

1. Agenda

Documents:

[2022-3.23-PLAN-COMM-AGENDA \(AGENDA\).PDF](#)

2. Meeting Materials

Documents:

[PACKET-2-3.23.22-PC-II \(2 OF 4\).PDF](#)
[PACKET-3-3.23.22-PC-III \(3 OF 4\).PDF](#)
[PACKET-4-3.23.22-PC-IV \(4 OF 4\).PDF](#)
[PACKET-1-3.23.22-PC-I \(1 OF 4\).PDF](#)



HERITAGE
COMMUNITY
OPPORTUNITY

VILLAGE OF MOUNT HOREB

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Mount Horeb, WI 53572
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THE MARCH 23rd, 2022 PLAN COMMISSION/HISTORIC PRESERVATION COMMISSION WILL BE HELD VIRTUAL AND IN PERSON. YOU CAN WATCH THE MEETING LIVE VIA THE VILLAGE WEBSITE BY CLICKING "WATCH LIVE" UNDER THE TROLLWAY TV GRAPHIC ON THE RIGHT SIDE OF THE HOME PAGE AT WWW.MOUNTHOREBWI.INFO. THE MEETING IS ALSO BROADCAST LIVE ON MHTC CHANNEL 181 AND CHARTER CHANNEL 981. YOU CAN ALSO JOIN THE MEETING USING:

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/418113189>

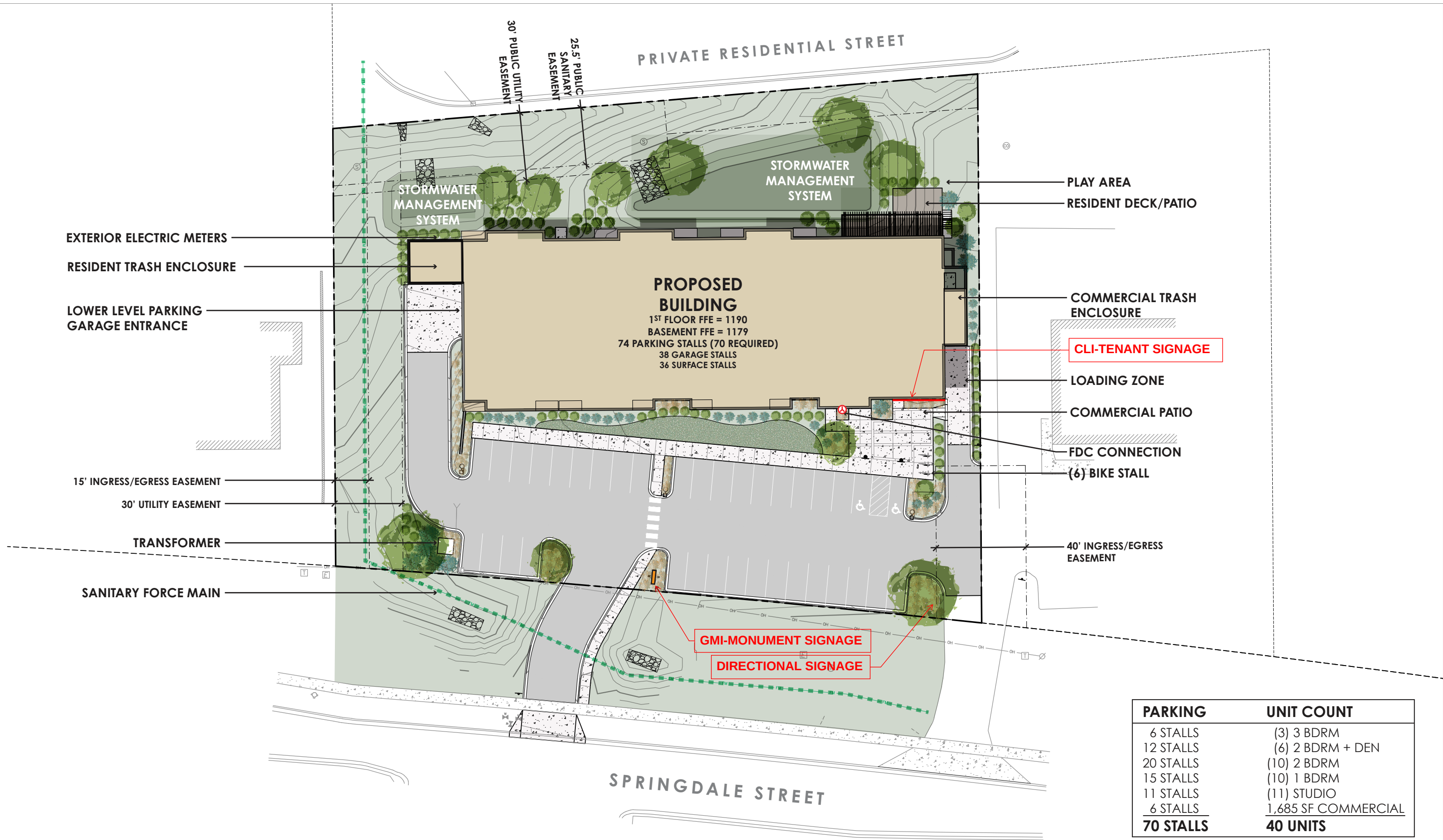
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PLAN COMMISSION/HISTORIC PRESERVATION COMMISSION WEDNESDAY, MARCH 23, 2022

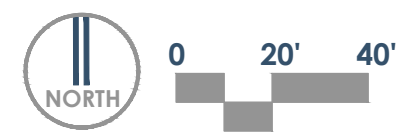
The Plan Commission/Historic Preservation Commission of the Village of Mount Horeb will meet virtually and in person on the second floor of the Municipal Building at the above date at 7:00pm. Agenda as follows:

1. Call to order – Roll call
2. Consider February 23, 2022 Plan Commission meeting minutes
3. Discussion on the proposed free-standing sign for Little Vikings Academy, 1991 Commerce Drive
4. Consideration applications of 110 and 108 E. Main Street and certificate of appropriateness.
 - a- Design Review
 - b- Certificate of appropriateness
5. Consider SIP and design review for mixed use development located at 1800 Springdale Street, further described as parcel 0607-072-9765-1
 - a- Site specific implementation plan
 - b- Design review
6. Plan Commission Chair report
7. Village Planner report
8. Adjourn

File: I:\2021\21-10870\02 Planning\01 Graphics and Exhibits\2022-01-18 - Site Plan Revised\21-10870 EXHIBIT - Site Plan.dwg Layout: Titled Block User: mshinichski Plotted: Mar 14, 2022 - 2:10pm Xref's:



PARKING	UNIT COUNT
6 STALLS	(3) 3 BDRM
12 STALLS	(6) 2 BDRM + DEN
20 STALLS	(10) 2 BDRM
15 STALLS	(10) 1 BDRM
11 STALLS	(11) STUDIO
6 STALLS	1,685 SF COMMERCIAL
70 STALLS	40 UNITS





SPRINGDALE STREET APARTMENTS

EXTERIOR RENDERINGS

MT. HOREB, WI

DATE: 03.14.2022

Sketch **works**
architecture llc



SPRINGDALE STREET APARTMENTS

EXTERIOR RENDERINGS

MT. HOREB, WI

DATE: 03.14.2022

Sketch **works**
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SPRINGDALE STREET APARTMENTS

MT. HOREB, WI

EXTERIOR RENDERINGS

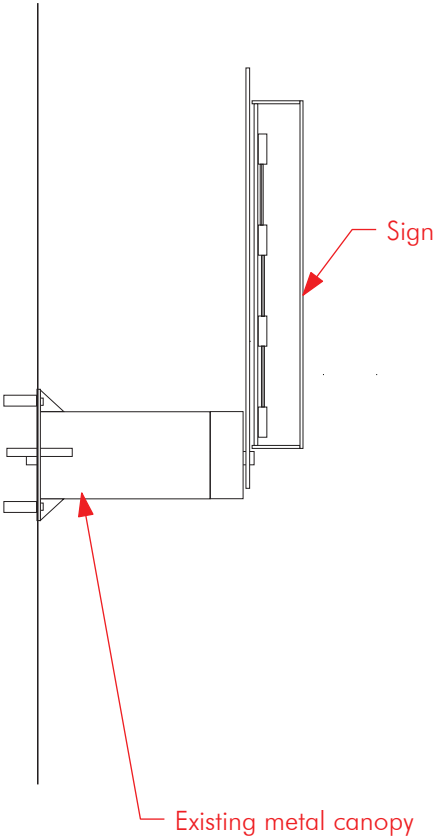
DATE: 03.14.2022

Sketch **works**
architecture llc



makesignsnotwar.com
325 W Front St, Mount Horeb, WI 53572

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ILLUMINATION



Retail tenant sign details:
-Tenant signs can be any color as approved by landlord.
-Illumination can be any of the following:
-Exposed neon
-Halo lit
-Face lit



makesignsnotwar.com
325 W Front St, Mount Horeb, WI 53572

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GENERAL NOTES

1. REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGENDS.
2. ALL WORK IN THE ROW AND/OR PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN AND MUNICIPAL REQUIREMENTS.
3. EXISTING GRADE SPOT ELEVATIONS SHOWN FOR INFORMATIONAL PURPOSES. DURING CONSTRUCTION MATCH EXISTING GRADES AT CONSTRUCTION LIMITS.
4. NO SITE GRADING OUTSIDE OR DOWNSLOPE OF PROPOSED SILT FENCE LOCATION. NO LAND DISTURBANCE BEYOND PROPERTY LINES.
5. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.

DEMOLITION NOTES

1. THIS PLAN INDICATES ITEMS ON THE PROPERTY INTENDED FOR DEMOLITION BASED ON THE CURRENT SITE DESIGN THAT HAVE BEEN IDENTIFIED BY A REASONABLE OBSERVATION OF THE EXISTING CONDITIONS THROUGH FIELD SURVEY, RECONNAISSANCE, "DIGGER'S HOTLINE" LOCATION, AND GENERAL "STANDARD OF CARE". THERE MAY BE ADDITIONAL ITEMS THAT CAN NOT BE IDENTIFIED BY A REASONABLE ABOVE GROUND OBSERVATION, OF WHICH THE ENGINEER WOULD HAVE NO KNOWLEDGE OR MAY BE A PART OF ANOTHER DESIGN DISCIPLINE. IT IS THE CONTRACTOR'S/BIDDER'S RESPONSIBILITY TO REVIEW THE PLANS, INSPECT THE SITE AND PROVIDE THEIR OWN DUE DILIGENCE TO INCLUDE IN THEIR BID WHAT ADDITIONAL ITEMS, IN THEIR OPINION, MAY BE NECESSARY FOR DEMOLITION. ANY ADDITIONAL ITEMS IDENTIFIED BY THE CONTRACTOR/BIDDER SHALL BE IDENTIFIED IN THE BID AND REPORTED TO THE ENGINEER OF RECORD. JSD TAKES NO RESPONSIBILITY FOR ITEMS ON THE PROPERTY THAT COULD NOT BE LOCATED BY A REASONABLE OBSERVATION OF THE PROPERTY OR OF WHICH THEY WOULD HAVE NO KNOWLEDGE.
2. CONTRACTOR SHALL KEEP ALL STREETS AND PRIVATE DRIVES FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
3. ALL TREES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS SPECIFICALLY CALLED OUT FOR PROTECTION. ALL TREES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY AND STUMPS SHALL BE GROUND TO PROPOSED SUBGRADE.
4. ALL LIGHT POLES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY, INCLUDING BASE AND ALL APPURTENANCES. SALVAGE FOR RELOCATION. COORDINATE RELOCATION AND/OR ABANDONMENT OF ALL ELECTRIC LINES WITH ELECTRICAL ENGINEER AND OWNER PRIOR TO DEMOLITION.
5. ABANDONED/REMOVED ITEMS SHALL BE DISPOSED OF OFF SITE UNLESS OTHERWISE NOTED.
6. CONTRACTOR TO REPLACE ALL SIDEWALK AND CURB AND GUTTER ABUTTING THE PROPERTIES, WHICH IS DAMAGED BY THE CONSTRUCTION, OR ANY SIDEWALK AND CURB AND GUTTER THAT THE CITY ENGINEER DETERMINES NEEDS TO BE REPLACED BECAUSE IT IS NOT AT A DESIRABLE GRADE REGARDLESS OF WHETHER THE CONDITION EXISTED PRIOR TO BEGINNING CONSTRUCTION.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
 - 7.1. EXAMINE ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
 - 7.2. VERIFYING UTILITY ELEVATIONS AND NOTIFYING ENGINEER OF ANY DISCREPANCIES. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCIES ARE RESOLVED.
 - 7.3. NOTIFYING ALL UTILITIES PRIOR TO THE REMOVAL OF ANY UNDERGROUND UTILITIES.
 - 7.4. NOTIFYING THE DESIGN ENGINEER AND LOCAL CONTROLLING MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION INSPECTION.
8. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
9. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF THESE IMPROVEMENTS.
10. CONTRACTOR TO COORDINATE PRIVATE UTILITY REMOVAL / ABANDONMENT AND NECESSARY RELOCATION WITH RESPECTIVE UTILITY COMPANY. COORDINATION REQUIRED PRIOR TO CONSTRUCTION.
11. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH THE APPROVED MUNICIPALITY RECYCLING PLAN.
12. ANY CONTAMINATED SOILS SHALL BE REMOVED IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS TO AN APPROVED LANDFILL.
13. ALL EXISTING UTILITIES TO BE FIELD LOCATED AND FLAGGED BY CONTRACTOR.
14. EXISTING FIBER OPTIC LINE TO BE CLEARLY MARKED PRIOR TO ANY EXCAVATION. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES OCCUR IN THE LOCATION SHOWN OR PROPOSED IMPROVEMENTS IMPACTING EXISTING FIBER OPTIC LINE LOCATION.
15. SEWER ABANDONMENT SHALL BE IN ACCORDANCE WITH SECTION 3.2.24, OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN WISCONSIN, LATEST ADDITION, AND VILLAGE OF MOUNT HOREB SPECIFICATIONS.
16. WATER ABANDONMENT SHALL BE IN ACCORDANCE WITH SECTION 4.1.0 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN WISCONSIN, LATEST ADDITION, AND VILLAGE OF MOUNT HOREB SPECIFICATIONS.
17. ALL PERIMETER EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF DEMOLITION ACTIVITIES. CONTRACTOR SHALL KEEP ALL STREETS AND PAVEMENT FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
18. BUILDING REMOVALS SHALL BE BY A QUALIFIED CONTRACTOR. CONTRACTOR TO FOLLOW ALL DEMOLITION REGULATIONS, DISCONNECT ALL UTILITIES, OBTAIN ALL APPLICABLE PERMITS AND DISPOSE OF ALL BUILDING MATERIALS IN APPROPRIATE LANDFILLS. DEMOLISHED MATERIALS SHALL NOT BE BURIED ON SITE. IF ENCOUNTERED, ANY CONTAMINATED SOILS SHALL BE REMOVED TO A LANDFILL IN ACCORDANCE WITH APPROPRIATE STATE AND FEDERAL REGULATIONS.
19. CONTRACTOR TO REMOVE EXISTING UTILITY PIPE OR PROVIDE PIPE BACK-FILLING AFTER REMOVAL OF EXISTING UTILITIES WITHIN BUILDING FOOTPRINT USING "LOW DENSITY CONCRETE/FLOWABLE FILL".
20. RESTORATION OF THE EXISTING ROADWAY RIGHT-OF-WAYS ARE CONSIDERED INCIDENTAL AND SHOULD BE PART OF THE COST OF THE UNDERGROUND IMPROVEMENTS, DEMOLITION AND REMOVAL. THIS INCLUDES CURB & GUTTER, SIDEWALK, TOPSOIL, SEEDING AND MULCHING.

CONSTRUCTION SEQUENCING

1. INSTALL PERIMETER SILT FENCE, INLET PROTECTION AND TEMPORARY CONSTRUCTION ENTRANCE.
2. STRIP AND STOCKPILE TOPSOIL, INSTALL SILT FENCE AROUND PERIMETER OF STOCKPILE.
3. ROUGH GRADE INFILTRATION BASINS AND INSTALL POND OUTLET.
4. CONDUCT ROUGH GRADING EFFORTS AND INSTALL CHECK DAMS WITHIN DRAINAGE DITCHES AS NEEDED.
5. INSTALL UTILITY PIPING AND STRUCTURES, IMMEDIATELY INSTALL INLET PROTECTION.
6. COMPLETE FINAL GRADING, INSTALLATION OF GRAVEL BASE COURSES, PLACEMENT OF CURBS, PAVEMENTS, WALKS, ETC.
7. PLACE TOPSOIL AND IMMEDIATELY STABILIZE DISTURBED AREAS WITH EROSION CONTROL MEASURES AS INDICATED ON PLANS.
8. RESTORE INFILTRATION BASINS (FINAL GRADE RETENTION POND PER PLAN REQUIREMENTS)
9. EROSION CONTROLS SHALL NOT BE REMOVED UNTIL SITE IS FULLY STABILIZED OR 70% VEGETATIVE COVER IS ESTABLISHED.

CONTRACTOR MAY MODIFY SEQUENCING AFTER ITEM NO. 1 AS NEEDED TO COMPLETE CONSTRUCTION IF EROSION CONTROLS ARE MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION SITE EROSION CONTROL REQUIREMENTS.

PAVING NOTES

1. GENERAL
 - 1.1. ALL PAVING SHALL CONFORM TO "STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION, LATEST EDITION, APPLICABLE VILLAGE OF MOUNT HOREB ORDINANCES AND THE GEOTECHNICAL REPORT PREPARED BY CGC, INC DATED JANUARY 12, 2022.
 - 1.2. ALL PAVING DIMENSIONS ARE TO FACE OF CURB UNLESS SPECIFIED OTHERWISE.
 - 1.3. SURFACE PREPARATION – NOTIFY ENGINEER/OWNER OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
 - 1.4. ANY REQUIRED REPLACEMENT OF PUBLIC CURB AND GUTTER SHALL MATCH EXISTING AND MEET MUNICIPALITY REQUIREMENTS.
2. ASPHALTIC CONCRETE PAVING SPECIFICATIONS
 - 2.1. CODES AND STANDARDS – THE PLACING, CONSTRUCTION AND COMPOSITION OF THE ASPHALTIC BASE COURSE AND ASPHALTIC CONCRETE SURFACE COURSE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460 AND 465 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION. HEREAFTER, THIS PUBLICATION WILL BE REFERRED TO AS STATE HIGHWAY SPECIFICATIONS.
 - 2.2. WEATHER LIMITATIONS – APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS EXCESS OF MOISTURE. CONSTRUCT ASPHALTIC CONCRETE SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40° F (4° C) AND WHEN BASE IS DRY AND WHEN WEATHER IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (–1° C).
 - 2.3. GRADE CONTROL – ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.
 - 2.4. CRUSHED AGGREGATE BASE COURSE – THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.
 - 2.5. BINDER COURSE AGGREGATE – THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTIONS 460 AND 315, STATE HIGHWAY SPECIFICATIONS.
 - 2.6. SURFACE COURSE AGGREGATE – THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460 AND 465, STATE HIGHWAY SPECIFICATIONS.
 - 2.7. ASPHALTIC MATERIALS – THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455 AND 460, STATE HIGHWAY SPECIFICATIONS.
3. CONCRETE PAVING SPECIFICATIONS
 - 3.1. CONCRETE PAVING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 415 AND 416 OF THE STATE HIGHWAY SPECIFICATIONS.
 - 3.2. CONCRETE PAVEMENT SHALL BE REINFORCED WITH NOVOMESH 950 (OR EQUAL) FIBER REINFORCEMENT AT A RATE OF 5 LBS/CUBIC YARD.
 - 3.3. CURING COMPOUNDS SHALL CONFORM TO SECTION 415 OF THE STATE HIGHWAY SPECIFICATIONS.
 - 3.4. CONTRACTOR SHALL PROVIDE CONTROL JOINTS AND CONSTRUCTION JOINTS OF ONE-QUARTER CONCRETE THICKNESS AT AN EQUAL RATIO OF LENGTH TO WIDTH WHEREVER POSSIBLE WITH A MAXIMUM LENGTH BETWEEN JOINTS OF 8' ON CENTER.
 - 3.5. CONTRACTOR SHALL PROVIDE EXPANSION JOINTS IN SIDEWALKS AT A MAXIMUM 24' ON CENTER.
 - 3.6. EXTERIOR CONCRETE SURFACES SHALL BE BROOM FINISHED.
 - 3.7. ALL CONCRETE SURFACES TO BE SEALED WITH TYPE TK-26UV CONCRETE SEALANT.
4. PAVEMENT MARKING SPECIFICATIONS
 - 4.1. USE 4" WIDE, HIGH VISIBILITY YELLOW LATEX PAINT FOR STALL LINES.
 - 4.2. MARK AND STRIPE ADA PARKING SPACES APPROPRIATELY.
 - 4.3. ALL PAVEMENT MARKINGS INCLUDING: STOP BARS, CROSSWALKS, DIRECTIONAL ARROWS, PARKING STALL LINES, ADA STALL MARKINGS, NO PARKING ZONES, DROP-OFF/PICK-UP ZONES SHALL BE PAINTED WITH LATEX PAINT PER SPECIFICATIONS.
 - 4.4. 2' x 4' TRUNCATED DOME WARNING DETECTION FIELD SHALL BE PLACED AT ALL ADA RAMPS.

GRADING AND SEEDING NOTES

1. ALL PROPOSED GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY ALL GRADES, MAKE SURE ALL AREAS DRAIN PROPERLY AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR COMPUTATIONS OF ALL GRADING QUANTITIES. WHILE JSD PROFESSIONAL SERVICES, INC. ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARDS OF CARE. THEREFORE, NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.
3. PARKING LOT AND DRIVEWAY ELEVATIONS ARE PAVEMENT GRADES, NOT TOP OF CURB GRADES, UNLESS OTHERWISE NOTED.
4. ANY WORK WITHIN RIGHT-OF-WAY SHALL BE PROPERLY PERMITTED AND COORDINATED WITH THE APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. ALL GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS.
5. CONTRACTOR SHALL PROVIDE NOTICE TO THE MUNICIPALITY IN ADVANCE OF ANY SOIL DISTURBING ACTIVITIES, IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
6. ALL DISTURBED AREAS SHALL BE SODDED AND/OR SEEDED AND MULCHED IMMEDIATELY FOLLOWING GRADING ACTIVITIES. SOD/SEED MIX TO BE IN ACCORDANCE WITH LANDSCAPE PLAN.
7. CONTRACTOR SHALL CHISEL-PLOW OR DEEP TILL WITH DOUBLE TINES ALL STORMWATER MANAGEMENT FACILITIES JUST PRIOR TO SODDING AND/OR SEEDING AND MULCHING TO PROMOTE INFILTRATION.
8. CONTRACTOR SHALL WATER ALL NEWLY SODDED/SEEDDED AREAS DURING THE SUMMER MONTHS WHENEVER THERE IS A 7 DAY LAPSE WITH NO SIGNIFICANT RAINFALL.
9. CONTRACTOR TO DEEP TILL ALL COMPACTED PVIOUS SURFACES PRIOR TO SODDING AND/OR SEEDING AND MULCHING.
10. ALL SLOPES 20% OR GREATER SHALL BE TEMPORARY SEEDDED, MULCHED, OR OTHER MEANS OF COVER PLACED ON THEM WITHIN 2 WEEKS OF DISTURBANCE.
11. ALL EXPOSED SOIL 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 AND REQUIRE VEGETATIVE COVER FOR LESS THAN 1 YEAR, REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1059 AND VILLAGE OF MOUNT HOREB ORDINANCE.

UTILITY NOTES

1. ALL EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATIONS OF UNDERGROUND UTILITIES. AS MAY BE NECESSARY TO AVOID DAMAGE THERETO, CONTRACTOR/OWNER SHALL CALL "DIGGER'S HOTLINE" PRIOR TO ANY CONSTRUCTION.
2. PRIOR TO CONSTRUCTION, THE PRIME CONTRACTOR IS RESPONSIBLE FOR:
EXAMINING ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
 - OBTAINING ALL PERMITS INCLUDING PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS, AND ALL OTHER FEES REQUIRED FOR PROPOSED WORK TO OBTAIN OCCUPANCY.
 - VERIFYING ALL ELEVATIONS, LOCATIONS AND SIZES OF SANITARY, WATER AND STORM LATERALS AND CHECK ALL UTILITY CROSSINGS FOR CONFLICTS. NOTIFY ENGINEER OF ANY DISCREPANCY. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS RESOLVED.
 - NOTIFYING ALL UTILITIES PRIOR TO INSTALLATION OF ANY UNDERGROUND IMPROVEMENTS.
 - NOTIFYING THE DESIGN ENGINEER AND MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION OBSERVATION.
 - COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
3. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN – AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES.
4. SPECIFICATIONS SHALL COMPLY WITH THE VILLAGE OF MOUNT HOREB SPECIAL PROVISIONS.
5. LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF IMPROVEMENTS.
7. CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVER NIGHT AS REQUIRED IN CONSTRUCTION SITES WHERE THE POTENTIAL FOR PEDESTRIAN INJURY EXISTS.
8. CONTRACTOR SHALL ADJUST AND/OR RECONSTRUCT ALL UTILITY COVERS (SUCH AS MANHOLE COVERS, VALVE BOX COVERS, ETC.) TO MATCH THE FINISHED GRADES OF THE AREAS EFFECTED BY THE CONSTRUCTION.
9. THE PRIME CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
10. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH AS-BUILT CONDITIONS OF THE DESIGNATED IMPROVEMENTS IN ORDER THAT THE APPROPRIATE DRAWINGS CAN BE PREPARED, IF REQUIRED. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE ENGINEER AS WORK PROGRESSES.
12. STORM SEWER SPECIFICATIONS –

PIPE – REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF ASTM CLASS III (MINIMUM) C-76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C-443. HIGH DENSITY DUAL-WALL POLYETHYLENE CORRUGATED PIPE SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M-294 TYPE "S".

INLETS – INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NO. 28 OF THE "STANDARD SPECIFICATIONS", OR APPROVED EQUAL WITH A 1'-8" X 2'-6" MAXIMUM OPENING. CURB FRAME & GRATE SHALL BE NEENAH R-3067 WITH TYPE R GRATE, OR EQUAL.

BACKFILL AND BEDDING – STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".

MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.

FIELD TILE CONNECTION – ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.

13. WATER MAIN SPECIFICATIONS –

PIPE – DUCTILE IRON PIPE SHALL BE CLASS 52 CONFORMING TO AWWA C151 AND CHAPTER 8.18.0 OF THE "STANDARD SPECIFICATIONS". POLYVINYL CHLORIDE (PVC) PIPE SHALL MEET THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 150, DR-18, WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. NON-METALLIC WATER MAINS SHALL BE INSTALLED WITH BLUE INSULATION TRACER WIRE AND CONFORM WITH SPS 382.30(11)(h).

VALVES AND VALVE BOXES – GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.0 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES.

HYDRANTS – HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE VILLAGE OF MOUNT HOREB. THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 23-INCHES (SEE DETAIL).

BEDDING AND COVER MATERIAL – PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".

BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".

14. SANITARY SEWER SPECIFICATIONS –

PIPE – SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034 SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212.

BEDDING AND COVER MATERIAL – BEDDINGS AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDING AND SHALL CONFORM TO SECTION 8.43.2 (A), BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."

BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".

MANHOLES – MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE VILLAGE OF MOUNT HOREB.

MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.

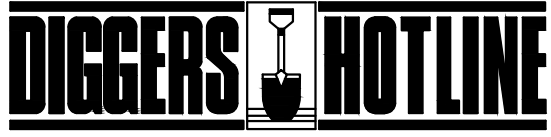
15. WATERMAIN AND SANITARY SEWER SHALL BE INSULATED WHEREVER THE DEPTH OF COVER IS LESS THAN 6 FEET. INSULATION AND INSTALLATION OF INSULATION SHALL BE CONFORMING WITH CHAPTER 4.17.0 "INSULATION" OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN 6TH EDITION UPDATED WITH ITS LATEST ADDENDUM (TYP.).

EROSION CONTROL NOTES

1. CONTRACTOR IS RESPONSIBLE TO NOTIFY ENGINEER OF RECORD AND OFFICIALS OF ANY CHANGES TO THE EROSION CONTROL AND STORMWATER MANAGEMENT PLANS. ENGINEER OF RECORD AND APPROPRIATE VILLAGE OF MOUNT HOREB OFFICIALS MUST APPROVE ANY CHANGES PRIOR TO DEVIATION FROM THE APPROVED PLANS.
2. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) TECHNICAL STANDARDS (REFERRED TO AS BMP'S) AND VILLAGE OF MOUNT HOREB ORDINANCE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THESE STANDARDS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL EROSION CONTROL MEASURES WHICH MAY BE NECESSARY TO MEET UNFORESEEN FIELD CONDITIONS.
3. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
5. INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN. MODIFICATIONS TO THE APPROVED EROSION CONTROL DESIGN IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS IS ALLOWED IF MODIFICATIONS CONFORM TO BMP'S. ALL DESIGN MODIFICATIONS MUST BE APPROVED BY THE VILLAGE OF MOUNT HOREB PRIOR TO DEVIATION OF THE APPROVED PLAN.
4. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY STATE INSPECTORS, LOCAL INSPECTORS, COUNTY INSPECTORS AND/OR ENGINEER OF RECORD SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
5. INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL MEASURES SHALL BE ROUTINE (ONCE PER WEEK MINIMUM) TO ENSURE PROPER FUNCTIONING OF EROSION CONTROLS AT ALL TIMES. EROSION CONTROL MEASURES ARE TO BE IN WORKING ORDER AT THE END OF EACH WORK DAY.
6. ALL EROSION AND SEDIMENT CONTROL ITEMS SHALL BE INSPECTED WITHIN 24 HOURS OF ALL RAIN EVENTS EXCEEDING 0.5 INCHES. ANY DAMAGED EROSION CONTROL MEASURES SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON INSPECTION.
7. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. ADDITIONAL LOCATIONS OTHER THAN AS SHOWN ON THE PLANS MUST BE PRIOR APPROVED BY THE MUNICIPALITY. CONSTRUCTION ENTRANCES SHALL BE 50' LONG AND NO LESS THAN 12" THICK BY USE OF 3" CLEAR STONE. CONSTRUCTION ENTRANCES SHALL BE MAINTAINED BY THE CONTRACTOR IN A CONDITION WHICH WILL PREVENT THE TRACKING OF MUD OR DRY SEDIMENT ONTO ADJACENT PUBLIC STREETS AFTER EACH WORKING DAY OR MORE FREQUENTLY AS REQUIRED.
8. PAVED SURFACES ADJACENT TO CONSTRUCTION SITE VEHICLE ACCESS SHALL BE SWEEPED AND/OR SCRAPPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST AFTER THE END OF EACH WORK DAY AND AS REQUESTED BY THE VILLAGE OF MOUNT HOREB.
9. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS.
10. INSTALL EROSION CONTROLS ON THE DOWNSTREAM SIDE OF STOCKPILES. IF STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION, ACCORDANCE WITH BEST MANAGEMENT PRACTICES IS REQUIRED. IF DISTURBANCE OCCURS BETWEEN NOVEMBER 15TH AND MAY 15TH, THE MULCHING SHALL BE PERFORMED BY HYDRO-MULCHING WITH A "TACKIFIER".
11. DITCH CHECKS AND APPLICABLE EROSION NETTING/MATTING SHALL BE INSTALLED IMMEDIATELY AFTER COMPLETION OF GRADING EFFORTS WITHIN DITCHES/SWALES TO PREVENT SOIL TRANSPORTATION.
12. EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.):
 - A. PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
 - B. BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
 - C. DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH THE DEWATERING TECHNICAL STANDARD NO. 1061 PRIOR TO RELEASE INTO THE STORM SEWER, RECEIVING STREAM, OR DRAINAGE DITCH.
13. ALL SLOPES 4:1 OR GREATER SHALL BE STABILIZED WITH CLASS I, TYPE B EROSION MATTING OR APPLICATION OF A WISCONSIN DEPARTMENT OF TRANSPORTATION (WisDOT) APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED WITHIN 7 DAYS OF REACHING FINAL GRADE AND/OR AS SOON AS CONDITIONS ALLOW. DRAINAGE SWALES SHALL BE STABILIZED WITH CLASS II, TYPE B EROSION MATTING. EROSION MATTING AND/OR NETTING USED, ONSITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND WDNR TECHNICAL STANDARDS 1052 AND 1053.
14. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST ARISING FROM CONSTRUCTION OPERATIONS. REFER TO WDNR TECHNICAL STANDARD 1068.
15. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY AT THE SITE HAS BEEN COMPLETED AND THAT A UNIFORM PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% FOR UNPAVED AREAS AND AREAS COVERED BY PERMANENT STRUCTURES OR THAT EMPLOY EQUIVALENT PERMANENT STABILIZATION MEASURES.
16. CONTRACTOR/OWNER SHALL FILE A NOTICE OF TERMINATION UPON COMPLETION OF THE PROJECT IN ACCORDANCE WITH WDNR REQUIREMENTS AND/OR PROPERTY SALE IN ACCORDANCE WITH WDNR REQUIREMENTS.
17. STABILIZATION PRACTICES:
 - 17.1. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. NO MORE THAN SEVEN (7) DAYS SHALL PASS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS CEASED UNLESS:
 - THE STABILIZATION MEASURES BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS CEASED IS PRECLUDED BY SNOW COVER. IN THAT EVENT, STABILIZATION SHALL BE INITIATED AS SOON AS PRACTICABLE.
 - 17.3. CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN FOURTEEN (14) DAYS FROM WHEN ACTIVITY CEASED. (I.E. THE TOTAL TIME PERIOD THAT THE CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN FOURTEEN (14) DAYS. IN THAT EVENT, STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED.
 - 17.4. STABILIZATION MEASURES SHALL BE DETERMINED BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION ACTIVITY HAS CEASED, INCLUDING BUT NOT LIMITED TO WEATHER CONDITIONS AND LENGTH OF TIME MEASURE MUST BE EFFECTIVE. THE FOLLOWING ARE ACCEPTABLE STABILIZATION MEASURES:
 - PERMANENT SEEDING; IN ACCORDANCE WITH APPROVED CONSTRUCTION SPECIFICATION
 - TEMPORARY SEEDING; MAY CONSIST OF SPRING OATS(100LBS/ACRE) AND/OR WHEAT OR CEREAL RYE (150LB/ACRE)
 - HYDRO-MULCHING WITH A TACKIFIER
 - GEOTEXTILE EROSION MATTING
 - SODDING

STORMWATER FACILITIES CONSTRUCTION NOTES

1. ENGINEER SHALL BE NOTIFIED PRIOR TO INSTALLATION OF STORMWATER MANAGEMENT FACILITIES. CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES SHALL BE OBSERVED AND DOCUMENTED BY THE ENGINEER, OR AN OWNER'S REPRESENTATIVE.
2. STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AFTER SUBSTANTIAL COMPLETION OF FINAL SITE GRADING AND SOILS HAVE BEEN STABILIZED.
3. AREAS USED FOR TEMPORARY SEDIMENT BASINS SHALL BE REMOVED IN THEIR ENTIRETY AFTER CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.
4. CONSTRUCTION TRAFFIC, HEAVY EQUIPMENT AND SOIL STOCKPILES SHALL NOT BE PLACED IN AREAS WHERE PROPOSED STORMWATER MANAGEMENT FACILITIES ARE LOCATED.
5. NATIVE SOIL INFILTRATION RATES BELOW STORMWATER FACILITIES SHALL BE VERIFIED BY THE OWNER'S GEOTECHNICAL ENGINEER PRIOR INSTALLATION OF FACILITIES. NATIVE SOIL INFILTRATION RATES SHALL BE EQUAL TO OR GREATER THAN DESIGN INFILTRATION RATES.
6. NATIVE SOILS SHALL BE BLENDED A MINIMUM OF TWO FEET PRIOR TO INSTALLATION OF STORMWATER INFILTRATION FACILITIES TO BREAKUP ANY LOWER PERMEABILITY SEAMS THAT MAY BE PRESENT.
7. THICKER SILT OR CLAY LAYERS SHALL BE OVER-EXCAVATED AND BACKFILLED WITH GRANULAR MATERIALS CONFORMING TO SPECIFICATIONS PER WDNR TECH STANDARD 1004.



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SKETCHWORKS

CLIENT ADDRESS:

**7780 ELMWOOD AVENUE
MIDDLETON, WI 53562**

PROJECT:

**MOUNT HOREB
APARTMENT
DEVELOPMENT**

PROJECT LOCATION:

**1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572**

PLAN MODIFICATIONS:

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1	03.14.2022	SITE PLAN SUBMITTAL
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Designed By: CTD
Reviewed by: MAH
Approved By:

SHEET TITLE:
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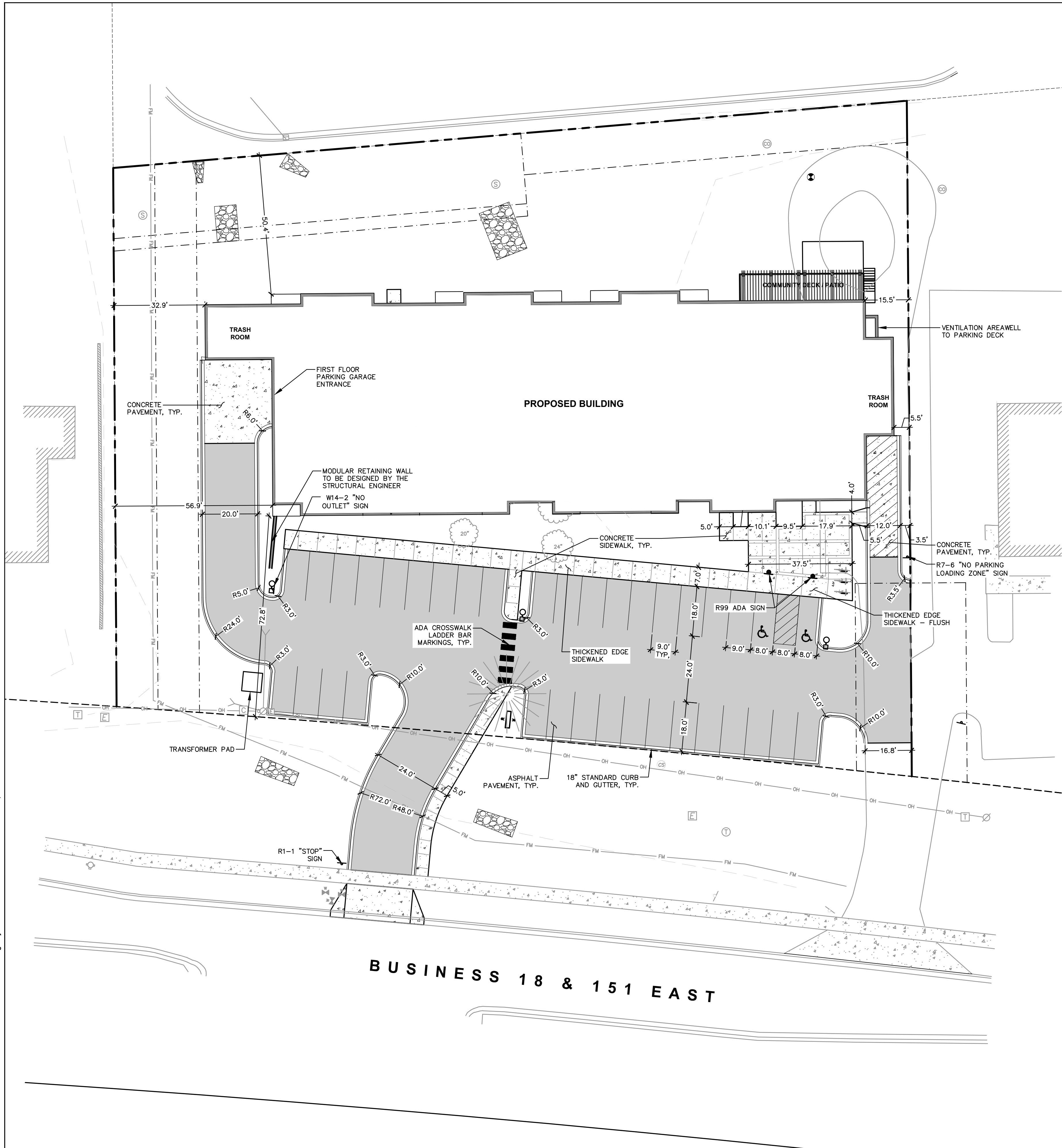
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LEGEND

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	EASEMENT LINE
	BUILDING OUTLINE
	BUILDING OVERHANG
	BUILDING SETBACK LINE
	PAVEMENT SETBACK LINE
	EDGE OF PAVEMENT
	STANDARD CURB AND GUTTER
	REJECT CURB AND GUTTER
	MOUNTABLE CURB AND GUTTER
	8" CONCRETE RIBBON CURB
	ASPHALT PAVEMENT
	HEAVY DUTY ASPHALT PAVEMENT
	CONCRETE PAVEMENT
	HEAVY DUTY CONCRETE PAVEMENT
	STORMWATER MANAGEMENT AREA
	RETAINING WALL
	BOULDER WALL
	RAILING
	FENCE
	LIGHT POLE (REFER TO PHOTOMETRIC PLAN)
	ADA PARKING SIGN
	FLAG POLE
	BOLLARD
	BOLLARD WITH ADA PARKING SIGN
	BIKE RACK
	SAWCUT EXISTING PAVEMENT

SITE INFORMATION BLOCK

SITE ADDRESS	1800 SPRINGDALE STREET
PROPERTY ACREAGE	1.44 ACRES (62,898 SF)
NUMBER OF BUILDING STORIES	3
TOTAL BUILDING SQUARE FOOTAGE	15,562 SF
GROSS BUILDING SQUARE FOOTAGE	47,064 SF
NUMBER OF PARKING STALLS	
SURFACE	
LARGE	34
ACCESSIBLE	2
TOTAL SURFACE	36
UNDERGROUND	
LARGE	37
ACCESSIBLE	1
TOTAL UNDERGROUND	38
NUMBER OF BICYCLE STALLS:	6 EXT. STALLS (38 INT. STORAGE UNITS)
EXISTING VS. PROPOSED SITE COVERAGE	
EXISTING IMPERVIOUS SURFACE AREA	5,975 SF
EXISTING PERVIOUS SURFACE AREA	56,923 SF
EXISTING IMPERVIOUS SURFACE AREA RATIO	0.09
PROPOSED IMPERVIOUS SURFACE AREA	37,067 SF
PROPOSED PERVIOUS SURFACE AREA	25,831 SF
PROPOSED IMPERVIOUS SURFACE AREA RATIO	0.59



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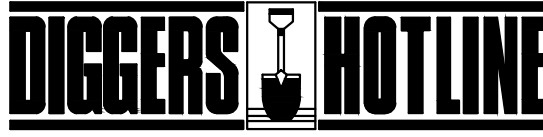
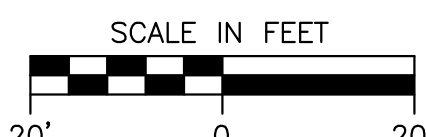
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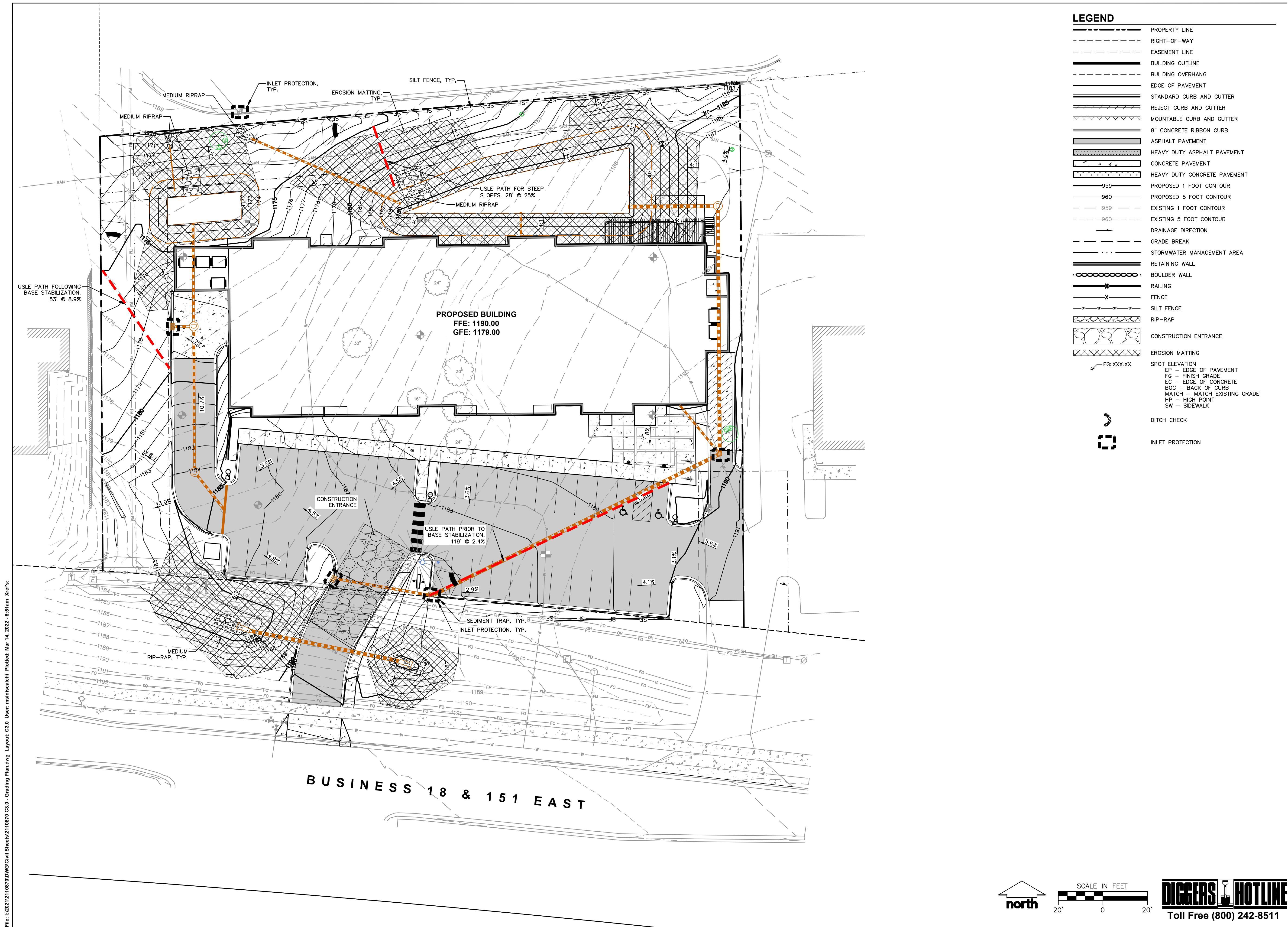
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LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- EASEMENT LINE
- BUILDING OUTLINE
- BUILDING OVERHANG
- EDGE OF PAVEMENT
- STANDARD CURB AND GUTTER
- REJECT CURB AND GUTTER
- MOUNTABLE CURB AND GUTTER
- 6" CONCRETE RIBBON CURB
- ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- PROPOSED 1 FOOT CONTOUR
- PROPOSED 5 FOOT CONTOUR
- EXISTING 1 FOOT CONTOUR
- EXISTING 5 FOOT CONTOUR
- DRAINAGE DIRECTION
- GRADE BREAK
- STORMWATER MANAGEMENT AREA
- RETAINING WALL
- BOULDER WALL
- RAILING
- FENCE
- SILT FENCE
- RIP-RAP
- CONSTRUCTION ENTRANCE
- EROSION MATTING
- SPOT ELEVATION
 - EP - EDGE OF PAVEMENT
 - FG - FINISH GRADE
 - EC - EDGE OF CONCRETE
 - BOC - BACK OF CURB
 - MATCH - MATCH EXISTING GRADE
 - HP - HIGH POINT
 - SW - SIDEWALK
- DITCH CHECK
- INLET PROTECTION



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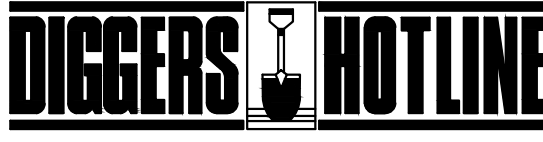
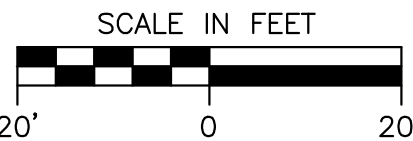
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GRADING AND EROSION
CONTROL PLAN

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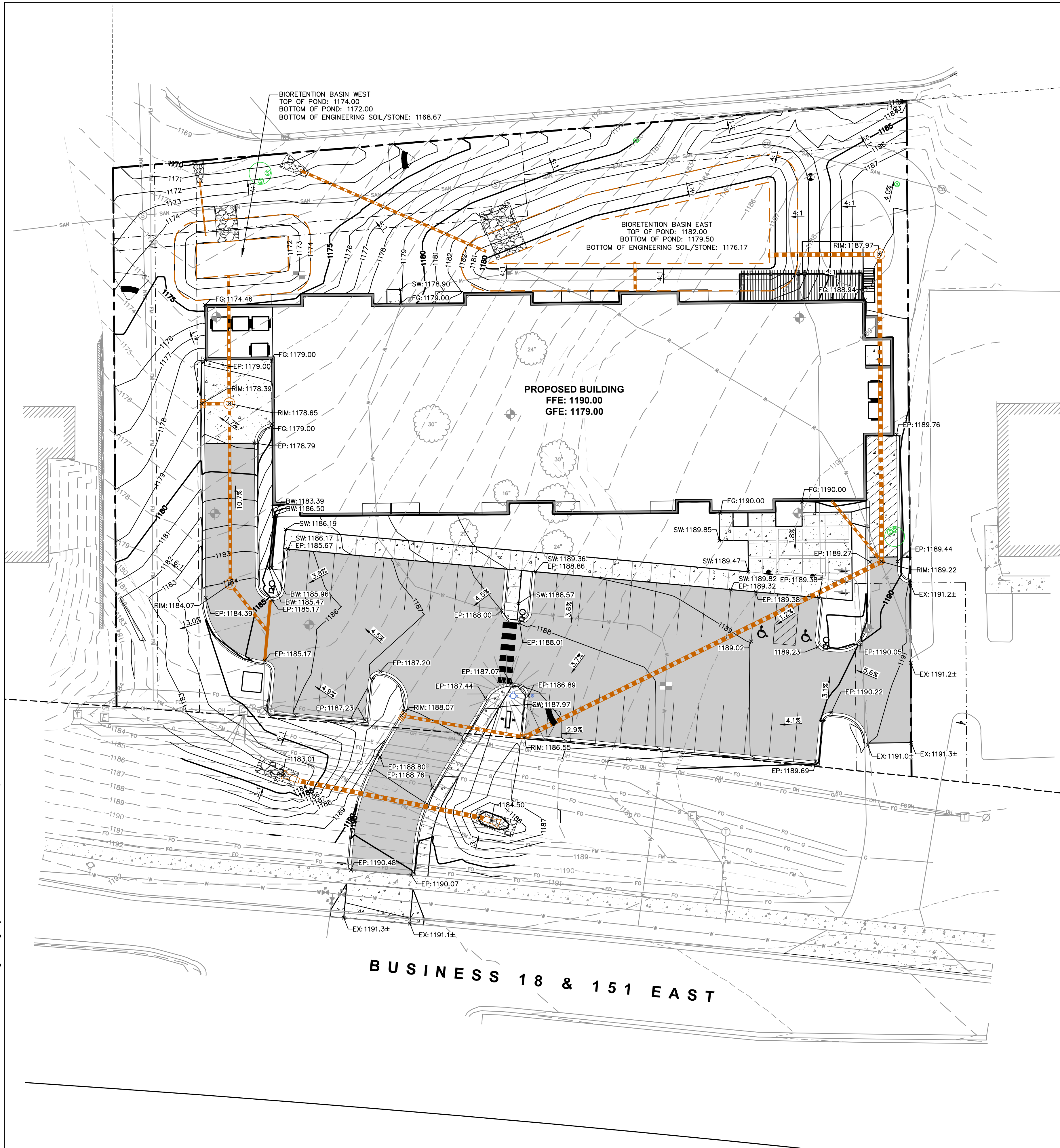
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---	BUILDING OVERHANG
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=====	STANDARD CURB AND GUTTER
=====	REJECT CURB AND GUTTER
=====	MOUNTABLE CURB AND GUTTER
=====	ASPHALT PAVEMENT
=====	CONCRETE PAVEMENT
=====	HEAVY DUTY CONCRETE PAVEMENT
959	PROPOSED 1 FOOT CONTOUR
960	PROPOSED 5 FOOT CONTOUR
959	EXISTING 1 FOOT CONTOUR
960	EXISTING 5 FOOT CONTOUR
→	DRAINAGE DIRECTION
- - - -	GRADE BREAK
X	FENCE
X FG:XXX.XX	SPOT ELEVATION
	EP - EDGE OF PAVEMENT
	FG - FINISH GRADE
	EC - EDGE OF CONCRETE
	BOC - BACK OF CURB
	MATCH - MATCH EXISTING GRADE
	HP - HIGH POINT
	SW - SIDEWALK



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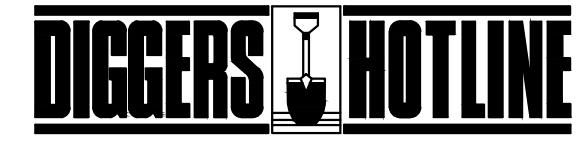
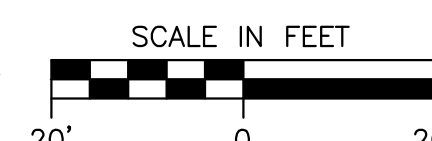
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PLAN**

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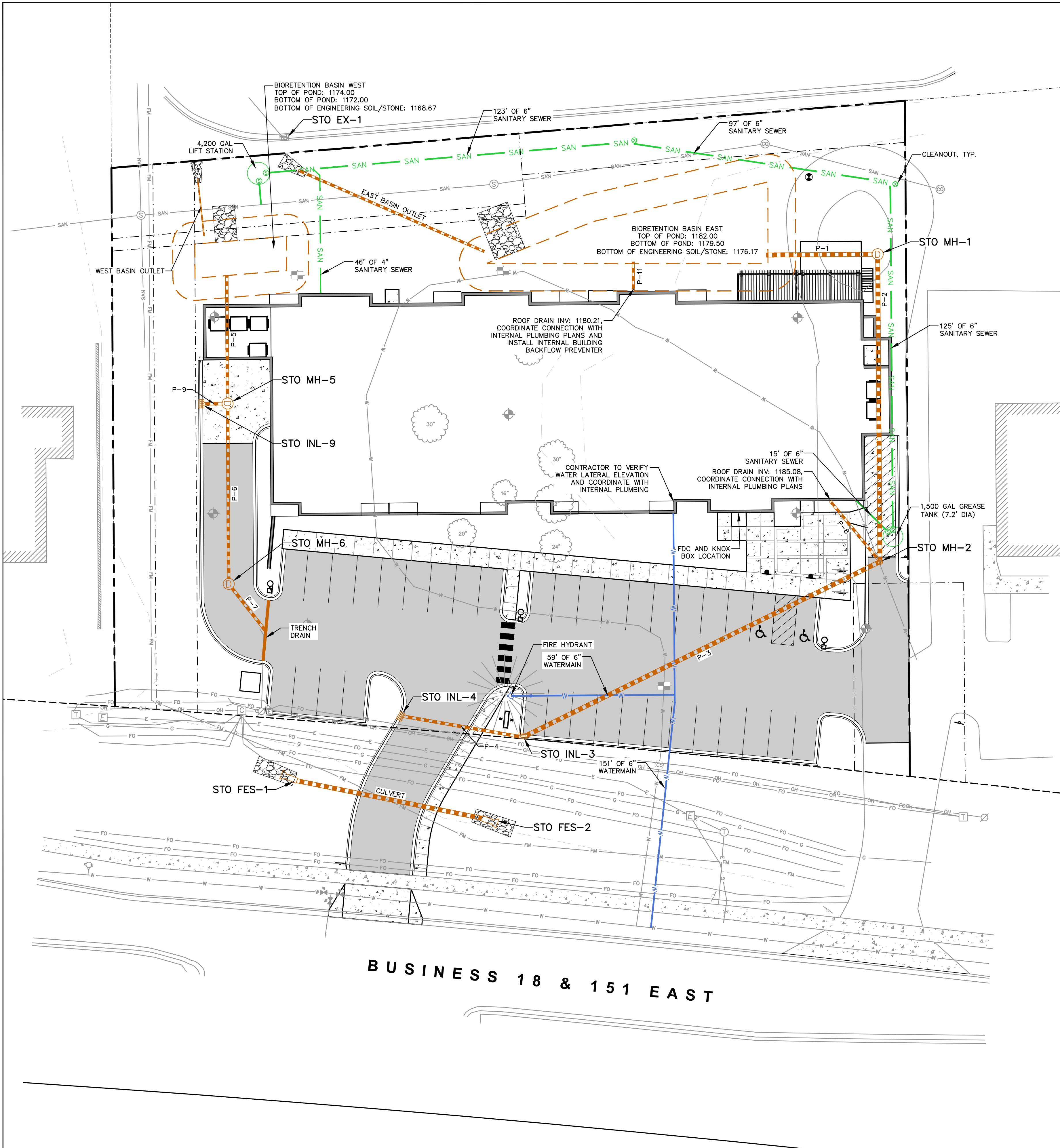
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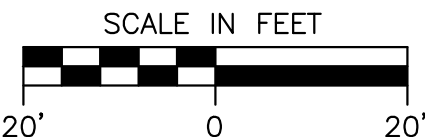
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---	ASPHALT PAVEMENT
---	CONCRETE PAVEMENT
---	HEAVY DUTY CONCRETE PAVEMENT
---	FENCE
---	SANITARY SEWER
---	WATERMAIN
---	STORM SEWER

PROPOSED STORM SEWER STRUCTURE TABLE					
LABEL	RIM EL. (FT)	INVERT EL. (FT)	DEPTH (FT)	STRUCTURE DESC.	FRAME & GRATE
STO EX-1	1167.33		2.2	2 x 3 INLET	R-3067 TYPE L
STO FES-1	1184.73	E INV: 1183.02 (18")	-	18 IN RCP FES	-
STO FES-2	1186.21	W INV: 1184.50 (18")	-	18 IN RCP FES	-
STO INL-3	1186.55	NE INV: 1182.72 (18") W INV: 1182.82 (12")	3.8	2 x 3 INLET	R-3067 TYPE L
STO INL-4	1188.07	E INV: 1184.86 (12")	3.2	2 x 3 INLET	R-3067 TYPE L
STO INL-9	1178.54	E INV: 1177.37 (12")	2.7	2 x 3 INLET	R-3067 TYPE L
STO MH-1	1187.97	W INV: 1180.45 (18") S INV: 1180.55 (18")	7.6	48 IN MH (FLAT)	R-1550 SOLID LID
STO MH-2	1189.22	N INV: 1181.38 (18") SW INV: 1181.48 (18") NW INV: 1184.00 (10")	7.8	36 IN MH (FLAT)	R-2050 TYPE D
STO MH-5	1178.65	N INV: 1172.93 (12") W INV: 1177.50 (12") S INV: 1175.95 (12")	6.8	48 IN MH (FLAT)	R-1550 SOLID LID
STO MH-6	1184.07	N INV: 1178.89 (12") SE INV: 1178.99 (12")	5.2	48 IN MH (FLAT)	R-1550 SOLID LID

PROPOSED STORM SEWER PIPE TABLE							
LABEL	FROM	TO	LENGTH	INVERT EL. (FT)	DISCHARGE EL. (FT)	SLOPE	SIZE & MATERIAL
CULVERT	STO FES-2	STO FES-1	68'	1184.50	1183.02	2.17%	18 IN RCP
EAST BASIN OUTLET			73'	1179.92	1171.67	11.25%	10 IN HDPE
P-1	STO MH-1		40'	1180.45	1179.50	2.36%	18 IN RCP
P-2	STO MH-2	STO MH-1	111'	1181.38	1180.55	0.75%	18 IN RCP
P-3	STO INL-3	STO MH-2	144'	1182.72	1181.48	0.86%	18 IN RCP
P-4	STO INL-4	STO INL-3	45'	1184.86	1182.82	4.51%	12 IN RCP
P-5	STO MH-5		46'	1172.93	1172.00	2.00%	12 IN RCP
P-6	STO MH-6	STO MH-5	65'	1178.89	1175.95	4.50%	12 IN RCP
P-7		STO MH-6	21'	1179.95	1178.99	4.50%	12 IN RCP
P-8		STO MH-2	28'	1185.07	1184.00	3.78%	10 IN HDPE
P-9	STO MH-5	STO INL-9	10'	1177.50	1177.37	1.30%	12 IN RCP
P-11			10'	1180.21	1180.00	2.00%	10 IN HDPE
WEST BASIN OUTLET			21'	1172.42	1171.39	5.00%	4 IN PVC

NOTE: INLET RIM ELEVATIONS ARE TO THE GUTTER FLOW LINE.



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CLIENT:

SKETCHWORKS

CLIENT ADDRESS:

7780 ELMWOOD AVENUE
MIDDLETON, WI 53562

PROJECT:

MOUNT HOREB
APARTMENT
DEVELOPMENT

PROJECT LOCATION:

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MT HOREB, DANE COUNTY
WI, 53572

PLAN MODIFICATIONS:

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Designed By: CTD
Reviewed By: MAH
Approved By:

SHEET TITLE:

UTILITY PLAN

SHEET NUMBER:

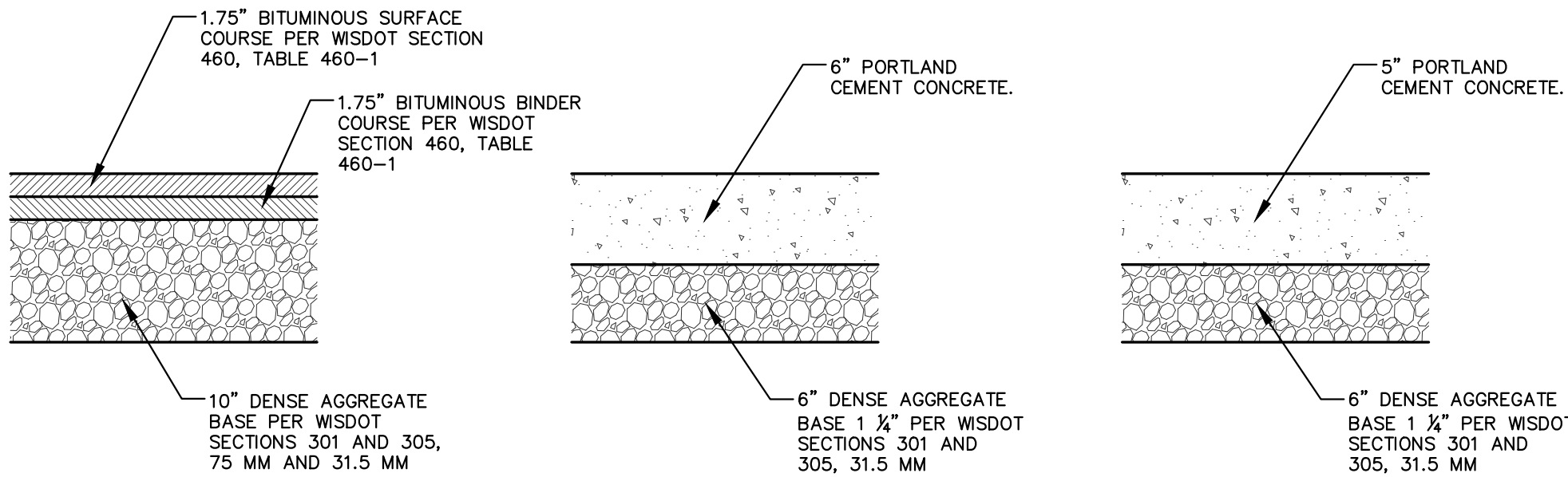
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JSD PROJECT NO:

21-10870

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STANDARD ASPHALT PAVEMENT SECTION

CONCRETE PAVEMENT SECTION

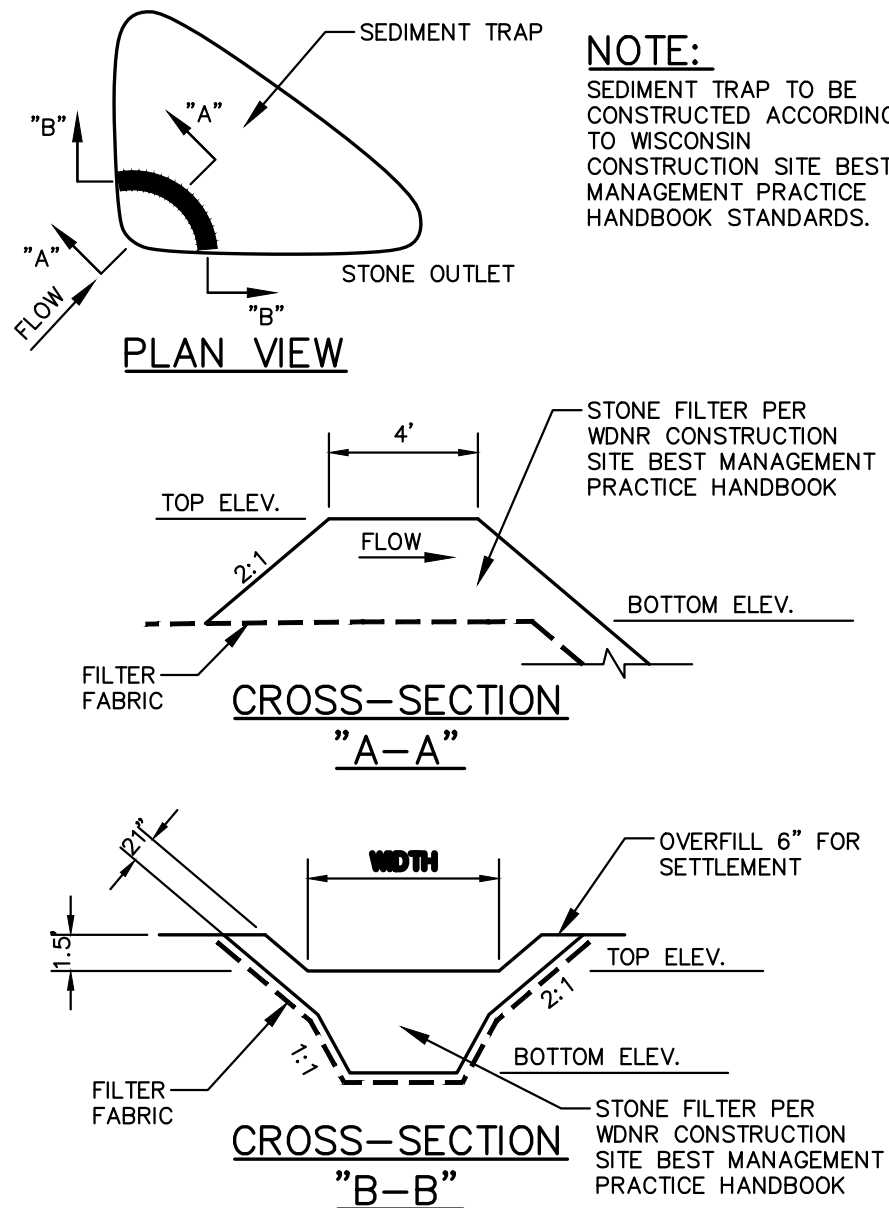
CONCRETE SIDEWALK SECTION

GENERAL NOTES:

- REFER TO PAVEMENT RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT, PREPARED BY CGC, INC. TITLED "GEOTECHNICAL EXPLORATION REPORT" DATED JANUARY 12, 2022. IF THERE ARE ANY DISCREPANCIES BETWEEN THIS DETAIL AND THE PAVEMENT RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT, THE GEOTECHNICAL REPORT SHALL GOVERN.
- WSDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, INCLUDING SUPPLEMENTAL SPECIFICATIONS, COMPACTION REQUIREMENTS:
 - BITUMINOUS CONCRETE: REFER TO SECTION 460-3.
 - BASE COURSE: REFER TO SECTION 301.3.4.2, STANDARD COMPACTION.

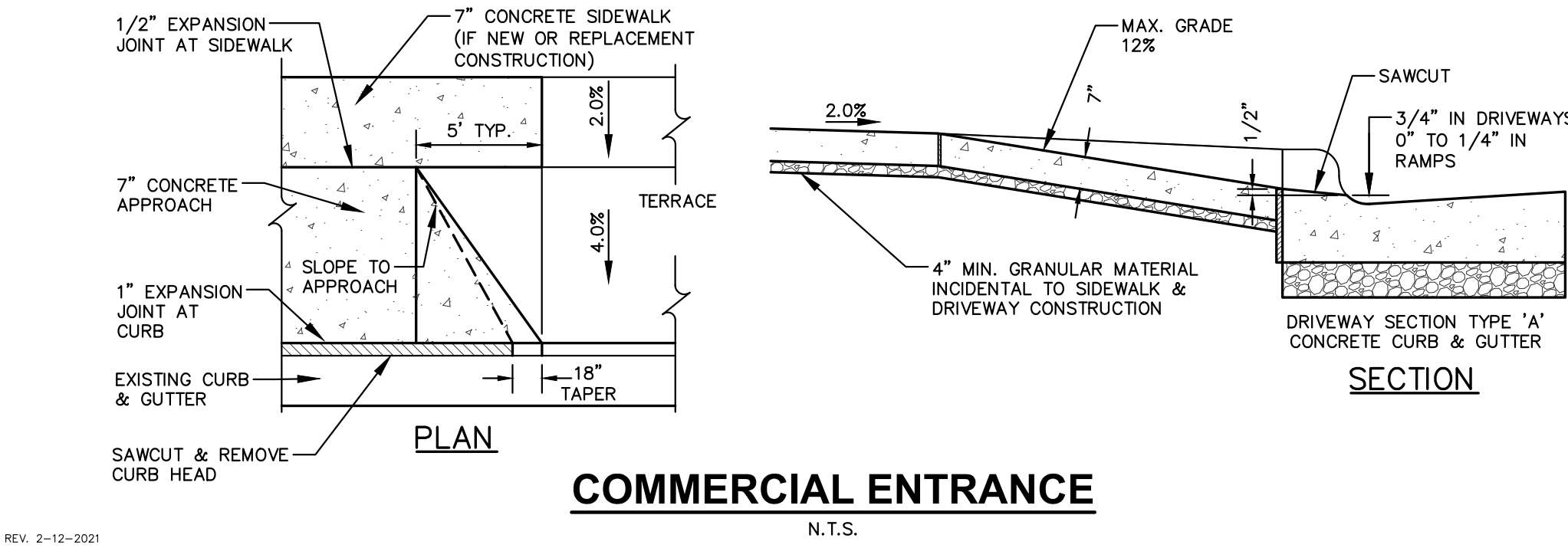
PAVEMENT SECTIONS

REV. 7-01-2019 N.T.S.

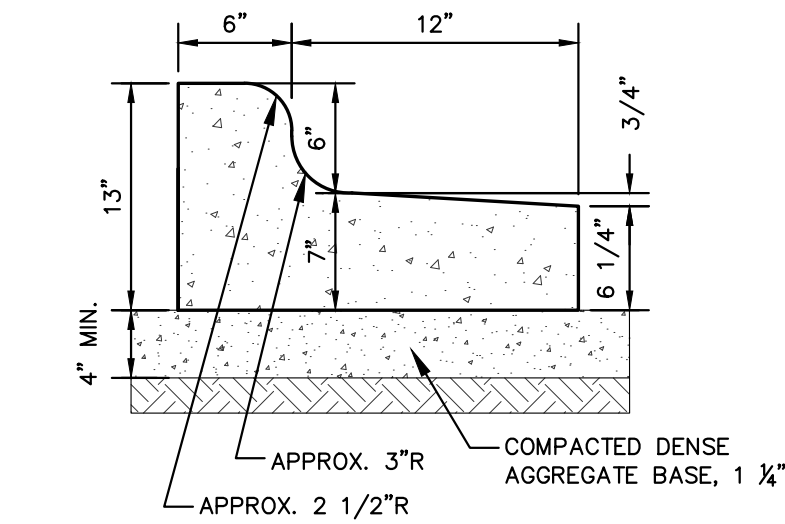


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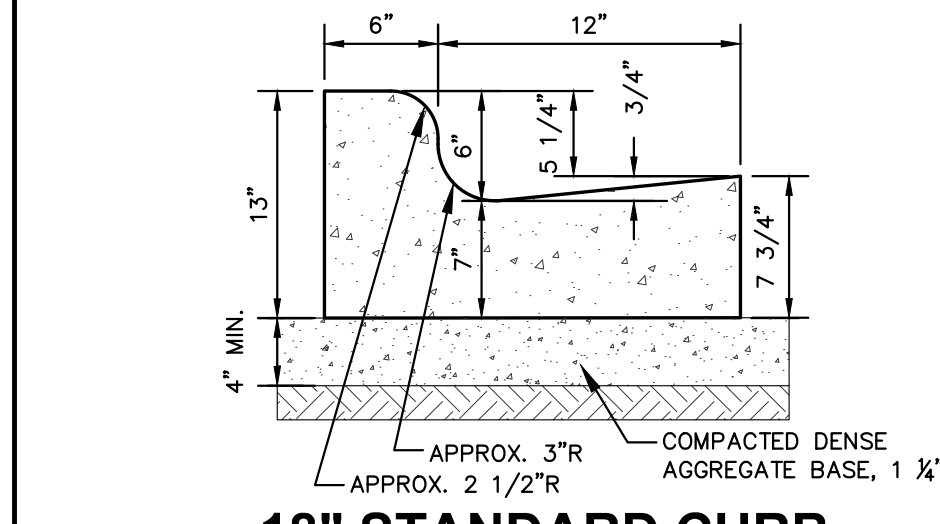
REV. 11-19-2018 N.T.S.



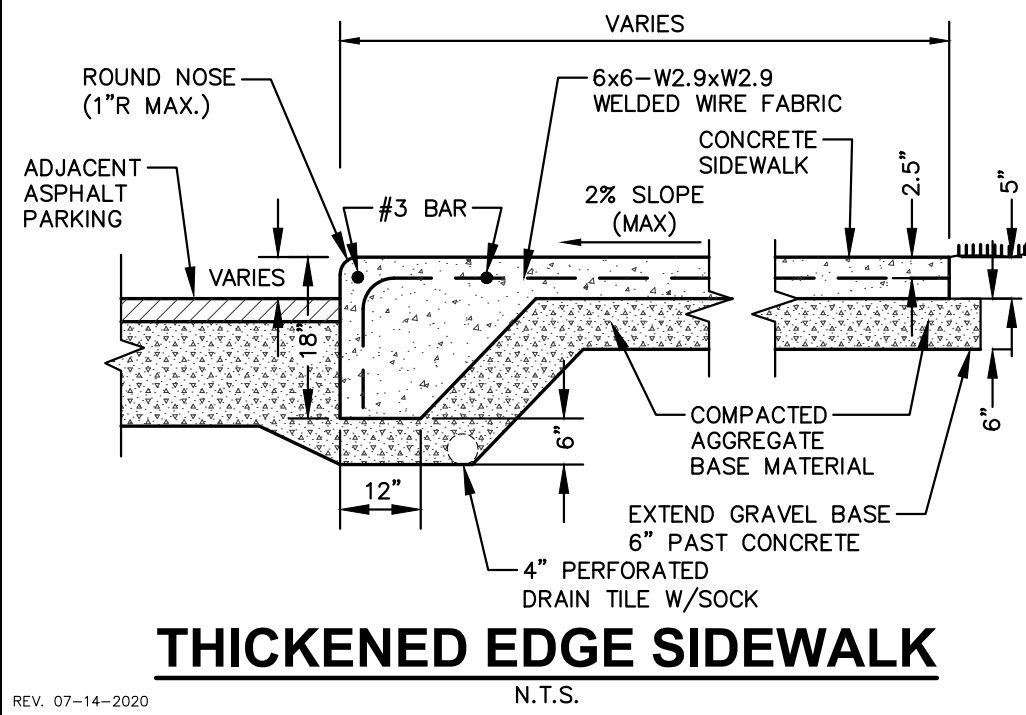
REV. 2-12-2021



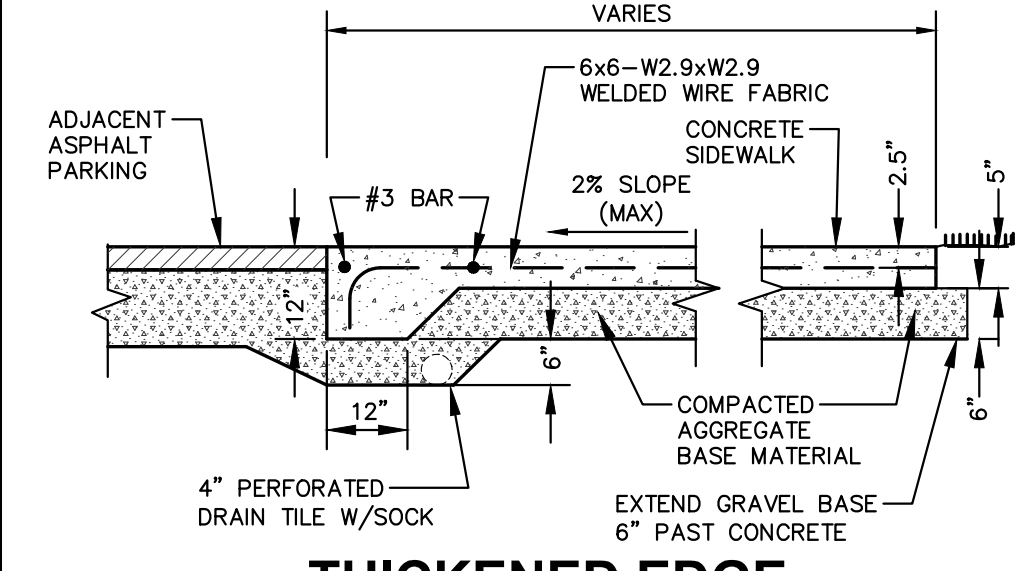
REV. 12-17-2018



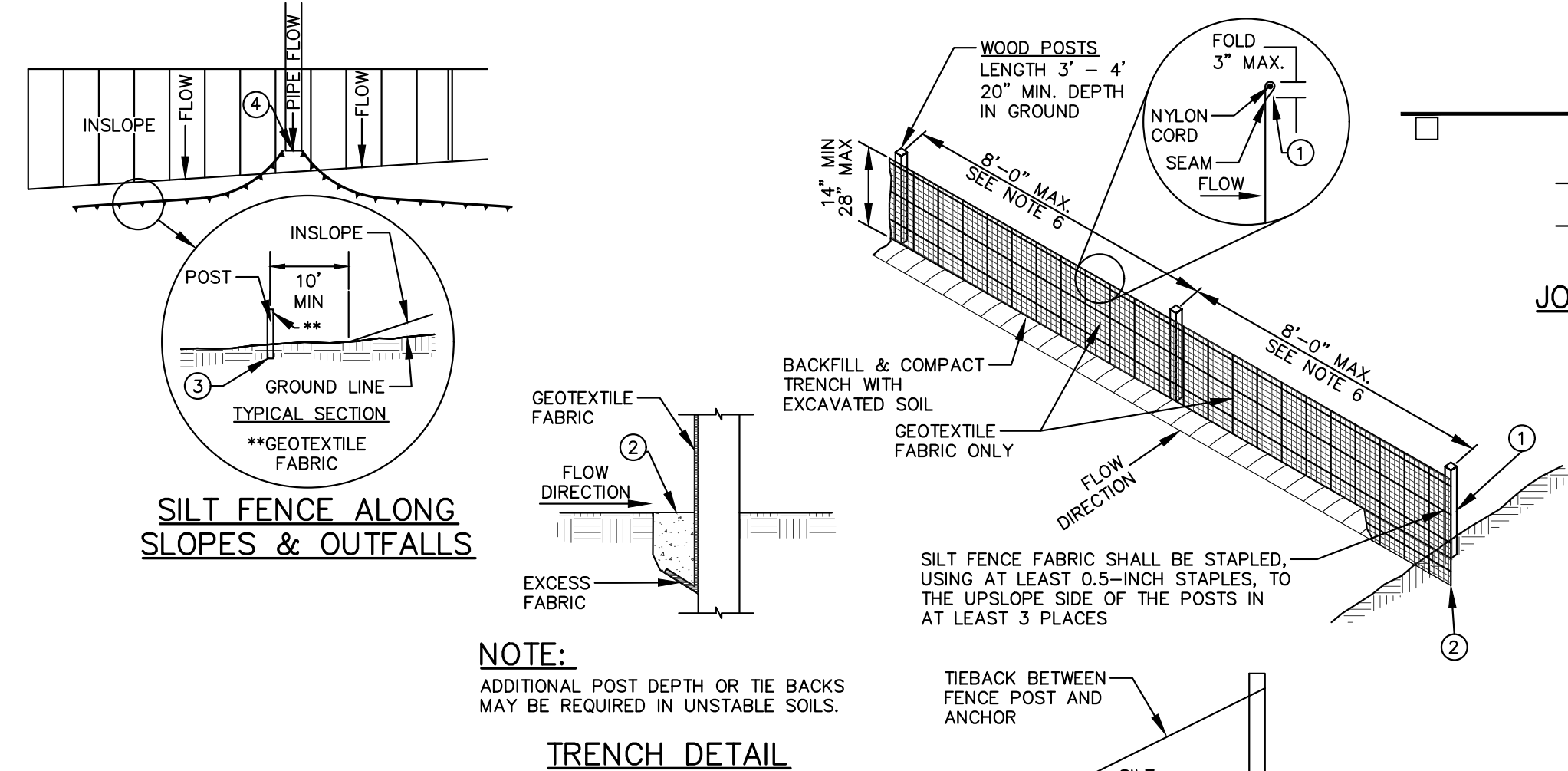
REV. 12-17-2018



REV. 07-14-2020

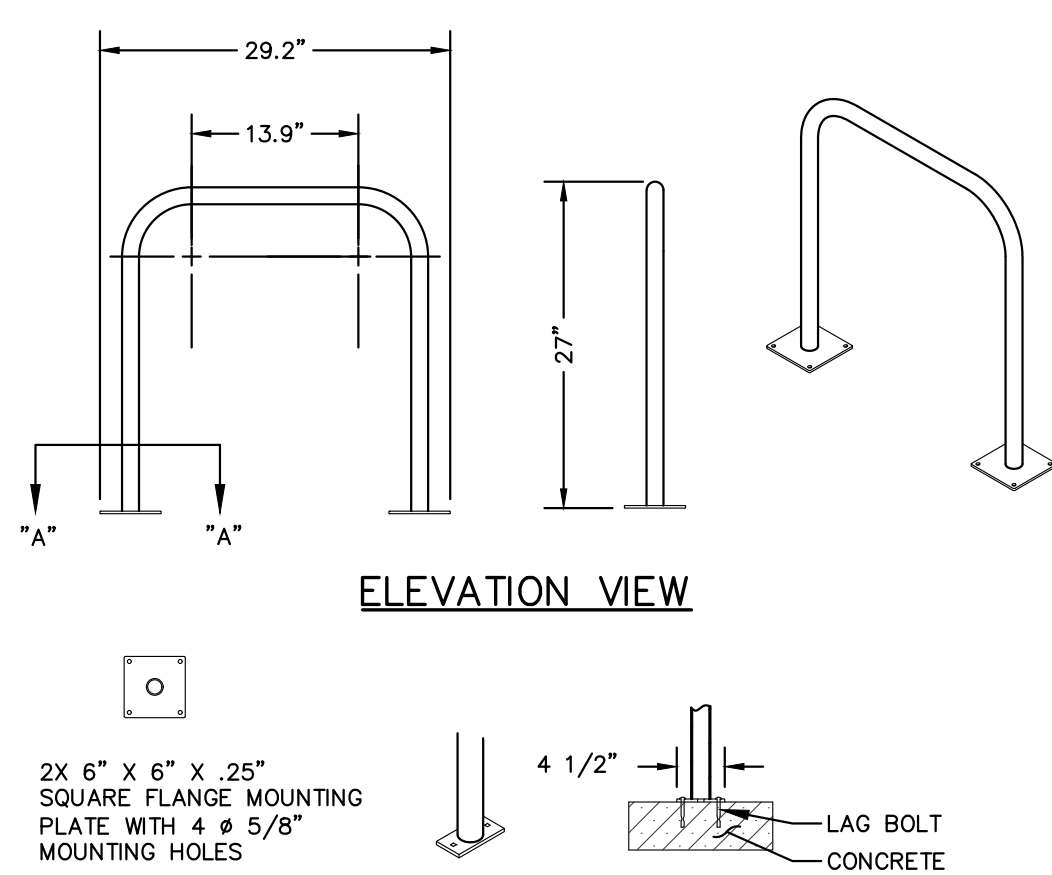


REV. 07-14-2020



GENERAL NOTES:

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

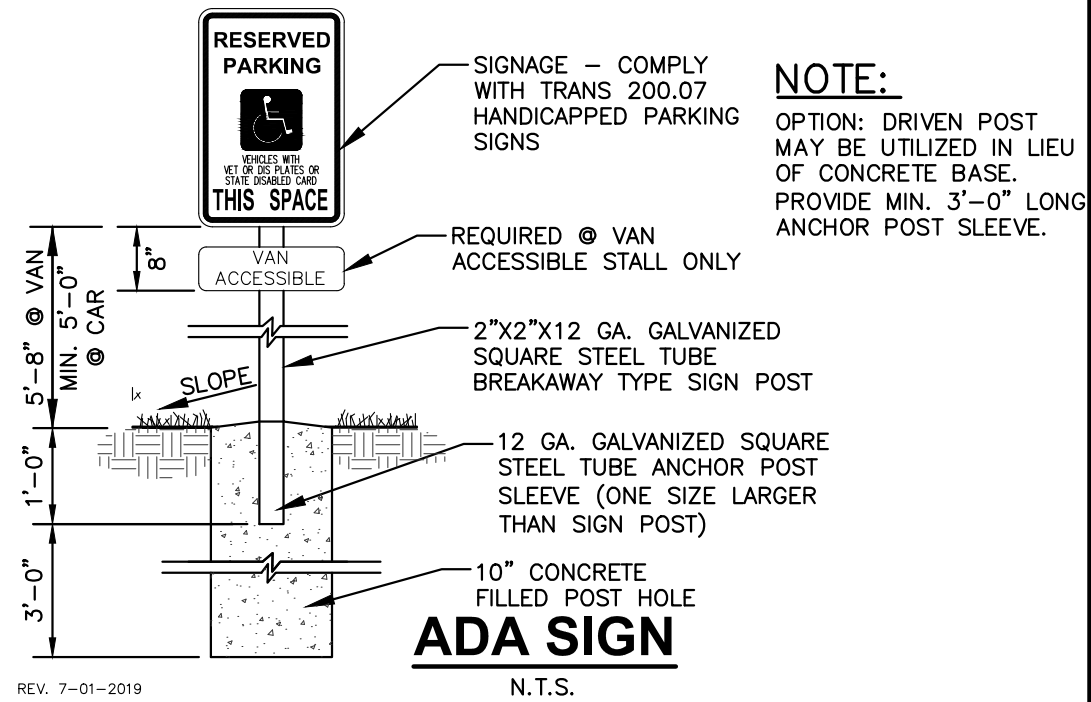


GENERAL NOTES:

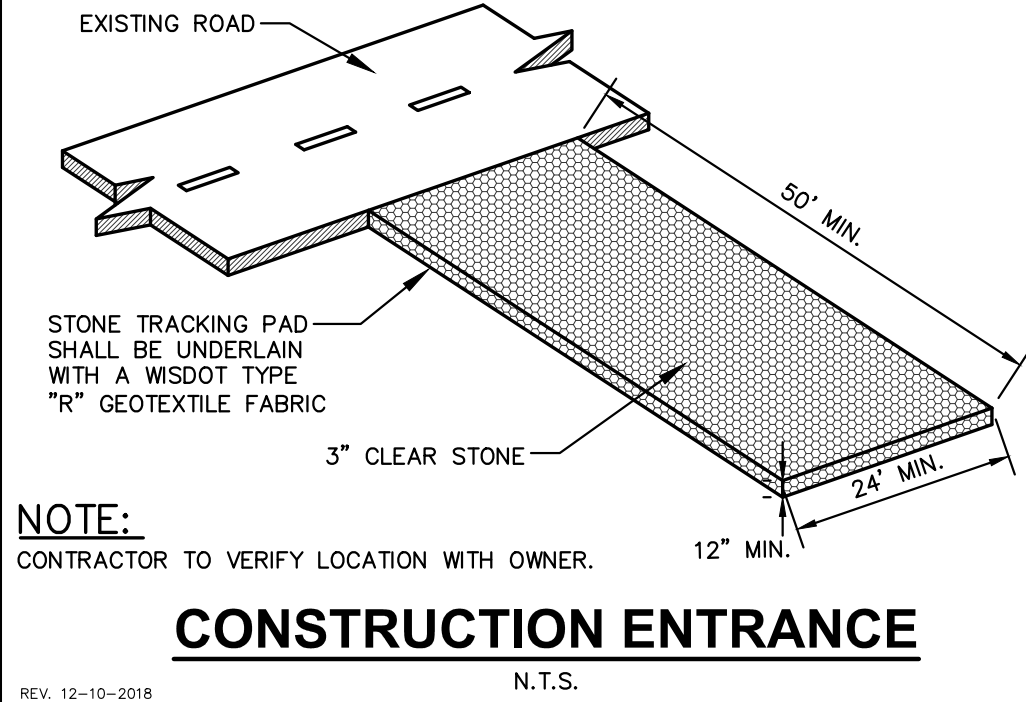
- DO NOT SCALE DRAWING.
- INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

REV. 12-10-2018

N.T.S.



REV. 7-01-2019



REV. 12-10-2018



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Approved By:

SHEET TITLE:

DETAILS

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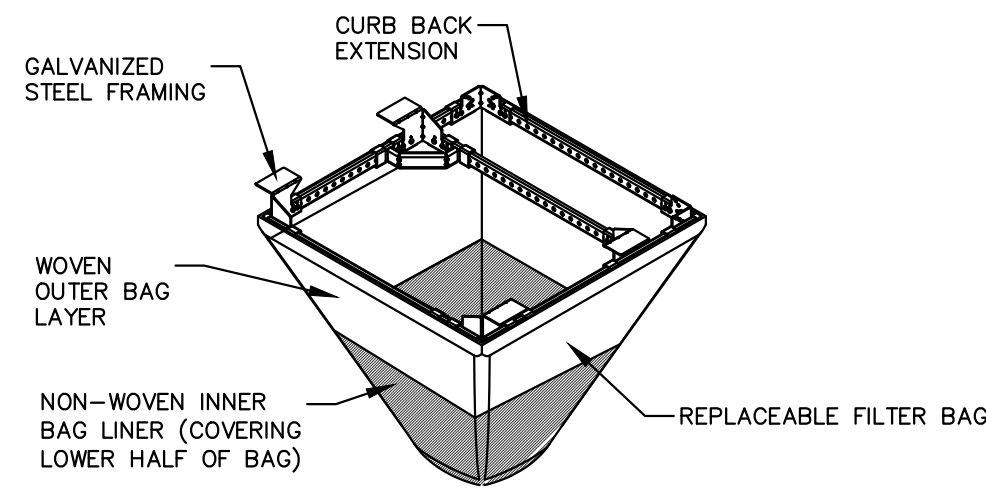
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FLEXSTORM INLET FILTERS TO MEET DANE COUNTY EROSION CONTROL STANDARDS



(HB) HYBRID FILTER BAG SPECIFICATIONS:

CATCH-IT INLET FILTER (Temporary Inlet Protection)						
Neenah Casting	Inlet Type	Grate Size	Opening Size	Bag Cap (ft.)	Flow Ratings (CFS)	
					HB (Hybrid Bag)	Bypass
3067	Curb Box	35.25 x 17.75	33.0 x 15.0	4.4	2.0	5.8
3246A	Curb Box	35.75 x 23.875	33.5 x 21.0	4.2	1.1	3.3
3030	Square/Rect (SQ)	23 x 16	20.5 x 13.5	1.6	0.7	2.2
3067-C	Square/Rect (SQ)	35.25 x 17.75	33 x 15	3.2	1.0	5.2
R-2501	Round (RD)	~26	~24	2.3	0.8	5.2
R-1772/2560	Round (RD)	22.25-23.5	20.5-21	1.5	0.6	4.6
						62MRD22HB

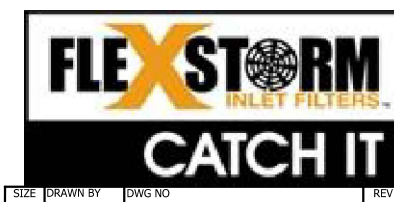
FRAMED INLET PROTECTION

N.T.S.

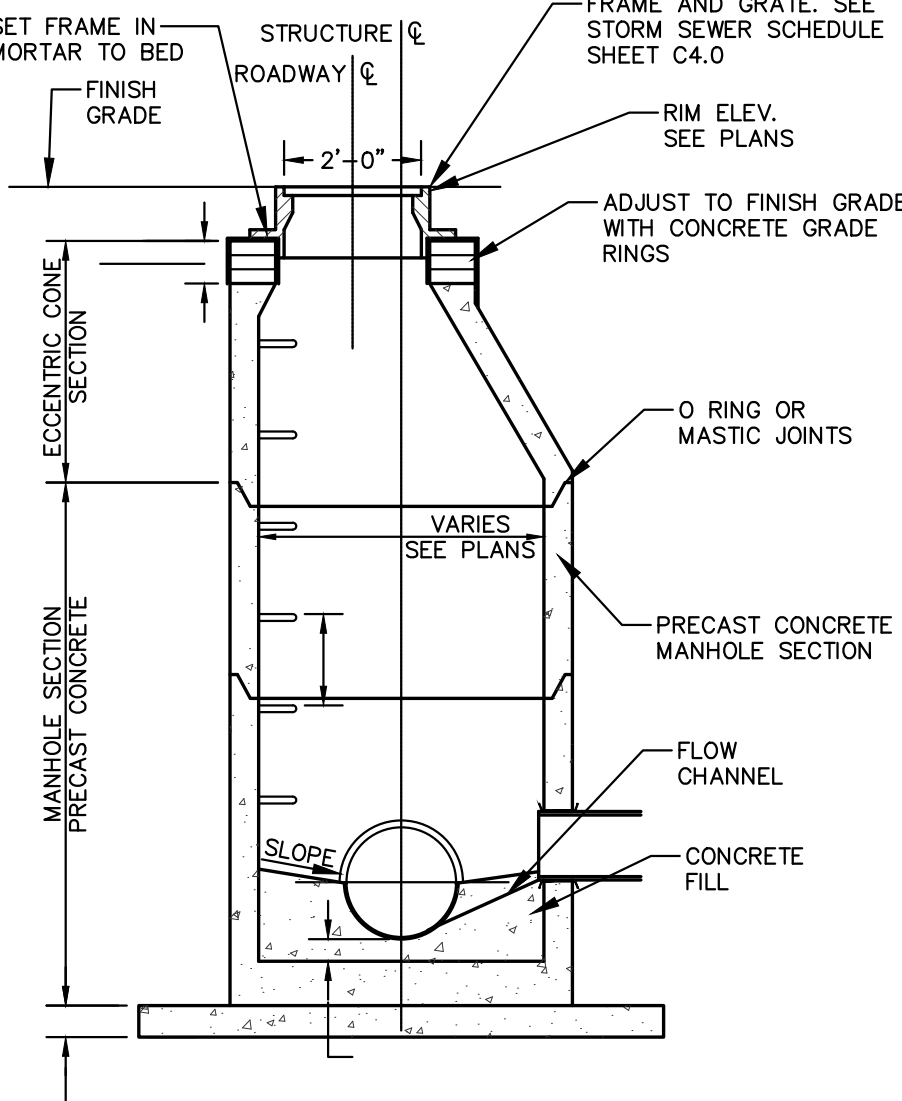
- INSTALLATION INSTRUCTIONS:
1. REMOVE GRATE FROM THE DRAINAGE STRUCTURE
 2. CLEAN STONE AND DIRT FROM LEDGE (LIP) OF DRAINAGE STRUCTURE
 3. DROP THE INLET FILTER THROUGH THE CLEAR OPENING SUCH THAT THE HANGERS REST FIRMLY ON THE LIP OF THE STRUCTURE
 4. REPLACE THE GRATE AND CONFIRM IT IS NOT ELEVATED MORE THAN 1/8"

- MAINTENANCE GUIDELINES:
1. EMPTY THE SEDIMENT BAG IF MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS
 2. REMOVE THE GRATE, ENGAGE THE LIFTING POINTS, AND LIFT FILTER FROM THE DRAINAGE STRUCTURE.
 3. DISPOSE OF SEDIMENT AND DEBRIS BY THE ENGINEERING OR MAINTENANCE CONTRACT 4. ALTERNATIVELY, AN INDUSTRIAL VACUUM CAN BE USED TO COLLECT SEDIMENT FROM THE FILTER BAG

Woven and Non-Woven Geotextile Filter Bag Properties (Minimum Average Roll Values)			
PROPERTY	TEST METHOD	WOVEN (OUTER)	NON-WOVEN (LINER)
TENSILE STRENGTH	ASTM D4632	350 x 225 Lbs	100 Lbs
ELONGATION	ASTM D4632	20% x 15%	50%
CBR PUNCTURE	ASTM D6241	1000 Lbs	65 Lbs
TRAPEZOIDAL TEAR	ASTM D4533	110 x 75 Lbs	45 Lbs
UV RESISTANCE	ASTM D4355	90%	70%
OPENING SIZE (AOS)	ASTM D4751	20 US STD SIEVE	40 US STD SIEVE
PERMITTIVITY	ASTM D4481	1.5 Sec ⁻¹	2.0 Sec ⁻¹
WATER FLOW RATE	ASTM D4481	200 gal/min/ft ²	145 gal/min/ft ²
MINIMUM FILTER BAG VOLUME		2 CUBIC FT	

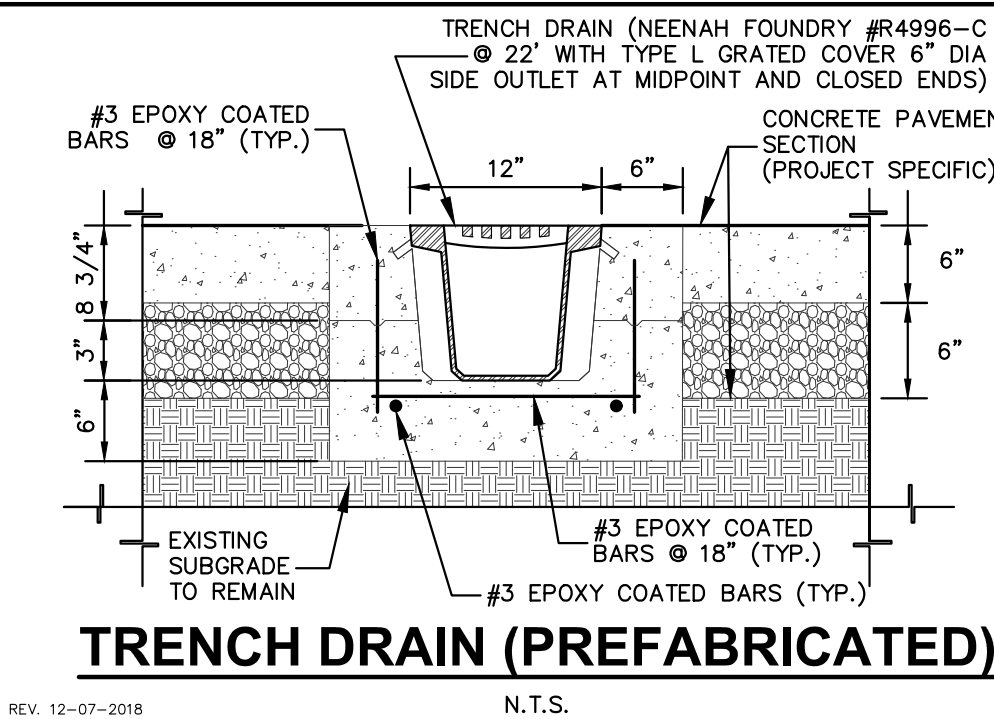


REV. 12-07-2018



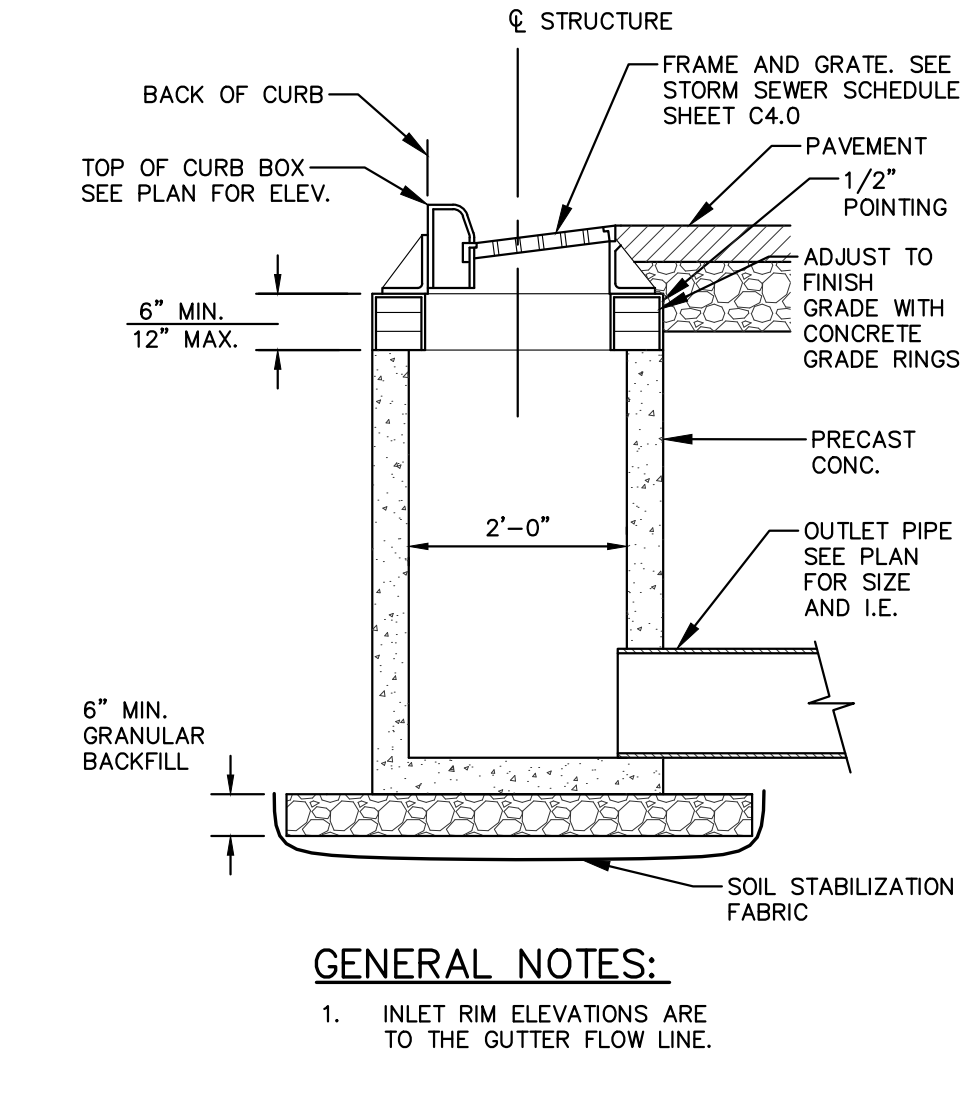
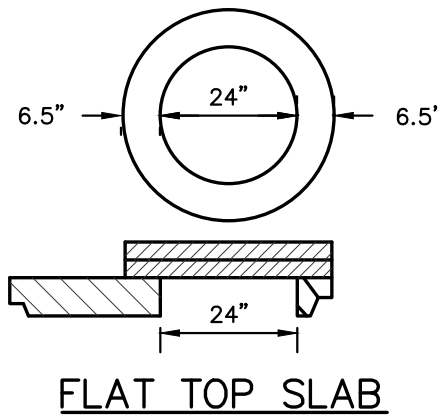
STORM MANHOLE

N.T.S.



GENERAL NOTES:

1. MANHOLE CONSTRUCTION TO MEET REQUIREMENTS OF ASTM C478.
2. PROVIDE FLAT TOP SLAB FOR MANHOLES 5' OR LESS IN DEPTH. FLAT TOP SLABS TO BE IN-BELL TYPE.
3. JOINTS SHALL BE WATERTIGHT. USE BUTYL RUBBER GASKET.
4. USE MORTAR FOR PIPE CONNECTIONS.
5. ECCENTRIC CONE SECTION OF MANHOLE TO BE SET OUTSIDE OF VEHICULAR WHEEL PATH NEAR ROADWAY.

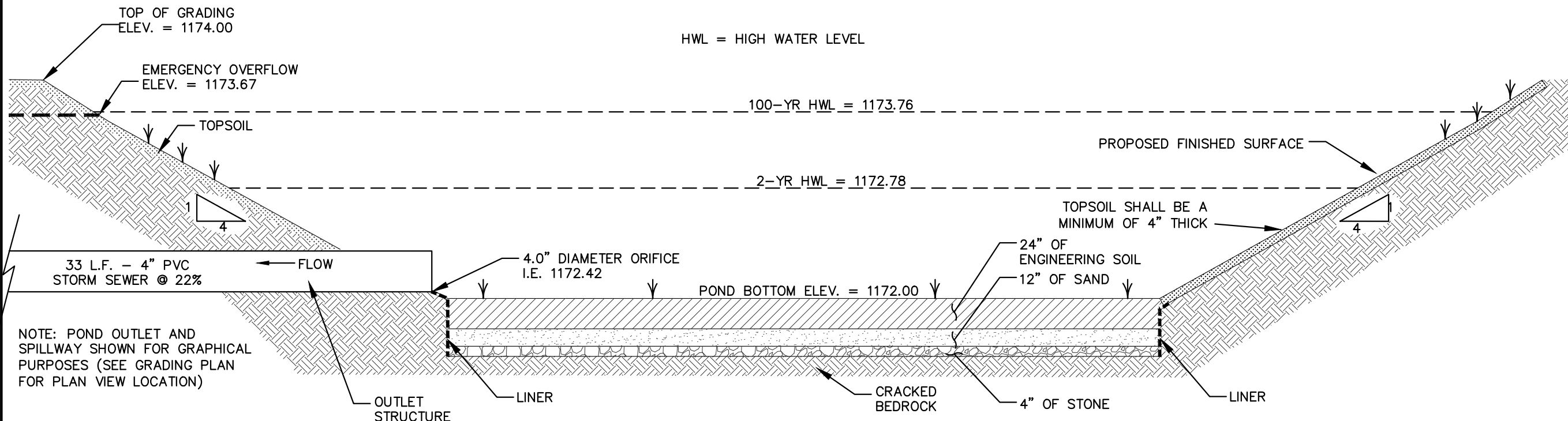


GENERAL NOTES:

1. INLET RIM ELEVATIONS ARE TO THE GUTTER FLOW LINE.

STORM INLET

N.T.S.



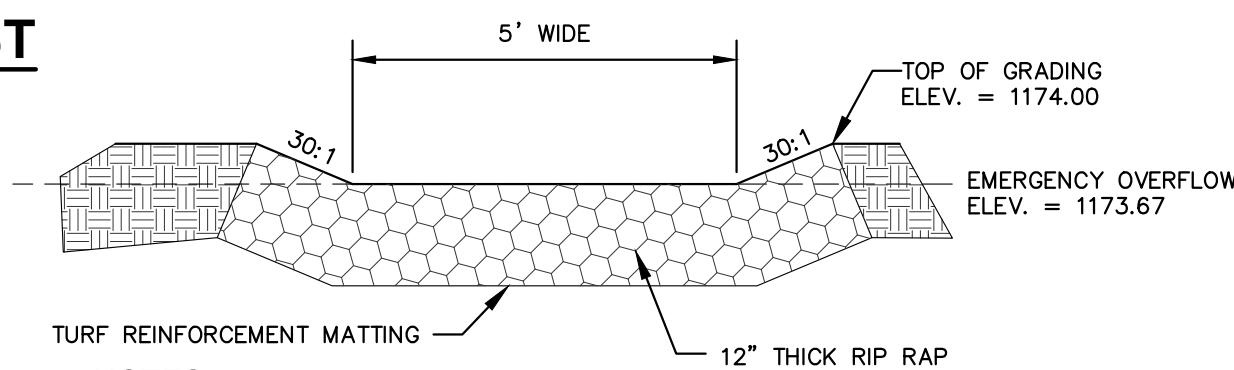
CROSS-SECTION

N.T.S.

BIORETENTION BASIN WEST

N.T.S.

NOTE: REFER TO BIORETENTION BASIN NOTES BELOW

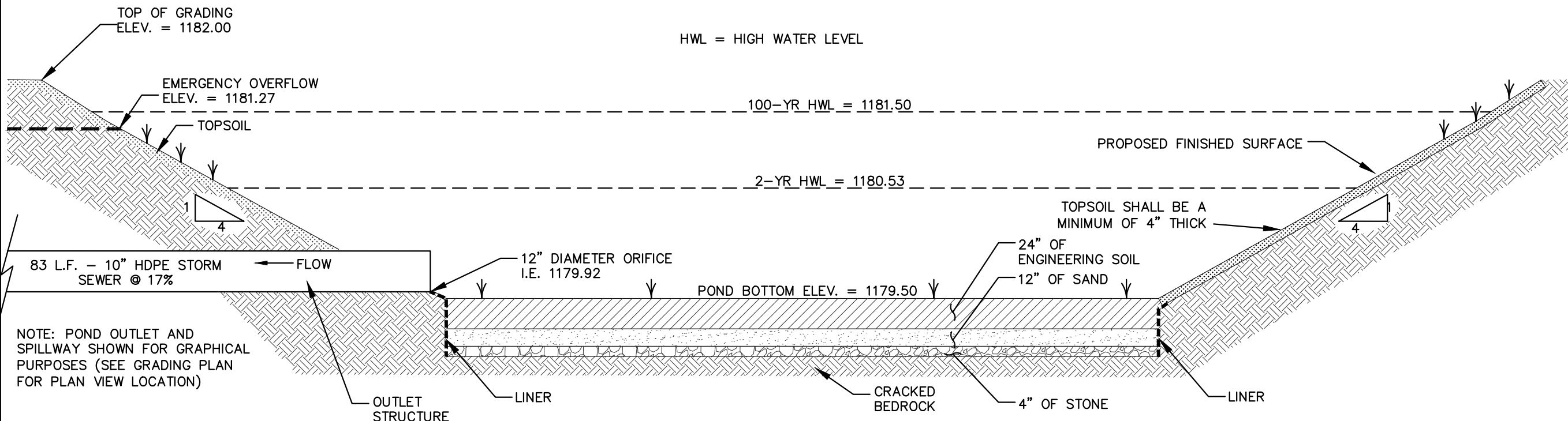


NOTES

1. EXTEND TURF REINFORCEMENT MATTING 2' BELOW THE ELEVATION OF THE EMERGENCY SPILLWAY ON THE INSIDE OF THE POND.

EMERGENCY OVER FLOW DETAIL

N.T.S.



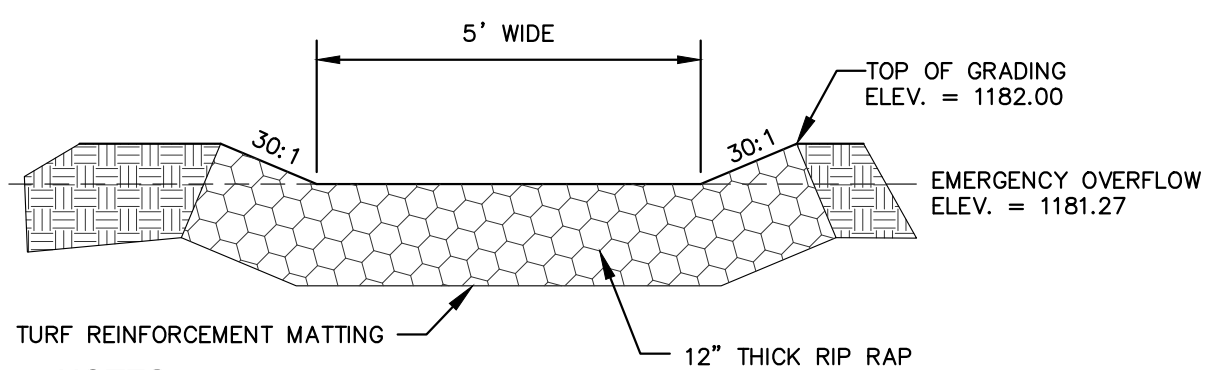
CROSS-SECTION

N.T.S.

BIORETENTION BASIN EAST

N.T.S.

NOTE: REFER TO BIORETENTION BASIN NOTES BELOW



NOTES

1. EXTEND TURF REINFORCEMENT MATTING 2' BELOW THE ELEVATION OF THE EMERGENCY SPILLWAY ON THE INSIDE OF THE POND.

EMERGENCY OVER FLOW DETAIL

N.T.S.

NOTE:

INFILTRATION DEVICES ARE DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR), COUNTY, MUNICIPALITY, AND ENGINEERING STANDARD OF CARE. ALL DESIGNATED INFILTRATION AREAS (e.g. RAIN GARDENS, INFILTRATION BASINS, BIORETENTION DEVICES) SHALL BE FENCED PRIOR TO CONSTRUCTION AND REMAIN UNDISTURBED AND PROTECTED DURING THE CONSTRUCTION OF PROPOSED SITE IMPROVEMENTS. PROPOSED BIORETENTION DEVICES SHALL NOT BE CONSTRUCTED UNTIL THE DEVICE'S CONTRIBUTING WATERSHED AREA MEETS ESTABLISHED VEGETATION REQUIREMENTS SET FORTH WITHIN THE RESPECTIVE WDNR TECHNICAL STANDARDS. IF THE LOCATION OF THE INFILTRATION AREA CONFLICTS WITH CONSTRUCTION STAGING AND/OR CONSTRUCTION TRAFFIC AND IS DISTURBED, COMPACTION MITIGATION WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR IS REQUIRED TO PROVIDE QUALIFIED STAFF FOR INSPECTION AND OBSERVATION OF THE CONSTRUCTION ACTIVITIES RELATING TO ALL JOB SITE REGULATORY COMPLIANCE INCLUDING THE PROTECTION AND CONSTRUCTION OF ALL STORMWATER MANAGEMENT FEATURES. ANY OBSERVATION OF PLAN OR SITE DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

THE STORMWATER MANAGEMENT FEATURES CONTAINED WITHIN THIS PLAN SET HAVE BEEN DESIGNED IN ACCORDANCE WITH APPLICABLE STANDARDS SET FORTH IN WISCONSIN DNR NR151 AND LOCAL ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER CONSTRUCTION PRACTICES HAVE BEEN UTILIZED AND THAT STORMWATER MANAGEMENT FEATURES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH APPROVED DESIGN PLANS. JSD PROFESSIONAL SERVICES, INC. (JSD) SHALL NOT BE LIABLE FOR ANY CONSTRUCTION PRACTICES OR INSTALLATION WHICH DEVIATES FROM THE APPROVED PLAN SET. ONCE THE OWNER HAS PROVIDED FINAL APPROVAL TO THE WORK PERFORMED BY THE CONTRACTOR AND ENSURED COMPLIANCE WITH THE PLAN, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN STORMWATER MANAGEMENT FEATURES IN ACCORDANCE WITH THE RECORDED MAINTENANCE AGREEMENT. PROPER OPERATION IS DEPENDENT ON A MULTITUDE OF VARIABLES INCLUDING WEATHER. THESE COMPONENTS REQUIRE ONGOING MAINTENANCE FOR WHICH THE OWNER IS RESPONSIBLE. JSD TAKES NO RESPONSIBILITY FOR PROPER OPERATION OF THE WATER QUALITY COMPONENTS.

SAND STORAGE LAYER: IF NATIVE SOIL INFILTRATION RATES ARE GREATER THAN OR EQUAL TO THE DESIGN SAND LAYER (3.6 IN/HR), NATIVE SOILS MAY BE USED. GEOTECHNICAL CONSULTANT SHALL PROVIDE THIS INFORMATION IN WRITTEN DOCUMENTATION FOR VERIFICATION PRIOR TO CONSTRUCTION.

AS-BUILT SURVEY AND CERTIFICATION: UPON CONSTRUCTION COMPLETION AND STABILIZATION, AN AS-BUILT SURVEY IS TO BE CONDUCTED FOR BASIN AND CERTIFIED BY THE ISSUING ENGINEER. SURVEYOR IS TO CONFIRM THE TEMPORARY 3" ORIFICE IN THE BIORETENTION BASIN OUTLET HAS BEEN PLUGGED AND SEALED. AS-BUILT PLANS ARE TO BE SUBMITTED TO MUNICIPALITY FOR FINAL APPROVAL.

BIORETENTION BASIN NOTES



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Reviewed By: MAH
Approved By:

SHEET TITLE:

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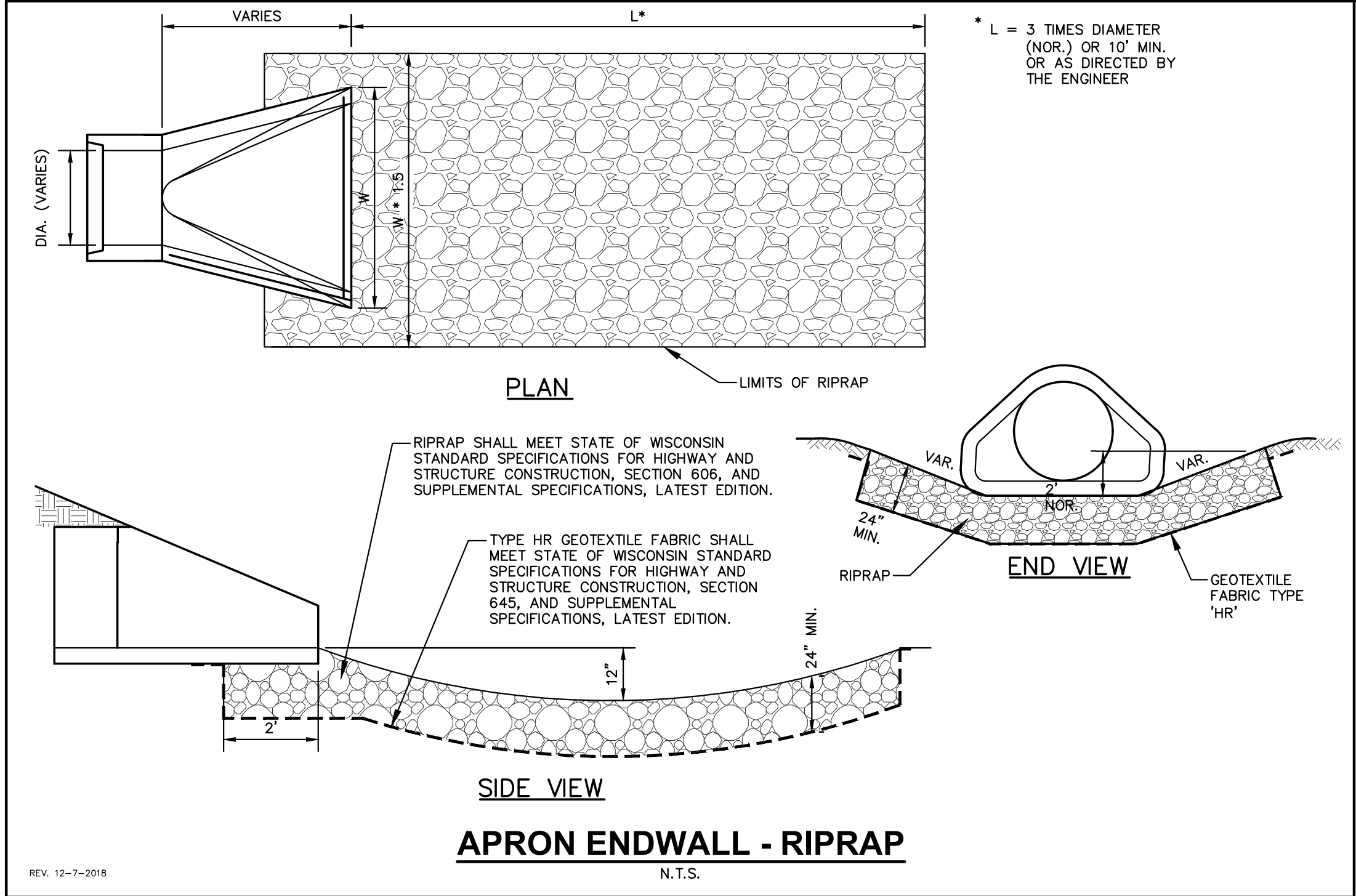
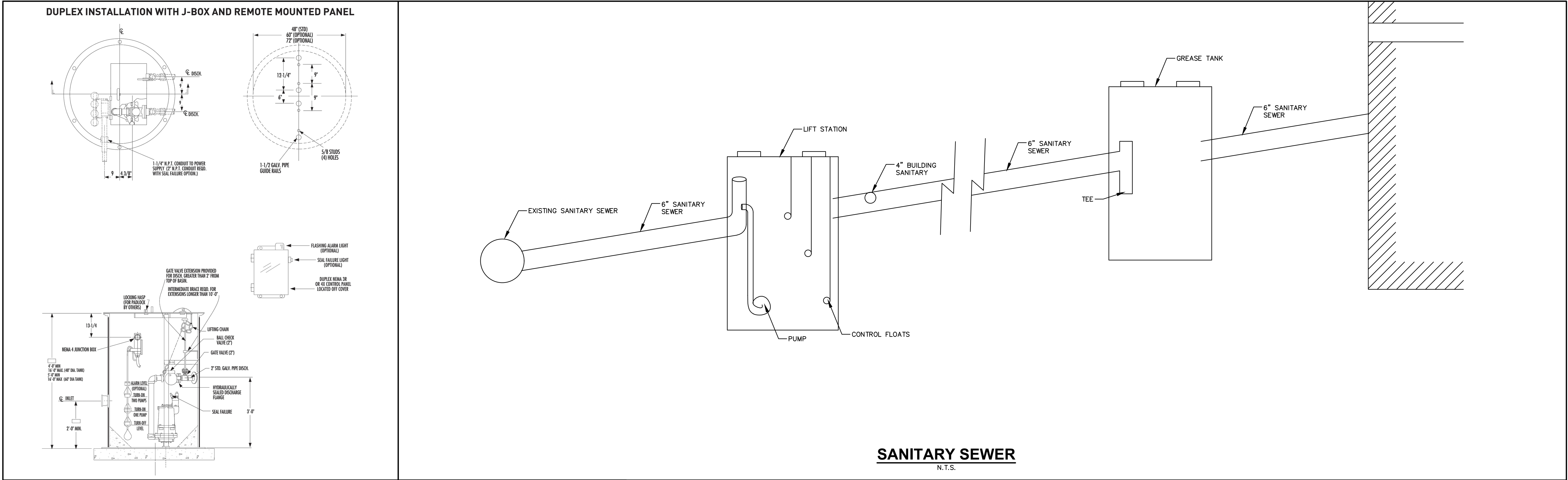
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JSD PROJECT NO:

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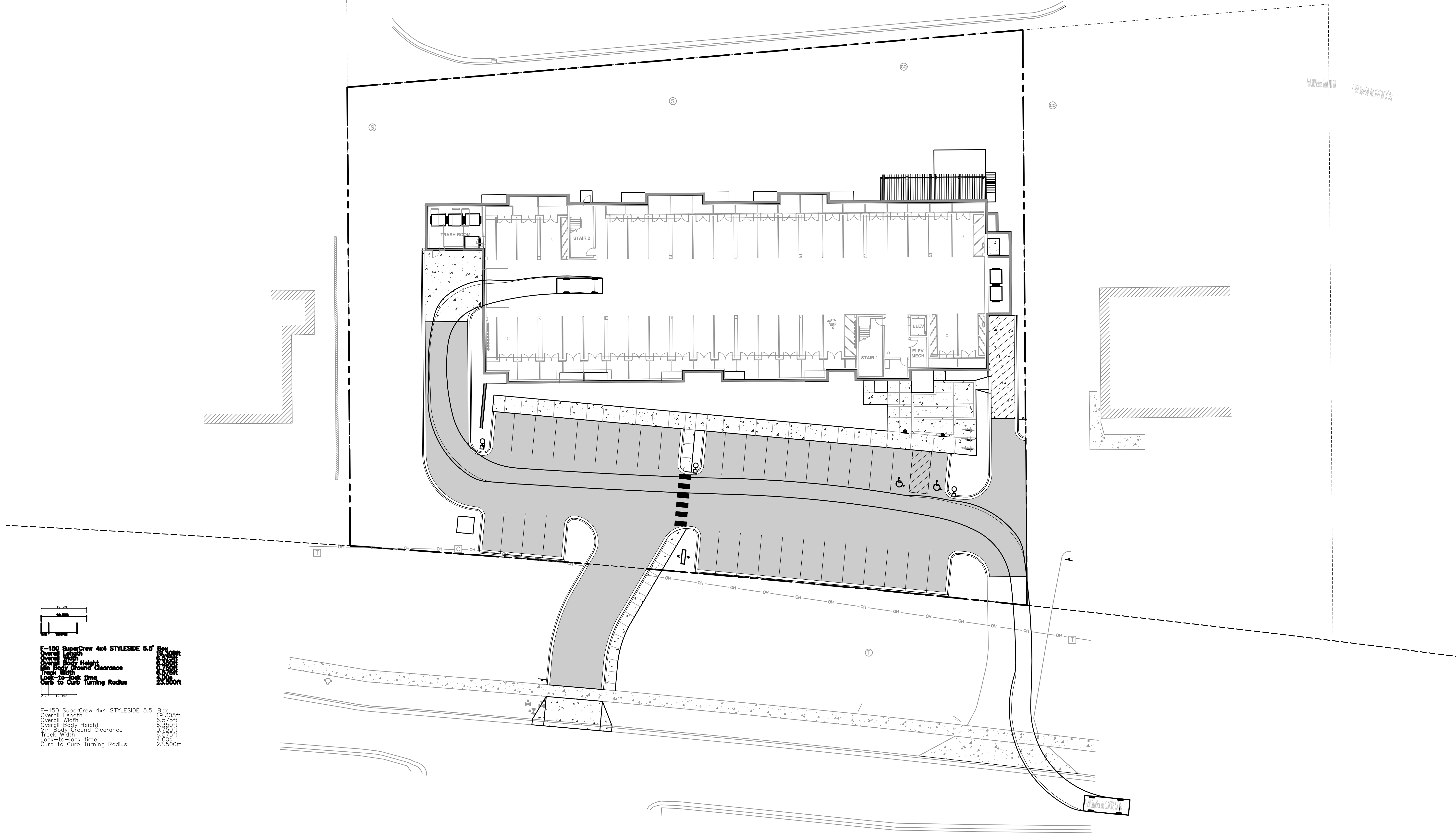
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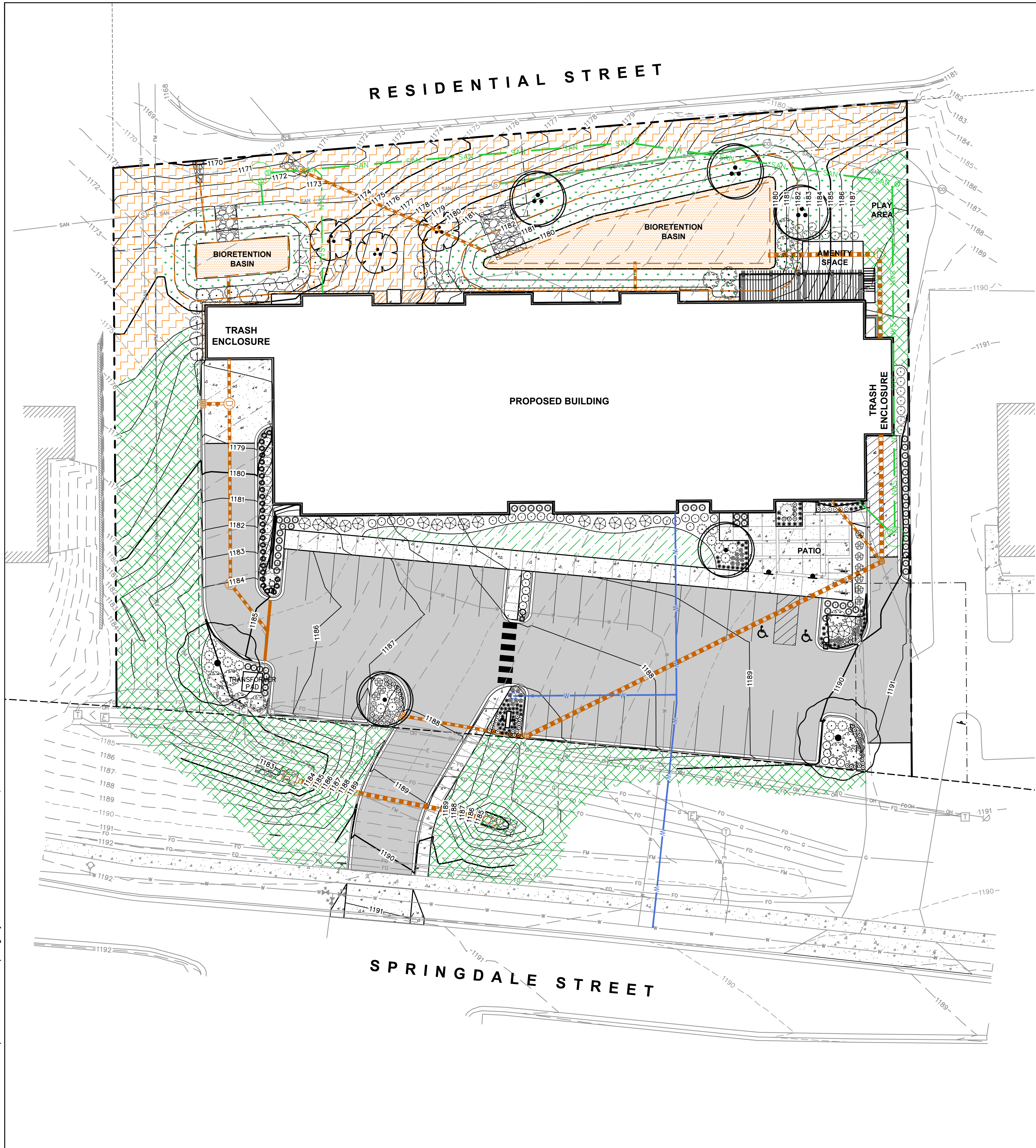
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F-150 SuperCrew 4x4 STYLESIDE 5.5' Box
Overall Length 19.308ft
Overall Width 6.575ft
Overall Body Height 6.250ft
Min Body Ground Clearance 0.750ft
Track Width 6.575ft
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 23.500ft

F-150 SuperCrew 4x4 STYLESIDE 5.5' Box
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GENERAL NOTES

1. REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGEND.
2. ALL WORK IN THE ROW SHALL BE IN ACCORDANCE WITH THE MUNICIPAL STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.
4. DRAWING FOR REVIEW - NOT FOR CONSTRUCTION UNLESS OTHERWISE NOTED IN THE TITLE BLOCK.
5. THE LANDSCAPE CONTRACTOR SHALL COORDINATE ALL FINE GRADING AND TOPSOILING WITH GENERAL CONTRACTOR
6. REFER TO "LANDSCAPE DETAILS AND NOTES" SHEET FOR ADDITIONAL DETAILS, NOTES AND SPECIFICATION INFORMATION INCLUDING MATERIALS, GUARANTEE AND EXECUTION RELATED TO LANDSCAPE PLAN
7. CONTRACTOR SHALL REVIEW SITE CONDITIONS FOR UTILITY CONFLICTS, DRAINAGE ISSUES, SUBSURFACE ROCK, AND PLANT PLACEMENT CONFLICTS PRIOR TO PLANT INSTALLATION. REPORT ANY CONDITIONS THAT MAY HAVE ADVERSE IMPACT ON PLANTING OPERATIONS TO LANDSCAPE ARCHITECT
8. DO NOT COMMENCE PLANTING OPERATIONS UNTIL ALL ADJACENT SITE IMPROVEMENTS AND FINISH GRADING ARE COMPLETE

CONTRACTOR NOTES

1. ALL PLANTING BEDS SHALL RECEIVE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE NOTED ON PLANS.

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- BUILDING OUTLINE
- BUILDING OVERHANG
- EDGE OF PAVEMENT
- STANDARD CURB AND GUTTER
- REJECT CURB AND GUTTER
- ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- STORMWATER MANAGEMENT AREA
- RETAINING WALL
- LIGHT POLE (REFER TO PHOTOMETRIC PLAN)
- ADA PARKING SIGN
- BIKE RACK
- PROPOSED WATER
- PROPOSED SANITARY
- PROPOSED STORM
- DECORATIVE STONE MULCH
- NATIVE VEGETATIVE MAT
- SEED - RAINWATER RENEWAL MIX
- SEED - BLUEGRASS
- SEED - PRAIRIE MIX
- SOD - BLUEGRASS

PLANT SCHEDULE

ORNAMENTAL TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	B & B	1.5" Cal (Multi-Stem)	20	3
CANOPY TREE	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	AM2	Acer miyabei 'Morton' TM / State Street Miyabe Maple	B & B	2.5" Cal	50	2
	BN2	Betula nigra 'Heritage' - Multi-Stem / Heritage River Birch - Multi-Stem	B & B	Min. 8' Ht.	30	3
	BN	Betula nigra 'Heritage' - Single / Heritage River Birch - Single	B & B	2.5" Cal	50	2
LOW SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	JS	Juniperus sabina 'Mini-Arcadia' / Mini Arcadia Juniper	#3	Min. 12" Wide	3	18
	SN	Spiraea japonica 'SMNSJMFR' TM / Double Play Red Spirea	#3	Min. 12"-24"	3	33
	TM	Taxus x media 'Everlow' / Everlow Yew	#3	Min. 12" Wide	3	18
MEDIUM SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	AB	Aronia melanocarpa 'Morton' TM / Iroquois Beauty Black Chokeberry	#3	Min. 12"-24"	6	33
	HQ	Hydrangea paniculata 'Little Quick Fire' / Little Quick Fire Hydrangea	#3	Min. 12"-24"	6	10
PERENNIALS & GRASSES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	CN	Calamintha nepeta 'Montrose White' / Montrose White Catmint	#1	Min. 8"-18"	2	44
	EP	Echinacea x 'CBG Cone 2' TM / Pixie Meadowbrite Purple Coneflower	#1	Min. 8"-18"	2	14
	HA	Hemerocallis x 'Chicago Apache' / Daylily	#1	Min. 8"-18"	2	17
	LS	Liatris spicata 'Kobold' / Kobold Spike Gayfeather	#1	Min. 8"-18"	2	34
	PV	Panicum virgatum 'Shenandoah' / Shenandoah Switch Grass	#1	Min. 8"-18"	2	56
	SH2	Sporobolus heterolepis / Prairie Dropseed	#1	Min. 8"-18"	2	28
	SH	Sporobolus heterolepis 'Tara' / Prairie Dropseed	#1	Min. 8"-18"	2	88
TALL SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	CB	Cornus baileyi / Bailey's Red-twig Dogwood	B & B	Min. 12"-24"	9	11
	PC	Physocarpus opulifolius 'Center Glow' / Center Glow Ninebark	B & B	Min. 36" tall	9	15
	PM	Pinus mugo / Mugo Pine	B & B	Min. 18-24" Ht.	9	2
	VJ	Viburnum x juddii / Judd Viburnum	B & B	Min. 12"-24"	9	14



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MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:
SKETCHWORKS

CLIENT ADDRESS:
**7780 ELMWOOD AVENUE
MIDDLETON, WI 53562**

PROJECT:
**MOUNT HOREB
APARTMENT
DEVELOPMENT**

PROJECT LOCATION:
**1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572**

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.14.2022	SITE PLAN SUBMITTAL
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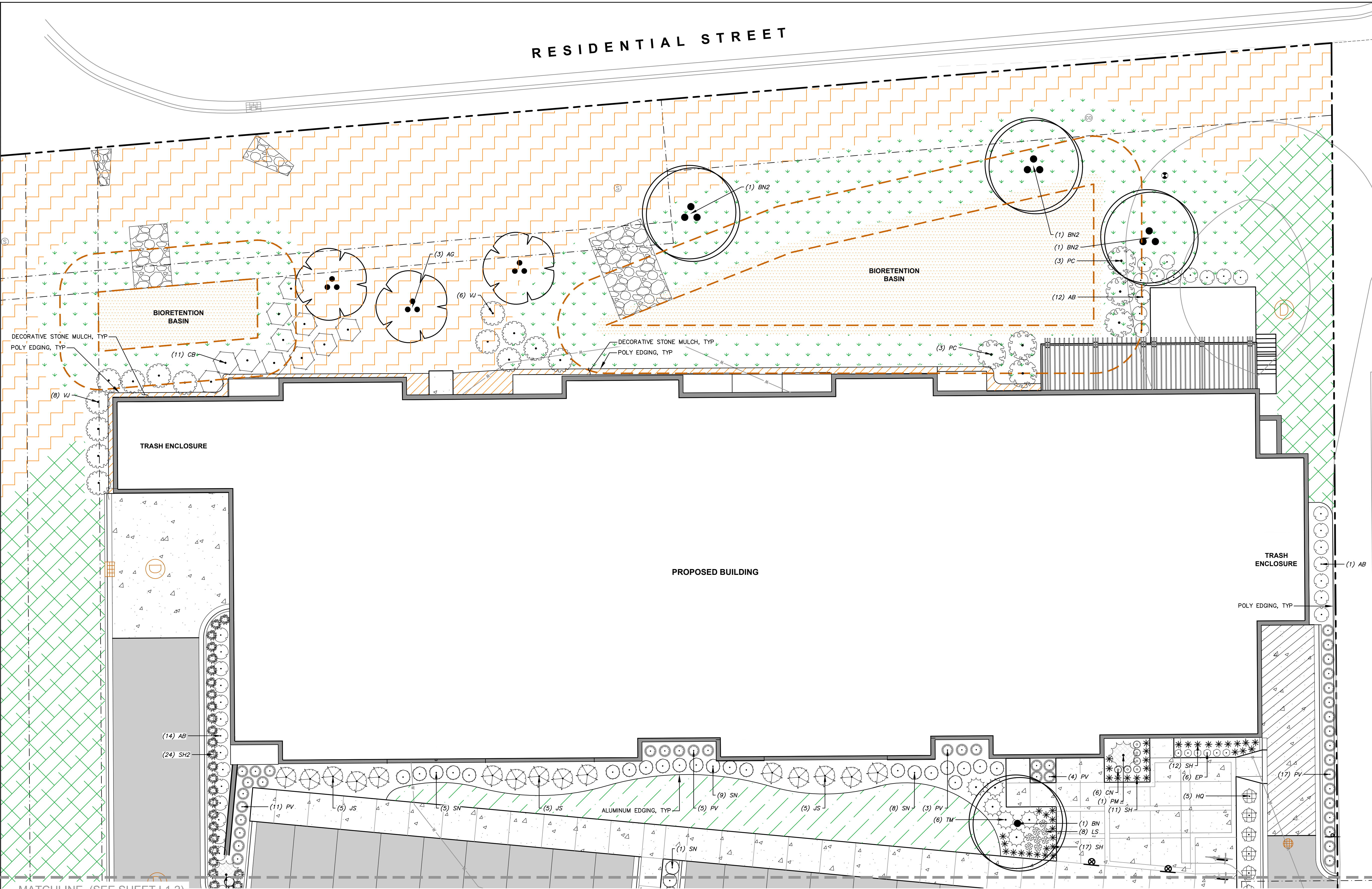
Designed By: MWS
Reviewed By: KJY
Approved By:
SHEET TITLE:
LANDSCAPE PLAN

SHEET NUMBER:
L1.0

JSD PROJECT NO: 21-10870

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RESIDENTIAL STREET



MATCHLINE (SEE SHEET L1.2)

CONTRACTOR NOTES

- ALL PLANTING BEDS SHALL RECEIVE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE SPECIFIED ON PLANS.
- ALL DISTURBED AREAS ON SITE SHALL RECEIVE BLUEGRASS SEED MIX, FERTILIZER AND MULCH, UNLESS OTHERWISE SPECIFIED ON PLANS.



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P. 608.848.5060

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SKETCHWORKS

CLIENT ADDRESS:

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MIDDLETON, WI 53562

PROJECT:

MOUNT HOREB
APARTMENT
DEVELOPMENT

PROJECT LOCATION:

1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572

PLAN MODIFICATIONS:

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Designed By: MWS
Reviewed By: KJY

Approved By:

SHEET TITLE:

LANDSCAPE PLAN -
NORTH

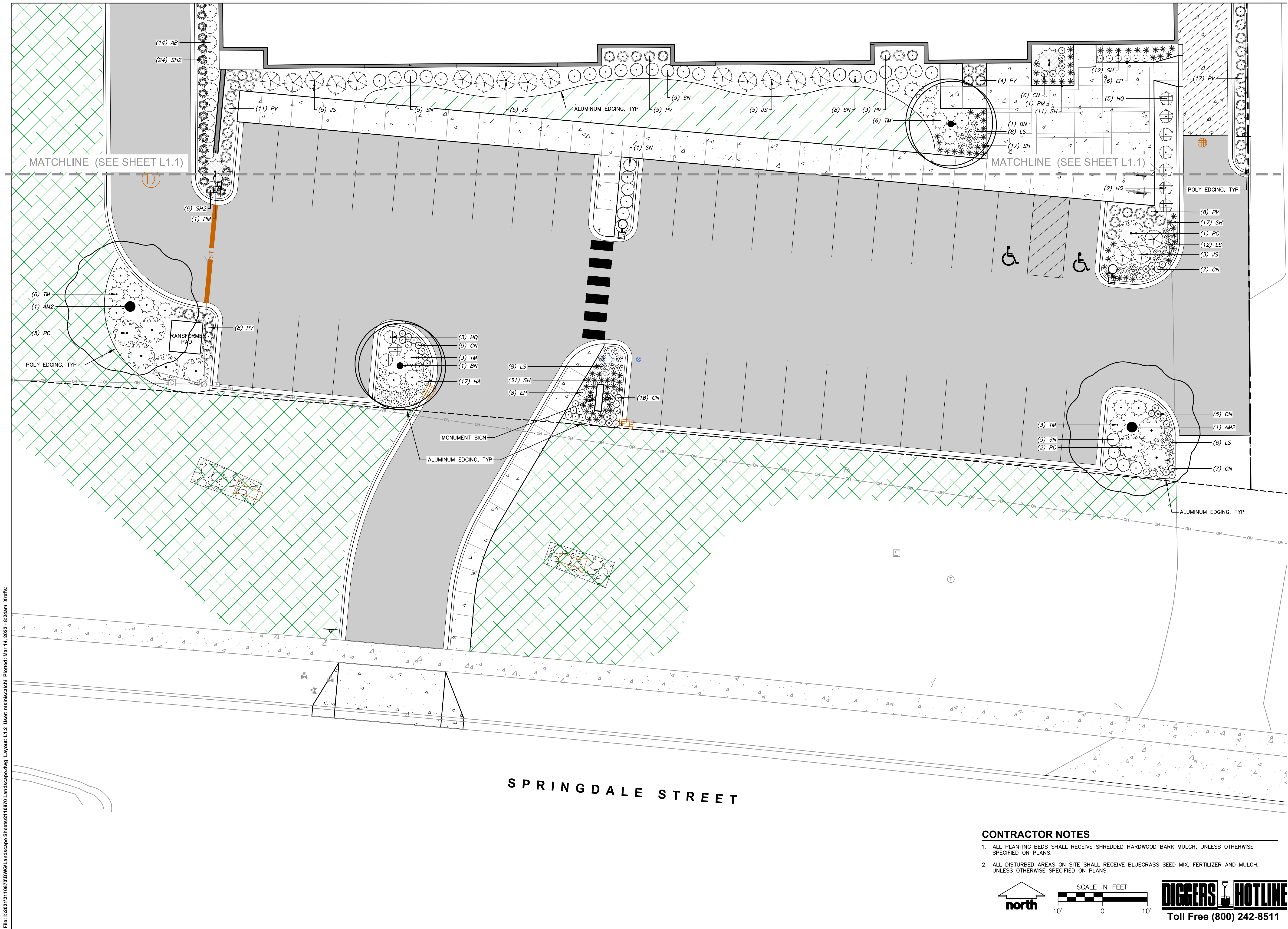
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JSD PROJECT NO:

21-10870

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CONTRACTOR NOTES

1. ALL PLANTING BEDS SHALL RECEIVE SHREDDED HARDWOOD BARK MULCH, UNLESS OTHERWISE SPECIFIED ON PLANS.
2. ALL DISTURBED AREAS ON SITE SHALL RECEIVE BLUEGRASS SEED MIX, FERTILIZER AND MULCH, UNLESS OTHERWISE SPECIFIED ON PLANS.



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7780 ELMWOOD AVENUE
MIDDLETON, WI 53562

PROJECT:

MOUNT HOREB
APARTMENT
DEVELOPMENT

PROJECT LOCATION:

1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572

PLAN MODIFICATIONS:

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Designed By: MWS
Reviewed By: KJY

Approved By:

SHEET TITLE:
LANDSCAPE PLAN -
SOUTH

SHEET NUMBER:

L1.2

JSD PROJECT NO: 21-10870

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MUNICIPAL LANDSCAPE REQUIREMENTS

17.136(b) MINIMUM CANOPY TREE AND PARKING SPACE REQUIREMENTS (36 Surface Stalls)

Landscape Requirement:	1 Canopy Tree per 12 parking stalls
Calculation:	36 stalls/12 = 3
Total Points Required:	3 Canopy Trees
Total Points Provided:	3 Canopy Trees
Provisions:	Trees to be located within 10 feet of parking area surface Minimum 2"-2.5" caliper

Species: Scientific Name	Species: Common Name	QTY	POINTS	TOTAL POINTS
TALL DECIDUOUS TREES				
Acer miyabei 'Morton' TM	State Street Maple	2	1	2
Betula nigra 'Heritage' - single stem	River Birch	1	1	1
Total Trees =		3		

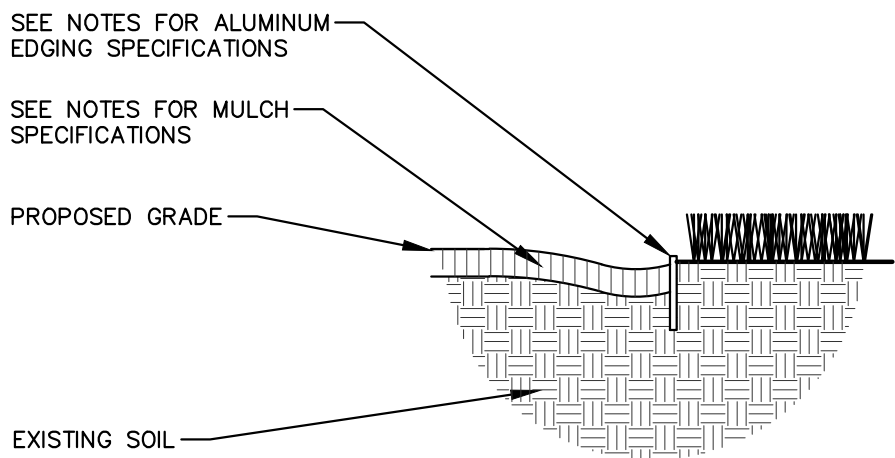
17.136(c) SCREENING STANDARDS FOR PARKING AREAS NEAR RESIDENTIALLY ZONED PARCELS

(not applicable)

17.136(d) MINIMUM LANDSCAPE ELEMENT STANDARDS

Landscape Requirement:	15 Landscape Points per 1 parking stall
Calculation:	15 x 36 surface stalls = 540
Total Points Required:	540 Landscape Points
Total Points Provided:	486 Landscape Points
Provisions:	Plants to be located in perimeters adjacent to public ROW; interior areas and immediate perimeters to the parking area; and/or perimeter of lots adjacent to other property Enhancement of building and related open spaces do not qualify.

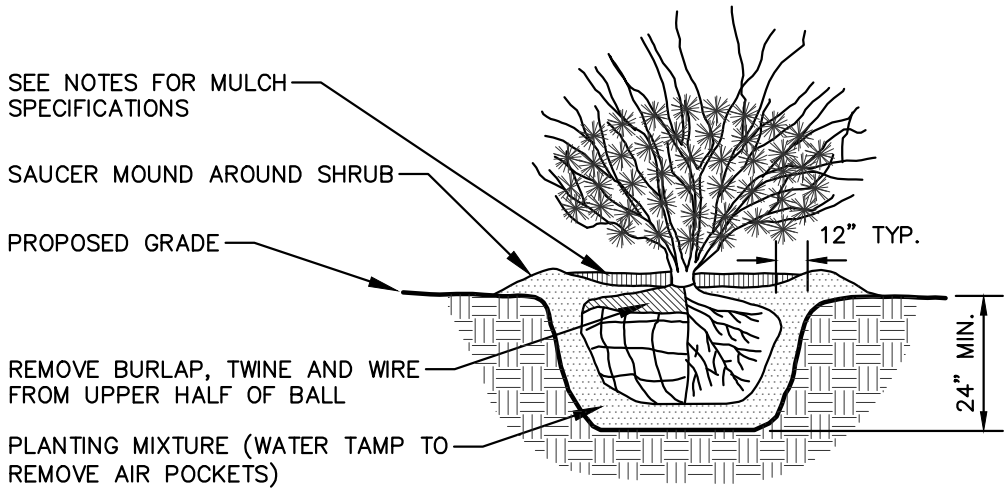
Scientific Name	Common Name	QTY	POINTS	TOTAL POINTS
CANOPY TREES (1.5"-2" DBH)				
Acer miyabei 'Morton' TM	State Street Miyabe Maple	2	50	100
Betula nigra 'Heritage' - Single	Heritage River Birch - Single	1	50	50
TALL SHRUBS				
Physocarpus opulifolius 'Center Glow'	Center Glow Ninebark	9	9	81
Pinus mugo	Mugo Pine	1	9	9
MEDIUM SHRUBS				
Aronia melanocarpa 'Morton' TM	Iroquis Beauty Black Chokeberry	21	6	126
Hydrangea paniculata 'Little Quick Fire'	Little Quick Fire Hydrangea	7	6	42
LOW SHRUBS				
Juniperus sabina 'Mini-Arcadia'	Mini Arcadia Juniper	3	3	9
Spiraea japonica 'SMNSJMFR' TM	Double Play Red Spirea	11	3	33
Taxus x media 'Everlow'	Everlow Yew	12	3	36
PERENNIALS & GRASSES				
VARIOUS	VARIOUS	218	0	0
Total Points =			486	



ALUMINUM LANDSCAPE EDGING DETAIL

REV. 01-03-2019

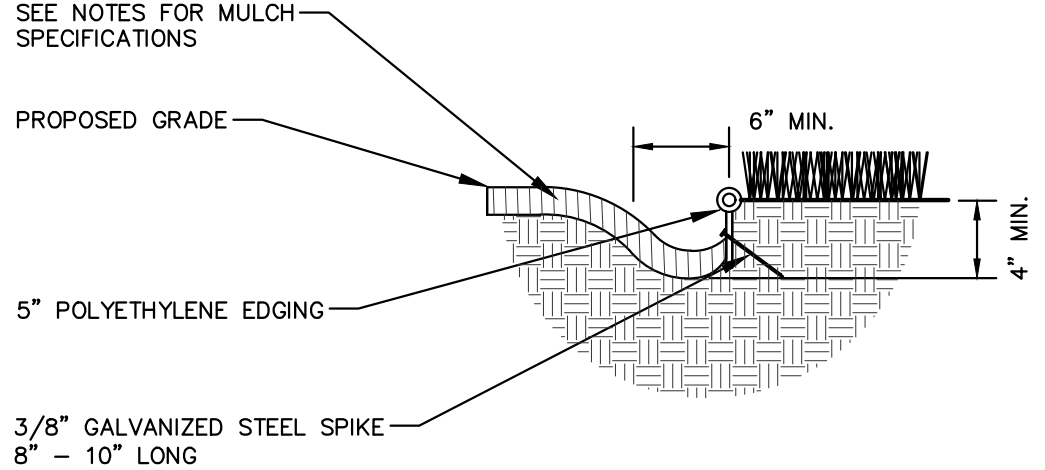
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SHRUB PLANTING DETAIL

REV. 01-03-2019

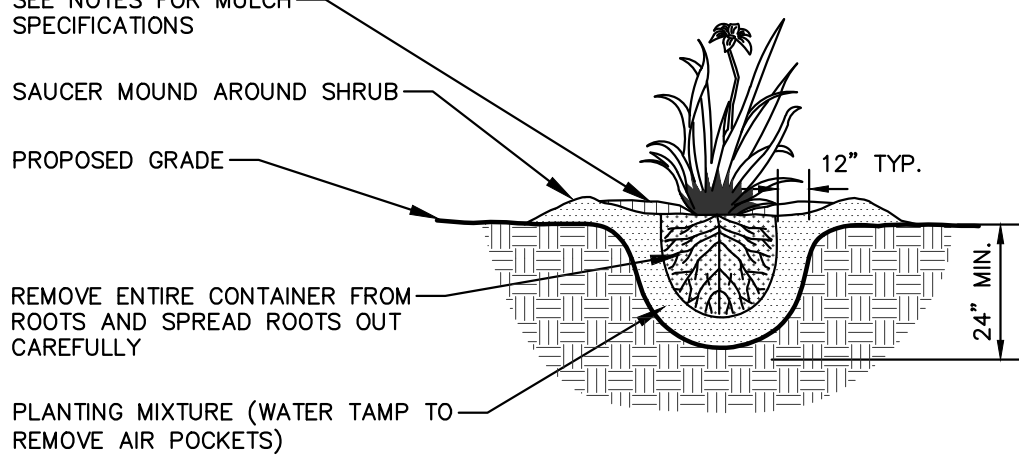
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POLYETHYLENE LANDSCAPE EDGING DETAIL

REV. 01-03-2019

N.T.S.



PERENNIAL/ORNAMENTAL GRASS PLANTING DETAIL

REV. 01-03-2019

N.T.S.

PLANT SCHEDULE

ORNAMENTAL TREES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	AG	Amelanchier x grandiflora 'Autumn Brilliance' / Autumn Brilliance Serviceberry	B & B	1.5" Cal (Multi-Stem)	20	3
CANOPY TREE	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	AM2	Acer miyabei 'Morton' TM / State Street Miyabe Maple	B & B	2.5" Cal	50	2
	BN2	Betula nigra 'Heritage' - Multi-Stem / Heritage River Birch - Multi-Stem	B & B	Min. 8" Ht.	30	3
	BN	Betula nigra 'Heritage' - Single / Heritage River Birch - Single	B & B	2.5" Cal	50	2
LOW SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	JS	Juniperus sabina 'Mini-Arcadia' / Mini Arcadia Juniper	#3	Min. 12" Wide	3	18
	SN	Spiraea japonica 'SMNSJMFR' TM / Double Play Red Spirea	#3	Min. 12"-24"	3	33
	TM	Taxus x media 'Everlow' / Everlow Yew	#3	Min. 12" Wide	3	18
MEDIUM SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	AB	Aronia melanocarpa 'Morton' TM / Iroquis Beauty Black Chokeberry	#3	Min. 12"-24"	6	33
	HQ	Hydrangea paniculata 'Little Quick Fire' / Little Quick Fire Hydrangea	#3	Min. 12"-24"	6	10
PERENNIALS & GRASSES	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	CN	Calamintha nepeta 'Montrose White' / Montrose White Catmint	#1	Min. 8"-18"	2	44
	EP	Echinacea x 'CBG Cone 2' TM / Pixie Meadowbrite Purple Coneflower	#1	Min. 8"-18"	2	14
	HA	Hemerocallis x 'Chicago Apache' / Daylily	#1	Min. 8"-18"	2	17
	LS	Liatris spicata 'Kobold' / Kobold Spike Gayfeather	#1	Min. 8"-18"	2	34
	PV	Panicum virgatum 'Shenandoah' / Shenandoah Switch Grass	#1	Min. 8"-18"	2	56
	SH2	Sporobolus heterolepis / Prairie Dropseed	#1	Min. 8"-18"	2	28
	SH	Sporobolus heterolepis 'Tara' / Prairie Dropseed	#1	Min. 8"-18"	2	88
TALL SHRUBS	CODE	BOTANICAL / COMMON NAME	CONT	SIZE	LS POINTS	QTY
	CB	Cornus baileyi / Bailey's Red-twig Dogwood	B & B	Min. 12"-24"	9	11
	PC	Physocarpus opulifolius 'Center Glow' / Center Glow Ninebark	B & B	Min. 36" tall	9	15
	PM	Pinus mugo / Mugo Pine	B & B	Min. 18-24" Ht.	9	2
	VJ	Viburnum x juddii / Judd Viburnum	B & B	Min. 12"-24"	9	14

GENERAL NOTES

- GENERAL: ALL WORK IN THE R-O-W AND PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL REQUIREMENTS. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES. LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO UTILITIES. CONTRACTOR MUST CALL 1-800-382-5544 FOR UTILITY LOCATIONS AT LEAST THREE DAYS PRIOR TO DIGGING. HAND DIG AND INSTALL NEAR EXISTING UTILITIES. PROTECT PREVIOUSLY INSTALLED WORK OF OTHER TRADES. CONTRACTOR IS RESPONSIBLE FOR STAKING THE PLANT MATERIALS FOR REVIEW BY OWNER PRIOR TO DIGGING AND PLACEMENT AND SHALL COORDINATE ALL FINE GRADING AND RESTORATION WITH THE GRADING CONTRACTOR.
- DELIVERY AND HANDLING: DO NOT DELIVER MORE PLANT MATERIALS THAN CAN BE PLANTED IN ONE DAY, UNLESS ADEQUATE, APPROPRIATE AND SECURE STORAGE IS PROVIDED AND APPROVED BY OWNER'S REPRESENTATIVE. AT ALL TIMES, PROTECT ALL PLANT MATERIALS FROM WIND AND DIRECT SUN. DELIVER PLANTS WITH LEGIBLE IDENTIFICATION LABELS. PROTECT PLANTS DURING DELIVERY AND DO NOT PRUNE PRIOR TO DELIVERY. ALL TREES AND SHRUBS SHALL BE PLANTED ON THE DAY OF DELIVERY; IF THIS IS NOT POSSIBLE, PROTECT THE PLANT MATERIALS NOT PLANTED BY STORING THEM IN A SHADED, SECURE AREA, PROTECTING THE ROOT MASS WITH WET SOIL, MULCH, HAY OR OTHER SUITABLE MEDIUM. CONTRACTOR TO KEEP ALL PLANT MATERIALS ADEQUATELY WATERED TO PREVENT ROOT DESICCATION. DO NOT REMOVE CONTAINER GROWN STOCK FROM CONTAINERS BEFORE TIME OF PLANTING. DO NOT PICK UP CONTAINER OR BALLED PLANTS BY STEM OR ROOTS. ALL PLANTS SHALL BE LIFTED AND HANDLED FROM THE BOTTOM OF THE CONTAINER OR BALL. PERFORM ACTUAL PLANTING ONLY WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE IN ACCORDANCE WITH LOCALLY ACCEPTED BEST HORTICULTURAL PRACTICES.
- MATERIALS - PLANTS: ALL PLANTS SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD FOR NURSERY STOCK ANSI Z60.1. PLANTS SHALL BE TRUE TO SPECIES AND VARIETY SPECIFIED AND NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST 2 YEARS. PLANTS SHALL BE FRESHLY DUG (DURING THE MOST RECENT FAVORABLE HARVEST SEASON). PLANTS SHALL BE SO TRAINED IN DEVELOPMENT AND APPEARANCE AS TO BE UNQUESTIONABLY SUPERIOR IN FORM, FITNESS, AND SYMMETRY. PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF, AND FREE OF DISEASE AND INSECTS (ADULT EGGS, PUPAE OR LARVAE). THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS AND SHALL BE FREE FROM PHYSICAL DAMAGE OR OTHER CONDITIONS THAT WOULD PREVENT THRIVING GROWTH OR PREMATURE MORTALITY. PLANTS SHALL BE OF THE HIGHEST QUALITY, POSSESS TYPICAL GROWTH HABITS AND FORM FOR THEIR SPECIES AND BE FREE OF INJURY. PARKWAY TREES AND PARKING LOT TREES SHALL HAVE A MINIMUM BRANCHING HEIGHT OF SIX (6) FEET ABOVE THE GROUND TO ALLOW ADEQUATE VISUAL AND PHYSICAL CLEARANCE.
- PRUNING: THE CONTRACTOR SHALL PRUNE ALL TREES AND REPAIR ANY INJURIES THAT OCCURRED DURING THE PLANTING PROCESS. DOUBLE LEADERS, DEAD BRANCHES, AND LIMBS DAMAGED OR BROKEN DURING THE PLANTING PROCESS, SHALL BE PRUNED. THIS SHALL BE THE ONLY PRUNING ALLOWED AT PLANTING. PRUNING SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN STANDARD FOR TREE CARE OPERATIONS, ANSI A300. PRUNE TREES IN ACCORDANCE WITH NAA GUIDELINES. DO NOT TOP TREES. PRUNE SHRUBS ACCORDING TO STANDARD HORTICULTURAL PRACTICES. ON CUTS OVER 3/4" IN DIAMETER AND BRUISES OR SCARS ON BARK, TRACE THE INJURED CAMBIUM LAYER BACK TO LIVING TISSUE AND REMOVE. SMOOTH AND SHAPE WOUNDS SO AS NOT TO RETAIN WATER. TREAT THE AREA WITH AN APPROVED INCONSPICUOUS LATEX BASED ANTISEPTIC TREE PAINT, IF PRUNING OCCURS "IN SEASON". DO NOT PRUNE ANY OAK TREES DURING THE MONTHS FROM APRIL TO OCTOBER.
- CLEANUP: THE WORK AREA SHALL BE KEPT SAFE AND NEAT AT ALL TIMES. DISPOSED OF EXCESS SOIL. REMOVE ALL CUTTINGS AND WASTE MATERIALS. SOIL AND BRANCHES. BIND AND WRAP THESE MATERIALS, ANY REJECTED PLANTS, AND ANY OTHER DEBRIS RESULTING FROM ALL PLANTING TASKS AND PROMPTLY CLEAN UP AND REMOVE FROM THE PROJECT SITE. UNDER NO CIRCUMSTANCES SHALL THE ACCUMULATION OF SOIL, BRANCHES OR OTHER DEBRIS BE ALLOWED UPON A PUBLIC PROPERTY IN SUCH A MANNER AS TO RESULT IN A PUBLIC SAFETY HAZARD OR DAMAGE. LIKEWISE, UNDER NO CIRCUMSTANCES SHALL ANY DEBRIS OR INCIDENTAL MATERIALS BE ALLOWED UPON ADJACENT PRIVATE PROPERTY.
- ANY SUBSTITUTIONS IN PLANT TYPE, LOCATION, OR SIZE SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
- CONTRACTOR TO VERIFY PLANT MATERIAL QUANTITIES. QUANTITIES SHOWN ON PLAN TAKE PRECEDENCE OVER THOSE ON SCHEDULE.

LANDSCAPE MATERIAL NOTES

- MATERIALS - PLANTING MIXTURE: ALL HOLES EXCAVATED FOR TREES, SHRUBS, PERENNIALS AND ORNAMENTAL GRASSES SHALL BE BACKFILLED WITH TWO (2) PARTS TOPSOIL, ONE (1) PART SAND AND ONE (1) PART COMPOST. SOIL MIXTURE SHALL BE WELL BLENDED PRIOR TO INSTALLATION.
- MATERIALS - TOPSOIL: TOPSOIL TO BE CLEAN, FRIABLE LOAM FROM A LOCAL SOURCE, FREE FROM STONES OR DEBRIS OVER 3/4" IN DIAMETER, AND FREE FROM TOXINS OR OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL HAVE A pH VALUE BETWEEN 6 AND 7. TOPSOIL AND PLANTING SOIL SHALL BE TESTED TO ENSURE CONFORMANCE WITH THESE SPECIFICATIONS AND SHALL BE AMENDED TO MEET THESE SPECIFICATIONS. PROVIDE TEST RESULTS TO OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT. DO NOT PLACE FROZEN OR MUDDY TOPSOIL. APPLY SOIL AMENDMENTS TO ALL LANDSCAPE AREAS PER SOIL TEST.
- MATERIALS - ALUMINUM EDGING: EDGING SHALL BE 1/8" X 4", ALUMINUM EDGING, MILL FINISH. OWNER'S REPRESENTATIVE SHALL APPROVE PRODUCT SPECIFICATION PROVIDED BY LANDSCAPE CONTRACTOR.
- MATERIALS - POLYETHYLENE EDGING: EDGING SHALL BE 5" DEEP, POLYETHYLENE EDGING. OWNER'S REPRESENTATIVE SHALL APPROVE PRODUCT SPECIFICATION PROVIDED BY LANDSCAPE CONTRACTOR.
- MATERIALS - SHREDDED HARDWOOD BARK MULCH: ALL PLANTING AREAS LABELED ON PLAN SHALL RECEIVE CERTIFIED WEED FREE SHREDDED HARDWOOD BARK MULCH INSTALLED TO A MINIMUM AND CONSISTENT DEPTH OF 3-INCHES. SHREDDED HARDWOOD BARK MULCH SIZE & COLOR TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. FERTILIZER SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS. SHREDDED HARDWOOD BARK MULCH AREAS SHALL NOT RECEIVE WOVEN WEED BARRIER FABRIC.
- MATERIALS - STONE MULCH: ALL PLANTING AREAS LABELED ON PLAN SHALL RECEIVE 1.5" DIAMETER HERITAGE STONE MULCH SPREAD TO A MINIMUM AND CONSISTENT DEPTH OF 3-INCHES. DECORATIVE STONE MULCH TYPE, SIZE & COLOR TO BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. FERTILIZER SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, COUNTY AND STATE REQUIREMENTS. STONE MULCH AREAS SHALL RECEIVE WOVEN WEED BARRIER FABRIC. NO PLASTIC/IMPERVIOUS BARRIERS WILL BE PERMITTED. EXAMPLE: BLACK VISQUEEN.
- MATERIALS - TREE & SHRUB RINGS: ALL TREES AND/OR SHRUBS PLANTED IN SEEDED LAWN AREAS TO BE INSTALLED WITH A MINIMUM 5' DIAMETER SHREDDED HARDWOOD BARK MULCH TREE RING SPREAD TO A CONSISTENT DEPTH OF 3-INCHES. ALL TREE RINGS SHOULD BE INSTALLED WITH A 5" DEPTH SHOVEL CUT EDGE, ANGLED 45-DEGREES INTO SOIL AT A 5' DIAMETER ABOUT THE CENTER OF THE TREE PLANTING. A PRE-EMERGENT GRANULAR HERBICIDE WEED-PREVENTER SHOULD BE MIXED WITH MULCH USED TO INSTALL TREE RING AS WELL AS TOPICALLY APPLIED TO COMPLETED INSTALLATION OF TREE RING.
- MATERIALS - RAINWATER RENEWAL SEED MIX: DISTURBED LAWN AREAS LABELED ON PLAN AS SUCH, SHALL BE BROADCAST SEEDED WITH "RAINWATER RENEWAL" SEED MIX, AS PROVIDED BY AGRECOL, LLC, WWW.AGRECOL.COM, OR APPROVED EQUIVALENT. INSTALL SEED WITH SUPPLEMENTAL MATERIALS AND AMENDMENTS AS RECOMMENDED BY SEED SUPPLIER AND AT RATES AND OPTIMUM TIMES OF THE YEAR AS RECOMMENDED BY THE SEED SUPPLIER TO ENSURE SUCCESSFUL GERMINATION AND SEED/ROOT ZONE GROWTH DEVELOPMENT. REFER TO PRODUCT SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION.
- MATERIALS - PRAIRIE SEED MIX: DISTURBED LAWN AREAS LABELED ON PLAN AS SUCH, SHALL BE BROADCAST SEEDED WITH "SHORTGRASS PRAIRIE FOR DRY SOILS" SEED MIX, AS PROVIDED BY AGRECOL, LLC, WWW.AGRECOL.COM, OR APPROVED EQUIVALENT. INSTALL SEED WITH SUPPLEMENTAL MATERIALS AND AMENDMENTS AS RECOMMENDED BY SEED SUPPLIER AND AT RATES AND OPTIMUM TIMES OF THE YEAR AS RECOMMENDED BY THE SEED SUPPLIER TO ENSURE SUCCESSFUL GERMINATION AND SEED/ROOT ZONE GROWTH DEVELOPMENT. REFER TO PRODUCT SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION.
- MATERIALS - TURFGRASS SEED: DISTURBED LAWN AREAS LABELED ON PLAN AS SUCH, SHALL RECEIVE 6" OF TOPSOIL AND EARTH CARPET'S "MADISON PARKS" GRASS SEED, OR EQUIVALENT AS APPROVED BY THE OWNER'S REPRESENTATIVE, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. IN ADDITION TO TURFGRASS SEED, ANNUAL RYE SHALL BE APPLIED TO ALL DISTURBED AREAS AT A RATE OF 1 1/2 LBS PER 1000 SQUARE FEET. FERTILIZE AND MULCH PER MANUFACTURER'S RECOMMENDATIONS. MULCH SHALL BE CERTIFIED NOXIOUS WEED SEED-FREE
- MATERIALS - SOD: DISTURBED LAWN AREAS LABELED ON PLAN AS SUCH, SHALL RECEIVE 6" OF TOPSOIL AND A PREMIUM GRADE TURFGRASS SOD. ONLY IMPROVED TYPES OF SOD (ELITE) ARE ACCEPTABLE. TURFGRASS SHALL BE MACHINE CUT AT A UNIFORM THICKNESS OF .60 INCH, PLUS OR MINUS .25 INCH, AT TIME OF CUTTING. MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH. TURFGRASS SOD SHALL BE CUT TO THE SUPPLIER'S STANDARD WIDTH (36-48 INCHES) AND LENGTH. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE. STANDARD SIZE SECTIONS OF TURFGRASS SOD SHALL BE STRONG ENOUGH SO THAT THEY CAN BE PICKED UP AND HANDLED WITHOUT DAMAGE. TURFGRASS SOD SHALL NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT IS EXCESSIVELY DRY OR WET, AS THIS MAY ADVERSELY AFFECT ITS SURVIVAL. POST-PLANT IRRIGATION WILL BE NECESSARY TO ENSURE SOD STAYS ALIVE AND ROOTS INTO SOIL. THE CONTRACTOR IS RESPONSIBLE FOR WATERING SOD UNTIL TIME OF ACCEPTANCE BY THE OWNER. TURFGRASS SOD SHALL BE HARVESTED, DELIVERED, AND INSTALLED/TRANSPLANTED WITHIN A PERIOD OF 24 HOURS. TURFGRASS SOD SHALL BE RELATIVELY FREE OF THATCH, UP TO 0.5 INCH ALLOWABLE (UNCOMPRESSED). TURFGRASS SOD SHALL BE REASONABLY FREE (10 WEEDS/100 SQ. FT.) OF DISEASES, NEMATODES AND SOIL-BORNE INSECTS. ALL TURFGRASS SOD SHALL BE FREE OF GRASSY AND BROAD LEAF WEEDS AND WEED SEED. THE SOD SUPPLIER SHALL MAKE RECOMMENDATIONS TO THE CONTRACTOR REGARDING WATERING SCHEDULE. THE WATERING SCHEDULE SHOULD BEGIN IMMEDIATELY AFTER SOD IS INSTALLED.

CONTRACTOR AND OWNER RESPONSIBILITY NOTES

- GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL PLANTS THROUGH ONE (1) YEAR AFTER ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PLANTS SHALL BE ALIVE AND IN HEALTHY AND FLOURISHING CONDITION AT THE END OF THE GUARANTEE PERIOD. THE CONTRACTOR SHALL REPLACE (AT NO COST TO OWNER) ANY PLANTS THAT ARE DEAD OR NOT IN A VIGOROUS THRIVING CONDITION. REPLACEMENT PLANTS SHALL BE OF THE SAME KIND AND SIZE AS ORIGINALLY SPECIFIED UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE. RESTORE BEDS AS NECESSARY FOLLOWING PLANT REPLACEMENT, INCLUDING BUT NOT LIMITED TO BEDDING, EDGING, MULCH, ETC. REPLACE PLANTS DAMAGED AT TIME OF PLANTING. REPAIR AREAS DISTURBED IN ANY WAY DURING PLANT REPLACEMENT AT NO COST TO OWNER. CONTRACTOR SHALL PROVIDE A ONE (1)-YEAR STRAIGHTENING GUARANTEE FOR ALL TREES.
- CONTRACTOR IS RESPONSIBLE FOR STAKING THE PLANT MATERIALS FOR REVIEW BY OWNER'S REPRESENTATIVE PRIOR TO DIGGING AND PLACEMENT AND SHALL COORDINATE ALL FINE GRADING AND RESTORATION WITH THE GRADING CONTRACTOR.
- MAINTENANCE: (CONTRACTOR) FOR ALL PLANTINGS, SEEDED AND/OR SODDED LAWN AREAS: THE CONTRACTOR SHALL MAINTAIN ALL PLANTINGS AND LAWN AREAS FOR A MINIMUM TIME PERIOD OF 60 DAYS, UNTIL FINAL ACCEPTANCE BY OWNER'S REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY WATERING PLANTS AND LAWN/TURFGRASS DURING THIS 60 DAY ESTABLISHMENT PERIOD. CONTRACTOR IS RESPONSIBLE FOR THE ESTABLISHMENT OF HEALTHY VIGOROUS PLANT MATERIALS AND LAWN/TURFGRASS GROWTH. CONTRACTOR IS ALSO RESPONSIBLE FOR ANY PRUNING OF PLANT MATERIALS, AND SHAPING AND/OR REPLACEMENT OR SUPPLEMENT OF DEFICIENT SHREDDED HARDWOOD BARK MULCH DURING THIS PERIOD. LONG TERM PLANT MATERIALS AND LAWN/TURFGRASS MAINTENANCE AND ANY PROGRAM FOR SUCH IS THE RESPONSIBILITY OF THE OWNER. ALL PLANTINGS AND LAWN/TURFGRASS AREAS SHALL BE MAINTAINED IN A MANICURED CONDITION UNTIL THE TIME WHEN THE OWNER'S ACCEPTANCE IS GIVEN.
- MAINTENANCE: (OWNER) THE OWNER IS RESPONSIBLE FOR THE CONTINUED MAINTENANCE, REPAIR AND REPLACEMENT OF ALL LANDSCAPING MATERIALS AND WEED BARRIER FABRIC AS NECESSARY FOLLOWING THE ONE (1) YEAR CONTRACTOR GUARANTEE PERIOD.



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161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:

SKETCHWORKS

CLIENT ADDRESS:

7780 ELMWOOD AVENUE
MIDDLETON, WI 53562

PROJECT:

MOUNT HOREB
APARTMENT
DEVELOPMENT

PROJECT LOCATION:

1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.14.2022	SITE PLAN SUBMITTAL
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Designed By: MWs
Reviewed By: KJY
Approved By:

SHEET TITLE:

LANDSCAPE DETAILS &
NOTES

SHEET NUMBER:

L2.0

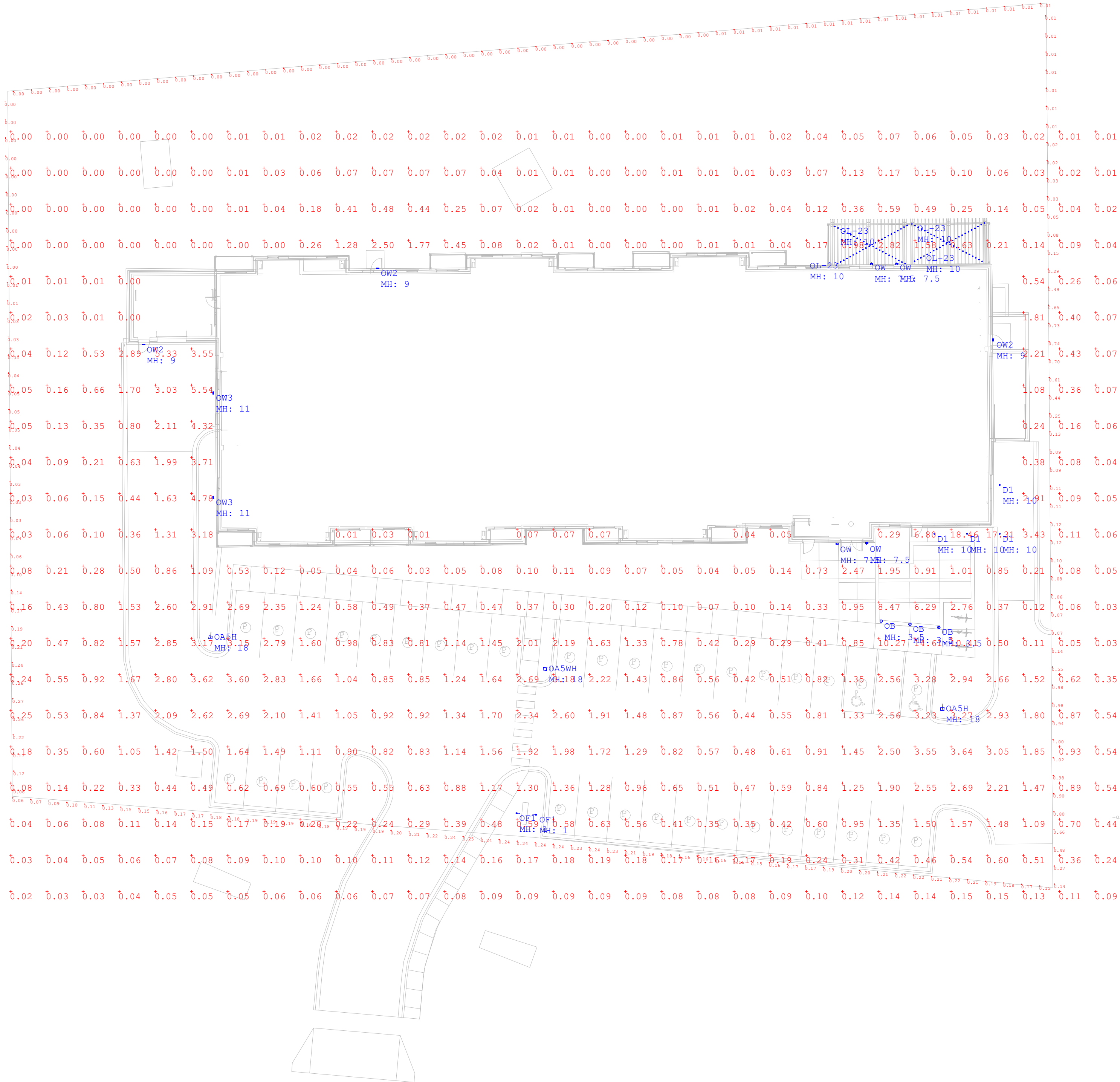
JSD PROJECT NO:

21-10870

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Luminaire Schedule						
Qty	Label	MFG	Description	LLF	Lum. Watts	Total Watts
2	OA5H	LITHONIA	DSX1 LED P2 xxK TSM MVOLT HS- 15FT POLE 3 FT BASE	0.950	102	204
1	OA5WH	LITHONIA	DSX1 LED P2 xxK TSW MVOLT HS- 15FT POLE 3 FT BASE	0.950	102	102
3	OB	TGS	RBL 26W xxK UDD	0.950	26	78
2	OF1	WAC	5121-xx	0.010	9.553	19.106
4	OW	WAC	WS-W15216-xxxxK-BK	0.950	17	68
3	OW2	LITHONIA	WPX1 LED P1 xxK MVOLT (finish)	0.950	11	33
2	OW3	LITHONIA	WPX1 LED P2 xxK MVOLT (finish)	0.950	24	48
4	D1	LITHONIA	LDN4 40_15 LQ4AR LSS	0.950	17.5	70
4	OL-23	TIVOLI	LSL2-x-12-S-xxk-C-12- 23FT	0.950	N.A.	18.4

Calculation Summary						
Label	Units	Avg	Max	Min	Max/Min	Avg/Min
Presumed Property Line	Fc	0.15	1.02	0.00	N.A.	N.A.
Front Parking Lot	Fc	1.28	3.6	0.4	9.00	3.20



COMMENTS				
#	DATE	REVISIONS		

DRAWN BY : JT	DATE : 3-8-2022	SCALE : 1" = 20'
---------------	-----------------	------------------

SPRINGDALE STREET APARTMENTS	MT HOREB, WI	SITE LIGHTING LAYOUT
------------------------------	--------------	----------------------

GENERAL PLAN NOTES:

- A. EXTERIOR DIMENSIONS ARE FROM GRIDLINE TO GRIDLINE, OR TO EDGE OF FOUNDATION WALL UNLESS OTHERWISE NOTED. PLEASE CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- B. DIMENSIONS ARE TO FACE OF FRAME OR COLUMN CENTERLINE UNLESS OTHERWISE NOTED. VERIFY ALL EXISTING CONDITIONS AND ADJUST WALL DIMENSIONS ACCORDINGLY. CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- C. ALL DOORS WITH A CLOSE PROXIMITY OF A PERPENDICULAR WALL SHALL HAVE A TYPICAL DIMENSION OF 6" FROM FACE OF FRAME TO DOOR OPENING UNLESS NOTED OTHERWISE.
- D. INTERIOR WALL FIRE SEPARATION, SEE A0.5
- E. STAIRWELL, ELEVATOR, FIRE WALL SEPARATION AND MECHANICAL CHASE INTERIOR WALLS TO BE RATED 2HR FIRE SEPARATION
- F. PROVIDE SOUND INSULATION IN ALL COMMON WALLS, IN ALL FLOORS AND CEILINGS, AND AT UNIT BATHROOM WALLS
- G. FIRE EXTINGUISHER CABINETS: REQUIRED EVERY 75 FEET OR 3,000 SF (WHICHEVER IS MORE LIMITING). CABINETS TO BE PARTIALLY RECESSED AND RATED TO MEET THE ASSOCIATED WALL FIRE RATING
- H. ALL EXITS SHALL BE ACCESSIBLE, INCLUDING A MAXIMUM OF 1/2" RISE AT DOOR THRESHOLDS

KEYNOTES:

- 1 CONCRETE CURB, SEE TYPICAL DETAIL
- 2 STORAGE LOCKER - 2X4 FRAMED WITH PLYWOOD ON PARKING SIDE UP TO 4'-0", WIRE MESH TO BOTTOM OF PRECAST. DOORS TBD.
- 3 FLOOR DRAIN
- 4 SLOPE FLOOR TO DRAIN 1/4" / 12"
- 5 ELECTRIC CAR CHARGING STATION
- 6 VENT WELL
- 7 BIKE REPAIR
- 8 FIRE SPRINKLER RISER
- 9 DOG WASH TUB
- 10 GAS METERS
- 11 WATER METERS
- 12 ELECTRICAL METERS

SPRINGDALE ST. APARTMENTS

NEW MULTI-FAMILY RESIDENTIAL
1800 SPRINGDALE STREET
MT. HOREB, WI 53572

Project Status

2022.02.03	DD PRICING
2022.03.09	FOR REVIEW
2022.03.14	SIP SUBMITTAL

PROJ. #: 21062-01

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LOWER LEVEL
FLOOR PLAN -
OVERALL

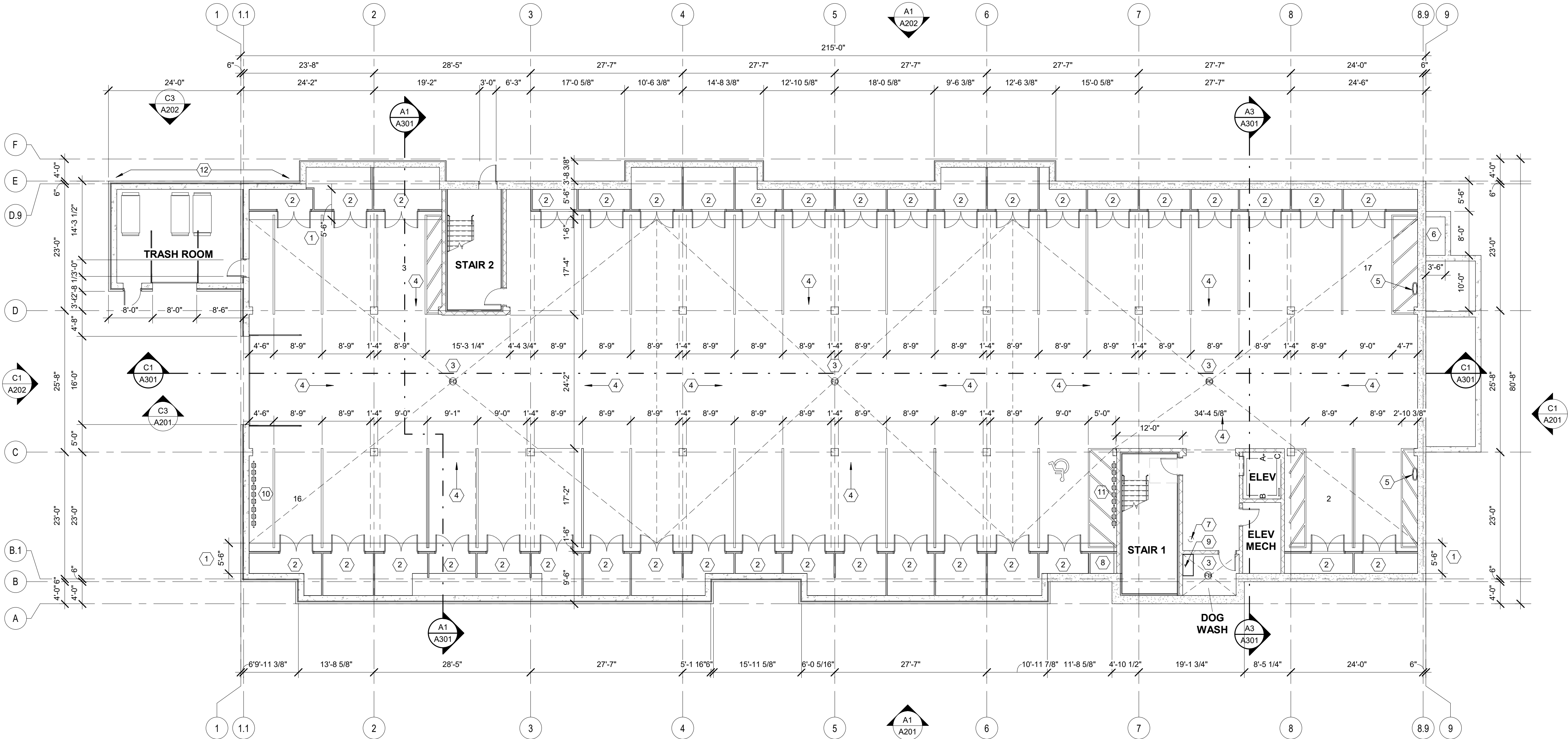
A101

D

C

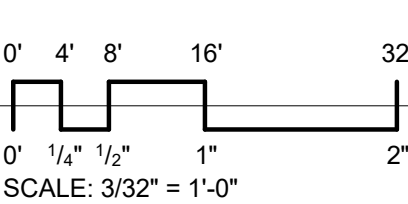
B

A



A1 L.L. PARKING PLAN OVERALL
3/32" = 1'-0"

GARAGE AMENITIES
38 PARKING STALLS
(2)EV CHARGING STATIONS
INDIVIDUAL STORAGE UNITS
DOG WASH ROOM
BIKE REPAIR STAND
BIKE STALLS LOCATED IN
EACH STORAGE UNIT



PRELIMINARY

Sketch works
architecture *llc*

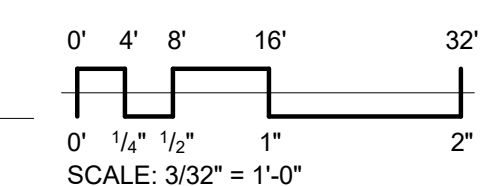
- SPRINGDALE ST. APARTMENTS**
- NEW MULTI-FAMILY RESIDENTIAL**
- 1800 SPRINGDALE STREET**
MT. HOREB, WI 53572

022.02.03	DD PRICING
022.03.09	FOR REVIEW
022.03.14	SIP SUBMITTAL

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**FIRST FLOOR
PLAN -
OVERALL**

A102



PLAN
NORTH

A circular symbol with a vertical line through the center and a horizontal line through the center, forming a cross. An arrowhead is at the top of the vertical line, pointing upwards.

A1 FIRST FLOOR PLAN OVERALL
3/32" = 1'-0"

PRELIMINARY

D

C

B

A

GENERAL PLAN NOTES:

- A. EXTERIOR DIMENSIONS ARE FROM GRIDLINE TO GRIDLINE, OR TO EDGE OF FOUNDATION WALL UNLESS OTHERWISE NOTED. PLEASE CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- B. DIMENSIONS ARE TO FACE OF FRAME OR COLUMN CENTERLINE UNLESS OTHERWISE NOTED. VERIFY ALL EXISTING CONDITIONS AND ADJUST WALL DIMENSIONS ACCORDINGLY. CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- C. ALL DOORS WITH A CLOSE PROXIMITY OF A PERPENDICULAR WALL SHALL HAVE A TYPICAL DIMENSION OF 6" FROM FACE OF FRAME TO DOOR OPENING UNLESS NOTED OTHERWISE.
- D. INTERIOR WALL FIRE SEPARATION, SEE A0.5
- E. STAIRWELL, ELEVATOR, FIRE WALL SEPARATION AND MECHANICAL CHASE INTERIOR WALLS TO BE RATED 2HR FIRE SEPARATION
- F. PROVIDE SOUND INSULATION IN ALL COMMON WALLS, IN ALL FLOORS AND CEILINGS, AND AT UNIT BATHROOM WALLS
- G. FIRE EXTINGUISHER CABINETS: REQUIRED EVERY 75 FEET OR 3,000 SF (WHICHEVER IS MORE LIMITING). CABINETS TO BE PARTIALLY RECESSED AND RATED TO MEET THE ASSOCIATED WALL FIRE RATING
- H. ALL EXITS SHALL BE ACCESSIBLE, INCLUDING A MAXIMUM OF 1/2" RISE AT DOOR THRESHOLDS

KEYNOTES:

- 1 MECHANICAL SHAFT FROM FIRST FLOOR TO ROOF

SPRINGDALE ST. APARTMENTS

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SECOND
FLOOR PLAN -
OVERALL

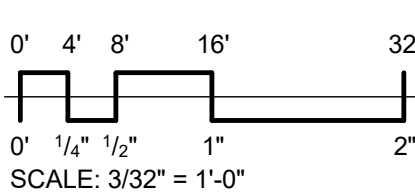
A103

A1 SECOND FLOOR PLAN OVERALL
3/32" = 1'-0"

PRELIMINARY



15 UNITS
1 - 3 bdrm
2 - 2 bdrm + den
3 - 2 bdrm
4 - 1 bdrm
5 - Studio



GENERAL PLAN NOTES:

- A. EXTERIOR DIMENSIONS ARE FROM GRIDLINE TO GRIDLINE, OR TO EDGE OF FOUNDATION WALL UNLESS OTHERWISE NOTED. PLEASE CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- B. DIMENSIONS ARE TO FACE OF FRAME OR COLUMN CENTERLINE UNLESS OTHERWISE NOTED. VERIFY ALL EXISTING CONDITIONS AND ADJUST WALL DIMENSIONS ACCORDINGLY. CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- C. ALL DOORS WITH A CLOSE PROXIMITY OF A PERPENDICULAR WALL SHALL HAVE A TYPICAL DIMENSION OF 6" FROM FACE OF FRAME TO DOOR OPENING UNLESS NOTED OTHERWISE.
- D. INTERIOR WALL FIRE SEPARATION, SEE A0.5
- E. STAIRWELL, ELEVATOR, FIRE WALL SEPARATION AND MECHANICAL CHASE INTERIOR WALLS TO BE RATED 2H FIRE SEPARATION
- F. PROVIDE SOUND INSULATION IN ALL COMMON WALLS, IN ALL FLOORS AND CEILINGS, AND AT UNIT BATHROOM WALLS
- G. FIRE EXTINGUISHER CABINETS: REQUIRED EVERY 75 FEET OR 3,000 SF (WHICHEVER IS MORE LIMITING). CABINETS TO BE PARTIALLY RECESSED AND RATED TO MEET THE ASSOCIATED WALL FIRE RATING
- H. ALL EXITS SHALL BE ACCESSIBLE, INCLUDING A MAXIMUM OF 1/2" RISE AT DOOR THRESHOLDS

KEYNOTES:

- 1 MECHANICAL SHAFT FROM FIRST FLOOR TO ROOF



SPRINGDALE ST. APARTMENTS

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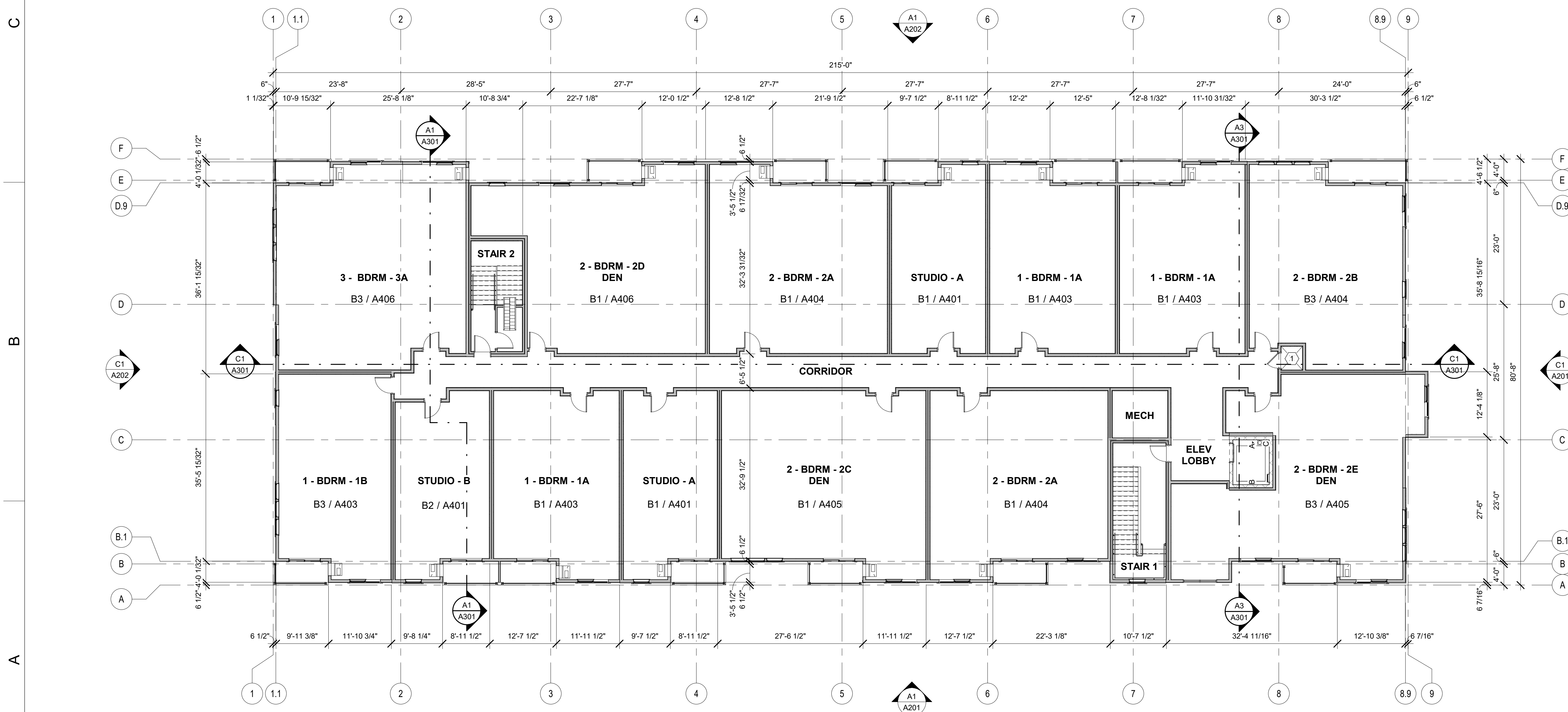
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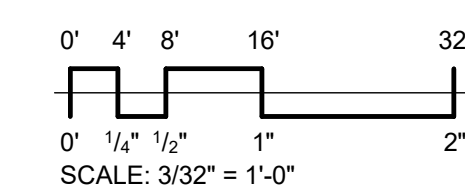
THIRD FLOOR PLAN - OVERALL

A104



14 UNITS

- 1 - 3 bdrm
3 - 2 bdrm + den
3 - 2 bdrm
4 - 1 bdrm
5 - Studio



A1 THIRD FLOOR PLAN OVERALL
3/32" = 1'-0"

$$3/32'' = 1'-0''$$

PRELIMINARY

D
C
B
A

1

2

3

4

ROOF PLAN GENERAL NOTES:

- A. EXTERIOR DIMENSIONS ARE FROM GRIDLINE TO GRIDLINE, OR TO EDGE OF FOUNDATION WALL UNLESS OTHERWISE NOTED. PLEASE CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- B. DIMENSIONS ARE TO FACE EAVE UNLESS OTHERWISE NOTED. VERIFY ALL EXISTING CONDITIONS AND ADJUST WALL DIMENSIONS ACCORDINGLY. CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- C. ROOF ASSEMBLY TO BE RATED 1 HR
- D. INTERIOR WALL FIRE SEPARATION, SEE A0.5
- E. STAIRWELL, ELEVATOR, AND MECHANICAL CHASE
INTERIOR WALLS SHALL BE CONTINUOUS TO BOTTOM OF RATED CEILING ASSEMBLY CAP
- F. FIRE WALL TO EXTEND TO BOTTOM OF ROOF SHEATHING. SHEATHING TO BE FIRE RETARDANT WITHIN 4'-0" OF FIRE WALL, NO OPENINGS WITHIN 4'-0" OF FIRE WALL
- G. PROVIDE APPROPRIATE INSULATION IN ATTIC AREA, PROVIDE VAPOR BARRIER BELOW INSULATION
- H. PROVIDE DRAFTSTOPPING IN ATTIC/ CEILINGS AND FLOORS EVERY 3000 SF OR TWO DWELLING UNITS, WHICHEVER IS SMALLER, AND SHALL BE INSTALLED IN LINE WITH THE DWELLING UNIT SEPARATION WALLS, WHERE CORRIDOR WALLS PROVIDES THE SEPARATION, DRAFTSTOPPING IS ONLY REQUIRED ABOVE ONE OF THE CORRIDOR WALLS
- I. COORDINATE INTERNAL ROOF DRAINS WITH CIVIL STORM SEWER CONNECTIONS.

ROOF PLAN KEYNOTES:

- 1 ROOF DRAIN WITH OVERFLOW
- 2 FULLY ADHEARED EPDM OVER ROOF SHEATHING ON SLOPED TOP CORD ROOF TRUSS
- 3 SLOPED TOP CORD TRUSS AT 1/4" / 12"
- 4 SLOPED ROOF CANT TO ROOF DRAINS
- 5 ROOF HATCH WITH ALTERNATING TREAD LADDER FROM THRID FLOOR
- 6 PROPOSED RTU LOCATION FOR COMMERCIAL TENNANT
- 7 MECHANICAL SHAFT FROM FIRST FLOOR TO ROOF

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2022.03.14	SIP SUBMITTAL

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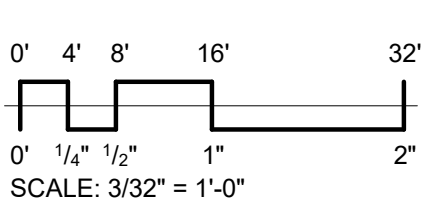
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ROOF PLAN

A107

A1 ROOF PLAN OVERALL

3/32" = 1'-0"

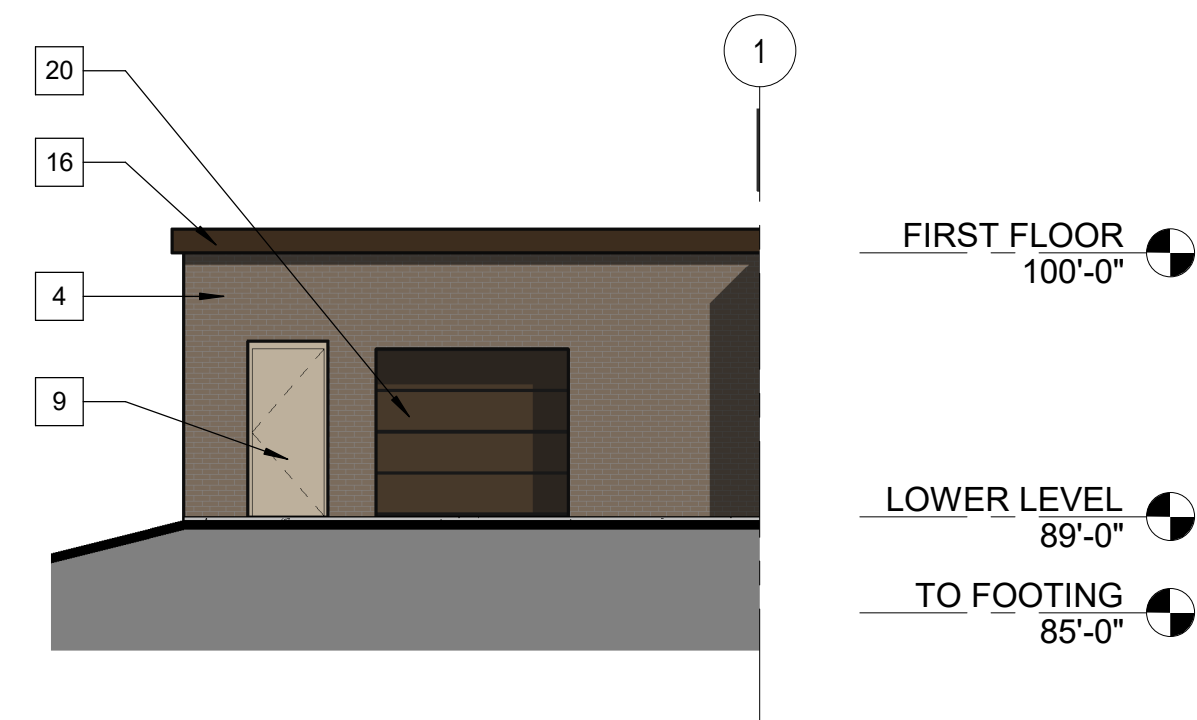


PRELIMINARY



C1 EAST ELEVATION
1/8" = 1'-0"

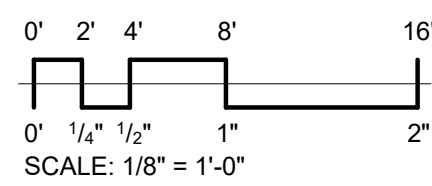
EXTERIOR MATERIAL SCHEDULE							
#	DESCRIPTION	MANUFACTURER	TYPE/STYLE	COLOR	HEIGHT	WIDTH	COMMENTS
1	FIBER CEMENT LAP SIDING	JAMES HARDIE	CEDARMILL	IRON GRAY	6" EXPOSED		
2	PREFINISHED METAL WALL PANEL	BERRIDGE MFG. CO.	FW-1025 PANEL	HONEY WALNUT	10 1/4"		WITHOUT GROOVES
3	FIBER CEMENT LAP SIDING	JAMES HARDIE	CEDARMILL	COBBLESTONE	6" EXPOSED		
4	BRICK	HEBRON BRICK CO.	MODULAR	AMERICANA: ROUTE 66			COLOR MORTAR, TBD.
5	PRECAST SILL	KALISH MASONRY	STANDARD PROFILE	8-31	4"		MATCH ARCHITECT'S SAMPLE
6	PRECAST LINTEL	KALISH MASONRY	STANDARD PROFILE	8-31	8"		MATCH ARCHITECT'S SAMPLE
7	WINDOW / DOOR TRIM	JAMES HARDIE	CEDARMILL	COBBLESTONE	6" EXPOSED		
8	ALUMINUM STOREFRONT			MEDIUM BRONZE			
9	HOLLOW METAL DOOR			MATCH BRICK COLOR			
10	SLIDING PATIO DOOR	PELLA		FOSSILE			
11	WINDOW	PELLA		FOSSILE			
12	RAILING			BLACK			
13	C-CHANNEL			BLACK			
14	METAL COPING	CMG		MEDIUM BRONZE			
15	DECORATIVE CORNICE			MATCH COBBLESTONE			
16	PERGOLA						
17	PAINTED CONCRETE			MATCH BRICK COLOR			
18	METAL CORNICE	CMG		MEDIUM BRONZE			
19	METAL CORNICE	CMG		SIERRA TAN			
20	OVERHEAD DOOR						



C3 TRASH ENCLOSURE - SOUTH ELEVATION
1/8" = 1'-0"



A1 SOUTH ELEVATION
1/8" = 1'-0"



PRELIMINARY

SPRINGDALE ST. APARTMENTS

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EXTERIOR
ELEVATIONS

A201

Stormwater Management Plan & Erosion Control Report

Mount Horeb Apartment Development

1800 Springdale St

Report Date: March 11, 2022



Prepared for:

Sketchworks Architecture

Attn: Bradley Koning
7780 Elmwood Ave, Suite 208
Middleton, WI 53562

Prepared by:

JSD Professional Services, Inc.

161 Horizon Drive, Suite 101
Verona, WI 53593

JSD Project No. 21-10870



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APPENDIX 6 – THERMAL RUNOFF
APPENDIX 7 – WDNR USLE
APPENDIX 8 – STORMWATER COST ESTIMATE
APPENDIX 9 – MAINTENANCE AGREEMENT

1.0 INTRODUCTION

This technical report shall serve as the stormwater management report to support the Mount Horeb Apartment Development.

The site is located along Springdale St (Business 18 and 151) in the Village of Mount Horeb. A small paved roundabout is to be removed and replaced with a 3-story apartment building.

Improvements associated with the proposed expansions will require that new impervious area be added, the existing impervious areas be removed and replaced. The total existing impervious area is approximately 0.14 acres while the proposed impervious area is approximately 0.85 acres. The total final buildout includes approximately 59% impervious surface on the lot, where the existing impervious coverage was 9%.

Stormwater management facilities have been designed for all redevelopment standards required by the Village of Mount Horeb, Dane County, and WDNR. Standards met on-site include sediment control, oil/grease, run-off rate control, stable outlet design, and infiltration.

A large portion of the site's impervious areas, including the roof, will drain to one of the two bioretention basins. Some of the area on the north side of the building will drain off site. Proposed construction plans of improvements can be found in **Appendix 2**.

2.0 EXISTING CONDITIONS

The existing site is located along Springdale St (Business 18 and 151) where the neighboring properties to the east and west are commercial and the north is residential.

The existing site contains a paved roundabout area that runs along the eastern property line. The rest of the site is grass covered with some wooded areas. The majority of the site is sheet flowing northwest to towards the residential subdivision. An existing conditions map can be found in **Appendix 1**.

The sites consists primarily of two different soil types as shown by the USDA Web Soil Survey. These are Cut and Fill Land (Cu) and Edmund Silt Loam (EdC2), 6 to 12 percent slopes, eroded. WDNR wetland mapping indicates that there are no delineated wetlands or wetland indicator soils on or adjacent to the proposed site. Additionally, there are no bodies of water adjacent to the site. Refer to **Appendix 3** for more Geotechnical information.

3.0 DESIGN CRITERIA

3.1 Mount Horeb, Wisconsin – Code of Ordinances

Chapter 20 – Erosion Control and Stormwater Management

3.2 Dane County Code of Ordinances

Chapter 14 – Manure Management, Erosion Control and Stormwater Management

3.3 Wisconsin Administrative Code

WDNR – Technical Standards (NR 151 and NR 216)

4.0 ANALYSIS

This stormwater management and erosion control plan has been written and analyzed for the full build of the proposed Mount Horeb Apartment Development.

HydroCAD® stormwater modeling system (Version 10.00-25) has been used to analyze stormwater characteristics for the development. HydroCAD uses the accepted TR-55 – Urban Hydrology for Small Watersheds methodology for determining peak discharge runoff rates. The NOAA Atlas 14 rainfall depths for Dane County and the MSE 4 rainfall distribution were used in the hydrologic model. Refer to **Appendix 4** for proposed HydroCAD modeling.

5.0 DESIGN

The proposed site has been divided into seven watersheds. All of the roof runoff (Areas A and B) will be piped to Bioretention Basin East. The eastern portion of the parking lot/drive aisles (Area C) and north side of building (Area E) will drain to the Bioretention Basin East as well. The western side of the parking/drive aisle areas (Area D) and the northwest side of the building (Area F) will drain to Bioretention Basin West. The rest of the surrounding areas (Area G) will drain to the northwest, as it does in the existing conditions.

Proposed construction plans and watershed map can be found in **Appendix 2**

5.1 Sediment Control

Mount Horeb, Wisconsin – Code of Ordinances, Chapter 20, Sec. 20.10(2)(a). Sediment control
For new construction, design practices shall retain soil particles greater than 5 microns on the site (80% reduction) resulting from a one-year 24-hour storm event (2.5 inches over a 24-hour duration), according to approved procedures, and assuming no sediment resuspension.

Total suspended solids (TSS) reduction is being satisfied within the two Bioretention basins. A total of 80.5% is being provided. The WinSLAMM modeling can be found in **Appendix 5**.

5.2 Oil and Grease Control

Mount Horeb, Wisconsin – Code of Ordinances, Chapter 20, Sec. 20.10(2)(b). Oil and Grease Control
For all stormwater plans for commercial or industrial developments and all other uses where the potential for pollution by oil or grease, or both, exists, the first 0.5 inches of runoff will be treated using the best oil and grease removal technology available.

Oil and grease treatment is being satisfied within the two Bioretention basins.

5.3 Runoff Rate Control

Mount Horeb, Wisconsin – Code of Ordinances, Chapter 20, Sec. 20.10(2)(c/d). Runoff Rate Control
Except for redevelopment projects, all stormwater facilities shall be designed, installed and maintained to effectively accomplish the following: 1. Maintain predevelopment peak runoff rates for the 2-year, 24-hour storm event (2.9 inches over 24 hours' duration). 2. Maintain predevelopment peak runoff rates for the 10-year, 24-hour storm event (4.2 inches over 24 hours' duration).

TABLE 1: PRE-DEVELOPMENT VERSUS POST-DEVELOPMENT PEAK RUNOFF RATES

	2-year	10-year	100-year
Rainfall for each 24-hour storm event (inches)	2.90	4.20	6.66
Existing peak discharge rate (cfs)	2.50	4.58	8.70
Proposed peak discharge rate without controls (cfs)	4.34	6.72	11.29
Proposed peak discharge rate with TSS pipe (cfs)	1.69	3.30	8.31
Difference: Proposed peak discharge rates with detention vs. existing peak discharge Rate (cfs)	-0.81	-1.28	-0.39

All proposed storm events, including the 100-year, are reducing the runoff rates when compared to the predevelopment conditions. Refer to **Appendix 4** for modeling input and output.

5.4 Outlets

Mount Horeb, Wisconsin – Code of Ordinances, Chapter 20, Sec. 20.10(2)(e). Outlets

Discharges from new construction sites must have a stable outlet capable of carrying the design flow as required in subsection (2)(e) at a nonerosive velocity.

All storm sewer pipes have been designed so as to prevent erosive velocity and safely convey the off-site discharges over the surface and within pipes. Pipe sizing was completed using the rational method, refer to **Appendix 6** for modeling.

5.5 Infiltration

Mount Horeb, Wisconsin – Code of Ordinances, Chapter 20, Sec. 20.10(2)(f). Infiltration

Residential Development. For residential developments, design practices shall infiltrate sufficient runoff volume so that post-development infiltration volume will be at least 90% of the predevelopment infiltration volume, based upon average annual rainfall.

Infiltration is being satisfied within the two Bioretention basins. A total of 105% is being provided. The WinSLAMM modeling can be found in **Appendix 5**.

6.0 EROSION CONTROL

Erosion control measures onsite will conform to the Wisconsin Department of Natural Resources Technical Standards, Village of Mount Horeb, and Dane County requirements. These measures include, but are not limited to; construction entrance, silt fencing, grading, seeding, mulching, erosion matting, and temporary stone check dams as necessary. Construction sequencing shall be as follows:

1. Install silt fence in the appropriate locations
2. Install all temporary erosion control measures as noted on the Erosion Control Plan
3. Clear and grub existing vegetation
4. Topsoil removal and stockpile
5. Pavement demolition and removal
6. Site mass grading
7. Stabilize graded slopes/swales
8. Install utilities
9. Prepare building pads/foundations
10. Construct/erect building
11. Install aggregate base course
12. Place topsoil

13. Seed and mulch
14. Place asphalt/concrete pavement
15. Remove temporary erosion control practices upon contributing area stabilization

It is anticipated that the total disturbance area will be 1.59 acres. The construction entrance for the development will need to be cleaned and maintained. Sediment shall be removed from the silt fence when levels reach an elevation of one foot. All disturbed pervious areas shall be restored with a minimum of six inches of topsoil, fertilizer, seed, and mulch within seven days of final grading. The seed mixture shall be WISDOT Mix #10, and be placed at a minimum rate of 3 lb. per 1,000 square feet as recommended by the manufacturer.

All runoff during construction shall be directed through the erosion control measures as shown on the Grading and Erosion Control Plan. Erosion control measures have been designed to prevent gully and bank erosion, limit soil loss rate to a maximum of 5 tons per acre annually, and regulate soil transportation within the boundaries.

The erosion control measures for the Mount Horeb Apartment Development have been designed to meet the Village of Mount Horeb, Dane County, Wisconsin, and WDNR standards.

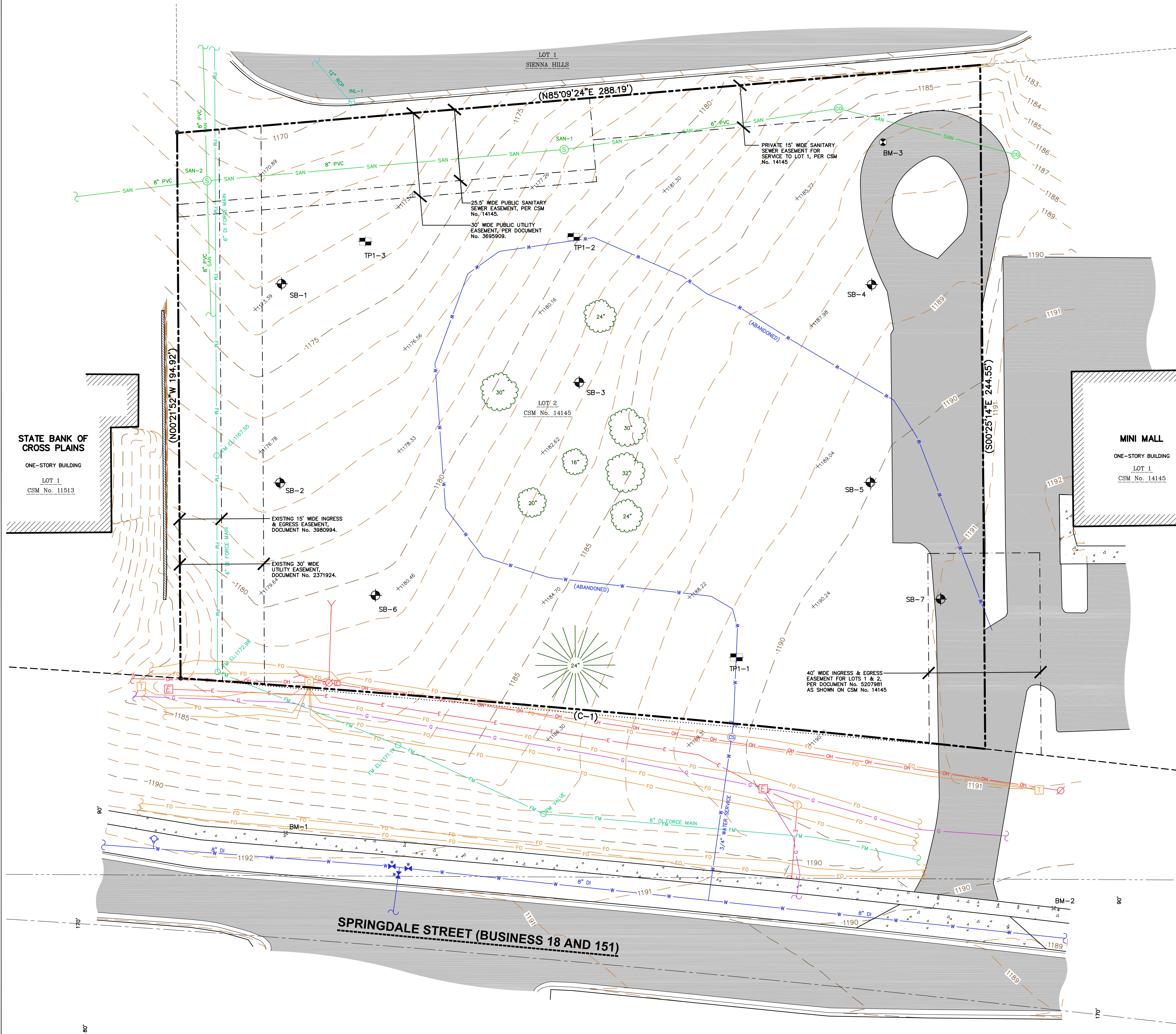
For more detailed requirements regarding erosion control and grading efforts, refer to the proposed construction plans in **Appendix 2** and Universal Soil Loss Equation (USLE) worksheet in **Appendix 6**.

7.0 CONCLUSION

Stormwater management features for Mount Horeb Apartment Development have been designed in accordance with applicable standards per Chapter 20 of the Mount Horeb Code of Ordinances, Chapter 14 of the Dane County Code of Ordinances, WDNR standards NR151 and NR216. Site stormwater management features two bioretention basins which help to reduce total suspended solids, peak run-off rate, oil and grease, help to infiltrate and help to discharge stable rates. On-site storm water treatment and conveyance will be a private system owned and maintained by the site ownership group. Erosion control practices will limit the soil loss rate to 5 tons per acre annually, and regulate soil transportation within project site boundaries. Refer to construction plans for further details.

Appendix 1:
Existing Conditions Survey

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EXISTING CONDITIONS MAP

LOT 2, CERTIFIED SURVEY MAP No. 14145, RECORDED IN VOLUME 95, PAGES 219-221, AS DOCUMENT No. 5206181, LOCATED IN THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER AND SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 07, TOWNSHIP 06 NORTH, RANGE 07 EAST, VILLAGE OF MOUNT HOREB, DANE COUNTY, WISCONSIN.

LEGEND

SB-1	3/4" REBAR FOUND	---	EASEMENT LINE
SB-2	SOIL BORING	---	CONCRETE CURB & GUTTER
SB-3	TEST PIT	---	SANITARY SEWER
SB-4	SIGN	---	WATER LINE
SB-5	SANITARY MANHOLE	---	STORM SEWER
SB-6	HYDRANT	---	NATURAL GAS
SB-7	WATER VALVE	---	OVERHEAD LINE
SB-8	CURB STOP/SERVICE VALVE	---	UNDERGROUND ELECTRIC
SB-9	CURB INLET	---	FIBER OPTIC
SB-10	ELECTRIC TRANSFORMER	---	UNDERGROUND TELEPHONE
SB-11	POWER POLE W/GUY	---	BUILDING
SB-12	TELEPHONE MANHOLE	---	INDEX CONTOUR
SB-13	DECIDUOUS TREE	---	INTERMEDIATE CONTOUR
SB-14	CONIFEROUS TREE	---	BITUMINOUS PAVEMENT
SB-15	PARCEL BOUNDARY	---	RETAINING WALL
SB-16	RIGHT-OF-WAY LINE	---	CONCRETE PAVEMENT
SB-17	CENTERLINE	---	END OF FLAGGED UTILITIES
SB-18	SECTION LINE	---	DENOTES RECORD DATA DEPICTING THE SAME LINE ON THE GROUND AS RETRACED BY THIS SURVEY
SB-19	PLATTED LOT LINE	---	

NOTES

- FIELD WORK PERFORMED ON NOVEMBER 01, 2021.
- BEARINGS FOR THIS SURVEY AND MAP ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, DANE COUNTY. THE SOUTH LINE OF THE NORTHWEST QUARTER OF SECTION 07-06-07, RECORDED AS S89°43'27"E.
- ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). BENCHMARK IS A CUT CROSS IN THE SIDEWALK NEAR THE SOUTHWEST CORNER OF THIS PARCEL, ELEVATION = 1192.25'
- CONTOUR INTERVAL IS ONE FOOT.
- SUBSURFACE UTILITIES AND FEATURES SHOWN ON THIS MAP HAVE BEEN APPROXIMATED BY LOCATING SURFICIAL FEATURES AND APPURTENANCES, LOCATING DIGGERS HOTLINE FIELD MARKINGS AND BY REFERENCE TO UTILITY RECORDS AND MAPS. DIGGER'S HOTLINE TICKET No.s 20214414355 AND 20214414357, WITH A START DATE OF NOVEMBER 01, 2021.
- UTILITY COMPANIES CONTACTED THRU DIGGERS HOTLINE:
MT. HOREB ELECTRIC AND WATER
MADISON GAS AND ELECTRIC
CHARTER COMMUNICATIONS
ALLIANT ENERGY
MT. HOREB TELEPHONE
- BEFORE EXCAVATION, APPROPRIATE UTILITY COMPANIES SHOULD BE CONTACTED. FOR EXACT LOCATION OF UNDERGROUND UTILITIES, CONTACT DIGGERS HOTLINE, AT 1.800.242.8511.
- JSD PROFESSIONAL SERVICES, INC. DOES NOT GUARANTEE THAT THE BENCHMARKS LISTED ON THIS MAP HAVE NOT BEEN DISTURBED SINCE THE DATE OF THIS SURVEY AND SHOULD BE VERIFIED BEFORE BEING UTILIZED.
- ROADWAY UTILITY RECORD DRAWINGS WERE REQUESTED FROM THE VILLAGE OF MOUNT HOREB AND RECEIVED.

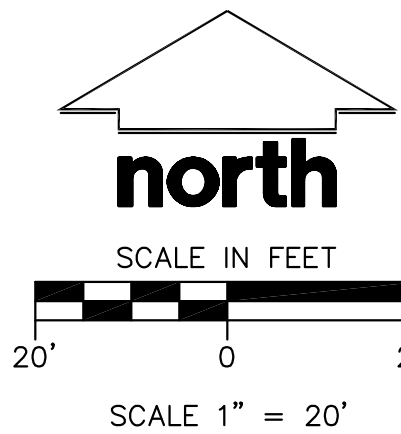
SANITARY SEWER MANHOLES					
STRUCT. ID	RIM ELEVATION	INVERT ELEVATION	PIPE SIZE	PIPE TYPE	
SAN-1	1177.76	E 1167.88	6"	PVC	
		W 1167.83	8"	PVC	
SAN-2	1171.68	E 1165.29	8"	PVC	
		S 1165.27	8"	PVC	
		W 1165.29	8"	PVC	
		N 1165.25	8"	PVC	

STORM SEWER INLETS					
INLET ID	RIM ELEVATION	INVERT ELEVATION	PIPE SIZE	PIPE TYPE	
INL-1	1169.38	NW 1165.05	12"	RCP	

BENCHMARKS		
BENCH MARK	ELEVATION	DESCRIPTION
BM-1	1192.25	CUT CROSS IN SIDEWALK, SOUTHWEST CORNER OF SITE
BM-2	1189.48	CUT CROSS IN SIDEWALK, SOUTHWEST CORNER OF SITE
BM-3	1187.13	FOUND M.A.G. NAIL, NORTHEAST CORNER OF SITE

*JSD DOES NOT GUARANTEE THAT THE BENCHMARK ELEVATIONS LISTED ON THIS MAP HAVE NOT BEEN DISTURBED SINCE THE DATE OF THIS SURVEY AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION ACTIVITIES.

RECORD CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C-1	288.84'	7729.49'	2°08'28"	N84°58'32"W	288.83'



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CLIENT:
**SKETCHWORKS
ARCHITECTURE**

CLIENT ADDRESS:
**7780 ELMWOOD AVENUE, STE. 208
MIDDLETON, WI 53562**

PROJECT:
**MOUNT HOREB
APARTMENT
DEVELOPMENT**

PROJECT LOCATION:
**VILLAGE OF MOUNT HOREB
DANE COUNTY, WISCONSIN**

Design/Drawn: JK 11/02/21
Approved: TJB 11/02/21

SHEET TITLE:
EXISTING CONDITIONS MAP

SHEET NUMBER:

1 OF 1

JSD PROJECT NO: 21-10870

THESE PLANS AND DESIGNS ARE COPYRIGHT PROTECTED AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF JSD PROFESSIONAL SERVICES, INC.

Appendix 2:

Proposed Construction Plans

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GENERAL NOTES

1. REFER TO THE EXISTING CONDITIONS SURVEY FOR EXISTING CONDITIONS NOTES AND LEGENDS.
2. ALL WORK IN THE ROW AND/OR PUBLIC EASEMENTS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER & WATER CONSTRUCTION IN WISCONSIN AND MUNICIPAL REQUIREMENTS.
3. EXISTING GRADE SPOT ELEVATIONS SHOWN FOR INFORMATIONAL PURPOSES. DURING CONSTRUCTION MATCH EXISTING GRADES AT CONSTRUCTION LIMITS.
4. NO SITE GRADING OUTSIDE OR DOWNSLOPE OF PROPOSED SILT FENCE LOCATION. NO LAND DISTURBANCE BEYOND PROPERTY LINES.
5. JSD SHALL BE HELD HARMLESS AND DOES NOT WARRANT ANY DEVIATIONS BY THE OWNER/CONTRACTOR FROM THE APPROVED CONSTRUCTION PLANS THAT MAY RESULT IN DISCIPLINARY ACTIONS BY ANY OR ALL REGULATORY AGENCIES.

DEMOLITION NOTES

1. THIS PLAN INDICATES ITEMS ON THE PROPERTY INTENDED FOR DEMOLITION BASED ON THE CURRENT SITE DESIGN THAT HAVE BEEN IDENTIFIED BY A REASONABLE OBSERVATION OF THE EXISTING CONDITIONS THROUGH FIELD SURVEY, RECONNAISSANCE, "DIGGER'S HOTLINE" LOCATION, AND GENERAL "STANDARD OF CARE". THERE MAY BE ADDITIONAL ITEMS THAT CAN NOT BE IDENTIFIED BY A REASONABLE ABOVE GROUND OBSERVATION, OF WHICH THE ENGINEER WOULD HAVE NO KNOWLEDGE OR MAY BE A PART OF ANOTHER DESIGN DISCIPLINE. IT IS THE CONTRACTOR'S/BIDDER'S RESPONSIBILITY TO REVIEW THE PLANS, INSPECT THE SITE AND PROVIDE THEIR OWN DUE DILIGENCE TO INCLUDE IN THEIR BID WHAT ADDITIONAL ITEMS, IN THEIR OPINION, MAY BE NECESSARY FOR DEMOLITION. ANY ADDITIONAL ITEMS IDENTIFIED BY THE CONTRACTOR/BIDDER SHALL BE IDENTIFIED IN THE BID AND REPORTED TO THE ENGINEER OF RECORD. JSD TAKES NO RESPONSIBILITY FOR ITEMS ON THE PROPERTY THAT COULD NOT BE LOCATED BY A REASONABLE OBSERVATION OF THE PROPERTY OR OF WHICH THEY WOULD HAVE NO KNOWLEDGE.
2. CONTRACTOR SHALL KEEP ALL STREETS AND PRIVATE DRIVES FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
3. ALL TREES WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS SPECIFICALLY CALLED OUT FOR PROTECTION. ALL TREES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY AND STUMPS SHALL BE GROUND TO PROPOSED SUBGRADE.
4. ALL LIGHT POLES TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY, INCLUDING BASE AND APPURTENANCES. SALVAGE FOR RELOCATION. COORDINATE RELOCATION AND/OR ABANDONMENT OF ALL ELECTRIC LINES WITH ELECTRICAL ENGINEER AND OWNER PRIOR TO DEMOLITION.
5. ABANDONED/REMOVED ITEMS SHALL BE DISPOSED OF OFF SITE UNLESS OTHERWISE NOTED.
6. CONTRACTOR TO REPLACE ALL SIDEWALK AND CURB AND GUTTER ABUTTING THE PROPERTIES, WHICH IS DAMAGED BY THE CONSTRUCTION, OR ANY SIDEWALK AND CURB AND GUTTER THAT THE CITY ENGINEER DETERMINES NEEDS TO BE REPLACED BECAUSE IT IS NOT AT A DESIRABLE GRADE REGARDLESS OF WHETHER THE CONDITION EXISTED PRIOR TO BEGINNING CONSTRUCTION.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR:
 - 7.1. EXAMINE ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
 - 7.2. VERIFYING UTILITY ELEVATIONS AND NOTIFYING ENGINEER OF ANY DISCREPANCIES. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCIES ARE RESOLVED.
 - 7.3. NOTIFYING ALL UTILITIES PRIOR TO THE REMOVAL OF ANY UNDERGROUND UTILITIES.
 - 7.4. NOTIFYING THE DESIGN ENGINEER AND LOCAL CONTROLLING MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION INSPECTION.
8. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
9. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF THESE IMPROVEMENTS.
10. CONTRACTOR TO COORDINATE PRIVATE UTILITY REMOVAL / ABANDONMENT AND NECESSARY RELOCATION WITH RESPECTIVE UTILITY COMPANY. COORDINATION REQUIRED PRIOR TO CONSTRUCTION.
11. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH THE APPROVED MUNICIPALITY RECYCLING PLAN.
12. ANY CONTAMINATED SOILS SHALL BE REMOVED IN ACCORDANCE WITH FEDERAL AND STATE REGULATIONS TO AN APPROVED LANDFILL.
13. ALL EXISTING UTILITIES TO BE FIELD LOCATED AND FLAGGED BY CONTRACTOR.
14. EXISTING FIBER OPTIC LINE TO BE CLEARLY MARKED PRIOR TO ANY EXCAVATION. CONTRACTOR TO NOTIFY ENGINEER IMMEDIATELY IF ANY DISCREPANCIES OCCUR IN THE LOCATION SHOWN OR PROPOSED IMPROVEMENTS IMPACTING EXISTING FIBER OPTIC LINE LOCATION.
15. SEWER ABANDONMENT SHALL BE IN ACCORDANCE WITH SECTION 3.2.24, OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN WISCONSIN, LATEST ADDITION, AND VILLAGE OF MOUNT HOREB SPECIFICATIONS.
16. WATER ABANDONMENT SHALL BE IN ACCORDANCE WITH SECTION 4.1.0 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN WISCONSIN, LATEST ADDITION, AND VILLAGE OF MOUNT HOREB SPECIFICATIONS.
17. ALL PERIMETER EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF DEMOLITION ACTIVITIES. CONTRACTOR SHALL KEEP ALL STREETS AND PAVEMENT FREE AND CLEAR OF ALL CONSTRUCTION RELATED DIRT, DUST AND DEBRIS.
18. BUILDING REMOVALS SHALL BE BY A QUALIFIED CONTRACTOR. CONTRACTOR TO FOLLOW ALL DEMOLITION REGULATIONS, DISCONNECT ALL UTILITIES, OBTAIN ALL APPLICABLE PERMITS AND DISPOSE OF ALL BUILDING MATERIALS IN APPROPRIATE LANDFILLS. DEMOLISHED MATERIALS SHALL NOT BE BURIED ON SITE. IF ENCOUNTERED, ANY CONTAMINATED SOILS SHALL BE REMOVED TO A LANDFILL IN ACCORDANCE WITH APPROPRIATE STATE AND FEDERAL REGULATIONS.
19. CONTRACTOR TO REMOVE EXISTING UTILITY PIPE OR PROVIDE PIPE BACK-FILLING AFTER REMOVAL OF EXISTING UTILITIES WITHIN BUILDING FOOTPRINT USING "LOW DENSITY CONCRETE/FLOWABLE FILL".
20. RESTORATION OF THE EXISTING ROADWAY RIGHT-OF-WAYS ARE CONSIDERED INCIDENTAL AND SHOULD BE PART OF THE COST OF THE UNDERGROUND IMPROVEMENTS, DEMOLITION AND REMOVAL. THIS INCLUDES CURB & GUTTER, SIDEWALK, TOPSOIL, SEEDING AND MULCHING.

CONSTRUCTION SEQUENCING

1. INSTALL PERIMETER SILT FENCE, INLET PROTECTION AND TEMPORARY CONSTRUCTION ENTRANCE.
2. STRIP AND STOCKPILE TOPSOIL, INSTALL SILT FENCE AROUND PERIMETER OF STOCKPILE.
3. ROUGH GRADE INFILTRATION BASINS AND INSTALL POND OUTLET.
4. CONDUCT ROUGH GRADING EFFORTS AND INSTALL CHECK DAMS WITHIN DRAINAGE DITCHES AS NEEDED.
5. INSTALL UTILITY PIPING AND STRUCTURES, IMMEDIATELY INSTALL INLET PROTECTION.
6. COMPLETE FINAL GRADING, INSTALLATION OF GRAVEL BASE COURSES, PLACEMENT OF CURBS, PAVEMENTS, WALKS, ETC.
7. PLACE TOPSOIL AND IMMEDIATELY STABILIZE DISTURBED AREAS WITH EROSION CONTROL MEASURES AS INDICATED ON PLANS.
8. RESTORE INFILTRATION BASINS (FINAL GRADE RETENTION POND PER PLAN REQUIREMENTS)
9. EROSION CONTROLS SHALL NOT BE REMOVED UNTIL SITE IS FULLY STABILIZED OR 70% VEGETATIVE COVER IS ESTABLISHED.

CONTRACTOR MAY MODIFY SEQUENCING AFTER ITEM NO. 1 AS NEEDED TO COMPLETE CONSTRUCTION IF EROSION CONTROLS ARE MAINTAINED IN ACCORDANCE WITH THE CONSTRUCTION SITE EROSION CONTROL REQUIREMENTS.

PAVING NOTES

1. GENERAL
 - 1.1. ALL PAVING SHALL CONFORM TO "STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION, LATEST EDITION, APPLICABLE VILLAGE OF MOUNT HOREB ORDINANCES AND THE GEOTECHNICAL REPORT PREPARED BY CGC, INC DATED JANUARY 12, 2022.
 - 1.2. ALL PAVING DIMENSIONS ARE TO FACE OF CURB UNLESS SPECIFIED OTHERWISE.
 - 1.3. SURFACE PREPARATION – NOTIFY ENGINEER/OWNER OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.
 - 1.4. ANY REQUIRED REPLACEMENT OF PUBLIC CURB AND GUTTER SHALL MATCH EXISTING AND MEET MUNICIPALITY REQUIREMENTS.
2. ASPHALTIC CONCRETE PAVING SPECIFICATIONS
 - 2.1. CODES AND STANDARDS – THE PLACING, CONSTRUCTION AND COMPOSITION OF THE ASPHALTIC BASE COURSE AND ASPHALTIC CONCRETE SURFACE COURSE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460 AND 465 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION. HEREAFTER, THIS PUBLICATION WILL BE REFERRED TO AS STATE HIGHWAY SPECIFICATIONS.
 - 2.2. WEATHER LIMITATIONS – APPLY TACK COATS WHEN AMBIENT TEMPERATURE IS ABOVE 50° F (10° C) AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35° F (1° C) FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. DO NOT APPLY WHEN BASE IS WET OR CONTAINS EXCESS OF MOISTURE. CONSTRUCT ASPHALTIC CONCRETE SURFACE COURSE WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40° F (4° C) AND WHEN BASE IS DRY AND WHEN WEATHER IS NOT RAINY. BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30° F (–1° C).
 - 2.3. GRADE CONTROL – ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.
 - 2.4. CRUSHED AGGREGATE BASE COURSE – THE TOP LAYER OF BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.
 - 2.5. BINDER COURSE AGGREGATE – THE AGGREGATE FOR THE BINDER COURSE SHALL CONFORM TO SECTIONS 460 AND 315, STATE HIGHWAY SPECIFICATIONS.
 - 2.6. SURFACE COURSE AGGREGATE – THE AGGREGATE FOR THE SURFACE COURSE SHALL CONFORM TO SECTIONS 460 AND 465, STATE HIGHWAY SPECIFICATIONS.
 - 2.7. ASPHALTIC MATERIALS – THE ASPHALTIC MATERIALS SHALL CONFORM TO SECTION 455 AND 460, STATE HIGHWAY SPECIFICATIONS.
3. CONCRETE PAVING SPECIFICATIONS
 - 3.1. CONCRETE PAVING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 415 AND 416 OF THE STATE HIGHWAY SPECIFICATIONS.
 - 3.2. CONCRETE PAVEMENT SHALL BE REINFORCED WITH NOVOMESH 950 (OR EQUAL) FIBER REINFORCEMENT AT A RATE OF 5 LBS/CUBIC YARD.
 - 3.3. CURING COMPOUNDS SHALL CONFORM TO SECTION 415 OF THE STATE HIGHWAY SPECIFICATIONS.
 - 3.4. CONTRACTOR SHALL PROVIDE CONTROL JOINTS AND CONSTRUCTION JOINTS OF ONE-QUARTER CONCRETE THICKNESS AT AN EQUAL RATIO OF LENGTH TO WIDTH WHEREVER POSSIBLE WITH A MAXIMUM LENGTH BETWEEN JOINTS OF 8' ON CENTER.
 - 3.5. CONTRACTOR SHALL PROVIDE EXPANSION JOINTS IN SIDEWALKS AT A MAXIMUM 24' ON CENTER.
 - 3.6. EXTERIOR CONCRETE SURFACES SHALL BE BROOM FINISHED.
 - 3.7. ALL CONCRETE SURFACES TO BE SEALED WITH TYPE TK-26UV CONCRETE SEALANT.
4. PAVEMENT MARKING SPECIFICATIONS
 - 4.1. USE 4" WIDE, HIGH VISIBILITY YELLOW LATEX PAINT FOR STALL LINES.
 - 4.2. MARK AND STRIPE ADA PARKING SPACES APPROPRIATELY.
 - 4.3. ALL PAVEMENT MARKINGS INCLUDING: STOP BARS, CROSSWALKS, DIRECTIONAL ARROWS, PARKING STALL LINES, ADA STALL MARKINGS, NO PARKING ZONES, DROP-OFF/PICK-UP ZONES SHALL BE PAINTED WITH LATEX PAINT PER SPECIFICATIONS.
 - 4.4. 2' x 4' TRUNCATED DOME WARNING DETECTION FIELD SHALL BE PLACED AT ALL ADA RAMPS.

GRADING AND SEEDING NOTES

1. ALL PROPOSED GRADES SHOWN ARE FINISHED GRADES. CONTRACTOR SHALL VERIFY ALL GRADES, MAKE SURE ALL AREAS DRAIN PROPERLY AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR COMPUTATIONS OF ALL GRADING QUANTITIES. WHILE JSD PROFESSIONAL SERVICES, INC. ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARDS OF CARE. THEREFORE, NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.
3. PARKING LOT AND DRIVEWAY ELEVATIONS ARE PAVEMENT GRADES, NOT TOP OF CURB GRADES, UNLESS OTHERWISE NOTED.
4. ANY WORK WITHIN RIGHT-OF-WAY SHALL BE PROPERLY PERMITTED AND COORDINATED WITH THE APPROPRIATE OFFICIALS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. ALL GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS.
5. CONTRACTOR SHALL PROVIDE NOTICE TO THE MUNICIPALITY IN ADVANCE OF ANY SOIL DISTURBING ACTIVITIES, IN ACCORDANCE WITH MUNICIPAL REQUIREMENTS.
6. ALL DISTURBED AREAS SHALL BE SODDED AND/OR SEEDED AND MULCHED IMMEDIATELY FOLLOWING GRADING ACTIVITIES. SOD/SEED MIX TO BE IN ACCORDANCE WITH LANDSCAPE PLAN.
7. CONTRACTOR SHALL CHISEL-PLOW OR DEEP TILL WITH DOUBLE TINES ALL STORMWATER MANAGEMENT FACILITIES JUST PRIOR TO SODDING AND/OR SEEDING AND MULCHING TO PROMOTE INFILTRATION.
8. CONTRACTOR SHALL WATER ALL NEWLY SODDED/SEEDED AREAS DURING THE SUMMER MONTHS WHENEVER THERE IS A 7 DAY LAPSE WITH NO SIGNIFICANT RAINFALL.
9. CONTRACTOR TO DEEP TILL ALL COMPACTED PVIOUS SURFACES PRIOR TO SODDING AND/OR SEEDING AND MULCHING.
10. ALL SLOPES 20% OR GREATER SHALL BE TEMPORARY SEEDED, MULCHED, OR OTHER MEANS OF COVER PLACED ON THEM WITHIN 2 WEEKS OF DISTURBANCE.
11. ALL EXPOSED SOIL 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 AND REQUIRE VEGETATIVE COVER FOR LESS THAN 1 YEAR, REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH WDNR TECHNICAL STANDARD 1059 AND VILLAGE OF MOUNT HOREB ORDINANCE.

UTILITY NOTES

1. ALL EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATIONS OF UNDERGROUND UTILITIES. AS MAY BE NECESSARY TO AVOID DAMAGE THERETO, CONTRACTOR/OWNER SHALL CALL "DIGGER'S HOTLINE" PRIOR TO ANY CONSTRUCTION.
2. PRIOR TO CONSTRUCTION, THE PRIME CONTRACTOR IS RESPONSIBLE FOR:
EXAMINING ALL SITE CONDITIONS RELATIVE TO THE CONDITIONS INDICATED ON THE ENGINEERING DRAWINGS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER AND RESOLVED PRIOR TO THE START OF CONSTRUCTION.
 - OBTAINING ALL PERMITS INCLUDING PERMIT COSTS, TAP FEES, METER DEPOSITS, BONDS, AND ALL OTHER FEES REQUIRED FOR PROPOSED WORK TO OBTAIN OCCUPANCY.
 - VERIFYING ALL ELEVATIONS, LOCATIONS AND SIZES OF SANITARY, WATER AND STORM LATERALS AND CHECK ALL UTILITY CROSSINGS FOR CONFLICTS. NOTIFY ENGINEER OF ANY DISCREPANCY. NO WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS RESOLVED.
 - NOTIFYING ALL UTILITIES PRIOR TO INSTALLATION OF ANY UNDERGROUND IMPROVEMENTS.
 - NOTIFYING THE DESIGN ENGINEER AND MUNICIPALITY 48 HOURS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE FOR APPROPRIATE CONSTRUCTION OBSERVATION.
 - COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
3. ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN – AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES.
4. SPECIFICATIONS SHALL COMPLY WITH THE VILLAGE OF MOUNT HOREB SPECIAL PROVISIONS.
5. LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS SHALL BE VERIFIED IN THE FIELD DURING CONSTRUCTION.
6. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING THE CONSTRUCTION OF IMPROVEMENTS.
7. CONTRACTOR SHALL INSTALL A PEDESTRIAN FENCE AROUND ALL EXCAVATIONS TO BE LEFT OPEN OVER NIGHT AS REQUIRED IN CONSTRUCTION SITES WHERE THE POTENTIAL FOR PEDESTRIAN INJURY EXISTS.
8. CONTRACTOR SHALL ADJUST AND/OR RECONSTRUCT ALL UTILITY COVERS (SUCH AS MANHOLE COVERS, VALVE BOX COVERS, ETC.) TO MATCH THE FINISHED GRADES OF THE AREAS EFFECTED BY THE CONSTRUCTION.
9. THE PRIME CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION WITH OTHER CONTRACTORS INVOLVED WITH CONSTRUCTION OF THE PROPOSED DEVELOPMENT AND FOR REPORTING ANY ERRORS OR DISCREPANCIES BETWEEN THESE PLANS AND PLANS PREPARED BY OTHERS.
10. ANY SANITARY SEWER, SANITARY SEWER SERVICES, WATER MAIN, WATER SERVICES, STORM SEWER, OR OTHER UTILITIES, WHICH ARE DAMAGED BY THE CONTRACTORS, SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE ENGINEER WITH AS-BUILT CONDITIONS OF THE DESIGNATED IMPROVEMENTS IN ORDER THAT THE APPROPRIATE DRAWINGS CAN BE PREPARED, IF REQUIRED. ANY CHANGES TO THE DRAWINGS OR ADDITIONAL ITEMS MUST BE REPORTED TO THE ENGINEER AS WORK PROGRESSES.
12. STORM SEWER SPECIFICATIONS –

PIPE – REINFORCED CONCRETE PIPE (RCP) SHALL MEET THE REQUIREMENTS OF ASTM CLASS III (MINIMUM) C-76 WITH RUBBER GASKET JOINTS CONFORMING TO ASTM C-443. HIGH DENSITY DUAL-WALL POLYETHYLENE CORRUGATED PIPE SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M-294 TYPE "S".

INLETS – INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NO. 28 OF THE "STANDARD SPECIFICATIONS", OR APPROVED EQUAL WITH A 1'-8" X 2'-6" MAXIMUM OPENING. CURB FRAME & GRATE SHALL BE NEENAH R-3067 WITH TYPE R GRATE, OR EQUAL.

BACKFILL AND BEDDING – STORM SEWER SHALL BE CONSTRUCTED WITH GRAVEL BACKFILL AND CLASS "B" BEDDING IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".

MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.

FIELD TILE CONNECTION – ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.
13. WATER MAIN SPECIFICATIONS –

PIPE – DUCTILE IRON PIPE SHALL BE CLASS 52 CONFORMING TO AWWA C151 AND CHAPTER 8.18.0 OF THE "STANDARD SPECIFICATIONS". POLYVINYL CHLORIDE (PVC) PIPE SHALL MEET THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 150, DR-18, WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. NON-METALLIC WATER MAINS SHALL BE INSTALLED WITH BLUE INSULATION TRACER WIRE AND CONFORM WITH SPS 382.30(11)(h).

VALVES AND VALVE BOXES – GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.0 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES.

HYDRANTS – HYDRANTS SHALL CONFORM TO THE SPECIFICATIONS OF THE VILLAGE OF MOUNT HOREB. THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 23-INCHES (SEE DETAIL).

BEDDING AND COVER MATERIAL – PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".

BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".
14. SANITARY SEWER SPECIFICATIONS –

PIPE – SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034 SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212.

BEDDING AND COVER MATERIAL – BEDDINGS AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDING AND SHALL CONFORM TO SECTION 8.43.2 (A), BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."

- BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".
- MANHOLES – MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE VILLAGE OF MOUNT HOREB.
- MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.
15. WATERMAIN AND SANITARY SEWER SHALL BE INSULATED WHEREVER THE DEPTH OF COVER IS LESS THAN 6 FEET. INSULATION AND INSTALLATION OF INSULATION SHALL BE CONFORMING WITH CHAPTER 4.17.0 "INSULATION" OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN 6TH EDITION UPDATED WITH ITS LATEST ADDENDUM (TYP.).

EROSION CONTROL NOTES

1. CONTRACTOR IS RESPONSIBLE TO NOTIFY ENGINEER OF RECORD AND OFFICIALS OF ANY CHANGES TO THE EROSION CONTROL AND STORMWATER MANAGEMENT PLANS. ENGINEER OF RECORD AND APPROPRIATE VILLAGE OF MOUNT HOREB OFFICIALS MUST APPROVE ANY CHANGES PRIOR TO DEVIATION FROM THE APPROVED PLANS.
2. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) TECHNICAL STANDARDS (REFERRED TO AS BMP'S) AND VILLAGE OF MOUNT HOREB ORDINANCE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THESE STANDARDS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL EROSION CONTROL MEASURES WHICH MAY BE NECESSARY TO MEET UNFORESEEN FIELD CONDITIONS.
5. INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN. MODIFICATIONS TO THE APPROVED EROSION CONTROL DESIGN IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS IS ALLOWED IF MODIFICATIONS CONFORM TO BMP'S. ALL DESIGN MODIFICATIONS MUST BE APPROVED BY THE VILLAGE OF MOUNT HOREB PRIOR TO DEVIATION OF THE APPROVED PLAN.
4. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED BY STATE INSPECTORS, LOCAL INSPECTORS, COUNTY INSPECTORS AND/OR ENGINEER OF RECORD SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
5. INSPECTIONS AND MAINTENANCE OF ALL EROSION CONTROL MEASURES SHALL BE ROUTINE (ONCE PER WEEK MINIMUM) TO ENSURE PROPER FUNCTIONING OF EROSION CONTROLS AT ALL TIMES. EROSION CONTROL MEASURES ARE TO BE IN WORKING ORDER AT THE END OF EACH WORK DAY.
6. ALL EROSION AND SEDIMENT CONTROL ITEMS SHALL BE INSPECTED WITHIN 24 HOURS OF ALL RAIN EVENTS EXCEEDING 0.5 INCHES. ANY DAMAGED EROSION CONTROL MEASURES SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON INSPECTION.
7. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. ADDITIONAL LOCATIONS OTHER THAN AS SHOWN ON THE PLANS MUST BE PRIOR APPROVED BY THE MUNICIPALITY. CONSTRUCTION ENTRANCES SHALL BE 50' LONG AND NO LESS THAN 12" THICK BY USE OF 3" CLEAR STONE. CONSTRUCTION ENTRANCES SHALL BE MAINTAINED BY THE CONTRACTOR IN A CONDITION WHICH WILL PREVENT THE TRACKING OF MUD OR DRY SEDIMENT ONTO ADJACENT PUBLIC STREETS AFTER EACH WORKING DAY OR MORE FREQUENTLY AS REQUIRED.
8. PAVED SURFACES ADJACENT TO CONSTRUCTION SITE VEHICLE ACCESS SHALL BE SWEEPED AND/OR SCRAPPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST AFTER THE END OF EACH WORK DAY AND AS REQUESTED BY THE VILLAGE OF MOUNT HOREB.
9. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER AND SILT FENCE SHALL BE IMMEDIATELY FITTED AT ALL INSTALLED CULVERT INLETS TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS.
10. INSTALL EROSION CONTROLS ON THE DOWNSTREAM SIDE OF STOCKPILES. IF STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS TEMPORARY SEEDING AND STABILIZATION ACCORDANCE WITH BEST MANAGEMENT PRACTICES IS REQUIRED. IF DISTURBANCE OCCURS BETWEEN NOVEMBER 15TH AND MAY 15TH, THE MULCHING SHALL BE PERFORMED BY HYDRO-MULCHING WITH A "TACKIFIER."
11. DITCH CHECKS AND APPLICABLE EROSION NETTING/MATTING SHALL BE INSTALLED IMMEDIATELY AFTER COMPLETION OF GRADING EFFORTS WITHIN DITCHES/SWALES TO PREVENT SOIL TRANSPORTATION.
12. EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.):
 - A. PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
 - B. BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
 - C. DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH THE DEWATERING TECHNICAL STANDARD NO. 1061 PRIOR TO RELEASE INTO THE STORM SEWER, RECEIVING STREAM, OR DRAINAGE DITCH.
13. ALL SLOPES 4:1 OR GREATER SHALL BE STABILIZED WITH CLASS I, TYPE B EROSION MATTING OR APPLICATION OF A WISCONSIN DEPARTMENT OF TRANSPORTATION (WisDOT) APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED WITHIN 7 DAYS OF REACHING FINAL GRADE AND/OR AS SOON AS CONDITIONS ALLOW. DRAINAGE SWALES SHALL BE STABILIZED WITH CLASS II, TYPE B EROSION MATTING. EROSION MATTING AND/OR NETTING USED ONSITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES AND WDNR TECHNICAL STANDARDS 1052 AND 1053.
14. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST ARISING FROM CONSTRUCTION OPERATIONS. REFER TO WDNR TECHNICAL STANDARD 1068.
15. EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY AT THE SITE HAS BEEN COMPLETED AND THAT A UNIFORM PERENNIAL VEGETATIVE COVER HAS BEEN ESTABLISHED WITH A DENSITY OF AT LEAST 70% FOR UNPAVED AREAS AND AREAS COVERED BY PERMANENT STRUCTURES OR THAT EMPLOY EQUIVALENT PERMANENT STABILIZATION MEASURES.
16. CONTRACTOR/OWNER SHALL FILE A NOTICE OF TERMINATION UPON COMPLETION OF THE PROJECT IN ACCORDANCE WITH WDNR REQUIREMENTS AND/OR PROPERTY SALE IN ACCORDANCE WITH WDNR REQUIREMENTS.
17. STABILIZATION PRACTICES:
 - 17.1. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. NO MORE THAN SEVEN (7) DAYS SHALL PASS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS CEASED UNLESS:
 - THE STABILIZATION MEASURES BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS CEASED IS PRECLUDED BY SNOW COVER. IN THAT EVENT, STABILIZATION SHALL BE INITIATED AS SOON AS PRACTICABLE.
 - 17.3. CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN FOURTEEN (14) DAYS FROM WHEN ACTIVITY CEASED. (I.E. THE TOTAL TIME PERIOD THAT THE CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN FOURTEEN (14) DAYS. IN THAT EVENT, STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE SEVENTH (7) DAY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED.
 - 17.4. STABILIZATION MEASURES SHALL BE DETERMINED BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION ACTIVITY HAS CEASED, INCLUDING BUT NOT LIMITED TO WEATHER CONDITIONS AND LENGTH OF TIME MEASURE MUST BE EFFECTIVE. THE FOLLOWING ARE ACCEPTABLE STABILIZATION MEASURES:
 - PERMANENT SEEDING; IN ACCORDANCE WITH APPROVED CONSTRUCTION SPECIFICATION
 - TEMPORARY SEEDING; MAY CONSIST OF SPRING OATS(100LBS/ACRE) AND/OR WHEAT OR CEREAL RYE (150LB/ACRE)
 - HYDRO-MULCHING WITH A TACKIFIER
 - GEOTEXTILE EROSION MATTING
 - SODDING

STORMWATER FACILITIES CONSTRUCTION NOTES

1. ENGINEER SHALL BE NOTIFIED PRIOR TO INSTALLATION OF STORMWATER MANAGEMENT FACILITIES. CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES SHALL BE OBSERVED AND DOCUMENTED BY THE ENGINEER, OR AN OWNER'S REPRESENTATIVE.
2. STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AFTER SUBSTANTIAL COMPLETION OF FINAL SITE GRADING AND SOILS HAVE BEEN STABILIZED.
3. AREAS USED FOR TEMPORARY SEDIMENT BASINS SHALL BE REMOVED IN THEIR ENTIRETY AFTER CONSTRUCTION OF STORMWATER MANAGEMENT FACILITIES.
4. CONSTRUCTION TRAFFIC, HEAVY EQUIPMENT AND SOIL STOCKPILES SHALL NOT BE PLACED IN AREAS WHERE PROPOSED STORMWATER MANAGEMENT FACILITIES ARE LOCATED.
5. NATIVE SOIL INFILTRATION RATES BELOW STORMWATER FACILITIES SHALL BE VERIFIED BY THE OWNER'S GEOTECHNICAL ENGINEER PRIOR INSTALLATION OF FACILITIES. NATIVE SOIL INFILTRATION RATES SHALL BE EQUAL TO OR GREATER THAN DESIGN INFILTRATION RATES.
6. NATIVE SOILS SHALL BE BLENDED A MINIMUM OF TWO FEET PRIOR TO INSTALLATION OF STORMWATER INFILTRATION FACILITIES TO BREAKUP ANY LOWER PERMEABILITY SEAMS THAT MAY BE PRESENT.
7. THICKER SILT OR CLAY LAYERS SHALL BE OVER-EXCAVATED AND BACKFILLED WITH GRANULAR MATERIALS CONFORMING TO SPECIFICATIONS PER WDNR TECH STANDARD 1004.



Toll Free (800) 242-8511



CREATE THE VISION  TELL THE STORY

jsdinc.com

MADISON REGIONAL OFFICE
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
P. 608.848.5060

CLIENT:

SKETCHWORKS

CLIENT ADDRESS:

**7780 ELMWOOD AVENUE
MIDDLETON, WI 53562**

PROJECT:

**MOUNT HOREB
APARTMENT
DEVELOPMENT**

PROJECT LOCATION:

**1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572**

PLAN MODIFICATIONS:

#	Date:	Description:
1	03.14.2022	SITE PLAN SUBMITTAL
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Designed By: CTD
Reviewed by: MAH
Approved By:

SHEET TITLE:
NOTES

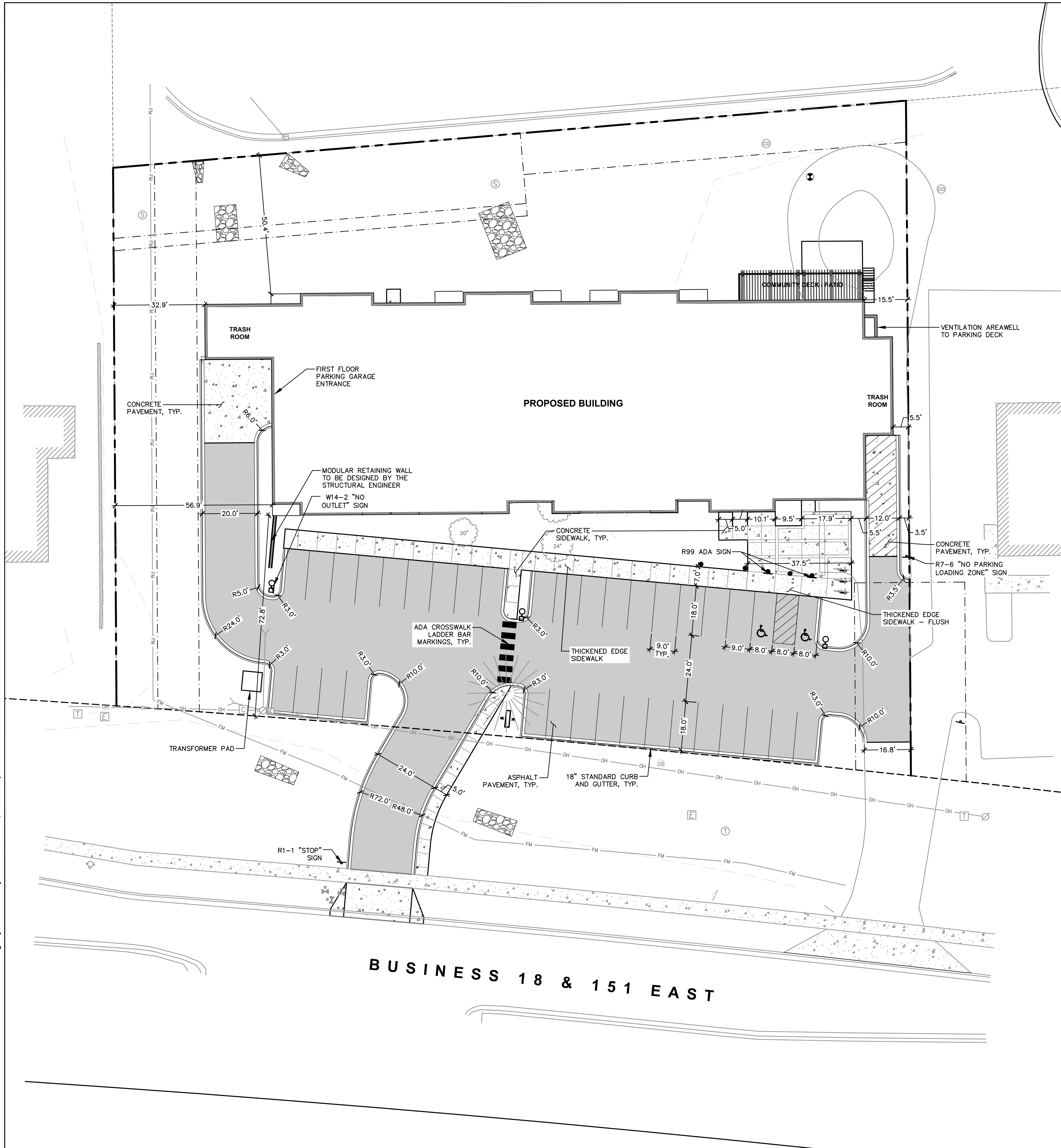
SHEET NUMBER:

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JSD PROJECT NO: 21-10870

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LEGEND

---	PROPERTY LINE
- - - -	RIGHT-OF-WAY
- . - . -	EASEMENT LINE
----	BUILDING OUTLINE
----	BUILDING OVERHANG
----	BUILDING SETBACK LINE
----	PAVEMENT SETBACK LINE
----	EDGE OF PAVEMENT
=====	STANDARD CURB AND GUTTER
=====	REJECT CURB AND GUTTER
=====	MOUNTABLE CURB AND GUTTER
=====	8" CONCRETE RIBBON CURB
=====	ASPHALT PAVEMENT
=====	HEAVY DUTY ASPHALT PAVEMENT
=====	CONCRETE PAVEMENT
=====	HEAVY DUTY CONCRETE PAVEMENT
----	STORMWATER MANAGEMENT AREA
=====	RETAINING WALL
=====	BOULDER WALL
-----X-----	RAILING
-----X-----	FENCE
-----X-----	LIGHT POLE (REFER TO PHOTOMETRIC PLAN)
-----X-----	ADA PARKING SIGN
-----X-----	FLAG POLE
-----X-----	BOLLARD
-----X-----	BOLLARD WITH ADA PARKING SIGN
-----X-----	BIKE RACK
-----X-----	SAWCUT EXISTING PAVEMENT

SITE INFORMATION BLOCK

SITE ADDRESS	1800 SPRINGDALE STREET
PROPERTY ACREAGE	1.44 ACRES (62,898 SF)
NUMBER OF BUILDING STORIES	3
TOTAL BUILDING SQUARE FOOTAGE	15,562 SF
GROSS BUILDING SQUARE FOOTAGE	47,064 SF
NUMBER OF PARKING STALLS	
SURFACE	
LARGE	34
ACCESSIBLE	2
TOTAL SURFACE	36
UNDERGROUND	
LARGE	37
ACCESSIBLE	1
TOTAL UNDERGROUND	38
NUMBER OF BICYCLE STALLS:	8
EXISTING VS. PROPOSED SITE COVERAGE	
EXISTING IMPERVIOUS SURFACE AREA	5,975 SF
EXISTING PERVIOUS SURFACE AREA	56,923 SF
EXISTING IMPERVIOUS SURFACE AREA RATIO	0.09
PROPOSED IMPERVIOUS SURFACE AREA	37,067 SF
PROPOSED PERVIOUS SURFACE AREA	25,831 SF
PROPOSED IMPERVIOUS SURFACE AREA RATIO	0.59



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Designed By: CTD
Reviewed By: MAH
Approved By:

SHEET TITLE:

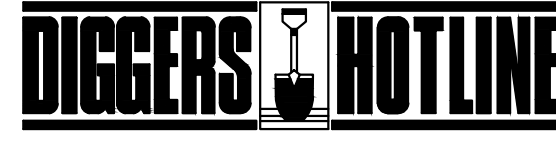
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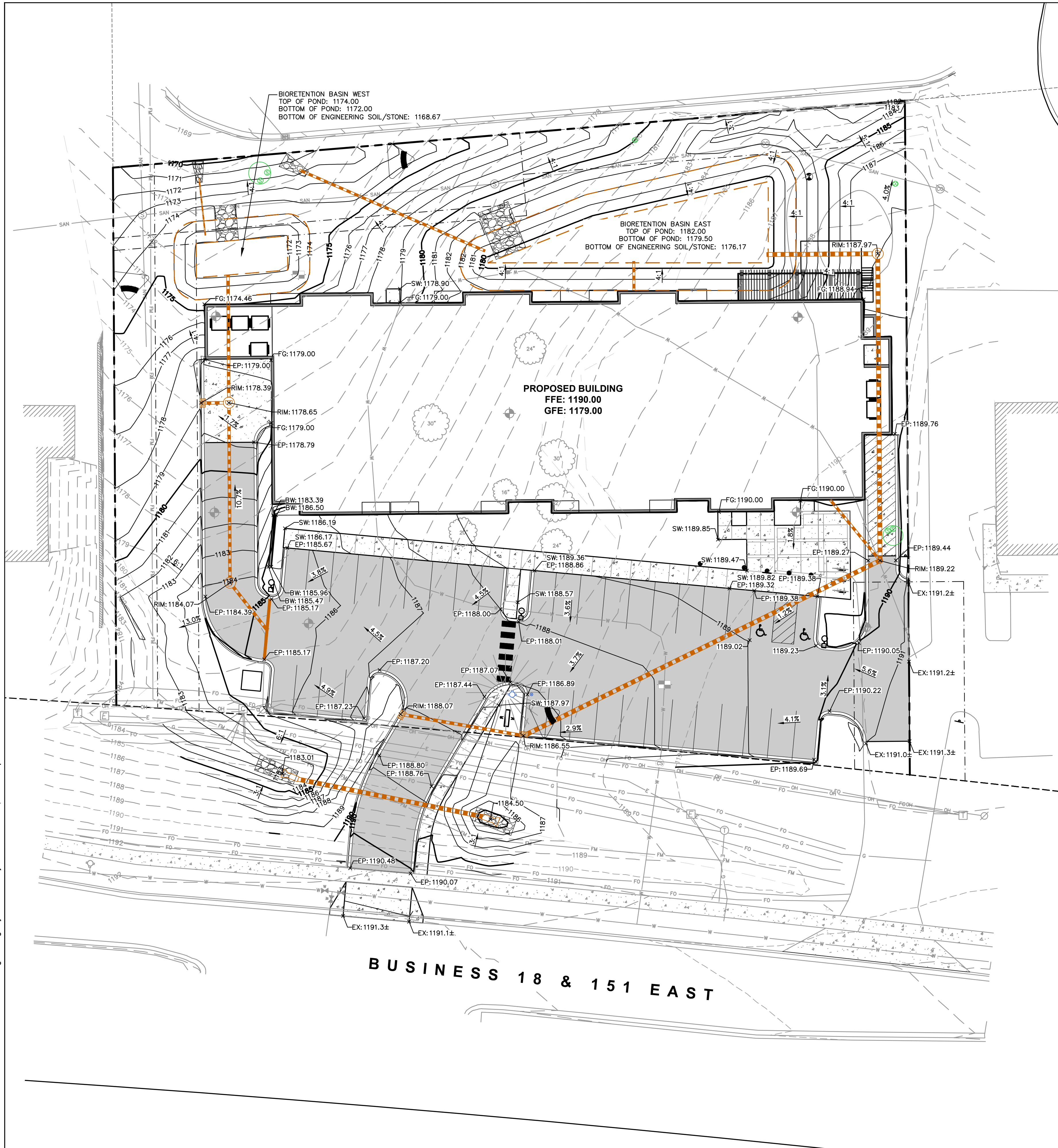
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LEGEND

---	PROPERTY LINE
- - -	RIGHT-OF-WAY
- . -	EASEMENT LINE
---	BUILDING OUTLINE
---	BUILDING OVERHANG
---	EDGE OF PAVEMENT
---	STANDARD CURB AND GUTTER
---	REJECT CURB AND GUTTER
---	MOUNTABLE CURB AND GUTTER
---	ASPHALT PAVEMENT
---	CONCRETE PAVEMENT
---	HEAVY DUTY CONCRETE PAVEMENT
---	PROPOSED 1 FOOT CONTOUR
---	PROPOSED 5 FOOT CONTOUR
---	EXISTING 1 FOOT CONTOUR
---	EXISTING 5 FOOT CONTOUR
---	DRAINAGE DIRECTION
---	GRADE BREAK
---	FENCE
---	SPOT ELEVATION
---	EP - EDGE OF PAVEMENT
---	FG - FINISH GRADE
---	EC - EDGE OF CONCRETE
---	BOC - BACK OF CURB
---	MATCH - MATCH EXISTING GRADE
---	HP - HIGH POINT
---	SW - SIDEWALK



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SKETCHWORKS

CLIENT ADDRESS:

7780 ELMWOOD AVENUE
MIDDLETON, WI 53562

PROJECT:

MOUNT HOREB
APARTMENT
DEVELOPMENT

PROJECT LOCATION:

1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572

PLAN MODIFICATIONS:

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Designed By: CTD
Reviewed By: MAH
Approved By:

SHEET TITLE:

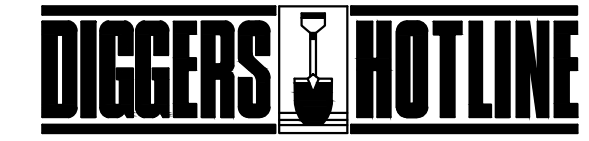
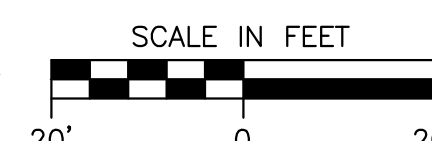
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PLAN

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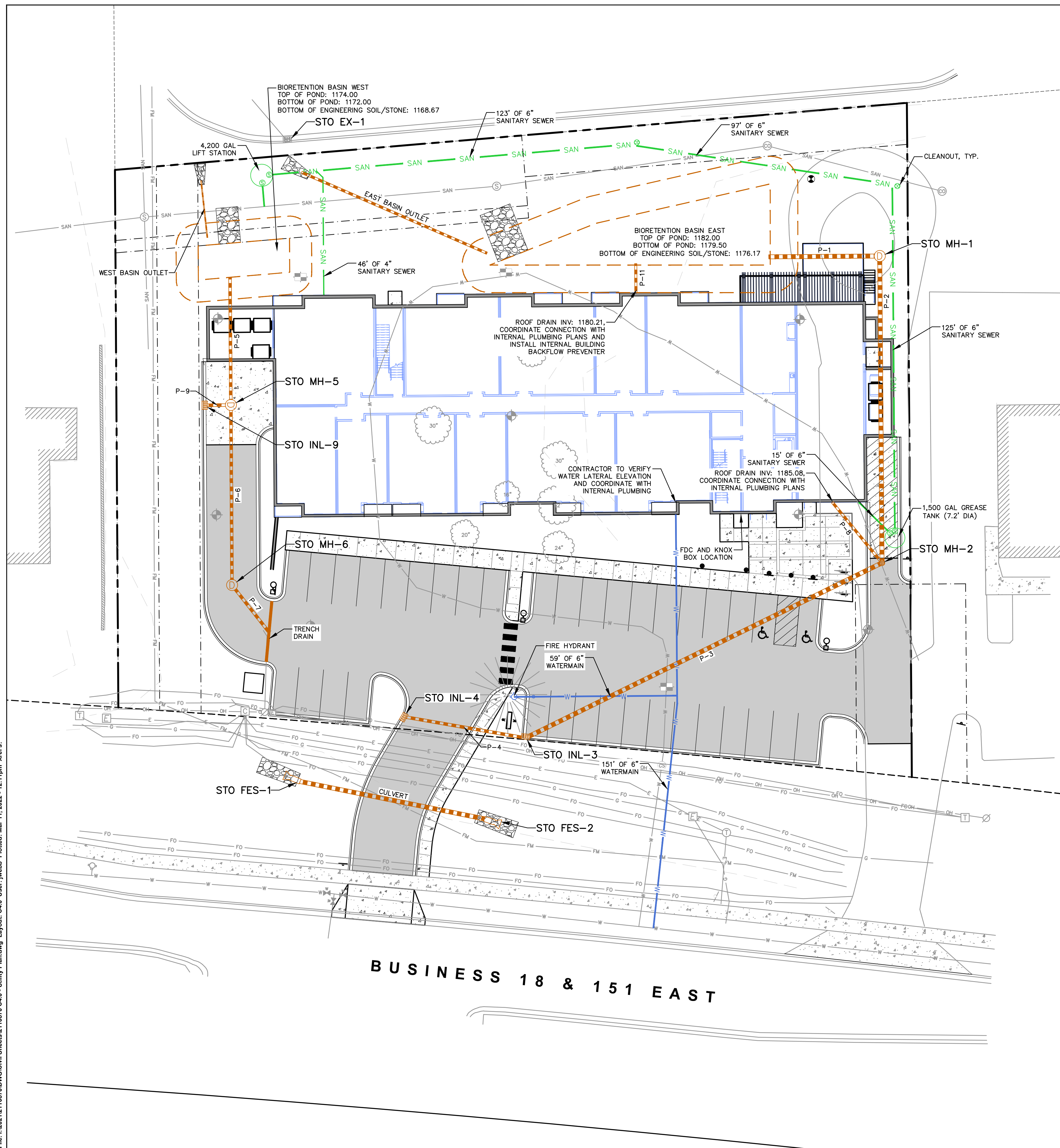
JSD PROJECT NO:

21-10870

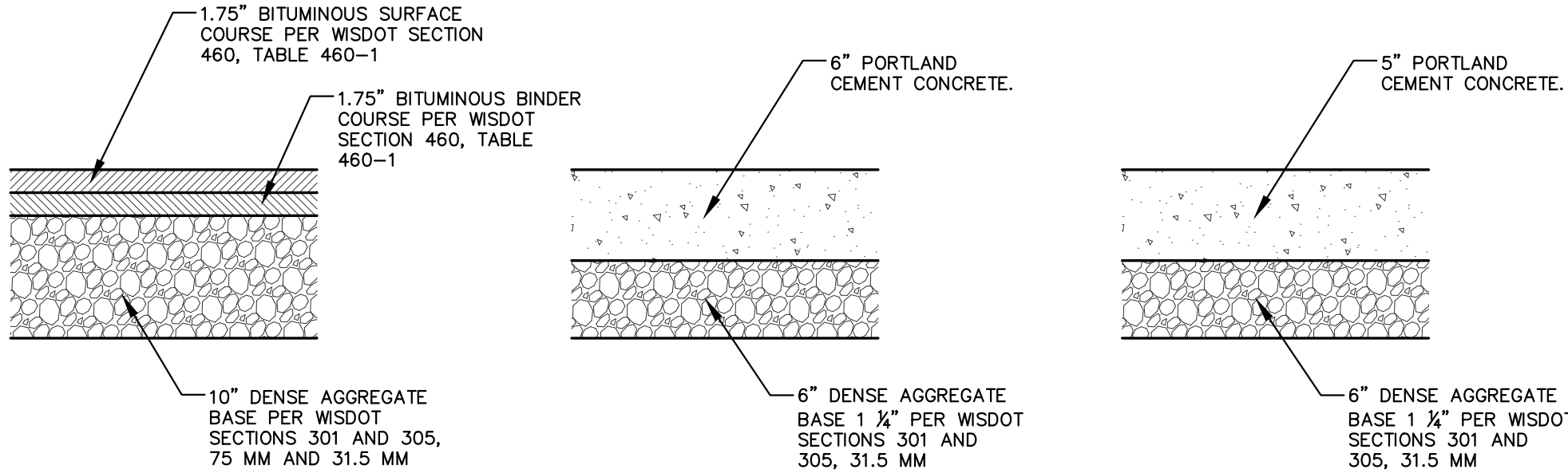


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STANDARD ASPHALT PAVEMENT SECTION

CONCRETE PAVEMENT SECTION

CONCRETE SIDEWALK SECTION

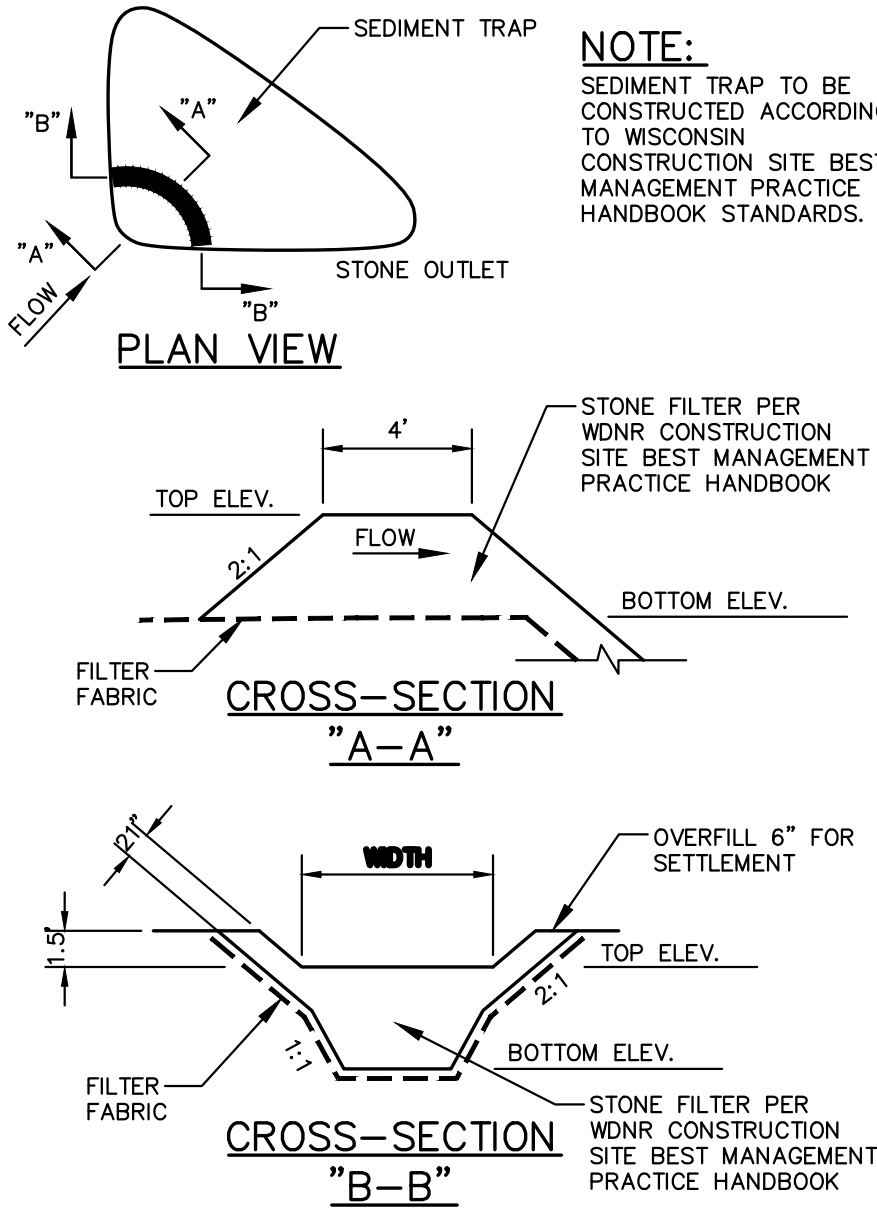
GENERAL NOTES:

- REFER TO PAVEMENT RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT, PREPARED BY CGC, INC. TITLED "GEOTECHNICAL EXPLORATION REPORT" DATED JANUARY 12, 2022. IF THERE ARE ANY DISCREPANCIES BETWEEN THIS DETAIL AND THE PAVEMENT RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT, THE GEOTECHNICAL REPORT SHALL GOVERN.
- WSDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, INCLUDING SUPPLEMENTAL SPECIFICATIONS, COMPACTION REQUIREMENTS:
 - BITUMINOUS CONCRETE: REFER TO SECTION 460-3.
 - BASE COURSE: REFER TO SECTION 301.3.4.2, STANDARD COMPACTION.

PAVEMENT SECTIONS

REV. 7-01-2019

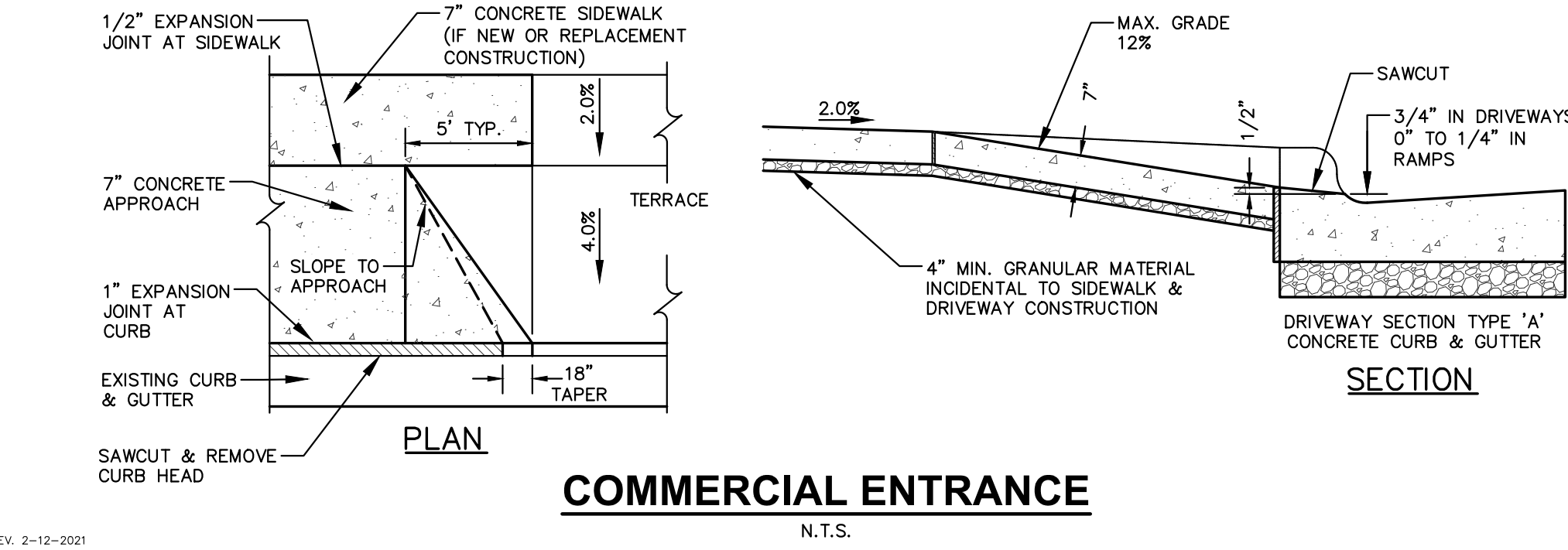
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SEDIMENT TRAP

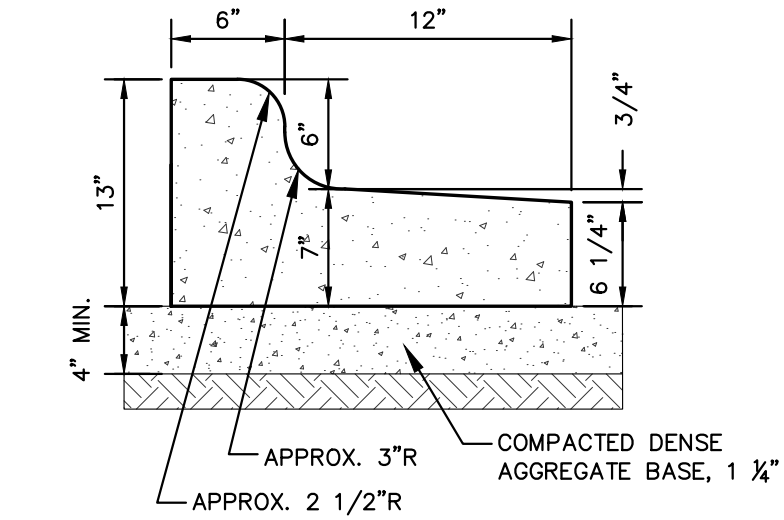
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REV. 11-19-2018



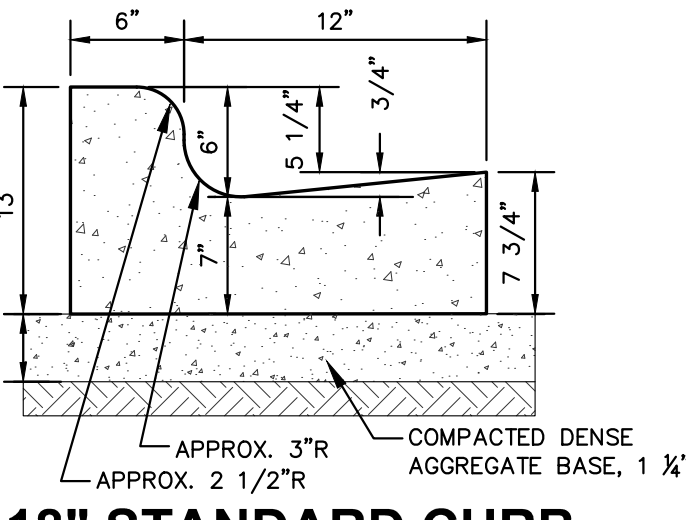
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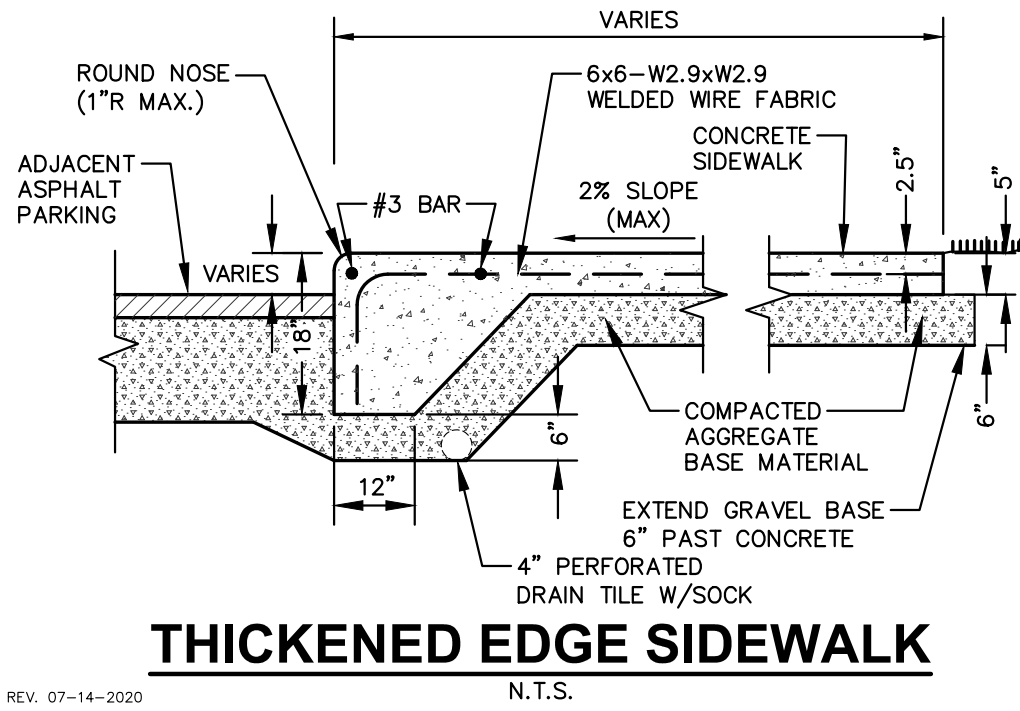
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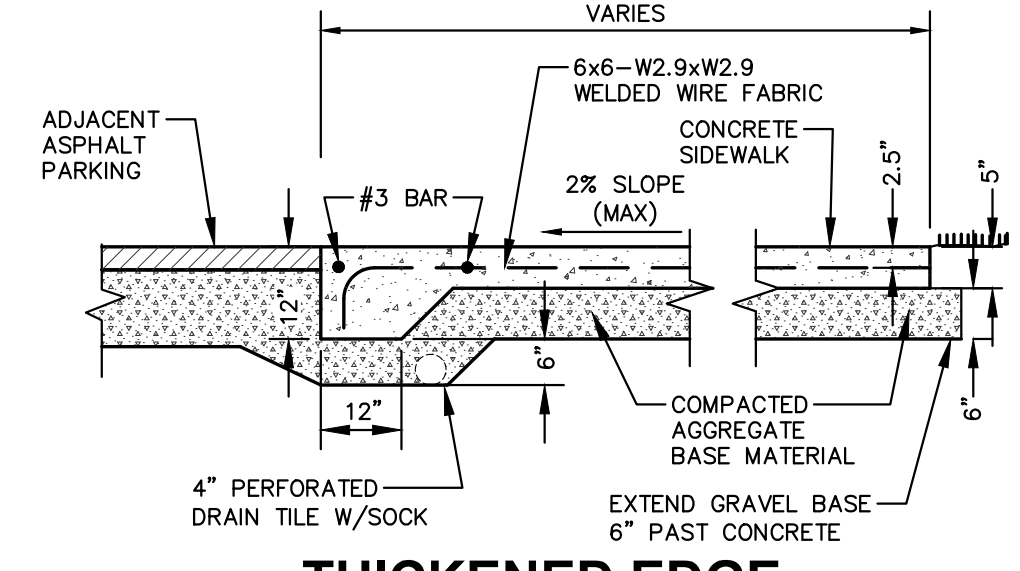
REV. 12-17-2018

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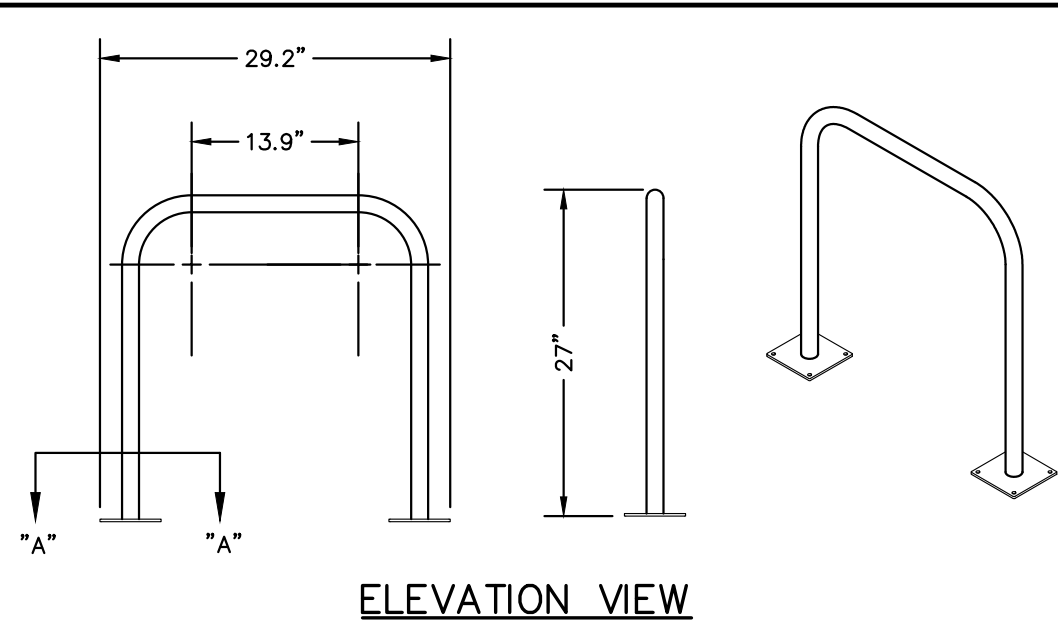
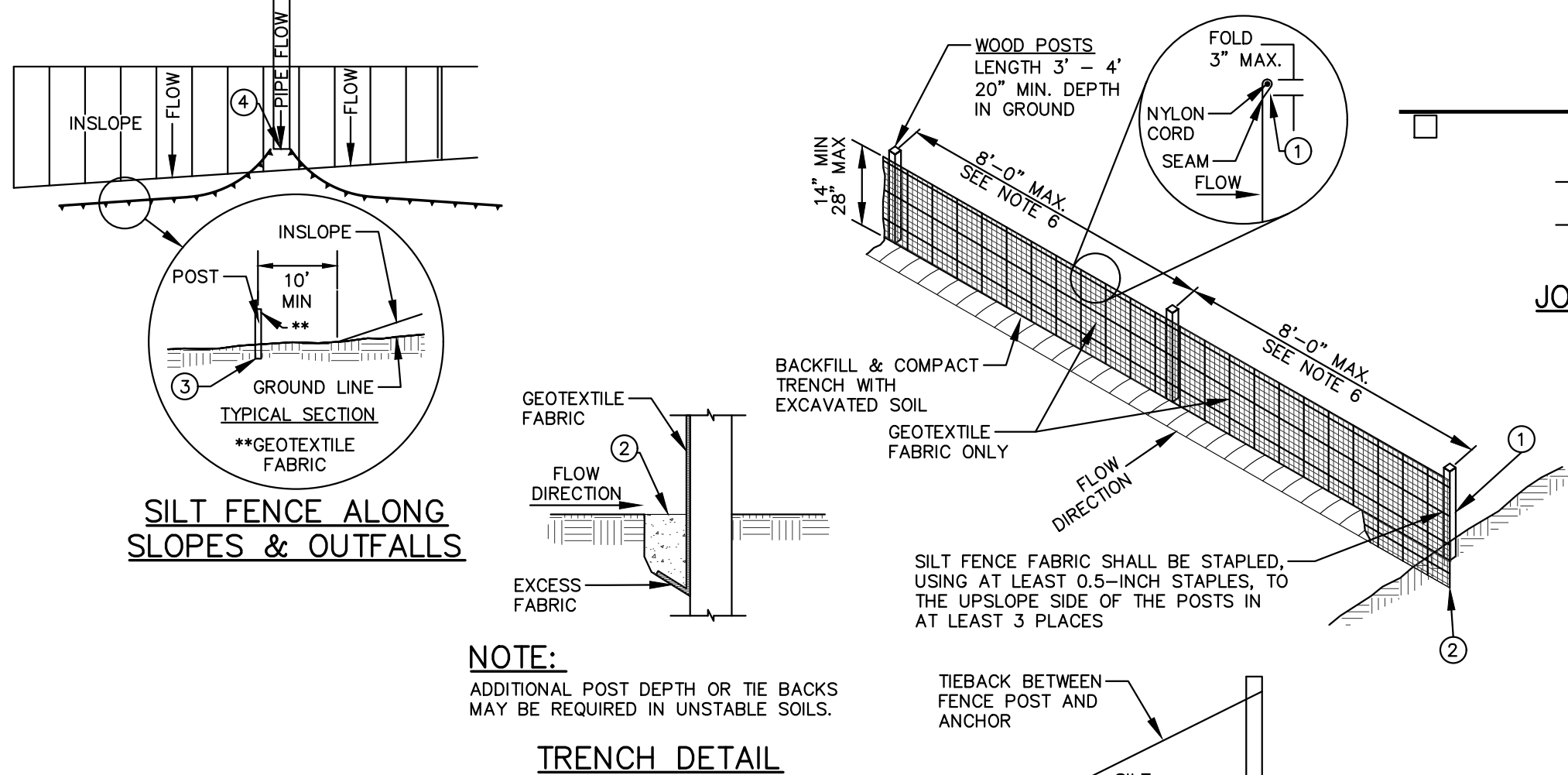
REV. 07-14-2020

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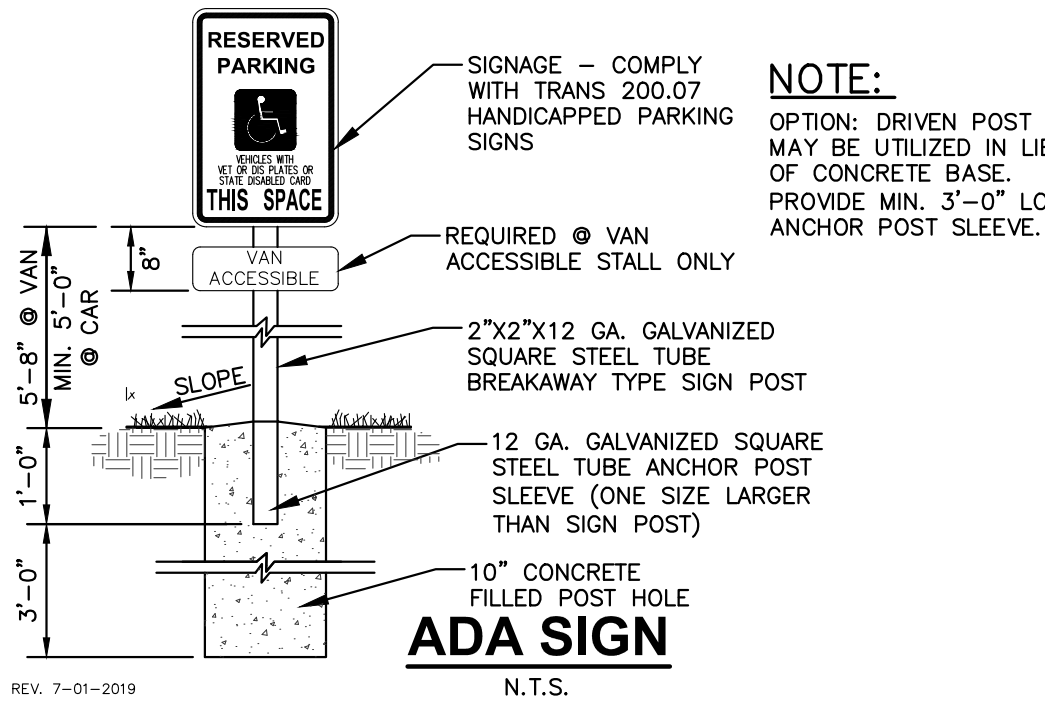
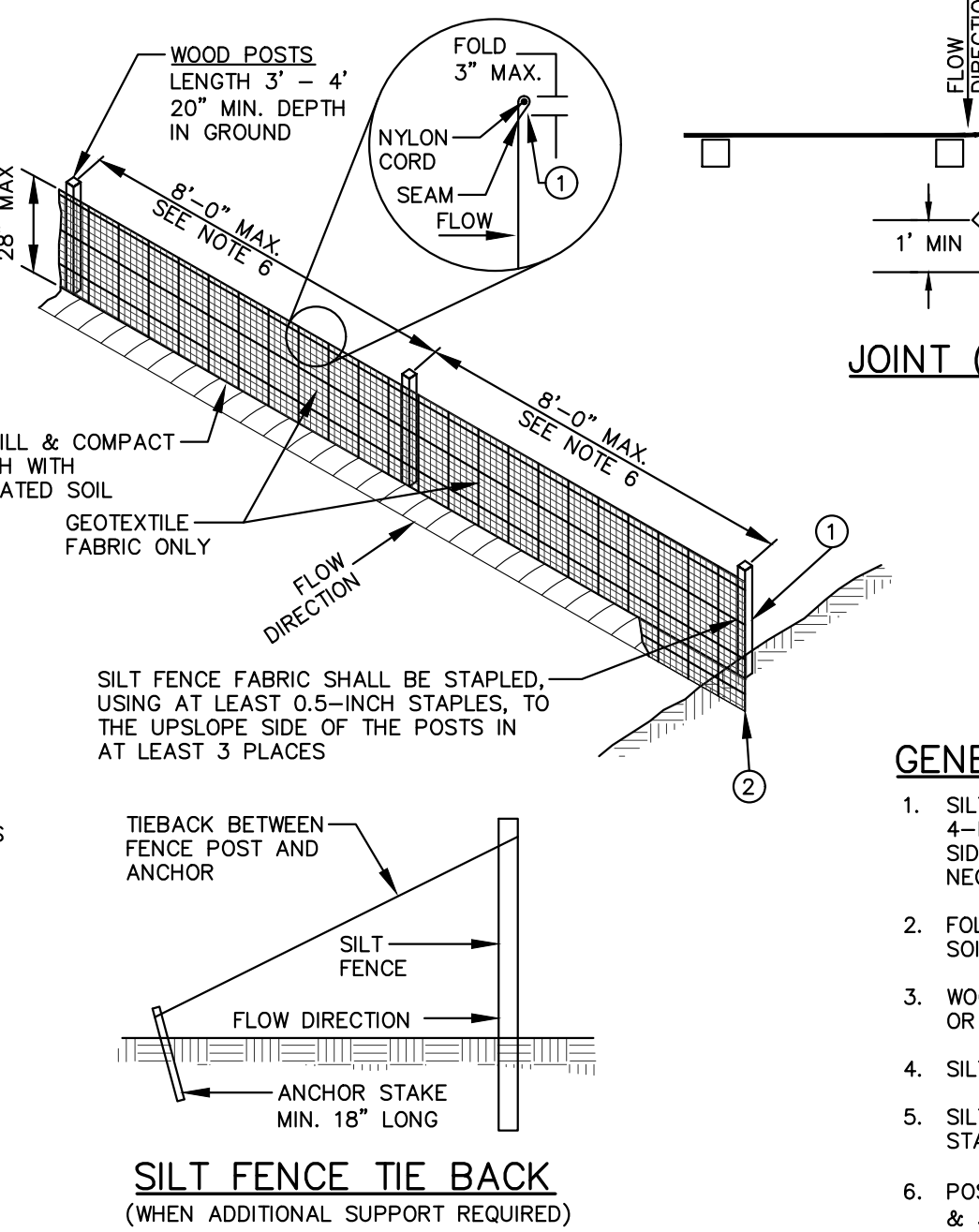
REV. 07-14-2020

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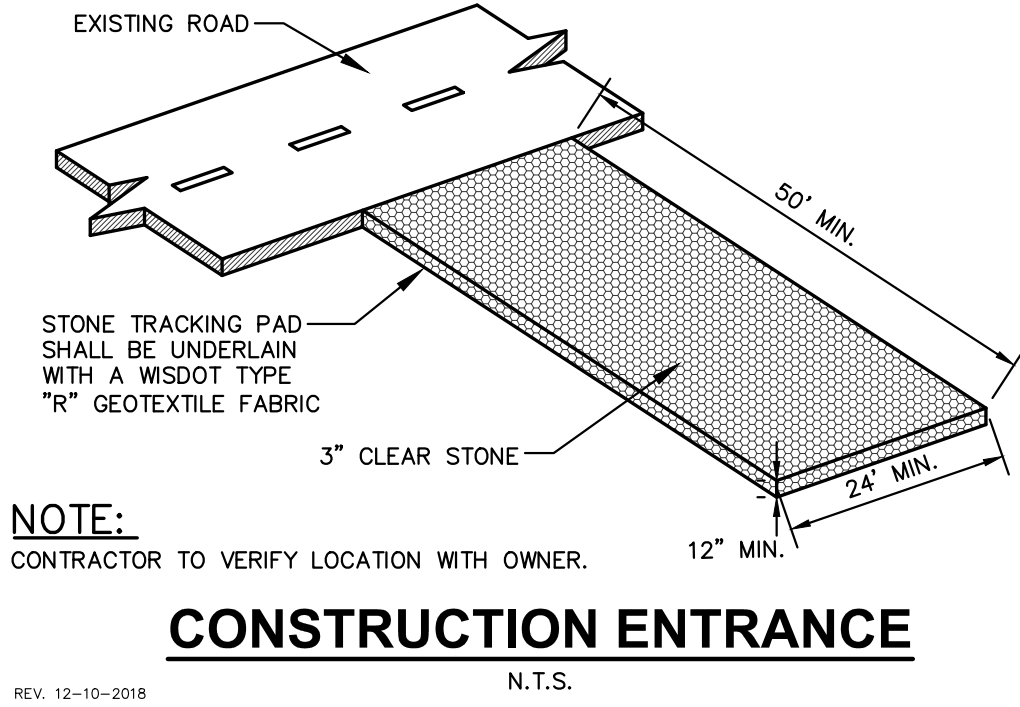
REV. 12-10-2018

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REV. 7-01-2019

N.T.S.



REV. 12-10-2018

DIGGERS HOTLINE

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Approved By:

SHEET TITLE:

DETAILS

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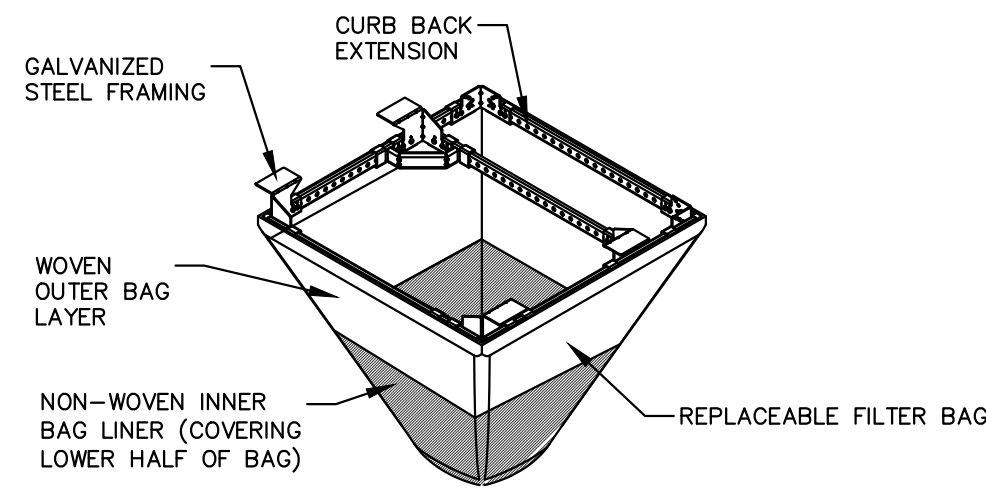
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21-10870

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FLEXSTORM INLET FILTERS TO MEET DANE COUNTY EROSION CONTROL STANDARDS



(HB) HYBRID FILTER BAG SPECIFICATIONS:

CATCH-IT INLET FILTER (Temporary Inlet Protection)						
Neenah Casting	Inlet Type	Grate Size	Opening Size	Bag Cap (ft.)	Flow Ratings (CFS)	
					HB (Hybrid Bag)	Bypass
3067	Curb Box	35.25 x 17.75	33.0 x 15.0	4.4	2.0	5.8
3246A	Curb Box	35.75 x 23.875	33.5 x 21.0	4.2	1.1	3.3
3030	Square/Rect (SQ)	23 x 16	20.5 x 13.5	1.6	0.7	2.2
3067-C	Square/Rect (SQ)	35.25 x 17.75	33 x 15	3.2	1.0	5.2
R-2501	Round (RD)	~26	~24	2.3	0.8	5.2
R-1772/2560	Round (RD)	22.25-23.5	20.5-21	1.5	0.6	4.6
						62MRD22HB

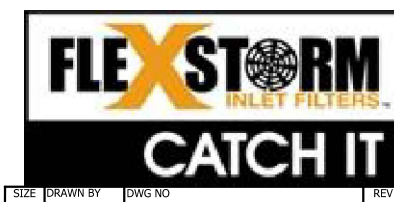
FRAMED INLET PROTECTION

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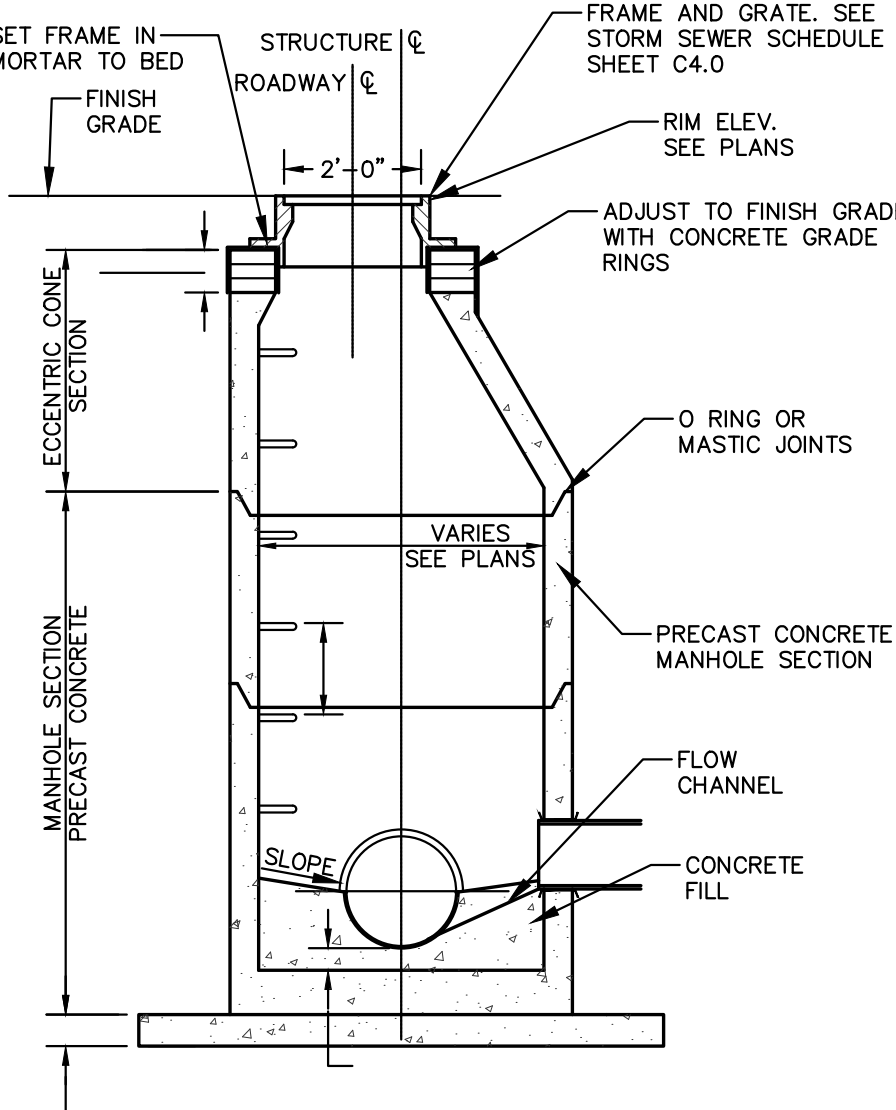
- INSTALLATION INSTRUCTIONS:
1. REMOVE GRATE FROM THE DRAINAGE STRUCTURE
 2. CLEAN STONE AND DIRT FROM LEDGE (LIP) OF DRAINAGE STRUCTURE
 3. DROP THE INLET FILTER THROUGH THE CLEAR OPENING SUCH THAT THE HANGERS REST FIRMLY ON THE LIP OF THE STRUCTURE
 4. REPLACE THE GRATE AND CONFIRM IT IS NOT ELEVATED MORE THAN 1/8"

- MAINTENANCE GUIDELINES:
1. EMPTY THE SEDIMENT BAG IF MORE THAN HALF FILLED WITH SEDIMENT AND DEBRIS
 2. REMOVE THE GRATE, ENGAGE THE LIFTING POINTS, AND LIFT FILTER FROM THE DRAINAGE STRUCTURE.
 3. DISPOSE OF SEDIMENT AND DEBRIS BY THE ENGINEERING OR MAINTENANCE CONTRACT 4. ALTERNATIVELY, AN INDUSTRIAL VACUUM CAN BE USED TO COLLECT SEDIMENT FROM THE FILTER BAG

Woven and Non-Woven Geotextile Filter Bag Properties (Minimum Average Roll Values)			
PROPERTY	TEST METHOD	WOVEN (OUTER)	NON-WOVEN (LINER)
TENSILE STRENGTH	ASTM D4632	350 x 225 Lbs	100 Lbs
ELONGATION	ASTM D4632	20% x 15%	50%
CBR PUNCTURE	ASTM D6241	1000 Lbs	65 Lbs
TRAPEZOIDAL TEAR	ASTM D4533	110 x 75 Lbs	45 Lbs
UV RESISTANCE	ASTM D4355	90%	70%
OPENING SIZE (AOS)	ASTM D4751	20 US STD SIEVE	40 US STD SIEVE
PERMITTIVITY	ASTM D4481	1.5 Sec ⁻¹	2.0 Sec ⁻¹
WATER FLOW RATE	ASTM D4481	200 gal/min/ft ²	145 gal/min/ft ²
MINIMUM FILTER BAG VOLUME		2 CUBIC FT	

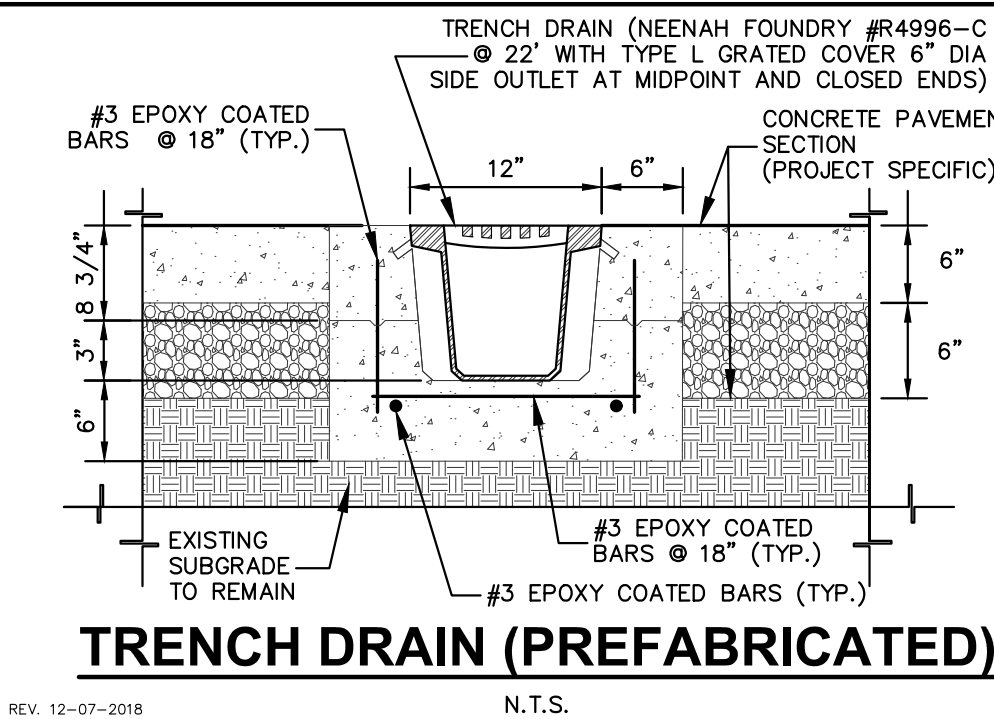


FOR FLEXSTORM HD SPECIFICATIONS



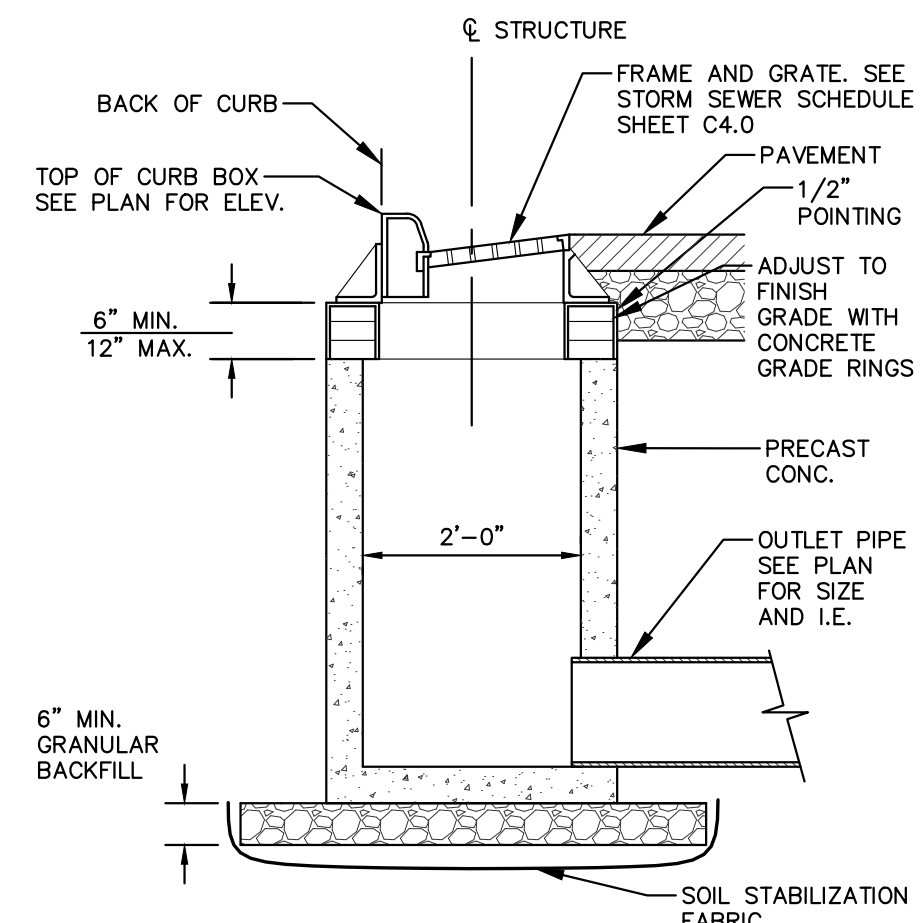
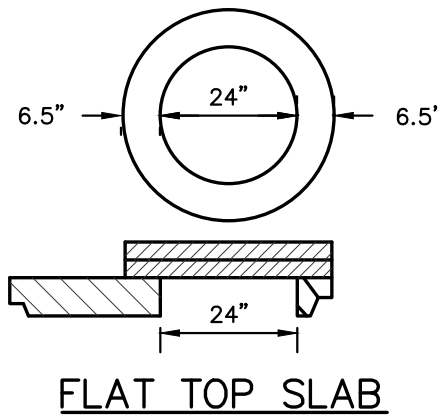
STORM MANHOLE

N.T.S.



GENERAL NOTES:

1. MANHOLE CONSTRUCTION TO MEET REQUIREMENTS OF ASTM C478.
2. PROVIDE FLAT TOP SLAB FOR MANHOLES 5' OR LESS IN DEPTH. FLAT TOP SLABS TO BE IN-BELL TYPE.
3. JOINTS SHALL BE WATERTIGHT. USE BUTYL RUBBER GASKET.
4. USE MORTAR FOR PIPE CONNECTIONS.
5. ECCENTRIC CONE SECTION OF MANHOLE TO BE SET OUTSIDE OF VEHICULAR WHEEL PATH NEAR ROADWAY.

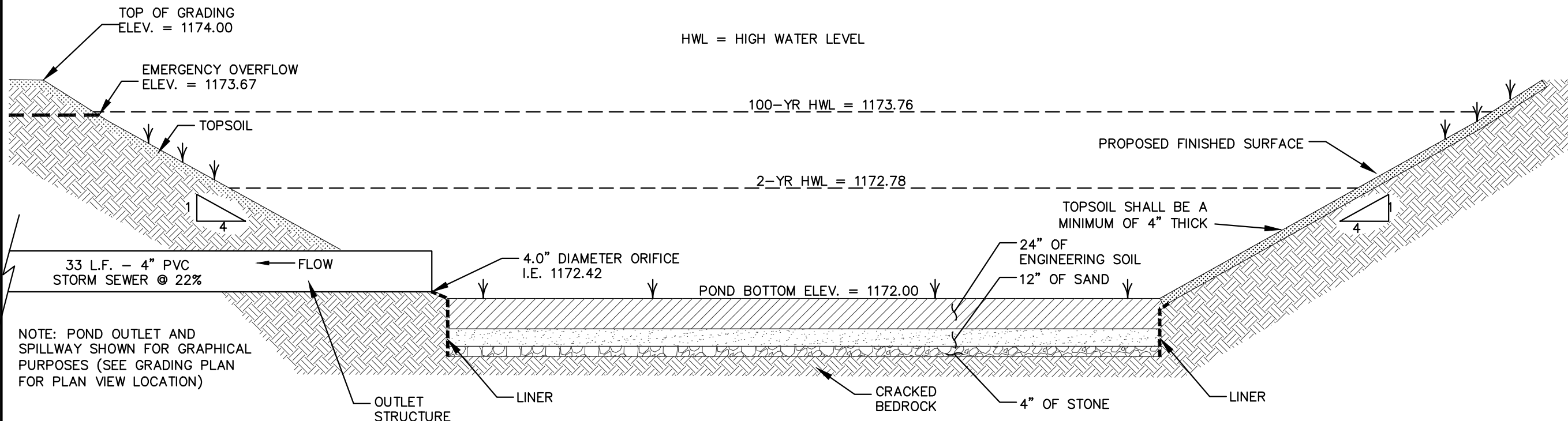


STORM INLET

N.T.S.

GENERAL NOTES:

1. INLET RIM ELEVATIONS ARE TO THE GUTTER FLOW LINE.



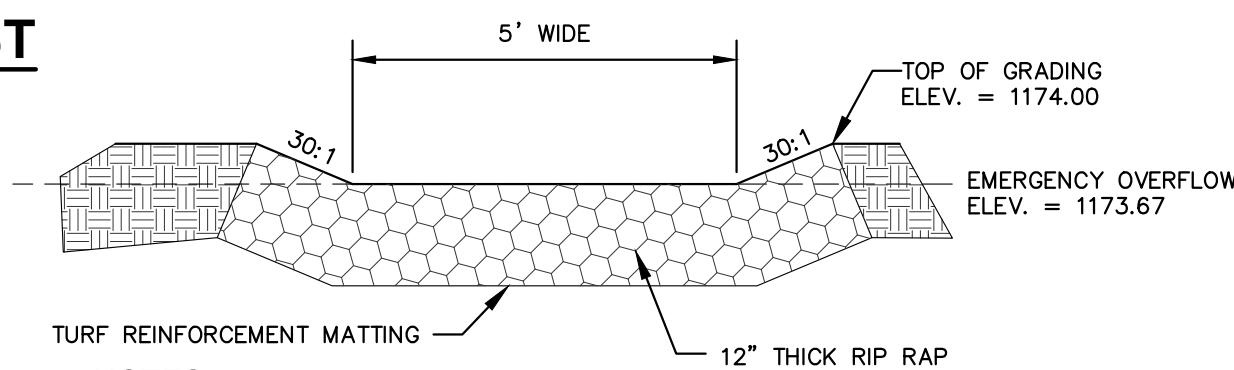
CROSS-SECTION

N.T.S.

BIORETENTION BASIN WEST

N.T.S.

NOTE: REFER TO BIORETENTION BASIN NOTES BELOW

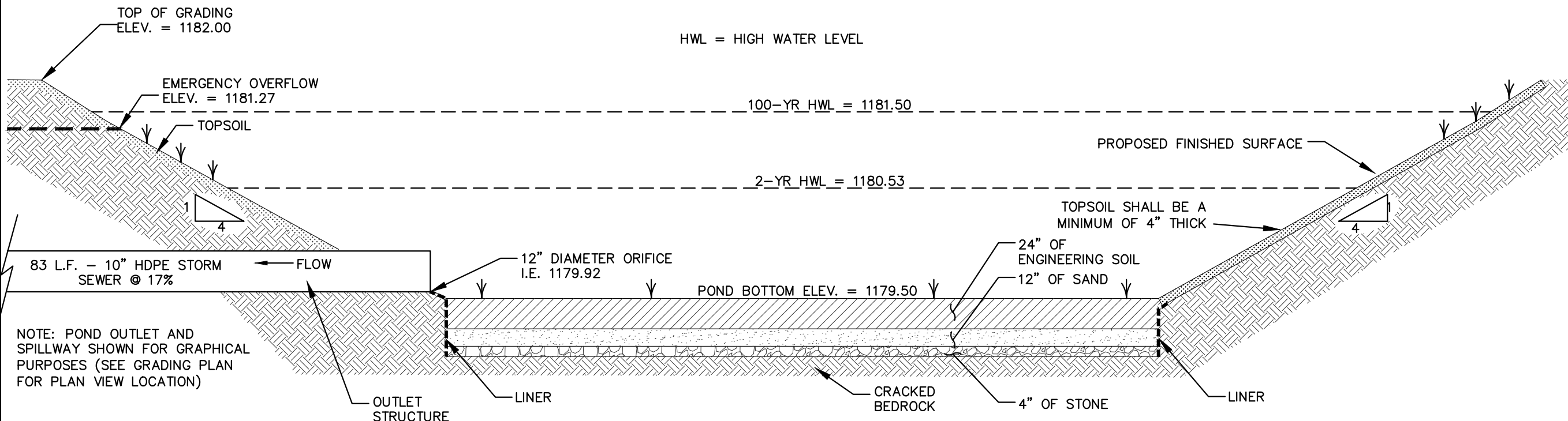


NOTES

1. EXTEND TURF REINFORCEMENT MATTING 2' BELOW THE ELEVATION OF THE EMERGENCY SPILLWAY ON THE INSIDE OF THE POND.

EMERGENCY OVER FLOW DETAIL

N.T.S.



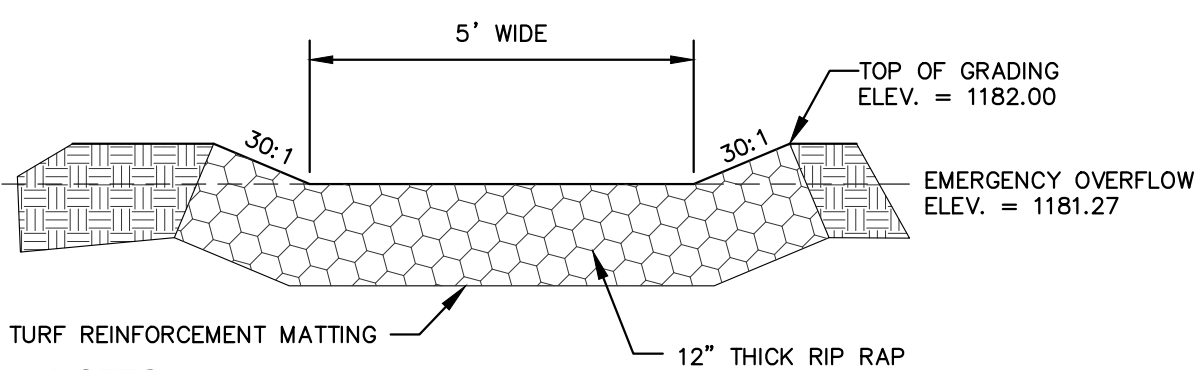
CROSS-SECTION

N.T.S.

BIORETENTION BASIN EAST

N.T.S.

NOTE: REFER TO BIORETENTION BASIN NOTES BELOW



NOTES

1. EXTEND TURF REINFORCEMENT MATTING 2' BELOW THE ELEVATION OF THE EMERGENCY SPILLWAY ON THE INSIDE OF THE POND.

EMERGENCY OVER FLOW DETAIL

N.T.S.

GENERAL NOTES:

1. ALL CONSTRUCTION PRACTICES SHALL MEET THE SPECIFICATIONS OF THE WDNR TECHNICAL STANDARD 1004 - BIORETENTION FOR INFILTRATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THIS STANDARD AND CONSTRUCT THE BIORETENTION DEVICE IN ACCORDANCE WITH THE REQUIREMENTS OUTLINED THEREIN.
2. CONTRACTOR SHALL INSTALL 24" OF ENGINEERED SOIL CONSISTING OF: 85% ASTM C33 SAND, 15% CERTIFIED COMPOST (SEE GENERAL NOTE 3).
3. CERTIFIED COMPOST SHALL CONSIST OF: >40% ORGANIC MATTER, <60% ASH CONTENT, pH OF 6-8, AND MOISTURE CONTENT OF 35-50% BY WEIGHT.
4. SAND/GRAVEL STORAGE LAYER SHALL CONSIST OF SAND OR GRAVEL MATERIAL MEETING THE SPECIFICATIONS IN SECTION V.B.7 OF WDNR TECHINCAL STANDARD 1004.
5. SAND/NATIVE SOIL INFILTRATION LAYER SHALL BE FORMED BY A LAYER OF SAND 3 INCHES DEEP, WHICH IS VERTICALLY MIXED WITH THE NATIVE SOIL TO A DEPTH OF 2-4 INCHES.
6. CONFIRM WITH GEOTECHNICAL ENGINEER THAT THE SILT LOAM SOIL PROFILE HAS BEEN REACHED PRIOR TO BACKFILLING THE BIORETENTION BASIN. DEEP TILL MINIMUM 2 FEET OF NATIVE SOIL TO PROMOTE INFILTRATION.
7. IF ADDITIONAL EXCAVATION IS REQUIRED BELOW THE SAND SOIL PROFILE TO REACH THE LISTED NATIVE SOIL LAYER, THE BACKFILL USED TO RETURN THE BOTTOM OF THE BIORETENTION SYSTEM TO THE BOTTOM OF THE SAND LAYER ELEVATION MUST HAVE AN EQUAL OR HIGHER INFILTRATION RATE THAN THE LISTED NATIVE SOIL LAYER AS CONFIRMED BY A GEOTECHNICAL ENGINEER.
8. FILTER FABRIC SHALL BE PLACED ABOVE AND ON THE SIDES OF THE PERFORATED PIPE, BETWEEN THE PEA GRAVEL AND THE ENGINEERED SOIL, A WIDTH OF 4 FEET CENTERED OVER THE FLOW LINE OF THE PIPE.
10. ANNUAL RYE GRASS SHALL BE SEEDED AT 40 LB/ACRE WITH THE SEED MIX IN THE AREAS SURROUNDING THE BASIN, ON SIDE SLOPES, AND OVER ANY LAND THAT DISCHARGES INTO THE BASIN FOR EROSION CONTROL WHEN BASIN IS BROUGHT ON-LINE. ROOTSTOP AND PLUGS ARE REQUIRED TO ESTABLISH VEGETATION AT THE INVERT OF THE BASIN.
11. RUNOFF MUST INFILTRATE WITHIN 24-HOURS. BASINS UNABLE TO MAINTAIN THESE RATES MUST BE DEEP TILLED, REGRADED, AND IF NECESSARY REPLANTED TO RESTORE ORIGINAL INFILTRATION RATES.
12. ALL WORK TO BE CONDUCTED IN CONFORMANCE WITH APPLICABLE LOCAL, REGIONAL, AND STATE STORMWATER STANDARDS FOR THE PROJECT SITE AS APPROVED BY THE REGULATORY ENGINEER.
13. SEE LANDSCAPING PLAN AND CONSULT WITH LANDSCAPE ARCHITECT OR ECOLOGICAL PLANTING AGENCY FOR APPROPRIATE SEED MIX, PLANTS AND PLANTING CONFIGURATIONS.

NOTE:

INFILTRATION DEVICES ARE DESIGNED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR), COUNTY, MUNICIPALITY, AND ENGINEERING STANDARD OF CARE. ALL DESIGNATED INFILTRATION AREAS (e.g. RAIN GARDENS, INFILTRATION BASINS, BIORETENTION DEVICES) SHALL BE FENCED PRIOR TO CONSTRUCTION AND REMAIN UNDISTURBED AND PROTECTED DURING THE CONSTRUCTION OF PROPOSED SITE IMPROVEMENTS. PROPOSED BIORETENTION DEVICES SHALL NOT BE CONSTRUCTED UNTIL THE DEVICE'S CONTRIBUTING WATERSHED AREA MEETS ESTABLISHED VEGETATION REQUIREMENTS SET FORTH WITHIN THE RESPECTIVE WDNR TECHNICAL STANDARDS. IF THE LOCATION OF THE INFILTRATION AREA CONFLICTS WITH CONSTRUCTION STAGING AND/OR CONSTRUCTION TRAFFIC AND IS DISTURBED, COMPACTION MITIGATION WILL BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR IS REQUIRED TO PROVIDE QUALIFIED STAFF FOR INSPECTION AND OBSERVATION OF THE CONSTRUCTION ACTIVITIES RELATING TO ALL JOB SITE REGULATORY COMPLIANCE INCLUDING THE PROTECTION AND CONSTRUCTION OF ALL STORMWATER MANAGEMENT FEATURES. ANY OBSERVATION OF PLAN OR SITE DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

THE STORMWATER MANAGEMENT FEATURES CONTAINED WITHIN THIS PLAN SET HAVE BEEN DESIGNED IN ACCORDANCE WITH APPLICABLE STANDARDS SET FORTH IN WISCONSIN DNR NR151 AND LOCAL ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER CONSTRUCTION PRACTICES HAVE BEEN UTILIZED AND THAT STORMWATER MANAGEMENT FEATURES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH APPROVED DESIGN PLANS. JSD PROFESSIONAL SERVICES, INC. (JSD) SHALL NOT BE LIABLE FOR ANY CONSTRUCTION PRACTICES OR INSTALLATION WHICH DEVIATES FROM THE APPROVED PLAN SET. ONCE THE OWNER HAS PROVIDED FINAL APPROVAL TO THE WORK PERFORMED BY THE CONTRACTOR AND ENSURED COMPLIANCE WITH THE PLAN, IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN STORMWATER MANAGEMENT FEATURES IN ACCORDANCE WITH THE RECORDED MAINTENANCE AGREEMENT. PROPER OPERATION IS DEPENDENT ON A MULTITUDE OF VARIABLES INCLUDING WEATHER. THESE COMPONENTS REQUIRE ONGOING MAINTENANCE FOR WHICH THE OWNER IS RESPONSIBLE. JSD TAKES NO RESPONSIBILITY FOR PROPER OPERATION OF THE WATER QUALITY COMPONENTS.

SAND STORAGE LAYER: IF NATIVE SOIL INFILTRATION RATES ARE GREATER THAN OR EQUAL TO THE DESIGN SAND LAYER (3.6 IN/HR), NATIVE SOILS MAY BE USED. GEOTECHNICAL CONSULTANT SHALL PROVIDE THIS INFORMATION IN WRITTEN DOCUMENTATION FOR VERIFICATION PRIOR TO CONSTRUCTION.

AS-BUILT SURVEY AND CERTIFICATION: UPON CONSTRUCTION COMPLETION AND STABILIZATION, AN AS-BUILT SURVEY IS TO BE CONDUCTED FOR BASIN AND CERTIFIED BY THE ISSUING ENGINEER. SURVEYOR IS TO CONFIRM THE TEMPORARY 3" ORIFICE IN THE BIORETENTION BASIN OUTLET HAS BEEN PLUGGED AND SEALED. AS-BUILT PLANS ARE TO BE SUBMITTED TO MUNICIPALITY FOR FINAL APPROVAL.

BIORETENTION BASIN NOTES



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CLIENT:

SKETCHWORKS

CLIENT ADDRESS:

7780 ELMWOOD AVENUE
MIDDLETON, WI 53562

PROJECT:

MOUNT HOREB
APARTMENT
DEVELOPMENT

PROJECT LOCATION:

1800 SPRINGDALE ST
MT HOREB, DANE COUNTY
WI, 53572

PLAN MODIFICATIONS:

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1	03.14.2022	SITE PLAN SUBMITTAL
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Designed By: CTD
Reviewed By: MAH
Approved By:

SHEET TITLE:

DETAILS

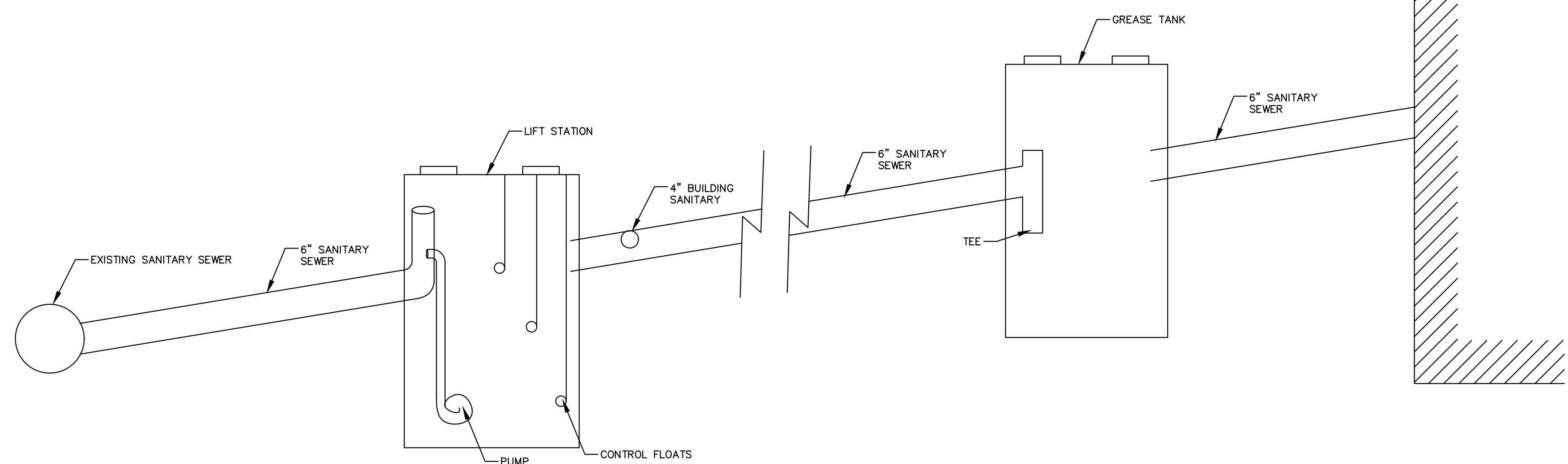
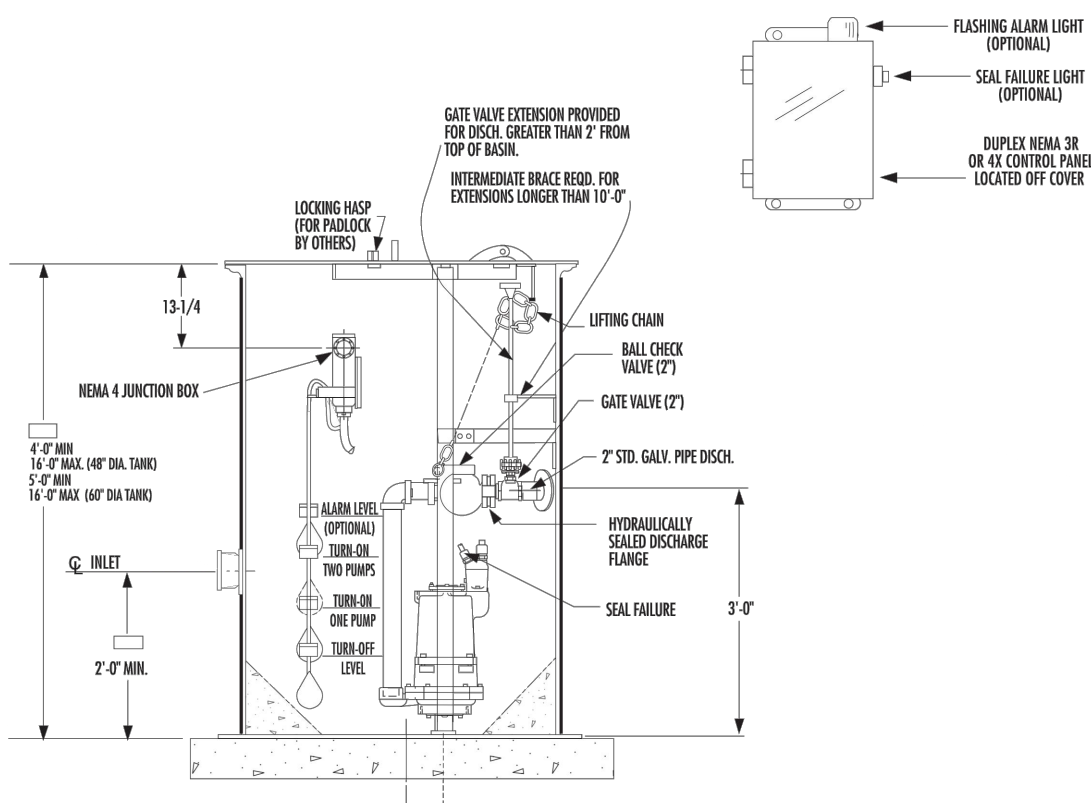
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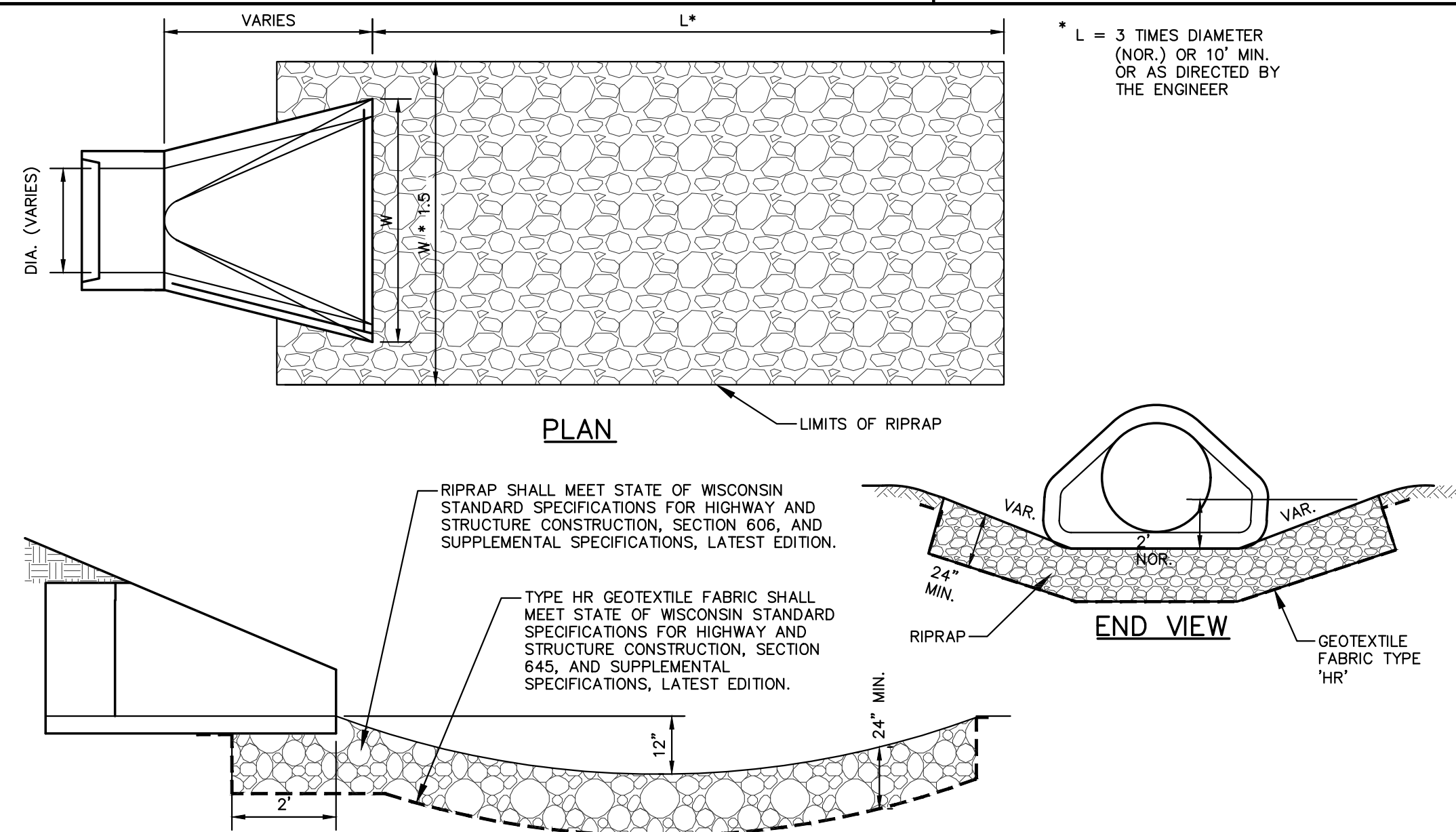
JSD PROJECT NO:

21-10870

Technical drawings of the 12" x 12" x 12" 304 Stainless Steel Enclosure. The left drawing is a front view showing the enclosure with a 12" x 12" x 12" label, a 1/4" N.P.T. conduit for power supply, and a 1/2" N.P.T. conduit for a ground rod. The right drawing is a top view showing the enclosure with a 48" (STD) / 60" (OPTIONAL) / 72" (OPTIONAL) diameter, 12 1/4" height, 9" width, and 5/8" studs (4) inches.



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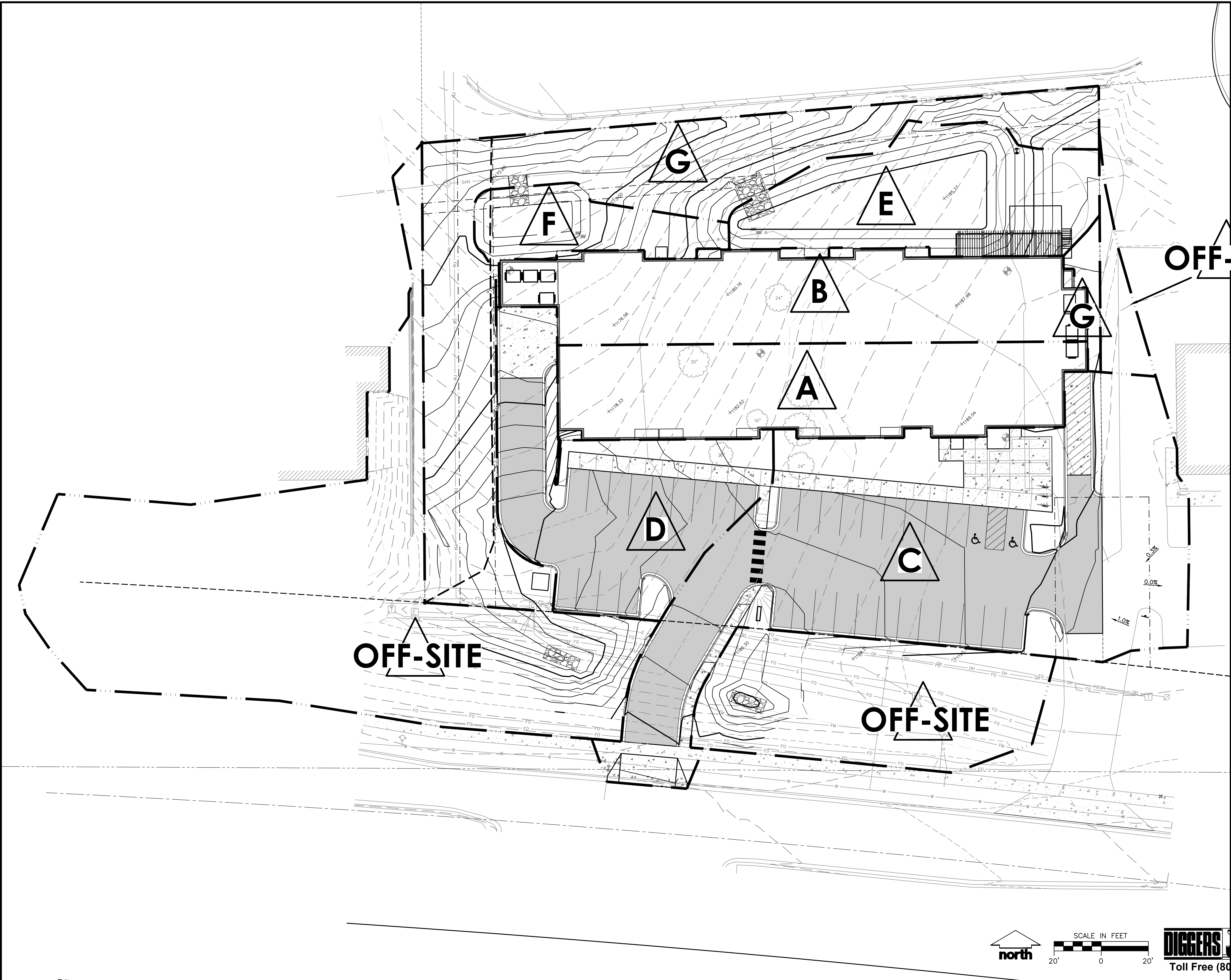


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REV. 12-7-2018



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RUSSELL MARKS

CLIENT ADDRESS:
20 EAST 74TH ST, APT. 2G
NEW YORK, NY 10021

PROJECT:
103 EAST PARK LANE
DEVELOPMENT

PROJECT LOCATION:
103 EAST PARK LANE
VERONA, DANE COUNTY
WI 53593

PLAN MODIFICATIONS:

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Designed By: CTD
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Approved By:

SHEET TITLE:
PROPOSED WATERSHED
MAP

SHEET NUMBER:

SWMP

JSD PROJECT NO: 21-10819

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Appendix 3:

Soil Info

Map Unit Description

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

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

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

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

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

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

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

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Dane County, Wisconsin

Cu—Cut and fill land

Map Unit Setting

National map unit symbol: t91k

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Farmland classification: Not prime farmland

Map Unit Composition

Cut and fill land: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cut And Fill Land

Typical profile

H1 - 0 to 10 inches: variable

Properties and qualities

Slope: 2 to 20 percent

Drainage class: Moderately well drained

Depth to water table: About 12 to 72 inches

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydric soil rating: No

EdC2—Edmund silt loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: t92b

Elevation: 1,060 to 1,300 feet

Mean annual precipitation: 31 to 39 inches

Mean annual air temperature: 41 to 50 degrees F

Frost-free period: 120 to 190 days

Farmland classification: Not prime farmland

Map Unit Composition

Edmund and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edmund

Setting

Landform: Hills

Landform position (two-dimensional): Shoulder, backslope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Thin loess over clayey pedis sediment derived from dolomite

Typical profile

H1 - 0 to 8 inches: silt loam

H2 - 8 to 14 inches: silty clay loam
H3 - 14 to 18 inches: silty clay
R - 18 to 22 inches: weathered bedrock

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 12 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low
to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Forage suitability group: Low AWC, adequately drained
(G105XY002WI)
Other vegetative classification: Low AWC, adequately drained
(G105XY002WI)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Dane County, Wisconsin
Survey Area Data: Version 20, Sep 7, 2021

Soil Map—Dane County, Wisconsin



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Dane County, Wisconsin

Survey Area Data: Version 20, Sep 7, 2021

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

Date(s) aerial images were photographed: Jun 13, 2020—Jun 18, 2020

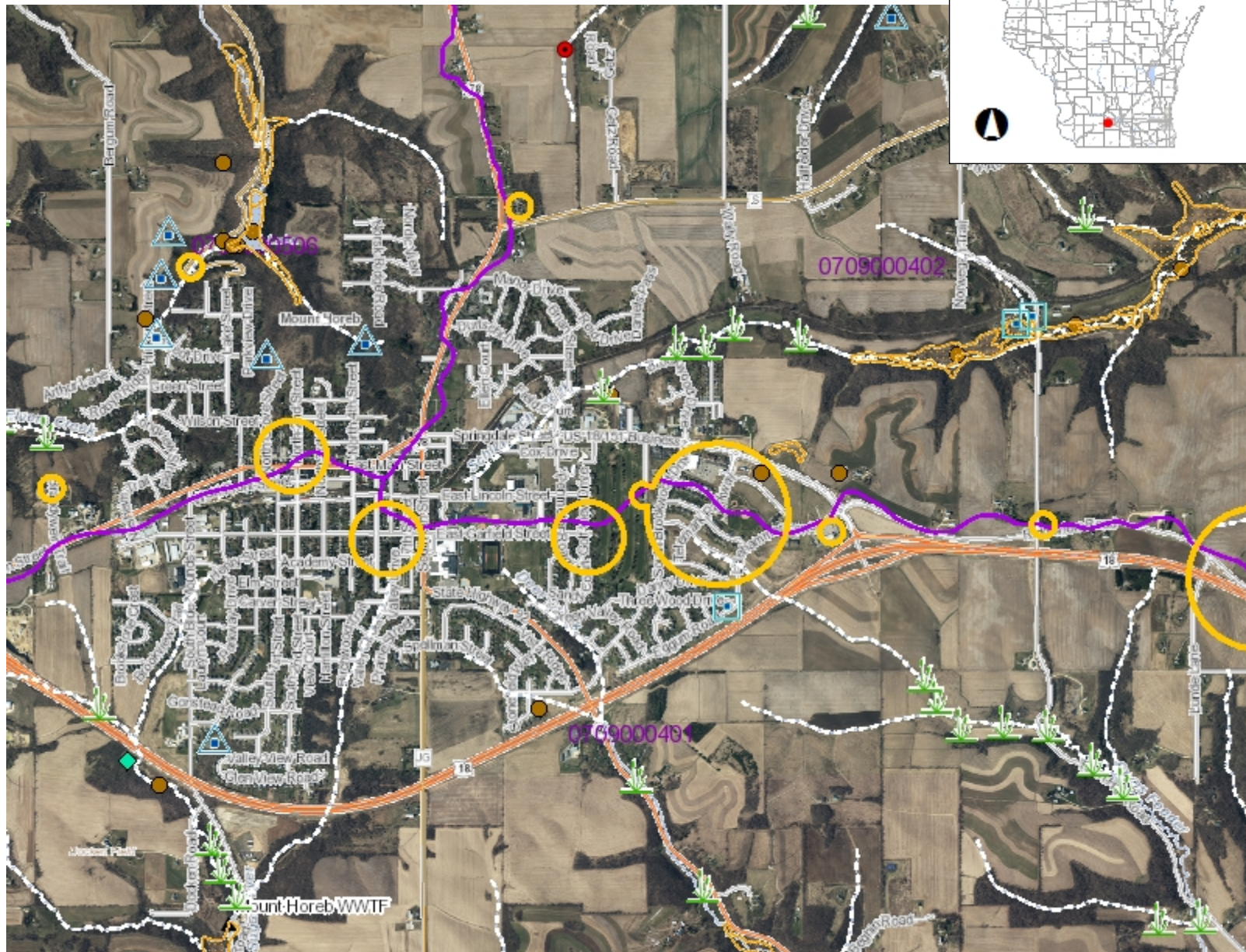
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Cu	Cut and fill land	0.0	1.9%
EdC2	Edmund silt loam, 6 to 12 percent slopes, eroded	1.6	98.1%
Totals for Area of Interest		1.6	100.0%



Surface Water Data Viewer Map



Legend

- Wetland Class Areas
- Wetland Class Points
 - Dammed pond
 - Excavated pond
 - Filled/draind wetland
 - Wetland too small to delineate
 - Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Wetland Class Areas
- Wetland Class Points
 - Dammed pond
 - Excavated pond
 - Filled/draind wetland
 - Wetland too small to delineate
 - Filled excavated pond
- Filled Points
- Wetland Class Areas
- Filled Areas
- Waterway and Wetland Alterations
- Informal Actions
- Exemption Determinations
- Ordinary High Water Mark Determinations
- Wetland Identifications and Confirmations
- Navigability Determinations
 - Yes
 - Yes with Agricultural Exemption
 - No
- Surface Water Outfalls
- Groundwater Protection Areas

Notes

1.0 0 0.48 1.0 Miles

NAD_1983_HARN_Wisconsin_TM

1: 30,439

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>



Construction • Geotechnical
Consulting Engineering/Testing

January 12, 2022
C21576

Mr. Chris Etmanczyk
Driftless View LLC
800 West Broadway, Suite 500
Madison, WI 53713

Re: Geotechnical Exploration Report
Proposed Mixed-Use Development
Springdale Street
Mount Horeb, Wisconsin

Dear Mr. Etmanczyk:

Construction • Geotechnical Consultants, Inc. (CGC) has completed the subsurface exploration program for the above-referenced project. The purpose of this program was to evaluate the subsurface conditions within the proposed construction area and to provide geotechnical recommendations regarding site preparation, foundation, floor slab, below-grade wall, retaining wall and pavement design/construction. A determination of the site class for seismic design is also included, along with a discussion of the on-site stormwater infiltration potential. We are sending you an electronic copy of this report, and we can provide a paper copy upon request. Electronic copies are also being sent to the project team at JSD Professional Services and Sketchworks Architecture.

SITE CONDITIONS AND PROJECT DESCRIPTION

We understand that a three to five-story mixed-use building with a partially exposed below-grade parking level is planned for a vacant lot on Springdale Street in Mount Horeb, Wisconsin. The subject site is located on the north side of the road, approximately 550 ft west of the intersection with Brookwood Drive, and is currently covered with lawn and scattered trees. A house formerly located in the eastern part of the site was demolished prior to 2010, according to historic aerial images (available through DCiMap). Based on a provided topographic site plan (JSD; 1-ft contour lines), existing site grades slope from the southeast down towards the northwest, with ground surface elevations ranging between about EL 1,191 and 1,170 ft.

It is understood that the new building will be located in the central part of the site, and that finished first floor and lower-level elevations are proposed to be established at EL 1,190 and 1,180 ft, respectively. Accordingly, we anticipate that large portions of the building footprint will be excavated to establish lower-level subgrades, with maximum excavation depths of about 10 ft below existing grade anticipated near the southeast building corner. In western parts of the building, we expect fill placement to be required in order to establish building grades, and maximum fill heights are anticipated to be about 7 ft above existing grade near the northwest building corner. The north and west side of the parking level are expected to be at least partially exposed.

Site work is proposed to include a paved drive on the east side of the building, a paved parking lot south of the building, as well as a stormwater infiltration basin to the north of the building.

SUBSURFACE CONDITIONS

Subsurface conditions for this study were explored by drilling seven Standard Penetration Test (SPT) soil borings within the proposed building (B-1 through B-5) and pavement (B-6 and B-7) areas. The borings were conducted by Soil Essentials (under subcontract to CGC) on December 22, 2021 using track-mounted Geoprobe 7822DT rotary drill rigs equipped with hollow stem augers and automatic SPT hammers. The five building borings were planned to be drilled to 30 ft below current site grades, but auger refusal occurred on apparent bedrock at depths between about 7.7 and 22.2 ft. Auger refusal on apparent bedrock also occurred in the pavement boring B-7 at about 10.6 ft below grade, while B-6 terminated at the planned depth of 15 ft. The specific procedures used for drilling and sampling are described in Appendix A.

In addition to the soil borings, three test pits were performed within or near the planned stormwater management areas. The test pits were excavated by Hellenbrand Brothers Excavating (also under subcontract to CGC) and logged in the field by CGC on November 18, 2021 to refusal on apparent bedrock between about 5.5 and 12.5 ft below the existing ground surface elevations.

The soil boring and test pit locations were selected and field-staked by JSD personnel, who also provided ground surface elevations, and are shown in plan on the Soil Boring & Test Pit Location Exhibit presented in Appendix B.

The subsurface profiles at the boring and test pit locations varied to some degree, but the following strata were typically encountered (in descending order):

- About 4 to 36 in. of **topsoil**, including apparent lower topsoil horizons; followed by
- Approximately 2 to 9 ft of medium stiff to very stiff **lean to silty clay**; over
- Roughly 1 to 9 ft of loose to medium dense **silty sand** and **sandy silt** strata; underlain by
- Medium dense to very dense, probable **weathered limestone bedrock** to the maximum depths explored/the level of refusal.

Natural moisture contents in representative clay samples were determined in our laboratory to range from 16.4% to 46.1%. Based on natural moisture contents, pocket penetrometer readings (q_p -values; an estimate of the unconfined compressive strength of cohesive soils) and SPT blow counts (N-values), the cohesive soils should be considered slightly to moderately compressible.

As noted above, weathered limestone bedrock was encountered across the site, and the borings and test pits generally terminated due to auger or backhoe bucket refusal, likely indicating the top of fairly competent/hard bedrock. It must be noted that the drilling/sampling procedures in the borings

can disturb/degrade the bedrock, making it difficult to distinguish between soil and weathered rock in some cases. Hence, some of the soils present above the apparent weathered limestone bedrock were characterized as *possible highly weathered to weathered limestone bedrock*. The depth and consistency of bedrock should be expected to vary across the site, and we have included a summary of the estimated depths and elevations of the top of weathered bedrock and refusal in Table 1 below.

TABLE 1 – Summary of Top of Bedrock and Refusal Depths and Elevations

Boring/ Test Pit	Approx. Existing Ground Surface Elevation (ft)	Approx. Top of Bedrock		Approx. Refusal	
		Depth (ft)	Elevation (ft)	Depth (ft)	Elevation (ft)
B-1	1172.9	18.0	1154.9	22.2	1150.7
B-2	1177.6	12.0	1165.6	12.6	1165.0
B-3	1182.3	1.2	1181.2	7.7	1174.6
B-4	1188.4	4.0	1184.4	11.7	1176.7
B-5	1190.2	1.5	1188.7	7.7	1182.5
B-6	1180.6	9.0	1171.6	Not encountered	
B-7	1191.0	1.5	1189.5	10.6	1180.4
TP-1	1189.5	1.3	1188.3	5.5	1184.0
TP-2	1179.7	0.8	1178.9	5.5	1174.2
TP-3	1172.6	5.5	1167.1	12.5	1160.1

Groundwater was not encountered in the borings and test pits during or upon the completion of drilling/excavating. Groundwater levels are expected to fluctuate with seasonal variations in precipitation, infiltration, evapotranspiration, the level in nearby waterbodies and other factors.

A more detailed description of the site soil and groundwater conditions is presented on the individual soil boring and test pit logs attached in Appendix B, which also contain the laboratory test results, and on the WDSPS *Soil and Site Evaluation – Storm* form for the stormwater test pits contained in Appendix G.

DISCUSSION AND RECOMMENDATIONS

Subject to the limitations discussed below and based on the subsurface exploration, it is our opinion that the site is generally suitable for the proposed development and that the planned building can be supported by a conventional shallow spread footing foundation system. *However, bedrock excavation is generally expected to be required in order to establish parking level and footing grades in eastern to central portions of the building footprint. Towards the northwest corner of the building, on the other hand, we anticipate that undercutting of marginal native soils may be required below*

the bottom of footings on a fairly isolated basis. In addition, we anticipate that site grades in the western section of the building will need to be raised several feet above existing to create the building pad. Since we expect fairly significant fill heights to be required towards the northwest building corner, we recommend early fill placement to allow the slightly to moderately compressible clays which were found in this area to consolidate and settle under the weight of the new fill. Our recommendations for site preparation, foundation, floor slab, below-grade wall, retaining wall and pavement design/construction, along with our assessment of the site class for seismic design and a discussion of the stormwater infiltration potential, are presented in the following subsections. Additional information regarding the conclusions and recommendations presented in this report is discussed in Appendix C.

1. Site Preparation

We recommend that topsoil be stripped at least 10 ft beyond the proposed construction area, including areas requiring fill beyond the building footprint and pavement limits. The topsoil can be stockpiled on-site and later re-used as fill in landscaped areas. As noted previously, topsoil thicknesses ranged from about 4 to 36 in. in the borings and test pits (including apparent lower topsoil horizons in some areas which should generally also be removed), but variable topsoil thicknesses should be expected between and beyond boring/test pit locations due to previous grading activities. Trees and root zones should be removed from construction areas prior to or in conjunction with topsoil stripping.

After topsoil stripping, the exposed soils are generally expected to consist of medium stiff to very stiff native clays, loose to medium dense sand to silty sand soils, or medium dense to very dense, weathered limestone bedrock. In areas remaining at grade or requiring fill, we recommend that cohesive and fine-grained (i.e., clay and silt) subgrades be statically recompacted (i.e., without vibration) and subsequently proof-rolled with a piece of heavy rubber-tire construction equipment, such as a loaded tri-axle dump truck, to check for soft/yielding areas. If soft/yielding areas are observed, these soils should be undercut and replaced with granular backfill compacted to at least 95% based on modified Proctor methods (ASTM D1557) in accordance with our Recommended Compacted Fill Specifications presented in Appendix D. Alternatively, 3-in. dense graded base (DGB) or properly crushed bedrock materials (discussed further herein) that are placed in loose 10-in. lifts and compacted until deflection ceases can also be used to restore grades in undercut areas. Granular soil and weathered bedrock subgrades should be thoroughly recompacted with a vibratory smooth-drum roller, and zones that remain loose after recompaction should be undercut and replaced as described above. Areas subsequently receiving fill should be checked for their footing, floor slab and pavement support suitability prior to fill placement, as applicable.

Following the development of a firm and stable subgrade, fill placement to establish site, pavement and building grades can proceed. To the extent possible, we recommend using granular soils (i.e., sands/gravels, including native sand soils if selectively excavated and stockpiled) as structural fill within the building envelope and in the upper 2± ft within pavement areas because these soils are

relatively easy to place and compact in most weather conditions compared to clay/silt soils. If excavated rock is used as fill, we recommend the rock be crushed to a nominal size of 3 in. or less and have a resulting gradation similar to that of 3-in. dense graded base, as outlined in Section 305 of the WisDOT *Standard Specifications*, to fill the voids during placement and compaction. Clay and silt soils excavated on-site are generally not recommended as structural fill because moisture conditioning by discing and drying (aeration) will likely be required to achieve desired compaction levels, which is highly weather-dependent (i.e., dry, warm and windy conditions) and could delay construction progress. In our opinion, clay/silt soils are best used as fill in landscaping or potentially as lower lifts in pavement areas provided the moisture contents can be sufficiently lowered from the natural states to facilitate compaction efforts. We recommend that structural fill be compacted to at least 95% based on modified Proctor methods (ASTM D1557) following Appendix D guidelines. Periodic field density tests should be taken by CGC staff within the fill to document the adequacy of the compaction effort.

Finish parking level grades are expected to be established about 7 ft above existing site grades towards the northwest building corner. Due to fairly significant fill heights and the presence of slightly to moderately compressible clay soils on this site, particularly in the area where the most fill is planned, we recommend the fill within and 10 ft beyond the north and east sides of the building footprint be placed early in the construction process to finished floor slab grade to allow the existing cohesive soils to consolidate and settle under the weight of the new fill. In general, we anticipate a consolidation period on the order of 1 to 2 months (potentially longer, pending the evaluation of survey data) likely to be adequate. Settlement platforms (see detail in Appendix E) or monitoring points should be established within the fill to monitor the settlement progress. The settlement platforms should be surveyed at the time of installation, immediately after the full height of the fill reaches the floor slab subgrade elevation, at least twice a week in the first two weeks after fill placement, and then weekly to bi-weekly thereafter until three consecutive sets of survey readings indicate that settlement has largely ceased. Foundation construction within the monitoring area can begin after the settlement data indicates that fill-induced settlement has largely ceased.

If desired, while settlement is being monitored in the northwest fill areas, foundation and building construction can commence in the south and east portions of the building footprint where natural soils are expected at footing grade and settlement is not a concern.

As an alternative to the settlement monitoring platforms discussed above (which are placed prior to the commencement of fill placement), the progress of the resulting consolidation settlement could be monitored by driving multiple #4 rebar vertically into the newly placed fill materials to a depth of at least 4 ft below grade after fill placement to achieve the design slab subgrade has been completed. The tops of the rebar should be surveyed immediately after fill placement is complete, then at least twice weekly for a period of about two weeks, and weekly to bi-weekly thereafter to monitor settlement. It is important to note that with this alternative, a portion of the anticipated consolidation settlement will likely occur *during* the filling operations. As a result, little (to potentially no)

apparent settlement may be observed from survey readings completed *after* fill placement has been completed.

As discussed above and summarized in Table 1, bedrock was encountered in the soil borings and test pits performed for this study, and the depth and consistency of bedrock should be expected to vary across the project area. As a general “rule of thumb”, it has been our experience that excavation to the level of auger refusal in the soil borings can typically be accomplished using conventional earthwork equipment and techniques, including a narrow bucket and ripping tooth. Excavations that extend below the level of auger refusal typically require special bedrock removal techniques, such as chiseling with an excavator-mounted rock chipper, blasting, etc. Rock excavation considerations are contained in Appendix F. *We recommend that a unit rate for rock excavation be established in the bidding documents and that the project budget include a generous rock excavation volume and contingency. Note that rock excavation should be clearly defined in the project specifications.* If rock excavation is based on the use of a ripping tooth (excavator or bulldozer), we recommend the rock line (if included on the plans) use the “Approximate Top of Bedrock” depth/elevation columns in Table 1. Alternative rock excavation definitions may require adjusting the rock line. It should also be noted that mass excavation with scrapers may not be able to extend into the weathered bedrock to the same extent as using a large excavator (with appropriate bucket or single-point ripping tooth) and haul trucks.

Above the rock cuts, we anticipate that excavation sidewalls can generally be sloped back according to OSHA requirements in order to establish parking level grades. The stiff native clays and sands with significant amounts of fines (denoted SM on the boring/test pit logs), typically classified as OSHA “Type B” soils, are anticipated to control excavation slopes, and slopes of 1.0H:1.0V are expected to be at least temporarily stable. Note that flatter side slopes may be required where perched or seeping water is present that destabilizes the side slopes, or where granular soils or granular, highly weathered to weathered bedrock with fairly low fines-content are present (if any). *The appropriate excavation side slopes should be determined by a competent person completing the earthwork in accordance with OSHA slope guidelines.* Where excavation occurs within close proximity to right-of-way or the adjacent parcels and adequate sloping is not possible, temporary shoring (earth retention) will likely be required. We recommend shoring systems be designed by an appropriately qualified professional engineer.

2. Building Foundations

We understand that the finished floor elevation of the partially exposed parking level will be established at EL 1,180 ft. Based on existing ground surface elevations, we anticipate that site grades will need to be raised to establish the western portion of the building pad, with a maximum fill height around 7 ft expected near the northwest building corner. *As discussed in the preceding section, we recommend that the fill be properly placed early in the construction process to the planned floor slab subgrade elevation, followed by a time delay/consolidation period prior to beginning footing construction.* Central and eastern portions of the building footprint will have to be excavated to a

maximum expected depth of roughly 10 ft below existing site grades near the southeast building corner. Footing subgrades are expected to consist of very dense, weathered to fairly hard/competent limestone bedrock over large portions of the building footprint, and rock excavation, as discussed previously, may be required in some areas. As an exception, in the western part of the building, footings are expected to bear within stiff to very stiff clay soils, which are expected to control the foundation design, or on newly-placed structural fill above these soils.

Provided the site preparation recommendations discussed previously are followed, the following parameters should be used for foundation design:

- Maximum net allowable bearing pressure: 4,000 psf
- Minimum foundation widths:
 - Continuous wall footings: 18 in.
 - Column pad footings: 30 in.
- Minimum footing depths below finish site grades:
 - Exterior/perimeter footings: 4 ft
 - Interior footings: no minimum requirement

Recognizing that footing subgrades will vary significantly across the building footprint, a CGC field representative should be present during footing excavations to document that the subgrades are suitable for footing support or otherwise advise on corrective measures, such as undercutting. We recommend using a smooth-edged backhoe bucket for footing/undercut excavations in soil. A bucket with teeth is acceptable for excavations in weathered bedrock provided that loosened rock is removed from the bottom of the excavation. Where required, the base of undercut excavations should be widened beyond the footing edges at least 0.5 ft in each direction for each foot of undercut depth for stress distribution purposes. Weathered bedrock, granular soils and structural fill exposed at footing grades or at the bottom of undercut excavations should be thoroughly recompact with a large vibratory plate compactor or an excavator-mounted hoe-pack prior to backfilling or formwork/concrete placement to densify material loosened during excavation, and loosened rock which cannot be adequately recompact should be removed as noted above. Soils potentially susceptible to disturbance from vibratory compaction (e.g., cohesive/fine-grained soils or sands with elevated moisture content) should be hand-trimmed. OSHA slope guidelines should be followed if workers need to enter footing or undercut excavations.

Undercutting will be required where clays with q_p -values of less than 2.0 tsf are encountered at and slightly below the bottom of footings designed for an allowable bearing pressure of 4,000 psf. Soils containing organics, such as lower topsoil horizons if not addressed during general site grading, should also be undercut and replaced below the bottom of footings. In addition, loose granular soils and highly weathered to weathered bedrock that cannot be recompact satisfactorily should also be undercut. Where unsuitable soils have been undercut, we recommend granular backfill compacted to

at least 95% compaction based on modified Proctor methods (ASTM D1557), in accordance with the Recommended Compacted Fill Specifications presented in Appendix D, be used to restore footing grades. Alternatively, 3-in. DGB (or on-site processed bedrock) that is placed in loose 10-in. lifts and compacted until deflection ceases can also be used to restore footing grades in undercut areas.

Provided the foundation design/construction recommendations discussed above are followed, *including early fill placement and associated settlement monitoring*, we estimate that total and differential post-construction settlements should be on the order of 1.0 and 0.5 in., respectively. Note that slightly higher differential settlement may occur, and possibly over a very short distance, where footing subgrades transition from soil to rock. It is therefore recommended that the foundations be suitably reinforced in such areas to resist this action.

3. Seismic Site Class

In our opinion, the average soil/rock properties in the upper 100 ft of the site (based on N-values projected to be greater than 50 blows/ft, on average, in the weathered to fairly hard limestone bedrock underlying the site) can be characterized as a very dense soil/soft rock profile. This characterization would place the site in Class C for seismic design according to International Building Code and ASCE 7.

4. Floor Slab

The parking level floor slab is expected to be supported on weathered to fairly hard/competent bedrock, granular soils, clay, or on newly-placed structural fill where site grades need to be raised. We recommend granular and weathered bedrock floor slab subgrades be thoroughly recompact with a vibratory smooth-drum roller prior to concrete placement. Cohesive and fine-grained floor slab subgrades will require static recompaction (i.e., without vibration) and subsequent proof-rolling. Areas that remain loose after recompaction or where soft/yielding zones are observed should be undercut and replaced with well-compacted 3-in. DGB or granular fill. *As the clay soils that may be present at floor slab grades in some areas are considered susceptible to disturbance from precipitation and repetitive construction traffic, we recommend that the project budget include a contingency for floor slab subgrade undercutting/replacement.*

To act as a capillary break below the parking level slab, we recommend including a minimum 6-in. thick layer of well-graded sand/gravel with less than 5% by weight passing the No. 200 U.S. standard sieve. Note, however, that some structural engineers require a layer of dense graded base, such as 1¼-in. DGB, rather than sand/gravel below floor slabs to increase the subgrade modulus immediately below the slab. To further reduce the potential for moisture migration through the slab, a plastic vapor barrier can also be utilized. Fill and base layer material below the floor slab should be placed as described in the Site Preparation section of this report. Slabs constructed on a minimum 6-in. thick dense graded base layer may be designed utilizing a subgrade modulus of 150 pci, and a subgrade modulus of 100 pci should be used for the design of slabs that are constructed on a

sand/gravel layer. The design subgrade moduli are based on a firm or adequately stabilized, recompacted subgrade such that non-yielding conditions are developed. The slab should be structurally separated from the footings with a compressible filler and have construction joints and reinforcement for crack control.

5. **Below-Grade Walls**

We anticipate that below-grade walls will be laterally supported by the parking level slab and upper-level framing. Therefore, *at-rest* lateral earth pressures should be used during design of these walls. To reduce the buildup of such pressures, high-quality backfill should be placed within 4 to 6 ft of the walls. We recommend that a perimeter drainage system be installed to intercept potential surface water infiltration and that the granular backfill be continuously connected to the drainage system, which discharge water by means of one or more sump pumps. Alternatively, the perimeter drainage system could also be designed to “daylight” down slope where site grades allow. The granular backfill should be well-graded sand or gravel having no more than 12% by weight passing the No. 200 U.S. standard sieve (i.e., USCS designations SP, SP-SM, GP or GP-GM). The granular soils on this site were generally found to contain higher amounts of fines, but can potentially also be used as wall backfill provided a three-dimensional drainage board is included in the wall design. Soils containing cobbles/boulders should not be used in direct contact with below-grade walls. To impede the inflow of surface moisture, the final 2 ft of backfill in unpaved areas should consist of a clayey fill cap. The clayey cap (or pavement) should be graded to promote positive drainage away from the walls.

Before placing the wall backfill, the exterior walls should be damp-proofed with spray-applied or mopped-on rubber or bituminous sealer. Compaction of the backfill within 3 to 5 ft of the walls should be performed with lightweight equipment to avoid the development of excessive lateral earth pressures. The backfill should generally be compacted to a minimum compaction level of 93% modified Proctor following Appendix D guidelines. *Note, however, that we recommend a minimum 95% compaction where shallow stoops or pavement will be supported on the wall backfill.* Lower-level walls constructed in accordance with the above recommendations may be designed for an equivalent fluid pressure of 55 psf per ft of depth (*drained, at-rest* conditions). Additionally, the wall design should also account for surcharge effects that could be applied during or after construction, as well as hydrostatic pressures.

6. **Retaining Walls**

Cast-in-place concrete site retaining walls may not be laterally restrained from rotating. Therefore, these walls can be designed for *active* earth pressures behind the walls and *passive* pressures in front of the walls. Lateral earth pressures behind the retaining walls can be reduced by backfilling with sand with less than 12% by weight passing the No. 200 U.S. standard sieve, as described in the preceding section. In addition, weepholes should be placed near the base of these walls on 10-ft centers to provide drainage of the wall backfill. The weepholes should be hydraulically connected

with the backfill and should be protected with a non-woven geotextile fabric to minimize soil loss through the weepholes. The wall designer may have other and/or additional drainage requirements.

Retaining walls constructed in accordance with the above recommendations may be designed for an *active* equivalent fluid pressure of 35 psf per ft of depth. *Passive* pressures are expected to be on the order of 200 psf per ft of depth. Both active and passive equivalent fluid pressures assume *drained* conditions, and the passive pressure value includes a safety factor of 2 to prevent excessive wall deflection. The retaining wall design should also take into account surcharge effects which could be applied during or after construction.

We recommend using an *ultimate* concrete-to-soil friction factor of 0.3 for retaining wall footings bearing on at least medium stiff clay and silt soils. For footings bearing on sand, an *ultimate* concrete-to-soil friction factor of 0.4 may be implemented.

7. **Pavement Design**

We anticipate that new pavement design will be controlled by the surficial clays that were encountered near existing site grades over portions of the site. Subgrades should be prepared as described in the Site Preparation section of this report, with recompaction/proof-rolling completed prior to base course and asphalt placement. *We recommend that the budget include a contingency for pavement subgrade undercutting/stabilization, which may involve about 12 in. of additional coarse aggregate (e.g., 3-in. DGB or properly crushed bedrock materials), potentially over biaxial geogrid (e.g., Tensar BX Type 1 or equivalent).* The areas requiring undercutting/stabilization and the depth of undercutting should be determined in the field by proof-rolling prior to installing the base course layer, and the need for undercutting/stabilization will likely depend on the weather conditions during construction, as the clayey subgrade soils can be susceptible to disturbance/weakening from precipitation and repeated construction traffic. The need for undercutting below the pavement section will likely be reduced where site grades are raised at least 2 ft above existing grade with high-quality granular fill.

We anticipate that asphalt pavement on this site will primarily be exposed to automobile traffic with less than one 18-kip equivalent single axle load (ESAL) per day. In view of this, we have assumed Traffic Class I following Wisconsin Asphalt Pavement Association (WAPA) recommendations for relatively small parking areas and driveways that are mainly used by light passenger vehicles. However, main sections of the driveways are likely to experience heavier traffic loads (e.g., due to delivery and garbage trucks). For pavement areas where trucks will routinely travel, as well as parking lots with 50 or more stalls, we have assumed a traffic load of up to 5 ESALs per day and Traffic Class II according to WAPA. The pavement sections summarized in Table 2 below were selected assuming a Soil Support Value “SSV” of about 4.0 for a firm or adequately stabilized clay subgrade and a design life of 20 years.

TABLE 2 – Recommended Pavement Sections

Material	Thicknesses (in.)		WDOT Specification ⁽¹⁾
	Traffic Class I (Light Duty)	Traffic Class II (Medium Duty)	
Bituminous Upper Layer ^(2,3)	1.75	1.75	Section 460, Table 460-1
Bituminous Lower Layer ^(2,3)	1.75	2.25	Section 460, Table 460-1
Dense Graded Base Course ^(2,4)	8.0	10.0	Sections 301 and 305
Total Thickness	11.5	14.0	

Notes:

- 1) Wisconsin DOT *Standard Specifications for Highway and Structure Construction*, latest edition, including supplemental specifications, and *Wisconsin Asphalt Pavement Association 2020 Asphalt Pavement Design Guide*.
- 2) Compaction requirements:
 - Bituminous concrete: Refer to Section 460-3.
 - Base course: Refer to Section 301.3.4.2, Standard Compaction
- 3) Mixture Type LT (or E-0.3) bituminous; refer to Section 460, Table 460-2 of the *Standard Specifications*.
- 4) The upper 4 in. should consist of 1¼-in. DGB; the bottom part of the layer can consist of 3-in. DGB.

If a uniform aggregate section is desired between the light and medium-duty sections for grading purposes, we recommend that the greater aggregate thickness of 10 in. be used in design. Further, the medium-duty pavement section may be considered across the entire area. The recommended pavement sections assume regular maintenance (crack sealing, etc.) will occur, as needed. Note that if traffic volumes are greater than those assumed, CGC should be allowed to review the recommended pavement sections and adjust them accordingly. Alternative pavement designs may prove acceptable and should be reviewed by CGC. If there is a delay between subgrade preparation and placing the base course, the subgrade should be recompact.

Where concrete pavement may be used, such as in pavement areas subjected to concentrated wheel loads (e.g., dumpster pads), we recommend that the concrete should be at least 6 in. thick and contain adequate reinforcement for crack control. Concrete slabs underlain by a minimum 6-in. thick dense

graded base layer over a firm or stabilized subgrade can be designed utilizing a subgrade modulus of 150 pci.

8. Stormwater Infiltration Potential

We understand that a stormwater infiltration basin is planned on the north side of the new building, and Test Pits 2 and 3 were performed within and near the proposed basin footprint, respectively. One test pit was also performed within the area of the proposed parking lot near Springdale Street where stormwater management may be considered.

The bottom of the engineered soil/stone layer of the northern basin is proposed to be established at EL 1,172.92 ft, roughly 1 to 12 ft below current site grades. Accordingly, lower-permeability *silty clay loam* soils and/or weathered to fairly hard/competent *bedrock* are expected below the engineered soil layer, neither of which are considered conducive for infiltrating significant quantities of stormwater. Similar conditions were encountered in TP-1 in the southern part of the site. Accordingly, it is our opinion that very limited stormwater infiltration will be possible on this site.

Infiltration Potential: The following is a summary of the estimated infiltration rates for the soils encountered in Test Pits 1 through 3, per Table 2 of the WDNR Conservation Practice Standard 1002, *Site Evaluation for Storm Water Infiltration*. The estimated infiltration rates are as follows:

- | | |
|--------------------------|-------------|
| • Silty clay loam (SiCL) | 0.04 in./hr |
| • Silt loam (SiL) | 0.13 in./hr |

Note that the infiltration rates should be considered very approximate since they are merely based on soil texture and do not account for in-place soil density and other factors, which will affect the infiltration rate. We recommend that, at the time of construction, the soils at and several feet below the bottom of stormwater management systems be checked by a certified soil tester *in conjunction with the basin designer* to document that the soils are appropriate for the design infiltration rate or recommend remedial measures, if necessary. *Variability in the soil conditions should be expected across the site and within the stormwater basins that could result in a wide range of undercut depths to reach soil suitable for the design infiltration rate.* The Wisconsin Department of Safety & Professional Services *Soil and Site Evaluation – Storm* form for Test Pits 1 through 3 is contained in Appendix G.

Groundwater: Groundwater was not encountered in the test pits (or soil borings) performed for this study. Seasonal groundwater fluctuations should be expected, as previously discussed.

Bedrock: Apparent bedrock was encountered below a depth of about 5.5 ft in TP-3, overlain by a layer of silty clay loam, and below the surficial topsoil layers in Test Pits 1 and 2. The depth of bedrock should be expected to vary across the site.

During construction, appropriate erosion control should be provided to prevent eroded soil from contaminating the stormwater management areas. Where appropriate, the stormwater system design should include pretreatment to remove fine-grained soils (silt/clay) and clogging materials (oils/greases) from stormwater prior to entering the infiltration areas. Additionally, a regular maintenance plan should be developed to remove silt/clay soils and clogging materials that may accumulate in the bottom of the stormwater management areas over time. Failure to adequately control fine-grained soils and clogging materials from entering the infiltration areas or failure to regularly remove fine-grained soils and clogging materials that accumulate at the base of the stormwater infiltration systems will likely cause the stormwater management systems to fail. Additionally, it is important that the soils in the bottom of the infiltration systems do not become compacted during construction or measures are taken to mitigate soils that are compacted during construction. Refer to WDNR *Conservation Practice Standards 1002, 1003 and 1004*, as well as *NR151* for additional information.

CONSTRUCTION CONSIDERATIONS

Due to variations in weather, construction methods and other factors, specific construction problems are difficult to predict. Soil related difficulties which could be encountered on the site are discussed below:

- Due to the potentially sensitive nature of some of the on-site soils, we recommend that final site grading activities be completed during dry weather, if possible. Construction traffic should be avoided on prepared subgrades to minimize potential disturbance.
- Contingencies in the project budget for subgrade stabilization with coarse aggregate in pavement and floor slab areas should be increased if the project schedule requires that work proceed during adverse weather conditions.
- Earthwork construction during the late fall through early spring could be complicated as a result of wet weather and freezing temperatures. During cold weather, exposed subgrades should be protected from freezing before and after footing construction. Fill should never be placed while frozen or on frozen ground.
- Excavations extending greater than 4 ft in depth below the existing ground surface should be sloped or braced in accordance with current OSHA standards. Earth retention systems, if needed, should be designed by an appropriately qualified professional engineer.

- Based on the observations made during our field explorations and proposed building elevations, we generally do not expect groundwater to be encountered during construction. However, water accumulating at the bottom of excavations as a result of precipitation or seepage should be quickly removed, with dewatering means and methods being the contractor's responsibility.
- As discussed above and summarized in Table 1, apparent bedrock was generally encountered at fairly shallow depths across the site, and rock excavation should be expected to establish parking level and footing grades over eastern to central portions of the building footprint, as well as potentially during utility construction. Although rock excavation considerations were included in the Site Preparation section of this report, with more information pertaining to rock excavation included in Appendix F, bedrock removal in narrow utility trenches will likely be more difficult than in mass cut areas, as it may be more difficult to locate and exploit fractures and weak zones in the bedrock.

RECOMMENDED CONSTRUCTION MONITORING

The quality of the foundation, floor slab and pavement subgrades will be largely determined by the level of care exercised during site development. To check that earthwork and foundation construction proceed in accordance with our recommendations, the following operations should be monitored by CGC:

- Topsoil stripping and subgrade proof-rolling/compaction;
- Fill/backfill placement and compaction;
- Foundation excavation/subgrade preparation; and
- Concrete placement.

* * * * *



Geotechnical Exploration Report
Springdale Street Mixed-Use
CGC Project No. C21576
January 12, 2022
Page 15

It has been a pleasure to serve you on this project. If you have any questions or need additional consultation, please contact us.

Sincerely,

CGC, Inc.

A blue ink signature of Tim F. Gassenheimer, written in a cursive style.

Tim F. Gassenheimer, PE, CST
Senior Staff Engineer

A black ink signature of Alex J. Bina, written in a cursive style.

Alex J Bina, PE, CST
Consulting Professional

Encl: Appendix A - Field Exploration
Appendix B - Soil Boring & Test Pit Location Exhibit
Logs of Test Borings (7)
Logs of Test Pits (3)
Log of Test Boring-General Notes
Unified Soil Classification System
Appendix C - Document Qualifications
Appendix D - Recommended Compacted Fill Specifications
Appendix E - Settlement Platform
Appendix F - Rock Excavation Considerations
Appendix G - WDSPS *Soil and Site Evaluation – Storm Form*

Cc: Mr. Kevin Yeska – JSD Professional Services, Inc.
Mr. Andrew Geffert – JSD Professional Services, Inc.
Mr. Brad Koning – Sketchworks Architecture, LLC

APPENDIX A
FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Subsurface conditions on this site were explored by drilling seven Standard Penetration Test (SPT) soil borings to depths between 7.7 and 22.2 ft below current site grades, which were sampled at 2.5-ft intervals to a depth of 10 ft and at 5-ft intervals thereafter. The soil samples were obtained in general accordance with specifications for standard penetration testing, ASTM D1586. The specific procedures used for drilling and sampling are described below.

1. Boring Procedures between Samples

The boring is extended downward, between samples, by a hollow-stem auger.

2. Standard Penetration Test and Split-Barrel Sampling of Soils
(ASTM Designation: D1586)

This method consists of driving a 2-inch outside diameter split-barrel sampler using a 140-pound weight falling freely through a distance of 30 inches. The sampler is first seated 6 inches into the material to be sampled and then driven 12 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the log of borings and is known as the Standard Penetration Resistance.

During the field exploration, the driller visually classified the soil and prepared a field log. *Field screening of the soil samples for possible environmental contaminants was not conducted by the driller as these services were not part of CGC's work scope.* Water level observations were made in each boring during and after drilling and are shown at the bottom of each boring log. Upon completion of drilling, the borings were backfilled with bentonite to satisfy WDNR regulations, and the soil samples were delivered to our laboratory for visual classification and laboratory testing. The soils were visually classified by a geotechnical engineer using the Unified Soil Classification System (USCS).

In addition to the soil borings, three test pits were excavated within or near the planned stormwater management areas. The excavations were logged (using dual classification per the USCS and USDA classifications systems) and sampled in the field by CGC and subsequently backfilled with excavation spoils placed in lifts and tamped with the excavator bucket.

The final boring and test pit logs prepared by the engineer, including laboratory test results, along with a Soil Boring & Test Pit Location Exhibit and a description of the Unified Soil Classification System are presented in Appendix B.

APPENDIX B

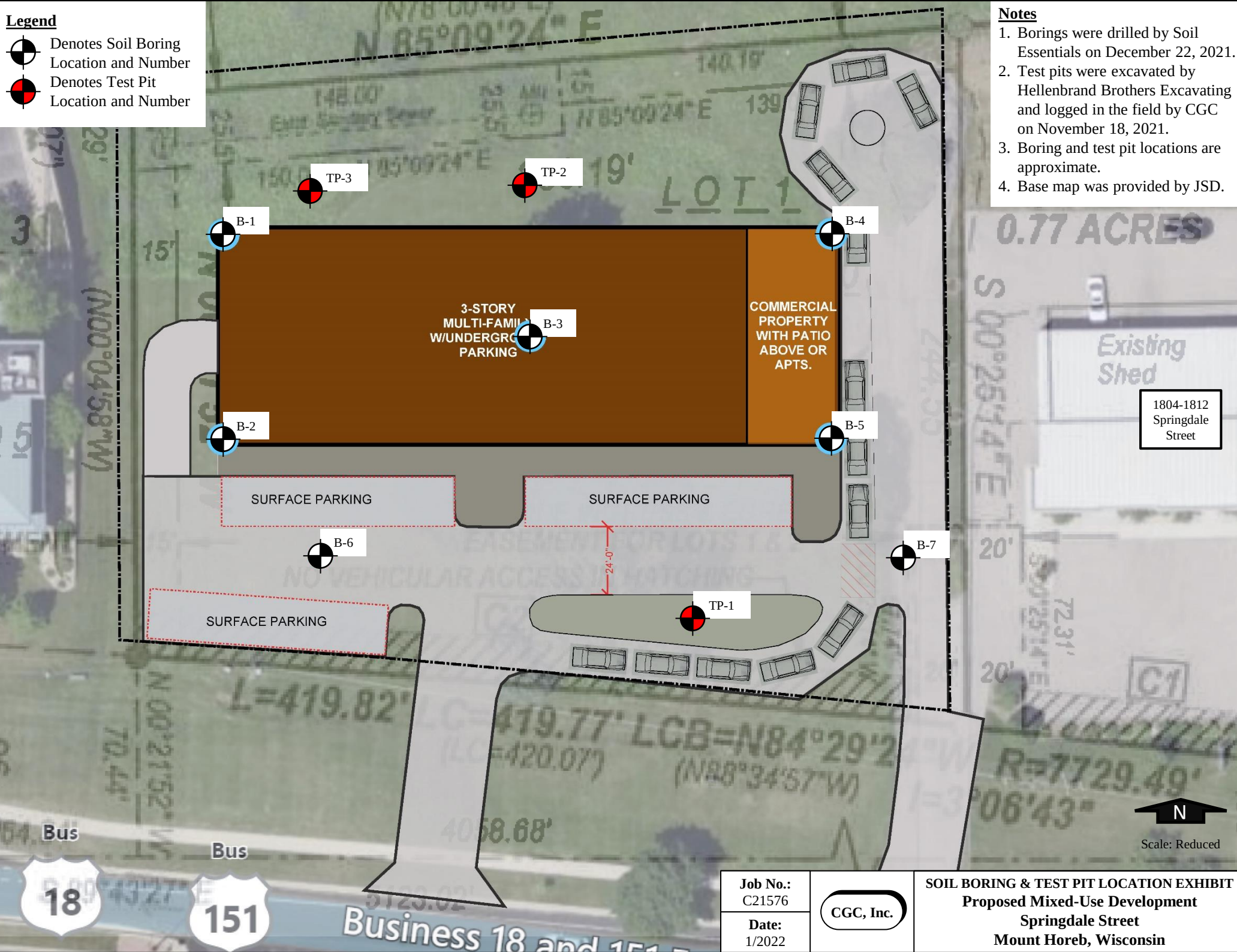
**SOIL BORING & TEST PIT LOCATION EXHIBIT
LOGS OF TEST BORINGS (7)
LOGS OF TEST PITS (3)
LOG OF TEST BORING-GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM**

Legend

-  Denotes Soil Boring Location and Number
-  Denotes Test Pit Location and Number

Notes

1. Borings were drilled by Soil Essentials on December 22, 2021.
2. Test pits were excavated by Hellenbrand Brothers Excavating and logged in the field by CGC on November 18, 2021.
3. Boring and test pit locations are approximate.
4. Base map was provided by JSD.





LOG OF TEST BORING

Project **Proposed Mixed-Use Development**
Location **Springdale Street**
Mount Horeb, Wisconsin

Boring No. **B-1**
Surface Elevation (ft) **1172.92**
Job No. **C21576**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		qu (qa) (tsf)	W	LL	PL	LI
					20± in. TOPSOIL					
1		16	M	5	Medium Stiff to Stiff, Dark Brown Lean to Silty CLAY, Trace Sand and Organics (CL/CL-ML; Possible Lower Horizon Topsoil)	(0.75-2.0)	32.9			
2		13	M	6	Stiff to Very Stiff, Brown Lean CLAY, Trace to Little Sand, Scattered to Numerous Rock Fragments and Chert (CL; Possible Highly Weathered Limestone Bedrock)	(2.5)				
3		15	M	6		(2.0-2.25)				
4		17	M	7		(1.75-2.5)				
					Loose, Light Brown Fine to Medium SAND, Some Silt, Little Gravel (SM; Possible Weathered Limestone Bedrock)					
5		13	M	7						
6		3	M	99/3"	Very Dense, Tan Fine to Coarse SAND and GRAVEL, Some Silt (SM/GM; Probable Weathered Limestone Bedrock)					
					End of Boring/Auger Refusal on Probable Bedrock at 22.2 ft					
					Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

While Drilling ☒ NW Upon Completion of Drilling ☒ NW
Time After Drilling _____
Depth to Water _____
Depth to Cave in _____ 19.8'

GENERAL NOTES

Start 12/22/21 End 12/22/21
Driller SE Chief Cory Rig Geoprobe
Logger Cory Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST BORING

Project **Proposed Mixed-Use Development**
Springdale Street
 Location **Mount Horeb, Wisconsin**

Boring No. **B-2**
 Surface Elevation (ft) **1177.57**
 Job No. **C21576**
 Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N			Depth (ft)	qu (qa) (tsf)	W	LL	PL
						11± in. TOPSOIL					
1		16	M	3		Very Loose, Dark Gray to Black SILT, Trace Sand and Organics (ML; Probable Lower Horizon Topsoil)					
2		15	M	6		Stiff to Very Stiff, Brown Lean CLAY, Trace Sand, Scattered Rock Fragments (CL)	(2.75-3.25)				
					5						
3		13	M	4			(1.25-2.0)				
4		14	M	5		Very Stiff, Light Brown Lean CLAY, Little Sand and Gravel, Scattered Rock Fragments (CL; Possible Highly Weathered Limestone Bedrock)	(2.25-3.0)				
					10						
						Probable Bedrock at about 12 ft based on Drilling Action					
						End of Boring/Auger Refusal on Probable Bedrock at 12.6 ft					
					15						
						Borehole Backfilled with Bentonite Chips					
					20						
					25						

WATER LEVEL OBSERVATIONS

GENERAL NOTES

While Drilling ☒ NW Upon Completion of Drilling ☒ NW
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____ **12.2'**

Start **12/22/21** End **12/22/21**
 Driller **SE** Chief **Cory** Rig **Geoprobe**
 Logger **Cory** Editor **TFG** **7822DT**
 Drill Method **2.25" HSA; Autohammer**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST BORING

Project **Proposed Mixed-Use Development**
Location **Springdale Street**
Mount Horeb, Wisconsin

Boring No. **B-3**
Surface Elevation (ft) **1182.32**
Job No. **C21576**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE						VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)			qu (qa) (tsf)	W	LL	PL	LI	
							14± in. TOPSOIL						
1		13	M	10			Medium Dense to Very Dense, Tan Fine to Coarse SAND and GRAVEL, Some Silt (SM/GM; Probable Weathered Limestone Bedrock)						
2		3	M	99/5"									
					5								
3		1	M	99/1"									
							End of Boring/Auger Refusal on Probable Bedrock at 7.7 ft						
							Borehole Backfilled with Bentonite Chips						

WATER LEVEL OBSERVATIONS

GENERAL NOTES

While Drilling ☒ NW Upon Completion of Drilling ☒ NW
Time After Drilling _____
Depth to Water _____
Depth to Cave in _____ **6.1'**

Start **12/22/21** End **12/22/21**
Driller **SE** Chief **Tim** Rig **Geoprobe**
Logger **Tim** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

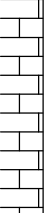


LOG OF TEST BORING

Project **Proposed Mixed-Use Development**
Location **Springdale Street**
Mount Horeb, Wisconsin

Boring No. **B-4**
Surface Elevation (ft) **1188.42**
Job No. **C21576**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N			Depth (ft)	qu (qa) (tsf)	W	LL	PL	LI
							12± in. TOPSOIL					
1		8	M	9			Very Stiff, Dark Brown Lean CLAY, Trace Sand and Organics (CL; Possible Lower Horizon Topsoil)	(2.25-3.0)	46.1			
2		12	M	17			Medium Dense to Very Dense, Tan Fine to Coarse SAND and GRAVEL, Some Silt (SM/GM; Probable Weathered Limestone Bedrock)					
					5							
3		7	M	99/1"								
4		3	M	99/3"								
					10							
							End of Boring/Auger Refusal on Probable Bedrock at 11.7 ft					
							Borehole Backfilled with Bentonite Chips					
					15							
					20							
					25							

WATER LEVEL OBSERVATIONS

GENERAL NOTES

While Drilling ☒ NW Upon Completion of Drilling ☒ NW
Time After Drilling _____
Depth to Water _____
Depth to Cave in _____ **10.1'**

Start **12/22/21** End **12/22/21**
Driller **SE** Chief **Tim** Rig **Geoprobe**
Logger **Tim** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST BORING

Project **Proposed Mixed-Use Development**
Location **Springdale Street**
Mount Horeb, Wisconsin

Boring No. **B-5**
Surface Elevation (ft) **1190.15**
Job No. **C21576**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE						VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N	Depth (ft)			qu (qa) (tsf)	W	LL	PL	LI
							18± in. TOPSOIL					
1		12	M	19			Medium Dense to Very Dense, Tan Fine to Coarse SAND and GRAVEL, Some Silt (SM/GM; Probable Weathered Limestone Bedrock)					
2		2	M	99/3"								
					5							
3		7	M	99/5"								
							End of Boring/Auger Refusal on Probable Bedrock at 7.7 ft					
							Borehole Backfilled with Bentonite Chips					

WATER LEVEL OBSERVATIONS

GENERAL NOTES

While Drilling ☒ NW Upon Completion of Drilling ☒ NW
Time After Drilling _____
Depth to Water _____
Depth to Cave in _____ **6.1'**

Start **12/22/21** End **12/22/21**
Driller **SE** Chief **Tim** Rig **Geoprobe**
Logger **Tim** Editor **TFG** **7822DT**
Drill Method **2.25" HSA; Autohammer**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

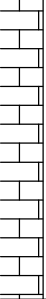


LOG OF TEST BORING

Project **Proposed Mixed-Use Development**
Location **Springdale Street**
Mount Horeb, Wisconsin

Boring No. **B-6**
Surface Elevation (ft) **1180.55**
Job No. **C21576**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES						
No.	TYPE	Rec (in.)	Moist	N			Depth (ft)	qu (qa) (tsf)	W	LL	PL	LI	
							14± in. TOPSOIL						
1		13	M	5			Stiff, Brown Lean CLAY, Trace Sand, Scattered Rock Fragments (CL)	(1.25-1.5)	16.4				
							Loose to Medium Dense, Light Brown Sandy SILT to Silty Fine SAND, Trace Gravel, Scattered Rock Fragments (ML/SM; Possible Highly Weathered Limestone Bedrock)						
2		14	M	9									
					5								
3		12	M/W	12									
4		12	M	10			Medium Dense to Very Dense, Tan Fine to Coarse SAND and GRAVEL, Some Silt (SM/GM; Probable Weathered Limestone Bedrock)						
					10								
5		9	M	99/3"									
					15		End of Boring at 15 ft Borehole Backfilled with Bentonite Chips						
					20								

WATER LEVEL OBSERVATIONS

GENERAL NOTES

While Drilling ☒ NW Upon Completion of Drilling ☒ NW
Time After Drilling _____
Depth to Water _____
Depth to Cave in _____ 12.9'

Start 12/22/21 End 12/22/21
Driller SE Chief Tim Rig Geoprobe
Logger Tim Editor TFG 7822DT
Drill Method 2.25" HSA; Autohammer

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST BORING

Project **Proposed Mixed-Use Development**
Location **Springdale Street**
Mount Horeb, Wisconsin

Boring No. **B-7**
Surface Elevation (ft) **1190.98**
Job No. **C21576**
Sheet **1** of **1**

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES					
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL	LI
						4± in. TOPSOIL					
1		15	M	17		Medium Dense, Reddish Brown Fine SAND, Some Silt, Trace Gravel (SM)					
2		12	M	23		Medium Dense to Very Dense, Tan Fine to Coarse SAND and GRAVEL, Some Silt (SM/GM; Probable Weathered Limestone Bedrock)					
3		11	M	57							
4		2	M	99/4"							
						End of Boring/Auger Refusal on Probable Bedrock at 10.6 ft					
						Borehole Backfilled with Bentonite Chips					
WATER LEVEL OBSERVATIONS						GENERAL NOTES					
While Drilling ☒ NW Upon Completion of Drilling ☒ NW						Start 12/22/21 End 12/22/21					
Time After Drilling						Driller SE Chief Cory Rig Geoprobe					
Depth to Water						Logger Cory Editor TFG 7822DT					
Depth to Cave in 8.9'						Drill Method 2.25" HSA; Autohammer					
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.											

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST PIT

Project **Proposed Mixed-Use Development**
Location **Springdale Street**
Mount Horeb, Wisconsin

Pit No. **TP-3**
Surface Elevation **1172.56**
Job No. **C21576**
Sheet **1** of **1**

2921 PERRY STREET, MADISON, WIS. 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks		SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N			Depth (ft)	qu (qa) (tsf)	W	LL	PL
			M			24± in. Dark Gray to Black Silty TOPSOIL USDA: 10YR 3/1 Silt Loam	(1.5-2.5)				
			M		Brown Lean CLAY, Trace to Little Sand, Trace Gravel (CL) USDA: 10YR 5/3 Silty Clay Loam						
					5	Scattered Limestone Fragments with Depth					
			M		Probable Weathered LIMESTONE BEDROCK USDA: Bedrock						
					10						
						End of Test Pit/Excavator Bucket Refusal on Apparent Harder/More Competent Limestone Bedrock at 12.5 ft					
						Test Pit Backfilled with Excavation Spoils					
						15					

WATER LEVEL OBSERVATIONS

While Excavating ☒ NW Upon Completion of Digging ☒ NW
Time After Excavating _____
Depth to Water _____
Depth to Cave in _____

GENERAL NOTES

Start **11/18/21** End **11/18/21**
Exc. **HBE** Operator **Rob**
Logger **TFG** Editor **TFG**
Equip. Used: **Takeuchi TB290**

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

LOG OF TEST BORING General Notes

DESCRIPTIVE SOIL CLASSIFICATION

Grain Size Terminology

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse.....	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse.....	2.00 mm to 4.76 mm.....	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm.....	#200 to #40
Silt.....	0.005 mm to 0.074 mm.....	Smaller than #200
Clay.....	Smaller than 0.005 mm.....	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

General Terminology

Physical Characteristics
Color, moisture, grain shape, fineness, etc.
Major Constituents
Clay, silt, sand, gravel
Structure
Laminated, varved, fibrous, stratified,
cemented, fissured, etc.
Geologic Origin
Glacial, alluvial, eolian, residual, etc.

Relative Density

Term	"N" Value
Very Loose.....	0 - 4
Loose.....	4 - 10
Medium Dense.....	10 - 30
Dense.....	30 - 50
Very Dense.....	Over 50

Relative Proportions Of Cohesionless Soils

Proportional Term	Defining Range by Percentage of Weight
Trace.....	0% - 5%
Little	5% - 12%
Some.....	12% - 35%
And	35% - 50%

Consistency

Term	q _u -tons/sq. ft
Very Soft.....	0.0 to 0.25
Soft.....	0.25 to 0.50
Medium.....	0.50 to 1.0
Stiff.....	1.0 to 2.0
Very Stiff.....	2.0 to 4.0
Hard.....	Over 4.0

Organic Content by Combustion Method

Soil Description	Loss on Ignition
Non Organic.....	Less than 4%
Organic Silt/Clay.....	4 - 12%
Sedimentary Peat.....	12% - 50%
Fibrous and Woody Peat...	More than 50%

Plasticity

Term	Plastic Index
None to Slight.....	0 - 4
Slight.....	5 - 7
Medium.....	8 - 22
High to Very High ..	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

Drilling and Sampling

CS – Continuous Sampling
RC – Rock Coring: Size AW, BW, NW, 2"W
RQD – Rock Quality Designation
RB – Rock Bit/Roller Bit
FT – Fish Tail
DC – Drove Casing
C – Casing: Size 2 ½", NW, 4", HW
CW – Clear Water
DM – Drilling Mud
HSA – Hollow Stem Auger
FA – Flight Auger
HA – Hand Auger
COA – Clean-Out Auger
SS - 2" Dia. Split-Barrel Sample
2ST – 2" Dia. Thin-Walled Tube Sample
3ST – 3" Dia. Thin-Walled Tube Sample
PT – 3" Dia. Piston Tube Sample
AS – Auger Sample
WS – Wash Sample
PTS – Peat Sample
PS – Pitcher Sample
NR – No Recovery
S – Sounding
PMT – Borehole Pressuremeter Test
VS – Vane Shear Test
WPT – Water Pressure Test

Laboratory Tests

q_a – Penetrometer Reading, tons/sq ft
q_a – Unconfined Strength, tons/sq ft
W – Moisture Content, %
LL – Liquid Limit, %
PL – Plastic Limit, %
SL – Shrinkage Limit, %
LI – Loss on Ignition
D – Dry Unit Weight, lbs/cu ft
pH – Measure of Soil Alkalinity or Acidity
FS – Free Swell, %

Water Level Measurement

▽ - Water Level at Time Shown
NW – No Water Encountered
WD – While Drilling
BCR – Before Casing Removal
ACR – After Casing Removal
CW – Cave and Wet
CM – Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

CGC, Inc.

Madison - Milwaukee

Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS

(more than 50% of material is larger than No. 200 sieve size)

Clean Gravels (Less than 5% fines)



GW

Well-graded gravels, gravel-sand mixtures, little or no fines



GP

Poorly-graded gravels, gravel-sand mixtures, little or no fines

Gravels with fines (More than 12% fines)



GM

Silty gravels, gravel-sand-silt mixtures



GC

Clayey gravels, gravel-sand-clay mixtures

Clean Sands (Less than 5% fines)



SW

Well-graded sands, gravelly sands, little or no fines



SP

Poorly graded sands, gravelly sands, little or no fines

Sands with fines (More than 12% fines)



SM

Silty sands, sand-silt mixtures



SC

Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(50% or more of material is smaller than No. 200 sieve size.)



ML

Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity



CL

Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays



OL

Organic silts and organic silty clays of low plasticity



MH

Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts



CH

Inorganic clays of high plasticity, fat clays



OH

Organic clays of medium to high plasticity, organic silts



PT

Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

GP Not meeting all gradation requirements for GW

GM Atterberg limits below "A" line or P.I. less than 4

Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

GC Atterberg limits above "A" line or P.I. greater than 7

SW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

SP Not meeting all gradation requirements for GW

SM Atterberg limits below "A" line or P.I. less than 4

Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

SC Atterberg limits above "A" line with P.I. greater than 7

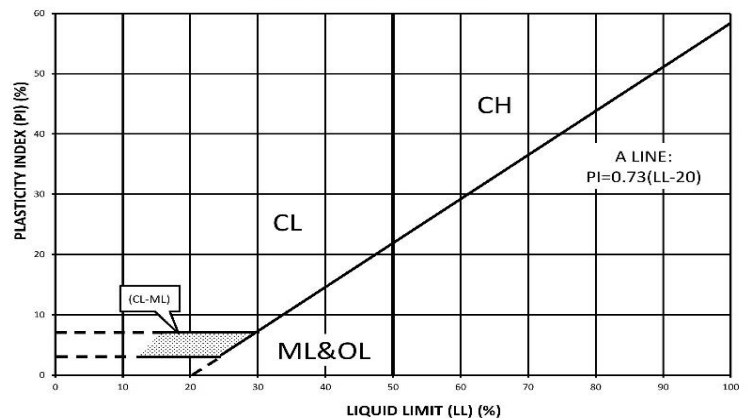
Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent GW, GP, SW, SP

More than 12 percent GM, GC, SM, SC

5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX C

DOCUMENT QUALIFICATIONS

APPENDIX C

DOCUMENT QUALIFICATIONS

I. GENERAL RECOMMENDATIONS/LIMITATIONS

CGC, Inc. should be provided the opportunity for a general review of the final design and specifications to confirm that earthwork and foundation requirements have been properly interpreted in the design and specifications. CGC should be retained to provide soil engineering services during excavation and subgrade preparation. This will allow us to observe that construction proceeds in compliance with the design concepts, specifications and recommendations, and also will allow design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction. CGC does not assume responsibility for compliance with the recommendations in this report unless we are retained to provide construction testing and observation services.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and no other warranties are expressed or implied. The opinions and recommendations submitted in this report are based on interpretation of the subsurface information revealed by the test borings indicated on the location plan. The report does not reflect potential variations in subsurface conditions between or beyond these borings. Therefore, variations in soil conditions can be expected between the boring locations and fluctuations of groundwater levels may occur with time. The nature and extent of the variations may not become evident until construction.

II. IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the report for any purpose or project except the one originally contemplated.

READ THE FULL REPORT

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report* that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *CGC cannot accept responsibility or liability for problems that occur because our reports do not consider developments of which we were not informed.*

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINION

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most

effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the confirmation-dependent recommendations included in your report. *Those confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *CGC cannot assume responsibility or liability for the report's confirmation-dependent recommendations if we do not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical engineering report. Confront that risk by having CGC participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

GIVE CONSTRUCTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time to perform additional study.* Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and constructors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic

expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

ENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

OBTAIN PROFESSIONAL ASSISTANCE TO DEAL WITH MOLD

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention.*** ***Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Membership in the Geotechnical Business Council (GBC) of Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with CGC, a member of GBC, for more information.

Modified and reprinted with permission from:

Geotechnical Business Council
of the Geoprofessional Business Association
8811 Colesville Road, Suite G 106
Silver Spring, MD 20910

APPENDIX D

RECOMMENDED COMPACTED FILL SPECIFICATIONS

APPENDIX D

CGC, INC.

RECOMMENDED COMPACTED FILL SPECIFICATIONS

General Fill Materials

Proposed fill shall contain no vegetation, roots, topsoil, peat, ash, wood or any other non-soil material which by decomposition might cause settlement. Also, fill shall never be placed while frozen or on frozen surfaces. Rock, stone or broken concrete greater than 6 in. in the largest dimension shall not be placed within 10 ft of the building area. Fill used greater than 10 ft beyond the building limits shall not contain rock, boulders or concrete pieces greater than a 2 sq ft area and shall not be placed within the final 2 ft of finish subgrade or in designated utility construction areas. Fill containing rock, boulders or concrete pieces should include sufficient finer material to fill voids among the larger fragments.

Special Fill Materials

In certain cases, special fill materials may be required for specific purposes, such as stabilizing subgrades, backfilling undercut excavations or filling behind retaining walls. For reference, WisDOT gradation specifications for various types of granular fill are attached in Table 1.

Placement Method

The approved fill shall be placed, spread and leveled in layers generally not exceeding 10 in. in thickness before compaction. The fill shall be placed at moisture content capable of achieving the desired compaction level. For clay soils or granular soils containing an appreciable amount of cohesive fines, moisture conditioning will likely be required.

It is the Contractor's responsibility to provide all necessary compaction equipment and other grading equipment that may be required to attain the specified compaction. Hand-guided vibratory or tamping compactors will be required whenever fill is placed adjacent to walls, footings, columns or in confined areas.

Compaction Specifications

Maximum dry density and optimum moisture content of the fill soil shall be determined in accordance with modified Proctor methods (ASTM D1557). The recommended field compaction as a percentage of the maximum dry density is shown in Table 2. Note that these compaction guidelines would generally not apply to coarse gravel/stone fill. Instead, a method specification would apply (e.g., compact in thin lifts with a vibratory compactor until no further consolidation is evident).

Testing Procedures

Representative samples of proposed fill shall be submitted to CGC, Inc. for optimum moisture-maximum density determination (ASTM D1557) prior to the start of fill placement. The sample size should be approximately 50 lb.

CGC, Inc. shall be retained to perform field density tests to determine the level of compaction being achieved in the fill. The tests shall generally be conducted on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

Table 1
Gradation of Special Fill Materials

Material	WisDOT Section 311	WisDOT Section 312	WisDOT Section 305			WisDOT Section 209		WisDOT Section 210
	Breaker Run	Select Crushed Material	3-in. Dense Graded Base	1 1/4-in. Dense Graded Base	3/4-in. Dense Graded Base	Grade 1 Granular Backfill	Grade 2 Granular Backfill	Structure Backfill
Sieve Size	Percent Passing by Weight							
6 in.	100							
5 in.		90-100						
3 in.			90-100					100
1 1/2 in.		20-50	60-85					
1 1/4 in.				95-100				
1 in.					100			
3/4 in.			40-65	70-93	95-100			
3/8 in.				42-80	50-90			
No. 4			15-40	25-63	35-70	100 (2)	100 (2)	25-100
No. 10		0-10	10-30	16-48	15-55			
No. 40			5-20	8-28	10-35	75 (2)		
No. 100						15 (2)	30 (2)	
No. 200			2-12	2-12	5-15	8 (2)	15 (2)	15 (2)

Notes:

1. Reference: Wisconsin Department of Transportation *Standard Specifications for Highway and Structure Construction*.
2. Percentage applies to the material passing the No. 4 sieve, not the entire sample.
3. Per WisDOT specifications, both breaker run and select crushed material can include concrete that is 'substantially free of steel, building materials and other deleterious material'.

Table 2
Compaction Guidelines

Area	Percent Compaction (1)	
	Clay/Silt	Sand/Gravel
<u>Within 10 ft of building lines</u>		
Footing bearing soils	93 - 95	95
Under floors, steps and walks		
- Lightly loaded floor slab	90	90
- Heavily loaded floor slab and thicker fill zones	92	95
<u>Beyond 10 ft of building lines</u>		
Under walks and pavements		
- Less than 2 ft below subgrade	92	95
- Greater than 2 ft below subgrade	90	90
Landscaping	85	90

Notes:

1. Based on Modified Proctor Dry Density (ASTM D 1557)

APPENDIX E

SETTLEMENT PLATFORM

Settlement Platform Instructions

Settlement platforms will be placed as close to the bottom of the fill as is practical. The surface upon which the settlement platform should rest must be cleaned off to a flat compacted surface. The settlement platform should then be placed in this surface and backfill should be placed over the top of the settlement platform to a depth of at least two feet.

Initial elevations should be taken on the top of the first section of the pipe riser. These should be referenced to the elevation at the platform so that all future additional lengths of riser pipe can be referenced to the elevation of the platform.

The settlement platform locations should be guarded with tall stakes driven into the fill marked with red flags. No equipment should be permitted to operate closer than three feet from the riser pipes. As each layer of fill is being added to the area, fill should be carefully placed around the riser pipe to an elevation slightly above the surrounding area. The vibrating compactor then should be moved to within a foot or so of the riser pipe with care being taken so as to avoid disturbance of the riser pipe. If necessary, hand compacting equipment should be used to avoid damage to the riser pipe.

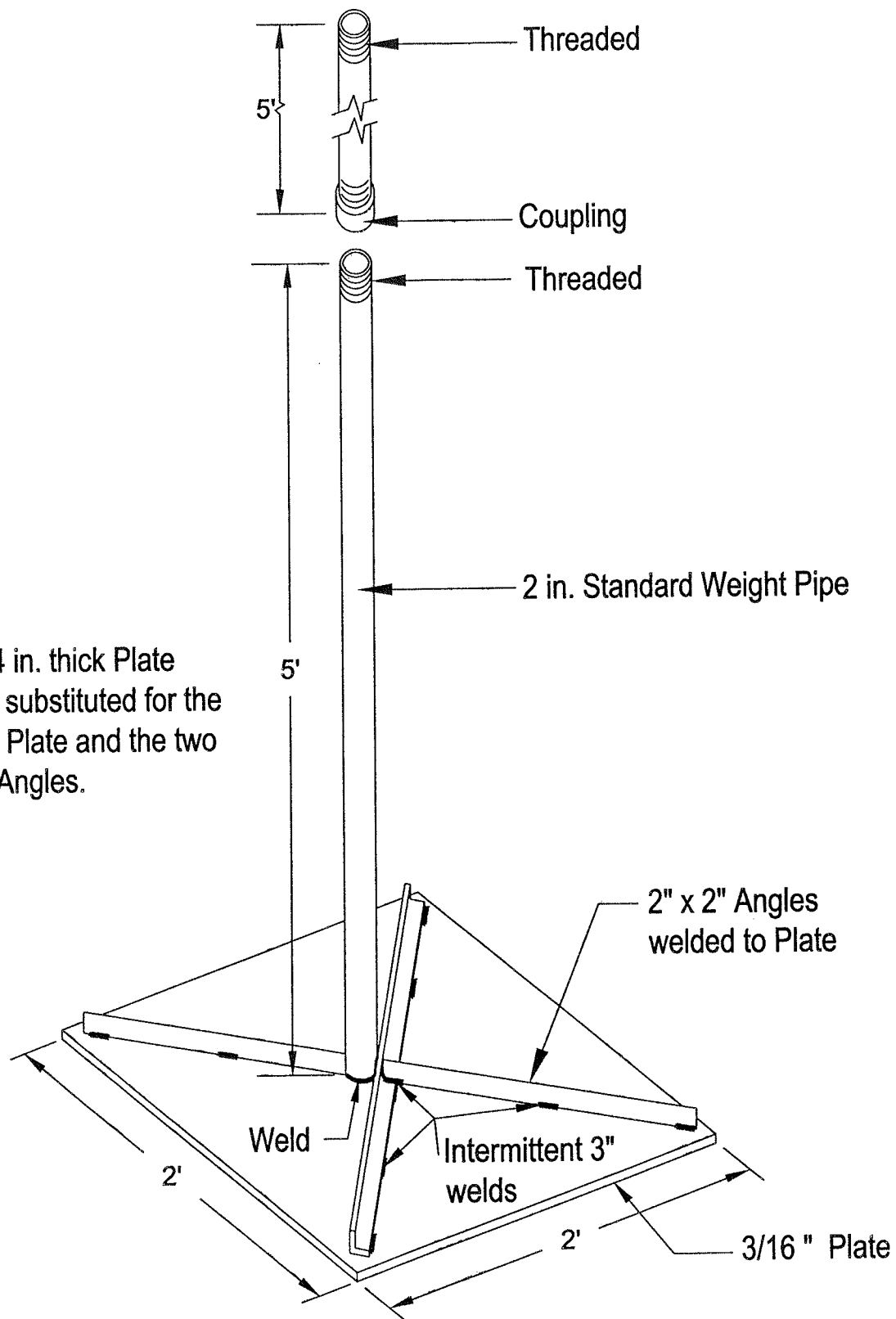
When settlement platform readings are taken, the elevation of nearby fill should also be taken.

The elevation at the settlement platform and the nearby fill should be observed at least once each week, and during the period that fill is being placed in the vicinity of the platform, these elevations should be obtained daily. All elevation data should be plotted according to time, with one graph prepared per settlement platform. The plotting should contain the time scale along the abscissa and the vertical scale should be height of fill shown going upward from the middle of the paper, and the settlement of the settlement platforms should be plotted downward from the middle of the paper. The time scale should include both the actual calendar date and also the number of days since the platform was installed.

The benchmark to be used in reading the various settlement platforms should be well away from the proposed excavation or filling areas.

If damage occurs to any settlement platform riser pipe, it is suggested that the pipe be repaired as quickly as possible and the readings continued. The adjustment of these readings can be made, considering that settlement rate during the period of damage was uniform.

One 3/4 in. thick Plate
may be substituted for the
3/16 in. Plate and the two
2" x 2" Angles.



CGC, Inc.

Typical Detail
Settlement Platform

APPENDIX F

ROCK EXCAVATION CONSIDERATIONS

APPENDIX F

ROCK EXCAVATION CONSIDERATIONS

In order to minimize probable "rock" excavation expenses during construction, we suggest that project specifications incorporate the following:

- A. It is assumed that all excavations to levels and dimensions required by the Contract Documents are earth excavation. Earth excavation includes removal and disposal of all materials encountered except rock/sound bedrock which is defined as natural materials which:
 - 1. Cannot be excavated with a minimum 3/4 cubic yard capacity backhoe without drilling and blasting;
 - 2. Cannot be economically removed with a one-tooth ripper on a D8 cat (or equivalent);
 - 3. Requires the use of special equipment such as a pneumatic hammer;
 - 4. Requires the use of explosives (after obtaining written permission of the owner).
- B. Examples of material classified as rock are boulders 1/2 cubic yard or more in volume, bedrock, rock in ledges, and rock-hard cementitious aggregate deposits.
- C. Do not proceed with rock excavation work until architect, engineer and/or testing firm (i.e., CGC) has taken the necessary measures to determine quantity of rock excavation required to complete the work. Measurements will be taken after properly stripped of earth by the contractor. Contractor will be paid the difference between the cost of rock and earth excavation based on an agreed upon unit price established prior to starting rock excavation.

A statement should also be included in the specifications to the effect that: "Stated models of earth excavation equipment are merely for purposes of defining the various excavation categories and are not intended to indicate the brand or type of equipment that is to be used."

APPENDIX G

**WISCONSIN DEPARTMENT OF SAFETY & PROFESSIONAL SERVICES
*SOIL AND SITE EVALUATION – STORM FORM***



Division of Industry Services

P.O. Box 2658

Madison, Wisconsin 53701

Attachment 2:

SOIL AND SITE EVALUATION - STORM

In accordance with SPS 382.365, 385, Wis. Adm. Code, and WDNR Standard 1002

Page 1 of 1

Attach a complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent of slope, scale or dimensions, north arrow, and BM referenced to nearest road Please print all information Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m)]	County	Dane
	Parcel I.D.	157/0607-072-9765-1
	Reviewed by:	
		Date:

Property Owner	Badgerland Financial ACA c/o Compeer Financial			Property Location	Govt. Lot SE 1/4 NW 1/4 S 7 T 6 N R 7 E		
Property Owner's Mail Address	PO Box 4292			Lot #	Block#	Subd. Name or CSM # CSM 14145	
City	State	Zip Code	Phone Number	☐ City	☒ Village	☐ Town	Nearest Road
Mankato	MN	56001			Mount Horeb		Springdale Street
Drainage area			☐ sq ft ☐ acres	Hydraulic Application Test Method		Soil Moisture	
Test site suitable for (check all that apply): ☐ Site not suitable;				☒ Morphological Evaluation		Date of soil borings: _____	
☐ Bioretention; ☐ Subsurface Dispersal System;				☐ Double Ring Infiltrometer		USDA-NRCS WETS Value:	
☐ Reuse; ☐ Irrigation; ☐ Other _____				☐ Other: (specify) _____		☐ Dry = 1;	
						☐ Normal = 2;	
						☐ Wet = 3.	

TP-1	#OBS.	☒ Pit	☐ Boring	Ground surface elevation	1189.5 ft.	Elevation of limiting factor	1188.3 ft. (Bedrock)			
Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-15	10YR 2/1	none	SiL	1fgr	mfr	cs	<5		0.13
2	15-66	BEDROCK (weathered)								
Comments: Groundwater was not encountered during or upon the completion of excavating. Excavator bucket refusal at about 5.5 ft below grade on apparent harder/more competent bedrock.										

TP-2	#OBS.	☒ Pit	☐ Boring	Ground surface elevation	1179.7 ft.	Elevation of limiting factor	1178.9 ft. (Bedrock)			
Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-9	10YR 2/1	none	SiL	1fgr	mfr	cs	<5		0.13
2	9-66	BEDROCK (weathered)								
Comments: Groundwater was not encountered during or upon the completion of excavating. Excavator bucket refusal at about 5.5 ft below grade on apparent harder/more competent bedrock.										

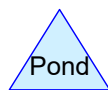
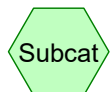
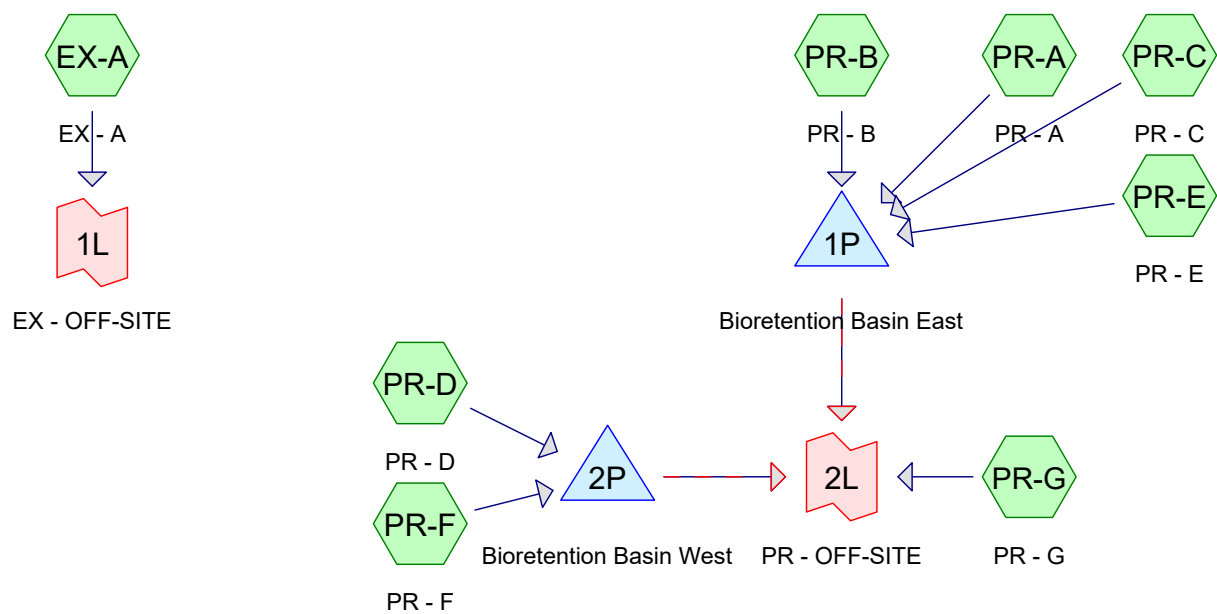
TP-3	#OBS.	☒ Pit	☐ Boring	Ground surface elevation	1172.6 ft.	Elevation of limiting factor	1167.0 ft. (Bedrock)			
Horizon	Approx. Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	% Rock Frags.	% Fines (P200)	Hydraulic App Rate Inches/Hr
1	0-24	10YR 3/1	none	SiL	1fgr	mfr	cs	<5		0.13
2	24-67	10YR 5/3	none	SiCL	2msbk	mfi	gs	<10		0.04
3	67-150	BEDROCK (weathered)								
Comments: Groundwater was not encountered during or upon the completion of excavating. Excavator bucket refusal at about 12.5 ft below grade on apparent harder/more competent bedrock.										

Overall Site Comments: See Comments above and Stormwater Infiltration Potential section in Geotechnical Exploration Report.

Name (Please Print)	Tim F. Gassenheimer	Signature		Credential Number	SP-011900004
Address	129 Milky Way, Madison, WI 53718		Date Evaluation Conducted	November 18, 2021	
			Telephone Number	(608) 288-4100	

Appendix 4:

HydroCAD Modeling



Routing Diagram for 21-10870

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.950	80	>75% Grass cover, Good, HSG D (EX-A, PR-C, PR-D, PR-E, PR-F, PR-G)
0.012	98	Patio (PR-E)
0.692	98	Paved parking, HSG D (EX-A, PR-C, PR-D, PR-G)
0.064	98	Sidewalk (PR-C, PR-D, PR-F)
0.405	98	Unconnected roofs, HSG D (PR-A, PR-B)
3.123	87	TOTAL AREA

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-A: EX - A Runoff Area=66,842 sf 13.41% Impervious Runoff Depth>0.99"
 Flow Length=210' Slope=0.0600 '/' Tc=12.0 min CN=82 Runoff=1.89 cfs 0.127 af

Subcatchment PR-A: PR - A Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>2.26"
 Tc=6.0 min CN=98 Runoff=0.63 cfs 0.038 af

Subcatchment PR-B: PR - B Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>2.26"
 Tc=6.0 min CN=98 Runoff=0.63 cfs 0.038 af

Subcatchment PR-C: PR - C Runoff Area=20,879 sf 82.14% Impervious Runoff Depth>1.95"
 Tc=6.0 min CN=95 Runoff=1.37 cfs 0.078 af

Subcatchment PR-D: PR - D Runoff Area=8,176 sf 82.82% Impervious Runoff Depth>1.95"
 Tc=6.0 min CN=95 Runoff=0.54 cfs 0.031 af

Subcatchment PR-E: PR - E Runoff Area=6,630 sf 7.75% Impervious Runoff Depth>0.93"
 Tc=12.0 min CN=81 Runoff=0.18 cfs 0.012 af

Subcatchment PR-F: PR - F Runoff Area=2,499 sf 1.00% Impervious Runoff Depth>0.88"
 Tc=12.0 min CN=80 Runoff=0.06 cfs 0.004 af

Subcatchment PR-G: PR - G Runoff Area=13,380 sf 0.37% Impervious Runoff Depth>0.88"
 Tc=12.0 min CN=80 Runoff=0.33 cfs 0.023 af

Pond 1P: Bioretention Basin East Peak Elev=4.19' Storage=3,527 cf Inflow=2.76 cfs 0.166 af
 Discarded=0.03 cfs 0.037 af Primary=0.67 cfs 0.073 af Secondary=0.00 cfs 0.000 af Outflow=0.70 cfs 0.110 af

Pond 2P: Bioretention Basin West Peak Elev=3.98' Storage=765 cf Inflow=0.58 cfs 0.035 af
 Discarded=0.01 cfs 0.009 af Primary=0.11 cfs 0.012 af Secondary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.021 af

Link 1L: EX - OFF-SITE Inflow=1.89 cfs 0.127 af
 Primary=1.89 cfs 0.127 af

Link 2L: PR - OFF-SITE Inflow=0.96 cfs 0.108 af
 Primary=0.96 cfs 0.108 af

Total Runoff Area = 3.123 ac Runoff Volume = 0.350 af Average Runoff Depth = 1.34"
62.43% Pervious = 1.950 ac 37.57% Impervious = 1.173 ac

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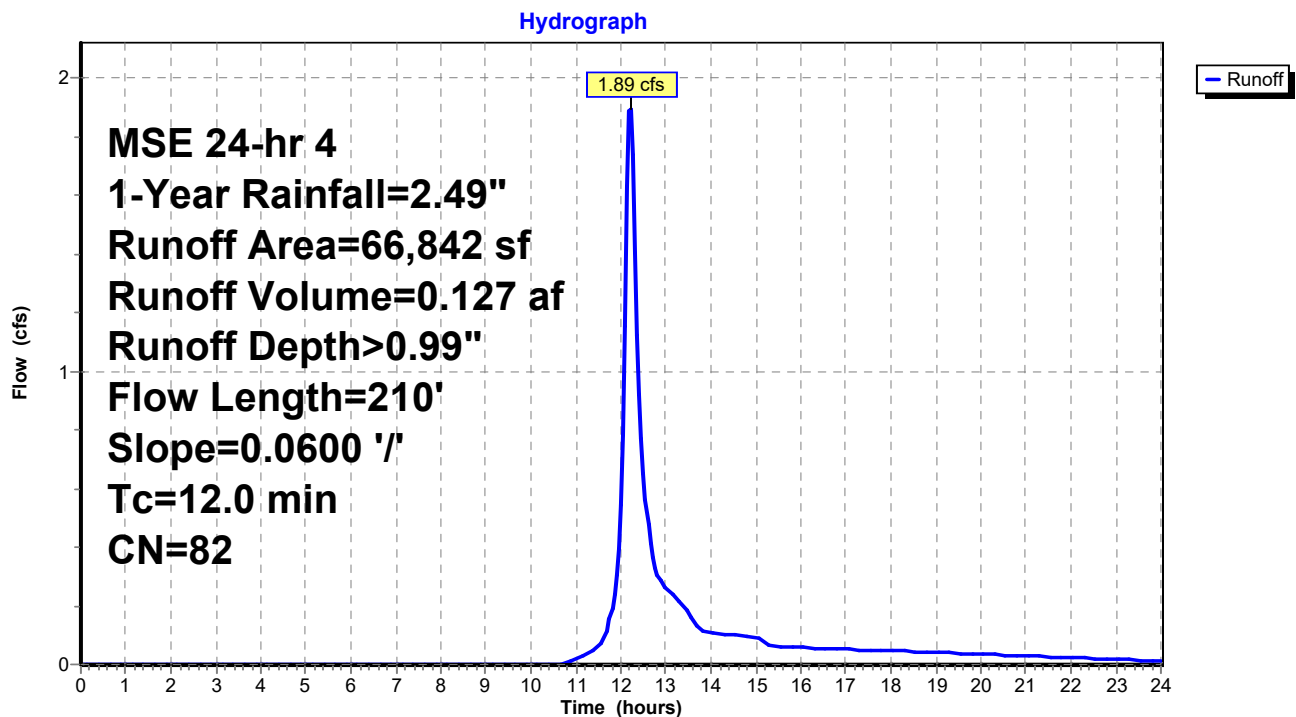
Summary for Subcatchment EX-A: EX - A

Runoff = 1.89 cfs @ 12.21 hrs, Volume= 0.127 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
8,964	98	Paved parking, HSG D
57,878	80	>75% Grass cover, Good, HSG D
66,842	82	Weighted Average
57,878		86.59% Pervious Area
8,964		13.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	210	0.0600	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 2.90"

Subcatchment EX-A: EX - A

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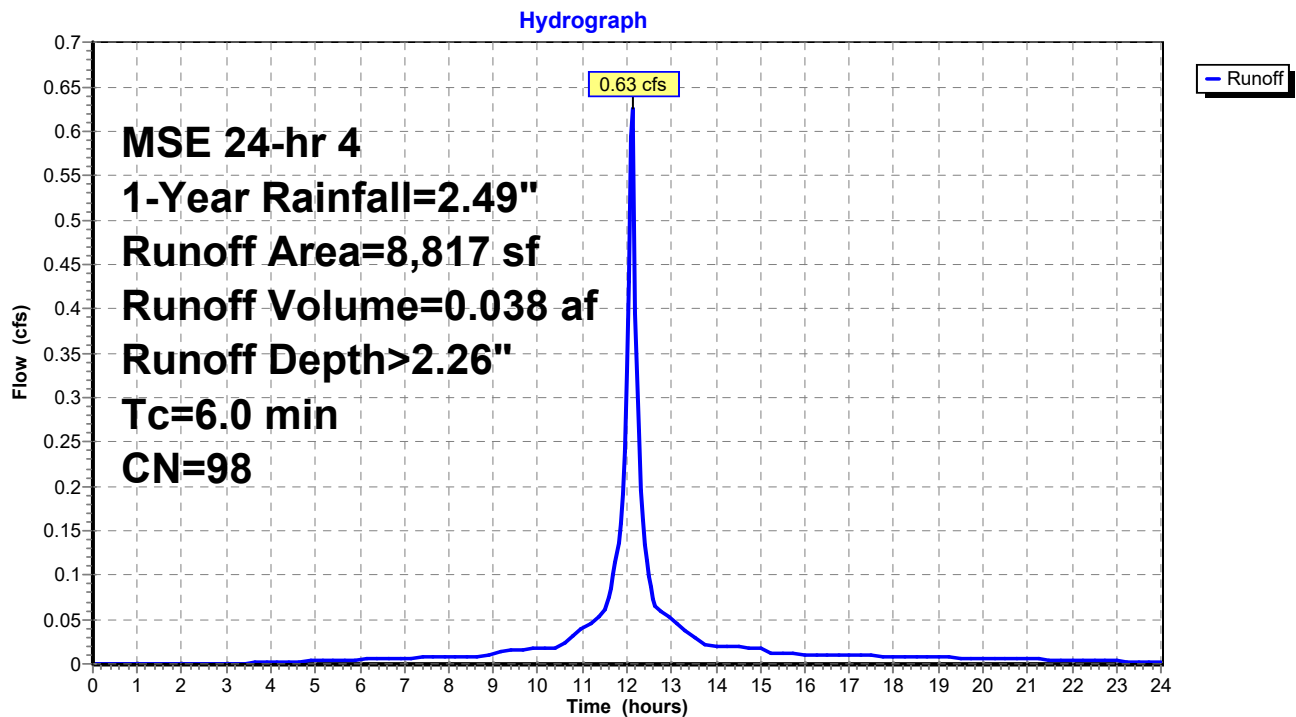
Summary for Subcatchment PR-A: PR - A

Runoff = 0.63 cfs @ 12.13 hrs, Volume= 0.038 af, Depth> 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-A: PR - A

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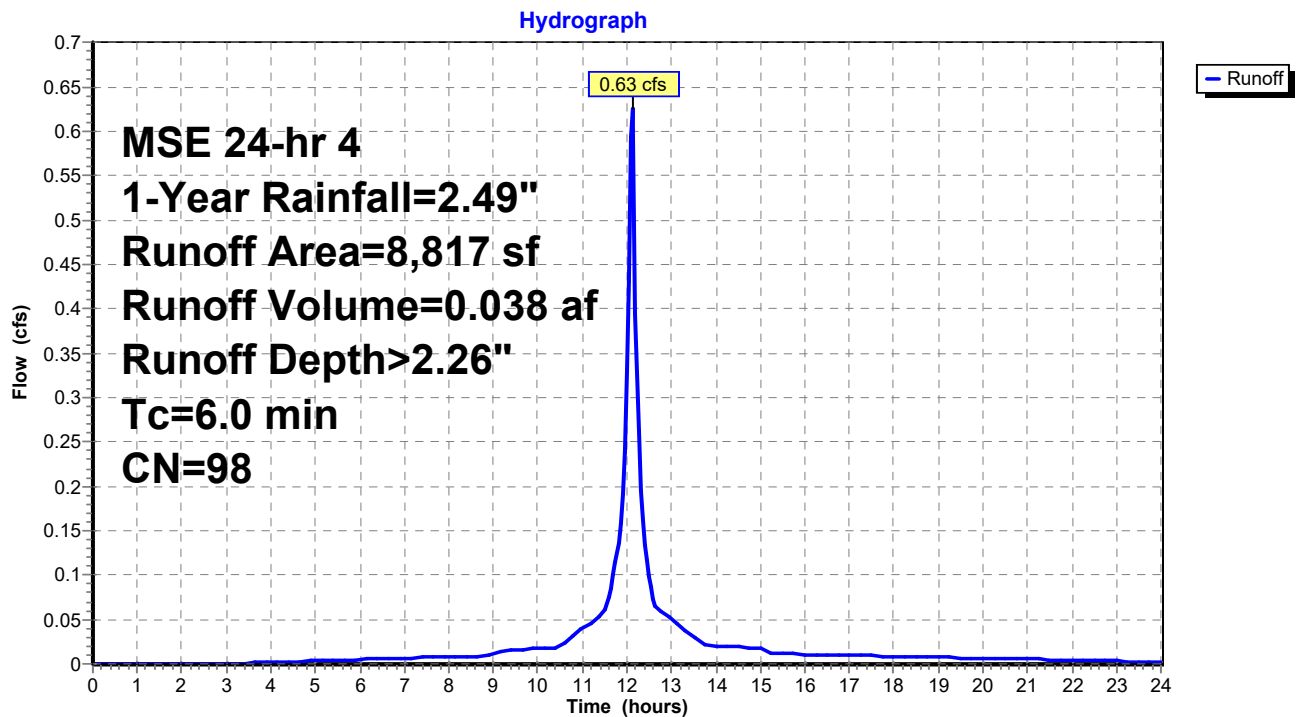
Summary for Subcatchment PR-B: PR - B

Runoff = 0.63 cfs @ 12.13 hrs, Volume= 0.038 af, Depth> 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-B: PR - B

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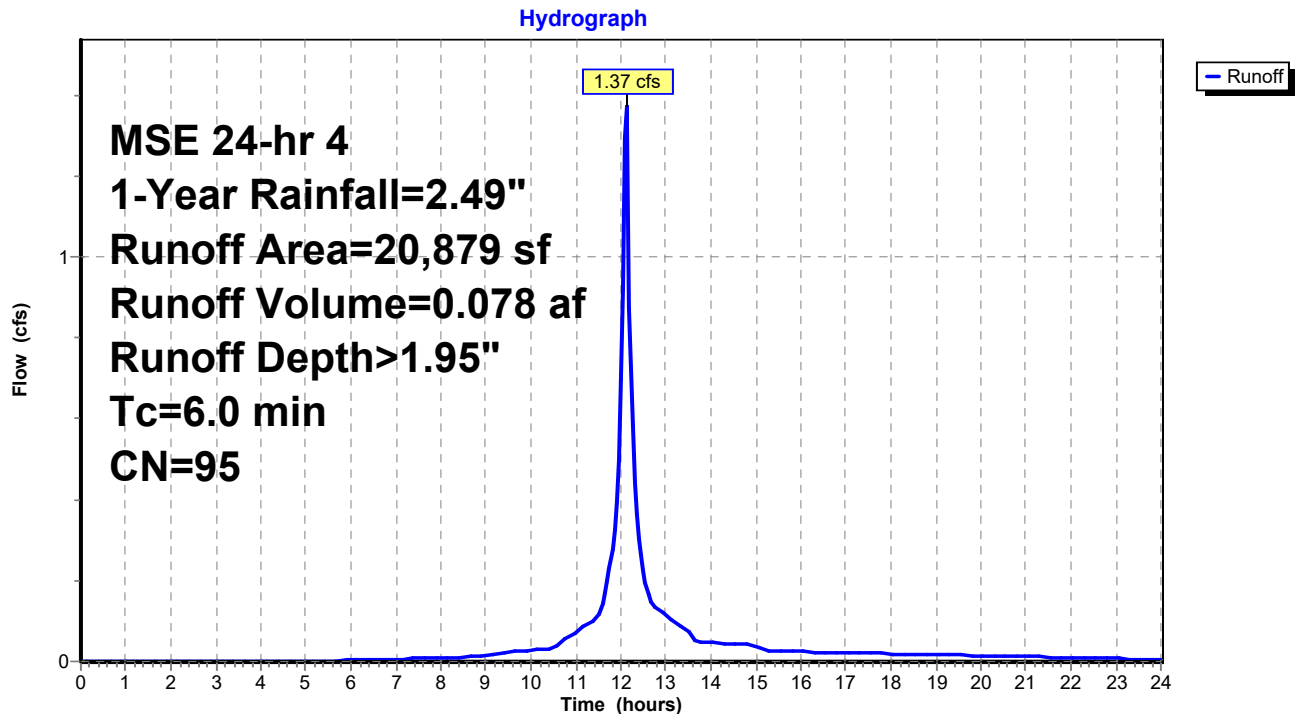
Summary for Subcatchment PR-C: PR - C

Runoff = 1.37 cfs @ 12.13 hrs, Volume= 0.078 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG D
* 2,151	98	Sidewalk
3,728	80	>75% Grass cover, Good, HSG D
20,879	95	Weighted Average
3,728		17.86% Pervious Area
17,151		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-C: PR - C

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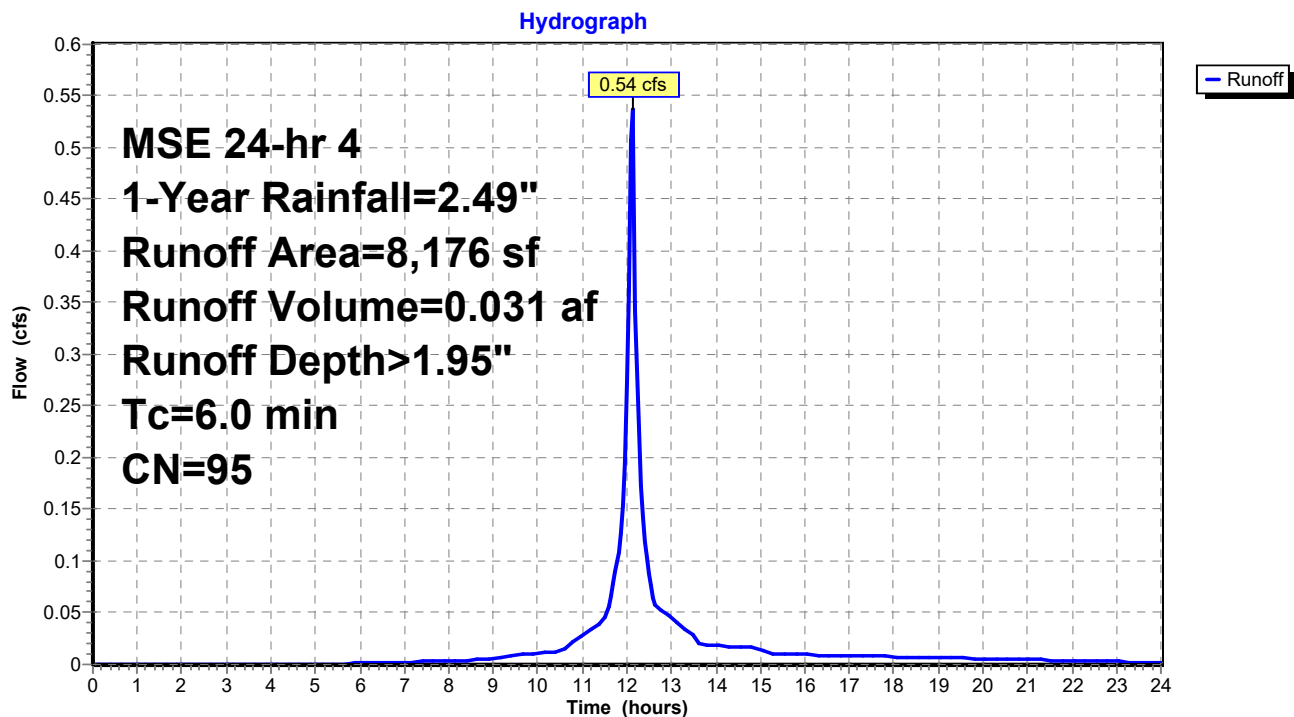
Summary for Subcatchment PR-D: PR - D

Runoff = 0.54 cfs @ 12.13 hrs, Volume= 0.031 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
6,145	98	Paved parking, HSG D
* 626	98	Sidewalk
1,405	80	>75% Grass cover, Good, HSG D
8,176	95	Weighted Average
1,405		17.18% Pervious Area
6,771		82.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-D: PR - D

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Summary for Subcatchment PR-E: PR - E

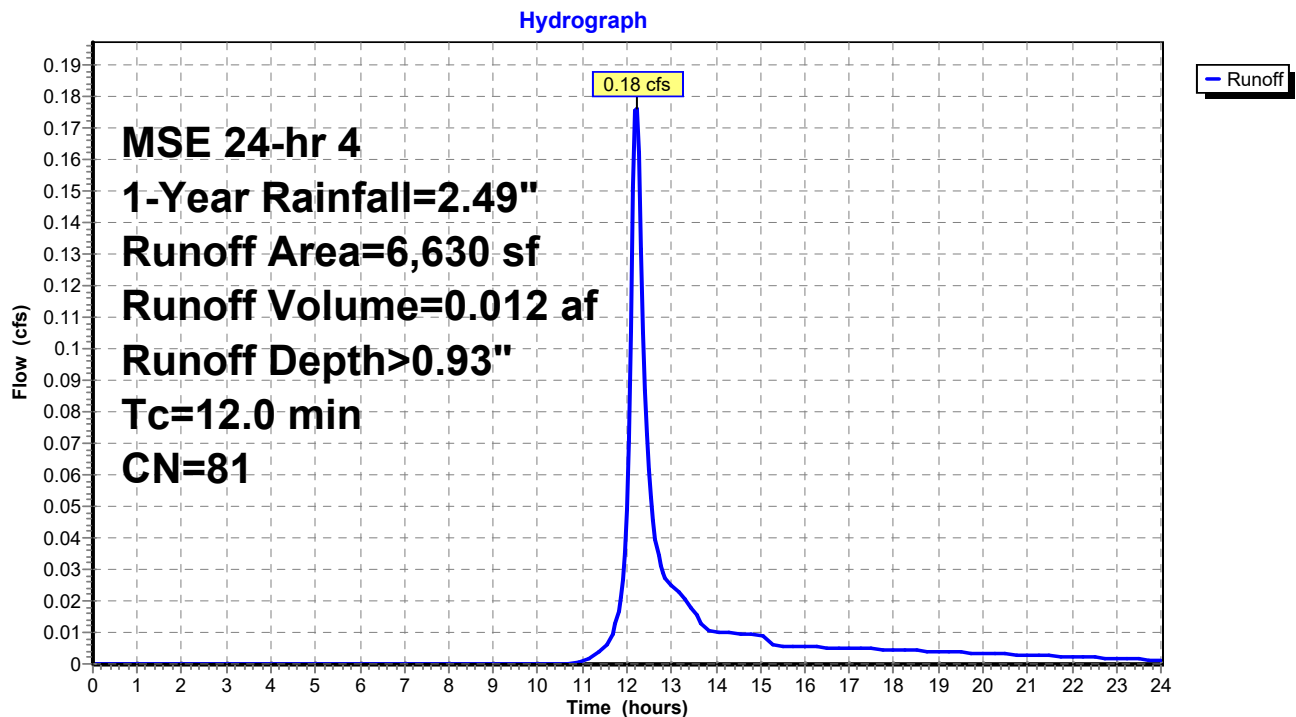
Runoff = 0.18 cfs @ 12.21 hrs, Volume= 0.012 af, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (sf)	CN	Description
*	514	98	Patio
	6,116	80	>75% Grass cover, Good, HSG D
	6,630	81	Weighted Average
	6,116		92.25% Pervious Area
	514		7.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-E: PR - E



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Summary for Subcatchment PR-F: PR - F

Runoff = 0.06 cfs @ 12.21 hrs, Volume= 0.004 af, Depth> 0.88"

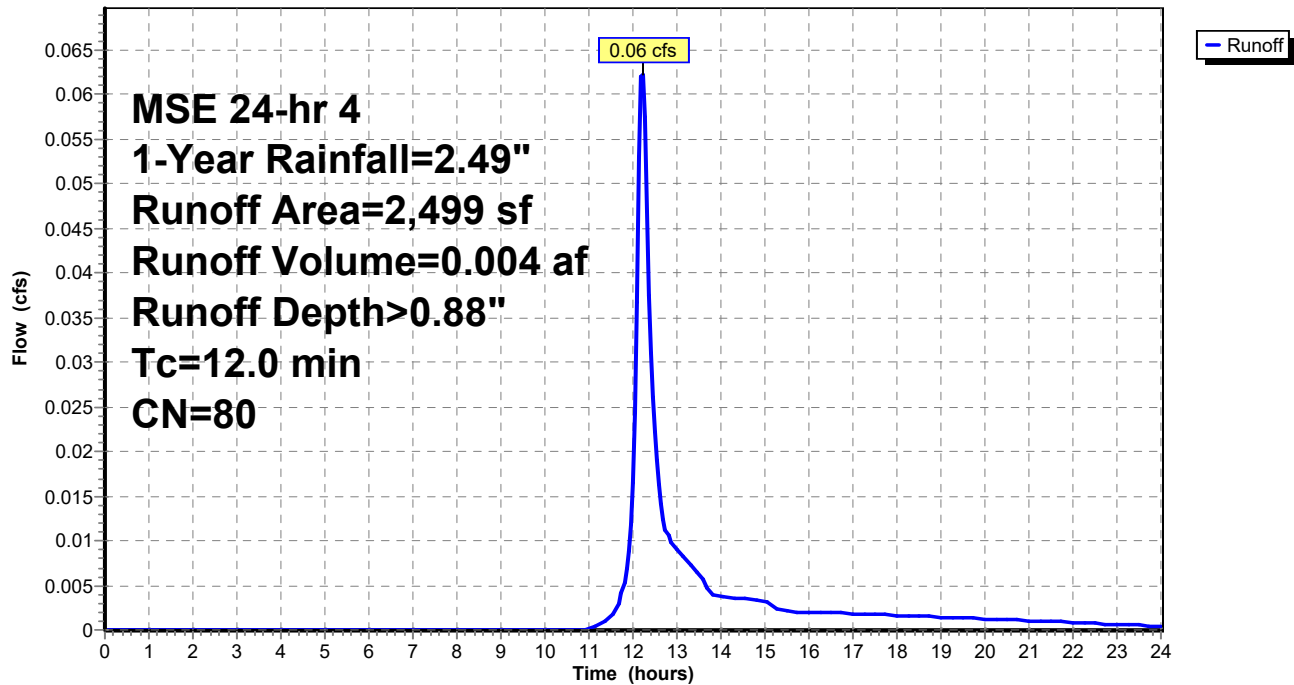
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
* 25	98	Sidewalk
2,474	80	>75% Grass cover, Good, HSG D
2,499	80	Weighted Average
2,474		99.00% Pervious Area
25		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-F: PR - F

Hydrograph



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Summary for Subcatchment PR-G: PR - G

Runoff = 0.33 cfs @ 12.21 hrs, Volume= 0.023 af, Depth> 0.88"

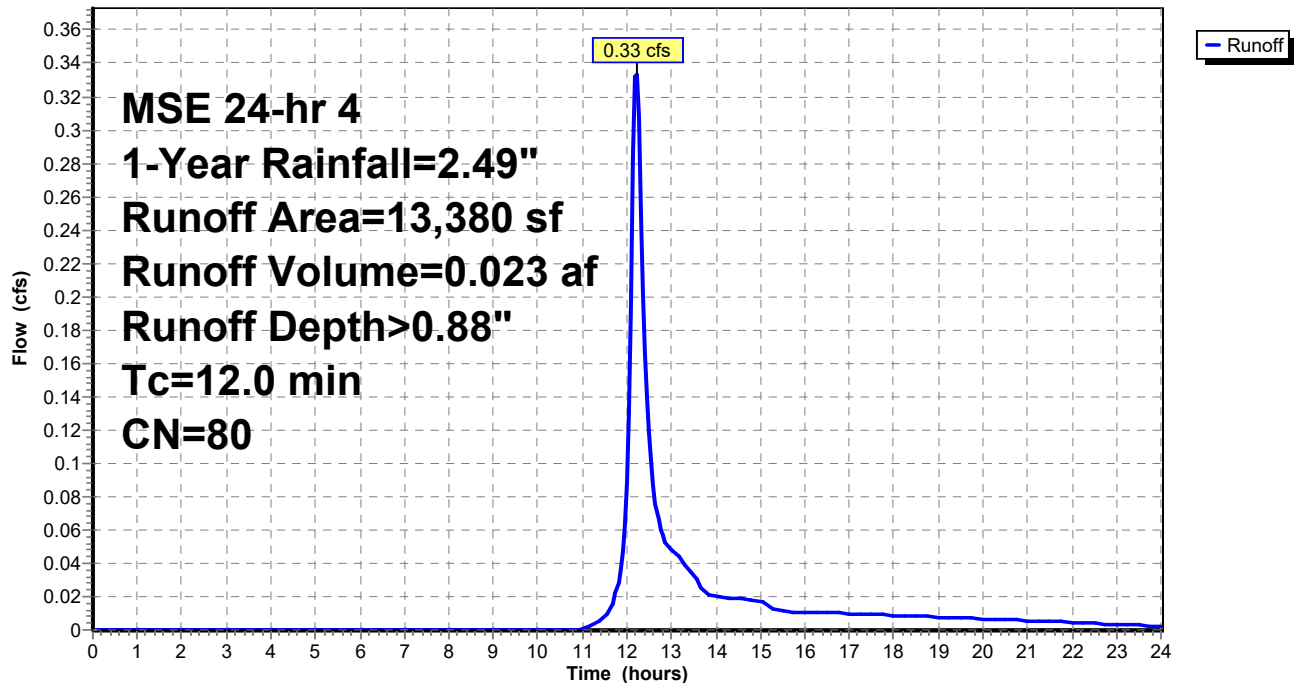
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
49	98	Paved parking, HSG D
13,331	80	>75% Grass cover, Good, HSG D
13,380	80	Weighted Average
13,331		99.63% Pervious Area
49		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-G: PR - G

Hydrograph



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MSE 24-hr 4 1-Year Rainfall=2.49"

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Summary for Pond 1P: Bioretention Basin East

Inflow Area = 1.036 ac, 78.19% Impervious, Inflow Depth > 1.92" for 1-Year event
 Inflow = 2.76 cfs @ 12.13 hrs, Volume= 0.166 af
 Outflow = 0.70 cfs @ 12.39 hrs, Volume= 0.110 af, Atten= 75%, Lag= 15.5 min
 Discarded = 0.03 cfs @ 12.39 hrs, Volume= 0.037 af
 Primary = 0.67 cfs @ 12.39 hrs, Volume= 0.073 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 4.19' @ 12.39 hrs Surf.Area= 2,620 sf Storage= 3,527 cf

Plug-Flow detention time= 163.7 min calculated for 0.110 af (66% of inflow)
 Center-of-Mass det. time= 79.7 min (855.0 - 775.3)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	9,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	1,698	33.0	3	3
0.33	1,698	33.0	185	188
0.34	1,698	33.0	6	193
1.33	1,698	33.0	555	748
1.34	1,698	27.0	5	753
3.33	1,698	27.0	912	1,665
3.34	1,698	100.0	17	1,682
5.83	4,385	100.0	7,573	9,255

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	10.0" Round Culvert L= 73.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / -4.46' S= 0.1125 ' S Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	5.10'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.39 hrs HW=4.19' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.03 cfs)**Primary OutFlow** Max=0.67 cfs @ 12.39 hrs HW=4.19' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.67 cfs @ 2.27 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=-0.01' TW=0.00' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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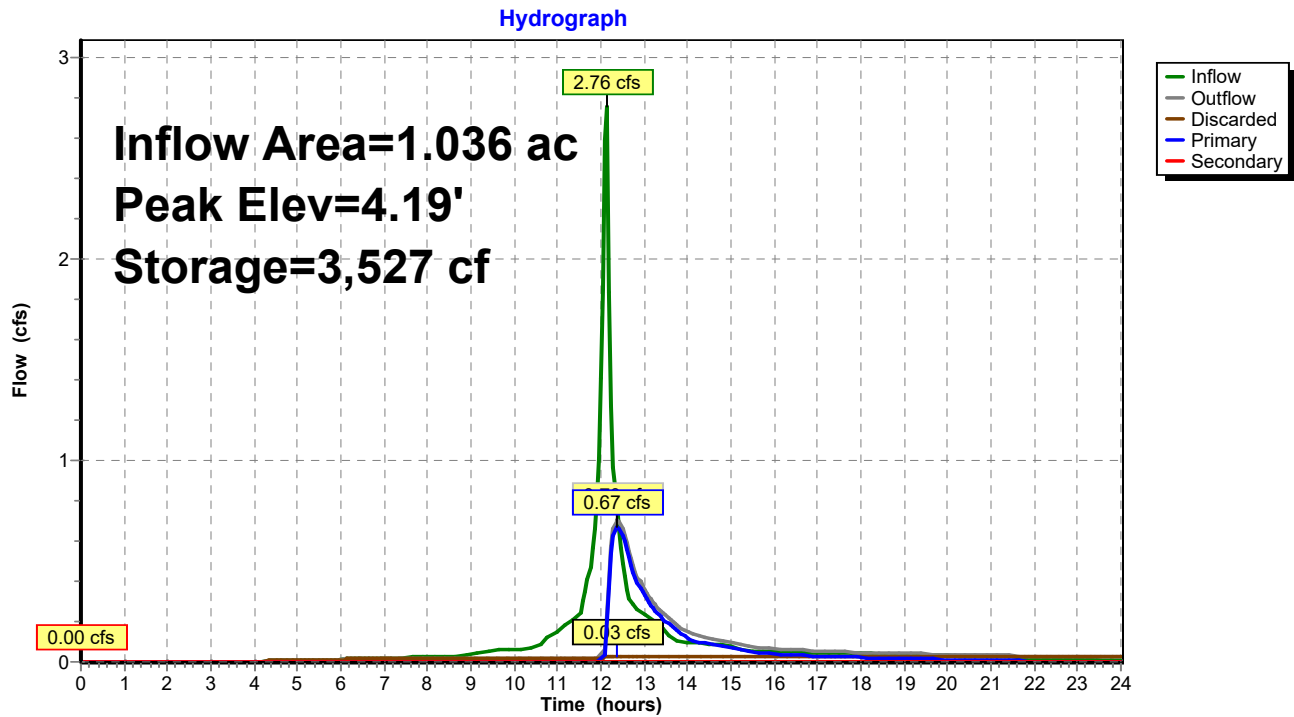
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Pond 1P: Bioretention Basin East



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Summary for Pond 2P: Bioretention Basin West

Inflow Area = 0.245 ac, 63.66% Impervious, Inflow Depth > 1.70" for 1-Year event
 Inflow = 0.58 cfs @ 12.13 hrs, Volume= 0.035 af
 Outflow = 0.11 cfs @ 12.49 hrs, Volume= 0.021 af, Atten= 80%, Lag= 21.6 min
 Discarded = 0.01 cfs @ 12.49 hrs, Volume= 0.009 af
 Primary = 0.11 cfs @ 12.49 hrs, Volume= 0.012 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 3.98' @ 12.49 hrs Surf.Area= 710 sf Storage= 765 cf

Plug-Flow detention time= 183.6 min calculated for 0.021 af (61% of inflow)
 Center-of-Mass det. time= 95.1 min (884.4 - 789.3)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	2,147 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	410	33.0	1	1
0.33	410	33.0	45	45
0.34	410	33.0	1	47
1.33	410	33.0	134	181
1.34	410	27.0	1	182
3.33	410	27.0	220	402
3.34	410	100.0	4	406
5.33	1,340	100.0	1,741	2,147

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	4.0" Round Culvert L= 21.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / 2.70' S= 0.0500 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Secondary	5.00'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.49 hrs HW=3.98' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)**Primary OutFlow** Max=0.11 cfs @ 12.49 hrs HW=3.98' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 0.11 cfs @ 1.64 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=-0.01' TW=0.00' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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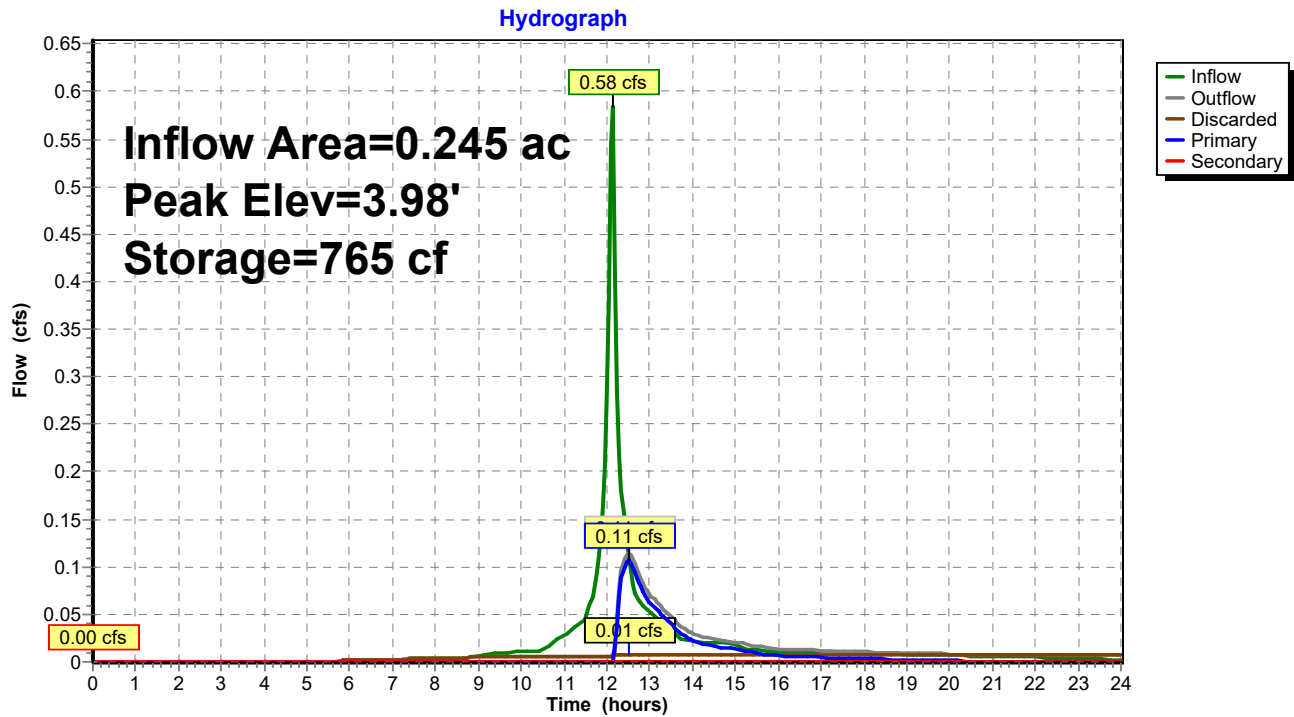
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Pond 2P: Bioretention Basin West



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MSE 24-hr 4 1-Year Rainfall=2.49"

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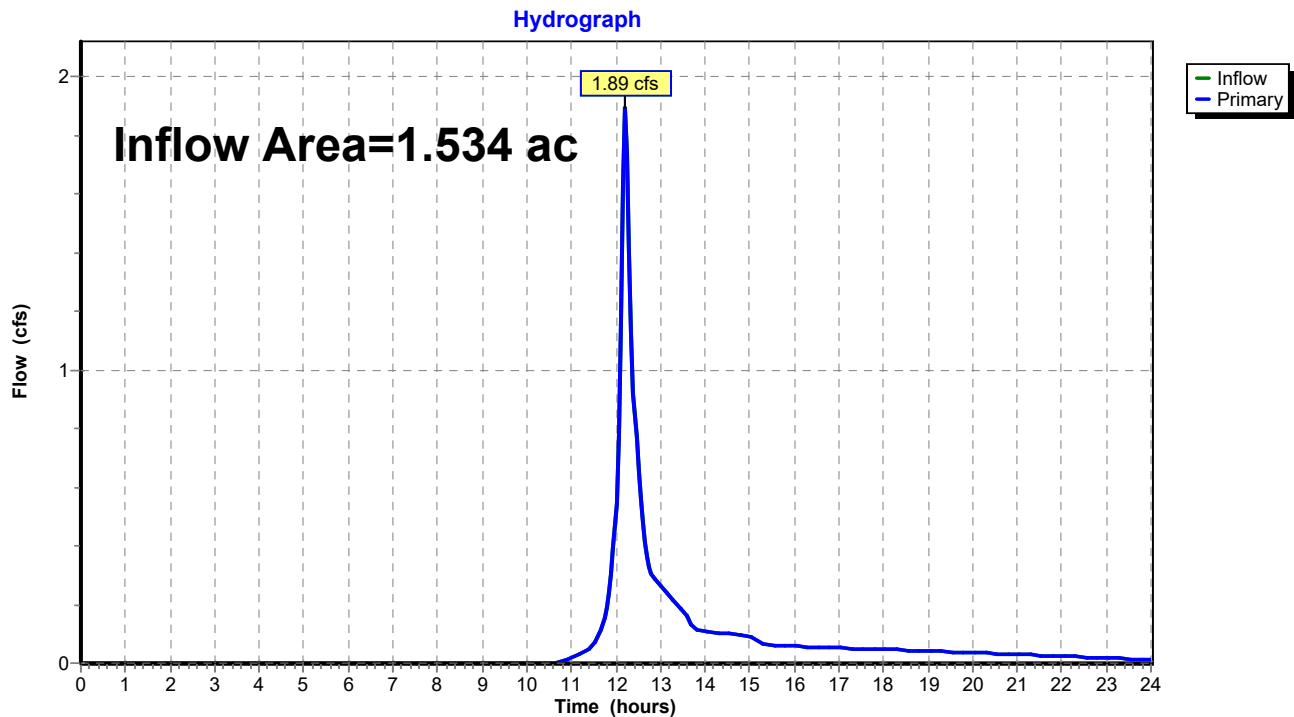
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Summary for Link 1L: EX - OFF-SITE

Inflow Area = 1.534 ac, 13.41% Impervious, Inflow Depth > 0.99" for 1-Year event
Inflow = 1.89 cfs @ 12.21 hrs, Volume= 0.127 af
Primary = 1.89 cfs @ 12.21 hrs, Volume= 0.127 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: EX - OFF-SITE



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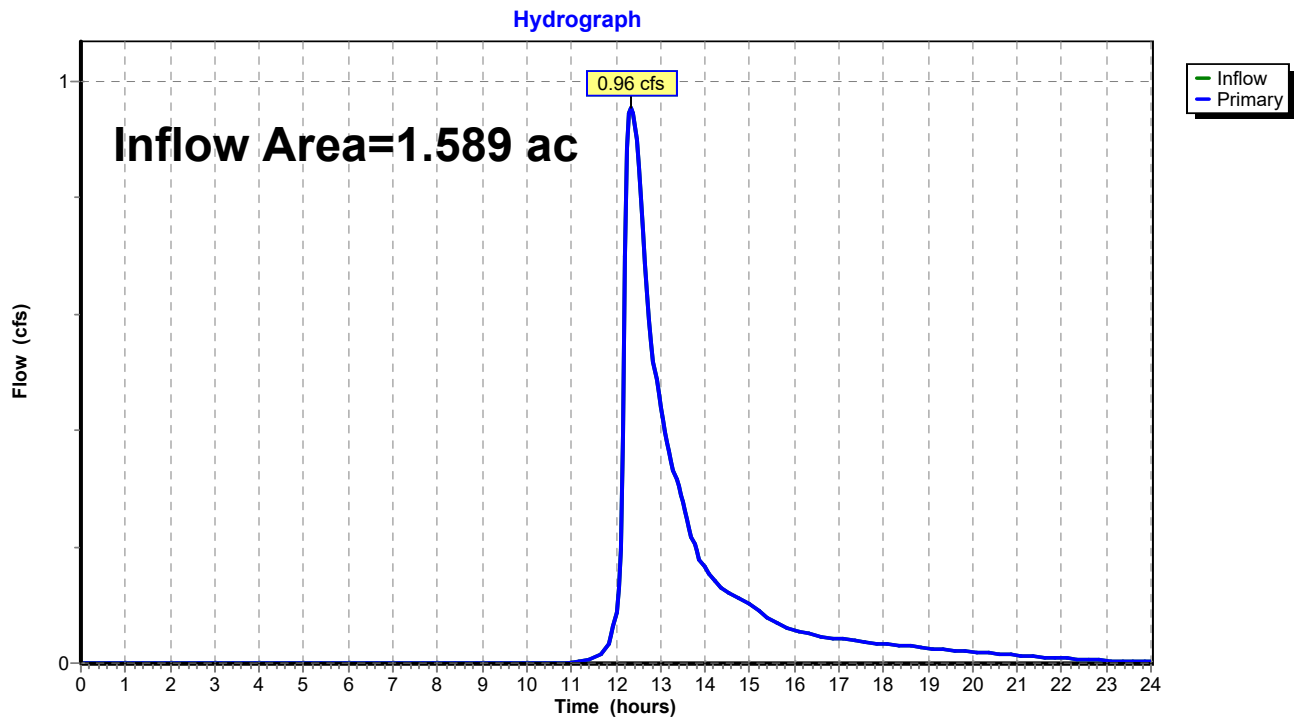
Page 17

Summary for Link 2L: PR - OFF-SITE

Inflow Area = 1.589 ac, 60.90% Impervious, Inflow Depth > 0.81" for 1-Year event
Inflow = 0.96 cfs @ 12.34 hrs, Volume= 0.108 af
Primary = 0.96 cfs @ 12.34 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: PR - OFF-SITE



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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-A: EX - A Runoff Area=66,842 sf 13.41% Impervious Runoff Depth>1.30"
 Flow Length=210' Slope=0.0600 '/' Tc=12.0 min CN=82 Runoff=2.50 cfs 0.166 af

Subcatchment PR-A: PR - A Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>2.67"
 Tc=6.0 min CN=98 Runoff=0.73 cfs 0.045 af

Subcatchment PR-B: PR - B Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>2.67"
 Tc=6.0 min CN=98 Runoff=0.73 cfs 0.045 af

Subcatchment PR-C: PR - C Runoff Area=20,879 sf 82.14% Impervious Runoff Depth>2.35"
 Tc=6.0 min CN=95 Runoff=1.63 cfs 0.094 af

Subcatchment PR-D: PR - D Runoff Area=8,176 sf 82.82% Impervious Runoff Depth>2.35"
 Tc=6.0 min CN=95 Runoff=0.64 cfs 0.037 af

Subcatchment PR-E: PR - E Runoff Area=6,630 sf 7.75% Impervious Runoff Depth>1.24"
 Tc=12.0 min CN=81 Runoff=0.24 cfs 0.016 af

Subcatchment PR-F: PR - F Runoff Area=2,499 sf 1.00% Impervious Runoff Depth>1.17"
 Tc=12.0 min CN=80 Runoff=0.08 cfs 0.006 af

Subcatchment PR-G: PR - G Runoff Area=13,380 sf 0.37% Impervious Runoff Depth>1.17"
 Tc=12.0 min CN=80 Runoff=0.45 cfs 0.030 af

Pond 1P: Bioretention Basin East Peak Elev=4.36' Storage=3,972 cf Inflow=3.28 cfs 0.200 af
 Discarded=0.03 cfs 0.038 af Primary=1.13 cfs 0.105 af Secondary=0.00 cfs 0.000 af Outflow=1.17 cfs 0.143 af

Pond 2P: Bioretention Basin West Peak Elev=4.11' Storage=862 cf Inflow=0.70 cfs 0.042 af
 Discarded=0.01 cfs 0.010 af Primary=0.19 cfs 0.019 af Secondary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.029 af

Link 1L: EX - OFF-SITE Inflow=2.50 cfs 0.166 af
 Primary=2.50 cfs 0.166 af

Link 2L: PR - OFF-SITE Inflow=1.69 cfs 0.154 af
 Primary=1.69 cfs 0.154 af

Total Runoff Area = 3.123 ac Runoff Volume = 0.438 af Average Runoff Depth = 1.68"
62.43% Pervious = 1.950 ac 37.57% Impervious = 1.173 ac

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MSE 24-hr 4 2-Year Rainfall=2.90"

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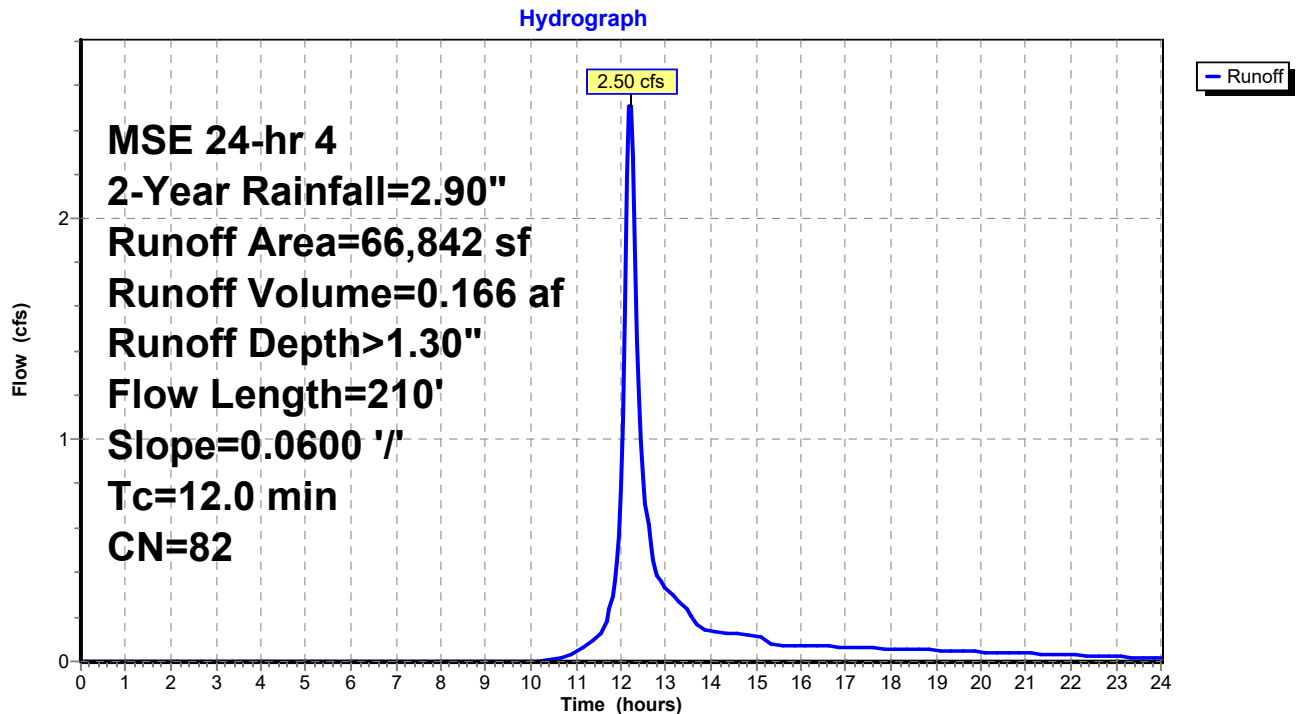
Summary for Subcatchment EX-A: EX - A

Runoff = 2.50 cfs @ 12.20 hrs, Volume= 0.166 af, Depth> 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

Area (sf)	CN	Description
8,964	98	Paved parking, HSG D
57,878	80	>75% Grass cover, Good, HSG D
66,842	82	Weighted Average
57,878		86.59% Pervious Area
8,964		13.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	210	0.0600	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 2.90"

Subcatchment EX-A: EX - A

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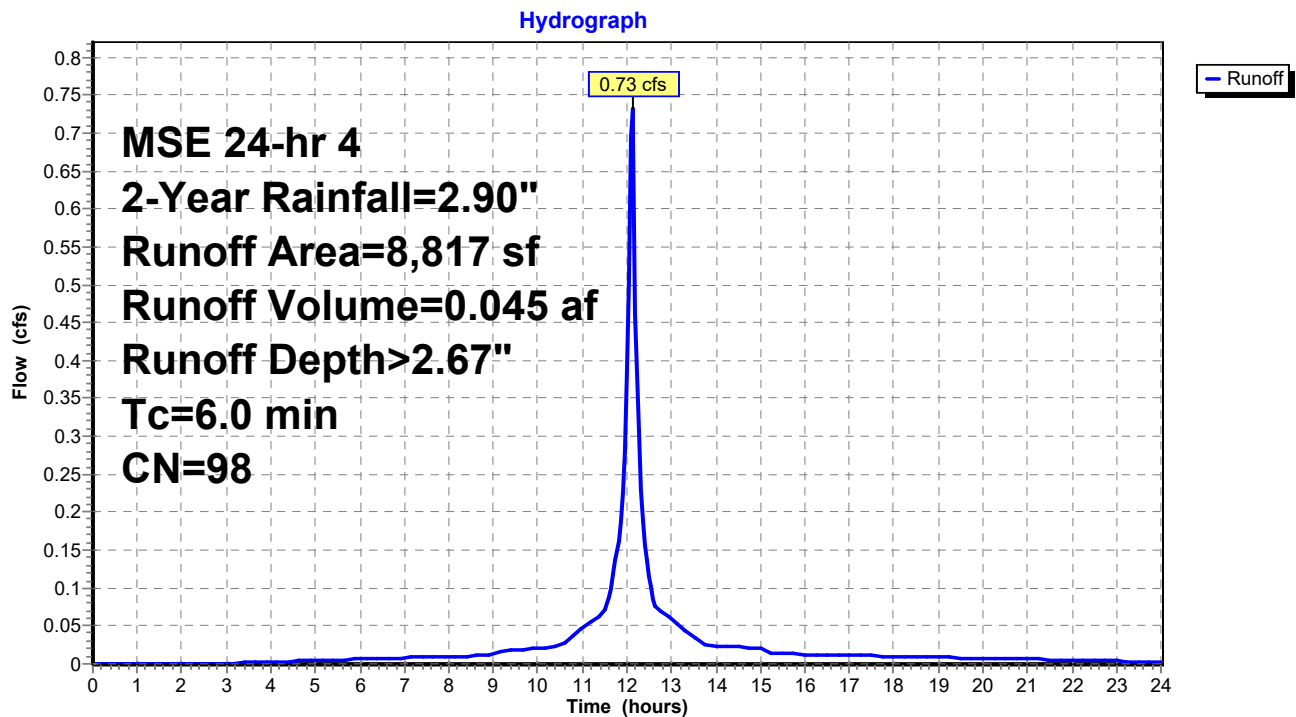
Summary for Subcatchment PR-A: PR - A

Runoff = 0.73 cfs @ 12.13 hrs, Volume= 0.045 af, Depth> 2.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-A: PR - A

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MSE 24-hr 4 2-Year Rainfall=2.90"

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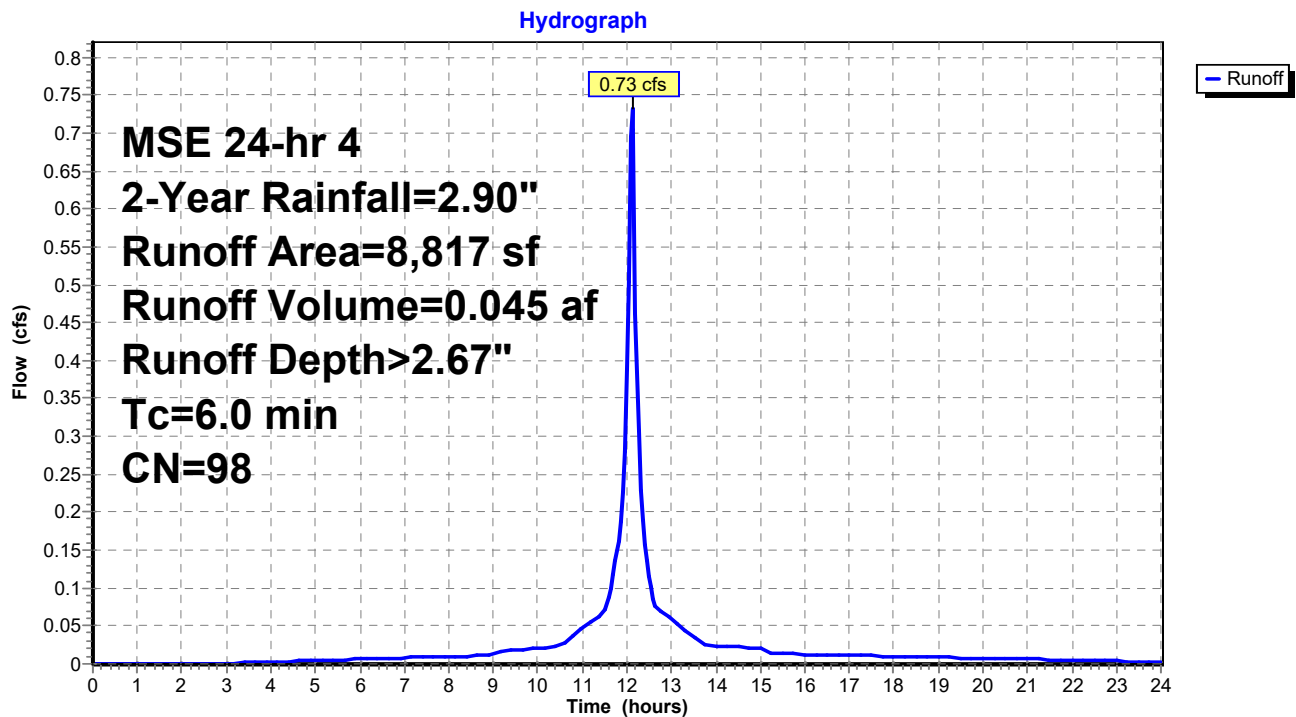
Summary for Subcatchment PR-B: PR - B

Runoff = 0.73 cfs @ 12.13 hrs, Volume= 0.045 af, Depth> 2.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-B: PR - B

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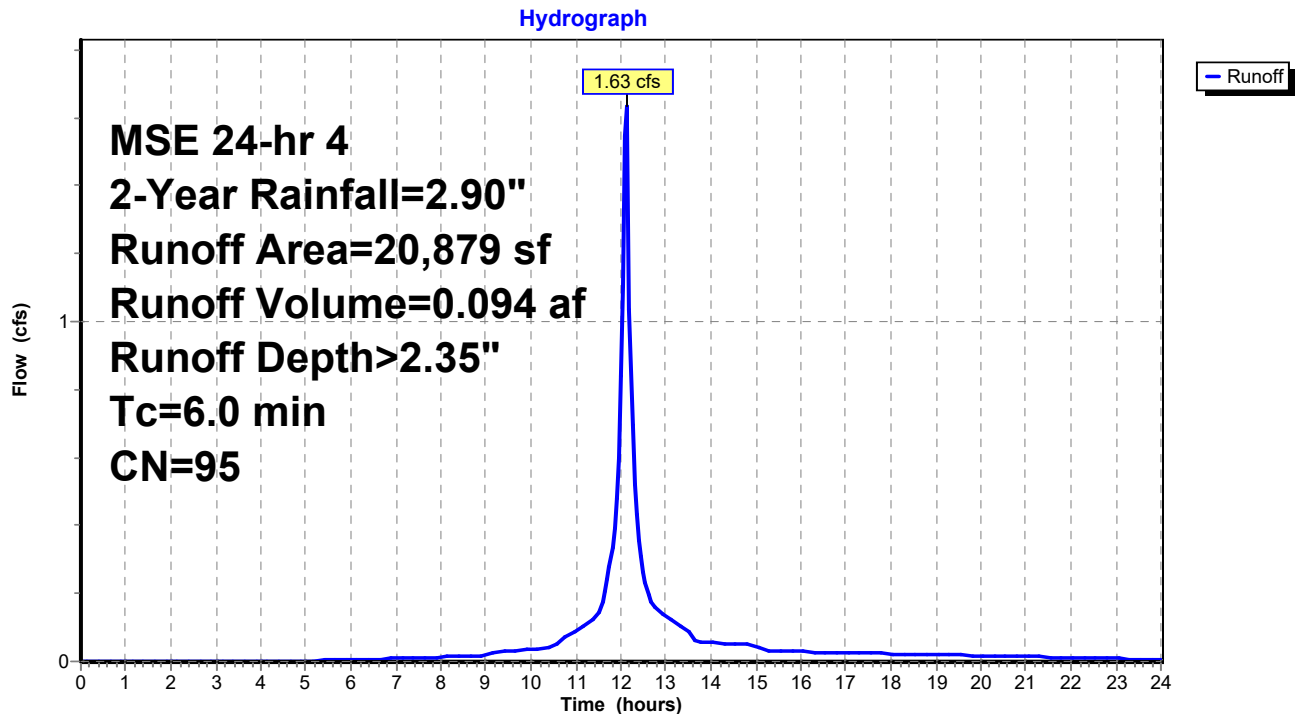
Summary for Subcatchment PR-C: PR - C

Runoff = 1.63 cfs @ 12.13 hrs, Volume= 0.094 af, Depth> 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG D
* 2,151	98	Sidewalk
3,728	80	>75% Grass cover, Good, HSG D
20,879	95	Weighted Average
3,728		17.86% Pervious Area
17,151		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-C: PR - C

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Summary for Subcatchment PR-D: PR - D

Runoff = 0.64 cfs @ 12.13 hrs, Volume= 0.037 af, Depth> 2.35"

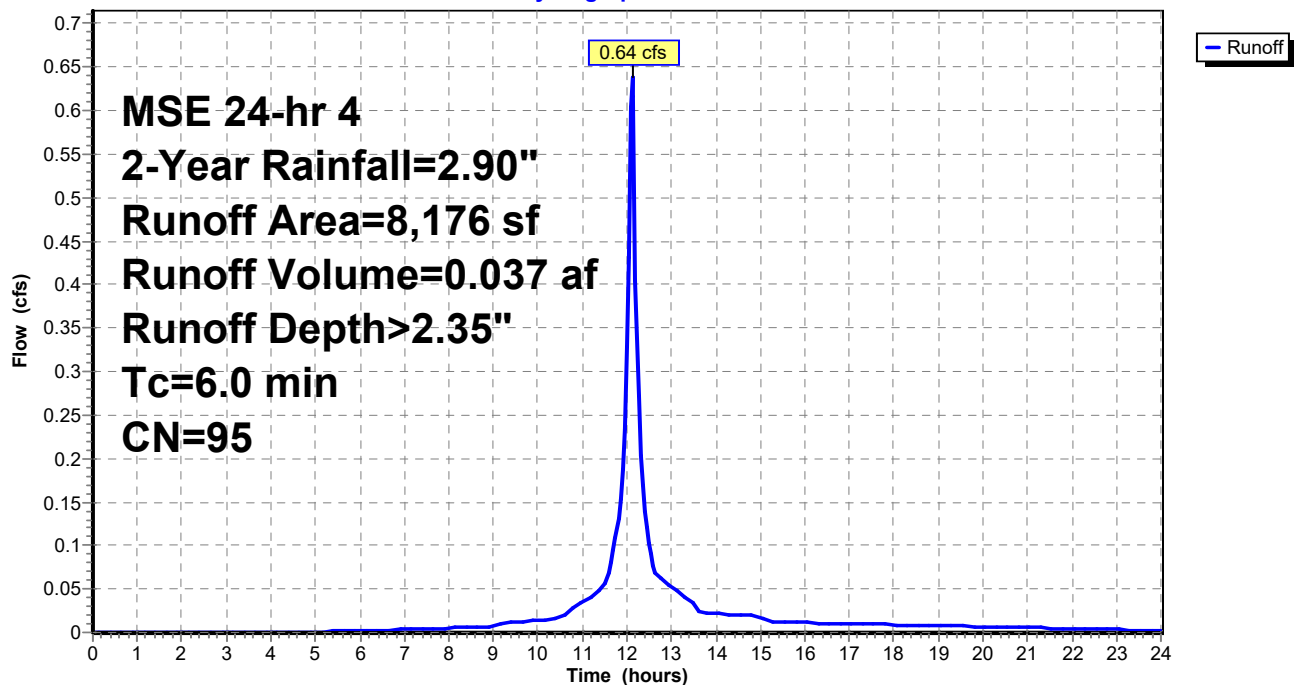
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

Area (sf)	CN	Description
6,145	98	Paved parking, HSG D
* 626	98	Sidewalk
1,405	80	>75% Grass cover, Good, HSG D
8,176	95	Weighted Average
1,405		17.18% Pervious Area
6,771		82.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-D: PR - D

Hydrograph



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Summary for Subcatchment PR-E: PR - E

Runoff = 0.24 cfs @ 12.21 hrs, Volume= 0.016 af, Depth> 1.24"

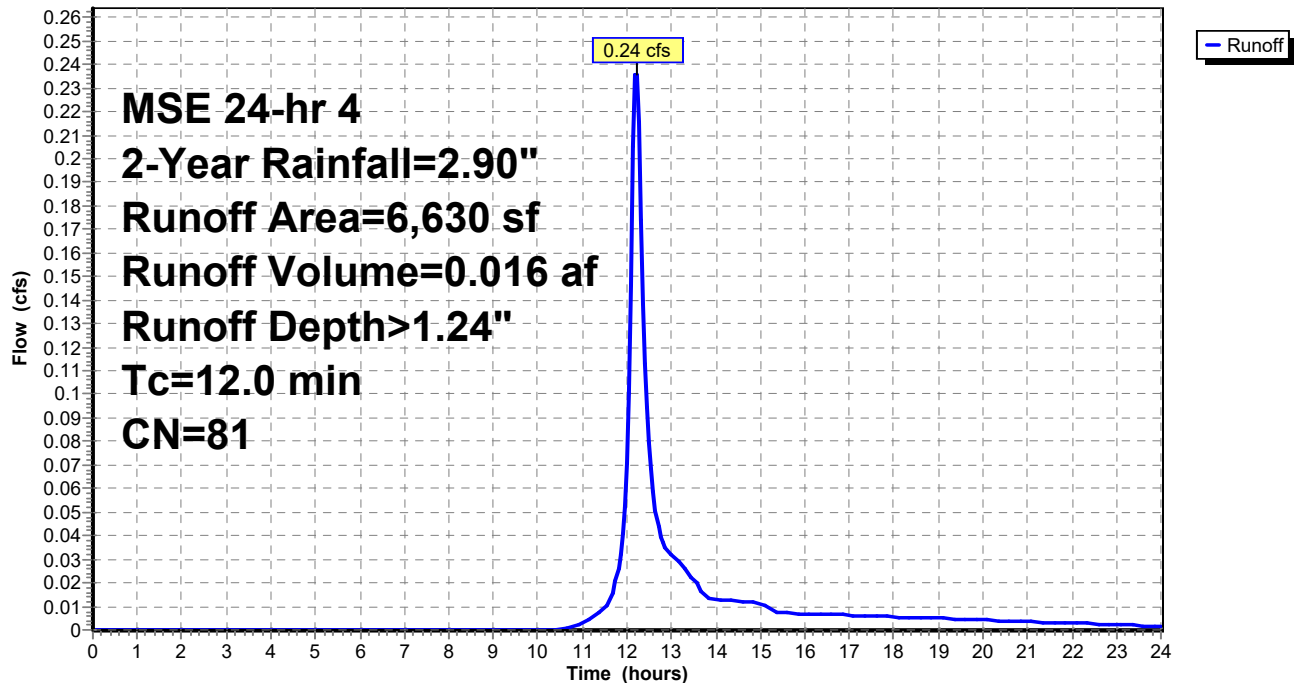
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

	Area (sf)	CN	Description
*	514	98	Patio
	6,116	80	>75% Grass cover, Good, HSG D
	6,630	81	Weighted Average
	6,116		92.25% Pervious Area
	514		7.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-E: PR - E

Hydrograph



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Summary for Subcatchment PR-F: PR - F

Runoff = 0.08 cfs @ 12.21 hrs, Volume= 0.006 af, Depth> 1.17"

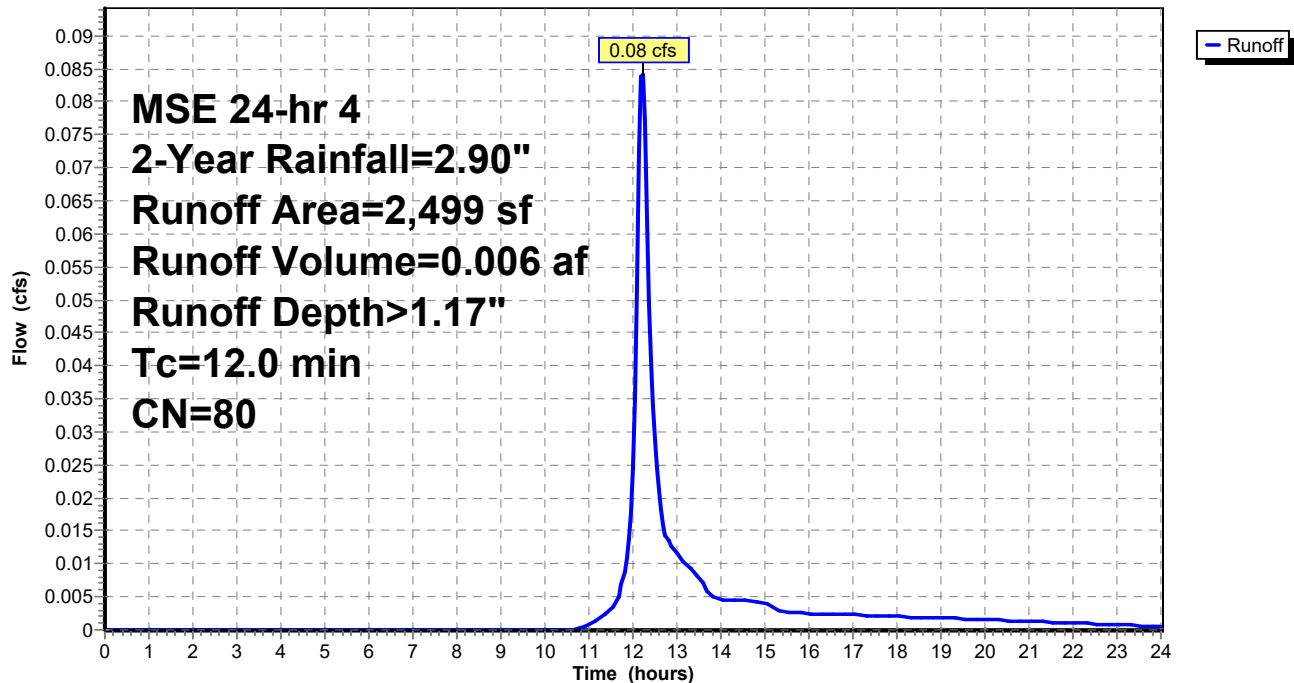
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

Area (sf)	CN	Description
* 25	98	Sidewalk
2,474	80	>75% Grass cover, Good, HSG D
2,499	80	Weighted Average
2,474		99.00% Pervious Area
25		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-F: PR - F

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Summary for Subcatchment PR-G: PR - G

Runoff = 0.45 cfs @ 12.21 hrs, Volume= 0.030 af, Depth> 1.17"

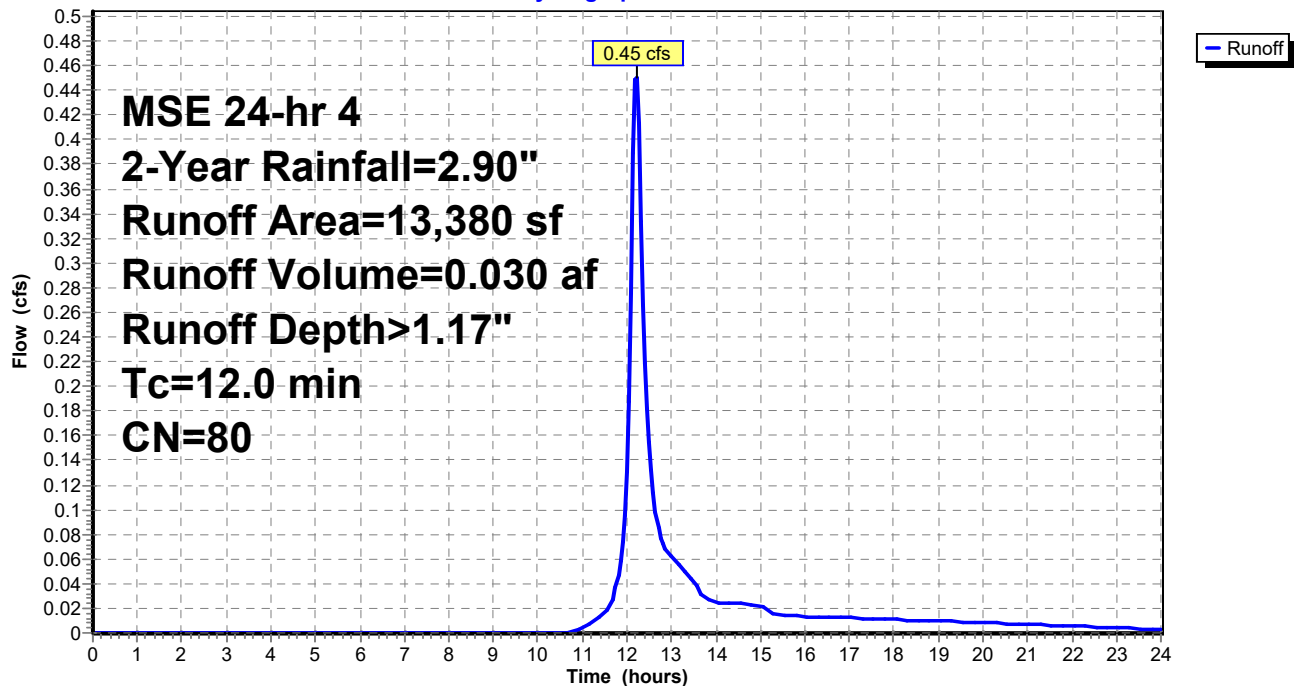
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.90"

Area (sf)	CN	Description
49	98	Paved parking, HSG D
13,331	80	>75% Grass cover, Good, HSG D
13,380	80	Weighted Average
13,331		99.63% Pervious Area
49		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-G: PR - G

Hydrograph



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Summary for Pond 1P: Bioretention Basin East

Inflow Area = 1.036 ac, 78.19% Impervious, Inflow Depth > 2.31" for 2-Year event
 Inflow = 3.28 cfs @ 12.13 hrs, Volume= 0.200 af
 Outflow = 1.17 cfs @ 12.31 hrs, Volume= 0.143 af, Atten= 64%, Lag= 10.6 min
 Discarded = 0.03 cfs @ 12.31 hrs, Volume= 0.038 af
 Primary = 1.13 cfs @ 12.31 hrs, Volume= 0.105 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 4.36' @ 12.31 hrs Surf.Area= 2,797 sf Storage= 3,972 cf

Plug-Flow detention time= 146.0 min calculated for 0.142 af (71% of inflow)
 Center-of-Mass det. time= 68.6 min (840.6 - 772.0)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	9,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	1,698	33.0	3	3
0.33	1,698	33.0	185	188
0.34	1,698	33.0	6	193
1.33	1,698	33.0	555	748
1.34	1,698	27.0	5	753
3.33	1,698	27.0	912	1,665
3.34	1,698	100.0	17	1,682
5.83	4,385	100.0	7,573	9,255

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	10.0" Round Culvert L= 73.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / -4.46' S= 0.1125 ' S Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	5.10'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.03 cfs @ 12.31 hrs HW=4.36' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.03 cfs)**Primary OutFlow** Max=1.13 cfs @ 12.31 hrs HW=4.36' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 1.13 cfs @ 2.65 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=-0.01' TW=0.00' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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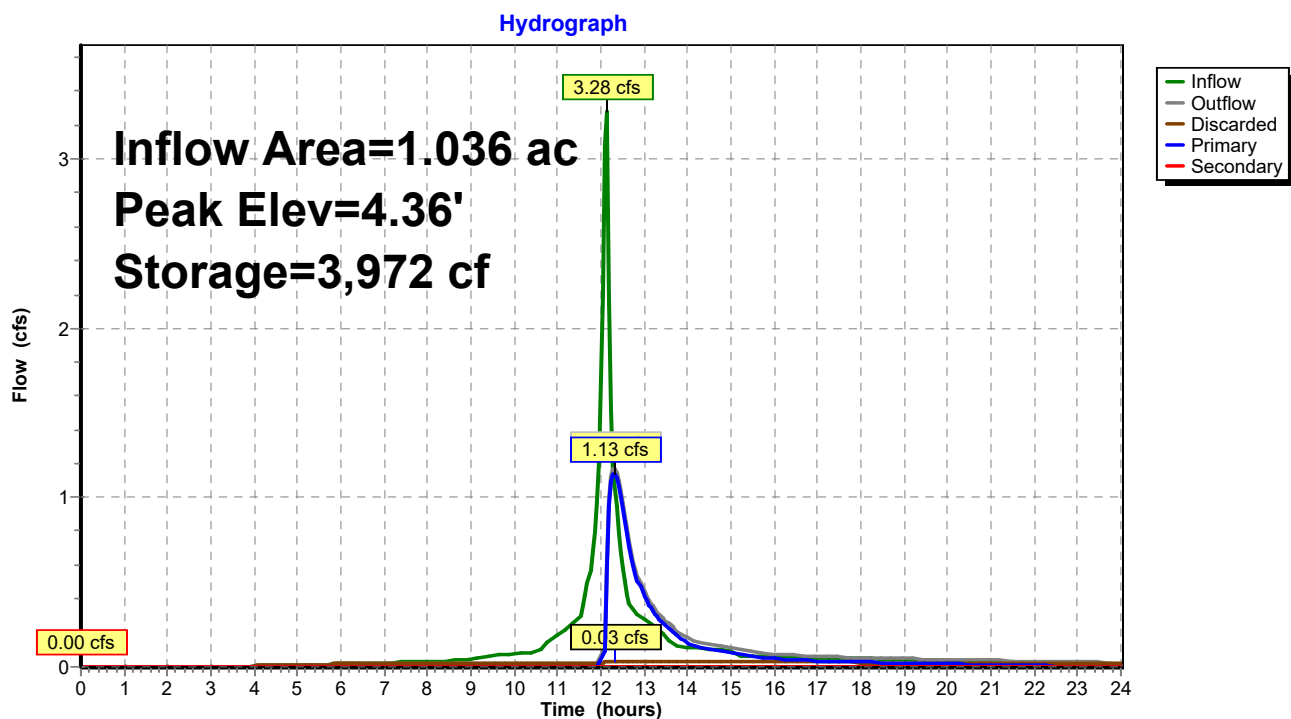
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MSE 24-hr 4 2-Year Rainfall=2.90"

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Pond 1P: Bioretention Basin East



Summary for Pond 2P: Bioretention Basin West

Inflow Area = 0.245 ac, 63.66% Impervious, Inflow Depth > 2.08" for 2-Year event
 Inflow = 0.70 cfs @ 12.13 hrs, Volume= 0.042 af
 Outflow = 0.19 cfs @ 12.38 hrs, Volume= 0.029 af, Atten= 72%, Lag= 15.1 min
 Discarded = 0.01 cfs @ 12.38 hrs, Volume= 0.010 af
 Primary = 0.19 cfs @ 12.38 hrs, Volume= 0.019 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 4.11' @ 12.38 hrs Surf.Area= 771 sf Storage= 862 cf

Plug-Flow detention time= 156.5 min calculated for 0.029 af (67% of inflow)
 Center-of-Mass det. time= 74.8 min (860.1 - 785.4)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	2,147 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	410	33.0	1	1
0.33	410	33.0	45	45
0.34	410	33.0	1	47
1.33	410	33.0	134	181
1.34	410	27.0	1	182
3.33	410	27.0	220	402
3.34	410	100.0	4	406
5.33	1,340	100.0	1,741	2,147

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	4.0" Round Culvert L= 21.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / 2.70' S= 0.0500 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Secondary	5.00'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.38 hrs HW=4.11' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.19 cfs @ 12.38 hrs HW=4.11' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 0.19 cfs @ 2.13 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=-0.01' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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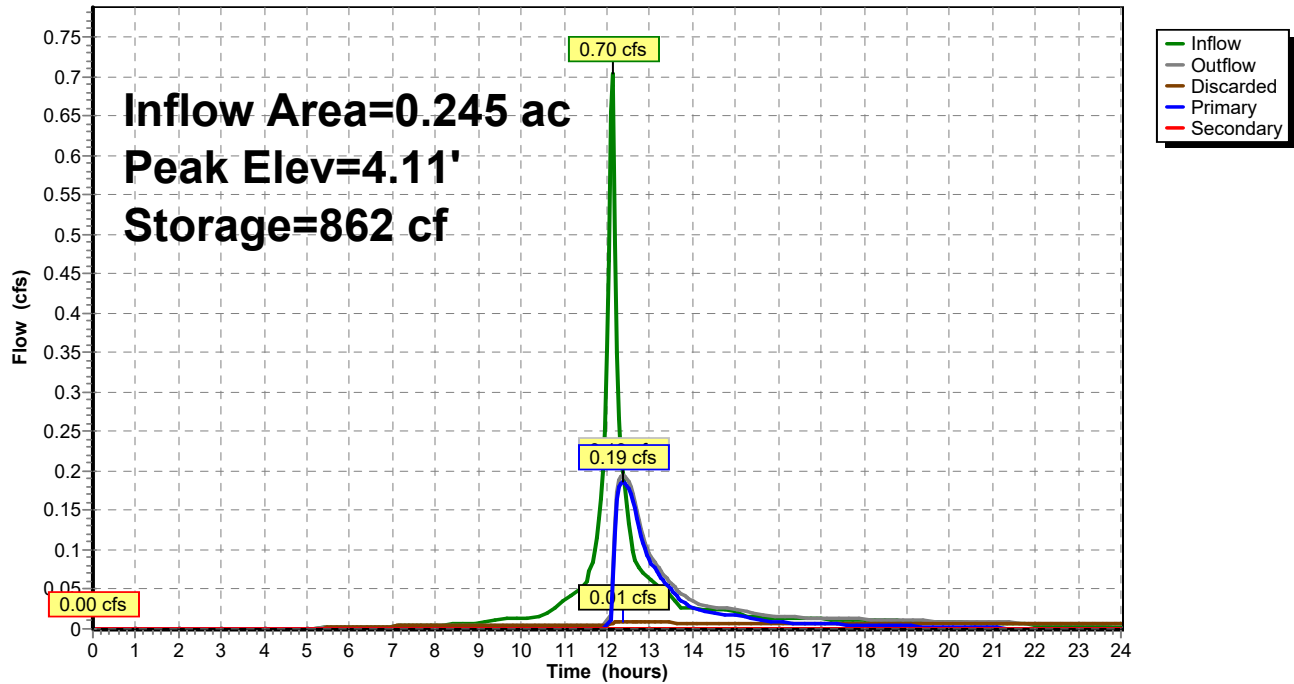
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Pond 2P: Bioretention Basin West

Hydrograph



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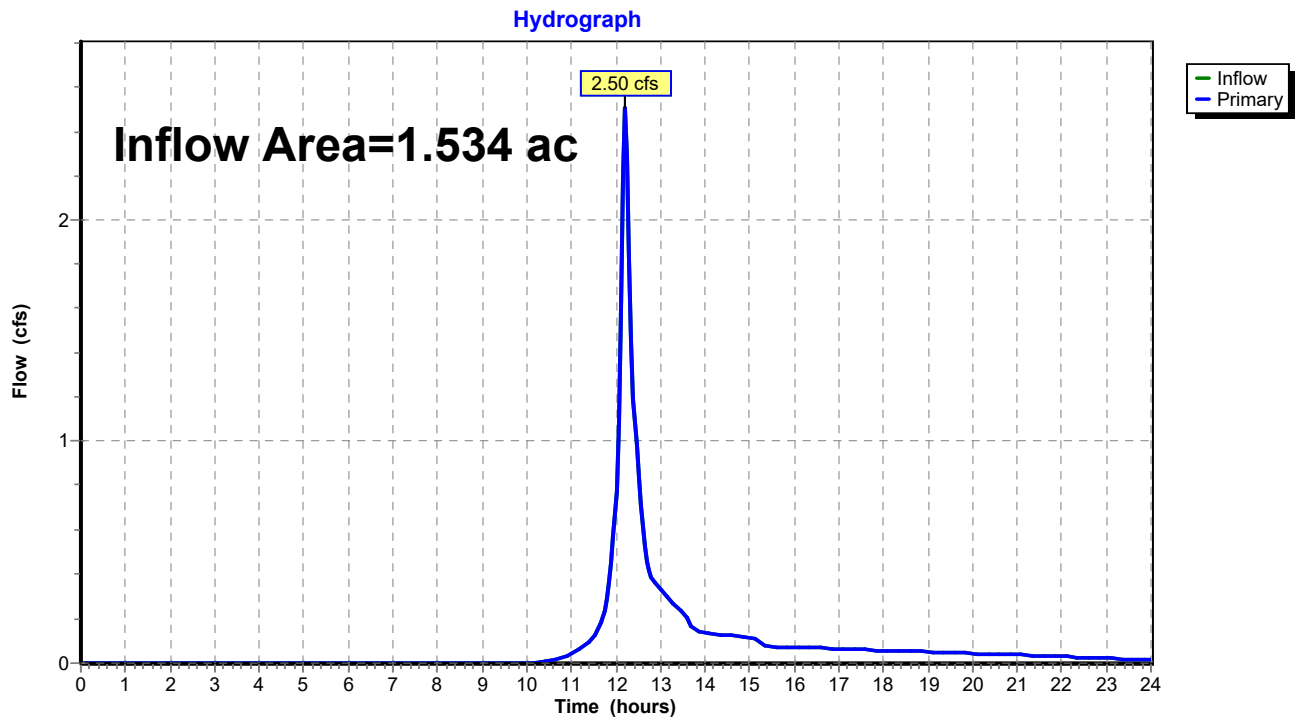
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Summary for Link 1L: EX - OFF-SITE

Inflow Area = 1.534 ac, 13.41% Impervious, Inflow Depth > 1.30" for 2-Year event
Inflow = 2.50 cfs @ 12.20 hrs, Volume= 0.166 af
Primary = 2.50 cfs @ 12.20 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: EX - OFF-SITE



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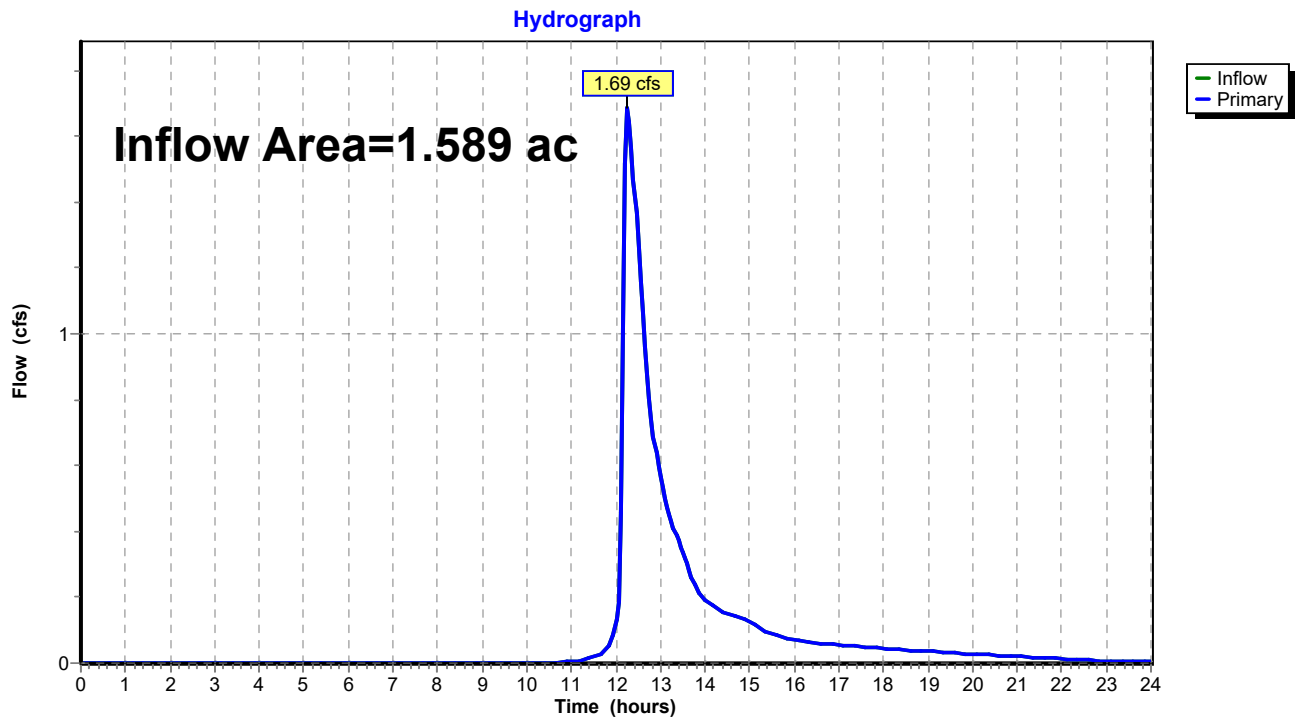
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Summary for Link 2L: PR - OFF-SITE

Inflow Area = 1.589 ac, 60.90% Impervious, Inflow Depth > 1.16" for 2-Year event
Inflow = 1.69 cfs @ 12.27 hrs, Volume= 0.154 af
Primary = 1.69 cfs @ 12.27 hrs, Volume= 0.154 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: PR - OFF-SITE



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MSE 24-hr 4 10-Year Rainfall=4.20"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-A: EX - A Runoff Area=66,842 sf 13.41% Impervious Runoff Depth>2.37"
Flow Length=210' Slope=0.0600 '/' Tc=12.0 min CN=82 Runoff=4.58 cfs 0.303 af

Subcatchment PR-A: PR - A Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>3.96"
Tc=6.0 min CN=98 Runoff=1.07 cfs 0.067 af

Subcatchment PR-B: PR - B Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>3.96"
Tc=6.0 min CN=98 Runoff=1.07 cfs 0.067 af

Subcatchment PR-C: PR - C Runoff Area=20,879 sf 82.14% Impervious Runoff Depth>3.63"
Tc=6.0 min CN=95 Runoff=2.45 cfs 0.145 af

Subcatchment PR-D: PR - D Runoff Area=8,176 sf 82.82% Impervious Runoff Depth>3.63"
Tc=6.0 min CN=95 Runoff=0.96 cfs 0.057 af

Subcatchment PR-E: PR - E Runoff Area=6,630 sf 7.75% Impervious Runoff Depth>2.29"
Tc=12.0 min CN=81 Runoff=0.44 cfs 0.029 af

Subcatchment PR-F: PR - F Runoff Area=2,499 sf 1.00% Impervious Runoff Depth>2.21"
Tc=12.0 min CN=80 Runoff=0.16 cfs 0.011 af

Subcatchment PR-G: PR - G Runoff Area=13,380 sf 0.37% Impervious Runoff Depth>2.21"
Tc=12.0 min CN=80 Runoff=0.85 cfs 0.056 af

Pond 1P: Bioretention Basin East Peak Elev=4.84' Storage=5,430 cf Inflow=4.93 cfs 0.308 af
Discarded=0.04 cfs 0.041 af Primary=2.15 cfs 0.208 af Secondary=0.00 cfs 0.000 af Outflow=2.19 cfs 0.249 af

Pond 2P: Bioretention Basin West Peak Elev=4.58' Storage=1,276 cf Inflow=1.09 cfs 0.067 af
Discarded=0.01 cfs 0.010 af Primary=0.34 cfs 0.043 af Secondary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.053 af

Link 1L: EX - OFF-SITE Inflow=4.58 cfs 0.303 af
Primary=4.58 cfs 0.303 af

Link 2L: PR - OFF-SITE Inflow=3.30 cfs 0.307 af
Primary=3.30 cfs 0.307 af

Total Runoff Area = 3.123 ac Runoff Volume = 0.735 af Average Runoff Depth = 2.82"
62.43% Pervious = 1.950 ac 37.57% Impervious = 1.173 ac

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MSE 24-hr 4 10-Year Rainfall=4.20"

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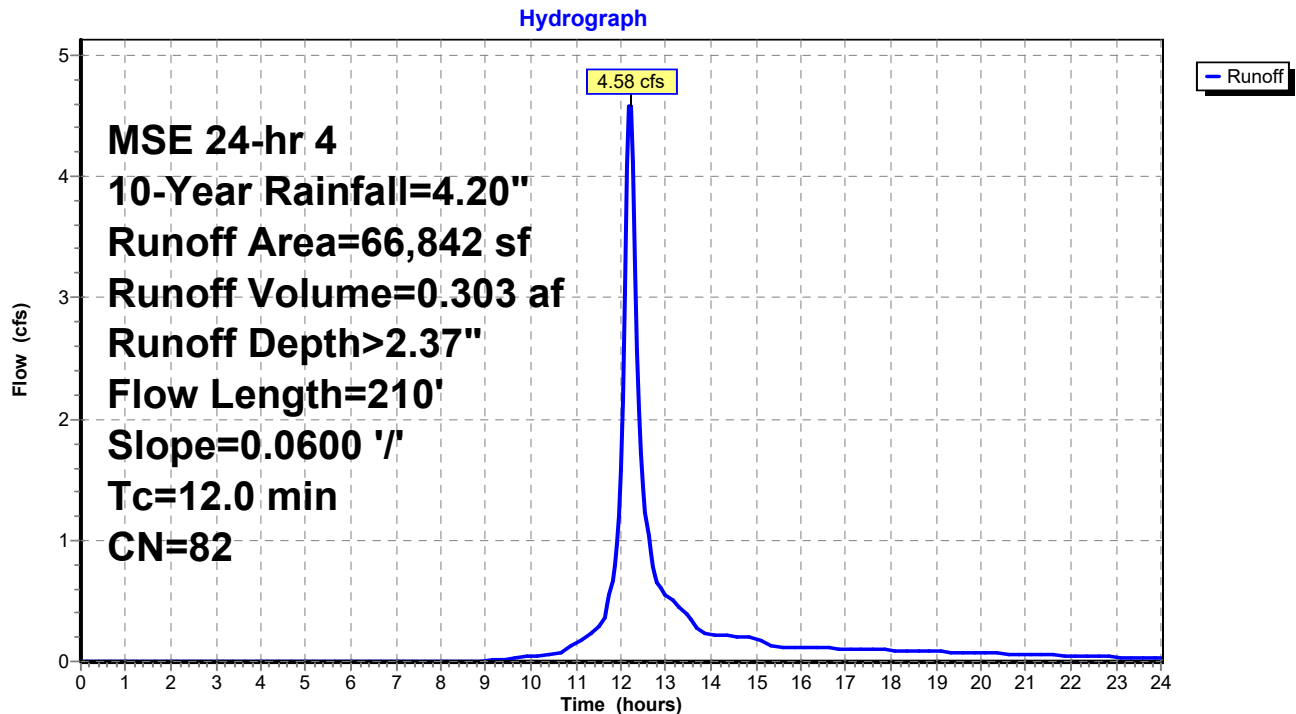
Summary for Subcatchment EX-A: EX - A

Runoff = 4.58 cfs @ 12.20 hrs, Volume= 0.303 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

Area (sf)	CN	Description
8,964	98	Paved parking, HSG D
57,878	80	>75% Grass cover, Good, HSG D
66,842	82	Weighted Average
57,878		86.59% Pervious Area
8,964		13.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	210	0.0600	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 2.90"

Subcatchment EX-A: EX - A

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Summary for Subcatchment PR-A: PR - A

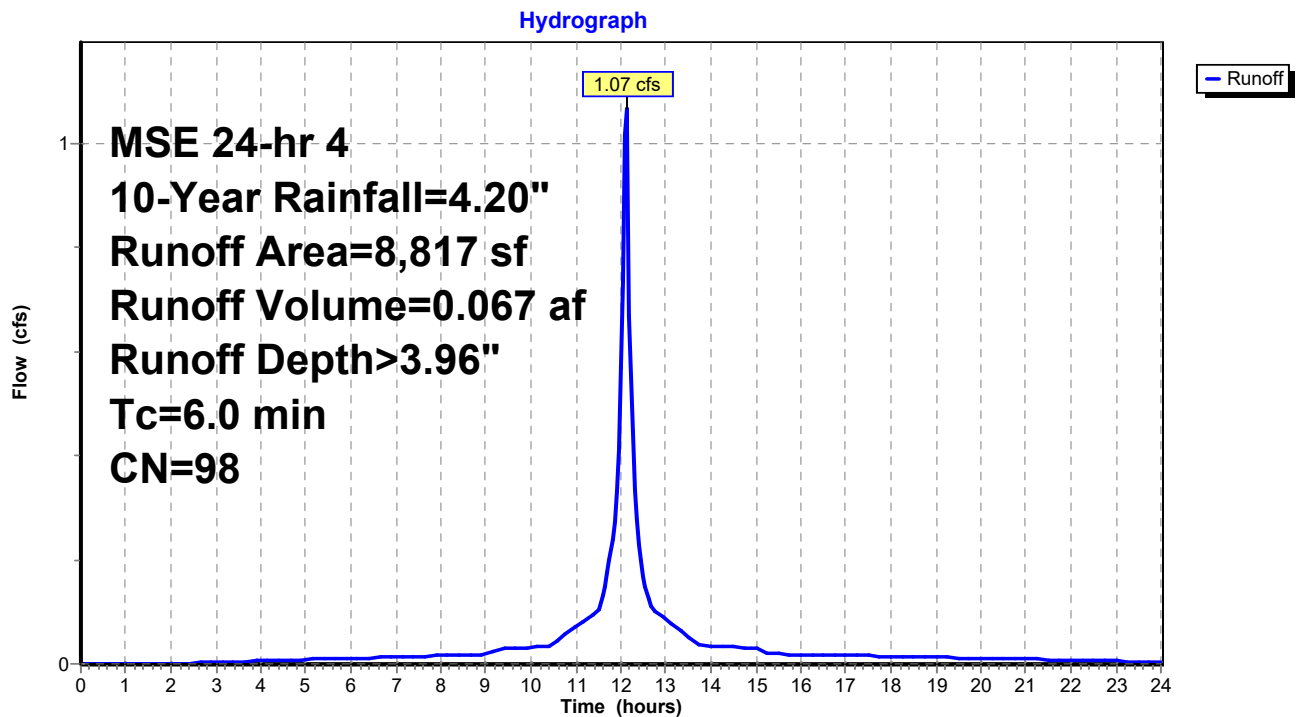
Runoff = 1.07 cfs @ 12.13 hrs, Volume= 0.067 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-A: PR - A



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MSE 24-hr 4 10-Year Rainfall=4.20"

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Summary for Subcatchment PR-B: PR - B

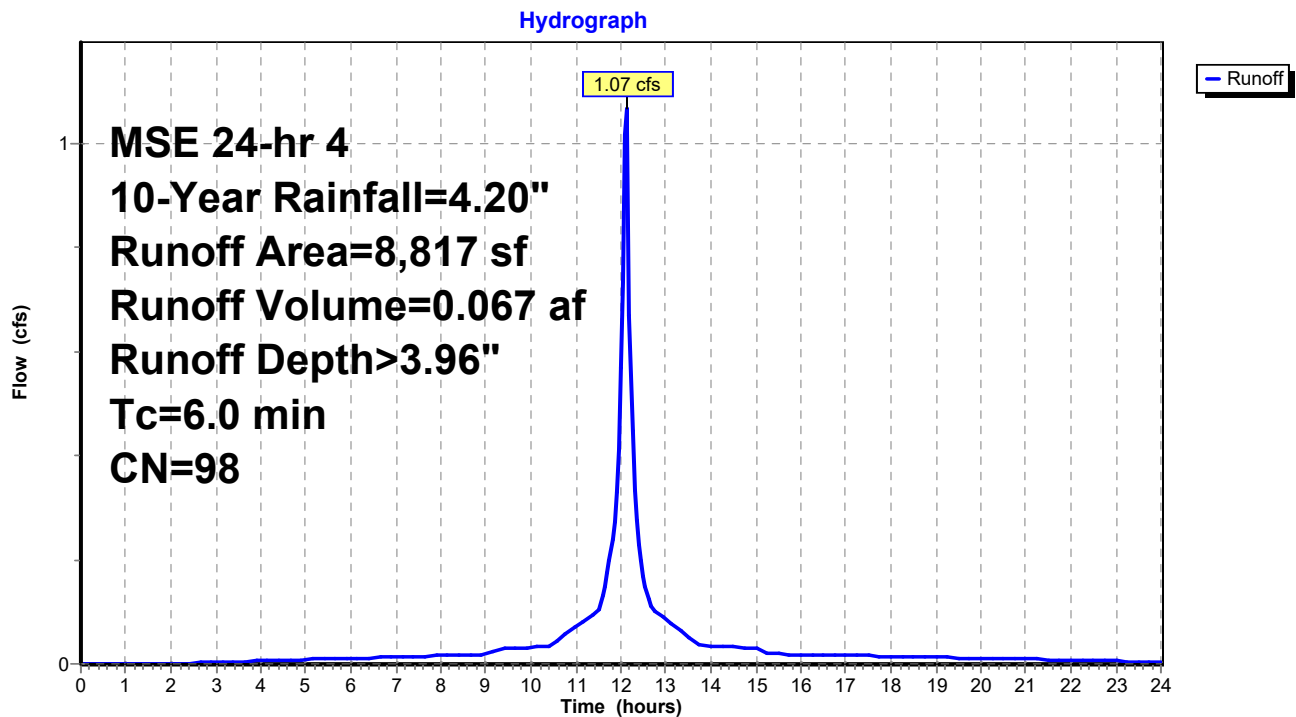
Runoff = 1.07 cfs @ 12.13 hrs, Volume= 0.067 af, Depth> 3.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-B: PR - B



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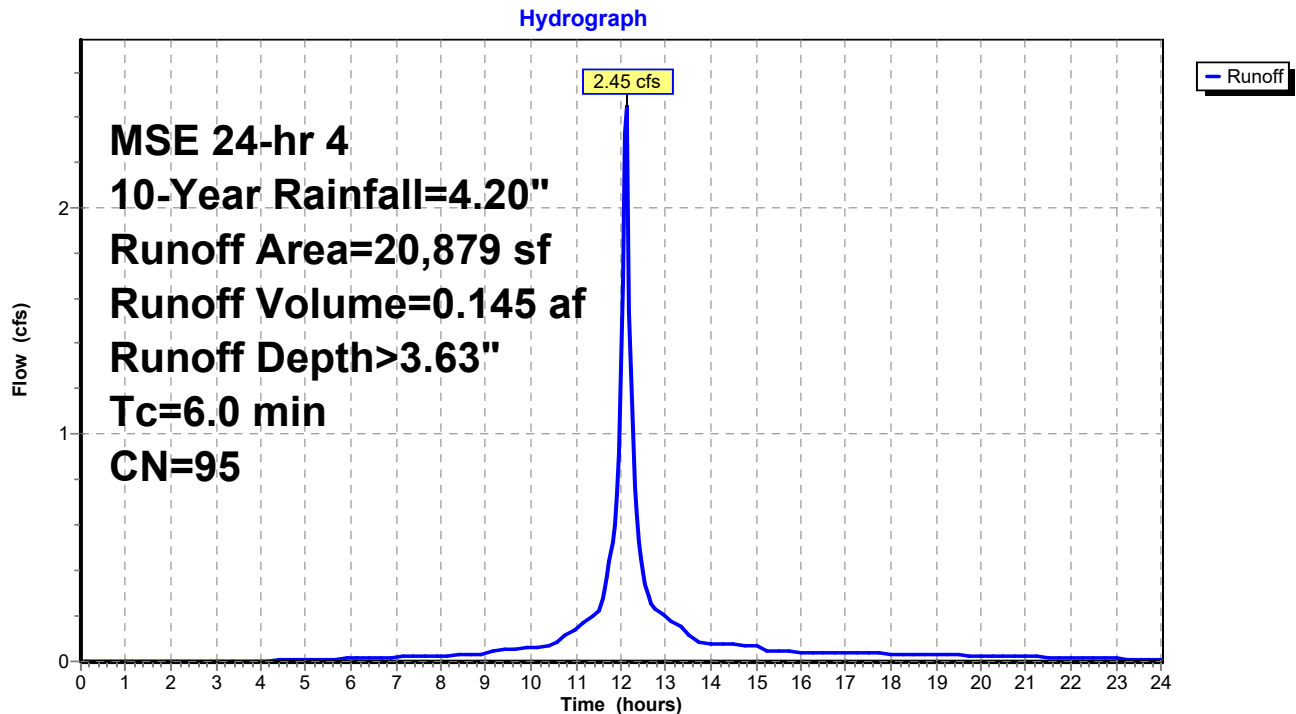
Summary for Subcatchment PR-C: PR - C

Runoff = 2.45 cfs @ 12.13 hrs, Volume= 0.145 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG D
* 2,151	98	Sidewalk
3,728	80	>75% Grass cover, Good, HSG D
20,879	95	Weighted Average
3,728		17.86% Pervious Area
17,151		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-C: PR - C

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MSE 24-hr 4 10-Year Rainfall=4.20"

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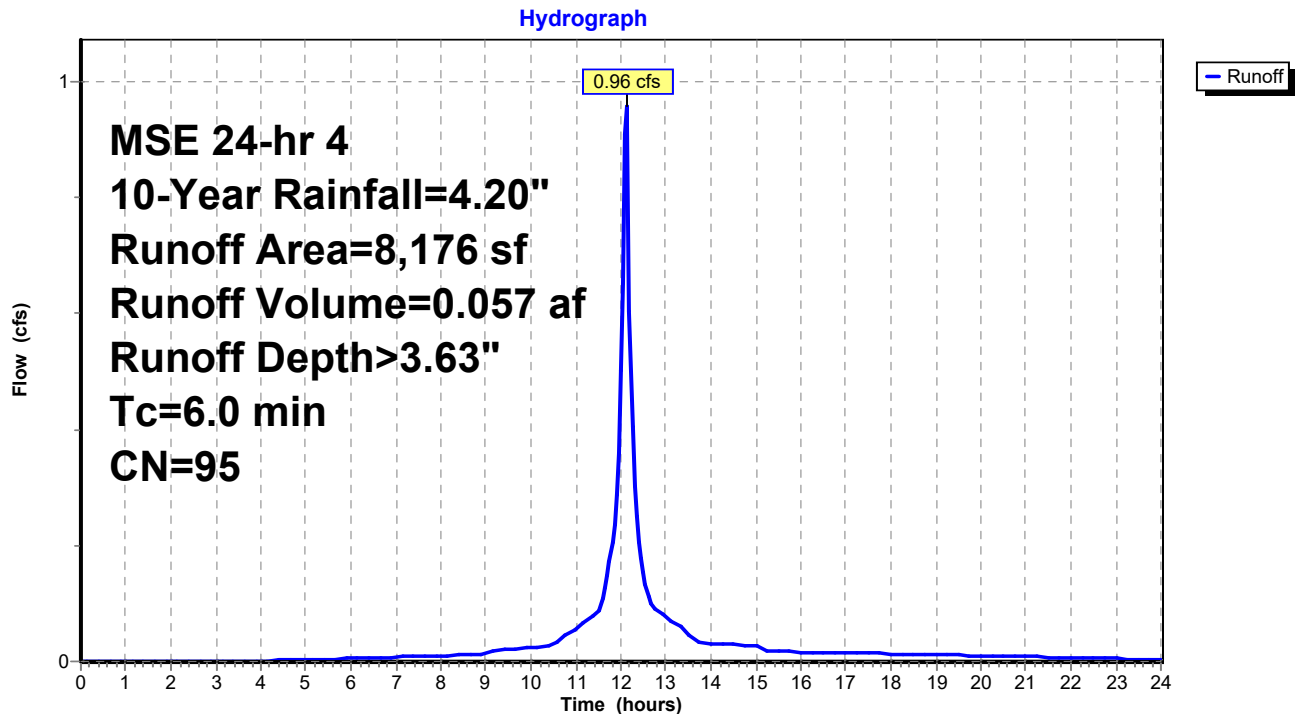
Summary for Subcatchment PR-D: PR - D

Runoff = 0.96 cfs @ 12.13 hrs, Volume= 0.057 af, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

Area (sf)	CN	Description
6,145	98	Paved parking, HSG D
* 626	98	Sidewalk
1,405	80	>75% Grass cover, Good, HSG D
8,176	95	Weighted Average
1,405		17.18% Pervious Area
6,771		82.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-D: PR - D

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MSE 24-hr 4 10-Year Rainfall=4.20"

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Summary for Subcatchment PR-E: PR - E

Runoff = 0.44 cfs @ 12.20 hrs, Volume= 0.029 af, Depth> 2.29"

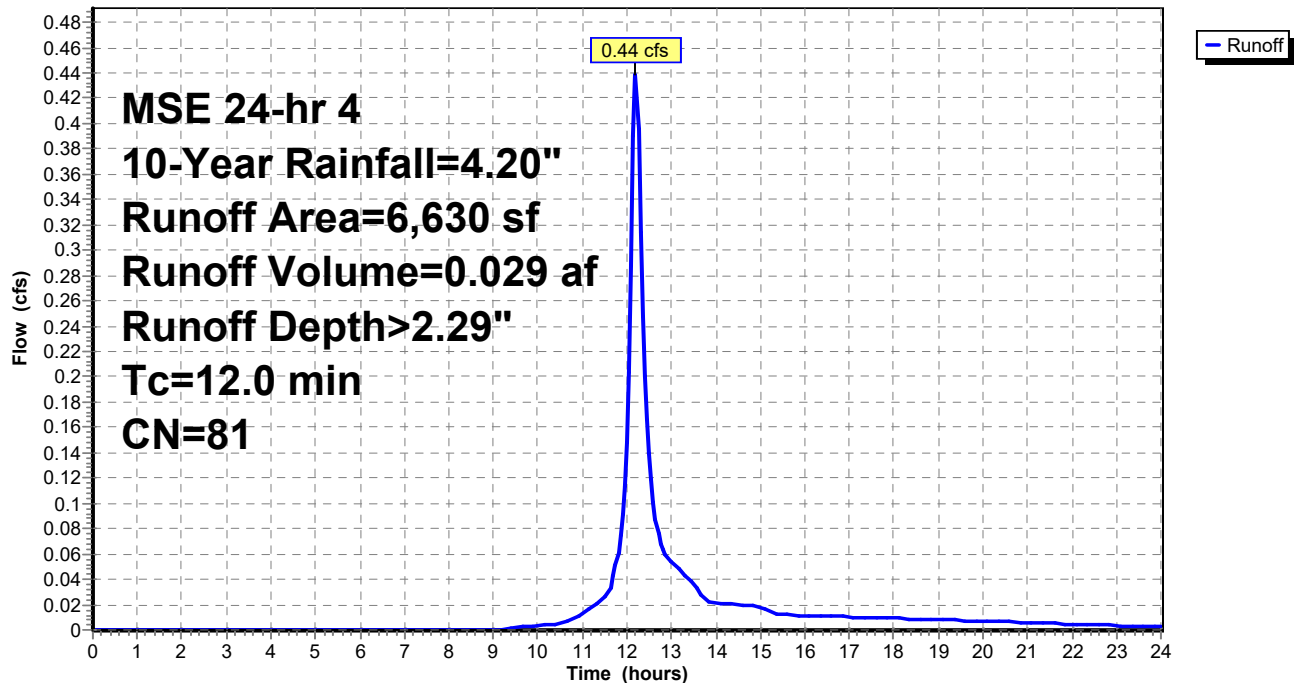
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
*	514	98	Patio
	6,116	80	>75% Grass cover, Good, HSG D
	6,630	81	Weighted Average
	6,116		92.25% Pervious Area
	514		7.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-E: PR - E

Hydrograph



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MSE 24-hr 4 10-Year Rainfall=4.20"

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Summary for Subcatchment PR-F: PR - F

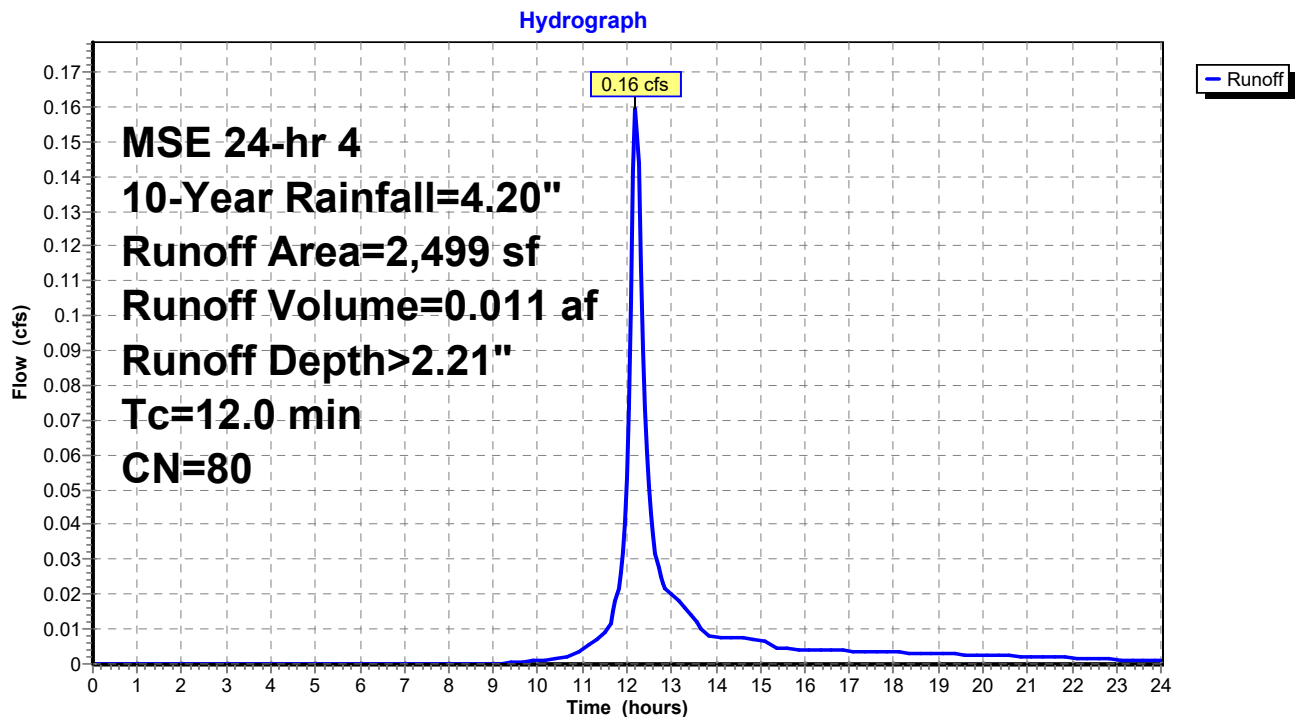
Runoff = 0.16 cfs @ 12.20 hrs, Volume= 0.011 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

	Area (sf)	CN	Description
*	25	98	Sidewalk
	2,474	80	>75% Grass cover, Good, HSG D
	2,499	80	Weighted Average
	2,474		99.00% Pervious Area
	25		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-F: PR - F



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MSE 24-hr 4 10-Year Rainfall=4.20"

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Summary for Subcatchment PR-G: PR - G

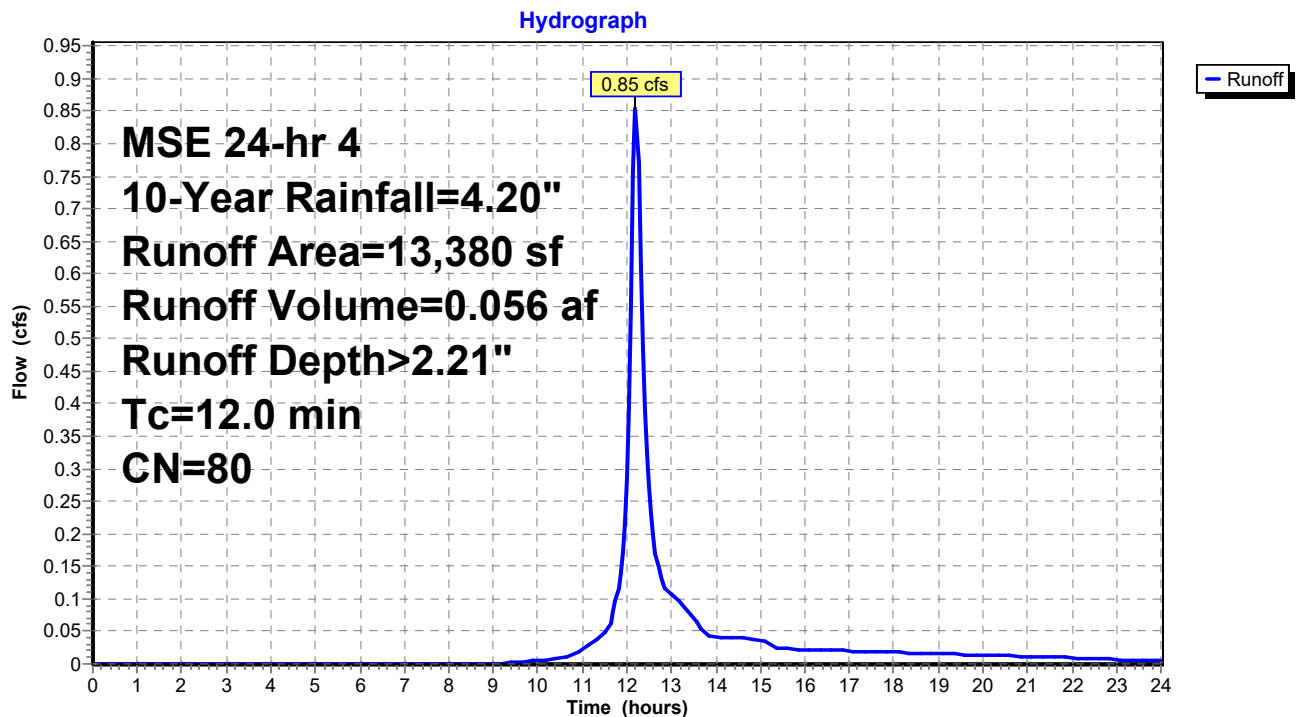
Runoff = 0.85 cfs @ 12.20 hrs, Volume= 0.056 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

Area (sf)	CN	Description
49	98	Paved parking, HSG D
13,331	80	>75% Grass cover, Good, HSG D
13,380	80	Weighted Average
13,331		99.63% Pervious Area
49		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-G: PR - G



Summary for Pond 1P: Bioretention Basin East

Inflow Area = 1.036 ac, 78.19% Impervious, Inflow Depth > 3.56" for 10-Year event
 Inflow = 4.93 cfs @ 12.13 hrs, Volume= 0.308 af
 Outflow = 2.19 cfs @ 12.27 hrs, Volume= 0.249 af, Atten= 56%, Lag= 8.2 min
 Discarded = 0.04 cfs @ 12.27 hrs, Volume= 0.041 af
 Primary = 2.15 cfs @ 12.27 hrs, Volume= 0.208 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 4.84' @ 12.27 hrs Surf.Area= 3,312 sf Storage= 5,430 cf

Plug-Flow detention time= 122.6 min calculated for 0.249 af (81% of inflow)
 Center-of-Mass det. time= 56.9 min (821.4 - 764.6)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	9,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	1,698	33.0	3	3
0.33	1,698	33.0	185	188
0.34	1,698	33.0	6	193
1.33	1,698	33.0	555	748
1.34	1,698	27.0	5	753
3.33	1,698	27.0	912	1,665
3.34	1,698	100.0	17	1,682
5.83	4,385	100.0	7,573	9,255

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	10.0" Round Culvert L= 73.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / -4.46' S= 0.1125 ' S Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	5.10'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.27 hrs HW=4.83' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.04 cfs)

Primary OutFlow Max=2.14 cfs @ 12.27 hrs HW=4.83' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 2.14 cfs @ 3.92 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=-0.01' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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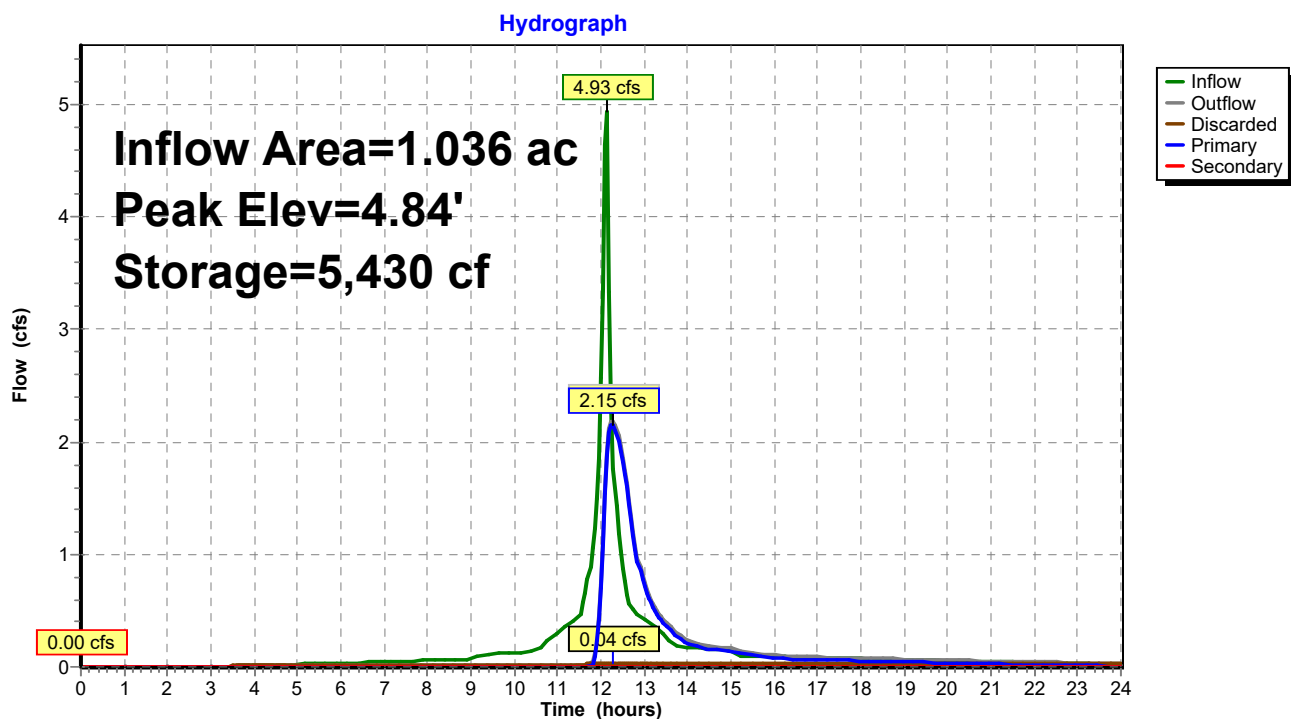
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MSE 24-hr 4 10-Year Rainfall=4.20"

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Pond 1P: Bioretention Basin East



Summary for Pond 2P: Bioretention Basin West

Inflow Area = 0.245 ac, 63.66% Impervious, Inflow Depth > 3.29" for 10-Year event
 Inflow = 1.09 cfs @ 12.13 hrs, Volume= 0.067 af
 Outflow = 0.35 cfs @ 12.34 hrs, Volume= 0.053 af, Atten= 67%, Lag= 12.7 min
 Discarded = 0.01 cfs @ 12.34 hrs, Volume= 0.010 af
 Primary = 0.34 cfs @ 12.34 hrs, Volume= 0.043 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 4.58' @ 12.34 hrs Surf.Area= 990 sf Storage= 1,276 cf

Plug-Flow detention time= 126.5 min calculated for 0.053 af (79% of inflow)
 Center-of-Mass det. time= 57.4 min (833.8 - 776.4)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	2,147 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	410	33.0	1	1
0.33	410	33.0	45	45
0.34	410	33.0	1	47
1.33	410	33.0	134	181
1.34	410	27.0	1	182
3.33	410	27.0	220	402
3.34	410	100.0	4	406
5.33	1,340	100.0	1,741	2,147

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	4.0" Round Culvert L= 21.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / 2.70' S= 0.0500 '/ Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Secondary	5.00'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.34 hrs HW=4.58' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.34 cfs @ 12.34 hrs HW=4.58' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 0.34 cfs @ 3.93 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=-0.01' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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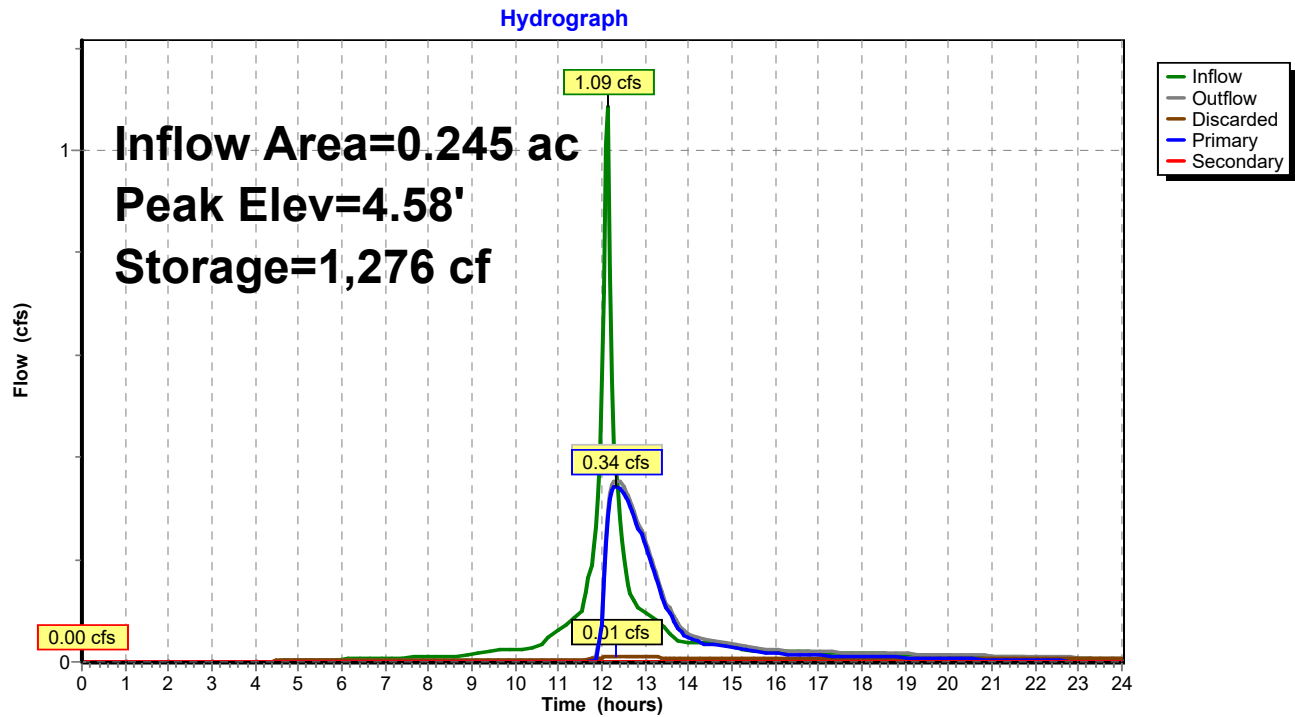
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Pond 2P: Bioretention Basin West



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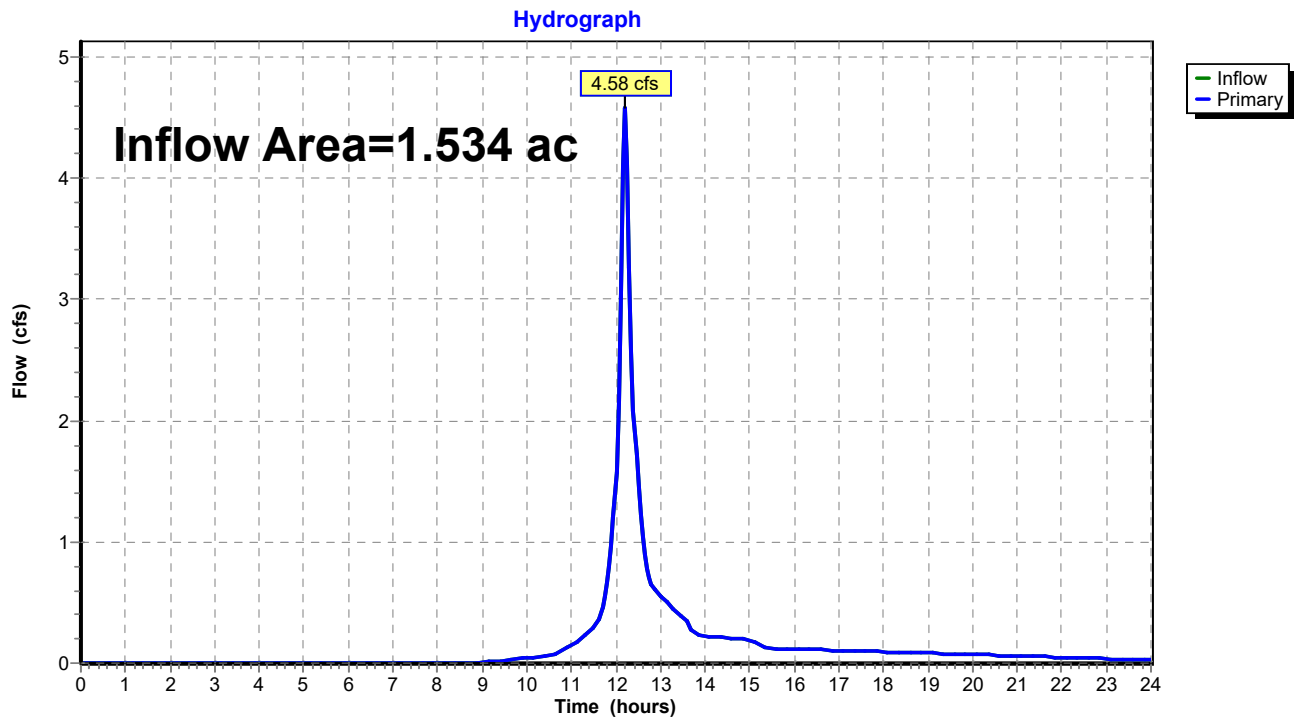
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Summary for Link 1L: EX - OFF-SITE

Inflow Area = 1.534 ac, 13.41% Impervious, Inflow Depth > 2.37" for 10-Year event
Inflow = 4.58 cfs @ 12.20 hrs, Volume= 0.303 af
Primary = 4.58 cfs @ 12.20 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: EX - OFF-SITE



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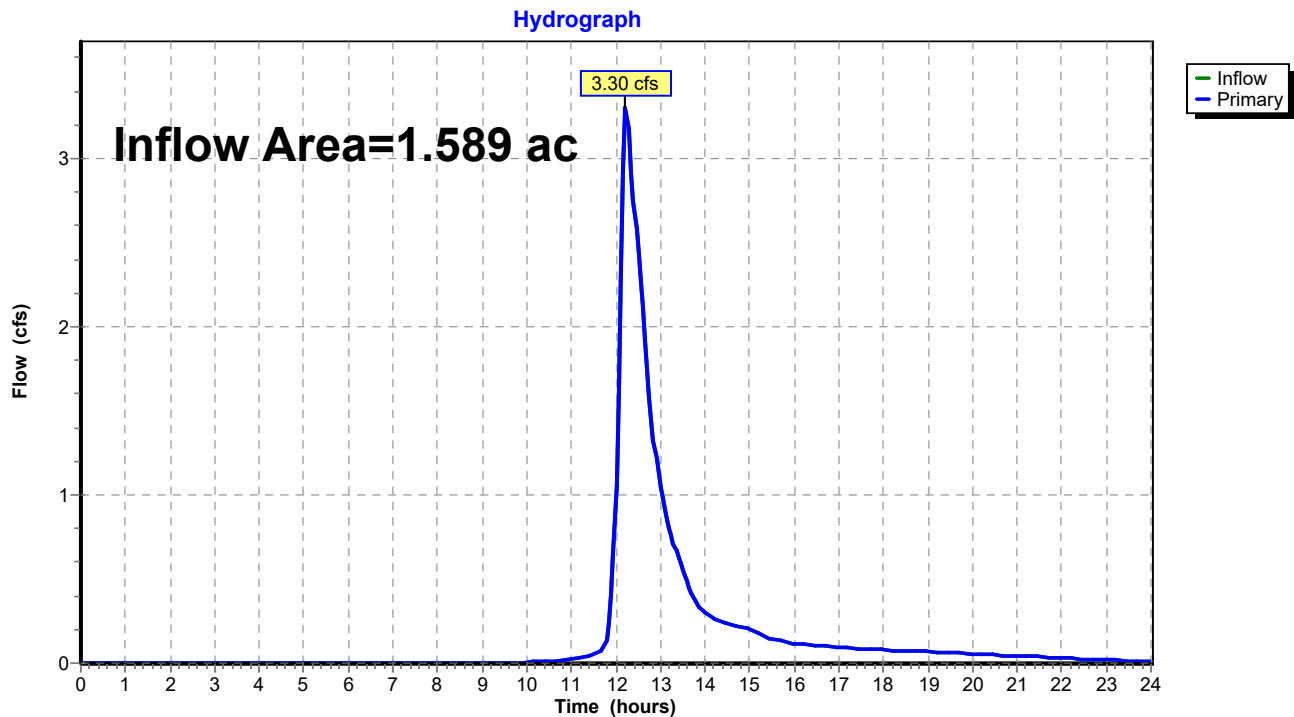
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Summary for Link 2L: PR - OFF-SITE

Inflow Area = 1.589 ac, 60.90% Impervious, Inflow Depth > 2.32" for 10-Year event
Inflow = 3.30 cfs @ 12.22 hrs, Volume= 0.307 af
Primary = 3.30 cfs @ 12.22 hrs, Volume= 0.307 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: PR - OFF-SITE



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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-A: EX - A Runoff Area=66,842 sf 13.41% Impervious Runoff Depth>4.59"
Flow Length=210' Slope=0.0600 '/' Tc=12.0 min CN=82 Runoff=8.70 cfs 0.587 af

Subcatchment PR-A: PR - A Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>6.42"
Tc=6.0 min CN=98 Runoff=1.70 cfs 0.108 af

Subcatchment PR-B: PR - B Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>6.42"
Tc=6.0 min CN=98 Runoff=1.70 cfs 0.108 af

Subcatchment PR-C: PR - C Runoff Area=20,879 sf 82.14% Impervious Runoff Depth>6.07"
Tc=6.0 min CN=95 Runoff=3.97 cfs 0.242 af

Subcatchment PR-D: PR - D Runoff Area=8,176 sf 82.82% Impervious Runoff Depth>6.07"
Tc=6.0 min CN=95 Runoff=1.55 cfs 0.095 af

Subcatchment PR-E: PR - E Runoff Area=6,630 sf 7.75% Impervious Runoff Depth>4.49"
Tc=12.0 min CN=81 Runoff=0.85 cfs 0.057 af

Subcatchment PR-F: PR - F Runoff Area=2,499 sf 1.00% Impervious Runoff Depth>4.38"
Tc=12.0 min CN=80 Runoff=0.31 cfs 0.021 af

Subcatchment PR-G: PR - G Runoff Area=13,380 sf 0.37% Impervious Runoff Depth>4.38"
Tc=12.0 min CN=80 Runoff=1.67 cfs 0.112 af

Pond 1P: Bioretention Basin East Peak Elev=5.33' Storage=7,190 cf Inflow=8.07 cfs 0.516 af
Discarded=0.04 cfs 0.045 af Primary=2.83 cfs 0.377 af Secondary=2.76 cfs 0.034 af Outflow=5.64 cfs 0.456 af

Pond 2P: Bioretention Basin West Peak Elev=5.09' Storage=1,834 cf Inflow=1.81 cfs 0.116 af
Discarded=0.01 cfs 0.012 af Primary=0.45 cfs 0.082 af Secondary=0.64 cfs 0.008 af Outflow=1.11 cfs 0.101 af

Link 1L: EX - OFF-SITE Inflow=8.70 cfs 0.587 af
Primary=8.70 cfs 0.587 af

Link 2L: PR - OFF-SITE Inflow=8.31 cfs 0.613 af
Primary=8.31 cfs 0.613 af

Total Runoff Area = 3.123 ac Runoff Volume = 1.331 af Average Runoff Depth = 5.11"
62.43% Pervious = 1.950 ac 37.57% Impervious = 1.173 ac

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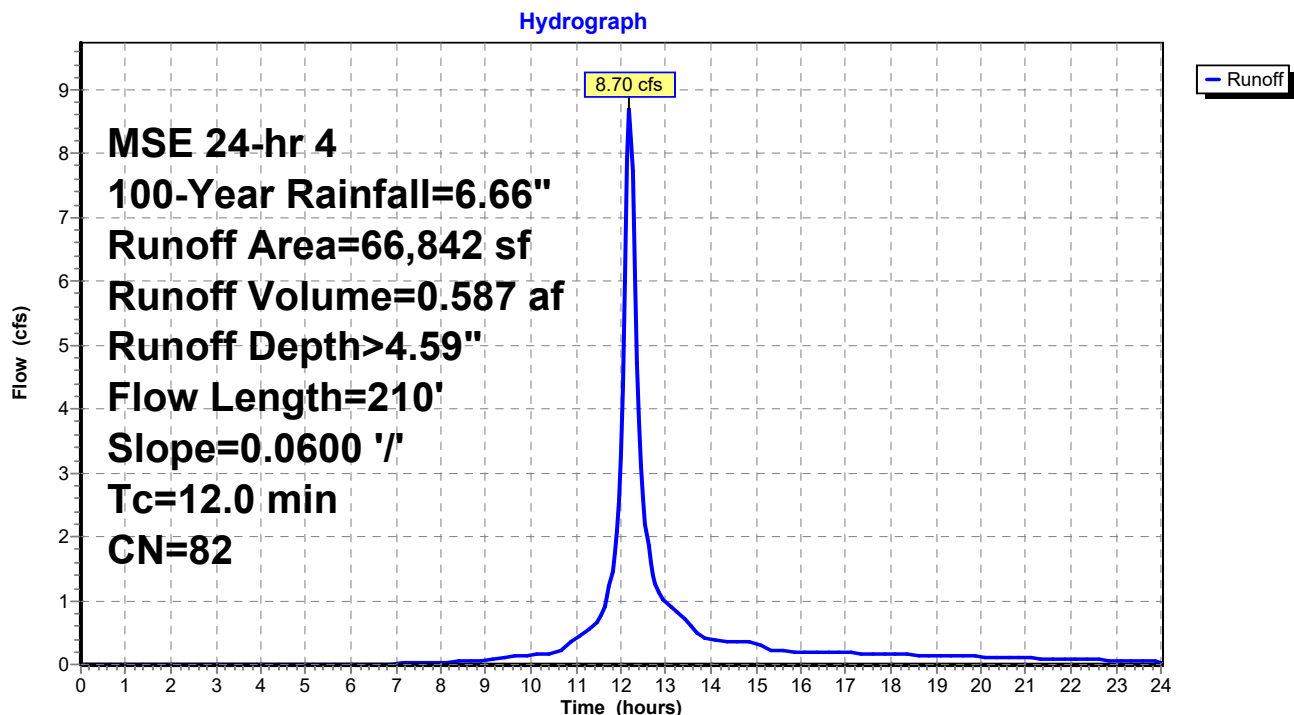
Summary for Subcatchment EX-A: EX - A

Runoff = 8.70 cfs @ 12.20 hrs, Volume= 0.587 af, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
8,964	98	Paved parking, HSG D
57,878	80	>75% Grass cover, Good, HSG D
66,842	82	Weighted Average
57,878		86.59% Pervious Area
8,964		13.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	210	0.0600	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 2.90"

Subcatchment EX-A: EX - A

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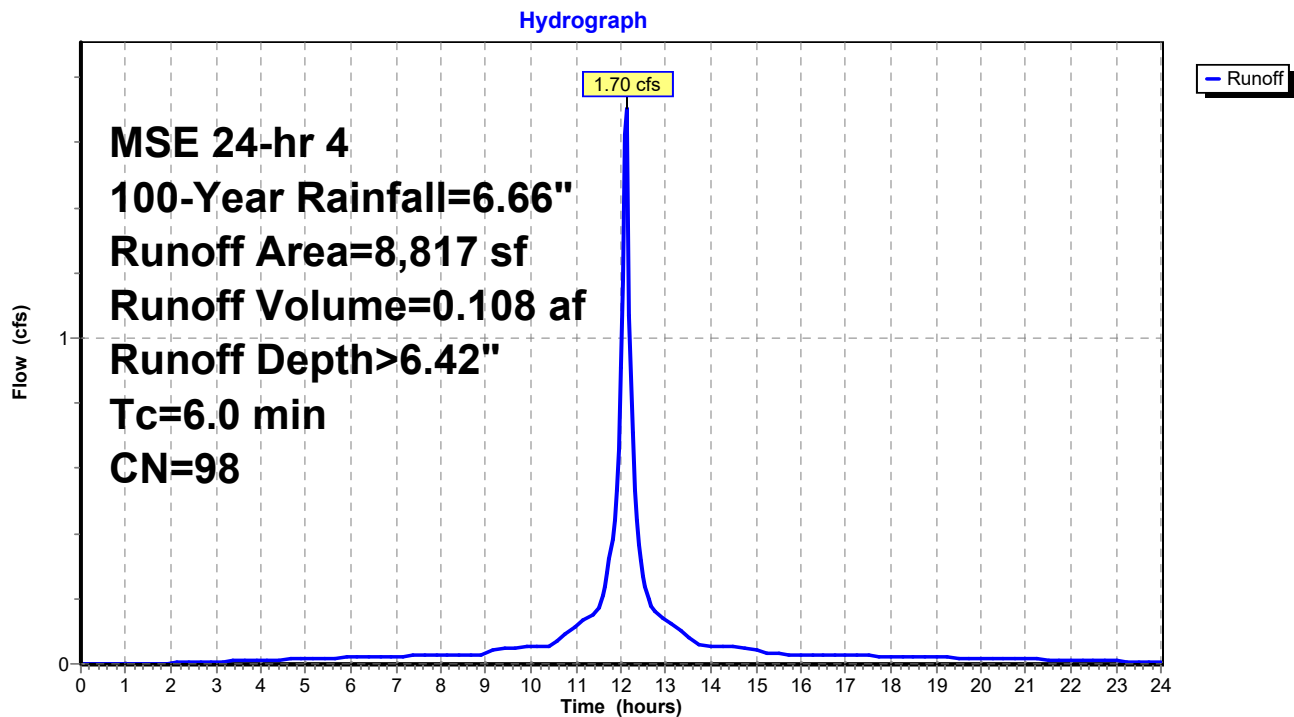
Summary for Subcatchment PR-A: PR - A

Runoff = 1.70 cfs @ 12.13 hrs, Volume= 0.108 af, Depth> 6.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-A: PR - A

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MSE 24-hr 4 100-Year Rainfall=6.66"

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Summary for Subcatchment PR-B: PR - B

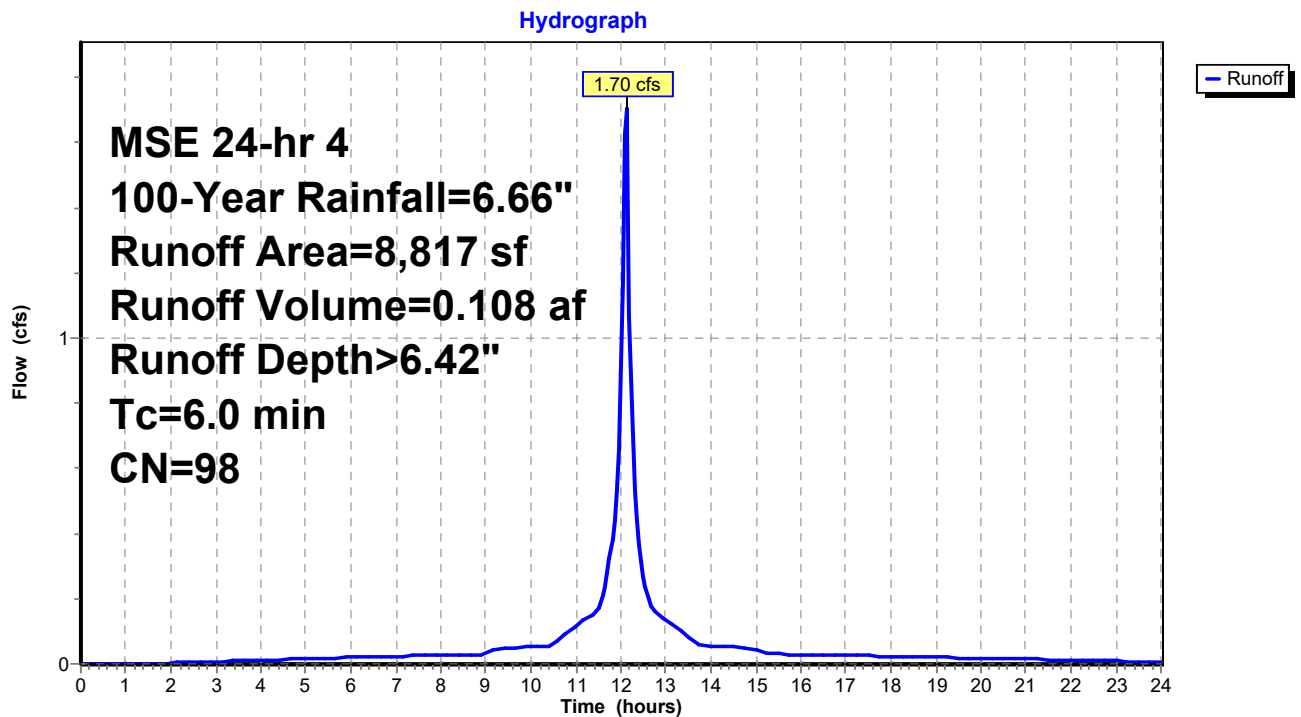
Runoff = 1.70 cfs @ 12.13 hrs, Volume= 0.108 af, Depth> 6.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-B: PR - B



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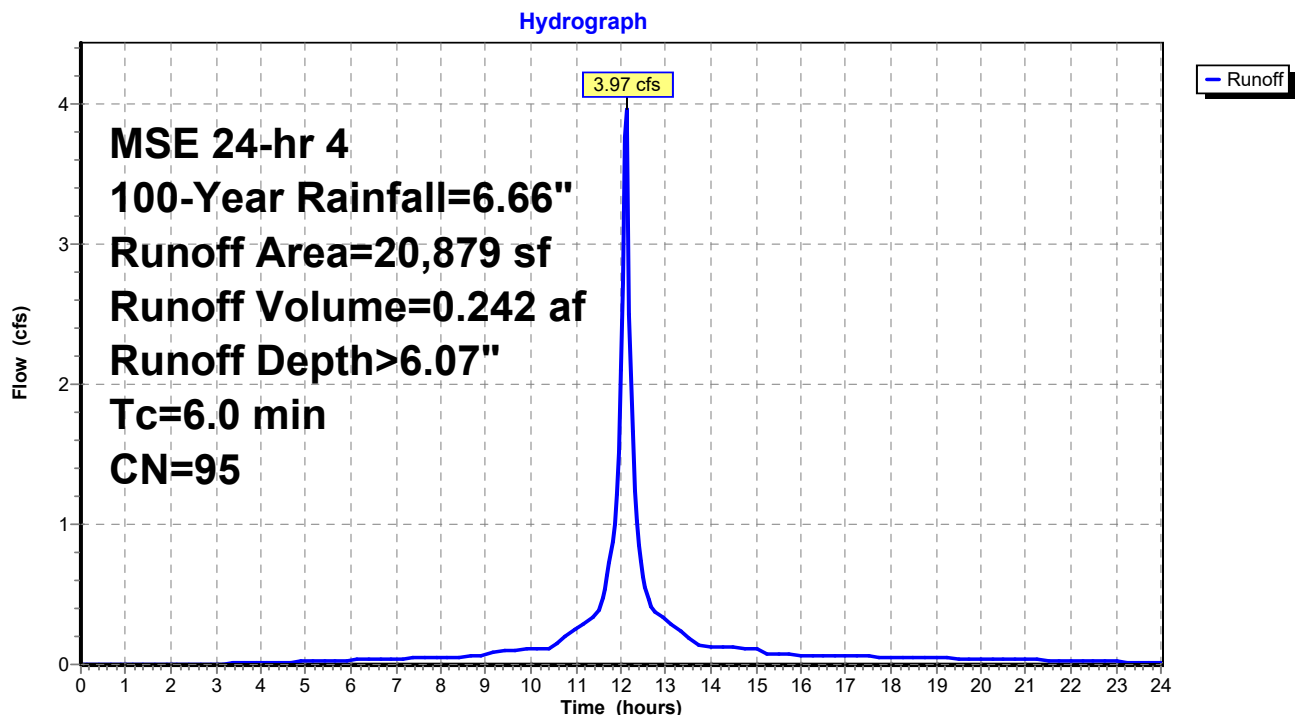
Summary for Subcatchment PR-C: PR - C

Runoff = 3.97 cfs @ 12.13 hrs, Volume= 0.242 af, Depth> 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG D
* 2,151	98	Sidewalk
3,728	80	>75% Grass cover, Good, HSG D
20,879	95	Weighted Average
3,728		17.86% Pervious Area
17,151		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-C: PR - C

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MSE 24-hr 4 100-Year Rainfall=6.66"

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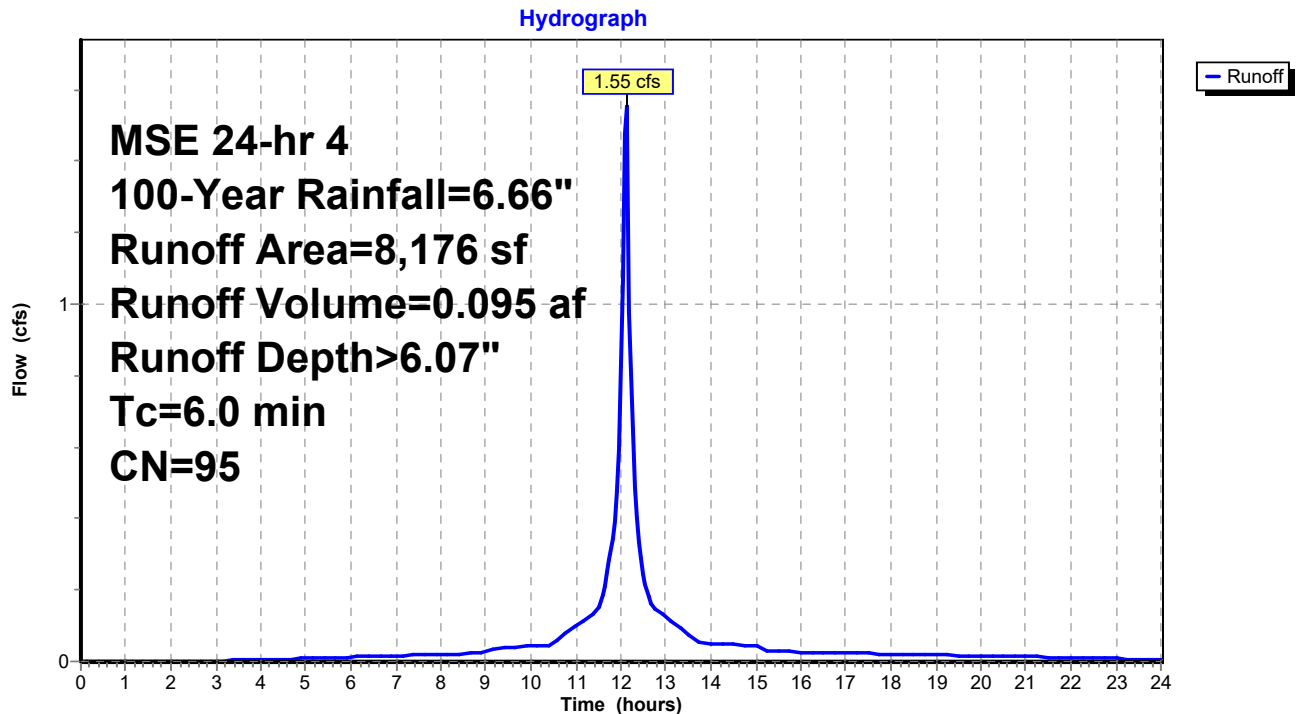
Summary for Subcatchment PR-D: PR - D

Runoff = 1.55 cfs @ 12.13 hrs, Volume= 0.095 af, Depth> 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
6,145	98	Paved parking, HSG D
* 626	98	Sidewalk
1,405	80	>75% Grass cover, Good, HSG D
8,176	95	Weighted Average
1,405		17.18% Pervious Area
6,771		82.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-D: PR - D

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Summary for Subcatchment PR-E: PR - E

Runoff = 0.85 cfs @ 12.20 hrs, Volume= 0.057 af, Depth> 4.49"

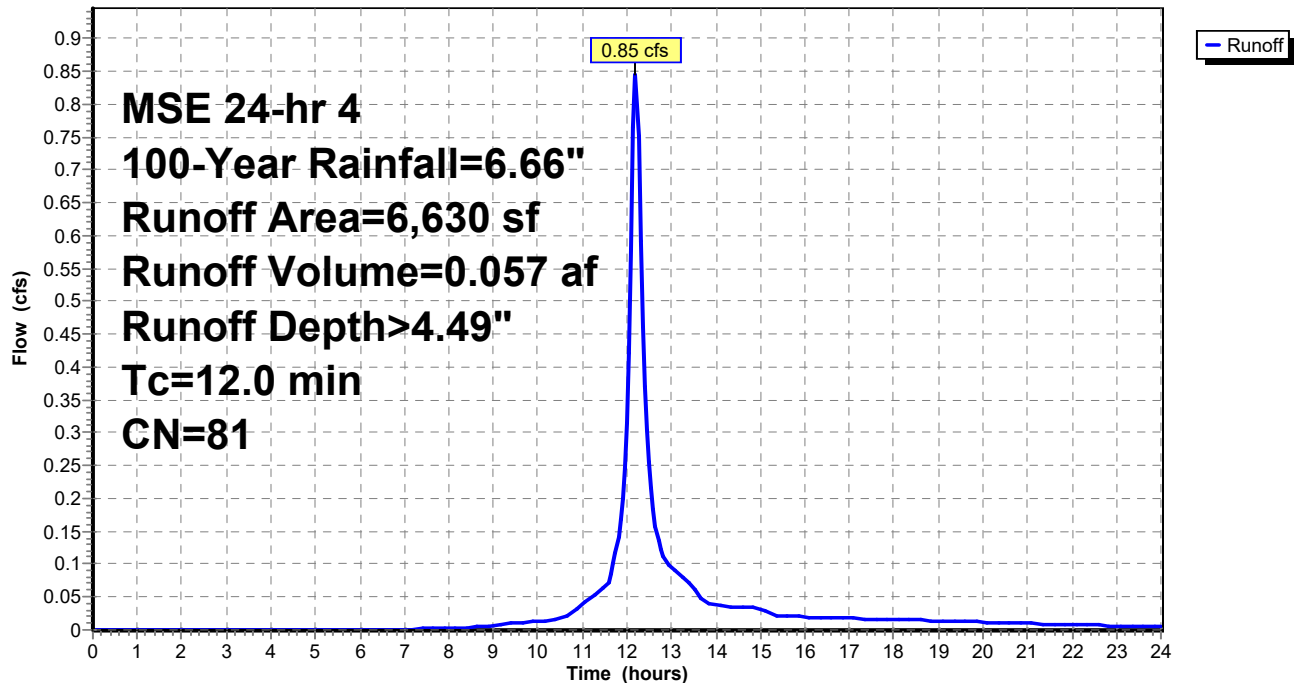
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
* 514	98	Patio
6,116	80	>75% Grass cover, Good, HSG D
6,630	81	Weighted Average
6,116		92.25% Pervious Area
514		7.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-E: PR - E

Hydrograph



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MSE 24-hr 4 100-Year Rainfall=6.66"

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Summary for Subcatchment PR-F: PR - F

Runoff = 0.31 cfs @ 12.20 hrs, Volume= 0.021 af, Depth> 4.38"

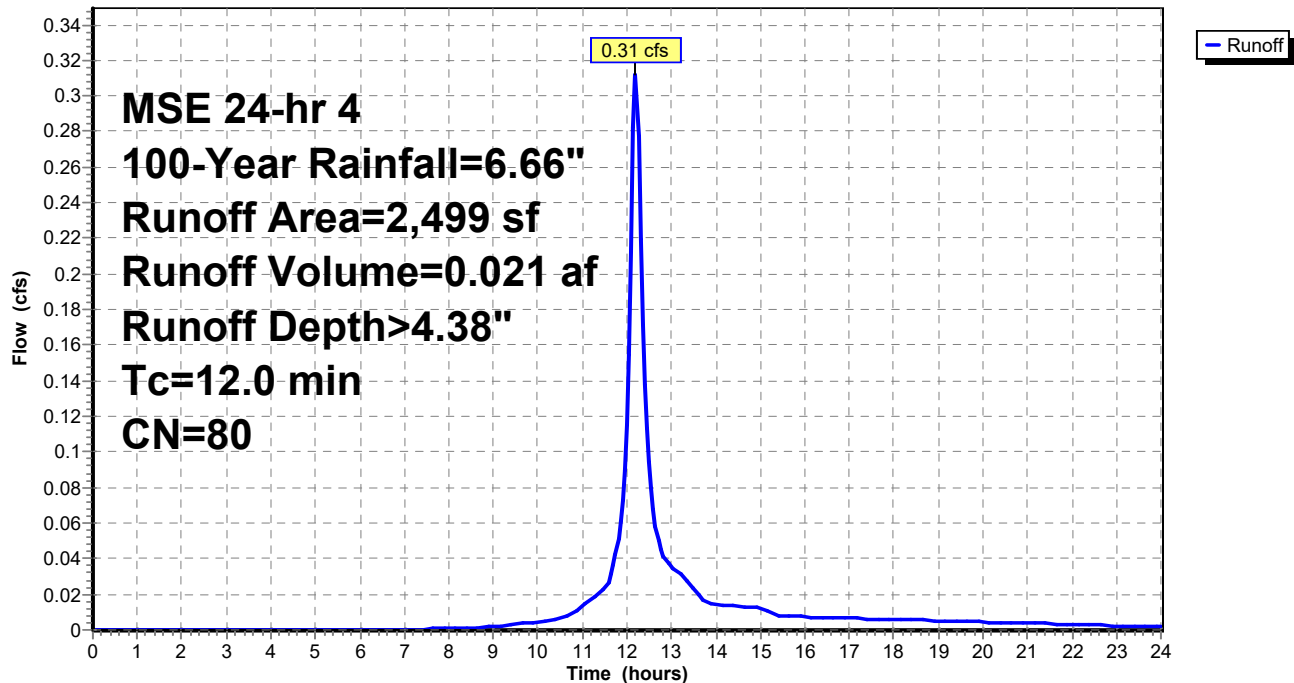
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
* 25	98	Sidewalk
2,474	80	>75% Grass cover, Good, HSG D
2,499	80	Weighted Average
2,474		99.00% Pervious Area
25		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-F: PR - F

Hydrograph



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Summary for Subcatchment PR-G: PR - G

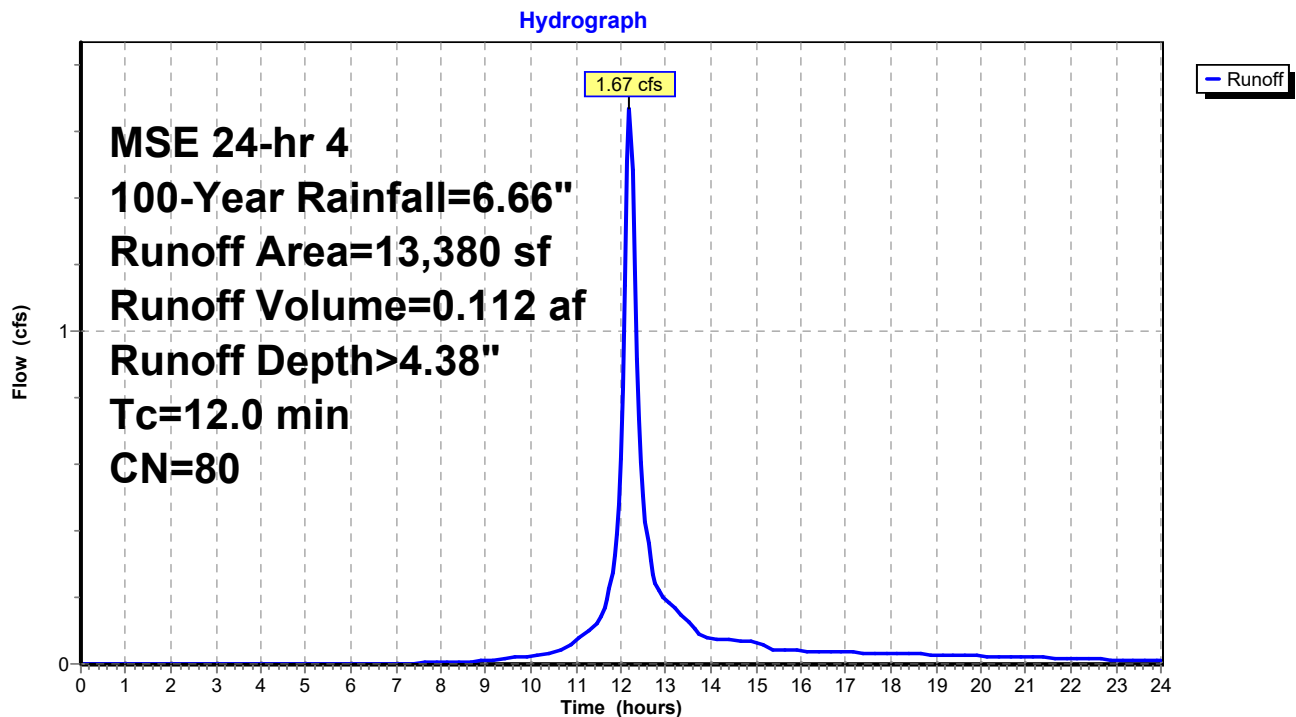
Runoff = 1.67 cfs @ 12.20 hrs, Volume= 0.112 af, Depth> 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
49	98	Paved parking, HSG D
13,331	80	>75% Grass cover, Good, HSG D
13,380	80	Weighted Average
13,331		99.63% Pervious Area
49		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-G: PR - G



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Summary for Pond 1P: Bioretention Basin East

Inflow Area = 1.036 ac, 78.19% Impervious, Inflow Depth > 5.97" for 100-Year event
 Inflow = 8.07 cfs @ 12.13 hrs, Volume= 0.516 af
 Outflow = 5.64 cfs @ 12.21 hrs, Volume= 0.456 af, Atten= 30%, Lag= 4.9 min
 Discarded = 0.04 cfs @ 12.21 hrs, Volume= 0.045 af
 Primary = 2.83 cfs @ 12.21 hrs, Volume= 0.377 af
 Secondary = 2.76 cfs @ 12.21 hrs, Volume= 0.034 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 5.33' @ 12.21 hrs Surf.Area= 3,843 sf Storage= 7,190 cf

Plug-Flow detention time= 100.2 min calculated for 0.455 af (88% of inflow)
 Center-of-Mass det. time= 50.9 min (807.2 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	9,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	1,698	33.0	3	3
0.33	1,698	33.0	185	188
0.34	1,698	33.0	6	193
1.33	1,698	33.0	555	748
1.34	1,698	27.0	5	753
3.33	1,698	27.0	912	1,665
3.34	1,698	100.0	17	1,682
5.83	4,385	100.0	7,573	9,255

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	10.0" Round Culvert L= 73.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / -4.46' S= 0.1125 ' S Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	5.10'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.04 cfs @ 12.21 hrs HW=5.32' (Free Discharge)↑**3=Exfiltration** (Exfiltration Controls 0.04 cfs)**Primary OutFlow** Max=2.82 cfs @ 12.21 hrs HW=5.32' TW=0.00' (Dynamic Tailwater)↑**1=Culvert** (Inlet Controls 2.82 cfs @ 5.16 fps)**Secondary OutFlow** Max=2.58 cfs @ 12.21 hrs HW=5.32' TW=0.00' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir** (Weir Controls 2.58 cfs @ 1.19 fps)

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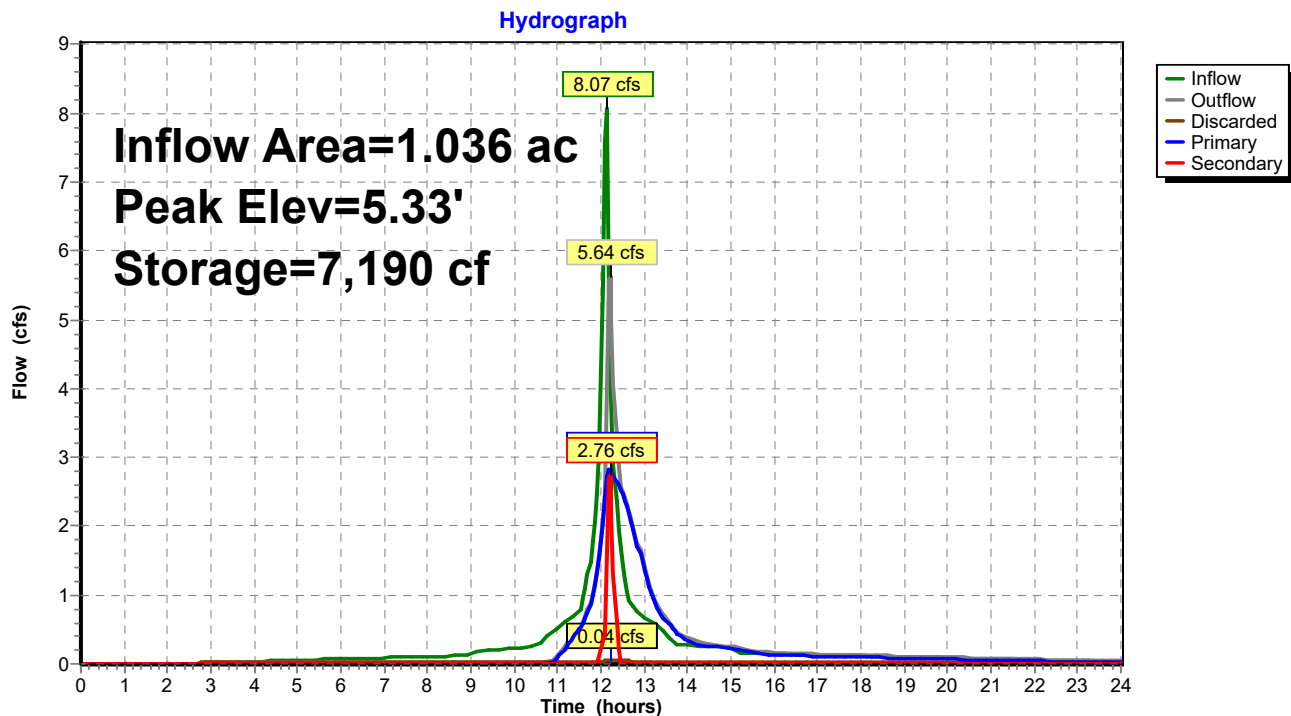
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Pond 1P: Bioretention Basin East



Summary for Pond 2P: Bioretention Basin West

Inflow Area = 0.245 ac, 63.66% Impervious, Inflow Depth > 5.67" for 100-Year event
 Inflow = 1.81 cfs @ 12.13 hrs, Volume= 0.116 af
 Outflow = 1.11 cfs @ 12.24 hrs, Volume= 0.101 af, Atten= 39%, Lag= 6.3 min
 Discarded = 0.01 cfs @ 12.24 hrs, Volume= 0.012 af
 Primary = 0.45 cfs @ 12.24 hrs, Volume= 0.082 af
 Secondary = 0.64 cfs @ 12.24 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 5.09' @ 12.24 hrs Surf.Area= 1,226 sf Storage= 1,834 cf

Plug-Flow detention time= 105.4 min calculated for 0.101 af (87% of inflow)
 Center-of-Mass det. time= 53.2 min (819.5 - 766.3)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	2,147 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	410	33.0	1	1
0.33	410	33.0	45	45
0.34	410	33.0	1	47
1.33	410	33.0	134	181
1.34	410	27.0	1	182
3.33	410	27.0	220	402
3.34	410	100.0	4	406
5.33	1,340	100.0	1,741	2,147

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	4.0" Round Culvert L= 21.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / 2.70' S= 0.0500 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Secondary	5.00'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.24 hrs HW=5.08' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.45 cfs @ 12.24 hrs HW=5.08' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 0.45 cfs @ 5.20 fps)

Secondary OutFlow Max=0.61 cfs @ 12.24 hrs HW=5.08' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.61 cfs @ 0.73 fps)

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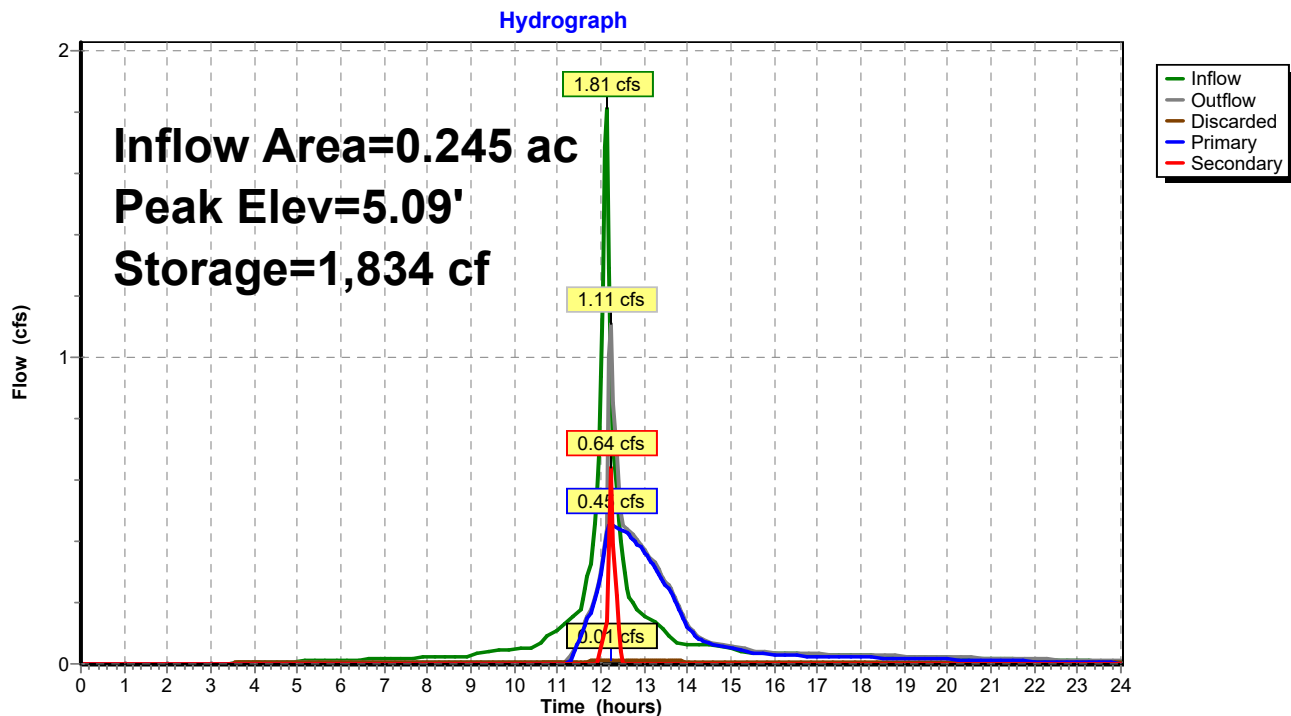
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Pond 2P: Bioretention Basin West



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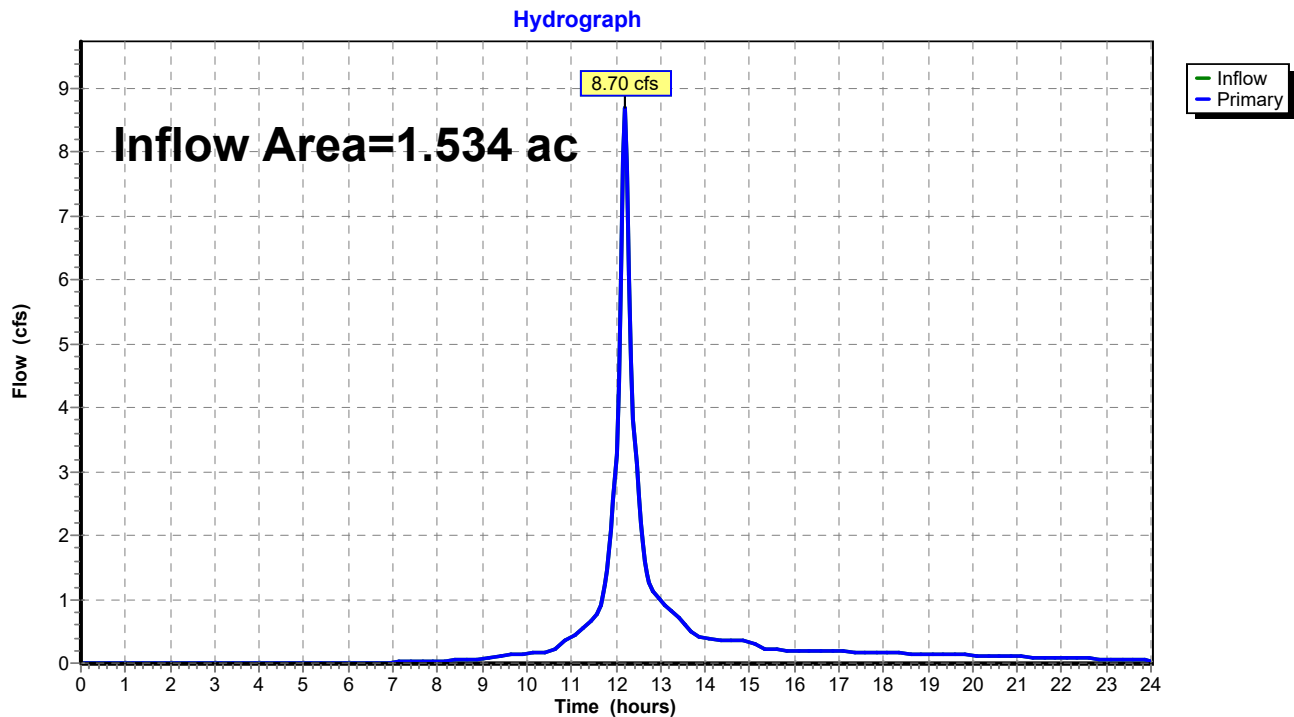
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Summary for Link 1L: EX - OFF-SITE

Inflow Area = 1.534 ac, 13.41% Impervious, Inflow Depth > 4.59" for 100-Year event
Inflow = 8.70 cfs @ 12.20 hrs, Volume= 0.587 af
Primary = 8.70 cfs @ 12.20 hrs, Volume= 0.587 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: EX - OFF-SITE



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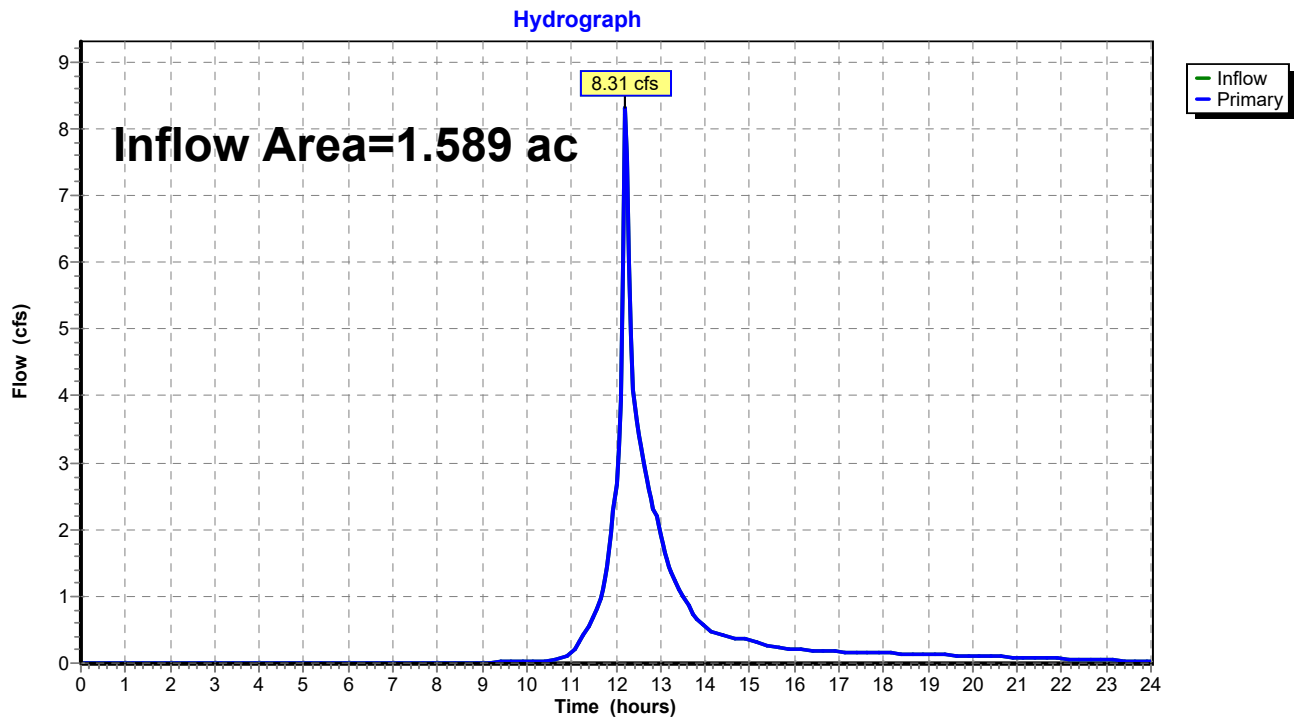
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Summary for Link 2L: PR - OFF-SITE

Inflow Area = 1.589 ac, 60.90% Impervious, Inflow Depth > 4.63" for 100-Year event
Inflow = 8.31 cfs @ 12.21 hrs, Volume= 0.613 af
Primary = 8.31 cfs @ 12.21 hrs, Volume= 0.613 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: PR - OFF-SITE



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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-A: EX - A Runoff Area=66,842 sf 13.41% Impervious Runoff Depth>5.41"
Flow Length=210' Slope=0.0600 '/' Tc=12.0 min CN=82 Runoff=10.16 cfs 0.692 af

Subcatchment PR-A: PR - A Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>7.29"
Tc=6.0 min CN=98 Runoff=1.92 cfs 0.123 af

Subcatchment PR-B: PR - B Runoff Area=8,817 sf 100.00% Impervious Runoff Depth>7.29"
Tc=6.0 min CN=98 Runoff=1.92 cfs 0.123 af

Subcatchment PR-C: PR - C Runoff Area=20,879 sf 82.14% Impervious Runoff Depth>6.93"
Tc=6.0 min CN=95 Runoff=4.50 cfs 0.277 af

Subcatchment PR-D: PR - D Runoff Area=8,176 sf 82.82% Impervious Runoff Depth>6.93"
Tc=6.0 min CN=95 Runoff=1.76 cfs 0.108 af

Subcatchment PR-E: PR - E Runoff Area=6,630 sf 7.75% Impervious Runoff Depth>5.30"
Tc=12.0 min CN=81 Runoff=0.99 cfs 0.067 af

Subcatchment PR-F: PR - F Runoff Area=2,499 sf 1.00% Impervious Runoff Depth>5.18"
Tc=12.0 min CN=80 Runoff=0.37 cfs 0.025 af

Subcatchment PR-G: PR - G Runoff Area=13,380 sf 0.37% Impervious Runoff Depth>5.18"
Tc=12.0 min CN=80 Runoff=1.96 cfs 0.133 af

Pond 1P: Bioretention Basin East Peak Elev=5.40' Storage=7,459 cf Inflow=9.17 cfs 0.590 af
Discarded=0.05 cfs 0.046 af Primary=2.91 cfs 0.426 af Secondary=4.17 cfs 0.059 af Outflow=7.13 cfs 0.530 af

Pond 2P: Bioretention Basin West Peak Elev=5.13' Storage=1,894 cf Inflow=2.07 cfs 0.133 af
Discarded=0.01 cfs 0.012 af Primary=0.46 cfs 0.091 af Secondary=1.25 cfs 0.015 af Outflow=1.72 cfs 0.119 af

Link 1L: EX - OFF-SITE Inflow=10.16 cfs 0.692 af
Primary=10.16 cfs 0.692 af

Link 2L: PR - OFF-SITE Inflow=10.75 cfs 0.723 af
Primary=10.75 cfs 0.723 af

Total Runoff Area = 3.123 ac Runoff Volume = 1.548 af Average Runoff Depth = 5.95"
62.43% Pervious = 1.950 ac 37.57% Impervious = 1.173 ac

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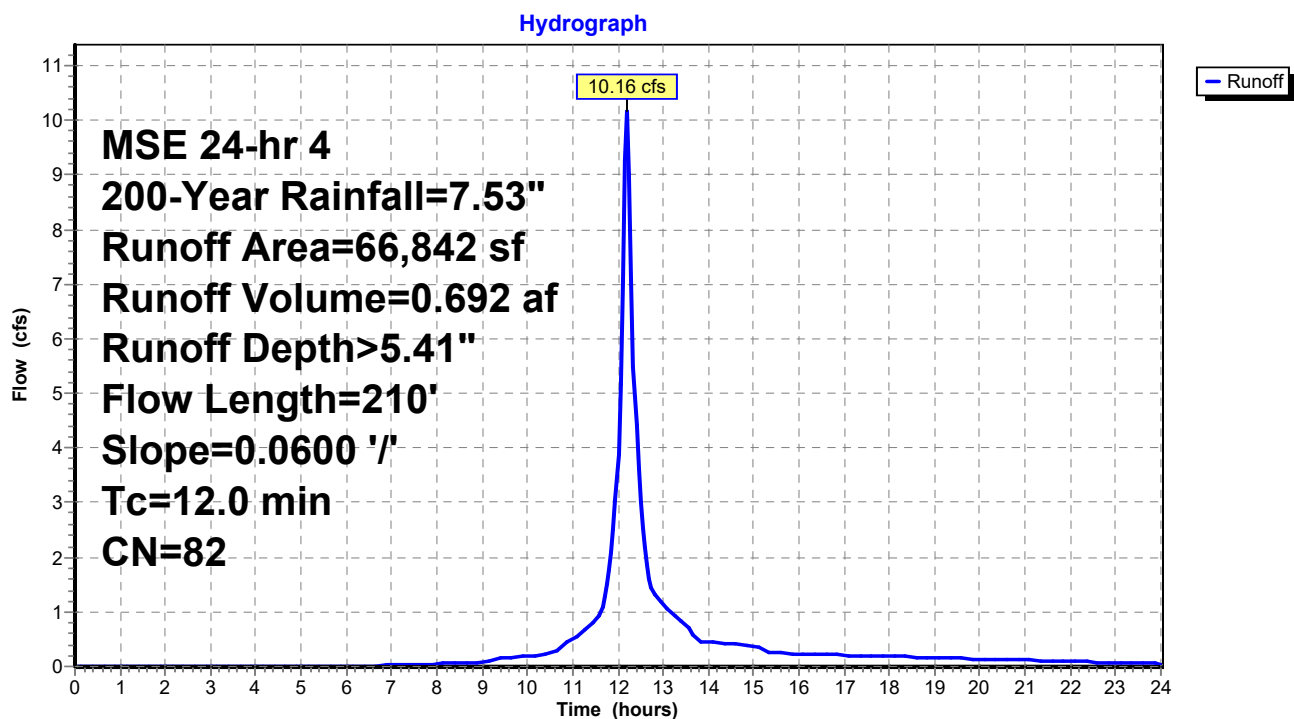
Summary for Subcatchment EX-A: EX - A

Runoff = 10.16 cfs @ 12.20 hrs, Volume= 0.692 af, Depth> 5.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
8,964	98	Paved parking, HSG D
57,878	80	>75% Grass cover, Good, HSG D
66,842	82	Weighted Average
57,878		86.59% Pervious Area
8,964		13.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	210	0.0600	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 2.90"

Subcatchment EX-A: EX - A

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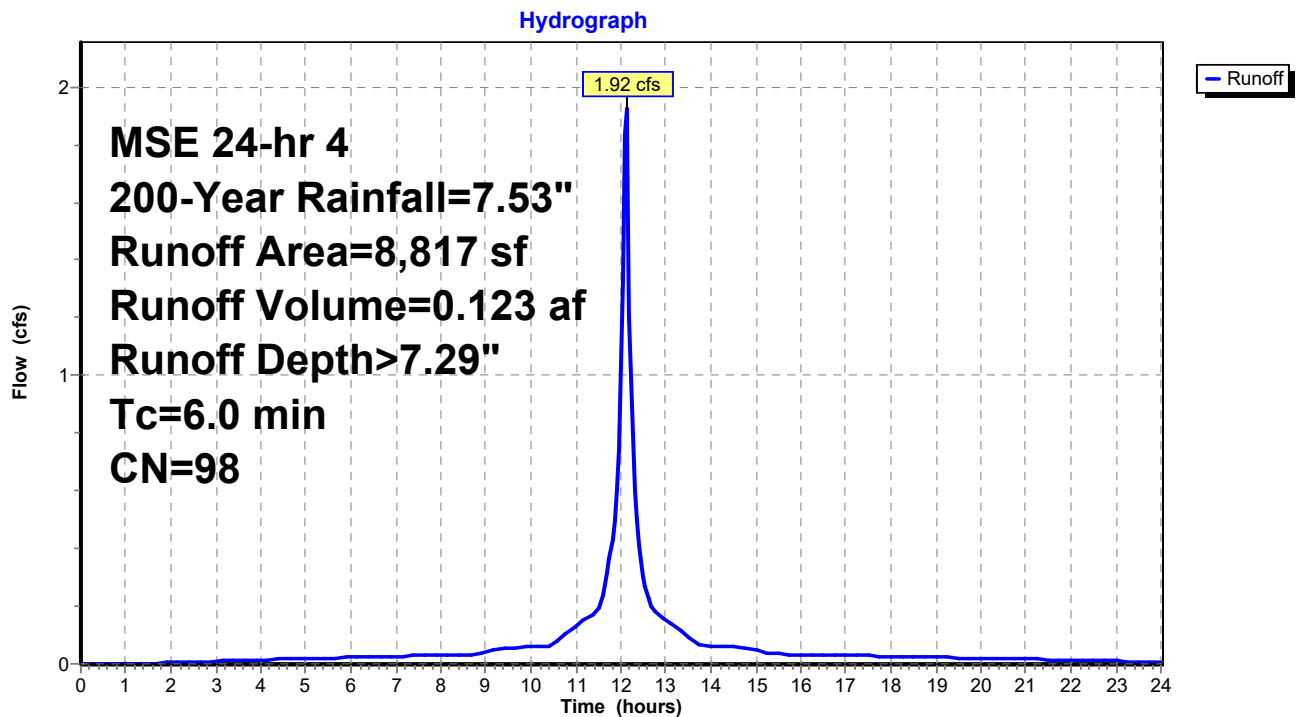
Summary for Subcatchment PR-A: PR - A

Runoff = 1.92 cfs @ 12.13 hrs, Volume= 0.123 af, Depth> 7.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-A: PR - A

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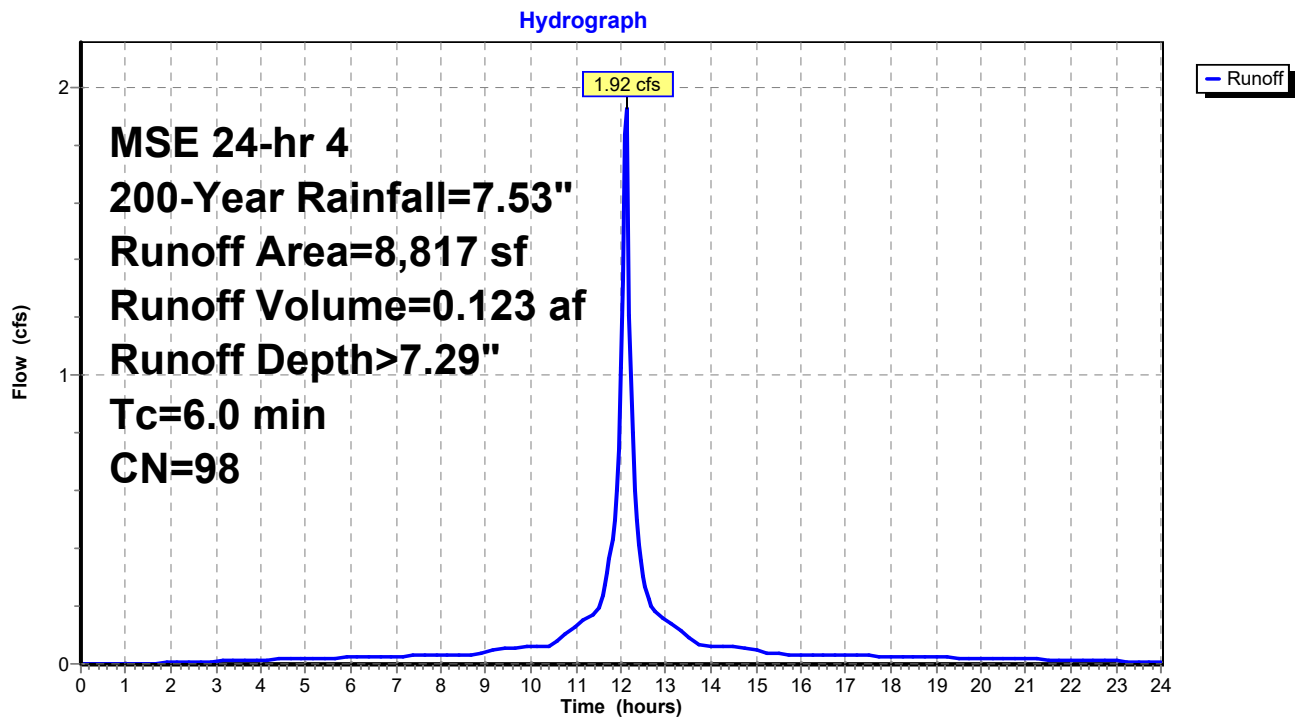
Summary for Subcatchment PR-B: PR - B

Runoff = 1.92 cfs @ 12.13 hrs, Volume= 0.123 af, Depth> 7.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
8,817	98	Unconnected roofs, HSG D
8,817		100.00% Impervious Area
8,817		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-B: PR - B

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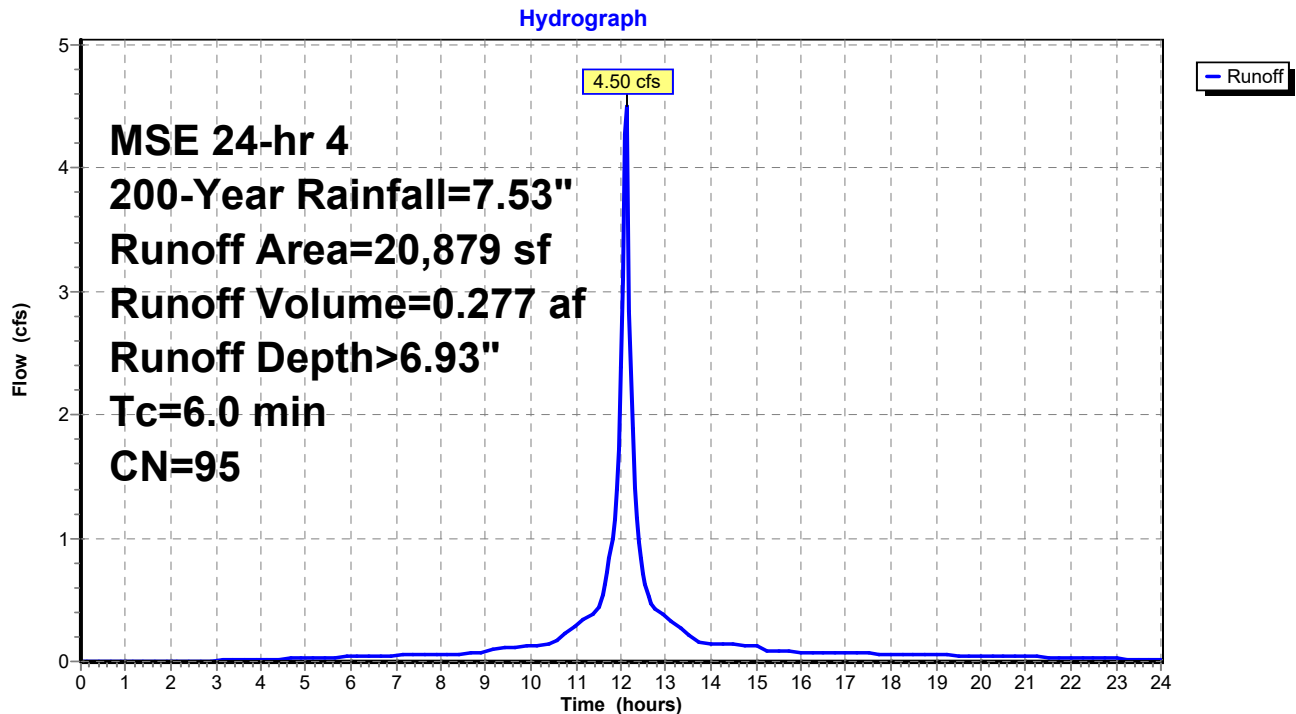
Summary for Subcatchment PR-C: PR - C

Runoff = 4.50 cfs @ 12.13 hrs, Volume= 0.277 af, Depth> 6.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
15,000	98	Paved parking, HSG D
* 2,151	98	Sidewalk
3,728	80	>75% Grass cover, Good, HSG D
20,879	95	Weighted Average
3,728		17.86% Pervious Area
17,151		82.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-C: PR - C

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MSE 24-hr 4 200-Year Rainfall=7.53"

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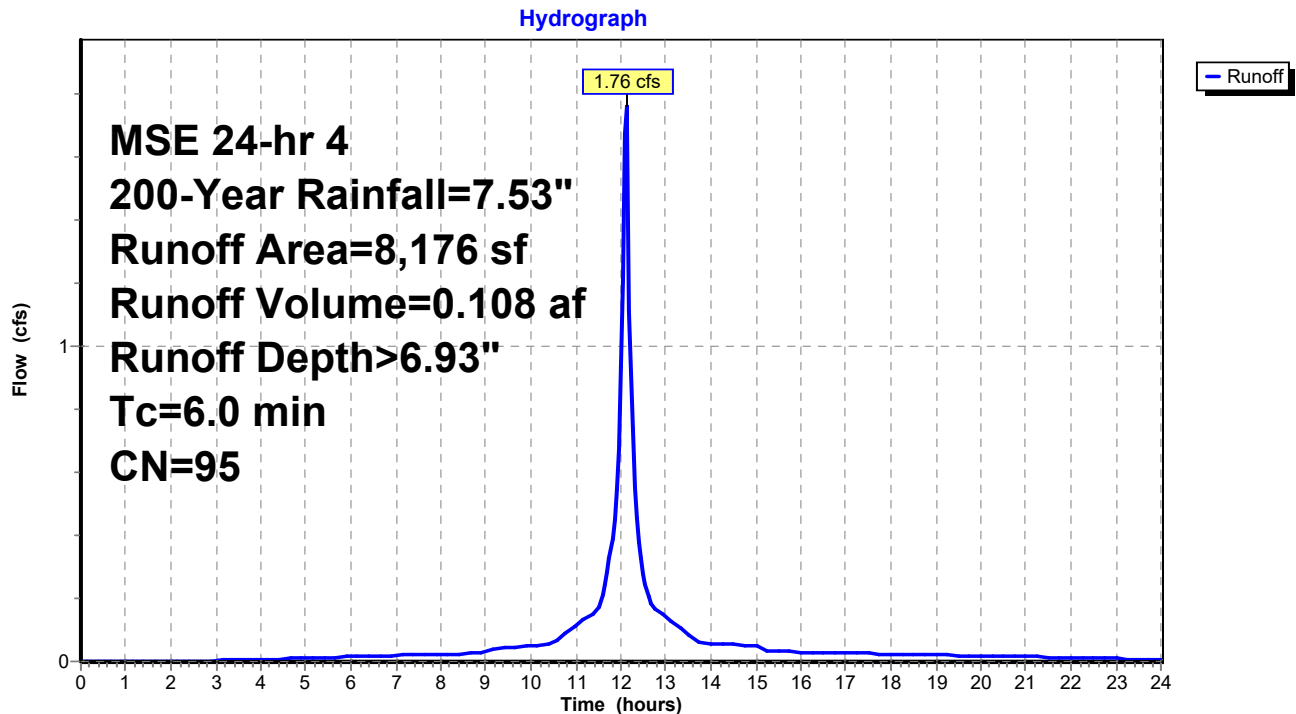
Summary for Subcatchment PR-D: PR - D

Runoff = 1.76 cfs @ 12.13 hrs, Volume= 0.108 af, Depth> 6.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
6,145	98	Paved parking, HSG D
* 626	98	Sidewalk
1,405	80	>75% Grass cover, Good, HSG D
8,176	95	Weighted Average
1,405		17.18% Pervious Area
6,771		82.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry,

Subcatchment PR-D: PR - D

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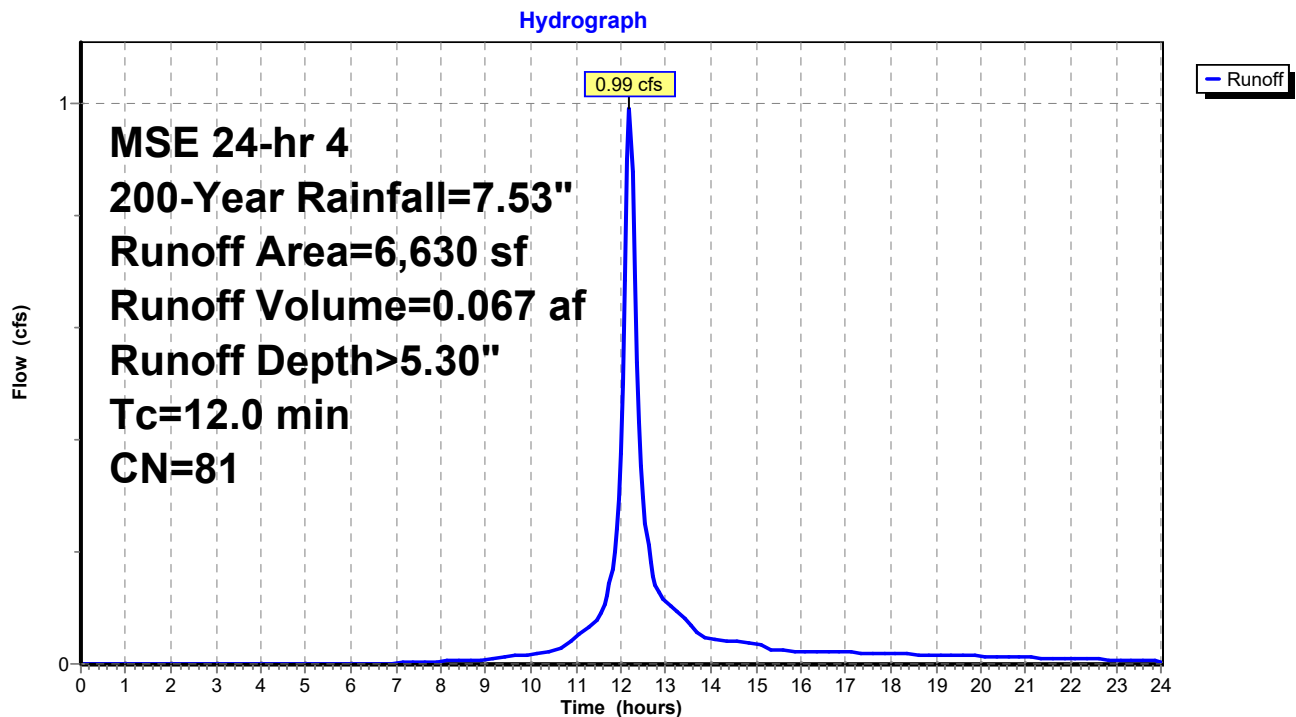
Summary for Subcatchment PR-E: PR - E

Runoff = 0.99 cfs @ 12.20 hrs, Volume= 0.067 af, Depth> 5.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	514	98	Patio
	6,116	80	>75% Grass cover, Good, HSG D
	6,630	81	Weighted Average
	6,116		92.25% Pervious Area
	514		7.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-E: PR - E

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Summary for Subcatchment PR-F: PR - F

Runoff = 0.37 cfs @ 12.20 hrs, Volume= 0.025 af, Depth> 5.18"

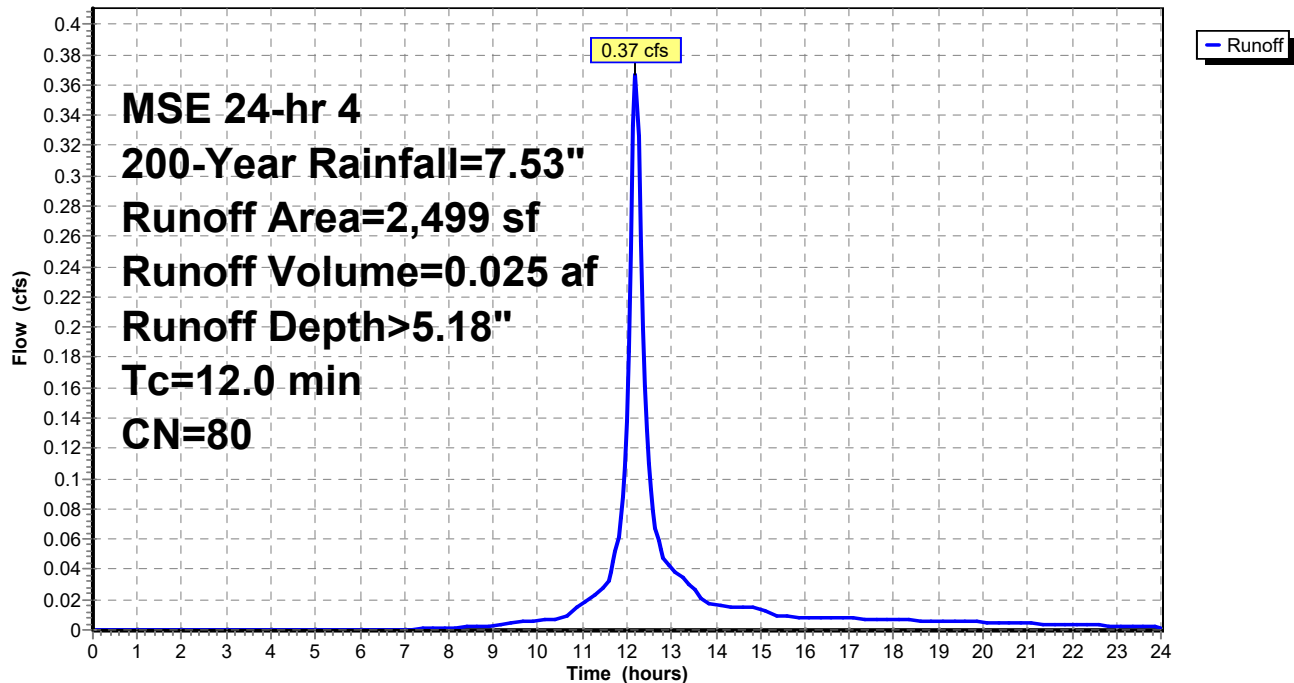
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	25	98	Sidewalk
	2,474	80	>75% Grass cover, Good, HSG D
	2,499	80	Weighted Average
	2,474		99.00% Pervious Area
	25		1.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-F: PR - F

Hydrograph



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MSE 24-hr 4 200-Year Rainfall=7.53"

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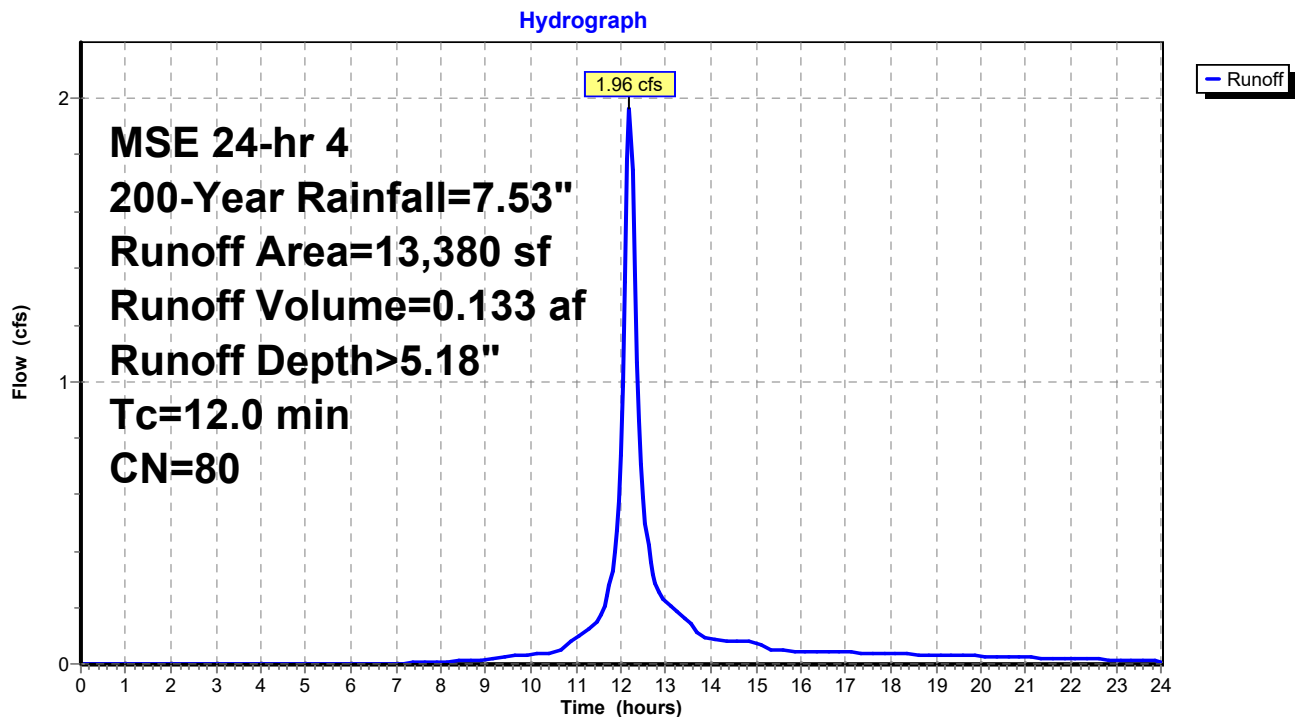
Summary for Subcatchment PR-G: PR - G

Runoff = 1.96 cfs @ 12.20 hrs, Volume= 0.133 af, Depth> 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
49	98	Paved parking, HSG D
13,331	80	>75% Grass cover, Good, HSG D
13,380	80	Weighted Average
13,331		99.63% Pervious Area
49		0.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry,

Subcatchment PR-G: PR - G

Summary for Pond 1P: Bioretention Basin East

Inflow Area = 1.036 ac, 78.19% Impervious, Inflow Depth > 6.83" for 200-Year event
 Inflow = 9.17 cfs @ 12.13 hrs, Volume= 0.590 af
 Outflow = 7.13 cfs @ 12.20 hrs, Volume= 0.530 af, Atten= 22%, Lag= 4.0 min
 Discarded = 0.05 cfs @ 12.20 hrs, Volume= 0.046 af
 Primary = 2.91 cfs @ 12.20 hrs, Volume= 0.426 af
 Secondary = 4.17 cfs @ 12.20 hrs, Volume= 0.059 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 5.40' @ 12.20 hrs Surf.Area= 3,918 sf Storage= 7,459 cf

Plug-Flow detention time= 95.2 min calculated for 0.530 af (90% of inflow)
 Center-of-Mass det. time= 49.1 min (803.4 - 754.3)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	9,255 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	1,698	33.0	3	3
0.33	1,698	33.0	185	188
0.34	1,698	33.0	6	193
1.33	1,698	33.0	555	748
1.34	1,698	27.0	5	753
3.33	1,698	27.0	912	1,665
3.34	1,698	100.0	17	1,682
5.83	4,385	100.0	7,573	9,255

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	10.0" Round Culvert L= 73.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / -4.46' S= 0.1125 ' S Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.55 sf
#2	Secondary	5.10'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.05 cfs @ 12.20 hrs HW=5.39' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=2.91 cfs @ 12.20 hrs HW=5.39' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 2.91 cfs @ 5.33 fps)

Secondary OutFlow Max=4.11 cfs @ 12.20 hrs HW=5.39' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 4.11 cfs @ 1.40 fps)

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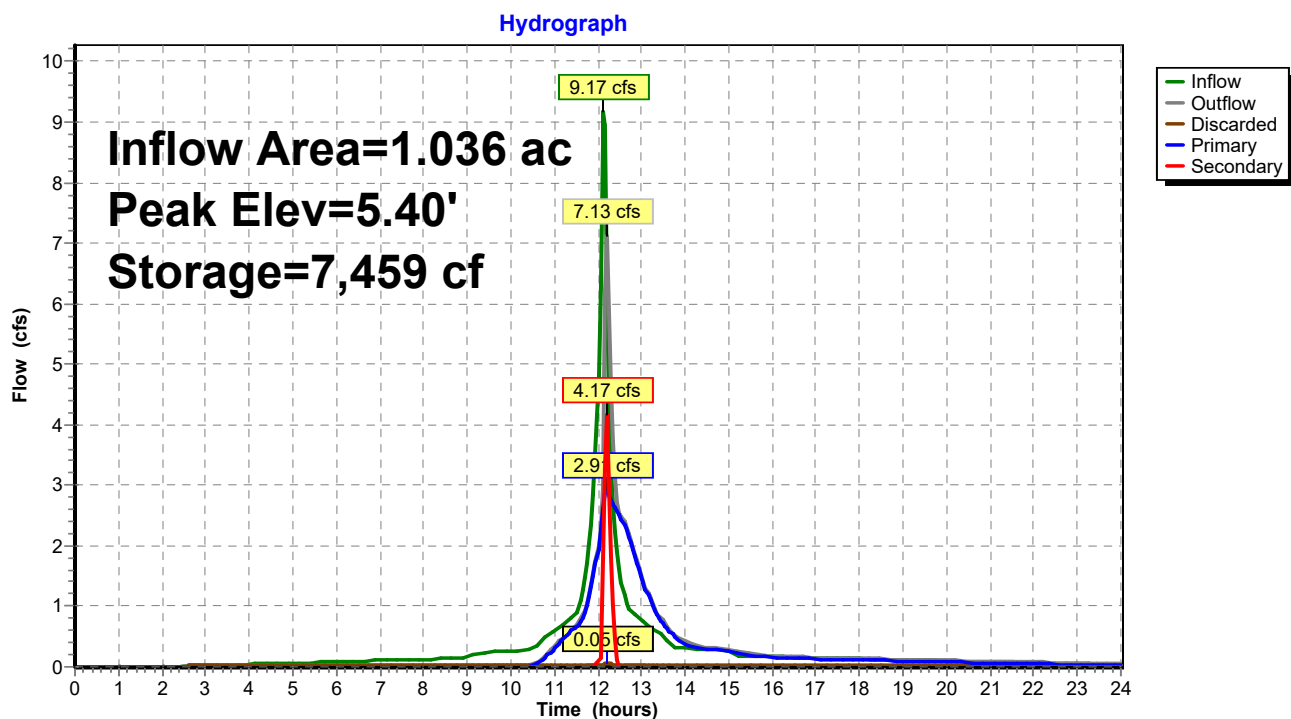
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MSE 24-hr 4 200-Year Rainfall=7.53"

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Pond 1P: Bioretention Basin East



Summary for Pond 2P: Bioretention Basin West

Inflow Area = 0.245 ac, 63.66% Impervious, Inflow Depth > 6.52" for 200-Year event
 Inflow = 2.07 cfs @ 12.13 hrs, Volume= 0.133 af
 Outflow = 1.72 cfs @ 12.21 hrs, Volume= 0.119 af, Atten= 17%, Lag= 4.4 min
 Discarded = 0.01 cfs @ 12.21 hrs, Volume= 0.012 af
 Primary = 0.46 cfs @ 12.21 hrs, Volume= 0.091 af
 Secondary = 1.25 cfs @ 12.21 hrs, Volume= 0.015 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 5.13' @ 12.21 hrs Surf.Area= 1,249 sf Storage= 1,894 cf

Plug-Flow detention time= 98.1 min calculated for 0.118 af (89% of inflow)
 Center-of-Mass det. time= 50.8 min (814.7 - 763.8)

Volume	Invert	Avail.Storage	Storage Description
#1	-0.01'	2,147 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
-0.01	0	0.0	0	0
0.00	410	33.0	1	1
0.33	410	33.0	45	45
0.34	410	33.0	1	47
1.33	410	33.0	134	181
1.34	410	27.0	1	182
3.33	410	27.0	220	402
3.34	410	100.0	4	406
5.33	1,340	100.0	1,741	2,147

Device	Routing	Invert	Outlet Devices
#1	Primary	3.75'	4.0" Round Culvert L= 21.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 3.75' / 2.70' S= 0.0500 ' / ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#2	Secondary	5.00'	10.0' long x 2.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32
#3	Discarded	-0.01'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.01 cfs @ 12.21 hrs HW=5.13' (Free Discharge)

↑**3=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=0.46 cfs @ 12.21 hrs HW=5.13' TW=0.00' (Dynamic Tailwater)

↑**1=Culvert** (Inlet Controls 0.46 cfs @ 5.30 fps)

Secondary OutFlow Max=1.18 cfs @ 12.21 hrs HW=5.13' TW=0.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir** (Weir Controls 1.18 cfs @ 0.91 fps)

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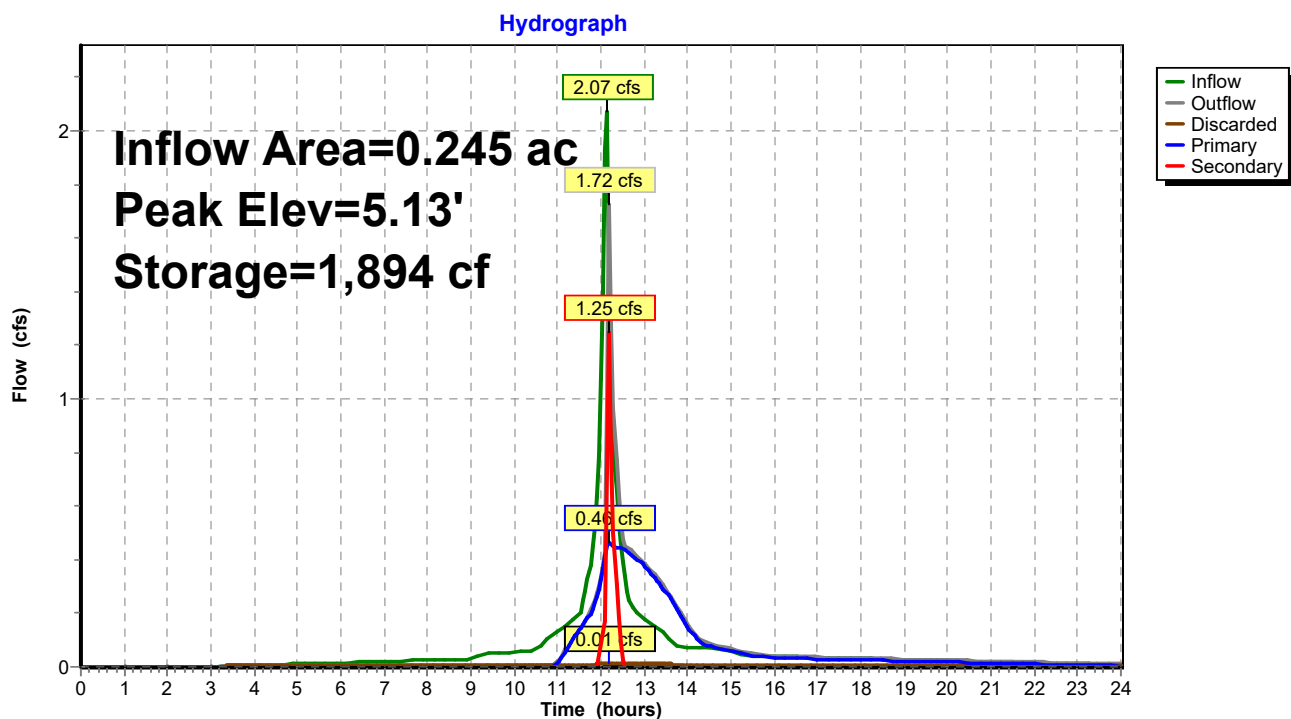
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Pond 2P: Bioretention Basin West



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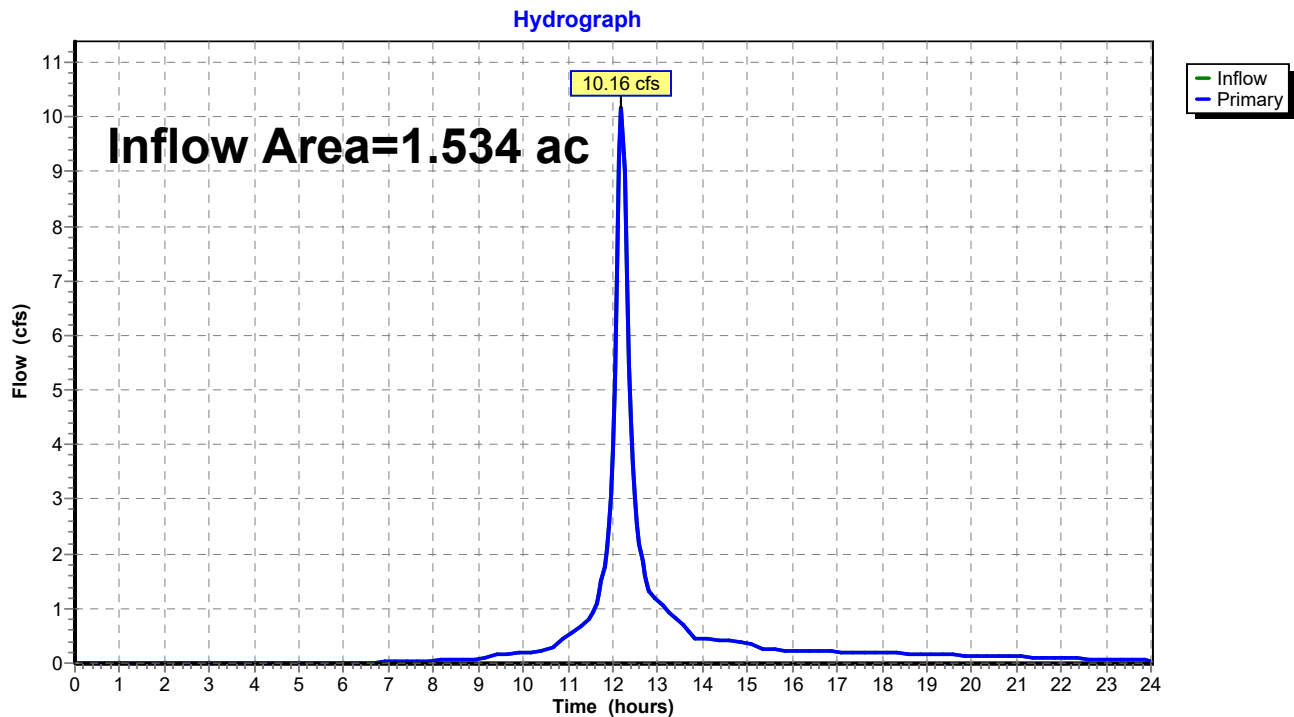
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Summary for Link 1L: EX - OFF-SITE

Inflow Area = 1.534 ac, 13.41% Impervious, Inflow Depth > 5.41" for 200-Year event
Inflow = 10.16 cfs @ 12.20 hrs, Volume= 0.692 af
Primary = 10.16 cfs @ 12.20 hrs, Volume= 0.692 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 1L: EX - OFF-SITE



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MSE 24-hr 4 200-Year Rainfall=7.53"

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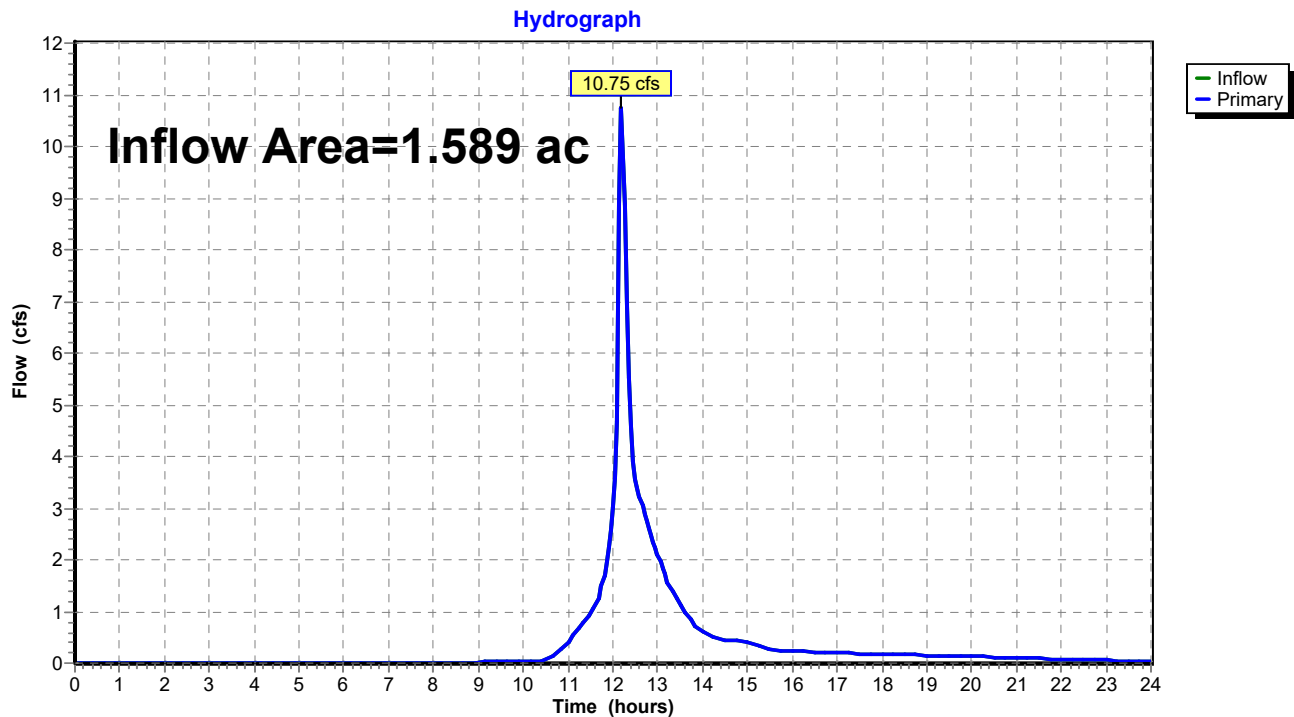
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Summary for Link 2L: PR - OFF-SITE

Inflow Area = 1.589 ac, 60.90% Impervious, Inflow Depth > 5.46" for 200-Year event
Inflow = 10.75 cfs @ 12.20 hrs, Volume= 0.723 af
Primary = 10.75 cfs @ 12.20 hrs, Volume= 0.723 af, Atten= 0%, Lag= 0.0 min

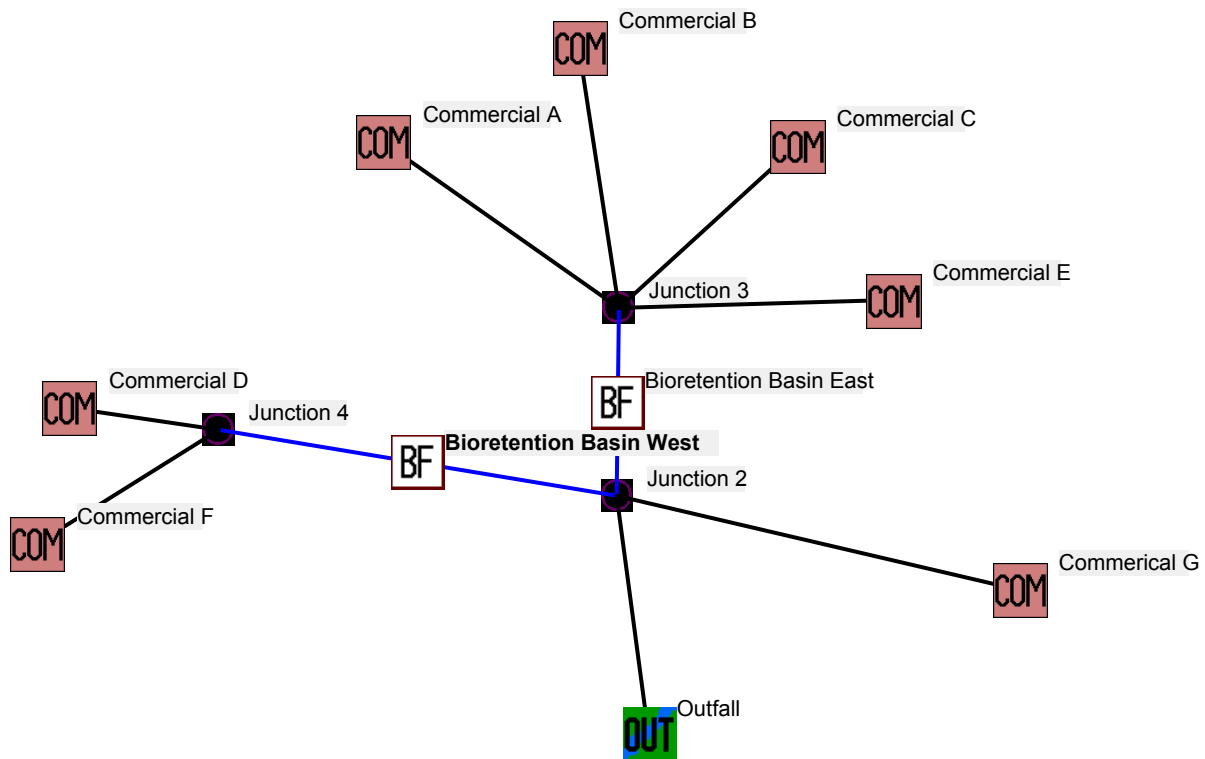
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 2L: PR - OFF-SITE



Appendix 5:

WinSLAMM Modeling Infiltration



Data file name: I:\2021\2110870\04 Civil\SWMP\Modeling\WinSLAMM\21-10870.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WI_Multi_rain\Madison\WisReg - Madison WI Annual 1981.ran
Particulate Solids Concentration file name: C:\WinSLAMM Files\WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppd
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: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 03-09-2022 Time: 16:58:56
Site information:

LU# 1 - Commercial: Commercial A Total area (ac): 0.202
1 - Roofs 1: 0.202 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: Commercial B Total area (ac): 0.202
1 - Roofs 1: 0.202 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: Commercial C Total area (ac): 0.479
13 - Paved Parking 1: 0.344 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.049 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.086 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Commercial: Commercial D Total area (ac): 0.187
13 - Paved Parking 1: 0.141 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.014 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.032 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 5 - Commercial: Commercial G Total area (ac): 0.307
13 - Paved Parking 1: 0.001 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.306 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 6 - Commercial: Commercial E Total area (ac): 0.152
31 - Sidewalks 1: 0.012 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.140 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 7 - Commercial: Commercial F Total area (ac): 0.058
31 - Sidewalks 1: 0.001 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.057 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - Bioretention Basin East

1. Top area (square feet) = 4385
2. Bottom area (square feet) = 1698
3. Depth (ft): 5.83
4. Biofilter width (ft) - for Cost Purposes Only: 30
5. Infiltration rate (in/hr) = 0.5
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) 1.33
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
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

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 5
2. Weir crest width (ft): 2
3. Height of datum to bottom of weir opening: 5.1

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.83
2. Pipe invert elevation above datum (ft): 3.75
3. Number of surface pipe outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Bioretention Basin West

1. Top area (square feet) = 1340
2. Bottom area (square feet) = 410
3. Depth (ft): 5.33
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
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) 1.33
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
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

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 5

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 0.33
2. Pipe invert elevation above datum (ft): 3.75
3. Number of surface pipe outlets: 1

Data file name: I:\2021\2110870\04 Civil\SWMP\Modeling\WinSLAMM\21-10870.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WI_Multi_rain\Madison\WisReg - Madison WI Annual 1981.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.ppd
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 03-09-2022 Time of run: 16:59:26
Total Area Modeled (acres): 1.587
Years in Model Run: 1.00

	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:	78966	-	90.96	448.4	-
Outfall Total with Controls:	12667	83.96%	110.4	87.28	80.54%
Annualized Total After Outfall Controls:	12702			87.52	



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WinSLAMM Infiltration Calculations

Mount Horeb Apartment Development
3/9/2022

Existing

Drainage Area 1.31 acres
57,064 sf

Flow Off-Site (Pre-Settlement) 20135 ft³/year (From WinSLAMM)(See below)

Runoff

Depth of Rain Off-Site (Area/Flow) 0.3529 ft
4.2342 in

Total Depth of Rain 28.81 in/year

Rain Stay-On 24.58 in/year

45% stay-on 11.059 in/year

Proposed

Drainage Area 1.31 acres
57,064 sf

Flow Off-Site 12,667 ft³ (From WinSLAMM)(See below)

Runoff

Depth of Rain Off-Site (Area/Flow) 0.2220 ft
2.6638 in

Total Depth of Rain 28.81 in/year

Rain Stay-On 26.15 in/year

106 % Infiltrated

WinSLAMM

Land Uses				Junctions				
Runoff Volume (cf)				Part. Solids Yield (lbs)				
Data File: I:\2021\2110870\04 Civil\SwMP\Modelling\WinSLAMM\21-10870.mdb								
Rain File: WisReg - Madison WI Annual 1981.RAN								
Date: 03-09-22 Time: 3:48:55 PM								
Site Description:								
Runoff Volume Total (cf) at the Outfall								
Rain Number	Start Date	Rain Total (in)	Outfall Total (cf)	Rv	Total Losses (in.)	Calculated CN*	Event Peak Flow (cfs)	Pre-Dev Runoff Vol.
Minimum:		0.00	0	0.000	0.01	61.9	0.000	0.0
Maximum:		2.59	5501	0.369	1.64	99.5	0.057	5932.0
Average:		0.26	116.2	0.012	0.24	79.7	0.039	223.7
Total:		28.81	12667		26.66			20135.00
* Note: NRCS does not recommend using CN method for rains < 0.5 in.								
See 'PreDevelopment Areas and CN' Help for more info.								



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WinSLAMM Infiltration Calculations

Mount Horeb Apartment Development
3/9/2022

Land Uses				Junctions			Control Practices						Outfall				Output Summary				
Runoff Volume				Part. Solids Yield (lbs)						Part. Solids Conc. (mg/L)						Summary Table					
Data File: I:\2021\2110870\04 C 0870.mdb Rain File: WisReg - Madison WI Date: 03-09-22 Time: 3:48:54 PM Site Description:																					
Col. #:	2	4	5	6	7	8	9	10	11	12	13	14	15	18	19	27	28	29	30	31	
Control Practice No.	Control Practice Type	Total Inflow Volume (cf)	Total Outflow Volume (cf)	Percent Volume Reduction	Total Influent Load (lbs)	Total Effluent Load (lbs)	Percent Load Reduction	Flow Weighted Influent Conc (mg/L)	Flow Weighted Effluent Conc (mg/L)	Percent Conc. Reduction	Influent Median Part. Size (microns)	Effluent Median Part. Size (microns)	Notes	Maximum Stage (ft)	Hydraulic Volume Out (cf)	Maximum Surface Ponding Time (hrs)	Maximum Subsurface Ponding Time (hrs)	Volume Infiltrated (cf)	Underdrain Discharge Vol. (cf)	Evapo-Transpir. Vol. (cf)	
1	Biofilter	64570	9443	85.38	320.5	49.12	84.67	79.50	83.32	-4.810	7.80	7.80	No Biofilter Overflows	3.93	9332	22.8	38.10	55597.34		0	
2	Biofilter	12400	1228	90.10	100.1	10.32	89.69	129.3	134.6	-4.094	7.80	7.80	No Biofilter Overflows	3.88	1226	22.1	38.85	11243.13		0	
◀																					

Outfall				Output Summary			
Conc. (mg/L)				Summary Table			
31	32	33	34	35	39	54	61
Evapo-Transpir. Vol. (cf)	Minimum Soil Moist. (frac)	Surface Discharge Bypass Vol. (cf)	Evap. Vol. (cf)	Volume Supplemt. Inj. (cf)	Surface Ponding Events > 72 hrs (Count)	Residence Time in Media (hrs)	Runoff Producing Events/ Ttl. Rains
		0.00			0	12.96	8/90
		0.00			0	12.96	4/90

Land Uses				Junctions				Control Practices											
File Name: I:\2021\2110870\04 Civil\SWMP\Modeling\WinSLAMM\21-10870.mdb																			
Outfall Output Summary																			
		Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction												
Total of All Land Uses without Controls		78966		0.43	90.96	448.4													
Outfall Total with Controls		12667	83.96 %	0.07	110.4	87.28	80.54 %												
Current File Output: Annualized Total After Outfall Controls		12702	Years in Model Run:		1.00	87.52													
Print Output Summary to .csv File Print Output Summary to Text File Print Output Summary to Printer																			
Total Control Practice Costs				Total Area Modeled (ac)				Receiving Water Impacts Due To Stormwater Runoff (CWP Impervious Cover Model)											
Capital Cost	N/A			1.587															
Land Cost	N/A																		
Annual Maintenance Cost	N/A																		
Present Value of All Costs	N/A																		
Annualized Value of All Costs	N/A																		
				Perform Outfall Flow Duration Curve Calculations															

Appendix 6:

Pipe Sizing (Rational Method)

Mount Horeb Apartment Development
03/09/22

- Black - manually entered in the cell
- 10 Green - calculation performed
- Blue - referenced from another source
- Orange - Override

STORM SEWER SIZING CALCULATIONS

PIPE	Pipe Run		Manhole Size	Length	Pipe Diameter	Slope	Pipe Material	Mannings (n)	Pipe Area	Hydraulic Radius	DA	Drainage Areas			Runoff Coef.	Upstream End	Area x C		Time of Conc.		Rainfall Intensity	Design Storm	Bypass Runoff	Total Runoff	Design Capacity	Percent Full	Velocity Full
	From	To										Perv.	Imp.	Total			Increment	Total	To Structure	Pipe							
ROOF WEST																											
P-4	STO INL-4	STO INL-3		45.28	12	4.51	RCP	0.012	0.79	0.25	C divided by 3	0.029	0.131	0.160	0.81	Y	0.13	0.13	6.0	0.07	6.82	10	0.00	0.89	8.22	10.8%	10.46
P-3	STO INL-3	STO MH-2		143.99	18	0.86	RCP	0.012	1.77	0.38	C divided by 3	0.029	0.131	0.160	0.81	N	0.13	0.26	6.1	0.40	6.82	10	0.00	1.77	10.58	16.8%	5.99
P-2	STO MH-2	STO MH-1		111.29	18	0.75	RCP	0.012	1.77	0.38	C divided by 3	0.029	0.131	0.160	0.81	N	0.13	0.39	6.5	0.33	6.82	10	0.00	3.97	9.88	40.2%	5.59
P-1	STO MH-1	0		40.20	18	2.36	RCP	0.012	1.77	0.38					N		0.00	0.39	6.8	0.07	6.43	10	0.00	3.97	17.53	22.7%	9.92
ROOF EAST																											
P-8	0	STO MH-2		28.33	10	3.78	HDPE	0.011	0.55	0.21	A	0.000	0.202	0.202	0.95	Y	0.19	0.19	6.0	0.05	6.82	10	0.00	1.31	5.05	26.0%	9.26
ROOF WEST																											
P-7	0	STO MH-6		21.37	12	4.50	RCP	0.012	0.79	0.25	D divided by 2	0.016	0.078	0.094	0.82	Y	0.08	0.08	6.0	0.03	6.82	10	0.00	0.52	8.21	6.4%	10.45
P-6	STO MH-6	STO MH-5		65.28	12	4.50	RCP	0.012	0.79	0.25					N		0.00	0.08	6.0	0.10	6.82	10	0.00	0.52	8.21	6.4%	10.45
P-5	STO MH-5	0		46.33	12	2.00	RCP	0.012	0.79	0.25					N		0.00	0.08	6.1	0.11	6.82	10	0.00	1.05	5.47	19.2%	6.97
ROOF EAST																											
P-9	STO MH-5	STO INL-9		10.00	12	1.30	RCP	0.012	0.79	0.25	D divided by 2	0.016	0.078	0.094	0.82	Y	0.08	0.08	6.0	0.03	6.82	10	0.00	0.52	4.41	11.9%	5.62
ROOF EAST																											

Appendix 7:

Thermal Control

Temperature Urban Runoff Model

POST-DEVELOPMENT

Required Inputs:

version 1.0

% Connected imperviousness on site	63.2%	
Site area	1.44	acres
Time of concentration (Tc)	0.10	hours

Units:

english



Outputs:

Temp. of runoff, predevelopment	66.2	°F
Temp. of runoff from connected impervious area	92.0	°F
Temp. of runoff, post-development	88.1	°F

Assumed Inputs:

Rainfall depth	0.5	inches
Rainfall duration	4.0	hours
Hour of day that rain begins	20	
Time of concentration (Tc)	0.10	hours
Wind speed	10.2	ft/s
Rain temperature (during storm)	73.7	°F
Initial temp. of impervious surfaces	93.6	°F
Air temperature	80.0	°F
Relative humidity	80%	

Appendix 8:
WDNR USLE



Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.0 (06-29-2017)



YEAR 1

Developer:

Project:

Mount Horeb Apartment Development

Date:

03/09/22

County:

Dane

Version 1.0

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground	06/01/22	07/25/22	38.5%	150	Silt Loam	0.43	2.4%	119	0.25	1.00	6.1	1.050	Sediment Trap	1.3
Bare Ground	07/25/22	03/31/23	45.5%	150	Silt Loam	0.43	9.0%	53	0.86	1.00	25.2	0.709	Sediment Trap	3.6
Seed with Mulch or Er	03/31/23	05/31/23	15.7%	150	Silt Loam	0.43	9.0%	53	0.86	0.10	0.9	0.709	Sediment Trap	0.1
End	05/31/23	-----	-----	-----	-----	-----	9.0%	53	0.86	-----	-----	0.000		0.0
		-----	-----	-----	-----	-----	9.0%	0	-----	-----	-----	0.000		0.0
		-----	-----	-----	-----	-----	0.0%	0	-----	-----	-----	0.000		0.0
TOTAL											32.2		TOTAL	5.0
													% Reduction Required	NONE

Notes:

See Help Page for further descriptions of variables and items in drop-down boxes.

The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.

For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

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

Recommended Permanent Seeding Dates:

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

Designed By:	CTD
Date	



Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Version 2.0 (06-29-2017)



YEAR 1

Developer:

Project:

Mount Horeb Apartment Development - Steep Slopes

Date:

03/09/22

County:

Dane

Version 1.0

Activity (1)	Begin Date (2)	End Date (3)	Period % R (4)	Annual R Factor (5)	Sub Soil Texture (6)	Soil Erodibility K Factor (7)	Slope (%) (8)	Slope Length (ft) (9)	LS Factor (10)	Land Cover C Factor (11)	Soil loss A (tons/acre) (12)	SDF (13)	Sediment Control Practice (14)	Sediment Discharge (t/ac) (15)
Bare Ground ▾	06/01/22	06/24/22	14.2%	150	Silt Loam ▾	0.43	25.0%	28	3.29	1.00	30.1	0.638	Sediment Trap ▾	3.8
Seed with Mulch or En ▾	06/24/22	08/24/22	42.0%	150	Silt Loam	0.43	25.0%	28	3.29	0.10	8.9	0.638	Sediment Trap ▾	1.1
End ▾	08/24/22	----	----	----	-----	----	25.0%	28	3.29	-----	----	0.000	Sediment Trap ▾	0.0
▾		----	----	----	-----	----	25.0%	28	3.29	-----	----	0.000	▾	0.0
▾		----	----	----	-----	----	25.0%	0	----	-----	----	0.000	▾	0.0
▾		----	----	----	-----	----	0.0%	0	----	-----	----	0.000	▾	0.0
SLOPE > 20% USE PRESCRIPTIVE COMPLIANCE										TOTAL	39.0		TOTAL	5.0
Notes:													% Reduction Required	NONE

Notes:

See Help Page for further descriptions of variables and items in drop-down boxes.

The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.

For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

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

Recommended Permanent Seeding Dates:

4/1-5/15 and
Thaw-6/30

8/7-8/29 Turf, introduced grasses and legumes
Native Grasses, forbs, and legumes

Designed By:	CTD
Date	

Appendix 9:
Stormwater Cost Estimate

Preliminary Cost Estimate



Project Mount Horeb Apartment Development
Location Mt Horeb, Wisconsin
JSD Project No. 21-10219
Date: 3/9/2022

No.	Item	Quantity	Unit	Unit Cost	Amount
<u>Storm Sewer And Erosion Control Improvements</u>					
<u>Erosion Control</u>					
1	Silt Fence	371	LF	\$ 2.00	\$ 742.00
2	Stone Tracking Pad	1	EA	\$ 750.00	\$ 750.00
3	Inlet Protection	5	EA	\$ 150.00	\$ 750.00
4	Erosion Matting	1,373	SY	\$ 3.00	\$ 4,119.00
5	Mediun Riprap	53	SY	\$ 5.00	\$ 265.00
5	Seeding	18	CY	\$ 73.00	\$ 1,314.00
				Subtotal =	\$ 7,940.00
<u>Storm Sewer</u>					
6	Storm Sewer - 4" PVC Pipe	33	LF	\$ 8.00	\$ 264.00
7	Storm Sewer - 10" HDPE Pipe	121	LF	\$ 19.00	\$ 2,299.00
8	Storm Sewer - 12" RCP Pipe	270	LF	\$ 50.00	\$ 13,500.00
9	Storm Sewer - 18" RCP Pipe	252	LF	\$ 57.00	\$ 14,364.00
10	48" Diameter Manhole	3	EA	\$ 2,500.00	\$ 7,500.00
11	36" Diameter Manhole	1	EA	\$ 2,000.00	\$ 2,000.00
12	2"x3" Inlet	3	EA	\$ 2,000.00	\$ 6,000.00
13	18" FES	2	EA	\$ 2,000.00	\$ 4,000.00
14	Trench Drain	1	EA	\$ 1,000.00	\$ 1,000.00
15	Roof Drain Downspout Connection:	2	EA	\$ 2,500.00	\$ 5,000.00
16	Bioretention Basin	2	LS	\$ 15,000.00	\$ 30,000.00
				Subtotal =	\$ 85,927.00
				Estimated Costs =	\$ 93,867.00
				110% Estimated Costs=	\$ 103,253.70

Note: All unit costs reflect delivered and installed.

(1) Granular trench backfill and compaction considered incidental to utility construction.

Appendix 10:
Maintenance Agreement

TO BE COMPLETED

JSD REGIONAL OFFICES

Madison, WI

Milwaukee, WI

Wausau, WI

Appleton, WI

Kenosha, WI

Chicago, IL

Coeur d'Alene, ID



Village of Mount Horeb

138 East Main Street
Mount Horeb Wisconsin 53572

DESIGN REVIEW APPLICATION

Applicant Name: Driftless View LLC C/O Chris Etmanczyk

Address: 800 W. Broadway Ave. Suite 500 Madison WI 53713

Telephone Number (daytime): 608 212-3033 chris.etman@lee-associates.com

Address of project if different: 1800 Springdale Street

Zoning Classification of project: PD-1/PB underlying zoning

Fee paid (\$100-see back side of application):

Plan Submittal Checklist attached: herein

Landscape Plan Submittal Checklist attached: herein

Design Review Parking Lot Application Required: herein

Design Review Parking Lot Application Submitted: herein

Project Description: Mixed-Use development consisting of 40 residential
units and approx. 1,700 sf of commercial tenant space. Development will
have sub-grade parking and surface parking. New site access to align
with adjacent Norsk Golf Rd.



Applicant

03/14/2022

Date

Zoning Administrator

Date

I HEREBY ACKNOWLEDGE RECEIPT OF WRITTEN PLAN COMMISSION
APPROVAL FOR THE ABOVE PROJECT, AND AGREE TO MEET THE
CONDITIONS INCLUDED IN THE APPROVAL.

SIGNED:

DATE:

17.14 DESIGN REVIEW

(3) ADMINISTRATION

- (a) The Building Inspector or the Village Administrator, or his/her designee, shall advise applicants when they apply for building permits or land disturbing activity permits or other approvals or permits whether design review applies. If design review applies, the applicant will be given checklists, application forms and timetables. These documents shall have prior Plan Commission approval as to format and content. Applicants may request and have pre-application conferences with staff.
- (b) Completed applications and supporting materials must be filed in the Village office at least 20 days prior to a scheduled Plan Commission meeting so as to allow sufficient time for review by staff prior to placement on the Plan Commission agenda. Staff must be satisfied that a complete packet of information will be available to the Plan Commission prior to the commencement of the Plan Commission meeting at which the item is set for design review.
- (c) Each application shall be accompanied by a fee of \$100, payable to the Village Treasurer. In addition, each applicant under this subsection shall reimburse the Village for all professional fees, including reasonable engineering and legal review fees, incurred by the Village in connection with each application.
- (d) The Plan Commission will review a design application at a meeting set for such purpose. Following such review, discussions with applicants and agents, and discussion with the Plan Commission and with staff, the Commission shall, within 45 days of its initial review meeting, render a decision of approval, conditional approval or rejection. Decisions shall be in writing and shall identify those elements of the approved design which the Commission intends to be mandatory. Applicants shall sign acknowledgments of receiving the written Plan Commission design review decision prior to being issued a building or land disturbing activity permit. Failure to render a decision within the required time period shall be deemed a rejection for the application. The Plan Commission may, in cases requiring additional time for review, extend, for no more than 45 additional days, the time within which to render its decision.
- (e) A project that has had design review and that has a building or land disturbing activity permit is approved for execution only in accord with the directives included in the design review approval. Construction or execution that deviates from directives may not occur within terms of this chapter without prior Village approval. The Village Administrator, or his/her designee, is responsible for determining whether to give staff approval to such deviations on a finding that they are minor variations as to the Plan Commission's decision or whether full Plan Commission review and approval is needed upon a finding that the deviations are major.
- (f) An approved Design Review application shall be valid for a three (3) year period from the date of approval. A building permit for the improvement or change approved by the Design Review application must be issued before the three year period has expired. After the period has expired, the applicant must start the approval process over and resubmit a new Design Review application.

PLAN SUBMITTAL CHECKLIST

Project: _____

Submitted by: _____

Dated submitted: _____

NOTE: Please include each applicable item listed below with all formal plan submittals. All lines should be checked. Mark "N/A" if the item does not apply. All plans must be submitted with this checklist as a single package no later than twenty (20) days prior to presentation at Plan Commission/Historic Preservation Commission.

- X 1. Show existing and proposed contours at an interval suitable to the topography and project. Contours should extend a minimum of 20 feet beyond property lines and nearby berms and swales and at least to the backs of curbs.
- X 2. Show square footage of:
- a. Lot or parcel
 - b. Existing impervious surface
 - c. Proposed total impervious
 - d. Existing building
 - e. Proposed total building
 - f. Existing parking and pavement
 - g. Proposed total parking and pavement
- X 3. Show all relevant dimensions including:
- a. Buildings
 - b. Parking stalls
 - c. Driveway widths
 - d. Setbacks to buildings and other improvements
 - e. Parking lot aisles, turnarounds, turning radii, etc.
 - f. Distance from driveway to street corner if under 200 feet
 - g. Sidewalk, walkway and handicap ramp widths and locations with respect to street and right-of-way
 - h. Widths of abutting R.O.W.'s, roadways, and terraces.
- X 4. Show dimensions and bearings of property lines.
- X 5. Show North Arrow and scale of drawing.
- X 6. Show Village bench mark location and elevation to NGS datum.
- X 7. Show all existing and proposed surface materials (grass, bituminous, concrete, etc.).

- X 8. Show total number of required and proposed parking stalls.
- X 9. Show handicap parking stall and ramp locations.
- X 10. Show up or down arrows on loading or other ramps.
- X 11. Show existing, proposed, and adjoining driveway approaches.
- X 12. Show removal and replacement to Village Specifications of concrete curb and gutter for all new curb cuts or as otherwise required.
- X 13. Show rim and invert elevations of all drainage structures.
- X 14. Design surface drainage to bypass dumpster locations.
- X 15. Indicate proposed direction of roof drainage and show location of all roof gutter down-spouts.
- X 16. Show all existing and proposed public and private utility locations on and adjacent to site.
- X 17. Show location of nearest existing Village of Mt. Horeb fire hydrants and proposed Village and private fire hydrants.
- X 18. Show location and screening of refuse containers.
- X 19. Show how recyclable materials will be handled.
- X 20. Show proposed lighting for site including location, pole height, luminaire type and manufacturer's specifications.
- X 21. Provide drawings of proposed building with elevation views showing proposed materials and colors.
- X 22. Include elevation view of rooftop mechanicals and required screening design materials and colors.
- X 23. Include name of designer.

LANDSCAPE PLAN SUBMITTAL CHECKLIST

NOTE: Please include each applicable item listed below with all formal plan submittals. All lines should be checked or marked "N/A" if the item does not apply.

This checklist should accompany the PLAN SUBMITTAL CHECKLIST.

- ☒ 1. Show existing and proposed contours at an interval suitable to the topography and project. Contours should extend a minimum of 20 feet beyond property lines and nearby berms and swales and at least to the backs of curbs.
- ☒ 2. Show total number of required:
 - ☒ a. Parking stalls
 - ☒ b. Landscaping points and size of landscaping elements
 - ☒ c. Additional canopy trees
- ☒ 3. Show total number of provided:
 - ☒ a. Parking stalls
 - ☒ b. Landscaping points and size of landscaping elements
 - ☒ c. Additional canopy trees
- ☒ 4. Show North Arrow and scale of drawing.
- ☒ 5. Include name of designer on final papers.
- ☒ 6. Show existing/proposed hydrants, sanitary laterals, water services, light poles, power poles, and other significant topographic features in landscaped areas.
- ☒ 7. Show all relevant dimensions.
- ☒ 8. Show landscape elements and trees drawn to scale equal to their growth within five years of construction.

APPENDIX 1

PARKING AREA
APPLICATION WORKSHEET

PORTION TO BE COMPLETED BY APPLICANT:

Project Location/Address: 1800 Springdale Steet.

Owner/Applicant: Driftless View LLC. C/O Chris Etmanczyk

Address: 800 W. Broadway Ave. Suite 500 Madison WI 53713

Phone: 608 212-3033

Date of Application: 03/14/2022

1. The land use or development to be served by the proposed parking area: PD

2. Number of projected employees and/or students: 4
3. Square feet of floor area: 15,670 GSF
4. Capacity of the facility (if applicable): 62 bedrooms + Commercial Tenant (TBD)
5. Number of dwelling units (if applicable): 40

Efficiencies 11 1 Bedroom 10 2 Bedroom 16 More than 2 Bedroom 3

PORTION TO BE COMPLETED BY ZONING ADMINISTRATOR:

6. Minimum number of spaces required: _____
7. Minimum number of spaces for handicapped: _____
8. Minimum number of canopy trees under the canopy tree requirement: _____
9. Minimum number of points under the landscape element point system requirement: _____
10. Linear feet of screening from nearby residentially zoned property: _____

Location of Screening: _____



March 14, 2022

Nic Owens
Village Administrator
Village of Mt. Horeb Planning Department
138 E. Main Street
Mount Horeb Wisconsin 53572

RE: Zoning Amendment / SIP Application
1800 Springdale Street (Springdale St. Apartment Development)

On behalf of Compeer Financial and Driftless View LLC, Please accept this SIP submittal for the rezoning of Lot 2 at 1800 Springdale St. We are requesting approval of the Specific Implementation plan of the development approved by Plan Commission on February 23 and the Village Board on March 3, 2022. The lot be rezoned from Planned Business (PB) to Planned Development (PD) to allow greater use of the site as proposed in our General Development Plan.

Organizational Structure

The proposed development will be owned by Driftless View, LLC. c/o Chris Etmanczyk and Matt Etmanczyk who are Verona and Mount Horeb residents, respectively. A pr

A private maintenance company will be responsible for the building common areas and spaces. Grounds maintenance and landscaping will also be maintained by a private company to ensure the project is well taken care of and any issues are addressed. The trash and recycling will be contracted through Waste Management. We have reviewed the plans and discussed the logistics of serving the property.

Economic Impact

This development will provide housing for up to 63 beds within 40 apartment units. The economic impact this project has on the Village of Mount Horeb could be vast. The mixed-use aspect of the development brings potential job opportunities and supports the existing businesses within the village. The development of this project will transform a vacant lot and have improvements valued at approximately \$7 million and increased tax revenue approximately \$150,000 each year over the existing vacant land use. The development is seeking no public assistance for the project.

Development / Construction Schedule

Development of the construction documents will commence upon final Design Review approval by the Village. Construction is anticipated to begin in June 2022 with an estimated completion of June 2023.



Project Description

The existing lot has remained undeveloped along Springdale Street. Several factors make the use of this site challenging to develop solely for commercial business use. These factors include a substantial setback and easement along Springdale Street, west, and north property lines. In addition, there is a significant grade change to the north as referenced in the existing conditions photographs previously submitted. In addition, shallow bedrock depth across the entire site as well as limited septic capacity in this area of the Village have made the lot challenging to build by other developers.

Our Amendment and rezone of the property to Planned Development (PD) would allow greater flexibility in the allowable uses, including Mixed-Use and Multi-Family developments. Due to the limited infrastructure of the Village sewer system, the area north of Springdale St. has been limited to business and single-family residential uses to the greater extent. However, our team has proposed a system that would alleviate the potential high-volume system consistent with a multi-family development. A holding tank design will reduce the septic demands to meet the minimum constant flow rate to not overwhelm the system. A zoning that would allow greater flexibility in its uses, would be more economically feasible and attract greater diversity and opportunities for the parcel.

The proposed mixed-use development will consist of 1,712 gsf of commercial tenant space and a multi-family component consisting of 40 units with a mix of unit types. The unit mix is in response to the Mount Horeb Topline House Survey developed by Kristin Runge, Ph.D – UW Madison. That survey identified a significant lack of rental apartment/multi-family options in the Mount Horeb area. Taking advantage of the existing topography, the proposed building would have underground parking, a variety of apartment unit configurations including studio, 1 bed, 2 bed, 2 bed + den, and 3 bed units. The building will also include a club room with various amenities as well as an outdoor patio with rear yard greenspace amenities.

As previously noted, there are significant utility easements along the south, west, and north of the existing lot. Overhead power and cable lines may need to be relocated underground within the southern right-of-way to allow for fire department apparatus access. The 30 ft. utility easement along the western property line contains the village sanitary force main. The northern public utility easement is 30 ft. wide which then reduces to a 15 ft. private sanitary easement for the adjacent property to the east.

Project Data

Site Utilization

- Site Area: 1.44 acres (62,898 sf)
- Building Area: 15,562 sf
- Total Building SF: 47,064 gsf
- Floor Area Ratio (FAR): .25
- Impervious Surface Ratio: 59%
- Landscape Area Ratio: 41%



Building Composition

- 3 stories above grade
- 1 story below grade
- Base building height: 40 ft.
- Tower element height: 47 ft.
- Commercial Tenant Area: 1,712 gsf
- Apartment units: 40
 - Studio: 11 units
 - 1 Bedroom: 10 units
 - 2 Bedroom: 10 units
 - 2 Bedroom + Den: 6 units
 - 3 Bedroom: 3 units

Parking

- Total Parking Stalls: 74 (including 2 ADA)
 - 38 sub-grade
 - 36 surface
- Total Bike Stalls: *6
 - 6 surface
 - *38 storage units with adequate bike storage

Site Access / Parking

The lot shares an existing single entrance point via a shared access easement with the commercial development to the east. This entrance is currently restricted to a right-in / right-out access. The proposed development includes a second full access point which will allow east and west traveling vehicular access. The proposed entrance aligns with Norsk Golf Road to the south where there is an existing break in the center median along Springdale Street.

We have reviewed the site plan and building access with the Village of Mount Horeb Fire Chief. Comment received include specific requests to minimize the number of trees at or near the parking lot islands. Chief Minter requested that landscaping be smaller in size as to not damage trucks while entering the facility and to keep trees toward the outer edges of the parking lot and lawn. Unfortunately, due to the existing easements, there is limited areas to place trees and landscaping to meet the Village's landscape requirements. The approval of exemptions listed in the following section also limits the area required to meet the landscaping standards in certain areas. We have included Chief Minter's emailed response as an attachment to this application.

The documents include an auto-turn diagram for both the largest fire truck as well as a standard vehicle. The proposed parking lot will align with the adjacent property for continuous vehicle circulation in the existing shared access easement between the two parcels and access points. Pedestrian access is provided adjacent to the proposed drive with a connection to the mixed-use building. Private access to the underground parking area is to the west of the property via ramp. Within the sub-grade parking structure, there are two electric vehicle charging stations



proposed. In addition, amenities include a dog wash room, bike repair stand, and storage lockers located at the front of each parking space sufficient for bike storage.

Requested Exemptions (Previously Approved by Plan Commission and Village Board)

The Planned Business Zoning allows a Commercial Apartment as a conditional use per 17.20(8)a of the Mount Horeb Zoning Ordinance. However, Commercial Apartments are limited in density and thus require a Planned Development (PD-1) zoning to achieve the proposed density. As part of this rezoning request, the development requires flexibilities within the underlaying PB zoning. Those flexibilities are as follows:

- Allowable Principal Land Use permitted to include Apartments with a density of 40 dwelling units in addition to the other permitted commercial land uses in the PB district. (17.42(2)).
 - 17.20(1)(a)7 Requires no less than 3 and no more than 8 dwelling units.
- Principal Apartment land use building setback to be 15 feet side yard setback.
 - 17.20(1)(a)7 Requires 30 foot setback from any property line.
- Maximum Floor Area Ratio (FAR) to be .75
 - 17.24(7)a Maximum Floor Area Ratio (FAR) of 0.3.
- Paved surface setback of 0 feet on east and south property lines.
 - 17.24(7)(b)(3)i Minimum paved surface setback of 10 feet.
- Maximum building height of 47 feet for tower element as required by the Design Standards
 - 17.24(7)(b)4 Maximum building height of 45 feet.
- Remove Frontage landscaping requirement due to parking setback and existing utility easement along Springdale Street.
 - 17.14(4)(b)(26)a-b Minimum 10-foot wide landscaped area shall be provided adjacent to the frontage of all streets and drives, except within the downtown area.
 - This area shall be landscaped appropriately as determined by the Plan Commission. At minimum, one canopy-type street tree (maple, oak, hickory, ginkgo, honey locust or similar species) shall be required for every 50 feet of street or drive frontage, except within the downtown area. Said trees shall be a minimum 2-inch to 2.5-inch caliper.

End of Flexibilities.

Please feel free to contact us with any questions you may have regarding this request.

Respectfully,

Brad Koning
SKETCHWORKS ARCHITECTURE, LLC

Brad Koning

From: Jenny Minter <jminter@fdmh.org>
Sent: Friday, February 25, 2022 1:45 PM
To: Brad Koning
Subject: Re: FW: FW: Springdale Apartments Development Proposal (Parcel Number: 060707297651)

Brad,

Thank you for reaching out with the updated plans and asking for our input.

A few items:

- The resident patio on the rear of the building lists an area for grills. Just be aware that when planning placement of items in this area, any grills need to be placed 10 feet from the building and cannot be located under any overhanging portion of the building. Your balconies above do not look 10 feet deep, so under shouldn't be a problem, but the 10 feet away will limit your grill placement options.
- We are not super excited about the placement of the trees on either side of the entry drive, and the tree located nearest the building by the garage entrance. If the trees selected are to get as big or bigger than projected on the drawing it will hinder our ability to enter the parking lot without causing damage to our trucks. We need to cut towards the curbs tight in order to make it past cars parked in the lot spaces. The one tree by the garage entrance looks to cover half the driveway area which will damage our trucks when we respond to dumpster fires or fires in the garage area. I know you need to put in plenty of trees for the Mount Horeb specs, but we really prefer trees on the outer edges of the parking lot or in the lawn. We will be tending to this building years from now when the new small trees are not so small anymore. Any more space you can give us in the planting plan, or smaller varieties, is much appreciated.
- The last things I didn't see on the plans, but usually come later. The FDC for the sprinkler system; we would like input on the placement and we have fitting requirements. And a Knox Box, which would be located at the front entrance, and we can provide specific location input on that as well.

Otherwise, I don't see any concerns from a fire code perspective.

Thank you,

Jenny Minter
Chief
Mount Horeb Area Fire & EMS
608-437-5571

On Fri, Feb 25, 2022 at 12:10 AM Brad Koning <bkoning@sketchworksarch.com> wrote:

Chief Minter,

We have made some revisions to the site plan for the proposed apartment building located at the 1800 block of Springdale St. If you would please review the attached site plan and make any comments you feel are relevant to the fire apparatus access and your departments support in case of emergency, it would be greatly appreciated. The building will be fully sprinklered and monitored for fire and smoke protection.

Village of Mount Horeb

Erosion Control and Stormwater Management Permit

Date: 3/10/2022

Permit No : _____

Project Name: Mount Horeb Apartment Development

Project Location: 1800 Springdale St

Landowner: Badgerland Financial ACA

Applicant Sketchworks Architecture

Landowner
Address: PO Box 129

Applicant
Address: 7780 Elmwood Avenue, Suite 208

Johnson Creek, WI 53038

Middleton, WI 53562

Landowner phone: 920.261.2274

Applicant phone: 608.836.7570

Landowner email: _____

Applicant email: bkoning@sketchworksarch.com

FEES

Application Fee	\$150.00
Checklist Control Plan Fee (if applicable)	\$200.00
Plan Review and Inspection Fee Deposit:	
0-2 acres \$1,000 2-5 acres \$2,000 5+ acres \$3,500	<u>\$1,000</u>
Public Stormwater Management Facilities Cost	_____
Regional Stormwater Management Program Fee	_____
Total Fee	<u>_____</u>

Permit Conditions:

1. This permit authorizes the activities described in the Erosion Control and Stormwater Management Permit Application for Land Disturbing Activities filed by the Landowner/Applicant, in accordance with such application and in accordance with the approved Erosion Control Plan, the approved Stormwater Management Plan, and any agreement between the Village and the Permittee relating to the project, including but not limited to any development agreement, maintenance easement and agreement, or other applicable agreement.
2. The permittee shall notify the Village Building Inspector at least one (1) working day prior to commencing any land developing or land disturbing activity.

3. The erosion control plan shall be implemented prior to the start of any land-disturbing activity and shall be maintained over the duration of the project. Any stormwater control components of the plan shall be maintained in perpetuity, unless otherwise provided in the stormwater management plan and any applicable stormwater management easement and agreement.
4. The permittee shall be responsible for successful completion of the erosion control plan and the stormwater management plan. The permittee shall be liable for all costs incurred, including environmental restoration costs, resulting from noncompliance with an approved plan.
5. The permittee shall inspect the erosion control measures after each rain of 0.5 inches or more, and at least once each week, and make any needed repairs.
6. The Permittee and landowner authorize the Village or the Village's designee to enter the property to which this permit applies for the purposes of inspection under section 20.08 of the Village Code, or curative action under section 20.15(4) of the Village Code.
7. If required under section 20.11 of the Village Code, the permittee shall pay a proportionate share of the cost of public drainage ways, stream channels or other improvements and control measures servicing or that will serve the property to which this permit applies.
8. All incidental mud-tracking off-site onto adjacent public streets shall be cleaned up and removed by the end of each working day using proper disposal methods.
9. Neither this permit nor the approved Erosion Control Plan or Stormwater Management Plan may be modified without the prior written approval of the Village of Mount Horeb.
10. This permit is not assignable without the prior written approval of the Village of Mount Horeb.
11. Transfer of ownership, possession or control of the property to which this permit applies is subject to the provisions of section 20.07(5) of the Village Code.

Authorized Signature: _____ Date: _____
(If permittee is not the landowner, attach a notarized statement authorizing permittee to act as landowner's agent.)

Zoning Reviewed by: _____ Date: _____

Village Engineer: _____ Date: _____

Permit Issued by: _____ Date: _____

EROSION CONTROL AND STORMWATER MANAGEMENT PERMIT APPLICATION FOR LAND-DISTURBING ACTIVITIES

Chapter 20 Village of Mount Horeb Municipal Ordinances

This application must be completed by anyone wishing to undertake land disturbing or land developing activities meeting the requirements of sections 20.04 or 20.05 of the Village Code of the Village of Mount Horeb. At the time of submitting this application, all applicants must submit the appropriate application fee and any required stormwater and/or erosion control plans.

Application for a permit shall constitute express permission by the landowner and the applicant for the Village or the Village's designee to enter the property for the purposes of inspection or curative action.

ALL NECESSARY INFORMATION MUST BE COMPLETED.

SECTION I: APPLICANT INFORMATION	
Name Sketchworks Architecture	Contact Person Brad Koning
Mailing Address 7780 Elmwood Avenue, Suite 208	Title Partner
City, State, Zip Code Middleton, WI 53562	Telephone Number 608.836.7570
SECTION II: CONTRACTOR INFORMATION (when known)	
Name	Contact Person
Mailing Address	Title
City, State, Zip Code	Telephone Number
SECTION III: CONSTRUCTION SITE INFORMATION	
Project Name: <u>Mount Horeb Apartment Development</u>	
Project Address: <u>1800 Springdale St</u>	Zip Code: <u>53572</u>
Mailing Address: <u>1800 Springdale St</u>	Zip Code: <u>53572</u>
Project Start Date: <u>6/10/2022</u>	Project End Date: <u>5/31/2023</u>
If the site is not wholly located within the Village of Mt. Horeb or if the site is not located on a Village Street, complete the following:	
Quarter: <u>SE</u> Quarter: <u>NW</u> Section: <u>07</u> Township: <u>06</u> N. Range: <u>07</u>	
Is this site wholly contained on the above quarter section? (Yes or No) <u>Yes</u>	
*Use more space if needed to describe site location.	
Total Area of Construction Site: <u>1.44</u> Acres	Total Estimated Disturbed Area: <u>1.59</u> Acres
Site Impervious Area: (including rooftops)	Before Construction: <u>9</u> %
	After Construction: <u>59</u> %
Type of Construction (check all that apply)	
☒ Residential ☒ Commercial ☐ Industrial ☐ Reconstruction ☐ Demolition ☐ Utility	
☐ Transportation (If applicable, list WDOT Project Number _____)	
☐ Other (describe) _____	

Does your construction site's stormwater discharge to: (check all that apply)

- ☒ Storm drain system - infiltrates to groundwater
☐ Storm drain system - discharge to surface water
☐ Directly or indirectly to waters of the state - enter name of stream, river, lake wetland:
☐ Infiltration to groundwater occurs on-site

Has the stormwater discharge leaving the site been sampled and analyzed for pollutants?

(Yes or No) Yes

SECTION IV: CERTIFICATION

"I certify that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person, or persons, directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. In addition, I certify that the provision of the permit, including development and implementation of the Construction Site Erosion Control and Stormwater Management Plan, will be complied with. I acknowledge that I have read and understand Chapter 20, Erosion Control and Stormwater Management, Village of Mt. Horeb Municipal Code of Ordinances. I am aware of the enforcement provisions in Chapter 20, and where notice of noncompliance has been given and where corrections are not made within the time periods specified, I understand that corrective action may be taken by the Village, including but not limited to fines and citations and orders of stop work. Where conditions warrant, Village employees are authorized to enter my property to make necessary corrections and clean up, the expense of which will be assessed against my property by the Village to compensate for the total costs and expenses of this action."

Landowner Printed Name	Title	Telephone Number
Landowner Signature	Date Signed	

Please complete if this permit application was prepared by a consultant or someone other than an employee of the site Landowner.

Preparer Printed Name Colin Dumond	Firm JSD Professional Services, Inc.
Mailing Address 161 Horizon Dr #101	Title Staff Engineer
City, State, Zip Code Verona, WI 53593	Telephone Number 608.848.5060
Signature of Preparer	Date Signed

[Please complete the following Section if the Project Site Landowner will be acting through an authorized agent.]

I hereby authorize _____ to serve as my agent in all matters related to the issuance of a stormwater and erosion control permit under the provisions of Chapter 20, Village Code. I understand that I shall be bound to the terms of any permit issued to the agent.

(Landowner's Signature)

STATE OF WISCONSIN

COUNTY OF _____

Subscribed and sworn to before me this
_____ day of _____, 200____.

Notary Public, State of Wisconsin

My commission expires: _____

Village of Mount Horeb Erosion Control Application Checklist

(If the site is subject to a checklist control plan, please see page 9)

Project _____

Permit No. _____

Date _____

Please check the appropriate box: I=Included; N/A= Non-Applicable (If "N/A" is checked, an explanation must be entered.)

Plan requirement	I	N/A	Explanation/Location in Plan	I	N/A
Limits of disturbed area	X		C3.0		
Limits of impervious area	X		C2.0		
Location and types of predominant soils	X		SWMP Packet - Appendix 3		
Site topography at a contour level not to exceed 5 feet	X		C3.1		
Cross sections of and profiles within road ditches		X			
Locations and dimensions of all construction site control measures, including culvert sizes	X		C4.0		
Direction of flow of runoff (contours or runoff arrows)	X		C3.0		
Watershed size for each contributing drainage area	X		SWMP Packet - Appendix 2		
Design discharge for ditches and structural measures (flow calculations)		X			
Runoff velocities (feet/second, meters/second)	X		SWMP Packet - Appendix 4		
Locations and dimensions of all temporary soil stockpiles		X			
Fertilizer and seeding rates and recommendations (see worksheet, page 11)	X		SWMP Packet - Appendix 3		
Time schedules for stabilization of ditches, slopes, and exposed soil (See worksheet, page 11)	X		SWMP Packet - Appendix 3		
Description of the methods by which sites are to be developed, including plans for site dewatering		X			
Provision for sequential steps for mitigating erosive effect of land disturbing activities	X		C1.0		
Provisions to prevent sediment from being tracked onto public or private roadways	X		C3.0		
Soil loss calculations	X		SWMP Packet - Appendix 8		

Plan Requirement (con't)	I	N/A	Explanation/Location in Plan	I	N/A
Any other information necessary to reasonably determine the location, nature and condition of the site	X				
Application Requirements	X				
Copies of permits or permit applications or approvals required by any other governmental entity	X				
Proposed timetable and schedule for completion and installation of all elements of approved plan (see worksheet, page 11)	X				
Estimate of the cost of completion and installation of all elements of the proposed plan	X				
Evidence of financial responsibility to complete the work proposed in the plan	X				

Village of Mount Horeb Stormwater Control Application Checklist

(If the site is subject to a checklist control plan, please see page 9)

Project _____

Permit No. _____

Date _____

Please check the appropriate box: I=Included; NA= Non-Applicable (If "N/A" is checked, an explanation must be entered.)

Plan Requirement	I	N/A	Explanation/Location in Plan	I	N/A
Narrative describing the proposed project, including implementation schedule for planned practices	X		SWMP Packet		
Identification of the entity responsible for long-term maintenance of the project	X		SWMP Packet - Appendix 10		
Map showing drainage areas for each watershed area	X		SWMP Packet - Appendix 2		
Summary of runoff peak flow rate calculations, by watershed area, including: Pre-existing flow rates	X		SWMP Packet - Appendix 4		
Post-construction peak flow rates without detention	X		SWMP Packet - Appendix 4		
Post-construction peak flow rates with detention	X		SWMP Packet - Appendix 4		
Assumed Runoff Curve Numbers (RCNs)	X		SWMP Packet - Appendix 4		
Time of concentration (T_c) used in calculations	X		SWMP Packet - Appendix 4		
A complete site plan and specifications* including: Soil erosion control and overland runoff control measures, including runoff calculations as appropriate	X		SWMP Packet - Appendix 4		
All existing and proposed drainage features	X		C3.0		
the location and area of all proposed impervious surfaces	X		C2.0		
the limits and area of the disturbed area	X		C3.0		
Any other information necessary to reasonably determine the location, nature and condition of any physical or environmental features	X				
Detailed construction schedule	X		C1.0		
Copies of permits or permit applications required by any other governmental entities or agencies	X				

Plan Requirement (con't)	I	N/A	Explanation/Location in Plan	I	N/A
Engineered designs for all structural management practices and a narrative describing maintenance practices	— X	—	SWMP Packet - Appendix 10	—	—
Description of methods to control oil and grease, or justification for omission	X		SWMP Packet - Report		
If required, a plan to control temperature	X		SWMP Packet - Appendix 7		
Easement agreement and as-built plans for all temporary and permanent on-site stormwater management practices (20.12)		X			
A description of the methods to remove temporary stormwater management control measures (if applicable)	X		C1.0		
Compliance with Standards	I	N/A	Explanation/Location in Plan	I	N/A
Sediment Control: New construction: trap 5 microns (80% reduction in TSS)	X		SWMP Packet - Appendix 5		
Redevelopment: trap 20 microns (40% reduction in TSS)		X			
Oil & grease control (treat first .5 inches)	X		SWMP Packet - Report		
Runoff rate control. Maintain predevelopment peak runoff rates for: 2-year, 24-hour storm event	X		SWMP Packet - Appendix 4		
10-year, 24-hour storm event	X		SWMP Packet - Appendix 4		
Safely pass 100-year, 24 hour storm event	X		SWMP Packet - Appendix 4		
Proof of stable outlet capable of carrying the design flow at a non-erosive velocity	X		SWMP Packet - Report		
Runoff directed to impervious areas where feasible?	X				
Thermal control, if applicable	X		SWMP Packet - Appendix 7		
Compliance with Village Comprehensive Stormwater Management Plan, if applicable	X				
Application Requirements	I	N/A	Explanation/Location in Plan	I	N/A
Application fee	X				
Copy of permits or permit applications or approvals required by any other governmental entity	X				

Application Requirement (con't)	I	N/A	Explanation/Location in Plan	I	N/A
Proposed timetable and schedule for completion and installation of all elements of approved plans	X		C1.0		
Estimate of the cost of completion	X		SWMP Packet - Appendix 9		
Evidence of financial responsibility to complete work	X				
If required, payment for applicant's proportionate share of the cost to build any public stormwater management measures		X			
* If applicable, proof of long-term maintenance responsibility for on-site stormwater management measure.	X		SWMP Packet - Appendix 10		

*** Complete site plan and specifications in plan must include the following:**

1. Property lines and lot dimensions.
2. All buildings and outdoor uses, existing and proposed, including all dimensions and setbacks.
3. All public and private roads, interior roads, driveways and parking lots, showing traffic patterns and type of paving and surfacing material.
4. All natural and artificial water features (including OHWM, 100-year flood elevations, and delineated wetland boundaries, if applicable.)
5. Depth to bedrock.
6. Depth to seasonal high water table.
7. The extent and location of all soil types as described in the Dane County Soil Survey, slopes exceeding 12%, and areas of natural woodland or prairie.
8. Existing and proposed elevations (referenced to the North American Vertical Datum of 1988, where available) and existing and proposed contours in the area requiring a grading and filling permit.
9. Elevations, sections, profiles, and details as needed to describe an natural and artificial features of the project.

Village of Mount Horeb

Erosion Control Permit Simplified Application Checklist

Permit # _____

Date _____

Project Name: _____

Plan Requirements		X	Location of Information: Page Number or Attachment
1.	Narrative describing the proposed project		
2.	Site plan (of known scale that includes: property lines, disturbed area limits, impervious area limits (existing and proposed), natural and artificial water features, 100-yr flood plain, delineated wetland boundaries, location of all proposed erosion control practices)		
3.	Contours (existing and proposed)		
4.	Watershed size for each drainage area (include area draining to the site and within project boundaries)		
5.	Tracking Control (provisions to prevent mud-tracking onto public streets and roads during construction, e.g. tracking pad or existing gravel drive)		
6.	Sediment control practices to protect stormwater facilities or storm sewer inlets, existing and proposed, on or adjacent to the site (e.g. inlet protection or stone weeper)		
7.	Proposed erosion control practices (list of erosion control practices)		
8.	Proposed start date (date for installation of all erosion control practices and start of land disturbing activity)		
9.	Proposed stabilization date (date for placement of seed & mulch, sod or permanent surfacing)		
10.	Culvert sizes (existing and proposed culverts on or adjacent to the site)		
11.	Any other information necessary to reasonably determine the location, nature and condition of any physical or environmental features of the site		



Enterprise Lighting Ltd
Manufacturers' Representative

Transmittal

Enterprise Lighting, LTD.
2007 Pewaukee Rd.
Waukesha WI 53188
Phone: (262) 953-2700
From: Kelly Franzen

Project Springdale Street Apartments
Quote# ELL22-111438
Location Mt. Horeb WI
Contact:

ATTACHED WE ARE SENDING YOU 1 COPY OF THE FOLLOWING ITEM:

- | | | |
|--|---|--------|
| ☒ Drawings | ☐ Specifications | Other: |
| ☐ Prints | ☐ Information | |
| ☐ Plans | ☐ Submittals | |

THESE ARE TRANSMITTED FOR:

- | | | |
|--|---|---------------------------------|
| ☐ Prior Approval | ☐ Resubmittal for Approval | ☐ Record |
| ☐ Approval | ☐ Corrections | Bids due on: |
| ☐ Approval as Submitted | ☒ Your Use | Other: |
| ☐ Approval as Noted | ☐ Review and Comment | |

Type	MFG	Part
OA5H	Lithonia Exterior	DSX1 LED P2 **K T5M MVOLT HS SPA STD FINISH
OA5H	Lithonia Exterior	SSS 15 4C DM19AS STD FINISH
OA5WH	Lithonia Exterior	DSX1 LED P2 **K T5W MVOLT HS SPA STD FINISH
OA5WH	Lithonia Exterior	SSS 15 4C DM19AS STD FINISH
OB	Truly Green Solutions, Inc.	RBL-26W-40K-U-D-D
OF1	WAC Lighting	5121-**-STD FINISH / 9075-TRN-SS
OW	WAC Lighting	WS-W15216-XXK-BK
OW2	Lithonia Exterior	WPX1 LED P1 **K MVOLT STD FINISH
OW3	Lithonia Exterior	WPX1 LED P2 **K MVOLT STD FINISH
D1	Acuity Downlighting	LDN4 40/15 LO4AR LSS MVOLT GZ10
OL-23	Tivoli	LSL2-X-12-S-**-C-12-23FT /END PREP / ACCESSORIES / TRANSFORMER T.B.D.

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

DSX1 LED P2 **K T5M MVOLT HS
SPA STD FINISH

Notes:

Type:**OA5H**

ELL22-111438



D-Series Size 1 LED Area Luminaire

**Specifications**

EPA: 1.01 ft²
(0.09 m²)

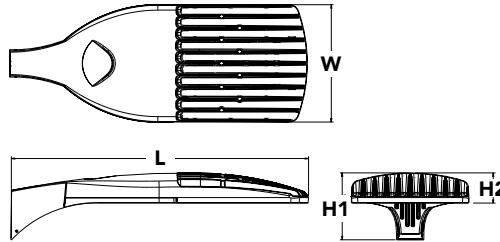
Length: 33"
(83.8 cm)

Width: 13"
(33.0 cm)

Height H1: 7-1/2"
(19.0 cm)

Height H2: 3-1/2"

Weight (max): 27 lbs
(12.2 kg)

Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information**EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD**

DSX1 LED		T.B.D.				
Series	LEDs	Color temperature	Distribution		Voltage	Mounting
DSX1 LED	Forward optics P1 P4 ¹ P7 ¹ P2 P5 ¹ P8 P3 P6 ¹ P9 ¹ Rotated optics P10 ² P12 ² P11 ² P13 ^{1,2}	30K 3000 K 40K 4000 K 50K 5000 K	T1S Type I short (Automotive) T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium	TSVS Type V very short ³ TSS Type V short ³ TSM Type V medium ³ TSW Type V wide ³ BLC Backlight control ⁴ LCCO Left corner cutoff ⁴ RCCO Right corner cutoff ⁴	MVOLT ⁵ XVOLT ^{6,7,8} (277V-480V) 120 ⁹ 208 ⁹ 240 ⁹ 277 ⁹ 347 ⁹ 480 ⁹	Shipped included SPA Square pole mounting RPA Round pole mounting ¹⁰ WBA Wall bracket ³ SPUMBA Square pole universal mounting adaptor ¹¹ RPUMBA Round pole universal mounting adaptor ⁹ Shipped separately KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) ¹²

Control options			T.B.D.
Control options	Other options	Finish (required)	
Shipped installed NLTAIR2 nLight AIR generation 2 enabled ¹³ PIRHN Network, high/low motion/ambient sensor ¹⁴ PER NEMA twist-lock receptacle only (controls ordered separate) ¹⁵ PER5 Five-pin receptacle only (controls ordered separate) ^{15,16} PER7 Seven-pin receptacle only (controls ordered separate) ^{15,16} DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ¹⁷ DS Dual switching ^{18,19,20}	PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc ^{20,21} PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc ^{20,21} PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc ^{20,21} PIRH1FC3V Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc ^{20,21} FAO Field adjustable output ^{20,21}	Shipped installed HS House-side shield ²³ SF Single fuse (120, 277, 347V) ⁹ DF Double fuse (208, 240, 480V) ⁹ L90 Left rotated optics ² R90 Right rotated optics ² HA 50°C ambient operations ¹ BAA Buy America(n) Act Compliant Shipped separately BS Bird spikes ²⁴ EGS External glare shield	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

DSX1 LED P2 **K T5M MVOLT HS
SPA STD FINISH

Notes:**Type:****OA5H**

ELL22-111438

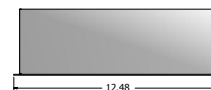
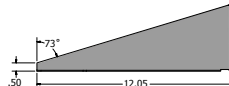
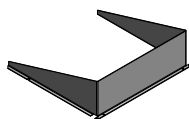
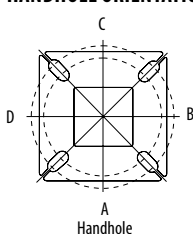
Ordering Information**Accessories**

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²⁵
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²⁵
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²⁵
DSHORT SBK U	Shorting cap ²⁵
DSK1HS 30C U	House-side shield for P1, P2, P3, P4 and P5 ²³
DSK1HS 40C U	House-side shield for P6 and P7 ²³
DSK1HS 60C U	House-side shield for P8, P9, P10, P11 and P12 ²³
PUMBA DOBXD U*	Square and round pole universal mounting bracket (specify finish) ²⁶
KMA8 DOBXD U	Mast arm mounting bracket adaptor (specify finish) ¹²
DSK1EGS (FINISH) U	External glare shield

For more control options, visit [DTL](#) and [ROAM](#) online.**NOTES**

- HA not available with P4, P5, P6, P7, P9 and P13.
- P10, P11, P12 or P13 and rotated optics (L90, R90) only available together.
- Any Type 5 distribution with photocell, is not available with WBA.
- Not available with HS.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- XVOLT only suitable for use with P3, P5, P6, P7, P9 and P13.
- XVOLT works with any voltage between 277V and 480V.
- XVOLT not available with fusing (SF or DF) and not available with PIR, PIRH, PIR1FC3V, PIRH1FC3V.
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).
- Suitable for mounting to round poles between 3.5" and 12" diameter.
- Universal mounting brackets intended for retrofit on existing, pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31. Only usable when pole's drill pattern is NOT Lithonia template #8.
- Must order fixture with SPA option. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" diameter mast arm (not included).
- Must be ordered with PIRHN. Sensor cover available only in dark bronze, black, white and natural aluminum colors.
- Must be ordered with NITAIR2. For more information on nLight Air 2 visit [this link](#).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting cap included.
- If ROAM® node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Node with integral dimming.
- DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRH1FC3V, FAO.
- Provides 50/50 fixture operation via (2) independent drivers. Not available with PER, PER5, PER7, PIR or PIRH. Not available P1, P2, P3, P4 or P5.
- Requires (2) separately switched circuits with isolated neutral.
- Reference Controls Option Default settings table on page 4.
- Reference Motion Sensor table on page 4 to see functionality.
- Not available with other dimming controls options.
- Not available with BLC, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- Must be ordered with fixture for factory pre-drilling.
- Requires luminaire to be specified with PER, PER5 or PER7 option. See Control Option Table on page 4.
- For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8.

Options**EGS - External Glare Shield****Drilling****HANDHOLE ORIENTATION**

Handhole

Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-280	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS

DSX1 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
DSX1 LED	1.013	2.025	1.945	3.038	2.850	3.749

	Drilling Template	Minimum Acceptable Outside Pole Dimension					
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"	3.5"	4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

DSX1 LED P2 **K T5M MVOLT HS
 SPA STD FINISH

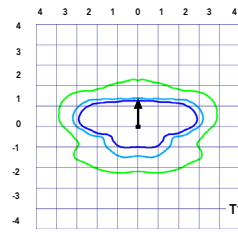
Notes:

Type:**OA5H**

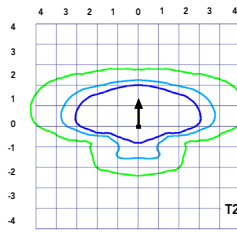
ELL22-111438

Photometric DiagramsTo see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Area Size 1 homepage](#).

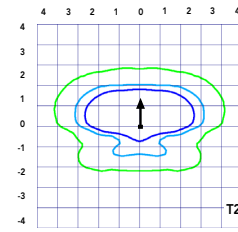
Isofootcandle plots for the DSX1 LED 60C 1000 40K. Distances are in units of mounting height (25').

LEGEND

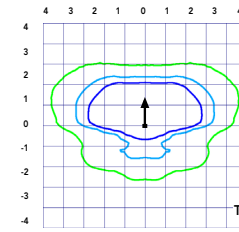
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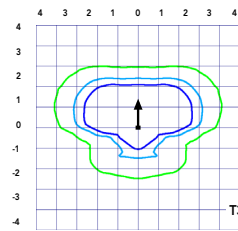
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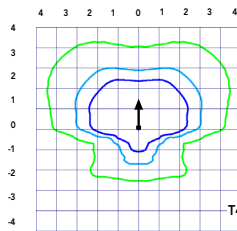
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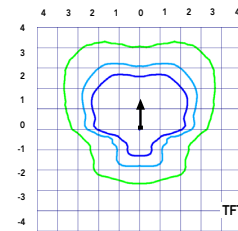
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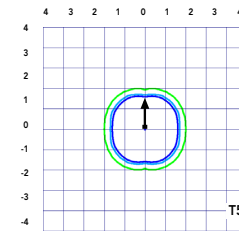
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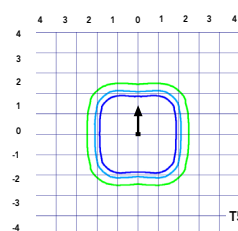
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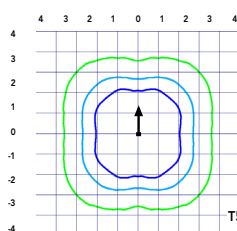
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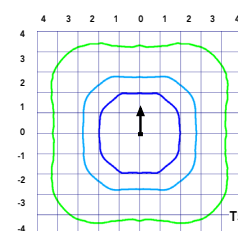
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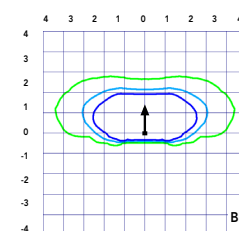
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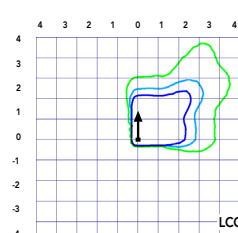
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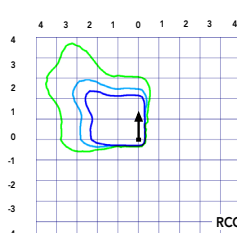
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Test No. LT123271 tested in accordance with IESNA LM-79-08.



Test No. LT12321 tested in accordance with IESNA LM-79-08.



Test No. LT123164B tested in accordance with IESNA LM-79-08.

Submitted by Enterprise Lighting, LTD.		Catalog Number: DSX1 LED P2 **K T5M MVOLT HS SPA STD FINISH Notes:	Type: OA5H ELL22-111438
 Enterprise Lighting Manufacturers' Representative	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)		

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings						
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

*for use when motion sensor is used as dusk to dawn control.

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current	Wattage	120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	30	530	54	0.45	0.26	0.23	0.19	0.10	0.12
	P2	30	700	70	0.59	0.34	0.30	0.25	0.20	0.16
	P3	30	1050	102	0.86	0.50	0.44	0.38	0.30	0.22
	P4	30	1250	125	1.06	0.60	0.52	0.46	0.37	0.27
	P5	30	1400	138	1.16	0.67	0.58	0.51	0.40	0.29
	P6	40	1250	163	1.36	0.78	0.68	0.59	0.47	0.34
	P7	40	1400	183	1.53	0.88	0.76	0.66	0.53	0.38
	P8	60	1050	207	1.74	0.98	0.87	0.76	0.64	0.49
	P9	60	1250	241	2.01	1.16	1.01	0.89	0.70	0.51
Rotated Optics (Requires L90 or R90)	P10	60	530	106	0.90	0.52	0.47	0.43	0.33	0.27
	P11	60	700	137	1.15	0.67	0.60	0.53	0.42	0.32
	P12	60	1050	207	1.74	0.99	0.87	0.76	0.60	0.46
	P13	60	1250	231	1.93	1.12	0.97	0.86	0.67	0.49

Controls Options				
Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensors with integral photocell. PIR for 8-15' mounting; PIRH for 15-30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRH1FC3V when the sensor photocell is used for dusk-to-dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclipse.	nLight Air rSDGR	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts Contact factory for performance data on any configurations not shown here.

Forward Optics																			
LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
30	530	P1	54W	T1S	6,457	2	0	2	120	6,956	2	0	2	129	7,044	2	0	2	130
				T2S	6,450	2	0	2	119	6,949	2	0	2	129	7,037	2	0	2	130
				T2M	6,483	1	0	1	120	6,984	2	0	2	129	7,073	2	0	2	131
				T3S	6,279	2	0	2	116	6,764	2	0	2	125	6,850	2	0	2	127
				T3M	6,468	1	0	2	120	6,967	1	0	2	129	7,056	1	0	2	131
				T4M	6,327	1	0	2	117	6,816	1	0	2	126	6,902	1	0	2	128
				TFTM	6,464	1	0	2	120	6,963	1	0	2	129	7,051	1	0	2	131
				TSVS	6,722	2	0	0	124	7,242	3	0	0	134	7,334	3	0	0	136
				TSS	6,728	2	0	1	125	7,248	2	0	1	134	7,340	2	0	1	136
				TSM	6,711	3	0	1	124	7,229	3	0	1	134	7,321	3	0	2	136
				TSW	6,667	3	0	2	123	7,182	3	0	2	133	7,273	3	0	2	135
				BLC	5,299	1	0	1	98	5,709	1	0	2	106	5,781	1	0	2	107
				LCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80
				RCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80
				30	700	P2	70W	T1S	8,249	2	0	2	118	8,886	2	0	2	127	8,999
T2S	8,240	2	0					2	118	8,877	2	0	2	127	8,989	2	0	2	128
T2M	8,283	2	0					2	118	8,923	2	0	2	127	9,036	2	0	2	129
T3S	8,021	2	0					2	115	8,641	2	0	2	123	8,751	2	0	2	125
T3M	8,263	2	0					2	118	8,901	2	0	2	127	9,014	2	0	2	129
T4M	8,083	2	0					2	115	8,708	2	0	2	124	8,818	2	0	2	126
TFTM	8,257	2	0					2	118	8,896	2	0	2	127	9,008	2	0	2	129
TSVS	8,588	3	0					0	123	9,252	3	0	0	132	9,369	3	0	0	134
TSS	8,595	3	0					1	123	9,259	3	0	1	132	9,376	3	0	1	134
TSM	8,573	3	0					2	122	9,236	3	0	2	132	9,353	3	0	2	134
TSW	8,517	3	0					2	122	9,175	4	0	2	131	9,291	4	0	2	133
BLC	6,770	1	0					2	97	7,293	1	0	2	104	7,386	1	0	2	106
LCCO	5,038	1	0					2	72	5,427	1	0	2	78	5,496	1	0	2	79
RCCO	5,038	1	0					2	72	5,427	1	0	2	78	5,496	1	0	2	79
30	1050	P3	102W					T1S	11,661	2	0	2	114	12,562	3	0	3	123	12,721
				T2S	11,648	2	0	2	114	12,548	3	0	3	123	12,707	3	0	3	125
				T2M	11,708	2	0	2	115	12,613	2	0	2	124	12,773	2	0	2	125
				T3S	11,339	2	0	2	111	12,215	3	0	3	120	12,370	3	0	3	121
				T3M	11,680	2	0	2	115	12,582	2	0	2	123	12,742	2	0	2	125
				T4M	11,426	2	0	3	112	12,309	2	0	3	121	12,465	2	0	3	122
				TFTM	11,673	2	0	2	114	12,575	2	0	3	123	12,734	2	0	3	125
				TSVS	12,140	3	0	1	119	13,078	3	0	1	128	13,244	3	0	1	130
				TSS	12,150	3	0	1	119	13,089	3	0	1	128	13,254	3	0	1	130
				TSM	12,119	4	0	2	119	13,056	4	0	2	128	13,221	4	0	2	130
				TSW	12,040	4	0	3	118	12,970	4	0	3	127	13,134	4	0	3	129
				BLC	9,570	1	0	2	94	10,310	1	0	2	101	10,440	1	0	2	102
				LCCO	7,121	1	0	3	70	7,671	1	0	3	75	7,768	1	0	3	76
				RCCO	7,121	1	0	3	70	7,671	1	0	3	75	7,768	1	0	3	76
				30	1250	P4	125W	T1S	13,435	3	0	3	107	14,473	3	0	3	116	14,657
T2S	13,421	3	0					3	107	14,458	3	0	3	116	14,641	3	0	3	117
T2M	13,490	2	0					2	108	14,532	3	0	3	116	14,716	3	0	3	118
T3S	13,064	3	0					3	105	14,074	3	0	3	113	14,252	3	0	3	114
T3M	13,457	2	0					2	108	14,497	2	0	2	116	14,681	2	0	2	117
T4M	13,165	2	0					3	105	14,182	2	0	3	113	14,362	2	0	3	115
TFTM	13,449	2	0					3	108	14,488	2	0	3	116	14,672	2	0	3	117
TSVS	13,987	4	0					1	112	15,068	4	0	1	121	15,259	4	0	1	122
TSS	13,999	3	0					1	112	15,080	3	0	1	121	15,271	3	0	1	122
TSM	13,963	4	0					2	112	15,042	4	0	2	120	15,233	4	0	2	122
TSW	13,872	4	0					3	111	14,944	4	0	3	120	15,133	4	0	3	121
BLC	11,027	1	0					2	88	11,879	1	0	2	95	12,029	1	0	2	96
LCCO	8,205	1	0					3	66	8,839	1	0	3	71	8,951	1	0	3	72
RCCO	8,205	1	0					3	66	8,839	1	0	3	71	8,951	1	0	3	72
30	1400	P5	138W					T1S	14,679	3	0	3	106	15,814	3	0	3	115	16,014
				T2S	14,664	3	0	3	106	15,797	3	0	3	114	15,997	3	0	3	116
				T2M	14,739	3	0	3	107	15,878	3	0	3	115	16,079	3	0	3	117
				T3S	14,274	3	0	3	103	15,377	3	0	3	111	15,572	3	0	3	113
				T3M	14,704	2	0	3	107	15,840	3	0	3	115	16,040	3	0	3	116
				T4M	14,384	2	0	3	104	15,496	3	0	3	112	15,692	3	0	3	114
				TFTM	14,695	2	0	3	106	15,830	3	0	3	115	16,030	3	0	3	116
				TSVS	15,283	4	0	1	111	16,464	4	0	1	119	16,672	4	0	1	121
				TSS	15,295	3	0	1	111	16,477	4	0	1	119	16,686	4	0	1	121
				TSM	15,257	4	0	2	111	16,435	4	0	2	119	16,644	4	0	2	121
				TSW	15,157	4	0	3	110	16,328	4	0	3	118	16,534	4	0	3	120
				BLC	12,048	1	0	2	87	12,979	1	0	2	94	13,143	1	0	2	95
				LCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71
				RCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71

Submitted by Enterprise Lighting, LTD.  Enterprise Lighting Manufacturers' Representative	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)	Catalog Number: DSX1 LED P2 **K T5M MVOLT HS SPA STD FINISH Notes:	Type: OA5H ELL22-111438
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FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (1.01 ft³) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 3000 K, 4000 K and 5000 K (70 CRI) configurations. The D-Series Size 1 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX1 LED area luminaire has a number of control options. DSX Size 1, comes standard with 0-10V dimming drivers. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensors with on-board photocells feature field-adjustable programming and are suitable for mounting heights up to 30 feet.

nLIGHT AIR CONTROLS

The DSX1 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found here.

INSTALLATION

Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern (template #8). NEMA photocontrol receptacle are also available.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

BUY AMERICAN

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Submitted by Enterprise Lighting, LTD.  Enterprise Lighting Manufacturers' Representatives	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)	Catalog Number: SSS 15 4C DM19AS STD FINISH Notes:	Type: OA5H ELL22-111438
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FEATURES & SPECIFICATIONS

INTENDED USE — These specifications are for USA standards only. Square Straight Steel is a general purpose light pole for up to 39-foot mounting heights. This pole provides a robust yet cost effective option for mounting area lights and floodlights.

CONSTRUCTION

Pole Shaft: The pole shaft is of uniform dimension and wall thickness and is made of a weldable-grade, hot-rolled, commercial-quality steel tubing with a minimum yield of 55 KSI (11-gauge, .1196"), or 50 KSI (7-gauge, .1793"). Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4", 5" and 6".

Pole Top: Options include tenon top, drilled for side mount fixture, tenon with drilling (includes extra handhole) and open top. Side drilled and open top poles include a removable top cap.

Handhole: A reinforced handhole with grounding provision is provided at 18" from the base on side A. Positioning the handhole lower may not be possible and requires engineering review; consult Tech Support-Outdoor for further information. Every handhole includes a cover and cover attachment hardware. The handhole has a nominal dimension of 2.5" x 5".

Base Cover: A durable ABS plastic two-piece full base cover, finished to match the pole, is provided with each pole assembly. Additional base cover options are available upon request.

Anchor Base/Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be altered to match existing foundations; consult factory for modifications. Anchor bolts are manufactured to ASTM F1554 Standards grade 55, (55 KSI minimum yield strength and tensile strength of 75-95 KSI). Top threaded portion (nominal 12") is hot-dipped galvanized per ASTM A-153.

HARDWARE — All structural fasteners are high-strength galvanized carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

FINISH — Extra durable painted finish is coated with TGIC (Triglycidyl Isocyanurate) Polyester powder that meets 5A and 5B classifications of ASTM D3359. Powder-coat finishes include Dark Bronze, White, Black, and Natural Aluminum colors. Architectural Colors and Special Finishes are available by quote and include, but are not limited to Paint over Hot-dipped Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes.

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

INSTALLATION — Do not erect poles without having fixtures installed. Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates. If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage. Lithonia Lighting is not responsible for the foundation design.

WARRANTY — 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

Catalog Number
Notes
Type



Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL



Submitted by Enterprise Lighting, LTD.  Enterprise Lighting Manufacturers' Representative	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)	Catalog Number: SSS 15 4C DM19AS STD FINISH Notes:	Type: OA5H ELL22-111438
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SSS Square Straight Steel Poles

ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

Example: SSS 20 5C DM19 DDBXD

SSS	15					T.B.D.	
Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness ²	Mounting ³		Options	Finish ¹³	
SSS ¹	10'-39' (for 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.) See technical information table for complete ordering information.)	4C 4" 11g (.1196") 4G 4" 7g (.1793") 5C 5" 11g (.1196") 5G 5" 7g (.1793") 6G 6" 7g (.1793") See technical information table for complete ordering information.)	Tenon mounting PT Open top (includes top cap) T20 2-3/8" O.D. (2" NPS) T25 2-7/8" O.D. (2-1/2" NPS) T30 3-1/2" O.D. (3" NPS) T35 4" O.D. (3-1/2" NPS) <u>KAC/KAD/KSE/KSF/KVR/KVF Drill mounting⁴</u> DM19 1 at 90° DM28 2 at 180° DM28 PL 2 at 180° with one side plugged DM29 2 at 90° DM39 3 at 90° DM49 4 at 90° <u>CSX/DSX/RSX/AERIS™/OMERO™/HLA/KAX Drill mounting⁴</u> DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM49AS 4 at 90° <u>RAD drill mounting⁴</u> DM19RAD 1 at 90° DM28RAD 2 at 180° DM29RAD 2 at 90° DM39RAD 3 at 90° DM49RAD 4 at 90° <u>ESX Drill mounting⁴</u> DM19ESX 1 at 90° DM28ESX 2 at 180° DM29ESX 2 at 90° DM39ESX 3 at 90° DM49ESX 4 at 90°		<u>AERIS™ Suspend drill mounting^{4,5}</u> DM19AST_ 1 at 90° DM28AST_ 2 at 180° DM29AST_ 2 at 90° DM39AST_ 3 at 90° DM49AST_ 4 at 90° <u>OMERO™ Suspend drill mounting^{4,5}</u> DM19MRT_ 1 at 90° DM28MRT_ 2 at 180° DM29MRT_ 2 at 90° DM39MRT_ 3 at 90° DM49MRT_ 4 at 90°	Shipped installed VD Vibration damper ⁶ HAXy Horizontal arm bracket (1 fixture) ^{7,8} FDLxy Festoon outlet less electrical ^{7,9} CPL12/xy 1/2" coupling ⁷ CPL34/xy 3/4" coupling ⁷ CPL1/xy 1" coupling ⁷ NPL12/xy 1/2" threaded nipple ⁷ NPL34/xy 3/4" threaded nipple ⁷ NPL1/xy 1" threaded nipple ⁷ EHHxy Extra handhole ^{7,10} NEC NEC 410.30 compliant gasketed handhole (Not UL Labeled) IC Interior coating ¹¹ L/AB Less anchor bolts (Include when anchor bolts are not needed) TP Tamper resistant handhole cover fasteners UL UL listed with label (Includes NEC compliant cover) BAA Buy America(n) Act Compliant ¹²	<u>Super durable paint colors</u> DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLTXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white <u>Other finishes</u> GALV Galvanized finish <u>Architectural colors and special finishes</u> Paint over Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes available.

NOTES:

- Handhole covers (HHC), full base covers (FBC) and top caps (TC) shipped separately. No need to call out in nomenclature. For additional parts please order as replacements.
- Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" - 0.1196" | "G" - 0.1793".
- PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, follow this example: DM28/T20. The combination includes a required extra handhole.
- Refer to the fixture spec sheet for the correct drilling template pattern and orientation compatibility.
- Insert "1" or "2" to designate fixture size; e.g. DM19AST2.
- On 4" and 5" poles, VD cannot be installed if provisions (EHH, FDL, NPL, CPL) are located higher than 2/3 of the pole's total height.
Example: Pole height is 25ft, A provision cannot be placed above 16ft.
- Specify location and orientation when ordering option.
For "x": Specify the height above the base of pole in feet or feet and inches; separate feet and inches with a "-".
Example: 5ft = 5 and 20ft 3in = 20-3
For "y": Specify orientation from handhole (A,B,C,D) Refer to the Handhole Orientation diagram below.
Example: 1/2" coupling at 5' 8" orientation C = CPL12/5-8C
- Horizontal arm is 18" x 2-3/8" O.D. tenon standard, with radius curve providing 12" rise and 2-3/8" O.D. If ordering two horizontal arm at the same height, specify with HAXxy. Example: HA20BD.
- FDL does not come with GFCI outlet or handhole cover. These must be supplied by contractor or electrician.
- Combination of tenon-top and drill mount includes extra handhole. EHH includes cover.
- Provides enhanced corrosion resistance.
- Use when mill certifications are required.
- Finish must be specified. Additional colors available; see Architectural Colors brochure linked [here](#) (Form No. 794.3).

Accessories: Order as separate catalog number.

PL DT20 Plugs for ESX drillings
PL DT8 Plugs for DMxxAS drillings



POLE-SSS

OUTDOOR: One Lithonia Way Conyers, GA 30012 Phone: 800-705-SERV (7378) www.lithonia.com

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Rev. 03/01/22

**Job Name:**Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)**Catalog Number:**

SSS 15 4C DM19AS STD FINISH

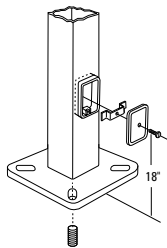
Notes:**Type:****OA5H**

ELL22-111438

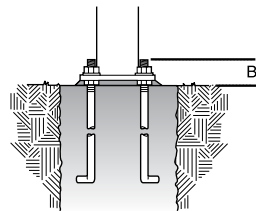
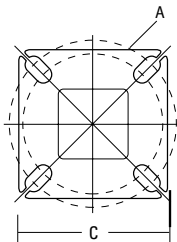
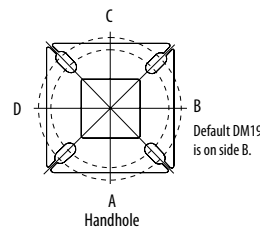
SSS Square Straight Steel Poles**TECHNICAL INFORMATION — EPA (ft²) with 1.3 gust**

Catalog Number	Nominal Shaft Length (ft.)*	Pole Shaft Size (Base in. x Top in. x ft.)	Wall thick (in)	Gauge	EPA (ft ²) with 1.3 gust						Bolt circle (in)	Bolt size (in. x in. x in.)	Approximate ship weight (lbs.)
					80 MPH	Max. weight	90 MPH	Max. weight	100 MPH	Max. weight			
SSS 10 4C	10	4.0 x 10.0	0.1196	11	30.6	765	23.8	595	18.9	473	8-9	3/4 x 18 x 3	75
SSS 12 4C	12	4.0 x 12.0	0.1196	11	24.4	610	18.8	470	14.8	370	8-9	3/4 x 18 x 3	90
SSS 14 4C	14	4.0 x 14.0	0.1196	11	19.9	498	15.1	378	11.7	293	8-9	3/4 x 18 x 3	100
SSS 16 4C	16	4.0 x 16.0	0.1196	11	15.9	398	11.8	295	8.9	223	8-9	3/4 x 18 x 3	115
SSS 18 4C	18	4.0 x 18.0	0.1196	11	12.6	315	9.2	230	6.7	168	8-9	3/4 x 18 x 3	125
SSS 20 4C	20	4.0 x 20.0	0.1196	11	9.6	240	6.7	167	4.5	150	8-9	3/4 x 18 x 3	140
SSS 20 4G	20	4.0 x 20.0	0.1793	7	14	350	11	275	8	200	8-9	3/4 x 30 x 3	198
SSS 20 5C	20	5.0 x 20.0	0.1196	11	17.7	443	12.7	343	9.4	235	10-12	1 x 36 x 4	185
SSS 20 5G	20	5.0 x 20.0	0.1793	7	28.1	703	21.4	535	16.2	405	10-12	1 x 36 x 4	265
SSS 25 4C	25	4.0 x 25.0	0.1196	11	4.8	150	2.6	100	1	50	8-9	3/4 x 18 x 3	170
SSS 25 4G	25	4.0 x 25.0	0.1793	7	10.8	270	7.7	188	5.4	135	8-9	3/4 x 30 x 3	245
SSS 25 5C	25	5.0 x 25.0	0.1196	11	9.8	245	6.3	157	3.7	150	10-12	1 x 36 x 4	225
SSS 25 5G	25	5.0 x 25.0	0.1793	7	18.5	463	13.3	333	9.5	238	10-12	1 x 36 x 4	360
SSS 30 4G	30	4.0 x 30.0	0.1793	7	6.7	168	4.4	110	2.6	65	8-9	3/4 x 30 x 3	295
SSS 30 5C	30	5.0 x 30.0	0.1196	11	4.7	150	2	50	--	--	10-12	1 x 36 x 4	265
SSS 30 5G	30	5.0 x 30.0	0.1793	7	10.7	267	6.7	167	3.9	100	10-12	1 x 36 x 4	380
SSS 30 6G	30	6.0 x 30.0	0.1793	7	19	475	13.2	330	9	225	11-13	1 x 36 x 4	520
SSS 35 5G	35	5.0 x 35.0	0.1793	7	5.9	150	2.5	100	--	--	10-12	1 x 36 x 4	440
SSS 35 6G	35	6.0 x 35.0	0.1793	7	12.4	310	7.6	190	4.2	105	11-13	1 x 36 x 4	540
SSS 39 6G	39	6.0 x 39.0	0.1793	7	7.2	180	3	75	--	--	11-13	1 x 36 x 4	605

NOTE: * EPA values are based ASCE 7-93 wind map. For 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.

BASE DETAIL

POLE DATA								
Shaft base size	Bolt circle A	Bolt projection B	Base diameter C	Base plate thickness	Template description	Anchor bolt description	Anchor bolt and template number	Anchor bolt description
4"C	8" - 9"	3.25" - 3.75"	8" - 8.25"	0.75"	ABTEMPLATE PJ50004	AB18-0	ABSSS-4C	3/4"x18"x3"
4"G	8" - 9"	3.38" - 3.75"	8" - 8.25"	0.875"	ABTEMPLATE PJ50004	AB30-0	ABSSS-4G	3/4"x30"x3"
5"	10" - 12"	3.5" - 4"	11"	1"	ABTEMPLATE PJ50010	AB36-0	ABSSS-5	1"x36"x4"
6"	11" - 13"	4" - 4.50"	12.5"	1"	ABTEMPLATE PJ50011	AB36-0	N/A	1"x36"x4"

**HANDHOLE ORIENTATION****IMPORTANT INSTALLATION NOTES:**

- **Do not** erect poles without having fixtures installed.
- Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates.
- If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage.
- Lithonia Lighting is not responsible for the foundation design.
- Bolt circles have +/- 1/2" tolerance.

CAUTION: These specifications are intended for general purposes only. Lithonia Lighting reserves the right to change material or design, without prior notice, in a continuing effort to upgrade its products.



POLE-SSS

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

DSX1 LED P2 **K T5W MVOLT HS
SPA STD FINISH

Notes:

Type:**OA5WH**

ELL22-111438



D-Series Size 1 LED Area Luminaire

**Specifications**

EPA: 1.01 ft²
(0.09 m²)

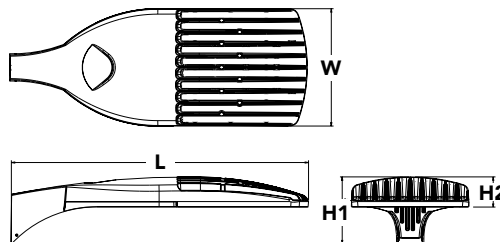
Length: 33"
(83.8 cm)

Width: 13"
(33.0 cm)

Height H1: 7-1/2"
(19.0 cm)

Height H2: 3-1/2"

Weight (max): 27 lbs
(12.2 kg)

Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information**EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD**

DSX1 LED		T.B.D.				
Series	LEDs	Color temperature	Distribution		Voltage	Mounting
DSX1 LED	Forward optics P1 P4 ¹ P7 ¹ P2 P5 ¹ P8 P3 P6 ¹ P9 ¹ Rotated optics P10 ² P12 ² P11 ² P13 ^{1,2}	30K 3000 K 40K 4000 K 50K 5000 K	T1S Type I short (Automotive) T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium	TSVS Type V very short ³ TSS Type V short ³ TSM Type V medium ³ TSW Type V wide ³ BLC Backlight control ⁴ LCCO Left corner cutoff ⁴ RCCO Right corner cutoff ⁴	MVOLT ⁵ XVOLT ^{6,7,8} (277V-480V) 120 ⁹ 208 ⁹ 240 ⁹ 277 ⁹ 347 ⁹ 480 ⁹	Shipped included SPA Square pole mounting RPA Round pole mounting ¹⁰ WBA Wall bracket ³ SPUMBA Square pole universal mounting adaptor ¹¹ RPUMBA Round pole universal mounting adaptor ⁹ Shipped separately KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) ¹²

Control options			T.B.D.
Shipped installed	Other options	Finish (required)	
NLTAIR2 nLight AIR generation 2 enabled ¹³ PIRHN Network, high/low motion/ambient sensor ¹⁴ PER NEMA twist-lock receptacle only (controls ordered separate) ¹⁵ PER5 Five-pin receptacle only (controls ordered separate) ^{15,16} PER7 Seven-pin receptacle only (controls ordered separate) ^{15,16} DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ¹⁷ DS Dual switching ^{18,19,20}	PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc ^{20,21} PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc ^{20,21} PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc ^{20,21} PIRH1FC3V Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc ^{20,21} FAO Field adjustable output ^{20,21}	Shipped installed HS House-side shield²³ SF Single fuse (120, 277, 347V) ⁹ DF Double fuse (208, 240, 480V) ⁹ L90 Left rotated optics ² R90 Right rotated optics ² HA 50°C ambient operations ¹ BAA Buy America(n) Act Compliant Shipped separately BS Bird spikes ²⁴ EGS External glare shield	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

DSX1 LED P2 **K T5W MVOLT HS
SPA STD FINISH

Notes:

Type:**OA5WH**

ELL22-111438

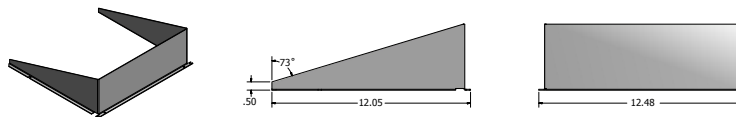
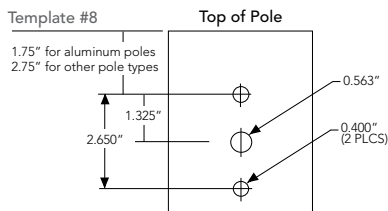
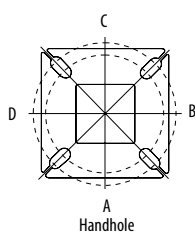
Ordering Information**Accessories**

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²⁵
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²⁵
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²⁵
DSHORT S8K U	Shorting cap ²⁵
DSK1HS 30C U	House-side shield for P1, P2, P3, P4 and P5 ²³
DSK1HS 40C U	House-side shield for P6 and P7 ²³
DSK1HS 60C U	House-side shield for P8, P9, P10, P11 and P12 ²³
PUMBA DDBXD U*	Square and round pole universal mounting bracket (specify finish) ²⁶
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) ¹²
DSK1EGS (FINISH) U	External glare shield

For more control options, visit [DTL](#) and [ROAM](#) online.**NOTES**

- HA not available with P4, P5, P6, P7, P9 and P13.
- P10, P11, P12 or P13 and rotated optics (L90, R90) only available together.
- Any Type 5 distribution with photocell, is not available with WBA.
- Not available with HS.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- XVOLT only suitable for use with P3, P5, P6, P7, P9 and P13.
- XVOLT works with any voltage between 277V and 480V.
- XVOLT not available with fusing (SF or DF) and not available with PIR, PIRH, PIR1FC3V, PIRH1FC3V.
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).
- Suitable for mounting to round poles between 3.5" and 12" diameter.
- Universal mounting brackets intended for retrofit on existing, pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31. Only usable when pole's drill pattern is NOT Lithonia template #8.
- Must order fixture with SPA option. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" diameter mast arm (not included).
- Must be ordered with PIRH.N. Sensor cover available only in dark bronze, black, white and natural aluminum colors.
- Must be ordered with NITAIR2. For more information on nLight Air 2 visit [this link](#).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting cap included.
- If RQAM* node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Node with integral dimming.
- DMG not available with PIRH.N, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRH1FC3V, FAO.
- Provides 50/50 fixture operation via (2) independent drivers. Not available with PER, PER5, PER7, PIR or PIRH. Not available P1, P2, P3, P4 or P5.
- Requires (2) separately switched circuits with isolated neutral.
- Reference Controls Option Default settings table on page 4.
- Reference Motion Sensor table on page 4 to see functionality.
- Not available with other dimming controls options.
- Not available with BLC, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- Must be ordered with fixture for factory pre-drilling.
- Requires luminaire to be specified with PER, PER5 or PER7 option. See Control Option Table on page 4.
- For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8.

Options**EGS - External Glare Shield****Drilling****HANDHOLE ORIENTATION****Tenon Mounting Slipfitter**

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-280	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS

DSX1 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX1 LED	1.013	2.025	1.945	3.038	2.850	3.749

	Drilling Template	Minimum Acceptable Outside Pole Dimension					
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"	3.5"	4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

DSX1 LED P2 **K T5W MVOLT HS
SPA STD FINISH

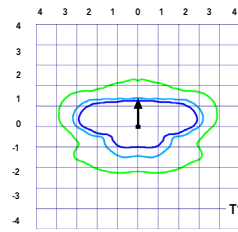
Notes:

Type:**OA5WH**

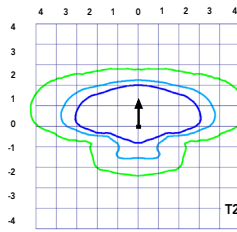
ELL22-111438

Photometric DiagramsTo see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Area Size 1 homepage](#).

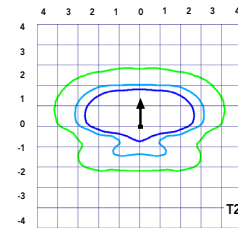
Isofootcandle plots for the DSX1 LED 60C 1000 40K. Distances are in units of mounting height (25').

LEGEND

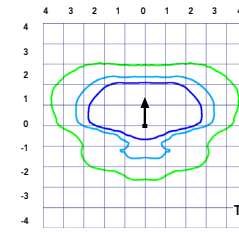
Test No. LT12321 tested in accordance with IESNA LM-79-08.



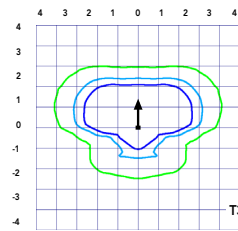
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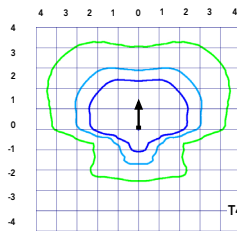
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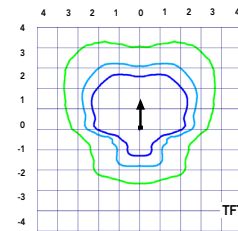
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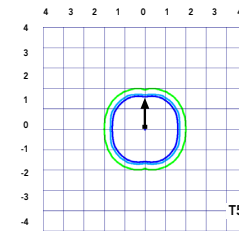
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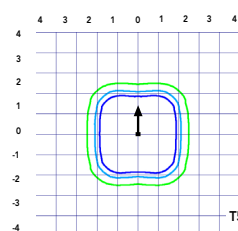
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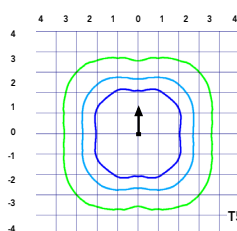
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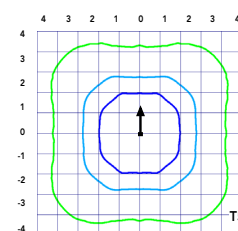
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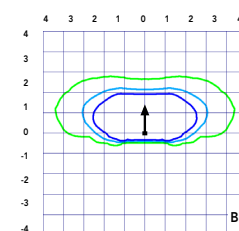
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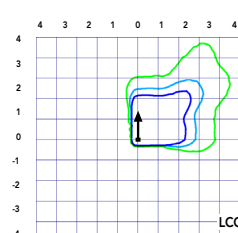
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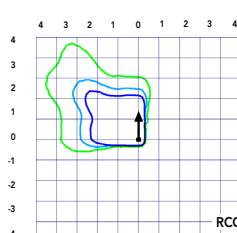
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Test No. LT123271 tested in accordance with IESNA LM-79-08.



Test No. LT12321 tested in accordance with IESNA LM-79-08.



Test No. LT123164B tested in accordance with IESNA LM-79-08.

Submitted by Enterprise Lighting, LTD.		Catalog Number: DSX1 LED P2 **K T5W MVOLT HS SPA STD FINISH Notes:	Type: OA5WH ELL22-111438
 Enterprise Lighting Manufacturers' Representative	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)		

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings						
Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

*for use when motion sensor is used as dusk to dawn control.

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current	Wattage	120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	30	530	54	0.45	0.26	0.23	0.19	0.10	0.12
	P2	30	700	70	0.59	0.34	0.30	0.25	0.20	0.16
	P3	30	1050	102	0.86	0.50	0.44	0.38	0.30	0.22
	P4	30	1250	125	1.06	0.60	0.52	0.46	0.37	0.27
	P5	30	1400	138	1.16	0.67	0.58	0.51	0.40	0.29
	P6	40	1250	163	1.36	0.78	0.68	0.59	0.47	0.34
	P7	40	1400	183	1.53	0.88	0.76	0.66	0.53	0.38
	P8	60	1050	207	1.74	0.98	0.87	0.76	0.64	0.49
	P9	60	1250	241	2.01	1.16	1.01	0.89	0.70	0.51
Rotated Optics (Requires L90 or R90)	P10	60	530	106	0.90	0.52	0.47	0.43	0.33	0.27
	P11	60	700	137	1.15	0.67	0.60	0.53	0.42	0.32
	P12	60	1050	207	1.74	0.99	0.87	0.76	0.60	0.46
	P13	60	1250	231	1.93	1.12	0.97	0.86	0.67	0.49

Controls Options				
Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensors with integral photocell. PIR for 8-15' mounting; PIRH for 15-30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRH1FC3V when the sensor photocell is used for dusk-to-dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclipse.	nLight Air rSDGR	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts Contact factory for performance data on any configurations not shown here.

Forward Optics																							
LED Count	Drive Current	Power Package	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)								
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW				
30	530	P1	54W	T1S	6,457	2	0	2	120	6,956	2	0	2	129	7,044	2	0	2	130				
				T2S	6,450	2	0	2	119	6,949	2	0	2	129	7,037	2	0	2	130				
				T2M	6,483	1	0	1	120	6,984	2	0	2	129	7,073	2	0	2	131				
				T3S	6,279	2	0	2	116	6,764	2	0	2	125	6,850	2	0	2	127				
				T3M	6,468	1	0	2	120	6,967	1	0	2	129	7,056	1	0	2	131				
				T4M	6,327	1	0	2	117	6,816	1	0	2	126	6,902	1	0	2	128				
				TFTM	6,464	1	0	2	120	6,963	1	0	2	129	7,051	1	0	2	131				
				TSVS	6,722	2	0	0	124	7,242	3	0	0	134	7,334	3	0	0	136				
				TSS	6,728	2	0	1	125	7,248	2	0	1	134	7,340	2	0	1	136				
				TSM	6,711	3	0	1	124	7,229	3	0	1	134	7,321	3	0	2	136				
				TSW	6,667	3	0	2	123	7,182	3	0	2	133	7,273	3	0	2	135				
				BLC	5,299	1	0	1	98	5,709	1	0	2	106	5,781	1	0	2	107				
				LCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80				
				RCCO	3,943	1	0	2	73	4,248	1	0	2	79	4,302	1	0	2	80				
30	700	P2	70W	T1S	8,249	2	0	2	118	8,886	2	0	2	127	8,999	2	0	2	129				
				T2S	8,240	2	0	2	118	8,877	2	0	2	127	8,989	2	0	2	128				
				T2M	8,283	2	0	2	118	8,923	2	0	2	127	9,036	2	0	2	129				
				T3S	8,021	2	0	2	115	8,641	2	0	2	123	8,751	2	0	2	125				
				T3M	8,263	2	0	2	118	8,901	2	0	2	127	9,014	2	0	2	129				
				T4M	8,083	2	0	2	115	8,708	2	0	2	124	8,818	2	0	2	126				
				TFTM	8,257	2	0	2	118	8,896	2	0	2	127	9,008	2	0	2	129				
				TSVS	8,588	3	0	0	123	9,252	3	0	0	132	9,369	3	0	0	134				
				TSS	8,595	3	0	1	123	9,259	3	0	1	132	9,376	3	0	1	134				
				TSM	8,573	3	0	2	122	9,236	3	0	2	132	9,353	3	0	2	134				
				TSW	8,517	3	0	2	122	9,175	4	0	2	131	9,291	4	0	2	133				
				BLC	6,770	1	0	2	97	7,293	1	0	2	104	7,386	1	0	2	106				
				LCCO	5,038	1	0	2	72	5,427	1	0	2	78	5,496	1	0	2	79				
				RCCO	5,038	1	0	2	72	5,427	1	0	2	78	5,496	1	0	2	79				
				30	1050	P3	102W	T1S	11,661	2	0	2	114	12,562	3	0	3	123	12,721	3	0	3	125
								T2S	11,648	2	0	2	114	12,548	3	0	3	123	12,707	3	0	3	125
								T2M	11,708	2	0	2	115	12,613	2	0	2	124	12,773	2	0	2	125
								T3S	11,339	2	0	2	111	12,215	3	0	3	120	12,370	3	0	3	121
T3M	11,680	2	0					2	115	12,582	2	0	2	123	12,742	2	0	2	125				
T4M	11,426	2	0					3	112	12,309	2	0	3	121	12,465	2	0	3	122				
TFTM	11,673	2	0					2	114	12,575	2	0	3	123	12,734	2	0	3	125				
TSVS	12,140	3	0					1	119	13,078	3	0	1	128	13,244	3	0	1	130				
TSS	12,150	3	0					1	119	13,089	3	0	1	128	13,254	3	0	1	130				
TSM	12,119	4	0					2	119	13,056	4	0	2	128	13,221	4	0	2	130				
TSW	12,040	4	0					3	118	12,970	4	0	3	127	13,134	4	0	3	129				
BLC	9,570	1	0					2	94	10,310	1	0	2	101	10,440	1	0	2	102				
LCCO	7,121	1	0					3	70	7,671	1	0	3	75	7,768	1	0	3	76				
RCCO	7,121	1	0					3	70	7,671	1	0	3	75	7,768	1	0	3	76				
30	1250	P4	125W	T1S	13,435	3	0	3	107	14,473	3	0	3	116	14,657	3	0	3	117				
				T2S	13,421	3	0	3	107	14,458	3	0	3	116	14,641	3	0	3	117				
				T2M	13,490	2	0	2	108	14,532	3	0	3	116	14,716	3	0	3	118				
				T3S	13,064	3	0	3	105	14,074	3	0	3	113	14,252	3	0	3	114				
				T3M	13,457	2	0	2	108	14,497	2	0	2	116	14,681	2	0	2	117				
				T4M	13,165	2	0	3	105	14,182	2	0	3	113	14,362	2	0	3	115				
				TFTM	13,449	2	0	3	108	14,488	2	0	3	116	14,672	2	0	3	117				
				TSVS	13,987	4	0	1	112	15,068	4	0	1	121	15,259	4	0	1	122				
				TSS	13,999	3	0	1	112	15,080	3	0	1	121	15,271	3	0	1	122				
				TSM	13,963	4	0	2	112	15,042	4	0	2	120	15,233	4	0	2	122				
				TSW	13,872	4	0	3	111	14,944	4	0	3	120	15,133	4	0	3	121				
				BLC	11,027	1	0	2	88	11,879	1	0	2	95	12,029	1	0	2	96				
				LCCO	8,205	1	0	3	66	8,839	1	0	3	71	8,951	1	0	3	72				
				RCCO	8,205	1	0	3	66	8,839	1	0	3	71	8,951	1	0	3	72				
30	1400	P5	138W	T1S	14,679	3	0	3	106	15,814	3	0	3	115	16,014	3	0	3	116				
				T2S	14,664	3	0	3	106	15,797	3	0	3	114	15,997	3	0	3	116				
				T2M	14,739	3	0	3	107	15,878	3	0	3	115	16,079	3	0	3	117				
				T3S	14,274	3	0	3	103	15,377	3	0	3	111	15,572	3	0	3	113				
				T3M	14,704	2	0	3	107	15,840	3	0	3	115	16,040	3	0	3	116				
				T4M	14,384	2	0	3	104	15,496	3	0	3	112	15,692	3	0	3	114				
				TFTM	14,695	2	0	3	106	15,830	3	0	3	115	16,030	3	0	3	116				
				TSVS	15,283	4	0	1	111	16,464	4	0	1	119	16,672	4	0	1	121				
				TSS	15,295	3	0	1	111	16,477	4	0	1	119	16,686	4	0	1	121				
				TSM	15,257	4	0	2	111	16,435	4	0	2	119	16,644	4	0	2	121				
				TSW	15,157	4	0	3	110	16,328	4	0	3	118	16,534	4	0	3	120				
				BLC	12,048	1	0	2	87	12,979	1	0	2	94	13,143	1	0	2	95				
				LCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71				
				RCCO	8,965	1	0	3	65	9,657	1	0	3	70	9,780	1	0	3	71				

Submitted by Enterprise Lighting, LTD.  Enterprise Lighting Manufacturers' Representative	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)	Catalog Number: DSX1 LED P2 **K T5W MVOLT HS SPA STD FINISH Notes:	Type: OA5WH ELL22-111438
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FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and streetscapes.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED drivers are mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (1.01 ft³) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in standard 3000 K, 4000 K and 5000 K (70 CRI) configurations. The D-Series Size 1 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX1 LED area luminaire has a number of control options. DSX Size 1, comes standard with 0-10V dimming drivers. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensors with on-board photocells feature field-adjustable programming and are suitable for mounting heights up to 30 feet.

nLIGHT AIR CONTROLS

The DSX1 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found here.

INSTALLATION

Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 1 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 1 utilizes the AERIS™ series pole drilling pattern (template #8). NEMA photocontrol receptacle are also available.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C minimum ambient. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

BUY AMERICAN

Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.
All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Submitted by Enterprise Lighting, LTD.  Enterprise Lighting Manufacturers' Representatives	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)	Catalog Number: SSS 15 4C DM19AS STD FINISH Notes:	Type: OA5WH ELL22-111438
--	--	--	--



FEATURES & SPECIFICATIONS

INTENDED USE — These specifications are for USA standards only. Square Straight Steel is a general purpose light pole for up to 39-foot mounting heights. This pole provides a robust yet cost effective option for mounting area lights and floodlights.

CONSTRUCTION

Pole Shaft: The pole shaft is of uniform dimension and wall thickness and is made of a weldable-grade, hot-rolled, commercial-quality steel tubing with a minimum yield of 55 KSI (11-gauge, .1196"), or 50 KSI (7-gauge, .1793"). Shaft is one-piece with a full-length longitudinal high-frequency electric resistance weld. Uniformly square in cross-section with flat sides, small corner radii and excellent torsional qualities. Available shaft widths are 4", 5" and 6".

Pole Top: Options include tenon top, drilled for side mount fixture, tenon with drilling (includes extra handhole) and open top. Side drilled and open top poles include a removable top cap.

Handhole: A reinforced handhole with grounding provision is provided at 18" from the base on side A. Positioning the handhole lower may not be possible and requires engineering review; consult Tech Support-Outdoor for further information. Every handhole includes a cover and cover attachment hardware. The handhole has a nominal dimension of 2.5" x 5".

Base Cover: A durable ABS plastic two-piece full base cover, finished to match the pole, is provided with each pole assembly. Additional base cover options are available upon request.

Anchor Base/Bolts: Anchor base is fabricated from steel that meets ASTM A36 standards and can be altered to match existing foundations; consult factory for modifications. Anchor bolts are manufactured to ASTM F1554 Standards grade 55, (55 KSI minimum yield strength and tensile strength of 75-95 KSI). Top threaded portion (nominal 12") is hot-dipped galvanized per ASTM A-153.

HARDWARE — All structural fasteners are high-strength galvanized carbon steel. All non-structural fasteners are galvanized or zinc-plated carbon steel or stainless steel.

FINISH — Extra durable painted finish is coated with TGIC (Triglycidyl Isocyanurate) Polyester powder that meets 5A and 5B classifications of ASTM D3359. Powder-coat finishes include Dark Bronze, White, Black, and Natural Aluminum colors. Architectural Colors and Special Finishes are available by quote and include, but are not limited to Paint over Hot-dipped Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes.

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

INSTALLATION — Do not erect poles without having fixtures installed. Factory-supplied templates must be used when setting anchor bolts. Lithonia Lighting will not accept claim for incorrect anchorage placement due to failure to use Lithonia Lighting factory templates. If poles are stored outside, all protective wrapping must be removed immediately upon delivery to prevent finish damage. Lithonia Lighting is not responsible for the foundation design.

WARRANTY — 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

NOTE: Actual performance may differ as a result of end-user environment and application. Specifications subject to change without notice.

Catalog Number
Notes
Type



Anchor Base Poles

SSS

SQUARE STRAIGHT STEEL



Submitted by Enterprise Lighting, LTD.  Enterprise Lighting Manufacturers' Representative	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)	Catalog Number: SSS 15 4C DM19AS STD FINISH Notes:	Type: OA5WH ELL22-111438
--	--	--	--

SSS Square Straight Steel Poles

ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

Example: SSS 20 5C DM19 DDBXD

SSS	15					T.B.D.	
Series	Nominal fixture mounting height	Nominal shaft base size/wall thickness ²	Mounting ¹		Options	Finish ¹³	
SSS ¹	10'-39' (for 1/2 ft increments, add -6 to the pole height. Ex: 20-6 equals 20ft 6in.) See technical information table for complete ordering information.)	4C 4" 11g (.1196") 4G 4" 7g (.1793") 5C 5" 11g (.1196") 5G 5" 7g (.1793") 6G 6" 7g (.1793") See technical information table for complete ordering information.)	Tenon mounting PT Open top (includes top cap) T20 2-3/8" O.D. (2" NPS) T25 2-7/8" O.D. (2-1/2" NPS) T30 3-1/2" O.D. (3" NPS) T35 4" O.D. (3-1/2" NPS) <u>KAC/KAD/KSE/KSF/KVR/KVF Drill mounting⁴</u> DM19 1 at 90° DM28 2 at 180° DM28 PL 2 at 180° with one side plugged DM29 2 at 90° DM39 3 at 90° DM49 4 at 90° <u>CSX/DSX/RSX/AERIS™/OMERO™/HLA/KAX Drill mounting⁴</u> DM19AS 1 at 90° DM28AS 2 at 180° DM29AS 2 at 90° DM39AS 3 at 90° DM49AS 4 at 90° <u>RAD drill mounting⁴</u> DM19RAD 1 at 90° DM28RAD 2 at 180° DM29RAD 2 at 90° DM39RAD 3 at 90° DM49RAD 4 at 90° <u>ESX Drill mounting⁴</u> DM19ESX 1 at 90° DM28ESX 2 at 180° DM29ESX 2 at 90° DM39ESX 3 at 90° DM49ESX 4 at 90°		AERIS™ Suspend drill mounting ^{4,5} DM19AST_ 1 at 90° DM28AST_ 2 at 180° DM29AST_ 2 at 90° DM39AST_ 3 at 90° DM49AST_ 4 at 90° <u>OMERO™ Suspend drill mounting^{4,5}</u> DM19MRT_ 1 at 90° DM28MRT_ 2 at 180° DM29MRT_ 2 at 90° DM39MRT_ 3 at 90° DM49MRT_ 4 at 90°	Shipped installed VD Vibration damper ⁶ HAxy Horizontal arm bracket (1 fixture) ^{7,8} FDLxy Festoon outlet less electrical ^{7,9} CPL12/xy 1/2" coupling ⁷ CPL34/xy 3/4" coupling ⁷ CPL1/xy 1" coupling ⁷ NPL12/xy 1/2" threaded nipple ⁷ NPL34/xy 3/4" threaded nipple ⁷ NPL1/xy 1" threaded nipple ⁷ EHHxy Extra handhole ^{7,10} NEC NEC 410.30 compliant gasketed handhole (Not UL Labeled) IC Interior coating ¹¹ L/AB Less anchor bolts (Include when anchor bolts are not needed) TP Tamper resistant handhole cover fasteners UL UL listed with label (Includes NEC compliant cover) BAA Buy America(n) Act Compliant ¹²	Super durable paint colors DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLTXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white <u>Other finishes</u> GALV Galvanized finish <u>Architectural colors and special finishes</u> Paint over Galvanized, RAL Colors, Custom Colors and Extended Warranty Finishes available.

NOTES:

- Handhole covers (HHC), full base covers (FBC) and top caps (TC) shipped separately. No need to call out in nomenclature. For additional parts please order as replacements.
- Wall thickness will be signified with a "C" (11 Gauge) or a "G" (7-Gauge) in nomenclature. "C" - 0.1196" | "G" - 0.1793".
- PT open top poles include top cap. When ordering tenon mounting and drill mounting for the same pole, follow this example: DM28/T20. The combination includes a required extra handhole.
- Refer to the fixture spec sheet for the correct drilling template pattern and orientation compatibility.
- Insert "1" or "2" to designate fixture size; e.g. DM19AST2.
- On 4" and 5" poles, VD cannot be installed if provisions (EHH, FDL, NPL, CPL) are located higher than 2/3 of the pole's total height.
Example: Pole height is 25ft, A provision cannot be placed above 16ft.
- Specify location and orientation when ordering option.
For "x": Specify the height above the base of pole in feet or feet and inches; separate feet and inches with a "-".
Example: 5ft = 5 and 20ft 3in = 20-3
For "y": Specify orientation from handhole (A,B,C,D) Refer to the Handhole Orientation diagram below.
Example: 1/2" coupling at 5' 8" orientation C = CPL12/5-8C
- Horizontal arm is 18" x 2-3/8" O.D. tenon standard, with radius curve providing 12" rise and 2-3/8" O.D. If ordering two horizontal arm at the same height, specify with HAxy. Example: HA20BD.
- FDL does not come with GFCI outlet or handhole cover. These must be supplied by contractor or electrician.
- Combination of tenon-top and drill mount includes extra handhole. EHH includes cover.
- Provides enhanced corrosion resistance.
- Use when mill certifications are required.
- Finish must be specified. Additional colors available; see Architectural Colors brochure linked [here](#) (Form No. 794.3).

Accessories: Order as separate catalog number.

PL DT20 Plugs for ESX drillings
PL DT8 Plugs for DMxxAS drillings



POLE-SSS

OUTDOOR: One Lithonia Way Conyers, GA 30012 Phone: 800-705-SERV (7378) www.lithonia.com

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Rev. 03/01/22

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

RBL-26W-40K-U-D-D

Notes:

Type:**OB**

ELL22-111438



SKU#: _____ PROJECT NAME: _____ DATE: _____

RBL™**Bollard****DESCRIPTION**

The TGS RBL™ is full-cutoff with even light distribution of 360°, which is ideal for illuminating building entryways, pathways, and pedestrian plazas, or any location that requires a low mounting height light source. The TGS LED RBL™ is weather-resistant and has a concrete base for sturdy structural support from all directions.

**APPLICATIONS**

Entryways, Pathways, Pedestrian Walkways

FEATURES**Construction**

Extruded 6061 aluminum alloy body with die-cast top heatsink and corrosion resistant polyester power coating. IP65 Rated.

Electrical

Input voltage: 120-277VAC
8W Emergency battery backup option available.

**RBL™**

26W (2,500 lm)

Projected L70: >50,000 hours

System Efficacy: 96 LpW

Warranty: 5 years

1-10V Dimming

Optical System

Frosted diffused lens provides uniform 360° distribution.

Installation/ Mounting

Mounting includes concrete bollard base and anchor bolts for sturdy installation.

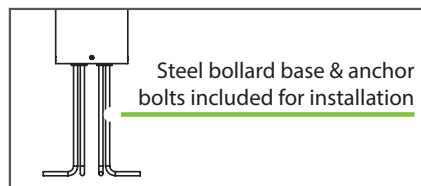
IP65
Rated1-10V
Dimming**Warranty**

5 Year Warranty.

See warranty documentation for more information.

Controls/Dimming

1-10V Dimming

8W
EM
OptionUniformed 360°
DistributionSteel bollard base & anchor
bolts included for installation**Ordering Information****EXAMPLE: RBL-26W-40K-U-D-D**

Series	Wattage	CCT	Input Voltage	Controls	Finish	Emergency Driver
RBL	26W	40K - 4000K 50K - 5000K	U - 120-277VAC	D - 1-10V Dimming	D - Dark Bronze	EM - 8W Emergency Battery Backup

Specifications and Dimensions subject to change without notice.

Optional mounting and accessories are purchased separately.

*MOQ and longer lead times may apply, please contact customer service for more information.

1 562020

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**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

RBL-26W-40K-U-D-D

Notes:**Type:****OB**

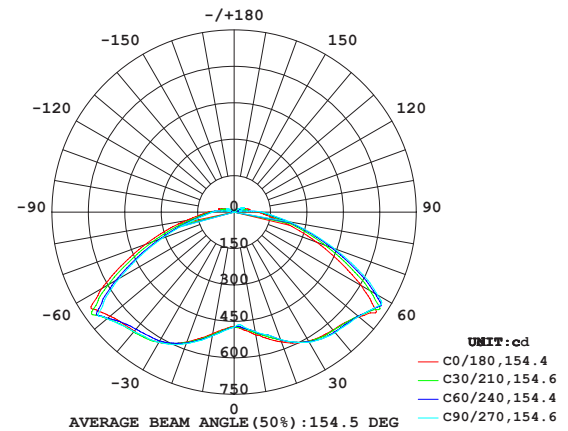
ELL22-111438

RBL™**Bollard****Performance Information**

Input Voltage	120-277VAC
Input Frequency	50/60Hz
Wattage	See Performance Table
Delivered Lumens	See Performance Table
System Efficacy	See Performance Table
CRI	>80
Available CCT	4000K, 5000K
Projected L70	>50,000 hours
Power Factor	>0.9
THD	<20%
Dimming	1-10V Dimming
Operating Temp.	-40°~113°F
IP Rating	IP65

Photometric Data

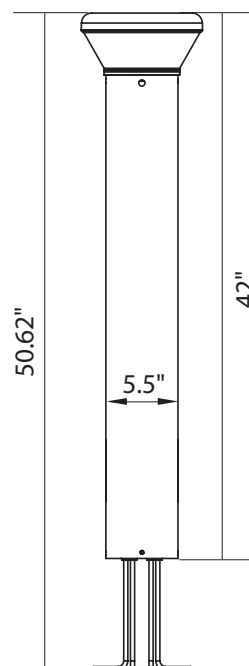
* IESNA LM-63 IES Available

**Performance Table**

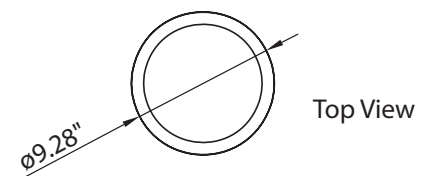
SKU	Wattage (W)	4000K	
		Delivered Lumens (lm)	System Efficacy (lm/W)
RBL-26W-40K-U-D-D	26	2500	96

Electrical Load

System Wattage (W)	Driver Current (mA)	Current (A)			
		120V	208V	240V	277V
26	670	0.22	0.13	0.11	0.09

Product Dimensions

Weight: 13.67lbs.

**Accessories Included**

Mounting Type	Accessory	Quantity
	Bollard Base	1
	M8-SS Nuts	4
	Anchor Bolts	4
	Spring Washer	4
	Round Screw Washer	4



Enterprise Lighting
Manufacturers' Representative

Job Name:

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

5121-**-STD FINISH / 9075-TRN-SS

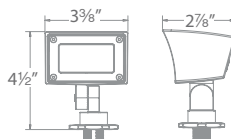
Notes:

Type:**OF1**

ELL22-111438

DUO CCT MINI WALL WASH 12V

5121-27/30

WAC**LANDSCAPE LIGHTING**

Select Warm White (2700K)
or Pure White light (3000K)

Continuously
adjust brightness

Fixture Type: Catalog Number: Project: Location: **PRODUCT DESCRIPTION**

Landscape Wall Wash Luminaire

FEATURES

- A uniform wide distribution wall wash from a small form factor
- Integral brightness control select color temperature option
- IP66 rated, Protected against high-pressure water jets
- Solid diecast brass or corrosion resistant aluminum
- Factory sealed water tight fixtures
- Mounting stake, 6' lead wire and direct burial gel filled wire nuts included
- Maintains constant lumen output against voltage drop
- UL 1838 Listed
- MLV dimmable with remote MLV dimmers

SPECIFICATIONS

Input: 9 - 15VAC (Transformer is required)
Power: 1W to 8W / 2VA - 12VA
Brightness: 80 lm to 420 lm
Beam Angle: Asymmetrical (70° by 95°)
CRI: 85
Rated Life: 60,000 hours

ORDERING NUMBER

		Color Temp	Finish
5121	Mini Wall wash 12V	2700K	BK Black on Aluminum
		or 3000K	BZ Bronze on Aluminum BBR Bronze on Brass

T.B.D.**5121-**_____Example: **5121-27/30BZ**

wacighting.com

Phone (800) 526.2588

Fax (800) 526.2585

Headquarters/Eastern Distribution Center

44 Harbor Park Drive

Port Washington, NY 11050

Central Distribution Center

1600 Distribution Ct

Lithia Springs, GA 30122

Western Distribution Center

1750 Archibald Avenue

Ontario, CA 91760

WAC Lighting retains the right to modify the design of our products at any time as part of the company's continuous improvement program. FEB 22 2021



Enterprise Lighting
Manufacturers' Representative

Job Name:

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formerly Shulfer Architects, LLC (Middleton)

Catalog Number:

5121-**-STD FINISH / 9075-TRN-SS

Notes:**Type:****OF1**

ELL22-111438

DUO CCT MINI WALL WASH 12V

5121-27/30

WAC**LANDSCAPE LIGHTING****Accessories**

Additional Stake		9000-ST9-BZ	Bronze	Durable PVC stake
Surface Mount Flange/Stake		5000-SCP-BZ 5000-SCP-BBR 5000-SCP-BK	Bronze on Aluminum Bronze on Brass Black on Aluminum	Includes three 7 inch threaded stainless steel stabilizing pins for ground mounting or surface mounts with four screws or over a junction box
Guardian Mount		9000-SP9-BZ	Stainless Steel	Heavy duty stainless steel spike to position fixture Formed from a single piece of metal
Gutter Mount Bracket		5000-GM-BZ 5000-GM-BK	Stainless Steel	Stainless Steel universal mounting bracket for gutter mounting fixture
Tree Mount Junction Box		5000-TCP-BZ 5000-TCP-BK	Bronze on Aluminum Black on Aluminum	Bronze on Aluminum box with Stainless steel mounting screws. Two ½" NPT threaded holes
Optics		LENS-2X3-AMB LENS-2X3-GRN LENS-2X3-RED	Amber Green Red	LENS-2X3-BLU LENS-2X3-FR LENS-2X3-SPR Blue Frosted Spread Enhances saturation of florals and foliage
Extension Rods		5000-X04-BZ 5000-X04-BK 5000-X08-BZ 5000-X08-BK 5000-X12-BZ 5000-X12-BK	4 in 4 in 8 in 8 in 12 in 12 in	5000-X18-BZ 5000-X18-BK 5000-X24-BZ 5000-X24-BK 18 in 18 in 24 in 24 in Extends distance between Accent light and Surface Mount Canopy, Stake, or Tree Mount box
Rod L-Coupler		5000-LCO-BZ	Bronze	

Magnetic Transformers

Stainless Steel, 12-15V output, IP65 rated, UL 1838 listed
See transformer spec sheet for details and its accessories

9075-TRN-SS
75W Max

9150-TRN-SS
150W Max

9300-TRN-SS
300W Max

9600-TRN-SS
600W Max



wacighting.com
Phone (800) 526.2588
Fax (800) 526.2585

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Port Washington, NY 11050

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1600 Distribution Ct
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Western Distribution Center
1750 Archibald Avenue
Ontario, CA 91760

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Enterprise Light
Manufacturers' Represent

Job Name:

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formerly Shulfer Architects, LLC (Middleton)

Catalog Number:

5121-**-STD FINISH / 9075-TRN-SS

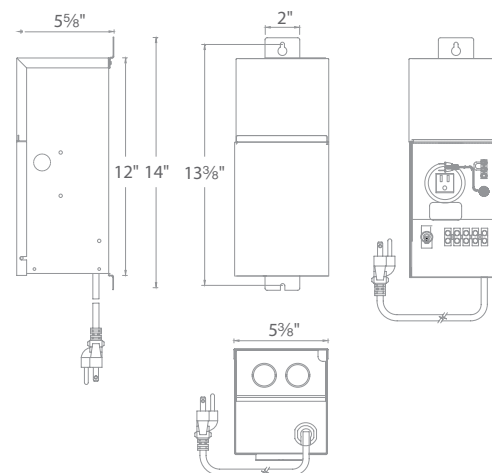
Notes:

Type:**OF1**

ELL22-111438

MAGNETIC TRANSFORMER - 75W

9075

WAC**LANDSCAPE LIGHTING**Fixture Type: Catalog Number: Project: Location: **PRODUCT DESCRIPTION**

Magnetic transformer for Landscape Lighting products.

SPECIFICATIONS**Input:** 120VAC**Output:** 12VAC, 13VAC, 14 VAC, 15VAC; 75W / 75VA**FEATURES**

- IP65 Rated
- Taps for 12V, 13V, 14V and 15V
- Knock outs for power and photosensor connections
- 3-prong outlet for timer
- Outdoor rated stainless steel transformer contains an outdoor rated 3-prong plug for power
- 6' lead wire
- UL 1838 Listed

ORDERING NUMBER**9075-TRN-SS**

75W Max

9075-TRN-SS

wacighting.com

Phone (800) 526.2588

Fax (800) 526.2585

Headquarters/Eastern Distribution Center

44 Harbor Park Drive

Port Washington, NY 11050

Central Distribution Center

1600 Distribution Ct

Lithia Springs, GA 30122

Western Distribution Center

1750 Archibald Avenue

Ontario, CA 91760

WAC Lighting retains the right to modify the design of our products at any time as part of the company's continuous improvement program. MAY 2019

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

WS-W15216-XXK-BK

Notes:

Type:**OW**

ELL22-111438

WAC LIGHTING

Corte

Outdoor Wall Sconce

T.B.D.

Fixture Type:

Catalog Number:

Project:

Location:

Model & Size	Color Temp & CRI	Finish	Watt	LED Lumens	Delivered Lumens
WS-W15216 16"	3000K 90 3500K 90 4000K 90	BK Black	17W 17W 17W	1365 1416 1388	954 988 980

Example: **WS-W15216-40-BK**For custom requests please contact customs@wacighting.com**FEATURES**

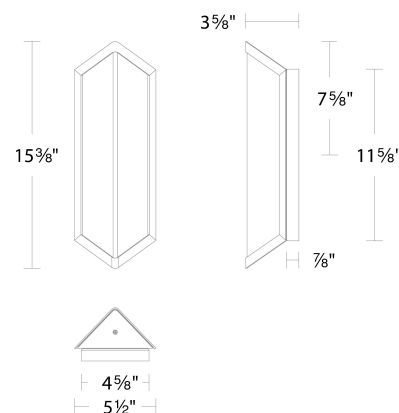
- Built in color temperature adjustability. Switch from 3000K/3500K/4000K.
- ACLED driverless technology
- 5 Year warranty

SPECIFICATIONS

Color Temp:	4000K,3500K,3000K
Input:	120 VAC,50/60Hz
CRI:	90
Dimming:	ELV: 100-10% ,TRIAC: 100-10%
Rated Life:	54000 Hours
Mounting:	Can be mounted on wall in all orientations
Standards:	ETL, cETL,IP65,Title 24 JA8-2019 Compliant Wet Location Listed
Construction:	Aluminum body, bend etched acrylic diffuser

**FINISHES:**

Black

LINE DRAWING:

WS-W15216

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

WPX1 LED P1 **K MVOLT STD
FINISH

Notes:

Type:**OW2**

ELL22-111438



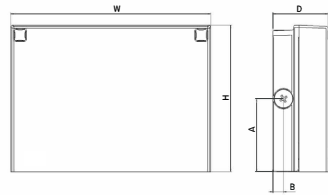
WPX LED Wall Packs

Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

Front View

Side View

Luminaire	Height (H)	Width (W)	Depth (D)	Side Conduit Location		Weight
				A	B	
WPX1	8.1" (20.6 cm)	11.1" (28.3 cm)	3.2" (8.1 cm)	4.0" (10.3 cm)	0.6" (1.6 cm)	6.1 lbs (2.8 kg)
WPX2	9.1" (23.1 cm)	12.3" (31.1 cm)	4.1" (10.5 cm)	4.5" (11.5 cm)	0.7" (1.7 cm)	8.2 lbs (3.7 kg)
WPX3	9.5" (24.1 cm)	13.0" (33.0 cm)	5.5" (13.7 cm)	4.7" (12.0 cm)	0.7" (1.7 cm)	11.0 lbs (5.0 kg)

Introduction

The WPX LED wall packs are energy-efficient, cost-effective, and aesthetically appealing solutions for both HID wall pack replacement and new construction opportunities. Available in three sizes, the WPX family delivers 1,550 to 9,200 lumens with a wide, uniform distribution.

The WPX full cut-off solutions fully cover the footprint of the HID glass wall packs that they replace, providing a neat installation and an upgraded appearance. Reliable IP66 construction and excellent LED lumen maintenance ensure a long service life. Photocell and emergency egress battery options make WPX ideal for every wall mounted lighting application.

Ordering Information**EXAMPLE: WPX2 LED 40K MVOLT DDBXD**

		T.B.D.			T.B.D.
Series		Color Temperature	Voltage	Options	Finish
WPX1 LED P1	1,550 Lumens, 11W ¹	30K 3000K	MVOLT 120V - 277V	(blank) None	DDBXD Dark bronze
WPX1 LED P2	2,900 Lumens, 24W	40K 4000K	347 347V ³	E4WH Emergency battery backup, CEC compliant (4W, 0°C min) ²	DWHXD White
WPX2 LED	6,000 Lumens, 47W	50K 5000K		E14WC Emergency battery backup, CEC compliant (14W, -20°C min) ²	DBLXD Black
WPX3 LED	9,200 Lumens, 69W			PE Photocell ³	Note: For other options, consult factory.

Note: The lumen output and input power shown in the ordering tree are average representations of all configuration options. Specific values are available on request.

NOTES

- All WPX wall packs come with 6kV surge protection standard, except WPX1 LED P1 package which comes with 2.5kV surge protection standard. Add SPD6KV option to get WPX1 LED P1 with 6kV surge protection.
Sample nomenclature: WPX1 LED P1 40K MVOLT SPD6KV DDBXD
- Battery pack options only available on WPX1 and WPX2.
- Battery pack options not available with 347V and PE options.

FEATURES & SPECIFICATIONS**INTENDED USE**

The WPX LED wall packs are designed to provide a cost-effective, energy-efficient solution for the one-for-one replacement of existing HID wall packs. The WPX1, WPX2 and WPX3 are ideal for replacing up to 150W, 250W, and 400W HID luminaires respectively. WPX luminaires deliver a uniform, wide distribution. WPX is rated for -40°C to 40°C.

CONSTRUCTION

WPX feature a die-cast aluminum main body with optimal thermal management that both enhances LED efficacy and extends component life. The luminaires are IP66 rated, and sealed against moisture or environmental contaminants.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs and LED lumen maintenance of L90/100,000 hours. Color temperature (CCT) options of 3000K, 4000K and 5000K with minimum CRI of 70. Electronic drivers ensure system power factor >90% and THD <20%. All luminaires have 6kV surge protection (Note: WPX1 LED P1 package comes with a standard surge protection rating of 2.5kV. It can be ordered with an optional 6kV surge protection).

All photocell (PE) operate on MVOLT (120V - 277V) input.

Note: The standard WPX LED wall pack luminaires come with field-adjustable drive current feature. This feature allows tuning the output current of the LED drivers to adjust the lumen output (to dim the luminaire).

INSTALLATION

WPX can be mounted directly over a standard electrical junction box. Three 1/2 inch conduit ports on three sides allow for surface conduit wiring. A port on the back surface allows poke-through conduit wiring on surfaces that don't have an electrical junction box. Wiring can be made in the integral wiring compartment in all cases. WPX is only recommended for installations with LEDs facing downwards.

LISTINGS

CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. IP66 Rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.



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WPX LED
Rev. 08/31/21

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

WPX1 LED P1 **K MVOLT STD
 FINISH

Notes:

Type:**OW2**

ELL22-111438

Performance Data**Electrical Load**

Luminaire	Input Power (W)	120V	208V	240V	277V	347V
WPX1 LED P1	11W	0.09	0.05	0.05	0.04	0.03
WPX1 LED P2	24W	0.20	0.12	0.10	0.09	0.07
WPX2	47W	0.39	0.23	0.20	0.17	0.14
WPX3	69W	0.58	0.33	0.29	0.25	0.20

Projected LED Lumen Maintenance

Data references the extrapolated performance projections in a 25°C ambient, based on 6,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	50,000	75,000	100,000
Lumen Maintenance Factor	>0.94	>0.92	>0.90

Lumen Output

Luminaire	Color Temperature	Lumen Output
WPX1 LED P1	3000K	1,537
	4000K	1,568
	5000K	1,602
WPX1 LED P2	3000K	2,748
	4000K	2,912
	5000K	2,954
WPX2	3000K	5,719
	4000K	5,896
	5000K	6,201
WPX3	3000K	8,984
	4000K	9,269
	5000K	9,393

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

Ambient	Ambient	Lumen Multiplier
0°C	32°F	1.05
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

HID Replacement Guide

Luminaire	Equivalent HID Lamp	WPX Input Power
WPX1 LED P1	100W	11W
WPX1 LED P2	150W	24W
WPX2	250W	47W
WPX3	400W	69W

Emergency Egress Battery Packs

The emergency battery backup is integral to the luminaire — no external housing or back box is required. The emergency battery will power the luminaire for a minimum duration of 90 minutes and deliver minimum initial output of 550 lumens. Both battery pack options are CEC compliant.

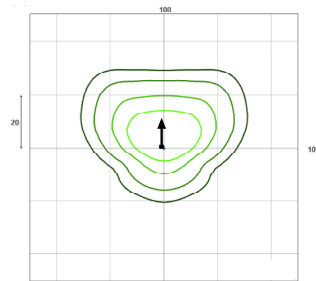
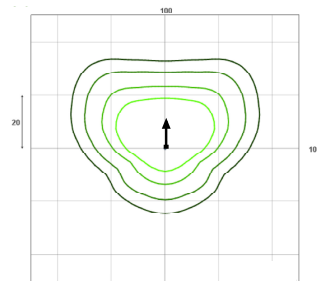
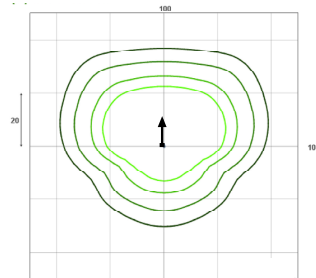
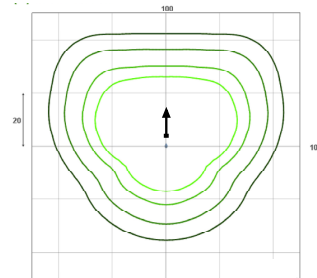
Battery Type	Minimum Temperature Rating	Power (Watts)	Controls Option	Ordering Example
Standard	0°C	4W	E4WH	WPX2 LED 40K MVOLT E4WH DDBXD
Cold Weather	-20°C	14W	E14WC	WPX2 LED 40K MVOLT E14WC DDBXD

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting [WPX LED](http://www.lithonia.com) homepage. Tested in accordance with IESNA LM-79 and LM-80 standards

LEGEND

- 0.1 fc
- 0.2 fc
- 0.5 fc
- 1.0 fc

WPX1 LED P1**WPX1 LED P2****WPX2 LED****WPX3 LED**

Mounting Height = 12 Feet.

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

WPX1 LED P2 **K MVOLT STD
FINISH

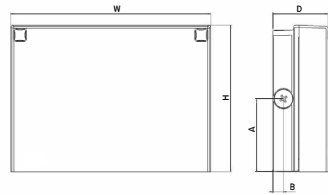
Notes:

Type:**OW3**

ELL22-111438



WPX LED Wall Packs

**Specifications**

Front View

Side View

Luminaire	Height (H)	Width (W)	Depth (D)	Side Conduit Location		Weight
				A	B	
WPX1	8.1" (20.6 cm)	11.1" (28.3 cm)	3.2" (8.1 cm)	4.0" (10.3 cm)	0.6" (1.6 cm)	6.1 lbs (2.8 kg)
WPX2	9.1" (23.1 cm)	12.3" (31.1 cm)	4.1" (10.5 cm)	4.5" (11.5 cm)	0.7" (1.7 cm)	8.2 lbs (3.7 kg)
WPX3	9.5" (24.1 cm)	13.0" (33.0 cm)	5.5" (13.7 cm)	4.7" (12.0 cm)	0.7" (1.7 cm)	11.0 lbs (5.0 kg)

Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The WPX LED wall packs are energy-efficient, cost-effective, and aesthetically appealing solutions for both HID wall pack replacement and new construction opportunities. Available in three sizes, the WPX family delivers 1,550 to 9,200 lumens with a wide, uniform distribution.

The WPX full cut-off solutions fully cover the footprint of the HID glass wall packs that they replace, providing a neat installation and an upgraded appearance. Reliable IP66 construction and excellent LED lumen maintenance ensure a long service life. Photocell and emergency egress battery options make WPX ideal for every wall mounted lighting application.

Ordering Information**EXAMPLE: WPX2 LED 40K MVOLT DDBXD**

		T.B.D.			T.B.D.
Series		Color Temperature	Voltage	Options	Finish
WPX1 LED P1	1,550 Lumens, 11W ¹	30K 3000K	MVOLT 120V - 277V	(blank) None	DDBXD Dark bronze
WPX1 LED P2	2,900 Lumens, 24W	40K 4000K	347 347V ³	E4WH Emergency battery backup, CEC compliant (4W, 0°C min) ²	DWHXD White
WPX2 LED	6,000 Lumens, 47W	50K 5000K		E14WC Emergency battery backup, CEC compliant (14W, -20°C min) ²	DBLXD Black
WPX3 LED	9,200 Lumens, 69W			PE Photocell ³	Note: For other options, consult factory.

Note: The lumen output and input power shown in the ordering tree are average representations of all configuration options. Specific values are available on request.

NOTES

- All WPX wall packs come with 6kV surge protection standard, except WPX1 LED P1 package which comes with 2.5kV surge protection standard. Add SPD6KV option to get WPX1 LED P1 with 6kV surge protection.
Sample nomenclature: WPX1 LED P1 40K MVOLT SPD6KV DDBXD
- Battery pack options only available on WPX1 and WPX2.
- Battery pack options not available with 347V and PE options.

FEATURES & SPECIFICATIONS**INTENDED USE**

The WPX LED wall packs are designed to provide a cost-effective, energy-efficient solution for the one-for-one replacement of existing HID wall packs. The WPX1, WPX2 and WPX3 are ideal for replacing up to 150W, 250W, and 400W HID luminaires respectively. WPX luminaires deliver a uniform, wide distribution. WPX is rated for -40°C to 40°C.

CONSTRUCTION

WPX feature a die-cast aluminum main body with optimal thermal management that both enhances LED efficacy and extends component life. The luminaires are IP66 rated, and sealed against moisture or environmental contaminants.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs and LED lumen maintenance of L90/100,000 hours. Color temperature (CCT) options of 3000K, 4000K and 5000K with minimum CRI of 70. Electronic drivers ensure system power factor >90% and THD <20%. All luminaires have 6kV surge protection (Note: WPX1 LED P1 package comes with a standard surge protection rating of 2.5kV. It can be ordered with an optional 6kV surge protection).

All photocell (PE) operate on MVOLT (120V - 277V) input.

Note: The standard WPX LED wall pack luminaires come with field-adjustable drive current feature. This feature allows tuning the output current of the LED drivers to adjust the lumen output (to dim the luminaire).

INSTALLATION

WPX can be mounted directly over a standard electrical junction box. Three 1/2 inch conduit ports on three sides allow for surface conduit wiring. A port on the back surface allows poke-through conduit wiring on surfaces that don't have an electrical junction box. Wiring can be made in the integral wiring compartment in all cases. WPX is only recommended for installations with LEDs facing downwards.

LISTINGS

CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. IP66 Rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified. International Dark Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.



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WPX LED
Rev. 08/31/21

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

WPX1 LED P2 **K MVOLT STD
 FINISH

Notes:

Type:**OW3**

ELL22-111438

Performance Data**Electrical Load**

Luminaire	Input Power (W)	120V	208V	240V	277V	347V
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To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	50,000	75,000	100,000
Lumen Maintenance Factor	>0.94	>0.92	>0.90

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Luminaire	Color Temperature	Lumen Output
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	5000K	1,602
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	5000K	2,954
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	4000K	5,896
	5000K	6,201
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	4000K	9,269
	5000K	9,393

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Use these factors to determine relative lumen output for average ambient temperatures from 0-50°C (32-122°F).

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20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

HID Replacement Guide

Luminaire	Equivalent HID Lamp	WPX Input Power
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WPX3	400W	69W

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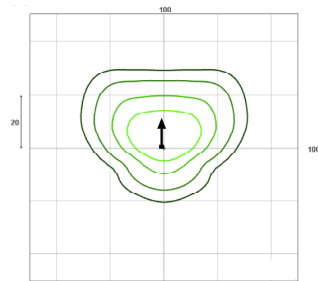
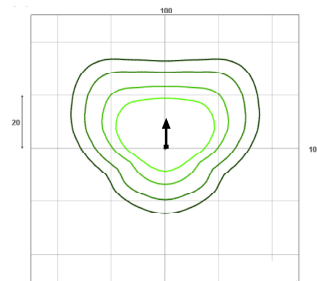
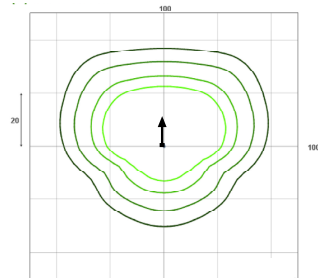
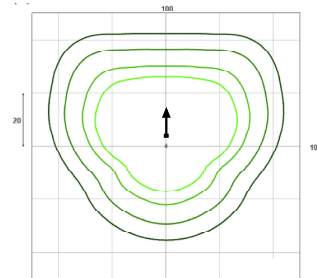
Battery Type	Minimum Temperature Rating	Power (Watts)	Controls Option	Ordering Example
Standard	0°C	4W	E4WH	WPX2 LED 40K MVOLT E4WH DDBXD
Cold Weather	-20°C	14W	E14WC	WPX2 LED 40K MVOLT E14WC DDBXD

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit the Lithonia Lighting [WPX LED](http://www.lithonia.com) homepage. Tested in accordance with IESNA LM-79 and LM-80 standards

LEGEND

- 0.1 fc
- 0.2 fc
- 0.5 fc
- 1.0 fc

WPX1 LED P1**WPX1 LED P2****WPX2 LED****WPX3 LED**

Mounting Height = 12 Feet.

Submitted by Enterprise Lighting, LTD.	Job Name: Springdale Street Apartments Architect: Sketchworks Architecture, LLC formally Shulfer Architects, LLC (Middleton)	Catalog Number: LDN4 40/15 L04AR LSS MVOLT GZ10 Notes:	Type: D1 ELL22-111438
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FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.

CONSTRUCTION — Galvanized steel mounting/plaster frame; galvanized steel junction box with bottom-hinged access covers and spring latches. Reflectors are retained by torsion springs. Vertically adjustable mounting brackets with commercial bar hangers provide 3-3/4" total adjustment. Two combination 1/2"-3/4" and four 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out). No. 12 AWG conductors, rated for 90°C.

Accommodates 12"-24" joist spacing.

Passive cooling thermal management for 25°C standard; high ambient (40°C) option available. Light engine and drivers are accessible from above or below ceiling.

Max ceiling thickness 1-1/2".

OPTICS — LEDs are binned to a 3-step SDCM; 80 CRI minimum. 90 CRI optional.

LED light source concealed with diffusing optical lens.

General illumination lighting with 1.0 S/MH and 55° cutoff to source and source image.

Self-finished anodized reflectors in specular, semi-specular, or matte diffuse finishes. Also available in white and black painted reflectors.

ELECTRICAL — Multi-volt (120-277V, 50/60Hz) 0-10V dimming drivers mounted to junction box, 10% or 1% minimum dimming level available.

0-10V dimming fixture requires two (2) additional low-voltage wires to be pulled.

70% lumen maintenance at 60,000 hours.

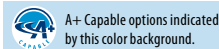
LISTINGS — Certified to US and Canadian safety standards. Wet location standard (covered ceiling). IP55 rated. ENERGY STAR® certified product.

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT.

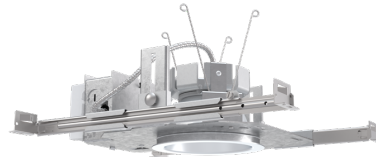
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



Catalog Number
Notes
Type



LDN4

**4" Open and WallWash LED
Non-IC
New Construction Downlight**



ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

Series	Color temperature	Lumens ¹	Aperture/Trim Color	Finish	Voltage
LDN4 4" round	27/ 2700K 30/ 3000K 35/ 3500K 40/ 4000K 50/ 5000K	05 500 lumens 07 750 lumens 10 1000 lumens 15 1500 lumens	20 2000 lumens 25 2500 lumens 30 3000 lumens 40 4000 lumens	L04 Downlight LW4 Wallwash AR Clear WR ² White BR ² Black LSS Semi-specular LD Matte diffuse LS Specular	MVOLT Multi-volt 120 120V 277 277V 347 ³ 347V

Driver	Options
GZ10 0-10V driver dims to 10%	SF ⁴ Single fuse
GZ1 0-10V driver dims to 1%	TRW ⁶ White painted flange
EZ10 0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 10%	TRBL ⁶ Black painted flange
EZ1 0-10V eldoLED driver with smooth and flicker-free deep dimming performance down to 1%	EL ⁵ Emergency battery pack with integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS
D10 Minimum dimming 10% driver for use with JOT	ELR ⁵ Emergency battery pack with remote test switch. 10W Constant Power, Not Certified in CA Title 20 MAEDBS
D1 Minimum dimming 1% driver for use with JOT	ELSD ⁵ Emergency battery pack with self-diagnostics, 10W Constant Power, integral test switch. Not Certified in CA Title 20 MAEDBS
EDAB eldoLED DALI SOLDRIVE dim to dark	ELRSD ⁵ Emergency battery pack with self-diagnostics, 10W Constant Power, remote test switch. Not Certified in CA Title 20 MAEDBS
	E10WCP ⁵ Emergency battery pack, 10W Constant Power with integral test switch. Certified in CA Title 20 MAEDBS
	E10WCPR ⁵ Emergency battery pack, 10W Constant Power with remote test switch. Certified in CA Title 20 MAEDBS
	NPP16D ⁷ nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1).
	NPP16DER ⁷ nLight® network power/relay pack with 0-10V dimming for non-eldoLED drivers (GZ10, GZ1). ER controls fixtures on emergency circuit.
	N80 ⁸ nLight™ Lumen Compensation
	JOT ¹³ Wireless room control with "Just One Touch" pairing
	NPS80EZ ⁷ nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1).
	NPS80EZER ⁷ nLight® dimming pack controls 0-10V eldoLED drivers (EZ10, EZ1). ER controls fixtures on emergency circuit.
	HA0 ¹¹ High ambient option (40°C)
	CP ¹² Chicago Plenum
	RRL RELOC®-ready luminaire connectors enable a simple and consistent factory installed option across all ABL luminaire brands. Refer to RRL for complete nomenclature. Available only in RRLA, RRLB, RRLAE, and RRLC125.
	NLTAIR2 ^{9,10} nLight® Air enabled
	NLTAIRER2 ^{9,10} nLight® AIR Dimming Pack Wireless Controls. Controls fixtures on emergency circuit, not available with battery pack options
	NLTAIREM2 ^{9,10} nLight® AIR Dimming Pack Wireless Controls. UL924 Emergency Operation, via power interrupt detection. Available with battery pack options.
	BAA Buy America(n) Act Compliant
	90CRI High CRI (90+)

Accessories: Order as separate catalog number.
PS1055CP FMC Power Sentry batterypack, T20 compliant, field installable, 10w constant power
EAC ISSM 375 Compact interruptible emergency AC power system
EAC ISSM 125 Compact interruptible emergency AC power system
GRA46 JZ Oversized trim ring with 6" outside diameter
SCA4 Sloped Ceiling Adapter. Degree of slope must be specified (5D, 10D, 15D, 20D, 25D, 30D). Ex: SCA4 10D.

Notes

- Overall height varies based on lumen package; refer to dimensional chart on page 3.
- Not available with finishes.
- Not available with emergency options.
- Must specify voltage 120V or 277V.
- 12.5" of plenum depth or top access required for battery pack maintenance.
- Available with clear (AR) reflector only.
- Specify voltage. ER for use with generator supply EM power. Will require an emergency hot feed and normal hot feed.
- Fixture begins at 80% light level. Must be specified with NPS80EZ or NPS80EZ ER. Only available with EZ10 and EZ1 drivers.
- Not available with CP, NPS80EZ, NPS80EZER, NPP16D, NPP16DER or N80 options.
- NLTAIR2, NLTAIRER2 and NLTAIREM2 not recommended for metal ceiling installations.
- Fixture height is 5-11/16" for all lumen packages with HA0.
- Must specify voltage for 3000lm. Not available with emergency battery pack option.
- Must specify D10 or D1 driver. Not available with nLight options. Not available with CP. Not recommended for metal ceiling installation. Not for use with emergency backup power systems other than battery packs.

DOWNLIGHTING

LDN4

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

LDN4 40/15 LO4AR LSS MVOLT

GZ10

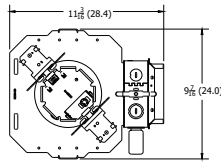
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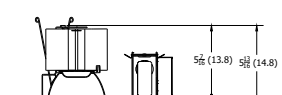
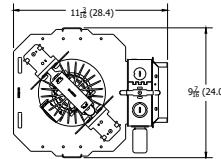
ELL22-111438

LDN4

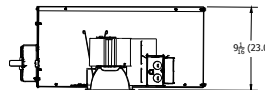
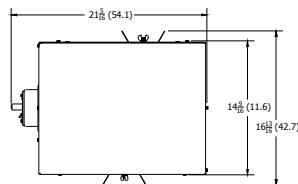
* All dimensions are inches (centimeters) unless otherwise noted.

LDN4 500 - 2000 LUMENS

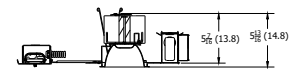
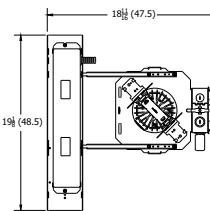
Aperture: 4-5/16" (11)
 Ceiling Opening: 5-1/8" (13)
 Overlap Trim: 5-7/16" (13.8)

LDN4 2500 - 4000 LUMENS

Aperture: 4-5/16" (11)
 Ceiling Opening: 5-1/8" (13)
 Overlap Trim: 5-7/16" (13.8)

LDN4 CP

Aperture: 4-5/16" (11)
 Ceiling Opening: 5-1/8" (13)
 Overlap Trim: 5-7/16" (13.8)

LDN4 EL

Aperture: 4-5/16" (11)
 Ceiling Opening: 5-1/8" (13)
 Overlap Trim: 5-7/16" (13.8)

LDN4			
Nominal	Lumens	Wattage	Lm/W
500	523.6	5.74	91.2
750	751.1	8.6	87.3
1000	1045	10.58	98.8
1500	1512	17.5	86.4
2000	2006	22.12	90.7
2500	2551	26.1	97.7
3000	3007	32.1	93.7
4000	4212	43	98.0

LUMEN OUTPUT MULTIPLIERS - CCT					
	2700K	3000K	3500K	4000K	5000K
80CRI	0.950	0.966	1.000	1.025	1.101

HOW TO ESTIMATE DELIVERED LUMENS IN EMERGENCY MODE

Use the formula below to estimate the delivered lumens in emergency mode

Delivered Lumens = 1.25 x P x LPW

P = Output power of emergency driver. P = 10W for PS1055CP

LPW = Lumen per watt rating of the luminaire. This information is available on the ABL luminaire spec sheet.

The LPW rating is also available at Designlight Consortium.

LUMEN OUTPUT MULTIPLIERS - FINISH			
	Clear (AR)	White (WR)	Black (BR)
Specular (LS)	1.0	N/A	N/A
Semi-specular (LSS)	0.950	N/A	N/A
Matte diffuse (LD)	0.85	N/A	N/A
Painted	N/A	0.87	0.73

Notes

- Tested in accordance with IESNA LM-79-08.
- Tested to current IES and NEMA standards under stabilized laboratory conditions.
- CRI: 80 typical.

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

LDN4 40/15 LO4AR LSS MVOLT
 GZ10
 Notes:

Type:**D1**

ELL22-111438

LDN4**ADDITIONAL DATA**

JOT

JUST ONE TOUCH

The Sensor Switch JOT enabled solution offers a wireless, app-free approach to single room lighting control. JOT enabled products use Bluetooth® Low Energy (BLE) technology to enable wireless dimming and switching.

Diagram

LDN4 Series

Sensor Switch
WSXA JOT

- 1. Power:** Install JOT enabled fixtures and controls as instructed.
- 2. Pair:** Insert the pairing tool into the pinhole on the wall switch; press and hold any button for 6 seconds.
- 3. Play:** Once paired, each fixture will individually dim down to 10% brightness. All products will be fully functional.

COMPATIBLE 0-10V WALL-MOUNT DIMMERS

MANUFACTURER	PART NO.	POWER BOOSTER AVAILABLE
Lutron®	Diva® DDTV	
	Diva® DVSC TV	
	Nova T® NTFTV	
	Nova® NDTV	
Leviton®	AWSMT-7DW	CN100
	AWSMG-7DW	PE300
	AMRMG-7DW	
	Leviton Centura Fluorescent Control System	
	IllumaTech® IP7 Series	
Synergy®	ISD BC	
	SLD LPCS	RDMFC
	Digital Equinox (DEQ BC)	
Douglas Lighting Controls	WPC-5721	
Entertainment Technology	Tap Glide TG600FAM120 (120V)	
	Tap Glide Heatsink TGH1500FAM120 (120V)	
	Oasis OA2000FAMU	
Honeywell	EL7315A1019	EL7305A1010 (optional)
	EL7315A1009	
HUNT Dimming	Preset slide: PS-010-IV and PS-010-WH	
	Preset slide: PS-010-3W-IV and PS-010-3W-WH	
	Preset slide, controls FD-010: PS-IFC-010-IV and PS-IFC-010-WH-120/277V	
	Preset slide, controls FD-010: PS-IFC-010-3W-IV and PS-IFC-010-3W-WH-120/277V	
	Remote mounted unit: FD-010	
Lehigh Electronic Products	Solitaire	PBX
PDM Electrical Products	WPC-5721	
Starfield Controls	TR61 with DALI interface port	RT03 DALInet Router
WattStopper®	LS-4 used with LCD-101 and LCD-103	

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a **shaded background***
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a **shaded background***

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details



LDN4

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Catalog Number:

LDN4 40/15 LO4AR LSS MVOLT
GZ10

Notes:

Type:**D1**

ELL22-111438

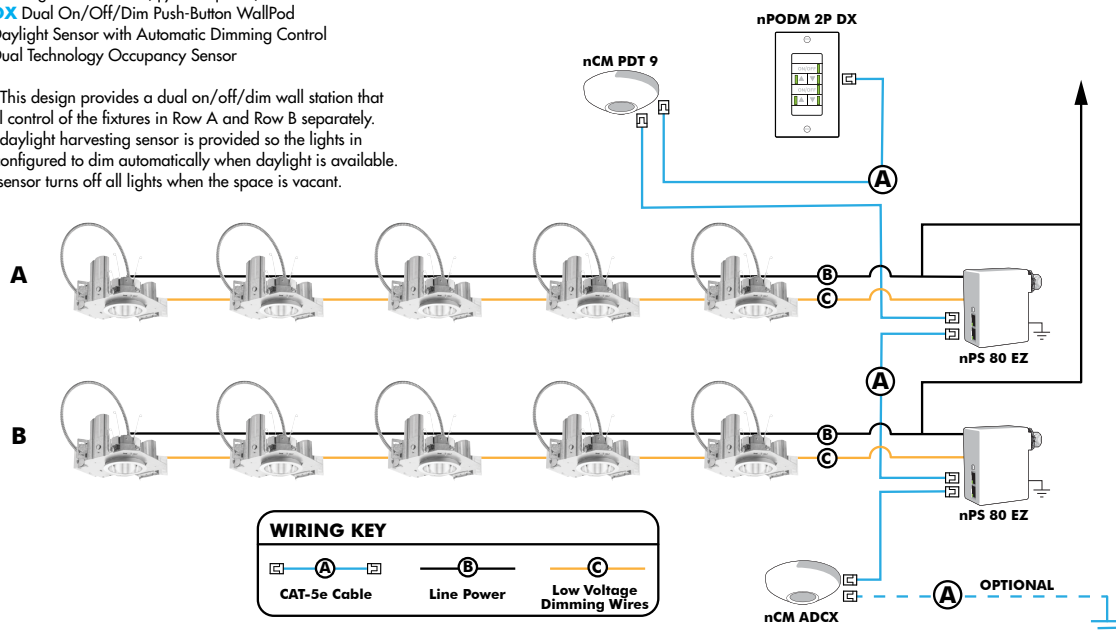
LDN4**EXAMPLE**

Group Fixture Control*

*Application diagram applies for fixtures with eldoLED drivers only.

nPS 80 EZ Dimming/Control Pack (qty: 2 required)**nPODM 2P DX** Dual On/Off/Dim Push-Button WallPod**nCM ADCX** Daylight Sensor with Automatic Dimming Control**nCM PDT 9** Dual Technology Occupancy Sensor

Description: This design provides a dual on/off/dim wall station that enables manual control of the fixtures in Row A and Row B separately. Additionally, a daylight harvesting sensor is provided so the lights in Row B can be configured to dim automatically when daylight is available. An occupancy sensor turns off all lights when the space is vacant.

**Choose Wall Controls**

nLight offers multiple styles of wall controls - each with varying features and user experience.

**Push-Button Wallpod**

Traditional tactile buttons and LED user feedback

**Graphic Wallpod**

Full color touch screen provides a sophisticated look and feel

nLight® Wired Controls Accessories:

Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlight for complete listing of nLight controls.

WallPod Stations	Model number	Occupancy sensors	Model Number
On/Off	nPODM (Color)	Small motion 360°, ceiling (PIR/dual Tech)	nCM 9 / nCM PDT 9
On/Off & Raise/Lower	nPOD DX (Color)	Large motion 360°, ceiling (PIR/dual tech)	nCM 10 / nCM PDT 10
Graphic Touchscreen	nPOD GFX (Color)	Wide View (PIR/dual tech)	nWV 16 / nWV PDT 16
Photocell controls	Model Number	Wall Switch w/ Raise/Lower (PIR/dual tech)	nWSX LV DX / nWSX PDT LV DX
Dimming	nCM ADCX	Cat-5 cables (plenum rated)	Model Number
		10', CAT5 10FT	CAT5 10FT J1
		15', CAT5 15FT	CAT5 15FT J1

nLight® AIR Control Accessories:

Order as separate catalog number. Visit www.acuitybrands.com/products/controls/nlightair.

Wall switches

On/Off single pole

On/Off two pole

On/Off & raise/lower single pole

On/Off & raise/lower two pole

On/Off & raise/lower single pole

Model number

rPODB [color]

rPODB 2P [color]

rPODB DX [color]

rPODB 2P DX [color]

rPODBZ DX WH¹**Notes**

1 Can only be ordered with the RES7Z zone control sensor version.

nLight AIR

nLight AIR is the ideal solution for retrofit or new construction spaces where adding communication is cost prohibitive. The integrated nLight AIR rPP20 Power Pack is part of each Lithonia LDN Luminaire. These individually addressable controls offer the ultimate in flexibility during initial setup and for space repurposing.

**Simple as 1,2,3**

1. Install the nLight® AIR fixtures with embedded smart sensor
2. Install the wireless battery-powered wall switch
3. With CLAIRITY app, pair the fixtures with the wall switch and if desired, customize the sensor settings for the desired outcome





Job Name:

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
ACCESSORIES / TRANSFORMER T.B.D.

Notes:

Type:

OL-23

ELL22-111438

LITESPHERE2.0



Enterprise Light
Manufacturers' Represent**Job Name:**Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formerly Shulfer Architects, LLC (Middleton)**Catalog Number:**LSL2-X-12-S-**K-C-12-23FT /END PREP /
ACCESSORIES / TRANSFORMER T.B.D.**Notes:****Type:****OL-23**

ELL22-111438

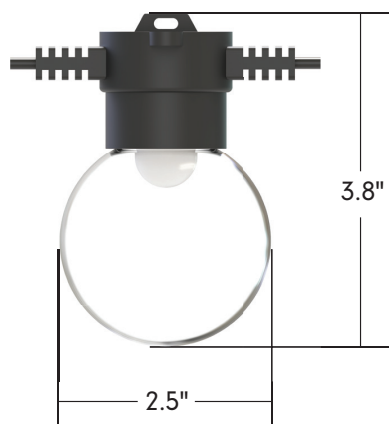
**12V** | Litesphere™ 2.0

Project: _____ Type: _____

Product Features

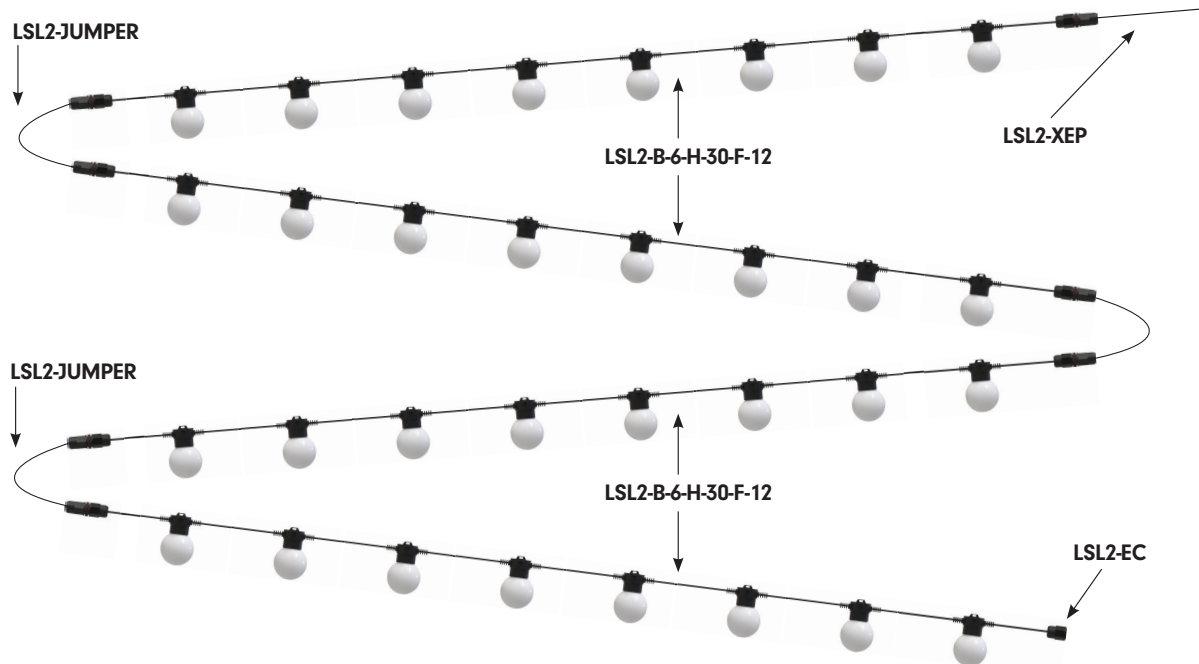
- Tivoli's next evolution of Litesphere delivers a robust specification-grade strand with factory molded standard spacing for consistent quality from start to finish
- Litesphere 2.0 design provides optional suspended mounting or a twist-off cap for surface applications
- 12V DC Low voltage system for long runs
- IP67
- cULus
- 3 Year warranty

Dimensions



Enterprise Light
Manufacturers' Represent**Job Name:**Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)**Catalog Number:**LSL2-X-12-S-**K-C-12-23FT /END PREP /
ACCESSORIES / TRANSFORMER T.B.D.**Notes:****Type:****OL-23**

ELL22-111438

12V | Litesphere™ 2.0**System Configuration Example****Strand Order Guide**

Note: For suspension application, a catenary cable is required for proper installation.
Please contact Tivoli for recommendations on unique mounting applications.

Product	Wire	Spacing	LED Type	LED Color	Globe	Voltage
LSL2 Litesphere 2.0	T.B.D.			T.B.D.		
	B Black	06 6" OC	V Very High Output	19 1900K	C Clear	12 12V DC
	W White	12 12" OC	H High Output	27 2700K	F Frosted	
		18 18" OC	S Standard Output	30 3000K	O Opal	
		24 24" OC		35 3500K		
				40 4000K		
				50 5000K*		
				AM Amber*		
				RB Royal Blue*		
				RD Red*		
				GM Green*		
				YL Yellow*		

*Available in
VHO LED only

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Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
 ACCESSORIES / TRANSFORMER T.B.D.

Notes:**Type:****OL-23**

ELL22-111438

**12V** | Litesphere™ 2.0**Power Lead Order Guide**

Figure A - All Litesphere 2.0 are evenly cut between globes according to specified spacing.

Figure B - Power leads are added to the end cut, extending the total length of the power lead.

LSL2-XEP-X-XX**X** = B (Black), W (White)**XX** = 05 (5'), 10 (10'), 15 (15'), 20 (20'), 25 (25')

For custom length consult factory

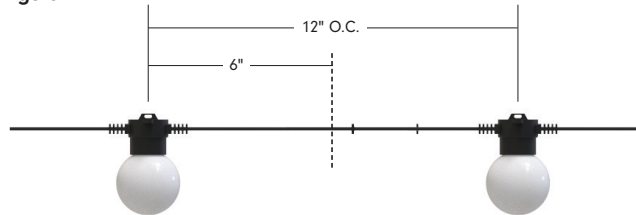
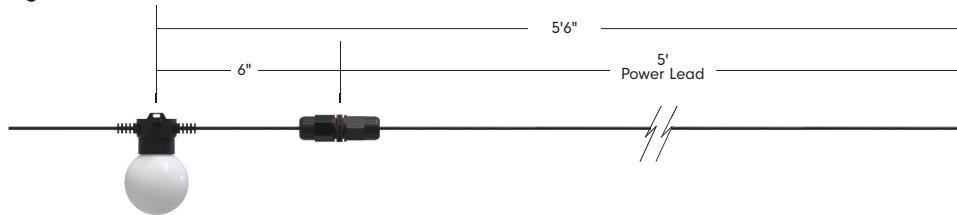
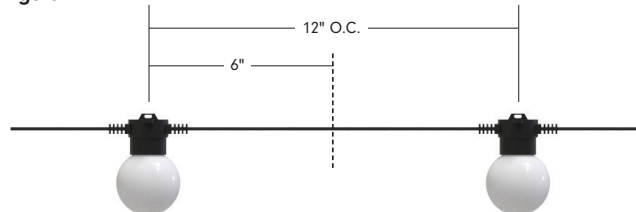
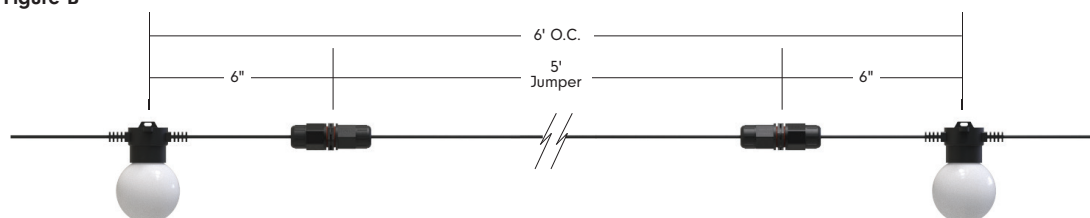
T.B.D.**Figure A****Figure B****Jumper Order Guide**

Figure A - All Litesphere 2.0 are evenly cut between globes according to specified spacing.

Figure B - Jumpers are added between the cuts, extending the total length of wire between globes.

LSL2-JUMPER-X-XX**X** = B (Black), W (White)**XX** = 05 (5'), 10 (10')

For custom length, consult factory

Figure A**Figure B**

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
 ACCESSORIES / TRANSFORMER T.B.D.

Notes:**Type:****OL-23**

ELL22-111438

12V | Litesphere™ 2.0**Specifications****Output - Standard Brightness**

On-Center Spacing	6"	12"	18"	24"
Lumens/ft	11	6	4	3
Watts/ft	.17	.09	.06	.04
Maximun Electrical Run	130'	180'	230'	250'

Output - High Output

On-Center Spacing	6"	12"	18"	24"
Lumens/ft	29.9	15	10	7
Watts/ft	.46	.23	.15	.12
Maximun Electrical Run	80'	110'	130'	150'

Output - Very High Output

On-Center Spacing	6"	12"	18"	24"
Lumens/ft	180	90.2	60	45
Watts/ft	1.92	.96	.64	.48
Maximun Electrical Run	30'	55'	70'	80'

Weights

On-Center Spacing	6"	12"	18"	24"
lb/ft	0.33	0.20	0.24	0.28
lb/ft with catenary cable	0.35	0.22	0.26	0.30

Output - Based on 3000K Clear Globe

Efficacy	Standard Brightness (40), High Output (46), Very High Output (94)
----------	---

Electrical

Input Voltage	12V DC
Power Consumption (W/LED)	Standard Brightness (.09), High Output (.23), Very High Output (.96)

Control

Control System	0-10V, ELV, MLV, DMX 512
----------------	--------------------------

Physical

Dimensions	2.5"W x 3.8"H
Socket Housing	PVC
American Wire Gauge	14 AWG
Globe	PE
Mounting	Surface Mount, Suspended
Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Storage Temperature	-40°C to 80°C (-40°F to 176°F)

Certification and Testing

Certification	cULus
Environment	Wet Location
IP Rating	IP67
Warranty	3 Years

**Job Name:**

Springdale Street Apartments
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Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
 ACCESSORIES / TRANSFORMER T.B.D.

Notes:**Type:****OL-23**

ELL22-111438

**12V** | Litesphere™ 2.0**Mounting Options****SURFACE/FLUSH**

For surface mount applications, remove the top suspension-plate by turning counter-clockwise until off. Place socket flush against the desired surface and mount using proper screws according to substrate.

**SUSPENDED**

Suspended mounting will use a combination of LS-Cable, LS-Locks with LS-UVZP. Tension the cable wire with our LS-TT (Tension Tool) for desired sag (Please adhere to local city code for suspended application).

Note: For suspension application, a catenary cable is required for proper installation.
 Please contact Tivoli for recommendations on unique mounting applications.

**Mounting Accessories****LS-CABLE-60 Catenary Cable Kit - 60'**

(1/8" Stainless Steel cable includes 2 cable locks for use with loads up to 200lbs)

LS-CABLE-110 Catenary Cable Kit - 110'

(1/8" Stainless Steel cable includes 2 cable locks for use with loads up to 200lbs)

LS-CABLE-500 Catenary Cable Kit - 500'

(1/8" Stainless Steel cable for use with loads up to 200lbs)

**LS-LOCK-4**

Cable Lock for 1/8th inch cable, Heavy-duty lockable fasteners support loads up to 200 lbs. Can be easily adjusted without the use of tools. Includes (2) Locks, (1) cable release key.

**LS-TT**

Catenary Cable Tensioning Tool up to 880lbs with minimal effort due to the 6:1 gear drive mechanism. Integral torque gauge controls the load applied to the wire, giving consistent tension every time and optimizing the life of the wire.

**LS-UVZP-XX-50**

X = BK (Black), WH (White)

50 pc Bag set. UV resistant, heavy duty ties.
 Maximum weight up to 100 lbs./per tie.

**LS-UVZP-XX-30**

X = BK (Black), WH (White)

30 pc Bag set. UV resistant, heavy duty ties.
 Maximum weight up to 100 lbs./per tie.



Enterprise Light
Manufacturers' Represent

Job Name:

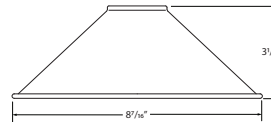
Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

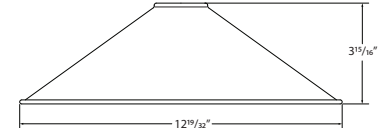
LSL2-X-12-S-**-K-C-12-23FT /END PREP /
ACCESSORIES / TRANSFORMER T.B.D.

Notes:**Type:****OL-23**

ELL22-111438

12V | Litesphere™ 2.0**Light Shades****HAT****SHADE-HT-BK-BK-8**

Light Shade - HAT
8.3" Black Top, Black Bottom
Weight: 0.38 lb

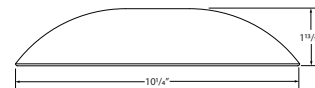
**SHADE-HT-BK-BK-13***

Light Shade - HAT
12.6" Black Top, Black Bottom
Weight: 1.06 lb

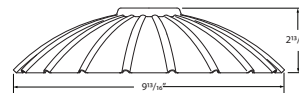
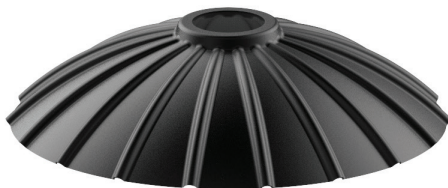
SHADE-HT-BK-CO-13 *

Light Shade - HAT
12.6" Black Top, Copper Bottom
Weight: 1.06 lb

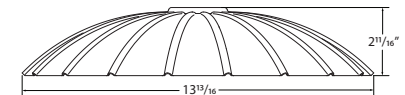
*Consult factory for lead time and MOQ

DISH**SHADE-DS-BK-BK-10**

Light Shade - DISH
10.2" Black Top, Black Bottom
Weight: 0.72 lb

FLOWER**SHADE-FL-BK-BK-10**

Light Shade - FLOWER
9.8" Light Shade, Black Top, Black Bottom
Weight: 0.54 lb

**SHADE-FL-BK-BK-13**

Light Shade - FLOWER
13.8" Light Shade, Black Top, Black Bottom
Weight: 1.1 lb

Accessories**SHADE-LS2ADP-XX-01** 2.0 Light Shade Adapter

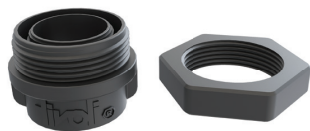
X = BK (Black), WH (White)
PVC Black Adapter - Sold individually.

SHADE-LS2ADP-XX-25 2.0 Light Shade Adapter

X = BK (Black), WH (White)
PVC Black Adapter Kit - Sold in packs of 25

SHADE-LS2ADP-XX-50 2.0 Light Shade Adapter

X = BK (Black), WH (White)
PVC Black Adapter Kit - Sold in packs of 50



**Job Name:**

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Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
ACCESSORIES / TRANSFORMER T.B.D.

Notes:**Type:****OL-23**

ELL22-111438

**12V** | Litesphere™ 2.0**Replacement Parts**

Very High Output



Standard & High Output

**LST-CG**

Litesphere 2.0
Clear globe
sold each

**LST-OG**

Litesphere 2.0
Opal globe
sold each

LSL-19-V-12

12V Wedge base
1900K

LSL-27-V-12

12V Wedge base
2700K

LSL-30-V-12

12V Wedge base
3000K

LSL-35-V-12

12V Wedge base
3500K

LSL-40-V-12

12V Wedge base
4000K

LSL-50-V-12

12V Wedge base
5000K

LSL-AM-V-12

12V Wedge base
Amber

LSL-RD-V-12

12V Wedge base
Red

LSL-RB-V-12

12V Wedge base
Royal Blue

LSL-GN-V-12

12V Wedge base
Green

LSL-YL-V-12

12V Wedge base
Yellow

STANDARD**LSL-19-S-12**

12V Wedge base
1900K

LSL-27-S-12

12V Wedge base
2700K

LSL-30-S-12

12V Wedge base
3000K

LSL-35-S-12

12V Wedge base
3500K

LSL-40-S-12

12V Wedge base
4000K

HIGH OUTPUT**LSL-19-H-12**

12V Wedge base
1900K

LSL-27-H-12

12V Wedge base
2700K

LSL-30-H-12

12V Wedge base
3000K

LSL-35-H-12

12V Wedge base
3500K

LSL-40-H-12

12V Wedge base
4000K

**LST-FG**

Litesphere 2.0
Frosted globe
sold each

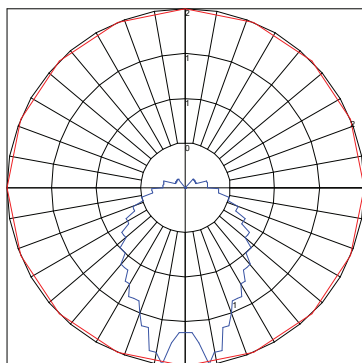
**LSL2-EC-X**

X = B (black), W (white)
Litesphere 2.0 End-Cap
Weight: 0.0375 lb
sold each

Photometrics**Frosted Globe - Based on 3000K LED****Standard Brightness**

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY				
Maximum Candela	Location	Horizontal Angle	Location	Vertical Angle
1.6		0		7.5

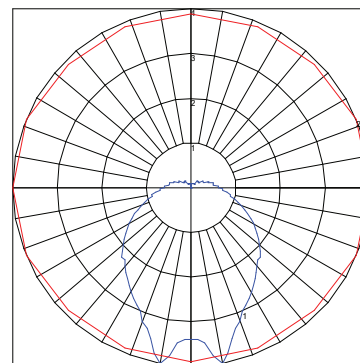


Maximum Candela = 1.6 Located At Horizontal Angle = 0, Vertical Angle = 7.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (7.5) (Through Max. Cd.)

High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY				
Maximum Candela	Location	Horizontal Angle	Location	Vertical Angle
4		0		10

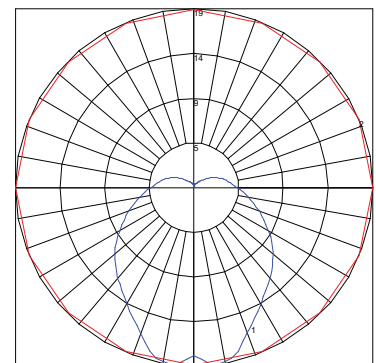


Maximum Candela = 4 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

Very High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY				
Maximum Candela	Location	Horizontal Angle	Location	Vertical Angle
18.5		0		7.5



Maximum Candela = 18.5 Located At Horizontal Angle = 0, Vertical Angle = 7.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (7.5) (Through Max. Cd.)

**Job Name:**

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
ACCESSORIES / TRANSFORMER T.B.D.

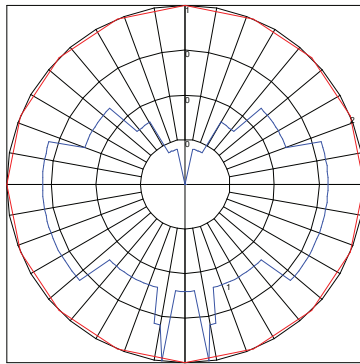
Notes:**Type:****OL-23**

ELL22-111438

12V | Litesphere™ 2.0**Photometrics****Opal Globe - Based on 3000K LED****Standard Brightness**

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY			
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle	
0.5	0	7.5	

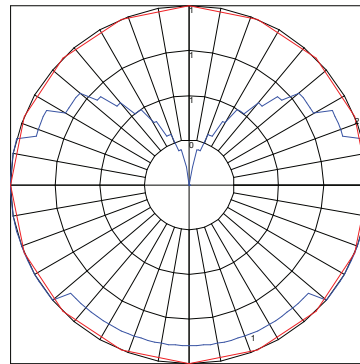


Maximum Candela = .5 Located At Horizontal Angle = 0, Vertical Angle = 7.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (7.5) (Through Max. Cd.)

High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY			
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle	
1	0	50	

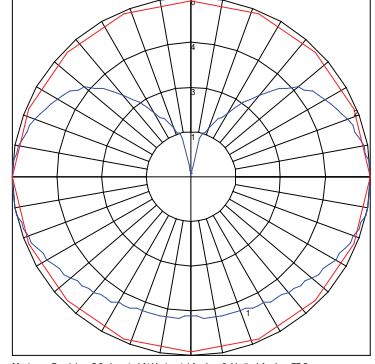


Maximum Candela = 1 Located At Horizontal Angle = 0, Vertical Angle = 50
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (50) (Through Max. Cd.)

Very High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY			
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle	
5.9	0	77.5	

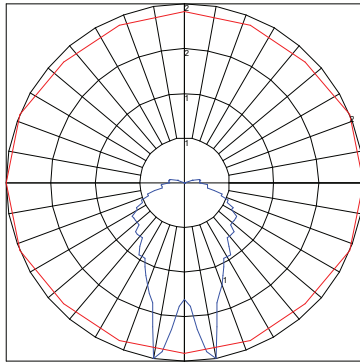


Maximum Candela = 5.9 Located At Horizontal Angle = 0, Vertical Angle = 77.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (77.5) (Through Max. Cd.)

Clear Globe - Based on 3000K LED**Standard Brightness**

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY			
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle	
2.3	0	10	

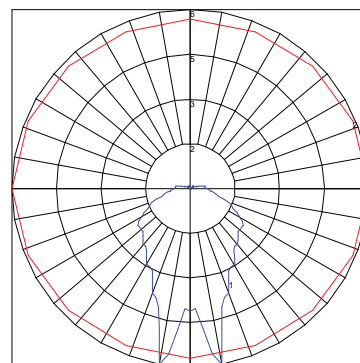


Maximum Candela = 2.3 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY			
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle	
6.1	0	10	

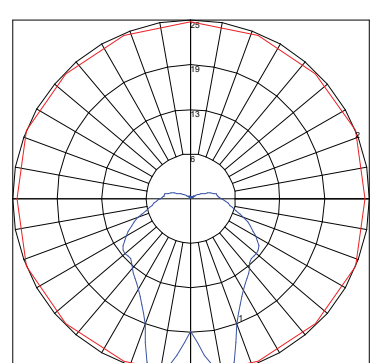


Maximum Candela = 6.1 Located At Horizontal Angle = 0, Vertical Angle = 10
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (10) (Through Max. Cd.)

Very High Output

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

POLAR GRAPH AND MAXIMUM CANDELA INTENSITY			
Maximum Candela	Location - Horizontal Angle	Location - Vertical Angle	
25.3	22.5	12.5	



Maximum Candela = 25.3 Located At Horizontal Angle = 22.5, Vertical Angle = 12.5
1 - Vertical Plane Through Horizontal Angles (22.5 - 202.5) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (12.5) (Through Max. Cd.)

**Job Name:**

Springdale Street Apartments
 Architect: Sketchworks Architecture, LLC
 formally Shulfer Architects, LLC (Middleton)

Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
 ACCESSORIES / TRANSFORMER T.B.D.

Notes:**Type:****OL-23**

ELL22-111438

**12V** | Litesphere™ 2.0**Power Supplies****ADNM - NON DIMMING**

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	MAX LOAD	CIRCUIT BREAKERS	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-60-1-5-12-D	Indoor / Outdoor	100-277V AC 5ø60 HZ	12V DC	60W	1	5A
	ADNM-80-1-5-12-D				60W	1	5A
	ADNM-150-2-5-12-D				2x60W	2	2x5A
	ADNM-240-3-5-12-D				3x60W	3	3x5A
	ADNM-320-4-5-12-D				4x60W	4	4x5A

ADNM - 0-10V DIMMING

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-60-1-5-12-DOT	Indoor / Outdoor	100-277V AC 5ø60 Hz	12V DC	1	60W	5A
	ADNM-80-1-5-12-DOT				1	60W	5A
	ADNM-150-2-5-12-DOT				2	2x60W	2x5A
	ADNM-240-3-5-12-DOT				3	3x60W	3x5A
	ADNM-320-4-5-12-DOT				4	4x60W	4x5A

ADNM - DMX SINGLE ADDRESS

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-60-1-5-12-DIN	Indoor / Outdoor	100-277V AC 5ø60 Hz	12V DC	1	60W	5A
	ADNM-80-1-5-12-DIN				1	60W	5A
	ADNM-150-2-5-12-DIN				2	2x60W	2x5A
	ADNM-240-3-5-12-DIN				3	3x60W	3x5A
	ADNM-320-4-5-12-DIN				4	4x60W	4x5A

ADNM - DMX MULTI ADDRESS

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	CIRCUIT CAPACITY
ADNM Series Class 2 Transformer	ADNM-150-2-5-12-DIN-2	Indoor / Damp	100-277V AC 5ø60 Hz	12V DC	2	2x60W	5A
	ADNM-240-3-5-12-DIN-3				3	3x60W	3x5A



Enterprise Light
Manufacturers' Represent

Job Name:

Springdale Street Apartments
Architect: Sketchworks Architecture, LLC
formally Shulfer Architects, LLC (Middleton)

Catalog Number:

LSL2-X-12-S-**K-C-12-23FT /END PREP /
ACCESSORIES / TRANSFORMER T.B.D.

Notes:**Type:****OL-23**

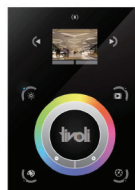
ELL22-111438

12V | Litesphere™ 2.0**Power Supplies****INFINITY - MLV / ELV / 0-10V / PWM / TRIAC**

DESCRIPTION	CAT NO	APPLICATION	PRIMARY VOLTAGE	SECONDARY VOLTAGE	CIRCUIT BREAKERS	MAX LOAD	MIN LOAD	CIRCUIT CAPACITY
Infinity Series Class 2 Transformer	INF-J-30-1-2.5-12	Indoor / Outdoor	100 - 277V AC	12VDC	1	30W	3W	2.5A
	INF-J-60-1-5-12				1	60W	6W	5A
	INF-J-180-3-5-12				3	3x60W	3x6W	3x5A
	INF-J-300-5-5-12				5	5x60W	5x6W	5x5A

Controls**Touchscreen****TVOQ-1-WH**

WH (White only)
512 DMX channel, 16 scene,
4 zone, glass touch screen

**Touchscreen****TVOQ-10-XX-7**

XX = BK (Black), WH (White)
1024 DMX channel, 500 scene,
10 zone, glass touch screen

**Touchscreen****TVOQ-2-XX**

XX = BK (Black), WH (White)
512 DMX channel, 99 scene,
1 zone, glass touch screen



MEMORANDUM

To: Village of Mount Horeb Plan Commission
From: Village Planner: Ben Rohr, AICP
Date: March 23, 2022
Re: Specific Implementation Plan (SIP) and Design Review for Proposed 3-Story Mixed-Use Building at 1800 Springdale Street for Driftless View, LLC.

Introduction

Driftless View, LLC has submitted the Specific Implementation Plan (SIP) for 1800 Springdale Street for Plan Commission review. The project is proposed along the north side of Springdale Street adjacent to the State Bank of Cross Plains (west), a multi-tenant commercial building (east), a developing residential neighborhood (north), and a multi-tenant commercial building and the Norsk Golf Club (south). This development received General Development Plan (GDP) zoning at the February meeting. The proposed SIP is consistent with the GDP and with the flexibilities from the requirements of the Zoning Ordinance approved in the GDP.

The Planned Development is proposed to accommodate a three-story mixed-use building with 40 multi-family housing units and 1,712 square feet of commercial space on an existing 1.44-acre parcel. The mixed-use building will be a combination of market rate multi-family apartments (11 studio units, 10 one-bedroom units, 16 two-bedroom units, and 3 three-bedroom units) and leased commercial space (1,712 sf). The development will include a community room, shared outdoor patio, and rear yard greenspace for the residential tenants, in addition to an outdoor patio for commercial patrons. Underground and surface bicycle and vehicle parking are provided for both uses. Pedestrians can access the site from a planned sidewalk connection to Springdale Street that extends the full length of the front façade.

To receive final Village approval of the Planned Development, this project requires approval of the SIP and Design Review by the Plan Commission and the Village Board. This report addresses the SIP first, followed by the Design Review.

Specific Implementation Plan Review

Chris and Matt Etmanczyk (Driftless View, LLC) and their team have been working with Village Staff and the Plan Commission to refine their design over the past several months through multiple rounds of conceptual review. At the February Plan Commission and Village Board meeting, the project received General Development Plan approval. The SIP must meet the zoning requirements, inclusive of the zoning flexibilities approved in the GDP.

Specific SIP Flexibilities Consistent with the Approved GDP include:

1. Allowable Land Uses: The GDP approved two by-right principal land uses for the property – Apartments and Indoor Commercial Entertainment. The SIP is consistent with the approved GDP.
2. Number of Dwelling Units in Building: The GDP approved a building with up to 40 dwelling units. The SIP is consistent with the approved GDP number of units in the building.
3. Building Height: The GDP approved a building of three stories, with under-building and surface parking, up to 47 feet in height. The SIP is consistent with the approved GDP building height.
4. Building Setback: The GDP approved an eastern property line setback for the building of 15 feet. The SIP is consistent with the approved reduced setback on the eastern property line.
5. Floor Area Ratio: The GDP approved a site with a floor area ratio up to 0.75. The SIP is consistent with the approved increase in floor area ratio for this property.
6. Paved Surface Setback: The GDP approved a paved surface setback of zero feet along the south and east property lines. The SIP is consistent with the approved reduction in paved surface setback along these two property lines.
7. Landscape Frontage: The GDP approved a landscape frontage of zero feet along the south property line. The SIP is consistent with the approved reduction in landscape frontage along this property line.

Planner's Recommendation for the Specific Implementation Plan:

I recommend the Plan Commission recommend the SIP for 1800 Springdale Street for approval by the Village Board, subject to the waivers and requirements addressed at the end of this report, as discussed and approved by the Plan Commission.

Design Review Requirements per Section 17-14:

Design Review by the Plan Commission is required under Section 17.14 of the Zoning Ordinance. Design Review is required for all development projects in the Village, except residential development with three or fewer dwelling units. The Design Review requirements in Section 17.14(4)(b) identify 27 Design Directives. The Plan Commission has the ability to waive any Design Directive or add additional design requirements upon a finding that the additional design requirement would improve the project.

This review is based on the plan set provided by the applicant. This project complies with most Design Review requirements. I recommend the Plan Commission discuss the few remaining waivers required that have been underlined.

1. Site Grading:

- a. The grading plan shall preserve existing grades to the greatest extent possible, particularly at the perimeter of the site.
 - The existing site slopes generally from east to west. The Grading Plan maintains the site's topography to the extent possible and appears to address the significant elevation change on the property in an appropriate manner.
- b. In no instance shall proposed grading create transitions to adjoining properties or rights-of-way that are unsafe, unstable or create drainage problems.
 - Existing grade transitions to adjacent properties are maintained. Same comment as 1.a., above.

- c. Site grading shall also preserve or create an attractive site appearance in conjunction with the proposed development.
 - The proposed development utilizes the existing topography changes on the site to incorporate underbuilding parking on the lower side of the site (western). Same comment as 1.a., above.

2. Existing Site Vegetation and Other Natural Features:

- a. The grading and development plans shall preserve, protect, and maintain important existing site vegetation as identified by the Plan Commission. Examples include hedgerows, groves and individual specimen trees.
 - The majority of the site is mowed grass with a small cluster of existing trees. The trees are proposed to be removed to provide a developable area on the property and be replaced with 10 canopy and ornamental trees along the front and rear of the site.
- b. Topsoil used at the development site should be from on site, to the extent possible, particularly in areas under the drip line of preserved vegetation.
 - The Site Plan is designed to enable the Grading Plan to meet this requirement on this challenging site.

3. Site Layout Relation to Abutting Streets:

- a. In general, the layout of buildings, structures, pavement, parking and landscaping shall be compatible with the general pattern for similar land uses in the vicinity, as determined by the Plan Commission.
 - This is a challenging site with existing grade changes, existing development on three sides, and a shared access point on the eastern property line. The development plan is designed to create a level ground-floor building footprint and efficiently accommodate access to the under-building parking at the west end of the building. This arrangement allows for the stormwater basins to effectively capture water from the building and parking area on the lower, rear side of the building and for the building to present an attractive face to Springdale Street and the private street to the north.
- b. The general site layout shall result in an attractive appearance to all abutting streets, as determined by the Plan Commission.
 - Same as 3.a., above.

4. Building Setbacks:

- a. Building setbacks shall comply with the requirements of the zoning district, and with the additional requirements listed below in subparagraphs 4.b. and 4.c.
 - Per the approved GDP, the eastern property line setback for the principal building is proposed to be 15 feet. The SIP is consistent with the approved reduced setback on the eastern property line. All other building setbacks are met.
- b. Within the downtown area, and particularly along Main Street and the commercially developed portions of intersecting streets, the entire street side of buildings shall be located at or within 3 feet of all abutting street rights-of-way, unless an exception is granted through the conditional use process.

- This requirement is not applicable, as the subject property is not located in the specified area.
- c. Within the CTH ID corridor between STH 78 and USH 151, the entire street side of buildings shall be located at or within 30 feet of all abutting street rights-of-way, unless an exception is granted through the conditional use process. Parking shall not be permitted in this area. Drives for one-way circulation and/or emergency vehicle access may be permitted through the conditional use process.
 - The proposed building is greater than 30 feet from the Springdale Street right-of-way with surface parking proposed between the building and right-of-way. Due to the existing site configuration and constraints, parking requirements needed, and the approved GDP, I recommend that this requirement be waived.

5. Building Height:

- a. Building heights shall comply with the requirements of the zoning district, and with the additional requirements listed below in subparagraphs 5.b. and 5.c.
 - This requirement is met by compliance with the GDP to allow a building of three stories, with under-building and surface parking, up to 47 feet in height.
- b. Within the downtown area, and particularly along Main Street and the commercially developed portions of intersecting streets, building heights shall be a minimum of 20 feet and shall be a minimum of 2 stories, unless an exception is granted through the conditional use process.
 - This requirement is not applicable, as the subject property is not located in the specified area.
- c. Within the CTH ID corridor between STH 78 and USH 151, building heights shall provide a functional or decorative building tower or related architectural feature that exceeds the height of the majority of the building facade by at least 7 feet, unless an exception is granted through the conditional use process. Roofs, and roof appurtenances such as cupolas, shall not count toward this requirement.
 - This requirement is met with a 7-foot elevated facade parapet and accent-colored decorative metal cornice wrapping on the prominent southeast corner of the building.

6. Building Mass:

- a. Buildings over 5,000 square feet of gross floor area shall be subject to the requirements for large developments.
 - The building exceeds 5,000 square feet of gross floor area, and complies with all requirements for large developments.

7. Building Facades:

- a. Long building facades shall be visually broken up and variegated with staggers and offsets as determined appropriate by the Plan Commission.
 - This requirement is met by regularly spaced building staggers, changes in building facade materials, patios, and different sized windows along all facades.

- b. All building facades facing streets, drives or parking areas shall provide regularly spaced openings for windows and doors, and regularly spaced decorative elements such as piers and columns. The size and spacing of these features shall be compatible with nearby structures that meet this requirement, as determined by the Plan Commission.
 - This requirement is met by regularly spaced changes in materials, colors, and textures.
- c. All building facades facing streets, drives or parking areas shall provide a pattern of upper story openings that is compatible with the pattern established by the ground floor, as determined by the Plan Commission.
 - This requirement is met.
- d. Within the downtown zoning district, and particularly along Main Street and the commercially developed portions of intersecting streets, building facades shall employ traditional storefront design by providing pilasters, transom windows, cornices, lintels and related decorative details to highlight transitions between the ground floor and upper stories and between upper stories and the parapet.
 - This requirement is not applicable.

8. Exterior Building Materials:

- a. Exterior materials for multi-family, office, or commercial buildings may not include metal wall panels, concrete panels, plain concrete block, asphalt, or spandrel window panels, unless an exception is granted through the conditional use process.
 - This requirement is met for most of the exterior building materials, outside of the proposed brown portions of the exterior that are identified as “prefinished metal wall panels” on sheet A201 and A202 of the submitted materials packet. These sections of each façade make up very small portions of each and act as accents to the other materials and colors proposed. I recommend that this requirement be waived.
- b. Hard and durable materials including decorative block, brick or stone, shall be required on all exterior portions of the structure within 40 inches of the adjacent grade.
 - This requirement is met with the use of brick on three sides of the building adjacent to the grade and painted concrete on the rear side of the building adjacent to the grade.

9. Exterior Building Colors:

- a. Exterior colors of all buildings, structures, appurtenances and paving shall be compatible and harmonious with those of existing buildings in the immediate area which conform to these design requirements, as determined by the Plan Commission.
 - i. Within the downtown area, the Victorian color palette shall be used, or other colors must be approved by the Plan Commission.
 - This requirement is not applicable, as the subject property is not located in the specified area.
 - ii. Throughout the rest of the Village, primary colors including red, blue, green, yellow, black, and fluorescent colors shall not be permitted. Where an integral

part of site design, muted versions of these colors may be used, as approved by the Plan Commission.

- This requirement is met on all portions of the building with a neutral color scheme proposed.
- iii. High gloss paints and other exterior finishes are not permitted.
 - This requirement is met on all portions of the building.
- iv. Color patterns shall be used consistently throughout the property, as determined by the Plan Commission.
 - This requirement is met on all portions of the building with a consistent use of neutral colors proposed.

10. Exterior Doors:

- a. All exterior doors visible from streets, drives or parking areas shall provide decorative design elements.
 - This requirement met, outside of blank metal service doors proposed on the south, north, and east elevations. However, landscape screening is proposed in each location. I recommend that this requirement be waived.

11. Windows:

- a. Spandrel panels, mirrored glass or heavily-tinted windows are not permitted. Where screening is desired, vertical or horizontal strip blinds may be used.
 - This requirement is met.
- b. Windows may not be obscured by paper or other attached materials on more than 5% of any individual window panel.
 - This requirement is met.

12. Roofs:

- a. Roof forms and materials shall be compatible and harmonious with those of existing buildings in the immediate area which conform to these design requirements, as determined by the Plan Commission.
 - This requirement is not met. The proposed flat roof of the building does not match the new construction that has taken place along Springdale Street (pitched roofs). However, this is a very typical modern style of architecture seen across Dane County and the building already exceeds the maximum height limit, which would only further be exceeded with a pitched roof.
- b. Metal roofs shall not be used for multifamily, office or commercial buildings, unless an exception is granted through the conditional use process.
 - This requirement is met.
- c. Roof forms shall be designed to accommodate the requirements in subparagraphs 5.c. and 7.d., above.
 - This requirement is met.
- d. Rooftop mechanical equipment shall not exceed the elevation of the lowest point of the surrounding building parapet or roof.

- There is only one mechanical planned for the roof to accommodate the commercial space. This unit will be located near the eastern side of the roof to utilize the screening of the elevated parapet walls and tower element. All other mechanicals are planned to be located within the building. This requirement is met.

13. Exterior Building Appurtenances:

- a. Building facades shall be uncluttered by the minimal use and careful placement of brackets, wiring, meter boxes, antennae, gutters, downspouts and other appurtenances. Where necessary, such features shall be colored to blend in, rather than contrast, with the immediately adjacent building exterior.
 - This requirement is met.

14. Awnings:

- a. Awnings, where approved by the Plan Commission, shall complement the character of the building.
 - Two awnings are proposed at the southeast corner of the building where the commercial tenant space is located and over the main residential entryway. Both match the color scheme and materials of the building. This requirement is met.
- b. Soft, weather-treated canvas or vinyl materials which allow for flexible or fixed installation may be used. Metal canopies are prohibited.
 - This requirement is not met. The awnings proposed are metal and provide architectural interest to the focal entry points of the building. They also match the color scheme and materials of the building. I recommend that this requirement be waived.
- c. Backlighting is prohibited.
 - This requirement is met.

15. Trash Containment Structures:

- a. Trash containment structures shall be designed to fully conceal trash storage.
 - There are two trash containment structures proposed. One on the east elevation for the commercial tenant and one on the western elevation for the residential occupants. Both are concealed with permanent walls on all four sides and a roof. This requirement is met.
- b. Trash containment structures shall be constructed in the same materials and colors as the ground floor of the principal building.
 - Both containment structures look and function like portions of the rest of the building using the same materials, colors, and architectural elements. This requirement is met.
- c. Wood or synthetic wood gates shall be used and shall be arranged in a pattern to provide complete opacity. Metal panel gates and metal fence gates with strips are prohibited.
 - As an alternative to a standalone trash containment structure, this project employs accessory structures on the east and west elevations that look and feel like the principal building. This requirement is met with fully enclosed structures.

16. Freestanding Canopy Structures:

- a. Freestanding canopy structures, such as those providing shelter at a gas station or drive-up banking station, shall be designed to complement the design of the principal building, as determined by the Plan Commission.
 - This requirement is met. There is no freestanding canopy structure.
- b. Canopy roofs shall employ the same pitch, materials and colors as the roof of the principal building, unless an exception is granted through the conditional use process.
 - This requirement is met.
- c. Canopy supports shall be decorative in nature and shall employ the same materials and colors as the principal building. Exposed nondecorative supporting poles are not permitted.
 - This requirement is met.

17. Other Structures:

- a. Outbuildings shall employ the same high-quality exterior building materials as used on the principal building.
 - This requirement is met. There are not outbuildings.
- b. Walls and fences shall employ high-quality materials such as metal pickets, stone, decorative block or brick which complement the principal building, as determined by the Plan Commission.
 - This requirement is met.

18. Exterior Lighting:

- a. All exterior lighting shall use decorative fixtures, as approved by the Plan Commission. Such fixtures shall be consistent in design theme throughout the site.
 - This requirement is met.
- b. All exterior light bulbs shall not be visible from beyond any property line. Directional or cutoff fixtures shall be used to meet this requirement.
 - This requirement is met. To note, the proposed string lights in the residential rear patio area are exposed bulbs without cutoff fixtures, however they give off very minimal light and there will be only 0.1 footcandles visible from the rear property line.
- c. Lighting at the property lines shall not exceed 0.5 footcandles over ambient conditions.
 - This requirement is met on three sides of the property. However, along the eastern property line, the proposed footcandles slightly exceed 0.5 adjacent to the commercial tenant's trash enclosure (0.7 footcandles) and the shared access driveway (1.0 footcandles). I recommend that this requirement be waived given the need to light the existing shared access driveway and that the eastern elevation of the accessory trash enclosure structure directly abuts the neighboring parking lot to the east that also uses exterior light fixtures.
- d. Maximum lighting shall not exceed 10.0 footcandles on the site, except in areas serving in-vehicle uses such as drive-up windows and fueling areas. In such locations, maximum lighting shall not exceed 25.0 footcandles.
 - This requirement is met.

- e. Freestanding light fixtures shall not exceed a total height of 20 feet.
 - This requirement is met. The freestanding parking lot light poles are proposed to be a maximum of 17 feet in height.

19. Exterior Signage:

- a. Exterior signage shall complement the design of the overall site, as determined by the Plan Commission.
 - The proposed freestanding ground-monument sign is 86 square feet in size, made of high-quality materials matching the building façade, and located outside of the right-of-way with appropriate front setbacks. This requirement is met.
 - The proposed commercial tenant wall sign is proposed to be located on the top of metal awning and contain the commercial tenant's logo and name. Since a commercial tenant has not yet been identified and it is currently premature to review this sign based on the requirements of the ordinance, I recommend that it be reviewed by staff prior to installation to confirm it meets all standards.
- b. Freestanding sign supports shall be decorative in nature and shall employ the same materials and colors as the principal building. Exposed nondecorative supporting poles are not permitted.
 - The proposed freestanding ground-mounted sign matches the materials and look of the proposed building façade with brick, metal, and wood included. The sign is also surrounded on all four sides with proposed perennials, grasses, and low shrubs.

20. Outdoor Display or Storage:

- a. All outdoor display and/or storage areas must be clearly depicted and labeled on an approved site plan. Said label shall specify the general types of materials to be displayed or stored, including: retail or rental display; retail or rental vehicle display; long-term business vehicle storage; equipment storage; refuse storage; scrap equipment or vehicle storage.
 - There is a proposed outdoor seating area for the commercial tenant's use at the southeast corner of the front façade. The outdoor patio will be a cement surface meant for café tables and chairs. Two of the three sides of the patio are screened with landscaping, outside of the side facing Springdale Street that functions as the main entryway to the indoor commercial space, residential building, and sidewalk and parking area. This requirement is met.
- b. Outdoor storage areas shall be adequately screened from view from adjacent properties and streets, drives and parking areas, as determined by the Plan Commission.
 - This requirement is met.

21. Pavement Materials:

- a. All traffic circulation, parking and pedestrian areas shall be provided with a hard, durable surface such as concrete, asphalt, pavement blocks or bricks. Gravel is not acceptable.
 - This requirement is met throughout the site.

- b. Durable, porous pavement techniques are encouraged, and the overall coverage of pavement on all sites should be minimized so as to reduce stormwater runoff.
 - No porous pavement is proposed, but the project must comply with requirements for on-site detention of stormwater throughout the site. This requirement is met.

22. Pedestrian Facilities:

- a. Public sidewalks or multipurpose paths shall be required along all street frontages, per Village standards.
 - There is a proposed north-south sidewalk connection to the site from the existing sidewalk present along Springdale Street. Additionally, a reduced crosswalk distance and pavement marking are provided within the parking area for increased pedestrian safety. With the existing on-site grade changes and easements along the western property line, it was determined by the developer that a pedestrian connection to the developing neighborhood north of the project was infeasible. This requirement is met.
- b. Paved pedestrian connections are required between all street frontage pedestrian facilities and public doorways. Said connections shall be a minimum of 5 feet wide.
 - This requirement is met for connections to Springdale Street and has been deemed infeasible by the developer for the rear private street.
- c. Where pedestrian connections cross vehicle circulation areas, a crosswalk clearly delineated by color and/or texture is required.
 - This requirement is met.

23. Traffic Circulation:

- a. Traffic circulation patterns shall be safe and understandable by vehicle operators, as determined by the Plan Commission.
 - The proposed driveways (24 feet wide), residential underground access drive (20 feet wide), and parking spaces (18 feet long) are of adequate size to facilitate traffic circulation. While the site has two proposed driveways from Springdale Street, only one provides two-way ingress/egress (center of the property). The existing shared driveway along the eastern property line will continue to connect the two properties together and serve as both ingress/egress and cross access. This creates a three-way conflict point as the driveway enters the two properties and cross traffic could be going in either direction. The developer has addressed this with a narrowed drive isle to slow traffic going east-west and a proposed directional sign adjacent to the driveway entrance at the far southeast corner of the site.

I recommend that the Plan Commission require a stop sign to be placed within the two landscaped islands that extend into the parking area directly south of the proposed commercial outdoor seating area and additional pavement markings are added to this area associated with the stop sign. Additionally, if there is space in the shared median between the two properties, another directional sign could be placed that orients drives to the cross-traffic pattern between the two sites.

- b. Traffic patterns which are determined as too complicated by the Plan Commission shall be prohibited. Complications may be identified due to steep grades, inadequate throat depths, offset intersections, too many intersections within a particular area, dangerous and conflicting traffic movements, movements compromised by limited visibility, or restricted turning radii for the types of vehicles likely present on the site.
 - This requirement is met with the additional parking lot signage and pavement markings as described in 23a. above.
- c. No traffic circulation shall be permitted within 10 feet of a street or drive right-of-way or easement, nor within 5 feet of any other property line, except within the downtown area, or as approved as through the conditional use process.
 - Per the approved GDP, the minimum pavement surface setback on the southern and eastern property lines were reduced to zero feet. The SIP is consistent with the approved reduced setbacks on those property lines. This requirement is met.
- d. Within the CTH ID corridor between STH 78 and USH 151, refer to subparagraph 4.c. above regarding limitations on drives located adjacent to street rights-of-way.
 - The proposed building is greater than 30 feet from the Springdale Street right-of-way with surface parking proposed between the building and right-of-way. Due to the existing site configuration and constraints, parking requirements needed, and the approved GDP, I recommend that this requirement be waived.

24. Parking:

- a. All parking areas located within required principal building setback areas shall be visually screened from streets by a continuous landscaped hedge, fence, wall or berm with a minimum height of 40 inches over the elevation of the adjacent portion of the parking lot at time of installation. Gaps in this hedge are permitted for pavement approved as part of the site design.
 - Per the approved GDP, the requirement for minimum landscape frontage facing Springdale Street was removed. The SIP is consistent with the approved GDP. This requirement is met.
- b. Within the downtown area, and particularly along Main Street and the commercially developed portions of intersecting streets, parking shall not be located along a street frontage unless an exception is granted through the conditional use process.
 - This standard is not applicable to the subject property.
- c. Within the CTH ID corridor between STH 78 and USH 151, refer to subparagraph 4.c. above regarding the prohibition of parking adjacent to street rights-of-way.
 - The proposed building is greater than 30 feet from the Springdale Street right-of-way with surface parking proposed between the building and right-of-way. Due to the existing site configuration and constraints, parking requirements needed, and the approved GDP, I recommend that this requirement be waived.
- d. Bicycle parking shall be provided at a rate of one bicycle space for every 10 vehicle parking spaces up to a total of 20 bicycle spaces.

- There are 6 bicycle parking stalls proposed outdoors, adjacent to the main building entryway and an additional 38 residential bicycle storage units within the underground parking area for residents. This requirement is met.

25. Building Foundation Landscaping:

- a. A minimum 10-foot wide landscaping bed or planter shall be provided along at least 50% of each wall facing a street, drive or parking area, except within the downtown area.
 - This requirement is met.
- b. This bed or planter shall be located adjacent to or within 10 feet of the building foundation.
 - This requirement is met.
- c. This bed or planter shall be landscaped appropriately as determined by the Plan Commission.
 - This requirement is met.

26. Street Frontage Landscaping:

- a. A minimum 10-foot wide landscaped area shall be provided adjacent to the frontage of all streets and drives, except within the downtown area.
 - Per the approved GDP, the requirement for minimum landscape frontage facing Springdale Street was removed. The SIP is consistent with the approved GDP. This requirement is met.
- b. This area shall be landscaped appropriately as determined by the Plan Commission. At minimum, one canopy-type street tree (maple, oak, hickory, ginkgo, honey locust or similar species) shall be required for every 50 feet of street or drive frontage, except within the downtown area. Said trees shall be a minimum 2-inch to 2.5-inch caliper.
 - Per the approved GDP, the requirement for minimum landscape frontage facing Springdale Street was removed. The SIP is consistent with the approved GDP. The submitted landscape plan does provide significant frontage landscaping including trees, varying-sized shrubs, decorative grasses, and perennials in four different locations facing Springdale Street. This requirement is met.

27. Parking Lot Landscaping:

- a. Parking lot landscaping shall comply with the requirements of §17.136
 - This requirement is met with the number of parking area trees, landscape islands, and points provided in Sheet L1.0.
- b. Subsection 24.a., above, shall also apply along street and drive frontages.
 - Per the approved GDP, the requirement for minimum landscape frontage facing Springdale Street was removed. The SIP is consistent with the approved GDP. This requirement is met.

- c. Subsection 24.c., above, shall also apply along CTH ID.
- The proposed building is greater than 30 feet from the Springdale Street right-of-way with surface parking proposed between the building and right-of-way. Due to the existing site configuration and constraints, parking requirements needed, and the approved GDP, I recommend that this requirement be waived.

Village Planner's Recommendations:

I recommend the Plan Commission consider and approve the following requirements for the approval of the Specific Implementation Plan for 1800 Springdale Street:

1. A recommendation to the Village Board that the Specific Implementation Plan for 1800 Springdale Street be approved, subject to any and all requirements identified by the Plan Commission under Design Review.
2. A recommendation to the Village Board that the Site Plan packet be approved, subject to any and all requirements identified by the Plan Commission under Design Review.
3. Design Review as submitted to the Village, including waivers from the Design Review requirements approved by the Plan Commission, including:
 - a. 4.c., 23.d., 24.c., and 27.c. for increased principal building setback from the Springdale Street right-of-way and surface parking between the right-of-way and principal building, as depicted.
 - b. 8.a. for use of the decorative metal panels on the building exterior, as depicted.
 - c. 10.a. for the non-decorative service doors on the building façade, as depicted.
 - d. 12.a. for the proposed flat roof, as depicted.
 - e. 14.b. for the metal awnings over the commercial tenant's and residential units' main entryway, as depicted.
 - f. 18.c. for exceeding the maximum footcandles at the property line on the eastern property line, as depicted.
4. Additional Design Review requirements as approved by the Plan Commission, including:
 - a. Require the commercial tenant signage permit to be submitted in the future by the operator once identified. Village staff review and approval for compliance with all ordinance requirements.
 - b. Require a parking lot stop sign, additional pavement markings at the stop sign location, and directional signage in the shared eastern parking area median.
5. Any additional requirements identified by Village Staff, the Village Engineer, the Plan Commission, or the Village Board.

Village of Mount Horeb, Building Inspection Dept.

Building Inspector's Report February 2022

Month to Date

27- Building permits have been issued for general construction since February 1st.
2 - new UDC permit

Year to Date

33-General permits since Jan. 1st
6- New UDC single family homes since Jan. 1st
3- New Duplex

Large Commercial projects currently active

- Landsby Ridge

Respectfully submitted

Dave Geraths
Building Inspector

PLAN COMMISSION/HISTORIC PRESERVATION COMMISSION
WEDNESDAY, FEBRUARY 23, 2022

The Plan Commission/Historic Preservation Commission met on the above date in the Board Room of the Municipal Building, 138 East Main Street, Mount Horeb, WI. Chair Randy Littel called the meeting to order at 7:00pm. Present were Commissioners, Aaron Boehnen, Andrew Kidd, Destinee Udelhoven and Peggy Zalucha. Sarah Best and Norb Scribner appeared virtually. Also present were Economic Development Director Rowan Childs, Village Planner Ben Rohr and Assistant Clerk Jean Culberson. Village Administrator Nic Owen was absent.

Consider January 26, 2022 Plan Commission meeting minutes

Udelhoven motioned to approve the minutes and Zalucha seconded the motion. Motion carried by unanimous voice vote.

Public Hearing: To consider Conditional Use Permit application from Jim Sutter, 1920 Three Wood Drive, to install deck on NE corner of the house

The public hearing opened at 7:04pm. No one spoke and the hearing closed at 7:08pm.

Consider the recommendation for Resolution 2022-03, Conditional Use Permit, for deck structure at 1920 Three Wood Drive

Owner Jim Sutter gave a brief summary. Culberson defined the setbacks for a corner lot and the encroachment of the deck into the front yard. Boehnen questioned the elevation in relation to the backyard neighbor. Boehnen motioned to approve the deck and Zalucha seconded the motion. Motion carried by unanimous voice vote.

Public Hearing: To consider a zoning change from PB planned business to PD-1 Planned Development District with General Development Plan for a proposed mixed-use development located at 1800 Springdale Street, further described as parcel 0607-072-9765-1

The public hearing opened at 7:10pm. Sienna Hills Subdivision developer Rich Eberle opposed the project and expressed disappointment that he was not informed prior to the hearing. The size of the building and the scope of stormwater directed toward his subdivision was concerning. Lynn Forshaug on the Housing Task Force Board spoke in favor of the project stating the location was good and the need for senior housing. Developer and resident Brian Durtschi spoke in opposition of the location of the project. Durtschi questioned the fire department access to the back of the building, the curb issue, the number of units to beds and if the commercial failed would the owner be permitted to change to all apartments. The hearing closed at 7:26pm.

Consider recommendation for draft Ordinance 2022-02 changing the zoning classification of 1800 Springdale Street from Planned Business to PD-1 Planned Development with a General Development Plan for a proposed Mixed-Use Development.

Brad Koning with Sketchworks Architecture and owners Chris and Matt Etmanczyk gave an overview on the changes addressed and answers to the public hearing questions. The proposed 40 units have dens that do not count as bedrooms due to the fire code. The developer will bury the overhead power lines allowing the fire department access and the curb issue could be removed. The stormwater followed the DSPS and CARPC standards. Rohr stated the DC standard must be for a 100-year event and the Village Engineer and Dane County would approve the stormwater plan.

The Board discussed: the zoning change, housing study on the number of units in the Village, market rate and affordability, reducing the density and whether to table the request since the Village Engineer was not in attendance to answer the stormwater questions. Rohr stated if approved by the Board the density remains including the nine components listed in the packet. Boehnen motioned to approve the Ordinance with the 9 components and Best seconded the motion. Littel requested a roll call vote. Littel, Best, Boehnen, Kidd and Scribner voted yes. Udelhoven and Zalucha voted No. Motion passed.

Concept review by Steve Brown Apartments, 120 South First Street

Director/Developer Dan Seeley and Shane Fry partner and architect for Brownhouse gave an overview of the proposed five-story apartment building. The property is currently the municipal parking lot. The building consists of private underground parking, one level of public surface parking and four levels of market rate apartments. Proposing 63-64 units of studio, 1-2-bedroom apartments at market rate and green rooftop amenity. The Board questioned the height of the building, location, slope and driveway. Seeley stated the stormwater review was not completed and the first-floor public parking was a requirement. Rohr questioned if the project was under parked and Fry agreed explaining the need to stop accommodating one car per person. The Board was in favor of the project and requested elevations showing height of the building in relation to the Hoff Mall Apartments, Duluth five-story and the turret on the Opera House.

Plan Commission Chair report: Littel referred to the Building Inspection report in the packet.

Village Planner report: Rohr gave an update on the Comprehensive Plan joint meeting on March 30th.

Adjourn: Boehnen moved, Little seconded to adjourn the meeting at 9:10pm. Motion carried by



HERITAGE
COMMUNITY
OPPORTUNITY

VILLAGE OF MOUNT HOREB

E. Main Street
Mount Horeb, WI 53572
Phone: (608) 437-6884 Fax: (608) 437-3190
Email: mhinfo@mounthorebwi.info Web: mounthorebwi.info

THE MARCH 23rd, 2022 PLAN COMMISSION/HISTORIC PRESERVATION COMMISSION WILL BE HELD VIRTUAL AND IN PERSON. YOU CAN WATCH THE MEETING LIVE VIA THE VILLAGE WEBSITE BY CLICKING "WATCH LIVE" UNDER THE TROLLWAY TV GRAPHIC ON THE RIGHT SIDE OF THE HOME PAGE AT WWW.MOUNTHOREBWI.INFO. THE MEETING IS ALSO BROADCAST LIVE ON MHTC CHANNEL 181 AND CHARTER CHANNEL 981. YOU CAN ALSO JOIN THE MEETING USING:

Please join my meeting from your computer, tablet or smartphone.

<https://global.gotomeeting.com/join/418113189>

You can also dial in using your phone. United States: [+1 \(224\) 501-3412](tel:+12245013412) Access Code: 418-113-189

PLAN COMMISSION/HISTORIC PRESERVATION COMMISSION WEDNESDAY, MARCH 23, 2022

The Plan Commission/Historic Preservation Commission of the Village of Mount Horeb will meet virtually and in person on the second floor of the Municipal Building at the above date at 7:00pm. Agenda as follows:

1. Call to order – Roll call
2. Consider February 23, 2022 Plan Commission meeting minutes
3. Discussion on the proposed free-standing sign for Little Vikings Academy, 1991 Commerce Drive
4. Consideration applications of 110 and 108 E. Main Street and certificate of appropriateness.
 - a- Design Review
 - b- Certificate of appropriateness
5. Consider SIP and design review for mixed use development located at 1800 Springdale Street, further described as parcel 0607-072-9765-1
 - a- Site specific implementation plan
 - b- Design review
6. Plan Commission Chair report
7. Village Planner report
8. Adjourn

VILLAGE OF MOUNT HOREB

SIGN PERMIT

PERMIT NO. _____

PARCEL NO. _____

PERMITS REQUESTED

☐ CONST ☐ HVAC ☐ ELECT ☐ PLUMB ☐ EROSION**Brenda Moore Fritz****1991 Commerce Dr., Mt Horeb****(414) 840-2122**

Owner

Cert # _____

Address

Telephone

Sign Art Studio**325 W. Front St. Mt Horeb****608-437-3502**

Building Contractor

Cert # _____

Address

Telephone

Electrical Contractor

Cert # _____

Address

Telephone

HVAC Contractor

Cert # _____

Address

Telephone

Plumbing Contractor

Address

Telephone

PROJECT LOCATION

1991 Commerce Dr., Mt Horeb**PI****32,000**

Project Address

Zoning

Lot Area

Estimated Cost

Lot

Block

Subdivision

Req'd
Setbacks:

Front

Rear

Left

Right

PROJECT DESCRIPTION

- ☐ NEW CONST
☐ ADDITION
☐ ALTERATION
☐ REPAIR
☒ OTHER

Sign Installation - GMN

THIS PERMIT IS ISSUED PURSUANT TO THE FOLLOWING CONDITIONS. FAILURE TO COMPLY MAY RESULT IN SUSPENSION OR REVOCATION. ALL CONSTRUCTION SHALL COMPLY W/ THE REQ'MNTS OF WISCONSIN STATE CODE AND MT HOREB MUNICIPAL CODE. IT IS THE RESPONSIBILITY OF THE APPLICANT TO KNOW THE CODES AND TO ENSURE COMPLIANCE WITH THE AFOREMENTIONED CODES. ISSUANCE OF THIS PERMIT CREATES NO LEGAL LIABILITY, EXPRESS OR IMPLIED, ON THE DEPARTMENT OR MUNICIPALITY.

CONDITIONS OF APPROVAL

PLANS SUBMITTED ☐ YES ☐ NOADD'NL PLANS REQ'D ☐ YES ☐ NO

BUILDING PLANS CONSISTING OF A SITE PLAN AND SIGN DIAGRAM SHOWING THE SIZE AND CHARACTERISTICS OF THE PROPOSED SIGN MUST BE SUBMITTED.

APPLICANT SHALL NOTIFY DIGGER'S HOTLINE (1-800-242-8511) PRIOR TO EXCAVATING, OR BORING

FEES:

BLDG PERMIT: _____

EROSION: _____

UTILITIES: _____

TOTAL: _____

RECEIPT:
CHK # _____

**Village of Mt. Horeb
Building Inspection Department
138 East Main Street
Mt. Horeb Wisconsin 53572
608-437-6884
cell 608-697-7776**

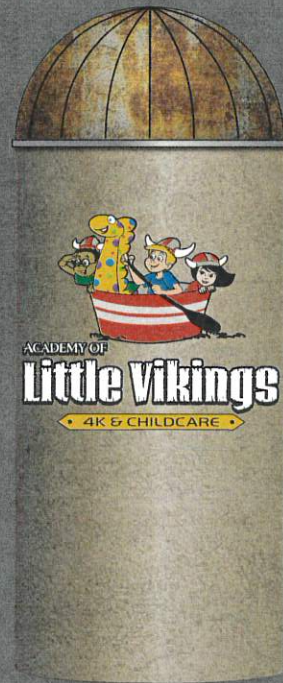
PERMIT ISSUED BY:

Name

Certification No. _____

Date

Seal No. _____



SIGNAGE CONCEPT



DATE: 03/07/22 CUSTOMER: Little Vikings Daycare ADDRESS: 1991 Commerce Dr., Mount Horeb WI 53572



customer approval: _____	date: _____	landlord approval: _____	date: _____	SHEET
By signing this approval you are hereby authorizing Sign Art Studio LLC to proceed with the work as described. Any deviation from these specifications will become the customer's financial responsibility.				MAP
© The above artwork and/or conceptual design, less customer provided artwork or plans, is property of Sign Art Studio and may not be reproduced without written consent.				

Proposed Location



1CT



KEY NOTES:

A - S/F Non-Illuminated monument sign Silo cap dome to be formed aluminum tube frame construction. Paint to be distressed aluminum.

B - Main silo tube to be tube frame construction and formed aluminum skin. skin to be sprayed with texture paint to give it a old cement look.

C - Logo Graphic to be hand painted on silo.

FINISHES:

- Colors TBD
- Colors TBD
- Other colors TBD

CALCULATIONS:



makesignsnotwar.com
325 W Front St. Mount Horeb, WI 53572

CUSTOMER APPROVAL: _____

DATE: _____

LANDLORD APPROVAL: _____

DATE: _____

By signing this approval you are hereby authorizing Sign Art Studio LLC to proceed with the work as described. Any deviation from these specifications will become the customer's financial responsibility.

© The above artwork and or conceptual design, less customer provided artwork or plans, is property of Sign Art Studio and may not be reproduced without written consent.

SHEET

GMN

LITTLE VIKINGS DAYCARE - SIGNAGE

Village of Mount Horeb

138 East Main Street

Mount Horeb Wisconsin 53572

DESIGN REVIEW APPLICATION

Applicant Name: Vestibule Investments, LLC/Mark & Barb
Address: 801 View Ct. Mt. Horeb, WI Johnson
Telephone Number (daytime): 608-444-5849
Address of project if different: 110 + 108 E Main St. Mount Horeb
Zoning Classification of project: CB
Fee paid (\$100-see back side of application): yes
Plan Submittal Checklist attached: yes
Landscape Plan Submittal Checklist attached: NO
Design Review Parking Lot Application Required: NO
Design Review Parking Lot Application Submitted: NO
Project Description: See Email

Mark Johnson 3-14-22
Applicant Date

Zoning Administrator Date

I HEREBY ACKNOWLEDGE RECEIPT OF WRITTEN PLAN COMMISSION APPROVAL FOR THE ABOVE PROJECT, AND AGREE TO MEET THE CONDITIONS INCLUDED IN THE APPROVAL.

SIGNED: _____

DATE: _____

Village of Mount Horeb
Building & Zoning Department
138 E Main Street
Mount Horeb, WI 53572
Phone (608) 437-6884 / Fax (608) 437-3190
mhbuildinginspector@mounthorebwi.info
www.mounthorebwi.info

CERTIFICATE OF APPROPRIATENESS

APPLICATION & INSTRUCTIONS (no fee)

Parcel ID Number# 060612322217
Address of Property: 108 + 110 E Main St. Mt. Horeb
Property Owner: Vestibule Investments, LLC / Mark & Barb Johnson
Name: _____
Street Address: 801 View Ct.
City: Mt. Horeb State: WI Zip: 53572
Daytime telephone number: 608 444-5849
Email: Vito 427@icloud.com

Applicant (if different from owner): Same
Street Address: _____
City: _____ State: _____ Zip: _____
Daytime telephone number: () _____
Email: _____

Description of Project

A. Describe proposed work, materials to be used, and impact on existing feature:

See Email

B. List any attachments (photos, sketches, floor plans, etc.):

See Email

Signature of applicant: Mark J. Johnson Date: 3-14-22

Return to: Zoning Administrator, 138 E. Main Street, Mount Horeb WI 53572

PLAN COMMISSION REVIEW

Date of Review _____ Application: Approved: _____ Denied: _____

Specific conditions of approval: _____

PLAN SUBMITTAL CHECKLIST

Project: Re-Side existing Bu. lding
Submitted by: Mark Johnson
Dated submitted: 3-14-22

NOTE: Please include each applicable item listed below with all formal plan submittals. All lines should be checked. Mark "N/A" if the item does not apply. All plans must be submitted with this checklist as a single package no later than twenty (20) days prior to presentation at Plan Commission/Historic Preservation Commission.

N/A 1. Show existing and proposed contours at an interval suitable to the topography and project. Contours should extend a minimum of 20 feet beyond property lines and nearby berms and swales and at least to the backs of curbs.

✓ 2. Show square footage of:

- ✓ a. Lot or parcel 4588 sq. ft.
- b. Existing impervious surface
- c. Proposed total impervious
- ✓ d. Existing building 1600 sq. ft.
- e. Proposed total building
- f. Existing parking and pavement
- g. Proposed total parking and pavement

N/A 3. Show all relevant dimensions including:

- a. Buildings
- b. Parking stalls
- c. Driveway widths
- d. Setbacks to buildings and other improvements
- e. Parking lot aisles, turnarounds, turning radii, etc.
- f. Distance from driveway to street corner if under 200 feet
- g. Sidewalk, walkway and handicap ramp widths and locations with respect to street and right-of-way
- h. Widths of abutting R.O.W.'s, roadways, and terraces.

N/A 4. Show dimensions and bearings of property lines.

✓ 5. Show North Arrow and scale of drawing.

N/A 6. Show Village bench mark location and elevation to NGS datum.

N/A 7. Show all existing and proposed surface materials (grass, bituminous, concrete, etc.).

- NA 8. Show total number of required and proposed parking stalls.
- NA 9. Show handicap parking stall and ramp locations.
- NA 10. Show up or down arrows on loading or other ramps.
- NA 11. Show existing, proposed, and adjoining driveway approaches.
- NA 12. Show removal and replacement to Village Specifications of concrete curb and gutter for all new curb cuts or as otherwise required.
- NA 13. Show rim and invert elevations of all drainage structures.
- NA 14. Design surface drainage to bypass dumpster locations.
- NA 15. Indicate proposed direction of roof drainage and show location of all roof gutter down-spouts.
- NA 16. Show all existing and proposed public and private utility locations on and adjacent to site.
- NA 17. Show location of nearest existing Village of Mt. Horeb fire hydrants and proposed Village and private fire hydrants.
- NA 18. Show location and screening of refuse containers.
- NA 19. Show how recyclable materials will be handled.
- NA 20. Show proposed lighting for site including location, pole height, luminaire type and manufacturer's specifications.
- ☒ 21. Provide drawings of proposed building with elevation views showing proposed materials and colors.
- N/A 22. Include elevation view of rooftop mechanicals and required screening design materials and colors.
- ☒ 23. Include name of designer.

Jamie Orloff - Premier
Cooperative



DCiMap

Version 3.6.5



↑
NORTH



060612322217



Show search results for 060612322217



110R

108+

110

123.7'

36.9'

40ft



MEMORANDUM

To: Village of Mount Horeb Plan Commission
From: Village Planner: Ben Rohr, AICP
Date: March 23, 2022
Re: Design Review & Certificate of Appropriateness for Façade Renovations to 108 and 110 E. Main Street

Background

Vestibule Investments, LLC (Mark and Barb Johnson) have submitted a request for Design Review and Certificate of Appropriateness for a façade renovation at 108 and 110 East Main Street. The façade changes include:

- Removal of all the exterior siding from front facade (vinyl and the false clockwork) and replacing that with historically correct LP Smartsiding and cedar finish.
- Painting all roof finials and attic vent contrasting color.
- Adding “mustache” trim to the tops of the windows.
- Replacing the 108 E. Main Street 1/2 entrance door as well as the 110 E. Main Street entrance door.
- Removing and replacing single pane show windows (3) in front of 110 E. Main Street with double-paned low E reflective glass with black trim to match 108 E. Main Street.
- Replacing 4 double-hung upstairs windows, paint trim and window molding to match finials and roof trim.

The result will be a renovated façade at 108/110 East Main Street that more accurately reflects the historic look of the building, enhances the aesthetic interest of the building, and matches the existing building to the west (Duluth). Outside of the changes above, the remainder of the exterior of the building will remain unchanged.

Because of its location along East Main Street in the Downtown area, and its contributing status to the historic downtown, these changes will require review and approval under both the Village’s Design Review standards, and review and approval under the Village’s Certificate of Appropriateness.

Design Review

Design Review by the Plan Commission is required under Section 17.14 of the Zoning Ordinance and is required for all development projects in the Village, except residential development with three or fewer dwelling units. Site Plan review also occurs under this process.

The first task of the Design Review process is to confirm that all requirements of the CB zoning district have been met and are reflected in the Site Plan. The proposed building modifications comply with all requirements of the zoning district.

The Design Review requirements in Section 17.14(4)(b) identify 27 Design Directives. The Plan Commission has the ability to waive any Design Directive, and may add additional design requirements upon a finding that the additional design requirement would improve the project.

Village Planner's Analysis and Recommendation Regarding Design Review.

This project meets all applicable Design Directives. I have no recommended changes for the project design. Therefore, after discussion and questions by the Plan Commission about the project, I recommend that the Plan Commission make a finding that the design of the project (including all design directives and any additional design requirements identified by the Plan Commission) makes the development a positive asset to the visual appearance of the community, and a positive contribution to the growth and stability of the community tax base.

If acceptable to the Plan Commission, the Village Planner recommends the Plan Commission make, consider, and adopt a motion that finds the proposed façade renovations to be fully consistent with the requirements of the Zoning Ordinance, inclusive of full and continuous compliance with the submittal documents, and with any conditions identified by Village Staff and the Plan Commission, and therefore approves the Design Review.

Certificate of Appropriateness

Certificate of Appropriateness review by the Plan Commission is required under Section 17.17 of the Zoning Ordinance and is required for all development projects that involve the alteration, rehabilitation, construction, reconstruction, or demolition of a historic structure, historic site, or any other improvement in the historic district.

Under its review responsibilities in Section 17.174(b), the Plan Commission shall approve an application for a Certificate of Appropriateness, unless it finds one or more of the following impacts will occur:

- a. In the case of a designated historic structure of historic site, the proposed work would detrimentally change, destroy or adversely affect any exterior feature of the improvement or site upon which said work is to be done;
- b. In the case of the construction of a new improvement upon a historic site, or within a historic district, the exterior of such improvement would adversely affect or not harmonize with the external appearance or other neighboring improvements on such site or within the district;
- c. In the case of any property located in a historic district, the proposed construction, reconstruction, exterior alteration or demolition does not conform to the purpose and intent of this section and to the objectives and design criteria of the historic preservation plan for said district;
- d. The building or structure is of such architectural or historical significance that its demolition would be detrimental to the public interest and contrary to the general welfare of the people of the village state;

- e. In the case of a request for the demolition of a deteriorated building or structure, any economic hardship or difficulty claimed by the owner is self-created or is the result of any failure to maintain the property in good repair.

If the Commission determines that the application for a Certificate of Appropriateness and the proposed changes are consistent with the character and features of the property or district, it shall issue the Certificate of Appropriateness.

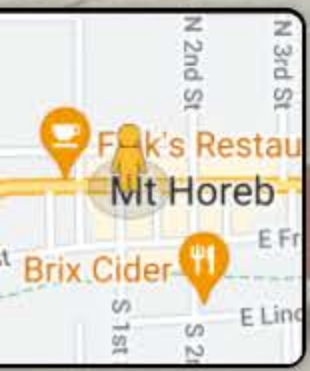
Village Planner's Analysis & Recommendation Regarding the Certificate of Appropriateness

I believe the proposed façade renovation complies with standards outlined above. I have no recommended changes for the project design.

Therefore, after discussion and questions by the Plan Commission about the project, I recommend that the Plan Commission make a finding that the proposed project (including any additional design requirements identified by the Plan Commission) does not have any adverse effect on the historic nature of the building, on the historic nature of nearby properties, or on the overall historic integrity of the Downtown Historic District.

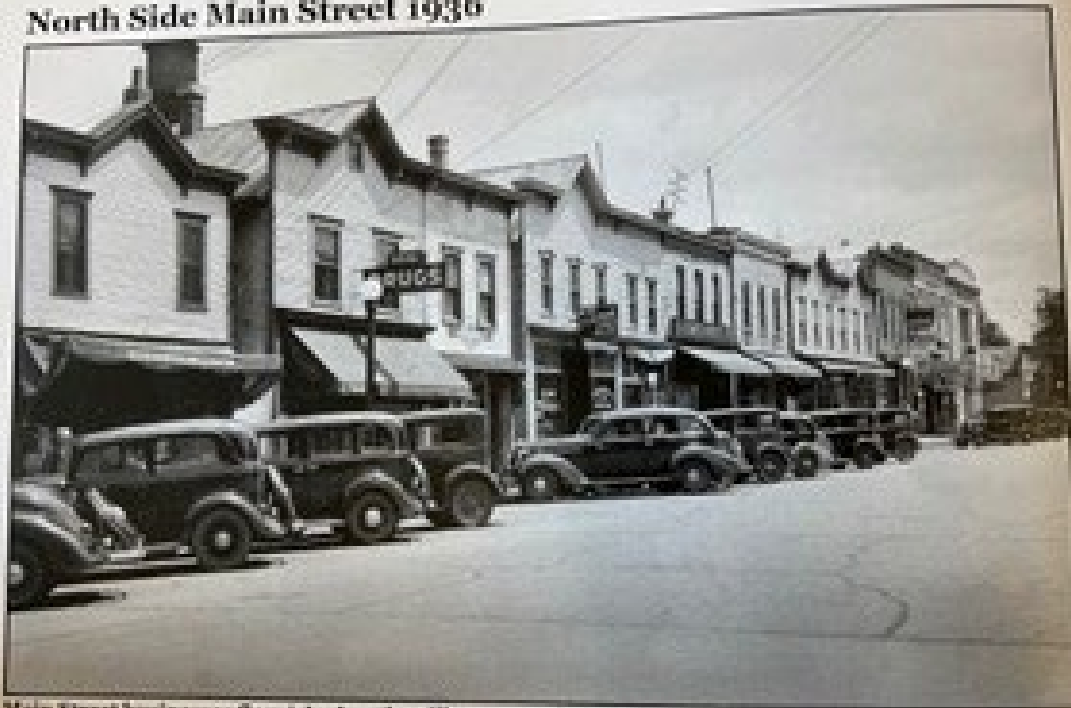
If acceptable to the Plan Commission, the Village Planner recommends the Plan Commission make, consider, and adopt a motion that finds the proposed project is fully consistent with the requirements of the Zoning Ordinance, inclusive of full and continuous compliance with the submittal documents, and with any conditions identified by Village Staff and the Plan Commission; and therefore approves the requested Certificate of Appropriateness.







North Side Main Street 1936



Main Street businesses flourished as the village grew, including a grocery store and a movie theater.

COMING OFF THE RAILROAD

25



A Sunday scene on the north side of Main Street shows 1961. Note Post Office sign near door to brick building on left (Dorothy's Food Store in 1961). Also seen are the Evans Drug Store, L. H. Lewis Tailor Shop, and Part of L. J. Bergh's Grocery Store.

