THE CITY OF WATERTOWN

PLAN COMMISSION MEETING AGENDA

MONDAY, OCTOBER 26, 2026 AT 4:30 PM

COUNCIL CHAMBERS, SECOND FLOOR, MUNICIPAL BUILDING, 106 JONES STREET, WATERTOWN, WI 53094

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1. **CALL TO ORDER**
2. **APPROVAL OF MINUTES**
   - A. Review and take action: Site Plan Review Committee minutes dated October 12, 2026
   - B. Review and take action: Plan Commission minutes dated September 28, 2026
3. **BUSINESS**
   - A. Review and Discuss Draft Zoning Code Updates: Exterior Building Design Standards
   - B. Review and set public hearing date at Common Council – Chapter 550 Zoning Code Rewrite
   - C. Public hearing: 1911 Gateway Drive Conditional Use Permit (CUP) request for Group Development under §550-68A(1) and §550-68A(3)
   - D. Review and take action: 1911 Gateway Drive Conditional Use Permit (CUP) request for Group Development under §550-68A(1) and §550-68A(3)
4. **ADJOURNMENT**

Persons requiring other reasonable accommodations for any of the above meetings, may contact the office of the City Clerk at cityclerk@watertownwi.gov phone 920-262-4000

A quorum of any City of Watertown Council, Committee, Board, Commission, or other body, may be present at this meeting for observing and gathering of information only

SITE PLAN REVIEW COMMITTEE
October 12, 2026

The Site Plan Review Committee met on the above date at 1:30 P.M. in the Council Chambers on the second floor of City Hall. The following members were present: Mayor Robert Stocks, Brian Zirbes – Zoning, Mike Jacek – Building Inspection, Andrew Beyer and Nathan Williams – Engineering, Laura Bohlman – Police, Don Dishno – Fire Department, Stacy Winkelman – Streets & Solid Waste, Ryan Schmidt – Parks & Rec., and Manager of Economic Development and Strategic Initiatives Deb Sybell.

Also in attendance were Ruth Mack and Bruce Loeb of Loeb & Co., Hunter Lien of Free Heel Capital, Holly Merson of Payne & Dolan, Inc., and Nikki Zimmerman of the City of Watertown.

1. **Call to Order**
   The meeting was called to order by Chairperson Brian Zirbes.

2. **Approval of Minutes**
   A. **Review and take action: Site Plan Review Minutes Dated September 14, 2026**
   Motion was made and seconded to approve the minutes as submitted. Unanimously approved.

3. **Business**
   A. **Review and take possible action: Mary Street & Clark Street proposed multifamily residential development**
   Bruce Loeb was present to explain this project. They are looking for preliminary acceptance of the general proposal of 102-unit rental apartments.

   The following was presented by staff:

Fire:	A full set of plans will have to be submitted. Each building will need to have a Knox Box.
Building:	The plans will have to go to the state for review. Permits will follow from the Building Safety & Zoning office.
Police:	No concerns.
Mayor:	No concerns.
Stormwater:	Stormwater management and erosion control plans will be needed along with the Stormwater and Erosion Control permit submitted.
Engineering:	The city is finalizing a sanitary sewer feasibility study in the area. Will need detailed plans and will likely have specific comments once those are reviewed.
Zoning:	The following items will need to be completed: a rezoning to MR-10; Certified Survey Map (CSM) approval to combine the parcels and resolve the encroachment issue with the neighbors; a Conditional Use Permit (CUP) for Group Development; a full set of plans; a Lighting Plan with a photometric map; a Landscaping Plan with calculated points; and the Traffic Circulation and Parking plan.
Parks & Rec:	No concerns.
Water/Wastewater:	Not present.
Streets/Solid Waste:	Private garbage and recycling services will have to be obtained – the city does not complete collection for this size of structure.
Econ. Development:	No concerns.

   With this just being a preliminary review, no action is necessary.

   B. **Review and make recommendation to Plan Commission: 1911 Gateway Drive proposed multifamily residential development**

Hunter Lien was present. This item is for a proposed multifamily residential development with 22 buildings with tucked under garages and a large-scale clubhouse.

The following was presented by staff:

Fire:	The hydrant placement and turning radius are appropriate. Discussion has been made regarding moving one of the riser rooms. It can't be further than 50 feet from the closest drivable surface. A full set of plans shall be submitted to the Fire Department prior to construction. Permits from the Fire Department for the fire systems will need to be obtained. Knox Boxes will have to be placed on each building.
Building:	The plans will have to go to the state for review. Permits will follow from the Building Safety & Zoning office.
Police:	No concerns.
Mayor:	No concerns.
Stormwater:	Stormwater and Erosion Control Permit will be needed. Confirmed that the sewer and water on the site will be privately owned and maintained.
Engineering:	There are some plan-specific comments that will be communicated via email.
Zoning:	The Landscaping Plan with the point calculations and the Lighting Plan with the photometric map will need to be submitted.
Parks & Rec:	No concerns.
Water/Wastewater:	Not present.
Streets/Solid Waste:	Private garbage and recycling services will have to be obtained – the city does not complete collection for this size of structure.
Econ. Development:	No concerns.

Motion was made and seconded to present this item with a positive recommendation to the Plan Commission.

Unanimously approved.

4. **Adjournment**
   Motion was made and seconded to adjourn. Unanimously approved.

Respectfully submitted,
Nikki Zimmerman
Recording Secretary

Note: These minutes are uncorrected, and any corrections made thereto will be noted in the proceedings at which these minutes are approved.

PLAN COMMISSION MINUTES

September 28th, 2026

The Plan Commission met in council chambers with following members present: Mayor Robert Stocks, Alderperson Ken Berg, Nick Krueger, Kerry Kneser, Tom Levi & Zoning Administrator Brian Zirbes

Others in attendance: Sonja Kruesel of Vandewalle & Associates, and Deb Sybell, Economic Development Director

1. CALL TO ORDER

2. APPROVAL OF MINUTES

A. Review and take action: Site Plan Review Committee minutes dated September 14, 2026

B. Review and take action: Plan Commission minutes dated September 14, 2026 A motion to approve the above minutes for September 14th, 2026 for both committees was made by Krueger, seconded by Dittmann and approved unanimously.

3. BUSINESS

A. Public hearing: Creation of Tax Incremental District (TID) 10 Project Plan and Boundary No comments from the public were made.

B. Review and take action action: Plan Commission resolution recommending adoption of Tax Incremental District No.10 Project Plan Sonja was present to give overview and provide update on the proposed creation of TID 10. She noted the Joint Review Board met earlier today and discussed this proposed TID. No action was taken but no concerns were raised by members present. Tax incremental financing (TIF) is a powerful tool for incentivizing economic development and it is used extensively in Wisconsin. She gave an summary of how TIDs and TIFs work and noted this is a mixed use type of TID with residential, industrial and commercial parcels identified and 29 parcels chosen within a boundary totaling 141 acres of which 20 acres are defined as wetlands. 42% of the land is currently zoned commercial & at least 50% will be commercial or residential w/ 19.98 acres recognized as developable land use for apartments. This represents 17% of the TID 10 land area, well below the 35% threshold.

Sonja pointed out the clause that has to be satisfied to qualify and that is the BUT4 TEST which says that unless this TID was created, the value & development would not happen as proposed. She noted that TID 3 grew at 20 times the rate of the city and TID 4 grew at 31 times the overall growth of our city. She then told us about the 12% test where you take all the value of each TID we currently have and it cannot exceed 12% of our city's equalized value. We are at between 3 & 4% and even with the projected value of TID 10, it is estimated to be around 4%. Projections of value from the construction of 274 apts at $135,000 of assessed value equal about $36 million once completed, fully rented and within a few years occupancy. The estimates for increases in commercial and industrial values are again hard to quantify but statistically the growth typically occurs because of the incentives to develop and grow within a mixed use TID as proposed.

Sonja went over 5 infrastructure projects that would be a priority for completing including Gateway & Market Way sidewalk, Gateway Resurfacing and others which would be paid for with increment from the TID once new assessments provide revenue for the city. Berg was complimentarily of the mixed use and why that will be beneficial for the success of this TID. He pointed to Loeb's 14 acres light industrial land off Air Park Dr that has been for sale for many years w/o development along with the many commercial lots off Gateway, Market Way, etc., that remain vacant presently, but could see new development opportunities with 700 to 900 residents from this project as potential customers and/or employees. He also commented on our local schools benefiting by the influx of new residents within our city.

Sonja reported that this TID is proposed for creation on January 1st, 2027 and she is scheduling for the Council to take action November 2nd if supported by this Plan Commission. Then, the Joint Review Board will meet again at some point in November and take action with our city, school

district, Jefferson County and MATC weighing in as to their degree of support. This TID projected to retire in 2047. The baseline value in 2026 would be $24,689,000 and is projected to grow to $61,660,000 (in 2026 dollars). Sonja stated TIDs incentivize development but that is all negotiable and unique to each TID. Krueger moved to recommend to our city council the approval of TID 10 as proposed & outlined by Vandewalle Associates, seconded by Kneser and approved unanimously.

C. **Review and Discuss Draft Zoning Updates: Article VIII: Landscaping and Article X: Administration and Procedures** Sonja pointed out these last two chapters will complete the proposed zoning changes being considered, then a review with staff and if considered ready, there will be public hearing to formalize everything. She noted on the landscaping chapter, it is on a points system. The existing model had many choices for the applicant but this proposed plan is less choices and more user friendly for the applicant. Then on the administration and procedures chapter, Sonja talked about options applicants have to make the process simpler more efficient. The Council currently holds the public hearings on zoning map amendments, but Vandewalle is suggesting a policy change to have public hearings come before the Plan Commission instead. In doing so, if agreed to, the process of approval would save one month or more for the applicant. Site plan review is another example of a proposed change, where the zoning administrator will review applications and make recommendations to the Plan Commission. The Plan Commission will review and approve, reject or modify site plans. Currently, the Ste Plan Review Committee reviews these plans but this new zoning ordinance would eliminate the Ste Plan Review Committee as an unnecessary step since dept heads will communicate their individual concerns to the Zoning Administrator and he or she will see that these concerns are addressed. Berg asked if dept heads are in favor of this proposed change and Brian said they are in favor of the change. Berg also asked if the fees that are owed during the site plan review process were still in place and Brian said yes since the process is still the same but done mor administratively. By bringing public hearings to Plan Commission vs Council and taking comments that occur during these hearings, the Plan Commission is becoming more involved in the approval process.

In summary, all the proposed changes to our zoning code we have discussed up to this point will come back in January or February probably for public hearing for feedback from the public if any.

4. ADJOURNMENT

A motion to adjourn at 5:27pm by Kneser, seconded by Levi and approved unanimously.

Respectfully submitted,

Alderperson Ken Berg

All materials discussed at this meeting can be found at: https://files-backend.assets.thrillshare.com/documents/asset/uploaded_file/5330/Cow/8c64d7ca-8677-483b-a280-0513b7a21cf5/September-28%2C-2026-Plan-Commission-Meeting-Packet.pdf?disposition=inline

Exterior Building Design Standards
Plan Commission Overview Draft 10/26/26

Article VII establishes exterior building design standards to promote attractive, durable, and high-quality development. Requirements vary by land use type.

Building Material Classifications

Exterior building materials are broken into four groups, with Class I, II, and III being "high quality."

- **Class I – Masonry and Glass:** Brick, stone, brick or stone veneer, and storefront glass.
- **Class II – Decorative Masonry:** Decorative or split-face block and stucco.
- **Class III – Siding and Architectural Panels:** Wood, vinyl, fiber cement, composite and aluminum siding, architectural metal panels, and EIFS (synthetic stucco).
- **Class IV – Utilitarian Materials:** Plain concrete block, precast concrete panels, corrugated or non-decorative metal, plywood, and similar materials.

Application by Development Type

Single- and Two-Family Residential: Single-family homes, duplexes, and similar residential uses are generally exempt from design standards, except for restrictions on bright primary colors and high-gloss finishes. Many communities will have very few regulations for single family or two-family design. Where regulations are used, common examples include garage protrusion limitations (snout houses), metal roof considerations, or anti-monotony regulations. The proposed draft Watertown code prohibits bright/high-glass primary colors and uses a 4' maximum garage protrusion for single family homes in the bulk standards section of the code.

Multifamily Residential: Such land uses may use Class I, II, and III materials; Class IV materials are prohibited. Buildings must incorporate architectural variation every 40 feet, provide at least 20% windows and doors on street-facing façades, and use durable materials such as brick or stone along the bottom 40" of façades facing streets/parking areas.

Commercial, Mixed-Use, and Institutional: Buildings must be predominantly Class I materials, with Class II and III materials limited to 50% of the façade. Class IV materials are prohibited, with exceptions for certain rear façades. Architectural variation is required every 40 feet, along with durable base materials, prominent entrances, and attractive street-facing façades.

Industrial: Greater flexibility is provided for functional building materials. Street-facing façades must incorporate at least 15% Class I materials, reducible to 10% with additional design improvements. All other materials, including Class IV, may be used for the remainder of the building. Architectural variation is required every 100 feet.

Administration and Flexibility: The Zoning Administrator reviews building designs through the site plan and building permit processes. Exceptions for comparable materials and Plan Commission waivers provide flexibility where alternative designs achieve the ordinance's intent without lengthy/costly CUP procedures. Overall, the standards establish consistent expectations for

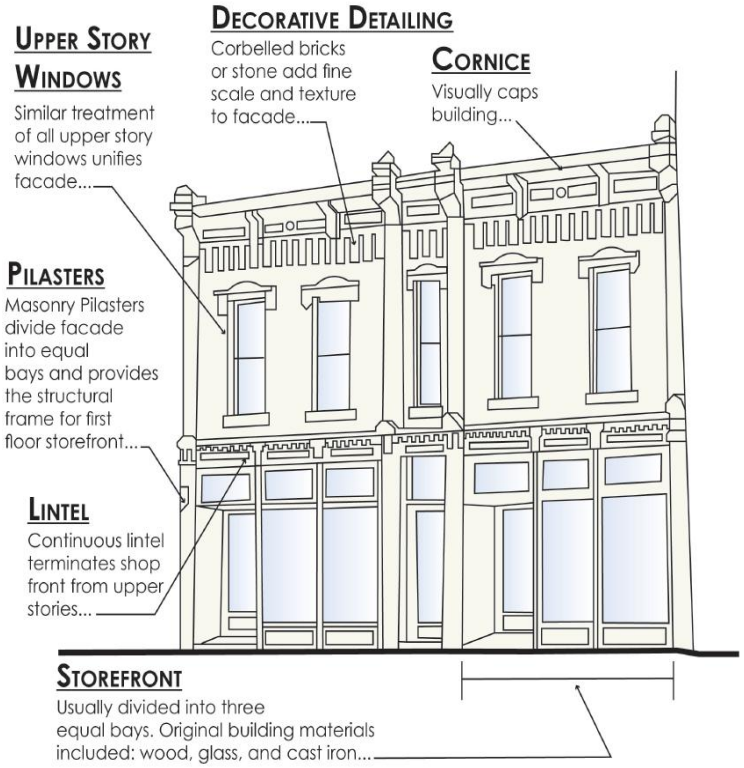
building quality while recognizing the different design and functional needs of residential, commercial, and industrial development.

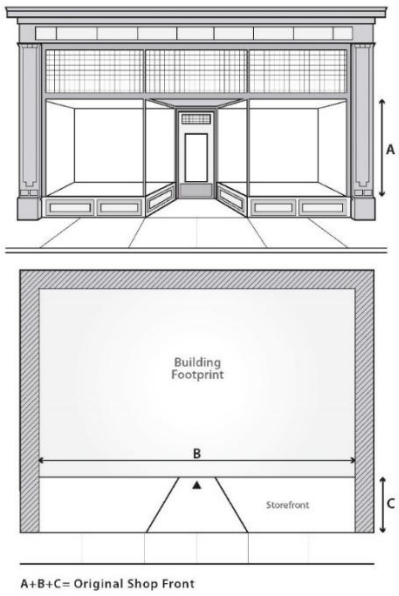
Downtown

The proposed approach for downtown is to maintain the City's existing historic preservation review process rather than establish a separate set of architectural design standards through zoning. The Historic Preservation Commission (HPC) currently reviews exterior building changes and issues Certificates of Appropriateness under Chapter 325, Historic Preservation.

The draft zoning code references Chapter 325 and clarifies that projects requiring both Site Plan Review and a Certificate of Appropriateness shall receive an HPC recommendation prior to Plan Commission action. Properties within the Downtown Mixed-Use (DMU) District that are not subject to historic preservation review would follow the applicable exterior design standards based on land use.

Rather than duplicate design standards, limited updates to Chapter 325 are proposed for consideration, including additional guidance for historic façades, storefronts, windows, architectural features, and exterior colors. These additions build upon the City's existing historic preservation criteria while maintaining flexibility for the HPC to evaluate individual projects. Two architectural graphics are also proposed to support the review process.





ARTICLE VII: EXTERIOR BUILDING DESIGN STANDARDS

Section 550.07.01: Purpose and Applicability

(1) Purpose. The purpose of this Section is to regulate the design and materials used for the exterior of buildings and structures within the City so as to maintain and enhance the attractiveness and values of property in the community. This Article is further intended to support the creation of a pedestrian-oriented urban environment that emphasizes architectural and urban design principles of human scale and visual interest. Additionally, this Article is intended to ensure the development of structures that maintain a long-lasting appearance; withstand the effects of time and exposure to the elements; resist damage in areas with high vehicular and pedestrian traffic and in areas where larger equipment that could cause damage is commonly used; that maintain a consistent character of development based on land use and zoning district particular to each development; and that contribute to the long-term economic and social vitality of the City of Watertown.

(2) Applicability. Telecommunication, Extraction and Disposal, Energy Production, and Agricultural land uses are exempt from the exterior design standards in Sections 550.07.10 to 550.07.50 below.

(a) New Construction. The requirements of this Section shall apply to all structures and buildings within the City constructed after the effective date of this Chapter.

(b) Additions. Additions to buildings constructed after the effective date of this Chapter shall comply with the standards of this Section and, as determined by the Plan Commission, shall match or be substantially similar to the design and materials of the existing building.

(c) Alterations. For buildings constructed prior to the effective date of this Chapter, alterations that do not impact the floor area of the building shall comply with the standards of this Section, or shall match or be substantially similar to the existing building design and materials. Ordinary repairs and maintenance are not considered alterations.

(d) Exceptions and Appeals.

1. Exceptions. Exceptions to the building design standards set forth in this Section may be granted by the Zoning Administrator, to permit substitute building materials or construction of comparable quality or design when it can be demonstrated that the provisions of this Section are infeasible and that the granting of such exception is in keeping with the purpose of this Section. Decisions rendered by the Zoning Administrator may be appealed to the Plan Commission.

2. Appeals. Any person affected by a decision of the Zoning Administrator may petition for a hearing before the Plan Commission.

3. Waivers. The Plan Commission is authorized to grant one or more waivers for specific design requirements in this Section when the Plan Commission finds the design to constitute an exemption as described above in subsection (1) or finds an alternative design standard also achieves the Purpose of this Section.

   a. Granting of waivers by the Plan Commission shall be identified within the conditions of approval as part of the design review component of any Site Plan review (Section 550.10.43).

(e) Beyond the rules in this Section, additional building design standards may apply to:

1. Conditional Use Permits (see Section 550.10.32)

2. Planned Development Districts (see Section 550.0.2.11)

Commented [SK1]: Allows some flexibility in PC design review, while still being closely prescribed by the Code. This avoids the need for drawn out processes with things like CUPs.

(3) Review and Approval. Through the site plan review and building permit processes, the Zoning Administrator shall be responsible and have authority to hear, review, and act upon all proposed exterior architectural plans for all proposed development.

(4) Exterior Building Materials. The 4 classes of building materials referenced in this Chapter have the following meanings:

(a) Class I materials include brick, brick veneer, stone, stone veneer, and glass (curtain/storefront).

(b) Class II materials include split face or decorative block, and stucco.

(c) Class III materials include architectural/decorative metal panels, EIFS, residential aluminum siding, and siding made of wood, wood composite, vinyl, or fiber cement.

(d) Class IV materials include smooth face or non-decorative block; concrete panels (tilt-up or precast); asphaltic, fiberglass, metal, or poly-roofing siding; non-decorative metal panels; corrugated metal; and plywood, chipboard, or other non-decorative wood. Also includes any material not listed in (a) through (c) above.

(e) Architectural Metal Panels. For purposes of this section, architectural metal panels are factory-manufactured exterior metal wall panels with concealed fasteners, a factory-applied or inherently finished surface, and a smooth or intentionally designed profile. Corrugated, standard ribbed, and exposed-fastener metal panels shall be classified as Class IV materials. The Zoning Administrator may require manufacturer specifications to verify compliance.

Figure 550.07.01a: Exterior Building Material Requirements by Use*

Type of Construction	Land Use (see Article III)	Exterior Building Materials Permitted
New Construction of Any Kind	Single Family, Two-Family, Manufactured Homes, and Cottage Courts	See Section 550.07.10
New Construction of Any Kind	Townhouse, Multiplex, Apartment	See Section 550.07.20
New Construction of Any Kind	Commercial, Mixed-Use, and Institutional Uses	See Section 550.07.30
New Construction of Any Kind	Industrial, Storage, Transportation	See Section 550.07.40
Any Exterior Change	Within the Downtown Mixed Use Zoning District	See Section 550.07.50

*Telecommunication, Extraction and Disposal, Energy Production, and Agricultural land uses are exempt from the exterior design requirements of this Article.

Sections 550.07.02 to 550.07.09: Reserved

Section 550.07.10: Single- and Two-Family Uses

These standards apply to all single-family, duplex, twin house, two-flat, manufactured home, and cottage court land uses, buildings, and structures constructed after the effective date of this Chapter.

(1) Except for (1)(a) below, all single-family, duplex, twin house, two-flat, manufactured home and cottage court land uses are exempt from the exterior design standards of this Article. See applicable land use requirements in Section 550.03.06 and the base zoning district's bulk dimensional standards in Article IV.

(a) Exterior building colors. High gloss paints and exterior finishes and primary colors, including red, blue, green, yellow, black, and fluorescent colors, shall not be permitted. Where an integral part of site design or used as accents, muted versions of these colors may be used as determined by the Zoning Administrator.

Sections 550.07.11 to 550.07.19: Reserved

Section 550.07.20: Multi-Family Uses

These standards apply to all townhouse, multiplex, and apartment land uses, buildings, and structures constructed after the effective date of this Chapter. See an example exterior design diagram in Figure 550.07.20a.

(1) Exterior Materials. Multi-family buildings shall be clad in Class I, II or III materials. Class IV materials are prohibited.

(a) Materials of comparable quality may be substituted for any class of material or be used as a decorative element if the material can be removed or replaced with a permitted exterior material, as determined by the Zoning Administrator.

(b) Exterior building materials in conjunction with façade articulations listed below in Section 550.07.20(3) shall be used to create the building's distinct horizontal base, middle, and top.

(2) Building Entrance.

(a) The primary entrance shall be on the front façade facing the street and decorative doors shall be used on this facade.

(b) The primary entrance shall be covered a minimum of 3 feet from the door. Recessed 3-foot entries shall be deemed to meet this requirement.

(c) Exterior entry doors for individual units shall be residential in style and shall include frame and panel (real or decorative).

(d) Exterior entry doors for multiple units may be residential (as described in Subsection (c) above) or commercial in style (glass).

(3) Façade Articulation.

(a) Façade lengths shall not be greater than 40 feet without articulation such as:

1. Recesses or projections that step back or project a portion of the main façade plane.
2. Recesses or projections of upper floors from the ground floor façade plane.
3. Vertical division using different textures or materials.
4. Division of the façade into individual units through the use of windows, entrances, arcades, porches, decks, balconies, lighting, etc.
5. Roof form variation such as the inclusion of dormers, change in roof lines, or change in roof type.
6. Public art installations located directly on a facade, such as murals (See Chapter 12.075 of the City of Watertown Municipal Code for public art standards).

(b) On façades facing the street, windows or doors shall be required in order to promote a visual connection to the street.

1. The total area of windows and doors, including trim, shall comprise a minimum of 20 percent of the total façade area, excluding gables.

Commented [SK2]: Plan Commission could customize this if they were concerned with any particular material. For example, if you wanted to limit Architectural Metal panels, you could add sub (b): Decorative metal wall panels (Class III materials) may be used up to 30% of any façade. Draft as written does not include a limit.

2. Structured in-building vehicle parking or access is permitted on the ground floor of a structure in accordance with the standards below:

   a. Vehicle access is permitted from any façade of the structure to the right-of-way.

   b. Structured in-building parking shall be fully enclosed on all sides within the structure. Vehicle parking is permitted within the ground floor of the structure as long as the nonresidential land use requirements for ground floors of Mixed Use Buildings are met (see Section 550.03.08. and 550.03.28(19)).

(c) On any façade facing a public street or parking area, hard and durable materials such as decorative block, brick, stone, or a comparable material shall be required within 40 inches of the adjacent grade.

(4) Roofs.

(a) As determined by the Plan Commission, decorative and articulated metal roofs and exterior metal wall panels shall be permitted if all fasteners are fully shielded from view.

(b) Roof forms and materials shall be compatible and harmonious with those of existing buildings in the immediate area which conform to this Section.

(c) See (8) below for roof-top mechanical screening requirements.

(5) Wall Details, Trim, and Windows.

(a) Exterior windows shall match the architectural character of the building. Spandrel, mirrored, or tinted glass is prohibited.

(b) All façade openings shall be articulated or appropriately trimmed through the use of materials such as lintels, sills, surrounds, shutters, etc.

(c) Natural wood shall be painted or stained unless it is cedar, redwood or other naturally weather-resistant species intended to be exposed.

(d) Pressure-treated lumber shall be painted or stained after a curing period of no greater than 18 months.

(e) Exterior building apparatus such as brackets, wiring, antennas, gutters, downspouts, and other similar feature shall blend in with the color and design of the structure's exterior façade.

(6) Patios, Decks, and Balconies.

(a) Ground-level patios and decks facing the street shall be bordered with landscape treatments, in accordance with Article VIII as depicted and approved on the Site Plan (Section 550.10.43).

   1. Covered porches are exempt from this requirement.

(b) Exterior stairs leading to a deck or balcony are not permitted on the front or street side of a building.

   1. On corner lots, exterior stairs shall be permitted on the interior side façade.

(c) Exterior corridors shall be covered by the building roof, shall be located within the footprint of the building foundation, and shall not be visible from the street.

(d) Upper-story decks and balconies shall be cantilevered, supported by vertical columns, or supported from above.

(7) Mechanical and Exterior Building Systems.

Commented [SK3]: Requires durable material on base of building

Commented [SK4]: Could add a section on color here if desired: Colors. Primary colors including red, blue, green, yellow, and fluorescent colors are prohibited on all exterior facades. Color patterns shall be used consistently throughout the property. Some communities prefer to be a little less regulatory on colors.

Commented [SK5]: Metal roof reference

Commented [SK6]: City may not wish to regulate roof forms.

(a) Drainage pipes and air intakes and exhaust vents for high-energy gas applications and meters on exterior walls shall match or be complementary to the color of the roof and wall onto which they are mounted.

(b) Facade-mounted Equipment.

1. Window-mounted air conditioning units shall not be permitted in any window that faces a public street and shall not encroach into exterior balconies, porches, decks, or patios.

    a. When no alternative is available, units shall be masked (painted, encased, etc.) in order to blend into the building's exterior finish and shall be flush-mounted so as not to project beyond the main plane of the façade more than necessary.

2. Building-mounted equipment installed on the façade visible from an adjacent public right-of-way or residential district shall not encroach into exterior balconies, porches, decks, or patios and shall be screened in a manner that is:

    a. Architecturally compatible with the primary structure to which the equipment is attached. Screening materials shall be identical to or substantially similar to the materials used on the building façade to which the equipment is attached.

    b. Incorporated as part of the building wall or flush-mounted so as not to project beyond the main plane of the façade.

    c. Consistent with the color of the structure to which the equipment is attached.

(c) Roof-mounted Equipment. Roof-mounted equipment shall be screened, preferably by parapet walls. Other acceptable screen types shall be:

1. Architecturally compatible with the primary structure to which the equipment is attached. Screening materials shall be identical to or substantially similar to the materials used on the building façade to which the equipment is attached.

2. Consistent with the color of the structure to which the equipment is attached.

3. Designed to be an integral part of the building's architectural design and give the impression that it is something other than a mechanical screen.

(d) See Section 550.06.21 for screening requirements for ground-mounted mechanical systems and refuse enclosure requirements.

(8) Wall or Roof-Mounted Lighting. See Section 550.06.20.

Figure 550.07.20a: Multi-Family Exterior Design Standards Example



Sections 550.07.21 to 550.07.29: Reserved

Section 550.07.30: Commercial, Mixed-Use, and Institutional Uses

These standards apply to all mixed-use, commercial, and institutional land uses, buildings, and structures constructed after the effective date of this Chapter. See Article VIII for landscaping standards. See an example exterior design diagram in Figure 550.07.30a.

(1) Building Entrance and Orientation.

(a) The main entrance shall be clearly defined and accentuated through the use of detailing, distinctive materials, or colors, projections or recesses, porticos, covered entrances, stoops, or other features as deemed appropriate by the Zoning Administrator.

(b) Buildings shall be oriented so that the front façade faces the road with the highest traffic volumes.

(a) All façades facing a public right-of-way shall be designed to have the appearance of a front façade and shall incorporate decorative doors, meaning each shall include windows, doors or other architectural components typically associated with front façades, as approved by the Zoning Administrator.

(c) Service or loading areas shall not be permitted between the building and the public street.

(d) Drive-through windows shall not be located between the building and the public street.

Commented [SK7]: Flagging for awareness.

(2) Exterior Materials. Commercial buildings shall be predominately clad in Class I materials. Class II and Class III materials may be used as accents and trim not to exceed 50 percent of the total building façade. Class IV materials are prohibited.

(a) Rear building elevations not facing a public street or public parking lot shall be exempt from this requirement.

(b) Materials of comparable quality may be substituted for any class of material or be used as a decorative element if the material can be removed or replaced with a permitted exterior material, as determined by the Zoning Administrator.

(c) Exterior building materials in conjunction with façade articulations listed below in Section 550.07.30(3) shall be used to create the building's distinct horizontal base, middle, and top.

(3) Façade Articulation. See Section 550.07.20(3).

(4) Colors. See Section 550.07.20(4).

(5) Roofs. See Section 550.07.20(5).

(6) Wall Details, Trim, and Windows. See Section 550.07.20(6).

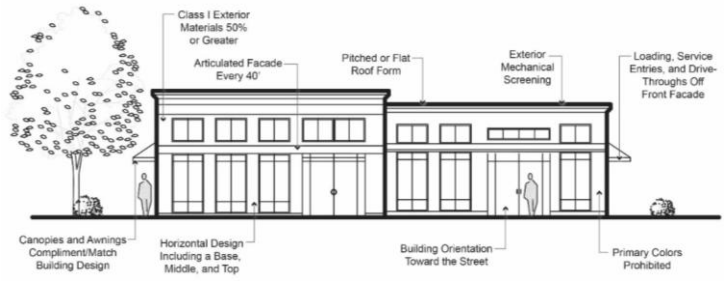
(7) Patios, Decks, and Balconies. See Section 550.07.20(7).

(8) Mechanical and Exterior Building Systems. See Section 550.07.20(8).

(9) Wall or Roof-Mounted Lighting. See Section 550.07.20(9).

Commented [SK8]: Everything is just cross referenced to the MF section above to reduce redundance text. However, you could have all of that text here and further customize it to be more or less stringent than MF standards. If not regulating color in MF standards, delete the reference here.

Figure 550.07.30a: Commercial, Mixed-Use, and Institutional Exterior Design Standards Example



Sections 550.07.31 to 550.07.39: Reserved

Section 550.07.40: Industrial Uses

These standards apply to all industrial, storage, and transportation land uses, buildings, and structures constructed after the effective date of this Chapter. See Article VIII for landscaping standards. See an example exterior design diagram in Figure 550.07.40a.

(1) Architectural Design.

(a) Buildings shall be designed to include façade articulation; flat, unadorned walls shall be avoided.

(b) Buildings shall be oriented so as to face the road with the highest traffic volumes. This requirement shall not apply to buildings with frontage on state or federal highways, unless there is direct access from the development to the highway.

1. If a visitor, office, or customer entrance component is included in the building, such space(s) shall be clearly defined and accentuated through the use of detailing, windows, distinctive materials and/or colors, projections or recesses, or other architectural features as deemed appropriate by the Plan Commission.

(2) Exterior Materials. Industrial buildings shall be clad in Class I, II or III materials. Certain Class IV materials are also acceptable as noted.

(a) For all façades facing a public street, a minimum of 15 percent of the façade shall be composed of Class I building materials.

1. This requirement may be reduced to 10 percent of the façade provided that other elements are incorporated into the building and site design, such as façade articulation, increased landscaping, or other improvements approved by the Plan Commission.

(b) Smooth faced/non-decorative block or concrete panels (tilt-up/precast) (Class IV materials) may be used if they are part of a palette of permitted materials or if they incorporate horizontal and vertical articulation including, but not limited to, changes in color or texture, as deemed appropriate by the Plan Commission.

(c) Non-decorative metal panels (Class IV materials) may be used as deemed appropriate by the Plan Commission.

1. In the AG, LI, HI, and IOA zoning districts, visible exterior fasteners shall be the same color as the attached wall for any principal or accessory building visible from a public street.
2. In all other zoning districts, exterior wall fasteners shall be fully concealed from view.

(d) Materials of comparable quality may be substituted for any class of material or be used as a decorative element if the material can be removed or replaced with a permitted exterior material, as determined by the Plan Commission.

(3) Façade Articulation.

(a) Façade lengths shall not be greater than 100 feet without articulation such as:

1. Recesses or projections that step back or project a portion of the main façade plane.
2. Recesses or projections of upper floors from the ground floor façade plane.
3. Vertical division using different textures or materials.
4. Division of the façade into individual components (i.e., storefronts, distinct uses) through the use of architectural elements such as porches, balconies, windows, covered entrances, arcades, awnings, marquees, lighting, signage, etc.
5. Roof form variation such as the inclusion of dormers, change in roof lines, or change in roof type.
6. Public art installations located directly on a facade, such as murals (See Chapter 12.075 of the City of Watertown Municipal Code for public art standards).

(4) Mechanical and Exterior Building Systems.

(a) Applicability. See Section 550.06.21 to determine whether screening is required.

(b) Drainage pipes on exterior walls shall match or be complementary to the color of the roof and wall onto which they are mounted.

(c) Building-mounted Equipment.

1. Building-mounted equipment installed on the façade visible from an adjacent public right-of-way or residential district shall be disguised or screened in one of the following ways:
   a. Architecturally compatible with the primary structure to which the equipment is attached. Screening materials shall be identical to or substantially similar to the materials used on the building façade to which the equipment is attached.
   b. Incorporated as part of the building wall and/or flush-mounted so as not to project beyond the main plane of the façade.
   c. Consistent with the color of the structure to which the equipment is attached.

Commented [SK9]: Our common approach for industrial. It basically says you need to make the front façade look a little nicer with glass, stone, or brick up to 15%, the rest of the building can be pretty much whatever you want.

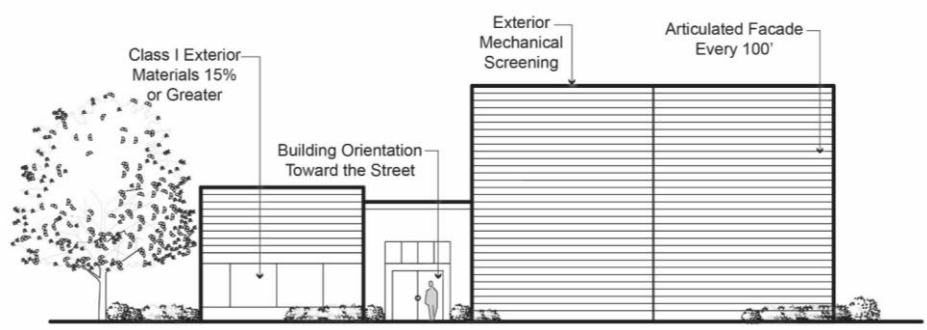
(d) Roof-mounted Equipment. Roof-mounted equipment visible from an adjacent public right-of-way or residential district shall be screened, preferably by parapet walls. Other acceptable screen types shall be:

a. Architecturally compatible with the primary structure to which the equipment is attached. Screening materials shall be identical to or substantially similar to the materials used on the building façade to which the equipment is attached.

b. Consistent with the color of the structure to which the equipment is attached.

c. Designed to be an integral part of the building's architectural design and give the impression that it is something other than a mechanical screen.

Figure 550.07.40a: Industrial Exterior Design Standards Example



Sections 550.07.41 to 550.07.49: Reserved

Section 550.07.50: Downtown Historic Preservation and Exterior Design Review

(1) Purpose. The purpose of this Section is to preserve and enhance the historic and architectural character of downtown Watertown, encourage compatible new development and reinvestment in existing buildings, and coordinate zoning review with the City's historic preservation review process.

(2) Applicability. Properties within the Downtown Mixed-Use (DMU) Zoning District shall be subject to the following exterior building design requirements.

(a) Historic Preservation Review. Properties subject to a Certificate of Appropriateness under Chapter 325, Historic Preservation, shall be reviewed in accordance with Chapter 325.

(b) Other DMU Properties. Properties within the DMU Zoning District that are not subject to historic preservation review under Chapter 325 shall comply with the applicable exterior building design standards of Sections 550.07.10 through 550.07.40.

(c) Other Applicable Requirements. All properties within the DMU Zoning District shall remain subject to applicable zoning requirements including dimensional standards, site design, landscaping, lighting, parking, signage, and other applicable provisions of this Chapter.

(3) Review and Approval.

(a) Historic Preservation Review. The Historic Preservation Commission shall review applications requiring a Certificate of Appropriateness in accordance with Chapter 325. Such review shall address the historic and architectural appropriateness of proposed exterior improvements.

(b) Site Plan Review. For development requiring Site Plan Review under Section 550.10.43 and a Certificate of Appropriateness under Chapter 325, the Historic Preservation Commission shall review the proposed exterior building design and provide a recommendation to the Plan Commission prior to final Site Plan approval. The Historic Preservation Commission shall retain its authority to issue Certificates of Appropriateness as provided in Chapter 325.

Sections 550.07.51 to 550.07.99: Reserved

City of Watertown Zoning Code Rewrite

Plan Commission
October 26, 2026
Exterior Building Design Standards

VANDEWALLE & ASSOCIATES INC.
Madison . Milwaukee

THE CITY OF WATERTOWN
Opportunity runs through

Code Organization

- Code Outline
  - Article 1: Introduction
  - Article 2: Establishment of Zoning Districts
  - Article 3: Land Use Regulations
  - Article 4: Bulk Regulations
  - Article 5: Nonconforming Situations
  - Article 6: Performance Standards
  - Article 7: Exterior Building Design Standards
  - Article 8: Landscaping Requirements
  - Article 9: Signage
  - Article 10: Administration and Procedures
  - Article 11: Definitions

Today's Review
(Last Section)

Exterior Design Standards

Classify Materials

Material Class	General Description	Materials Included
Class I (Highest Quality)	*Masonry and Glass*	Brick, stone, glass
Class II	*Decorative Masonry*	Decorative block, stucco
Class III	*Siding and Architectural Panels*	Decorative metal, siding, wood, EIFS
Class IV (Lower Quality)	*Utilitarian Materials*	Non-decorative block, concrete, metal, wood

Apply Materials by Land Use

Land Use / Zoning District	Materials	Articulation	Other
Single Family and Two Family	--	--	• Prohibit high-gloss primary and fluorescent color • Garage protrusion (Article IV)
Multi-Family	Class I, II, III: Brick, stone, glass, decorative block, and siding	Every 40 feet	• PC may allow metal roof • Require mechanical screening • 40” durable base • Doors and windows 20% of street facade
Commercial, Mixed-Use, Institutional	Class I (Primary) Class II and III (Up to 50%): Brick, stone, glass, decorative metal, block, siding	Every 40 feet	• PC may allow metal roof • Require mechanical screening • 40” durable base
Industrial	Class I: Only 15% street face Brick, stone, glass, any other materials rest of building	Every 100’	• Metal roof permitted • Require mechanical screening

Multi-Family



Above Example

Materials: stone, glass, decorative block, metal, and siding
Articulation: less than every 40’
Base: hard stone base at 40”
Roof: no metal (shingle)
Mechanicals: screened (colors, materials, landscaping, in-building)

Below Example:
Lumin Terrace, Watertown



Commercial









Watertown Examples
Materials: brick, stone, glass over 50%
Articulation: less than every 40’
Base: hard stone base at 40”
Roof: metal and shingle
Mechanicals: screened

Institutional







Materials: brick, stone, glass over 50%
Articulation: less than every 40’
Base: hard stone base at 40”
Roof: metal and shingle
Mechanicals: screened

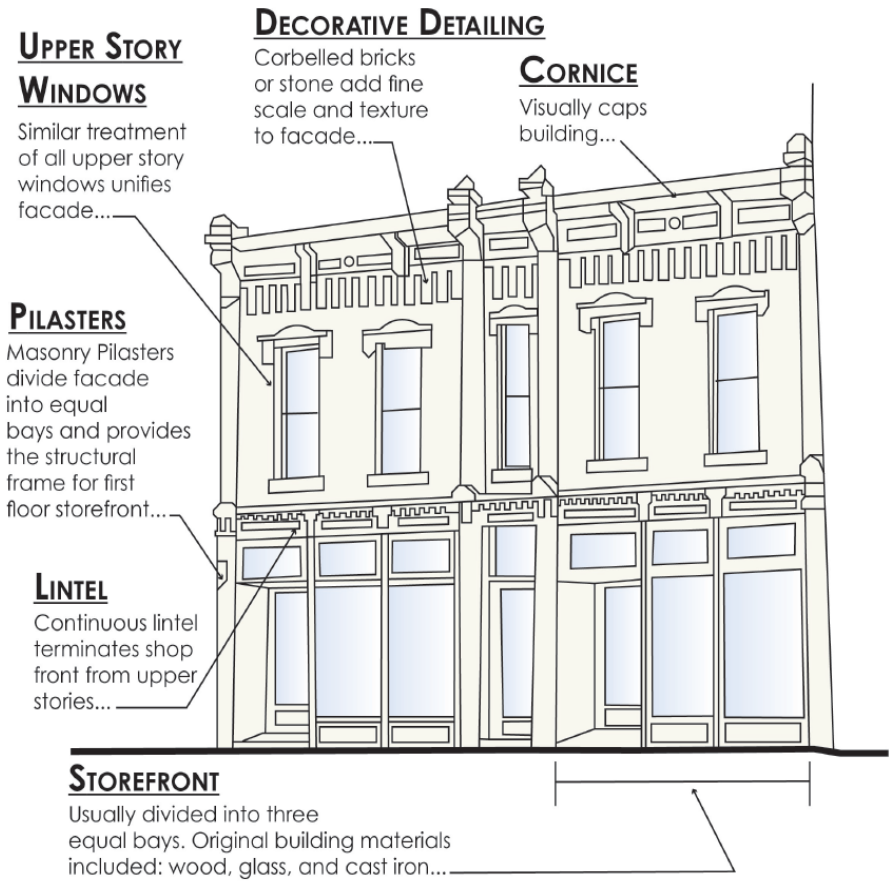
Industrial



Materials: brick, stone, glass over 15%
Articulation: less than every 100’
Base: no requirements
Roof: metal
Mechanicals: screened

Downtown

- Retain HPC review under Chapter 325 (for properties requiring Certificate of Appropriateness)
- HPC recommends to Plan Commission
- Plan Commission acts on Site Plan Review
- Where HPC does not have review authority, Plan Commission site plan review, land use design standards, and bulk dimensions still apply



Summary of Key Policy Questions

- What to include for single-family and two-family?
- Residential accessory buildings?
- Confirm materials allowances for other land uses
- 40” durable base for multi-family and commercial?
- Downtown approach: defer to HPC for properties within the historic district as a recommendation to Plan Commission

Next Steps & Questions

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BUILDING SAFETY & ZONING DIVISION

PLAN COMMISSION STAFF REPORT

TO: Plan Commission
DATE: October 26th, 2026
SUBJECT: Scheduling of a Public Hearing for the Zoning Code Rewrite.

The City of Watertown is proposing a rewrite of Chapter 550 Zoning of the Watertown City Code. A public hearing before the Common Council is a required part of that process.

BACKGROUND DESCRIPTION:
The City of Watertown has been preparing a rewrite and update of Chapter 550 Zoning of the Watertown City Code for approximately the last year and a half. The rewrite of Chapter 550 Zoning will consist of a full replacement of the current Chapter 550 Zoning and a new zoning map. The Plan Commission is required to schedule a public hearing to gather comments about the proposed changes. Scheduling the public hearing as proposed allows the appropriate amount of time to properly notice the public hearing.

STAFF EVALUATION:

Zoning Code
The zoning code requires the Plan Commission to conduct an initial review of the zoning code changes and schedule a public hearing before the Common Council.

Per Section § 550-141E:
E. Initial review by the Plan Commission and scheduling of Common Council public hearing. The Common Council shall not make an amendment to the Official Zoning Map without allowing for a recommendation from the Plan Commission per the provisions of this subsection.
(1) The Plan Commission shall schedule a reasonable time and place for a public meeting to hear the application within 45 days of the acceptance and determination of the complete application as determined by the Zoning Administrator. The applicant may appear in person, by agent and/or by attorney.
(2) Within 60 days after the public meeting (or within an extension of said period requested in writing by the applicant and granted by the Plan Commission), the Plan Commission shall schedule a public hearing before the Common Council.
(3) If the Plan Commission recommends approval of an application, it shall state in the minutes or in a subsequently *issued written decision its conclusion and any finding of facts supporting its conclusion as to the following: that the potential public benefits of the proposed amendment outweigh any and all potential adverse impacts of the proposed amendment, as identified in Subsection* ***D(3)(a)*** *through* ***(c)*** *above, after taking into consideration the proposal by the applicant*

PLAN COMMISSION OPTIONS:
The following are possible options for the Plan Commission:
1. Set public hearing date for November 17th, 2026
2. Set public hearing to a later date.

STAFF RECOMMEDATION:
- Staff recommends setting the public hearing date at the Common Council for November 17th, 2026.

ATTACHMENTS:
- Application materials.

Zoning Code Update – Proposed Adoption Schedule

- October 26th
  - Vandewalle presentation on zoning code design standards at Plan Commission (last section of draft zoning code).
  - Plan Commission informed that the Common Council presentation on the draft zoning code and map will take place at the November 2nd meeting.
  - Plan Commission informed that the entire draft zoning code (containing all the previously reviewed sections) and map will be available at the November 9th Plan Commission meeting.
  - Plan Commission schedules public hearing for the draft zoning code at Common Council for November 17th.
- November 2nd
  - Sonja presentation on the draft zoning code and map at the Common Council.
- November 9th
  - Plan Commission provided entire draft zoning code and map. Plan Commission to review draft zoning code and map for the November 23rd meeting.
- November 17th
  - Public hearing for the draft zoning code and map at Common Council.
- November 23rd
  - Plan Commission reviews public hearing comments and makes a recommendation to the Common Council for adoption of the zoning code and map.
- December 1st
  - Common Council - 1st reading of the ordinance to adopt the zoning code and map. (Vandewalle in attendance)
- December 15th
  - Common Council - 2nd reading of the ordinance to adopt the zoning code and map. Effective date to be January 1st, 2027.

NOTICE OF PUBLIC HEARING

In accordance with Wis. Stat. § 62.23(7)(de) and Section § 550-142E(1) of the City of Watertown Municipal Code, a notice is hereby given by the Plan Commission of the City of Watertown, Wisconsin, that a public hearing will be held on the 26th day of October 26, 2026 at 4:30 P.M., or shortly thereafter, in the Council Chambers of the Municipal Building, 106 Jones Street, Watertown, Wisconsin. This public hearing will be to consider the request of Hunter Lien (applicant) and 1911 Watertown Propco, LLC (owners) for a Conditional Use Permit for a Group Development under Sections §550-68A(1) and §550-68A(3).

1911 Gateway Drive is zoned MR-10 (Multifamily Residential-10), and is further described as follows:

Lot 1 of Certified Survey Map No. 6536 recorded January 22, 2025, as Document No. 1491549, being Lot 1 of Certified Survey Map No. 4319, recorded in Vol. 2 of Certified Survey Maps, on Pages 229-231, as Document No. 1095342, and lands located in the SE ¼ of the NW ¼ of Section 16, T8N, R15E, in the City of Watertown, Jefferson County, Wisconsin. (PIN: 291-0815-1624-003)

All persons wishing to be heard are invited to be present. Written comments may be submitted to the Building, Safety, & Zoning Department at nzimmerman@watertownwi.gov.

CITY OF WATERTOWN
Brian Zirbes
Zoning & Floodplain Administrator

BZ/nmz

PUBLISH: October 12, 2026
and
October 19, 2026
(BLOCK AD)

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BUILDING SAFETY & ZONING DIVISION

PLAN COMMISSION STAFF REPORT

TO: Plan Commission
DATE: October 26th, 2026
SUBJECT: 1911 Gateway Drive, Site Plan Review and Conditional Use Permit - CUP

A request by Hunter Lien, agent for River Crossing LLC, for a Site Plan Review and a Conditional Use Permit (CUP) for a 'Group Development'. Parcel PIN(s): 291-0815-1624-003

SITE DETAILS:
Acres: 33.32
Current Zoning: Multi-Family Residential-10 (MR-10)
Existing Land Use: Vacant Land
Future Land Use Designation: Multi-Family/Mixed Residential

BACKGROUND AND APPLICATION DESCRIPTION:
The applicant is seeking Site Plan Review and approval of a Conditional Use Permit (CUP) for a 'Group Development'. This development proposal meets the definition of a 'Group Development' due to it including two or more structures containing principal land uses on the same lot. The applicant is proposing a 274-unit multi-family development consisting of eight (8)-8-unit buildings, four (4)-12-unit buildings, six (6)-15-unit buildings, four (4)-18-unit buildings, and a 3,200 square clubhouse building. All residential buildings will be 2-stories. Units within the development will consist of 72 one-bedroom units, 178 two-bedroom units, and 24 three-bedroom units. Exterior building materials consist of vinyl siding, brick and stone veneer, vinyl double hung windows, asphalt shingle roofs, and aluminum trim. Access to the development will consist of two driveways from Gateway Drive on the west and one from Air Park Drive on the north. Parking will consist of 256 spaces in garages and 338 surface spaces, for a total of 594 spaces including 12 ADA spaces.

STAFF EVALAUATION:

Site Plan Review Committee:
See Minutes of October 12th, 2026

Land Use and Zoning:

1. Site Plan Review: A Site Plan Review Committee recommendation and Plan Commission approval of the site plan is required pursuant to Sections 550-144 & 550-145 of the zoning code.

   Within the Multi-Family Residential-10 (MR-10) 'Apartment: 4,350 square feet per dwelling unit (five- to twenty-four-unit building)' is a principal land use permitted as a conditional use and includes land uses that consists of attached, multifamily residences of no more than 24 dwelling units per building [per § 550-49A(7)]

   Regulations for 'Apartment: 4,350 square feet per dwelling unit (five- to twenty-four-unit building)' include:
   - No more than 24 dwelling units, and no fewer than three, may be located in a building.
   - A Group Development CUP is required for any development with one or more buildings which contain four or more dwelling units

   Site Layout and Design:
   Within the Multi-Family Residential-10 (MR-10) the minimum paved surface setback is three feet from side or rear lot lines and ten feet from street lot lines [per § 550-27F(2)(f) and the minimum dwelling unit (building) separation is 20 feet [per § 550-27F(2)(g)]. Parking standards require 2.5 stalls per three-

bedroom; two stalls per two-bedroom, one-bedroom or efficiency. The proposed development meets the setback, building separation, and parking standards.

Vehicle Access and Circulation:
The proposed driveways and parking stalls meet aisle width and parking stall dimension requirements specified in the Off-Street Parking and Traffic Circulation Standards [per § 550-107F].

Landscaping:
The applicant has not provided a landscaping plan or landscaping point calculations for this development proposal.

Lighting:
The applicant has not submitted a lighting plan or photometric map for this development proposal.

2. Group Development: Any development proposal that meets the definition of a 'Group Development' per Section § 550-68 shall be subject to the 'Use Regulations' under § 550-69.

   Under section § 550-68A(1) '*Two or more structures containing principal land uses on the same lot'* is defined as a 'Group Development'. Common examples of group developments include six-unit apartment buildings, apartment complexes, condominium complexes, strip centers, shopping centers, and office centers *[per § 550-68B].*

   Under section § 550-69 there are no permitted by right uses and all uses shall be conditional uses. All land uses permitted under the applicable zoning district are allowed within the 'Group Development'.

   Section § 550-69:

   A. Permitted by right: not applicable.

   B. Conditional use regulations. Any land use that is permitted as a permitted by right land use or as a conditional land use within the applicable zoning district(s) is permitted to locate within a group development. The detailed land use regulations of this section that pertain to individual land uses shall also apply to individual land uses within a group development, as will all other applicable provisions of this chapter. Therefore, land uses permitted by right in the zoning district shall be permitted by right within an approved group development (unless otherwise restricted by the conditions of approval imposed during the conditional use approval for the group development as a whole), and land uses permitted as a conditional use in the zoning district shall be permitted within the group development only with conditional use approval for the specific use. In all cases, the following conditional use conditions shall be applied to the group development as a whole and to individual uses within the group development:

      (1) All required off-street parking spaces and access drives shall be located entirely within the boundaries of the group development. **Meets Standard.**

      (2) The development shall contain a sufficient number of waste bins to accommodate all trash and waste generated by the land uses in a convenient manner. **Meets Standard.**

      (3) No group development shall take access to a local residential street. **Meets Standard.**

      (4) All development located within a group development shall be located so as to comply with the intent of this chapter regarding setbacks of structures and buildings from lot lines. As such,

individual principal and accessory structures and buildings located within group developments shall be situated within building envelopes that serve to demonstrate complete compliance with said intent. Said building envelopes shall be depicted on the site plan required for review of group developments. The use of this approach to designing group developments will also ensure the facilitation of subdividing group developments in the future (if such action is so desired). **Meets Standard.**

(5) The following standards shall apply to all group developments:

(a) Building exterior materials shall be of high quality on all sides of the structure, including glass, brick, decorative concrete block or stucco. Decorative architectural metal with concealed fasteners may be approved with special permission from the City. **Meets Standard.**

(b) Building exterior design shall be unified in design and materials throughout the structure and shall be complementary to other structures in the vicinity. However, the development shall employ varying building setbacks, height, roof, treatments, door and window openings, and other structural and decorative elements to reduce the apparent size and scale of the structure. A minimum of 20% of the combined facades of the structure shall employ actual facade protrusions or recesses. A minimum of 20% of the combined linear roof eave or parapet lines of the structure shall employ differences in height of eight feet or more. Roofs with particular slopes may be required by the City to complement existing buildings or otherwise establish a particular aesthetic objective. **Meets Standard.**

(c) Mechanical equipment, refuse containers and any permitted outdoor storage shall be fully concealed from on-site and off-site ground-level views with materials identical to those used on the building exterior. **Meets Standard.**

(d) Standard corporate trademark building designs, materials, architectural elements and colors all shall be acceptable, as determined by the City, only as subtly integrated into the more generic design of the building as a whole. Color schemes of all architectural elements shall be muted, neutral, nonreflective, and nonuse or non-tenant specific. **Meets Standard.**

(e) Public entryways shall be prominently indicated from the building's exterior design and shall be emphasized by on-site traffic flow patterns. All sides of the building that directly face or abut a public street shall have public entrances. **N/A.**

(f) Loading areas shall be completely screened from surrounding roads and residential, office and commercial properties. Said screening may be through internal loading areas, screening wall that will match the building exterior in materials and design, fully opaque landscaping at time of planting, or combinations of the above. Gates and fencing may be used for security purposes but not for screening and shall be of high aesthetic quality. **N/A.**

(g) Vehicle access from public streets shall be designed to accommodate peak traffic volumes without disrupting traffic on public streets from inadequate throat length, access drive width or design or inadequate driveway location. The impact of traffic generated by the proposed development shall be demonstrated by a traffic impact analysis performed by the applicant's traffic engineer so as to not adversely impact off-site public roads, intersections and interchanges during the traffic peak associated with a full parking lot. Where the project shall adversely impact off-site traffic, the City may deny the application, may require a size

reduction in the proposed development, or may require off-site improvements. **Meets Standard.**

(h) Parking lot design shall employ interior landscaped islands with a minimum of 400 square feet at all parking islands, and in addition shall provide a minimum of one landscaped island of a minimum of 400 square feet in each parking aisle for every 20 cars in that aisle. Aisle-end islands shall count toward meeting this requirement. Landscaped medians shall be used to break large parking areas into distinct pods, with a maximum of 100 spaces in any one pod. **Needs to be waived, requirement not applicable to the proposed development design.**

(i) A minimum of one cart-return area of 200 square feet shall be provided for every parking area pod. There shall be no exterior cart-return or cart-storage areas located within 25 feet of the building in areas located between the building and a public street. **N/A.**

(j) The applicant shall demonstrate full compliance with City standards for stormwater, utilities, erosion control and public safety. **Meets Standard.**

(k) On-site landscaping shall be provided per the landscaping requirements of this chapter, except that building foundation landscaping and paved area landscaping shall be provided at 1.5 times the required landscape points for development in the zoning district. **Needs to be waived, proposal does not meet 1.5 times landscaping points requirement.**

(l) A conceptual plan for exterior signage shall be provided at time of detailed site plan or GDP that provides for coordinated and complementary exterior sign location, configurations and colors throughout the planned development. All freestanding signage within the development shall complement the on-building signage. Freestanding sign materials and design shall complement the building exterior and may not exceed the maximum height requirement of this chapter and the Building Code. **Meets Standard.**

(m) The entire development shall provide for full and safe pedestrian and bicycle access within the development and shall provide appropriate connections to the existing and planned pedestrian and bicycle facilities in the community and in surrounding neighborhoods, including sidewalk connections to all building entrances from all public streets. The development shall provide secure bicycle parking and pedestrian furniture in appropriate quantities and location. A central pedestrian gathering area shall be provided. **Meets Standard.**

(n) Where such developments are proposed to provide a new location for a business already located within the community, a required condition of approval for the new development shall be a prohibition on conditions of sale, lease or use of the previously occupied building or site which provide limits beyond the range of applicable local, state or federal regulations. If such limits are required, the applicant may seek City approval to demolish the previously occupied structure and prepare the site for some future development. **N/A.**

(o) The applicant shall provide adequate evidence that the proposed development and uses cannot be adequately sited within or on existing developed properties or buildings within the community. **Meets Standard.**

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BUILDING SAFETY & ZONING DIVISION

PLAN COMMISSION STAFF REPORT

(p) The Plan Commission may waive any of the above standards by a three-fourths' vote of members in attendance, but only if supplemental design elements or improvements are incorporated into the project that compensate for the waiver of the particular standard. **Two standards will need to be waived to approve this proposal.**

WISCONSIN STATUES:

All Conditional Use Permits are subject to the requirements of Wisconsin Act 67.

Under 2017 Wisconsin Act 67: Section 16. 62.23 (7) (de) Conditional Use Permits.

1. *62.23 (7) (de)(1) In this paragraph:*
   a. *"Conditional use" means a use allowed under a conditional use permit, special exception, or other special zoning permission issued by a city, but does not include a variance.*
   b. *"Substantial evidence" means facts and information, other than merely personal preferences or speculation, directly pertaining to the requirements and conditions an applicant must meet to obtain a conditional use permit and that reasonable persons would accept in support of a conclusion.*
2. *62.23 (7) (de)(2)*
   a. *If an applicant for a conditional use permit meets or agrees to meet all of the requirements and conditions specified in the city ordinance or those imposed by the city zoning board, the city shall grant the conditional use permit. Any condition imposed must be related to the purpose of the ordinance and be based on substantial evidence.*
   b. *The requirements and conditions described under subd. 2. a. must be reasonable and, to the extent practicable, measurable and may include conditions such as the permit's duration, transfer, or renewal. The applicant must demonstrate that the application and all requirements and conditions established by the city relating to the conditional use are or shall be satisfied, both of which must be supported by substantial evidence. The city's decision to approve or deny the permit must be supported by substantial evidence.*
3. *62.23 (7) (de)(3)*
   Upon receipt of a conditional use permit application and following publication in the city of a class 2 notice under ch. 985, the city shall hold a public hearing on the application.
4. *62.23 (7) (de)(4)*
   Once granted, a conditional use permit shall remain in effect as long as the conditions upon which the permit was issued are followed, but the city may impose conditions such as the permit's duration, transfer, or renewal, in addition to any other conditions specified in the zoning ordinance or by the city zoning board.
   62.23 (7) (de)(5)
   If a city denies a person's conditional use permit application, the person may appeal the decision to the circuit court under the procedures contained in par. (e) 10.

PLAN COMMISSION DECISION:

Group Development Criteria	Applicant Provided Substantial Evidence		Opponent Provided Substantial Evidence		PC Finds Standards Met	
Review § 550-69B	**Yes**	No	Yes	**No**	**Yes**	No

If Plan Commission answers "no" to any of the questions, above, the CUP must be denied. Otherwise, proceed to the conditions of approval.

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BUILDING SAFETY & ZONING DIVISION

PLAN COMMISSION STAFF REPORT

PLAN COMMISSION OPTIONS:

The following are possible options for the Plan Commission:

1. Deny the Conditional Use Permit, based on failure to provide substantial evidence to meet one or more of the regulatory standards.
2. Approve the Conditional Use Permit without conditions, based on successfully providing substantial evidence of regulatory compliance.
3. Approve the Conditional Use Permit with conditions as identified by the Plan Commission:
   a. Waive Sections § 550-69B(5)(h) & 550-69B(5)(k).
   b. Provide a code compliant landscaping plan with calculated landscaping points.
   c. Provide a code compliant lighting plan with a photometric map.
   d. Obtain required Stormwater and Erosion Control Permits.

STAFF RECOMMEDATION:

- Staff recommends approval of the Site Plan and Conditional Use permit with conditions.

ATTACHMENTS:

- Application materials

Payne+Dolan
A WALBEC COMPANY

Engineering Survey Group
W6380 Design Drive
Greenville, WI 54942
920.757-7559 | Designbuild@walbecgroup.com

October 6, 2026

Project Narrative

Project: River Crossing
Gateway Drive
Watertown, WI 53094

National Management LLC. is requesting conditional use permit and site plan review and approval for a new multi-family development, River Crossing, located on the west side of Gateway Drive (north of Air Park Drive) on the western portion of parcel 291-0815-1624-003, in the City of Watertown. The property is zoned MR-10 and a conditional use permit is required for the proposed development. City Land Use Plan map designation for the property is Planned Neighborhood Use and the proposed use is compatible. The existing property is currently agricultural with an existing house and outbuildings. The existing house and outbuildings will be removed for the proposed development.

The property area is 33.32 acres, and the area of site disturbance is proposed at 22.33 acres. The development will consist of twenty-two (22) multi-family buildings, a clubhouse building and a mailbox building: eight (8)-8-unit buildings, four (4)-12-unit buildings, six (6)-15-unit buildings, four (4)-18-unit buildings, and a 3,200 square clubhouse building. All residential buildings will be 2-stories. Exterior building materials consist of vinyl siding, brick and stone veneer, vinyl double hung windows, asphalt shingle roofs, and aluminum trim.
A clubhouse with patio and pickleball courts is proposed along the eastern side of the site. Two waste enclosures are proposed: one on the south-central end and one on the on the next driveway north centrally located. The waste enclosures will contain a sufficient number of waste bins to conveniently accommodate all trash and waste generated by the proposed use. All improvements located within the development comply with all building setback requirements.

The proposed number of dwelling units is 274. The overall development will include 72 one-bedroom units, 178 two-bedroom units, and 24 three-bedroom units. The leasing office will be located in the clubhouse building, staffed by the property manager, National Management LLC, with regular office hours. The development is designed to meet HUD accessibility requirements. Commercial traffic to the property will include mail/parcel deliveries, refuse pickup, and maintenance/vendor services, all with varying frequency. Hours of operation will be consistent with residential uses throughout the City. The development will be comprised of the ratios below. The floor area ratio is 0.28.

Building Floor Area	4.68 AC	203,860 SF	14.04%
Pavement	6.14 AC	267,458 SF	18.43%
Total Impervious	10.82 AC	471,319 SF	32.48%
Landscape – Open Space	11.68 AC	508,781 SF	35.05%
Project Site	33.32 AC	1,451,419 SF	100%

Access to development will be via (3) driveways, two from Gateway Drive on the west and one from Air Park Drive on the north. Parking is provided in garages, in front of garages and other locations throughout the site: 256 spaces in garages, 338 surface spaces, for a total of 594 spaces including 12 ADA spaces. All required off-street parking and access drives are designed entirely within the boundaries of the group development. Internal walks are provided to each building for pedestrian access.
Two 8” water service connections are proposed, one to the existing water main in Ari Park Drive and one i Gateway Drive. A private 8” water loop is proposed to service each of the buildings and proposed site

hydrants. Sanitary services from each of the buildings are proposed to connect into an 8" private sanitary interceptor line to connect into the existing sanitary manhole in an easement on the Pro-Health property along Airpark Drive.

Post-construction stormwater management is provided with a wet pond along the western side of the site. Infiltrating testing confirmed that infiltration is not required due to low permeable soils and high ground water. The stormwater pond discharges to adjacent wetlands.
The proposed development shall comply with all requirements of Article XI Performance Standards. The development will not create any potential nuisances related to access, visibility, off-street parking, off-street loading, exterior storage, exterior lighting, vibration, noise, air pollution, odors, electromagnetic radiation, glare and heat, fire and explosion, toxic and noxious materials, waste materials, drainage, exterior construction materials, and hazardous materials.
The proposed development will fit well with the general character of this area. The vacant property will be transformed into a development that is aesthetically pleasing and complementary to other area structures. Building exterior will feature high-quality materials along with coordinated landscaping with resilient plantings enhancing property and neighborhood appeal. Site lighting (building mounted lighting only) will be provided in a fashion that provides appropriate foot candles for safety with cut-off fixtures for minimal light trespass and directed inward toward the development. The building and grounds will be well maintained. No hazards or nuisances to nearby neighbors are anticipated as a result of this project.

Information on how the proposed River Crossing multi-family development addresses the City Group Developments conditions can be found below.

(1) All required off-street parking spaces and access drives shall be located entirely within the boundaries of the group development.

- All required off-street parking spaces and access drives are located entirely within the boundaries of the development.

(2) The development shall contain a sufficient number of waste bins to accommodate all trash and waste generated by the land uses in a convenient manner.

- Two waste enclosures are proposed: one on the south central end and one on the on the next driveway north centrally located. The waste enclosures will contain a sufficient number of waste bins to conveniently accommodate all trash and waste generated by the proposed use.

(3) No group development shall take access to a local residential street.

- The development does not take access from a local residential street.

(4) All development located within a group development shall be located so as to comply with the intent of this chapter regarding setbacks of structures and buildings from lot lines. As such, individual principal and accessory structures and buildings located within group developments shall be situated within building envelopes that serve to demonstrate complete compliance with said intent. Said building envelopes shall be depicted on the site plan required for review of group developments.

- The development complies with all required setbacks.

(5) (a) Building exterior materials shall be of high quality on all sides of the structure, including glass, brick, decorative concrete block or stucco. Decorative architectural metal with concealed fasteners may be approved with special permission from the City.

- Exterior building materials consist of vinyl siding and composite trim, brick and stone veneer, vinyl double hung windows, dimensional shingle roofs, and aluminum trim.

(5) (b) Building exterior design shall be unified in design and materials throughout the structure and shall be complementary to other structures in the vicinity. However, the development shall employ varying building setbacks, height, roof, treatments, door and window openings, and other structural and decorative elements to reduce the apparent size and scale of the structure. A minimum of 20% of the combined facades of the structure shall employ actual facade protrusions or recesses. A minimum of 20% of the combined linear roof

eave or parapet lines of the structure shall employ differences in height of eight feet or more. Roofs with particular slopes may be required by the City to complement existing buildings or otherwise establish a particular aesthetic objective.

• The exterior building design incorporates façade projections exceeding 20 percent of the building frontages. These include building jogs, balcony projections and roof gable elements. The two-story, loe-rise buildings are appropriately scaled to complement the nearby development.

(5) (c) Mechanical equipment, refuse containers and any permitted outdoor storage shall be fully concealed from on-site and off-site ground-level views with materials identical to those used on the building exterior.

• Refuse containers shall be located within an enclosure of split face concrete masonry units.

(5) (d) Standard corporate trademark building designs, materials, architectural elements and colors all shall be acceptable, as determined by the City, only as subtly integrated into the more generic design of the building as a whole. Color schemes of all architectural elements shall be muted, neutral, nonreflective and nonuse- or nontenant-specific.

• Exterior building materials consist of high quality vinyl siding and composite trim, brick and stone veneer, vinyl colors with be neutral with a variety of colors to add interest.

(5) (e) Public entryways shall be prominently indicated from the building's exterior design and shall be emphasized by on-site traffic flow patterns. All sides of the building that directly face or abut a public street shall have public entrances.

• None of the buildings have entryways that face or abut a public street.

(5) (f) Loading areas shall be completely screened from surrounding roads and residential, office and commercial properties. Said screening may be through internal loading areas, screening wall that will match the building exterior in materials and design, fully opaque landscaping at time of planting, or combinations of the above. Gates and fencing may be used for security purposes but not for screening and shall be of high aesthetic quality.

• The development does not include any designated loading areas. Commercial traffic to the property will include mail/parcel deliveries, refuse pickup, and maintenance/vendor services, all with varying frequency.

(5) (g) Vehicle access from public streets shall be designed to accommodate peak traffic volumes without disrupting traffic on public streets from inadequate throat length, access drive width or design or inadequate driveway location. The impact of traffic generated by the proposed development shall be demonstrated by a traffic impact analysis performed by the applicant's traffic engineer so as to not adversely impact off-site public roads, intersections and interchanges during the traffic peak associated with a full parking lot. Where the project shall adversely impact off-site traffic, the City may deny the application, may require a size reduction in the proposed development, or may require off-site improvements.

• Vehicle access has been designed to accommodate peak traffic volumes and no traffic disruption to public streets is anticipated.

(5) (h) Parking lot design shall employ interior landscaped islands with a minimum of 400 square feet at all parking islands, and in addition shall provide a minimum of one landscaped island of a minimum of 400 square feet in each parking aisle for every 20 cars in that aisle. Aisle-end islands shall count toward meeting this requirement. Landscaped medians shall be used to break large parking areas into distinct pods, with a maximum of 100 spaces in any one pod.

• Landscape islands are provided on each aisle end of each row of parking.

(5) (i) A minimum of one cart-return area of 200 square feet shall be provided for every parking area pod. There shall be no exterior cart-return or cart-storage areas located within 25 feet of\ the building located between the building and a public street.

• Cart return is not applicable to this development.

(5) (j) The applicant shall demonstrate full compliance with City standards for stormwater, utilities, erosion control and public safety.

• The development has been designed to meet City standards for stormwater, utilities, erosion control and public safety. See included stormwater report, which details how stormwater requirements for infiltration, peak discharge, and water quality have been met. See sheets C7.0,C7.1, and C7.2 for proposed erosion control measures. See sheets C4.0, C4.1, and C5.0-C5.11for proposed utilities.

(5) (k) On-site landscaping shall be provided per the landscaping requirements of this chapter, except that building foundation landscaping and paved area landscaping shall be provided at 1.5 times the required landscape points for development in the zoning district.

• Landscaping has been designed to meet City standards for the MR-10 district. See sheet C1.4 for landscape plan, which includes a landscaping calculations table which breaks down the required plants and provided plants for each of the specific areas such as: paved area, developed lots, street, and building foundation.

(5) (l) A conceptual plan for exterior signage shall be provided at time of detailed site plan or GDP that provides for coordinated and complementary exterior sign location, configurations and colors throughout the planned development. All freestanding signage within the development shall complement the on-building signage. Freestanding sign materials and design shall complement the building exterior and may not exceed the maximum height requirement of this chapter and the Building Code.

• A monument sign is proposed between the two entrances along Gateway Drive and will be designed to meet zoning requirements. Monument sign will be appropriately scaled and materials shall match primary buildings.

(5) (m) The entire development shall provide for full and safe pedestrian and bicycle access within the development and shall provide appropriate connections to the existing and planned pedestrian and bicycle facilities in the community and in surrounding neighborhoods, including sidewalk connections to all building entrances from all public streets. The development shall provide secure bicycle parking and pedestrian furniture in appropriate quantities and location. A central pedestrian gathering area shall be provided.

• The development includes internal sidewalks that are provided to each building for pedestrian access. All walks are designed to be accessible per HUD and ADA standards. Additionally, a clubhouse with patio and pickleball courts is proposed along the eastern side of the site.

(5) (n) Where such developments are proposed to provide a new location for a business already located within the community, a required condition of approval for the new development shall be a prohibition on conditions of sale, lease or use of the previously occupied building or site which provide limits beyond the range of applicable local, state or federal regulations. If such limits are required, the applicant may seek City approval to demolish the previously occupied structure and prepare the site for some future development.

• This development is not a new location for a business already located within the community.

(5) (o) The applicant shall provide adequate evidence that the proposed development and uses cannot be adequately sited within or on existing developed properties or buildings within the community.

• All available sites were investigated with this site being the most beneficial for the new multi-family development.

(5) (p) The Plan Commission may waive any of the above standards by a three-fourths' vote of members in attendance, but only if supplemental design elements or improvements are i into the project that compensate for the waiver of the particular standard.

PLAN OF PROPOPSED IMPROVEMENT
FOR
NATIONAL MANAGEMENT, LLC
RIVER CROSSING
CITY OF WATERTOWN, WISCONSIN
JEFFERSON COUNTY

PRELIMINARY NOT FOR CONSTRUCTION

OWNER/DEVELOPER:
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EMAIL: BL521D@ATT.COM

TDS TELECOM
SOUTHEAST WISCONSIN
PHONE: (877) 483-7142

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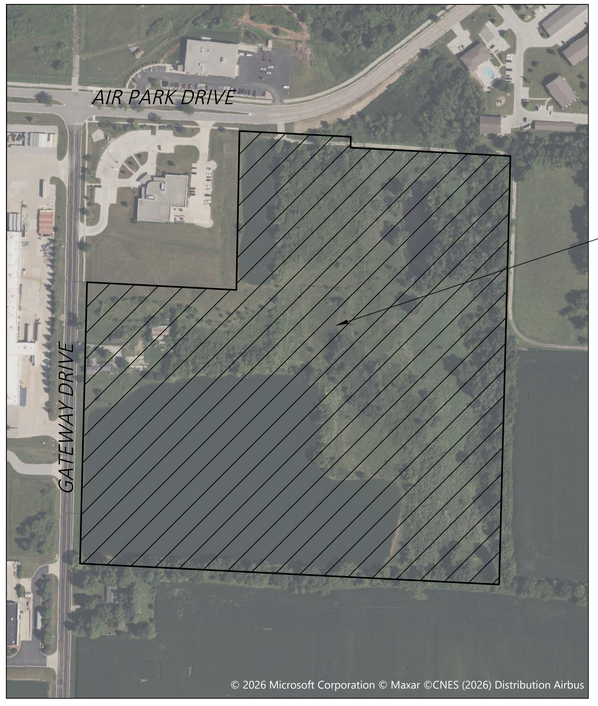
NOTES TO CONTRACTOR:
PRIOR TO CONSTRUCTION, A PRECONSTRUCTION CONFERENCE MAY BE HELD AT THE CITY OFFICES. THE PRECONSTRUCTION CONFERENCE SHALL BE SCHEDULED AND MODERATED BY THE DESIGN ENGINEER OF RECORD.

EACH CONTRACTOR SHALL HAVE A COPY OF THE CITY APPROVED PLANS, AND CITY SPECIFICATIONS ON-SITE DURING TIMES OF CONSTRUCTION. .

COORDINATES ON THIS PLAN ARE REFERENCED TO:
HORIZONTAL DATUM WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS)
JEFFERSON COUNTY NAD83
VERTICAL DATUM NAVD 88 (2012)

DIGGERS HOTLINE MUST BE CONTACTED TO LOCATE UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.

LOCATION MAP
NOT TO SCALE



SHEET NO.	DESCRIPTION
C0.0	TITLE SHEET
C1.0	EXISTING CONDITIONS
C2.0	DEMOLITION PLAN
C3.0 - C3.2	SITE PLANS
C4.0 - C4.12	ROADWAY & STORM SEWER PLANS
C5.0 - C5.12	SANITARY & WATERMAIN PLANS
C5.13	FIRE COVERAGE PLAN
C6.0 - C6.6	GRADING PLANS
C7.0 - C7.2	EROSION CONTROL PLANS
C8.0 - C8.3	LANDSCAPING PLANS
C9.0	GENERAL NOTES
C9.1 - C9.9	CONSTRUCTION DETAILS
E-1 - E3	PHOTOMETRICS PLAN
A4.0	BUILDING ELEVATIONS

EXISTING LEGEND
- BENCHMARK
- FOUND, IRON PIPE
- FIRE HYDRANT
- ENDWALL
- CATCH BASIN, ROUND
- STORM MANHOLE
- SANITARY MANHOLE
- GUY WIRE
- SIGN
- GAS VALVE
- WATER VALVE
- POST
- UTILITY METER
- UTILITY PEDESTAL
- TREE
- POWER POLE
- DOWNSPOUT
- BOLLARD
- EXISTING OVERHEAD UTILITY
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND GAS
- EXISTING UNDERGROUND FIBER OPTIC
- EXISTING WATER
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING UNDERGROUND TELEPHONE
- EXISTING TREE LINE
- PROPERTY LINE
- EASEMENT LINE
- RIGHT OF WAY LINE

PROPOSED LEGEND
- SIGN
- HANDICAP PARKING
- STORM MANHOLE
- STORM INLET/CB
- PIPE END SECTION
- SANITARY MANHOLE
- SANITARY CLEANOUT
- WATER VALVE
- PIPE FITTING
- HYDRANT
- ASPHALT PAVEMENT
- CONCRETE/ASPHALT COMPOSITE PAVEMENT
- CONCRETE SIDEWALK
- PAVEMENT REMOVAL
- SWALE
- SANITARY SEWER
- STORM SEWER
- ROOF DRAINS
- WATERMAIN
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED FENCE

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

NO.	REVISION DESCRIPTION	DATE

Payne+Dolan
A WALBEC COMPANY
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PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
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BROOKFIELD, WI 53005

Seal

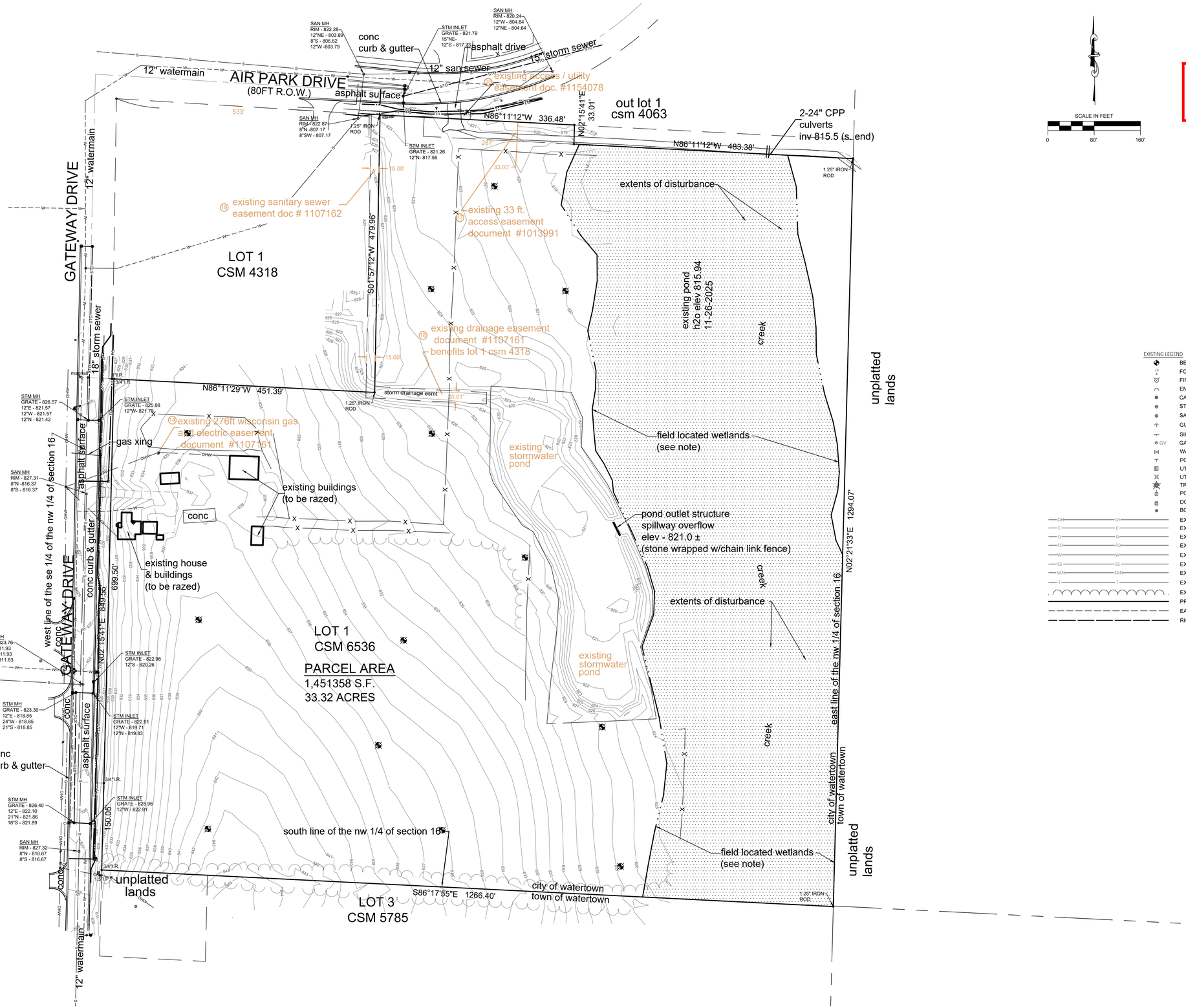
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TITLE SHEET

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P&D Project No:	#491163
Sheet No.	C0.0

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SCALE IN FEET
0 80' 160'

PRELIMINARY NOT FOR CONSTRUCTION

EXISTING LEGEND

- BENCHMARK
- FOUND, IRON PIPE
- FIRE HYDRANT
- ENDWALL
- CATCH BASIN, ROUND
- STORM MANHOLE
- SANITARY MANHOLE
- GUY WIRE
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CITY OF WATERTOWN, WI

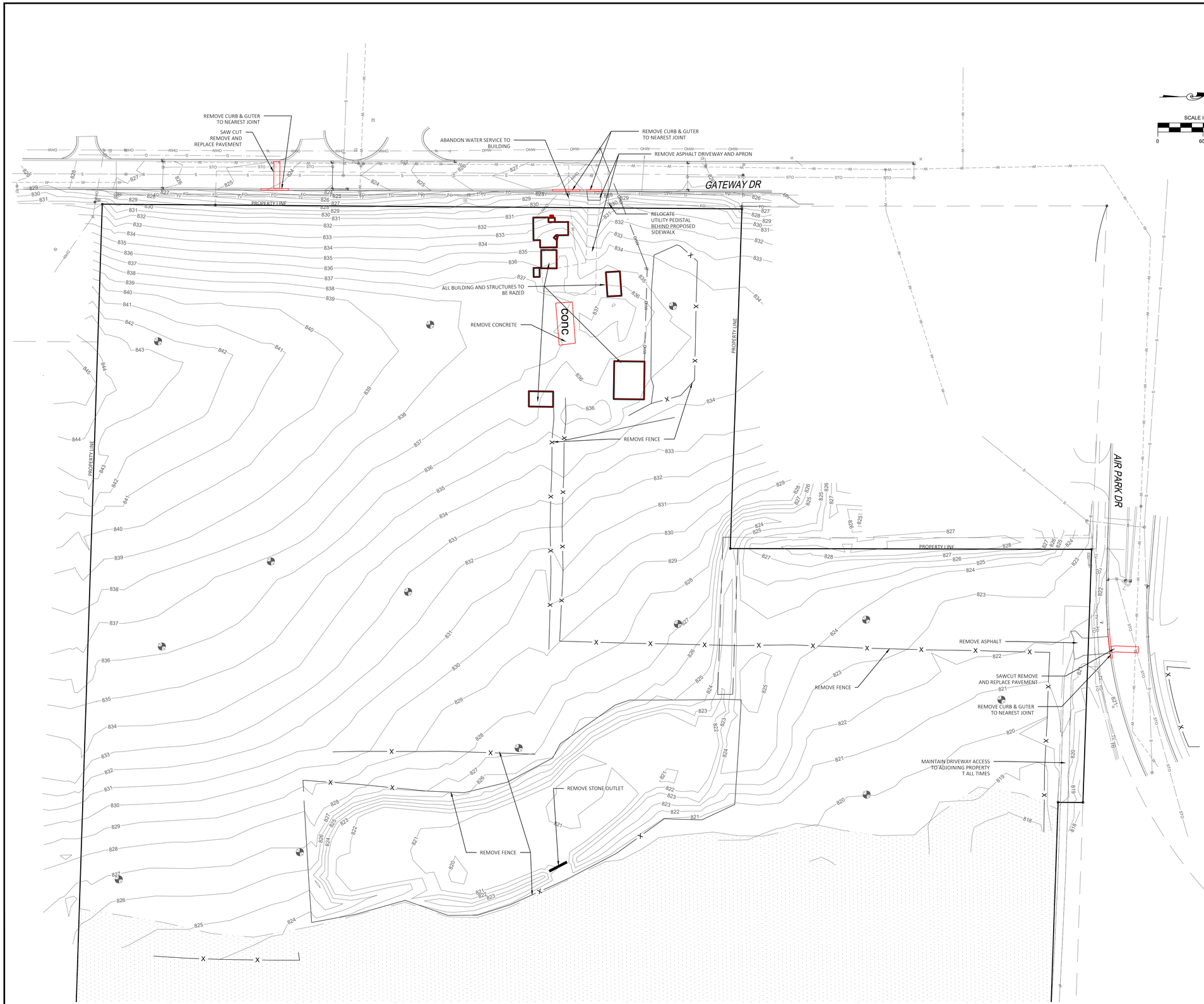
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NATIONAL MANAGEMENT, LLC
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141 BROOKFIELD, WI 53005

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SHEET TITLE
EXISTING CONDITION SURVEY

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Sheet No.	C1.0



PRELIMINARY
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CONSTRUCTION

EXISTING LEGEND

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RIVER CROSSING
CITY OF WATERTOWN, WI

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NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY SUITE
141 BROOKFIELD, WI 53005

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SHEET TITLE
DEMOLITION PLAN

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Sheet No.	C2.0

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SCALE IN FEET

0 60' 120'

PRELIMINARY NOT FOR CONSTRUCTION

SITE DATA

PARCEL ID: 291-0815-1624-003
PARCEL SIZE: 1,451,167 SF (33.32 AC)

ZONING: MULTI-FAMILY RESIDENTIAL 10

SETBACKS:
FRONT/STREET: 40-FT
SIDE: 25-FT

TOTAL UNITS 274
NUMBER OF RESIDENTIAL BUILDINGS = 22
8-UNIT BUILDINGS = 8
12-UNIT BUILDINGS = 4
15-UNIT BUILDINGS = 6
18-UNIT BUILDINGS = 4
NUMBER OF FIRST FLOOR UNITS = 96
CLUBHOUSE = 1
NUMBER OF ONE BEDROOM UNITS = 72
NUMBER OF TWO BEDROOM UNITS = 178
NUMBER OF THREE BEDROOM UNITS = 24

REQUIRED PARKING 2 SPACES PER 1&2 BR UNIT
2.5 SPACES PER 3 BR UNIT = 548 SPACES
=(2.5 X 24) +(2 x 250) = 560 SPACES

PARKING IN GARAGES = 256 SPACES
SURFACE PARKING = 338 SPACES

TOTAL PARKING PROVIDED = 594 SPACES
HC PARKING REQUIRED = 2% OF TOTAL = 12 HC SPACES
HC SPACES PROVIDED = 12 SPACES

LEGAL DRSCRIPTION:
LOT 1, CSM 6536, DOC 1491549

LOT AREA = 33.32 AC
FLOOR AREA = 4.26 AC (12.8%)
IMPERVIOUS SURFACE = 9.60 AC (28.8%)

PROPOSED LEGEND

- SIGN
- HANDICAP PARKING
- STORM MANHOLE
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- SANITARY MANHOLE
- SANITARY CLEANOUT
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- SANITARY SEWER
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- WATERMAIN
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- PROPOSED CONTOUR LINE
- PROPOSED FENCE

NOTES:

HIGHLIGHED ACCESSIBLE ROUTES WILL MEET SLOPE, WIDTH AND SURFACE REQUIREMENTS.

ALL BUT ONE FIRST-FLOOR UNITS ARE TYPE-B ACCESSIBLE

PAVEMENT STRIPING WILL BE PROVIDED IN ORDER TO IDENTIFY THE ACCESSIBLE ROUTES.

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DATE
REVISION DESCRIPTION
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CITY OF WATERTOWN, WI

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SHEET TITLE
OVERALL SITE PLAN

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PROPOSED LEGEND

- SIGN
- HANDICAP PARKING
- STORM MANHOLE
- STORM INLET/CB
- PIPE END SECTION
- SANITARY MANHOLE
- SANITARY CLEANOUT
- WATER VALVE
- PIPE FITTING
- HYDRANT
- ASPHALT PAVEMENT
- CONCRETE/ASPHALT COMPOSITE PAVEMENT
- CONCRETE SIDEWALK
- PAVEMENT REMOVAL
- SWALE
- SANITARY SEWER
- STORM SEWER
- ROOF DRAINS
- WATERMAIN
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED FENCE

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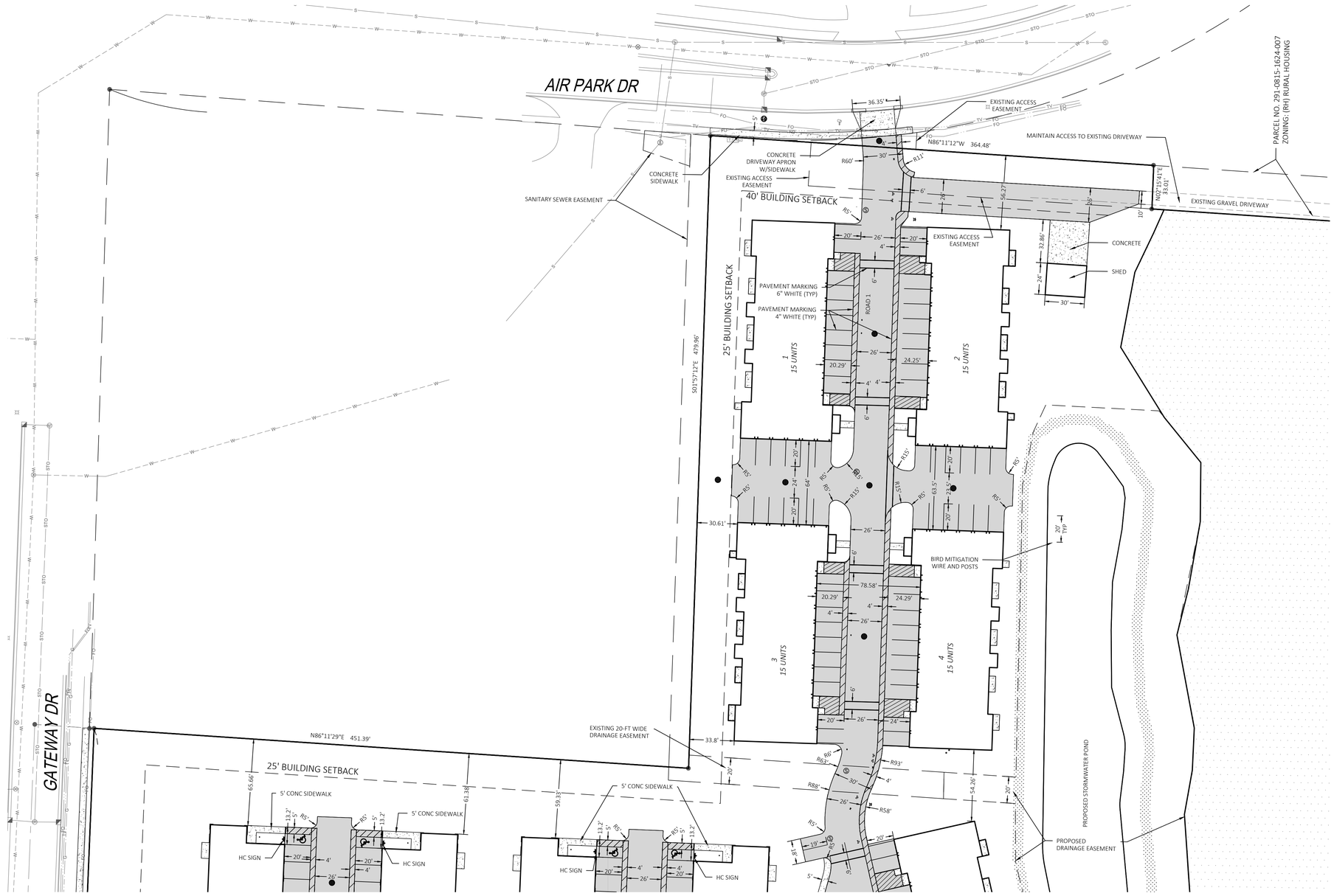
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PROPOSED LEGEND

- SIGN
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- STORM INLET/CB
- PIPE END SECTION
- SANITARY MANHOLE
- SANITARY CLEANOUT
- WATER VALVE
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SCALE IN FEET
0 60' 120'

PROPOSED LEGEND

- EXISTING SANITARY
- EXISTING STORM DRAIN
- EXISTING WATER MAIN/SERVICE
- PROPOSED SANITARY
- PROPOSED STORM DRAIN
- PROPOSED WATER MAIN/SERVICE
- PROPOSED STORM MH
- PROPOSED STORM INLET/CB
- PROPOSED PIPE END SECTION
- PROPOSED SANITARY MH
- PROPOSED SANITARY CLEANOUT
- PROPOSED HYDRANT
- PROPOSED WATER VALVE

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NOTES:

1. WATERMAIN AND SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, AND STANDARDS OF THE WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES FOR PRIVATE WATERMAIN AND SANITARY SEWER.
2. ALL WATER MAIN PIPE SHALL BE PVC, CONFORMING TO THE REQUIREMENTS OF AWWA C-900, AND SHALL BE FURNISHED WITH INTRGRAL ELASTOMERIC BELL AND SPIGOT JOINTS.
3. TYPICAL HYDRANT BURY DEPTH = 6.5' OR AS NOTED. MINIMUM COVER ON WATERMAIN SHALL BE 6-FEET OR AS NOTED TO MAINTAIN ADEQUATE VERTICAL SEPARATION AT CROSSINGS.
4. SANITARY SEWERS SHOWN ON THE CONSTRUCTION PLANS SHALL BE POLYVINYL CHLORIDE PIPE IN ACCORDANCE WITH ASTM D-3034 (SDR 35). ALL JOINTS SHALL BE ELASTOMERIC GASKET TYPE (WITH A "LOCKED-IN" RUBBER SEALING RING) PROVIDING A WATER TIGHT SEAL AND CONFORMING TO THE REQUIREMENTS OF ASTM D3212 "SPECIFICATION FOR JOINTS AND DRAIN AND SEWER PLASTIC PIPES USING FLEXIBLE ELASTOMERIC SEALS." ALL PIPE SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-B AS DEFINED IN ASTM D-1784.

PIPE CROSSING TABLE

CROSSING I.D.	BOTTOM OF TOP PIPE			TOP OF BOTTOM PIPE			SEPARATION (FT)
1	STO	HDPE 12"	821.53	SAN	PVC 8"	816.51	5.02
2	STO	HDPE 18"	820.84	WAT	PVC 8"	819.33	1.51
3	STO	HDPE 24"	821.77	SAN	PVC 8"	817.49	4.28
4	STO	HDPE 24"	821.54	WAT	PVC 8"	819.36	2.18
5	STO	HDPE 12"	821.99	WAT	PVC 8"	820.49	1.50
6	STO	HDPE 30"	820.54	SAN	PVC 8"	818.68	1.86
7	STO	HDPE 30"	820.46	SAN	PVC 8"	818.67	1.79
8	WAT	PVC 8"	818.92	SAN	PVC 8"	818.42	0.50
9	STO	HDPE 12"	822.35	WAT	PVC 8"	819.28	3.06
10	STO	HDPE 30"	820.37	WAT	PVC 8"	818.46	1.91
11	STO	HDPE 15"	821.98	WAT	PVC 8"	817.73	4.25
12	SAN	PVC 8"	819.50	WAT	PVC 8"	817.85	1.65
13	STO	HDPE 30"	820.22	WAT	PVC 8"	818.69	1.53
14	STO	HDPE 12"	822.62	SAN	PVC 8"	820.80	1.83
15	STO	HDPE 12"	822.63	WAT	PVC 8"	818.89	3.74
16	STO	HDPE 12"	823.88	SAN	PVC 8"	821.31	2.57
17	STO	HDPE 12"	824.21	WAT	PVC 8"	822.16	2.05
18	STO	HDPE 12"	824.66	SAN	PVC 8"	821.86	2.80
19	STO	HDPE 12"	827.28	SAN	PVC 8"	822.50	4.78
20	STO	HDPE 12"	827.52	WAT	PVC 8"	825.15	2.36
21	WAT	PVC 8"	824.53	SAN	PVC 8"	820.55	3.98
22	STO	HDPE 15"	826.82	SAN	PVC 8"	820.51	6.31
23	STO	HDPE 12"	827.15	WAT	PVC 8"	824.92	2.24
24	STO	HDPE 12"	824.50	SAN	PVC 8"	820.03	4.47
25	STO	HDPE 12"	824.52	WAT	PVC 8"	822.63	1.89
26	STO	HDPE 12"	823.61	SAN	PVC 8"	819.57	4.05
27	STO	HDPE 12"	823.67	WAT	PVC 8"	821.36	2.31
28	STO	HDPE 15"	822.15	SAN	PVC 8"	819.04	3.11

NOTE:
MINIMUM 1.5' VERTICAL SEPARATION FOR WATERMAIN UNDER SEWER PIPES.
MINIMUM 0.5' VERTICAL SEPARATION FOR WATERMAIN UNDER SEWER PIPES, OR BETWEEN SEWER PIPES.

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SCALE IN FEET
0 60' 120'

PROPOSED LEGEND

- EXISTING SANITARY
- EXISTING STORM DRAIN
- EXISTING WATER MAIN/SERVICE
- PROPOSED SANITARY
- PROPOSED STORM DRAIN
- PROPOSED WATER MAIN/SERVICE
- PROPOSED STORM MH
- PROPOSED STORM INLET/CB
- PROPOSED PIPE END SECTION
- PROPOSED SANITARY MH
- PROPOSED SANITARY CLEANOUT
- PROPOSED HYDRANT
- PROPOSED WATER VALVE

GATEWAY DRIVE
AIR PARK DRIVE
CLUBHOUSE
PROPOSED STORMWATER POND
PROPOSED STORMWATER POND
PROPOSED STORMWATER POND

BUILDING 19 8 UNITS
BUILDING 20 8 UNITS
BUILDING 21 8 UNITS
BUILDING 22 8 UNITS
BUILDING 18 18 UNITS
BUILDING 17 12 UNITS
BUILDING 16 8 UNITS
BUILDING 14 12 UNITS
BUILDING 15 8 UNITS
BUILDING 13 18 UNITS
BUILDING 11 12 UNITS
BUILDING 10 8 UNITS
BUILDING 12 18 UNITS
BUILDING 9 12 UNITS
BUILDING 8 18 UNITS
BUILDING 7 8 UNITS
BUILDING 6 15 UNITS
BUILDING 5 15 UNITS
BUILDING 4 15 UNITS
BUILDING 3 15 UNITS
BUILDING 2 15 UNITS
BUILDING 1 15 UNITS

HYDRANT ASSEMBLY
STA: 17+18.25 W/ 6" LEAD, -22.0' LT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 825.52
BURY DEPTH = 7.5'
NOZZLE ELEV = 834.77'

HYDRANT ASSEMBLY
STA: 41+19.99 W/ 6" LEAD, -18.0' LT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 826.89
BURY DEPTH = 7.0'
NOZZLE ELEV = 835.64'

HYDRANT ASSEMBLY
STA: 19+52.26 W/ 6" LEAD, -22.0' LT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 822.21
BURY DEPTH = 8.5'
NOZZLE ELEV = 832.46'

HYDRANT ASSEMBLY
STA: 45+53.76 W/ 6" LEAD, -18.0' LT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 820.53
BURY DEPTH = 8.5'
NOZZLE ELEV = 830.78'

HYDRANT ASSEMBLY
STA: 0+00.00 W/ 6" LEAD, 10.0' RT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 821.24
BURY DEPTH = 6.5'
NOZZLE ELEV = 829.49'

HYDRANT ASSEMBLY
STA: 3+35.49 W/ 6" LEAD, 22.0' RT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 818.10
BURY DEPTH = 9.0'
NOZZLE ELEV = 828.85'

HYDRANT ASSEMBLY
STA: 8+01.40 W/ 6" LEAD, 19.9' RT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 817.49
BURY DEPTH = 9.5'
NOZZLE ELEV = 828.74'

HYDRANT ASSEMBLY
STA: 12+43.50 W/ 6" LEAD, 27.0' RT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 819.29
BURY DEPTH = 7.5'
NOZZLE ELEV = 828.54'

SAN MH 17
RIM: 832.18
8" E: 822.18

SAN MH 8
RIM: 833.75
8" E: 820.06

SAN MH 16
RIM: 831.68
8" W: 821.60
8" E: 821.50

SAN MH 15
RIM: 829.92
8" W: 820.85
8" E: 820.75

SAN MH 7
RIM: 829.72
8" W: 818.84
8" E: 818.74

SAN MH 10
RIM: 825.95
8" S: 818.59
8" N: 818.49

SAN MH 14
RIM: 828.10
8" N: 820.19

SAN MH 13
RIM: 827.04
8" S: 819.70
8" N: 819.60
8" W: 819.70

SAN MH 12
RIM: 827.20
8" S: 819.48
8" N: 819.38

SAN MH 11
RIM: 826.35
8" S: 819.05
8" N: 818.95

SAN MH 5
RIM: 826.60
8" N: 817.82
8" W: 817.92
8" S: 817.92

SAN MH 6
RIM: 827.31
8" W: 818.14
8" E: 818.04

SAN MH 4
RIM: 826.58
8" S: 817.09
8" N: 816.99

SAN MH 3
RIM: 826.89
8" S: 816.78
8" N: 816.68

SAN MH 2
RIM: 826.50
8" S: 815.78
8" N: 815.68

SAN MH 1
RIM: 826.32
8" S: 814.89
8" W: 808.92

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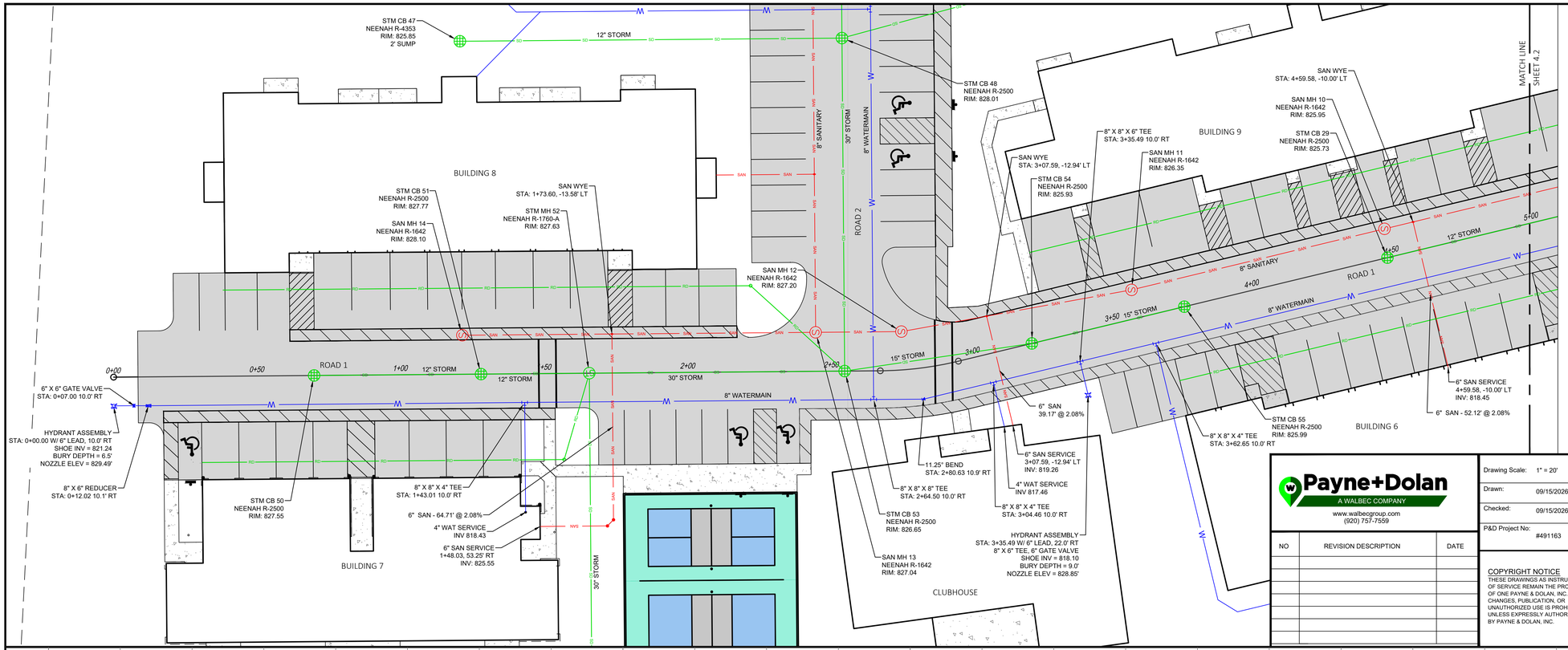
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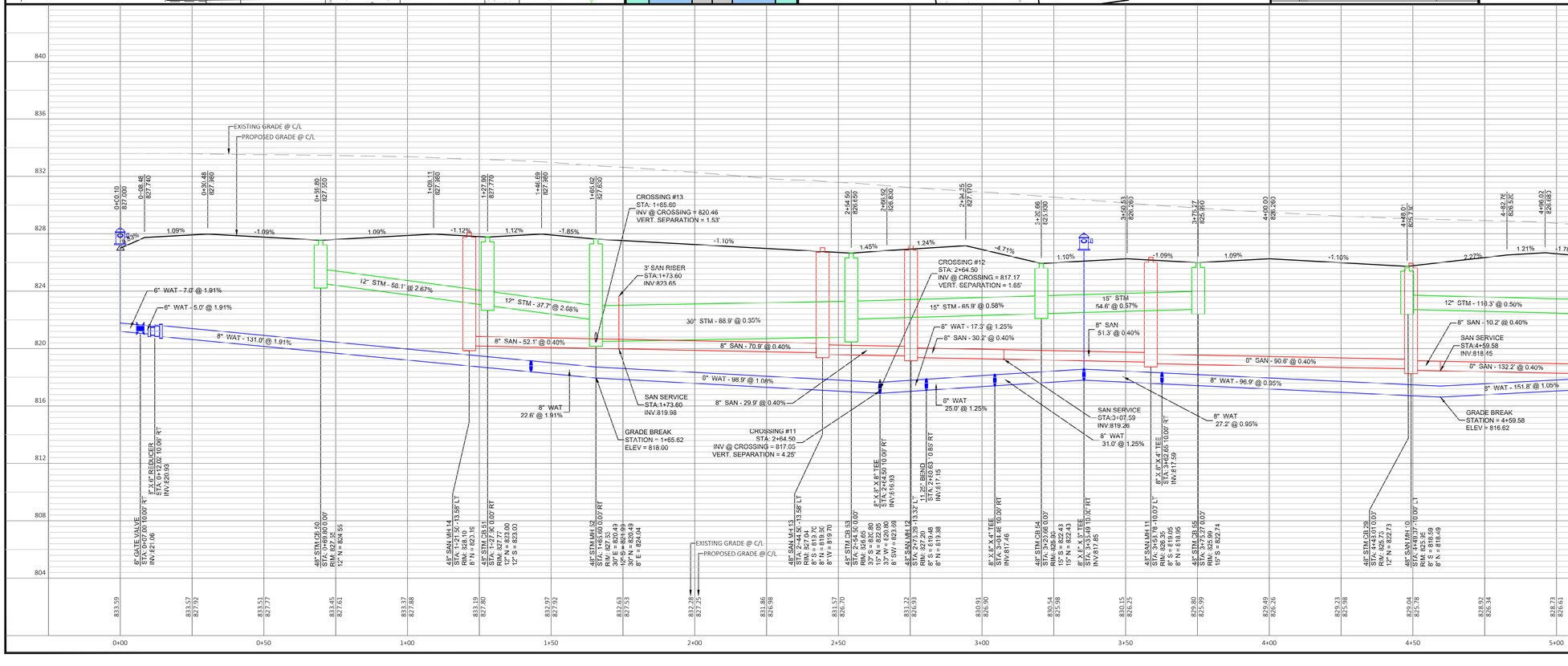
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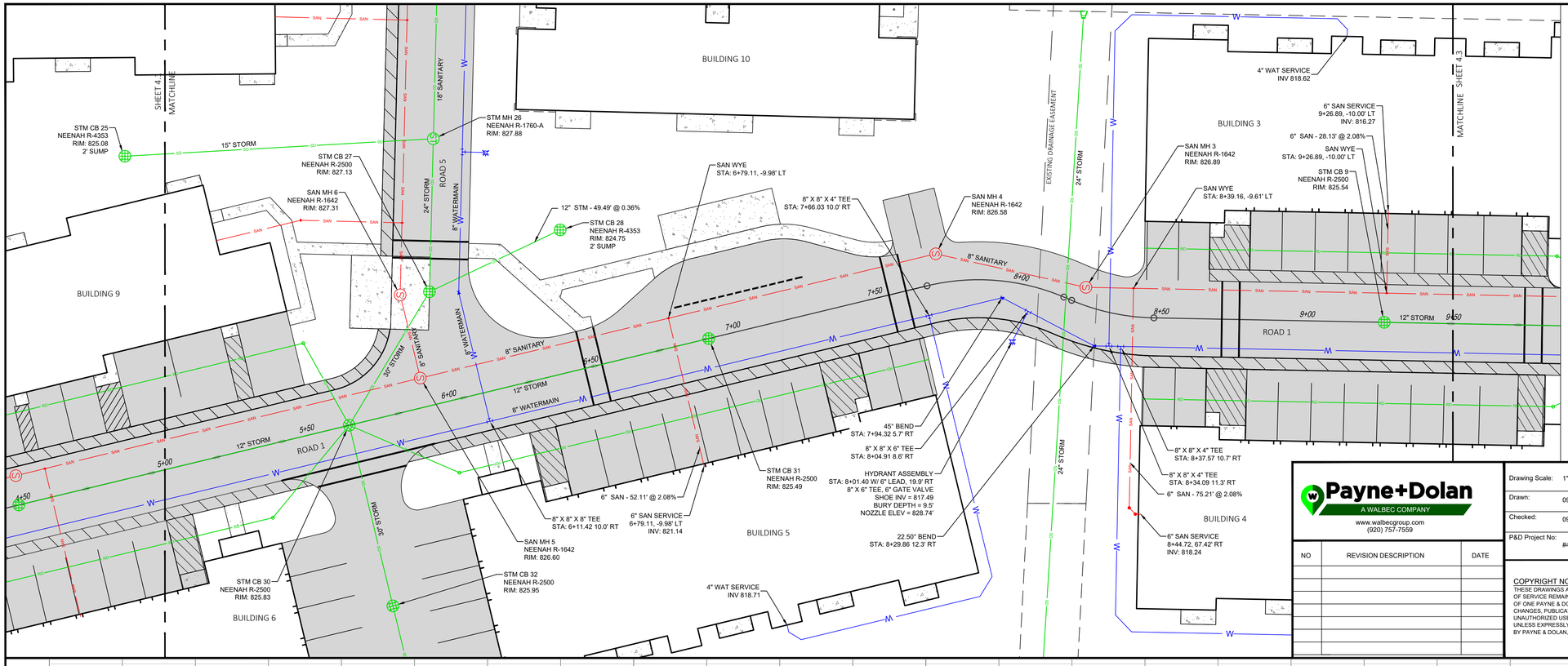
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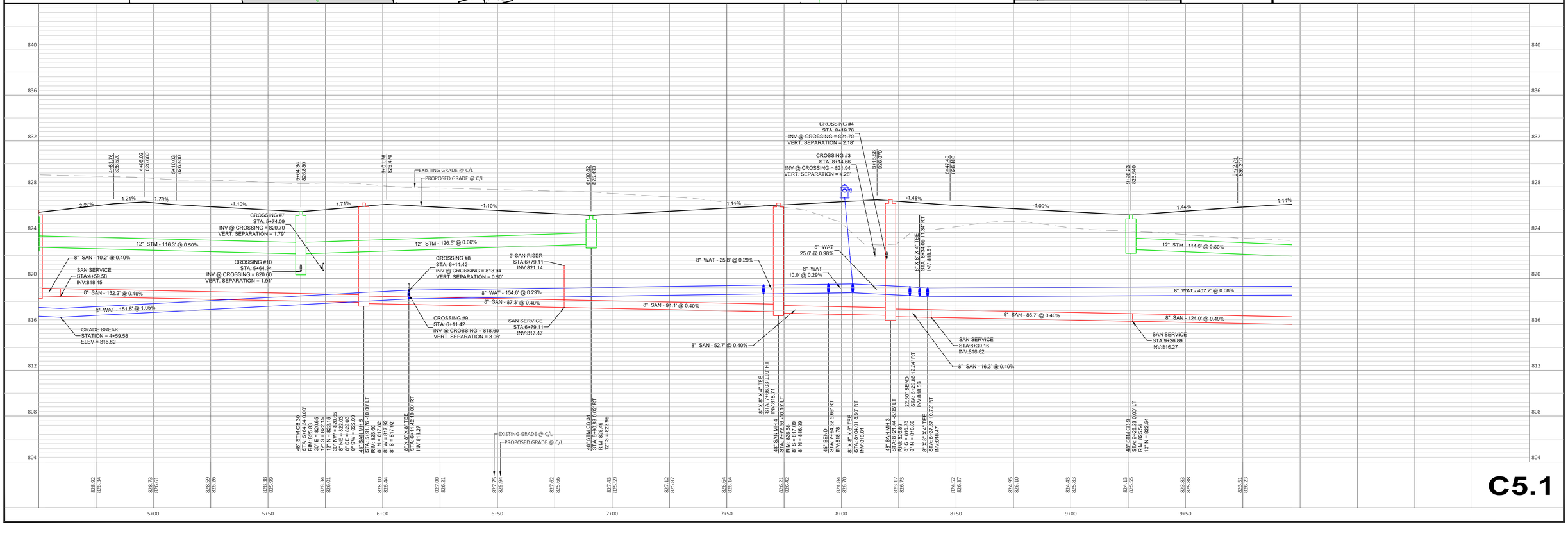
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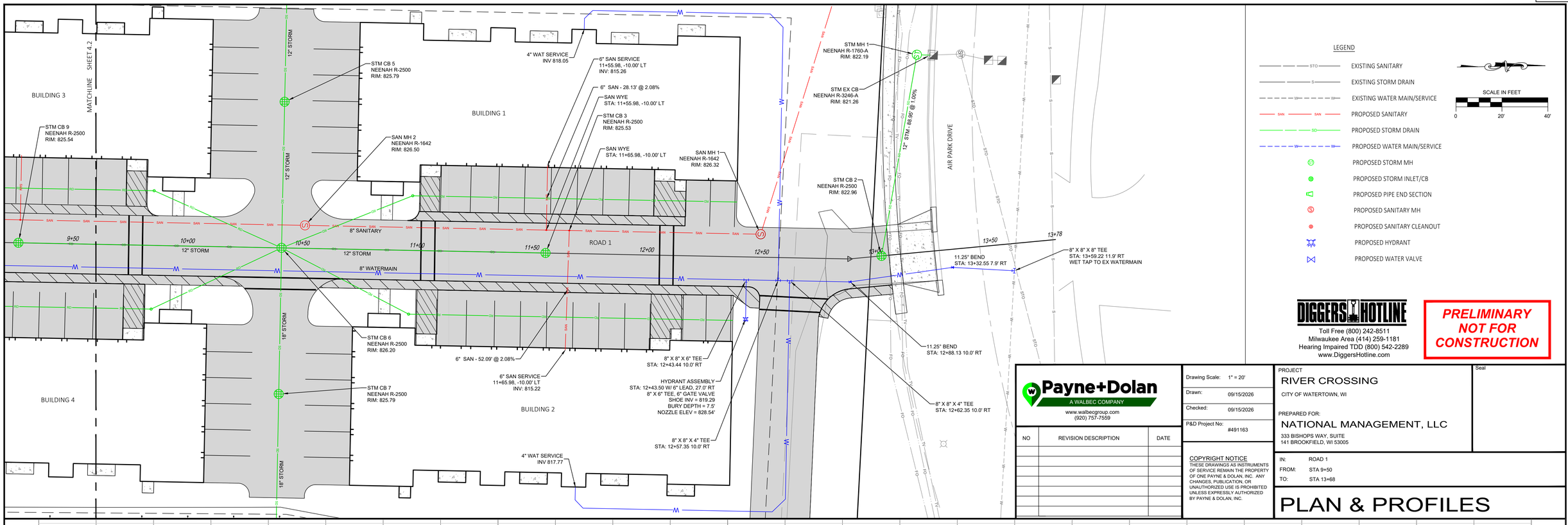
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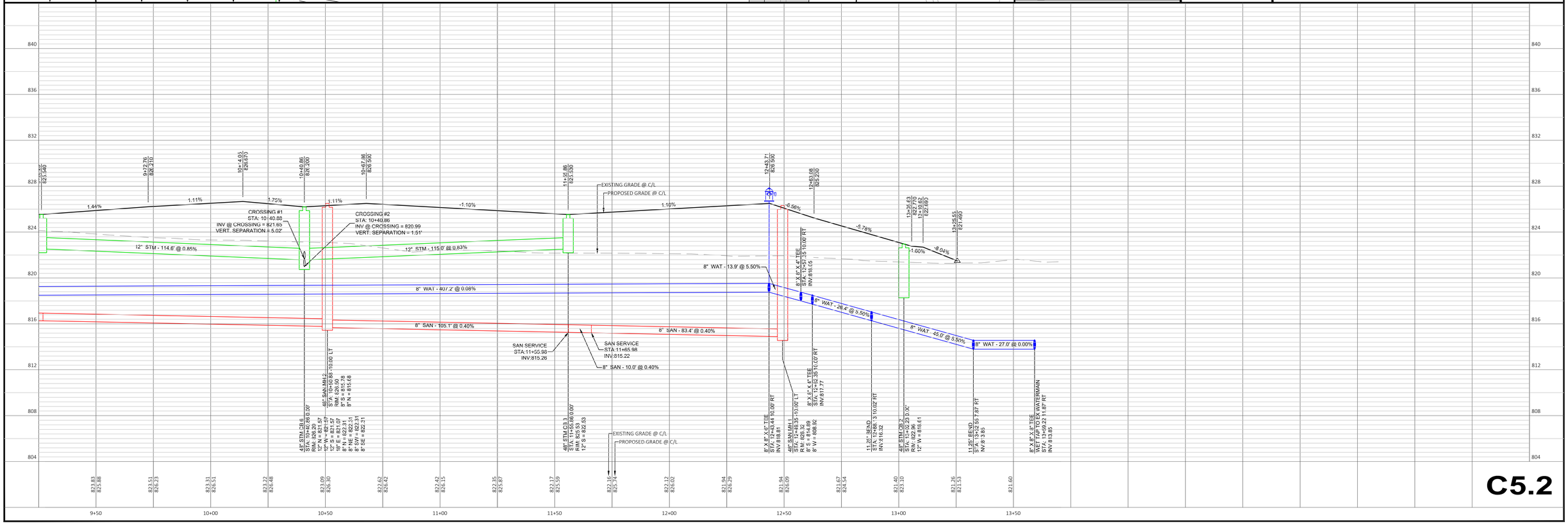
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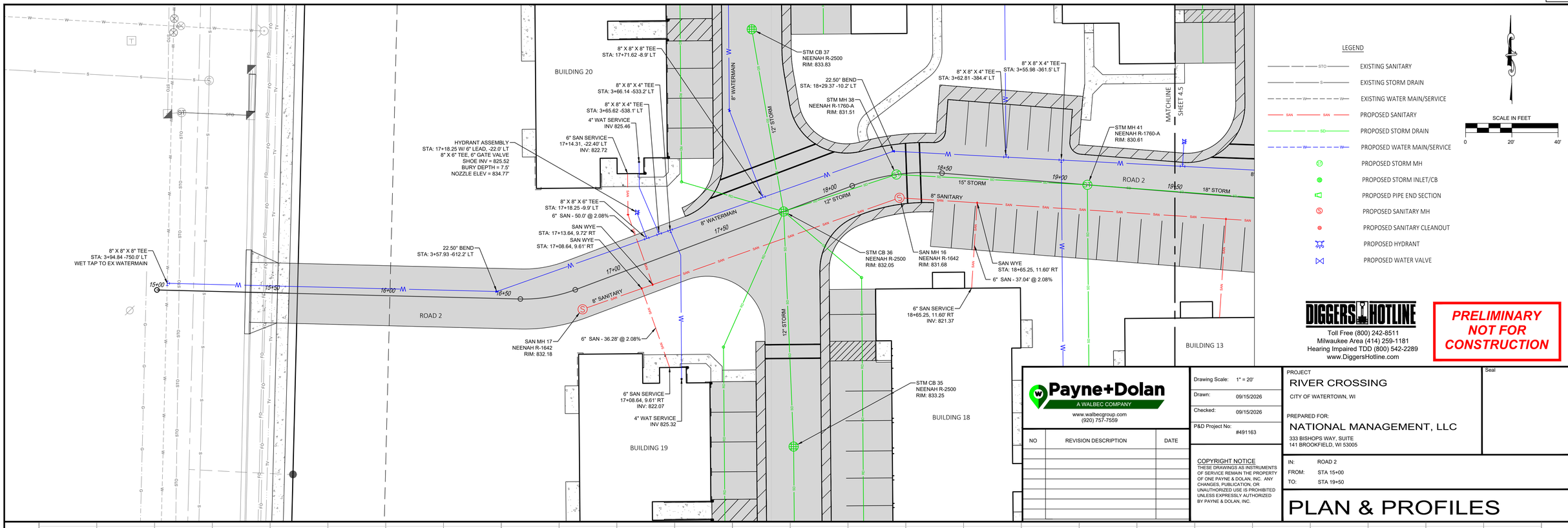
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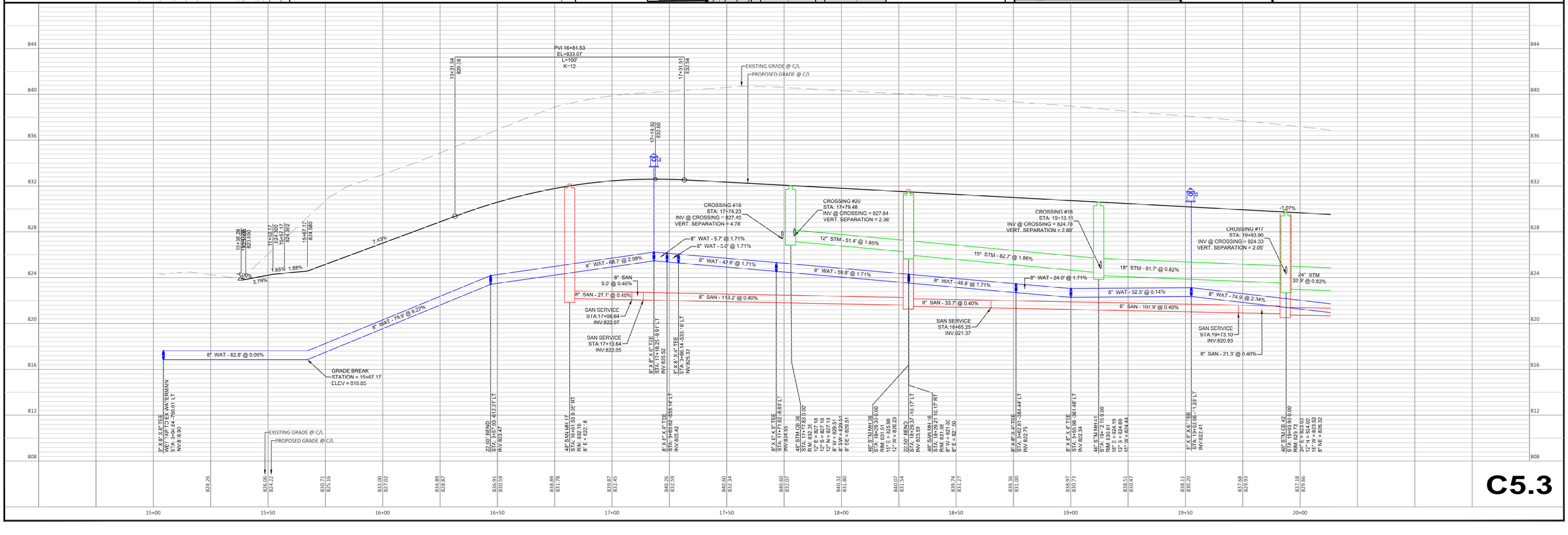
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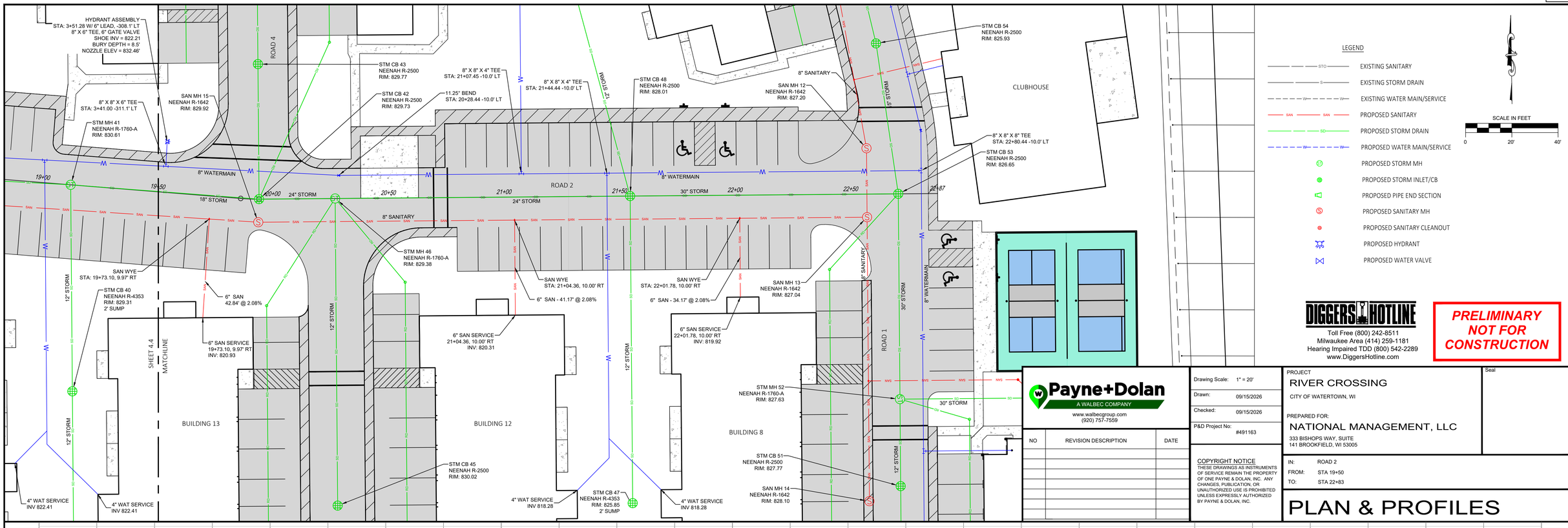
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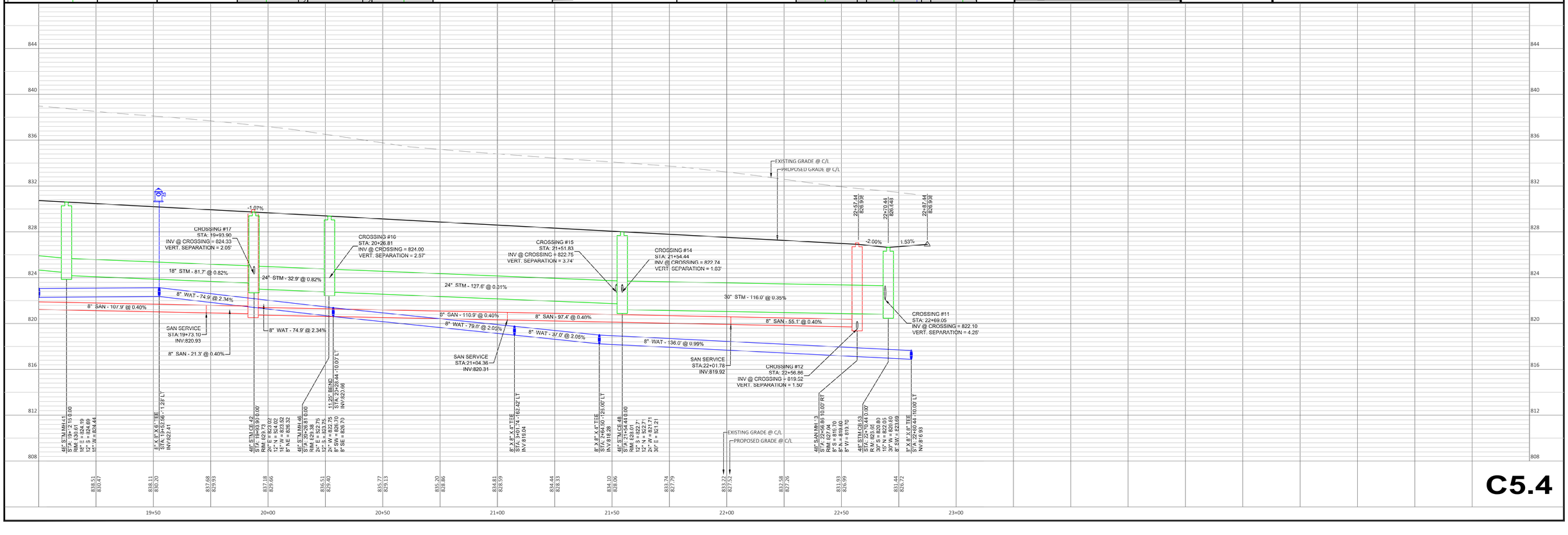
PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

PREPARED FOR:
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE
141 BROOKFIELD, WI 53005

Seal

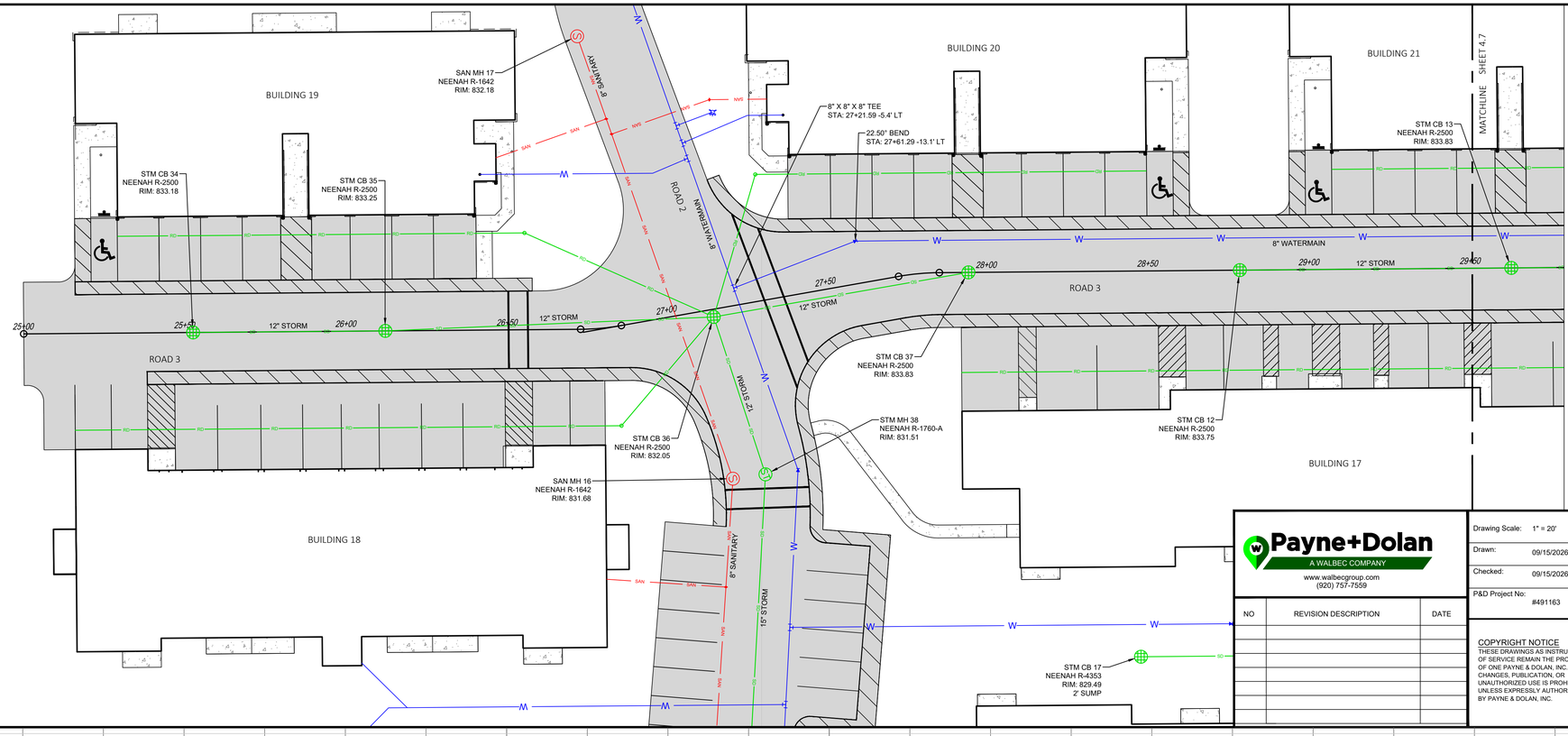
IN: ROAD 2
FROM: STA 19+50
TO: STA 22+83

PLAN & PROFILES



C5.4

Sep 15, 2026 – 3:13pm
S:\design & construction services\080-C3D\national management llc\river crossing\030-sheetsplan\Plan & Profiles.dwg



LEGEND

- EXISTING SANITARY
- EXISTING STORM DRAIN
- EXISTING WATER MAIN/SERVICE
- PROPOSED SANITARY
- PROPOSED STORM DRAIN
- PROPOSED WATER MAIN/SERVICE
- PROPOSED STORM MH
- PROPOSED STORM INLET/CB
- PROPOSED PIPE END SECTION
- PROPOSED SANITARY MH
- PROPOSED SANITARY CLEANOUT
- PROPOSED HYDRANT
- PROPOSED WATER VALVE

SCALE IN FEET
0 20' 40'

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(920) 757-7559

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P&D Project No: #491163

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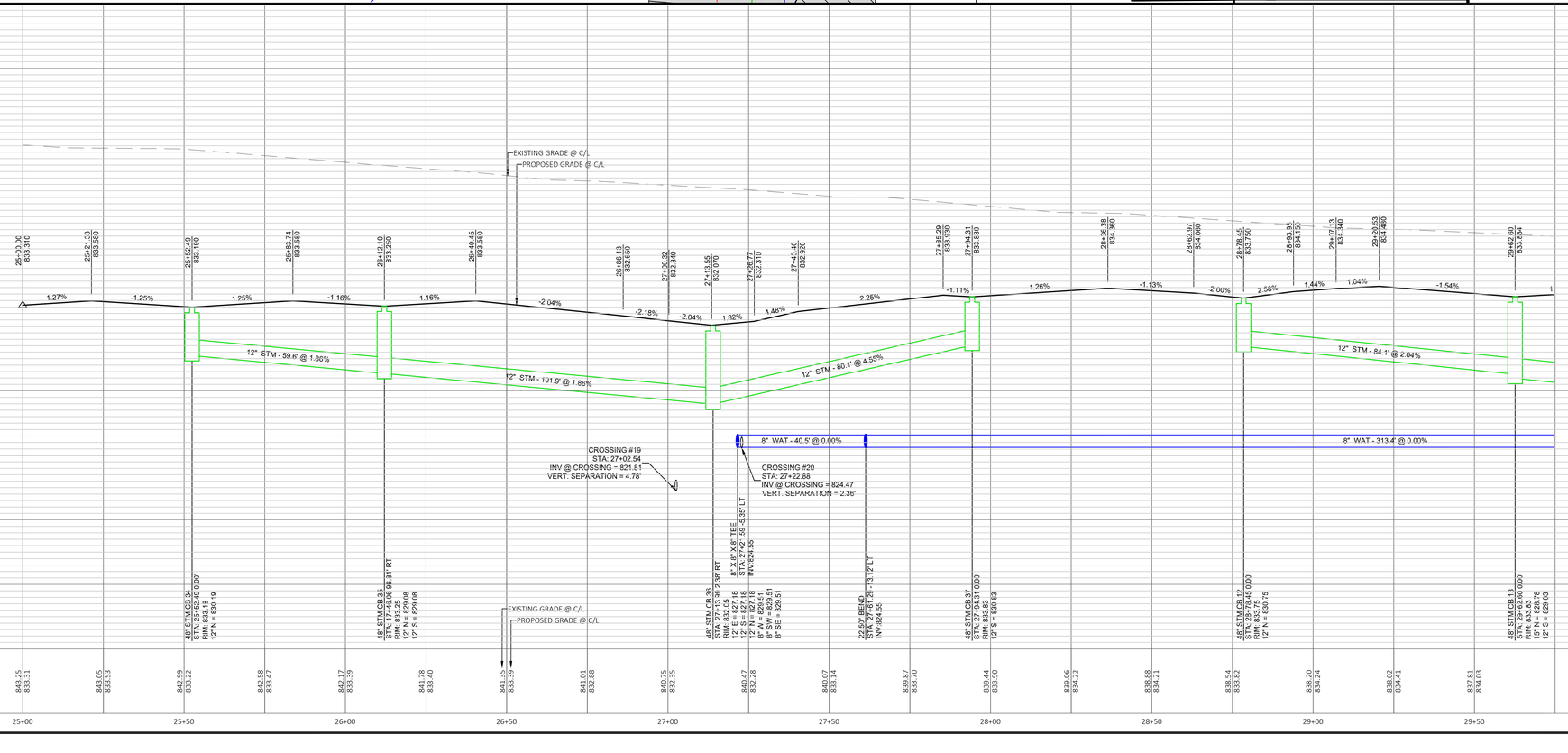
PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

PREPARED FOR:
NATIONAL MANAGEMENT, LLC
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141 BROOKFIELD, WI 53005

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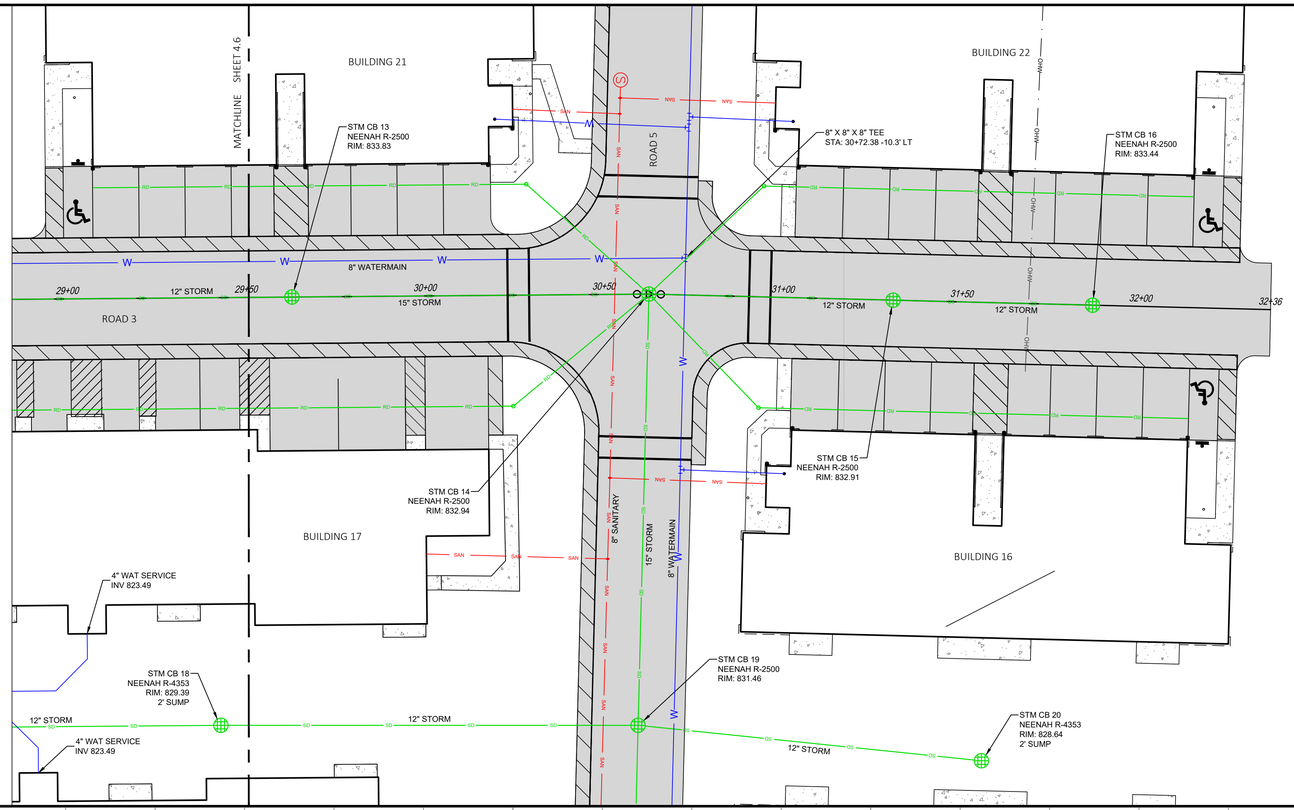
IN: ROAD 3
FROM: STA 25+00
TO: STA 29+50

PLAN & PROFILES



C5.5

Sep 15, 2026 – 3:13pm
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LEGEND

- EXISTING SANITARY
- EXISTING STORM DRAIN
- EXISTING WATER MAIN/SERVICE
- PROPOSED SANITARY
- PROPOSED STORM DRAIN
- PROPOSED WATER MAIN/SERVICE
- PROPOSED STORM MH
- PROPOSED STORM INLET/CB
- PROPOSED PIPE END SECTION
- PROPOSED SANITARY MH
- PROPOSED SANITARY CLEANOUT
- PROPOSED HYDRANT
- PROPOSED WATER VALVE

SCALE IN FEET
0 20' 40'

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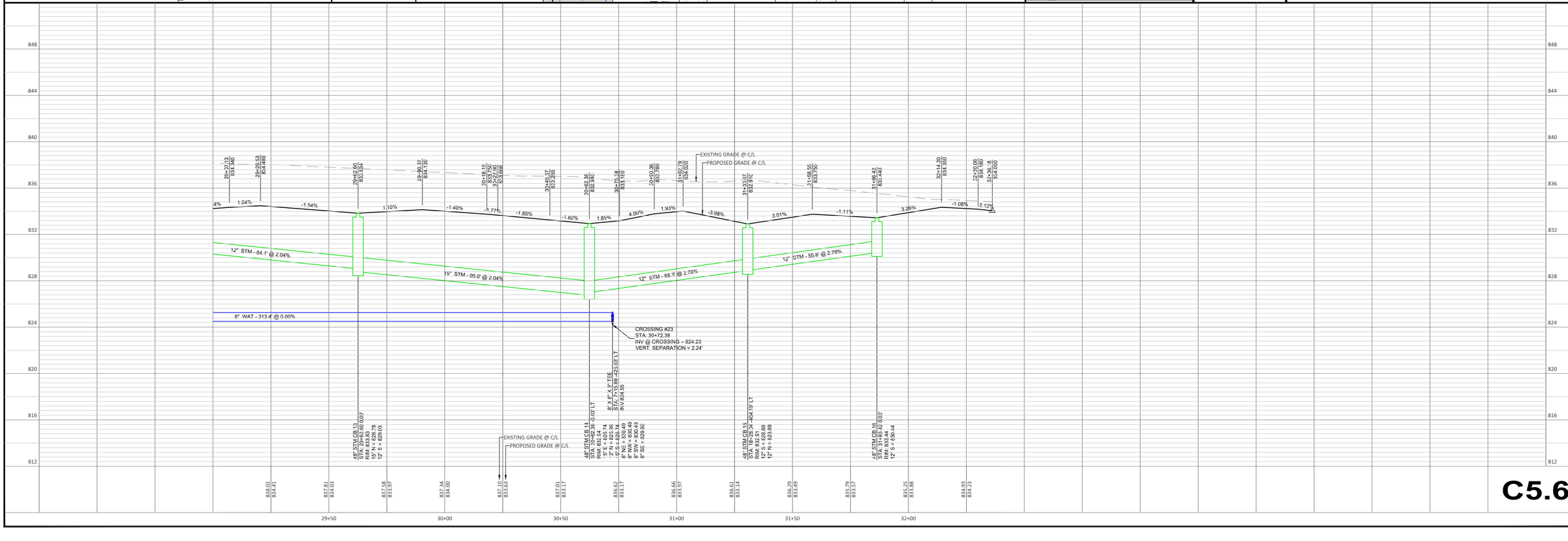
PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

PREPARED FOR:
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE
141 BROOKFIELD, WI 53005

Seal

IN: ROAD 3
FROM: STA 25+00
TO: STA 29+50

PLAN & PROFILES



C5.6

Sep 15, 2026 – 3:14pm
S:\design & construction services\080–C3D\national management llc\river crossing\030–sheetsplan\Plan & Profiles.dwg

STM CB 17
NEENAH R-4353
RIM: 829.49
2' SUMP

STM CB 18
NEENAH R-4353
RIM: 829.39
2' SUMP

STM CB 19
NEENAH R-2500
RIM: 831.46

STM CB 20
NEENAH R-4353
RIM: 828.64
2' SUMP

STM MH 41
NEENAH R-1760-A
RIM: 830.61

STM CB 22
NEENAH R-2500
RIM: 829.53

STM CB 23
NEENAH R-2500
RIM: 829.43

STM CB 24
NEENAH R-2500
RIM: 830.15

STM CB 42
NEENAH R-2500
RIM: 829.73

SAN MH 15
NEENAH R-1642
RIM: 829.92

STM MH 46
NEENAH R-1760-A
RIM: 829.38

STM CB 44
NEENAH R-2500
RIM: 830.47

STM CB 21
NEENAH R-2500
RIM: 830.84

SAN MH 7
NEENAH R-1642
RIM: 829.72

4" WAT SERVICE
INV 819.70

BUILDING 14

BUILDING 15

BUILDING 11

ROAD 2

ROAD 4

18" STORM

8" WATERMAIN

24" STORM

8" SANITARY

16" STORM

12" STORM

35+00 35+50 36+00 36+50 37+00 37+50 38+00 38+36

LEGEND

- EXISTING SANITARY
- EXISTING STORM DRAIN
- EXISTING WATER MAIN/SERVICE
- PROPOSED SANITARY
- PROPOSED STORM DRAIN
- PROPOSED WATER MAIN/SERVICE
- PROPOSED STORM MH
- PROPOSED STORM INLET/CB
- PROPOSED PIPE END SECTION
- PROPOSED SANITARY MH
- PROPOSED SANITARY CLEANOUT
- PROPOSED HYDRANT
- PROPOSED WATER VALVE

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SCALE IN FEET
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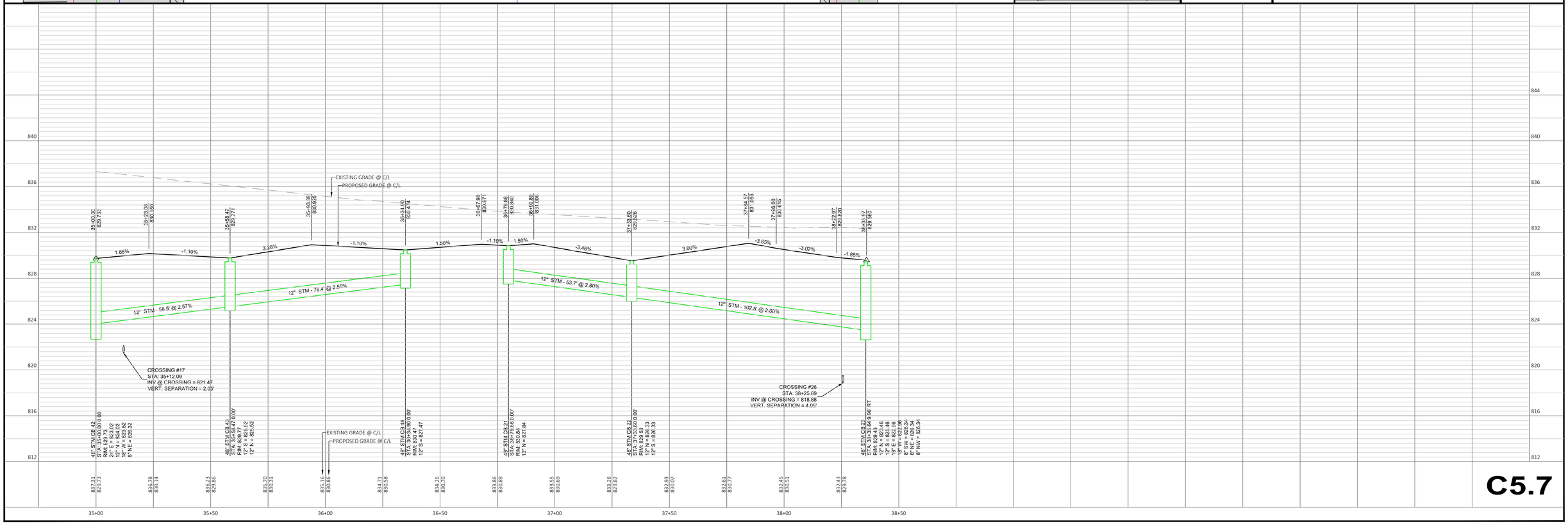
PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

PREPARED FOR:
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE
141 BROOKFIELD, WI 53005

Seal

IN: ROAD 4
FROM: STA 35+00
TO: STA 38+36

PLAN & PROFILES



C5.7

BUILDING 22
BUILDING 16
BUILDING 15
BUILDING 21
BUILDING 17
ROAD 5
ROAD 4
ROAD 3
MATCHLINE SHEET 4.10

HYDRANT ASSEMBLY
STA: 41+19.99 W/ 6' LEAD, -18.0' LT
8" X 6" TEE, 6" GATE VALVE
SHOE INV = 826.89
BURY DEPTH = 7.0'
NOZZLE ELEV = 835.64'
8" X 8" X 6" TEE
STA: 41+19.99 -10.0' LT
8" X 8" GATE VALVE
STA: 41+14.99 -10.0' LT
4" WAT SERVICE
INV 826.09
6" SAN SERVICE
41+54.26, 9.42' RT
INV: 820.04
6" SAN - 43.52' @ 2.08%
8" X 8" X 4" TEE
STA: 7+26.11 -463.2' LT
8" WATERMAIN
8" SANITARY
8" X 8" X 4" TEE
STA: 7+25.33 -460.3' LT
SAN MH 8
NEENAH R-1642
RIM: 833.75
SAN WYE
STA: 41+54.26, 9.42' RT
SAN WYE
STA: 41+58.71, 9.43' RT
6" SAN - 29.98' @ 2.08%
6" SAN SERVICE
41+58.71, 9.43' RT
INV: 820.02
4" WAT SERVICE
INV 825.96
8" WATERMAIN
15" STORM
12" STORM
STM CB 15
NEENAH R-2500
RIM: 832.91
8" X 8" X 8" TEE
STA: 41+98.54 -10.0' LT
4" WAT SERVICE
INV 822.89
6" SAN SERVICE
42+60.51, 9.63' RT
INV: 819.62
8" X 8" X 4" TEE
STA: 7+00.55 -367.8' LT
6" SAN - 43.71' @ 2.08%
STM CB 14
NEENAH R-2500
RIM: 832.94
SAN WYE
STA: 42+83.17, 9.67' RT
SAN WYE
STA: 42+60.51, 9.63' RT
6" SAN - 50.67' @ 2.08%
6" SAN SERVICE
42+83.17, 9.67' RT
INV: 819.52
STM CB 13
NEENAH R-2500
RIM: 833.83
STM CB 18
NEENAH R-4353
RIM: 829.39
STM CB 19
NEENAH R-2500
RIM: 831.46
STM CB 20
NEENAH R-4353
RIM: 828.64
2' SUMP
4" WAT SERVICE
INV 821.22
6" SAN SERVICE
43+90.80, 9.88' RT
INV: 819.09
8" X 8" X 4" TEE
STA: 6+64.80 -234.5' LT
6" SAN - 43.96' @ 2.08%
SAN WYE
STA: 43+65.40, 9.83' RT
SAN WYE
STA: 43+90.80, 9.88' RT
6" SAN
61.71' @ 2.08%
6" SAN SERVICE
43+65.40, 9.83' RT
INV: 819.20
STM CB 23
NEENAH R-2500
RIM: 829.43
SAN MH 7
NEENAH R-1642
RIM: 829.72
18" STORM

LEGEND
EXISTING SANITARY
EXISTING STORM DRAIN
EXISTING WATER MAIN/SERVICE
PROPOSED SANITARY
PROPOSED STORM DRAIN
PROPOSED WATER MAIN/SERVICE
PROPOSED STORM MH
PROPOSED STORM INLET/CB
PROPOSED PIPE END SECTION
PROPOSED SANITARY MH
PROPOSED SANITARY CLEANOUT
PROPOSED HYDRANT
PROPOSED WATER VALVE

SCALE IN FEET
0 20' 40'

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RIVER CROSSING
CITY OF WATERTOWN, WI

PREPARED FOR:
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE
141 BROOKFIELD, WI 53005

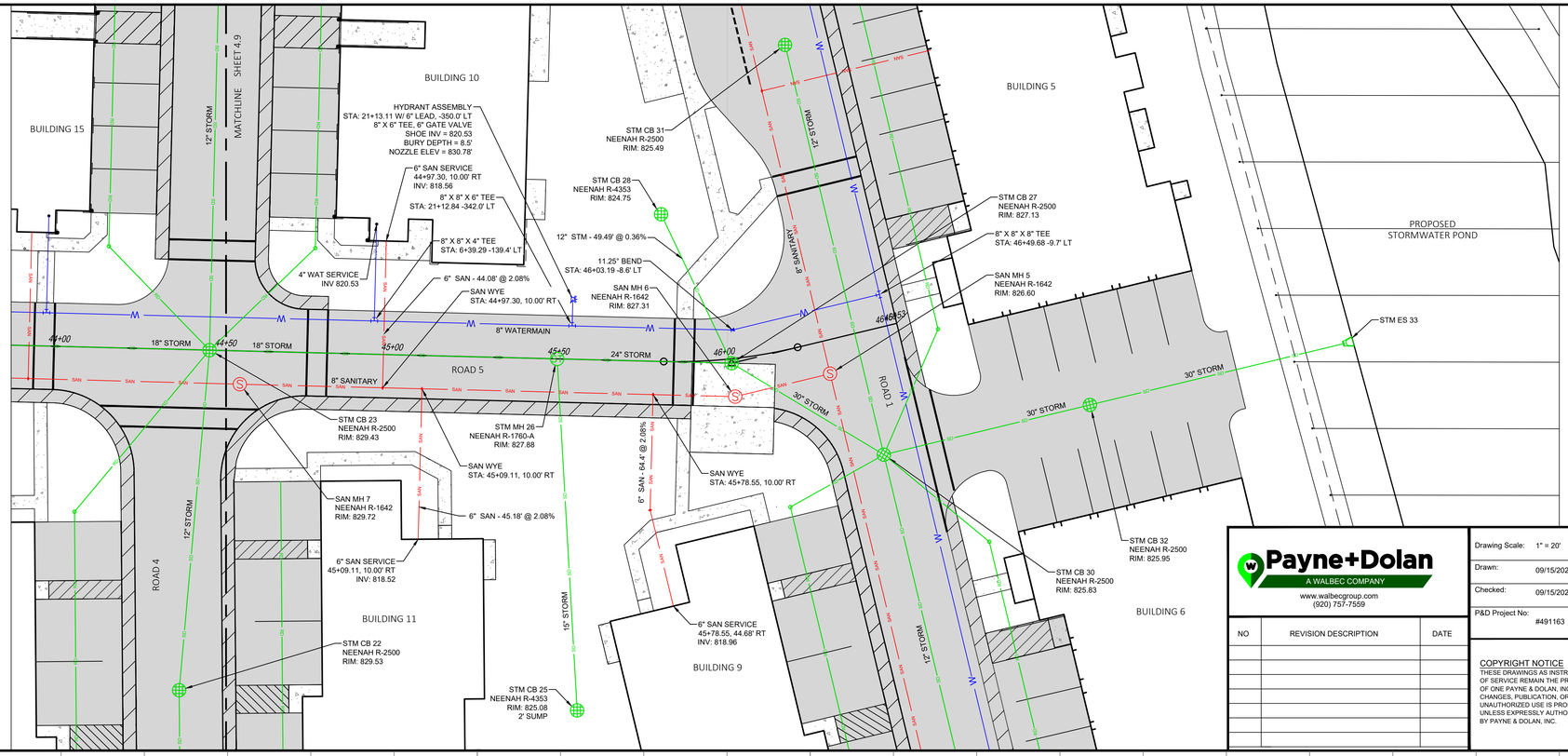
Seal

IN: ROAD 5
FROM: STA 40+00
TO: STA 44+50

PLAN & PROFILES

PVI 41+10.99
EL=834.25
L=100'
K=12
EXISTING GRADE @ C/L
PROPOSED GRADE @ C/L
-1.46%
1.13%
-1.94%
6.83%
-4.02%
3.80%
2.00%
6" STM - 5.0' @ 7.14%
8" STM - 39.1' @ -3.05%
8" STM - 36.5' @ -3.05%
8" STM - 59.2' @ -3.05%
8" STM - 138.0' @ -1.10%
8" STM - 98.5' @ -1.10%
8" STM
3.0' @ -3.05%
8" SAN - 5.0' @ 0.40%
8" SAN - 4.5' @ 0.40%
8" SAN - 101.8' @ 0.40%
8" SAN - 22.7' @ 0.40%
8" SAN - 82.2' @ 0.40%
8" SAN - 25.4' @ 0.40%
8" SAN - 63.6' @ 0.40%
15" STM - 120.6' @ 2.04%
10" STM - 115.6' @ 0.93%
CROSSING #22
STA: 42+09.19
INV @ CROSSING = 826.94
VERT. SEPARATION = 6.31'
CROSSING #23
STA: 42+08.88
INV @ CROSSING = 827.27
VERT. SEPARATION = 2.24'
CROSSING #21
STA: 41+99.19
INV @ CROSSING = 825.55
VERT. SEPARATION = 3.98'
CROSSING #24
STA: 43+29.72
INV @ CROSSING = 824.62
VERT. SEPARATION = 4.47'
CROSSING #25
STA: 43+30.25
INV @ CROSSING = 824.04
VERT. SEPARATION = 1.89'
SAN SERVICE
STA:41+54.26
INV:820.04
SAN SERVICE
STA:41+58.71
INV:820.02
SAN SERVICE
STA:42+83.17
INV:819.52
SAN SERVICE
STA:42+60.51
INV:819.62
SAN SERVICE
STA:43+65.40
INV:819.20
SAN SERVICE
STA:43+90.80
INV:819.09
EXISTING GRADE @ C/L
PROPOSED GRADE @ C/L

C5.8



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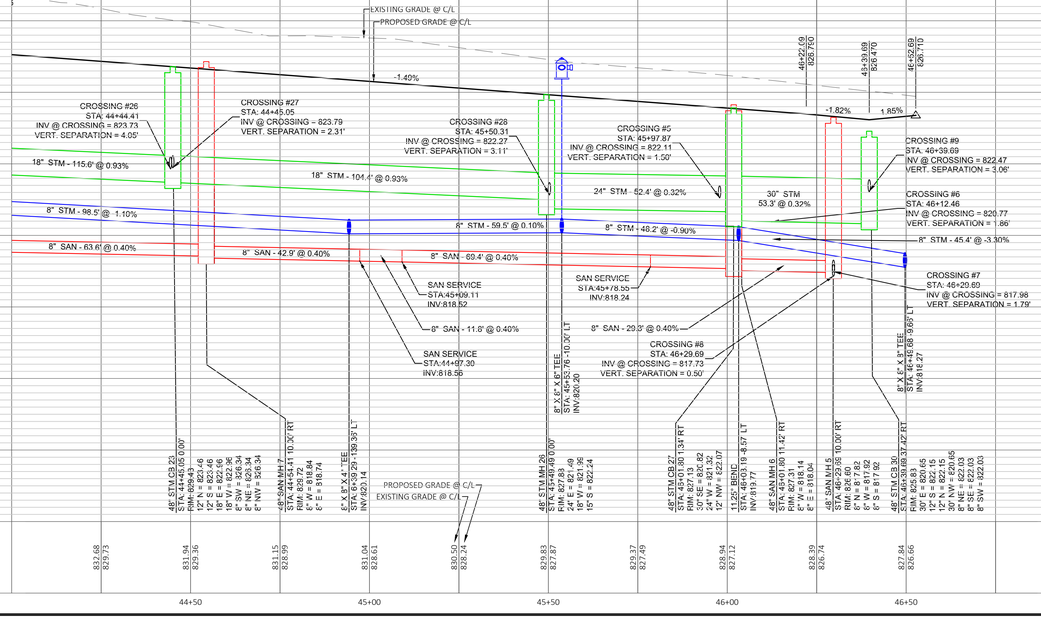
PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

PREPARED FOR:
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE
141 BROOKFIELD, WI 53005

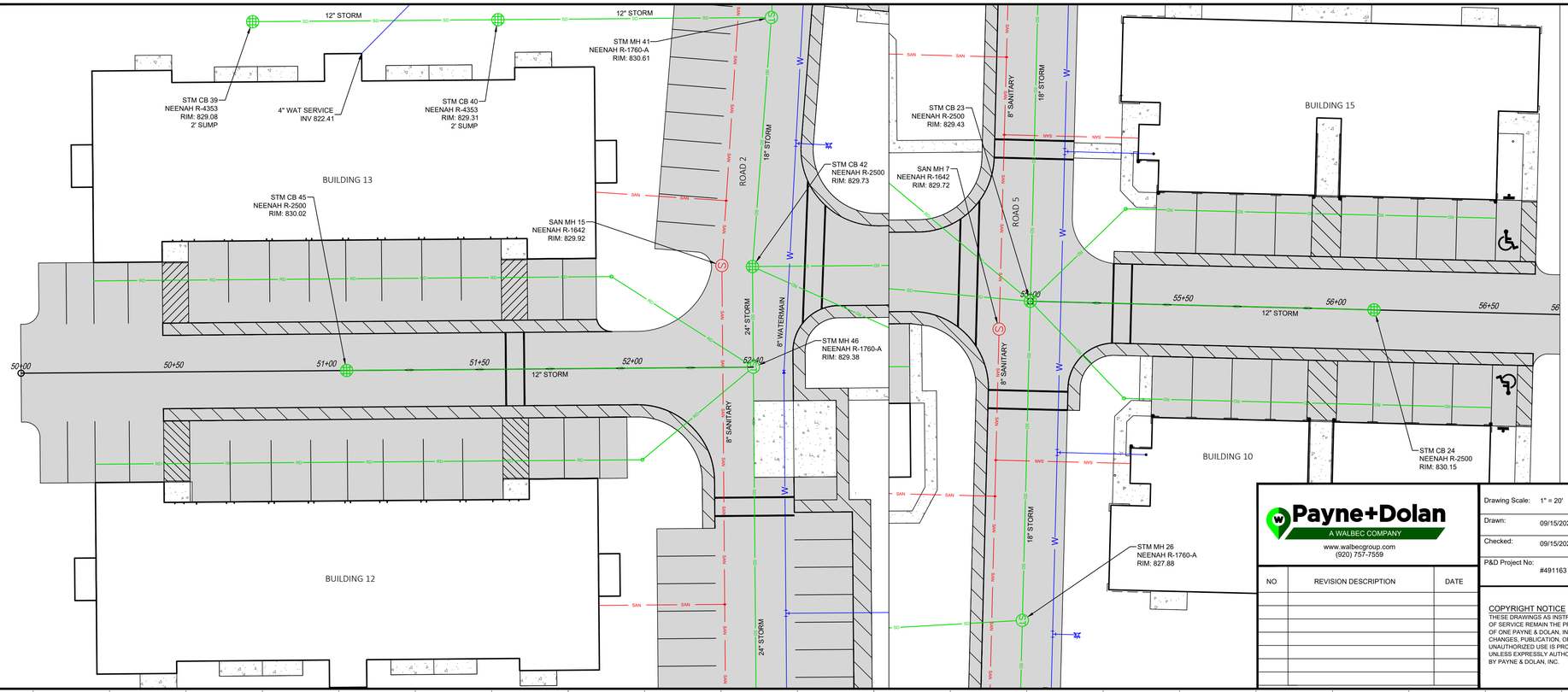
Seal

IN: ROAD 5
FROM: STA 44+50
TO: STA 46+53

PLAN & PROFILES



C5.9



LEGEND

- EXISTING SANITARY
- EXISTING STORM DRAIN
- EXISTING WATER MAIN/SERVICE
- PROPOSED SANITARY
- PROPOSED STORM DRAIN
- PROPOSED WATER MAIN/SERVICE
- PROPOSED STORM MH
- PROPOSED STORM INLET/CB
- PROPOSED PIPE END SECTION
- PROPOSED SANITARY MH
- PROPOSED SANITARY CLEANOUT
- PROPOSED HYDRANT
- PROPOSED WATER VALVE

SCALE IN FEET
0 20' 40'

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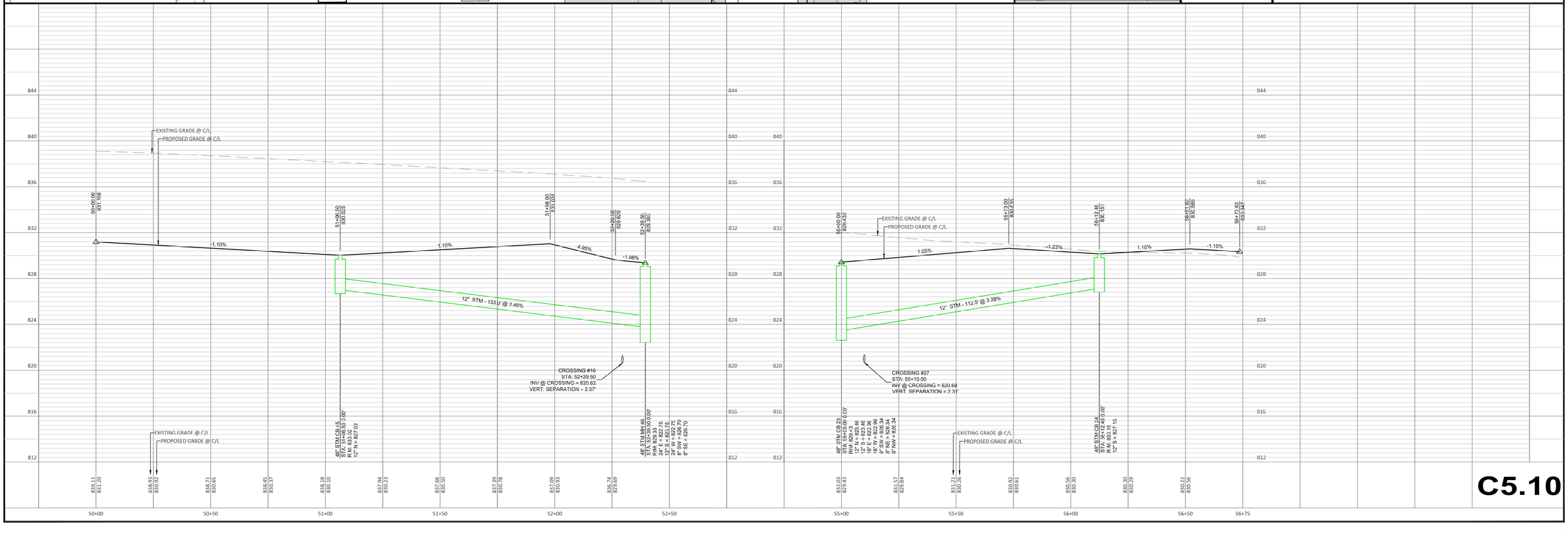
PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

PREPARED FOR:
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE
141 BROOKFIELD, WI 53005

Seal

IN: DRIVEWAY 12-15 AND DRIVEWAY 10-12
FROM:
TO:

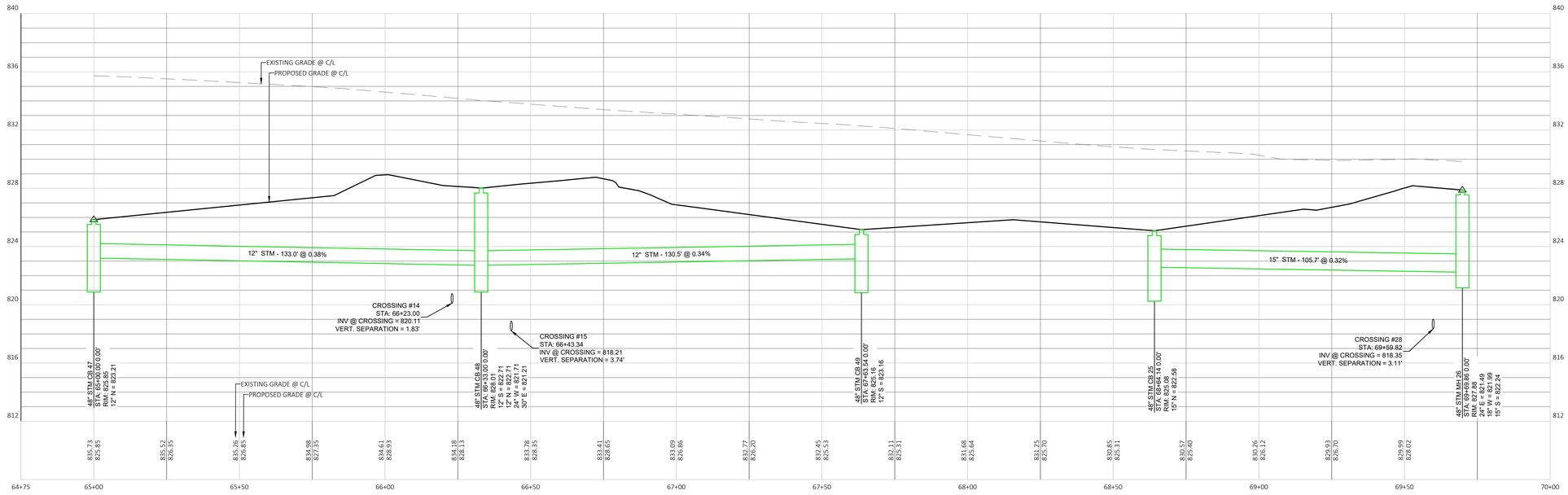
PLAN & PROFILES



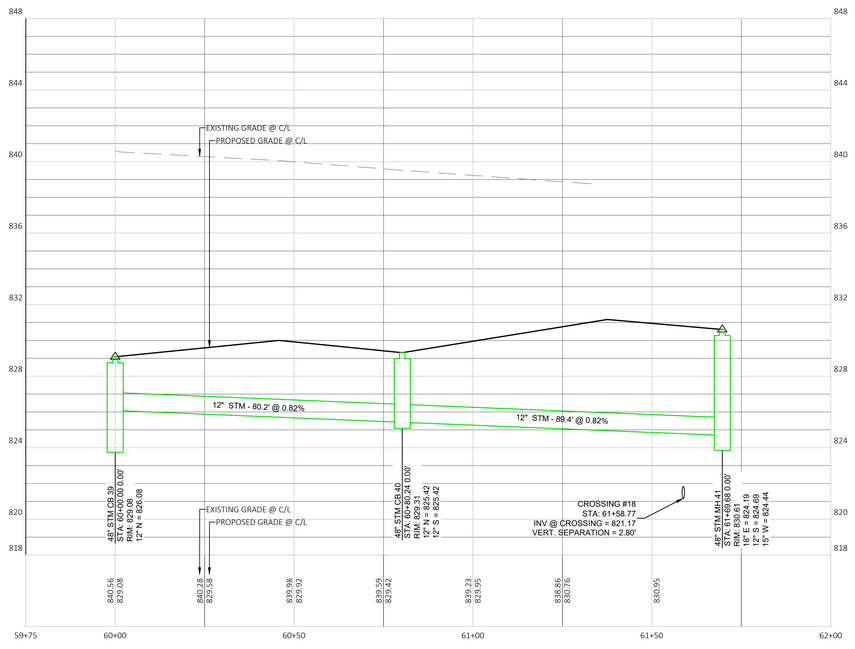
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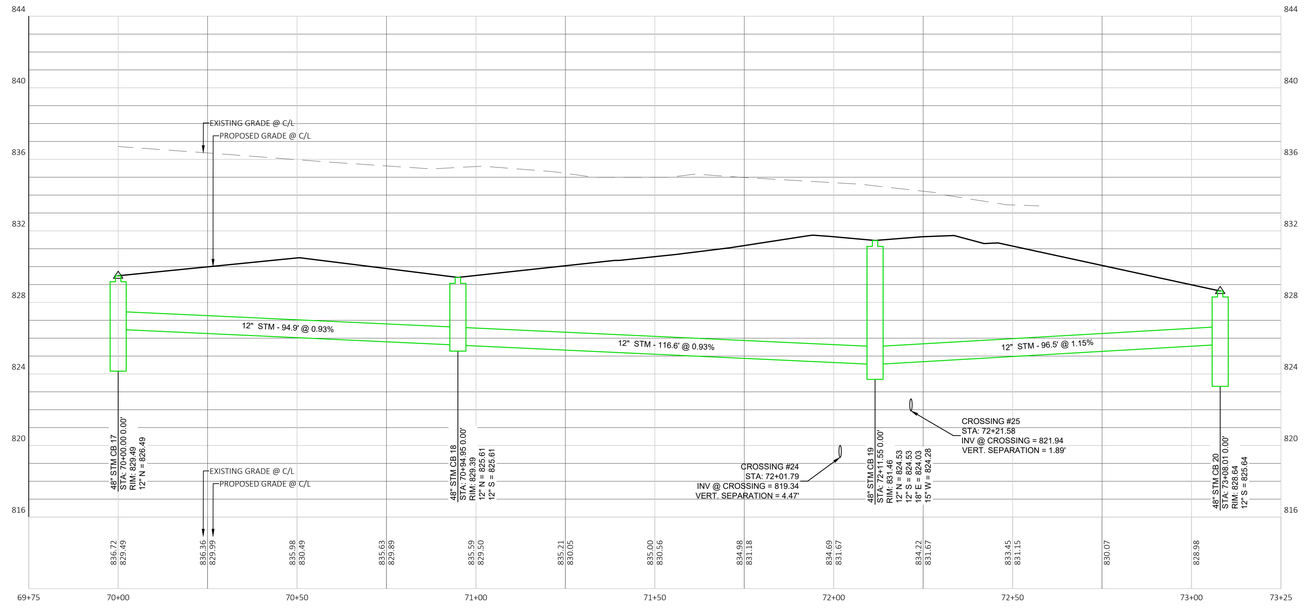
BACKYARDS 8-12 & 9-11



BACKYARD 13-18



BACKYARDS 14-17 & 15-16



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PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

Seal

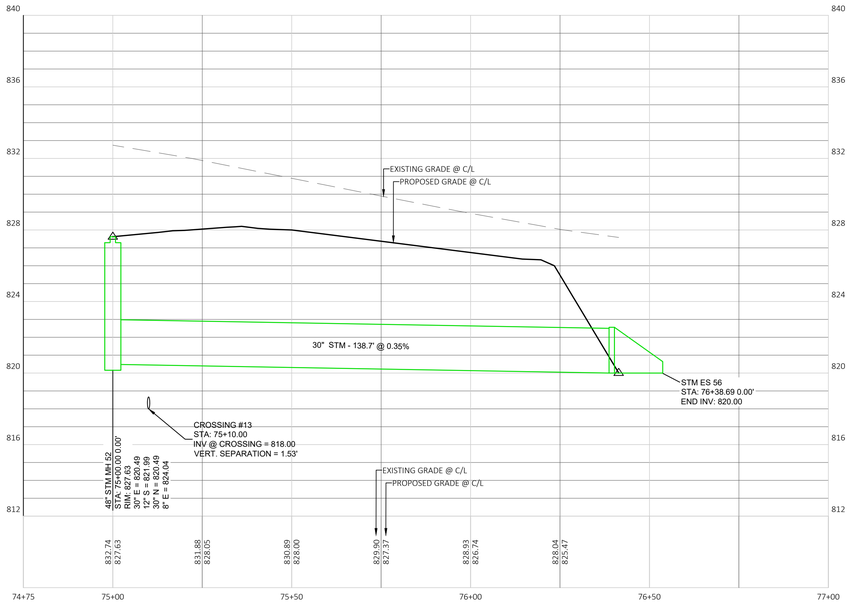
SHEET TITLE
PLAN & PROFILES

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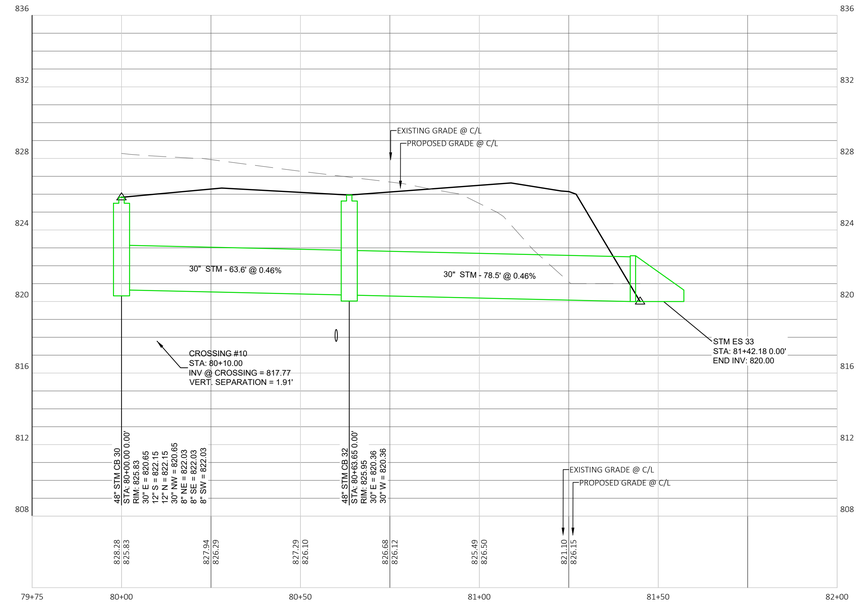
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Drawn:	GME 09/15/2026
Checked:	HAM 09/15/2026
P&D Project No:	#491163
Sheet No.	C5.11

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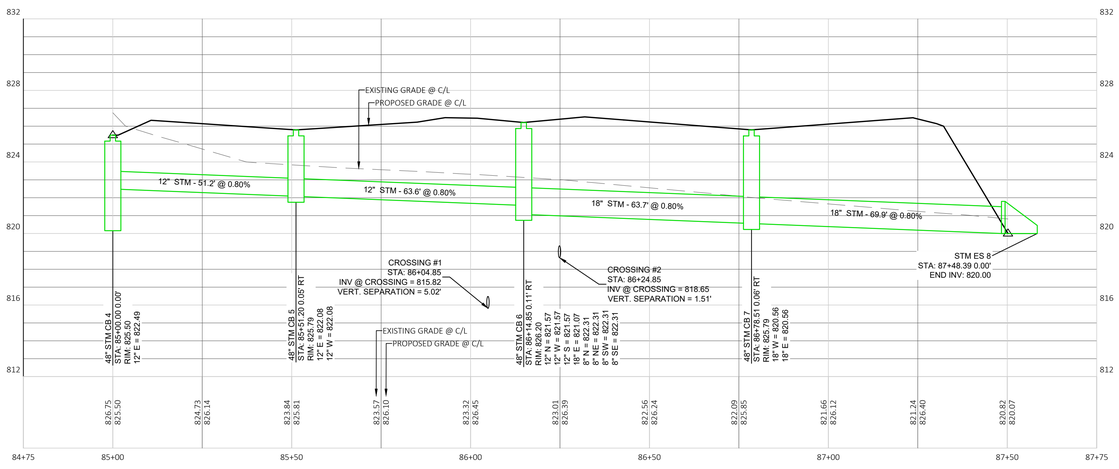
SOUTH OUTLET



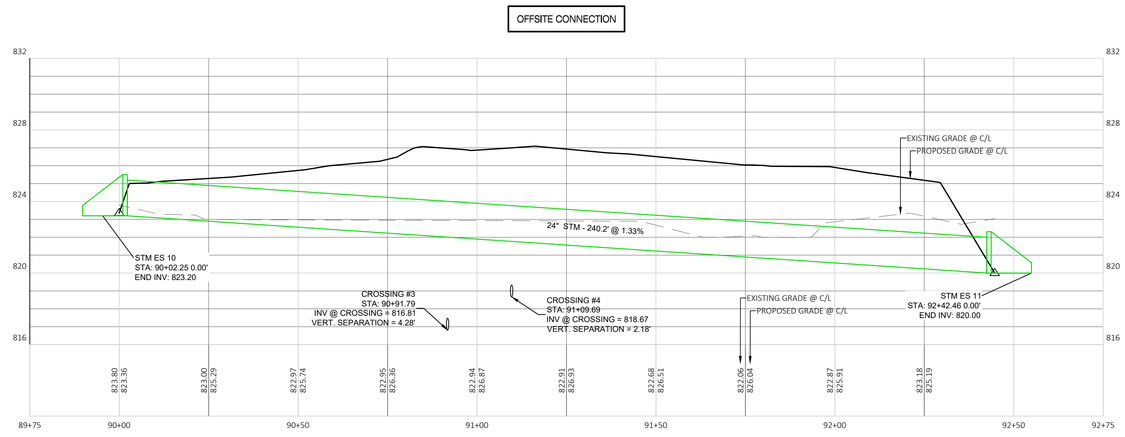
MIDDLE OUTLET



NORTH OUTLET



OFFSITE CONNECTION



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CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

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C5.12

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CITY OF WATERTOWN, WI

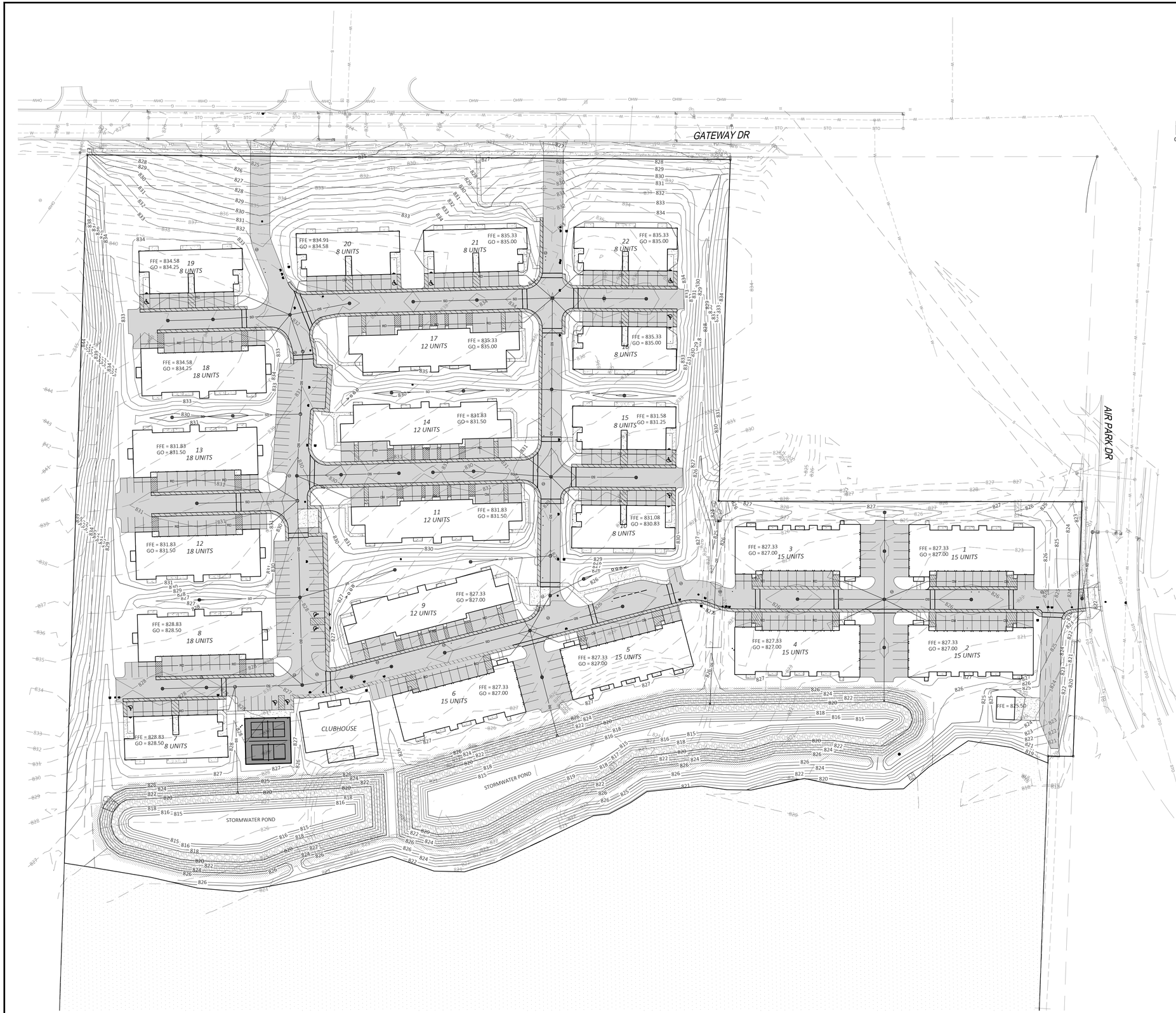
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SCALE IN FEET
0 60' 120'

PRELIMINARY NOT FOR CONSTRUCTION

EXISTING LEGEND
- BENCHMARK
- FOUND, IRON PIPE
- FIRE HYDRANT
- ENDWALL
- CATCH BASIN, ROUND
- STORM MANHOLE
- SANITARY MANHOLE
- GUY WIRE
- SIGN
- GAS VALVE
- WATER VALVE
- POST
- UTILITY METER
- UTILITY PEDESTAL
- TREE
- POWER POLE
- DOWNSPOUT
- BOLLARD
- EXISTING OVERHEAD UTILITY
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND GAS
- EXISTING UNDERGROUND FIBER OPTIC
- EXISTING WATER
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING UNDERGROUND TELEPHONE
- EXISTING TREE LINE
- PROPERTY LINE
- EASEMENT LINE
- RIGHT OF WAY LINE

PROPOSED LEGEND
- SIGN
- HANDICAP PARKING
- STORM MANHOLE
- STORM INLET/CB
- PIPE END SECTION
- SANITARY MANHOLE
- SANITARY CLEANOUT
- WATER VALVE
- PIPE FITTING
- HYDRANT
- ASPHALT PAVEMENT
- CONCRETE/ASPHALT COMPOSITE PAVEMENT
- CONCRETE SIDEWALK
- PAVEMENT REMOVAL
- SWALE
- SANITARY SEWER
- STORM SEWER
- ROOF DRAINS
- WATERMAIN
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- PROPOSED FENCE

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SCALE IN FEET
0 30' 60'

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EXISTING LEGEND

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- FIRE HYDRANT
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SCALE IN FEET
0 30' 60'

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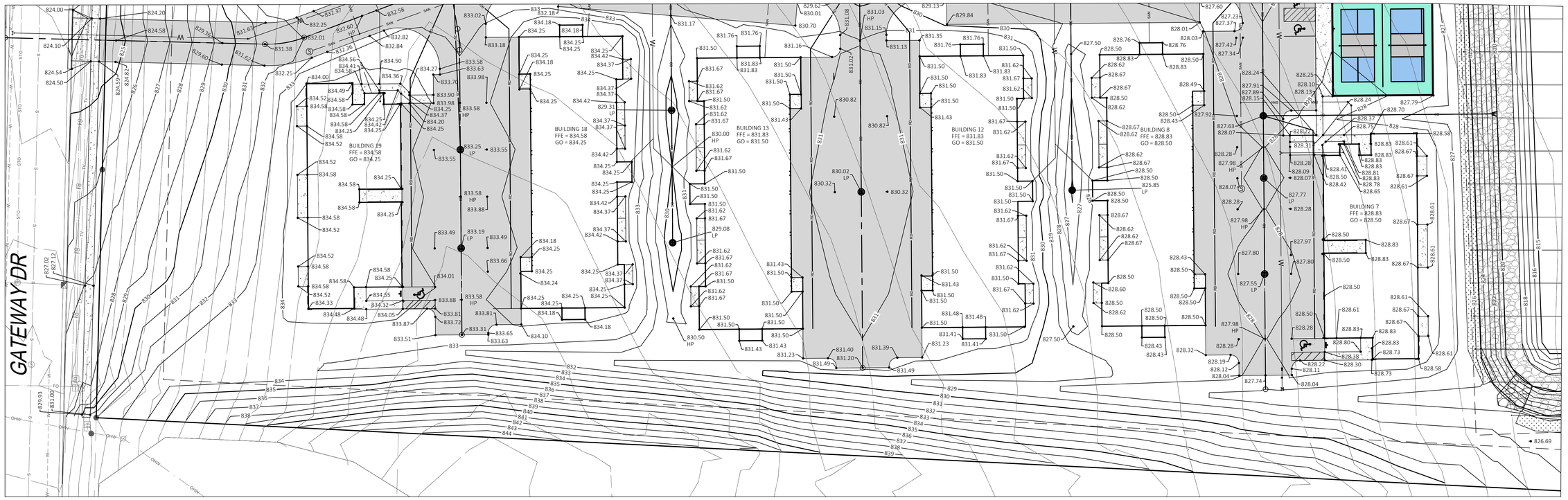
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SCALE IN FEET
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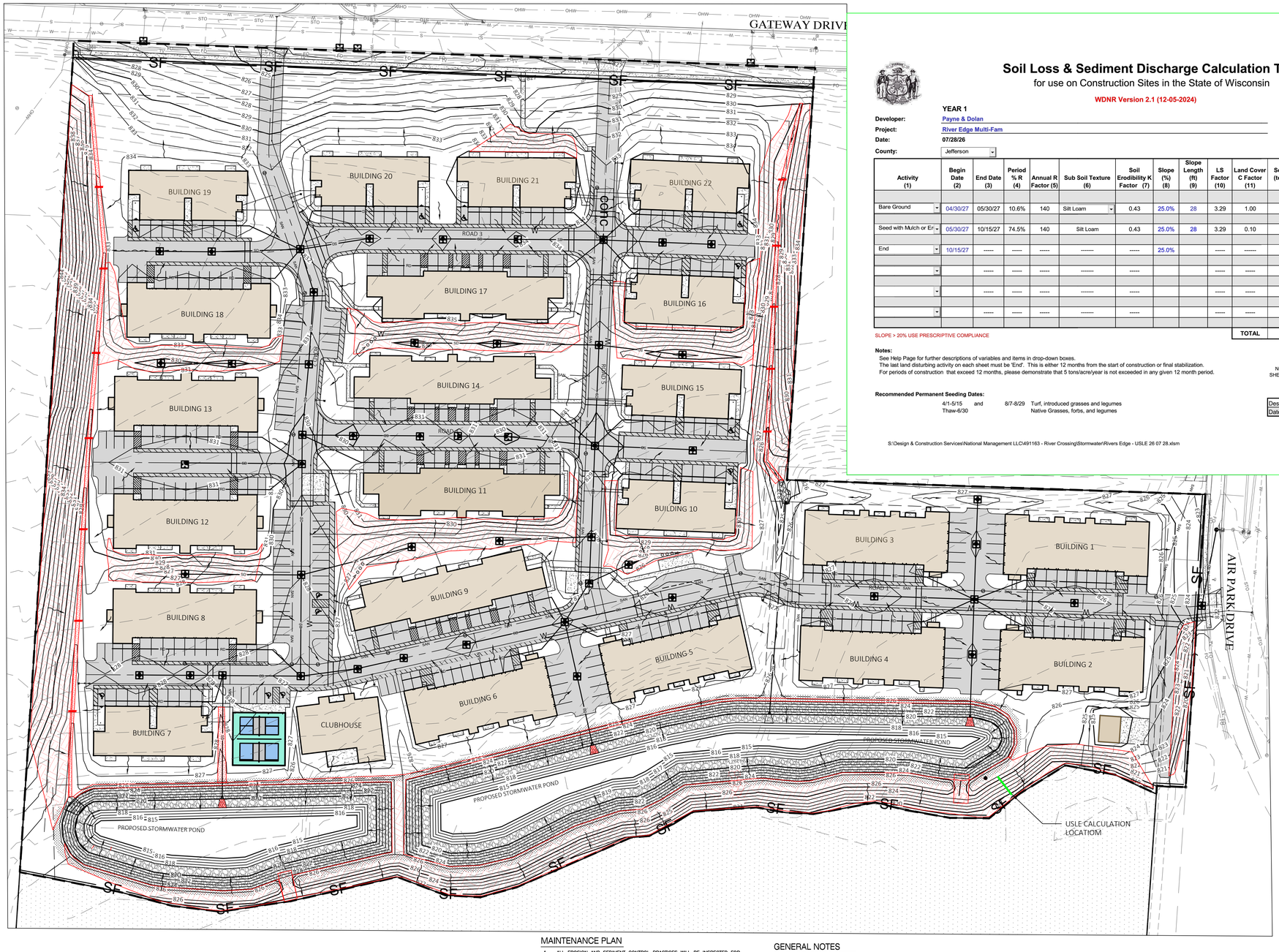
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Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.1 (12-05-2024)

WISCONSIN DEPT. OF NATURAL RESOURCES

YEAR 1

Developer: Payne & Dolan
Project: River Edge Multi-Fam
Date: 07/28/26
County: Jefferson

Version 2.1

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground	04/30/27	05/30/27	10.6%	140	Silt Loam	0.43	25.0%	28	3.29	1.00	21.1	0.638	Sediment Basin	2.7
Seed with Mulch or Er	05/30/27	10/15/27	74.5%	140	Silt Loam	0.43	25.0%	28	3.29	0.10	14.7	0.638	Sediment Basin	1.9
End	10/15/27	-----	-----	-----	-------	-----	25.0%		-----	------	-----	0.000	Sediment Basin	0.0
		-----	-----	-----	-------	-----			-----	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----			-----	-----	-----	0.000		0.0
		-----	-----	-----	-------	-----			-----	-----	-----	0.000		0.0
										TOTAL	35.8		TOTAL	4.6
													% Reduction Required	NONE

SLOPE > 20% USE PRESCRIPTIVE COMPLIANCE

Notes:
See Help Page for further descriptions of variables and items in drop-down boxes.
The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.
For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

Recommended Permanent Seeding Dates:

4/1-5/15 and Thaw-6/30 — Turf, introduced grasses and legumes
8/7-8/29 — Native Grasses, forbs, and legumes

Designed By:	Steve Kolar
Date	7/28/2026

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PRELIMINARY NOT FOR CONSTRUCTION

SCALE IN FEET
0 60' 120'

PROPOSED LEGEND

- SIGN
- HANDICAP PARKING
- STORM MANHOLE
- STORM INLET/CB
- PIPE END SECTION
- SANITARY MANHOLE
- SANITARY CLEANOUT
- WATER VALVE
- PIPE FITTING
- HYDRANT
- ASPHALT PAVEMENT
- CONCRETE/ASPHALT COMPOSITE PAVEMENT
- CONCRETE SIDEWALK
- PAVEMENT REMOVAL
- SWALE
- SANITARY SEWER
- STORM SEWER
- ROOF DRAINS
- WATERMAIN
- EXISTING CONTOUR LINE
- XXX — PROPOSED CONTOUR LINE
- PROPOSED FENCE

EROSION CONTROL LEGEND

- INLET PROTECTION
- DRAINAGE ARROW
- WISDOT CLASS III, TYPE B OR TURF REINFORCEMENT MATTING (TRM)
- WISDOT CLASS I, TYPE A LIGHT DUTY EMAT AND SEEDING (AREA: 24680 SY)
- WISDOT CLASS II, TYPE B SWALE EMAT AND SEEDING (AREA: 1563 SY)
- RETAINING WALL
- RIPRAP
- TRACKING PAD
- SF — PERIMETER EROSION CONTROL (TOTAL LENGTH: 3003 LF)
- GRADING LIMITS (19.44 Ac)
- DITCH CHECK
- USLE CALCULATION LINE

NOTE: ALL LANDSCAPE AREAS BETWEEN BUILDINGS AND HARDSCAPE AND ALL OTHER LANDSCAPE AREAS WITH A SLOPE OF 10:1 OR FLATTER SHALL BE TOPSOIL, SEEDED AND MULCHED

STEEP SLOPES SHALL BE SEEDED WITH A NO MOW MIX. SEE LANDSCAPE PLANS FOR SEEDING MIXES.

CONSTRUCTION ACTIVITY AND SEQUENCE

PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCE SHOWING A WEEKLY SCHEDULE OF OPERATIONS FOR REVIEW AND ACCEPTANCE BY THE VILLAGE ENGINEER. THE WEEKLY SCHEDULE SHALL INCLUDE SPECIFIC SEQUENCES FOR INSTALLATION OF TEMPORARY SEDIMENT TRAPS, INCREMENTAL GRADING AND RESTORATION OF PERIMETER SLOPE SEGMENTS, AND CONSTRUCTION OF PERMANENT INFILTRATION BASINS

ANTICIPATED DISTURBANCE: 22.32 Ac
SITE CONSTRUCTION: APRIL 2027 – SEPTEMBER 2028, DURATION 18 MONTHS

1. BEGIN CONSTRUCTION AFTER RECEIPT OF ALL CITY, COUNTY AND WDNR PERMITS
2. CLEAR & GRUB NECESSARY VEGETATION.
3. INSTALL DETENTION PONDS AND GRADEDRIVES, DRAINAGE SWALES AND BUILDING PADS, STABILIZE DRAINAGE SWALES WITHIN 7 DAYS OF FINAL GRADING
4. UTILITY EXTENSION WORK IN DRIVES, CONSTRUCT BUILDINGS AT GRADE AND CONNECT SERVICE LATERALS
5. SIDEWALK, CONCRETE AND PAVING
6. LANDSCAPE
7. COMPLETE PERMANENT RESTORATION OF ALL REMAINING DISTURBED AREAS BY ESTABLISHMENT PERIOD

MAINTENANCE PLAN

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSPECTED FOR FUNCTIONAL EFFECTIVENESS FOLLOWING EVERY 1/2-INCH RAIN EVENT AND IN NO CASE LESS THAN ONCE PER WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO ENSURE THE DEVICE FUNCTIONS AS DESIGNED.
2. ALL SEEDED AREAS WILL BE WATERED, FERTILIZED, MULCHED AND RE-SEEDED AS NECESSARY TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. SEE LANDSCAPE PLANS FOR SEED MIXES.
3. ANY SEDIMENT REACHING A PUBLIC OR PRIVATE STREET SHALL BE REMOVED BY STREET CLEANING BEFORE THE END OF EACH DAY OR AS NECESSARY TO PREVENT DEBRIS FROM ENTERING A STORM SEWER, DITCH, OR WATERWAY.
4. IN THE EVENT CONSTRUCTION ACTIVITIES RESULT IN SEVERE DUST CONDITIONS, SEE WDNR TECHNICAL STANDARD 1068.
5. IN THE EVENT OF DEWATERING ACTIVITIES, FOLLOW WDNR TECHNICAL STANDARD 1061. ALL WATER DISCHARGED FROM THE DEWATERING EQUIPMENT MUST BE FILTERED BY A TYPE II GEOTEXILE BAG SIZED FOR THE PUMP DISCHARGE FLOW RATE.
6. SEDIMENT TRAP DESIGN TO BE IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1063
7. DITCH CHECKS TO BE PLACED AT EVERY 2' OF VERTICAL DROP IN ELEVATION OR CLOSER. DITCH CHECK AND EMAT INSTALLATION SHOULD BE PER WDNR TECHNICAL STANDARD 1062.
8. ALL EXPOSED SOIL AREAS NOT DISTURBED FOR UP TO SEVEN DAYS MUST BE IMMEDIATELY STABILIZED OR PERMANENTLY RESTORED IN ACCORDANCE WITH THE WDNR BMP'S.
9. TEMPORARY STABILIZATION MATERIALS SHALL BE MULCHED AND SHALL BE APPLIED AND ANCHORED AS SPECIFIED IN WI DNR TECHNICAL STANDARD 1058. FOR AREAS NOT STABILIZED BY OCT. 15, APPLY TEMPORARY SEEDING WITH ANIONIC POLYACRYLAMIDE AS SPECIFIED IN WI DNR TECHNICAL STANDARD 1050 & 1059.
10. ALL SIGNIFICANT CHANGES TO THIS SCHEDULE SHALL BE PROVIDED TO THE WDNR AND LOCAL MUNICIPALITY PRIOR TO DEVIATION.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN POSITIVE DRAINAGE TO THE SEDIMENT CONTROL DEVICES AT ALL TIMES DURING CONSTRUCTION.
12. ALL EROSION CONTROL BMP DEVICES CAN BE REMOVED ONCE 100% OF THE SITE HAS BEEN VEGETATED TO 70% COVERAGE PER WDNR TECHNICAL STANDARDS.

GENERAL NOTES

- ALL CATCH BASINS, INLETS, AND FLARED END SECTIONS, BOTH EXISTING AND PROPOSED SHALL HAVE INLET PROTECTION INSTALLED PRIOR TO DISTURBANCE AND AFTER CONSTRUCTION
- ALL DISTURBED AREAS SHALL BE STABILIZED ACCORDING TO THE EROSION AND SEDIMENT CONTROL PLAN AND LANDSCAPING PLAN. PERMANENT STABILIZATION SHALL BE INSTALLED WITHIN THE TIME FRAMES INDICATED IN THE SWPPP AND THE PROJECT SPECIFICATIONS
- ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS NECESSARY, AND AT A MINIMUM ACCORDING TO THE EROSION AND SEDIMENT CONTROL PLAN. CONTRACTOR RESPONSIBLE FOR MAINTENANCE AND REPLACEMENT OF ROCK ENTRANCES AS NEEDED

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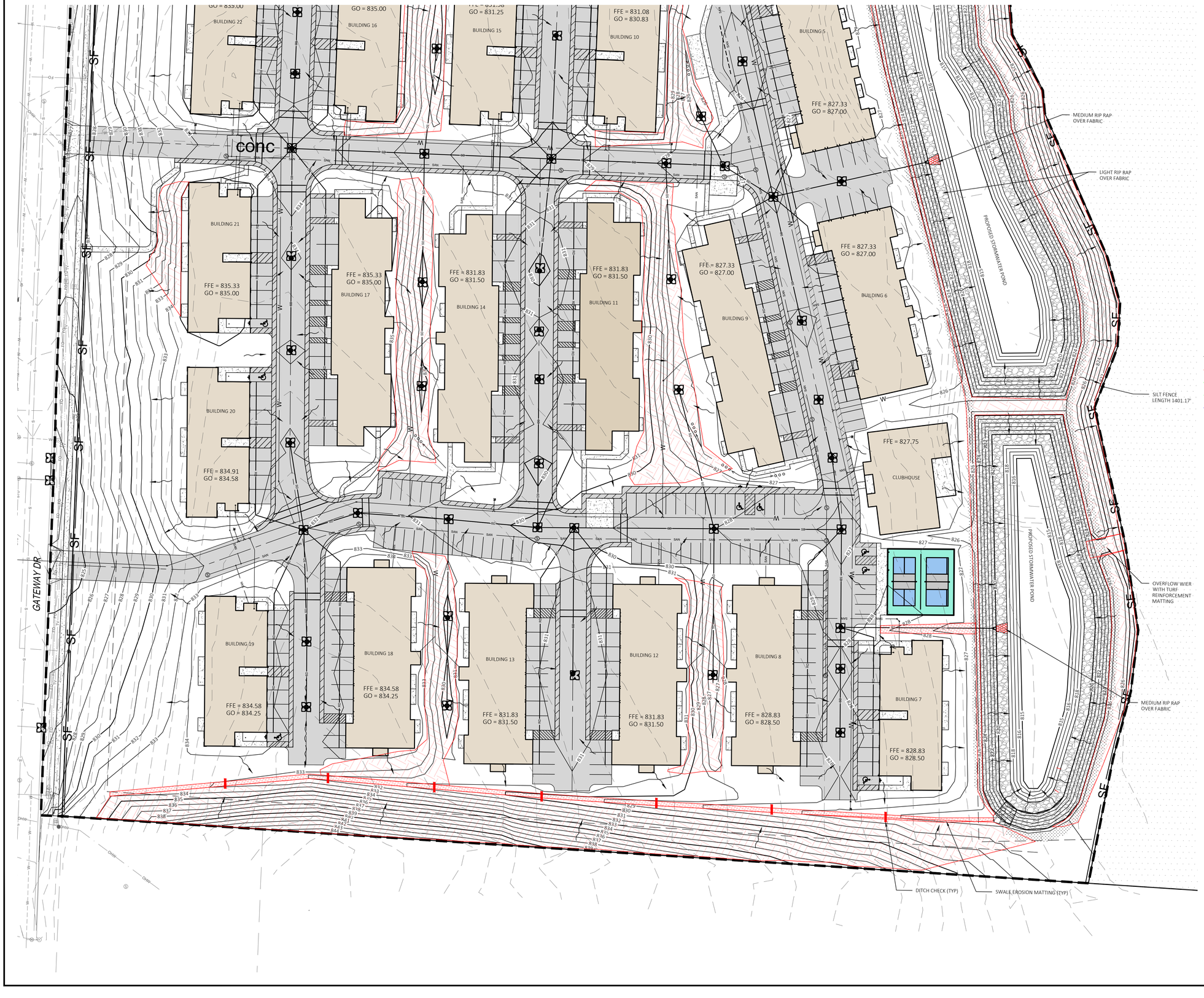
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EROSION CONTROL PLAN

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PROPOSED LEGEND

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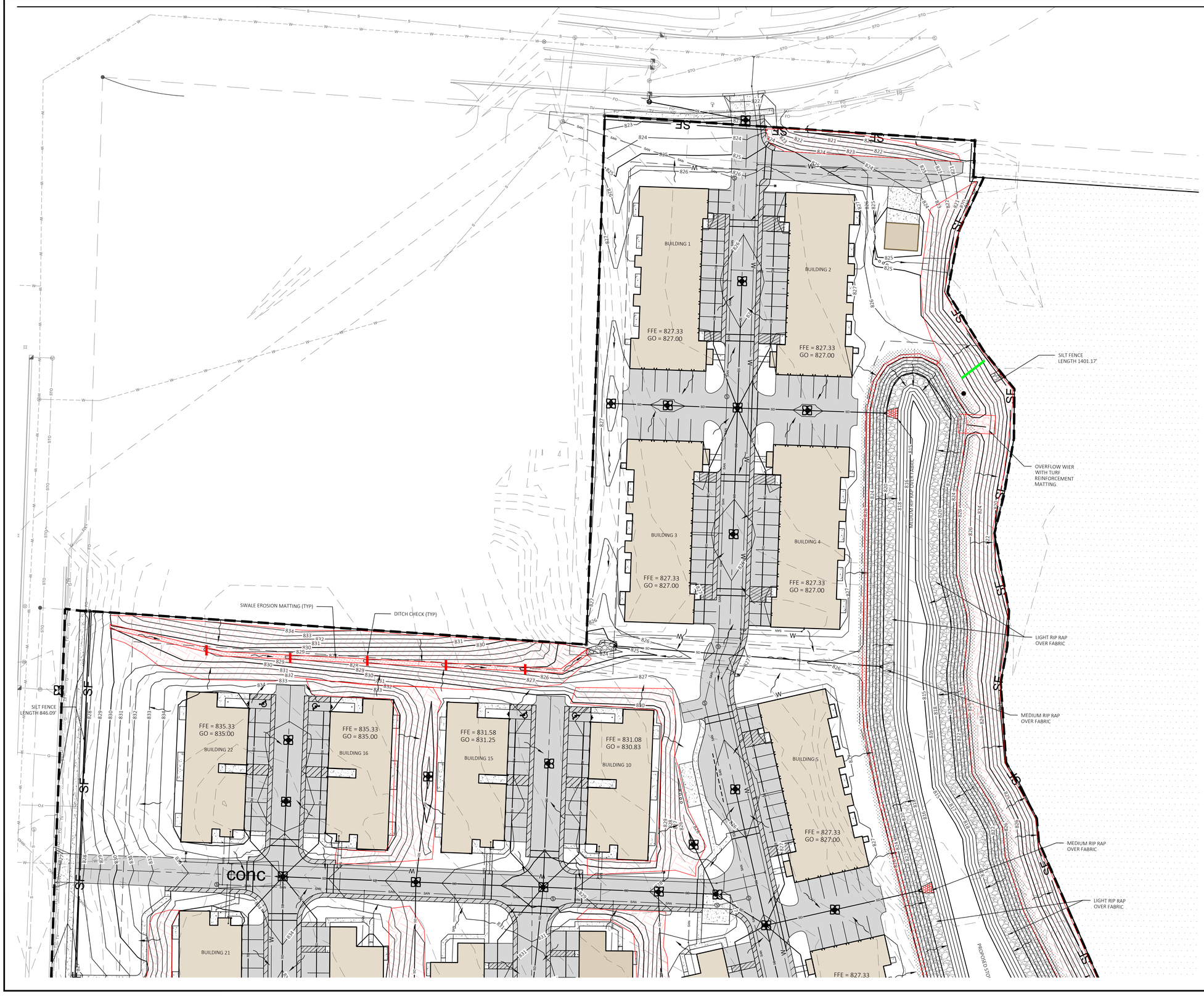
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SHEET TITLE
EROSION CONTROL PLAN

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Sheet No.	C7.1

Sep 15, 2026 – 3:18pm
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PRELIMINARY NOT FOR CONSTRUCTION

PROPOSED LEGEND

- SIGN
- HANDICAP PARKING
- STORM MANHOLE
- STORM INLET/CB
- PIPE END SECTION
- SANITARY MANHOLE
- SANITARY CLEANOUT
- WATER VALVE
- PIPE FITTING
- HYDRANT
- ASPHALT PAVEMENT
- CONCRETE/ASPHALT COMPOSITE PAVEMENT
- CONCRETE SIDEWALK
- PAVEMENT REMOVAL
- SWALE
- SANITARY SEWER
- STORM SEWER
- ROOF DRAINS
- WATERMAIN
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE (XXX)
- PROPOSED FENCE

EROSION CONTROL LEGEND

- INLET PROTECTION
- DRAINAGE ARROW
- WISDOT CLASS III, TYPE B OR TURF REINFORCEMENT MATTING (TRM)
- WISDOT CLASS I, TYPE A LIGHT DUTY EMAT AND SEEDING (AREA: 24680 SY)
- WISDOT CLASS II, TYPE B SWALE EMAT AND SEEDING (AREA: 1563 SY)
- RETAINING WALL
- RIPRAP
- TRACKING PAD
- PERIMETER EROSION CONTROL (TOTAL LENGTH: 3003 LF) (SF)
- GRADING LIMITS (19.44 Ac)
- DITCH CHECK
- USLE CALCULATION LINE

SCALE IN FEET
0 40' 80'

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A WALBEC COMPANY
www.walbecgroup.com
(920) 757-7559

PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY SUITE
141 BROOKFIELD, WI 53005

Seal

SHEET TITLE
EROSION CONTROL PLAN

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Sep 15, 2026 – 3:19pm
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GENERAL NOTES

1. THE CITY OF WATERTOWN, JEFFERSON COUNTY, AND THE CURRENT EDITION OF THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION (LATEST EDITION), INCLUDING ALL SUPPLEMENTS, SHALL GOVERN ALL MATERIALS AND WORKMANSHIP INVOLVED IN THE IMPROVEMENTS SHOWN ON THIS PLAN. IN THE CASE OF CONFLICTS BETWEEN THE WISDOT SPECS AND THE CITY OF WATERTOWN REQUIREMENTS, THE CITY OF WATERTOWN REQUIREMENTS SHALL PREVAIL.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL EFFECT ON THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL CALL, TOLL FREE, THE WISCONSIN DIGGER'S HOTLINE (811) 48 HOURS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO WORK IN THE VICINITY OF THEIR UNDERGROUND LINES.
3. THE OWNER SHALL OBTAIN A PERMIT FOR ALL CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH LOCAL, STATE, & FEDERAL REGULATIONS.
4. THE CONTRACTOR IS TO PERFORM ALL INSPECTIONS AS REQUIRED BY THE WDNR FOR THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM (WPDES) PERMIT AND FURNISH OWNER'S REPRESENTATIVE WITH WRITTEN REPORTS.
5. THE CONTRACTOR IS REQUIRED TO VISIT THE SITE AND FULLY INFORM CONCERNING CONDITIONS AFFECTING THE SCOPE OF THE WORK. FAILURE TO VISIT THE SITE SHALL NOT RELIEVE CONTRACTOR FROM ANY RESPONSIBILITY IN THE PERFORMANCE OF THE CONTRACT.
6. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR EXPENSES INCURRED DUE TO SOIL CONDITIONS, GROUNDWATER, AND/OR ROCK EXCAVATION, ALL OF THESE ITEMS SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT.
7. THE COST OF ALL DEWATERING REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT.
8. THE DIRECT OR INDIRECT DISCHARGE OR PUMPING OF UNFILTERED SEDIMENT-LADEN WATER INTO THE STORM DRAINAGE SYSTEM OR WATERCOURSE IS ILLEGAL AND PROHIBITED.
9. ANY WELL, WELL POINT, PIT, OR OTHER DEVICE INSTALLED FOR THE PURPOSE OF LOWERING THE GROUND WATER TO FACILITATE CONSTRUCTION OF THIS PROJECT SHALL BE PROPERLY ABANDONED IN ACCORDANCE WITH THE PROVISIONS OF THE WDNR.
10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO THE WDNR FOR THE REGISTRY, MAINTENANCE AND ABANDONMENT OF ANY WITHDRAWAL DEVICE USED IN CONSTRUCTION OF THIS PROJECT.
11. ALL DIMENSIONS ARE TO THE EDGE OF PAVEMENT AND/OR FLANGE OF CURB, UNLESS OTHERWISE NOTED.
12. ALL SITE SIGNAGE, PAVEMENT MARKING COLOR AND WIDTH SHALL BE PER CONSTRUCTION DETAILS OR THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
13. ALL EXISTING PAVEMENTS, WALKS, CURBS, ETC. SHALL BE SAWCUT BEFORE REMOVAL. IF, DURING CONSTRUCTION, THE PAVEMENT, WALKWAY, CURB, ETC. ARE DAMAGED BEYOND THE ORIGINAL SAWCUT, THE DAMAGED AREA SHALL BE RECUT TO NEAT LINES AS DIRECTED BY THE ENGINEER. PAYMENT FOR SAWCUTTING SHALL BE INCLUDED IN THE PRICE BID FOR THE PROJECT.
14. THE CONTRACTOR SHALL SAWCUT EXISTING PAVEMENT TO PROVIDE A SMOOTH VERTICAL FULL DEPTH BUTT JOINT BETWEEN THE EXISTING PAVEMENT OR CURB AND THE PROPOSED PAVEMENT. CONTRACTOR SHALL LOCATE SOUND PAVEMENT EDGE AND CUT AND TRIM PAVEMENT TO A NEAT LINE. INCLUDE THE COST OF PAVEMENT REMOVAL AND DISPOSAL IN THE PRICE BID FOR THE PROJECT.
15. THE CONTRACTOR WILL BE REQUIRED TO PARTICIPATE IN SEDIMENT AND EROSION CONTROL INSPECTIONS ON A WEEKLY BASIS AND SIGN AN APPROVED INSPECTION SHEET THAT MAY BE KEPT ON FILE AT THE JOB SITE.
16. UNLESS OTHERWISE NOTED, STANDARDS AND SPECIFICATIONS ESTABLISHED IN THE WDNR TECHNICAL STANDARDS SHALL GOVERN THE EROSION AND SEDIMENT CONTROL INSTALLATIONS SPECIFIED ON THIS PLAN.
17. THIS PROJECT WILL INVOLVE SEVERAL CONSTRUCTION PHASES AND SEQUENCING THROUGHOUT ITS LIFETIME. IT IS VERY IMPORTANT THAT ALL TEMPORARY SEDIMENT AND EROSION CONTROL FIELD METHODS ALONG WITH THIS PLAN, ARE UPDATED TO REFLECT THE ACTUAL FIELD CONDITIONS, CURRENT WEATHER CONDITIONS AND SITE GRADE CHANGES.
18. THE CONTRACTOR SHALL REMOVE EXISTING GROUND COVER ONLY AS NECESSARY FOR THE PROJECT PHASE CURRENTLY UNDER CONSTRUCTION.
19. CONSTRUCTION AND DEMOLITION DEBRIS SHALL BE PROPERLY DISPOSED OF ACCORDING TO LOCAL REQUIREMENTS.
20. THE CONTRACTOR WILL BE REQUIRED TO BUILD SEDIMENT BASINS OR SEDIMENT TRAPS OR USE EQUAL METHODS TO DETAIN AND CLEAN WATER TO ACCEPTABLE WDNR STANDARDS BEFORE RELEASING THE WATER BACK INTO THE DRAINAGEWAYS OR WATERS OF THE STATE.
21. THERE SHALL BE NO TURBID DISCHARGES TO SURFACE WATERS, RESULTING FROM DEWATERING ACTIVITIES. SEDIMENT-LADEN WATER MUST PASS THROUGH A SETTLING POND, FILTER BAG, OR OTHER COMPARABLE PRACTICE, PRIOR TO DISCHARGE.
22. NO SOLID OR LIQUID WASTE SHALL BE DISCHARGED INTO STORM WATER RUNOFF.
23. ALL PROCESS WASTEWATER (EQUIPMENT WASHING, LEACHATE FROM ON-SITE WASTE DISPOSAL, ETC.) SHALL BE COLLECTED AND DISPOSED OF AT A PUBLICLY OWNED TREATMENT WORKS.
24. ALL CONSTRUCTION ACTIVITIES MUST COMPLY WITH ALL LOCAL EROSION/SEDIMENT CONTROL, WASTE DISPOSAL, SANITARY AND HEALTH REGULATIONS.
25. OTHER EROSION CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND IMPLEMENTATION OF ADDITIONAL EROSION CONTROL ITEMS, AT THE ENGINEER'S DISCRETION.
26. NO SOIL, ROCK, DEBRIS OR OTHER MATERIAL SHALL BE DUMPED OR PLACED IN ANY AREAS NOT ADEQUATELY PROTECTED BY EROSION CONTROL INSTALLATIONS.
27. IT IS PREFERRED TO USE PERMANENT EROSION CONTROL ITEMS AS SHOWN IN THE PLANS TO CONTROL CONSTRUCTION POLLUTION WHEN POSSIBLE. OTHERWISE, THE TEMPORARY POLLUTION PREVENTION ITEMS ARE TO BE USED.
28. MOST TEMPORARY SEDIMENT AND EROSION CONTROL METHODS, INCLUDING BUT NOT LIMITED TO, SILT FENCE AND DITCH CHECKS MAY ALL HAVE TO BE PERIODICALLY REMOVED AND REPLACED, OR MOVED FROM THE EXISTING ROAD DITCH OR STRIPPED AREAS AS WORK PROGRESSES. ANY CHANGES SHALL BE NOTED IN THE PLAN BY RED LINE AND DATED ON A CORRECTIVE ACTION LOG.
29. ALL TEMPORARY SEDIMENT CONTROLS AND STORM WATER QUALITY METHODS WILL BE BUILT/INSTALLED AS THE PROJECT PROGRESSES TO ELIMINATE UNNECESSARY DISTURBANCE AND REDUNDANCY. ALL TEMPORARY CONTROLS SHALL BE IN PLACE AND FUNCTIONING PROPERLY WHEN THREATENING WEATHER IS IMMINENT.
30. "TEMPORARY STABILIZATION" MEANS THE ESTABLISHMENT OF TEMPORARY VEGETATION, MULCHING, GEOTEXTILES, SOD, PRESERVATION OF EXISTING VEGETATION AND OTHER TECHNIQUES CAPABLE OF QUICKLY ESTABLISHING COVER OVER DISTURBED AREAS TO PROVIDE EROSION CONTROL BETWEEN CONSTRUCTION OPERATIONS.
31. "PERMANENT STABILIZATION" MEANS THE ESTABLISHMENT OF PERMANENT VEGETATION, DECORATIVE LANDSCAPE MULCHING, MATTING, SOD, RIP RAP AND LANDSCAPING TECHNIQUES TO PROVIDE PERMANENT EROSION CONTROL ON AREAS WHERE CONSTRUCTION OPERATIONS ARE COMPLETE OR WHERE NO FURTHER DISTURBANCE IS EXPECTED FOR AT LEAST A YEAR. OFF-SITE TRACKING OF SEDIMENTS SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. ALL PAVED STREETS ADJACENT TO THE SITE WILL BE SWEPT DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE.

GRADING NOTES

1. CONTRACTOR TO REMOVE TREES AND CLEAR AREAS AS NECESSARY TO PERFORM ALL SITE WORK INCLUDING GRADING AND UTILITY WORK.
2. PROTECTION OF EXISTING TREES AND VEGETATION: PROTECT EXISTING TREES AND OTHER VEGETATION INDICATED TO REMAIN IN PLACE AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, SKINNING OR BRUISING OF BARK, SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION MATERIALS OR EXCAVATED MATERIALS WITHIN DRIP LINE, EXCESS FOOT OR VEHICULAR TRAFFIC, OR PARKING OF VEHICLES WITHIN DRIP LINE. PROVIDE TEMPORARY GUARDS TO PROTECT TREES AND VEGETATION TO BE LEFT STANDING.
3. ALL ELEVATIONS SHOWN ON PLANS ARE TO FINISHED GRADE ELEVATIONS.
4. SITE BUILDING PAD EXCAVATION AND CONSTRUCTION TO BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. BUILDING PAD PREPARATION SHALL BEGIN BY CLEARING & STRIPPING UNSUITABLE MATERIAL FROM PAD SITE. THEN PLACE & COMPACT BACKFILL MATERIAL AT GEOTECHNICAL ENGINEER'S AND ARCHITECT'S RECOMMENDATIONS.
5. ALL FILL UNDER PAVEMENT SHALL BE COMPACTED TO THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.
6. CONTRACTOR SHALL IMPLEMENT ALL SOIL AND EROSION CONTROL PRACTICES REQUIRED BY THE WDNR AND THE LOCAL JURISDICTION.
7. ALL GROUND SURFACE AREAS THAT HAVE BEEN EXPOSED OR LEFT BARE AS A RESULT OF CONSTRUCTION AND ARE TO FINAL GRADE AND ARE TO REMAIN SO, SHALL BE SEEDED AND MULCHED AS SOON AS PRACTICAL IN ACCORDANCE WITH THE SEEDING NOTES.
8. CONTRACTOR TO LAYOUT BUILDINGS BASED ON ARCHITECTURAL/FOUNDATION PLANS. SITE PLAN IS FOR CONCEPTUAL PURPOSES ONLY.
9. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
10. THE CONTRACTOR SHALL PROTECT ALL TREES ON SITE UNLESS INDICATED TO BE REMOVED.
11. THE CONTRACTOR SHALL PROTECT ALL DRAINAGE WAYS ON SITE AND DISTURB AS LITTLE AS POSSIBLE. IF DISTURBED THE CONTRACTOR SHALL STABILIZE THE DRAINAGE WAY WITHIN 48 HOURS.
12. ALL ORGANIC OR OTHER UNSUITABLE MATERIALS SHALL BE REMOVED FROM BENEATH THE ROADWAY.
13. PUBLIC ROADWAYS IF DISTURBED. A TEST ROLL OF THE PREPARED SUBGRADE SHALL BE PERFORMED BY THE OWNER IN THE PRESENCE OF A CITY INSPECTOR. THE CITY HAS THE AUTHORITY TO REQUIRE ADDITIONAL SUBGRADE CORRECTION OR ELIMINATE THE STABILIZATION FABRIC.

WATERMAIN

1. WATERMAIN CONSTRUCTION SHALL CONFORM TO CHAPTER 8.20 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
2. ALL WATER MAIN PIPE SHALL BE PVC, CONFORMING TO THE REQUIREMENTS OF AWWA C-900, AND SHALL BE FURNISHED WITH INTRGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. NOT LESS THAN PRESSURE CLASS 235.
3. PVC WATERMAIN SHALL BE MARKED WITH TRACER WIRE PER SECTION 2.11 OF THE STANDARD SPECIFICATION FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION, OR SPS SECTION 382.30(11)(h).

SANITARY SEWER

1. SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN, AND STANDARDS OF THE WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES FOR PRIVATE SANITARY SEWER.
2. SANITARY SEWERS SHOWN ON THE CONSTRUCTION PLANS SHALL BE POLYVINYL CHLORIDE PIPE IN ACCORDANCE WITH ASTM D-3034 (SDR 35). ALL JOINTS SHALL BE ELASTOMERIC GASKET TYPE (WITH A "LOCKED-IN" RUBBER SEALING RING) PROVIDING A WATER TIGHT SEAL AND CONFORMING TO THE REQUIREMENTS OF ASTM D3212 "SPECIFICATION FOR JOINTS AND DRAIN AND SEWER PLASTIC PIPES USING FLEXIBLE ELASTOMERIC SEALS." ALL PIPE SHALL HAVE A MINIMUM CELL CLASSIFICATION OF 12454-B AS DEFINED IN ASTM D-1784.
3. GRANULAR BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND WITHIN 5' OF THE EDGE OF PAVEMENT.
4. SANITARY MANHOLES SHALL BE PRECAST CONCRETE IN ACCORDANCE WITH ASTM C-478 AND SHALL BE WATER PROOFED TO 6" BELOW ALL GRADE RINGS AND 6" ABOVE & BELOW ALL EXTERIOR JOINTS.
5. CASTING SHALL BE AS NOTED ON PLAN.
6. PLASTIC SANITARY SEWER SHALL BE MARKED FOR EASY IDENTIFICATION WITH TRACER WIRE PER SECTION 2.11 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION OR SECTION SPC SECTION 382.30(11)(h).
7. MANHOLE STEPS SHALL BE POLYPROPYLENE, POLYPROPYLENE COATED STEEL REINFORCING OF AN APPROVED NON-CORROSIVE FIBERGLASS MATERIAL. THE COPOLYMER POLYPROPYLENE SHALL MEET THE REQUIREMENTS OF ASTM D-4101 REINFORCED WITH DEFORMED 8 INCH MINIMUM DIAMETER REINFORCING STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A-615, GRADE 60. NON-COATED CAST IRON STEPS ARE NOT ACCEPTABLE.
8. WATER AND SEWER LINE CROSSING AND SEPARATIONS SHALL BE IN ACCORDANCE WITH THE STATE STANDARDS AND LOCAL CODES.
9. EXISTING MANHOLE SHALL BE CORED-DRILLED WITH A KOR-N-SEAL (OR APPROVED EQUAL) BOOT PRESSED INTO PLACE. THE CONTRACTOR SHALL USE PRECO BULKHEAD OR OTHER MEANS TO INSURE A WATERTIGHT CONNECTION.
10. NO ROOF DRAINS, FOOTING DRAINS, AND/OR SURFACE WATER DRAINS MAY BE CONNECTED TO THE SANITARY SEWER SYSTEM, INCLUDING A TEMPORARY CONNECTION DURING CONSTRUCTION.
12. MANHOLE INVERT SHALL BE SHAPED FOR FLOW CHANNEL WITH CONCRETE AND SMOOTHLY FINISHED BY A U-SHAPED SECTION CONFORMING TO THE INSIDE DIAMETER OF THE CONNECTING SEWERS. CHANGES IN THE SIZE AND GRADE SHALL BE MADE SMOOTH TRUE CURVES FOR ALL CONNECTING SEWERS AT EACH MANHOLE.
13. PRECAST MANHOLE SHALL BE BEDDED ON A #2 STONE BEDDING FOUNDATION AS SHOWN IN THE DETAILS.
14. THE CONTRACTOR SHALL REMOVE BY PUMPING OR OTHER SUITABLE METHODS ANY WATER WHICH MAY ACCUMULATE IN TRENCHES.
15. PIPE SHALL BE LAID IN OPEN TRENCHES, EXCEPT WHEN CONDITIONS REQUIRE TUNNELING OR JACKING OF PIPE.
16. TRENCH SHALL BE OPENED SUFFICIENTLY AHEAD OF PIPE LAYING TO REVEAL OBSTRUCTIONS, AND SHALL BE PROPERLY PROTECTED AND/OR BARRICADED WHEN LEFT UNATTENDED.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR SHEETING AND BRACING OF TRENCHES AS NECESSARY TO PROTECT WORKMEN AND ADJACENT STRUCTURES. ALL TRENCHING SHALL BE DONE IN ACCORDANCE WITH OSHA STANDARDS TO PROTECT WORKMEN.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTS FOR INFILTRATION/EXFILTRATION AND DEFLECTION AS ESTABLISHED BY THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN, AND STANDARDS OF THE WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES. ALL TESTING SHALL BE COMPLETED AFTER FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS AND SHALL BE OBSERVED BY A PROFESSIONAL ENGINEER FOR CERTIFICATION WITHIN 40 DAYS AFTER COMPLETION. ANY PORTIONS NOT PASSING SAID TEST FOR ACCEPTANCE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE, INCLUDING RE-EXCAVATION AND BACKFILL.
19. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH "AS BUILT" LOCATIONS AND INFORMATION FOR ALL SANITARY SEWER LATERALS WITHIN 10 DAYS AFTER COMPLETION. THESE PLANS SHALL BE SUBMITTED TO THE PROJECT ENGINEER.
20. GRANULAR BACKFILL SHALL BE REQUIRED UNDER ALL PAVEMENT AREAS AND WITHIN 5 FEET OF THE EDGE OF PAVEMENT.
21. THE PLANS SHOW APPROXIMATE LOCATIONS OF ALL KNOWN UTILITIES WITHIN THE PROJECT LIMITS. THE ENGINEER NOR THE UTILITY COMPANIES GUARANTEE THE ACCURACY OF THE PLANS IN THIS RESPECT. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL CONFIRM THE LOCATIONS OF ALL UTILITIES IN THE FIELD TO THEIR EXACT HORIZONTAL AND VERTICAL LOCATIONS.

UTILITY NOTES

1. ALL DRAIN TILE AND STORM SEWERS DAMAGED, DISTURBED OR REMOVED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH THE SAME QUALITY PIPE OR BETTER, MAINTAINING THE SAME GRADIENT AS EXISTING. THE DRAIN TILE AND/OR STORM SEWER SHALL BE CONNECTED TO THE CURB SUB-DRAIN, STORM SEWER SYSTEM OR OUTLET TO THE ROADWAY DITCH AS APPLICABLE. REPLACED DRAIN TILE/STORM SEWER SHALL BE LAID ON COMPACTED BEDDING EQUAL IN DENSITY TO SURROUNDING STRATUM. REPLACEMENT SHALL BE DONE AT THE TIME OF THE BACKFILL OPERATION. COST OF THIS WORK TO BE INCLUDED IN THE PRICE BID FOR THE PROJECT.
2. ALL EXISTING UTILITIES KNOWN TO EXIST HAVE BEEN SHOWN ON THESE PLANS IN THEIR APPROXIMATE LOCATION. PRIOR TO THE BEGINNING OF CONSTRUCTION OR EARTH MOVING OPERATIONS, THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF THE UTILITIES SHOWN. THE CONTRACTOR IS ALSO RESPONSIBLE FOR THE PROTECTION AND/OR RELOCATION OF ANY UTILITIES THAT MAY EXIST AND ARE NOT SHOWN.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE RELOCATION AND/OR PROTECTION OF ANY UTILITIES AS REQUIRED BY THE PLAN WITH THE OWNER OF THE AFFECTED UTILITY.
4. UTILITY POLES WITHIN INFLUENCE OF THE UTILITY OPERATIONS SHALL BE REINFORCED BY THE UTILITY COMPANY PRIOR TO THESE CONSTRUCTION ACTIVITIES. NOTIFICATION OF THE UTILITY COMPANY PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
5. COMPACTED FILLS ARE TO BE MADE TO A MINIMUM OF THREE FEET ABOVE THE CROWN OF ANY PROPOSED SEWER PRIOR TO CUTTING OF TRENCHES FOR PLACEMENT OF SAID SEWERS. ALL FILLS SHALL BE CONTROLLED, COMPACTED, AND INSPECTED BY AN APPROVED TESTING LABORATORY OR AN INSPECTOR FROM THE APPROPRIATE GOVERNMENTAL AGENCY.
6. CONTRACTOR TO REPLACE ANY PAVEMENT OR UTILITIES DAMAGED WHICH ARE NOT SPECIFIED TO BE REMOVED ON THESE PLANS.
7. ALL CATCH BASINS PLACED WITHIN THE PAVEMENT SHALL HAVE HEAVY DUTY FRAMES AND GRATES AND CONFORM TO ADA REQUIREMENTS.
8. ADJUST ALL EXISTING CASTINGS AND CLEANOUTS WITHIN PROJECT AREA TO GRADE AS REQUIRED.
9. ALL CATCH BASINS WITH DEPTH GREATER THAN 6' SHALL BE PROVIDED WITH STEPS. STEPS SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATION FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
10. ALL STORM AND SANITARY SEWER MANHOLES WITH A DEPTH GREATER THAN 4' SHALL BE PROVIDED WITH STEPS. STEPS SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR SEWR AND WATER CONSTRUCTION IN WISCONSIN.
11. DISTANCES SHOWN FOR BOTH SANITARY AND STORM SEWER PIPES ARE MEASURED FROM CENTER OF STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR ACTUAL FIELD CUT LENGTH. COORDINATES FOR STORM AND SANITARY STRUCTURES ARE SHOWN TO THE CENTER OF STRUCTURE, UNLESS OTHERWISE NOTED.
12. IMMEDIATELY AFTER PLACEMENT OF ANY CONDUITS, THE CONTRACTOR SHALL CONSTRUCT THE END TREATMENTS REQUIRED BY THE PLANS AT BOTH THE OUTLET AND INLET ENDS. THIS SHALL INCLUDE HEADWALLS, CONCRETE, RIP RAP, ROCK CHANNEL PROTECTION, SODDING, POURING BOTTOMS, MUDDING LIFT HOLES, ETC.
13. ALL PROPOSED STORM SEWERS, SURFACE OR OTHER DRAINAGE FACILITIES ARE TO BE PRIVATE AND MAINTAINED BY THE OWNER. EROSION CONTROL MEASURES MUST PROVIDE PROTECTION UNTIL COMPLETION OF THE PROJECT AND VEGETATIVE STABILIZATION.
14. THE CONTRACTOR IS TO CONSTRUCT CURBS, CATCH BASINS, DOWNSPOUTS, PIPING AND CONNECTIONS ETC. AS REQUIRED TO CONVEY THE ROOF AND PAVED SURFACE DRAINAGE TO THE WET PONDS OR AS SHOWN ON THE PLANS.
15. ROOF DRAINS, FOUNDATION DRAINS AND ALL OTHER CLEAR WATER CONNECTIONS TO THE SANITARY SEWER SYSTEMS ARE PROHIBITED.
16. SITE CONTRACTOR SHALL PICK UP ALL UTILITIES, WITH THE EXCEPTION OF DOWNSPOUTS, 5' OUTSIDE BUILDING WALL. COORDINATE DOWNSPOUT CONNECTIONS WITH CONSTRUCTION MANAGER.
17. ALL STORM STRUCTURES ARE WISDOT TYPES UNLESS OTHERWISE INDICATED.
18. STORM SEWER PIPE SHALL BE ONE OF THE FOLLOWING:
    A. "HDPE" HIGH DENSITY POLYETHYLENE OR "PVC" POLYVINYL CHLORIDE SDR-35
    B. ROOF DRAINAGE PIPE, "PVC" POLYVINYL CHLORIDE SDR-35
19. ALL PIPE END SECTIONS TO BE TIED TO THE STORM SEWER PIPE.
20. FOR EXACT LOCATION OF DOWN SPOUTS & ROOF DRAINS, COORDINATE WITH CONSTRUCTION MANAGER. ALL ROOF DRAINS ARE TO BE 8" UNLESS OTHERWISER
21. ALL EXISTING INVERTS ALONG THE PROPOSED TOP OF CASTING ELEVATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF THE SEWER.
22. ANY FIELD TILE CUT IN EXCAVATION WHICH DRAINS IN AN OFFSITE AREA MUST BE TIED INTO THE STORM DRAINAGE SYSTEM.
23. THE FLOW IN ALL SEWERS, DRAINS, FIELD TILES AND WATERCOURSES ENCOUNTERED SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS OWN EXPENSE, AND WHENEVER SUCH WATERCOURSES AND DRAINS ARE DISTURBED OR DESTROYED DURING THE PROSECUTION OF THE WORK, THEY SHALL BE RESTORED BY THE CONTRACTOR AT HIS OWN EXPENSE TO A CONDITION SATISFACTORY TO THE ENGINEER.
24. ALL WATERLINE CROSSINGS SHALL MAINTAIN A VERTICAL SEPARATION OF 18" MINIMUM. SANITARY SEWER SHALL BE LOCATED A MINIMUM OF 18" BELOW WATERLINE AT ALL CROSSINGS. WATERLINE SHALL BE LOCATED A MINIMUM OF 10' HORIZONTALLY FROM ANY SANITARY SEWER. ALL MEASUREMENTS SHALL BE TAKEN FROM OUTSIDE OF SEWER PIPE TO THE OUTSIDE OF WATERLINE SHOWN. ONE FULL LENGTH OF WATERLINE PIPE SHALL BE LOCATED AT ALL CROSSINGS TO ENABLE BOTH JOINTS TO BE LOCATED AS FAR FROM SEWER AS POSSIBLE. ALL WATER SHALL HAVE A MINIMUM OF 5' OF COVER.

DUST CONTROL

DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

THE FOLLOWING SPECIFICATIONS FOR DUST CONTROL SHALL BE FOLLOWED ONSITE:

1. VEGETATIVE COVER AND/MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 14 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
2. WATERING - SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS

CONSTRUCTION SEQUENCE

TO COMPLETE THE EXCAVATION AND CONSTRUCTION OF THE PROPOSED JOB IMPROVEMENTS, COORDINATION OF THE CONTRACTOR'S WORK CREWS WILL BE REQUIRED. THE EXISTING DITCHES WILL PERFORM TEMPORARY SEDIMENT CONTROL AND STORAGE DURING THE PROPOSED CONSTRUCTION. WORK WILL GENERALLY PROCEED FROM DOWNSTREAM TO UPSTREAM IN THESE
WORK AREAS. THE GENERAL CONSTRUCTION SEQUENCE IS AS FOLLOWS:

1. INSTALL TEMPORARY CONSTRUCTION SITE EROSION CONTROL PRACTICES..
2. STRIP AND STOCKPILE TOPSOIL.
3. CONSTRUCT STORMWATER PONDS.
4. EXCAVATE/FILL SITE TO SUBGRADE.
5. CONSTRUCT SITE TO PLAN GRADES.
6. REMOVE SEDIMENT THAT HAS ACCUMULATED DURING CONSTRUCTION FROM THE PROPOSED WET POND. CONFIRM PROVIDED STORAGE DEPTHS MEET DESIGN REQUIREMENTS OF THE STORM WATER MANAGEMENT PLAN PRIOR TO FINAL STABILIZATION.
7. APPLY PERMANENT EROSION CONTROLS THAT INCLUDE PERMANENT SEEDING AND STORM SEWER OUTLET PROTECTION.
8. REMOVE TEMPORARY EROSION CONTROLS.

GENERAL CONSTRUCTION SEQUENCE NOTES
ALL TEMPORARY AND PERMANENT CONSTRUCTION SITE EROSION CONTROLS SHALL BE INSTALLED PER THE WISCONSIN DEPARTMENT OF NATURAL RESOURSES TECHNICAL STANDARDS WHICH CAN BE FOUND AT THE FOLLOWING WEB ADDRESS:
https://dnr.wisconsin.gov/topic/stormwater/standards

EROSION AND SEDIMENT CONTROL PRODUCTS SHALL BE PER THE WISCONSIN DEPARTMENT OF TRANSPORTATION EROSION CONTROL PRODUCT ACCEPTABILITY LIST (PAL) LATEST EDITION. THIS CAN BE FOUND AT THE FOLLOWING WEB ADDRESS:
https://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/tools/pal/default.aspx

EROSION AND SEDIMENT CONTROL TECHNICAL STANDARDS THAT APPLY TO THIS SITE WILL INCLUDE:

1. CHANNEL EROSION MAT - 1053
2. DUST CONTROL - 1068
3. LAND APPLICATION OF ADDITIVES FOR EROSION CONTROL - 1050
4. MULCHING FOR CONSTRUCTION SITES - 1058
5. SEEDING - 1059
6. SILT FENCE - 1056
7. TRACK OUT PRACTICES - 1057
8. DEWATERING PRACTICES - 1061
9. INLET PROTECTION - 1060
10. SEDIMENT BALE BARRIER - 1055
11. DITVH CHECKS - 1062

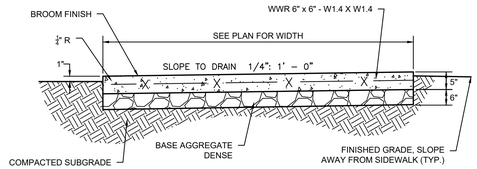
STABILIZATION PRACTICES

MULCH AND/OR OTHER APPROPRIATE VEGETATIVE PRACTICES SHALL BE APPLIED TO DISTURBED AREAS WITHIN 7 DAYS OF GRADING IF THE AREA IS TO REMAIN DORMANT (UNDISTURBED) FOR MORE THAN 14 DAYS OR ON AREAS AND PORTIONS OF THE SITE WHICH CAN BE BROUGHT TO FINAL GRADE.

MULCH SHALL CONSIST OF UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90 LB./1000 SQ. FT. (TWO TO THREE BALES). THE STRAW MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY 1000-SQ.-FT. SECTIONS AND PLACE TWO 45-LB. BALES OF STRAW IN EACH SECTION.

MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR RUNOFF. THE FOLLOWING ARE ACCEPTABLE METHODS FOR ANCHORING MULCH:

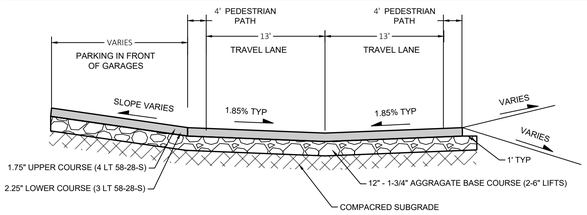
1. MECHANICAL-USE A DISK, CRIMPER, OR SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT BE LEFT GENERALLY LONGER THAN 6 IN.
2. MULCH NETTINGS-USE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING ALL PLACEMENT AND ANCHORING SUGGESTIONS. USE IN AREAS OF WATER CONCENTRATION AND STEEP SLOPES TO HOLD MULCH IN PLACE.
3. SYNTHETIC BINDERS-FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. ALL APPLICATIONS OF SYNTHETIC BINDERS MU



CONCRETE SIDEWALK WITH MESH

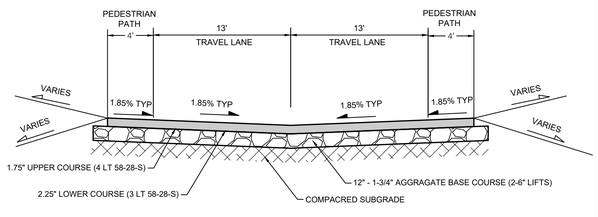
NOTES:

1) INSTALL EXPANSION JOINTS AT 30' OC AND WHERE SLAB ABUTS STRUCTURES. EXPANSION JOINTS SHALL BE ½" WIDE BY DEPTH OF SLAB.
2) INSTALL CONTROL JOUNTS AT 6' OC MAXIMUM. CONTROL JOINTS SHALL BE 3/8" WIDE BY 1 1/2" DEEP AND TOOLED, SAWED JOINTS ARE NOT PERMITTED.
3) WALK SHALL HAVE A MINIMUM CROSS SLOPE OF 1.00%, MAXIMUM CROSS SLOPE OF 2%.
4) WATER AND UTILITY BOXES IN WALK AREA SHALL BE ADJUSTED FLUSH WITH THE FINAL SURFAE.
5) REFER TO ARCHITECTURA PLANS FOR ADDITIONAL DETAIL AT ALL BUILDING DOORS.



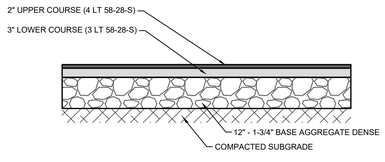
TYPICAL FINISHED SECTION (GARAGES)

TWO LANE PRIVATE DRIVE

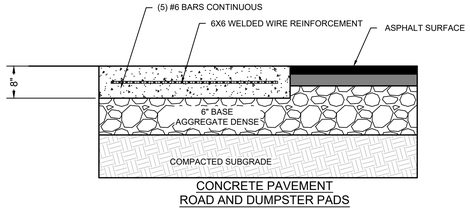


TYPICAL FINISHED SECTION

TWO LANE PRIVATE DRIVE

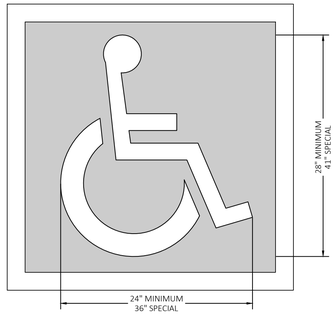


ASPHALT PAVEMENT SECTION PUBLIC ROAD (IF REQUIRED)



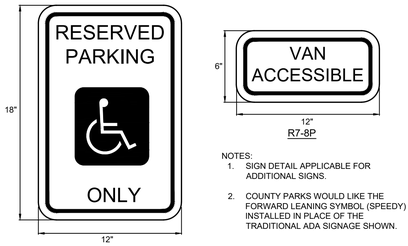
CONCRETE PAVEMENT ROAD AND DUMPSTER PADS

NOTE:
1. HANDICAP PAVEMENT MARKING SHALL CONFORM TO SECTION 3B.20 OF THE MUTCD.
2. BLUE BACKGROUND AND WHITE BORDER ARE OPTIONAL



HANDICAP PAVEMENT MARKING

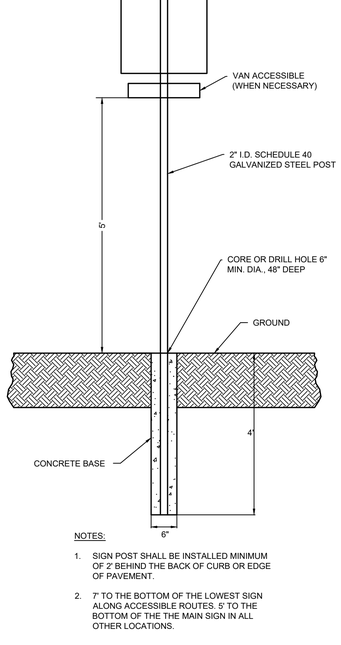
N.T.S.



NOTES:
1. SIGN DETAIL APPLICABLE FOR ADDITIONAL SIGNS.
2. COUNTY PARKS WOULD LIKE THE FORWARD LEANING SYMBOL (SPEEDY) INSTALLED IN PLACE OF THE TRADITIONAL ADA SIGNAGE SHOWN.

ACCESSIBLE PARKING SIGNS

N.T.S.

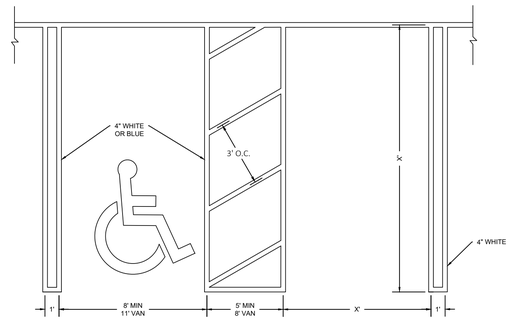


NOTES:

1. SIGN POST SHALL BE INSTALLED MINIMUM OF 2' BEHIND THE BACK OF CURB OR EDGE OF PAVEMENT.
2. 7' TO THE BOTTOM OF THE LOWEST SIGN ALONG ACCESSIBLE ROUTES. 5' TO THE BOTTOM OF THE THE MAIN SIGN IN ALL OTHER LOCATIONS.

SIGN POST INSTALLATION IN LANDSCAPE AREA

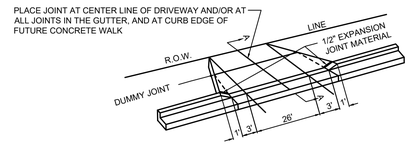
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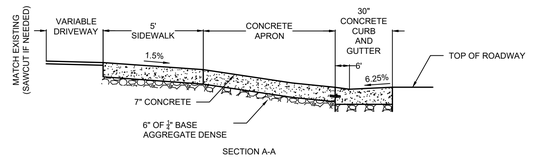


NOTES:
1. PARKING STALL DIMENSIONS SHALL FOLLOW LOCAL ORDINANCES.
2. PARKING STALL STRIPING SHALL CONFORM TO SECTION 3B.19 OF THE MUTCD.
3. PER 2010 ADA STANDARDS VAN ACCESSIBLE PARKING SHALL BE EITHER 11 FEET PARKING STALL WITH AT A MINIMUM 5 FEET ACCESSIBLE AISLE OR AT A MINIMUM 8 FEET PARKING STALL WITH 8 FEET ACCESSIBLE AISLE.

PERPENDICULAR STALL DOUBLE STRIPING

N.T.S.





TYPICAL DRIVEWAY DETAIL

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PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

Seal

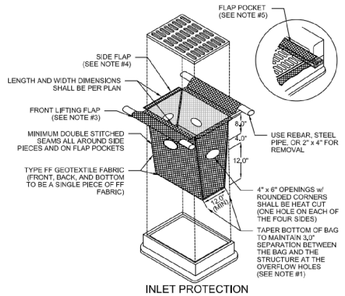
SHEET TITLE
CONSTRUCTION DETAILS

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FIGURE 2. INLET PROTECTION TYPE D



INLET PROTECTION TYPE D

CAN BE INSTALLED IN INLETS WITH OR WITHOUT CURB BOXES

NOTES:

1. TAPER BOTTOM OF BAG TO MAINTAIN 3" OF CLEARANCE BETWEEN THE BAG AND THE STRUCTURE. MEASURED FROM THE BOTTOM OF THE OVERFLOW OPENINGS TO THE STRUCTURE WALL.
2. GEOTEXTILE FABRIC TYPE FF FOR FLAPS, TOP AND BOTTOM OF OUTSIDE OF FILTER BAG. FRONT, BACK, AND BOTTOM OF FILTER BAG BEING ONE PIECE.
3. FRONT LIFTING FLAP IS TO BE USED WHEN REMOVING AND MAINTAINING FILTER BAG.
4. SIDE FLAPS SHALL BE A MAXIMUM OF 2" LONG. FOLD THE FABRIC OVER AND REINFORCE WITH MULTIPLE STITCHES.
5. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2" x 4", THE REBAR, STEEL PIPE, OR WOOD SHALL BE INSTALLED IN THE REAR FLAP AND SHALL NOT BLOCK THE TOP HALF OF THE CURB FACE OPENING.

MAINTENANCE NOTES:

1. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE INLET SHALL BE IMMEDIATELY REMOVED.

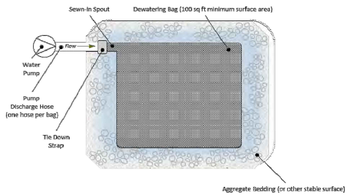
WISCONSIN DEPT. OF NATURAL RESOURCES

1060
TECHNICAL STANDARD No.
12/2021
REVISION DATE
NOT TO SCALE

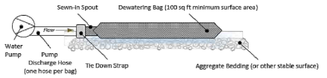
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Figure 1:
Geotextile Filter Bag

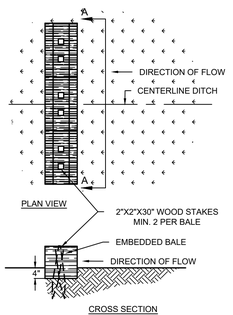
PLAN VIEW



SIDE VIEW



WDNR
4/2020

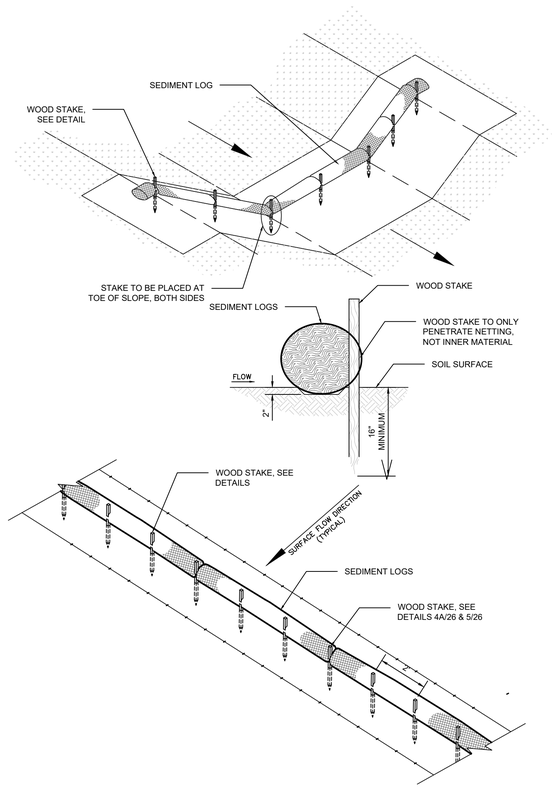




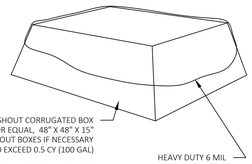
SECTION A-A

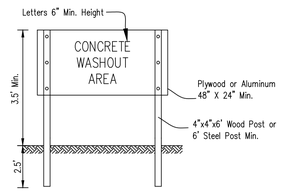
NOTES:
1. INSTALL BALES BY DIGGING A 4" DEEP TRENCH WIDE ENOUGH FOR BALE. EMBED BALE IN TRENCH AND SECURE WITH STAKES.
2. BALES SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING PERIODS OF PROLONGED RAIN. REPAIR OR REPLACEMENT SHALL BE MADE IMMEDIATELY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT OR WHEN DEPOSITS REACH ONE HALF THE HEIGHT OF THE BARRIER.
4. BALES SHALL BE REMOVED ONLY WHEN THE THREAT OF EROSION HAS PASSED AND PERMANENT VEGETATION HAS BEEN ESTABLISHED.

STRAW BALE DITCH CHECK



SEDIMENT LOG PERIMETER CONTROL





SIGN DETAIL

NOTES:

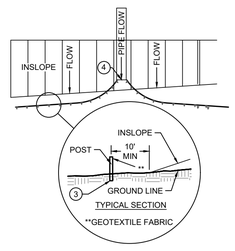
1. MAINTAIN A CONCRETE WASHOUT DEVICE WITH A HEAVY-DUTY 6 MIL PLASTIC LINER TO COLLECT, STORE AND DISPOSE OF READY-MIX CONCRETE AND/OR SLURRY.
2. DEVICE SHALL BE PLACED ON A LEVEL AREA AND EMPTIED OR REPLACED WHEN THE CONTAINER BECOMES TWO-THIRDS FULL.

CONCRETE WASHOUT BOX WITH LINER
N.T.S

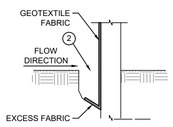
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GENERAL NOTES

1. SILT FENCE SHALL BE ANCHORED BY SPREADING AT LEAST 8-INCHES OF FABRIC IN A 4-INCH WIDE AND 6-INCH DEEP TRENCH OR 6-INCH DEEP V-TRENCH ON THE UPSLOPE SIDE OF THE FENCE. TRENCHES SHALL NOT BE EXCAVATED WIDER OR DEEPER THAN NECESSARY FOR PROPER INSTALLATION.
2. FOLD MATERIAL TO FIT TRENCH AND BACKFILL AND COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1.125-INCHES x 1.125-INCHES OF DRIED OAK OR HICKORY.
4. SILT FENCE TO EXTEND ABOVE THE TOP OF PIPE.
5. SILT FENCE CONSTRUCTION AND GEOTEXTILE FABRIC SHALL CONFORM TO WDNR TECHNICAL STANDARD 1056.
6. POST SPACING SHALL BE SELECTED BASED ON GEOTEXTILE FABRIC (8-FEET FOR WOVEN & 3-FEET FOR NON-WOVEN).

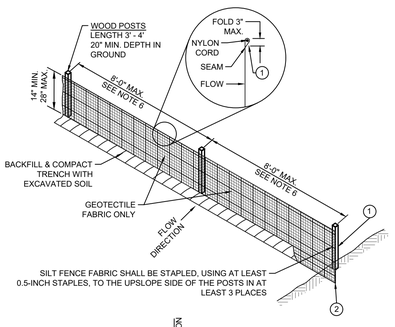


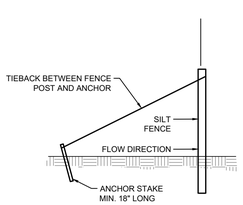
SILT FENCE ALOND SLOPES & OUTFALLS



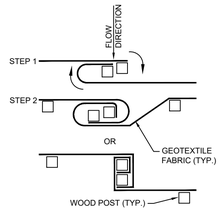
NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

TRENCH DETAIL

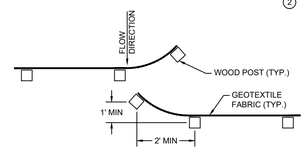




SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)

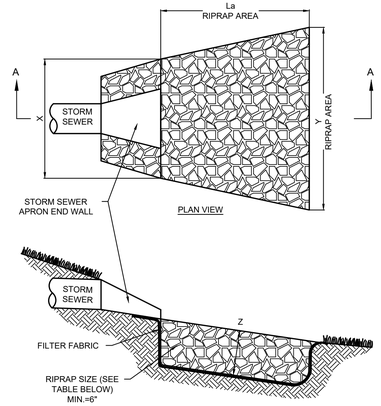


JOINT (TWIST METHOD)



JOINT (HOOK METHOD)

SILT FENCE DETAIL



SECTION A-A

DIMENSIONS

OUTLET	La	X	Y	RIP RAP	Z
30" END SECTION	8'	6'	8'	MEDIUM	1'
24" END SECTION	8'	5'	7'	MEDIUM	1'
18" END SECTION	8'	4'	6'	MEDIUM	1'

RIPRAP SHALL COMPLY WITH THE SECTION 606 OF THE STATE OF WISCONSIN STANDARD FOR HIGHWAY AND STRUCTURE CONSTRUCTION.

NO | REVISION DESCRIPTION | DATE

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CITY OF WATERTOWN, WI

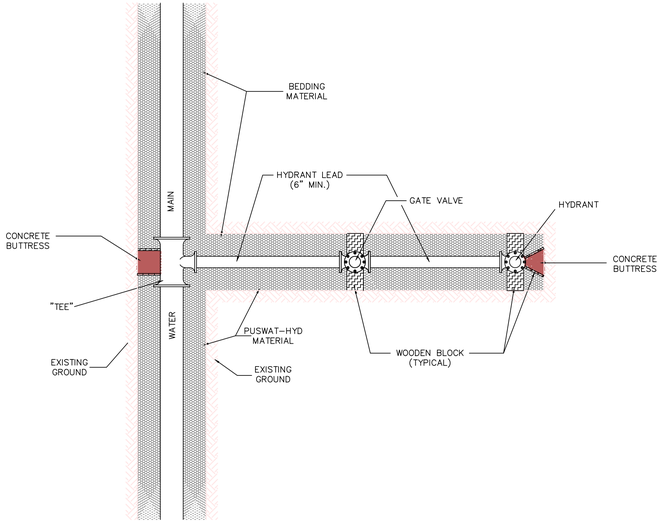
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BROOKFIELD, WI 53005

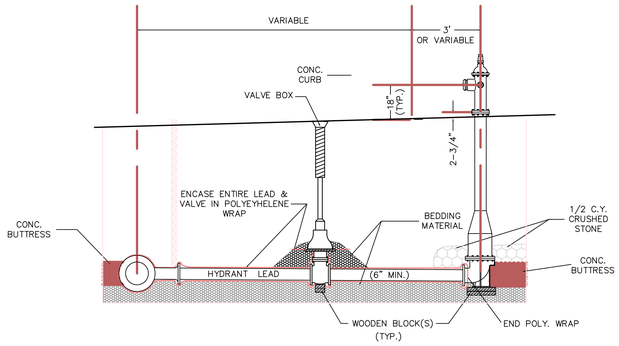
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CONSTRUCTION DETAILS

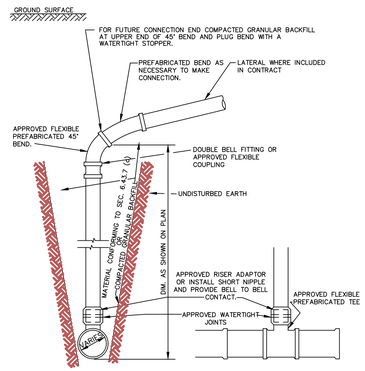
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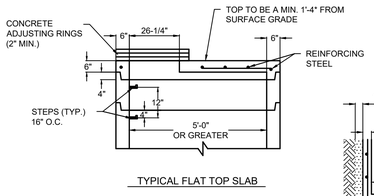


TYPICAL HYDRANT SETTING

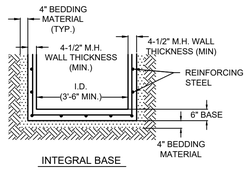


TYPICAL RISER DETAIL

PRELIMINARY NOT FOR CONSTRUCTION



TYPICAL FLAT TOP SLAB



INTEGRAL BASE

TYPE II JOINT REQUIRED ON ALL STORM MANHOLES.

NOTES:

FLAT SLAB TOP MAY BE USED FOR SHALLOW STORM MANHOLES.

ADJUST FRAME TO GRADE WITH BRICK OR CONCRETE RINGS OF VARIABLE THICKNESS, MAXIMUM RING HEIGHT = 6" MINIMUM RING HEIGHT = 2". RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP.

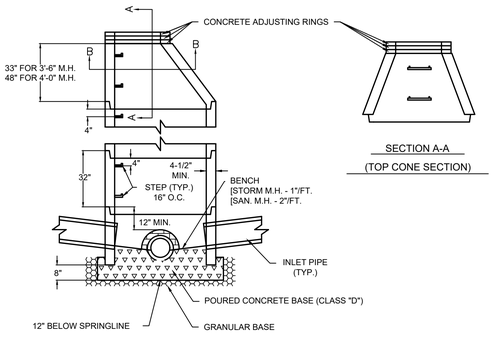
CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C-478 REQUIREMENTS OF ASTM SPECIFICATIONS.

JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING MORTAR OR BUTYL RUBBER GASKETS FOR STORM AND BUTYL RUBBER GASKETS FOR SANITARY MANHOLES.

AREA OF CIRCUMFERENTIAL STEEL = 0.12 SQ. INCH PER LINEAL FOOT.

SPACE BETWEEN PIPE AND PRECAST MANHOLE WALL TO BE FILLED WITH BRICK MORTARED IN PLACE EXCEPT THAT AN APPROVED FLEXIBLE WATERTIGHT PIPE TO MANHOLE SEAL IS REQUIRED FOR ALL FLEXIBLE SANITARY SEWER CONNECTIONS. THE ANNULAR SPACE BETWEEN THE PIPE AND MANHOLE WALL SHALL BE FILLED WITH FLEXIBLE BUTYL RUBBER GASKET MATERIAL BELOW THE SURFACE OF THE BENCH OR SPRINGLINE.

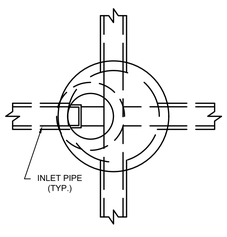
MINIMUM 4" STONE CUSHION UNDER BASE IS REQUIRED.



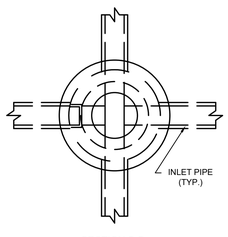
POURED BASE MANHOLE

SECTION A-A

(TOP CONE SECTION)



SECTION B-B



SECTION B-B

WITH ACCESS IN CENTER

TYPICAL PRECAST STORM SEWER MANHOLE SECTION

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

NO	REVISION DESCRIPTION	DATE

Payne+Dolan
A WALBEC COMPANY
www.walbecgroup.com
(920) 757-7559

PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

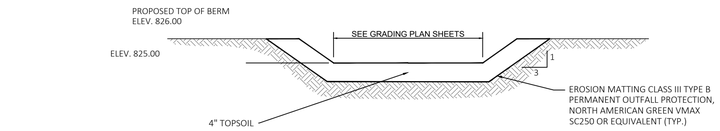
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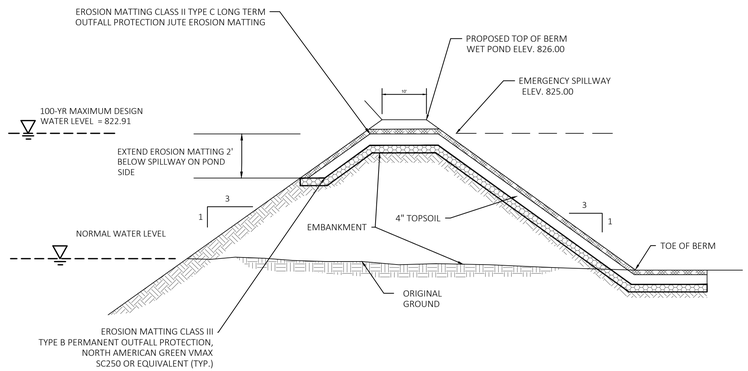
SHEET TITLE
CONSTRUCTION DETAILS

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Drawing Scale:	NTS
Drawn:	GME 09/15/2026
Checked:	HAM 09/15/2026
P&D Project No:	#491163

Sheet No.
C8.3

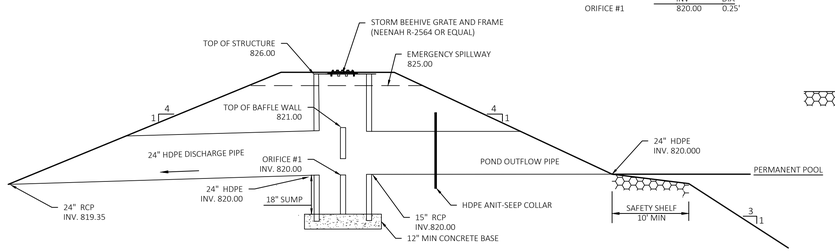




PROPOSED EMERGENCY SPILLWAYS

N.T.S.

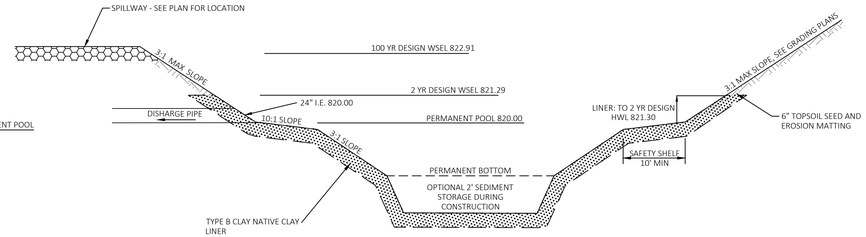
WET POND #1	DIA	INV	SLOPE
DISCHARGE PIPE	24"	798.00	1.00%
	RIM		
OUTLET STRUCTURE	826.00		
	ELEV		
TOP OF BAFFLE WALL	821.00		
	INV	DIA	
ORIFICE #1	820.00	0.25'	



WET POND PRECAST OUTLET STRUCTURE

NTS

WET POND #1 DATA	ELEV
TOP OF BERM	826.00
SPILLWAY	825.00
100-YR WSEL	822.91
2-YR WSEL	821.29
PERMANENT POOL	820.00
PERMANENT BOTTOM	815.00



WET POND CROSS SECTION

NTS

PRELIMINARY NOT FOR CONSTRUCTION

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
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Payne+Dolan
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www.walbecgroup.com
(920) 757-7559

PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

Seal

SHEET TITLE
CONSTRUCTION DETAILS

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Drawn:	GME 09/15/2026
Checked:	HAM 09/15/2026
P&D Project No:	#491163
Sheet No.	C8.4

THE CITY OF WATERTOWN

EROSION CONTROL AND STORM WATER RUNOFF PERMIT APPLICATION

106 JONES STREET
PO BOX 477
WATERTOWN, WI 53094
(920) 262-4060

FOR OFFICE USE ONLY

Permit #_____ Date_____

Permit Effective Date_____

Permit Expires_____

Amount Paid (Calculations on Page 2 of this permit):_____

Payment Method (or Check #)_____

1911 Gateway Drive

Project Address

River Crossing Apartments

Project Name and Description

hunter@freeheelcapital.com

Applicant Email

Applicant	Address	Phone
Hunter Lien	333 Bishops Way, STE 141, Brookfield, WI 53005	414-839-4452

Applicant	Address	Phone
1911 Watertown Propco LLC, River Crossing D LLC	220 N Green ST STE 610, Chicago, IL 60607	

Landowner	Address	Phone

Proposed:

Redeveloped/Existing Impervious Area= _____ Square Feet

New Impervious Area= _____ Square Feet

Total Land Disturbance Area= _____ Square Feet
(existing pervious or impervious, disturbed this project)

Check All That Applicable:

- ☒ Land Disturbing/Erosion Control Permit (Section 288, Article I)
- ☒ Storm Water Runoff Control Permit (Section 288, Article II):
  - ☒ Plan Submittal Checklist
  - ☒ Site and Grading Plan
  - ☐ Financial Guarantee (up to 120% of the estimated cost of construction and maintenance)
  - ☒ Storm Water Calculations
  - ☒ Maintenance Agreement

I,_____, hereby certify that all the information herein and attached hereto is Correct, that I understand the provisions of City of Watertown's Erosion and Sediment Control Ordinance and Program (Section 288, Article I) and/or Storm Water Runoff Control Ordinance and Program (Section 288, Article II), and that I accept responsibility for carrying out, in full compliance with all pertinent City Ordinances, the Erosion and Sediment Control Plan, and the Storm Water Runoff Control Plan for the above-referenced project as approved by the City. I understand that the Permit Application Fee is non-refundable and must be paid at the time of permit submittal.

I further grant the right-of-entry onto this property, as described above, to the designated personnel of the City of Watertown for the purpose of inspecting and monitoring for compliance with the aforesaid Ordinances.

Signature of Applicant

Date 9/14/26

Hunter Lien

Print Name

Approved:

City of Watertown Official — Date

City of Watertown Official — Date

FEE CALCULATIONS

Erosion Control Plan Review

Total Disturbed Area (this project):	972,548	Square feet x	0.002	$ per Square Foot =	$ 1,945
Total New Impervious Area (this project):	418,255	Square feet x	0.003	$ per Square Foot =	$ 1,255
Total Redeveloped Impervious Area (this project):	0	Square feet x	0.0015	$ per Square Foot =	$ 0

Total Erosion Fee = $ 3,200

Storm Water Runoff Control

Total Disturbed Area (this project):	972,548	Square feet x	0.002	$ per Square Foot =	$ 1,945
Total New Impervious Area (this project):	418,255	Square feet x	0.003	$ per Square Foot =	$ 1,255
Total Redeveloped Impervious Area (this project):	0	Square feet x	0.0015	$ per Square Foot =	$

Total Storm Water Fee = $ 3,200

Erosion Control Inspections**

- 3,000 Square Feet > 1 Acre: $55 x ____ months site will be disturbed = $ ____
- 1 Acre > 5 Acres: $110 x ____ months site will be disturbed = $ ____
- 5 Acres or more: $165 x 5 months site will be disturbed = $ 825

Long Term Maintenance Agreement County Recording Fee

$30.00

Base Fee = $125.00

Total Permit Fee (Erosion+Stormwater+Inspection+Recording+Base)= $ $7,380

Permit applies for:

- Disturbing or grading more than 3,000 square feet of land
- Excavating and/or filling more than 400 cubic yards of material

**Erosion control inspections completed by a 3rd party consultant may be charged at consultant rates.

THE CITY OF WATERTOWN

Construction Site Erosion Control Inspections

City staff or a consultant conduct erosion control inspections on construction sites to meet Section 2.4.4 of the Wisconsin Department of Natural Resources (WDNR) Municipal Separate Storm Sewer System (MS4) Permit No. WI-S050075-3 and Section § 288.11-1. Inspection. of the City of Watertown (City) Municipal Code.

Per City municipal code § 288-11., Fee Schedule: *The fees referred to in other sections of this article shall be established by the Common Council and may from time to time be modified by resolution. A schedule of the fees established by the Common Council shall be available for review in City Hall. The fee shall cover all City and consultant costs to review the permit application and perform the required site inspections.*

(Single & Two-Family Residential Building Permit sites < 1 acre are exempt from this erosion control inspection and inspection fee requirement. Erosion control on Single & Two-Family Residential Building sites < 1 acre is reviewed, inspected and enforced through the City's Single & Two-Family Residential Building Permit.)

Erosion Control Inspections

Permit-Holders: Any construction site with 3,000 square feet or more of land disturbance within the City is required to obtain an Erosion Control and Stormwater Permit from the City Engineering Department. The Erosion Control and Stormwater Permit requires permit holders to conduct erosion control inspections on their sites:

- Once per week, and
- After every ½-inch rain event

Permit holders are requested to send the weekly and post – ½ inch rain event inspection reports to the City at mmcbroom@watertownwi.gov.

City Inspectors: City erosion control inspectors also complete erosion control inspections to ensure the sites are in compliance with the Erosion Control and Stormwater Permit and related technical standards. City inspections are conducted:

- Within the 1st two weeks of construction*
- Monthly
  - Weekly if deficiencies are noted on site, until erosion control measures are properly installed and maintained
- Final inspection after construction is done

*Permit holders are requested to notify the City Engineering Department when construction starts on site at 920-262-4060 or mmcbroom@watertownwi.gov.

Erosion Control Inspection Fees

An erosion control inspection fee is included with the Erosion Control and Stormwater Permit Fee, to be paid at the time the permit application is submitted. The erosion control inspection fee is calculated based on the following rates** multiplied by the estimated number of months the site will be under construction:

- 3,000 Square Feet > 1 Acre: $55 x_____months site will be disturbed = $_____
- 1 Acre > 5 Acres: $110 x_____months site will be disturbed = $_____
- 5 Acres or more: $165 x_____months site will be disturbed = $_____

Example: a 4.5-acre site that will be under construction from April through October ($110 x 7 months) = $770

**Erosion control inspections completed by a 3rd party consultant may be charged at consultant rates.

The City implements a Construction Site Pollutant Control Program to engage residents, private property owners, developers, engineers and other interested parties in activities with the goal of reducing the amount of pollution from active construction sites that enters local streams, lakes and wetlands. This program is implemented per Section 2.4 of the WDNR MS4 Permit No. WI-S050075-3. The City's Construction Site Stormwater Runoff Program uses permitting, inspections, enforcement and education measures to reduce the amount of Total Suspended Solids (TSS), Total Phosphorus (TP) and other pollutants from reaching the Rock River, Silver Creek, Silver Creek Pond, Lake Victoria, Heiden Pond, and other local tributaries and wetlands through stormwater runoff.

Additional information on Construction Site Stormwater Management and the City's Stormwater Management Program can be found at:

City of Watertown Stormwater Utility: https://www.watertownwi.gov/page/stormwater-utility

Wisconsin Construction Site Erosion Control Field Guide:
https://dnr.wisconsin.gov/sites/default/files/topic/Stormwater/MS4/WIconstECfieldGuide.pdf

Protect WI Waterways:
https://protectwiwaterways.org/

City of Watertown Stormwater Ordinance Chapter 288:
https://ecode360.com/29260130?highlight=&searchId=2852784508562961#29260130

Payne+Dolan
A WALBEC COMPANY
www.walbecgroup.com
(920) 757-7559

W6380 Design Drive
Greenville, WI 54942 (920) 757-7559
www.walbecgroup.com

Project:

River Crossing Apartments

Location:
Gateway Drive
City of Watertown, WI

STORM WATER MANAGEMENT PLAN

Preparer:



Project Number: 491163
Last Revised: September 8th, 2026

Table of Contents

1.0 INTRODUCTION 3

PLANNING GOALS 3
DESIGN SUMMARY 4

2.0 HYDROLOGIC CALCULATIONS 4

3.0 PRE-DEVELOPED CONDITIONS 4

Table 2: Hydrologic Analysis of Pre-Developed Conditions 5

4.0 POST-DEVELOPMENT CONDITIONS 5

Table 3: Hydrologic Analysis of Post-Developed Conditions 6

5.0 ALLOWABLE PEAK RUNOFF RATES 6

Table 4: Comparison of Pre- and Post-Development Flows 6

6.0 STORM WATER QUALITY CONTROL 7

Table 5: Water Quality Modeling Results (TSS) 7
Table 6: Water Quality Modeling Results (phosphouus) 7

7.0 INFILTRATION 7

8.0 STORMWATER MANAGEMENT MAINTENANCE PLAN 7

APPENDICES

Appendix 1 Location Map
Appendix 2 Web Soil Survey and Geotechnical Report
Appendix 3 Drainage Area Maps
Appendix 4 HydroCAD Model Results
Appendix 5 WinSLAMM Input/Output
Appendix 6 Storm Water Maintenance Plan

1.0 INTRODUCTION

The River Crossing multi-family development is located along the east side of Gateway Drive, south of Air Park Drive and part of the SE1/4 and NW1/4 of Section 16, T8N, R15E in the City of Watertown, Jefferson County, Wisconsin. The 24.35 acre study area includes the proposed multifamily development and the existing development on the adjacent Pro-Health Care property. A site location map is included in **Appendix 1**.

The closest water body is an unnamed tributary to the Rock River.

Storm water management is required by the Wisconsin Department of Natural Resources (DNR) through Chapter NR 151 Runoff Management and the City of Watertown ordinance Chapter 20.16. The development is required to implement the following controls:

Runoff Rate Control: In the City of Watertown, runoff rate control or detention is required whenever the development occurring is subject to storm water management. Per Chapter 20.16, requires the installation of stormwater detention and retention facilities which shall be designed so that the post-development runoff shall not exceed predevelopment rates for the 2-yr, 10-yr and 100-yr storm events.
The maximum runoff curve numbers for existing meadow with C soils is 71, and the maximum existing runoff curve number for forest with C soils is 70. Peak discharges are calculated using TR-55 runoff curve number methodology, Atlas 14 precipitation depths, and the appropriate NRCS Wisconsin MSE3 precipitation distribution".

- **Sediment Control**: BMPs shall be designed, installed and maintained to reduce the total suspended solids carried in runoff from the post-construction site by 80% for new development or to the maximum extent practicable as provided in subd. 2. The design shall be based on an average annual rainfall, as compared to no runoff management controls.

- **Infiltration**: Per the geotechnical report, the site is exempt from the infiltration requirements base on WDNR Technical standard 1002, Site evaluation for stormwater infiltration.

Planning Goals
The stormwater planning goals include:

- Minimize sediment and other pollutants from leaving the site during and after construction; and
- Maintain pre-development peak flows to avoid off-site channel erosion during post-development stormwater conveyance events.

Design Summary
To accomplish the above goals, a storm sewer system is proposed throughout the site to convey runoff to wet detention ponds. The Stormwater BMPs will by design:

- Reduce post-construction total suspended solids by not less than 80%
- Maintain pre-development peak flow rates for the 2, 10 and 100-year/24-hour design storm events.

2.0 HYDROLOGIC CALCULATIONS

HydroCAD version 10.20-9a has been used to analyze storm water hydrologic characteristics for the site. HydroCAD uses the TR-55 methodology for determining peak discharge runoff rates. Curve numbers for the existing ground cover were selected by soil type using the values specified in the City of Watertown and NR-151 requirements. The Web Soil Survey and the Geotechnical Report for the study area are included in **Appendix 2**. Storm water modeling was conducted using the 1-year, 2-year, 10-year and 100-year storm events using the MSE3 rainfall distribution. Rainfall depths and intensity were developed for the site, based on NOAA Atlas 14, Volume 8, Version 2.

Table 1: Design Rainfall Values

Storm Recurrence Interval	24-hour Rainfall Depth
1-year	2.42 inches
2-year	2.74 inches
10-year	3.85inches
100-year	6.18 inches

3.0 PRE-DEVELOPED CONDITIONS

The drainage study areas were determined using 1-foot topographic mapping generated from topographic field survey data developed for the project. The existing drainage areas are broken out into separate sub-areas to match the proposed sub-areas. Drainage area maps are included in **Appendix 3**.
A stormwater management plan was previously prepared for a portion of this area in connection with the construction of ProHealth Care in early 2000's. Thr runoff from approximately 2.45 acres of the ProHealth Care property crosses the River Crossing development and drains to an existing dry stormwater pond constructed to reduce peak discharge rates. The pond discharges to adjacent wetlands. Of the River Crossing Property, approximately 3.55 acres drains west towards Gateway Drive, while the remaining 18.35 acres drains east towards the wetlands. Existing land cover consists of lawn, row crops, meadow, driveways, and buildings.
Existing conditions were modeled using current drainage patterns and impervious areas. The existing dry stormwater pond is not included in the predevelopment calculations.

The following table presents the results of the hydrological analysis for existing conditions:

Table 2: Hydrologic Analysis of Pre-Developed Conditions

	Area (Ac)	Runoff Curve Number	Time of Conc. (min.)	Peak Flow Rate (cfs)			
				1-year	2-year	10-year	100-year
Existing Basin (E1)	3.55	75	6	3.81	5.13	10.30	22.57
Existing Basin (E2)	20.80	74	12.7	14.74	20.36	42.81	97.37
Total	24.35			16.93	23.37	48.95	111.21

Detailed hydrologic calculations for the study area are included in **Appendix 4**.

4.0 POST-DEVELOPMENT CONDITIONS

Post-development conditions encompass 24.35-acres including a portion of the existing ProHealth Care parcel, the proposed multifamily development with buildings, roads and parking, and toe stormwater ponds. The two stormwater ponds function as a single system through an equalizer pipe that connects them.

The area of post-development drainage basins match those of the existing conditions.

Proposed drainage Basin P1 flows offsite to the Gateway Drive with no stormwater controls, the area flowing to Gateway Drive is being reduced from 3.55 acres to 2.45 acres. Proposed drainage Basin P3 flows to the wetlands with no stormwater controls. Proposed drainage Basin P2 flows to a wet stormwater pond for peak flow control and water quality.

The following table summarizes the results of the analysis of proposed conditions:

Table 3: Hydrologic Analysis of Post-Developed Conditions

	Area (Ac)	Runoff Curve Number	Time of Conc. (min.)	Peak Flow Rate (cfs)			
				1-year	2-year	10-year	100-year
Proposed Basin (P1)	2.45	82	6	1.29	5.39	9.43	18.36
Proposed Basin (P2)	20.36	90	14.2	37.72	44.95	70.30	123.34
Proposed Basin (P3)	1.54	83	6	2.86	3.57	6.14	11.78
Total Proposed (w/o detention)	24.35	---	---	41.16	49.25	77.74	138.01
Detention Features				**1-year**	**2-year**	**10-year**	**100-year**
Proposed Pond	Peak Inflow (cfs)			37.72	44.95	70.30	123.34
	Peak Outflow (cfs)			1.11	2.24	8.45	16.52
	High Water Level			821.16	821.29	821.75	82.91
Total Proposed (with detention)				7.25	9.08	15.75	34.57

Detailed hydrologic calculations for the study area are included in **Appendix 4**.

5.0 ALLOWABLE PEAK RUNOFF RATES

Hydrologic analysis included in this report was performed using the HydroCAD hydrologic simulation computer model, version 10.20-9a by HydroCAD Software Solutions LLC. The discharges were generated using the SCS Dimensionless Unit Hydrograph Method for a 24-hour duration storm. Model parameters include drainage area, SCS runoff curve number, time of concentration and 24-hour precipitation with MSE3 NRCS rainfall distribution curve. A time of concentration path was determined and the time calculated for the pre-development areas and a 6-minute minimum time of concentration and lag method is used for a portion of the post-development areas. The following table summarizes the results of the analysis.

Table 4: Comparison of Pre- and Post-Development Flows

	1-year	2-year	10-year	100-year
Total Site Discharge (cfs)	**Pre-development Flows**			
	16.93	23.37	48.95	111.21
	Post-Development Flows			
	7.25	9.08	15.75	34.57

6.0 STORM WATER QUALITY CONTROL

The post-development site will utilize the wet ponds to achieve post-construction storm water quality control in accordance with the State of Wisconsin requirements for suspended solids removal.

The requirement is 80% removal of the Total Suspended Solids (TSS) as compared to no controls. Water quality analysis included in this report was performed using the Source Loading and Management Model (WINSLAMM) computer model, version 10.5.0. WINSLAMM was adopted and calibrated by the Wisconsin Department of Natural Resources to better understand the relationships between sources of urban runoff pollutants and runoff quality. The water quality modeling results for the study area are as follows:

Table 5: Water Quality Modeling Results (TSS)

Site	No Controls (lbs)	With Controls (lbs)	% Reduction
Post-development Site	6444	665.3	89.83

Table 6: Water Quality Modeling Results (phosphouus)

Site	No Controls (lbs)	With Controls (lbs)	% Reduction
Post-development Site	25.43	8.049	68.35

Detailed computations are provided in **Appendix 5**.

The wet ponds exceed 80% TSS reduction and provide 38.35% Phosphorus reduction.

7.0 INFILTRATION

The proposed development is exempt from infiltration requirements. Infiltration testing was done per WDNR standard 1002, design infiltration rates of 0.03 and 0.50 inches per hour were observed.

8.0 STORMWATER MANAGEMENT MAINTENANCE PLAN

The stormwater management maintenance provisions and maintenance checklist are detailed in **Appendix 7.**

Appendix 1

Location Map



Municipal Boundary

Parcels Boundaries

Common Areas

Addresses

Street Labels

THE CITY OF WATERTOWN
Opportunity runs through it.

N

City of Watertown Geographic Information System

Scale: 1:6,479
SCALE BAR = 1"

Printed on: August 3
Author:

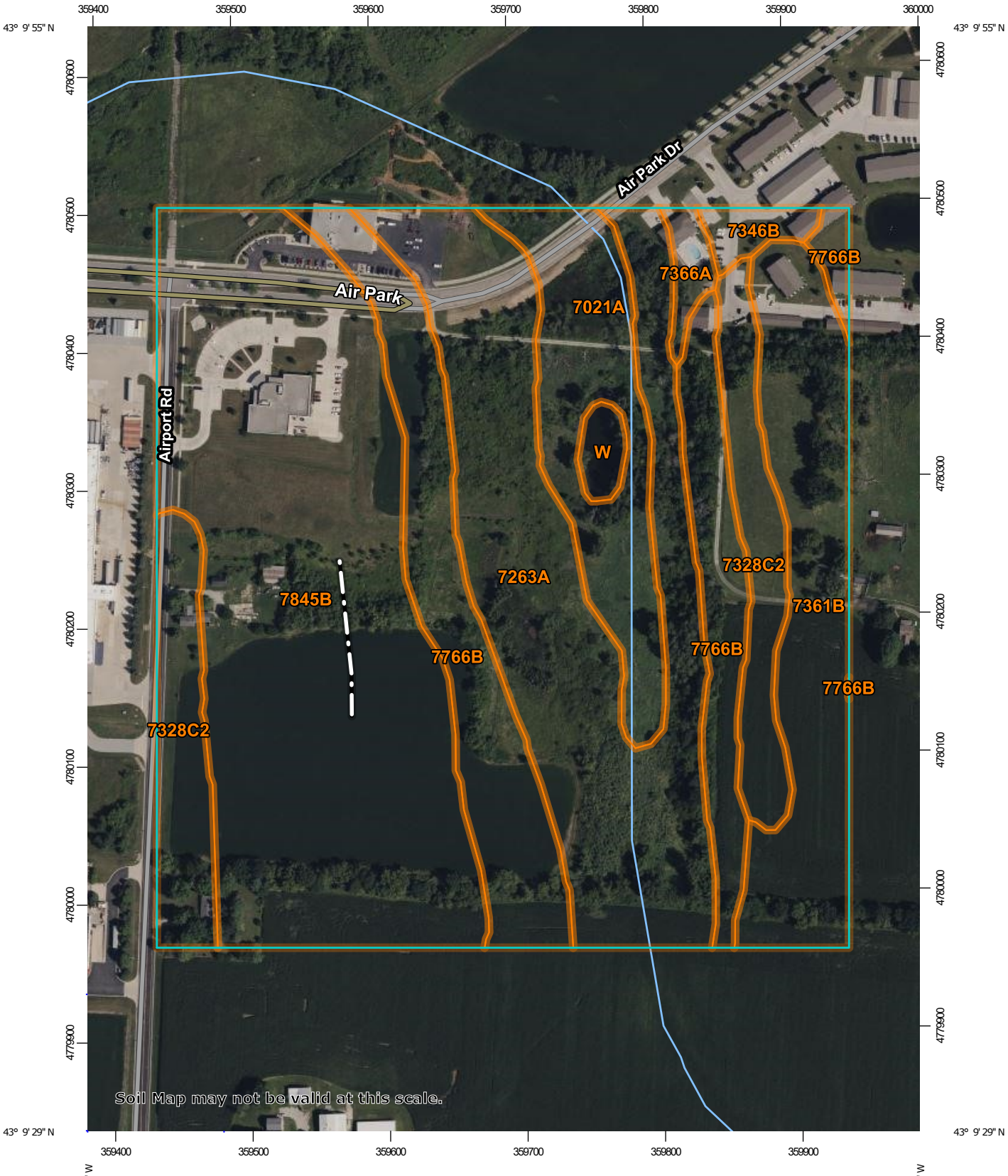
DISCLAIMER: This map is not a substitute for an actual field survey or onsite investigation.
The accuracy of this map is limited to the quality of the records from which it was assembled.
Other inherent inaccuracies occur during the compilation process.
City of Watertown makes no warranty whatsoever concerning this information.

Appendix 2

Web Soil Survey and

Geotechnical Report

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,900 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7021A	Palms muck, 0 to 2 percent slopes	5.3	8.0%
7263A	Keowns silt loam, 0 to 2 percent slopes	14.7	21.9%
7328C2	Rotamer loam, 6 to 12 percent slopes, eroded	5.8	8.6%
7346B	Hebron loam, 1 to 6 percent slopes	0.6	0.9%
7361B	Kidder loam, 2 to 6 percent slopes	7.3	10.8%
7366A	Aztalan fine sandy loam, 0 to 3 percent slopes	0.6	0.9%
7766B	Lamartine silt loam, 2 to 6 percent slopes	9.8	14.6%
7845B	Theresa silt loam, 2 to 6 percent slopes	22.4	33.4%
W	Water	0.5	0.7%
Totals for Area of Interest		**67.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jefferson County, Wisconsin

7021A—Palms muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2szdc
Landscape: Drumlin fields
Elevation: 780 to 1,240 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 43 to 49 degrees F
Frost-free period: 124 to 178 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Palms, muck, and similar soils: 87 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palms, Muck

Setting

Landscape: Drumlin fields
Landform: Interdrumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material over loamy drift

Typical profile

Oap - 0 to 13 inches: muck
Oa - 13 to 30 inches: muck
2Cg - 30 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 1.98 in/hr)
Depth to water table: About 0 to 4 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 15.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F095XB001WI - Mucky Swamp
Forage suitability group: Not suited, flooded or organics (G095BY010WI)
Other vegetative classification: Not suited, flooded or organics (G095BY010WI)
Hydric soil rating: Yes

Minor Components

Houghton, muck

Percent of map unit: 8 percent
Landscape: Outwash plains
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Other vegetative classification: Not suited, flooded or organics (G095BY010WI)
Hydric soil rating: Yes

Adrian

Percent of map unit: 5 percent
Landscape: Drumlin fields
Landform: Interdrumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Hydric soil rating: Yes

7263A—Keowns silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tjz0
Landscape: Lake plains
Elevation: 580 to 1,050 feet
Mean annual precipitation: 29 to 35 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 124 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Keowns and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Keowns

Setting

Landscape: Lake plains
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy and loamy lacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Eg - 9 to 16 inches: silt loam
Bg - 16 to 32 inches: silt loam
Cg - 32 to 79 inches: stratified silt loam to very fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Forage suitability group: High AWC, high water table (G095BY007WI)
Other vegetative classification: High AWC, high water table (G095BY007WI)
Hydric soil rating: Yes

Minor Components

Palms, muck

Percent of map unit: 10 percent
Landscape: Lake plains
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB001WI - Mucky Swamp
Hydric soil rating: Yes

7328C2—Rotamer loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2wpxv
Landscape: Till plains
Elevation: 790 to 1,070 feet
Mean annual precipitation: 33 to 35 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 150 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Rotamer, eroded, and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rotamer, Eroded

Setting

Landscape: Till plains
Landform: Drumlins, Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous sandy and loamy till

Typical profile

Ap - 0 to 8 inches: loam
Bt - 8 to 13 inches: sandy clay loam
C - 13 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Kidder, eroded

Percent of map unit: 4 percent
Landscape: Till plains
Landform: Drumlins, Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB010WI - Loamy and Clayey Upland
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Lapeer

Percent of map unit: 2 percent
Landscape: Till plains
Landform: Drumlins, Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Lamartine

Percent of map unit: 1 percent
Landscape: Till plains
Landform: Drumlins, Moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

7346B—Hebron loam, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: g6zp
Landscape: Lake plains
Elevation: 780 to 1,060 feet
Mean annual precipitation: 28 to 35 inches
Mean annual air temperature: 36 to 57 degrees F
Frost-free period: 135 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Hebron and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hebron

Setting

Landscape: Lake plains
Landform: Terraces
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy outwash over silty and clayey lacustrine deposits

Typical profile

Ap,E - 0 to 12 inches: loam

Bt - 12 to 34 inches: sandy clay loam
2Bt - 34 to 40 inches: silty clay loam
2C - 40 to 60 inches: silty clay loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 0.57 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F095XB010WI - Loamy and Clayey Upland
Forage suitability group: High AWC, adequately drained (G095BY008WI)
Other vegetative classification: High AWC, adequately drained (G095BY008WI)
Hydric soil rating: No

Minor Components

Matherton

Percent of map unit: 4 percent
Landscape: Lake plains
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

Aztalan

Percent of map unit: 4 percent
Landscape: Lake plains
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

Sebewa

Percent of map unit: 2 percent
Landscape: Lake plains
Landform: Depressions
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

7361B—Kidder loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tjy9
Landscape: Drumlin fields
Elevation: 790 to 1,180 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 127 to 181 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Kidder and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kidder

Setting

Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 11 inches: loam
Bt - 11 to 31 inches: sandy clay loam
C - 31 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F095XB010WI - Loamy and Clayey Upland

Forage suitability group: Mod AWC, adequately drained (G095BY005WI)
Other vegetative classification: Mod AWC, adequately drained (G095BY005WI)
Hydric soil rating: No

Minor Components

Mchenry

Percent of map unit: 3 percent
Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Backslope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F095XB010WI - Loamy and Clayey Upland
Hydric soil rating: No

Rotamer

Percent of map unit: 2 percent
Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

7366A—Aztalan fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wspn
Landscape: Basins
Elevation: 770 to 870 feet
Mean annual precipitation: 33 to 35 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 136 to 172 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Aztalan and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aztalan

Setting

Landscape: Basins
Landform: Glacial lakes (relict)
Landform position (three-dimensional): Talf
Down-slope shape: Concave

Across-slope shape: Linear
Parent material: Loamy outwash over stratified silty and clayey lacustrine deposits

Typical profile

Ap - 0 to 14 inches: fine sandy loam
Bt - 14 to 25 inches: loam
2Cg - 25 to 79 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Forage suitability group: Mod AWC, high water table (G095BY004WI)
Other vegetative classification: Mod AWC, high water table (G095BY004WI)
Hydric soil rating: No

Minor Components

Sebewa, clayey substratum

Percent of map unit: 10 percent
Landscape: Drumlin fields
Landform: Interdrumlins
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

7766B—Lamartine silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tjw4
Landscape: Drumlin fields
Elevation: 590 to 1,240 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 43 to 46 degrees F

Frost-free period: 135 to 194 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Lamartine and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lamartine

Setting

Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
Bt1 - 8 to 20 inches: silty clay loam
2Bt2 - 20 to 28 inches: clay loam
2C - 28 to 79 inches: gravelly sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Forage suitability group: High AWC, high water table (G095BY007WI)
Other vegetative classification: High AWC, high water table (G095BY007WI)
Hydric soil rating: No

Minor Components

Theresa

Percent of map unit: 9 percent
Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear

Across-slope shape: Linear
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Hydric soil rating: No

Pella

Percent of map unit: 6 percent
Landscape: Drumlin fields
Landform: Drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F095XB004WI - Wet Loamy or Clayey Lowland
Hydric soil rating: Yes

7845B—Theresa silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2szd9
Landscape: Drumlin fields
Elevation: 700 to 1,240 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 140 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Theresa and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Theresa

Setting

Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over loamy till and/or calcareous, dense loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
BE - 8 to 14 inches: silt loam
Bt1 - 14 to 18 inches: silty clay loam
2Bt2 - 18 to 34 inches: clay loam
2Cd - 34 to 79 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: 32 to 35 inches to densic material
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 60 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F095XB007WI - Loamy Upland with Carbonates
Forage suitability group: Mod AWC, adequately drained with limitations (G095BY006WI)
Other vegetative classification: Mod AWC, adequately drained with limitations (G095BY006WI)
Hydric soil rating: No

Minor Components

Hochheim

Percent of map unit: 10 percent
Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F095XB006WI - Shallow Upland
Hydric soil rating: No

Lamartine

Percent of map unit: 5 percent
Landscape: Drumlin fields
Landform: Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F095XB005WI - Moist Loamy or Clayey Lowland
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: g718

Elevation: 660 to 980 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 39 to 43 degrees F
Frost-free period: 100 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Watertown Apartments

Geotechnical Engineering Report

June 12, 2026 | Terracon Project No. 58265062

Watertown, Wisconsin

Prepared for:

Payne & Dolan Incorporated
PO Box 781
Waukesha, WI 53187



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June 12, 2026

Payne & Dolan Incorporated
PO Box 781
Waukesha, WI 53187

Attn: Mr. Nick Olson
P: (262) 804-7414
E: nickolson@walbecgroup.com

Re: Geotechnical Engineering Report
Watertown Apartments
1911 Gateway Drive
Watertown, Wisconsin
Terracon Project No. 58265062

Dear Mr. Olson:

We have completed the scope of Geotechnical Engineering services for the referenced project in general accordance with the Task Order dated April 8, 2026. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations pavement and floor slab for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon

Abdelhady Deif, E.I.T.
Field Engineer

Paul J. Koszarek, P.E., C.S.T.
Senior Principal

Table of Contents

Introduction **1**
Project Description **1**
Site Conditions **3**
Geotechnical Characterization **4**
Subsurface Profile 4
Subsurface Water Conditions 5
Geotechnical Overview **6**
Earthwork **7**
Demolition 7
Site Preparation 7
Fill Material Types 8
Fill Placement and Compaction Requirements 9
Utility Trench Backfill 10
Grading and Drainage 11
Earthwork Construction Considerations 11
Construction Observation and Testing 12
Construction Observation and Testing 12
Shallow Foundations **12**
Design Parameters – Compressive Loads 13
Foundation Construction Considerations 14
Floor Slabs **15**
Floor Slab Design Parameters 15
Floor Slab Construction Considerations 16
Seismic Considerations **17**
Frost Considerations **17**
Pavements **18**
General Pavement Comments 18
Pavement Section Thicknesses 18
Pavement Drainage 20
Pavement Maintenance 21
Stormwater Management **21**
General Comments **22**

Attachments

Exploration and Testing Procedures
Site Location and Exploration Plans
Exploration and Laboratory Results
Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services for the construction of a new Apartments Complex in Watertown, Wisconsin. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Demolition considerations
- Foundation design and construction
- Floor slab design and construction
- Seismic considerations per IBC
- Frost considerations
- Design and construction of pavements
- Design and construction of stormwater management

The geotechnical engineering Scope of Services for this project included the advancement of test borings, laboratory testing, engineering analysis, and preparation of this report.

Drawings showing the site and boring locations are shown on the **Site Location** and **Exploration Plan**, respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in the **Exploration Results** section.

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	An email request for proposal was received from Nick Olson, dated February 17, 2026. The request included a preliminary site plan showing the proposed building and driveway locations. A follow-up phone call was conducted on February 25, 2026. Updated site plan with boring locations was provided on March 2, 2026.
Project Description	Based on the site plan the project will include the construction of 24 buildings. Building height information indicates that the structures will be two- or three-story above grade. Basements are not planned. Additional site work will include the construction of two stormwater ponds along the east side of the site.
Finished Floor Elevation (FFE)	Not provided, but we anticipate that the finished floor elevations of the building will be within 2 feet of existing grade.
Maximum Loads	We were not provided the maximum column, wall, and slab loads. We will use the following assumed loads in estimating settlement based on our experience with similar projects. ▪ Columns: 75 to 150 kips ▪ Walls: 2 to 6 kips per linear foot (klf) Slabs: 125 pounds per square foot (psf)
Grading/Slopes	Not provided but anticipated to be on the order of approximately 2 feet of cut and/or fill to be required to develop final grades, excluding remedial grading requirements and excavations for stormwater ponds.
Below-Grade Structures	None anticipated
Free-Standing Retaining Walls	None anticipated

Item	Description
Pavements	Paved site roads, driveways and parking lots will be constructed on the parcel. A preferred pavement surfacing has not been identified to us as part of the preliminary information. Asphalt surfacing is common in the area for projects of this nature and is the assumed preference. Unless information is provided prior to the report, we assume that the traffic classification will consist of: ■ Class I: Parking stalls for autos and pickup trucks ■ Class II: Traffic consisting of home delivery trucks, trash pickup The pavement design period is 20 years.
Building Code	2021 IBC.

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading limits, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at 1911 Gateway Drive in Watertown, Wisconsin. Latitude/Longitude (approximate) 43.1617, -88.7273 See **Site Location**
Existing Improvements	The site is mostly undeveloped consisting of a farm field, with an existing structure located along the west side that is planned to be demolished for this project.
Existing Topography	Based on grading plan provided, the site elevations vary from 819 feet to 841 feet. The site gently slopes downward towards the northeast direction.
Current Ground Cover	Grass, trees and other vegetation

Geotechnical Characterization

The following table describes the locations where the borings were performed and the termination depths:

Number of Borings	Approximate Boring Depth [1]	Location
10 (B-1 through B-10)	(13.3-20)[2]	Buildings Area
3 (SW-1 to SW-3)	(11-15)[2]	Stormwater Pond Areas

1. Feet below existing ground surface.
2. Some borings encountered refusals on unknown material (bedrock or cobbles/boulders) at depths shallower than the planned boring depth.

Subsurface Profile

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting, and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** attachment of this report.

Model Layer	Layer Name	General Description
1	**Topsoil**	12 to 30 inches thick.
2	**Native Cohesive Soil**	Tan and gray lean clay with traces of sand and gravel was encountered. The lean clay was soft to hard in consistency with obtained hand penetrometer values ranging from 1.00 to over 4.5 tons per square foot (tsf). The clay exhibited increase in strength with depth. Moisture contents ranged from 8% to 26%.
3	**Native Non-Cohesive Soils**	Silt, clayey sand, and silty sand were encountered in a loose to very dense condition, with N-values ranging from 4 to 62 bpf, including refusal at 50 blows for 0.5 inches of penetration. Moisture contents ranged from about 7% to 13%.

Auger and split spoon refusals varied from 11.0 feet to 18.0 feet below ground surface. The refusal materials are not known because rock coring or test pits were not

performed. The following table lists the borings where auger refusal was observed and the corresponding depths and elevation of refusal:

Boring Number	Depth below Ground Surface where Refusal was Observed (feet)	Refusal Elevation (feet)
B-1	13.7	807.4
B-2	16.8	804.7
B-4	13.3	813.8
B-5	16	809.8
B-7	18	814.0
SW-1	11	807.9
SW-2	14.3	810.8

Based on the State of Wisconsin Depth to bedrock maps, the depth to bedrock in the vicinity of this site is 20 to 43 feet. Therefore, it is possible that the auger refusals represent competent bedrock; however, rock cores were not completed as part of our scope so this could not be verified.

The geotechnical characterization forms the basis of our geotechnical evaluation of site preparation, foundation options and pavement options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely.

Conditions encountered at each boring location are indicated on the individual boring logs shown in the **Exploration Results** section and are attached to this report. Stratification boundaries on the boring logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

Subsurface Water Conditions

The boreholes were observed during drilling and after completion for the presence and level of groundwater. Free water was observed at depths ranging from 5.0 to 13.0 feet below existing ground surface during drilling, and from 2.5 to 14.5 feet below existing ground surface at completion of drilling operations, or during the short period after removal of the augers and before backfilling.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of

groundwater level fluctuations should be considered when developing the design and construction plans for the project

Geotechnical Overview

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test borings, provided that the recommendations provided in this report are implemented in the design and construction phases of this project.

The main concern on this site would be the observed presence of groundwater within 5 feet of the current ground surface. We did not observe water at this level in all of our borings; however, it would appear that the water was observed to be close to the ground surface in the lower elevations of the site (B-1, B-2, SW-1, SW-2 and SW-3). In these areas, dewatering will likely be required in order to lower the groundwater levels to at least 2 feet below the lowest planned elevation of excavation. In the pond areas, dewatering will be required to lower the levels to 2 feet below the bottom of liner elevation and then remain in place until the liners are constructed and pond is filled to avoid the liner from failing due to uneven hydrostatic pressures.

If finished floor elevations are lowered to elevations that are within 2 feet of the observed water levels, then underslab drainage systems may be required. It is recommended to attempt to raise grade in the areas were water levels were observed to be within 5 feet of existing grade to prevent excessive dewatering and hydrostatic pressure mitigation.

The **Shallow Foundations** section addresses foundation support of structures. Structures may be supported on shallow foundations bearing on suitable native soils or newly compacted engineered fill. The shallow foundations may be proportioned using a net allowable bearing pressure of 2,500 psf, assuming finished floor elevations will be within 2 feet of existing grade. We do not recommend that the very loose sand or medium stiff clay soils layer be used for support of the new foundations. Overexcavation and replacement with compacted construction fill or lean concrete backfill may be considered.

If near surface soils are observed to be unstable during construction, they should be moisture conditioned and recompacted. Terracon should be retained during construction to discuss stabilization if unstable conditions are encountered. See **Subgrade Stabilization** for further recommendations.

Based on subsurface conditions encountered at the boring locations, it is anticipated that approximately 12 to 30 inches of topsoil will need to be removed from the site. The near-surface clay soils observed in the borings exhibited elevated moisture contents,

typically near or exceeding 20 percent. As a result, these soils are expected to be unstable in their current condition.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration Results**), engineering analyses, and our current understanding of the proposed project. The **General Comments** section provides an understanding of the report limitations.

Earthwork

The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations, pavements, floor slabs, and utility trenches.

Demolition

It is anticipated that the existing building on the west side of the site will be demolished in advance of earthwork activities. Removal of any foundations, floor slabs, and utilities should be conducted. The sidewalls of the former basement should be sloped back at a minimum 1H:1V slope to allow for proper benching in of the sidewalls with new structural fill.

Site Preparation

Prior to placing structural fill, topsoil, vegetation, and other unsuitable or soft material for an area extending at least 10 feet beyond the edges of the proposed structures' footprint and pavements should be removed. Following site stripping, and prior to placing new structural fill, the exposed soils should be observed and tested by Terracon. A Terracon representative should observe proof compaction of the exposed soils. For granular soils, proofcompaction can be accomplished using a vibratory steel drum roller with a minimum drum weight of 10 tons.

For clay soils, a full loaded dump truck weighing about 25 tons should be used for a proofroll. The proofcompaction/proofrolling should be performed under the direction of the Geotechnical Engineer. Areas that display excessive deflection (pumping) or rutting, more than 1", during proofcompaction or proofroll operations should be improved by scarification and recompaction or undercut and replacement with new structural fill.

After an acceptable subgrade condition is achieved, the placement and compaction of new fills may begin, as appropriate. The placement and compaction of all base course and fill soils should be monitored by a representative of the geotechnical engineer. Fill

and base course placement should be done in accordance with the State of Wisconsin's Standard Specifications for Highway and Structure Construction.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within 10 feet of structures, pavements or constructed slopes. General fill is material used to achieve grade outside of these areas.

Reuse of On-Site Soil: Excavated on-site soil may be selectively reused as structural of general fill. The onsite soils are cohesive and will be sensitive to moisture conditions (particularly during seasonally wet periods) and may not be suitable for reuse when above optimum moisture content.

Material property requirements for on-site soil for use as general fill and structural fill are noted in the table below:

Property	General Fill	Structural Fill
Composition	Free of deleterious material	Free of deleterious material
Maximum particle size	6 inches (or 2/3 of the lift thickness)	3 inches
Fines content	Not limited	Not limited
Plasticity	Not limited	Maximum liquid limit of 45 with a plasticity index of 20 or less.
GeoModel Layer Expected to be Suitable[1]	2, 3	2, 3

1. Based on subsurface exploration. Actual material suitability should be determined in the field at time of construction.

Imported Fill Materials: Imported fill materials should meet the following material property requirements. Regardless of its source, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade.

Soil Type [1, 2]	USCS Classification	Acceptable Locations for Placement
Cohesive	CL [3], CL/ML [3] (LL ≤ 45 and PI ≤ 20)	Not native to the site, not recommended to be imported as structural fill

Soil Type [1, 2]	USCS Classification	Acceptable Locations for Placement
Granular	GW, GP, GM, GC SW, SP, SM, SC 5% to 15% passing #200 sieve	Mass grading and backfill for utilities and foundations. Can also be used below/adjacent to floor slabs and pavement
Granular	Crushed limestone meeting WisDOT Section 305 for 1¼ dense graded base	Undercut areas below foundations. Aggregate base below slabs and pavements. Can also be used for utility and structural backfill

1. Structural fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to Terracon for evaluation prior to use on this site.
2. Any organic materials, rock fragments larger than 3 inches, and other unsuitable materials should be removed prior to use as structural fill.
3. Highly susceptible to frost; unstable when wet, are commonly used for pavement support with the knowledge that additional maintenance and/or shorter pavement life are likely.

Fill Placement and Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Description
Maximum Fill Lift Thickness	■ 9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used ■ 4 inches in loose thickness when hand-guided equipment (i.e., a jumping jack or plate compactor) is used
Minimum Compaction Requirements [1, 2, 3]	■ Structural Fills: 95% of the maximum dry density as obtained by the modified Proctor (ASTM D1557) ■ General Fills: 90% of the maximum dry density as obtained by the modified Proctor (ASTM D1557)
Moisture Content Range [1]	■ within 2% below to 3% above the modified Proctor optimum moisture content at the time of placement and compaction ■ granular materials should be compacted within workable moisture levels

Item	Description

1. We recommend that structural fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.
2. If the granular material is coarse sand, crushed limestone, or gravel, is of a uniform size, or has a low fines content, compaction should be observed to ensure that each lift is placed in the recommended thickness and compacted using proper equipment. The clean granular soils should be compacted to at least 65% of relative density until they are not observed to yield.
3. Specifically, moisture levels should be maintained to achieved compaction without bulking during placement or pumping when proofrolled.

Utility Trench Backfill

Any soft or unsuitable materials encountered at the bottom of utility trench excavations should be removed and replaced with structural fill or bedding material in accordance with the specifications for the utility be supported. This recommendation is particularly applicable to utility work requiring grade control and/or in areas where subsequent grade raising could cause settlement in the subgrade supporting the utility. Trench excavation should not be conducted below a downward 1.5 horizontal:1 vertical projection from existing foundations without engineering review of shoring requirements and geotechnical observation during construction.

On-site materials are considered suitable for backfill of utility and pipe trenches from 1 foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. Where trenches are placed beneath slabs or footings, the backfill should satisfy the gradation and expansion index requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

For low permeability subgrades, utility trenches are a common source of water infiltration and migration. Utility trenches penetrating beneath the building should be effectively sealed to restrict water intrusion and flow through the trenches, which could migrate below the building. The trench should provide an effective trench plug that extends at least 5 feet from the face of the building exterior. The plug material should consist of cementitious flowable fill or low permeability clay. The trench plug material should be placed to surround the utility line. If used, the clay trench plug material

should be placed and compacted to comply with the water content and compaction recommendations for structural fill stated previously in this report.

Grading and Drainage

All grades must provide effective drainage away from the building during and after construction and should be maintained throughout the life of the structure. Water retained next to the building can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge onto splash blocks at a distance of at least 10 feet from the building.

Exposed ground should be sloped and maintained at a minimum 5% away from the building for at least 10 feet beyond the perimeter of the building. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping have been completed, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically inspected and adjusted, as necessary, as part of the structure's maintenance program. Where paving or flatwork abuts the structure, a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Earthwork Construction Considerations

Terracon should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation, proofrolling, placement and compaction of controlled compacted fills, backfilling of excavations into the completed subgrade, and just prior to construction of building floor slabs.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, as well as other applicable codes, and in accordance with any applicable local, state, and federal safety regulations. The contractor should be aware that slope height, slope inclination, and excavation depth should in no instance exceed those specified by these safety regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should be contacted to discuss mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

Construction Observation and Testing

The earthwork efforts should be observed by the Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation, topsoil, and pavements), evaluation and remediation of existing fill materials, as well as proofrolling and mitigation of unsuitable areas delineated by the proofroll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the structures areas and 5,000 square feet in pavement areas. Where not specified by local ordinance, one density and water content test should be performed for every 100 linear feet of compacted utility trench backfill and a minimum of one test performed for every 12 vertical inches of compacted backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

Shallow Foundations

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for newly constructed shallow foundations. We do not recommend that the existing fill soils be used for support of foundations.

Design Parameters – Compressive Loads

Item	Description
Maximum Net Allowable Bearing pressure [1, 2]	2,500 psf
Required Bearing Stratum [3]	Native clay soils with unconfined strength ≥ 1.25 tsf, or structural fill or lean concrete extending to suitable native soils, sandy soils with a minimum SPT N value of 8 blows per foot or structural fill or lean concrete extending to suitable native soils.
Minimum Foundation Dimensions	Columns: 30 inches Strip Footings: 18 inches
Minimum Embedment below Finished Grade [4]	Exterior footings for unheated buildings: 60 inches Exterior footings for heated buildings: 48 inches Interior footings in heated buildings: 18 inches *If construction occurs during winter months, the depth of interior footings should be at 48 inches in order to minimize the need for winter protection of the foundation bearing soils. The bearing soils will still require protection until they are poured and backfilled.
Estimated Total Settlement from Structural Loads [2]	Less than about 1 inch
Estimated Differential Settlement from Structural Loads[5]	Approximately ½ inch

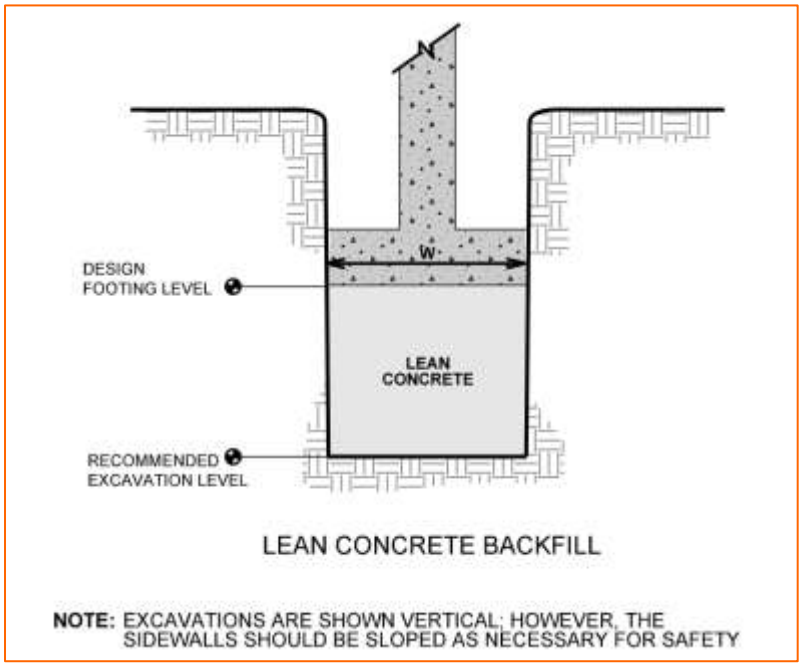
1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. These bearing pressures can be increased by 1/3 for transient loads unless those loads have been factored to account for transient conditions. Values assume that exterior grades are no steeper than 20% within 10 feet of structure.
2. Values provided are for maximum loads noted in **Project Description**.
3. Unsuitable or soft soils should be over-excavated and replaced per the recommendations presented in the **Earthwork**.
4. Embedment necessary to minimize the effects of frost and/or seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
5. Differential settlements are measured over a span of 50 feet.

Foundation Construction Considerations

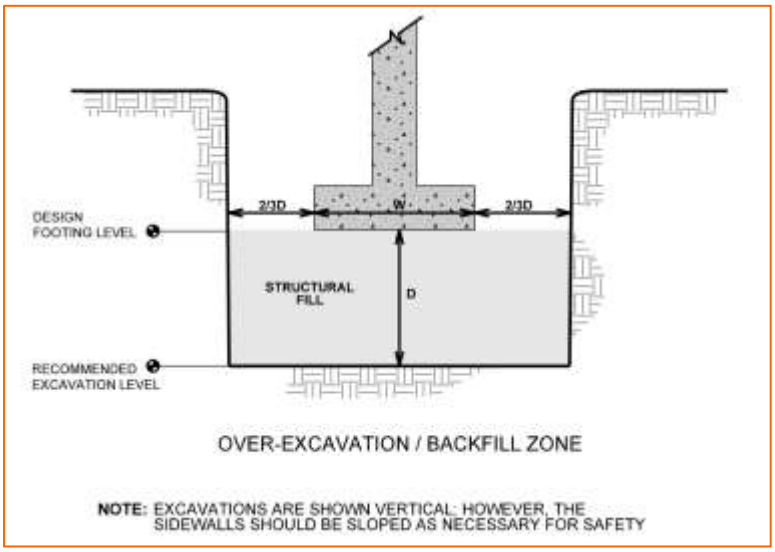
As noted in **Earthwork**, the foundation excavations should be evaluated under the direction of the Geotechnical Engineer. Based on the conditions observed in the borings, foundation may bear on the native sandy soils at the site. Due to the granular nature of the soils, they will become loosened through the excavation process. Prior to observation and testing of the bearing soils, they should be redensified using a ho-pac or diesel plate compactor.

As noted in **Earthwork**, the foundation excavations should be evaluated under the direction of the Geotechnical Engineer. Due to the granular nature of the soils, they will become loosened through the excavation process. Prior to observation and testing of the bearing soils, they should be redensified using a ho-pac or diesel plate compactor. If unsuitable material is encountered at the planned bearing level, the material should be overexcavated and replaced. Illustrations of overexcavation and backfill can be found below. All foundation excavations should be free of water and soft/loose soil, prior to placing concrete/structural fill should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

If unsuitable bearing soils are encountered at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level, or on lean concrete backfill placed in the excavations. This is illustrated on the sketch below.



Over-excavation for structural fill placement below footings should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with structural fill placed, as recommended in the **Earthwork** section.



Floor Slabs

Design parameters for floor slabs assume the requirements for **Earthwork** have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the aggregate base beneath the floor slab.

Floor Slab Design Parameters

Item	Description
Floor Slab Support [1]	Suitable existing fill that has prepared in accordance with the **Earthwork** section and tested/approved by Terracon or newly placed structural fill
Granular Leveling Course	A minimum 4 inches of well-graded crushed stone meeting WisDOT Section 310 for an open graded base course material compacted to non-yielding condition
Modulus of Subgrade Reaction	125 pounds per square inch per inch (psi/in) for a soil subgrade prepared as recommended in this report Note: a value of 125 pci can be used at the top of the compacted granular leveling course

Item	Description
1.	Floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, when the project includes humidity-controlled areas, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut contraction joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations, refer to the ACI Design Manual. Joints or cracks should be sealed with a waterproof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing or other means.

Floor Slab Construction Considerations

Finished subgrade, within and for at least 10 feet beyond the floor slab, should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed, and structural fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

Terracon should review the condition of the floor slab subgrades immediately prior to placement of the granular leveling course and construction of the slabs. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas containing backfilled trenches. Areas where unsuitable conditions are located should be repaired by removing and replacing the affected material with properly

Seismic Considerations

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7-16 and the International Building Code (IBC). During this geotechnical field investigation, soil borings were completed at the site to a maximum depth of about 20 feet. The soil conditions below this depth are anticipated to be similar to those encountered in the upper 20 feet based on our experience with the geology in the vicinity of the project site. Based on the soil conditions encountered and our experience with the geology in the vicinity of the project site, **Seismic Site Classification D** can be used for the design of the proposed structures. Additional deeper borings and/or a site-specific seismic evaluation using geophysical methods would be required to further define the seismic site class.

Frost Considerations

The soils on this site are frost susceptible, and water present or migrating beneath structures in non-climate-controlled areas can affect the performance of the slabs on-grade, and pavements. Exterior slabs should be anticipated to heave during winter months. If frost action needs to be eliminated in critical areas, we recommend the use of non-frost susceptible (NFS) fill or structural slabs (for instance, structural stoops in front of building doors). Placement of NFS material in large areas may not be feasible; however, the following recommendations are provided to help reduce potential frost heave:

- Provide surface drainage away from the building and slabs.
- Install drains around the perimeter of the building, below exterior slabs and pavements, and connect them to the storm drainage system.
- Provide underdrains within NFS backfill to prevent the accumulation of water from surface infiltration
- Grade subgrades, so groundwater potentially perched in overlying more permeable subgrades and/or engineered-fills, slope toward a site drainage system.
- Place NFS fill as backfill beneath slabs and pavements critical to the project.
- Place a 3 horizontal to 1 vertical (3H:1V) transition zone between NFS fill and other soils.
- Place NFS materials in critical sidewalk areas.

As an alternative to extending NFS fill to the full frost depth, consideration can be made to placing extruded polystyrene or cellular concrete under a buffer of at least 2 feet of

NFS material. Footings for heated structures should be 48 inches below perimeter grade and 60 inches below perimeter grade for unheated structures.

Pavements

General Pavement Comments

Estimates of minimum pavement thicknesses are provided for the traffic conditions. Site preparation is a critical aspect of pavement performance. The minimum pavement thicknesses are based on the subgrade being prepared as recommended in the **Earthwork** section.

There is often a time lapse between the end of grading operations and the commencement of paving. Subgrades prepared early in the construction process can become disturbed by construction traffic. Non-uniform subgrades often result in poor pavement performance and local failures relatively soon after pavements are constructed. Depending on the paving equipment used by the contractor, measures may be required to improve subgrade strength to greater depths for support of heavily loaded trucks. Improvements should be made as recommended in **Earthwork**.

Before paving, and were recommended by Terracon, pavement subgrades should be proofrolled in the presence of a Terracon representative. Proofrolling can be accomplished using a loaded tandem-axle dump truck with a gross weight of at least 25 tons, or similarly loaded equipment.

Designs for new pavement sections for this project have been based on the procedures outlined in the 1993 Guideline for Design of Pavement Structures by the American Association of State Highway and Transportation Officials (AASHTO-1993). Pavement design methods are intended to provide structural sections with adequate thickness over a particular subgrade such that wheel loads are reduced to a level the subgrade can support.

Pavement Section Thicknesses

All pavements should be designed for the types and volumes of traffic, subgrade, and drainage conditions that are anticipated. Terracon was not provided with anticipated traffic loading information; therefore, the traffic usage and loading should be provided to Terracon so that the thickness recommendations provided below can be verified prior to using them for final design.

The minimum thicknesses provided are based on 18-kip Equivalent Single Axle Load Applications ($ESAL_{18}$) over a 20-year design life, which are provided in the table below.

Traffic patterns and anticipated loading conditions are as follows:

Design Traffic		
Pavement Type	**Location**	**Flexible Design ESAL's Values**
Standard Duty	Passenger car parking areas	30,000
Heavy Duty	Passenger car drive areas	60,000

The following pavement design parameters were used in our evaluation of estimating minimum pavement sections for the project.

Pavement Design Input		
Input Parameter	**Asphalt**	**Concrete**
Reliability	85%	85%
Initial Serviceability	4.2	4.5
Terminal Serviceability	2.0	2.0
Standard Deviation	0.45	0.35
Load Transfer	---	3.6
Drainage	1.0	1.0

Based upon the estimated design parameters listed above, we have developed recommended minimum pavement sections for Asphaltic Concrete (AC) and Portland Cement Concrete (PCC) pavements, where the subgrade appears firm under proofrolling at the time of construction. The recommended minimum pavement sections are provided in the following table. Greater pavement and/or base course thicknesses may be required for greater expected traffic loads and volumes, or if poorer subgrade conditions are encountered.

The following table provides our estimated minimum thickness of AC pavements.

Asphaltic Concrete (AC) Design

Layer	Thickness (inches)	
	Standard Duty Pavement	**Heavy Duty Pavement**
AC Surface [1]	1.5	2
AC Binder [2]	2	2

Asphaltic Concrete (AC) Design

Layer	Thickness (inches)	
	Standard Duty Pavement	Heavy Duty Pavement
Aggregate Base [3]	8	9

1. Surface course, WisDOT Specifications for No. 5 (9.5 mm) Hot Mix Asphalt (HMA)
2. Binder course, WisDOT Specifications for No. 4 (12.5 mm) HMA
3. The base course aggregate beneath the new pavement should conform to the 1-1/4-inch Dense Graded Base listed in Section 305 of the WisDOT Standard Specifications (current edition)

The following table provides our estimated minimum thickness of PCC pavements.

Portland Cement Concrete (PCC) Design

Layer	Thickness (inches)	Thickness (inches)	
	Standard Duty Pavement	Heavy Duty Pavement [3]	Dumpster Pad [3]
PCC [1]	5	6	7
Aggregate Base [2]	6	6	6

1. Portland cement concrete pavements are recommended for roadways and areas subjected to repeated truck traffic, truck turning areas, and trash container pads. Trash container pads should be large enough to support the container and the tipping axle of the trash collection vehicle.
2. The base course aggregate beneath the new pavement should conform to the 1-1/4-inch Dense Graded Base listed in Section 305 of the WisDOT Standard Specifications (current edition).
3. PCC should be considered for areas of anticipated heavy traffic, fire trucks, delivery trucks, or concentrated loads (e.g., dumpster pads), and areas with repeated turning or maneuvering of heavy vehicles.

Pavement Drainage

The pavement sections provided above are based on no significant increase in the subgrade moisture contents. Paved areas should be sloped to provide rapid drainage of surface water and to drain water away from the pavement edges. Water should not be allowed to accumulate on or adjacent to the pavement, since this could saturate and soften the subgrade soils and subsequently accelerate pavement deterioration. Periodic maintenance of the pavements will be required. Cracks should be sealed, and areas exhibiting distress should be repaired promptly to help prevent further deterioration. Even with periodic maintenance, some movement and related cracking may still occur, and repairs may be required.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic upkeep should be anticipated. Preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Pavement care consists of both localized (e.g., crack and joint sealing and patching) and global maintenance (e.g., surface sealing). Additional engineering consultation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
- Place compacted, low permeability backfill against the exterior side of curb and gutter.

Stormwater Management

It is our understanding that ponds is planned along the east portion of the site. The bottom of the pond is unknown to us. The seasonal high groundwater level for the area of the pond where the borings were conducted was observed at elevation 813 to 814 feet.

Stormwater management facilities are governed by the Wisconsin Department of Natural Resources Conservation Practice Standard 1002 (Site Evaluation for Storm Water Infiltration). Based on the textural classification consisting of a design infiltration rate of 0.04 to 0.5 inches per hour (in/hr) were assigned to the soils observed within the borings per Table 2 of WDNR Standard 1002.

Based on the soils and the observation of the seasonal high groundwater level at 813 to 814, there isn't at least 5 feet of infiltratable soils above the SHGWL and thus this site would be exempt from infiltration.

Wet detention ponds should incorporate a liner system in accordance with the WDNR Technical Standard 1001. Liner systems constructed of soil should have a minimum thickness of two feet. The level of liner system (A, B, or C) is dependent on the potential for groundwater pollution and should be selected by the designer and owner based on the operational characteristics of the facility. The on-site lean clays should be suitable for use as a clay liner. Soil fill materials used for liner construction should be processed placed in horizontal lifts of 9 inches or less in loose thickness. Each lift should be compacted to at least 95% of the maximum dry density as obtained by the standard Proctor (ASTM D698) or 92% of the maximum dry density as obtained by the Modified Proctor (ASTM D1557), or the minimum degree required to achieve the specified maximum permeability recommended below. The liner material should be uniformly moisture conditioned at the time of compaction within 0 to +4% of the optimum moisture content as determined by the standard Proctor test. The pond side slopes should be no steeper than 3H:1V.

The completed earthen liner should be protected from desiccation and cracking prior to filling the pond. If the liner becomes dry, desiccated, or cracked prior to filling or during the life of the pond, the clay liner should be scarified, moisture conditioned, and recompacted. Additionally, the normal pool elevation within the pond should be maintained at or above the seasonal high groundwater level to avoid the possibility of the clay liner failing due to hydrostatic pressures.

The material characteristics and permeability criteria for the liner system should be selected in accordance with Appendix D of Technical Standard 1001 based on the liner level which is required for the facility. We recommend that onsite soils or imported materials are tested to confirm they will meet the requirements defined in the Technical Standard.

Due to the presence of water close the ground surface in the pond borings, dewatering may be required in order to lower the groundwater table to 2 feet below the lowest planned excavation level and allow for proper compaction of the liner materials.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the

Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly affect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Exploration and Testing Procedures

Field Exploration

Number of Borings	Approximate Boring Depth [1]	Location
10 (B-1 through B-10)	(13.3-20)[2]	Buildings Area
3 (SW-1 to SW-3)	(11-15)[2]	Stormwater Pond Areas

1. Feet below existing ground surface.
2. Some borings encountered refusals on unknown material at depths shallower than planned.

Boring Layout and Elevations: Terracon personnel laid out the borings based on the planned structure locations and the locations of existing utilities which are present at the site. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±20 feet) and using existing site features.

Subsurface Exploration Procedures: The borings were advanced their full depth using continuous flight hollow stem augers. Four samples were obtained in the upper 10 feet of each boring, and at 5-foot intervals thereafter to termination depths. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. Soil samples in stormwater area were collected at 2.5-foot intervals to the termination depth The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. The samples were placed in appropriate containers, taken to our laboratory for testing, and classified by the project engineer. In addition, we observed and recorded subsurface water levels during drilling and after boring completion. The borings were backfilled with bentonite chips and auger cuttings after drilling.

Our exploration team prepared field boring logs as part of standard drilling operations. These logs include sampling depths, penetration distances, and other relevant sampling information, visual classifications of materials encountered during drilling, and our interpretation of subsurface conditions between samples. Report logs were prepared from the field logs and incorporated the project engineer's interpretation of the field logs and include modifications based on observations and laboratory tests of the samples in our laboratory.

Laboratory Testing

The samples were tested in the laboratory to measure their natural water content which are provided on the boring logs in **Exploration Results**. Laboratory testing to determine the organic content of samples from borings B-5 and SW-1 was also performed. The samples were also classified in the laboratory based on visual observation, texture, and plasticity. The soil descriptions presented on the boring logs are in accordance with the General Notes and Unified Soil Classification System (USCS) included in **Supporting Information**. The estimated USCS group symbols for native soil samples are shown on the boring logs, and a brief description of the USCS is included in **Supporting Information**. The soils in the pond area were classified using the USDA Classification System.

Attachment

Site Location and Exploration Plans

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

Site Location

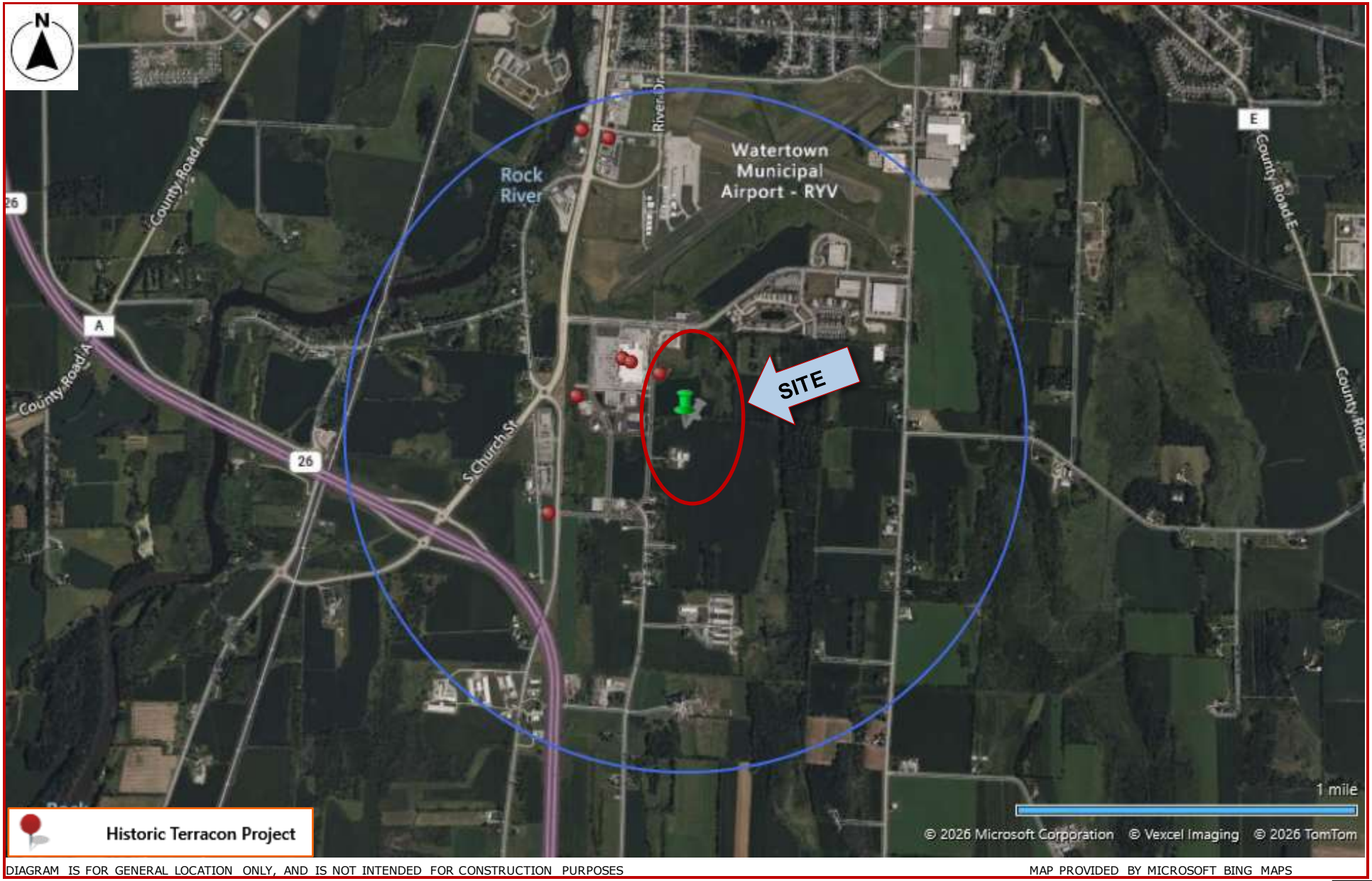


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Plan

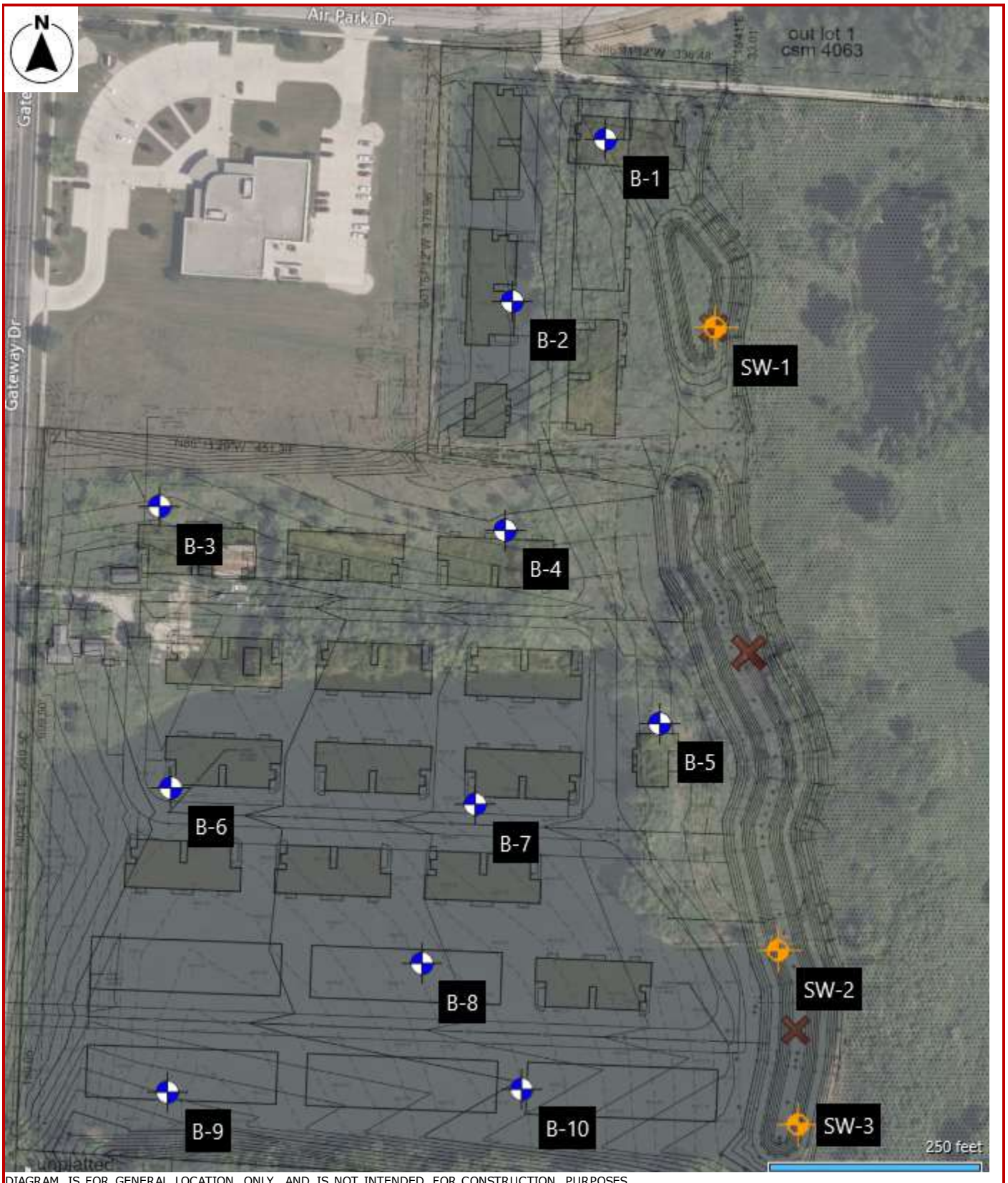


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Exploration and Laboratory Results

Contents:

Untitled Fence Diagram
Boring Logs.
Stormwater Forms

Note: All attachments are one page unless noted above.

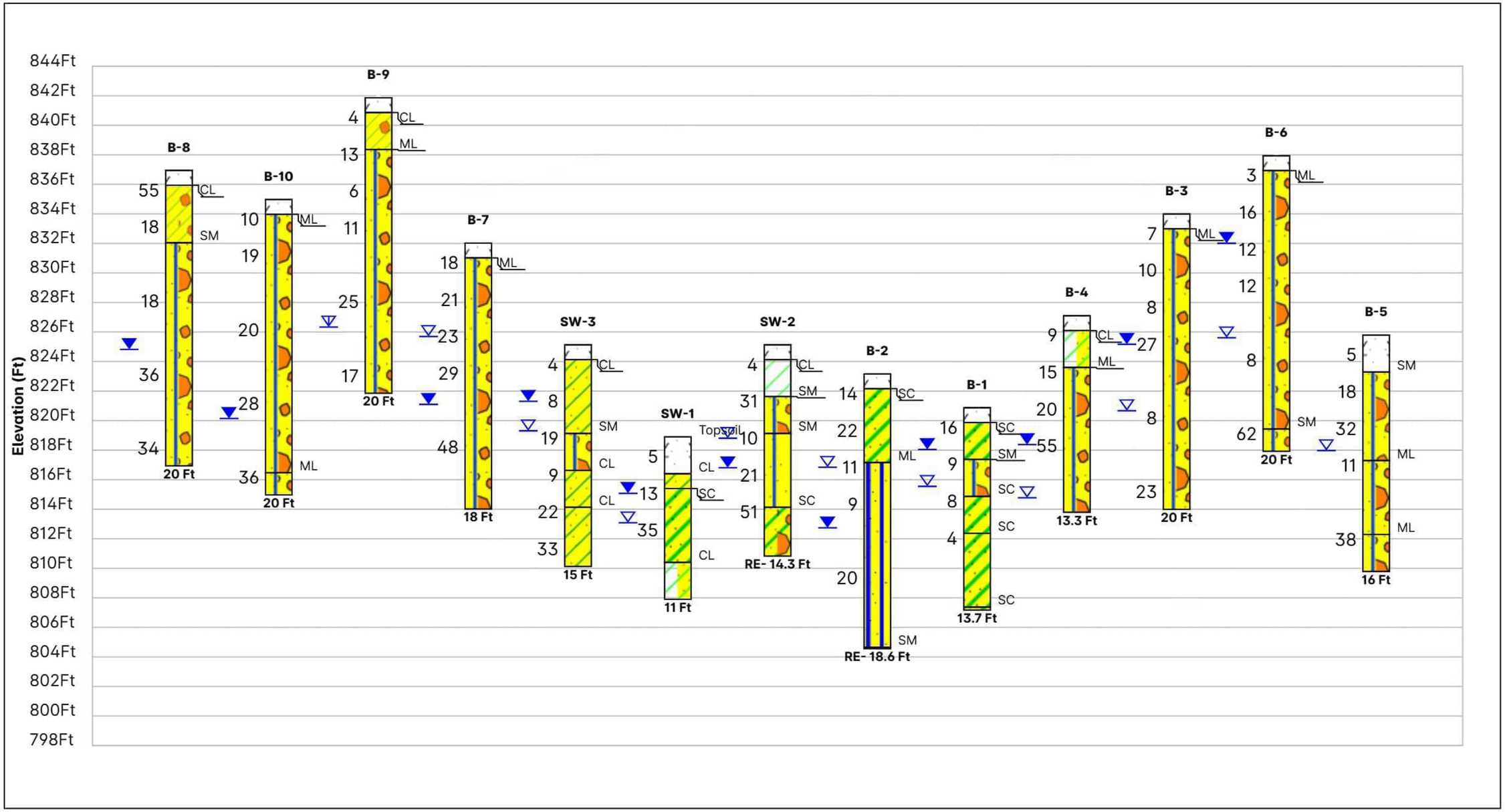
Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No: 58265062

Subsurface Profile

Terracon
4900 S Pennsylvania Ave, Ste 100
Cudahy, WI 53110-1347

◄ X

X ►



Notes	Water Level Observations	Explanation
See Exploration Plan for orientation of soil profile. See General Notes in Supporting Information for symbols and soil classifications. Soils profile provided for illustration purposes only. Soils between borings may differ AR - Auger Refusal BT - Boring Termination	Water Level Reading at time of drilling. Water Level Reading after drilling.	B-01 — Borehole Number Sampling (See General Notes) — Borehole Lithology AR / BT — Borehole Termination Type

Material Legend

	Sandy Lean Clay with Gravel	Silty Sand with Gravel	Sandy Silt with Gravel	Sandy Lean Clay	Topsoil	
Clayey Sand	Lean Clay with Sand	Lean Clay	Silty Sand	Clayey Sand with Gravel	Sandy Silt	

CPT Soil Classification Graphic Color Code

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1632° Longitude: -88.7263°

BORING LOG NO. B-1

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
821(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Water Content (%)
1			**TOPSOIL,** (12" thick)		821.0					
		1.0			820.0					
3			**CLAYEY SAND (SC),** trace gravel, fine grained sand, gray mottled brown, moist, medium dense, rust mottling				16	▼	2-7-9 N = 16	12
		3.5			817.5					
			SILTY SAND WITH GRAVEL (SM), fine to coarse grained sand, brown, moist, loose, possible cobble	5			1	▽	1-2-7 N = 9	-
		6.0			815.0					
			CLAYEY SAND (SC), trace gravel, fine grained sand, brown, wet, loose				14		6-5-3 N = 8	10
		8.5			812.5					
			CLAYEY SAND (SC), trace gravel, fine grained sand, gray, wet, loose	10			10		1-2-2 N = 4	9
		13.5			807.5					
			CLAYEY SAND WITH GRAVEL (SC), fine grained sand, tan, moist, very dense				0.5		50/2"	7
			Boring Auger Refusal at 13.7 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
Finishing Comments: Refusal due to possible bedrock or cobbles/boulders

Water Level Observations
▽ 5 Ft. While drilling
▼ 2.5 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/24/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1627° Longitude: -88.7268°

BORING LOG NO. B-2

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
823(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Water Content (%)
1		1.0	**TOPSOIL,** (12" thick)		823.0 822.0					
3		6.0	**CLAYEY SAND (SC),** trace gravel, fine grained sand, tan, moist, medium dense	5			18		2-4-10 N = 14	12
							5		14-13-9 N = 22	9
			SANDY SILT (ML), trace gravel, tan, wet, stiff to very stiff		817.0		18	▽	2-5-6 N = 11	10
				10			18	▼	8-5-4 N = 9	10
				15			1		6-9-11 N = 20	-
		18.5	**SILTY SAND WITH GRAVEL (SM),** light gray, wet, very dense, possible cobble		804.5		1		50/1.5"	
			Boring Refusal at 18.6 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
Finishing Comments: Refusal due to possible bedrock or cobbles/boulders

Water Level Observations
▽ 6 Ft. While drilling
▼ 10.1 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/23/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.162° Longitude: -88.7283°

BORING LOG NO. B-3

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
834(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Water Content (%)
1		1.0	**TOPSOIL,** (12" thick)		834.0 833.0					
3			**SANDY SILT WITH GRAVEL (ML),** tan, moist to wet, medium stiff to very stiff				18		2-2-5 N = 7	11
				5			18		4-4-6 N = 10	10
							18		2-2-6 N = 8	11
							1		36-17-10 N = 27	
				10						
							16		2-4-4 N = 8	12
				15						
							18		4-9-14 N = 23	9
			Boring Terminate at 20 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.

Water Level Observations
13 Ft. While drilling
8.5 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/23/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1619° Longitude: -88.7268°

BORING LOG NO. B-4

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
827(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Hand Penetrometer (tsf)	Water Content (%)
1			**TOPSOIL,** (12" thick)		827.0						
		1.0			826.0						
2			**SANDY LEAN CLAY (CL),** trace gravel, tan, stiff, trace roots				10		2-3-6 N = 9	1.0	11
		3.5			823.5						
3			**SANDY SILT WITH GRAVEL (ML),** tan, moist to wet, very stiff to hard, trace cobbles	5			16		10-8-7 N = 15		9
							14		15-10-10 N = 20		8
							3		11-23-32 N = 55		11
				10							
			Boring Auger Refusal at 13.3 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
Finishing Comments: Refusal due to possible bedrock or cobbles/boulders

Water Level Observations
12 Ft. While drilling
8.4 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/23/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1613° Longitude: -88.7261°

BORING LOG NO. B-5

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
826(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Water Content (%)	Organic Content (%)
1			**TOPSOIL,** (30" thick)		826.0						
		2.5			823.5		6		1-2-3 N = 5	36	7
3			**SILTY SAND WITH GRAVEL (SM),** fine, medium and coarse grained sand, brown, moist to wet, medium dense to dense	5			12		4-6-12 N = 18	11	
							12	▽	10-16-16 N = 32	7	
		8.5			817.5						
			SANDY SILT WITH GRAVEL (ML), tan, moist to wet, stiff	10			16		3-5-6 N = 11	9	
		13.5			812.5						
			SANDY SILT WITH GRAVEL (ML), gray, moist, very stiff, trace clay	15			18		14-16-22 N = 38	7	
			Boring Auger Refusal at 16 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
Finishing Comments: Refusal due to possible bedrock or cobbles/boulders

Water Level Observations
Groundwater not encountered upon completion
▽ 7.5 Ft. While drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/23/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1611° Longitude: -88.7283°

BORING LOG NO. B-6

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
838(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Water Content (%)
1			**TOPSOIL,** (12" thick)		838.0					
		1.0			837.0					
3			**SANDY SILT WITH GRAVEL (ML),** tan, moist to wet, soft to stiff, trace clay				18		1-1-2 N = 3	13
							6		5-8-8 N = 16	12
				5				▼		
							12		3-5-7 N = 12	10
							15		5-7-5 N = 12	8
				10				▽		
							22		1-2-6 N = 8	12
				15						
		18.5			819.5					
			SILTY SAND WITH GRAVEL (SM), fine grained sand, tan, moist to wet, very dense, possible cobbles and boulders				20		15-27-35 N = 62	9
			Boring Terminate at 20 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.

Water Level Observations
▽ 12 Ft. While drilling
▼ 5.6 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/22/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1611° Longitude: -88.7269°

BORING LOG NO. B-7

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
832(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Water Content (%)
1		1.0	**TOPSOIL,** (12" thick)		832.0 831.0					
3			**SANDY SILT WITH GRAVEL (ML),** tan, moist to wet, very stiff to hard				18		2-8-10 N = 18	8
				5			20		7-9-12 N = 21	9
								▽		
							18		3-5-18 N = 23	9
							20		7-14-15 N = 29	7
				10				▼		
							19		10-18-30 N = 48	8
				15						
			Boring Auger Refusal at 18 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
Finishing Comments: Refusal due to possible bedrock or cobbles/boulders

Water Level Observations
▽ 6 Ft. While drilling
▼ 10.6 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/23/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1605° Longitude: -88.7272°

BORING LOG NO. B-8

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
837(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Hand Penetrometer (tsf)	Water Content (%)
1			**TOPSOIL,** (12" thick)		837.0						
		1.0			836.0						
2			**SANDY LEAN CLAY WITH GRAVEL (CL),** dark brown to brown, hard, possible cobbles and boulders				10		4-20-35 N = 55	dist.	21
							6		7-10-8 N = 18		
		5.0			832.0						
3			**SILTY SAND WITH GRAVEL (SM),** tan, moist, medium dense to very dense, possible cobbles and boulders	5							
							6		6-50/2.5''		9
							18		5-8-10 N = 18		9
				10				▼			
							16		13-16-20 N = 36		10
				15							
							22		8-16-18 N = 34		8
			Boring Terminate at 20 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
General Comments: Auger refusal at 6.5-feet offset 5-feet west

Water Level Observations
Groundwater not encountered while drilling
▼ 11.8 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/22/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1601° Longitude: -88.7283°

BORING LOG NO. B-9

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
842(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Hand Penetrometer (tsf)	Water Content (%)
1			**TOPSOIL,** (12" thick)		842.0						
		1.0			841.0						
2			**SANDY LEAN CLAY WITH GRAVEL (CL),** tan, medium stiff, trace silt				18		1-2-2 N = 4	dist.	26
		3.5			838.5						
3			**SANDY SILT WITH GRAVEL (ML),** tan, moist to wet, medium stiff to very stiff	5			12		2-4-9 N = 13		11
							20		3-2-4 N = 6		10
				10			18		3-4-7 N = 11		12
				15			16	▽	6-10-15 N = 25		9
							10		5-7-10 N = 17		9
			Boring Terminate at 20 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.

Water Level Observations
Groundwater not encountered while drilling
▽ 15.2 Ft. After completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/22/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1601° Longitude: -88.7267°

BORING LOG NO. B-10

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
835(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Water Content (%)
1			**TOPSOIL,** (12" thick)		835.0					
		1.0			834.0					
3			**SANDY SILT WITH GRAVEL (ML),** tan, moist to wet, stiff to hard, possible cobbles and boulders				10		2-3-7 N = 10	11
				5			14		4-12-7 N = 19	8
							8		8-50/4''	8
							13		7-9-11 N = 20	8
				10						
							18	▼	5-10-18 N = 28	8
				15						
		18.5			816.5					
			SANDY SILT WITH GRAVEL (ML), gray, moist, hard				22		12-18-18 N = 36	7
			Boring Terminate at 20 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.

Water Level Observations
Groundwater not encountered while drilling
▼ 14.5 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/22/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1626° Longitude: -88.7259°

BORING LOG NO. SW-1

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
819(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Hand Penetrometer (tsf)	Water Content (%)	Organic Content (%)
1			**TOPSOIL,** (30" thick)		819.0							
		2.5			816.5		5		1-1-4 N = 5	dist.	27	3.2
3			**CLAYEY SAND (SC),** trace gravel, gray and rusty brown, moist, medium dense to very dense					▼				
							10		4-6-7 N = 13		9	
				5				▽				
							14		12-15-20 N = 35		7	
		8.5			810.5							
			CLAYEY SAND (SC), trace gravel, gray, wet, very dense, trace rock				8		4-50/5''		11	
				10			0		50/0.5''			
			Boring Auger Refusal at 11 Ft									

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
Finishing Comments: Refusal due to possible bedrock or cobbles/boulders

Water Level Observations
▽ 5.5 Ft. While drilling
▼ 3.5 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/24/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.1606° Longitude: -88.7256°

BORING LOG NO. SW-2

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
825(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Hand Penetrometer (tsf)	Water Content (%)
1			**TOPSOIL,** (12" thick)		825.0						
		1.0			824.0						
2			**LEAN CLAY (CL),** trace sand, trace gravel, rusty brown mottled gray, stiff				10		2-2-2 N = 4	1.5	20
		3.5			821.5						
3			**SILTY SAND WITH GRAVEL (SM),** trace clay, gray, moist, dense				18		9-16-15 N = 31		7
				5							
		6.0			819.0						
			SILTY SAND (SM), trace gravel, trace clay, brown with rust mottling, medium dense, very moist				18		3-4-6 N = 10		9
							18		5-8-13 N = 21		8
				10							
		11.0			814.0						
			CLAYEY SAND WITH GRAVEL (SC), brownish gray, moist, very dense				18		20-27-24 N = 51		7
							8		14-50/3''		6
			Boring Refusal at 14.3 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.
Finishing Comments: Refusal due to possible bedrock or cobbles/boulders

Water Level Observations
▽ 6 Ft. While drilling
▼ 8 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/23/2026

Watertown Apartments
1911 Gateway Drive, Watertown, WI, 53094-8727,USA
Terracon Project No. 58265062

Latitude: 43.16° Longitude: -88.7255°

BORING LOG NO. SW-3

4900 S Pennsylvania Ave,
Ste 100 Cudahy, WI 53110-1347

Surface Elevation:
825(Ft) +/-

Model Layer	Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Water Level Observations	Field Test Results	Hand Penetrometer (tsf)	Water Content (%)
1		1.0	**TOPSOIL,** (12" thick)		825.0 824.0						
2			**SANDY LEAN CLAY (CL),** trace gravel, rusty brown mottled gray, stiff				10		1-2-2 N = 4	dist.	22
							12	▼	3-2-6 N = 8	1.25	11
		6.0		5				▽			
3			**SILTY SAND WITH GRAVEL (SM),** brown, medium dense, very moist		819.0		8		6-12-7 N = 19		9
		8.5			816.5						
2			**SANDY LEAN CLAY (CL),** trace gravel, grayish brown, stiff				18		2-4-5 N = 9	1.0	10
		11.0		10	814.0						
			SANDY LEAN CLAY (CL), trace gravel, gray, hard				18		7-8-14 N = 22	4.5+	8
							18		7-9-24 N = 33	dist.	11
			Boring Terminate at 15 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation interpreted from the topographic plan.

Water Level Observations
▽ 5.5 Ft. While drilling
▼ 3.5 Ft. At completion of drilling

Abandonment Method
Boring backfilled with soil cuttings and bentonite chips upon completion.

Equipment
Subcontractor-7822DT
Geoprobe

Hammer Type
Automatic

Driller
Chris

Logged By
Madie

Start Date
04/23/2026

Wisconsin Department of Safety and Professional Services
Division of Industry Services
4822 Madison Yards Way
PO Box 7302
Madison, WI 53707

W
Email: dsps@wisconsin.gov

Program: Plumbing
Web: https://dsps.wi.gov/Pages/Programs/Plumbing

Soil and Site Evaluation – Stormwater Infiltration

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]

Attach a complete site plan on paper not less than 8 ½ x 11 inches in size. Plan must include, but is not limited to: vertical and horizontal reference point (BM); direction and percent of slope; scale or dimensions; north arrow; and BM referenced to nearest road.

PLEASE PRINT ALL INFORMATION

COUNTY: Jefferson County

PARCEL ID: 291-0815-1624-003

PROPERTY OWNER: 1911 WATERTOWN PROPCO LLC

PROPERTY OWNER'S MAILING ADDRESS: 220 N GREEN ST STE 610

CITY, STATE, ZIP CODE: CHICAGO, IL 60607

PHONE:

PROPERTY LOCATION

Govt. Lot ____, ____ ¼, ____ ¼, S ____, T ____N, R ____ W

Lot #, Block #, Subd. Name or CSM #: _____

Municipality: _____

☑ City ☐ Village ☐ Town

Nearest Road: Gateway Dr

Drainage area_____ ☐sq. ft. ☐acres

Test site suitable for (check all that apply):

☐Site not suitable ☐Bioretention

☐Reuse ☐Subsurface Dispersal System

☐Irrigation ☐Other _____

HYDRAULIC APPLICATION TEST METHOD

☐ Morphological Evaluation

☐ Double Ring Infiltrometer

☐ Other: (specify)

_____

SOIL MOISTURE

Date of soil borings: 04/23/2026

USDA-NRCS WETS VALUE:

☐ Dry = 1

☑ Normal = 2

☐ Wet = 3

SW-3 #OBS. ☐ Pit ☑ Boring Ground Surface Elevation 825 ft. Elevation of Limiting Factor 814 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	12			Topsoil						
2	72	10 YR 5/2	C2D 10 YR 5/6	SC	3 Vco Abk	Fi	Ab	5	55	0.04
3	102	10 YR 5/4	None	XGRSL	0 Sg	L	Ab	30	40	0.50
4	132	10 YR 5/3	None	GRSC	3 Vco Abk	Fr	Ab	15	60	0.04
5	180	10 YR 5/2	None	SC	3 Vco Abk	Fi	Ab	10	70	0.04

Comments:

SW-2 ____ #OBS. ☐ Pit ☑ Boring Ground Surface Elevation 825 ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	12			Topsoil						
2	42	10 YR 5/4	M2D 10 YR 5/1, C2D 10 YR 5/6	C	3 Vco Abk	Fi	Ab	5	90	0.07
3	72	10 YR 5/4	None	GSL	0 Sg	L	Ab	15	35	0.50
4	132	10 YR 5/4	F2D 7.5 YR 5/6	SCL	3 Vco Abk	Fr	Ab	8	50	0.11
5	172	10 YR 5/2	None	GSCL	3 Vco Abk	Fr	Ab	15	45	0.11

Comments:

SW-1 ____ #OBS. ☐ Pit ☑ Boring Ground Surface Elevation 819 ft. Elevation of Limiting Factor 813 ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.
1	12			Topsoil						
2	72	10 YR 6/2	C2D 10 YR 6/6	SC	3 Vco Abk	Fr	Ab	5	80	0.04
3	102	10 YR 5/3	None	SCL	3 Vco Abk	Fi	Ab	5	50	0.11
4	180	10 YR 5/6	C2D 5 YR 4/6	SC	3 Vco Abk	Fr	Ab	10	60	0.04

Comments:

____ #OBS. ☐ Pit ☐ Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.

Comments:

____ #OBS. ☐ Pit ☐ Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.

Comments:

____ #OBS. ☐ Pit ☐ Boring Ground Surface Elevation _____ ft. Elevation of Limiting Factor _____ ft.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines	Hydraulic App. Rate Inches/Hr.

Comments:

Overall Site Comments:

Paul J Koszarek, P.E., C.S.T.
Name (Please Print)

Signature

1263130
Credential Number

4900 S Pennsylvania Ave Suite 100, Cudahy, WI 53110
Address

05/14/2026
Date Evaluation Conducted

262-332-3399
Phone Number

Supporting Information

Contents:

General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

General Notes

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING


Auger


Split Spoon


Shelby Tube


Macro Core


Ring Sampler


Rock Core


Grab Sample


No Recovery

WATER LEVEL


Water Initially Encountered


Water Level After a Specified Period of Time


Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Subsurface water level variations will occur over time. In low permeability soils, accurate determination of subsurface water levels is not possible with short term water level observations.

FIELD TESTS

(HP)	**Hand Penetrometer**
(T)	**Torvane**
(b/f)	**Standard Penetration Test (blows per foot)**
(PID)	**Photo-Ionization Detector**
(OVA)	**Organic Vapor Analyzer**
(DCP)	**Dynamic Cone Penetrometer**

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS

(More than 50% retained on No. 200 sieve)
Density determined by Standard Penetration Resistance

Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.
Very Loose	0 – 3
Loose	4 – 9
Medium Dense	10 – 29
Dense	30 – 50
Very Dense	> 50

CONSISTENCY OF FINE-GRAINED SOILS

(50% or more passing the No. 200 sieve)
Consistency determined by laboratory shear strength testing, field visual-manual procedures, or standard penetration resistance

Descriptive Term (Consistency)	Unconfined Compressive Strength, Qu, tsf	Standard Penetration or N-Value Blows/Ft.
Very Soft	Less than 0.25	0 – 1
Soft	0.25 to 0.50	2 – 4
Medium Stiff	0.50 to 1.00	4 – 8
Stiff	1.00 to 2.00	8 – 15
Very Stiff	2.00 to 4.00	15 – 30
Hard	> 4.00	> 30

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive term(s) of other constituents	Percent (%) of dry weight
Trace	< 15
With	15 – 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major component of sample	Particle size
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive term(s) of other constituents	Percent (%) of dry weight
Trace	< 5
With	5 – 12
Modifier	> 12

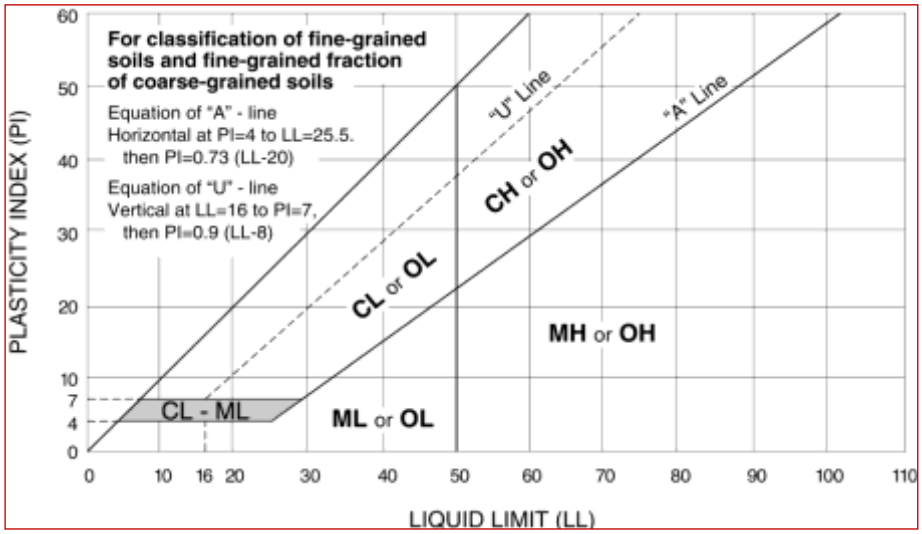
PLASTICITY DESCRIPTION

Term	Plasticity Index
Non plastic	0
Low	1 – 10
Medium	11 – 30
High	> 30

Unified Soil Classification System

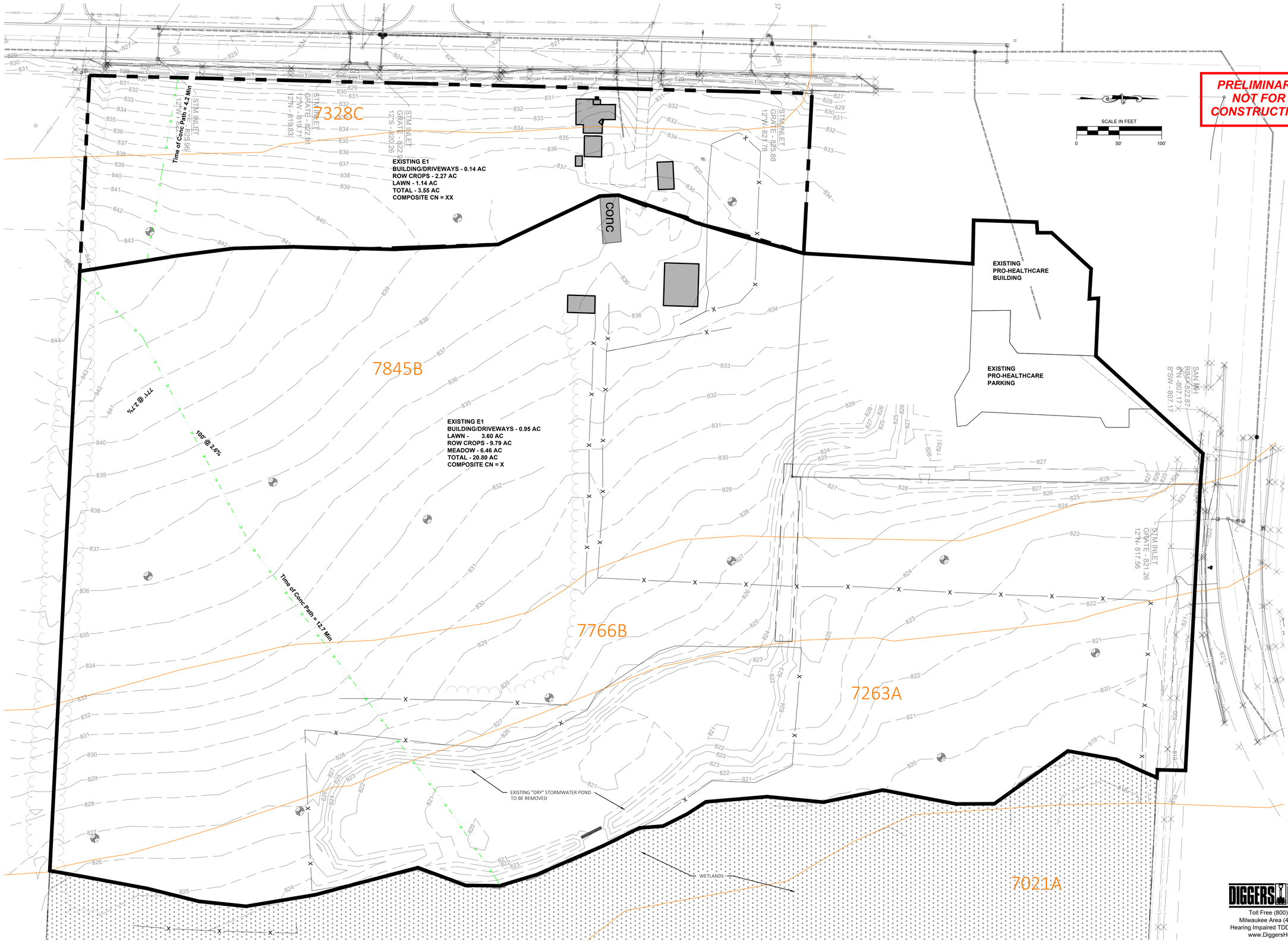
Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.



Appendix 3

Drainage Area Maps



DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

NO	REVISION DESCRIPTION	DATE

Payne+Dolan
A WALBEC COMPANY
www.walbecgroup.com
(920) 757-7559

PROJECT
RIVER CROSSING
GATEWAY DRIVE
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT.LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

Seal

SHEET TITLE
EXISTING HYDROLOGY

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Drawing Scale:	1"=50'
Drawn:	SPK 09/01/2026
Checked:	HAM 01/09/2026
P&D Project No:	419163
Sheet No.	**HY1**

PRELIMINARY
NOT FOR
CONSTRUCTION

SCALE IN FEET
0 50' 100'

PROPOSED P1
BUILDINGS - 0.32 AC
DRIVEWAY/CONCRETE - 0.10 AC
LANDSCAPE - 2.03 AC
TOTAL - 2.45 AC
COMPOSITE CN = 82

7328C

PROPOSED P2
BUILDINGS - 4.24 AC
DRIVEWAY/CONCRETE - 5.87AC
LANDSCAPE - 8.65 AC
POND - 1.60 AC
TOTAL - 20.36 AC
COMPOSITE CN = XX

7845B

PROPOSED P3
BUILDINGS - 0.12 AC
DRIVEWAY/CONCRETE - 0.17 AC
LANDSCAPE - 1.25 AC
TOTAL - 1.54 AC
COMPOSITE CN = XX

7766B

7265H

7021A

EXISTING
PRO-HEALTHCARE
BUILDING

EXISTING
PRO-HEALTHCARE
PARKING

8-UNIT
12-UNIT
15-UNIT
18-UNIT

conc

Time of Conc Path = 15.5 Min

WETLANDS

EQUILIZER PIPE

POND OUTLET STRUCTURE

POND OVERFLOW WIER

SAN MH
RIM=832.87
8"N-807.12
8"SW-807.17

12"N-817.

DIGGERS HOTLINE
Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

NO:	REVISION DESCRIPTION:	DATE:

Payne+Dolan
A WALBEC COMPANY
www.walbecgroup.com
(920) 757-7559

PROJECT
RIVER CROSSING
GATEWAY DRIVE
CITY OF WATERTOWN, WI

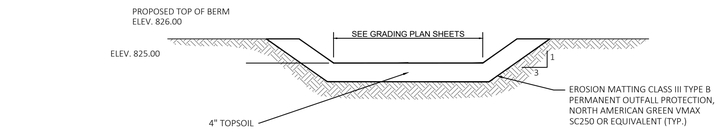
CLIENT
NATIONAL MANAGEMENT.LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

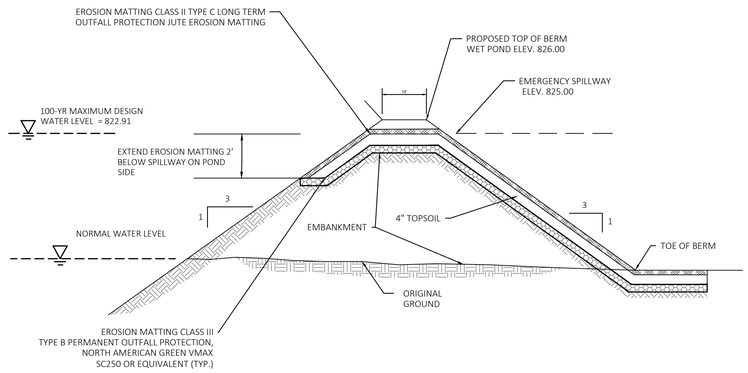
Seal

SHEET TITLE
PROPOSED HYDROLOGY

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Drawing Scale:	1"=50'
Drawn:	SPK 09/01/2026
Checked:	HAM 01/09/2026
P&D Project No:	419163
Sheet No.	HY2

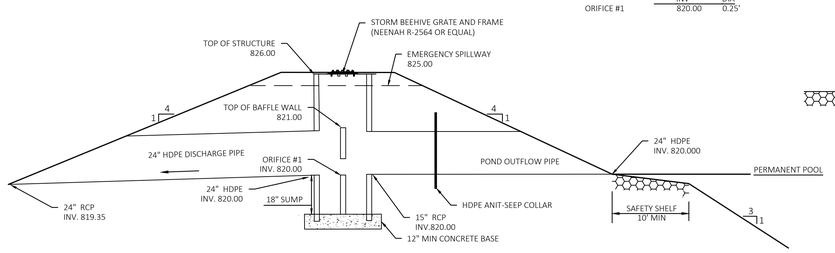




PROPOSED EMERGENCY SPILLWAYS

N.T.S.

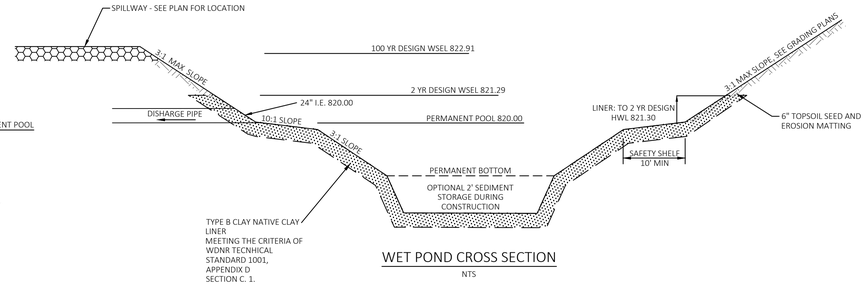
WET POND #1	DIA	INV	SLOPE
DISCHARGE PIPE	24"	798.00	1.00%
	RIM		
OUTLET STRUCTURE	826.00		
	ELEV		
TOP OF BAFFLE WALL	821.00		
	INV	DIA	
ORIFICE #1	820.00	0.25'	



WET POND PRECAST OUTLET STRUCTURE

NTS

WET POND #1 DATA	ELEV
TOP OF BERM	826.00
SPILLWAY	825.00
100-YR WSEL	822.91
2-YR WSEL	821.29
PERMANENT POOL	820.00
PERMANENT BOTTOM	815.00



WET POND CROSS SECTION

NTS

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Milwaukee Area (414) 259-1181
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NO	REVISION DESCRIPTION	DATE

Payne+Dolan
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(920) 757-7559

PROJECT
RIVER CROSSING
CITY OF WATERTOWN, WI

CLIENT
NATIONAL MANAGEMENT, LLC
333 BISHOPS WAY, SUITE 141
BROOKFIELD, WI 53005

Seal

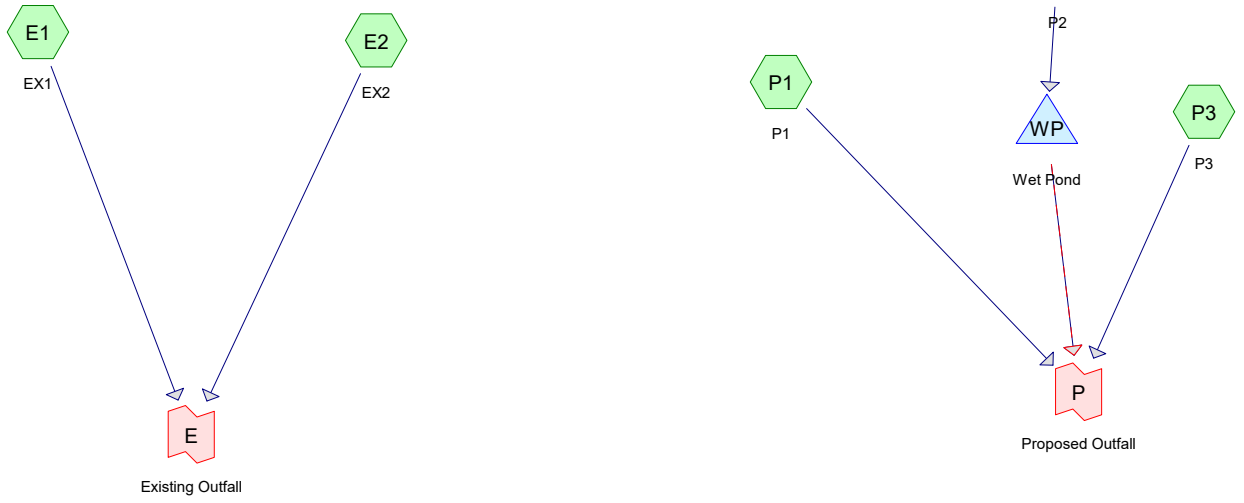
SHEET TITLE
CONSTRUCTION DETAILS

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Drawing Scale:	NTS
Drawn:	XXX 08/17/2026
Checked:	XXX XX/XX/XXXX
P&D Project No:	#491163
Sheet No.	C8.4

Appendix 4

HydroCAD Model Results



Subcat Reach Pond Link

Routing Diagram for River Crossing
Prepared by Payne & Dolan, Printed 8/31/2026
HydroCAD® 10.20-9a s/n 08699 © 2026 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-year	MSE 24-hr	3	Default	24.00	1	2.42	2
2	2-year	MSE 24-hr	3	Default	24.00	1	2.74	2
3	10-year	MSE 24-hr	3	Default	24.00	1	3.85	2
4	100-year	MSE 24-hr	3	Default	24.00	1	6.18	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
16.670	79	50-75% Grass cover, Fair, HSG C (E1, E2, P1, P2, P3)
0.140	98	Building/driveways (E1)
4.560	98	Buildings (P1, P2)
0.950	98	Buildings and Driveways (E2)
0.120	98	Builkdings (P3)
5.870	98	Drives/Concrete (P2)
0.100	98	Driveway/sidewalks (P1)
18.520	71	Meadow, non-grazed, HSG C (E1, E2)
0.170	98	Parking/Drives (P3)
1.600	98	Pond (P2)
48.700	**81**	**TOTAL AREA**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: EX1 Runoff Area=3.550 ac 3.94% Impervious Runoff Depth=0.60"
Tc=6.0 min CN=75 Runoff=3.81 cfs 0.179 af

Subcatchment E2: EX2 Runoff Area=20.800 ac 4.57% Impervious Runoff Depth=0.56"
Flow Length=871' Tc=12.7 min CN=74 Runoff=14.74 cfs 0.977 af

Subcatchment P1: P1 Runoff Area=2.450 ac 17.14% Impervious Runoff Depth=0.94"
Tc=6.0 min CN=82 Runoff=4.29 cfs 0.192 af

Subcatchment P2: P2 Runoff Area=20.360 ac 57.51% Impervious Runoff Depth=1.46"
Flow Length=710' Slope=0.0120 '/' Tc=15.5 min CN=90 Runoff=37.72 cfs 2.477 af

Subcatchment P3: P3 Runoff Area=1.540 ac 18.83% Impervious Runoff Depth=1.00"
Tc=6.0 min CN=83 Runoff=2.86 cfs 0.128 af

Pond WP: Wet Pond Peak Elev=821.16' Storage=277,869 cf Inflow=37.72 cfs 2.477 af
Primary=1.11 cfs 1.532 af Secondary=0.00 cfs 0.000 af Outflow=1.11 cfs 1.532 af

Link E: Existing Outfall Inflow=16.93 cfs 1.156 af
Primary=16.93 cfs 1.156 af

Link P: Proposed Outfall Inflow=7.25 cfs 1.851 af
Primary=7.25 cfs 1.851 af

Total Runoff Area = 48.700 ac Runoff Volume = 3.952 af Average Runoff Depth = 0.97"
72.26% Pervious = 35.190 ac 27.74% Impervious = 13.510 ac

Summary for Subcatchment E1: EX1

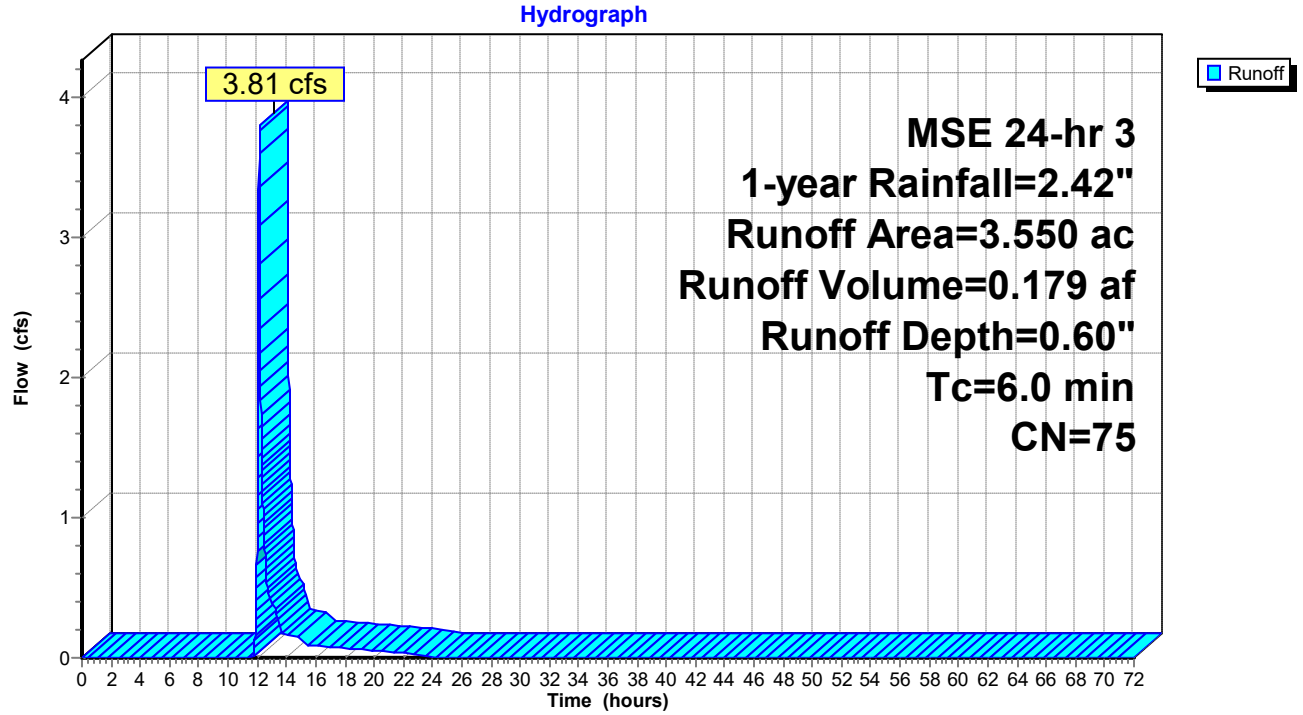
Runoff = 3.81 cfs @ 12.14 hrs, Volume= 0.179 af, Depth= 0.60"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-year Rainfall=2.42"

	Area (ac)	CN	Description
*	0.140	98	Building/driveways
	2.270	71	Meadow, non-grazed, HSG C
	1.140	79	50-75% Grass cover, Fair, HSG C
	3.550	75	Weighted Average
	3.410		96.06% Pervious Area
	0.140		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment E1: EX1



Summary for Subcatchment E2: EX2

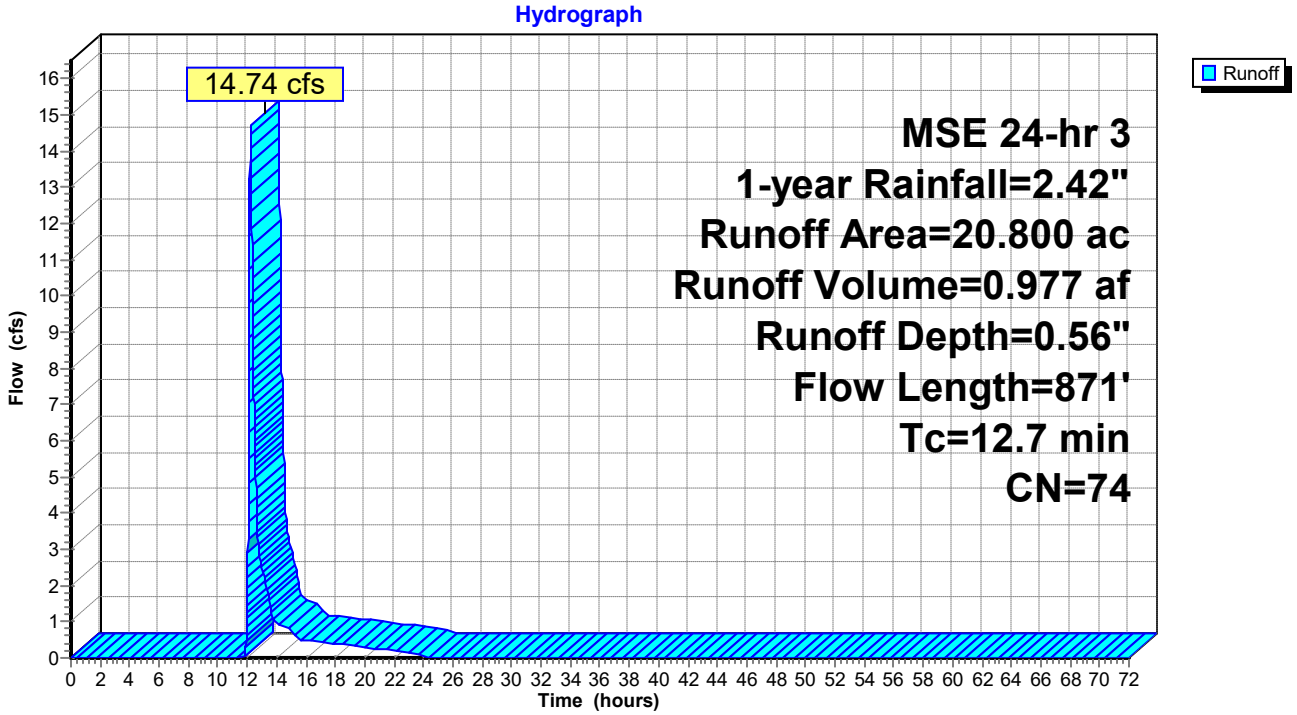
Runoff = 14.74 cfs @ 12.23 hrs, Volume= 0.977 af, Depth= 0.56"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-year Rainfall=2.42"

	Area (ac)	CN	Description
*	0.950	98	Buildings and Driveways
	3.600	79	50-75% Grass cover, Fair, HSG C
	16.250	71	Meadow, non-grazed, HSG C
	20.800	74	Weighted Average
	19.850		95.43% Pervious Area
	0.950		4.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	100	0.0260	0.42		**Sheet Flow,** Fallow n= 0.050 P2= 2.74"
8.7	771	0.0270	1.48		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.7	871	Total			

Subcatchment E2: EX2



Summary for Subcatchment P1: P1

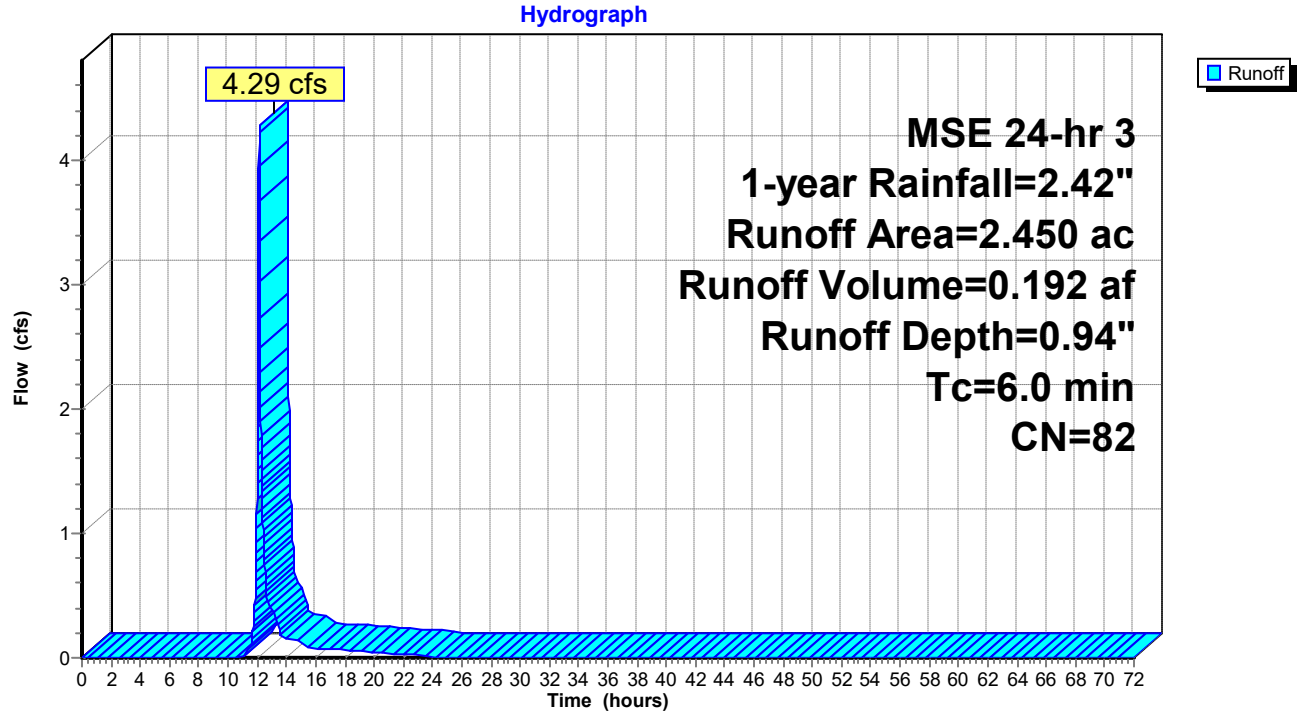
Runoff = 4.29 cfs @ 12.14 hrs, Volume= 0.192 af, Depth= 0.94"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-year Rainfall=2.42"

	Area (ac)	CN	Description
*	0.100	98	Driveway/sidewalks
*	0.320	98	Buildings
	2.030	79	50-75% Grass cover, Fair, HSG C
	2.450	82	Weighted Average
	2.030		82.86% Pervious Area
	0.420		17.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: P1



Summary for Subcatchment P2: P2

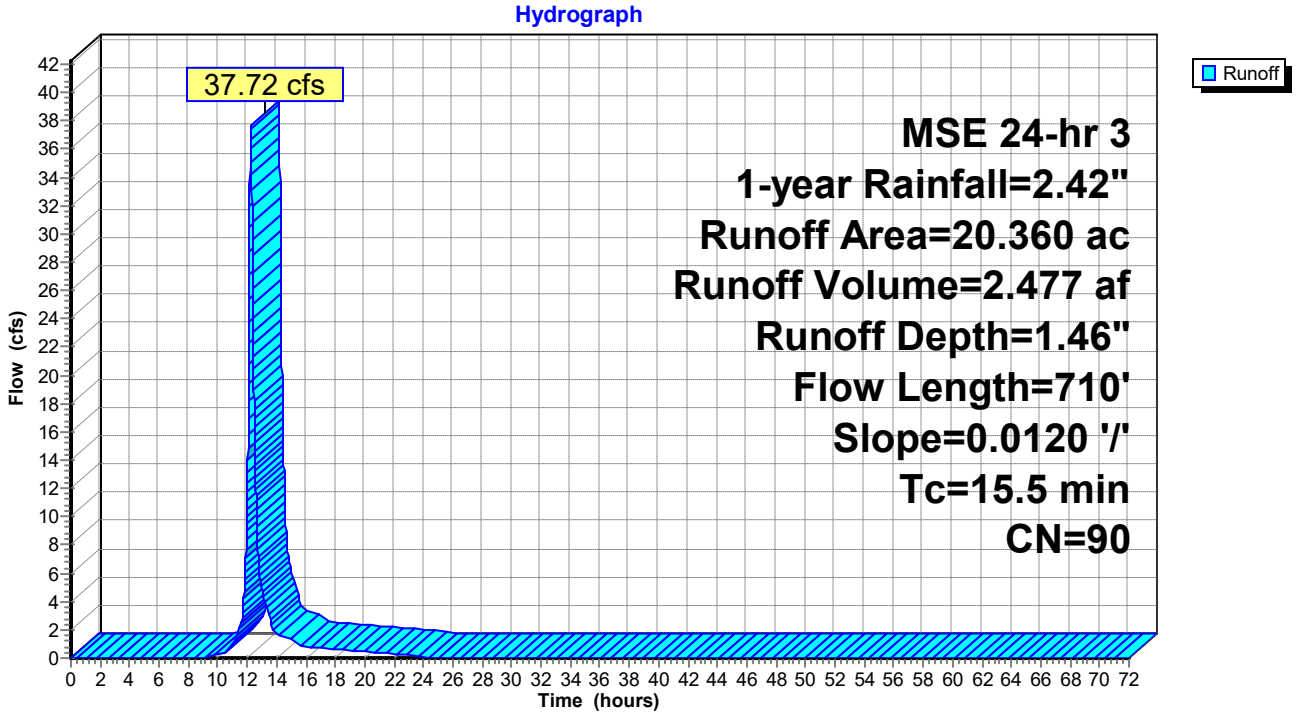
Runoff = 37.72 cfs @ 12.24 hrs, Volume= 2.477 af, Depth= 1.46"
Routed to Pond WP : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-year Rainfall=2.42"

	Area (ac)	CN	Description
*	4.240	98	Buildings
*	5.870	98	Drives/Concrete
	8.650	79	50-75% Grass cover, Fair, HSG C
*	1.600	98	Pond
	20.360	90	Weighted Average
	8.650		42.49% Pervious Area
	11.710		57.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	710	0.0120	0.76		**Lag/CN Method,**

Subcatchment P2: P2



Summary for Subcatchment P3: P3

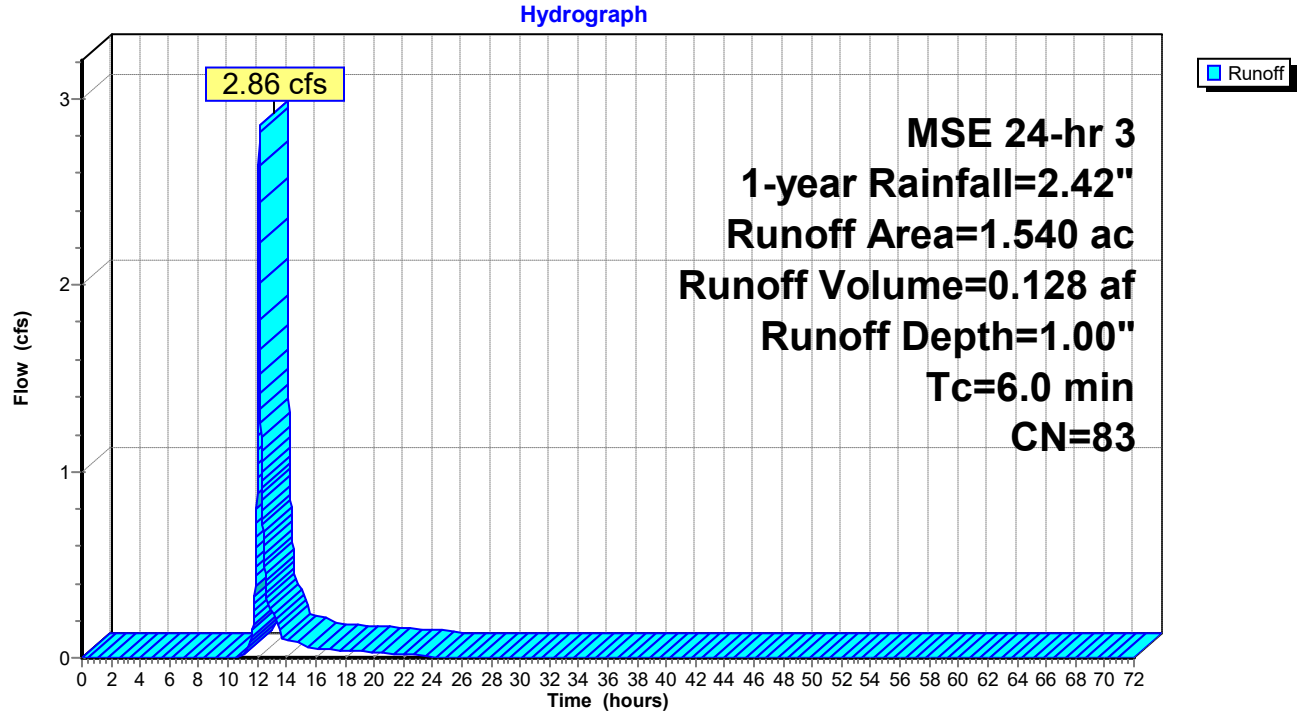
Runoff = 2.86 cfs @ 12.14 hrs, Volume= 0.128 af, Depth= 1.00"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-year Rainfall=2.42"

	Area (ac)	CN	Description
*	0.120	98	Builkdings
*	0.170	98	Parking/Drives
	1.250	79	50-75% Grass cover, Fair, HSG C
	1.540	83	Weighted Average
	1.250		81.17% Pervious Area
	0.290		18.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P3: P3



Summary for Pond WP: Wet Pond

Inflow Area = 20.360 ac, 57.51% Impervious, Inflow Depth = 1.46" for 1-year event
Inflow = 37.72 cfs @ 12.24 hrs, Volume= 2.477 af
Outflow = 1.11 cfs @ 15.23 hrs, Volume= 1.532 af, Atten= 97%, Lag= 179.5 min
Primary = 1.11 cfs @ 15.23 hrs, Volume= 1.532 af
Routed to Link P : Proposed Outfall
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link P : Proposed Outfall

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 820.00' Surf.Area= 68,008 sf Storage= 194,045 cf
Peak Elev= 821.16' @ 15.23 hrs Surf.Area= 75,999 sf Storage= 277,869 cf (83,824 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 1,137.9 min (1,943.7 - 805.8)

Volume	Invert	Avail.Storage	Storage Description
#1	815.00'	730,078 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

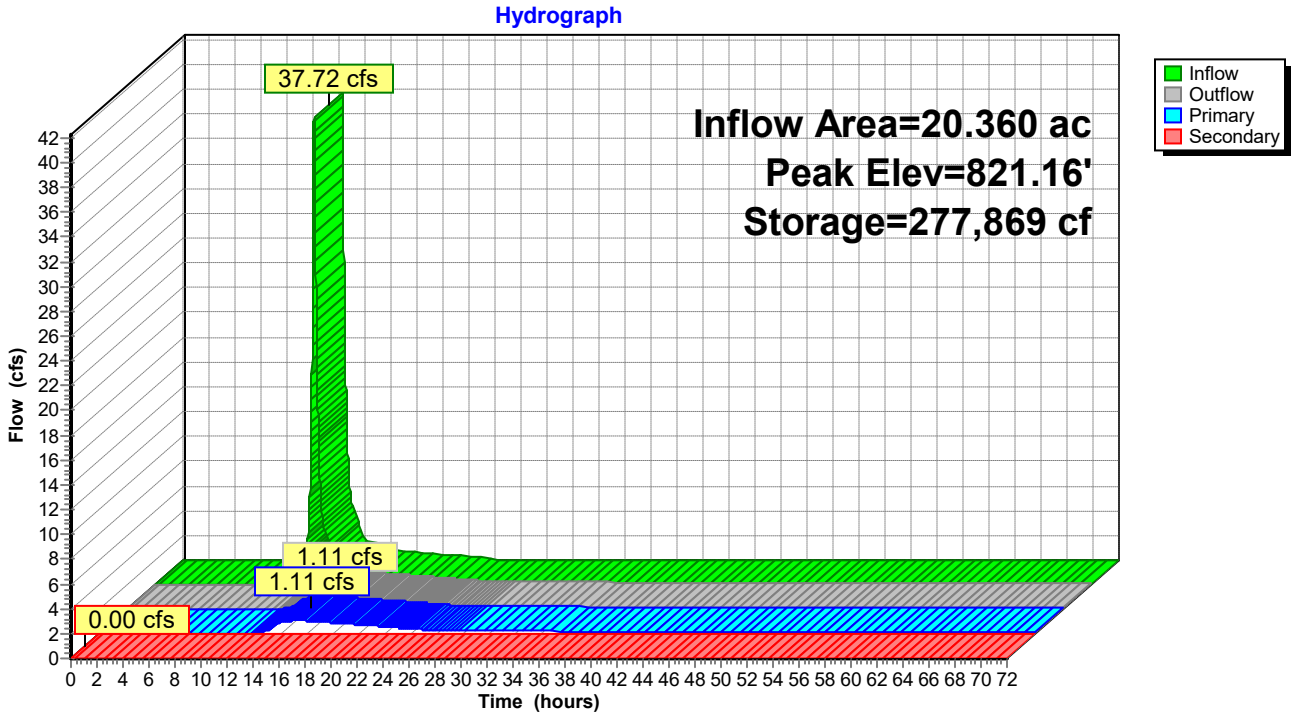
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
815.00	22,094	0	0
819.00	46,341	136,870	136,870
820.00	68,008	57,175	194,045
821.00	74,853	71,431	265,475
822.00	81,829	78,341	343,816
823.00	88,933	85,381	429,197
824.00	96,180	92,557	521,754
825.00	103,545	99,863	621,616
826.00	113,378	108,462	730,078

Device	Routing	Invert	Outlet Devices
#1	Primary	820.00'	**24.0" Round Culvert** L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 820.00' / 819.35' S= 0.0120 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#2	Secondary	825.00'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Device 1	820.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	821.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.11 cfs @ 15.23 hrs HW=821.16' (Free Discharge)
└**1=Culvert** (Passes 1.11 cfs of 5.50 cfs potential flow)
└**3=Orifice/Grate** (Orifice Controls 0.24 cfs @ 4.91 fps)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 0.86 cfs @ 1.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=820.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond WP: Wet Pond

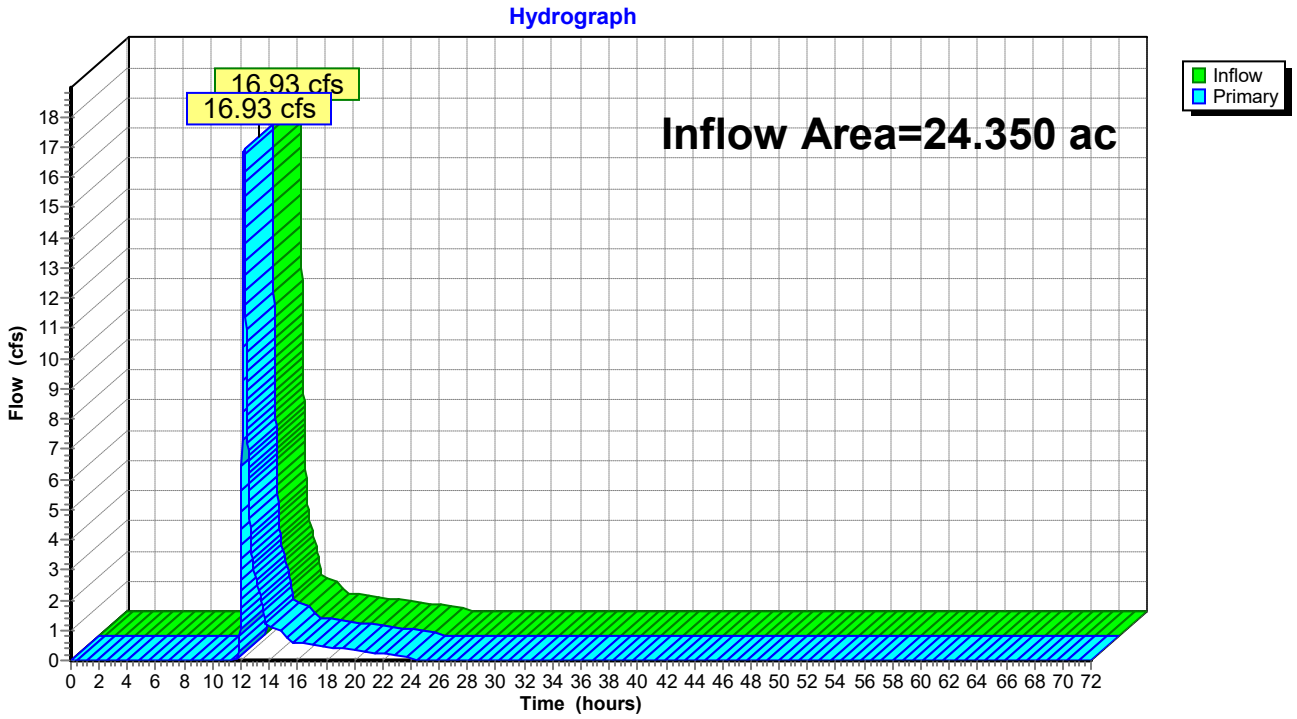


Summary for Link E: Existing Outfall

Inflow Area = 24.350 ac, 4.48% Impervious, Inflow Depth = 0.57" for 1-year event
Inflow = 16.93 cfs @ 12.21 hrs, Volume= 1.156 af
Primary = 16.93 cfs @ 12.21 hrs, Volume= 1.156 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link E: Existing Outfall

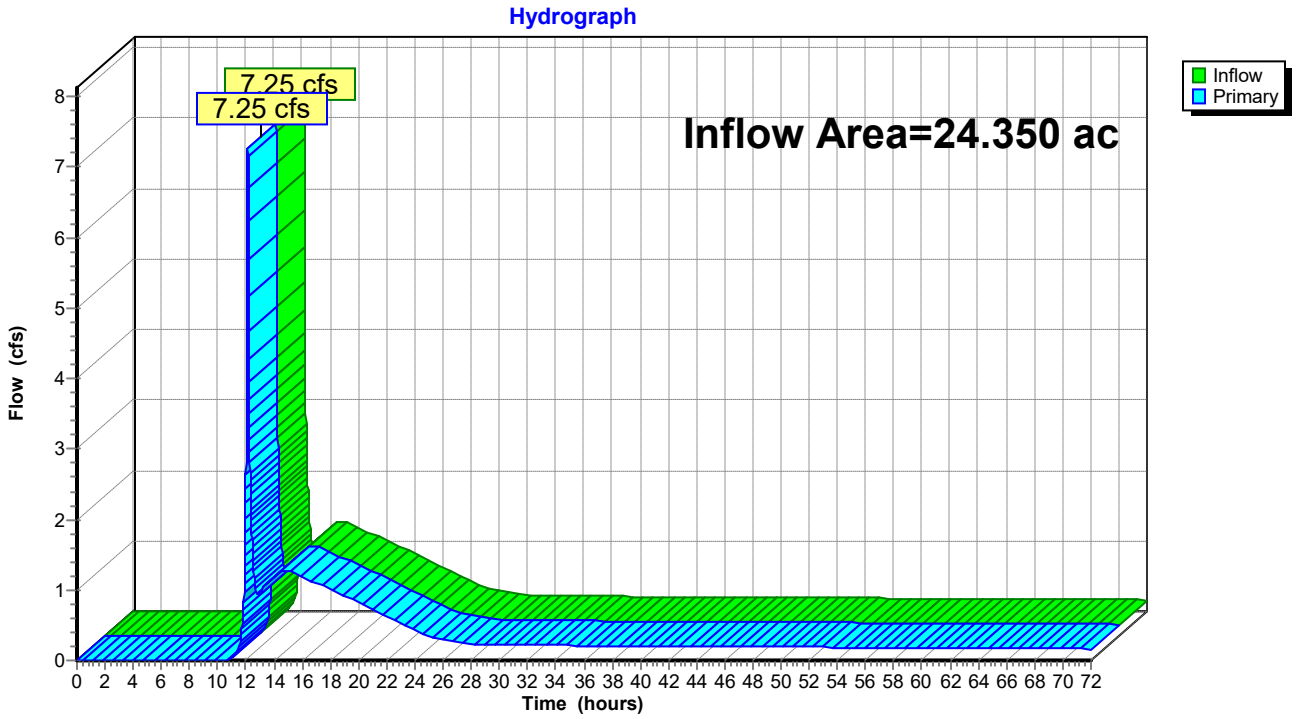


Summary for Link P: Proposed Outfall

Inflow Area = 24.350 ac, 51.01% Impervious, Inflow Depth > 0.91" for 1-year event
Inflow = 7.25 cfs @ 12.14 hrs, Volume= 1.851 af
Primary = 7.25 cfs @ 12.14 hrs, Volume= 1.851 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link P: Proposed Outfall



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: EX1 Runoff Area=3.550 ac 3.94% Impervious Runoff Depth=0.80"
Tc=6.0 min CN=75 Runoff=5.13 cfs 0.235 af

Subcatchment E2: EX2 Runoff Area=20.800 ac 4.57% Impervious Runoff Depth=0.75"
Flow Length=871' Tc=12.7 min CN=74 Runoff=20.36 cfs 1.296 af

Subcatchment P1: P1 Runoff Area=2.450 ac 17.14% Impervious Runoff Depth=1.18"
Tc=6.0 min CN=82 Runoff=5.39 cfs 0.240 af

Subcatchment P2: P2 Runoff Area=20.360 ac 57.51% Impervious Runoff Depth=1.75"
Flow Length=710' Slope=0.0120 '/' Tc=15.5 min CN=90 Runoff=44.95 cfs 2.964 af

Subcatchment P3: P3 Runoff Area=1.540 ac 18.83% Impervious Runoff Depth=1.24"
Tc=6.0 min CN=83 Runoff=3.57 cfs 0.159 af

Pond WP: Wet Pond Peak Elev=821.29' Storage=287,155 cf Inflow=44.95 cfs 2.964 af
Primary=2.24 cfs 2.010 af Secondary=0.00 cfs 0.000 af Outflow=2.24 cfs 2.010 af

Link E: Existing Outfall Inflow=23.37 cfs 1.531 af
Primary=23.37 cfs 1.531 af

Link P: Proposed Outfall Inflow=9.08 cfs 2.410 af
Primary=9.08 cfs 2.410 af

Total Runoff Area = 48.700 ac Runoff Volume = 4.895 af Average Runoff Depth = 1.21"
72.26% Pervious = 35.190 ac 27.74% Impervious = 13.510 ac

Summary for Subcatchment E1: EX1

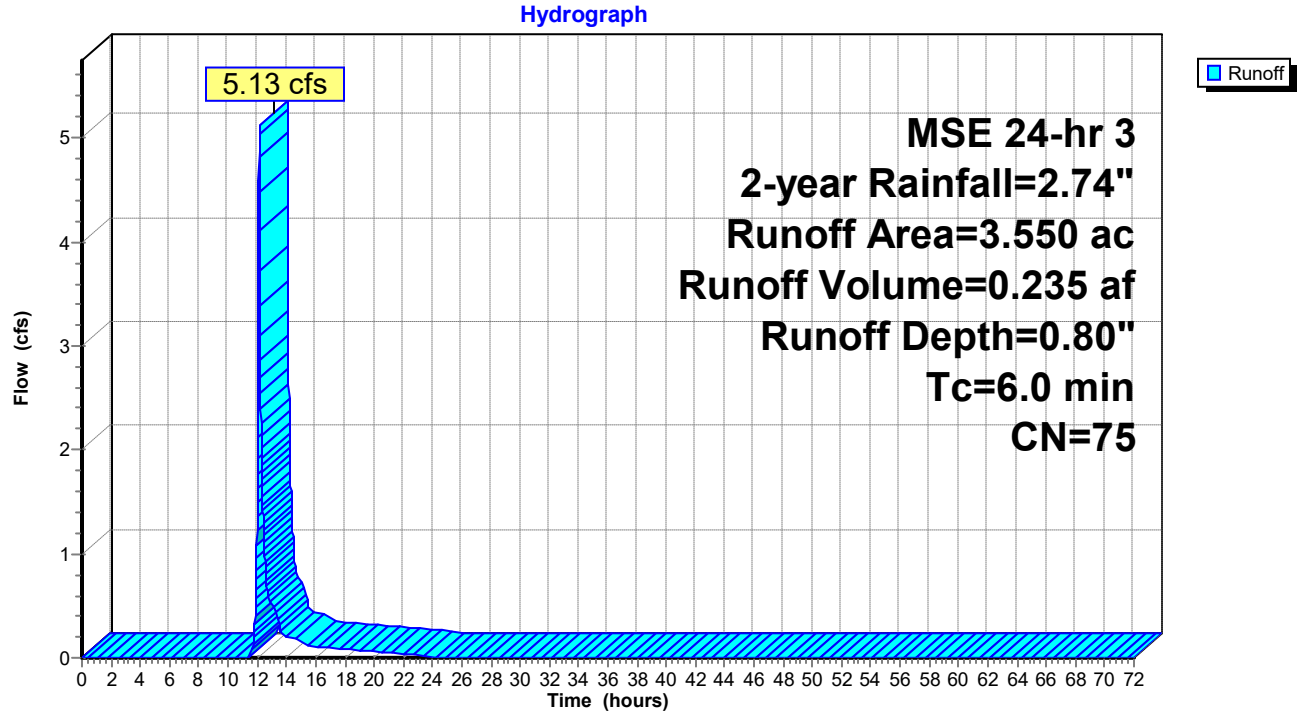
Runoff = 5.13 cfs @ 12.14 hrs, Volume= 0.235 af, Depth= 0.80"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.74"

	Area (ac)	CN	Description
*	0.140	98	Building/driveways
	2.270	71	Meadow, non-grazed, HSG C
	1.140	79	50-75% Grass cover, Fair, HSG C
	3.550	75	Weighted Average
	3.410		96.06% Pervious Area
	0.140		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment E1: EX1



Summary for Subcatchment E2: EX2

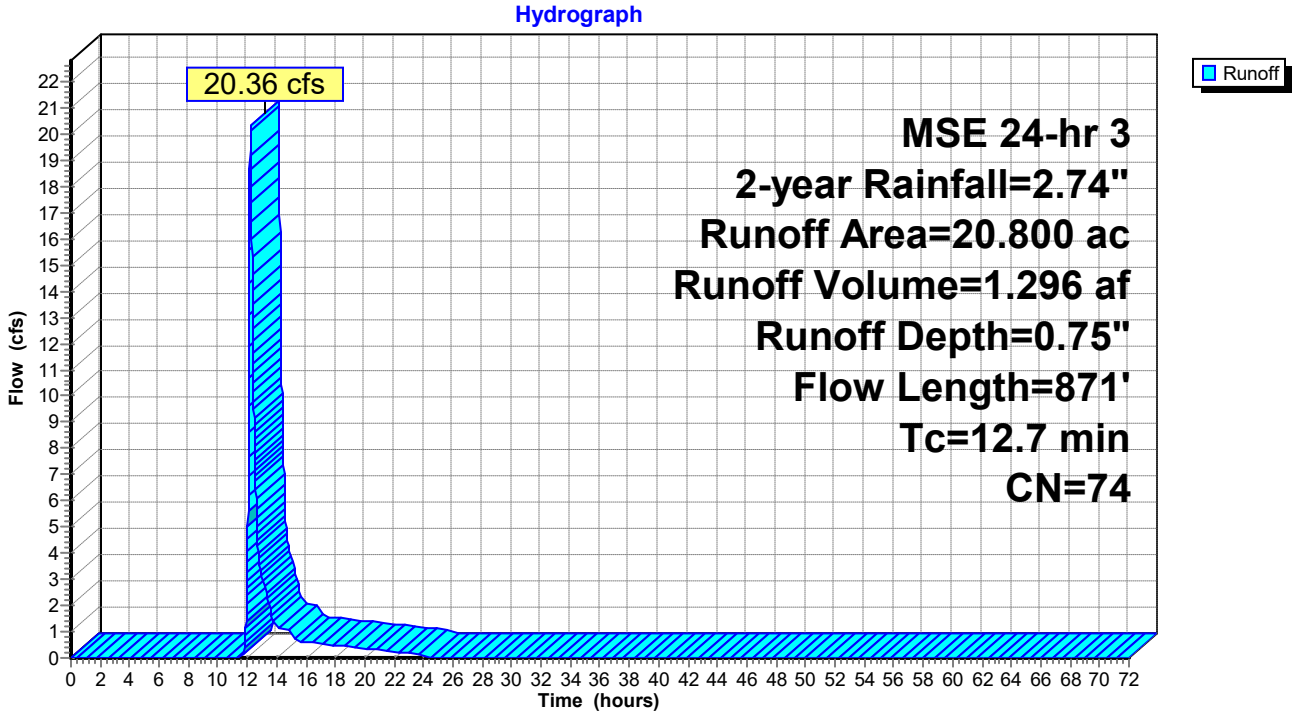
Runoff = 20.36 cfs @ 12.22 hrs, Volume= 1.296 af, Depth= 0.75"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.74"

	Area (ac)	CN	Description
*	0.950	98	Buildings and Driveways
	3.600	79	50-75% Grass cover, Fair, HSG C
	16.250	71	Meadow, non-grazed, HSG C
	20.800	74	Weighted Average
	19.850		95.43% Pervious Area
	0.950		4.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	100	0.0260	0.42		**Sheet Flow,** Fallow n= 0.050 P2= 2.74"
8.7	771	0.0270	1.48		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.7	871	Total			

Subcatchment E2: EX2



Summary for Subcatchment P1: P1

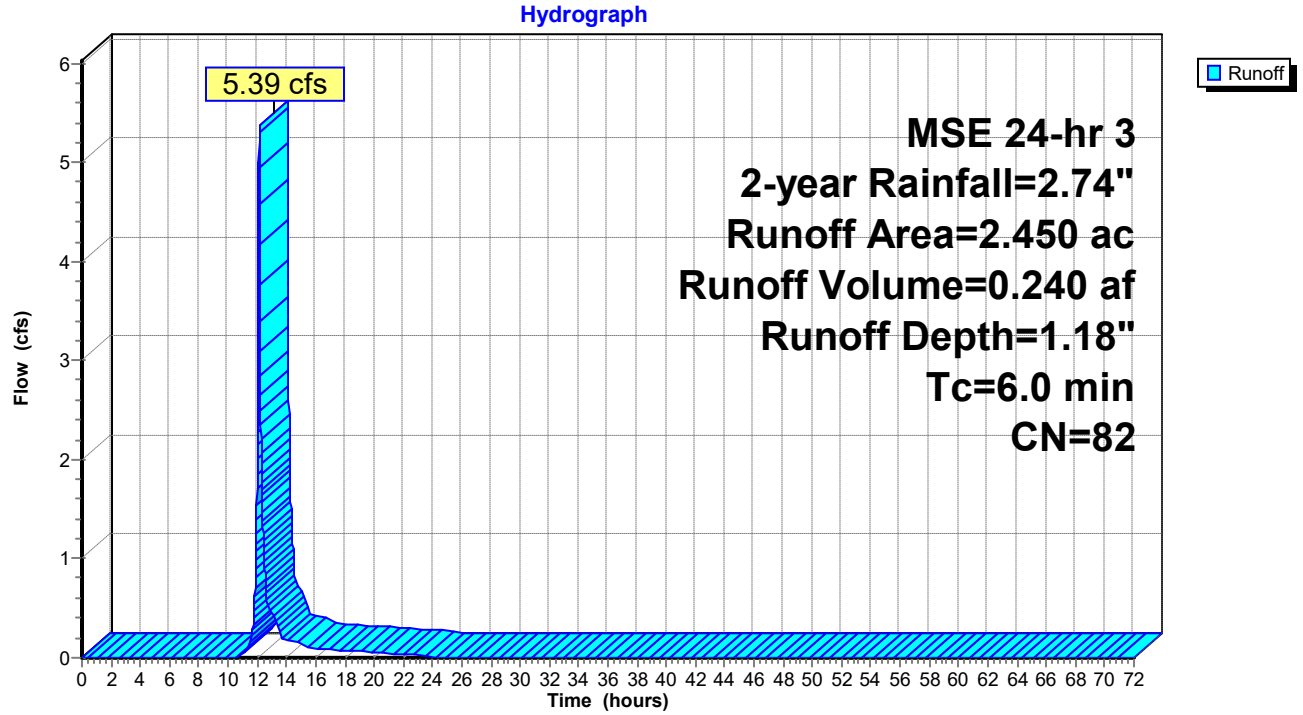
Runoff = 5.39 cfs @ 12.14 hrs, Volume= 0.240 af, Depth= 1.18"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.74"

	Area (ac)	CN	Description
*	0.100	98	Driveway/sidewalks
*	0.320	98	Buildings
	2.030	79	50-75% Grass cover, Fair, HSG C
	2.450	82	Weighted Average
	2.030		82.86% Pervious Area
	0.420		17.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: P1



Summary for Subcatchment P2: P2

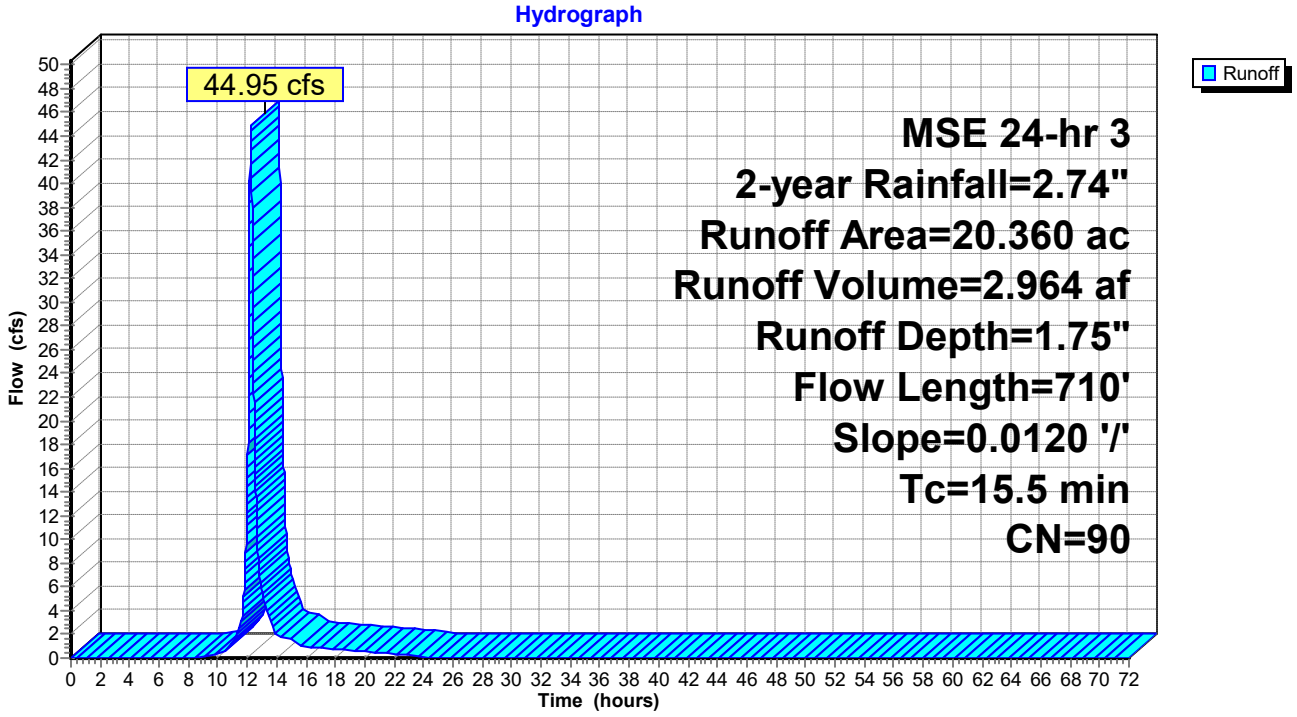
Runoff = 44.95 cfs @ 12.24 hrs, Volume= 2.964 af, Depth= 1.75"
Routed to Pond WP : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.74"

	Area (ac)	CN	Description
*	4.240	98	Buildings
*	5.870	98	Drives/Concrete
	8.650	79	50-75% Grass cover, Fair, HSG C
*	1.600	98	Pond
	20.360	90	Weighted Average
	8.650		42.49% Pervious Area
	11.710		57.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	710	0.0120	0.76		**Lag/CN Method,**

Subcatchment P2: P2



Summary for Subcatchment P3: P3

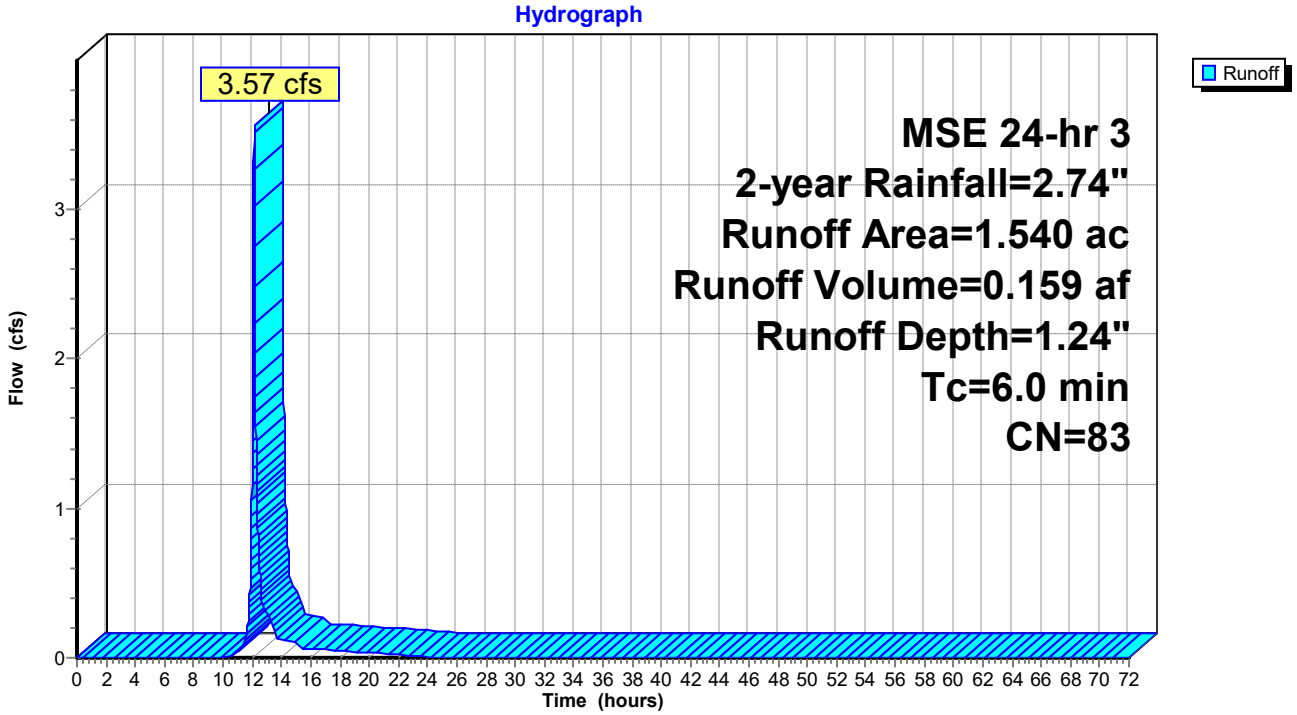
Runoff = 3.57 cfs @ 12.14 hrs, Volume= 0.159 af, Depth= 1.24"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.74"

	Area (ac)	CN	Description
*	0.120	98	Builkdings
*	0.170	98	Parking/Drives
	1.250	79	50-75% Grass cover, Fair, HSG C
	1.540	83	Weighted Average
	1.250		81.17% Pervious Area
	0.290		18.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P3: P3



Summary for Pond WP: Wet Pond

Inflow Area = 20.360 ac, 57.51% Impervious, Inflow Depth = 1.75" for 2-year event
Inflow = 44.95 cfs @ 12.24 hrs, Volume= 2.964 af
Outflow = 2.24 cfs @ 13.78 hrs, Volume= 2.010 af, Atten= 95%, Lag= 92.5 min
Primary = 2.24 cfs @ 13.78 hrs, Volume= 2.010 af
Routed to Link P : Proposed Outfall
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link P : Proposed Outfall

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 820.00' Surf.Area= 68,008 sf Storage= 194,045 cf
Peak Elev= 821.29' @ 13.78 hrs Surf.Area= 76,847 sf Storage= 287,155 cf (93,111 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 909.5 min (1,711.7 - 802.2)

Volume	Invert	Avail.Storage	Storage Description
#1	815.00'	730,078 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

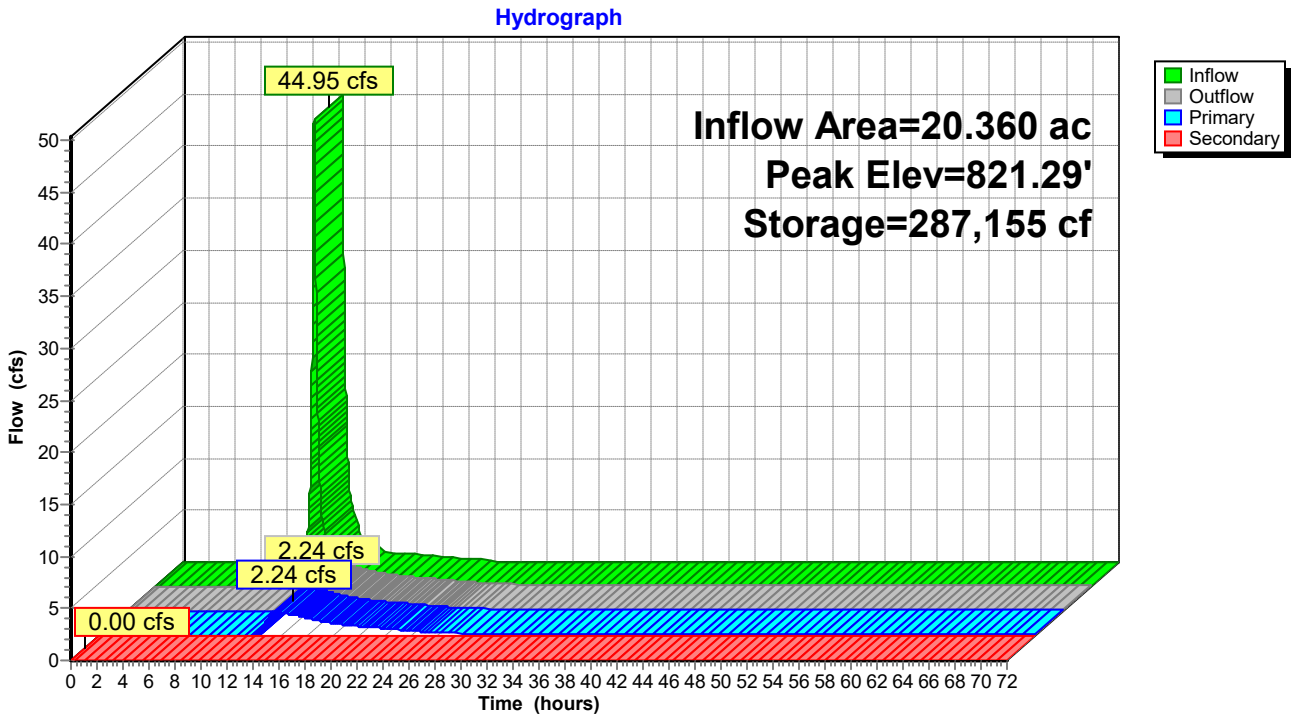
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
815.00	22,094	0	0
819.00	46,341	136,870	136,870
820.00	68,008	57,175	194,045
821.00	74,853	71,431	265,475
822.00	81,829	78,341	343,816
823.00	88,933	85,381	429,197
824.00	96,180	92,557	521,754
825.00	103,545	99,863	621,616
826.00	113,378	108,462	730,078

Device	Routing	Invert	Outlet Devices
#1	Primary	820.00'	**24.0" Round Culvert** L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 820.00' / 819.35' S= 0.0120 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#2	Secondary	825.00'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Device 1	820.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	821.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.22 cfs @ 13.78 hrs HW=821.29' (Free Discharge)
└**1=Culvert** (Passes 2.22 cfs of 6.51 cfs potential flow)
└**3=Orifice/Grate** (Orifice Controls 0.25 cfs @ 5.19 fps)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 1.97 cfs @ 1.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=820.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond WP: Wet Pond

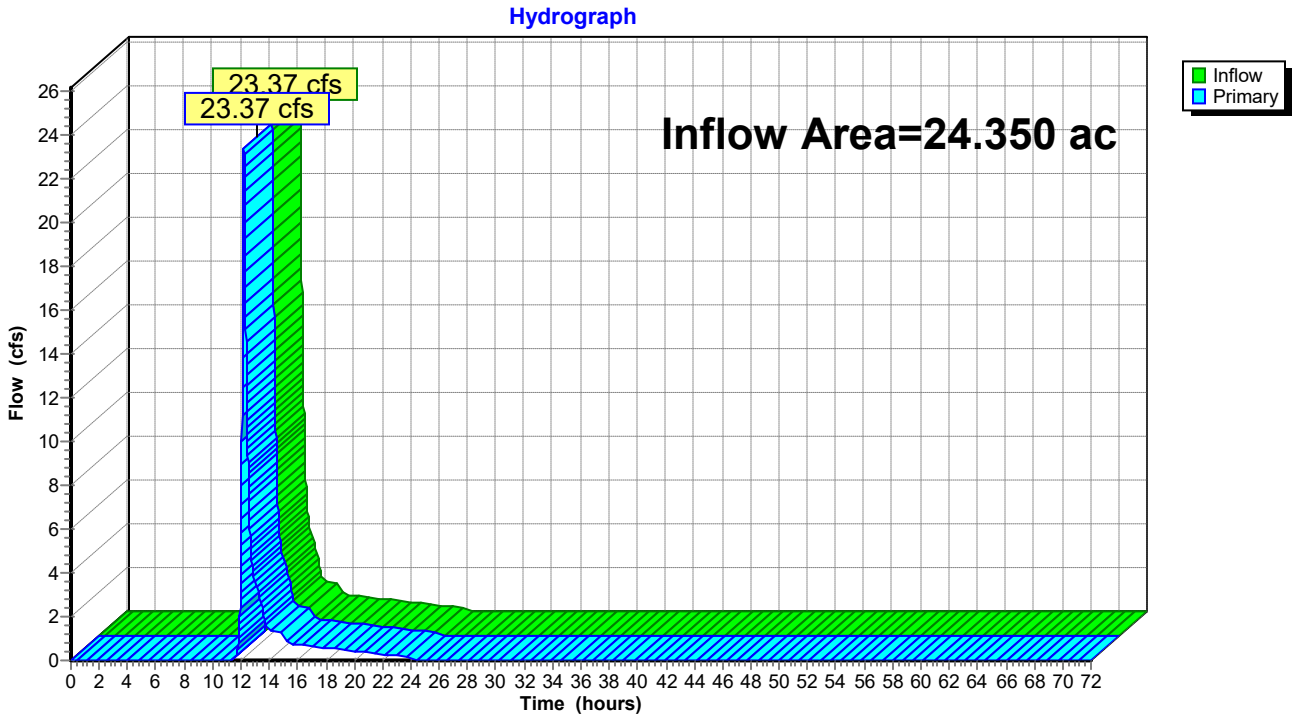


Summary for Link E: Existing Outfall

Inflow Area = 24.350 ac, 4.48% Impervious, Inflow Depth = 0.75" for 2-year event
Inflow = 23.37 cfs @ 12.21 hrs, Volume= 1.531 af
Primary = 23.37 cfs @ 12.21 hrs, Volume= 1.531 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link E: Existing Outfall

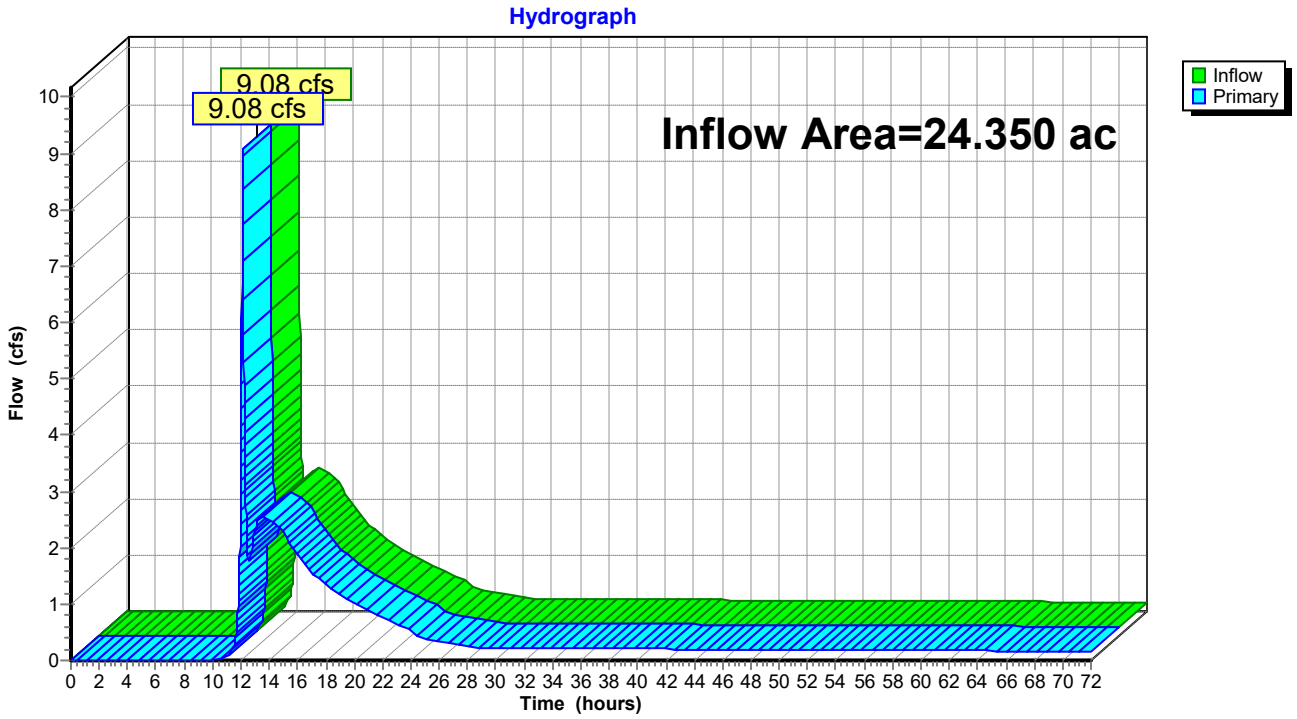


Summary for Link P: Proposed Outfall

Inflow Area = 24.350 ac, 51.01% Impervious, Inflow Depth > 1.19" for 2-year event
Inflow = 9.08 cfs @ 12.14 hrs, Volume= 2.410 af
Primary = 9.08 cfs @ 12.14 hrs, Volume= 2.410 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link P: Proposed Outfall



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: EX1 Runoff Area=3.550 ac 3.94% Impervious Runoff Depth=1.56"
Tc=6.0 min CN=75 Runoff=10.30 cfs 0.460 af

Subcatchment E2: EX2 Runoff Area=20.800 ac 4.57% Impervious Runoff Depth=1.49"
Flow Length=871' Tc=12.7 min CN=74 Runoff=42.81 cfs 2.578 af

Subcatchment P1: P1 Runoff Area=2.450 ac 17.14% Impervious Runoff Depth=2.08"
Tc=6.0 min CN=82 Runoff=9.43 cfs 0.424 af

Subcatchment P2: P2 Runoff Area=20.360 ac 57.51% Impervious Runoff Depth=2.78"
Flow Length=710' Slope=0.0120 '/' Tc=15.5 min CN=90 Runoff=70.30 cfs 4.712 af

Subcatchment P3: P3 Runoff Area=1.540 ac 18.83% Impervious Runoff Depth=2.16"
Tc=6.0 min CN=83 Runoff=6.14 cfs 0.277 af

Pond WP: Wet Pond Peak Elev=821.75' Storage=323,368 cf Inflow=70.30 cfs 4.712 af
Primary=8.45 cfs 3.743 af Secondary=0.00 cfs 0.000 af Outflow=8.45 cfs 3.743 af

Link E: Existing Outfall Inflow=48.95 cfs 3.038 af
Primary=48.95 cfs 3.038 af

Link P: Proposed Outfall Inflow=15.75 cfs 4.444 af
Primary=15.75 cfs 4.444 af

Total Runoff Area = 48.700 ac Runoff Volume = 8.450 af Average Runoff Depth = 2.08"
72.26% Pervious = 35.190 ac 27.74% Impervious = 13.510 ac

Summary for Subcatchment E1: EX1

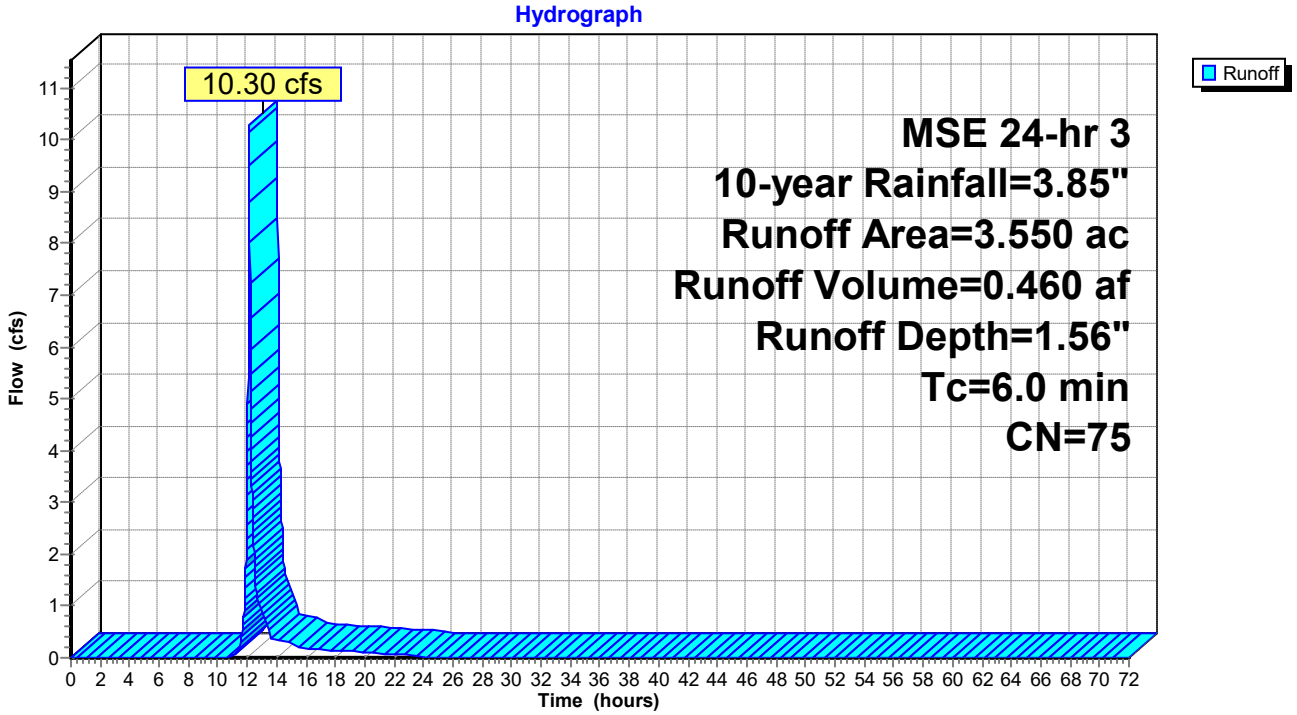
Runoff = 10.30 cfs @ 12.14 hrs, Volume= 0.460 af, Depth= 1.56"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=3.85"

	Area (ac)	CN	Description
*	0.140	98	Building/driveways
	2.270	71	Meadow, non-grazed, HSG C
	1.140	79	50-75% Grass cover, Fair, HSG C
	3.550	75	Weighted Average
	3.410		96.06% Pervious Area
	0.140		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment E1: EX1



Summary for Subcatchment E2: EX2

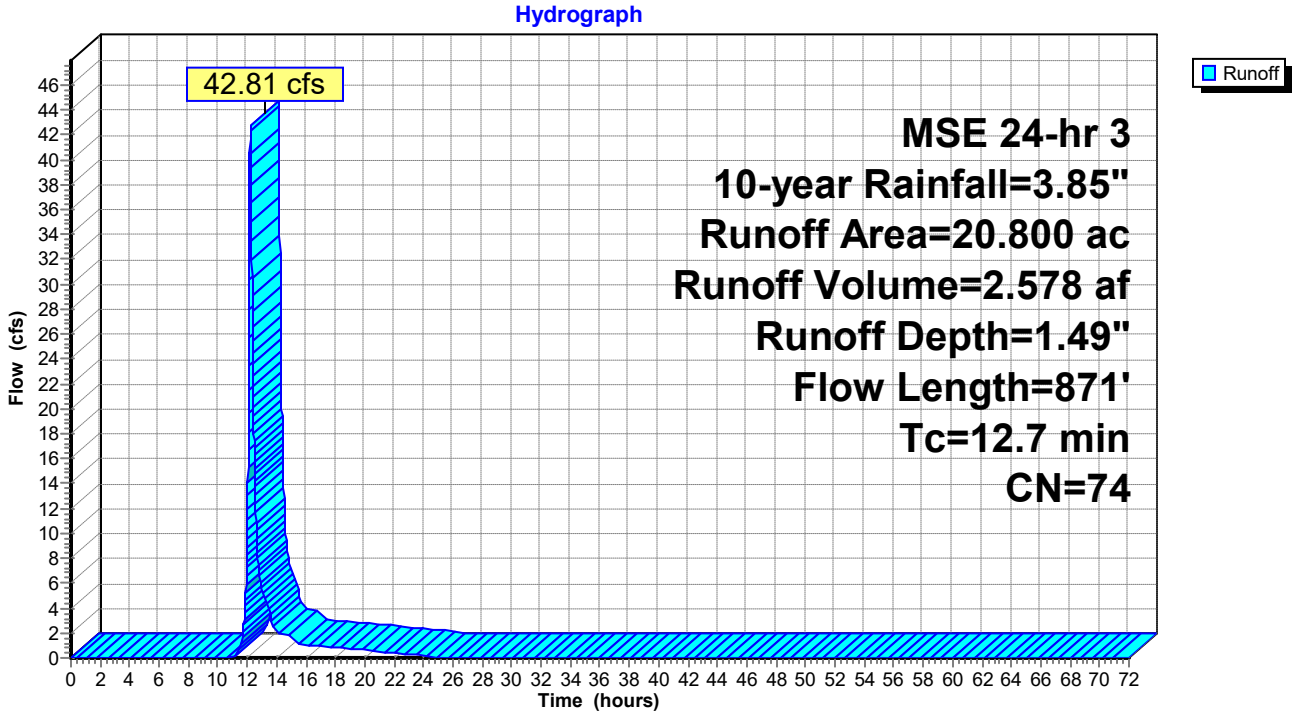
Runoff = 42.81 cfs @ 12.21 hrs, Volume= 2.578 af, Depth= 1.49"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=3.85"

	Area (ac)	CN	Description
*	0.950	98	Buildings and Driveways
	3.600	79	50-75% Grass cover, Fair, HSG C
	16.250	71	Meadow, non-grazed, HSG C
	20.800	74	Weighted Average
	19.850		95.43% Pervious Area
	0.950		4.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	100	0.0260	0.42		**Sheet Flow,** Fallow n= 0.050 P2= 2.74"
8.7	771	0.0270	1.48		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.7	871	Total			

Subcatchment E2: EX2



Summary for Subcatchment P1: P1

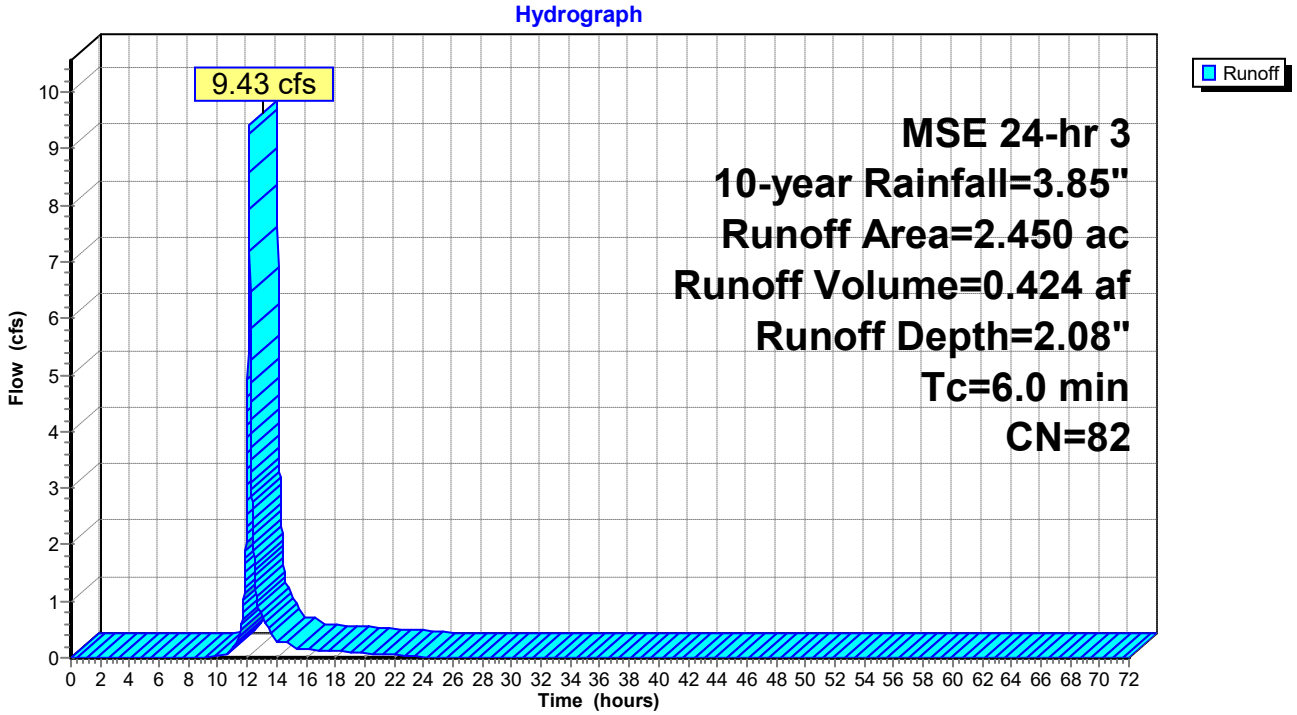
Runoff = 9.43 cfs @ 12.13 hrs, Volume= 0.424 af, Depth= 2.08"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=3.85"

	Area (ac)	CN	Description
*	0.100	98	Driveway/sidewalks
*	0.320	98	Buildings
	2.030	79	50-75% Grass cover, Fair, HSG C
	2.450	82	Weighted Average
	2.030		82.86% Pervious Area
	0.420		17.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: P1



Summary for Subcatchment P2: P2

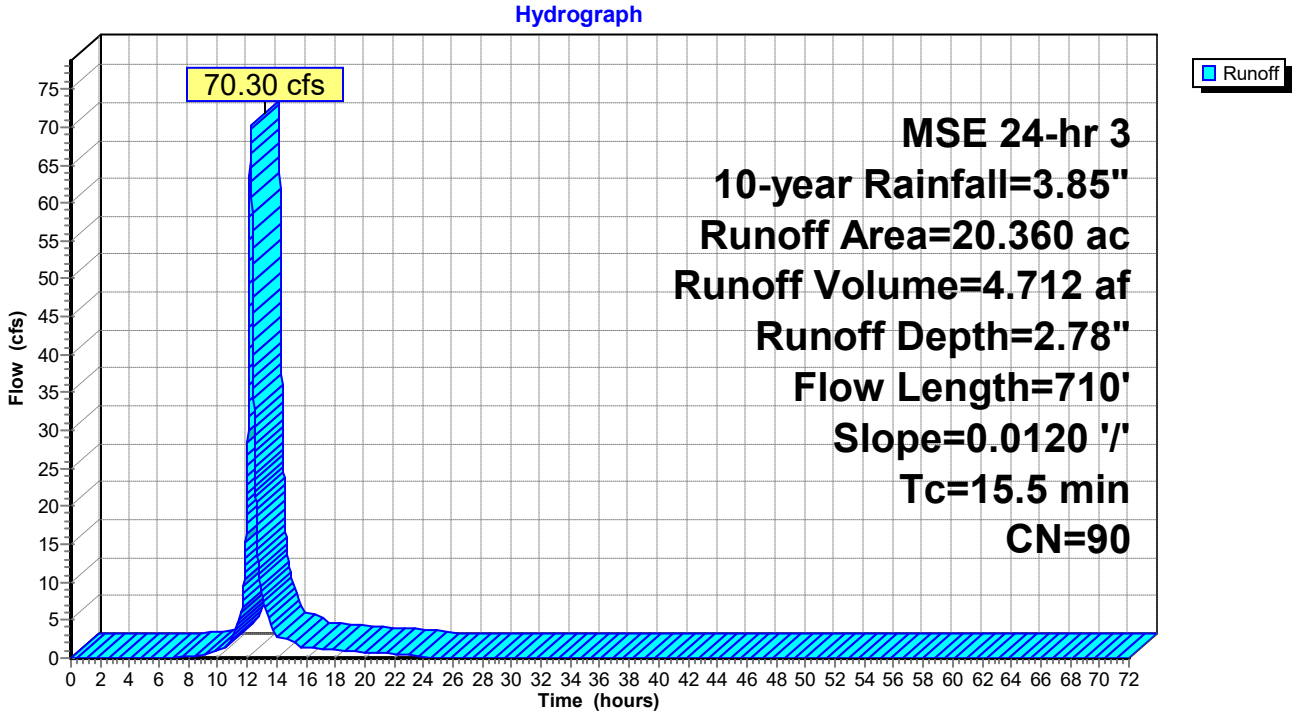
Runoff = 70.30 cfs @ 12.24 hrs, Volume= 4.712 af, Depth= 2.78"
Routed to Pond WP : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=3.85"

	Area (ac)	CN	Description
*	4.240	98	Buildings
*	5.870	98	Drives/Concrete
	8.650	79	50-75% Grass cover, Fair, HSG C
*	1.600	98	Pond
	20.360	90	Weighted Average
	8.650		42.49% Pervious Area
	11.710		57.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	710	0.0120	0.76		**Lag/CN Method,**

Subcatchment P2: P2



Summary for Subcatchment P3: P3

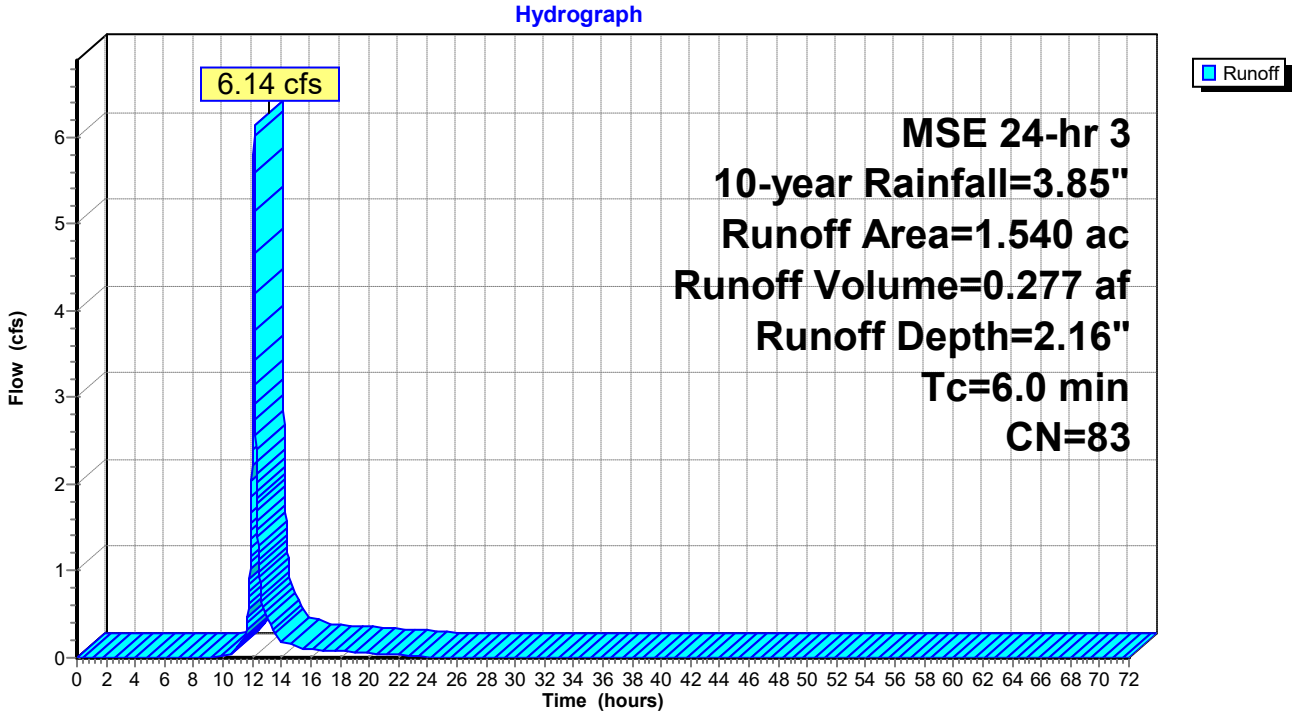
Runoff = 6.14 cfs @ 12.13 hrs, Volume= 0.277 af, Depth= 2.16"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=3.85"

	Area (ac)	CN	Description
*	0.120	98	Builkdings
*	0.170	98	Parking/Drives
	1.250	79	50-75% Grass cover, Fair, HSG C
	1.540	83	Weighted Average
	1.250		81.17% Pervious Area
	0.290		18.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P3: P3



Summary for Pond WP: Wet Pond

Inflow Area = 20.360 ac, 57.51% Impervious, Inflow Depth = 2.78" for 10-year event
Inflow = 70.30 cfs @ 12.24 hrs, Volume= 4.712 af
Outflow = 8.45 cfs @ 12.97 hrs, Volume= 3.743 af, Atten= 88%, Lag= 43.8 min
Primary = 8.45 cfs @ 12.97 hrs, Volume= 3.743 af
Routed to Link P : Proposed Outfall
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link P : Proposed Outfall

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 820.00' Surf.Area= 68,008 sf Storage= 194,045 cf
Peak Elev= 821.75' @ 12.97 hrs Surf.Area= 80,067 sf Storage= 323,368 cf (129,324 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 548.9 min (1,341.8 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	815.00'	730,078 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

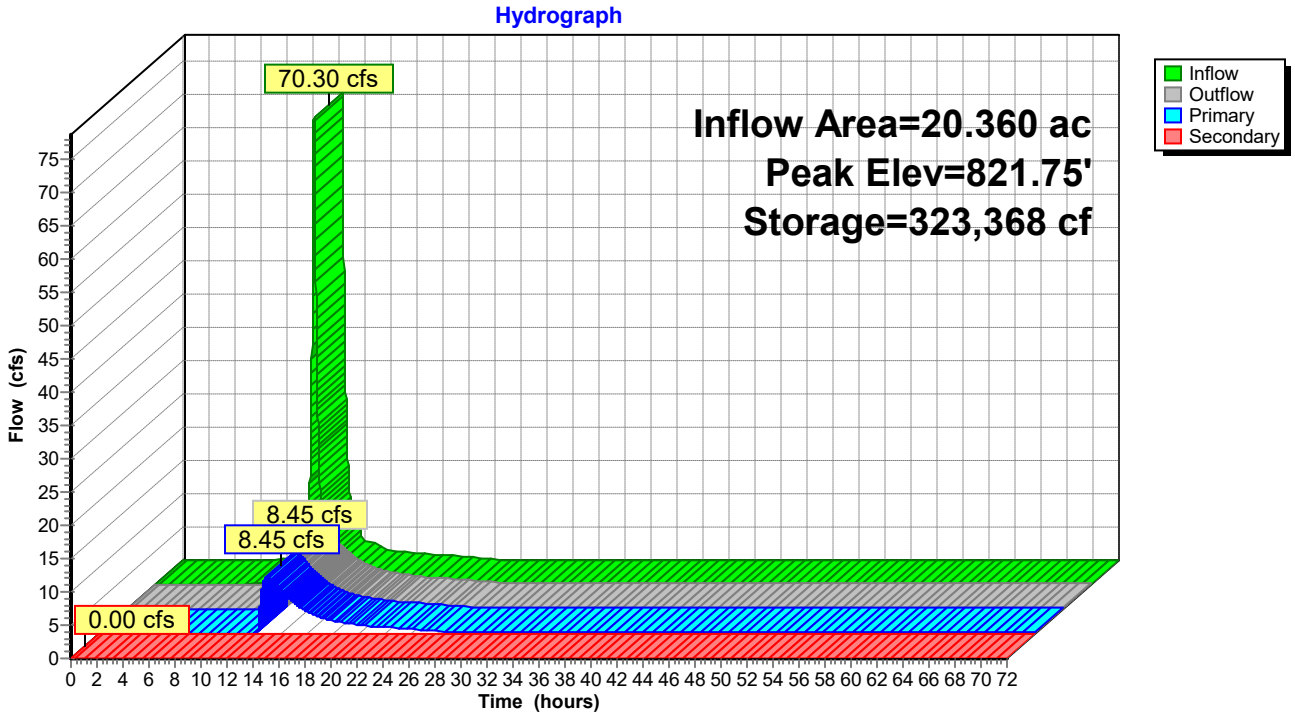
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
815.00	22,094	0	0
819.00	46,341	136,870	136,870
820.00	68,008	57,175	194,045
821.00	74,853	71,431	265,475
822.00	81,829	78,341	343,816
823.00	88,933	85,381	429,197
824.00	96,180	92,557	521,754
825.00	103,545	99,863	621,616
826.00	113,378	108,462	730,078

Device	Routing	Invert	Outlet Devices
#1	Primary	820.00'	**24.0" Round Culvert** L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 820.00' / 819.35' S= 0.0120 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#2	Secondary	825.00'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Device 1	820.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	821.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=8.44 cfs @ 12.97 hrs HW=821.75' (Free Discharge)
└**1=Culvert** (Passes 8.44 cfs of 10.34 cfs potential flow)
└**3=Orifice/Grate** (Orifice Controls 0.30 cfs @ 6.13 fps)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 8.14 cfs @ 2.83 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=820.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond WP: Wet Pond

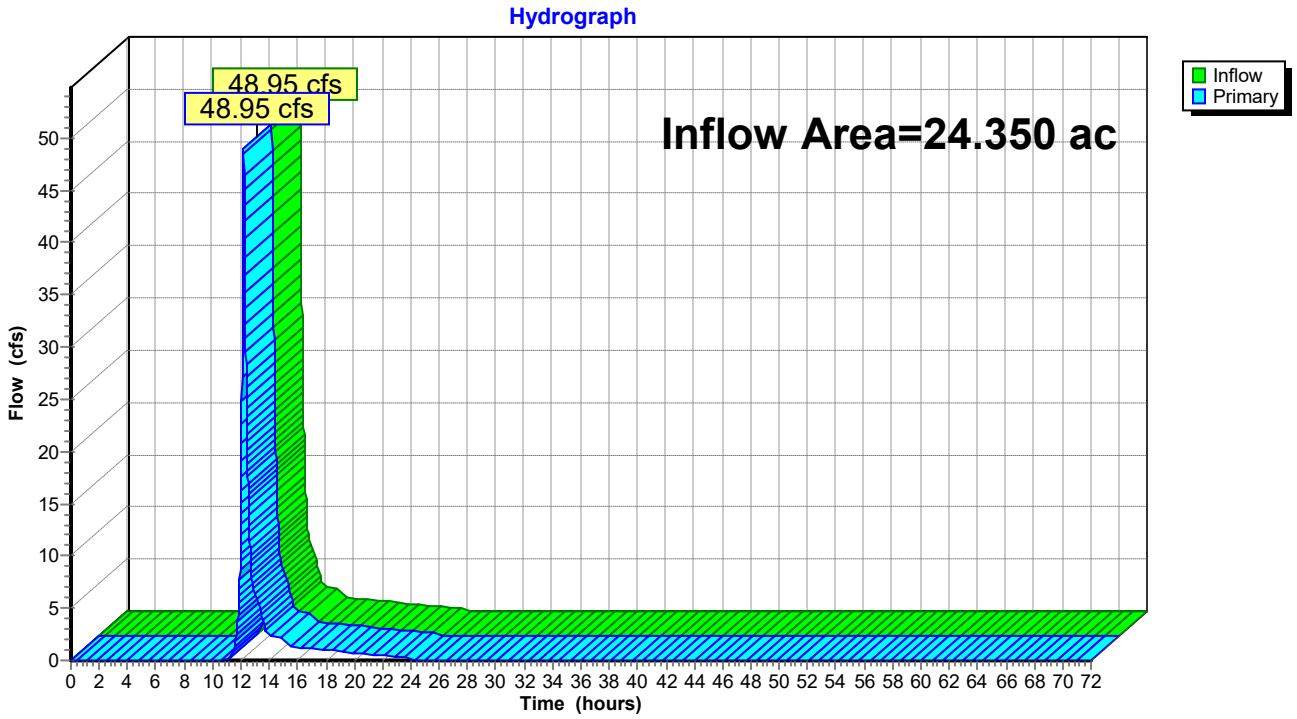


Summary for Link E: Existing Outfall

Inflow Area = 24.350 ac, 4.48% Impervious, Inflow Depth = 1.50" for 10-year event
Inflow = 48.95 cfs @ 12.20 hrs, Volume= 3.038 af
Primary = 48.95 cfs @ 12.20 hrs, Volume= 3.038 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link E: Existing Outfall

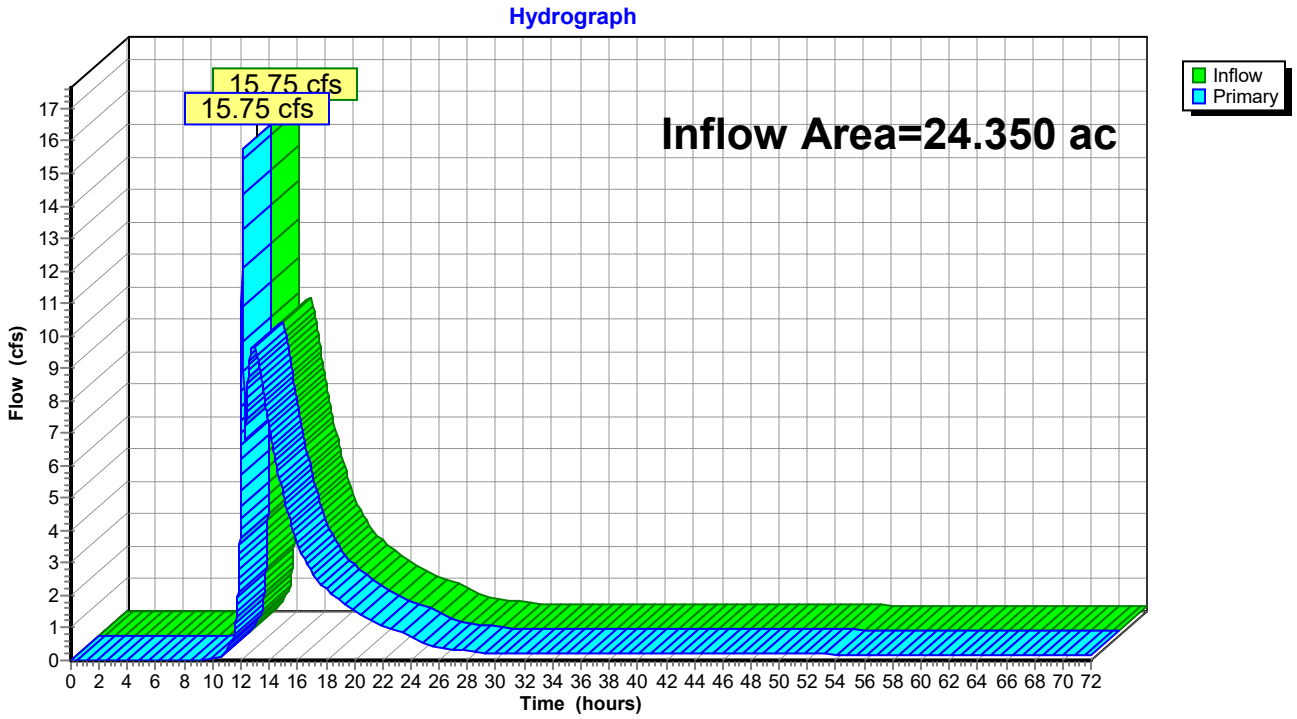


Summary for Link P: Proposed Outfall

Inflow Area = 24.350 ac, 51.01% Impervious, Inflow Depth > 2.19" for 10-year event
Inflow = 15.75 cfs @ 12.13 hrs, Volume= 4.444 af
Primary = 15.75 cfs @ 12.13 hrs, Volume= 4.444 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link P: Proposed Outfall



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment E1: EX1 Runoff Area=3.550 ac 3.94% Impervious Runoff Depth=3.44"
Tc=6.0 min CN=75 Runoff=22.57 cfs 1.016 af

Subcatchment E2: EX2 Runoff Area=20.800 ac 4.57% Impervious Runoff Depth=3.34"
Flow Length=871' Tc=12.7 min CN=74 Runoff=97.37 cfs 5.784 af

Subcatchment P1: P1 Runoff Area=2.450 ac 17.14% Impervious Runoff Depth=4.15"
Tc=6.0 min CN=82 Runoff=18.36 cfs 0.848 af

Subcatchment P2: P2 Runoff Area=20.360 ac 57.51% Impervious Runoff Depth=5.02"
Flow Length=710' Slope=0.0120 '/' Tc=15.5 min CN=90 Runoff=123.34 cfs 8.519 af

Subcatchment P3: P3 Runoff Area=1.540 ac 18.83% Impervious Runoff Depth=4.26"
Tc=6.0 min CN=83 Runoff=11.78 cfs 0.547 af

Pond WP: Wet Pond Peak Elev=822.91' Storage=421,590 cf Inflow=123.34 cfs 8.519 af
Primary=16.52 cfs 7.533 af Secondary=0.00 cfs 0.000 af Outflow=16.52 cfs 7.533 af

Link E: Existing Outfall Inflow=111.21 cfs 6.800 af
Primary=111.21 cfs 6.800 af

Link P: Proposed Outfall Inflow=34.57 cfs 8.928 af
Primary=34.57 cfs 8.928 af

Total Runoff Area = 48.700 ac Runoff Volume = 16.714 af Average Runoff Depth = 4.12"
72.26% Pervious = 35.190 ac 27.74% Impervious = 13.510 ac

Summary for Subcatchment E1: EX1

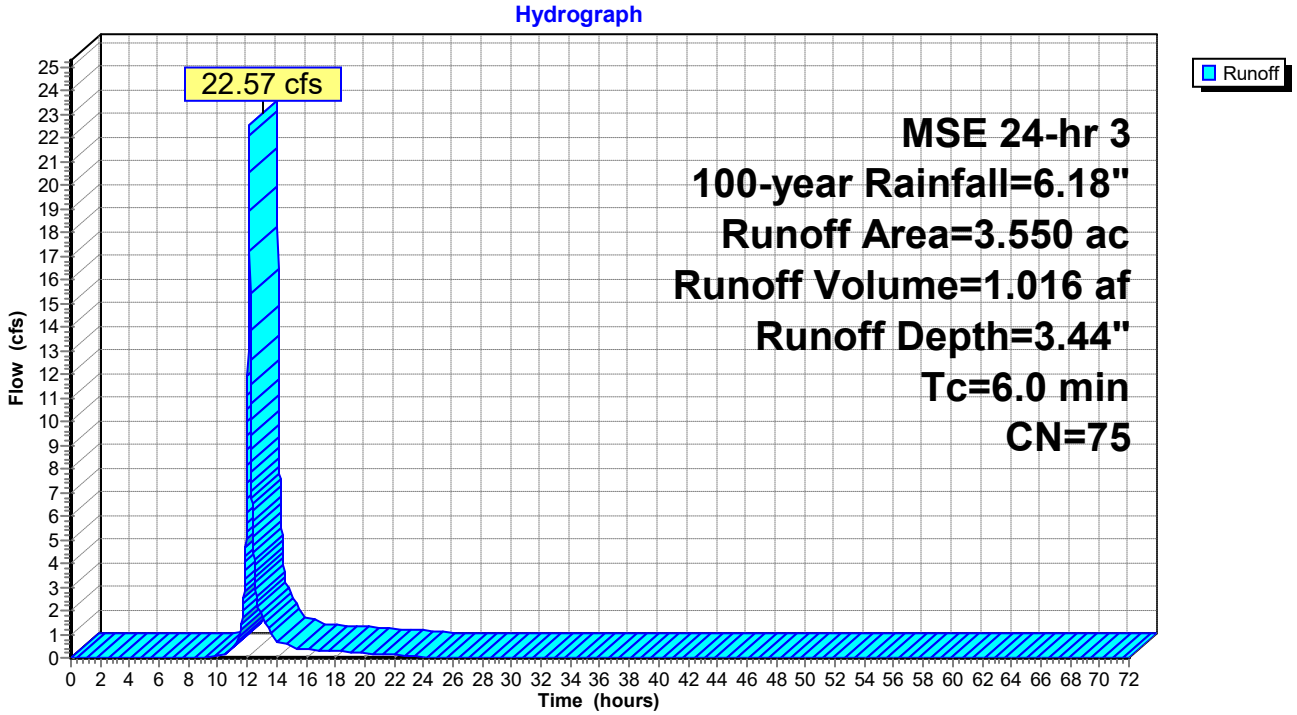
Runoff = 22.57 cfs @ 12.13 hrs, Volume= 1.016 af, Depth= 3.44"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=6.18"

	Area (ac)	CN	Description
*	0.140	98	Building/driveways
	2.270	71	Meadow, non-grazed, HSG C
	1.140	79	50-75% Grass cover, Fair, HSG C
	3.550	75	Weighted Average
	3.410		96.06% Pervious Area
	0.140		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment E1: EX1



Summary for Subcatchment E2: EX2

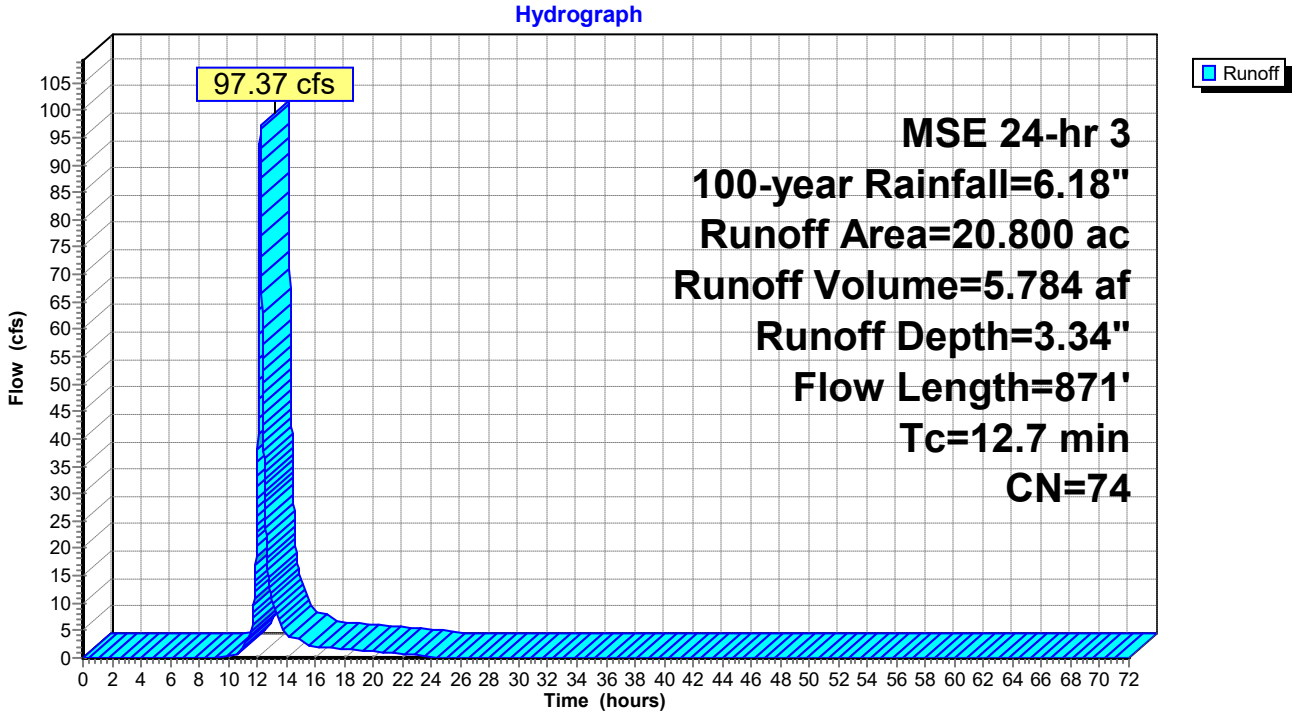
Runoff = 97.37 cfs @ 12.21 hrs, Volume= 5.784 af, Depth= 3.34"
Routed to Link E : Existing Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=6.18"

	Area (ac)	CN	Description
*	0.950	98	Buildings and Driveways
	3.600	79	50-75% Grass cover, Fair, HSG C
	16.250	71	Meadow, non-grazed, HSG C
	20.800	74	Weighted Average
	19.850		95.43% Pervious Area
	0.950		4.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	100	0.0260	0.42		**Sheet Flow,** Fallow n= 0.050 P2= 2.74"
8.7	771	0.0270	1.48		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.7	871	Total			

Subcatchment E2: EX2



Summary for Subcatchment P1: P1

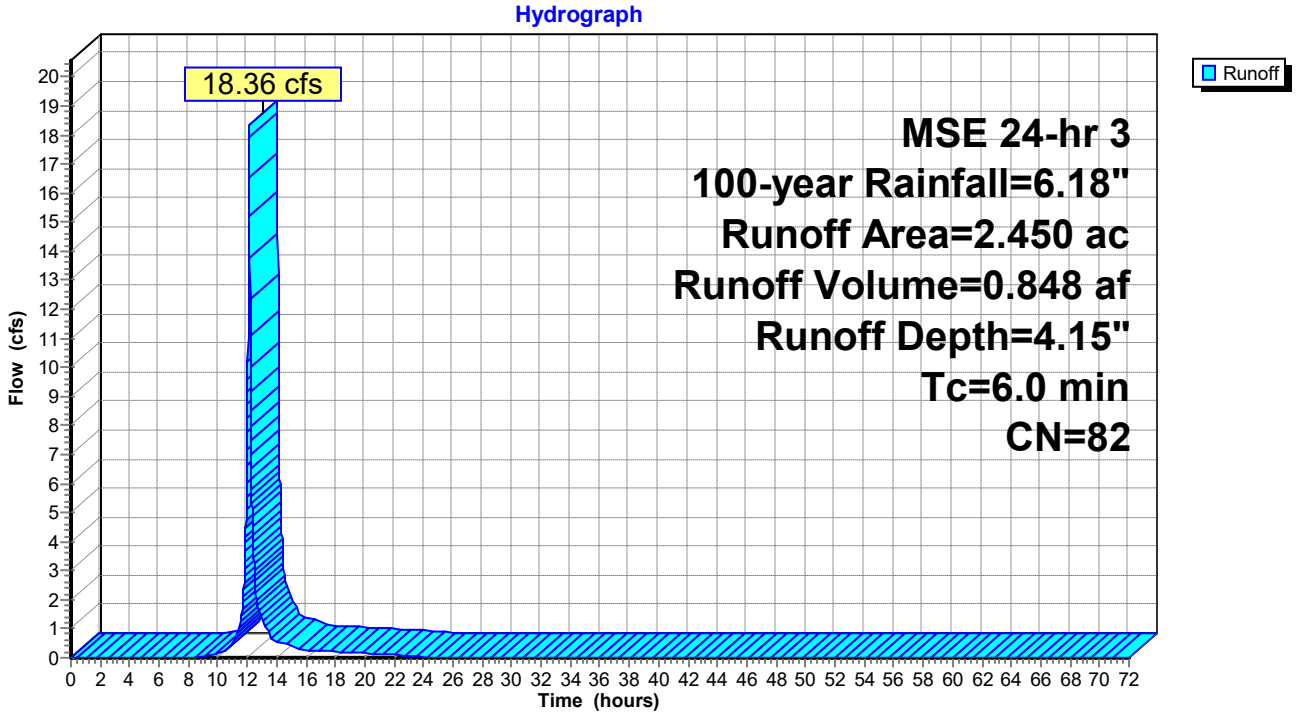
Runoff = 18.36 cfs @ 12.13 hrs, Volume= 0.848 af, Depth= 4.15"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=6.18"

	Area (ac)	CN	Description
*	0.100	98	Driveway/sidewalks
*	0.320	98	Buildings
	2.030	79	50-75% Grass cover, Fair, HSG C
	2.450	82	Weighted Average
	2.030		82.86% Pervious Area
	0.420		17.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P1: P1



Summary for Subcatchment P2: P2

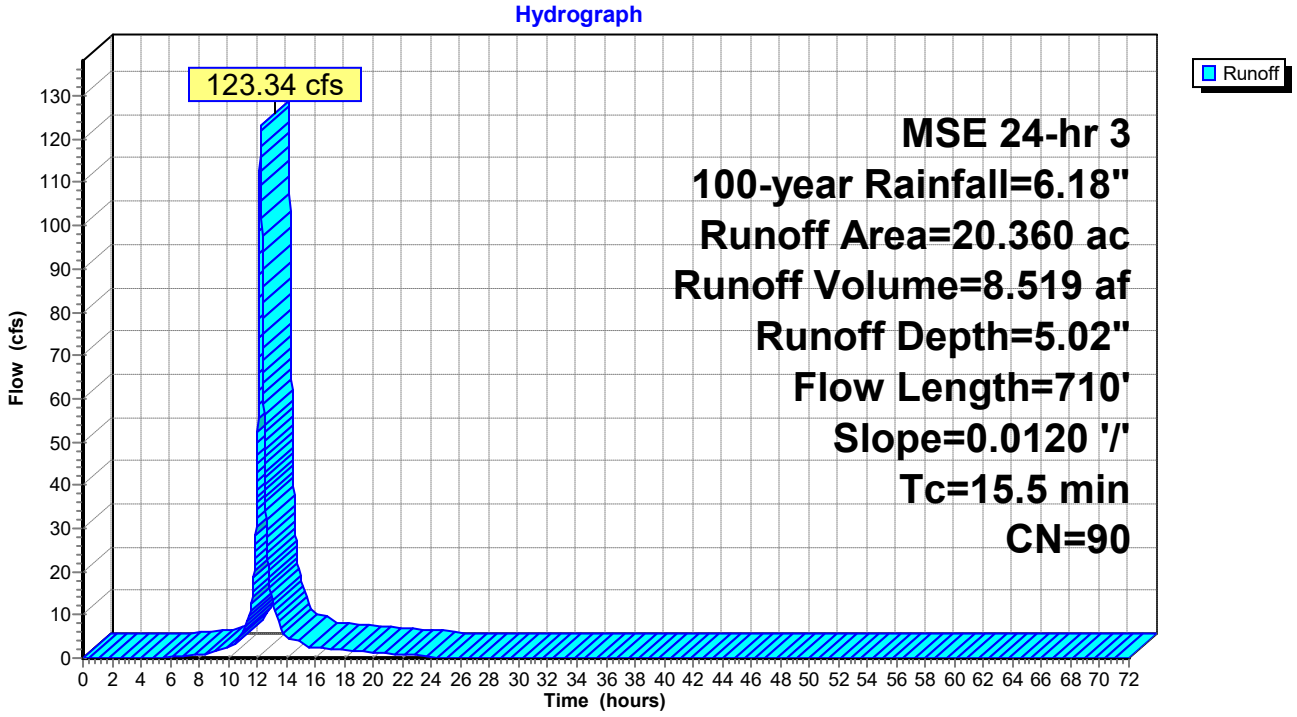
Runoff = 123.34 cfs @ 12.23 hrs, Volume= 8.519 af, Depth= 5.02"
Routed to Pond WP : Wet Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=6.18"

	Area (ac)	CN	Description
*	4.240	98	Buildings
*	5.870	98	Drives/Concrete
	8.650	79	50-75% Grass cover, Fair, HSG C
*	1.600	98	Pond
	20.360	90	Weighted Average
	8.650		42.49% Pervious Area
	11.710		57.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.5	710	0.0120	0.76		**Lag/CN Method,**

Subcatchment P2: P2



Summary for Subcatchment P3: P3

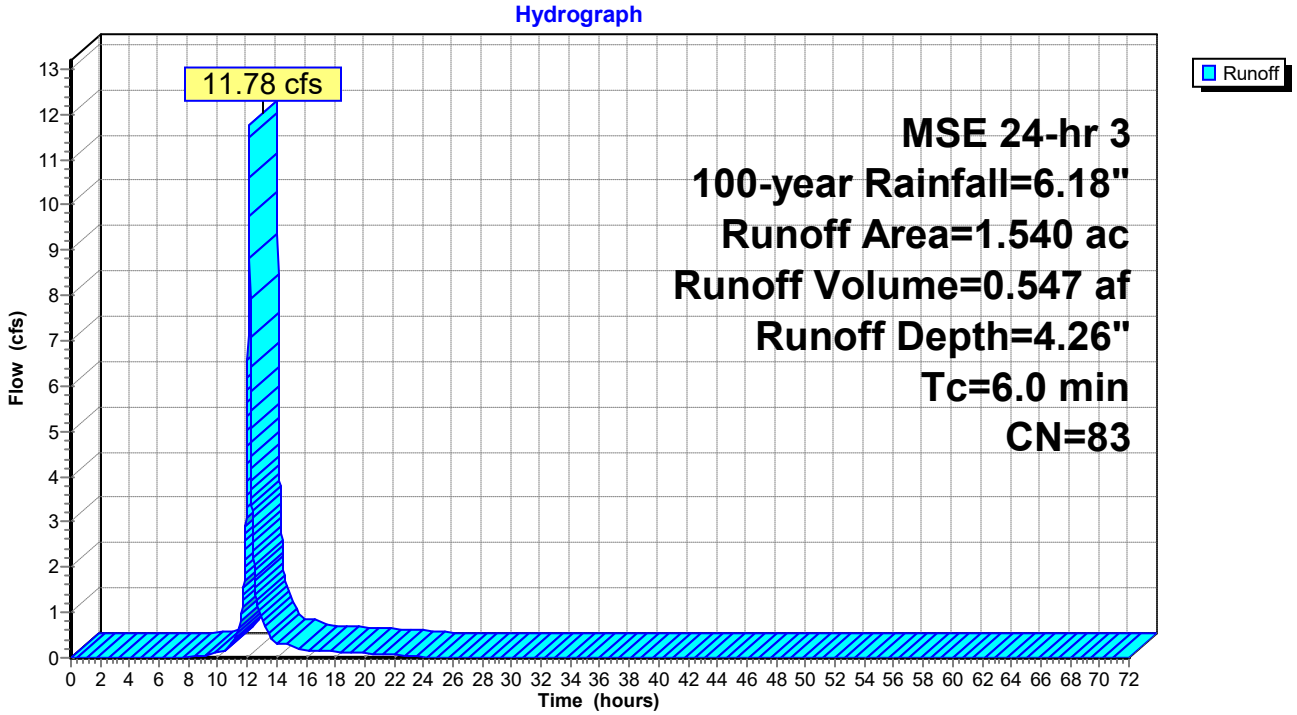
Runoff = 11.78 cfs @ 12.13 hrs, Volume= 0.547 af, Depth= 4.26"
Routed to Link P : Proposed Outfall

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=6.18"

	Area (ac)	CN	Description
*	0.120	98	Builkdings
*	0.170	98	Parking/Drives
	1.250	79	50-75% Grass cover, Fair, HSG C
	1.540	83	Weighted Average
	1.250		81.17% Pervious Area
	0.290		18.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment P3: P3



Summary for Pond WP: Wet Pond

Inflow Area = 20.360 ac, 57.51% Impervious, Inflow Depth = 5.02" for 100-year event
Inflow = 123.34 cfs @ 12.23 hrs, Volume= 8.519 af
Outflow = 16.52 cfs @ 12.85 hrs, Volume= 7.533 af, Atten= 87%, Lag= 37.1 min
Primary = 16.52 cfs @ 12.85 hrs, Volume= 7.533 af
Routed to Link P : Proposed Outfall
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link P : Proposed Outfall

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Starting Elev= 820.00' Surf.Area= 68,008 sf Storage= 194,045 cf
Peak Elev= 822.91' @ 12.85 hrs Surf.Area= 88,323 sf Storage= 421,590 cf (227,546 cf above start)

Plug-Flow detention time= 878.1 min calculated for 3.079 af (36% of inflow)
Center-of-Mass det. time= 350.6 min (1,131.9 - 781.3)

Volume	Invert	Avail.Storage	Storage Description
#1	815.00'	730,078 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

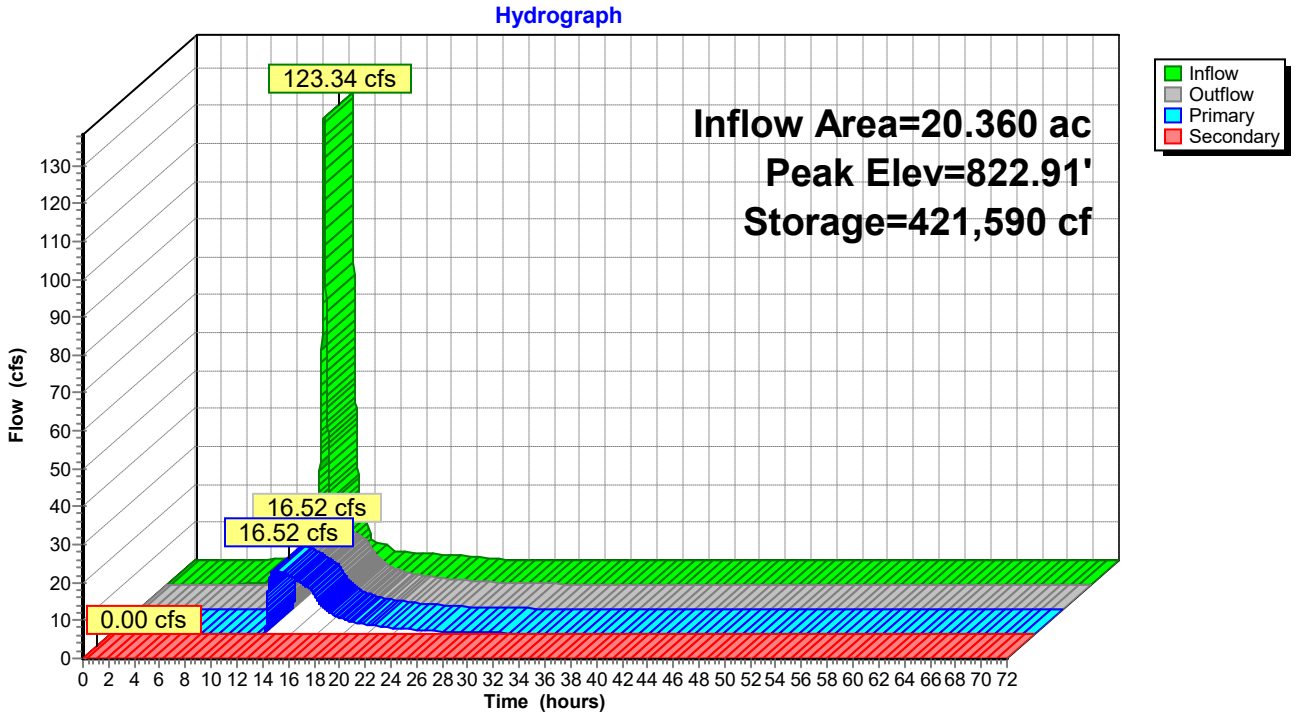
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
815.00	22,094	0	0
819.00	46,341	136,870	136,870
820.00	68,008	57,175	194,045
821.00	74,853	71,431	265,475
822.00	81,829	78,341	343,816
823.00	88,933	85,381	429,197
824.00	96,180	92,557	521,754
825.00	103,545	99,863	621,616
826.00	113,378	108,462	730,078

Device	Routing	Invert	Outlet Devices
#1	Primary	820.00'	**24.0" Round Culvert** L= 54.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 820.00' / 819.35' S= 0.0120 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#2	Secondary	825.00'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Device 1	820.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	821.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=16.52 cfs @ 12.85 hrs HW=822.91' (Free Discharge)
└**1=Culvert** (Inlet Controls 16.52 cfs @ 5.26 fps)
└**3=Orifice/Grate** (Passes < 0.39 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Passes < 31.32 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=820.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond WP: Wet Pond

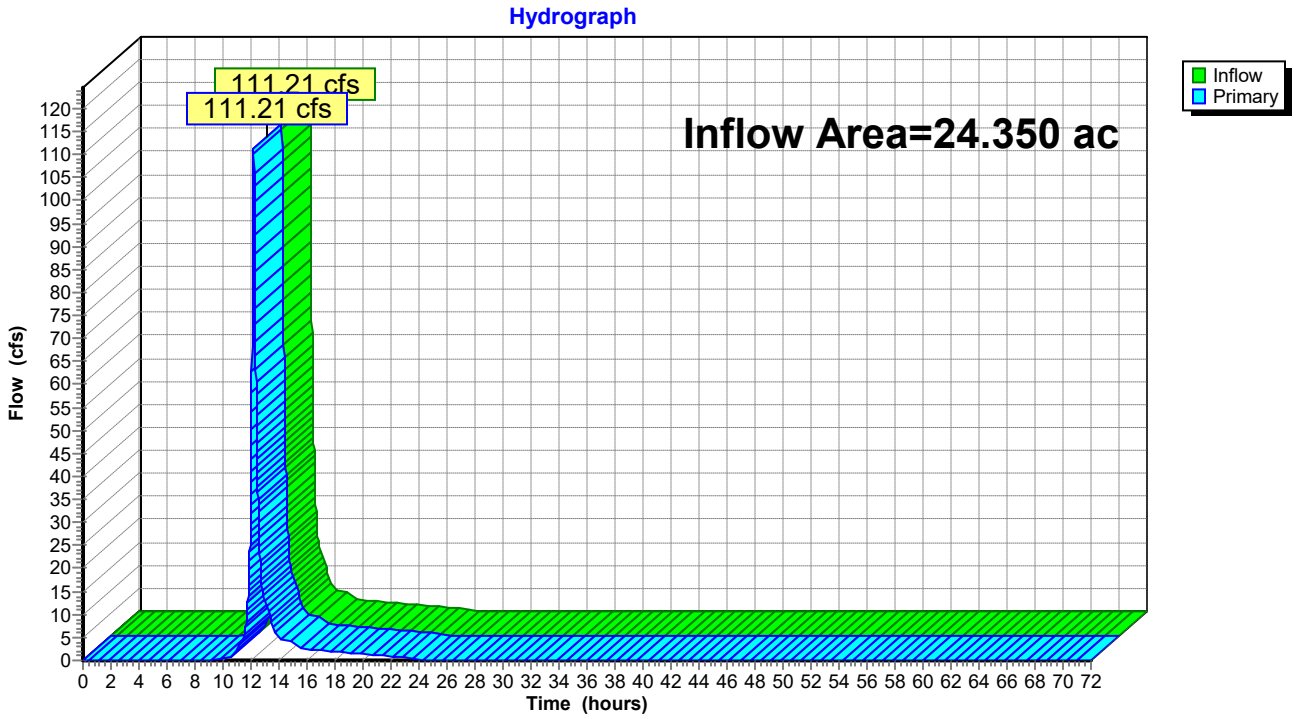


Summary for Link E: Existing Outfall

Inflow Area = 24.350 ac, 4.48% Impervious, Inflow Depth = 3.35" for 100-year event
Inflow = 111.21 cfs @ 12.19 hrs, Volume= 6.800 af
Primary = 111.21 cfs @ 12.19 hrs, Volume= 6.800 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link E: Existing Outfall

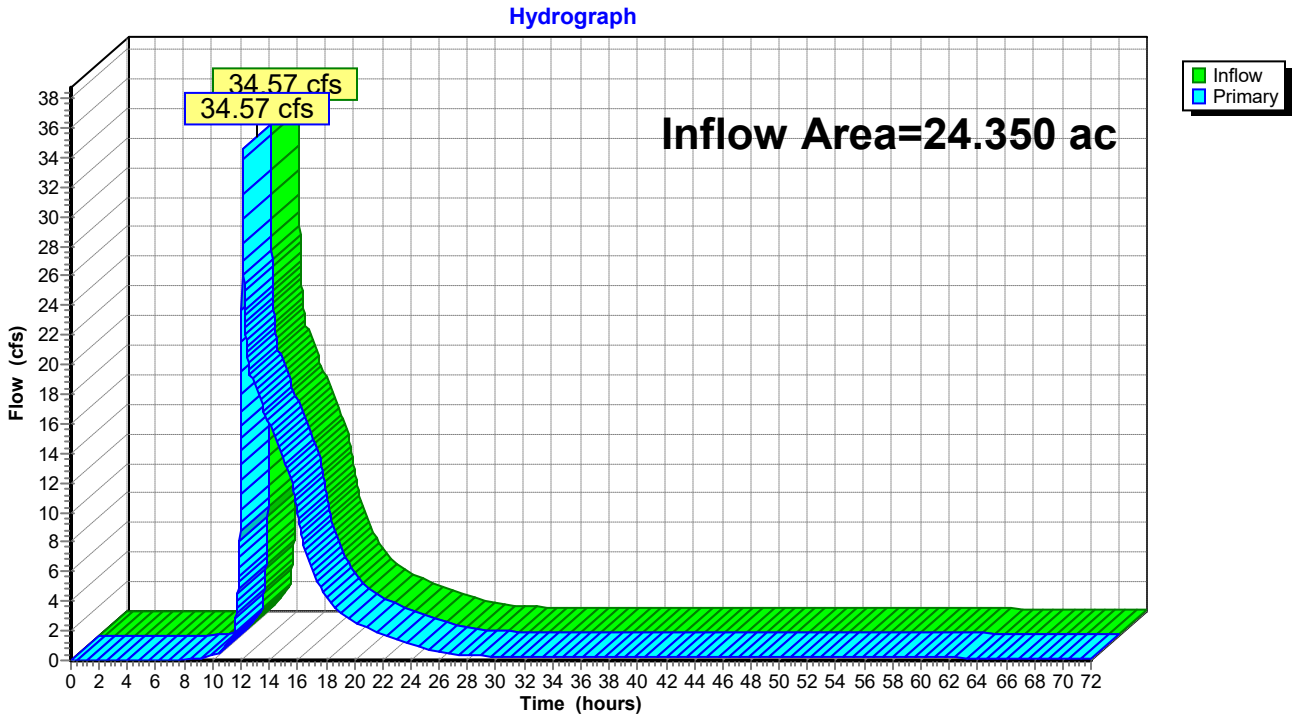


Summary for Link P: Proposed Outfall

Inflow Area = 24.350 ac, 51.01% Impervious, Inflow Depth > 4.40" for 100-year event
Inflow = 34.57 cfs @ 12.14 hrs, Volume= 8.928 af
Primary = 34.57 cfs @ 12.14 hrs, Volume= 8.928 af, Atten= 0%, Lag= 0.0 min

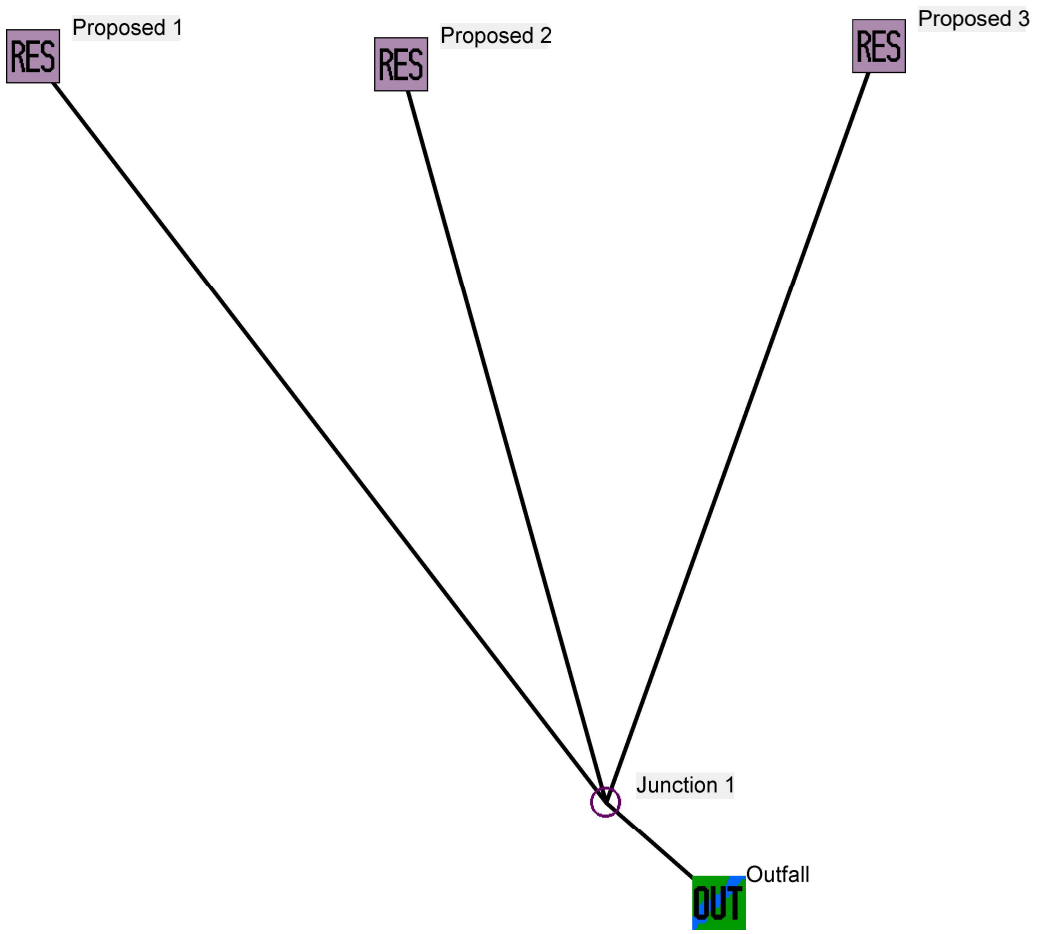
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link P: Proposed Outfall



Appendix 5

WinSLAMM Input/Output


RES
Proposed 1
RES
Proposed 2
RES
Proposed 3
Junction 1
OUT
Outfall

Data file name: S:\Design & Construction Services\National Management LLC\491163 - River Crossing\Stormwater\SWMP\WinSLAMM\Ri...ols.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Date: 08-31-2026 Time: 11:56:38
Site information:

LU# 1 - Residential: Proposed 1 Total area (ac): 2.450
1 - Roofs: 0.320 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.100 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 2.030 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Residential: Proposed 3 Total area (ac): 1.540
1 - Roofs: 0.120 ac. Pitched Disconnected Normal Clayey Low Density PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAM
25 - Driveways 1: 0.170 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 1.250 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

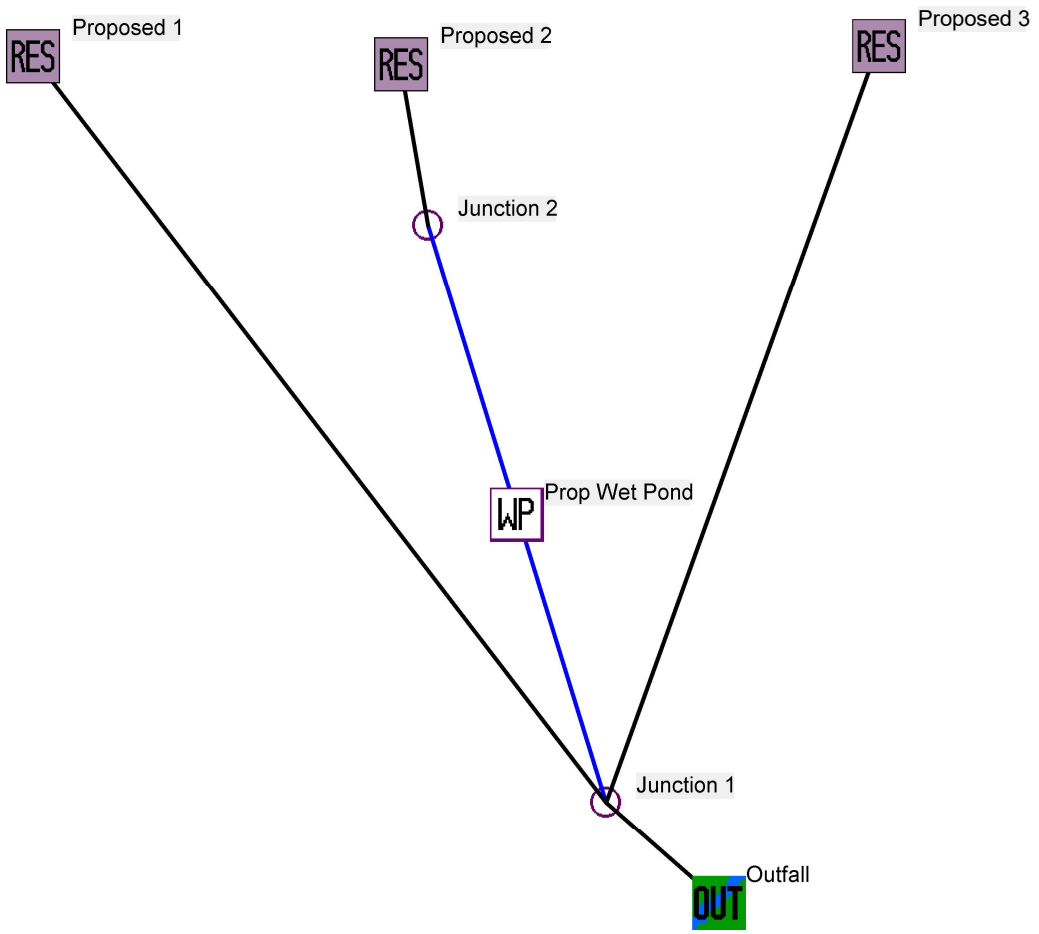
LU# 3 - Residential: Proposed 2 Total area (ac): 20.360
1 - Roofs 1: 4.240 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 5.870 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 8.650 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 1.600 ac. PSD File: Source Area PSD File:

SLAMM for Windows Version 10.5.0
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Data file name: S:\Design & Construction Services\National Management LLC\491163 - River Crossing\Stormwater\SWMP\WinSLAMM\River Crossing No Controls.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 08-31-2026 Time of run: 11:55:21
Total Area Modeled (acres): 24.350
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	1.145E+06	-	90.11	6444	-
Outfall Total with Controls:	1.145E+06	0.00%	90.11	6444	0.00%
Annualized Total After Outfall Controls:	1.161E+06			6533	

Pollutant	Conc. No Controls	Conc. With Controls	Conc. Units	Pollutant Yield No Controls	Pollutant Yield With Controls	Pol. Yield Units	Percent Reduction
Particulate Solids	90.11	90.11	mg/L	6444	6444	lbs	0.00 %
Total Phosphorus	0.3556	0.3556	mg/L	25.43	25.43	lbs	0.00 %


RES
Proposed 1
RES
Proposed 2
RES
Proposed 3
Junction 2
WP
Prop Wet Pond
Junction 1
OUT
Outfall

Data file name: S:\Design & Construction Services\National Management LLC\491163 - River Crossing\Stormwater\SWMP\WinSLAMM\Ri
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Date: 08-31-2026 Time: 11:51:21
Site information:

LU# 1 - Residential: Proposed 1 Total area (ac): 2.450
1 - Roofs: 0.320 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 0.100 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 2.030 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Residential: Proposed 3 Total area (ac): 1.540
1 - Roofs: 0.120 ac. Pitched Disconnected Normal Clayey Low Density PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAM
25 - Driveways 1: 0.170 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 1.250 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Residential: Proposed 2 Total area (ac): 20.360
1 - Roofs 1: 4.240 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - Driveways 1: 5.870 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 8.650 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 1.600 ac. PSD File: Source Area PSD File:

Control Practice 1: Wet Detention Pond CP# 1 (DS) - Prop Wet Pond
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Sharp Crested Weir
1. Sharp crested weir length (ft): 4
2. Sharp crested weir height from invert: 4
3. Sharp crested weir invert elevation above datum (ft): 7
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 10
Outlet type: Vertical Stand Pipe
1. Stand pipe diameter (ft): 4
2. Stand pipe height above datum (ft): 11
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.5071	0.00	0.00
2	1.00	0.6419	0.00	0.00
3	2.00	0.7797	0.00	0.00
4	3.00	0.9185	0.00	0.00
5	4.00	1.0638	0.00	0.00
6	5.00	1.5613	0.00	0.00
7	6.00	1.7183	0.00	0.00
8	7.00	1.8785	0.00	0.00
9	8.00	2.0416	0.00	0.00
10	9.00	2.2080	0.00	0.00
11	10.00	2.3770	0.00	0.00
12	11.00	2.6027	0.00	0.00

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Data file name: S:\Design & Construction Services\National Management LLC\491163 - River Crossing\Stormwater\SWMP\WinSLAMM\River Crossing.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/06 End of Winter Season: 03/28
Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69
Date of run: 08-31-2026 Time of run: 11:49:37
Total Area Modeled (acres): 24.350
Years in Model Run: 0.99

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	1.145E+06	-	90.11	6444	-
Outfall Total with Controls:	1.147E+06	-0.17%	9.153	655.3	89.83%
Annualized Total After Outfall Controls:	1.163E+06			664.4	

Pollutant	Conc. No Controls	Conc. With Controls	Conc. Units	Pollutant Yield No Controls	Pollutant Yield With Controls	Pol. Yield Units	Percent Reduction
Particulate Solids	90.11	9.153	mg/L	6444	655.3	lbs	89.83 %
Total Phosphorus	0.3556	0.1124	mg/L	25.43	8.049	lbs	68.35 %

Appendix 6

Storm Water Maintenance Plan

	DECLARATION OF CONDITIONS AND RESTRICTIONS FOR MAINTENANCE OF STORMWATER MANAGEMENT MEASURES
Document Number	

STORMWATER MANAGEMENT PRACTICES
MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20____, by and between River Crossing _____hereinafter collectively called the "Owner" and the City of Watertown hereinafter called the "City".

WITNESSETH:

WHEREAS, the Owner is the owner of the following described lands situated in the City of Watertown, Jefferson County, State of Wisconsin, to-wit:

Lot 1 of Certified Survey Map No. 6536 recorded January 22, 2025, as Document No. 1491549 being Lot 1 of Certified Survey Map No. 4319, recorded in Vol. 21 of Certified Survey Maps, on Pages 229-231, as document No., 1095342, and lands located in the SE 1/4 of the NW 1/4 of Section 16, T8N, R15E, in the City of Watertown, Jefferson County, Wisconsin.

Tax Key: 291-0815-1624-003

Hereinafter called the "Property".

WHEREAS, the Owner is developing the Property; and

WHEREAS, the Site Plan identified as River Crossing Apartments and Site Improvements hereinafter called the "Plan", which is attached hereto as Exhibit "A" and expressly made a part of hereof, as approved or to be approved by the City, provides for on-site stormwater management practices within the confines of the Property; and

WHEREAS, the City and the Owner, its successors and assigns, agree that the health, safety and welfare of the residents of the City, require that the on-site stormwater management practices as defined in Wisconsin Administrative Code NR 151, be constructed and maintained on the Property; and

WHEREAS, the City requires that on-site stormwater management practices as shown on the Plan be constructed and adequately maintained by the Owner, its successors and assigns.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Owner, its successors and assigns, in accordance with the plans and specifications identified in the Plan, shall construct the on-site stormwater management facilities.

2. The Owner, its successors and assigns, shall adequately maintain the stormwater man practices, including, but not limited to, all pipes and channels built to convey stormwater to the facility, as well as all structures, improvements and vegetation provided to control the quantity and quality of the stormwater. Adequate maintenance is herein defined as keeping the stormwater management facilities in good working condition so that these facilities are performing their design functions and are in accordance with the Storm Water Practice Maintenance Plan attached to this Agreement as Exhibit A and by this reference made a part hereof.

3. The Owner, its successors and assigns, shall regularly inspect the stormwater management practices as often as conditions require, but in any event at least twice each year. The standard Storm Water Maintenance Report attached to this Agreement as Exhibit A and by this reference made a part hereof shall be used for the purpose of the regular inspections of the stormwater management practices. This report form may be periodically updated by the City. The Owner, successors and assigns shall keep the Storm Water Maintenance Reports from past inspections as well as a log of maintenance activity indicating the date and type of maintenance completed. The reports and maintenance log shall be made available to the City for review upon request. The purpose of the inspections is to assure safe and proper functioning of the facilities. The inspections shall cover all facilities including, but not limited to, berms, outlet structures, pond areas and access roads. Deficiencies shall be noted in the Operation and Maintenance Report.

4. The Owner, its successors and assigns, hereby grants permission to the City, its authorized agents and employees, to enter upon the Property and to inspect the stormwater management practices whenever the City deems necessary. The purpose of inspection is to investigate reported deficiencies, to respond to citizen complaints, or verify maintenance of on-site stormwater management practices. The City shall provide the Owner, its successors and assigns, copies of the inspection findings and a directive to commence with the repairs if necessary. Corrective actions shall be taken within a reasonable time frame as established by the City Engineer.

5. If the Owner, its successors and assigns, fails to maintain the stormwater management practices in good working condition acceptable to the City and does not perform the required corrective actions in the specified time, the City may:

    a. Perform the corrective actions identified in the inspection report and assess the Owner, its successors and assigns for the cost of such work. The cost of such work shall be specially assessed against the Property pursuant to Wisconsin Statutes Section § 66.0703. It is expressly understood and agreed that the City is under no obligation to routinely maintain or repair said stormwater management practices, and in no event shall this Agreement be construed to impose any such obligation on the City.

6. The Owner, its successors and assigns, will perform the work necessary to keep these facilities in good working order as appropriate. In the event a maintenance schedule for the stormwater management practices (including sediment removal) is outlined in the Operation and Maintenance Plan, the schedule will be followed.

7. This Agreement may be modified by mutual agreement of the *responsible party* and the City. The modification date shall be the date City of records the modified Agreement with the Rock County Register of Deeds, as a property deed restriction so that the modified agreement is binding upon all subsequent owners of the land served by the stormwater management

practices. Responsible party, as used in this paragraph, shall mean the Owner, its succ assigns, who is responsible for the Agreement at the time of any amendment.

8. In the event the City pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Owner, its successors and assigns, shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the City hereunder. Failure of the Owner to make payment within thirty (30) days shall result in the amount being added to the tax roll as a special charge pursuant to paragraph 5(b).

9. This Agreement imposes no liability of any kind whatsoever on the City and the Owner agrees to hold the City harmless from any liability in the event the stormwater management practices fail to operate properly.

10. Upon receipt of the executed Agreement, the City shall record said agreement in the Office of the Register of Deeds.

WITNESS the following signatures and seals:

Owner Name
River Crossing _____

By: _____
Name:_____
Title: Managing Member
Date: _____

River Crossing _____

By: _____
Name:_____
Title: Managing Member
Date: _____

STATE OF WISCONSIN)
JEFFERSON COUNTY) : ss.

The foregoing Agreement was acknowledged before me this _____ day of _____, 20_____ by _____ and _____.

_____
Printed Name: _____
Notary Public, State of Wisconsin
My commission is/expires _____

City of Watertown
By: _____
Name:_____
Title:_____

STATE OF WISCONSIN)
JEFFERSON COUNTY) : ss.

The foregoing Agreement was acknowledged before me this _____ day of _____, 20_____ by _____ and _____.

Printed Name: _____
Notary Public, State of Wisconsin
My commission is/expires _____

This instrument was drafted by: Steve Kolar

Exhibit A

Storm Water Practice Maintenance Plan

River Crossing Apartments

Watertown, WI

This exhibit explains the basic function of each of the storm water practices on the subject property and prescribes the minimum maintenance requirements to remain compliant with this Agreement. The maintenance activities listed below are aimed to ensure these practices continue serving their intended functions in perpetuity. The list of activities is not all inclusive, but rather indicates the minimum type of maintenance that can be expected for this site.

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Tax Key: 291-0815-1624-003

Responsible Party:
Name:
National Management LLC
333 Bishops Way, Suite 141
Brookfield, WI 53005
Phone:
Email

System Description:

Stormwater measures on the property are designed to provide the peak flow control for the site prior to discharging off-site into adjacent municipal storm sewers. Wet pond provides at least 80% TSS removal, the ponds also provide peak flow control. Stormwater is conveyed to these ponds by overland flow and on-site storm sewer systems. Best management practices (BMP'S) shall be inspected and maintained on a regular basis.

The BMP'S receive runoff from the development of the subject property. During rainfall or snow melt events, the water level in the BMP'S will temporarily rise and slowly drain down. Performance of the BMP's can be monitored by observing the outflow characteristics of the storm water at the outlet structures for each device.

Minimum Maintenance Requirements:

To ensure the proper long-term function of the storm water management practices described above, the following activities must be completed:

All storm water drainage systems and components shall be inspected and maintained at least semiannually in early spring and in early fall. Additional inspections shall be made after large rainfall events of at least 1-inch. Repairs shall be made whenever deficiencies are found. The owner shall keep a written record of all inspections for a minimum period of five years. The inspections reports shall identify a reasonable schedule for repair or maintenance.

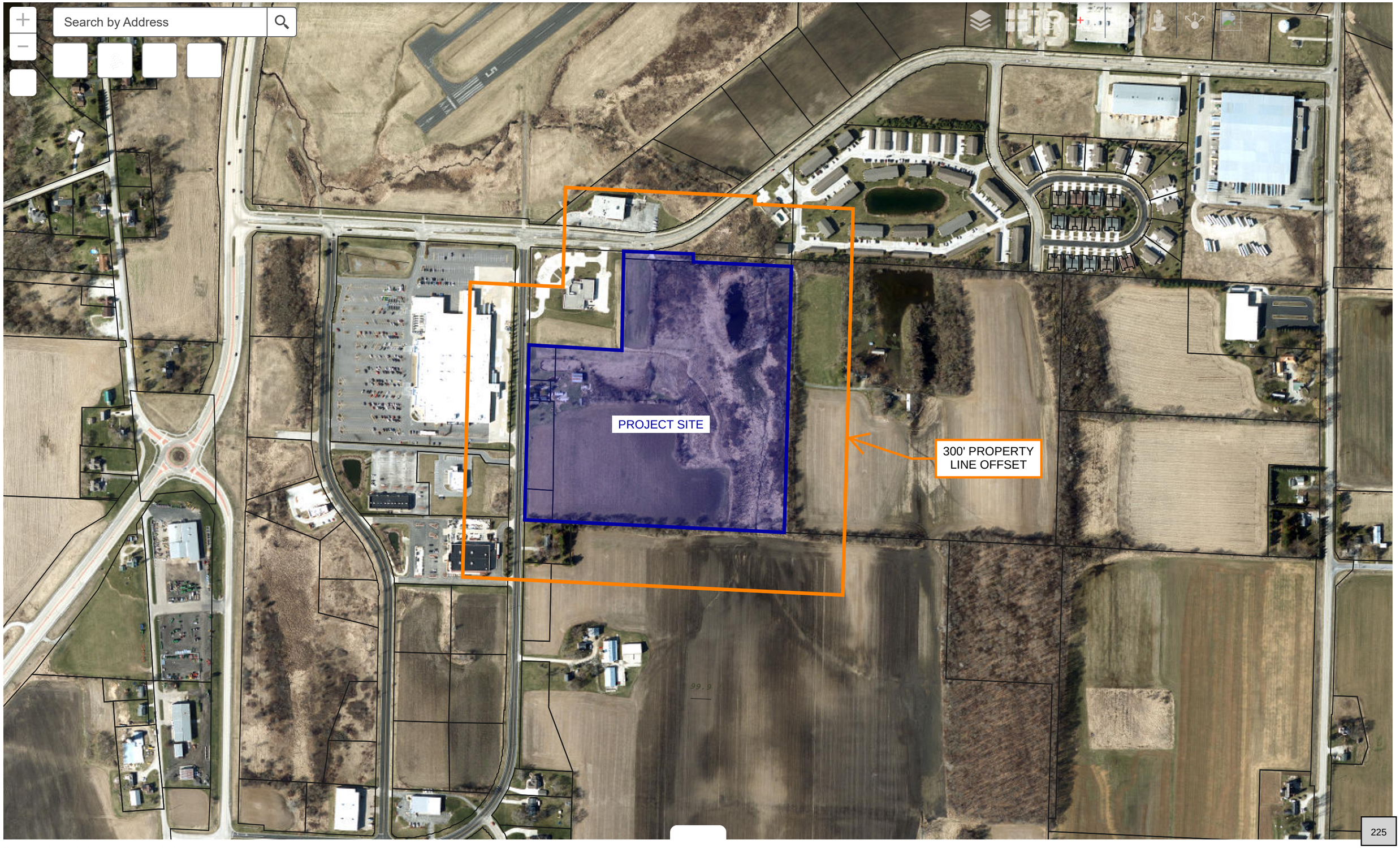
1. Grass Swales
    - Mow, remove trash, brush, trees, and accumulated sediments.
    - Reseed and dead grass or other vegetation as necessary.
2. Riprap Swales
3. Remove trash, brush, trees, and accumulated sediments.

4. Replace rip rap that has moved or washed away exposing bare soil, replace underlying fabric if m
   washed out.
   - Remove accumulated sediment.
5. Catch Basins and Storm Sewer

   The catch basin is considered a confined space and applicable entry requirements should be followed.
   - Inspect in the Spring and Fall for damage and sediment accumulation. Repair damage as needed. Remove accumulated sediments once a year in the fall or as needed. Properly dispose of sediments in accordance with NR528.
   - Inspect riprap at pipe outfalls. Replace riprap as necessary.
6. Detention Basins – Quarterly Inspections
   - Inspect stone weir between wet forebay and infiltration cell and pond overflow for signs of failure.
   - Inspect and repair any eroded areas on or around the embankments, emergency spillway, outlet structures and pipes.
   - Inspect for any damage to the outlet structure and promptly repair any damage that is found.
   - Replace riprap in bottom of basin and emergency spillway as needed.
   - Sediments shall be removed once the average permanent pool depth is 3.5 feet or less (6-inch sediment depth). Bathometric survey or other means to measure sediment depth shall be done once every five years.
   - When sediments are dredged, properly dispose of sediments in accordance with NR528.
7. Steep slopes
   - Inspect for signs or evidence of failure, bare soil, or rill erosion. Promptly repair any eroded areas with erosion matting, seed fertilizer and mulch.
   - Repair any areas along the slope that are starting to channelize runoff or sloughing by regrading.
   - Remove any woody vegetation.

THE CITY OF WATERTOWN
Opportunity runs through it.

Watertown GIS Viewer



Shapes on map represent general recommendations for future land use. Actual boundaries between different land use types and associated zoning districts may vary somewhat from representations on this map. Not all lands shown in a future developed land use category are immediately appropriate for development, rezoning, or subdivision.
Environmental Corridors depicted on this map use generalized boundaries of environmental features identified by the DNR. Actual Environmental Corridor boundaries are to be refined through detailed on-site investigation.

City of Watertown Growth Area*

City of Watertown And Town of Emmet Intergovernmental Agreement**

Town of Shields

Town of Emmet

Town of Watertown

Dodge County

Jefferson County

Rock River

Silver Creek

Provimi Rd

Welsh Rd

N Water St

2nd Street Rd

Hancock Rd

Jumeau St

N 4th St

Church St

W Main St

S Water St

Hall St

West St

Western Ave

Milford St

River Dr

S 3rd St

S 12th St

Summit Ave

Clark St

Gypsy Rd

Horseshoe Rd

Jefferson Rd

South Rd

River Rd

Air Park Dr

Beryl Dr

High Rd

Turf Dr

1911 Gateway Dr

Gophe

Future Land Use Urban Area

Map 6b

City of Watertown Comprehensive Plan

City/Town IGA**
- City Growth Area
- City Periphery Areas

*Each "Planned Mixed Use Area" may include mix of:
1. Office
2. Multi-Family Residential
3. Mixed Industrial
4. Commerical Services/Retail
5. Institutional
6. Parks & Recreation

**"Planned Neighborhoods" should include a mix of the following:
1. Single-Family - Sewered (predominant land use)
2. Two-family Residential
3. Multi-Family Residential
4. Institutional
5. Neighborhood Mixed Use
6. Parks & Recreation

***Each "Riverside Mixed Use Area" may include mix of:
1. Office
2. Single-Family - Sewered
3. Two-Family Residential
4. Multi-Family Residential
5. Commerical Services/Retail
6. Institutional
7. Parks & Recreation

- City of Watertown
- Town Boundary
- Parcel
- Railroad
- Watertown Urban Service Area
- Watertown Long Range Growth Area

Airport Height Limitations
- Maximum Building Elevation b/t 865 and 968 ft
- Maximum Building Elevation b/t 968 and 1005 ft

Land Use Categories
- Agricultural
- Single-Family Residential - Unsewered
- Single-Family Residential - Sewered
- Two-Family Residential
- Multi-Family Residential
- Planned Neighborhood**
- Institutional
- Airport
- Rights-of-Way
- Neighborhood Mixed Use
- Planned Mixed Use*
- Central Mixed Use
- Riverside Mixed Use***
- Mixed Industrial
- Parks & Recreation
- Environmental Corridor
- Surface Water

Miles: 0 0.25 0.5 1

Draft: August 7, 2019
Source: WisDNR, FEMA, City of Watertown, Dodge Co. LIO & Jefferson Co. LIO, V&A

THE CITY OF WATERTOWN
Opportunity runs through it.

VANDEWALLE & ASSOCIATES INC.
Shaping places, shaping change