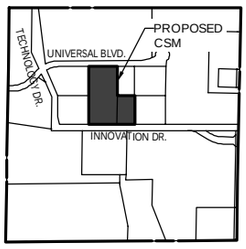
CERTIFIED SURVEY MAP NO._____

That part of lands located in the NE 1/4 of the NE 1/4, SE 1/4 of the NE 1/4, NW 1/4 of the NE 1/4, and SW 1/4 of the NE 1/4 of Section 3, Township 4 North, Range 15 East, City of Whitewater, Walworth County, Wisconsin.
Being a combination of Lot 1 of Certified Survey Map 4557 and Lot 3 of Certified Survey Map 4555, City of Whitewater, Walworth County , Wisconsin.



LOCATION MAP
SECTION 03-3-15
1" = 2000'

50 0 50 100
SCALE IN FEET: 1"=100'

N

BEARING REFERENCE TO WISCRS, WALWORTH COUNTY ZONE (NSRS 2011)

*WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE (NAD 27) REFERENCE

WISCONSIN
GARY R. SPLINTER
S-2239
OAK CREEK
WI
LAND SURVEYOR

UNIVERSAL BLVD

66'

(*N88°40'08"E 249.99')
N89°57'52"E 324.95'

10' UTILITY EASEMENT (AS SHOWN ON CSM 4557)

70.2'

49.8'

LOT 1
CSM 2959

Building

LOT 1
CSM 4557

(*N01°19'58"W 660.18')
N00°02'19"W 660.28'

S00°01'38"E 330.08'
(*S01°18'29"E 330.07')

LOT 1
CSM 2943

LEGEND

- DENOTES 1" (O.D.) IRON PIPE FOUND
- DENOTES 3/4" REBAR FOUND, OR AS NOTED.
- DENOTES 1-1/4" (O.D.) X 18" LONG IRON PIPE SET, WEIGHING 1.13 LBS/LINEAR FT
- CONCRETE MONUMENT WITH BRASS CAP
- P.O.B. POINT OF BEGINNING
- ( ) RECORDED BEARING AND DISTANCE
- BORE SOIL BORING

(*S88°41'28"W 199.95')
S89°57'55"E 199.93'

49.7'

10' UTILITY EASEMENT (AS SHOWN ON CSM 4555)

NE CORNER SEC. 3 T3N R15E CONC. MONUMENT SEWRPC BRASS CAP

10' UTILITY EASEMENT (AS SHOWN ON CSM 4555)

10.0'

10' UTILITY AND DRAINAGE EASEMENT (AS SHOWN ON CSM 4555)

LOT 1
CSM 4555

LOT 1
ACRES = 6.439
SF = 280494

LOT 3
CSM 4555

LOT 2
CSM 4996

S00°00'53"E 329.96'
(*S01°18'29"E 330.07')

1326.82'
S01°03'07"W

10.0'

10.0'

10' UTILITY EASEMENT (AS SHOWN ON CSM 4555)

10' UTILITY EASEMENT (AS SHOWN ON CSM 4555)

1184.18'
N89°57'54"E

S89°57'54"W 524.68'
(*88°40'36"W)

70'

INNOVATION DRIVE

1316.32
S01°03'07"W

SE OF THE NE CORNER SEC. 3 T3N R15E CONC. MONUMENT SEWRPC BRASS CAP

kapur
1224 S. Pine Street
Burlington, Wisconsin 53105
kapurinc.com

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THIS INSTRUMENT DRAFTED BY GRS

CERTIFIED SURVEY MAP NO._____

That part of lands located in the NE 1/4 of the NE 1/4, SE 1/4 of the NE 1/4, NW 1/4 of the NE 1/4, and SW 1/4 of the NE 1/4 of Section 3, Township 4 North, Range 15 East, City of Whitewater, Walworth County, Wisconsin.
Being a combination of Lot 1 of Certified Survey Map 4557 and Lot 3 of Certified Survey Map 4555, City of Whitewater, Walworth County , Wisconsin.

SURVEYOR'S CERTIFICATE

I, Gary R. Splinter, Professional Land Surveyor, do hereby certify that by the direction of Lavelle Industries INC., I have surveyed and mapped the land shown and described hereon, being all of Lot 3 of Certified Survey Map 4555, as recorded in the Walworth County Register of Deeds Office on Document No. 892264, Lot 1 of Certified Survey Map 4557, as recorded in the Walworth County Register of Deeds Office on Document No. 893027, and lands all located in the Northeast 1/4 of the Northeast 1/4, Southeast 1/4 of the Northeast 1/4, Northwest 1/4 of the Northeast 1/4 and the Southwest 1/4 of the Northeast 1/4 all in Section 3, Township 4 North, Range 15 East, City of Whitewater, Walworth County, Wisconsin.

Said land contains 280,494 square feet or 6.439 acres, more or less.

I further certify that I have fully complied with the provisions of Section 236.34 of the Wisconsin Statutes and Chapter 18 of the City of Whitewater Subdivision Ordinance, in surveying, dividing, and mapping, and that this Certified Survey Map is a true and correct representation of all the exterior boundaries of the land surveyed and division of said land.

April 9, 2025

Gary R. Splinter S-2239 DATE

WISCONSIN
GARY R.
SPLINTER
S-2239
OAK CREEK
WI
LAND SURVEYOR

OWNER'S CERTIFICATE

LAVELLE INDUSTRIES INC., OWNER, WE HEREBY CERTIFY THAT I HAVE CAUSED THE LAND DESCRIBED ON THIS CERTIFIED SURVEY MAP TO BE SURVEYED, DIVIDED, AND MAPPED AS REPRESENTED HEREON. WE ALSO CERTIFY THAT THIS CERTIFIED SURVEY MAP IS REQUIRED TO BE SUBMITTED TO THE FOLLOWING FOR APPROVAL OR OBJECTION:

_____
LAVELLE INDUSTRIES INC. (DEBORAH M. SCHEFFLER, CHIEF FINANCIAL OFFICER)

STATE OF WISCONSIN)
)SS
WALWORTH COUNTY)

PERSONALLY CAME BEFORE ME THIS_____DAY OF_____ , 2025, THE ABOVE NAMED LAVELLE INDUSTRIES, INC (DEBRORAH M. SCHEFFLER) TO ME KNOWN TO BE THE PERSON WHO EXECUTED THE FOREGOING INSTRUMENT AND ACKNOWLEDGE THE SAME.

_____, _____ COUNTY, WISCONSIN

MY COMMISSION EXPIRES _____ _____
NOTARY PUBLIC, STATE OF WISCONSIN

CITY OF WHITEWATER APPROVAL

APPROVED BY THE CITY OF WHITEWATER PLAN AND ARCHITECTURAL REVIEW COMMISSION

DATED THIS _____ DAY OF _____, 2025.

_____
HEATHER BOEHM, CITY CLERK

kapur
1224 S. Pine Street
Burlington, Wisconsin 53105
kapurinc.com

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THIS INSTRUMENT DRAFTED BY GRS

Lavelle Industries, Inc.
Storm Water Management Plan

City of Whitewater
Walworth County, Wisconsin

Prepared by:

Kapur & Associates, Inc.
1224 S. Pine Street
Burlington, Wisconsin 53105

April 10, 2025

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5.0	Post-Development Infiltration Summary	3

APPENDICIES

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APPENDIX B	WinSLAMM Input
APPENDIX C	WinSLAMM Outfall Runoff Volume Output
APPENDIX D	WinSLAMM Solids Reduction Output
APPENDIX E	Site Plan

1.0 Project Description and Location

Kapur & Associates, Inc. has prepared an updated storm water management report for the new addition for Lavelle Industries located in the City of Whitewater, Walworth County, Wisconsin. The new analysis incorporates the new 49,865 S.F. addition, parking areas and future additions up to 1 acre. Included in the new analysis is the incorporation of both Parcel A455700001 & A455500003. An infiltration analysis on the entire property for the existing pre-development areas with no impervious areas and the proposed development areas.

The subject property is located at 1215 Universal Blvd in the City of Whitewater, Walworth County, Wisconsin and is in the Whitewater Creek watershed, tributary to a regional pond owned by the City of Whitewater that addresses both stormwater release rates, and pollution reduction. The entire site drains to the regional pond which accounts for the peak flow and water quality requirements set forth by the City and State. As part of this amendment the entire parcel of 6.439 acres was modeled for adequate infiltration. The amendment reflects current site conditions, from the previous additions.

2.0 Soil Information

Geotechnical exploration of the project site was conducted by Gestra Engineering, Inc. Please refer to Appendix A for additional information.

3.0 Hydrology

Hydrologic conditions for infiltration and site-specific pollutant loading were modeled using the current of WinSLAMM V 10.5.0.

Infiltration: For development with more than 40% and up to 80% connected imperviousness infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 75% of the pre-development infiltration volume, based on an average annual rainfall or 2% of the post-construction site. Pretreatment shall be required for parking lot runoff and for runoff from new road construction in commercial, industrial and institutional areas that will enter an infiltration system. Pretreatment shall be designed to protect the infiltration system from clogging prior to scheduled maintenance and to protect groundwater quality in accordance with sub. (6) of NR 151.124.

4.0 Pre-Development Site Conditions

The Pre-Development Site Conditions utilizes the site prior to initial development, assuming an entirely previous area over the full lot. The calculated predevelopment outfall runoff volume output, and rainfall amounts used in the below infiltration volume calculation has been provided in Appendix C for reference.

Pre-developed Rain Volume = (6.439 * 43,560) SF * (29.96/12) FT = 700,272 CF
Pre-development Infiltration Volume = 700,272 CF – 11,180 CF = **689,092** CF

5.0 Post-Development Site Conditions

To meet the infiltration requirements, storm water management practices were constructed including an on-site bio-infiltration basin. The inputs for the impervious area, pervious areas, and

the bio-infiltration basin have been included in Appendix B. The calculated outfall runoff volume output, and rainfall amounts used in the below infiltration volume calculation has been provided in Appendix C for reference. The pre-development site conditions are for the site prior to any development of the parcel.

Post-developed Rain Volume = (6.439 * 43,560) SF * (29.96/12) FT = 700,272 CF
Post-developed Infiltration Volume = 700,272 CF – 186,041 CF = **514,231** CF

Percent of Pre-Developed Infiltration Volume= 514,231 CF / 689,110 CF = **74.6%**

Based on the above infiltration calculations, the site meets the 2% of the post-construction site requirement.

Storm Water Summary

A summary of the storm water flows for the project site for pre- and post-development conditions is shown in the table below.

Infiltration Volume:

	Area (Ac)	Rain Volume (cf)	Runoff Volume (cf)	Infiltration Volume (cf)	% Infiltrated
Predeveloped	6.439	700,272	11,180	689,092	
Post Developed	6.439	700,272	186,041	514,231	**74.6%**

Table 1 – Summarized Total Flows - WinSLAMM output

Water Quality: Based on the SLAMM analysis, 55.77% of suspended solids can be expected to be removed on-site prior to release within the greater regional basin. This calculation has been provided under Appendix D.

Appendix A - Geotechnical Report

GEOTECHNICAL ENGINEERING REPORT

Proposed Building Addition
Lavelle Industries, Inc.
Whitewater, Wisconsin

GESTRA Project No.: M14037-10
September 11, 2014

Prepared For:
Reesman's Excavating & Grading, Inc.
Burlington, Wisconsin

Geotechnical Engineering Report

Proposed Building Addition
Lavelle Industries, Inc.
1215 Universal Blvd.
Whitewater, Wisconsin

GESTRA Project No.: M14037-10
September 11, 2014

Prepared for:

Reesman's Excavating & Grading, Inc.
28815 Bushnell Road
Burlington, WI 53105

Report Prepared by:

GESTRA Engineering, Inc.
715 Post Road, Suite A
Madison, WI 53713
Phone: (608) 222-9406

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APPENDIX II LABORATORY TEST RESULTS

Geotechnical Engineering Report
Proposed Building Addition
Lavelle Industries, Inc.
1215 Universal Blvd.
Whitewater, Wisconsin

1.0 INTRODUCTION

GESTRA Engineering, Inc. (GESTRA) was authorized by Reesman's Excavating & Grading, Inc. (Reesman) to complete a subsurface exploration and geotechnical investigation for the proposed building addition to the existing Lavelle Industries, Inc. manufacturing plant, located at 1215 Universal Boulevard in Whitewater, Wisconsin. This report presents the results from the subsurface soil exploration and describes the field exploration, laboratory test results, and provides recommendations pertaining to the design and construction of the proposed development.

The engineering recommendations and analysis contained within this report are based on the following project information, which is a projection of GESTRA's understanding of the project. If for any reason the actual project information differs from what is reported below, GESTRA should be contacted so that we can review our recommendations in light of any new information.

1.1 Project Information

The project site is located along the south side of the existing Lavelle Industries, Inc. manufacturing plant at 1215 Universal Boulevard in Whitewater, Wisconsin. The proposed project will include the construction of a building addition, a parking lot expansion, and an access drive. The proposed building addition will extend south of the existing building, just west of the existing loading dock bays. The building addition will measure approximately 84 feet by 150 feet. The addition will consist of a single story (high bay), metal structure with a concrete slab on grade matching the finish floor elevation of the existing manufacturing plant at elevation 837.58 feet, as shown on the Civil Plans prepared by Pinnacle Engineering Group. New loading dock bays are planned along the east wall of the planned addition. As such, finished exterior site grades along the east wall of the planned will be approximately 4 feet to 5 feet lower than the finish floor elevation, and the east perimeter foundation wall essentially act as a retaining wall.

The addition is assumed to be designed as steel frame construction and supported by cast in place shallow spread foundations. We have assumed that wall loads will not exceed 5 kips per lineal foot and individual column loads will be 150 kips or less. We have also assumed the building foundations will bear at a maximum of 4 feet to 5 feet below the finish floor elevation. As an exception, footings along the east wall of the planned addition in the proposed loading dock area are expected to bear about 8 feet to 9 feet below the finished floor elevation.

Expansion of the existing asphalt parking lot and construction of a new south access drive off of Innovation Drive is planned generally southeast of the new building addition. In addition, a new concrete loading dock slab is planned along the east side of the proposed addition. Specific traffic loading design details were not known at the time of this report. However, we have assumed that the proposed new pavement areas will be subjected to moderate truck traffic estimated at 10 to 15 delivery trucks or semi trucks per day.

Based on the proposed finish floor slab elevation and the proposed finished site grades, in relation to existing site grades, up to about 5 feet of fill is expected to be necessary in the area of

the planned addition to establish the finish floor elevation. Minimal site grading is anticipated to be necessary to establish the majority of the proposed pavement grades. As an exception, cuts of up to about 2 feet are anticipated to be necessary near the south end of the planned access drive.

2.0 SCOPE OF WORK

GESTRA has performed the following services for the project:

1. Contacted Diggers Hotline to identify the utility locations prior to drilling.
2. Located the borings using tape and stake methods referencing known site features and performed a level survey to obtain approximate ground surface elevations at the borehole locations.
3. Performed eight (8) standard penetration (SPT) borings utilizing an ATV-mounted drilling rig. Five (5) borings to a depth of 15 feet were planned in the building addition area, and three (3) borings were planned to a depth of 7½ feet below existing grades in new pavement areas. However, auger penetration refusal on cobbles, boulders, or possible bedrock was encountered at boring B-2 at a depth of 8 feet below ground surface (bgs). The remainder of the borings were completed to the planned depths. Site work included abandonment of the boreholes with bentonite chips per WDNR requirements and surface patching with cold patch asphalt, where applicable.
4. Performed laboratory soil tests to assign classification and engineering properties to the soils encountered. The laboratory testing included hand penetrometer, Atterberg limits, mechanical sieve analysis, percent finer than the 200 sieve, organic contents, and moisture contents.
5. Prepared this engineering report presenting the results of the field exploration, laboratory testing, and providing recommendations pertaining to allowable soil bearing capacity for spread foundations, estimates of settlement for spread foundations, seismic site classification, frost depth, anticipation and management of groundwater, subgrade modulus for design of slabs on grade, lateral earth pressure coefficients, pavement recommendations, and site preparation/soil correction.

3.0 EXPLORATION RESULTS

3.1 Site Conditions

The project site, located along the south side of the existing manufacturing plant, is generally comprised of asphalt pavement near the existing building, with grass present over the southern portion of the site. Areas of concrete pavement are also present adjacent to the existing building.

In general, the topography of the project site is relatively level to slightly rolling. Based on the site plan provided by Pinnacle, about 4± feet of elevation difference is present in the area of the proposed building addition. Existing ground surface elevations at the boring locations ranged between 837.3 feet at B-1 and 830.0 feet at B-6.

3.2 Subsurface Soil Profile

Based on our exploration, the subsurface soil profile generally consists of surficial topsoil to an estimated depth of 4 to 8 inches below ground surface (bgs), underlain by native sandy lean clay or clayey sand to depths of about 1 foot to 7 feet bgs. Beneath the sandy lean clay and clayey

sand strata, the underlying native soils were comprised of glacial till materials, consisting of silty sand with gravel and possible cobbles, to the termination/refusal depth of the borings. As exceptions to the above generalized profile, about 3½ inches of asphalt pavement was present at the surface of B-3 and a second stratum of topsoil was encountered below the surficial topsoil at B-7 and extended to a depth of about 1.3 feet bgs. Furthermore, fill or possible fill materials, consisting of sandy lean clay with gravel or silty sand with gravel, were encountered below the topsoil layer at B-1, B-2, and B-5. The fill/possible fill materials extended to depths of approximately 3 feet and 5 feet bgs, with approximate bottom elevations between 831.8 feet and 834.1 feet.

At boring B-2, auger penetration refusal on cobbles, boulders, or possible bedrock was encountered above the planned boring depth at a depth of about 8 feet bgs.

Existing Fill/Possible Fill: The fill/possible fill material was generally comprised of either dark brown and brown sandy lean clay with gravel or brown and light brown silty sand with gravel. Standard Penetration Test (SPT) blow counts, or N-values, as shown on the boring logs, within the cohesive fill materials at B-1 ranged from 6 to 7 blows per foot (bpf). An N-value of 11 bpf resulted within the granular fill material at B-2 and B-5. Moisture contents of samples of the cohesive fills tested ranged between about 17% and 18%.

Native Soils: The native soil profile observed was fairly consistent between the boreholes. The native soils primarily consisted of stiff to hard brown sandy lean clay underlain by light brown very dense silty sand with gravel and possible cobbles, which were characterized as glacial till deposits and extended to the termination/refusal depths of the borings. As an exception to the native soil profile, a stratum of medium dense silty sand with gravel was encountered above the very dense glacial till materials within B-5.

Moisture contents of samples of the native sandy lean clay soil tested ranged from 13% to 27%. Hand penetrometer readings in the native sandy lean clay soils were between 1.25 tsf and 4.5+ tsf. N-values, as shown on the boring logs, in the native silty sand with gravel materials typically ranged from 80 blows per foot (bpf) and SPT refusal. SPT refusal is defined as the depth where 50 blows of a 140 pound hammer advanced the split spoon sampler 6 inches or less, and is noted on the boring logs as 50/inches of penetration (i.e. 50/1").

To aid in the evaluation of the anticipated pavement subgrade soils, a bulk sample of auger cuttings collected from the near surface soils at borings B-6, completed within the proposed pavement area, was subjected to an Atterberg Limits determination and a mechanical sieve analysis. The results of the laboratory testing completed on the bulk sample indicated that the near surface soils were comprised of brown clayey sand. The results of the sieve analysis indicated that approximately 2% of the sample was comprised of gravel, 57% was sand, and about 41 percent passed the No. 200 sieve. The Atterberg Limits determination completed on the bulk sample yielded a Liquid Limit (LL) of 27 and a Plasticity Index of 12.

Results of the field and laboratory tests and observations are depicted on the individual test boring logs and laboratory data sheets included in Appendix I and II of this report, respectively. The soils encountered were grouped together based on similar observed properties. The stratification lines depicted on the boring logs were estimated by the reviewing engineer based on the available data and experience. The actual in-situ changes between layers may differ slightly and may be more gradual than depicted on the boring logs. Subsurface and groundwater conditions can vary between borehole locations and in areas not explored.

It is important to note that the soil observations and soil layer thickness estimates were made in small diameter boreholes. Therefore, it should be understood that thicker or thinner deposits of the individual strata are likely to be encountered within other portions of the project. Furthermore, the estimation of strata thickness, such as topsoil or fill, at a particular location can differ from person to person due to a sometimes indistinct transition between the soils encountered. Additionally, it must be recognized that in the absence of foreign substances and/or debris within the soil samples obtained, it is sometimes difficult to distinguish between natural soils and clean soil fill.

3.3 Groundwater Observations

Groundwater observations were made during and at the completion of the drilling operations. Free water was not encountered within any of the borings during or immediately after completion of drilling.

Based on the above information, we anticipate that the groundwater level on the site is below the depths explored by the borings. Groundwater level fluctuations may occur with time and seasonal changes due to variations in precipitation, evaporation, surface water runoff and local dewatering. Installation and monitoring of an observation well would be required to assess a true groundwater elevation on this site.

4.0 ANALYSIS AND RECOMMENDATIONS

4.1 Existing Fill

The fill and possible fill materials encountered in borings B-1, B-2, and B-5 were free of deleterious materials, and relatively consistent related to the type of material, consistency and moisture content, which is an indication that the material may have been placed in a controlled manner. However, we understand records related to fill placement on the site are not available at this time. If these records are available, they should be provided for our review as it pertains to the recommendations presented in this report. If there are records available that document controlled fill placement, it may result in a revision of the recommendations in this report.

A second stratum of topsoil was encountered at B-7 below the surficial topsoil, which extended to a depth of about 1.3 feet bgs and is a possible indication that topsoil was not completely removed during the last site earthwork. The deeper topsoil materials are expected to be exposed during initial site stripping. Where topsoil (surficial or buried) materials are exposed, they should be removed to expose suitable inorganic subgrade.

The unknown nature of undocumented fill increases the risk for unforeseen problems during and post construction, such as buried unsuitable material or inconsistent material that could lead to additional site excavation, excessive settlement, or pavement subgrade instability. We recommend the existing fill soils be completely removed from below proposed building foundations. If the owner is willing to accept some increased level of risk, the fill material as encountered in our borings may be left in place for the support of the floor slab and pavements provided the recommendations in this report are followed. If the project team or owner is not willing to accept this risk, further exploration could be performed or additional earthwork measures could be considered to mitigate the possible risk.

4.2 Site Preparation

The site preparation should start with removal of roots, topsoil, vegetation, pavements, debris (if present) or other deleterious material from areas of proposed development. In addition, all unused utilities that may be present should be properly removed or abandoned. Material removed from the project site should be disposed in accordance with all applicable federal, state, and local regulations. Soil should not be stockpiled near or adjacent to excavations.

Assuming the building slab on grade is lightly loaded (150 psf or less), the slab may be supported above the existing site soils (fill or native) following proper preparation and evaluation, as described herein, provided the owner understands and accepts the potential additional risk with the existing fill. It should also be understood by the project owner and contractor that if the floor slab or pavements are supported by or above the existing fill, even with additional surface corrective measures, there are still additional potential risks such as non-uniform subgrade conditions and consolidation of the underlying fill, potentially resulting in detrimental total and/or differential settlement. If the owner does not approve of the potential risk, alternate slab support or substantial soil correction should be considered.

In the building slab on grade area and pavement areas, after the initial site preparation described above, we recommend recompacting the exposed material. Any areas of significant deflection during recompaction may be disked, dried, and re-compacted if weather permits, or removed and replaced with engineered fill. After recompaction and before structural fill or base material placement, a proof roll is recommended with a minimum 20 ton tri-axle dump truck, or like machinery imparting similar static loading on the soil and moving at no more than walking speed. A geotechnical engineer or their designated representative should be present during the proof roll in order to identify soft or unstable areas, if any, and subsequently recommend remediation procedures.

Based on the relatively high moisture contents (typically greater than 25%) observed in the sandy lean clay and clayey sand materials near the surface of borings B-3 and B-6, respectively, it is likely that areas of the site may show instability when exposed to construction traffic, especially if construction occurs in the spring or fall. An aggressive construction schedule or construction during seasons with limited drying time may require alternate subgrade preparation methods such as removal and replacement or stabilization with lime or fly ash.

Based on our understanding of the project, cuts of up to about 2 feet and fills of 1 to 5 feet are anticipated to attain subgrade elevation over portions of the site. As a general rule for new fill placement, the lift thickness should not exceed 12 inches for granular soils and 9 inches for cohesive soil and the maximum particle size should be limited to 25% of the initial lift thickness. Engineered fill placed within the building pad, below foundations or in the pavement subgrade/base course should be compacted to a minimum of 95% of the Modified Proctor maximum dry density value. Structural soil fill should be placed a minimum of five feet beyond the edges of the new building and pavement areas, and an additional foot horizontally for each vertical foot of new fill to be placed, to provide adequate lateral confinement. The inorganic site soils free of any deleterious material that would be removed from excavations could be reused as structural fill; however, moisture conditioning of the material may be necessary.

4.3 Foundation Recommendations

Based on the results of our exploration, the existing inorganic native sandy lean clay and medium dense silty sand with gravel encountered in the building borings should be suitable for a shallow spread foundation designed for a maximum net allowable soil bearing pressure of 2,000

psf provided the recommendations in this report are followed. If the foundation excavations are planned to be extended to expose the native very dense silty sand with gravel (SPT N-value of 50 bpf or greater), such as is expected for the deeper loading dock footings, then a maximum net allowable soil bearing pressure of 5,000 psf may be used in the design. We do not recommend bearing spread foundations within or above existing fill materials; therefore, some additional over-excavation is anticipated based on the anticipated finish floor elevation. Consideration should be given to performing a test pit exploration to assist in further determining the limit of existing fill and depth within the proposed building and assist in evaluating the amount of potential overexcavation.

Table 4-1 provides approximate depths below existing grade and corresponding elevation to the soil recommended for a design allowable bearing capacity of 2,000 psf and 5,000 psf at each of the test boring locations performed within the building area. Where new foundations are planned adjacent to existing foundations, the effects of overlapping soil stresses must be considered and the maximum net allowable soil bearing pressure must not be exceeded.

Table 4-1: Approximate Bearing Capacity Depths

Test Boring Location	Existing Ground Elevation (ft)	Approximate Depth* to 2,000 psf Allowable Bearing Capacity (ft)		Soil Description	Approximate Depth* to 5,000 psf Allowable Bearing Capacity (ft)		Soil Description
		Depth (ft)	Elevation (ft)		Depth (ft)	Elevation (ft)	
B-1	837.3	5.5	831.8	Sandy lean clay	7	830.3	Silty sand with gravel
B-2	837.1	3	834.1	Sandy lean clay	5.5	831.6	Silty sand with gravel
B-3	833.9	1	832.9	Sandy lean clay	3	830.9	Silty sand with gravel
B-4	832.7	1	831.7	Sandy lean clay	1.5	831.2	Silty sand with gravel
B-5	835.7	1	834.7	Silty sand with gravel	3	832.7	Silty sand with gravel

*Depth is estimated based on samples collected; however, actual transition of fill and native soil may vary throughout the site.

Where unsuitable soils are encountered at the foundation elevation, soil correction should consist of additional excavation to remove the unsuitable soils. If the over-excavation is being filled with engineered fill, we recommend the over-excavation be widened at a minimum 1H:1V ratio from the edge of the foundation. The over-excavation can then be filled to grade with suitable engineered fill compacted to at least 95% of the Modified Proctor density (ASTM D1557). For foundations designed for an allowable bearing pressure of 2,000 psf, the engineered fill may consist of inorganic clayey or sandy site soils. For engineered fill placed below foundations designed for an allowable bearing pressure of 5,000 psf, the fill material should consist of well graded granular material with less than 10% fines. Alternatively, lean concrete with a minimum

compressive strength of 500 psi could be used to fill the over-excavation to grade and lateral over-excavation will not be required. The above recommendations should apply in scenarios where new engineered fill is required to raise the site to design bottom of foundation elevation.

The depth of excavation required to expose suitable bearing material may vary between and beyond the areas explored by GESTRA. Due to the similarity of the native and fill material, we strongly recommend that a GESTRA field representative be present to observe and evaluate the suitability of the soils at the planned foundation subgrade elevations at the time of construction and to verify that the excavations extend through any unsuitable materials to a competent bearing stratum.

The shallow foundation design should incorporate a minimum strip footing width of 18 inches and column pad width of 24 inches, even if the allowable bearing capacity has not been fully utilized. All perimeter foundations should bear a minimum of 48 inches below grade for heated structures and 60 inches for unheated structures in order to protect the structure from frost heave. We recommend that foundations also be suitably reinforced in order to compensate for the effects of minor differential movements due to subsurface soil variations.

If the recommendations as stated in this report are used in the design and construction of the proposed building addition, it is our opinion that total settlements will be less than 1 inch.

4.4 Floor Slab Recommendations

We assume the slab will be supported above the existing site soils (fill or native) following the recommended site preparation and evaluation, as described herein, and the owner understands and accepts the potential additional risk with the existing fill. We recommend that a subgrade reaction modulus of 125 pounds per square inch per inch of deflection (pci) be used in the design of the floor slab on grade assuming at least a portion of the slab subgrade will consist of existing lean clay fill. This value assumes a 1 foot plate is used to determine the modulus and should be adjusted for the size of the foundation and confinement effect. We recommend that the floor slabs be suitably reinforced and designed to be separate from the foundation system in order to allow for independent movements.

We recommend the installation of a capillary moisture break directly below the slab. It should consist of at least 6 inches of clean sand or gravel with a maximum particle size of 1 inch containing no more than 5% passing the number 200 sieve (fines) and follow the recommendations of ACI 302.1, Section 4.1. If the floor slab is to include floor coverings, we recommend that the manufacturer be consulted to verify the proper incorporation of a vapor retarder. If a vapor retarder is used, we recommend it be placed in accordance with ACI 302.1 Section 3.2 and should meet the requirements of ASTM E1745. The vapor retarder should include proper sealing at penetrations, overlap at joints, and sealing at the interface of the wall and slab and may require an adequate cushion material to prevent damage.

4.5 Seismic Site Classification

Section 1615 of the International Building Code 2009 (IBC) was used to assign a soil site classification. Based on the native soil conditions observed and assuming these are consistent or better to a depth of 100 feet, the soil site classification **C** (very dense soil and soft rock) should be used in the structural design of the proposed building. Based on site class C, and mapped spectral response accelerations S_s and S_1 for Whitewater, Wisconsin, the site coefficients F_a and F_v are 1.2 and 1.7, respectively.

4.6 Below Grade Walls

Below grade walls like those planned along the east wall of the addition should be designed to resist lateral earth pressures. The values presented in Table 4-2 assume that the walls are vertical; that a clean, free-draining granular fill is used as backfill within 2 feet behind the wall; the backfill condition at the ground surface is level; and that adequate drainage is provided to prevent the buildup of any hydrostatic pressure. In addition, the loading dock walls will also be required to resist the surcharge of traffic that may occur during or after construction.

Table 4-2: Lateral Earth Pressure Design Parameters

Estimated Design Parameter	Native Clay Soil or Clay Fill	Native Silty Sand with Gravel	Structural Fill
Total Unit Weight (γ)	120 pcf	125 pcf	130 pcf
Angle of Internal Friction (Φ)	30°	32°	35°
At-Rest Earth Pressure Coefficient, (K_o)	0.5	0.47	0.42
Active Earth Pressure Coefficient, (K_a)	0.33	0.30	0.27
Passive Earth Pressure Coefficient, (K_p)	3.00	3.25	3.69

For walls that are free to rotate at least 0.001 times the height of the wall, then an active earth pressure condition will develop. For walls that will be restrained, such as the loading dock walls, then an at-rest condition will pertain.

Equivalent fluid densities can be calculated by multiplying unit weight by the listed pressure coefficients at different conditions. The upper 1-foot of soil should be ignored when calculating passive resistance. Frictional resistance for concrete elements cast directly on native stiff sandy lean clay or silty sand with gravel soil may be calculated as 0.35 and 0.45, respectively, times the vertical dead load on that element.

Drainage should be provided behind the loading dock walls and other below grade walls to prevent the buildup of hydrostatic pressures. We recommend that free-draining granular drainage aggregate, such as ASTM Specification C33 Size No.67 washed concrete aggregate, be placed within 2 feet behind the back face of the below grade walls. Drainage pipes should also be installed along the perimeter of the walls, slightly above the footing, and allowed to drain either by gravity or to a sump pit and pump system. The drainage pipes should also be surrounded by a minimum of 6 inches of drainage aggregate. Due to the significant percentages of fine material present within the existing native sandy lean clay soils, the drainage aggregate should be completely wrapped in a non-woven, high survivability, geotextile fabric with an apparent opening size (AOS) in the range of 70 to 100. The geotextile fabric should prevent migration of any adjacent soil into the drainage aggregate. We do not recommend using a drainage pipe that includes a geotextile sleeve in immediate contact with the pipe.

We recommend a relatively impermeable barrier that may consist of a minimum 2 foot thick clay cap or Bituminous or Portland cement concrete (i.e. walkways and drives) be placed around below grade walls to minimize surface water infiltration into the backfill adjacent to the wall. The clay material, if used, should be placed and compacted as recommended in this report and should extend from final grade to a depth of at least 2 feet. The clay cap or impermeable barrier should slope away from the wall at a minimum 2 percent grade. Surcharge loads, including

those from adjacent (present and future) structures, as well as truck traffic or temporary construction equipment, within a zone defined by a plane extending at a 45 degree angle above the base of the wall should also be included in the design.

4.7 Pavement Recommendations

The Wisconsin Asphalt Pavement Association (WAPA) Design Guide was used to provide the recommendations for the proposed new pavement areas. Based on the clayey sand soils encountered at B-6, B-7, and B-8, GESTRA recommends that the "poor soils" (estimated CBR value between 2 and 5, SSV = 2.5) category be assumed as the prevalent subgrade condition. We assumed a Traffic Class II (1 to 5 ESALs/day) for the planned new pavement areas and drives that will be primarily used for automobiles and limited truck traffic and Traffic Class III (6 to 50 ESALs/day) for the areas planned for semi truck traffic and regular delivery trucks. In Table 4-3 below, we present our recommendations for the hot mix asphalt pavement and base course thickness.

Table 4-3: Pavement Design Recommendations

Traffic Class	Pavement Layer Type	Thickness, inches	Material Type	WisDOT Specifications
Traffic Class II	Hot Mix Asphalt	4.0	HMA Mix E-0.3	Section 460
	Base Course (Dense Graded)	9.0	1¼ inch Crushed Stone	Section 305
Traffic Class III	Hot Mix Asphalt	6.0	HMA Mix E-0.3*	Section 460
	Base Course (Dense Graded)	10.0	1¼ inch Crushed Stone	Section 305

*Mixture type E-1 is recommended if Design Daily ESALs ≥ 41.

Pavement sections presented in the above table should not be used for equipment or truck parking areas, entrances and exit aprons, or contain trash dumpster or other loading/unloading zones. In these areas, a Portland Cement Concrete (PCC) pavement should be used. The PCC layer thickness is recommended to be 6.0 inches with a minimum of 6.0 inch-thick crushed stone base course, but may be modified depending on the final design. The reinforcement details for PCC layers should be designed by the project design engineer as the project conditions dictate.

One of the important considerations in designing a high quality and durable pavement is providing adequate drainage. Drainage design for the proposed pavement section is out of the scope of GESTRA for this project. It is important that bird baths (leeching basins) and surface waves are not created during construction of the HMA layer. A proper slope should be allowed and drainage should be provided along the edges of pavements to prevent the accumulation of free water within the base course, which otherwise may result in subgrade softening and pavement deterioration under exposure and repeated traffic conditions.

All pavements require regular maintenance and repair in order to maintain the serviceability of the pavement. These repairs and maintenance are due to normal wear and tear of the pavement surface and are required in order to extend the service life of the pavement. However, after 10

years of service, a normal pavement structure is likely to deteriorate to a point where pavement rehabilitation may be required to maintain the serviceability.

4.8 Construction Consideration

The detailed means and methods of excavation and construction should be decided by the contractor and approved by the project design team. Based on the specific site information, geotechnical exploration results and requirements for the proposed structures, the following issues should be taken in to consideration during construction.

Dewatering

Groundwater was not observed in any borehole during or immediately after drilling. However, perched or trapped water may be encountered within portions of the existing fill or backfill materials adjacent to the existing building. Based on the anticipated depth of excavation, typical sump and pump techniques should be adequate to remove water that might be encountered. Water from other sources such as surface runoff from rain events should be controlled and prevented from entering site excavations.

Excavation Stability

Caving is a common issue for excavation side walls during construction, especially within existing fill and granular soils. An excavation plan should be developed and the length of excavation left open should be limited to prevent caving soil from covering the suitable bearing soils. The contractor must comply with the federal, state, local and updated OSHA regulations during excavation and in retention system design to ensure excavation safety.

OSHA has instituted strict standards for temporary construction excavations. These standards are outlined in 29 CFR Part 1926 Subpart P. Excavations within unstable soil conditions or extending five feet or more in depth should be adequately sloped or braced according to these standards. Excavation safety is the responsibility of the contractor. Material stockpiles or heavy equipment should not be placed or operate near the edge of the excavation slopes. The actual stable slope angle should be determined during construction by the contractor and will depend upon the loading, soil, and groundwater conditions encountered.

Weather Implications

The subgrade soil or the soil at foundation level might become unstable with exposure to adverse weather such as rain, snow and freezing temperatures. Unstable areas due to weather exposure may require an additional undercut or stabilization and the representative of the geotechnical engineer should assist with the determination of the depth of additional undercut or stabilization required based on observation of the field condition.

Soil Sensitivity

Soil at the construction site will be exposed to moisture and disturbance from construction traffic, construction equipment and human factors. Since the near surface soils encountered are considered sensitive to moisture, every effort should be made to provide and maintain adequate drainage across the site during construction, and to minimize ponding on the subgrade. Foundations, floor slabs and pavement should be constructed immediately after the review of the representative geotechnical engineer.

5.0 EXPLORATION AND TESTING PROCEDURES

5.1 Layout and Elevation Procedures

A total of eight (8) soil borings were completed at the locations shown on the attached Borehole Location Map in Appendix I. The borings were located in the field by GESTRA using tape and stake methods and a level survey was performed to obtain approximate ground surface elevation at the borehole locations. The boring locations were measured from existing site features and ground surface elevations were referenced to the top of the existing finish floor at the doorway along the south side of the existing building. As shown on the site plan provided by Pinnacle, the elevation of the existing finish floor is 837.58 feet.

5.2 Field Testing Procedures

The borings were drilled using a CME 550 all-terrain drill rig. The boreholes were initiated and advanced by using 3¼ inch hollow stem augers. During drilling, soil samples were collected at 2½ foot intervals to the boring termination/auger refusal depths. All representative soil samples were taken in general accordance with the "Standard Method for Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). After each sampling, a soil sample was retained and placed in a jar and recorded for type, color, consistency, and moisture, sealed and then transported to the laboratory for further review and testing, if required. The specific drilling method used including the depths, rig type, crew chief, and borehole abandonment are included on each of the individual boring logs as it may change for each hole.

5.3 Laboratory Testing Procedures

After completion of drilling operations, all of the retained soil samples were transported to GESTRA's laboratory and classified by a geotechnical engineer using the Unified Soil Classification System. The engineer then assigned laboratory testing suited to extract important index properties of the soil layers encountered. These tests included moisture and organic contents, Atterberg Limits, percent finer than the 200 sieve, and mechanical sieve analysis. All lab results are presented in Appendix II of this report.

STANDARD OF CARE

Our exploration was limited to evaluating subsurface soil and groundwater conditions pertaining to the proposed project. GESTRA did not perform any environmental, chemical, or hydrogeologic testing as these were not part of our work scope.

This report should be made available in its entirety to bidding contractors for information purposes. The soil borings and site sketch should not be detached from this report. Our report is not valid if used for purposes other than what is described in the report.

All OSHA regulations such as those regarding proper sloping and temporary shoring of excavations should be followed during the entire construction process.

GESTRA has presented our professional opinions in this report in the form of recommendations. Our opinions are based on our understanding of current project information and related accepted engineering practices at the time of this report. Other than this, no warranty is implied or intended.

Sincerely,

GESTRA Engineering, Inc.

Ryan Portman, P.E.
Project Engineer

Douglas Dettmers, P.E.
Senior Engineer

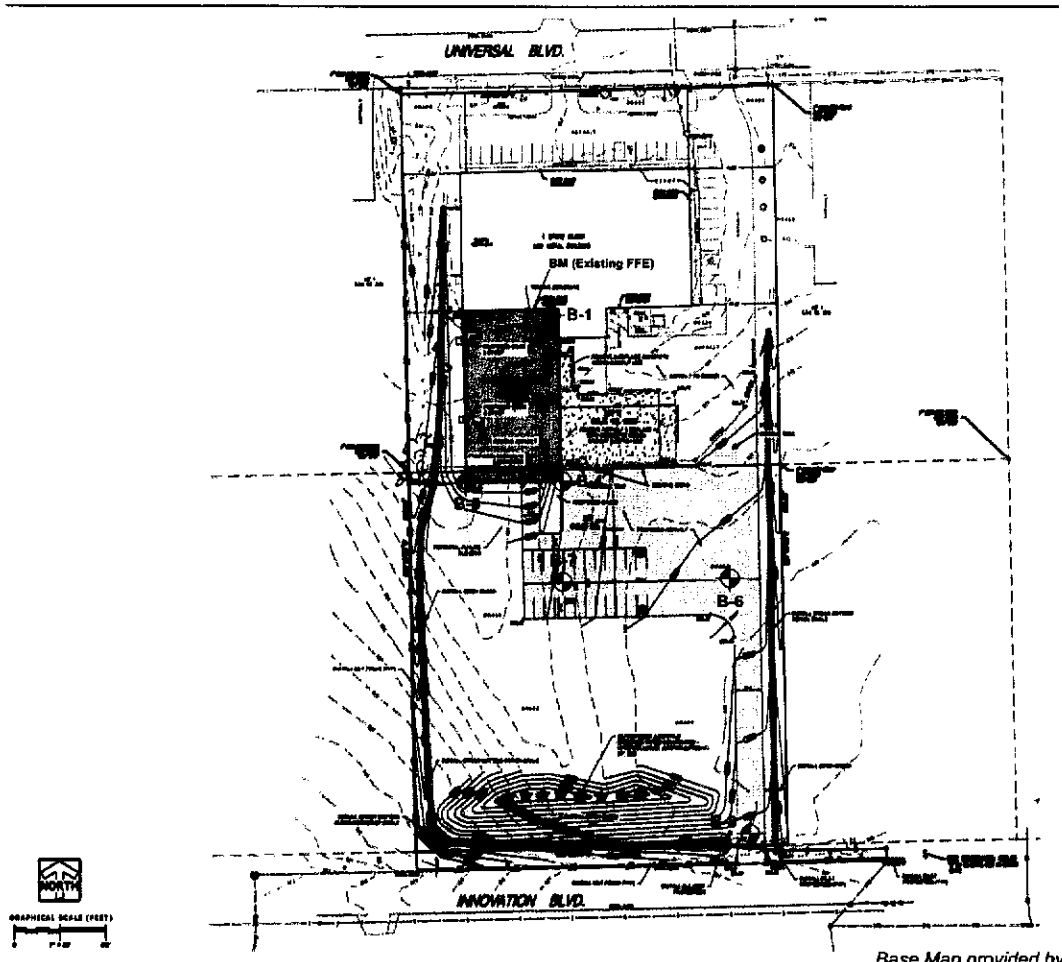
APPENDIX I

SITE LOCATION MAP, BOREHOLE LOCATION MAP, TEST BORING LOGS AND NOMENCLATURE

BASE MAP PROVIDED BY GOOGLE MAPS

GESTRA Engineering, Inc.
715 Post Road, Suite A
Madison, WI 53713
Phone: (608) 222-9406
Fax: (608) 222-9408

Project Name & Location: Lavelle Industries Building Addition 1215 Universal Blvd. Whitewater, WI	Scale: Not available
	Drawing No.: 1 of 1
	Drawn by: RJP
Drawing Title: Site Location Map	Checked by: DSD
Project No.: M14037-10	Date: September 4, 2014



◆ = Boring Location

Base Map provided by Pinnacle Engineering Group

Project Name & Location: Lavelle Industries Building Addition 1215 Universal Blvd. Whitewater, WI	Project No.: M14037-10	Drawing Title: Borehole Location Map	Drawn By: RJP	GESTRA GESTRA Engineering, Inc. 715 Post Road, Suite A Madison, WI 53713 Phone: (608) 222-9406 Fax: (608) 222-9408 www.gestrainc.com
	Drawing No.: 1 of 1	Scale: Shown above	Checked By: DSD	
			Date: September 5, 2014	

SOIL BORING LOG

GESTRA
Gestra Engineering Inc.
1626 W. Fond du Lac Avenue
Milwaukee, WI 53205
Phone: 414-933-7444, Fax: 414-933-7814

PAGE NUMBER: 1 of 1

PROJECT NAME	Lavelle Industries Building Addition
PROJECT LOCATION	Whitewater, WI
DATE DRILLING STARTED	9/2/2014
DATE DRILLING ENDED	9/2/2014
BORING NUMBER	B-1
PROJECT NUMBER	M14037-10
DRILLING RIG	CME 550 ATV
BORING DRILLED BY	FIRM: Gestra CREW CHIEF: A. Woerpel
FIELD LOG	D. Harris
LAB LOG / QC	R. Portman
NORTHING	
EASTING	
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	837.3 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (4")								
						0.3 (837)								
SS - 1	14	1 2 5	7			SANDY LEAN CLAY WITH GRAVEL, dark brown and brown, moist, intermixed light brown silty sand with gravel (FILL)	CL						17	
SS - 2	16	2 3 3	6	5	832.3								18	
						5.5 (831.8)								
SS - 3	7	2 50/3"	50/3"			SANDY LEAN CLAY, brown, moist, stiff to very stiff, trace gravel	CL			1.5-2.0			13	
						7 (830.3)								
SS - 4	3	50/4"	50/4"	10	827.3	SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)	SM							
SS - 5	3	50/4"	50/4"											
SS - 6	4	50/4"	50/4"											
				15	822.3	15 (822.3)								
						End of Boring at 15.0 ft.								
				20	817.3									

WATER & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING (ft): NE		CAVE DEPTH AT COMPLETION (ft): NMR	WET ☐ DRY ☐
WATER LEVEL AT COMPLETION (ft): NE		CAVE DEPTH AFTER 0 HOURS (ft): NMR	WET ☐ DRY ☐
WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded	

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA
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PAGE NUMBER: 1 of 1

PROJECT NAME: Lavelle Industries Building Addition		DATE DRILLING STARTED: 9/2/2014	BORING NUMBER: B-2
PROJECT LOCATION: Whitewater, WI		DATE DRILLING ENDED: 9/2/2014	PROJECT NUMBER: M14037-10
BORING DRILLED BY: FIRM: Gestra; CREW CHIEF: A. Woerpel	FIELD LOG: D. Harris; LAB LOG / QC: R. Portman	NORTHING; EASTING	DRILLING RIG: CME 550 ATV; DRILLING METHOD: 3¼" HSA; SURFACE ELEVATION: 837.1 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (6")								
						0.5 (836.6)								
SS - 1	3	5 6 5	11			SILTY SAND WITH GRAVEL, brown and light brown, moist, intermixed clayey sand (FILL)	SM							
						3 (834.1)								
SS - 2	12	3 4 7	11	5	832.1	SANDY LEAN CLAY, brown, moist, very stiff, trace gravel	CL			2.25-2.75			18	
						5.5 (831.6)								
SS - 3	10	15 35 50/1"	85/7"			SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)	SM							
						8 (829.1)								
						End of Boring at 8.0 ft.								Auger refusal occurred at depth of about 8 feet on cobbles, boulders, or possible bedrock.
				10	827.1									
				15	822.1									
				20	817.1									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING (ft): NE	▩	CAVE DEPTH AT COMPLETION (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION (ft): NE	■	CAVE DEPTH AFTER 0 HOURS (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA
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PAGE NUMBER: 1 of 1

PROJECT NAME	Lavelle Industries Building Addition
PROJECT LOCATION	Whitewater, WI
DATE DRILLING STARTED	9/2/2014
DATE DRILLING ENDED	9/2/2014
BORING NUMBER	B-3
PROJECT NUMBER	M14037-10
DRILLING RIG	CME 550 ATV
BORING DRILLED BY	FIRM: Gestra CREW CHIEF: A. Woerpel
FIELD LOG	D. Harris
LAB LOG / QC	R. Portman
NORTHING	
EASTING	
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	833.9 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						ASPHALT (3.5")								
						0.3 (833.6)								
SS - 1	12	1 2 3	5			SANDY LEAN CLAY, brown, moist, stiff to very stiff, trace gravel	CL			.25-2.0			25	P200=69.5%
						3 (830.9)								
SS - 2	2	18 50/3"	50/3"	5	828.9	SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)								
SS - 3	3	50/3"	50/3"											
SS - 4	3	50/3"	50/3"	10	823.9		SM							
SS - 5	4	50/4"	50/4"											
SS - 6	3	50/4"	50/4"											
				15	818.9	15 (818.9)								
						End of Boring at 15.0 ft.								
				20	813.9									

WATER & CAVE-IN OBSERVATION DATA

WATER ENCOUNTERED DURING DRILLING (ft): NE		CAVE DEPTH AT COMPLETION (ft): NMR	WET ☐ DRY ☐
WATER LEVEL AT COMPLETION (ft): NE		CAVE DEPTH AFTER 0 HOURS (ft): NMR	WET ☐ DRY ☐
WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded	

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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PAGE NUMBER: 1 of 1

PROJECT NAME: Lavelle Industries Building Addition		DATE DRILLING STARTED: 9/2/2014	BORING NUMBER: B-4
PROJECT LOCATION: Whitewater, WI		DATE DRILLING ENDED: 9/2/2014	PROJECT NUMBER: M14037-10
BORING DRILLED BY: FIRM: Gestra; CREW CHIEF: A. Woerpel	FIELD LOG: D. Harris; LAB LOG / QC: R. Portman	NORTHING; EASTING	DRILLING RIG: CME 550 ATV; DRILLING METHOD: 3¼" HSA; SURFACE ELEVATION: 832.7 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (8") 0.7 (832)								
SS - 1	8	6 50/4"	50/4"			SANDY LEAN CLAY, brown, moist, hard, trace gravel 1.5 (831.2)	CL			4.5+			17	
						SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)								
SS - 2	2	50/5"	50/5"	5	827.7									
SS - 3	2	50/2"	50/2"											
							SM							
SS - 4	2	50/3"	50/3"	10	822.7									
SS - 5	3	50/3"	50/3"											
SS - 6	2	50/2"	50/2"											
				15	817.7	15 (817.7)								
						End of Boring at 15.0 ft.								
				20	812.7									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING (ft): NE	▨	CAVE DEPTH AT COMPLETION (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION (ft): NE	■	CAVE DEPTH AFTER 0 HOURS (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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PAGE NUMBER: 1 of 1

PROJECT NAME: Lavelle Industries Building Addition		DATE DRILLING STARTED: 9/2/2014	BORING NUMBER: B-5
PROJECT LOCATION: Whitewater, WI		DATE DRILLING ENDED: 9/2/2014	PROJECT NUMBER: M14037-10
BORING DRILLED BY: FIRM: Gestra CREW CHIEF: A. Woerpel	FIELD LOG: D. Harris LAB LOG / QC: R. Portman	NORTHING EASTING	DRILLING RIG: CME 550 ATV DRILLING METHOD: 3¼" HSA SURFACE ELEVATION: 835.7 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft) / Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
					TOPSOIL (8") 0.7 (835)								
SS - 1	12	2 4 7	11		SILTY SAND WITH GRAVEL, brown, moist, medium dense (POSSIBLE FILL)	SM							
					3 (832.7)								
SS - 2	14	13 30 50	80	5 / 830.7	SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)								
SS - 3	3	50/4"	50/4"										
SS - 4	3	50/3"	50/3"	10 / 825.7		SM							
SS - 5	3	50/3"	50/3"										
SS - 6	3	50/3"	50/3"	15 / 820.7	15 (820.7)								
					End of Boring at 15.0 ft.								
				20 / 815.7									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING (ft): NE	▨	CAVE DEPTH AT COMPLETION (ft): NMR WET ☐ DRY ☐
▽	WATER LEVEL AT COMPLETION (ft): NE	■	CAVE DEPTH AFTER 0 HOURS (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

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PAGE NUMBER: 1 of 1

PROJECT NAME: Lavelle Industries Building Addition		DATE DRILLING STARTED: 9/2/2014	BORING NUMBER: B-6
PROJECT LOCATION: Whitewater, WI		DATE DRILLING ENDED: 9/2/2014	PROJECT NUMBER: M14037-10
BORING DRILLED BY: FIRM: Gestra; CREW CHIEF: A. Woerpel	FIELD LOG: D. Harris	NORTHING:	DRILLING RIG: CME 550 ATV
	LAB LOG / QC: R. Portman	EASTING:	DRILLING METHOD: 3¼" HSA
			SURFACE ELEVATION: 830 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (8") 0.7 (829.3)								
SS - 1	15	4 11 50/5"	61/11"			CLAYEY SAND, brown, moist, stiff to very stiff, trace gravel 2 (828)	SC			1.5-2.0	27	15	27	Gravel=2%; Sand=57%; P200=41%
SS - 2	6	30 50/1"	50/1"	5	825.0	SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)	SM							
SS - 3	3	50/3"	50/3"			7.5 (822.5)								
						End of Boring at 7.5 ft.								
				10	820.0									
				15	815.0									
				20	810.0									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING (ft): NE	▨	CAVE DEPTH AT COMPLETION (ft): NMR WET DRY
▼	WATER LEVEL AT COMPLETION (ft): NE	■	CAVE DEPTH AFTER 0 HOURS (ft): NMR WET DRY
▼	WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA
Gestra Engineering Inc.
1626 W. Fond du Lac Avenue
Milwaukee, WI 53205
Phone: 414-933-7444, Fax: 414-933-7844

PAGE NUMBER: 1 of 1

PROJECT NAME	Lavelle Industries Building Addition
PROJECT LOCATION	Whitewater, WI
DATE DRILLING STARTED	9/2/2014
DATE DRILLING ENDED	9/2/2014
BORING NUMBER	B-7
PROJECT NUMBER	M14037-10
DRILLING RIG	CME 550 ATV
BORING DRILLED BY	FIRM: Gestra CREW CHIEF: A. Woerpel
FIELD LOG	D. Harris
LAB LOG / QC	R. Portman
NORTHING	
EASTING	
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	832.3 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u, or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (8") 0.7 (831.6)								
SS - 1	4	31 50/1"	50/1"			CLAYEY SAND, dark gray, moist, trace organic matter (BURIED TOPSOIL)	SC			0.75-1.0			18	LOI=3.2%
						1.3 (831)	SC						17	
						CLAYEY SAND, brown, moist 1.5 (830.8)								
						SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)								
SS - 2	4	50/4"	50/4"	5	827.3		SM							
SS - 3	4	50/4"	50/4"			7.5 (824.8)								
						End of Boring at 7.5 ft.								
				10	822.3									
				15	817.3									
				20	812.3									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING (ft): NE	▨	CAVE DEPTH AT COMPLETION (ft): NMR WET ☐ DRY ☐
▽	WATER LEVEL AT COMPLETION (ft): NE	■	CAVE DEPTH AFTER 0 HOURS (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

SOIL BORING LOG

GESTRA
Gestra Engineering Inc.
1626 W. Fond du Lac Avenue
Milwaukee, WI 53205
Phone: 414-933-7444, Fax: 414-933-7844

PROJECT NAME	Lavelle Industries Building Addition
PROJECT LOCATION	Whitewater, WI
DATE DRILLING STARTED	9/2/2014
DATE DRILLING ENDED	9/2/2014
PAGE NUMBER	1 of 1
BORING NUMBER	B-8
PROJECT NUMBER	M14037-10
DRILLING RIG	CME 550 ATV
BORING DRILLED BY	FIRM: Gestra CREW CHIEF: A. Woerpel
FIELD LOG	D. Harris
LAB LOG / QC	R. Portman
NORTHING	
EASTING	
DRILLING METHOD	3¼" HSA
SURFACE ELEVATION	830.4 ft

Sample Number and Type	Sample Recovery (in)	Blow Counts	N - Value	Depth (ft)	Elevation	Soil Description and Geological Origin for Each Major Unit	USCS Classification	Graphic	Well Diagram	Unconfined Comp. Strength (Q_u or Q_p) (tsf)	Liquid Limit	Plasticity Index	Moisture Content (%)	Comments
						TOPSOIL (8") 0.7 (829.7)								
SS - 1	8	7 50/5"	50/5"			CLAYEY SAND, brown, moist, trace gravel 1 (829.4)	SC							
						SILTY SAND WITH GRAVEL, light brown, moist, very dense, possible cobbles (GLACIAL TILL)								
SS - 2	2	50/5"	50/5"	5	825.4		SM							
SS - 3	4	50/5"	50/5"			7.5 (822.9)								
						End of Boring at 7.5 ft.								
				10	820.4									
				15	815.4									
				20	810.4									

WATER & CAVE-IN OBSERVATION DATA

▽	WATER ENCOUNTERED DURING DRILLING (ft): NE	▨	CAVE DEPTH AT COMPLETION (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AT COMPLETION (ft): NE	■	CAVE DEPTH AFTER 0 HOURS (ft): NMR WET ☐ DRY ☐
▼	WATER LEVEL AFTER 0 HOURS (ft): NMR		NE = Not Encountered; NMR = No Measurement Recorded

NOTE: Stratification lines between soil types represent the approximate boundary; gradual transition between in-situ soil layers should be expected.

GENERAL NOTES

DRILLING AND SAMPLING SYMBOLS

SYMBOL	DEFINITION
HSA	Hollow Stem Auger
RWB	Rotary Wash Boring (Mud Drilling)
_FA	4", 6" or 10" Diameter Flight Auger
_HA	2", 4" or 6" Hand Auger
_DC	2 1/2" , 4" , 5" or 6" Steel Drive Casing
_RC	Size A, B, or N Rotary Casing
PD	Pipe Drill or Cleanout Tube
CS	Continuous Split Spoon Sampling
DM	Drill Mud
JW	Jetting Water
SS	2" O.D. Split Spoon Sample
_L	2 1/2" or 3 1/2" O.D. SB Liner Sample
ST	3" Thin Walled Tube Sample (Shelby Tube)
3TP	3" Thin Walled Tube (Pitcher Sampler)
_TO	2" or 3" Thin Walled Tube (Osterberg Sampler)
W	Wash Sample
B	Bag Sample
P	Test Pit Sample
_Q	BQ, NQ, or PQ Wireline System
_X	AX, BX, or NX Double Tube Barrel
CR	Core Recovery – Percent
NSR	No Sample Recovered, classification based on action of drilling, equipment and/or material noted in drilling fluid or on sampling bit.
NMR	No Measurement Recorded, primarily due to presence of drilling or coring fluid.
▽	Water Level Symbol

TEST SYMBOLS

SYMBOL	DEFINITION
MC	Moisture Content - % of Dry Wt. – ASTM D 2216
OC	Organic Content - % of Dry Wt. – ASTM D 2974
DD	Dry Density – Pounds Per Cubic Foot
LL, PL	Liquid and Plastic Limit – ASTM D 4318
	Additional Insertions
Qu	Unconfined Comp. Strength-psf – ASTM D 2166
Qp	Penetrometer Reading – Tons/Square Foot
Ts	Torvane Reading – Tons/Square Foot
G	Specific Gravity – ASTM D 854
SL	Shrinkage Limits – ASTM D 427
OC	Organic Content – Combustion Method
SP	Swell Pressure - Tons/Square Foot
PS	Percent Swell
FS	Free Swell – Percent
pH	Hydrogen Ion Content. Meter Method
SC	Sulfate Content – Parts/ Million, same as mg/L
CC	Chloride Content - Parts/ Million, same as mg/L
C*	One Dimensional Consolidation – ASTM D 2453
Qc*	Triaxial Compression
D.S.*	Direct Shear – ASTM D 3080
K*	Coefficient of Permeability – cm/sec
D*	Dispersion test
DH*	Double Hydrometer – ASTM D 4221
MA*	Particle Size Analysis – ASTM D 422
R	Laboratory Receptivity, in ohm – cm – ASTM G 57
E*	Pressuremeter Deformation Modulus – TSF
PM*	Pressuremeter Test
VS*	Field Vane Shear – ASTM D 2573
IR*	Infiltrometer Test – ASTM D 3385
RQD	Rock Quality Designation – Percent

*See attached data sheet or graph

WATER LEVEL

Water levels shown on the boring logs are the levels measured in the borings at the time and under the conditions indicated. In sand, the indicated levels may be considered reliable ground water levels. In clay soil, it may not be possible to determine the ground water level within the normal time required for test borings, except where lenses or layers of more pervious waterbearing soil are present. Even then, an extended period of time may be necessary to reach equilibrium. Therefore, the position of the water level symbol for cohesive or mixed texture soils may not indicate the true level of the ground water table. Perched water refers to water above an impervious layer, thus impeded in reaching the water table. The available water level information is given at the bottom of the log sheet.

DESCRIPTIVE TERMINOLOGY

DENSITY TERM	"N" VALUE
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

CONSISTENCY TERM	Unconfined Compressive Strength, (tsf)	"N" VALUE
Very Soft	<0.25	0-2
Soft	0.25 - 0.49	2-4
Medium Stiff	0.5 - 0.99	4-8
Stiff	1.0 - 1.99	8-16
Very Stiff	2.0 - 3.99	16-30
Hard	4.0+	Over 30

Standard "N" Penetration: Blows per Foot of a 140 Pound Hammer Falling 30 inches on a 2 inch OD Split Barrel Sampler

Lamination	Up to 1/2" thick stratum
Layer	1/2" to 6" thick stratum
Lens	1/2" to 6" discontinuous stratum
Varved	Alternating laminations
Dry	Powdery, no noticeable water
Moist	Below saturation
Wet	Saturated, above liquid limit
Water bearing	Pervious soil below water

RELATIVE GRAVEL PROPORTIONS

CONDITION	TERM	RANGE
Coarse Grained Soils	trace of gravel	2-14%
	with gravel	15-49%
Fine Grained Soils		
15-29% + No. 200	trace of gravel	2-14%
15-29% + No. 200	with gravel	15-29%
30% + No. 200	trace of gravel	2-14%
30% + No. 200	with gravel	15-24%
30% + No. 200	gravelly	25-49%

RELATIVE SIZES

Boulder	Over 12"
Cobble	3" - 12"
Gravel	
Coarse	3/4" - 3"
Fine	#4 – 3/4"
Sand	
Coarse	#4 - #10
Medium	#10 - #40
Fine	#40- #200
Silt & Clay	- # 200, Based on Plasticity

SOILS CLASSIFICATION FOR ENGINEERING PURPOSES

ASTM Designation: D 2487 - 83

(Based on Unified Soil Classification System)

SOIL ENGINEERING

Criteria for Assigning GroupSymbols and Group Names Using Laboratory Tests [A]				Soil Classification [B] Group Symbole	Group Name
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less Than 5% fines [C]	Cu≥ 4 and 1≤ Cc ≤3 [E]	GW	Well graded gravel [F]
			Cu< 4 and/or 1> Cc >3 [E]	GP	Poorly graded gravel [F]
		Gravels with Fines more than 12% fines [C]	Fines Classify as ML or MH	GM	Silty gravel [F,G,H]
			Fines classify as CL or CH	GC	Clayey gravel [F,G,H]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean sands Less than 5% fines [D]	Cu≥ 6 and 1≤ Cc ≤3 [E]	SW	Well graded sand [I]
			Cu< 6 and/or 1> Cc >3 [E]	SP	Poorly graded sand [I]
		Sands with Fines more than 12% fines [D]	Fines Classify as ML or MH	SM	Silty sand [G,H,I]
			Fines classify as CL or CH	SC	Clayey sand [G,H,I]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid Limit less than 50	inorganic	PI >7 and plots on or above " A" line	CL	Lean clay [K,L,M]
			PI<4 or plots below " A " line	ML	Silt [K,L,M]
		organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OL	Organic clay [K,L,M,N] Organic Silt [K,L,M,O]
	Silts and Clays Liquid Limit 50 or more	inorganic	PI plots on or above " A " line	CH	Fat clay [K,L,M]
			PI plots below " A " line	MH	Elastic silt [K,L,M]
		Organic	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OH	Organic clay [K,L,M,P] Organic Silt [K,L,M,Q]
Highly organic Soils		Primarily organic matter, dark in color, and organic odor		PT	Peat
Fibric Peat > 67% Fibers		Hemic Peat 33 % - 67 % Fibers		sapric	Peat < 33% Fibers

[A] Based on the material passing the 3-in (75- mm)sieve

[B] If field sample contained cobbles or boulders, or both. add with cobbles or boulders, or both to group name

[C] Gravels with 5 to 12 % fines require dual symbols:
GW - GM well-graded gravel with silt
GW - GC well-graded gravel with clay
GP - GM poorly-graded gravel with Silt
GP - GC poorly-graded gravel with clay

[D] Sands with 5 to 12 % fines require dual symbols:
SW -SM well-graded sand with silt
SW - SC well-graded sand with clay
SP - SM poorly-graded sand with Silt
SP - SC poorly-graded sand with clay

[E] $Cu = \frac{D_{60}}{D_{10}}$ $\quad C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in hatched area, soil is a CL_ML silty clay
If soil contains 15 to 29% plus No. 200, add, "with sand" or " with gravel", whichever is predominent

[L] If soil contains ≥ 30% plus No.200, predominantly sand, add "sandy" to the group name

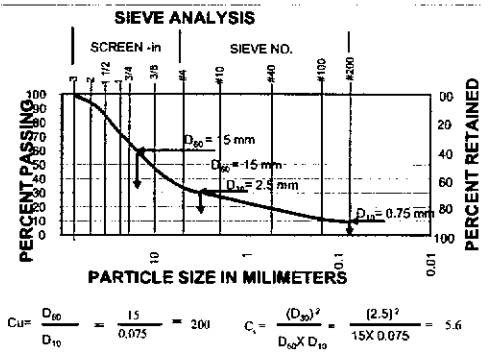
[M] If soil contains ≥ 30% plus No.200, predominantly gravel add "gravelly" to the group name

[N] PI ≥4 and plots on or above "A" Line

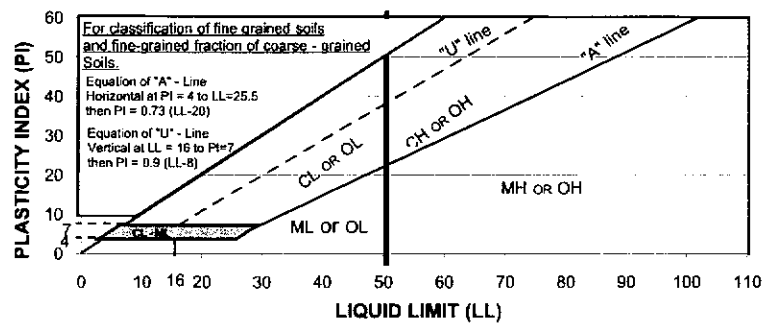
[O] PI < 4 or plots below "A" Line

[P] PI plots on or above "A" Line

[Q] PI plots below "A" Line



$Cu = \frac{D_{60}}{D_{10}} = \frac{15}{0.075} = 200$ $\quad C_c = \frac{(D_{30})^2}{D_{60} X D_{10}} = \frac{(2.5)^2}{15X\,0.075} = 5.6$



Geotechnical -Structural- Pavement - Construction Materials

APPENDIX II

LABORATORY TEST RESULTS

GESTRA Engineering, Inc
715 Post Road, Suite A
Madison, WI 53713
Phone: (608) 222-9406; Fax: (608) 222-9408

Laboratory Test Results of
Mechanical Analysis of Soil or Aggregate

Project Name: Lavelle Industries - Building Addition
Project Number: M14037-10
Project Location: Whitewater, WI
ASTM Designation: **C136, D422**

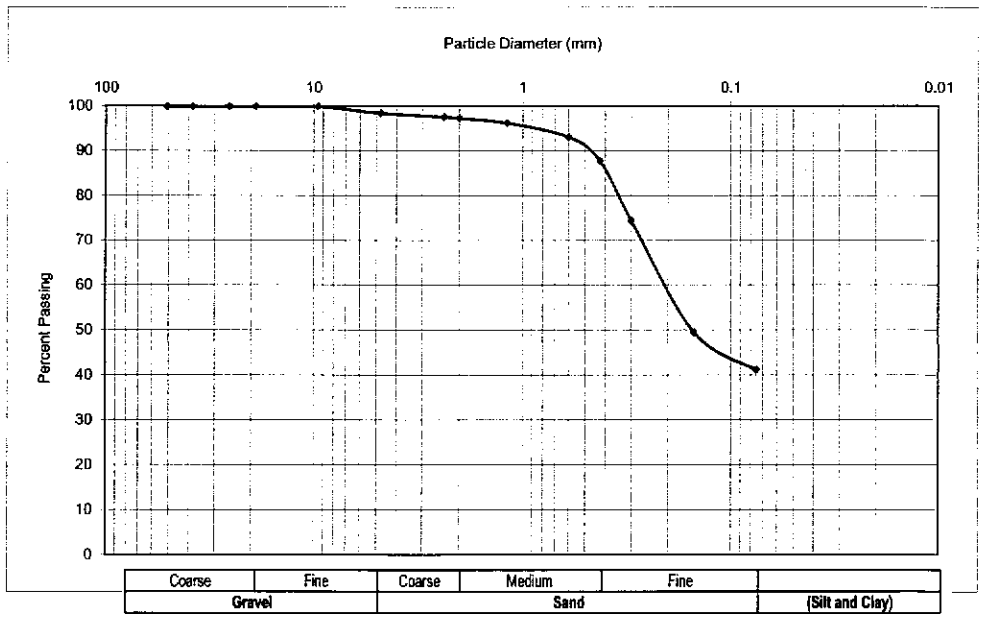
Date: September 9, 2014
Reported To: Reesman's Excavating & Grading

Sample Information

Type of Sample: Bulk (Grab)
Sample Number: 1394
Sample Location: B-6
Depth of Sample: 0.7 - 2'

Mechanical Analysis Data

Sieve	Sieve Opening (mm)	Percent Passing (%)
2	50.8	100.0
1 1/2	38.1	100.0
1	25.4	100.0
3/4	19.05	100.0
3/8	9.525	100.0
#4	4.75	98.5
#8	2.36	97.7
#10	2	97.4
#16	1.18	96.3
#30	0.6	93.2
#40	0.425	87.9
#50	0.3	74.4
#100	0.15	49.6
#200	0.075	41.3



Moisture Content 16.4 %

Remarks: Gravel 1.5 % Sand 57.2 %
Passing #200 Sieve (Silt & Clay) 41.3 %

Performed by: CP

Reviewed by: R. Portman
GESTRA Engineering, Inc.

GESTRA Engineering, Inc
715 Post Road, Suite A
Madison, WI 53713
Phone: (414) 933-7444; Fax: (414) 933-7844

Laboratory Test Results of Atterberg Limits of Soil

Project Name:	Lavelle Industries Addition	Date:	September 8, 2014
Project Number:	M14037	Client:	Reesman's Excavating & Grading
Project Location:	Whitewater, WI		
ASTM Designation:	**D4318**		

Sample Information

Type of Sample	Split spoon
Boring Number	B-6
Sample Type	Bulk (Grab)
Depth of Sample	0.7 - 2'

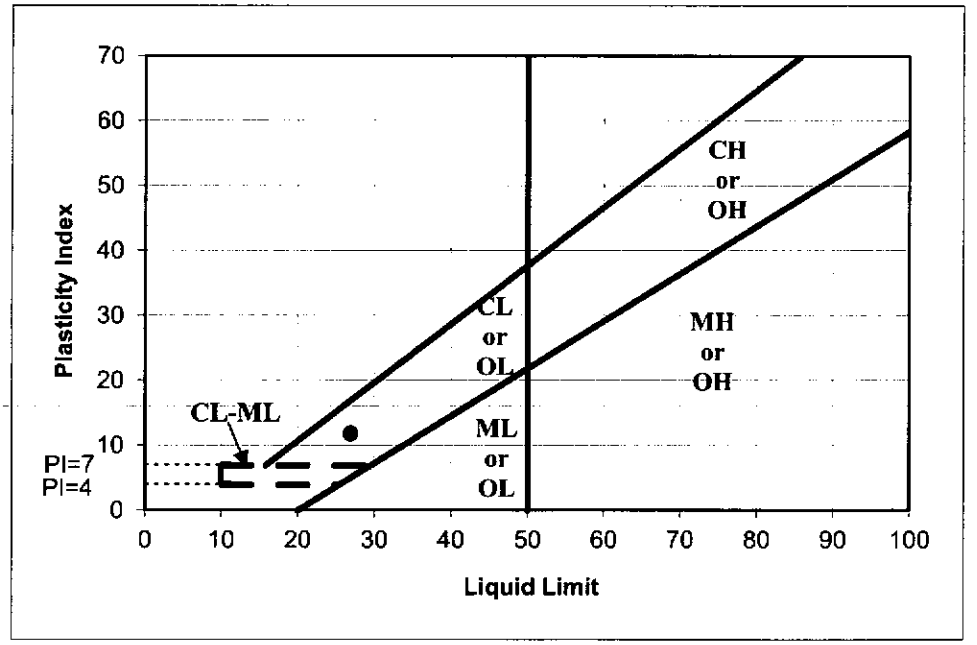
Determination of Liquid Limit

Cup Number	31	11	22
Weight of Cup (g)	32.45	31.74	32.67
Weight of Wet Soil and Cup (g)	45.84	42.72	43.23
Weight of Dry Soil and Cup (g)	43.06	40.35	40.89
Moisture Content (%)	26.2	27.5	28.5
Blow Counts	28	22	20

Determination of Plastic Limit

Cup Number	9	3
Weight of Cup (g)	32.12	31.35
Weight of Wet Soil and Cup (g)	39.49	38.77
Weight of Dry Soil and Cup (g)	38.53	37.82
Moisture Content (%)	15.0	14.7

Compilation of Test Results



Liquid Limit	27
Plastic Limit	15
Plasticity Index	12
USCS Symbol	**CL**

Performed by: CP

Reviewed By: R. Portman

GESTRA Engineering, Inc.

GESTRA

GESTRA Engineering, Inc
715 Post Road, Suite A
Madison, WI 53713
Phone: (608) 222-9406; Fax: (608) 222-9408

Laboratory Test Results of
Amount of Soil Finer than #200 Sieve

Project Name: Lavelle Industries - Building Addition
Project Number: M14037-10
Project Location: Whitewater, WI
ASTM Designation: **D1140**

Date: September 10, 2014
Report To: Reesman's Excavating & Grading

Boring Number	B-3							
Sample Number	1-SS							
Weight of Pan (g)	374.4							
Weight of Wet Soil and Pan (g)	552.8							
Weight of Wet Soil (g)	178.4							
Weight of Dry Soil and Pan (g)	518.1							
Weight of Dry Soil (g)	143.7							
Weight of Soil and Pan after Wash (g)	418.2							
Weight of Soil after Wash (g)	43.8							
Percentage of Material Passing #200 (%)	69.5							
Moisture Content (%)	24.1							

Boring Number								
Sample Number								
Weight of Pan (g)								
Weight of Wet Soil and Pan (g)								
Weight of Wet Soil (g)								
Weight of Dry Soil and Pan (g)								
Weight of Dry Soil (g)								
Weight of Soil and Pan after Wash (g)								
Weight of Soil after Wash (g)								
Percentage of Material Passing #200 (%)								
Moisture Content (%)								

Performed by: CE

Reviewed by: RJP

GESTRA Engineering, Inc
715 Post Road, Suite A
Madison, WI 53713
Phone: (608) 222-9406; Fax: (608) 222-9408

Laboratory Test Results of
Moisture Content, Organic Content, and Density of Soil

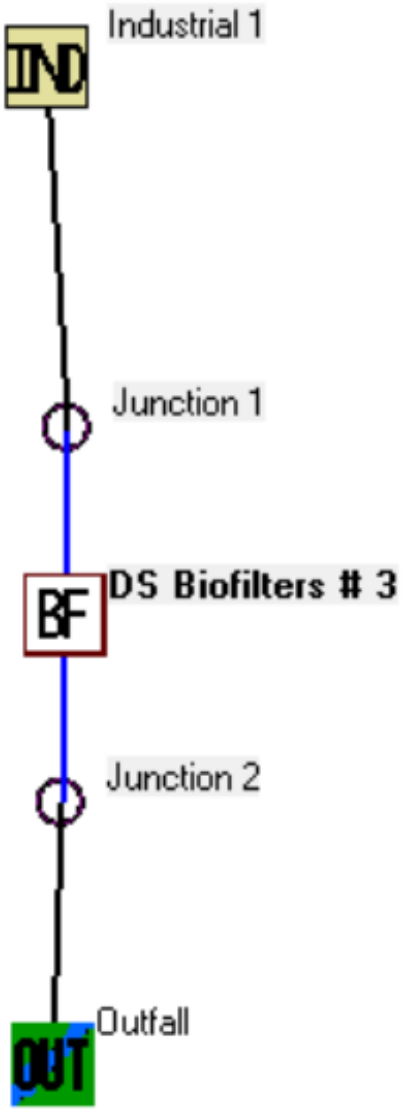
Project Name:	Lavelle Industries Building Addition	Date:	September 5, 2014
Project Number:	M14037-10	Report To:	Reesman's Excavating and Grading
Project Location:	Whitewater, WI		
ASTM Designation:	**D2216, D 2974**		

Boring Number	B-1	B-1	B-1	B-2	B-3	B-4	B-6	B-7
Sample Number	1	2	3	2	1	1	1	1
Cup Number	11	15	9	29	22	35	31	3
Weight of Cup (g)	31.73	32.48	32.14	32.46	32.68	32.68	32.44	31.35
Weight of Wet Soil and Cup (g)	65.75	71.32	64.28	67.42	69.95	71.39	65.00	71.91
Weight of Dry Soil and Cup (g)	60.93	65.44	60.72	62.18	62.61	65.82	58.17	66.04
Weight of Soil and Cup After Burn (g)								
Weight of Sample for Density (lbs)								
Diameter (in)								
Length(in)								
Moisture Content (%)	16.5	17.8	12.5	17.6	24.5	16.8	26.5	16.9
Organic Content (%)								
Wet Density (pcf)								
Dry Density (pcf)								

Boring Number	B-7							
Sample Number	1 (BTS)							
Cup Number	16							
Weight of Cup (g)	37.83							
Weight of Wet Soil and Cup (g)	77.93							
Weight of Dry Soil and Cup (g)	71.83							
Weight of Soil and Cup After Burn (g)	70.75							
Weight of Sample for Density (lbs)								
Diameter (in)								
Length(in)								
Moisture Content (%)	17.9							
Organic Content (%)	3.2							
Wet Density (pcf)								
Dry Density (pcf)								

Performed by: C. Enos Reviewed by: R. Portman

Appendix B - WinSLAMM Input


Industrial 1
IND
Junction 1
DS Biofilters # 3
BF
Junction 2
Outfall
OUT

Data file name: D:\Walworth_Co\Whitewater_City\Priv\25.0048.01 Lavelle Whitewater Expansion Planning\Design\Hydrology\LaVelle Post 4-10-2025.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/05/69 Study period ending date: 12/31/69
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 04-11-2025 Time: 09:46:28
Site information:

Pre-Development Area Description	Pre-Development Area (ac)	Pre-Development CN
Ex South Field	6.439	67
Total Area (ac)/Composite CN	6.439	67

LU# 1 - Industrial: Industrial 1 Total area (ac): 6.439
1 - FLAT ROOF WEST (DOCK): 0.028 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
2 - FLAT ROOF EAST (INFILL): 0.146 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
3 - EXISTING DISCONNECTED ROOF: 0.482 ac. Pitched Disconnected Normal Sandy Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
4 - EXISTING CONNECTED ROOF: 0.899 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
5 - WAREHOUSE & DOCKS: 0.974 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
6 - Future Addition: 1.000 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - EX PARKING AREA: 0.630 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
14 - PROP PARKING AREA: 0.436 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
25 - EX CONCRETE SIDEWALKS/PAVEMENT: 0.168 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
26 - PROP CONCRETE SIDEWALKS/PAVEMENT: 0.422 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 1.254 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - DS Biofilters # 3

1. Top area (square feet) = 5578
2. Bottom aea (square feet) = 1203
3. Depth (ft): 6

4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 1
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 1.5
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 1.5
13. Engineered soil porosity = 0.38
14. Percent solids reduction due to flow through engineered soil = 80
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

User-Defined Media Type 1.000

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 1
3. Height of datum to bottom of weir opening: 5.5

Outlet type: Evapotranspiration

Month Number	Month	Evapotranspiration (in/day)	Evaporation (in/day)
1	January	.02	.
2	February	.02	.
3	March	.09	.
4	April	.18	.
5	May	.18	.
6	June	.19	.
7	July	.12	.
8	August	.1	.
9	September	.11	.
10	October	.12	.
11	November	.11	.
12	December	.02	.

1. Saturated Soil Moisture Content: 0.38
2. Soil Field Moisture Capacity (% of Soil Dry Weight): 0.08
3. Permanent Wilting Point (% of Soil Dry Weight): 0.03
4. Supplemental Irrigation Used= False

4a. Fraction of available capacity when irrigation starts = 0

4b. Fraction of available capacity when irrigation stops = 0

5a. First area of biofilter that is vegetated (fraction): 1

5b. Second area of biofilter that is vegetated (fraction): 0

5c. Third area of biofilter that is vegetated (fraction): 0
5d. Fourth area of biofilter that is vegetated (fraction): 0
6a. First plant type: Turfgrass
6b. Second plant type:
6c. Third plant type:
6d. Fourth plant type:
7a. First root depth (ft): 1
7b. Second root depth (ft): 0
7c. Third root depth (ft): 0
7d. Fourth root depth (ft): 0
8a. First ET adjustment factor for actual crop (decimal): 0.8
8b. Second ET adjustment factor for actual crop (decimal): 0
8c. Third ET adjustment factor for actual crop (decimal): 0
8e. Fourth ET adjustment factor for actual crop (decimal): 0

Appendix C - WinSLAMM Outfall Runoff Volume Output

Data File: D:\Walworth_Co\Whitewater_City\Priv\25.0048.01 Lavelle Whitewater Expansion Planning\Design\Hydrology\LaVelle Post 4-10-2025.mdb
Rain File: WI Milwaukee 69.RAN
Date: 04-11-25 Time: 9:48:54 AM
Site Description:

Runoff Volume Total (cf) at the Outfall

RainNumber	StartDate	RainTotal (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)	Pre-DevRunoff Vol. (cf)
1	1/5/1969	-	-	-	-	-	-	-
2	1/6/1969	-	-	-	-	-	-	-
3	1/8/1969	-	-	-	-	-	-	-
4	1/15/1969	-	-	-	-	-	-	-
5	1/17/1969	-	-	-	-	-	-	-
6	1/23/1969	-	-	-	-	-	-	-
7	1/24/1969	-	-	-	-	-	-	-
8	1/28/1969	-	-	-	-	-	-	-
9	1/29/1969	-	-	-	-	-	-	-
10	2/6/1969	-	-	-	-	-	-	-
11	2/6/1969	-	-	-	-	-	-	-
12	2/22/1969	-	-	-	-	-	-	-
13	3/6/1969	-	-	-	-	-	-	-
14	3/20/1969	0.18	0	0	0.18	n/a	0	n/a
15	3/20/1969	0.04	0	0	0.04	n/a	0	n/a
16	3/21/1969	0.08	0	0	0.08	n/a	0	n/a
17	3/24/1969	0.64	0	0	0.64	n/a	0	n/a
18	3/28/1969	0.08	0	0	0.08	n/a	0	n/a
19	4/1/1969	0.29	0	0	0.29	n/a	0	n/a
20	4/4/1969	0.43	0	0	0.43	n/a	0	n/a
21	4/8/1969	0.71	993.2	0.06	0.67	83.4	0.11	0
22	4/14/1969	0.52	0	0	0.52	n/a	0	n/a
23	4/16/1969	0.1	0	0	0.1	n/a	0	n/a
24	4/16/1969	1.26	12564	0.43	0.72	90.8	0.829	340
25	4/21/1969	0.04	0	0	0.04	n/a	0	n/a
26	4/27/1969	0.01	0	0	0.01	n/a	0	n/a
27	4/28/1969	0.06	0	0	0.06	n/a	0	n/a
28	5/1/1969	0.01	0	0	0.01	n/a	0	n/a
29	5/5/1969	0.18	0	0	0.18	n/a	0	n/a
30	5/6/1969	0.02	0	0	0.02	n/a	0	n/a
31	5/6/1969	0.06	0	0	0.06	n/a	0	n/a
32	5/8/1969	0.26	0	0	0.26	n/a	0	n/a
33	5/8/1969	0.22	0	0	0.22	n/a	0	n/a
34	5/10/1969	0.02	0	0	0.02	n/a	0	n/a
35	5/13/1969	0.18	0	0	0.18	n/a	0	n/a
36	5/17/1969	1.33	9451	0.3	0.93	86.6	0.563	528
37	5/20/1969	0.03	0	0	0.03	n/a	0	n/a
38	5/21/1969	0.55	0	0	0.55	n/a	0	n/a
39	5/24/1969	0.06	0	0	0.06	n/a	0	n/a
40	5/26/1969	0.01	0	0	0.01	n/a	0	n/a
41	5/31/1969	0.12	0	0	0.12	n/a	0	n/a
42	6/1/1969	0.04	0	0	0.04	n/a	0	n/a
43	6/2/1969	0.05	0	0	0.05	n/a	0	n/a
44	6/3/1969	0.02	0	0	0.02	n/a	0	n/a
45	6/4/1969	0.4	0	0	0.4	n/a	0	n/a
46	6/6/1969	0.09	0	0	0.09	n/a	0	n/a
47	6/7/1969	0.83	2396	0.12	0.73	85.1	0.177	0
48	6/11/1969	0.07	0	0	0.07	n/a	0	n/a
49	6/11/1969	0.03	0	0	0.03	n/a	0	n/a
50	6/12/1969	0.01	0	0	0.01	n/a	0	n/a

51	6/12/1969	0.24	0	0	0.24	n/a	0	n/a
52	6/17/1969	0.36	0	0	0.36	n/a	0	n/a
53	6/18/1969	0.16	0	0	0.16	n/a	0	n/a
54	6/19/1969	0.09	0	0	0.09	n/a	0	n/a
55	6/21/1969	0.02	0	0	0.02	n/a	0	n/a
56	6/22/1969	0.36	0	0	0.36	n/a	0	n/a
57	6/22/1969	0.05	0	0	0.05	n/a	0	n/a
58	6/25/1969	1.68	17878	0.46	0.92	88.9	2.466	2008
59	6/27/1969	0.68	7614	0.48	0.35	95.5	3.762	0
60	6/29/1969	0.38	59.47	0.01	0.38	86.4	0.047	0
61	6/29/1969	1.96	30436	0.66	0.66	93.3	4.459	3765
62	6/30/1969	0.01	0	0	0.01	n/a	0	n/a
63	7/2/1969	0.31	0	0	0.31	n/a	0	n/a
64	7/4/1969	0.04	0	0	0.04	n/a	0	n/a
65	7/10/1969	0.47	0	0	0.47	n/a	0	n/a
66	7/11/1969	0.07	0	0	0.07	n/a	0	n/a
67	7/16/1969	0.52	57.27	0.01	0.52	81.8	0.068	0
68	7/17/1969	0.85	9959	0.5	0.42	94.8	2.59	0
69	7/17/1969	1.44	21385	0.64	0.53	94.4	3.787	899
70	7/18/1969	0.01	0	0	0.01	n/a	0	n/a
71	7/23/1969	0.11	0	0	0.11	n/a	0	n/a
72	7/26/1969	1.37	14341	0.45	0.76	90.6	8.201	652
73	7/27/1969	1.38	16379	0.51	0.68	92	0.732	685
74	7/31/1969	0.04	0	0	0.04	n/a	0	n/a
75	8/4/1969	0.03	0	0	0.03	n/a	0	n/a
76	8/7/1969	0.1	0	0	0.1	n/a	0	n/a
77	8/9/1969	0.08	0	0	0.08	n/a	0	n/a
78	8/16/1969	0.32	0	0	0.32	n/a	0	n/a
79	9/4/1969	0.36	0	0	0.36	n/a	0	n/a
80	9/5/1969	0.74	5295	0.31	0.51	92.1	2.731	0
81	9/14/1969	0.01	0	0	0.01	n/a	0	n/a
82	9/15/1969	0.03	0	0	0.03	n/a	0	n/a
83	9/16/1969	0.03	0	0	0.03	n/a	0	n/a
84	9/23/1969	0.16	0	0	0.16	n/a	0	n/a
85	9/25/1969	0.01	0	0	0.01	n/a	0	n/a
86	9/29/1969	0.84	4543	0.23	0.65	89.1	1.248	0
87	10/6/1969	0.01	0	0	0.01	n/a	0	n/a
88	10/6/1969	0.01	0	0	0.01	n/a	0	n/a
89	10/9/1969	0.05	0	0	0.05	n/a	0	n/a
90	10/10/1969	0.14	0	0	0.14	n/a	0	n/a
91	10/10/1969	1.34	11850	0.38	0.83	88.9	1.243	558
92	10/12/1969	1.63	20650	0.54	0.75	91.6	0.882	1745
93	10/15/1969	0.16	0	0	0.16	n/a	0	n/a
94	10/19/1969	0.44	0	0	0.44	n/a	0	n/a
95	10/19/1969	0.35	190	0.02	0.34	89.1	0.06	0
96	10/21/1969	0.02	0	0	0.02	n/a	0	n/a
97	10/24/1969	0.01	0	0	0.01	n/a	0	n/a
98	10/30/1969	0.32	0	0	0.32	n/a	0	n/a
99	11/2/1969	0.77	0	0	0.77	n/a	0	n/a
100	11/11/1969	0.05	0	0	0.05	n/a	0	n/a
101	11/11/1969	0.04	0	0	0.04	n/a	0	n/a
102	11/13/1969	0.03	0	0	0.03	n/a	0	n/a
103	11/17/1969	0.15	0	0	0.15	n/a	0	n/a
104	11/18/1969	0.02	0	0	0.02	n/a	0	n/a
105	11/19/1969	0.01	0	0	0.01	n/a	0	n/a
106	11/26/1969	0.07	0	0	0.07	n/a	0	n/a
107	12/7/1969	-	-	-	-	-	-	-
108	12/11/1969	-	-	-	-	-	-	-
109	12/16/1969	-	-	-	-	-	-	-

110	12/21/1969	-	-	-	-	-	-	-
111	12/23/1969	-	-	-	-	-	-	-
112	12/24/1969	-	-	-	-	-	-	-
113	12/24/1969	-	-	-	-	-	-	-
114	12/27/1969	-	-	-	-	-	-	-
115	12/28/1969	-	-	-	-	-	-	-
116	12/31/1969	-	-	-	-	-	-	-
Minimum:		0	0	0	0.01	81.8	0	0
Maximum:		1.96	30436	0.66	0.93	95.5	8.201	3765
Average:		0.26	1604	0.05	0.19	91.6	2.764	621.1
Total:		29.96	186041		22.02			11180
* Note: NRCS does not recommend using CN method for rains < 0.5 in.								
See 'PreDevelopment Areas and CN' Help for more info.								

Appendix D - WinSLAMM Solids Reduction Output

SLAMM for Windows Version 10.5.0

Data file name: D:\Walworth_Co\Whitewater_City\Priv\25.0048.01 Lavelle Whitewater Expansion Planning\Design\Hydrology\LaVelle Post 4-10-2025.mdb

Data file description:

Rain file name: C:\WinSLAMM Files\Rain Files\WI Milwaukee 69.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx

Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx

Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx

Residential Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Freeway Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std

Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False

Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv

Cost Data file name:

Seed for random number generator: -42

Start of Winter Season: 12/02 End of Winter Season: 03/12

Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69

Date of run: 04-11-2025 Time of run: 09:49:09

Total Area Modeled (acres): 6.439

Years in Model Run: 0.99

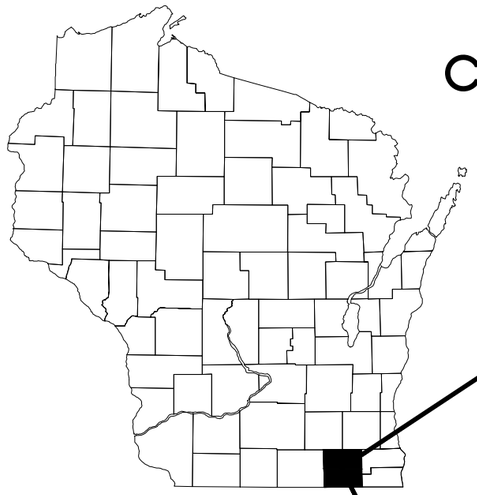
	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	434137	-	86.6	2347	-
Outfall Total with Controls:	186041	57.15%	89.4	1038	55.77%
Annualized Total After Outfall Controls:	188625			1053	

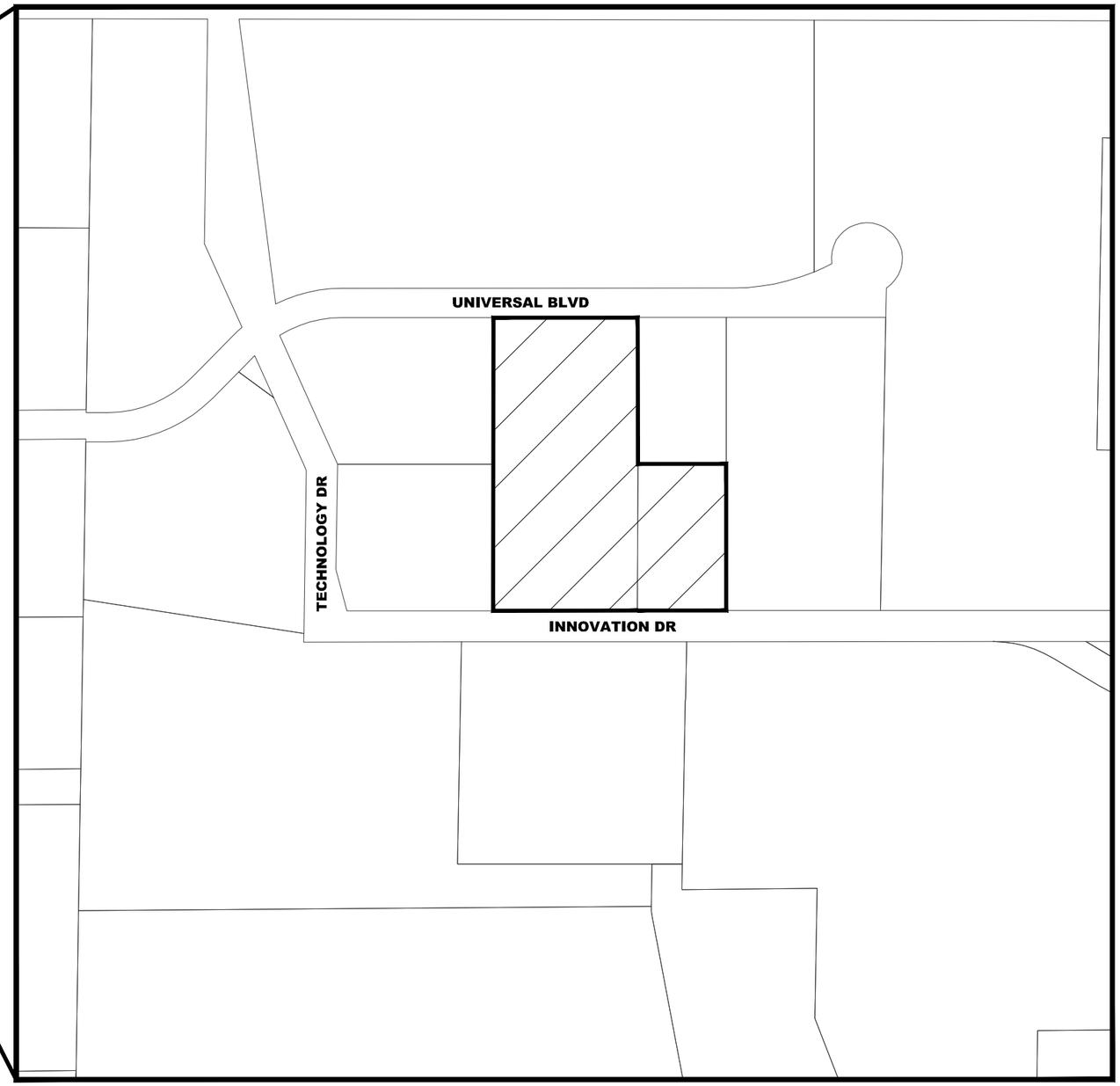
Biofilter # 1 is expected to clog in 1.9 years.. Percent Solids Reduction due to Engineered Media = 80

Appendix E – Site Plan

LAVELLE EXPANSION

CITY OF WHITEWATER, WALWORTH COUNTY, WISCONSIN





LOCATION MAP

SHEET INDEX

TITLE	1.0
GENERAL NOTES	2.0
CONSTRUCTION DETAILS	2.1 – 2.2
REMOVALS	3.0
SITE PLAN & UTILITIES	4.0
GRADING PLAN	5.0
RESTORATION & LANDSCAPING	6.0

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

COORDINATES ON THE PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, WALWORTH COUNTY.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM (NGVD29).

**ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WHITEWATER LAND DEVELOPMENT STANDARDS, AND THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION; LATEST EDITIONS AND REVISIONS.

kapur
1224 S. Pine Street
Burlington, Wisconsin
53105
kapurinc.com

PROJECT:
LAVELLE INDUSTRIES

LOCATION:
CITY OF WHITEWATER, WISCONSIN

CLIENT:
PSG
CONSULT-DEVELOP-CONSTRUCT

RELEASE:
FOR CITY REVIEW

REVISIONS:

#	DATE	DESCRIPTION
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#

NORTH ARROW:

SCALE: NO SCALE

GREGORY L. GOVERNATORI
E-56034
RACINE, WI
PROFESSIONAL ENGINEER
4-10-25

SHEET:
TITLE

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:
1.0

EROSION CONTROL

ANY DEVIATION FROM THESE NOTES BY THE CONTRACTOR MUST BE APPROVED BY CITY OF WHITEWATER AND ENGINEER.

1. CONTRACTOR MUST CONFORM WITH ANY STATE, FEDERAL, AND LOCAL PERMITS, ORDINANCES AND/OR REGULATIONS AND WITH THE CONDITIONS INCLUDED IN THIS PLAN SET. EROSION CONTROL MEASURES SHALL BE INSTALLED, MAINTAINED AND REMOVED IN CONFORMANCE WITH THE WISCONSIN DNR STORMWATER MANAGEMENT TECHNICAL STANDARDS, WITH THE DETAILS AND NOTES LISTED IN THIS PLAN SET, AND ADJUSTED TO FIT FIELD CONDITIONS ON AN AS NEEDED BASIS.

2. APPLY APPROPRIATE SOIL CONSERVATION MEASURES TO PROTECT PROJECT AREA AND ADJACENT LANDS, THESE MEASURES MAY INCLUDE, BUT ARE NOT LIMITED TO MULCHING, RAPID GROWTH VEGETATION, FABRIC EROSION MAT, SILT SOCKS, DITCH CHECKS, INLET PROTECTION, TRACKING PAD AND SILT FENCE.

3. ALL EROSION CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL.

4. INSPECT ALL EROSION CONTROL MEASURES PRIOR TO COMMENCING GRADING OR ANY OTHER LAND DISTURBING ACTIVITIES. EROSION CONTROL MEASURES SHALL BE INSPECTED, AT A MINIMUM, WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES ½ INCH OF RAIN OR MORE DURING A 24 HOUR PERIOD. MAINTENANCE SHALL BE IN ACCORDANCE WITH THE WDNR STORMWATER MANAGEMENT TECHNICAL STANDARDS AND THE ENGINEER'S PLANS AND AS DEEMED NECESSARY BY THE REGULATORY AGENCIES. EROSION CONTROL MAINTENANCE WILL BE AN ONGOING PROCESS THROUGHOUT THE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN A DAILY LOG BOOK ON SITE NOTING INSPECTION DATES AND TIMES, REPAIRS NECESSARY AND REPAIRS MADE. EROSION CONTROL MEASURES ARE TO BE IN WORKING AND EFFECTIVE CONDITION AT THE END OF EACH WORKING DAY.

5. PROJECT PERMITS, APPROVED PROJECT PLANS, THE CONTRACTOR'S DAILY LOG BOOK, AND WEEKLY EROSION CONTROL INSPECTION REPORTS MUST BE KEPT ON SITE IN AN ACCESSIBLE LOCATION.

6. EROSION CONTROL MEASURES INCLUDING SILT FENCE, FIBER LOGS, TRACKING PAD BUT NOT LIMITED TO DITCH CHECKS, EROSION MATTING, AND SILT DIKES SHALL NOT BE REMOVED UNTIL THE AREAS THEY SERVE HAVE ESTABLISHED VEGETATIVE COVER (I.E. 80% VEGETATIVE GROWTH OR AS OTHERWISE AUTHORIZED BY REGULATORY AGENCIES).

7. THE FOLLOWING EROSION CONTROL METHODS ARE TO BE UTILIZED ON THE SITE:

A.) SILT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING OR LAND DISTURBANCE. OVERLAND FLOW SHALL BE PREVENTED FROM LEAVING THE WORK SITE BY INSTALLING SILT FENCE PARALLEL TO THE CONTOURS AT LOCATIONS SHOWN ON THE PLANS.
B.) TRACKING OF MATERIAL FROM THE PROJECT SITE ONTO INNOVATION DR. & UNIVERSAL BLVD. WILL BE PREVENTED. A 3" TO 6" CLEAR OR WASHED STONE TRACKING PAD SHALL BE BUILT PURSUANT TO DNR TECHNICAL STANDARD 1057 AT THE CONSTRUCTION ACCESS POINTS TO PREVENT TRACKING OF SOIL.
C.) INLET FILTER PROTECTION SHALL BE INSTALLED AFTER INLETS ARE CONSTRUCTED.
D.) IF TRENCH WATER IS ENCOUNTERED, ALL TRENCH WATER MUST BE DISCHARGED INTO A SETTLING BASIN OR FILTERING DEVICE SUCH AS A FILTER BAG PRIOR TO RELEASE. IF THE CONTRACTOR DETERMINES THAT DEWATERING WILL BE NECESSARY, A DEWATERING PLAN MUST BE SUBMITTED TO THE WDNR COUNTY BY THE CONTRACTOR FOR APPROVAL AND A WDNR TRENCH PERMIT ALSO MAY BE NECESSARY AND IS THE RESPONSIBILITY OF THE CONTRACTOR. SEE NOTE 11 BELOW FOR ADDITIONAL INFORMATION.
E.) FOLLOWING THE INITIAL SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS WITH TEMPORARY OR PERMANENT STABILIZATION METHODS AS APPROPRIATE. A NON-TOXIC TACKIFIER OR POLYMER MUST BE USED FOR STABILIZATION PURPOSES AFTER THE GROWING SEASON (TYPICALLY AFTER OCTOBER 15TH ANNUALLY).
F.) ANY SOIL STOCKPILED THAT REMAINS UNDISTURBED FOR SEVEN (7) DAYS MUST BE STABILIZED AS APPROPRIATE (SEE ABOVE NOTE 7E). SILT FENCE MUST BE PLACED ON DOWN SLOPE SIDES OF STOCKPILE AREAS.
G.) ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS AND OTHER WASTES) SHALL BE PROPERLY DISPOSED OF AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.
H.) ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION WORK OR A STORM EVENT SHALL BE CLEANED BY THE END OF EACH WORK DAY AND AREAS RESTORED. FLUSHING SHALL NOT BE ALLOWED.
I.) ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR THE APPLICATION OF STABILIZATION MEASURES MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
J.) WIND EROSION SHALL BE KEPT TO A MINIMUM DURING CONSTRUCTION. WATERING, MULCH OR A TACKING AGENT MAY NEED TO BE UTILIZED TO PROTECT NEARBY RESIDENCES & WATER RESOURCES.

8. EROSION CONTROL MEASURES SHALL BE MAINTAINED AS FOLLOWS:

A.) SILT FENCE – SEDIMENT/DEPOSITS/DEBRIS SHALL BE REMOVED AFTER EACH PRECIPITATION EVENT AS NEEDED AND IF DEPOSITS REACH 25% THE HEIGHT OF THE FENCE.
B.) DITCH CHECKS – DAMAGED OR ANY UNDERCUTTING OR FLOWS AROUND THE END OF THE DITCH CHECKS SHALL BE REPAIRED OR REPLACED. ACCUMULATION OF SEDIMENT/DEBRIS 1/2 THE HEIGHT OF THE DITCH CHECK SHALL BE REMOVED AS NEEDED.
C.) INLET PROTECTION – SEDIMENT DEPOSITS SHALL BE REMOVED AND THE INLET PROTECTION DEVICE RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED BETWEEN 1/3 TO 1/2 THE DESIGN DEPTH OF THE DEVICE, OR WHEN THE DEVICE IS NO LONGER FUNCTIONING AS DESIGNED. CARE SHALL BE TAKEN SUCH THAT SEDIMENT DOES NOT FALL INTO THE INLET; ANY MATERIAL FALLING INTO THE INLET SHALL BE IMMEDIATELY REMOVED.

9. AT ABSOLUTELY NO TIME MAY CONSTRUCTION EQUIPMENT, DEBRIS, FILL, ETC BE USED, PLACED, OR OTHERWISE STORED WITHIN WETLANDS, WATERWAYS, OR FLOOD PLAINS, AND/OR OTHER NATURAL RESOURCE AREAS AND SHALL BE PROPERLY SECURED WITHIN THE PROJECT STAGING AREA DURING PERIODS OF INACTIVITY.

11. IN THE EVENT DEWATERING IS NECESSARY, DEWATERING SHALL TAKE PLACE PER WISCONSIN DNR TECHNICAL STANDARD 1061. A FILTER BAG SHALL BE SECURELY ATTACHED TO THE TERMINAL END OF THE PUMP HOSE. THE PUMP SHALL BE PLACED UPON A CONTAINER, WHICH WILL CAPTURE SPILLS AND/OR LEAKS. A FILTER BAG MUST BE PLACED ON STABLE, NON-ERODIBLE GROUND AND SHOULD NOT BE PLACED UPGRADE OF BARE OR UNSTABLE GROUND UPON WHICH FILTERED WATER WILL RUNOFF AND BECOME RE-SUSPENDED WITH SEDIMENT. IN ADDITION THE FILTER BAG MAY NOT BE PLACED WITHIN WETLANDS, ON BANKS OF WATERWAY OR BELOW ORDINARY HIGH WATER MARK OF THE WATERWAY UNLESS OTHERWISE DIRECTED BY THE ENGINEER. IF WATER LEAVING THE BAG IS CLOUDY OR TURBID, THE FILTER BAG WILL NEED TO BE REPLACED WITH A NEW BAG. A FILTER BAG MUST BE PROPERLY DISPOSED OF IN A LANDFILL UPON COMPLETION OF USE.

12. UNIVERSAL BOULEVARD AND INNOVATION DRIVE SHALL BE CLEAN BY THE END OF EACH WORKDAY. DURING HAULING ACTIVITIES CONTRACTOR SHALL HAVE ROADS SWEPT WHERE SEDIMENT ACCUMULATES AS NEEDED.

SEEDING AND MULCHING/SODDING SPECIFICATIONS:

1. SEEDING AND MULCHING AND/OR SODDING TECHNIQUES SHALL BE USED AT AREAS OF EXPOSED SOIL WHERE THE ESTABLISHMENT OF VEGETATION IS DESIRED. TEMPORARY SEEDING APPLIES TO DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE OR ON WHICH LAND-DISTURBING ACTIVITIES WILL NOT BE PERFORMED FOR A PERIOD GREATER THAN 30 DAYS, REQUIRING VEGETATIVE COVER FOR LESS THAN ONE YEAR. SEED AND MULCH SHALL BE UTILIZED THROUGHOUT THE DURATION OF CONSTRUCTION TO ESTABLISH TEMPORARY VEGETATION TO HELP REDUCE EROSION PER WDNR TECHNICAL STANDARDS 1059 AND 1058 RESPECTIVELY AS FOLLOWS:

A. TEMPORARY SEEDING REQUIRES A SEEDBED OF LOOSE SOIL TO A MINIMUM DEPTH OF 2 INCHES.

B. FERTILIZER APPLICATION IS NOT GENERALLY REQUIRED FOR TEMPORARY SEEDING.

C. ALL SEED SHALL CONFORM TO THE REQUIREMENTS OF THE WISCONSIN STATE STATUTES AND OF THE ADMINISTRATIVE CODE CHAPTER ATCP 20.01 REGARDING NOXIOUS WEED SEED CONTENT AND LABELING. SEED SHALL NOT BE USED LATER THAN ONE YEAR AFTER THE TEST DATE ON THE LABEL.

D. IN THE SPRING AND SUMMER CONTRACTOR SHALL USE OATS APPLIED AT 131 LBS/ACRE FOR TEMPORARY SEEDING PURPOSES. IN THE FALL THE CONTRACTOR SHALL USE WINTER WHEAT APPLIED AT 131 LBS/ACRE. THE CONTRACTOR SHALL USE STRAW MULCH APPLIED AT 1.5 TONS/ACRE. DORMANT SEED SHALL BE USED WHEN SOIL TEMPERATURE IS CONSISTENTLY BELOW 53 DEGREES FAHRENHEIT (TYPICALLY OCT. 15 UNTIL SNOW COVER ANNUALLY). NEVER PLACE SEED ON TOP OF SNOW. IF COVER IS NEEDED AFTER SNOW FALL, CONTRACTOR MAY CHOOSE TO USE A DRY, NONTOXIC TYPE B SOIL STABILIZER PER MANUFACTURER'S SPECIFICATIONS AS REQUIRED BY THE WDNR. SOIL STABILIZERS SHALL NOT BE USED WITHIN 30 FEET OF WETLANDS OR WATERS.

E. SEEDING SHALL NOT TAKE PLACE WHEN THE SOIL IS TOO WET.

F. CONTRACTOR MAY CONSIDER WATERING TO HELP ESTABLISH THE SEED. WATER APPLICATION RATES SHALL BE CONTROLLED TO HELP PREVENT RUNOFF AND EROSION.

G. DURING CONSTRUCTION, AREAS THAT HAVE BEEN SEEDED AND MULCHED SHALL AT A MINIMUM BE INSPECTED WEEKLY AND WITHIN 24 HOURS AFTER EVERY PRECIPITATION EVENT THAT PRODUCES ½ INCH OF RAIN OR MORE DURING A 24 HOUR PERIOD. INSPECT WEEKLY DURING THE GROWING SEASON UNTIL VEGETATION IS DENSELY ESTABLISHED OR THE SOD IS PLACED. REPAIR AND RESEED/RESOD AREAS THAT HAVE EROSION DAMAGE AS NECESSARY.

H. CONTRACTOR IS TO LIMIT VEHICLE TRAFFIC AND OTHER FORMS OF COMPACTION IN AREAS THAT ARE SEEDED AS MUCH AS POSSIBLE. RESEED DRIVEN OVER AREAS AS NEEDED.

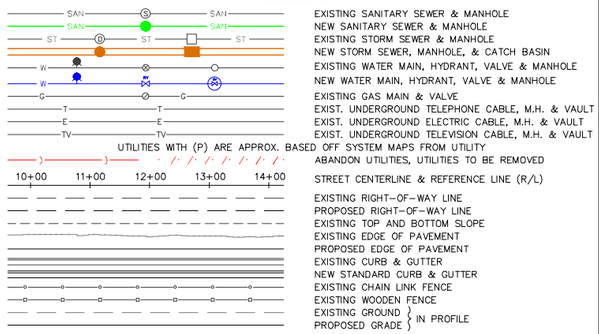
I. MULCH SHOULD BE PLACED WITHIN 24 HOURS OF SEEDING.

J. MULCHING OPERATIONS SHALL NOT TAKE PLACE DURING PERIODS OF EXCESSIVELY HIGH WINDS THAT WOULD PRECLUDE THE PROPER PLACEMENT OF MULCH.

K. MULCH THAT IS DISPLACED SHALL BE REAPPLIED AND PROPERLY ANCHORED. MAINTENANCE SHALL BE COMPLETED AS SOON AS POSSIBLE WITH CONSIDERATION TO SITE CONDITIONS.

L. AREAS OF CONCENTRATED FLOW, IF NOT SODDED, SHALL AT A MINIMUM, HAVE CLASS I, TYPE A EROSION MATTING INSTALLED IN PLACE OF MULCH. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION.

LEGEND



EXISTING SANITARY SEWER & MANHOLE
NEW SANITARY SEWER & MANHOLE
EXISTING STORM SEWER & MANHOLE
NEW STORM SEWER, MANHOLE, & CATCH BASIN
EXISTING WATER MAIN, HYDRANT, VALVE & MANHOLE
NEW WATER MAIN, HYDRANT, VALVE & MANHOLE
EXISTING GAS MAIN & VALVE
EXIST. UNDERGROUND TELEPHONE CABLE, M.H. & VAULT
EXIST. UNDERGROUND ELECTRIC CABLE, M.H. & VAULT
EXIST. UNDERGROUND TELEVISION CABLE, M.H. & VAULT
UTILITIES WITH (P) ARE APPROX. BASED OFF SYSTEM MAPS FROM UTILITY
ABANDON UTILITIES, UTILITIES TO BE REMOVED
STREET CENTERLINE & REFERENCE LINE (R/L)
EXISTING RIGHT-OF-WAY LINE
PROPOSED RIGHT-OF-WAY LINE
EXISTING TOP AND BOTTOM SLOPE
EXISTING EDGE OF PAVEMENT
PROPOSED EDGE OF PAVEMENT
EXISTING CURB & GUTTER
NEW STANDARD CURB & GUTTER
EXISTING CHAIN LINK FENCE
EXISTING WOODEN FENCE
EXISTING GROUND } IN PROFILE
PROPOSED GRADE }

SEQUENCING NOTES

THE FOLLOWING CONSTRUCTION SCHEDULE IS ANTICIPATED AS FOLLOWS:

1. OBTAIN APPROVAL AND ALL NECESSARY REGULATORY PERMITS.
2. INSTALL SILT FENCE AS SHOWN ON PROJECT EROSION CONTROL PLAN SHEET.
3. CONTRACTOR OR HIS AGENT SHALL COMPLETE INITIAL EROSION CONTROL INSPECTION TO ENSURE ALL MEASURES HAVE BEEN PROPERLY INSTALLED PRIOR TO STARTING ANY LAND DISTURBANCE ON SITE.
4. BEGIN SITE GRADING ACTIVITIES & BEGIN BUILDING CONSTRUCTION.
5. BEGIN LOADING DOCK CONSTRUCTION FOLLOWED BY WAREHOUSE AND INFILL BUILDING CONSTRUCTION. TRUCK ACCESS TO EXISTING DOCK SHALL BE MAINTAINED UNTIL NEW DOCK IS COMPLETED.
6. MATERIAL PLACED ON TOPSOIL STOCKPILE SHALL BE SEEDED AND MULCHED USING THE TEMPORARY SEED MIX AND MULCH APPLICATION RATE AS LISTED ON THIS PLAN SHEET UPON COMPLETION OF PLACEMENT OF TOPSOIL OR BY THE 7TH CALENDAR DAY THAT THE PILE IS NO LONGER UNDER ACTIVE DISTURBANCE. IT IS RECOMMENDED THAT THE PILE BE GRADED TO A SMOOTH CONCAVE CONTOUR TO PROVIDE LESS SURFACE AREA FOR POTENTIAL WIND EROSION.
7. CONTRACTOR WILL APPLY TEMPORARY SEED MIX AND MULCH TO SITE AREAS WHERE PRACTICAL (IE AREAS THAT WILL NOT BE DRIVEN OVER FOR CONSTRUCTION PURPOSES OR OTHERWISE DISTURBED) BY OCTOBER 15TH OR THE CONTRACTOR WILL NEED TO APPLY A DORMANT SEED MIX (WINTER WHEAT) POST OCTOBER 15TH. IF AREAS THAT WERE DISTURBED ARE AT GRADE AND OUT OF FUTURE DISRUPTION AREAS, ESTABLISH PERMANENT GROUND COVER APPROPRIATE FOR THE DISTURBED AREAS.
8. INSTALL SITE UTILITIES. INSTALL INLET PROTECTION FOLLOWING INSTALLATION OF INLET STRUCTURES, AS NECESSARY.
9. BEGIN PAVING OPERATIONS.
10. CONTRACTOR TO REPLACE TOPSOIL ON SITE; SEED AND MULCH TO BE USED FOR FINAL STABILIZATION OF THE SITE WHEN WEATHER CONDITIONS ARE CONDUCIVE FOR PLACEMENT. FINAL STABILIZATION SHALL BE IN CONJUNCTION WITH THE FINAL LANDSCAPING OF THE APPROXIMATED AREAS AS SHOWN ON THIS PLAN SET.
11. CONTRACTOR TO REMOVE AND PROPERLY DISPOSE OF TEMPORARY EROSION CONTROL MEASURES INCLUDING SILT FENCE WHEN SITE HAS ESTABLISHED VEGETATIVE COVER.
12. BUILDING DOCK CONSTRUCTION THEN WAREHOUSE AND INFILL BUILDING CONSTRUCTION.

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LESLIE SCHERRER PELLA
LESLIE@PSGWISCONSIN.COM
262-758-6064

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JACOB BRECKLER
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LIGHTING DESIGNER: VT POWER ENGINEERING
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PROJECT:
LAVELLE INDUSTRIES

LOCATION:
CITY OF WHITEWATER, WISCONSIN

CLIENT:
PSG
CONSULT-DEVELOP-CONSTRUCT

RELEASE:
FOR CITY REVIEW

REVISIONS:

#	DATE	DESCRIPTION
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

NORTH ARROW:

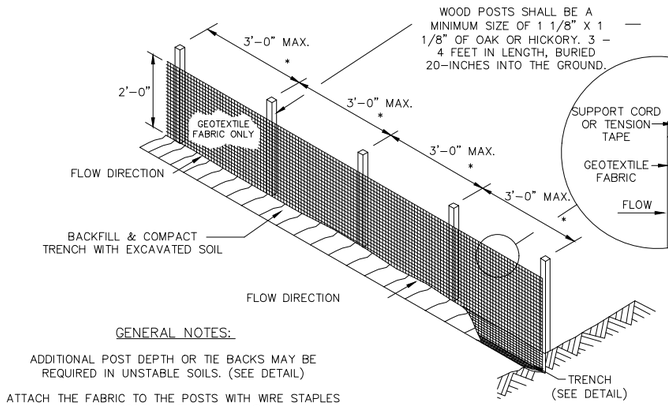
SCALE: NO SCALE

GREGORY L. GOSTOMSKI S-1656 GREGORY L. GOSTOMSKI RACINE, WI PROFESSIONAL ENGINEER
4-10-25

SHEET:
GENERAL NOTES

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:
2.0



GENERAL NOTES:

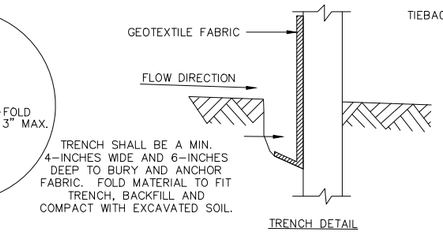
ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS. (SEE DETAIL)

ATTACH THE FABRIC TO THE POSTS WITH WIRE STAPLES OR WOODEN LATH AND NAILS

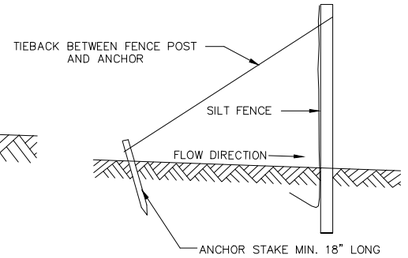
*8'–0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

IF POSSIBLE, CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE ONE OF THE FOLLOWING METHODS:
(1)TWIST METHOD: OVERLAP END POSTS & TWIST AT LEAST 180 DEGREES.
(2)HOOK METHOD: HOOK THE END OF EACH SILT FENCE LENGTH.

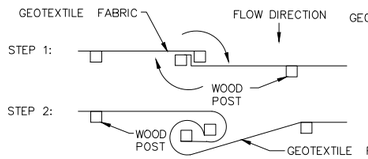
AXONIMETRIC VIEW



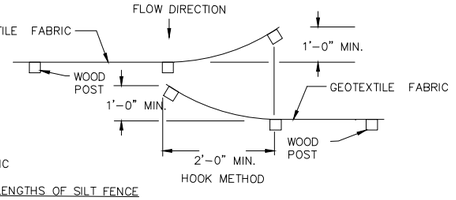
TRENCH DETAIL



SILT FENCE TIE BACK (WHEN ADDITIONAL SUPPORT REQUIRED)



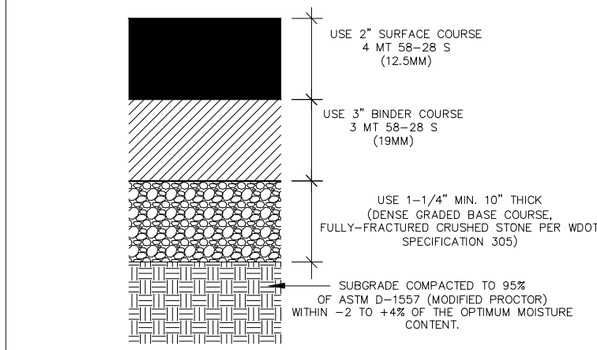
TWIST METHOD



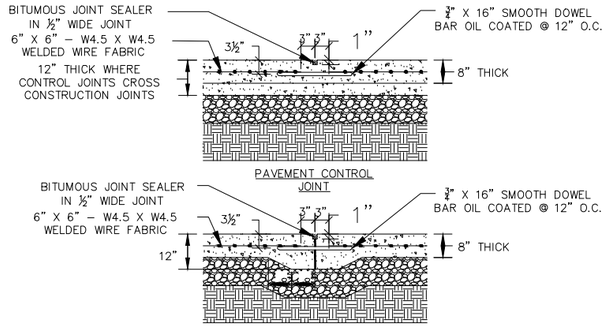
JOINING TWO LENGTHS OF SILT FENCE

HOOK METHOD

1 SILT FENCE
N.T.S.



2 ASPHALT PAVEMENT
N.T.S.



5 CONTROL & CONSTRUCTION JOINT DETAILS
N.T.S.

NOTES:

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

1. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MIN. OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
2. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2x4.

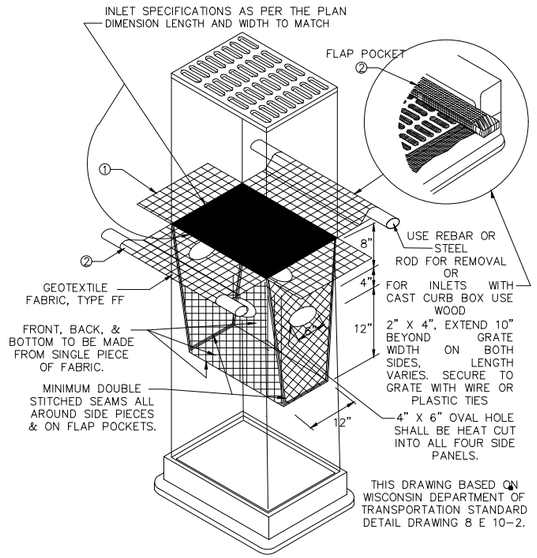
INSTALLATION NOTES

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3".

WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

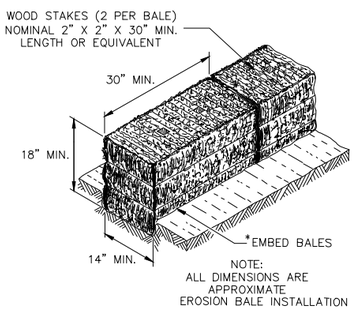


3 INLET PROTECTION TYPE D
N.T.S.

PLAN VIEW

IF REQUIRED TWO ROWS MAY BE USED WITH STAGGERED JOINTS.

FRONT ELEVATION ACROSS DITCH BOTTOM



NOTE:
ALL DIMENSIONS ARE APPROXIMATE
EROSION BALE INSTALLATION

GENERAL NOTES:

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

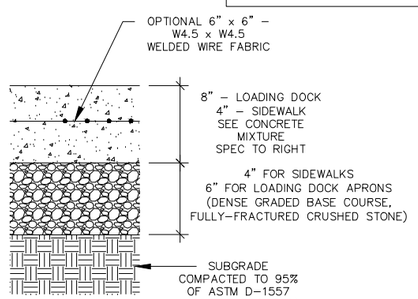
BALES SHOULD BE PLACED END TO END OR OVERLAPPING AT RIGHT ANGLES TO THE DIRECTION OF FLOW AND FAR ENOUGH UP THE SIDES OF THE DITCH TO PREVENT ERODING AROUND ENDS.

BALES SHALL BE PLACED WITH TWINE OR TIE WIRES PARALLEL TO THE GROUND.

STAKES TO BE BATTERED IN OPPOSITE DIRECTIONS.

* AS DETERMINED BY THE ENGINEER.

4 DITCH CHECKS
N.T.S.



CONCRETE MIXTURE

FULL 6 BAG DOT MIX:
- 565 LBS OF CEMENT/FLY ASH
- 455 LBS OF CEMENT
- 110 LBS OF FLY ASH (20%)
- 1.5 LBS OF FIBER MESH PER CUBIC YARD
- AGGREGATE STONE MIX PER CUBIC YARD:
  - 950 TO 1000 LBS PER CUBIC YARD OF 1–½" STONE
  - 950 TO 1000 LBS PER CUBIC YARD OF ¾" STONE
  - 1300 LBS OF SAND
- USE DOWEL BASKETS FOR THE JOINTS

6 CONCRETE PAVEMENT
N.T.S.

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Burlington, Wisconsin
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RELEASE:
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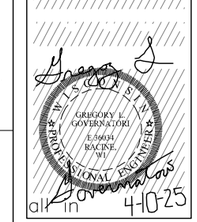
NORTH ARROW:

SCALE: NO SCALE

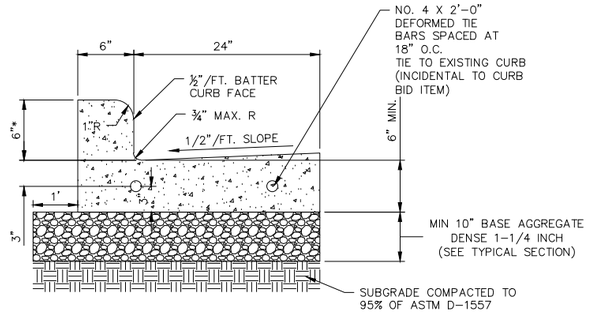


SHEET:
DETAILS

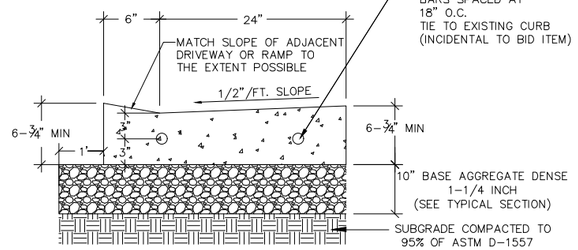
PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:
2.1

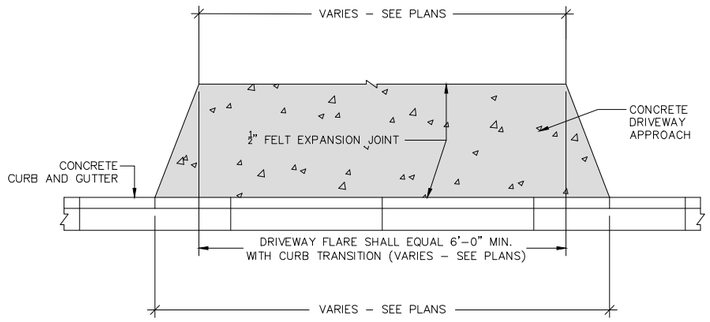
PLOTTED BY: KYLEE THOMPSON
PLOT DATE/TIME: 4/11/2025 9:02 AM
FILENAME: D:\Walworth_Co\Whitewater_City\Priv\25.0048.01 Lavelle Whitewater Expansion Planning\Design\250048_TITLE & DETAILS.dwg SAVED DATE: 4/10/2025



*CURB HEIGHT MAY VARY. SEE SITE GRADING PLAN FOR EXACT CURB HEIGHTS. CONTACT ENGINEER WITH ANY QUESTIONS THAT ARISE.
*PLACE ½" EXPANSION JOINT, PER WISDOT SPEC, SECTION 601 AND AT MAX SPACING OF 300'

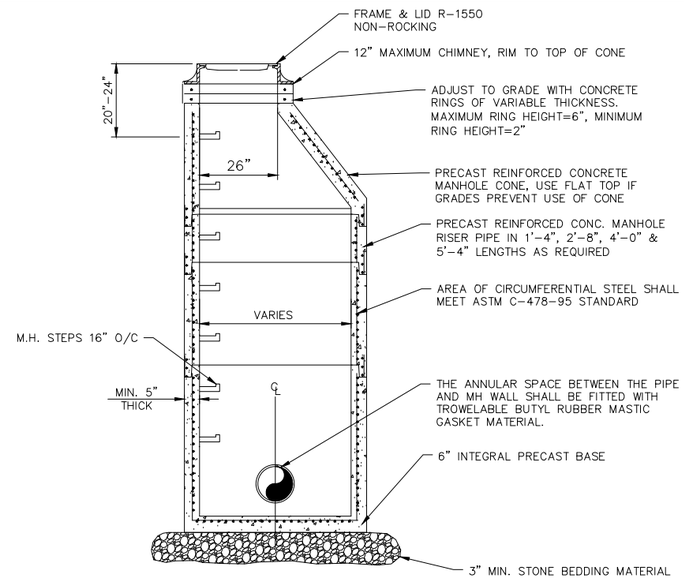


7 30-INCH BARRIER CONCRETE CURB & GUTTER
N.T.S.



NOTE:
THE BASE FOR THE SIDEWALK AND DRIVEWAY APPROACH SHALL BE CRUSHED STONE, CRUSHED AGGREGATE, TRAFFIC BOND, OR CRUSHED CONCRETE.

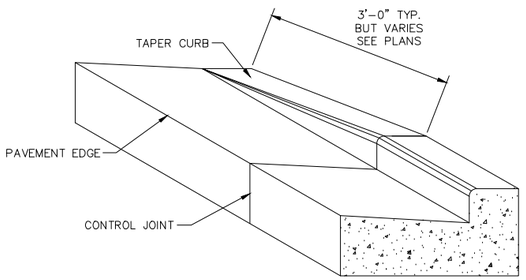
8 STANDARD CONCRETE DRIVEWAY
N.T.S.



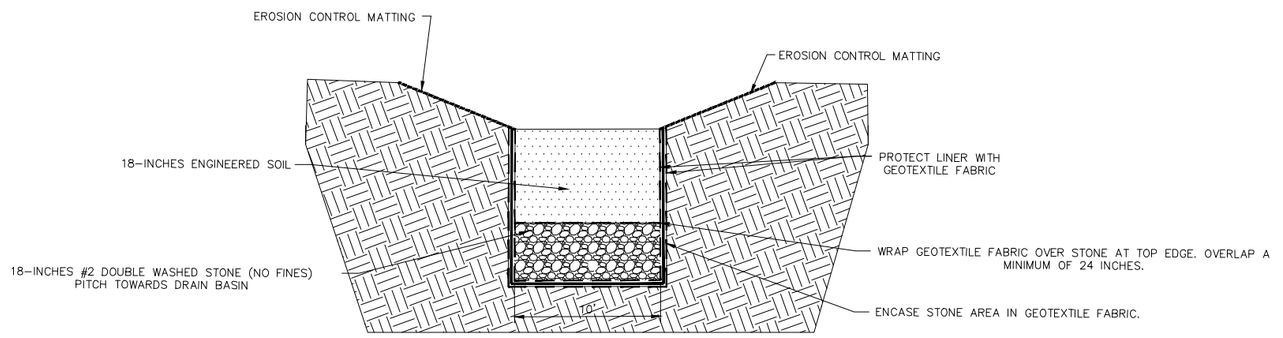
STORM MANHOLE NOTES:

1. PRECAST CONCRETE ADJUSTING RINGS TO BE REINFORCED WITH ONE HOOP OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY, RINGS SHALL BE GROOVED TO RECEIVE STEP.
2. CONCRETE AND STEEL REINFORCEMENT SHALL CONFORM TO DESIGNATION C-478 REQUIREMENTS OF ASTM SPECIFICATIONS.
3. JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING RUBBER GASKETS OR BUTYL RUBBER MASTIC MATERIAL.
4. 3" MIN. BEDDING MATERIAL REQUIRED UNDER MANHOLE BASE AND BACKFILLED STRUCTURE WITH GRANULAR BACKFILL MATERIAL.
5. SEE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION, FILE NO. 12 FOR PRECAST MANHOLE AND FILE NO. 13 FOR MANHOLE INVERTS, INCLUDING INVERTS OF LATERAL SEWERS THAT CONNECT DIRECTLY TO MANHOLES.
6. REPLACE CONE WITH FLAT TOP SECTION WHEN NECESSARY DUE TO LARGER DIAMETER OF STRUCTURE/VERTICAL RESTRICTIONS.

9 STORM MANHOLE
N.T.S.



10 CONCRETE CURB & GUTTER TRANSITITON TO DEPRESSED CURB
N.T.S.



11 INFILTRATION SECTION
N.T.S.

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-	-	-
-	-	-
-	-	-

NORTH ARROW:

SCALE: NO SCALE

GREGORY L. GOVERNATORI E-39604 RACINE, WI PROFESSIONAL ENGINEER
4-10-25

SHEET:
DETAILS

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:
2.2

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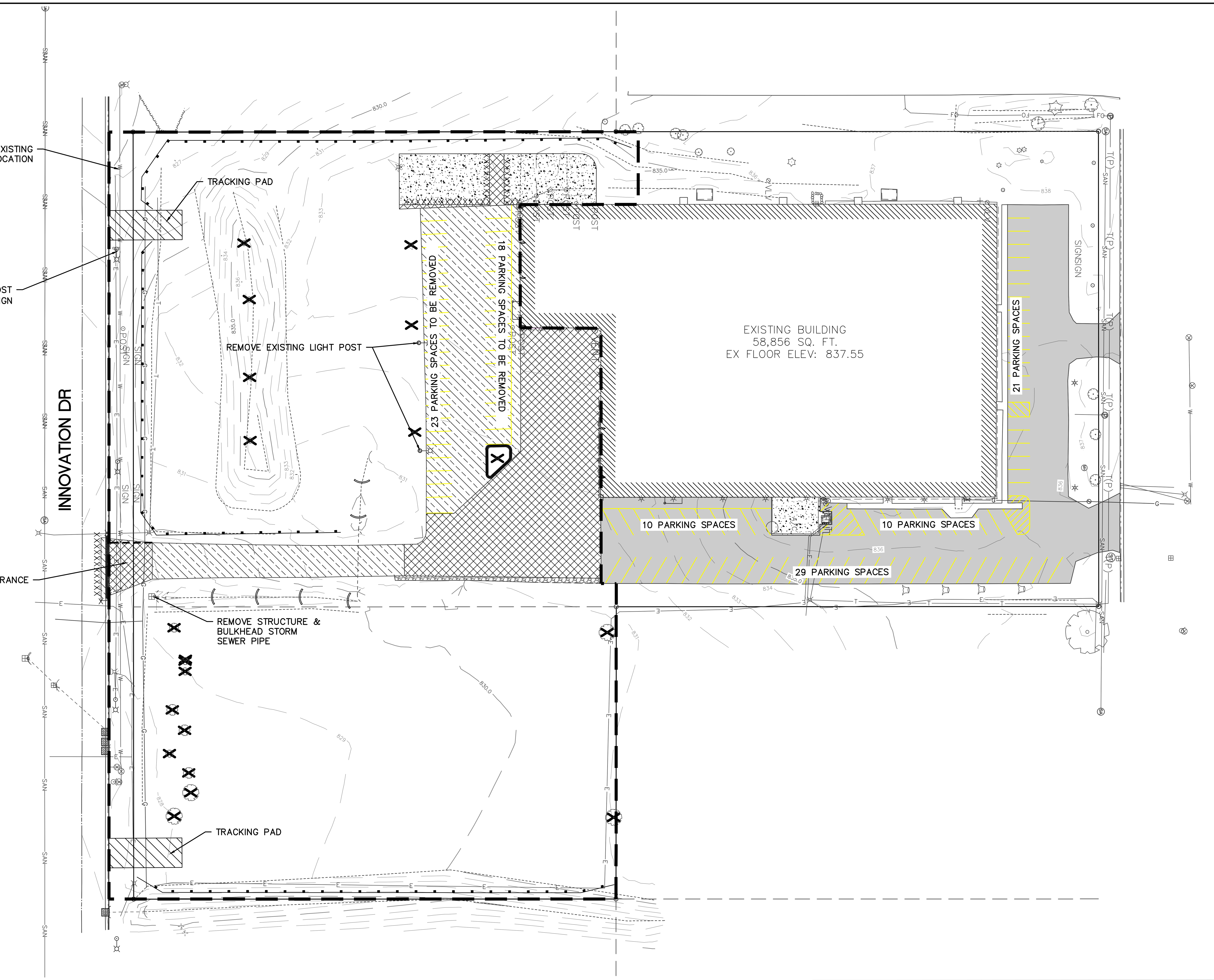

EROSION CONTROL LEGEND

- DITCH CHECK SEE DETAIL 4/SHEET 2.1
- INLET PROTECTION SEE DETAIL 3/SHEET 2.1
- SILT FENCE SEE DETAIL 1/SHEET 2.1

POINTS OF CONTACT

LAND OWNER:

LAVELLE INDUSTRIES

LAVELLE INDUSTRIES
1215 UNIVERSAL BLVD
WHITEWATER, WI 53190

PHONE: (608) 837-5141

PROJECT ENGINEER:

GREG GOVERNATORI, P.E.

KAPUR & ASSOCIATES, INC
1224 SOUTH PINE STREET
BURLINGTON, WI 53105

PHONE: (262) 758-6010

REMOVALS LEGEND

- ASPHALTIC PAVEMENT REMOVAL
- CONCRETE REMOVAL
- XXXXXXXXXXX SAWCUT
- X TREE REMOVAL
- PROJECT LIMITS
- GRAVEL REMOVAL
- EXISTING CONCRETE TO REMAIN
- EXISTING BUILDINGS
- EXISTING ASPHALT TO REMAIN
- CURB & GUTTER REMOVAL

INSPECT ALL EROSION CONTROL MEASURES PRIOR TO COMMENCING GRADING, GRUBBING OR OTHER LAND DISTURBING ACTIVITIES. EROSION CONTROL MEASURES MUST BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EVERY PRECIPITATION EVENT OF 0.50 INCH OR GREATER. IN ADDITION THE CONTRACTOR SHALL CONDUCT DAILY INSPECTIONS AND DOCUMENT CONDITIONS AND REPAIRS MADE ALONG WITH DATE, TIME OF INSPECTION AND WEATHER CONDITIONS IN A DAILY LOG BOOK. THE DAILY LOG BOOK, WEEKLY / 0.50 INCH PRECIPITATION REPORTS, APPROVED PLANS AND WPDES PERMIT SHALL BE KEPT IN AN ACCESSIBLE LOCATION, LIKE A MAILBOX, WITHIN THE STAGING AREA.

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PROJECT:
LAVELLE INDUSTRIES

LOCATION:
CITY OF WHITEWATER, WISCONSIN

CLIENT:
PSG
CONSULT-DEVELOP-CONSTRUCT

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FOR CITY REVIEW

REVISIONS:

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NORTH ARROW:

SCALE: NO SCALE

0 40' 80'

IF NOT ONE INCH ADJUST SCALE ACCORDINGLY

SEAL:
GREGORY L. GOVERNATORI
E 36034
RACINE, WI
WISCONSIN PROFESSIONAL ENGINEER
4-10-25

SHEET:
REMOVALS

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:
3.0

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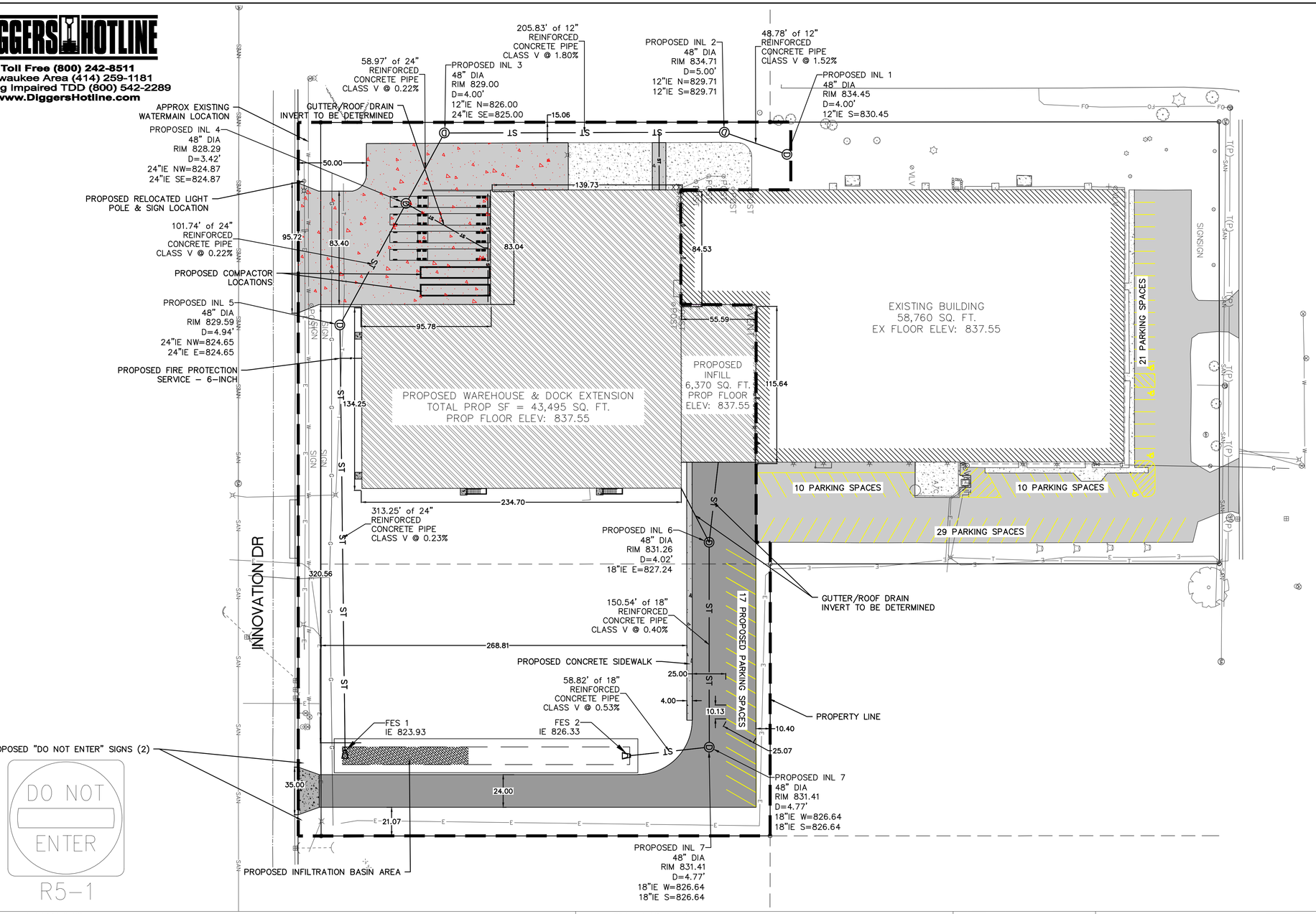

SITE PLAN NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF WHITEWATER LAND DEVELOPMENT STANDARDS, THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN, AND THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION; LATEST ADDITIONS AND REVISIONS
2. A SAWED JOINT IS REQUIRED WHERE NEW ASPHALTIC CONCRETE SURFACES MEET EXISTING ASPHALTIC CONCRETE SURFACES. MATCH EXISTING PAVEMENT ELEVATION AT ALL SAWCUT LOCATIONS UNLESS OTHERWISE NOTED.
3. PROOF ROLL NECESSARY PRIOR TO PAVING. POOR MATERIAL SHALL BE REMOVED (COMMON EXCAVATION) AND REPLACED WITH SUITABLE MATERIAL. CONFIRM MATERIAL WITH ENGINEER. PROOF ROLL INCIDENTAL TO PAVING COSTS.
4. ALL LINEAR DIMENSIONS ARE TO FACE OF CURB, EDGE OF PAVEMENT OR BUILDING OUTSIDE WALL UNLESS OTHERWISE NOTED
5. SITE CONSTRUCTION AND PAVEMENT MARKING SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
6. ALL PARKING SPACES SHALL BE PAINTED 4" TRAFFIC YELLOW. PAVEMENT MARKINGS TO BE ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ANY LOCAL CODES AND ORDINANCES. MARKINGS AND SIGNAGE TO BE IN ACCORDANCE WITH MUTCD.
7. THE UNDERGROUND AND OVERHEAD UTILITY INFORMATION AS SHOWN HEREON IS BASED, IN PART, UPON INFORMATION FURNISHED BY THE LOCAL MUNICIPALITY AND FIELD LOCATES. ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED NOR CERTIFIED TO. IT IS CONTRACTORS RESPONSIBILITY TO FIELD VERIFY UTILITY INFORMATION. UTILITIES AND ADDITIONAL ITEMS FOR REMOVAL TO BE DETERMINED IN FIELD AS NEEDED.
8. ALL EXCESS TOPSOIL TO BE HAULED OFF BY LANDSCAPE CONTRACTOR. TOPSOIL DEPTHS CAN BE FOUND IN SOIL BORING LOGS.
9. CONCRETE PAVING TO BE COMPLETED IN MULTIPLE MOBILIZATIONS TO ACCOMMODATE PROJECT PHASING

SITE DATA

ZONING M-1
GENERAL MANUFACTURING

EXISTING CONDITIONS:
PROPERTY SIZE: 6.439 ACRES (280,490 SF)
PARCEL /A455700001 – 4.924 ACRES (214,490 SF)
PARCEL /A455500003 – 1.515 ACRES (66,000 SF)
IMPERVIOUS AREA: 2.76 ACRES (120,284 SF) – 42.9%
OPEN SPACE AREA: 3.68 ACRES (160,206 SF) – 57.1%
BUILDING AREA: 58,760 SF – 20.9%

PROPOSED CONDITIONS:
PROPERTY SIZE: 6.439 ACRES (280,490 SF)
PARCEL /A455700001 – 4.924 ACRES (214,490 SF)
PARCEL /A455500003 – 1.515 ACRES (66,000 SF)
IMPERVIOUS AREA: 4.22 ACRES (184,000 SF) – 65.6%
OPEN SPACE AREA: 2.215 ACRES (96,490 SF) – 34.4%
BUILDING AREA: 108,625 SF – 38.7%

PARKING BREAKDOWN:
EXISTING: 112 SPACES
REMOVING 41 PARKING SPACES
PROPOSED: 88 SPACES (UNDER CURRENT LEVEL)
ADA SPACES REQUIRED – 4

POINTS OF CONTACT

LAND OWNER:
LAVELLE INDUSTRIES
LAVELLE INDUSTRIES
1215 UNIVERSAL BLVD
WHITEWATER, WI 53190
PHONE: (608) 837-5141

PROJECT ENGINEER:
GREG GOVERNATORI, P.E.
KAPUR & ASSOCIATES, INC
1224 SOUTH PINE STREET
BURLINGTON, WI 53105
PHONE: (262) 758-6010

HATCH LEGEND

- PROPOSED ASPHALTIC CONCRETE
- PROPOSED BUILDING ADDITIONS
- EXISTING BUILDINGS
- PROJECT LIMITS
- PROPOSED CONCRETE
- EXISTING ASPHALT
- EXISTING CONCRETE

INSPECT ALL EROSION CONTROL MEASURES PRIOR TO COMMENCING GRADING, GRUBBING OR OTHER LAND DISTURBING ACTIVITIES. EROSION CONTROL MEASURES MUST BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EVERY PRECIPITATION EVENT OF 0.50 INCH OR GREATER. IN ADDITION THE CONTRACTOR SHALL CONDUCT DAILY INSPECTIONS AND DOCUMENT CONDITIONS AND REPAIRS MADE ALONG WITH DATE, TIME OF INSPECTION AND WEATHER CONDITIONS IN A DAILY LOG BOOK. THE DAILY LOG BOOK, WEEKLY / 0.50 INCH PRECIPITATION REPORTS, APPROVED PLANS AND WPDES PERMIT SHALL BE KEPT IN AN ACCESSIBLE LOCATION, LIKE A MAILBOX, WITHIN THE STAGING AREA.

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SEAL:
WISCONSIN
GREGORY L. GOVERNATORI
E-36034
RACINE, WI
PROFESSIONAL ENGINEER
4-10-25

SHEET:
SITE PLAN & UTILITY

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:
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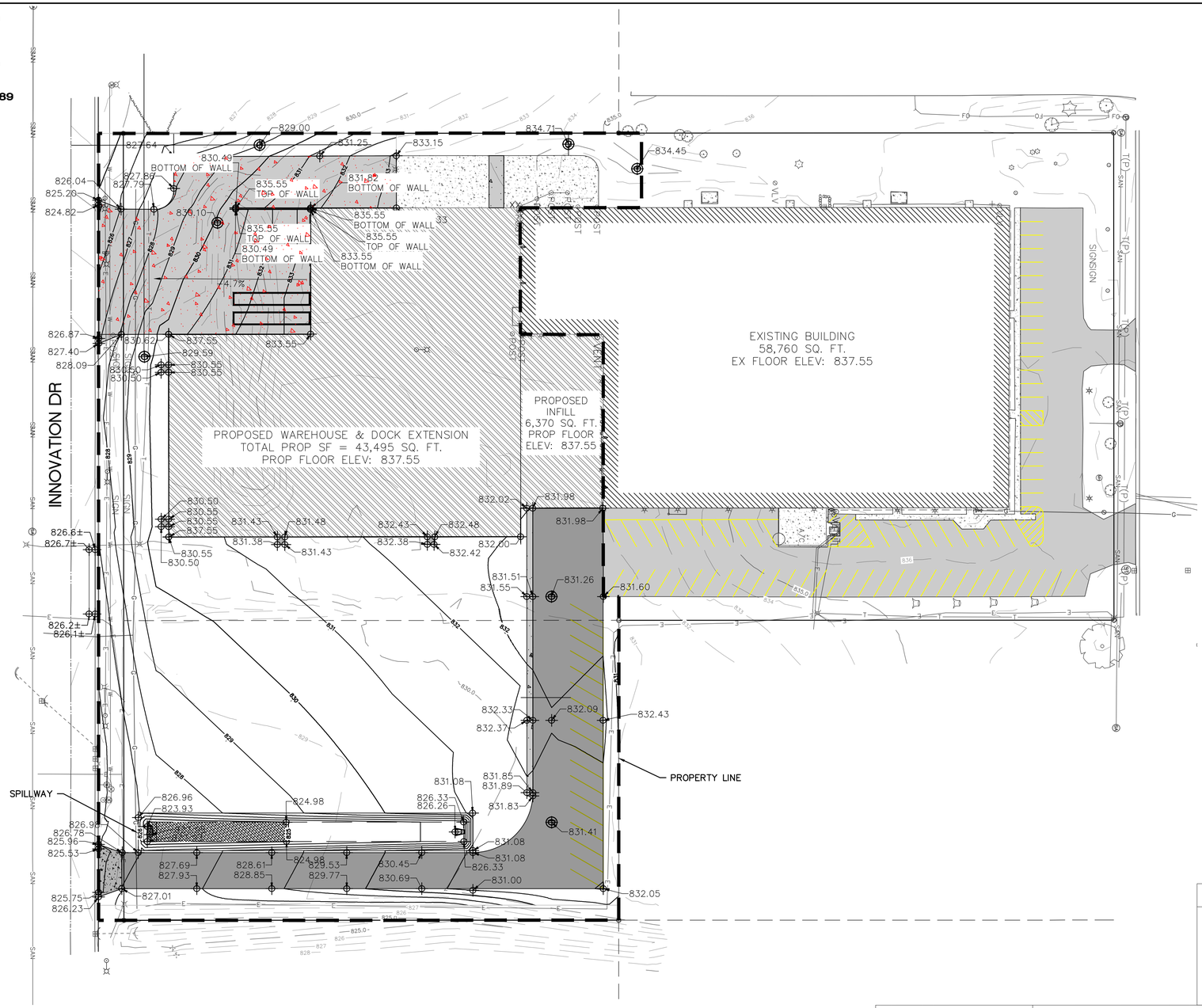

GRADING LEGEND

- 835 — EXISTING CONTOUR LINE – MAJOR
- 834 — PROPOSED CONTOUR LINE – MINOR
- 832 — PROPOSED CONTOUR LINE – MAJOR
- 715.18 — PROPOSED SPOT ELEVATIONS
- 716.00± — MATCH EXISTING ELEVATIONS

POINTS OF CONTACT

LAND OWNER:

LAVELLE INDUSTRIES

LAVELLE INDUSTRIES
1215 UNIVERSAL BLVD
WHITEWATER, WI 53190

PHONE: (608) 837-5141

PROJECT ENGINEER:

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KAPUR & ASSOCIATES, INC
1224 SOUTH PINE STREET
BURLINGTON, WI 53105

PHONE: (262) 758-6010

HATCH LEGEND

- PROPOSED ASPHALTIC CONCRETE
- PROPOSED CONCRETE
- PROPOSED BUILDING ADDITIONS
- EXISTING ASPHALT
- EXISTING BUILDINGS
- EXISTING CONCRETE
- PROJECT LIMITS

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NORTH ARROW:

SCALE: NO SCALE

0 40' 80'

IF NOT ONE INCH ADJUST SCALE ACCORDINGLY

SEAL:

WISCONSIN
GREGORY L. GOVERNATORI
E-36034
RACINE, WI
PROFESSIONAL ENGINEER

4-10-25

SHEET:

GRADING

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:

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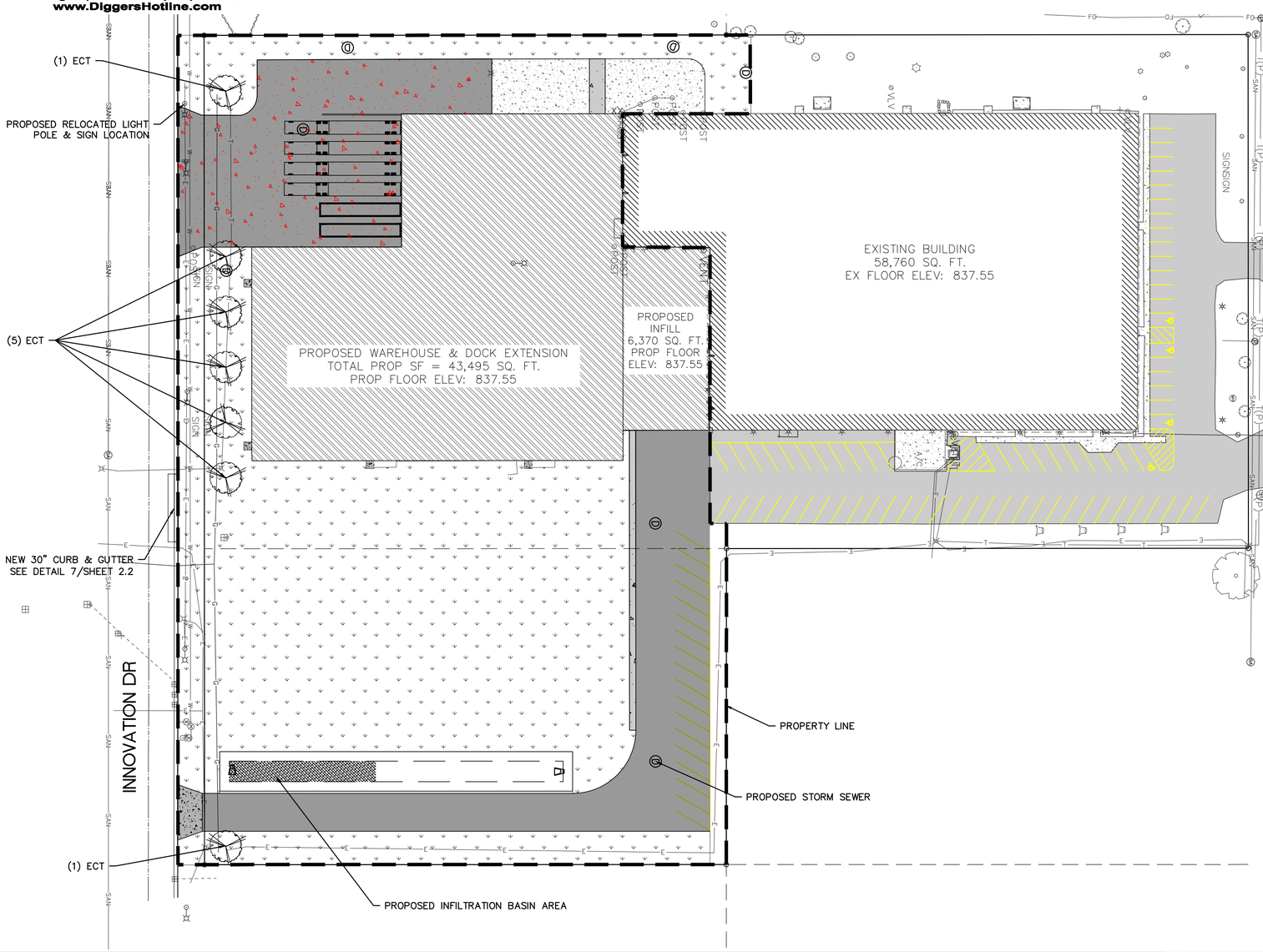

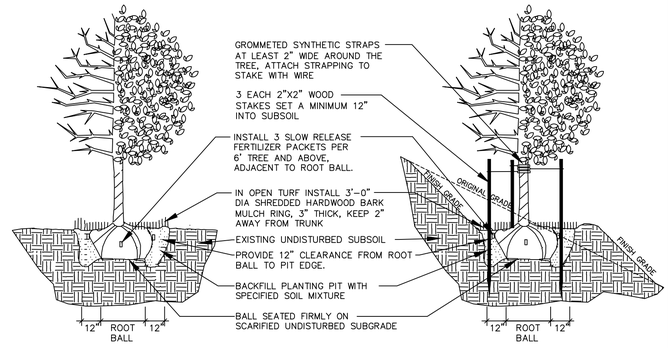

1 DECIDUOUS TREE PLANTING, STAKING, & PLANTING ON A SLOPE
N.T.S.

1. ALL PLANT MATERIAL SHALL BE OBTAINED FROM A NURSERY LOCATED IN ZONE 5, CONFORM TO APPLICABLE REQUIREMENTS OF THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AND BOTANICAL NAMES SHALL BE ACCORDING TO THE CURRENT EDITION OF "STANDARDIZED PLANT NAMES PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURE NOMENCLATURE.
2. CONTRACTOR TO PROVIDE TO THE LANDSCAPE ARCHITECT SAMPLES OF ALL BARK AND MINERAL/STONE MULCHES, DECORATIVE GRAVELS, MAINTENANCE STRIP STONE, OR OTHER GROUND COVER MATERIALS FOR APPROVAL PRIOR TO INSTALLATION.
3. BARK MULCH TO BE FRESHLY ACQUIRED HARDWOOD SHREDDED BARK MULCH. NOT DOUBLE MILLED, EXCESSIVE DIRT AND DUST LIKE MATERIAL OR OLD MATERIAL IS NOT ACCEPTABLE.
4. LANDSCAPE EDGING TO BE ALUMINUM EDGING. REFER TO SPECIFICATION 32 93 00 PLANTS FOR ADDITIONAL INFORMATION.
5. ALL PLANTING AREAS TO RECEIVE A 3-INCH THICK LAYER OF HARDWOOD SHREDDED BARK MULCH OVER TYPAR WEED FABRIC WITH EDGING. EDGING TO BE INSTALLED BETWEEN DIFFERENT TYPES OF MULCHES, BETWEEN MULCHES AND TURF, AND/OR WHERE SPECIFICALLY NOTED ON THE PLAN. REFER TO SPECIFICATION 32 93 00 PLANTS FOR ADDITIONAL INFORMATION.
6. INSTALL SHOVEL CUT EDGE AROUND ALL INDIVIDUAL TREES AND SHRUBS IN LAWN AREAS AND ALONG PAVEMENT WHERE PLANTING AREAS ABUT TO PREVENT HARDWOOD SHREDDED BARK MULCH FROM SPILLING OUT OF PLANTING AREA.
7. CONTRACTOR RESPONSIBLE FOR MAINTENANCE OF PLANT MATERIAL FOR 90 DAYS FROM INSTALLATION, INCLUDING WATERING, WEEDING, ETC. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF SEEDED AREAS FOR 60 DAYS FROM INSTALLATION, INCLUDING WATERING, WEEDING, ETC. CONTRACTOR TO PROVIDE AND REVIEW MAINTENANCE INSTRUCTIONS WITH THE OWNER PRIOR TO THE COMPLETION OF THESE MAINTENANCE PERIODS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
8. CLEANLY PRUNE AND REMOVE DAMAGED BRANCHES, DEAD WOOD, AND ROOTS IMMEDIATELY PRIOR TO PLANTING. DO NOT CUT LEADERS OR LEAVE "V" CROTCHES OR DOUBLE LEADERS UNLESS A MULTI-STEM TREE IS SPECIFIED.
9. REMOVE BURLAP, WIRE BASKET, ROPE, TWINE, AND ALL SYNTHETIC MATERIAL FROM THE ROOTS, TRUNK, OR CROWN OF PLANT.
10. REMOVE EXCESS SOIL ABOVE ROOT COLLAR.
11. PLANT TREES AND SHRUBS SO THAT THE ROOT COLLAR IS 2" ABOVE FINISHED GRADE OR SEVERAL INCHES ABOVE GRADE IF PLANT IS INSTALLED IN POOR SOILS.
12. PLANT TREES AND SHRUBS WITH SAME ORIENTATION AS WHEN HARVESTED FROM THE NURSERY OR TO SHOWCASE THE MOST AESTHETIC VIEW.
13. PLANT ALL TREES WITH THREE SLOW RELEASE FERTILIZER PACKETS, SPACED EQUIDISTANT AROUND THE EDGE OF THE ROOT BALL.
14. PLANT ALL SHRUBS WITH ONE SLOW RELEASE FERTILIZER PACKET, PLACED BELOW THE ROOTING SYSTEM.
15. WATER AND TAMP BACKFILL AND ROOTS OF ALL NEWLY SET PLANT MATERIAL SO THE SOIL AND ROOTS ARE THOROUGHLY SOAKED AND AIR POCKETS ARE REMOVED.
16. FOR INDIVIDUAL TREES & SHRUBS PLANTED IN TURF AREAS, PROVIDE CONTINUOUS 3" SOIL SAUCER TO CONTAIN WATER & MULCH (TREES ON SLOPES SHALL BE SAUCERED ON THE DOWNHILL SIDE)
17. INSTALL 3" THICK SHREDDED HARDWOOD BARK MULCH RING 3'-0" DIA. FOR DECIDUOUS TREES AND ALL INDIVIDUAL SHRUBS IN LAWN AREAS, 5'-0" DIA.
18. STONE CHIP TO BE ¾-INCH RAVENS BLACK DECORATIVE STONE CHIP FROM HALQUIST STONE. CONTRACTOR TO CONTACT HALQUIST STONE N51 W23563 LISBON ROAD SUSSEX, WI 53089 TELEPHONE (262)246-9000 EMAIL: INFO@HALQUISTSTONE.COM.
19. REFER TO SPECIFICATIONS 32 93 00 PLANTS AND 32 92 00 TURF AND GRASSES FOR ADDITIONAL INFORMATION.

2 LANDSCAPE NOTES

Plant Schedule

	Scientific Name	Common Name	Quantity	Spacing	Install Size	Size
						Maturity in ft. (Height/Spread)
Deciduous Trees						
ECT	Gymnocladus dioicus 'Espresso'	Espresso Coffeetree	7	Per Plan	3" caliper B&B	50'/35'

NOTE: Installation contractor is responsible for verifying plant count from plan. Plan quantities take precedence over list.

POINTS OF CONTACT

LAND OWNER:

LAVELLE INDUSTRIES

LAVELLE INDUSTRIES
1215 UNIVERSAL BLVD
WHITEWATER, WI 53190

PHONE: (608) 837-5141

PROJECT ENGINEER:

GREG GOVERNATORI, P.E.

KAPUR & ASSOCIATES, INC
1224 SOUTH PINE STREET
BURLINGTON, WI 53105

PHONE: (262) 758-6010

RESTORATION AND LANDSCAPE LEGEND

- PROPOSED ASPHALTIC CONCRETE
- PROPOSED BUILDING ADDITIONS
- EXISTING BUILDINGS
- SHADE TREE
- PROJECT LIMITS
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE LOADING DOCK
- EXISTING ASPHALT
- EXISTING CONCRETE
- RESTORE DISTURBED AREA

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NORTH ARROW:

SCALE: NO SCALE
0 40' 80'
IF NOT ONE INCH ADJUST SCALE ACCORDINGLY

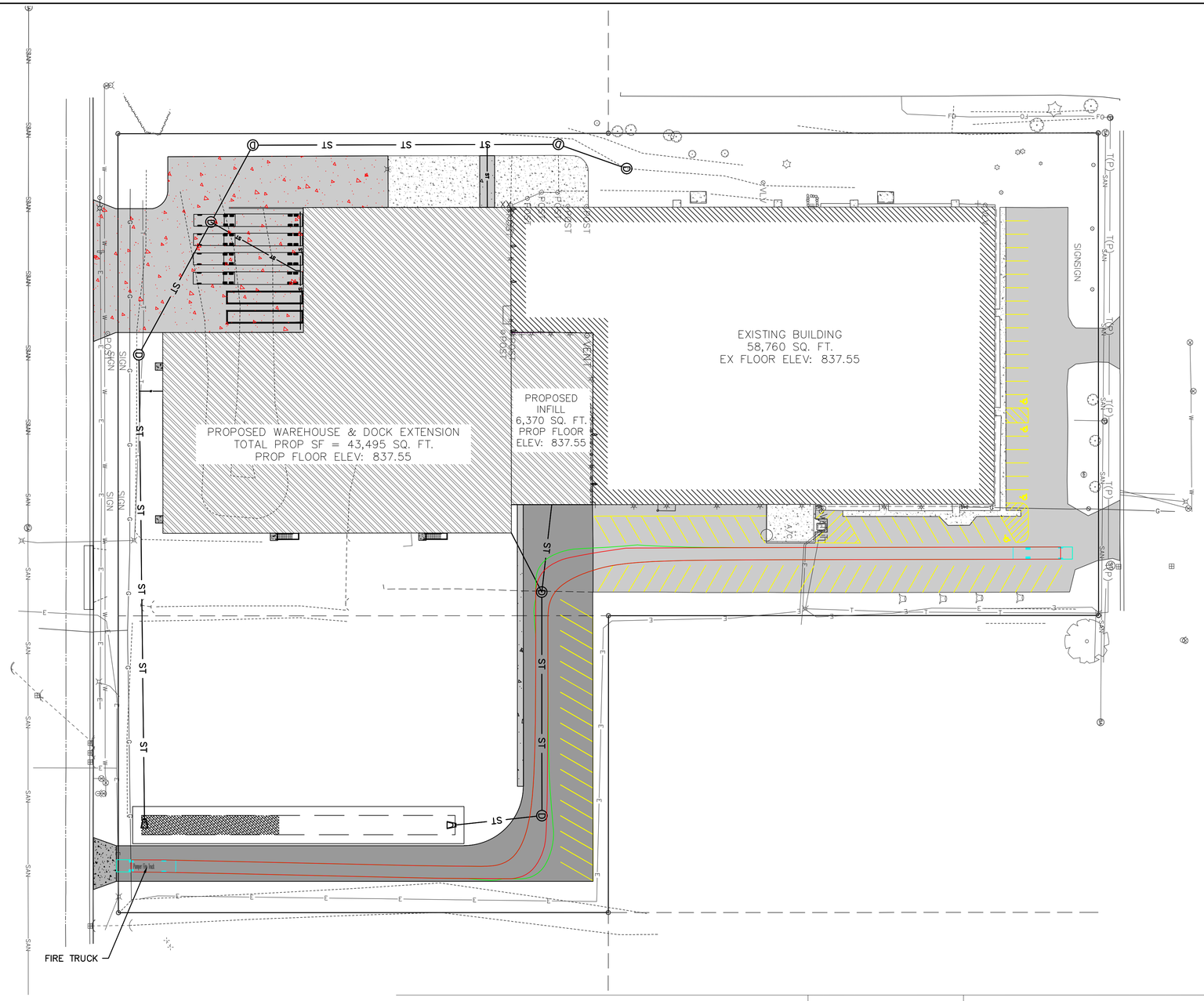
SEAL
WISCONSIN
GREGORY L. GOVERNATORI
E-36034
RACINE, WI
PROFESSIONAL ENGINEER
4-10-25

SHEET:
RESTORATION & LANDSCAPING

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:
6.0

FILENAME: D:\Walworth_Co\Whitewater_City\Priv\25.0048.01 Lavelle Whitewater Expansion Planning\Design\250048_PLN_RESTORATION & LANDSCAPING.dwg



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HATCH LEGEND

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- PROPOSED BUILDING ADDITIONS
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- PROPOSED CONCRETE
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SEAL:

WISCONSIN
GREGORY L. GOVERNATORI
E-36034
RACINE, WI
PROFESSIONAL ENGINEER

4-10-25

SHEET:

FIRE TRUCK TURNING EXHIBIT

PROJECT MANAGER:	GLG
PROJECT NUMBER:	25.0048.01
DATE:	4-9-2025

SHEET NUMBER:

7.0

FILENAME: D:\Wallworth_Co\Whitewater_City\Priv\25.0048.01 Lavelle Whitewater Expansion Planning\Design\250048_PLN_SITE PLAN & UTILITY.dwg