMPACITY
MFR	- MANUFACTURER
MOCP	- MAXIMUM OVER CURRENT PROTECTION
N.I.C.	- NOT IN CONTRACT
NC	- NORMALLY CLOSED
NC	- NOISE CRITERIA
NO	- NORMALLY OPEN
OA	- OUTSIDE AIR (UNCONDITIONED)
OFCI	- OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	- OWNER FURNISHED, OWNER INSTALLED
PC	- PLUMBING CONTRACTOR
PD	- PRESSURE DROP (FEET)
PH.	- PHASE
PSIA	- POUNDS PER SQUARE INCH, ATMOSPHERIC
PSIG	- POUNDS PER SQUARE INCH, GAUGE
RA	- RETURN AIR
RH	- RELATIVE HUMIDITY
RPM	- REVOLUTIONS PER MINUTE
SA	- SUPPLY AIR
TOB	- TOP OF BEAM
TOD	- TOP OF DUCT
TON	- TON OF COOLING (12,000 BTU/H)
TOP	- TOP OF PIPE
TOS	- TOP OF STEEL
TSP	- TOTAL STATIC PRESSURE
TYP.	- TYPICAL
UP	- UP
V / VOLT.	- VOLTAGE
VFD	- VARIABLE FREQUENCY DRIVE
VTR	- VENT THROUGH ROOF

PLUMBING PIPING LEGEND

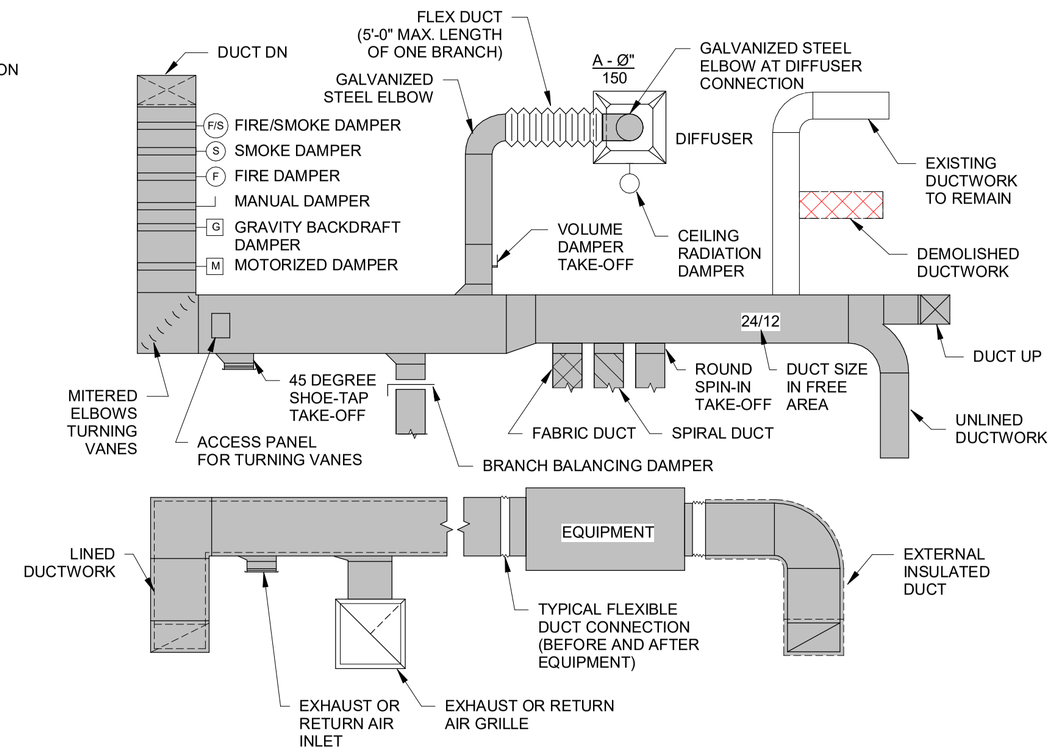
AW	SANITARY ACID WASTE
AV	SANITARY ACID VENT
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
FP-D	FIRE PROTECTION - DRY
FP-PA	FIRE PROTECTION - PRE-ACTION
FP-W	FIRE PROTECTION - WET
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRCULATION
GW	GREASE WASTE
GV	GREASE VENT
FOS	- FUEL OIL SUPPLY
FOR	- FUEL OIL RETURN
LP	LIQUID PROPANE
NG	NATURAL GAS
ST-O	STORM OVERFLOW
ST-P	STORM PRIMARY
V	VENT
W	SANITARY WASTE

DUCTWORK SYMBOLS

- SUPPLY AIR DUCT UP / DOWN
- RETURN AIR DUCT UP / DOWN
- EXHAUST AIR DUCT UP / DOWN

DUCTWORK LEGEND

XX/XX	- RECTANGULAR DUCT SIZE
X"Ø	- ROUND DUCT SIZE
XX/XX"Ø	- FLAT OVAL DUCT SIZE



NOTES:

- THIS DRAWING IS FOR INFORMATIONAL PURPOSES ONLY. ITEMS SHOWN ARE NOT NECESSARILY USED ON THIS PROJECT.
- DUCT SIZE: FIRST NUMBER INDICATES DIMENSION OF SIDE SHOWN. THE SECOND NUMBER INDICATES SIDE NOT SHOWN

PIPING / EQUIPMENT LINE STYLES

- EXISTING
- DEMOLISHED
- NEW

SYMBOL LEGEND

- CONNECT TO EXISTING
- T - THERMOSTAT
- TS - TEMPERATURE SENSOR (DDC)
- H - HUMIDITY SENSOR
- SD - DUCT SMOKE DETECTOR
- CO - CARBON MONOXIDE SENSOR
- CO_2 - CARBON DIOXIDE SENSOR
- NO_2 - NITROGEN DIOXIDE SENSOR
- P - PRESSURE SENSOR

GRILLE, REGISTER, DIFFUSER TAG

GRILLE, REGISTER, DIFFUSER TYPE.

A-XX/XX — DUCT INLET SIZE

CFM — DESIGN CFM

PIPING TAGS

NOMINAL PIPE SIZE

##"-XXX — PIPE SYSTEM ABBREVIATION

##"-XXX (##) — FIXTURE UNITS / FLOW

PIPING SYMBOLS

- ISOLATION VALVE
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GAS COCK
- GATE VALVE
- GATE VALVE (NORMALLY CLOSED)
- GLOBE VALVE
- GLOBE VALVE (NORMALLY CLOSED)
- NEEDLE VALVE
- NEEDLE VALVE (NORMALLY CLOSED)
- 2 WAY CONTROL VALVE
- 3 WAY CONTROL VALVE
- CLEAN OUT
- FLOOR DRAIN
- FLOOR SINK
- WALL HYDRANT/ HOSE BIBB
- REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
- UNION
- PIPING DROP
- INLINE PIPING DROP
- PIPING RISE
- INLINE PIPING RISE
- PIPE CAP
- PIPE BREAK
- FLEXIBLE CONNECTOR
- RELIEF VALVE
- METER
- WALL / END CLEANOUT
- THERMOMETER
- STRAINER
- IN LINE PUMP
- PIPE ANCHOR
- PIPE GUIDE
- STEAM TRAP

SHEET ANNOTATION SYMBOLS

- 01 - KEYNOTE
- 01 - REVISION NUMBER
- 01 / 01 - DETAIL NUMBER ON SHEET / SHEET NUMBER
- ## - ## - SPOT ELEVATION (BOTTOM OF ELEMENT)

GENERAL MECHANICAL / PLUMBING NOTES:

1. CONTRACT DOCUMENTS SHALL BE ISSUED TO ALL SUBCONTRACTORS BY THE GENERAL CONTRACTOR IN COMPLETE SETS IN ORDER TO ACHIEVE THE FULL EXTENT AND COMPLETE COORDINATION OF ALL WORK.
2. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS. WRITTEN DIMENSIONS GOVERN. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
3. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE LOCAL, STATE, AND NATIONAL LAWS, CODES, ORDINANCES, AND REGULATIONS, AS WELL AS LOCAL UTILITY REQUIREMENTS. PROVIDE ALL ADDITIONAL ACCESSORIES EQUIPMENT AND OTHER WORK NECESSARY FOR A PROPER AND OPERATIONAL INSTALLATION. TO SATISFY WARRANTY REQUIREMENTS, CODES OR STANDARDS. VERIFY THAT ALL EQUIPMENT PROVIDED IS SUITABLE FOR INTENDED USE. INSTALL ALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
4. MECHANICAL/PLUMBING DRAWINGS ARE DIAGRAMMATIC IN NATURE. ADDITIONAL OFFSETS, FITTINGS, AND ACCESSORIES MAY BE NEEDED FOR INSTALLATION OF NEW MECHANICAL ELEMENTS. FIELD VERIFY EXISTING CONDITIONS AND COORDINATE WITH OTHER TRADES, ARCHITECTURAL DRAWINGS, AND STRUCTURAL DRAWINGS.
5. WORK NOT SPECIFICALLY SHOWN IN DETAIL, INDICATED BY REFERENCE, OR OTHERWISE IMPLIED, SHALL BE PROVIDED IN ACCORDANCE WITH THE TRADE OR INDUSTRY BEST STANDARD PRACTICE TO PROVIDE A COMPLETE INSTALLATION.
6. COORDINATE CLOSELY BETWEEN MECHANICAL AND PLUMBING CONTRACTORS TO UTILIZE THE SAME SUPPORTS WHERE POSSIBLE.
7. ALL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE ROUTED TO AVOID CONFLICTS WITH STRUCTURE, OTHER PIPING, ETC. UNLESS SPECIFICALLY DIMENSIONED, THE PIPE AND DUCTWORK SHOWN INDICATES GENERAL LOCATION ONLY, CONTRACTOR SHALL COORDINATE.
8. ANY PAINTED SURFACES AFFECTED BY NEW WORK THAT REQUIRES PATCHING OR REPAIR SHALL BE REPAINTED WITH A MINIMUM OF TWO COATS OF PAINT TO MATCH EXISTING ADJACENT COLOR. THIS WORK BY GENERAL CONTRACTOR.
9. OPENINGS
   A. PATCH ALL WALL AND FLOOR OPENINGS LEFT BY ANY REMOVAL OF MECHANICAL ELEMENTS, INCLUDING PIPING AND DUCTWORK. FINISH TO MATCH ADJACENT.
   B. ANY HOLES OR OPENINGS CREATED IN THE ROOFING STRUCTURE AS A RESULT OF DEMOLITION OR NEW WORK SHALL BE PATCHED AND REPAIRED TO PROVIDE A PERMANENT WATERPROOF SEAL USING MATERIALS THAT MATCH ADJACENT ROOFING MATERIALS. ALL WORK SHALL COMPLY WITH ANY ROOF WARRANTIES.
   C. PROVIDE CONTINUOUS SEALANT AROUND ALL MATERIALS AT EXTERIOR WALL PENETRATIONS. SEAL ALL OPENINGS IN WALLS, FLOORS, CEILINGS AND ROOFS AROUND DUCTS, PIPES, VENTS, TRAPS, CONDUIT AND ALL OTHER PENETRATIONS WITH FIRESTOPPING AS SPECIFIED AND REQUIRED BY ALL APPLICABLE CODES.
   D. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL SLEEVES AND/OR OPENINGS WHERE REQUIRED TO RUN NEW PIPING, DUCTWORK, OR OTHER MECHANICAL ELEMENTS, EXCEPT WHERE OTHERWISE INDICATED. PENETRATION SEALANT RATING SHALL MATCH STRUCTURE RATING. COORDINATE WITH GENERAL CONTRACTOR TO REPAIR/RESTORE AFFECTED OCCUPIED SPACE WALLS, FLOORS, AND CEILINGS TO MATCH EXISTING.
   E. OPENINGS FOR DUCTWORK THROUGH WALLS AND FLOORS SHALL BE NEATLY SAW-CUT WITH A MAXIMUM OVER CUT OF 1" AROUND REQUIRED DUCT OPENINGS. REPAIR ALL AREAS AROUND PENETRATIONS WITH BACK-UP WALL AND FINISH TO MATCH EXISTING. DO NOT REDUCE INSULATION THICKNESS WHERE DUCT PASSES THROUGH OPENINGS.
   F. WHERE OPENINGS ARE CUT THRU WALL PROVIDE STEEL ANGLE REINFORCING TO STABILIZE THE STRUCTURE.
   G. OPENINGS FOR PIPING AND ROUND DUCT THROUGH WALLS AND FLOORS SHALL BE NEATLY CORE-DRILLED LARGE ENOUGH FOR INSULATION TO PASS THROUGH, SLEEVED AND GROUTED. PROVIDE FIRE CAULKING AND/OR F.S. DAMPERS AT RATED FLOORS AND WALLS.
10. PIPING:
    A. ROUTE PIPING IN ORDERLY MANNER AND MAINTAIN GRADIENT. ROUTE PARALLEL AND PERPENDICULAR TO WALLS. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT. PROVIDE ACCESS WHERE VALVES AND FITTINGS ARE NOT EXPOSED. INSULATED PIPES CONVEYING FLUIDS BELOW AMBIENT TEMPERATURE: INSULATE ENTIRE SYSTEM INCLUDING FITTINGS, VALVES, UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, PUMP BODIES, AND EXPANSION JOINTS. CONTINUE INSULATION THROUGH WALLS, SLEEVES, PIPE HANGERS, AND OTHER PIPE PENETRATIONS.
    B. PIPING ABOVE SUSPENDED CEILINGS SHALL BE INSTALLED A MINIMUM OF 6" ABOVE THE CEILING LEVEL.
    C. PIPING SIZES TO EQUIPMENT, AND EQUIPMENT SUPPORTS SHALL BE VERIFIED AND ADJUSTED TO MATCH THE ACTUAL EQUIPMENT PROVIDED.
    D. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
11. DUCTWORK:
    A. INSTALL, SUPPORT, AND SEAL DUCTS IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. FLEXIBLE DUCTS: CONNECT TO METAL DUCTS WITH LIQUID ADHESIVE PLUS TAPE. VERIFY THAT DUCTS HAVE BEEN TESTED BEFORE APPLYING INSULATION MATERIALS.
    B. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS, AND ELSEWHERE AS INDICATED.
    C. AT FANS AND MOTORIZED EQUIPMENT ASSOCIATED WITH DUCTS, PROVIDE FLEXIBLE DUCT CONNECTIONS IMMEDIATELY ADJACENT TO THE EQUIPMENT.
    D. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFF TO DIFFUSERS, GRILLES, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE, OR REGISTER ASSEMBLY. PROVIDE ADDITIONAL BALANCING DAMPERS WHERE NECESSARY TO BALANCE DIFFUSER AIR FLOWS.
12. SEAL AND FIRE CAULK ALL PENETRATIONS AS NECESSARY TO MAINTAIN FIRE RATING.
13. ALL FIELD CHANGES ARE TO BE PRE-APPROVED.

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	
DRAWN BY	MJN
DESIGNED BY	MJL
REVIEWED BY	MJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	

TITLE

MECHANICAL TITLE SHEET

SHEET

M0-01

2" 1" 1/4" 1/2" 0

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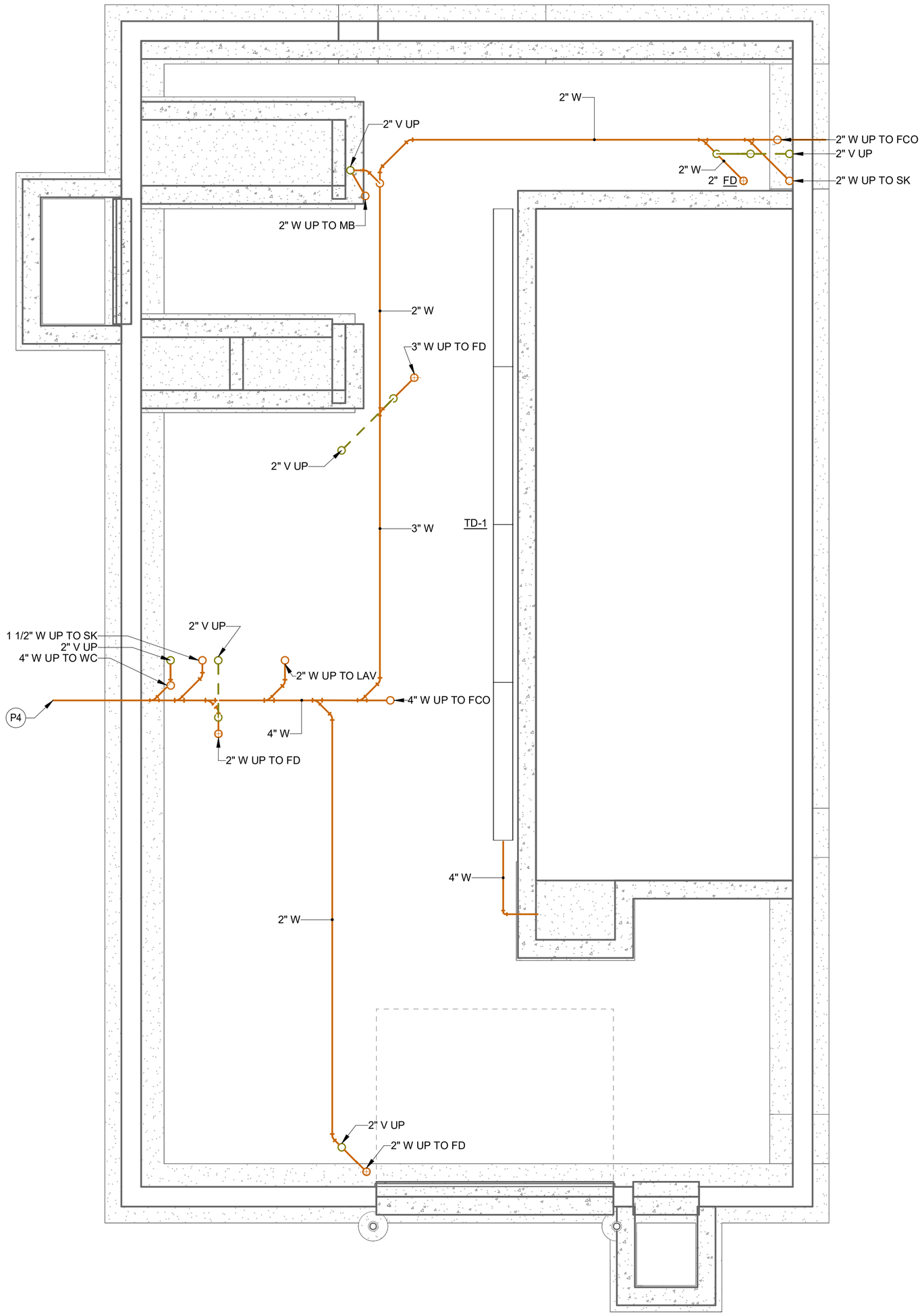
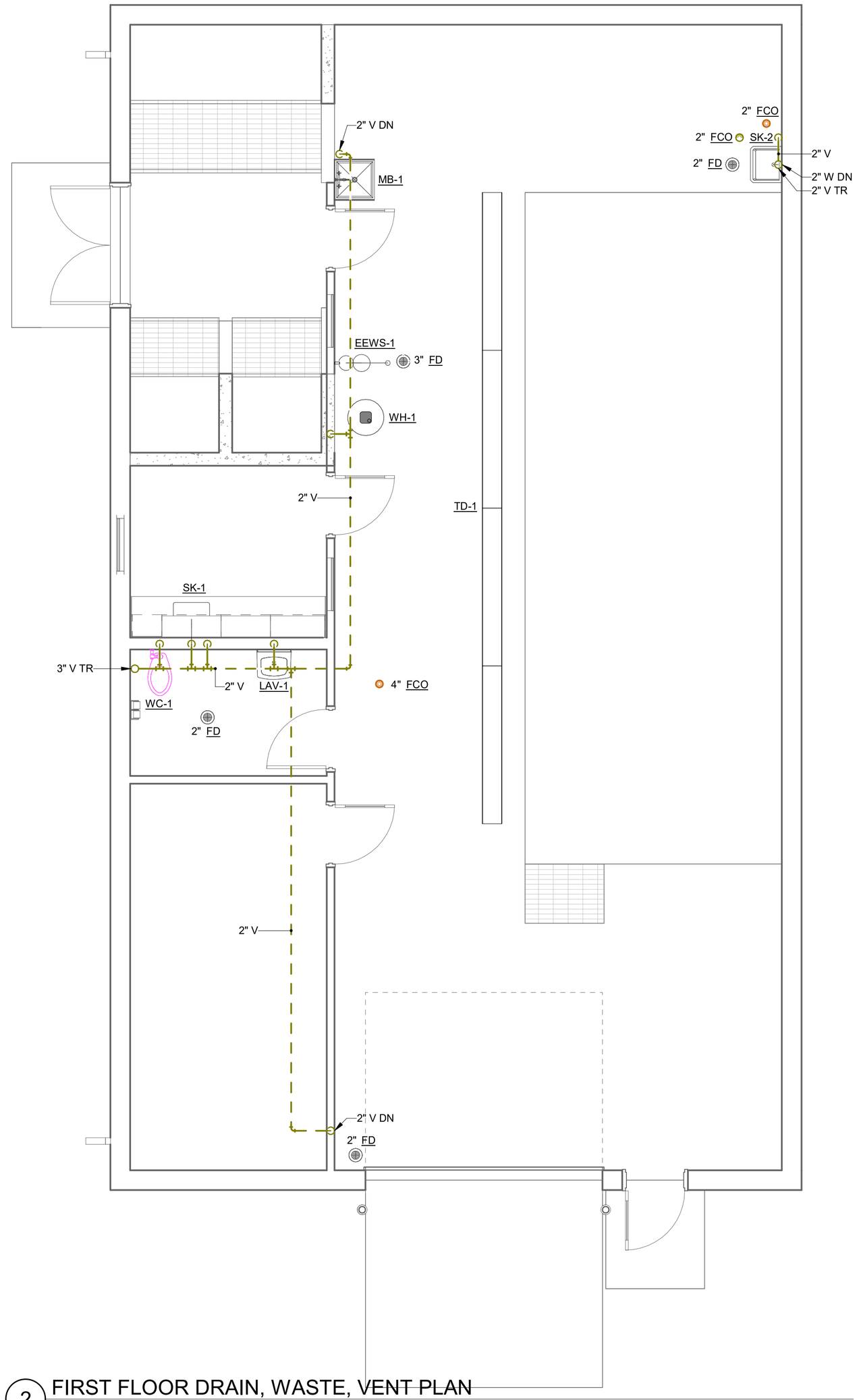
KEYNOTE LEGEND

P4	REFERENCE CIVIL DRAWINGS FOR CONTINUATION OF SANITARY LINE.



1 FOUNDATION DRAIN, WASTE, VENT PLAN
1/4" = 1'-0"



2 FIRST FLOOR DRAIN, WASTE, VENT PLAN
1/4" = 1'-0"

N

0 1/4" 1/2" 1" 2"

163

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TITLE

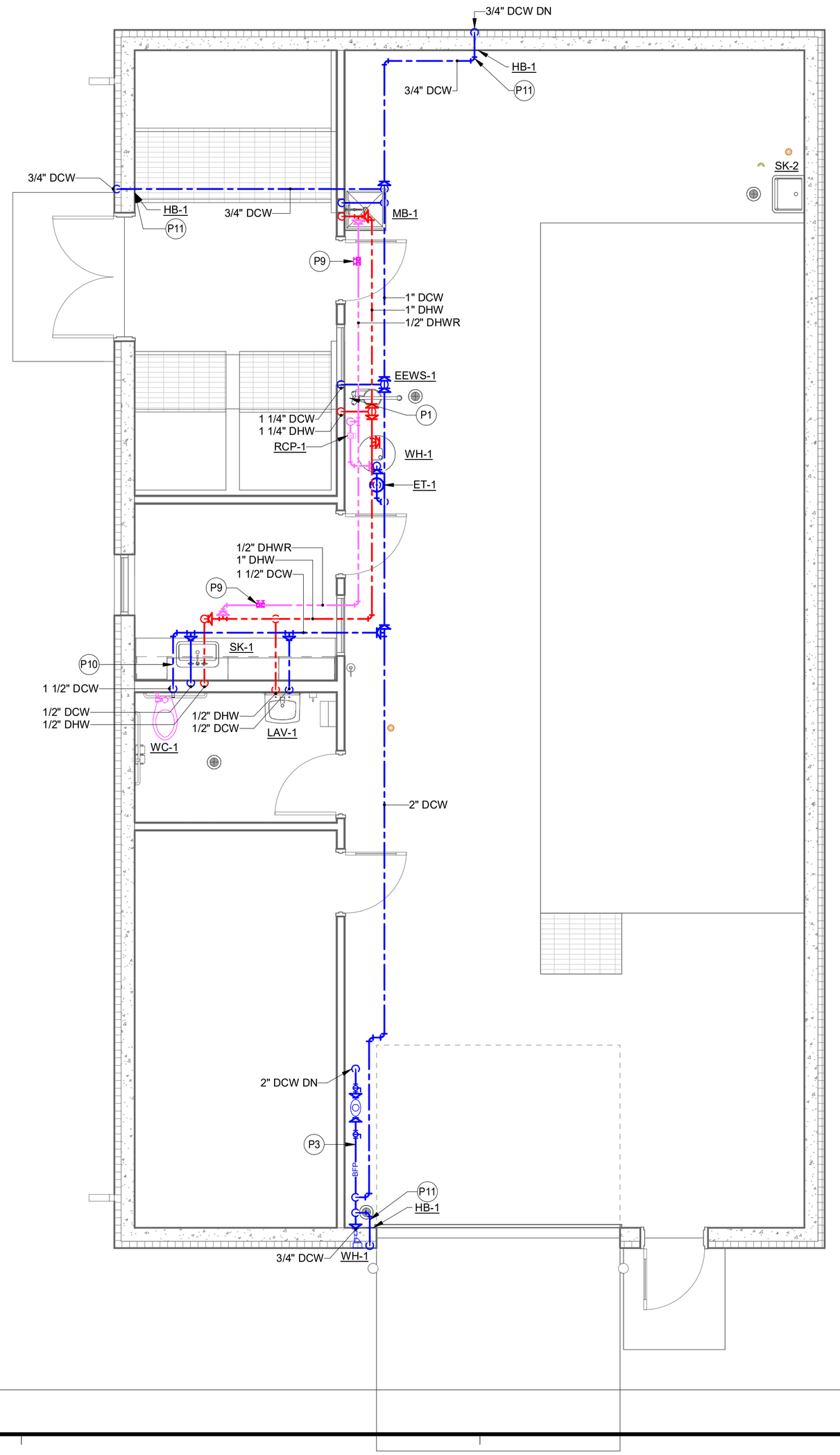
LOWER & FIRST FLOOR SANITARY PLUMBING PLAN

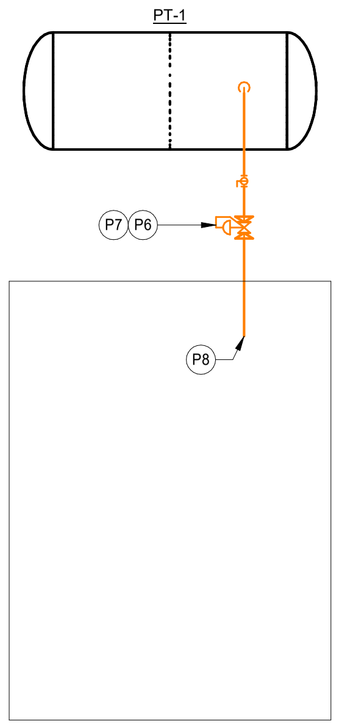
SHEET

P2-10

KEYNOTE LEGEND

P1	INSTALL THERMOSTATIC MIXING VALVE COMPLYING WITH ASSE 1071 FOR EMERGENCY COMBINATION SHOWER/EYEWASH STATION.
P3	REFERENCE WATER SERVICE ENTRY DETAIL FOR MORE INFORMATION. REFERENCE CIVIL DRAWINGS FOR MORE INFORMATION ON WATER LINE ENTRY INTO BUILDING.
P6	COORDINATE PROPANE REGULATOR PRESSURE WITH GENERATOR REQUIREMENTS. SET AT 9 IN H20 FOR BASIS OF DESIGN GENERATOR.
P7	INSTALL REGULATOR, 4" DIRT LEG AND SHUT-OFF VALVE ON PROPANE PIPING. SEE DETAIL.
P8	CONTRACTOR TO VERIFY LOCATION OF CONNECTION TO GENERATOR.
P9	INSTALL CIRCUIT SOLVER SET TO 1 GPM.
P10	INSTALL WATER HAMMER ARERESTOR PER CODE.
P11	HB-1 MOUNTED ON INTERIOR WALL 24" AFF.





N

1 FIRST FLOOR DOMESTIC WATER PLAN
1/4" = 1'-0"

0 1/4" 1/2" 1" 2"

164

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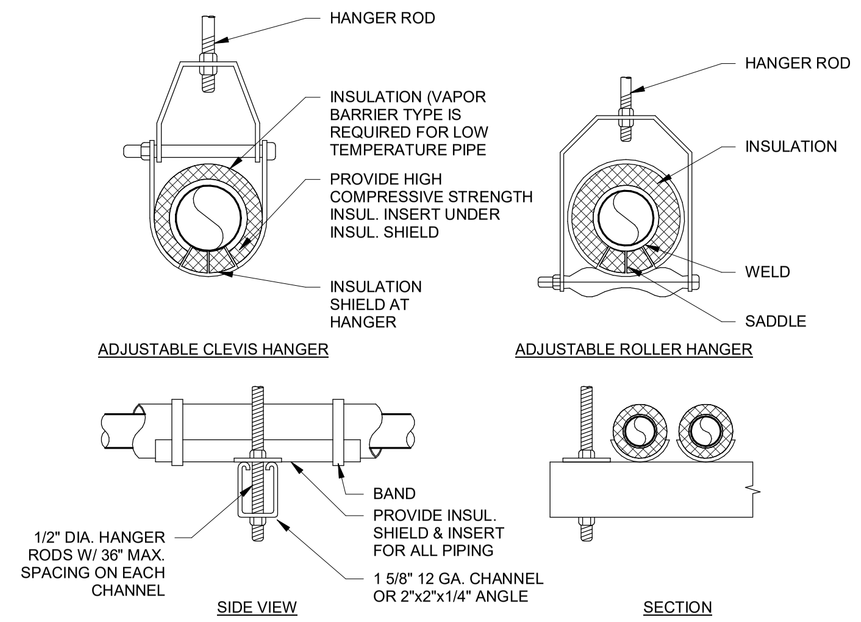
TITLE

FIRST FLOOR POTABLE WATER PLUMBING PLAN

SHEET

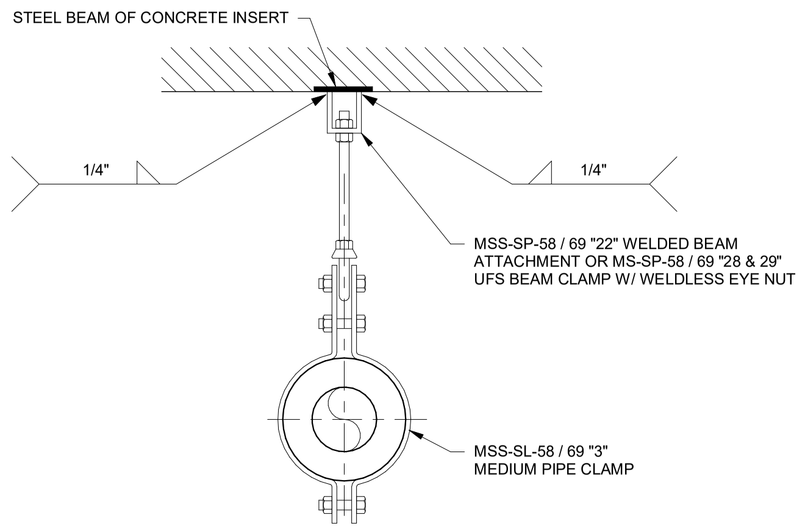
P2-21



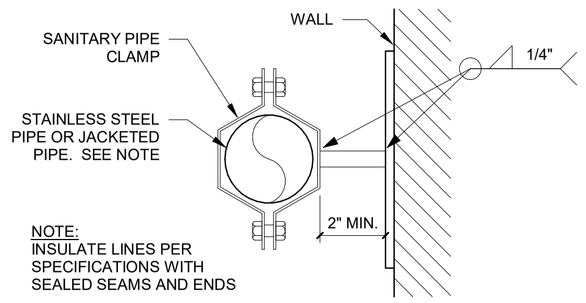
NOTE: SEE MFGR. THREADED ROD DATA FOR LOAD CARRYING CAPACITIES
ROD: ASTM.A36

MAXIMUM PIPE SUPPORT SPACING - FEET																		
NOMINAL SIZE	THRU 3/4"	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
STEEL PIPE - STD. WT.	7 FT.	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
COPPER PIPE	5 FT.	6	7	8	8	9	10	12	13	14	16	--	--	--	--	--	--	--
SCH. 40 PVC (100')	4 FT.	4	4	5	5	5	5	5	6	6	--	--	--	--	--	--	--	--
POLYPROPYLENE (PPR)	32 IN.	4	4	4	4	4	4	4	4	4	--	--	--	--	--	--	--	--
NOTE: FOR TRAPEZE HANGER, TAKE SPACING OF SMALLEST SIZE ON TRAPEZE																		

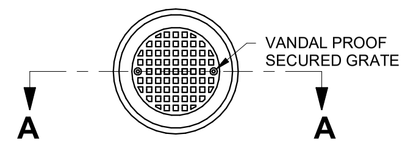
1 PIPE SUPPORT
NOT TO SCALE



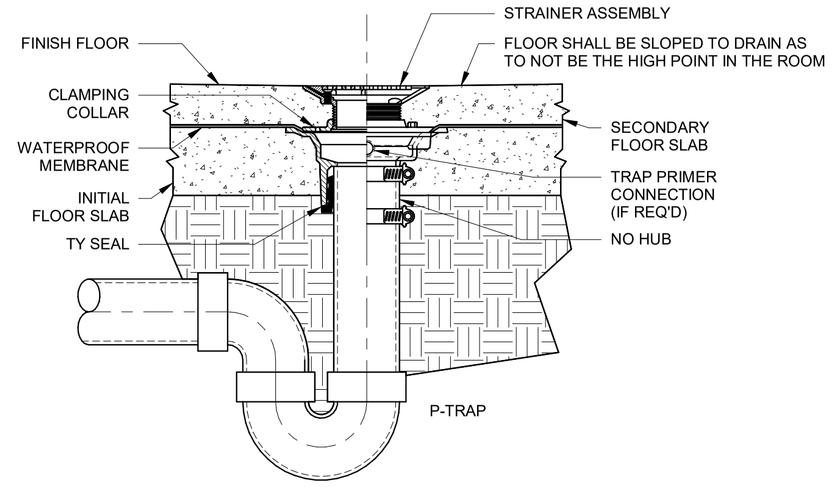
2 PIPE HANGER / CLAMP DETAIL
NOT TO SCALE



3 PIPE DROP WALL STANDOFF
NOTE
NOT TO SCALE

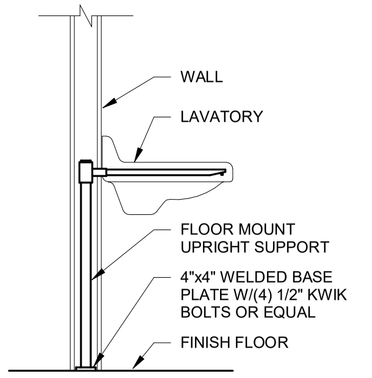


PLAN VIEW

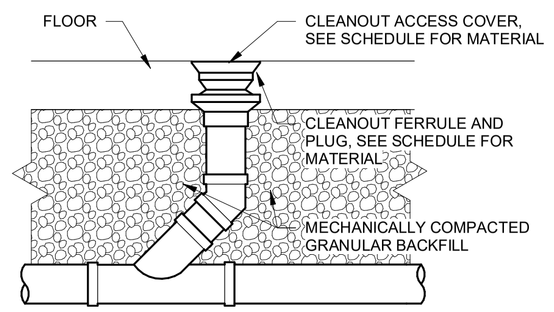


SECTION A-A

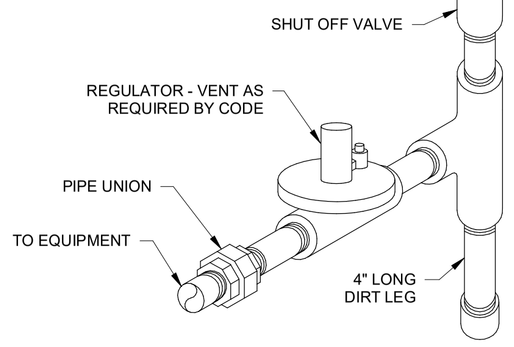
4 TYPICAL FLOOR DRAIN DETAIL
NOT TO SCALE



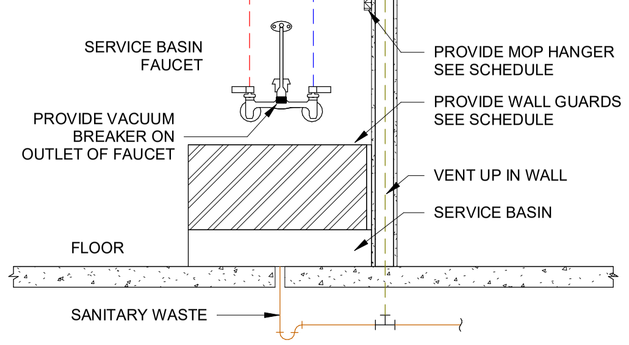
5 WALL HUNG LAVATORY WALL SUPPORT DETAIL
NOT TO SCALE



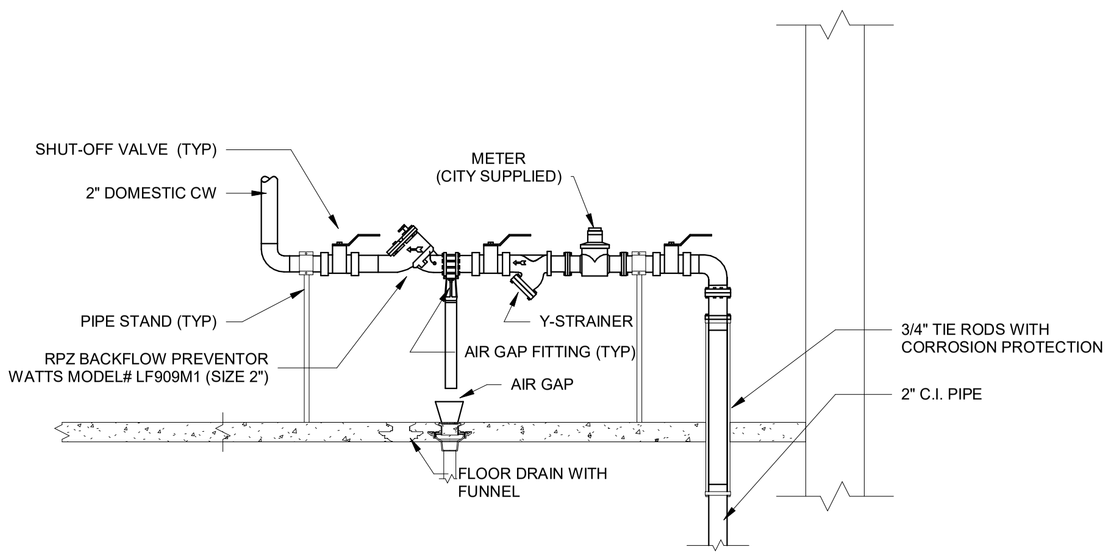
6 CLEANOUT DETAIL
NOT TO SCALE



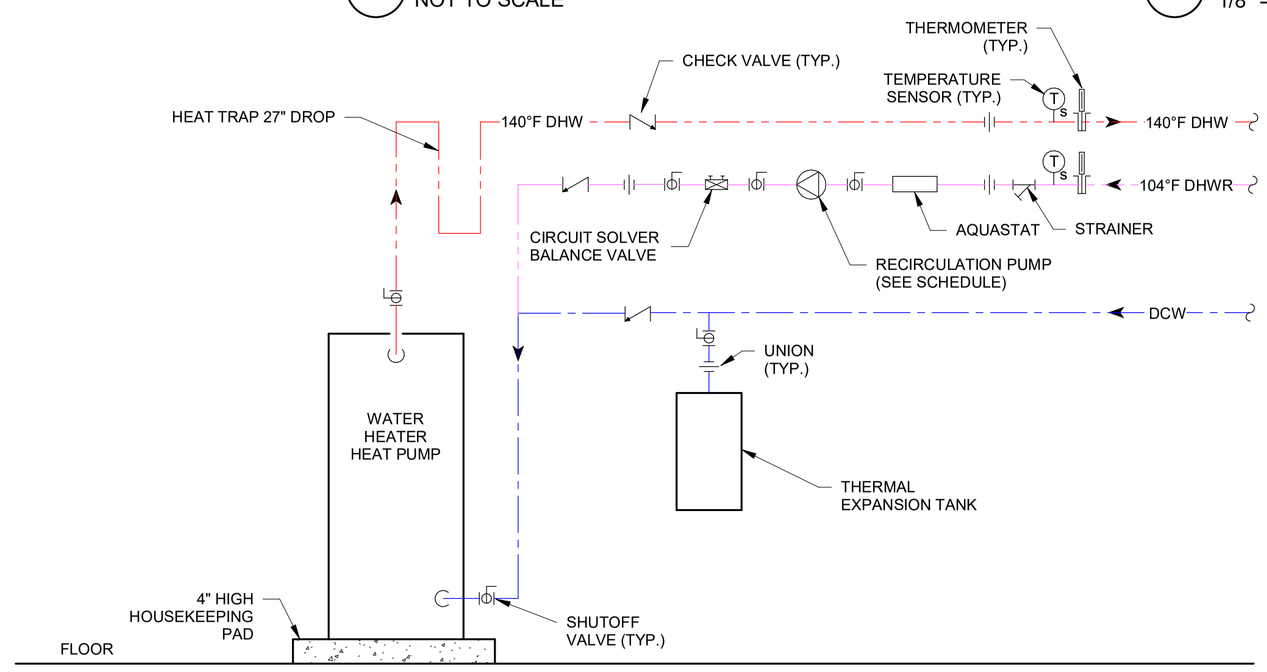
7 GAS REGULATOR DETAIL
NOT TO SCALE



10 SERVICE BASIN PIPING DETAIL
1/8" = 1'-0"



8 WATER SERVICE ENTRY DETAIL
NOT TO SCALE



9 SINGLE TEMPERATURE WATER HEATER WITH MIXING VALVE
NOT TO SCALE

2" 1" 1/4" 1/2" 0

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	
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DESIGNED BY	MJL
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TITLE

PLUMBING DETAILS

SHEET

P5-11

PLUMBING FIXTURE SCHEDULE

FIXTURE	MFR	MODEL	FINISH / COLOR	TRIM			WASTE	VENT	COLD WATER	HOT WATER	NOTES
				MFR	MODEL	TYPE					
EEWS-1	BRADLEY	S19-314EW	YELLOW	BRADLEY	S19-2150 EFX20	MIXING VALVE	1 1/4"	1 1/2"		1 1/4"	PROVIDE WITH IMPACT RESISTANT SHOWER HEAD AND BOWL IN YELLOW, STAINLESS STEEL PUSH AND PULL HANDLE, ANSI APPROVED SIGNAGE, AND GALVANIZED PIPING. PROVIDE WITH THERMOSTATIC MIXING VALVE.
FCO	WADE	6000 SERIES					VARIES				SEE PLANS FOR SIZE
FD	WADE	1100 SERIES	NICKEL BRONZE	WADE	TYPE 'A'	ROUND GRID TOP	VARIES				PROVIDE AND INSTALL UNIT FOR FINISHED FLOOR, ROUND NICKEL BRONZE TOP. PROVIDE AND INSTALL UNIT WITH NICKEL BRONZE STRAINER. FLOOR DRAINS SHALL BE SIZED PER PLANS.
HB-1	WOODFORD	19	BRASS	WOODFORD		TEE KEY			3/4"		UNIT TO BE INSTALLED AT 24" A.F.F. VERIFY PIPE CONNECTION TYPE.
LAV-1	KOHLER	K-2196	WHITE	SLOAN	EBF-650-BDT	SINGLE LEVEL HANDLE FAUCET	1 1/2"	1 1/2"	1/2"	1/2"	PROVIDE AND INSTALL WITH PVC P-TRAP, ANGLE STOPS WITH LOOSE KEY HANDLES AND VANDAL PROOF GRID STRAINER. LAV FAUCET TO BE 0.5 GPM. PROVIDE LAWLER MODEL# TMM-1070 MIXING VALVE. MIXING VALVE TO BE ASSE 1070 APPROVED AND WATER TEMP TO BE SET AT 105°F.
MB-1	MUSTEE	63M	WHITE	CHICAGO	897-CP	WALL MOUNT FAUCET	2"	1 1/2"	3/4"	3/4"	PROVIDE AND INSTALL VACUUM BREAKER, PAIL HOOK, MOP HANGER AND STRAINER.
SK-1	CHICAGO	786-GR8E35V317XKAB	STAINLESS STEEL	CHICAGO	786-GR8E35V317XKAB	LEVER HANDLE FAUCET	1 1/2"	1 1/2"	1/2"	1/2"	FAUCET: DECK MOUNTED, 8" FIXED CENTERS, CERAMIC CARTRIDGES, 13 1/8" HIGH WITH 8" RESTRICTED SWING GOOSENECK SPOUT, NOMINAL 2.2 GPM VANDAL PROOF OUTLET, QUARTER TURN VANDAL PROOF WRIST BLADE HANDLE, THREE HOLE MOUNT, POLISHED CHROME FINISH. PROVIDE 1/2" CHROME PLATED ANGLE STOPS WITH WHEEL HANDLE AND FLEXIBLE RISERS.
SK-2	RUGGED TUB	B24W	WHITE				---	---	---	---	HEAVY-DUTY UTILITY SINK W/ LEGS AND INTEGRATED BOTTLE SHELF. PROVIDE AND INSTALL WITH ELKAY LK-18 DRAIN, 16 GAUGE P-TRAP AND CODE APPROVED ELKAY LK105 AIR GAP.
TD-1	ZURN INDUSTRIES, LLC	Z882									COORDINATE PIPING CONNECTIONS WITH GENERAL CONTRACTOR. SEE PLUMBING PLANS FOR PIPE SIZING. SEE STRUCTURAL PLANS FOR TRENCH DRAIN DIMENSIONS.
WC-1	KOHLER	K-96057	WHITE	SLOAN	8111	AUTOFLUSH VALVE (BATTERY)	3"	2"	1"		PROVIDE HEAVY DUTY ELONGATED WHITE OPEN FRONT PLASTIC SEAT, CHURCH 9500C OR EQUIVALENT.
WH-1	WOODFORD	B67	NICKEL BRONZE	WOODFORD		REMOVABLE KEY			3/4"		FREEZELESS LOCKABLE BOX WALL HYDRANT W/DOUBLE CHECK BACKFLOW PREVENTER. LOCATE AT 2'-0" ABOVE F.G.

ELECTRIC WATER HEATER SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE UNIT WITH LOCAL DISCONNECT.

MARK	MFR	MODEL	TEMPERATURE RISE (°F)	STORAGE VOLUME (GAL)	RECOVERY RATE (GPH)	PIPING CONNECTIONS		ELECTRICAL		NOTES
						DCW	DHW	VOLT / PH.	AMPS	
WH-1	A.O. SMITH	DEN-66	120 °F	60.00 CF	101	3/4"	3/4"	480/3	44 A	1, 2

EXPANSION TANK SCHEDULE

MARK	MFG	MODEL	LOCATION	SERVICE	TANK VOL. (GAL)	WEIGHT	TANK ACCEPTANCE	FITTING SIZE	DIAMETER	LENGTH	NOTES
ET-1	BELL & GOSSETT	1BN318LF	WATER ROOM	DOMESTIC WATER	4.4	9 lb	3.2	3/4"	11	15	

RECIRCULATION PUMP SCHEDULE

NOTES:
1. INSTALL UNITS AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PUMP SHALL CONTAIN NO LEAD AND BE RATED FOR POTABLE WATER APPLICATIONS.
3. CONTROL PUMP VIA SETPOINT TEMPERATURE CONTROL TO MAINTAIN 100°F-104°F TEMPERATURE IN LOOP.
4. PROVIDE CIRCULATION PUMP WITH AUTOMATIC TIMER AND AQUASTAT.
5 DISCONNECT BY ELECTRICAL CONTRACTOR. COORDINATE WITH EC PRIOR TO ORDERING.

MARK	MANUFACTURER	MODEL	SERVICE	PUMP CONSTRUCTION	GPM	HEAD LOSS (IN FEET)	ELECTRICAL		NOTES
							VOLTAGE / PH.	AMPS	
RCP-1	BELL & GOSSETT	ECOCIRC 20-18	DHWR	IN-LINE	2	21	115/1	1	1, 2, 3, 4, 5

VESSEL SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. TANK TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH ASME SECTION VIII, DIVISION 1 CODE.
3. TANK TO BE RATED FOR 250 PSI @ 400°F.
4. TANK TO BE DESIGNED TO DELIVER 700 CFH OF VAPOR PROPANE TO THE GENERATOR AT 9 IN H20 PSI. TANK TO BE SUPPLIED WITH VAPORIZER AND OTHER ACCESSORIES AS NEEDED TO ACHIEVE DESIGN DELIVERY.
5. TANK TO BE SUPPLIED WITH LEVEL INDICATOR.
6. TANK TO BE SUPPLIED PAINTED OR POWDER COATED ON ALL EXTERIOR SURFACES WITH DURABLE EXTERIOR-RATED PAINT OR COATING FOR RUST PROTECTION.
7. TANK TO BE SUPPLIED WITH LEGS AND SET, LEVELED AND ANCHORED INTO PLACE BY THE MECHANICAL CONTRACTOR.

MARK	TYPE	ORIENTATION	OUTSIDE DIAMETER (IN)	VOLUME (GAL)	TYPE FUEL	NOTES
PT-1	PROPANE TANK	HORIZONTAL	41	1000	PROPANE	1, 2, 3, 4, 5, 6, 7

0 1/4" 1/2" 1" 2"

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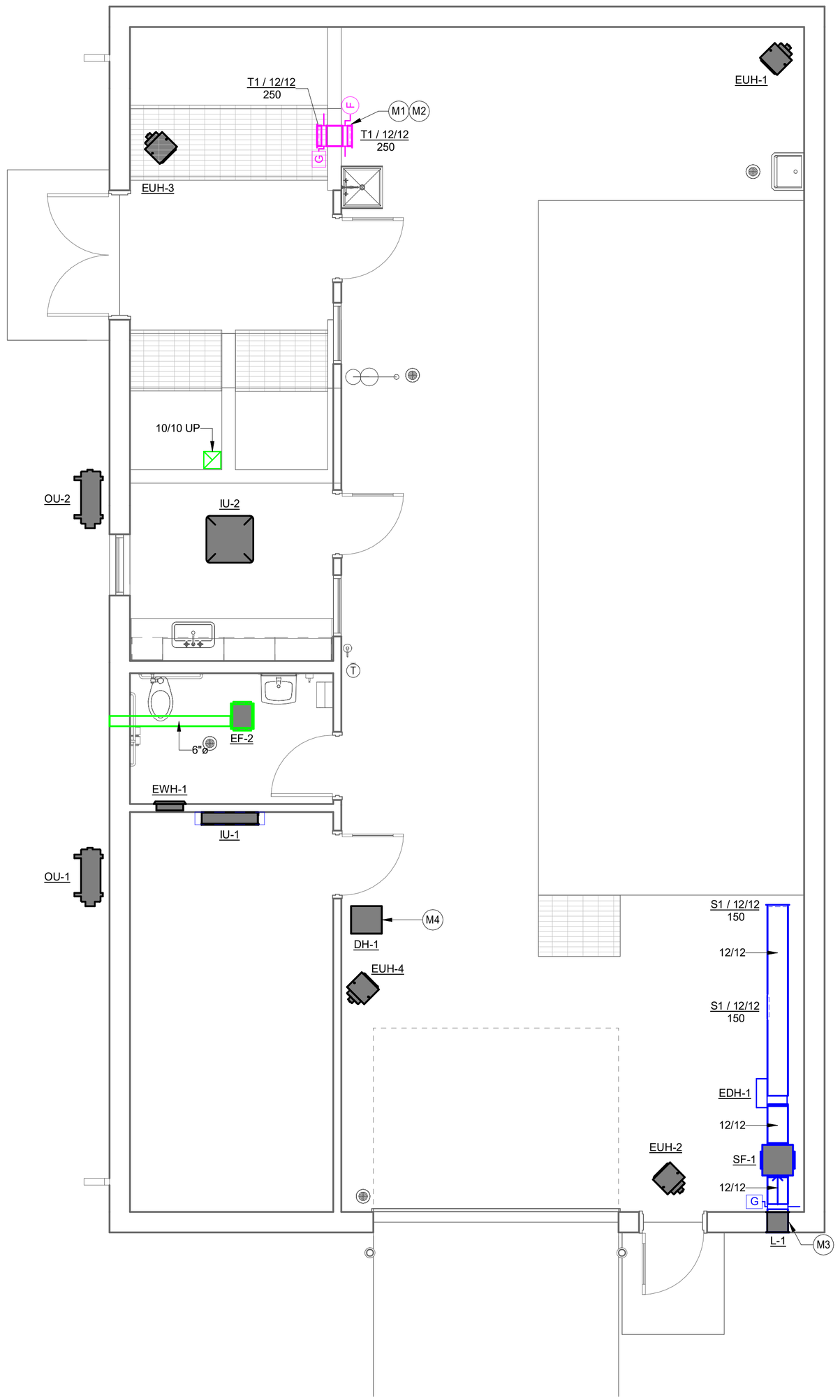
PLUMBING SCHEDULES AND SPECIFICATIONS

SHEET

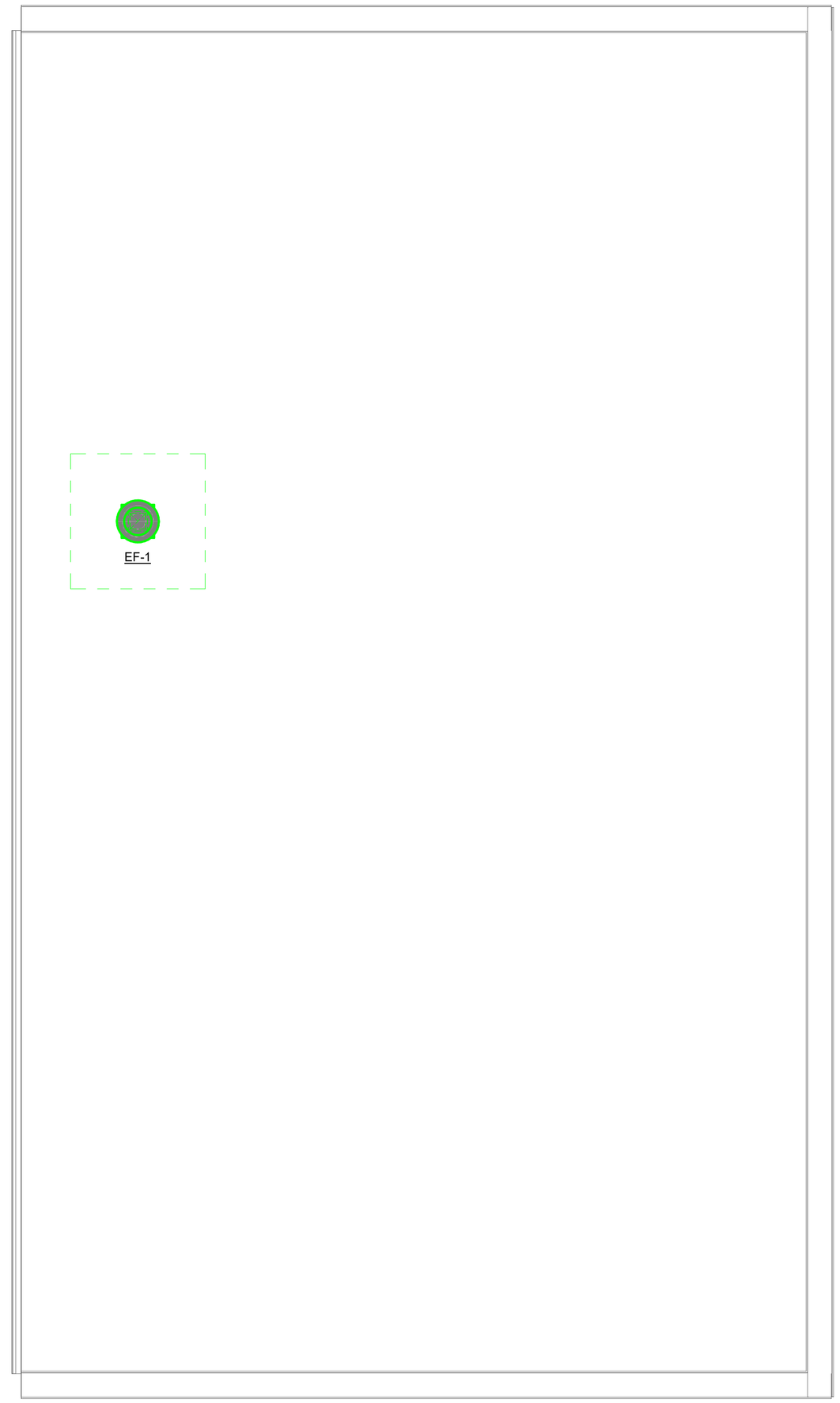
P6-11

KEYNOTE LEGEND

M1	REFER TO DETAIL 6 ON M4-11.
M2	MOUNT 7'-0" AFF.
M3	MOUNT 10'-0" AFF.
M4	ROUTE CONDENSATE TO A FLOOR DRAIN.



1 PROCESS BLDG - FIRST FLOOR HVAC PLAN
1/4" = 1'-0"



2 PROCESS BLDG - ROOF HVAC PLAN
1/4" = 1'-0"

N

ISG

City of MOVILLE
EST. 1887
IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	
DRAWN BY	MJN
DESIGNED BY	MJL
REVIEWED BY	MJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	

TITLE

FIRST FLOOR HVAC PLAN

SHEET

M2-11

0 1/4" 1/2" 1" 2"

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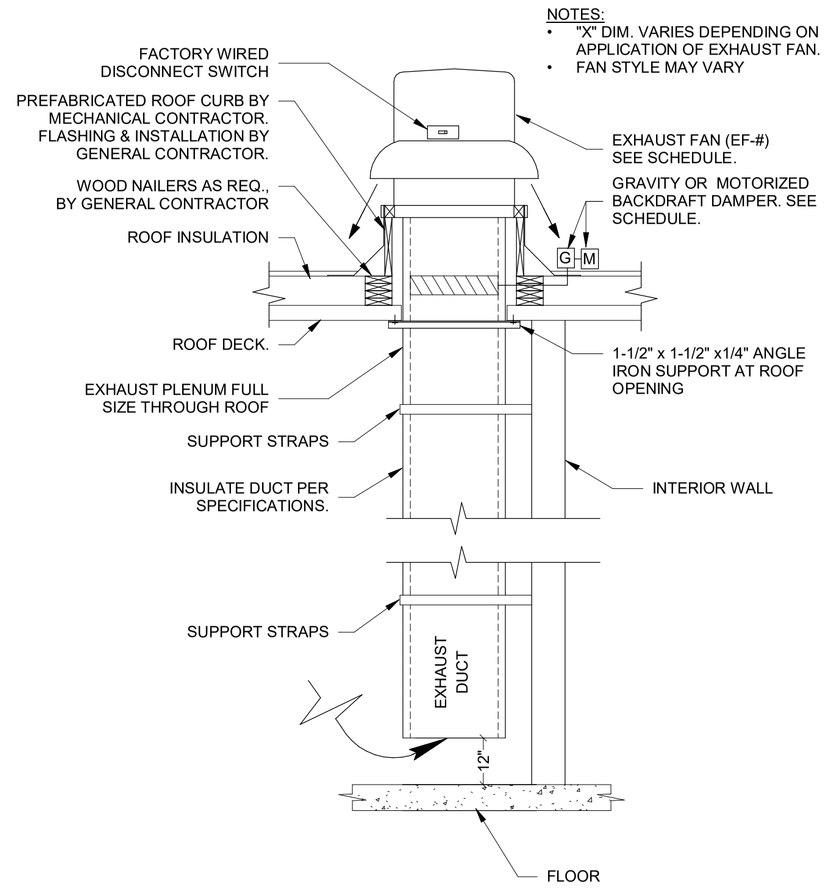
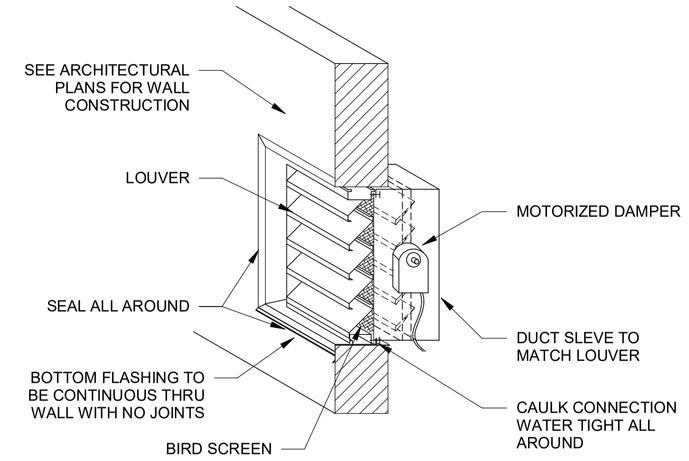
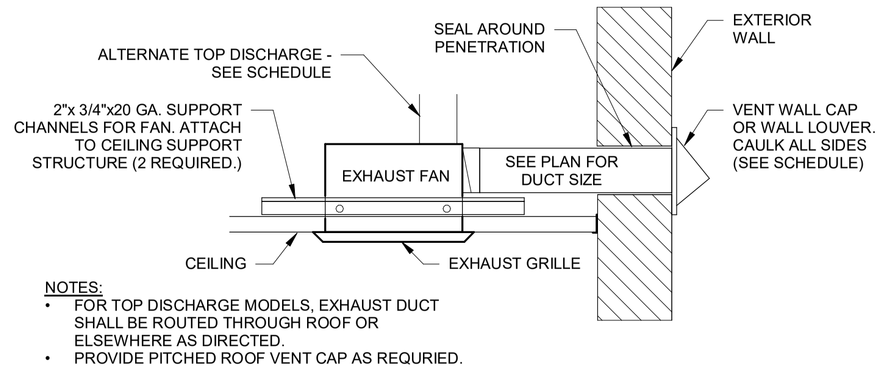


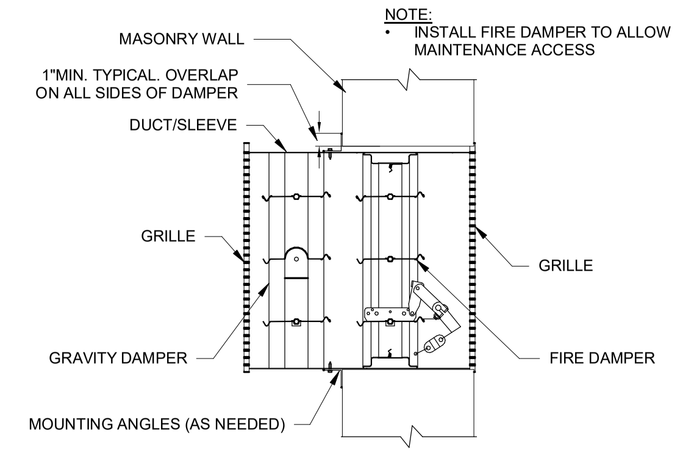
1 TYPICAL ROOF EXHAUST FAN (EF) DETAIL
NOT TO SCALE



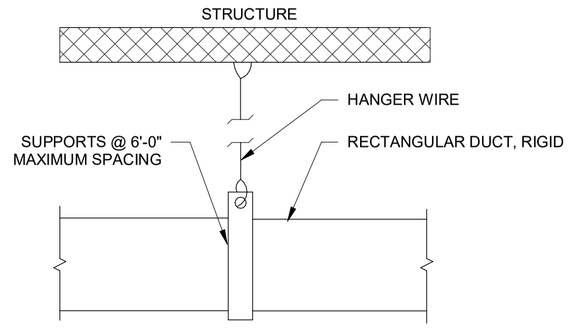
2 LOUVER WITH MOTORIZED DAMPER DETAIL
NOT TO SCALE



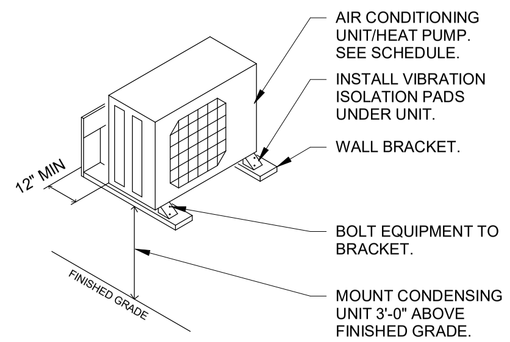
3 BATHROOM EXHAUST FAN DETAIL - TYPICAL
NOT TO SCALE



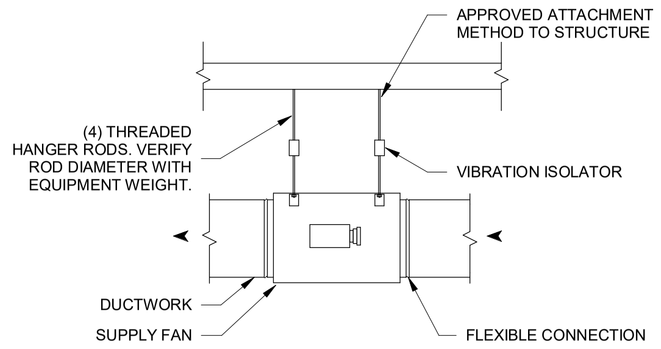
4 VERTICAL RECTANGULAR MULTI-BLADE FIRE DAMPER
NOT TO SCALE



5 SQUARE DUCT SUPPORT
NOT TO SCALE



6 SINGLE WALL MOUNT CONDENSING UNIT AND HEAT PUMP
NOT TO SCALE



7 SUPPLY FAN HANGING KIT DETAIL
NOT TO SCALE

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

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PROJECT NO.	25-27061
FILE NAME	
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DESIGNED BY	MJL
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CLIENT PROJECT NO.	

TITLE

HVAC DETAILS

SHEET

M4-11

0 1/4" 1/2" 1" 2"

5/28/2025 11:07:48 AM

CONTROL SEQUENCE

EF-1/L-1

FAN TO RUN CONTINUOUSLY.

SF-1/EDH-1

FAN TO RUN CONTINUOUSLY. WHEN SPACE TEMPERATRURE, AS SENSE BY THE REMOTE THERMOSTAT. DROPS BELOW 55°F, EDH-1 SHALL BE ENABLED TO MEET SETPOINT.

EF-2

FAN TO BE TIED TO LIGHT SWITCH AND RUN WHEN LIGHT IS ON.

EUH-1, 2, 3 & 4

WHEN SPACE TEMPERATURE DROPS BELOW 55°F, AS SENSED BY THE INTEGRAL THERMOSTAT, UNIT SHALL RUN TO MAINTAIN SETPOINT.

IU-1/OU-1

MINI-SPLIT TO BE SUPPLIED WITH PROGRAMMABLE THERMOSTAT.
COOLING SETPOINT: 75°F
HEATING SETPOINT: 55°F

IU-2/OU-2

MINI-SPLIT TO BE SUPPLIED WITH PROGRAMMABLE THERMOSTAT. UNIT TO BE PROGRAMMED FOR OCCUPIED AND UNOCCUPIED HOURS.
OCCUPIED COOLING SETPOINT: 72°F
OCCUPIED HEATING SETPOINT: 68°F
UNOCCUPIED COOLING SETPOINT: 75°F
UNOCCUPIED HEATING SETPOINT: 65°F

EWH-1

WHEN SPACE TEMPERATURE DROPS BELOW 55°F, AS SENSED BY THE INTEGRAL THERMOSTAT, UNIT SHALL RUN TO MAINTAIN SETPOINT.

MINI-SPLIT SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE WITH FACTORY PROGRAMMABLE THERMOSTAT.
3. PROVIDE WITH SINGLE POWER POINT CONNECTION.
4. ROUTE CONDENSATE LINE PER CODE TO NEARBY DRAIN, MOP BASIN, OR SINK TAILPIECE. PROVIDE UNIT WITH CONDENSATE PUMP IF NECESSARY.

			INDOOR UNIT					OUTDOOR UNIT	HEATING				ELECTRICAL DATA		
TAG	MFG	LOCATION	QTY	MODEL	WEIGHT (LBS)	MOUTING	SUPPLY CFM (EA)	MODEL	TYPE	CAPACITY (MBH)	HSPF2	REFRIGERANT TYPE	MCA	VOLT/PH	NOTES
IU-1/OU-1	LG	ELECTRICAL	1	KNSAP241A	36.6	WALL	389	KUSAP241A	HEAT PUMP	22,000	9.7	R32	19	208-230/60/1	1,2,3,4
IU-2/OU-2	LG	LAB	1	KNUDB121A	28.4	CEILING	247	KUSXB121A	HEAT PUMP	11,100	10.1	R32	13.4	208-230/60/1	1,2,3,4

SUPPLY FAN UNIT SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE WITH DIRECT-DRIVE ECM MOTOR WITH FACTORY-SUPPLIED SPEED CONTROLLER.
3. PROVIDE WITH DISCONNECT.
4. PROVIDE WITH FILTER BOX WITH WASHABLE FILTERS.
5. PROVIDE WITH GRAVITY BACKDRAFT DAMPER MOUNTED UPSTREAM OF FAN.
6. SUPPLY FAN CONSTRUCTION TO INCLUDE FULLY-INSULATED AIR STREAM.

				ELECTRICAL			SUPPLY FAN					
MARK	MFR	MODEL	AREA SERVED	VOLTAGE / PH.	HP	MCA	E.S.P.	DRIVE TYPE	S.A. CFM	O.A. CFM	WEIGHT	NOTES
SF-1	GREENHECK	SQ-95-VG	PROCESS	120/1	1/6	2	0.5	DIRECT	300	300	71 lb	1, 2, 3, 4, 5

EXHAUST FAN SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE FIELD MOUNTED DISCONNECT AND FACTORY MOUNTED SPEED CONTROLLER. POWER FAN AND DAMPER DOWNSTREAM OF DISCONNECT.
3. PROVIDE UNIT WITH MOTORIZED CLASS 1A BACKDRAFT DAMPER WITH LINE VOLTAGE ACTUATOR.
4. PROVIDE UNIT WITH ROOF CURB - FULLY INSULATED.

									ELECTRICAL				
MARK	MFR	MODEL	LOCATION/SERVES	DRIVE	CFM	E.S.P.	SONES	FRPM	HP	VOLTAGE / PH.	AMPS	WEIGHT	NOTES
EF-1	GREENHECK	G-080-E	PROCESS	DIRECT	250	0.6	7.3	1550	1/20	120/1	2.2	25 lb	1, 2, 3, 4
EF-2	GREENHECK	SP-B80-QD	RESTROOM	DIRECT	75	0.8	0.8	900		120/1	0.16	11 lb	1

DEHUMIDIFIER SCHEDULE

NOTES
1. PROVIDE UNIT WITH CEILING HANGING BRACKET INSTALLATION KIT. INSTALL PER MFG. INSTRUCTIONS.
2. ROUTE CONDENSATE TO FLOOR DRAIN.
3. PROVIDE UNIT WITH MFR. RECOMMENDED FILTER.
4. PROVIDE UNIT WITH MFR. RECOMMENDED REMOTE HUMIDISTAT.

			DEHUMIDIFIER				ELECTRICAL			
MARK	MFG	MODEL	LOCATION	CFM	E.S.P.	WATER REMOVEL (PINTS / DAY @ 80°F, 60% HUM.)	VOLT/PH	AMPS	OPERATING RANGE	NOTES
DH-1	QUEST	HI-E DRY 195	PROCESS	610	0.2	195	120/1	13.1	56°F - 95°F	1,2,3,4

UNIT HEATER SCHEDULE

NOTES:
1. SUPPLY WITH CEILING MOUNTING BRACKET. INSTALL PER MFG RECOMMENDATIONS.
2. PROVIDE UNIT WITH FACTORY INSTALLED DISCONNECT.
3. PROVIDE UNIT WITH INTEGRAL THERMOSTAT SET TO 55°F (ADJ).

MARK	MFR	MODEL	LOCATION	CFM	WATTS (KW)	HEATING OUTPUT (BTU/H)	VOLTAGE / PH.	HANGING KIT	MOUNTING HEIGHT	DISCONNECT SWITCH	NOTES
EUH-1	MODINE MANUFACTURING	HER 50C 3101	PROCESS	380	5 KW	17,100	208/3	YES	10'-0"	YES	1, 2, 3
EUH-2	MODINE MANUFACTURING	HER 50C 3101	PROCESS	380	5 KW	17,100	208/3	YES	10'-0"	YES	1, 2, 3
EUH-3	MODINE MANUFACTURING	HER 50C 3101	CHEM ROOM	380	5 KW	17,100	208/3	YES	10'-0"	YES	1, 2, 3
EUH-4	MODINE MANUFACTURING	HER 50C 3101	PROCESS	380	5 KW	17,100	208/3	YES	10'-0"	YES	1, 2, 3

ELECTRIC WALL HEATER SCHEDULE

NOTES:
1. INSTALL AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE NON FUSED DISCONNECT. COORDINATE INSTALLATION WITH ELECTRICAL.
3. PROVIDE UNIT WITH SURFACE MOUNTING FRAME.

MARK	MFR	MODEL	LOCATION	CFM	WATTS	HEATING OUTPUT (BTU/H)	VOLTAGE / PH.	NOTES
EWH-1	QMARK	CWH1101DSF	RESTROOM	65	1000 W	3,413	120/1	1, 2, 3

HEATING COIL SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. UNIT TO BE CONTROLLED VIA FACOTRY SUPPLIED SCR CONTROLLER.
3. FIELD VERIFY INSTALLED DUCT SIZE FROM UNIT AND MATCH FOR DIMENSIONS OF HEATER ELEMENTS.
4. SUPPLY HEATER WITH THERMOSTAT.

MARK	MFR	MODEL	WIDTH	HEIGHT	VOLT / PH	KW	NOTES
EDH-1	GREENHECK	IDHE	10"	10"	208/3	10	1, 2, 3, 4

LOUVER SCHEDULE

NOTES:
1. INSTALL UNIT AS SHOWN AND AS PER MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE FULL DUCT SIZE OF LOUVER THROUGH EXTERIOR WALL.
3. PROVIDE LOUVER WITH BIRD SCREEN
4. PROVIDE WITH MOTORIZED CLASS 1A MOTORIZED BACKDRAFT DAMPER WITH LINE VOLTAGE ACTUATOR.

MARK	MANUFACTURER	MODEL	WIDTH	HEIGHT	AIR FLOW - CFM	VELOCITY - FPM	PRESSURE DROP IN.WG.	NOTES
L-1	GREENHECK	ESD-635	1' - 0"	1' - 0"	300	526	0.041	1, 2, 3, 4

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EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

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HVAC SCHEDULES AND SPECIFICATIONS

SHEET

M5-11

2" 1" 1/4" 1/2" 0

5/28/2025 11:07:48 AM

LINETYPES

PROCESS LINES

- PROCESS PIPING
- EXISTING PIPING
- FUTURE PIPING
- PROCESS PIPING (INSULATED)
- PROCESS PIPING (INSULATED & HEAT TRACE)
- OWNER SUPPLIED
- OPEN CHANNEL
- DEMO PIPING
- VENDOR SUPPLIED/SKID

INSTRUMENT LINES

- CAPILLARY TUBE
- ELECTRICAL SIGNAL
- HYDRAULIC SIGNAL
- PNEUMATIC SIGNAL
- SOFTWARE OR DATA LINK

LINE ANNOTATION

PP1-XXX TO/FROM EQUIPMENT — NEW LINE END CONNECTOR

PP1-XXX TO/FROM EQUIPMENT — EXISTING LINE END CONNECTOR

10"-WW101-DIP

- PIPE MATERIAL
- LINE NUMBER
- SERVICE
- LINE SIZE

EQUIPMENT DESIGNATIONS

ABBREVIATION	DESCRIPTION
AD	AIR DRYER
AE	AERATOR
B	BLOWER/COMPRESSOR
BFP	BELT FILTER PRESS
C	CONVEYOR
CEN	CENTRIFUGE
CL	CLARIFIER
COL	COLLECTOR/HOPPER
CTU	COMBINED TREATMENT UNIT
DAF	DISSOLVED AIR FLOTATION
DM	DRIVE MECHANISM
FL	FLOCCULATOR
FLT	FILTER
FP	FILTER PRESS
G	GENERATOR
GD	GRINDER
HEX	HEAT EXCHANGER
HG	HYDRAULIC GATE
INJ	INJECTOR
K	SKID
M	MEMBRANE
ME	MISCELLANEOUS EQUIPMENT
MXR	MIXER
P	PUMP
SCR	SCREEN
SD	SEDIMENTATION
SL	SLAKER
SMP	AUTOSAMPLER
T	TANK
UV	ULTRAVIOLET DISINFECTION
VGC	VORTEX GRIT COLLECTOR
WGB	WASTE GAS BURNER

LINE SERVICE DESIGNATIONS

ABBREVIATION	DESCRIPTION
	WATER
PW	POTABLE WATER
BPW	BACKFLOW PREVENTED POTABLE WATER
RUW	RE-USE WATER
NPW	NON-POTABLE WATER
	CHEMICALS
ALS	ALUMINUM SULFATE
AMS	AMMONIUM SULFATE
ANT	ANTISCALANT
BP	BLENDED PHOSPHATE
CD	CHLORINE DIOXIDE
CDG	CARBON DIOXIDE GAS
CLG	CHLORINE GAS
CS	CAUSTIC SODA (SODIUM HYDROXIDE)
CTA	CITRIC ACID
FECL	FERRIC CHLORIDE
FL	FLUORIDE
HCL	HYDROCHLORIC ACID
HL	HYDRATED LIME (CALCIUM HYDROXIDE)
LS	LIME SLURRY
OP	ORTHOPHOSPHATE
OZ	OZONE
PAC	POWDER ACTIVATE CARBON
PC	PRIMARY COAGULANT
POL	POLYMER
PPM	POTASSIUM PERMANGANATE
PP	POLYPHOSPHATE
QL	QUICKLIME (CALCIUM OXIDE)
SA	SODA ASH (SODIUM CARBONATE)
SBF	SODIUM BISULFITE
SHC	SODIUM HYPOCHLORITE
SP	SODIUM PERMAGANATE
SUA	SULFURIC ACID
	PROCESS
AA	AERATION AIR
BG	BIOGAS
BL	BLEND WATER
BR	BRINE
BW	BACKWASH
BYP	BYPASS
CA	COMPRESSED AIR
CEN	CENTRATE
CIP	CLEAN IN PLACE
CO	CONDENSATE
D	DRAIN
DS	DIGESTED SLUDGE
DCW	DISINFECTED WATER
DW	DECANT WATER
DWS	DEWATERED SLUDGE
FTTW	FILTRATE TO WASTE
FTW	FILTERED WATER
FW	FINISHED WATER
GR	GRIT
ML	MIXED LIQUOR
NG	NATURAL GAS
OA	OUTSIDE AIR
OF	OVERFLOW
PE	PLANT EFFLUENT
PER	PERMEATE
PS	PRIMARY SLUDGE
PSC	PRIMARY SCUM
RAS	RETURN ACTIVATED SLUDGE
REJ	REJECT WATER
RS	RAW SEWAGE
RW	RAW WATER
SBT	SUBNATANT
SCR	SCREENINGS

LINE SERVICE DESIGNATIONS

SLD	SOLIDS
SMP	SAMPLE
SNT	SUPERNATANT
SS	SANITARY SEWER
SSC	SECONDARY SCUM
STM	STEAM
SW	SOFTENED WATER
THS	THICKENED SLUDGE
V	VENT
WAS	WASTE ACTIVATED SLUDGE
WSS	WASTE SECONDARY SLUDGE
WW	WASTEWATER

PIPE MATERIAL DESIGNATIONS

MATERIAL	DESCRIPTION
CIP	CAST IRON
CLP	CONCRETE LINED STEEL
RCP	REINFORCED CONCRETE PIPE
CP	COPPER
CS	CARBON STEEL
DIP	DUCTILE IRON
FRP	FIBERGLASS REINFORCED PLASTIC
GP	GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
PVC	POLYVINYL CHLORIDE
CPVC	CHLORINATED POLYVINYL CHLORIDE
SS	STAINLESS STEEL
VC	VITRIFIED CLAY

PROCESS PIPING SEQUENCING

SHEET NUMBER	DESCRIPTION
PP1-01+	LEGENDS
PP1-04	DESIGN BASIS
PP1-05	MASS FLOW BALANCE
PP1-06+	PFD - PROCESS FLOW DIAGRAM
	WATER TREATMENT
PP1-10+	P&ID - SOURCE / SUPPLY
PP1-20+	P&ID - FILTRATION
PP1-30+	P&ID - SOFTENING
PP1-40+	P&ID - MEMBRANES
PP1-50+	P&ID - POTABLE, REUSE
	WASTEWATER TREATMENT
PP2-10+	P&ID - INFLUENT / COLLECTION
PP2-20+	P&ID - PRIMARY TREATMENT
PP2-30+	P&ID - SECONDARY TREATMENT
PP2-40+	P&ID - TERTIARY TREATMENT
PP2-50+	P&ID - SOLIDS MANAGEMENT
PP2-60+	P&ID - NON-POTABLE, REUSE
PP2-70+	AIR / PNEUMATIC / HYDRAULIC SUBPROCESSES
PP2-80+	CHEMICAL
PP2-90+	MISC. PROCESSES
	DETAILS
PP3-10+	SCHEDULES / SPECIFICATION
PP3-20+	STANDARD DETAILS
PP3-30+	CHEMICAL FEED SCHEMATICS
	ORTHOGRAPHIC VIEWS
PP4-10+	DEMOLITION PLANS
PP5-10+	PIPING PLANS
PP5-30+	PIPING ELEVATION / SECTION / ISOMETRIC VIEWS

INSTRUMENTATION SYMBOLS

FIELD MOUNTED

- DISCRETE INSTRUMENT
- SHARED DISPLAY, SHARED CONTROL
- PROGRAMMABLE LOGIC CONTROL (PLC)

INSTRUMENT IDENTIFICATION PER ANSI/ISA-5.1

	SYMBOL	ALARM	CONTROL	INDICATE CONTROL	RECORD CONTROL	CONTROL VALVE	EMERGENCY	PRIMARY ELEMENT	GLASS, VIEWING DEVICE	INDICATE	LIGHT	MOISTURE	ORIFICE, RESTRICTION	POINT CONNECTION	RECORD, OR PRINT	SWITCH	TRANSMIT	MULTIFUNCTION	VALVE, DAMPER, LOUVER	WELL	COMPUTE, CONVERT, RELAY	ACTUATOR, DRIVE
ANALYSIS	A	AA*	AC	AIC	ARC			AE		AI					AR	AS*	AT		AV		AY	AZ
BURNER, COMBUSTION	B	BA*	BC	BIC	BRC			BE		BI					BR	BS*	BT		BV		BY	BZ
CONDUCTIVITY	C	CA*	CC	CIC	CRC			CE		CI					CR	CS*	CT		CV		CY	
DENSITY OF SPECIFIC GRAVITY	D	DA*	DC	DIC	DRC			DE		DI					DR	DS*	DT		DV		DY	
VOLTAGE	E		EC	EIC	ERC			EE		EI						ES*	ET				EY	EZ
FLOW RATE	F	FA*	FC	FIC	FRC	FCV		FE	FG	FI			RO		FR	FS*	FT		FV		FY	
FLOW RATIO	FF		FFC	FFIC	FFRC										FFR	FFS*	FFT		FFV		FFY	
GAUGE	G																					
HAND	H		HC	HIC		HCV										HS*			HV			HZ
CURRENT	I		IC	IIC	IRC											IS*	IT				IY	IZ
POWER	J		JC	JIC	JRC											JS*	JT				JY	JC
TIME, TIME SCHEDULE	K		KC	KIC	KRC											KS*	KT				KY	KZ
LEVEL	L	LA*	LC	LIC	LRC	LCV		LE	LG	LI					LR	LS*	LT		LV		LY	
MOTOR	M																					
VIDEO	N																					
USER'S CHOICE	O																					
PRESSURE, VACUUM	P	PA*	PC	PIC	PRC	PCV		PE		PI					PR	PS*	PT		PV		PY	
PRESSURE DIFFERENTIAL	PD	PDA*	PDC	PDIC	PDRC	PDCV		PDE		PDI					PDR	PDS*	PDT				PDY	
QUANTITY	Q		QC	QIC	QRC											QS*	QT					
RADIATION	R		RC													RS*	RT					
SPEED, FREQUENCY	S	SA*	SC		SRC	SCV		SE		SI					SR	SS*	ST		SV		SY	
TEMPERATURE	T	TA*	TC	TIC	TRC	TCV		TE							TR	TS*	TT		TV		TY	
TURBIDITY	TB									TBI							TBT					
MULTIVARIABLE	U		UC	UIC	URC											US*						
VIBRATION, MECHANICAL ANALYSIS	V		VC	VIC	VRC											VS*	VT				VY	-
WEIGHT, FORCE	W		WC	WIC	WRC	WCV		WE		WI					WR	WS*	WT		WV		WY	WZ
UNCLASSIFIED	X					XV																
EVENT, STATE, OR PRESENCE	Y		YC													YS*	YT				YY	YZ
POSITION, DIMENSION	Z		ZXC	ZIC	ZRC			ZE		ZI						ZS*	ZT				ZY	ZZ

(*) = FUNCTION MODIFIER

- NONE
- HIGH-HIGH HH
- HIGH H
- LOW L
- LOW-LOW LL
- MIDDLE M
- OPEN O
- CLOSE C
- RUN R
- STOP S
- UNCLASSIFIED X

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EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT AND WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	27061
FILE NAME	27061-PP1-01
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

P&ID GENERAL LEGEND

SHEET

PP1-01

VALVE SYMBOLS

- 3-WAY VALVE
- AIR RELEASE VALVE
- BALANCING VALVE
- BACK FLOW PREVENTER
- BALL CHECK VALVE
- BALL VALVE
- BALL VALVE (CLOSED)
- BUTTERFLY VALVE
- BUTTERFLY VALVE (CLOSED)
- CHECK VALVE
- DBL DOOR CHECK VALVE
- DUCKBILL CHECK VALVE
- CONE VALVE
- CONTROL VALVE
- PUMP CONTROL VALVE
- DIAPHRAGM VALVE
- FLOAT VALVE
- GAGE VALVE
- GATE VALVE
- GATE VALVE (CLOSED)
- KNIFE GATE VALVE
- GLOBE VALVE
- GLOBE VALVE (CLOSED)
- MUD VALVE
- NEEDLE VALVE
- PINCH VALVE
- PLUG VALVE
- PLUG VALVE (CLOSED)
- ANGLE PRESSURE RELIEF VALVE

VALVE SYMBOLS

- PRESSURE RELIEF VALVE
- PRESSURE REDUCING VALVE
- PRESSURE SUSTAINING VALVE
- PUMP CONTROL VALVE (ALT 1)
- PUMP CONTROL VALVE (ALT 2)
- ROOT VALVE
- SILENT CHECK VALVE
- SLEEVE VALVE
- SOLENOID VALVE (ON/OFF)
- PNEUMATIC ACTUATED VALVE (ON/OFF)
- MOTOR ACTUATED VALVE (ON/OFF)
- ELECTRICALLY ACTUATED VALVE (ON/OFF)
- PNEUMATIC ACTUATED VALVE (MODULATING)
- MOTOR ACTUATED VALVE (MODULATING)
- MIXING VALVE

PIPE FITTINGS AND CONNECTORS

- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- FLEXIBLE COUPLING
- FLEX CONNECTOR
- SLEEVE COUPLING
- PIPE UNION
- EXPANSION JOINT
- BLIND FLANGE
- PIPE CAP
- NEW-EXISTING PIPE CONNECTION

INSTRUMENTATION

- INSTRUMENT/PROBE
- ULTRASONIC LEVEL ELEMENT
- RADAR LEVEL ELEMENT
- FLOAT SWITCH
- WOF/FLOOD SWITCH
- GENERAL LEVEL TRANSMITTER

DRAIN SYMBOLS

- DRAIN
- DRAIN SUMP
- PIPE DRAIN

LINE END DEVICES

- SLIDE GATE
- SLUICE GATE
- SLIDE PLATE
- STOP LOG
- FLAP GATE
- TELESCOPING VALVE
- CHEMICAL DIFFUSER
- DIFFUSER ASSEMBLY
- SPRAY NOZZLE
- SINGLE LINE NOZZLE
- QUICK CONNECT
- HOSE CONNECTION
- SLUICE GATE (ELEV)

IN-LINE DEVICES

- ORIFICE PLATE
- STATIC MIXER
- INJECTOR
- SILENCER
- WYE STRAINER
- BASKET STRAINER
- IN-LINE FILTER
- DRIP TRAP
- PRESSURE INDICATOR
- PULSATION DAMPENER
- CALIBRATION COLUMN
- CHEMICAL SEAL
- RUPTURE DISC
- SAMPLE TAP
- AUTOMATIC STRAINER

MISCELLANEOUS

- AIR FILTER
- SEAL WATER UNIT
- VFD — VARIABLE FREQUENCY DRIVE
- FVNR — FULL VOLTAGE NON-REVERSING (ACROSS THE LINE)
- FVR — FULL VOLTAGE REVERSING (ACROSS THE LINE WITH REVERSING)
- RVSS — REDUCED VOLTAGE SOFT STARTER

IN-LINE INSTRUMENTATION

- ANNULAR FLOW ELEMENT
- FLUME
- M — MAGNETIC FLOW METER
- PROPELLER METER
- S — VENTURIMETER
- SONIC PROBE FLOW ELEMENT
- ROTAMETER
- ΔT — THERMAL MASS FLOW METER

PUMPS

- DIAPHRAGM PUMP
- PROGRESSIVE CAVITY PUMP
- PISTON PUMP
- AXIAL PUMP
- GRINDER PUMP
- IN-LINE CENTRIFUGAL PUMP
- PERISTALTIC PUMP
- CENTRIFUGAL PUMP
- SUMP PUMP
- COLUMN PUMP
- ROTARY LOBE PUMP
- HOSE PUMP

BLOWERS

- POSITIVE DISPLACEMENT BLOWER
- CENTRIFUGAL BLOWER
- COMPRESSOR
- ROTARY BLOWER

MIXERS

- MIXER
- VERTICAL SUBMERSIBLE MIXER
- SUBMERSIBLE MIXER
- TANK MOUNT MIXER

HEATERS & HEAT EXCHANGERS

- IN-LINE HEATER
- PLATE AND FRAME HEAT EXCHANGER
- SPIRAL HEAT EXCHANGER

ISG

City of MOVILLE — EST. 1887 — IOWA

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT AND WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	27061
FILE NAME	27061-PP1-02
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

P&ID SYMBOLS LEGEND

SHEET

PP1-02

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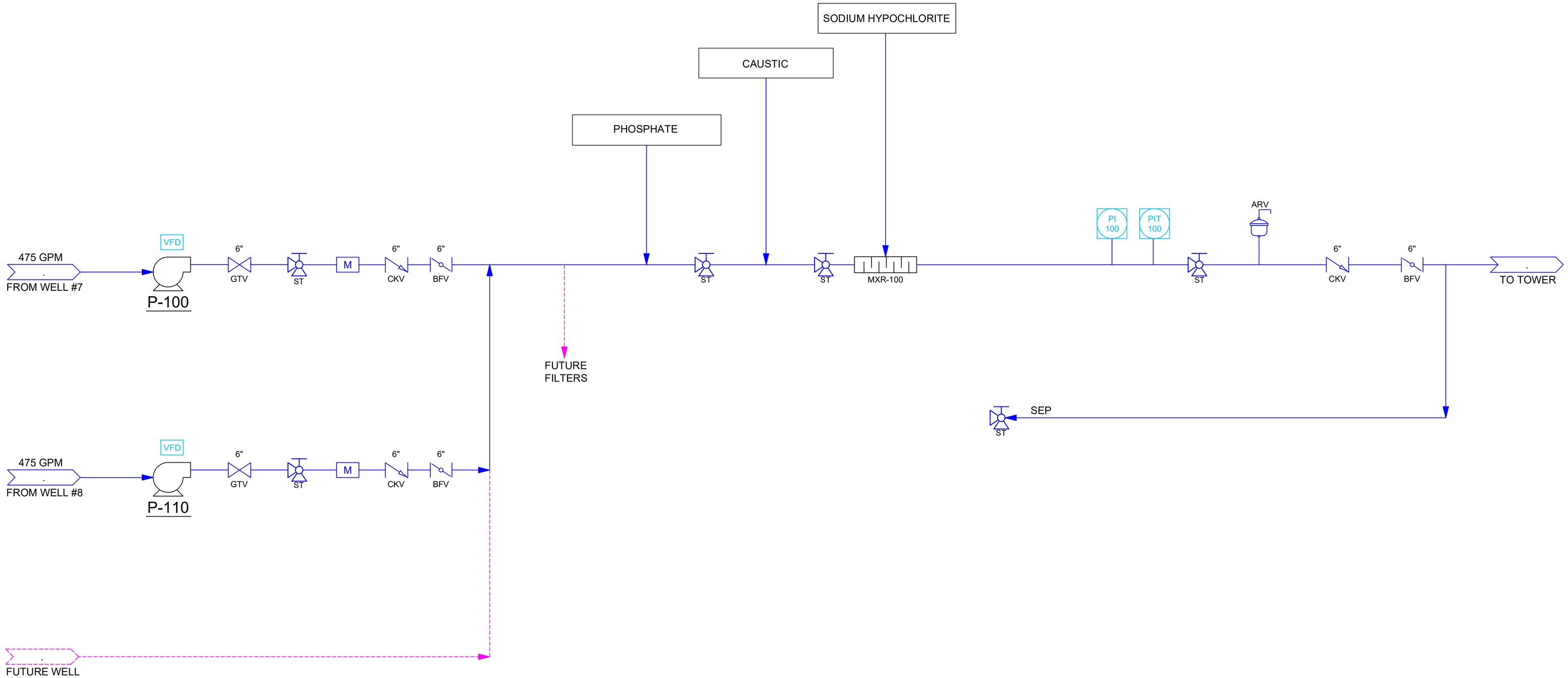

P-100

WELL PUMP #7
12" CASING DIAMETER
233' SETTING DEPTH
60 HP . .
475 GPM @ 360 TDH .
460 V / 3 PH / 60 HZ

P-110

WELL PUMP #8
12" CASING DIAMETER
233' SETTING DEPTH
60 HP . .
475 GPM @ 360 TDH .
460 V / 3 PH / 60 HZ

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IOWA

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT AND WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

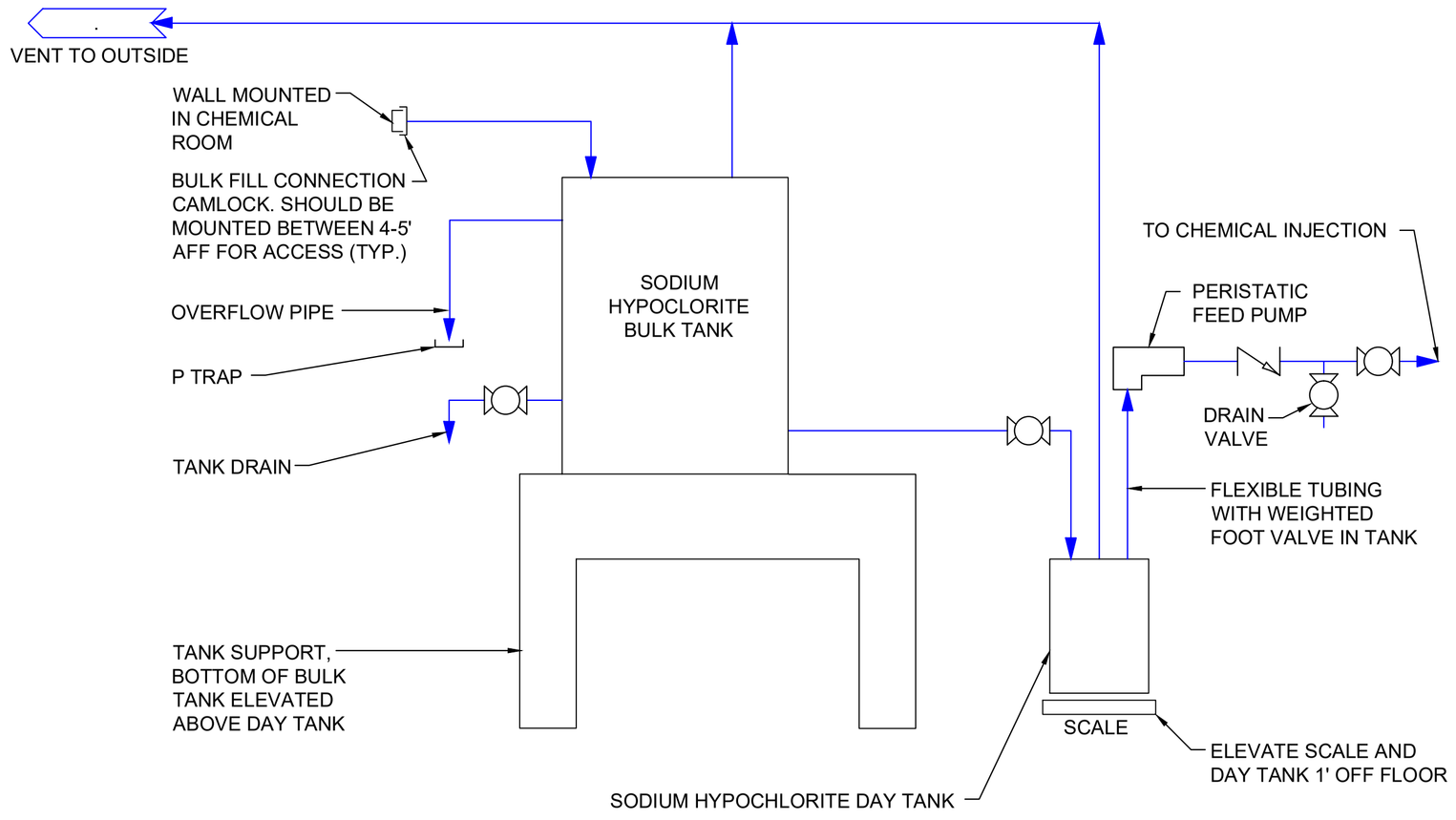
PROJECT NO.	27061
FILE NAME	27061-PP1-10
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

P&ID

SHEET

PP1-10



A SODIUM HYPOCHLORITE CHEMICAL FEED SCHEMATIC
N.T.S.

NOTES:

A. BULK TANKS TO FILL DAY TANKS VIA GRAVITY.

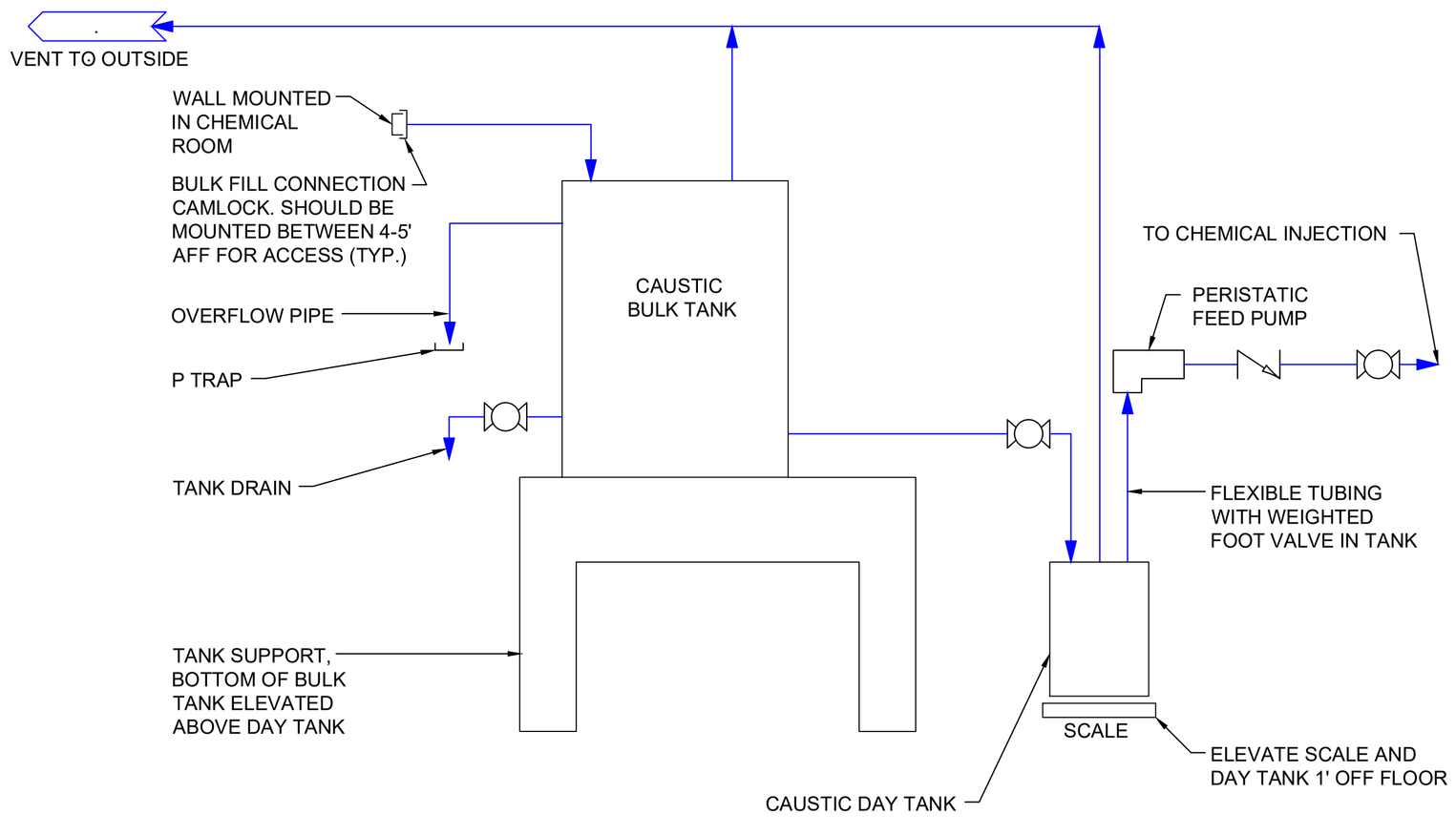
B. CHEMICAL FEED PUMPS TO BE WALL MOUNTED WITH FEED PUMP NO LOWER THAN 3.5' AND NO HIGHER THAN 5'.

C. ALL TANKS TO BE LABELED TO SHOW VOLUMETRIC LIQUID LEVEL RULER.

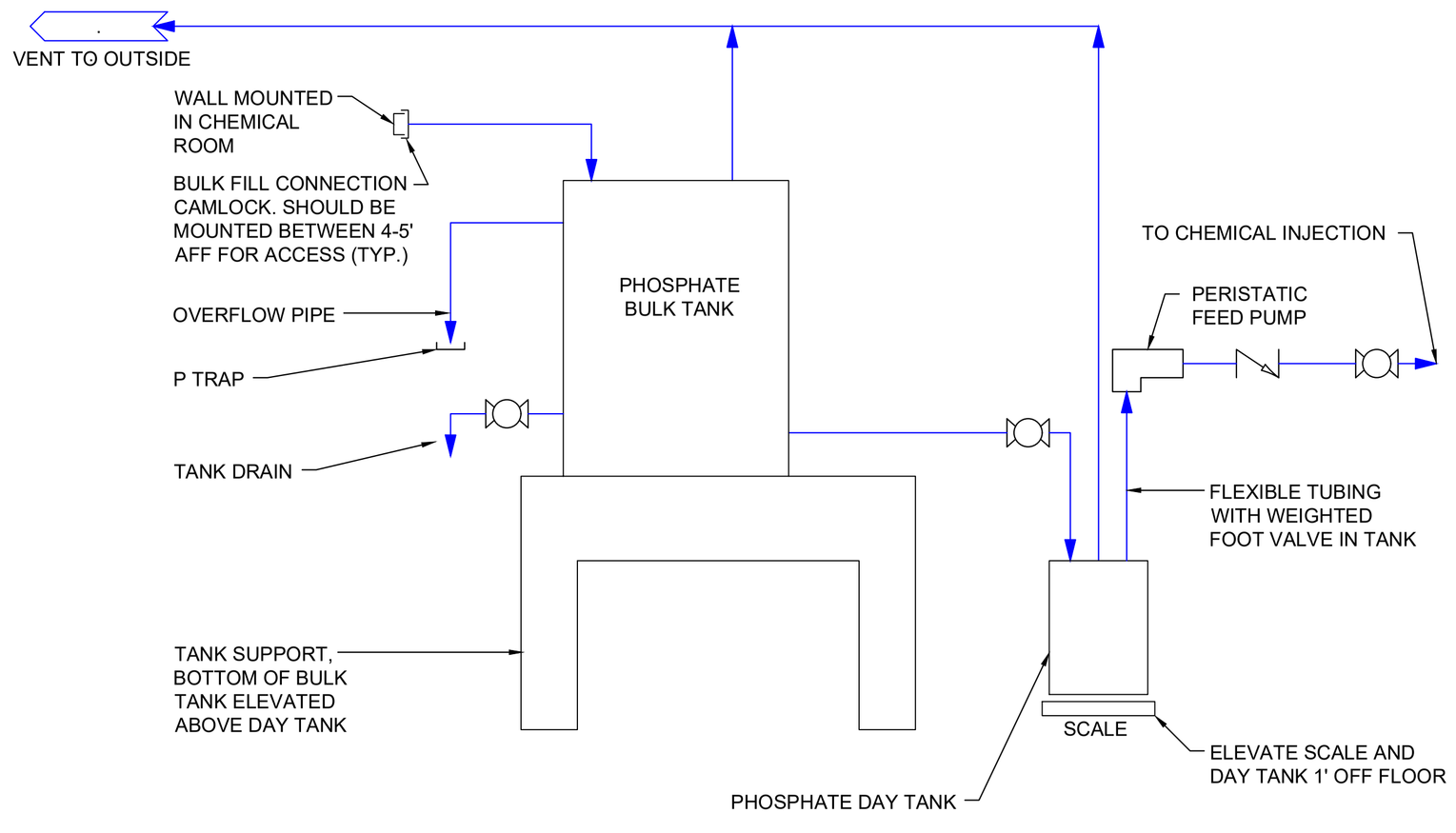
D. ALL PARTS OF THE CHEMICAL FEED SHALL BE BUILT IN A MANNER AS TO BE EASILY DISASSEMBLED FOR OPERATOR USE.

E. ALL BULK AND DAY TANKS TO BE LABELED TO CLEARLY SHOW THE SPECIFIC CHEMICAL CONTENTS INCLUDING NSF CERTIFICATION.

F. WALL MOUNTED CHEMICAL BULK FILL CONNECTIONS SHOULD BE MOUNTED NO LOWER THAN 4' OR HIGHER THAN 5' TO PROVIDE ADEQUATE ACCESS.



B CAUSTIC CHEMICAL FEED SCHEMATIC
N.T.S.



C PHOSPHATE CHEMICAL FEED SCHEMATIC
N.T.S.

ISG

EST. City of 1887 MOVILLE IOWA

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PROJECT

CITY OF MOVILLE SECTION 3: WATER TREATMENT PLANT AND WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	27061
FILE NAME	27061-PP3-30
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

CHEMICAL FEED SCHEMATIC

SHEET

PP3-30

S:\PROJECTS\27000 PROJ\27000-27099\27061 MOVILLE WATER SYSTEM IMPROVEMENTS-MOVILLE IA\27061 PLANT PROJECT\27061 MOVILLE WATER SYSTEM IMPROVEMENTS\PID DWG\27061-PP3-30.DWG

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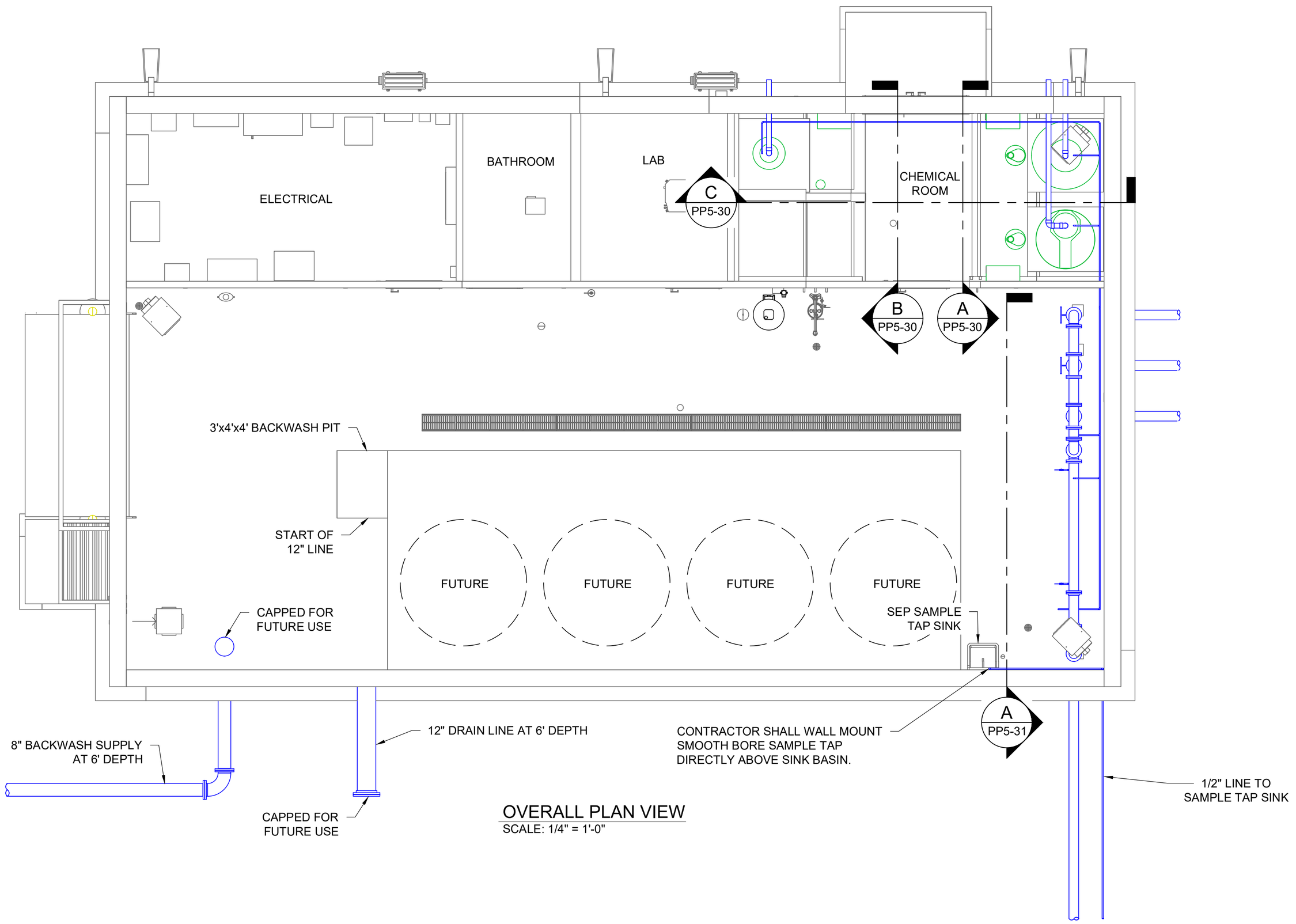

OVERALL PLAN VIEW
SCALE: 1/4" = 1'-0"

N

S:\PROJECTS\27000 PROJ\27000-27099\27061 MOVILLE WATER SYSTEM IMPROVEMENTS-MOVILLE IA\27061 PLANT PROJECT\27061 MOVILLE WATER SYSTEM IMPROVEMENTS\ORTHOS\DWGS\27061-PP5-10.DWG

174

0 1/4"1/2" 1" 2"

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT AND WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

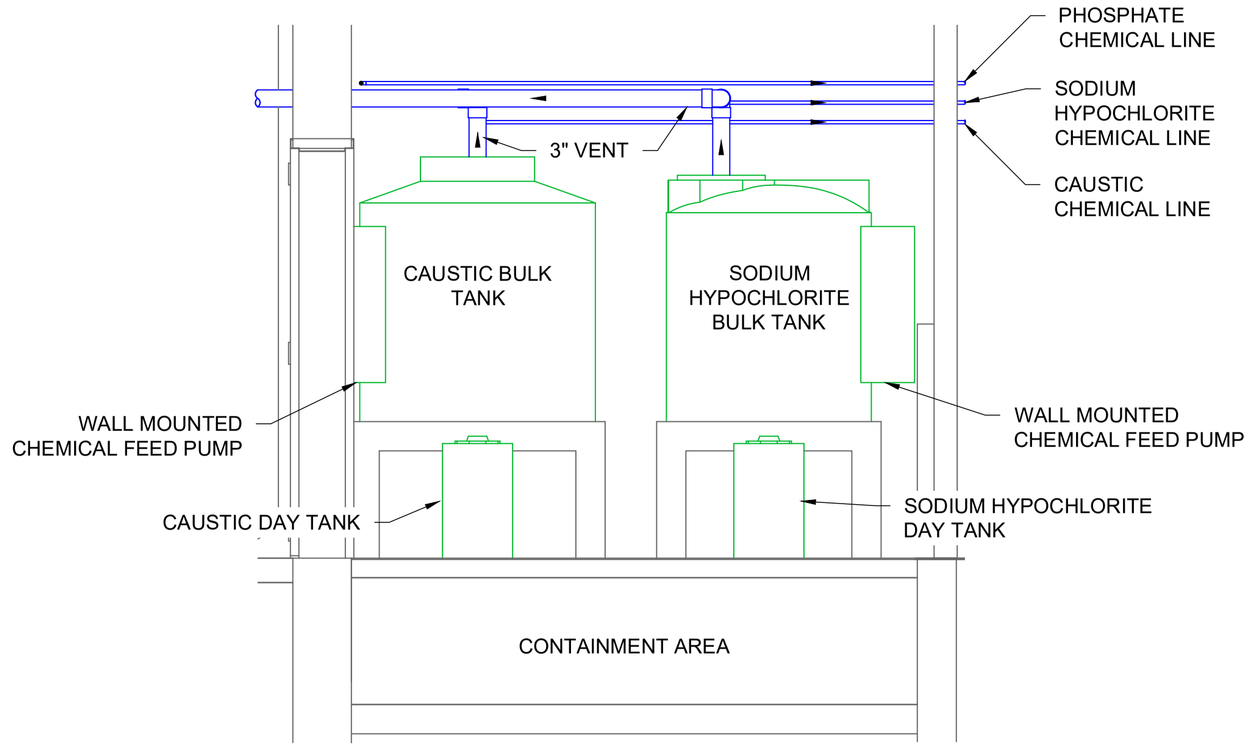
PROJECT NO.	27061
FILE NAME	27061-PP5-10
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

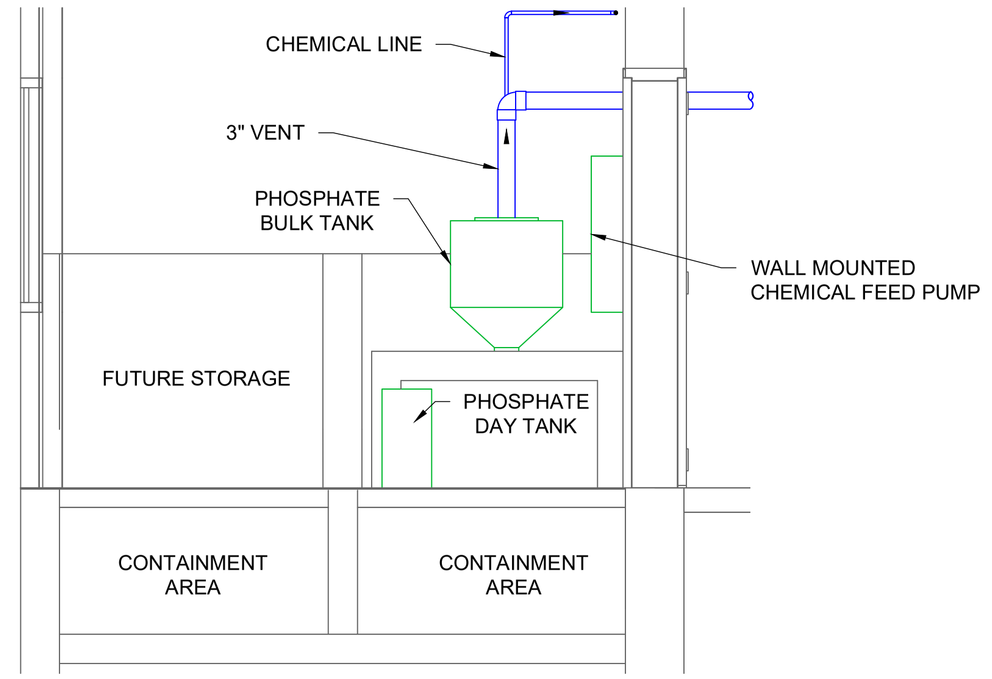
OVERALL PLAN VIEW

SHEET

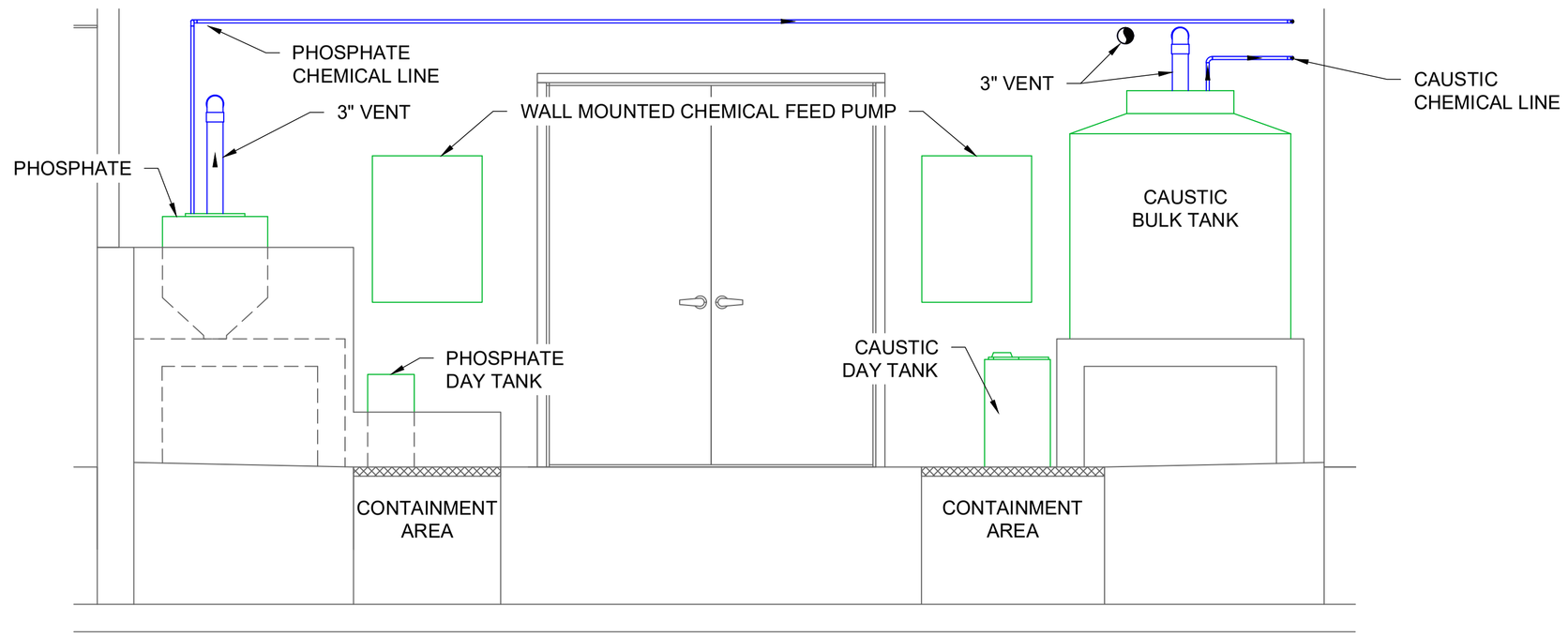
PP5-10



A CHEMICAL ROOM SECTION VIEW
SCALE: 1/2" = 1'-0"



B CHEMICAL ROOM SECTION VIEW
SCALE: 1/2" = 1'-0"



C CHEMICAL ROOM SECTION VIEW
SCALE: 1/2" = 1'-0"

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EST. 1887
IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT AND WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	27061
FILE NAME	27061-PP5-30
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	---

TITLE

CHEMICAL ROOM SECTION VIEWS

SHEET

PP5-30

S:\PROJECTS\27000 PROJ\27000-27099\27061 MOVILLE WATER SYSTEM IMPROVEMENTS-MOVILLE IA\27061 PLANT PROJECT\27061-PP5-30.DWG

0 1/4"1/2" 1" 2"

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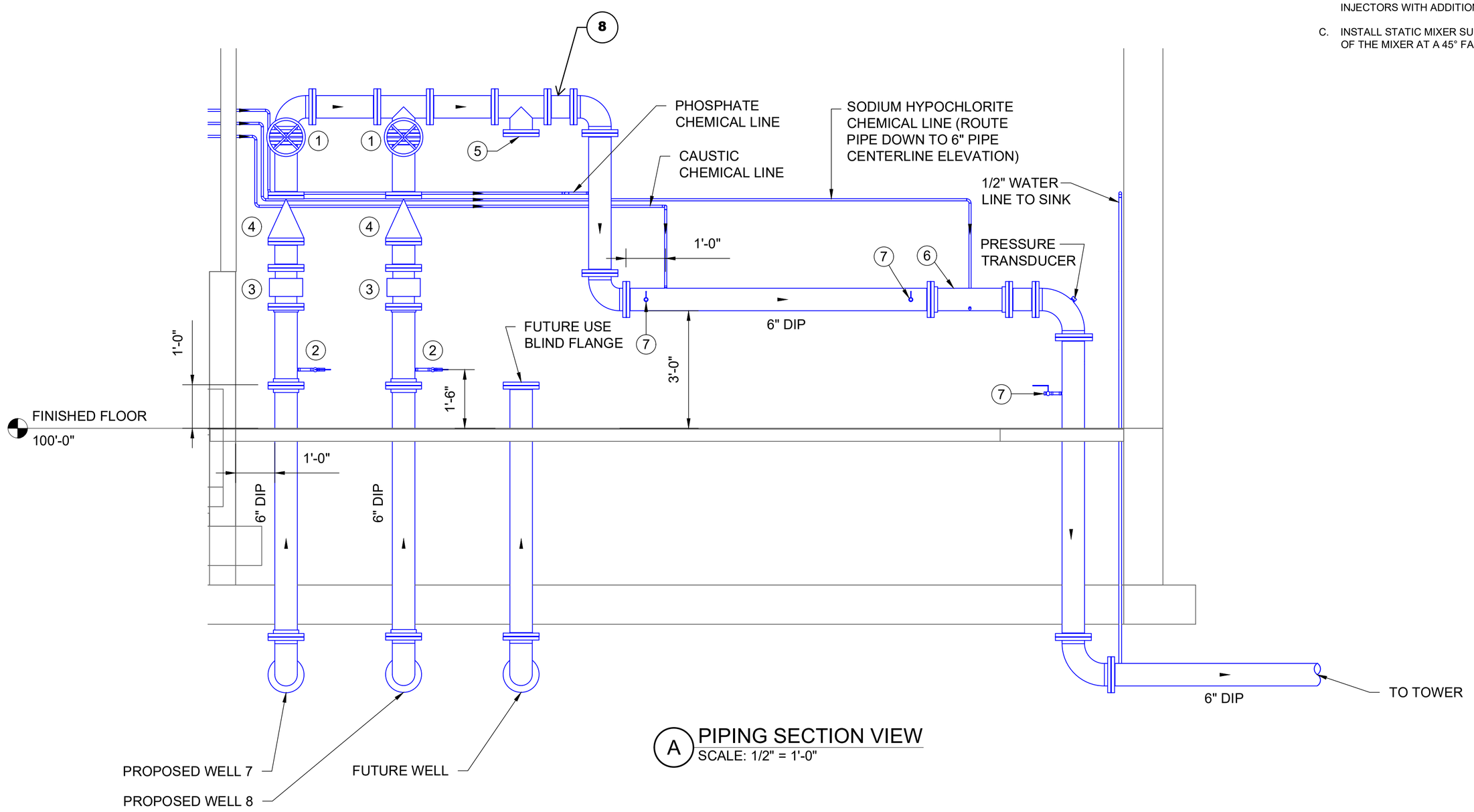
NOTES:

A. FOR FLOW METER INSTALLATION FOLLOW MANUFACTURES UPSTREAM AND DOWNSTREAM SPACING REQUIREMENTS.

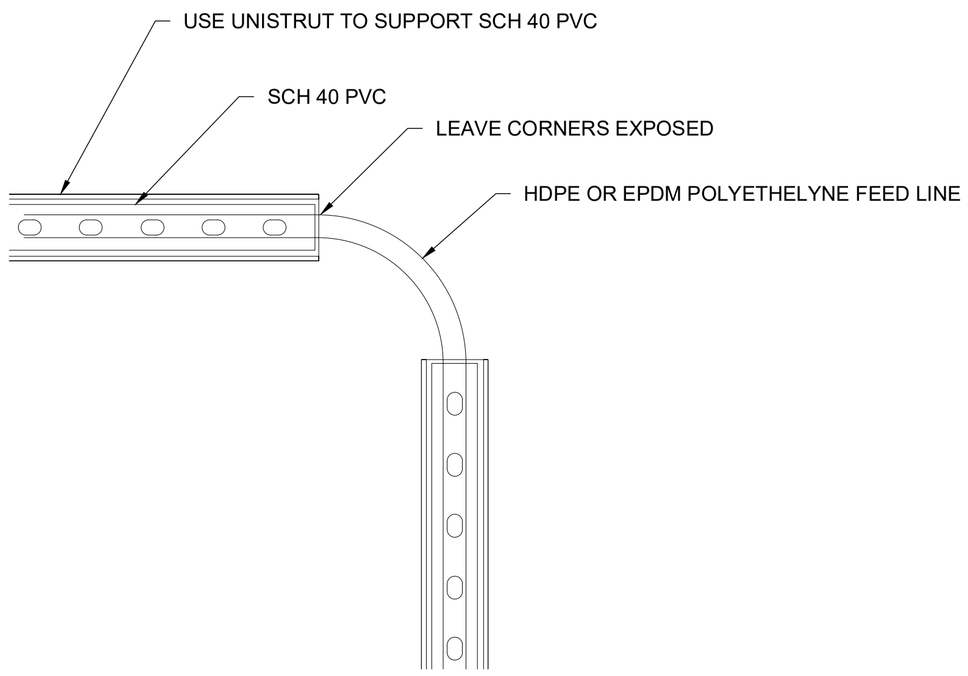
B. CHEMICAL FEED CARRIER PIPE SHALL TERMINATE AT CENTERLINE OF INTENDED INJECTION PIPE. FLEXIBLE HOSE ASSEMBLY SHALL CONNECT TO INJECTORS WITH ADDITIONAL EXCESS TUBING COILED.

C. INSTALL STATIC MIXER SUCH THAT INJECTION ENTERS THE BOTTOM HALF OF THE MIXER AT A 45° FACING INTO THE PLANT.

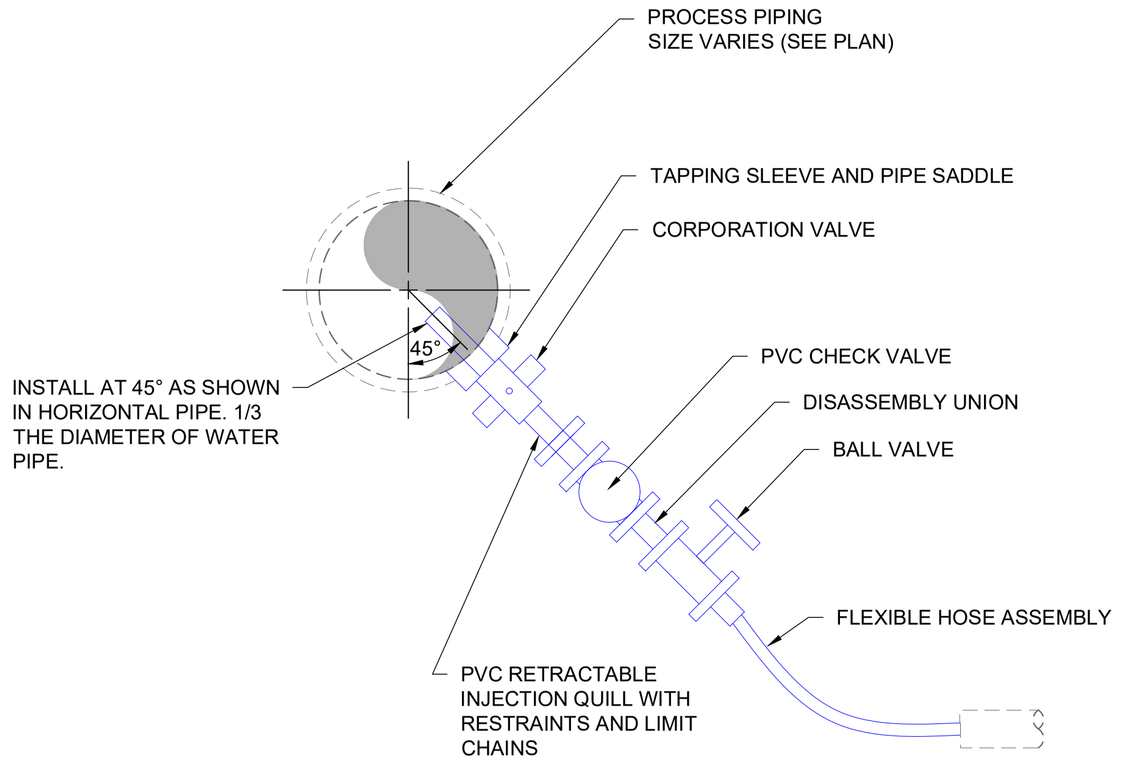
KEYNOTE LEGEND	
1.	6" MANUAL BUTTERFLY VALVE
2.	RAW SAMPLE TAP
3.	6" FLOW METER
4.	6" CHECK VALVE
5.	6" BLIND FLANGE
6.	INLINE STATIC MIXER WITH INJECTION POINT
7.	SAMPLE TAP SEE SECTION 40 0506.
8.	AIR RELEASE VALVE SEE SECTION



A PIPING SECTION VIEW
SCALE: 1/2" = 1'-0"



7 CHEMICAL FEED LINE DETAIL
SCALE: NTS



6 CHEMICAL INJECTOR
SCALE: NTS

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT AND WELLS

MOVILLE IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

PROJECT NO.	27061
FILE NAME	27061-PP5-31
DRAWN BY	TAK
DESIGNED BY	KMM
REVIEWED BY	SJL
ORIGINAL ISSUE DATE	05/28/2025
CLIENT PROJECT NO.	----

TITLE

PIPING SECTION VIEW

SHEET

PP5-31

S:\PROJECTS\27000 PROJ\27000-27099\27061 MOVILLE WATER SYSTEM IMPROVEMENTS-MOVILLE IA\27061 PLANT PROJECT\PROJECT\27061 MOVILLE WATER SYSTEM IMPROVEMENTS\ORTHOS\DWGS\27061-PP5-31.DWG

0 1/4"1/2" 1" 2"

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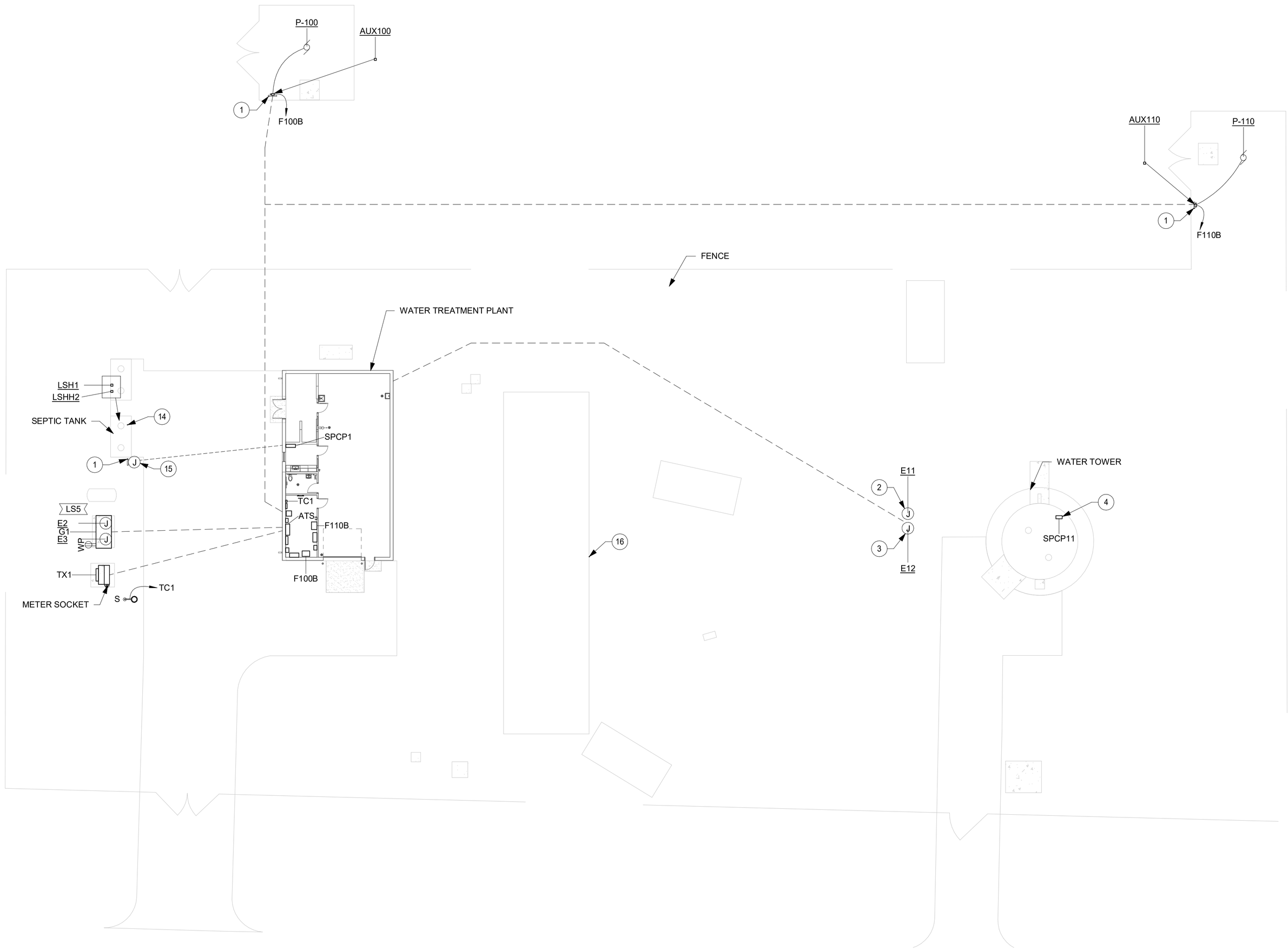

1 SITE POWER, LIGHTING, AND CONTROL PLAN
1" = 20'-0"

SHEET NOTES

1. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPATIBLE LIGHTING CONTROL DEVICES ARE SUPPLIED WITH LIGHTING PACKAGE.

2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.

3. ALL LIGHTING SHALL COMPLY WITH LOCAL AND STATE ENERGY CODES.

4. ALL UNDERGROUND PVC CONDUIT SHALL TRANSITION TO GALVANIZED STEEL RIGID METAL CONDUIT PRIOR TO EMERGING FROM UNDERGROUND. REFER TO BELOW GRADE PVC CONDUIT DETAIL.

5. WHERE RIGID POLYVINYL (PVC) CONDUIT LARGER THAN 2 INCH (53 MM) TRADE SIZE IS PROVIDED, USE GALVANIZED STEEL RIGID METAL CONDUIT ELBOWS FOR BENDS.

ELECTRICAL KEYNOTE LEGEND

1	F&I FREE STANDING ELECTRICAL STAND, REFER TO DETAIL.
2	F&I IN GRADE PULL BOX WITH MINIMUM TIER 8 COVER STAMPED "ELECTRICAL" OR SIMILAR FOR CONNECTION TO WATER TOWER. CONDUIT FROM BOX TO WATER TOWER AND CONDUCTORS BY SECTION 2 CONTRACTOR. COORDINATE INSTALLATION WITH SECTION 2 WATER TOWER CONTRACTOR. F&I CONDUIT FROM MDP WITH PULL STRING, REFER TO ONE LINE DIAGRAM. BOX SHALL BE CAPABLE OF ACCEPTING A MINIMUM OF (1) ADDITIONAL 1" CONDUIT.
3	F&I IN GRADE PULL BOX WITH MINIMUM TIER 8 COVER STAMPED "COMMUNICATIONS" OR SIMILAR FOR CONNECTION TO WATER TOWER. CONDUIT FROM BOX TO WATER TOWER BY SECTION 2 CONTRACTOR. COORDINATE INSTALLATION WITH SECTION 2 WATER TOWER CONTRACTOR. F&I CONDUIT TO SPCP1, AND F&I FIBER OPTIC CABLE TO WATER TOWER, REFER TO ONE LINE DIAGRAM. BOX SHALL BE CAPABLE OF ACCEPTING A MINIMUM OF (1) ADDITIONAL 2" CONDUIT.
4	SPCP11 PROVIDED BY SECTION 3 CONTRACTOR AND INSTALLED BY SECTION 2 CONTRACTOR IN BASE OF WATER TOWER. VERIFY FINAL LOCATION WITH SECTION 2 CONTRACTOR.
14	SEPTIC TANK; CLASS I DIVISION 1 SPACE: TANK INTERIOR AND WITHIN 3 FOOT RADIUS OF VENT. CLASS I DIVISION 2: WITHIN 5 FOOT RADIUS OF VENT AND WITHIN 3 FOOT ENVELOPE 1.5 FEET HIGH AROUND ACCESS HATCHES.
15	F&I PULL BOX AND TERMINATION ENCLOSURE FOR INSTALLATION OF SEPTIC TANK LEVEL SENSORS (LSH1 AND LSHH2), REFER TO DETAIL.
16	FUTURE STRUCTURE. CONDUITS SHALL BE INSTALLED A MINIMUM OF 15 FEET FROM FUTURE STRUCTURE.

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

SITE POWER, LIGHTING, AND CONTROL PLAN

SHEET

E2-00

0 1/4" 1/2" 1" 2"

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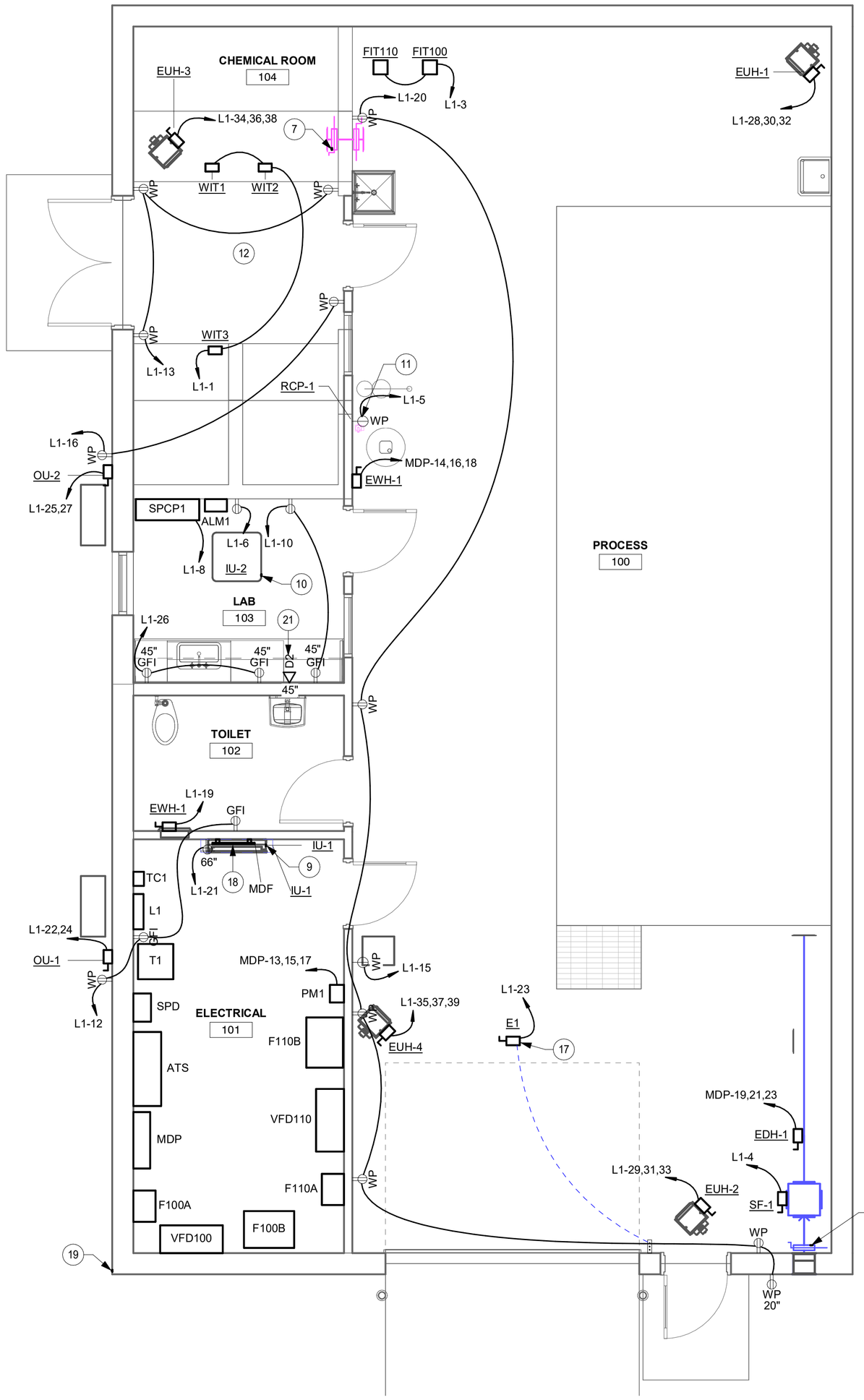
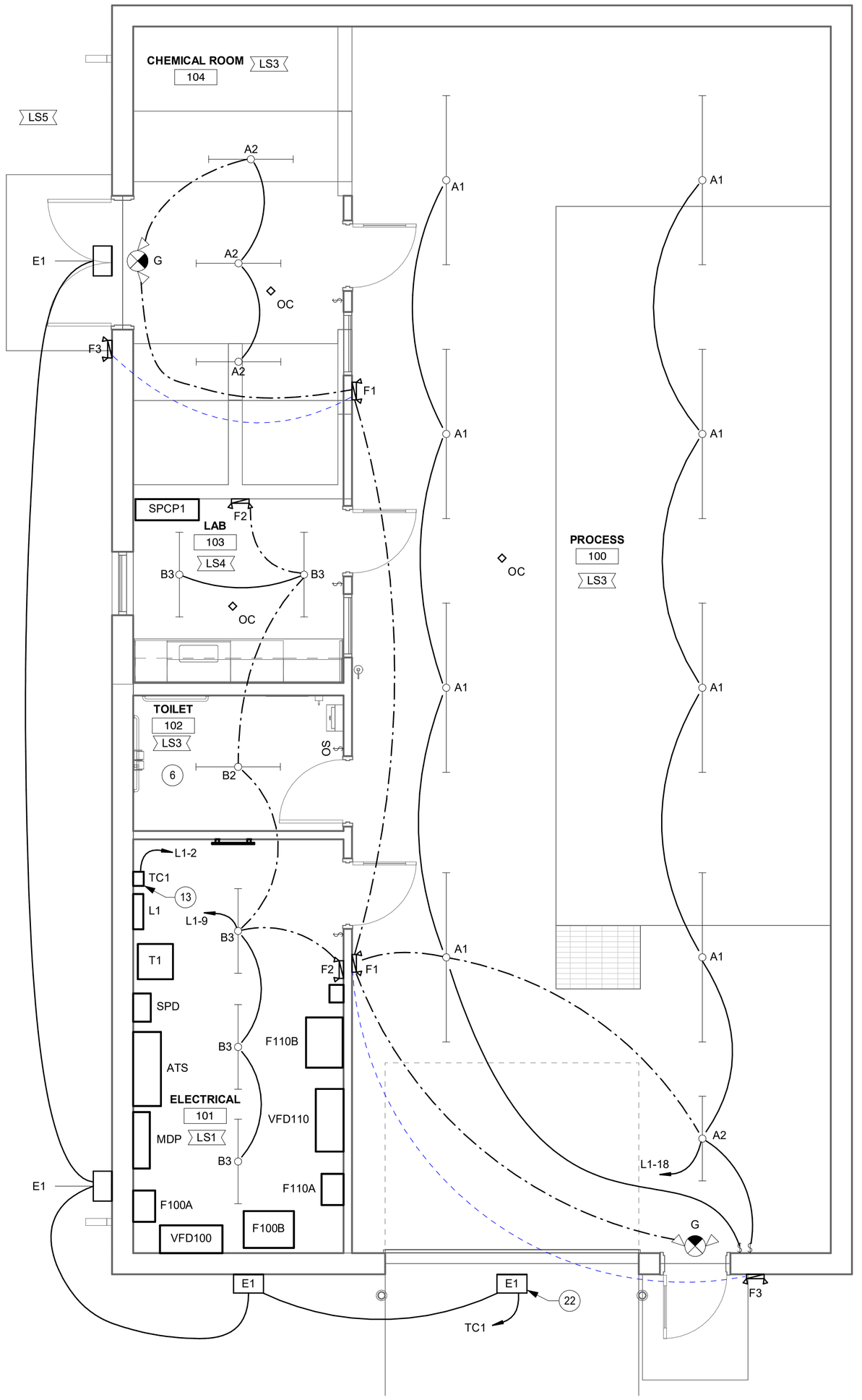


1 FIRST FLOOR POWER PLAN
1/4" = 1'-0"



2 FIRST FLOOR LIGHTING PLAN
1/4" = 1'-0"

N

SHEET NOTES

1. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE COMPATIBLE LIGHTING CONTROL DEVICES ARE SUPPLIED WITH LIGHTING PACKAGE.
2. REFER TO MANUFACTURERS INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
3. ALL LIGHTING SHALL COMPLY WITH LOCAL AND STATE ENERGY CODES.
4. PROVIDE UNSWITCHED HOT TO ALL EXIT AND EMERGENCY LIGHT FIXTURES.
5. LOCATIONS OF INDICATED LIGHTING CONTROL SENSORS ARE DIAGRAMMATIC AND ONLY INTENDED TO INDICATE WHICH ROOMS OR AREAS REQUIRE DEVICES. PROVIDE QUANTITY AND LOCATIONS AS REQUIRED FOR COMPLETE COVERAGE OF RESPECTIVE ROOM OR AREA BASED ON MANUFACTURER'S RECOMMENDATIONS FOR INSTALLED DEVICES.
6. MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.
7. COORDINATE WORK WITH OTHER TRADES.
8. CHEMICAL ROOM IS CONSIDERED A CORROSIVE LOCATION. PROCESS ROOM IS CONSIDERED A DAMP LOCATION. ALL OTHER INTERIOR SPACES ARE CONSIDERED DRY LOCATIONS.
9. LAB AND TOILET SPACES ARE CONSIDERED FINISHED SPACES, FLUSH MOUNT WALL DEVICE BOXES IN THESE SPACES.

ELECTRICAL KEYNOTE LEGEND

6	ENERGIZE SPACE EXHAUST FAN (EF-2) WITH SPACE LIGHTS, WHEN SPACE IS OCCUPIED.
7	INTERLOCK LOUVER WITH EF-1 EXHAUST FAN. F&I MINIMUM 3/4" CONDUIT TO EF-1 AND WIRE PER MANUFACTURERS INSTRUCTIONS.
8	INTERLOCK LOUVER WITH SUPPLY FAN SF-1. F&I MINIMUM 3/4" CONDUIT TO SF-1 AND WIRE PER MANUFACTURERS INSTRUCTIONS.
9	PROVIDE CONDUCTORS IN CONDUIT TO OU-1 OUTDOOR MINI SPLIT UNIT PER THE MANUFACTURERS INSTRUCTION.
10	PROVIDE CONDUCTORS IN CONDUIT TO OU-2 OUTDOOR MINI SPLIT UNIT PER THE MANUFACTURERS INSTRUCTION.
11	LOCATE RECEPTACLE NEAR RCP-1 PUMP.
12	WEIGHT INDICATING TRANSMITTERS (WIT'S) AND RECEPTACLES SERVING CHEMICAL PUMPS ARE SHOWN IN GENERAL LOCATIONS FOR DESIGN INTENT. CONTRACTOR RESPONSIBLE FOR COORDINATING AND ADJUSTING EXACT LOCATION OF EQUIPMENT TO MAKE A COMPLETE WORKING SYSTEM. CONTRACTOR RESPONSIBLE FOR FURNISHING AND INSTALLING FREE STANDING SUPPORT STRUCTURES FOR WIT'S AND RECEPTACLES AS REQUIRED.
13	PROVIDE 120VAC, 7 DAY, 24 HOUR, ASTRONOMICAL TIME CLOCK WITH MINIMUM OF (2) 20 AMP PROGRAMMABLE RELAY OUTPUTS.
17	PROVIDE CONNECTION TO OVERHEAD DOOR MOTOR. PROVIDE AND INSTALL WIRING FOR DOOR CONTROLLER AND PHOTOEYES. VERIFY LOCATION OF CONTROLLER WITH OWNER PRIOR TO INSTALLATION AND ADJUST ACCORDINGLY.
18	F&I 24"X24" PLYWOOD BACKBOARD PAINTED WHITE AND 24"WX12"D SHELF PAINTED WHITE FOR NETWORK EQUIPMENT. INSTALL SHELF 78" ABOVE FINISHED FLOOR.
19	F&I 1-1/4" CONDUIT WITH PULL STRING FROM INTERNET SERVICE PROVIDER EQUIPMENT TO MDF BACKBOARD. COORDINATE EXACT LOCATION WITH INTERNET SERVICE PROVIDER AND ADJUST CONDUIT LOCATION AS REQUIRED.
21	F&I (2) CAT6 CABLES TO MDF. F&I JACK AT EACH CABLE END.
22	COORDINATE LOCATION BETWEEN OVERHEAD DOOR AND CANOPY.

ISG

EST. City of MOVILLE 1887 IOWA

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

FIRST FLOOR POWER AND LIGHTING PLANS

SHEET

E2-11

0 1/4" 1/2" 1" 2"

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SHEET NOTES

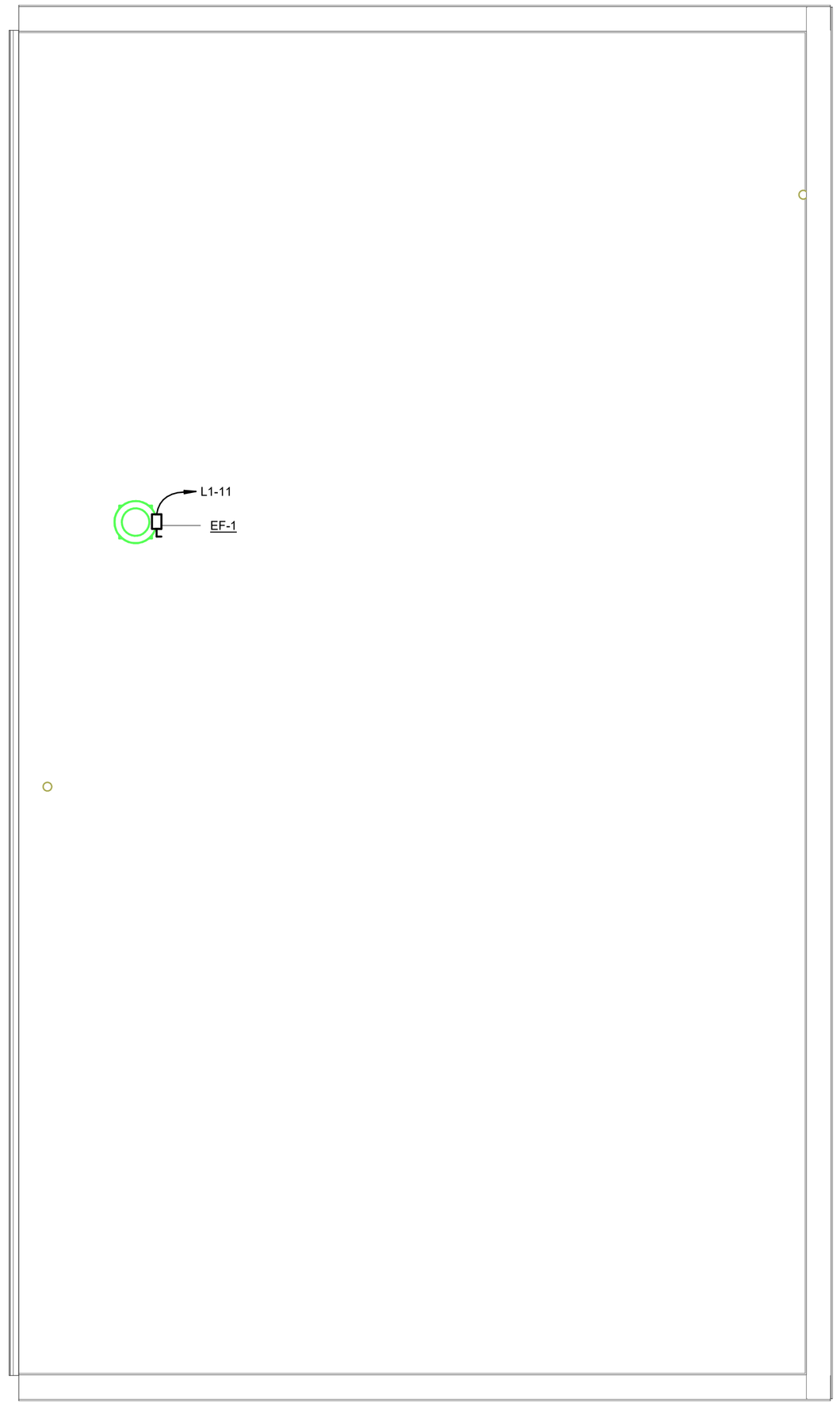
1. MAINTAIN FIRE RATING OF ALL WALLS AND FLOORS. PROVIDE FIRE PROOFING FOR ALL WALL AND FLOOR PENETRATIONS PER CODE.

2. COORDINATE WORK WITH OTHER TRADES.

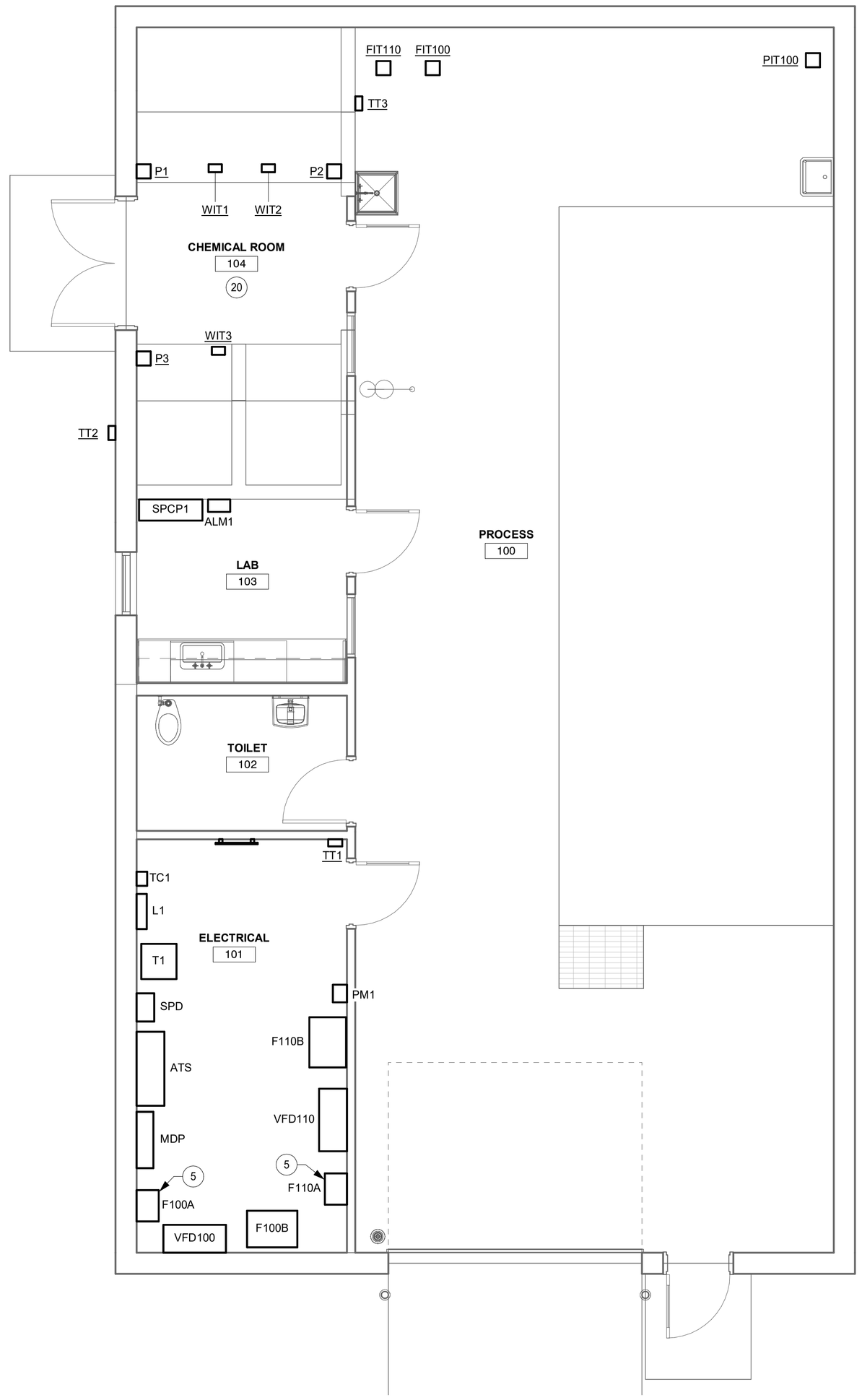
3. CHEMICAL ROOM IS CONSIDERED A CORROSIVE LOCATION. PROCESS ROOM IS CONSIDERED A DAMP LOCATION. ALL OTHER INTERIOR SPACES ARE CONSIDERED DRY LOCATIONS.

ELECTRICAL KEYNOTE LEGEND

5	ASSOCIATED VFD SHALL AUTOMATICALLY ENABLE AND DISABLE HARMONIC FILTER CONTACTOR AS RECOMMENDED BY FILTER MANUFACTURER FOR VARIABLE TORQUE LOAD. F&I 3/4"C WITH 2-#14'S TO ASSOCIATED VFD RELAY OUTPUT AND WIRE PER MANUFACTURERS INSTRUCTIONS.
20	WEIGHT INDICATING TRANSMITTERS (WIT'S) AND CHEMICAL PUMPS ARE SHOWN IN GENERAL LOCATIONS FOR DESIGN INTENT. CONTRACTOR RESPONSIBLE FOR COORDINATING AND ADJUSTING EXACT LOCATION OF EQUIPMENT TO MAKE A COMPLETE WORKING SYSTEM.



1 ROOF POWER PLAN
1/4" = 1'-0"



2 FIRST FLOOR CONTROL PLAN
1/4" = 1'-0"

N

2"
1"
1/4" 1/2"
0

179

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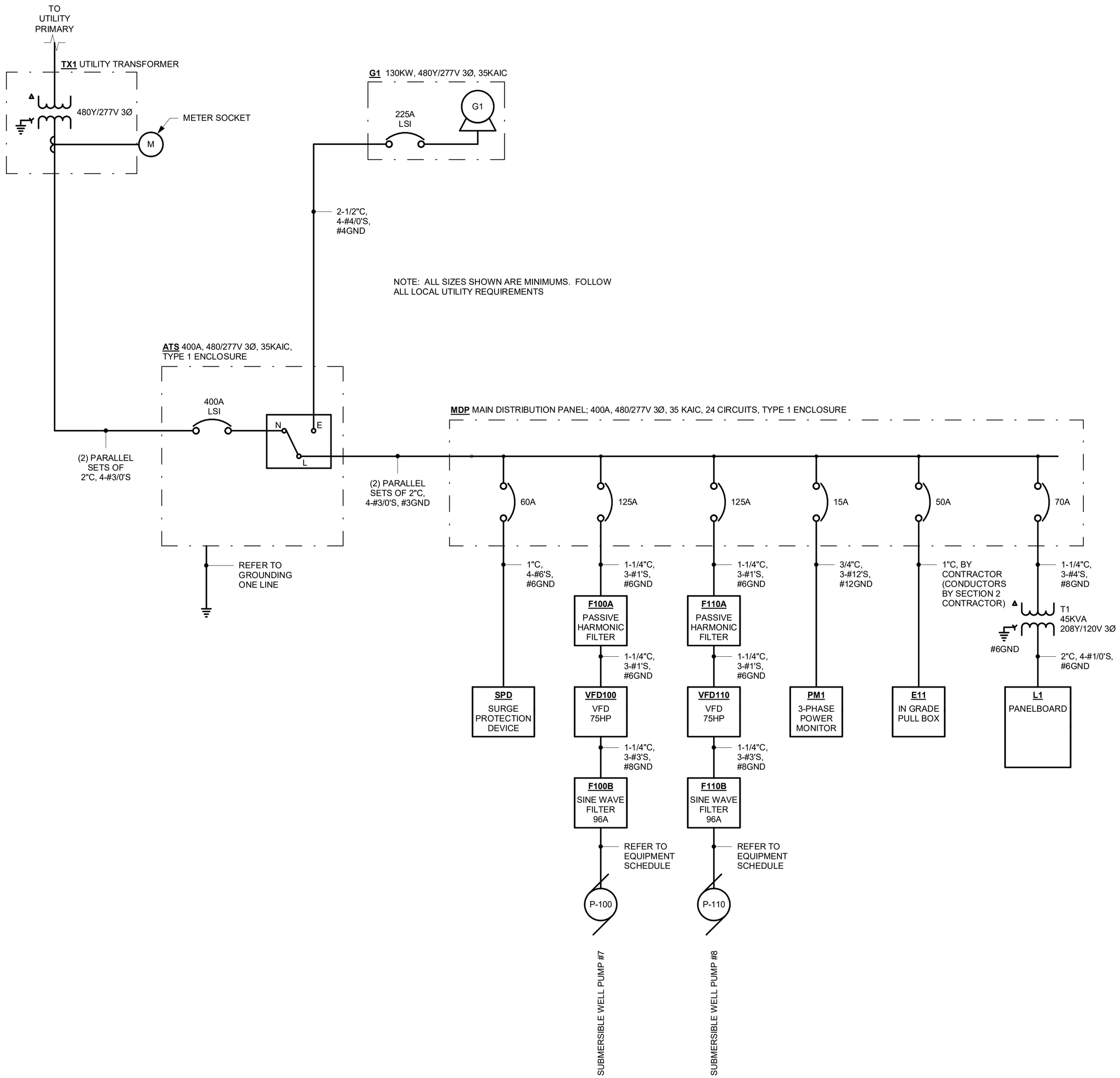
TITLE

ROOF POWER AND FIRST FLOOR CONTROL PLANS

SHEET

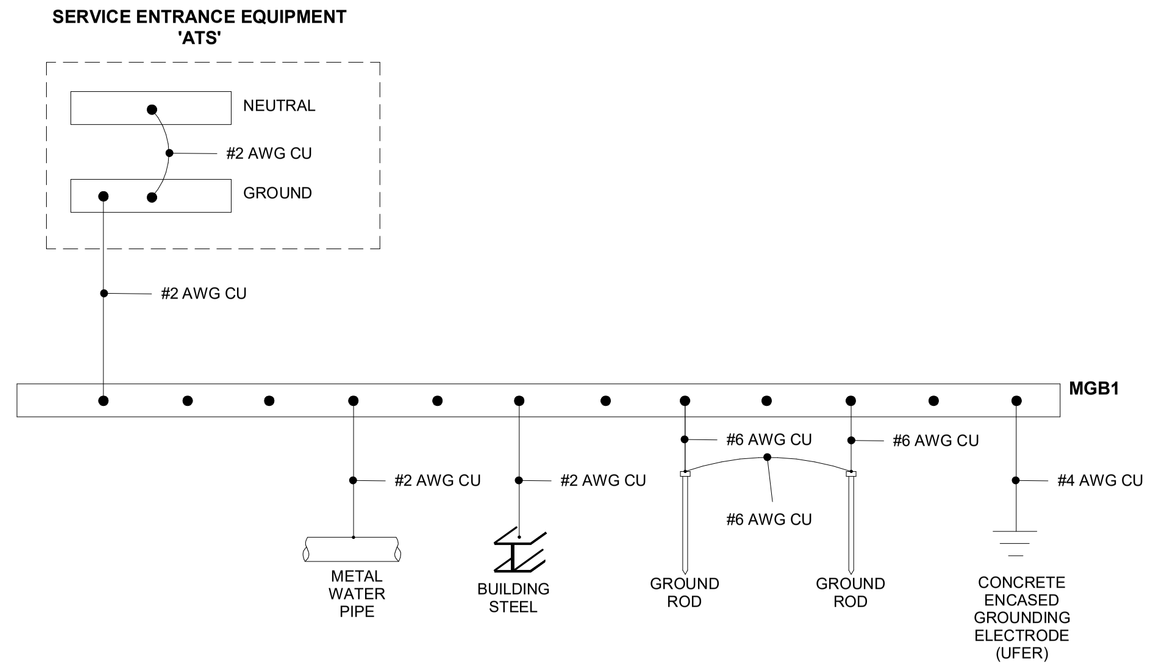
E2-12



1 ELECTRICAL ONE LINE DIAGRAM
NOT TO SCALE

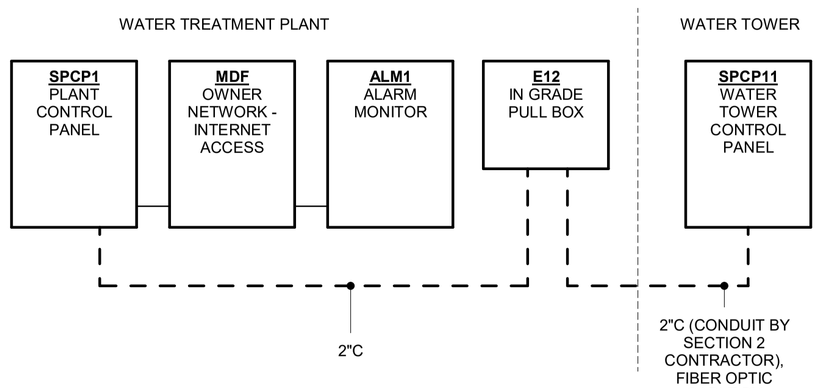
ONE LINE LEGEND

EXISTING	———
DEMOLISHED	- - - - -
NEW	———
ENCLOSURE	— – — – —



2 GROUNDING ONE LINE DIAGRAM
NOT TO SCALE

NOTES: F&I CAT6 CABLE IN MINIMUM 3/4" CONDUIT TO DEVICES SHOWN UNLESS NOTED OTHERWISE. CONTRACTOR RESPONSIBLE FOR FURNISHING AND INSTALLING FIBER OPTIC CABLE FROM SPCP1 TO SPCP11. INSTALL CABLES WITHOUT SPLICES. COORDINATE FIBER OPTIC CABLE INSTALLATION WITH SECTION 2 CONTRACTOR. F&I JACK AND PATCH CABLE AT MDF FOR EACH CABLE.



3 CONTROL NETWORK ONE LINE DIAGRAM
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ONE LINE DIAGRAMS

SHEET

E4-11

0 1/4" 1/2" 1" 2"

180

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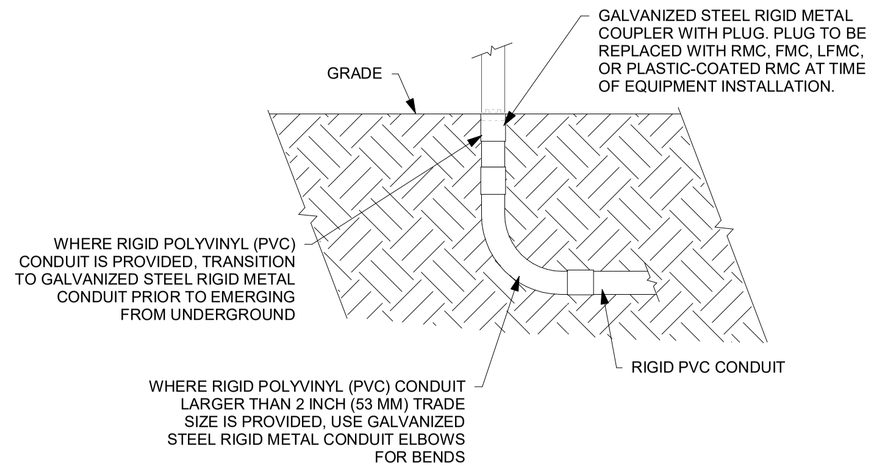
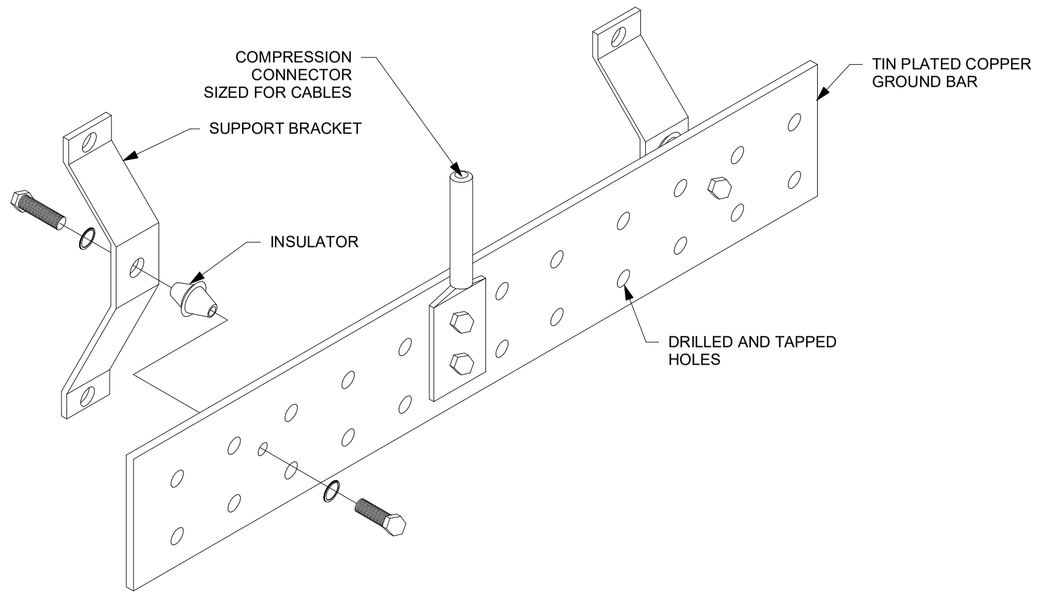


1 BELOW GRADE PVC CONDUIT DETAIL
NOT TO SCALE

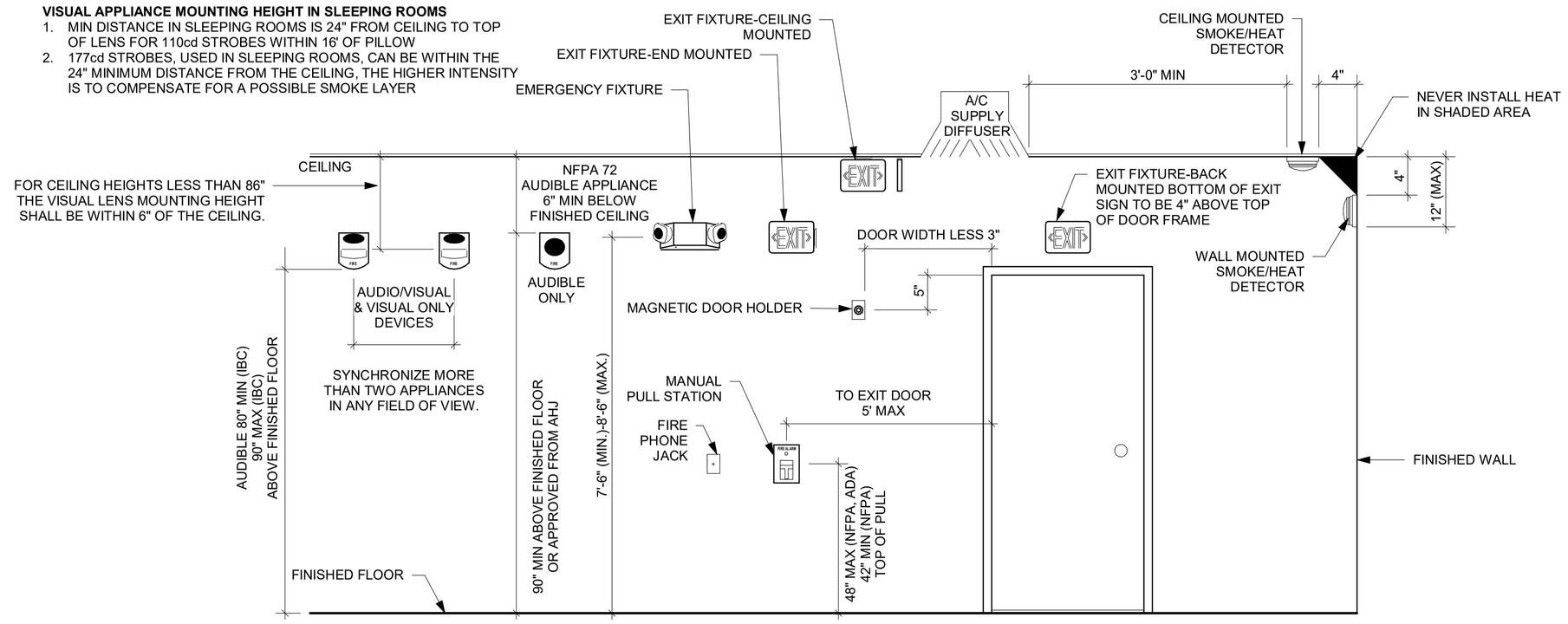
ELECTRICAL SYMBOLS LEGEND

RECEPTACLES		SWITCHES		MISC. POWER SYMBOLS		FIRE PROTECTION SYSTEM		COMMUNICATIONS		ELECTRICAL PANELS		TAG DESCRIPTIONS	
	SIMPLEX	$	SINGLE POLE		DISCONNECT	FACP	FIRE ALARM CONTROL PANEL		DATA JACK -WALL	P1	FLUSH MOUNT PANELBOARD	1,3,5,7	LIGHTING SCENARIO
	DUPLEX	$2	DOUBLE POLE		FUSED DISCONNECT	FAAP	FIRE ALARM ANNUNCIATOR PNL		FLOOR DATA JACK	P1	SURFACE MT PANELBOARD	#	KEYNOTE
IG	ISOLATED GROUND	$3	3-WAY		FAN		SMOKE DETECTOR		DATA JACK -CEILING	PHONE	PHONE SYSTEM		
TR	TAMPER RESISTANT	$4	4-WAY		ELECT. CONTROLLED VALVE		HEAT DETECTOR		TELEPHONE JACK- WALL				
WP	WEATHER PROOF W/GFI	$E	EMERGENCY		FUSESTAT	F	HORN STROBE		DATA/VOICE JACK - WALL				WIRE TYPES
GFI	GROUND FAULT INTERRUPT	$F	FAN		HAND DRYER		HORN ONLY	TV	TELEVISION JACK				
CR	CONTROLLED RECEPTACLE	$K	KEY OPERATED		HAIR DRYER	C	STROBE ONLY (C = CLG MTD)	S	SPEAKER - CEILING				STANDARD
CTR	COUNTERTOP RECEPTACLE	$LV	LOW VOLTAGE	H	HEATER	SC	SPKR STROBE (C = CLG MTD)	S	SPEAKER - WALL/SURFACE				LOW-VOLTAGE
USB	COMBO RECEPTACLE / USB	$P	PILOT LIGHT	J	JUNCTION BOX	F	EXTERIOR HORN W/ STROBE	C	CLOCK				UN-SWITCHED HOT
	HIGH VOLTAGE	$T	TIMER		MOTOR		MINI HORN	B	BELL				
	SPLIT WIRE	$CB	CIRCUIT BREAKER		MOTOR WITH DISCONNECT	A	ANSUL TIE		BUZZER				
	DOUBLE DUPLEX	$D	DIMMER	R	RELAY	TS	SPRINKLER TAMPER SWITCH	IC	INTERCOM				
	220 VOLT	$H	ILLUMINATED HANDLE		SOLENOID VALVE	FS	SPRINKLER FLOW SWITCH	M	MICROPHONE				
	SPECIAL PURPOSE	$M	MOTOR		COMBINATION STARTER & DISC	WSP	WALL SPEAKER - FIRE		SPEAKER/CLOCK				
	CEILING MOUNTED RECPT	$SC	SPEED CONTROLLER		MOTOR STARTER	SFA	CEILING SPEAKER - FIRE	TC	TIME CLOCK				
	CEILING MOUNTED SP RECPT	$W	SPRING WOUND TIMER	T	THERMOSTAT		MAGNETIC DOOR HOLDER	WAP	WIRELESS ACCESS POINT				
	FLOOR BOX RECEPTACLE	$MC	MOMENTARY CONTACT	SD	DUCT-TYPE SMOKE DETECTOR	F	MANUAL PULL STATION	TP	TOUCHPAD				
		$WP	WEATHER PROOF		USB CHARGING STATION	AIM	ADDRESSABLE INPUT MODULE	PROJ	PROJECTOR				
		$OS	OCCUPANCY SENSOR-WALL			AOM	ADDRESSABLE OUTPUT MOD.	BT	BLUETOOTH				
		$VS	VACANCY SENSOR-WALL				ABORT SWITCH						
		OS	OCCUPANCY SENSOR-CLG			C	BELL-CHIME						
		VS	VACANCY SENSOR-CLG			EOLR	END OF LINE RESISTOR						
		PC	PHOTO CELL			FSD	FIRE/SMOKE DAMPER						
			3-BUTTON SWITCH			S	SMOKE DAMPER						
		$L?	LOW VOLTAGE SWITCH / TYPE			CO	CARBON MONOXIDE DETECTOR						



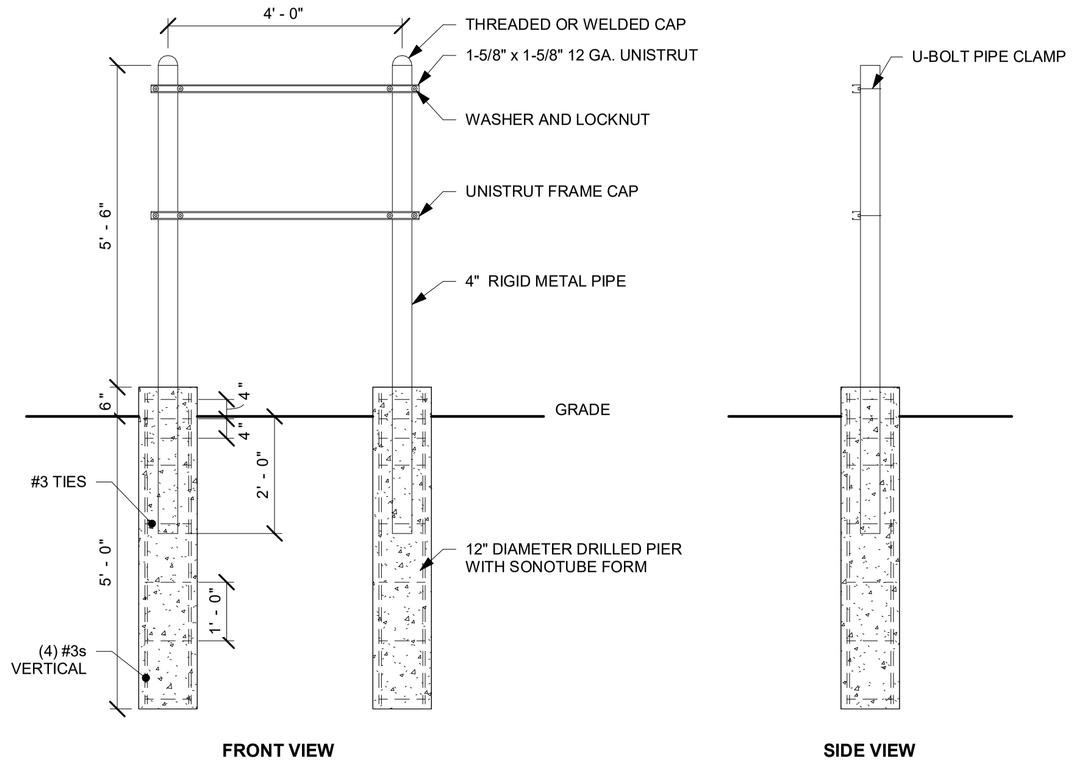
2 GROUND BAR
NOT TO SCALE

VISUAL APPLIANCE MOUNTING HEIGHT IN SLEEPING ROOMS
1. MIN DISTANCE IN SLEEPING ROOMS IS 24" FROM CEILING TO TOP OF LENS FOR 110cd STROBES WITHIN 16' OF PILLOW
2. 177cd STROBES, USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" MINIMUM DISTANCE FROM THE CEILING, THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER

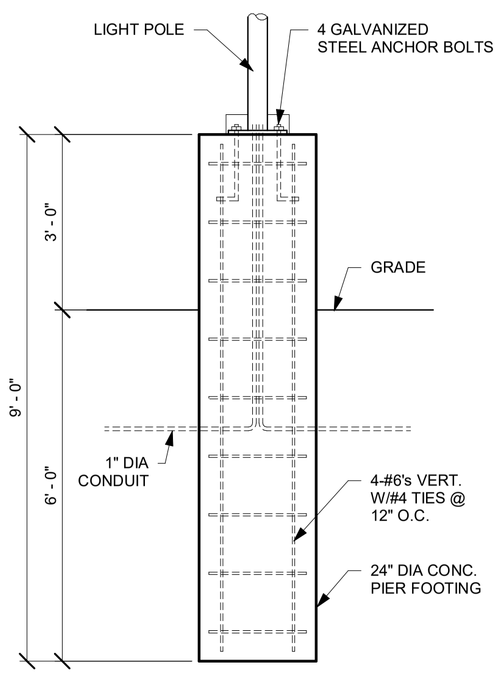


3 TYPICAL MOUNTING HEIGHTS
NOT TO SCALE

ALL UNISTRUT, FASTENERS, AND ASSOCIATED MATERALS SHALL BE GALVANIZED OR STAINLESS STEEL.
DETAIL IS MEANT TO CONVEY MINIMUM CONSTRUCTION REQUIREMENTS.
MAXIMUM DISTANCE BETWEEN VERTICAL SUPPORTS IS SHOWN.
CONTRACTOR RESPONSIBLE FOR SIZING, SUPPLYING, AND CONSTRUCTING STRUCTURE WITH ALL NEEDED MATERIALS TO SUPPORT ALL REQUIRED EQUIPMENT PER PLANS AND SPECIFICATIONS. INCREASE STUCTURE LENGTH WITH ADDITIONAL VERTICAL SUPPORTS AS REQUIRED.
UNISTRUT MAY BE PLACED ON BOTH SIDES OF STRUCTURE FOR INSTALLATION OF EQUIPMENT.
F&I UNISTRUT AS REQUIRED TO PROPERLY SECURE EQUIPMENT. ENCLOSURES SHALL BE SECURED AT TOP AND BOTTOM, AND ADDITIONAL SUPPORTS SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER OR REQUIRED.



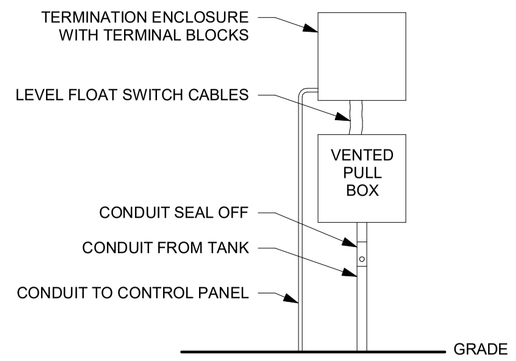
4 FREE STANDING EXTERIOR EQUIPMENT STAND DETAIL
NOT TO SCALE



** LIGHT POLE BASE INSTALLED AND PROVIDED BY ELECTRICAL CONTRACTOR

5 SITE POLE MOUNTING BASE
NOT TO SCALE

TYPICAL CONDUIT AND CABLE INSTALLATION FOR WASTE STORAGE TANK LEVEL SENSORS. CONTRACTOR RESPONSIBLE FOR FURNISHING AND INSTALLING ADDITIONAL CONDUITS, ENCLOSURES, AND EQUIPMENT AS REQUIRED FOR ACTUAL EQUIPMENT PER THE PLANS AND SPECIFICATIONS. WASTE STORAGE TANK IS CONSIDERED CLASSIFIED SPACE. ALL ENCLOSURES SHALL BE TYPE 4X STAINLESS STEEL. ALL STRUCTURAL SUPPORTS, FASTENERS, ETC. SHALL BE STAINLESS STEEL.



6 WASTE STORAGE TANK ELECTRICAL INSTALLATION DETAIL
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SYMBOLS AND DETAILS

SHEET

E4-12

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ELECTRICAL EQUIPMENT SCHEDULE

TAG	DESCRIPTION	POWER REQUIREMENTS HP	VOLTS	POLES	FLA	VA	LOCATION	PNL - CKT	MINIMUM CONDUIT, WIRE SIZE, GROUND	STARTER TYPE	STARTER BY	DISCONNECT TYPE	DISCONNECT BY	NOTES
E1	OVERHEAD DOOR	1/2	120 V	1	9.8 A	1127 VA	PROCESS 100	L1 - 23	3/4"C, 2-#12's, #12GND	(none)	(none)	NF	EC	
E2	G1 BATTERY CHARGER		120 V	1	5.0 A	600 VA		L1 - 17	3/4"C, 2-#12's, #12GND	(none)	(none)	(none)	(none)	
E3	G1 COOLANT HEATER		120 V	1	8.3 A	1000 VA		L1 - 14	3/4"C, 2-#12's, #12GND	(none)	(none)	(none)	(none)	
EDH-1	ELECTRIC DUCT HEATER		480 V	3	12.0 A	10000 VA	PROCESS 100	MDP - 19,21,23	3/4"C, 3-#12's, #12GND	(none)	(none)	NF	EC	
EF-1	EXHAUST FAN	1/6	120 V	1	2.2 A	253 VA		L1 - 11	3/4"C, 2-#12's, #12GND	(none)	(none)	NF	WU	
EUH-1	ELECTRIC UNIT HEATER		208 V	3	6.0 A	5000 VA	PROCESS 100	L1 - 28,30,32	3/4"C, 3-#12's, #12GND	(none)	(none)	NF	WU	
EUH-2	ELECTRIC UNIT HEATER		208 V	3	6.0 A	5000 VA	PROCESS 100	L1 - 29,31,33	3/4"C, 3-#12's, #12GND	(none)	(none)	NF	WU	
EUH-3	ELECTRIC UNIT HEATER		208 V	3	6.0 A	5000 VA	CHEMICAL ROOM 104	L1 - 34,36,38	3/4"C, 3-#12's, #12GND	(none)	(none)	NF	WU	
EUH-4	ELECTRIC UNIT HEATER		208 V	3	6.0 A	5000 VA	PROCESS 100	L1 - 35,37,39	3/4"C, 3-#12's, #12GND	(none)	(none)	NF	WU	
EWH-1	ELECTRIC WATER HEATER		480 V	3	14.6 A	12200 VA	PROCESS 100	MDP - 14,16,18	3/4"C, 3-#12's, #12GND	(none)	(none)	NF	EC	
EWH-1	ELECTRIC WALL HEATER		120 V	1	8.3 A	1000 VA	TOILET 102	L1 - 19	3/4"C, 2-#12's, #12GND	(none)	(none)	NF	WU	
OU-1	MINI-SPLIT OUTDOOR UNIT		208 V	2	19.0 A	3952 VA		L1 - 22,24	3/4"C, 2-#12's, #12GND	(none)	(none)	NF	EC	
OU-2	MINI-SPIT OUTDOOR UNIT		208 V	2	13.4 A	2787 VA		L1 - 25,27	3/4"C, 2-#10's, #10GND	(none)	(none)	NF	EC	
P-100	SUBMERSIBLE WELL PUMP #7	60	480 V	3	77.0 A	61347 VA		F100B - 2,4,6	1-1/4"C, 3-#3's, #8GND	VFD	EC	NF	EC	F&I DISCONNECT WITH AUXILIARY CONTACT. REFER TO ONE LINE FOR MINIMUM VFD SIZE.
P-110	SUBMERSIBLE WELL PUMP #8	60	480 V	3	77.0 A	61347 VA		F110B - 1,3,5	1-1/4"C, 3-#3's, #8GND	VFD	EC	NF	EC	F&I DISCONNECT WITH AUXILIARY CONTACT. REFER TO ONE LINE FOR MINIMUM VFD SIZE.
RCP-1	RECIRCULATION PUMP RECEPTACLE		120 V	1	1.0 A	115 VA	PROCESS 100	L1 - 5	3/4"C, 2-#12's, #12GND	(none)	(none)	(none)	(none)	PROVIDE CORD AND PLUG CONNECTION TO PUMP. PROVIDE RECEP WITH IN-USE WEATHER-PROOF COVER.
SF-1	SUPPLY FAN UNIT	1/6	120 V	1	1.3 A	150 VA	PROCESS 100	L1 - 4	#12"C, 2-#12's, #12GND	(none)	(none)	NF	WU	

STARTER TYPE
COMB - COMBINATION
ECM - ELECTRONICALLY CONTROLLED MOTOR
MAG - MAGNETIC STARTER
MAN - MANUAL STARTER
SS - SOFT STARTER
VFD - VARIABLE FREQUENCY DRIVE

STARTER BY
EC - ELECTRICAL CONTRACTOR
ES - EQUIPMENT SUPPLIER
MC - MECHANICAL CONTRACTOR
WU - WITH UNIT

DISCONNECT TYPE
BO - BY OTHERS
F - FUSED DISCONNECT
NF - NON-FUSED DISCONNECT
WU - WITH UNIT

DISCONNECT BY
EC - ELECTRICAL CONTRACTOR
ES - EQUIPMENT SUPPLIER
MC - MECHANICAL CONTRACTOR

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMP	WATTS	TYPE COMMENTS
A1	8FT VAPOR TIGHT LINEAR	LITHONIA	FEM-L96-12000LM-LPACL-WD-MVOLT-GZ10-40K-80CRI	12796 LM	76 W	SUSPEND 13'-0" ABOVE FINISHED FLOOR
A2	4FT VAPOR TIGHT LINEAR	LITHONIA	FEM-L48-8000LM-LPACL-WD-MVOLT-GZ10-40K-80CRI	8621 LM	51 W	SUSPEND 13'-0" ABOVE FINISHED FLOOR
B2	4FT LINEAR	LITHONIA	CLX-L48-3000LM-SEF-WDL-MVOLT-GZ10-40K-80CRI	3000 LM	32 W	CEILING MOUNT
B3	4FT LINEAR	LITHONIA	CLX-L48-5000LM-SEF-WDL-MVOLT-GZ10-40K-80CRI	5000 LM	32 W	SUSPEND 13'-0" ABOVE FINISHED FLOOR
E1	WALL PACK	LITHONIA	DSXW1-LED-P4-40K-70CRI-T2M-MVOLT-BBW-PIR-BSW-DBLXD	4269 LM	29 W	INSTALL MINIMUM 12'-8" A.F.F.. PROVIDE #BSW BIRD DETERENT SPIKE AND #PIR MOTION/AMBIENT SENSOR OPTIONS.
F1	EMERGENCY LIGHT - WET AREA	LITHONIA	WLTU-LED	LED	2 W	
F2	EMERGENCY LIGHT - DRY AREA	LITHONIA	ELM2L-M12	LED	1 W	
F3	REMOTE EMERGENCY LIGHT	LITHONIA	ERE-GY-SGL-RD-WP	LED	0 W	PROVIDE #WP WEATHER PROOF OPTION
G	EXIT/ EMERGENCY COMBINATION LIGHT	LITHONIA	WLTC-1-R-SD	3W LED	7 W	PROVIDE UNSWITCHED HOT TO FIXTURE
S	AREA LIGHT POLE MOUNTED	LITHONIA	DSX1-LED-P2-40K-70CRI-T2M-MVOLT-RPA-PIR-DBLXD	9651 LM	68 W	PROVIDE STRAIGHT ROUND POLE. INSTALL FIXTURE 20' A.F.G.. PROVIDE #PIR MOTION/AMBIENT OPTION. MOUNT POLE ON 3' BASE, REFER TO MOUNTING BASE DETAIL.

LIGHTING SCENARIO SCHEDULE

SCENARIO#	LIGHTING SCENARIO DESCRIPTION
LS1	MANUAL ON MANUAL OFF
LS3	OCCUPANCY SENSOR AND MANUAL ON/OFF. OCCUPANCY SENSOR TO TURN LIGHTS ON WHEN SPACE IS OCCUPIED AND TURN LIGHTS OFF WHEN SPACE IS UNOCCUPIED AFTER 30 MINUTES.
LS4	OCCUPANCY SENSOR AND MANUAL ON/OFF WITH 0-10 VOLT DIMMING. OCCUPANCY SENSOR TO TURN LIGHTS ON WHEN SPACE IS OCCUPIED AND TURN LIGHTS OFF WHEN SPACE IS UNOCCUPIED AFTER 30 MINUTES.
LS5	AUTOMATIC CONTROL OF EXTERIOR FIXTURES BASED UPON THE FOLLOWING SCHEDULE: 7-DAY PROGRAMMABLE ASTRONOMICAL TIME CLOCK SET FOR OPERATION FROM DUSK TO DAWN. AUTOMATIC ON DUSK TO DAWN OPERATION WITH PHOTOCELL. LIGHT OUTPUT SHALL BE AUTOMATICALLY REDUCED BY 30% WHEN MOTION IS NOT DETECTED FOR 15 MINUTES. LIGHT OUTPUT SHALL AUTOMATICALLY INCREASE TO FULL OUTPUT WHEN MOTION IS DETECTED.

NOTES: CONTROL CONDUCTORS MAY BE COMBINED IN SINGLE CONDUIT, UPSIZE CONDUIT AS REQUIRED.

INPUT AND OUTPUT CONTROL SCHEDULE

ITEM#	DESCRIPTION	PANEL	MINIMUM CONDUIT, WIRE #, SIZE, GND	I/O	DEVICE BY	NOTES
ALM1	ALARM MONITOR	SPCP1	1-1/2"C, 22-#14'S, 2-#20 TWISTED PAIR SHIELDED	11 DO, 2 AO	EC	
ATS	AUTO TRANSFER SWITCH EMERGENCY POSITION	SPCP1	3/4"C, 2-#14'S	DI	EC	
AUX100	WELL #7 P-100 DISCONNECT OPEN POSITION AUXILIARY CONTACT	SPCP1	3/4"C, 2-#14'S	DI	EC	
AUX110	WELL #8 P-110 DISCONNECT OPEN POSITION AUXILIARY CONTACT	SPCP1	3/4"C, 2-#14'S	DI	EC	
F100A	PASSIVE HARMONIC FILTER OVERTEMPERATURE	SPCP1	3/4"C, 2-#14'S	DI	EC	
F100B	SINE WAVE FILTER OVERTEMPERATURE	SPCP1	3/4"C, 2-#14'S	DI	EC	
F110A	PASSIVE HARMONIC FILTER OVERTEMPERATURE	SPCP1	3/4"C, 2-#14'S	DI	EC	
F110B	SINE WAVE FILTER OVERTEMPERATURE	SPCP1	3/4"C, 2-#14'S	DI	EC	
FIT100	WELL #7 FLOW TRANSMITTER	SPCP1	3/4"C, 2-#14'S, 1-#20 TWISTED PAIR SHIELDED	DI, AI	EC	
FIT110	WELL #8 FLOW TRANSMITTER	SPCP1	3/4"C, 2-#14'S, 1-#20 TWISTED PAIR SHIELDED	DI, AI	EC	
G1	GENERATOR RUNNING AND ALARM MONITOR	SPCP1	3/4"C, 4-#14'S	2 DI	EC	
LSH1	HIGH LEVEL FLOAT SWITCH SEPTIC TANK	SPCP1	3/4"C, 2-#14'S, #14GND	DI	ES	
LSHH2	HIGH HIGH LEVEL FLOAT SWITCH SEPTIC TANK	SPCP1	3/4"C, 2-#14'S, #14GND	DI	ES	
P1	CAUSTIC CHEMICAL PUMP	SPCP1	3/4"C, 6-#14'S, 1-#20 TWISTED PAIR SHIELDED	DO, 2 DI, AO	ES	PROVIDE CONNECTION TO PUMP VIA M12 CABLES, COORDINATE WITH EQUIPMENT SUPPLIER
P2	SODIUM HYPOCHLORITE PUMP	SPCP1	3/4"C, 6-#14'S, 1-#20 TWISTED PAIR SHIELDED	DO, 2 DI, AO	ES	PROVIDE CONNECTION TO PUMP VIA M12 CABLES, COORDINATE WITH EQUIPMENT SUPPLIER
P3	PHOSPHATE CHEMICAL PUMP	SPCP1	3/4"C, 6-#14'S, 1-#20 TWISTED PAIR SHIELDED	DO, 2 DI, AO	ES	PROVIDE CONNECTION TO PUMP VIA M12 CABLES, COORDINATE WITH EQUIPMENT SUPPLIER
PIT100	SYSTEM WATER PRESSURE TRANSMITTER	SPCP1	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	EC	
PM1	3-PHASE POWER MONITOR ALARM	SPCP1	3/4"C, 2-#14'S	DI	EC	
SPD	SURGE PROTECTION DEVICE ALARM	SPCP1	3/4"C, 2-#14'S	DI	EC	
TT1	TEMPERATURE TRANSMITTER	SPCP1	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	EC	
TT2	TEMPERATURE TRANSMITTER	SPCP1	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	EC	
TT3	TEMPERATURE TRANSMITTER	SPCP1	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	EC	
VFD100	SUBMERSIBLE WELL VFD - DISABLE	SPCP1	3/4"C, 6-#14'S, 1-#20 TWISTED PAIR SHIELDED	DO, DI, AO	EC	PROVIDE RELAY CONTROL INDEPENDENT FROM ELECTRONIC CONTROLLER TO DISABLE VFD, REFER TO SECTION 26 0915 SUPERVISORY AND PROCESS CONTROL FOR REQUIREMENTS.
VFD110	SUBMERSIBLE WELL VFD - DISABLE	SPCP1	3/4"C, 6-#14'S, 1-#20 TWISTED PAIR SHIELDED	DO, DI, AO	EC	PROVIDE RELAY CONTROL INDEPENDENT FROM ELECTRONIC CONTROLLER TO DISABLE VFD, REFER TO SECTION 26 0915 SUPERVISORY AND PROCESS CONTROL FOR REQUIREMENTS.
WIT1	CAUSTIC DAY TANK SCALE	SPCP1	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	ES	
WIT2	SODIUM HYPOCHLORITE DAY TANK SCALE	SPCP1	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	ES	
WIT3	PHOSPHATE DAY TANK SCALE	SPCP1	3/4"C, 1-#20 TWISTED PAIR SHIELDED	AI	ES	

I/O		DEVICE BY	
AI	ANALOG INPUT	BO	BY OWNER
AO	ANALOG OUTPUT	EC	ELECTRICAL CONTRACTOR
COM	COMMUNICATIONS	ES	EQUIPMENT SUPPLIER
DI	DIGITAL INPUT	MC	MECHANICAL CONTRACTOR
DO	DIGITAL OUTPUT	PC	PROCESS CONTRACTOR
ENET	ETHERNET/IP	WU	WITH UNIT

0 1/4" 1/2" 1" 2"

182

5/28/2025 9:27:05 AM

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

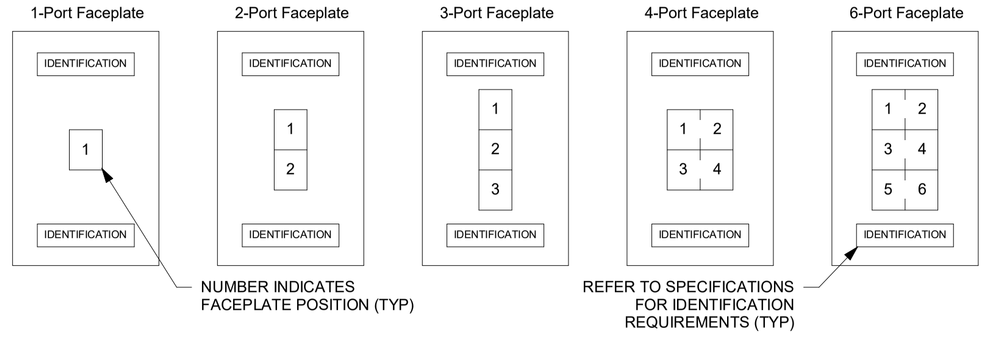
EQUIPMENT SCHEDULES

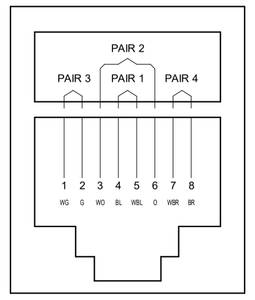
SHEET

E4-13

TECHNOLOGY INFORMATION OUTLET SCHEDULE

SINGLE GANG WALLPLATES





ANSI/TIA/EIA T568B
PIN/PAIR ASSIGNMENT

NOTES:
1. PROVIDE REMOVABLE BLANK INSERT(S) FOR ALL UNUSED PORTS.

SCHEDULE NOTES:
1. LOCATION OF FUTURE OR OWNER PROVIDED WIRELESS ACCESS POINT AND CAMERA, PROVIDE A 20' SLACK COIL AT THE NEAREST CABLE SUPPORT FOR POSSIBLE RELOCATION AFTER WIRELESS SURVEY.

LEGEND

AUX	3.5MM TRS
BLANK	FILLER MODULE
CAT6(A)	CAT6(A) POINT-TO-POINT
COAX	F-CONNECTOR
DATA	CAT6(A) TO MDF/IDF
HDMI	HDMI FEMALE JACK
-----	HDMI CONTINUED

TECHNOLOGY OUTLET SCHEDULE

CONFIGURATION	PORT COUNT	PORTS (SEE DETAIL FOR LOCATIONS) 1	2	3	4	5	6	NOTES
D2	2	DATA	DATA					

Branch Panel: L1

Location: ELECTRICAL 101
Supply From: T1
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000
Mains Type: MCB
Mains Rating: 150 A
MCB Rating: 150 A

Notes:
Provide fully rated feed through lugs. Provide GFI type circuit breaker where GFI is indicated.

CKT	Circuit Description	Trip	Pole	A		B		C		Pole	Trip	Circuit Description	CKT
1	WIT1, WIT2, WIT3 Scales	20 A	1	15	184					1	20 A	TC1 Exterior Lighting Clock	2
3	FIT100 & FIT110	20 A	1			100	150			1	15 A	SF-1 Supply Fan	4
5	GFI - RCP-1 Recep	20 A	1					115	180	1	20 A	Recep ALM1	6
7	Recep G1 Generator	20 A	1	180	300					1	20 A	SPCP1	8
9	Lighting Interior Non-Process	20 A	1			193	360			1	20 A	Receps - Lab	10
11	EF-1 Exhaust Fan	15 A	1					253	540	1	20 A	Recep Panel and Toilet	12
13	Receps Chemical Pumps	20 A	1	540	1000					1	20 A	E3 G1 Gen Coolant Heater	14
15	GFI - Recep DH-1	20 A	1			1440	360			1	20 A	Receps OU2 & Chem Room	16
17	E2 G1 Gen Battery Charger	20 A	1					600	826	1	20 A	Lighting Interior Process	18
19	EWH-1 Heater - Restroom	15 A	1	1000	1080					1	20 A	Receps Process Room	20
21	Recep MDF	20 A	1			360	1976			2	30 A	OU-1 Minisplit	22
23	E1 Overhead Door	20 A	1					1127	1976				24
25	OU-2 Minisplit	15 A	2	1394	360					1	20 A	Receps Lab SW	26
27						1394	1667						28
29								1667	1667	3	20 A	EUH-1	30
31	EUH-2	20 A	3	1667	1667								32
33						1667	1667						34
35								1667	1667	3	20 A	EUH-3	36
37	EUH-4	20 A	3	1667	1667								38
39						1667	0			1	20 A	SPARE	40
41	SPARE	20 A	1					0	0	1	20 A	SPARE	42
43	SPARE	20 A	1	0	0					1	20 A	SPARE	44
45	SPARE	20 A	1			0	0			1	20 A	SPARE	46
47	SPARE	20 A	1					0	0	1	20 A	SPARE	48
			Total Load:	12719 VA		12999 VA		12283 VA					
			Total Amps:	107 A		109 A		102 A					

Legend:

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PROJECT

CITY OF MOVILLE SECTION 3:WATER TREATMENT PLANT & WELLS

MOVILLE IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

PROJECT NO.	25-27061
FILE NAME	27061 Elec R24
DRAWN BY	CRI
DESIGNED BY	CRI
REVIEWED BY	RDS
ORIGINAL ISSUE DATE	05/28/25
CLIENT PROJECT NO.	

TITLE

EQUIPMENT AND PANEL SCHEDULES

SHEET

E5-11

0 1/4" 1/2" 1" 2"

5/28/2025 9:27:06 AM

Certified Testing Services, Inc.
419 W. 6th Street • P.O. Box 1193 • Sioux City, Iowa 51102 • Phone (712) 252-5132

March 31, 2025

Attn: Mr. Brett Walker, P.E.
ISG
217 E 2nd Street, Suite 110
Des Moines, Iowa 50309

RE: Addendum
Geotechnical Engineering Report
Moville Water System Improvements
Woodbury County, Iowa
CTS Job No. G7547A

Dear Mr. Walker:

This letter is an addendum to our original report. The reason for this addendum is that in an email on March 31, 2025, Ms. Brooke Sievers, P.E., Civil Engineer of ISG, indicated a discrepancy between the average percolation rates provided in the report. Please make a copy of the addendum and attach to your original report.

Based on the percolation test results, the material encountered at 3 feet below the existing grade at the test locations had an average percolation rate of 187.5 minutes per inch.

With the exception of the above recommendations, the recommendations presented in our original report should be followed. If you have any questions pertaining to this addendum or if we may be of further service, please contact our office.

Respectfully submitted,
CERTIFIED TESTING SERVICES, INC.

Jed A. McInerney, P.E. IA 22686
Senior Geotechnical Engineer

JAM/jm

Certified Testing Services, Inc.

GEOTECHNICAL ENGINEERING REPORT

Moville Water System Improvements
Woodbury County, Iowa

Prepared For:
ISG
217 E 2nd Street, Suite 110
Des Moines, Iowa

CTS Project No. G7547

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

Signature: Jed A. McInerney 12-27-2024

Name: Jed A. McInerney, P.E. (date)

License Number 22686

My license renewal date is December 31, 2024.

Pages or sheets covered by this seal:

This report contains 40 pages, including this page.

CTS File Number G7547

Certified Testing Services, Inc.
419 W. 6th Street • P.O. Box 1193 • Sioux City, Iowa 51102 • Phone (712) 252-5132

December 27, 2024

Attn: Mr. Brett Walker, P.E.
ISG
217 E 2nd Street, Suite 110
Des Moines, Iowa 50309

Re: Geotechnical Engineering Report
Moville Water System Improvements
Woodbury County, Iowa
CTS Job No. G7547

Dear Mr. Walker:

Certified Testing Services, Inc. is pleased to transmit our Geotechnical Engineering Report for the referenced project. This report includes the results of field and laboratory testing, and recommendations for foundation design, as well as general site development.

We appreciate the opportunity to perform this Geotechnical Study and look forward to continued participation during the design and construction phases of this project. If you have any questions pertaining to this report or if we may be of further service, please contact our office.

Respectfully submitted,
CERTIFIED TESTING SERVICES, INC.

Jed A. McInerney, P.E. IA 22686
Senior Geotechnical Engineer

James A. Bertsch, P.E. IA 12121
Senior Geotechnical Engineer

JAM/JAB/jb

GEOTECHNICAL ENGINEERING REPORT

MOVILLE WATER SYSTEM IMPROVEMENTS
WOODBURY COUNTY, IOWA

CTS JOB NUMBER G7547

PREPARED FOR

ATTN: MR. BRETT WALKER, P.E.
ISG
217 E 2ND STREET, SUITE 110
DES MOINES, IOWA 50309

DECEMBER 27, 2024

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Boring Location Plan
Boring Logs
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Laboratory Test Results
Percolation Test Results
Infiltration Test Results
Soil Classification Chart and General Notes

PROJECT INFORMATION

Project Authorization

Certified Testing Services, Inc. has completed a subsurface exploration for the Moville Water System Improvements project. Mr. Brett Walker, PE of ISG authorized our work by signing our proposal on November 1, 2024. This work was performed in accordance with CTS Proposal Number 6991 dated October 24, 2024.

Project Description

Mr. Brett Walker, PE of ISG presented preliminary project information in a "Request For Proposal" (RFP) included in an email on October 22, 2024, and in an email on December 5, 2024. The RFP included a drawing titled, "Well Placements" that included boring location and depth information. The email on December 5, 2024, included an updated version of the drawing titled "Well Placements". CTS understands that the geotechnical portion of the project will consist of a new water treatment plant building, new 400,000 gallon water tower, sanitary field, and future backwash infiltration basin located northwest of the intersection of 160th Street and Humbolt Avenue in Woodbury County, Iowa. The following is our understanding of the project:

Water Treatment Plant Building

- Single-story structure with slab-on-grade
- Plan area of approximately 2,200 SF to 2,400 SF
- Concrete construction is proposed
- The report is based on maximum wall loads of 5 KLF
- The report is also based on less than 2 feet of cut/fill being required to bring site to grade

Water Tower

- Single pedestal spheroid design
- 24 feet in diameter foundation
- Tower will have an approximate capacity of 400,000 gallons
- Report is based on an assumed required bearing capacity of 3,500 PSF
- Report is also based less than 2 feet of cut/fill being required to bring site to grade in the tower area

The geotechnical recommendations presented in this report are based on the available project information, structure locations and the subsurface materials described in this report. If the noted information is incorrect, please inform CTS in writing so that we may amend the recommendations presented in this report if appropriate. CTS will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Purpose and Scope of Services

The purpose of this study was to explore the subsurface conditions at the site to prepare recommendations for foundation systems for the proposed construction. Our scope of services included performing three soil test borings to depths of 15 feet below the existing grade and a percolation test in the sanitary field area, two soil test borings to depths of 15 feet below the existing grade in the water treatment building area, three soil test borings to depths of 15 feet below the existing grade and two infiltration tests at 3 feet and 5 feet below grade in the future backwash infiltration basin area, and two soil test borings to depths of 50 feet in the water tower area, or a minimum depth of 5 feet into suitable material. The scope of work also included select laboratory testing and preparation of this geotechnical report. This report briefly outlines the testing procedures, presents available project information, describes the site and subsurface conditions, and presents recommendations regarding the following:

- Suitability of site for the construction of the proposed project
- Site preparation and grading procedures for project
- Foundation types, depths, allowable bearing capacities and estimate for potential settlement
- Provide percolation test and infiltration test results
- Comments regarding factors that will impact construction and performance of the proposed construction

The scope of services does not include an environmental assessment of the site.

SITE AND SUBSURFACE CONDITIONS

Site Location and Description

The project is located northwest of the intersection of 160th Street and Humbolt Avenue in Woodbury County, Iowa. The site was bordered by agricultural fields to the north, east, and west, and 160th Street to the south.

At the time of drilling, the surface at the boring locations consisted of a harvested agricultural field. The site sloped down to the west with approximately 16.5 feet of elevation change between the boring locations. The site surface was firm at the time of drilling and the drill rig did not experience difficulty moving around the site.

Subsurface Conditions

The site subsurface conditions were explored with a total of ten soil test borings sampled to depths ranging from 15 feet to 50 feet below the existing grade in the project area. The boring locations and depths were chosen by ISG personnel. CTS personnel located the borings in the field using a handheld GPS device. The following table presents the approximate GPS coordinates for the boring locations and the approximate locations of the borings are also presented on the “Boring Location Plan” included in the Appendix, which is a modified partial copy of drawing titled, “Well Placements”. The surface elevations at the

boring locations were determined in the field using conventional leveling techniques and are for general reference only. The base of the power box located southwest of Boring B3 was used as a benchmark and an elevation of 1246.0 feet was interpolated from the contours provided on the drawing titled, “Well Placements”.

BORING NUMBER	BORING LOCATION
B1	42.47529° N; -96.06249° W
B2	42.47523° N; -96.06247° W
B3	42.47515° N; -96.06241° W
B4	42.47526° N; -96.06194° W
B5	42.47509° N; -96.06183° W
B6	42.47537° N; -96.06162° W
B7	42.47537° N; -96.06152° W
B8	42.47537° N; -96.06142° W
B9	42.47522° N; -96.06114° W
B10	42.47530° N; -96.06101° W

The borings were advanced utilizing hollow stem auger and solid flight auger drilling methods and soil samples were routinely obtained during the drilling process. Select soil samples were later tested in the laboratory to determine the material’s engineering properties for our evaluation. A percolation test was performed in the sanitary leach field in the area of Borings B1, B2, and B3 and two infiltration tests were performed in the infiltration basin near Borings B6 and B8. Drilling, soil sampling and the laboratory testing were accomplished generally in accordance with ASTM procedures. The borings were backfilled with on-site material after performing our work; however, it should be noted that some settlement of the backfill material may occur and it is the client’s responsibility to backfill the borings once we have left the site.

The subsurface conditions below the surface material generally consisted of lean clay altered loess, lean clay leached loess, silt Peorian loess, lean clay Peorian loess, and silt with sand alluvium. The boring logs included in the Appendix should be reviewed for specific information at individual boring locations. The boring logs include soil/rock descriptions, stratifications, penetration resistances, and locations of the samples and laboratory test data. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual. Water level information obtained during field operations is also shown on these boring logs. Samples that were not altered by laboratory testing will be retained for 30 days from the date of this report and then will be discarded.

Water Level Measurements

Free water was not encountered in the borings at the time of drilling. The water level measurements presented in this report are the levels that were measured at the time of our field activities and should be expected to fluctuate with climatic conditions.

EVALUATIONS AND RECOMMENDATIONS

Geotechnical Discussion Water Treatment Plant

The main concern from a geotechnical standpoint for the water treatment plant is for total and differential settlement due to the compressible loess materials encountered in the top 10 feet of Boring B5 in the building area. Our settlement analysis using empirical formulas, empirical soil data, past experience with similar soils, and field and laboratory testing indicates that total settlement due to a maximum wall loading of 5 kips per lineal foot will vary from less than an inch to on the order of 2.5 inches. **In order to minimize total settlement to on the order of 1-inch and differential settlement to on the order of ¾-inch in the wall areas, and provide for uniform foundation support, CTS recommends that the foundations be placed on a minimum of 2 feet of new structural fill.** The fill material for the foundations should be placed prior to the new area fill placement, if any. The overexcavation for the foundations should extend at least 10 inches horizontally in every direction beyond the outer edges of the foundations for each foot of vertical cut beneath the bottom of foundations. Structural fill should meet the recommendations of the "Site Preparation" section of this report.

Geotechnical Discussion Water Tower

The main concern for the water tower is the amount of total and differential settlement that is anticipated due to a loading of 3,500 PSF on the existing compressible loess material encountered in Borings B9 and B10. Our settlement analysis, based on empirical formulas, empirical soil data, past experience with similar material and field and laboratory testing indicates that total settlement will be on the order of 4 inches with differential settlement being approximately ¾ to ½ of the total settlement. In order to limit total settlement to on the order of an inch, with the anticipated differential settlement being on the order of ¾-inch, CTS recommends that the tower be placed on a minimum of 10 feet of new structural fill material meeting the recommendations of the "Site Preparation" section of this report. The overexcavation for the tower should extend horizontally beyond the outer edges of the tower foundation a minimum of 10 inches for each foot of cut below the bottom of the tower. The owner may want to consider a deep foundation consisting of auger cast-on-place piles or rammed aggregated piers due to the depth of overexcavation. Recommendations for a deep foundation are presented in the "Deep Foundation Recommendations" and "Auger Cast-in-Place Piles" sections of this report. If the owner is considering using rammed aggregated piers, a copy of this report should be provided to the rammed aggregate pier contractor to determine their design.

If an overexcavation and replacement method is to be considered, CTS recommends that the center of the tower be staked by the owner's surveyor prior to the overexcavation. After the overexcavation is performed, the center of the tower should be restaked by the owner's surveyor and the surveyor should measure the bottom of the overexcavation to confirm that the bottom of the overexcavation meets the minimum overexcavation requirements of 10 inches horizontally in every direction from the perimeter of the footings for each foot of vertical cut below the bottom of the tower. After the new structural fill is

placed, the surveyor should resurvey the center of the tower prior to the construction of the tower to be sure that the tower is centered on the overexcavation.

Geotechnical Discussion Percolation Tests

Free groundwater was not encountered in the percolation test holes at the time of performing our test. The percolation test holes encountered a 12-inch root zone at the surface. The percolation test performed near Boring B1 encountered lean clay altered loess material that extended to the bottom of the percolation test hole of 3 feet below the existing grade, the percolation test performed near Boring B2 encountered lean clay leached loess material in the top 2 feet and silt Peorian loess was encountered below the lean clay leached loess material that extended to the bottom of the percolation test hole of 3 feet below the existing grade, and the percolation test performed near Boring B3 encountered silt Peorian loess material in the top 1.5 feet and lean clay Peorian loess was encountered below the silt Peorian loess material that extended to the bottom of the percolation test hole of 3 feet. Based on the percolation test results, the material encountered at 3 feet below the existing grade at the test locations had an average percolation rate of 5.1 minutes per inch. The approximate locations of the percolation tests are presented on the "Boring Location Plan" in the Appendix. The results of the percolation test are presented in the "Percolation Test Results" section of the Appendix.

Geotechnical Discussion Infiltration Tests

Free groundwater was not encountered in the infiltration test holes at the time of performing our test. The infiltration test holes encountered a 12-inch root and disturbed zone at the surface. The infiltration test performed near Boring B6 encountered lean clay altered loess material that extended to the bottom of the Infiltration Test Hole I-1 of 3 feet below the existing grade and had an average infiltration rate of 12 inches per hour. The infiltration test performed near Boring B8 encountered lean clay loess material that extended to the bottom of Infiltration Test Hole I-2 of 5 feet below the existing grade and had an average infiltration rate of 3.25 inches per hour. The approximate locations of the infiltration tests are presented on the "Boring Location Plan" in the Appendix. The results of the infiltration tests are presented in the "Infiltration Test Results" section of the Appendix.

Geotechnical Discussion General

The seismic site classification for the site soils, in accordance with ASCE 7, Chapter 20, is a Class D. Due to the low seismic activity in the area, we are not aware of special designs or details for foundation structures due to seismic action.

Site Preparation

CTS recommends that topsoil, vegetation, soft material, organic material, material contain frost, and unsuitable soils in the construction areas be stripped from the site and either wasted or stockpiled for later use in landscaping. The existing lean clay and silt material would be suitable for use as structural fill. A representative of the geotechnical engineer should determine the depth of removal at the time of construction.

After stripping and excavating to the proposed subgrade level, as required, the floor slab of the building and bottom of the water tower excavation, if an overexcavation and replacement method is used, should be proofrolled with a loaded tandem axle dump truck, similar piece of heavy rubber-tired vehicle (typically with an axle load greater than 9-tons) or the largest rubber-tired equipment that will be used in the areas. The proofrolling and undercutting activities should be witnessed by a representative of the geotechnical engineer. If excessive movement is observed during the proofrolling, the proofrolling should be stopped and the site evaluated by the geotechnical engineer or their representative.

After subgrade preparation and observation have been completed, fill placement may begin. Structural fill materials should be lean clay or silt material in the building area and lean clay, silt, or granular material may be used for structural fill material in the water tower foundation area. If a granular fill material is used below the water tower, CTS recommends that a 2 feet clay cap be placed around the perimeter of the water tower to minimize surface moisture from infiltrating below the bottom of the water tower. Structural fill should be free of organic or other deleterious materials, have a maximum particle size of less than 3 inches, and have a liquid limit less than 45 and plasticity index less than 22. Close moisture control of the lean clay and silt will be required in order to obtain compaction. CTS does not recommend alternating layers of cohesive and noncohesive material due to the potential for a perched water condition to occur that could affect the long term competency of the supporting materials. Fill materials should not contain frost and new fill should not be placed on frozen ground.

Structural fill should be placed in maximum loose lifts of 4 inches for hand compaction equipment and 8 inches for riding compaction equipment and compacted to at least 100 percent of the materials' standard Proctor maximum dry density in the water tower area and at least 95 percent of the materials' standard Proctor maximum dry density in the building and other structural areas. Backfill for the foundation excavations should be compacted to a minimum of 93 percent around the perimeter of the structure and backfill for utility trenches in non-structural areas should be compacted to a minimum of 90 percent compaction, with the exception of structural areas under pavement, sidewalks and other structural areas, which should be compacted to a minimum of 95 percent of ASTM D698. Lean clay materials should be compacted to within a minus 3 to a plus 3 percent of the optimum moisture content and silt materials should be compacted to within a minus 5 to a plus 2 percent of the optimum moisture content as determined in general accordance with ASTM D 698 procedures. Every other lift of compacted-engineered fill should be tested by a representative of the geotechnical engineer prior to placement of subsequent lifts.

Shallow Foundation Recommendations

The planned construction can be supported on conventional spread footing or trench footing foundations bearing on new structural fill as discussed in the “Geotechnical Discussion Water Treatment Plant”, “Geotechnical Discussion Water Tower” and “Site Preparation” sections of this report. Spread footings for building columns and walls can be designed for a net allowable soil bearing pressure of 2,000 PSF, based on dead load plus design live load. Minimum dimensions of 24 inches for column footings, 18 inches for continuous footings and 12 inches for trench footings should be used in foundation design to minimize the possibility of a local bearing capacity failure. The water tower foundation may

be supported on ring wall foundation designed for 3,500 PSF. IBC will allow for a load reduction factor for two or more transient loads to be multiplied by 0.75 and add to the effect of the dead load. However, IBC states, "The load used in design shall not be less than the sum of the effects of dead load and any one of the transient loads". The seismic site classification for the site soils, in accordance with ASCE 7, Chapter 20, is a Class D. Due to the low seismic activity in the area, we are not aware of special designs or details for foundation structures due to seismic action.

Exterior footings and footings in unheated areas should be located at a depth of 42 inches or deeper below the final exterior grade to provide adequate frost protection. If the structures are to be constructed during the winter months or if footings will likely be subjected to freezing temperatures after foundation construction, then all footings should be protected from freezing. Otherwise, interior footings can be located at nominal depths compatible with architectural and structural considerations.

The foundation excavations should be observed by a representative of CTS prior to steel or concrete placement to assess that the foundation materials are capable of supporting the design loads and are consistent with the materials discussed in this report. Soft or loose soil zones encountered at the bottom of the footing excavations should be removed to the level of competent naturally deposited soils or properly compacted structural fill as directed by the geotechnical engineer.

After opening, footing excavations should be observed and concrete placed as quickly as possible to avoid exposure of the footing bottoms to wetting and drying. Surface run-off water should be drained away from the excavations and not be allowed to pond. If possible, the foundation concrete should be placed during the same day the excavation is made. If it is required that footing excavations be left open for more than one day, they should be protected to reduce evaporation or entry of moisture.

Consolidation testing was beyond the scope of this exploration. Based on the known subsurface conditions and site geology, laboratory testing, and past experience, we anticipate that properly designed and constructed footings for the water treatment plant building that is supported on the recommended material should experience total and differential settlements within a 50 feet length of wall of less than l-inch and ¾-inch, respectively.

Floor Slab Recommendations

The floor slab in the water treatment plant building should be supported on a minimum of 2 feet of new structural fill. **Final floor slab preparation, including density testing, should occur just prior to concrete placement for proper floor slab support.** CTS recommends that a compacted free draining granular mat with a minimum thickness of 4 inches be placed beneath the floor slab to enhance drainage. The granular mat should consist of coarse sand or well-graded gravel with a maximum size particle of 1-inch and have less than 6 percent passing the #200 sieve. It should be noted that the material passing the #200 sieve should not contain clay. Polyethylene sheeting, if used, should be placed in accordance with the "Manual of Concrete Practice of the American Concrete Institute". The floor slabs

should have an adequate number of joints to reduce cracking resulting from differential movement and shrinkage. Floor slabs should not be constructed on frozen ground.

Subgrade prepared as recommended would have a modulus of subgrade reaction, *k* value, of 144 kips per cubic foot (kcf), based on an allowable settlement of ½-inch, and friction factor of 0.3 for lean clay and silt material that may be used in the slab-on-grade design.

Deep Foundation Recommendations

An alternate to a shallow foundation would be to support the water tower on a deep foundation consisting of auger cast-in-place piles. The following allowable loading and COMP624P Horizontal Subgrade Modulus may be used for the design of a deep foundation.

STRATA	ALLOWABLE SKIN FRICTION (PSF)	ALLOWABLE END BEARING (PSF)	HORIZONTAL SUBGRADE MODULUS (K)
LOESS (3.5' TO 25')	310	3,720	380 pci
LOESS (25' TO 35')	430	5,220	580 pci
ALLUVIUM (35' TO 50')	1,750	21,100	2,150 pci

The allowable skin friction values presented above may also be used for uplift forces as well as the weight of the pile. It should be noted that the top 5 feet of material encountered should be ignored for frost action. CTS should be allowed to review the final pile design. A factor of safety of 2.0 has been applied to determine the allowable loading presented above. A 16-inch auger cast-in-place pile extending to a depth of 45 feet would have an approximate load capacity of 75 tons, which does not include a pile group reduction factor. It should be noted that this loading is just an example and the actual pile capacity should be determined by a structural engineer.

Auger Cast-In-Place Piles

The materials encountered in the borings are capable of producing a limited amount of side adhesion/friction capacity to support the loads of the proposed structure. Drilled auger cast-in-place concrete piles are suitable for supporting the proposed structure. CTS should be allowed to review the final pile design.

A minimum spacing of three diameters, center to center, would require a pile group efficiency/reduction factor of 0.9. It should be noted that the installation techniques of the piles would need to be monitored carefully to minimize necking of the piles.

It is recommended that load bearing properties of at least one (1) test pile be evaluated by performing a load test, in general accordance with the "Standard Method of Testing Piles under Axial Compressive Load" (ASTM D1143) prior to constructing the remaining pile

foundations. If it is elected to not perform a pile load test, the pile depths should be increased by a minimum of 5 feet. Procedures used in constructing the test pile should be observed to establish desirable procedures for constructing the remaining job piles. Accurate records of the pile depths, drilling and water conditions should be obtained during construction.

Pile installations should be inspected by a representative of the geotechnical engineer to determine the adequacy of the bearing material and to check that they conform to the specifications.

CONSTRUCTION CONSIDERATIONS

CTS should be retained to provide observation and testing of construction activities involved in the foundation, earthwork, and related activities of this project. CTS cannot accept responsibility for conditions that deviate from those described in this report, nor for the performance of the foundation system if not engaged to also provide construction observation and testing for this project.

Moisture Sensitive Soils and Weather Related Concerns

The fine-grained soils encountered at this site will be sensitive to disturbances caused by construction activity and to changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and support capabilities. In addition, soils that become wet may be slow to dry and thus significantly retard the progress of grading and compaction activities. It will, therefore, be advantageous to perform earthwork and foundation construction activities during dry weather.

Drainage and Groundwater Considerations

Water should not be allowed to collect in the foundation excavation, on floor slab areas, or on prepared subgrade of the construction area either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of collected rainwater, groundwater, or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the structures and beneath the floor slabs. The grades should be sloped away from the structures and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas of the building.

Free groundwater was not encountered at the time the field exploration was conducted and should not affect construction. If water is encountered, the water should be removed using pumps. It is possible that seasonal variations will cause fluctuations or a water table to be present in the upper soils. Should excessive and uncontrolled amounts of seepage occur, the geotechnical engineer should be consulted.

Excavations

In Federal Register, Volume 54, Number 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its

"Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better enhance the safety of workers entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. The lean clay and silt material is a Class B material in accordance with OSHA criteria.

We are providing this information solely as a service to our client. CTS does not assume responsibility for construction site safety or the contractor's or other party's compliance with local, state, and federal safety or other regulations.

REPORT LIMITATIONS

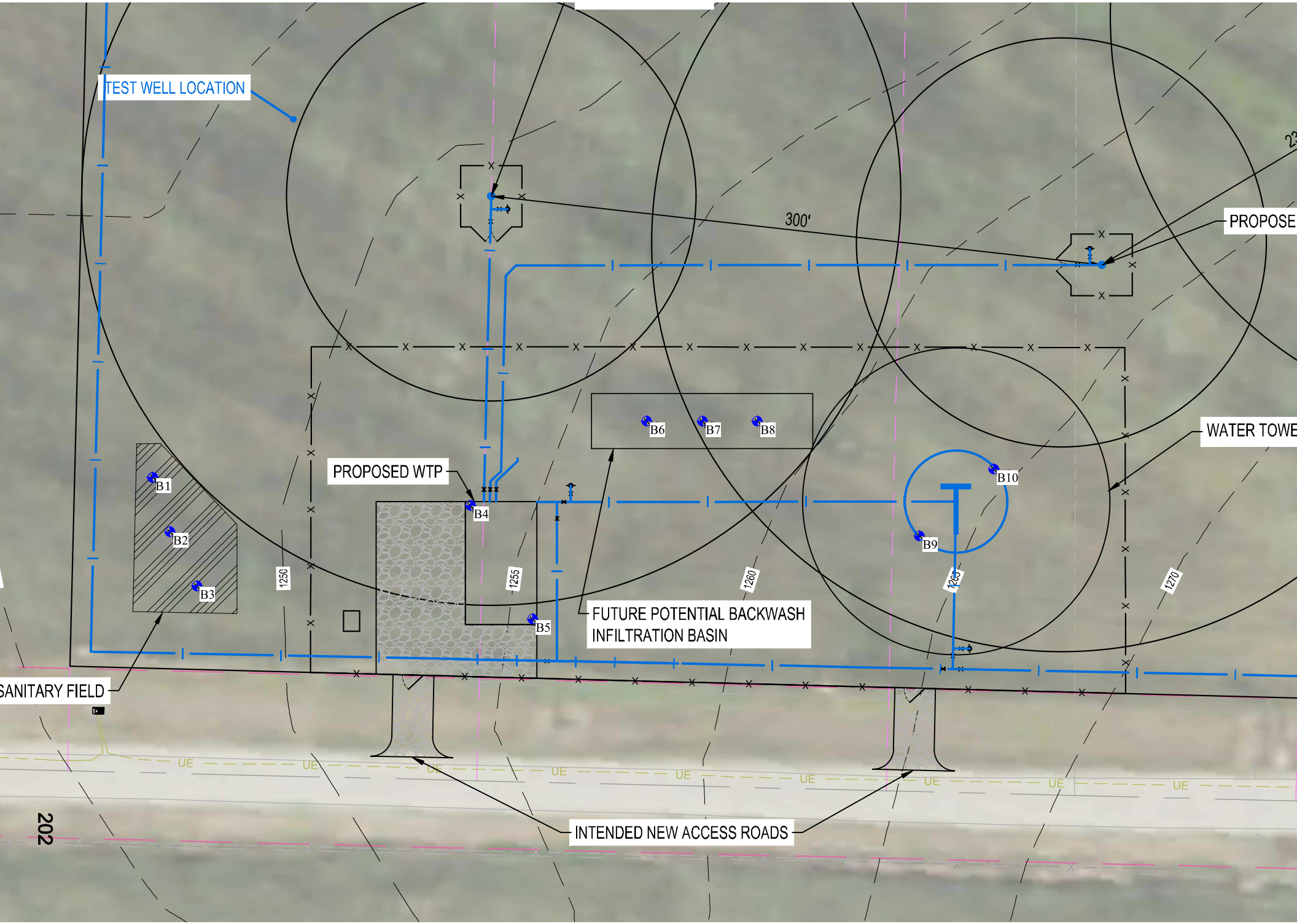
The recommendations submitted are based on the available subsurface information obtained by CTS and design details furnished by Mr. Brett Walker, PE of ISG. If deviations from the subsurface conditions noted in this report are encountered during construction, CTS should be notified immediately to determine if changes in the foundation recommendations are required. If CTS is not retained to perform these functions, CTS will not be responsible for the impact of those conditions on the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of ISG and the City of Moville and their consultants for the specific application to the proposed Water System Improvements project in Woodbury County, Iowa.

APPENDIX

BORING LOCATION PLAN


TEST WELL LOCATION
300'
PROPOSE
WATER TOWE
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
PROPOSED WTP
FUTURE POTENTIAL BACKWASH
INFILTRATION BASIN
SANITARY FIELD
INTENDED NEW ACCESS ROADS
1250
1255
1260
1265
1270
UE
202

BORING LOGS

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **11/15/24**
Date Completed: **11/15/24**

Boring No.: **B-1**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1248.3**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone											
			LEAN CLAY, Medium Brown and Light Brown, Moist, Medium, Altered Loess	CL	3-2-4 N= 6	18								
5			(Yellow Brown and Gray)			16	101	64	4.50					
			SILT, Medium Yellow Brown and Gray, Moist to Very Moist, Soft to Stiff, Peorian Loess	ML	1-1-2 N= 3	19								
10			(Oxidized)			21	94	73	3.75					
					2-3-6 N= 9	21								
15			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **11/15/24**
Date Completed: **11/15/24**

Boring No.: **B-2**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1248.6**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone											
			LEAN CLAY, Light Brown, Moist, Leached Loess	CL		16	86	45	4.50					
			SILT, Medium Yellow Brown and Gray, Moist, Medium to Stiff, Peorian Loess	ML	2-2-2 N= 4	14								
5			(Oxidized)			18	77	42	4.50					
					3-3-4 N= 7	20								
10														
						19	83	51	4.25					
15			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **11/15/24**
Date Completed: **11/15/24**

Boring No.: **B-3**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1249.7**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone											
			SILT, Medium Yellow Brown and Gray, Moist, Stiff, Peorian Loess	ML	3-3-4 N= 7	16								
			LEAN CLAY, Medium Yellow Brown and Gray, Moist, Peorian Loess	CL		13	93	45	4.50					
5			SILT, Medium Yellow Brown and Gray, Moist to Very Moist, Medium to Soft, Peorian Loess	ML	2-2-2 N= 4	17								
						21	76	47	4.00					
10														
					2-1-2 N= 3	19								
15			(Oxidized)											
			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **12/18/24**
Date Completed: **12/18/24**

Boring No.: **B-4**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1254.4**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone, 8-Inch Frost Layer at Surface											
			LEAN CLAY, Medium Brown and Light Brown, Moist, Very Stiff, Altered Loess (Medium Yellow Brown)	CL	5-5-8 N= 13	20	90	62	4.50					
5						17								
			LEAN CLAY, Medium Yellow Brown and Gray, Very Moist, Stiff, Oxidized, Peorian Loess	CL		24	98	90	1.50	1.20				
				ML	2-4-5 N= 9	18								
10			SILT, Medium Yellow Brown and Gray, Moist to Very Moist, Stiff, Oxidized, Peorian Loess											
						23	90	72	3.25					
15			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G7547.GPJ CERTIFIED TESTING.GDT 12/24/24

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **12/18/24**
Date Completed: **12/18/24**

Boring No.: **B-5**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1256.8**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone, 8-Inch Frost Layer at Surface											
			LEAN CLAY, Medium Brown, Very Moist to Moist, Medium, Altered Loess (Medium Yellow Brown)	CL	2-3-3 N= 6	23								
5						17	94	59	3.00					
			SILT, Medium Yellow Brown and Gray, Moist, Medium to Stiff, Peorian Loess	ML	1-2-2 N= 4	18								
10			(Grayish Yellow Brown)			19	94	66	4.50					
			(Yellow Brown and Gray)		3-4-5 N= 9	20								
15			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G7547.GPJ CERTIFIED TESTING.GDT 12/24/24

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **11/15/24**
Date Completed: **11/15/24**

Boring No.: **B-6**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1257.4**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone											
			LEAN CLAY WITH ROOTS, Medium Brown, Moist, Altered Loess	ML		15	84	42	4.50					
5			LEAN CLAY, Medium Yellow Brown and Gray, Moist, Medium, Peorian Loess	CL	3-2-4 N= 6	19								
			SILT, Yellow Brown and Gray, Moist to Very Moist, Medium to Stiff, Oxidized, Peorian Loess	ML		20	98	79	3.25					
10					2-2-2 N= 4	22								
15						21	87	62	4.50	1.10				
			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **11/15/24**
Date Completed: **11/15/24**

Boring No.: **B-7**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1258.8**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone											
			LEAN CLAY, Light Brown, Moist, Stiff, Leached Loess	CL	2-3-4 N= 7	16								
			LEAN CLAY, Medium Yellow Brown and Gray, Moist, Peorian Loess	CL		15	105	68	4.50					
5			SILT, Yellow Brown and Gray, Moist, Medium to Stiff, Peorian Loess	ML	1-2-4 N= 6	19								
						21	94	72	4.50					
10														
			(Oxidized)		2-3-6 N= 9	21								
15			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G7547.GPJ CERTIFIED TESTING.GDT 12/24/24

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **11/15/24**
Date Completed: **11/15/24**

Boring No.: **B-8**
Boring Location: **Woodbury County, IA**
Drill Type: **Flight Auger**
Ground Elev.: **1259.9**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
			12-Inch Root and Disturbed Zone											
			LEAN CLAY, Light Brown, Moist, Altered Loess	CL		20	98	78	4.50					
			LEAN CLAY, Yellow Brown and Gray, Moist, Medium, Peorian Loess	CL	2-2-4 N= 6	16								
5						18	91	60	4.50					
					3-2-4 N= 6	20								
10														
						19	93	66	4.00					
15			END OF BORING AT 15 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF EXPLORATORY BORING

Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **12/18/24**
Date Completed: **12/18/24**

Boring No.: **B-9**
Boring Location: **Woodbury County, IA**
Drill Type: **Hollow Stem**
Ground Elev.: **1264.7**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
	12-Inch Root and Disturbed Zone, 2-Inch Frost Layer at Surface	CL	3-2-4 N= 6	21								
	LEAN CLAY, Medium Brown to Medium Yellow Brown, Moist, Medium, Altered Loess	ML		13	74	29	2.25					
5	SILT, Yellow Brown and Gray, Dry to Very Moist, Stiff, Peorian Loess		2-3-5 N= 8	16								
10	(Oxidized)			19	86	55	2.00					
15			2-4-5 N= 9	19								
20				18	98	71	4.50	1.40				
25			2-4-7 N= 11	21								
30	(Sand Lense)			24	90	78	3.00					
35	SILT WITH SAND, Yellow Brown, Dry to Very Moist, Hard to Very Hard, Alluvium	ML	5-10-16 N= 26	11								
40				18	109	94	3.00					
45			13-26-31 N= 57	18								
50			8-20-25 N= 45	21								
	END OF BORING AT 50 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

LOG OF BORING G7547.GPJ CERTIFIED TESTING.GDT 12/24/24

LOG OF EXPLORATORY BORING

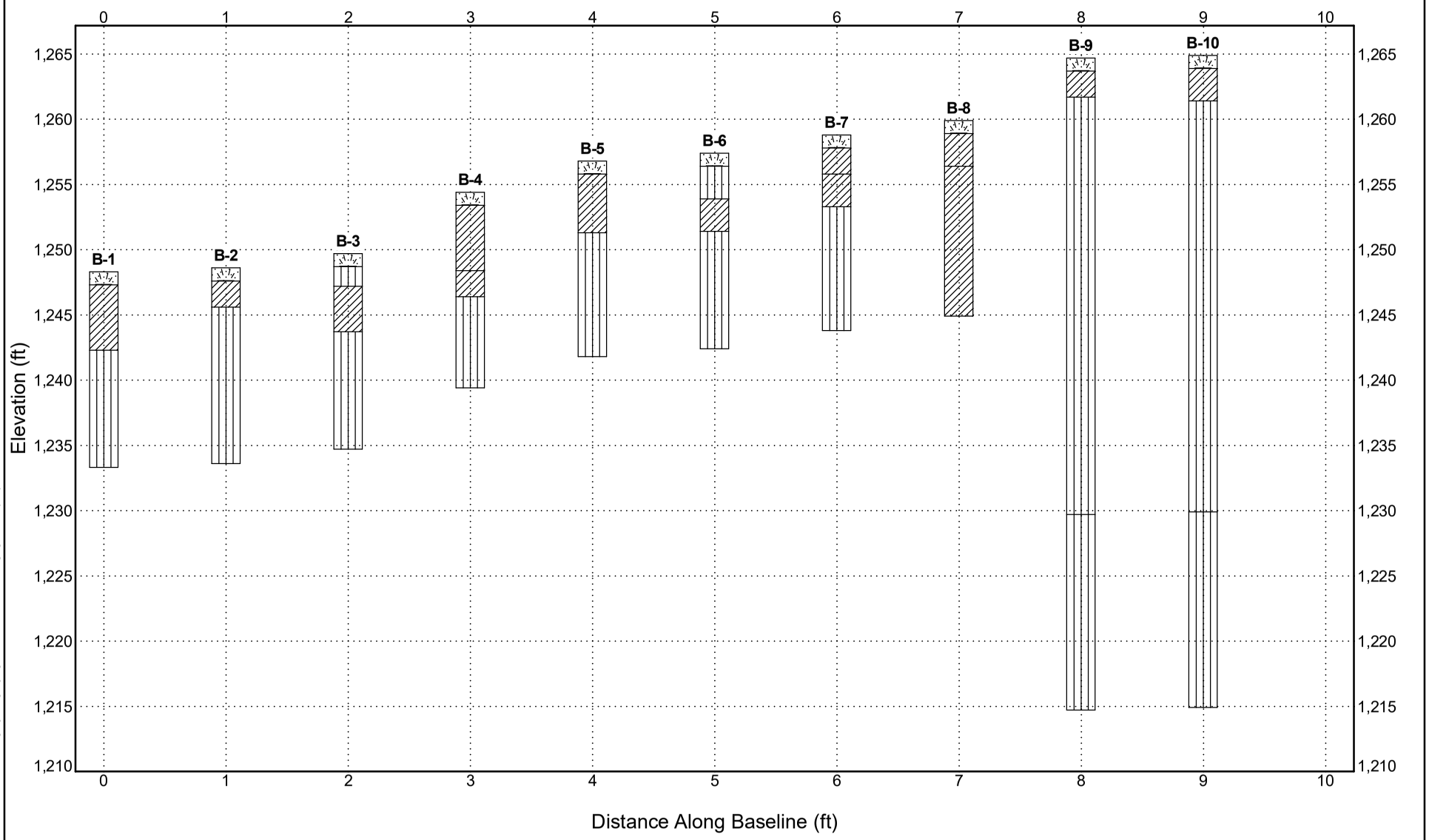
Job Number: **G7547**
Project: **Water System Improvements**
Date Started: **12/18/24**
Date Completed: **12/18/24**

Boring No.: **B-10**
Boring Location: **Woodbury County, IA**
Drill Type: **Hollow Stem**
Ground Elev.: **1264.9**

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows/ 1-3/4")
	12-Inch Root and Disturbed Zone, 2-Inch Frost Layer at Surface	CL		18	84	49	4.50					
	LEAN CLAY, Medium Brown to Light Brown, Moist, Altered Loess	ML	2-2-3 N= 5	13								
5	SILT, Yellow Brown and Gray, Dry to Moist, Medium to Very Stiff, Peorian Loess			19	88	56	4.50					
10	(Oxidized)		2-3-5 N= 8	20								
15				20	99	79	2.50	1.60				
20			1-3-5 N= 8	20								
25				22	96	80	3.00					
30	(Lean Clay Lense)		2-5-9 N= 14	22								
35	SILT WITH SAND, Light Yellow Brown, Dry to Moist, Hard to Very Hard, Alluvium	ML		13	107	61	3.50					
40	(Grayish Yellow Brown, Oxidized)		8-20-27 N= 47	16								
45			11-29-30 N= 59	18								
50			8-19-20 N= 39	19								
	END OF BORING AT 50 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

BORING PROFILES



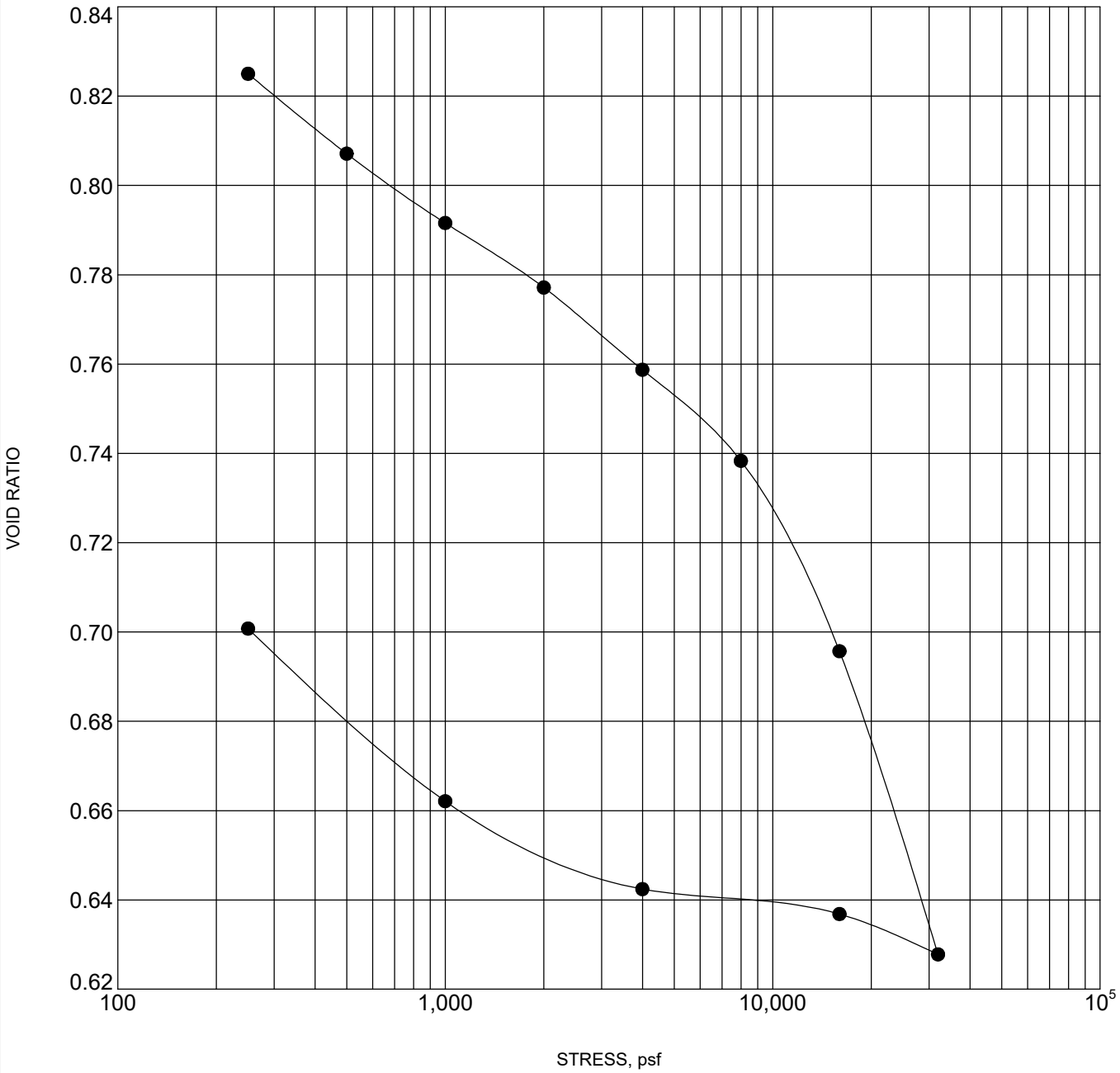
Certified Testing Services, Inc.
419 W. 6th Street, PO Box 1193
Sioux City, Iowa 51102
Telephone: 712-252-5132
Fax: 712-252-0110

Water System Improvements
Woodbury County, IA

Project Number: G7547

LITHOLOGY AND WATER LEVELS - A SIZE G7547.GPJ CERTIFIED TESTING.GDT 12/24/24

LABORATORY TEST RESULTS



Specimen Identification		Classification	γ_d	MC%
● B-9 9.3		SILT (ML)	92	27

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CONSOLIDATION TEST

Project: Water System Improvements

Location: Woodbury County, IA

Number: G7547

US CONSOL VOID RATIO G7547.GPJ CERTIFIED TESTING.GDT 12/26/24

PERCOLATION TEST RESULTS

Client: ISG

Site Location: Moville Water System Improvements: Woodbury County, Iowa

P-1

Elapsed Time	Water Level Drop (in)
30	0.3
30	0.2
30	0.3
30	0.2
30	0.3

Min/Inch 112.5

P-2

Elapsed Time	Water Level Drop (in)
30	0.0
30	0.1
30	0.1
30	0.2
30	0.1

Min/Inch 225.0

P-3

Elapsed Time	Water Level Drop (in)
30	0.1
30	0.1
30	0.1
30	0.1
30	0.2

Min/Inch 225.0

Performed By: TK - CTS

Dates Performed: 11/25/24 - 11/26/24

Weather Cond: Partly Cloudy

Temperature (F): 35

Soak Time (hrs): 24

Ground Water Level (Feet): N/A

Percolation Test Results: 187.5 min/in

Average of three tests

PERCOLATION TEST WORKSHEET

Project: Moville Water System Improvements

Location: Woodbury County, Iowa

Number: G7547

INFILTRATION TEST RESULTS

Infiltration Test Data Sheet

Project No.	G7547
Test #	I-1
Date	11/26/2024
Depth	3'

1st Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0.00
1	1.00
2	1.00
3	0.75
4	0.50
5	0.25
6	0.25
7	0.25
8	0.25
9	0.25
10	0.25
15	1.25
30	2.25
45	2.25
60	2.25

Infiltration Rate 12.75 in/hr

2nd Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0
5	1.25
10	1.25
15	1.25
30	3.25
45	3.25
60	2.75

Infiltration Rate 13.0 in/hr

3rd Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0
5	1.00
10	1.00
15	1.25
30	3.25
45	3.00
60	2.25

Infiltration Rate 11.75 in/hr

4th Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0
5	0.75
10	1.25
15	1.25
30	2.75
45	2.25
60	2.25

Infiltration Rate 10.5 in/hr

Infiltration Test Data Sheet

Project No.	G7547
Test #	I-2
Date	11/26/2024
Depth	5'

1st Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0.00
1	0.50
2	0.25
3	0.25
4	0.50
5	0.25
6	0.25
7	0.00
8	0.25
9	0.00
10	0.25
15	0.50
30	0.75
45	0.75
60	0.50

Infiltration Rate 5 in/hr

2nd Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0
5	0.25
10	0.25
15	0.25
30	0.75
45	0.75
60	0.75

Infiltration Rate 3 in/hr

3rd Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0
5	0.25
10	0.25
15	0.25
30	0.75
45	0.50
60	0.50

Infiltration Rate 2.5 in/hr

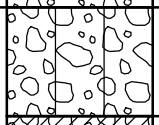
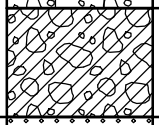
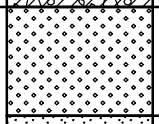
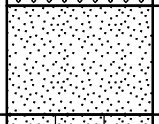
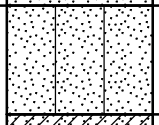
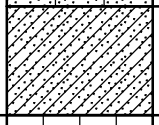
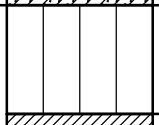
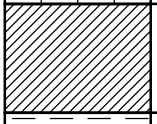
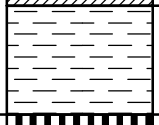
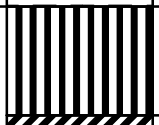
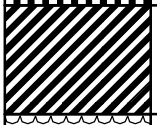
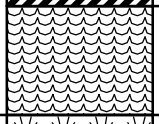
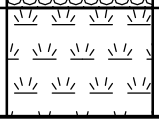
4th Hour

Elapsed Time (Minutes)	Water Level Drop (in)
0	0
5	0.25
10	0.25
15	0.25
30	0.50
45	0.50
60	0.75

Infiltration Rate 2.5 in/hr

SOIL CLASSIFICATION CHART AND GENERAL NOTES

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

GENERAL NOTES

SAMPLING SYMBOLS:

	STANDARD PENETRATION TEST – 1 3/8: I.D., 2" O.D.
	SHELBY THIN-WALLED TUBE – 3" O.D. UNDISTURBED SAMPLE
	GRAB SAMPLE
	ROCK CORE
	AUGER SAMPLE
	NO RECOVERY

WATER LEVEL MEASUREMENT SYMBOLS:

	WATER LEVEL AT TIME OF DRILLING
	WATER LEVEL AFTER 7 DAYS

CONSISTENCY OF FINE-GRAINED SOILS	
UNCONFINED COMPRESSIVE STRENGTH, QU, PSF	CONSISTENCY
< 500	VERY SOFT
500 - 1,000	SOFT
1,001 - 2,000	MEDIUM
2,001 - 4,000	STIFF
4,001 - 8,000	VERY STIFF
8,001 - 16,000	HARD
> 16,000	VERY HARD

RELATIVE DENSITY OF COARSE GRAINED SOILS	
N-BLOWS/FT.	RELATIVE DENSITY
0 - 3	VERY LOOSE
4 - 9	LOOSE
10 - 29	MEDIUM DENSE
30 - 49	DENSE
50 - 80	VERY DENSE
80 +	EXTREMELY DENSE

RELATIVE PROPORTIONS OF SAND AND GRAVEL	
DESCRIPTIVE TERM(S) (OF COMPONENTS ALSO PRESENT IN SAMPLE)	PERCENT OF DRY WEIGHT
WITH	15 - 29
MODIFIER	> 30

GRAIN SIZE TERMINOLOGY	
MAJOR COMPONENT OF SAMPLE	SIZE RANGE
BOULDERS	OVER 12 IN. (300MM)
COBBLES	12 IN. TO 3 IN. (300 MM TO 75 MM)
GRAVEL	3 IN. TO #4 SIEVE (75MM TO 4.75MM)
SAND	#4 TO #200 SIEVE (4.75MM TO 0.075 MM)
SILT OR CLAY	PASSING #200 SIEVE (0.075MM)

RELATIVE PROPORTIONS OF FINES	
DESCRIPTIVE TERM(S) (OF COMPONENTS ALSO PRESENT IN SAMPLE)	PERCENT OF DRY WEIGHT
WITH	15 - 29
MODIFIER	> 30