

VILLAGE OF GERMANTOWN
N112 W17001 MEQUON ROAD
GERMANTOWN, WI 53022

MEETING:	PLAN COMMISSION
DATE AND TIME:	MONDAY, JULY 23, 2018 6:30 p.m.
LOCATION:	Germantown Village Hall Board Room

- I. **CALL TO ORDER:** This meeting has been given public notice in accordance with Wisconsin Statutes, Section 19.83 and 19.84 in such form that will apprise the general public and news media of subject matter that is intended for discussion and action.
- II. **ROLL CALL**
- III. **PUBLIC INPUT/PUBLIC APPEARANCE:** Please be advised per §19.84(2) that information will be received from the public, however, no action will be taken at this time.
- IV. **APPROVAL OF MINUTES:** July 9, 2018
- V. **NEW BUSINESS**
 - A. Carity Land Corporation, Agent for Briscoe Development & Management Inc., Property Owner – 146.5 Acres South of Freistadt Road, North of Mequon Road & West of Country Aire Drive. Preliminary Subdivision Plat for “Wrenwood” a 142-Lot Single-Family and 60-Unit Multi-Family Residential Development.
 - B. Zilber Property Group, Agent for Towne Realty, Inc., Brian & Kevin Kazmierczak, Richard & Mary Stephan and Frank & Mary Wiedmeyer, Property Owners of 146.5 Acres North of Holy Hill Road & east of US41. 2-Lot Certified Survey Map (CSM) and Site Plan Review for a 706,044 sqft Briggs & Stratton Corporation Warehouse & Distribution Facility.
- VI. **ANNOUNCEMENTS:**
- VII. **ADJOURNMENT:**

The next Plan Commission Meeting will be on August 13, 2018 at 6:30 p.m.

UPON REASONABLE NOTICE, efforts will be made to accommodate the needs of disabled individuals through appropriate aids and services. For additional information or to request this service please contact the Village Clerk at (262)250-4740 at least 2 days prior to the meeting. Notice is given that a majority of the Village Board may attend this meeting to gather information about an item over which they have decision making responsibility. This may constitute a meeting of the Village Board per State ex rel. Badke v. Greendale Village Board, even though the Village Board will not take formal action at this meeting.

PLAN COMMISSION MINUTES
July 9, 2018

CALL TO ORDER: Chairman Wolter called the meeting to order at 6:30 p.m.

ROLL CALL: Chairman Dean Wolter, Trustee Rep. David Baum, Commissioners Tony Laszewski and Bob Williams were present. Commissioner Peter Nilles and Matt Kimmler were absent and excused. Also present were Community Development Director/Village Planner Jeff Retzlaff and Planning Assistant Lori Johnson.

PUBLIC INPUT: None

APPROVAL OF MINUTES: *MOTION Baum second Laszewski to Approve the minutes from 6-25-18. MOTION carried unanimously.*

Dave Leszczynski, W124 N11749 Wasaukee Road. The property owner is seeking approval of a Rezoning application (A-1: Agricultural to Rs-3: Single-Family Residential) to create a Planned Development District (PDD) to develop a 17-lot, 29.7-acre single family residential development north of Elm Lane and west of Wasaukee Road. Planner Retzlaff summarized the proposal. Discussion followed.

Dave Leszczynski spoke on the new development. He indicated he just received DNR confirmation regarding the wetland delineation and will work with staff on the issues with the driveway easement and other things that need to be addressed. He is hoping to submit the preliminary plat for phase 1 that connects to the Woodland Ponds subdivision, within the next 2 months. Commissioner Williams asked if there was an opportunity to eliminate a lot so the lots that fall under the 1 acre minimum would meet the zoning requirement. Leszczynski explained he was in the process of acquiring a permit from USACE to fill 2 small wetlands, and if granted, all the lots will be over 1 acre in size and the PDD will not be needed. But he doesn't want to wait for the determination and wants to proceed with the rezoning PDD to encroach into the wetland setback area. He stated all the Woodland Ponds covenants will be included in phase 1 and be a part of their association and architectural control committee. He was not sure if phase 2 would be included at this time. Discussion continued.

Trustee Baum said there may be opposition at the Village Board level with the PDD because the Village hasn't been given anything as a tradeoff. Planner Retzlaff stated in this case a more legitimate paved or gravel trail that would allow residents from Woodland Ponds to go through to Elm or Harvest Hills could be included as part of the PDD. He said the cul-de-sac bulb in Harvest Hills could also be constructed at the same time to save money and be coordinated with the timing of the construction. Trustee Baum said he doesn't like approving a PDD on a conceptual basis. While he is OK with the rezoning, he is not sure about going forward with anything else until he understands exactly what's being proposed with the lots. Planner Retzlaff said a lot rides on the jurisdictional approval. Leszczynski said he could do 7 lots instead of 8, but he is so close to getting an additional lot. He will work with staff on Phase 2 and the driveway easement. Chairman Wolter said he doesn't have an issue with lots 1-8 as long as they tie into the subdivision above and will use its covenants, oversight committees and pay towards the HOA. He also doesn't have any issues with the lots off Elm Lane and Wasaukee Road. But he thinks everyone has is struggling with lots 9, 10, 11, 12 and 13 and what the vision is and how it will look and how you'll cross and maintain a decent connection from the edge of the cul-de-sac to lot 13 and what is needed in the ordinances and make it a cohesive part of the subdivision to the west. Leszczynski said he was willing to take lots 12 and 13 out for now and move forward with the rest and come back with the preliminary plat with 1-acre lot

out for now and move forward with the rest and come back with the preliminary plat with 1-acre lot sizes. He said phase 1 is ready to go. But phase 2 is still in conception mode and he may lose 2 lots there. He will try to build on them, but they do have issues with access. Discussion continued.

Mike Gleeson, W126 N11811 Forest Hill Road in Woodland Ponds subdivision, spoke regarding the proposal. He said the biggest thing their subdivision is asking for is that this development be the same as their neighborhood and agreed with having 7 lots in order to meet the zoning requirements. He is now satisfied that the developer has agreed to accept all the Woodland Ponds covenants. Chairman Wolter asked if the HOA will review the first house. Leszczynski said Bill Peterson, Developer of the Woodland Ponds subdivision, agreed to have him be a part of their HOA and architectural review board. Planner Retzlaff asked Leszczynski if he is willing to work with Harvest Hills as well, but he indicated he would need more information before he would agree to that. He was also unsure what covenants would cover lots 14 through 17. Chairman Wolter commented that he appreciates the lot layout and for helping to answer questions for the residents to the north. Planner Retzlaff recommended approving the rezoning to Rs-3 with the concept plan for 7 lots to the north. Mr. Leszczynski said he'd be happy with 7 lots in order to move forward.

MOTION Baum second Laszewski to Approve the Rezoning from A-1: Agricultural to Rs-3: Single-Family for the entire 29.7-acre property, provided the developer brings to staff a 7-lot subdivision subject to the following conditions.

- 1. Provide a detailed landscaping plan (type, amount, location, etc. plantings and methods to maintain) for the 5' wide vegetated buffer required under #3 above, and, a detailed plan for the proposed pedestrian trail and other amenities discussed in the Developers PDD application. Said plans to be prepared and submitted for review and approval by the Village concurrent with preliminary plat approval.***
- 2. This approval does NOT include any modification to the private street design requirements proposed by the Developer;***
- 3. The Developer shall submit soil evaluation reports reviewed and approved by Washington County indicating that all proposed lots can support a POWTS;***
- 4. The Developer shall submit a copy of the wetland delineation confirmation letter from the WisDNR. Any changes to the size or location of wetlands approved by the DNR shall be reflected in a revised General Development Plan and subdivision preliminary plat.***
- 5. All Village of Germantown development Code requirements, including but not limited to the General Zoning Code, Shoreland-Wetland Zoning Code and Subdivision Code shall be met prior to approval of the required subdivision plat by the Village.***
- 6. Phase 1 of the Development must comply with all the covenants of the Woodland Ponds Subdivision.***
- 7. If the Developer can eliminate outlot 1 and outlot 2 and re-layout the individual parcels and get the 8th parcel, and, comply with the ordinances and maintain the wetland setback, he can bring in an 8-lot subdivision.***

MOTION to Amend Baum second Laszewski that a revised concept plan for phase 2 shall be submitted at the time the preliminary plat is submitted to Plan Commission for review.

MOTION to Amend carried unanimously.

MOTION to Approve as Amended carried unanimously.

Top Leaf Development LLC and Alan & Lynda Luther – 107 acres south of Freistadt Road, North of Elm Lane and west of Wasaukee Road. The property owner is requesting approval of a Conditional Use Permit (CUP) for encroachment into a 25' wetland setback and Preliminary Subdivision Plat for Harvest Hills, a 37-lot residential development. Planner Retzlaff summarized the proposal.

MOTION Baum second Williams to Approve the Harvest Hills preliminary subdivision plat subject to the following conditions:

- 1. Developer shall enter into a Development Agreement with the Village pursuant to Section 18 of the Village Code (Subdivision and Platting), as well as, the preparation of detailed plans for the installation of public utilities and improvements including, but not limited to public street and intersection improvements, sanitary sewer, storm sewer & storm water management facilities, master grading plan and erosion control, trails, landscaping & street trees, open space, lighting and signage.***
- 2. The street tree landscape plan dated June 21, 2018 (revision date) shall be approved by the Village Forester prior to installation of any street trees within the development. Street trees shall be installed close to the front/street yard property line. The timing of installation of the street trees and common open space landscaping shall be determined as set forth in the Development Agreement.***
- 3. All of the comments, outstanding issues, construction plan details and corrections, and plat preliminary corrections identified by the Director of Public Works in a May 4 and June 13, 2018 review memos, and by the Village Surveyor in a May 1, 2018 review memo, shall be addressed prior to executing the Development agreement and/or commencement of construction.***
- 4. The Development Agreement shall include a requirement that subdivision deed restrictions and covenants be submitted to the Village prior to final plat submittal that include a requirement that each individual lot contain the minimum landscaping required under Section 17.43(5).***
- 5. The proposed landscaping and monument sign at the Freistadt Road shall be located outside of the vision triangle and within a landscape easement on Lot 18.***

MOTION carried unanimously.

MOTION Baum second Laszewski to Approve a Conditional Use Permit to allow development within the 25' wetland setback areas and proposed compensation as presented in the Wetland Mitigation Plan pursuant to Section 24.04 of the Shoreland-Wetland Zoning Code and subject to the following conditions:

- 1. The Developer shall prepare and submit an annual monitoring report to the Village and local DNR staff concerning the various management activities proposed in the plan, including the invasive species removal and wetland grass planting/restoration. Said report shall, at a minimum, detail the type and amount of plantings, all activities carried out in the previous year and the observed success of all previous activities, recommendations for new or different activities needed to ensure success of the mitigation measures and management activities to be carried out, and a list of planned activities for the upcoming year. Said report shall be submitted annually at the end of each year beginning in 2018 for a period of three (3) years.***

MOTION carried unanimously.

ANNOUNCEMENTS: None

ADJOURNMENT: There being no further business, the meeting was adjourned at 8:06 p.m.

Respectfully submitted,

Lori Johnson
Planning Assistant

PRELIMINARY SUBDIVISION PLAT

7/23/18 Plan Commission Meeting

Carity Land Corp / Briscoe Development & Management Inc.

Village Planner Report

Germantown, Wisconsin

Summary

Bill Carity, Carity Land Corporation, agent for Briscoe Development & Management Inc., property owner, is requesting approval of a preliminary subdivision plat for "Wrenwood", a 145-acre residential development with 142 single-family lots and 60 multi-family condominium units located south of Freistadt Road, north of Mequon Road and west of Country Aire Drive.

Property Location: Freistadt Road, Mequon Road and Country Aire Drive

Applicant/

Property Owner: Bill Carity
12720 W. North Ave
Brookfield, WI

Briscoe Development
250 Executive Drive Ste 301
Brookfield, WI

Current Zoning: Rs-5: Single-Family & Rm-2: Multi-Family w/ Planned Development District (PDD) Overlay ("Wrenwood PDD")

Adjacent Land Uses		Zoning
North	Residential	Rs-1
South	Residential/Industrial	Rs-2/M-1
East	Residential/Agricultural	A-1/Rs-2
West	Residential/Agricultural/Industrial	Rs-5/A-1/M-2



Proposal/Background

Bill Carity, Carity Land Corporation, agent for Briscoe Development & Management Inc., property owner, is requesting approval of a preliminary subdivision plat for "Wrenwood", a 145-acre residential development with 142 single-family lots and 60 multi-family condominium units located south of Freistadt Road, north of Mequon Road and west of Country Aire Drive.

Consistent with the Wrenwood Planned Development District (PDD) and General Development Plan approved in March, development shown in the preliminary plat and summarized in Table 1 below will have the following characteristics:

TABLE 1.
Wrenwood Summary Statistics

Gross Area (Ac)	145.36
Wetland Area (Ac)	20.69
Right-of-Way (Ac)	18.04
Net Density Area (Total Ac)	106.63
Net Density Area (SF Ac)	92.77
Net Density Area (MF Ac)	13.86
# Single-Family Lots/DU's	142
# Multi-Family Lots/DU's	60
SF Net Density (SF DU/Acre)	1.53
MF Net Density (MF DU/Acre)	4.33
Open Space (Outlot Total Ac)	59.88
SF Avg Lot Size (ac)	17,779 sqft
SF Lot Size Range (Ac)	15,005 to 26,507 sqft

As noted in Table 1, the proposed density for the single-family area will only be 1.53 DU/ net acre (vs. the maximum 2.9 DU/net acre allowed in the underlying Rs-5 District), and, only 4.33 DU/net acre in the multi-family area (vs. the maximum 8.0 DU/net acre allowed in the underlying Rm-2 District).

As discussed at the time the Wrenwood PDD and concept plan was approved, the 13-acre multi-family area (Lot 1) is intended to be developed at a later date with a PDD-required limit of not more than sixty (60) units in condominium-style, 4-unit buildings. Development of the multi-family area will require separate Site Plan and Condominium Plat approvals from the Village.

Also, the Developer intends to complete development in multiple phases beginning with the single-family area south of the "central park" Primary Environmental Corridor (PEC) as Phase I (Lot Nos. 2 through 48 with a single street access to Country Aire Drive). All roads, water & sewer utilities, landscaping and storm water management facilities for the south development area will be completed in Phase I.

Phase II will likely include the single-family area north of the central park PEC (Lot Nos. 49 through 144). It should be noted that the final lot and street layout for the north development area (Phase II) may change because of a yet-to-be resolved Freistadt Road access issue with Washington County (discussed further under Staff Comments below).

Staff Comments

Village Planner/Zoning Administrator

In accordance with the Village's Subdivision Code, the Plan Commission is responsible for reviewing the preliminary plat application and forwarding a recommendation to the Village Board along with comments received from the official "objecting agencies" (i.e. Department of Administration, WisDOT and Washington County), as well as, all other review agencies to whom the plat has been submitted (e.g. Southeastern Wisconsin Regional Planning Commission/SEWRPC, Germantown School District, all utility companies, etc).

Once the preliminary plat is approved by the Village Board, a Development Agreement with the Village will be required and detailed construction plans for all road, utility, landscaping, lighting and storm water management facilities will be prepared and submitted to Village staff for review and approval for each separate phase of development.

At the time the Wrenwood PDD was approved, the Developer provided preliminary landscaping plans for the road entrances onto Country Aire Drive and Freistadt Road and adjacent common areas. These landscaping plans will need to be included with the required street tree plans and detailed plans for the open space trail system approved in concept as part of the PDD. Also, the Development Agreement should include a requirement that subdivision deed restrictions and covenants be submitted to the Village prior to final plat submittal that include a requirement that each individual lot contain the minimum landscaping required under Section 17.43(5).

Development is proposed in a manner that permanently protects and preserves 59+ acres of Primary Environmental Corridor (PEC) and almost all of the 20+ acres of wetland on the property. However, there are two small areas of isolated wetland proposed to be filled: one located between the two existing wetland ponds near Lot 39 in the Phase I (south) development area, and the second located near Lot 83 in the Phase II (north) development area. Proposed Road "A" traverses the wetland area in the Phase I (south) development area and Road "D" traverse the wetland area in the Phase II (north) development area. The Developer intends fill these two small, narrow wetland projections and, in so doing, reduce and remove the 25' wetland setback from the proposed road right-of-way. However, the Developer has yet to submit wetland fill permit applications to the DNR, and, the "jurisdictional determination" needed from the Army Corp of Engineers (ACE) is pending. For these reasons, preliminary plat approval should be conditioned subject to DNR approval of these proposed wetland fills. If fill permits for either one or both are not approved and the proposed road and lot layouts need to be significantly altered from the proposed preliminary plat, the Developer should

be required to re-submit a revised preliminary plat. If only minor changes are required to the road and/or lot layout, said changes can be made to the development and shown in the final plat (no revised preliminary plat will be required).

Parks & Recreation

In a June 29 email from Park & Recreation Director Mark Schroeder, the Village's Park & Recreation Commission is on record as being in favor of the proposed Wrenwood subdivision subject to the following recommendations:

1. All open space and the "central park" PEC area should be privately owned and maintained;
2. The Developer should extend water utilities further north along Country Aire Drive to a point at the southern property line of Friedenfeld Park (approximately 150 feet from the assumed closest point on the Wrenwood property);
3. The Developer should install sidewalk along the west side of Country Aire Drive north from Mequon Road to connect to both Wrenwood and Friedenfeld Park; and
4. The Developer should install an off-road bicycle path along the south side of Freistadt Road to connect to future pedestrian facilities to the west consistent with the Washington County Bike & Pedestrian Plan.

NOTE: The Public Works Director has indicated that the Village will likely include a northerly extension of both water and sanitary sewer beyond the Wrenwood property to a point adjacent to Friedenfeld Park as part of the Village's project to extend such services to the Wrenwood development]

Village Engineer/Public Works

The developer has not submitted detailed grading, erosion control, road, utility, landscaping, lighting or storm water management construction plans for the proposed development. However, the Village Surveyor has identified in a June 6, 2018 memo a series of issues and required corrections that will need to be addressed/corrected prior to approval of the preliminary plat by the Village Board.

One issue identified is the possible need to dedicate a total of up to 60' of right-of-way along Country Aire Drive (as shown on the Village's "ultimate" Right-of-Way Map). The preliminary plat currently shows a dedication of only 30' of ROW. According to the Village Engineer, the necessary amount of ROW for Country Aire in this vicinity will be dictated, in part, by the need for by-pass/acceleration/deceleration lanes and final design of the Road "A" intersection onto Country Aire Drive. Until the road construction plans are prepared and approved, the Developer is put on notice that the shape and size of the proposed lots and outlot at the Road "A" intersection, including Lot 2, Lot 48 and Outlot 7 may need to be altered to accommodate the dedication of additional ROW.

Similarly, the Surveyor has identified the possible need to dedicate a total of up to 60' of ROW along Freistadt Road. The preliminary plat currently shows a total of 55' of existing ROW for Freistadt Road/CTH F. The necessary amount of ROW for Freistadt Road/CTH F will be dictated by Washington County as part of their approval of the final

design for the two proposed road intersections and possible need for by-pass/acceleration/deceleration lanes on Freistadt Road/CTH F. Until the road construction plans are prepared and approved by the County, the Developer is put on notice that the shape and size of the proposed lots along Freistadt Road, including Lot 49, 63, 64 and 126, may need to be altered to accommodate the dedication of additional ROW.

Fire Department

The Fire Department has reviewed the preliminary plat and is recommending approval provided the temporary road closures at the end of proposed Road “C”, Road “D” and Road “E” are designed to accommodate emergency vehicles. The Department recommends a minimum cul-de-sac type turn-around with a min. 65’ radius if possible.

Washington County

On May 25, 2018, the Washington Land Use & Planning Committee went on record stating their objection to the preliminary plat (copy attached) for the following reasons:

1. Approval for access to County Highway F (Freistadt Road) has not been granted by the County Highway Department;
2. The Primary Environmental Corridor (PEC) boundary has not been mapped and identified on the preliminary plat; and
3. The WisDNR should be contacted to verify whether permits or approvals are required regarding the wetlands shown on the preliminary plat.

Washington County is an “objecting agency” (vs. an “approving agency”) for subdivision plats proposed in the Village. The Village Plan Commission and Village Board are not obligated, but encouraged, to consider Washington County’s objections. With regard to the County’s three objections, only the first objection remains an outstanding issue. The PEC is, in fact, mapped and presented on the preliminary plat, and, the DNR has been/will be involved in the permitting process as development proceeds (ex: pending wetland fill application, required Notice of Intent, and any other Chapter 30 related permits or approvals required).

With regard to the County’s objection regarding access to Freistadt Road/CTH F, the County Highway Commissioner, Scott Schmidt, indicated to the Village in an email that:

“... the locations of the [two] driveways had some concerns regarding separation distances, site distances, possibly design issues with respect to right-of-way and drainage issues for the by-pass, turning, and accelerations lanes. The accesses will need to go to the [County] Public Works Committee for approval, since the development is requesting two accesses, and the separation distance may not be met. In short, we need plans (maybe not final, but close enough to know they work within the existing right of way, or if more right of way is needed) for the right of way of CTH F... “.

Because the Developer does not intend to develop the north development area (Phase II) for some time, the detailed plans required by the County Highway Commissioner

have not yet been prepared. Consequently, the potential issues cited above cannot be resolved at this time. Staff would point out that, when the same Wrenwood development was presented to the County Highway Commission back in 2008 with the same two access roads proposed onto Freistadt Road/CTH F, the County did not object to the preliminary plat for any reason (but did specify certain intersection design, detailed construction and right-of-way requirements that would need to be met by the Developer). However, after Washington County's "approval" back in March, 2008, the County's access standards and requirements for proposed intersections along County highways has changed. One current County Highway requirement that may affect the proposed lot and road layout is a restriction that only one (1) access to a County highway is allowed per property. Wrenwood has two (2) proposed road intersection onto Freistadt Road/CTH F. Staff continues to support the two access road proposal given the number of proposed lots (95) that would otherwise have to be served by one road connection to Freistadt Road/CTH F, and, the resulting cul-de-sac length. If Washington County approves only one (1) road connection onto Freistadt Road/CTH F and the proposed road and lot layout needs to be significantly altered from the proposed preliminary plat, the Developer should be required to re-submit a revised preliminary plat. If only minor changes are required to the road and/or lot layout, said changes can be made to the development and shown in the final plat (no revised preliminary plat will be required).

Wisconsin Dept of Administration

In a June 13, 2018 letter (copy attached), the Department of Administration (DOA) indicates that they are withholding certification of the preliminary plat due to the objections filed by Washington County. DOA also identifies a series of minor corrections that will need to be made to the final plat to comply with the platting requirements under Wis. Stats. Chapter 236. *[NOTE: The DOA does not require re-submittal of a preliminary plat, but looks for any objections to be addressed and reflected in the final plat prior to DOA certification]*

Wisconsin Dept of Transportation

In a May 24, 2018 letter, the Department of Transportation (DOT) indicates that they do NOT object to the preliminary plat provided that the final plat comply with applicable provisions in the Wis. Admin. Code and TRANS 233 pertaining to the division of land adjacent to a state highway (copy attached).

Southeastern Wisconsin Regional Planning Commission (SEWRPC)

No comments have been received.

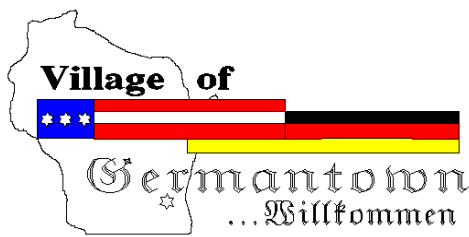
Germantown School District

No comments have been received.

Village Staff Recommendation

APPROVE the Wrenwood preliminary subdivision plat subject to the following conditions:

1. Developer shall enter into a Development Agreement with the Village pursuant to Section 18 of the Village Code (Subdivision and Platting), as well as, the preparation of detailed construction plans for the public improvements including, but not limited to public street and intersection improvements, sanitary sewer, water, storm water management facilities, master grading and erosion control, landscaping & street trees, open space trails, lighting and signage. At a minimum, said agreement shall require the review and approval of said plans by Village staff prior to the commencement of construction activities and establish the timing for installation of said improvements (or as otherwise provided for therein).
2. The Development Agreement shall include a requirement that subdivision deed restrictions and covenants be submitted to the Village prior to final plat submittal that include a requirement that each individual lot contain the minimum landscaping required under Section 17.43(5).
3. If the WisDNR does not approve the proposed wetland fills in the Phase I (south) development area in vicinity of Lot No. 39 and in the Phase II (north) development area near Lot 83 and, as a consequence the proposed road and lot layouts need to be significantly altered from the proposed preliminary plat, the Developer shall submit a revised preliminary plat to the Village for approval. If only minor changes are required to the road and/or lot layouts, said changes can be made to the development and shown in the final plat (no revised preliminary plat will be required).
4. If Washington County approves only one (1) road connection onto Freistadt Road/CTH F and the proposed road and lot layout needs to be significantly altered from the proposed preliminary plat, the Developer shall submit a revised preliminary plat to the Village for approval. If only minor changes are required to the road and/or lot layout, said changes can be made to the development and shown in the final plat (no revised preliminary plat will be required).
5. All WisDOT requirements listed in the May 24, 2018 review letter shall be met and reflected on the final plat in compliance with all applicable provisions in Wis. Admin. Code TRANS 233.
6. All of the Village Surveyor comments, issues and plat corrections listed in the June 6, 2018 review memo, 2018 memo shall be addressed and reflected in a revised preliminary plat prior to final approval by the Village Board.
7. The temporary road closures at the end of proposed Road "C", Road "D" and Road "E" shall be designed to accommodate emergency vehicles with a minimum cul-de-sac type turn-around with a min. 65' radius (*Fire Department*).
8. The Developer shall install sidewalk along the west side of Country Aire Drive north from Mequon Road to provide a pedestrian path connection to the planned path/sidewalk along the north side of Mequon Road (*Park Commission*).
9. The Developer shall install a sidewalk or off-road bicycle path along the south side of Freistadt Road as part of an overall future pedestrian path connection to the west consistent with the Washington County Bike & Pedestrian Plan (*Park Commission*).



Engineering Department Memorandum

To: Jeff Retzlaff Village Planner

CC:

From: Bob Beilfuss, PLS, Village Surveyor

Date: June 6, 2018

Re: Wrenwood Subdivision-Preliminary Plat Review

Jeff,

Here are my review comments for the CSM received 3-29-2018.

Wrenwood Subdivision-Preliminary Plat Review

Applicant or Owner: Bill Carity

Land Surveyor/Firm: Calvin Klimeck, PLS, Pioneer Engineering and Surveying

1. There will be a minimum 60' road right of way dedication to the public along the Freistadt Road-CTH F frontage or whatever the Washington County Highway Commission requires. Whichever one is greater. Adjoining lots will need to be adjusted in size or relocated.
2. There will be a minimum 60' road right of way dedication to the public for road purposes along Country Aire Road. Adjoining lots will need to be adjusted in size or relocated.
3. While not a village requirement, we recommend the preliminary plat be placed on the same sheet size as the final subdivision plat.
4. There are existing buildings located on the property that need to be mapped and shown as well as the location of any wells and septic tanks or fields serving these buildings.
5. There are hatched areas that need to be defined as either wetlands or water bodies with either different hatching or text label in each area.
6. The wetland delineation shown on the plat was performed in June of 2003 and is no longer valid. A new delineation will be required.
7. There is a 25' wetland setback that needs to be labeled on all sheets. No earthmoving activities are to be done within the 25' setback.
8. There are some wetlands located within the proposed road R/W for Road A. Either the road needs to be relocated around the wetland or the developer needs to obtain a letter from the DNR allowing the wetland to be removed and this letter needs to be provided to the Engineering Department prior to the start of construction.

9. A minimum 100' tangent section is required between road curves and there is a curve on Road A and D that is missing this tangent section. The Village does not allow reverse curves for roadways. These two roads need to be re-aligned.
10. Provide curve data tables for all curves shown on the plat..
11. For cul-de-sac bulbs label the radius of the bulb. If an offset bulb is being used, label the bulb offset.
12. Identify lines on the plat by either labeling the line or thru the use of a legend.
13. Existing and proposed contours at vertical intervals of not more than 2 feet where the slope of the ground surface is less than 10% and of not more than 4 feet where the slope of the ground surface is 10% or more. Elevations shall be marked on such contours based on National Geodetic Datum of 1929 (mean sea level).
14. Water elevations of adjoining lakes, ponds and streams at the date of the survey and approximate high and low water elevations, all referred to mean sea level (1929) datum.
15. Add right-of-way width and names of all existing and proposed streets.
16. Type, width and elevation of any existing street pavements within the exterior boundaries of the plat or immediately adjacent thereto together with any legally established centerline elevations, all to mean sea level (1929) datum.
17. Location and names of any adjacent subdivision, parks and cemeteries and owners of record of abutting unplatted lands.
18. Location, width and names of all proposed streets and public rights-of-way such as alleys and easements.
19. Existing zoning on and adjacent to the proposed plat.
20. The surveyor preparing the preliminary plat shall certify on the face of the plat that it is a correct representation of all existing land divisions and features and that he has fully complied with the provisions of this chapter and Chapter 236 of the Wisconsin Statute.
21. The final plat will not be present to the Village Board for final approval until all proposed improvements have been installed and accepted by the Village Public Works Committee. This includes all required easements and agreements. The final plat must meet all the requirements of Chapter 236 of the Wisconsin Statutes.
22. Any requirements as described by the Washington County Highway Commissioner.

No further review comments.

Document Submittals and Data Conversion

June 6, 2018

As of October 2005, the Village of Germantown requires a digital copy of all Certified Survey Maps, Condominium Plats and Subdivision Plats in addition to the documents as required by Wisconsin Statute and Village Ordinances as part of the land division approval.

Prior to Recording the Certified Survey Map or Subdivision Plat, the professional land surveyor is responsible for submitting a copy of the AutoCad drawing file (.dwg) of the document in version 2018 on compact disk (CD) or via email to the Village Surveyor.

All digital professional land surveyor seals and signatures will be purged from the digital copy prior to submittal.

The model space of the drawing will be done in Wisconsin State Plane Coordinate System, South Zone (NAD 1927 datum) and the Grid Bearing basis.

Prior to Recording the Certified Survey Map or subdivision plat. the Village Engineering Department will verify that the boundary markers have been installed as described on the submitted map. All boundary corners are to be clearly marked in the field by the professional land surveyor of record.



Division of Transportation
System Development
Southeast Regional Office
141 N.W. Barstow Street
P.O. Box 798
Waukesha, WI 53187-0798

Scott Walker, Governor
Dave Ross, Secretary
Internet: www.dot.wisconsin.gov

Telephone: (262) 548-5903
Facsimile (FAX): (262) 548-5662
E-Mail: waukesha.dtd@dot.wi.gov

May 24, 2018

Renee Powers – Plat Review
Department of Administration
101 E. Wilson Street FL 6
P.O. Box 1645
Madison, WI 53701-1645

Subject: Wrenwood, Village of Germantown, Washington County

Dear Ms. Powers – Plat Review

The subject preliminary plat was transmitted to the Wisconsin Department of Transportation by the Department of Administration on 5/15/2018 under the provisions of Section 236.12, Wisconsin Statutes.

The Wisconsin Department of Transportation has considered this map in the light of the Rules and Regulations Governing Division of Land Abutting a State Trunk Highway or Connecting Highway, Chapter Trans 233, Wisconsin Administrative Code, promulgated under authority of Section 236.13(1)(e) and 86.07(2), Wisconsin Statutes.

The Department of Transportation certifies this preliminary plat as nonobjectionable, with the condition that the final plat comply with TRANS 233.02, 233.04, 233.05 and 233.08 Wis. Admin. Code, noted below. Full compliance with this and other pertinent requirements as set forth in the Department Rules will be required before we can certify the final plat.

Section 233.02 relates to the effect that a land division has on the adjacent highway by generating traffic, reducing sight distance, impairing safety, impeding traffic movements and impacting the public's investment in the highway. It is required that:

- The individual lots do not require direct access to a state trunk highway.
- The land division consider access requirements of adjacent and contiguous lands.
- Chapter Trans 233 be applied to all lands that are owned by or under option or contract or lease to the land divider.
- Storm drainage be addressed as it relates to Trans 233.
- Vision corners be added as it relates to Trans 233.
- Setbacks be provided. (See 233.08 below).

Section 233.04 (1) Identify the owners of all properties abutting/surrounding the divider's land as "owned by Others" or "Owned by Divider" is sufficient for Identification.

Paragraph 1 of Section 233.05 relates to access restriction between a state trunk highway and abutting lots of a land division. It is required that "no access" be shown graphically along the frontage of the land division and the state trunk highway or connecting highway. (Remove note, as shown on plat) It is also required that an access restriction clause, in the form as is stated below, be added to the face of the map when submitted for final review.

233.05(1) As owner I hereby restrict all lots and blocks (except Lot Block _), in that no owner, possessor, user, nor licensee, nor other person shall have any right of direct vehicular ingress or egress with (STH or USH) _____ or _____ Street, as shown on the plat; it being expressly intended that this restriction shall constitute a restriction for the benefit of the public according to 236.293, Stats., and shall be enforceable by the Department of Transportation.

Section 233.08 of the above-mentioned Rules relates to the highway setback line which must appear on the face of the plat. This highway setback line should be shown at a distance as required by this section from the outside or nearer right-of-way line or centerline, whichever is more restrictive. No improvements are allowed in the setback which includes but not limited to: easements, signs, parking, driveways, wells, septic, drainage facilities, buildings, retaining walls, landscaping, grading and berms. A note stating the following is required to be added to the sheet containing the graphic showing the setback.

233.08 There shall be no improvements or structures placed between the highway and the setback line.

If space is limited on the sheet of the land division map with the graphic, the following note may be used with the above note placed on a subsequent page.

"CAUTION - Highway Setback Restrictions Prohibit Improvements. See sheet _____."

As it relates to Trans 233: drainage and vision corners.

It is required that a vision corner of be added on each side of Country Aire Drive along STH 167. (Vision triangle dimensioned per FDM 11-10 Attachment 5.13) Also, the following note shall be added to the face of the map.

"No structure or improvement of any kind is permitted within the vision corner. No vegetation within the vision corner may exceed 30 inches in height.

As it relates to Trans 233, the discharge of storm water directly or indirectly upon a state trunk highway. The land division layout shall include provisions for surface drainage in such a manner that the existing highway drainage system is not adversely affected. It is required that the developer provide our district office with a final plan for the subject plat. (Fill out form FDM-7-50-5 Attachment 5)

It is requested that the land divider comply with Section 233.03 of the Rules by consulting with me regarding this matter. I may be reached at (262) 548-6704.

The final land division map, incorporating the appropriate revision, corrections or additions in compliance with the above-referenced Sections of the Rules, must be submitted in order that the objections noted herein may be removed.

Anyone has the right to appeal the region's decision. Anyone wishing to do so must send the request for the appeal along with a copy of this letter describing the decision, and reasons for the request to Mike Roach, WisDOT – DTSD Real Estate, 4822 Madison Yards Way, 5th Floor South, P.O. Box 7986 – Room 501, Madison, WI 53707-7986. Said information must be mailed within 20 days of the date of this letter. Notification of receipt of the request for the appeal will be sent to the appellant, submitter (if different than appellant), owner, the municipality, county and the district. The Department will then review the decision with any new information and

inform all the above-mentioned parties of the final decision within 60 days of receipt of the appeal.

We wish to thank you for your cooperation in these matters of mutual interest.

Sincerely,

A handwritten signature in cursive script, reading "Patricia Reikowski".

Patricia A. Reikowski
Wisconsin Department of Transportation
SE Region - Land Division Coordinator
262-548-6704
patricia.reikowski@dot.wi.gov



SCOTT WALKER
GOVERNOR
ELLEN E. NOWAK
SECRETARY

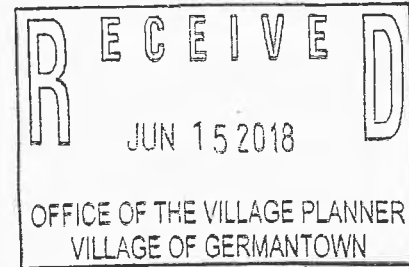
Plat Review

101 E Wilson St FL 9, Madison WI 53703
PO Box 1645, Madison WI 53701
(608) 266-3200 Fax: (608) 264-6104 TTY: (608) 267-9629
E-mail: plat.review@wi.gov
<http://doa.wi.gov/platreview>

June 13, 2018

0075
PERMANENT FILE NO. 26624

KALVIN K. KLIMECK
PIONEER ENGINEERING
W3902 CTH B
JOHNSON CREEK WI 43256



Subject: WRENWOOD
NW1/4, NE1/4, SE1/4 & SW1/4
S23 T9N R20E
VILLAGE OF GERMANTOWN, WASHINGTON COUNTY

Dear Mr. Klimeck:

You have submitted the preliminary plat of WRENWOOD for review. The Department of Administration must withhold certification of this preliminary plat due to objections filed by the Washington County Planning & Parks Department.

DEPARTMENT OF ADMINISTRATION COMMENTS:

We have examined and find that, with the exceptions noted below, this preliminary plat appears to conform with the applicable layout requirements of ss. 236.16 and 236.20, Wis. Stats.

- s. 236.20 (3) (a) The subdivision location must be described by 1/4-1/4 Section, Section, Town, Range and County in the location descriptions under the plat name and in the Surveyor's certificate on the final plat.
- s. 236.20 (4) (b) All lands being dedicated to the public, including streets, must be marked "dedicated to the public" on the final plat.
- s. 236.20 (5) (b) All watercourses and ponds within the subdivision must be identified on the final plat. If any watercourse or pond is navigable or waters of the public, then the provisions of s. 236.16 (3), s. 236.20 (5) (c), and s. 236.20 (6) apply.

DEPARTMENT OF TRANSPORTATION:

The Department of Transportation is an objecting agency on this plat. On May 15, 2018 we transmitted the plat to them for review. On May 24, 2018 we received a copy of the plat certifying no objection.

COUNTY PLANNING AGENCY:

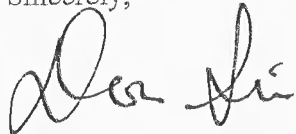
The Washington County Planning & Parks Department is an objecting agency on this plat. On May 15, 2018 we transmitted copies to them for review. On May 30, 2018 we were notified that they object to the plat.

Local government units, during their review of the plat, will resolve, when applicable, that the plat:

- complies with local comprehensive plans, official map or subdivision control ordinances;
- conforms with areawide water quality management plans, if sewerred;
- complies with Wisconsin shoreland management regulations;
- resolves possible problems with storm water runoff;- fits the design to the topography;
- displays well designed lot and street layout;
- includes service or is serviceable by necessary utilities.

If there are any questions concerning this review or preparation and submittal of the final plat, please contact our office, at the number listed below.

Sincerely,



Don Sime, PLS
Plat Review
Phone: (608) 266-3200

Enc: Original, Print

cc: Carity Land Corps, Owner
Clerk, Village of Germantown
Washington County Planning & Parks Department
Department of Transportation

ORIGINAL RECEIVED FROM SURVEYOR ON 05/15/2018; REVIEWED ON 06/13/2018



SCOTT WALKER
GOVERNOR
ELLEN E. NOWAK
SECRETARY

Plat Review
101 E Wilson St FL 9, Madison WI 53703
PO Box 1645, Madison WI 53701
(608) 266-3200 Fax: (608) 264-6104 TTY: (608) 267-9629
E-mail: plat.review@wi.gov
<http://doa.wi.gov/platreview>

May 15, 2018

0075

PERMANENT FILE NO. 26624

CLERK, VILLAGE OF GERMANTOWN
PO BOX 337
GERMANTOWN WI, 53022-0337

Subject: WRENWOOD
NW1/4, NE1/4, SE1/4 & SW1/4
S23 T9N R20E
VILLAGE OF GERMANTOWN, WASHINGTON COUNTY

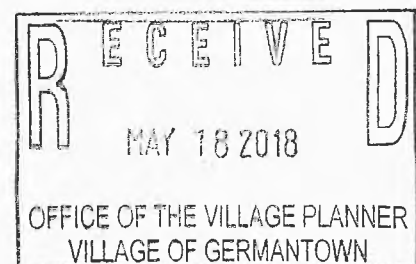
Dear Clerk, VILLAGE OF GERMANTOWN:

This plat has been submitted for review. One of the purposes of the review process is to ensure that provisions have been made for wastewater treatment. The surveyor indicated on the plat submittal form that public sewer will be made available to all of the lots in this subdivision.

If private on-site wastewater treatment systems will be used instead of public sewer, the systems must comply with the requirements of the local ordinance and the rules of the Department of Safety and Professional Services.

There is no need to respond to this letter. If you have any questions regarding this review, please contact our office at the number listed below. If you have any questions regarding private on-site wastewater treatment systems, please contact Mark Finger, Department of Safety and Professional Services, at (608) 574-1189 or mark.finger@wi.gov.

Plat Review
Phone (608) 266-3200
plat.review@wi.gov
<http://doa.wi.gov/platreview>





Washington County

Planning and Parks Department

NOTIFICATION OF ACTION ON PROPOSED SUBDIVISION PLAT WASHINGTON COUNTY LAND USE & PLANNING COMMITTEE MEETING

05/25/18

Department of Administration
Plat Review Unit
P O Box 1645
Madison WI 53701-1645

To Whom it May Concern:

This letter is to inform you that the Washington County Land Use & Planning Committee have considered the following subdivision plat pursuant to Wisconsin Statutes and applicable local Ordinances:

Date of Meeting: 05/24/2018

Subdivision Name: WRENWOOD SUBDIVISION

// Pre-Preliminary Plat /X/ Preliminary Plat // Final Plat

Location: NW ¼, NE ¼, SE ¼ & SW ¼ OF SECTION, 23
Municipality: VILLAGE OF GERMANTOWN
Subdivider: CARITY LAND CORP
Surveyor: PIONEERING ENGINEERING AND SURVEYING, LLC

Action taken:

Land Use Staff Recommendation was that the committee indicate objection to the Preliminary Plat for Wrenwood Subdivision due to the following reasons:

- 1) Approval has not been obtained for access to County Hwy F from the County Highway Department.
- 2) The Primary Environmental Corridor should be mapped and identified on the plat.
- 3) The Wisconsin Department of Natural Resources (DNR) should be contacted to verify no permits or approvals are needed regarding the wetlands on the plat.

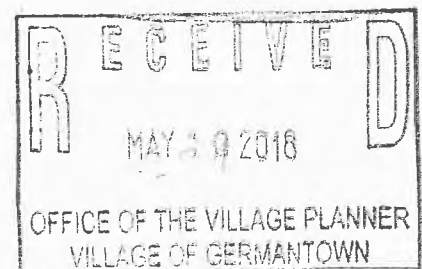
If you have any questions regarding this subdivision plat, please do not hesitate to contact me.

Sincerely,

Jamie Ludovic, Central Services Director

JL:PG:ff

cc: Municipal Clerk
Subdivider
Surveyor
Land & Water Conservation Division



Lori Johnson

To: Mark Schroeder
Subject: RE: Wrenwood Subdivision Preliminary Plat

From: Mark Schroeder
Sent: Friday, June 29, 2018 8:40 AM
To: Lori Johnson <ljohnson@village.germantown.wi.us>; Jeff Retzlaff <jretzlaff@village.germantown.wi.us>
Cc: Subject: RE: Wrenwood Subdivision Preliminary Plat

Good morning Jeff,

In response to the May 17th letter from Planning Assistant Lori Johnson, the Park & Recreation Commission reviewed the preliminary plate for the Wrenwood Subdivision at the June 27th commission meeting. Per the meeting discussion, the commission affirmed the recommendation that the park and open space/environmental corridor areas within the development be privately owned and maintained. In regard to water service, the commission made a recommendation that the developer extend water service approximately 150' further north along Country Aire Drive to the southern boundary of Friedenfeld Park to serve future park and recreation needs. Lastly, the commission discussed access/connectivity for future residents of the Wrenwood Development and the community, and are recommending the developer construct the following pedestrian improvements, 1) installation of sidewalk from Mequon Road north along Country Aire Drive to connect to both the Wrenwood development and Friedenfeld Park, and 2) installation of off-road bike path along Freistadt Road on the north side of the development to connect to future pedestrian facilities per the Washington County Bike & Pedestrian Plan.

If you have questions, please let me know.

Thanks,

Mark Schroeder, CPRP
Park & Recreation Director
Germantown Park & Recreation Department
Ph: (262) 250-4710 Fax: (262) 255-2920



Visit Us on Facebook

Discover. Play. Grow



Village of

Germantown
...Willkommen

Fee must accompany application
Preliminary & Final Plat Fees Combined
Under 10 lots \$4,575
11-25 lots \$5,600
26-50 lots \$6,625
Over 51 lots \$7,650



PAID 5/15/18

[Signature]

SUBDIVISION PLAT APPLICATION

Pursuant to Section 18.04 and 18.05 of the Municipal Code

Please read and complete this application carefully. All applications must be signed and dated.

1	APPLICANT OR AGENT <u>BILL CARITY</u> <u>CARITY LAND CORP.</u> <u>12720 W. NORTH AVE.</u> <u>BROOKFIELD WI 53005</u> Phone (414) <u>861-1967</u> Fax (262) <u>785-1949</u> E-Mail <u>carityland@global.net</u>	PROPERTY OWNER <u>MICHAEL BOISCOE</u> <u>250 S. EXECUTIVE DR. #300</u> <u>BROOKFIELD WI 53005</u> Phone (414) <u>861-1988</u>
----------	--	--

2	PROPERTY ADDRESS OR GENERAL LOCATION GTNV 232989, GTNV 232998, GTNV 231998m GTNV 233981, GTNV 234993, and GTNV 234997 <u>SEE ATTACHED EXHIBIT</u>	TAX KEY NUMBER(S)
----------	---	--------------------------

3 READ AND INITIAL THE FOLLOWING:

☒ I understand that the Subdivision Plat is not valid until recorded at the Washington County Register of Deeds. The Village will record the document and charge the applicant all applicable recording fees.

☒ If technical corrections to the Plat are required, I understand that the document will not be recorded until all corrections are made and approved by the Village.

☒ I understand that all applicable impact fees must be paid prior to recording. Failure to pay fees will delay recording and may ultimately result in the revocation of Village approval. I understand that parcels created outside the Sewer Service Area will require a soil test. I also understand that all properties abutting a State Highway will require DOT approval and I will be responsible for securing such approval prior to recording.

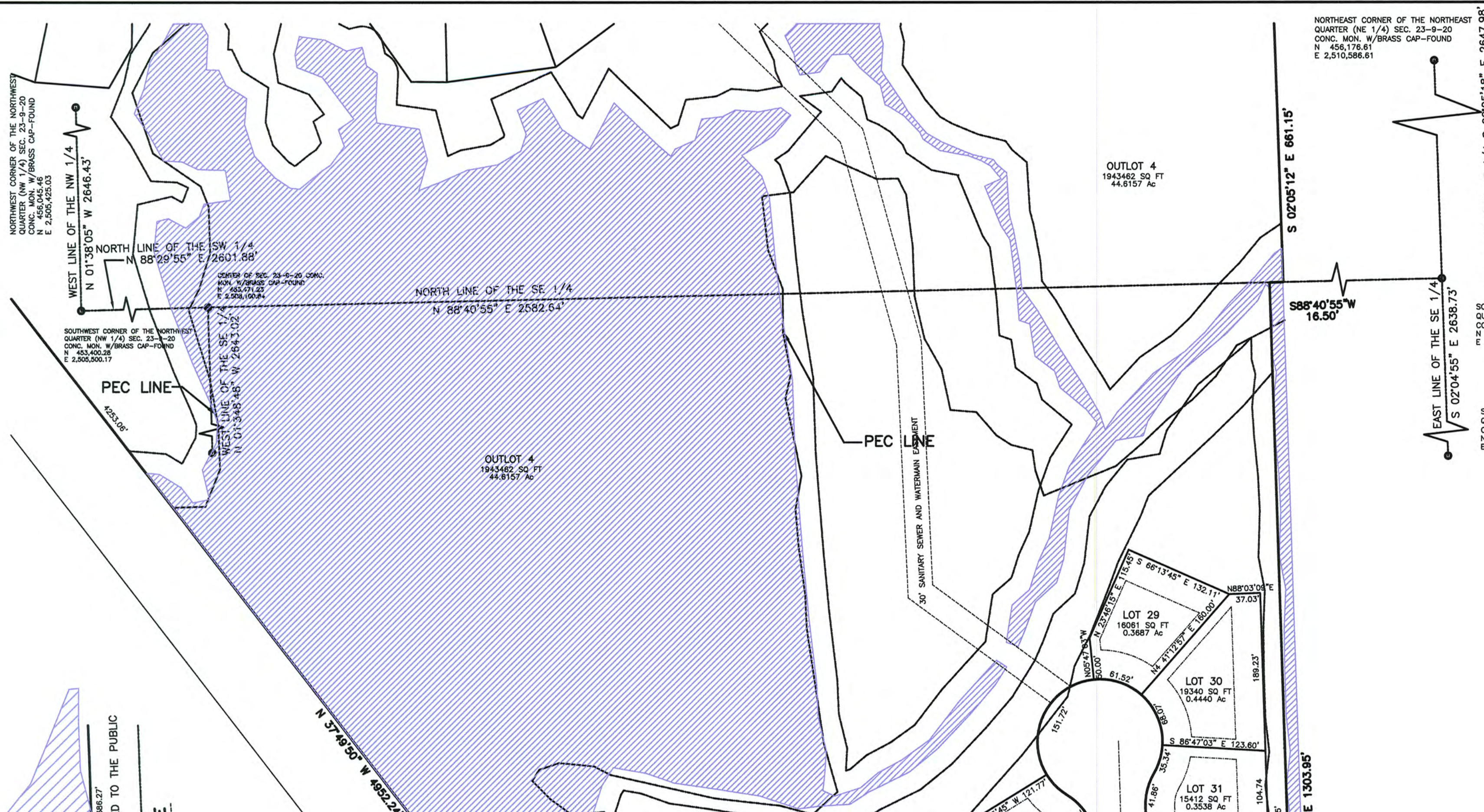
☒ I understand all delinquent property taxes on any of the properties involved shall be paid prior to recording.

☒ I understand that a Developer's Agreement will be required prior to recording of the plat.

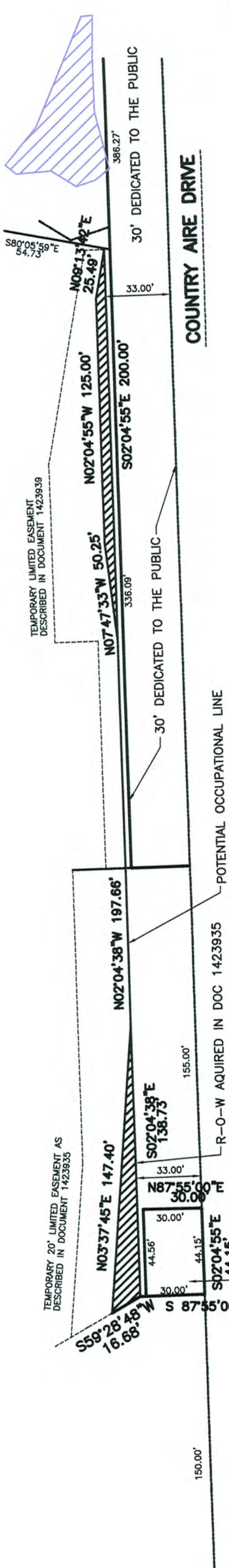
4 SIGNATURES -- ALL APPLICATIONS MUST BE SIGNED BY OWNER!

Will Carity 5-13-18
Applicant Date

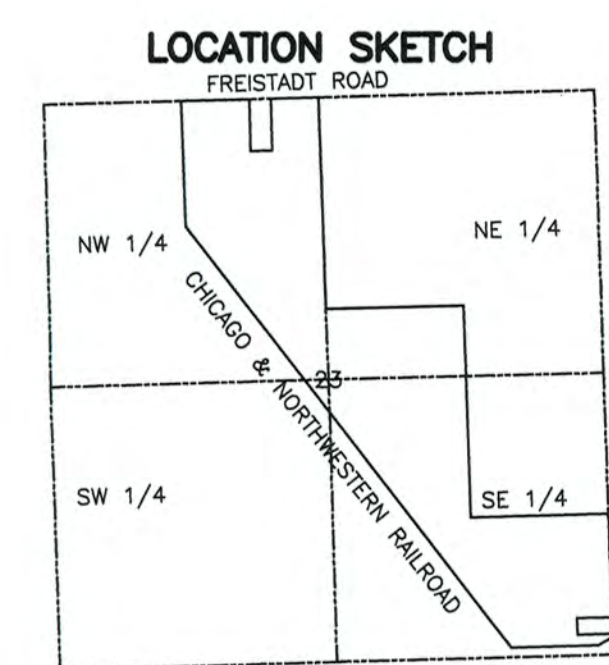
[Signature] 5/14/2018
Owner Date



OUTLOT 5 IS FOR THE LIFT STATION AND TO BE DEEDED TO THE VILLAGE OF GERMANTOWN.



CONTAINING 6.332.003 SQUARE FEET OR 145.3628 ACRES OF LAND.



VICINITY SKETCH
 NW 1/4, NE 1/4, SE 1/4, & SW 1/4 SEC. 23 T.9 N., R.20 E
 SCALE: 1" = 1000'

TYPICAL SETBACKS

[illegible]

DATE:
MAY 18, 2018

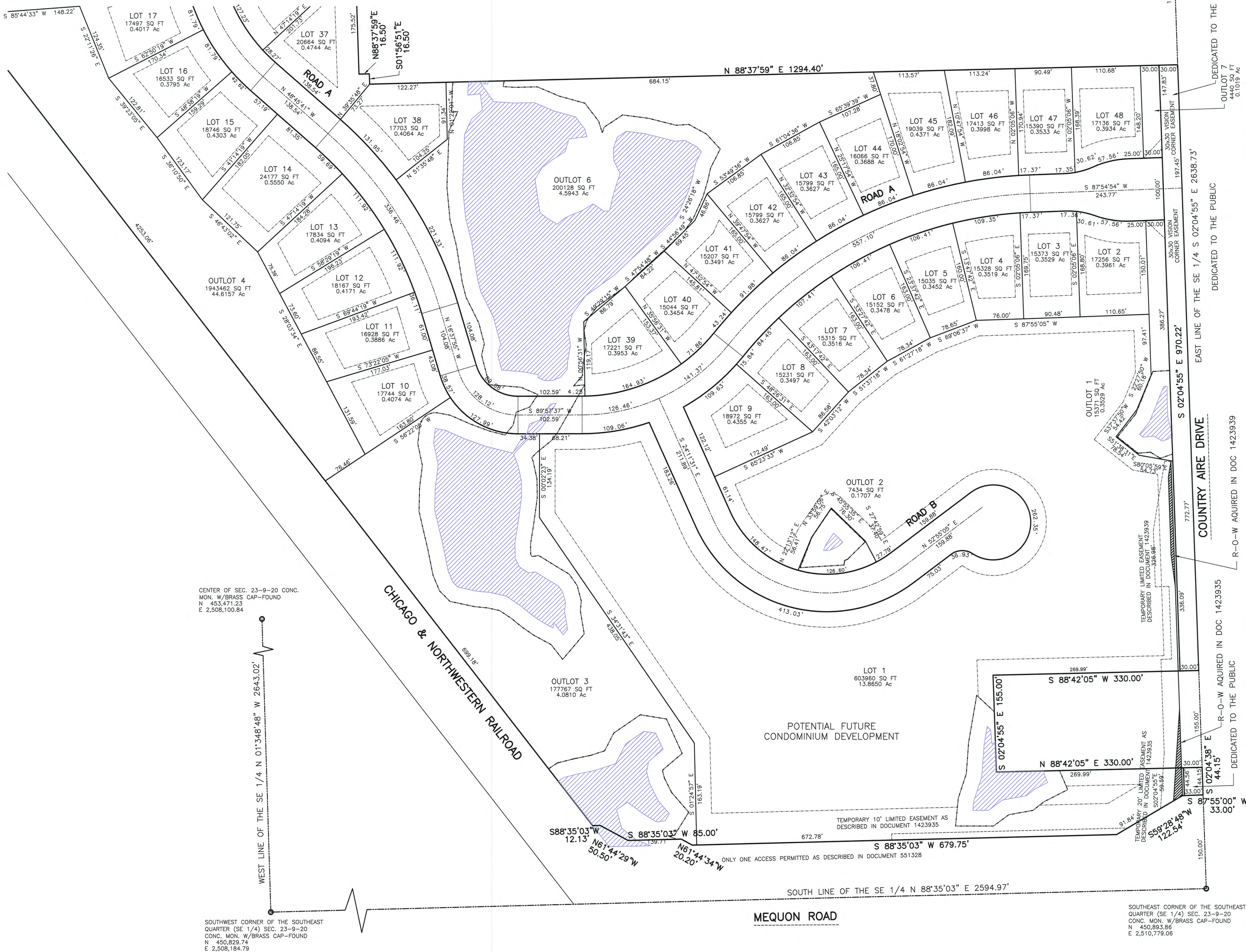
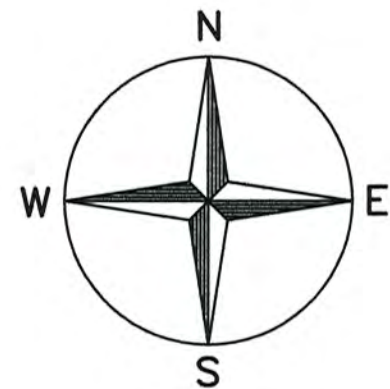


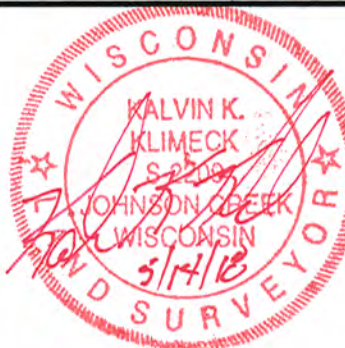
3902 C.T.H. "B"
JOHNSON CREEK, WI. 53038
E-MAIL: kalpioneereng@tds.net CELL: 414 651-0490

PAGE 1 OF 3
PIONEER FILE NO.

PREFI AT200

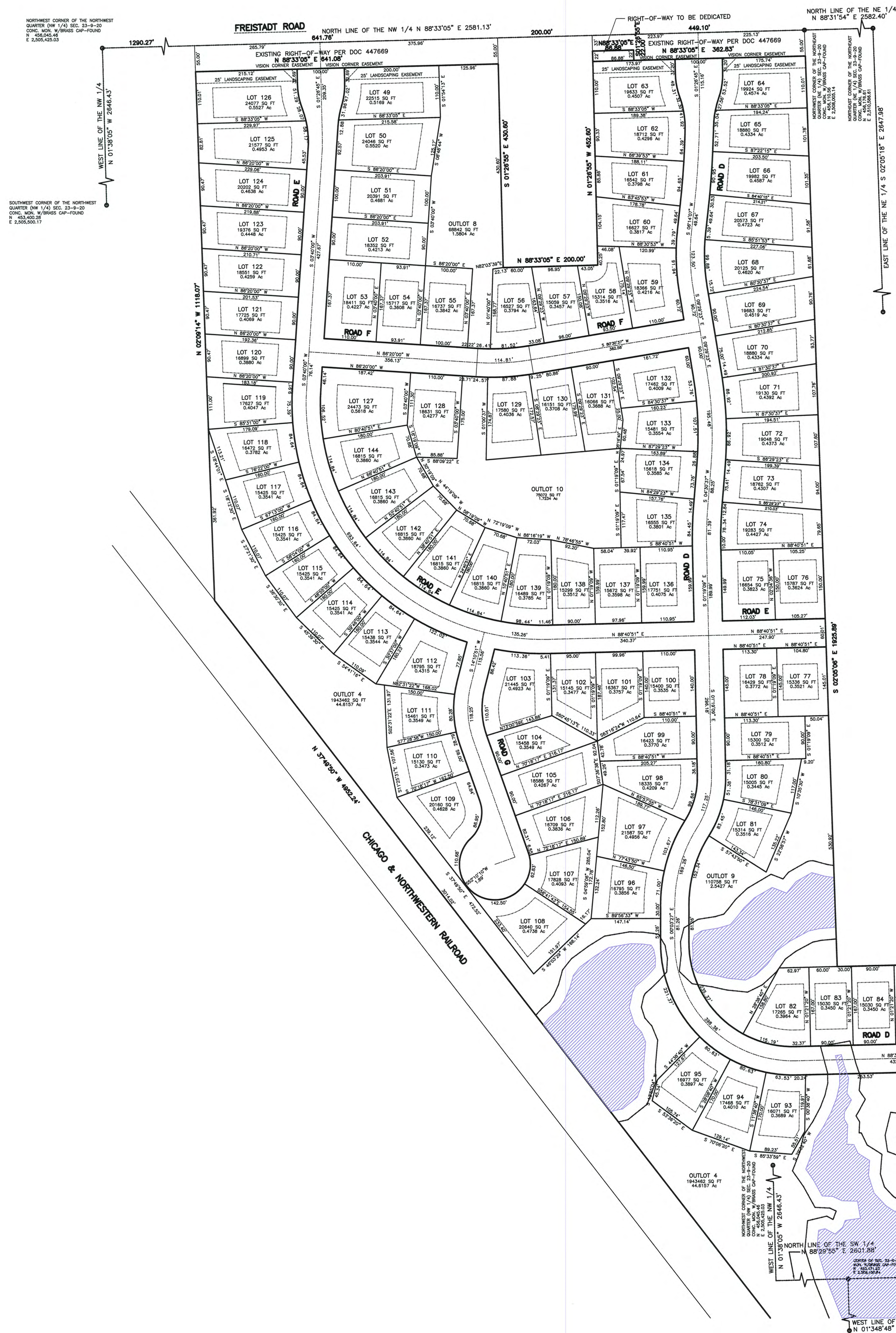
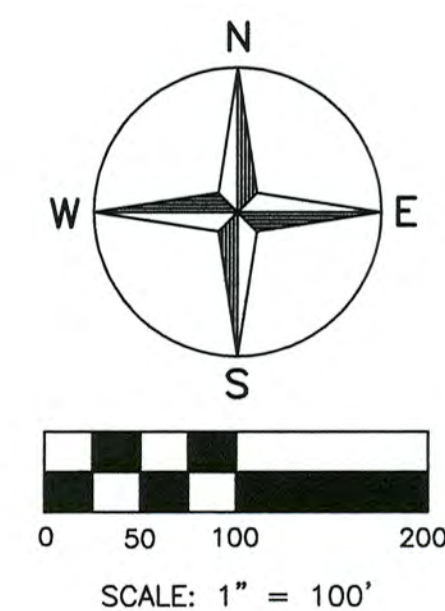
SOUTHEAST CORNER OF THE NORTHEAST
QUARTER (NE 1/4) SEC. 23-9-20
CONC. MON. W/BRASS CAP-FOUND
N 453,530.67
E 2,510,683.06



NO.	REVISIONS	BY	DATE	DESIGNED BY:	SCALE:		PIONEER ENGINEERING AND SURVEYING, LLC. CONSULTANTS IN SUBDIVISIONS AND COMMERCIAL DEVELOPMENTS 3902 C.T.H. "B" JOHNSON CREEK, WI. 53038 E-MAIL: kalpioneereng@tds.net CELL: 414 651-0490		WRENWOOD PRELIMINARY PLAT	MUNIC. PROJ. NO.	PIONEER PROJ. NO.
				K. K. KLIMECK	1" = 60' HORIZ.					VILLAGE OF GERMANTOWN	PIONEER PROJ. NO. 17-01
				DRAWN BY:	DATE:					APPROVED BY:	PIONEER SHT. NO. PAGE 2 OF 3
				CHECKED BY:	MAY 18, 2018						PIONEER FILE NO. 17-01
				K. K. KLIMECK						VILLAGE ENGINEER DATE	PRELIMINARY



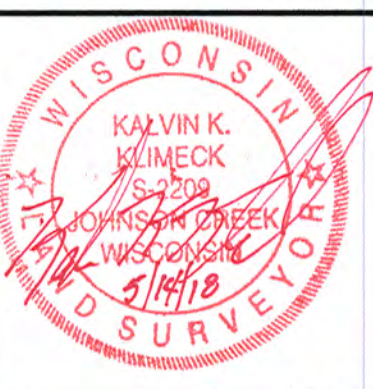
NO.	REVISIONS	BY	DATE	DESIGNED BY:	SCALE:	 PIONEER ENGINEERING AND SURVEYING, LLC. CONSULTANTS IN SUBDIVISIONS AND COMMERCIAL DEVELOPMENTS 3902 C.T.H. "B" JOHNSON CREEK, WI. 53038 E-MAIL: kalpioneereng@tds.net CELL: 414 651-0490 	WRENWOOD PRELIMINARY PLAT		MUNIC. PROJ. NO.	PIONEER PROJ. NO.
				K. K. KLIMECK	1" = 60' HORIZ.				VILLAGE OF GERMANTOWN	PIONEER PROJ. NO. 17-01
				DRAWN BY:	DATE:				APPROVED BY	PIONEER SHT. NO.
				K. K. KLIMECK	MAY 18, 2018					PAGE 3 OF 3
				CHECKED BY:						PIONEER FILE NO.
				K. K. KLIMECK					VILLAGE ENGINEER DATE	17-01



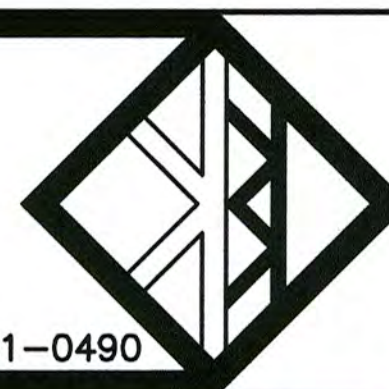
NO.	REVISIONS	BY	DATE	DESIGNED BY:	SCALE:
				K. K. KLIMECK	1" = 100' HORIZ.
				DRAWN BY:	
				K. K. KLIMECK	DATE:
				CHECKED BY:	MAY 14, 2018
				K. K. KLIMECK	

SCALE:
1" = 100' HORIZ.

DATE:
MAY 14, 2018

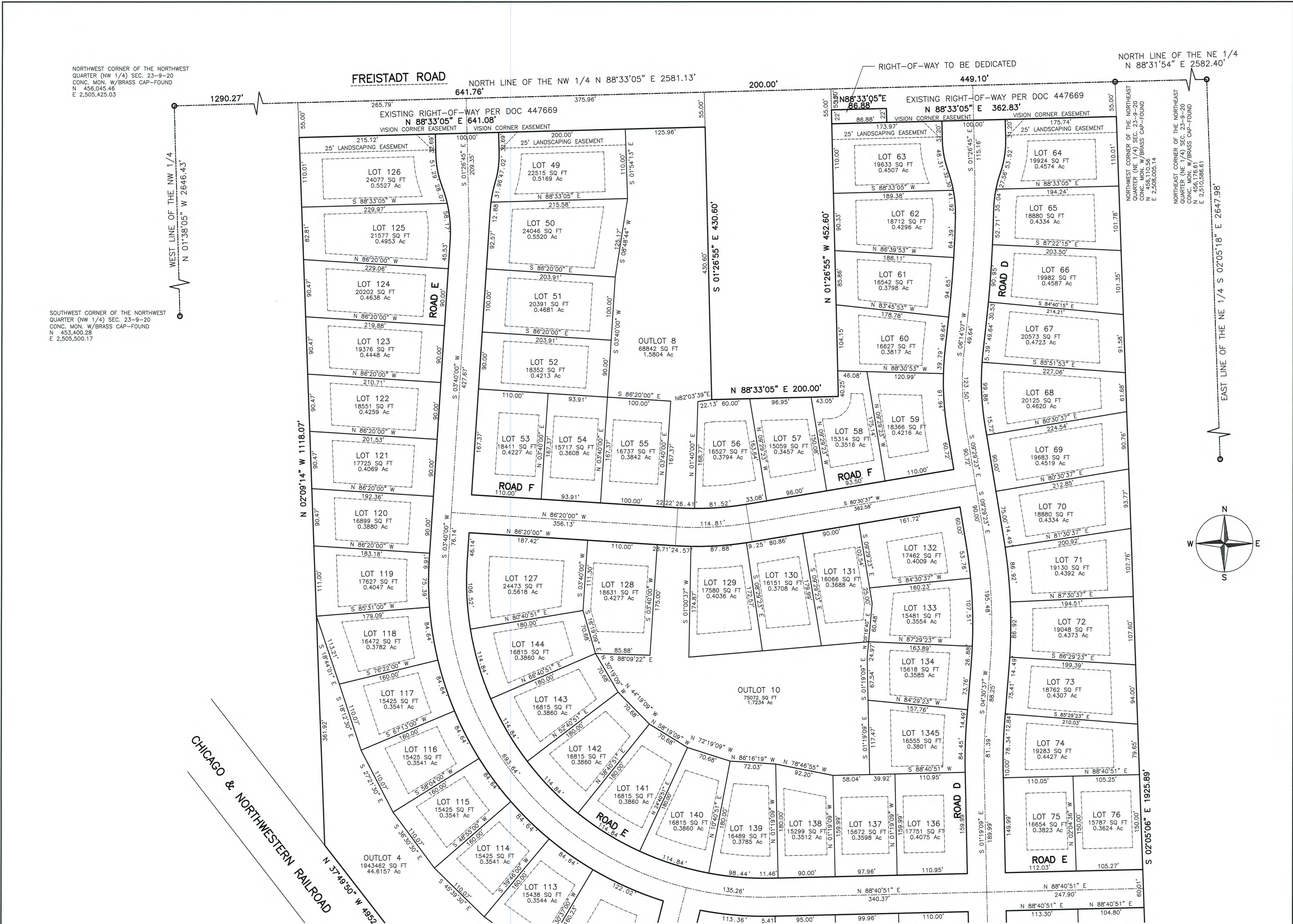


**PIONEER ENGINEERING
AND SURVEYING, LLC.**
CONSULTANTS IN SUBDIVISIONS
AND COMMERCIAL DEVELOPMENTS
3902 C.T.H. "B"
JOHNSON CREEK, WI. 53038
kalpioneereng@tds.net CELL: 414 651-0490



MUNIC. PROJ. NO. _____	PIONEER PROJ. NO. 17-01
VILLAGE OF GERMANTOWN APPROVED _____ BY _____	PIONEER SHT. NO. PAGE 1 OF 3
VILLAGE ENGINEER _____ DATE _____	PIONEER FILE NO. 17-01

PRFPI AT201



Wetland and Waterway Investigation Report

Wrenwood Development Site
Village of Germantown,
Washington County, Wisconsin
Stantec Project #: 193705634
Lead Investigator: Eric C. Parker



Prepared for:

Carity Land Corporation
12720 West North Avenue
Brookfield, WI 53005

Prepared by:

Stantec Consulting Services Inc.
209 Commerce Parkway,
PO Box 128
Cottage Grove, Wisconsin 53527
Phone: (608) 839-1998
Fax: (608) 839-1995

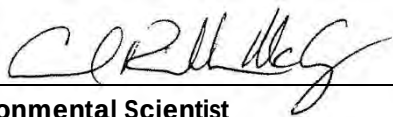
October 4, 2017

Sign-off Sheet

This document entitled Wetland and Waterway Investigation Report was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Carity Land Corporation (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment considering the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not consider any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party because of decisions made or actions taken based on this document.

Prepared by: 
(signature)
Eric C. Parker, PWS, Senior Scientist

Reviewed by 
(signature)
Brian S. Lennie, CWS, Associate

Independent Review by: 
Carol R. McCoy, Senior Environmental Scientist

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
INTRODUCTION
October 4, 2017

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WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
INTRODUCTION
October 4, 2017

1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec) performed an investigation of wetlands and waterways within the Wrenwood Development Site (the "Property"), totaling approximately 149.17 acres in size. Eric C. Parker of Stantec, assisted by Jacob S. Eeling (also of Stantec) completed the field work on September 15th and 18th, 2017.

The Property is located in Section 23, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin. Specifically, the Property is located between Country Aire Drive on the east, and the Canadian National Railroad on the west; and between State Trunk Highway (STH) 167 (Mequon Road) on the south, and County Trunk Highway (CTH) F (Freistadt Road) on the north (Figures 1-5).

The purpose and objective of this wetland and waterway investigation was to identify the extent and spatial arrangement of wetlands and waterways within the Property that may require local, state, or federal permitting, if impacted by development. Ten (10) wetland areas and two waterways were identified and mapped in the Property. In addition, two ponds were present within two of the wetlands.

In 2003, Natural Resources Consulting (NRC), acquired by Stantec in 2010, completed a wetland delineation on the Property. The resulting report (dated October 14, 2003) was submitted to the U.S. Army Corps of Engineers (USACE), and their concurrence was obtained. Stantec reviewed this report prior to the September 2017 field work.

The wetlands and waterways identified in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the Wisconsin Department of Natural Resources (WDNR), and local authority under the Village of Germantown. Stantec recommends this report be submitted to the Village, WDNR, and USACE for final jurisdictional review and concurrence.

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2.0 METHODS

2.1 WETLANDS

Wetland identifications were based on the criteria and methods outlined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1 (1987) and subsequent guidance documents, and applicable Regional Supplement to the *Corps of Engineers Wetland Delineation Manual*.

The wetland identifications involved the use of available resources to assist in the assessment, such as U.S. Geological Survey (USGS) topographic maps, U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey, WDNR Wisconsin Wetland Inventory (WWI) mapping, and aerial photography.

On-site wetland determinations were made using the three criteria (vegetation, soil, and hydrology) and technical approach defined in the USACE 1987 Manual and applicable Regional Supplement. Per procedures described in the 1987 Manual and applicable Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

As recent weather patterns influence the visibility and presence of some wetland hydrology indicators, the antecedent precipitation in the months leading up to the field investigation was reviewed. The current year's precipitation data was compared to long-term (30-year) precipitation averages and standard deviation to determine if precipitation was normal, wet, or dry for the area using a WETS analysis as developed by the NRCS.

A review of U.S. Department of Agriculture Farm Service Agency (FSA) annual aerial slides and other available aerial imagery was conducted for the Property to assist in the wetland determination because farmed areas with mapped poorly drained or somewhat poorly drained soils are present within the Property. The aerial imagery was reviewed for the appearance of wetland signatures. A wetland signature is field evidence, recorded by aerial imagery, of ponding, flooding, or impacts of saturation for sufficient duration, which meets wetland hydrology and possibly wetland vegetation criteria. Wetland signatures may vary based on the type and seasonal date of the aerial imagery. Signatures visible on FSA annual aerial slides in cropland for Wisconsin have been categorized as follows (USDA, NRCS 1998):

1. Hydrophytic vegetation (seen as a different color of green)
2. Surface water (usually black or white)
3. Drowned-out crops (bare soil or mud flats)
4. Differences in color due to different planting dates or isolated areas not farmed with the rest of the field
5. Inclusions of wet areas in set-aside program
6. Patches of greener color in "dry" years
7. Crop stress (yellow) or sparse canopy (light green)
8. Saturated soil visible on infrared (IR) slides or photos

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The antecedent precipitation in the months leading up to each aerial image was reviewed and compared to long-term (30-year) precipitation averages and standard deviation to determine if each year was normal, wet, or dry using a WETS analysis (Appendix D).

Mapped poorly and somewhat poorly drained soils were identified within the Property and available aerial imagery was analyzed for signatures of wetness consistency in these areas (Off-Site Aerial Imagery Analysis in Appendix E). Areas within agricultural fields are typically identified as wetland if they contain hydric soils and 50% or more of the aerial images taken in the five (or more) most recent normal precipitation years show any of the wetland signatures listed above. However, while the focus of the analysis is on wetland signatures visible in normal precipitation years, years considered wet or dry for received precipitation were also analyzed. Wetland determinations and wetland boundaries are identified based on the aerial image having the largest wetland boundary during a “normal” rainfall year if signatures were apparent in at least 50% of the years (USDA, NRCS 1998).

The wetland boundary and sample points were surveyed with a Global Positioning System (GPS) capable of sub-meter accuracy and mapped using Geographical Information Systems (GIS) software. Unless located in an active farm field, the wetland boundaries were flagged on the ground with pink wetland delineation wire flags.

2.2 WATERWAYS

Waterways (e.g. streams, rivers) and waterbodies (e.g. ponds, lakes) within the Property that may be under federal, state, or local zoning authority, were identified and mapped in this investigation based on NRC’s previous investigation and Stantec’s September 2017 investigation, and features previously identified by the WDNR and U.S. Geological Survey, as depicted on Figures 1-4. Culverts associated with ditches and waterways were also identified and located with GPS.

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3.0 RESULTS

3.1 SITE DESCRIPTION

The Property is approximately 149.17 acres and is comprised of upland agricultural lands with scattered depressional wetlands in its southern half. In addition, an area of floodplain and mesic forest bisects the Property near its center, near an unnamed, intermittent tributary that flows northeasterly off the Property, and eventually to the Menomonee River to the west of the Property. The Property is generally bounded on the west by the railroad embankment, on the south by STH 167 (Mequon Road), on the north by CTH F (Freistadt Road), and in the southeast by Country Aire Drive. The remainder of the Property is bounded on the east by other agricultural land and woodlands. Other surrounding land uses include rural residential properties, residential subdivisions, and commercial/retail uses.

Soils mapped by NRCS within the Property and their hydric status are summarized in Table 1, below, and mapped on Figure 2, Appendix A. Wetlands identified in the field are located primarily within areas mapped as potentially possessing hydric soils (Figure 3, Appendix A).

Table 1. Summary of Soils Mapped within the Property

Soil Symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric Status
CeB2: Casco loam, 2 to 6 percent slopes, eroded	Casco-Eroded	80-90	Outwash plains	No
	Fox	5-11	Outwash plains	No
	Casco-Severely eroded	5-9	Outwash plains	No
DdB: Dodge silt loam, 2 to 6 percent slopes	Dodge	80-95	Drumlins	No
	St. Charles	3-10	Drumlins	No
	Mayville	2-7	Drumlins	No
	Lamartine	0-3	Drumlins	No
Hu: Houghton mucky peat, 0 to 2 percent slopes	Houghton-Mucky peat	85-95	Depressions	Yes
	Houghton-Ponded	3-7	Depressions	Yes
	Adrian	1-5	Lakebeds (relict)	Yes
	Palms-Mucky peat	1-3	Interdrumlins	Yes
KIA: Kendall silt loam, 1 to 3 percent slopes	Kendall	90	Till plains	No
	Wetter soils	10	Depressions	Yes
MgA: Martinton silt loam, 1 to 3 percent slopes	Martinton	90	Lake plains	No
	Wetter soils	10	Depressions on lake plains	Yes
MoB: Mayville silt loam, 2 to 6 percent slopes	Mayville	80-95	Drumlins	No
	Dodge	5-17	Drumlins	No

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Soil Symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric Status
	Lamartine	0-3	Drumlins	No
MtA: Mequon silt loam, 1 to 3 percent slopes	Mequon	90	Till plains	No
	Wetter soils	10	Depressions on till plains	Yes
Mzb: Montgomery silty clay loam	Montgomery	100	Depressions on lakebeds (relict), drainageways on lakebeds (relict)	Yes
OuB: Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes	Ozaukee-High carbonate substratum	92-100	End moraines, ground moraines	No
	Ashkum-Drained	0-5	End moraines, ground moraines	Yes
	Urban land	0-3	Ground moraines	No
	Orthents, clayey	0-3	Ground moraines	No
OuB2: Ozaukee silt loam, high carbonate substratum, 2 to 6 percent slopes, eroded	Ozaukee-High carbonate substratum, eroded	92-100	End moraines, ground moraines	No
	Ashkum-Drained	0-5	End moraines, ground moraines	Yes
	Urban land	0-3	Ground moraines	No
	Orthents, clayey	0-3	Ground moraines	No
OuC2: Ozaukee silt loam, high carbonate substratum, 6 to 12 percent slopes, eroded	Ozaukee-High carbonate substratum, eroded	88-100	End moraines, ground moraines	No
	Urban land	0-5	Ground moraines	No
	Mequon	0-5	Ground moraines	No
	Ozaukee-Severely eroded	0-5	End moraines, ground moraines	No
ShB: Saylesville silt loam, 2 to 6 percent slopes	Saylesville	100	Lakebeds (relict)	No
ThB2: Theresa silt loam, 2 to 6 percent slopes, eroded	Theresa-Eroded	80-90	Drumlins	No
	Hochheim-Eroded	8-15	Drumlins	No
	Lamartine	2-5	Drumlins	No
ThC2: Theresa silt loam, 6 to 12 percent slopes, eroded	Theresa-Eroded	80-95	Drumlins	No
	Hochheim-Eroded	4-15	Drumlins	No
	Lamartine	1-5	Drumlins	No
VsA: Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	Virgil	90	Outwash plains	No
	Wetter soils	10	Depressions	Yes
W: Water	Water	100	—	Unranked

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The Wisconsin Wetland Inventory (WWI) map identifies wetland areas within the Property in the approximate locations of wetlands observed during this investigation, with certain differences (Figure 4). The WWI wetlands are larger than what was determined in the wooded portions; however, in the farmed areas the WWI does not depict any wetlands. (Figure 5).

Average precipitation for the investigation area was obtained from the Germantown weather station (NWS station #USC00473058) and used for the WETS analysis. A total of 12.89 inches of precipitation occurred in June through August compared to the average of 11.86 inches. Based on the WETS analysis, conditions were in the normal range (Appendix D). However, conditions were dry at the time of the field work because there was only 0.34 inches of rain in September prior to the field work. September is typically a dry time of year.

3.2 WETLANDS

Ten (10) wetlands were determined and delineated within the Property. Data forms for each determination are provided in Appendix B. Site photographs are included in Appendix C. In non-farmed areas, the wetland boundaries were flagged with pink wetland delineation wire flags and mapped with a GPS. The transition from wetland to upland characteristics generally correlated with a poorly to well-defined topographic break. Wetland boundary limits are shown on Figure 5. These wetlands are summarized in Table 2 below.

Table 2. Summary of Wetlands Identified within the Property

Wetland	Wetland Type	Adjacent Surface Waters	Acreage (on-site)
Wetland 1 (W-1)	Farmed Wet Meadow (F0Kf)	Unnamed Tributary southerly to Menomonee River	0.37
Wetland 2 (W-2)	Shrub Carr (S3K) Perimeter to Excavated Pond (W0Hx)	Unnamed Tributary northerly to Menomonee River	0.25
Wetland 3 (W-3)	Potential Farmed Wet Meadow (F0Kf)	Potentially isolated Non-Federal Wetland	0.01
Wetland 4 (W-4)	Wet Meadow (E2K)	Potentially isolated Non-Federal Wetland	0.05
Wetland 5 (W-5)	Shrub Carr (S3K) Perimeter to Excavated Pond (W0Hx)	Unnamed Tributary northerly to Menomonee River	0.59
Wetland 6 (W-6)	Hardwood Swamp (T3K); Shrub Carr (S3K); Wet Meadow (E2K)	Unnamed Tributary northerly to Menomonee River	15.24
Wetland 7 (W-7)	Hardwood Swamp (T3K)	Unnamed Tributary northerly to Menomonee River	0.18
Wetland 8 (W-8)	Hardwood Swamp (T3K)	Potentially isolated Non-Federal Wetland	0.03
Wetland 9 (W-9)	Hardwood Swamp (T3K); Shrub Carr (S3K); Wet Meadow (E2K)	Unnamed Tributary northerly to Menomonee River	0.84
Wetland 10 (W-10)	Wet Meadow (E2K); Shrub Carr (S3K)	Potentially isolated Non-Federal Wetland	1.13
Total			18.68

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3.2.1 Wetland 1

Wetland 1 (W-1) is a farmed wetland, and therefore the vegetation was significantly disturbed and normal circumstances were not present. Given the active farming, an off-site aerial imagery analysis was completed to identify potential farmed wetlands on the Property (Appendix E). Signatures of moisture or ponding were consistently present in normal years in an area of soils mapped as Virgil silt loam in the southwestern portion of the Property. Virgil soils, which potentially have hydric soils in depressions, were identified as farmed wetland at the location of W-1. No other areas on the Property had such consistent signatures.

Vegetation

W-1 was dominated by green amaranth (*Amaranthus retroflexus*, FACU). Although there were two other non-dominant weeds present, indicative of wetlands, the dominant plants were not comprised of hydrophytic (FAC, FACW, and OBL) species. Therefore, the wetland vegetation criterion was not met.

Hydrology

W-1 appears to have a seasonally flooded-saturated hydroperiod based on consistent signatures in normal precipitation years per the Off-Site Aerial Imagery Analysis. A primary indicator was observed at sample point P1: Sparsely Vegetated Concave Surface (B8). Additionally, three secondary indicators were observed: Surface Soil Cracks (B6), Saturation Visible on Aerial Imagery (C9), and Geomorphic Position (D2). Therefore, the wetland hydrology criterion was met.

Soils

Soils within W-1 are partially mapped by the NRCS as Virgil silt loam (VsA) (Figure 2), which is typically non-hydric. However, Virgil soils have hydric inclusions in depressions such as in W-1 as documented at P1. The NRCS field indicators of hydric soils identified at P1 were F3- Depleted Matrix. Therefore, the hydric soil criterion was satisfied within W-1.

Wetland Boundary

The wetland boundary for W-1 was determined based on distinct differences in hydrology indicators, hydric soils, topography, and best professional judgment. The boundary was an extrapolation of the following: (1) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; (2) Transition from soils exhibiting hydric characteristics to non-hydric soils; and (3) transition from lower areas where the soybean crop was drowned out or stressed to adjacent areas where the crop was not stressed. The boundary of W-1 was further identified by signatures on recent aerial imagery in normal precipitation years per the off-site analysis (Appendix E). The transition from wetland to upland characteristics generally correlated with a faint to distinct topographic break.

3.2.2 Wetlands 2 and 5

Wetland 2 (W-2) which is 0.25 acre in size, and Wetland 5 (W-5), which is 0.59 acre in size, are comprised of shrub carr perimeters around two ponds (Pond 1 and Pond 2, respectively), that were created by excavation in 1988 (based on reviewing historic aerial imagery). These wetlands and ponds may be connected to an unnamed tributary to Menomonee River (to the north) via underground drain tiles and/or drain by surface water to off-site wetlands to the north.

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Vegetation

W-2 and W-5 were dominated by shrubs including sandbar willow (*Salix interior*, FACW) and common buckthorn (*Rhamnus cathartica*, FAC). Saplings and trees of green ash (*Fraxinus pennsylvanica*, FACW) were also dominant. Dominant herbaceous species included reed canary grass (*Phalaris arundinacea*, FACW) and narrow-leaved cattail (*Typha angustifolia*, OBL). As the dominant plants were comprised mostly of hydrophytic (FAC, FACW, and OBL) species, the wetland vegetation criterion was met within W-2 and W-5.

Hydrology

W-2 and W-5 are contiguous with open water and are the zones of Ponds 1 and 2 where water fluctuates and groundwater is near the surface. These wetlands appear to have a seasonally flooded-saturated hydroperiod. Primary indicators observed at sample point P4 within W-2 were Saturation (A3), Water Marks (B1), Sparsely Vegetated Concave Surface (B8), Water-Stained Leaves (B9), and Adventitious Roots. No primary indicators were observed at sample point P10 completed within W-5. Secondary indicators observed at sample points P4 and P10 within W-2 and W-5 included both Geomorphic Position (D2) and a positive FAC-Neutral Test (D5). At sample point P4, Crayfish Burrows (C8) were noted, while at sample point P10, a Dry-Season Water Table (C2) was observed. Therefore, the wetland hydrology criterion was met within W-2 and W-5.

Soils

Soils within W-2 and W-5 are partially mapped by the NRCS (Figure 2) as somewhat poorly drained soils, Virgil and Ozaukee silt loams (VsA and OuB2), which are typically non-hydric. However, these wetlands were excavated in the late 1980s, which altered their drainage status. A portion of W-5 was also excavated in Casco loam (CeB2), which is typically well drained. The NRCS field indicator of hydric soils identified within W-2, and W-5 evidenced the NRC field indicator of F3- Depleted Matrix. Therefore, the hydric soil criterion was satisfied within these wetlands.

Wetland Boundary

The wetland boundaries for W-2 and W-5 were determined based on distinct differences in vegetation, hydrology, and topography, consisting of the following: (1) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; (2) Transition from soils exhibiting hydric characteristics to non-hydric soils; (3) transition from areas dominated by hydrophytic vegetation to adjacent areas dominated by non-hydrophytic vegetation. The transition from wetland to upland characteristics generally correlated with a moderately distinct to distinct topographic break.

3.2.3 Wetland 3

Wetland W-3 is a wetland that was identified in the field based on a combination of crop stress and hydric soils. It is a very small area (0.01 acre) that does not appear to have an inlet, but does have an eroded channel for an outlet. W-1 was located in a swale, and observed to be slightly lower in elevation than surrounding farmed areas to the north, east, and south. Given the significantly disturbed vegetation, normal circumstances were not present.

Vegetation

Crop remnants in W-3 consisted of stressed soybeans (*Glycine max*, UPL) on the edges, however, no crop was present in most of the area, likely due to saturated ground during early crop growth. In addition to the significant disturbance from continuous plowing and planting due to agriculture,

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the field appeared to be treated with herbicide since planting in the spring, so weedy vegetation was not present.

Hydrology

W-3 appeared to have a seasonally flooded-saturated hydroperiod in 2017, however 2017 was a very wet spring, and crop signatures were present in only 40% of normal precipitation years in the off-site aerial imagery analysis (Appendix E). One primary indicator was observed at sample point P5: Sparsely Vegetated Concave Surface (B8). The secondary indicators observed were Surface Soil Cracks (B6) and Geomorphic Position (D2). Therefore, the wetland hydrology criterion was met.

Soils

Soils within W-3 are mapped as Ozaukee silt loam (OuB), which is typically non-hydric, however small areas of Ashkum hydric soils may be found in end or ground moraines within the OuB mapping unit. The NRCS field indicator of hydric soil identified at sample point P5 was F3- Depleted Matrix. Therefore, the hydric soil criterion was satisfied.

Wetland Boundary

The wetland boundary for W-3 was determined using best professional judgment based on differences in crop stress, hydrology indicators, and topography, consisting of the following: (1) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; (2) Transition from soils exhibiting hydric characteristics to non-hydric soils; (3) location of crop stress signatures in 40 percent of normal years per the off-site aerial imagery analysis; and (4) landscape position. The transition from wetland to upland characteristics generally correlated with a faint topographic break.

3.2.4 Wetland 4

Wetland 4 (W-4) is an isolated wet meadow wetland, potentially associated with a seasonally high water table. There were no observed inlets or outlets.

Vegetation

W-4 was dominated by reed canary grass and common horsetail (*Equisetum arvense*, FAC). As the dominant plants were comprised mostly of hydrophytic (FAC, FACW, and OBL) species, the wetland vegetation criterion was met.

Hydrology

W-4 appears to have a seasonally flooded-saturated hydroperiod. Old and partially functional drain tiles may be present. No primary hydrology indicators were observed at sample point P7 within W-4; however, the secondary indicators included Surface Soil Cracks (B6), Crayfish Burrows (C8), and a positive FAC-Neutral Text (D5). Therefore, the wetland hydrology criterion was met.

Soils

Soils within W-4 are mapped by the NRCS as Martinton silt loam (MgA) (Figure 2), which is typically non-hydric. However, inclusions of wetter soils in depressions may be found. The NRCS field indicator of hydric soils identified at P7 was F3- Depleted Matrix. Therefore, the hydric soil criterion was satisfied within W-4.

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Wetland Boundary

The wetland boundary for W-4 was determined based primarily on distinct differences in vegetation, hydrology indicators, and soils, consisting of the following: (1) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; (2) Transition from soils exhibiting hydric characteristics to non-hydric soils; (3) transition from areas dominated by hydrophytic vegetation to adjacent areas dominated by non-hydrophytic vegetation. The transition from wetland to upland characteristics at times correlated with a faint topographic break.

3.2.5 Wetland 6

Wetland 6 (W-6) is associated with an unnamed tributary to the Menomonee River (WW-1) and is comprised mostly of hardwood swamp, with smaller areas of shrub carr and wet meadow. W-6 is 15.24 acres in size within the Property, and continues off-site to the east. Most of W-6 is a somewhat disturbed hardwood swamp that may have been pastured several decades ago. However, portions of W-6 within the easterly woodland on the Property are relatively undisturbed, comprised of basins and drainageways. One of the drainageways was identified as WW-2, which is located along the east side of the Property entirely within W-6 (see Photo 22 in Appendix C).

Vegetation

The hardwood swamp portions of W-6 are represented by sample points P14, P17, and P21 and were dominated by trees including green ash, American elm (*Ulmus americana*, FACW), and swamp white oak (*Quercus bicolor*, FACW). The basins were mostly open and free of shrubs however saplings of the trees listed above and common buckthorn were present on the perimeter. Dominant herbaceous species within the hardwood swamp portions were beggar's ticks (*Bidens connata*, FACW), water parsnip (*Sium suave*, OBL), water hemlock (*Cicuta maculata*, OBL), reed canary grass, lake sedge (*Carex lacustris*, OBL), hop sedge (*Carex lupulina*, OBL), and fowl manna grass (*Glyceria striata*, OBL). In the shrub carr portions of W-6, such as at sample points P20 and P23, Eastern cottonwood (*Populus deltoides*, FAC), sandbar willow (*Salix interior*, FACW), pussy willow (*Salix discolor*, FACW), and numerous herbaceous species were dominant. Finally, in the wet meadow portions of W-6 along the unnamed tributary WW-1 and on the western side of W-6, reed canary grass was dominant. As the dominant plants were comprised mostly of hydrophytic (FAC, FACW, and OBL) species, the wetland vegetation criterion was met.

Hydrology

W-6 appears to have a seasonally flooded-saturated hydroperiod throughout most of its extent. Primary indicators observed at the sample points completed within W-6 were Sediment Deposits (B2), Sparsely Vegetated Concave Surface (B8), and Water-Stained Leaves (B9). Secondary indicators observed at sample points within W-6 typically included both Geomorphic Position (D2) and a positive FAC-Neutral Text (D5), with dry-season water table (C2) and Crayfish Burrows (C8) also observed. Therefore, the wetland hydrology criterion was met throughout wetland W-6.

Soils

Soils within W-6 are largely mapped by the NRCS (Figure 2) as Houghton Muck (Hu) and Montgomery silty clay loam (MzB), which are typically hydric; and Martinton silt loam (MgA), a soil type that is typically non-hydric and somewhat poorly drained, but also has inclusions of hydric soils. The NRCS field indicators of hydric soils identified within W-6 included A11- Depleted Below Dark Surface, A12- Thick Dark Surface, and F3- Depleted Matrix. Therefore, the hydric soil criterion was satisfied within W-6.

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Wetland Boundary

The wetland boundaries for W-6 were determined based on distinct differences in vegetation, hydrology, and topography. The eastern side of the southern-most lobe of W-6 was poorly defined within the agricultural field based on the off-site aerial imagery analysis and observed hydrology indicators such as crop stress, sediment deposits, and algal mat. The boundary was defined throughout most of W-6 based on the following: (1) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; (2) Transition from soils exhibiting hydric characteristics to non-hydric soils; (3) transition from areas dominated by hydrophytic vegetation to adjacent areas dominated by non-hydrophytic vegetation. The transition from wetland to upland characteristics generally correlated with a moderately distinct topographic break.

3.2.6 Wetlands 7 and 8

Wetlands 7 and 8 (W-7 and W-8) are hardwood swamp wetlands associated with wooded depressions surrounded by upland woods. The portion of W-7 on the Property is 0.18 acre in size, and based on the WWI, W-7 drains off-site northerly and easterly through a large wetland complex to the unnamed tributary to the Menomonee River. W-8 appears to be an isolated depression that is 0.03 acre in size, and entirely within the Property.

Vegetation

W-7 and W-8 are depressional hardwood swamp wetlands that were sparsely vegetated or devoid of vegetation. Trees on the perimeter, most of which were entirely outside the wetland boundaries, provided the shade in the wetlands via their overhang. Sample point P15 was located within W-7 and was dominated by green ash and silver maple (*Acer saccharinum*, FACW); and sample point P18 within W-8 was dominated by green ash and seven herbaceous species that were only very sparsely present. As the dominant plants were comprised mostly of hydrophytic (FAC, FACW, and OBL) species, the wetland vegetation criterion was met within both wetlands.

Hydrology

W-7 and W-8 appear to have a seasonally flooded-saturated hydroperiod. Primary indicators observed at sample point P15 completed within W-7 were Saturation (A3), Sparsely Vegetated Concave Surface (B8) and Hydrogen Sulfide Odor (C1). At sample point P18 within W-8, only primary indicator B8 was observed. Secondary indicators observed at both sample points included Geomorphic Position (D2) and a positive FAC-Neutral Text (D5); and dry-season water table (C2) was also observed at P15. Therefore, the wetland hydrology criterion was met throughout wetlands W-7 and W-8.

Soils

Soils within W-7 are mapped by the NRCS (Figure 2) as Montgomery silty clay loam (MzB), which are typically hydric. Soils within W-8 are mapped as Ozaukee silt loam (OuB), a soil type that is typically non-hydric and somewhat poorly drained, but also has inclusions of hydric Ashkum soils. The NRCS field indicators of hydric soils identified within W-7 included A4-Hydrogen Sulfide, A11- Depleted Below Dark Surface, F3- Depleted Matrix, and F6-Redox Dark Surface. At sample point P18 within wetland W-8, the same indicators were observed except for A4. Therefore, the hydric soil criterion was satisfied within W-7 and W-8.

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Wetland Boundary

The wetland boundaries for W-7 and W-8 were determined based on distinct differences in vegetation, hydrology, and topography, consisting of the following: (1) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; (2) Transition from soils exhibiting hydric characteristics to non-hydric soils; (3) transition from areas dominated by hydrophytic vegetation to adjacent areas dominated by non-hydrophytic vegetation. The transition from wetland to upland characteristics generally correlated with a distinct topographic break.

3.2.7 Wetlands 9 and 10

Wetlands 9 and 10 (W-9 and W-10) have cover types of wet meadow, shrub carr, and hardwood swamp. The portion of W-9 on the Property is 0.84 acre in size, and based on the WWI, W-9 drains off-site easterly and eventually into a large mostly wooded wetland complex that is associated with the same unnamed tributary to the Menomonee River as W-6. W-10 appears to be an isolated depression that is 1.13 acre in size, and extends into the railroad right-of-way on the west side of the Property. Potentially W-9 and W-10 are connected via a drain tile under the agricultural field that separates them.

Vegetation

W-9 and W-10 are depressional wetlands that were mostly densely vegetated. Hardwood swamp comprised most of W-9, while shrub carr dominated W-10. Sample points P25 and P27 were located within W-9 and W-10, respectively, and were both dominated by reed canary grass. As the dominant plants were comprised mostly of hydrophytic (FAC, FACW, and OBL) species, the wetland vegetation criterion was met within both wetlands.

Hydrology

W-9 and W-10 appear to have a seasonally flooded-saturated hydroperiod. Two secondary indicators were observed at the sample points completed within these wetlands: Geomorphic Position (D2) and a positive FAC-Neutral Text (D5). Therefore, the wetland hydrology criterion was met in wetlands W-7 and W-8.

Soils

Soils within wetlands W-9 and W-10 are mapped by the NRCS (Figure 2) as Mequon silt loam (MtA), which is typically non-hydric. However, wetter soils in depressions such as in W-9 and W-10 are hydric. The NRCS field indicator of hydric soils, identified within both wetlands, was F3- Depleted Matrix. At sample point P27 in wetland W-10, A11- Depleted Below Dark Surface and F6-Redox Dark Surface were also present. Therefore, the hydric soil criterion was satisfied within wetlands W-9 and W-10.

Wetland Boundary

The wetland boundaries for W-9 and W-10 were determined based on distinct differences in vegetation, hydrology, and topography, consisting of the following: (1) Transition from an area exhibiting wetland hydrology indicators within the wetland to a lack of wetland hydrology indicators within the adjacent upland; (2) Transition from soils exhibiting hydric characteristics to non-hydric soils; (3) transition from areas dominated by hydrophytic vegetation to adjacent areas dominated by non-hydrophytic vegetation. The transition from wetland to upland characteristics generally correlated with a subtle to distinct topographic break.

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
RESULTS
October 4, 2017

3.3 WATERWAYS

Waterway WW-1 traverses the central portion of the Property (Figure 5) and was found to have the characteristics and dimensions of an intermittent state navigable waterway. However, there are no known determinations of state navigability by the WDNR for WW-1. Although WW-1's channel did not have water in it at the time of the field work in September 2017, it was a dry time of the year. Photo No. 21 (Appendix C), taken on September 15th, shows a typical reach of WW-1 within wetland W-6. The average width of the channel was approximately 10 feet; the banks were steep and approximately 3-4 feet in height with an ordinary high water mark (OHWM) that appeared to be near the channel's top of bank. WW-1 is an unnamed tributary to the Menomonee River, and the WDNR has assigned it with Water Body Identification Code 5033705.

Waterway WW-2, which is along the east edge of the Property, is part of wetland W-6 and tributary to WW-1. WW-2, which was also dry during Stantec's field work in September 2017, is thought to be a non-navigable waterway based on its width of approximately three feet, and a lack of defined banks. This waterway appears to serve as an outlet to off-site wetlands to the southeast of WW-2. These same off-site wetlands, and WW-2 by extension, may also serve as an outlet to W-2/Pond 1 and W-5/Pond 2.

As described earlier in Section 3.2.2 of this report, Ponds 1 and 2 were excavated in 1988. This coincided with the construction of the existing residence to the west of Pond 2. Pond 2 is a local water body identified by the WDNR as a priority navigable waterway (PNW) Lake Less than 50 Acres and provided a water body identification code of 5572846. These ponds outlet to off-site wetlands to the north. These off-site wetlands are thought to eventually flow into WW-1 and are therefore tributary to the Menomonee River.

3.4 UPLANDS

Uplands on the Property were comprised of farm fields that are higher in elevation than adjacent farmed wetlands. Uplands in the east-central portion of the Property were also comprised of woodlands dominated by sugar maple (*Acer saccharum*, FACU), basswood (*Tilia americana*, FACU), black walnut (*Juglans nigra*, FACU), hybrid bush honeysuckle (*Lonicera x bella*, FACU), and common buckthorn. The upland woodlands were also somewhat higher in elevation than the adjacent hardwood swamp portions of wetland W-6.

The agricultural fields of the Property were mostly upland and planted in soybeans (*Glycine max*, UPL) in 2017. The soybean crop was fully mature at the time of field work and about 2-3 feet tall. The seven agricultural fields on the Property are identified on the 2015 aerial image in the off-site aerial imagery analysis (Appendix E). All the fields appeared to have herbicide applied earlier in 2017 to control weeds in the weeks leading up to the field work, with good to moderate success.

Given the ongoing agricultural use on the Property and the mapped hydric soils and soils which may include small areas of hydric soils, an off-site aerial imagery analysis was completed (Appendix E). Uplands outside the wetlands delineated by Stantec on the Property generally lacked consistent signatures of wetness in normal precipitation years, and lacked hydric soils and wetland hydrology indicators. This condition was found to be the case at sample points P2, P6, P9, P19, and P26, which were determined to be uplands. At sample point P3, a wetland (W-3) was identified; however, W-3 was not consistently present on aerial imagery and was thought to potentially be upland, subject to WDNR review at the time of the field confirmation. At the other farmed upland sample points,

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
RESULTS
October 4, 2017

signatures were even more inconsistently present on aerial imagery per the off-site analysis, but nevertheless checked as to whether they were farmed wetlands.

Sample points P11 and P12 were completed in an area previously identified by NRC as wetland 8 in 2003. Although both sample points were dominated by wetland vegetation, upland vegetation was also present, and the soils were non-hydric. Therefore, this area was determined to be uplands. Sample point P3 was also determined to be upland, although it was dominated by reed canary grass. All three of these sample points determined to be uplands were located in soils derived from excavated dredge spoils from Ponds 1 and 2.

Sample point P13 was completed in a tree-line on the edge of the Property adjacent to wetlands that are identified on the WWI. P13 was determined to be upland. Sample point P28 was also completed in a tree-line on the edge of the Property because a signature was observed in recent years in the adjacent farm field. The sample point was approximately at the same elevation of the adjacent farm field and was selected because normal circumstances were present and all three parameters could be more easily investigated.

Sample points P16, P22, and P24 were completed adjacent to wetland W-6 to represent wooded and old field uplands that partially define the boundary of W-6.

3.5 OTHER ENVIRONMENTAL CONSIDERATIONS

This report is limited to the identification of state and/or federally regulated wetlands and waterways within the Property. However, there may be other regulated environmental features within the Property, including, but not limited to, historical or archeological features, and endangered or threatened species. Federal, state, and local units of government and regional planning organizations may have regulatory authority to control or restrict land uses within or near these features. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

Specifically, in the State of Wisconsin, Wis. Adm. Code NR 151.12 requires that a “protective area” or buffer be determined from the top of the channel of lakes, streams, and rivers, or at the delineated boundary of wetlands. In accordance with NR 151.12, the width of the “protective area” for less susceptible wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. Moderately susceptible wetlands, lakes, and perennial and intermittent streams identified on USGS topographic maps or NRCS county soil survey maps (whichever is more current) require a protective buffer of 50 feet, and outstanding or exceptional resource waters, highly susceptible wetlands, and wetlands in areas of special natural resource interest require protective buffers of 75 feet.

Wetlands W-6, W-7, and W-8 on the Property have been identified as primary environmental corridor as established by Southeastern Wisconsin Regional Planning Commission (SEWRPC). Therefore, based on the “protective buffer” standards provided by NR 151.12, it is Stantec’s professional opinion that these wetlands may qualify as highly susceptible wetlands and therefore have a buffer per NR 151 of 75 feet. However, wetlands W-2, W-4, W-5, W-9, and W-10 may qualify as moderately susceptible. The farmed wetlands on the Property are expected to qualify as less susceptible wetlands. The jurisdictional authority on wetland buffers rests with the WDNR. Local zoning authorities may also impose more restrictive buffers than that of NR 151.

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
CONCLUSION
October 4, 2017

4.0 CONCLUSION

Stantec performed an investigation of wetlands and waterways within the Wrenwood Development Site totaling approximately 149.17 acres. Eric C. Parker of Stantec, assisted by Jacob S. Eeling (also of Stantec) completed the field work on September 15th and 18th, 2017. The qualifications of Eric Parker are provided in Appendix G.

The Property is located in Section 23, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin. Specifically, the Property is located between Country Aire Drive on the east and the Canadian National Railroad on the west; and between Mequon Road on the south and Freistadt Road on the north (Figures 1-5).

The purpose and objective of this wetland and waterway investigation was to identify the extent and spatial arrangement of wetlands and waterways within the Property that may require local, state or federal permitting if impacted by development. Ten (10) wetland areas and two waterways were identified and mapped in the Property. In addition, two ponds were present within two of the wetlands.

The wetlands and waterways identified in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and local authority under the City of New Berlin. Stantec recommends this report be submitted to local authorities, the WDNR and USACE for final jurisdictional review and concurrence.

Prior to beginning work at this site or disturbing or altering wetlands, waterways, or adjacent lands in any way, Stantec recommends that the owner obtain the necessary permits or other agency regulatory review and concurrence regarding the proposed work to comply with applicable regulations. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

The information provided by Stantec regarding wetland boundaries is a scientific-based analysis of the wetland and upland conditions present within the Property at the time of the fieldwork. Experienced and qualified professionals performed the wetland delineation using standard practices and sound professional judgment. The ultimate decision on wetland boundaries rests with the USACE and, in some cases, the WDNR or a local unit of government. Therefore, adjustments may be made to boundaries based upon a regulatory agency review. An agency determination can vary from time to time depending on various factors including, but not limited to recent precipitation patterns and the season of the year. In addition, the physical characteristics of the Property can change over time, depending on the weather, vegetation patterns, drainage activities on adjacent parcels, or other events. Any of these factors can change the nature and extent of wetlands within the Property.

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site

REFERENCES

October 4, 2017

5.0 REFERENCES

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WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
Appendix A– Figures
October 4, 2017

Appendix A – Figures

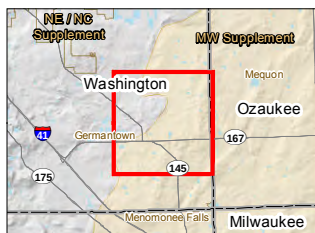
Figure 1. Project Location and Topography

Figure 2. NRCS Soil Survey Data – Hydric Ratings

Figure 3. NRCS Soil Survey Data – Wetland Indicator Soils

Figure 4. Wisconsin Wetland Inventory

Figure 5. Field Collected Data



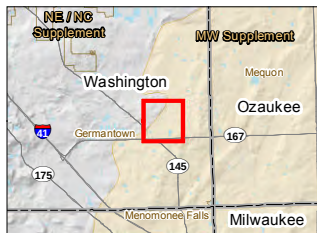
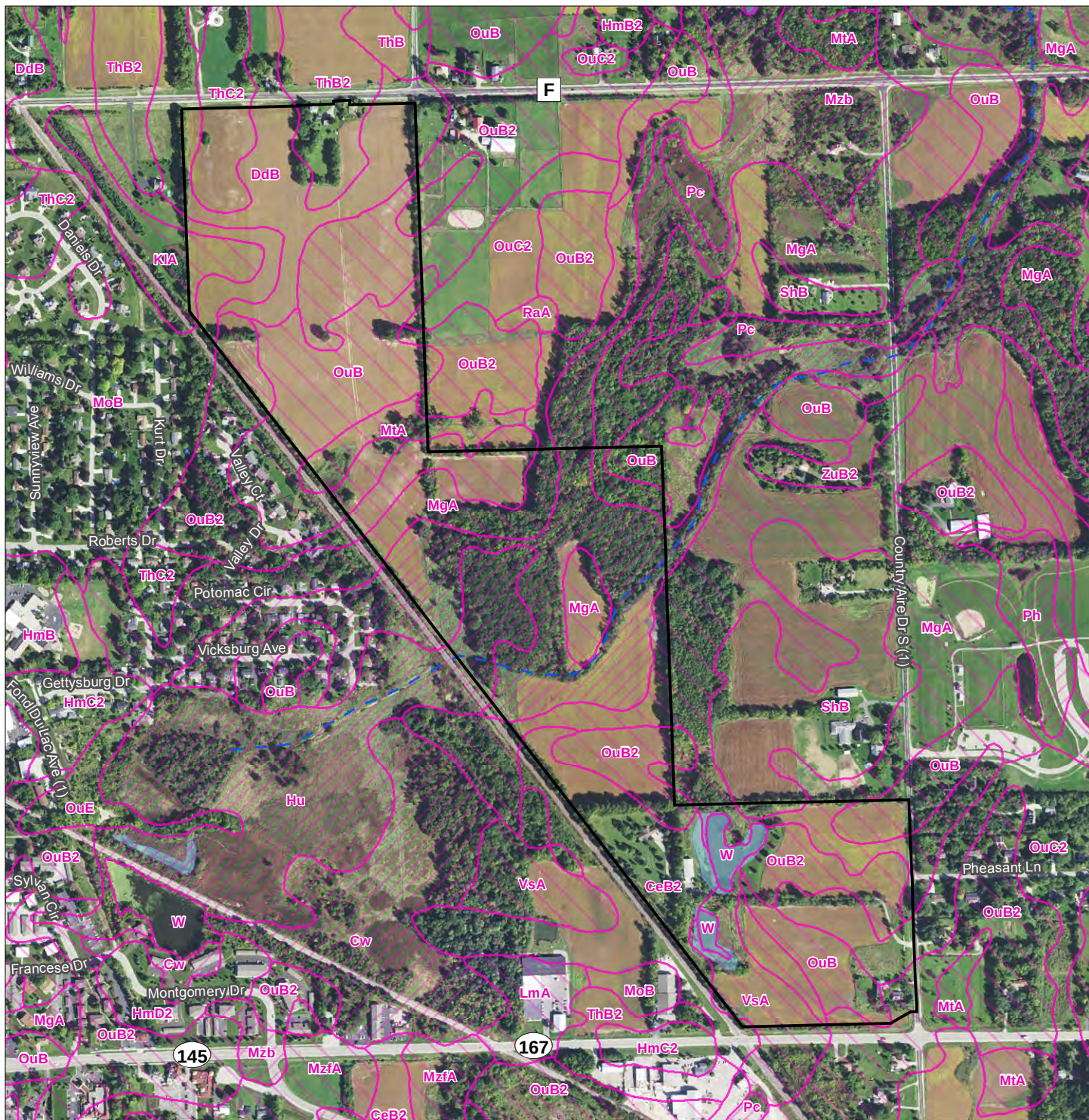
 Approximate Project Boundary

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Project Location and Topography

0 1,000 2,000 Feet
1:24,000 (at original document size of 8.5x11)





Legend

- Approximate Project Boundary
- NRCS Soil Survey Data
- Hydric Ratings**
 - Predominantly Hydric Soil
 - Partially Hydric Soil
 - Non-Hydric Soil

- DNR 24k Hydrography
- Perennial Stream
- Intermittent Stream
- Waterbody

- Notes
- Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 - Data Sources Include: Stantec, WdOT, WDNR, NRCS
 - Orthophotography: 2015 NAIP

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Figure No.
2

Title

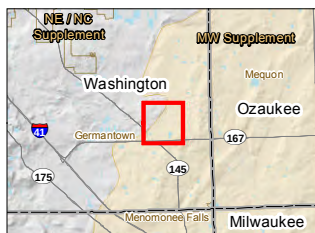
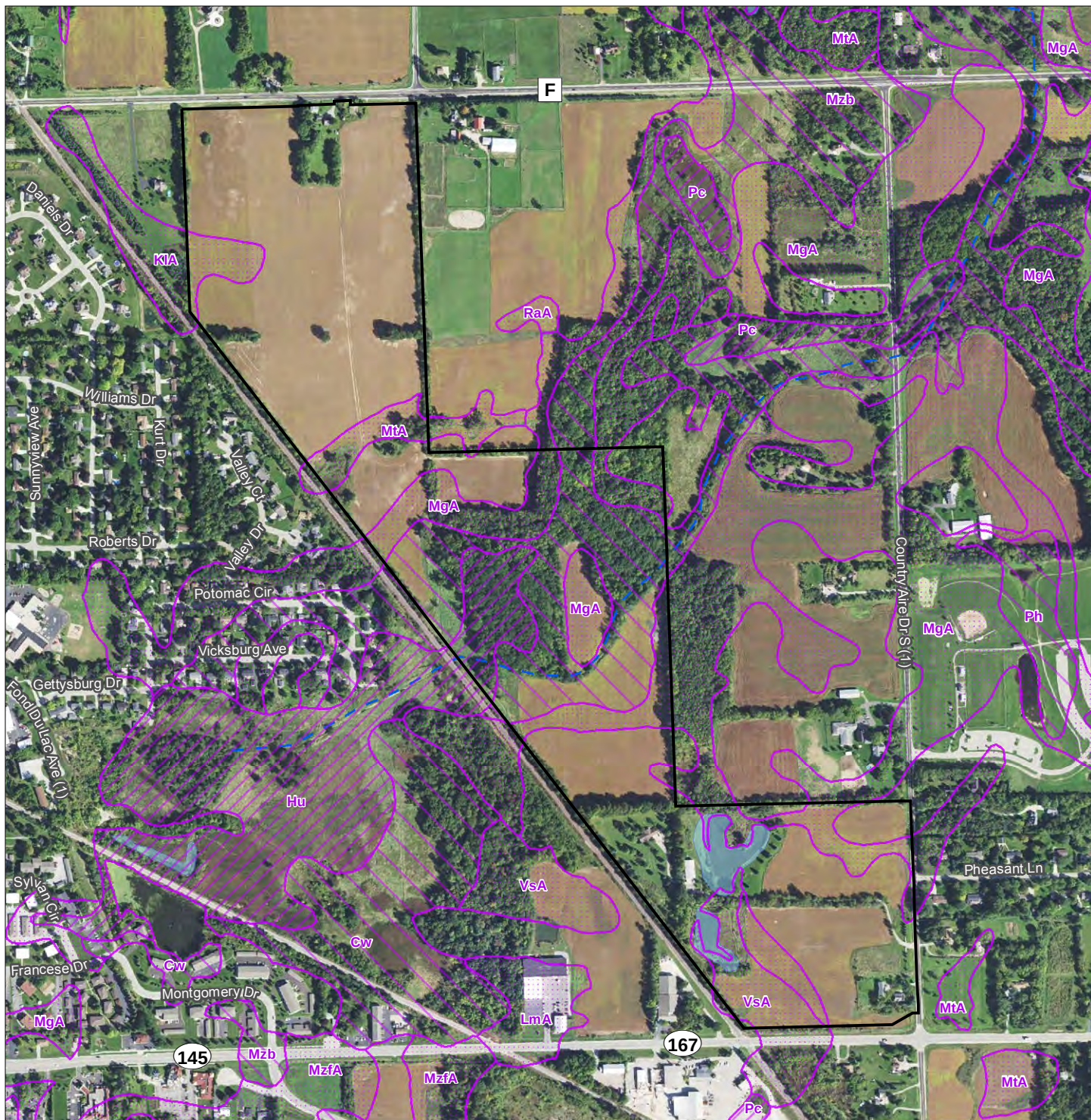
NRCS Soil Survey Data Hydric Ratings

Client/Project
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location 193705634
T9N, R20E, S23, Prepared by JM on 2017-09-14
V. of Germantown, Technical Review by DG on 2017-09-14
Washington Co., WI Ind Review by EP on 2017-09-25

0 400 800 Feet
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Legend

- Approximate Project Boundary
- NRCS Soil Survey Data
- Wetland Indicator Soils
- Very Poorly Drained
- Poorly Drained
- Somewhat Poorly Drained

- ~ DNR 24k Hydrography
- ~ Perennial Stream
- ~ Intermittent Stream
- ~ Waterbody

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WeDOT, WDNR, NRCS
 3. Orthophotography: 2015 NAIP

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Figure No.
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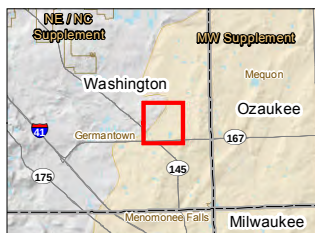
Title
NRCS Soil Survey Data
Wetland Indicator Soils

Client/Project
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location 193705634
T9N, R20E, S23, Prepared by JM on 2017-09-14
V. of Germantown, Technical Review by DG on 2017-09-14
Washington Co., WI Ind Review by EP on 2017-09-25

0 400 800 Feet
1:9,600 (at original document size of 8.5x11)





 Approximate Project Boundary
WWI Wetland Class Points

-  Filled Points
-  Filled/Drained Wetland
-  Wetland Too Small To Delineate

Wetland

- DNR 24k Hydrography
-  Perennial Stream
 -  Intermittent Stream
 -  Waterbody

Figure No.

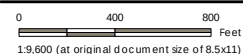
4

Title

Wisconsin Wetland Inventory

Client/Project
 Carity Land Corporation
 Wrenwood Site
 Wetland Delineation

Project Location	193705634
T9N, R20E, S23,	Prepared by JM on 2017-09-14
V. of Germantown,	Technical Review by DG on 2017-09-14
Washington Co., WI	Ind Review by EP on 2017-09-25

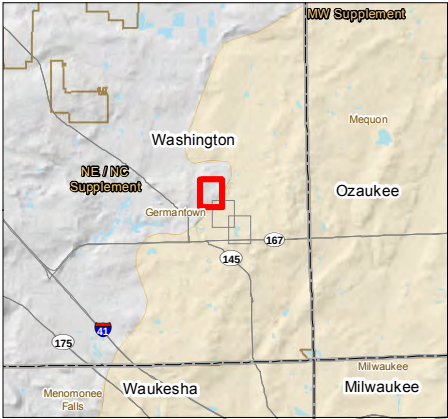


Page 1 of 1

Notes

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Stantec, WisDOT, WDNR
3. Orthophotography: 2015 NAIP

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- Notes
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 2. Data Sources Include: Stantec, WisDOT, WDNR
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Legend

- Approximate Project Boundary
- 2ft Elevation Contour
- Sample Point
- Tile Inlet Drain
- Tile Outlet PVC
- Possible Tile Outlet
- Culvert
- Field Delineated Waterway
- Field Delineated Waterbody
- Field Delineated Wetland

Figure No.

5

Title

Field Collected Data

Client/Project

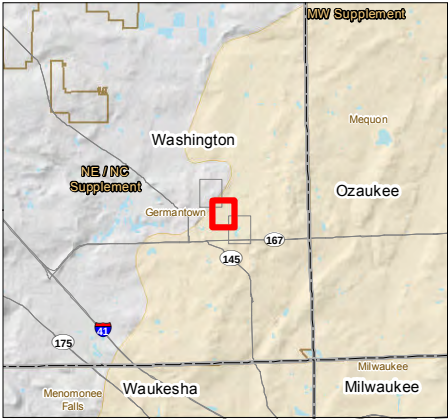
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location
T9N, R20E, S23,
V. of Germantown,
Washington Co., WI

193705634
Prepared by JM on 2017-09-19
Technical Review by DG on 2017-09-19
Independent Review by EP on 2017-10-04

0 100 200 Feet
1:2,400 (At Original document size of 11x17)





- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WisDOT, WDNR
 3. Orthophotography: 2015 NAIP

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- Legend
- Approximate Project Boundary
 - 2ft Elevation Contour
 - Sample Point
 - Tile Inlet Drain
 - Tile Outlet PVC
 - Possible Tile Outlet
 - Culvert
 - Field Delineated Waterway
 - Field Delineated Waterbody
 - Field Delineated Wetland

Figure No.
5
Title
Field Collected Data

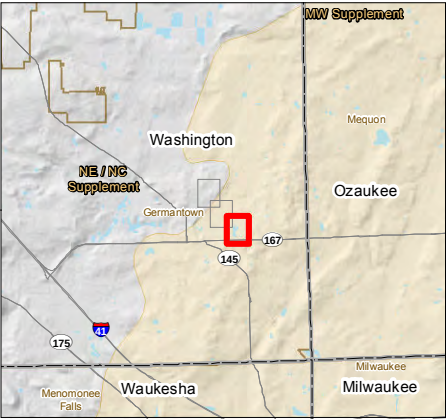
Client/Project
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location
T9N, R20E, S23,
V. of Germantown,
Washington Co., WI

193705634
Prepared by JM on 2017-09-19
Technical Review by DG on 2017-09-19
Independent Review by EP on 2017-10-04

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Notes

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- Legend**
- Approximate Project Boundary
 - 2ft Elevation Contour
 - Sample Point
 - Tile Inlet Drain
 - Tile Outlet PVC
 - Possible Tile Outlet
 - Culvert
 - Field Delineated Waterway
 - Field Delineated Waterbody
 - Field Delineated Wetland

Figure No.
5

Title
Field Collected Data

Client/Project
**Carity Land Corporation
Wrenwood Site
Wetland Delineation**

Project Location
T9N, R20E, S23,
V. of Germantown,
Washington Co., WI

193705634
Prepared by JM on 2017-09-19
Technical Review by DG on 2017-09-19
Independent Review by EP on 2017-10-04

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1:2,400 (At Original document size of 11x17)



WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
Appendix B– Wetland Determination Data Forms
October 4, 2017

Appendix B – Wetland Determination Data Forms

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Virgil silt loam		NWI/WWI Classification: N/A		Wetland ID: W-1
Landform: Depression		Local Relief: Concave		Sample Point: P1
Slope (%): 0-2		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Farmed Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☒ Soil ☐ or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☐ Yes ☒ No		Township: 9N
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been dry over the previous few weeks. Not normal circumstances, cropped field and disturbed vegetation. Determined wetland based on hydric soil, sufficient wetland hydrology indicators, off-site imagery analysis, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☒ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☒ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☒ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
--	---	---

Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Off-Site Aerial Imagery Review	
Remarks: Off site review indicates an aerial wetness signature in 83% of normal precipitation years.	

SOILS

Map Unit Name: Virgil silt loam		Series Drainage Class: somewhat poorly									
Taxonomy (Subgroup): Udolic Endoaqualfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	8	1	10YR	4/1	100	--	--	--	--	--	silty clay loam
8	13	2	10YR	4/1	97	7.5YR	3/3	3	C	M	silty clay loam
13	19	3	10YR	5/2	97	10YR	4/3	3	C	M	silty clay
19	24	4	10YR	5/1	97	10YR	4/4	3	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):		Indicators for Problematic Soils¹	
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
Restrictive Layer (If Observed) Type: N/A Depth: N/A		Hydric Soil Present? ☒ Yes ☐ No	
Remarks:			

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Wrenwood Development**

Wetland ID: **W-1**

Sample Point: **P1**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)

1.	<i>Amaranthus retroflexus</i>	35	Y	FACU
2.	--	--	--	--
3.	<i>Panicum dichotomiflorum</i>	5	N	FACW
4.	<i>SETARIA VIRIDIS</i>	5	N	UPL
5.	<i>GLYCINE MAX</i>	3	N	UPL
6.	<i>Ambrosia artemisiifolia</i>	2	N	FACU
7.	<i>Cyperus esculentus</i>	1	N	FACW
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		51		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>6</u>	x 2 =	<u>12</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>37</u>	x 4 =	<u>148</u>
UPL spp.	<u>8</u>	x 5 =	<u>40</u>

Total 51 (A) 200 (B)

Prevalence Index = B/A = 3.922

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Virgil silt loam		NW1/WW1 Classification: None Depicted		Wetland ID: Adjacent to W-1
Landform: Rise		Local Relief: Convex		Sample Point: P2
Slope (%): 2-4		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Agricultural Field
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☒ Soil ☐ or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☐ Yes ☒ No		Township: 9N
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been dry over the previous few weeks. Not normal circumstances, cropped field and disturbed vegetation. Determined upland based on non-hydric soil, lack of hydrology indicators, lack of hydric soils, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☐ Yes ☒ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Off-Site Aerial Imagery Analysis		
Remarks: Off-Site Aerial Imagery Analysis indicates this area is non-wetland.		

SOILS

Map Unit Name: Virgil silt loam		Series Drainage Class: somewhat poorly									
Taxonomy (Subgroup): Udolic Endoaqualfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	14	1	10YR	4/2	100	--	--	--	--	--	silt loam
14	19	2	10YR	4/2	60	--	--	--	--	--	silty clay loam
--	--	--	10YR	6/2	40	--	--	--	--	--	--
19	24	3	10YR	4/2	37	10YR	4/4	3	C	M	silty clay
--	--	--	10YR	6/2	55	10YR	4/4	5	C	M	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
Remarks: Mixed matrix in horizons 2 and 3.	

Project/Site: **Wrenwood Development**

Wetland ID: **Adjacent to W-1**

Sample Point: **P2**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)				
1.	GLYCINE MAX	100	Y	UPL
2.	DAUCUS CAROTA	2	N	UPL
3.	CIRSIIUM ARVENSE	2	N	FACU
4.	TARAXACUM OFFICINALE	2	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		106		

Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	4	x 4 =	16
UPL spp.	102	x 5 =	510

Total **106** (A) **526** (B)

Prevalence Index = B/A = **4.962**

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Virgil silt loam	NW1/WW1 Classification:			Wetland ID: Adjacent to W-2
Landform: Backslope	Local Relief: Concave			Sample Point: P3
Slope (%): 2-4	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Upland Meadow
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydic Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been dry over the previous few weeks. Determined non-wetland based on lack of hydric soils, lack of hydrology indicators, lack of hydrophytic vegetation, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☐ Yes ☒ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks:		

SOILS

Map Unit Name: Virgil silt loam		Series Drainage Class: somewhat poorly									
Taxonomy (Subgroup): Udolic Endoaqualfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)		%	Color (Moist)	%	Type	Location		
0	11	1	10YR	4/2	100	--	--	--	--	--	silty clay loam
11	19	2	10YR	4/3	97	10YR	4/4	3	C	M	silty clay loam
19	24	3	10YR	4/2	97	10YR	4/4	3	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒ : ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **Adjacent to W-2**

Sample Point: **P3**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)

1.	PHALARIS ARUNDINACEA	100	Y	FACW
2.	Solidago canadensis	10	N	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		110		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	100	x 2 =	200
FAC spp.	0	x 3 =	0
FACU spp.	10	x 4 =	40
UPL spp.	0	x 5 =	0

Total **110** (A) **240** (B)

Prevalence Index = B/A = **2.182**

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☒ Yes | ☐ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☒ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Briscoe Property		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Pioneer Engineering Inc.				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Virgil silt loam		NWI/WWI Classification: W0Hx		Wetland ID: W-2
Landform: Depression		Local Relief: Concave		Sample Point: P4
Slope (%): 0-2		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Shrub Carr
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been dry over the previous few weeks. Determined wetland having met all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☒ A3 - Saturation ☒ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☒ B8 - Sparsely Vegetated Concave Surface	☒ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☒ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☒ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☒ Yes ☐ No Depth: 14 (in.) Saturation Present? ☒ Yes ☐ No Depth: 10 (in.)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks: Adventitious roots present		

SOILS

Map Unit Name: Virgil silt loam		Series Drainage Class: somewhat poorly									
Taxonomy (Subgroup): Udolic Endoaqualfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)		%	Color (Moist)	%	Type	Location		
0	7	1	10YR	4/2	95	10YR	4/4	5	C	M	silty clay loam
7	24	2	2.5Y	5/2	90	10YR	4/6	10	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydic Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Briscoe Property**

Wetland ID: **W-2**

Sample Point: **P4**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Fraxinus pennsylvanica</i>	15	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		15		
Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	<i>Salix interior</i>	25	Y	FACW
2.	<i>Fraxinus pennsylvanica</i>	10	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		35		
Herb Stratum (Plot size: 2 meter radius)				
1.	<i>PHALARIS ARUNDINACEA</i>	7	Y	FACW
2.	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
3.	<i>Symphotrichum lanceolatum</i>	5	Y	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		17		
Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>67</u>	x 2 =	<u>134</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 67 (A) 134 (B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

- ☒ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Ozaukee silt loam		NWI/WWI Classification: None Depicted		Wetland ID: W-3
Landform: Swale		Local Relief: Concave		Sample Point: P5
Slope (%): 4-6		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Farmed Wetland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☒ Soil ☐ or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☐ Yes ☒ No		Township: 9N
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been dry over the previous few weeks. Not normal circumstances, cropped field, disturbed vegetation, herbicide use. Potentially wetland based on hydric soil, sufficient wetland hydrology indicators, off-site imagery analysis, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☒ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☒ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Off-Site Aerial Imagery Review	
Remarks: Off-site review indicates an aerial wetness signature in 40% of normal precipitation years.	

SOILS

Map Unit Name: Ozaukee silt loam		Series Drainage Class: well									
Taxonomy (Subgroup): Oxyaquic Hapludalfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	6	1	10YR	4/2	100	--	--	--	--	--	silty clay loam
6	13	2	10YR	5/2	90	10YR	4/4	10	C	M	silty clay
13	24	3	10YR	5/1	60	7.5YR	4/6	40	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
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--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):		Indicators for Problematic Soils¹	
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
Restrictive Layer (If Observed) Type: N/A Depth: N/A		Hydric Soil Present? ☒ Yes ☐ No	
Remarks:			

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Wrenwood Development**

Wetland ID: **W-3**

Sample Point: **P5**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)

1.	GLYCINE MAX	5	Y	UPL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		5		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **Sparse vegetation in a soybean field, potentially a drown-out from saturated soils; it was a very wet spring this year.**

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	5	x 5 =	25

Total **5** (A) **25** (B)

Prevalence Index = B/A = **5.000**

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Ozaukee silt loam		NW1/WW1 Classification: None Depicted		Wetland ID: Adjacent to W-3
Landform: Swale		Local Relief: Concave linear		Sample Point: P6
Slope (%): 5-8		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Agricultural Field
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☒ Soil ☐ or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☐ Yes ☒ No		Township: 9N
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydic Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been dry over the previous few weeks. Not normal circumstances, cropped field, disturbed vegetation, and herbicide use. Determined non-wetland based on lack of wetland indicators, off-site imagery analysis, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **Off-Site Aerial Imagery Analysis**

Remarks: **P6 is in a small (approx 1ft wide, a few inches deep) eroded channel emanating from potential wetland 3, a small bare spot. Off-site aerial imagery analysis indicates non-wetland at this point, lacks consistent signature in normal precipitation years.**

SOILS

Map Unit Name: Ozaukee silt loam	Series Drainage Class: well
Taxonomy (Subgroup): Oxyaquic Hapludalfs	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	13	1	10YR	4/3	100	--	--	--	--	--	silty clay loam
13	24	2	10YR	5/1	70	7.5YR	5/6	30	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Mucky Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils ¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
---	--	--	--	--	--

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **Adjacent to W-3**

Sample Point: **P6**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)

1.	GLYCINE MAX	50	Y	UPL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		50		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	50	x 5 =	250

Total **50** (A) **250** (B)

Prevalence Index = B/A = **5.000**

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☒ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Martinton silt loam		NWI/WWI Classification: None Depicted		Wetland ID: W-4
Landform: Backslope		Local Relief: Linear		Sample Point: P7
Slope (%): 4-6		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Fresh Wet Meadow
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been dry over the previous few weeks. Determined wetland having met sufficient indicators for all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☒ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☒ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks:		

SOILS

Map Unit Name: Martinton silt loam		Series Drainage Class: somewhat poorly									
Taxonomy (Subgroup): Aquic Argiudolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	6	1	10YR	4/2	100	--	--	--	--	--	silty clay loam
6	24	2	10YR	4/2	85	10YR	4/6	15	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Mucky Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **W-4**

Sample Point: **P7**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Ulmus americana</i>	1	N	FACW
2.	<i>Fraxinus pennsylvanica</i>	1	N	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		2		

Herb Stratum (Plot size: 2 meter radius)

1.	<i>PHALARIS ARUNDINACEA</i>	50	Y	FACW
2.	<i>Equisetum arvense</i>	30	Y	FAC
3.	<i>TYPHA ANGUSTIFOLIA</i>	15	N	OBL
4.	<i>Panicum capillare</i>	10	N	FAC
5.	<i>Epilobium coloratum</i>	3	N	OBL
6.	<i>Solidago canadensis</i>	3	N	FACU
7.	<i>DAUCUS CAROTA</i>	2	N	UPL
8.	<i>Fraxinus pennsylvanica</i>	2	N	FACW
9.	<i>Ambrosia artemisiifolia</i>	1	N	FACU
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		116		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	<i>Vitis riparia</i>	3	N	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		3		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>18</u>	x 1 =	<u>18</u>
FACW spp.	<u>54</u>	x 2 =	<u>108</u>
FAC spp.	<u>43</u>	x 3 =	<u>129</u>
FACU spp.	<u>4</u>	x 4 =	<u>16</u>
UPL spp.	<u>2</u>	x 5 =	<u>10</u>

Total 121 (A) 281 (B)

Prevalence Index = B/A = 2.322

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☒ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Martinton silt loam	NW1/WW1 Classification: None Depicted			Wetland ID: Adjacent to W-4
Landform: Backslope	Local Relief: Convex			Sample Point: P8
Slope (%): 5-8	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Old Field
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No		Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☒ No	Hydric Soils Present?	☐ Yes ☒ No
Wetland Hydrology Present?	☐ Yes ☒ No	Is This Sampling Point Within A Wetland?	☐ Yes ☒ No

Remarks: **WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Not normal circumstances, cropped field and disturbed vegetation. Determined non-wetland based on lack of sufficient indicators for all three parameters.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☒ No	Depth: (in.)
Water Table Present?	☐ Yes ☒ No	Depth: (in.)
Saturation Present?	☐ Yes ☒ No	Depth: (in.)

Wetland Hydrology Present? ☐ Yes ☒ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Martinton silt loam** Series Drainage Class: **somewhat poorly**

Taxonomy (Subgroup): **Aquic Argiudolls**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	5	1	10YR	4/2	100	--	--	--	--	--	silt loam
5	11	2	10YR	4/3	100	--	--	--	--	--	silty clay loam
11	18	3	10YR	5/4	100	--	--	--	--	--	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):

- | | |
|---|--|
| <ul style="list-style-type: none"> ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B) | <ul style="list-style-type: none"> ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions |
|---|--|

Indicators for Problematic Soils ¹

- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: gravel/stones	Depth: 18 inches
---------------------------------	----------------------------	-------------------------

Hydric Soil Present? ☐ Yes ☒ No

Remarks: **10% gravel/stones in entire horizon, auger refusal at 18 inches**

Project/Site: **Wrenwood Development**

 Wetland ID: **Adjacent to W-4**

 Sample Point: **P8**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>SALIX ALBA</i>	10	Y	FACW
2.	<i>Acer negundo</i>	3	N	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **13**

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Fraxinus pennsylvanica</i>	1	N	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **1**

Herb Stratum (Plot size: 2 meter radius)

1.	<i>POA PRATENSIS</i>	40	Y	FACU
2.	<i>Solidago canadensis</i>	15	Y	FACU
3.	<i>DAUCUS CAROTA</i>	10	N	UPL
4.	<i>BROMUS INERMIS</i>	10	N	UPL
5.	<i>SETARIA PUMILA</i>	5	N	FAC
6.	<i>AGROSTIS GIGANTEA</i>	5	N	FACW
7.	<i>Symphyotrichum novae-angliae</i>	3	N	FACW
8.	<i>Ambrosia artemisiifolia</i>	3	N	FACU
9.	<i>PHALARIS ARUNDINACEA</i>	3	N	FACW
10.	<i>TRIFOLIUM PRATENSE</i>	3	N	FACU
11.	<i>Symphyotrichum pilosum</i>	3	N	FACU
12.	<i>Xanthium strumarium</i>	2	N	FAC
13.	<i>MELILOTUS ALBUS</i>	2	N	FACU
14.	--	--	--	--
15.	--	--	--	--

 Total Cover = **104**

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

 Total Cover = **0**

Remarks:

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **1** (A)

 Total Number of Dominant Species Across All Strata: **3** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **33%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	22	x 2 =	44
FAC spp.	10	x 3 =	30
FACU spp.	66	x 4 =	264
UPL spp.	20	x 5 =	100

 Total **118** (A) **438** (B)

 Prevalence Index = B/A = **3.712**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634	Date: 09/15/17
Applicant: Carity Land Corporation			County: Washington
Investigator #1: Eric Parker	Investigator #2:		State: Wisconsin
Soil Unit: Ozaukee silt loam	NW1/WW1 Classification: N/A		Wetland ID: N/A
Landform: Depression	Local Relief: Concave		Sample Point: P9
Slope (%): 1-3	Latitude: N/A	Longitude: N/A	Community ID: Agricultural Field
Datum: N/A			Section: 23
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No			Township: 9N
Are Vegetation ☒ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☐ Yes ☒ No	
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		Range: 20E	

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No

Remarks: **WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Not normal circumstances, cropped field and disturbed vegetation. Determined non-wetland based on lack of hydric soil indicators, hydrophytic vegetation, off-site aerial imagery analysis, and best professional judgement.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☒ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☒ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☒ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No Depth: (in.)

Water Table Present? ☐ Yes ☒ No Depth: (in.)

Saturation Present? ☐ Yes ☒ No Depth: (in.)

Wetland Hydrology Present? ☒ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **Off-Site Aerial Imagery Review**

Remarks: **Off site review indicates an aerial wetness signature in 0% of normal precipitation years.**

SOILS

Map Unit Name: **Ozaukee silt loam** Series Drainage Class: **well**

Taxonomy (Subgroup): **Oxyaquic Hapludalfs**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	5	1	10YR	4/2	100	--	--	--	--	--	silt loam
5	11	2	10YR	4/3	100	--	--	--	--	--	silty clay loam
11	18	3	10YR	5/4	100	--	--	--	--	--	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):

- | | |
|---|--|
| <ul style="list-style-type: none"> ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B) | <ul style="list-style-type: none"> ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions |
|---|--|

Indicators for Problematic Soils ¹

- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
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Remarks:

Project/Site: **Wrenwood Development**

 Wetland ID: **N/A**

 Sample Point: **P9**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)

1.	GLYCINE MAX	5	Y	UPL
2.	HIBISCUS TRIONUM	3	Y	UPL
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		8		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

 Total Number of Dominant Species Across All Strata: **2** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	0	x 4 =	0
UPL spp.	8	x 5 =	40

 Total **8** (A) **40** (B)

 Prevalence Index = B/A = **5.000**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Casco loam	NW1/WW1 Classification: W0Hx			Wetland ID: W-5
Landform: Toeslope	Local Relief: Concave			Sample Point: P10
Slope (%): 2-4	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Shrub Carr
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No		Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☒ Yes ☐ No	Hydric Soils Present?	☒ Yes ☐ No
Wetland Hydrology Present?	☒ Yes ☐ No	Is This Sampling Point Within A Wetland?	☒ Yes ☐ No

Remarks: **WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland having met sufficient indicators for all three parameters.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☒ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☒ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☒ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No Depth: (in.)
 Water Table Present? ☐ Yes ☒ No Depth: (in.)
 Saturation Present? ☒ Yes ☐ No Depth: **20** (in.)

Wetland Hydrology Present? ☒ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Casco loam** Series Drainage Class: **well**

Taxonomy (Subgroup): **Inceptic Hapludalfs**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	3	1	10YR	4/2	100	--	--	--	--	--	silt loam
3	12	2	10YR	5/2	95	10YR	4/6	5	C	M	silty clay
12	24	3	2.5Y	5/1	90	10YR	4/6	10	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):

- | | |
|---|---|
| <ul style="list-style-type: none"> ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B) | <ul style="list-style-type: none"> ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions |
|---|---|

Indicators for Problematic Soils ¹

- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: **N/A** Depth: **N/A**

Hydric Soil Present? ☒ Yes ☐ No

Remarks: **Horizons 2 and 3 have 15% gravel/stones**

Project/Site: **Wrenwood Development**

 Wetland ID: **W-5**

 Sample Point: **P10**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Salix interior</i>	15	Y	FACW
2.	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		20		

Herb Stratum (Plot size: 2 meter radius)

1.	<i>PHALARIS ARUNDINACEA</i>	75	Y	FACW
2.	<i>TYPHA ANGUSTIFOLIA</i>	15	N	OBL
3.	<i>Symphyotrichum novae-angliae</i>	10	N	FACW
4.	<i>SONCHUS ARVENSIS</i>	5	N	FACU
5.	<i>CIRSIIUM ARVENSE</i>	3	N	FACU
6.	<i>Euthamia graminifolia</i>	2	N	FAC
7.	<i>Symphyotrichum lanceolatum</i>	2	N	FACW
8.	<i>Scirpus atrovirens</i>	1	N	OBL
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		113		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	<i>Vitis riparia</i>	10	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		10		

Remarks:

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

 Total Number of Dominant Species Across All Strata: 4 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>16</u>	x 1 =	<u>16</u>
FACW spp.	<u>107</u>	x 2 =	<u>214</u>
FAC spp.	<u>12</u>	x 3 =	<u>36</u>
FACU spp.	<u>8</u>	x 4 =	<u>32</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

 Total 143 (A) 298 (B)

 Prevalence Index = B/A = 2.084
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Casco loam	NW1/WW1 Classification: None Depicted			Wetland ID: Adjacent to W-5
Landform: Backslope	Local Relief: Concave			Sample Point: P11
Slope (%): 1-3	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Upland Meadow
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No		Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☒ Yes ☐ No	Hydric Soils Present?	☐ Yes ☒ No
Wetland Hydrology Present?	☐ Yes ☒ No	Is This Sampling Point Within A Wetland?	☐ Yes ☒ No

Remarks: **WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined non-wetland based on lack of hydric soils and sufficient wetland hydrology indicators, and best professional judgement.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☒ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No Depth: (in.)

Water Table Present? ☐ Yes ☒ No Depth: (in.)

Saturation Present? ☐ Yes ☒ No Depth: (in.)

Wetland Hydrology Present? ☐ Yes ☒ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Casco loam** Series Drainage Class: **well**

Taxonomy (Subgroup): **Inceptic Hapludalfs**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)
			Color (Moist)	%	Color (Moist)	%	Type	Location	
0	10	1	10YR 4/2	100	--	--	--	--	silt loam
10	16	2	10YR 4/2	50	--	--	--	--	silty clay loam
--	--	--	10YR 4/1	48	10YR 4/3	2	C	M	--
16	20	3	10YR 4/2	60	--	--	--	--	silty clay loam
--	--	--	10YR 4/3	35	10YR 4/4	5	C	M	--
20	24	4	10YR 4/3	100	--	--	--	--	silty clay loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):

- | | |
|---|--|
| <ul style="list-style-type: none"> ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B) | <ul style="list-style-type: none"> ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions |
|---|--|

Indicators for Problematic Soils ¹

- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
---------------------------------	------------------	-------------------	---

Remarks:

Project/Site: **Wrenwood Development**

 Wetland ID: **Adjacent to W-5**

 Sample Point: **P11**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>PICEA ABIES</i>	5	Y	UPL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **5**

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Salix interior</i>	2	Y	FACW
2.	<i>Acer negundo</i>	2	Y	FAC
3.	<i>Rubus occidentalis</i>	1	Y	UPL
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **5**

Herb Stratum (Plot size: 2 meter radius)

1.	<i>PHALARIS ARUNDINACEA</i>	100	Y	FACW
2.	<i>CIRSIIUM ARVENSE</i>	5	N	FACU
3.	<i>Solidago canadensis</i>	5	N	FACU
4.	<i>SONCHUS ARVENSIS</i>	1	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

 Total Cover = **111**

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

 Total Cover = **0**

Remarks:

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **3** (A)

 Total Number of Dominant Species Across All Strata: **5** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **60%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	102	x 2 =	204
FAC spp.	2	x 3 =	6
FACU spp.	11	x 4 =	44
UPL spp.	6	x 5 =	30

 Total **121** (A) **284** (B)

 Prevalence Index = B/A = **2.347**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Ozaukee silt loam	NW1/WW1 Classification: None Depicted			Wetland ID: Adjacent to W-5
Landform: Depression	Local Relief: Concave			Sample Point: P12
Slope (%): 0-2	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Upland Meadow
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No		Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☒ Yes ☐ No	Hydric Soils Present?	☐ Yes ☒ No
Wetland Hydrology Present?	☒ Yes ☐ No	Is This Sampling Point Within A Wetland?	☐ Yes ☒ No

Remarks: **WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined non-wetland based on lack of hydric soil indicators and best professional judgement.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☒ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☒ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No Depth: (in.)

Water Table Present? ☐ Yes ☒ No Depth: (in.)

Saturation Present? ☐ Yes ☒ No Depth: (in.)

Wetland Hydrology Present? ☒ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks: **Soils compacted from vehicular traffic at this location.**

SOILS

Map Unit Name: **Ozaukee silt loam** Series Drainage Class: **well**

Taxonomy (Subgroup): **Oxyaquic Hapludalfs**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	10	1	10YR	4/2	100	--	--	--	--	--	silty clay loam
10	13	2	10YR	4/2	98	10YR	4/4	2	C	M	silty clay loam
13	24	3	10YR	5/4	100	--	--	--	--	--	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):

- | | |
|---|--|
| <ul style="list-style-type: none"> ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B) | <ul style="list-style-type: none"> ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions |
|---|--|

Indicators for Problematic Soils ¹

- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
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Remarks:

Project/Site: **Wrenwood Development**

 Wetland ID: **Adjacent to W-5**

 Sample Point: **P12**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
2.	<i>Populus deltoides</i>	3	Y	FAC
3.	<i>Cornus racemosa</i>	1	N	FAC
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		9		

Herb Stratum (Plot size: 2 meter radius)

1.	<i>PHALARIS ARUNDINACEA</i>	50	Y	FACW
2.	<i>ECHINOCHLOA CRUS-GALLI</i>	10	Y	FAC
3.	<i>Panicum dichotomiflorum</i>	10	Y	FACW
4.	<i>Poa palustris</i>	7	N	FACW
5.	<i>Euthamia graminifolia</i>	7	N	FAC
6.	<i>Carex pellita</i>	5	N	OBL
7.	<i>Populus deltoides</i>	3	N	FAC
8.	<i>Symphyotrichum lanceolatum</i>	3	N	FACW
9.	<i>Parthenocissus quinquefolia</i>	3	N	FACU
10.	<i>Ambrosia artemisiifolia</i>	2	N	FACU
11.	<i>Solidago canadensis</i>	2	N	FACU
12.	<i>Scirpus atrovirens</i>	1	N	OBL
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		103		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **5** (A)

 Total Number of Dominant Species Across All Strata: **5** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	6	x 1 =	6
FACW spp.	75	x 2 =	150
FAC spp.	24	x 3 =	72
FACU spp.	7	x 4 =	28
UPL spp.	0	x 5 =	0

 Total **112** (A) **256** (B)

 Prevalence Index = B/A = **2.286**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2:		State: Wisconsin
Soil Unit: Ozaukee silt loam	NW1/WW1 Classification: None Depicted			Wetland ID: Adj. to W-6
Landform: Swale	Local Relief: Concave			Sample Point: P13
Slope (%): 2-3	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Brushy Treeline
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No		Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☒ Yes ☐ No	Hydric Soils Present?	☐ Yes ☒ No
Wetland Hydrology Present?	☐ Yes ☒ No	Is This Sampling Point Within A Wetland?	☐ Yes ☒ No

Remarks: **WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined non-wetland based on lack of hydric soil and wetland hydrology indicators, and best professional judgement.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☒ No	Depth: (in.)
Water Table Present?	☐ Yes ☒ No	Depth: (in.)
Saturation Present?	☐ Yes ☒ No	Depth: (in.)

Wetland Hydrology Present? ☐ Yes ☒ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks: **No wetland hydrology indicators observed.**

SOILS

Map Unit Name: **Ozaukee silt loam** Series Drainage Class: **well**

Taxonomy (Subgroup): **Oxyaquic Hapludalfs**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)
			Color (Moist)	%		Color (Moist)	%	Type	Location	
0	8	1	10YR	3/2	100	--	--	--	--	silt loam
8	13	2	10YR	5/3	100	--	--	--	--	silty clay loam
13	19	3	10YR	4/3	100	--	--	--	--	silty clay loam
19	24	4	10YR	4/2	95	10YR	4/4	5	C M	silty clay
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):

- | | |
|---|--|
| <ul style="list-style-type: none"> ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B) | <ul style="list-style-type: none"> ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions |
|---|--|

Indicators for Problematic Soils ¹

- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☐ Yes ☒ No
---------------------------------	------------------	-------------------	---

Remarks:

Project/Site: **Wrenwood Development**

 Wetland ID: **Adj. to W-6**

 Sample Point: **P13**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Prunus serotina</i>	20	Y	FACU
2.	<i>RHAMNUS CATHARTICA</i>	20	Y	FAC
3.	<i>Fraxinus pennsylvanica</i>	10	N	FACW
4.	<i>Crataegus crus-galli</i>	7	N	FAC
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **57**

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>RHAMNUS CATHARTICA</i>	60	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **60**

Herb Stratum (Plot size: 2 meter radius)

1.	<i>RHAMNUS CATHARTICA</i>	50	Y	FAC
2.	<i>Cornus racemosa</i>	3	N	FAC
3.	<i>Geum canadense</i>	2	N	FAC
4.	<i>Sanguinaria canadensis</i>	2	N	FACU
5.	<i>Ribes americanum</i>	2	N	FACW
6.	<i>Quercus rubra</i>	1	N	FACU
7.	<i>Symphytotrichum lateriflorum</i>	1	N	FAC
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

 Total Cover = **61**

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

 Total Cover = **0**

Remarks:

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **3** (A)

 Total Number of Dominant Species Across All Strata: **4** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **75%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	12	x 2 =	24
FAC spp.	143	x 3 =	429
FACU spp.	23	x 4 =	92
UPL spp.	0	x 5 =	0

 Total **178** (A) **545** (B)

 Prevalence Index = B/A = **3.062**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2: Jacob Eeling		State: Wisconsin
Soil Unit: Martinton silt loam	NW1/WW1 Classification: N/A			Wetland ID: W-6
Landform: Swale	Local Relief: Concave			Sample Point: P14
Slope (%): 1-2	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Hardwood Swamp
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No		Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☒ Yes ☐ No	Hydric Soils Present?	☒ Yes ☐ No
Wetland Hydrology Present?	☒ Yes ☐ No	Is This Sampling Point Within A Wetland?	☒ Yes ☐ No

Remarks: **WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland having met sufficient indicators for all three parameters.**

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☒ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☒ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☒ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☒ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No Depth: (in.)

Water Table Present? ☐ Yes ☒ No Depth: (in.)

Saturation Present? ☐ Yes ☒ No Depth: (in.)

Wetland Hydrology Present? ☒ Yes ☐ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **N/A**

Remarks:

SOILS

Map Unit Name: **Martinton silt loam** Series Drainage Class: **somewhat poorly**

Taxonomy (Subgroup): **Aquic Argiudolls**

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	7	1	10YR	5/2	100	--	--	--	--	--	silt loam
7	24	2	10YR	5/2	90	10YR	4/6	5	C	M	silt loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):

- | | |
|---|---|
| <ul style="list-style-type: none"> ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B) | <ul style="list-style-type: none"> ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions |
|---|---|

Indicators for Problematic Soils ¹

- ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B)
- ☐ A16 - Coast Prairie Redox (LRR K, L, R)
- ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R)
- ☐ S7 - Dark Surface (LRR K, L, M)
- ☐ S8 - Polyvalue Below Surface (LRR K, L)
- ☐ S9 - Thin Dark Surface (LRR K, L)
- ☐ F12 - Iron-Manganese Masses (LRR K, L, R)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 149B)
- ☐ F21 - Red Parent Material
- ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed)	Type: N/A	Depth: N/A	Hydric Soil Present? ☒ Yes ☐ No
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Remarks:

Project/Site: **Wrenwood Development**

 Wetland ID: **W-6**

 Sample Point: **P14**
VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Fraxinus pennsylvanica</i>	50	Y	FACW
2.	<i>Ulmus americana</i>	20	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **70**

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>RHAMNUS CATHARTICA</i>	7	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

 Total Cover = **7**

Herb Stratum (Plot size: 2 meter radius)

1.	<i>RHAMNUS CATHARTICA</i>	10	Y	FAC
2.	<i>Geum canadense</i>	5	Y	FAC
3.	<i>Symphotrichum lateriflorum</i>	2	N	FAC
4.	<i>Oxalis stricta</i>	1	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

 Total Cover = **18**

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

 Total Cover = **0**

Remarks:

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **5** (A)

 Total Number of Dominant Species Across All Strata: **5** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	70	x 2 =	140
FAC spp.	24	x 3 =	72
FACU spp.	1	x 4 =	4
UPL spp.	0	x 5 =	0

 Total **95** (A) **216** (B)

 Prevalence Index = B/A = **2.274**
Hydrophytic Vegetation Indicators:

☐ Yes	☒ No	Rapid Test for Hydrophytic Vegetation
☒ Yes	☐ No	Dominance Test is > 50%
☒ Yes	☐ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☒ No	Morphological Adaptations (Explain) *
☐ Yes	☒ No	Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		Soil Unit: Montgomery silty clay loam		State: Wisconsin
Landform: Depression		NW1/WWI Classification: T3K		Wetland ID: W-7
Slope (%): 1-3		Local Relief: Concave		Sample Point: P15
Latitude: N/A		Longitude: N/A		Community ID: Hardwood Swamp
Datum: N/A		Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No		Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydric Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland based on hydric soils, sufficient hydrology indicators, hydrophytic plants, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☒ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☒ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☒ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☒ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☒ Yes ☐ No Depth: 16 (in.) Saturation Present? ☒ Yes ☐ No Depth: 0 (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A	
Remarks:	

SOILS

Map Unit Name: Montgomery silty clay loam	Series Drainage Class: very poorly										
Taxonomy (Subgroup): Vertic Endoaquolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
Color (Moist)	%	Color (Moist)	%	Type	Location						
0	9	1	10YR	3/1	80	10YR	4/4	20	C	M	silty clay loam
9	24	2	10YR	4/1	97	10YR	5/6	3	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):		Indicators for Problematic Soils¹
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☒ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☒ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Mucky Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☒ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)
Restrictive Layer (If Observed) Type: N/A Depth: N/A		Hydric Soil Present? ☒ Yes ☐ No
Remarks: High organic content in 1st horizon		

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Wrenwood Development**

Wetland ID: **W-7**

Sample Point: **P15**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Fraxinus pennsylvanica</i>	30	Y	FACW
2.	<i>Acer saccharinum</i>	20	Y	FACW
3.	<i>RHAMNUS CATHARTICA</i>	10	N	FAC
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		60		
Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		5		
Herb Stratum (Plot size: 2 meter radius)				
1.	<i>Lycopus uniflorus</i>	2	N	OBL
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		2		
Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>2</u>	x 1 =	<u>2</u>
FACW spp.	<u>100</u>	x 2 =	<u>200</u>
FAC spp.	<u>10</u>	x 3 =	<u>30</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 112 (A) 232 (B)

Prevalence Index = B/A = 2.071

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☒ Yes | ☐ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☒ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2: Jacob Eeling		State: Wisconsin
Soil Unit: Martinton silt loam	NW1/WW1 Classification:			Wetland ID: Adjacent to W-7
Landform: Backslope	Local Relief: Convex			Sample Point: P16
Slope (%): 2-4	Latitude: N/A	Longitude: N/A	Datum: N/A	Community ID: Mesic Woodland
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydic Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined non-wetland based on lack of sufficient indicators for all 3 parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☐ Yes ☒ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks:		

SOILS

Map Unit Name: Martinton silt loam		Series Drainage Class: somewhat poorly									
Taxonomy (Subgroup): Aquic Argiudolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	9	1	10YR	3/4	100	--	--	--	--	--	silt loam
9	14	2	10YR	5/3	100	--	--	--	--	--	silty clay loam
14	18	3	10YR	4/4	100	--	--	--	--	--	silty clay
18	20	4	10YR	6/6	75	10YR	5/8	25	C	M	sandy loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
Restrictive Layer (If Observed) Type: Rock Depth: 20 inches		Hydic Soil Present? ☐ Yes ☒ No			
Remarks: Auger refusal at 20 inches					

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Wrenwood Development**

Wetland ID: **Adjacent to W-7**

Sample Point: **P16**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Acer saccharum</i>	60	Y	FACU
2.	<i>Fagus grandifolia</i>	30	Y	FACU
3.	<i>Tilia americana</i>	15	N	FACU
4.	<i>Fraxinus americana</i>	10	N	FACU
5.	<i>Prunus serotina</i>	5	N	FACU
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		120		
Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	<i>Acer saccharum</i>	7	Y	FACU
2.	<i>Fagus grandifolia</i>	3	Y	FACU
3.	<i>Tilia americana</i>	3	Y	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		13		
Herb Stratum (Plot size: 2 meter radius)				
1.	<i>Acer saccharum</i>	15	Y	FACU
2.	<i>Carex pensylvanica</i>	3	N	UPL
3.	<i>Fagus grandifolia</i>	3	N	FACU
4.	<i>Geranium maculatum</i>	2	N	FACU
5.	<i>Maianthemum racemosum</i>	2	N	FACU
6.	<i>Fraxinus americana</i>	1	N	FACU
7.	<i>Ribes cynosbati</i>	1	N	FACU
8.	<i>Quercus rubra</i>	1	N	FACU
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		28		
Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>0</u>	x 2 =	<u>0</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>158</u>	x 4 =	<u>632</u>
UPL spp.	<u>3</u>	x 5 =	<u>15</u>

Total 161 (A) 647 (B)

Prevalence Index = B/A = 4.019

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		Soil Unit: Martinton silt loam		State: Wisconsin
Landform: Depression		NW1/WW1 Classification: T3K		Wetland ID: W-6
Slope (%): 1-3		Local Relief: Concave		Sample Point: P17
Latitude: N/A		Longitude: N/A		Community ID: Hardwood Swamp
Datum: N/A		Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No		Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland having met sufficient indicators for all 3 parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☒ B8 - Sparsely Vegetated Concave Surface	☒ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☒ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☒ Yes ☐ No Depth: 22 (in.) Saturation Present? ☒ Yes ☐ No Depth: 21 (in.)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks:		

SOILS

Map Unit Name: Martinton silt loam	Series Drainage Class: somewhat poorly
Taxonomy (Subgroup): Aquic Argiudolls	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	9	1	10YR	2/2	100	--	--	--	--	--	peat
9	13	2	10YR	3/1	98	10YR	4/6	2	C	M	silt loam
13	19	3	10YR	4/1	98	10YR	4/6	2	C	M	silt loam
19	22	4	10YR	5/1	90	10YR	4/4	10	C	M	silty clay
22	24	5	5Y	5/1	85	10YR	4/6	15	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☒ A1 - Histosol ☒ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.				

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **W-6**

Sample Point: **P17**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Quercus bicolor</i>	25	Y	FACW
2.	<i>Fraxinus pennsylvanica</i>	7	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **32**

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--

Total Cover = **5**

Herb Stratum (Plot size: 2 meter radius)

1.	<i>Bidens connata</i>	10	Y	FACW
2.	<i>PHALARIS ARUNDINACEA</i>	5	Y	FACW
3.	<i>Carex lupulina</i>	5	Y	OBL
4.	<i>Glyceria striata</i>	3	N	OBL
5.	<i>Pilea pumila</i>	2	N	FACW
6.	<i>Iris versicolor</i>	2	N	OBL
7.	<i>Carex cristatella</i>	2	N	FACW
8.	<i>Carex vulpinoidea</i>	1	N	OBL
9.	<i>Ulmus americana</i>	1	N	FACW
10.	<i>Sium suave</i>	1	N	OBL
11.	<i>SOLANUM DULCAMARA</i>	1	N	FAC
12.	<i>PERSICARIA HYDROPIPER</i>	1	N	OBL
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--

Total Cover = **34**

Woody Vine Stratum (Plot size: 10 meter radius)

1.	<i>Vitis riparia</i>	5	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--

Total Cover = **5**

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **7** (A)

Total Number of Dominant Species Across All Strata: **7** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	13	x 1 =	13
FACW spp.	57	x 2 =	114
FAC spp.	6	x 3 =	18
FACU spp.	0	x 4 =	0
UPL spp.	0	x 5 =	0

Total **76** (A) **145** (B)

Prevalence Index = B/A = **1.908**

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2: Jacob Eeling		State: Wisconsin
Soil Unit: Ozaukee silt loam		NWI/WWI Classification: None Depicted		Wetland ID: W-8
Landform: Depression		Local Relief: Concave		Sample Point: P18
Slope (%): 0-2		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Hardwood Swamp
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland having met sufficient indicators for all 3 parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☒ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks: Isolated depression.		

SOILS

Map Unit Name: Ozaukee silt loam	Series Drainage Class: well
Taxonomy (Subgroup): Oxyaquic Hapludalfs	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	10	1	10YR	3/1	98	10YR	3/2	2	C	M	silty clay loam
10	24	2	10YR	5/1	90	10YR	4/6	10	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☒ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Mucky Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☒ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.				

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydic Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **W-8**

Sample Point: **P18**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Fraxinus pennsylvanica</i>	5	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		5		

Herb Stratum (Plot size: 2 meter radius)

1.	<i>Carex lupulina</i>	2	Y	OBL
2.	<i>Glyceria striata</i>	2	Y	OBL
3.	<i>Fraxinus pennsylvanica</i>	1	Y	FACW
4.	<i>SOLANUM DULCAMARA</i>	1	Y	FAC
5.	<i>Bidens connata</i>	1	Y	FACW
6.	<i>Symphytotrichum lateriflorum</i>	1	Y	FAC
7.	<i>RHAMNUS CATHARTICA</i>	1	Y	FAC
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		9		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>4</u>	x 1 =	<u>4</u>
FACW spp.	<u>7</u>	x 2 =	<u>14</u>
FAC spp.	<u>3</u>	x 3 =	<u>9</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 14 (A) 27 (B)

Prevalence Index = B/A = 1.929

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☒ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		Soil Unit: Montgomery silty clay loam		State: Wisconsin
Landform: Side slope		NW1/WW1 Classification: None Depicted		Wetland ID: Adjacent to W-6
Slope (%): 2-4		Local Relief: Convex		Sample Point: P19
Latitude: N/A		Longitude: N/A		Community ID: Agricultural Field
Datum: N/A		Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No		Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☐ Yes ☒ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Not normal circumstances, cropped field and disturbed vegetation. Determined non-wetland based on lack of hydric soils, wetland hydrology indicators, dominance of upland weeds, off-site aerial imagery analysis, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Off-Site aerial imagery analysis	
Remarks: Off-site analysis indicates uplands in this area east of the south lobe of W-6	

SOILS

Map Unit Name: Montgomery silty clay loam	Series Drainage Class: very poorly										
Taxonomy (Subgroup): Vertic Endoaquolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%		Color (Moist)	%	Type	Location		
0	10	1	10YR	3/1	100	--	--	--	--	--	silty clay loam
10	15	2	10YR	3/1	98	10YR	3/2	2	C	M	silty clay loam
15	24	3	10YR	5/1	90	10YR	5/6	10	C	M	silty clay
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NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):		Indicators for Problematic Soils¹
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)
Restrictive Layer (If Observed) Type: N/A Depth: N/A		Hydric Soil Present? ☐ Yes ☒ No
Remarks:		

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Wrenwood Development**

Wetland ID: **Adjacent to W-6**

Sample Point: **P19**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)

1.	GLYCINE MAX	60	Y	UPL
2.	Amaranthus retroflexus	20	Y	FACU
3.	Juncus tenuis	1	N	FAC
4.	PLANTAGO MAJOR	1	N	FACU
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		82		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	1	x 3 =	3
FACU spp.	21	x 4 =	84
UPL spp.	60	x 5 =	300

Total **82** (A) **387** (B)

Prevalence Index = B/A = **4.720**

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2: Jacob Eeling		State: Wisconsin
Soil Unit: Montgomery silty clay loam		NWI/WWI Classification: E2K		Wetland ID: W-6
Landform: Toeslope		Local Relief: Concave		Sample Point: P20
Slope (%): 0-2		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Shrub Carr
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland based on sufficient indicators for all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☒ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☒ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☒ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☒ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A	
Remarks:	

SOILS

Map Unit Name: Montgomery silty clay loam		Series Drainage Class: very poorly									
Taxonomy (Subgroup): Vertic Endoaquolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)		%	Color (Moist)	%	Type	Location		
0	9	1	10YR	2/1	100	--	--	--	--	--	silt loam
9	20	2	10YR	5/1	95	10YR	4/6	5	C	M	silty clay loam
20	24	3	10YR	5/1	98	10YR	4/1	2	D	M	silty clay
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NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):		Indicators for Problematic Soils¹	
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☒ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.			

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydic Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **W-6**

Sample Point: **P20**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	Populus deltoides	20	Y	FAC
2.	Salix petiolaris	5	N	FACW
3.	Salix interior	5	N	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		30		

Herb Stratum (Plot size: 2 meter radius)

1.	TYPHA ANGUSTIFOLIA	15	Y	OBL
2.	PHALARIS ARUNDINACEA	15	Y	FACW
3.	Symphyotrichum puniceum	5	Y	OBL
4.	Panicum capillare	5	Y	FAC
5.	Amaranthus retroflexus	5	Y	FACU
6.	TRIFOLIUM HYBRIDUM	3	N	FACU
7.	SETARIA PUMILA	3	N	FAC
8.	Alisma triviale	3	N	OBL
9.	Populus deltoides	3	N	FAC
10.	Epilobium coloratum	3	N	OBL
11.	Scirpus atrovirens	2	N	OBL
12.	Ambrosia artemisiifolia	2	N	FACU
13.	AGROSTIS GIGANTEA	2	N	FACW
14.	Euthamia graminifolia	2	N	FAC
15.	Persicaria pensylvanica	1	N	FACW
Total Cover =		69		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **History of being farmed in this location, but not for several years.**

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **5** (A)

Total Number of Dominant Species Across All Strata: **6** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **83%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	28	x 1 =	28
FACW spp.	28	x 2 =	56
FAC spp.	33	x 3 =	99
FACU spp.	10	x 4 =	40
UPL spp.	0	x 5 =	0

Total **99** (A) **223** (B)

Prevalence Index = B/A = **2.253**

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☒ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		Soil Unit: Montgomery silty clay loam		State: Wisconsin
Landform: Depression		NW1/WW1 Classification: T3K		Wetland ID: W-6
Slope (%): 1-2		Local Relief: Concave		Sample Point: P21
Latitude: N/A		Longitude: N/A		Community ID: Hardwood Swamp
Datum: N/A		Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No		Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland based on sufficient indicators for all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☒ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A	
Remarks:	

SOILS

Map Unit Name: Montgomery silty clay loam	Series Drainage Class: very poorly										
Taxonomy (Subgroup): Vertic Endoaquolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	13	1	10YR	3/1	97	10YR	4/6	3	C	M	silt loam
13	16	2	10YR	4/1	93	10YR	4/6	7	C	M	silty clay loam
16	26	3	10YR	5/1	60	10YR	4/6	40	C	M	silty clay
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--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):		Indicators for Problematic Soils¹
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☒ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydric Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **W-6**

Sample Point: **P21**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Quercus bicolor</i>	50	Y	FACW
2.	<i>Ulmus americana</i>	20	Y	FACW
3.	<i>Fraxinus pennsylvanica</i>	15	N	FACW
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		85		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Ulmus americana</i>	5	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		5		

Herb Stratum (Plot size: 2 meter radius)

1.	<i>Carex lacustris</i>	7	Y	OBL
2.	<i>Glyceria striata</i>	5	Y	OBL
3.	<i>Acer saccharinum</i>	1	N	FACW
4.	<i>Fraxinus pennsylvanica</i>	1	N	FACW
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		14		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	<i>Vitis riparia</i>	3	N	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		3		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>12</u>	x 1 =	<u>12</u>
FACW spp.	<u>92</u>	x 2 =	<u>184</u>
FAC spp.	<u>3</u>	x 3 =	<u>9</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 107 (A) 205 (B)

Prevalence Index = B/A = 1.916

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☒ Yes | ☐ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☒ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		Soil Unit: Montgomery silty clay loam		State: Wisconsin
Landform: Side slope		NW1/WW1 Classification: T3K		Wetland ID: Adjacent to W-6
Slope (%): 2-4		Local Relief: Convex		Sample Point: P22
Latitude: N/A		Longitude: N/A		Community ID: Dry-Mesic Woodland
Datum: N/A		Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No		Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined non-wetland based on lack of wetland hydrology indicators, a lack of hydrophytic vegetation, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A	
Remarks:	

SOILS

Map Unit Name: Montgomery silty clay loam	Series Drainage Class: very poorly										
Taxonomy (Subgroup): Vertic Endoaquolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	11	1	10YR	3/1	100	--	--	--	--	silt loam	
11	24	2	10YR	4/1	98	10YR	4/4	2	C	M	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):		Indicators for Problematic Soils¹
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☒ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)
Restrictive Layer (If Observed) Type: N/A Depth: N/A		Hydic Soil Present? ☒ Yes ☐ No
Remarks:		

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Wrenwood Development**

Wetland ID: **Adjacent to W-6**

Sample Point: **P22**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Quercus macrocarpa</i>	50	Y	FACU
2.	<i>Quercus rubra</i>	20	Y	FACU
3.	<i>Tilia americana</i>	5	N	FACU
4.	<i>Fraxinus pennsylvanica</i>	3	N	FACW
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		78		
Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	<i>RHAMNUS CATHARTICA</i>	75	Y	FAC
2.	<i>Quercus macrocarpa</i>	15	N	FACU
3.	<i>Ostrya virginiana</i>	5	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		95		
Herb Stratum (Plot size: 2 meter radius)				
1.	<i>RHAMNUS CATHARTICA</i>	40	Y	FAC
2.	<i>Fraxinus pennsylvanica</i>	2	N	FACW
3.	<i>Quercus rubra</i>	1	N	FACU
4.	<i>Ribes cynosbati</i>	1	N	FACU
5.	<i>Acer saccharum</i>	1	N	FACU
6.	<i>Arisaema triphyllum</i>	1	N	FAC
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		46		
Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>5</u>	x 2 =	<u>10</u>
FAC spp.	<u>116</u>	x 3 =	<u>348</u>
FACU spp.	<u>98</u>	x 4 =	<u>392</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 219 (A) 750 (B)

Prevalence Index = B/A = 3.425

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☒ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		Soil Unit: Martinton silt loam		State: Wisconsin
Landform: Depression		NW1/WW1 Classification: T3K		Wetland ID: W-6
Slope (%): 2-4		Local Relief: Concave		Sample Point: P23
Latitude: N/A		Longitude: N/A		Community ID: Shrub Carr
Datum: N/A		Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No		Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland based on sufficient indicators for all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
---	---	--

Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks:		

SOILS

Map Unit Name: Martinton silt loam		Series Drainage Class: somewhat poorly									
Taxonomy (Subgroup): Aquic Argiudolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	10	1	10YR	4/2	100	--	--	--	--	silt loam	
10	18	2	10YR	4/1	97	10YR	4/3	3	C	M	silty clay loam
18	24	3	10YR	5/1	95	10YR	4/6	5	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
Restrictive Layer (If Observed) Type: N/A Depth: N/A		Hydic Soil Present? ☒ Yes ☐ No			
Remarks:					

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Wrenwood Development**

Wetland ID: **W-6**

Sample Point: **P23**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Populus deltoides</i>	7	Y	FAC
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		7		
Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	<i>Salix discolor</i>	10	Y	FACW
2.	<i>Salix interior</i>	5	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		15		
Herb Stratum (Plot size: 2 meter radius)				
1.	<i>PHALARIS ARUNDINACEA</i>	100	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		100		
Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>115</u>	x 2 =	<u>230</u>
FAC spp.	<u>7</u>	x 3 =	<u>21</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 122 (A) 251 (B)

Prevalence Index = B/A = 2.057

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Briscoe Property		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Pioneer Engineering Inc.				County: Washington
Investigator #1: Eric Parker		Investigator #2: Jacob Eeling		State: Wisconsin
Soil Unit: Montgomery silty clay loam		NWI/WWI Classification: T3K		Wetland ID: Adjacent to W-6
Landform: Side slope		Local Relief: Convex		Sample Point: P24
Slope (%): 3-5		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Old Field
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydic Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined non-wetland based on lack of sufficient wetland indicators, a lack of hydrophytic vegetation, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A	
Remarks:	

SOILS

Map Unit Name: Montgomery silty clay loam		Series Drainage Class: very poorly									
Taxonomy (Subgroup): Vertic Endoaquolls											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	10	1	10YR	3/2	100	--	--	--	--	silt loam	
10	22	2	10YR	4/1	98	10YR	4/6	2	C	M	silty clay
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	--	--	--	--	--	--	--	

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):		Indicators for Problematic Soils¹	
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☒ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)	☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions	☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
Restrictive Layer (If Observed) Type: gravel Depth: 22 inches		Hydic Soil Present? ☒ Yes ☐ No	
Remarks: Auger refusal at 22 inches with rock			

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Project/Site: **Briscoe Property** Wetland ID: **Adjacent to W-6** Sample Point: **P24**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	<i>RHAMNUS CATHARTICA</i>	10	Y	FAC
2.	<i>Cornus racemosa</i>	1	N	FAC
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		11		

Herb Stratum (Plot size: 2 meter radius)				
1.	<i>POA PRATENSIS</i>	80	Y	FACU
2.	<i>Solidago canadensis</i>	50	Y	FACU
3.	<i>Symphyotrichum pilosum</i>	20	N	FACU
4.	<i>Symphyotrichum novae-angliae</i>	5	N	FACW
5.	<i>Juncus tenuis</i>	2	N	FAC
6.	<i>Quercus macrocarpa</i>	1	N	FACU
7.	<i>TARAXACUM OFFICINALE</i>	1	N	FACU
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		159		

Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>5</u>	x 2 =	<u>10</u>
FAC spp.	<u>13</u>	x 3 =	<u>39</u>
FACU spp.	<u>152</u>	x 4 =	<u>608</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 170 (A) 657 (B)

Prevalence Index = B/A = 3.865

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☒ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/18/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2: Jacob Eeling		State: Wisconsin
Soil Unit: Ozaukee silt loam		NWI/WWI Classification: T3/E2K		Wetland ID: W-9
Landform: Depression		Local Relief: Concave		Sample Point: P25
Slope (%): 1-3		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Wet Meadow
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland based on sufficient indicators for all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks:		

SOILS

Map Unit Name: Ozaukee silt loam		Series Drainage Class: well									
Taxonomy (Subgroup): Oxyaquic Hapludalfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	3	1	10YR	4/2	--	--	--	--	--	silt loam	
3	13	2	10YR	4/2	85	7.5YR	4/6	15	C	PL	silty clay
13	24	3	10YR	4/1	95	10YR	4/3	5	C	M	sandy clay
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydic Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **W-9**

Sample Point: **P25**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Fraxinus pennsylvanica</i>	15	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		15		
Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		
Herb Stratum (Plot size: 2 meter radius)				
1.	<i>PHALARIS ARUNDINACEA</i>	100	Y	FACW
2.	<i>TYPHA ANGUSTIFOLIA</i>	10	N	OBL
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		110		
Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>10</u>	x 1 =	<u>10</u>
FACW spp.	<u>115</u>	x 2 =	<u>230</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 125 (A) 240 (B)

Prevalence Index = B/A = 1.920

Hydrophytic Vegetation Indicators:

- ☒ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☒ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		Soil Unit: Ozaukee silt loam		State: Wisconsin
Landform: Rise		NW1/WW1 Classification: None Depicted		Wetland ID: Adj. to W-9 & W-10
Slope (%): 1-3		Local Relief: Convex		Sample Point: P26
Latitude: N/A		Longitude: N/A		Community ID: Agricultural Field
Datum: N/A		Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No		Section: 23
Are Vegetation ☒ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☐ Yes ☒ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Not normal circumstances, cropped field and disturbed vegetation. Determined non-wetland based on lack of wetland hydrology indicators, a lack of hydric soils, and best professional judgement.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☒ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **Off-Site Aerial Imagery Review**

Remarks: **Off site aerial imagery analysis with signature in 20% (1 in 5) of normal precipitation years in vicinity of P26.**

SOILS

Map Unit Name: Ozaukee silt loam	Series Drainage Class: well
Taxonomy (Subgroup): Oxyaquic Hapludalfs	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)	%	Type	Location		
0	6	1	10YR	4/2	100	--	--	--	--	--	silty clay
6	9	2	7.5YR	5/3	62	7.5YR	4/4	3	C	M	silty clay
--	--	--	10YR	4/2	30	7.5YR	5/1	5	D	M	--
9	19	3	10YR	5/3	40	7.5YR	4/4	15	C	M	silty clay
--	--	--	7.5YR	4/3	40	10YR	5/1	5	D	M	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
Restrictive Layer (If Observed) Type: N/A Depth: N/A		Hydric Soil Present? ☐ Yes ☒ No			

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Remarks: **Possible old fill materials, compacted. 10% rocks in 2nd and 3rd horizons.**

Project/Site: **Wrenwood Development**

Wetland ID: **Adj. to W-9 & W-10**

Sample Point: **P26**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 2 meter radius)

1.	GLYCINE MAX	50	Y	UPL
2.	SETARIA PUMILA	3	N	FAC
3.	Ambrosia artemisiifolia	2	N	FACU
4.	Panicum capillare	2	N	FAC
5.	HIBISCUS TRIONUM	2	N	UPL
6.	ECHINOCHLOA CRUS-GALLI	1	N	FAC
7.	Xanthium strumarium	1	N	FAC
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		61		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	7	x 3 =	21
FACU spp.	2	x 4 =	8
UPL spp.	52	x 5 =	260

Total **61** (A) **289** (B)

Prevalence Index = B/A = **4.738**

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☒ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation				County: Washington
Investigator #1: Eric Parker		Investigator #2: Jacob Eeling		State: Wisconsin
Soil Unit: Ozaukee silt loam		NWI/WWI Classification: E2K		Wetland ID: W-10
Landform: Depression		Local Relief: Concave		Sample Point: P27
Slope (%): 1-3		Latitude: N/A Longitude: N/A Datum: N/A		Community ID: Wet Meadow
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Hydic Soils Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined wetland based on sufficient indicators for all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☒ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)		Wetland Hydrology Present? ☒ Yes ☐ No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A		
Remarks:		

SOILS

Map Unit Name: Ozaukee silt loam		Series Drainage Class: well									
Taxonomy (Subgroup): Oxyaquic Hapludalfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)		
			Color (Moist)	%	Color (Moist)	%	Type	Location			
0	6	1	10YR	3/2	98	10YR	4/6	2	C	PL	silty clay loam
6	9	2	10YR	4/1	98	10YR	4/6	2	C	PL	silty clay loam
9	24	3	10YR	4/1	95	7.5YR	4/6	5	C	M	silty clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☒ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☒ F3 - Depleted Matrix ☒ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					

Restrictive Layer (If Observed) Type: N/A Depth: N/A	Hydic Soil Present? ☒ Yes ☐ No
Remarks:	

Project/Site: **Wrenwood Development**

Wetland ID: **W-10**

Sample Point: **P27**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	<i>Salix interior</i>	5	Y	FACW
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		5		

Herb Stratum (Plot size: 2 meter radius)

1.	<i>PHALARIS ARUNDINACEA</i>	100	Y	FACW
2.	<i>TYPHA ANGUSTIFOLIA</i>	10	N	OBL
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		110		

Woody Vine Stratum (Plot size: 10 meter radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>10</u>	x 1 =	<u>10</u>
FACW spp.	<u>105</u>	x 2 =	<u>210</u>
FAC spp.	<u>0</u>	x 3 =	<u>0</u>
FACU spp.	<u>0</u>	x 4 =	<u>0</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>

Total 115 (A) 220 (B)

Prevalence Index = B/A = 1.913

Hydrophytic Vegetation Indicators:

- | | | |
|---|--|--|
| ☒ Yes | ☐ No | Rapid Test for Hydrophytic Vegetation |
| ☒ Yes | ☐ No | Dominance Test is > 50% |
| ☒ Yes | ☐ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem Hydrophytic Vegetation (Explain) * |

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Wrenwood Development		Stantec Project #: 193705634		Date: 09/15/17
Applicant: Carity Land Corporation		Investigator #2: Jacob Eeling		County: Washington
Investigator #1: Eric Parker		NW1/WW1 Classification: None Depicted		State: Wisconsin
Soil Unit: Dodge silt loam	Local Relief: Convex			Wetland ID: N/A
Landform: Footslope	Latitude: N/A Longitude: N/A Datum: N/A			Sample Point: P28
Slope (%): 2-4				Community ID: Shrub Thicket
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 23
Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 9N
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic?				Range: 20E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydic Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☐ Yes ☒ No
Remarks: WETS analysis indicates antecedent precipitation is in the normal range. However, it has been in dry over the previous few weeks. Determined non-wetland based on lack of sufficient indicators for all three parameters.	

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☒):

<u>Primary:</u> ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface	☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)	<u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test
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Field Observations: Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table Present? ☐ Yes ☒ No Depth: (in.) Saturation Present? ☐ Yes ☒ No Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: **Off-Site Aerial Imagery Review**

Remarks: **Signature in agricultural field in recent wet year on aerial imagery inspected at this location given topographic position in the adjacent treeline is similar to proximal agricultural field.**

SOILS

Map Unit Name: Dodge silt loam	Series Drainage Class: well
Taxonomy (Subgroup): Typic Hapludalfs	

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	6	1	10YR	3/2	100	--	--	--	--	--	silt loam
6	15	2	10YR	4/3	100	--	--	--	--	--	silt loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒): ☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)		☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions		Indicators for Problematic Soils¹ ☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)	
--	--	--	--	---	--

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If Observed) Type: root/rocks Depth: 16 inches	Hydric Soil Present? ☐ Yes ☒ No
Remarks: Auger refusal at 16 inches	

Project/Site: **Wrenwood Development**

Wetland ID: **N/A**

Sample Point: **P28**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 10 meter radius)				
	Species Name	% Cover	Dominant	Ind. Status
1.	<i>Crataegus coccinea</i>	30	Y	UPL
2.	<i>Prunus serotina</i>	20	Y	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		50		
Sapling/Shrub Stratum (Plot size: 5 meter radius)				
1.	<i>Cornus racemosa</i>	50	Y	FAC
2.	<i>RHAMNUS CATHARTICA</i>	15	N	FAC
3.	<i>Prunus virginiana</i>	3	N	FACU
4.	<i>EUONYMUS EUROPAEUS</i>	2	N	UPL
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		70		
Herb Stratum (Plot size: 2 meter radius)				
1.	<i>Cornus racemosa</i>	40	Y	FAC
2.	<i>RHAMNUS CATHARTICA</i>	10	N	FAC
3.	<i>ALLIARIA PETIOLATA</i>	7	N	FACU
4.	<i>Geum canadense</i>	1	N	FAC
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		58		
Woody Vine Stratum (Plot size: 10 meter radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>0</u>	x 2 =	<u>0</u>
FAC spp.	<u>116</u>	x 3 =	<u>348</u>
FACU spp.	<u>30</u>	x 4 =	<u>120</u>
UPL spp.	<u>32</u>	x 5 =	<u>160</u>

Total 178 (A) 628 (B)

Prevalence Index = B/A = 3.528

Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
Appendix C– Site Photographs
October 4, 2017

Appendix C – Site Photographs

Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
1

Date
09/15/2017

Direction Photo Taken:
East

Photo Description:
Sample point P1 within
farmed wetland W-1.



Photo No.
2

Date
9/15/2017

Direction Photo Taken:
Southwest

Photo Description:
Sample point P1 within
farmed wetland W-1.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
3

Date
09/15/2017

Direction Photo Taken:
East

Photo Description:
Sample point P2 on
uplands outside Wetland
W-1 amidst healthy
soybeans



Photo No.
4

Date
09/15/2017

Direction Photo Taken:
South

Photo Description:
Sample point P2 outside
Wetland W-1 with W-1 in
the background



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
5

Date
09/15/2017

Direction Photo Taken:
West

Photo Description:
Sample point P3 in an area
dominated by reed canary
grass outside wetland W-2.



Photo No.
6

Date
09/15/2017

Direction Photo Taken:
Northwest

Photo Description:
Sample point P4 in a shrub
carr portion at the south
end of wetland W-2 with
Pond 1 in the background.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
7

Date
09/15/2017

Direction Photo Taken:
Southwest

Photo Description:
Sample point P5 within a
potential farmed wetland
area identified as W-3.



Photo No.
8

Date
09/15/2017

Direction Photo Taken:
Southwest

Photo Description:
Sample point P6 in a
drainage-way emanating
from potential wetland W-3
in the agricultural field.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
9

Date
09/15/2017

Direction Photo Taken:
East

Photo Description:
Sample point P7 within
wetland W-3 on the east
side of the Property.



Photo No.
10

Date
09/15/2017

Direction Photo Taken:
Northeast

Photo Description:
Sample point P8 in old field
uplands adjacent to
wetland W-4.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
11

Date
09/15/2017

Direction Photo Taken:
West

Photo Description:
Sample point P9 at a signature point where crop stress was observed; soils non-hydric and was determined to be upland.



Photo No.
12

Date
09/15/2017

Direction Photo Taken:
North

Photo Description:
Sample point P10 within shrub carr portion of wetland W-5 which surrounds Pond 2.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
13

Date
09/15/2017

Direction Photo Taken:
North

Photo Description:
Sample point P11 in area dominated by reed canary grass with non-hydric soils, and determined to be uplands.



Photo No.
14

Date
09/15/2017

Direction Photo Taken:
South

Photo Description:
Upland sample point P12 to the north of P11 where wetland plant species dominated however soils were also non-hydric.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
15

Date
09/15/2017

Direction Photo Taken:
Northwest

Photo Description:
Upland sample point P13
within a brushy tree-line
adjacent to an upland
agricultural field.



Photo No.
16

Date
09/15/2017

Direction Photo Taken:
South

Photo Description:
PVC pipe likely providing
an outlet for field tiles into
the south end of Pond 1
within wetland W-2.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
17

Date
09/15/2017

Direction Photo Taken:
North

Photo Description:
Farmed wetland W-1, with
W1 in the open area in the
background.



Photo No.
18

Date
09/15/2017

Direction Photo Taken:
West

Photo Description:
Pond 1 showing shrub carr
wetland W-2 perimeter.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
19

Date
09/15/2017

Direction Photo Taken:
North

Photo Description:
Photo taken at the south
end of Pond 2.



Photo No.
20

Date
09/15/2017

Direction Photo Taken:
Northeast

Photo Description:
View along an open
portion of the northern
basin of wetland W-6



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
21

Date
09/15/2017

Direction Photo Taken:
West Northwest

Photo Description:
View upstream along
intermittent waterway
WW-1, which is potentially
navigable.



Photo No.
22

Date
09/15/2017

Direction Photo Taken:
North

Photo Description:
View along a ditched
intermittent non-navigable
waterway just outside an
agricultural field.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
1

Date
09/18/2017

Direction Photo Taken:
North

Photo Description:
Sample point P14 within
wetland W-6 and WW-2.



Photo No.
2

Date
9/18/2017

Direction Photo Taken:
North

Photo Description:
Sample point P15 within
wetland W-7.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
3

Date
09/18/2017

Direction Photo Taken:
Northwest

Photo Description:

Sample point P16 in upland mesic woodlands between wetlands W-6 and W-7. W-7 is in the background.



Photo No.
4

Date
09/18/2017

Direction Photo Taken:
Southeast

Photo Description:

Sample point P17 within Wetland W-6.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
5

Date
09/18/2017

Direction Photo Taken:
South

Photo Description:
Sample point P18 in
wetland W-8, which
appeared to be isolated.



Photo No.
6

Date
09/18/2017

Direction Photo Taken:
North

Photo Description:
Sample point P19 within an
upland agricultural field
adjacent to wetland W-6.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
7

Date
09/18/2017

Direction Photo Taken:
West

Photo Description:
Sample point P20 within
shrub carr portion of
wetland W-6.



Photo No.
8

Date
09/18/2017

Direction Photo Taken:
South

Photo Description:
Sample point P21 in a
wooded portion of
wetland W-6.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
9

Date
09/18/2017

Direction Photo Taken:
Northwest

Photo Description:
Sample point P22 in
disturbed woodlands
adjacent to wetland W-6.



Photo No.
10

Date
09/18/2017

Direction Photo Taken:
East

Photo Description:
Sample point P23 in
wetland W-6.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
11

Date
09/18/2017

Direction Photo Taken:
West

Photo Description:
Sample point P24 in an old
field community that was
determined to be upland.



Photo No.
12

Date
09/18/2017

Direction Photo Taken:
North

Photo Description:
Sample point P25 within
wetland W-9.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
13

Date
09/18/2017

Direction Photo Taken:
South

Photo Description:
Sample point P26 in farmed area between wetlands W-9 and W-10.



Photo No.
14

Date
09/18/2017

Direction Photo Taken:
South

Photo Description:
Wetland sample point P27 within wetland W-10.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
15

Date
09/18/2017

Direction Photo Taken:
North

Photo Description:
Upland sample point P28
within a brushy tree-line
adjacent to an agricultural
field where an aerial
signature was visible.



Photo No.
16

Date
09/18/2017

Direction Photo Taken:
North

Photo Description:
Interior view of wooded
portion of wetland W-6,
north of WW-1.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
17

Date
09/18/2017

Direction Photo Taken:
East

Photo Description:
Old dumped materials
within wetland W-7.



Photo No.
18

Date
09/18/2017

Direction Photo Taken:
North

Photo Description:
Gap between W-9 and W-
10 part of agricultural field
and dominated by planted
soybeans.



Project Name: Wrenwood Development
Wetland Delineation

Project Location: Village of Germantown,
Washington County, WI

Photographer(s): Eric C. Parker

File: 193705634

Photo No.
19

Date
09/18/2017

Direction Photo Taken:
Southwest

Photo Description:
View across a disturbed
wet meadow portion of
wetland W-10.



Photo No.
20

Date
09/18/2017

Direction Photo Taken:
West Southwest

Photo Description:
View along intermittent
waterway WW-1 within
wetland W-6.



WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
Appendix D– WETS Analysis
October 4, 2017

Appendix D – WETS Analysis

WETS Analysis Worksheet

Project Name: Wrenwood Development
 Project Number: 193705634
 Period of interest: June to August 2017
 Station: GERMANTOWN (WI) USC00473058
 County: Washington

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	August	2.63	3.80	4.52
2nd month prior:	July	2.64	3.89	4.64
3rd month prior:	June	2.49	4.17	5.06
Sum =		11.86		

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
2.50	Dry	1	3	3
3.76	Normal	2	2	4
6.63	Wet	3	1	3
Sum =		12.89	Sum*** =	10

*Normal precipitation with 30% to 70% probability of occurrence

Determination: _____ Wet

**Condition value:

Dry = 1
 Normal = 2
 Wet = 3

***If sum is:

6 to 9 then period has been drier than normal
10 to 14 then period has been normal
15 to 18 then period has been wetter than normal

_____ Dry
X Normal

Precipitation data source: NOAA Regional Climate Centers - ACIS (http://efotg.sc.egov.usda.gov/efotg_locator.aspx)
<http://mrcc.isws.illinois.edu/CLIMATE/Station/Daily/StnDyBTD2.jsp>

Reference: Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination*, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Monthly Data between Specific Months
 GERMANTOWN (WI)
 USC00473058

Date	Precipitation (in)
Jun-17	6.63
Jul-17	3.76
Aug-17	2.50
Sum:	12.89

Daily Data Between Two Dates
 GERMANTOWN (WI)
 USC00473058

Date	Precipitation (in)
9/1/2017	0.00
9/2/2017	0.00
9/3/2017	0.19
9/4/2017	0.00
9/5/2017	0.00
9/6/2017	0.02
9/7/2017	0.00
9/8/2017	0.00
9/9/2017	0.13
9/10/2017	0.00
9/11/2017	0.00
9/12/2017	0.00
9/13/2017	0.00
9/14/2017	0.00
Sum:	0.34

WETS Station: GERMANTOWN, WI

Requested years: 1987 - 2016

Month	Temperature (°F)			Precipitation (inches)				
	Avg daily max	Avg daily min	Avg daily mean	Avg	30% chance will have		Avg number of days with 0.10 inch or more	Average total snowfall
					less than	more than		
Jan	27.5	11.4	19.4	1.53	0.91	1.86	4	14.0
Feb	30.5	13.4	22.0	1.26	0.72	1.51	3	12.5
Mar	42.0	23.7	32.9	1.95	1.21	2.36	5	6.4
Apr	54.6	34.3	44.5	3.84	2.62	4.58	6	1.4
May	66.6	44.5	55.5	3.77	2.37	4.55	7	0.3
Jun	76.7	54.1	65.4	4.17	2.49	5.06	7	0.0
Jul	80.8	59.0	69.9	3.89	2.64	4.64	6	0.0
Aug	79.1	57.8	68.4	3.80	2.63	4.52	7	0.0
Sep	72.1	49.2	60.7	3.27	2.00	3.96	6	0.0
Oct	59.2	37.9	48.5	2.44	1.57	2.94	6	0.1
Nov	45.5	28.2	36.9	2.16	1.23	2.62	5	2.2
Dec	32.4	17.2	24.8	1.87	1.09	2.27	5	12.4
Annual:					31.65	35.97		
Average	55.6	35.9	45.7	-	-	-	-	-
Total	-	-	-	33.93			66	49.2

GROWING SEASON DATES

Requested years of data: 1987 - 2016

Years with missing data: 24 deg = 0 28 deg = 0 32 deg = 0

Years with no occurrence: 24 deg = 0 28 deg = 0 32 deg = 0

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
Appendix E– Off-Site Aerial Imagery Analysis
October 4, 2017

Appendix E – Off-Site Aerial Imagery Analysis

June Aerial Imagery

Off-Site Aerial Imagery Analysis

Wrenwood Site Wetland Delineation - 193705634

Village of Germantown, Washington County, WI

Date	Monthly Rainfall in Inches ¹			Weighted Sum	Relative Wetness	Field #'s Shown on 2015 NAIP Image						
	March	April	May			Field 1 Image Interpretations	Field 2 Image Interpretations	Field 3 Image Interpretations	Field 4 Image Interpretations	Field 5 Image Interpretations	Field 6 Image Interpretations	Field 7 Image Interpretations
June 1997	1.35	2.13	2.53	10	Normal	WS at W-1; CS at W-3	WS at P9	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
June 1998	4.91	4.23	3.67	18	Wet	VV at W-1; WS at W-3	NSS, NV	NSS, NV	NSS, NV	NSS, NV	WS at P26	WS / DO in field by P28
June 1999	0.51	5.46	4.79	16	Wet	VV at W-1	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
June 2001	0.25	4.66	3.98	16	Wet	WS at W-1	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
June 2005	1.26	0.64	2.82	10	Normal	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
June 2006	2.85	4.07	4.61	18	Wet	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
June 2010	0.84	5.83	4.23	16	Wet	WS at W-1	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
June 2013	2.16	7.82	6.37	17	Wet	VV at W-1; WS at W-3	NSS, NV	WS west end in W-6 & NW Corner	NSS, NV	WS east end	WS south end & P26	WS west central portion
30% chance less than**	0.94	2.18	1.80	# of Normal Years		2	2	2	2	2	2	2
30 Year Average**	1.90	3.15	2.93	Number w/Wet Signatures		1	0	0	0	0	0	0
30% chance more than**	2.32	3.75	3.54	% w/Wet Signatures		50.0	0.0	0.0	0.0	0.0	0.0	0.0
				# of Wet Years		6	6	6	6	6	6	6
				Number w/Wet Signatures		5	0	1	0	1	2	2
				% w/Wet Signatures		83.3	0.0	16.7	0.0	16.7	33.3	33.3

¹ Station: GERMANTOWN (WI) USC00473058

DRY
NORMAL
WET

Key

WS = Wetland Signature

NC = Not Cropped

DO = Drowned Out

SS = Soil Wetness Signature

AP = Altered Pattern

SW = Standing Water

NSS = No Soil Wetness Signature

VV = Volunteer Vegetation (not planted, naturally established)

CS = Crop Stress

NV = Normal Healthy Crop

July Aerial Imagery

Off-Site Aerial Imagery Review

Wrenwood Site Wetland Delineation - 193705634

Village of Germantown, Washington County, WI

Date	Monthly Rainfall in Inches ¹			Weighted Sum	Relative Wetness	Field 1 Image Interpretations	Field 2 Image Interpretations	Field 3 Image Interpretations	Field 4 Image Interpretations	Field 5 Image Interpretations	Field 6 Image Interpretations	Field 7 Image Interpretations
	April	May	June									
July 2000 NAIP	3.41	8.01	2.84	14	Normal	WS at W-1; WS at W-3	AP & CS at P9	WS west end in W-6	NSS, NV	NSS, NV	WS at P26	NSS, NV
July 2002 NAIP	4.13	3.03	4.43	16	Wet	WS at W-1; obscuring clouds	Obscuring Clouds	WS west end in W-6	NSS, NV	NSS, NV	NSS, NV	AP Throughout
July 2008 NAIP	6.79	1.65	10.61	14	Normal	CS at W-1	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
30% chance less than**	2.18	1.80	2.15	# of Normal Years		2	2	2	2	2	2	2
30 Year Average**	3.15	2.93	3.58	Number w/Wet Signatures		2	0	1	0	0	1	0
30% chance more than**	3.75	3.54	4.34	% w/Wet Signatures		100.0	0.0	50.0	0.0	0.0	50.0	0.0
				# of Wet Years		1	1	1	1	1	1	1
				Number w/Wet Signatures		1	1	1	0	0	0	1
				% w/Wet Signatures		100.0	100.0	100.0	0.0	0.0	0.0	100.0

¹ Station: GERMANTOWN (WI) USC00473058

DRY
NORMAL
WET

Key

WS = Wetland Signature	SW = Standing Water
NC = Not Cropped	NSS = No Soil Wetness Signature
DO = Drowned Out	VV = Volunteer Vegetation (not planted, naturally establishi
SS = Soil Wetness Signature	CS = Crop Stress
AP = Altered Pattern	NV = Normal Healthy Crop

September Aerial Imagery

Off-Site Aerial Imagery Review

Wrenwood Site Wetland Delineation - 193705634

Village of Germantown, Washington County, WI

Date	Monthly Rainfall in Inches ¹			Weighted Sum	Relative Wetness	Field 1 Image Interpretations	Field 2 Image Interpretations	Field 3 Image Interpretations	Field 4 Image Interpretations	Field 5 Image Interpretations	Field 6 Image Interpretations	Field 7 Image Interpretations
	June	July	August									
September 2015	3.91	3.56	4.59	12	Normal	WS at W-1	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV	NSS, NV
30% chance less than**	2.15	2.59	3.00	# of Normal Years		1	1	1	1	1	1	1
30 Year Average**	3.58	3.81	4.21	Number w/Wet Signatures		1	0	0	0	0	0	0
30% chance more than**	4.34	4.55	4.99	% w/Wet Signatures		100.0	0.0	0.0	0.0	0.0	0.0	0.0

¹ Station: GERMANTOWN (WI) USC00473058

DRY
NORMAL
WET

Key

WS = Wetland Signature

NC = Not Cropped

DO = Drowned Out

SS = Soil Wetness Signature

AP = Altered Pattern

SW = Standing Water

NSS = No Soil Wetness Signature

VV = Volunteer Vegetation (not planted, naturally establish

CS = Crop Stress

NV = Normal Healthy Crop

- - - COMBINED TOTALS - - -

	Field 1 Image Interpretations	Field 2 Image Interpretations	Field 3 Image Interpretations	Field 4 Image Interpretations	Field 5 Image Interpretations	Field 6 Image Interpretations	Field 7 Image Interpretations
Total Normal Years	5	5	5	5	5	5	5
# w/Wet Signatures	4	2	1	0	0	1	1
% w/Wet Signatures	80.0	40.0	20.0	0.0	0.0	20.0	20.0
Total Wet Years	7	7	7	7	7	7	7
# w/Wet Signatures	6	1	2	0	1	2	3
% w/Wet Signatures	85.7	14.3	28.6	0.0	14.3	28.6	42.9



June
1997
Normal

An aerial photograph showing a landscape with a road, fields, and some buildings. The road runs diagonally from the bottom left towards the top right. To the left of the road is a residential area with many small houses. To the right of the road are large, open fields, some of which are brown and some are green. There are some buildings and structures scattered throughout the landscape.

June
1998
WET



Done
1999
WET

An aerial photograph showing a landscape with various land uses. A large, irregularly shaped area of dense, dark green forest or trees occupies the central and right portions of the image. To the left of this forested area, there is a large, light brown, rectangular area that appears to be a cleared field or a large pond. In the upper left, there are some small, light-colored structures, possibly buildings or houses. A road or path runs diagonally from the bottom left towards the center. The overall image has a slightly grainy, vintage quality.

July
2000
NORMAL

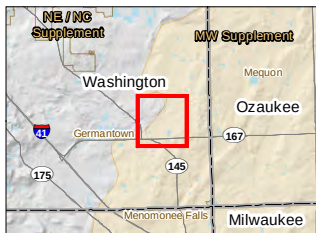
An aerial photograph showing a landscape with a road running diagonally from the bottom left towards the top right. The road is a light-colored, straight line. To the left of the road, there are several rectangular plots of land, some of which appear to be agricultural fields or pastures. To the right of the road, there is a large, irregularly shaped area of land that is mostly green, suggesting vegetation or trees. There are some smaller, lighter-colored patches within this green area, possibly cleared land or buildings. The overall image has a slightly grainy, vintage quality.

June
2001
WET



An aerial photograph showing a landscape with a road, fields, and a residential area. The road runs diagonally from the bottom left towards the top right. To the left of the road is a residential area with many small houses. To the right of the road are large fields, some of which are brown and some are green. A large, dark, irregular shape is visible in the center-right of the image, possibly a forest or a large field. The text "July 2002 WET" is written in the center of the image.

July
2002
WET



Legend

 Approximate Project Boundary

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WeDOT, WDNR
 3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.

X

Title

Historic Orthophotography
NAIP 06/16/2005

Client/Project

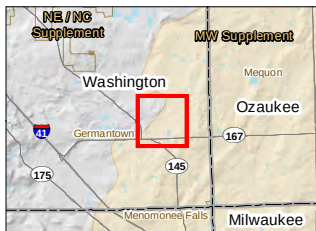
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location

193705634
T9N, R20E, S23, Prepared by JM on 2017-09-14
V. of Germantown, Technical Review by DG on 2017-09-14
Washington Co., WI Ind Review by EP on 2017-09-25

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Legend

 Approximate Project Boundary

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WeDOT, WDNR
 3. Orthophotography: NAIP

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Figure No.

X

Title

Historic Orthophotography
NAIP 06/12/2006

Client/Project

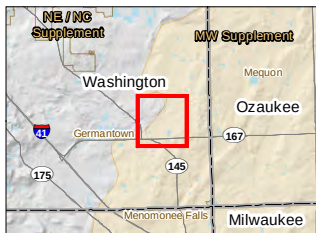
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location

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Legend

 Approximate Project Boundary

- Notes
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 2. Data Sources Include: Stantec, WeDOT, WDNR
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Figure No.

X

Title

Historic Orthophotography
NAIP 07/05/2008

Client/Project

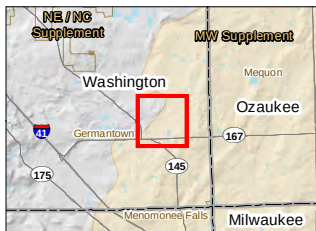
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location

193705634
T9N, R20E, S23, Prepared by JM on 2017-09-14
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Legend

Approximate Project Boundary

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WeDOT, WDNR
 3. Orthophotography: NAIP

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Figure No.

X

Title

Historic Orthophotography
NAIP 06/28/2010

Client/Project

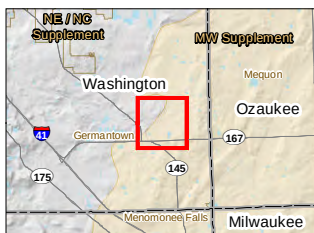
Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location

193705634
T9N, R20E, S23, Prepared by JM on 2017-09-14
V. of Germantown, Technical Review by DG on 2017-09-14
Washington Co., WI Ind Review by EP on 2017-09-25

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Legend

 Approximate Project Boundary

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WeDOT, WDNR
 3. Orthophotography: NAIP

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Figure No.

X

Title

Historic Orthophotography
NAIP 06/19/2013

Client/Project

Carity Land Corporation
Wrenwood Site
Wetland Delineation

Project Location

193705634
T9N, R20E, S23, Prepared by JM on 2017-09-14
V. of Germantown, Technical Review by DG on 2017-09-14
Washington Co., WI Ind Review by EP on 2017-09-25

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 Approximate Project Boundary

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WisDOT, WDNR
 3. Orthophotography: NAIP

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Figure No.

X

Title

Historic Orthophotography
NAIP 09/11/2015

Client/Project
 Carity Land Corporation
 Wrenwood Site
 Wetland Delineation

Project Location	193705634
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T9N, R20E, S23,
V. of Germantown,
Washington Co., WI

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WETLAND AND WATERWAY INVESTIGATION REPORT

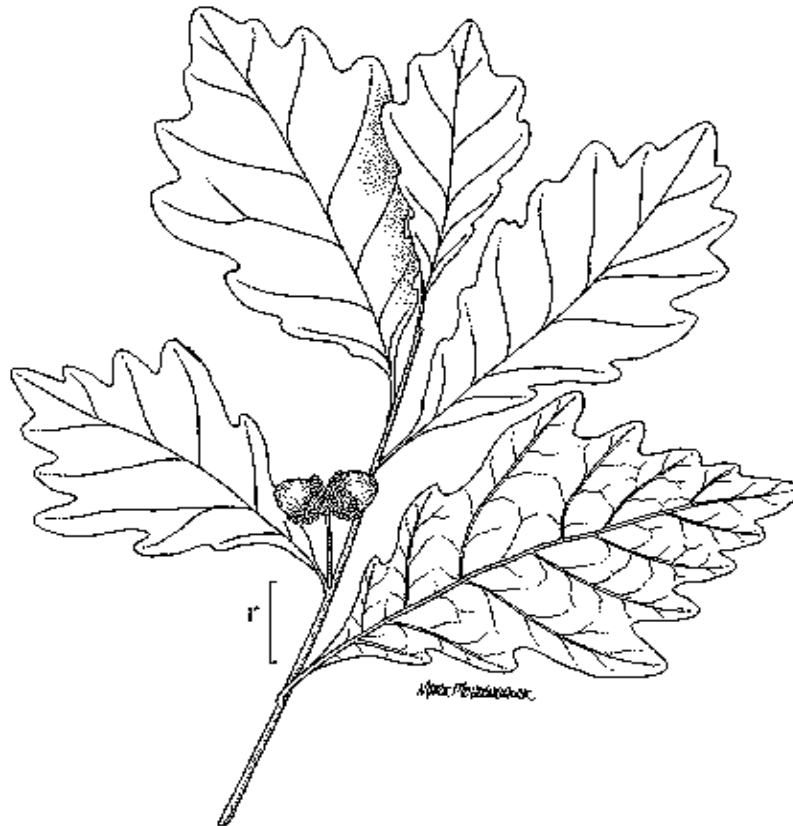
Wrenwood Development Site
Appendix F– Previous Reports
October 4, 2017

Appendix F– Previous Reports

WETLAND/ENVIRONMENTAL CORRIDOR DELINEATION REPORT

**Briscoe Property- Germantown
VILLAGE OF GERMANTOWN, WASHINGTON COUNTY,
WISCONSIN**

October 14, 2003



NRC Project # 03-054

**NATURAL RESOURCES CONSULTING, INCORPORATED
P.O. BOX 128
COTTAGE GROVE, WISCONSIN 53527-0128
(608) 839-1998**

**WETLAND AND ENVIRONMENTAL CORRIDOR DELINEATION REPORT
BRISCOE PROPERTY- GERMANTOWN
WASHINGTON COUNTY, WISCONSIN**

October 14, 2003

Prepared For:

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c/o Pioneer Engineering, Inc.
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Prepared By:

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NRC Project # 03-054

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Specializing in wetland, biological and environmental permitting services

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EXECUTIVE SUMMARY

Natural Resources Consulting, Incorporated (NRC) performed a determination and delineation of wetland and primary environmental corridor boundaries on the Briscoe Property in the Village of Germantown, Washington County, Wisconsin ("the Property"). The Property, approximately 145 acres in size, consists of agricultural land bisected by a woodland corridor and an intermittent tributary to the Menomonee River. The Property is located on the east side of the Village between CTH F and STH 167, and east of the railroad right-of-way running northwest to southeast through Section 23, Township 9 North, Range 2 East (Figure 1).

The objective of the wetland/environmental corridor determination and delineation was to provide an estimate of the extent and spatial arrangement of wetlands, and a refinement of primary wetland corridor boundaries at the Property. Nine wetland areas were identified and delineated on the Property (Figures 4 & 5). These wetlands are located in central and southern portions of the site in association with the woodland/stream corridor, two man-made ponds, and six isolated depressional landscape features. The current Southeastern Wisconsin Regional Planning Commission (SEWRPC) primary environmental corridor boundary was adjusted to reflect the results of the on-site wetland delineation and on-site observations related to other corridor delineation guidelines. NRC recommends this report be submitted to the U.S. Army Corps of Engineers, the Wisconsin Department of Natural Resources, and SEWRPC for final jurisdictional review and concurrence.

INTRODUCTION AND OBJECTIVES

NRC performed a determination and delineation of wetland and primary environmental corridor boundaries on the Briscoe-Germantown Property in Washington County, Wisconsin ("the Property"). The Property is located on the east side of the railroad right-of-way that runs from the NW ¼ to the SE ¼ of Section 23, Township 9 North, Range 20 East. The Property, approximately 145 acres, consists primarily of upland agricultural lands with scattered depressional wetlands in its southern half. In addition, an area of floodplain and mesic forest bisects the Property near its center, in the vicinity of an unnamed, intermittent tributary that flows northeasterly to the Menomonee River. The Property is generally bounded on the west by the railroad embankment, on the south by USH 167 (Mequon Road), on the north by CTH F (Friestadt Road), and on the southeast by Country Aire Drive. The remainder of the Property is bounded on the east by other agricultural land. Other surrounding land uses include rural residential, residential subdivisions, and commercial/retail uses.

The Property lies in the southeast corner of Washington County. In this part of the county, soils are typically well-drained to somewhat poorly drained and have a subsoil of silty clay loam to clay over silty clay loam glacial till or lake-laid silt and clay, which formed on ground moraines and in lacustrine basins.

The objective of the wetland determination and delineation was to provide an estimate of the extent and spatial arrangement of wetlands at the Property. Most wetlands are considered waters of the U.S. and are therefore subject to regulation under the Clean Water Act (CWA). Specifically, non-isolated wetlands are regulated under Section 404 of the CWA and the jurisdictional regulatory authority lies with the United States Army Corps of Engineers (USACE). Additionally, the Wisconsin Department of Natural Resources (WDNR) has regulatory authority over wetlands (both isolated and non-isolated), navigable waters, and adjacent lands under Chapter 30 Wisconsin State Statutes, Act 6, and NR 103 Wisconsin Administrative Code. The Village of Germantown and/or Washington County may have additional regulatory authority over wetlands and their buffers (i.e. setbacks) through shoreland or wetland zoning ordinances.

The objective of the environmental corridor determination and delineation was to provide a draft refinement of the secondary environmental corridor identified by the Southeastern Wisconsin Regional Planning Commission (SEWRPC).

NRC understands the requested services to include:

1. Complete wetland determinations at the Property.
2. Flag wetland/upland boundaries at the Property.
3. Inventory SEWRPC Natural Resource Base and/or Base-related Elements at the Property.
4. Refine environmental corridor boundaries for the Property based on the SEWRPC document, *Refining the Delineation of Environmental Corridors in Southeastern Wisconsin* (Rubin and Emmerich, 1981) and the on-site resource inventory.

METHODS

Wetlands

The initial steps in the wetland determination and delineation process included a review of the following documents:

- Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), excerpts from *Soil Survey of Washington County, Wisconsin*;
- NRCS list of hydric soils for Washington County;
- U.S. Geological Survey 7.5 minute *Menomonee Falls, Wisconsin* quadrangle map;
- The Wisconsin Wetland Inventory (WWI) Map for the area; and
- Aerial photographic coverage dated 2000.

These documents provide information on where wetlands have been previously identified or areas that possess a high likelihood of wetlands occurring. These initially identified areas were then visited to make on-site determinations, and where necessary, complete delineations of the uppermost wetland boundary.

Wetland determinations were made using the criteria and methods outlined in the USACE Manual (USACE 1987), subsequent guidance documents (USACE 1991, 1992), Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers (USACE 1996), and the Basic Guide to Wisconsin's Wetlands and their Boundaries (Wisconsin Department of Administration Coastal Management Program 1995). The U.S. Army Corps of Engineers and U.S. Environmental Protection Agency wetland definition is included below.

“Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions.”

The State of Wisconsin wetland definition differs slightly, however, the Wisconsin Administrative Code also cites the usage of the 1987 Manual.

Wetland determinations were made using the three criteria of assessment approach defined in the 1987 Manual. According to procedures described in this Manual, areas that under normal circumstances reflect a predominance of hydrophytic (water loving) vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands. Since the wetland boundaries at the Property are relatively abrupt, the Routine Method for Small Areas was employed.

A preliminary reconnaissance of the Property was used to determine the general topography and plant communities at the Property and to identify suitable locations for sampling transects. In general, transects are linear features aligned perpendicular to site contours such that they cross representative locations of wetlands and adjacent uplands. The three criteria were evaluated by placing an observation point within a representative location of each plant community encountered along the transect.

At each observation point:

1. The presence or absence of normal circumstances was determined.
2. The plant community was characterized by identifying dominant plant species using the "50/20" rule. For each stratum in the plant community, dominant species are the most abundant (when ranked in descending order of abundance and cumulatively totaled) that immediately exceed 50% of the total dominance measure for the stratum, plus any additional species comprising 20% or more of the total dominance measure for the stratum.

Wetland indicator status is ranked by percent probability of the species occurrence in wetlands as follows:

OBL = Obligate Wetland, occurs with an estimated 99 percent probability of occurrence in wetlands

FACW = Facultative Wetland, estimated 67 to 99 percent probability of occurrence in wetlands

FAC = Facultative equally likely to occur in wetlands and non-wetlands (34 to 66 percent probability)

FACU = Facultative upland, 67 to 99 percent probability in non-wetlands, 1 to 33 percent in wetlands

UPL = Obligate Upland, greater than 99 percent probability in non-wetlands in this region

NI = No indicator, insufficient information available to determine an indicator status

Wetland indicator status can be modified with a positive sign (+) to indicate a frequency toward the higher end of the category, while a minus sign (-) indicates a frequency toward the lower end of the category (Resource Management Group, 1995);

3. Soil pits were dug to a depth of at least 20 inches (except where definitive criteria were identified at a shallower depth) and the soil was evaluated for hydric soil characteristics; and
4. Hydrology was assessed by observing for primary (i.e., inundation, saturation within the root zone, water marks, etc.) and secondary (i.e., oxidized pore linings, water stained leaves, etc.) indicators of wetland hydrology.

A transect was initiated at a representative location within each wetland for the wetland determination. The uppermost wetland boundary was identified once an upland site was encountered along the transect. The uppermost wetland boundary was flagged using consecutively numbered surveyors flagging. Subject to weathering, the flagging will remain in the field for use during a USACE / WDNR site visit and for a guide during construction.

NRC provided a sketch map to the Client indicating the approximate location of boundary flagging for their use in locating and mapping the flags in the field by professional survey. The surveyor provided a draft wetland delineation map to NRC for review prior to finalization.

Environmental Corridors

The initial steps in the environmental corridor refinement process included a review of the following documents:

- Applicable current SEWRPC Environmental Corridor mapping overlaid on 400-scale aerial photographic coverage of the Property (dated 2000).
- Applicable SEWRPC mylar transparency for the Property, which reflects the inventory of natural resource base and base-related elements initially used by SEWRPC to delineate the corridor.

NRC then reviewed each area in the field, applying the definitions, criteria, and guidelines outlined in Rubin and Emmerich (1981) and comparing field conditions with the aerial photography to assess changes in land use and/or vegetative cover.

In wooded areas, NRC flagged the drip line of the areas meeting the SEWRPC definition of Woodlands. The wetland boundary NRC delineated in the field serves as the PEC boundary in other (non-wooded) areas. NRC provided a sketch map of the flagged Primary Environmental Corridor boundary to the Client for their use in locating and mapping the flags in the field by professional survey. The surveyor provided a draft map to NRC for review prior to finalization.

RESULTS

Table 1 is a list of the soils mapped in the *Soil Survey of Washington County, Wisconsin*, for the Property. The NRCS lists the Houghton and Montgomery series as hydric, while the Kendall, Martinton, Mequon, and Virgil series may contain hydric inclusions. Soils listed as hydric within Washington County are shown in **bold** print.

Table 1. Soil Map Units Identified at the Property.

SYMBOL	SOIL MAP UNIT	CLASSIFICATION	DRAINAGE CLASS	HYDRIC PART
CeB2	Casco loam, 6 to 12 percent slopes, eroded	Inceptic Hapludalfs	Somewhat excessively drained	Not Hydric
DdB	Dodge silt loam, 2 to 6 percent slopes	Typic Hapludalfs	Well drained	Not Hydric
Hu	Houghton mucky peat	Typic Haplosaprists	Very poorly drained	Entire Map Unit
KIA	Kendall silt loam, 1 to 3 percent slopes	Aeric Endoaqualfs	Somewhat poorly drained	Inclusion (wetter soils)
MgA	Martinton silt loam, 1 to 3 percent slopes	Aquic Argiudolls	Somewhat poorly drained	Inclusion (wetter soils)
MoB	Mayville silt loam, 2 to 6 percent slopes	Oxyaquic Hapludalfs	Moderately well drained	Not Hydric
MtA	Mequon silt loam, 1 to 3 percent slopes	Udolic Endoaqualfs	Somewhat poorly drained	Inclusion (wetter soils)
Mzb	Montgomery silty clay loam	Vertic Endoaquolls	Poorly to very poorly drained	Entire Map Unit
OuB	Ozaukee silt loam, 2 to 6 percent slopes	Oxyaquic Hapludalfs	Well drained	Not Hydric
OuB2	Ozaukee silt loam, 2 to 6 percent slopes, eroded	Oxyaquic Hapludalfs	Well drained	Not Hydric
ThB2	Theresa silt loam, 2 to 6 percent slopes, eroded	Typic Hapludalfs	Well drained	Not Hydric
ThC2	Theresa silt loam, 6 to 12 percent slopes, eroded	Typic Hapludalfs	Well drained	Not Hydric
VsA	Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	Udolic Endoaqualfs	Somewhat poorly drained	Inclusion (wetter soils)

Sources: USDA 1978, NRCS, <http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi>

The Wisconsin Wetland Inventory (WWI) identifies a broad-leaved, forested wetland (T3K) and a persistent narrow-leaved emergent wetland (E2Ka) on the Property. Both of these wetlands are associated with the intermittent tributary to the Menomonee River that flows southwest to northeast across the Property. The WWI also identifies two wetlands of less than 2 acres in size within the Property boundaries.

Wetlands

An on-site wetland delineation was completed on June 5, 2003 by Elizabeth Day and Jeff Kraemer of NRC. Nine wetland areas were identified and delineated on the Property (Figures 4 & 5). Transect and sample point locations were chosen within representative plant communities and landscape positions. USACE data sheets completed for fourteen points on six transects through the wetlands and adjacent uplands are included in Appendix A. Sample point locations are shown on Figures 4 & 5 and the corresponding field data are summarized in Table 2.

Table 2. Data Summary

SAMPLE POINT	DOMINANT VEGETATION OBSERVED	WETLAND VEGETATION	HYDROLOGY INDICATORS	HYDRIC SOIL OBSERVED	WETLAND
T-1A	Kentucky bluegrass (<i>Poa pratensis</i> , FAC-) Canada goldenrod (<i>Solidago canadensis</i> , FACU)	NO 0%	None observed	NO	NO
T-1B	Canada goldenrod (<i>Solidago canadensis</i> , FACU) Kentucky bluegrass (<i>Poa pratensis</i> , FAC-) field horsetail (<i>Equisetum arvense</i> , FAC) calico aster (<i>Aster lateriflorus</i> , FACW-) grass-leaved goldenrod (<i>Euthamia graminifolia</i> , FAC) narrow-leaved cattail (<i>Typha angustifolia</i> , OBL) broad-leaved woolly sedge (<i>Carex pellita</i> , OBL) giant goldenrod (<i>Solidago gigantea</i> , FACW) sandbar willow (<i>Salix exigua</i> , OBL) black willow (<i>Salix nigra</i> , OBL) Eastern cottonwood (<i>Populus deltoides</i> , FAC+)	YES 82 %	1 Primary (Saturation in upper 12 inches)	YES	YES (W-2)
T-2A	field penny-cress (<i>Thlaspi arvense</i> , NI) annual ragweed (<i>Ambrosia artemisiifolia</i> , FACU) field thistle (<i>Cirsium arvense</i> , FACU) alsike clover (<i>Trifolium hybridum</i> , FACU) dandelion (<i>Taraxacum officinale</i> , FACU) bull thistle (<i>Cirsium vulgare</i> , FACU-)	NO 0%	None observed	YES	NO
T-2B	lady's thumb (<i>Polygonum persicaria</i> , FACW) reed canary grass (<i>Phalaris arundinacea</i> , FACW+) field penny-cress (<i>Thlaspi arvense</i> , NI) annual ragweed (<i>Ambrosia artemisiifolia</i> , FACU)	YES 67%	1 Primary (Saturation in upper 12 inches)	YES	YES (W-3)
T-3A	American manna grass (<i>Glyceria grandis</i> , OBL) upright sedge (<i>Carex stricta</i> , OBL)	YES 100%	1 Primary (Saturation in upper 12 inches)	YES	YES (W-4)

T-3B	purple crane's bill (<i>Geranium maculatum</i> , FACU) jack-in-the-pulpit (<i>Arisaema triphyllum</i> , FACW-) beech (<i>Fagus grandifolia</i> , FACU) shrub & tree sugar maple (<i>Acer saccharum</i> , FACU) green ash (<i>Fraxinus pennsylvanica</i> , FACW)	NO 33%	None observed	NO	NO
T-3C	blue flag (<i>Iris versicolor</i> , OBL) reed canary grass (<i>Phalaris arundinacea</i> , FACW+) fowl manna grass (<i>Glyceria striata</i> , OBL) green ash (<i>Fraxinus pennsylvanica</i> , FACW) basswood (<i>Tilia Americana</i> , FACU) shrub & tree swamp white oak (<i>Quercus bicolor</i> , FACW+) silver maple (<i>Acer saccharinum</i> , FACW)	YES 75%	1 Primary (Saturation in upper 12 inches)	YES	YES (W-3)
T-4A	giant goldenrod (<i>Solidago gigantea</i> , FACW) reed canary grass (<i>Phalaris arundinacea</i> , FACW+) <i>Carex</i> spp. green ash (<i>Fraxinus pennsylvanica</i> , FACW) common buckthorn (<i>Rhamnus cathartica</i> , FACU) black willow (<i>Salix nigra</i> , OBL) American elm (<i>Ulmus americana</i> , FACW-)	YES 83%	2 Primary (Saturation in upper 12 inches, drainage patterns in wetlands)	YES	YES (W-6)
T-4B	Kentucky bluegrass (<i>Poa pratensis</i> , FAC-) reed canary grass (<i>Phalaris arundinacea</i> , FACW+) dandelion (<i>Taraxacum officinale</i> , FACU)	NO 33%	None observed	NO	NO
T-5A	Spotted touch-me-not (<i>Impatiens capensis</i> , FACW) garlic mustard (<i>Alliaria petiolata</i> , FAC) common buckthorn (<i>Rhamnus cathartica</i> , FACU) Virginia creeper (<i>Parthenocissus quinquefolia</i> , FAC-) American elm (<i>Ulmus americana</i> , FACW-) silver maple (<i>Acer saccharinum</i> , FACW)	YES 67%	1 Primary (Saturation in upper 12 inches)	YES	YES (W-3)
T-5B	reed canary grass (<i>Phalaris arundinacea</i> , FACW+) black willow (<i>Salix nigra</i> , OBL)	YES 100%	1 Primary (Saturation in upper 12 inches)	YES	YES (W-3)
T-5C	field penny-cress (<i>Thlaspi arvense</i> , NI) annual ragweed (<i>Ambrosia artemisiifolia</i> , FACU)	NO 0%	None observed	YES	NO
T-6A	Narrow-leaved cattail (<i>Typha angustifolia</i> , OBL) sandbar willow (<i>Salix exigua</i> , OBL)	YES 100%	1 Primary (Saturation in upper 12 inches)	YES	YES (W-9)
T-6B	corn (<i>Zea mays</i> , UPL)	NO 0%	None observed	YES	NO

Wetlands 1 and 2

Wetlands 1 and 2, located in the southern third of the Property, are shallow man-made ponds surrounded by a narrow fringe of persistent emergent vegetation (Figures 4 & 5). Common species at the pond edge include soft-stem bulrush, narrow-leaved cattail, spike rushes, Kentucky bluegrass, and reed canary grass. Scattered areas around both ponds, and in particular the southern end of Wetland 2, also support pioneer type shrub and small tree growth including willow, cottonwood, and green ash. The dominant vegetation observed at the sample point located at the southeastern end of Wetland 2 (sample point T-1B) includes goldenrods and asters, Kentucky bluegrass, field horsetail, cattail, sedges, sandbar and black willows, and cottonwood. The wetland boundaries were delineated at an abrupt topographic break and at a distinct vegetation change predominantly following the transition from sandbar willow, woolly sedge, giant goldenrod to Kentucky bluegrass, Canada goldenrod, and wild carrot.

Wetlands 1 & 2 appear to have seasonally saturated and inundated soils fed by groundwater discharge and local surface water runoff. Saturation in the upper 12 inches, a primary indicator of wetland hydrology, was observed at T-1B. Secondary indicators included a positive FAC-Neutral test. Both pond areas appeared to be permanently inundated and contained approximately 12" of standing water near the margins; the depth near the center could not be determined due to lack of water clarity but appeared to be approximately 24" - 36" deep. The two pond areas are connected hydrologically by an overflow culvert discharging from Wetland 2 into Wetland 1. Wetland 1 has an overflow pipe that discharges into the roadside ditch of Mequon Road.

The soils within Wetlands 1 & 2 are mapped as Mequon silt loam and Virgil silt loam. The Mequon series consists of deep, somewhat poorly drained soils formed in thin loess and the underlying silty clay loam glacial till on ground moraines. These soils have moderately slow permeability. Slopes range from 1 to 3 percent. The Virgil series consists of very deep, somewhat poorly drained soils formed in loess or other silty material and in the underlying loamy outwash or sandy loam till. These soils are on outwash plains, stream terraces, or till plains. Permeability is moderate in the upper part of the profile and moderate to moderately rapid in the lower part. Slope ranges from 0 to 6 percent. The Mequon and Virgil series are listed on the List of Hydric Soils for Waukesha County. Hydric soil indicators were observed including low chroma colors, depletions, and redoximorphic features.

Wetland 3

Wetland 3, located in the central portion of the Property, is a large wetland complex comprised of forested wetlands, wet meadows, and an intermittent tributary. The largest portion of the wetland complex (western lobe) is comprised of a mesic wetland forest community. This area is dominated by silver maple, American elm, green and black ash, jack-in-the-pulpit, and jewel weed (T-5A). The ground layer was fairly scarce compared to the upland forested areas and provided evidence of recent inundated conditions. Several small depressional areas with standing water are also located within this portion of the wetland and are dominated by lake sedge, water parsnip, blue flag iris, and reed canary grass. The eastern portion of the wetland complex is a large depressional wetland that contained 3 to 12 inches of standing water. This wetland area was dominated by green ash, silver maple, swamp white oak, manna grass, reed canary grass, blue flag iris, and water parsnip (T-3C). A drainage swale at the southern end of this wetland area flows to the south and connects to the intermittent tributary. The western most portion of the wetland complex, adjacent to the railroad tracks is comprised of wet meadow vegetation dominated by reed canary grass. An intermittent tributary flows along the southern portion of the wetland from west to east and is tributary to the Menomonee River. The tributary contained 8 to 12 inches of water during the site visit and the banks were dominated by reed canary grass. A culvert is located within the tributary

and is used as a crossing for access to the alfalfa field located between the two wetland lobes.

Wetland 3 appeared to have seasonally saturated and inundated soils fed by groundwater discharge and local surface water runoff. Primary indicators of wetland hydrology included areas with inundation above the surface and saturation in the upper 12 inches. Secondary indicators included water-stained leaves and positive FAC-Neutral tests.

The soils within Wetland 3 are mapped primarily as Houghton mucky peat and Montgomery silty clay loam. The Houghton series consists of very deep, very poorly drained soils formed in herbaceous organic deposits more than 51 inches thick in depressions on lake plains, outwash plains, ground and end moraines and on floodplains. These soils have moderately slow to moderately rapid permeability. Slopes range from 0 to 2 percent. The Montgomery series consists of very deep, poorly drained or very poorly drained, slowly permeable soils formed in fine-textured lacustrine sediments. These soils are typically on lake plains and to a lesser extent on slack water floodplain steps. Slopes range from 0 to 1 percent. The Houghton and Montgomery series are listed on the Hydric Soils List for Waukesha County. Indicators of hydric soils included histic epipedons, low chroma colors, depletions, and redoximorphic features.

Wetland 4

Wetland 4 is an isolated vernal pool located just north of Wetland 3, near the northeast corner of the central third of the Property (sample point T-3A). It is a small depression supporting very sparse vegetative cover consisting of a few stems of manna grass and tussock sedge, and a green ash sapling. This sparse ground layer in comparison with that of the surrounding upland forest provides evidence of standing water in the spring and early summer seasons. The soils were saturated to the surface when observed during field delineation. The soils within Wetland 4 are mapped as Ozaukee silt loam. The Ozaukee series consists of moderately well drained soils that are moderately deep over glacial till. They formed in thin loess and in the underlying loamy dense till on ground moraines. The soils observed at the sample point did not match the typical profile for Ozaukee soils, which are non-hydric. The soils within Wetland 4 are gleyed silty clay loam with common, distinct redoximorphic features beginning at 6 inches below the soil surface.

Wetland 5

Wetland 5 is a depressional shallow to deep marsh with scattered patches of open water. It straddles the northern property line of the central third of the Property. Wetland 5 appears to have a permanently ponded hydroperiod supported by ground water discharge and limited local surface water runoff. It is dominated by cattails, blue flag iris and reed canary grass and has been used in the past as a dumping ground, particularly along its western shoreline. Soils are mapped as Montgomery silty clay loam. The Montgomery series consists of very deep, poorly drained or very poorly drained, slowly permeable soils formed in fine-textured lacustrine sediments.

Wetland 6

The WWI map indicates a wetland of less than 2 acres in the vicinity of Wetland 6, which is a forested depression with emergent openings that drains to the east (sample point T-4A). Black willow and American elm dominate the canopy, while green ash and common buckthorn are among the most common understory species. Late goldenrod, reed canary grass, and sedges dominate the herbaceous layer. Soils in the vicinity of Wetland 6 are mapped as Mequon silt loam. The Mequon series was described previously. Wetland 6 appears to have a seasonally saturated hydroperiod fed by groundwater discharge and local surface water runoff, including drainage from Wetland 7, which lies immediately up

gradient to the west. Soils were saturated to the surface at the sample point.

Wetland 7

The WWI map indicates a wetland of less than 2 acres in the vicinity of Wetland 7, which is a shrub-fringed emergent depression that abuts the railroad embankment and drains east into Wetland 6. Soils are mapped as Mequon silt loam and the hydroperiod appears to be seasonally-ponded. Willows are the most common species around the fringe of this wetland while cattails and reed canary grass dominate the central portion of Wetland 7.

Wetland 8

Wetland 8 is a disturbed wet meadow that may have been graded and mowed in past years. This wetland was dominated by reed canary grass, sedge spp., and Kentucky blue grass. The soils are mapped as Casco loam and the hydroperiod appears to be seasonally saturated. The adjacent uplands consisted of old field vegetation dominated by Kentucky blue grass and Canada goldenrod.

Wetland 9

Wetland 9 is a seasonally flooded basin within an agricultural field located in the southern most portion of the Property. This wetland area had recently been plowed however; cattail, reed canary grass, and sandbar willow stubbles could still be identified as the dominant vegetation. A prevalence of corn or other crop stubbles were not observed within the wetland area. The soils are mapped as Virgil silt loam and the hydroperiod appeared to be seasonally inundated and saturated. A wetland signature was apparent on a 2000 aerial photograph and saturated soils were observed in the upper 12 inches of the soil surface (Figure 5).

Uplands

The uplands on the Property consist mostly of mesic woods and active and recently abandoned agricultural fields. The dominant species observed in the mesic woods included sugar maple, bass wood, beech, common buckthorn, wild geranium, and jack-in-the-pulpit. The recently abandoned agricultural fields were dominated by pennycress and common ragweed. Active agricultural fields were most recently planted with alfalfa, corn, and winter wheat.

The majority of the soils in the upland areas of the Property are mapped as Casco loam, Ozaukee silt loam, and Dodge silt loam. The Casco series consists of very deep, somewhat excessively drained soils, which are shallow to stratified calcareous sandy outwash. They formed in loamy alluvium underlain by calcareous stratified sandy outwash on outwash plains, outwash terraces, eskers, kames, and moraines. Permeability is moderate in the loamy mantle and rapid or very rapid in the stratified sandy outwash. The Dodge series consists of very deep well-drained soils formed in loess and in the underlying glacial till on ground moraines, end moraines, and drumlins. Permeability is moderate. The Ozaukee series was described previously. None of these soil series are listed on the List of Hydric Soils for Waukesha County.

Environmental Corridor

NRC's draft refinement of SEWRPC's current Primary Environmental Corridor (PEC) boundary is indicated on Figure 4. Although much of the central wooded area was determined to be non-wetland, this area still meets the definition of Woodland and so remains as PEC. The extent of the SEWRPC-defined PEC was expanded somewhat near its western extent on the Property, to reflect the field determined boundaries of Wetland 3.

Other Environmental Considerations

This report is limited to the identification of state and/or federally regulated wetlands and SEWRPC-defined environmental corridors. In addition, there may be other regulated environmental features on the Property. These environmental features may include but are not limited to historical or archeological features, endangered or threatened species, floodplains, and/or navigable waters.

Specifically the intermittent stream that flows across the central portion of the Property and is adjacent to Wetland 3 will likely be considered navigable by the WDNR. The federal, state, or local unit of government, and/or the regional planning organization may restrict land use within or in close proximity to these features.

Prior to beginning work at this site or disturbing or altering wetlands, waterways, or adjacent lands in any way, NRC strongly recommends that the owner obtain the necessary permits or other agency regulatory review and concurrence with regard to the proposed work in order to comply with applicable regulations. NRC would be happy to assist with any additional resources inventory or identification work at your request, to the extent that the work is within our range of expertise.

CONCLUSIONS

NRC performed a determination and delineation of wetland and primary environmental corridor boundaries on the Briscoe Property in the Village of Germantown, Washington County, Wisconsin. The Property, approximately 145 acres in size, consists of agricultural land bisected by a woodland corridor and an intermittent tributary to the Menomonee River. The Property is located on the east side of the Village between CTH F and STH 167, and east of the railroad right-of-way running northwest to southeast through Section 23, Township 9 North, Range 2 East (Figure 1).

Nine wetland areas were delineated on the Property (Figures 4 & 5). Please note that this delineation identifies the wetland boundary per current federal and state guidelines and that certain activities in and/or adjacent to wetlands and some waterways are subject to regulation and approval by the U.S. Army Corps of Engineers and the Wisconsin Department of Natural Resources. In addition, the village, county or regional planning organization may restrict land use in close proximity to the wetland through setbacks, zoning, buffers or environmental corridors. NRC refined the current SEWRPC environmental corridor boundary for the Property (also shown on Figure 4), based primarily on the on-site wetland delineation and detailed definition of the current extent of the Woodland natural resource element.

The information provided herein regarding wetland boundaries and environmental corridors is preliminary, subject to review by the agencies having jurisdictional authority. The analyses and professional opinions presented are based on the conditions at the time the wetlands and corridor elements were viewed. The ultimate decision on wetland boundaries rests with the U.S. Army Corps of Engineers and, in some cases, the Wisconsin Department of Natural Resources, or a local unit of government. The Southeastern Wisconsin Regional Planning Commission has the authority to determine the extent of environmental corridors. As a result, there may be adjustments to boundaries based upon review by a regulatory agency. An agency wetland determination can vary from time to time depending on various factors including, but not limited to, recent precipitation patterns and the season of the year. In addition, the physical characteristics of the site can change with time, depending on the weather, vegetation patterns, drainage, activities on adjacent parcels, or other events. Any of these factors can change the nature and extent of wetlands and/or environmental corridors on the site. It is recommended the Client obtain an opinion and authority from regulating government agencies before proceeding with any development or utilization of the property. If the Client proceeds to change, modify or utilize the property in question without obtaining authorization from the regulating governmental agency, it will be done at the Client's own risk and Natural Resources Consulting, Inc. will not be responsible or liable for any resulting damages.

REFERENCES

DeLorme 3-D TopoQuads, 1999; United States Geological Survey, *Menomonee Falls, Wisconsin 7.5 Minute Series (Topographic) Maps*.

Rubin, Bruce P. and Gerald H. Emmerich, Jr., 1981. *Refining the Delineation of Environmental Corridors in Southeastern Wisconsin*. IN: Southeastern Wisconsin Regional Planning Commission Technical Record Vol. 4, #2, March 1981

Resource Management Group, *National List of Plant Species that Occur in Wetland Region 3, North Central*, 1995.

United States Army Corps of Engineers (USACE), *Corps of Engineers Wetlands Delineation Manual*, 1987.

USACE, *Questions and Answers on the 1987 Manual*, October 7, 1991.

USACE, *Clarification and Interpretation of the 1987 Manual*, March 6, 1992.

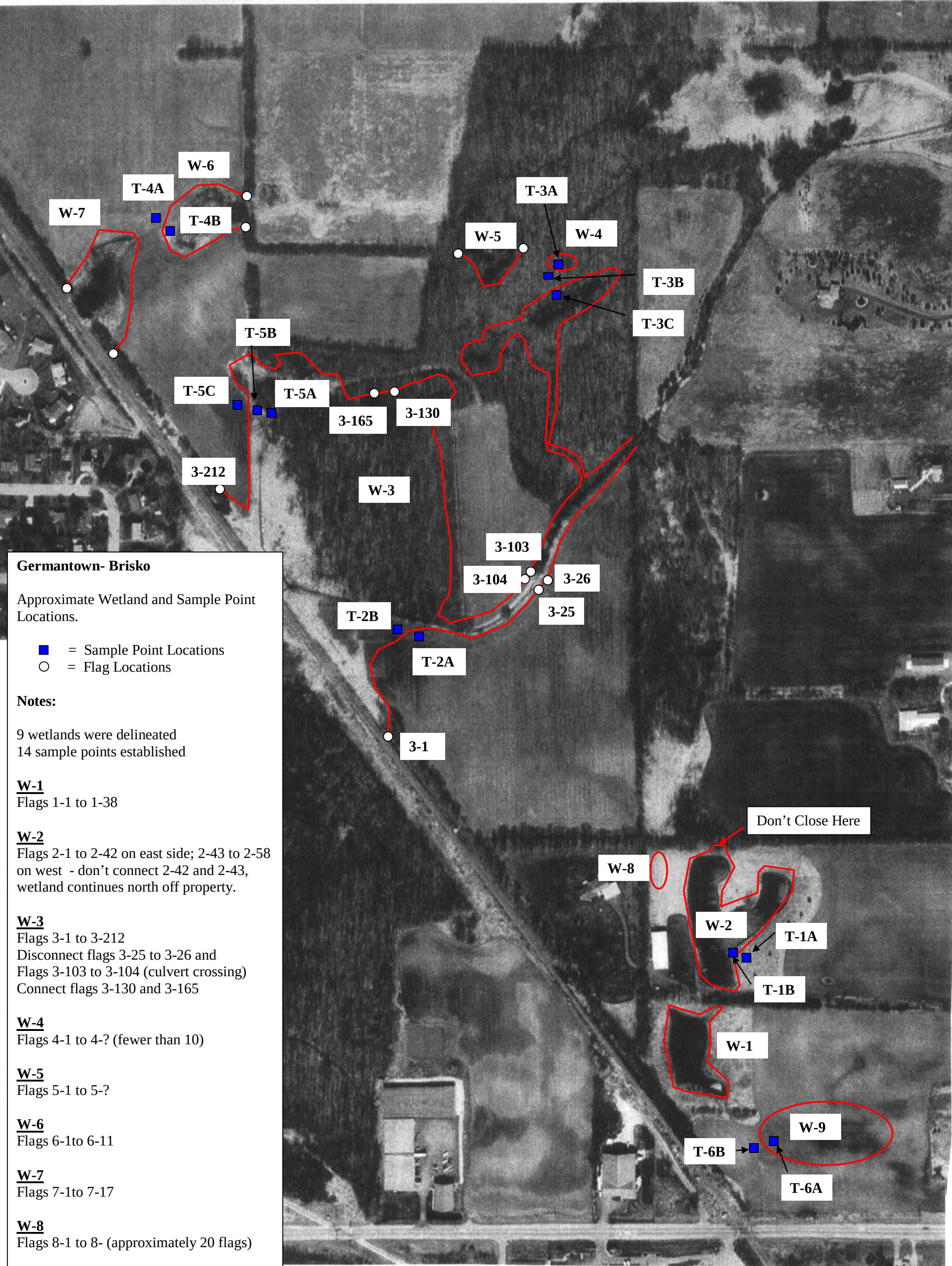
USACE, *Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers*, May 22, 1996.

United States Department of Agriculture (USDA), Soil Conservation Service. 1978. *Soil Survey of Washington County, Wisconsin*.

USDA, Natural Resource Conservation Service (NRCS), *Hydric Soil List for Washington County, Wisconsin*.

Wisconsin Department of Natural Resources, *Wisconsin Wetlands Inventory, Washington County, Wisconsin*.

REPORT FIGURES



Germantown- Brisko

Approximate Wetland and Sample Point Locations.

- = Sample Point Locations
- = Flag Locations

Notes:

9 wetlands were delineated
14 sample points established

W-1

Flags 1-1 to 1-38

W-2

Flags 2-1 to 2-42 on east side; 2-43 to 2-58 on west - don't connect 2-42 and 2-43, wetland continues north off property.

W-3

Flags 3-1 to 3-212
Disconnect flags 3-25 to 3-26 and
Flags 3-103 to 3-104 (culvert crossing)
Connect flags 3-130 and 3-165

W-4

Flags 4-1 to 4-? (fewer than 10)

W-5

Flags 5-1 to 5-?

W-6

Flags 6-1to 6-11

W-7

Flags 7-1to 7-17

W-8

Flags 8-1 to 8- (approximately 20 flags)

W-9

Flags 8-1 to 8- (approximately 20 flags)

Briscoe-Germantown Property
Pioneer Engineering, Inc.
October 14, 2003

Wetland and Environmental Corridor Delineation
Village of Germantown, Washington County, Wisconsin
NRC Project # 03-054

APPENDIX A

U.S. ARMY CORPS OF ENGINEERS DATA SHEETS

03-054



DEPARTMENT OF THE ARMY

ST. PAUL DISTRICT, CORPS OF ENGINEERS
190 FIFTH STREET EAST
ST. PAUL, MN 55101-1638

December 16, 2003

REPLY TO
ATTENTION OF:

Construction-Operations
Regulatory (04-00233-DEH)

Mr. Jeff Kraemer
Natural Resources Consulting, Inc.
119 South Main Street, Suite D
P.O. Box 128
Cottage Grove, Wisconsin 53527-0128

Dear Mr. Kraemer:

This is in response to your request for Corps concurrence with the wetland delineation completed at the Briscoe Property, received on October 16, 2003. The project site is located in Sec. 23, T. 9 N., R. 20 E., Washington County, Wisconsin.

We have reviewed the wetland delineation report you provided and concur that the wetland boundaries at the Briscoe Property have been established in accordance with the 1987 Corps of Engineers wetland delineation manual and are adequate for the purposes of determining Corps jurisdiction. We recommend that the delineated wetland boundaries be identified on any development plans forwarded to our office for review. This wetland delineation shall remain valid for a period of five years from the date of this letter, unless new information warrants revision of the delineation before the expiration date.

We have also completed a jurisdictional determination regarding the delineated wetlands. This jurisdictional determination takes into consideration the U.S. Supreme Court's decision in Solid Waste Agency of Northern Cook County v. Corps of Engineers (the SWANCC decision).

All wetlands delineated in the report are subject to regulation by the Corps under 404 of the Clean Water Act because they are adjacent to a tributary system to the Menomonee River, a tributary to Lake Michigan, an interstate, navigable water of the United States. Therefore, a Department of the Army permit would be required to discharge dredged and/or fill materials into these waterbodies.

Should the development of this property require a discharge of dredged and/or fill materials within the jurisdictional wetlands identified above, our public interest review would include an assessment of ALL wetland impacts associated with the project. This could result in a requirement to provide compensatory mitigation for impacts to non-jurisdictional wetlands as well as jurisdictional wetlands.

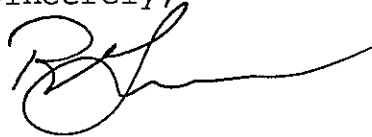
This jurisdictional determination is valid only for the project and waterbody referenced above. It is based on the Headquarters guidance available to us at this time. PLEASE NOTE THAT THIS LETTER DOES NOT ELIMINATE THE NEED FOR OTHER FEDERAL, STATE, LOCAL, OR OTHER AUTHORIZATIONS (SUCH AS THOSE OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES OR WAUKESHA COUNTY).

If you disagree with the enclosed jurisdictional determination, you may provide new information or appeal the jurisdictional determination. Please follow the directions in Section E of the enclosed Notification of Administrative Appeals Options and Process and Request for Appeal.

The decision regarding this action is based on information found in the administrative record, which documents the District's decision-making process, the basis for decision, and the final decision. If you have any questions, contact Dan Hunt in our Waukesha office at (262) 547-7623. In any correspondence or inquiries, please refer to the Regulatory number shown above.

If you have any questions, contact Daniel E. Hunt in our Waukesha office at (262) 547-6986. In any correspondence or inquiries, please refer to the Regulatory number shown above.

Sincerely,



Robert J. Whiting
Chief, Regulatory Branch

Copy furnished to:

Ben Callan, DNR-Milwaukee
Mike Briscoe, Briscoe Development and Management, Inc.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Briscoe Development & Management, Inc.	File Number: 200400233	Date: 12-16-03
Attached is:		See Section below
☐	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
☐	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
☐	PERMIT DENIAL	C
☐	APPROVED JURISDICTIONAL DETERMINATION	D
☒	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg-or> Corps regulations at 33 CFR Part 331.

A. INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approve jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B. PROFFERED PERMIT: You may accept or appeal the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C. PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D. APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact:

Daniel E. Hunt
U. S. Army Corps of Engineers, Regulatory Branch
1617 E. Racine Ave.,
Waukesha, WI 53186

Telephone (262) 547-7623

If you only have questions regarding the appeal process you may also contact:

Division Engineer
c/o Martha S. Chieply, Appeal Review Office
CEMVD
P. O. Box 80
Vicksburg, MS 39181-0080

Telephone (601) 634-5820

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

Date: _____

Telephone number: _____

JURISDICTIONAL DETERMINATION
U.S. Army Corps of Engineers, St. Paul District

APPLICANT: Briscoe Development & Management, Inc.

PROJECT LOCATION/WATERWAY: Menomonee River

FILE NUMBER: 200400233

PROJECT REVIEW COMPLETED: ☒ Office ☐ Field

Jurisdictional Determination (JD): (For sites evaluated under 33 CFR §320-330)

- ☒ Preliminary JD - Based on available information, ☒ *there appear to be* or ☐ *there appear to be no* waters of the United States on the project site. A preliminary JD is not appealable.
- ☐ Approved JD - ☐ *There are* or ☐ *there are no* waters of the United States on the project site, as identified in the basis of jurisdictional determination indicated below. An approved JD is an appealable action (33 CFR §331). The Request for Appeal form may be downloaded from the Corps' Mississippi Valley Division web site at: http://www.mvd.usace.army.mil/nwsinfo/mvd_appeals/pdf/naoraf.pdf or by calling 651-290- 5375.

Basis of Jurisdictional Determination: (Reference 33 CFR §328.3(a) and 329)

- ☐ (1) The waters are currently used, or were used in the past, or may be susceptible for use to transport interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide.
- ☐ (i) Section 10 waters
- ☐ (ii) Other waters that are navigable (document navigability and use in Rationale, below)
- ☐ (2) The waters or wetlands are interstate waters including interstate wetlands¹
- ☐ (3) The waters or wetlands are other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could effect interstate commerce including any such waters:
- ☐ (i) which are or could be used by interstate or foreign travelers for recreational purposes.
- ☐ (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ (iii) which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ (4) The waters or wetlands are impoundments of jurisdictional waters.
- ☐ (5) The waters are a tributary to a water identified in (1) - (4) above
- ☒ (6) The wetlands¹ are adjacent² to interstate or other waters of the US, except for those wetlands adjacent to other wetlands.

Rationale for Basis (applies to any boxes checked above). *If the jurisdictional water is not itself a Section 10 regulated water or water that is navigable, describe the surface connection to the downstream Section 10 water or water that is navigable. If (1) or (3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection:*

The wetlands are connected to the Menomonee River through drainage ditches and other drainage patterns. The Menomonee River flows into Lake Michigan, an interstate navigable water of the United States.

Lateral Extent of Jurisdiction (Reference 33 CFR §328 and 329):

- ☐ Ordinary High Water Mark indicated by:
- ☐ clear, natural line on the bank ☐ litter and debris ☐ shelving ☐ changes in soil
- ☐ destruction of terrestrial vegetation ☐ other: _____
- ☐ Wetland, as shown on the attached wetland delineation map and/or in a jurisdictional report prepared by: _____ (Attach data sheets representing each plant community type, etc.)
- ☒ Additional supporting information. (attach when appropriate) USGS Topo maps, County Soil Survey

Preparer: Sam Hens Date: 12/16/2003

¹Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

²The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.

WETLAND AND WATERWAY INVESTIGATION REPORT

Wrenwood Development Site
Appendix G– Delineator Qualifications
October 4, 2017

Appendix G – Delineator Qualifications

Mr. Parker is a botanist and certified Professional Wetland Scientist, with 30 years of professional and project management experience assisting public and private clientele in Wisconsin, Illinois, Indiana, Ohio, Michigan, North Dakota, Missouri, Pennsylvania, Texas, Maryland, Virginia, and North Carolina. His work has supported thousands of transportation, commercial, utility, residential, industrial & institutional projects. Mr. Parker has served on Stantec's Vegetation, Wetlands & Soils Subject Matter Expert group since 2015. His natural resource specialties include wetland science, botany, endangered resources, restoration & mitigation, environmental regulations & permitting. Mr. Parker has a widespread understanding of the scientific, technical & regulatory aspects of natural resources projects. His interests also include floristic quality assessment (FQA) and wetness categorization of wetland plant species. In 2011 he completed a national study (all 50 states) where he interviewed regional scientists for identifying mis-categorized plant species. This work was in response to a CFR public comment solicitation by the U.S. Army Corps of Engineers.

His experience includes the following: Botanical / Biological Surveys & Natural Resource Inventories; Rare Species Surveys, Conservation Plans & Monitoring; Habitat Restoration, Wildlife Surveys, SCAT surveys, Land Reclamation, Planning & Design; Wetland Determination, Delineation & Functional Assessment; Wetland Restoration, Mitigation, Banking & Monitoring; Environmental Assessments & Impact Statements (EA / EIS); Local / State / Federal Permit Applications & Environmental Documentation; Expert Witness Testimony; Wetland investigations and permitting; and Regulatory permit compliance.

EDUCATION

Critical Methods in Wetland Delineation, UW-LaCrosse Continuing Education and Extension, Madison, WI, 2014, 2016

40-Hour HAZWOPER Training per 29 CFR 1920.120(e), Compliance Solutions Occupational Trainers, Inc., Madison, Wisconsin, 2014 and Annual Refreshers

Wetland Delineation Regional Supplement Field Practicum, Wetland Training Institute, Portage, WI, 2011

Federal Wetland/Waters Regulatory Policy Course, Wetland Training Institute, Cottage Grove, WI, 2010

Advanced Wetland Delineation, UW-LaCrosse, Bayfield County, WI, 2001

Basic Wetland Delineation Training, WI Department of Administration, Waukesha, Wisconsin, 1997

Field Oriented Wetland Delineation Course (1987 Corps Manual), Wetlands Training Institute, St. Paul, MN, 1994

Wetland Ecosystems (including delineation & assessment), USEPA Graduate School, Washington DC, 1988

BS, Watershed Management, Soils Minor, University of Wisconsin - Stevens Point, Stevens Point, WI, 1983

REGISTRATIONS

Professional Wetland Scientist #838, Society of Wetland Scientists Certification Program

Certified Wetland Scientist #C-058, Lake County, Illinois, Lake County Stormwater Management Commission

Qualified Wetland Review Specialist #W-057, Kane County, Illinois, Kane County Stormwater Management

PROJECT EXPERIENCE

Various Wetland Delineations 2016, Various Locations, Wisconsin, Ohio, Michigan and Illinois

Performed various wetland delineations in 2016 including the following projects: AEP Ohio Transmission Company Wavery-Adams-Seaman 138 kV Transmission Line Rebuild, Adams and Pike Counties, OH (Dec.); Kansas West to Faraday Transmission Line, Macon, Moultrie, and Coles Counties, IL (Jan.); Riveredge Nature Center Preliminary, Town of Saukville, Ozaukee County, WI (Feb.); Crooked Lake Residential Lot, Town of Summit, Waukesha County, WI (March); Golden Lake Residential Lot, Town of Summit, Waukesha County, WI (March); Little Muskego Lake Residential Lot, City of Muskego, Waukesha County, WI (March); House Doctors Access, Town of Dekorra, Columbia County, WI (May); Reinders Development Site, Village of Elm Grove, Waukesha County, WI (April); Y16 STH 33 ATC Laydown Yard, Town of Caledonia, Columbia County, WI (June); Y-16 Johnson Rd ATC Laydown Yard, Town of Caledonia, Columbia County, WI (June); Y-16 Fairfield ATC Laydown Yard, Town of Portage-Columbia County, WI (June); Lemont Refinery SWMU 45 Site, Village of Lemont, Will County, IL (June); Lost Creek Wetland Mitigation Site, Town of Stockton, Portage County, WI (June); M&W Marine Vernon Site, town of Vernon, Waukesha County, WI (June); I-43 & Moorland Road Site -City of New Berlin, Waukesha County, WI (March); New Berlin Heights Subdivision, City of New Berlin, Waukesha County, WI (March); STH 67 Elkhorn WisDOT, Towns of Delavan and Geneva, Walworth County, WI (May); 4.41-Acre Duda Property, Town of Geneva, Walworth County, WI (June); USH 45 Union Grove – WisDOT, Town of Yorkville, Racine County, WI (June); 4.13-Acre 3709 West College Avenue Site, City of Franklin, Milwaukee County, WI (July); I-41 Burleigh to Good Hope Rd Corridor WisDOT, Cities of Wauwatosa and Milwaukee, Milwaukee County, WI (July); STH 60 and CTH Y Intersection WisDOT, Town of Cedarburg, Ozaukee County, WI (Aug.); STH 60 Corridor Improvements, Ozaukee and Washington Counties, WI (Aug. – Oct.); Erin Hills Golf Course, Town of Erin, Washington County, WI (Sept.); 1970 Springdale Road Parcel, City of New Berlin, Waukesha County, WI (Sept.); Back 40 Mine Site, Lake Township, Menominee County, MI; Brightwater East Site, Town of Summit, Waukesha County, WI (Oct.); Sandhill Subdivision, Town of Merton, Waukesha County, WI (Oct.); Janka and Gregor Parcels, 124-Acre Reclamation Site-City of New Berlin, Waukesha County, WI (Oct.); 9.8-Acre Bueges Sand & Gravel Pit, City of New Berlin, Waukesha County, WI (Sept.); Lot 1 CSM 10688 Site, City of Muskego, Waukesha County, WI (Oct.); Lake Zurich SW Cell Tower Site, Cuba Township, Lake County, IL (Oct.); Acme Steel Coke Site, City of Chicago, Cook County, IL (Dec.).

Various Wetland Delineations 2015, Various Locations, Wisconsin, Illinois, and Missouri

Performed various wetland delineations in 2015 including the following projects: Bolser Street MO33211-M Cell Tower Site, Town of Trenton, Grundy County, MO (Sept.); Krueger Farm spring wetland verification-Waukesha County, WI (March); Lakeland Animal Shelter, Town of Delavan, Walworth County, WI (April); River Glen Spring wetland verification-Waukesha County, WI (April); Section 9 Development Site, Town of Westport, Dane County, WI (April); Moelter Family Trust Site -Town of Lyons, Walworth County, WI (May); Franzel Rd Site, Town of Eileen, Bayfield County, WI (April); Silver Spring Golf Course, City of Brookfield, Waukesha County, WI (Sept.); Steinhafels Warehouse Addition -City of Pewaukee, Waukesha County, WI (May); O'Halloran Residence Determination, Town of Fontana, Walworth County, WI (June); USH 45 Improvements-WisDOT, Town of Bristol, Kenosha County, WI (June); STH 31 and 165 Parcel, Village of Pleasant Prairie -Kenosha County, WI (July); I-43 Corridor Improvements-WisDOT, Milwaukee and Ozaukee Counties, WI (July); STH 167 and Country Aire Drive Intersection-WisDOT, Village of Germantown, Washington County, WI (August); Oconomowoc Quarry-Town of Oconomowoc, Waukesha County, WI (Oct.); Big Eau Pleine Wetland Mitigation Site -Town of Johnson, Marathon County, WI (August); Summit 48-Acre Parcel, Town of Summit, Waukesha County, WI (October); USH 14 Corridor Improvements-WisDOT, Town of Walworth, Walworth County, WI; Chorneyko Property -Village of Geneva, Walworth County, WI (Nov.); Taylor Road Siding Track Expansion, Towns of Curran and Springfield, Jackson County, WI (Nov.); Blast Cleaning Technologies Parcel, City of New Berlin, Waukesha County, WI (Nov.); Dairyland Greyhound Park -City of Kenosha, Kenosha County, WI (June); Ansay Development Site -Town of Port Washington, Ozaukee County, WI (June); Wilmot Road Cell Tower Site -Village of Pleasant Prairie, Kenosha County, WI (June); Lily Lake Parcel -Town of Wheatland, Kenosha County, WI (Sept.); Aspen Park Apartments-City of Fitchburg, Dane County, WI (Nov.); Petrie Rd. Building Site -Town of Geneva, Walworth County, WI (Nov.); Calhoun-Coffee Rds Site – City of New Berlin, Waukesha County, WI (Oct.); 124-Acre Reclamation Site-City of New Berlin, Waukesha County, WI (Oct.); Erin Hills Golf Course, Town of Erin, Washington County, WI (Oct.); UPS-CACH Site, Village of Hodgkins, Cook County, IL (June); Woodwrights Property-Town of Wheatland, Kenosha County, WI (June); 40-Acre Parcel Development Site-Village of Sussex, Waukesha County, WI (Oct.); Antioch South Cell Tower Site-Village of Lake Villa, Lake County, IL (Oct.); Forest Glen Site-City of Muskego, Waukesha County, WI (Aug.); Eggers Woods Forest Preserve Drainage Improvements, City of Chicago, Cook County, IL (March).

* denotes projects completed with other firms

Various Wetland Delineations 2014, Various Locations, Wisconsin, Illinois, and Michigan

Performed various wetland delineations in 2014 including the following projects: Emerald Park Western Expansion Wetland Delineation, City of Muskego, Waukesha County, WI (Oct.); Arcadia Mining Site-Trempealeau County, WI (April); ATC STEM Site, Muskego, WI (October); Avon-Garage Road Mining Site-Black River Falls, WI (August); Basting Site - Town of Lisbon, WI (Oct.); Capital City Bike Path, Dane County, WI (Oct.); Barland Site, City of Cudahy, WI (Sept.); River Glen Site -Town of Lisbon, WI (May, 2014); Kalamazoo River Parcel, Kalamazoo and Calhoun Counties, MI (July); DeBack Parcel -Muskego, WI (Oct.); Deer Creek Run-Town of Sun Prairie, WI (Oct.); Windsor Crossing -Town of Windsor, Dane County, WI (Sept.); Pleasant View Site -Town of Middleton, Dane County, WI (April); Starfire Site -Franklin, WI (April); G2 Mitigation Site -Town of Omro, Winnebago County, WI (May); Line 6A MP 378.94 Wetland Delineation, McHenry County, IL (September); Geneva National Site, Walworth County, WI (Nov.); Goerke's Corners Self Storage Site-Town of Brookfield, Waukesha County, WI (April); Handel Site -Town of Holman, LaCrosse County, WI (April); KOA Site -DeForest, WI (Oct.); Kohler Ridge Site -New Berlin, WI (Oct.); Camp 8 Site -Village of Lannon, Waukesha County, WI (Sept.); Mallard Creek Subdivision-Oak Creek, WI (May); Muskego Corporate Park Site -Muskego, WI (Sept.); Nortrax Site -Merrill, WI (Oct.); Pewaukee Corporate Park-City of Pewaukee (Oct.); Gregar Parcel-City of Pewaukee, (Oct.); Toberman Parcel-Town of Prairie du Chien, Crawford County, WI (Oct.); UPS CACH Staging Expansion-Town of La Grange, Cook County, IL; West Prairie Village-Town of Sun Prairie, Dane County, WI; Wheeler Road-City of Madison,

Various Wetland Delineations 2013, Various Locations, Wisconsin, Illinois, Ohio, and Michigan

Performed various wetland delineations across Wisconsin in 2013 including the following projects: West Central Lateral - Eau Claire, Clark, Jackson & Monroe Counties, WI (April-May 2013); Murphy Farm Wetland & Primary Environmental Corridor, Pewaukee, WI (October 2013); Walker Cranberry 80-acre Parcel - Cranmoor, WI (Sept - Oct 2013); Citizens Bank Property - Oconomowoc, WI (May 2013); Broken Hill Subdivision, Pewaukee, WI (May, 2013; Agri-Partners Coop Rail siding track, Calumet County, WI (June 2013); Basse Farm Wetland Delineation, City of Muskego, WI (June 2013); Fritz Parcel Wetland Delineation - New Berlin, WI (June 2013); Saltzman Parcel Wetland Investigation - New Berlin, WI (May 2013); Waukesha Gun Club Wetland Delineation-City of Pewaukee, WI (July 2013); Bark Lake Wetland Delineation - Town of Richfield, WI (Aug 2013); Fox River Christian Church Wetland Delineation - Town of Waukesha, WI (Aug 2013); Cedar Grove Warehouse Wetland Delineation - Oostburg, WI (Aug 2013); Waumakee Wetland Delineation - Dane County, WI (Sept 2013); Town of Fulton Wetland Delineation - Rock County, WI (Sept 2013); Berne to Natrium Pipeline, Monroe County, OH (Oct 2013); CNX Noble Pipeline - Noble County, OH (Oct 2013); 4950 Voges Rd Wetland Delineation - Madison, WI (Sept 2013); Pleasant View Subdivision Wetland Delineation - Middleton, WI (Oct 2013); Cherokee Country Club Wetland Delineation - Madison, WI (Oct 2013); Deer Grove Forest Preserve, (November 2013)

Various Wetland Delineations 2012, Various Locations, Wisconsin, Illinois, Indiana, and Texas

Performed various wetland delineations across Wisconsin in 2012 including the following projects: West Central Lateral (190 miles), Eau Claire, Clark, Jackson & Monroe Counties, WI (Sept-Nov 2012); Schwaab Property Wetland & Primary Environmental Corridor, Nashotah, WI (Nov 2012); Trans-Load Rail Loop, Arcadia, WI (Oct 2012); Fiberdome Property Lake Mills, WI (Sept 2012); Morrison Cr Cranberry, Town of Knapp, WI (Aug 2012); London Mitigation Site, Jefferson County, WI (July 2012); Lathers Property Wetland & Primary Environmental Corridor, Waukesha County, WI (June 2012); Southern Access Pipeline, Sawyer and Washburn Counties, WI (June 2012); Reddick Station, Livingston County, IL (May 2012); Confidential Client Site, Jackson County, WI (April 2012); MATC West Parcel, Madison, WI (April 2012); Alpine Business Park, Oregon, WI (April 2012); I-80 Interchange, LaPorte County, IN (March 2012); Eagle-Ford Shale Wetland & Waterway Investigations, LaSalle and McMullen Counties, TX (Jan-Feb 2012)

Various Wetland Delineations 2011, Various Locations, Wisconsin, Illinois, Indiana, and Pennsylvania

Performed various wetland delineation projects throughout Wisconsin in 2011 including the following projects: Plum Creek Site Soil & Water Table Investigation, Oneida County, WI (Dec 2011); 6B Pipeline Porter County, IN (Nov 2011); STH 67 Sharon, Walworth County, WI (Nov 2011); STH 67 Geneva, Walworth County, WI (Nov 2011); STH 175 Germantown/Richfield, WI (Nov 2011); USH 12 Interchanges, Walworth County, WI (Oct 2011); I-43 Interchanges, Ozaukee County, WI (Oct 2011); STH 145 Germantown, WI (Oct 2011); STH 164 Town of Vernon, WI (Oct 2011); STH 20 Village of Waterford, WI (Oct 2011); Serosun Farms Verification, Kane County, IL (Oct 2011); Marcellus-Dominion Pipeline Clinton, Centre and Mifflin Counties, PA (Sept 2011); Big Eau Pleine Site, Marathon County, WI (Aug 2011) Atlas Resins Site, Taylor, WI (Aug 2011); Reynolds Avenue Site, Westport, WI (Aug 2011); Westbridge Site, Waunakee, WI (Aug 2011); ECB Site II, City of Franklin, WI (Aug 2011); Springdale Rd Parcel, New Berlin, WI (Aug 2011); Belleville Industrial Park, Dane County, WI (Aug 2011); Didion Ethanol Plant, Cambria, WI (July 2011); Towns Property, Mukwonago, WI (July 2011); Bagstad Property, Marquette County, WI (June 2011); Life Church Site, Germantown, WI (June 2011); Sauk Prairie Memorial Hospital, Prairie du Sac, WI (June 2011)

Various Preliminary Wetland Identifications 2010-2012, Wisconsin

Performed various preliminary wetland identifications and delineations throughout Wisconsin which included these projects: I-43 Glendale to Grafton (34 miles) - Milwaukee and Ozaukee Counties, WI (May-Aug 2012); STH 60 Jackson to Grafton (9 miles) - Washington and Ozaukee Counties, WI (June-Nov 2012); UW All-Season Softball Site, Madison, WI (Dec 2011); Fiber-Optic Route (40 miles), Wausau, WI (Apr 2011); 27th Street Ponds, Franklin-Oak Creek, WI (July 2010); Burlington Bypass (15 miles), Burlington, WI (Aug 2010); STH 167, Germantown-Mequon, WI (Jul-Aug 2010); USH 45 (10 miles), Bristol, WI (November 2010) STH 20 Roundabout, Dover, WI (November 2010).

Various Wetland Delineations in 2010, Wisconsin

Performed various wetland delineations across Wisconsin in 2010 including the following projects: Substation Site, Cambridge, WI (November 2010); Lake Edge Rd Parcel, McFarland, WI (November 2010); DeBack Parcel, Muskego, WI (October 2010); I-94 at Fox River, Waukesha, WI (October 2010); USH 45, Racine County, WI (October, 2010); ECB Site I, Franklin, WI (October 2010); STH 11 Improvements, Burlington, WI (October, 2010); Glacier Hills Wind Farm, Friesland, WI (Sept-Oct 2010); ISB Site, New Berlin, WI (September 2010); Gilmore Parcel, New Berlin, WI (September 2010); Palmyra SW Park Site, Palmyra, WI (August 2010); Gateway Substation, Beloit, WI (August 2010); Casey Gas Main, Friesland, WI (August 2010); Oakhill Rd Electric Distribution, Deltona, WI (August 2010); Jefferson School District, Jefferson, WI (July 2010); Bothe Property Site, Kenosha, WI (July 2010); WDOT High Speed Rail, Dane, Jefferson and Waukesha Counties, WI (June-September 2010); USH 151 Sun Prairie, (June 2010); Lacy Road Interchange, Fitchburg, WI (May 2010); Sivyier Rd Parcel, St. Francis, WI (April 2010); Seljan Industries, Lake Mills, WI (April 2010); Retail Site, Whitewater, WI (April 2010); Summit Horse Farm Site, Summit, WI (March 2010); STH 11 Site, Walworth County, WI (March 2010); Scot Industries, East Troy, WI (March 2010)

Expert Witness (factual and/or expert for depositions and/or court)

Expert Testimony

*WE Energies Elm Road Generating Station, Oak Creek, WI Laho Property, Kenosha County, WI
Cecchini Property, Racine County, WI
US Department of Justice, A&A Farms, Dane County, WI
James Cape & Sons Sand & Gravel Pit, Washington County, WI*

**Corridor Wetland and Stream Delineations-
Wisconsin, Ohio, Illinois, Indiana, Michigan,
Pennsylvania, and Virginia**

AEP Waverly-Adams-Seaman 138 kV Transmission Line Rebuild (34 miles), Adams and Pike Counties, OH (Crew Lead, Dec. 2016) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water, and upland drainage features; identified dominant plant species in various habitat types and sketched habitat boundaries; identified bat roost trees and searched for hibernacula. Identified access locations. Completed Ohio Rapid Assessment Method for Wetlands v. 5.0 for each wetland delineated; Characterized streams using Qualitative Habitat Evaluation Index (QHEI) and Use Assessment Field Sheet, and the Primary Headwater Habitat Evaluation Form.*

Dominion Virginia Power Line 1 Rebuild (13 miles), Nottaway County, VA (Crew Lead, September, 2015) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water; identified dominant plant species. Mapped wetlands and waterways along potential access routes.*

ET Rover Pipeline (varying segments, 300ft-wide Corridor), Lenawee, Washtenaw, Livingston, Shiawassee, and Genesee Counties, MI (Crew Lead, September, 2014) *Determined and delineated wetlands; Mapped streams-creeks-rivers, drainageways, lakes and ponds; Located drinking water sources; identified and mapped rare, threatened or endangered species habitat; select structures, cultural features, land uses; identified dominant and invasive plant species. Sketched all GPS-mapped features and downloaded GPS data, uploaded to project folder daily with a daily progress report.*

CNX Noble and Berne to Natrium Pipelines (49 miles), Noble and Monroe Counties, OH (Crew Lead, October, 2013) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water, and upland drainage features; identified dominant plant species in various habitat types and sketched habitat boundaries; identified bat roost trees and searched for hibernacula. Completed Ohio Rapid Assessment Method for Wetlands v. 5.0 for each wetland delineated; Characterized streams using Qualitative Habitat Evaluation Index (QHEI) and Use Assessment Field Sheet, and the Primary Headwater Habitat Evaluation (PHHE) Form.*

West Central Lateral Corridor Environmental Surveys (190 Miles, 400ft-wide Corridor), Clark, Eau Claire, Jackson, and Monroe Counties, WI (Project Manager and Crew Lead, August-December, 2012; April-May 2013) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water; identified dominant and invasive plant species in each wetland and adjacent upland. Mapped land uses in the corridor, searched for and mapped rare species and rare species habitat; completed wetland and stream evaluation forms; prepared reports, wetland-waterway permit applications and Certificate of Authority through the Wisconsin DNR and Public Service Commission.*

Eagle-Ford Shale Wetland and Waterway Delineations (numerous pipeline segments), LaSalle and McMullen Counties, TX (Crew Lead, January-February, 2012) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water; identified dominant plant species in each wetland and adjacent upland. Prepared reports and Section 404 wetland permit applications.*

Enbridge 6B Pipeline Improvements (38 miles), Porter County, IN (Crew Lead, November, 2011) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water; searched for rare plant species and habitat. Prepared report.*

Eric C. Parker ^{PWS}

Senior Scientist - Botanist

Marcellus-Dominion Pipeline Corridor (34 miles), Clinton, Centre, and Mifflin Counties, PA (Crew Lead, September, 2011) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water; identified and mapped invasive and dominant plant species in each wetland and adjacent upland. Mapped rare species habitat, searched for and recorded rare plant and animal species. Assisted in report preparation.*

Fiber Optic Route (40 miles), Marathon County, WI (Crew Lead, April, 2011) *Determined and delineated wetlands completing sample points and photo points, identified and mapped streams, open water; identified dominant plant species in each wetland and adjacent upland. Prepared report.*

ATC Paris to St. Martins (KK3025) 138KV Line Rebuild*, Kenosha, Racine and Milwaukee Counties, WI (Project Manager and Lead Scientist) 2005

Budgeted, scheduled, coordinated and participated in numerous project scope activities for an 18-mile corridor such as wetland delineation, waterway identification and data collection, rare species surveys, equipment access road location identification and invasive species populations identification. During the investigation, a total of 59 wetland areas, 10 ditches, 6 ponds, and 3 streams were located within the corridor route. Used GPS equipment for mapping natural resources. Coordinated with landowners. Assisted in the preparation, and reviewed the report that documented the work during the year prior to the 2005 construction.

Guardian II Laterals - Fox Valley, Hartford and West Band*, Outagamie, Calumet, Brown, Washington, and Dodge Counties, WI (Project Manager and Lead Scientist.) 2002-2003

Budgeted, scheduled, coordinated, and participated in numerous activities and scopes of work for the planning and permitting (WI Ch. 30, Section 404/401 and WI NR 103) phases of three gas laterals in 2003, 2006 and 2007; Coordinated with landowners; Determined, delineated, and mapped with a GPS, wetlands, woodlands and waterways; Collected required data and documented all types of natural resources through photography and data forms; Searched for rare species; Assisted in the preparation of data tables summarizing and quantifying impacts to wetlands, woodlands, waterways and agricultural lands; Coordinated with client of minor modifications to the pipeline routes to better protect various natural resources; Assisted client in regulatory agency coordination; Assisted with, prepared, and reviewed all reports.

* denotes projects completed with other firms

Eric C. Parker ^{PWS}

Senior Scientist - Botanist

Ixonia and Port Washington Gas Laterals*, Jefferson, Waukesha, Ozaukee and Washington Counties, WI (Third Party Wetland Monitor (Inspector)/Project Manager and Lead Scientist) 2002-2003

Reported directly to WDNR for permit compliance (Ixonia Lateral) during the construction of approximately 50 miles of natural gas pipelines. Determined, delineated, assessed function, reviewed and staked wetland and waterway wetland boundaries including the use of a GPS; Participated in meetings with client and regulatory agency staff to determine both general and site specific plan modifications to minimize environmental impacts; Installed signage identifying wetland boundaries and worked with the client and regulatory agency staff in determining work space limits to balance project needs with protecting natural systems; Reviewed and approved vegetation clearing limits and equipment access locations based on wetland and other plant community quality and function; Provided specific recommendations to comply with permit conditions regarding horizontal directional drilling and temporary and permanent erosion control issues proximate to wetlands and waterways; Reviewed proposed work space areas for potential damage to high quality natural areas such as relic prairie or woodland, or extant populations of uncommon or listed rare plant species; Responded to urgent construction issues such as a clean-up for a frac-out during an HDD operation; Reviewed proposed methods and locations for agricultural best management practices such as full topsoil removal and triple lift soil segregation; Inspected erosion control facilities for compliance with WDNR's technical standards; Reviewed invasive species control plans; Consulted on the most feasible and efficient BMP for erosion control.

Utility Corridor Environmental Assessments Various Pipeline Environmental Screening, Wisconsin

Mr. Parker conducted pre-construction wetland, rare species, and waterway mapping and permitting in support for electric distribution and gas pipeline upgrade projects for We Energies. Coordinated with customer service technicians, electrical engineers, erosion control specialists and other environmental staff. Projects included: Lincoln-Arthur Gas Main Replacement; Adams 475 HP Gas Phase 1, Waushara County; Adams 475 Phase 2, Waushara-Adams Counties; Wolf Paving Gas Extension, Waukesha County; Hi Crush Pipeline, Tomah, WI

Southern Access Pipeline (crude oil) Project Stage 1 (321 miles), Douglas to Rock Counties, Wisconsin

Conducted post-construction erosion control, wetland, rare species, and waterway monitoring during the multi-year post-construction monitoring period. Coordinated with other team members on the organization, maintenance, and summaries of data.

Electric Distribution Environmental Screening

Conducted pre-construction wetland, rare species and waterway mapping and permitting in support for electric distribution and gas pipeline upgrade projects for We Energies. Coordinated with customer service technicians, electrical engineers, erosion control specialists and other environmental staff. Projects included STH 26, Jefferson/Rock Counties, WI (2011-2012); Brookfield Square X12863, Brookfield, WI (Jan 2012); Moorland Emerald Drive, Brookfield, WI (Jan 2012); Saylesville X20961 Retire, Dodge County, WI (2011); Saylesville X20962, Dodge County, WI (2011); US Biogas, Sheboygan County, WI (Dec 2011); Saylesville Electric Distribution, Hartford, WI (Mar 2011); Barton Electric Distribution, West Bend, WI (Mar 2011); Sullivan SS Electric Distribution, Sullivan, WI (Jan 2011); Waubeka Electric Distribution, Waubeka, WI (Jan 2011)

Botanical Surveys

Kalamazoo River and Talmadge Creek 2013 (Baseline) and 2014, 2015 and 2016 Botanical Surveys, Calhoun and Kalamazoo Counties, Michigan

Head botanist for comprehensive floristic sampling along 40 miles of creek and river floodplain identifying and measuring cover, height, and density of herbaceous, shrub, tree and woody vines at pre-determined randomly selected points in both impact and control areas. Invasive plant species surveys were also completed by mapping their locations and determining their percent cover. Rare plant species were also identified and documented.

Tank 80 Mitigation Site Monitoring Final Year Botanical Survey, Lake County, Indiana

Lead botanist for floristic sampling along transects across the site where 50 herbaceous quadrats and a meander survey were completed as part of the final year of monitoring. Invasive plant species were also identified.

* denotes projects completed with other firms

Eric C. Parker ^{PWS}

Senior Scientist - Botanist

Wildlife Surveys

Blacktail Creek Cleanup and Restoration, Williston, ND February and March 2015 (Project Scientist)

Participated in daily evaluations of wildlife use along an approximately 6-mile reach of Blacktail Creek in Williams County, ND during brine-oil cleanup operations. Assessed habitat and assisted in the selection of wildlife trap locations. Recorded and reported on all wildlife (bird, mammal, aquatic invertebrate, and fish species); sightings included track identifications in snow and mud; work completed daily for a total of 31 days in two rotations. Served as the lead wildlife biologist while deploying amphibian and turtle traps to monitor populations during the initial early spring monitoring event; supervised chorus surveys; collected dead fauna, logged, and completed chain of command forms for storage and laboratory analysis (February, March, and April, 2015); Prepared Eco-SCAT daily reports.

Endangered Species Act Assessments

ATC T&E Survey, Straits to Pine River, Michigan

Conducted rare plant species surveys, invasive plant species surveys, and natural resources inventories along existing transmission line rights-of-way in 2010.

ATC T&E Survey, Mukwonago to Whitewater, Waukesha/Walworth Counties, WI (Subconsultant Project Manager and Lead Scientist)

Surveyed a 22-mile corridor where transmission lines were being upgraded for state and federally-listed special concern, threatened and endangered plant species. Provided completed rare plant reporting forms, photographs, and site sketches for the report.

Endangered Species/Species at Risk Assessments

Prairie White-Fringed Orchid Surveys, Illinois, and Wisconsin

Conducted surveys for this federally listed plant species along transmission line rights-of-way and proposed gas / oil pipe routes for various clients in 2013.

Botanical Survey, Greene County, Pennsylvania

*Mr. Parker served as lead scientist in a botanical survey for a proposed natural gas gathering pipeline in Greene County, PA. To evaluate potential impacts on two state-listed rare plant species, the team conducted a late season survey for passionflower (*Passiflora lutea*, PA Endangered) and leaf-cup (*Smallanthus uvedalius*, Proposed PA Rare). In addition to habitat mapping we mapped community types and compiled representative lists of plant species within the project corridor. The team provided the location of one large population of leaf-cup. The resulting reporting and coordination with the Pennsylvania Department of Conservation and Natural Resources (PADCNR) recommended avoidance strategies. This facilitated the client's ability to proceed with the project while providing additional documentation of rare plant populations to PADCNR.*

Various Vegetation Inventories, Indiana, Michigan, Illinois, Ohio, North Dakota, Pennsylvania, Texas, Wisconsin

Mr. Parker was responsible for several vegetation inventories in 2011-2015, projects included: West Central Gas Lateral Vegetation Surveys, Eau Claire, Clark, Jackson & Monroe Counties, WI; Griffith Terminal Mitigation Site Plant Inventory, City of Griffith, Lake County, IN; Confidential Client Plant Survey, Town of Bear Bluff, Jackson County, WI; McMahon Woods and Fen Vegetation Survey, Cook County, IL; Deer Grove East Plant Inventory, Cook County, IL; Barrington Hills Transmission Line Survey, Illinois; Southern Access Vegetation Inventory and Monitoring, Sawyer and Washburn Counties, WI; Emerald Park Avian Survey, Waukesha County, WI; Eagle-Ford Shale T&E Species and Plant Surveys, LaSalle and McMullen Counties, TX; 6B Pipeline Rare & Invasive Plant Species Surveys, Kalamazoo and Calhoun Counties, MI (Lead Botanist) and, Porter County, IN; Busse Woods Plant Inventory, Cook County, IL (Lead Scientist); Greene Gathering Rare Plant Survey and DCNR Wild Plant Management Permit Application, Greene County, PA; Marcellus Pipeline Rare & Invasive Plant Species Survey, Clinton, Centre & Mifflin Counties, PA; Gogebic Taconite Mine Site, Ashland and Iron Counties, WI, Rover Pipeline Wetland and Rare Species Surveys, Washtenaw, Livingston, Shiawassee and Genesee Counties, MI; Blacktail Creek Vegetation Recovery Assessment, Williams County, ND.

* denotes projects completed with other firms

Eric C. Parker ^{PWS}

Senior Scientist - Botanist

Shoreline Contamination Assessment Technique (SCAT) Surveys

Blacktail Creek Cleanup and Restoration, Williston, ND February and March 2015 (Project Scientist)

Participated in daily walk-throughs to evaluate an approximately 6-mile reach of Blacktail Creek during brine-oil cleanup operations to determine surface oil distribution (percent covers), surface oiling (thickness and type), and shallow subsurface oiling types; Coordinated with Stantec operations staff and agency staff. Prepared daily reports that also included wildlife surveys (Eco-SCAT Daily Summaries).

Soil Quality Assessment

Schneider Cheese Factory Soils Investigation, Waldo, WI (Project Scientist)

Evaluated soils on land adjacent to the cheese factory. Sampled soil from nine test pits for sieve and hydrometer analysis for the identification of the most feasible location for a proposed ridge and furrow waste water treatment system. Confirmed location of adjacent wetlands to avoid impacts. Coordinated with the WDNR and wrote the technical memorandum associated with the laboratory analyses of the soils.

Various Wetland Delineations Prior to 2010

USH 41 Wetlands Investigation*, Township of Eldorado, WI (Project Manager and Lead Scientist)

Conducted an investigation to identify all wetlands and determine their boundaries along a 4.5-mile segment of highway. Located a rare tree species and delineated the location of the population. Prepared a report for use in a Section 404 Permit application and the environment document.

STH 175 Wetlands Investigation*, Theresa, WI (Project Manager and Lead Scientist)

Conducted wetland delineation and assessment services for a 1.5-mile segment of rural highway where vertical and horizontal re-alignments were proposed. Prepared a report which was used to document wetland impacts in a Section 404 Permit application with the U.S. Army Corps of Engineers and Wisconsin Department of Natural Resources.

STH 67 Wetland Investigation*, Fond du Lac County, WI (Project Manager and Lead Scientist)

Conducted wetland delineation and assessment for WDOT Southeast Region associated with a 4.2-mile segment of highway proposed to be reconstructed. Coordinated the survey of the wetland boundary flags and prepared the report.

STH 23 Wetlands Investigation*, Fond du Lac County, WI (Project Manager and Lead Scientist)

Conducted wetland delineation and assessment for WDOT Southeast Region. Identified, delineated, and assessed all wetlands within two highway corridors totaling 7.1 miles in length. Coordinated the survey of the wetland boundary flags and prepared the report.

STH 149 Wetlands Investigation*, Fond du Lac County, WI (Project Manager and Lead Scientist)

Provided initial consultation to the client and recommended a scope of services. Conducted the field work for the wetland delineation and assessment, wildlife habitat analysis, stream navigability check, and environmental assessment of open land. Coordinated all graphic preparation and drafted the report.

Rawson Avenue Wetlands Investigation*, Franklin, WI (Project Professional and Lead Scientist)

Delineated and assessed four wetland plant communities in a 3.4-mile segment of a road which was proposed to be expanded from two to four lanes. Prepared a report. Conducted a study to identify the most feasible location for a compensatory wetland mitigation site for impacts proposed to wetlands and satisfy the requirements of a Section 404 Permit from the U.S. Army Corps of Engineers and project concurrence from the Wisconsin Department of Natural Resources.

* denotes projects completed with other firms

Eric C. Parker PWS

Senior Scientist - Botanist

West Puerner Street Wetland Investigation*, Jefferson, WI (Project Professional and Lead Scientist)

Conducted wetlands services on a 25-acre corridor crossing the Rock River on the north side of the City of Jefferson. One wetland contiguous with the Rock River was delineated. A report was prepared and the wetland's values were assessed to determine impacts of a proposed bridge, approaches, and roadway. Coordinated with U.S. Army Corps of Engineers and the Wisconsin Department of Natural Resources to obtain their concurrence on the preferred alternative and all necessary permits. Studied the feasibility to conduct compensatory wetland mitigation, both on-site and near-site.

Lake Forest Health and Fitness Institute Wetlands Study*, Lake Forest, IL (Project Professional and Lead Scientist)

Identified and delineated all wetlands on 60 acres of property on and adjacent to a proposed development site. Wrote the initial investigation report and advised the client on wetlands regulations. Assessed the wetlands' functions and values. Prepared the preliminary and final mitigation plans, as well as the Mitigation Implementation Plan. Prepared the joint federal and state permit application. Coordinated with agency personnel, engineers, and the client in a successful effort to obtain a U.S. Army Corps of Engineers permit (with state certification).

Wetland Investigation*, Oak Creek, WI (Project Manager and Lead Scientist)

Conducted wetland delineation services on a 22-acre site proposed for development as a residential property. Identified one 2.5-acre wetland on the site. Prepared the report.

Wetland Enhancement Pond*, Burlington, WI (Project Professional and Lead Scientist)

Flagged wetland boundaries within the potential storm water management area and assessed the functional values of the wetland using the WDNR's Rapid Assessment Methodology for Evaluating Wetland Functional Values (RAM). The RAM was the basis for the final recommendations to create a 4-foot-deep two-stage pond with gradual side slopes that both enhances wildlife habitat and the quality of water entering the Fox River.

29-Acre Retail Building Site Wetlands Investigation*, Franklin, WI (Project Manager and Lead Scientist)

Conducted wetland delineation for a commercial development. Coordinated with agencies to review the validity of previously identified wetlands that have become uplands. Obtained concurrence on delineated wetland boundaries from the regulatory agencies. Prepared a report documenting the investigation that included a review of regulatory constraints.

55-Acre Retail Building Site Wetlands Investigation*, Menomonee Falls, WI (Project Manager and Lead Scientist)

Conducted wetland delineation on a site proposed to be used for a commercial development. Prepared a report documenting the investigation that included a review of regulatory constraints. Coordinated with jurisdictional agency personnel and obtained their concurrence on wetland boundary locations.

Cedar Lake Road Utility Extensions Wetland Investigation*, Roud Lake, IL (Project Professional and Lead Scientist)

Identified and delineated three jurisdictional wetland areas in the vicinity of proposed sewer and water utility extensions. Provided agency coordination for approvals of the project adjacent to an "Advance Identification" (ADID) wetland associated with Squaw Creek, and receipt of a nationwide permit No. 12 for proposed work in an isolated wetland adjacent to Nippersink and Cedar Lake Roads.

West Puetz Road Wetlands Investigation*, Franklin, WI (Project Professional and Lead Scientist)

*Assessed the functional values of five wetland plant communities and prepared a report for use in obtaining agency concurrence and permits. Conducted a feasibility study to determine the best location for compensatory mitigation for wetland impacts in the project area. Prepared a plan to complete a wetland creation/restoration project on-site and assisted in agency coordination to obtain a FONSI for a Type II environmental document and obtain a Section 404 Permit. Discovered the state champion black cherry (*Prunus serotina*) tree in the project corridor and documented with WDNR.*

* denotes projects completed with other firms

Eric C. Parker PWS

Senior Scientist - Botanist

Proposed Quarry Stream and Wetland Hydrology Study*, Saukville, WI (Project Manager and Lead Wetland Scientist)

Conducted a two year study to collect baseline data from a navigable stream and adjacent wetlands on a 185-acre site. Data included measurements of stream discharges and shallow ground water levels in the wetlands, and a fisheries habitat analysis. The purpose of the study was to identify potential impacts of the proposed quarry on wetland functions and values with an emphasis in fisheries habitat enhancements.

Proposed Quarry Wetland Hydrology Study*, Lannon, WI (Project Professional and Lead Wetland Scientist)

Conducted two investigations of wetlands adjacent to the Fox River to determine water table depths, ground water flow directions, and sediment conductivity adjacent to proposed quarry locations. The projects involved monitoring well location, installation, monitoring, and agency/landowner coordination. The studies involved hydrogeologic modeling and wetland assessment to determine effects of an adjacent quarry on wetland hydrology.

Oconomowoc Bypass Wetland Mitigation Design*, Jefferson County, WI (Lead Scientist)

Prepared concepts, preliminary and final plans & specifications for the restoration and enhancement of forested wetlands and wetland buffer on a 117-Acre site located partly in the floodplain of the Rock River; Determined, delineated and assessed wetlands on the existing site and prepared a report; Coordinated with a contractor to cut and herbicide invasive species such as reed canary grass and common buckthorn prior to site construction.

Glacier Ridge Wetland Mitigation Bank Design*, Dodge County, WI (Project Manager and Lead Scientist)

Budgeted, scheduled, coordinated and participated in numerous tasks to design the first private wetland mitigation bank in Wisconsin under NR 350; Prepared concepts, preliminary plans and final plans and specifications for the restoration and enhancement of wetland and upland prairie/woodland buffer plant communities on four sites totaling 245 acres; Reviewed the delineation of all existing wetlands; Coordinated and met with the Mitigation Bank Review Team (MBRT) comprised of staff from the Wisconsin Department of Natural Resources, the US Fish & Wildlife Service, the US Army Corps of Engineers, the US Environmental Protection Agency, and the US Dept of Agriculture Natural Resource Conservation Service; Assisted in the preparation of a compensation site plan including a management and monitoring plan for 10 years post construction.

North End Quarry Environmental Investigation*, Lisbon, WI (Project Professional and Wetland Scientist)

Provided initial consultation to the client and recommended a scope of services. Conducted the field work for the wetland delineation and assessment, wildlife habitat analysis, stream navigability check, and environmental assessment of open land. Coordinated all graphic preparation and drafted the report.

Franklin Quarry Wetland Investigation*, Franklin, WI (Project Manager and Wetland Scientist)

Conducted wetland delineation, assessment, and mitigation services on a 40-acre quarry expansion site. Developed a site history to document land uses and assisted in the preparation of the report to be included in the Section 404 permit application with the U.S. Army Corps of Engineers. Provided jurisdictional agency coordination.

Bartelt Parcel Wetlands Investigation*, Lisbon, WI (Project Manager and Wetland Scientist)

Conducted wetlands delineation and assessment services on an 80-acre site proposed for sand and gravel extraction. Prepared a Chapter 30/NR 340 permit application for future quarrying adjacent to a pond and wetland and a Section 404 permit for an acceleration lane adjacent to wetlands. Coordinated with jurisdictional agencies.

* denotes projects completed with other firms

Eric C. Parker PWS

Senior Scientist - Botanist

Bristol Interceptor Environmental Assessment*, Bristol, WI (Project Professional and Wetland Scientist)

Performed a flora and fauna study of a utility corridor 75 to 100 feet wide and two miles long. Identified, delineated and assessed 5 wetlands that coincided with the corridor. Wrote the environmental assessment and wetland investigation reports. Prepared permit application and coordinated with the jurisdictional agencies.

Village of Jackson Utility Extensions, Wetland Investigation*, Jackson, WI (Project Manager and Lead Scientist)

Identified, delineated, and classified wetland areas along 5.5 miles of proposed sewer and water utility extensions. Provided an endangered, threatened, and special concern species survey along the proposed corridor. Coordinated with agencies for wetland boundary concurrence. Providing Chapter 30 and Section 404 permitting assistance.

Town of Mt. Pleasant, Pike River Improvements*, Racine County, WI (Project Manager and Lead Wetland Scientist)

Identified, delineated, and assessed 37 wetlands in a 920-acre study area to identify potential wetland impacts from a stream channel improvement and realignment project. Presented and assisted at facilitated meetings with agencies, engineers, and the client. Prepare conceptual wetland restoration plans.

Big Rib River Crossing at CTH O Wetlands Investigation*, Marathon, WI (Project Manager and Lead Wetland Scientist)

Identified, delineated, and assessed wetlands and other valuable habitats within a 70-acre study area. The results of the study may be used to evaluate environmental impacts of a highway project. Recommended a corridor for a new bridge and approaches and potential mitigation sites. Coordinated with jurisdictional agencies. Prepared all documentation and drafted the report.

STH 31 Reconstruction Wetland Investigation*, Caledonia and Mount Pleasant, WI (Project Professional and Lead Scientist)

A wetland investigation was conducted to identify the location and extent of jurisdictional wetlands within a 110-acre study area. Ten wetland plant communities were identified, flagged in the field, and surveyed. A total of 0.956 acres of wetlands were determined to be within the fill limits of the proposed highway reconstruction. Wetland functional values were assessed for the wetlands that were to be incorporated, and a mitigation siting study was conducted. The results of the investigations were presented in reports to WDOT Southeast Region as a component of the project's environmental documentation. Prepared the Section 404 permit application and coordinated with jurisdictional agency personnel.

STH 33 Reconstruction Wetland Investigation*, West Bend, WI (Project Professional and Lead Scientist)

A wetland investigation was conducted to identify the location and extent of jurisdictional wetland within an 8.5-acre study area, assess functional values, and describe effects of a highway reconstruction project on wetlands. Two wetland plant communities were identified, flagged in the field, surveyed, and described. It was determined that a 0.84-acre of wetland would be impacted by the reconstruction. Jurisdictional agencies were contacted and a scope of work to identify a potential mitigation site was generated. The work was documented in a report and submitted to WDOT Southeast Region. Completed a wetland mitigation site search and recommended a site for selection and prepared a plan for wetlands restoration.

USH 151 Reconstruction and Bypass Wetlands Investigation*, Fond du Lac County, WI (Project Professional and Lead Scientist)

Conducted wetland delineation and assessment services for Wisconsin Department of Transportation Southeast Region associated with a highway reconstruction project. Identified, delineated, and assessed 103 wetlands within selected highway corridors totaling approximately 33 miles in length. Information from the investigations were used by the client to determine impacts to wetlands and to secure permits and approvals from jurisdictional agencies.

* denotes projects completed with other firms

Eric C. Parker ^{PWS}

Senior Scientist - Botanist

Mukwonago Bypass Wetlands Assessment*, Waukesha County, WI (Project Manager and Lead Scientist)

Conducted an assessment of wetland functional values for three wetlands in a 400-acre study area traversed by the Mukwonago River. The wetland assessment was used to evaluate impacts of a proposed bypass for STH 83 around the east side of Mukwonago. Fourteen endangered, threatened, or special concern plant and animal species were known from the Mukwonago River corridor, and were considered in the assessments where high to exceptional significance ratings prevailed.

CTH Q Wetlands Investigation*, Shawano County, WI (Project Professional and Lead Scientist)

Delineated and assessed eleven wetlands along a 3.5-mile segment of rural highway and a 0.7-mile realignment corridor. Prepared a report and coordinated with agency personnel. Prepared and submitted a Section 404 Permit application and secured all necessary wetlands related permits and approvals from regulatory agencies. Prepared the compensatory wetland mitigation plan.

USH 10 Wetland and Waterway Mapping (I-39 to Marshfield)*, Portage and Wood Counties, WI (Project Manager, Principal-in-Charge, Lead Scientist)

Budgeted, scheduled, coordinated and participated in numerous tasks to map wetlands and waterways along two contiguous freeway corridor segments totaling approximately 35 miles in length during the growing seasons of 2005 and 2007; Supervised and participated in the final determination, delineation, classification and GPS survey of 174 wetlands; Reviewed and helped write the report.

Deer Grove Forest Preserve Wetland Delineation and Restoration*, Cook County, IL (Project Manager and Lead Scientist)

Budgeted, scheduled, coordinated and participated in numerous tasks to map and classify wetlands and waterways on a 628-acre site located on lands owned by the Forest Preserve District of Cook County. Supervised and participated in final wetland determinations and delineations of 40 wetlands comprising 188 acres; Used GPS to locate wetland boundaries and coordinated with the client, forest preserve district staff and US Army Corps of Engineers regulatory staff in the concurrence of the wetland delineation work; Assisted in the preparation and reviewed the report; Assisted in the preparation of a wetland and upland prairie/woodland restoration concept for the purpose of helping to meet the mitigation requirements of the O'Hare International Airport expansion.

Germantown Sand & Gravel Pit Wetland Restoration*, Washington County, WI (Project Manager and Lead Scientist)

Budgeted, scheduled, coordinated and participated in numerous tasks for analyzing alternatives to discharging water from a non-metallic mining operation, and analyzing the effects of ceasing water discharges through an existing waterway into downstream wetlands on an adjacent property; Completed wetland functional assessment and water budget analysis to determine the effects of the discharge on the sustainability and quality of the wetlands; Prepared applications and plans to obtain Wisconsin Pollution Discharge Elimination System (WPDES) and Chapter 30 permits to discharge into a state navigable waterway; Provided expert testimony for same; Assisted in the design of a sedimentation pond to remove 80% of the suspended solids at a discharge flow of over 1,000,000 gallons per day from the 130-Acre sand & gravel pit; Coordinated with the adjacent landowner, client, agency staff to prepare and implement a plant to remove sediment deposited on an adjacent property.

* denotes projects completed with other firms

Eric C. Parker PWS

Senior Scientist - Botanist

I-94 Corridor Wetland and Primary Environmental Corridor Mapping and Endangered Species Study*, Milwaukee, Racine, and Kenosha Counties, WI (Project Manager and Lead Scientist)

*Budgeted, scheduled, coordinated and participated in numerous tasks to map wetlands, primary environmental corridor and waterways, and search for rare species in a freeway corridor approximately 34 miles long. Supervised and participated in the preliminary determination, delineation, GPS mapping, and classification of 171 wetlands and 19 separate plant communities within primary environmental corridor; Supervised and participated in the final determination, delineation, classification and surveying of 85 wetlands within seven interchange areas that were designated for significant improvements; Reviewed and helped write the report; Supervised and conducted a rare species survey during the 2006 growing season to search for plant species that were listed as special concern, threatened or endangered by the State of Wisconsin; Prepared the report; Mapped locations of rare species using a GPS, and coordinated with the client and regulatory agency staff; Prepared a plan to mitigate roadway improvement impacts to seaside crowfoot (*Ranunculus cymbalaria*) through transplantation to an on-site location and obtained concurrence from the WDNR.*

Elm Road Generating Station*, Oak Creek & Caledonia, WI (Project Manager & Lead Scientist)

Budgeted, scheduled, coordinated and participated in numerous environmental projects involving the planning and construction of a power plant. Beginning in 2002 determined, delineated and classified over 70 different wetlands on properties totaling approximately 1,000 acres including over three miles of railroad. Located wetland boundaries, sample points and other natural features through the use of GPS equipment with real-time one-meter accuracy; Assessed the functions of 127 wetlands for Chapter 30, Section 404/401 and NR 103 permitting purposes; Searched for suitable sites (both on-site and near-site) for compensatory wetland mitigation to off-set over 20 acres of wetland impacts; Studied potential sites for feasibility of wetland restoration, enhancement and creation; Prepared conceptual and final compensation site plans and designed four selected sites that included restoration and/or enhancements to wet meadow, shallow marsh, hardwood swamp, mesic woodland, savanna, tallgrass prairie and streams; Submitted the mitigation plans to the client and agencies and obtained all necessary permits and approvals; Prepared bid documents and specifications for the construction of the mitigation sites; Provided direct consultation with the site contractor during construction of the mitigation sites which concluded in 2007.

McMahon Woods and Fen Plant Community Mapping*, Cook County, IL (Principal-in-Charge and Lead Scientist)

Budgeted, scheduled, coordinated and participated in numerous tasks to map and classify plant communities on a 470-acre site where rare habitat for a federally-listed Hines emerald dragonfly and uncommon flora exist. Supervised and participated in the identification of 75 plant communities in accordance with the Chicago Wilderness Terrestrial Community Classification System outlined in their Biodiversity Recovery Plan; Used GPS to locate plant community boundaries and coordinated with the client, forest preserve district staff and US Army Corps of Engineers regulatory staff; Assisted in the preparation and reviewed the report; Assisted in the preparation of a wetland restoration concept for the purpose of helping to meet the mitigation requirements of the O'Hare International Airport expansion.

* denotes projects completed with other firms

Eric C. Parker PWS

Senior Scientist - Botanist

Tri-State Tollway, Deerfield Plaza Wetland and Endangered Species Investigation*, Lake and Cook Counties, IL (Lead Scientist)

Conducted wetland delineation and assessment services for segments of the Tollway, totaling 5 miles. Wetland impacts were determined for reconstruction of the toll plaza and widening of the highway facilities adjacent to the plaza. Conducted an investigation to determine the extent of occurrence of Seaside Crowfoot, an endangered plant species in Illinois. Prepared plans to mitigate impacts of the highway and toll plaza reconstruction on both wetlands and the endangered species. Coordinated with agency personnel, prepared construction documents and specifications and wrote reports. Prepared Section 404 permit applications and obtained the permits with 401 Certification from the Illinois Department of Natural Resources. Conducted an investigation of trees and shrubs that would be impacted by the expansion of the toll plaza.

Guardian II Laterals*, Fox Valley, Hartford and West Bend, WI

Project Manager and Lead Scientist. Budgeted, scheduled, coordinated and participated in numerous activities and scopes of work for the planning and permitting (Chapter 30, Section 404/401 and NR 103) phases of three gas laterals in 2003, 2006 and 2007; Coordinated with landowners; Determined, delineated and mapped with a GPS, wetlands, woodlands and waterways; Collected required data and documented all types of natural resources through photography and data forms; Searched for rare species; Assisted in the preparation of data tables summarizing and quantifying impacts to wetlands, woodlands, waterways and agricultural lands; Coordinated with client on minor modifications to the pipeline routes to better protect various natural resources; Assisted client in regulatory agency coordination; Assisted prepare, and reviewed all reports.

* denotes projects completed with other firms

**SITE PLAN &
CERTIFIED SURVEY MAP (CSM) APPLICATIONS**
7/23/18 Plan Commission Meeting

Zilber Property Group / Towne Realty Inc. / Briggs & Stratton Corp.
Village Planner Report **Germantown, Wisconsin**

Summary

Chad Navis, Zilber Property Group, agent for Towne Realty Inc., and the Briggs & Stratton Corporation, is requesting approval of a 2-lot Certified Survey Map (CSM), Site Development and Building Plans for Phase I development of the 146.5-acre Germantown Corporate Park located on Holy Hill Road east of US41 including a 706,000 sqft distribution/warehouse facility for the Briggs & Stratton Corporation.

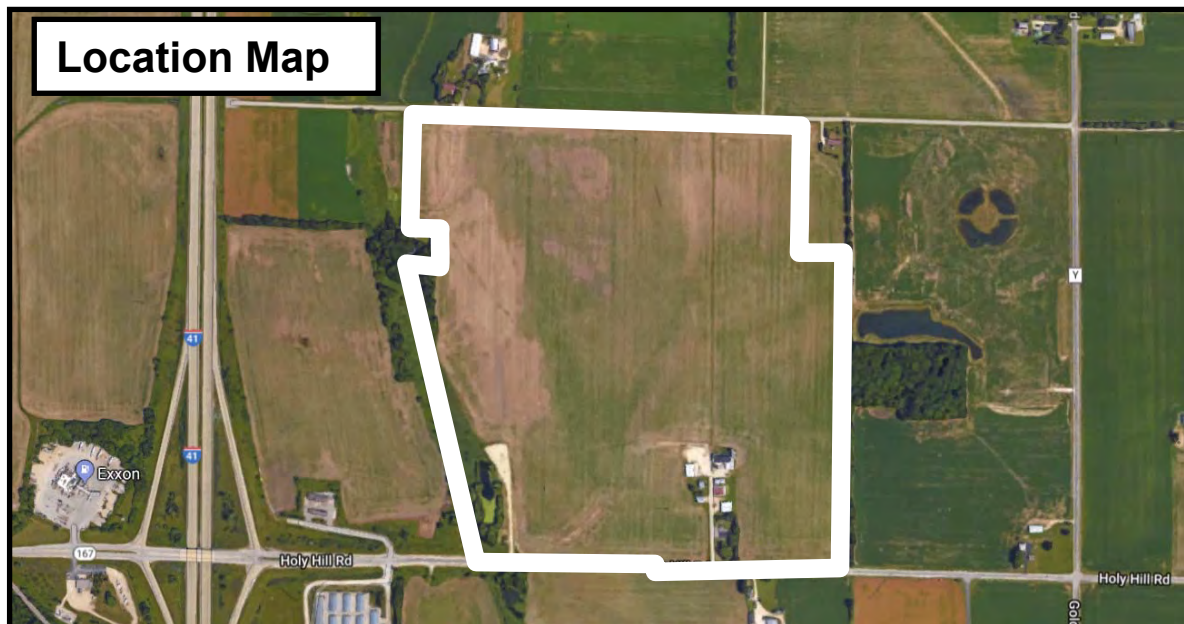
Location: Holy Hill Road ¼-mile east of US41

Agent/

Property Owners: Chad Navis, Zilber PG Towne Realty Inc. 9560 58 th PI Suite 350 Kenosha, WI	Brian & Kevin Kazmierczak Richard & Mary Stephan Frank & Mary Wiedmeyer Germantown, WI
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Current Zoning: M-1: Limited Industrial

Adjacent Land Uses		Zoning
North	Agricultural	A-1
South	Agricultural	A-1
East	Agricultural	A-1
West	Agricultural	A-1



Background/Proposal

In June, the Plan Commission and Village Board approved amendments to the Village's 2020 Land Use Plan (LUP) Map and rezoning of the 146.5-acre area in support of the planned development of the Germantown Corporate Park located on Holy Hill Road east of US41. The concept plan that was approved as part of the rezoning (see attached Exhibits A & B) present the anticipated and approximate size, orientation, and phasing of the future industrial development expected to occur within the corporate park, including the location of a new north-south road between Holy Hill and Rockfield Road.

Also in June, the Village Board created Tax Incremental Financing District No. 8 (TID#8) for purposes of re-constructing Holy Hill Road from US41 to Goldendale Road, and, extending sanitary sewer and water utilities along Goldendale Road and Holy Hill Road to serve development within the 146.5-acre corporate park and potential development on other adjacent land. Currently, the Village is in the process of designing the road, sanitary sewer and water utilities expected to commence later this year.

At this time, the Zilber Property Group, agent for Towne Realty Inc., prospective property owner and developer of the Germantown Corporate Park, is requesting approval of the following:

1. a Certified Survey Map (CSM) to re-divide the parcels acquired by Towne Realty that comprise the 146.5-acre business park and to facilitate Phase I development (Lot 1);
2. Site development plans for the mass grading and storm water management facilities needed to serve Phase I development (Lot 1) and future phase development (Lot 2) in the business park;
3. Road and utility construction plans for the proposed public road north of and intersecting with Holy Hill Road through the corporate park (to be constructed incrementally with each phase of development including Phase I); and
4. Site development and building plans for the proposed 706,000 sqft Briggs & Stratton Corporation warehouse/distribution facility to be located on a proposed 39.2-acre parcel (Lot 1 in the proposed CSM) within the overall 146.5-acre corporate park.

Certified Survey Map

As discussed in June, Towne Realty is acquiring 146.5 acres of land in eight (8) contiguous parcels located between Holy Hill Road and Rockfield Road for purposes of developing a 146.5-acre corporate park. The proposed CSM re-divides these eight parcels into the following to facilitate phased development of the corporate park:

1. Lot 1: a 39.2 acre parcel to be developed with the 706,000 sqft Briggs & Stratton Corporation distribution/warehouse facility;
2. Lot 2: a 101.7 acre "placeholder" parcel that will be re-divided over time into additional parcels as necessary to accommodate future phases of development; and
3. an 80' wide x 1,562' long right-of-way to be dedicated to the Village for the yet-to-be named public road providing access to development within the corporate park.

As shown on Sheet 1 of the CSM, there is a small unnamed tributary to Cedar Creek located in the far western side of the property. This waterway flows from south to north

and has a small pond and wetland complex associated with it across the west side of the property. A wetland delineation has been conducted and a jurisdictional determination is pending. Except for restoration of a small area of pre-existing development associated with the former agricultural use of the property, all Phase I development activities are planned to occur outside the 25' wetland and 75' navigable waterway setbacks enforced by the Village. No alteration or impact to the existing wetland or waterway resulting from corporate park development is currently proposed or anticipated.

Mass Grading & Storm Water Management Facility Plans

Detailed grading, erosion control and storm water management facility plans for the entire 146.5-acre corporate park have been prepared (see separate plan set labeled "Mass Grading and Storm Water Pond Plans" as a component of the Germantown Corporate Park Bid Pack 1 package dated July 16, 2018).

As detailed on sheets C-8 through C-12, run-off from development within the entire corporate park will be directed and captured by a large water-quality wet pond located along the western edge of the park and an inter-connected dry pond along Holy Hill Road. On-site storm sewer, drain tile, ditching and swales will direct run-off from Phase I development (and all subsequent phases of development) to the proposed storm water facilities.

Road & Utility Plans

Detailed construction plans for the road and utility infrastructure (sanitary sewer, water, storm sewer & street trees) to be installed as part of Phase I development have been prepared (see separate plan set labeled "Public Roadway and infrastructure Plans" as a component of the Germantown Corporate Park Bid Pack 1 package dated July 16, 2018).

As detailed therein, all public road, sanitary sewer, water, storm sewer and street tree landscaping to be constructed in Phase I will be located within an 80' x 1,560' dedicated public right-of-way adjacent to and west of Lot 1 in the middle of the corporate park. As discussed previously, the public road (labeled Road "A") and utility infrastructure will be extended as part of each subsequent phase is developed. These "internal" public improvements are being constructed by the Developer with costs up to \$1.6M reimbursed through tax incremental financing (TID#8).

[NOTE: the phased re-construction of Holy Hill Road (initially from US41 to a point beyond the proposed Road "A" intersection @ Holy Hill Road) and extension of sanitary sewer and water utilities beyond the corporate park is a separate project to be completed by the Village of Germantown concurrently with Phase I development].

Site Development & Building Plans

Detailed site development and building plans have been prepared for the proposed 706,000 sqft Briggs & Stratton Corporation warehouse/distribution facility to be developed on a 39.2-acre parcel (Lot 1) as part of Phase I (see engineering plan set labeled "Onsite Civil Engineering and Infrastructure Plans" as a component of the Germantown Corporate Park Bid Pack 2 package dated July 16, 2018, and, the architectural plan set labeled "Zilber Industrial I" dated July 16, 2018).

As detailed in the plans, development of the 706,000 sqft Briggs & Stratton distribution facility will have the following characteristics:

Site Improvements

- Two (2) access driveways onto Road "A" (one main access driveway for employees and visitors and another for trucks) and one (1) access driveway directly onto Holy Hill Road for truck only access into the site (counter-clockwise circulation within the site is proposed);
- On-site sanitary sewer and water facilities with connections to the public utilities being extended to the site and installed in the Road "A" public right-of-way;
- Install on-site storm sewer, drain tile, ditches and swales with connections to the corporate park "regional" storm water ponds being constructed on the west side of the corporate park;
- One parking area along the west side of the site with a total of 44 employee/visitor stalls (9'x20'), 74 truck/trailer stalls (13'x54') and 64 truck/trailer dock stalls adjacent to the building (with elevated dock bays). The parking and dock areas will be enclosed with a black, vinyl-coated 6' high chain-link security fence w/ motorized controlled access;
- A separate 30' wide perimeter circulation and emergency access driveway around the building connecting the parking area and access driveway onto Holy Hill Road and Road "A";
- Perimeter and building foundation landscaping along the west and south sides of the site and building elevations (including street trees along Holy Hill Road and Road "A").

Building Improvements (Briggs & Stratton Distribution/Warehouse Facility)

- 706,044 sqft industrial building w/ 32' clear height (w/ potential 150,280 sqft building expansion)
- Painted 12' wide pre-cast concrete wall panels with multiple reveals, white to gray painted accents and stepped to create shadow lines and reduce scale;
- Aluminum storefront window systems with clearstory windows
- (37) elevated loading dock bays & (2) at-grade overhead docks
- Roof-mounted mechanicals (max. 6' height) to be installed a minimum of 70' inside the roof edge along the east elevation and 50' inside the roof edge on all other elevations.

As discussed in the "Operational Plan Summary", the Briggs & Stratton Corporation is worlds' largest producer of gasoline engines for outdoor power equipment and leading manufacturer and marketer of power generation, pressure washer, lawn, garden turf care and job site products under many brand names in over 100 countries throughout the world.

With respect to this facility, Briggs & Stratton intends to operate a distribution and warehousing operation on a daily basis from 6:00am to 12:00 am (midnight) with occasional weekday and weekend overtime. Thirty (3) full-time and eight (8) temporary employees will work in the facility in two shifts (19 FTE on 1st shift and 11 FTE on 2nd shift). A maximum of (40) employees are expected to be on the site at any one time of the day. Operations are expected to generate an average of (160) daily vehicle trips (80 trips to and 80 trips from the site), and, an average of (50) daily truck trips (25 to and 25 from the site) with a maximum of (80) daily truck trips (40 to and 40 from the site). As stated, nothing will be manufacturer in this facility. Palletized products will be received, broken down, and shipped to retailers, manufacturers, other distribution centers, dealers, and end consumers. Equipment used in the facility will include electric fork lifts, pallet wrappers, jib cranes, racking, conveyors and carts. The facility is expected to be operational on April 1, 2019.

Access & Parking. Access to the B&S site will be provided by two (2) access driveways onto Road "A" (one main access driveway for employees and visitors and another for trucks) and one (1) access driveway directly onto Holy Hill Road for truck only access into the site (counter-clockwise circulation within the site is proposed). A 30' wide perimeter driveway for counter-clockwise circulation and emergency access is provided around the building connecting the parking area and access driveways to Holy Hill Road and Road "A". Parking is provided along the west side of the site with a total of 44 employee/visitor stalls (9'x20'), 74 truck/trailer stalls (13'x54') and 64 truck/trailer dock stalls adjacent to the building (with elevated dock bays).

Storm Water Management. A total of 1,108,915 sqft (25.46 acres) of impervious surfaces are proposed as part of the B&S facility development or 64.9% of the total 39.22-acre site leaving 35.1% in open/green space. No-onsite storm water basins are proposed for the B&S site; all on-site storm sewer, roof drains, ditches and swales are provided with connections to the corporate park "regional" storm water ponds being constructed on the west side of the corporate park.

Landscaping & Buffering. A significant amount of landscaping is proposed along the west and south sides of the site, particularly adjacent to the security-fenced portions of the site. Overall (see Sheet L-1), plantings consist of a variety of deciduous street and shade trees, ornamental trees, evergreen trees, deciduous and evergreen shrubs, perennial plantings and ornamental grasses. A total of 112 trees are proposed to be planted: 27 deciduous street and shade trees, 36 ornamental and 49 evergreen trees; and 349 deciduous and evergreen shrubs (see Sheet L-5).

[NOTE: A virtual "drive-by" view of the proposed landscaping from the public view along Road "A" and the Holy Hill Road intersection will be presented in a short video during the Plan Commission meeting].

Lighting. Exterior lighting of the B&S site and building include (see Option 2 on Sheet E-1b):

- (28) 163W LED cut-off style building-mounted fixtures at a height of 33' on all elevations;
- (11) 163 W LED cut-off style pole-mounted fixtures mounted on a 20' pole and 3' base (23' total fixture height) along the west side of the parking area and Holy Hill Road access driveway;

-
- Under canopy and ground-mounted directional spot lighting for the monument sign locations at Road “A” and Holy Hill Road.

Signage. A monument sign “placeholder” is shown in the southwest corner of the site, and, a directional sign “placeholder” at the Holy Hill Road access driveway. Both have landscaping, lighting (and flag features) proposed. Also, a wall-mounted sign on the west building elevation is shown in the “drive-by” virtual rendering of the site, but no specific details are included as part of these applications.

Staff Comments

Community Development: Planning & Zoning

The detailed site development and building plans for Phase I development are consistent with the concept plan that was presented and approved as part of the overall rezoning for the 146.5-acre corporate park.

As a result of Staff’s initial review of all the site development and building plans submitted, a number of items/issues were identified in a series of review memos (attached hereto) that the Developer has since addressed with additional information and revised plan sheets contained in the plan sets dated July 16, 2018. Although Staff reviewed these plan revisions and additional information with the Developer at a July 16 meeting, there has not been sufficient time for staff to thoroughly review all aspects of the revised plans and additional supporting information to definitively conclude that the plans are entirely code compliant and contain all of the necessary detail required. However, Staff has the opinion that all outstanding items or issues are relatively minor, will not alter the location, size, layout or other characteristics of the proposed site development or building, and, can easily be resolved through further consultation between Staff and the Developer. Consequently, Staff is recommending conditional approval of the site development and building plans subject to all of the outstanding items and issues identified in the following review memos being resolved and reflected in additional information and/or revised plans submitted to Village Staff for further review, comment and approval prior to issuance of commencing installation of the storm water management facilities and prior to issuance of a building permit for the B&S facility:

- June 28, 2018 memo from Community Development Director, Jeff Retzlaff

Staff acknowledges that, in the course of reviewing the Developer’s responses and revised plans intended to address staff’s initial items and issues, there may be additional questions, items or issues that are identified. The Developer is also responsible for addressing any additional items or issues that are identified.

Public Works & Engineering Department

As discussed above, the Village Engineer and Public Works Department staff have identified several technical issues and plan revisions that need to be resolved or otherwise addressed by the Developer prior to commencing construction activities and issuance of a building permit. Consequently, Staff is recommending conditional approval of the site development and building plans subject to all of the outstanding items and issues identified in the following review memos being resolved and reflected in additional information and/or revised plans submitted to Staff for further review, comment and approval prior to issuance of commencing installation of the storm water management facilities and prior to issuance of a building permit for the B&S facility:

- June 06, 2018 memo from Village Surveyor, Bob Beilfuss
- June 20, 2018 memo from Public Works Director, Larry Ratayczak (mass grading)
- June 28, 2018 memo from Public Works Director, Larry Ratayczak, (B&S Facility)

The Village Surveyor has also identified some technical items in his June 6, 2018 review memo (revised July 16) that will need to be corrected prior to recording the CSM.

Fire & Police Departments

The Fire Department is recommending approval of the B&S facility site plans subject to the following requirements:

1. Approved water supply with fire protection loop around building shall not have Storz style hydrants;
2. Water supply system to be built to VOG utility standards;
3. If the building requires fire pump, the GFD requires direct access via man door to/from the building exterior;
4. Fire protection panels should be in any fire pump room;
5. Horn strobe required in place of riser bell at Fire Department Connection;
6. Secondary fire annunciator panel required at office or main employee entrance;
7. At least two (2) Knox boxes are required for GFD access; one in the fire pump room and the other at the main entrance or employee entrance. Gated areas shall be accessible to the GFD;
8. Building is stated to have design requirements of Class 1-4 ESR fire sprinklers with standpipes at each exterior door.

All exterior doors (except primary entrance) shall be clearly marked with reflective 5" or larger letters/numbers to aid emergency personnel access.

Community Development: Inspection Services

Inspection Services has indicated that the submission of state-approved plans will be required prior to issuing a building permit along with the required \$20,000 occupancy bond.

VILLAGE PLANNER RECOMMENDATION:

Site Development & Building Plans

APPROVE the site development and building plans for Phase I development of the 146.5-acre Germantown Corporate Park located on Holy Hill Road east of US41 including a 706,000 sqft distribution/warehouse facility for the Briggs & Stratton Corporation subject to the following conditions:

1. This approval is subject to all the conditions and requirements set forth herein and adopted by the Plan Commission. Approval is granted for the following architectural and engineering plans dated July 16, 2018 unless superseded by subsequent plan sheets approved by Village Staff pursuant to revisions required herein and/or by the Plan Commission:
 - a. *“Mass Grading and Storm Water Ponds Plans” as a component of the Germantown Corporate Park Bid Pack 1 dated July 16, 2018;*
 - b. *“Public Roadway and infrastructure Plans” as a component of the Germantown Corporate Park Bid Pack 1 dated July 16, 2018;*
 - c. *“Onsite Civil Engineering and Infrastructure Plans” as a component of the Germantown Corporate Park Bid Pack 2 dated July 16, 2018;*
 - d. *Architectural plans labeled “Zilber Industrial I” dated July 16, 2018.*
2. All landscaping, screening, grading, and paving improvements shown on the approved site plans shall be installed as proposed prior to issuance of an occupancy permit unless a cash bond or letter of credit in an amount equal to 120 percent of the estimated installation and material costs reviewed and approved by the Village is submitted to the Village as necessary to ensure that installation of the proposed features and improvements will be completed within one (1) year after issuance of the occupancy permit.
3. The following items shall be provided as required by the Village Fire Department:
 - (a) State approved fire sprinkler and fire alarm systems are required; and
 - (b) Locations of all water distribution system and hydrants shall be determined in cooperation with the Germantown Fire Department and utility standards.
4. All exterior doors (except primary entrance) shall be clearly marked with reflective 5” or larger letters/numbers to aid emergency personnel access as required by the Police Department.
5. All outstanding items and issues identified by Village Staff in the following review memos shall be resolved and reflected in additional information and/or revised plans submitted to Staff for further review, comment and approval prior to issuance of commencing installation of the storm water management facilities and prior to issuance of a building permit for the B&S facility (excluding “early start” site clearing and footing/foundation work approved by the Village and/or WI DSPS):
 - a. *June 06, 2018 memo from Village Surveyor, Bob Beilfuss*
 - b. *June 20, 2018 memo from Public Works Director, Larry Ratayczak*
 - c. *June 28, 2018 memo from Public Works Director, Larry Ratayczak*
 - d. *June 28, 2018 memo from Community Dev Director, Jeff Retzlaff*
6. State approved plans and a \$20,000 occupancy bond are required by the Building Inspection Department as part of the building permit application.

VILLAGE PLANNER RECOMMENDATION *(continued)*:

Site Development & Building Plans

7. The following items shall be provided as required by the Village Fire Department:
- a. Water supply system to be built to VOG utility standards;
 - b. If the building requires fire pump, the GFD requires direct access via man door to/from the building exterior;
 - c. Fire protection panels should be in any fire pump room;
 - d. Horn strobe required in place of riser bell at Fire Department Connection;
 - e. Secondary fire annunciator panel required at office or main employee entrance;
 - f. At least two (2) Knox boxes are required for GFD access; one in the fire pump room and the other at the main entrance or employee entrance. Gated areas shall be accessible to the GFD;
 - g. Building is stated to have design requirements of Class 1-4 ESR fire sprinklers with standpipes at each exterior door.
 - h. Approved water supply with fire protection loop around building shall not have Storz style hydrants;

VILLAGE PLANNER RECOMMENDATION:

Certified Survey Map (CSM)

APPROVE the 2-lot Certified Survey Map (CSM) for the 146.5-acre Germantown Corporate Park property subject to the following conditions:

1. The CSM shall be revised to reflect the Village Surveyor comments contained in the June 6, 2018 review memo prior to recording the CSM.

EXHIBIT A – PHASE I

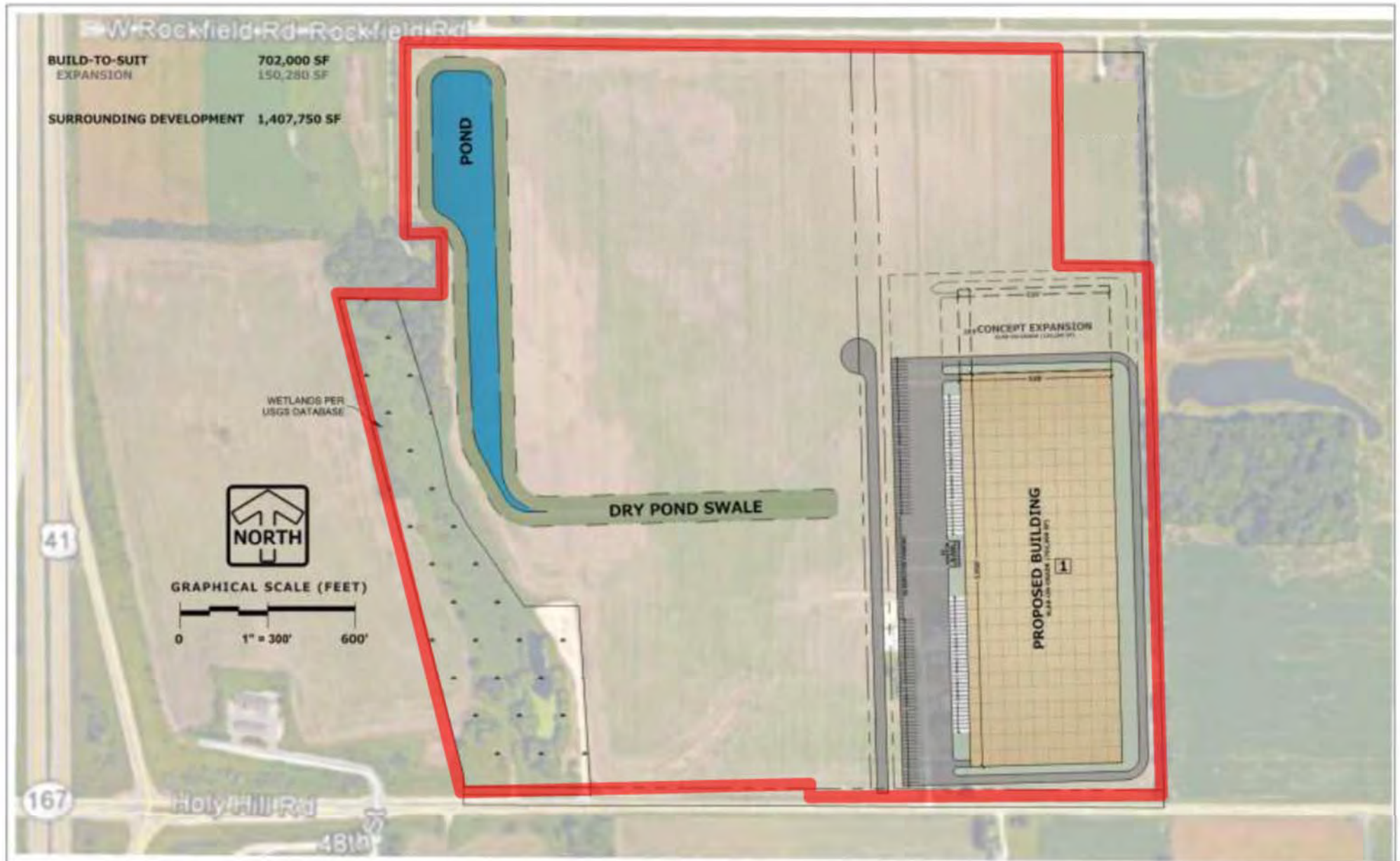
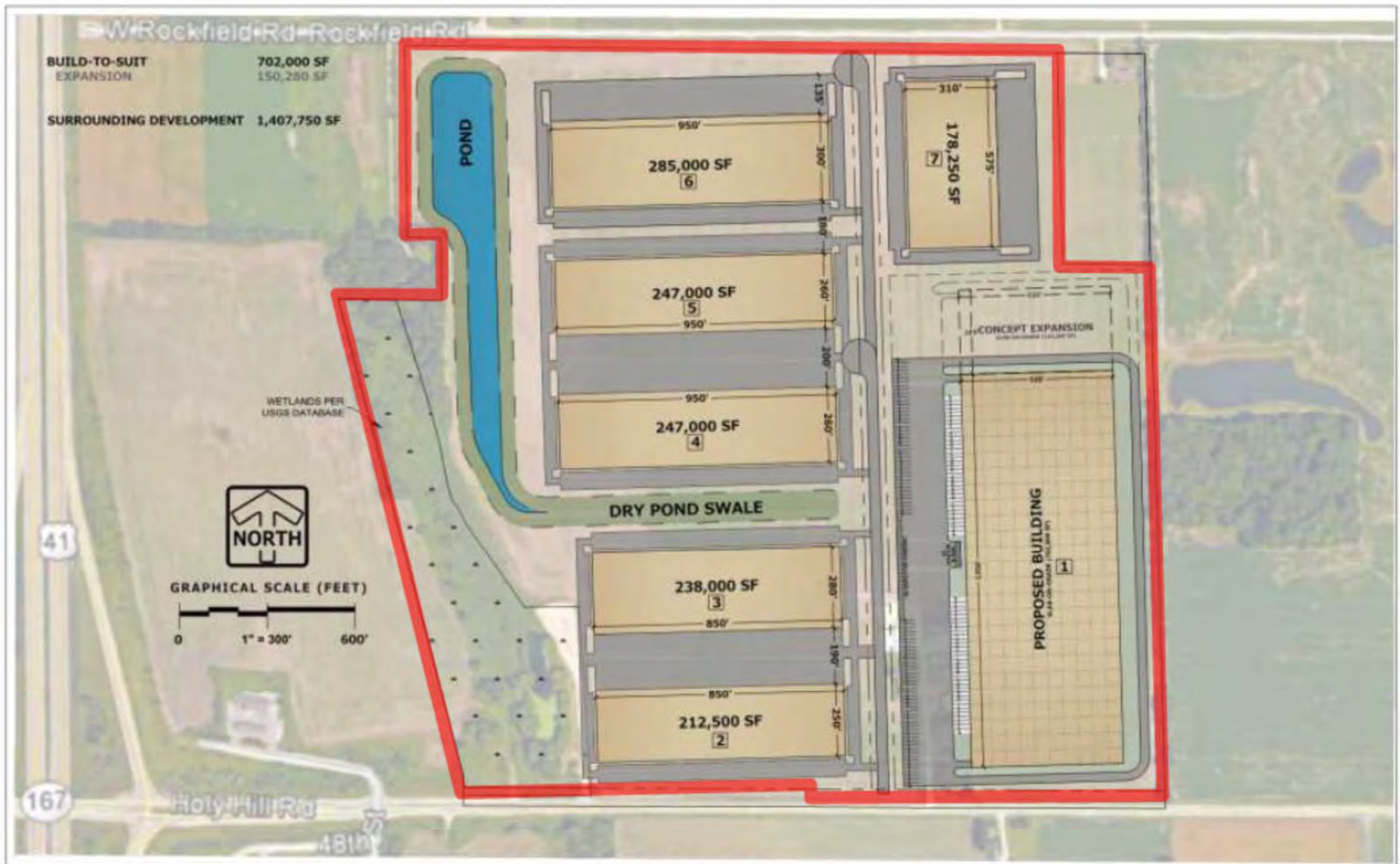


EXHIBIT B - BUILDOUT



Date _____



June 13, 2018

Re: Statement of Design Intent
Site Plan Review Application Submitted June 13, 2018

The proposed Zilber Industrial I at Germantown Corporate Park project is a 706,840 square foot industrial building that will be developed in a manner consistent with other institutional-quality industrial development projects recently completed by Zilber Property Group. The Zilber Industrial I building will be located in the newly developed Germantown Corporate Park, which is generally located in the northeast quadrant of the US 41 and Holy Hill Road interchange.

As currently proposed, the building will feature stepped up corner conditions and an intermediate employee entrance. The building will consist of 12ft wide and 32ft clear height painted and insulated precast wall panels that have multiple reveals and will be painted in tones between white to grey and red accent to help reduce the overall scale of the building. Additionally, the building elevation is stepped to further break the scale down and panels are stepped to create additional shadow lines. Around the building, the project includes clearstory windows to provide natural daylight within the building. The precast panel steps, paint and glazing are continued around the building to create four sided architecture.

June 13, 2018

Operational Plan Summary

Attachment to Site Plan Review Application Submitted June 13, 2018

- a) Detailed description of the proposed project and use.
 - 1. Distribution and Warehousing of the B&S brands including but not limited to Small Engines, Lawn and Garden equipment, Generators, Pressure Washers and relative component's.
 - 2. Receive inbound engines and products from B&S manufacturing plants, OEM's, contract manufacturers and suppliers.
 - 3. Ship to retailer's such as Lowes, Home Depot, Menards, Sears.
 - 4. Ship to OEM's such as Toro, Aries, John Deere.
 - 5. Ship to other distribution centers such as Amazon.
 - 6. Ship to end consumer direct.
 - 7. Ship to Dealers
 - 8. Ship International
 - 9. Process Returns
- b) Detailed description of company.
 - 1. Briggs & Stratton Corporation (NYSE: BGG), headquartered in Milwaukee, Wisconsin, is focused on providing power to get work done and make people's lives better. Briggs & Stratton is the world's largest producer of gasoline engines for outdoor power equipment, and is a leading designer, manufacturer and marketer of power generation, pressure washer, lawn and garden, turf care and job site products through its Briggs & Stratton®, Simplicity®, Snapper®, Ferris®, Vanguard™, Allmand®, Billy Goat®, Murray®, Branco® and Victa® brands. Briggs & Stratton products are designed, manufactured, marketed and serviced in over 100 countries on six continents.
- c) Anticipated hours of operation, hours open to the public, and hours of deliveries or shipments.
 - 1. Open daily 6:00 am – 12:00 am for all services
 - 2. Occasional daily Overtime
 - 3. Occasional Weekend Overtime
- d) Anticipated startup and total number of full- and part-time employees.
 - 1. April 1, 2019
 - 2. 30 full time employees
 - 3. 8 temporary employees
- e) Anticipated number of shifts and the anticipated number of employees per shift.
 - 1. 2 shifts
 - 2. 19 FTE's on 1st shift
 - 3. 11 FT's on 2nd shift

- f) Anticipated maximum number of employees on site at any time of the day.
 - 1. 40
- g) Anticipated daily average and maximum potential number of automobile trips to and from the site (excluding trucks).
 - 1. 80
- h) Anticipated daily average and maximum potential number of truck trips to and from the site.
 - 1. 40 Max
 - 2. 25 Avg
- i) Types and quantities of goods and materials to be made, used or stored on site.
 - 1. Palletized and carton material
 - 2. Nothing will be made in this building
 - 3. 45,000 units of products and engines
- j) Types of equipment or machinery to be used on site.
 - 1. Electric Fork lifts
 - 2. Pallet Wrappers
 - 3. Jib Cranes
 - 4. Personnel Carts
 - 5. Racking
 - 6. Conveyor

PROJECT:

ZILBER INDUSTRIAL I

GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN



ISSUED FOR: MUNICIPAL SITE PLAN RE-SUBMITTAL - 07/16/2018

ARCHITECT:
STEPHEN PERRY SMITH ARCHITECTS, INC.
MILWAUKEE, WISCONSIN



215 N. WATER STREET, SUITE 250
MILWAUKEE, WISCONSIN 53202
T 414.277.9700 | F 414.277.9705
spsarchitects.com



PROJECT

PROPOSED
ZILBER
INDUSTRIAL I
AT GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN



OWNER

ZILBER
PROPERTY GROUP_{SM}

REVISIONS

NO.	DESCRIPTION	DATE
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INFORMATION

PROJECT ARCHITECT	MAM
PROJECT MANAGER	MAM, SJC
PROJECT NUMBER	ZIL-18-907
ISSUED FOR	MUNICIPAL SITE PLAN RE-SUBMITTAL
DATE	JULY 16, 2018

SHEET

TITLE PAGE - CORE & SHELL

G000

KEYNOTES - SITE PLAN	
03-07	CONCRETE SIDEWALK
32-01	DUAL MOTORIZED GATES W/ ACCESS CONTROL AND ALPHONE ACCESS AND PRESSURE PAD DEPARTURE
32-02	SINGLE MANUAL SLIDING GATE WITH FIRE DEPARTMENT ACCESS
32-03	6'-0" H BLACK VINYL COATED CHAIN LINK FENCE
32-04	MONUMENT SIGN - BRIGGS & STRATTON
32-08	FLAG POLES
32-09	MONUMENT SIGN - SHIPPING AND RECEIVING



215 N. WATER STREET, SUITE 250
MILWAUKEE, WISCONSIN 53202
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PROJECT

PROPOSED
ZILBER INDUSTRIAL I
AT GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN



OWNER

ZILBER
PROPERTY GROUP_{SM}

REVISIONS

NO.	DESCRIPTION	DATE
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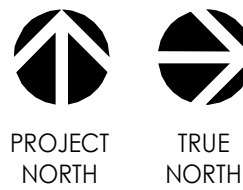
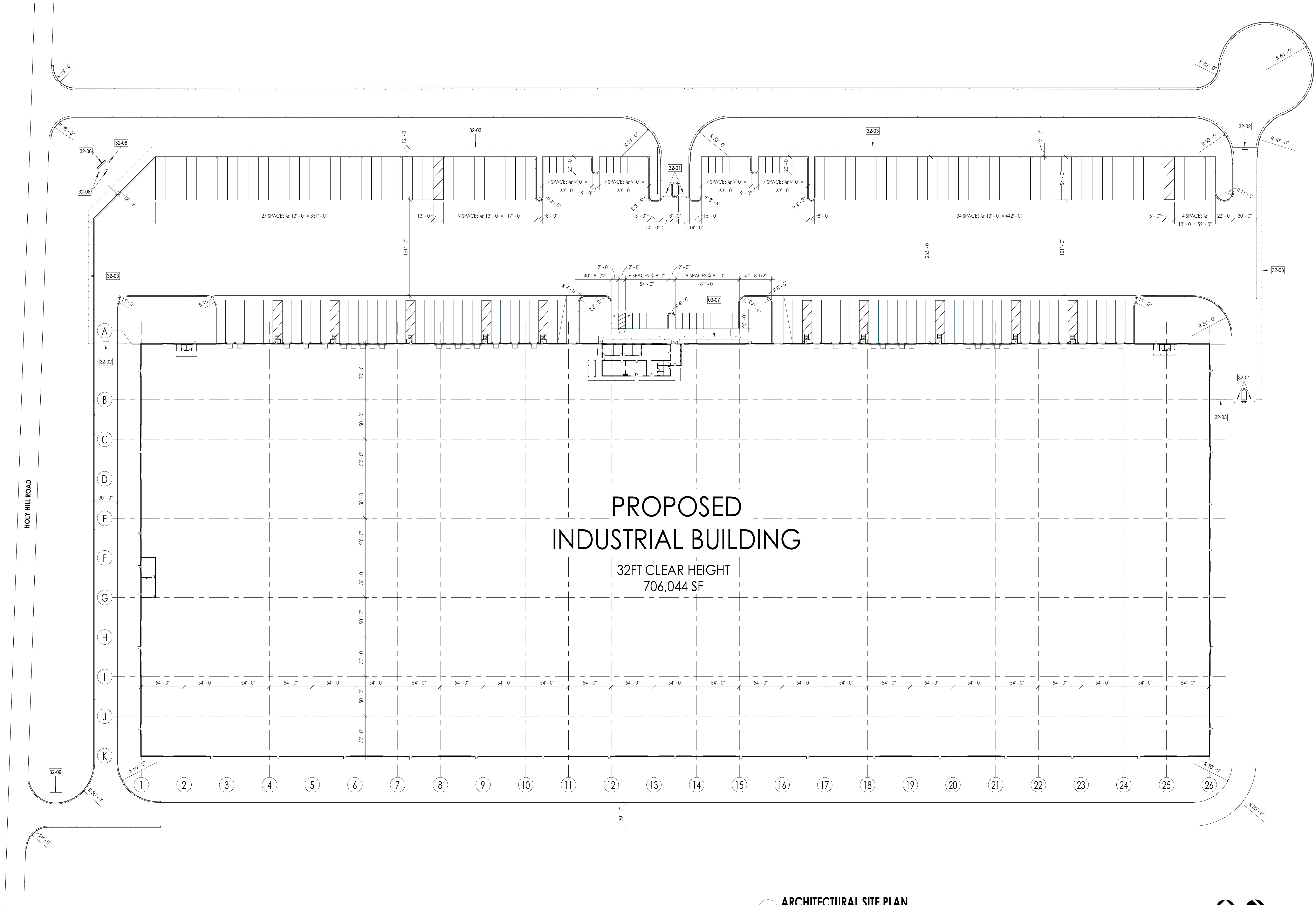
INFORMATION

PROJECT ARCHITECT	MAM
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DATE	JULY 16, 2018

SHEET

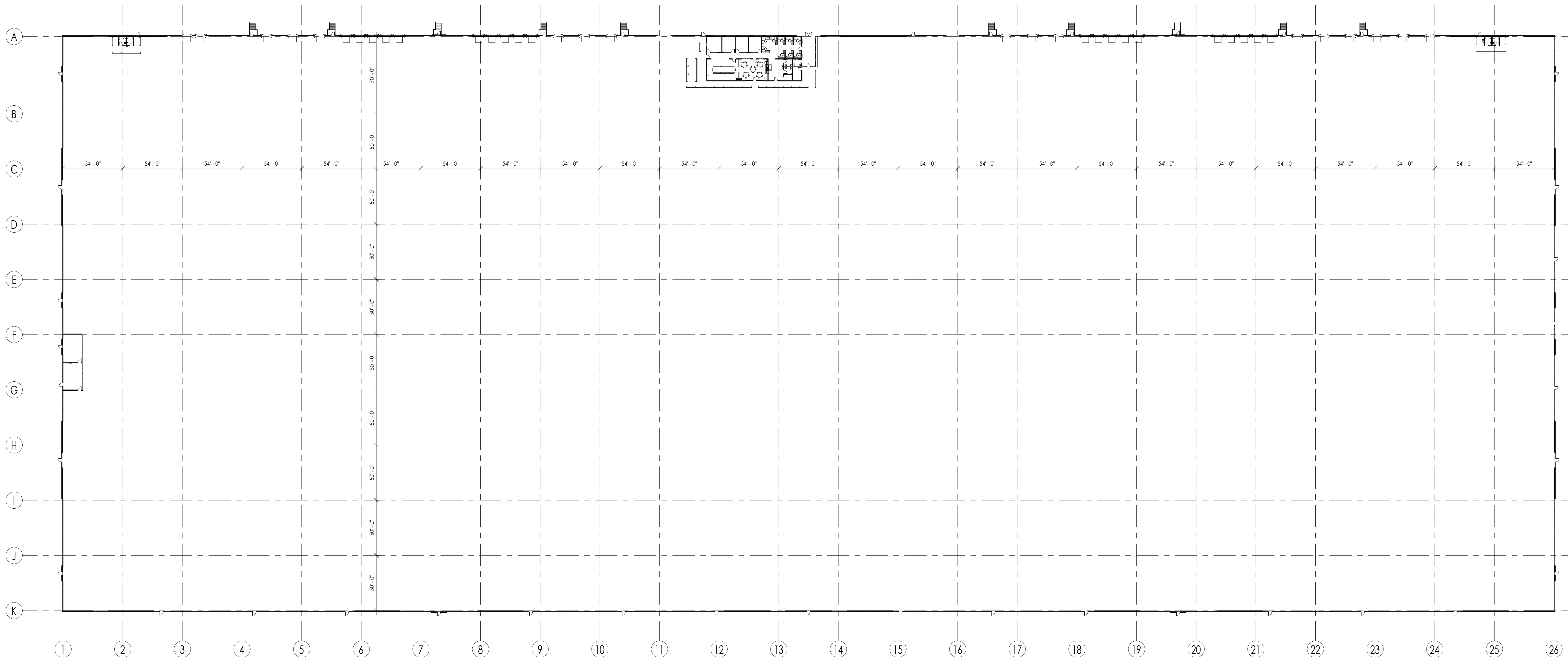
ARCHITECTURAL SITE PLAN

A050





PROPOSED
ZILBER
INDUSTRIAL I
AT GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN

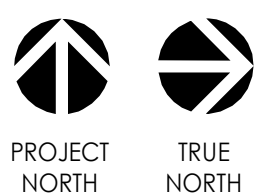


ZILBER
PROPERTY GROUPSM

NO.	DESCRIPTION	DATE
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PROJECT ARCHITECT	MAM
PROJECT MANAGER	MAM, SJC
PROJECT NUMBER	ZIL-18-907
ISSUED FOR	MUNICIPAL SITE PLAN RE-SUBMITTAL
DATE	JULY 16, 2018

FACILITY PLAN



A 100

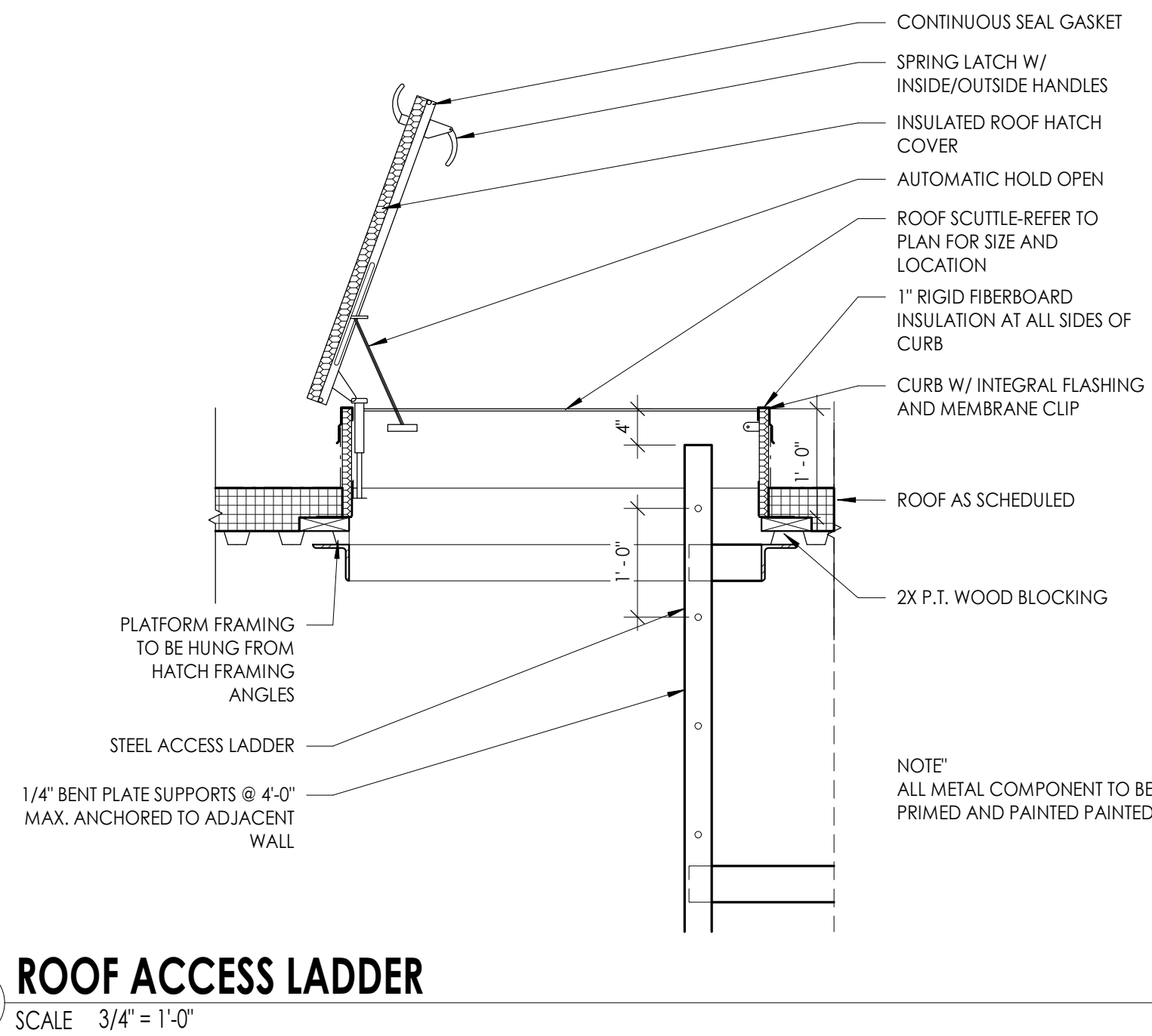
1 FACILITY PLAN - OVERALL
SCALE 1" = 40'-0"



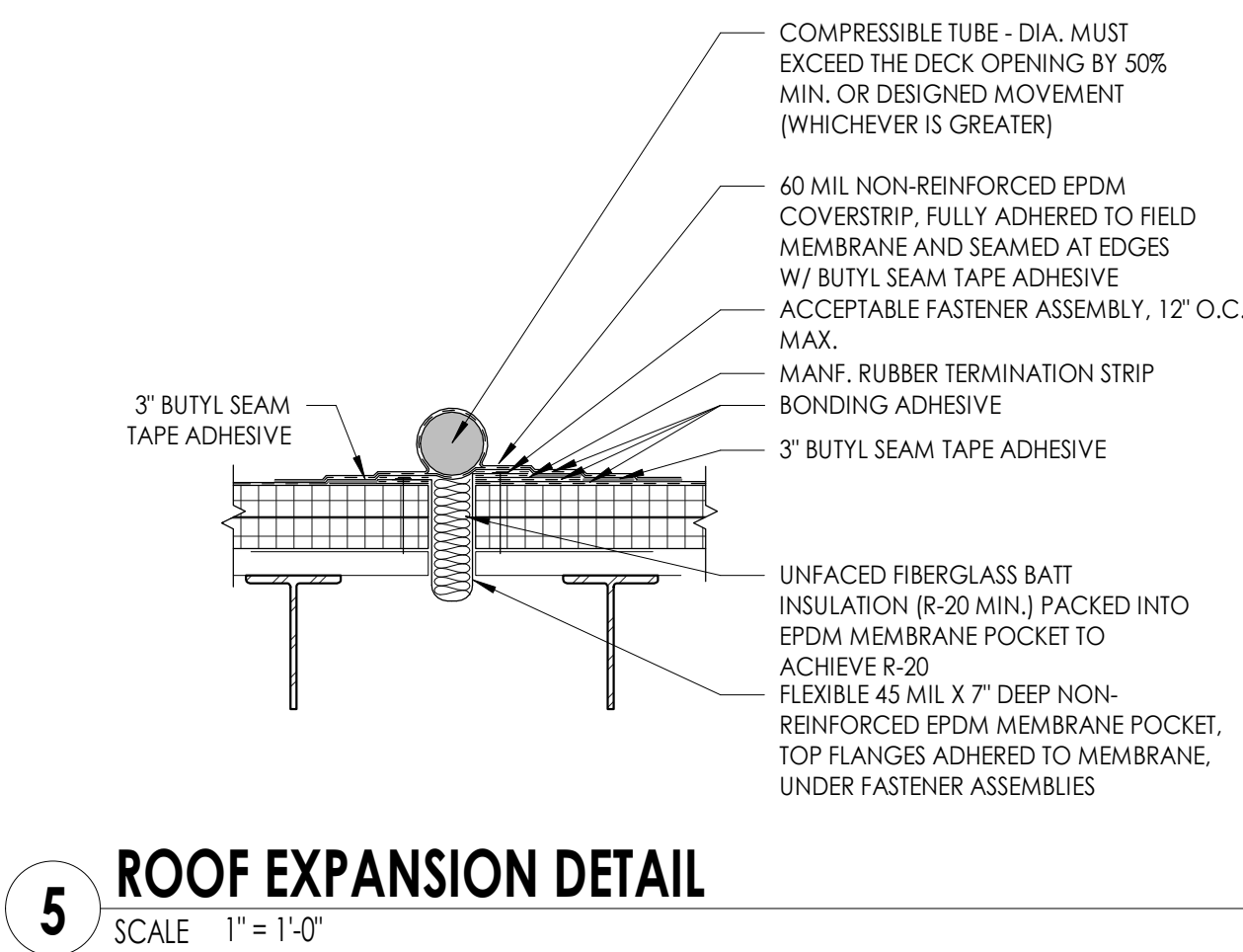
LINE OF SITE DIAGRAM
SCALE 1" = 30'-0"

KEYNOTES - ROOF PLAN	
07-02	ROOF DRAIN
08-07	INSULATED 30"x36" ROOF SCUTTLE W/ LADDER AND CAGE BELOW

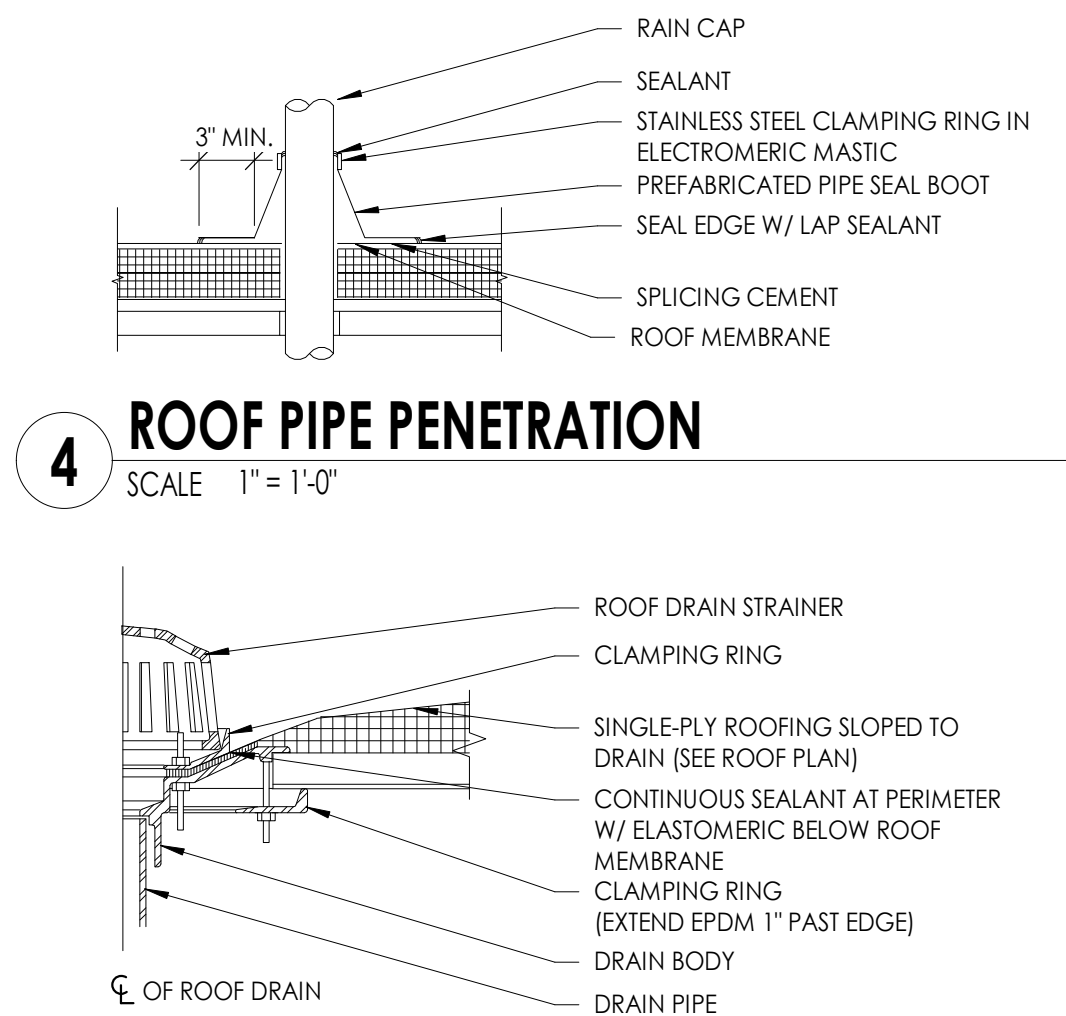
ROOF TYPES	
ROOF TYPE #1 - TYPICAL BUILDING ROOF	
60 MIL BALLASTED ROOF	
2 LAYERS OF POLYISOCYANURATE W/ STAGGERED JOINTS IN BOTH DIRECTIONS (R-21)	
1-1/2" METAL DECKING	
NOTE	
1. PITCH TO ROOF DRAIN AT 1/8" PER FOOT MINIMUM.	



6 ROOF ACCESS LADDER
SCALE 3/4" = 1'-0"

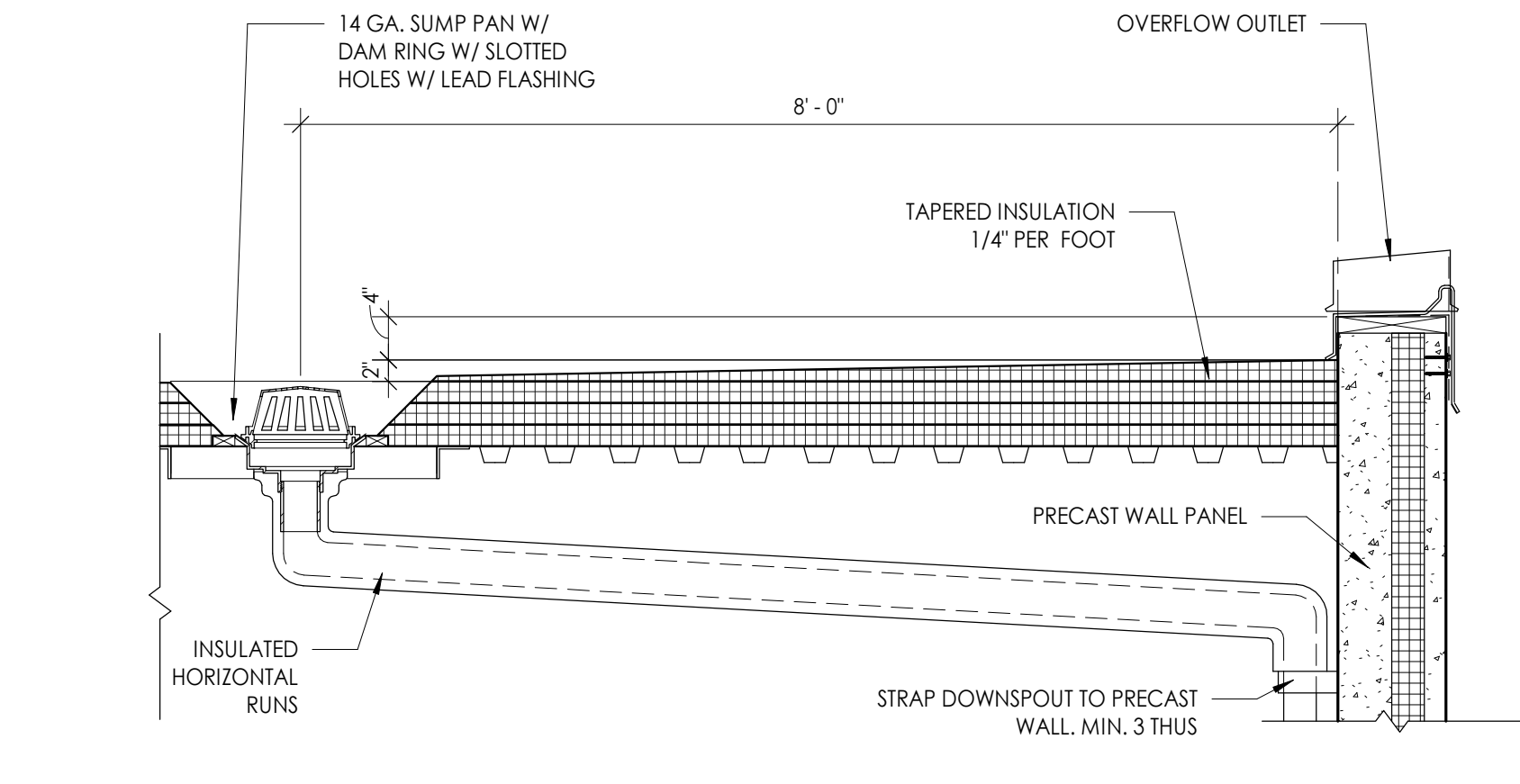


5 ROOF EXPANSION DETAIL
SCALE 1" = 1'-0"

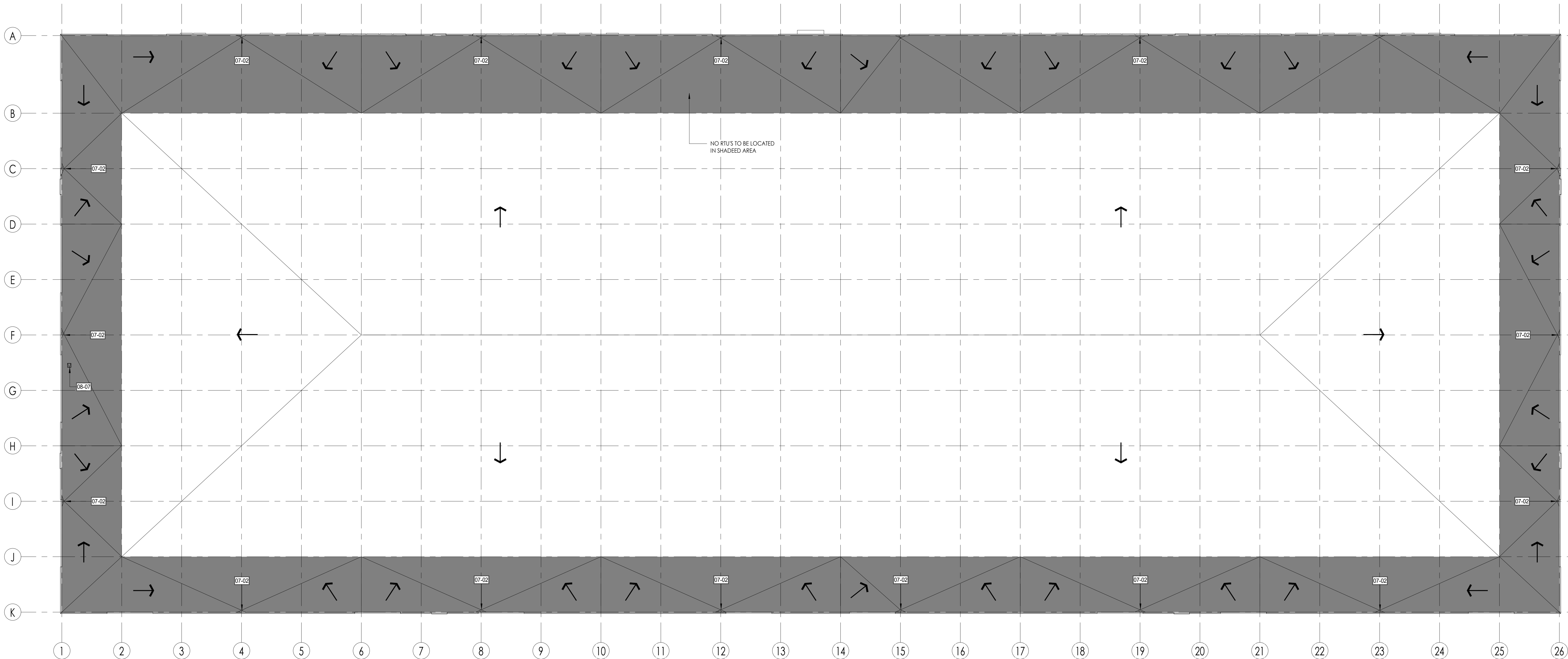


4 ROOF PIPE PENETRATION
SCALE 1" = 1'-0"

3 ROOF DRAIN DETAIL
SCALE 1 1/2" = 1'-0"



2 DOWNSPOUT DETAIL @ ROOF
SCALE 3/4" = 1'-0"



1 ROOF PLAN
SCALE 1" = 40'-0"



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PROJECT
PROPOSED
ZILBER INDUSTRIAL I
AT GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN

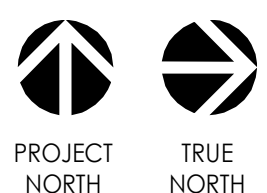


OWNER
ZILBER
PROPERTY GROUP_{SM}

REVISIONS		
NO.	DESCRIPTION	DATE

INFORMATION	
PROJECT ARCHITECT	MAM
PROJECT MANAGER	MAM, SJC
PROJECT NUMBER	ZIL-18-907
ISSUED FOR	MUNICIPAL SITE PLAN RE-SUBMITTAL
DATE	JULY 16, 2018

SHEET
ROOF PLAN



A105

PROJECT

PROPOSED
**ZILBER
INDUSTRIAL I**
AT GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN



OWNER

ZILBER
PROPERTY GROUP_{SM}

REVISIONS

NO.	DESCRIPTION	DATE
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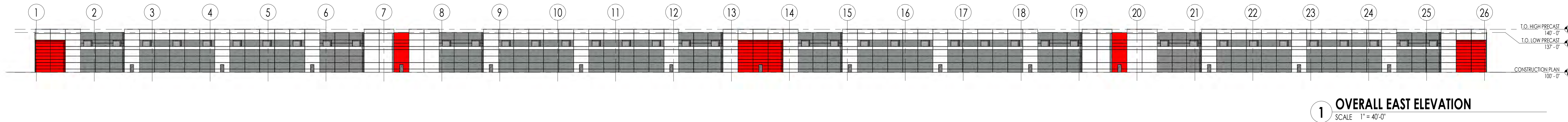
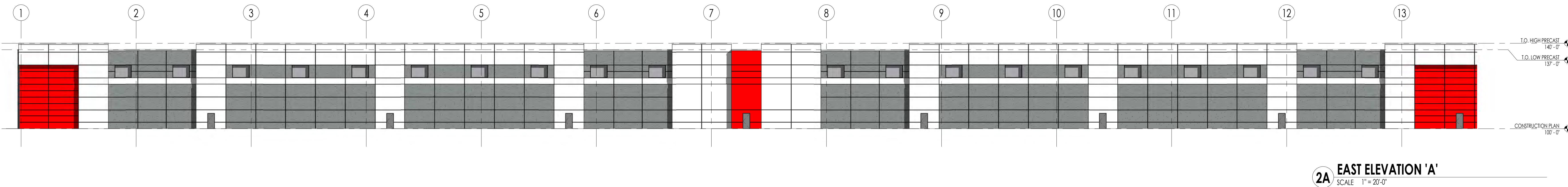
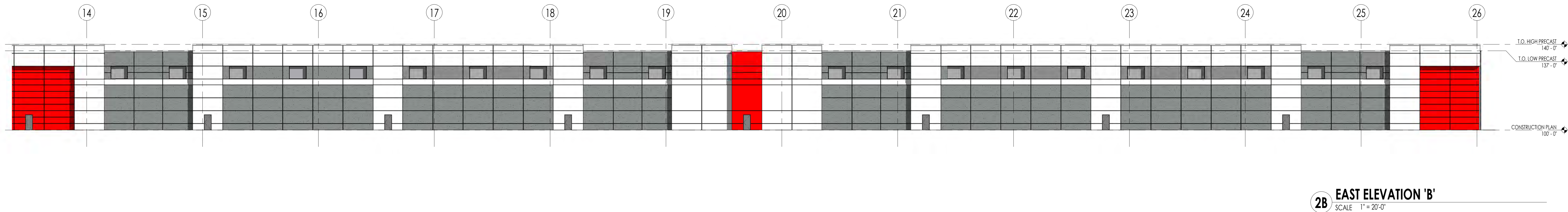
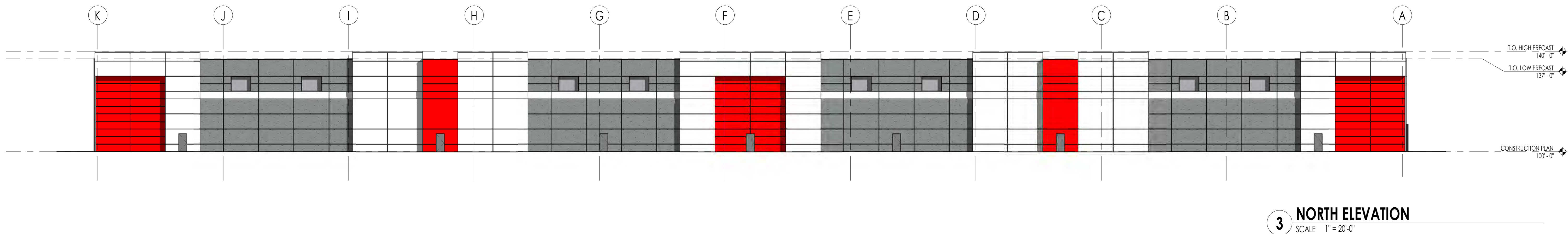
INFORMATION

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PROJECT MANAGER	MAM, SJC
PROJECT NUMBER	ZIL-18-907
ISSUED FOR	MUNICIPAL SITE PLAN RE-SUBMITTAL
DATE	JULY 16, 2018

SHEET

BUILDING ELEVATIONS

A401



PROJECT

PROPOSED
**ZILBER
INDUSTRIAL I**
AT GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN



OWNER

ZILBER
PROPERTY GROUPSM

REVISIONS

NO.	DESCRIPTION	DATE
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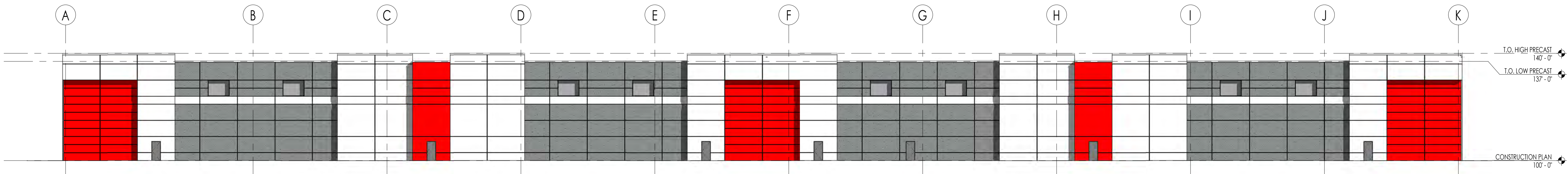
INFORMATION

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PROJECT MANAGER	MAM, SJC
PROJECT NUMBER	ZIL-18-907
ISSUED FOR	MUNICIPAL SITE PLAN RE-SUBMITTAL
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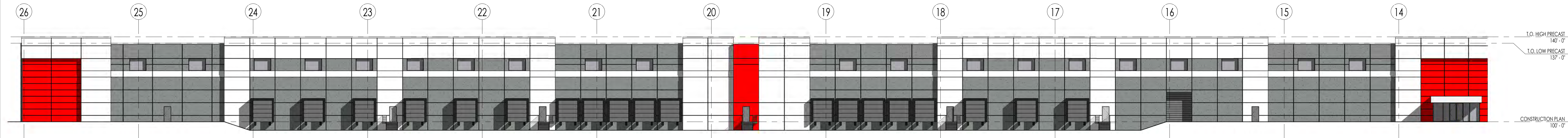
SHEET

BUILDING ELEVATIONS

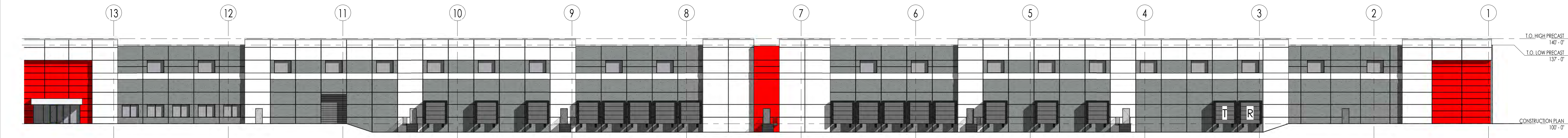
A402



4 SOUTH ELEVATION
SCALE 1" = 20'-0"



3 WEST ELEVATION 'B'
SCALE 1" = 20'-0"



2 WEST ELEVATION 'A'
SCALE 1" = 20'-0"

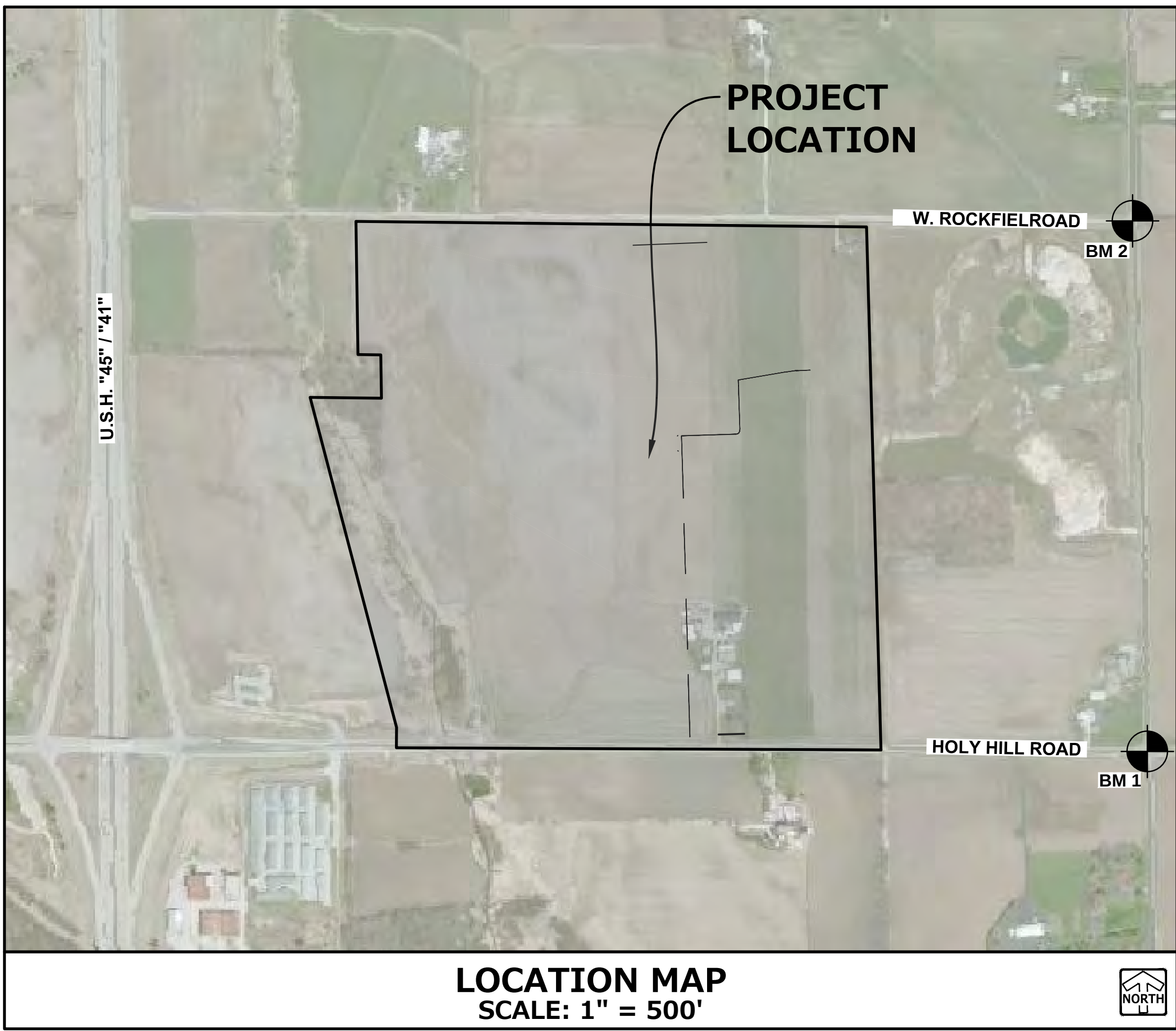


1 OVERALL WEST ELEVATION
SCALE 1" = 40'-0"

MASS GRADING AND STORM WATER PONDS PLANS
FOR
GERMANTOWN CORPORATE PARK
BID PACK 1

GERMANTOWN, WI

PLANS PREPARED
FOR
ZILBER
PROPERTY GROUP SM



LOCATION MAP
SCALE: 1" = 500'

LEGEND

	EXISTING	PROPOSED
SANITARY SEWER MANHOLE	⊙	⊙
STORM SEWER MANHOLE	⊙	⊙
STORM SEWER CATCH BASIN (ROUND CASTING)	⊙	⊙
STORM SEWER CATCH BASIN (RECTANGULAR CASTING)	⊙	⊙
PRECAST FLARED END SECTION	⊙	⊙
CONCRETE HEADWALL	⊙	⊙
VALVE BOX	⊙	⊙
FIRE HYDRANT	⊙	⊙
CLEANOUT	⊙	⊙
SANITARY SEWER	—	—
FORCE MAIN	—	—
STORM SEWER	—	—
DRAIN TILE	—	—
WATER MAIN	—	—
FIRE PROTECTION	—	—
ELECTRICAL CABLE	—	—
OVERHEAD WIRES	—	—
GAS MAIN	—	—
TELEPHONE LINE	—	—
UTILITY CROSSING	—	—
CAUTION EXISTING UTILITIES NEARBY	—	—
GRANULAR TRENCH BACKFILL	—	—
LIGHTING	—	—
ELECTRICAL TRANSFORMER OR PEDESTAL	—	—
POWER POLE	—	—
POWER POLE WITH LIGHT	—	—
GUY WIRE	—	—
STREET SIGN	—	—
CONTOUR	—	—
SPOT ELEVATION	—	—
WETLANDS	—	—
PRIMARY ENVIRONMENTAL CORRIDOR	—	—
FLOODWAY	—	—
FLOODPLAIN	—	—
HIGH WATER LEVEL (HWL)	—	—
NORMAL WATER LEVEL (NWL)	—	—
DIRECTION OF SURFACE FLOW	—	—
DITCH OR SWALE	—	—
DIVERSION SWALE	—	—
OVERFLOW RELIEF ROUTING	—	—
TREE WITH TRUNK SIZE	—	—
SOIL BORING	—	—
TOPSOIL PROBE	—	—
FENCE LINE, TEMPORARY SILT	—	—
FENCE LINE, WIRE	—	—
FENCE LINE, CHAIN LINK OR IRON	—	—
FENCE LINE, WOOD OR PLASTIC	—	—
CONCRETE SIDEWALK	—	—
CURB AND GUTTER	—	—
DEPRESSED CURB	—	—
REVERSE PITCH CURB & GUTTER	—	—
EASEMENT LINE	—	—

ABBREVIATIONS

BL	BASE LINE	NWL	NORMAL WATER LEVEL
C	LONG CHORD OF CURVE	PC	POINT OF CURVATURE
C & G	CURB AND GUTTER	PT	POINT OF TANGENCY
CB	CATCH BASIN	PVI	POINT OF VERTICAL INTERSECTION
CL	CENTERLINE	R	RADIUS
D	DEGREE OF CURVE	ROW	RIGHT-OF-WAY
EP	EDGE OF PAVEMENT	SAN	SANITARY SEWER
FF	FINISHED FLOOR	ST	STORM SEWER
FG	FINISHED GRADE	T	TANGENCY OF CURVE
FL	FLOW LINE	TB	TOP OF BANK
FP	FLOODPLAIN	TC	TOP OF CURB
FR	FRAME	TF	TOP OF FOUNDATION
FW	FLOODWAY	TP	TOP OF PIPE
HWL	HIGH WATER LEVEL	TS	TOP OF SIDEWALK
INV	INVERT	TW	TOP OF WALK
L	LENGTH OF CURVE	WM	WATER MAIN
MH	MANHOLE	ZA	INTERSECTION ANGLE

GENERAL NOTES

- THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO SET FORTH PERFORMANCE AND CONSTRUCTION MATERIAL STANDARDS FOR THE PROPER EXECUTION OF WORK. ALL WORKS CONTAINED WITHIN THE PLANS AND SPECIFICATIONS SHALL BE COMPLETED IN ACCORDANCE WITH ALL REQUIREMENTS FROM LOCAL, STATE, FEDERAL OR OTHER GOVERNING AGENCY'S LAWS, REGULATIONS, JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., AND THE OWNER'S DIRECTION.
- A DRAFT GEOTECHNICAL REPORT HAS BEEN PREPARED BY GILES ENGINEERING ASSOCIATES, INC. DATED **JUNE 28, 2018**. THE DATA ON SUB-SURFACE SOIL CONDITIONS IS NOT INTENDED AS A REPRESENTATION OR WARRANTY OF THE CONTINUITY OF SUCH CONDITIONS BETWEEN BORINGS OR INDICATED SAMPLING LOCATIONS. IT SHALL BE EXPRESSLY UNDERSTOOD THAT OWNER WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSIONS DRAWN THERE FROM BY THE CONTRACTOR. DATA IS MADE AVAILABLE FOR THE CONVENIENCE OF THE CONTRACTOR; THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY ADDITIONAL SOILS INVESTIGATIONS THEY FEEL IS NECESSARY FOR THE PROPER EVALUATION OF THE SITE FOR PURPOSES OF PLANNING, BIDDING, OR CONSTRUCTING THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL COMPONENTS OF THE PLANS AND SPECIFICATIONS, INCLUDING FIELD VERIFYING SOIL CONDITIONS, PRIOR TO SUBMISSION OF A BID PROPOSAL.
- THE CONTRACTOR SHALL PROMPTLY REPORT ANY ERRORS OR AMBIGUITIES LEARNED AS PART OF THEIR REVIEW OF PLANS, SPECIFICATIONS, REPORTS AND FIELD INVESTIGATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COMPUTATION OF QUANTITIES AND WORK REQUIRED TO COMPLETE THIS PROJECT. THE CONTRACTOR'S BID SHALL BE BASED ON ITS OWN COMPUTATIONS AND IN NO SUCH INSTANCE RELY ON THE ENGINEER'S ESTIMATE.
- QUESTIONS/CLARIFICATIONS WILL BE INTERPRETED BY ENGINEER/OWNER PRIOR TO THE AWARD OF CONTRACT. ENGINEER/OWNER WILL SUBMIT OFFICIAL RESPONSES IN WRITING. INTERPRETATIONS PRESENTED IN OFFICIAL RESPONSES SHALL BE BINDING ON ALL PARTIES ASSOCIATED WITH THE CONTRACT. IN NO WAY SHALL WORD-OF-MOUTH DIALOG CONSTITUTE AN OFFICIAL RESPONSE.
- PRIOR TO START OF WORK, CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH ALL CONDITIONS OF THE SITE, AND SHALL ACCOUNT FOR CONDITIONS THAT AFFECT, OR MAY AFFECT CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, LIMITATIONS OF WORK ACCESS, SPACE LIMITATIONS, OVERHEAD OBSTRUCTIONS, TRAFFIC PATTERNS, LOCAL REQUIREMENTS, ADJACENT ACTIVITIES, ETC. FAILURE TO CONSIDER SITE CONDITIONS SHALL NOT BE CAUSE FOR CLAIM OF JOB EXTRAS.
- COMMENCEMENT OF CONSTRUCTION SHALL EXPLICITLY CONFIRM THAT THE CONTRACTOR HAS REVIEWED THE PLANS AND SPECIFICATIONS IN ENTIRETY AND CERTIFIES THAT THEIR SUBMITTED BID PROPOSAL CONTAINS PROVISIONS TO COMPLETE THE PROJECT, WITH THE EXCEPTION OF UNFORESEEN FIELD CONDITIONS; ALL APPLICABLE PERMITS HAVE BEEN OBTAINED, AND CONTRACTOR UNDERSTANDS ALL OF THE REQUIREMENTS OF THE PROJECT.
- SHOULD ANY DISCREPANCIES OR CONFLICTS IN THE PLANS OR SPECIFICATIONS BE DISCOVERED AFTER THE AWARD OF CONTRACT, ENGINEER SHALL BE NOTIFIED IN WRITING IMMEDIATELY AND CONSTRUCTION OF ITEMS AFFECTED BY THE DISCREPANCIES/CONFLICTS SHALL NOT COMMENCE, OR CONTINUE, UNTIL A WRITTEN RESPONSE FROM ENGINEER/OWNER IS DISTRIBUTED. IN THE EVENT OF A CONFLICT BETWEEN REFERENCED CODES, STANDARDS, SPECIFICATIONS AND PLANS, THE ONE ESTABLISHING THE MOST STRINGENT REQUIREMENTS SHALL BE FOLLOWED.
- THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS AND LICENSES TO COMPLETE THE PROJECT. OBTAINING PERMITS, OR DELAYS, IS NOT CAUSE FOR DELAY OF THE CONTRACT OR SCHEDULE. CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.
- THE CONTRACTOR SHALL NOTIFY ALL INTERESTED GOVERNING AGENCIES, UTILITY COMPANIES AFFECTED BY THIS CONSTRUCTION PROJECT, AND DIGGER'S HOTLINE IN ADVANCE OF CONSTRUCTION TO COMPLY WITH ALL JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., PERMIT STIPULATIONS, AND OTHER APPLICABLE STANDARDS.
- SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO INITIATE, INSTITUTE, ENFORCE, MAINTAIN, AND SUPERVISE ALL SAFETY PRECAUTIONS AND JOB SITE SAFETY PROGRAMS IN CONNECTION WITH THE WORK.
- CONTRACTOR SHALL KEEP THE JOBSITE CLEAN AND ORDERLY AT ALL TIMES. ALL LOCATIONS OF THE SITE SHALL BE KEPT IN A WORKING MANNER SUCH THAT DEBRIS IS REMOVED CONTINUOUSLY AND ALL RESPECTIVE CONTRACTORS OPERATE UNDER GENERAL "GOOD HOUSEKEEPING."
- THE CONTRACTOR SHALL INDEMNIFY THE OWNER, ENGINEER, AND THEIR AGENTS FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.

PROJECT TEAM CONTACTS

CIVIL ENGINEER: ADAM ARTZ, P.E., ANDREW SHOAF, P.E. PINNACLE ENGINEERING GROUP 15850 BLUEMOUND ROAD, SUITE 210 BROOKFIELD, WI 53005 (262) 754-8888	APPLICANT: JASON LUEDERS ZILBER PROPERTY GROUP 710 N. PLANKINTON AVENUE MILWAUKEE, WI 53202 (414) 274-2807
SURVEYOR: JOHN KONOPACKI, P.L.S. PINNACLE ENGINEERING GROUP 15850 W. BLUEMOUND ROAD, SUITE 210 BROOKFIELD, WI 53005 (262) 754-8888	

BENCHMARKS

VERTICAL DATUM: HORIZONTAL DATUM:	NGVD 29 NAD 1927
BM 1: CONCRETE MONUMENT WITH BRASS CAP AT THE SOUTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 7, TOWN 9 NORTH, RANGE 20 EAST, ELEVATION = 933.82.	
BM 2: CONCRETE MONUMENT WITH BRASS CAP AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 7, TOWN 9 NORTH, RANGE 20 EAST, ELEVATION = 945.69.	

INDEX OF SHEETS

C-1	COVER SHEET
C-2	EXISTING CONDITION & DEMOLITION PLAN
C-7 - C-3	INITIAL SITE STABILIZATION
C-8 - C-12	MASS GRADING & DRAINAGE PLAN
C-13 - C-17	SITE STABILIZATION PLAN
C-18 - C-19	SITE CONSTRUCTION DETAILS
L-1 - L-2	OVERALL LANDSCAPE PLAN

REQUIRED SUBMITTALS FOR APPROVAL

- PIPE BEDDING & TRENCH BACKFILL - GRADATION
- MANHOLE BACKFILL - GRADATION

REQUIRED SUBMITTALS FOR RECORDS

- WATER MAIN PIPES, VALVES, HYDRANTS & FITTINGS
- SANITARY SEWER PIPE & FITTINGS
- STORM SEWER PIPE, STRUCTURES, & FITTINGS
- TRACER WIRE
- UNDERGROUND UTILITY LOCATION RECORD DRAWINGS
- CHEMICAL SOIL STABILIZATION MIX DESIGN (IF APPLICABLE)



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EXPIRATION DATE: JULY 31, 2018

PINNACLE ENGINEERING GROUP, LLC - ENGINEER'S LIMITATION

PINNACLE ENGINEERING GROUP, LLC AND THEIR CONSULTANTS DO NOT WARRANT OR GUARANTEE THE ACCURACY AND COMPLETENESS OF THE DELIVERABLES HEREIN BEYOND A REASONABLE DILIGENCE. IF ANY MISTAKES, OMISSIONS, OR DISCREPANCIES ARE FOUND TO EXIST WITHIN THE DELIVERABLES, THE ENGINEER SHALL BE PROMPTLY NOTIFIED PRIOR TO BID SO THAT HE MAY HAVE THE OPPORTUNITY TO TAKE WHATEVER STEPS NECESSARY TO RESOLVE THEM. FAILURE TO PROMPTLY NOTIFY THE ENGINEER OF SUCH CONDITIONS SHALL ABSOLVE THE ENGINEER FROM ANY RESPONSIBILITY FOR THE CONSEQUENCES OF SUCH FAILURE. ACTIONS TAKEN WITHOUT THE KNOWLEDGE AND CONSENT TO THE ENGINEER, OR IN CONTRADICTION TO THE ENGINEER'S DELIVERABLES OR RECOMMENDATIONS, SHALL BECOME THE RESPONSIBILITY NOT OF THE ENGINEER BUT OF THE PARTIES RESPONSIBLE FOR TAKING SUCH ACTION.

FURTHERMORE, PINNACLE ENGINEERING GROUP, LLC IS NOT RESPONSIBLE FOR CONSTRUCTION SAFETY OR THE MEANS AND METHODS OF CONSTRUCTION.

REVISIONS

1	SITE PLAN REVIEW SET	6/11/18		
2	BID SET	6/18/18		
3	MUNICIPAL RESUBMITTAL	7/16/18		

PRECIPITATION	AREA
PRECIPITATION	AREA
SAVE DATE	7/16/18
SCALE	N.T.S.

SHEET
C-1
OF
C-19

COVER SHEET

BID PACKET 1

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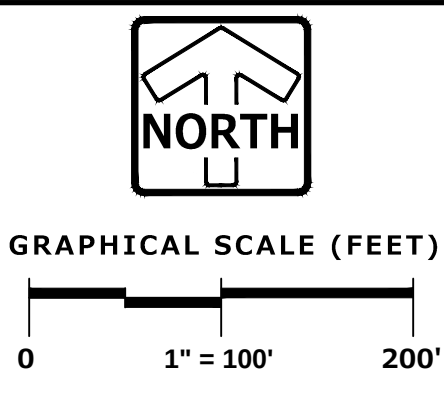
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CONTRACTOR RESPONSIBILITY:

THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. IF ADDITIONAL UTILITIES ARE KNOWN TO EXIST IN THE PROPERTY, THE OWNER WILL PROVIDE EXISTING PLANS OF OTHER UTILITIES SERVING THE SITE AND THE BUILDING THAT OTHERWISE CANNOT BE LOCATED BY A VISUAL OBSERVATION OF THE PROPERTY OR OF WHICH THE SURVEYOR WOULD HAVE NO KNOWLEDGE.

DEMOLITION & CLEARING

- CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THAT THE APPROPRIATE GOVERNMENTAL ENTITIES ARE NOTIFIED OF THE WORK AND NECESSARY PERMITS ARE OBTAINED.
- CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ITEMS/DEBRIS, CLASSIFICATION, AND PROPER DISPOSAL (E.G. - ARRANGE FOR ADEQUATE COLLECTION, AND TRANSPORTATION TO DELIVER THE RECOVERED MATERIALS TO THE APPROVED RECYCLING CENTER OR PROCESSING FACILITY). CONTRACTOR SHALL MAINTAIN RECORDS ACCESSIBLE TO THE OWNER AND GOVERNMENT ENTITIES.
- CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS IN MANNER TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES.
- CONDUCT DEMOLITION OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES DESIGNATED TO REMAIN.
- PROVIDE TEMPORARY BARRICADES AND OTHER FORMS OF PROTECTION AS REQUIRED FOR SAFETY AND SECURITY.
- PROVIDE BARRIERS AND APPROPRIATE SIGNS WHERE NECESSARY TO RESTRICT PEDESTRIANS FROM WANDERING INTO CONSTRUCTION AREAS. PROVIDE ACCEPTABLE TEMPORARY SECURITY BARRIERS WHERE PHYSICAL SECURITY OF BUILDINGS OR FENCES IS COMPROMISED DUE TO DEMOLITION WORK.
- PROVIDE TEMPORARY WEATHER PROTECTION DURING INTERVAL BETWEEN DEMOLITION AND REMOVAL OF EXISTING CONSTRUCTION ON EXTERIOR SURFACES AND INSTALLATION OF NEW CONSTRUCTION TO ENSURE NO WATER LEAKAGE OR DAMAGE OCCURS TO STRUCTURE OR INTERIOR AREAS OF EXISTING BUILDING.
- ERECT TEMPORARY ENCLOSURES AS NECESSARY TO LIMIT DUST. USE WATER AS NECESSARY TO LAY DUST WHEN CHIPPING, CORING, OR SAWING CONCRETE, MASONRY OR SIMILAR MATERIALS. WATER MUST BE CONTROLLED INSIDE BUILDINGS BY DAMMING, OR OTHER CONTAINMENT METHOD.
- PROVIDE AND MAINTAIN INTERIOR AND EXTERIOR SHORING, BRACING OR STRUCTURAL SUPPORT TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF STRUCTURES AND ADJACENT FACILITIES THAT ARE NOT PART OF DEMOLITION.
- PERFORM WORK IN SAFE AND SYSTEMATIC MANNER.
- WEAR PROPER PERSONAL PROTECTIVE EQUIPMENT AT ALL TIMES.
- COMPLETELY BACKFILL BELOW-GRADE AREAS AND VOIDS RESULTING FROM UTILITY REMOVAL AND OTHER DEMOLITION WORK WITH CLOSE GRADED AGGREGATE OR COHESIVE STRUCTURAL FILL.
- REPAIR DEMOLITION PERFORMED IN EXCESS OF THAT REQUIRED.

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DESIGNED: AJS

REVIEWED: TMA

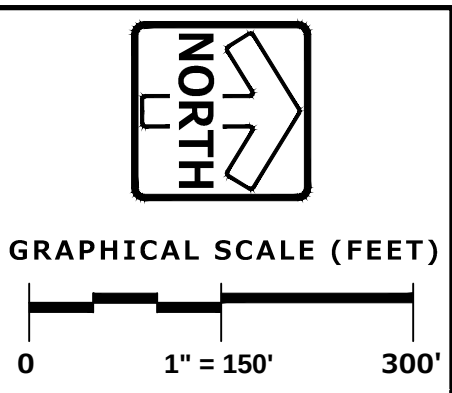
DRAWN: EP

- ### GENERAL EROSION AND SEDIMENT CONTROL NOTES
- ALL CONSTRUCTION SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER GENERAL PERMIT FOR CONSTRUCTION SITE LAND DISTURBANCE ACTIVITIES. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL TECHNICAL STANDARDS AND PROVISIONS IN EFFECT AT THE TIME OF CONSTRUCTION. THESE PROCEDURES AND STANDARDS SHALL BE REFERRED TO AS BEST MANAGEMENT PRACTICES (BMPs). IT IS THE RESPONSIBILITY OF ALL CONTRACTORS ASSOCIATED WITH THE PROJECT TO OBTAIN A COPY OF, AND UNDERSTAND, THE BMPs PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
 - THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL CONTROL MEASURES AS DIRECTED BY OWNER/ENGINEER OR GOVERNING AGENCIES SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
 - MODIFICATIONS TO THE APPROVED SWPPP IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS ARE ALLOWED IF MODIFICATIONS CONFORM TO BMPs. ALL MODIFICATIONS MUST BE APPROVED BY OWNER/ENGINEER/GOVERNING AGENCY PRIOR TO DEVIATION OF THE APPROVED PLAN.
 - INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN IN ORDER TO PROTECT ADJACENT PROPERTIES/STORM SEWER SYSTEMS FROM SEDIMENT TRANSPORT.
 - CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. CONTRACTOR IS RESPONSIBLE TO COORDINATE LOCATION(S) WITH THE PROPER AUTHORITIES, PROVIDE NECESSARY FEES AND OBTAIN ALL REQUIRED APPROVALS OR PERMITS. ADDITIONAL CONSTRUCTION ENTRANCES OTHER THAN AS SHOWN ON THE PLANS MUST BE APPROVED BY THE APPLICABLE GOVERNING AGENCIES PRIOR TO INSTALLATION.
 - PAVED SURFACES ADJACENT TO CONSTRUCTION ENTRANCES SHALL BE SWEEP AND/OR SCRAPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST IMMEDIATELY AND AS REQUESTED BY THE GOVERNING AGENCIES.
 - ALL EXISTING STORM SEWER FACILITIES THAT WILL COLLECT RUNOFF FROM DISTURBED AREAS SHALL BE PROTECTED TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS. ALL INLETS, STRUCTURES, PIPES, AND SWALES SHALL BE KEPT CLEAN AND FREE OF SEDIMENTATION AND DEBRIS.
 - EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, WATER MAIN, ETC.) OUTSIDE OF THE PERIMETER CONTROLS SHALL INCORPORATE THE FOLLOWING:

PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.

BACKFILL, COMPACT AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.

DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH BMPs PRIOR TO RELEASE INTO STORM SEWER OR DITCHES.
 - AT A MINIMUM, SEDIMENT BASINS AND NECESSARY TEMPORARY DRAINAGE PROVISIONS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE BEGINNING OF SIGNIFICANT MASS GRADING OPERATIONS TO PREVENT OFFSITE DISCHARGE OF UNTREATED RUNOFF.
 - ALL WATERCOURSES AND WETLANDS SHALL BE PROTECTED WITH SILT FENCE TO PREVENT ANY DIRECT DISCHARGE FROM DISTURBED SOILS.
 - ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR INSPECTION AND REPAIR DURING CONSTRUCTION. THE OWNER WILL BE RESPONSIBLE IF EROSION CONTROL IS REQUIRED AFTER THE CONTRACTOR HAS COMPLETED THE PROJECT.
 - TOPSOIL STOCKPILES SHALL HAVE A BERM OR TRENCH AROUND THE CIRCUMFERENCE AND PERIMETER SILT FENCE TO CONTROL SILT. IF TOPSOIL STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IS REQUIRED.
 - EROSION CONTROL MEASURES TEMPORARILY REMOVED FOR UNAVOIDABLE CONSTRUCTION ACTIVITIES SHALL BE IN WORKING ORDER IMMEDIATELY FOLLOWING COMPLETION OF SUCH ACTIVITIES OR PRIOR TO THE COMPLETION OF EACH WORK DAY, WHICH EVER OCCURS FIRST.
 - MAINTAIN SOIL EROSION CONTROL DEVICES THROUGH THE DURATION OF THIS PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. DISTURBANCES ASSOCIATED WITH EROSION CONTROL REMOVAL SHALL BE IMMEDIATELY STABILIZED.
 - PUMPS MAY BE USED AS BYPASS DEVICES. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS. PUMP DISCHARGE SHALL BE DIRECTED INTO AN APPROVED FILTER BAG OR APPROVED SETTLING DEVICE.
 - GRADING EFFORTS SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. EROSION AND SEDIMENT CONTROL MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS, AND THE USE OF TEMPORARY OR PERMANENT MEASURES. ALL DISTURBED AREAS THAT WILL NOT BE WORKED FOR A PERIOD OF FOURTEEN (14) DAYS REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH TECHNICAL STANDARDS.
 - ALL DISTURBED SLOPES EXCEEDING 4:1, SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S758N EROSION MATTING (OR APPROVED EQUAL) AND ALL CHANNELS SHALL BE STABILIZED WITH NORTH AMERICAN GREEN C1258N (OR APPROVED EQUAL) OR APPLICATION OF AN APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED. EROSION MATTING AND/OR NETTING USED ONSITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
 - DURING PERIODS OF EXTENDED DRY WEATHER, THE CONTRACTOR SHALL KEEP A WATER TRUCK ON SITE FOR THE PURPOSE OF WATERING DOWN SOILS WHICH MAY OTHERWISE BECOME AIRBORNE. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING WIND EROSION (DUST) DURING CONSTRUCTION AT HIS/HER EXPENSE.
 - DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE VISUALLY INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM ON A DAILY BASIS.
 - QUALIFIED PERSONNEL (PROVIDED BY THE GENERAL/PRIME CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED AND EROSION AND SEDIMENT CONTROLS WITHIN 24 HOURS OF ALL 0.5-INCH OR MORE, PRECIPITATION EVENTS WITH A MINIMUM INSPECTION INTERVAL OF ONCE EVERY SEVEN (7) CALENDAR DAYS IN THE ABSENCE OF A QUALIFYING RAIN OR SNOWFALL EVENT. REPORTING SHALL BE IN ACCORDANCE WITH OF THE GENERAL PERMIT. CONTRACTOR SHALL IMMEDIATELY ARRANGE TO HAVE ANY DEFICIENT ITEMS REVEALED DURING INSPECTIONS REPAIRED/REPLACED.
 - SEE ADDITIONAL DETAILS AND NOTES ON SITE STABILIZATION AND CONSTRUCTION DETAILS.



SHEET C-4

SHEET C-5

SHEET C-6

SHEET C-7

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EXISTING CONDITIONS SURVEY:

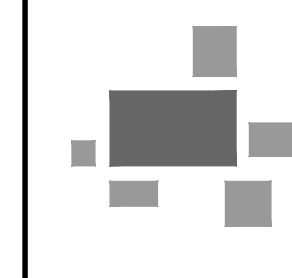
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LEGEND

- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- STORM STORM CATCH BASIN (ROUND CASTING)
- STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
- RISER
- PRECAST FLARED END SECTION
- CLEANOUT
- VALVE BOX
- FIRE HYDRANT
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- WETLANDS
- HIGH WATER LEVEL (HWL)
- NORMAL WATER LEVEL (NWL)
- DIRECTION OF SURFACE FLOW
- DIVERSION SWALE
- DIVERSION BERM
- OVERFLOW RELIEF ROUTING
- SILT FENCE
- TREE FENCE
- MASS GRADING PROJECT LIMITS
- INLET PROTECTION
- STRAW WATTLE
- ROCK CHECK DAM
- CONSTRUCTION ENTRANCE
- HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)
- TURF REINFORCEMENT MAT (TRM)

GERMANTOWN CORPORATE PARK
GERMANTOWN, WI

INITIAL SITE STABILIZATION



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REVISIONS

1	SITE PLAN REVIEW SET	6/11/18			
2	BID SET	6/18/18			
3	MUNICIPAL RESUBMITTAL	7/16/18			

PROJECT NO. 1296-00-WI

DATE: 7/17/18

SCALE: 1" = 150'

SHEET
C-3
OF
C-19

LEGEND

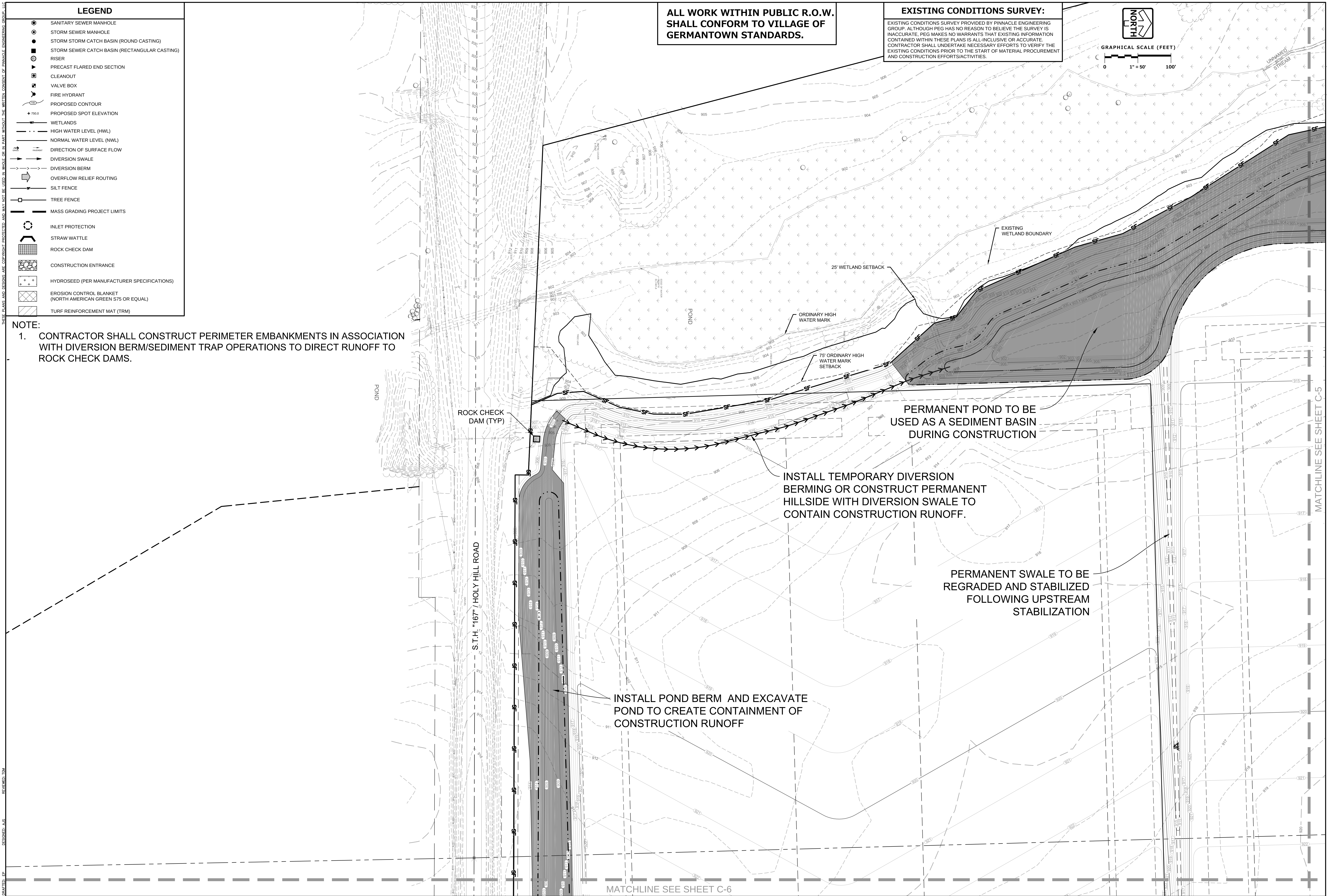
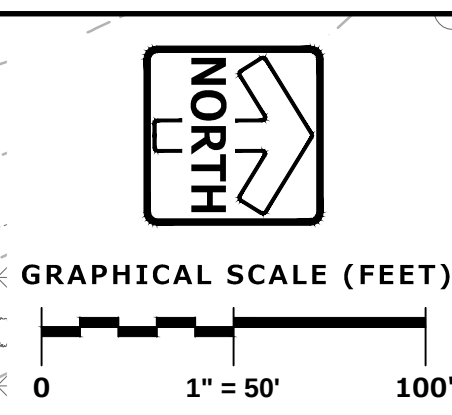
	SANITARY SEWER MANHOLE
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	STRAW WATTLE
	ROCK CHECK DAM
	CONSTRUCTION ENTRANCE
	HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
	EROSION CONTROL BLANKET (NORTH AMERICAN GEN S75 OR EQUAL)
	TURF REINFORCEMENT MAT (TRM)

NOTE:

1. CONTRACTOR SHALL CONSTRUCT PERIMETER EMBANKMENTS IN ASSOCIATION WITH DIVERSION BERM/SEDIMENT TRAP OPERATIONS TO DIRECT RUNOFF TO ROCK CHECK DAMS.

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9 4 SET
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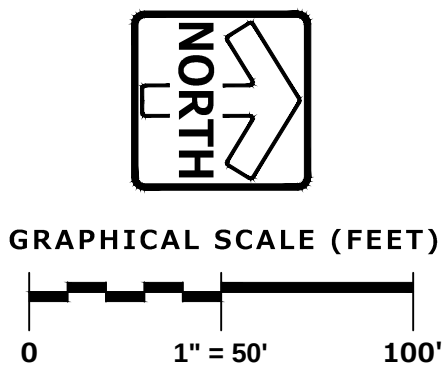
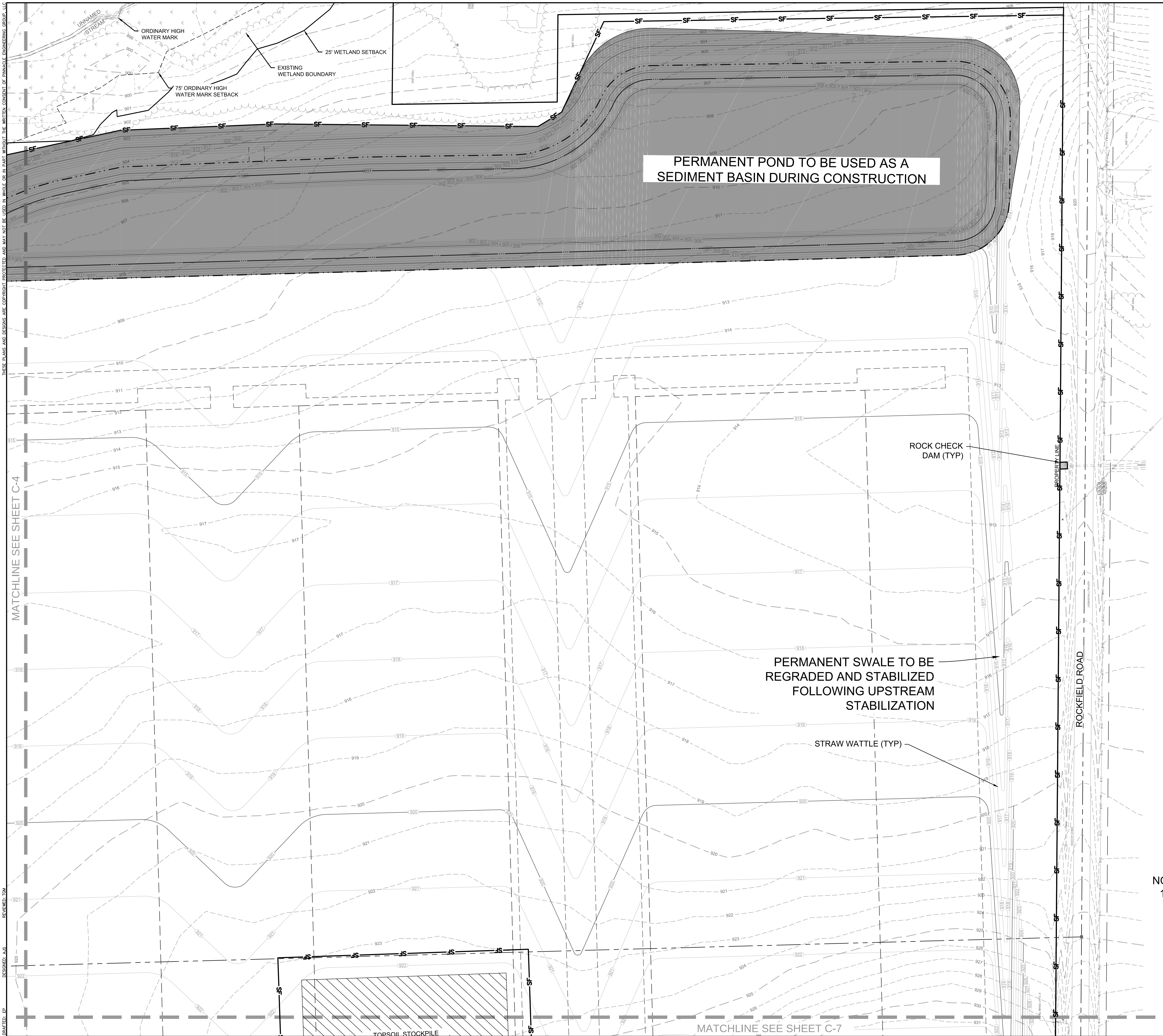
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INITIAL SITE STABILIZATION

REVISIONS		REC NO: 1295.00-WT REC PM: ARCA SAVE DATE: 7/17/18 SCALE: 1" = 50' © COPYRIGHT 2018	SHEET C-4 OF C-19
1	SITE PLAN REVIEW SET	6/11/18	
2	BID SET	6/18/18	
3	MUNICIPAL RESUBMITTAL	7/16/18	

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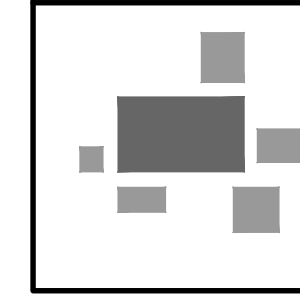


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	RISER
	PRECAST FLARED END SECTION
	CLEANOUT
	VALVE BOX
	FIRE HYDRANT
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	WETLANDS
	HIGH WATER LEVEL (HWL)
	NORMAL WATER LEVEL (NWL)
	DIRECTION OF SURFACE FLOW
	DIVERSION SWALE
	DIVERSION BERM
	OVERFLOW RELIEF ROUTING
	SILT FENCE
	TREE FENCE
	MASS GRADING PROJECT LIMITS
	INLET PROTECTION
	STRAW WATTLE
	ROCK CHECK DAM
	CONSTRUCTION ENTRANCE
	HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
	EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)
	TURF REINFORCEMENT MAT (TRM)

NOTE:
1. CONTRACTOR SHALL CONSTRUCT PERIMETER EMBANKMENTS IN ASSOCIATION WITH DIVERSION BERM/SEDIMENT TRAP OPERATIONS TO DIRECT RUNOFF TO SED. TRAPS.



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(262) 754-8888

CHICAGO | MILWAUKEE | NATIONWIDE

GERMANTOWN CORPORATE PARK
GERMANTOWN, WI

INITIAL SITE STABILIZATION

REVISIONS	
1. SITE PLAN REVIEW SET	6/11/18
2. BID SET	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PROJECT NO. 1296.00-WI	AREA
DATE 7/17/18	SCALE 1" = 50'

SHEET
C-5
C-19



GRAPHICAL SCALE (FEET)

0 1" = 50' 100

**ALL WORK WITHIN PUBLIC R.O.W.
SHALL CONFORM TO VILLAGE OF
GERMANTOWN STANDARDS.**

EXISTING CONDITIONS SURVEY:

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LEGEND

- | | |
|--|--|
| | SANITARY SEWER MANHOLE |
| | STORM SEWER MANHOLE |
| | STORM STORM CATCH BASIN (ROUND CASTING) |
| | STORM SEWER CATCH BASIN (RECTANGULAR CASTING) |
| | RISER |
| | PRECAST FLARED END SECTION |
| | CLEANOUT |
| | VALVE BOX |
| | FIRE HYDRANT |
| | PROPOSED CONTOUR |
| | PROPOSED SPOT ELEVATION |
| | WETLANDS |
| | HIGH WATER LEVEL (HWL) |
| | NORMAL WATER LEVEL (NWL) |
| | DIRECTION OF SURFACE FLOW |
| | DIVISION SWALE |
| | DIVISION BERM |
| | OVERFLOW RELIEF ROUTING |
| | SILT FENCE |
| | TREE FENCE |
| | MASS GRADING PROJECT LIMITS |
| | INLET PROTECTION |
| | STRAW WATTLE |
| | ROCK CHECK DAM |
| | CONSTRUCTION ENTRANCE |
| | HYDROSEED (PER MANUFACTURER SPECIFICATIONS) |
| | EROSION CONTROL BLANKET
(NORTH AMERICAN GREEN S75 OR EQUAL) |
| | TURF REINFORCEMENT MAT (TRM) |

NOTE:

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INITIAL SITE STABILIZATION

REVISIONS

1	SITE PLAN REVIEW SET	6/11/18			
2	BID SET	6/18/18			
3	MUNICIPAL RESUBMITTAL	7/16/18			

REG JOB No 1296.00-WI

REG PM ARA

SAVE DATE 7/17/18

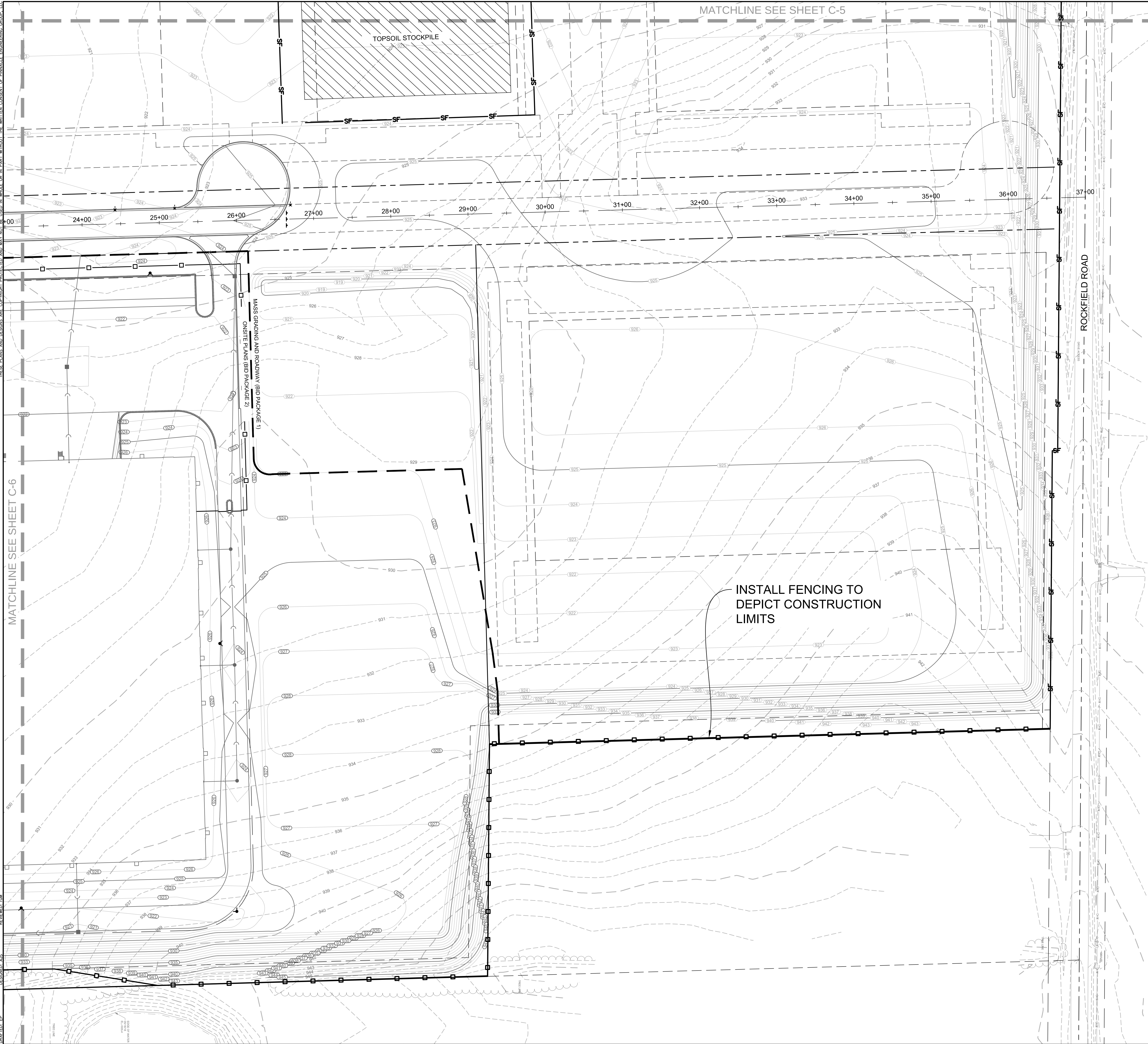
SHEET
C-6
OF
C-19

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INITIAL SITE STABILIZATION

BID PACKET 1

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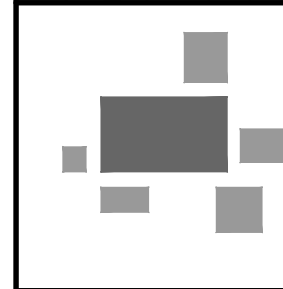


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LEGEND	
	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	STORM CATCH BASIN (ROUND CASTING)
	STORM CATCH BASIN (RECTANGULAR CASTING)
	RISER
	PRECAST FLARED END SECTION
	CLEANOUT
	VALVE BOX
	FIRE HYDRANT
	PROPOSED CONTOUR
	PROPOSED SPOT ELEVATION
	WETLANDS
	HIGH WATER LEVEL (HWL)
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	DIRECTION OF SURFACE FLOW
	DIVERSION SWALE
	DIVERSION BERM
	OVERFLOW RELIEF ROUTING
	SILT FENCE
	TREE FENCE
	MASS GRADING PROJECT LIMITS
	INLET PROTECTION
	STRAW WATTLE
	ROCK CHECK DAM
	CONSTRUCTION ENTRANCE
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NOTE:
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INITIAL SITE STABILIZATION

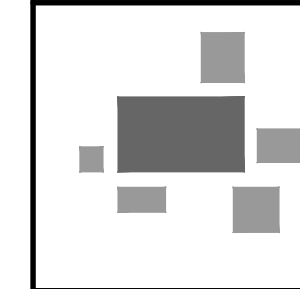
REVISIONS	
1. SITE PLAN REVIEW SET	6/11/18
2. BID SET	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PEG JOB NO. 1296.00-WI	AREA
PEG PM	SAVE DATE 7/17/18
SCALE 1" = 50'	

SHEET
C-7
C-19

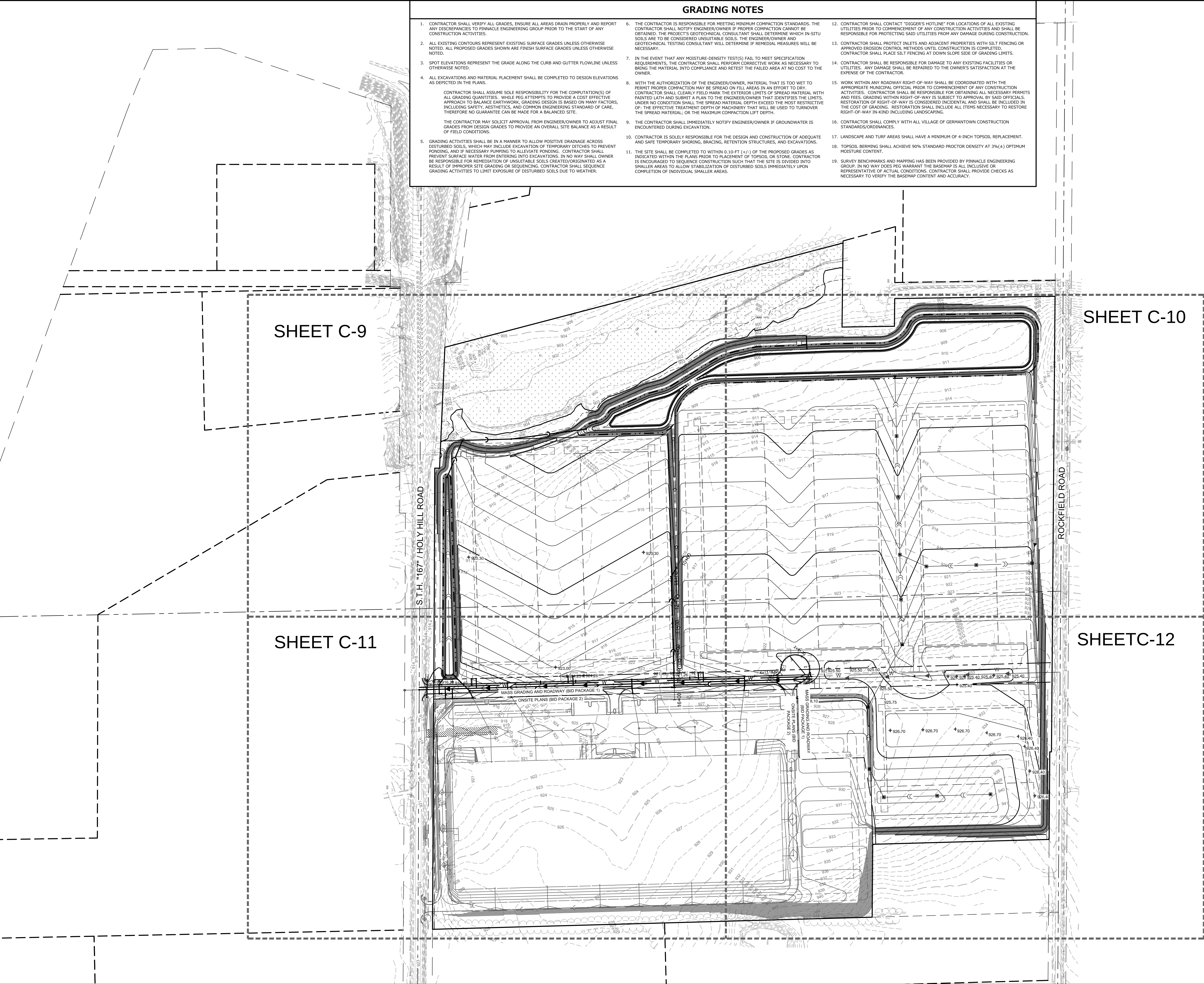
Z:\PROJECTS\2018\1296.00-WI\CAD\SHEETS\MASS GRADING\1296.00-WI INITIAL SITE STABILIZATION PLAN.DWG

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DRAWN: JAS
REVIEWED: TMA



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- ### GRADING NOTES
- CONTRACTOR SHALL VERIFY ALL GRADES, ENSURE ALL AREAS DRAIN PROPERLY AND REPORT ANY DISCREPANCIES TO PINNACLE ENGINEERING GROUP PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
 - ALL EXISTING CONTOURS REPRESENT EXISTING SURFACE GRADES UNLESS OTHERWISE NOTED. ALL PROPOSED GRADES SHOWN ARE FINISH SURFACE GRADES UNLESS OTHERWISE NOTED.
 - SPOT ELEVATIONS REPRESENT THE GRADE ALONG THE CURB AND GUTTER FLOWLINE UNLESS OTHERWISE NOTED.
 - ALL EXCAVATIONS AND MATERIAL PLACEMENT SHALL BE COMPLETED TO DESIGN ELEVATIONS AS DEPICTED IN THE PLANS.

CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPUTATION(S) OF ALL GRADING QUANTITIES. WHILE PEG ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARD OF CARE, THEREFORE NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.

THE CONTRACTOR MAY SOLICIT APPROVAL FROM ENGINEER/OWNER TO ADJUST FINAL GRADES FROM DESIGN GRADES TO PROVIDE AN OVERALL SITE BALANCE AS A RESULT OF FIELD CONDITIONS.
 - GRADING ACTIVITIES SHALL BE IN A MANNER TO ALLOW POSITIVE DRAINAGE ACROSS DISTURBED SOILS, WHICH MAY INCLUDE EXCAVATION OF TEMPORARY DITCHES TO PREVENT PONDING, AND IF NECESSARY PUMPING TO ALLEVIATE PONDING. CONTRACTOR SHALL PREVENT SURFACE WATER FROM ENTERING INTO EXCAVATIONS. IN NO WAY SHALL OWNER BE RESPONSIBLE FOR RENOVATION OF UNSUITABLE SOILS CREATED/ORIGINATED AS A RESULT OF IMPROPER SITE GRADING OR SEQUENCING. CONTRACTOR SHALL SEQUENCE GRADING ACTIVITIES TO LIMIT EXPOSURE OF DISTURBED SOILS DUE TO WEATHER.
 - THE CONTRACTOR IS RESPONSIBLE FOR MEETING MINIMUM COMPACTION STANDARDS. THE CONTRACTOR SHALL NOTIFY ENGINEER/OWNER IF PROPER COMPACTION CANNOT BE OBTAINED. THE PROJECT'S GEOTECHNICAL CONSULTANT SHALL DETERMINE WHICH IN-SITU SOILS ARE TO BE CONSIDERED UNSUITABLE SOILS. THE ENGINEER/OWNER AND GEOTECHNICAL TESTING CONSULTANT WILL DETERMINE IF REMEDIAL MEASURES WILL BE NECESSARY.
 - IN THE EVENT THAT ANY MOISTURE-DENSITY TEST(S) FAIL TO MEET SPECIFICATION REQUIREMENTS, THE CONTRACTOR SHALL PERFORM CORRECTIVE WORK AS NECESSARY TO BRING THE MATERIAL INTO COMPLIANCE AND RETEST THE FAILED AREA AT NO COST TO THE OWNER.
 - WITH THE AUTHORIZATION OF THE ENGINEER/OWNER, MATERIAL THAT IS TOO WET TO PERMIT PROPER COMPACTION MAY BE SPREAD ON FILL AREAS IN AN EFFORT TO DRY. CONTRACTOR SHALL CLEARLY FIELD MARK THE EXTERIOR LIMITS OF SPREAD MATERIAL WITH PAINTED LATH AND SUBMIT A PLAN TO THE ENGINEER/OWNER THAT IDENTIFIES THE LIMITS. UNDER NO CONDITION SHALL THE SPREAD MATERIAL DEPTH EXCEED THE MOST RESTRICTIVE OF: THE EFFECTIVE TREATMENT DEPTH OF MACHINERY THAT WILL BE USED TO TURNOVER THE SPREAD MATERIAL; OR THE MAXIMUM COMPACTION LIFT DEPTH.
 - THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER/OWNER IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION.
 - CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ADEQUATE AND SAFE TEMPORARY SHORING, BRACING, RETENTION STRUCTURES, AND EXCAVATIONS.
 - THE SITE SHALL BE COMPLETED TO WITHIN 0.10-FT (+/-) OF THE PROPOSED GRADES AS INDICATED WITHIN THE PLANS PRIOR TO PLACEMENT OF TOPSOIL OR STONE. CONTRACTOR IS ENCOURAGED TO SEQUENCE CONSTRUCTION SUCH THAT THE SITE IS DIVIDED INTO SMALLER AREAS TO ALLOW STABILIZATION OF DISTURBED SOILS IMMEDIATELY UPON COMPLETION OF INDIVIDUAL SMALLER AREAS.
 - CONTRACTOR SHALL CONTACT "DIGGER'S HOTLINE" FOR LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR PROTECTING SAID UTILITIES FROM ANY DAMAGE DURING CONSTRUCTION. CONTRACTOR SHALL PLACE SILT FENCING AT DOWN SLOPE SIDE OF GRADING LIMITS.
 - CONTRACTOR SHALL PROTECT INLETS AND ADJACENT PROPERTIES WITH SILT FENCING OR APPROVED EROSION CONTROL METHODS UNTIL CONSTRUCTION IS COMPLETED. CONTRACTOR SHALL PLACE SILT FENCING AT DOWN SLOPE SIDE OF GRADING LIMITS.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING FACILITIES OR UTILITIES. ANY DAMAGE SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.
 - WORK WITHIN ANY ROADWAY RIGHT-OF-WAY SHALL BE COORDINATED WITH THE APPROPRIATE MUNICIPAL OFFICIAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FEES. GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS. RESTORATION OF RIGHT-OF-WAY IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF GRADING. RESTORATION SHALL INCLUDE ALL ITEMS NECESSARY TO RESTORE RIGHT-OF-WAY IN-KIND INCLUDING LANDSCAPING.
 - CONTRACTOR SHALL COMPLY WITH ALL VILLAGE OF GERMANTOWN CONSTRUCTION STANDARDS/ORDINANCES.
 - LANDSCAPE AND TURF AREAS SHALL HAVE A MINIMUM OF 4-INCH TOPSOIL REPLACEMENT.
 - TOPSOIL BERMING SHALL ACHIEVE 90% STANDARD PROCTOR DENSITY AT 3% (+) OPTIMUM MOISTURE CONTENT.
 - SURVEY BENCHMARKS AND MAPPING HAS BEEN PROVIDED BY PINNACLE ENGINEERING GROUP. IN NO WAY DOES PEG WARRANT THE BASEMAP IS ALL INCLUSIVE OR REPRESENTATIVE OF ACTUAL CONDITIONS. CONTRACTOR SHALL PROVIDE CHECKS AS NECESSARY TO VERIFY THE BASEMAP CONTENT AND ACCURACY.



GRAPHICAL SCALE (FEET)
0 1" = 150' 300'

LEGEND

	SANITARY MANHOLE
	STORM CATCH BASIN
	CURB CATCH BASIN
	CONTOUR
	SPOT ELEVATION
	DIRECTION OF SURFACE FLOW
	DITCH OR SWALE
	FLOODPLAIN
	MASS GRADING PROJECT LIMITS
	OVERFLOW RELIEF ROUTING
	CURB AND GUTTER
	REVERSE PITCH CURB & GUTTER

ALL WORK WITHIN PUBLIC R.O.W. SHALL CONFORM TO VILLAGE OF GERMANTOWN STANDARDS.

GERMANTOWN CORPORATE PARK
GERMANTOWN, WI

MASS GRADING & DRAINAGE PLAN OVERVIEW

REVISIONS			SHEET C-8 C-19
NO.	DESCRIPTION	DATE	
1	SITE PLAN REVIEW SET	6/11/18	
2	BID SET	6/18/18	
3	MUNICIPAL RESUBMITTAL	7/16/18	

PROJECT NO. 1296.00-WI

AREA

DATE 7/17/18

SCALE 1" = 150'

LEGEND	
	SANITARY MANHOLE
	STORM CATCH BASIN
	CURB CATCH BASIN
	CONTOUR
	SPOT ELEVATION
	DIRECTION OF SURFACE FLOW
	DITCH OR SWALE
	FLOODPLAIN
	MASS GRADING PROJECT LIMITS
	OVERFLOW RELIEF ROUTING
	CURB AND GUTTER
	REVERSE PITCH CURB & GUTTER



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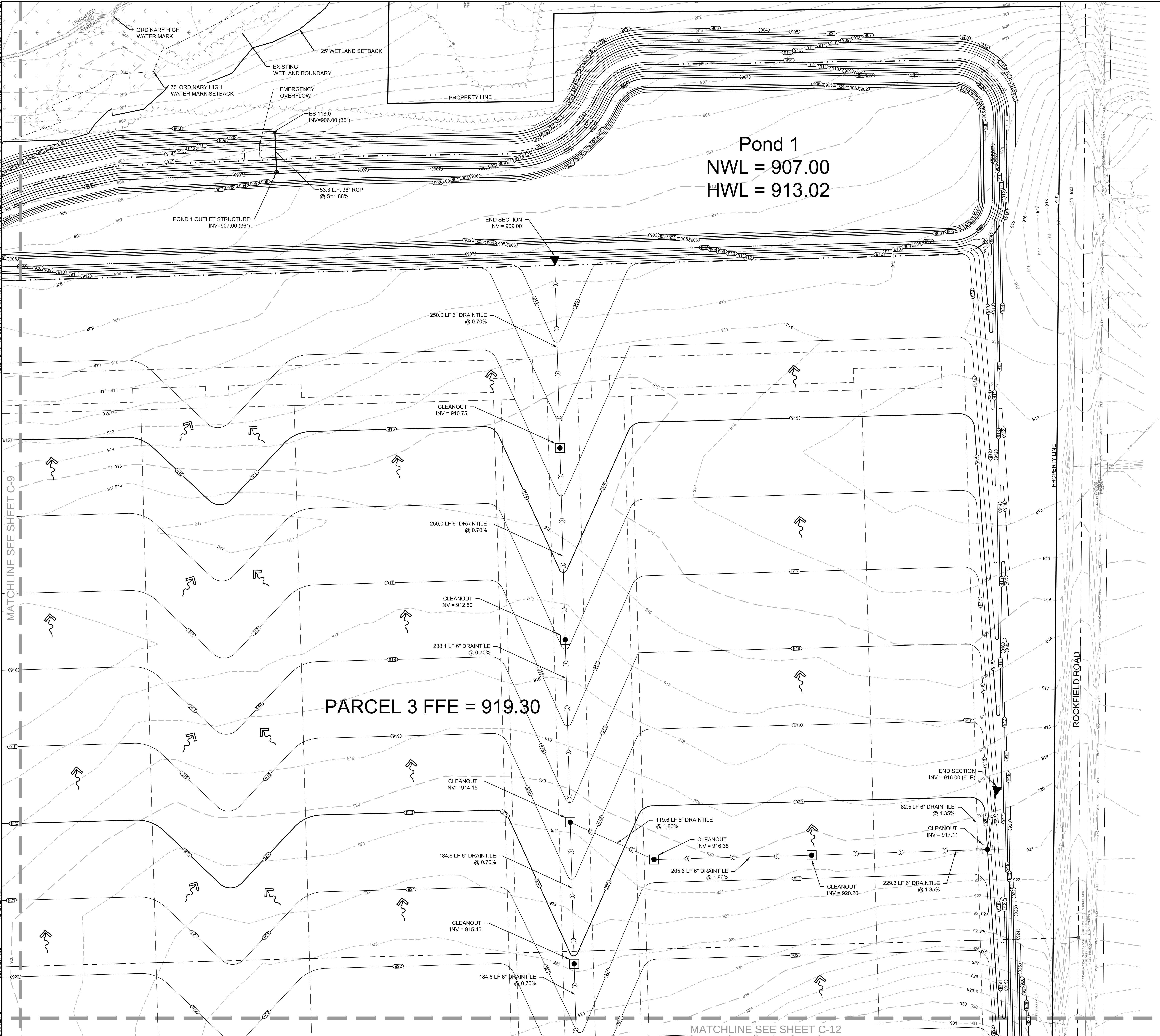
GERMANTOWN CORPORATE PARK
GERMANTOWN, WI

MASS GRADING & DRAINAGE PLAN

REVISIONS	
1 SITE PLAN REVIEW SET	6/11/18
2 BID SET	6/18/18
3 MUNICIPAL RESUBMITTAL	7/16/18

PEG JOB No. **1296.00-WI**
 PEG PM **ARA**
 SAVE DATE **7/17/18**
 SCALE **1" = 50'**

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LEGEND

SANITARY MANHOLE

STORM CATCH BASIN

CURB CATCH BASIN

CONTOUR

SPOT ELEVATION

DIRECTION OF SURFACE FLOW

DITCH OR SWALE

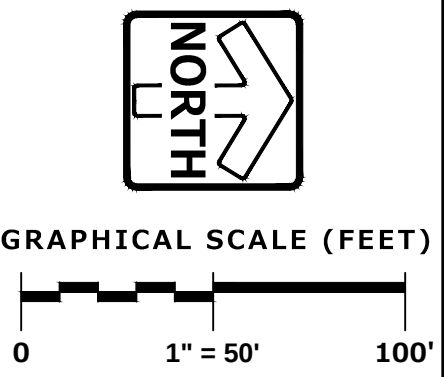
FLOODPLAIN

MASS GRADING PROJECT LIMITS

OVERFLOW RELIEF ROUTING

CURB AND GUTTER

REVERSE PITCH CURB & GUTTER



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MASS GRADING & DRAINAGE PLAN

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PROJECT NO. 1296.00-WI	AREA
DATE 7/17/18	SCALE 1" = 50'

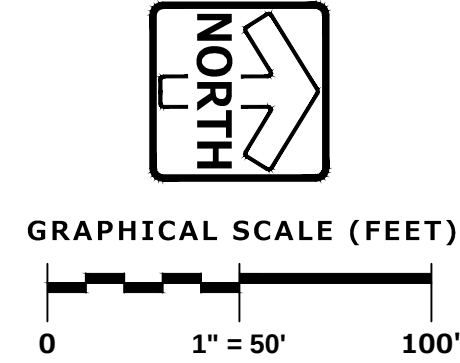
SHEET
C-10
C-19

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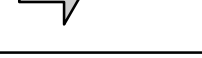
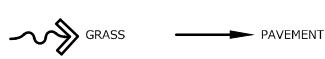
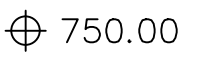
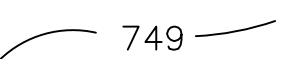
DESIGNED: EP

DESIGNED: AJS

REVIEWED: TMA



LEGEND

- 
- SANITARY MANHOLE

STORM CATCH BASIN

CURB CATCH BASIN

CONTOUR

SPOT ELEVATION

DIRECTION OF SURFACE FLOW

DITCH OR SWALE

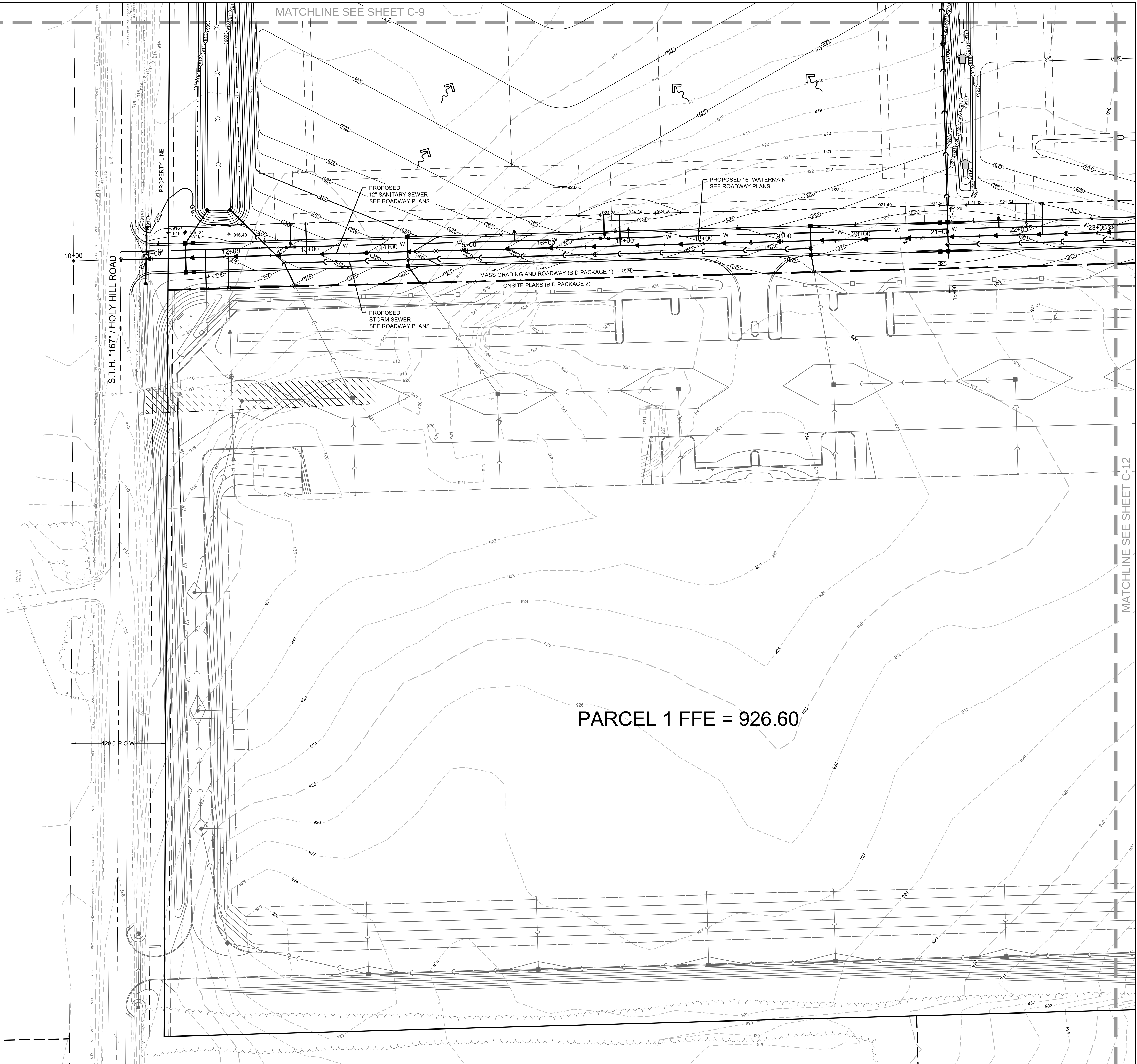
FLOODPLAIN

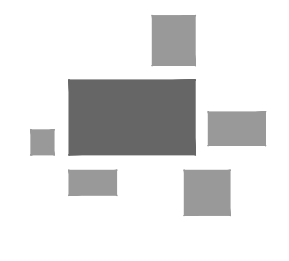
MASS GRADING PROJECT LIMITS

OVERFLOW RELIEF ROUTING

CURB AND GUTTER

REVERSE PITCH CURB & GUTTER





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MASS GRADING & DRAINAGE PLAN

REVISIONS		
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PROJECT NO. 1296.00-WI	AREA
DATE 7/17/18	SCALE 1" = 50'
SHEET C-11	SHEET C-19

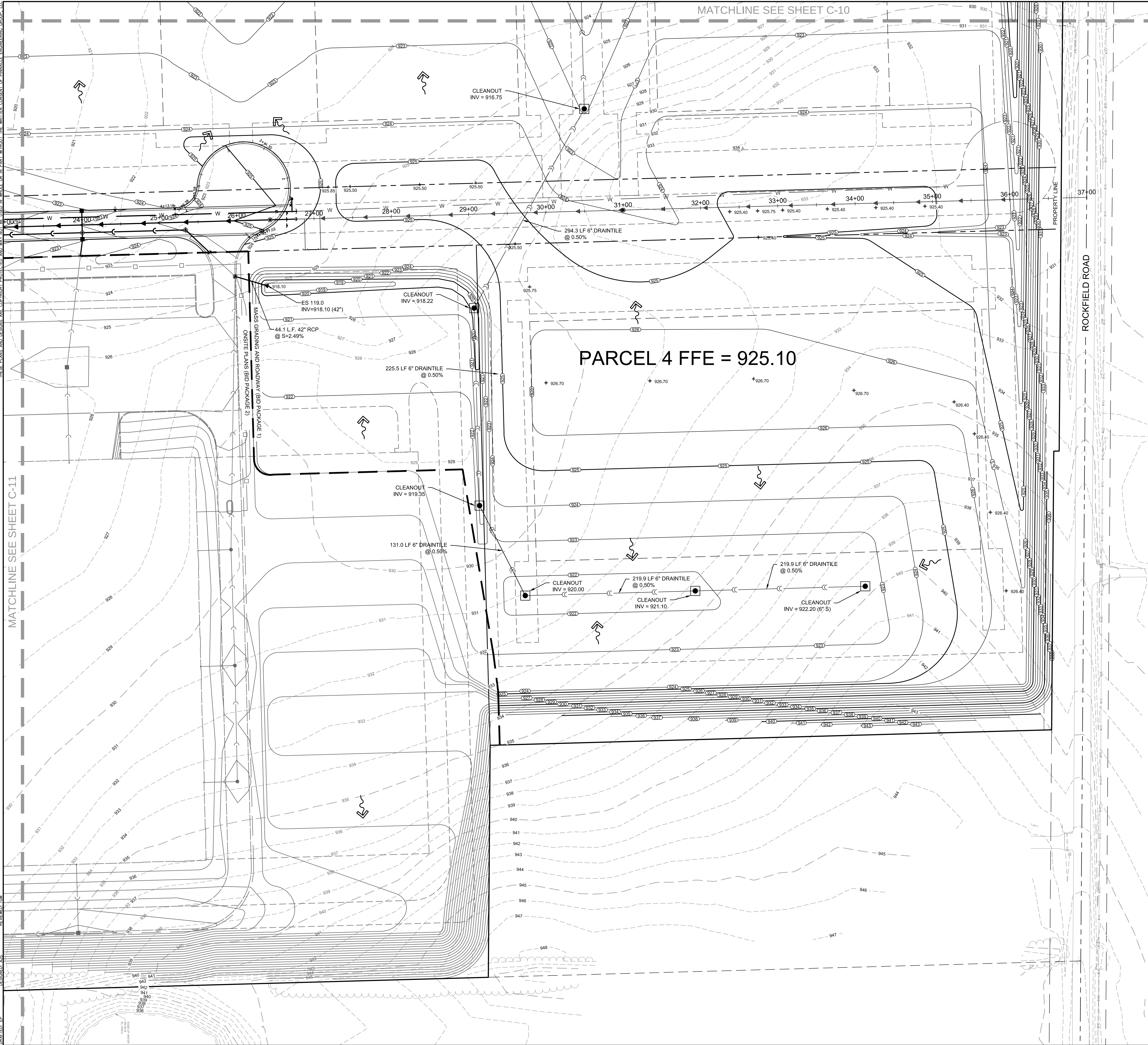
MASS GRADING & DRAINAGE PLAN

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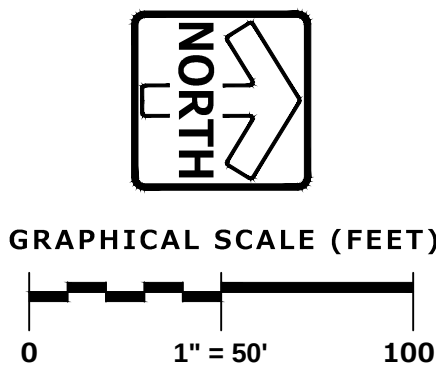
MATCHLINE SEE SHEET C-12

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REVIEWED: TSM
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MATCHLINE SEE SHEET C-10



LEGEND

- SANITARY MANHOLE
- STORM CATCH BASIN
- CURB CATCH BASIN
- CONTOUR
- SPOT ELEVATION
- DIRECTION OF SURFACE FLOW
- DITCH OR SWALE
- FLOODPLAIN
- MASS GRADING PROJECT LIMITS
- OVERFLOW RELIEF ROUTING
- CURB AND GUTTER
- REVERSE PITCH CURB & GUTTER

PARCEL 4 FFE = 925.10

ROCKFIELD ROAD

MATCHLINE SEE SHEET C-11



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MASS GRADING & DRAINAGE PLAN

REVISIONS		
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REV	DATE	BY	APP
1	7/17/18		

SHEET
C-12
C-19

MASS GRADING & DRAINAGE PLAN

BID PACKET 1

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DESIGNED: EP

DRAWN: JAS

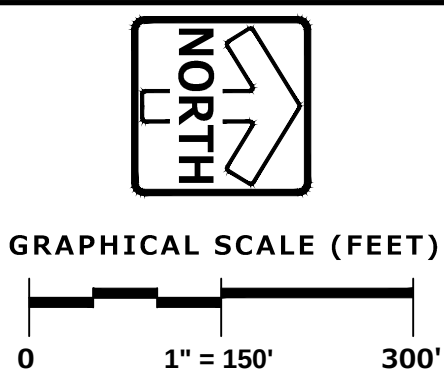
REVIEWED: TMA

- ### GENERAL EROSION AND SEDIMENT CONTROL NOTES
- ALL CONSTRUCTION SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER GENERAL PERMIT FOR CONSTRUCTION SITE LAND DISTURBANCE ACTIVITIES. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL TECHNICAL STANDARDS AND PROVISIONS IN EFFECT AT THE TIME OF CONSTRUCTION. THESE PROCEDURES AND STANDARDS SHALL BE REFERRED TO AS BEST MANAGEMENT PRACTICES (BMPs). IT IS THE RESPONSIBILITY OF ALL CONTRACTORS ASSOCIATED WITH THE PROJECT TO OBTAIN A COPY OF, AND UNDERSTAND, THE BMPs PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
 - THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL CONTROL MEASURES AS DIRECTED BY OWNER/ENGINEER OR GOVERNING AGENCIES SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
 - MODIFICATIONS TO THE APPROVED SWPPP IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS ARE ALLOWED IF MODIFICATIONS CONFORM TO BMPs. ALL MODIFICATIONS MUST BE APPROVED BY OWNER/ENGINEER/GOVERNING AGENCY PRIOR TO DEVIATION OF THE APPROVED PLAN.
 - INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN IN ORDER TO PROTECT ADJACENT PROPERTIES/STORM SEWER SYSTEMS FROM SEDIMENT TRANSPORT.
 - CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. CONTRACTOR IS RESPONSIBLE TO COORDINATE LOCATION(S) WITH THE PROPER AUTHORITIES, PROVIDE NECESSARY FEES AND OBTAIN ALL REQUIRED APPROVALS OR PERMITS. ADDITIONAL CONSTRUCTION ENTRANCES OTHER THAN AS SHOWN ON THE PLANS MUST BE APPROVED BY THE APPLICABLE GOVERNING AGENCIES PRIOR TO INSTALLATION.
 - PAVED SURFACES ADJACENT TO CONSTRUCTION ENTRANCES SHALL BE SWEEP AND/OR SCRAPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST IMMEDIATELY AND AS REQUESTED BY THE GOVERNING AGENCIES.
 - ALL EXISTING STORM SEWER FACILITIES THAT WILL COLLECT RUNOFF FROM DISTURBED AREAS SHALL BE PROTECTED TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS. ALL INLETS, STRUCTURES, PIPES, AND SWALES SHALL BE KEPT CLEAN AND FREE OF SEDIMENTATION AND DEBRIS.
 - EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, WATER MAIN, ETC.) OUTSIDE OF THE PERIMETER CONTROLS SHALL INCORPORATE THE FOLLOWING:

PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.

BACKFILL, COMPACT AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.

DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH BMPs PRIOR TO RELEASE INTO STORM SEWER OR DITCHES.
 - AT A MINIMUM, SEDIMENT BASINS AND NECESSARY TEMPORARY DRAINAGE PROVISIONS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE BEGINNING OF SIGNIFICANT MASS GRADING OPERATIONS TO PREVENT OFFSITE DISCHARGE OF UNTREATED RUNOFF.
 - ALL WATERCOURSES AND WETLANDS SHALL BE PROTECTED WITH SILT FENCE TO PREVENT ANY DIRECT DISCHARGE FROM DISTURBED SOILS.
 - ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR INSPECTION AND REPAIR DURING CONSTRUCTION. THE OWNER WILL BE RESPONSIBLE IF EROSION CONTROL IS REQUIRED AFTER THE CONTRACTOR HAS COMPLETED THE PROJECT.
 - TOPSOIL STOCKPILES SHALL HAVE A BERM OR TRENCH AROUND THE CIRCUMFERENCE AND PERIMETER SILT FENCE TO CONTROL SILT. IF TOPSOIL STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IS REQUIRED.
 - EROSION CONTROL MEASURES TEMPORARILY REMOVED FOR UNAVOIDABLE CONSTRUCTION ACTIVITIES SHALL BE IN WORKING ORDER IMMEDIATELY FOLLOWING COMPLETION OF SUCH ACTIVITIES OR PRIOR TO THE COMPLETION OF EACH WORK DAY, WHICH EVER OCCURS FIRST.
 - MAINTAIN SOIL EROSION CONTROL DEVICES THROUGH THE DURATION OF THIS PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. DISTURBANCES ASSOCIATED WITH EROSION CONTROL REMOVAL SHALL BE IMMEDIATELY STABILIZED.
 - PUMPS MAY BE USED AS BYPASS DEVICES. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS. PUMP DISCHARGE SHALL BE DIRECTED INTO AN APPROVED FILTER BAG OR APPROVED SETTLING DEVICE.
 - GRADING EFFORTS SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. EROSION AND SEDIMENT CONTROL MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS, AND THE USE OF TEMPORARY OR PERMANENT MEASURES. ALL DISTURBED AREAS THAT WILL NOT BE WORKED FOR A PERIOD OF FOURTEEN (14) DAYS REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH TECHNICAL STANDARDS.
 - ALL DISTURBED SLOPES EXCEEDING 4:1, SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75BN EROSION MATTING (OR APPROVED EQUAL) AND ALL CHANNELS SHALL BE STABILIZED WITH CLASS 1 TYPE B (SEE WISCONSIN DOT PRODUCT ACCEPTABILITY LISTS) OR APPLICATION OF AN APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED. EROSION MATTING AND/OR NETTING USED ONSITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
 - DURING PERIODS OF EXTENDED DRY WEATHER, THE CONTRACTOR SHALL KEEP A WATER TRUCK ON SITE FOR THE PURPOSE OF WATERING DOWN SOILS WHICH MAY OTHERWISE BECOME AIRBORNE. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING WIND EROSION (DUST) DURING CONSTRUCTION AT HIS/HER EXPENSE.
 - DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE VISUALLY INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM ON A DAILY BASIS.
 - QUALIFIED PERSONNEL (PROVIDED BY THE GENERAL/PRIME CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED AND EROSION AND SEDIMENT CONTROLS WITHIN 24 HOURS OF ALL 0.5-INCH OR MORE, PRECIPITATION EVENTS WITH A MINIMUM INSPECTION INTERVAL OF ONCE EVERY SEVEN (7) CALENDAR DAYS IN THE ABSENCE OF A QUALIFYING RAIN OR SNOWFALL EVENT. REPORTING SHALL BE IN ACCORDANCE WITH OF THE GENERAL PERMIT. CONTRACTOR SHALL IMMEDIATELY ARRANGE TO HAVE ANY DEFICIENT ITEMS REVEALED DURING INSPECTIONS REPAIRED/REPLACED.
 - SEE ADDITIONAL DETAILS AND NOTES ON SITE STABILIZATION AND CONSTRUCTION DETAILS.



SHEET C-14

SHEET C-15

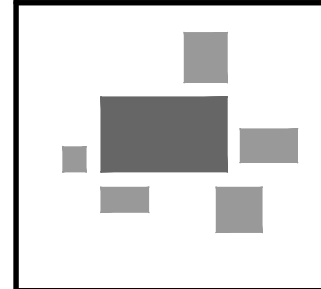
SHEET C-16

SHEET C-17

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- ### LEGEND
- SANITARY SEWER MANHOLE
 - STORM SEWER MANHOLE
 - STORM STORM CATCH BASIN (ROUND CASTING)
 - STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
 - RISER
 - PRECAST FLARED END SECTION
 - CLEANOUT
 - VALVE BOX
 - FIRE HYDRANT
 - PROPOSED CONTOUR
 - PROPOSED SPOT ELEVATION
 - WETLANDS
 - HIGH WATER LEVEL (HWL)
 - NORMAL WATER LEVEL (NWL)
 - MASS GRADING PROJECT LIMITS
 - DIRECTION OF SURFACE FLOW
 - DIVERSION SWALE
 - DIVERSION DITCH
 - OVERFLOW RELIEF ROUTING
 - SILT FENCE
 - INLET PROTECTION
 - STRAW WATTLE
 - CONSTRUCTION ENTRANCE
 - HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
 - EROSION CONTROL BLANKET - CHANNEL
 - EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)
 - TURF REINFORCEMENT MAT (TRM)



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GERMANTOWN CORPORATE PARK
GERMANTOWN, WI

SITE STABILIZATION PLAN OVERVIEW

REVISIONS			SHEET C-13 of C-19
NO.	DESCRIPTION	DATE	
1	SITE PLAN REVIEW SET	6/11/18	
2	BID SET	6/18/18	
3	MUNICIPAL RESUBMITTAL	7/16/18	

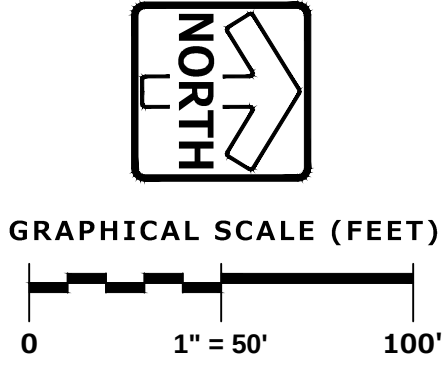
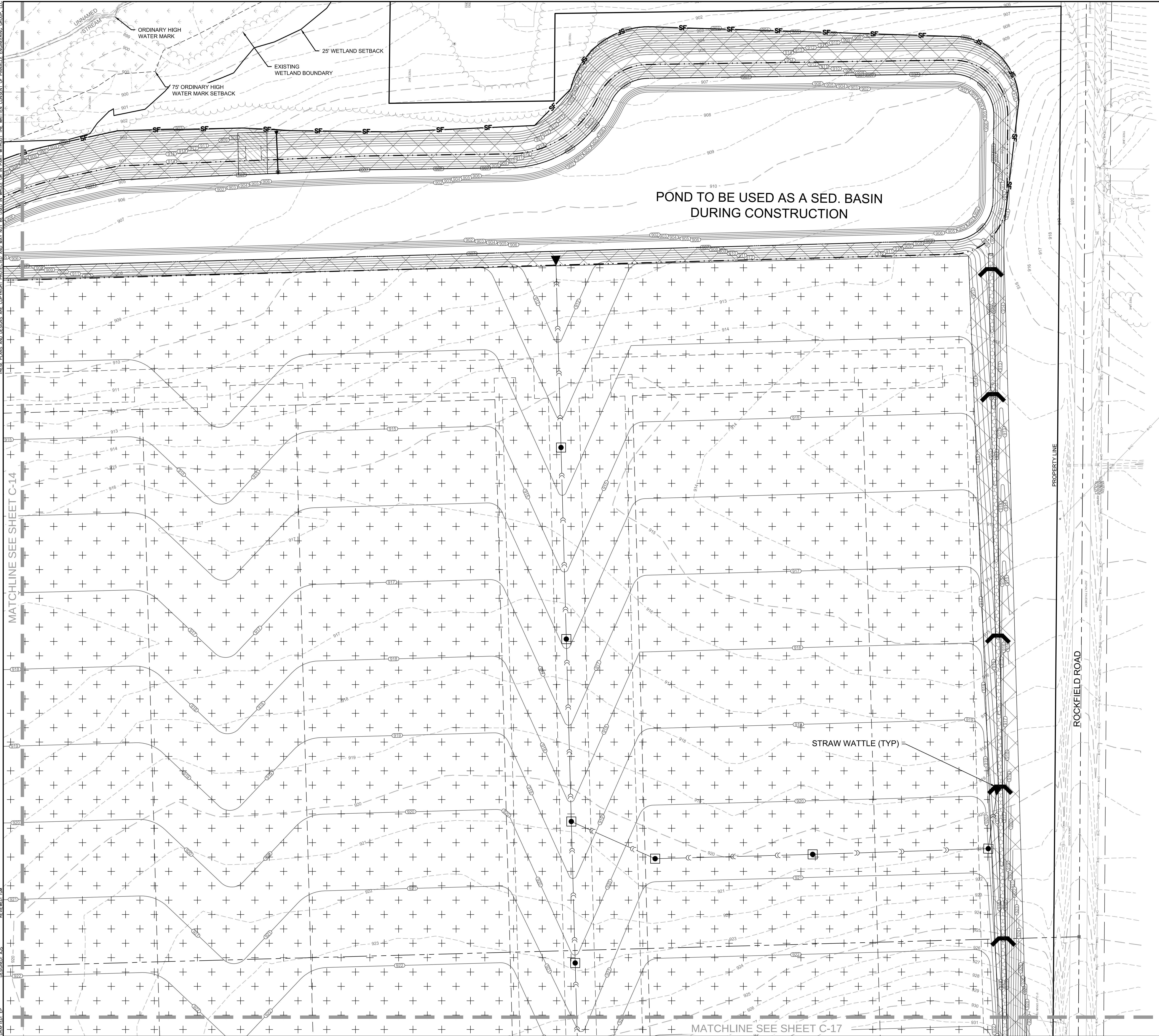
PROJECT NO. 1296.00-WI

AREA

DATE 7/17/18

SCALE 1" = 150'

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	EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)
	TURF REINFORCEMENT MAT (TRM)

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GERMANTOWN, WI**

SITE STABILIZATION PLAN

REVISIONS	
1. SITE PLAN REVIEW SET	6/11/18
2. BID SET	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PEC DB 1296.00-WI	AREA	DATE	SCALE
PEC PM		7/17/18	1" = 50'
SAVE DATE			

SHEET	C-15
OF	19
SHEET	C-19



GRAPHICAL SCALE (FEET)

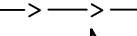
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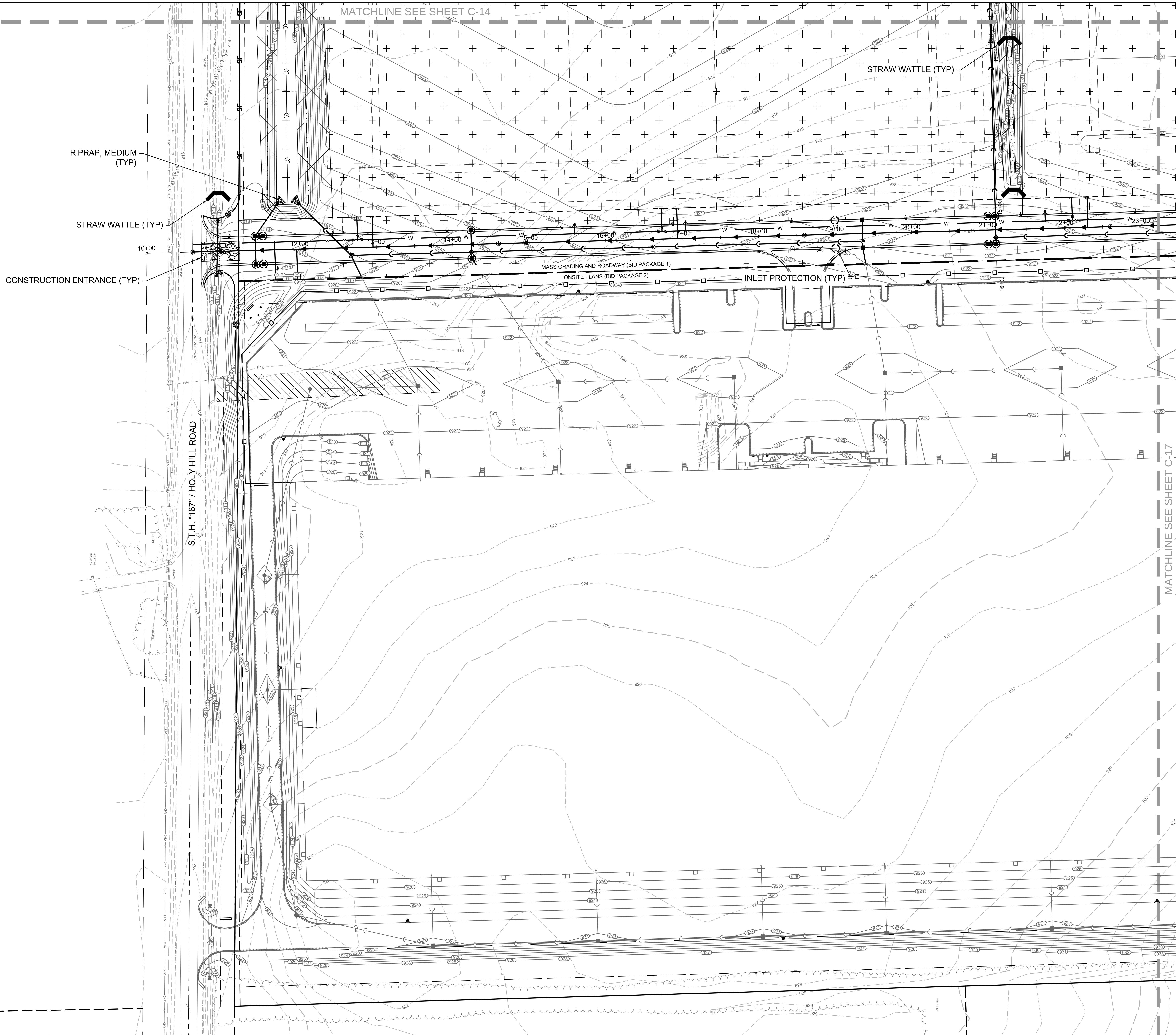
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LEGEND

- | | |
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|  | EROSION CONTROL BLANKET
(NORTH AMERICAN GREEN S75 OR EQUAL) |
|  | TURF REINFORCEMENT MAT (TRM) |



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MATCHLINE SEE SHEET C-17

BID PACKET 1

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SITE STABILIZATION PLAN



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SITE STABILIZATION PLAN

REVISIONS

1	SITE PLAN REVIEW SET	6/11/18	_____	_____	_____
2	BID SET	6/18/18	_____	_____	_____
3	MUNICIPAL RESUBMITTAL	7/16/18	_____	_____	_____

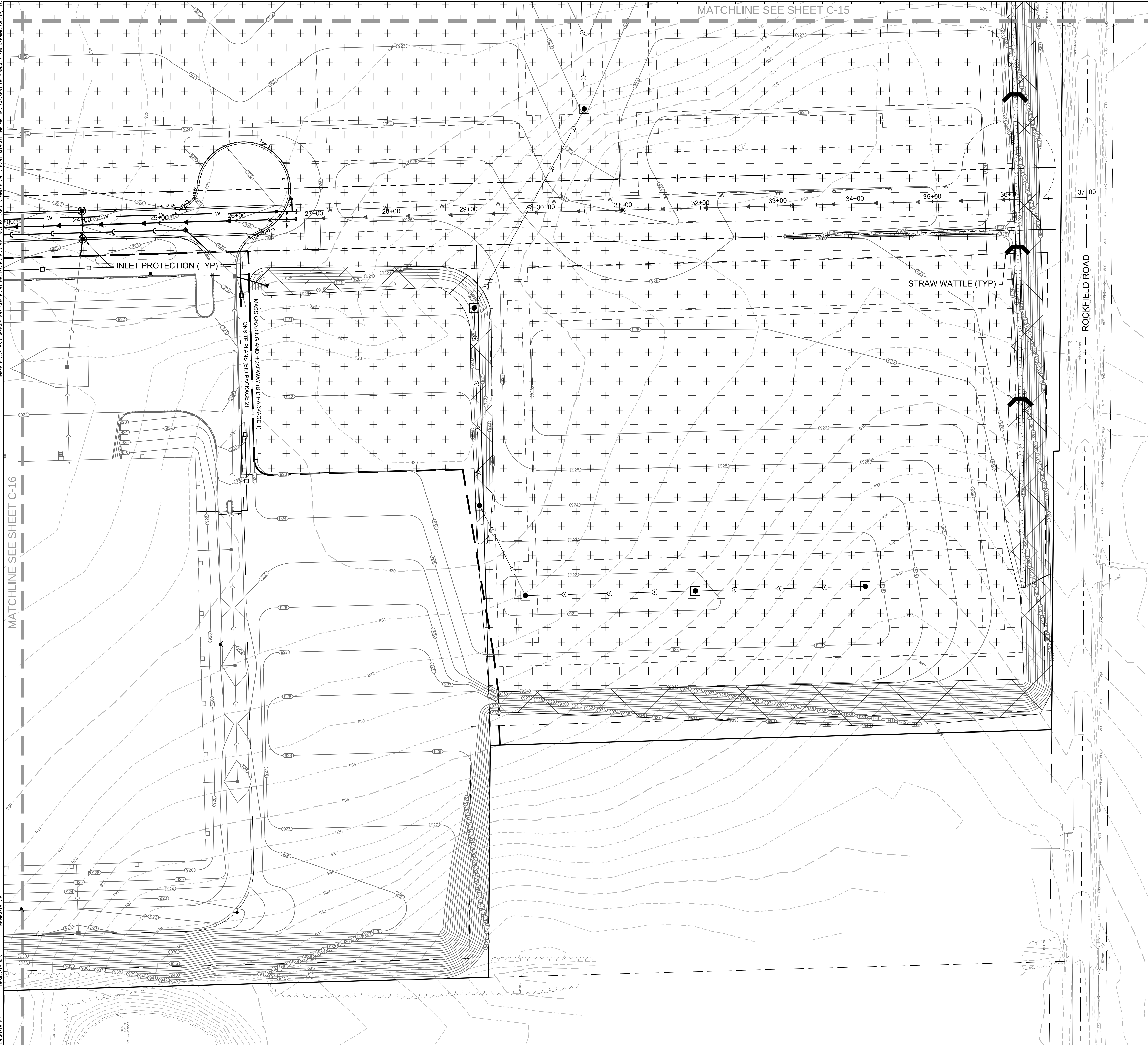
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PEG PM	ARA
SAVE DATE	7/17/18

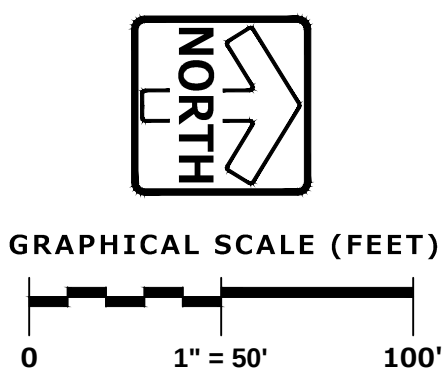
SCALE 1" = 50'

SHEET
C-16
OF
C-19

DESIGNED: EP
DRAWN: JAS
REVIEWED: TMA
DATE: 7/17/18



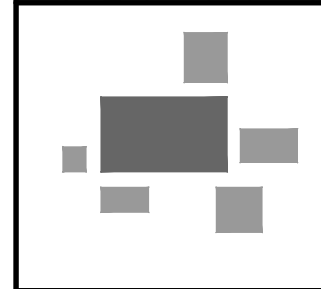
MATCHLINE SEE SHEET C-15



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SITE STABILIZATION PLAN

REVISIONS			SHEET C-17 of C-19
1	SITE PLAN REVIEW SET	6/11/18	
2	BID SET	6/18/18	
3	MUNICIPAL RESUBMITTAL	7/16/18	

PROJECT: 1296.00-WI

AREA: 1296.00-WI

DATE: 7/17/18

SCALE: 1" = 50'

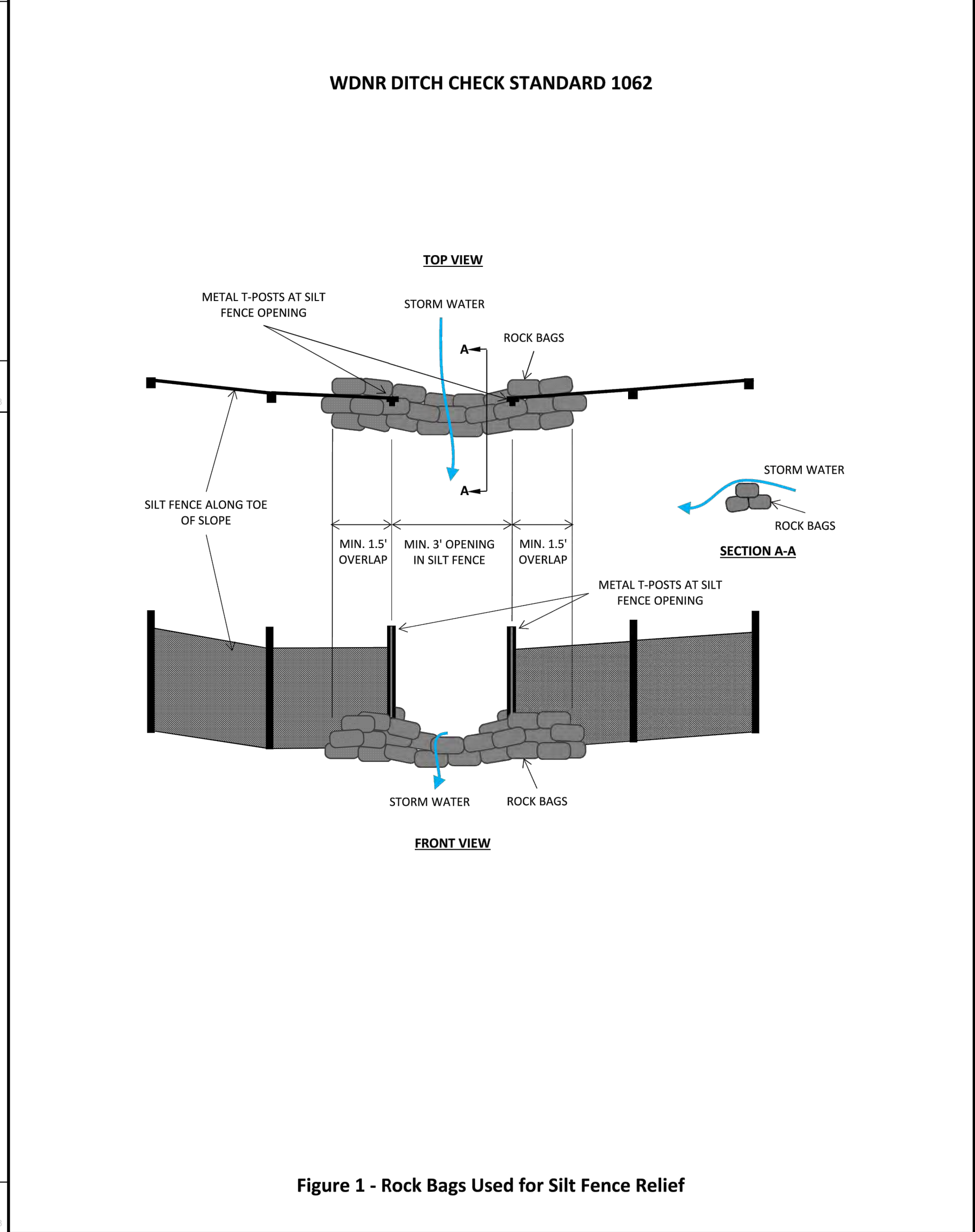
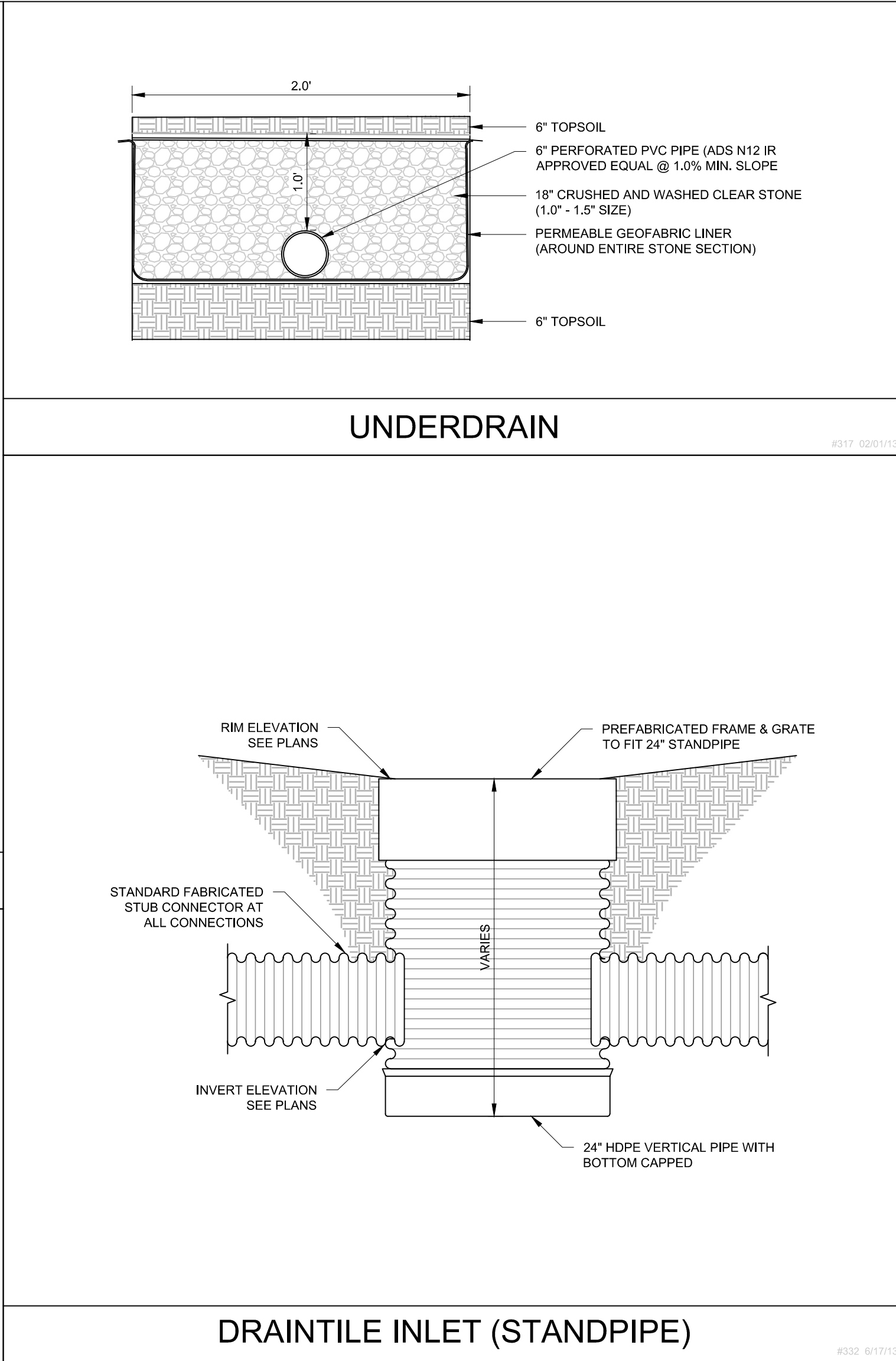
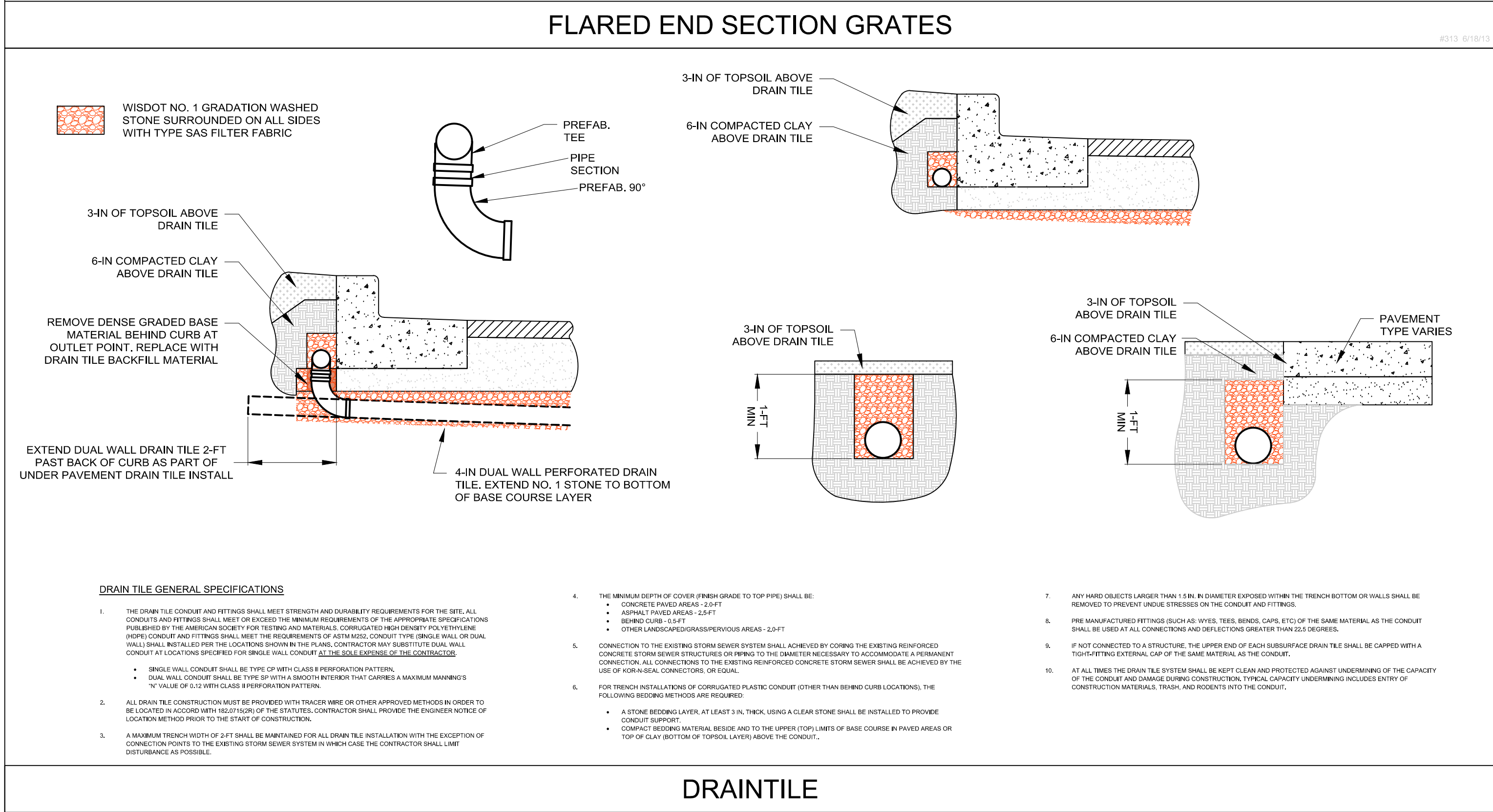
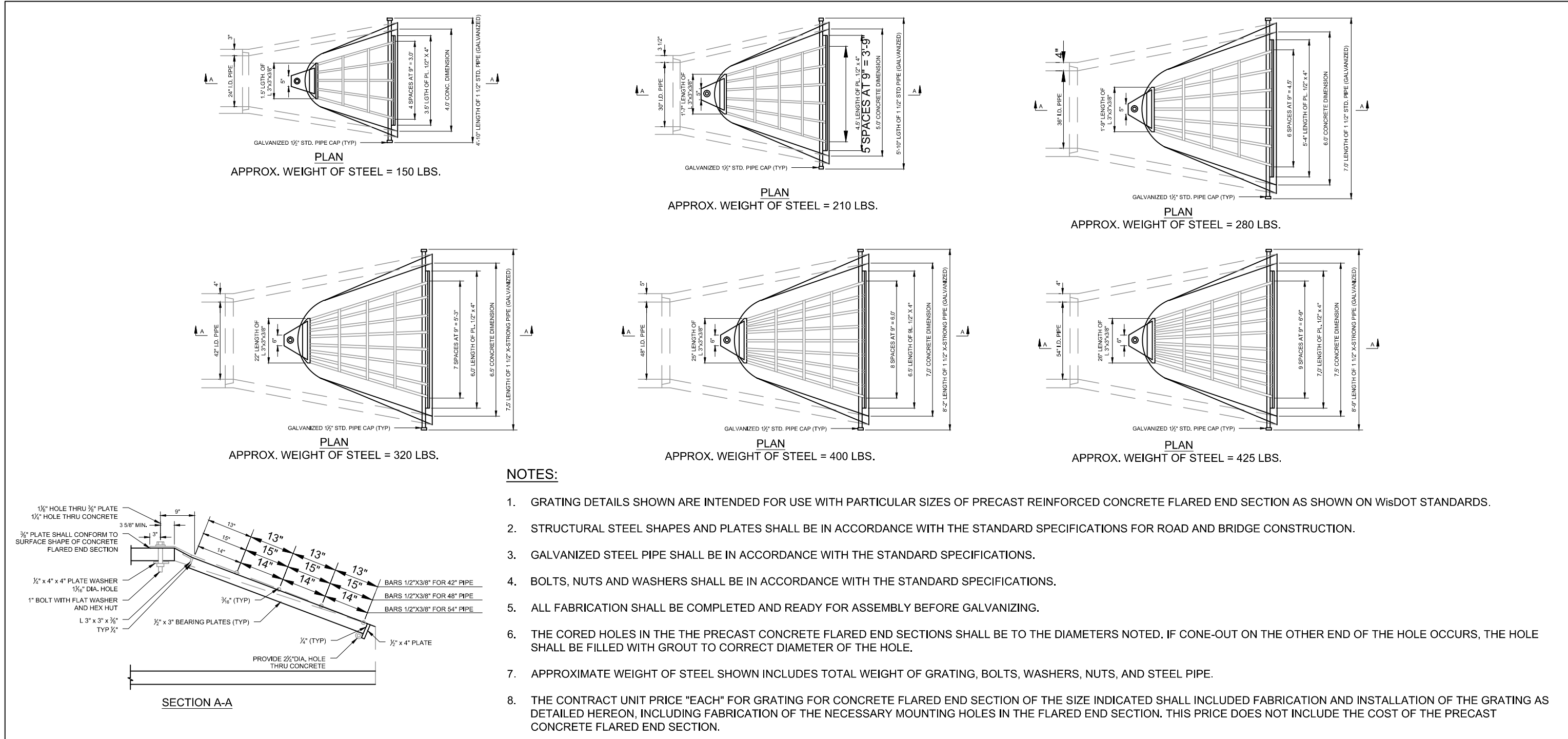
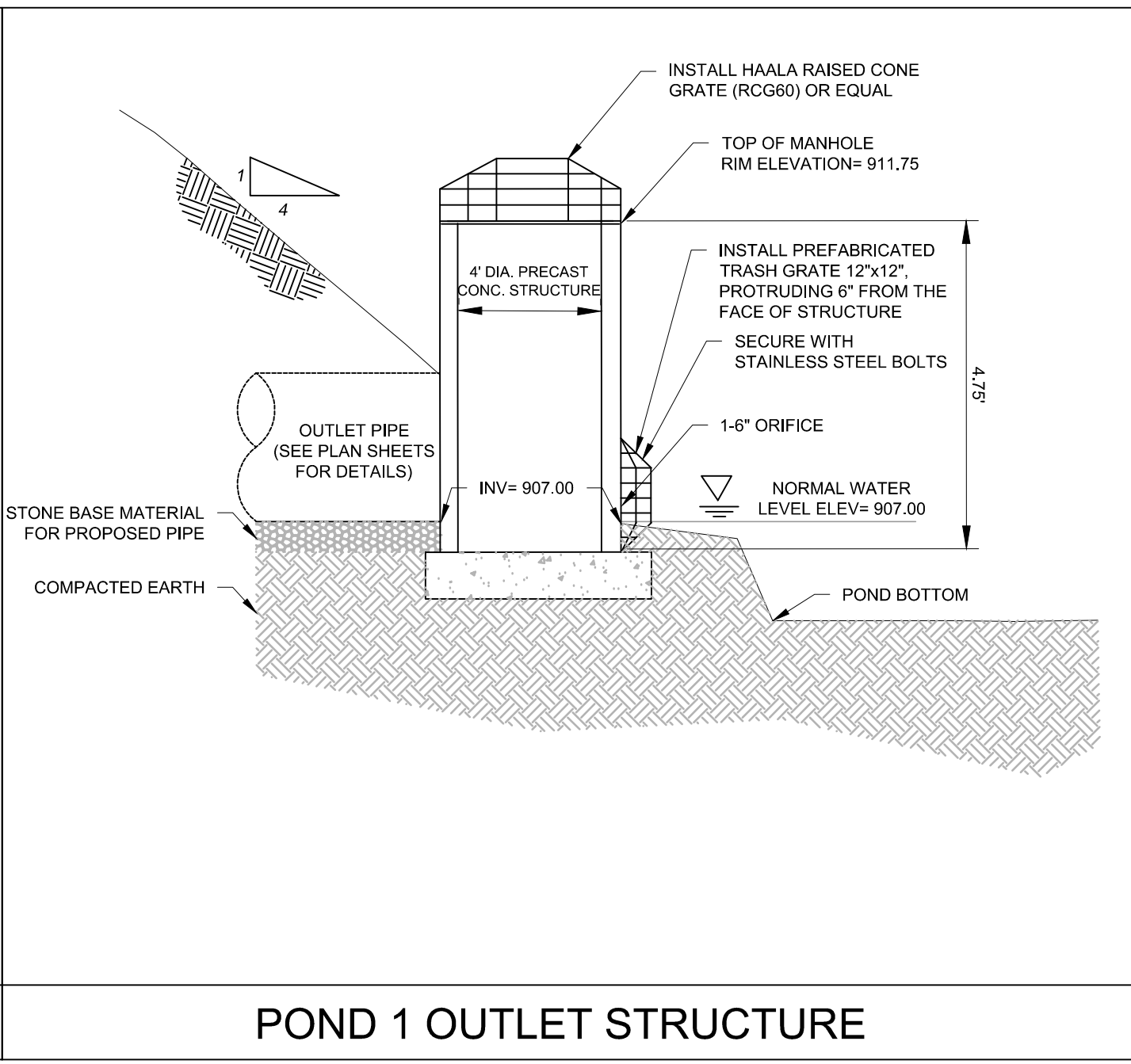
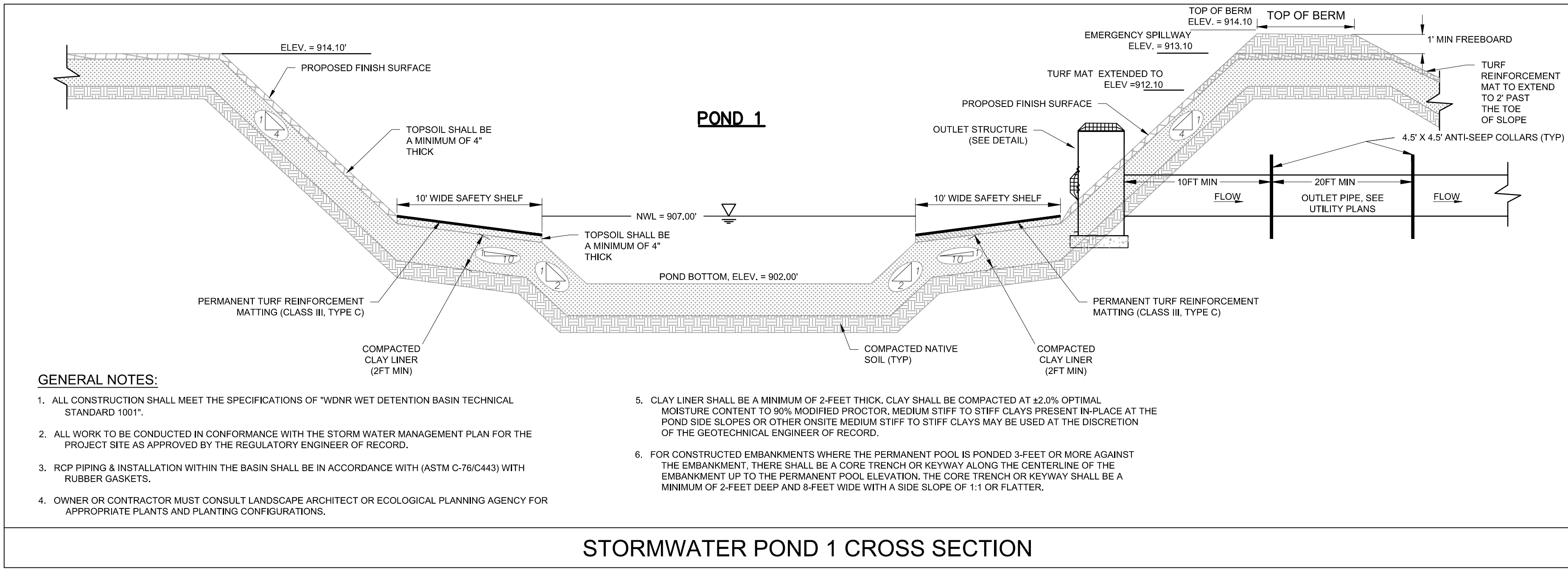
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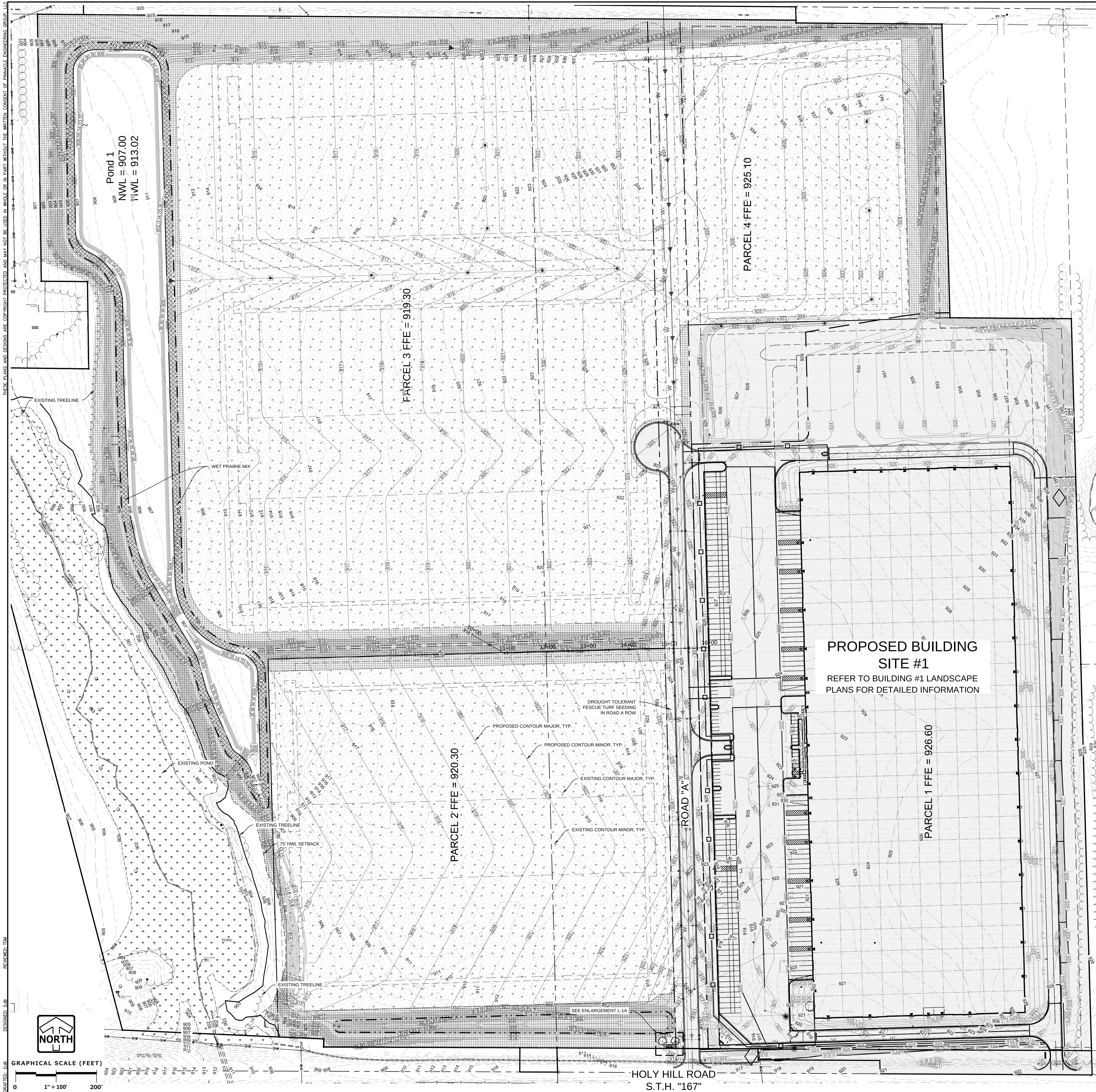
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REVIEWED: AJS

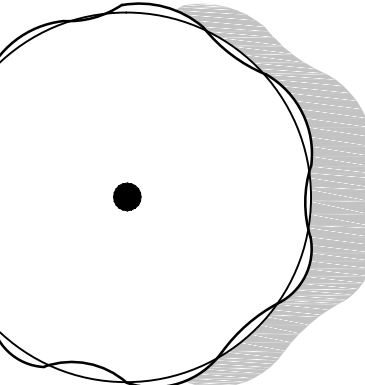
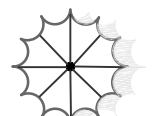
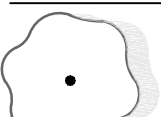
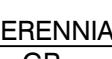
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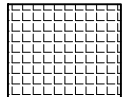
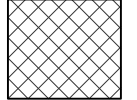
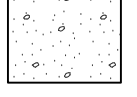
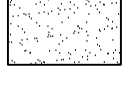
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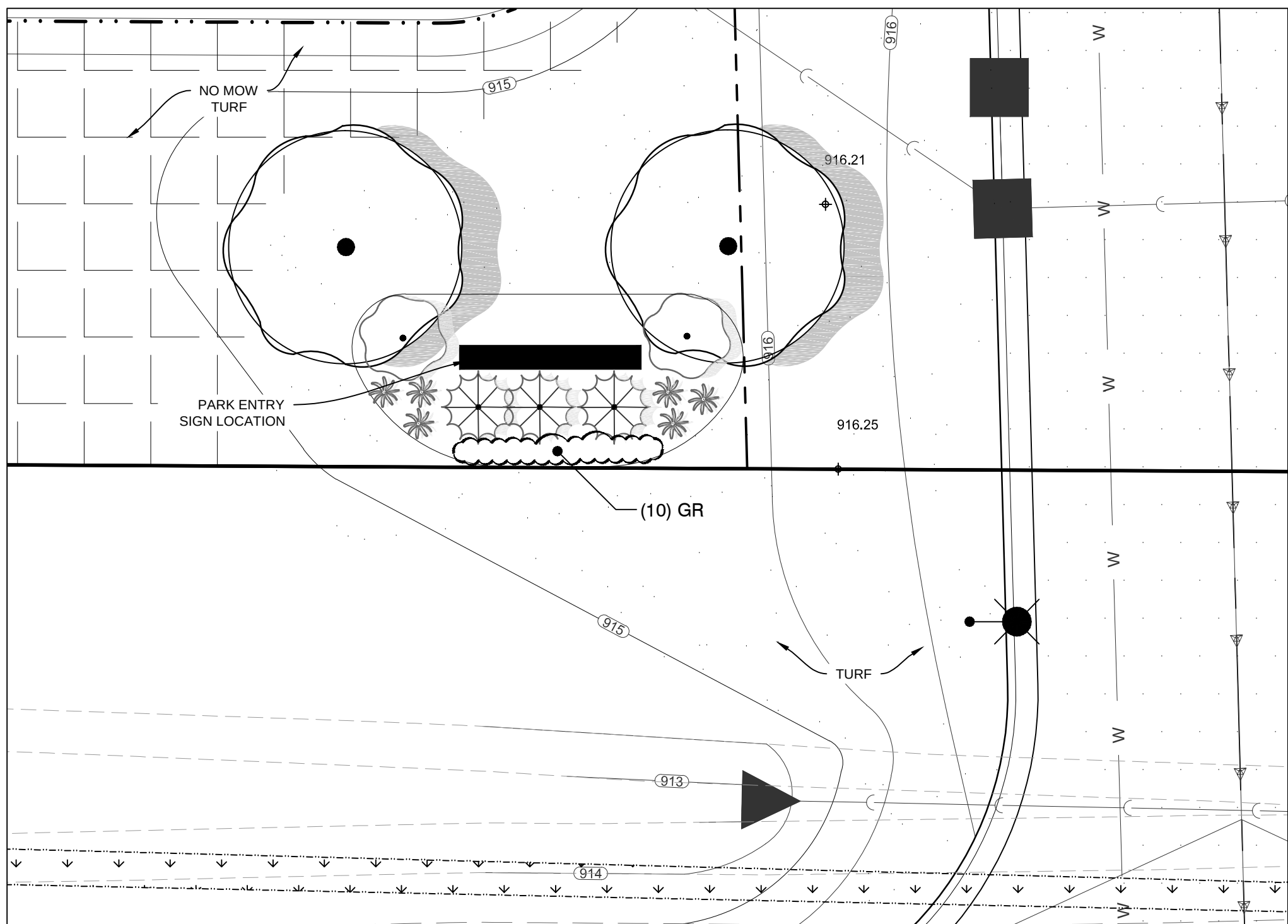




PLANT SCHEDULE

ORNAMENTAL TREES	BOTANICAL NAME	COMMON NAME	SIZE	QTY	
	Amelanchier x grandiflora 'Autumn Brilliance'	'Autumn Brilliance' Serviceberry	1.5" Cal.	2	
LOW EVERGREEN SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	QTY	
	Juniperus horizontalis 'Youngstown'	Creeping Juniper	2' Wide	3	
ORNAMENTAL GRASSES	BOTANICAL NAME	COMMON NAME	SIZE	QTY	
	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	1 gal.	6	
TALL DECIDUOUS SHRUB	BOTANICAL NAME	COMMON NAME	SIZE	QTY	
	Viburnum dentatum 'Blue Muffin'	Southern Arrowwood	2' Tall & Wide	2	
PERENNIALS	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY
	GERANIUM X 'ROZANNE' TM	HYBRID CRANESBILL	4.5" CONT.	24" O.C.	10

	TURF SEED LOW GROW MIX	627,607 sf
	AGRECOL WET PRAIRIE / AGRECOL WET PRAIRIE MIX	74,760 sf
	BOUTELOUA CURTIPENDULA / SIDE OATS GRAMA	2,902,830 sf
	TURF - DROUGHT TOLERANT FESCUE	31,730 SF



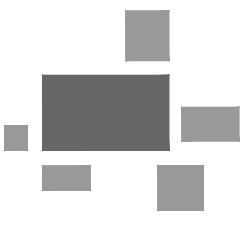
ENLARGEMENT L-1A

SCALE: 1"=10'



GRAPHICAL SCALE (FEET)

0 1" = 10' 20'



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GERMANTOWN, WI

OVERALL LANDSCAPE PLAN

REVISIONS	
1 SITE PLAN REVIEW SET	6/11/18
2 BID SET	6/18/18
3 MUNICIPAL RESUBMITTAL	7/16/18

REG. JOB NO. 1296-00-WI	AREA
DATE	7/16/18
SCALE	1"=100'

SHEET	L-1
	of
	L-2

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DESIGNED: DUB

DRAWN: DUB

REVIEWED: TOM

GENERAL PLANTING NOTES

- THE LAYOUT OF ALL PLANTING BEDS AND INDIVIDUAL TREES AND SHRUBS SHALL BE STAKED BY THE CONTRACTOR IN ADVANCE OF INSTALLATION. FLAGGING, STAKES, OR PAINT MAY BE USED TO DELINEATE LOCATIONS AS SCALED FROM THE PLANS. AN APPROVED REPRESENTATIVE WILL REVIEW THESE LOCATIONS WITH THE CONTRACTOR AND MAKE MINOR ADJUSTMENTS AS NECESSARY. BED LAYOUT SHALL ALSO INCLUDE PERENNIAL GROUPINGS BY SPECIES.
- THE CONTRACTOR IS RESPONSIBLE FOR INDEPENDENTLY DETERMINING THE PLANT MATERIAL QUANTITIES REQUIRED BY THE LANDSCAPE PLANS. REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIAL SHALL COMPLY WITH STANDARDS DESCRIBED IN AMERICAN STANDARD OF NURSERY STOCK - Z60.1 ANSI. LANDSCAPE ARCHITECT OR OWNERS AUTHORIZED REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND POTENTIALLY REJECT ANY PLANT MATERIAL DEEMED TO NOT MEET THE REQUIRED STANDARDS.
- NO PLANT MATERIAL OR PLANT SIZE SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL BY THE LANDSCAPE ARCHITECT. ANY CHANGES SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT IN WRITING PRIOR TO INSTALLATION.
- ALL PLANT MATERIAL AND SEED SHALL BE PROVIDED FROM A NURSERY (WITHIN 200 MILES) WITH A SIMILAR PLANT HARDINESS ZONE AS PROJECT LOCATION. EXISTING SOIL SHALL BE AMENDED PER SOIL ANALYSIS REPORT TO ENSURE A PROPER GROWING MEDIUM IS ACHIEVED.
- ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH PLANTING DETAILS.
- ALL PLANTING BEDS SHALL HAVE A MINIMUM 10" DEPTH OF PREPARED SOIL. WITH APPROVAL, EXISTING SOIL MAY BE UTILIZED PROVIDED THE PROPER SOIL AMENDMENTS ARE TILLED THOROUGHLY INTO THE TOP 10" OF SOIL.
- WHILE PLANTING TREES AND SHRUBS, BACKFILL $\frac{2}{3}$ OF PLANTING HOLE AND WATER TREE THOROUGHLY BEFORE INSTALLING THE REMAINDER OF SOIL MIXTURE. AFTER ALL SOIL HAS BEEN PLACED INTO THE PLANTING HOLE WATER THOROUGHLY AGAIN.
- THE CONTRACTOR MUST LABEL ALL TREES WITH THE COMMON AND BOTANICAL NAMES PRIOR TO FINAL INSPECTION.
- ALL PLANTING BEDS SHALL BE MULCHED WITH 3" DEEP SHREDDED HARDWOOD MULCH, AND ALL TREES PLANTED IN TURF AREAS SHALL RECEIVE A 3" DEEP SHREDDED HARDWOOD MULCHED RING AS SHOWN IN PLANTING DETAILS.
- ALL PLANTING BEDS AND TREE RINGS SHALL HAVE A 4" DEEP TRENCHED BED EDGE CREATED BY EITHER A FLAT LANDSCAPE SPADE OR MECHANICAL EDGER. BED EDGES ARE TO BE CUT CLEAN AND SMOOTH AS SHOWN ON LANDSCAPE PLANS WITH A CLEAN DEFINITION BETWEEN TURF AND PLANTING AREAS.
- ALL TURF SEED AREAS SHALL RECEIVE A MINIMUM OF 3" DEPTH OF TOPSOIL. WITH APPROVAL, EXISTING SOIL MAY BE UTILIZED PROVIDED THE PROPER SOIL AMENDMENTS ARE TILLED THOROUGHLY INTO THE TOP 6" OF SOIL. REQUIRED AMENDMENTS SHALL BE DETERMINED BASED ON A SOIL ANALYSIS TO BE PERFORMED. ALL TOPSOIL AMENDMENT SHALL BE AGED WEED FREE MANURE OR CLASS 1 ORGANIC MATTER.
- FOR TURF SEEDING, APPLY A STARTER FERTILIZER AND SEED UNIFORMLY AT THE RATE RECOMMENDED BY MANUFACTURER, AND PROVIDE A MULCH COVERING THAT IS SUITABLE TO PROMOTE SEED GERMINATION AND TURF ESTABLISHMENT. CONTRACTOR TO PROVIDE FERTILIZER, SEED, AND MULCH SPECIFICATIONS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. EROSION CONTROL MEASURES ARE TO BE INSTALLED IN THOSE AREAS REQUIRING STABILIZATION (SWALES, SLOPES EXCEEDING 1:3, AND THOSE LOCATIONS INDICATED IN CIVIL DRAWINGS).
- THE CONTRACTOR TO ENSURE A SMOOTH, UNIFORM QUALITY TURF IS ACHIEVED WITH NO BARE SPOTS LARGER THAN 6" X 6". ANY BARE SPOTS LARGER THAN 6" X6" AT THE END OF ESTABLISHMENT PERIOD SHALL BE RESEEDD AT THE CONTRACTORS EXPENSE TO OBTAIN A DENSE, UNIFORM LAWN.
- ALL FINISH GRADING AND LAWN AREAS TO BE INSTALLED BY LANDSCAPE CONTRACTOR.
- ALL DISTURBED AREAS WITHIN THE PROJECT SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
- ALL DISTURBED AREAS OUTSIDE THE LIMITS OF WORK SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, INCLUDING ANY IRRIGATION LINES, PRIOR TO DIGGING. CONSULT DIGGERS HOTLINE.
- THE CONTRACTOR SHALL ENSURE THAT SOIL CONDITIONS AND COMPACTION ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AROUND THE CONSTRUCTION SITE. UNDESIRABLE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER SURFACE AND SUBSURFACE DRAINAGE IN ALL AREAS
- THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, FEES, AND LICENSES NECESSARY FOR THE INSTALLATION OF THIS PLAN.
- THE CONTRACTOR IS TO REVIEW ALL SITE ENGINEERING DOCUMENTS PRIOR TO INSTALLATION. ANY CONFLICTS MUST BE REPORTED TO THE LANDSCAPE ARCHITECT. THESE LANDSCAPE DRAWINGS ARE FOR THE INSTALLATION OF PLANT MATERIALS ONLY UNLESS OTHERWISE STATED.
- THE CONTRACTOR SHALL PROVIDE WATERING AND MAINTENANCE SERVICES FOR A PERIOD OF 60 DAYS TO ENSURE VEGETATIVE ESTABLISHMENT. UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL SUPPLY THE OWNER IN WRITING WITH ONGOING WATERING AND MAINTENANCE INSTRUCTIONS.
- PLANT MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM TIME OF OWNER ACCEPTANCE. ONLY ONE REPLACEMENT PER PLANT WILL BE REQUIRED DURING THE WARRANTY PERIOD EXCEPT IN THE EVENT OF FAILURE TO COMPLY WITH THE SPECIFIED REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE TO CONDUCT A FINAL WALK THROUGH WITH THE LANDSCAPE ARCHITECT, VILLAGE FORESTER, AND OR OWNERS REPRESENTATIVE TO ANSWER QUESTIONS, PROVIDE INSTRUCTIONS, AND ENSURE THAT PROJECT REQUIREMENTS HAVE BEEN MET.

PRAIRIE PLANTINGS

Specifications for Hand Broadcasting:

Seeding shall be conducted in late fall (September 1- Soil Freeze) so that seeds may lie dormant during the winter, allowing for stratification, or spring (March 1-June 1) to allow a complete growing season to become established.

A. Preparation of Soil Prior to Seeding

- Incorporate soil additives consisting of two inches of compost mixed into two inches of topsoil. the soil mix should be incorporated into the soil using a rotary device with capability of reaching to 12" below the surface. Compost shall meet WDNR specification S100 - Compost.
- All foreign materials larger than 1-inch shall be removed from the soil prior to seeding or planting.
- Area should be free from unsightly variations, ridges, and depressions.
- Avoid driving over the specified area with machinery.

B. Cover Crop

- Annual rye shall be spread at a density of 20 pounds per acre during the planting or seeding of the native plant species to stabilize the soil and reduce the growth of unwanted vegetation. This annual grass grows rapidly without competing with the wildflowers and grasses that are planted in the target areas.
- Winter wheat or perennial rye shall not be used as a cover crop. These grasses may out compete prairie seedlings, leading to a reduction in the success of the plantings.
- All seeding shall be covered with 1-inch of clean, non-invasive straw (no marsh hay, or reed canary grass) without seeds, within seven days. Wheat, rye, oats, or barley are acceptable forms of straw. Those areas of slopes steeper than 8:1 (eight feet horizontal to one foot vertical) shall be planted no later than October 1 and staked with an erosion control blanket to prevent erosion.

C. Seed Mix

Mix all prairie seed with vermiculite according to Agrecol recommendations.

- Broadcast half the seed over the entire site or target area.
- Broadcast the other half of seed perpendicular to the direction that the first half of the seed was broadcast.
- Cover seed with $\frac{1}{4}$ -inch to $\frac{1}{2}$ -inch of soil (use any excess soil from the site) with rake or drag.
- Roll site to ensure firm seed-to-ground contact.
- Keep seed constantly wet through germination period. Generally 3 weeks.

All seeding shall be covered with 1-inch of clean, non-invasive straw (no marsh hay, or reed canary grass) without seeds, within seven days. Wheat, rye, oats, or barley are acceptable forms of straw. Those areas of slopes steeper than 8:1 (eight feet horizontal to one foot vertical) shall be planted no later than October 1 and staked with an erosion control blanket to prevent erosion.

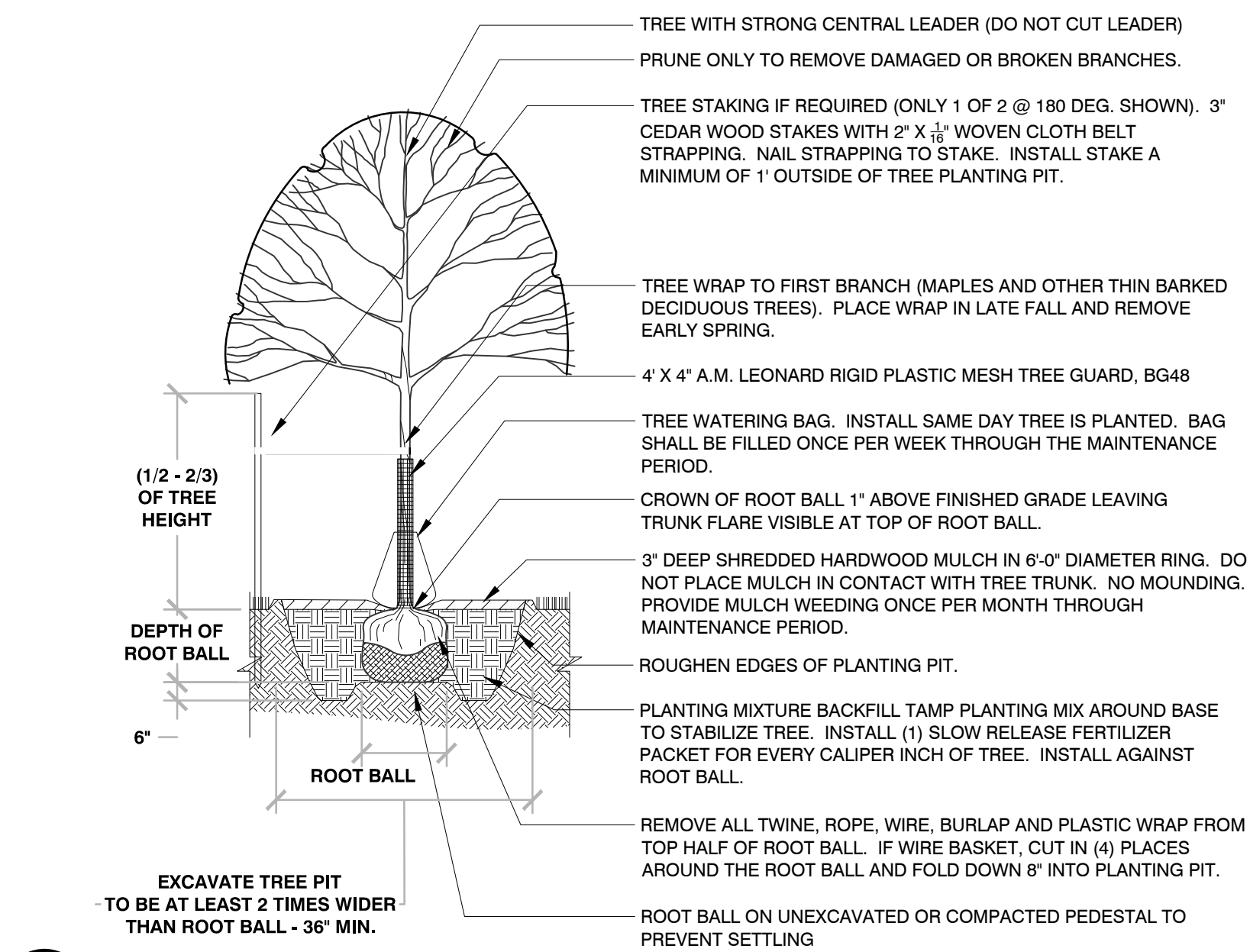
Wet Prairie Weed Suppression Measures:

First Year - Perform spot spray with herbicide to suppress weeds. This should occur approximately every month of the growing season after infiltration basins have been rough graded.

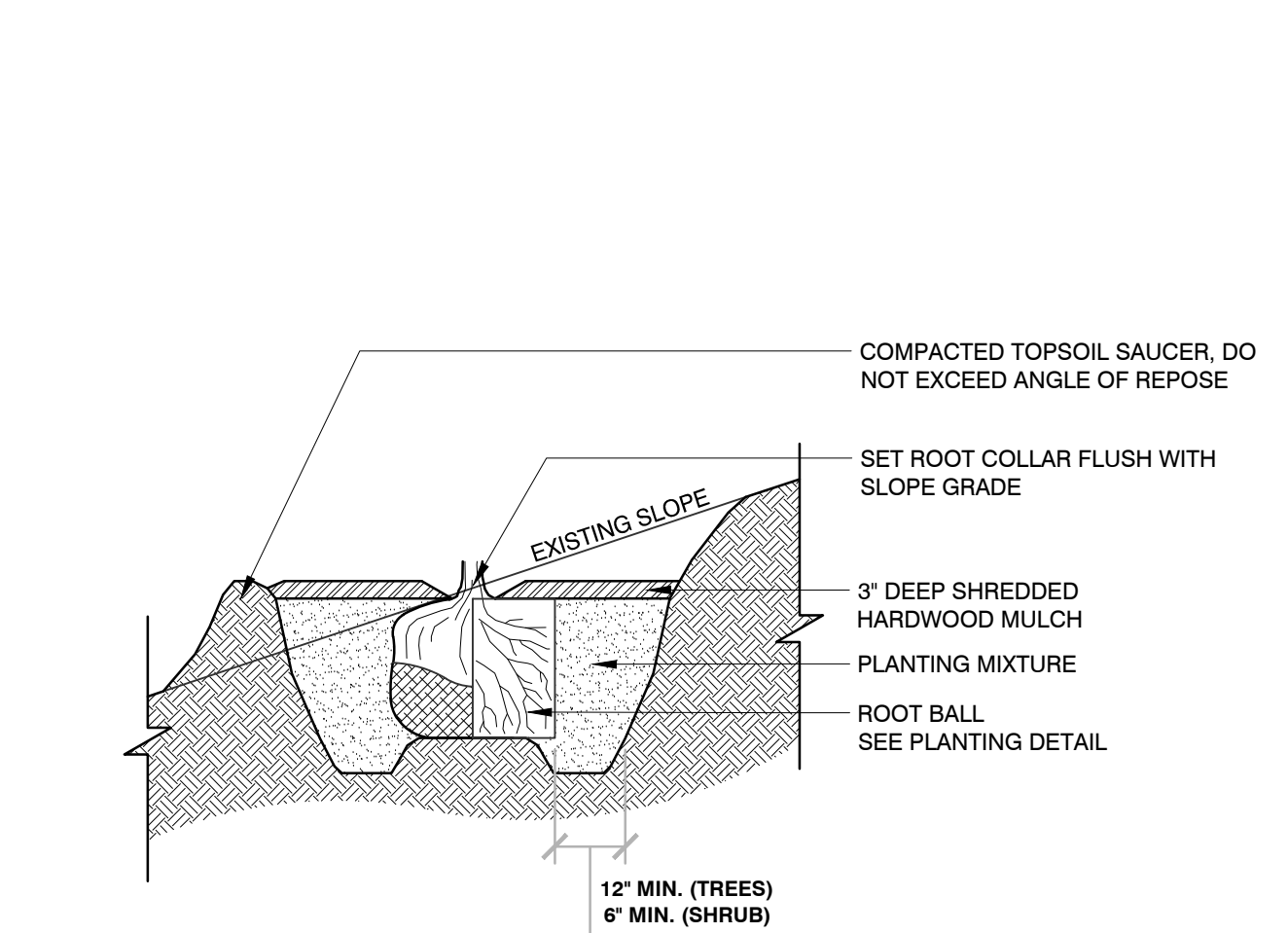
Second Year - In May/June mow basins at 6-inch height to suppress weeds. Perform spot spray with herbicide to suppress weeds. Have qualified professional assess plantings. Repeat mowing basins and spot-spray in early July.

Third Year - In May/June mow basins at 6-inch height to suppress weeds. Perform spot spray with herbicide to suppress weeds.

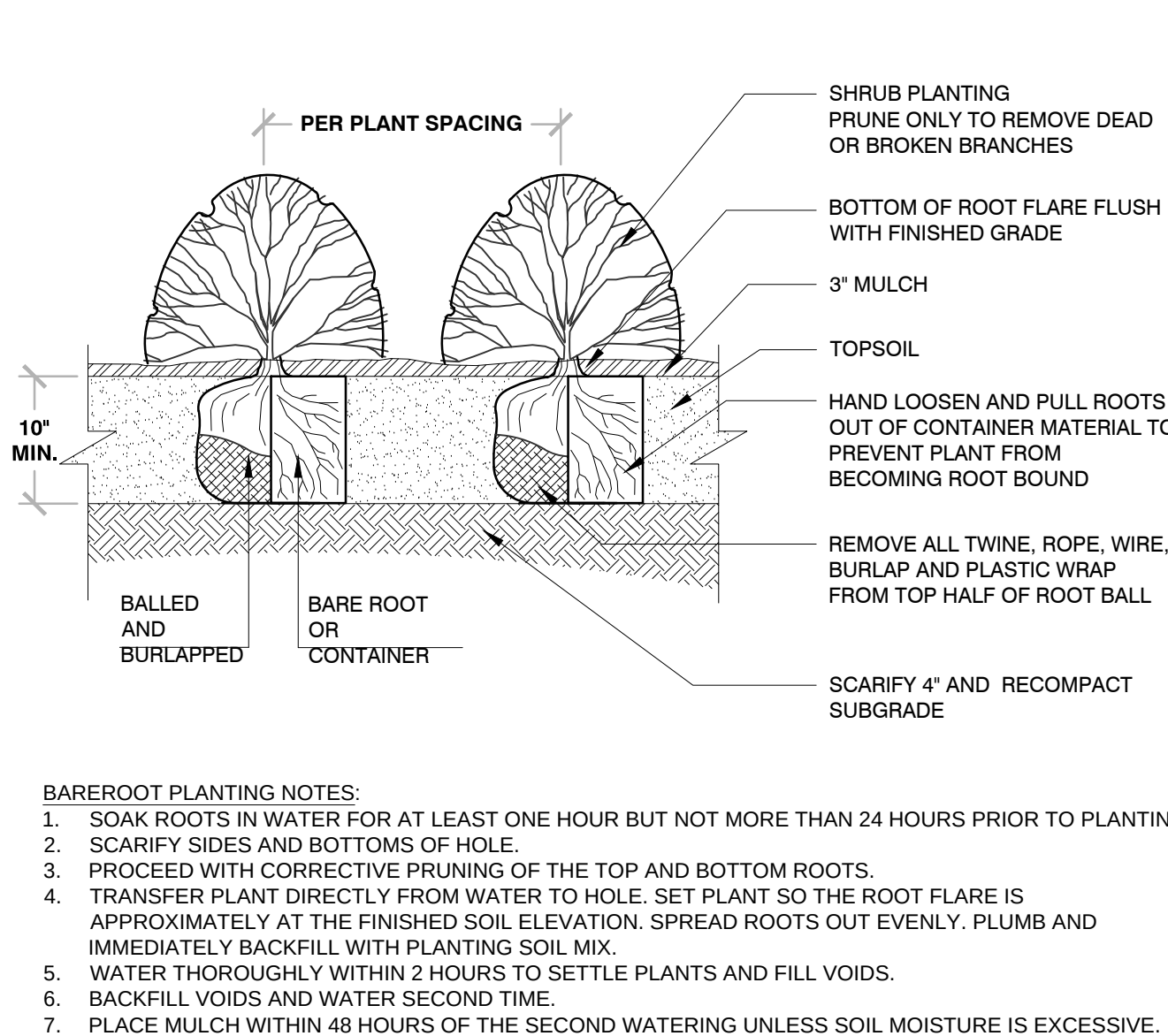
Fourth Year - In May perform a prescribed burn. In June have qualified professional assess plantings.



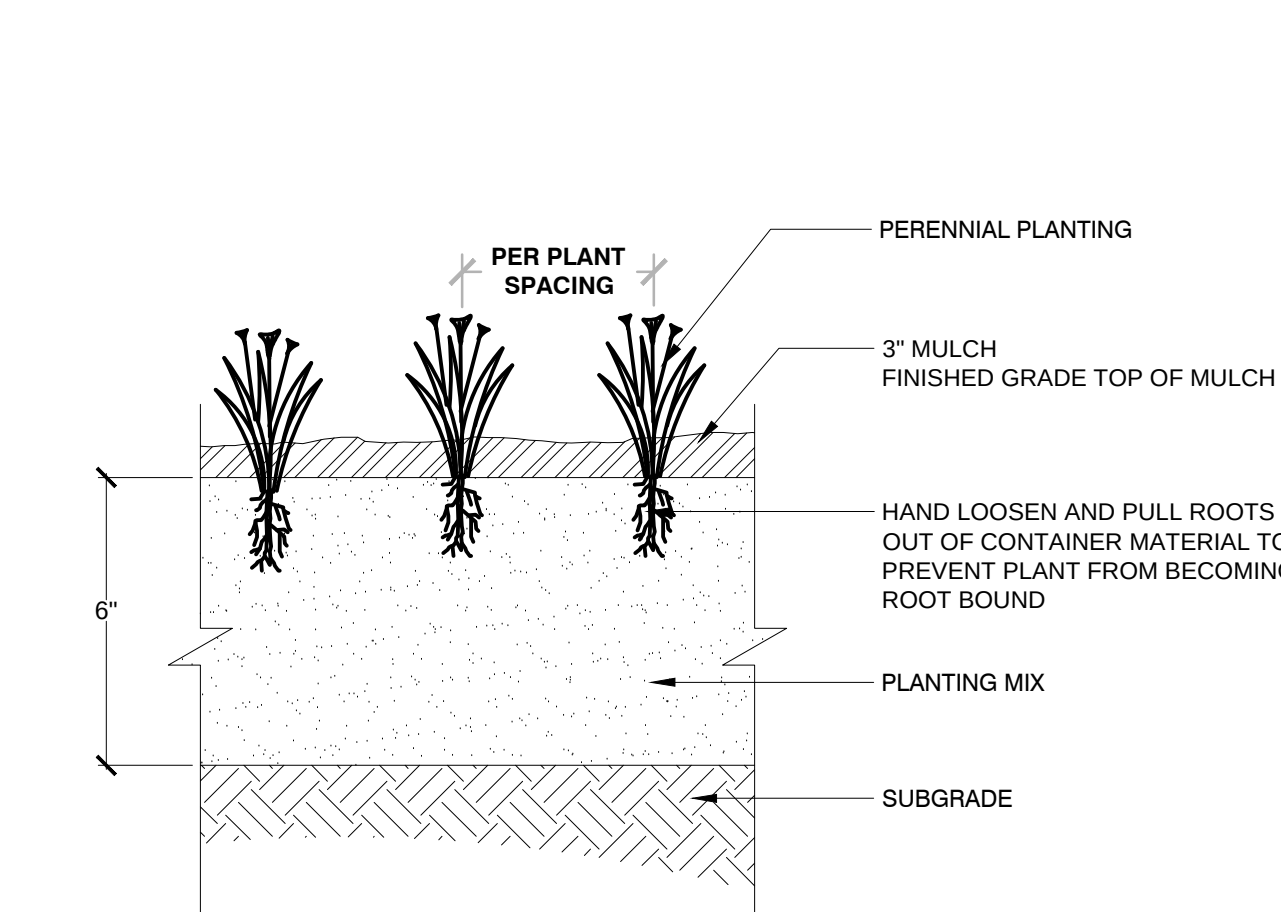
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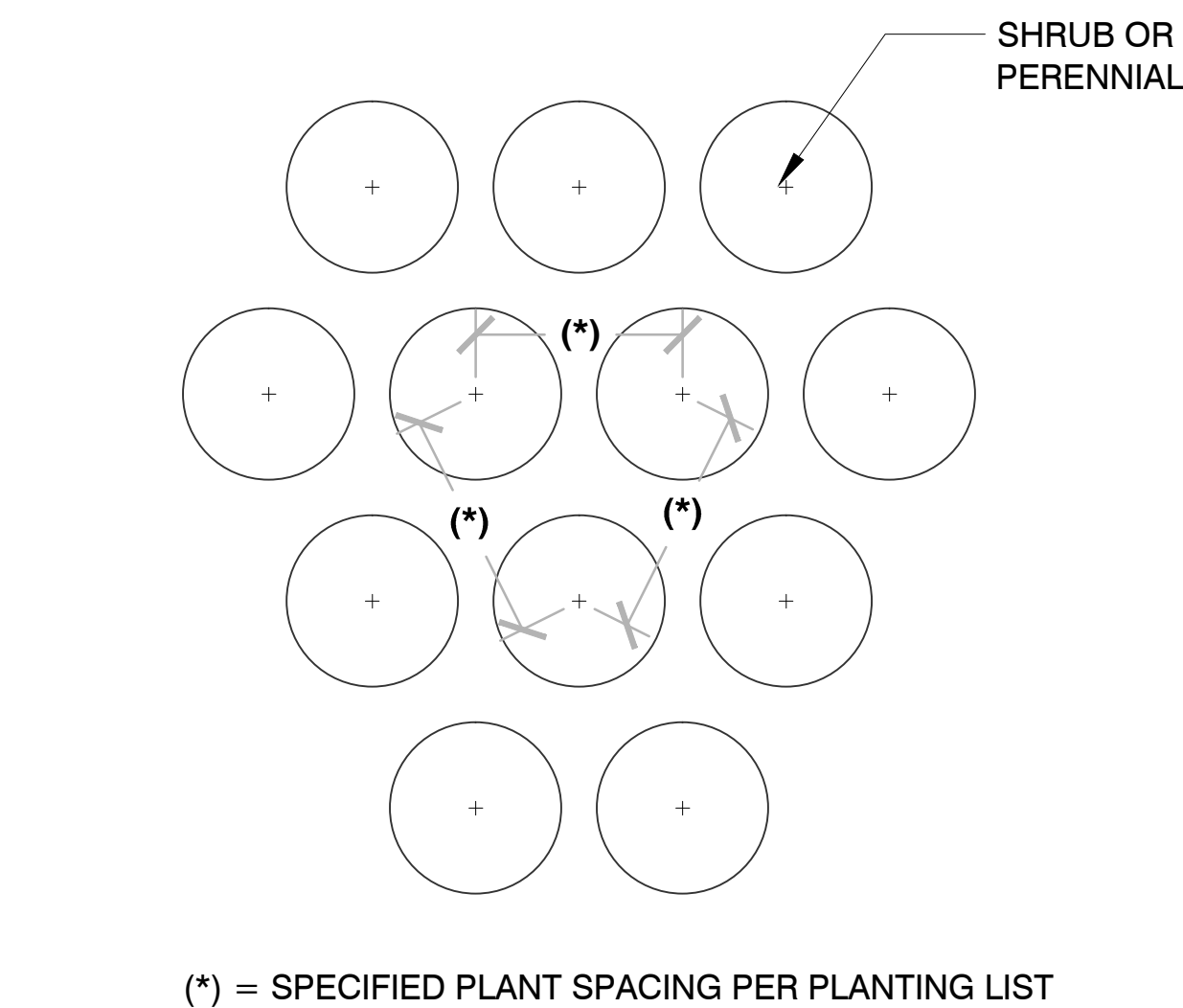
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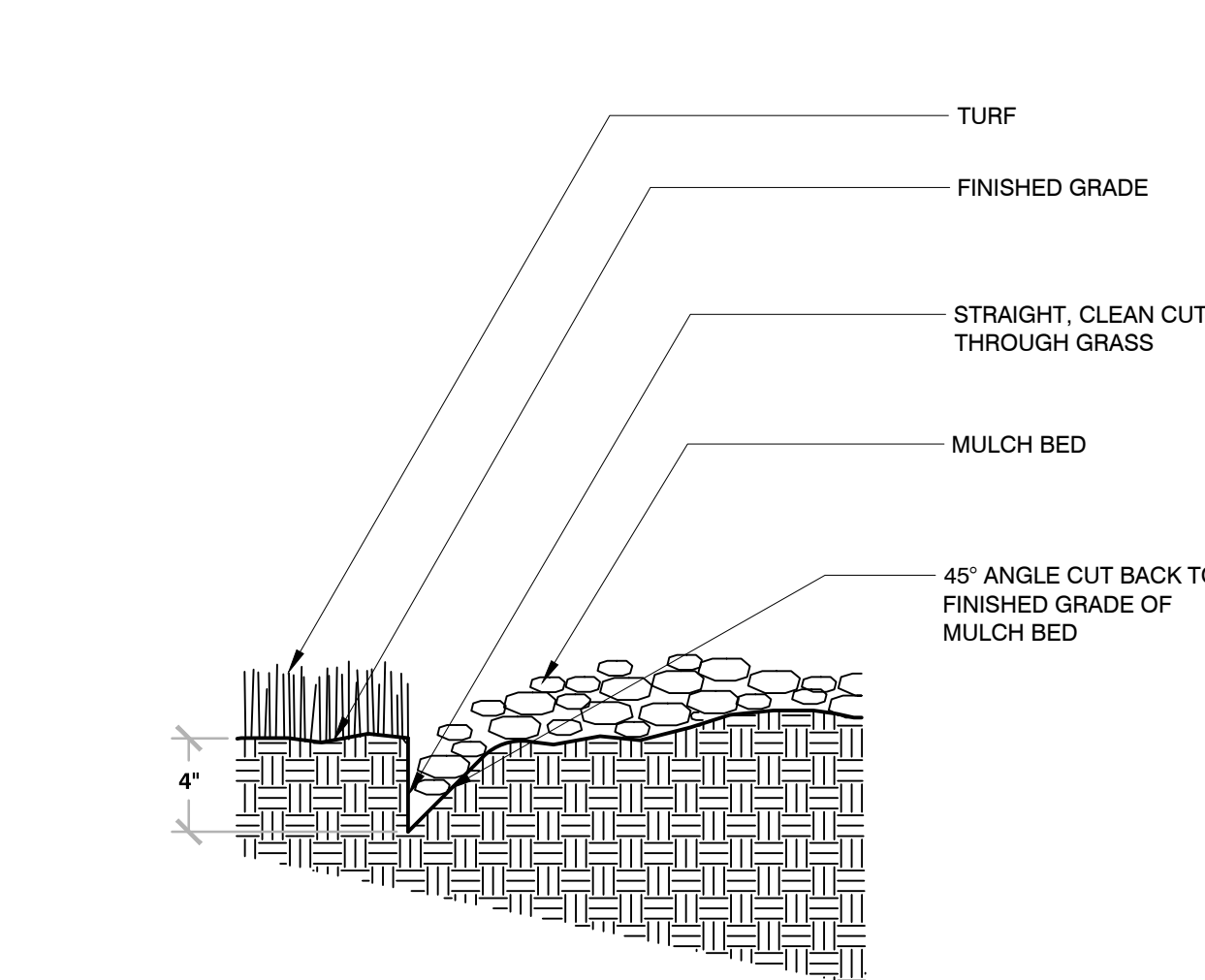
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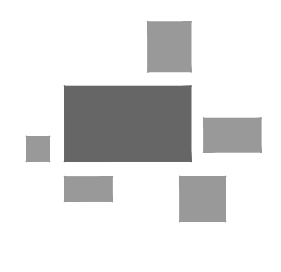
4 1" = 1'-0" 3293-01



5 3/4" = 1'-0" 3293-02



6 3/4" = 1'-0" 3293-03



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BROOKFIELD, WI 53005
(262) 754-8888

CHICAGO | MILWAUKEE | NATIONWIDE

GERMANTOWN CORPORATE PARK
GERMANTOWN, WI

PLANTING DETAILS & NOTES

REVISIONS				
1	SITE PLAN REVIEW SET	6/11/18		
2	BID SET	6/18/18		
3	MUNICIPAL RESUBMITTAL	7/16/18		

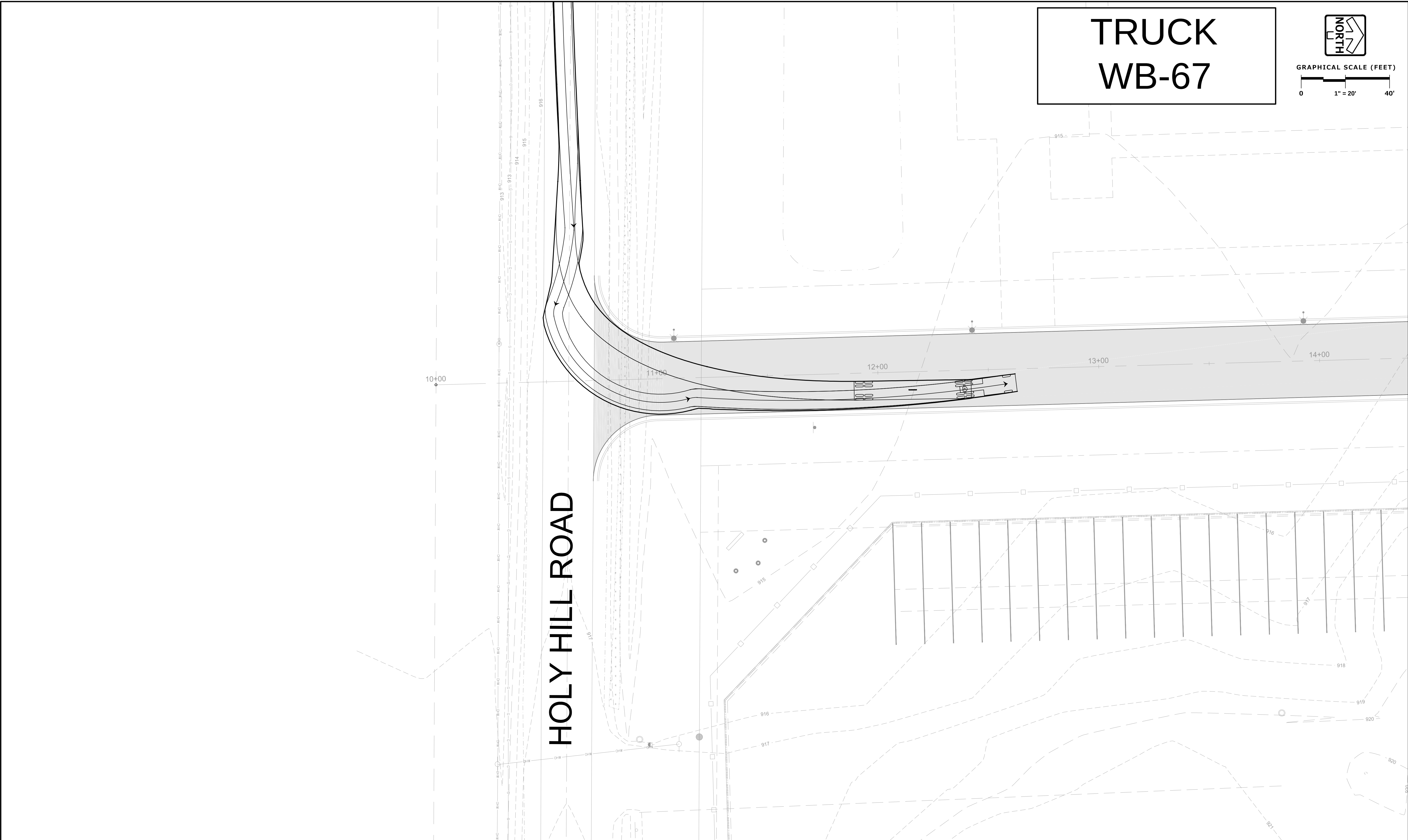
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PREP BY:	SCALE
SAVE DATE	SCALE

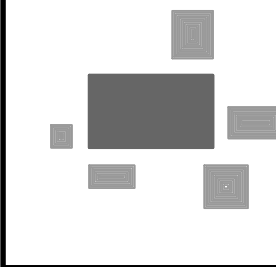
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L-2
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L-2

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DESIGNED: ASJ
REVIEWED: TDW

DRIFTED: EP





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**GERMANTOWN CORPORATE
PARK - ROADWAY
GERMANTOWN, WI**

**EB LANE LEFT TURN
IN TRUCK TURN
EXHIBIT**

REVISIONS					
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PEG JOB NO. 1296.00-WI
PEG PM. AREA
SAVE DATE 7/12/18
SCALE 1" = 20'

SHEET
C-1
C-1

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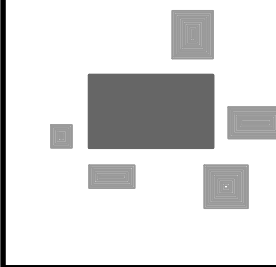
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REVIEWED: TDW

DESIGNED: AJS

DRAFTED: EP





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GERMANTOWN, WI**

**WB RIGHT TURN
LANE IN TRUCK
TURN EXHIBIT**

REVISIONS			

PEG JOB NO. 1296.00-WI

PEG PM: **AREA**

SAVE DATE: **7/12/18**

SCALE: **1" = 20'**

SHEET

C-1

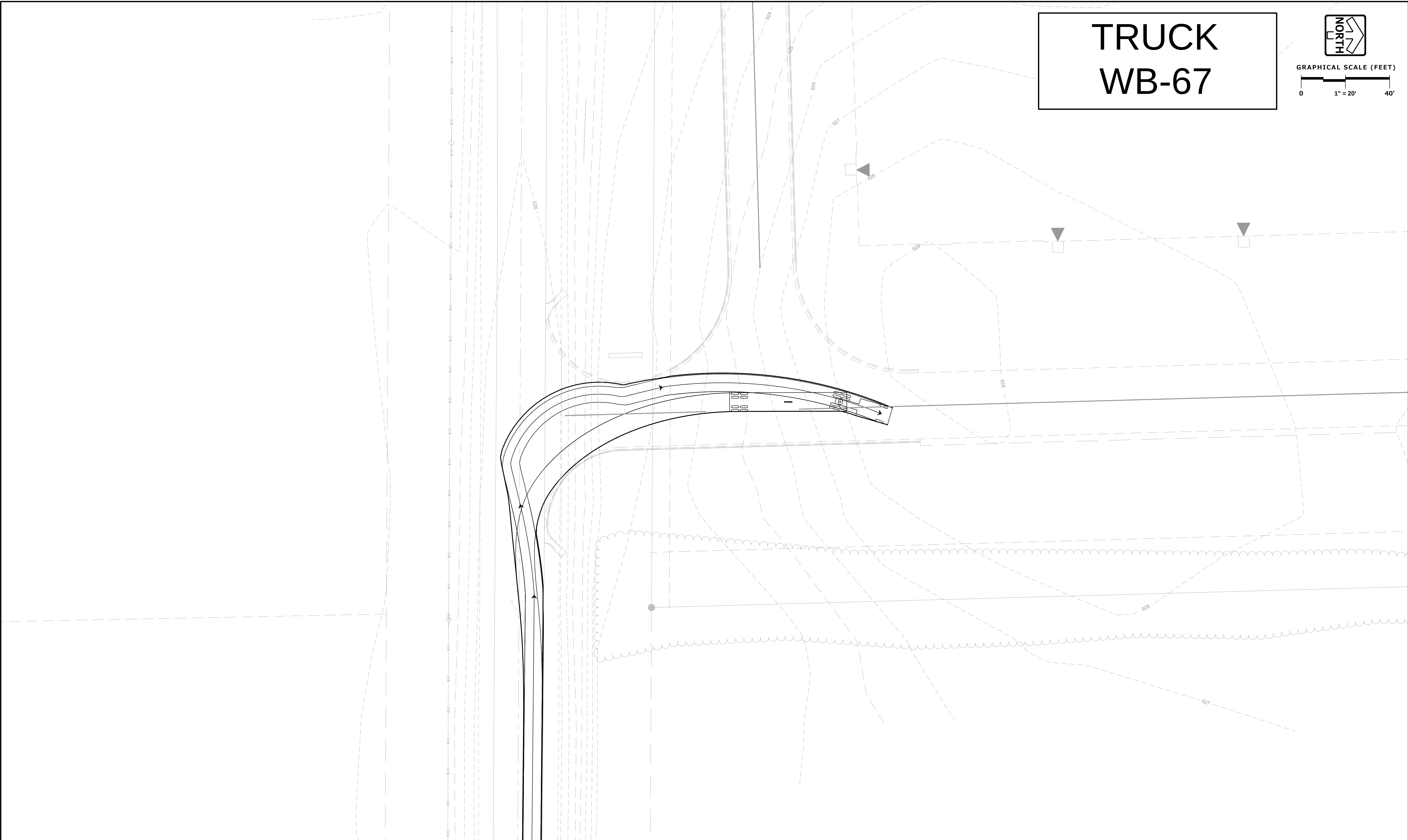
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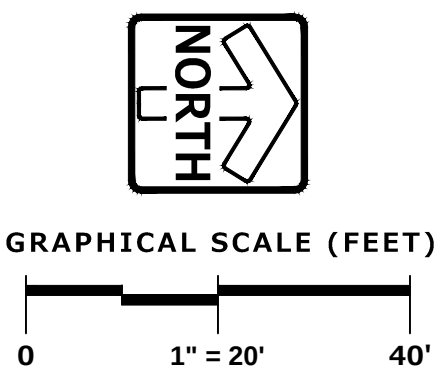
REVIEWED: TOM

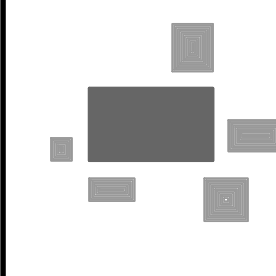
DESIGNED: AJS

DRAFTED: EP



TRUCK
WB-67





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GERMANTOWN, WI**

**WB LANE RIGHT
TURN IN TRUCK
TURN EXHIBIT**

REVISIONS			
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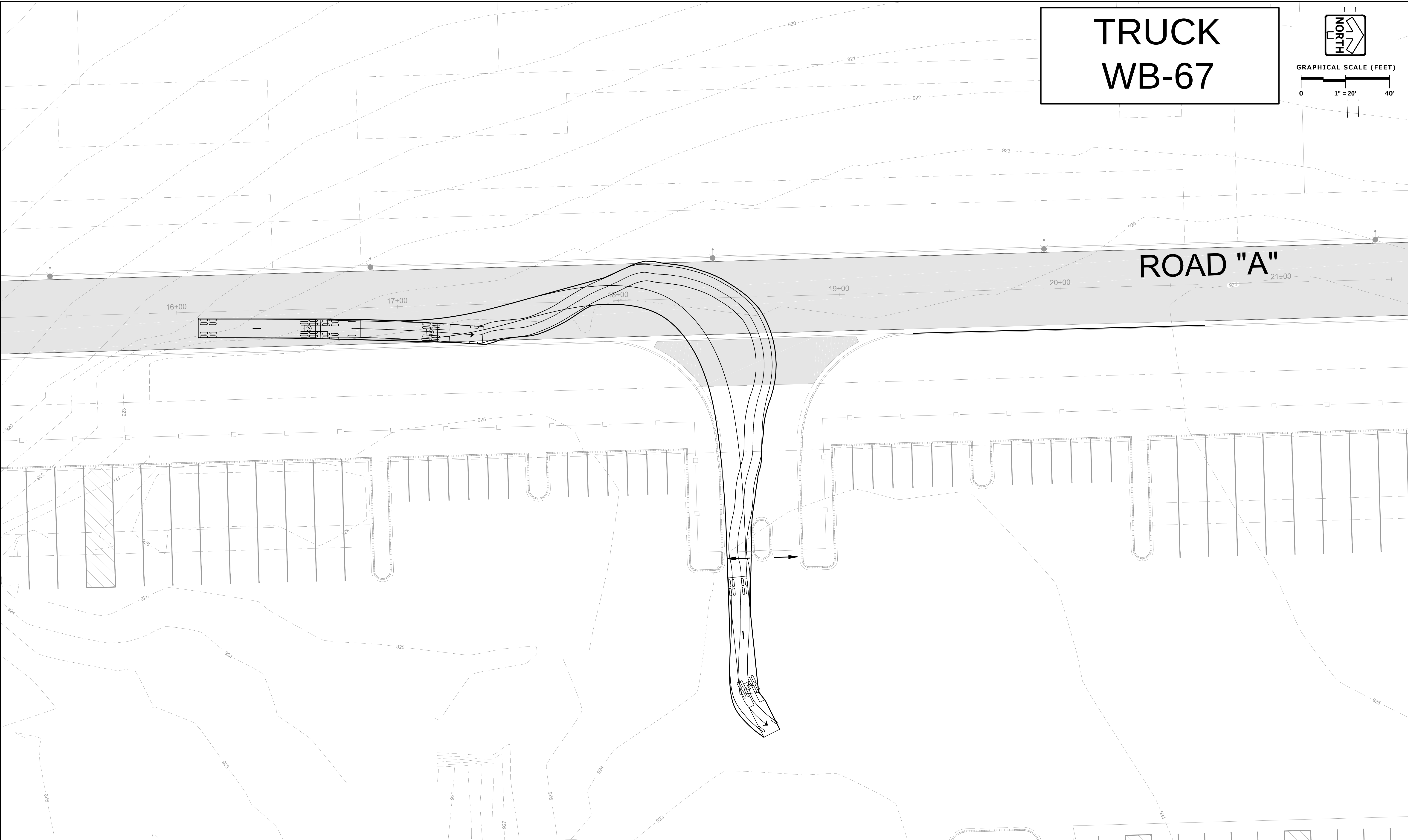
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PEG PM	SAVE DATE 7/12/18	C-1
SCALE 1" = 20'		C-1

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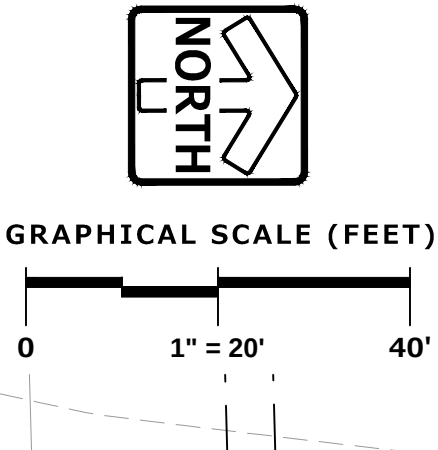
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DESIGNED: ALS

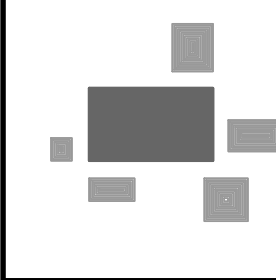
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ROAD "A"



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GERMANTOWN, WI**

**SOUTH DRIVEWAY
RIGHT TURN IN
TRUCK TURN
EXHIBIT**

REVISIONS			

PEG JOB NO: 1296.00-WI

PEG PM: AREA:

SAVE DATE: 7/12/18

SCALE: 1" = 20'

SHEET

C-1

C-1

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REVIEWED: TOM

DESIGNED: AJS

DRAWN: EP



TRUCK
WB-67



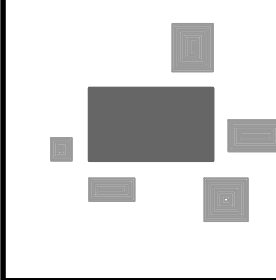
GRAPHICAL SCALE (FEET)

0 1" = 20' 40'

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EXHIBIT

TRUCK TURN EXHIBIT



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**NORTH DRIVEWAY
RIGHT TURN
INTRUCK TURN
EXHIBIT**

REVISIONS			
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PEG JOB NO: 1296.00-WI
AREA
SAVE DATE: 7/12/18
SCALE: 1" = 20'

SHEET
C-1
C-1

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REVIEWED: TDW

DESIGNED: AS

DRAWN: EP

PUBLIC ROADWAY AND INFRASTRUCTURE PLANS

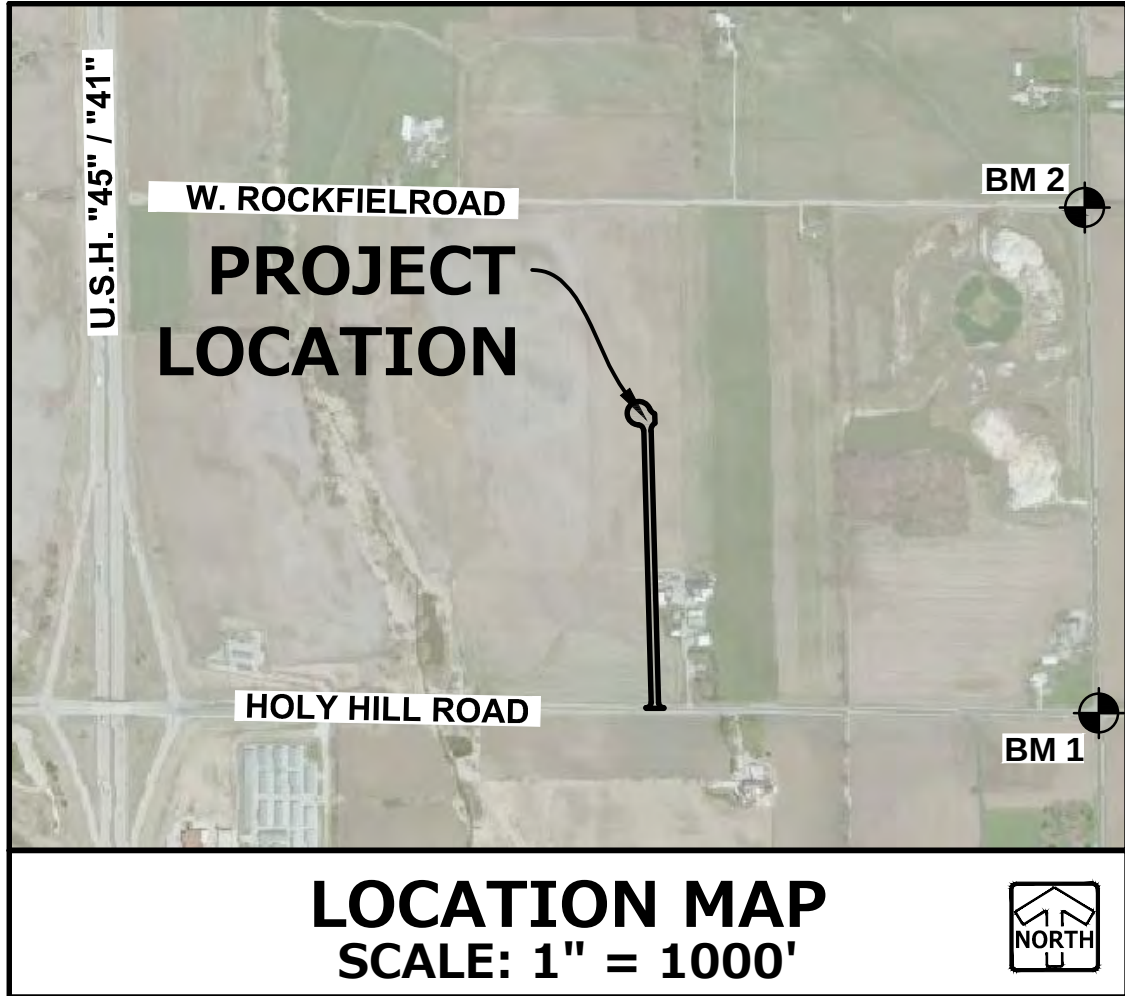
GERMANTOWN CORPORATE PARK
BID PACK 1

GERMANTOWN, WI

PLANS PREPARED
FOR

ZILBER

PROPERTY GROUP SM



LOCATION MAP
SCALE: 1" = 1000'

GENERAL NOTES

- THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO SET FORTH PERFORMANCE AND CONSTRUCTION MATERIAL STANDARDS FOR THE PROPER EXECUTION OF WORK. ALL WORKS CONTAINED WITHIN THE PLANS AND SPECIFICATIONS SHALL BE COMPLETED IN ACCORDANCE WITH ALL REQUIREMENTS FROM LOCAL, STATE, FEDERAL OR OTHER GOVERNING AGENCY'S LAWS, REGULATIONS, JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., AND THE OWNER'S DIRECTION.
- A DRAFT GEOTECHNICAL REPORT HAS BEEN PREPARED BY GILES ENGINEERING ASSOCIATES, INC. JUNE 28, 2018. THE DATA ON SUB-SURFACE SOIL CONDITIONS IS NOT INTENDED AS A REPRESENTATION OR WARRANTY OF THE CONTINUITY OF SUCH CONDITIONS BETWEEN BORINGS OR INDICATED SAMPLING LOCATIONS. IT SHALL BE EXPRESSLY UNDERSTOOD THAT OWNER WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSIONS DRAWN THERE FROM BY THE CONTRACTOR. DATA IS MADE AVAILABLE FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY ADDITIONAL SOILS INVESTIGATIONS THEY FEEL IS NECESSARY FOR THE PROPER EVALUATION OF THE SITE FOR PURPOSES OF PLANNING, BIDDING, OR CONSTRUCTING THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL COMPONENTS OF THE PLANS AND SPECIFICATIONS, INCLUDING FIELD VERIFYING SOIL CONDITIONS, PRIOR TO SUBMISSION OF A BID PROPOSAL.
- THE CONTRACTOR SHALL PROMPTLY REPORT ANY ERRORS OR AMBIGUITIES LEARNED AS PART OF THEIR REVIEW OF PLANS, SPECIFICATIONS, REPORTS AND FIELD INVESTIGATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COMPUTATION OF QUANTITIES AND WORK REQUIRED TO COMPLETE THIS PROJECT. THE CONTRACTOR'S BID SHALL BE BASED ON ITS OWN COMPUTATIONS AND IN NO SUCH INSTANCE RELY ON THE ENGINEER'S ESTIMATE.
- QUESTIONS/CLARIFICATIONS WILL BE INTERPRETED BY ENGINEER/OWNER PRIOR TO THE AWARD OF CONTRACT. ENGINEER/OWNER WILL SUBMIT OFFICIAL RESPONSES IN WRITING. INTERPRETATIONS PRESENTED IN OFFICIAL RESPONSES SHALL BE BINDING ON ALL PARTIES ASSOCIATED WITH THE CONTRACT. IN NO WAY SHALL WORD-OF-MOUTH DIALOG CONSTITUTE AN OFFICIAL RESPONSE.
- PRIOR TO START OF WORK, CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH ALL CONDITIONS OF THE SITE, AND SHALL ACCOUNT FOR CONDITIONS THAT AFFECT, OR MAY AFFECT CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, LIMITATIONS OF WORK ACCESS, SPACE LIMITATIONS, OVERHEAD OBSTRUCTIONS, TRAFFIC PATTERNS, LOCAL REQUIREMENTS, ADJACENT ACTIVITIES, ETC. FAILURE TO CONSIDER SITE CONDITIONS SHALL NOT BE CAUSE FOR CLAIM OF JOB EXTRAS.
- COMMENCEMENT OF CONSTRUCTION SHALL EXPLICITLY CONFIRM THAT THE CONTRACTOR HAS REVIEWED THE PLANS AND SPECIFICATIONS IN ENTIRETY AND CERTIFIES THAT THEIR SUBMITTED BID PROPOSAL CONTAINS PROVISIONS TO COMPLETE THE PROJECT, WITH THE EXCEPTION OF UNFORESEEN FIELD CONDITIONS; ALL APPLICABLE PERMITS HAVE BEEN OBTAINED; AND CONTRACTOR UNDERSTANDS ALL OF THE REQUIREMENTS OF THE PROJECT.
- SHOULD ANY DISCREPANCIES OR CONFLICTS IN THE PLANS OR SPECIFICATIONS BE DISCOVERED AFTER THE AWARD OF CONTRACT, ENGINEER SHALL BE NOTIFIED IN WRITING IMMEDIATELY AND CONSTRUCTION OF ITEMS AFFECTED BY THE DISCREPANCIES/CONFLICTS SHALL NOT COMMENCE, OR CONTINUE, UNTIL A WRITTEN RESPONSE FROM ENGINEER/OWNER IS DISTRIBUTED. IN THE EVENT OF A CONFLICT BETWEEN REFERENCED CODES, STANDARDS, SPECIFICATIONS AND PLANS, THE ONE ESTABLISHING THE MOST STRINGENT REQUIREMENTS SHALL BE FOLLOWED.
- THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS AND LICENSES TO COMPLETE THE PROJECT. OBTAINING PERMITS, OR DELAYS, IS NOT CAUSE FOR DELAY OF THE CONTRACT OR SCHEDULE. CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.
- THE CONTRACTOR SHALL NOTIFY ALL INTERESTED GOVERNING AGENCIES, UTILITY COMPANIES AFFECTED BY THIS CONSTRUCTION PROJECT, AND DIGGER'S HOTLINE IN ADVANCE OF CONSTRUCTION TO COMPLY WITH ALL JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., PERMIT STIPULATIONS, AND OTHER APPLICABLE STANDARDS.
- SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO INITIATE, INSTITUTE, ENFORCE, MAINTAIN, AND SUPERVISE ALL SAFETY PRECAUTIONS AND JOB SITE SAFETY PROGRAMS IN CONNECTION WITH THE WORK.
- CONTRACTOR SHALL KEEP THE JOBSITE CLEAN AND ORDERLY AT ALL TIMES. ALL LOCATIONS OF THE SITE SHALL BE KEPT IN A WORKING MANNER SUCH THAT DEBRIS IS REMOVED CONTINUOUSLY AND ALL RESPECTIVE CONTRACTORS OPERATE UNDER GENERAL "GOOD HOUSEKEEPING."
- THE CONTRACTOR SHALL INDEMNIFY THE OWNER, ENGINEER, AND THEIR AGENTS FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.

BENCHMARKS

VERTICAL DATUM: NGVD 29
HORIZONTAL DATUM: NAD 1927

BM 1: CONCRETE MONUMENT WITH BRASS CAP AT THE SOUTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 7, TOWN 9 NORTH, RANGE 20 EAST, ELEVATION = 933.82.

BM 2: CONCRETE MONUMENT WITH BRASS CAP AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 7, TOWN 9 NORTH, RANGE 20 EAST, ELEVATION = 945.69.

PROJECT TEAM
CONTACTS

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APPLICANT:
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MILWAUKEE, WI 53202
(414) 234-1100

INDEX OF SHEETS

C-1	COVER SHEET
C-2	GENERAL NOTES
C-3	PROJECT OVERVIEW
C-4 - C-6	ROADWAY PLAN AND PROFILE
C-7 - C-9	UTILITY PLAN & PROFILE
C-10 - C-13	STORM SEWER PLAN & PROFILE
C-14 - C-16	ROADWAY STABILIZATION PLAN
C-17 - C-20	CONSTRUCTION DETAILS

REQUIRED SUBMITTALS FOR APPROVAL

- HOT MIX ASPHALT - MIX DESIGN
- CONCRETE PAVEMENTS (EXTERIOR) - MIX DESIGN & JOINT PLAN
- PAVEMENT STONE BASE COURSE - GRADATION
- PIPE BEDDING & TRENCH BACKFILL - GRADATION
- MANHOLE BACKFILL - GRADATION
- PAVEMENT MARKING PAINT

REQUIRED SUBMITTALS FOR RECORDS

- WATER MAIN PIPES, VALVES, HYDRANTS & FITTINGS
- SANITARY SEWER PIPE & FITTINGS
- STORM SEWER PIPE, STRUCTURES, & FITTINGS
- TRACER WIRE
- UNDERGROUND UTILITY LOCATION RECORD DRAWINGS
- ADA SIGN & TRUNCATED DOMES, PAINT & STENCILS
- CHEMICAL SOIL STABILIZATION MIX DESIGN (IF APPLICABLE)



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EXPIRATION DATE: JULY 31, 2018

PINNACLE ENGINEERING GROUP, LLC - ENGINEER'S LIMITATION

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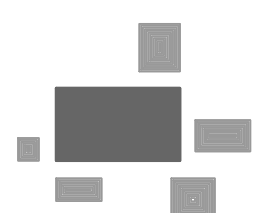
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REVISIONS

1	BID SET	6/18/18			
2	MUNICIPAL SUBMITTAL	7/03/18			
3	MUNICIPAL RESUBMITTAL	7/16/18			

SHEET
C-1
C-20

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DESIGNED: AS
DRAFTED: EP
REVIEWED: TDW

SITE AND DIMENSIONAL PLAN NOTES			GRADING NOTES			UTILITY NOTES														
1. ALL DIMENSIONS ARE EDGE OF PAVEMENT, FACE OF CURB, SHOULDER, OR CENTER OF LANE LINE UNLESS NOTED OTHERWISE. ALL UTILITY DIMENSIONS ARE TO OUTSIDE OF PIPE OR CENTER OF STRUCTURE UNLESS OTHERWISE NOTED. 2. ALL PROPOSED CURB AND GUTTER SHALL BE 18" STANDARD CURB AND GUTTER (SEE DETAIL), UNLESS OTHERWISE NOTED. CURB AND GUTTER DRAINING AWAY FROM THE FACE OF CURB IS NOTED AS REVERSE CURB AND GUTTER. 3. BUILDING DIMENSIONS AND ADJACENT PARKING AND UTILITY LAYOUT HAVE BEEN PREPARED BASED UPON ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. 4. THE CONTRACTOR SHALL CONTACT DIGGERS HOTLINE (1-800-242-8511) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT. 5. IMPROVEMENTS ADJACENT TO BUILDING IF SHOWN SUCH AS TRUCK DOCK, RETAINING WALLS, SIDEWALKS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS, SPECIFICATIONS, AND DETAILS. 6. REFER TO ELECTRICAL PLANS FOR LIGHTING LOCATIONS, SPECIFICATIONS, AND DETAILS. 7. SEE ADDITIONAL NOTES AND DETAILS ON SITE DIMENSIONAL PLANS AND CONSTRUCTION DETAILS. 8. ALL PAVING SHALL CONFORM TO STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION AND APPLICABLE VILLAGE OF GERMANTOWN ORDINANCES, AND SPECIFICATIONS CONTAINED WITHIN THIS PLAN SET. 9. CONTRACTOR SHALL CONSULT STRIPING COLOR WITH OWNER PRIOR TO CONSTRUCTION. 10. PROVIDE CONTRACTOR GRADE ACRYLIC, STRIPING PAINT FOR NEW ASPHALT OR COATED ASPHALT. APPLY MARKING PAINT AT A RATE OF ONE (1) GALLON PER THREE TO FOUR HUNDRED (300-400) LINEAL FEET OF FOUR (4) INCH WIDE STRIPES OR TO MANUFACTURER'S SPECIFICATION, WHICHEVER IS GREATER. 11. THOROUGHLY CLEAN SURFACES FREE OF DIRT, SAND, GRAVEL, OIL AND OTHER FOREIGN MATTER. CONTRACTOR RESPONSIBLE TO INSPECT EXISTING PAVEMENT SURFACES FOR CONDITIONS AND DEFECTS THAT WILL ADVERSELY AFFECT QUALITY OF WORK, AND WHICH CANNOT BE PUT INTO AN ACCEPTABLE CONDITION THROUGH NORMAL PREPARATORY WORK AS SPECIFIED. 12. DO NOT PLACE MARKING OVER UNSOUND PAVEMENTS. IF THESE CONDITIONS EXIST, NOTIFY OWNER. STARTING INSTALLATION CONSTITUTES CONTRACTOR'S ACCEPTANCE OF SURFACE AS SUITABLE FOR INSTALLATION. 13. LAYOUT MARKINGS USING GUIDE LINES, TEMPLATES AND FORMS. STENCILS AND TEMPLATES SHALL BE PROFESSIONALLY MADE TO INDUSTRY STANDARDS. "FREE HAND" PAINTING OF ARROWS, SYMBOLS, OR WORDING SHALL NOT BE ALLOWED. APPLY STRIPES STRAIGHT AND EVEN. 14. PROTECT ADJACENT CURBS, WALKS, FENCES, AND OTHER ITEMS FROM RECEIVING PAINT. 15. BARRICADE MARKED AREAS DURING INSTALLATION AND UNTIL THE MARKING PAINT IS DRIED AND READY FOR TRAFFIC. 16. ASPHALTIC CONCRETE PAVING SPECIFICATIONS-	CODES AND STANDARDS: THE PLACING, CONSTRUCTION AND COMPOSITION OF THE ASPHALTIC BASE COURSE AND ASPHALTIC CONCRETE SURFACING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460 AND 465 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION. HEREAFTER, THIS PUBLICATION WILL BE REFERRED TO AS THE STATE HIGHWAY SPECIFICATIONS. WEATHER LIMITATIONS: APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS EXCESS OF MOISTURE. CONSTRUCT ASPHALTIC CONCRETE SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40° (4° C) AND WHEN BASE IS DRY AND WHEN WEATHER IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (-1° C). GRADE CONTROL: ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION. CRUSHED AGGREGATE BASE COURSE: THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS. BINDER COURSE AGGREGATE: THE AGGREGATE FOR THE BINDER COURSE HALL CONFORM TO SECTIONS 460.2.7 AND 315, STATE HIGHWAY SPECIFICATIONS. SURFACE COURSE AGGREGATE: THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460.2.7 AND 465, STATE HIGHWAY SPECIFICATIONS. ASPHALTIC MATERIALS: THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455 AND 460, STATE HIGHWAY SPECIFICATIONS. SURFACE PREPARATION: NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.	17. TRAFFIC CONTROL SHALL BE PER M.U.T.C.D. 18. PUBLIC CURB & GUTTER REPLACEMENT SHALL BE TIED TO EXISTING CURB & GUTTER WITH #4 TIE BARS. PUBLIC CURB & GUTTER SHALL BE A 6-BAG MIX.	1. CONTRACTOR SHALL VERIFY ALL GRADES, ENSURE ALL AREAS DRAIN PROPERLY AND REPORT ANY DISCREPANCIES TO PINNACLE ENGINEERING GROUP PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. 2. ALL EXISTING CONTOURS REPRESENT EXISTING SURFACE GRADES UNLESS OTHERWISE NOTED. ALL PROPOSED GRADES SHOWN ARE FINISH SURFACE GRADES UNLESS OTHERWISE NOTED. 3. SPOT ELEVATIONS REPRESENT THE GRADE ALONG THE CURB AND GUTTER FLOWLINE UNLESS OTHERWISE NOTED. 4. ALL EXCAVATIONS AND MATERIAL PLACEMENT SHALL BE COMPLETED TO DESIGN ELEVATIONS AS DEPICTED IN THE PLANS. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPUTATION(S) OF ALL GRADING QUANTITIES. WHILE PEG ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARD OF CARE, THEREFORE NO GUARANTEE CAN BE MADE FOR A BALANCED SITE. THE CONTRACTOR MAY SOLICIT APPROVAL FROM ENGINEER/OWNER TO ADJUST FINAL GRADES FROM DESIGN GRADES TO PROVIDE AN OVERALL SITE BALANCE AS A RESULT OF FIELD CONDITIONS. 5. GRADING ACTIVITIES SHALL BE IN A MANNER TO ALLOW POSITIVE DRAINAGE ACROSS DISTURBED SOILS, WHICH MAY INCLUDE EXCAVATION OF TEMPORARY DITCHES TO PREVENT PONDING, AND IF NECESSARY PUMPING TO ALLEVIATE PONDING. CONTRACTOR SHALL PREVENT SURFACE WATER FROM ENTERING INTO EXCAVATIONS. IN NO WAY SHALL OWNER BE RESPONSIBLE FOR REMEDIATION OF UNSUITABLE SOILS CREATED/ORIGINATED AS A RESULT OF IMPROPER SITE GRADING OR SEQUENCING. CONTRACTOR SHALL SEQUENCE GRADING ACTIVITIES TO LIMIT EXPOSURE OF DISTURBED SOILS DUE TO WEATHER. 6. THE CONTRACTOR IS RESPONSIBLE FOR MEETING MINIMUM COMPACTION STANDARDS. THE CONTRACTOR SHALL NOTIFY ENGINEER/OWNER IF PROPER COMPACTION CANNOT BE OBTAINED. THE PROJECT'S GEOTECHNICAL CONSULTANT SHALL DETERMINE WHICH IN-SITU SOILS ARE TO BE CONSIDERED UNSUITABLE SOILS. THE ENGINEER/OWNER AND GEOTECHNICAL TESTING CONSULTANT WILL DETERMINE IF REMEDIAL MEASURES WILL BE NECESSARY. 7. IN THE EVENT THAT ANY MOISTURE-DENSITY TEST(S) FAIL TO MEET SPECIFICATION REQUIREMENTS, THE CONTRACTOR SHALL PERFORM CORRECTIVE WORK AS NECESSARY TO BRING THE MATERIAL INTO COMPLIANCE AND RETEST THE FAILED AREA AT NO COST TO THE OWNER. 8. WITH THE AUTHORIZATION OF THE ENGINEER/OWNER, MATERIAL THAT IS TOO WET TO PERMIT PROPER COMPACTION MAY BE SPREAD ON FILL AREAS IN AN EFFORT TO DRY. CONTRACTOR SHALL CLEARLY FIELD MARK THE EXTERIOR LIMITS OF SPREAD MATERIAL WITH PAINTED LATH AND SUBMIT A PLAN TO THE ENGINEER/OWNER THAT IDENTIFIES THE LIMITS. UNDER NO CONDITION SHALL THE SPREAD MATERIAL DEPTH EXCEED THE MOST RESTRICTIVE OF: THE EFFECTIVE TREATMENT DEPTH OF MACHINERY THAT WILL BE USED TO TURNOVER THE SPREAD MATERIAL, OR THE MAXIMUM COMPACTION LIFT DEPTH. 9. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER/OWNER IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION. 10. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ADEQUATE AND SAFE TEMPORARY SHORING, BRACING, RETENTION STRUCTURES, AND EXCAVATIONS. 11. THE SITE SHALL BE COMPLETED TO WITHIN 0.10-FT (+/-) OF THE PROPOSED GRADES AS INDICATED WITHIN THE PLANS PRIOR TO PLACEMENT OF TOPSOIL OR STONE. CONTRACTOR IS ENCOURAGED TO SEQUENCE CONSTRUCTION SUCH THAT THE SITE IS DIVIDED INTO SMALLER AREAS TO ALLOW STABILIZATION OF DISTURBED SOILS IMMEDIATELY UPON COMPLETION OF INDIVIDUAL SMALLER AREAS. 12. CONTRACTOR SHALL CONTACT "DIGGER'S HOTLINE" FOR LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR PROTECTING SAID UTILITIES FROM ANY DAMAGE DURING CONSTRUCTION. 13. CONTRACTOR SHALL PROTECT INLETS AND ADJACENT PROPERTIES WITH SILT FENCING OR APPROVED EROSION CONTROL METHODS UNTIL CONSTRUCTION IS COMPLETED. CONTRACTOR SHALL PLACE SILT FENCING AT DOWN SLOPE SIDE OF GRADING LIMITS. 14. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING FACILITIES OR UTILITIES. ANY DAMAGE SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR. 15. WORK WITHIN ANY ROADWAY RIGHT-OF-WAY SHALL BE COORDINATED WITH THE APPROPRIATE MUNICIPAL OFFICIAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FEES. GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS. RESTORATION OF RIGHT-OF-WAY IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF GRADING. RESTORATION SHALL INCLUDE ALL ITEMS NECESSARY TO RESTORE RIGHT-OF-WAY IN-KIND INCLUDING LANDSCAPING. 16. CONTRACTOR SHALL COMPLY WITH ALL VILLAGE OF GERMANTOWN CONSTRUCTION STANDARDS/ORDINANCES. 17. LANDSCAPE AND TURF AREAS SHALL HAVE A MINIMUM OF 4-INCH TOPSOIL REPLACEMENT. 18. TOPSOIL BERMING SHALL ACHIEVE 90% STANDARD PROCTOR DENSITY AT 3%(4) OPTIMUM MOISTURE CONTENT. 19. SURVEY BENCHMARKS AND MAPPING HAS BEEN PROVIDED BY PINNACLE ENGINEERING GROUP. IN NO WAY DOES PEG WARRANT THE BASEMAP IS ALL INCLUSIVE OR REPRESENTATIVE OF ACTUAL CONDITIONS. CONTRACTOR SHALL PROVIDE CHECKS AS NECESSARY TO VERIFY THE BASEMAP CONTENT AND ACCURACY.	1. EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE TYPE, LOCATION, SIZE AND ELEVATION OF UNDERGROUND UTILITIES AS 15. THEY DEEM NECESSARY FOR PROPOSED UTILITY CONNECTIONS AND/OR TO AVOID DAMAGE THERETO. CONTRACTOR SHALL CALL "DIGGER'S HOTLINE" PRIOR TO ANY CONSTRUCTION. 2. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (LATEST EDITION AND ADDENDUM) AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES. 3. UTILITY CONSTRUCTION AND SPECIFICATIONS SHALL COMPLY WITH THE VILLAGE OF GERMANTOWN SPECIAL PROVISIONS AND WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES COMM 82. 4. LENGTHS OF PROPOSED UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS ARE SHOWN FOR CONTRACTOR CONVENIENCE ONLY. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPUTATIONS OF MATERIALS REQUIRED TO COMPLETE WORK. LENGTHS SHALL BE FIELD VERIFIED DURING CONSTRUCTION. 5. CONTRACTOR SHALL ADJUST AND/OR RECONSTRUCT EXISTING UTILITY COVERS (SUCH AS MANHOLE COVERS, VALVE BOX COVERS, ETC.) TO MATCH FINISHED GRADES OF THE AREAS DISTURBED DURING CONSTRUCTION. 6. CONTRACTOR SHALL FIELD VERIFY LOCATIONS, ELEVATIONS, AND SIZES OF PROPOSED UTILITIES AND CHECK ALL UTILITY CROSSINGS FOR CONFLICTS PRIOR TO ATTEMPTING CONNECTIONS AND BEGINNING UTILITY CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS. 7. ALL NEW ON-SITE SANITARY, STORM AND WATER UTILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE PROPERTY OWNER. 8. THE CONTRACTOR SHALL CONTACT THE VILLAGE OF GERMANTOWN PUBLIC WORKS DEPARTMENT 48-HOURS IN ADVANCE OF SANITARY, WATER AND STORM CONNECTIONS TO THE VILLAGE-OWNED SYSTEM TO SCHEDULE INSPECTIONS. 9. ROUTING OF GAS, ELECTRIC AND TELEPHONE SERVICES ARE SHOWN ON THE ARCHITECTURAL PLANS AND SUBJECT TO CHANGE BASED UPON FINAL REVIEW AND APPROVAL BY RESPECTIVE UTILITY COMPANIES AND OWNER. CONTRACTOR SHALL CONTACT EACH UTILITY COMPANY AND COORDINATE FINAL LOCATIONS FOR ALL UTILITY SERVICES PRIOR TO START OF CONSTRUCTION. 10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE PROPER AUTHORITIES FOR ANY REQUIRED PERMITS, AUTHORIZATIONS, TRAFFIC CONTROL AND ANY PERMIT FEES REQUIRED. 11. FIELD TILE CONNECTION - ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER. 12. THE CONTRACTOR IS RESPONSIBLE FOR THE SIZE, TYPE AND NUMBER OF WATER MAIN BENDS, HORIZONTAL AND VERTICAL, REQUIRED TO COMPLETE CONSTRUCTION. COST FOR BENDS, HORIZONTAL AND VERTICAL, SHALL BE INCIDENTAL AND INCLUDED IN THE OVERALL COST OF THE CONTRACT. 13. STORM SEWER SPECIFICATIONS - PIPE - REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF ASTM CLASS C-76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C-443. STRENGTH CLASSIFICATIONS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:<table><tr><td>HEIGHT OF COVER (FEET):</td><td>0-2</td><td>2-3</td><td>3-6</td><td>6-15</td><td>15-25</td><td>25+</td></tr><tr><td>MINIMUM CONCRETE PIPE CLASSIFICATION:</td><td>IV</td><td>III</td><td>II</td><td>III</td><td>IV</td><td>ENGINEER TO SPECIFY</td></tr></table> HIGH DENSITY DUAL-WALL POLYETHYLENE N-12 CORRUGATED PIPE (HDPE) SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M-294 TYPE "S", OR POLYVINYL CHLORIDE (PVC) - CLASS PS46 MEETING AASHTO M278, AS NOTED. IF HDPE PIPE IS USED FOR POND OUTFALLS, A MINIMUM OF THREE (3) SECTIONS (2 STRAPS) SHALL BE STRAPPED TOGETHER. INLETS/CATCH BASINS - INLETS/CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NO. 25 OF THE "STANDARD SPECIFICATIONS" WITH A 1'-8" X 2'-6" MAXIMUM OPENING. FRAME & GRATE SHALL BE NEENAH R-2502 WITH TYPE D GRATE, OR EQUAL. CURB FRAME & GRATE SHALL BE NEENAH R-3067, OR EQUAL. THE SUMP DEPTH (VERTICAL DISTANCE FROM THE BASE OF THE STRUCTURE TO OUTFALL INVERT OF THE PIPE) SHALL BE 18" MIN. STRUCTURE SHOP DRAWINGS SHALL BE SUBMITTED TO PINNACLE ENGINEERING GROUP FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURING AND INSTALLATION. BACKFILL AND BEDDING - STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS". MANHOLE FRAMES AND COVERS - MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL . 14. WATER MAIN SPECIFICATIONS - PIPE - WATER MAIN SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 235, DR-18, WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. VALVES AND VALVE BOXES - GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.0 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES. HYDRANTS - HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE AND IN ACCORDANCE WITH FILE NO. 38 OF THE "STANDARD SPECIFICATIONS". THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 24-INCHES. HYDRANT MANUFACTURE: KENNEDY GUARDIAN (RED). HYDRANT AND TAP VALES: MUELLER MODEL #2360. BEDDING AND COVER MATERIAL - PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS". BACKFILL - BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL	HEIGHT OF COVER (FEET):	0-2	2-3	3-6	6-15	15-25	25+	MINIMUM CONCRETE PIPE CLASSIFICATION:	IV	III	II	III	IV	ENGINEER TO SPECIFY	IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS". SANITARY SEWER SPECIFICATIONS - PIPE - SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034, SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212. BEDDING AND COVER MATERIAL - BEDDING AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDINGS AND SHALL CONFORM TO SECTION 8.43.2 (A). BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT." BACKFILL - BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS." SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS." MANHOLES - MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE VILLAGE OF GERMANTOWN. STRUCTURE SHOP DRAWINGS SHALL BE SUBMITTED TO PINNACLE ENGINEERING GROUP FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURING AND INSTALLATION. MANHOLE FRAMES AND COVERS - MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1661 16. WATER MAIN AND SANITARY SEWER SHALL BE INSULATED WHEREVER THE DEPTH OF COVER IS LESS THAN 6 FEET. INSULATION AND PLACING OF INSULATION SHALL CONFORM TO CHAPTER 4.17.0 "INSULATION" OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN 6TH EDITION UPDATED WITH ITS LATEST ADDENDUM (TYP.). 17. TRACER WIRE SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THESE CODE SECTIONS AS PER 182.0715(2R) OF THE STATUTES. TRACER WIRE: COPPERHEAD TRACER WIRE #10 SOLID CCS SUPERFLEX (BLUE). WIRE CONNECTORS SHALL BE SNAKEBITE (BLUE) MADE BY COPPERHEAD INDUSTRIES, LLC. THE TRACER WIRE FOR THE SANITARY SEWER LATERAL SHALL BE CONTINUOUS AND SHALL BE EXTENDED ABOVE GRADE VIA A 4-INCH PVC PIPE WITH SCREW-ON CAP ADJACENT TO THE PROPOSED TERMINATION POINT OF THE LATERAL FOR THE PROPOSED BUILDING. 18. SEE UTILITY PLANS AND CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.	11. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR INSPECTION AND REPAIR DURING CONSTRUCTION. THE OWNER WILL BE RESPONSIBLE IF EROSION CONTROL IS REQUIRED AFTER THE CONTRACTOR HAS COMPLETED THE PROJECT. 12. TOPSOIL STOCKPILES SHALL HAVE A BERM OR TRENCH AROUND THE CIRCUMFERENCE AND PERIMETER SILT FENCE TO CONTROL SILT. IF TOPSOIL STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IS REQUIRED. 13. EROSION CONTROL MEASURES TEMPORARILY REMOVED FOR UNAVOIDABLE CONSTRUCTION ACTIVITIES SHALL BE IN WORKING ORDER IMMEDIATELY FOLLOWING COMPLETION OF SUCH ACTIVITIES OR PRIOR TO THE COMPLETION OF EACH WORK DAY, WHICH EVER OCCURS FIRST. 14. MAINTAIN SOIL EROSION CONTROL DEVICES THROUGH THE DURATION OF THIS PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. DISTURBANCES ASSOCIATED WITH EROSION CONTROL REMOVAL SHALL BE IMMEDIATELY STABILIZED. 15. PUMPS MAY BE USED AS BYPASS DEVICES. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS. PUMP DISCHARGE SHALL BE DIRECTED INTO AN APPROVED FILTER BAG OR APPROVED SETTLING DEVICE. 16. GRADING EFFORTS SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. EROSION AND SEDIMENT CONTROL MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS, AND THE USE OF TEMPORARY OR PERMANENT MEASURES. ALL DISTURBED AREAS THAT WILL NOT BE WORKED FOR A PERIOD OF FOURTEEN (14) DAYS REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH TECHNICAL STANDARDS. 17. DISTURBED SLOPES EXCEEDING 4:1, SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75BN EROSION MATTING (OR APPROVED EQUAL) AND ALL CHANNELS SHALL BE STABILIZED WITH NORTH AMERICAN GREEN C125BN (OR APPROVED EQUAL) OR APPLICATION OF AN APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED. EROSION MATTING AND/OR NETTING USED ONSITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. 18. DURING PERIODS OF EXTENDED DRY WEATHER, THE CONTRACTOR SHALL KEEP A WATER TRUCK ON SITE FOR THE PURPOSE OF WATERING DOWN SOILS WHICH MAY OTHERWISE BECOME AIRBORNE. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING WIND EROSION (DUST) DURING CONSTRUCTION AT HIS/HER EXPENSE. 19. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE VISUALLY INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM ON A DAILY BASIS. 20. QUALIFIED PERSONNEL (PROVIDED BY THE GENERAL/PRIME CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED AND EROSION AND SEDIMENT CONTROLS WITHIN 24 HOURS OF ALL 0.5-INCH, OR MORE, PRECIPITATION EVENTS WITH A MINIMUM INSPECTION INTERVAL OF ONCE EVERY SEVEN (7) CALENDAR DAYS IN THE ABSENCE OF A QUALIFYING RAIN OR SNOWFALL EVENT. REPORTING SHALL BE IN ACCORDANCE WITH OF THE GENERAL PERMIT. CONTRACTOR SHALL IMMEDIATELY ARRANGE TO HAVE ANY DEFICIENT ITEMS REVEALED DURING INSPECTIONS REPAIRED/REPLACED. 21. SEE ADDITIONAL DETAILS AND NOTES ON SITE STABILIZATION AND CONSTRUCTION DETAILS.
HEIGHT OF COVER (FEET):	0-2	2-3	3-6	6-15	15-25	25+														
MINIMUM CONCRETE PIPE CLASSIFICATION:	IV	III	II	III	IV	ENGINEER TO SPECIFY														
GENERAL EROSION AND SEDIMENT CONTROL NOTES																				
1. ALL CONSTRUCTION SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER GENERAL PERMIT FOR CONSTRUCTION SITE LAND DISTURBANCE ACTIVITIES. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL TECHNICAL STANDARDS AND PROVISIONS IN EFFECT AT THE TIME OF CONSTRUCTION. THESE WORK PROCEDURES AND STANDARDS SHALL BE REFERRED TO AS BEST MANAGEMENT PRACTICES (BMP'S). IT IS THE RESPONSIBILITY OF ALL CONTRACTORS ASSOCIATED WITH THE PROJECT TO OBTAIN A COPY OF, AND UNDERSTAND, THE BMP'S PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. 2. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL CONTROL MEASURES AS DIRECTED BY OWNER/ENGINEER OR GOVERNING AGENCIES SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST. 3. MODIFICATIONS TO THE APPROVED SWPPP IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS ARE ALLOWED IF MODIFICATIONS CONFORM TO BMP'S. MODIFICATIONS MUST BE APPROVED BY OWNER/ENGINEER/GOVERNING AGENCY PRIOR TO DEVIATION OF THE APPROVED PLAN. 4. INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN IN ORDER TO PROTECT ADJACENT PROPERTIES/STORM SEWER SYSTEMS FROM SEDIMENT TRANSPORT. 5. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. CONTRACTOR IS RESPONSIBLE TO COORDINATE LOCATION(S) WITH THE PROPER AUTHORITIES, PROVIDE NECESSARY FEES AND OBTAIN ALL REQUIRED APPROVALS OR PERMITS. ADDITIONAL CONSTRUCTION ENTRANCES OTHER THAN AS SHOWN ON THE PLANS MUST BE APPROVED BY THE APPLICABLE GOVERNING AGENCIES PRIOR TO INSTALLATION. 6. PAVED SURFACES ADJACENT TO CONSTRUCTION ENTRANCES SHALL BE SWEEP AND/OR SCRAPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST IMMEDIATELY AND AS REQUESTED BY THE GOVERNING AGENCIES. 7. ALL EXISTING STORM SEWER FACILITIES THAT WILL COLLECT RUNOFF FROM DISTURBED AREAS SHALL BE PROTECTED TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS. ALL INLETS, STRUCTURES, PIPES, AND SWALES SHALL BE KEPT CLEAN AND FREE OF SEDIMENTATION AND DEBRIS. 8. EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, WATER MAIN, ETC.) OUTSIDE OF THE PERIMETER CONTROLS SHALL INCORPORATE THE FOLLOWING: PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH. BACKFILL, COMPACT AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION. DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH BMP'S PRIOR TO RELEASE INTO STORM SEWER OR DITCHES.																				

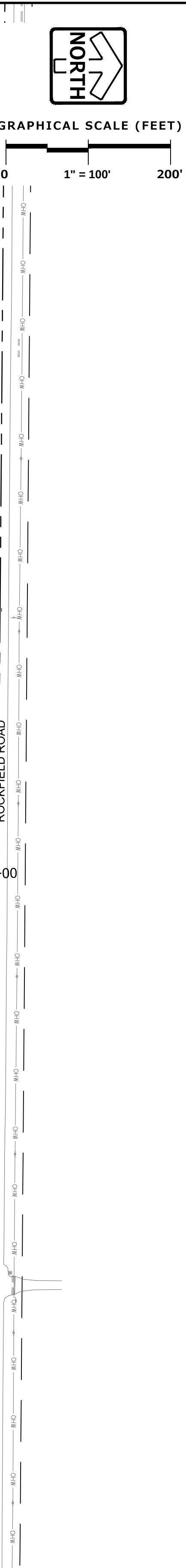
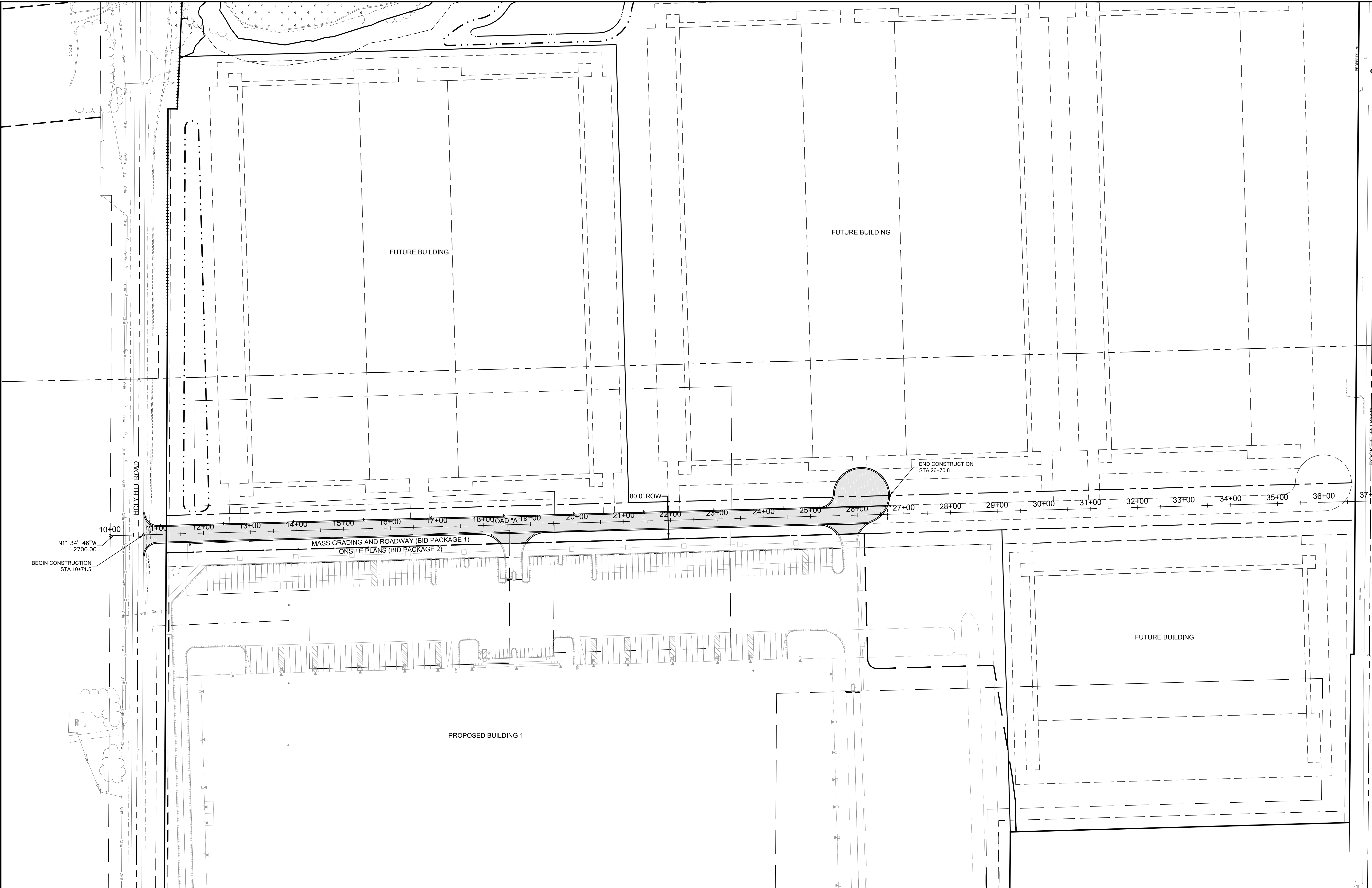
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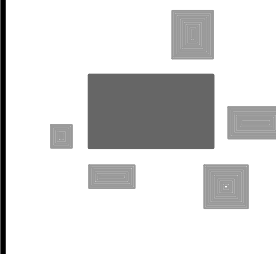
9. AT A MINIMUM, SEDIMENT BASINS AND NECESSARY TEMPORARY DRAINAGE PROVISIONS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE BEGINNING OF SIGNIFICANT MASS GRADING OPERATIONS TO PREVENT OFFSITE DISCHARGE OF UNTREATED RUNOFF.

10. ALL WATERCOURSES AND WETLANDS SHALL BE PROTECTED WITH SILT FENCE TO PREVENT ANY DIRECT DISCHARGE FROM DISTURBED SOILS.

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DESIGNED: ASJ
REVIEWED: TDW
DRAFTED: EP





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GERMANTOWN CORPORATE PARK - ROADWAY GERMANTOWN, WI

PROJECT OVERVIEW

REVISIONS		
1	BID SET	6/18/18
2	MUNICIPAL SUBMITTAL	7/03/18
3	MUNICIPAL RESUBMITTAL	7/16/18

PEG JOB NO: 1296.00-WI

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SAVE DATE: 7/17/18

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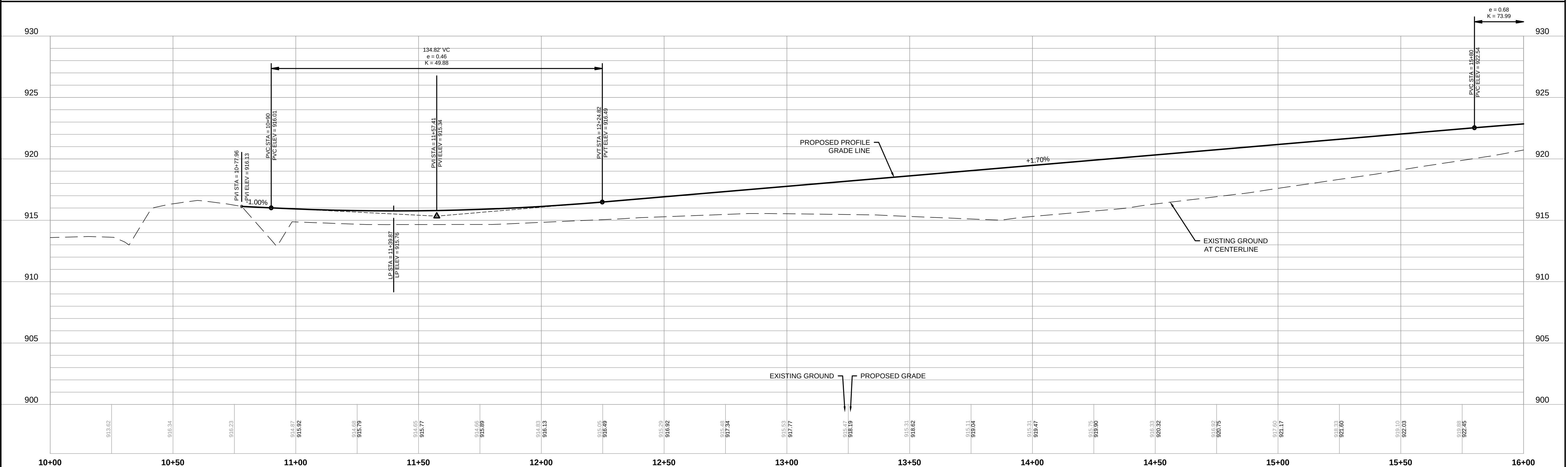
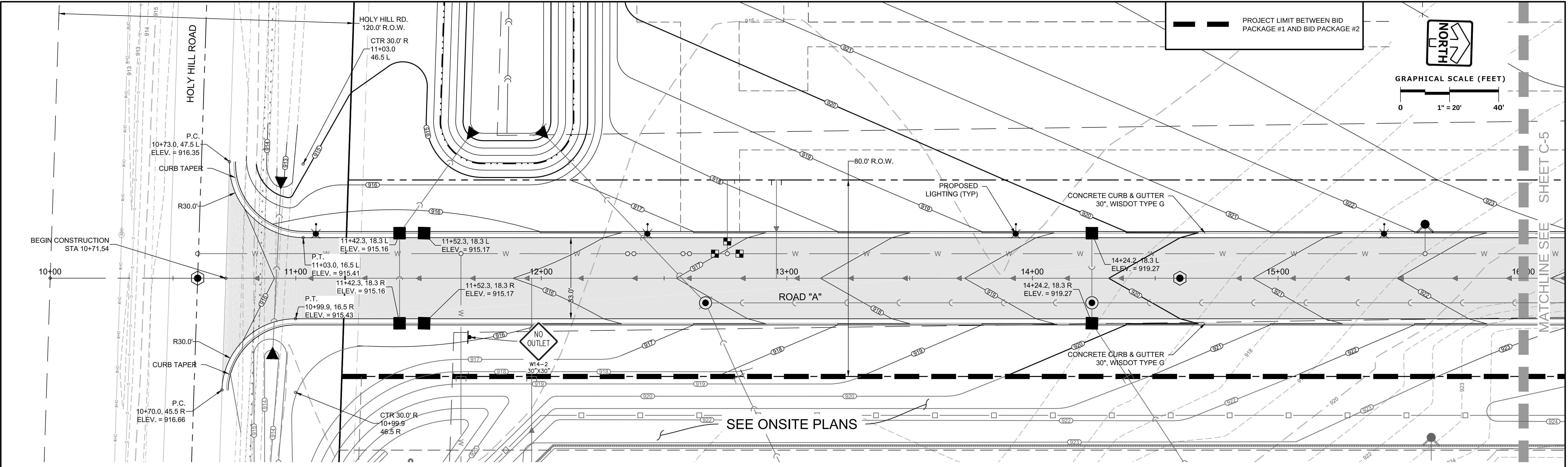
AREA

SHEET
C-3
C-20

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**ROADWAY PLAN
AND PROFILE**

REVISIONS

1	BID SET	6/18/18
2	MUNICIPAL SUBMITTAL	7/03/18
3	MUNICIPAL RESUBMITTAL	7/16/18

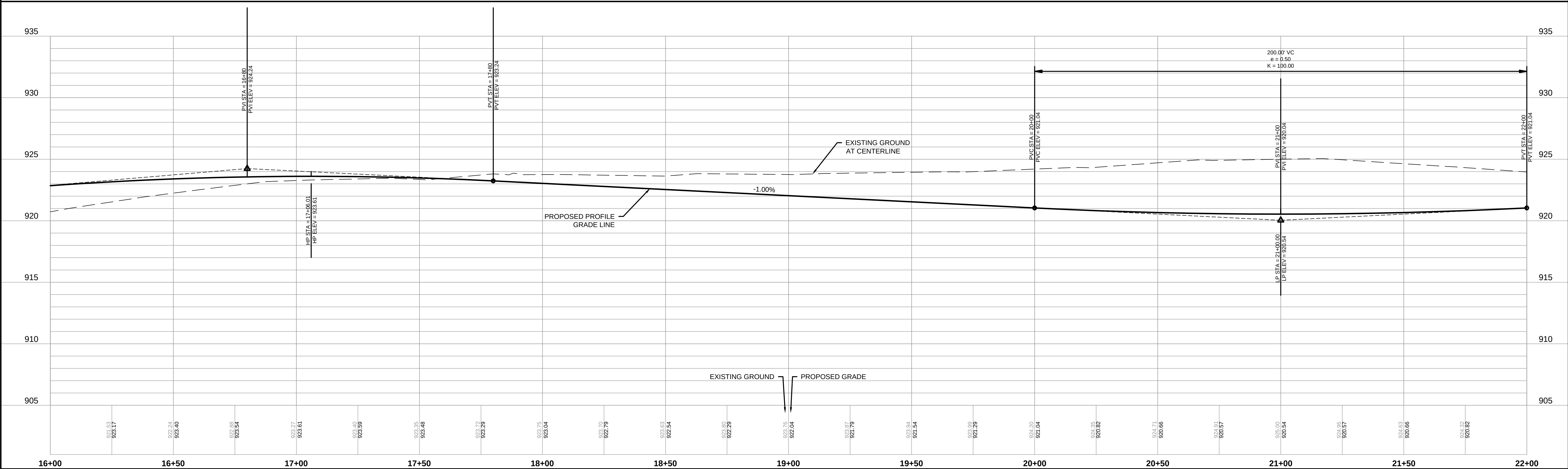
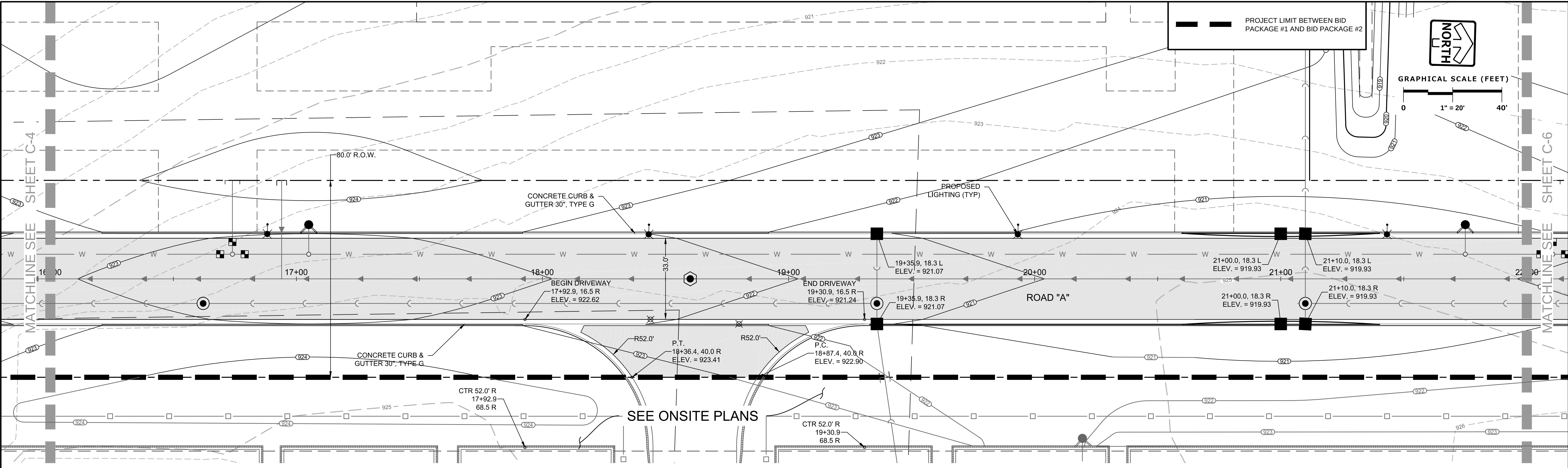
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**SHEET
C-4
C-20**

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ROADWAY PLAN AND PROFILE

REVISIONS	
1. BID SET	6/18/18
2. MUNICIPAL SUBMITTAL	7/03/18
3. MUNICIPAL RESUBMITTAL	7/16/18

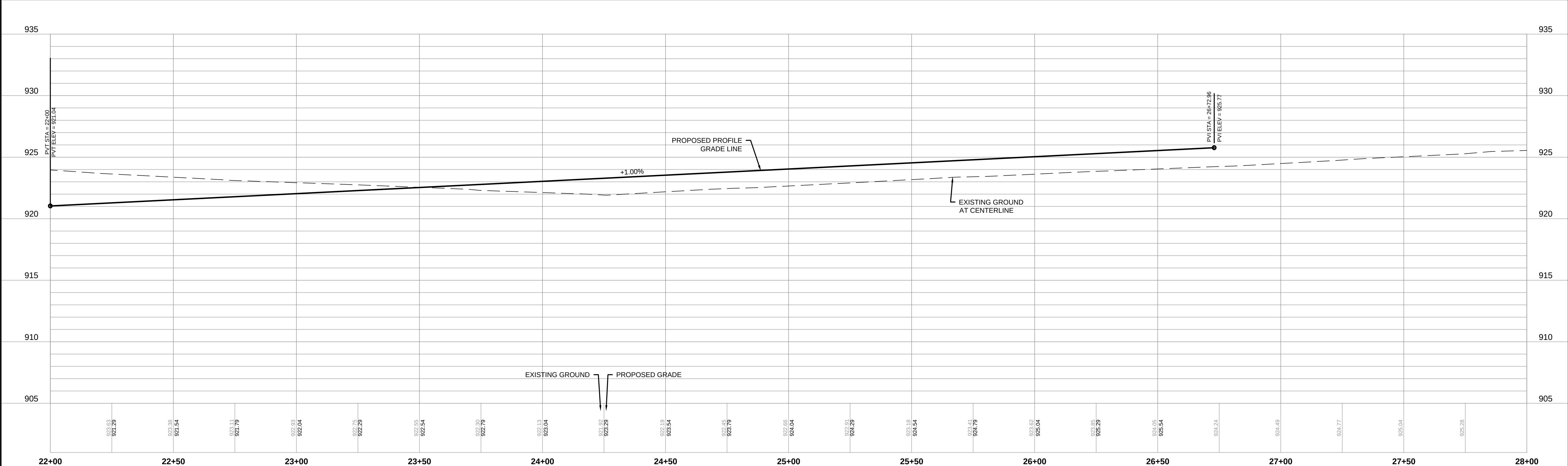
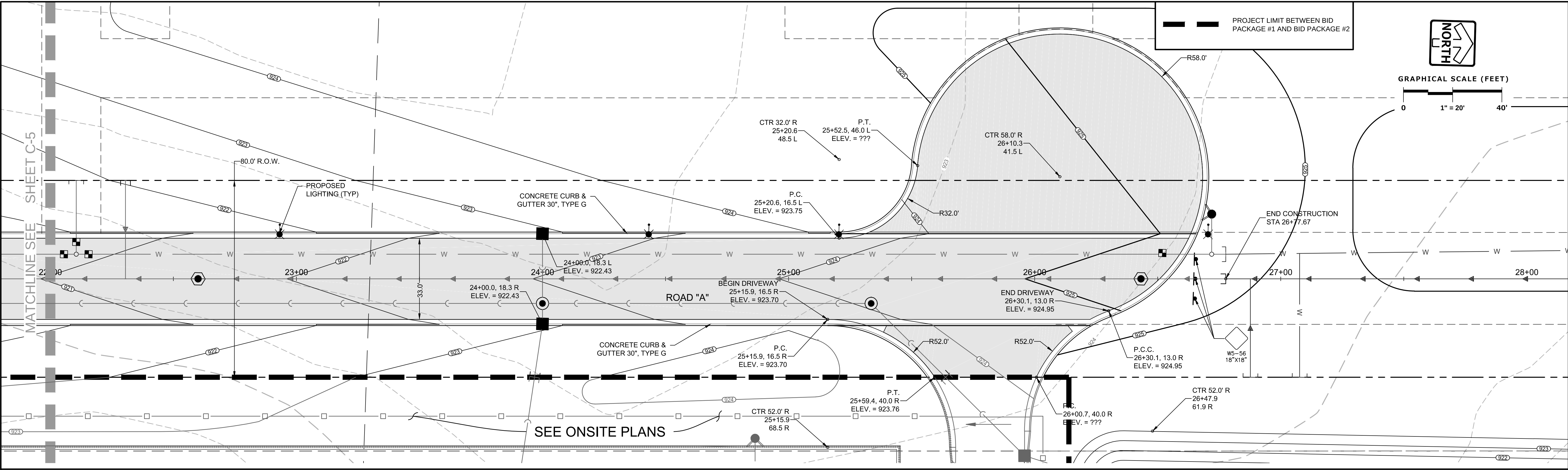
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PEG PM: ARA
SAVE DATE: 7/17/18
SCALE: 1" = 20'

SHEET
C-5
C-20

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**ROADWAY PLAN
AND PROFILE**

REVISIONS

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2	MUNICIPAL SUBMITTAL	7/03/18
3	MUNICIPAL RESUBMITTAL	7/16/18

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**SHEET
C-6
C-20**

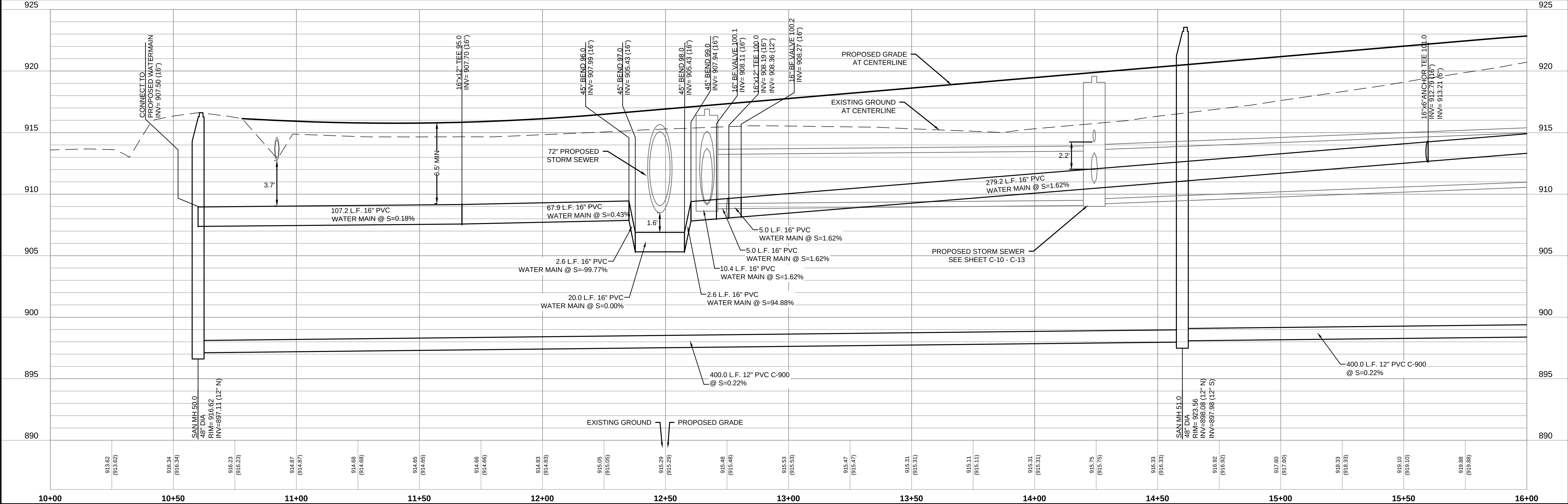
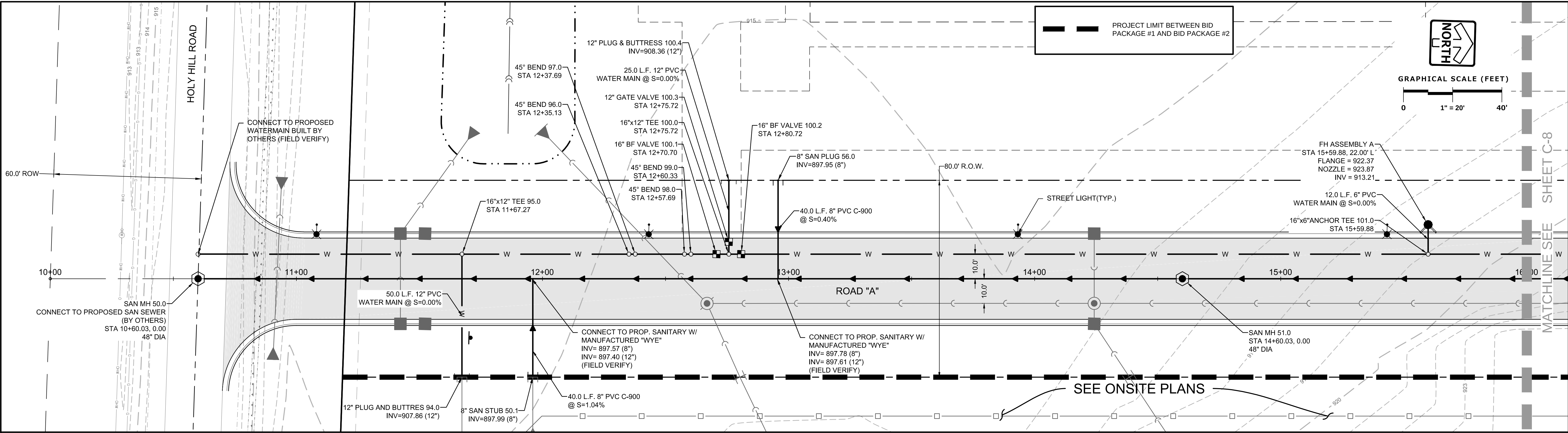
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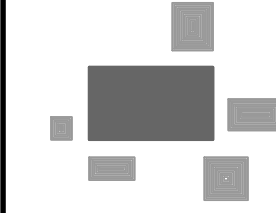
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**UTILITY PLAN
& PROFILE**

REVISIONS	
1. BID SET	6/18/18
2. MUNICIPAL SUBMITTAL	7/03/18
3. MUNICIPAL RESUBMITTAL	7/16/18

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SHEET

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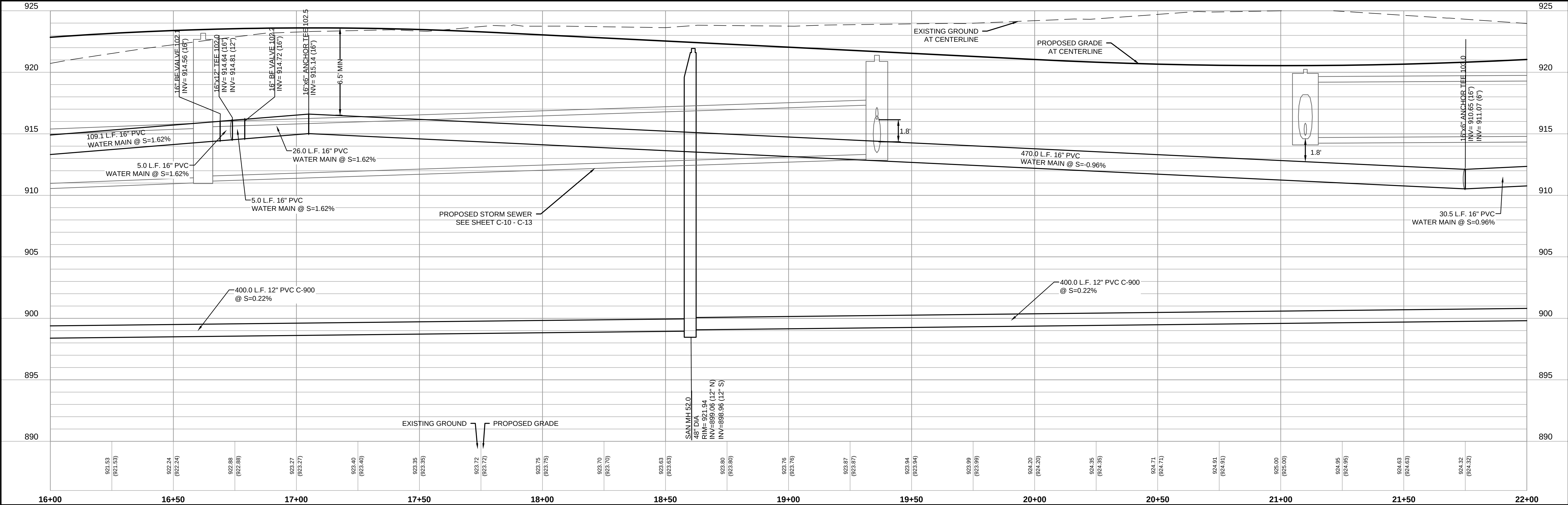
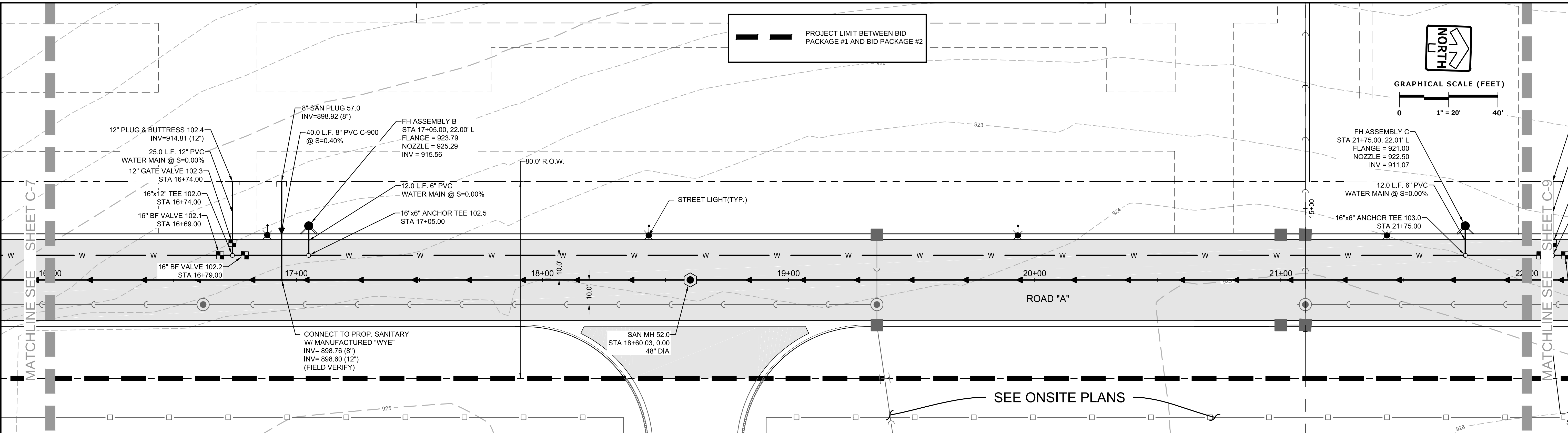
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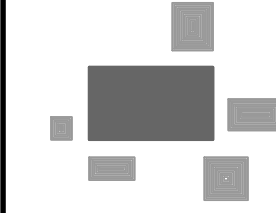
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UTILITY PLAN & PROFILE

REVISIONS	
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SHEET C-8

C-20

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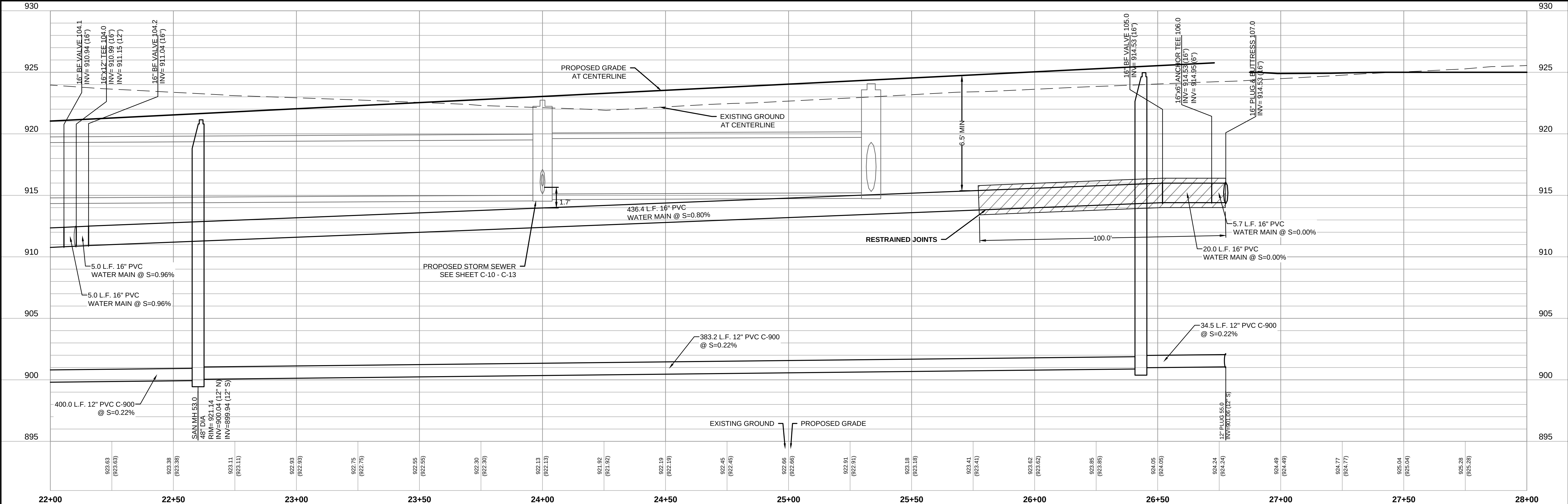
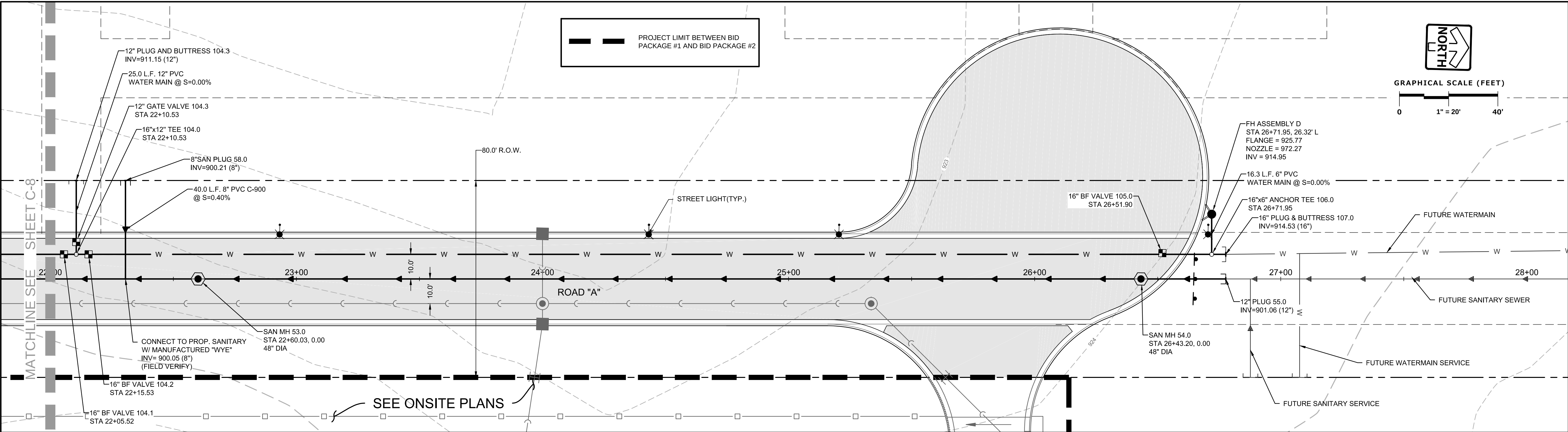
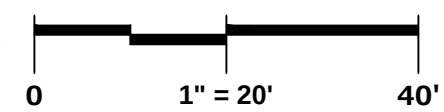
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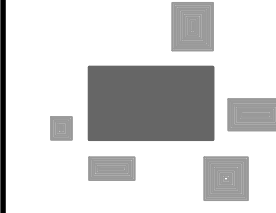
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PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2



GRAPHICAL SCALE (FEET)





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UTILITY PLAN & PROFILE

REVISIONS			DATE	BY	CHKD
NO.	DESCRIPTION	DATE			
1	BID SET	6/18/18			
2	MUNICIPAL SUBMITTAL	7/03/18			
3	MUNICIPAL RESUBMITTAL	7/16/18			

PEG JOB NO. 1296.00-WI

PEG PM: ARA

SAVE DATE: 7/17/18

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SHEET
C-9
C-20

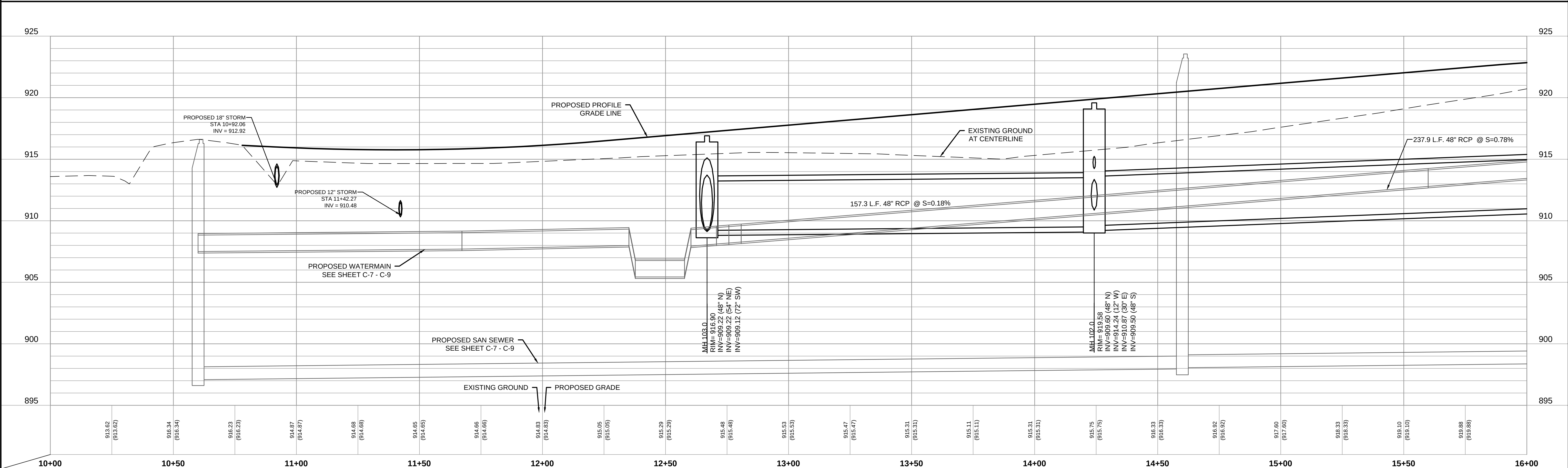
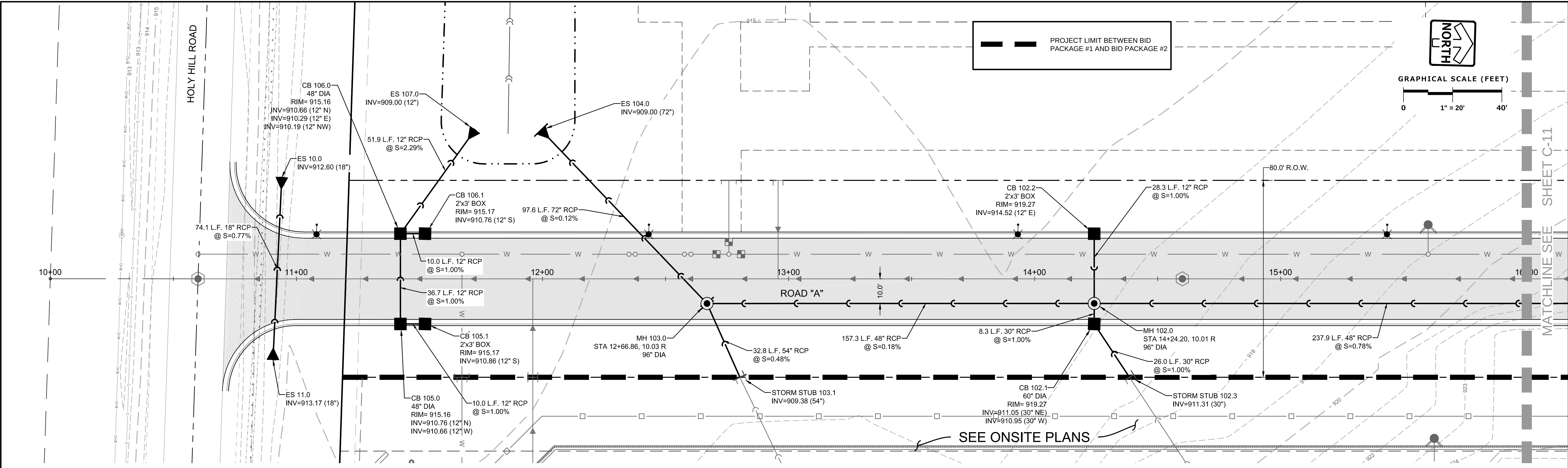
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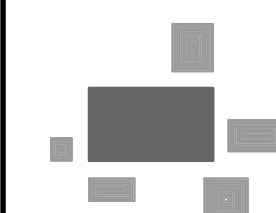
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DESIGNED: AS

REVIEWED: TOM





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**STORM SEWER
PLAN & PROFILE**

REVISIONS	
1. BID SET	6/18/18
2. MUNICIPAL SUBMITTAL	7/03/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PEG JOB N41296-00-WI

PEG PM: AREA

SAVE DATE: 7/17/18

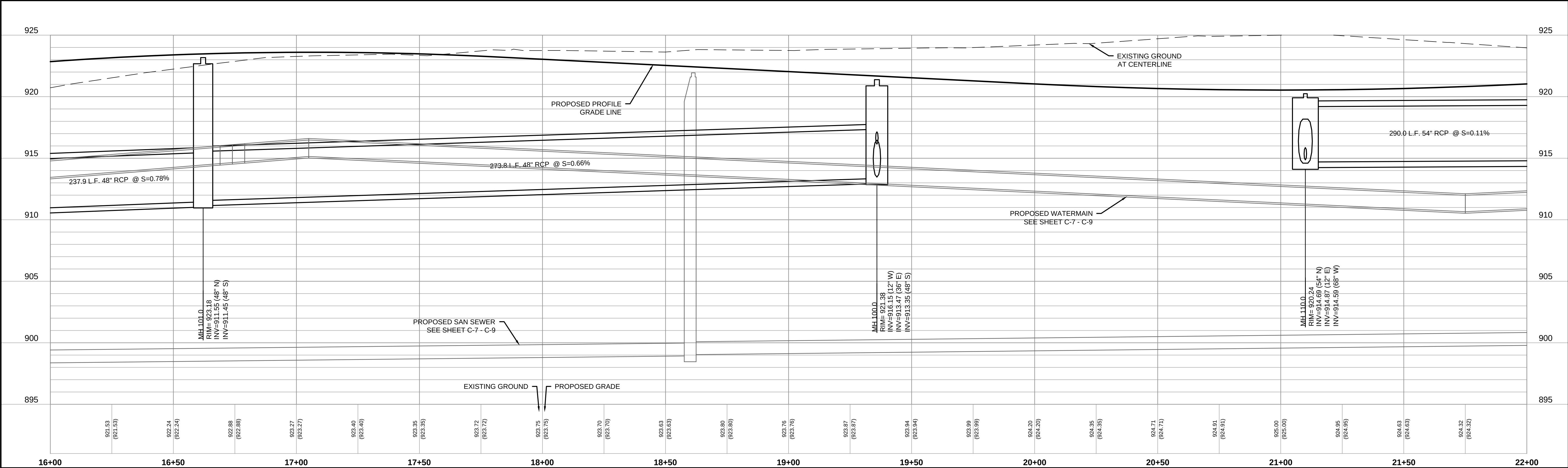
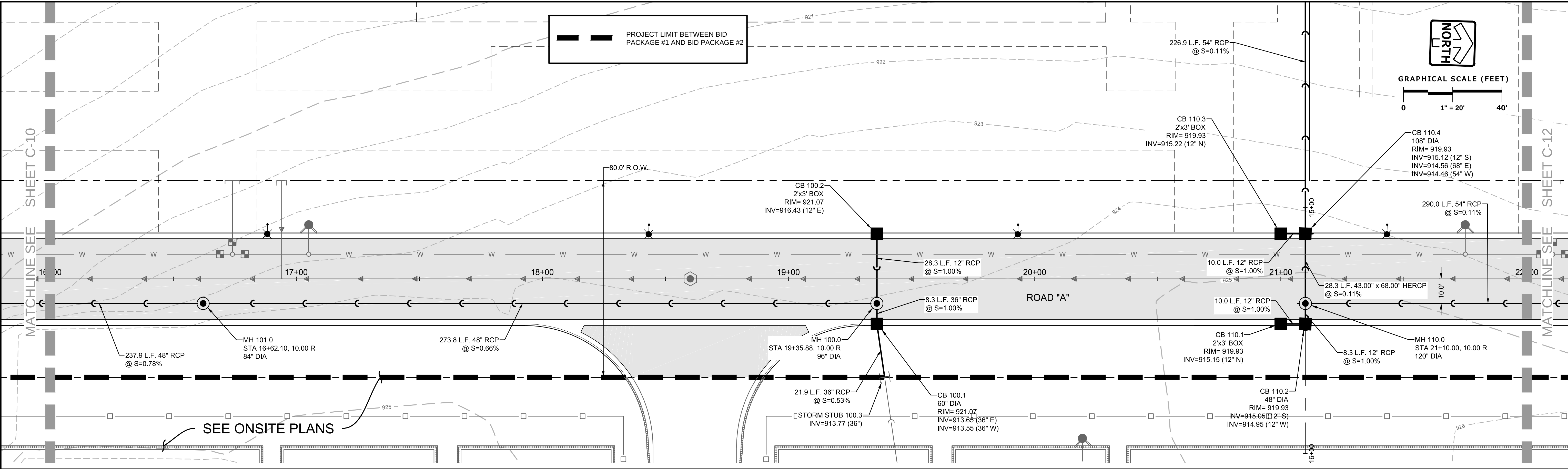
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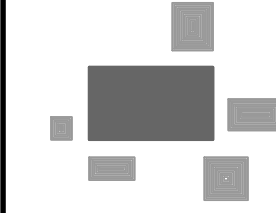
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DRAFTED: EP





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**GERMANTOWN CORPORATE
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**STORM SEWER
PLAN & PROFILE**

REVISIONS	
1. BID SET	6/18/18
2. MUNICIPAL SUBMITTAL	7/03/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PEG JOB NO. 1296.00-WI

PEG PM. ARA

SAVE DATE 7/17/18

SCALE 1" = 20'

SHEET
C-11
C-20

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STORM SEWER PLAN & PROFILE



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STORM SEWER PLAN & PROFILE

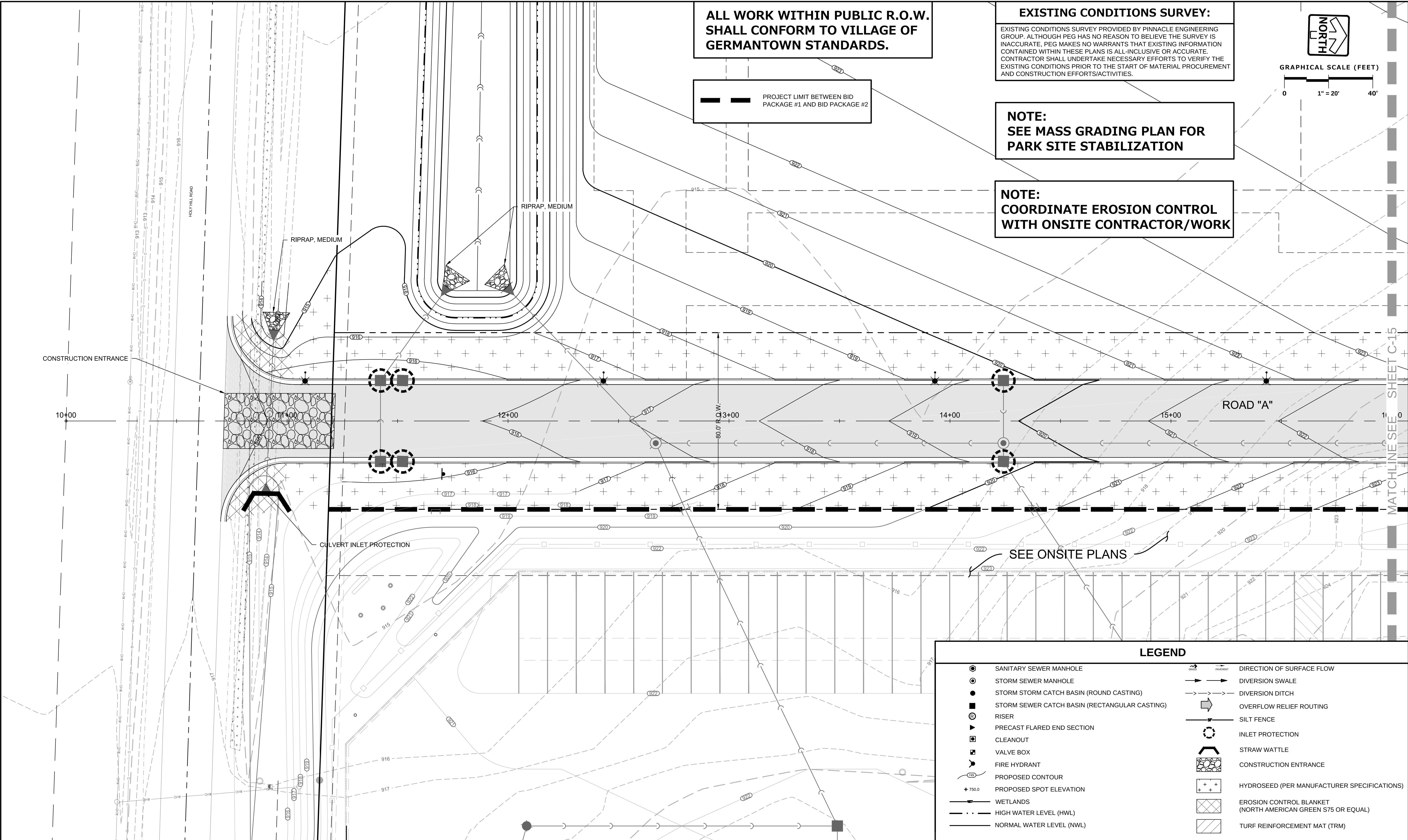
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3	MUNICIPAL RESUBMITTAL	7/16/18

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EG PM **ARA**
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SCALE **1" = 20'**

SHEET
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C-20

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REVIEWED: TDW
DRAFTED: EP



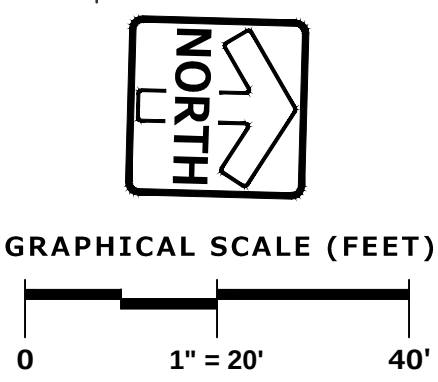
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PROJECT LIMIT BETWEEN BID
PACKAGE #1 AND BID PACKAGE #2

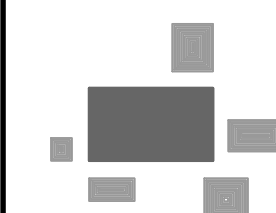
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NOTE:
SEE MASS GRADING PLAN FOR
PARK SITE STABILIZATION

NOTE:
COORDINATE EROSION CONTROL
WITH ONSITE CONTRACTOR/WORK



LEGEND			
	SANITARY SEWER MANHOLE		DIRECTION OF SURFACE FLOW
	STORM SEWER MANHOLE		DIVERSION SWALE
	STORM STORM CATCH BASIN (ROUND CASTING)		DIVERSION DITCH
	STORM SEWER CATCH BASIN (RECTANGULAR CASTING)		OVERFLOW RELIEF ROUTING
	RISER		SILT FENCE
	PRECAST FLARED END SECTION		INLET PROTECTION
	CLEANOUT		STRAW WATTLE
	VALVE BOX		CONSTRUCTION ENTRANCE
	FIRE HYDRANT		HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
	PROPOSED CONTOUR		EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)
	PROPOSED SPOT ELEVATION		TURF REINFORCEMENT MAT (TRM)
	WETLANDS		
	HIGH WATER LEVEL (HWL)		
	NORMAL WATER LEVEL (NWL)		



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**GERMANTOWN CORPORATE
PARK - ROADWAY
GERMANTOWN, WI**

**ROADWAY
STABILIZATION PLAN**

REVISIONS		
1	BID SET	6/18/18
2	MUNICIPAL SUBMITTAL	7/03/18
3	MUNICIPAL RESUBMITTAL	7/16/18

PEG JOB NO: 1296.00-WI

PEG PM: ARA

SAVE DATE: 7/17/18

SCALE: 1" = 20'

SHEET
C-14
C-20

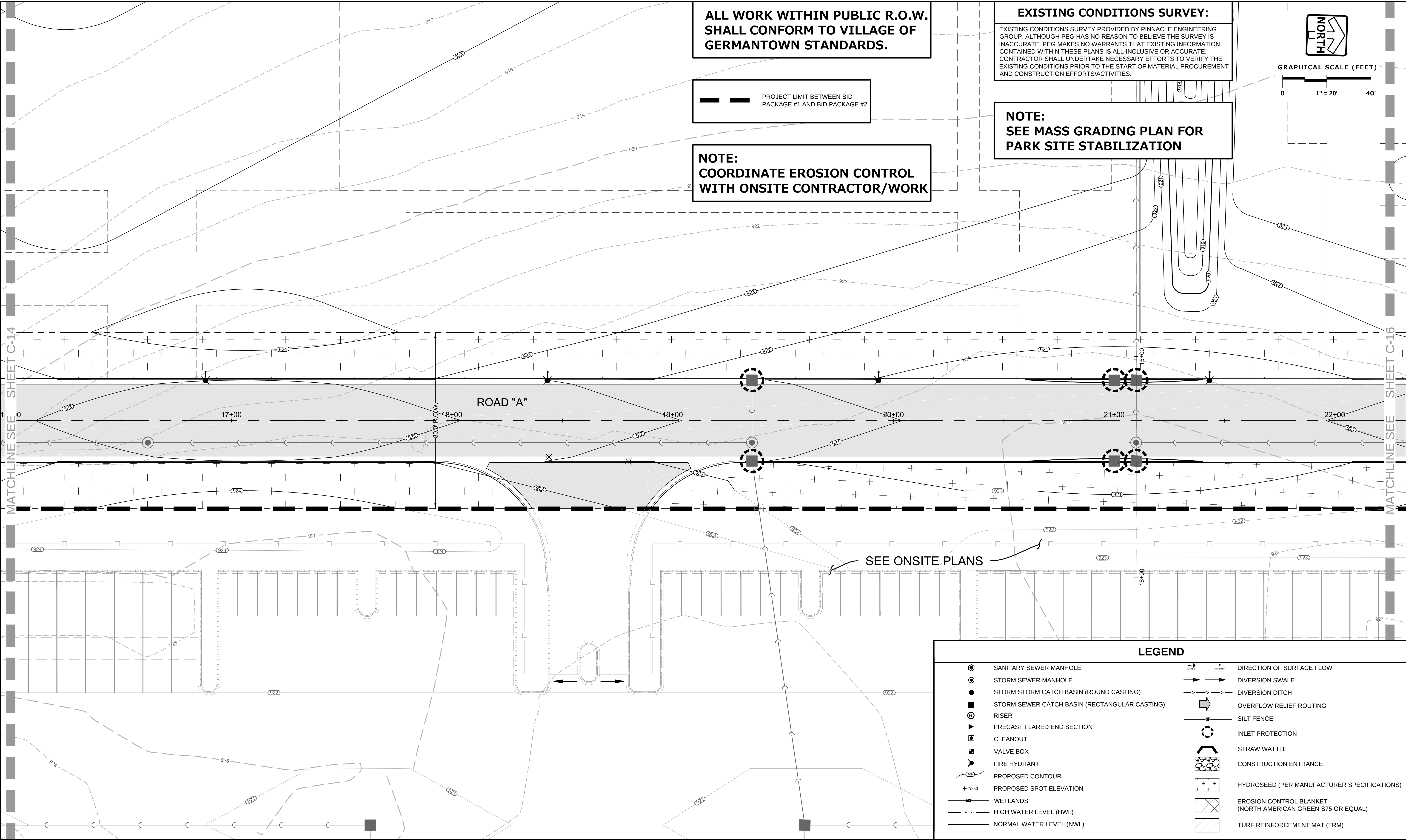
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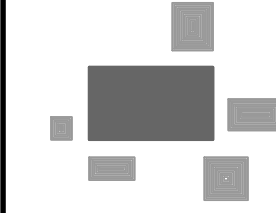
DESIGNED: AS

REVIEWED: TOM

DRAWN: EP



LEGEND			
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	STORM SEWER MANHOLE		DIVERSION SWALE
	STORM STORM CATCH BASIN (ROUND CASTING)		DIVERSION DITCH
	STORM SEWER CATCH BASIN (RECTANGULAR CASTING)		OVERFLOW RELIEF ROUTING
	RISER		SILT FENCE
	PRECAST FLARED END SECTION		INLET PROTECTION
	CLEANOUT		STRAW WATTLE
	VALVE BOX		CONSTRUCTION ENTRANCE
	FIRE HYDRANT		HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
	PROPOSED CONTOUR		EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)
	PROPOSED SPOT ELEVATION		TURF REINFORCEMENT MAT (TRM)
	WETLANDS		
	HIGH WATER LEVEL (HWL)		
	NORMAL WATER LEVEL (NWL)		



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GERMANTOWN CORPORATE PARK - ROADWAY GERMANTOWN, WI

ROADWAY STABILIZATION PLAN

REVISIONS			
1	BID SET	6/18/18	
2	MUNICIPAL SUBMITTAL	7/03/18	
3	MUNICIPAL RESUBMITTAL	7/16/18	

PEG JOB NO: 1296.00-WI

PEG PM: AREA

SAVE DATE: 7/17/18

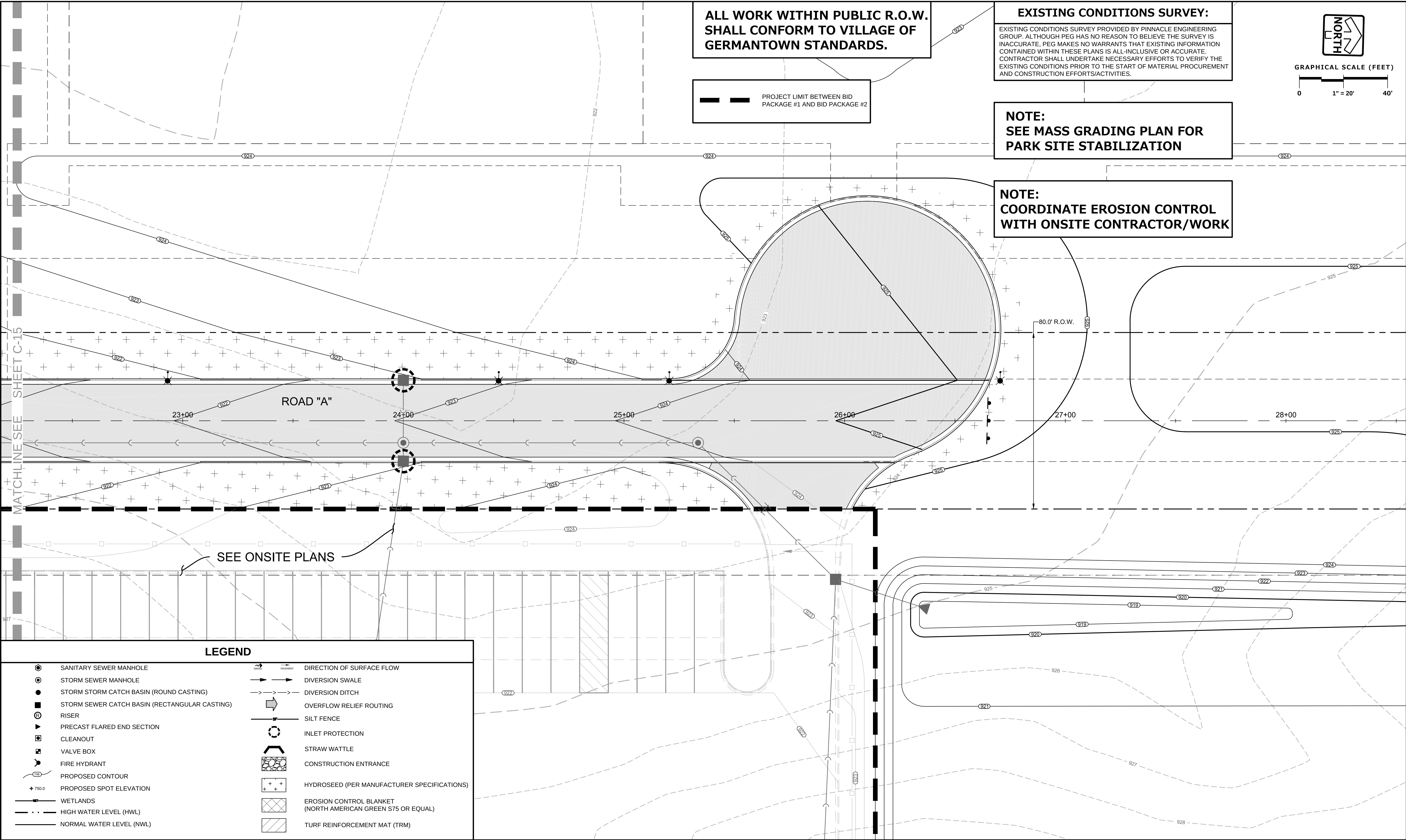
SCALE: 1" = 20'

SHEET
C-15
C-20

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DESIGNED: AJS
REVIEWED: TDW
DRAFTED: EP



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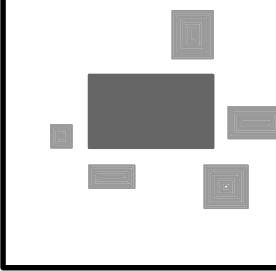
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PACKAGE #1 AND BID PACKAGE #2

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NOTE:
SEE MASS GRADING PLAN FOR
PARK SITE STABILIZATION

NOTE:
COORDINATE EROSION CONTROL
WITH ONSITE CONTRACTOR/WORK

- LEGEND**
- | | | | |
|--|---|--|--|
| | SANITARY SEWER MANHOLE | | DIRECTION OF SURFACE FLOW |
| | STORM SEWER MANHOLE | | DIVERSION SWALE |
| | STORM STORM CATCH BASIN (ROUND CASTING) | | DIVERSION DITCH |
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| | HIGH WATER LEVEL (HWL) | | |
| | NORMAL WATER LEVEL (NWL) | | |



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PARK - ROADWAY
GERMANTOWN, WI**

**ROADWAY
STABILIZATION PLAN**

REVISIONS					
1	BID SET	6/18/18	==	==	==
2	MUNICIPAL SUBMITTAL	7/03/18	==	==	==
3	MUNICIPAL RESUBMITTAL	7/16/18	==	==	==
			==	==	==

PEG JOB NO: 1296.00-WI

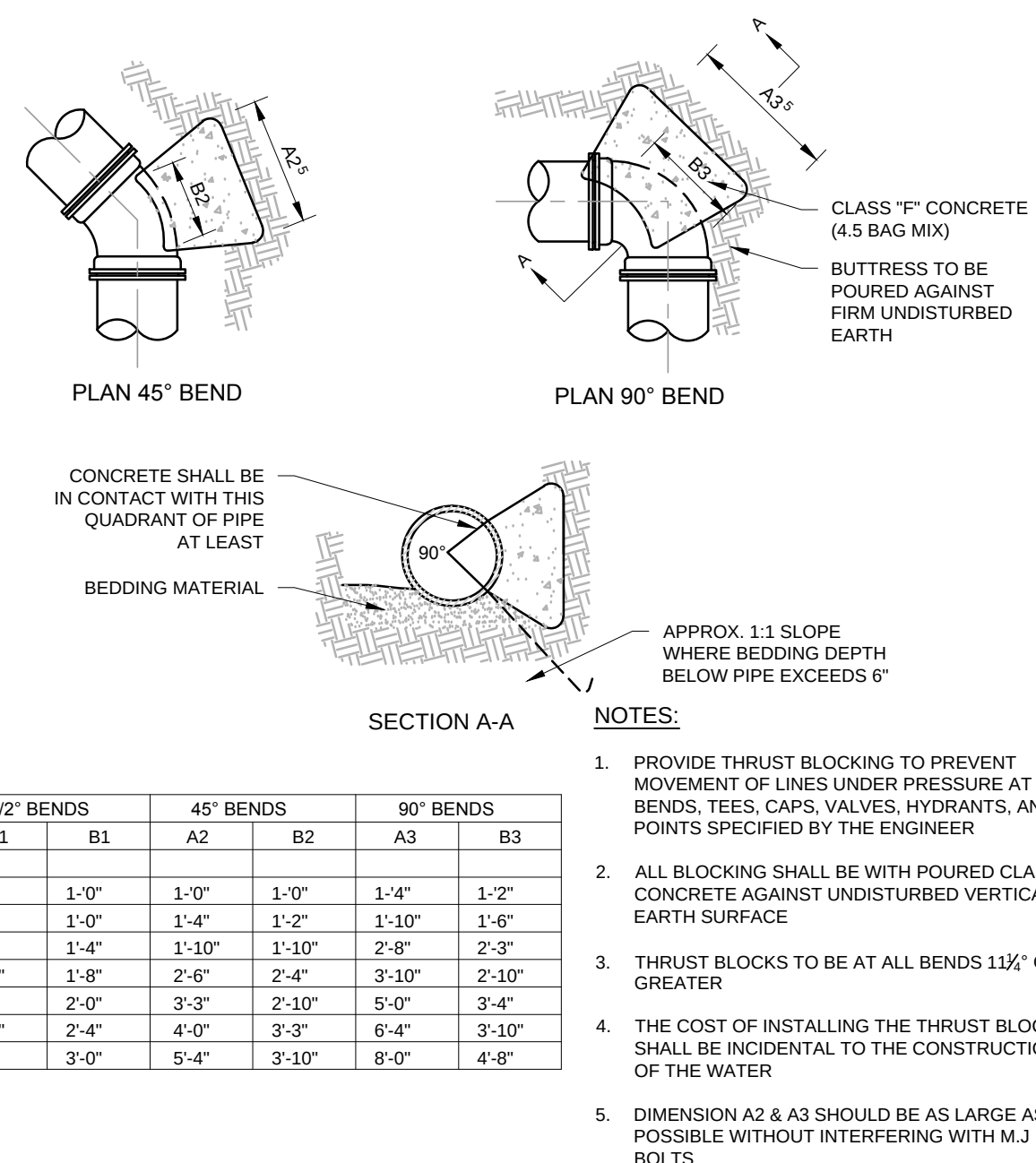
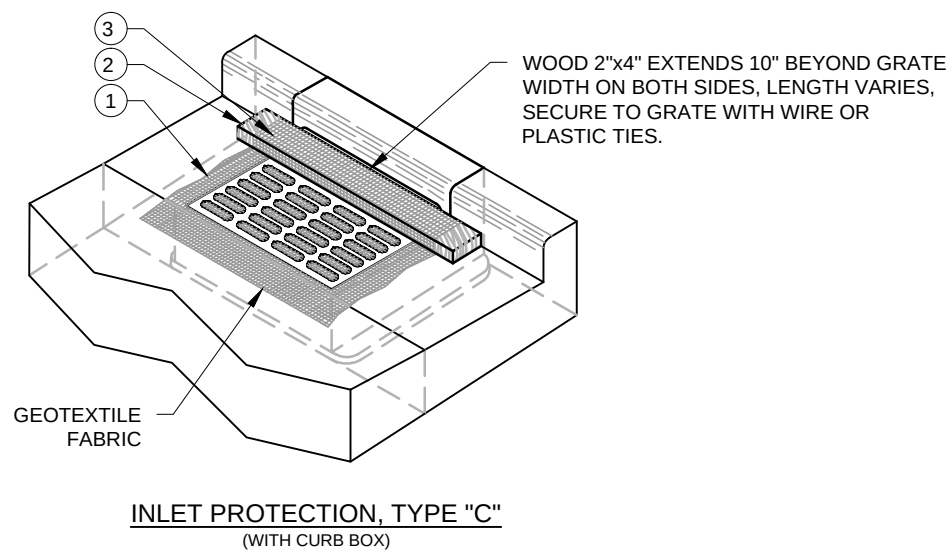
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SAVE DATE: 7/17/18

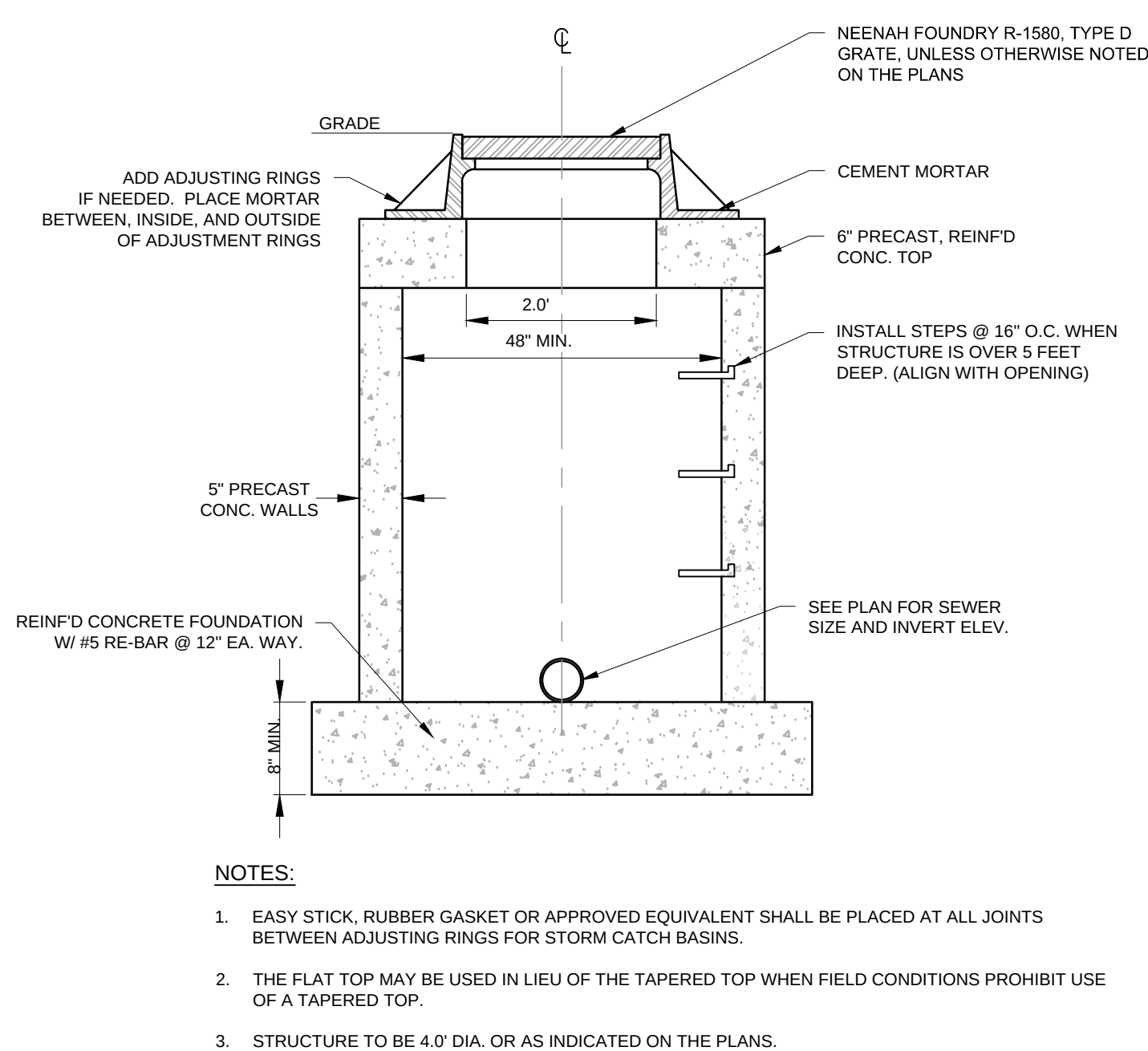
SCALE: 1" = 20'

SHEET
C-16
C-20

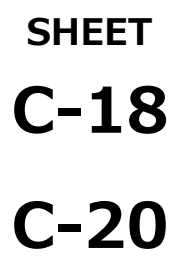
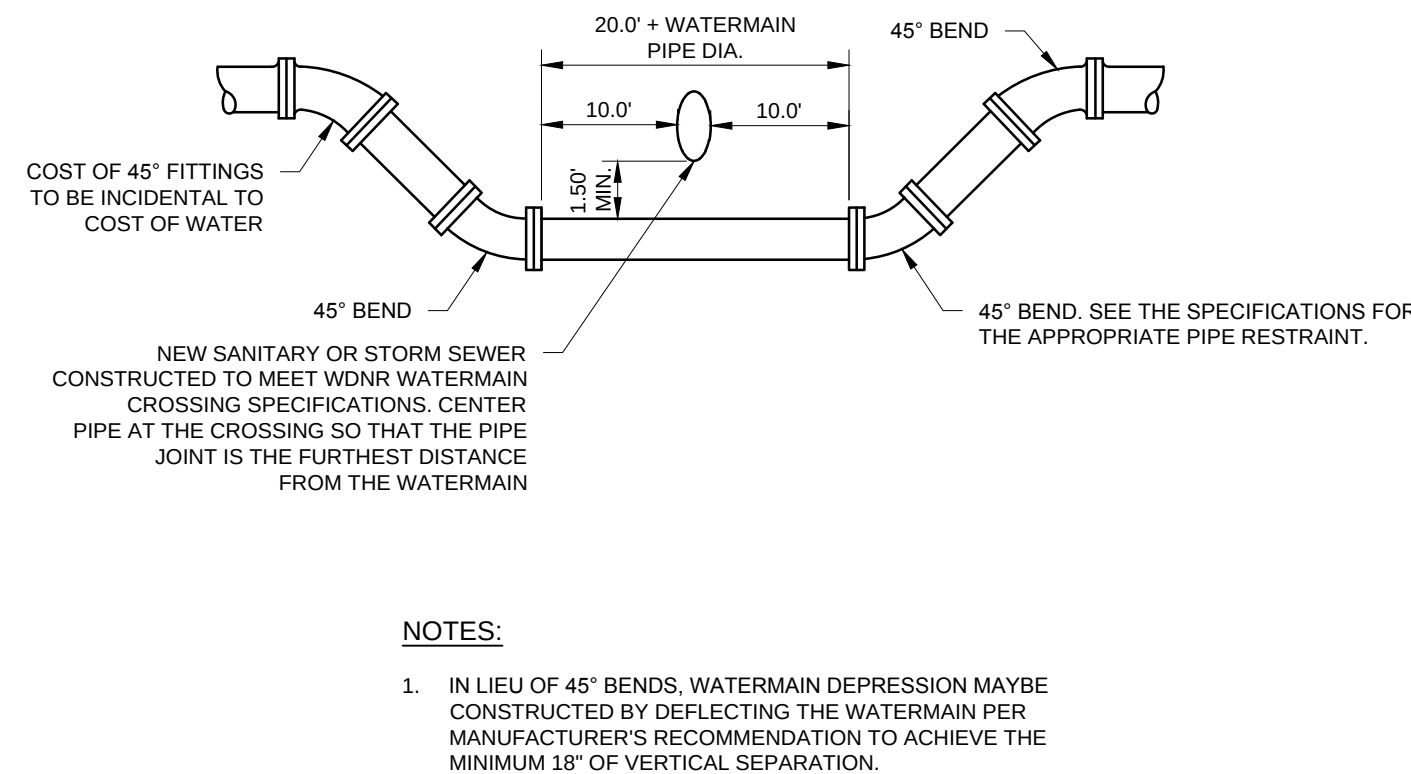
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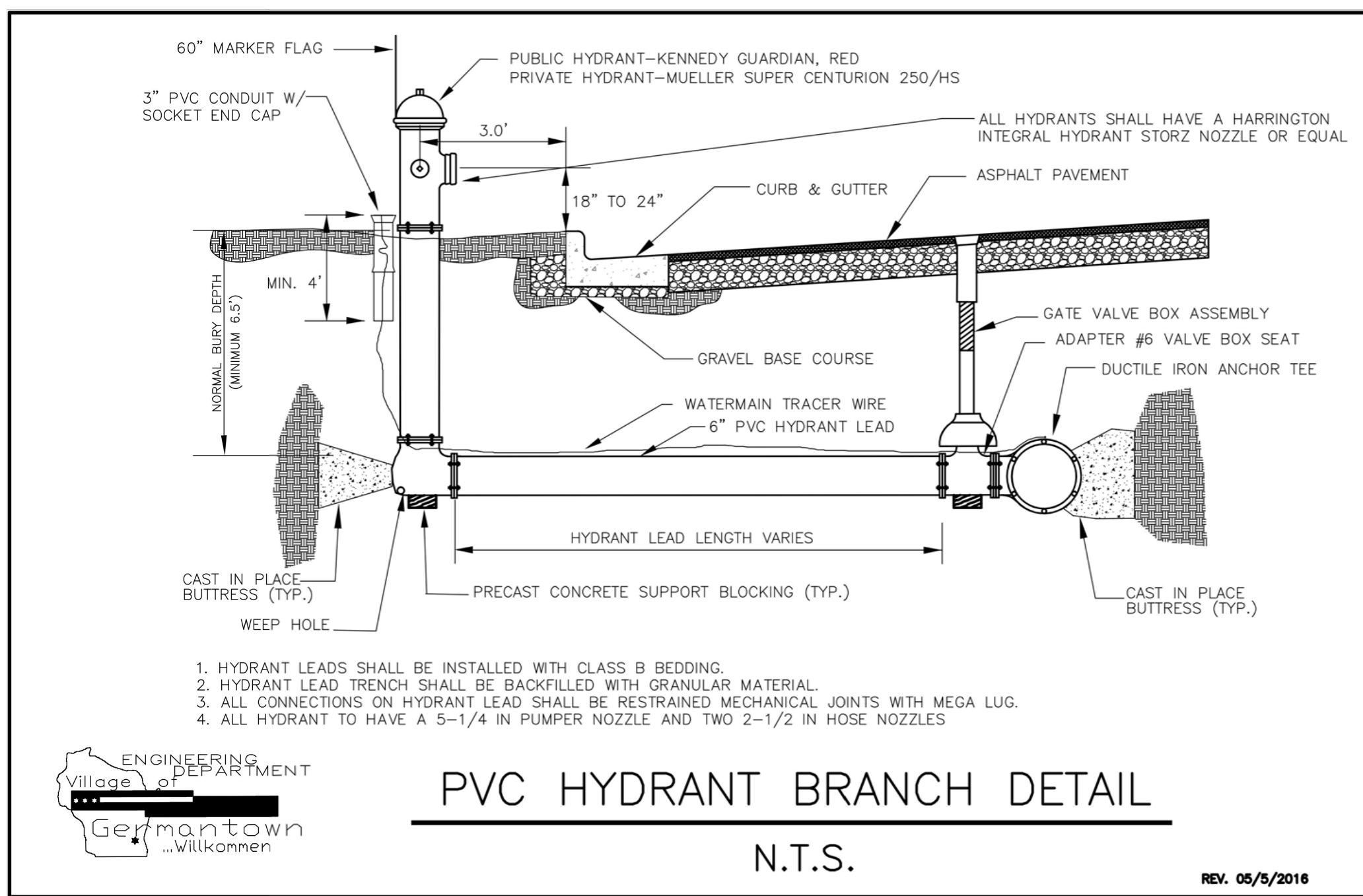
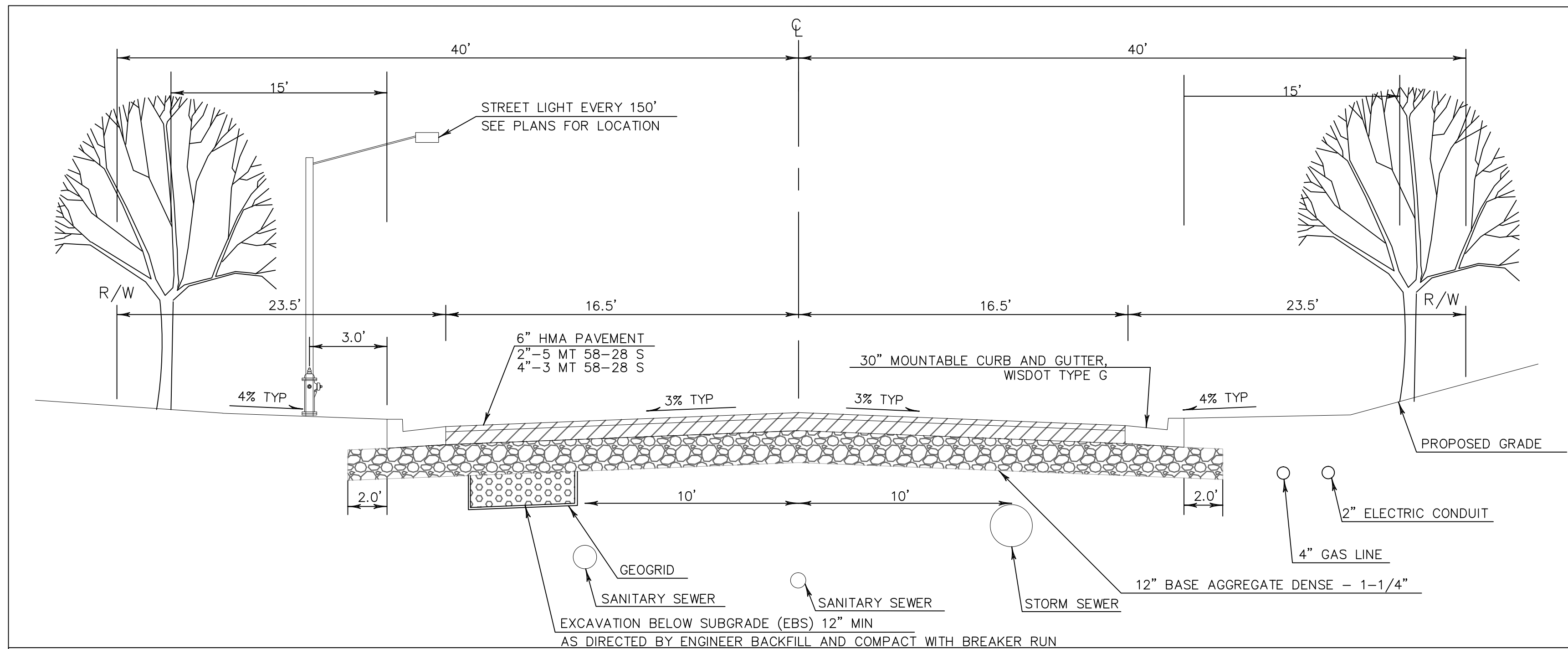
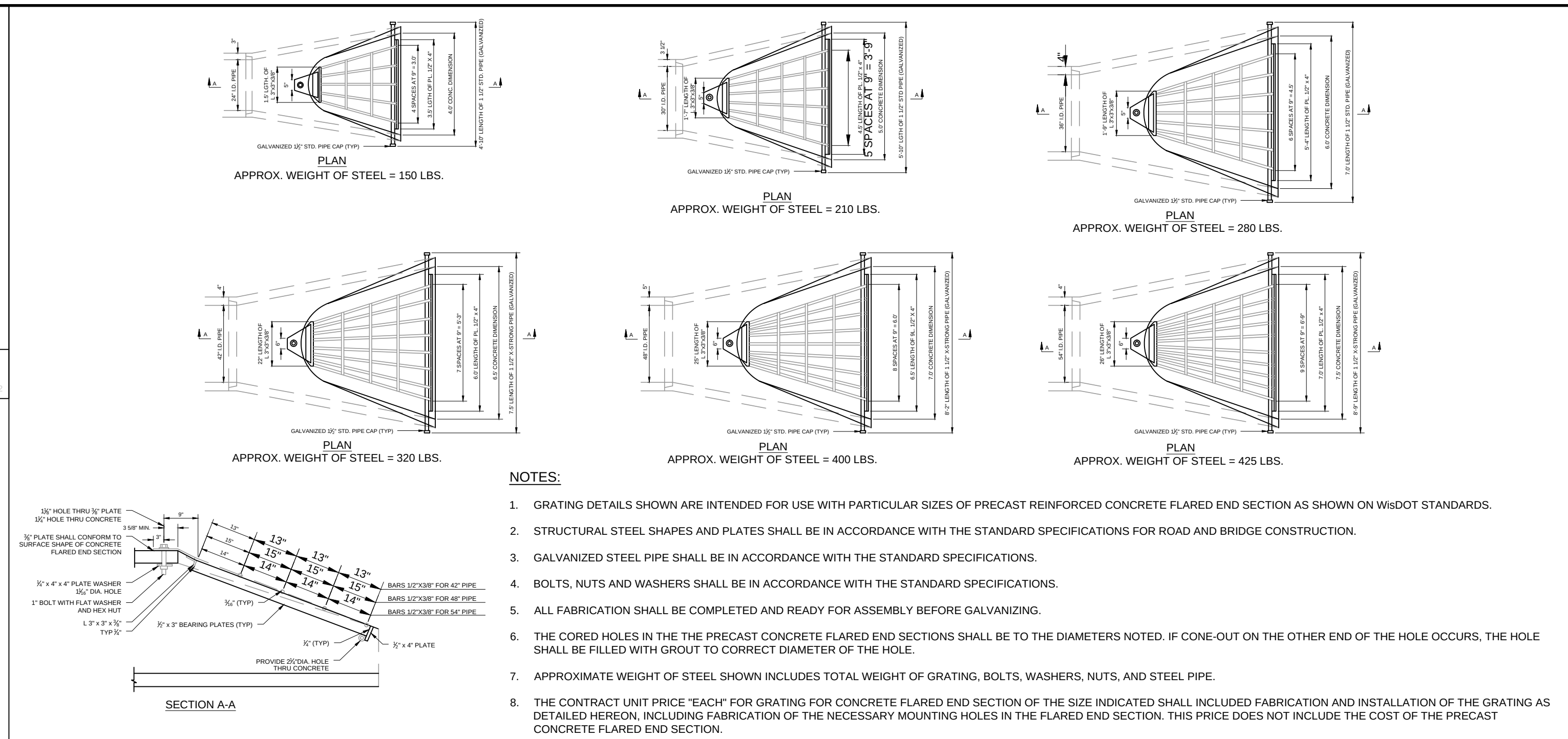
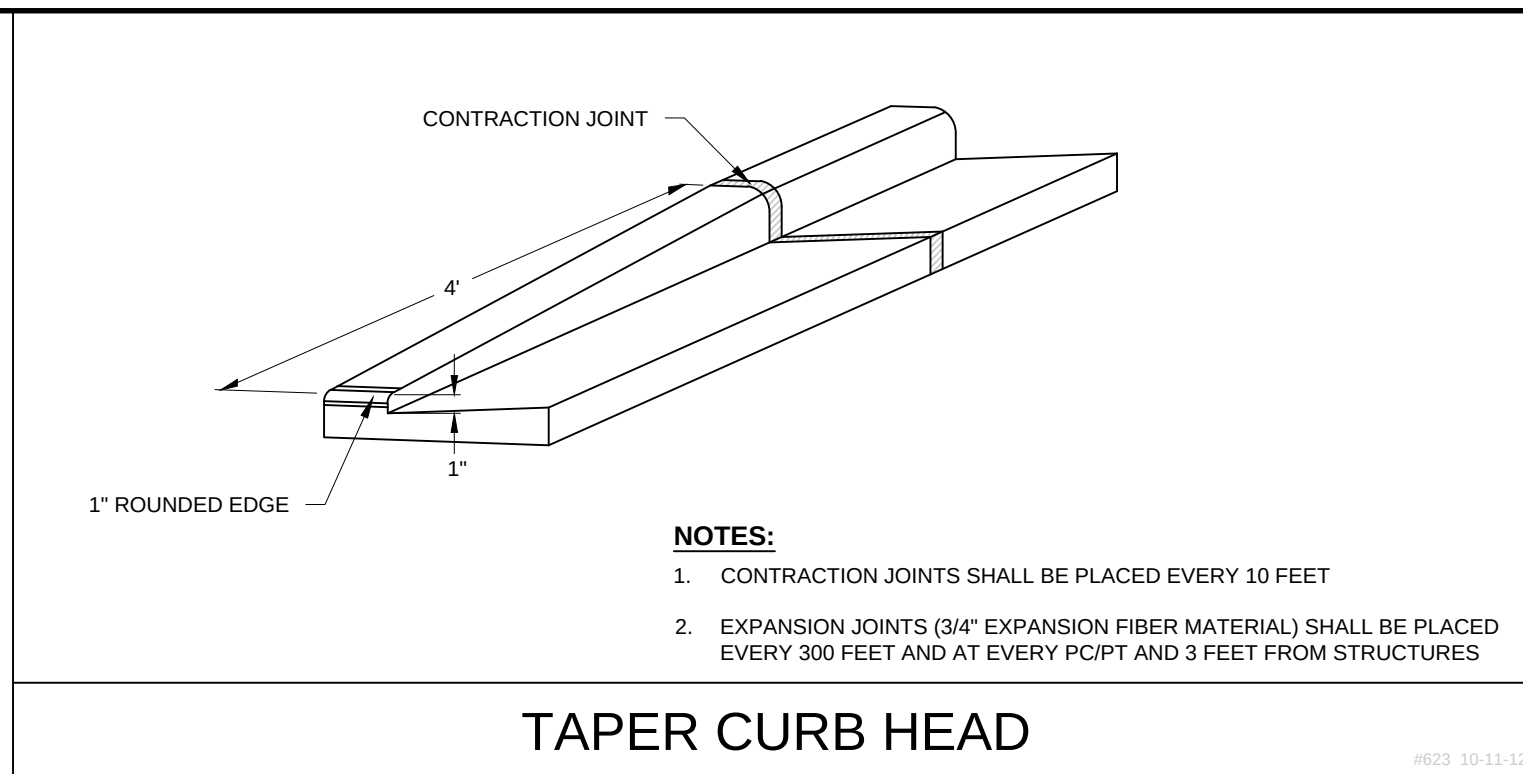
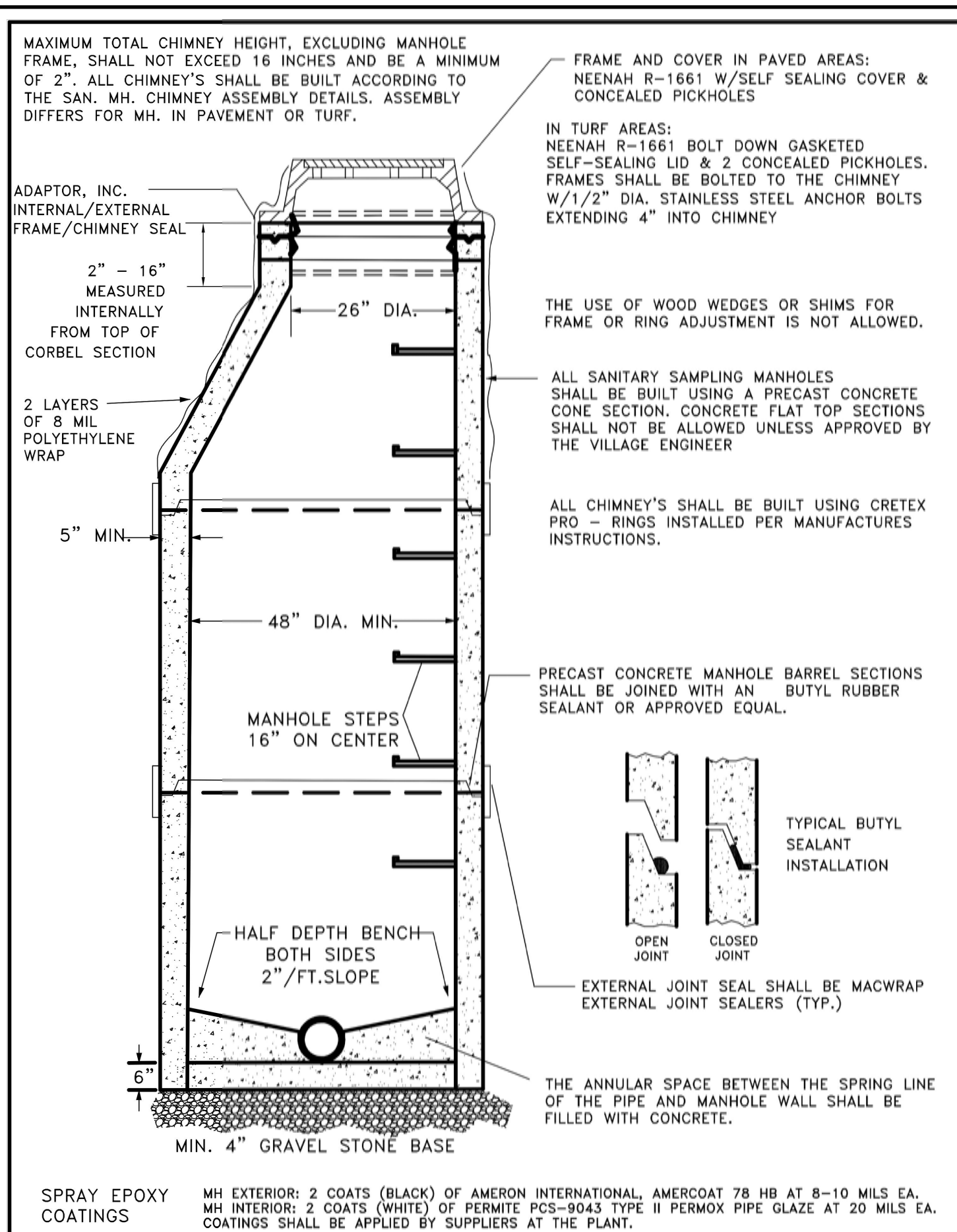


THRUST BLOCK



WATER MAIN DEPRESSION





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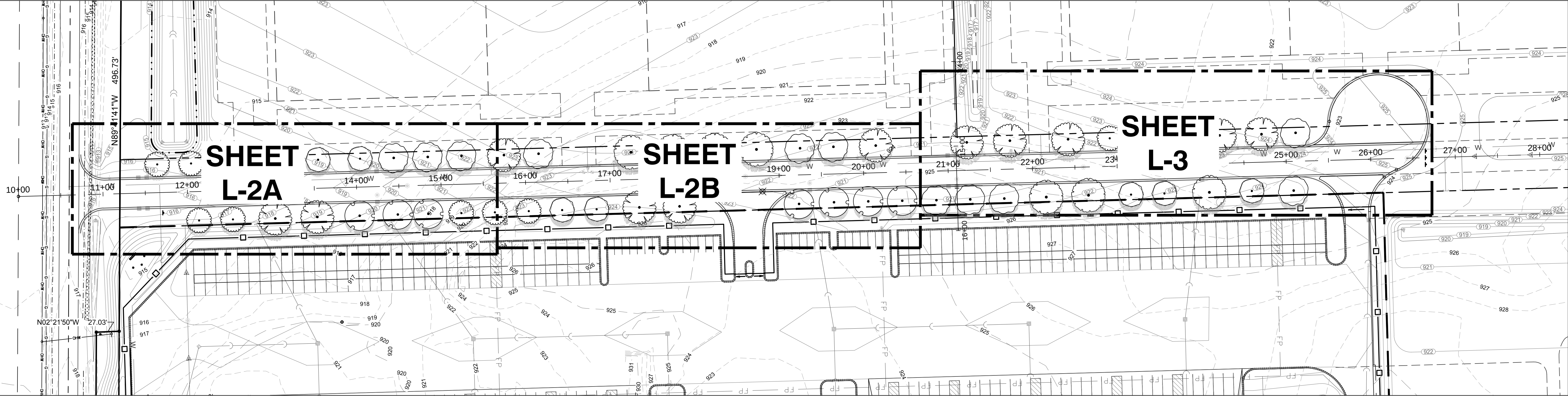
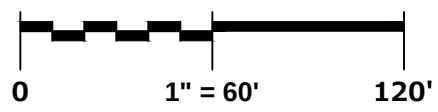
DESIGNED: D.B. DRAFTED: D.B. REVIEWED: T.W.

PLANT SCHEDULE

STREET TREES	COMMON NAME	SIZE	QTY
Acer miyabei `State Street`	Miyabei Maple	3" Cal.	7
Celtis occidentalis `Prairie Pride`	Prairie Pride Hackberry	3" Cal.	10
Gymnocladus dioica	Kentucky Coffee Tree	3" Cal.	11
Quercus bicolor	Swamp White Oak	3" Cal.	11
Tilia americana `Redmond`	Redmond American Linden	3" Cal.	8
Ulmus americana `New Horizon`	New Horizon American Elm	3" Cal.	7

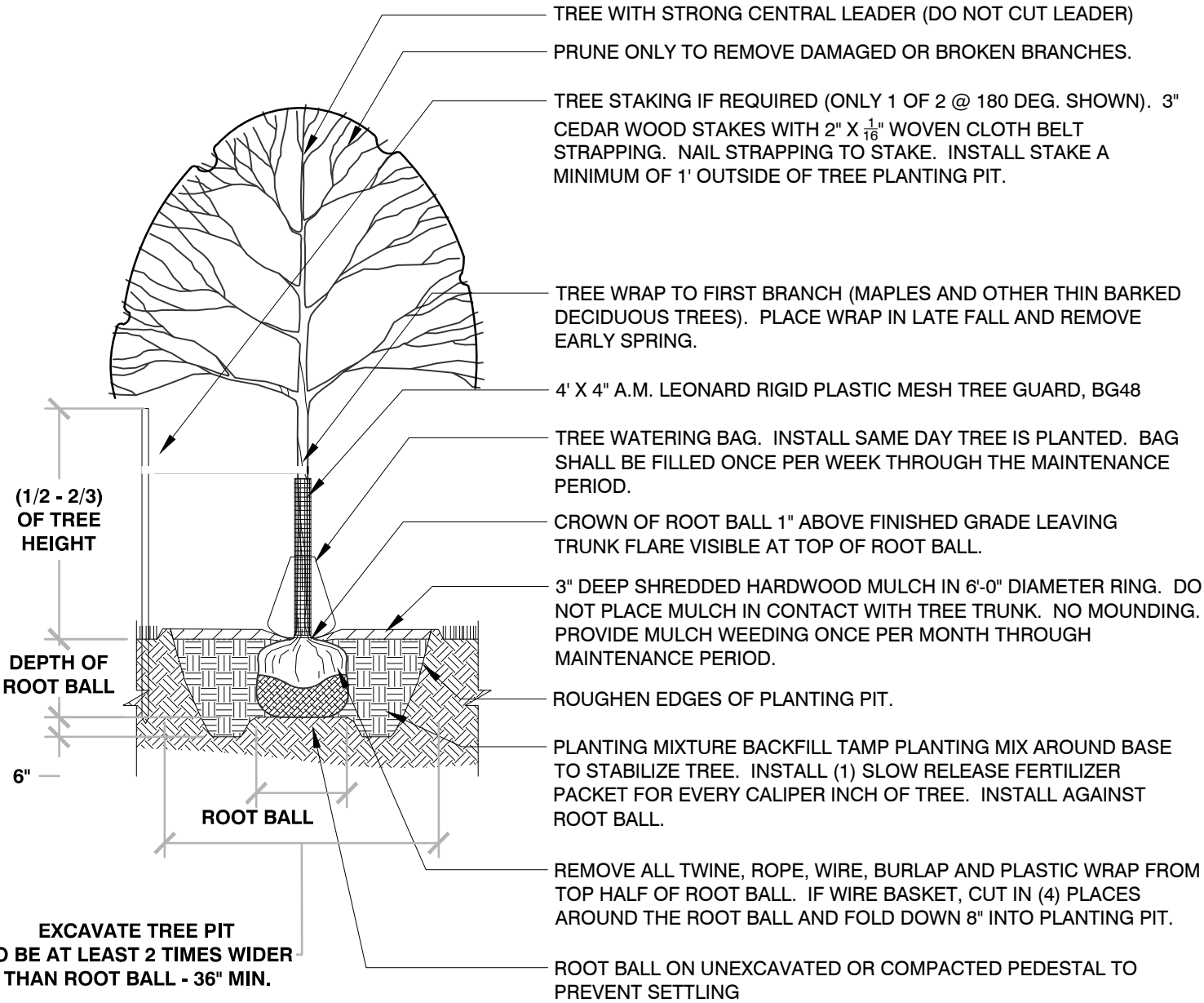


GRAPHICAL SCALE (FEET)



GENERAL PLANTING NOTES

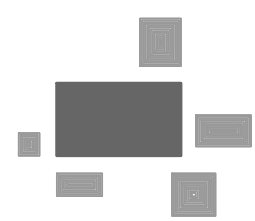
- THE LAYOUT OF ALL INDIVIDUAL TREES SHALL BE STAKED BY THE CONTRACTOR IN ADVANCE OF INSTALLATION. FLAGGING, STAKES, OR PAINT MAY BE USED TO DELINEATE LOCATIONS AS SCALED FROM THE PLANS. AN APPROVED REPRESENTATIVE WILL REVIEW THESE LOCATIONS WITH THE CONTRACTOR AND MAKE MINOR ADJUSTMENTS AS NECESSARY.
- THE CONTRACTOR IS RESPONSIBLE FOR INDEPENDENTLY DETERMINING THE PLANT MATERIAL QUANTITIES REQUIRED BY THE LANDSCAPE PLANS. REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIAL SHALL COMPLY WITH STANDARDS DESCRIBED IN AMERICAN STANDARD OF NURSERY STOCK - Z60.1 ANSI. LANDSCAPE ARCHITECT OR OWNERS AUTHORIZED REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND POTENTIALLY REJECT ANY PLANT MATERIAL DEEMED TO NOT MEET THE REQUIRED STANDARDS.
- NO PLANT MATERIAL OR PLANT SIZE SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL BY THE LANDSCAPE ARCHITECT. ANY CHANGES SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT IN WRITING PRIOR TO INSTALLATION.
- ALL PLANT MATERIAL SHALL BE PROVIDED FROM A NURSERY (WITHIN 200 MILES) WITH A SIMILAR PLANT HARDINESS ZONE AS PROJECT LOCATION. EXISTING SOIL SHALL BE AMENDED PER SOIL ANALYSIS REPORT TO ENSURE A PROPER GROWING MEDIUM IS ACHIEVED.
- ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH PLANTING DETAILS. REFER TO TREE PLANTING DETAIL AND TO THE VILLAGE OF GERMANTOWN SPECIFICATIONS FOR PLANTING STREET TREES.
- TREES SHALL BE INSTALLED A MINIMUM DISTANCE OF 5' FROM ANY SEWER AND WATER LINES, 10' FROM DRIVEWAYS, LIGHT POLES, AND FIRE HYDRANTS.
- TREES SHALL BE INSTALLED A MINIMUM OF 25' FROM STREET CORNERS OF MINOR ROADS, AND 50' FROM STREET CORNERS OF ARTERIAL ROADS.
- WHILE PLANTING TREES, BACKFILL $\frac{2}{3}$ OF PLANTING HOLE AND WATER TREE THOROUGHLY BEFORE INSTALLING THE REMAINDER OF SOIL MIXTURE. AFTER ALL SOIL HAS BEEN PLACED INTO THE PLANTING HOLE WATER THOROUGHLY AGAIN.
- THE CONTRACTOR MUST LABEL ALL TREES WITH THE COMMON AND BOTANICAL NAMES PRIOR TO FINAL INSPECTION.
- ALL TREES PLANTED IN TURF AREAS SHALL RECEIVE A 3" DEEP SHREDDED HARDWOOD MULCHED RING AS SHOWN IN PLANTING DETAILS.
- ALL TREE RINGS SHALL HAVE A 4" DEEP TRENCHED BED EDGE CREATED BY EITHER A FLAT LANDSCAPE SPADE OR MECHANICAL EDGER.
- ALL DISTURBED AREAS WITHIN THE PROJECT SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
- ALL DISTURBED AREAS OUTSIDE THE LIMITS OF WORK SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, INCLUDING ANY IRRIGATION LINES, PRIOR TO DIGGING. CONSULT DIGGERS HOTLINE.
- THE CONTRACTOR SHALL ENSURE THAT SOIL CONDITIONS AND COMPACTION ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AROUND THE CONSTRUCTION SITE. UNDESIRABLE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER SURFACE AND SUBSURFACE DRAINAGE IN ALL AREAS
- THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, FEES, AND LICENSES NECESSARY FOR THE INSTALLATION OF THIS PLAN.
- THE CONTRACTOR IS TO REVIEW ALL SITE ENGINEERING DOCUMENTS PRIOR TO INSTALLATION. ANY CONFLICTS MUST BE REPORTED TO THE LANDSCAPE ARCHITECT. THESE LANDSCAPE DRAWINGS ARE FOR THE INSTALLATION OF PLANT MATERIALS ONLY UNLESS OTHERWISE STATED.
- THE CONTRACTOR SHALL PROVIDE WATERING AND MAINTENANCE SERVICES FOR A PERIOD OF 60 DAYS TO ENSURE VEGETATIVE ESTABLISHMENT. UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL SUPPLY THE OWNER IN WRITING WITH ONGOING WATERING AND MAINTENANCE INSTRUCTIONS.
- STREET TREES SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM TIME OF OWNER ACCEPTANCE. ANY WARRANTY REPLACEMENT TREES SHALL ALSO BE GUARANTEED FOR AN ADDITIONAL YEAR.
- THE CONTRACTOR IS RESPONSIBLE TO CONDUCT A FINAL WALK THROUGH WITH THE LANDSCAPE ARCHITECT, VILLAGE FORESTER, AND OR OWNERS REPRESENTATIVE TO ANSWER QUESTIONS, PROVIDE INSTRUCTIONS, AND ENSURE THAT PROJECT REQUIREMENTS HAVE BEEN MET.



1 TREE PLANTING

1/4" = 1'-0"

P-MU-GER-01



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GERMANTOWN, WI

GENERAL INFORMATION
SHEET

REVISIONS

==	==	==	==
==	==	==	==
==	==	==	==

PEG JOB NO: 1296.00-WI	AREA
PEG PM: 7/15/18	SAVE DATE
SCALE: 1"=60'	

SHEET
L-1
L-3

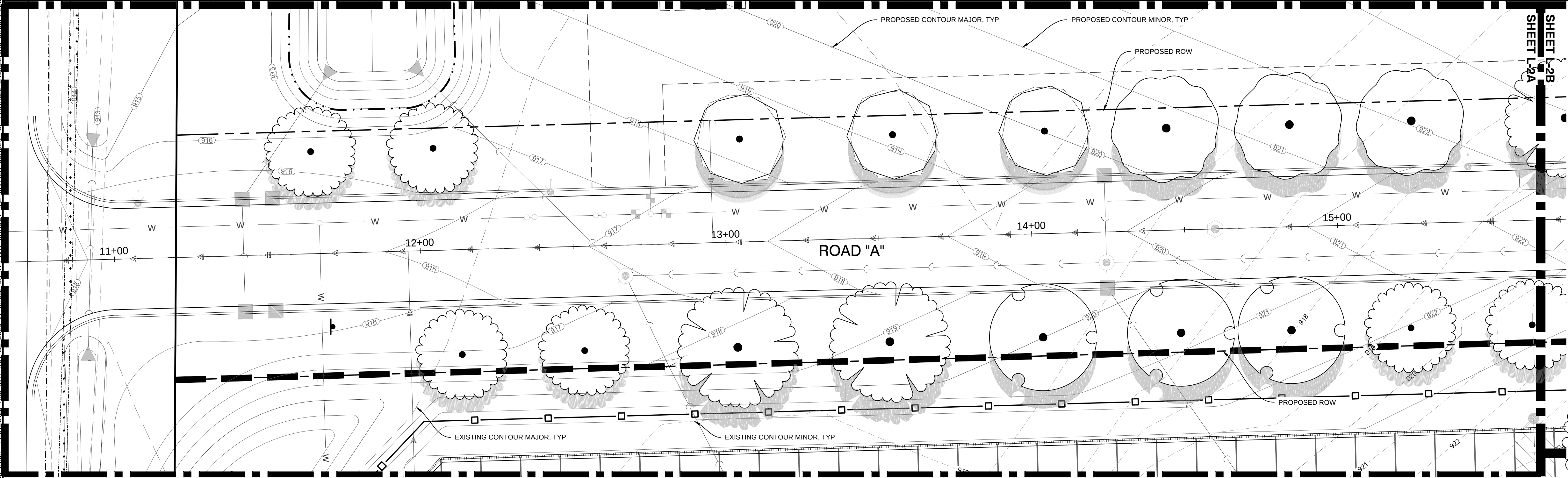
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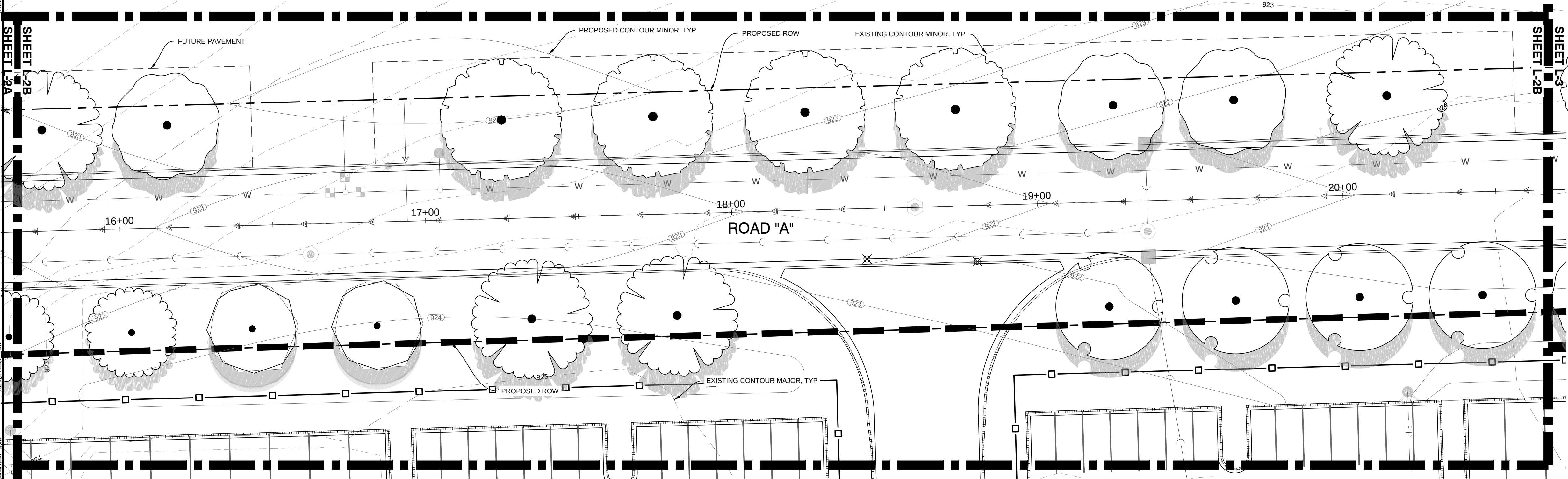
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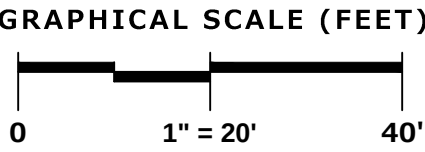
L-2A STREET TREE ENLARGEMENT
SCALE: 1"=20'

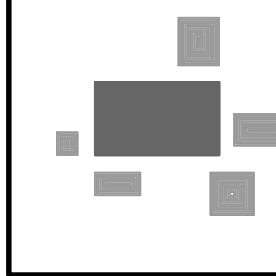


L-2B STREET TREE ENLARGEMENT
SCALE: 1"=20'

PLANT KEY

STREET TREES	BOTANICAL NAME	COMMON NAME
	<i>Acer miyabei</i> 'State Street'	Miyabei Maple
	<i>Celtis occidentalis</i> 'Prairie Pride'	Prairie Pride Hackberry
	<i>Gymnocladus dioica</i>	Kentucky Coffee Tree
	<i>Quercus bicolor</i>	Swamp White Oak
	<i>Tilia americana</i> 'Redmond'	Redmond American Linden
	<i>Ulmus americana</i> 'New Horizon'	New Horizon American Elm





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PARK - ROADWAY
GERMANTOWN, WI**

**STREET TREE
ENLARGEMENT**

REVISIONS

REG. JOB NO. 1296.00-WI	AREA
REG. PK. 7/15/18	SCALE 1"=20'
SAVE DATE	

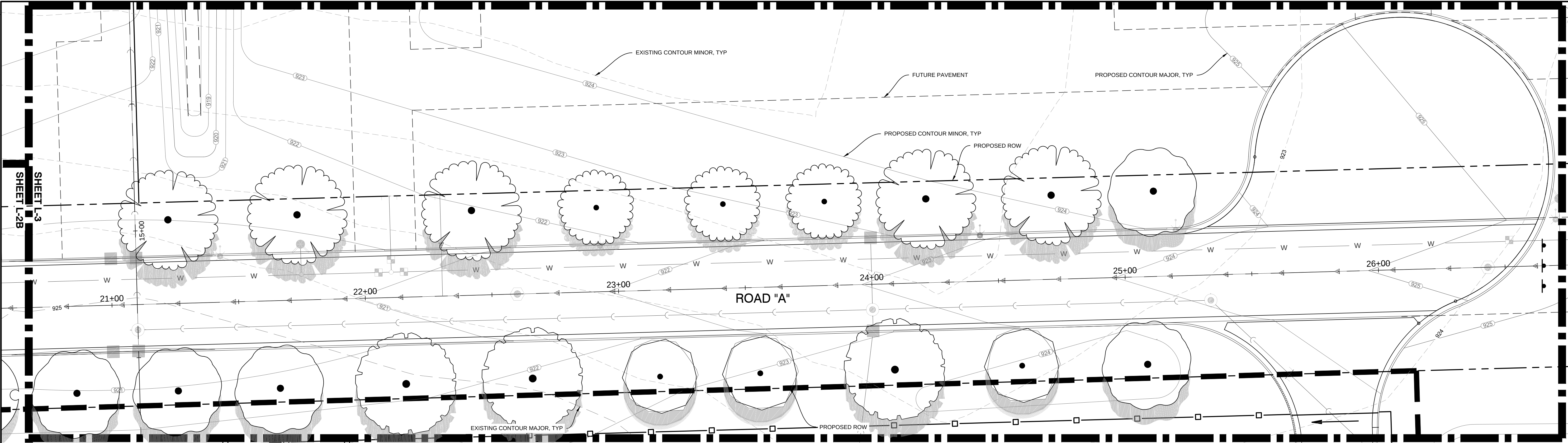
SHEET
L-2
L-3

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REVIEWED: TOM

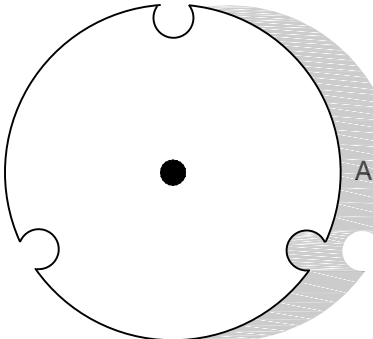
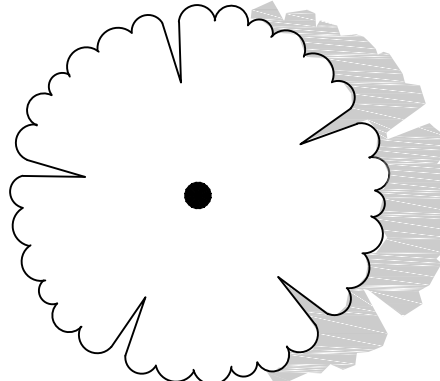
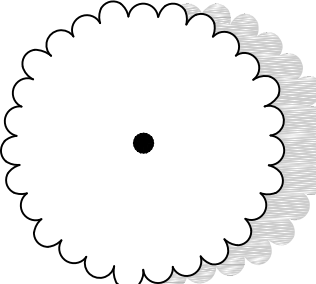
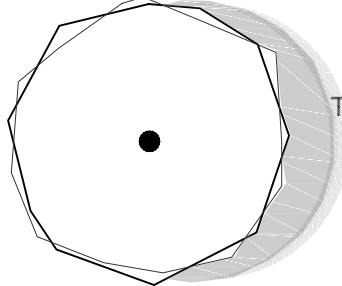
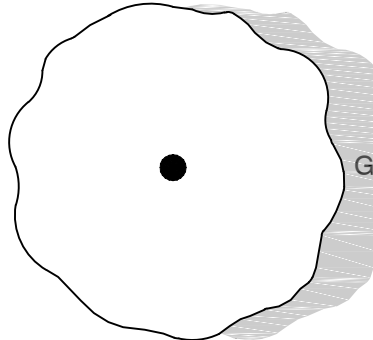
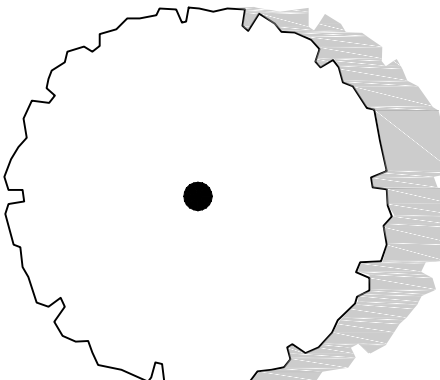
DESIGNED: D.B

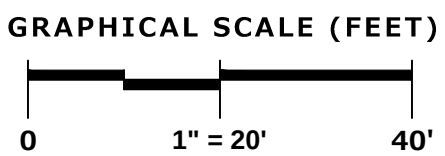
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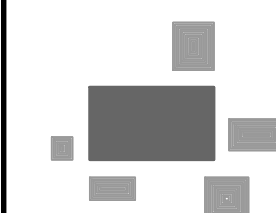


L-3 STREET TREE ENLARGEMENT
SCALE: 1"=20'

PLANT KEY

STREET TREES	BOTANICAL NAME	COMMON NAME	STREET TREES	BOTANICAL NAME	COMMON NAME
	<i>Acer miyabei</i> 'State Street'	Miyabei Maple		<i>Quercus bicolor</i>	Swamp White Oak
	<i>Celtis occidentalis</i> 'Prairie Pride'	Prairie Pride Hackberry		<i>Tilia americana</i> 'Redmond'	Redmond American Linden
	<i>Gymnocladus dioica</i>	Kentucky Coffee Tree		<i>Ulmus americana</i> 'New Horizon'	New Horizon American Elm





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GERMANTOWN, WI**

**STREET TREE
ENLARGEMENT**

REVISIONS	

PEG JOB NO: 1296.00-WI	AREA
PEG PM:	SAVE DATE: 7/15/18
SCALE: 1"=20'	

SHEET
L-3
L-3

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DESIGNED: JAS
CHECKED: JAS
DRAWN: EP
REVIEWED: TMA

ONSITE CIVIL ENGINEERING INFRASTRUCTURE PLANS FOR Z1 AT GERMANTOWN CORPORATE PARK BID PACK 2

GERMANTOWN, WI

PLANS PREPARED
FOR

ZILBER
PROPERTY GROUPSM

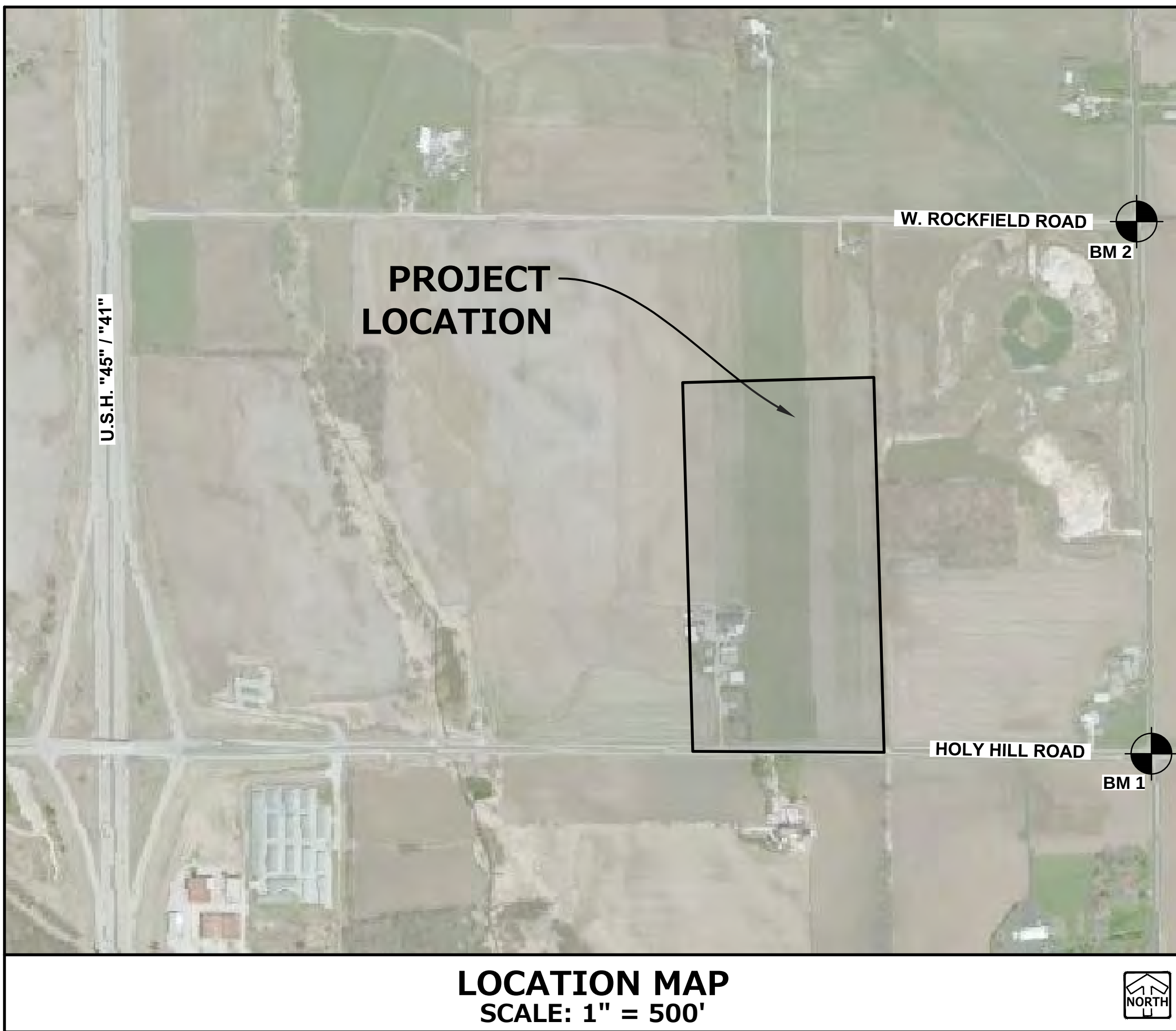


LEGEND

	EXISTING	PROPOSED
SANITARY SEWER MANHOLE	⊙	⊙
STORM SEWER MANHOLE	⊙	⊙
STORM SEWER CATCH BASIN (ROUND CASTING)	⊙	⊙
STORM SEWER CATCH BASIN (RECTANGULAR CASTING)	□	■
PRECAST FLARED END SECTION	△	▶
CONCRETE HEADWALL	∧	∧
VALVE BOX	Σ	Σ
FIRE HYDRANT	⊙	⊙
CLEANOUT	⊙	⊙
SANITARY SEWER	—	—
FORCE MAIN	—	—
STORM SEWER	—	—
DRAIN TILE	—	—
WATER MAIN	—	—
FIRE PROTECTION	—	—
ELECTRICAL CABLE	—	—
OVERHEAD WIRES	—	—
GAS MAIN	—	—
TELEPHONE LINE	—	—
UTILITY CROSSING	—	—
CAUTION EXISTING UTILITIES NEARBY	—	—
GRANULAR TRENCH BACKFILL	—	—
LIGHTING	—	—
ELECTRICAL TRANSFORMER OR PEDESTAL	—	—
POWER POLE	—	—
POWER POLE WITH LIGHT	—	—
GUY WIRE	—	—
STREET SIGN	—	—
CONTOUR	—	—
SPOT ELEVATION	—	—
WETLANDS	—	—
PRIMARY ENVIRONMENTAL CORRIDOR	—	—
FLOODWAY	—	—
FLOODPLAIN	—	—
HIGH WATER LEVEL (HWL)	—	—
NORMAL WATER LEVEL (NWL)	—	—
DIRECTION OF SURFACE FLOW	—	—
DITCH OR SWALE	—	—
DIVERSION SWALE	—	—
OVERFLOW RELIEF ROUTING	—	—
TREE WITH TRUNK SIZE	—	—
SOIL BORING	—	—
TOPSOIL PROBE	—	—
FENCE LINE, TEMPORARY SILT	—	—
FENCE LINE, WIRE	—	—
FENCE LINE, CHAIN LINK OR IRON	—	—
FENCE LINE, WOOD OR PLASTIC	—	—
CONCRETE SIDEWALK	—	—
CURB AND GUTTER	—	—
DEPRESSED CURB	—	—
REVERSE PITCH CURB & GUTTER	—	—
EASEMENT LINE	—	—

ABBREVIATIONS

BL	BASE LINE	NWL	NORMAL WATER LEVEL
C	LONG CHORD OF CURVE	PC	POINT OF CURVATURE
C & G	CURB AND GUTTER	PT	POINT OF TANGENCY
CB	CATCH BASIN	PVI	POINT OF VERTICAL INTERSECTION
CL	CENTERLINE	R	RADIUS
D	DEGREE OF CURVE	ROW	RIGHT-OF-WAY
EP	EDGE OF PAVEMENT	SAN	SANITARY SEWER
FF	FINISHED FLOOR	ST	STORM SEWER
FG	FINISHED GRADE	T	TANGENCY OF CURVE
FL	FLOW LINE	TB	TOP OF BANK
FP	FLOODPLAIN	TC	TOP OF CURB
FR	FRAME	TF	TOP OF FOUNDATION
FW	FLOODWAY	TP	TOP OF PIPE
HWL	HIGH WATER LEVEL	TS	TOP OF SIDEWALK
INV	INVERT	TW	TOP OF WALK
L	LENGTH OF CURVE	WM	WATER MAIN
MH	MANHOLE	∠	INTERSECTION ANGLE



GENERAL NOTES

- THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO SET FORTH PERFORMANCE AND CONSTRUCTION MATERIAL STANDARDS FOR THE PROPER EXECUTION OF WORK. ALL WORKS CONTAINED WITHIN THE PLANS AND SPECIFICATIONS SHALL BE COMPLETED IN ACCORDANCE WITH ALL REQUIREMENTS FROM LOCAL, STATE, FEDERAL OR OTHER GOVERNING AGENCY'S LAWS, REGULATIONS, JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., AND THE OWNER'S DIRECTION.
- A DRAFT GEOTECHNICAL REPORT HAS BEEN PREPARED BY GILES ENGINEERING ASSOCIATES, INC. JUNE 28TH, 2018. THE DATA ON SUB-SURFACE SOIL CONDITIONS IS NOT INTENDED AS A REPRESENTATION OR WARRANTY OF THE CONTINUITY OF SUCH CONDITIONS BETWEEN BORINGS OR INDICATED SAMPLING LOCATIONS. IT SHALL BE EXPRESSLY UNDERSTOOD THAT OWNER WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSIONS DRAWN THERE FROM BY THE CONTRACTOR. DATA IS MADE AVAILABLE FOR THE CONVENIENCE OF THE CONTRACTOR; THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY ADDITIONAL SOILS INVESTIGATIONS THEY FEEL IS NECESSARY FOR THE PROPER EVALUATION OF THE SITE FOR PURPOSES OF PLANNING, BIDDING, OR CONSTRUCTING THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL PROMPTLY REPORT ANY ERRORS OR AMBIGUITIES LEARNED AS PART OF THEIR REVIEW OF PLANS, SPECIFICATIONS, REPORTS AND FIELD INVESTIGATIONS.
- THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL COMPONENTS OF THE PLANS AND SPECIFICATIONS, INCLUDING FIELD VERIFYING SOIL CONDITIONS, PRIOR TO SUBMISSION OF A BID PROPOSAL.
- THE CONTRACTOR SHALL PROMPTLY REPORT ANY ERRORS OR AMBIGUITIES LEARNED AS PART OF THEIR REVIEW OF PLANS, SPECIFICATIONS, REPORTS AND FIELD INVESTIGATIONS.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COMPUTATION OF QUANTITIES AND WORK REQUIRED TO COMPLETE THIS PROJECT. THE CONTRACTOR'S BID SHALL BE BASED ON ITS OWN COMPUTATIONS AND IN NO SUCH INSTANCE RELY ON THE ENGINEER'S ESTIMATE.
- QUESTIONS/CLARIFICATIONS WILL BE INTERPRETED BY ENGINEER/OWNER PRIOR TO THE AWARD OF CONTRACT. ENGINEER/OWNER WILL SUBMIT OFFICIAL RESPONSES IN WRITING. INTERPRETATIONS PRESENTED IN OFFICIAL RESPONSES SHALL BE BINDING ON ALL PARTIES ASSOCIATED WITH THE CONTRACT. IN NO WAY SHALL WORD-OF-MOUTH DIALOG CONSTITUTE AN OFFICIAL RESPONSE.
- PRIOR TO START OF WORK, CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH ALL CONDITIONS OF THE SITE, AND SHALL ACCOUNT FOR CONDITIONS THAT AFFECT, OR MAY AFFECT CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, LIMITATIONS OF WORK ACCESS, SPACE LIMITATIONS, OVERHEAD OBSTRUCTIONS, TRAFFIC PATTERNS, LOCAL REQUIREMENTS, ADJACENT ACTIVITIES, ETC. FAILURE TO CONSIDER SITE CONDITIONS SHALL NOT BE CAUSE FOR CLAIM OF JOB EXTRAS.
- COMMENCEMENT OF CONSTRUCTION SHALL EXPLICITLY CONFIRM THAT THE CONTRACTOR HAS REVIEWED THE PLANS AND SPECIFICATIONS IN ENTIRETY AND CERTIFIES THAT THEIR SUBMITTED BID PROPOSAL CONTAINS PROVISIONS TO COMPLETE THE PROJECT, WITH THE EXCEPTION OF UNFORESEEN FIELD CONDITIONS; ALL APPLICABLE PERMITS HAVE BEEN OBTAINED, AND CONTRACTOR UNDERSTANDS ALL OF THE REQUIREMENTS OF THE PROJECT.
- SHOULD ANY DISCREPANCIES OR CONFLICTS IN THE PLANS OR SPECIFICATIONS BE DISCOVERED AFTER THE AWARD OF CONTRACT, ENGINEER SHALL BE NOTIFIED IN WRITING IMMEDIATELY AND CONSTRUCTION OF ITEMS AFFECTED BY THE DISCREPANCIES/CONFLICTS SHALL NOT COMMENCE, OR CONTINUE, UNTIL A WRITTEN RESPONSE FROM ENGINEER/OWNER IS DISTRIBUTED. IN THE EVENT OF A CONFLICT BETWEEN REFERENCED CODES, STANDARDS, SPECIFICATIONS AND PLANS, THE ONE ESTABLISHING THE MOST STRINGENT REQUIREMENTS SHALL BE FOLLOWED.
- THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS AND LICENSES TO COMPLETE THE PROJECT. OBTAINING PERMITS, OR DELAYS, IS NOT CAUSE FOR DELAY OF THE CONTRACT OR SCHEDULE. CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.
- THE CONTRACTOR SHALL NOTIFY ALL INTERESTED GOVERNING AGENCIES, UTILITY COMPANIES AFFECTED BY THIS CONSTRUCTION PROJECT, AND DIGGER'S HOTLINE IN ADVANCE OF CONSTRUCTION TO COMPLY WITH ALL JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., PERMIT STIPULATIONS, AND OTHER APPLICABLE STANDARDS.
- SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO INITIATE, INSTITUTE, ENFORCE, MAINTAIN, AND SUPERVISE ALL SAFETY PRECAUTIONS AND JOB SITE SAFETY PROGRAMS IN CONNECTION WITH THE WORK.
- CONTRACTOR SHALL KEEP THE JOBSITE CLEAN AND ORDERLY AT ALL TIMES. ALL LOCATIONS OF THE SITE SHALL BE KEPT IN A WORKING MANNER SUCH THAT DEBRIS IS REMOVED CONTINUOUSLY AND ALL RESPECTIVE CONTRACTORS OPERATE UNDER GENERAL "GOOD HOUSEKEEPING."
- THE CONTRACTOR SHALL INDEMNIFY THE OWNER, ENGINEER, AND THEIR AGENTS FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.

PROJECT TEAM CONTACTS

CIVIL ENGINEER: ADAM ARTZ, P.E., ANDREW SHOAF, P.E. PINNACLE ENGINEERING GROUP 15850 BLUEMOUND ROAD, SUITE 210 BROOKFIELD, WI 53005 (262) 754-8888	ARCHITECT: MATTHEW A. MANO VICE PRESIDENT, PE LEED-AP STEPHEN PERRY SMITH ARCHITECTS, INC. 215 N. WATER STREET, SUITE 250 MILWAUKEE, WI 53202 (414) 277-9700
SURVEYOR: JOHN KONOPACKI, P.L.S. PINNACLE ENGINEERING GROUP 15850 W. BLUEMOUND ROAD, SUITE 210 BROOKFIELD, WI 53005 (262) 754-8888	APPLICANT: JASON LUEDERS ZILBER PROPERTY GROUP 710 N. PLANKINGTON AVENUE MILWAUKEE, WI 53202 (414) 274-2807

BENCHMARKS

VERTICAL DATUM: NGVD 29
HORIZONTAL DATUM: NAD 1927

BM 1: CONCRETE MONUMENT WITH BRASS CAP AT THE SOUTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 7, TOWN 9 NORTH, RANGE 20 EAST, ELEVATION = 933.82.

BM 2: CONCRETE MONUMENT WITH BRASS CAP AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 SECTION 7, TOWN 9 NORTH, RANGE 20 EAST, ELEVATION = 945.69.

INDEX OF SHEETS

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### - ###	LANDSCAPE PLAN

REQUIRED SUBMITTALS FOR APPROVAL

- HOT MIX ASPHALT - MIX DESIGN
- CONCRETE PAVEMENTS (EXTERIOR) - MIX DESIGN & JOINT PLAN
- PAVEMENT STONE BASE COURSE - GRADATION
- PIPE BEDDING & TRENCH BACKFILL - GRADATION
- MANHOLE BACKFILL - GRADATION
- PAVEMENT MARKING PAINT

REQUIRED SUBMITTALS FOR RECORDS

- WATER MAIN PIPES, VALVES, HYDRANTS & FITTINGS
- SANITARY SEWER PIPE & FITTINGS
- STORM SEWER PIPE, STRUCTURES, & FITTINGS
- TRACER WIRE
- UNDERGROUND UTILITY LOCATION RECORD DRAWINGS
- ADA SIGN & TRUNCATED DOMES, PAINT & STENCILS
- CHEMICAL SOIL STABILIZATION MIX DESIGN (IF APPLICABLE)



Toll Free (800) 242-8511
Milwaukee Area (414) 258-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

EXPIRATION DATE: JULY 31, 2018

PINNACLE ENGINEERING GROUP, LLC - ENGINEER'S LIMITATION

PINNACLE ENGINEERING GROUP, LLC AND THEIR CONSULTANTS DO NOT WARRANT OR GUARANTEE THE ACCURACY AND COMPLETENESS OF THE DELIVERABLES HEREIN BEYOND A REASONABLE DILIGENCE. IF ANY MISTAKES, OMISSIONS, OR DISCREPANCIES ARE FOUND TO EXIST WITHIN THE DELIVERABLES, THE ENGINEER SHALL BE PROMPTLY NOTIFIED PRIOR TO BID SO THAT HE MAY HAVE THE OPPORTUNITY TO TAKE WHATEVER STEPS NECESSARY TO RESOLVE THEM. FAILURE TO PROMPTLY NOTIFY THE ENGINEER OF SUCH CONDITIONS SHALL ABSOLVE THE ENGINEER FROM ANY RESPONSIBILITY FOR THE CONSEQUENCES OF SUCH FAILURE. ACTIONS TAKEN WITHOUT THE KNOWLEDGE AND CONSENT TO THE ENGINEER, OR IN CONTRADICTION TO THE ENGINEER'S DELIVERABLES OR RECOMMENDATIONS, SHALL BECOME THE RESPONSIBILITY NOT OF THE ENGINEER BUT OF THE PARTIES RESPONSIBLE FOR TAKING SUCH ACTION.

FURTHERMORE, PINNACLE ENGINEERING GROUP, LLC IS NOT RESPONSIBLE FOR CONSTRUCTION SAFETY OR THE MEANS AND METHODS OF CONSTRUCTION.

REVISIONS

1	SITE PLAN REVIEW SUBMITTAL	6/11/18	—
2	BID SET REVISIONS	6/18/18	—
3	MUNICIPAL RESUBMITTAL	7/16/18	—
—	—	—	—

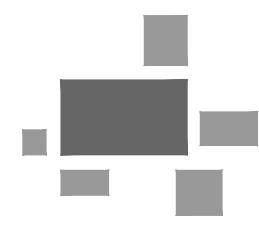
FIG. 100-1296-00-WI
FIG. 100-1296-00-WI
PLOT DATE: 7/17/18
SCALE: N.T.S.

SHEET
C-1
OF
C-22

COVER SHEET

BID PACKET 2

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PINNACLE ENGINEERING GROUP

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PLAN | DESIGN | DELIVER
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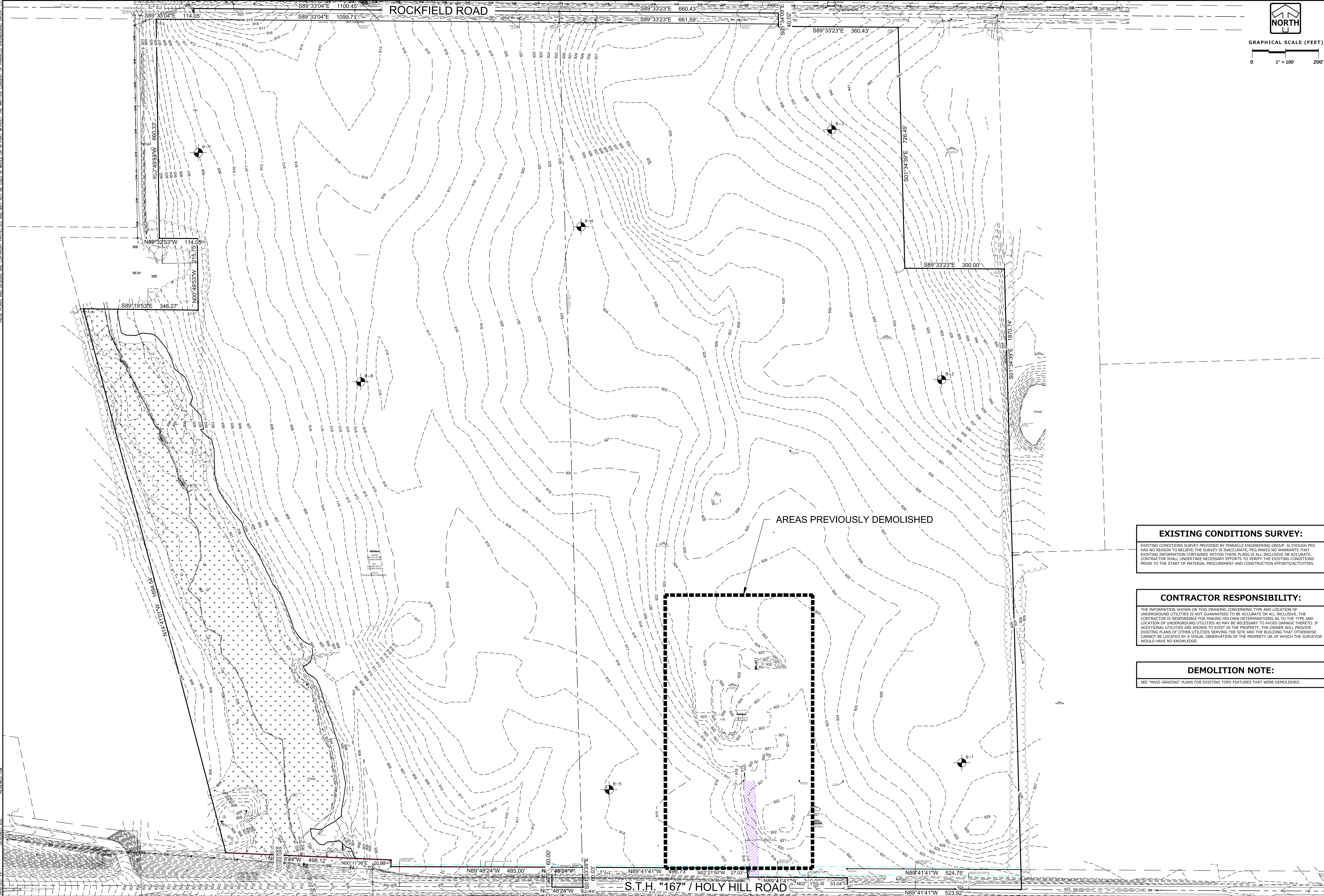
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BROOKFIELD, WI 53005
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Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI

COVER SHEET

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DESIGNED: AJS
REVIEWED: TMA
DRAFTED: EP



EXISTING CONDITIONS SURVEY:
EXISTING CONDITIONS SURVEY PROVIDED BY PINNACLE ENGINEERING GROUP. ALTHOUGH PEG HAS NO REASON TO BELIEVE THE SURVEY IS INACCURATE, PEG MAKES NO WARRANTIES THAT EXISTING INFORMATION CONTAINED WITHIN THESE PLANS IS ALL-INCLUSIVE OR ACCURATE. CONTRACTOR SHALL UNDERTAKE NECESSARY EFFORTS TO VERIFY THE EXISTING CONDITIONS PRIOR TO THE START OF MATERIAL PROCUREMENT AND CONSTRUCTION EFFORTS/ACTIVITIES.

CONTRACTOR RESPONSIBILITY:
THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. IF ADDITIONAL UTILITIES ARE KNOWN TO EXIST IN THE PROPERTY, THE OWNER WILL PROVIDE EXISTING PLANS OF OTHER UTILITIES SERVING THE SITE AND THE BUILDING THAT OTHERWISE CANNOT BE LOCATED BY A VISUAL OBSERVATION OF THE PROPERTY OR OF WHICH THE SURVEYOR WOULD HAVE NO KNOWLEDGE.

DEMOLITION NOTE:
SEE "MASS GRADING" PLANS FOR EXISTING TOPO FEATURES THAT WERE DEMOLISHED.

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GERMANTOWN, WI**

EXISTING CONDITION PLAN

REVISIONS	
1. SITE PLAN REVIEW SUBMITTAL	6/11/18
2. BID SET REVISIONS	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PEC JOB NO. 1296.00-WI
PEC PM
PLOT DATE 7/17/18
SCALE 1" = 100'

SHEET
C-2
of
C-22

SITE AND DIMENSIONAL PLAN NOTES

1. ALL DIMENSIONS ARE EDGE OF PAVEMENT, FACE OF CURB, SHOULDER, OR CENTER OF LANE LINE UNLESS NOTED OTHERWISE. ALL UTILITY DIMENSIONS ARE TO OUTSIDE OF PIPE OR STRUCTURE UNLESS NOTED OTHERWISE.
2. ALL PROPOSED CURBS AND GUTTER SHALL BE 18" STANDARD CURB AND GUTTER (SEE DETAILS). UNLESS OTHERWISE NOTED, CURB AND GUTTER DRAINING AWAY FROM THE FACE OF CURB IS NOTED AS REVERSE CURB AND GUTTER.
3. BUILDING DIMENSIONS AND ADJACENT PARKING AND UTILITY LAYOUT HAVE BEEN PREPARED BY OWNER ARCHITECTURAL INFORMATION CURRENT AT THE DATE OF THIS DRAWING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. THEREFORE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR PRECISE BUILDING DIMENSIONS AND EXACT UTILITY LOCATIONS AND NOTIFY THE ARCHITECT AND ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR SHALL CONTACT DIGGERS HOTLINE (1-800-242-8511) PRIOR TO ANY WORK TO LOCATE UTILITIES AND SHALL CONTACT THE OWNER SHOULD UTILITIES APPEAR TO BE IN CONFLICT WITH THE PROPOSED IMPROVEMENT.
5. IMPROVEMENTS ADJACENT TO BUILDING IF SHOWN SUCH AS TRUCK DOCK, RETAINING WALLS, CURBING, FENCES, CANOPIES, RAMPS, HANDICAP ACCESS, PLANTERS, DUMPSTERS, AND TRANSFORMERS ETC. HAVE BEEN SHOWN FOR APPROXIMATE LOCATION ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION, SPECIFICATION, AND DETAILS.
6. REFER TO ELECTRICAL PLANS FOR LIGHTING LOCATIONS, SPECIFICATIONS, AND DETAILS.
7. SEE ADDITIONAL NOTES AND DETAILS ON SITE DIMENSIONAL PLANS AND CONSTRUCTION DETAILS.
8. ALL PAVING SHALL CONFORM TO STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION AND APPLICABLE VILLAGE OF GERMANTOWN ORDINANCES, AND SPECIFICATIONS CONTAINED WITHIN THIS PLAN SET.
9. CONTRACTOR SHALL CONSULT STRIPING COLOR WITH OWNER PRIOR TO CONSTRUCTION.
10. PROVIDE CONTRACTOR GRADE ACRYLIC, STRIPE PAINT FOR NEW ASPHALT OR COATED ASPHALT. APPLY MARKING AT RATE OF 1 GALLON PER 100 LINEAL FEET OF STRIPING. HUNDRED (300-400) LINEAL FEET OF FOUR (4") WICH WIDE STRIPES OR TO MANUFACTURER'S SPECIFICATION, WHICHEVER IS GREATER.
11. THOROUGHLY CLEAN SURFACES FREE OF DIRT, SAND, GRAVEL, OIL AND OTHER FOREIGN MATERIALS. CONTRACTOR SHALL BE RESPONSIBLE TO INSPECT EXISTING PAVEMENT SURFACES FOR CONDITIONS AND DEFECTS THAT WILL AVERSELY AFFECT QUALITY OF WORK, AND WHICH CANNOT BE PUT INTO AN ACCEPTABLE CONDITION THROUGH NORMAL PREPARATORY WORK AS REQUIRED.
12. DO NOT PLACE MARKING OVER UNSOUND PAVEMENTS. IF THESE CONDITIONS EXIST, NOTIFY OWNER. STARTING INSTALLATION CONSTITUTES CONTRACTOR'S ACCEPTANCE OF SURFACE AS SUITABLE FOR INSTALLATION.
13. LAYOUT MARKINGS USING GUIDE LINES, TEMPLATES AND FORMS. STENCILS AND TEMPLATES SHALL BE PROFESSIONALLY MADE TO INDUSTRY STANDARDS. "FREE HAND" PAINTING OF MARKINGS, SYMBOLS, OR WORDING SHALL NOT BE ALLOWED. APPLY STRIPES RECEIVING PAINT.
14. PROTECT ADJACENT CURBS, WALKS, FENCES, AND OTHER ITEMS FROM RECEIVING PAINT.
15. BARRICADE MARKED AREAS DURING INSTALLATION AND UNTIL THE MARKING PAINT IS DRIED AND READY FOR TRAFFIC.
16. ASPHALTIC CONCRETE PAVING SPECIFICATIONS:-

CODES AND STANDARDS: THE PLACING, CONSTRUCTION AND COMPOSITION OF THE ASPHALTIC BASE COURSE AND ASPHALTIC CONCRETE SURFACING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SECTIONS 450.40, 460.40 AND 465.01 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION. HEREFTER, THIS PUBLICATION WILL BE REFERRED TO AS THE STATE HIGHWAY SPECIFICATIONS.

WEATHER LIMITATIONS: APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS FREE WATER. THE MINIMUM TEMPERATURE FOR CONCRETE SURFACE COURSE SHALL BE 40° F (4° C) AND THE MINIMUM TEMPERATURE FOR ASPHALTIC SURFACE COURSE SHALL BE 40° F (4° C) AND WHEN BASE IS DRY AND WHEN TEMPERATURE IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (1° C).
- GRADE CONTROL: ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.
- CRUSHED AGGREGATE BASE COURSE: THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301.30 AND 305.30 STATE HIGHWAY SPECIFICATIONS.
- BINDER COURSE AGGREGATE: THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTIONS 460.20 AND 460.30 STATE HIGHWAY SPECIFICATIONS.
- SURFACE COURSE AGGREGATE: THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460.20 AND 460.30 STATE HIGHWAY SPECIFICATIONS.
- ASPHALTIC MATERIALS: THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455.40 AND 460.30 STATE HIGHWAY SPECIFICATIONS.
- SURFACE PREPARATION: NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SURFACE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
- TRAFFIC CONTROL: SHALL BE PER M.U.T.C.D.
- PUBLIC CURB & GUTTER REPLACEMENT SHALL BE TO EXISTING CURB & GUTTER WITH 4" BARS. PUBLIC CURB & GUTTER SHALL BE 6" B&B MUD.

S.T.H. "167" / HOLY HILL ROAD

ROCKFIELD ROAD



GRAPHICAL SCALE (FEET)

0 1" = 100' 200

SITE DATA

SITE AREA: 1,708,372 S.F./39.22 AC
ZONING CLASSIFICATION: T.B.D
BUILDING FOOTPRINT AREA: 706,044 S.F.
IMPERVIOUS SPACE: 1,108,915 S.F./25.46 AC/64.9%
GREEN SPACE: 599,456 S.F./13.76 AC/35.1%
PARKING PROVIDED (9'x20'): 44 (2 ADA)

LEGEND

- LIGHT DUTY PAVEMENT**
 - 1" CRUSHED GRANITE BASE COURSE (1-1/4" DENSE GRADED VIRGIN LIMESTONE)
 - 1-1/2" ASPHALTIC CONC. (1 UPT)
 (SHT 58-28.5)

HEAVY DUTY PAVEMENT
 - 1" CRUSHED GRANITE BASE COURSE (1-1/4" DENSE GRADED VIRGIN LIMESTONE)
 - 2" ASPHALTIC CONC. (2 UPT)
 - 3" FINE LOWER LAYER (SHT 58-28.5)
 - 2" UPPER LAYER (SHT 58-28.5)

CONCRETE PAVEMENT (TRUCK CURB & DOLLY PAD)
 - 4" CRUSHED GRANITE BASE COURSE (1-1/4" DENSE GRADED VIRGIN LIMESTONE)
 - 7" PCC (4000 PSI AIR ENRICHED CONCRETE WITH 6" S&W GAUGE STEEL MESH)

CONCRETE SIDEWALK
 - 4" CRUSHED GRANITE BASE COURSE (1-1/4" DENSE GRADED LIMESTONE)
 - 4" PCC (4000 PSI AIR ENRICHED CONCRETE WITH 6" S&W WEDGE FABRIC PER ACT 315-92)

A 4" SOLID WHITE STRIPE

B 4" DIAGONAL AT 45° SPACED 2" O.C.

C ADA PARKING STALL SIGNAGE (SEE DETAIL)

D 18" CURB & GUTTER (SEE DETAIL)

E 18" REVERSE CURB & GUTTER (SEE DETAIL)

F TAPER CURB HEAD (SEE DETAIL)

G BUILDING DORM SLAB (2% MAX SLOPE WITHIN 5-FT OF DRIVE IN OR MAN DORM)

H ADA STALL INSIGNIA

J ADA CURB RAMP (SEE DETAIL)

K STEEL STAIRS (SEE ARCHITECTURAL PLANS)

PAVING COATING (FOR INFORMATION ONLY, NOT TO BE PAINTED)

MAN DORM

OVERHEAD DOOR

PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

**ALL WORK WITHIN PUBLIC R.O.W.
SHALL CONFORM TO VILLAGE OF
GERMANTOWN STANDARDS.**

REVISIONS		
1	SITE PLAN REVIEW SUBMITTAL	6/11/18
2	BID SET REVISIONS	6/18/18
3	MUNICIPAL RESUBMITTAL	7/16/18



30.0' R.O.W.—

6.0' HIGH -

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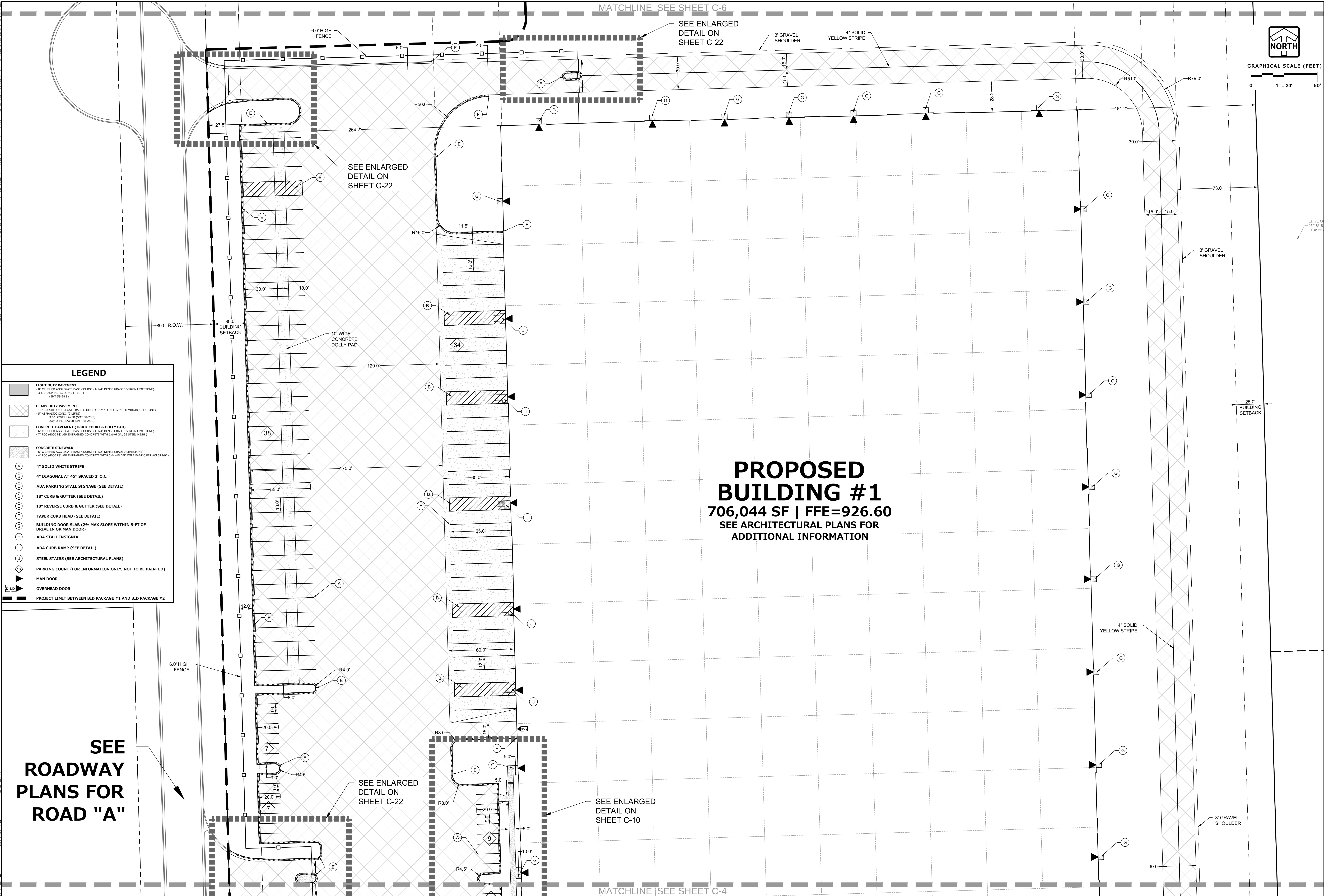
SITE DIMENSION & PAVING PLAN

EG JOB No **1296.00-WI**
EG PM **ARA**

SHEET
C-4
OF
C-22

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DESIGNED: AJS
CHECKED: TMA
DATE: 12/18/18



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GERMANTOWN, WI

SITE DIMENSION & PAVING PLAN

REVISIONS	
1. SITE PLAN REVIEW SUBMITTAL	6/11/18
2. BID SET REVISIONS	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PROJECT NO. 1296.00-W1
PLOT DATE 7/17/18
SCALE 1" = 30'

SHEET C-5
C-22

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DESIGNED: TSM

REVIEWED: AJS

DRAWN: EP



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**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

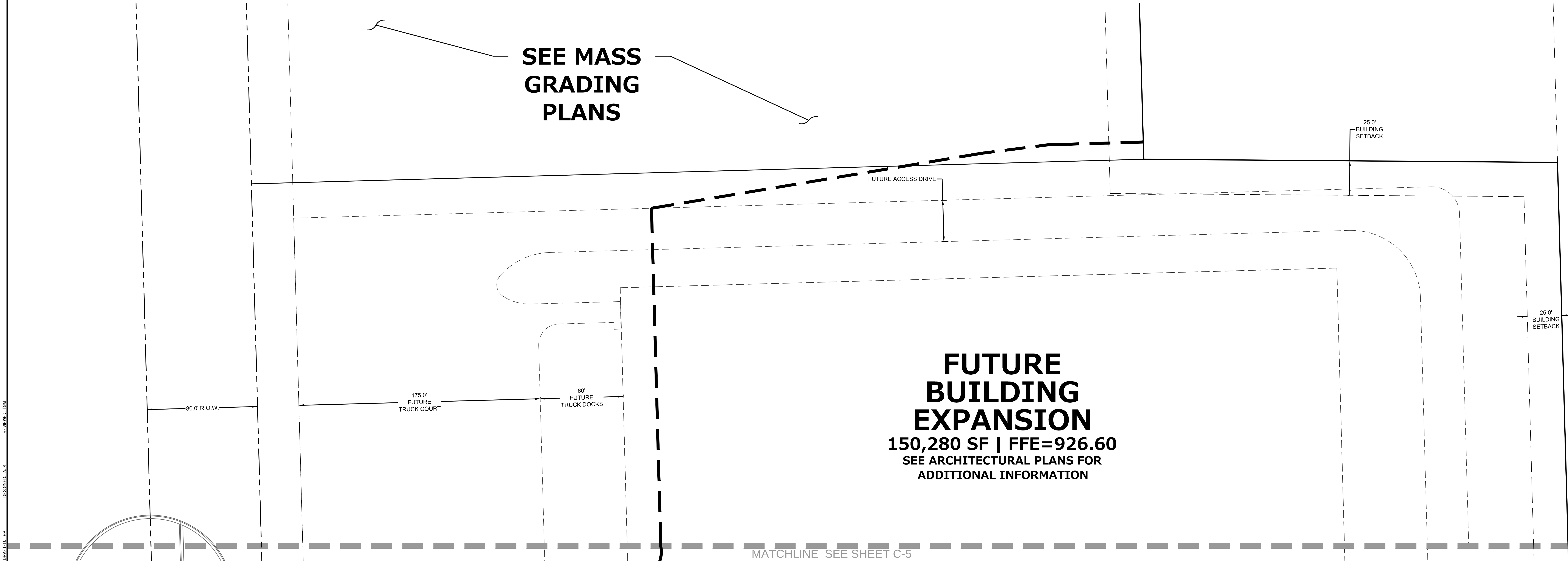
SITE DIMENSION & PAVING PLAN

REVISIONS		
1 - SITE PLAN REVIEW SUBMITTAL	6/11/18	
2 - BID SET REVISIONS	6/18/18	
3 - MUNICIPAL RESUBMITTAL	7/16/18	

PROJECT NO. 1296.00-WI
AREA
PLOT DATE 7/17/18
SCALE 1" = 30'

**SHEET
C-6
of
C-22**

Z:\PROJECTS\2018\1296.00-WI\CAD\SHEETS\BLDG 1\1296.00-WI BLDG #1 SITE DIMENSION & PAVING PLAN.DWG



**NORTH**

GRAPHICAL SCALE (FEET)
0 1" = 30' 60'

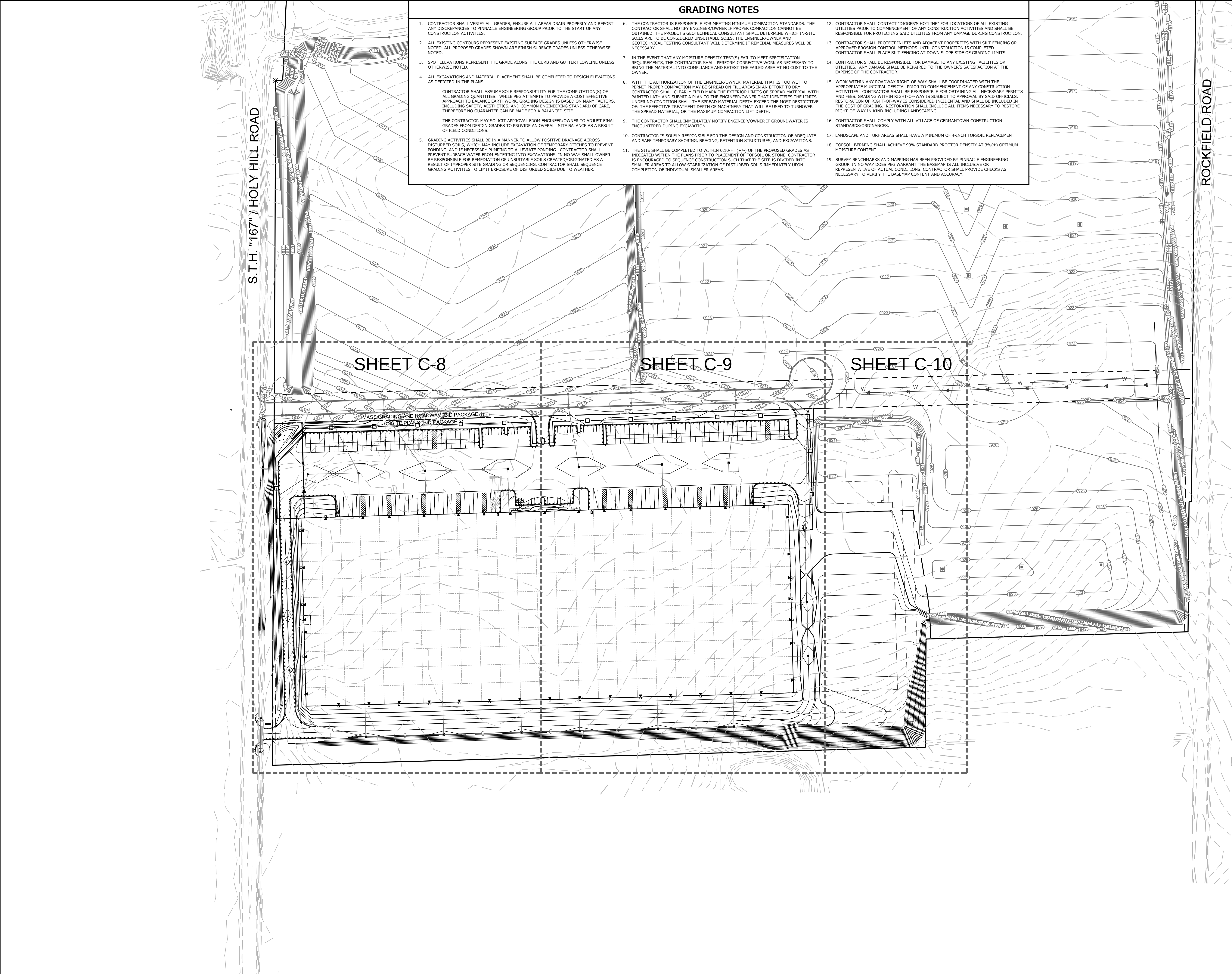
LEGEND	
	LIGHT DUTY PAVEMENT - 8" CRUSHED AGGREGATE BASE COURSE (1-1/4" DENSE GRADED VIRGIN LIMESTONE) - 3 1/2" ASPHALTIC CONC. (1 LIFT) (SMT SB-28-S)
	HEAVY DUTY PAVEMENT - 10" CRUSHED AGGREGATE BASE COURSE (1-1/4" DENSE GRADED VIRGIN LIMESTONE) - 5" ASPHALTIC CONC. (2 LIFTS) 3.0" LOWER LAYER (SMT SB-28-S) 3.0" UPPER LAYER (SMT SB-28-S)
	CONCRETE PAVEMENT (TRUCK COURT & DOLLY PAD) - 6" CRUSHED AGGREGATE BASE COURSE (1-1/4" DENSE GRADED VIRGIN LIMESTONE) - 7" PCC (4000 PSI AIR ENTRAINED CONCRETE WITH 6#4 GAUGE STEEL WESH)
	CONCRETE SIDEWALK - 4" CRUSHED AGGREGATE BASE COURSE (1-1/2" DENSE GRADED LIMESTONE) - 4" PCC (4000 PSI AIR ENTRAINED CONCRETE WITH 6#4 WELDED WIRE FABRIC PER ACI 311-92)
	4" SOLID WHITE STRIPE
	4" DIAGONAL AT 45° SPACED 2" O.C.
	ADA PARKING STALL SIGNAGE (SEE DETAIL)
	18" CURB & GUTTER (SEE DETAIL)
	18" REVERSE CURB & GUTTER (SEE DETAIL)
	TAPER CURB HEAD (SEE DETAIL)
	BUILDING DOOR SLAB (2% MAX SLOPE WITHIN 5-FT OF DRIVE IN OR MAN DOOR)
	ADA STALL INSIGNIA
	ADA CURB RAMP (SEE DETAIL)
	STEEL STAIRS (SEE ARCHITECTURAL PLANS)
	PARKING COUNT (FOR INFORMATION ONLY, NOT TO BE PAINTED)
	MAN DOOR
	OVERHEAD DOOR
	PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

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BID PACKET 2

SITE DIMENSION & PAVING PLAN

DESIGNED: EP
DRAWN: JAS
REVIEWED: TSM
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GRADING PLAN OVERVIEW

REVISIONS	
1. SITE PLAN REVIEW SUBMITTAL	6/11/18
2. BID SET REVISIONS	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PEC JOB NO. 1296.00-WI
PEC PM. AREA
PLOT DATE 7/17/18
SCALE 1" = 100'

SHEET
C-7
of
C-22

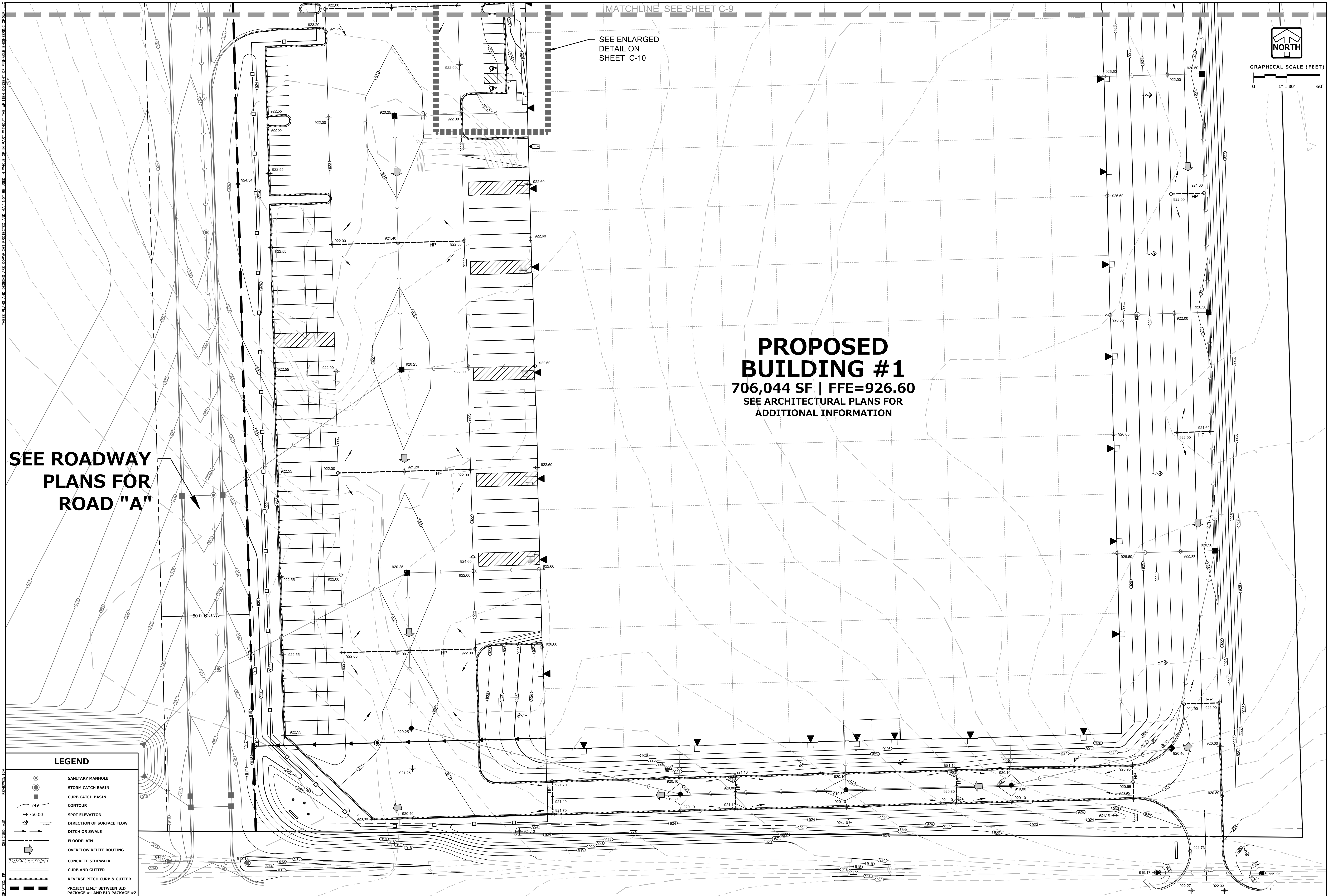
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BID PACKET 2

GRADING PLAN OVERVIEW

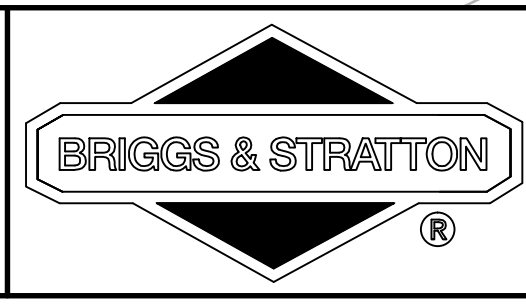
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LEGEND

- SANITARY MANHOLE
- STORM CATCH BASIN
- ▣ CURB CATCH BASIN
- CONTOUR
- 749 SPOT ELEVATION
- DIRECTION OF SURFACE FLOW
- DITCH OR SWALE
- FLOODPLAIN
- OVERFLOW RELIEF ROUTING
- CONCRETE SIDEWALK
- CURB AND GUTTER
- REVERSE PITCH CURB & GUTTER
- PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

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Z1 AT GERMANTOWN CORPORATE PARK
GERMANTOWN, WI

GRADING PLAN

REVISIONS			SHEET
NO.	DESCRIPTION	DATE	
1	SITE PLAN REVIEW SUBMITTAL	6/11/18	C-8 C-22
2	BID SET REVISIONS	6/18/18	
3	MUNICIPAL RESUBMITTAL	7/16/18	

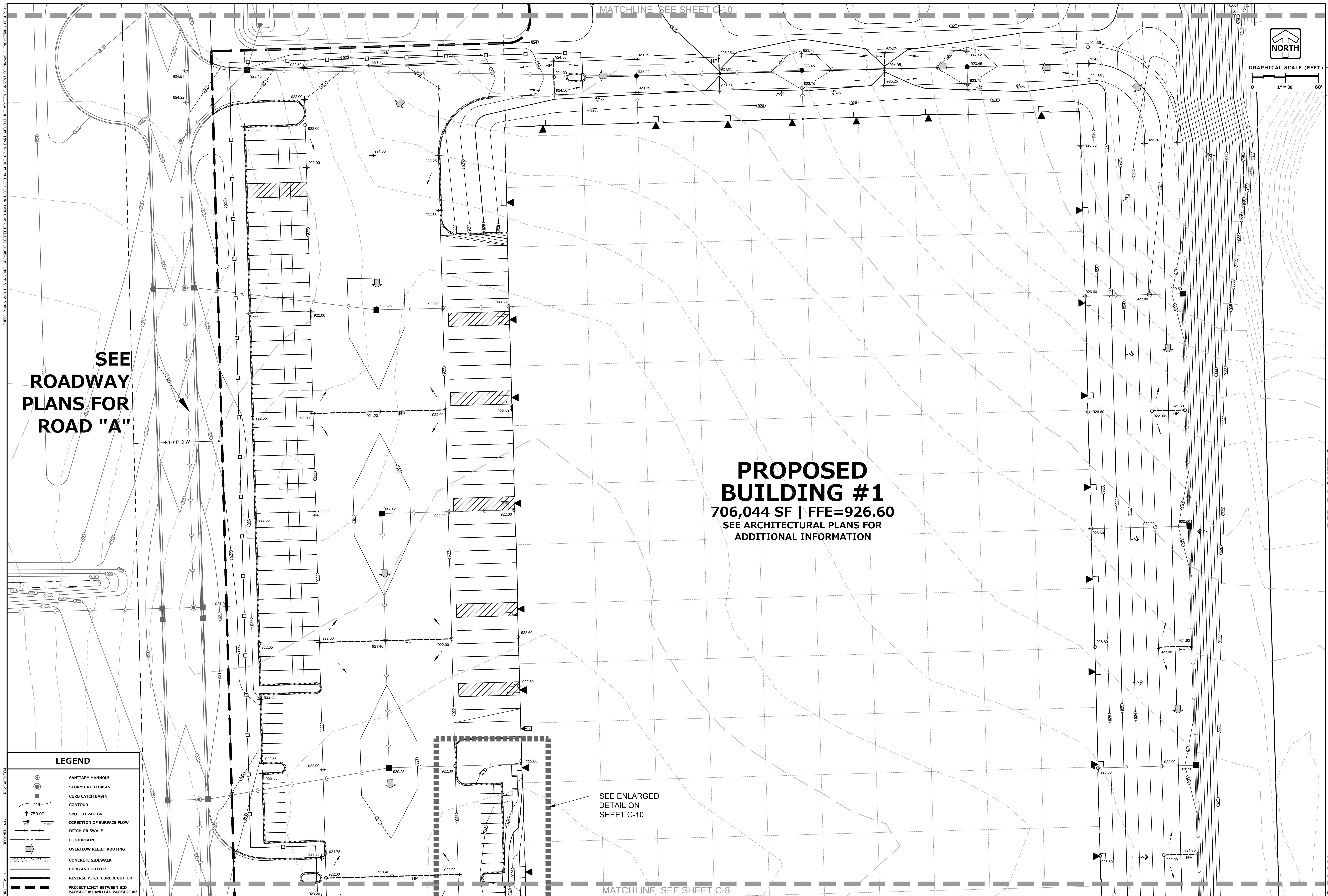
REG. NO. 1296.00-WI
AREA
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DESIGNED: JAS
CHECKED: EP
DATE: 7/17/18

REVIEWED: TMA

Z:\PROJECTS\2018\1296.00-WI\CAD\SHEETS\BLDG 1\1296.00-WI BLDG #1 GRADING PLAN.DWG



LEGEND

- SANITARY MANHOLE
- STORM CATCH BASIN
- CURB CATCH BASIN
- 749 CONTOUR
- 750.00 SPOT ELEVATION
- DIRECTION OF SURFACE FLOW
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SHEET
C-9
C-22

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BID PACKET 2

GRADING PLAN

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DESIGNED: TMA

REVIEWED: AJS

DATE: 10/18/18

PROJECT: 2018-1296-00-WI

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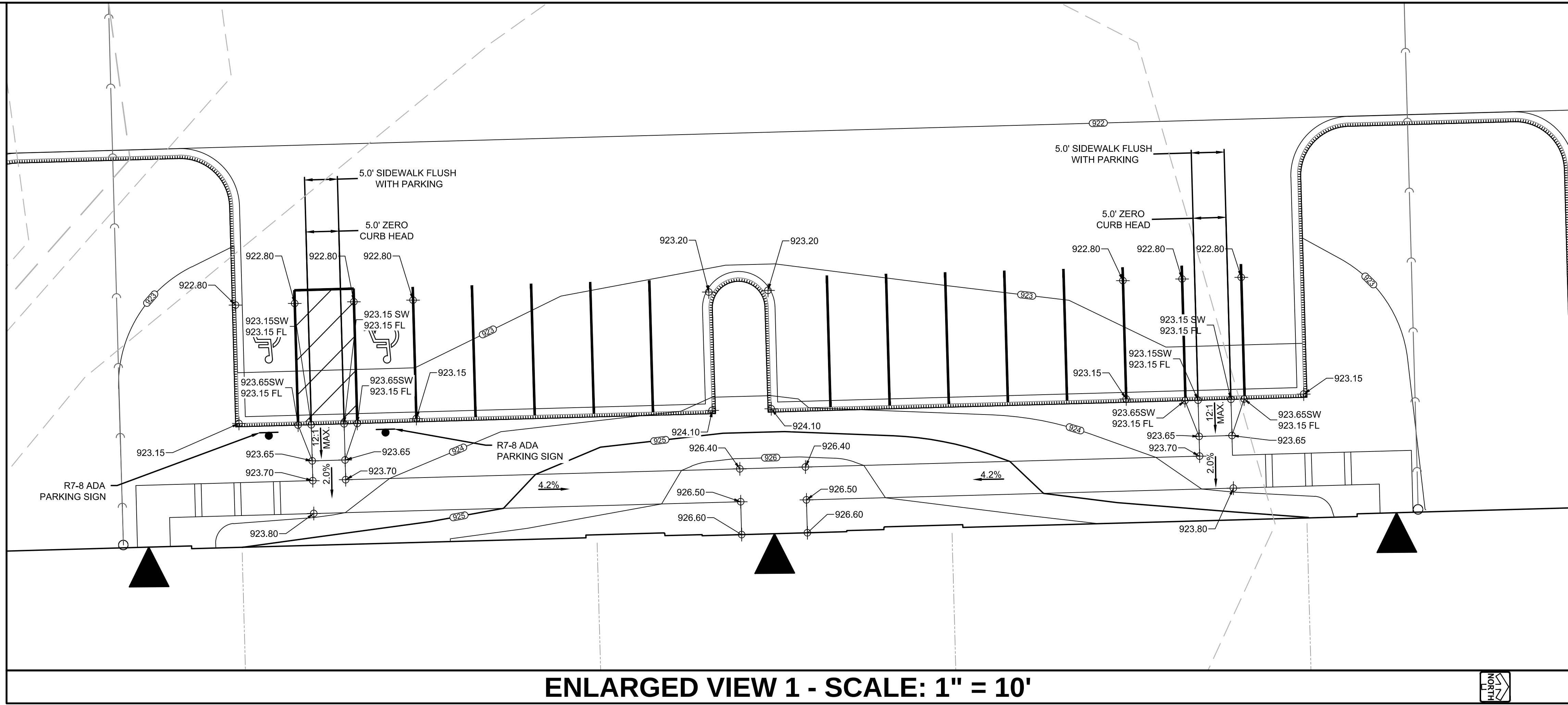
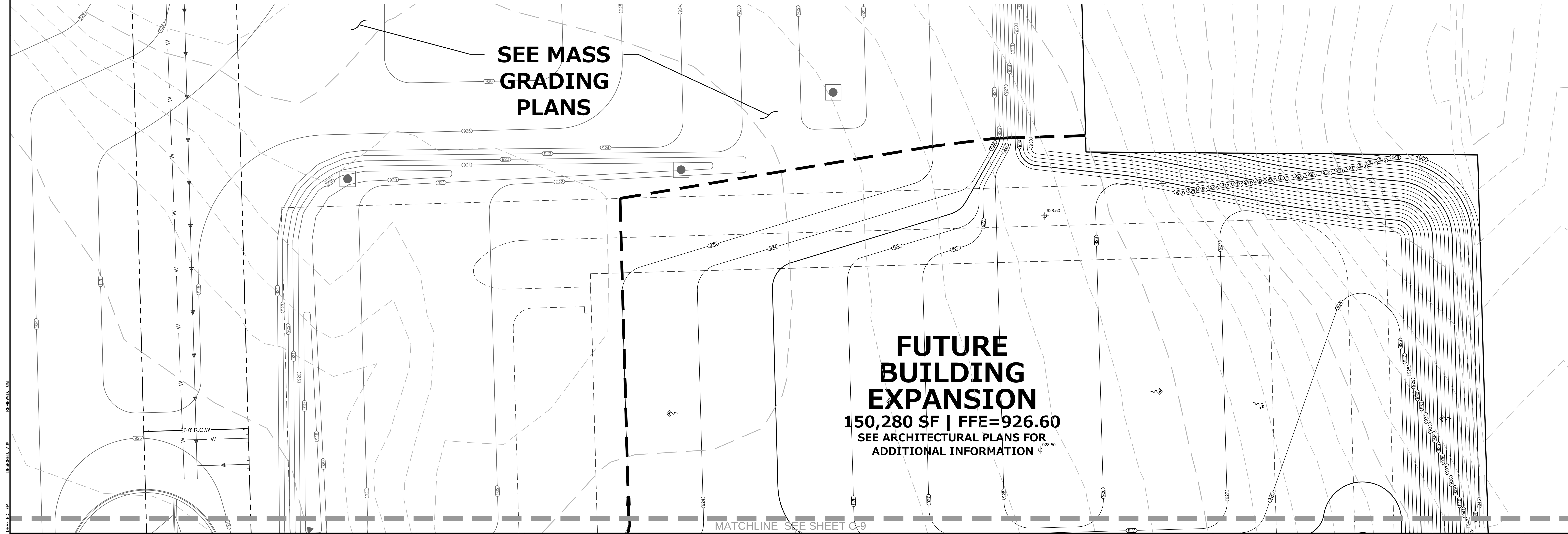
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PROJECT: 2018-1296-00-WI
AREA
PLOT DATE: 7/17/18
SCALE: 1" = 30'

SHEET
C-10
C-22



LEGEND

SANITARY MANHOLE

STORM CATCH BASIN

CURB CATCH BASIN

CONTOUR

SPOT ELEVATION

DIRECTION OF SURFACE FLOW

DITCH OR SWALE

FLOODPLAIN

OVERFLOW RELIEF ROUTING

CONCRETE SIDEWALK

CURB AND GUTTER

REVERSE PITCH CURB & GUTTER

PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

NORTHGRAPHICAL SCALE (FEET)
0 1" = 30' 60'

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BID PACKET 2

GRADING PLAN

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DESIGNED: AJS

REVIEWED: TMA

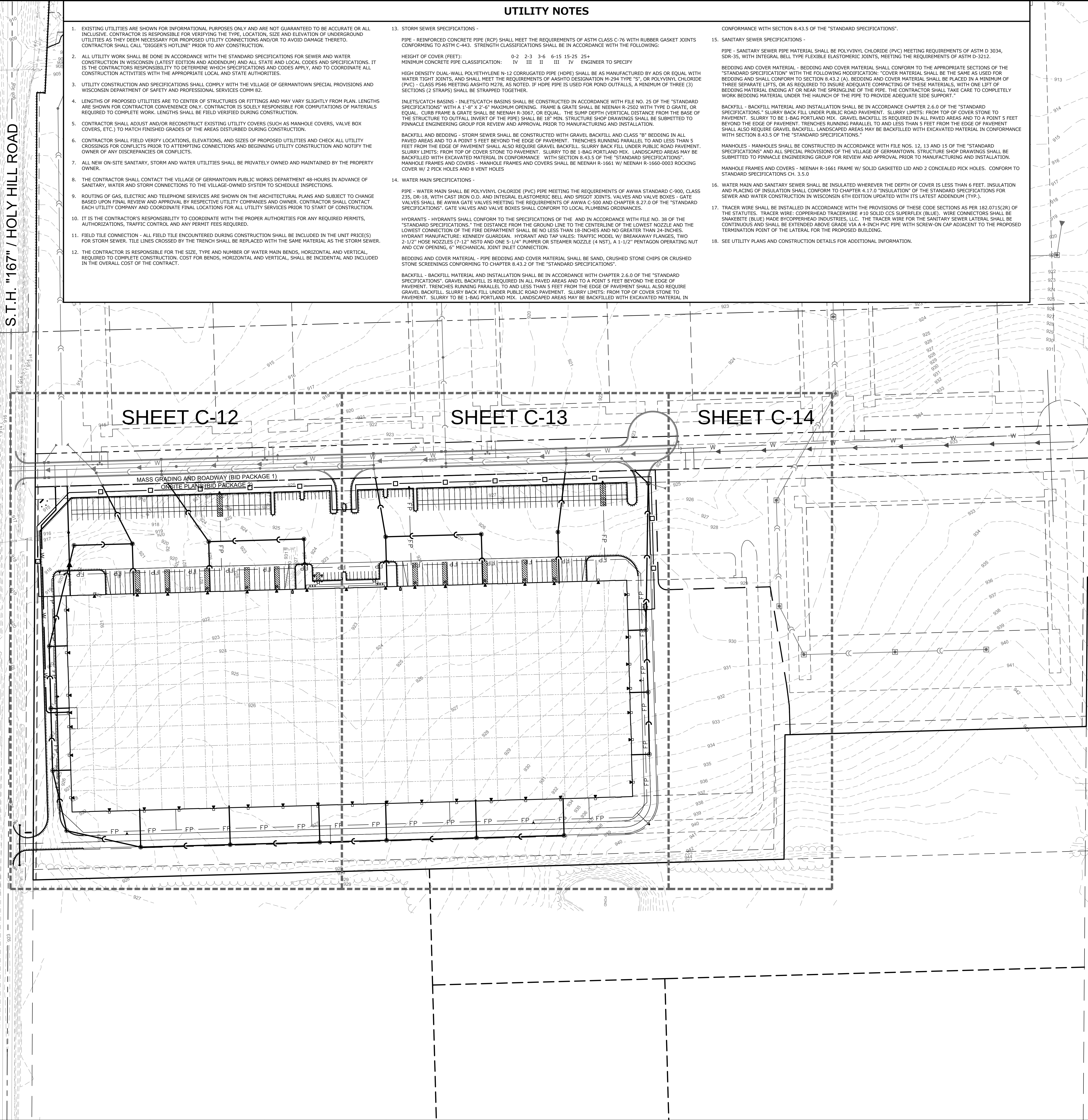
DRAWN: EP

- ### UTILITY NOTES
- EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE TYPE, LOCATION, SIZE AND ELEVATION OF UNDERGROUND UTILITIES AS THEY DEEM NECESSARY FOR PROPOSED UTILITY CONNECTIONS AND/OR TO AVOID DAMAGE THERETO. CONTRACTOR SHALL CALL "DIGGER'S HOTLINE" PRIOR TO ANY CONSTRUCTION.
 - ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (LATEST EDITION AND ADDENDUM) AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES.
 - UTILITY CONSTRUCTION AND SPECIFICATIONS SHALL COMPLY WITH THE VILLAGE OF GERMANTOWN SPECIAL PROVISIONS AND WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES COMM 82.
 - LENGTHS OF PROPOSED UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS ARE SHOWN FOR CONTRACTOR CONVENIENCE ONLY. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPUTATIONS OF MATERIALS REQUIRED TO COMPLETE WORK. LENGTHS SHALL BE FIELD VERIFIED DURING CONSTRUCTION.
 - CONTRACTOR SHALL ADJUST AND/OR RECONSTRUCT EXISTING UTILITY COVERS (SUCH AS MANHOLE COVERS, VALVE BOX COVERS, ETC.) TO MATCH FINISHED GRADES OF THE AREAS DISTURBED DURING CONSTRUCTION.
 - CONTRACTOR SHALL FIELD VERIFY LOCATIONS, ELEVATIONS, AND SIZES OF PROPOSED UTILITIES AND CHECK ALL UTILITY COVERINGS FOR CONFLICTS PRIOR TO ATTEMPTING CONNECTIONS AND BEGINNING UTILITY CONSTRUCTION AND NOTIFY THE OWNER OF ANY DISCREPANCIES OR CONFLICTS.
 - ALL NEW ON-SITE SANITARY, STORM AND WATER UTILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE PROPERTY OWNER.
 - THE CONTRACTOR SHALL CONTACT THE VILLAGE OF GERMANTOWN PUBLIC WORKS DEPARTMENT 48-HOURS IN ADVANCE OF SANITARY, WATER AND STORM CONNECTIONS TO THE VILLAGE-OWNED SYSTEM TO SCHEDULE INSPECTIONS.
 - ROUTING OF GAS, ELECTRIC AND TELEPHONE SERVICES ARE SHOWN ON THE ARCHITECTURAL PLANS AND SUBJECT TO CHANGE BASED UPON FINAL REVIEW AND APPROVAL BY RESPECTIVE UTILITY COMPANIES AND OWNER. CONTRACTOR SHALL CONTACT EACH UTILITY COMPANY AND COORDINATE FINAL LOCATIONS FOR ALL UTILITY SERVICES PRIOR TO START OF CONSTRUCTION.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE PROPER AUTHORITIES FOR ANY REQUIRED PERMITS, AUTHORIZATIONS, TRAFFIC CONTROL AND ANY PERMIT FEES REQUIRED.
 - FIELD TILE CONNECTION - ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE SIZE, TYPE AND NUMBER OF WATER MAIN BENDS, HORIZONTAL AND VERTICAL, REQUIRED TO COMPLETE CONSTRUCTION. COST FOR BENDS, HORIZONTAL AND VERTICAL, SHALL BE INCIDENTAL AND INCLUDED IN THE OVERALL COST OF THE CONTRACT.
 - STORM SEWER SPECIFICATIONS -
PIPE - REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF ASTM CLASS C-76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C-443. STRENGTH CLASSIFICATIONS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
HEIGHT OF COVER (FEET) 0-2 2-3 3-6 6-15 15-25 25+
MINIMUM CONCRETE PIPE CLASSIFICATION: IV III II III IV ENGINEER TO SPECIFY
HIGH DENSITY DUAL-WALL POLYETHYLENE N-12 CORRUGATED PIPE (HDPE) SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF ASHTO DESIGNATION M-294 TYPE "S", OR POLYVINYL CHLORIDE (PVC) - CLASS PS46 MEETING AASHTO M278, AS NOTED. IF HDPE PIPE IS USED FOR POND OUTFALLS, A MINIMUM OF THREE (3) SECTIONS (2 STRAPS) SHALL BE STRAPPED TOGETHER.
INLETS/CATCH BASINS - INLETS/CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NO. 25 OF THE "STANDARD SPECIFICATIONS" WITH A 1'-8" X 2'-6" MAXIMUM OPENING. FRAME & GRATE SHALL BE NEEHAH R-2502 WITH TYPE D GRATE, OR EQUAL. CURB FRAME & GRATE SHALL BE NEEHAH R-3067, OR EQUAL. THE SUMP DEPTH (VERTICAL DISTANCE FROM THE BASE OF THE STRUCTURE TO OUTFALL INVERT OF THE PIPE) SHALL BE 18" MIN. STRUCTURE SHOP DRAWINGS SHALL BE SUBMITTED TO PINNACLE ENGINEERING GROUP FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURING AND INSTALLATION.
BACKFILL AND BEDDING - STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS". MANHOLE FRAMES AND COVERS - MANHOLE FRAMES AND COVERS SHALL BE NEEHAH R-1661 W/ NEEHAH R-1660-0003 ROCKING COVER W/ 2 PICK HOLES AND 8 VENT HOLES
 - WATER MAIN SPECIFICATIONS -
PIPE - WATER MAIN SHALL BE POLYVINYL CHLORIDE (PVC) PIPE MEETING THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 235, DR-18, WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. VALVES AND VALVE BOXES - GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.2 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES.
HYDRANTS - HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE AND IN ACCORDANCE WITH FILE NO. 38 OF THE "STANDARD SPECIFICATIONS." THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 24-INCHES. HYDRANT MANUFACTURE: KENNEDY GUARDIAN. HYDRANT AND TAP VALVES: TRAFFIC MODEL W/ BREAKAWAY FLANGES, TWO 1-1/2" HOSE NOZZLES (7-12" NST) AND ONE 5-1/4" RUNNER OR STEAMER NOZZLE (4 NST), A 1-1/2" PENTAGON OPERATING NUT AND CCW OPENING, 6" MECHANICAL JOINT INLET CONNECTION.
BEDDING AND COVER MATERIAL - PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".
BACKFILL - BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN
 - SANITARY SEWER SPECIFICATIONS -
PIPE - SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034, SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212.
BEDDING AND COVER MATERIAL - BEDDING AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDING AND SHALL CONFORM TO SECTION 8.43.2 (A). BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."
BACKFILL - BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". SLURRY BACK FILL UNDER PUBLIC ROAD PAVEMENT. SLURRY LIMITS: FROM TOP OF COVER STONE TO PAVEMENT. SLURRY TO BE 1-BAG PORTLAND MIX. GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".
MANHOLES - MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE VILLAGE OF GERMANTOWN. STRUCTURE SHOP DRAWINGS SHALL BE SUBMITTED TO PINNACLE ENGINEERING GROUP FOR REVIEW AND APPROVAL PRIOR TO MANUFACTURING AND INSTALLATION.
MANHOLE FRAMES AND COVERS - NEEHAH R-1661 FRAME W/ SOLID GASKETED LID AND 2 CONCEALED PICK HOLES. CONFORM TO STANDARD SPECIFICATIONS CH. 3.5.0
WATER MAIN AND SANITARY SEWER SHALL BE INSULATED WHEREVER THE DEPTH OF COVER IS LESS THAN 6 FEET. INSULATION AND PLACING OF INSULATION SHALL CONFORM TO CHAPTER 4.17.0 "INSULATION" OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN 6TH EDITION UPDATED WITH ITS LATEST ADDENDUM (TYP.).
TRACER WIRE SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THESE CODE SECTIONS AS PER 182.0715(28) OF THE STATUTES. TRACER WIRE: COPPERHEAD TRACERWIRE #10 SOLID CCS SUPERFLEX (BLUE). WIRE CONNECTORS SHALL BE SNAKEBITE (BLUE) MADE BY COPPERHEAD INDUSTRIES, LLC. THE TRACER WIRE FOR THE SANITARY SEWER LATERAL SHALL BE CONTINUOUS AND SHALL BE EXTENDED ABOVE GRADE VIA A 4-INCH PVC PIPE WITH SCREEN-ON CAP ADJACENT TO THE PROPOSED TERMINATION POINT OF THE LATERAL FOR THE PROPOSED BUILDING.
 - SEE UTILITY PLANS AND CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

LEGEND

	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	STORM SEWER CATCH BASIN (ROUND CASTING)
	STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
	PRECAST CONCRETE FLARED END SECTION
	CLEANOUT
	VALVE BOX
	FIRE HYDRANT
	SANITARY SEWER
	STORM SEWER
	DRAIN TILE
	PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

ALL WORK WITHIN
PUBLIC R.O.W. SHALL
CONFORM TO VILLAGE
OF GERMANTOWN
STANDARDS.



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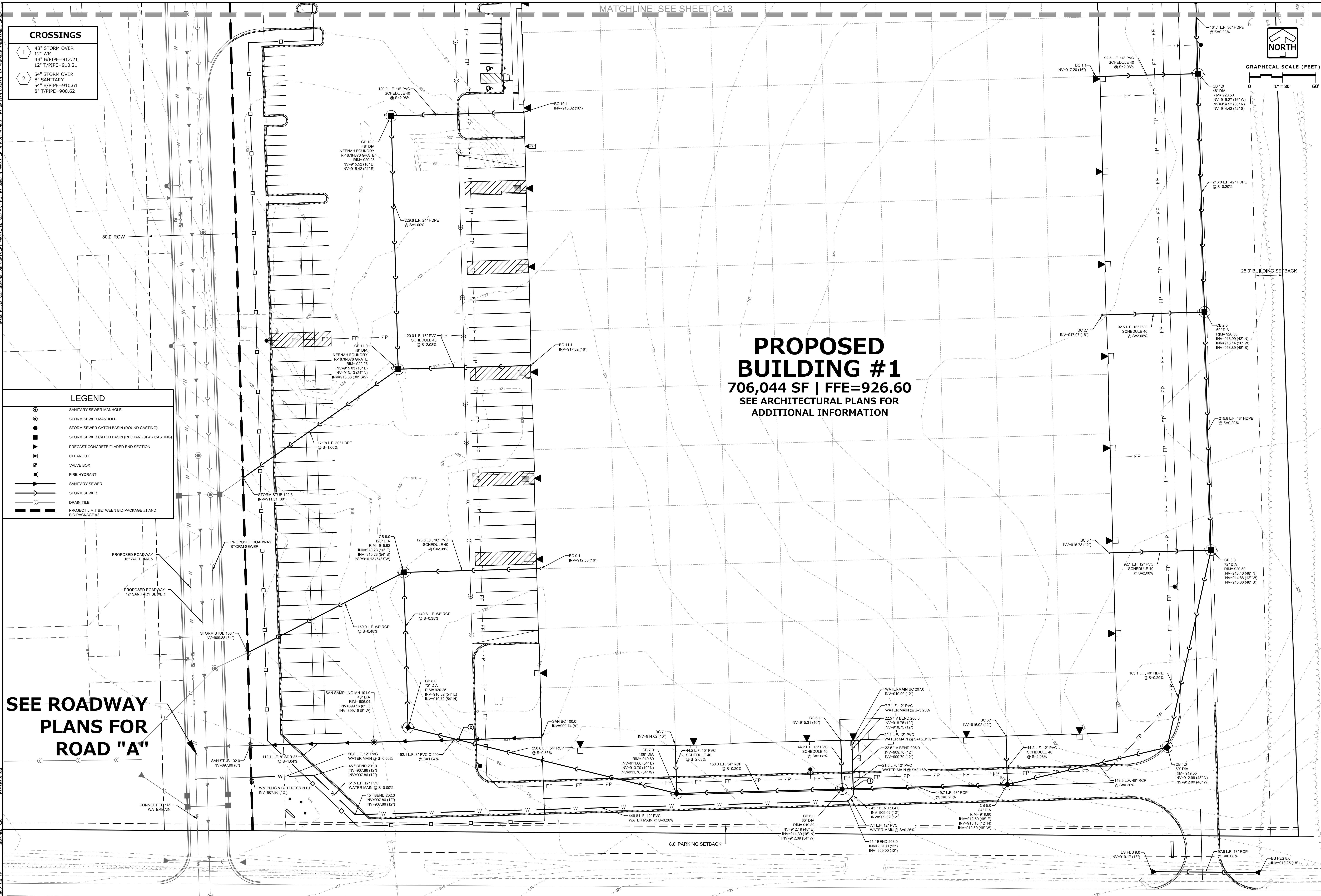
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CORPORATE PARK
GERMANTOWN, WI**

UTILITY PLAN OVERVIEW

REVISIONS	
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PROJECT NO. 1296.00-WI	AREA	SHEET
7/17/18	7/17/18	C-11
SCALE: 1" = 100'		C-22

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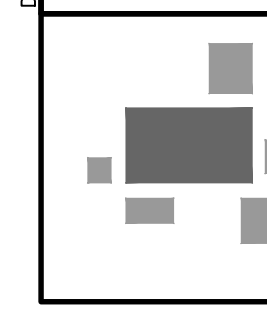
UTILITY PLAN

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DESIGNED: AJS
CHECKED: EP
DATE: 7/17/18



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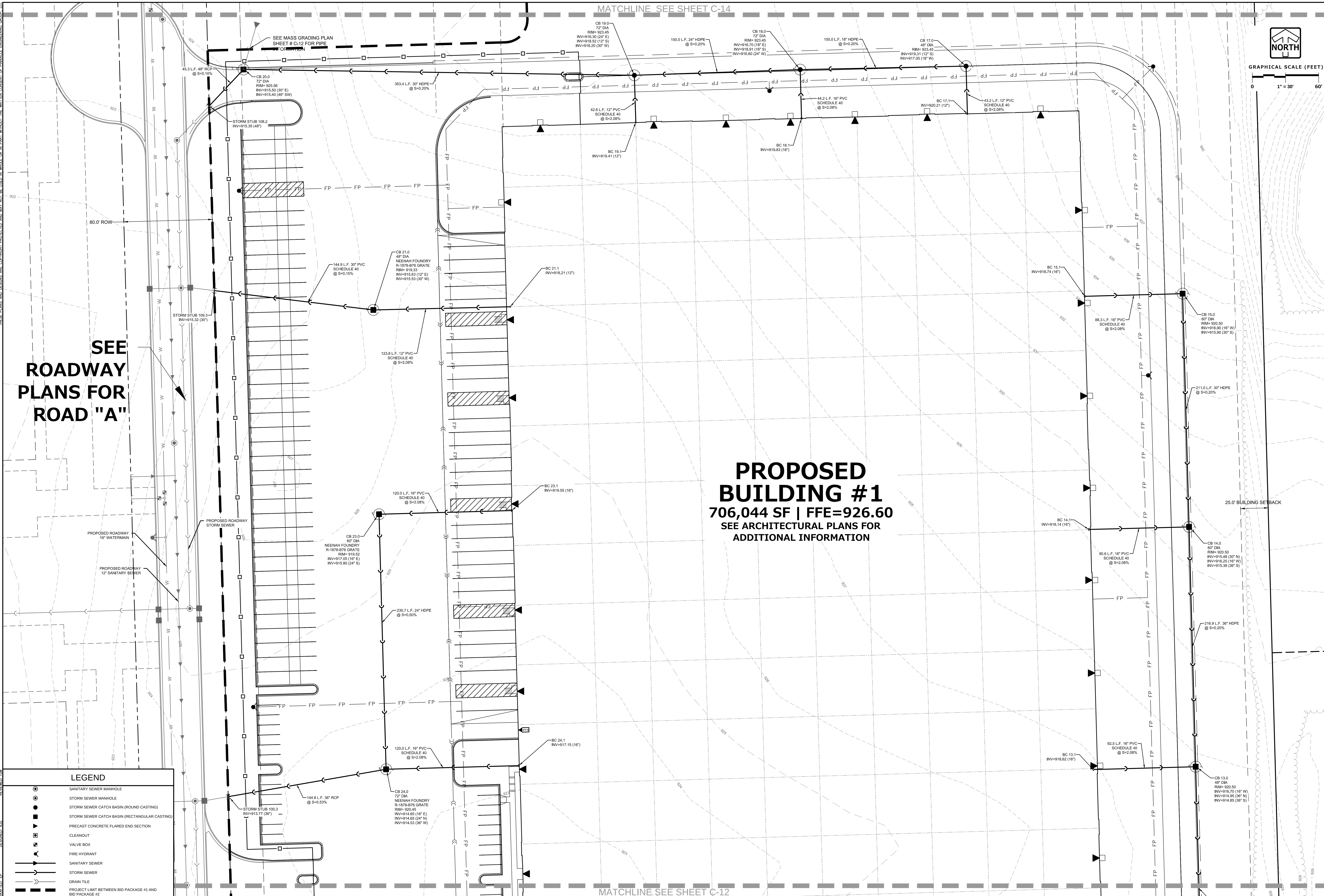
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REVISIONS	
1. SITE PLAN REVIEW SUBMITTAL	6/11/18
2. BID SET REVISIONS	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PROJECT NO. 1296.00-WI
PLOT DATE 7/17/18
SCALE 1" = 30'

SHEET
C-13
C-22



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DESIGNED: TSM

REVIEWED: AJS

DRAWN: EP



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ZILBER
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**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

UTILITY PLAN

REVISIONS	
1	SITE PLAN REVIEW SUBMITTAL 6/11/18
2	BID SET REVISIONS 6/18/18
3	MUNICIPAL RESUBMITTAL 7/16/18

PROJECT NO. 1296.00-WI

AREA

PG. 14

PLOT DATE 7/17/18

SCALE 1" = 30'

SHEET

C-14

8

C-22

The utility plan illustrates the proposed infrastructure for the Z1 building expansion at Germantown Corporate Park. Key features include:

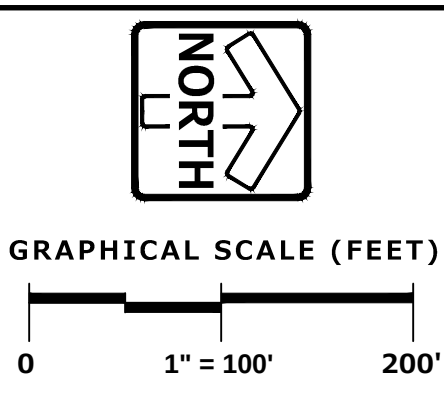
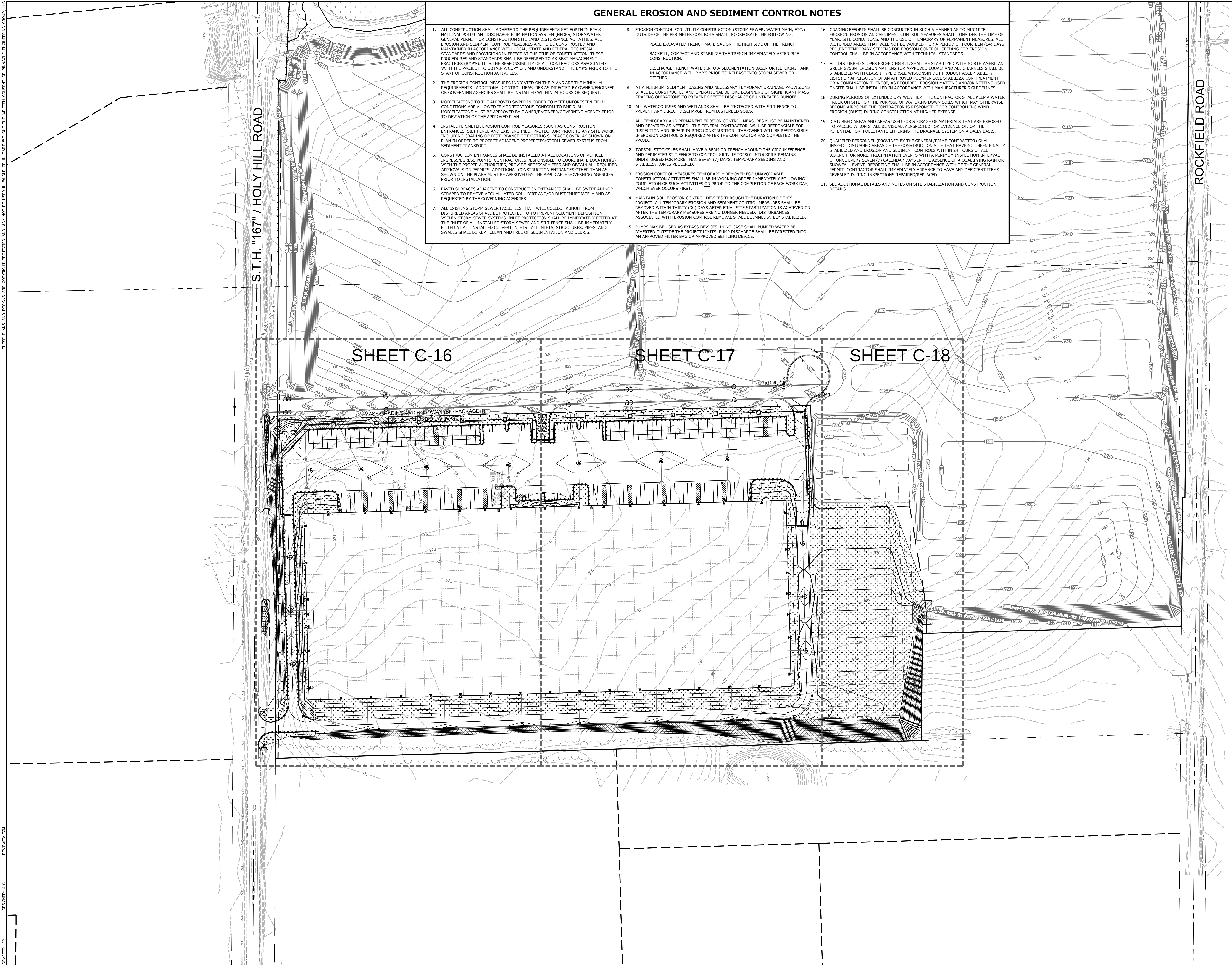
- Future Building Expansion:** A large rectangular area outlined in dashed lines, labeled "FUTURE BUILDING EXPANSION" with a footprint of 150,280 SF and FFE=926.60. It references architectural plans for additional information.
- Sanitary Sewer System:** Shown as solid lines with arrows indicating flow. It includes two manholes (circles with a dot) and several catch basins (rectangles with a triangle). A "PROPOSED ROADWAY 12' FUTURE SANITARY SEWER" is also indicated.
- Storm Sewer System:** Shown as dashed lines with arrows. It includes a "PROPOSED ROADWAY 16' FUTURE WATERMAIN".
- Proposed Roadway:** A vertical roadway on the left side of the plan, labeled "PROPOSED ROADWAY 16' FUTURE WATERMAIN" and "PROPOSED ROADWAY 12' FUTURE SANITARY SEWER". It has an 80.0' ROW.
- Topography:** Contour lines are shown across the site, with elevations ranging from 820 to 947 feet.
- Setbacks:** A "25.0' BUILDING SETBACK" is marked on the right side of the expansion area.
- Matchline:** A dashed line at the bottom indicates a matchline to sheet C-13.
- Grading:** A callout points to the plan with the text "SEE MASS GRADING PLANS".

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BID PACKET 2

UTILITY PLAN

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DESIGNED: EP
CHECKED: JAS
REVIEWED: TMA
DATE: 7/17/18



GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. ALL CONSTRUCTION SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER GENERAL PERMIT FOR CONSTRUCTION SITE LAND DISTURBANCE ACTIVITIES. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL TECHNICAL STANDARDS AND PROVISIONS IN EFFECT AT THE TIME OF CONSTRUCTION. THESE PROCEDURES AND STANDARDS SHALL BE REFERRED TO AS BEST MANAGEMENT PRACTICES (BMP'S). IT IS THE RESPONSIBILITY OF ALL CONTRACTORS ASSOCIATED WITH THE PROJECT TO OBTAIN A COPY OF, AND UNDERSTAND, THE BMP'S PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
2. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL CONTROL MEASURES AS DIRECTED BY OWNER/ENGINEER OR GOVERNING AGENCIES SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
3. MODIFICATIONS TO THE APPROVED SWPPP IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS ARE ALLOWED IF MODIFICATIONS CONFORM TO BMP'S. ALL MODIFICATIONS MUST BE APPROVED BY OWNER/ENGINEER/GOVERNING AGENCY PRIOR TO DEVIATION OF THE APPROVED PLAN.
4. INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN IN ORDER TO PROTECT ADJACENT PROPERTIES/STORM SEWER SYSTEMS FROM SEDIMENT TRANSPORT.
5. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. CONTRACTOR IS RESPONSIBLE TO COORDINATE LOCATION(S) WITH THE PROPER AUTHORITIES, PROVIDE NECESSARY FEES AND OBTAIN ALL REQUIRED APPROVALS OR PERMITS. ADDITIONAL CONSTRUCTION ENTRANCES OTHER THAN AS SHOWN ON THE PLANS MUST BE APPROVED BY THE APPLICABLE GOVERNING AGENCIES PRIOR TO INSTALLATION.
6. PAVED SURFACES ADJACENT TO CONSTRUCTION ENTRANCES SHALL BE SWEEP AND/OR SCAPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST IMMEDIATELY AND AS REQUESTED BY THE GOVERNING AGENCIES.
7. ALL EXISTING STORM SEWER FACILITIES THAT WILL COLLECT RUNOFF FROM DISTURBED AREAS SHALL BE PROTECTED TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS. ALL INLETS, STRUCTURES, PIPES, AND SWALES SHALL BE KEPT CLEAN AND FREE OF SEDIMENTATION AND DEBRIS.
8. EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, WATER MAIN, ETC.) OUTSIDE OF THE PERIMETER CONTROLS SHALL INCORPORATE THE FOLLOWING:

PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.

BACKFILL, COMPACT AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.

DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH BMP'S PRIOR TO RELEASE INTO STORM SEWER OR DITCHES.
9. AT A MINIMUM, SEDIMENT BASINS AND NECESSARY TEMPORARY DRAINAGE PROVISIONS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE BEGINNING OF SIGNIFICANT MASS GRADING OPERATIONS TO PREVENT OFFSITE DISCHARGE OF UNTREATED RUNOFF.
10. ALL WATERCOURSES AND WETLANDS SHALL BE PROTECTED WITH SILT FENCE TO PREVENT ANY DIRECT DISCHARGE FROM DISTURBED SOILS.
11. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR INSPECTION AND REPAIR DURING CONSTRUCTION. THE OWNER WILL BE RESPONSIBLE IF EROSION CONTROL IS REQUIRED AFTER THE CONTRACTOR HAS COMPLETED THE PROJECT.
12. TOPSOIL STOCKPILES SHALL HAVE A BERM OR TRENCH AROUND THE CIRCUMFERENCE AND PERIMETER SILT FENCE TO CONTROL SILT. IF TOPSOIL STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IS REQUIRED.
13. EROSION CONTROL MEASURES TEMPORARILY REMOVED FOR UNAVOIDABLE CONSTRUCTION ACTIVITIES SHALL BE IN WORKING ORDER IMMEDIATELY FOLLOWING COMPLETION OF SUCH ACTIVITIES OR PRIOR TO THE COMPLETION OF EACH WORK DAY, WHICH EVER OCCURS FIRST.
14. MAINTAIN SOIL EROSION CONTROL DEVICES THROUGH THE DURATION OF THIS PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. DISTURBANCES ASSOCIATED WITH EROSION CONTROL REMOVAL SHALL BE IMMEDIATELY STABILIZED.
15. PUMPS MAY BE USED AS BYPASS DEVICES. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS. PUMP DISCHARGE SHALL BE DIRECTED INTO AN APPROVED FILTER BAG OR APPROVED SETTLING DEVICE.
16. GRADING EFFORTS SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. EROSION AND SEDIMENT CONTROL MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS, AND THE USE OF TEMPORARY OR PERMANENT MEASURES. ALL DISTURBED AREAS THAT WILL NOT BE WORKED FOR A PERIOD OF FOURTEEN (14) DAYS REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH TECHNICAL STANDARDS.
17. ALL DISTURBED SLOPES EXCEEDING 4:1, SHALL BE STABILIZED WITH NORTH AMERICAN GREEN S75BN. EROSION MATTING (OR APPROVED EQUAL) AND ALL CHANNELS SHALL BE STABILIZED WITH CLASS 1 TYPE B (SEE WISCONSIN DOT PRODUCT ACCEPTABILITY LISTS) OR APPLICATION OF AN APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED. EROSION MATTING AND/OR NETTING USED ON-SITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
18. DURING PERIODS OF EXTENDED DRY WEATHER, THE CONTRACTOR SHALL KEEP A WATER TRUCK ON SITE FOR THE PURPOSE OF WATERING DOWN SOILS WHICH MAY OTHERWISE BECOME AIRBORNE. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING WIND EROSION (DUST) DURING CONSTRUCTION AT HIS/HER DISCRETION.
19. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE VISUALLY INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM ON A DAILY BASIS.
20. QUALIFIED PERSONNEL (PROVIDED BY THE GENERAL/PRIME CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED AND EROSION AND SEDIMENT CONTROLS WITHIN 24 HOURS OF ALL 0.5-INCH, OR MORE, PRECIPITATION EVENTS WITH A MINIMUM INSPECTION INTERVAL OF ONCE EVERY SEVEN (7) CALENDAR DAYS IN THE ABSENCE OF A QUALIFYING RAIN OR SNOWFALL EVENT. REPORTING SHALL BE IN ACCORDANCE WITH OF THE GENERAL PERMIT. CONTRACTOR SHALL IMMEDIATELY ARRANGE TO HAVE ANY DEFICIENT ITEMS REVEALED DURING INSPECTIONS REPAIRED/REPLACED.
21. SEE ADDITIONAL DETAILS AND NOTES ON SITE STABILIZATION AND CONSTRUCTION DETAILS.

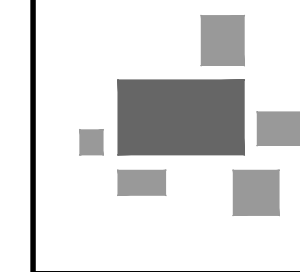
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LEGEND

- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- STORM STORM CATCH BASIN (ROUND CASTING)
- STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
- RISER
- ▤ PRECAST FLARED END SECTION
- CLEANOUT
- VALVE BOX
- FIRE HYDRANT
- PROPOSED CONTOUR
- +750.0 PROPOSED SPOT ELEVATION
- WETLANDS
- HIGH WATER LEVEL (HWL)
- NORMAL WATER LEVEL (NWL)
- DIRECTION OF SURFACE FLOW
- DIVERSION SWALE
- DIVERSION DITCH
- OVERFLOW RELIEF ROUTING
- SILT FENCE
- INLET PROTECTION
- CONSTRUCTION ENTRANCE
- EROSION CONTROL BLANKET - CHANNEL
- HYDROSEED (PER MANUFACTURER SPECIFICATIONS)
- EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)
- PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2



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**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

**SITE STABILIZATION PLAN
OVERVIEW**

REVISIONS			DATE	BY	APP'D
NO.	DESCRIPTION	DATE			
1	SITE PLAN REVIEW SUBMITTAL	6/11/18			
2	BID SET REVISIONS	6/18/18			
3	MUNICIPAL RESUBMITTAL	7/16/18			

PEG JOB NO. 1296.00-W1

AREA

DATE: 7/17/18

SCALE: 1" = 100'

SHEET C-15 of C-22

DATE: 7/17/18

SCALE: 1" = 100'

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SHALL CONFORM TO VILLAGE OF
GERMANTOWN STANDARDS.

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LEGEND

SANITARY SEWER MANHOLE

STORM SEWER MANHOLE

STORM CATCH BASIN (ROUND CASTING)

STORM CATCH BASIN (RECTANGULAR CASTING)

RISER

PRECAST FLARED END SECTION

CLEANOUT

VALVE BOX

FIRE HYDRANT

PROPOSED CONTOUR

PROPOSED SPOT ELEVATION

WETLANDS

HIGH WATER LEVEL (HWL)

NORMAL WATER LEVEL (NWL)

DIRECTION OF SURFACE FLOW

DIVERSION SWALE

DIVERSION DITCH

OVERFLOW RELIEF ROUTING

SILT FENCE

INLET PROTECTION

CONSTRUCTION ENTRANCE

EROSION CONTROL BLANKET - CHANNEL

HYDROSEED (PER MANUFACTURER SPECIFICATIONS)

EROSION CONTROL BLANKET (NORTH AMERICAN GREEN S75 OR EQUAL)

PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

SEE ROADWAY
PLANS FOR
ROAD "A"

MATCHLINE SEE SHEET C-17

**PROPOSED
BUILDING #1**
706,044 SF | FFE=926.60
SEE ARCHITECTURAL PLANS FOR
ADDITIONAL INFORMATION

NORTH

GRAPHICAL SCALE (FEET)

0 1" = 30' 60'

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**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

SITE STABILIZATION PLAN

REVISIONS	
1 - SITE PLAN REVIEW SUBMITTAL	6/11/18
2 - BID SET REVISIONS	6/18/18
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PEG JOB NO. 1296.00-W1

AREA

DESIGNED BY: [Signature]

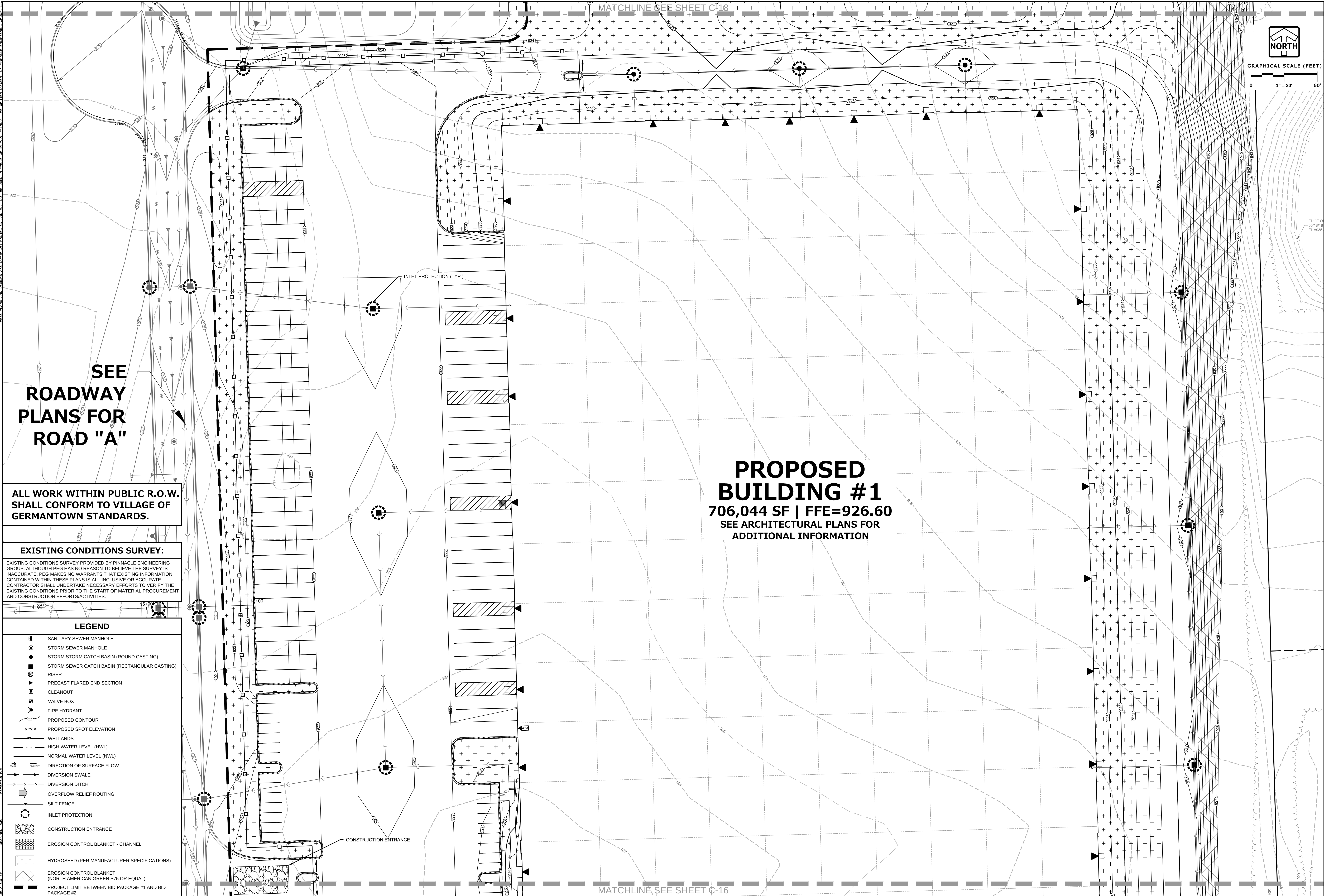
DATE: 7/17/18

SCALE: 1" = 30'

SHEET C-16 OF C-22

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DESIGNED: AJS
DRAWN: EP
REVIEWED: TSM



SEE
ROADWAY
PLANS FOR
ROAD "A"

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- LEGEND**
- SANITARY SEWER MANHOLE
 - STORM SEWER MANHOLE
 - STORM STORM CATCH BASIN (ROUND CASTING)
 - STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
 - RISER
 - PRECAST FLARED END SECTION
 - CLEANOUT
 - VALVE BOX
 - FIRE HYDRANT
 - PROPOSED CONTOUR
 - PROPOSED SPOT ELEVATION
 - WETLANDS
 - HIGH WATER LEVEL (HWL)
 - NORMAL WATER LEVEL (NWL)
 - DIRECTION OF SURFACE FLOW
 - DIVERSION SWALE
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 - PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

**PROPOSED
BUILDING #1**
706,044 SF | FFE=926.60
SEE ARCHITECTURAL PLANS FOR
ADDITIONAL INFORMATION

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PROPERTY GROUPSM

**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

SITE STABILIZATION PLAN

REVISIONS	
1. SITE PLAN REVIEW SUBMITTAL	6/11/18
2. BID SET REVISIONS	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

PROJECT NO: 1296.00-WI
AREA
PLOT DATE: 7/17/18
SCALE: 1" = 30'

**SHEET
C-17
C-22**

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DESIGNED: AJS
CHECKED: TMA
DATE: 6/11/18



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SITE STABILIZATION PLAN

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PROJECT: 2018\1296.00-WI\CAD\PROJECTS\2018\1296.00-WI\BLDG #1 SITE STABILIZATION PLAN.DWG

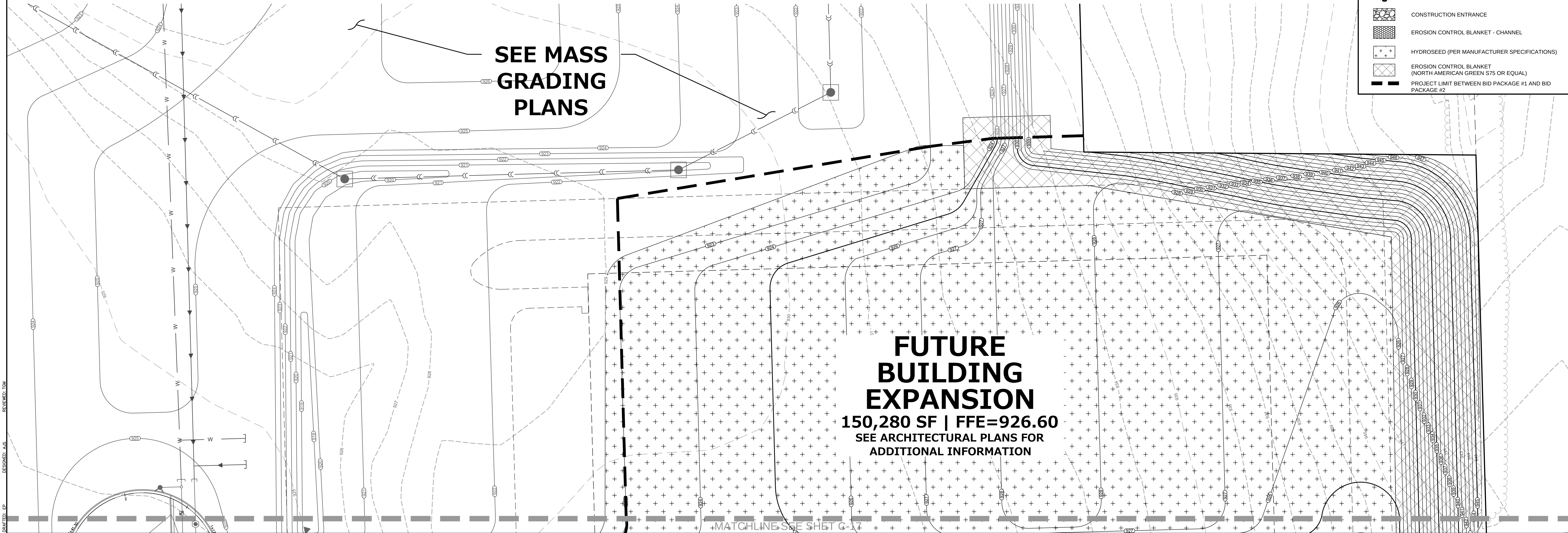
PG: 1296.00-WI

AREA

DATE: 7/17/18

SCALE: 1" = 30'

SHEET
C-18
C-22



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- PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

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BID PACKET 2

SITE STABILIZATION PLAN

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1.0 POTENTIAL POLLUTANT SOURCES

GIVEN THE PROPOSED ACTIVITY ON THE PROJECT SITE, THE PRIMARY POTENTIAL POLLUTANT SOURCE ASSOCIATED WITH THIS CONSTRUCTION PROJECT IS SOIL EROSION AND TRANSPORTATION. REFER TO SECTION 4 OF THIS PLAN, ADDITIONAL POTENTIAL SOURCES OF POLLUTION MAY INCLUDE FUEL TANKS, WASTE CONTAINERS, OIL OR OTHER PETROLEUM PRODUCTS, DETERGENTS, PAINTS, CONSTRUCTION DEBRIS, SANITARY STATIONS, FERTILIZERS, AND DUST; REFER TO SECTION 5 OF THIS PLAN.

2.0 EROSION AND SEDIMENT CONTROL IMPLEMENTATION

THE FOLLOWING ARE DESCRIPTIONS OF THE EROSION AND SEDIMENT CONTROL PRACTICES THAT SHALL BE IMPLEMENTED DURING CONSTRUCTION OF THIS PROJECT. IN ADDITION TO THESE MEASURES, CONTRACTOR SHALL DISTURB ONLY AREAS NECESSARY TO COMPLETE THE CONSTRUCTION PROJECT. ALL PRACTICES SHALL BE CONDUCTED IN ACCORDANCE WITH THE BEST MANAGEMENT PRACTICES (BMP).

2.1 CONSTRUCTION AND EROSION CONTROL SEQUENCING

CONSTRUCTION SEQUENCING WILL BE UTILIZED AS A MEANS OF CONTROLLING EROSION AND LIMITING SEDIMENT TRANSPORT. SEQUENCING AS LISTED BELOW IS GENERAL IN NATURE AND MAY VARY DEPENDING ON WEATHER CONDITIONS AND/OR PHASING OF CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A DETAILED SITE SEQUENCING PLAN TO OWNER FOR APPROVAL AT LEAST 5 BUSINESS DAYS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR MAY MODIFY SEQUENCING AFTER ITEM 4 AS NEEDED TO COMPLETE CONSTRUCTION ONLY IF EROSION CONTROLS ARE MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL REQUIREMENTS.

1. INSTALL TEMPORARY CONSTRUCTION ENTRANCES, INLET PROTECTION ON EXISTING STORM SEWER AND CULVERT INLET LOCATIONS SEDIMENT TRAPS, DIVERSION BERMS, DITCH CHECKS, AND PERIMETER SILT FENCING.
2. INSTALL SILT FENCING ALONG THE PERIMETER OF PROPOSED TOPSOIL STOCKPILE LOCATIONS. THE FIRST TOPSOIL DEPOSITED WITHIN THE STOCKPILE LIMITS SHALL BE PLACED TO CREATE TEMPORARY BERMING ALONG THE SILT FENCE TO PREVENT DIRECT STORMWATER RUNOFF AGAINST SILT FENCING. CONTRACTOR SHALL LIMIT LAND DISTURBING ACTIVITIES ASSOCIATED WITH TEMPORARY BERMING TO A MINIMUM.
3. CONDUCT ROUGH GRADING OPERATIONS AND UTILITY PIPING INSTALLATION, DRAIN TILE SHALL NOT BE INSTALLED UNTIL UPLAND AREAS CONTRIBUTING STORMWATER RUNOFF ARE STABILIZED. DITCH CHECKS SHALL BE INSTALLED WITHIN DRAINAGE DITCHES IMMEDIATELY FOLLOWING CREATION OF DITCHES AND INLET PROTECTION SHALL BE INSTALLED TO PROTECT ANY STORM SEWER OR CULVERTS THAT WILL FUNCTION DURING CONSTRUCTION.
4. FINE GRADE SUB-GRADE SOILS WITHIN PAVEMENT AND BUILDING LIMITS. PLACE STONE BASE MATERIAL AS SOON AS POSSIBLE FOLLOWING COMPLETION OF FINE GRADING EFFORTS.
5. FINE GRADE REMAINING DISTURBED AREAS, PLACE SALVAGED TOPSOIL, EROSION BLANKETS/MATTING, AND SEED/MULCH AS SOON AS POSSIBLE FOLLOWING COMPLETION OF FINE GRADING EFFORTS.
6. EROSION CONTROLS SHALL NOT BE REMOVED UNTIL SITE IS FULLY STABILIZED OR 70% VEGETATIVE COVER IS ESTABLISHED. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF SILT FENCE, TEMPORARY FENCING/PROTECTION, DITCH CHECKS, AND OTHER TEMPORARY CONTROLS, AND RESTORATION PRACTICES AS NECESSARY, TO THE SATISFACTION OF THE OWNER.

2.2 STABILIZATION PRACTICES

THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE INITIATED, SHALL BE RECORDED ON THE STABILIZATION SCHEDULE FOR MAJOR GRADING ACTIVITIES.

STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. NO MORE THAN SEVEN (7) DAYS SHALL PASS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CEASED UNLESS:

THE INITIATION OF STABILIZATION MEASURES BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE IS PRECLUDED BY SNOW COVER. IN THAT EVENT, STABILIZATION MEASURE SHALL BE INITIATED AS SOON AS PRACTICABLE.

CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN FOURTEEN (14) DAYS FROM WHEN ACTIVITIES CEASED, (I.E. THE TOTAL TIME PERIOD THAT THE CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN FOURTEEN (14) DAYS). IN THAT EVENT, STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED. SEE THE SOIL PROTECTION CHART PRESENTED IN THE CONSTRUCTION DOCUMENTS FOR RATES OF PERMANENT AND TEMPORARY VEGETATION.

STABILIZATION MEASURES SHALL BE DETERMINED BASED ON SITE CONDITIONS AT THE TIME CONSTRUCTION ACTIVITY HAS CEASED, INCLUDING BUT NOT LIMITED TO WEATHER CONDITIONS AND LENGTH OF TIME MEASURE MUST BE EFFECTIVE. THE FOLLOWING ARE ACCEPTABLE STABILIZATION MEASURES.

PERMANENT SEEDING: IN ACCORDANCE WITH APPROVED LANDSCAPING PLAN
 TEMPORARY SEEDING MAY CONSIST OF SPRING OATS (100 LBS/ACRE) AND/OR WHEAT OR CEREAL RYE (150 LBS/ACRE)
 HYDRO-MULCHING WITH A TACKIFIER
 GEOTEXTILE EROSION MATTING
 SODDING

2.3 STRUCTURAL PRACTICES

THE FOLLOWING ARE DESCRIPTIONS OF STRUCTURAL PRACTICES TO BE IMPLEMENTED TO DIVERT FLOWS FROM EXPOSED SOILS, STORE FLOWS, OR OTHERWISE LIMIT THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE INCLUDING THE PROPOSED AND EXISTING WETLAND AREAS. SUCH PRACTICES COULD INCLUDE SILT FENCE, PROTECTION FENCE, CONSTRUCTION ENTRANCE, DITCH CHECK, EROSION CONTROL, MATTING, DIVERSION BERMS/WALE, SEDIMENT TRAP, LEVEL SPREADER, INLET PROTECTION, OUTLET PROTECTION, AND TEMPORARY OR PERMANENT SEDIMENT BASIN. THE FOLLOWING STRUCTURAL PRACTICES ARE TO BE UTILIZED DURING THIS PROJECT.

SILT FENCE SHALL BE PLACED DOWN SLOPE OF DISTURBED AREAS OF THE CONSTRUCTION SITE AND AROUND THE PERIMETER OF THE TOPSOIL STOCKPILE. THIS INCLUDES PROTECTION OF EXISTING WETLAND AREAS TO BE MAINTAINED. SILT FENCE MAY ALSO BE USED AS A TEMPORARY CONTROL DEVICE WHERE SEDIMENTATION RUNOFF IS DISCOVERED.

CONSTRUCTION ENTRANCE SHALL BE INSTALLED TO REDUCE SOIL EROSION POLLUTANTS FROM LEAVING THE SITE DURING CONSTRUCTION ACTIVITIES. IF THE CRUSHED STONE DOES NOT ADEQUATELY REMOVE MUD FROM VEHICLE TIRES, THEY SHALL BE HOSED OFF BEFORE ENTERING A PAVED ROADWAY. ANY SOIL DEPOSITED ON THE PUBLIC PAVED ROAD WAY SHALL BE REMOVED IMMEDIATELY.

DITCH CHECK SHALL BE INSTALLED IN DRAINAGE CHANNELS AS NEEDED.

EROSION CONTROL MATTING SHALL BE PLACED ON AREAS OR EMBANKMENTS HAVING SLOPES GREATER THAN OR EQUAL TO 3:1 H, BEFORE VEGETATION IS ESTABLISHED.

INLET PROTECTION SHALL BE INSTALLED AT STORMWATER DRAINAGE INLETS TO REDUCE SEDIMENT WITHIN STORM SEWER CONVEYANCE FEATURES.

OUTLET SCOUR PROTECTION SHALL BE INSTALLED AT STORMWATER DRAINAGE OUTLETS TO DIFFUSE FLOWS.

3.0 ADDITIONAL PRACTICES

ADDITIONAL POLLUTANT CONTROL MEASURES TO BE IMPLEMENTED DURING CONSTRUCTION ACTIVITIES SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

CONSTRUCTION WASTE SHALL BE PROPERLY DISPOSED OF. THIS INCLUDES ALL CONSTRUCTION SITE WASTE MATERIAL, SANITARY WASTE, AND WASTE FROM VEHICLE TRACKING OF SEDIMENTS. THE CONTRACTOR SHALL ENSURE THAT NO MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, BURNED, OR DISCHARGED TO THE WATERS OF THE STATE. VEHICLES HAULING MATERIAL AWAY FROM THE SITE SHALL BE COVERED WITH A TARPULIN TO PREVENT BLOWING DEBRIS.

DUST CONTROL SHALL BE ACCOMPLISHED BY ONE OR MORE OF THE FOLLOWING METHODS:

COVERING 30% OR MORE OF THE SOIL SURFACE WITH A NON-ERODIBLE MATERIAL.

ROUGHENING (EQUIPMENT TRACKING) THE SOIL TO PRODUCE RIDGES PERPENDICULAR TO THE PREVAILING WIND. RIDGES SHALL BE AT LEAST SIX (6) INCHES IN HEIGHT.

FREQUENT WATERING OF EXCAVATION AND FILL AREAS.

PROVIDING GRAVEL OR PAVING AT ENTRANCE/EXIT DRIVES, PARKING AREAS AND TRANSIT PATHS.

STREET SWEEPING SHALL BE PERFORMED TO IMMEDIATELY REMOVE ANY SEDIMENT TRACKED ON PAVEMENTS.

4.0 EROSION AND SEDIMENT STRUCTURAL PRACTICE MAINTENANCE

THE FOLLOWING MAINTENANCE PRACTICES SHALL BE USED TO MAINTAIN, IN GOOD AND EFFECTIVE OPERATING CONDITIONS, VEGETATION, EROSION AND SEDIMENT CONTROL MEASURES, AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THIS PLAN. UPON IDENTIFICATION, DEFICIENCIES IN STORMWATER CONTROLS SHALL BE ADDRESSED IMMEDIATELY. THE MAINTENANCE PROCEDURES FOR THIS DEVELOPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO THE BELOW.

SILT FENCE - REPAIR OR REPLACE ANY DAMAGED FILTER FABRIC AND/OR STAKES. REMOVE ACCUMULATED SEDIMENT WHEN IT HAS REACHED ONE-HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

CONSTRUCTION ENTRANCE - AS NEEDED, ADD STONE TO MAINTAIN CONSTRUCTION ENTRANCE DIMENSIONS AND EFFECTIVENESS.

DITCH CHECK - RE-SECURE STAKES; ADJUST OR REPOSITION BALES TO ADDRESS PROPER FLOW OF STORMWATER; AND REMOVE ACCUMULATED SEDIMENT WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE BALE.

EROSION CONTROL MATTING - REPAIR MATTING IMMEDIATELY IF INSPECTION REVEALS BREACHED OR FAILED CONDITIONS. REPAIR AND RE-GRADE SOIL WHERE CHANNELIZATION HAS OCCURRED.

INLET PROTECTION - CLEAN, REPAIR OR REPLACE FILTER FABRIC AND/OR STONE WHEN CONTROL MEASURE IS CLOGGED. INLET FILTER BAGS SHALL BE REPLACED ONCE ONE-HALF FULL OF SEDIMENT.

OUTLET PROTECTION - CLEAN, REPAIR OR REPLACE FILTER FABRIC, TURF REINFORCEMENT MATTING AND/OR STONE WHEN CONTROL MEASURE IS ONE-HALF FULL OF SEDIMENT.

5.0 INSPECTION

INSPECTIONS SHALL BE COMPLETED WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A RAINFALL EVENT THAT IS ONE-HALF INCH OR GREATER OR EQUIVALENT SNOWFALL, OR AT A MINIMUM ONCE EVERY SEVEN (7) CALENDAR DAYS. INSPECTIONS SHALL BE UNDERTAKEN BY QUALIFIED PERSONNEL PROVIDED BY THE CONTRACTOR, AND SHALL INCLUDE: DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. A STORMWATER POLLUTION PREVENTION PLAN INSPECTION REPORT SHALL BE COMPLETED AND ADDED TO THE SWPPP. RAINFALL SHALL BE RECORDED ON THE SWPPP RAINFALL LOG. CONTRACTOR SHALL IMMEDIATELY ARRANGE FOR REPAIR OR REPLACEMENT OF ANY DAMAGED OR DEFICIENT CONTROL MEASURES OBSERVED DURING THE INSPECTION.

QUALIFIED PERSONNEL MEANS A PERSON KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROL MEASURES, SUCH AS A LICENSED PROFESSIONAL ENGINEER, A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL, A CERTIFIED EROSION SEDIMENT OR STORMWATER INSPECTOR, OR OTHER TRAINED INDIVIDUAL.

6.0 SPILL PREVENTION

6.1 GENERAL MATERIAL MANAGEMENT PRACTICES

THE GOOD HOUSEKEEPING PRACTICES LISTED BELOW SHALL BE FOLLOWED THROUGHOUT THE CONSTRUCTION PROJECT.

1. CONTRACTOR SHALL STORE ONLY ENOUGH PRODUCTS REQUIRED TO COMPLETE THIS PROJECT.
2. ALL MATERIAL SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR ORIGINAL CONTAINERS CONTAINING MANUFACTURER'S LABEL.
3. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
4. MATERIALS REQUIRED TO HAVE A MATERIAL SAFETY DATA SHEET (MSDS) SHALL HAVE A COPY STORED IN THE PROJECT'S MSDS DATABASE.

6.2 SPILL CONTROL PRACTICES

THE PRACTICES LISTED BELOW SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP.

1. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE MAINTAINED ONSITE.
2. IMMEDIATELY UPON DISCOVERY, ALL SPILLS SHALL BE CLEANED UP ACCORDING TO THE MANUFACTURERS' RECOMMENDED METHODS.
3. PERSONNEL CLEANING UP A SPILL SHALL USE PERSONAL PROTECTIVE EQUIPMENT.
4. IMMEDIATELY UPON DISCOVERY, SPILLS OF TOXIC OR HAZARDOUS MATERIALS SHALL BE REPORTED TO THE OWNER AND GENERAL CONTRACTOR.
5. NOTIFICATION AND REPORTING TO THE APPROPRIATE FEDERAL, STATE, AND LOCAL GOVERNMENT AGENCIES SHALL BE MADE AS REQUIRED.

GENERAL INFORMATION:

THIS STORMWATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO FULFILL ONE OF THE REQUIREMENTS OF THE GENERAL ENVIRONMENTAL PROTECTION AGENCY (EPA) NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (WISCONSIN POLLUTION DISCHARGE ELIMINATION SYSTEM "WPDES") FOR THE DISCHARGE OF STORMWATER ASSOCIATED WITH CONSTRUCTION PROJECTS DISTURBING ONE ACRE OR MORE. THE OWNER AND CONTRACTORS SHALL COMPLY WITH ALL REQUIREMENTS OF THE WPDES FOR ALL SUCH CONSTRUCTION PROJECTS. THE STORMWATER DISCHARGES ASSOCIATED WITH THE CONSTRUCTION ACTIVITY FROM THIS SITE ARE SUBJECT TO THE CONDITIONS AND REQUIREMENTS OF THE PERMITS.

THE EXECUTED OWNER CERTIFICATION AND THE CONTRACTOR CERTIFICATIONS SHALL BE KEPT ONSITE WITH THE APPROVED PLANS.

SWPPP AVAILABILITY:

THE OWNER SHALL RETAIN A COPY OF THE SWPPP AT THE CONSTRUCTION SITE FROM THE DATE OF THE PROJECT INITIATION TO THE DATE OF FINAL STABILIZATION.

KEEPING PLANS CURRENT:

THE CONTRACTOR SHALL AMEND THE PLAN WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS TO THE WATERS OF THE STATE AND WHICH HAS NOT OTHERWISE BEEN ADDRESSED IN THE PLAN OR IF THE PLAN PROVES TO BE INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY CONTROLLING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION SITE ACTIVITY. IN ADDITION, THE PLAN SHALL BE AMENDED TO IDENTIFY ANY NEW CONTRACTOR AND/OR SUBCONTRACTOR THAT WILL IMPLEMENT A MEASURE OF THE PLAN. AMENDMENTS TO THE PLAN MAY BE REQUIRED BY THE MUNICIPALITY, OWNER, OR OTHER REVIEWING AGENCY. COPIES OF THE AMENDMENTS SHALL BE KEPT ONSITE AS PART OF THE SWPPP.

RETENTION OF RECORDS:

THE OWNER SHALL RETAIN COPIES OF THIS AND ALL REPORTS AND NOTICES REQUIRED BY THIS PERMIT, AND RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT, FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE PERMIT COVERAGE EXPIRES OR IS TERMINATED. THIS PERIOD MAY BE EXTENDED BY THE REQUEST OF THE AGENCY AT ANY TIME. IN ADDITION, THE OWNER SHALL RETAIN A COPY OF THE PLAN REQUIRED BY THIS PERMIT AT THE CONSTRUCTION SITE FROM THE DATE OF PROJECT INITIATION TO THE DATE OF FINAL STABILIZATION.

A NOTICE OF INTENT (NOI) APPLICATION MUST BE COMPLETED AND INCORPORATED INTO THE SWPPP.

WPDES NOTICE OF TERMINATION GUIDANCE:

WHEN A SITE HAS BEEN FINALLY STABILIZED AND ALL STORMWATER DISCHARGES FROM CONSTRUCTION SITES THAT ARE AUTHORIZED BY THE PERMIT ARE ELIMINATED, THE OWNER OF THE FACILITY MUST SUBMIT A COMPLETED NOTICE OF TERMINATION THAT IS SIGNED IN ACCORDANCE WITH THE PERMIT. CONTRACTOR SHALL SUBMIT A COMPLETED NOTICE OF TERMINATION TO OWNER FOR EXECUTION PRIOR TO THEIR FINAL PAY APPLICATION REQUEST.

CONTROL MEASURE GROUP	CONTROL MEASURE	CONTROL MEASURE CHARACTERISTICS
VEGETATIVE SOIL COVER	TEMPORARY SEEDING	PROVIDES QUICK TEMPORARY COVER TO CONTROL EROSION WHEN PERMANENT SEEDING IS NOT DESIRED ON TIME OF YEAR IS INAPPROPRIATE.
	PERMANENT SEEDING	PROVIDES PERMANENT VEGETATIVE COVER TO CONTROL EROSION. FILTERS SEDIMENT FROM WATER. MAY BE PART OF FINAL LANDSCAPE PLAN.
NON VEGETATIVE SOIL COVER	AGGREGATE COVER	PROVIDES TEMPORARY COVER ON ROADS AND PARKING LOTS AND AREAS WHERE VEGETATION CANNOT BE ESTABLISHED. PREVENTS MUD FROM BEING PICKED UP AND TRANSPORTED OFF-SITE.
	PAVING	PROVIDES PERMANENT COVER ON PARKING LOTS AND ROADS OR OTHER AREAS WHERE VEGETATION CANNOT BE ESTABLISHED.
DIVERSIONS	DIVERSION BERM / SWALE	DIVERTS RUNOFF TO A SEDIMENT TRAP OR OTHER CONTROL.
ENCLOSED DRAINAGE	STORM SEWER	CONVEYS SEDIMENT LADEN WATER TO A SEDIMENT BASIN.
OUTLETS	APRON ENDWALL OR RIPRAP	PROTECTS DOWNSTREAM CHANNEL FROM HIGH VELOCITY OF FLOW DISCHARGING FROM STRUCTURE.
SEDIMENT BASINS	TEMPORARY SEDIMENT TRAP	CONSTRUCTED TO REMOVE SILTATION FROM RUNOFF FROM SITE DIVERSION BERMS/SWALES AND IN OVERLAND FLOOD ROUTE. CAN BE CONVERTED TO PERMANENT SEDIMENT BASIN.
	SILT FENCE	PLACED DOWN SLOPE OF DISTURBED AREA TO KEEP RUNOFF CONTAINED ONSITE.
SEDIMENT FILTERS	INLET PROTECTION	INSTALLED IN OPEN GRATE STRUCTURES TO COLLECT SEDIMENT.
	DITCH CHECK	PLACED IN DRAINAGE CHANNELS TO FILTER SEDIMENT FROM RUNOFF.
MUD AND DUST CONTROL	CONSTRUCTION ENTRANCE	REDUCES SOIL EROSION POLLUTANTS BEING TRANSPORTED OFF-SITE.
	STREET SWEEPING	REDUCES POLLUTANTS TRACKED FROM CONSTRUCTION SITE.
	DUST CONTROL	PREVENTS DUST FROM LEAVING CONSTRUCTION SITE.

STABILIZATION EFFECTIVENESS (TIME OF YEAR)

STABILIZATION TYPE	STABILIZATION UTILIZATION PERIODS											
	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
PERMANENT SEEDING			A	*	*	*	*	*	*			
DORMANT SEEDING	B										B	
TEMPORARY SEEDING			C	*	*	*	D	*	*			
SODDING			E	*	*	*	*	*	*			

A. KENTUCKY BLUEGRASS 90 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 30 LBS/ACRE.

B. KENTUCKY BLUEGRASS 135 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 45 LBS/ACRE + 2 TONS STRAW MULCH/ACRE.

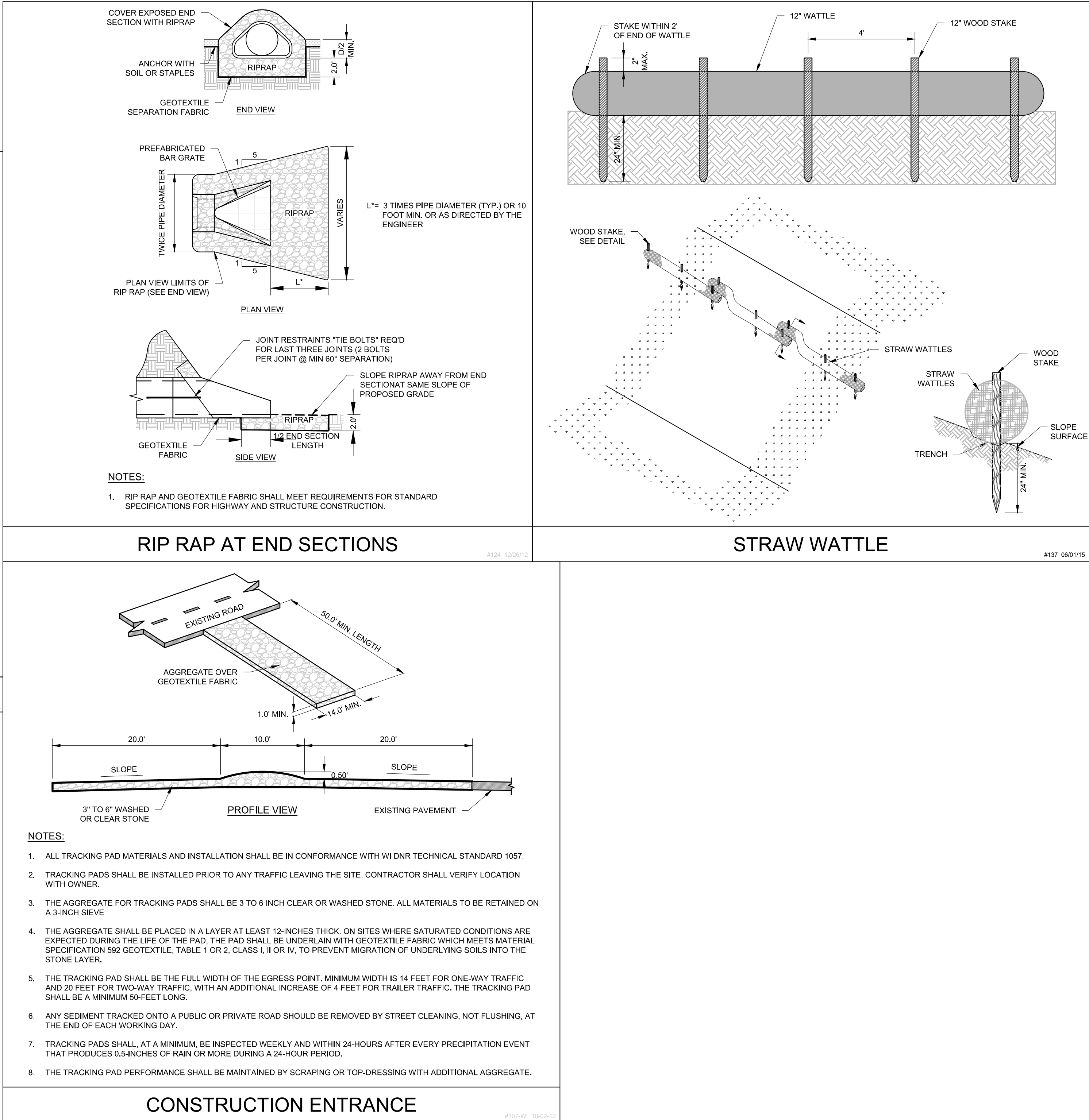
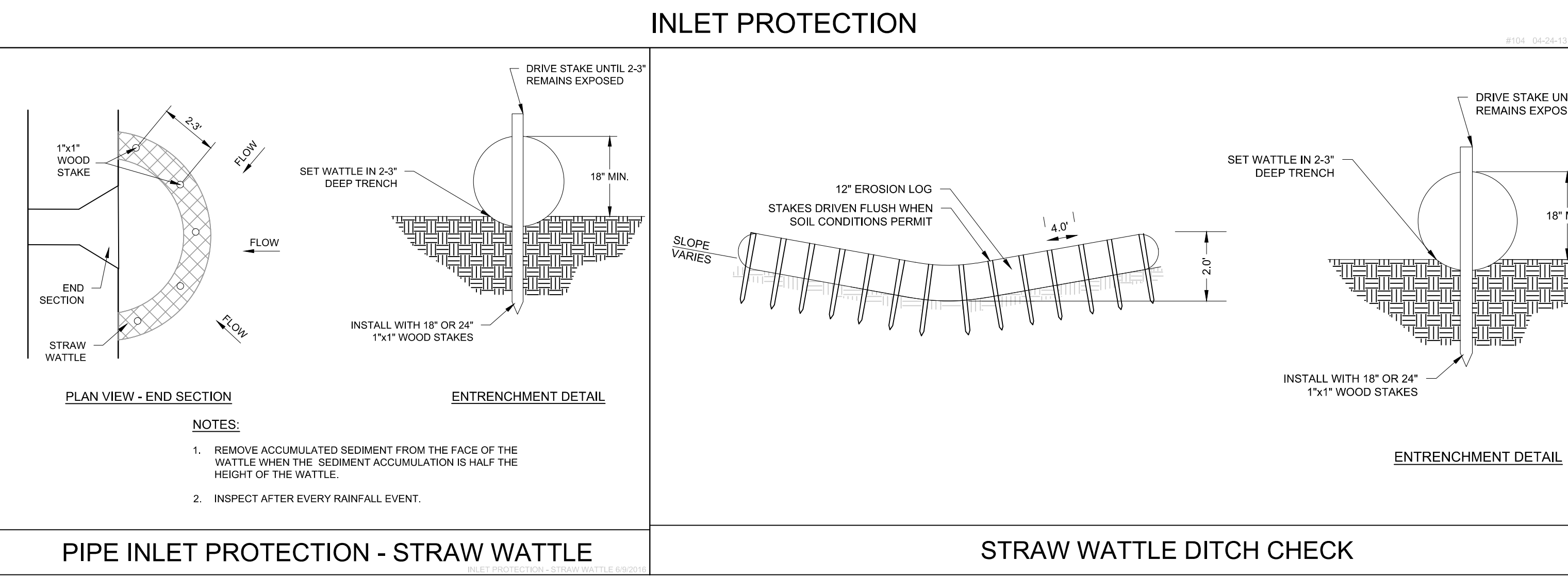
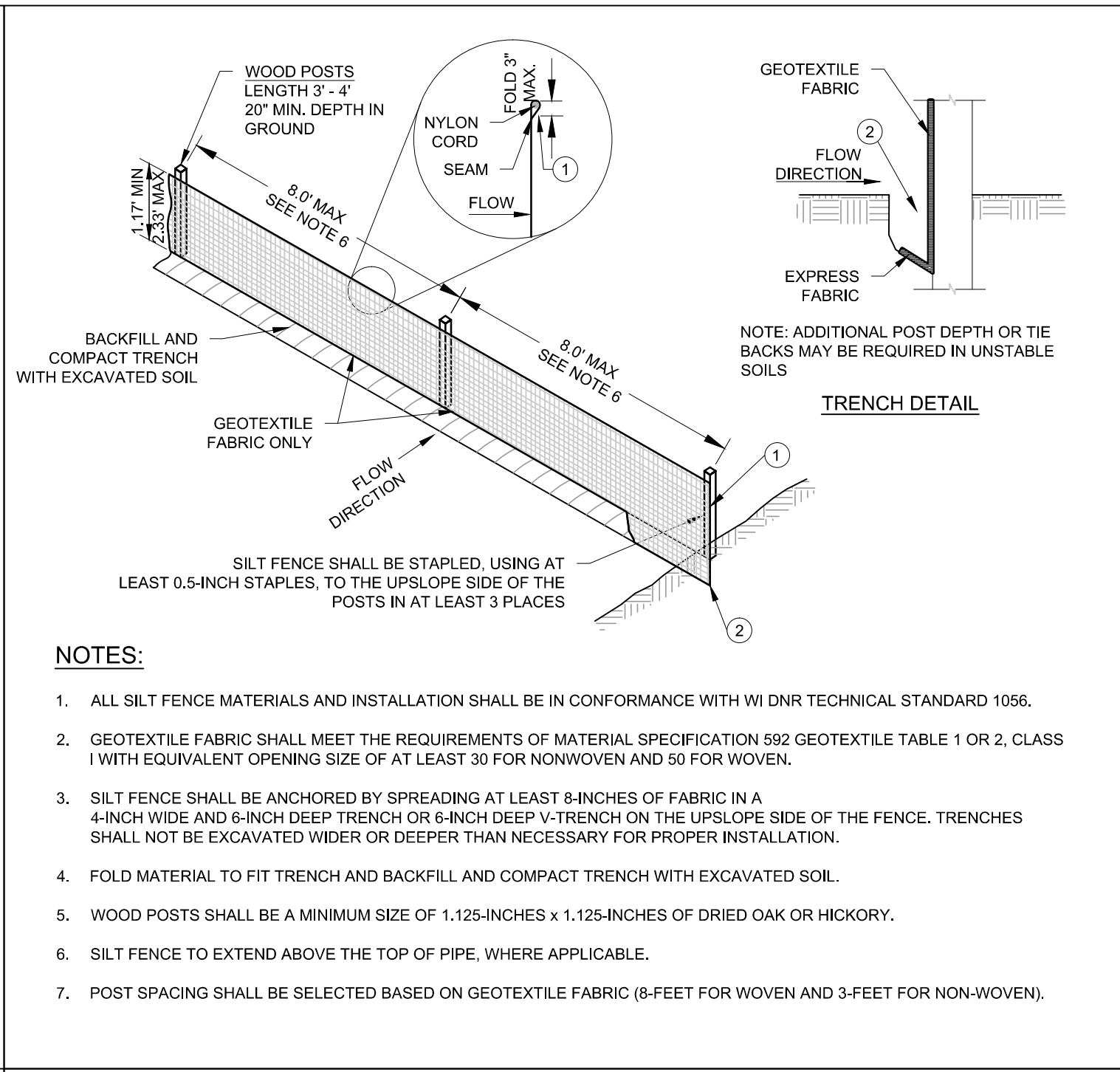
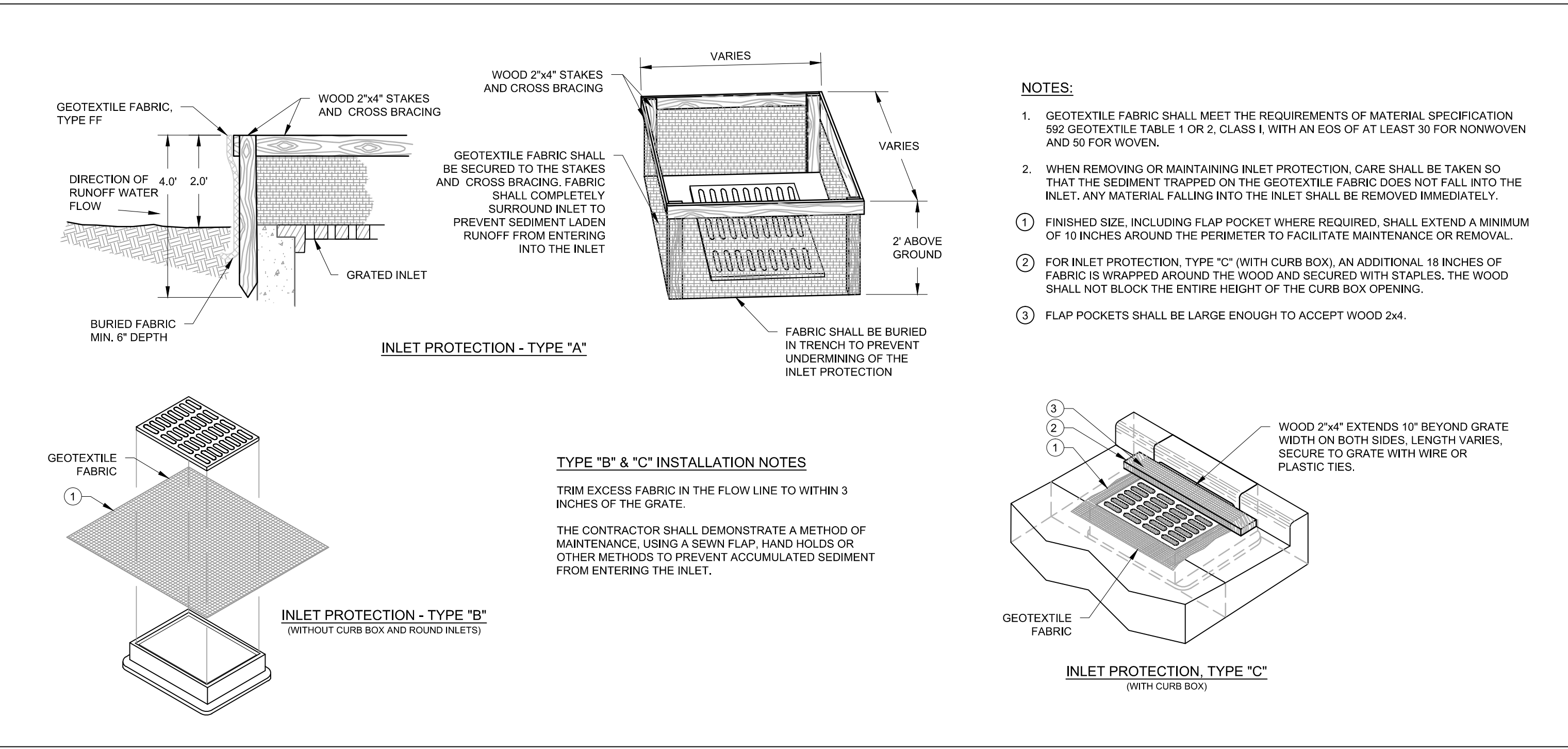
C. SPRING OATS 100 LBS/ACRE.

D. WHEAT OR CEREAL RYE 150 LBS/ACRE.

E. SOD.

F. STRAW MULCH 2 TONS/ACRE.

* IRRIGATION/WATERING REQUIRED TO SUPPORT ESTABLISHMENT AS NEEDED.



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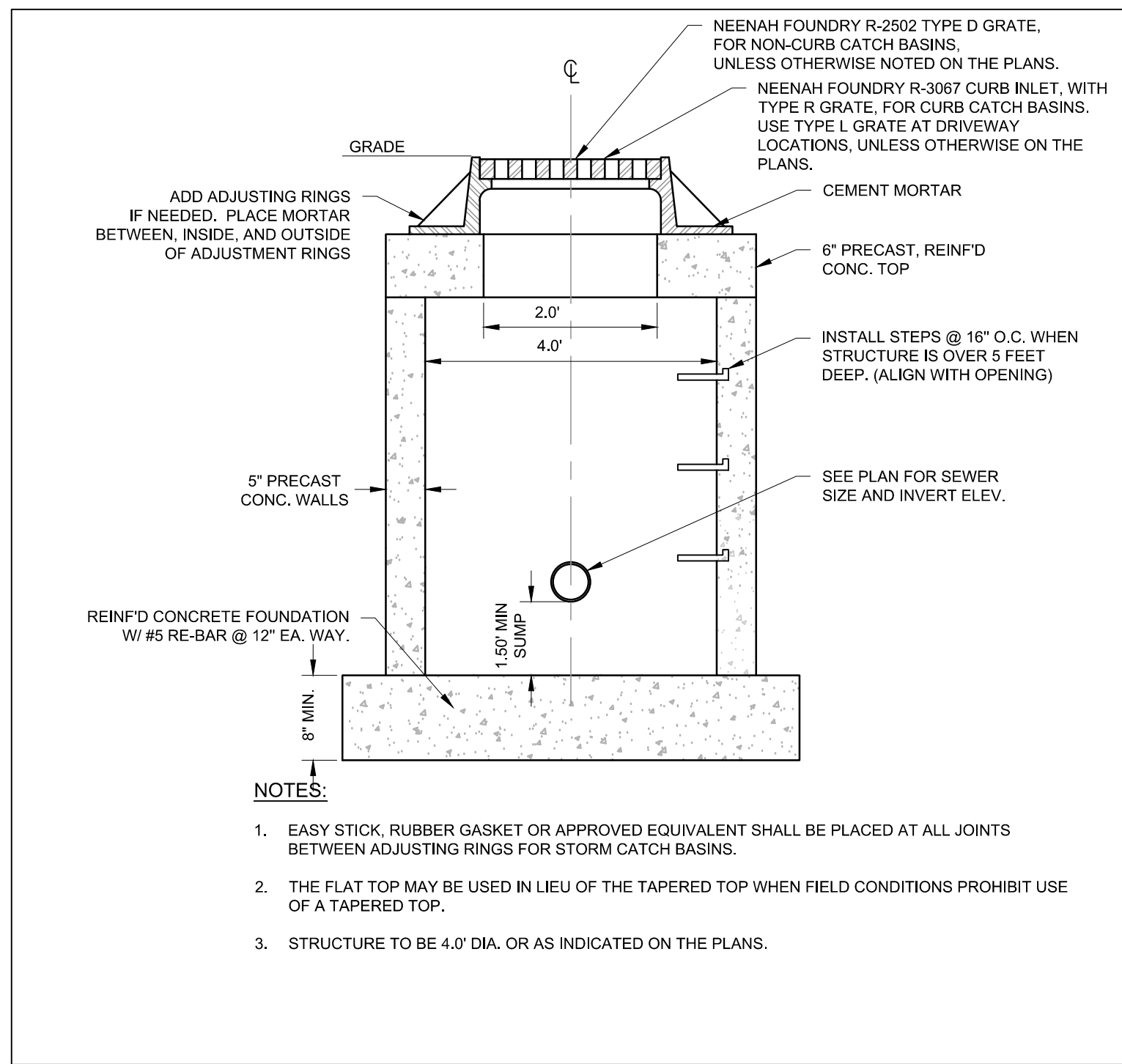
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 2. BID SET REVISIONS 6/18/18
 3. MUNICIPAL RESUBMITTAL 7/16/18
 SHEET C-19 & C-22
 PLOT DATE 7/17/18
 SCALE N.T.S.
 PEG 138 104 1296.00-WT
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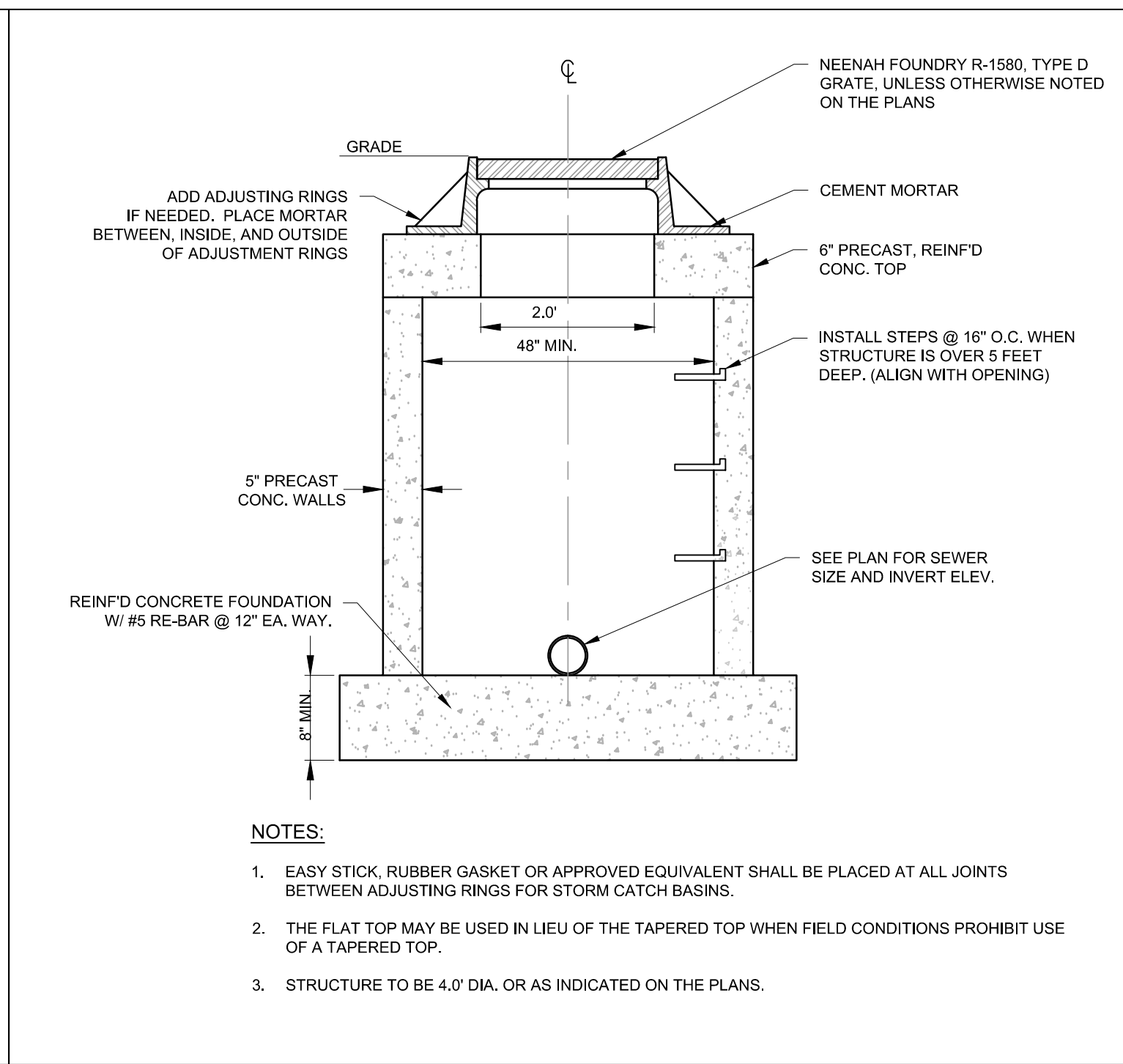
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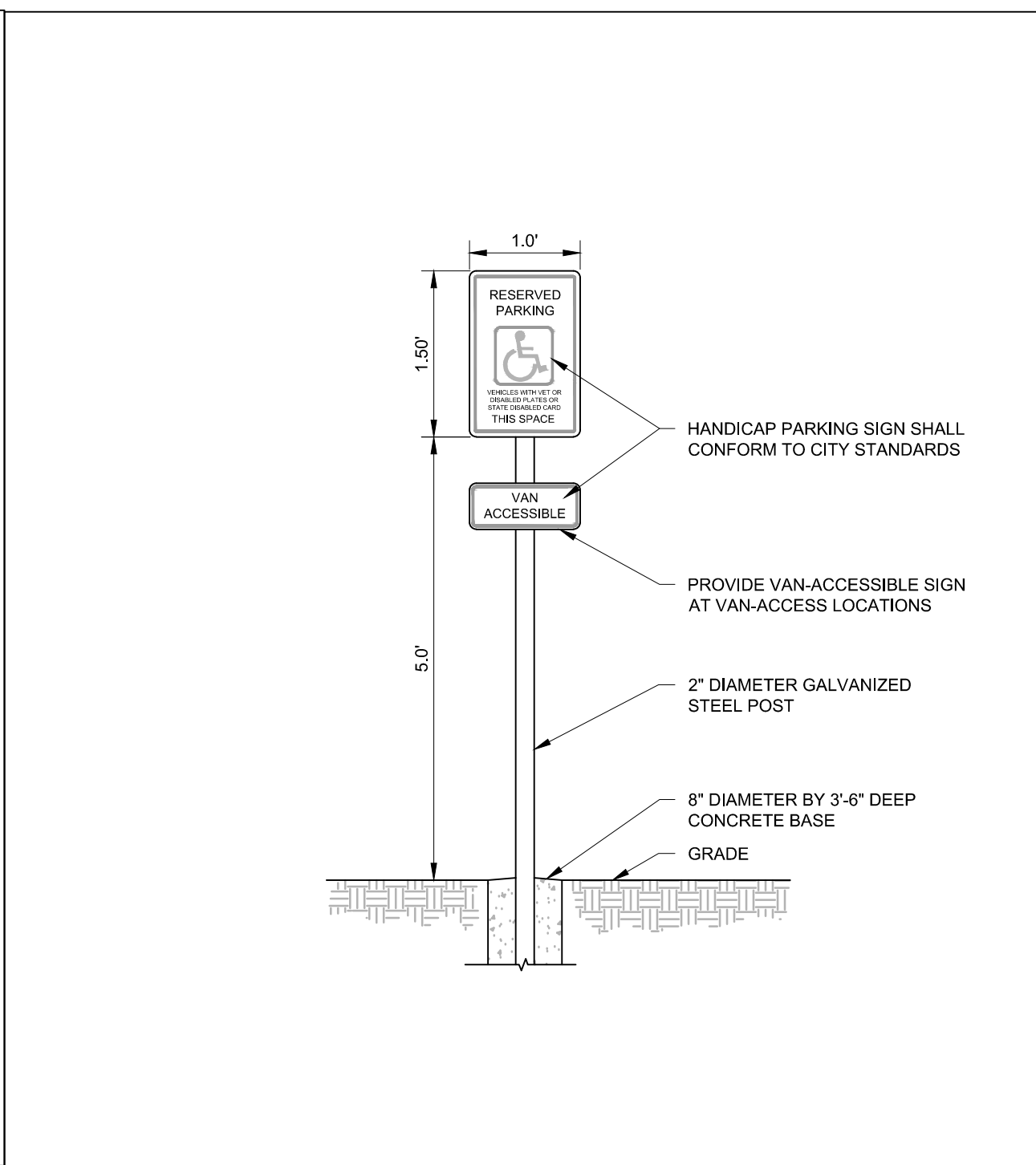
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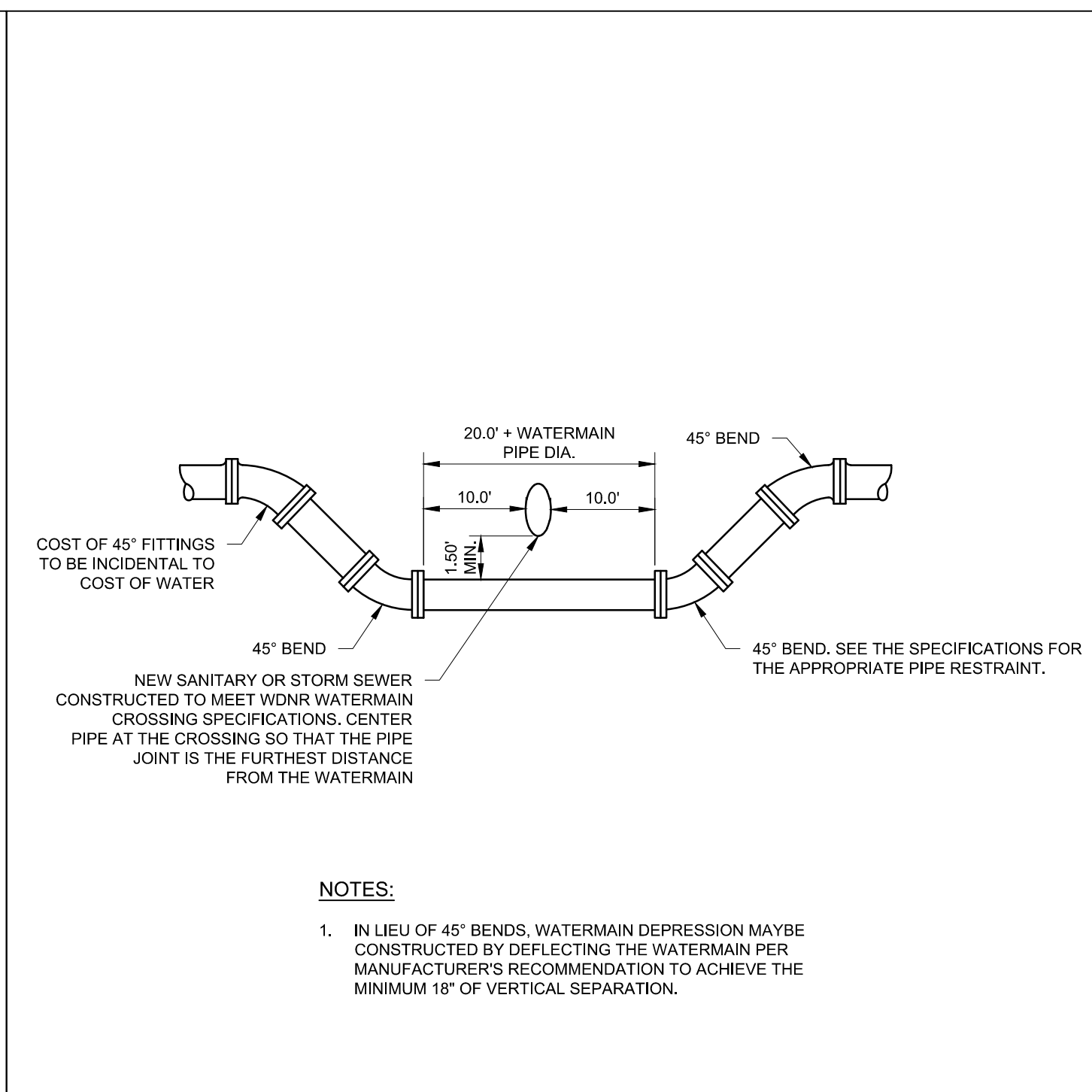
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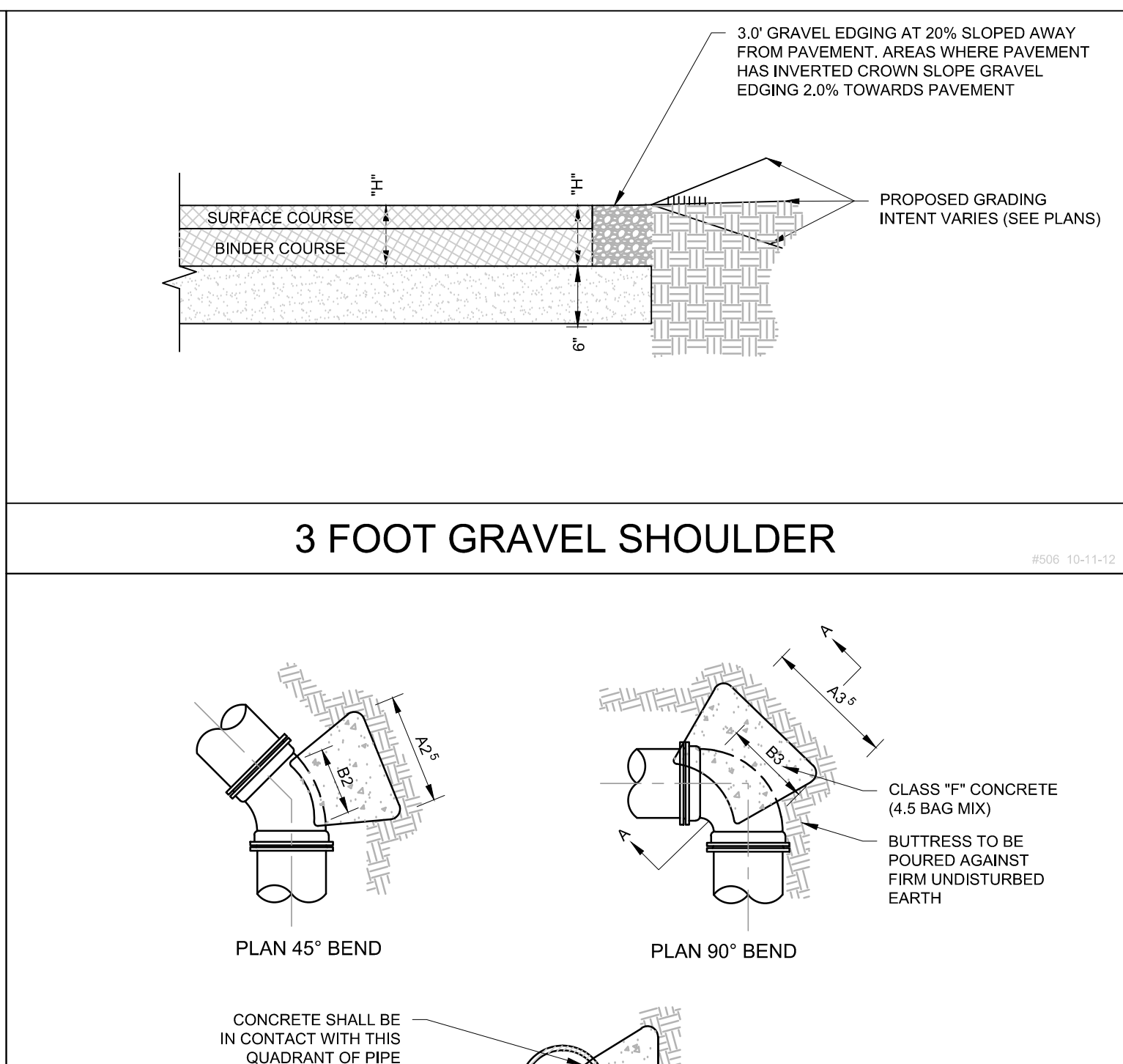
STORM SEWER MANHOLE



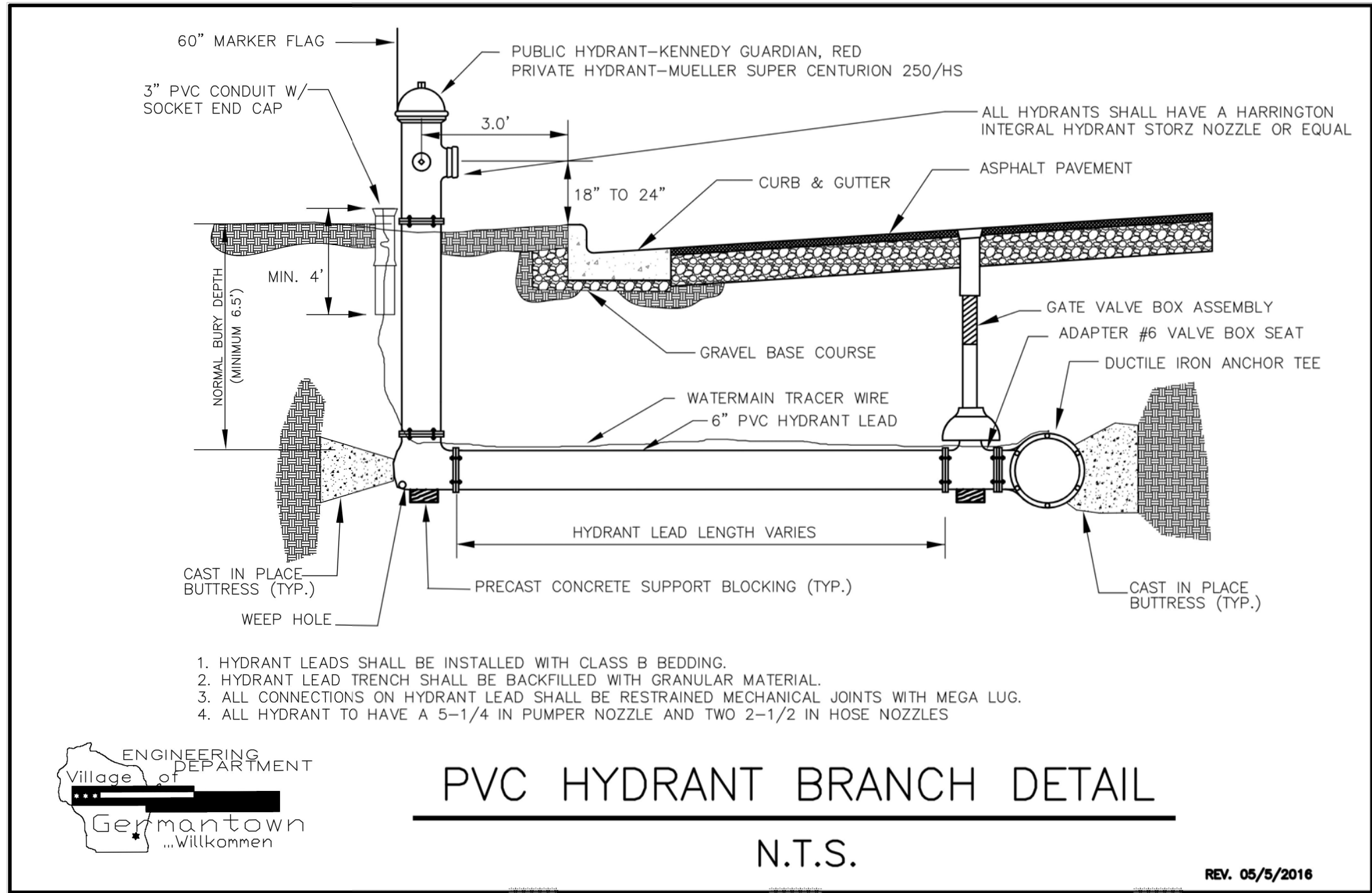
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WATER MAIN DEPRESSION

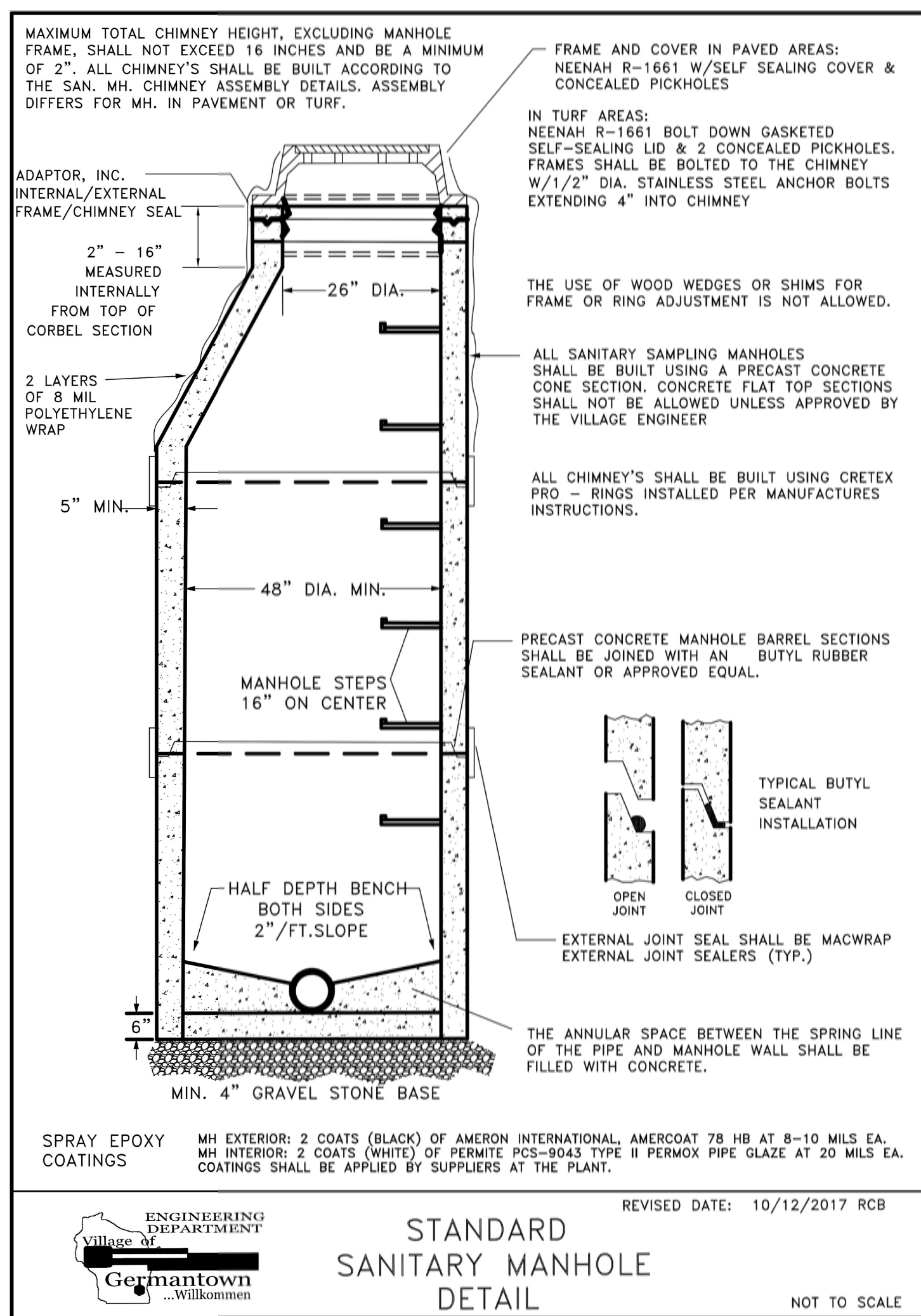


3 FOOT GRAVEL SHOULDER



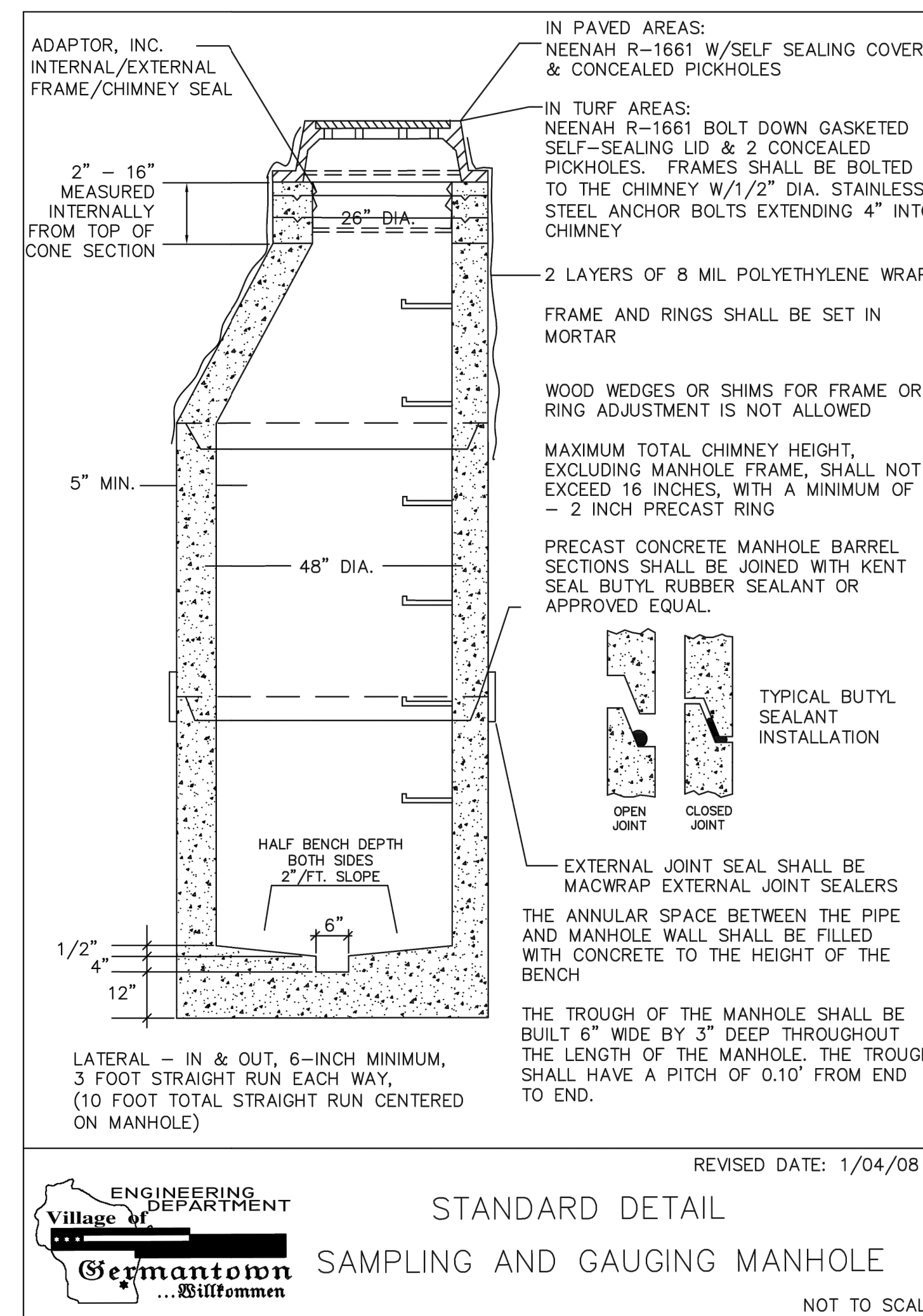
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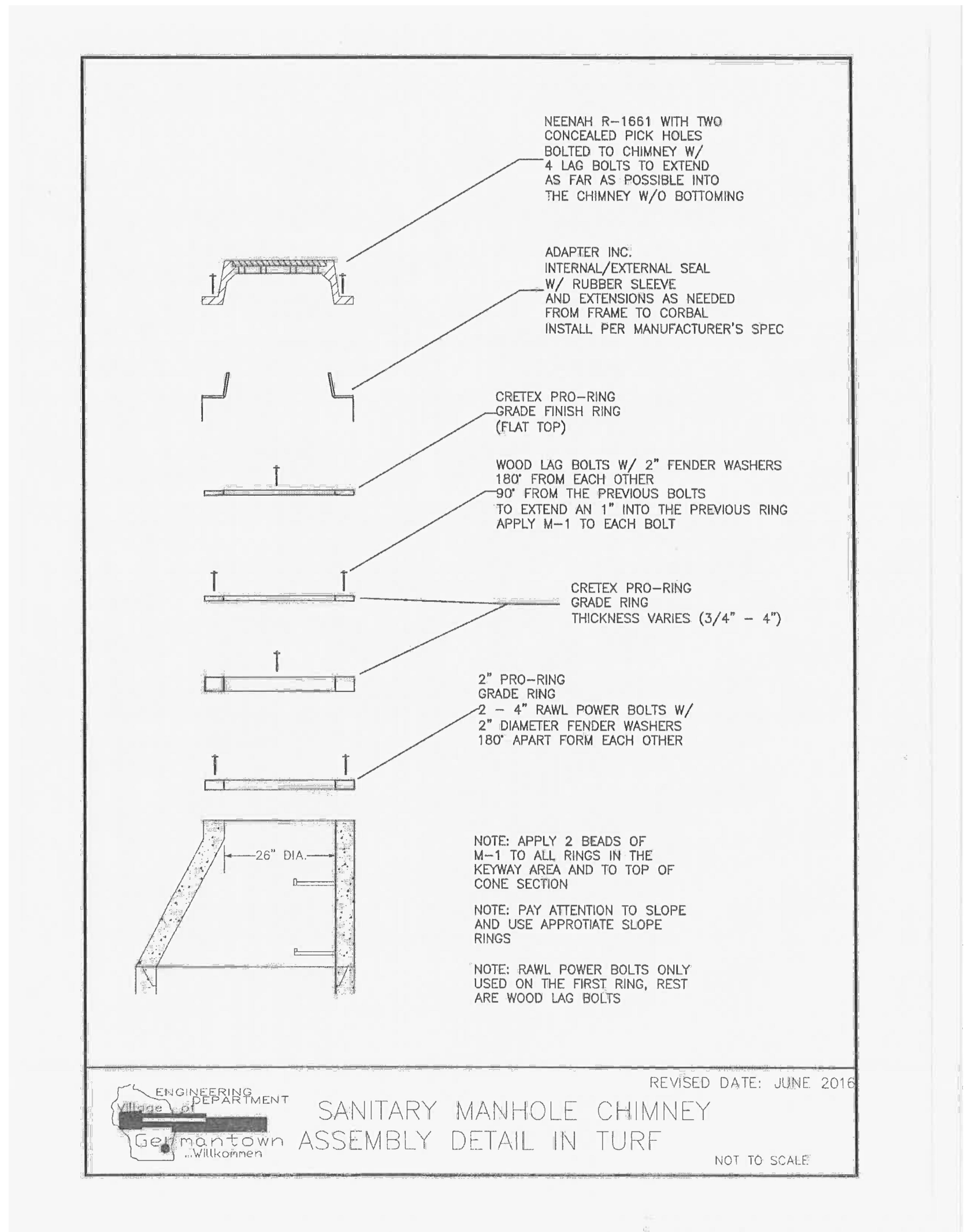
STANDARD SANITARY MANHOLE DETAIL

NOT TO SCALE



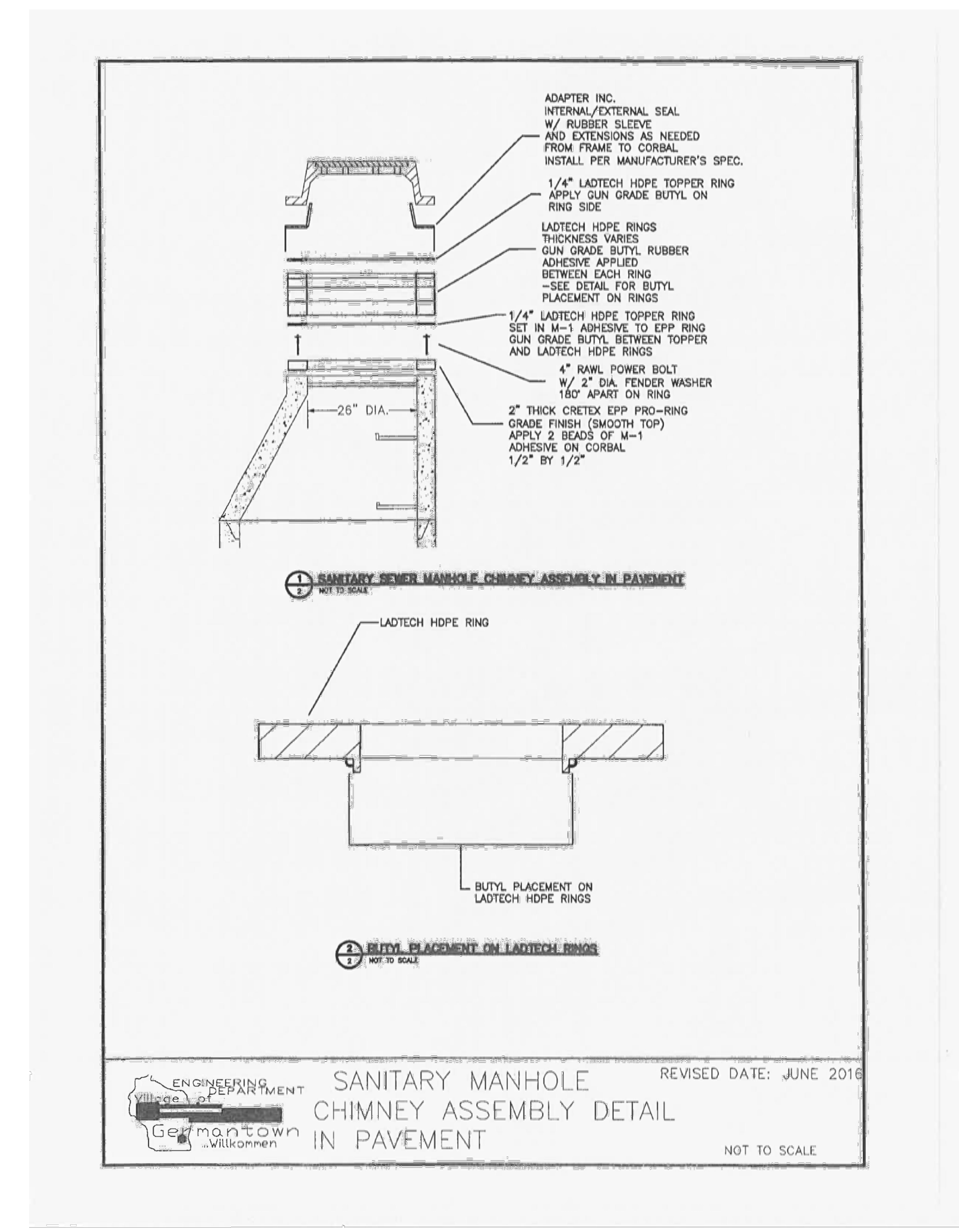
STANDARD DETAIL SAMPLING AND GAUGING MANHOLE

NOT TO SCALE



SANITARY MANHOLE CHIMNEY ASSEMBLY DETAIL IN TURF

NOT TO SCALE



SANITARY MANHOLE CHIMNEY ASSEMBLY DETAIL IN PAVEMENT

NOT TO SCALE

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DESIGNED: AJS

DRAWN: EP

DATE: 7/17/18

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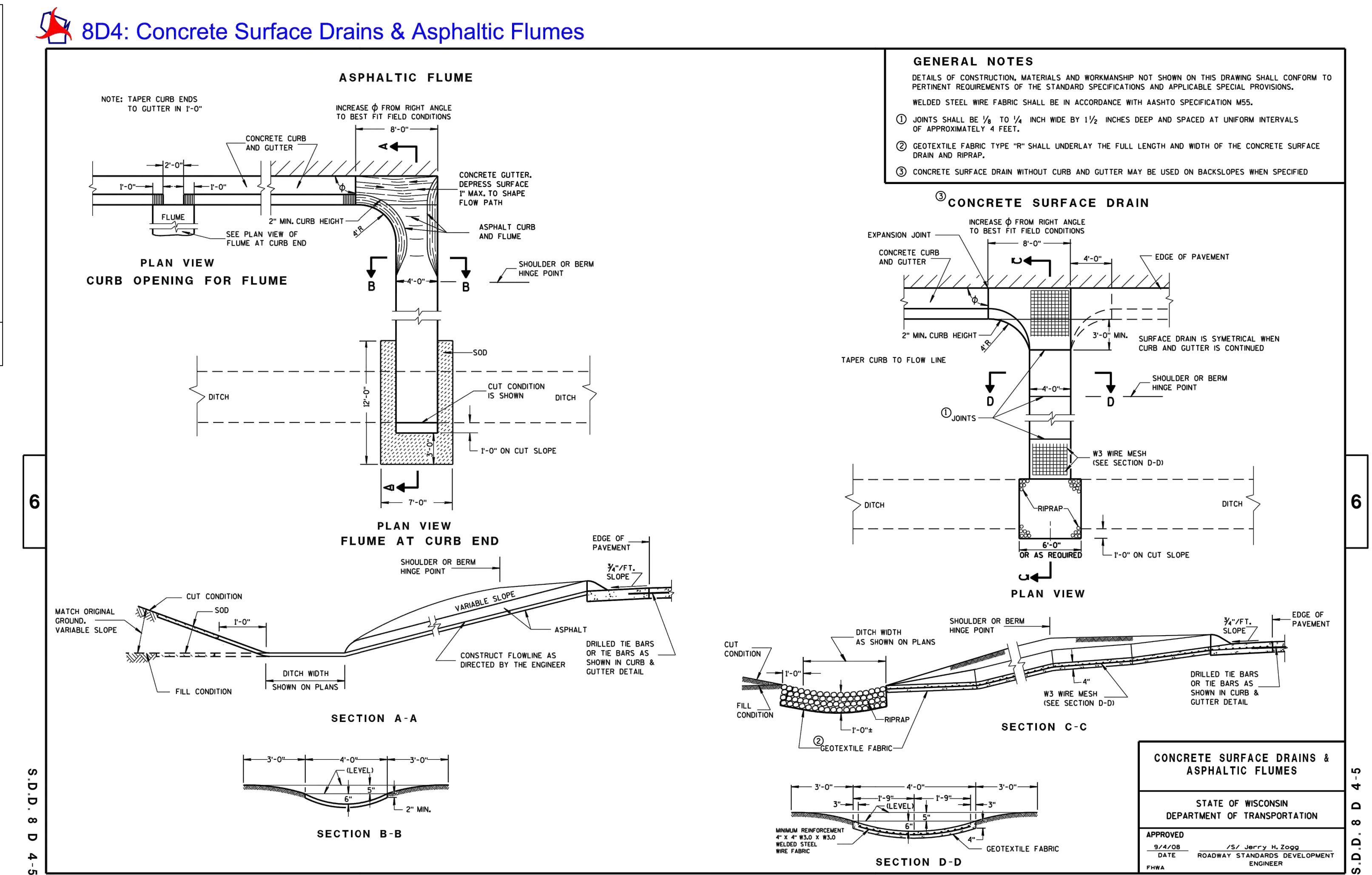
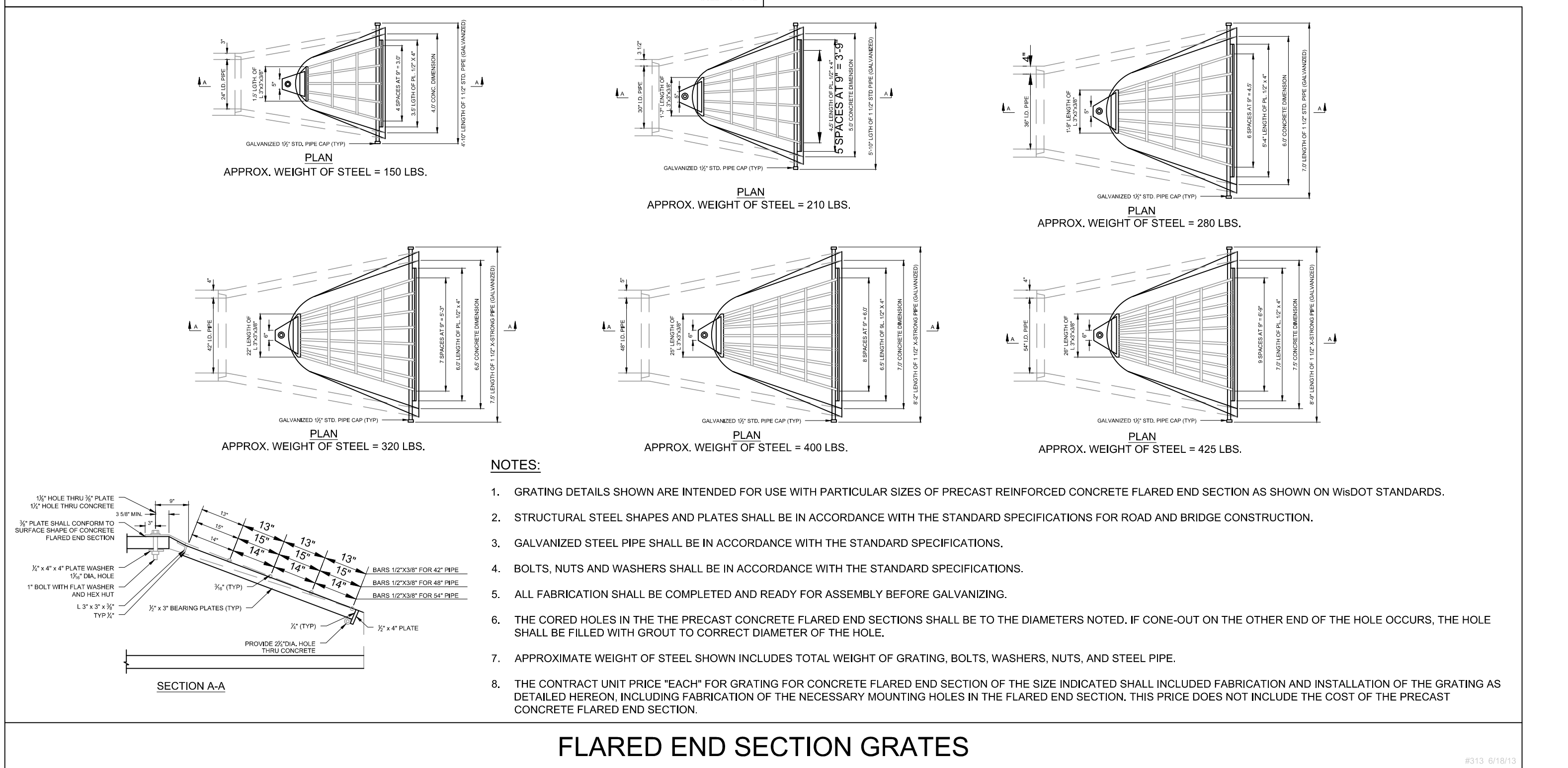
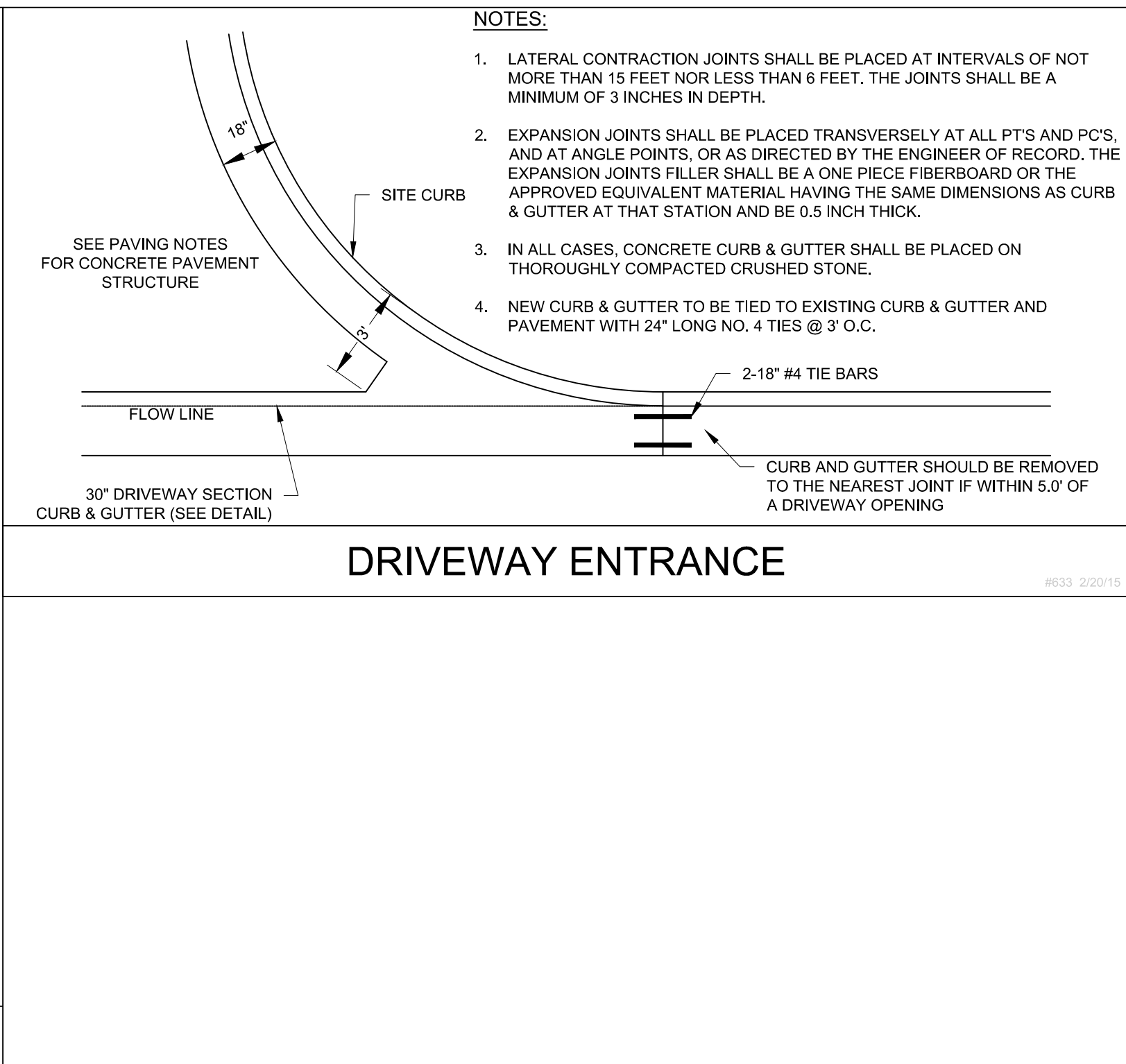
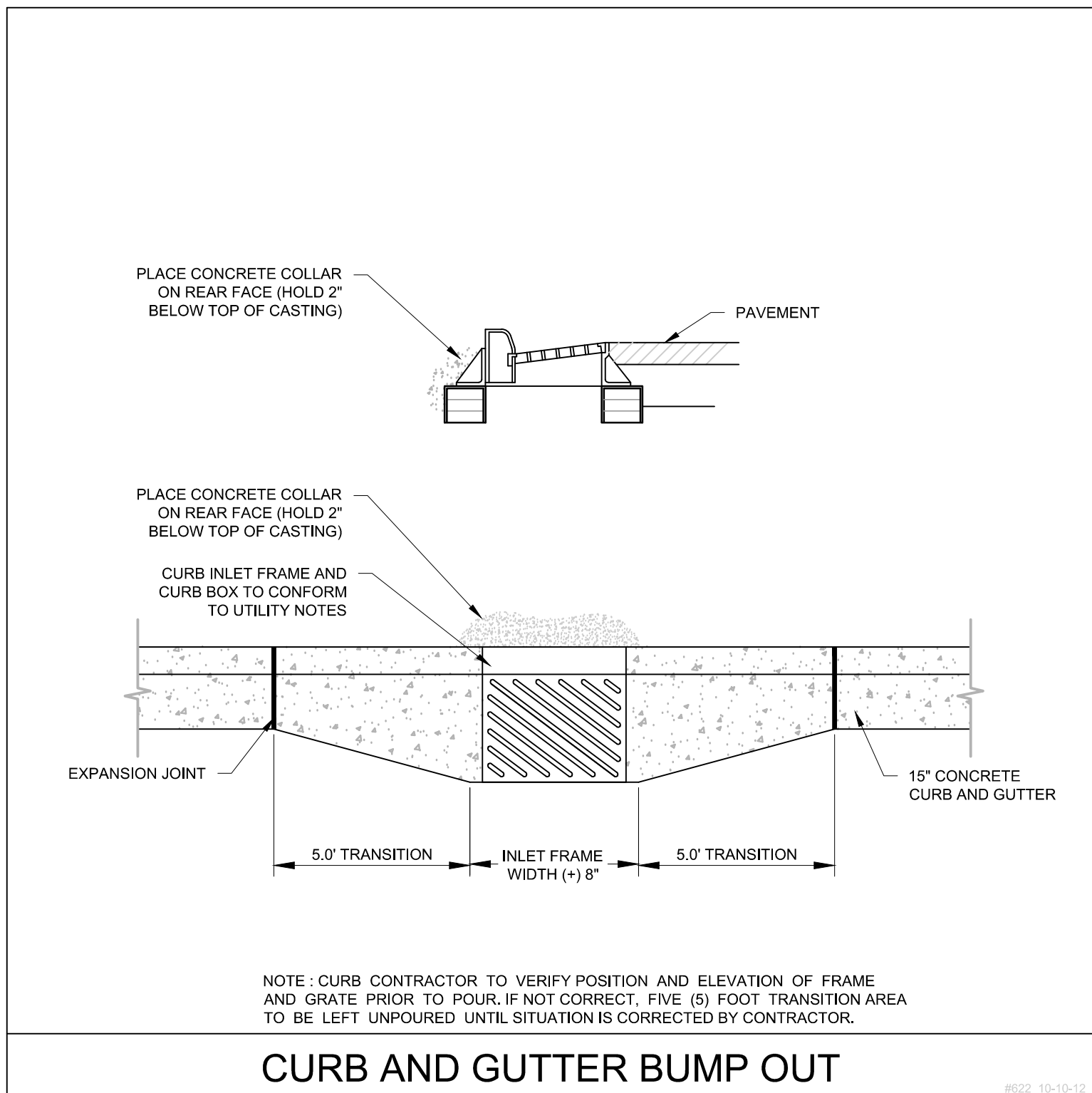
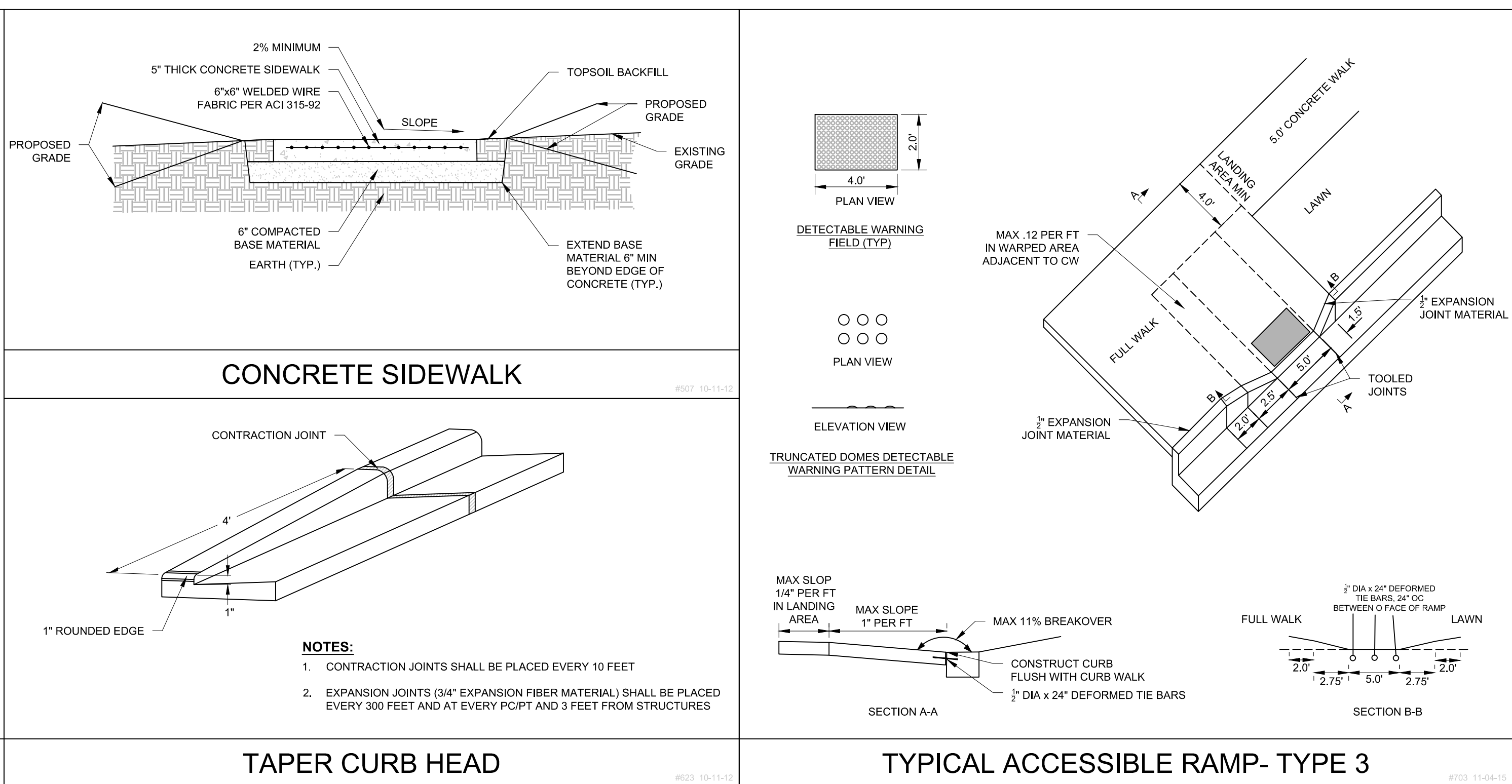
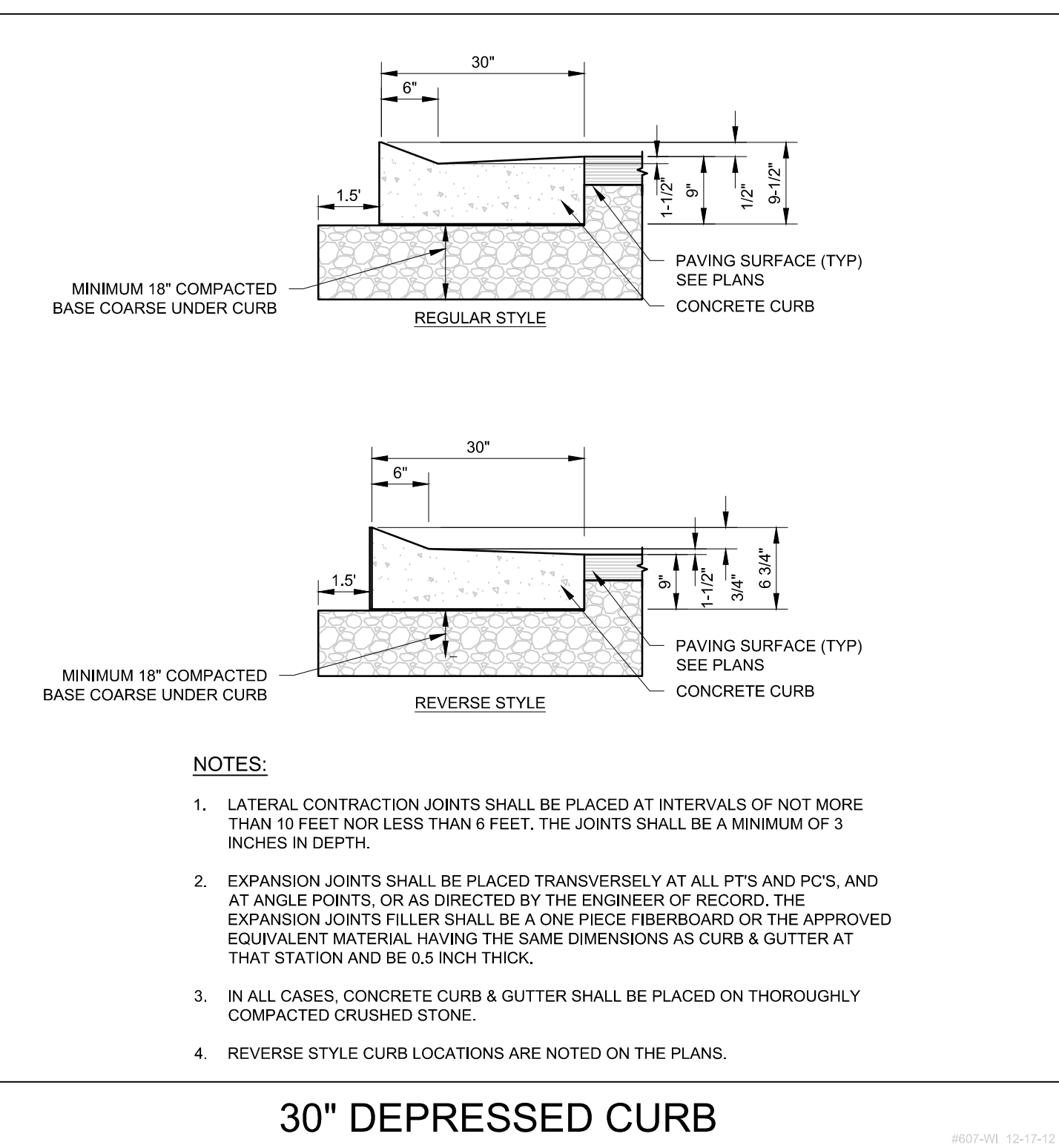
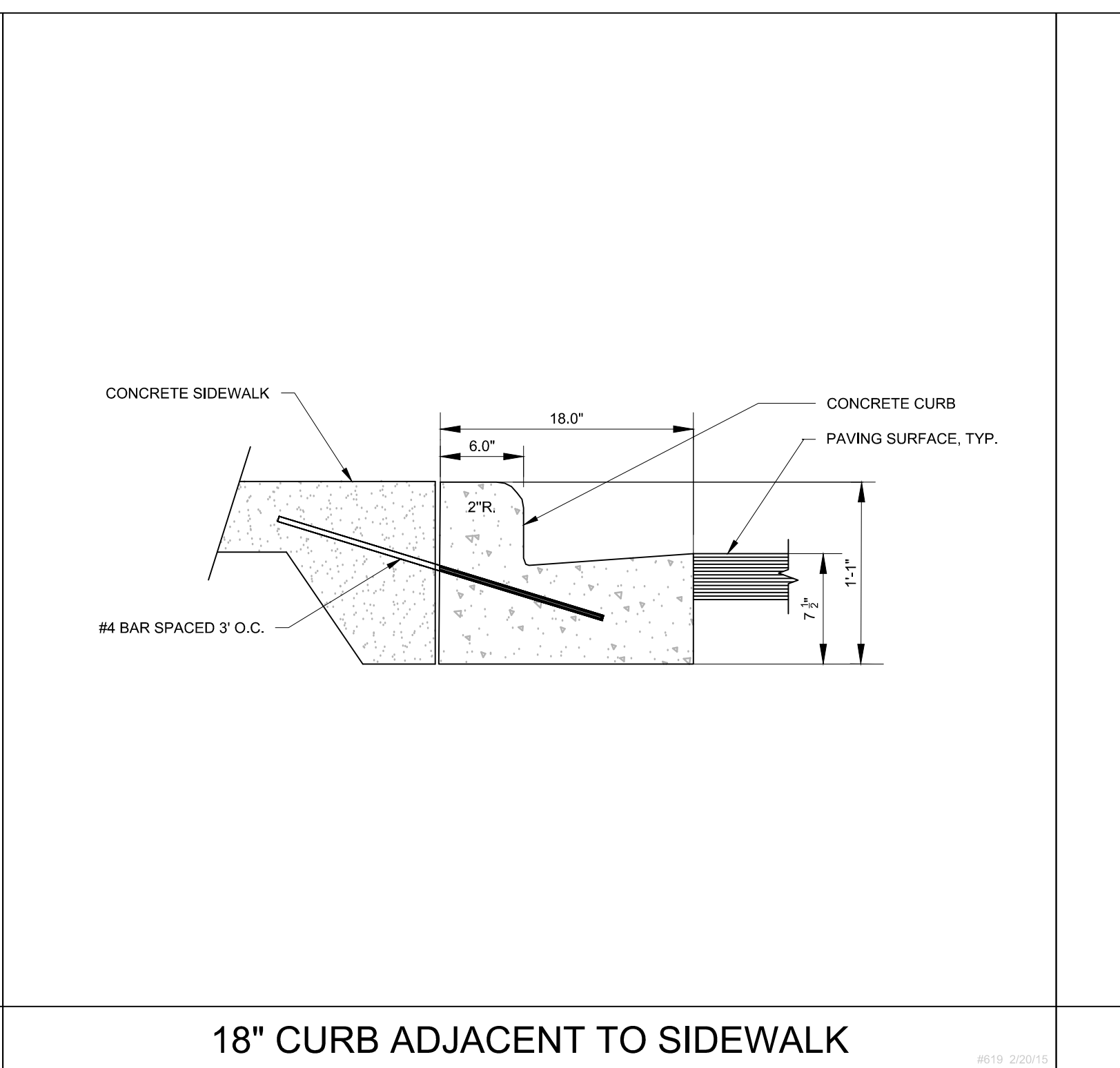
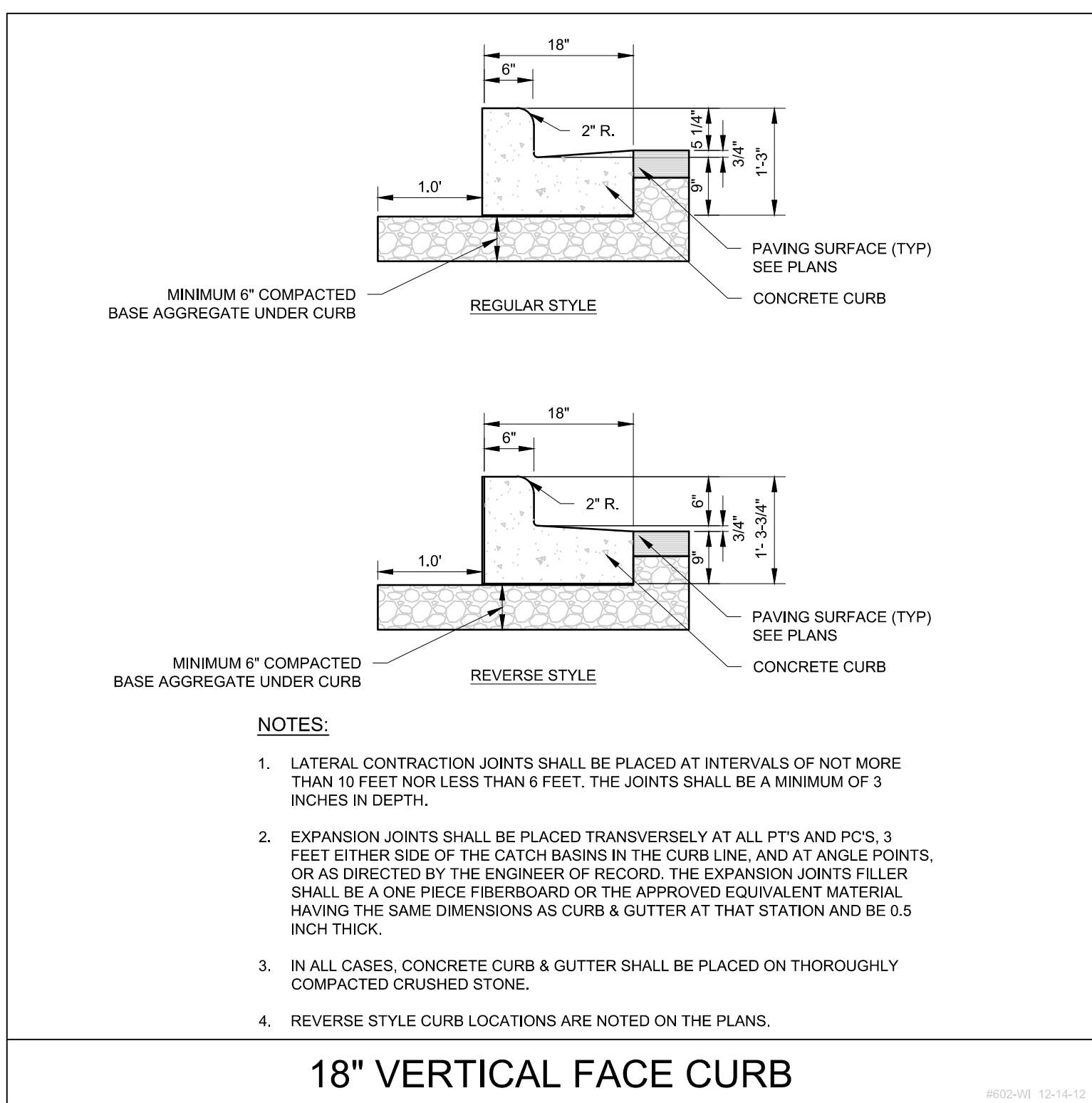
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SHEET
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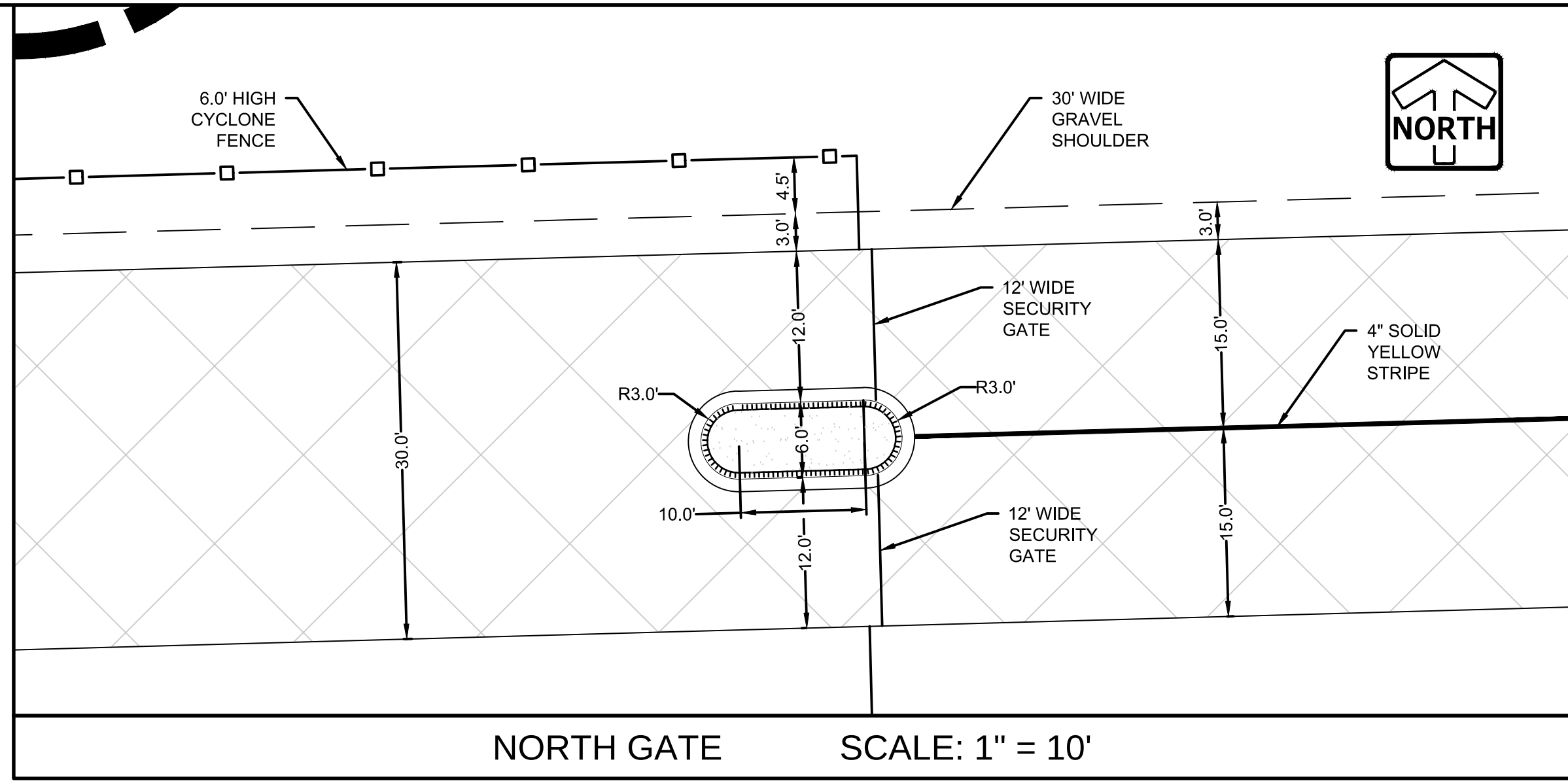
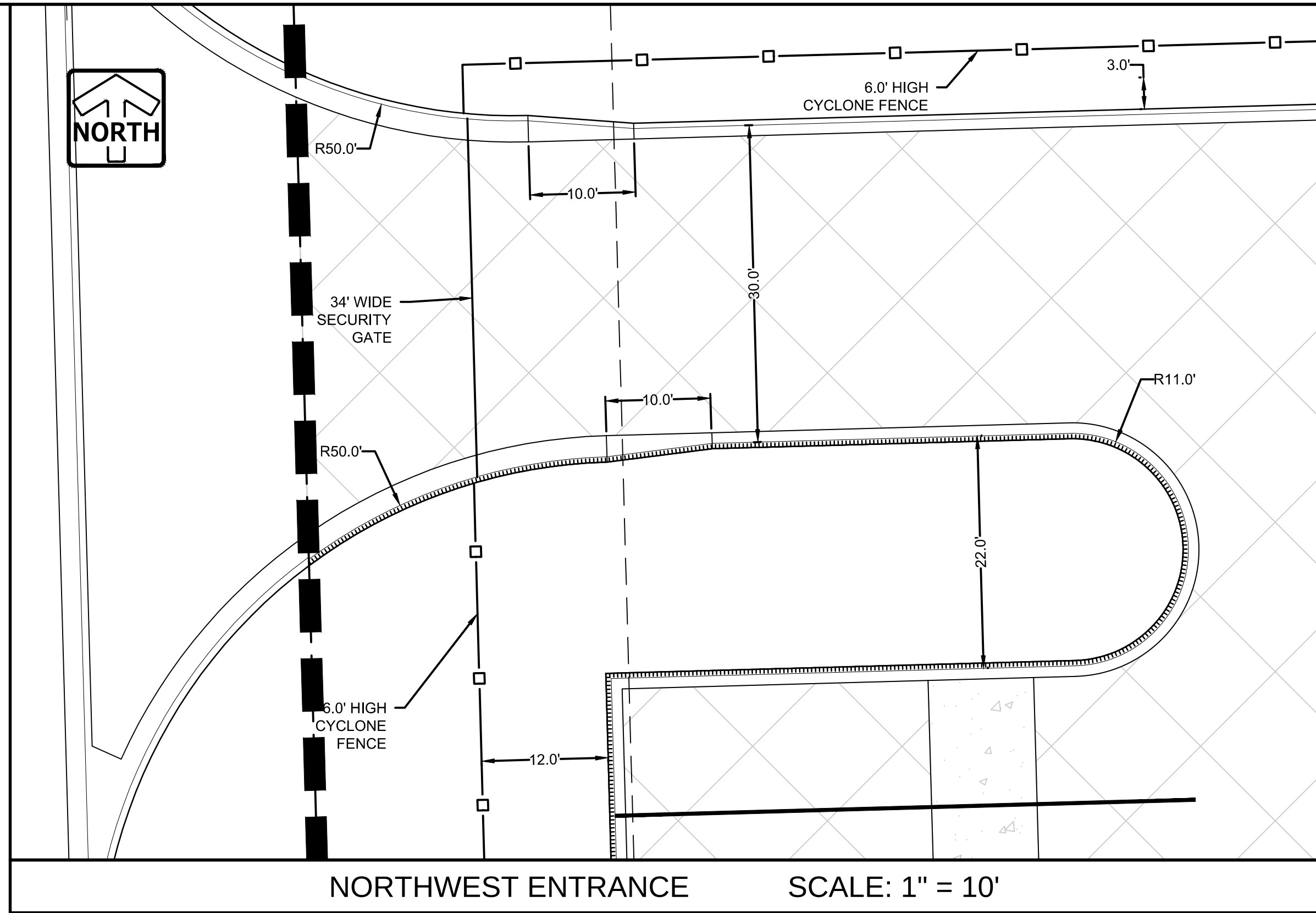
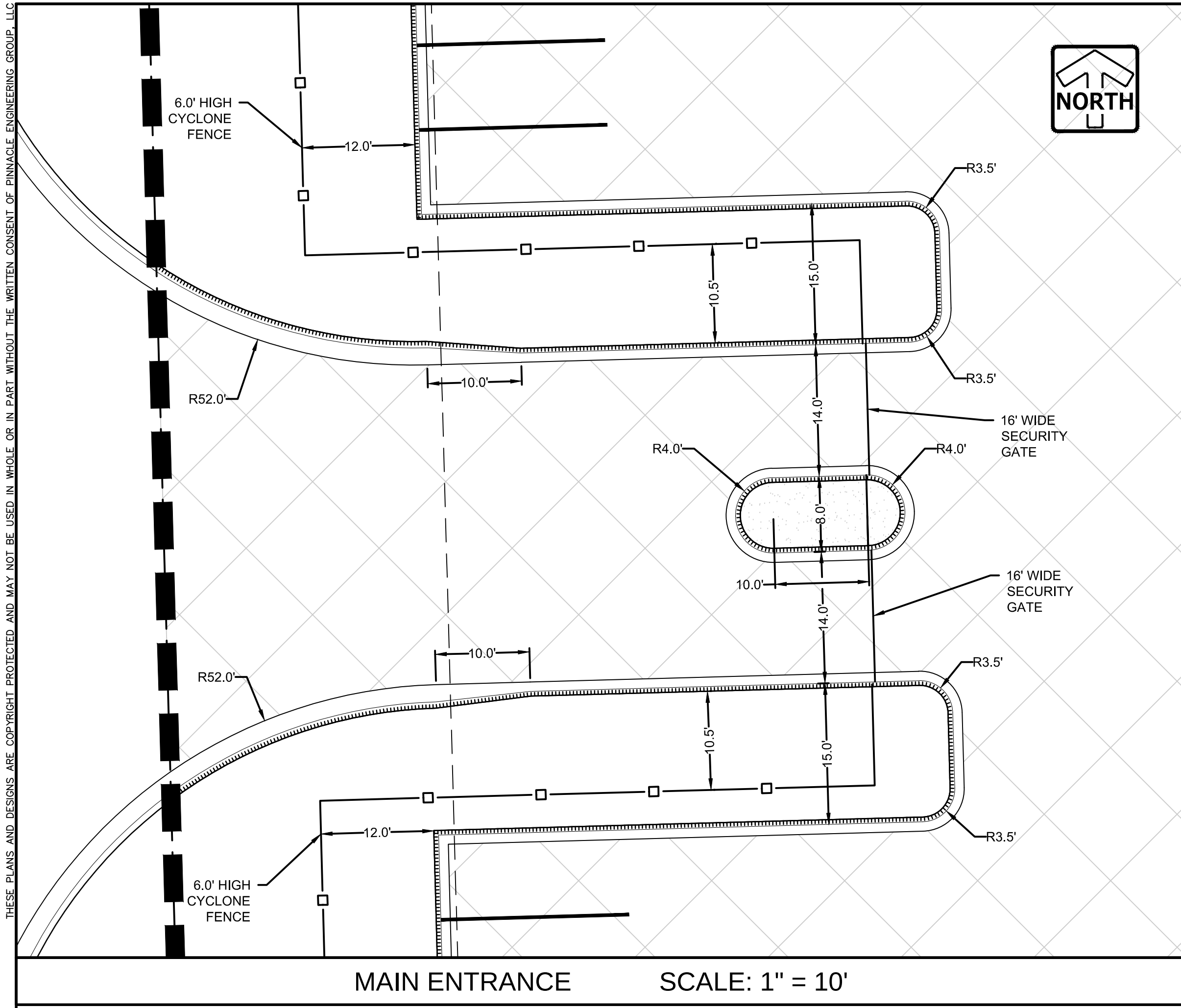


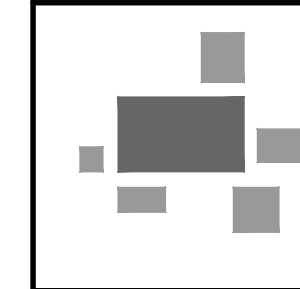
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PROJECT NO. 1296.00-WI

AREA

PLOT DATE 7/17/18

SCALE N.T.S.

SHEET
C-22
C-22

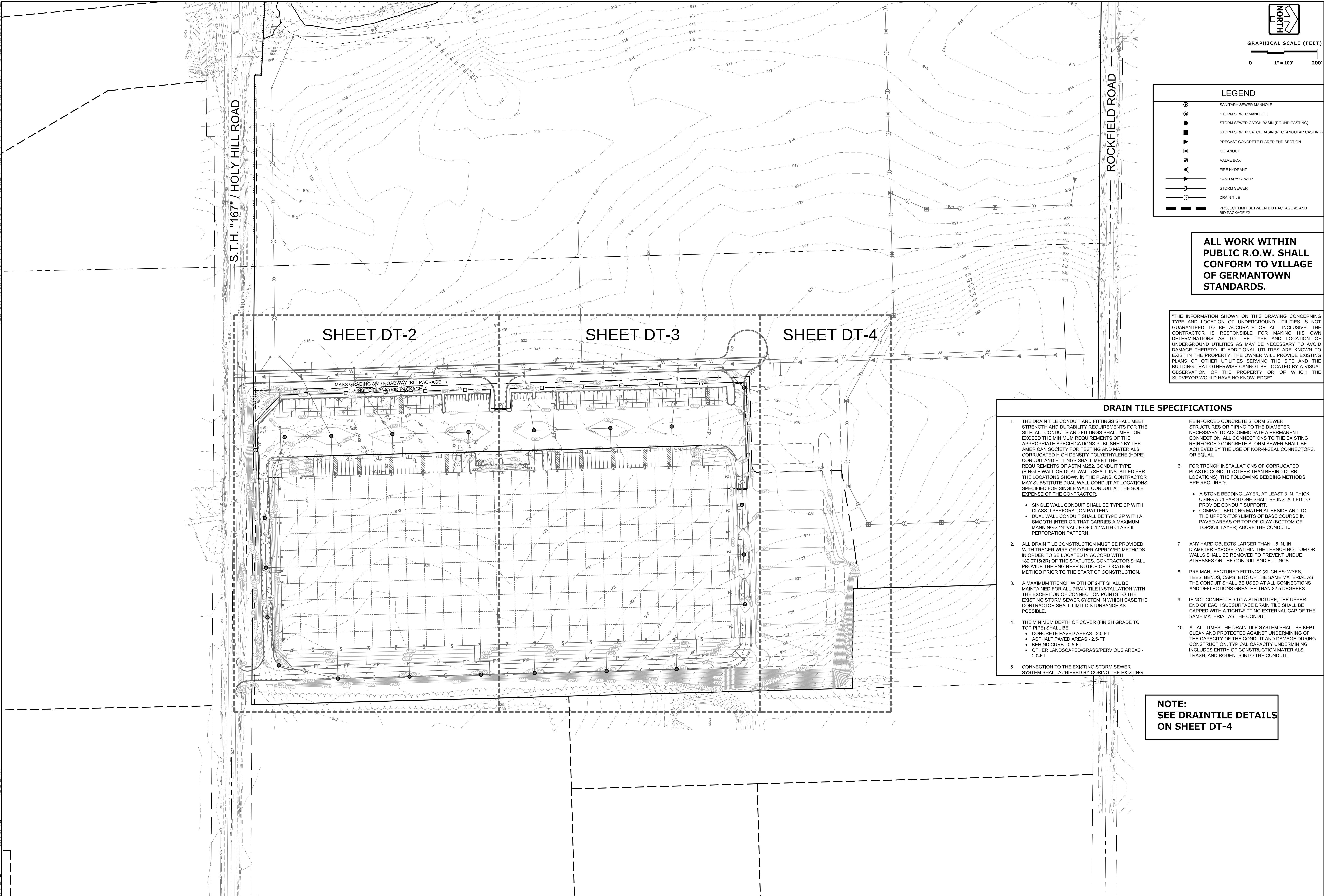
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DESIGNED: EP

DESIGNED: AJS

REVIEWED: TMA

DRAWN BY: TMA

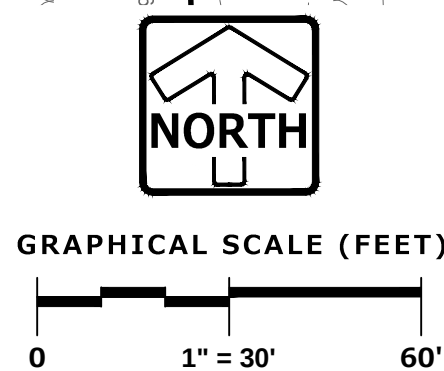


DRAIN TILE SPECIFICATIONS

- THE DRAIN TILE CONDUIT AND FITTINGS SHALL MEET STRENGTH AND DURABILITY REQUIREMENTS FOR THE SITE. ALL CONDUITS AND FITTINGS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS OF THE APPROPRIATE SPECIFICATIONS PUBLISHED BY THE AMERICAN SOCIETY FOR TESTING AND MATERIALS. CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) CONDUIT AND FITTINGS SHALL MEET THE REQUIREMENTS OF ASTM M252. CONDUIT TYPE (SINGLE WALL OR DUAL WALL) SHALL INSTALLED PER THE LOCATIONS SHOWN IN THE PLANS. CONTRACTOR MAY SUBSTITUTE DUAL WALL CONDUIT AT LOCATIONS SPECIFIED FOR SINGLE WALL CONDUIT AT THE SOLE EXPENSE OF THE CONTRACTOR.
 - SINGLE WALL CONDUIT SHALL BE TYPE CP WITH CLASS II PERFORATION PATTERN.
 - DUAL WALL CONDUIT SHALL BE TYPE SP WITH A SMOOTH INTERIOR THAT CARRIES A MAXIMUM MANNINGS "N" VALUE OF 0.12 WITH CLASS II PERFORATION PATTERN.
 - ALL DRAIN TILE CONSTRUCTION MUST BE PROVIDED WITH TRACER WIRE OR OTHER APPROVED METHODS IN ORDER TO BE LOCATED IN ACCORD WITH 182.0715(2R) OF THE STATUTES. CONTRACTOR SHALL PROVIDE THE ENGINEER NOTICE OF LOCATION METHOD PRIOR TO THE START OF CONSTRUCTION.
 - A MAXIMUM TRENCH WIDTH OF 2-FT SHALL BE MAINTAINED FOR ALL DRAIN TILE INSTALLATION WITH THE EXCEPTION OF CONNECTION POINTS TO THE EXISTING STORM SEWER SYSTEM IN WHICH CASE THE CONTRACTOR SHALL LIMIT DISTURBANCE AS POSSIBLE.
 - THE MINIMUM DEPTH OF COVER (FINISH GRADE TO TOP PIPE) SHALL BE:
 - CONCRETE PAVED AREAS - 2.0-FT
 - ASPHALT PAVED AREAS - 2.5-FT
 - BEHIND CURB - 0.5-FT
 - OTHER LANDSCAPED/GRASS/PERVIOUS AREAS - 2.0-FT
 - CONNECTION TO THE EXISTING STORM SEWER SYSTEM SHALL ACHIEVED BY CORING THE EXISTING
- REINFORCED CONCRETE STORM SEWER STRUCTURES OR PIPING TO THE DIAMETER NECESSARY TO ACCOMMODATE A PERMANENT CONNECTION. ALL CONNECTIONS TO THE EXISTING REINFORCED CONCRETE STORM SEWER SHALL BE ACHIEVED BY THE USE OF KOR-N-SEAL CONNECTORS, OR EQUAL.
- FOR TRENCH INSTALLATIONS OF CORRUGATED PLASTIC CONDUIT (OTHER THAN BEHIND CURB LOCATIONS), THE FOLLOWING BEDDING METHODS ARE REQUIRED:
 - A STONE BEDDING LAYER, AT LEAST 3 IN. THICK, USING A CLEAR STONE SHALL BE INSTALLED TO PROVIDE CONDUIT SUPPORT.
 - COMPACT BEDDING MATERIAL BESIDE AND TO THE UPPER (TOP) LIMITS OF BASE COURSE IN PAVED AREAS OR TOP OF CLAY (BOTTOM OF TOPSOIL LAYER) ABOVE THE CONDUIT.
 - ANY HARD OBJECTS LARGER THAN 1.5 IN. IN DIAMETER EXPOSED WITHIN THE TRENCH BOTTOM OR WALLS SHALL BE REMOVED TO PREVENT UNDUE STRESSES ON THE CONDUIT AND FITTINGS.
 - PRE MANUFACTURED FITTINGS (SUCH AS: WYES, TEES, BENDS, CAPS, ETC) OF THE SAME MATERIAL AS THE CONDUIT SHALL BE USED AT ALL CONNECTIONS AND DEFLECTIONS GREATER THAN 22.5 DEGREES.
 - IF NOT CONNECTED TO A STRUCTURE, THE UPPER END OF EACH SUBSURFACE DRAIN TILE SHALL BE CAPPED WITH A TIGHT-FITTING EXTERNAL CAP OF THE SAME MATERIAL AS THE CONDUIT.
 - AT ALL TIMES THE DRAIN TILE SYSTEM SHALL BE KEPT CLEAN AND PROTECTED AGAINST UNDERMINING OF THE CAPACITY OF THE CONDUIT AND DAMAGE DURING CONSTRUCTION. TYPICAL CAPACITY UNDERMINING INCLUDES ENTRY OF CONSTRUCTION MATERIALS, TRASH, AND RODENTS INTO THE CONDUIT.

NOTE:
SEE DRAINTILE DETAILS
ON SHEET DT-4

MATCHLINE SEE SHEET DT-3

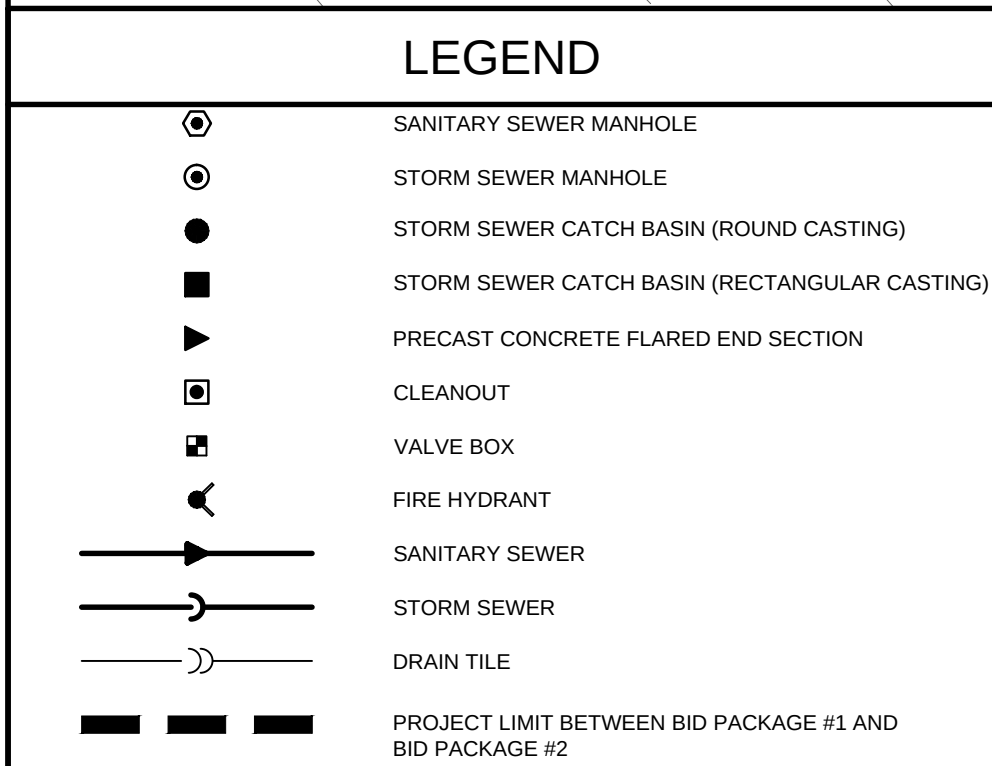


THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. IF ADDITIONAL UTILITIES ARE KNOWN TO EXIST IN THE PROPERTY, THE OWNER WILL PROVIDE EXISTING PLANS OF OTHER UTILITIES SERVING THE SITE AND THE BUILDING THAT OTHERWISE CANNOT BE LOCATED BY A VISUAL OBSERVATION OF THE PROPERTY OR OF WHICH THE SURVEYOR WOULD HAVE NO KNOWLEDGE".

NOTE:
SEE DRAINTILE DETAILS
ON SHEET DT-4

**PROPOSED
BUILDING #1**
706,044 SF | FFE=926.60
SEE ARCHITECTURAL PLANS FOR
ADDITIONAL INFORMATION

SEE ROADWAY PLANS FOR ROAD "A"



DRAFTED: EP
DESIGNED: AMS
REVIEWED: TGM



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CHICAGO | MILWAUKEE | NATIONWIDE



ZILBER
PROPERTY GROUPSM

**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

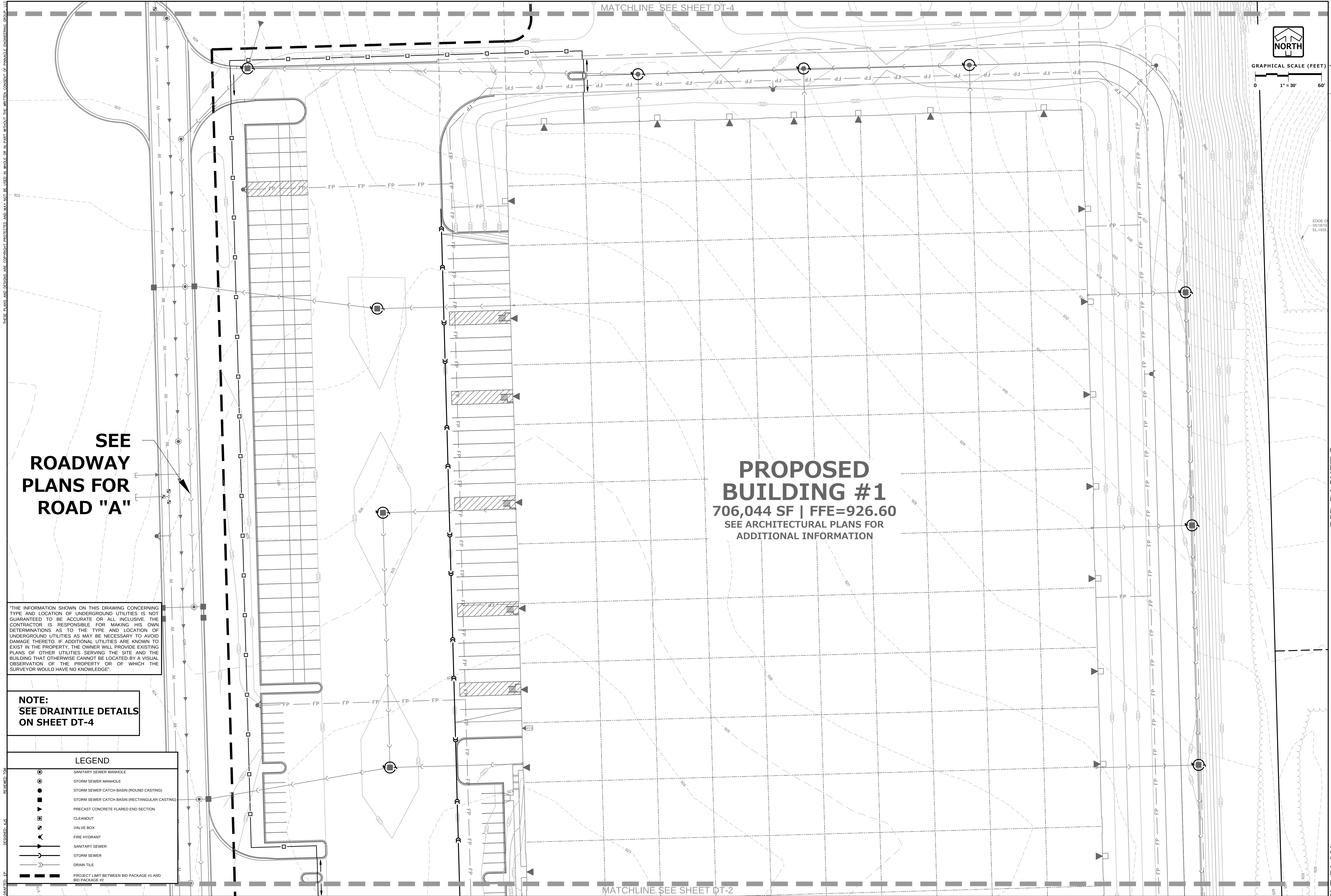
DRAINTILE PLAN

REVISIONS	
1 SITE PLAN REVIEW SUBMITTAL	6/11/18
2 BID SET REVISIONS	6/18/18
3 MUNICIPAL RESUBMITTAL	7/16/18

REG. JOB No. 1296.00-WI
REG. P.M.
PLAT DATE 7/17/18
SCALE 1" = 30'

SHEET
DT-2
OF
C-22

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DESIGNED: EP
CHECKED: AJS
REVIEWED: TZA

LEGEND

- SANITARY SEWER MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER CATCH BASIN (ROUND CASTING)
- STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
- PRECAST CONCRETE FLARED END SECTION
- CLEANOUT
- VALVE BOX
- FIRE HYDRANT
- SANITARY SEWER
- STORM SEWER
- DRAIN TILE
- PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

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ZILBER
PROPERTY GROUPSM

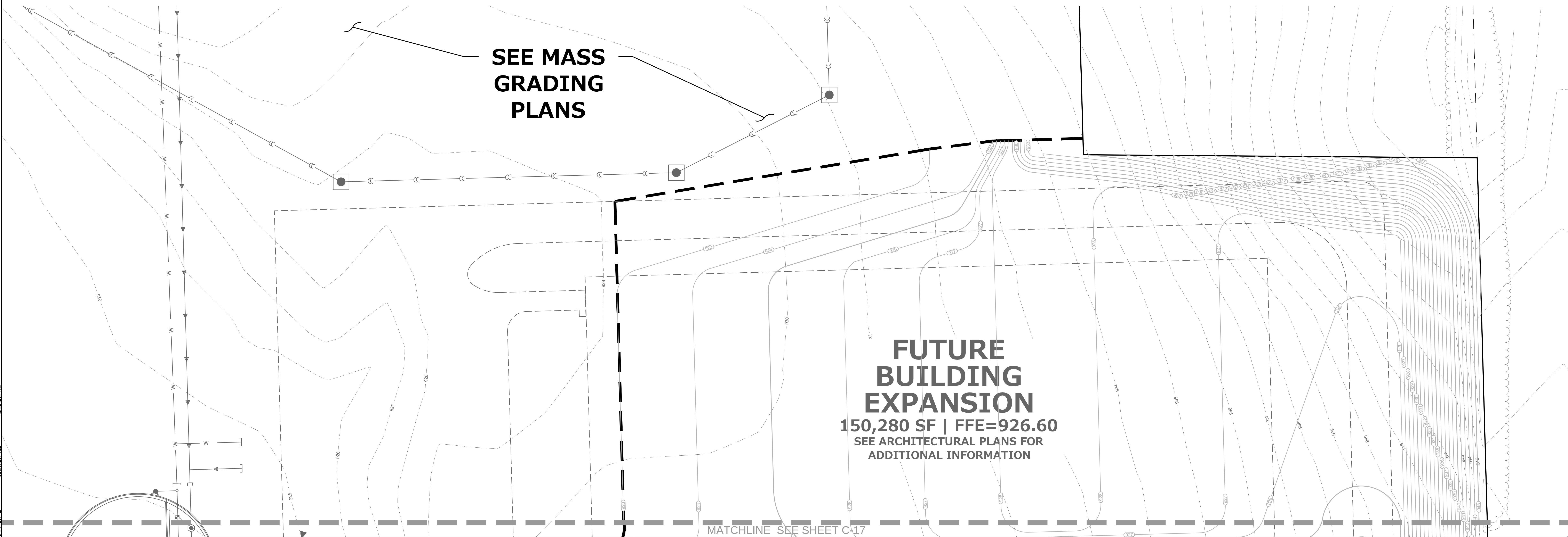
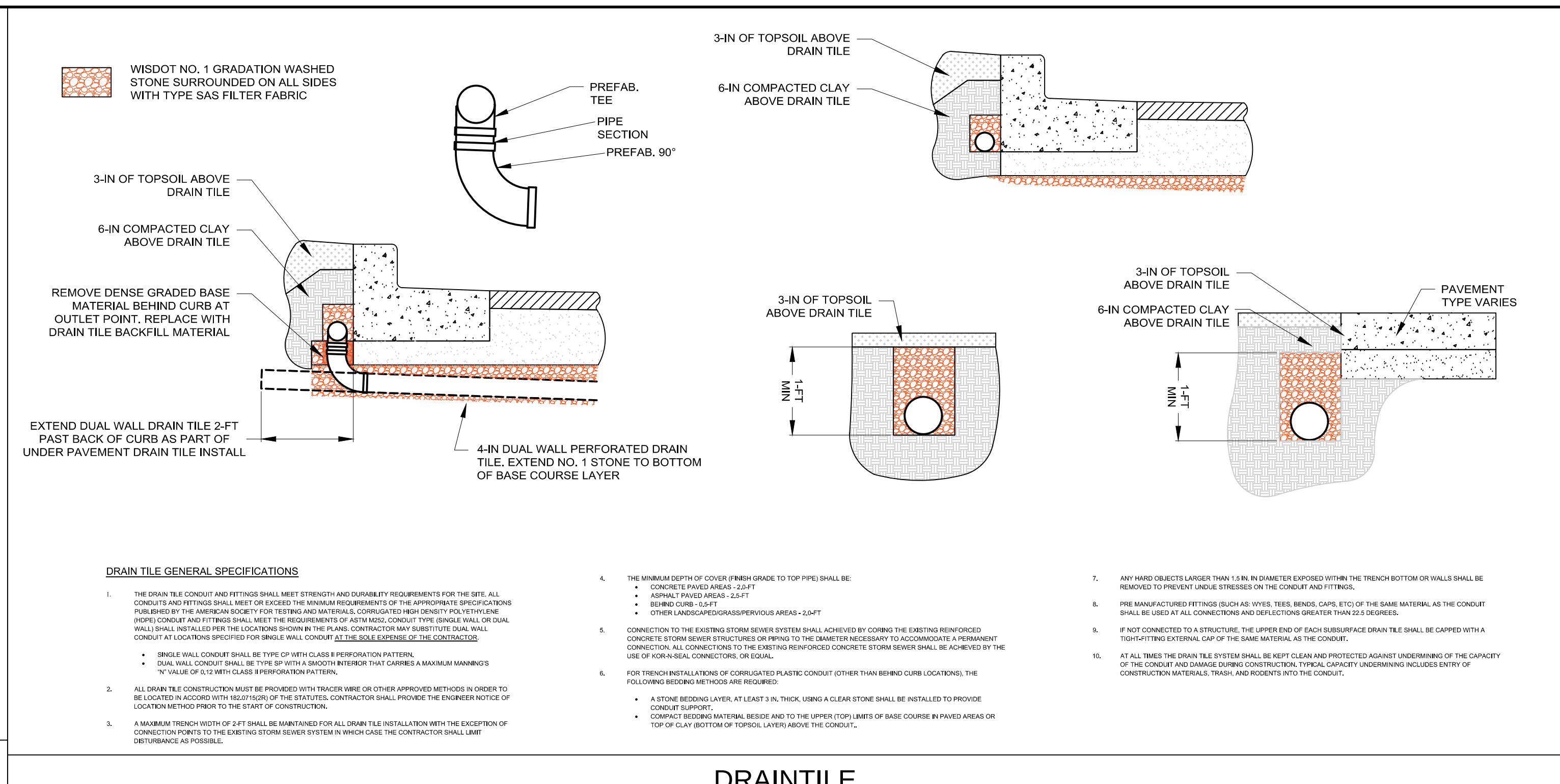
**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

DRAINTILE PLAN

REVISIONS	
1	SITE PLAN REVIEW SUBMITTAL 6/11/18
2	BID SET REVISIONS 6/18/18
3	MUNICIPAL RESUBMITTAL 7/16/18

FIG. NO.	AREA	DATE	SCALE
1296.00-W1	AREA	7/17/18	1" = 30'

SHEET DT-3
C-22

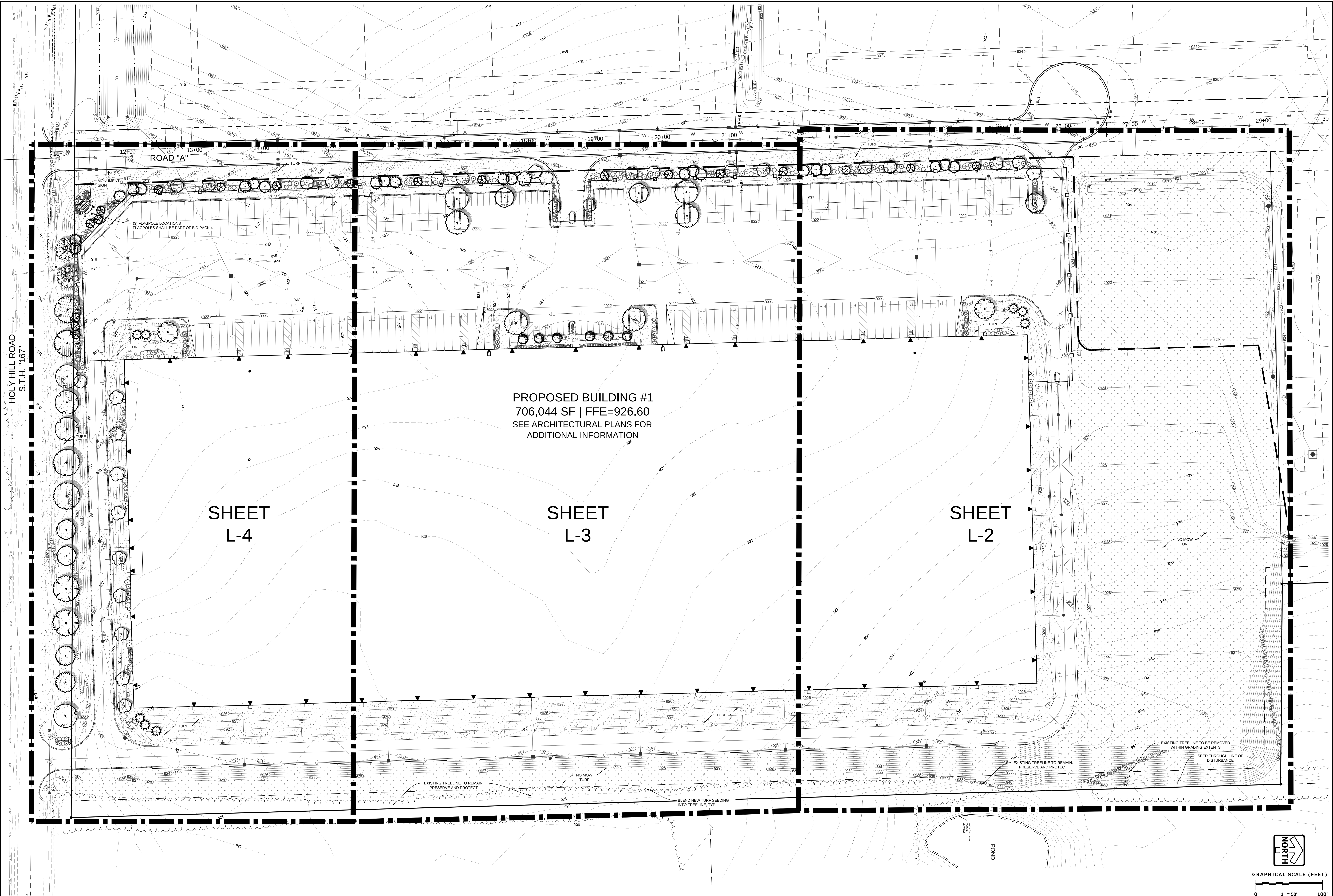


LEGEND

	SANITARY SEWER MANHOLE
	STORM SEWER MANHOLE
	STORM SEWER CATCH BASIN (ROUND CASTING)
	STORM SEWER CATCH BASIN (RECTANGULAR CASTING)
	PRECAST CONCRETE FLARED END SECTION
	CLEANOUT
	VALVE BOX
	FIRE HYDRANT
	SANITARY SEWER
	STORM SEWER
	DRAIN TILE
	PROJECT LIMIT BETWEEN BID PACKAGE #1 AND BID PACKAGE #2

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DRAFTED: DGM
DESIGNED: DUB
REVIEWED: ZOM



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ZILBER
PROPERTY GROUPSM

**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

LANDSCAPE SHEET KEY

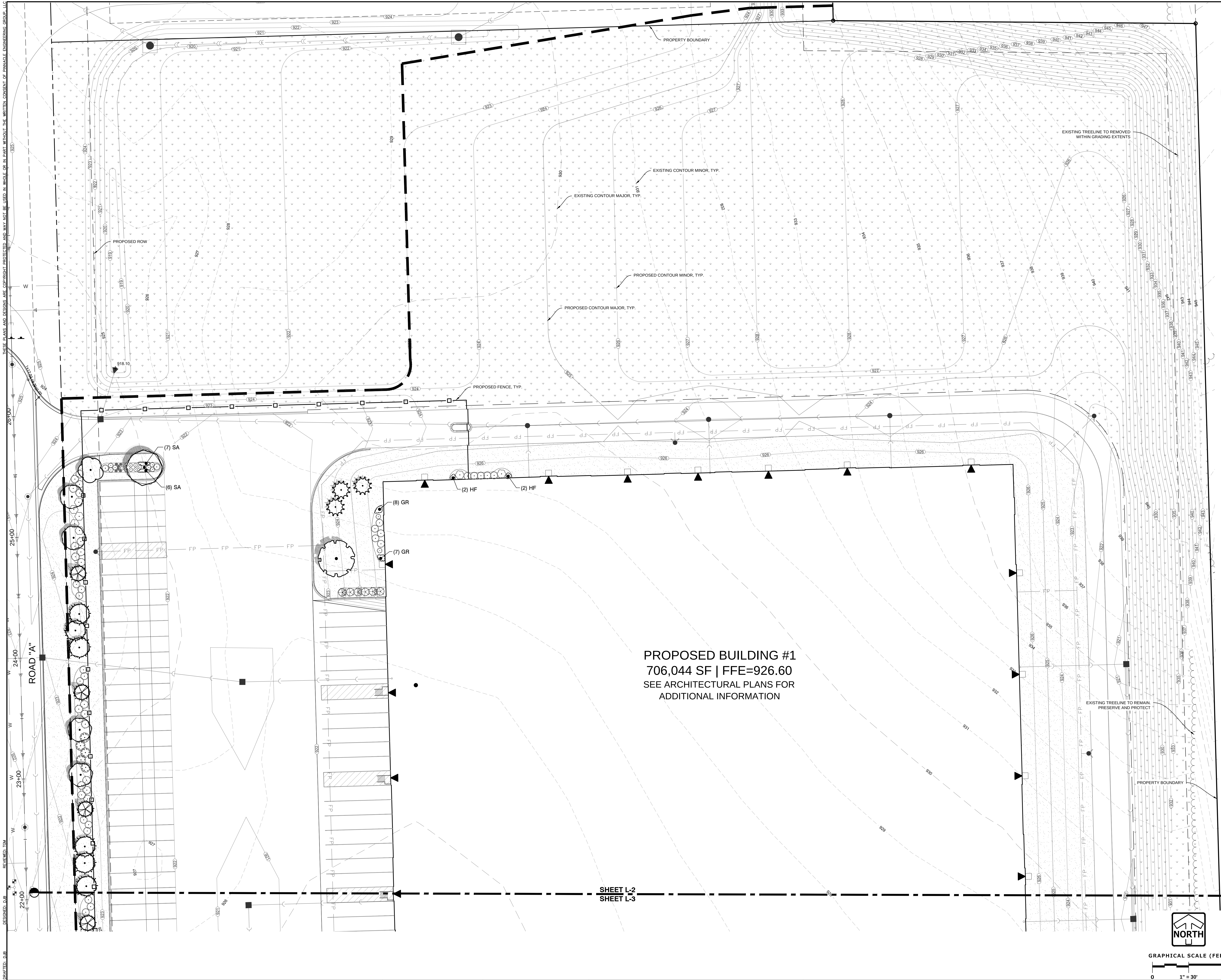
REVISIONS	
1. SITE PLAN REVIEW SUBMITTAL	6/11/18
2. BID SET REVISIONS	6/18/18
3. MUNICIPAL RESUBMITTAL	7/16/18

REG. JOB NO.	DATE	AREA
1296-00-WI	7/17/18	AREA

SCALE 1" = 50'

SHEET
L-1
of
L-5

DESIGNED: DUB
DRAFTED: DUB
REVIEWED: TOM
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PROPOSED BUILDING #1
706,044 SF | FFE=926.60
SEE ARCHITECTURAL PLANS FOR
ADDITIONAL INFORMATION

SHEET L-2
SHEET L-3

PLANT KEY	
DECIDUOUS TREES	
	BOTANICAL NAME
	Carya ovata
	Tilia americana 'Redmond'
	Ulmus americana 'New Horizon'
EVERGREEN TREES	
	BOTANICAL NAME
	Juniperus virginiana
	Picea glauca 'Densata'
	Pinus cembra 'Big Blue'
ORNAMENTAL TREES	
	BOTANICAL NAME
	Amelanchier x grandiflora 'Autumn Brilliance'
	Malus x 'Zumi'
	Syringa reticulata 'Ivory Silk'
STREET TREES	
	BOTANICAL NAME
	Acer miyabei 'State Street'
	Celtis occidentalis 'Prairie Pride'
	Gymnocladus dioica
	Quercus bicolor
	Tilia americana 'Redmond'
	Ulmus americana 'New Horizon'
LOW DECIDUOUS SHRUBS	
	BOTANICAL NAME
	Aronia melanocarpa 'Iroquois Beauty'™
	Potentilla fruticosa 'McKay's White'
	Weigela florida 'Dark Horse'
LOW EVERGREEN SHRUBS	
	BOTANICAL NAME
	Juniperus horizontalis 'Wiltonii'
MEDIUM EVERGREEN SHRUBS	
	BOTANICAL NAME
	Juniperus chinensis 'Sea Green'
	Juniperus squamata 'Blue Star'
	Juniperus virginiana 'Grey Owl'
	Picea pungens 'Montgomery'
	Pinus cembra 'Blue Mound'
	Taxus x media 'Tauntonii'
ORNAMENTAL GRASSES	
	BOTANICAL NAME
	Calamagrostis x acutiflora 'Karl Foerster'
	Panicum virgatum 'Heavy Metal'
TALL DECIDUOUS SHRUBS	
	BOTANICAL NAME
	Aronia arbutifolia 'Brilliantissima'
	Physocarpus opulifolius 'Center Glow'
	Syringa vulgaris 'Sensation'
	Viburnum dentatum 'Blue Muffin'
TALL EVERGREEN SHRUBS	
	BOTANICAL NAME
	Juniperus chinensis 'Ames'
PERENNIALS	
	BOTANICAL NAME
	GERANIUM X 'ROZANNE'™
	HOSTA X 'FRANCEE'
	NEPETA X FAASSENII 'WALKERS LOW'
	SEDUM X 'AUTUMN JOY'
	TURF
	Turf Seed Drought Tolerant Dwarf Fescue Blend
	NO MOW TURF
	Turf Seed Low Grow Mix

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Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI

ENLARGED LANDSCAPE PLAN

REVISIONS

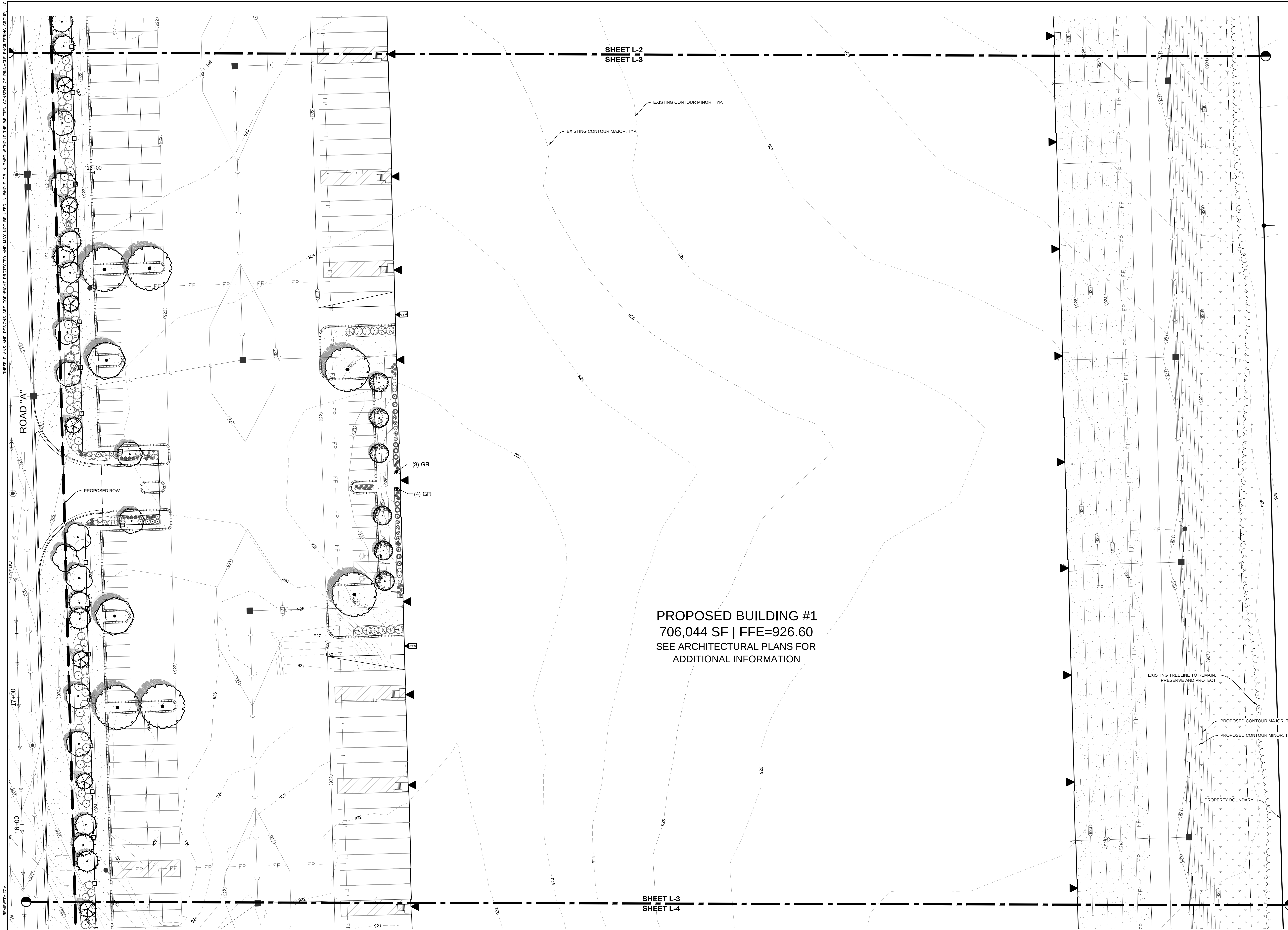
1	SITE PLAN REVIEW SUBMITTAL	6/11/18
2	BID SET REVISIONS	6/18/18
3	MUNICIPAL RESUBMITTAL	7/16/18

REG JOB NO. 1296-00-WI
PES PN. AKA
PLOT DATE 7/17/18
SCALE 1" = 30'

SHEET
L-2
of
L-5

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REVIEWED: TOM
DESIGNED: DUB
DRAFTED: DUB



PLANT KEY	
DECIDUOUS TREES	BOTANICAL NAME
	Carya ovata
	Tilia americana 'Redmond'
	Ulmus americana 'New Horizon'
EVERGREEN TREES	BOTANICAL NAME
	Juniperus virginiana
	Picea glauca 'Densata'
	Pinus cembra 'Big Blue'
ORNAMENTAL TREES	BOTANICAL NAME
	Amelanchier x grandiflora 'Autumn Brilliance'
	Malus x 'Zumi'
	Syringa reticulata 'Ivory Silk'
STREET TREES	BOTANICAL NAME
	Acer miyabei 'State Street'
	Celtis occidentalis 'Prairie Pride'
	Gymnocladus dioica
	Quercus bicolor
	Tilia americana 'Redmond'
	Ulmus americana 'New Horizon'
LOW DECIDUOUS SHRUBS	BOTANICAL NAME
	Aronia melanocarpa 'Iroquois Beauty' TM
	Potentilla fruticosa 'McKay's White'
	Weigela florida 'Dark Horse'
LOW EVERGREEN SHRUBS	BOTANICAL NAME
	Juniperus horizontalis 'Wiltonii'
MEDIUM EVERGREEN SHRUBS	BOTANICAL NAME
	Juniperus chinensis 'Sea Green'
	Juniperus squamata 'Blue Star'
	Juniperus virginiana 'Grey Owl'
	Picea pungens 'Montgomery'
	Pinus cembra 'Blue Mound'
	Taxus x media 'Tauntontii'
ORNAMENTAL GRASSES	BOTANICAL NAME
	Calamagrostis x acutiflora 'Karl Foerster'
	Panicum virgatum 'Heavy Metal'
TALL DECIDUOUS SHRUBS	BOTANICAL NAME
	Aronia arbutifolia 'Brilliantissima'
	Physocarpus opulifolius 'Center Glow'
	Syringa vulgaris 'Sensation'
	Viburnum dentatum 'Blue Muffin'
TALL EVERGREEN SHRUBS	BOTANICAL NAME
	Juniperus chinensis 'Ames'
PERENNIALS	BOTANICAL NAME
GR	GERANIUM X 'ROZANNE' TM
HF	HOSTA X 'FRANCEE'
NW	NEPETA X FAASSENII 'WALKERS LOW'
SA	SEDUM X 'AUTUMN JOY'
	TURF Turf Seed Drought Tolerant Dwarf Fescue Blend
	NO MOW TURF Turf Seed Low Grow Mix

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**Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI**

ENLARGED LANDSCAPE PLAN

REVISIONS

1	SITE PLAN REVIEW SUBMITTAL	6/11/18
2	BID SET REVISIONS	6/18/18
3	MUNICIPAL RESUBMITTAL	7/16/18

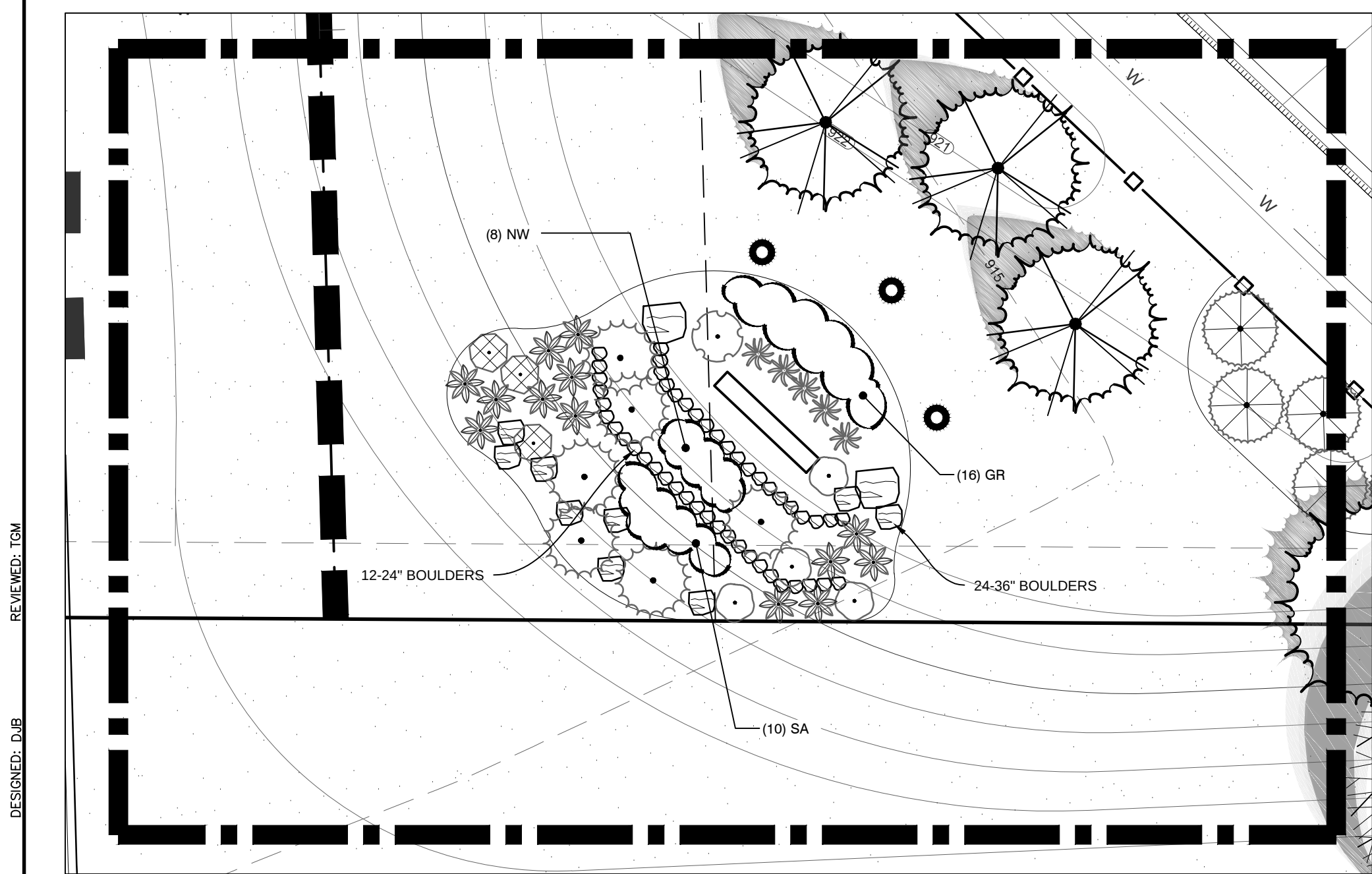
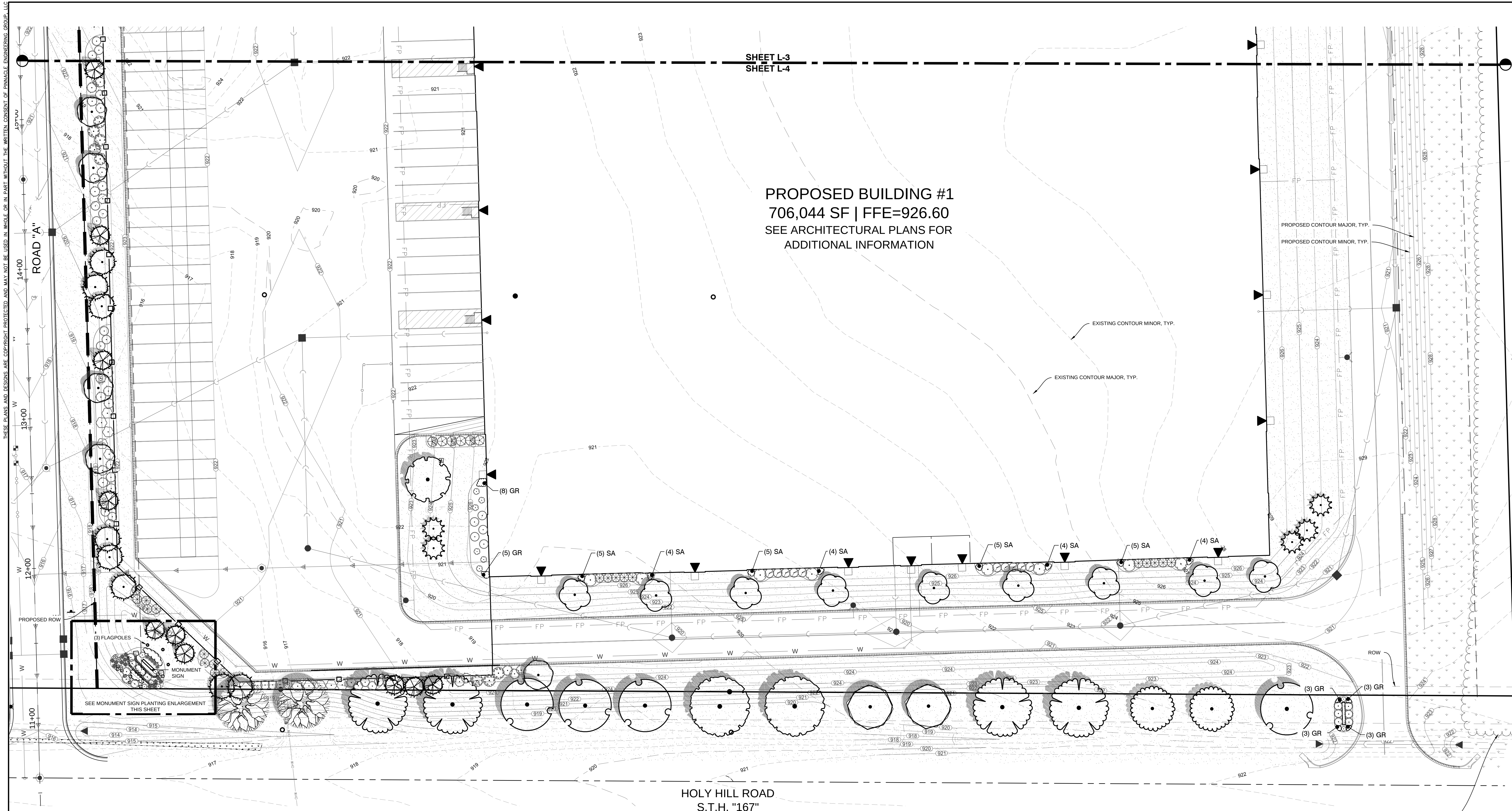
REG JOB NO. 1296-00-WI
PLS. PM. ALA
PLOT DATE 7/17/18
SCALE 1" = 30'

SHEET
L-3
OF
L-5

ENLARGED LANDSCAPE PLAN

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DESIGNED: DUB
DRAFTED: DUB
REVIEWED: TOM



MONUMENT SIGN PLANTING ENLARGEMENT
SCALE: 1"=10'

PLANT KEY

DECIDUOUS TREES

BOTANICAL NAME

Carya ovata

Tilia americana "Redmond"

Ulmus americana "New Horizon"

EVERGREEN TREES

BOTANICAL NAME

Juniperus virginiana

Picea glauca "Densata"

Pinus cembra "Big Blue"

ORNAMENTAL TREES

BOTANICAL NAME

Amelanchier x grandiflora "Autumn Brilliance"

Malus x "Zumi"

Syringa reticulata "Ivory Silk"

STREET TREES

BOTANICAL NAME

Acer miyabei "State Street"

Celtis occidentalis "Prairie Pride"

Gymnocladus dioica

Quercus bicolor

Tilia americana "Redmond"

Ulmus americana "New Horizon"

LOW DECIDUOUS SHRUBS

BOTANICAL NAME

Aronia melanocarpa "Iroquois Beauty" TM

Potentilla fruticosa "McKay's White"

Weigela florida "Dark Horse"

LOW EVERGREEN SHRUBS

BOTANICAL NAME

Juniperus horizontalis "Wiltonii"

MEDIUM EVERGREEN SHRUBS

BOTANICAL NAME

Juniperus chinensis "Sea Green"

Juniperus squamata "Blue Star"

Juniperus virginiana "Grey Owl"

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ORNAMENTAL GRASSES

BOTANICAL NAME

Calamagrostis x acutiflora "Karl Foerster"

Panicum virgatum "Heavy Metal"

TALL DECIDUOUS SHRUBS

BOTANICAL NAME

Aronia arbutifolia "Brilliantissima"

Physocarpus opulifolius "Center Glow"

Syringa vulgaris "Sensation"

Viburnum dentatum "Blue Muffin"

TALL EVERGREEN SHRUBS

BOTANICAL NAME

Juniperus chinensis "Ames"

PERENNIALS

BOTANICAL NAME

GERANIUM X "ROZANNE" TM

HOSTA X "FRANCEE"

NEPETA X FAASSENII "WALKERS LOW"

SEDUM X "AUTUMN JOY"

TURF

Turf Seed Drought Tolerant Dwarf Fescue Blend

NO MOW TURF

Turf Seed Low Grow Mix

REVISIONS

1	SITE PLAN REVIEW SUBMITTAL	6/11/18
2	BID SET REVISIONS	6/18/18
3	MUNICIPAL RESUBMITTAL	7/16/18

REVISIONS

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3	MUNICIPAL RESUBMITTAL	7/16/18

REVISIONS

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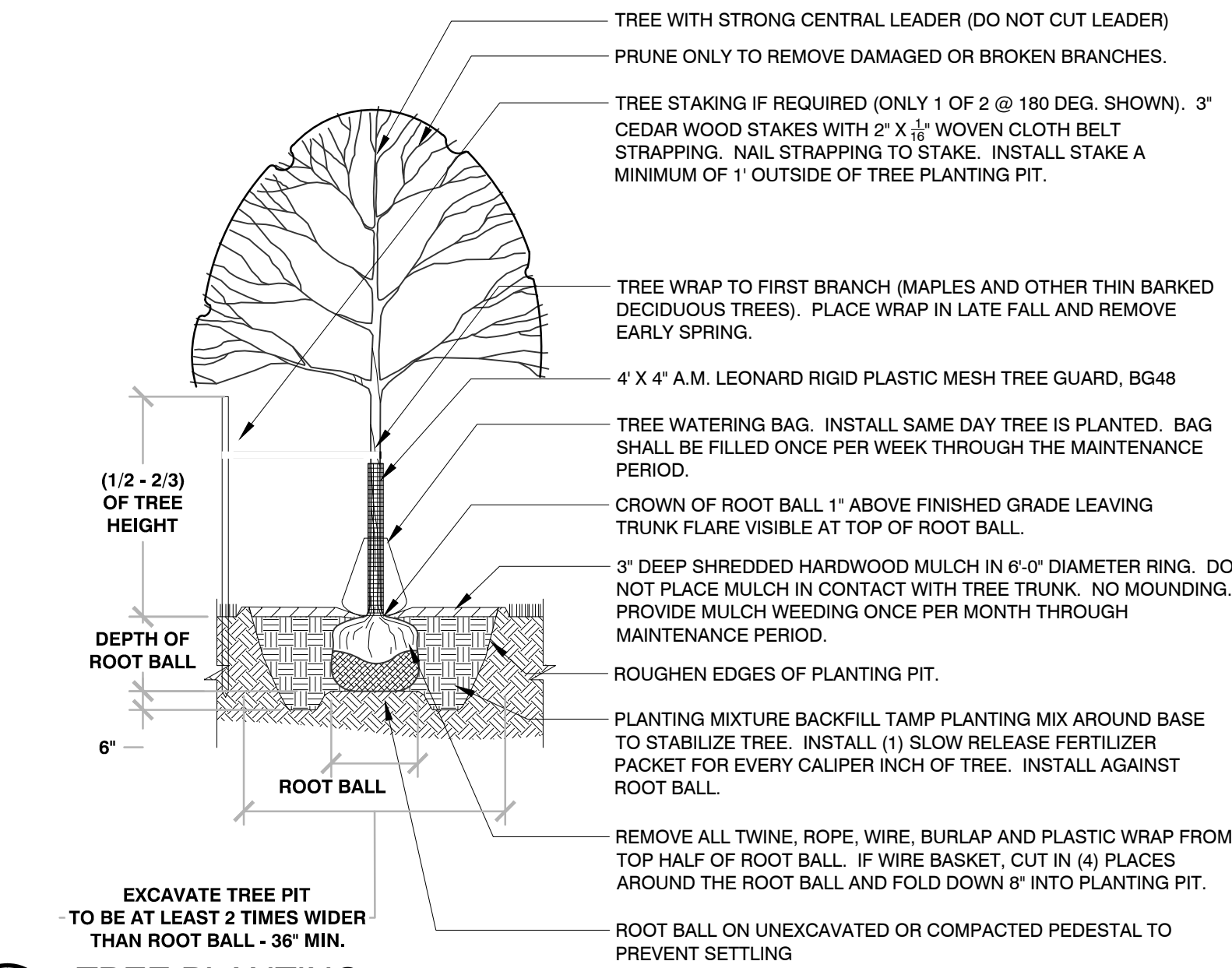
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GENERAL PLANTING NOTES

1. THE LAYOUT OF ALL PLANTING BEDS AND INDIVIDUAL TREES AND SHRUBS SHALL BE STAKED BY THE CONTRACTOR IN ADVANCE OF INSTALLATION. FLAGGING, STAKES, OR PAINT MAY BE USED TO DELINEATE LOCATIONS AS SCALED FROM THE PLANS. AN APPROVED REPRESENTATIVE WILL REVIEW THESE LOCATIONS WITH THE CONTRACTOR AND MAKE MINOR ADJUSTMENTS AS NECESSARY. BED LAYOUT SHALL ALSO INCLUDE PERENNIAL GROUPINGS BY SPECIES.
2. THE CONTRACTOR IS RESPONSIBLE FOR INDEPENDENTLY DETERMINING THE PLANT MATERIAL QUANTITIES REQUIRED BY THE LANDSCAPE PLANS. REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIAL SHALL COMPLY WITH STANDARDS DESCRIBED IN AMERICAN STANDARD OF NURSERY STOCK - 260.1 ANSI. LANDSCAPE ARCHITECT OR OWNERS AUTHORIZED REPRESENTATIVE RESERVES THE RIGHT TO INSPECT AND POTENTIALLY REJECT ANY PLANT MATERIAL DEEMED TO NOT MEET THE REQUIRED STANDARDS.
4. NO PLANT MATERIAL OR PLANT SIZE SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL BY THE LANDSCAPE ARCHITECT. ANY CHANGES SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT IN WRITING PRIOR TO INSTALLATION.
5. ALL PLANT MATERIAL AND SEED SHALL BE PROVIDED FROM A NURSERY (WITHIN 200 MILES) WITH A SIMILAR PLANT HARDINESS ZONE AS PROJECT LOCATION. EXISTING SOIL SHALL BE AMENDED PER SOIL ANALYSIS REPORT TO ENSURE A PROPER GROWING MEDIUM IS ACHIEVED.
6. ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH PLANTING DETAILS. FOR STREET TREE PLANTINGS, REFER TO TREE PLANTING DETAIL AND TO THE VILLAGE OF GERMANTOWN SPECIFICATIONS FOR PLANTING STREET TREES.
7. TREES SHALL BE INSTALLED A MINIMUM DISTANCE OF 5' FROM ANY SEWER AND WATER LINES, 10' FROM DRIVEWAYS, LIGHT POLES, AND FIRE HYDRANTS.
8. TREES SHALL BE INSTALLED A MINIMUM OF 25' FROM STREET CORNERS OF MINOR ROADS, AND 50' FROM STREET CORNERS OF ARTERIAL ROADS.
9. ALL PLANTING BEDS SHALL HAVE A MINIMUM 10" DEPTH OF PREPARED SOIL. WITH APPROVAL, EXISTING SOIL MAY BE UTILIZED PROVIDED THE PROPER SOIL AMENDMENTS ARE TILLED THOROUGHLY INTO THE TOP 10" OF SOIL. REFER TO SOIL PLACEMENT NOTES.
10. WHILE PLANTING TREES AND SHRUBS, BACKFILL $\frac{3}{4}$ OF PLANTING HOLE AND WATER TREE THOROUGHLY BEFORE INSTALLING THE REMAINDER OF SOIL MIXTURE. AFTER ALL SOIL HAS BEEN PLACED INTO THE PLANTING HOLE WATER THOROUGHLY AGAIN.
11. THE CONTRACTOR MUST LABEL ALL TREES WITH THE COMMON AND BOTANICAL NAMES PRIOR TO FINAL INSPECTION.
12. ALL PLANTING BEDS SHALL BE MULCHED WITH 3" DEEP SHREDDED HARDWOOD MULCH, AND ALL TREES PLANTED IN TURF AREAS SHALL RECEIVE A 3" DEEP SHREDDED HARDWOOD MULCHED RING AS SHOWN IN PLANTING DETAILS.
13. ALL PLANTING BEDS AND TREE RINGS SHALL HAVE A 4" DEEP TRENCHED BED EDGE CREATED BY EITHER A FLAT LANDSCAPE SPADE OR MECHANICAL EDGER. BED EDGES ARE TO BE CUT CLEAN AND SMOOTH AS SHOWN ON LANDSCAPE PLANS WITH A CLEAR DEFINITION BETWEEN TURF AND PLANTING AREAS.
14. ALL TURF SEED AREAS SHALL RECEIVE A MINIMUM OF 3" DEPTH OF TOPSOIL. WITH APPROVAL, EXISTING SOIL MAY BE UTILIZED PROVIDED THE PROPER SOIL AMENDMENTS ARE TILLED THOROUGHLY INTO THE TOP 6" OF SOIL AS INDICATED IN THE SOIL PLACEMENT NOTES. REQUIRED AMENDMENTS SHALL BE DETERMINED BASED ON A SOIL ANALYSIS TO BE PERFORMED. ALL TOPSOIL AMENDMENT SHALL BE AGED WEED FREE MANURE OR CLASS 1 ORGANIC MATTER.
15. FOR LAWN SEEDING, APPLY A STARTER FERTILIZER AND SEED UNIFORMLY AT THE RATE RECOMMENDED BY MANUFACTURER, AND PROVIDE A MULCH COVERING THAT IS SUITABLE TO PROMOTE SEED GERMINATION AND TURF ESTABLISHMENT. CONTRACTOR TO PROVIDE FERTILIZER, SEED, AND MULCH SPECIFICATIONS TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. EROSION CONTROL MEASURES ARE TO BE INSTALLED IN THOSE AREAS REQUIRING STABILIZATION (SWALES, SLOPES EXCEEDING 1:3, AND THOSE LOCATIONS INDICATED IN CIVIL DRAWINGS).
16. THE CONTRACTOR TO ENSURE A SMOOTH, UNIFORM QUALITY TURF IS ACHIEVED WITH NO BARE SPOTS LARGER THAN 6" X 6". ANY BARE SPOTS LARGER THAN 6" X6" AT THE END OF ESTABLISHMENT PERIOD SHALL BE RESEEDED AT THE CONTRACTORS EXPENSE TO OBTAIN A DENSE, UNIFORM LAWN.
17. ALL FINISH GRADING AND LAWN AREAS TO BE INSTALLED BY LANDSCAPE CONTRACTOR.
18. ALL DISTURBED AREAS WITHIN THE PROJECT SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
19. ALL DISTURBED AREAS OUTSIDE THE LIMITS OF WORK SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE OWNER.
20. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, INCLUDING ANY IRRIGATION LINES, PRIOR TO DIGGING. CONSULT DIGGERS HOTLINE.
21. THE CONTRACTOR SHALL ENSURE THAT SOIL CONDITIONS AND COMPACTION ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AROUND THE CONSTRUCTION SITE. UNDESIRABLE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER SURFACE AND SUBSURFACE DRAINAGE IN ALL AREAS
22. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, FEES, AND LICENSES NECESSARY FOR THE INSTALLATION OF THIS PLAN.
23. THE CONTRACTOR IS TO REVIEW ALL SITE ENGINEERING DOCUMENTS PRIOR TO INSTALLATION. ANY CONFLICTS MUST BE REPORTED TO THE LANDSCAPE ARCHITECT. THESE LANDSCAPE DRAWINGS ARE FOR THE INSTALLATION OF PLANT MATERIALS ONLY UNLESS OTHERWISE STATED.
24. THE CONTRACTOR SHALL PROVIDE WATERING AND MAINTENANCE SERVICES FOR A PERIOD OF 60 DAYS TO ENSURE VEGETATIVE ESTABLISHMENT. UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL SUPPLY THE OWNER IN WRITING WITH ONGOING WATERING AND MAINTENANCE INSTRUCTIONS.
25. PLANT MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM TIME OF OWNER ACCEPTANCE. ONLY ONE REPLACEMENT PER PLANT WILL BE REQUIRED DURING THE WARRANTY PERIOD EXCEPT IN THE EVENT OF FAILURE TO COMPLY WITH THE SPECIFIED REQUIREMENTS.
26. THE CONTRACTOR IS RESPONSIBLE TO CONDUCT A FINAL WALK THROUGH WITH THE LANDSCAPE ARCHITECT, VILLAGE FORESTER, AND OR OWNERS REPRESENTATIVE TO ANSWER QUESTIONS, PROVIDE INSTRUCTIONS, AND ENSURE THAT PROJECT REQUIREMENTS HAVE BEEN MET.



1 TREE PLANTING

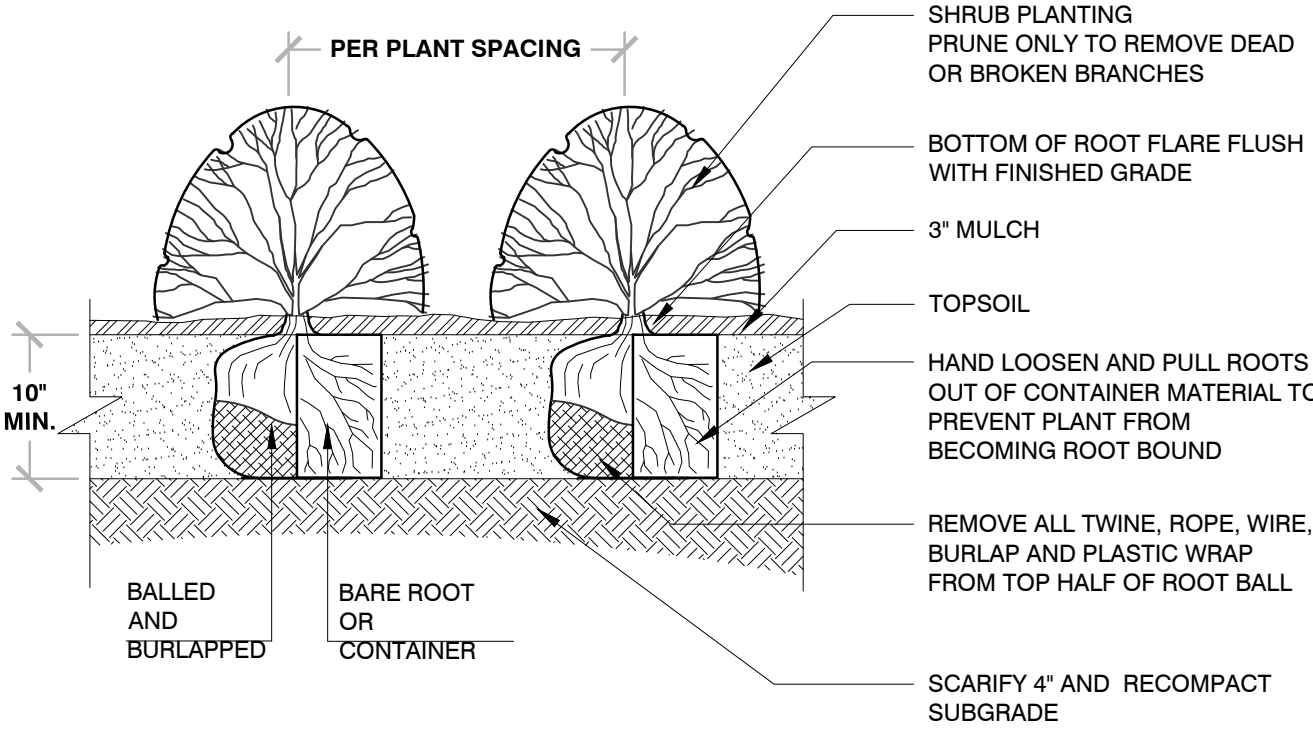
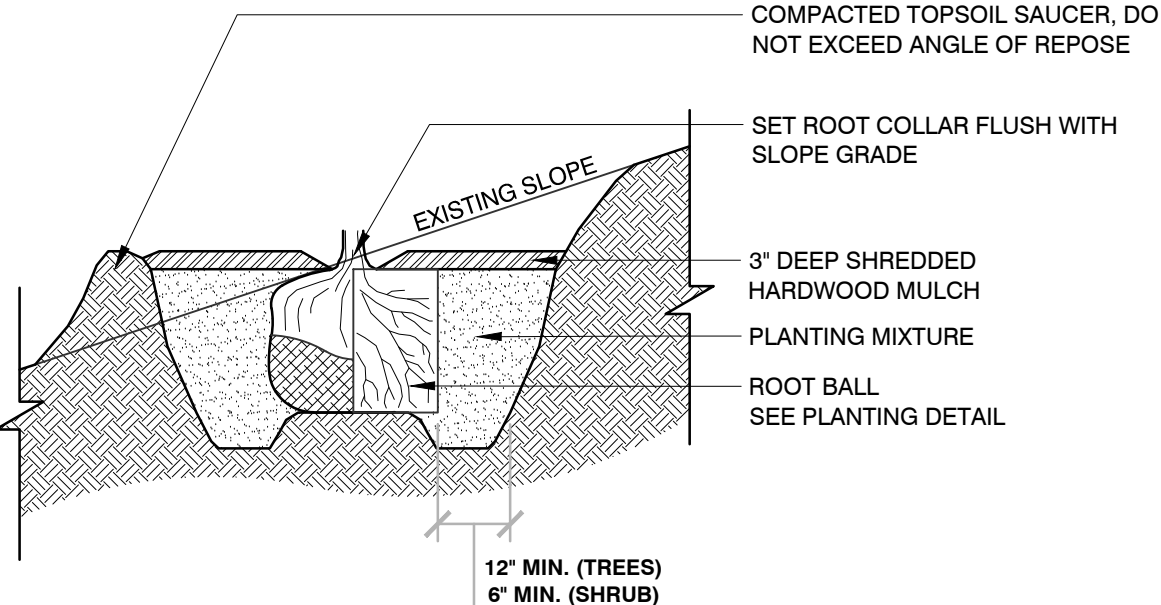
1/4" = 1'-0"

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2 TREE PLANTING ON SLOPE

3/8" = 1'-0"

329343-02

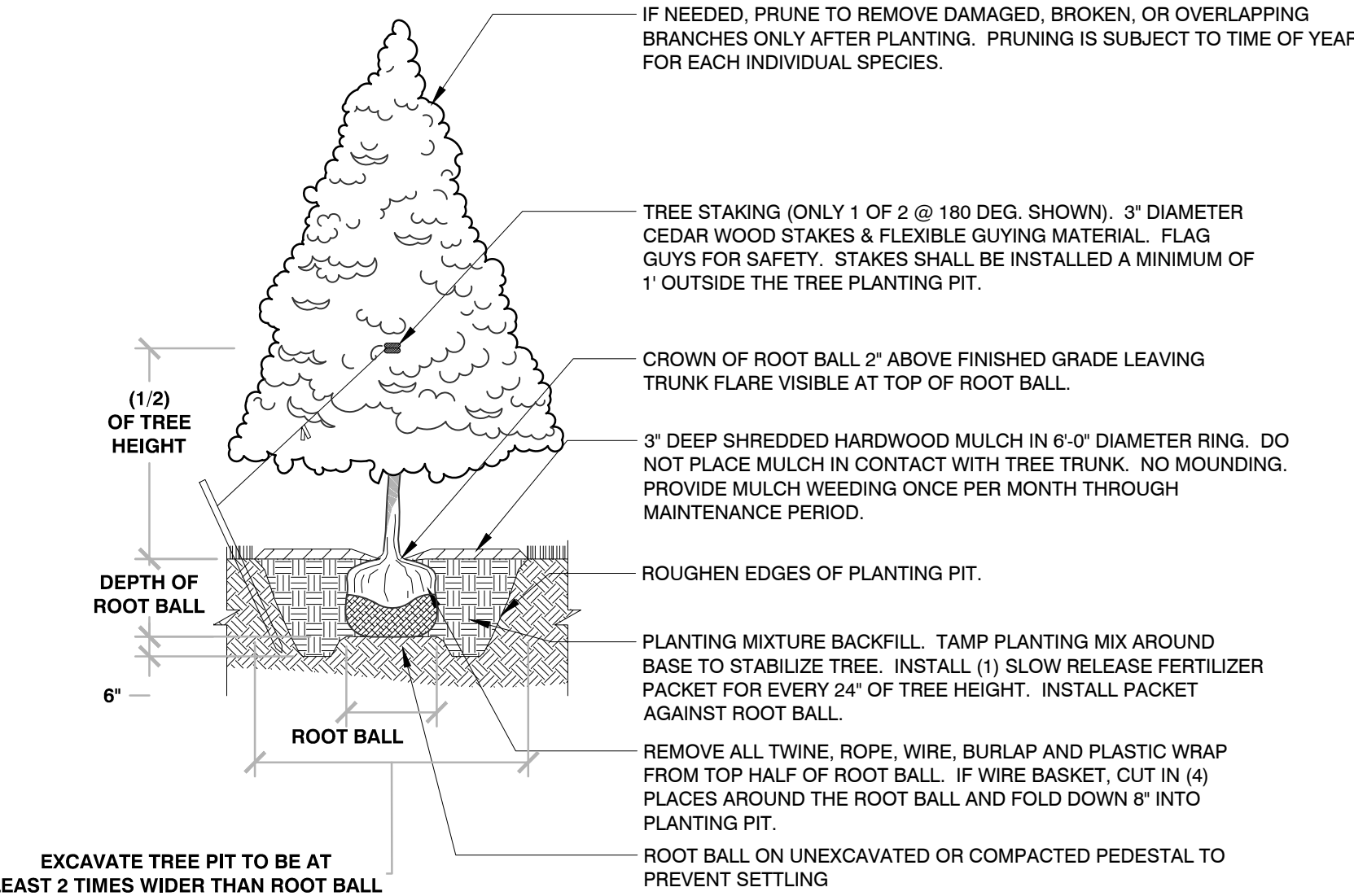


- BAREROOT PLANTING NOTES:
1. SOAK ROOTS IN WATER FOR AT LEAST ONE HOUR BUT NOT MORE THAN 24 HOURS PRIOR TO PLANTING.
 2. SCARIFY SIDES AND BOTTOMS OF HOLE.
 3. PROCEED WITH CORRECTIVE PRUNING OF THE TOP AND BOTTOM ROOTS.
 4. TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT SO THE ROOT FLARE IS APPROXIMATELY AT THE FINISHED SOIL ELEVATION. SPREAD ROOTS OUT EVENLY. PLUMB AND IMMEDIATELY BACKFILL WITH PLANTING SOIL MIX.
 5. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
 6. BACKFILL VOIDS AND WATER SECOND TIME.
 7. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

3 SHRUB PLANTING

1/2" = 1'-0"

329333-02



4 EVERGREEN TREE PLANTING

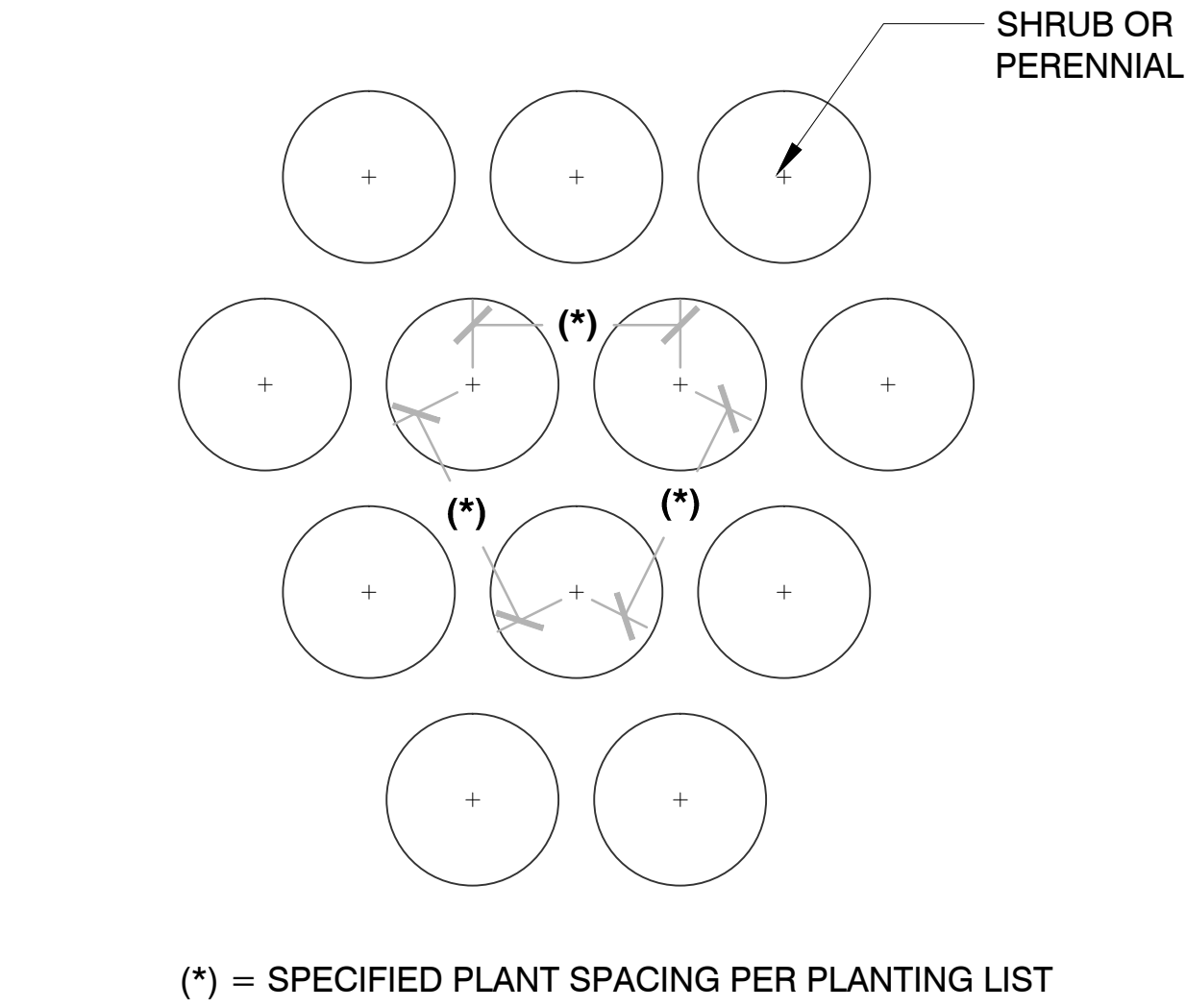
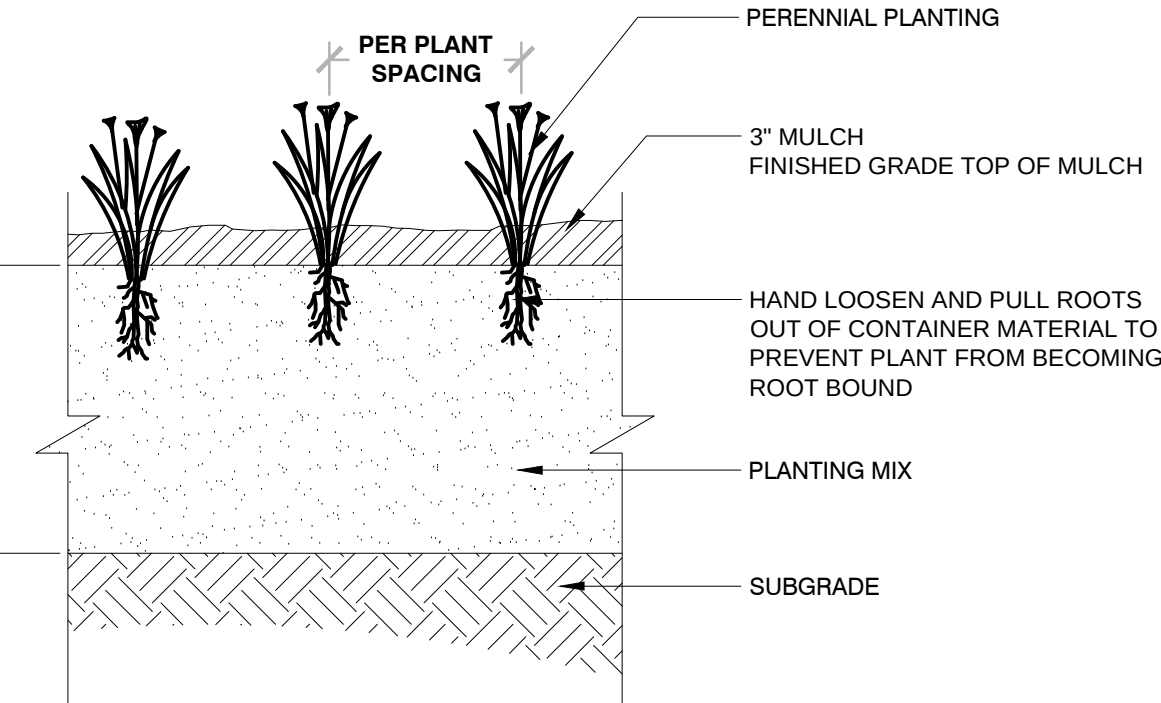
1/4" = 1'-0"

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5 PERENNIAL PLANTING

1" = 1'-0"

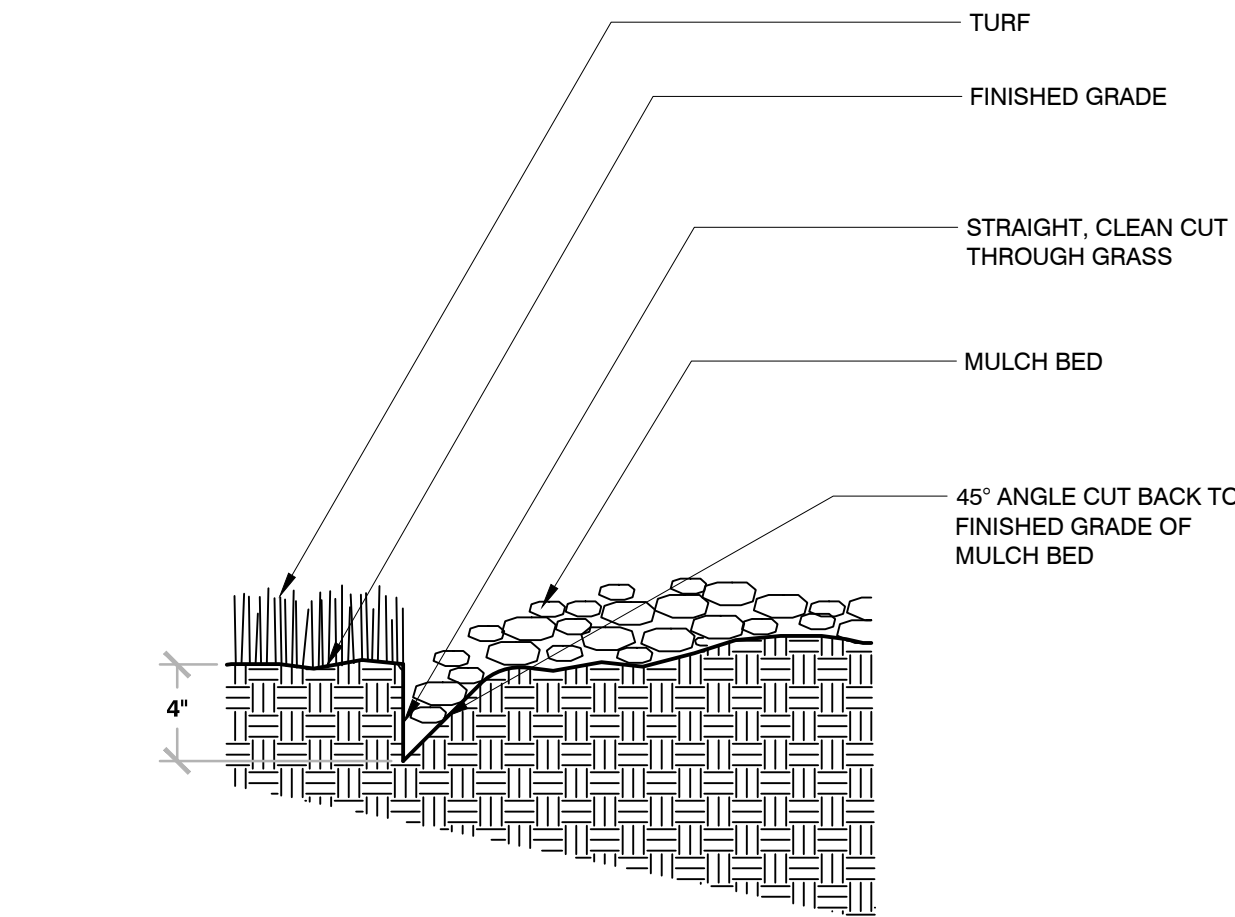
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6 PLANT SPACING

3/4" = 1'-0"

3293-02



7 TRENCHED BED EDGE

3/4" = 1'-0"

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PLANT SCHEDULE

DECIDUOUS TREES	COMMON NAME	SIZE	QTY	
Carya ovata	Shagbark Hickory	2.5" Cal.	2	
Tilia americana 'Redmond'	Redmond American Linden	2.5" Cal.	3	
Ulmus americana 'New Horizon'	New Horizon American Elm	2.5" Cal.	6	
EVERGREEN TREES	COMMON NAME	SIZE	QTY	
Juniperus virginiana	Eastern Red Cedar	5' Tall	19	
Picea glauca 'Densata'	Black Hills Spruce	5' Tall	22	
Pinus cembra 'Big Blue'	Big Blue Swiss Stone Pine	5' Tall	8	
ORNAMENTAL TREES	COMMON NAME	SIZE	QTY	
Amelanchier x grandiflora 'Autumn Brilliance'	'Autumn Brilliance' Serviceberry	1.5" Cal.	17	
Malus x 'Zumi'	Crab Apple	1.5" Cal.	13	
Syringa reticulata 'Ivory Silk'	Ivory Silk Japanese Tree Lilac	1.5" Cal.	6	
STREET TREES	COMMON NAME	SIZE	QTY	
Acer miyabei 'State Street'	Miyabei Maple	3" Cal.	4	
Celtis occidentalis 'Prairie Pride'	Prairie Pride Hackberry	3" Cal.	2	
Gymnocladus dioica	Kentucky Coffee Tree	3" Cal.	2	
Quercus bicolor	Swamp White Oak	3" Cal.	4	
Tilia americana 'Redmond'	Redmond American Linden	3" Cal.	2	
Ulmus americana 'New Horizon'	New Horizon American Elm	3" Cal.	2	
LOW DECIDUOUS SHRUBS	COMMON NAME	SIZE	QTY	
Aronia melanocarpa 'Troquois Beauty' TM	Black Chokeberry	2' Tall & Wide	6	
Potentilla fruticosa 'McKay's White'	McKay's White Bush Cinquefoil	2' Tall & Wide	20	
Weigela florida 'Dark Horse'	Weigela	2' Tall & Wide	13	
LOW EVERGREEN SHRUBS	COMMON NAME	SIZE	QTY	
Juniperus horizontalis 'Wiltonii'	Blue Rug Juniper	2' Wide	14	
MEDIUM EVERGREEN SHRUBS	COMMON NAME	SIZE	QTY	
Juniperus chinensis 'Sea Green'	Sea Green Juniper	2' Tall & Wide	76	
Juniperus squamata 'Blue Star'	Blue Star Juniper	2' Wide	12	
Juniperus virginiana 'Grey Owl'	Eastern Redcedar	2' Tall & Wide	10	
Picea pungens 'Montgomery'	Montgomery Blue Spruce	2' Tall & Wide	20	
Pinus cembra 'Blue Mound'	Blue Mound Stone Pine	2' Tall & Wide	16	
Taxus x media 'Tauntonii'	Taunton Yew	2' Tall & Wide	64	
ORNAMENTAL GRASSES	COMMON NAME	SIZE	QTY	
Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	1 gal.	28	
Panicum virgatum 'Heavy Metal'	Blue Switch Grass	1 gal.	41	
TALL DECIDUOUS SHRUBS	COMMON NAME	SIZE	QTY	
Aronia arbutifolia 'Brilliantissima'	Brilliant Red Chokeberry/Red Chokeberry	2' Tall & Wide	21	
Physocarpus opulifolius 'Center Glow'	Center Glow Ninebark	2' Tall & Wide	18	
Syringa vulgaris 'Sensation'	Sensation Lilac	2' Tall & Wide	8	
Viburnum dentatum 'Blue Muffin'	Southern Arrowwood	2' Tall & Wide	27	
TALL EVERGREEN SHRUBS	COMMON NAME	SIZE	QTY	
Juniperus chinensis 'Ames'	Ames Juniper	5' Ht.	24	
PERENNIALS	COMMON NAME	SIZE	SPACING	QTY
Geranium x 'Rozanne' TM	Hybrid Cranesbill	4.5" Cont.	24" o.c.	63
Hosta x 'Francee'	Plantain Lily	4.5" Cont.	36" o.c.	4
Nepeta x faassenii 'Walkers Low'	Walkers Low Catmint	4.5" Cont.	24" o.c.	8
Sedum x 'Autumn Joy'	Autumn Joy Sedum	4.5" Cont.	24" o.c.	59

TURF
Turf Seed Drought Tolerant Dwarf Fescue Blend

241,450 sf

NO MOW TURF
Turf Seed Low Grow Mix

383,000 sf

NOTES:

1. FOR STREET TREE PLANTING ALONG ROAD A, REFER TO ROADWAY PLANS

DESIGNED: TDM

DESIGNED: DUB

DRAFTED: DUB



PINNACLE ENGINEERING GROUP

ENGINEERING | NATURAL RESOURCES | SURVEYING

PLAN | DESIGN | DELIVER
www.pinnacle-engr.com

WISCONSIN OFFICE:
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BROOKFIELD, WI 53005
(262) 754-8888
CHICAGO | MILWAUKEE | NATIONWIDE

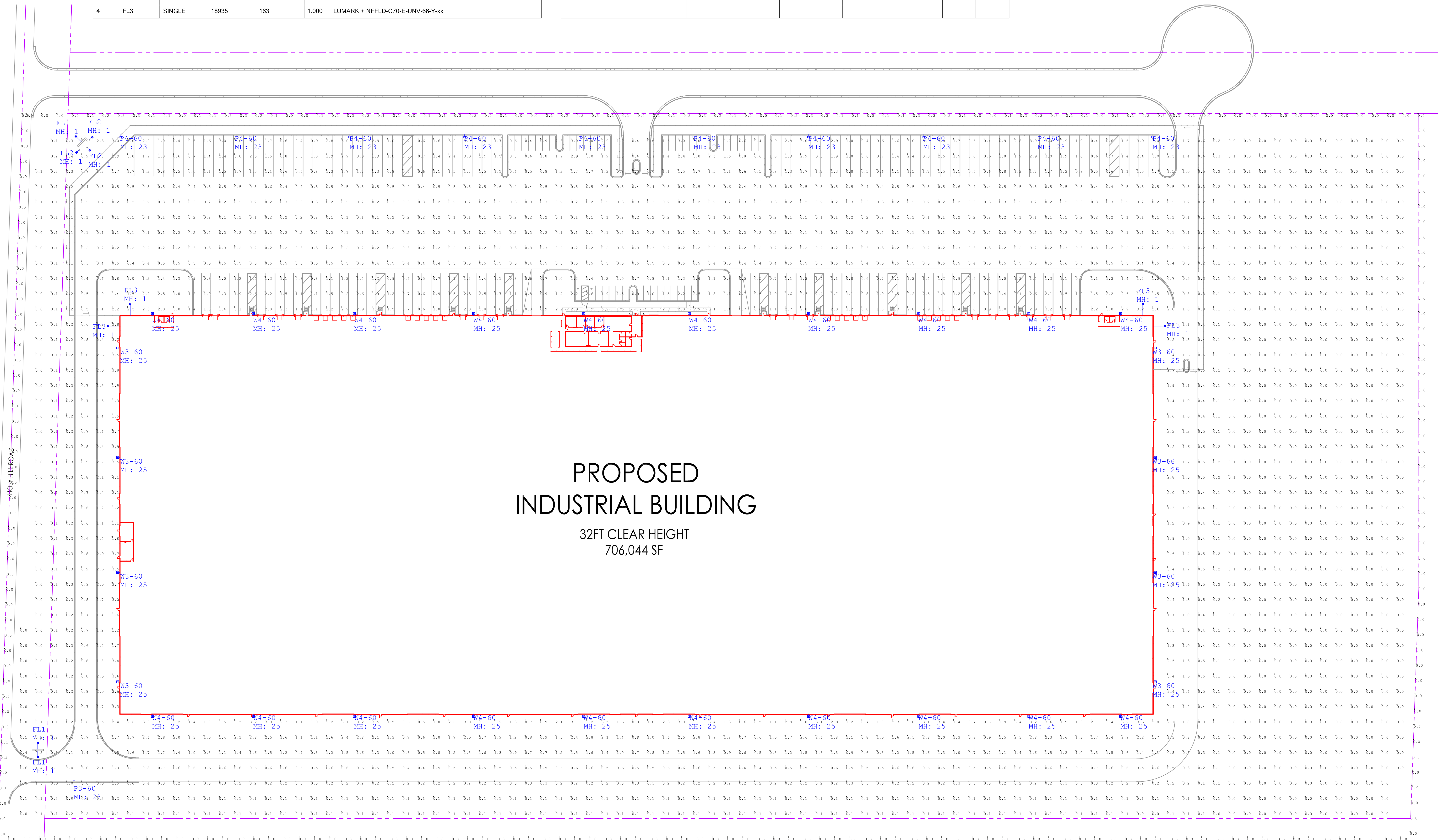


Z1 AT GERMANTOWN
CORPORATE PARK
GERMANTOWN, WI

PLANTING DETAILS & NOTES

Qty	Label	Arrangement	Lum. Lumens	Lum. Watts	LLF	Description
3	A10	SINGLE	1223	9.9	1.000	HALO COMM + PD610D10B-PDM8840-61VC
1	P3-60	SINGLE	18992	163	1.000	LUMARK + PRV-A60-D-UNV-T3-BZ (20' POLE, 3' BASE)
10	P4-60	SINGLE	18935	163	1.000	LUMARK + PRV-A60-D-UNV-T4-BZ (20' POLE, 3' BASE)
8	W3-60	SINGLE	18992	163	1.000	LUMARK + PRV-A60-D-UNV-T3-WM-BZ (25'-0" AFG)
20	W4-60	SINGLE	18935	163	1.000	LUMARK + PRV-A60-D-UNV-T4-WM-BZ (25'-0" AFG)
3	FL1	SINGLE	18935	163	1.000	LUMARK + NFFLD-S-C15-D-UNV-66-KNC-xx
3	FL2	SINGLE	18935	163	1.000	LUMARK + NFFLD-C25-E-UNV-33-Y-xx
4	FL3	SINGLE	18935	163	1.000	LUMARK + NFFLD-C70-E-UNV-66-Y-xx

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CANOPY	Illuminance	Fc	0.83	0.9	0.7	1.19	1.29
ENTIRE SITE	Illuminance	Fc	0.84	4.1	0.0	N.A.	N.A.
PROPERTY LINE	Illuminance	Fc	0.04	0.3	0.0	N.A.	N.A.
PARKING - DRIVES - TRAILERS	Illuminance	Fc	0.77	3.2	0.1	7.70	32.00



Lumark	
Model	Notes
P3-60	20' Pole, 3' Base
P4-60	20' Pole, 3' Base
W3-60	25' Pole, 3' Base
W4-60	25' Pole, 3' Base
FL1	15' Pole, 3' Base
FL2	15' Pole, 3' Base
FL3	15' Pole, 3' Base

Lumark	
Model	Notes
P3-60	20' Pole, 3' Base
P4-60	20' Pole, 3' Base
W3-60	25' Pole, 3' Base
W4-60	25' Pole, 3' Base
FL1	15' Pole, 3' Base
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W4-60	25' Pole, 3' Base
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FL2	15' Pole, 3' Base
FL3	15' Pole, 3' Base

Job Name	Job Number	Type
GERMANTOWN CORPORATE PARK	18992	P3-60

Job Name	Job Number	Type
GERMANTOWN CORPORATE PARK	18992	P4-60

Job Name	Job Number	Type
GERMANTOWN CORPORATE PARK	18992	W3-60

Job Name	Job Number	Type
GERMANTOWN CORPORATE PARK	18992	W3-60

Job Name	Job Number	Type
GERMANTOWN CORPORATE PARK	18992	W4-60

Job Name	Job Number	Type
GERMANTOWN CORPORATE PARK	18992	W4-60

Enterprise Lighting LTD

**GERMANTOWN CORPORATE PARK
GERMANTOWN, WISCONSIN**

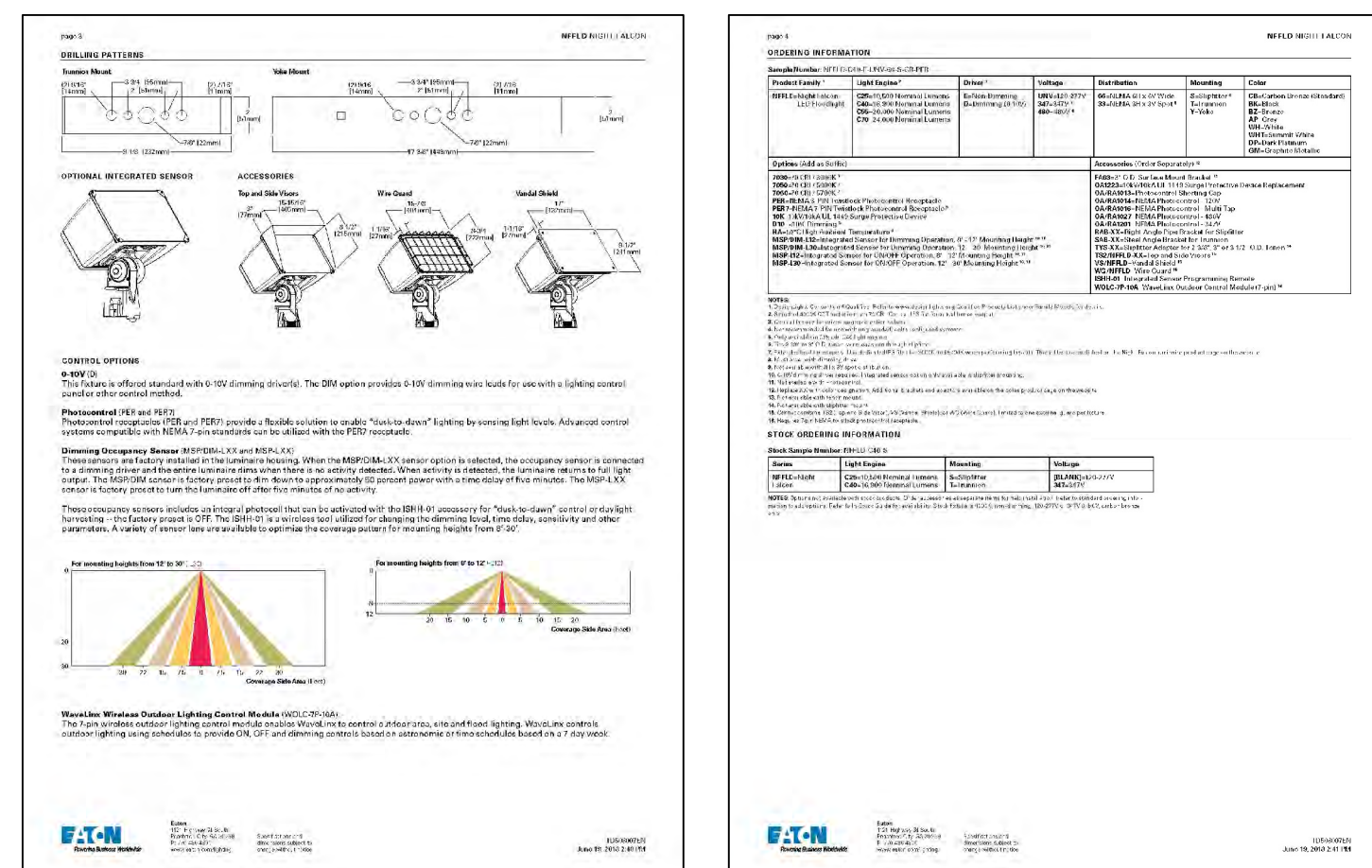
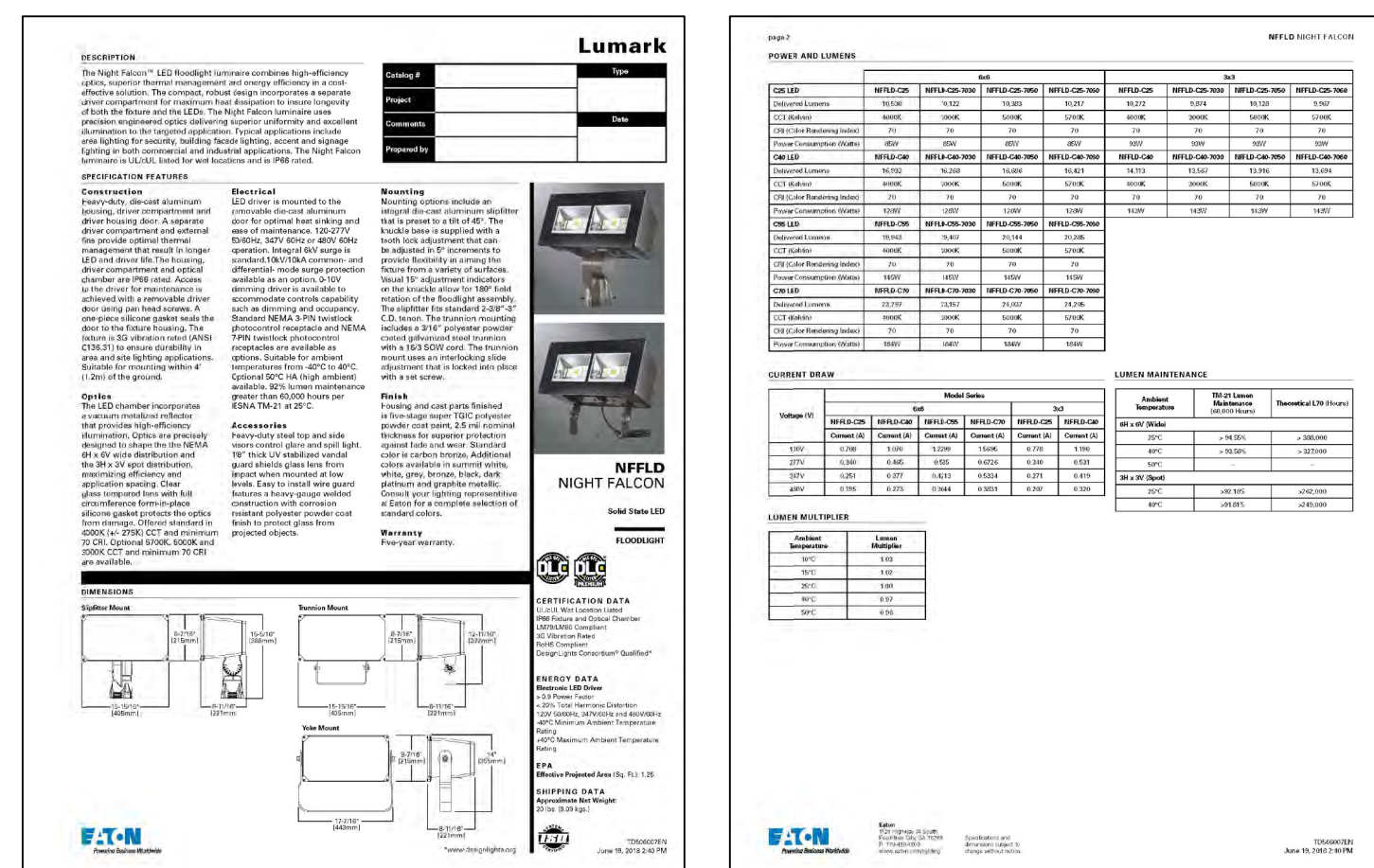
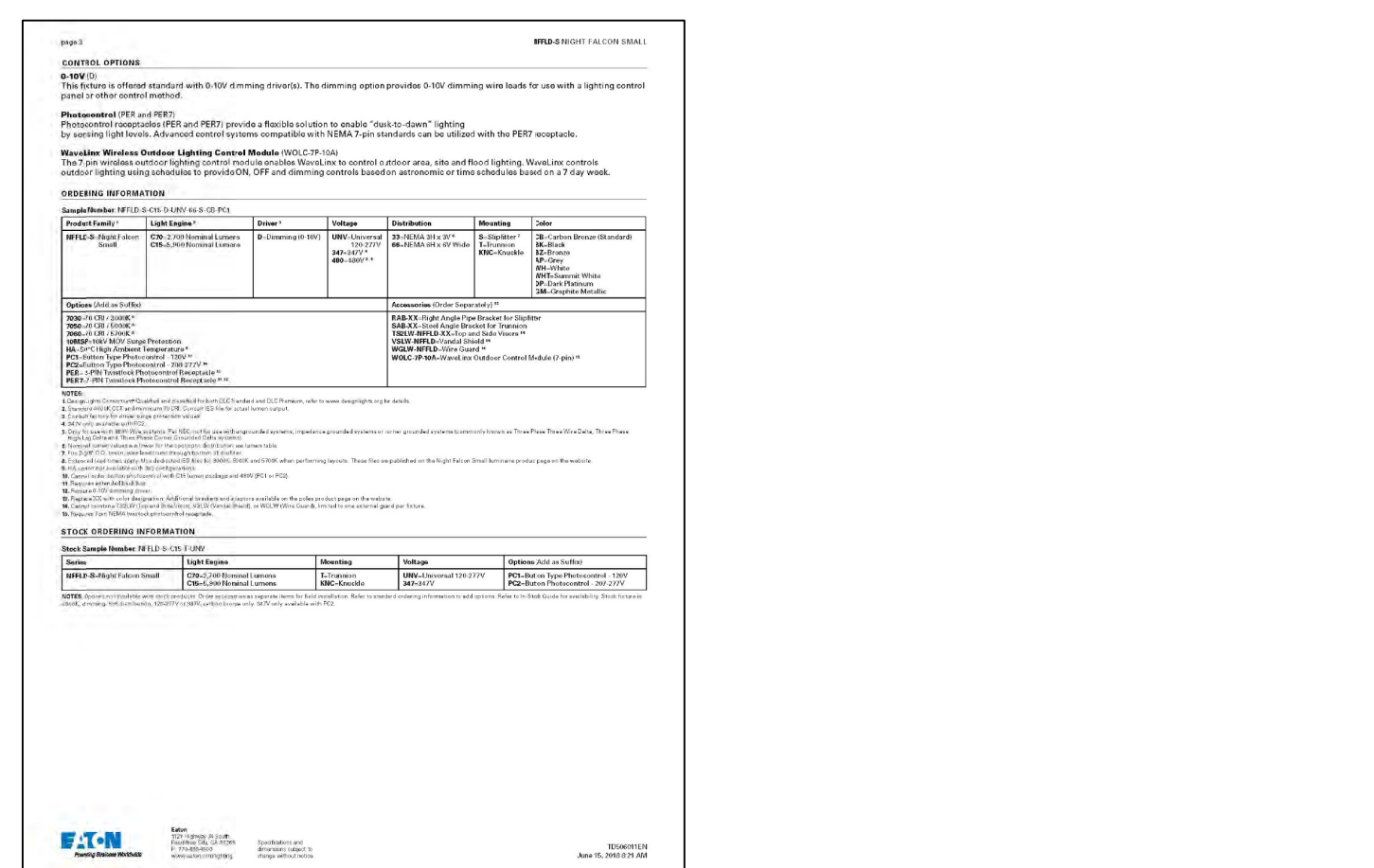
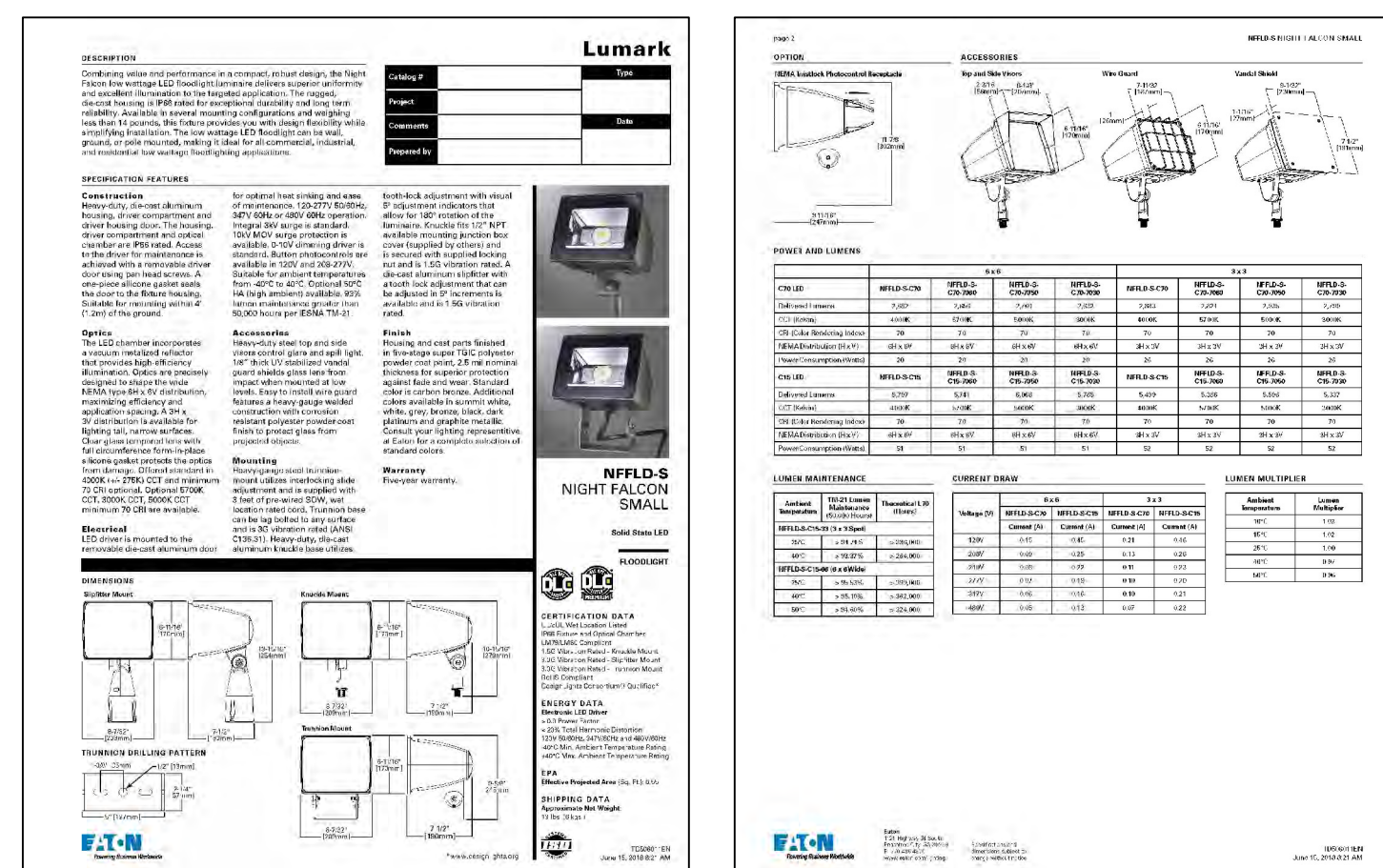
**SITE LIGHTING PLAN
OPTION 1**

DATE: JULY 16, 2018

SCALE: 1" = 60'-0"

SHEET NUMBER: E1a

Calculation Summary							
Label	CatcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CANOPY	Illuminance	Fc	12.73	14.9	10.8	1.18	1.38
ENTIRE SITE	Illuminance	Fc	0.63	3.0	0.0	N.A.	N.A.
PROPERTY LINE	Illuminance	Fc	0.07	0.3	0.0	N.A.	N.A.
PARKING - DRIVES - TRAILERS	Illuminance	Fc	0.82	3.0	0.2	4.10	15.00



32FT CLEAR HEIGHT
706,044 SF

[illegible][illegible][illegible]

 Eaton Power Quality Engineering & Technology	Job Number: _____ Customer: _____ Project: _____	Quoting Number: PRV-W4-0174-000007 Version: _____	Type: W4-00
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DESCRIPTION

The attached drawing shows the configuration of the equipment to be installed. The equipment is to be installed in a room with a temperature range of 50°F to 100°F. The equipment is to be installed in a room with a relative humidity range of 20% to 80%. The equipment is to be installed in a room with a maximum altitude of 5000 feet. The equipment is to be installed in a room with a maximum seismicity of 0.2g. The equipment is to be installed in a room with a maximum vibration of 0.1g. The equipment is to be installed in a room with a maximum noise level of 70 dBA. The equipment is to be installed in a room with a maximum air quality of 100% fresh air. The equipment is to be installed in a room with a maximum air flow of 1000 CFM. The equipment is to be installed in a room with a maximum air pressure of 1000 Pa. The equipment is to be installed in a room with a maximum air velocity of 1000 ft/min. The equipment is to be installed in a room with a maximum air density of 1.2 kg/m³. The equipment is to be installed in a room with a maximum air viscosity of 1.8e-4 Pa·s. The equipment is to be installed in a room with a maximum air thermal conductivity of 0.026 W/m·K. The equipment is to be installed in a room with a maximum air specific heat capacity of 1005 J/kg·K. The equipment is to be installed in a room with a maximum air gas constant of 287 J/kg·K. The equipment is to be installed in a room with a maximum air molecular weight of 28.97 g/mol. The equipment is to be installed in a room with a maximum air universal gas constant of 8.314 J/mol·K. The equipment is to be installed in a room with a maximum air Avogadro's number of 6.022e23 mol⁻¹. The equipment is to be installed in a room with a maximum air Planck's constant of 6.626e-34 J·s. The equipment is to be installed in a room with a maximum air speed of light of 2.998e8 m/s. The equipment is to be installed in a room with a maximum air gravitational constant of 6.674e-11 N·m²/kg². The equipment is to be installed in a room with a maximum air Boltzmann's constant of 1.38e-23 J/K. The equipment is to be installed in a room with a maximum air elementary charge of 1.602e-19 C. The equipment is to be installed in a room with a maximum air proton mass of 1.673e-27 kg. The equipment is to be installed in a room with a maximum air neutron mass of 1.675e-27 kg. The equipment is to be installed in a room with a maximum air electron mass of 9.109e-31 kg. The equipment is to be installed in a room with a maximum air Planck's constant of 6.626e-34 J·s. The equipment is to be installed in a room with a maximum air speed of light of 2.998e8 m/s. The equipment is to be installed in a room with a maximum air gravitational constant of 6.674e-11 N·m²/kg². The equipment is to be installed in a room with a maximum air Boltzmann's constant of 1.38e-23 J/K. The equipment is to be installed in a room with a maximum air elementary charge of 1.602e-19 C. The equipment is to be installed in a room with a maximum air proton mass of 1.673e-27 kg. The equipment is to be installed in a room with a maximum air neutron mass of 1.675e-27 kg. The equipment is to be installed in a room with a maximum air electron mass of 9.109e-31 kg.

ACCESSORIES AND OPTIONS

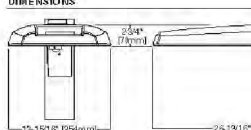
Accessories

The following accessories and options are available for this equipment. The equipment is to be installed in a room with a temperature range of 50°F to 100°F. The equipment is to be installed in a room with a relative humidity range of 20% to 80%. The equipment is to be installed in a room with a maximum altitude of 5000 feet. The equipment is to be installed in a room with a maximum seismicity of 0.2g. The equipment is to be installed in a room with a maximum vibration of 0.1g. The equipment is to be installed in a room with a maximum noise level of 70 dBA. The equipment is to be installed in a room with a maximum air quality of 100% fresh air. The equipment is to be installed in a room with a maximum air flow of 1000 CFM. The equipment is to be installed in a room with a maximum air pressure of 1000 Pa. The equipment is to be installed in a room with a maximum air velocity of 1000 ft/min. The equipment is to be installed in a room with a maximum air density of 1.2 kg/m³. The equipment is to be installed in a room with a maximum air viscosity of 1.8e-4 Pa·s. The equipment is to be installed in a room with a maximum air thermal conductivity of 0.026 W/m·K. The equipment is to be installed in a room with a maximum air specific heat capacity of 1005 J/kg·K. The equipment is to be installed in a room with a maximum air gas constant of 287 J/kg·K. The equipment is to be installed in a room with a maximum air molecular weight of 28.97 g/mol. The equipment is to be installed in a room with a maximum air universal gas constant of 8.314 J/mol·K. The equipment is to be installed in a room with a maximum air Avogadro's number of 6.022e23 mol⁻¹. The equipment is to be installed in a room with a maximum air Planck's constant of 6.626e-34 J·s. The equipment is to be installed in a room with a maximum air speed of light of 2.998e8 m/s. The equipment is to be installed in a room with a maximum air gravitational constant of 6.674e-11 N·m²/kg². The equipment is to be installed in a room with a maximum air Boltzmann's constant of 1.38e-23 J/K. The equipment is to be installed in a room with a maximum air elementary charge of 1.602e-19 C. The equipment is to be installed in a room with a maximum air proton mass of 1.673e-27 kg. The equipment is to be installed in a room with a maximum air neutron mass of 1.675e-27 kg. The equipment is to be installed in a room with a maximum air electron mass of 9.109e-31 kg.

Notes

The following notes apply to this equipment. The equipment is to be installed in a room with a temperature range of 50°F to 100°F. The equipment is to be installed in a room with a relative humidity range of 20% to 80%. The equipment is to be installed in a room with a maximum altitude of 5000 feet. The equipment is to be installed in a room with a maximum seismicity of 0.2g. The equipment is to be installed in a room with a maximum vibration of 0.1g. The equipment is to be installed in a room with a maximum noise level of 70 dBA. The equipment is to be installed in a room with a maximum air quality of 100% fresh air. The equipment is to be installed in a room with a maximum air flow of 1000 CFM. The equipment is to be installed in a room with a maximum air pressure of 1000 Pa. The equipment is to be installed in a room with a maximum air velocity of 1000 ft/min. The equipment is to be installed in a room with a maximum air density of 1.2 kg/m³. The equipment is to be installed in a room with a maximum air viscosity of 1.8e-4 Pa·s. The equipment is to be installed in a room with a maximum air thermal conductivity of 0.026 W/m·K. The equipment is to be installed in a room with a maximum air specific heat capacity of 1005 J/kg·K. The equipment is to be installed in a room with a maximum air gas constant of 287 J/kg·K. The equipment is to be installed in a room with a maximum air molecular weight of 28.97 g/mol. The equipment is to be installed in a room with a maximum air universal gas constant of 8.314 J/mol·K. The equipment is to be installed in a room with a maximum air Avogadro's number of 6.022e23 mol⁻¹. The equipment is to be installed in a room with a maximum air Planck's constant of 6.626e-34 J·s. The equipment is to be installed in a room with a maximum air speed of light of 2.998e8 m/s. The equipment is to be installed in a room with a maximum air gravitational constant of 6.674e-11 N·m²/kg². The equipment is to be installed in a room with a maximum air Boltzmann's constant of 1.38e-23 J/K. The equipment is to be installed in a room with a maximum air elementary charge of 1.602e-19 C. The equipment is to be installed in a room with a maximum air proton mass of 1.673e-27 kg. The equipment is to be installed in a room with a maximum air neutron mass of 1.675e-27 kg. The equipment is to be installed in a room with a maximum air electron mass of 9.109e-31 kg.

PHYSICAL DATA



(1) 1000 mm (39.37 in)

Color 1

Color 2

Color 3

Color 4

Color 5

Color 6

Color 7

Color 8

Color 9

Color 10

Color 11

Color 12

Color 13

Color 14

Color 15

Color 16

Color 17

Color 18

Color 19

Color 20

Color 21

Color 22

Color 23

Color 24

Color 25

Color 26

Color 27

Color 28

Color 29

Color 30

Color 31

Color 32

[illegible]

STORM SEWER COMPUTATIONS
FOR
Z1 AT GERMANTOWN CORPORATE PARK
SOUTH RUN

SHEET 1 OF 3
DESIGN BY: AJS
PROJECT NUMBER: 1296.00
DATE: 6/6/2018

DESIGN DATA																		
County: Washington			Design Storm: 10 yr		Storm Duration: 10 min		DESIGN INTENSITY (I): 5.36 in/hr				Intensity calculated using SEWRPC IDF equations.							
STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA				PIPE DATA				PIPE CAPACITY INFORMATION					ELEVATIONS		
			Flow is determined by Rational Method Q = CIA								Pipe capacity is determined by Manning's Equation Q = 1.486/n AR ^{2/3} S ^{1/2}							
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down
SOUTH																		
*	BC 1.1	CB 1.0	1.24	0.90	7.56	7.56	92.50	16	2.08	0.012	0.76	1.92	60%	9.08	12.90	926.60	917.20	915.28
	CB 1.0	CB 2.0	0.58	0.90	2.80	40.82	216.00	42	0.20	0.012	0.30	0.43	75%	5.67	52.43	920.50	914.43	913.99
*	BC 2.1	CB 2.0	1.24	0.90	7.56	7.56	92.50	16	2.08	0.012	0.76	1.92	60%	9.08	12.90	926.60	917.07	915.14
	CB 2.0	CB 3.0	0.67	0.90	3.23	51.61	215.80	48	0.20	0.013	0.28	0.43	72%	5.68	69.10	920.50	913.89	913.46
*	BC 3.1	CB 3.0	0.78	0.90	4.75	4.75	92.10	12	2.08	0.012	1.40	1.92	76%	7.96	5.99	926.60	916.78	914.86
	CB 3.0	CB 4.0	0.76	0.90	3.67	60.03	183.10	48	0.20	0.013	0.32	0.37	82%	5.81	69.10	920.50	913.36	913.00
	CB 4.0	CB 5.0	0.21	0.90	1.01	61.04	148.60	48	0.20	0.013	0.27	0.30	83%	5.82	69.10	920.40	912.90	912.60
*	BC 5.1	CB 5.0	0.28	0.90	1.71	1.71	44.20	12	2.08	0.012	0.09	0.92	35%	6.23	5.99	926.60	916.02	915.10
	CB 5.0	CB 6.0	0.21	0.90	1.01	63.76	149.70	48	0.20	0.013	0.29	0.30	87%	5.83	69.10	919.80	912.50	912.20
*	BC 6.1	CB 6.0	0.99	0.90	6.03	6.03	44.20	16	2.08	0.012	0.23	0.92	50%	8.60	12.90	926.60	915.32	914.40
	CB 6.0	CB 7.0	0.27	0.90	1.30	71.09	150.00	54	0.20	0.013	0.20	0.30	73%	6.16	94.60	919.80	912.10	911.80
*	BC 7.1	CB 7.0	0.29	0.90	1.77	1.77	44.20	10	2.08	0.012	0.24	0.92	51%	6.33	3.68	926.60	914.62	913.70
	CB 7.0	CB 8.0	0.28	0.80	0.00	72.86	250.60	54	0.35	0.012	0.29	0.88	56%	8.21	135.57	919.80	911.70	910.82
	CB 8.0	CB 9.0	0.71	0.90	3.43	76.29	140.60	54	0.35	0.013	0.21	0.49	61%	7.80	125.14	920.25	910.72	910.23
*	BC 9.1	MH 9.2	0.89	0.90	5.42	5.42	123.80	16	2.08	0.012	0.53	2.58	46%	8.37	12.90	926.60	912.81	910.23
	CB 9.0	MH 103.0	0.78	0.90	4.75	86.46	191.80	54	0.48	0.013	0.37	0.92	60%	9.07	146.55	920.25	910.13	909.22
*	BC 10.1	CB 10.0	1.33	0.90	8.10	8.10	120.00	16	2.08	0.012	1.14	2.50	63%	9.22	12.90	922.60	918.02	915.52
	CB 10.0	CB 11.0	1.14	0.90	6.95	15.05	229.60	24	1.00	0.012	0.87	2.30	58%	8.20	26.36	920.25	915.42	913.13
*	BC 11.1	CB 11.0	1.34	0.90	8.16	8.16	120.00	16	2.08	0.012	1.16	2.50	63%	9.23	12.90	922.60	917.52	915.03
	CB 11.0	CB 102.1	1.12	0.90	6.82	30.04	197.76	30	1.00	0.012	0.90	1.98	63%	9.72	47.80	920.25	913.03	911.05
*	BC 24.1	CB 24.0	1.00	0.90	6.09	6.09	120.00	16	2.08	0.012	0.64	2.50	51%	8.62	12.90	922.60	917.15	914.65
	CB 24.0	MH 100.0	1.17	0.90	7.13	28.21	166.70	36	0.53	0.013	0.30	0.88	56%	7.13	52.23	920.25	914.53	913.65
*	BC 15.1	CB 15.0	0.78	0.90	4.75	4.75	88.30	16	2.08	0.012	0.29	1.84	42%	8.09	12.90	926.60	918.74	916.90
	CB 15.0	CB 14.0	1.00	0.90	4.82	9.58	211.00	30	0.20	0.012	0.10	0.42	49%	4.01	21.38	920.50	915.90	915.48
*	BC 14.1	CB 14.0	1.24	0.90	7.56	7.56	90.80	16	2.08	0.012	0.75	1.89	60%	9.08	12.90	926.60	918.14	916.25
	CB 14.0	CB 13.0	0.66	0.90	3.18	20.32	216.90	36	0.20	0.012	0.17	0.43	60%	4.83	34.76	920.50	915.38	914.95
*	BC 13.1	CB 13.0	0.93	0.90	5.67	5.67	92.50	16	2.08	0.012	0.43	1.92	48%	8.46	12.90	926.60	918.62	916.70
	CB 13.0	CB 1.0	0.93	0.90	4.49	30.47	161.10	36	0.20	0.012	0.29	0.32	83%	5.20	34.76	920.50	914.85	914.53
Notes:																		
* Intensity = 6.77 in/hr based on a 6 min Tc using SEWRPC IDF equations.																		

Notes:
* Intensity = 6.77 in/hr based on a 6 min Tc using SEWRPC IDF equations.

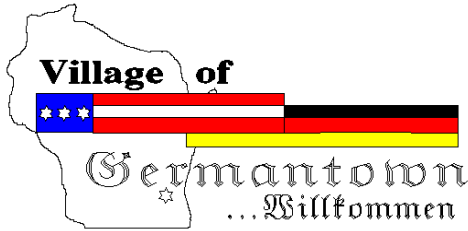
STORM SEWER COMPUTATIONS
FOR
Z1 AT GERMANTOWN CORPORATE PARK
NORTH RUN

SHEET 2 OF 3
DESIGN BY: AJS
PROJECT NUMBER: 1296.00
DATE: 6/6/2018

DESIGN DATA																			
County: Washington		Design Storm: 10 yr		Storm Duration: 10 min		DESIGN INTENSITY (I): 5.36 in/hr				Intensity calculated using SEWRPC IDF equations.									
STRUCTURE DATA			DRAINAGE AREA AND FLOW DATA				PIPE DATA				PIPE CAPACITY INFORMATION					ELEVATIONS			
			Flow is determined by Rational Method Q = CIA								Pipe capacity is determined by Manning's Equation Q = 1.486/n AR ^{2/3} S ^{1/2}								
Pipe Run	Upstream Structure	Downstream Structure	Individual Acres A	Individual Coefficient C	Individual Flow Q (cfs)	Cumulative Flow (cfs)	Length (ft)	Diameter (in)	Slope (%)	Manning Coefficient	Required Drop (ft)	Actual Drop (ft)	Percent Full (%)	Actual Velocity (fps)	Max. Capacity (cfs)	Rim/Toc Up	Invert Up	Invert Down	
NORTH																			
*	BC 17.1	CB 17.0	0.28	0.90	1.71	1.71	43.20	12	2.08	0.012	0.08	0.90	35%	6.23	5.99	926.60	920.21	919.31	
	CB 17.0	CB 18.0	0.25	0.90	1.21	2.91	150.00	18	0.20	0.012	0.10	0.30	55%	2.98	5.47	923.45	917.00	916.70	
*	BC 18.1	CB 18.0	0.99	0.90	6.03	6.03	44.20	16	2.08	0.012	0.23	0.92	50%	8.60	12.90	926.60	919.83	918.91	
	CB 18.0	CB 19.0	0.27	0.90	1.30	10.25	150.00	24	0.20	0.012	0.26	0.30	82%	3.96	11.79	923.45	916.60	916.30	
*	BC 19.1	CB 19.0	0.29	0.90	1.77	1.77	42.60	12	2.08	0.012	0.09	0.89	36%	6.29	5.99	926.60	919.41	918.52	
	CB 19.0	CB 20.0	0.20	0.90	0.96	12.98	353.40	30	0.20	0.012	0.30	0.71	61%	4.31	21.38	923.45	916.20	915.50	
	CB 20.0	MH 108	0.29	0.90	1.40	42.98	87.90	48	0.10	0.013	0.08	0.09	83%	4.11	48.86	923.45	915.40	915.31	
*	BC 21.1	CB 21.0	0.89	0.90	5.42	5.42	123.80	12	2.08	0.012	2.44	2.58	85%	8.08	5.99	922.60	918.21	915.63	
*	CB 21.0	CB 109.1	1.44	0.90	8.77	14.20	166.80	30	0.15	0.012	0.17	0.25	74%	3.92	18.51	920.25	915.53	915.29	
*	BC 23.1	CB 23.0	1.34	0.90	8.16	8.16	120.00	16	2.08	0.012	1.16	2.50	63%	9.23	12.90	922.60	919.55	917.05	
*	CB 23.0	CB 24.0	1.12	0.90	6.82	14.99	230.70	24	0.50	0.012	0.86	1.15	77%	6.21	18.64	920.25	915.80	914.65	
**	ES 119.0	CB 20.0	5.93	0.90	28.61	28.61	87.80	36	0.20	0.013	0.16	0.18	84%	4.81	32.09	924.53	915.40	915.22	
Notes:																			
* Intensity = 6.77 in/hr based on a 6 min Tc using SEWRPC IDF equations.																			
**Area is for future building expansion																			

			10-minute Intensity (Inches/hour) - IDF Equations							
County	Design Storm	Duration	County	1	2	5	10	25	50	100
Kenosha	1	5 min	Kenosha	2.98	3.48	4.32	5.03	6.03	6.86	7.65
Milwaukee	2	10 min	Milwaukee	2.87	3.43	4.35	5.08	6.1	6.83	7.6
Ozaukee	5		Ozaukee	2.89	3.49	4.44	5.2	6.2	6.95	7.62
Racine	10		Racine	2.92	3.45	4.31	5.04	6.04	6.82	7.65
Walworth	25		Walworth	3.09	3.61	4.46	5.17	6.18	6.96	7.73
Washington	50		Washington	2.98	3.6	4.57	5.36	6.37	7.13	7.85
Waukesha	100		Waukesha	3	3.58	4.53	5.28	6.3	7.08	7.85

5-minute Intensity (Inches/hour) - IDF Equations							
County	1	2	5	10	25	50	100
Kenosha	4.05	4.75	5.9	6.89	8.28	9.38	10.52
Milwaukee	3.91	4.69	5.93	6.95	8.33	9.37	10.39
Ozaukee	3.94	4.75	6.06	7.09	8.46	9.47	10.44
Racine	3.98	4.7	5.89	6.88	8.28	9.36	10.46
Walworth	4.21	4.92	6.09	7.08	8.45	9.53	10.6
Washington	4.07	4.89	6.23	7.29	8.7	9.77	10.77
Waukesha	4.09	4.88	6.18	7.22	8.64	9.7	10.75



Engineering Department Memorandum

To : Jeffrey W. Retzlaff, AICP, Planning Director/Zoning Administrator
From : Lawrence Ratayczak, P.E., Director of Public Works
Date : June 28th, 2018
Re : Zilber Holy Hill Site: Building #1 Plan Review

Items Reviewed:

1. Civil Plan Set (C1-C21 pages)

Dated: 06-12-18

Revised Plans Dated 07/16/2018

General Comments:

1. Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
This memo has been recreated to allow presentation of the original comment with a response immediately following. Zilber – Green | Pinnacle – Orange
2. The submitted plans have been reviewed for general conformance with State and Village design guidelines. It is understood the plans submitted are preliminary in nature and a higher level of detail and design needs to be completed as the plans move forward. Additional comments could arise as a result of the plan completion and modifications. The items listed below will need to be fully resolved before the Engineering Dept. can recommend a formal approval of the plans and permit for construction.
Acknowledged and understood.
3. This project will require a WRAPP/NOI from the DNR. Please submit a copy of the approved permit prior to final approval.
This permit will be forwarded upon receipt.
4. As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
Acknowledged and understood.
5. A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
Acknowledged and Understood.
6. Contact Frank Rosecky, 262-250-4722 for a utility permit.
Frank will be contacted as soon as plans have been finalized to a point of being able to trigger the permit.
7. As a guide to the review response: Items in *italics* are resolved or acknowledged, items in regular font are to be addressed yet, items in **Bold** are additional feedback to remaining original comment.
Acknowledged and understood.

C-1 Cover Sheet

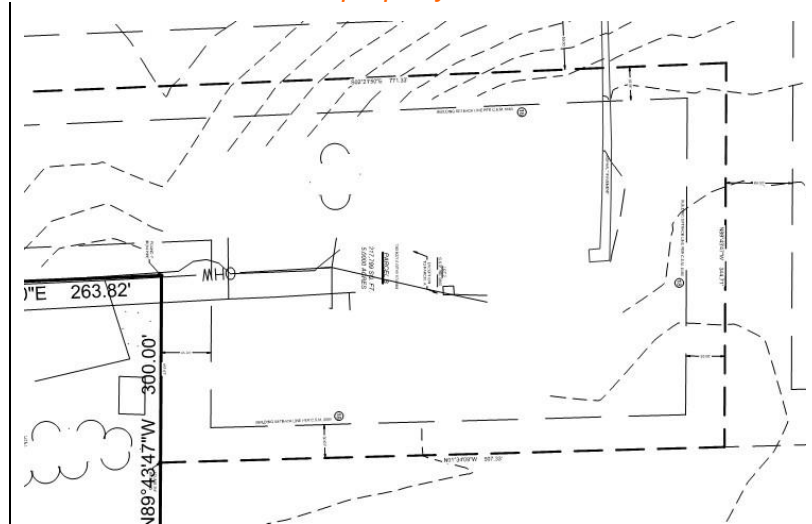
1. General Note #2, fill in blank spaces.

The Geotechnical report has been received and the note has been updated to include the report dated of June 28th, 2018.

C-2 Existing Conditions and Demolition Plan

1. Label existing contours
Additional Contour labels added.
2. Shows entire extents of property
Sheet viewport has been modified to show entire extents of property.

3. Show contours for this area
The Survey has been updated to show contours in this area.



C-4 Site Dimension and Paving Plan

1. Show turn movements for WB-67 turning from Holy Hill road to the proposed roadway.
Exhibits for a WB-67 turning from Holy Hill Road to the proposed roadway have been created. See the supplemental Truck turning exhibits.
2. Show turn movements for WB-67 turning from proposed roadway into the site.
Exhibits for a WB-67 turning from Holy Hill Road to the proposed roadway have been created. See Truck turning exhibits.
3. Assume existing utilities to the site will be removed? Call this out on a plan
A demolition note has been added to the Existing Condition sheet (C-2) that's states "See "mass grading" plans for existing topo features that were demolished. See sheet C-2.
4. Provide dimensions between property boundary and proposed parking / pavement.
Dimensions from the property boundary and the proposed parking/ pavement have been added to the plans. See sheets C-3 to C-6.

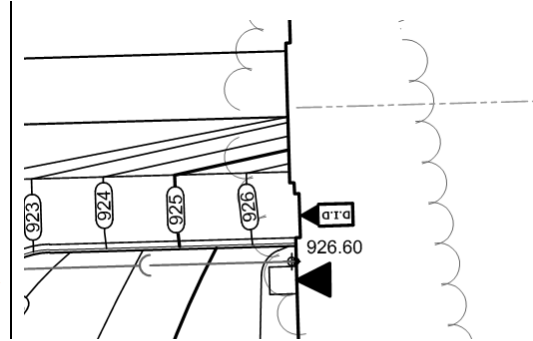
C-6 Site Dimension and Paving Plan

1. Note that any future additions or site development will require detailed plans and review at the time of the addition
Acknowledged and understood.

C-8 Grading Plan

1. Show how grading will work for these areas. Top of curb will be higher than the door elevation.

At the drive-in doors the curb will be tapered down so that the curb will not be higher than the drive-in door. See site dimensional and paving sheets (C-3 to C-6) for the call out. See the taper curb head detail on sheet C-21.

**C-10 Grading Plan**

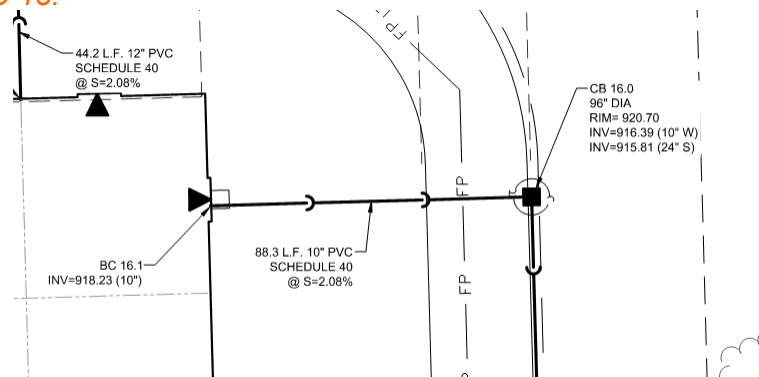
1. Enlarged view has no spot elevations, dimensions, or notes. Please revise to include those items.
The enlarged view has been updated with spot elevations, dimensions and notes. See sheet C-10

C-12 Utility Plan

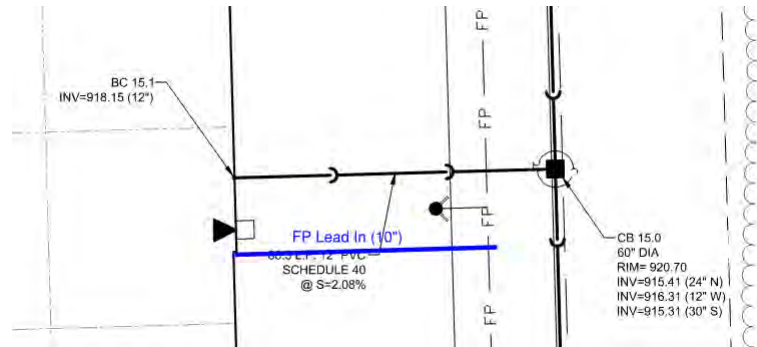
1. Pipe between CB 2 and CB 3 is shown as 30" however upstream pipe is shown as 42"
The pipe from CB 2.0 to CB 3.0 has been updated to match the storm sewer spreadsheet and been increase from a 30" pipe to a 48" pipe. See sheet C-12.
2. Sanitary sewer is shown at over 20' deep. Provide specifications for pipe material showing the selected material can be buried at this depth.
Material for the Sanitary pipe has been included in the pipe label. See sheet C-12.
3. Indicate the connection points of the FP loop to the public water main
Please note the connection from the public main to the building will be the only municipal pressure main. The fire protection "loop" (designated with the "FP" line type) will be fed from the building from the fire pump. This graphical depiction has been included based per comments from the fire protection design/build contractor. Please see sheets C-11 to C-14.

C-13 Utility Plan

1. CB 16: 96" diameter seems excessive for a 10" and 24" pipe.
Please note that roof drain locations have changed. Manhole Sizes have been updated and CB 16 has changed to a 48" diameter manhole from a 96" diameter manhole based on updated roof leader sizing. See sheet C-13.



2. CB 17: 96" diameter seems excessive for an 18" and 12" pipe.
Please note that roof drain locations have changed. Manhole Sizes have been updated and CB 17 has changed to a 48" diameter manhole from a 96" diameter manhole. See sheet C-13.



C-14 Utility Plan

1. Update storm sewer calcs to use NOAA Atlas 14 rainfall
Storm sewer calculations have been updated to the NOAA Atlas 14 Rainfall. See storm sewer calculations spreadsheet.
2. A 6 minute intensity is likely more appropriate for most of the storm sewer on this site. Update the intensity to a 6 minute time or show that 10 minutes is appropriate.
*See note on bottom of storm sewer spread sheets that states rows with a * symbol are using a 6 minute time of concentration. This 6-minute time of concentration is being used for all roof leads as they are largely impervious. See storm sewer spreadsheet calculations.*

C-15 Site Stabilization Plan

1. Provide additional details on site sequencing for this project in relation to the roadway project and mass grading project. Will those projects be completed prior to this project starting or will they happen concurrently? Show how runoff from this site will be routed to the stormwater basin or provide a separate sediment basin on this site during construction.
Construction activities are intended to utilize the Mass Grading and Stormwater Pond plans to establish the perimeter erosion controls and bring the sediment basin online immediately upon commencement of construction. The sediment basin is sized for the overall land disturbance. These controls will allow simultaneous construction within the overall project limits.

An initial site stabilization plan has been added to the mass grading plan set. These plans show how runoff will be directed into the proposed pond which is being used as a sediment basin during construction. The pond is being over excavated to be used as a sediment basin. See sheets C-3 to C-7 of the mass grading plans.

C-16 Site Stabilization Plan

1. Silt fence ends in the middle of the ditch along Holy Hill Road. Extend silt fence to contain all runoff from the site.
Silt fence has been extended across the entire frontage of Holy Hill Road.
2. Show areas requiring erosion mat for channelized flow.
Channel Erosion mat in the roadside ditch has been added.
3. Show inlet protection for storm sewer in the proposed roadway.
Refer to Sheets C-14 to C-16 of the Public Roadway plans.
4. Extend limits of erosion matting to cover the entire sloped area on the east side of the site.
Additional erosion matting has been added cover the entire sloped area on the east side. See sheet C-16
5. Adjust inlet protection symbols to match the actual inlet locations
Plan has been updated and inlet protection is around inlets. See sheets C-15 to C-18.
6. Adjust silt fence to match the disturbance limits.
Site Fence has been adjusted to match disturbance limits.
7. Callout type and size of riprap shown at culverts
Rip Rap has been called out with size of riprap depicted in plan view and a see detail callout for dimensional requirements.

C-17 Site Stabilization Plan

1. Extend silt fence to contain all runoff from the site.
Areas illustrated on this sheet will all be contained within larger mass grading project. Please refer to sheets C-8 to C-12 of the Mass Grading and Stormwater Ponds plans for demonstration of the overall silt fencing.
2. Show inlet protection for storm sewer in the proposed roadway.
Refer to Sheets C-14 to C-16 of the Public Roadway plans.
3. Extend limits of erosion matting to cover the entire sloped area on the east side of the site.
Additional erosion matting has been added cover the entire sloped area on the east side. See sheet C-16
4. Adjust inlet protection symbols to match inlet locations.
Plan has been updated and inlet protection is around inlets. See sheets C-15 to C-18

C-18 Site Stabilization Plan

1. Extend silt fence to contain all runoff from the site.
Areas illustrated on this sheet will all be contained within larger mass grading project. Please refer to sheets C-8 to C-12 of the Mass Grading and Stormwater Ponds plans for demonstration of the overall silt fencing.
2. Show inlet protection for storm sewer in the proposed roadway.
Refer to Sheets C-14 to C-16 of the Public Roadway plans
3. Adjust limits of erosion matting to not go over the property line.
Erosion matting has been moved back to property line. See sheet C-18.
4. Show erosion mat for channelized flow for swale areas
Channelized swales illustrated on this sheet will all be contained within larger mass grading project. Please refer to sheets C-12 of the Mass Grading and Stormwater Ponds plans for demonstration of the channel erosion matting.

C-19 Construction Details

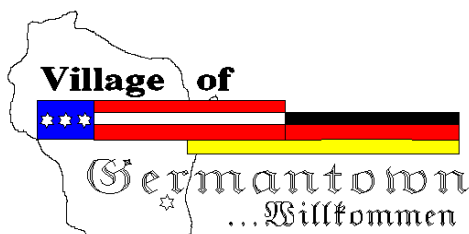
1. Revise inlet protection detail to also shown inlet protection for round inlets.
Inlet detail has been revised to include text to show which inlet should be used for a round inlet. See sheet C-19.
2. Show location of sediment trap on the plans or remove detail if no sediment trap is needed.
Sediment trap detail has been removed from the plans given that the site will be treated by the downstream sediment basin.
3. Straw wattle detail is for slope applications. Show where wattles on a slope will be used on the plan. Revise the detail to also include a straw wattle used as a ditch check.
New straw wattle details have been added to the plans. One straw wattle for inlet protection and one for how the straw wattles will be used for a ditch check. See sheet C-19.

C-20 Construction Details

1. 2'x3' Catch Basin Detail; where will this be used?
2'x3' Catch Basin Detail has been removed from the plans.
2. 3' gravel shoulder detail; assume the 20% slope was meant to be 2% please revise.
The detail was correct, and the slope was meant to be 20% not 2% to encourage drainage off the pavement.
3. 3' gravel shoulder detail; some areas of the site have an invert crown and are graded so that areas adjacent to the roadway are sloped towards the roadway. Those areas should have the shoulder sloped towards the roadway. Please clarify the detail.
Detail has been revised to state "Areas where pavement has inverted crown slope gravel edging 2.0% towards pavement. See Sheet C-20.

C-21 Construction Details

1. Update plans to show 30" depressed curb across the driveways as shown on the detail.
Plans have been updated to show 30" depress curb across driveways. See roadway plans sheets C-4 to C-6.



Engineering Department Memorandum

To : Jeffrey W. Retzlaff, AICP, Planning Director/Zoning

Administrator From : Lawrence Ratayczak, P.E., Director of Public Works

Date : June 20th, 2018

Re : Zilber Holy Hill Site: Mass Grading Plan Review

Items Reviewed:

- | | |
|----------------------------------|-----------------|
| 1. Civil Plan Set (C1-C15 pages) | Dated: 06-08-18 |
| 2. Stormwater Management Memo | Dated: 06-08-18 |

Revised Plans Dated 07/16/2018

General Comments:

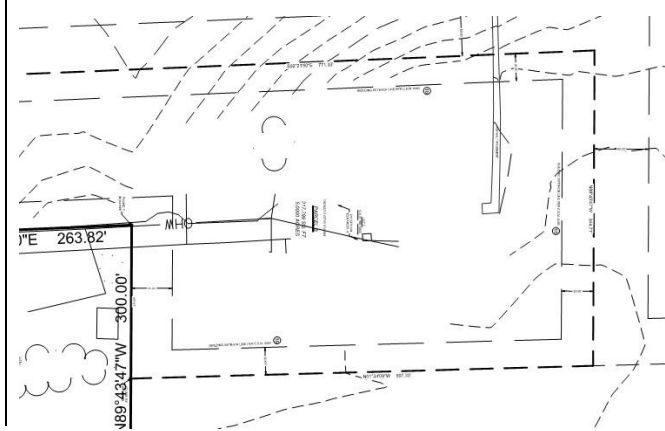
- Please respond to each item below. **A written response addressing each item shall be included in your submittal.**
This memo has been recreated to allow presentation of the original comment with a response immediately following. Zilber – Green | Pinnacle – Orange
- The submitted plans have been reviewed for general conformance with State and Village design guidelines. The items listed below will need to be fully resolved before the Engineering Dept. can recommend a formal approval of the plans and permit for construction.
Acknowledged and understood.
- This project will require an NOI from the DNR. Please submit a copy of the approved permit prior to final approval.
Acknowledged and understood.
- As-builts prepared to Village standards shall be prepared and provided to the Village post-construction (for all applicable items).
Acknowledged and understood.
- A professional engineer's original seal is to be affixed, signed and dated on the final set of construction plans.
Acknowledged and Understood.
- Contact Frank Rosecky, 262-250-4722 for a utility permit.
Frank will be contacted as soon as plans have been finalized to a point of being able to trigger the permit.
- As a guide to the review response: Items in *italics* are resolved or acknowledged, items in regular font are to be addressed yet, items in **Bold** are additional feedback to remaining original comment.
Acknowledged and understood.

C-1 Cover Sheet

- General Note #2, fill in blank spaces.
The Geotechnical report has been received and the note has been updated to include the report dated of June 28th, 2018.

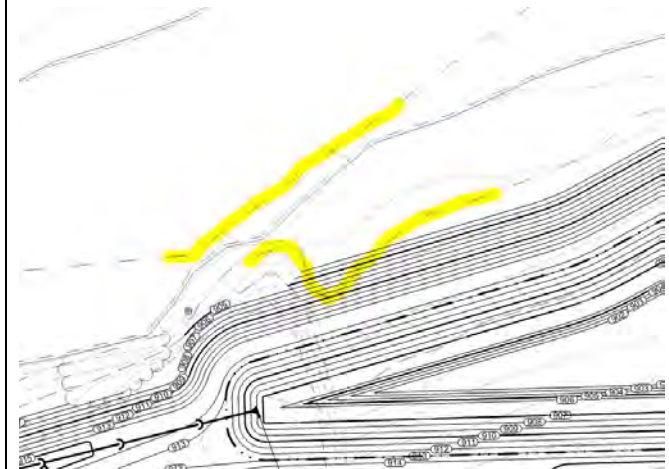
C-2 Existing Conditions and Demolition Plan

1. Label existing contours
Contours labels added.
2. Label Existing Roads
Road names have been added.
3. Shows entire extents of property
Sheet viewport has been modified to show entire extents of property.
4. Show contours for this area
Survey has been updated to show contours in this area.



C-4 Mass Grading and Drainage Plan

1. Show and label Ordinary High Water line for the existing pond on-site.
The Ordinary High Water line for the existing drainage feature on the west side of the site has been added the ordinary high water mark setbacks have been illustrated.
2. Show and label any wetlands around the existing pond. Show and label Village required wetland offsets. Provide a copy of the wetland determination / delineation for the site.
The wetlands have been labeled and a 25-ft setback has been illustrated.
3. Show and label existing stream on the site. Provide a navigability determination.
The waterway has been labeled as Existing Pond. An ordinary highwater mark determination has been requested.
3. What is this line? Please label.
This is the existing wetland line. This line has been labeled on all mass grading sheets.



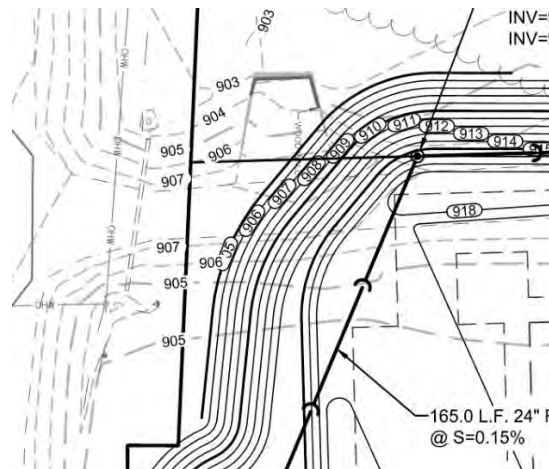
4. Is this an existing well? Please label and provide notes about abandonment

Note added to remove well per Wisconsin DNR Regulations on the Existing condition & demolition plan. See sheet C-2.



5. There appears to be some proposed contours missing in this area.

Grading has been revised.



6. Provide some additional information on how the basin on the south side of the site will function. A dry basin typically would have slope along the bottom of the basin for drainage. The current plan shows this area as completely flat and 800'+ long. Without any slope to the bottom it will just become a maintenance issue.

Drainage will be added to relieve the pond of standing water

7. Update match line callouts to reference the correct sheet numbers.

Callouts have been revised to reference the correct sheet numbers. See Sheets C-8 to C-12

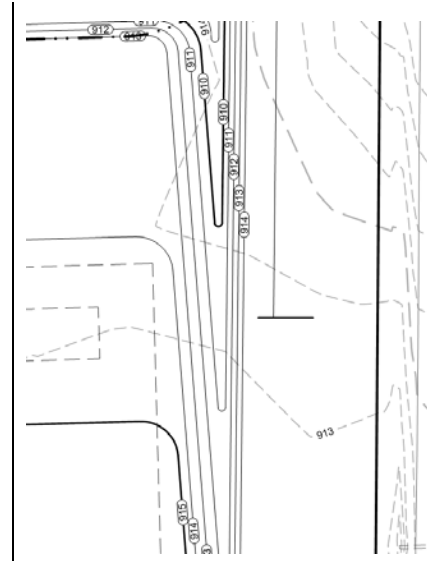
8. Label Property Boundary

Property Boundary Labels have been added. See Sheets C-8 to C-12

C-5 Mass Grading and Drainage Plan

1. Show and label existing stream on-site.
Existing stream labels have been added
2. Show and label any wetlands around the existing pond. Show and label Village required wetland offsets. Provide a copy of the wetland determination / delineation for the site.
Wetland setbacks and ordinary high-water mark setbacks have been added to the plans. A copy of the wetland determination report will be sent upon receipt.
3. Label property boundary.
Property boundary label have been added.
4. Why does the pond outlet and overflow on the west side of the basin aim directly towards the neighboring property? Adjust outlet to outlet downstream of the neighboring property.
The outlet and overflow weir have been moved to the south to miss the neighboring property. See Sheet C-10.

5. Appears to be contours missing in this area.
Grading has been revised.



6. Update match line callouts to reference the proper sheets.
Callouts have been revised to reference the correct sheet numbers.
7. Label emergency overflow
Emergency overflow has been labeled.

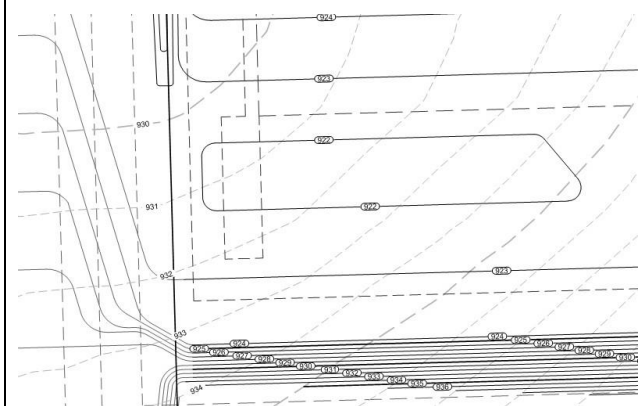
C-6 Mass Grading and Drainage Plan

1. Is the roadway shown being installed as a part of this project? I do not see details on the roadway in this plan set or the building plan set provided.
See Roadway plans.
2. Provide plan and profile sheets meeting Village standards for the roadway, storm sewer, Sanitary Sewer and Watermain.
See Roadway plans.
3. Provide a detailed grading plan for the roadway.
See Roadway plans.
4. Review and update storm sewer plan. Many of the pipe section are missing labels.
Storm sewer plan has been updated with pipe sections labeled. Also roadway storm sewer is shown in the roadway plans. See sheets C-9 to C-12 in the mass grading plans for mass grading storm sewer. See Sheets C-7 to C-9 in the roadway way plans for roadway storm sewer.
5. Review and update storm sewer sizing. CB110.4 shows a 42" pipe downstream of a 68" pipe.
Pipe size labels have been updated and Roadway storm sewer is shown in the Roadway plan set. See Roadway plans C-7 to C-9.
6. Clarify work limits; it's not clear what is proposed as a part of this plan set. Clearly show work limits for this plan set and how it ties into the work for the building site to the east
The full darkness/line weights represent the work limits for his set of plans. The Screened lines and reduced line weights represents work limits outside of this plan set. Work limits have been added to the roadway plans sheets. See roadway plans Sheets C-4 to C-16.
7. Sanitary manhole by others at Holy Hill Road will have an approximate invert elevation of 897.50. Can the proposed sanitary sewer in TID #8 be adjusted to match
Updated detail will be added to the roadway set upon finalization of the offsite sanitary sewer design.
8. Indicate the type and class of PVC pipe to be incorporated in the design of the sanitary sewer at the depth of 20 feet.
Pipe type and class are included in the pipe labels with the roadway plans. See sheets C-7 to C-9 in the roadway plans.

9. The Villages standard sanitary manhole detail and Section 5: Sanitary Sewer System Requirements are attached
The detail has been added to sheet C20 of the roadway set.
10. Ensure that a sanitary manhole is installed at station 31+00
Future extension to the Sanitary main will be presented to the Village for review and approval at time of the proposed extension.
11. Proposed 16" PVC water main to have a minimum cover of 7.5 feet
The plans have been revised.
12. Indicate location of 16" valves
Valves are located on the Roadway plans. See Sheets C-7 to C-9 on the roadway plans.
13. Show and call out valves on water laterals
Valves and water laterals are located on the Roadway plans. See Sheets C-7 to C-9 on the roadway plans.
14. Indicate why 12" water laterals are to be installed
12" laterals are anticipated for fire demands of the future buildings.
15. Show proposed water service to the B&S building
Service to the Briggs and Stratton are shown on the Roadway Plans. See Sheet C-7
16. Restrain all joints for the last 100 feet of 16" water main (north end)
Joint restraints have been added for the last 100' of the 16" water main. See Sheet C-9 of the Roadway plan.
17. See attached Section 6 (revised): Water Distribution System Requirements
Updated detail will be added to the roadway set.

C-7 Mass Grading and Drainage Plan

1. This area is graded to have a low spot with no drainage. Revise grading to provide drainage with no low spots
Drain tile has been added to this area to drain water from low spot.



2. Review and update storm sewer plan. Many of the pipe section are missing labels.
Pipe labels were updated. See sheets C-4 to C-7 in the mass grading plans for mass grading storm sewer. See Sheets C-10 to C-13 in the roadway way plans for roadway storm sewer.
3. Review and update storm sewer sizing. ES118 is 42", the next downstream pipe isn't labeled and downstream from there is only 36"
Pipe labels were updated. See sheets C-9 to C-12 in the mass grading plans for mass grading storm sewer. See Sheets C-10 to C-13 in the roadway way plans for roadway storm sewer.
4. Revise flow arrows to point in the correct direction.
Flow arrows were updated. See Mass grading sheets C-9 to C-12.
5. Provide spot elevations at high points.
Spot Elevation are added to the roadway plans. See sheets C-4 to C-6.
6. Clarify work limits; It's not clear what is proposed as a part of this plan set. Clearly show work limits for this plan set and how it ties into the work for the building site to the east

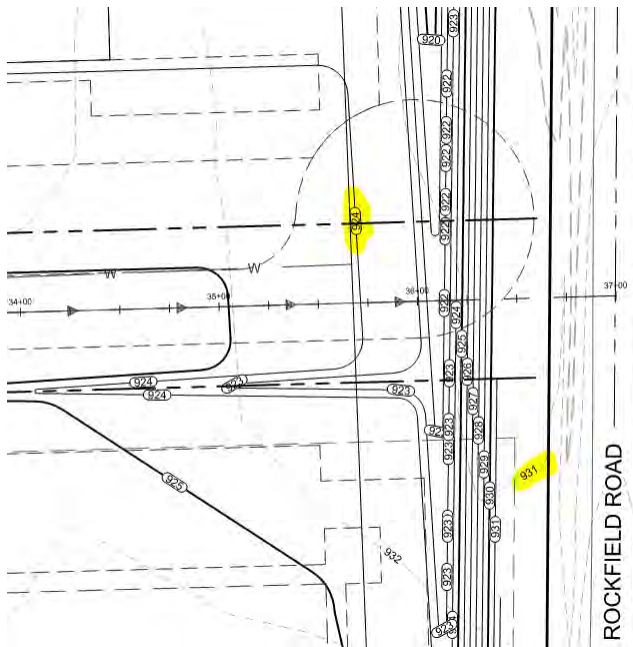
Work limits were added to the roadway plans to show separation from Building 1 to mass grading/ Roadway plans. See roadway plans Sheets C-4 to C-16.

7. Required Sanitary Sewer Easement locate at approximately station 31+00, 40 feet wide with a Temporary 75-foot construction easement, heading to the west.

Creating an easement without knowing exactly where it is need could cause future problems. If the easement is in the wrong location or ends up being unnecessary then a termination of the easement needs to be done. This results in double the amount of work. Can this be included as a blanket "easement to be provided" clause?

8. Proposed roadway should be designed to have the ability to extend and connect to existing Richfield Road while providing for acceptable road grade and site lines at the intersection.

Further details can be provided under a separate cover to prevent confusion.



C-9 Site Stabilization Plan

1. Hatching for erosion matting is difficult to see. Revise plans to clarify.
Contours have been screened back to improve clarity of erosion matting.
2. Show areas requiring erosion matting for concentrated flow.
Erosion matting has been updated. See mass grading sheets C-14 to C-17 and roadway sheets C-14 to C-16.
3. Show locations of temporary swales to route runoff to basin while the site is under construction.
Initial site stabilization plans have been added to the mass grading plans. See mass grading sheets C-3 to C-7.
4. Label existing contours.
Labels have been updated.

C-10 Site Stabilization Plan

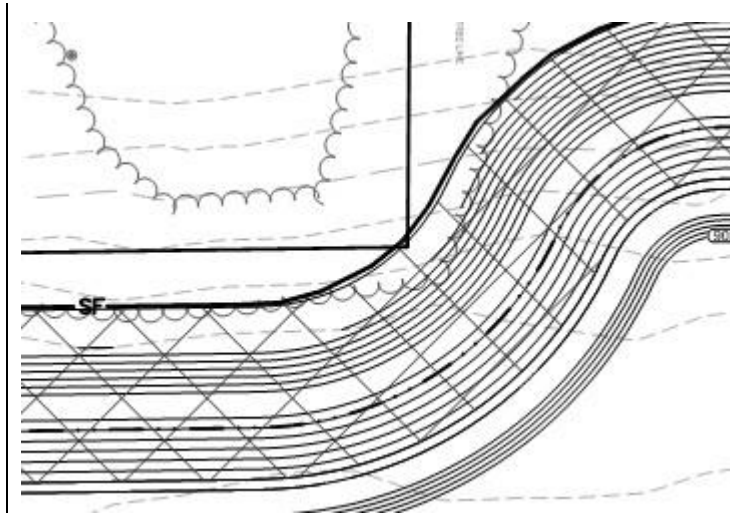
1. Hatching for erosion matting is difficult to see. Revise plans to clarify.
Contours have been shaded back to improve clarity of erosion matting.
2. Show areas requiring erosion matting for concentrated flow.
Erosion matting has been updated.
3. Show locations of temporary swales to route runoff to basin while the site is under

construction.

Temporary swales that route to the runoff basin have been shown on the Initial site stabilization plan on the mass grading sheets. See sheets C-3 to C-7 on the mass grading plans.

4. Adjust silt fence to not cross the property boundary.

Silt fence has been updated see sheet C-15 of the mass grading plans.



5. Label existing contours

Labels have been updated.

6. Label type of erosion matting for the pond overflow.

A new pattern was used for the TRM (Turf Reinforcement matting) in the spillway. See Sheet C-15 on the mass grading plans.

7. Provide a level spreader at the pond outlet. Add a level spreader detail to the plans.

Level Spreader has been added to plans. See Sheet C-18.

C-11 Site Stabilization Plan

1. Hatching for erosion matting is difficult to see. Revise plans to clarify.

Contours have been shaded to improve clarity of erosion matting.

2. Show areas requiring erosion matting for concentrated flow.

Additional erosion matting for channels has been added.

3. Show locations of temporary swales to route runoff to basin while the site is under construction.

Temporary swales that route to the runoff basin have been shown on the Initial site stabilization plan.

4. Label existing contours.

Existing contours have been labeled.

5. Provide Rip Rap calculations.

Calcs will be provided. See attached Rip rap calculations.

C-12 Site Stabilization Plan

1. Hatching for erosion matting is difficult to see. Revise plans to clarify.

Contours have been screened back to improve clarity of erosion matting.

2. Show areas requiring erosion matting for concentrated flow.

Additional erosion matting for channels has been added.

3. Show locations of temporary swales to route runoff to basin while the site is under construction.

Temporary swales that route to the runoff basin have been shown on the Initial site stabilization plan.

4. Label existing contours.
Existing contours have been labeled

C-13 Site Construction Details

1. Where will the sediment trap detail shown be utilized?
The detail has been removed given the use of the permanent pond as a sediment basin.
2. Straw wattle detail shown is for installation on a slope, where does this occur? Revise to include details for straw wattle ditch check.
A Detail for straw wattle at inlet has been add as well as the detail for straw wattle ditch check. See sheet C-18 on the mass grading plans and Sheet C-17 on the roadway plans.

C-14 Site Construction Details

1. Where will the tapered curb head detail shown be utilized?
Tapered curb will be used at the intersection with Holy Hill Road. until design from Village shows no taper is needed.
2. Stormwater Pond Cross Section.
 - 1) Show clay liner extending up to the 2 year water elevation.
 - 2) Turf matt on overflow, specify type of matting
 - 3) Detail calls for a minimum of 1' of freeboard, but elevations listed show less than 1' of freeboard.
Section will be updated.
3. Outlet Structure Detail. Provide additional details on the prefabricated trash grate.
Detail will be updated.
4. Update roadway typical section to match Village Standards.
Section has been updated to match village standards. See sheet C-20.
5. Including the following Village standard details
 - 1) Curb and Gutter
 - 2) Storm sewer manhole
 - 3) Storm sewer catch basin
 - 4) Sanitary sewer manhole
 - 5) Hydrant setting*Details have been added to the roadway set.*

C-15 Site Construction Details

1. Replace curb detail with village standard curb detail.
Details have been added to the roadway set.

Stormwater Management Memo

In general the stormwater management approach appears to meet the requirements. Please address the following with the final submittal.

- 1) Current analysis assumes all runoff from the site will make it to the basin. Account for all undetained areas in the final plan. Include drainage maps that clearly show drainage areas.
- 2) Portions of the site (south part of the proposed roadway) appear to overflow south to Holy Hill Road and not to the proposed basin. Either show how the 100 year event for all portions of the site will overflow to the basin or include provisions in the model to account for this.
- 3) Clearly show what is included in the calculations for future Pavement area, roof area, sidewalk area and greenspace. This will allow future buildings to be added to the site with minimal work required to update the stormwater management plan.
- 4) A large portion of the existing site currently drains North to a culvert Rockfield Road. The current plan has all the runoff from the site route to the west. Include information showing

that proposed release rate to the north will not exceed the existing release rate to the west.

- 5) Review how the interconnected ponds are modeled. Per HydroCAD documentation it appears this can be modeled with the dry pond discharging into the wet pond and the 24" pipe should not be included as an outlet of the wet pond.



Community Development Department

Jeffrey W. Retzlaff, AICP,
Director Village Planner &
Zoning Administrator N112
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Germantown, WI 53022-0337
Telephone: (262) 250-4735 Website:
www.village.germantown.wi.us
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jretzlaff@village.germantown.wi.us

June 28, 2018

Chad Navis,
Zilber Property Group 9560 56th Place Suite 350
Kenosha, WI 53144

RE: Germantown Business Park; Corporate Park Master Grading & BASCO Site & Building
Plans; Staff Review Comments

Mr. Navis:

Village Staff has reviewed the various plans submitted for the proposed Germantown Corporate Park and Briggs & Stratton site development and has identified the following outstanding items/issues that need to be addressed before we can schedule the plans for Plan Commission review/approval. Please provide the requested information, corrections, revisions, etc. as soon as possible. If necessary, Village staff can meet to discuss and clarify specific comments prior to you submitting response and/or revised plans or supplemental information.

Community Development Department

1. We need a copy of the wetland delineation report (complete) and DNR & ACOE concurrence letter(s) as appropriate.
A Wetland delineation report will be provided. It is an assured delineation and no wetlands in the developable area thus no permit required
2. By any/all accounts, including the DNR's online Surface Water database, the unnamed ponds and perennial stream located along the southwest portion of the overall 150-acre area are navigable waterways (as is the pond on the Wetterau property to the east). Not sure why navigability and OHWM determinations were not requested from the beginning (and any subsequent DNR & ACOE permitting requirements identified), but are necessary. The Village's Shoreland-Wetland Zoning Code establishes a 75' "no touch" development setback from navigable waterways and a similar 25' setback from wetlands. The navigable waterway OHWM and wetland boundaries and respective 75' and 25' setbacks need to be clearly shown on the appropriate site plan sheets and on the CSM.
Representation of the banks of the waterway and applicable setbacks to the OHWM and wetlands are included in the plans. Grading has been revised to avoid the areas within Villages setbacks.
3. The wetland boundary is presented on the plans sheets but is very difficult to read. On Sheet C-4 & C-9 (and others) it appears that proposed grading and site stabilization activities are encroaching into the wetland (not just the 25' setback area) and likely within the 75' navigable

waterway setback. Obviously, any such work in the wetland will require DNR (and possibly ACOE) approval, as will any work within the 25' and 75' setback areas require approval from the Village. With regard to wetland filling, Village approval is granted in the form of a rezoning to remove the filled area from the Wetland Overlay Zoning District. With regard to work in the 25' and 75' setbacks, Village approval is granted in the form of a conditional use permit (CUP) provided that a compensation plan is prepared and approved along with the CUP. These requirements are discussed in Section 24.04(3)(c)5. And 24.06(4) of the Municipal Code. CUP-approved compensation plans typically include the identification of how much area within the setback areas area proposed for development and a plan to compensate that amount of area on a 1:1 or 2:1 basis (depending on intensity of the proposed development) in the form of enhanced wetland protection (ex: wetland- friendly plantings or seeding within the setback areas adjacent to or near the affected wetland, removal of invasive species already within a wetland, or a combination of both).

Example Compensation plans are included with this review letter. Developer needs to decide what will be done: either apply for a CUP, or, revise the site development plans. If a CUP is applied for, processing requires a public hearing, Plan Commission review and Village Board approval. At this time, the earliest VB meeting date at which approval could be granted is August 6 with application submittal no later than July 11 (unless a special VB meeting is scheduled).

Representation of the banks of the waterway and applicable setbacks to the OHWM and wetlands are included in the plans. Grading has been revised to avoid the areas within Villages setbacks.

4. Grading for the BASCO site development encroaches into the Holy Hill Road ROW. While not significant, such grading should be coordinated with the re-construction plans for Holy Hill Road.

Acknowledged.

5. As a public street, the internal road will extend to and intersect with Rockfield Road. While the future extension of and construction details for the internal road extension to Rockfield are not shown in the mass grading plan set, the proposed grading, swales, etc. shown along the south side of Rockfield need to be such that the future extension and construction does not necessitate extraordinary measure to work. Are the grades reasonable and drainage features to be installed capable of easily being modified to accommodate the extension to Rockfield Road?

A supplemental exhibit will be prepared with a concept vertical profile of the reminder of the future roadway to show future improvements.

6. Proposed grading along the northeast corner of the BASCO site and future "Parcel 4" adjacent to the residential parcel to the north and agricultural parcel to the west are shown at an approximate 3:1 slope. While generally acceptable for purposes of construction site erosion and landscape management, the grade changes are proposed right at the common property lines in the northeast corner. How will that grading and restoration work be done without obtaining temporary construction easements from the adjacent property owners?

The impacts along the property line match existing grades. Excavation measures will slope down away from the property. Restoration efforts will remain on the Zilber property.

7. No fence or landscaped buffer of any type is proposed along the adjacent Wiedmeyer residential parcel to the east.

For discussion at 7/16 page turn meeting

8. While not final, the potential future building expansion and associated site development on the north portion of the BASCO parcel goes further into the proposed 3:1 slope area in the corner. Clearly some sort of retaining wall would be required unless additional land is acquired

from the north. Separate site plan review/approval will be required by the Village for any future expansion, including site, building and landscaping plans. For this reason, in part, landscaping along the BASCO parcel along the internal road north of the northernmost driveway will not be required at this time.

Understood and Acknowledged.

9. The minimum parking stall size for the Village is 180 sq. ft. The 9' x 18' stalls fall under the minimum and should be increased (9' x 20').

Stall dimensions have been updated.

10. The most prominent corner of the BASCO site development, i.e. in the northeast corner of the new internal road @ Holy Hill road intersection, has trailer parking proposed right up to the 5 feet of the property line from Holy Hill and 28' from the internal road. This location is probably the most visible but has the least amount of setback and buffering proposed. The minimum parking lot setback is 8 feet, so that will have to be revised. However, and more importantly, do you/we really want trailers parked so close to the property line and be the foremost view of the site? Is it possible to remove a few of the trailer parking stalls currently shown in that corner and replace them with a more prominent landscaped feature? Ideally, if you can remove a minimum of the first five (5) trailer stalls in the corner and reduce the paved area by cutting the corner at a 45 degree angle and replace with landscaping (or some other design that increases the setback depth between the trailer parking stalls and property lines).

Landscaping has been increased to accent the space available due to the removal of trailer parking spaces.

11. The property line location (after right-of-way dedication for Holly Hill Road) shown on various sheets including Sheet L-1 & L-4 is incorrectly shown... it looks like an errant property line from the previous residential lot is being shown for a short distance instead of the correct property/ROW line.

Property lines have been adjusted to match the completed survey.

12. The sign "placeholder" shown along the internal road @ the BASCO site entrance will require separate sign approval once those details are available. A minimum setback of five feet from the sign base to the property line will apply (it appears to meet that as currently shown).

Acknowledged. We are working with the tenant on signage requirements and will submit them under a separate submittal package.

13. The proposed site lighting (shown in arch plan set Sheet E-1) has a pole height of 32' with a 2' base for a total fixture height of 32 feet (and a building-mounted light fixture height of 36 feet). The Village's maximum fixture height allowance is 25 feet.

For discussion at 7/16 page turn meeting

14. A roof plan sheet is required and needs to show any/all roof-mounted mechanicals (assumed dimensions if no details available). We discussed the idea of possibly needing screening of any RTU's. I understand that the RTU's will likely be set a minimum of 50 feet from the roof edge and sight-line elevations will be provided to simulate that appearance. With that said, it's likely that the Plan Commission will require screening depending on the number and dimensions of the RTU's proposed.

The final location of mechanical equipment has not been determined but we have provided the contractor the following direction that all rooftop equipment must be placed at least fifty feet from the exterior wall to prevent them from being seen. We have provided a site line diagram that shows these units will not be visible from grade.

15. The information shared this week about fencing around the entire parking area is surprising since such fencing is not shown nor mentioned anywhere in the application or supporting plans that were submitted. With that said, we need details on the type, dimensions, location, etc. of the proposed fencing and gates. At this point Staff will not support the use of wire

woven “cyclone” fencing (coated or otherwise) without further details or significant changes, i.e. enhancement, to the landscaping proposed along the perimeter of the fenced areas. As discussed, the Village incorporated security fencing regulations into our Germantown Business Park covenants a few years ago, and, the same fencing regulations were incorporated into the covenants for the Willow Creek Business Park (see section 5.07 in the attached). Under these regulations, wire woven fence like cyclone fence is not allowed. Metal posts and pickets are allowed and you are strongly encouraged to incorporate this type of fence into your plans. I’ve attached some example photos of what staff feels is consistent with the fence regulations in our other business parks. As shown, use of architectural metal pickets in combination with abundant and varied plantings on the outside of the fence (and inside if necessary) serves both a functional and aesthetic purpose; particularly for a building oriented like the BASCO where the most prominent and visible west and south elevations are intended for fenced in trailer parking (and likely day- to-day outdoor pallet storage).

For discussion at 7/16 page turn meeting

16. In our discussion this week about fencing, it was pointed out that the fence location is to be adjacent to the curbed parking area. Although curb stops are shown, there should be some minimum separation (ideally a landscaped area) between the fence and parking area curbing to prevent vehicles from extending over the curb and damaging the fencing.

Acknowledged and the site plan indicates a small buffer between the fence and the back of the curb.

17. Street trees are required along both sides of the internal road (deciduous min. 3” dia). The street trees proposed along Holy Hill Road as part of the BASCO landscaping plan are acceptable, however, the proposed location is 25 feet south of the property/ROW line and nearly in the bottom of the road ditch. The trees should be relocated closer to the property line (ex: min. 5’-10’ south). Moreover, because Holy Hill road is going to be re-constructed along the frontage of the BASCO property, it may be prudent to delay installation until construction plans for Holy Hill road are complete.

Street trees have been added along the internal road on the roadway plan set. Trees along Holy Hill Road will be moved farther North, closer to the property line.

18. Landscaping along the internal road frontage needs to be enhanced, particularly in light of the plan to install security fence around the parking area in the street yard of the site. Although the Zoning code is non-specific in terms on the minimum type or quantity of landscaped features, an acceptable “rule of thumb” for past projects has been a minimum of two trees and three shrubs (deciduous, evergreen or combination of both) per 1,000 sqft of landscaped area. The current proposal has .55 trees/1000 sqft (a total of 24) and 3.5 shrubs/1000 sqft (a total of 151). Staff recommends increasing the number of trees to a minimum of 50 (1/3 deciduous and 2/3 evergreen) along the internal road frontage. Ideally, a level of landscaping and fencing as shown in the bottom photo of the attached fence comparison graphic is recommended. A similar number of trees and shrubs should also be provided along the south side of the fenced parking area across the entire Holy Hill road frontage to achieve the same degree of landscape screening. As an alternative, you may want to consider also including some low-level (2’ to 3’ high undulating earthen berms or moguls in combination with the landscaping on the outside of the fenced area within the 30’ wide setback from the property line to the curbed parking area.

Increased numbers of trees have been added to screen the parking lot on both the east and south sides.

19. Building setbacks and an easement for the future extension of water/sewer utilities across the site to the west (in the vicinity of Station 31+00) should be planned for and shown on the CSM.

For discussion at 7/16 page turn meeting

20. The Plan Commission Secretary is "Laura Johnson". Please correct CSM accordingly.
Understood
21. We need to get the revised and supplemental plan sheets discussed during our June 28 staff meeting add to the official application submittal; specifically, the plan set that Adam passed out labeled "Bid Pack 1" that contains the detailed road and utility construction details (dated 6-19-18);
Revised and supplemental sheets are included in this resubmittal.

Fire Department

22. Approved water supply with fire protection loop around building shall not have Storz style hydrants;
Acknowledged
23. Water supply system to be built to VOG utility standards;
Acknowledged
24. If the building requires fire pump, the GFD requires direct access via man door to/from the building exterior;
Acknowledged and provided
25. Fire protection panels should be in any fire pump room;
Acknowledged and provided
26. Horn strobe required in place of riser bell at Fire Department Connection;
Acknowledged.
27. Secondary fire annunciator panel required at office or main employee entrance;
Acknowledged.
28. At least two (2) Knox boxes are required for GFD access; one in the fire pump room and the other at the main entrance or employee entrance. Gated areas shall be accessible to the GFD;
Acknowledged.
29. Building is stated to have design requirements of Class 1-4 ESR fire sprinklers with standpipes at each exterior door.
Acknowledged.

Village Surveyor

30. On the Zilber plans, the existing conditions sheet, was missing the following items or they were unreadable:
- Monuments of the PLSS. There should have been 6 monuments shown. Include the Grid Coordinates and horizontal datum;
 - The entire boundary of the property;
 - Boundary markers recovered or set as part of the survey;
 - Existing buildings on the property. None were shown in the plan set, but a farm with outbuildings exist and are shown on the cover sheet;
 - Any easements with type of easement, size or width, including access to the site and any access restrictions;
 - Legal status of the adjoining properties;
 - Legal description;
 - Benchmarks used to establish the vertical control and contour of the property;
 - Contour interval;
 - Wells & Septic systems;
 - Wetlands and floodplain;
 - Pavements and shoulder as well as any turn lanes or bypass lanes either fronting

the property of located on the property as in driveways.

A full size version of the ALTA/NSPS survey has been included in the resubmission to demonstrate all of these items in a clear manner.

Public Works/Engineering Department

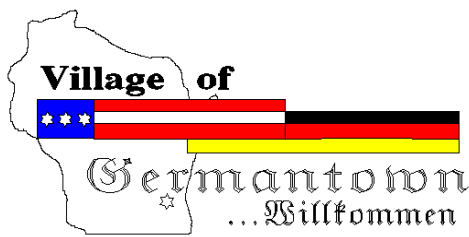
Comments are provided in a separate memo being prepared by the Public Works Director in coordination with the Village Engineer and Harwood Engineering (consulting engineer for this development).

When submitting you plans and additional information, please submit (1) digital plan set and fifteen (15) full-size, (1) reduced-size and (1) digital file plan set to the Community Development Department. Complete responses and/or information, plan revisions, etc. to the items/issues listed above will help avoid delay in the review and processing of your application.

Respectfully,



Jeffrey W. Retzlaff, AICP
Village Planner & Zoning Administrator



Engineering Department Memorandum

To: Jeff Retzlaff Village Planner

CC:

From: Bob Beilfuss, PLS, Village Surveyor

Date: June 6, 2018

Re: Briggs Land Division

Jeff,

Here are my review comments for the CSM received 7-11-2018.

Certified Survey Map

Applicant or Owner ZPG Development

Land Surveyor/Firm: John Konopacki, PLS, Pinnacle Engineering Group

1. The 3"x3" clear space in the upper right-hand corner of sheet 1 missing. This area is reserved for the Washington County Register of Deeds office recording information.
2. 40' dedicated road right of way required for Rockfield Road. The portion of Rockfield Road located in the Southeast $\frac{1}{4}$ of Section 7 is showing a partial R/W dedication (the 660.43' portion), as shown by the double lines, but it is not denoted as a dedication to the public for road purposes.

The entire frontage of Lot 2 (1022.26') shall include a 40' R/W dedication to the public for road purposes.

3. Area in the dedication note will need to be updated to reflect the new 40' dedication. A note showing the R/W dedication in the Southeast $\frac{1}{4}$ of Section 7 needs to be added.
4. The area from the monument marking Southwest $\frac{1}{4}$ of the Southeast $\frac{1}{4}$ corner of Section 7 to the east, across the frontage of Lot 1 appears to have been previously dedicated R/W, but there are no notes shown to be the source of the previous dedications. If these lands were not previously dedicated, then a new R/W dedication of 60' to the public needs to be added.
5. Associated boundary line dimensions need to be updated to reflect the new R/W lines as well as dimensions called out in the Surveyor's Certificate.
6. Total area of Lot 2 will need to be revised to reflect the 40' dedication.
7. Total area of Lot 1 will need to be revised to reflect the 60' dedication.
8. Building setbacks need to be shown and dimensioned on Lot 1 and 2.

9. The north arrow is overlapping text in the header on Sheet 1 and 2 and needs to be re-positioned.
10. Do the wetlands extend all the way to the west exterior line of proposed Lot 2 or is there another delineation line that defines the west limits of the wetland that is missing?
11. The corporate owner's certificate needs a place for 2 officers of the corporation to sign with their names and titles printed below the signature line and the same two people reflected in the notary's affidavit.
12. Add the following text to the Owner's certificate:

"As Owners, we hereby dedicate that part of (*street name*) to the Village of Germantown for public road purposes as represented on Sheet of ____ of this Certified Survey Map."

13. Revise the Village Board approval certificate

Village of Germantown Board Approval

This Certified Survey Map, being a division of (¼ ¼ Section __, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, having been approved by the Planning Commission being the same, is hereby approved and (*the dedication of that part of (insert street name) for public road purposes as shown on Sheet __ of __ is hereby*) accepted by the Village Board of Trustees of the Village of Germantown on this __ day of _____, 2012.

Dean Wolter, Village President

Date

Deanna Boldrey, Village Clerk

Date

- ☐ Include text in red italics for Certified Survey Maps which require road right of way dedication to the Village.

No further review comments.

Document Submittals and Data Conversion

As of October 2005, the Village of Germantown requires a digital copy of all Certified Survey Maps, Condominium Plats and Subdivision Plats in addition to the documents as required by Wisconsin Statute and Village Ordinances as part of the land division approval.

Prior to Recording the Certified Survey Map, the professional land surveyor is responsible for submitting a copy of the AutoCad drawing file (.dwg) of the document in version 2016 on compact disk (CD) or via email to the Village Surveyor.

July 16, 2018

All digital professional land surveyor seals and signatures will be purged from the digital copy prior to submittal.

The model space of the drawing will be done in Wisconsin State Plane Coordinate System, South Zone (NAD 1927 datum) and the Grid Bearing basis.

Prior to Recording the Certified Survey Map, the Village Engineering Department will verify that the boundary markers have been installed as described on the submitted map. All boundary corners are to be clearly marked in the field by the professional land surveyor of record.



Village of



Germantown

...Willkommen

Fee must accompany application

☐ \$2,900 with public improvements

X \$1,960 no public improvements

Paid 7-16-18 Date 7-16-18

CERTIFIED SURVEY MAP APPLICATION

Pursuant to Section 18.06 of the Municipal Code

Please read and complete this application carefully. **All applications must be signed and dated.**

1

APPLICANT OR AGENT

TOWNE REALTY, INC. d/b/a ZILBER PROPERTIES

ATTN: CHAD NAVIS

9560 58TH PLACE, SUITE 350

KENOSHA, WI 53144

Phone (414) 274-2640

Fax ()

E-Mail CHAD.NAVIS@ZILBER.COM

PROPERTY OWNER

ZPG DEVELOPMENT LLC

ATTN: CHAD NAVIS

9560 58TH PLACE, SUITE 350

KENOSHA, WI 53144

Phone (414) 274-2640

PROPERTY ADDRESS OR GENERAL LOCATION

TAX KEY NUMBER

2

SEE ATTACHED PROJECT AREA MAP & CSM

SEE ATTACHED SUMMARY

3

PURPOSE OF LAND SPLIT

ACCOMMODATE THE LONG TERM DEVELOPMENT OF AN INDUSTRIAL BUSINESS PARK AND IMMEDIATE CONSTRUCTION OF A +/- 706,000 SF INDUSTRIAL

Will the land split require rezoning?

NO

From

To

4

READ AND INITIAL THE FOLLOWING:

X

I understand that the Certified Survey Map is not valid until recorded at the Washington County Register of Deeds. The Village will record the document and charge the applicant all applicable recording fees.

X

I understand that the Map will not be placed on the Village Board agenda until all the technical corrections to the CSM are made, the payment of any outstanding impact fees are paid to the Village Clerk's Department, and the original signed and stamped copy of the Map is submitted on the proper paper.

X

I understand that parcels created outside the Sewer Service Area will require a soil test. I also understand that all properties abutting a State Highway will require DOT approval and I will be responsible for securing such approval prior to recording.

X

I understand all delinquent property taxes on any of the properties involved shall be paid prior to recording.

5

SIGNATURES -- ALL APPLICATIONS MUST BE SIGNED BY OWNER!

07/06/2018

Applicant

Date

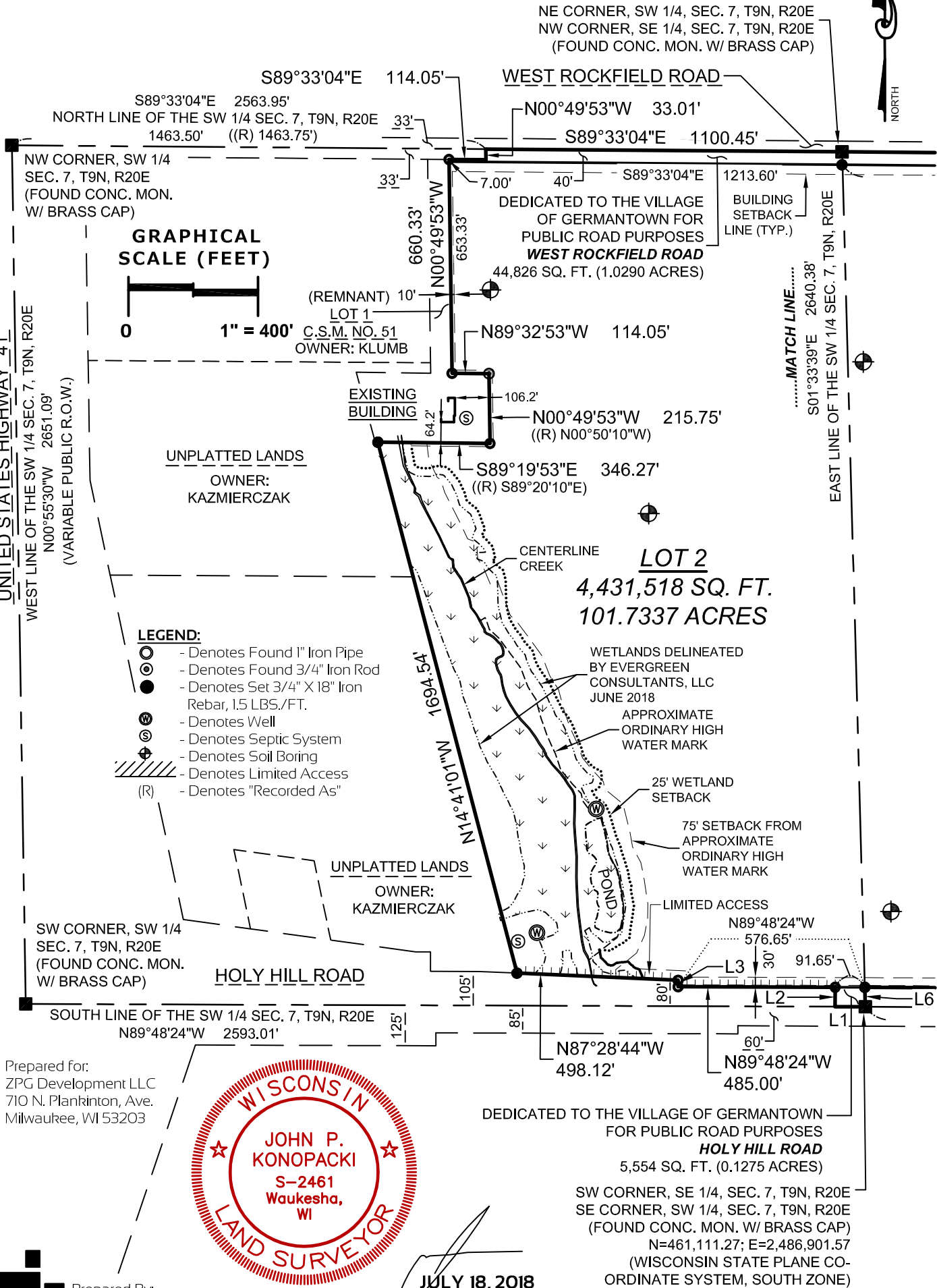
07/06/2018

Owner

Date

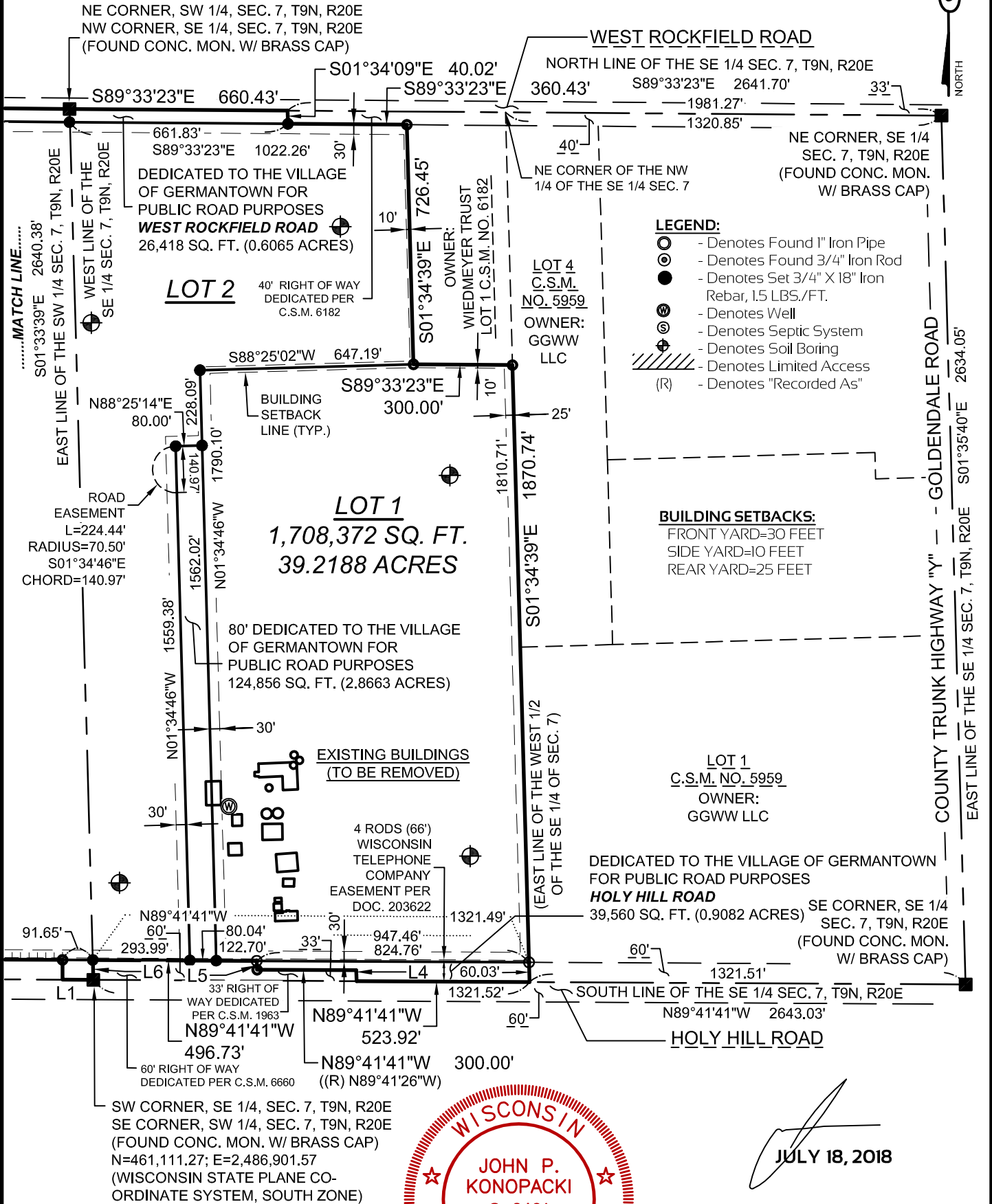
CERTIFIED SURVEY MAP NO. _____

Being part of Lot 1 of Certified Survey Map No. 51, all of Lot 1 of Certified Survey Map No. 1963, all of Lot 2 of Certified Survey Map No. 6182, all of Lot 1 and Lot 2 of Certified Survey Map No. 6660 and additional lands in the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin



CERTIFIED SURVEY MAP NO. _____

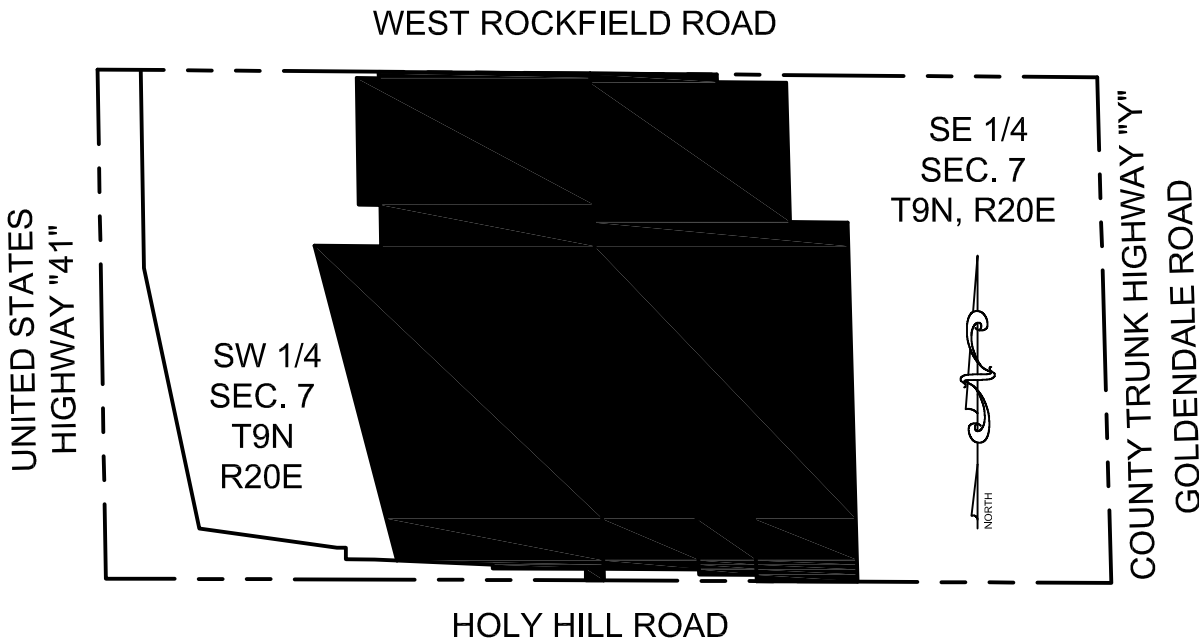
Being part of Lot 1 of Certified Survey Map No. 51, all of Lot 1 of Certified Survey Map No. 1963, all of Lot 2 of Certified Survey Map No. 6182, all of Lot 1 and Lot 2 of Certified Survey Map No. 6660 and additional lands in the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin



CERTIFIED SURVEY MAP NO. _____

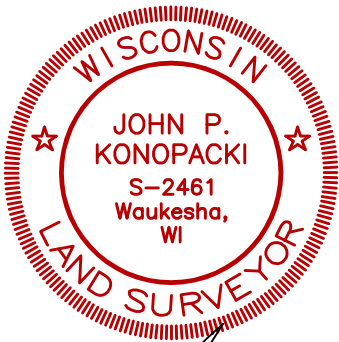
Being part of Lot 1 of Certified Survey Map No. 51, all of Lot 1 of Certified Survey Map No. 1963, all of Lot 2 of Certified Survey Map No. 6182, all of Lot 1 and Lot 2 of Certified Survey Map No. 6660 and additional lands in the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

VICINITY MAP
SCALE 1":1000'



- NOTES:
- All measurements have been made to the nearest one-hundredth of a foot.
 - All angular measurements have been made to the nearest one second.
 - Right of Way widths and locations are based on Certified Survey Map No. 51, Certified Survey Map No. 6182, Certified Survey Map No. 6182, Certified Survey Map No. 6660 and State of Wisconsin Department of Transportation Plat of Right of Way Project T03-1(65) dated September 27, 1982.
 - The property lies with in Zone "X" of the Flood Insurance Rate Map Community Panel No. 5513IC0268D dated NOVEMBER 20, 2013. Zone "X" areas are determined to be outside the 0.2% annual chance floodplain.
 - Access Limitations to Holy Hill Road per Document No. 250846 and Document No. 306488
 - Bearings referenced to the Wisconsin State Plane Coordinate System, South Zone (N.A.D. 1927). The south line of the Southeast 1/4 of Section 7, Township 9 North, Range 20 East has a bearing of N89°41'41"W.

LINE TABLE		
LINE NO.	BEARING	DISTANCE
L1	N89°48'24"W	93.49'
L2	N00°11'36"E	60.00'
L3	N00°11'36"E	20.00'
L4	N02°21'50"W	33.04'
L5	N02°21'50"W	27.03'
L6	S01°33'39"E	60.03'



JULY 18, 2018

CERTIFIED SURVEY MAP NO. _____

Being part of Lot 1 of Certified Survey Map No. 51, all of Lot 1 of Certified Survey Map No. 1963, all of Lot 2 of Certified Survey Map No. 6182, all of Lot 1 and Lot 2 of Certified Survey Map No. 6660 and additional lands in the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

SURVEYOR'S CERTIFICATE

STATE OF WISCONSIN)
WAUKESHA COUNTY) SS

I, John P. Konopacki, Professional Land Surveyor, do hereby certify:

That I have surveyed, mapped and divided that part of Lot 1 of Certified Survey Map No. 51, as recorded in the Register of Deeds office for Washington County as Document No. 2800872, all of Lot 1 of Certified Survey Map No. 1963, as recorded in the Register of Deeds office for Washington County as Document No. 406961, all of Lot 2 of Certified Survey Map No. 6182, as recorded in the Register of Deeds office for Washington County as Document No. 1167237, all of Lot 1 and Lot 2 of Certified Survey Map No. 6660, as recorded in the Register of Deeds office for Washington County as Document No. 1395752 and additional lands in the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, described as follows:

Beginning at the southeast corner of the Southwest 1/4 of said Section 7;
Thence North 89°48'24" West along the south line of said Southwest 1/4, 93.49 feet;
Thence North 00°11'36" East, 60.00 feet to the north right of way line of Holy Hill Road;
Thence North 89°48'24" West along said north right of way line, 485.00 feet;
Thence North 00°11'36" East along said right of way 20.00 feet;
Thence North 87°28'44" West along said right of way, 498.12 feet;
Thence North 14°41'01" West, 1694.54 feet to the south line of Lot 1 of Certified Survey Map No. 51;
Thence South 89°19'53" East along said south line, 346.27 feet to the east line of said Lot 1;
Thence North 00°49'53" West along said east line, 215.75 feet;
Thence North 89°32'53" West, 114.05 feet;
Thence North 00°49'53" West, 660.33 feet to the south right of way line of West Rockfield Road;
Thence South 89°33'04" East along said south right of way line, 114.05 feet;
Thence North 00°49'53" West, 33.01 feet to the north line of the southwest 1/4 of said Section 7;
Thence South 89°33'04" East along said north line, 1100.45 feet to the Northeast corner of said Southwest 1/4;
Thence South 89°33'23" East along the north line of said Southeast 1/4, 660.43 feet;
Thence South 01°34'09" East, 40.02 feet to the south right of way line of West Rockfield Road;
Thence South 89°33'23" East along said south right of way, 360.43 feet to the west line of Lot 1 of Certified Survey Map No. 6182;
Thence South 01°34'39" East along said west line, 726.45 feet to the south line of said Lot 1;
Thence South 89°33'23" East along said south line, 300.00 feet to the east line of the West 1/2 of the Southeast 1/4 of said Section 7;
Thence South 01°34'39" East along said east line, 1870.74 feet to the south line of said Southeast 1/4;
Thence North 89°41'41" West along said south line, 523.92 feet;
Thence North 02°21'50" West, 33.04 feet;
Thence North 89°41'41" West, 300.00 feet;
Thence North 02°21'50" West, 27.03 feet to the north right of way line of the aforesaid Holy Hill Road;
Thence North 89°41'41" West along said north right of way line, 496.73 feet to the west line of the Southeast 1/4 of said Section 7;
Thence South 01°33'39" East along said west line, 60.03 feet to the Point of Beginning.

Dedicating that portion of subject property as graphically shown for public right of way purposes.

Containing 6,381,104 square feet (146.4900 acres) of land Gross and 6,139,890 square feet (140.9525 acres) of land Net more or less.

That I have made such survey, land division and map by the direction of ZPG Development LLC, owner of said land.

That such plat is a correct representation of all the exterior boundaries of the land surveyed and the land division thereof made.

That I have fully complied with the requirements of Chapter 236 of the Wisconsin State Statutes and the Village of Germantown Land Division Ordinance in surveying, mapping and dividing the land with in this certified survey map.

Date: July 18, 2018




John P. Konopacki
Professional Land Surveyor S-2461



Prepared By:

PINNACLE ENGINEERING GROUP

15850 BLUEMOUND ROAD I SUITE 210
BROOKFIELD, WI 53005
OFFICE: (262) 754-8888

This instrument drafted by John P. Konopacki, PLS-License No. S-2461

PEG JOB#1296.00
SHEET 4 OF 6

CERTIFIED SURVEY MAP NO. _____

Being part of Lot 1 of Certified Survey Map No. 51, all of Lot 1 of Certified Survey Map No. 1963, all of Lot 2 of Certified Survey Map No. 6182, all of Lot 1 and Lot 2 of Certified Survey Map No. 6660 and additional lands in the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

OWNER'S CERTIFICATE OF DEDICATION

ZPG Development LLC, a limited liability company duly organized and existing under and by virtue of the laws of the State of Wisconsin, as owner, does hereby certify that said limited liability company caused the land described on this certified survey map to be surveyed, divided, mapped and dedicated as represented on this certified survey map.

ZPG Development LLC, as owner, hereby dedicates that part of West Rockfield Road and Holy Hill Road to the Village of Germantown for public road purposes as represented on Sheet 1 and Sheet 2 of this Certified Survey Map.

ZPG Development LLC, as owner, does further certify that this certified survey map is required by Chapter 236 of the Wisconsin State Statutes to be submitted to the following for approval or objection:

- 1. Village of Germantown

IN WITNESS WHEREOF, the said ZPG Development LLC has caused these presents to be signed by (name - print) _____, (title - print) _____, AND (name - print) _____, (title - print) _____, at _____, _____ County, Wisconsin, on this _____ day of _____, 2018.

In the presence of: ZPG Development LLC

Name - Title (signature)

Name - Title (signature)

STATE OF WISCONSIN)
_____ COUNTY) SS

Personally came before me this _____ day of _____, 2018, (name) _____, (title) _____, of the above named limited liability company, to me known to be the person who executed the foregoing instrument, and to me known to be such _____ (title) of said limited liability company, and acknowledged that they executed the foregoing instrument as such officer as the deed of said limited liability company, by its authority.

Notary Public
Name: _____
State of Wisconsin
My Commission Expires: _____

STATE OF WISCONSIN)
_____ COUNTY) SS

Personally came before me this _____ day of _____, 2018, (name) _____, (title) _____, of the above named limited liability company, to me known to be the person who executed the foregoing instrument, and to me known to be such _____ (title) of said limited liability company, and acknowledged that they executed the foregoing instrument as such officer as the deed of said limited liability company, by its authority.

Notary Public
Name: _____
State of Wisconsin
My Commission Expires: _____



CERTIFIED SURVEY MAP NO. _____

Being part of Lot 1 of Certified Survey Map No. 51, all of Lot 1 of Certified Survey Map No. 1963, all of Lot 2 of Certified Survey Map No. 6182, all of Lot 1 and Lot 2 of Certified Survey Map No. 6660 and additional lands in the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin

PLAN COMMISSION APPROVAL

Approved by the Plan Commission of the, Village of Germantown, on this _____ day of _____, 2018.

Date Dean Wolter, Village President

Date Laura Johnson, Secretary

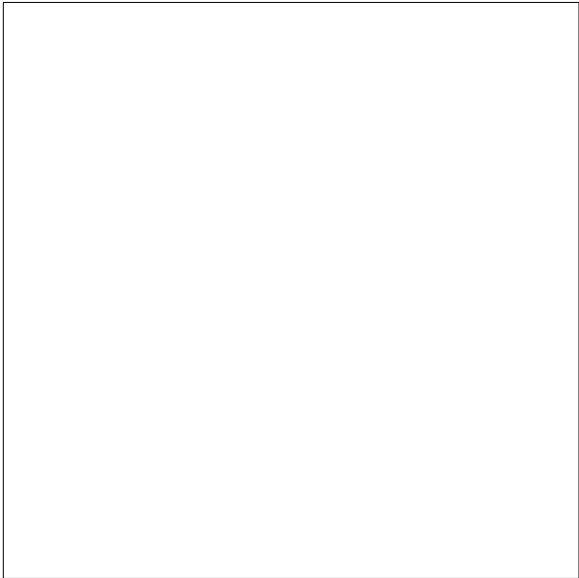
VILLAGE OF GERMANTOWN BOARD APPROVAL

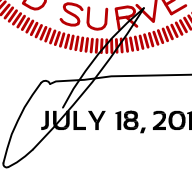
This Certified Survey Map, being a part of the Southwest 1/4 and Northwest 1/4 of the Southeast 1/4 of Section 7 and the Northeast 1/4, Southeast 1/4, Southwest 1/4 and Northwest 1/4 of the Southwest 1/4 of Section 7, Township 9 North, Range 20 East, Village of Germantown, Washington County, Wisconsin, having been approved by the Planning Commission being the same, is hereby approved and the dedication of that part of West Rockfield Road and Holy Hill Road for public road purposes as shown on Sheet 1 and Sheet 2 is hereby accepted by the Village Board of Trustees of the Village of Germantown on this _____ day of _____, 2018.

Date Dean Wolter, Village President

Date Deanna Boldrey, Village Clerk

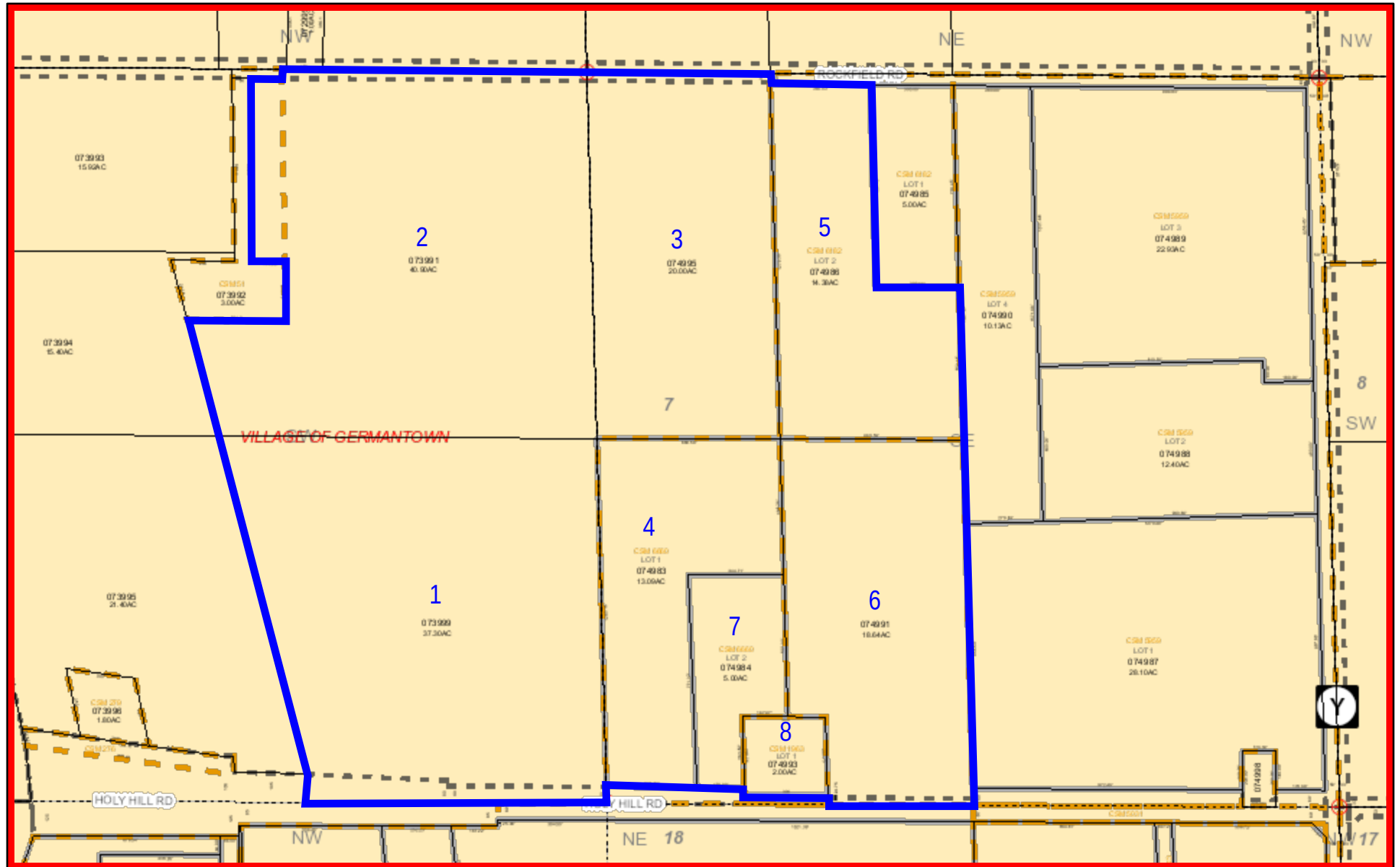
REGISTER OF DEEDS




JULY 18, 2018

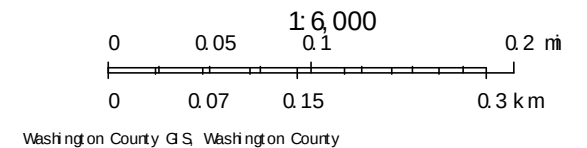
PROJECT AREA MAP

ATTACHMENT TO CERTIFIED SURVEY MAP APPLICATION - DATED 07/06/2018



May 8, 2018

- | | | | |
|----------------------------|------------------------------|--------------------|---------------|
| County Boundary | Washington County Land marks | Public Open Spaces | Meander Line |
| City, Village or Town Hall | Airports | Current Parcel | PLSS Monument |
| Libraries | Trails | Landhook | PLSS Boundary |



July 6, 2018

Village of Germantown
Certified Survey Map Application

Applicant:

Towne Realty, Inc. D/B/A Zilber Property Group
9560 58th Place, Suite 650
Kenosha, WI 53144
Contact: Chad Navis
Phone: 414-274-2640
Email: chad.navis@zilber.com

1. Property Owner(s) Summary:

PARCEL		CONTACT	DESCRIPTION	ACRES
1	GTNV_073999	BRIAN A KAZMIERCZAK, KEVIN J KAZMIERCZAK W202N11420 MERKEL DR GERMANTOWN WI 53022	PT SE SW DOC 1308664 SEC 7-9- 20	37.30 AC
2	GTNV_073991	BRIAN A KAZMIERCZAK, KEVIN J KAZMIERCZAK W202N11420 MERKEL DR GERMANTOWN WI 53022	PT N1/2 SW+PT CSM 51 DOC 1308664 SEC 7-9- 20	40.90 AC
3	GTNV_074995	BRIAN A KAZMIERCZAK, KEVIN J KAZMIERCZAK W202N11420 MERKEL DR GERMANTOWN WI 53022	W1/2 NW SE DOC 1308664 SEC 7-9- 20	20.00 AC
4	GTNV_074983	BRIAN A KAZMIERCZAK, KEVIN J KAZMIERCZAK W202N11420 MERKEL DR GERMANTOWN WI 53022	W 1/2 SW SE CSM 6660 LOT 1 DOC 1308664	13.09 AC
5	GTNV_074986	BRIAN A KAZMIERCZAK, KEVIN J KAZMIERCZAK W202N11420 MERKEL DR GERMANTOWN WI 53022	PT OF NW SE CSM 6182 LOT 2 DOC 1308664	14.38 AC
6	GTNV_074991	BRIAN A KAZMIERCZAK, KEVIN J KAZMIERCZAK W202N11420 MERKEL DR GERMANTOWN WI 53022	E1/2 SW SE (EXC CSM 1963) DOC 1308664	18.64 AC
7	GTNV_074984	RICHARD A STEPHAN, MARY K STEPHAN N128W21030 HOLY HILL RD RICHFIELD WI 53076	W 1/2 SW SE CSM 6660 LOT2 DOC 1396801	05.00 AC
8	GTNV_074993	FRANK E WIEDMEYER, MARY J WIEDMEYER W204N13164 GOLDENDALE RD RICHFIELD WI 53076	CSM 1963 PT SW SE DOC 1271133+1391655	02.00 AC
TOTAL PROJECT AREA ACRES:				151.31 AC

June 28, 2018

The Honorable Village President
and Members of the Village Board
Germantown, WI, 53022

Dear Village President and Members of the Village Board:

We are the owner of the property listed below. Towne Realty, Inc., ("Towne"), has certain contract rights to purchase the property. We consent to Towne's Certified Survey Map application for the property located at Parcel Numbers: GTNV 073991, GTNV 073999, GTNV 074995, GTNV 074991, GTNV 074986 and GTNV 074983, provided that no certified survey map is finalized until Towne or its assigns has taken title to the Property.

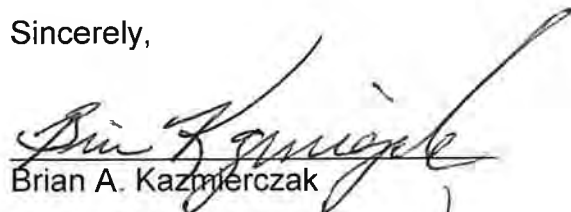
The purpose of the certified survey map is to accommodate the long term development of an industrial business park and immediate construction of a +/- 700,000 SF industrial building.

Towne has attached, in their submittal, its certified survey map, as required by Section 18.06 of the Village of Germantown Zoning Ordinance, and a receipt of the application fee.

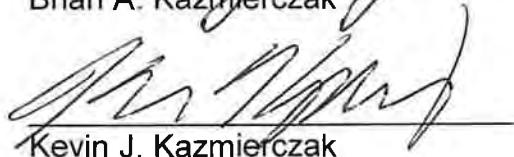
Please inform me and Towne Realty, Inc., of the date this item will be reviewed by the City Plan Commission and the Village Board. The meeting notice should be sent to *W202 N1420 Merkel Drive, Germantown, WI 53022* and to *TOWNE REALTY, INC., ATTN: CHAD NAVIS, 710 N. PLANKINTON AVE., MILWAUKEE, WI, 53203.*

If you any questions regarding the certified survey map application please contact Chad Navis at 414-274-2642.

Sincerely,



Brian A. Kazmierczak



Kevin J. Kazmierczak

June 28, 2018

The Honorable Village President
and Members of the Village Board
Germantown, WI, 53022

Dear Village President and Members of the Village Board:

We are the owner of the property listed below. Towne Realty, Inc., ("Towne"), has an interest in pursuing certain contract rights to purchase the property. We consent to Towne's Certified Survey Map application for the property located at Parcel Numbers: GTNV 074984, provided that no certified survey map is final until Towne or its assigns has taken title to the Property.

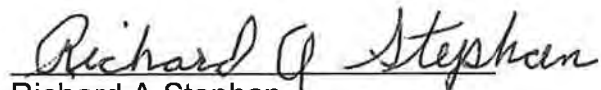
The purpose of the certified survey map is to accommodate the long term development of an industrial business park and immediate construction of a +/- 700,000 SF industrial building.

Towne has attached, in their submittal, its certified survey map, as required by Section 18.06 of the Village of Germantown Zoning Ordinance, and a receipt of the application fee.

Please inform me and Towne Realty, Inc., of the date this item will be reviewed by the City Plan Commission and the Village Board. The meeting notice should be sent to *N128W21030 Holy Hill Rd, Richfield, WI 53076* and to *TOWNE REALTY, INC., ATTN: CHAD NAVIS, 710 N. PLANKINTON AVE., MILWAUKEE, WI, 53203.*

If you any questions regarding the certified survey map application please contact Chad Navis at 414-274-2642.

Sincerely,


Richard A Stephan

June 28, 2018

The Honorable Village President
and Members of the Village Board
Germantown, WI, 53022

Dear Village President and Members of the Village Board:

We are the owner of the property listed below. Towne Realty, Inc., ("Towne"), has an interest in pursuing certain contract rights to purchase the property. We consent to Towne's Certified Survey Map application for the property located at Parcel Numbers: GTNV 074993, provided that no certified survey map is finalized until Towne or its assigns has taken title to the Property.

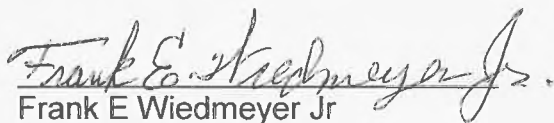
The purpose of the certified survey map is to accommodate the long term development of an industrial business park and immediate construction of a +/- 700,000 SF industrial building.

Towne has attached, in their submittal, its certified survey map, as required by Section 18.06 of the Village of Germantown Zoning Ordinance, and a receipt of the application fee.

Please inform me and Towne Realty, Inc., of the date this item will be reviewed by the City Plan Commission and the Village Board. The meeting notice should be sent to *W204 N13164 Goldendale Rd, Richfield, WI* and to *TOWNE REALTY, INC., ATTN: CHAD NAVIS, 710 N. PLANKINTON AVE., MILWAUKEE, WI, 53203.*

If you any questions regarding the certified survey map application please contact Chad Navis at 414-274-2642.

Sincerely,


Frank E Wiedmeyer Jr