PowerConneX New Albany, LLC
Case No. 25-90-EL-BLN

Exhibit C
Water Quality Study

EMHT

April 14, 2025

DICKINSON WRIGHT PLLC

Engineers, Surveyors, Planners, Scientists

MEMO

Date: April 14, 2025

To: Nolan Hagerty, BCEI

From: Heather Dardinger, Senior Environmental Scientist

Subject: 525 Building Power Generation Project: Water Quality & Water Impact

Copies: Brian Quackenbush, EMH&T

The following information is provided in support of the application to be made to the Ohio Power Siting Board for the 525 Building Power Generation Project, specifically in regard to compliance with water quality regulations, and the impact of the facility on water supplies.

WATER QUALITY

The 525 Building Fit-Out project is comprised by an existing 525,000-square foot warehouse situated northwest of Innovation Campus Way and Mink Street in the City of New Albany, Licking County, Ohio. Proposed plans include the installation of generation equipment to be situated on existing pavement along the northeast boundary of the site.

The private site improvement plans for the original building include two stormwater basins that provide detention and water quality in compliance with City of New Albany and Ohio EPA stormwater regulations. Details and calculations for these basins are shown on the Private Site Improvement Plan and Stormwater Management Plan in Appendix C. The project obtained coverage under the Ohio EPA NPDES General Permit for Construction Stormwater discharges and was listed as Facility Permit 4GC08162*AG. The approval letter for this NOI is attached, but since construction is completed, the coverage has been terminated.

Water quality during preconstruction

Since the existing site already has stormwater basins in place, there will be no water quality impacts during preconstruction.

Water quality during construction

The existing stormwater basins are currently configured with their permanent outlet structure design and if more than one acre is disturbed during construction, a new NOI will be required and the basins will need to be retrofitted for sediment control.

Water quality during operation

The existing stormwater basins are designed to meet the Ohio EPA post construction water quality requirements and any modifications to the tributary boundary to these basins will require updates to the basin and the outlet to continue to meet these requirements.

Permits

Ohio National Pollutant Discharge Elimination System (NPDES) Permit
Construction – A permit from the Ohio Environmental Protection Agency (EPA) for stormwater discharge (NPDES permit) was obtained for the original construction and is included in Appendix C. If more than one acre of earth is disturbed during construction of the 525 Building modifications, a new NOI will be required and a Stormwater Pollution Prevention Plan will need to be prepared.

Operation – The storage of exterior materials or operations is not anticipated, and therefore an NPDES permit should not be required for operation of the facility.

The following permits, if required, would need to be obtained before construction. Whether the following permits are required, depends on the location of the facility and what is revealed in studies of the project area.

Section 404 of the Clean Water Act
Wetlands or streams will not be impacted with the 525 Building modifications and this permit is not required.

Water Quality Certification Section 401 from the Ohio EPA
Wetlands or streams will not be impacted with the 525 Building modifications and this permit is not required.

Ohio Isolated Wetland Permit
Wetlands will not be impacted with the 525 Building modifications and this permit is not required.

Wastewater discharge
The existing building is serviced by a 12-inch sanitary sewer that drains to a 15-inch sanitary sewer located in Innovation Campus Way. An Ohio EPA PTI was obtained for this sewer and this permit letter is included in Appendix C. If no modifications are proposed to this sanitary sewer and no additional industrial discharges are proposed, further wastewater permitting should not be required.

Solid waste permit
Solid waste generation is not anticipated to exceed standard limits with commercial pickup and permit should not be required.

City of New Albany Site Development Permit
If additional tributary areas will be added to the existing basins or additional impervious areas are added, a new Site Development Permit will be required from the City of New Albany.

List of Attachments

New Albany 525 Building Private Site Improvement Plan, As-built Plans
Stormwater Management Plan
Ohio EPA Construction Stormwater NPDES Notice of Intent Approval Letter
Ohio EPA Sanitary Sewer Permit to Install

WATER IMPACT

The existing 525 Building is serviced by a 3-inch domestic water service and a 10-inch fire protection water service that are fed from a 12-inch water main on Innovation Campus Way. The meter and backflow preventers for these services are located in heated enclosures near the public right-of-way and the water

service plan for these services is included in Appendix C. Pumps for these services are located in a water room in the southwest corner of the building. The public main is fed from the City of New Albany's water grid, which is fed from the City of Columbus water system and the Hap Cremean Treatment Plant that sources water from Big Walnut Creek and Hoover Reservoir.

Impact to public and private water supplies from construction and operation

The attached Water Resource Map depicts the aquifers, water wells and Drinking Water Source Protection Areas (SPAs) located in proximity to the subject site.

The existing fire water service to the site includes a 10-inch ASSE 1048 double detector check backflow preventer and a 3-inch ASSE 1018 reduced pressure zone backflow preventer and these devices will protect the public water supply during construction and operation. Additionally, no deep excavations are anticipated during construction, so dewatering will not be required and any local private water wells in the area will not be impacted by construction or operation.

The parking lots and truck dock loading areas drain towards two existing stormwater basins. Any petroleum spills that may occur within the property from potential equipment failures will be intercepted in these basins and can be contained prior to draining into the downstream water supply.

The subject site is in Zone X and over 1.5 miles from a stream with a FEMA regulated floodplain.

Compliance with local water source protection

Per a search of the Ohio EPA's Drinking Water SPA Map, there are no surface water SPAs located within two miles of the subject site; there is one groundwater SPA located approximately 0.9 mile to the southwest. It is a non-community, groundwater system serving the Shell station located at the southeast corner of Harrison Road and Worthington Rd NW. It is unlikely that the proposed activities will affect this drinking water source given its distance from the site and very limited protection area. The project team will coordinate with the applicable local authorities to ensure protection of local drinking water sources.

List of Attachments

Water Resource Map
Water Service Plan

EMH&T

Water Attachments

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
INNOVATION CAMPUS WAY
2021

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BENCH MARKS
(NAVD 1988)

BM#90 Chiseled square on the south corner of a concrete light pole base, located east of Innovation Campus Way and being the seventh light pole west of the intersection of Innovation Campus Way and Mink Street.

N: 760419.8718 E: 1905563.6443 Elev. = 1178.97

BM#91 Chiseled square on the south corner of a concrete light pole base, located east of Innovation Campus Way and being the fourth light pole west of the intersection of Innovation Campus Way and Mink Street.

N: 759555.0367 E: 1905894.3184 Elev. = 1172.44

BM#92 Chiseled square on the southeast corner of a concrete light pole base, located north of Innovation Campus Way and being the second light pole west of the intersection of Innovation Campus Way and Mink Street.

N: 759231.5868 E: 1906380.5514 Elev. = 1177.31

BM#68 Railroad spike in the north side of a wooden utility pole being the first utility pole east of the intersection of Beaver Road and Mink Street, On the south side of Beaver Road.

N: 759918.8500 E: 1907408.0155 Elev. = 1185.01

HORIZONTAL REFERENCE POINTS (OHIO SOUTH ZONE)*

POINT	DESCRIPTION	NORTHING	EASTING
▲ #68	1157 IRSw/cap	759287.1507	1906989.3440
▲ #97	1157 IRSw/cap	760097.1161	1906981.2430
▲ #98	1157 IRSw/cap	760070.2048	1907117.4980
▲ #293	1157 IRSw/cap	760036.5689	1905720.3080

* Horizontal reference datum = NAD 83 (1986 adj)

(See Index Map for reference point locations)

VERTICAL DATUM

The Vertical Datum is based on the elevations established by the Franklin County Engineering Department, at monument A14RESET being 1019.434 feet in elevation, at monument A16 being 1071.594 feet in elevation, at monument D2RESET, being 1078.946 feet in elevation, at monument D8RESET, being 1089.268 feet in elevation, at monument FCGS1213, being 1077.648 feet in elevation, at monument FCGS6612, being 1072.592 feet in elevation, at monument NA–8, being 1078.899 feet in elevation, at monument NA–9, being 1070.241 feet in elevation, and at monument Z46 being 1071.678 feet in elevation. The said elevations were transferred from said Franklin County Engineering Department monuments using static GPS procedures (03 GEOID) and differential leveling to the site. The said monuments being source bench marks with elevations that are based on the North American Vertical Datum of 1988.

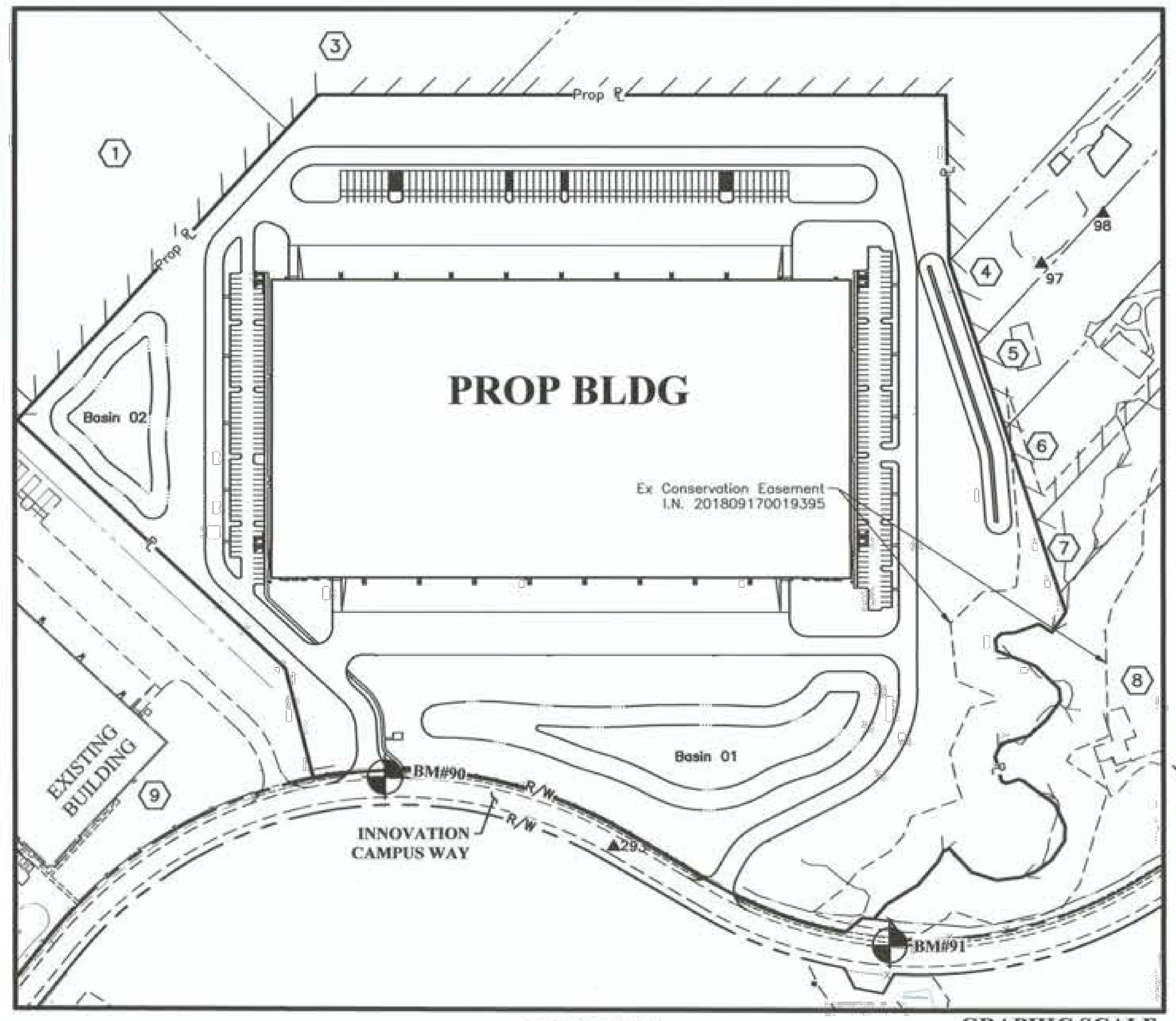
HORIZONTAL DATUM

The coordinates shown on this map are based on the Ohio State Plane Coordinate System, South Zone, NAD 83 (1986). Said coordinates originated from a field traverse which was tied (referenced) to said coordinate system by field traverse through point numbers 18, 19, 21, 22, 23, and 32 from Sight Survey file White\S6725trv.zak, by field traverse through point numbers 101, 102, 103, 104, 105, 106, 107, 111, 501, 502, 503, 504, 505, 506, 507, 508, 509, and 510 from Sight Survey file White\19991507.zak.

STANDARD CONSTRUCTION DRAWINGS

The Standard Construction Drawings listed on these plans are to be considered a part thereof.

AA–S102	AA–S141	L–6306	L–6317C
AA–S112	AA–S145	L–6309	L–6637
AA–S119	AA–S149	L–6310	L–6640
AA–S125	AA–S150	L–6311	1441
AA–S133	AA–S151	L–6312	2000
AA–S139	AA–S168	L–6316	2319



INDEX MAP
Scale: 1" = 200'

GRAPHIC SCALE
0 100 200 400
1 inch = 200 feet

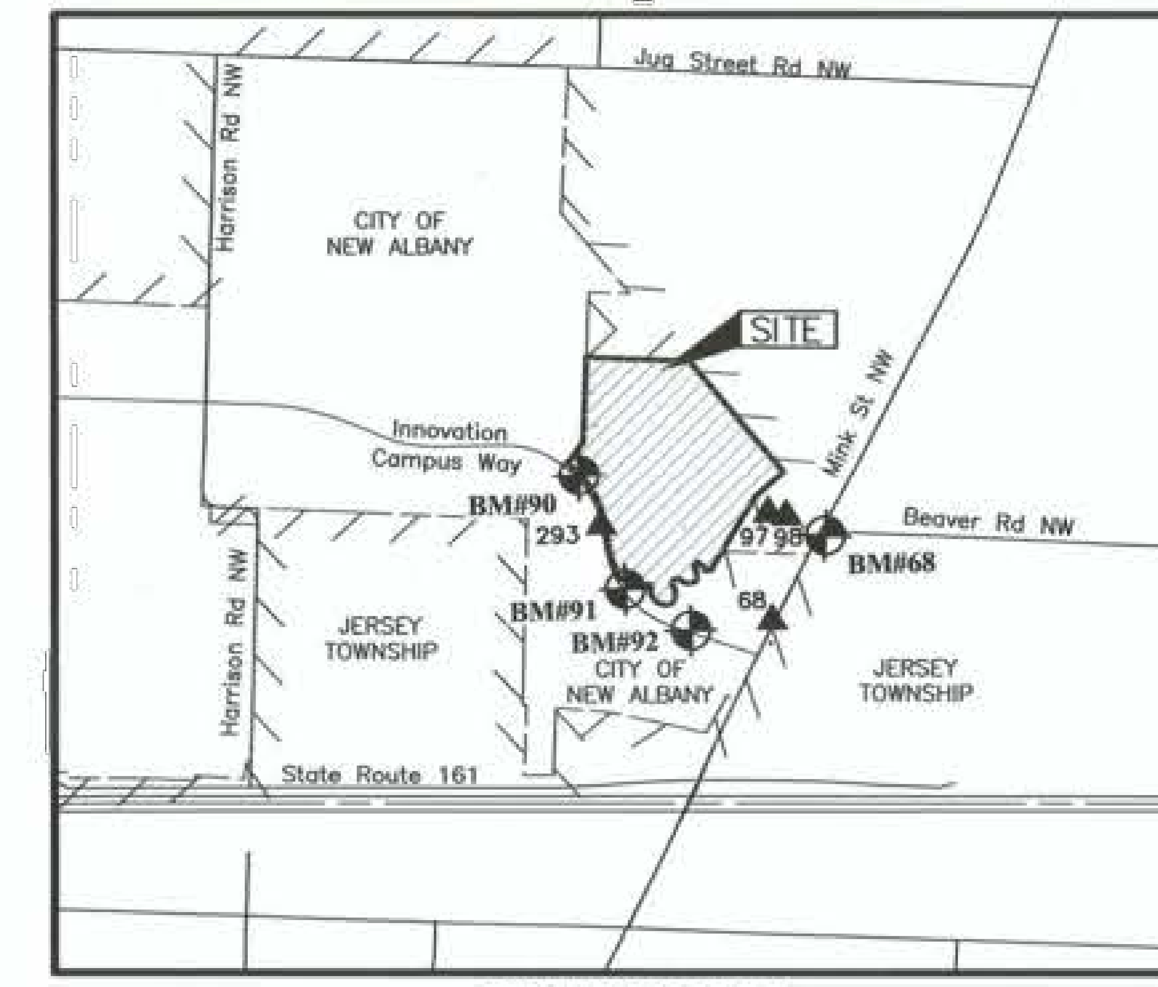
OHIO811.org
Before You Dig

STORMWATER NOTE:

Stormwater Quality And Quantity Controls For The Proposed Development Are Provided By Wet Basin 01 At The Southwest End Of The Site And Wet Basin 02 At The Northwest End Of The Proposed Site. The Outlets Are A Ditch Located On The Northwest End Of The Site And A Stream Located On The South End Of The Site.

OWNERSHIP LEGEND

1. MBJ HOLDINGS, LLC
   APN: 037–112080–02.000
   12455 JUG STREET
   21.63 AC
2. GRINSTEAD TED V
   APN: 037–112080–00.000
   12353 JUG STREET
   17.75 AC
3. MBJ HOLDINGS, LLC
   APN: 037–112188–00.001
   2275 MINK ST NW
   21.07 AC
4. STETZIK THOMAS & PAVANA
   APN: 035–107490–03.002
   2001 MINK ST NW
   1.94 AC
5. HOWELL PAMELA S
   APN: 035–107490–03.003
   MINK ST NW
   1.97 AC
6. HOWELL RONALD LEE & PAMELA SUE
   APN: 035–107490–03.001
   1921 MINK ST NW
   2.23 AC
7. MBJ HOLDINGS, LLC
   APN: 093–107478–00.002
   1825 MINK ST NW
   10.82 AC
8. MBJ HOLDINGS, LLC
   APN: 093–107490–00.000
   INNOVATION CAMPUS WAY
   11.95 AC
9. 9750 INNOVATION CAMPUS WAY LLC
   APN: 093–106422–00.002
   9750 INNOVATION CAMPUS WAY
   21.34 AC



LOCATION MAP
Not to Scale

DEVELOPER/OWNER
VanTrust
Pete Gray
950 Goodale Boulevard, Suite 100
Columbus, OH 43212
Tel: (614) 745–0610
Email: pete.gray@vantrustre.com

ENGINEER
EMHT Inc.
Amy Nagy
5500 New Albany Road
Columbus, Ohio 43054
Tel: (614) 755–4376
Email: Anagy@emht.com

CITY OF NEW ALBANY APPROVALS

The signatures below signify only concurrence with the general purpose of this project. All technical details remain the responsibility of the Engineer at Evans, Mechwart, Hambleton & Tilton, Inc. Consulting Engineers and Surveyors. The extent of City Engineer review and approval is based only on compliance with City Ordinances 1181, 1183, 1187, and other applicable City policies.

Signature	Date
[signature] Finance Director, City of New Albany, Ohio	1/13/2022
Matt Shull Chairperson of Service & Public Facilities City of New Albany, Ohio	01-12-2022
[signature] /MEF City Engineer, City of New Albany, Ohio	01-11-2022
[signature] City Manager, City of New Albany, Ohio	1/13/22

PREPARED BY:

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
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Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

STATE OF OHIO — AMY MARIE NAGY — E-77298 — REGISTERED PROFESSIONAL ENGINEER

Amy M. Nagy E-77298 1/6/2022
Registered Engineer No. Date

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2
	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
INNOVATION CAMPUS WAY
TITLE SHEET

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DATE	DECEMBER 17, 2021
SCALE	As Noted
JOB NO.	2021-0460
SHEET	1/39

CITY OF NEW ALBANY STANDARD NOTES

1.0 GENERAL

1.1 STANDARDS
The City of Columbus and Ohio Department of Transportation Construction and Material Specifications, current editions, together with the City of New Albany specifications including all supplements thereto (hereafter referred to as Standard Specifications), shall govern all construction items of these plans unless otherwise noted. If conflict between specifications is found, the more strict specification will apply as decided by the City Engineer. CMSC item numbers listed refer to the City of Columbus Construction and Material Specifications.

1.2 PLAN MODIFICATIONS
Any modifications to the work as shown on these drawings must have prior written approval by the City Engineer, City of New Albany. Inspectors have no authority to approve revisions in the field.

1.4 PRE-CONSTRUCTION CONFERENCE
1.4.1 A pre-construction conference involving a representative of the City of New Albany, the Owner, the Principle Contractor, and all available Sub-Contractors will be held prior to the start of construction.

1.4.2 All easements shall be recorded and submitted to the City Engineer prior to the pre-construction conference.

1.4.3 During the conference the Contractor shall submit his construction schedule, proposed schedule for controlling siltation and erosion, and for temporary and permanent seeding for the project.

1.5 WORKING HOURS
1.5.1 City Ordinance 521.12 restricts the hours of work to 7:30 am to 7:00 pm.

1.5.2 Work will not be permitted on Sundays unless otherwise approved by the City Manager.

1.6 INSPECTION
1.6.1 Inspection on this project will be provided by the representatives of the City of New Albany.

1.6.2 The Owner shall deposit with the City of New Albany the total estimated costs for construction inspection prior to any construction operations.

1.6.3 The Contractor shall notify the City Engineer at least 48 hours prior to construction.

1.7 WORK WITHIN PUBLIC RIGHT-OF-WAYS
1.7.1 All trenches within public right-of-way shall be backfilled according to the approved construction drawings or securely plated during non-working hours. Trenches outside these areas shall be backfilled or shall be protected by approved temporary fencing or barricades during non-working hours. Clean up shall follow closely behind the trenching operation. Trenches within City right of way shall be backfilled per Item 911, City of Columbus Construction and Material specification. Item 912 (Type 1 Only) compacted granular backfill shall be used within the 45 degree influence plane of paved surfaces.

1.7.2 The contractor shall be responsible for the condition of trenches within the right-of-way and public easements for a period of 2 (two) years from the final acceptance of the work, and shall make any necessary repairs at no cost to the City of New Albany. The Developer/Contractor shall provide a letter to the City indicating any settlement of the trenches shall be repaired at their expense for a period of 5 (five) years from the date of acceptance of the subdivision or site (whichever applicable).

1.7.3 Non-rubber tired vehicles shall not be moved on public streets. The City Engineer may grant exceptions where short distances and special circumstances are involved. Granting exceptions must be in writing, and any damages must be repaired to the satisfaction of the City of New Albany.

1.7.4 No materials, including pipe, shall be stored within the public right-of-way or within one hundred (100) feet of any intersecting street or driveway. During non-working hours, storage of equipment shall comply with these same requirements. Compliance with these requirements along with additional provisions of the contract specifications shall not relieve the contractor of their legal responsibility to maintain job safety.

1.7.5 Any deteriorated pavement due to construction operations shall be saw cut and removed and replaced as per City of Columbus Standard Drawing 2130 Dr.A. The location of the saw cut shall be determined by the City Engineer in the field.

1.7.6 When a new roadway is to adjoin an existing roadway any existing underdrain is to be maintained, or replaced if not functional. A relief joint shall be constructed at the intersection of the existing and new road.

1.7.7 Ingress and egress shall be maintained at all times to public and private property. Access to all adjoining properties shall be maintained at all times.

1.7.8 Access to the site shall be provided through the construction access drive (only) as shown on the erosion control plan.

1.7.9 When mail boxes, road or street name signs and supports interfere with construction, the contractor shall remove and erect them in temporary locations during construction in a manner satisfactory to the City Engineer and U.S. Postal Service. After completion of the construction and before final acceptance of the project the contractor shall erect the mailboxes, road or street name signs and supports in a permanent location in accordance with the plans unless otherwise directed by the City Engineer. Removal, temporary erection and permanent erection of mailboxes shall be in accordance with U.S. Postal regulations. This work shall be performed at no cost to the City or the property owners.

1.7.10 Trenches along roadways shall be protected in accordance with the ODOT "Drop offs in Work Zones" policy copies of which are available from the Ohio Department of Transportation, Bureau of Traffic, 1980 E. Broad Street, Columbus, Ohio 43215.

1.8 EQUIPMENT ON PUBLIC ROADS
Non-rubber tired vehicles shall not be moved on public streets. The City Engineer may grant exceptions where short distances and special circumstances are involved. Granting exceptions must be in writing, and any damages must be repaired to the satisfaction of the City of New Albany.

1.9 TRAFFIC MAINTENANCE
1.9.1 All traffic control devices shall be furnished, erected, maintained and removed by the Contractor in accordance with the Ohio Manual of Uniform Traffic Control Devices for Construction and Maintenance Operations (current edition), copies of which are available from the Ohio Department of Transportation, Bureau of Traffic, 1980 West Broad Street, Columbus, Ohio 43215.

1.9.2 All traffic lanes shall be fully open to traffic on all public roadways. Any lane closings must be coordinated with the City Engineer at least 48 hours prior to the lane closure.

1.9.3 Steady-burning Type 'C' lights shall be required on all barricades, drums, and similar devices in use at night.

1.9.4 Manual control of traffic by anyone other than a police officer is not permitted.

1.9.5 The maintenance of traffic should follow Typical Application (TA)-6 "Shoulder Work with Minor Encroachment" from the Ohio Manual of Uniform Traffic Control Devices (OMUTCD) current edition and ODOT SCD MT-101.90 for drop off requirements.

1.9.6 The minimum lane width of 10 feet must be maintained if the work zone encroaches in to the traveled lane. If this requirement cannot be met, the lane must be closed and flaggers employed following Typical Application (TA)-10 "Lane Closure on a Two Lane Road Using Flaggers" from the Ohio Manual of Uniform Traffic Control Devices (OMUTCO) current edition.

1.9.7 This operation may be performed at any time, except during peak hours (7am – 9am and 4pm–6pm).

1.9.8 If in the opinion of the City Engineer, the Contractor fails to comply with these requirements and the provisions of the approved maintenance of traffic plan, the City Engineer shall suspend work until all requirements are met. Any costs or delays incurred as a result of the failure shall be the full responsibility of the Contractor.

1.9.9 The following devices must meet NCHRP 350 or MASH-08 before the devices are installed on the project: drums, cones, vertical panels and the panel support, portable sign supports, temporary impact attenuators, temporary concrete barrier, and barricades.

1.9.10 Payment for all traffic maintenance items shall be included within the price bid for the project improvements.

1.9.11 All permanent traffic controls not in conflict with the temporary controls shall be maintained throughout this project by the Contractor. Permanent traffic controls may be temporarily relocated, as approved by the Engineer. The Contractor shall assume all liability for missing, damaged and improperly placed signs.

1.9.12 The Contractor shall be responsible for the reinstallation and/or replacement of all permanent traffic control devices damaged or removed during the construction. Permanent traffic control no longer in conflict with temporary traffic control shall be replaced immediately.

1.10 EXISTING TRAFFIC SIGN MAINTENANCE
1.10.1 Special care shall be taken to maintain existing signs. If necessary, the contractor shall relocate these signs out of the way of construction, but in conformance with OMUTCD. Any damaged signs shall be replaced at the expense of the contractor.

1.11 LOCAL ACCESS
1.11.1 Ingress and egress shall be maintained to all residential and commercial properties. Driveway closure may be necessary to enable work on or in front of a drive. The contractor will be responsible for notifying owners, residents, or business operators in writing at least 48 hours but not more than 72 hours prior to closure. The engineer shall be given a list of the persons that were given notices with the date of notice included. Closure is permitted only during work hours and access must be returned at the end of each working day. Properties with multiple drives may have one drive closed at a time, while work is performed in the area of the closed drive. Individual drive closures shall be kept to the minimum time needed for construction activities. Every effort must be made to accommodate the owner's need for access.

1.12 DUST CONTROL
The contractor shall be responsible for providing Dust Control measures in accordance with COCCMS Item 616. Dust control operations shall be performed on a periodic basis and/or as directed by the City Engineer to alleviate or prevent a dust nuisance originating within the project limits. Calcium chloride on areas to be seeded and mulched will not be permitted. The cost for all dust control measures shall be included in the price bid for the project improvements.

1.13 MAINTAIN DRAINAGE
The flow in all sewers, drains, field tiles and watercourses encountered shall be maintained by the Contractor. Whenever such watercourses and drains are disturbed or destroyed during the prosecution of the work, they shall be restored by the Contractor to a condition satisfactory to the City Engineer.

1.14 REPLACEMENT OF DRAIN TILE AND STORM SEWER
All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality pipe or better, maintaining the same gradient as existing. The drain tile and/or storm sewer shall be connected to the curb sub-drain, storm sewer system or provided with an outlet into the roadway ditch as applicable. Replaced drain tile/storm sewer shall be laid on bedding compacted to 98% maximum density.

1.15 DEWATERING
1.15.1 Contractors installing any well, well point, pit, or other device(s) used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report with the Ohio Department of Natural Resources within 30 days of the well completion in accordance with the Ohio Revised Code Section 1521.16 and 1524.05. In addition, any such facility shall be completed in accordance with Section 1521.15 of the Ohio Revised code. For copies of the necessary well log, drilling report, or registration forms, contact:

Ohio Department of Natural Resources
Division of Water
Fountain Square
Columbus, Ohio 43224-1387
(614) 265-6717

1.15.2 The contractor shall be responsible to the ODNR for registry, maintenance and abandonment of any withdrawal device used in the construction of this project.

1.15.3 Any well, well point, pit, or device installed for the purpose of lowering the ground water to facilitate construction of this project shall be properly abandoned in accordance with the provisions of Section 3745.9.10 of the Ohio Administrative Code or in accordance with the provisions of this plan.

1.15.4 The outlet for the well shall be directed into a suitable erosion control device as approved by the City Engineer.

1.15.5 If during construction of the sewer, the water wells belonging to nearby residences are dewatered, the contractor shall provide potable water to the residents. Bottled water will be provided in 4 hours and a 500 gallon water tank hooked up to the existing plumbing system will be provided within 48 hours should well service become dewatered. If the well is unable to be re-commissioned after construction, a tap to a water line shall be provided if available or another well dug, at no extra cost to the residents.

1.16 BLASTING
If the contractor intends to use blasting during excavation, the blasting shall be in accordance with the City of a New Albany Ordinance 1505.

1.17 STREET LIGHTING
1.17.1 Contractor Requirements
(a) The contractor must register with the City of New Albany and show evidence of liability insurance and a copy of their State of Ohio license.
(b) Obtain required permits through the New Albany Service Department and Community Development Department.

1.17.2 Street Light Submittals
(a) A site development plan must be submitted by Ohio Registered Engineer to the City of New Albany Service Department for preliminary review. The plans need to show the following information:
(1) Property lines.
(2) Utility and drainage easements.
(3) Storm drains and catch basins.
(4) Street light layout.
(b) Submit three (3) copies of the standard construction drawings to Community Development for review to receive approval. Permit must be issued prior to beginning work.
(c) Information on the construction drawings are to include:
(1) Location of light poles, disconnect switch, and power source.
(2) Voltage drop calculations, loads, wire size, and over-current protection.
(3) Photo cell location shown near or at disconnects.
(4) Foundation and rebar placement details for pole bases.

1.17.3 Inspection Requirements
(a) The Contractor must schedule inspections through the Community Development.
(b) The following inspections from the Community Development Department are required:
Rough inspections
(1) Conduit Depth. (100% of conduit must be inspected before burial)
(2) Ground rod and rebar connections
(3) Rebar reinforcement of light pole foundation

Final inspection
(1) Final connections at disconnect and light poles.
(2) Demonstrate 25 OHMS or less to the ground or add a second ground rod.
(3) Light pole finish (scratches, dents or paint defects) shall be repaired if damaged.
(4) Final inspection demonstrating the operation of all lights

1.17.4 Installation Requirements
(a) This work shall consist of furnishing and installing electrical materials and equipment complete and ready for service, in reasonably close conformity with locations, dimensions, and grades shown on the plans or as ordered by the City Engineer. This work shall also include necessary excavation and backfill, and disposal of discarded materials, and restoration of disturbed areas.
(b) Foundations shall have a sleeve for the grounding electrode conductor. The connection to the ground rod shall be by exothermic welding or listed pressure connector. The ground rod shall be driven 8 feet into undisturbed earth next to the pole base.
(c) Trenches adjacent to the pavement shall be excavated in a manner that will prevent the curb from moving or separating from the road base. Minimum distance from the curb to the ditch shall be 2 feet.
(d) Where conduit crosses the street, a pull-box shall be installed on both sides of the street and at directional changes more than 45 degrees. No conduit runs to exceed 200' between junction points.
(e) Conduit shall be schedule 40 PVC and shall be at a depth of at least 24".
(f) Where, in the opinion of the Engineer, an excavation for a foundation has revealed an unstable condition at the bottom of the excavation, the foundation shall be deepened or enlarged in size as directed by the Engineer. Payment for additional quantities of excavation and foundation concrete required by the Engineer for this purpose shall be made by the Contractor. If a cave-in should occur during the excavation, the Contractor may continue excavation with use of a casing, sleeves, or other methods, with the approval of the Engineer.
(g) Anchor bolts for light poles shall be installed in the foundations in accordance with approved shop drawings and anchor bolt setting templates. The tops of foundations shall be finished smooth and level. Anchor bolt settings for light poles shall provide that light poles predominantly illuminating a mainline roadway shall be positioned with the arm of the pole perpendicular to the longitudinal centerline of the roadway at that location. After forms have been removed, excavated spaces around the foundations shall be backfilled with suitable materials placed and tamped in thin layers as directed by the Engineer.
(h) When pull boxes are installed in paved areas, an adequate area shall be removed by saw cutting on the sides, or by removal back to an expansion joint. The cover surface shall be adjusted to be slightly above the surrounding pavement.

1.17.6 General Requirements
(a) Street lighting illumination and installation shall meet the New Albany Standards.

(1) This work shall consist of furnishing and installing electrical materials and equipment complete and ready for service, in conformity with the locations, dimensions, and grades shown on the plans or as ordered by the Engineer. This work shall also include necessary excavation and backfill, and disposal of discarded materials, and restoration of disturbed facilities and surfaces.

(2) Each system shall conform as to voltage, amperage, frequency and type as specified by design. The Contractor shall furnish and install all incidentals necessary to provide a complete and practical working unit or system. All installations shall be in accordance with the National Electrical Code and shall also conform to local laws and codes governing such work. The Contractor shall obtain and pay for all permits required. In order to provide the necessary requirements for the proposed lighting system, the Contractor shall cooperate with the agency which will furnish electrical service also hereinafter referred to as the supplying agency.

(3) Light poles conforming to approved shop drawings shall be set in the ground, erected up on the completed concrete foundations or other specified type of mounting. Light poles shall be plumbed. After erection, each light pole shall be adequately grounded and shall have hand hole covers or transformer base doors fastened in place. After erection, painted poles shall be inspected for defects in the painted surfaces. Minor scratches shall be given two coats of matching paint. The second coats shall not be applied until after the first coat has adequately dried. Poles having major scratches or defects in the painted surfaces will not be accepted.

(4) The contractor shall furnish all of the materials in accordance with the listed specifications. The equipment list and receipts shall be delivered to the Service Department. A copy of the receipt shall be provided to the City Engineer.

(5) The contractor shall provide the required number of poles complete with light fixture, bulb, wiring, and pedestal to the City. The equipment shall be delivered to the Service Department and a copy of the receipt shall be provided to the City Engineer.

(6) Street fixtures shall be controlled to operate at the same time when in close proximity or on the same street in the areas they serve. Some areas may require a single photocell for each light, while others may be joined to one photocell. In no case shall there be more than 6 lights on a photocell. The photo controller shall be placed near the disconnect box.

1.17.7 Material Specifications

(a) Disconnect box for a 120 rated current circuit shall be mounted to a 4x6 treated lumber pole containing a circuit breaker and have a lockable door. The box needs to be a minimum of 24 inches above final grade. Disconnect box for a 480 volt circuit shall be stainless steel in material and mounted to a concrete footer. The box shall be a minimum of 30 inches tall, 18 inches wide, and 15 inches deep. The concrete footer shall exceed 4 inches in all directions beyond base of disconnect box. The access door on disconnect shall be a minimum of 16 inches wide by 23 inches tall. The door shall have a latching handle that can be locked by padlock, and hinged on one side.
(b) Wiring for a 120 volt circuit to the pole and/or disconnect shall be 6 gauge in size, copper conductor, and have a USE jacketing or equivalent thickness. Wiring for a 480 volt circuit to the pole and/or disconnect shall be 4 gauge in size, copper conductor, and have a USE jacketing or equivalent thickness. Wiring going up all poles to the load shall be 10 gauge stranded copper wire. The hot lead shall have a black jacket, neutral lead shall have a white jacket, and the ground lead shall have a green jacket.
(c) Each electrical circuit shall have a fuse in the pole base. The fuse holder must be capable of accepting #6 awg on line side and 10 gauge on load side. 480 volt circuits must be capable of passing power to another pole on the line side of the holder.
(d) Pull boxes in residential areas shall be 18 inches long, 12 inches wide and 18 inches deep in size or equivalent. All 480 volt circuit pull boxes shall be traffic rated. The 480 volt boxes shall be 25 inches long, 16 inches wide, and 18 inches deep in size or equivalent. All pull boxes must have the word "electrical" embossed on the cover of the box. Plates attached to the cover will not be accepted. All pull boxes must be a minimum of curb height or final grade.

1.18 Permits
The Contractor shall be responsible to obtain all necessary permits unless otherwise noted.

1.18.1 A tap permit for domestic and commercial waterline services must be obtained from the City of Columbus and the City of New Albany prior to making the tap into the public waterline.

1.18.2 No service connection permits shall be issued or connections made to any service taps until waterlines have been disinfected (chlorinated).

1.18.3 Excavation and Driveway Permit(s) for work within the public right-of-way limits shall be obtained from the City as warranted.

1.18.4 No building permits will be issued until all punch list items are completed to the satisfaction of the City of New Albany. Domestic waterline taps for potable use and fire supply and sanitary sewer connection permits must be coordinated with the City of Columbus and the City of New Albany and all associated fees must be paid prior to making the tap. Water service will not be provided until all lines have been chlorinated.

1.22 Construction Layout
General Field layout control will be provided by the Owner. Provisions for all other construction staking required to accomplish the utility improvements shall be performed by a State of Ohio Licensed Professional Surveyor in accordance with Contract Documents.

1.22.1 All construction layout stakes (placed at intervals not to exceed 50') are to be set on the opposite side of the trench from where the excavated soil is placed. Stakes are to be preserved by the Contractor. If the above is not followed, work shall be suspended until the Contractor has requested re-staking, stakes have been replaced, and revised cut sheets have been approved.

1.22.2 Construction shall not be initiated until cut sheets have been submitted to the City Engineer's office in digital format.

1.23
Clearing and Grubbing
Any additional clearing and grubbing beyond that performed as part of the Mass Excavation shall be included as part of this plan. Costs associated with tree, brush or stump removal shall be included with the unit prices for the improvements. Trees planned to be removed shall be shown on the plans. City approval shall be obtained prior to removing trees.

1.23.1 Silt Fence or Snow Fence shall be used, if deemed necessary, to preserve the maximum amount of existing trees and vegetation.

1.24 Aggregate Base and Backfill Material
Aggregate base and backfill material shall be free of recycled concrete, reclaimed asphalt pavement, brick, wood or any other deleterious material that would prevent proper compaction from being achieved.

1.25 Prohibited Construction Activities
The contractor shall not use construction proceedings, activities or operations that may unnecessarily impact the natural environment or the public health and safety. Prohibited construction proceedings, activities or operations include, but are not limited to:

(a) Disposing of excess or unsuitable excavated material in wetlands or floodplains, even with the permission of the property owner.
(b) Indiscriminate, arbitrary, or capricious operation of equipment in any stream corridors, any wetlands, any surface waters, or outside the easement limits.
(c) Pumping of sediment-laden water from trenches or other excavations into any surface waters, any stream corridors, any wetlands or storm drains.
(d) Discharging pollutants such as chemicals, fuel, lubricants, bituminous materials, raw sewage, and other harmful waste into or alongside of rivers, streams, impoundments or into natural or man-made channels leading thereto.
(e) Permanent or unspecified alteration of flow line of a stream.
(f) Damaging vegetation outside of the construction area.
(g) Disposal of trees, brush and other debris in any stream corridors, an wetlands, and surface water, or at unspecified locations.
(h) Open burning of project debris without a permit.
(i) Storing construction equipment and vehicles and/or stock piling construction materials on property, public or private, not previously specified by the City Engineer for said purpose.

3.0 STREETS

3.1 Concrete Base Construction
In addition to the requirements set forth in the City of Columbus Specifications, the following shall apply:
a) No water shall be added to the concrete while in the mixers unless specifically authorized by the City Engineer or his representative.
b) Subgrade shall be at proper moisture content prior to base construction. Water shall be added to the subbase if necessary.
c) Concrete exceeding a 4" slump or being on the truck for 60 minutes or more will be rejected from the project.

3.2 Street Pre-Construction Conference
Prior to street construction a pre-construction conference shall be held at the City Hall with the owner and superintendent/foremen of the base, curb and asphalt sub-contractors. The pre-construction conference shall be scheduled by the contractor for 48 hours prior to the pouring of the curb. The purpose of the meeting is to ensure a 6" curb height is provided upon the completion of the street system.

3.3 Transverse & Longitudinal Joints
3.3.1 Transverse contraction and longitudinal joints shall be constructed as per 305.01 paragraph (C) & (D). (Including 26' pavement)

3.3.2 No transverse joints shall be permitted adjacent to a new pavement surface which is more than 24 hours old, weather permitting, except for joints which have existed over weekends and holidays. The surface course shall be continuous to the existing pavement surface.

3.3.3 The contractor shall provide a written procedure on how he/she intends to construct the final two courses of asphalt prior to construction for approval by the City Engineer. The procedure should include specifics for construction of intersections.

3.4 Curb Height
When constructing the pavement (concrete base to asphalt courses) the contractor shall ensure that a 6" height curb is available upon completion of street construction. The City may require this curb to be removed and reconstructed if this height deviates more or less than ½" of the 6" required height. All costs associated with the above shall be borne by the contractor.

3.5 Crack Sealing
The contractor, thirty (30) days prior to project acceptance by City Council or as directed by the City Engineer and weather permitting shall crack seal all pavement cracks as directed by the City Engineer. The crack seal shall be in accordance with Item 423. If acceptance occurs in winter months, crack seal may be delayed until weather permits.

3.6 Pavement Relief Joints
Asphalt shall not be placed in the pavement relief joints until permanent or temporary street signs are erected.

3.7 Curb Stamps
During installation, curb shall be stamped with the following symbols at the noted utilities:
'X' – Utility Crossing
'T' – Sump Pump Junction Box
'W' – Water Service
'WV' – Water Valve
'S' – Sanitary Sewer Crossing

3.9 Detectable Warnings
Type A detectable warning shall be installed as per COC Std. Dwg. 2319. Material shall be pre-cast manufactured 4'x8'x2.25" red clay brick.

4.0 STORM SEWER

4.1 STORM SEWER PIPE AND STRUCTURES

4.1 Pipe specification for the plan improvements may be in accordance with the following (Except as designated within the profiles.)

A) Reinforced concrete pipe ASTM C-76 (CMSC 706.02). Concrete classification shall be in conformance with the following unless otherwise referenced by the profiles.
– 12" –15" diameter Class IV
– 18" – 24" diameter Class III
– 27" and larger diameter Class II, or

B) High Density Polypropylene, HDPP 12" – 60" Polypropylene Double Wall ASTM F 2736 12" thru 30" and ASTM F- 2881 36" thru 60" with integral bell & spigot meeting the watertight requirements of ASTM D 3212 (CMSC 720.13 & ODOT 707.65), or

C) Smooth-lined corrugated polyethylene pipe (CMSC Item 720.12) (Hancor Hi-Q, ADS N-12, or equal). Except any sewers within Public R/W or as directed by the City Engineer, or

D) P.V.C. sewer pipe ASTM D3034 with joints as per ASTM D3212. PVC sewer pipe placement shall be limited to sewers through 10" diameter.

4.2 The Contractor shall provide written certification to the Engineer reflecting the pipe material to be used along with the current City consignment list identifying the approved pipe material specification.

4.3 All bedding shall be in accordance with Standard Drawing AA-S151 for rigid pipe sewer and in accordance with Standard Drawing AA-S149 for flexible pipe sewer.

4.4 The cost of compacted backfill shall be included in unit price bid for Item 901. Concrete encasement will be required (CCMS 901.12) where 30' of cover is not maintained. Cost to be included in unit price bid for Item 901.

4.5 All manhole castings shall be stamped STORM. Temporary casting tops may be used until such are made available.

4.6 All pre-cast concrete products shall be inspected at the location of manufacture. Approved pre-cast concrete products must be stamped or have such identification noting that inspection has been performed by the City of Columbus. Pre-cast concrete products without proof of inspection shall not be approved for installation.

4.7 The contractor shall submit a copy of the plans and a list of proposed pre-cast concrete product manufactures to the City of Columbus Construction Inspection Division before commencing construction. Send the information to the following address:
Construction Inspection Division
City of Columbus
1800 East 17th Avenue
Columbus, Ohio 43219

4.8 Openings shall be provided in the drainage structures to accommodate underdrain outlets.

4.9 All storm structures with a depth greater than four feet shall have steps (AA-S119) installed at 16" intervals maximum.

4.10 All standard catch basins and curb inlets within paved areas are to have bicycle safe grates.

4.11 When a new roadway is to adjoin an existing roadway any existing underdrain is to be maintained, or replaced if not functional. A relief joint shall be constructed at the intersection of the existing and new road.

4.12 All existing inverts along with the proposed top of casting elevations shall be verified by the Contractor prior to construction of the sewer.

4.13 Within proposed roadway sections that include straight 18" concrete curb, all frames and grates for curb and gutter inlets shall be per East Jordan 7505 Series or approved equal.

4.2 SEWER INSPECTION
4.2.1 The Contractor shall ensure there is a surveyor's level and rod on the project for use in performing grade checks whenever sewer line structures or pipe are being installed. The Contractor shall make this equipment available for the use of and assist the City Inspector in performing grade checks when requested by the inspector. The Inspector will make all reasonable attempts to confine requests for assistance in performing grade checks to times convenient to the Contractor.

4.2.2 These checks will be performed to ensure the following:
1. Proper placement of each structure.
2. Proper installation of initial runs of pipe from a structure.
3. Grade, after an overnight or longer shutdown.
4. Grade, at any other time the Inspector has reason to question grade of installation.

4.2.3 Grade checks performed by the City Inspector in no way relieve the Contractor for the ultimate responsibility to ensure construction to the plan grade.

4.2.4 At the request of the City Engineer, the contractor shall remove 36" storm sewer castings for inspection during construction and for final inspection.

4.2.5 Deflection Testing
All sewer lines installed on this project using P.V.C., HDPP, or H.D.P.E. pipe will be deflection tested by pulling an approved Mandrel equal in diameter to 95% of the pipe diameter through the pipe after pipe is backfilled and a sufficient amount of time is allowed for weight transfer of the backfill to the pipe and bedding, as required under CMSC Item 901.21. Testing shall be performed no sooner than 30 days after installation and backfilling.

5.0 WATERLINE

5.1 All water line and fire hydrant construction, material and specification shall be in accordance with "City of Columbus Construction and Material Specifications", 2018 edition and all revisions, including supplements and City of New Albany requirements including Chapter 939 of the City Code. Water main materials and installations shall be in accordance with the current rules, regulations and standard drawings of the City of Columbus, Division of Water.

5.2 For any emergencies involving the water distribution system, please contact the Division of Water Distribution Maintenance Office at 614-645-7788.

5.3 Each fire hydrant shall be acceptable to the City of New Albany with two (2) 2-1/2" side nozzles and one (1) 5" integrated storz fitting in place of pumper nozzle (no add-on fittings) in accordance with New Albany Fire specifications. Hydrants shall be in accordance with the CCMS. All public hydrants and nozzles shall receive 2 coats of New Albany Red (Federal Color Book 595, Color 11105). Private fire hydrants shall be painted red with white caps and bonnets. An additional fire hydrant for future maintenance purposes shall be delivered to the Public Service Department Building located at 7800 Bevelhymer Road, New Albany, OH 43054 (Residential Subdivision Projects Only). Prior to final acceptance, fire hydrants shall be inspected and accepted by the Monroe Township Fire Chief and the Public Service Department Building located at 7800 Bevelhymer Road, New Albany, OH 43054. These inspections will be scheduled by contacting the New Albany Building Department at (614) 939-2254. All brass fittings associated with water work, including repairs to the existing system, shall conform to the revised allowable lead extraction limit per the updated NSF/ANSI 61 Standard. The Division of Water's Approved Materials List has been updated to reflect this requirement.

5.4 No water service construction before or after the water meter shall begin until permits are issued by the City of Columbus Division of Water. It shall be unlawful for any person to perform any work on City of Columbus water line systems without first securing license to engage in such work, as indicated in Columbus City Code Section 1103.02 and 1103.06. This work includes any attachments, additions to or alterations in any city service pipe or appurtenances (including water service lines and taps). This requirement may be met by utilization of a subcontractor who holds a City of Columbus Water Contractor License or a Combined Water/Sewer Contractor License to perform this work. Utilization of a subcontractor must meet the licensing requirements of City of Columbus Building Code, in particular Section 4114.119 and 4114.529.

5.5 Water service taps 2" and smaller shall be Type K, soft temper copper tubing conforming with the requirements of 805.03 of the CMSC. The Contractor shall obtain the proper hydrant permit(s), and pay any applicable fees, for any approved hydrant usage deemed necessary for work under this improvement. Permits must be obtained from the New Albany Building Department prior to contacting the Division of Water Permit Office (645-7330). The Contractor shall adhere to all rules & regulations governing said permit and must have the original permit on site anytime in which the hydrant is in use. Cost to be included in the various bid items.

5.6 All water mains shall be disinfected in accordance with Section 801.15 of the City of Columbus Construction and Material Specifications. Special attention is directed to applicable sections of AWWA C-651. When water mains are ready for disinfection, the Contractor shall submit the survey coordinates to the Design Engineer for preparation of digital as-built drawings. The Design Engineer shall then submit three (3) SETS OF THE RED LINED 'As-Built' plans (with survey coordinates) to the City Engineer. The City of New Albany Shall submit a letter stating that the waterlines have been pressure tested and need to be disinfected to the City of Columbus, Division of Water. The Contractor shall be responsible for all costs associated with the disinfection of all water mains constructed under this plan. All water mains shall be cleaned and flushed, and any water main 12-inch and larger must be properly pigged, in accordance with section 801.13 of the City of Columbus, Construction, and Material Specifications. Only one connection to an existing water line is permitted before disinfection of a new water line has been completed. All other connections must be made after the line has been disinfected.

5.6.1.1 Any section of water main that is longer than 20 feet in length shall be chlorinated. Hand swabbing methods will only be permitted for sections less than or equal to 20 feet in length. Use unscented household bleach for hand swabbing of pipe and fittings. Please note that cut-in tees, sleeves, and any other required fittings or piping shall be taken into account and are included in the total length of the section (cut to cut).

5.6.1.2 Contractor shall adhere to the requirements of the Ohio Administrative Code Chapter 3745-83.02 Water Disruption of Service Rule. Excavate pits sufficiently below the area to be connected in order to maintain water levels below the water main. If water from the pit enters the existing main, contact the Division of Water immediately. Ensure that sufficiently sized pumps are utilized to remove water from the trench and back-up pumps are kept on site for redundancy.

5.7 All water mains shall be pressure tested in accordance with section 801.14 of the City of Columbus Construction and Material Specifications, with the following exception: 150 psi of pressure shall be maintained for at least two hours in any tested section. The City may not approve any test lasting less than two hours regardless of the amount of leakage.

5.8 Where indicated on the plans, the existing water main shall be abandoned; and any existing water services off this main shall be transferred to the new water main. Prior to abandonment of the existing water main, the proposed water main shall be pigged (if required), tested, chlorinated and put in service and then the existing water services shall be transferred. The Contractor shall maintain water services to all properties during construction of the new water main and shall notify all customers affected by the transfer of services. To ensure that all existing services are transferred to the new main, no water main shall be abandoned until the new water main has been put in service; all affected water services have been transferred; and the existing water main to be abandoned has been shut down for 24 hours. All visible valve boxes, fire hydrants, and service boxes on the water main to be abandoned, which will no longer be in service, shall be removed. All water mains to be abandoned shall be made water tight. The required surface restoration shall be paid for under the appropriate bid item(s).

5.9 Water service boxes shall be placed 1' from the edge of the proposed or existing sidewalk between the sidewalk and the curb, or 2 feet inside the right-of-way or easement line when no sidewalk is present or proposed. Refer to Standard Drawing L-9901 for additional information.

5.10 Maintain eighteen (18) inches vertical and ten (10) feet horizontal separation between any sanitary or storm sewer piping and all proposed water mains.

5.11 When Controlled Density Fill (Item 613, Type 3 Only within Public R/W) is to be used as backfill, the Contractor shall provide Size No. 57 Crushed Carbonate Stone (CCS) 1 foot below to 1 foot above the existing water line.

5.12 All water lines installed within a 45 degree influence plain of pavement shall be backfilled with Item 912 (Type 1 Only) compacted granular backfill.

5.13 Survey Coordinates
'Survey Coordinates' shall include all material, equipment, and labor necessary to obtain horizontal and vertical (Northing, Easting, and Elevation) survey coordinates for the water main improvements. The survey coordinates shall be obtained for the completed water main construction and shall include all valves, tees, crosses, bends, deflections, plugs, reducers, tapping sleeves, blow offs, chlorination taps, fire hydrants, air releases, curb stops, casing pipe termini, and other fittings. Additional survey coordinates are required on the water main every 200' where no fitting or other water main structure is being installed within that length of the improvement.

All survey coordinates shall be referenced to the applicable County Engineer's Monuments, and shall be based on the North American Datum of 1983 (NAD 83) with the NSRS2007 adjustment, with further reference made to the Ohio State Plane South Coordinate System, South Zone, with elevations based on NAVD 88 datum. All coordinates (Northing, Easting, Elevation) shall be referenced to the nearest hundredth (NXXXXXX.XX, EXXXXXX.XX, Elev. XXX.XX). All survey coordinates shall be accurate to within 1.0 foot horizontal and a tenth of a foot (0.10) or less vertical.

The coordinates shall be documented to the Municipality Engineer or designated Representative in digital spreadsheet form and shall include the applicable Item, Station, Northing, Easting, and elevation. Coordinates shall be submitted to the Municipality Engineer or designated Representative on a bi-weekly basis. Coordinates shall also be submitted to the Division of Power and Water as part of the request for chlorination (See Note Block 5.6).

Lump sum payment is full compensation for all work involved in obtaining and documenting the survey coordinates as described in this specification.

5.14 The Contractor must receive pre-approval from the Division of Water and City Engineer 48 hours in advance if elimination of bends is proposed and joint deflection is utilized instead.

REVISIONS

MARK	DATE	DESCRIPTION
	4/5/23	Revised As Constructed

CITY OF NEW ALBANY/LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
GENERAL NOTES

VANTRUST

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
JANUARY 22, 2022

SCALE
None

JOB NO.
2021-0460

SHEET
2/40

8.0 EROSION CONTROL

8.0.1 Control of erosion and sedimentation shall be in accordance with the City of New Albany Codified Ordinance chapter 1183.

8.1 TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

8.1.1 Erosion and sediment control measures are required as a part of this project. The erosion and sediment control plan reflects a schematic diagram of the intended measures for compliance with the required standards. General practice and/or site field conditions may warrant variation in the placement or use of the specific controls. Any variations shall be approved by the City Engineer.

8.1.2 The contractor in compliance with the NPDES General Permit for Storm Water Discharge associated with construction activity and in accordance with the City of New Albany's Ordinance 1183, will be responsible for providing adequate erosion and sediment control measures along with proper maintenance and inspection. An erosion control maintenance log shall be kept on site in compliance with OEPA regulations. The log shall be available for public inspection.

8.2 SEEDING

8.2.1 "Temporary seeding" No area for which grading has been completed shall be left unseeded or un-mulched for longer than 14 days. If permanent seed is not applied at this time, temporary seeding shall be done at the following rates:

March 1 to August 15

Seed:	Oats	2 lbs./1,000 sq. ft.
Fertilizer:	(12:12:12)	12-½ lbs./1,000 sq. ft.
Mulch:	(Straw or Hay)	2 tons/acre

August 15 to November 1

Seed:	Annual Rye	2 lbs./1,000 sq. ft.
Fertilizer:	(12:12:12)	12-½ lbs./1,000 sq. ft.
Mulch:	(Straw or Hay)	2 tons/acre

November 1 to March 1

Mulch (ONLY):	(Straw or Hay)	2 tons/acre

8.2.2 "Permanent seeding" shall be done between March 15 and September 15. If seeding is done between September 15 and March 15, it shall be classified as "Temporary Seeding". Permanent seed shall be 40% Kentucky Bluegrass, 40% Creeping Red Fescue, 20% Annual Ryegrass.

8.2.3 Permanent seeding shall consist of fertilizing, watering and seeding rates indicated under Item 659. Seeding shall be applied within two (2) days after final grading or following seed bed preparation.

Rates of application of Item 659:

Seed:		2 lbs./1,000 sq. ft.
Fertilizer:	(12:12:12)	25 lbs./1,000 sq. ft.
Mulch:	(Straw or Hay)	2 tons/acre

8.3 STABILIZATION OF DENUDED AREAS

8.3.1 Denuded areas shall have soil stabilization applied within seven days if they are to remain dormant for more than fourteen – days.

8.3.2 Sheet flow runoff from denuded areas shall be filtered or diverted to a setting facility.

8.3.3 Sediment Barriers such as sediment fence or diversions to settling facilities shall protect adjacent properties and water resources from sediment transported by sheet flow.

8.3.4 Prior to Construction Operations in a particular area, all sedimentation and erosion control features shall be in place. Field adjustments with respect to locations and dimensions may be made by the Engineer.

8.3.5 The Contractor shall place inlet protection for the erosion control immediately after construction of the catch basins or inlets, which are not tributary to a sediment basin or dam.

8.3.6 It may become necessary to remove portions of the barrier during construction to facilitate the grading operations in certain areas. However, the barrier shall be in place in the evening or during any inclement weather.

8.4 MAINTENANCE

8.4.1 It is the Contractor's responsibility to maintain the sediment control features used on this project. The site shall be inspected periodically and within 24 hours of a significant rainfall. Records of these inspections shall be kept and made available to jurisdictional agencies if requested. Any sediment or debris which has reduced the efficiency of a structure shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace at no additional cost to the Owner.

8.4.2 All Erosion & Sediment Control practices are subject to Field Modification at the direction of the City Engineer and/or Ohio EPA.

9.0 RIGHT-OF-WAY PERMITS

The contractor shall have all necessary permits before beginning construction. A permit is required to bury in public right-of-way. Permits may be required from more than one governing agency. The contractor shall notify the appropriate governing agency at least forty-eight hours in advance of commencement of work. On state right-of-way, call Ohio Department of Transportation, division of Highways Permit Expediter forty-eight hours in advance.

10.0 PAVEMENT REPLACEMENT

If any street or road within the City is damaged as a result of construction traffic related to Construction as determined by the City Engineer, all requested repairs shall be made by the Contractor. Existing pavement surfaces shall be video taped prior to the pre-construction meeting by the Contractor and a copy of the tape is to be furnished to the City Engineer.

11.0 EXISTING UTILITIES

11.1 The identity and location of the existing underground utility facilities know to be located in the construction area have been shown on the plans as accurately as provided by the Owner of the underground utility. The City of New Albany and/or Engineer assumes no responsibility to the accuracy or the depths of the underground facilities shown on the plans.

11.1.1 Investigation, location, support, protection and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor. This work includes maintenance of adequate depth on all existing utility facilities. The Contractor is responsible to identify and coordinate field stakeout of all locations of possible grade conflicts with existing utilities prior to construction.

11.1.2 The Contractor is responsible for coordinating the relocation and/or protection of any utilities as required by the plan with the owner of the affected utility. Private utility manholes within the limits of the work shall be adjusted to grade by the respective utility. The cost of this work shall be included in the price bid for the project improvements.

11.1.3 Utility poles within the influence of the earthwork operations shall be reinforced by the utility company prior to these construction activities. Notification of the utility company prior to construction shall be the responsibility of the Contractor.

11.1.4 Abandonment (Capping, Etc.) of existing utility facilities (Ameritech, Columbia Gas, American Electric Power) shall be performed by the respective utility company. Upon completion of same, the Contractor shall be responsible to remove any or all the necessary utility as required to complete the plan improvements. The cost of all removal along with the proper disposal thereof should be included in the price bid for the project improvement.

11.1.5 The Contractor shall cause notice to be given to the Ohio Utilities Protection Service (Telephone 800-362-2764, toll-free) and to the owners of the underground utilities who are not members of a registered underground protection service in accordance with Section 153.64 of the Revised Code. The above mentioned notice shall be given at least 48 hours prior to start of construction. The following utilities and Owners are located within the work limits of this project:

UTILITY	OWNER	TELEPHONE
Electric/FOC 850 Tech Center Drive Gahanna, OH 43230	AEP	(614) 277-2177/ (800)-255-6815
Sanitary Sewer, & Storm Sewer, Water & Fiber Optic Cable (FOC)	City of New Albany Service Department 7800 Bevelhymer Road New Albany, OH 43054	(614) 855-0076
Water Facilities	City of Columbus (Division of Power & Water) Water Distribution Center 910 Dublin Road. Columbus, OH 43215	(614) 645-7788
Gas	The Energy Cooperative 1500 Granville Rd Newark, OH 43055	(800) 255-6815

12.0 TREES

All branches or growth from trees that are to be saved and which are interfering with the grading operation may be removed by the use of pruning tools. All pruning tools used and methods employed shall meet with the approval of the City Arborist. The branches shall be removed with a good clean cut made flush with the parent trunk or if having a good healthy lateral branch, the cut shall be a good clean slanting cut close to and beyond the healthy branch. All pruning cuts shall be painted with an accepted pruning preservative. All branches removed shall be at the direction of the City Arborist (614) 855-0076. The cost of all work and expenses connected with the removal of trees and/or branches shall be included in the price bid for clearing and grubbing. No extra payment shall be made therefore.

13.0 BENCHMARKS AND SURVEY MONUMENTS

13.1 Do not disturb any Licking County Certified Benchmarks (vertical and/or horizontal) located within the working limits of the project. Contractor shall contact the Licking County survey department (740) 670-5280, prior to construction, to coordinate the proper procedures for resetting, relocation, or replacement of any Licking County Certified Benchmark or Survey Monument.

13.2 The Contractor shall reference all iron pins and monuments before excavating at or near said iron pins or monuments. The contractor shall not disturb existing right-of-way or property corner markers that are required to remain after construction. If any pins or monuments are disturbed, destroyed, or damaged by the Contractor that have not been designated to be removed in these plans, they shall be accurately replaced by a Registered Surveyor at the completion of the project or at the direction of the City Engineer and at the contractor's expense as per the City of Columbus Construction and Materials Specifications, Section 107.12. If replacement of pins or monuments is required, the Engineer, Developer, or Contractor shall provide an exhibit during the final punch list inspection verifying that monuments have been placed at all property corners.

FIRE SERVICE NOTES FOR WATER SYSTEM

Site Utility Contractor shall call the Monroe Township Fire Department for inspection of private fire protection system.

Approval of this plan by the City of Columbus Division of Power & Water does not constitute approval by the local fire jurisdiction.

Site Utility Contractor shall call the Monroe Township Fire Department for inspection of 8" private fire protection system beyond fire service meter including private fire hydrants and fire department connection before covering.

All private fire hydrants shall be painted red with white caps and bonnets.

All private fire hydrants shall conform to CMSC Item 809, with special attention to Item 809.02.11, two (2) additional 2 1/2" outlets, & one (1) 5" integrated storz fitting.

All private hydrant maintenance shall be the property owner responsibility.

All private hydrants usage shall be used for fire protection usage only.

REVISIONS

MARK	DATE	DESCRIPTION
	4/5/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
GENERAL NOTES

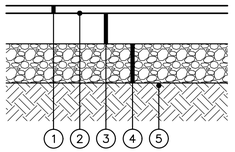
EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll free: 888.775.3648
emht.com

DATE
JANUARY 22, 2022

SCALE
None

JOB NO.
2021-0460

SHEET
3/40

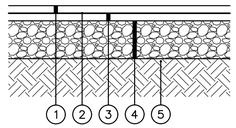


	A	B	C
Non–Stabilized	1.5"	3.5"	10"
12" Stabilized	1.5"	2.75"	10"

1. CMSC Item 441, A Asphalt Concrete, Surface Course, Type 1, PG 64–22
2. CMSC Item 407, Tack Coat, Applied At A Rate Of 0.10 Gal. Per Sq. Yd.
3. CMSC Item 441, B Asphalt Concrete, Intermediate Course, Type 2, PG 64–22
4. CMSC Item 304, C Aggregate Base
5. CMSC Item 204, Subgrade Compaction

NOTES
1. Pavement recommendation provided by Geotechnical Consultants, Inc report dated November 24, 2021. EMH&T assumes no liability for pavement section.

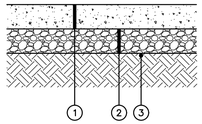
A DETAIL
HEAVY DUTY ASPHALT PAVEMENT
Not to Scale



1. CMSC Item 441, 1–1/2" Asphalt Concrete, Surface Course, Type 1, PG 64–22
2. CMSC Item 407, Tack Coat, Applied At A Rate Of 0.10 Gal. Per Sq. Yd.
3. CMSC Item 441, 1–1/2" Asphalt Concrete, Intermediate Course, Type 2, PG 64–22
4. CMSC Item 304, 8" Aggregate Base
5. CMSC Item 204, Subgrade Compaction

NOTES
1. Pavement recommendation provided by Geotechnical Consultants, Inc report dated November 24, 2021. EMH&T assumes no liability for pavement section.

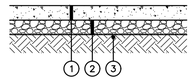
B DETAIL
STANDARD DUTY ASPHALT PAVEMENT
Not to Scale



1. CMSC Item 452, 8" Non–Reinforced Portland Cement Concrete Pavement (Class COC1)
2. CMSC Item 304, 6" Crushed Aggregate Base
3. CMSC Item 204, Subgrade Compaction

NOTES
1. Pavement recommendation provided by Geotechnical Consultants, Inc report dated November 24, 2021. EMH&T assumes no liability for pavement section.
2. Provide control and isolation joint per details E and F, this sheet.
3. Provide concrete/asphalt joint per detail S, Sheet 5, where concrete pavement ends or abuts another pavement type.
4. Provide light broom finish unless otherwise specified.

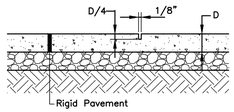
C DETAIL
CONCRETE PAVEMENT SECTION
Not to Scale



1. CMSC Item 608 (Class COC6), 4" Concrete Walk
2. CMSC Item 304, 4" Aggregate Base
3. Subgrade Compaction per ODOT Item 204

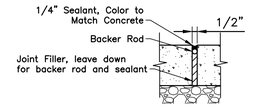
NOTES
1. Maintain maximum cross–slope of 1.56%.
2. Provide isolation joints where new walk abuts existing or new pavement, structure, or other site features per detail F, this sheet.
3. Provide control joints per detail E, this sheet.
4. Reference plan views for widths at various locations.

D DETAIL
CONCRETE SIDEWALK
Not to Scale



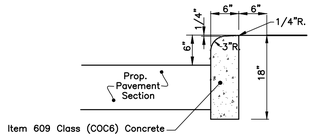
NOTES
1. Where not noted otherwise, provide control joints on concrete walks at equally spaced intervals matching sidewalk width to create square sections.
2. In concrete aprons, dumpster pads or walkways wider than 7'–0" provide control joints at equally spaced intervals to create square sections. Maximum spacing 10'–0" each direction.
3. Joints may be saw cut, troweled or formed.

E DETAIL
CONTROL JOINT
Not to Scale



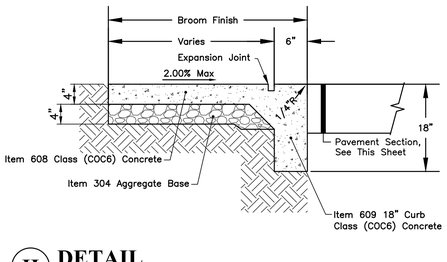
NOTES
1. Place isolation joints where new concrete slab abuts existing and new concrete, buildings, catch basins, curbs or other fixed objects, and as noted on the staking plans.
2. Seal joint with polyurethane sealant. Preformed expansion joint filler, non–impregnated type, closed cell resilient polyethylene foam, 1/2" thick unless otherwise noted.

F DETAIL
ISOLATION JOINT
Not to Scale

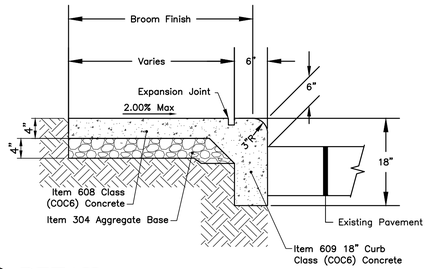


NOTES
1. Curb Shall be 0" Height at Ramps as Noted on Sheets 26 & 27.

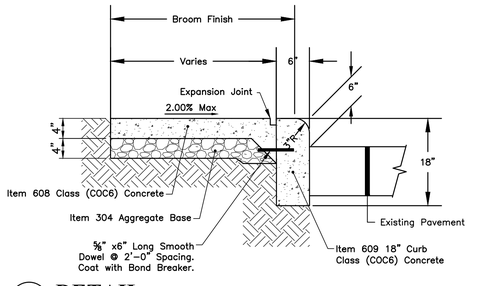
G DETAIL
CURB, 18" STRAIGHT
Not to Scale



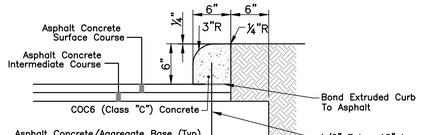
H DETAIL
FLUSH INTEGRAL CURB & SIDEWALK
Not to Scale



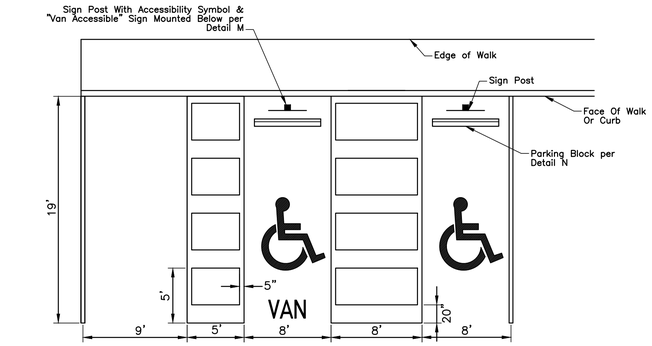
I DETAIL
INTEGRAL CURB & SIDEWALK
Not to Scale



J DETAIL
ALTERNATE INTEGRAL CURB & SIDEWALK
Not to Scale

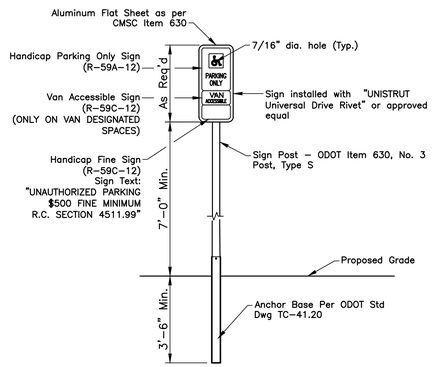


K DETAIL
EXTRUDED CURB
Not to Scale



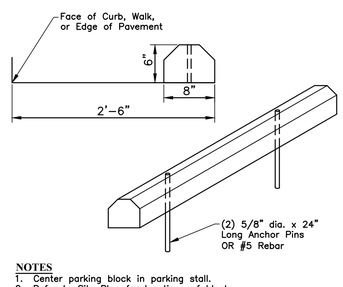
NOTES
1. Pavement shall have a maximum 2.00% slope in all directions in the area of handicap parking spaces and associated striping.
2. Handicap parking sign shall conform with current State and Local codes and regulations.
3. Transition from flush curb to full height curb as designated on Grading Plan. Slope walk to match curb.

L DETAIL
ADA PARKING STRIPING
Not to Scale



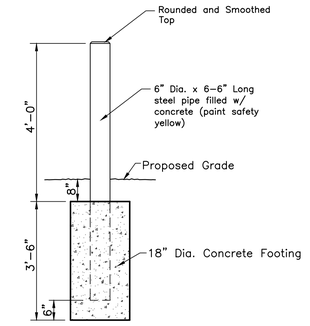
NOTE
1. Paint sign post and back of sign flat black.
2. Handicap signage to be as shown unless otherwise specified by local code.

M DETAIL
ADA PARKING SIGN
Not to Scale



NOTES
1. Center parking block in parking stall.
2. Refer to Site Plan for locations of blocks.

N DETAIL
CONCRETE PARKING BLOCK
Not to Scale



NOTE: See Architectural Plan for Locations adjacent to building.

O DETAIL
PROTECTIVE BOLLARD
Not to Scale

MARK	DATE	DESCRIPTION
	4/5/23	Revised As Constructed

REVISIONS

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
DETAILS

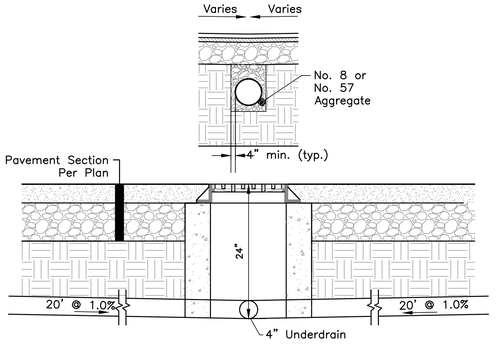
EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
As Noted

JOB NO.
2021-0460

SHEET
4/40

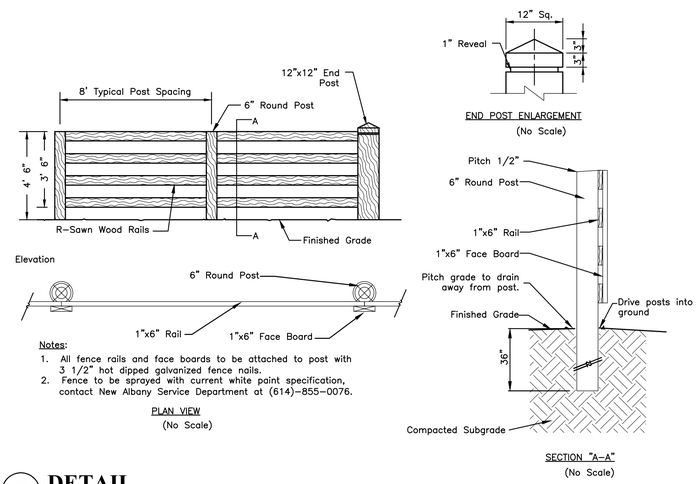


1. The Perforated Pipe shall be Protected from Heavy Traffic After Installation Prior to Placement of Proposed Pavement.
2. Cost of excavation and aggregate to be included with Item 605 – 4" Pipe Underdrain, Storm Structures, As Per Plan

The 4" Perforated Underdrain shall be provided as follows:

Structure	Number	Length

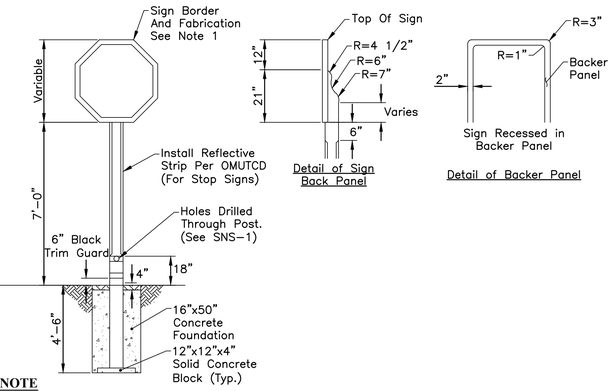
P DETAIL
TYPICAL 4" UNDERDRAIN
Not to Scale



Notes:
1. All fence rails and face boards to be attached to post with 3 1/2" hot dipped galvanized fence nails.
2. Fence to be sprayed with current white paint specification, contact New Albany Service Department at (614)-855-0076.

PLAN VIEW
(No Scale)

Q DETAIL
FOUR RAIL HORSE FENCE
Not to Scale



NOTE
1. Regulatory/Warning on wood supports – Sign Sheeting to be Type G, on aluminum blanks and meet OMUTCD standards. Signs to be attached to 1 1/4 inch thick synthetic backer panel (XTIRA or AZEK brand). Panel to be routed 1/4 inch for insertion of sign backer panel
2. Post Color: Ref NO. PMS 5535 (Hi-Gloss)
3. Hardware – Stainless Steel
4. Post size per NA-SNS-1
5. Trim guard to be thermoplastic vinyl

R DETAIL
STOP SIGN
Not to Scale

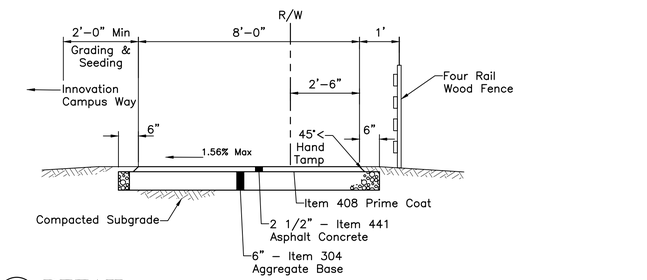
NOTES
1. Contractor shall provide turndown anywhere asphalt and concrete or concrete base pavement meet.

S DETAIL
ASPHALT/CONCRETE TURNDOWN W/ UNDERDRAIN
Not to Scale

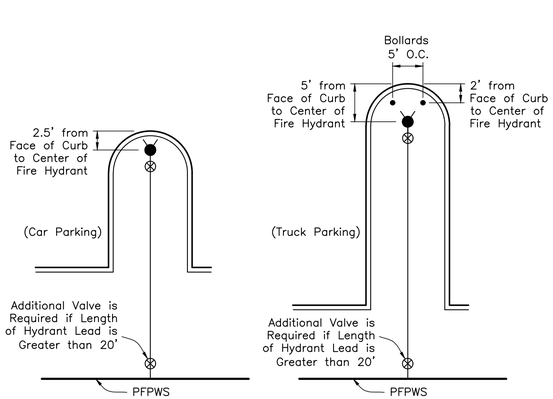
FDC shall be FM Approved and shall meet the Requirements of Monroe Township Fire Department. Reference General Notes Sheet 2.

Contractor to Provide Fittings as Needed to Connect to the 5" Storz Connection and Structure Large Enough to Accommodate the Equipment Cost to be Included in the Price Bid for the Fire Department Connection, Complete, As Per Plan.

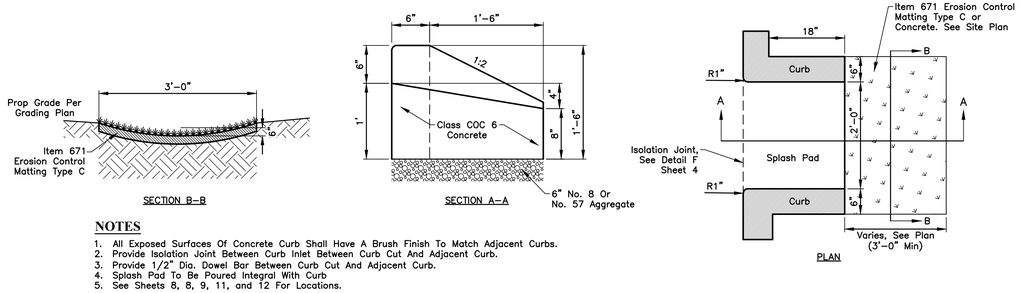
T DETAIL
FIRE DEPARTMENT CONNECTION
Not to Scale



U DETAIL
ASPHALT LEISURE TRAIL
Not to Scale

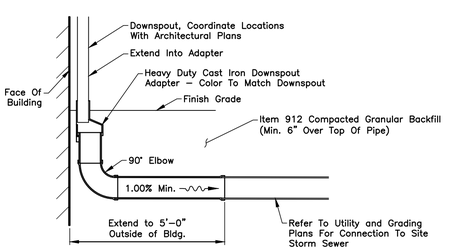


V DETAIL
HYDRANT IN ISLAND
Not to Scale



NOTES
1. All Exposed Surfaces Of Concrete Curb Shall Have A Brush Finish To Match Adjacent Curbs.
2. Provide Isolation Joint Between Curb Inlet Between Curb Cut And Adjacent Curb.
3. Provide 1/2" Dia. Dowel Bar Between Curb Cut And Adjacent Curb.
4. Splash Pad To Be Poured Integral With Curb
5. See Sheets 8, 8, 9, 11, and 12 For Locations.

W DETAIL
CURB CUT
Not to Scale



X1 DETAIL
DOWNSPOUT CONNECTION
Not to Scale

X2 DETAIL
DOWNSPOUT CONNECTION
Not to Scale

REVISIONS

MARK	DATE	DESKRIPTION
1	7/19/22	Revision 2
2	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
DETAILS

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
As Noted

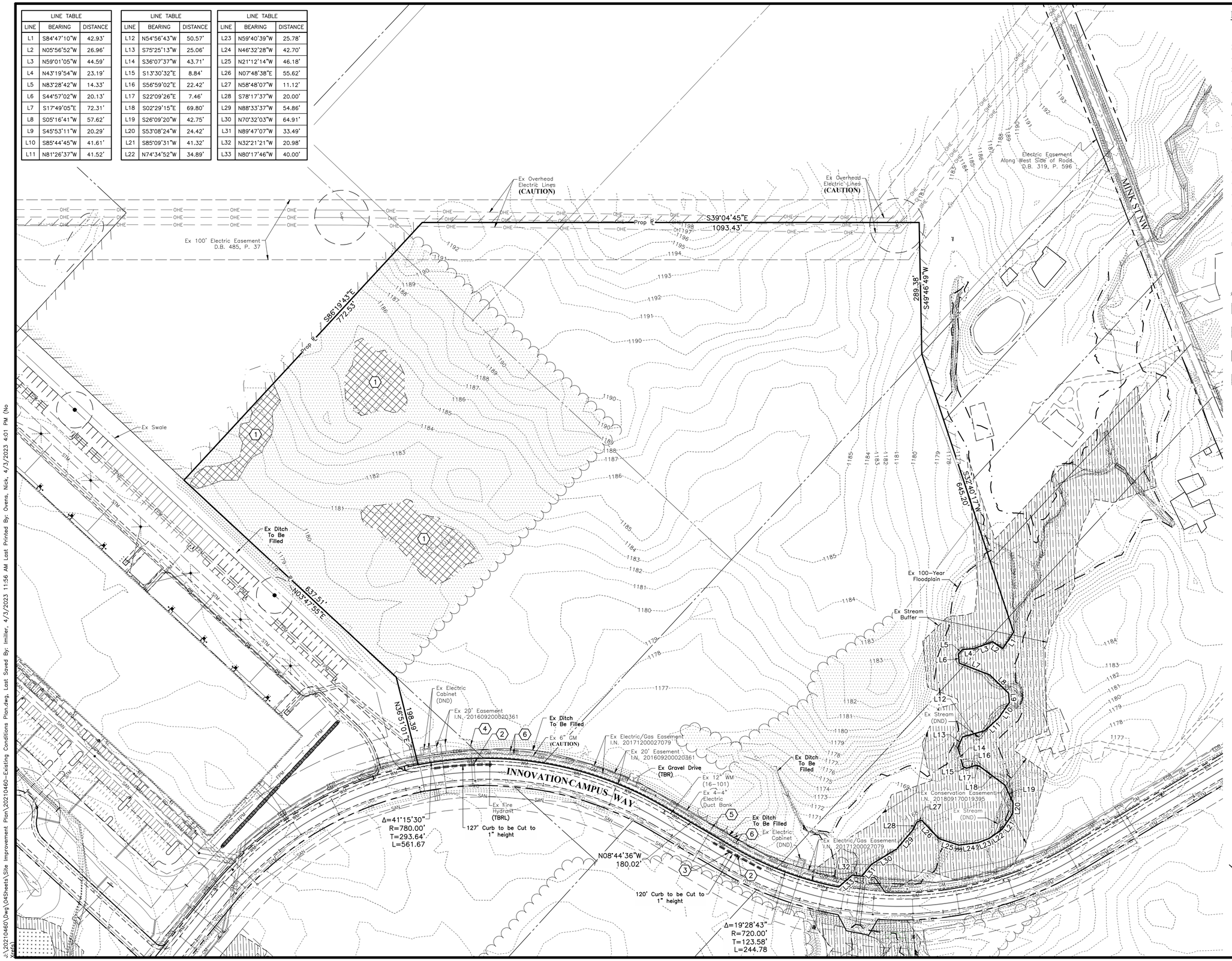
JOB NO.
2021-0460

SHEET
5/40

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S84°47'10"W	42.93'
L2	N05°56'52"W	26.96'
L3	N59°01'05"W	44.59'
L4	N43°19'54"W	23.19'
L5	N83°28'42"W	14.33'
L6	S44°57'02"W	20.13'
L7	S17°49'05"E	72.31'
L8	S05°16'41"W	57.62'
L9	S45°53'11"W	20.29'
L10	S85°44'45"W	41.61'
L11	N81°26'37"W	41.52'

LINE TABLE		
LINE	BEARING	DISTANCE
L12	N54°56'43"W	50.57'
L13	S75°25'13"W	25.06'
L14	S36°07'37"W	43.71'
L15	S13°30'32"E	8.84'
L16	S56°59'02"E	22.42'
L17	S22°09'26"E	7.46'
L18	S02°29'15"E	69.80'
L19	S26°09'20"W	42.75'
L20	S53°08'24"W	24.42'
L21	S85°09'31"W	41.32'
L22	N74°34'52"W	34.89'

LINE TABLE		
LINE	BEARING	DISTANCE
L23	N59°40'39"W	25.78'
L24	N46°32'28"W	42.70'
L25	N21°12'14"W	46.18'
L26	N07°48'38"E	55.62'
L27	N58°48'07"W	11.12'
L28	S78°17'37"W	20.00'
L29	N88°33'37"W	54.86'
L30	N70°32'03"W	64.91'
L31	N89°47'07"W	33.49'
L32	N32°21'21"W	20.98'
L33	N80°17'46"W	40.00'



LEGEND

EXISTING

- Contours
- Edge Of Pavement
- Curb
- Sidewalk
- Tree Line
- Cut Curb To 1" Height
- Fence Removal
- STM — Storm Sewer
- RD — Roof Drain
- SAN — Sanitary Sewer
- WM — Water Main
- FHL — Fire Hydrant Lead
- OHE-OHC — Overhead Utility Line
- OHE — Overhead Electric Line
- E — Underground Electric Line
- OHC — Overhead Communication Line
- GM — Gas Main
- Limits Of Disturbance
- Fire Hydrant / Manhole
- Water Valve / Catch Basin
- Light Pole / Curb Inlet
- Utility Poles / Signal Pole
- Tree Clearing Limits
- Leisure Path To Be Removed
- Stream Buffer
- Wetland to be Impacted

TBR	To Be Removed
TBV	To Be Vacated
DND	Do Not Disturb

CODED NOTES:

1. Existing Wetland to be Impacted
2. Exisiting Light Pole To Be Relocated
3. Existing Curb & Gutter Inlet Casting To Be Replaced With Driveway Frame & Grate, Neenah R-3290-A Or Approved Equal.
4. Existing Storm Manhole To Be Adjusted To Grade And Casting To Be Replaced With AA-S142 Curb & Gutter Inlet Casting
   Ex Rim=1178.43
   Prop Grate=1179.24
   Prop TC=1179.74
5. Existing Sanitary Manhole Adjust To Grade
   Ex Rim=1173.06
   Prop Rim=1175.44
6. Contractor Shall Field Verify Depth Of Electric Duct Bank And Gas Main At Proposed Drive Crossing.

NOTES:

All Drain Tile And Storm Sewers Damaged, Disturbed, Or Removed As A Result Of The Contractor's Operations Shall Be Replaced With The Same Quality Pipe Or Better, Maintaining The Same Gradient As Existing. The Drain Tile And/Or Storm Sewer Shall Be Connected To The Curb Sub-drain, Storm Sewer System Or Provided With An Outlet Into The Roadway Ditch As Applicable. Replaced Drain Tile/Storm Sewer Shall Be Laid On Bedding Compacted To 98% Maximum Density.

Contractor Shall Provide The City Of New Albany Engineer's Office With A Video Inspection Of Innovation Campus Way Prior To Construction.

Contractor Shall Field Verify Location And Depth Of All Proposed Crossings Of All Existing Utilities Prior To Start Of Construction. Contractor Shall Notify Engineer Of Any Conflicts With Appropriate Time To Modify Plans And Obtain Plan Revision Approval.

GRAPHIC SCALE
0 50 100 200
1 inch = 100 feet

REVISIONS

MARK	DATE	DESCRIPTION
	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
EXISTING CONDITIONS PLAN

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

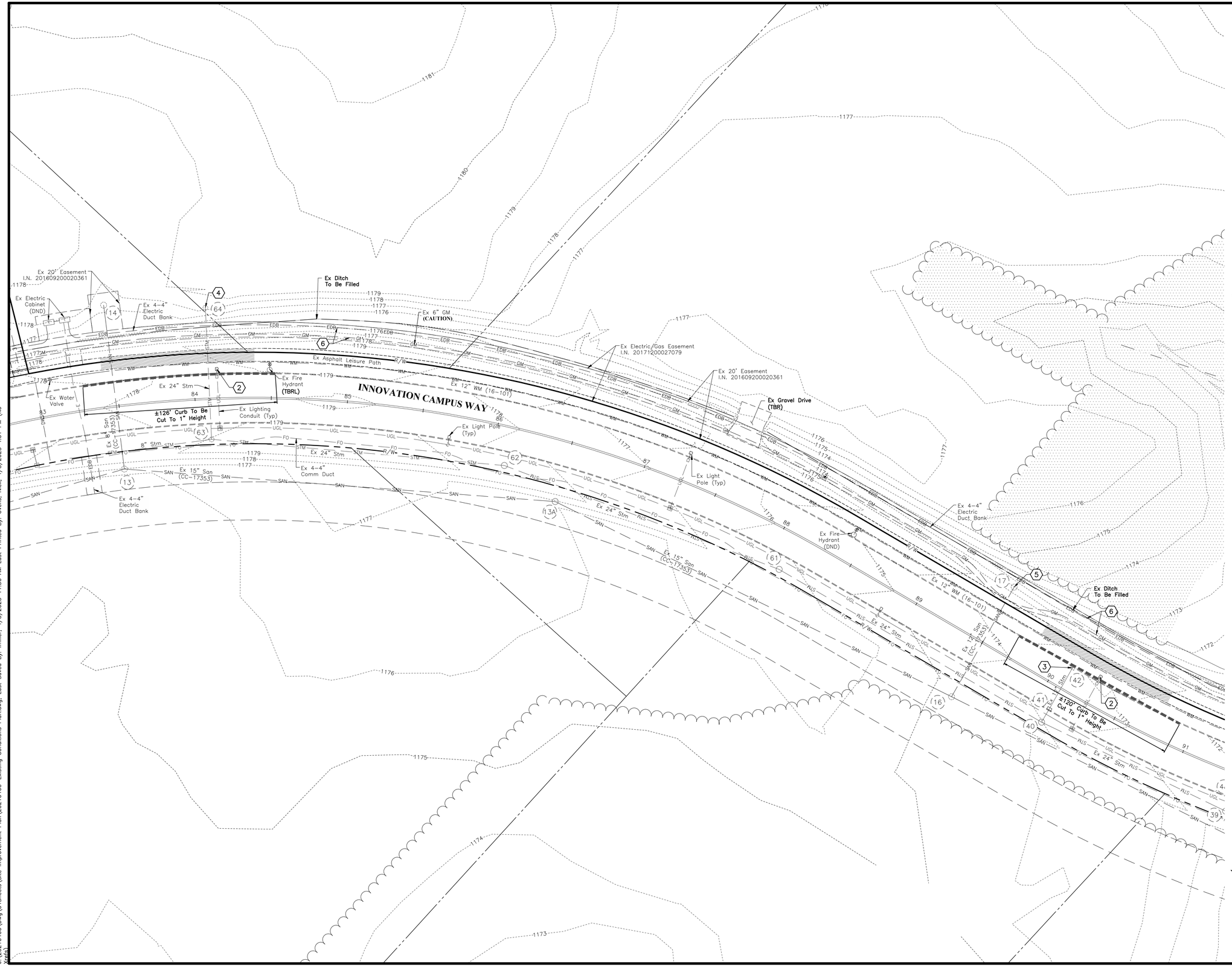
DATE
January 22, 2022

SCALE
1" = 100'

JOB NO.
2021-0460

SHEET
6/40

J:\2021\0460\Dwg\04Sheets\Site Improvement Plan\20210460-Existing Conditions Plan.dwg, Last Saved By: lmiller, 4/3/2023 11:56 AM Last Printed By: Ovens, Nick, 4/3/2023 4:01 PM (No Xref)



LEGEND

EXISTING

- Contours
- Edge Of Pavement
- Curb
- Sidewalk
- Tree Line
- Cut Curb To 1" Height
- Fence Removal
- Storm Sewer
- Roof Drain
- Sanitary Sewer
- Water Main
- Fire Hydrant Lead
- Overhead Utility Line
- Overhead Electric Line
- Underground Electric Line
- Overhead Communication Line
- Gas Main
- Limits Of Disturbance
- Fire Hydrant
- Manhole
- Water Valve
- Catch Basin
- Light Pole
- Curb Inlet
- Utility Poles
- Signal Pole
- Tree Clearing Limits
- Leisure Path To Be Removed
- Stream Buffer
- Wetland to be Impacted

TBR	To Be Removed
TBV	To Be Vacated
DND	Do Not Disturb

CODED NOTES:

1. Existing Wetland to be Impacted
2. Exisiting Light Pole To Be Relocated
3. Existing Curb & Gutter Inlet Casting To Be Replaced With Driveway Frame & Grate, Neenah R-3290-A Or Approved Equal.
4. Existing Storm Manhole To Be Adjusted To Grade And Casting To Be Replaced With AA-S142 Curb & Gutter Inlet Casting
   Ex Rim=1178.43
   Prop Grate=1179.24
   Prop TC=1179.74
5. Existing Sanitary Manhole Adjust To Grade
   Ex Rim=1173.06
   Prop Rim=1175.44
6. Contractor Shall Field Verify Depth Of Electric Duct Bank And Gas Main At Proposed Drive Crossing.

NOTES:

All Drain Tile And Storm Sewers Damaged, Disturbed, Or Removed As A Result Of The Contractor's Operations Shall Be Replaced With The Same Quality Pipe Or Better, Maintaining The Same Gradient As Existing. The Drain Tile And/Or Storm Sewer Shall Be Connected To The Curb Sub-drain, Storm Sewer System Or Provided With An Outlet Into The Roadway Ditch As Applicable. Replaced Drain Tile/Storm Sewer Shall Be Laid On Bedding Compacted To 98% Maximum Density.

Contractor Shall Provide The City Of New Albany Engineer's Office With A Video Inspection Of Innovation Campus Way Prior To Construction.

Contractor Shall Field Verify Location And Depth Of All Proposed Crossings Of All Existing Utilities Prior To Start Of Construction. Contractor Shall Notify Engineer Of Any Conflicts With Appropriate Time To Modify Plans And Obtain Plan Revision Approval.

GRAPHIC SCALE

0 15 30 60

1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
	4/5/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, FRANKLIN COUNTY, OHIO
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
INNOVATION CAMPUS WAY EXISTING CONDITIONS PLAN

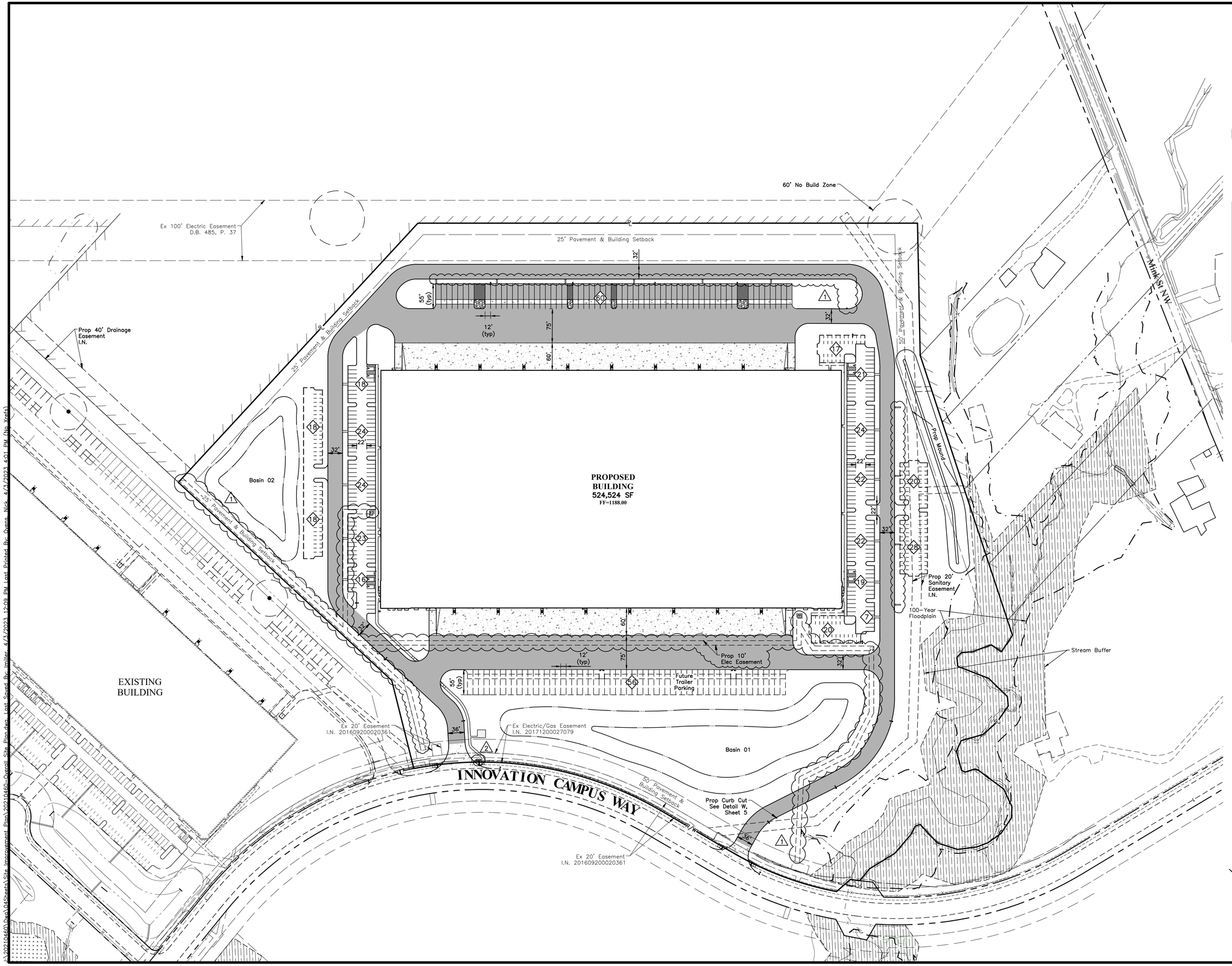
EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
7/40



LEGEND

- Heavy Duty Asphalt Pavement
- Standard Duty Asphalt Pavement
- Concrete Pavement
- Concrete Sidewalk
- Stream Buffer
- Gravel, See Landscape Plan For Details
- 4 Rail Horse Fence
- (#) Parking Count
- By Separate Plan — BSP

PROJECT DATA TABLE

Building Area:	±524,524 SF
Total Site Area:	42.29 Ac.
Employees:	325
Parking Required (2 per 3 employees):	217
Parking Provided:	219 Spaces
Handicap Parking Required	7 Spaces
Handicap Parking Provided	8 Spaces
Trailer Parking Provided:	60 Spaces
Future Parking:	121 Spaces
Future Trailer Parking:	56 Spaces
Lot Coverage:	63%

NOTES

Stream/Wetland Buffer Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

GRAPHIC SCALE
0 50 100 200
1 inch = 100 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
OVERALL SITE PLAN

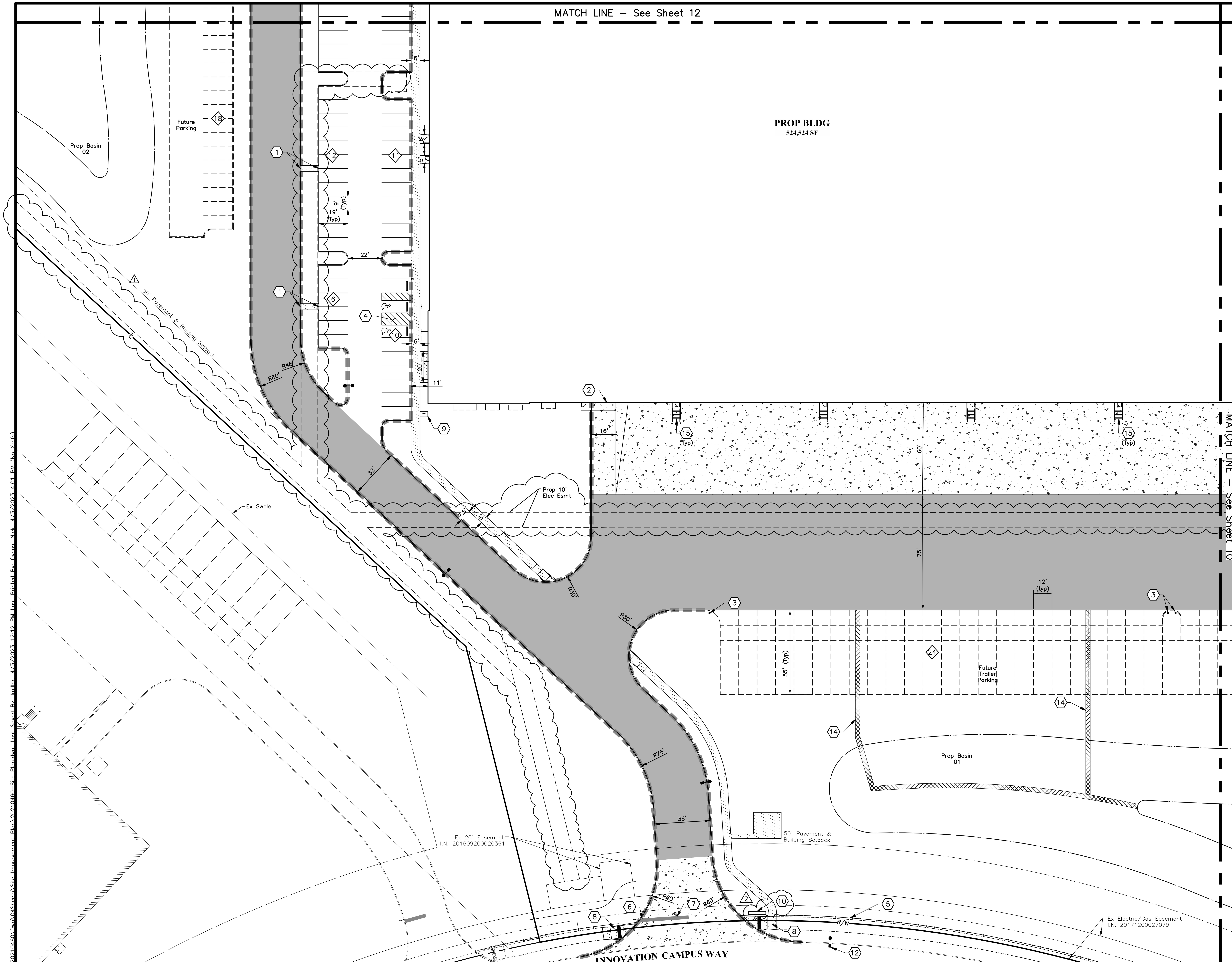
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE: January 22, 2022

SCALE: 1" = 100'

JOB NO.: 2021-0460

SHEET: 8/40



LEGEND

Symbol	Description	Detail
	Heavy Duty Asphalt Pavement	A / 4
	Standard Duty Asphalt Pavement	B / 4
	Concrete Pavement	C / 4
	Concrete Sidewalk	D / 4
	Gravel, See Landscape Plan For Details	
	Proposed 4 Rail Horse Fence	Q / 5
	Proposed 18" Curb	G / 4
	Proposed Extruded Curb	K / 4
#	Parking Count	
TBV	To Be Vacated	

NOTES:

All Radii Are 4.5' Unless Otherwise Noted And Measured To Face Of Curb Or Edge Of Pavement

All Curb Shall Be Extruded Curb Unless Otherwise Noted.

All Dimensions Given Are Measured To The Face Of Curb.

All Radius Dimensions Given Are Measured Along The Face Of Curb.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

CODED NOTES:

1. Curb Cut
   See Detail W, Sheet 5
2. Drive–In Door
3. Protective Bollard
   See Detail O, Sheet 4
4. Handicap Parking With Parking Block And Sign.
   See Details L,M,N, Sheet 4
5. 4–Rail Horse Fence
   See Detail Q, Sheet 5
6. Stop Sign
   See Detail R, Sheet 5
7. Stop Bar
8. Curb Ramp Per COC Std Dwg 2319. All Ramps And Landings Within Public Right–Of–Way Shall Be Constructed Using COC 6 Concrete. Detectable Warnings Within Public Right–Of–Way Shall Be Type A And Shall Be Installed Per COC Std. Dwg. 2319. Material Shall Be Pre–Cast Manufactured 4"x8"x2.25" Red Clay Brick.
9. Bike Rack
   See Landscape Plan For Details
10. Monument Sign
    See Architecture Plan For Details
11. Truck Entrance Sign
    See Architecture Plan For Details
12. Relocated Light Pole
    See Electrical Plan For Details
13. Provide 3' Opening In Fence For FDC
14. Erosion Control Matting Per COC Item 671
15. Stairs,
    See Architecture Plan For Details

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
SITE PLAN A

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
9/40

MATCH LINE – See Sheet 11

MATCH LINE – See Sheet 9

PROP BLDG
524,524 SF

Future Parking

Future Trailer Parking

Prop Basin 01

Prop Mound

50' Pavement & Building Setback

100-Year Floodplain

Stream Buffer

Prop 20' Sanitary Easement I.N.

Ex Conservation Easement I.N. 201809170019395

LEGEND

- Heavy Duty Asphalt Pavement — A/4
- Standard Duty Asphalt Pavement — B/4
- Concrete Pavement — C/4
- Concrete Sidewalk — D/4
- Gravel, See Landscape Plan For Details
- Proposed 4 Rail Horse Fence — Q/5
- Proposed 18" Curb — G/4
- Proposed Extruded Curb — K/4
- (#) Parking Count
- TBV To Be Vacated

NOTES:

All Radii Are 4.5' Unless Otherwise Noted And Measured To Face Of Curb Or Edge Of Pavement

All Curb Shall Be Extruded Curb Unless Otherwise Noted.

All Dimensions Given Are Measured To The Face Of Curb.

All Radius Dimensions Given Are Measured Along The Face Of Curb.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

CODED NOTES:

1. Curb Cut
   See Detail W, Sheet 5
2. Drive-In Door
3. Protective Bollard
   See Detail O, Sheet 4
4. Handicap Parking With Parking Block And Sign.
   See Details L,M,N, Sheet 4
5. 4-Rail Horse Fence
   See Detail Q, Sheet 5
6. Stop Sign
   See Detail R, Sheet 5
7. Stop Bar
8. Curb Ramp Per COC Std Dwg 2319. All Ramps And Landings Within Public Right-Of-Way Shall Be Constructed Using COC 6 Concrete. Detectable Warnings Within Public Right-Of-Way Shall Be Type A And Shall Be Installed Per COC Std. Dwg. 2319. Material Shall Be Pre-Cast Manufactured 4"x8"x2.25" Red Clay Brick.
9. Bike Rack
   See Landscape Plan For Details
10. Monument Sign
    See Architecture Plan For Details
11. Truck Entrance Sign
    See Architecture Plan For Details
12. Relocated Light Pole
    See Electrical Plan For Details
13. Provide 3' Opening In Fence For FDC
14. Erosion Control Matting Per COC Item 671
15. Stairs,
    See Architecture Plan For Details

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLANS FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
SITE PLAN B

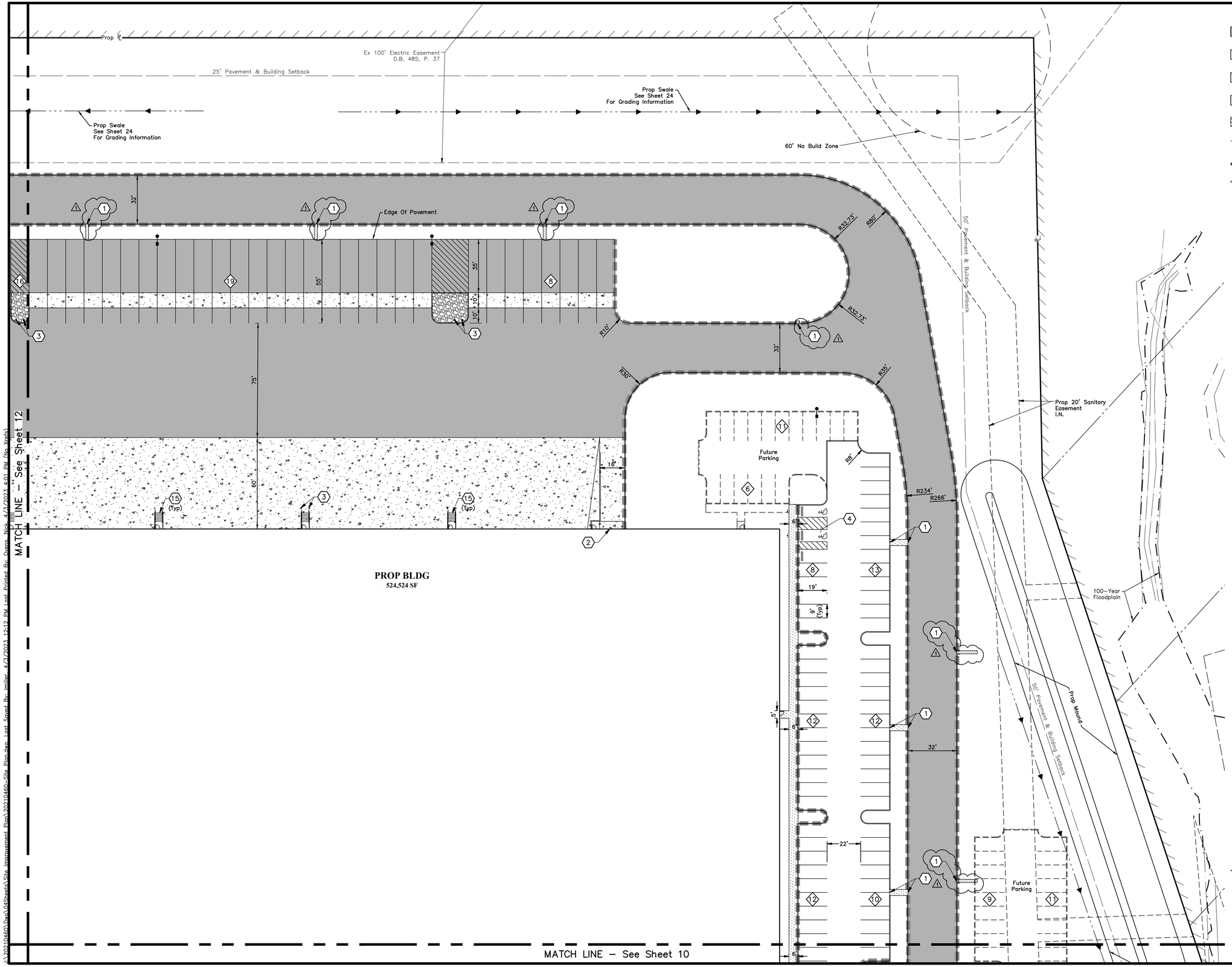
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
10/40



LEGEND

Heavy Duty Asphalt Pavement	A 4
Standard Duty Asphalt Pavement	B 4
Concrete Pavement	C 4
Concrete Sidewalk	D 4
Gravel, See Landscape Plan For Details	
Proposed 4 Rail Horse Fence	Q 5
Proposed 18" Curb	G 4
Proposed Extruded Curb	K 4
# Parking Count	
TBV To Be Vacated	

NOTES:

All Radii Are 4.5' Unless Otherwise Noted And Measured To Face Of Curb Or Edge Of Pavement

All Curb Shall Be Extruded Curb Unless Otherwise Noted.

All Dimensions Given Are Measured To The Face Of Curb.

All Radius Dimensions Given Are Measured Along The Face Of Curb.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

CODED NOTES:

1. Curb Cut
   See Detail W, Sheet 5
2. Drive-In Door
3. Protective Bollard
   See Detail O, Sheet 4
4. Handicap Parking With Parking Block And Sign.
   See Details L,M,N, Sheet 4
5. 4-Rail Horse Fence
   See Detail Q, Sheet 5
6. Stop Sign
   See Detail R, Sheet 5
7. Stop Bar
8. Curb Ramp Per COC Std Dwg 2319. All Ramps And Landings Within Public Right-Of-Way Shall Be Constructed Using COC 6 Concrete. Detectable Warnings Within Public Right-Of-Way Shall Be Type A And Shall Be Installed Per COC Std. Dwg. 2319. Material Shall Be Pre-Cast Manufactured 4"x8"x2.25" Red Clay Brick.
9. Bike Rack
   See Landscape Plan For Details
10. Monument Sign
    See Architecture Plan For Details
11. Truck Entrance Sign
    See Architecture Plan For Details
12. Relocated Light Pole
    See Electrical Plan For Details
13. Provide 3' Opening In Fence For FDC
14. Erosion Control Matting Per COC Item 671
15. Stairs,
    See Architecture Plan For Details

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
SITE PLAN C

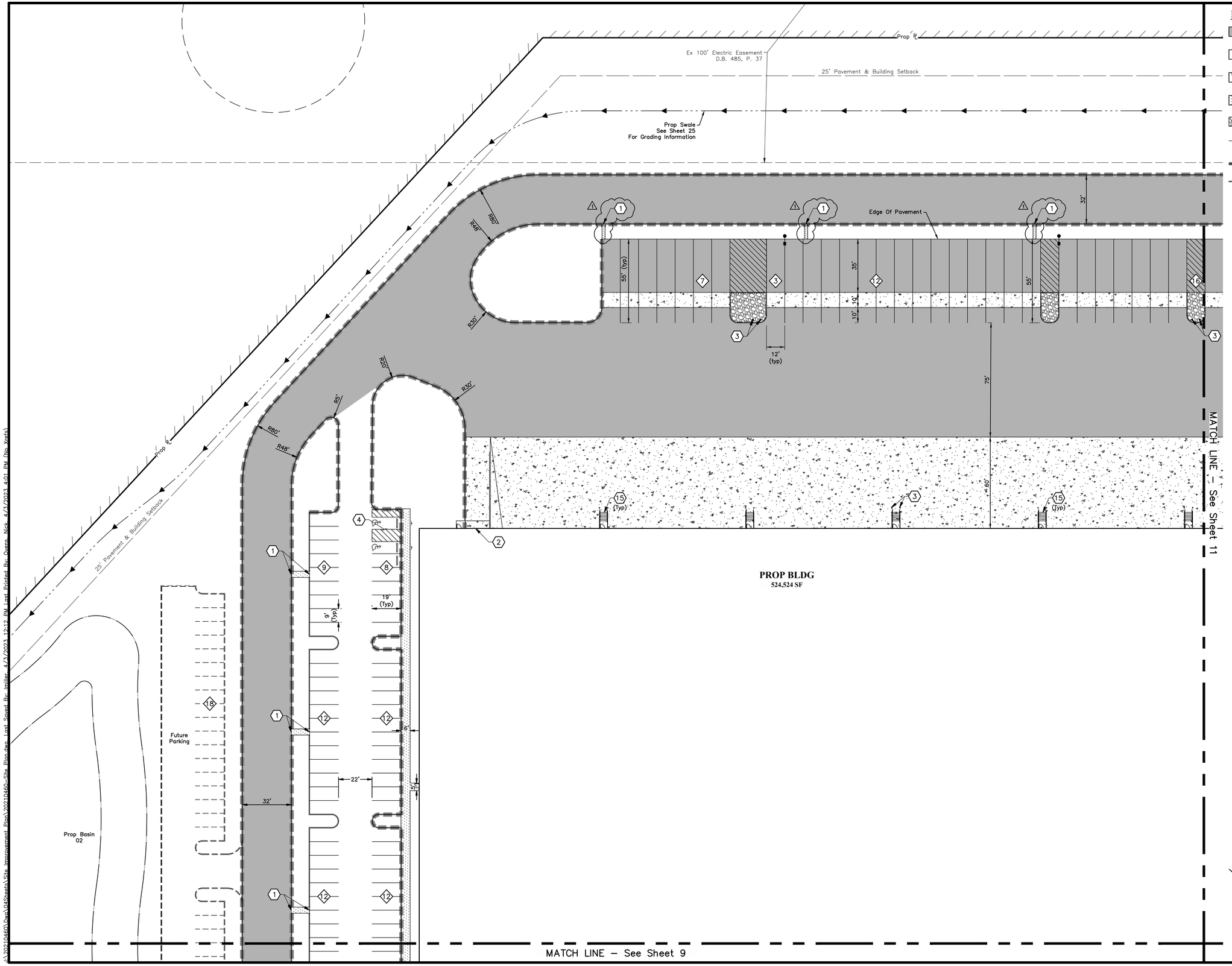
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
11/40



LEGEND

- Heavy Duty Asphalt Pavement — A 4
- Standard Duty Asphalt Pavement — B 4
- Concrete Pavement — C 4
- Concrete Sidewalk — D 4
- Gravel, See Landscape Plan For Details
- Proposed 4 Rail Horse Fence — Q 5
- Proposed 18" Curb — G 4
- Proposed Extruded Curb — K 4
- # Parking Count
- TBV To Be Vacated

NOTES:

All Radii Are 4.5' Unless Otherwise Noted And Measured To Face Of Curb Or Edge Of Pavement

All Curb Shall Be Extruded Curb Unless Otherwise Noted.

All Dimensions Given Are Measured To The Face Of Curb.

All Radius Dimensions Given Are Measured Along The Face Of Curb.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

CODED NOTES:

1. Curb Cut
   See Detail W, Sheet 5
2. Drive–In Door
3. Protective Bollard
   See Detail O, Sheet 4
4. Handicap Parking With Parking Block And Sign.
   See Details L,M,N, Sheet 4
5. 4–Rail Horse Fence
   See Detail Q, Sheet 5
6. Stop Sign
   See Detail R, Sheet 5
7. Stop Bar
8. Curb Ramp Per COC Std Dwg 2319. All Ramps And Landings Within Public Right–Of–Way Shall Be Constructed Using COC 6 Concrete. Detectable Warnings Within Public Right–Of–Way Shall Be Type A And Shall Be Installed Per COC Std. Dwg. 2319. Material Shall Be Pre–Cast Manufactured 4"x8"x2.25" Red Clay Brick.
9. Bike Rack
   See Landscape Plan For Details
10. Monument Sign
    See Architecture Plan For Details
11. Truck Entrance Sign
    See Architecture Plan For Details
12. Relocated Light Pole
    See Electrical Plan For Details
13. Provide 3' Opening In Fence For FDC
14. Erosion Control Matting Per COC Item 671
15. Stairs,
    See Architecture Plan For Details

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
SITE PLAN D

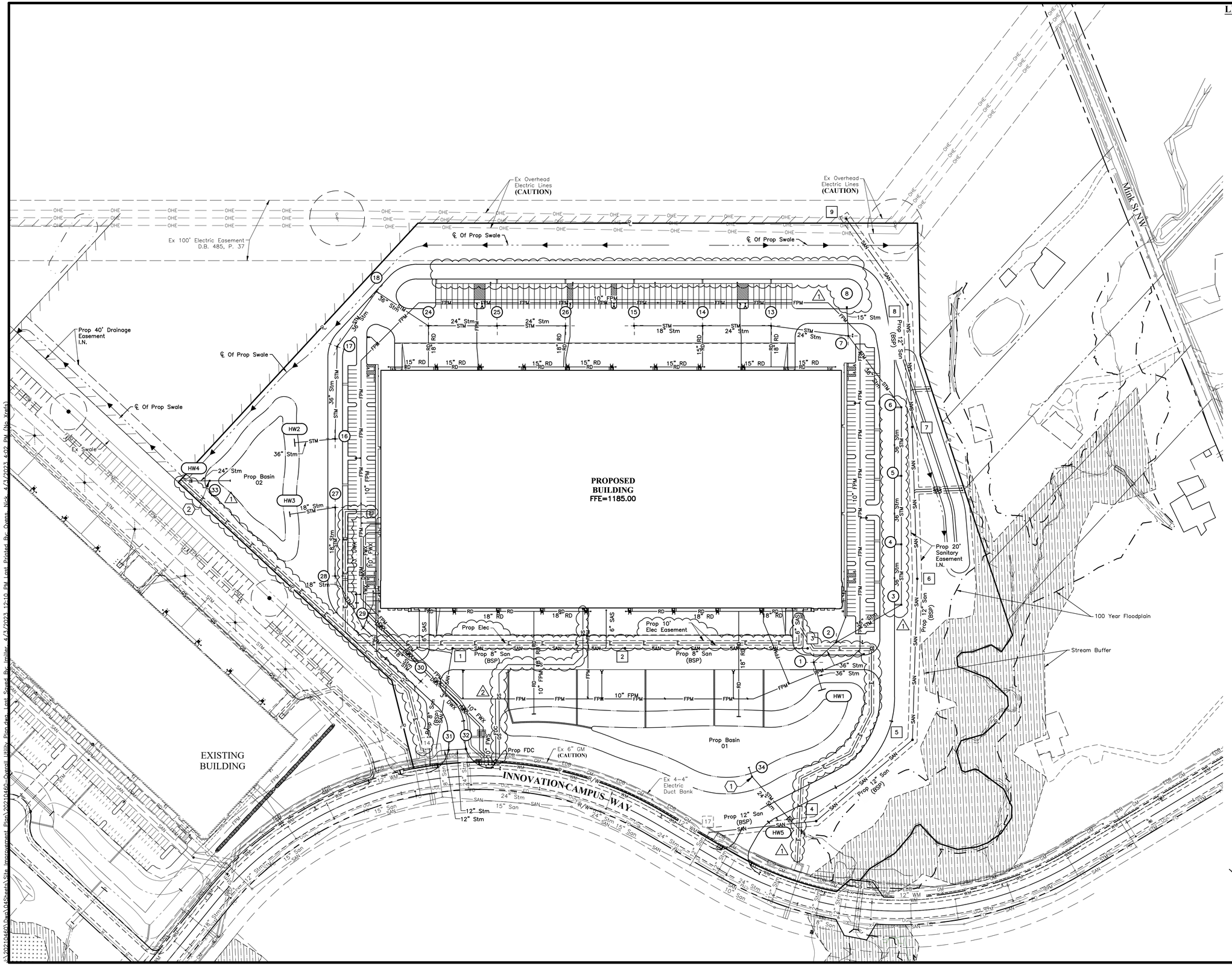
EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
12/40



LEGEND

PROPOSED

- Storm Sewer
- Roof Drain
- Underdrain
- Sanitary Sewer
- Sanitary Service (SAS)
- Public Fire Water Service
- Public Domestic Water Service
- Private Fire Water Service
- Private Domestic Water Service
- Fire Protection Main
- Fire Department Connection
- Gas Service
- Underground Electric
- Catch Basin
- Manhole (Mh)
- Yard Drain
- Cleanout
- Curb & Gutter Inlet
- Fire Hydrant (FH)
- Water Valve
- Fire Deparment connection (FDC)
- Site Light Pole (See MEP Plan)

EXISTING

- Storm Sewer
- Sanitary Sewer
- Water Main
- Lighting Conduit
- Electric Duct Bank
- Overhead Electric Lines
- Fiber Optic Duct Bank
- Utility Duct Bank
- Fire Hydrant
- Manhole
- Water Valve
- Catch Basin
- Light Pole
- Electric Duct Bank Manhole
- Communication Manhole

(BSP) By Separate Plan

(BO) By Others

EP Edge Of Pavement

CODED NOTES:

1. Proposed Outlet Structure, See Sheet 31 For Details
2. Proposed Outlet Structure, See Sheet 32 For Details

NOTES:

All fire service, roof drain, and sanitary service pipe installed within paved areas shall be installed with bedding per Item 912 (Type I only).

Contractor to provide valve box for all valves located below grade.

All private fire hydrants shall be painted red with the 3 outlet caps and top bonnet painted white by the site utility contractor; site utility contractor shall call the Monroe Township Fire Department for inspection. A 24 hour advance notice is required.

All private fire hydrants shall be installed per the C.M.S.C. Section 809 EXCEPT special attention will be given to C.M.S.C. Section 809.02.11, additionally, there shall be two 2-1/2" side outlets.

All private fire hydrants shall use ductile iron pipe from private water system tee thru hydrant control valve and fire hydrant assembly.

All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality pipe or better, maintaining the same gradient as existing. The drain tile and/or storm sewer shall be connected to the curb sub-drain, storm sewer system or provided with an outlet into the roadway ditch as applicable. Replaced drain tile/storm sewer shall be laid on bedding compacted to 98% maximum density.

Contractor shall provide the City of New Albany Engineer's office with a video inspection of Innovation Campus Way prior to construction.

GRAPHIC SCALE

0 50 100 200

1 inch = 100 feet

REVISIONS		
MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
OVERALL UTILITY PLAN

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 100'

JOB NO.
2021-0460

SHEET
13/40

MATCH LINE – See Sheet 17

MATCH LINE – See Sheet 15

PROP BLDG
524,524 SF

Prop Basin 02
See Sheet 32 For Details

HW3

18" Stm

Sta 5+19.07
10" Valve

Sta 4+75.70, 43.50 Rt
10" FPM Building Entry

8" FWX
Building Entry

Sta 4+75.70, 2.00 Rt
10" Valve

Sta 4+75.70
10"x10" Tee

3" DWX
Building Entry

Sta 3+19.71, 12.00 Lt
Fire Hydrant, Type "A"

Sta 3+19.71
10"x6" Anchoring Tee

Sta 3+10.73
45° Bend

4" Canopy Drain

Prop 10'
Elec Esmt

Prop Elec

Prop 6" SAS
Inv=1180.79(N)
Inv=1179.00(S)

Prop 18" RD
Inv=1181.00

Sta 1+47.93, 133.48 Rt
10" FPM Building Entry

18" RD @ 1.0% Min

Prop 18" RD
Inv=1178.40

Sta 33+14.13, 198.99 Rt
10" FPM Building Entry

Prop 6" SAS
Inv=1180.79(N)
Inv=1179.00(S)

Prop 18" RD
Inv=1181.00

6" SAS @ 2.08%

18" RD @ 2.03% min

Prop 10'
Elec Esmt

Prop Elec

Prop 6" San (BSP)

Prop Gas Service

Sta 0+41.16, 45.80 Rt
Fire Hydrant, Type "A"

Sta 32+84.68, 58.99 Rt
Fire Hydrant, Type "A"

Prop Comm
See MEP Plans
For Details

Prop 8" San (BSP)

Sta 35+88.68
10"x6" Anchoring Tee

Sta 0+00.00
45° Bend

Sta 35+17.44
10"x6" Tee

Sta 33+14.13, 2.00 Rt
Monitored Post
Inidicator Valve

Sta 33+14.13
10"x10" Tee

Sta 32+84.68
10"x6" Anchoring Tee

HW7

Prop Basin 01
See Sheet 31 For Details

Prop Hot Box w/
Meter & Backflow
Preventer
See WSP (Sheets
18–20) For Details

Ex 20' Easement
I.N. 201608200203

12" Stm

12" WM

Ex Gas Main

Ex Electric
Duct Bank

Ex Electric/Gas Easement
I.N. 20171200027079

Relocated
Fire Hydrant

0+00 1+00 2+00 3+00 4+00 5+00 25+00 34+00 33+00

NOTES:

All fire service, roof drain, and sanitary service pipe installed within paved areas shall be installed with bedding per Item 912 (Type i only).

Contractor to provide valve box for all valves located below grade.

All private fire hydrants shall be painted red with the 3 outlet caps and top bonnet painted white by the site utility contractor; site utility contractor shall call the Monroe Township Fire Department for inspection. A 24 hour advance notice is required.

All private fire hydrants shall be installed per the C.M.S.C. Section 809 EXCEPT special attention will be given to C.M.S.C. Section 809.02.11. Each fire hydrant shall be acceptable to the City of New Albany with two (2) 2–1/2" side nozzles and one (1) 5" integrated storz fitting in place of pumper nozzle (no add–on fittings) in accordance with New Albany Fire specifications.

All private fire hydrants shall use ductile iron pipe from private water system tee thru hydrant control valve and fire hydrant assembly.

All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality pipe or better, maintaining the same gradient as existing. The drain tile and/or storm sewer shall be connected to the curb sub–drain, storm sewer system or provided with an outlet into the roadway ditch as applicable. Replaced drain tile/storm sewer shall be laid on bedding compacted to 98% maximum density.

Contractor shall provide the City of New Albany Engineer's office with a video inspection of Innovation Campus Way prior to construction.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

LEGEND

PROPOSED

- Storm Sewer
- Roof Drain
- Underdrain
- Sanitary Sewer
- Sanitary Service (SAS)
- Public Fire Water Service
- Public Domestic Water Service
- Private Fire Water Service
- Private Domestic Water Service
- Fire Protection Main
- Fire Department Connection
- Gas Service
- Underground Electric
- Catch Basin
- Manhole (Mh)
- Yard Drain
- Cleanout
- Curb & Gutter Inlet
- Fire Hydrant (FH)
- Water Valve
- Fire Deparment connection (FDC)
- Site Light Pole (See MEP Plan)

EXISTING

- Storm Sewer
- Sanitary Sewer
- Water Main
- Lighting Conduit
- Electric Duct Bank
- Overhead Electric Lines
- Fiber Optic Duct Bank
- Fire Hydrant
- Water Valve
- Light Pole
- Communication Manhole
- Manhole
- Catch Basin
- Electric Duct Bank Manhole

(BO) By Others
(BSP) By Separate Plan
EP Edge Of Pavement

CODED NOTES

1. Private Fire Hydrant w/ Valve See Details V, Sheet 5.
2. Post Indicator Valve
3. Remote Fire Department Connection See Detail T, Sheet 5.
4. Water Service Tap. See WSP 6819 (Sheets 18–19) For Details.
5. 4" Underdrain See Detail S, Sheet 5 for Details.
6. 4" Fingerdrain See Detail P, Sheet 5 for Details.
7. Gas Meter See MEP Plans for Details.
8. 10" Valve
9. 6" Valve
10. Pad Mounted Transformer See Electrical Plan For Details
11. Light Poles See Electrical Plan for Details.
12. Contractor Shall Maintain A 1.5' Minimum Vertical Clearance From Outside Of Pipe To Outside Of Pipe For Utility Crossings Unless Otherwise Noted.
13. 6" RD Inv=1181.00 See Detail X Sheet 5
14. Relocated Light Pole
15. Monitored Post Indicator Valve
16. Existing Storm Manhole To Be Adjusted To Grade And Casting To Be Replaced With AA–S142 Curb & Gutter Inlet Casting
    Ex Rim=1178.43
    Prop Grate=1179.24
    Prop TC=1179.74
17. 6" Storm Connect Fire Riser Drain To Be Connected To 6" Roof Drain
18. Electric Vehicle Charging Station

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
UTILITY PLAN A

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
14/40

MATCH LINE – See Sheet 16

MATCH LINE – See Sheet 14

NOTES:

All fire service, roof drain, and sanitary service pipe installed within paved areas shall be installed with bedding per Item 912 (Type I only).

Contractor to provide valve box for all valves located below grade.

All private fire hydrants shall be painted red with the 3 outlet caps and top bonnet painted white by the site utility contractor; site utility contractor shall call the Monroe Township Fire Department for inspection. A 24 hour advance notice is required.

All private fire hydrants shall be installed per the C.M.S.C. Section 809 EXCEPT special attention will be given to C.M.S.C. Section 809.02.11. Each fire hydrant shall be acceptable to the City of New Albany with two (2) 2–1/2" side nozzles and one (1) 5" integrated storz fitting in place of pumper nozzle (no add–on fittings) in accordance with New Albany Fire specifications.

All private fire hydrants shall use ductile iron pipe from private water system tee thru hydrant control valve and fire hydrant assembly.

All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality pipe or better, maintaining the same gradient as existing. The drain tile and/or storm sewer shall be connected to the curb sub–drain, storm sewer system or provided with an outlet into the roadway ditch as applicable. Replaced drain tile/storm sewer shall be laid on bedding compacted to 98% maximum density.

Contractor shall provide the City of New Albany Engineer's office with a video inspection of Innovation Campus Way prior to construction.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

PROP BLDG
524,524 SF

Prop Electric Esmt
Prop Electric
Prop 8" San (BSP)
18" RD @ 1.0% Min
18" RD @ 2.0% Min
Prop 18" RD Inv=1181.00
Prop 18" RD Inv=1178.53
Sta 28+55.71, 175.11 Rt
10" FPM Building Entry
Prop 6" SAS Inv=1180.79(N) Inv=1179.00(S)
4" Canopy Drain
6" SAS @ 2.08% Min
Sta 24+06.11
10"x6" Anchoring Tee
Sta 24+06.11, 15.00 Lt
Fire Hydrant, Type "A"
Prop Mound
Prop 12" San (BSP)
100-Year Floodplain
Stream Buffer
Prop 20' Sanitary Easement I.N.
Ex Conservation Easement I.N. 201809170019395
Sta 26+93.44
45° Bend
Sta 26+98.78
10"x6" Anchoring Tee
Sta 27+22.72
22.5° Bend
Sta 26+94.72, 13.30 Lt
Fire Hydrant, Type "A"
Sta 29+96.68, 58.99 Rt
Fire Hydrant, Type "A"
Sta 28+68.24, 2.00 Rt
Monitored Post Inidicator Valve
Sta 28+68.24
10"x10" Tee
Sta 29+96.68
10"x6" Anchoring Tee
Sta 29+52.94
22.5° Bend
Sta 29+65.34
Monitored Post Inidicator Valve
Sta 31+46.04
Monitored Post Inidicator Valve
6" FHL
10" FPM
36" Stm
HW1
HW6
Prop Basin 01
See Sheet 31 For Details

LEGEND

PROPOSED

STM	Storm Sewer
RD	Roof Drain
	Underdrain
SAN	Sanitary Sewer
SAS	Sanitary Service (SAS)
FWS	Public Fire Water Service
DWS	Public Domestic Water Service
FWX	Private Fire Water Service
DWX	Private Domestic Water Service
FPM	Fire Protection Main
FDC	Fire Department Connection
GS	Gas Service
E	Underground Electric
Catch Basin	Fire Hydrant (FH)
Manhole (Mh)	Water Valve
Yard Drain	Fire Deparment connection (FDC)
Cleanout	Site Light Pole (See MEP Plan)
Curb & Gutter Inlet	

EXISTING

STM	Storm Sewer
SAN	Sanitary Sewer
WM	Water Main
UGL	Lighting Conduit
E	Electric Duct Bank
OHE	Overhead Electric Lines
FO	Fiber Optic Duct Bank
Fire Hydrant	Manhole
Water Valve	Catch Basin
Light Pole	Electric Duct Bank Manhole
Communication Manhole	

(BO) By Others
(BSP) By Separate Plan
EP Edge Of Pavement

CODED NOTES

1. Private Fire Hydrant w/ Valve See Details V, Sheet 5.
2. Post Indicator Valve
3. Remote Fire Department Connection See Detail T, Sheet 5.
4. Water Service Tap. See WSP 6819 (Sheets 18–19) For Details.
5. 4" Underdrain See Detail S, Sheet 5 for Details.
6. 4" Fingerdrain See Detail P, Sheet 5 for Details.
7. Gas Meter See MEP Plans for Details.
8. 10" Valve
9. 6" Valve
10. Pad Mounted Transformer See Electrical Plan For Details
11. Light Poles See Electrical Plan for Details.
12. Contractor Shall Maintain A 1.5' Minimum Vertical Clearance From Outside Of Pipe To Outside Of Pipe For Utility Crossings Unless Otherwise Noted.
13. 6" RD Inv=1181.00 See Detail X Sheet 5
14. Relocated Light Pole
15. Monitored Post Indicator Valve
16. Existing Storm Manhole To Be Adjusted To Grade And Casting To Be Replaced With AA–S142 Curb & Gutter Inlet Casting Ex Rim=1178.43 Prop Grate=1179.24 Prop TC=1179.74
17. 6" Storm Connect Fire Riser Drain To Be Connected To 6" Roof Drain
18. Electric Vehicle Charging Station

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/15/23	Revision 1
2	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
UTILITY PLAN B

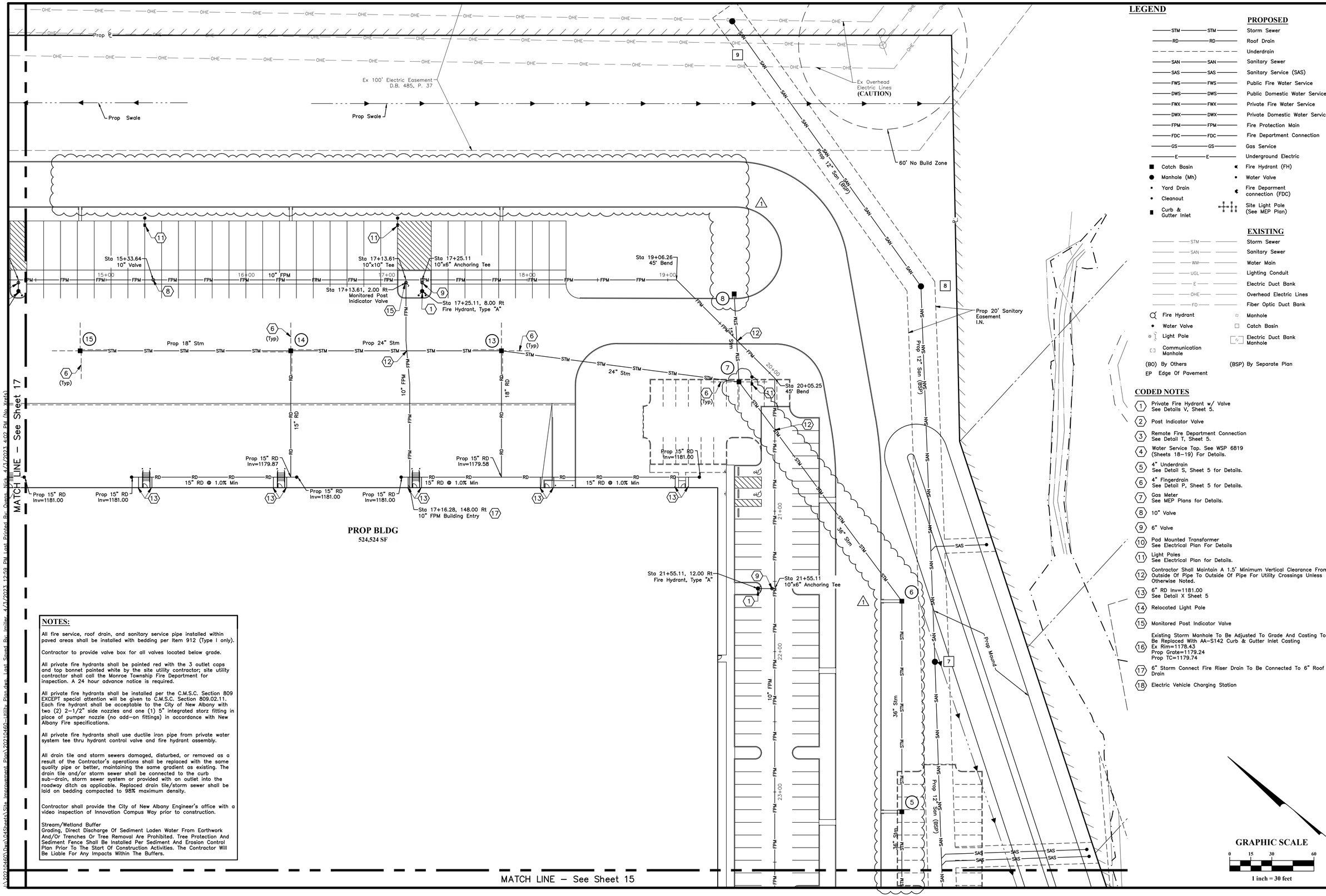
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
15/40



LEGEND

PROPOSED

- Storm Sewer
- Roof Drain
- Underdrain
- Sanitary Sewer
- Sanitary Service (SAS)
- Public Fire Water Service
- Public Domestic Water Service
- Private Fire Water Service
- Private Domestic Water Service
- Fire Protection Main
- Fire Department Connection
- Gas Service
- Underground Electric
- Catch Basin
- Fire Hydrant (FH)
- Manhole (Mh)
- Water Valve
- Yard Drain
- Fire Deparment connection (FDC)
- Cleanout
- Site Light Pole (See MEP Plan)
- Curb & Gutter Inlet

EXISTING

- Storm Sewer
- Sanitary Sewer
- Water Main
- Lighting Conduit
- Electric Duct Bank
- Overhead Electric Lines
- Fiber Optic Duct Bank
- Fire Hydrant
- Manhole
- Water Valve
- Catch Basin
- Light Pole
- Electric Duct Bank Manhole
- Communication Manhole

(BO) By Others
(BSP) By Separate Plan
EP Edge Of Pavement

CODED NOTES

1. Private Fire Hydrant w/ Valve See Details V, Sheet 5.
2. Post Indicator Valve
3. Remote Fire Department Connection See Detail T, Sheet 5.
4. Water Service Tap. See WSP 6819 (Sheets 18-19) For Details.
5. 4" Underdrain See Detail S, Sheet 5 for Details.
6. 4" Fingerdrain See Detail P, Sheet 5 for Details.
7. Gas Meter See MEP Plans for Details.
8. 10" Valve
9. 6" Valve
10. Pad Mounted Transformer See Electrical Plan For Details
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13. 6" RD Inv=1181.00 See Detail X Sheet 5
14. Relocated Light Pole
15. Monitored Post Indicator Valve
16. Existing Storm Manhole To Be Adjusted To Grade And Casting To Be Replaced With AA-S142 Curb & Gutter Inlet Casting
    Ex Rim=1178.43
    Prop Grate=1179.24
    Prop TC=1179.74
17. 6" Storm Connect Fire Riser Drain To Be Connected To 6" Roof Drain
18. Electric Vehicle Charging Station

NOTES:

All fire service, roof drain, and sanitary service pipe installed within paved areas shall be installed with bedding per Item 912 (Type I only).

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GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/15/23	Revision 1
2	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
UTILITY PLAN C

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers Surveyors Planners
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
16/40

Prop ℄

Ex 100' Electric Easement D.B. 485, P. 37

Prop ℄

Ex Overhead Electric Lines **(CAUTION)**

Prop Swale

Sta 10+10.24 45° Bend

Sta 11+37.61 10"x10" Tee

Sta 11+49.11 10"x6" Anchoring Tee

Sta 13+41.61 10"x10" Tee

Sta 14+37.61 10"x10" Tee

Sta 11+37.61, 2.00 Rt Monitored Post Inidicator Valve

Sta 11+49.11, 8.00 Rt Fire Hydrant, Type "A"

Sta 13+41.61, 2.00 Rt Monitored Post Inidicator Valve

Sta 14+37.61, 8.00 Rt Fire Hydrant, Type "A"

Sta 8+78.35, 25.10 Lt Fire Hydrant, Type "A"

Sta 8+83.40 10"x6" Anchoring Tee

Sta 8+31.86 45° Bend

Sta 6+17.88 10"x6" Anchoring Tee

Sta 6+17.88, 12.00 Lt Fire Hydrant, Type "A"

Prop 15" RD Inv=1181.00

Prop 15" RD Inv=1179.80

Prop 15" RD Inv=1181.00

Prop 15" RD Inv=1181.00

Prop 15" RD Inv=1179.89

Sta 11+40.28, 148.00 Rt 10" FPM Building Entry

Sta 13+32.28, 148.00 Rt 10" FPM Building Entry

15" RD @ 1.0% Min

24" Stm

36" Stm

10" FPM

6" FPM

18" RD

PROP BLDG
524,524 SF

Prop Basin 02
See Sheet 32 For Details

HW2

MATCH LINE – See Sheet 16

MATCH LINE – See Sheet 14

LEGEND

PROPOSED

STM	Storm Sewer
RD	Roof Drain
	Underdrain
SAN	Sanitary Sewer
SAS	Sanitary Service (SAS)
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- Catch Basin
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- Site Light Pole (See MEP Plan)

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STM	Storm Sewer
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(BSP) By Separate Plan
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GRAPHIC SCALE
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1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
UTILITY PLAN D

EMHT
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Engineers • Surveyors • Planners
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
17/40

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE WATER SERVICE PLAN
FOR
NEW ALBANY 525 BUILDING
2022

BENCH MARKS
(NAVD 1988)

BM#90 Chiseled square on the south corner of a concrete light pole base, located east of Innovation Campus Way and being the seventh light pole west of the intersection of Innovation Campus Way and Mink Street.
N: 760419.8718 E: 1905563.6443 Elev. = 1178.97

BM#91 Chiseled square on the south corner of a concrete light pole base, located east of Innovation Campus Way and being the fourth light pole west of the intersection of Innovation Campus Way and Mink Street.
N: 759555.0367 E: 1905894.3184 Elev. = 1172.44

BM#92 Chiseled square on the southeast corner of a concrete light pole base, located north of Innovation Campus Way and being the second light pole west of the intersection of Innovation Campus Way and Mink Street.
N: 759231.5868 E: 1906380.5514 Elev. = 1177.31

BM#68 Railroad spike in the north side of a wooden utility pole being the first utility pole east of the intersection of Beaver Road and Mink Street, On the south side of Beaver Road.
N: 759918.8500 E: 1907408.0155 Elev. = 1185.01

HORIZONTAL REFERENCE POINTS (OHIO SOUTH ZONE)*

POINT	DESCRIPTION	NORTHING	EASTING
▲ #68	1157 IRSw/cap	759287.1507	1906989.3440
▲ #97	1157 IRSw/cap	760097.1161	1906981.2430
▲ #98	1157 IRSw/cap	760070.2048	1907117.4980
▲ #293	1157 IRSw/cap	760036.5689	1905720.3080

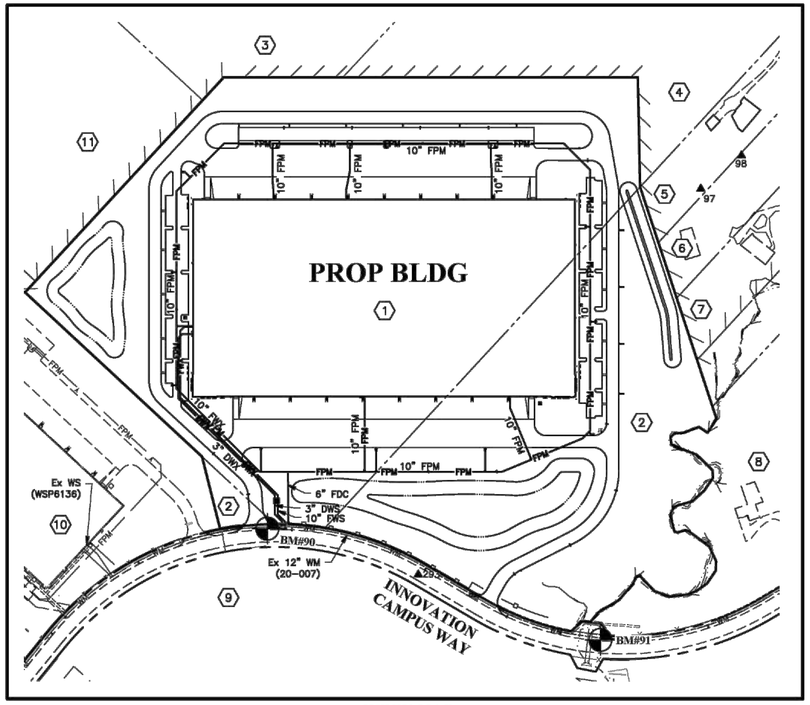
* Horizontal reference datum = NAD 83 (1986 adj)
(See Index Map for reference point locations)

VERTICAL DATUM

The Vertical Datum is based on the elevations established by the Franklin County Engineering Department, at monument A14RESET being 1019.434 feet in elevation, at monument A16 being 1071.594 feet in elevation, at monument D2RESET, being 1078.946 feet in elevation, at monument D8RESET, being 1089.268 feet in elevation, at monument FCGS1213, being 1077.648 feet in elevation, at monument FCGS6612, being 1072.592 feet in elevation, at monument NA-8, being 1078.899 feet in elevation, at monument NA-9, being 1070.241 feet in elevation, and at monument Z46 being 1071.678 feet in elevation. The said elevations were transferred from said Franklin County Engineering Department monuments using static GPS procedures (03 GEOID) and differential leveling to the site. The said monuments being source bench marks with elevations that are based on the North American Vertical Datum of 1988.

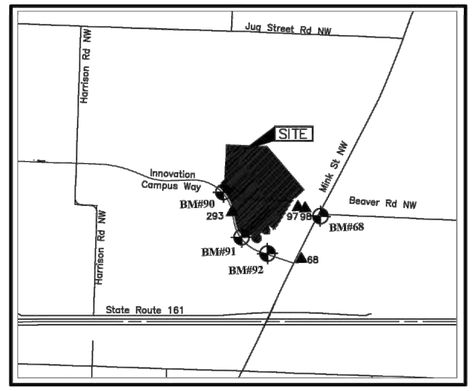
HORIZONTAL DATUM

The coordinates shown on this map are based on the Ohio State Plane Coordinate System, South Zone, NAD 83 (1986). Said coordinates originated from a field traverse which was tied (referenced) to said coordinate system by field traverse through point numbers 18, 19, 21, 22, 23, and 32 from Sight Survey file White\S6725trv.zak, by field traverse through point numbers 101, 102, 103, 104, 105, 106, 107, 111, 501, 502, 503, 504, 505, 506, 507, 508, 509, and 510 from Sight Survey file White\19991507.zak.



INDEX MAP
Scale: 1" = 200'

GRAPHIC SCALE
0 100 200 400
1 inch = 200 feet



LOCATION MAP
Not to Scale

OWNERSHIP LEGEND

1. COI NEW ALBANY 525 LLC
APN: 095-112080-02.001
9850 INNOVATION CAMPUS WAY
27.49 AC
2. COI NEW ALBANY 525 LLC
APN: 093-107490-00.002
9850 INNOVATION CAMPUS WAY
14.78 AC
3. MBJ HOLDINGS, LLC
APN: 037-112188-00.001
2275 MINK ST NW
21.07 AC
4. MBJ HOLDINGS, LLC
APN: 037-112188-00.003
2275 MINK ST NW
21.07 AC
5. STETZIK THOMAS & PAVANA
APN: 035-107490-03.002
2001 MINK ST NW
1.94 AC
6. HOWELL PAMELA S
APN: 035-107490-03.003
MINK ST NW
1.97 AC
7. HOWELL RONALD LEE & PAMELA SUE
APN: 035-107490-03.001
1921 MINK ST NW
2.23 AC
8. MBJ HOLDINGS, LLC
APN: 093-107478-00.002
1825 MINK ST NW
10.82 AC
9. SCANNEL PROPERTIES #538, LLC
APN: 093-107490-00.001
INNOVATION CAMPUS WAY
33.05 AC
10. 9750 INNOVATION CAMPUS WAY LLC
APN: 093-106422-00.002 9750
INNOVATION CAMPUS WAY 21.34 AC
11. MBJ HOLDINGS, LLC
APN: 037-112080-02.000
12455 JUG STREET
21.63 AC

SHEET INDEX

Title Sheet	1
Water Service Plan & Profile	2
Water Service Details	3

DEVELOPER/OWNER
VanTrust
Pete Gray
950 Goodale Boulevard, Suite 100
Columbus, OH 43212
Tel: (614) 745-0610
Email: pete.gray@vantrustre.com

ENGINEER
EMHT Inc.
Amy Nagy
5500 New Albany Road
Columbus, Ohio 43054
Tel: (614) 775-4376
Email: anagy@emht.com

OHIO811.org Before You Dig

STANDARD CONSTRUCTION DRAWINGS

The Standard Drawings listed on these plans shall be considered a part thereof:

City of Columbus

L-6306	L-6312	L-6640
L-6309	L-6316	L-9002G
L-6310	L-6317A&B	
L-6311	L-6637	

TRANSFER RESTRICTION

The Two Parcels Cannot Be Combined Due To A School District Boundary. A Transfer Restriction Restricting The Two Parcels To Never Be Sold Under Separate Ownership Has Been Recorded With The Licking County Recorder's Office, Instrument Numbers 202206080014301 & 202205050011272.

EASEMENT REFERENCE	REVISIONS

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
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STATE OF OHIO — AMY MARIE NAGY — E-77298 — REGISTERED ENGINEER — PROFESSIONAL ENGINEER
E-77298 NO. 3/15/2022 DATE

APPROVED FOR
GENERAL ARRANGEMENTS ONLY
DIVISION OF WATER
CITY OF COLUMBUS

ge 6/27/2022

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
PID: 095-112080-02.001
PID: 093-107490-00.002
WATER SERVICE TITLE SHEET

WSP 6819

SHEET: 1 / 3

J:\20210460\Dwg\04Sheets\Site_Improvement_Plan\20210460-Water_Service_Plan.dwg, Last Saved By: rowers, 6/24/2022 8:14 AM Last Printed By: Owens, Nick, 6/24/2022 9:15 AM (No Hreds)

2

CITY OF COLUMBUS WATER SERVICE PLAN NOTES

NO WATER SERVICE CONSTRUCTION, BEFORE OR AFTER THE WATER METER(S), SHALL BEGIN PRIOR TO FEE PAYMENT TO THE UTILITY PERMITS OFFICE AT 111 N. FRONT STREET (614-645-7330).

THE CITY OF COLUMBUS, CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMSC), 2018 EDITION AND ALL REVISIONS, INCLUDING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN THIS IMPROVEMENT, UNLESS OTHERWISE NOTED.

ALL WATER LINE MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT APPROVED MATERIALS LIST AND RULES AND REGULATIONS OF THE CITY OF COLUMBUS, DIVISION OF WATER, UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE CITY OF COLUMBUS DIVISION OF WATER. ONLY PRODUCTS LISTED ON THE CURRENT APPROVED MATERIALS LIST WILL BE PERMITTED TO BE INSTALLED.

IT SHALL BE UNLAWFUL FOR ANY PERSON TO PERFORM ANY WORK ON THE PUBLIC WATER DISTRIBUTION SYSTEM WITHOUT FIRST SECURING A LICENSE TO ENGAGE IN SUCH WORK, AS INDICATED IN COLUMBUS CITY CODE SECTIONS 1103.02 AND 1103.06. THIS WORK INCLUDES ANY ATTACHMENTS, ADDITIONS TO OR ALTERATIONS IN ANY CITY SERVICE PIPE OR APPURTENANCES (INCLUDING WATER SERVICE LINES AND WATER SERVICE TAPS). THIS REQUIREMENT MAY BE MET BY UTILIZATION OF A SUBCONTRACTOR WHO POSSESSES A CITY OF COLUMBUS WATER CONTRACTOR LICENSE OR A COMBINED WATER/SEWER CONTRACTOR LICENSE TO PERFORM THIS WORK. UTILIZATION OF A SUBCONTRACTOR MUST MEET THE LICENSING REQUIREMENTS OF CITY OF COLUMBUS BUILDING CODE, IN PARTICULAR SECTIONS 4114.119 AND 4114.529.

FOR ANY EMERGENCIES THAT OCCUR AFTER NORMAL WORKING HOURS INVOLVING THE WATER DISTRIBUTION SYSTEM, PLEASE CONTACT THE DIVISION OF WATER DISTRIBUTION MAINTENANCE OFFICE AT 614-645-7788.

SITE UTILITY CONTRACTOR SHALL OBTAIN A RIGHT OF WAY PERMIT PRIOR TO THE START OF ANY WATER SERVICE LINE AND/OR WATER SERVICE TAP INSTALLATION OR ANY PLACEMENT OF WATER SERVICE MATERIALS INTO THE PUBLIC RIGHT OF WAY.

THERE SHALL BE A 10 FOOT MINIMUM HORIZONTAL AND 18 INCH VERTICAL SEPARATION BETWEEN WATER SERVICE TAP(S), WATER SERVICE LINE(S), PRIVATE WATER SYSTEMS AND ANY SANITARY AND/OR STORM SEWER SYSTEMS.

EXISTING RIGHT OF WAY LINE(S), PROPOSED RIGHT OF WAY LINE(S) AND/OR WATER MAIN EASEMENT LINES SHALL BE STAKED AT 10 FOOT INCREMENTS BY A STATE OF OHIO LICENSED SURVEYOR WHEN THE WATER SERVICE TAP(S) AND/OR WATER SERVICE(S) ARE INSTALLED AND INSPECTED BY THE COLUMBUS DIVISION OF WATER.

ALL INSPECTIONS REQUIRE A 24 HOUR ADVANCE NOTICE.

SITE UTILITY CONTRACTOR SHALL FLUSH ALL WATER SERVICES PRIOR TO ANY WATER METER INSTALLATION. THE CITY OF COLUMBUS IS NOT RESPONSIBLE FOR ANY CITY WATER METER DAMAGE CAUSED BY NON-FLUSHING.

SITE UTILITY CONTRACTOR SHALL CALL COLUMBUS DIVISION OF WATER AT 614-645-7330 FOR INSPECTION AND HYDROSTATIC TEST OF 3" AND LARGER WATER SERVICE TAPS FROM THE WATER MAIN THRU THE CONTROL VALVE AND WATER SERVICES FROM THE CONTROL VALVE THRU THE WATER METER SETTING. HYDROSTATIC TEST SHALL BE PER CMSC ITEM 801.14 AND SHALL BE PERFORMED FROM THE WATER MAIN THRU THE WATER METER SETTING.

ALL 3" THRU 12" WATER SERVICE PIPE SHALL BE ONLY DUCTILE IRON FROM THE CITY WATER MAIN THRU THE CITY WATER METER SETTING(S) INCLUDING THE METER BYPASS.

ALL EXPOSED WATER MAIN AND ALL WATER SERVICE PIPE 3" AND LARGER SHALL BE POLYWRAPPED PER CMSC ITEM 801.03 TO A POINT 10 FOOT BEYOND THE RIGHT OF WAY VALVE(S).

3" AND LARGER METER SETTING(S) SHALL BE PER COLUMBUS DIVISION OF WATER STANDARD DETAIL DRAWINGS L-6317 A-E.

2" AND LARGER METERS SHALL BE PURCHASED AT THE UTILITY PERMITS OFFICE AT 111 N. FRONT STREET AND PICKED UP AT UTILITY METERING SERVICES AT 3568 INDIANOLA AVENUE.

BACKFLOW PREVENTION ASSEMBLY(S) SHALL BE INSTALLED, WHERE REQUIRED, PER COLUMBUS DIVISION OF WATER STANDARD DETAIL DRAWINGS L-9002 A THRU G. CONTRACTOR(S) SHALL CALL 614-645-6674 WITH BACKFLOW PREVENTION QUESTIONS. CONTRACTOR(S) SHALL CALL 614-645-5781 TO SCHEDULE BACKFLOW PREVENTION INSPECTION REQUESTS.

DOMESTIC WATER SERVICE BACKFLOW PREVENTER(S) SHALL MEET THE ASSE #1013 APPROVAL/STANDARD AND SHALL BE SIZED TO MATCH THE CITY WATER METER.

THE FIRE WATER SERVICE BACKFLOW PREVENTER(S) SHALL MEET THE APPROPRIATE ASSE APPROVAL/STANDARD AND SHALL BE EQUIPPED WITH A DETECTOR METER THAT IS ITRON 100W (TOWER) OR 100R (REMOTE) COMPATIBLE, MEASURES IN CUBIC FEET AND MEETS THE AWWA C-700 STANDARD. FIRE WATER BACKFLOW PREVENTER(S) SHALL BE SIZED TO MATCH THE FIRE WATER SERVICE SIZE AND EQUIPPED WITH O.S.&Y. VALVES.

IF DOMESTIC AND/OR FIRE WATER SERVICE METER(S) AND THEIR BACKFLOW PREVENTER(S) ARE TO BE LOCATED IN A METER ROOM INSIDE A BUILDING, THERE WILL BE A WALL OR CEILING MOUNTED GAS OR ELECTRIC THERMOSTATICALLY OPERATED HEATER. THE HEATER SHALL BE SIZED PER THE HEATER MANUFACTURER SPECS TO MAINTAIN A 40 DEGREE FAHRENHEIT INSIDE TEMPERATURE AT AN OUTSIDE TEMPERATURE OF MINUS 30 DEGREE FAHRENHEIT.

BACKFLOW PREVENTION DEVICES MUST BE TESTED AT THE TIME OF INSTALLATION BY A TESTER APPROVED BY THE DIVISION OF WATER BACKFLOW COMPLIANCE OFFICE. A COMPLETE LIST OF APPROVED TESTERS CAN BE FOUND AT WWW.COLUMBUS.GOV/BACKFLOW/CONSUMERS. RESULTS MUST BE SUBMITTED THROUGH THE ONLINE WEB SUBMITTAL SYSTEM AT WWW.COLUMBUS.TOKAYTEST.COM.

UNDERGROUND PRIVATE WATER SYSTEM(S) BEYOND METER(S)

SITE UTILITY CONTRACTOR SHALL CALL CITY OF NEW ALBANY FOR INSPECTION OF UNDERGROUND PRIVATE DOMESTIC AND/OR FIRE WATER SYSTEM(S) AFTER THE CITY WATER METER(S). THIS WILL INCLUDE DOMESTIC WATER LOOPS AND FIRE WATER LOOPS INCLUDING PRIVATE FIRE HYDRANTS THRU THE SITE BEFORE COVERING.

SITE UTILITY CONTRACTOR SHALL CALL CITY OF NEW ALBANY FOR FLUSHING AND/OR PRESSURE TEST INSPECTION OF PRIVATE FIRE SYSTEM AFTER THE CITY FIRE WATER SERVICE METER AND BACKFLOW PREVENTER.

4" AND LARGER PIPE MATERIAL FOR THE UNDERGROUND PRIVATE WATER SYSTEM AFTER THE CITY WATER METER SHALL BE DUCTILE IRON, C-900 OR C-909 PIPE ONLY TO A POINT 5' OUTSIDE THE BUILDING FOOTPRINT.

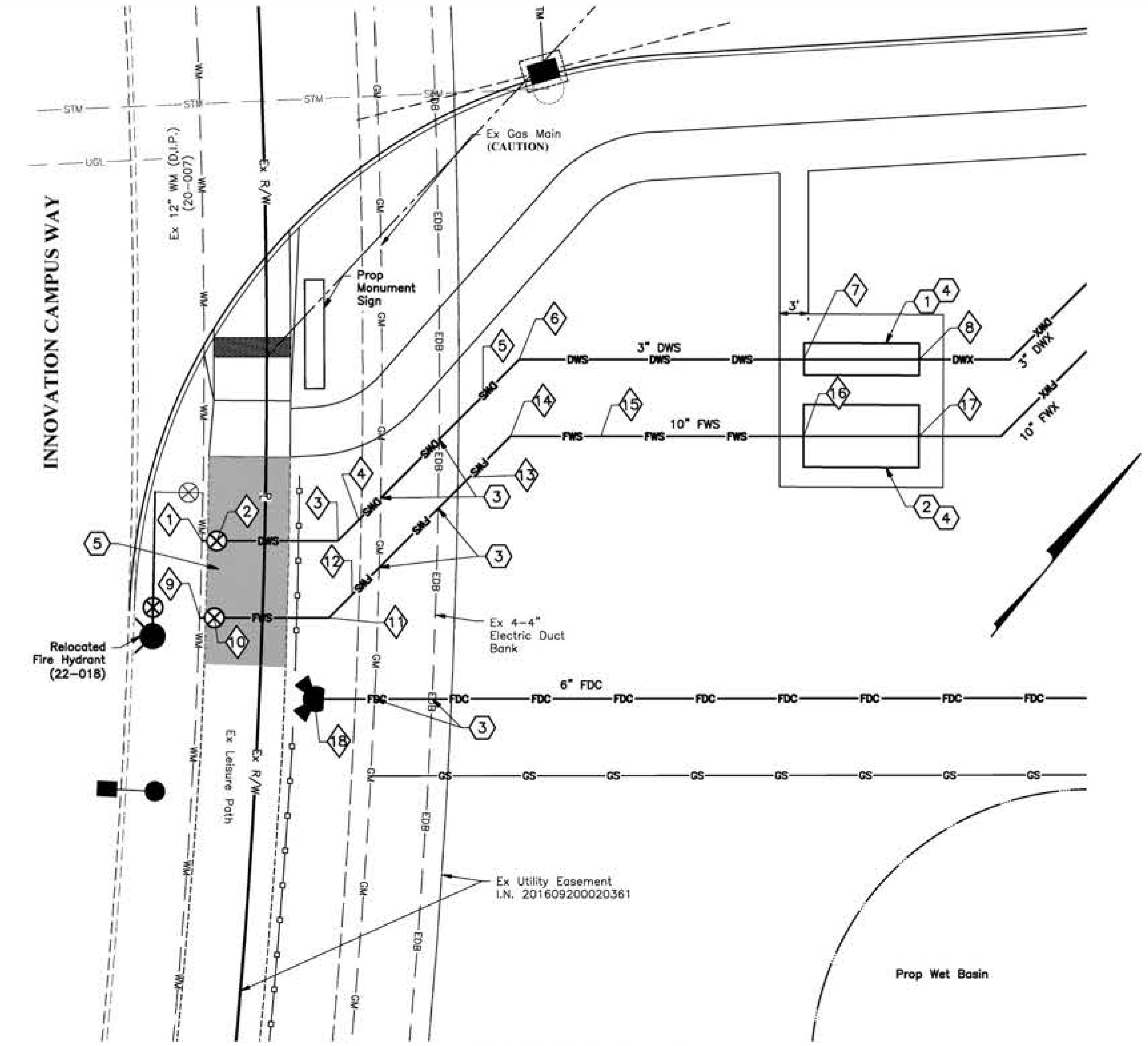
3" PIPE MATERIAL FOR THE UNDERGROUND PRIVATE WATER SYSTEM AFTER CITY WATER METER SHALL BE DUCTILE IRON OR SDR-21 PIPE ONLY TO A POINT 5' OUTSIDE THE BUILDING FOOTPRINT.

SURVEY COORDINATE TABLE

REF	ITEM	NORTHING	EASTING
1	12"x3" Tapping Sleeve	760393.06	1905591.99
2	3" Valve	760394.02	1905593.16
3	3" 45° Horizontal & 45° Vertical Bend	760402.01	1905602.92
4	3" 45° Vertical Bend	760405.06	1905603.23
5	3" 45° Vertical Bend	760423.27	1905605.04
6	3" 45° Horizontal & 45° Vertical Bend	760428.56	1905605.56
7	3" Heated Enclosure Entry	760447.35	1905628.49
8	3" Heated Enclosure Exit	760454.95	1905637.77
9	12"x10" Tapping Sleeve	760386.72	1905596.88
10	10" Valve	760387.67	1905598.04
11	10" 45° Horizontal & 45° Vertical Bend	760395.23	1905607.27
12	10" 45° Horizontal Bend	760398.62	1905607.61
13	10" 22.5° Vertical Bend	760415.83	1905609.32
14	10" 45° Horizontal Bend	760421.79	1905609.91
15	10" 22.5° Vertical Bend	760427.76	1905617.20
16	10" Heated Enclosure Entry	760441.14	1905633.53
17	10" Heated Enclosure Exit	760448.74	1905642.82
18	Fire Department Connection	760387.82	1905611.57

CODED NOTES:

1. Proposed Safe-T-Cover Model 800DS-AL Or Approved Equal With 3" ASSE #1013 Approved Backflow Preventer Per COC Std. Dwg. L-9002G. Enclosure Shall Meet ASSE #1060 Class 1 Approval. Color To Be Determined By The Property Owner. Concrete Slab To Be Increased 24" Over The Manufacturer's Specifications. Access Doors Shall Face The Site Driveway. See Sheet 3 For Additional Details.
2. Proposed Safe-T-Cover Model 1000T-AL Or Approved Equal With 10" ASSE #1048 Approved Backflow Preventer Per COC Std. Dwg. L-9002G. Enclosure Shall Meet ASSE #1060 Class 1 Approval. Color To Be Determined By The Property Owner. Concrete Slab To Be Increased 24" Over The Manufacturer's Specifications. Access Doors Shall Face The Site Driveway. See Sheet 3 For Additional Details.
3. Existing Utilities Shall Be Potholed Prior To Start Of Construction. Contractor Shall Notify Engineer Of Any Necessary Modifications With Appropriate Time To Make Any Necessary Revisions
4. Contractor Shall Provide Combination Padlocks For Enclosure Access Doors And Provide Combination To The Division Of Water
5. Path Replacement Per Detail U, See Sheet 5 Of The Site Improvement Plan



WATER SERVICE PLAN DETAIL
Scale: 1" = 10'

LEGEND

EXISTING

- STM — Storm Sewer
- SAN — Sanitary Sewer
- WM — Water Main
- UGL — Lighting Conduit
- E — Electric Duct Bank
- OHE — Overhead Electric Lines
- FO — Fiber Optic Duct Bank
- UDB — Utility Duct Bank
- Fire Hydrant
- Water Valve
- Light Pole
- Communication Manhole
- Manhole
- Catch Basin
- Electric Duct Bank Manhole

PROPOSED

- STM — Storm Sewer
- Underdrain
- FWS — Public Fire Water Service
- DWS — Public Domestic Water Service
- FWX — Private Fire Water Service
- DWX — Private Domestic Water Service
- FDC — Fire Department Connection
- Catch Basin
- Manhole (Mh)
- Yard Drain
- Cleanout
- Curb & Gutter Inlet
- Fire Hydrant (FH)
- Water Valve
- Fire Deparment connection (FDC)
- Site Light Pole (See MEP Plan)
- (BSP) By Separate Plan
- (BO) By Others

NOTES:

All Private Fire Hydrants shown include 6" Valve with Standard Valve Boxes unless otherwise noted.

All Valves include Standard Valve Boxes unless otherwise noted.

10' Typical Separation (Out-to-Out) Between DWS and FWS

Private Fire Hydrants Shall be used for Fire protection only.

Private Fire Hydrant Maintenance shall be the property owner's responsibility.

All streets in this development are privately owned and maintained, and located within the City of New Albany.

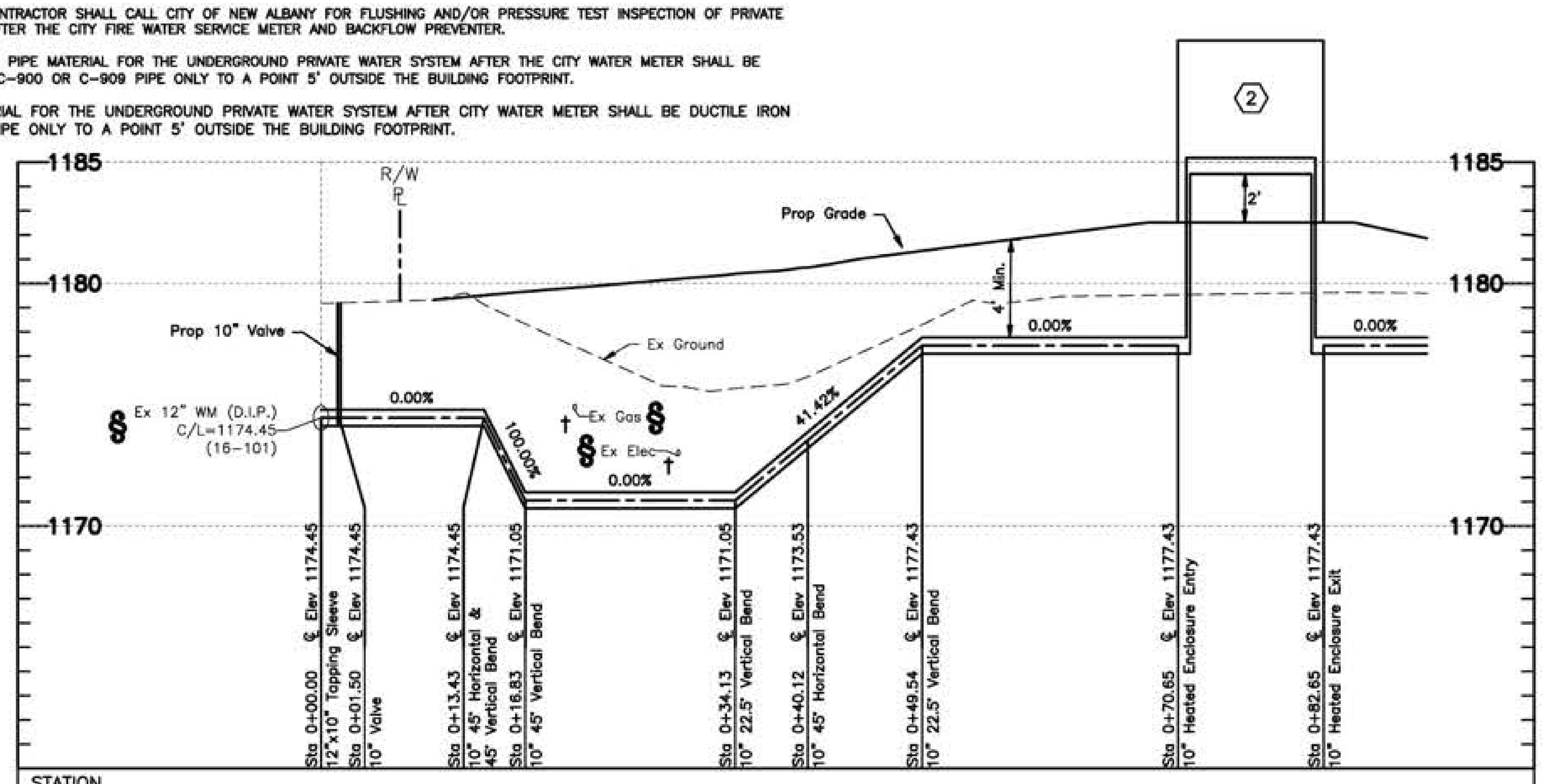
Water stationing based on ℄ Domestic Water System (DWS).

All private fire hydrants to be set 2'-0" from back of curb.

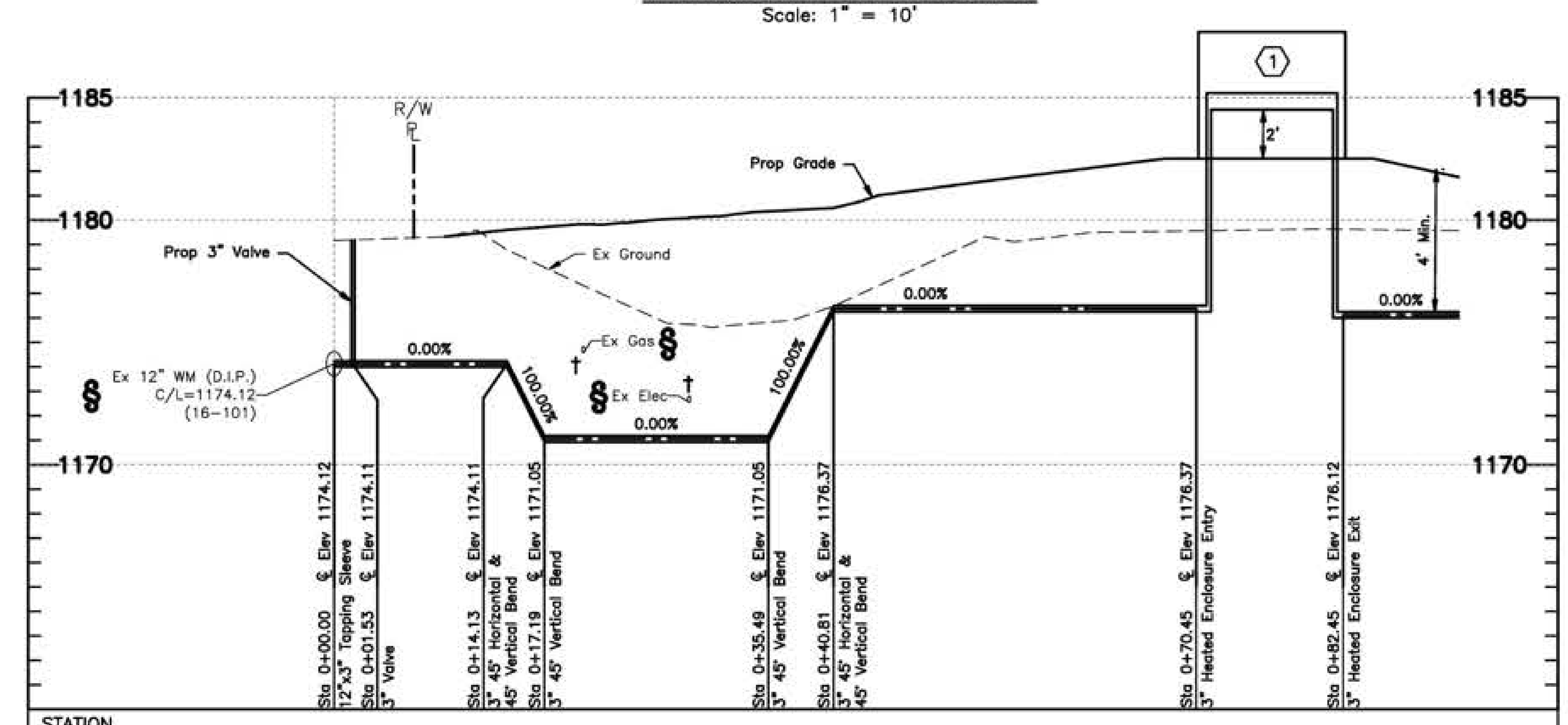
DWS	Domestic Water Service Before Meter
DWX	Domestic Water Service After Meter
FWS	Fire Water Service Before Meter
FWX	Fire Water Service After Meter
PFH	Private Fire Hydrant
FDC	Fire Department Connection
FPM	Fire Protection Main
	All Backfill within Right-Of-Way shall Be CDF.
†	Water Service and Water line to be lowered a minimum of 1.5' below storm sewer/underdrain in case of conflict. See COC Std Detail L-7401.
§	Contractor to verify elevation and location of existing utility before construction.

HORIZ 1 inch = 10 Feet: 0, 5, 10, 20

VERT 1 inch = 5 Feet: 0, 2.5, 5, 10



FIRE WATER SERVICE PROFILE
Scale: H: 1" = 10'
V: 1"=5'



DOMESTIC WATER SERVICE PROFILE
Scale: H: 1" = 10'
V: 1"=5'

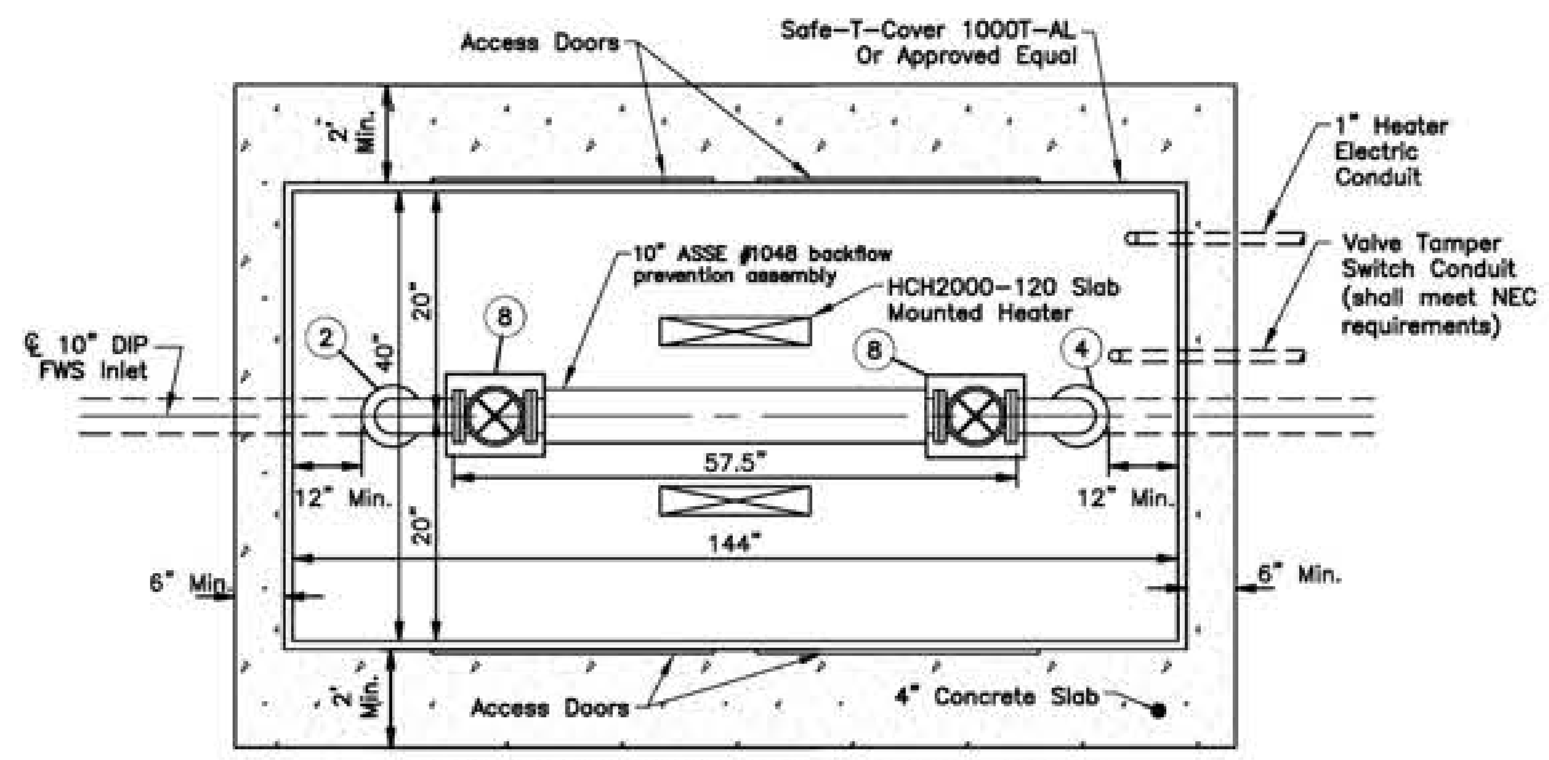
EASEMENT REFERENCE	REVISIONS

PRIVATE WATER SERVICE PLAN

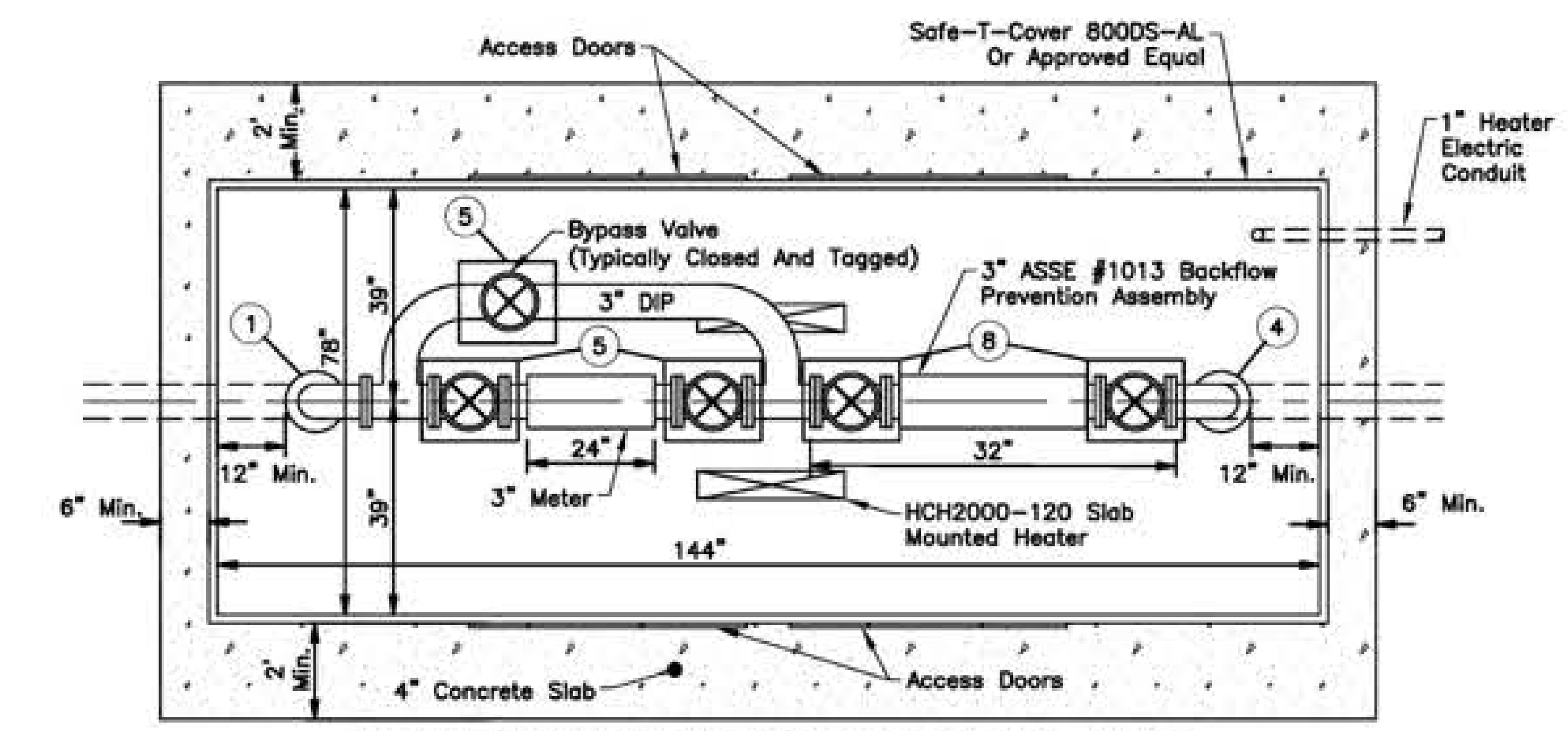
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
PID: 095-112080-02.001
PID: 093-107490-00.002
WATER SERVICE PLAN AND PROFILE

WSP 6819

SHEET: 2 / 3



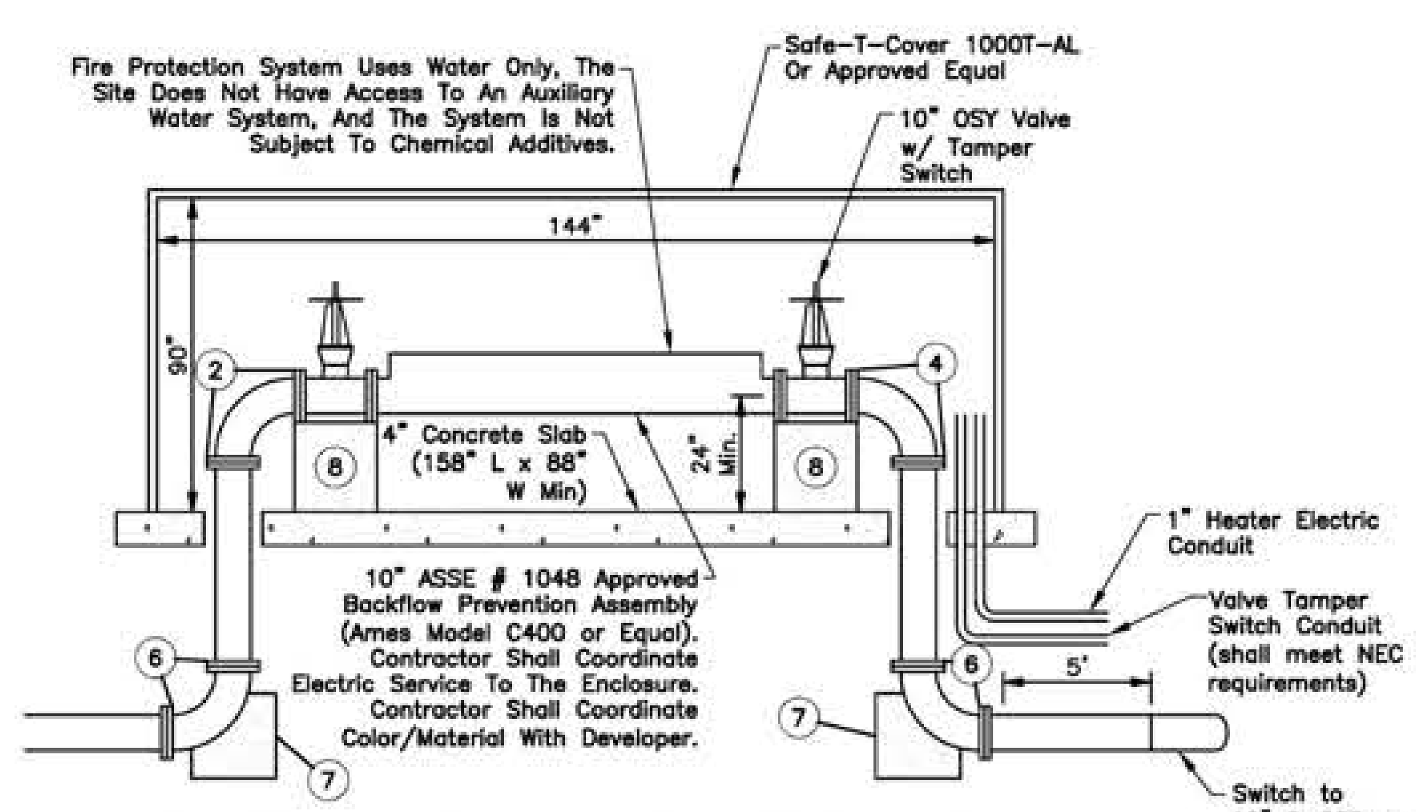
HEATED ENCLOSURE (FIRE) DETAIL - PLAN
Not to Scale



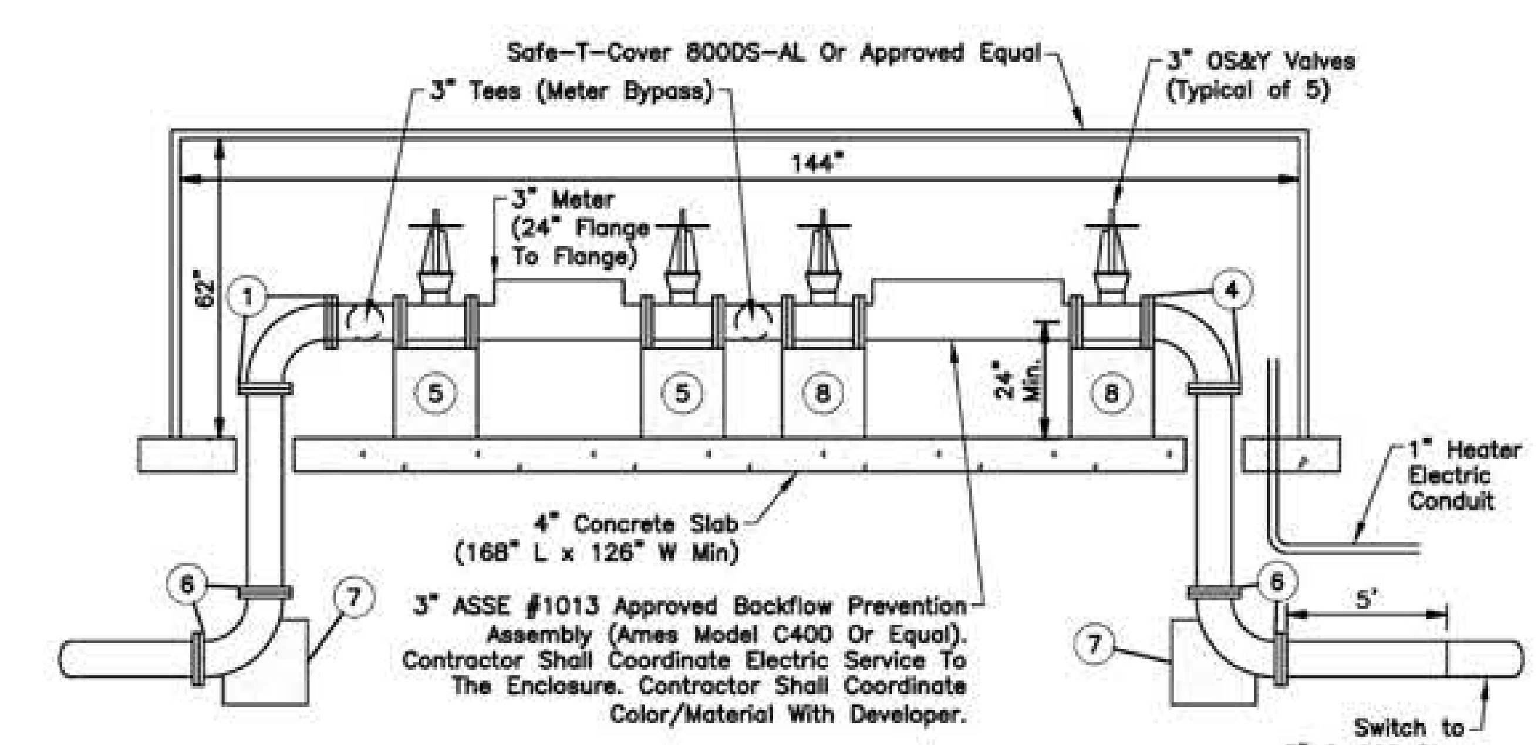
HEATED ENCLOSURE (DOMESTIC) DETAIL - PLAN
Not to Scale

CODED NOTES:

1. Service Inlet With Fixed Flanges Per L-6317C (dated 5/17/21)
2. Service Inlet With Fixed Flanges Per L-9002G (dated 5/20/21)
3. Service Outlet With Fixed Flanges Per L-6317C (dated 5/17/21)
4. Service Outlet With Fixed Flanges Per L-9002G (dated 5/20/21)
5. Concrete Valve Supports Per L-6317C (dated 5/17/21)
6. Mechanical Joint Wedge Action Restraining Gland Per L-9002G (dated 5/20/21)
7. Concrete Blocking Per L-9002G (dated 5/20/21)
8. Concrete Valve Supports Per L-9002G (dated 5/20/21)

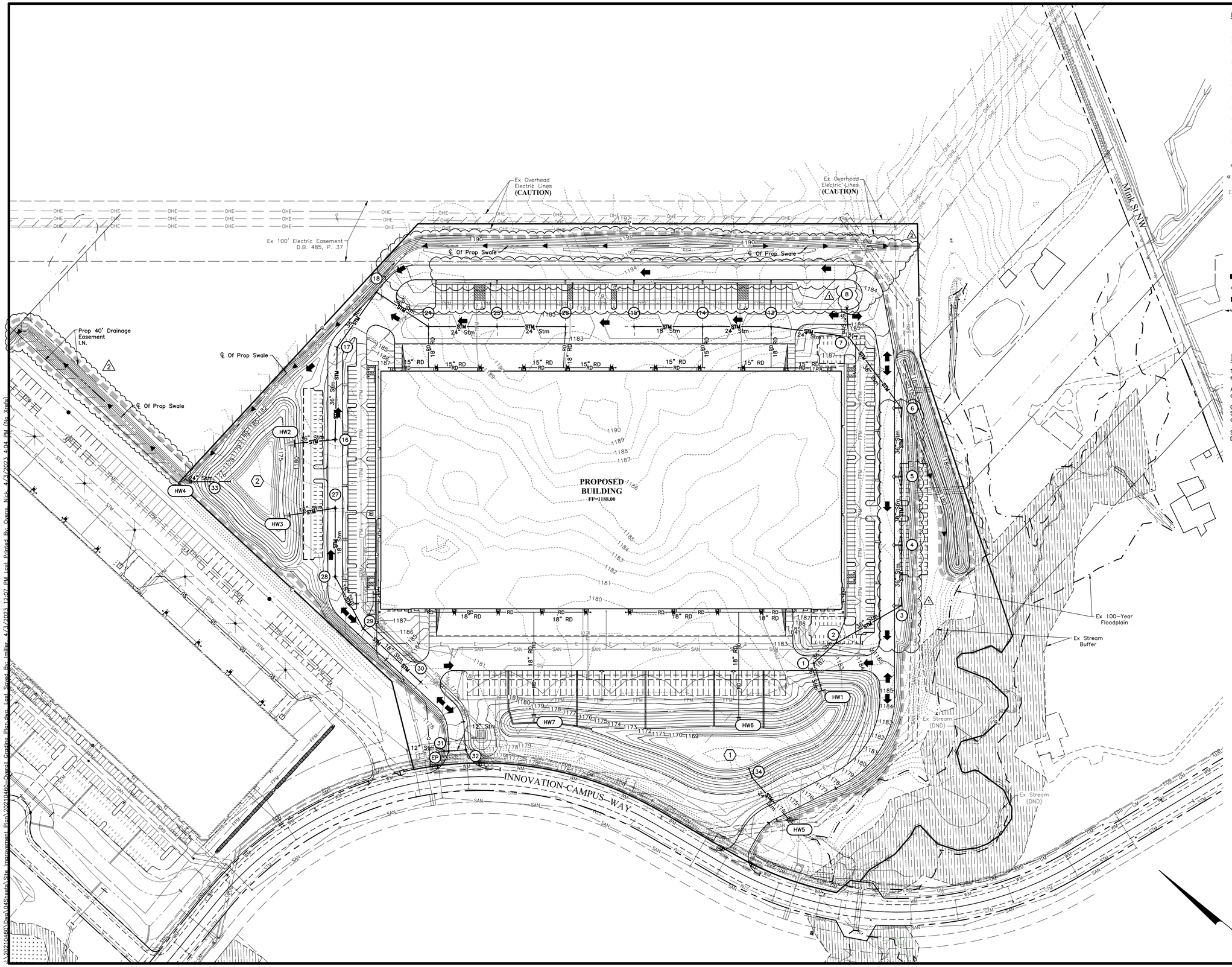


HEATED ENCLOSURE (FIRE) DETAIL - PROFILE
Not to Scale



HEATED ENCLOSURE (DOMESTIC) DETAIL - PROFILE
Not to Scale

EASEMENT REFERENCE	REVISIONS				
			PRIVATE WATER SERVICE PLAN	**NEW ALBANY 525 BUILDING** 9850 INNOVATION CAMPUS WAY PID: 095-112080-02.001 PID: 093-107490-00.002 WATER SERVICE DETAILS	WSP 6819 SHEET: 3 / 3



LEGEND

EXISTING

- Contours
- Storm Sewer
- Sanitary Sewer
- Water Main
- Electric Duct Bank
- Overhead Electric Line
- Underground Electric Line
- Telecomm Duct Bank
- Gas Main
- Lighting Conduit
- Fire Hydrant
- Water Valve
- Light Pole
- Communication Manhole
- Manhole
- Catch Basin
- Curb Inlet
- Electric Duct Bank Manhole

PROPOSED

- Contours
- Storm Sewer
- Roof Drain
- Underdrain
- Limits Of Disturbance
- Catch Basin
- Yard Drain
- Curb & Gutter Inlet
- Flow Routes
- Manhole (MH)
- Cleanout
- Major Flood Routing
- 23.80 Spot Elevation

NOTES:

To obtain elevations on the NAVD, add 1100.00 to all spot elevations 0.00 to 99.99.

All spot elevations represent top of pavement or sidewalk, unless otherwise noted.

Contractor is responsible for repairing any damage to Existing Storm Sewer facilities, including catch basins, which may occur during construction.

See Sheet 33-34 for Sediment & Erosion Control Plan and Details

CODED NOTES

1. Prop Wet Basin 01
   Top = 1178.50
   Bottom = 1168.50
   NP = 1172.50
   100-Year WSE = 1176.52
   See Sheet 31 for Details.
2. Prop Wet Basin 02
   Top = 1181.00
   Bottom = 1171.00
   NP = 1176.00
   100-Year WSE = 1179.88
   See Sheet 32 for Details.

NOTES:

All fire service, roof drain, and sanitary service pipe installed within paved areas shall be installed with Item 912 (Type I only).

All drain tile and storm sewers damaged, disturbed, or removed as a result of the Contractor's operations shall be replaced with the same quality pipe or better, maintaining the same gradient as existing. The drain tile and/or storm sewer shall be connected to the curb sub-drain, storm sewer system or provided with an outlet into the roadway ditch as applicable. Replaced drain tile/storm sewer shall be laid on bedding compacted to 98% maximum density.

Contractor shall provide the City of New Albany Engineer's office with a video inspection of Innovation Campus Way prior to construction.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

GRAPHIC SCALE

0 50 100 200

1 inch = 100 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
OVERALL GRADING PLAN

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 100'

JOB NO.
2021-0460

SHEET
21/40

MATCH LINE – See Sheet 25

MATCH LINE – See Sheet 23

PROPOSED BUILDING
FF=1188.00

See Grading Detail G, Sheet 27

See Grading Detail C, Sheet 26

See Grading Detail A, Sheet 26

HW3

HW7

INNOVATION CAMPUS WAY

PROPOSED

- Contours
- Storm Sewer
- Roof Drain
- Underdrain
- Limits Of Disturbance
- Catch Basin
- Manhole (MH)
- Yard Drain
- Cleanout
- Curb & Gutter Inlet
- Major Flood Routing
- Flow Routes
- Spot Elevation

EXISTING

- Contours
- Storm Sewer
- Lighting Conduit
- Light Pole
- Catch Basin

(BSP) By Separate Plan

(BO) By Others

EP Edge Of Pavement

CODED NOTES

1. Prop Basin 01
   Top = 1078.50
   Bottom = 1168.50
   NP = 1172.50
   100-Year WSE = 1176.52
   See Sheet 31 for Details.
2. Prop Basin 02
   Top = 1181.00
   Bottom = 1171.00
   NP = 1176.00
   100-Year WSE = 1179.88
   See Sheet 32 for Details.

NOTES:

All Spot Grades Represent Face of Curb Or Top of Pavement Unless Otherwise Noted.

To Obtain Proposed Elevations on USGS NAVD88 Datum, Add 1100 to All Elevations Between 0.00 and 99.99. Elevations Shown Represent Final Pavement Elevations.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
GRADING PLAN A

EMH&T
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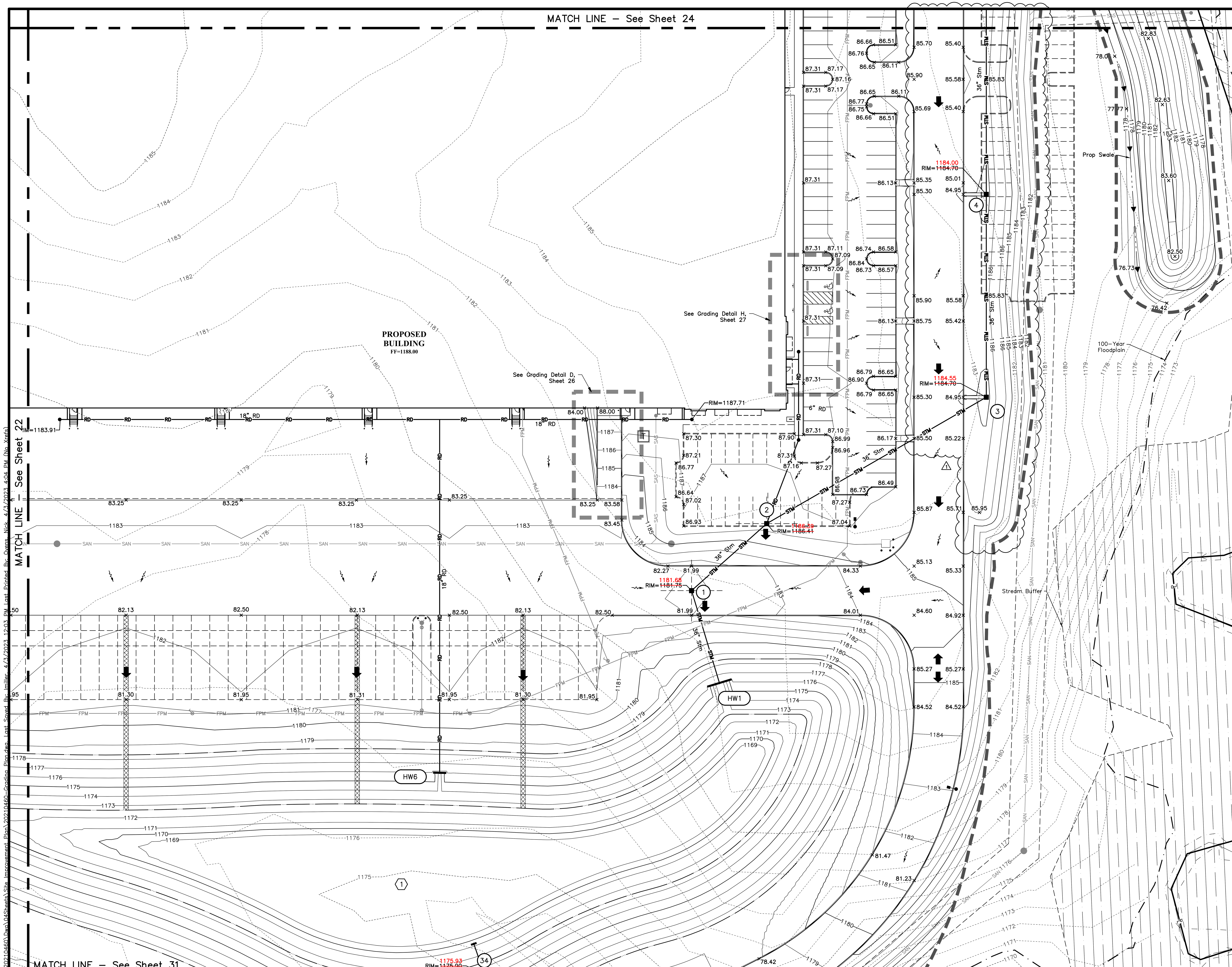
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
22/40



PROPOSED

- Contours
- Storm Sewer
- Roof Drain
- Underdrain
- Limits Of Disturbance
- Catch Basin
- Manhole (MH)
- Yard Drain
- Cleanout
- Curb & Gutter Inlet
- Major Flood Routing
- Flow Routes
- 23.80 Spot Elevation

EXISTING

- Contours
- Storm Sewer
- Lighting Conduit
- Light Pole
- Catch Basin

(BSP) By Separate Plan

(BO) By Others

EP Edge Of Pavement

CODED NOTES

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   See Sheet 32 for Details.

NOTES:

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GRAPHIC SCALE

0 15 30 60

1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY

GRADING PLAN B

EMHT
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Engineers • Surveyors • Planners • Scientists
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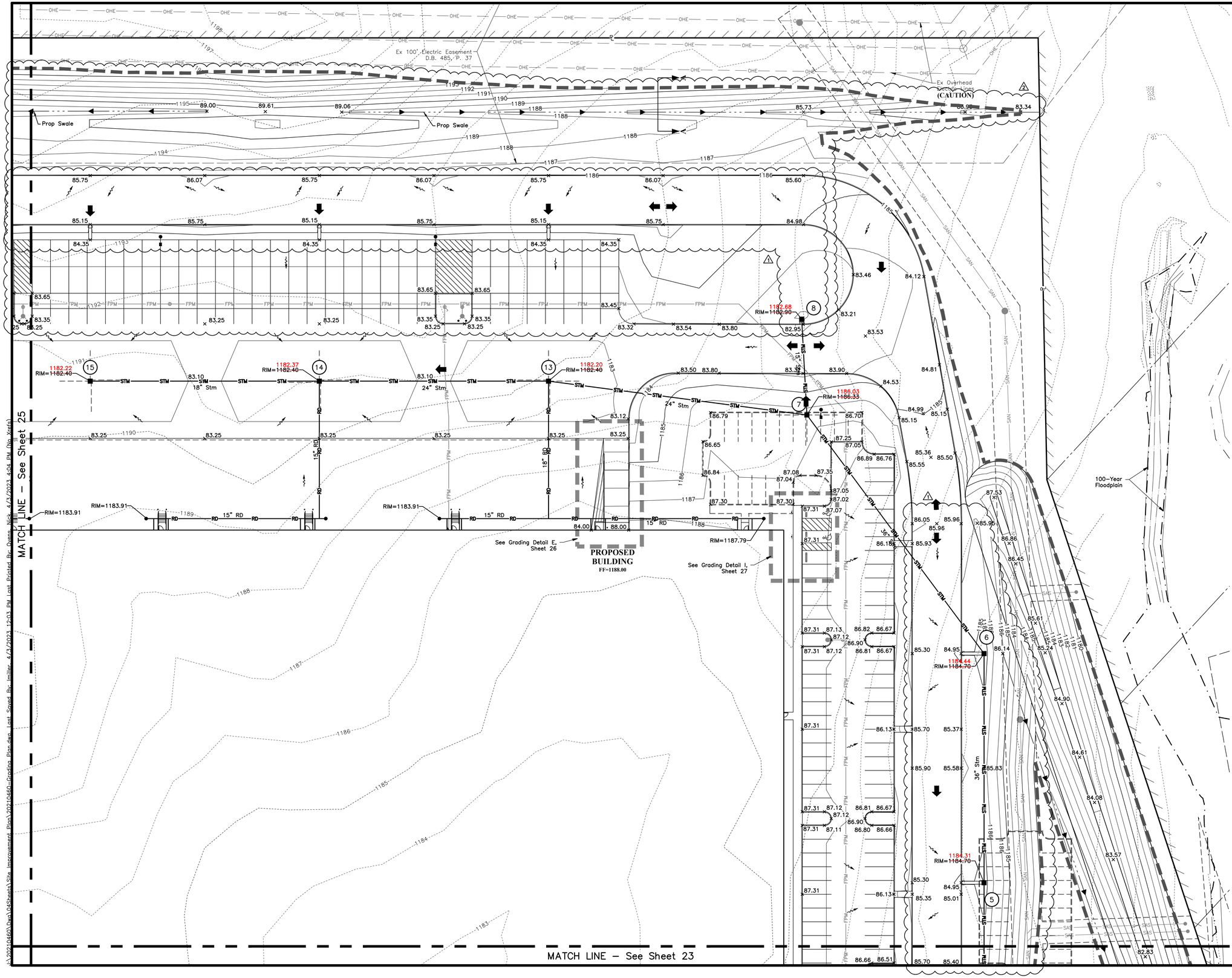
emht.com

DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
23/40



PROPOSED

- Contours
- Storm Sewer
- Roof Drain
- Underdrain
- Limits Of Disturbance
- Catch Basin
- Yard Drain
- Curb & Gutter Inlet
- Flow Routes
- Manhole (MH)
- Cleanout
- Major Flood Routing
- Spot Elevation

EXISTING

- Contours
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(BSP) By Separate Plan

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2. Prop Basin 02
   Top = 1181.00
   Bottom = 1171.00
   NP = 1176.00
   100-Year WSE = 1179.88
   See Sheet 32 for Details.

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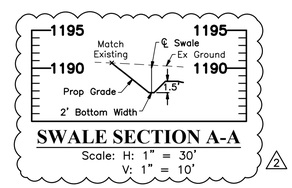

SWALE SECTION A-A
Scale: H: 1" = 30'
V: 1" = 10'

SWALE STATISTICS:

Tributary Area:	1.25 ac.
100-Year Flow:	3.54 cfs
100-Year Velocity:	2.38 ft/s
100-Year Max Depth:	0.45'

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/5/22	Revision 1
2	7/19/22	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
GRADING PLAN C

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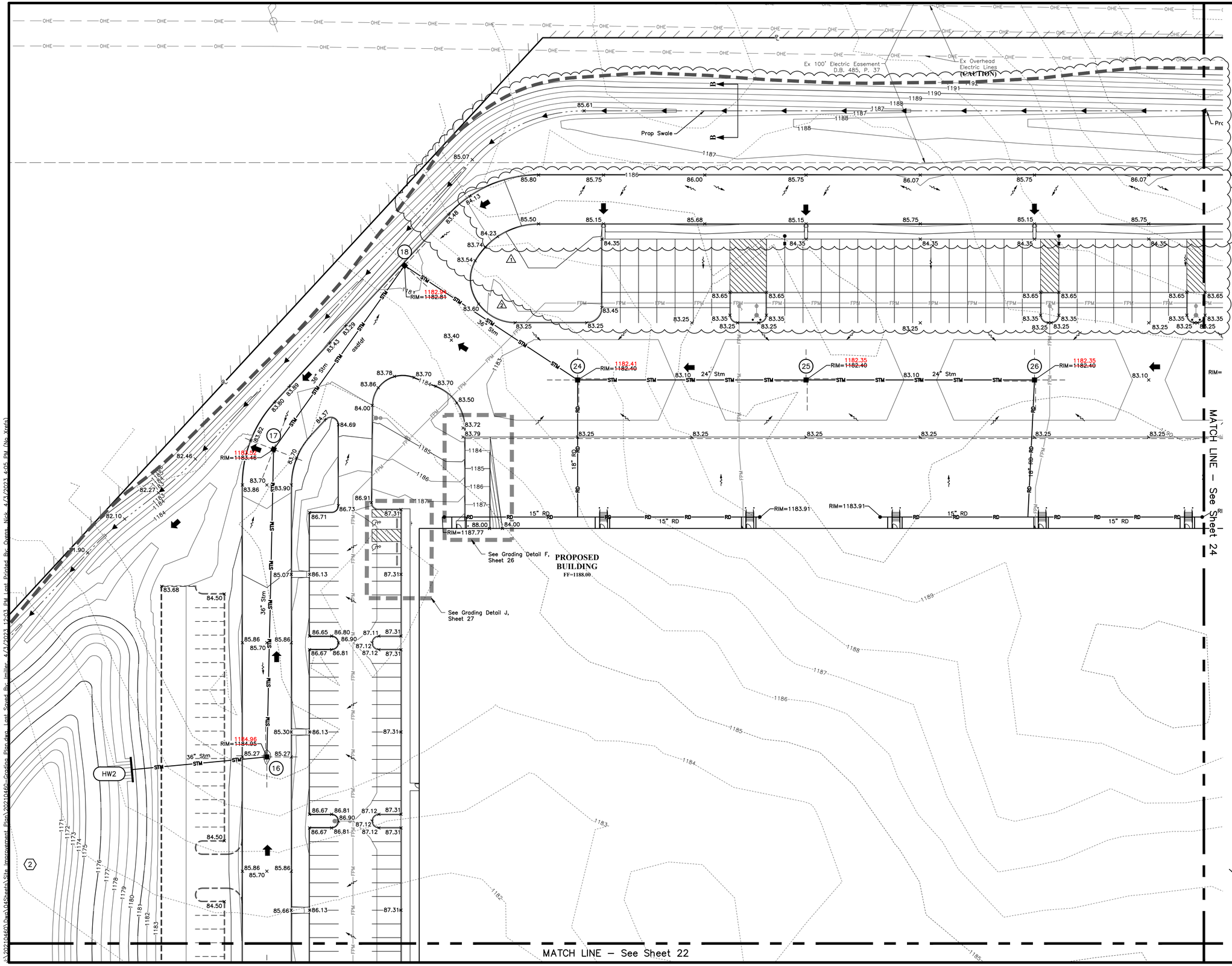
DATE
January 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
24/40



PROPOSED

- Contours
- Storm Sewer
- Roof Drain
- Underdrain
- Limits Of Disturbance
- Catch Basin
- Manhole (MH)
- Yard Drain
- Cleanout
- Curb & Gutter Inlet
- Major Flood Routing
- Flow Routes
- Spot Elevation

EXISTING

- Contours
- Storm Sewer
- Lighting Conduit
- Light Pole
- Catch Basin

(BSP) By Separate Plan

(BO) By Others

EP Edge Of Pavement

CODED NOTES

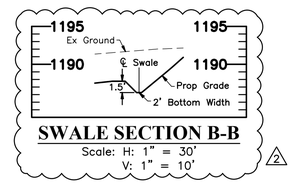
1. Prop Basin 01
   Top = 1078.50
   Bottom = 1168.50
   NP = 1172.50
   100-Year WSE = 1176.52
   See Sheet 31 for Details.
2. Prop Basin 02
   Top = 1181.00
   Bottom = 1171.00
   NP = 1176.00
   100-Year WSE = 1179.88
   See Sheet 32 for Details.

NOTES:

All Spot Grades Represent Face of Curb Or Top of Pavement Unless Otherwise Noted.

To Obtain Proposed Elevations on USGS NAVD88 Datum, Add 1100 to All Elevations Between 0.00 and 99.99. Elevations Shown Represent Final Pavement Elevations.

Stream/Wetland Buffer
Grading, Direct Discharge Of Sediment Laden Water From Earthwork And/Or Trenches Or Tree Removal Are Prohibited. Tree Protection And Sediment Fence Shall Be Installed Per Sediment And Erosion Control Plan Prior To The Start Of Construction Activities. The Contractor Will Be Liable For Any Impacts Within The Buffers.



SWALE SECTION B-B

Scale: H: 1" = 30'
V: 1" = 10'

2

SWALE STATISTICS:

Tributary Area:	2.46 ac.
100-Year Flow:	6.96 cfs
100-Year Velocity:	2.36 ft/s
100-Year Max Depth:	0.72'

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/22	Revision 1
2	7/19/22	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
GRADING PLAN D

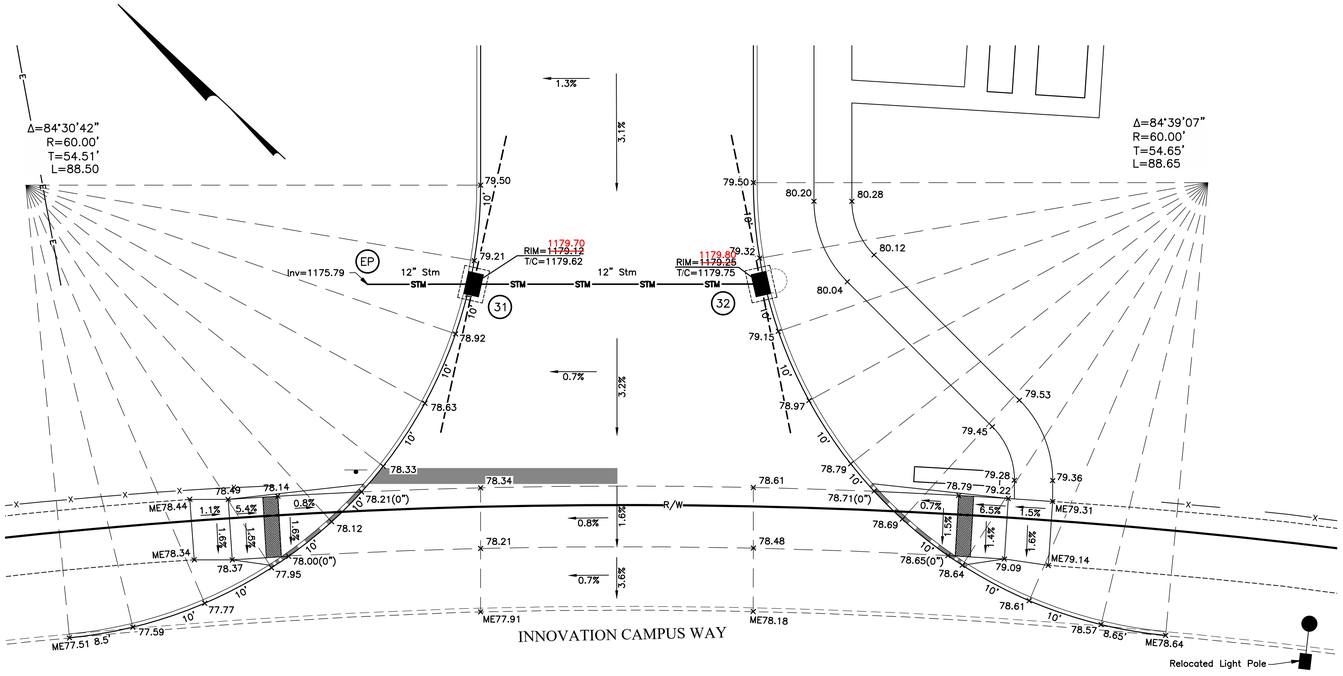
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

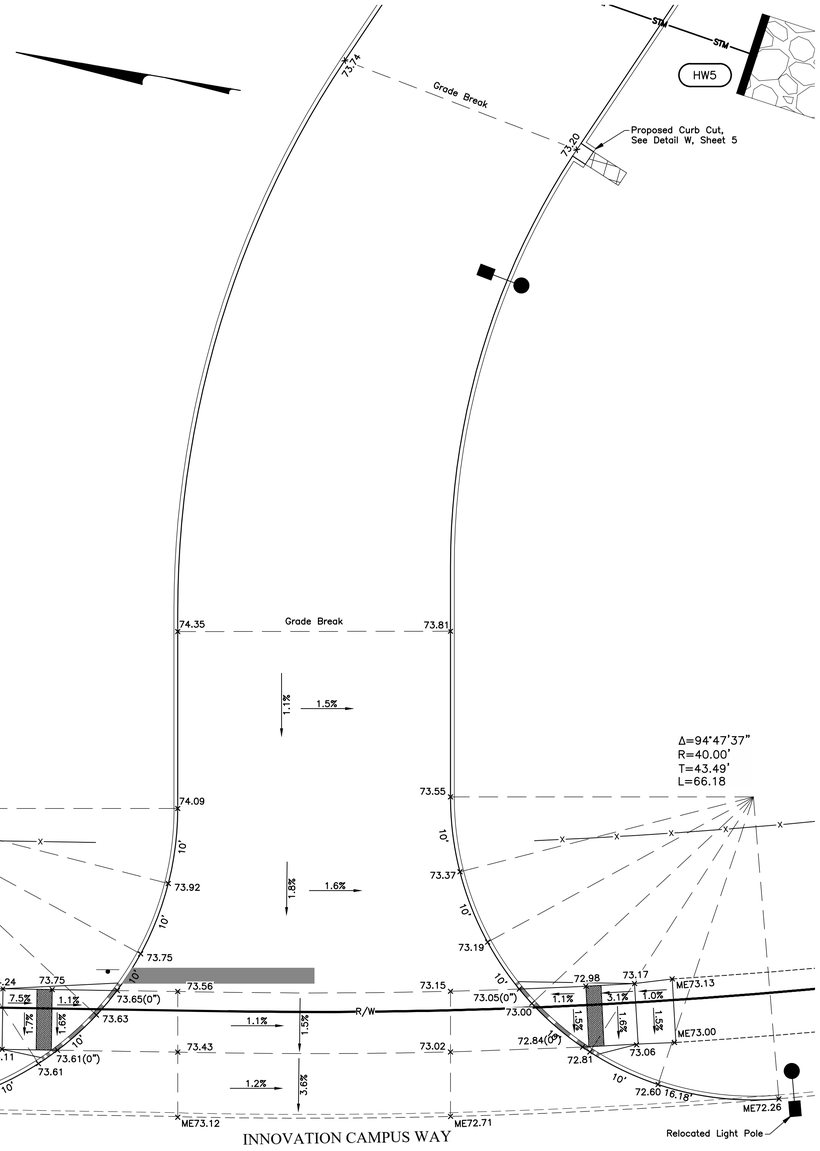
SCALE
1" = 30'

JOB NO.
2021-0460

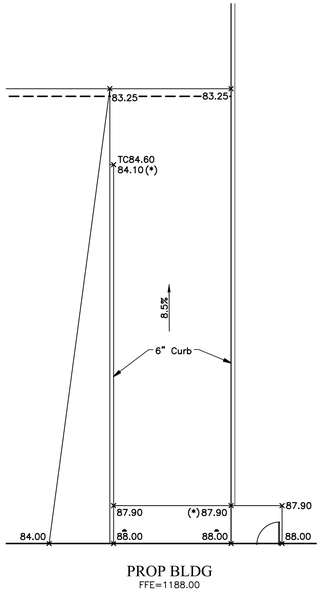
SHEET
25/40



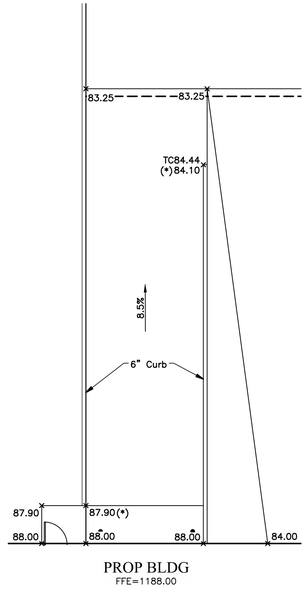
A DETAIL
INNOVATION CAMPUS WAY ENTRANCE WEST 1" = 10'



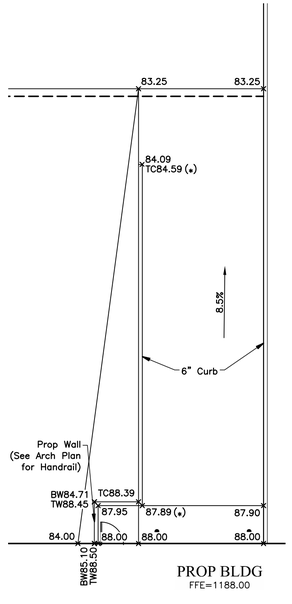
B DETAIL
INNOVATION CAMPUS WAY ENTRANCE EAST 1" = 10'



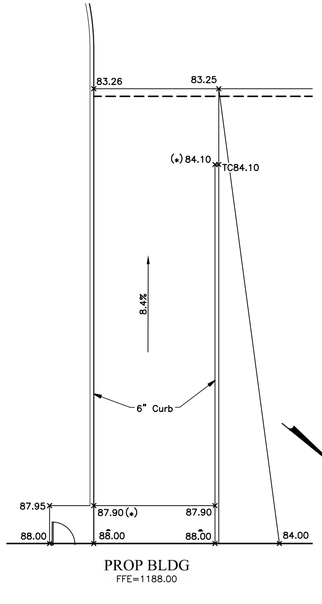
C DETAIL
DRIVE IN DOCK DOOR - A 1" = 10'



D DETAIL
DRIVE IN DOCK DOOR - B 1" = 10'



E DETAIL
DRIVE IN DOCK DOOR - C 1" = 10'



F DETAIL
DRIVE IN DOCK DOOR - D 1" = 10'

LEGEND

Flush Curb		ME	Match Existing
Transition Curb		TC	Top of Curb
Bullnose Curb	*	TW	Top of Wall
		BW	Bottom of Wall

(X") Height of adjacent curb. If 0", curb is flush with adjacent pavement and or sidewalk. If 6", add 0.5' to pavement elevation to obtain the top of curb elevation.

NOTES:

All Spot Grades Represent Face of Curb Or Top of Pavement Unless Otherwise Noted.

To Obtain Proposed Elevations on USGS NAVD88 Datum, Add 1100 to All Elevations Between 0.00 and 99.00. Elevations Shown Represent Final Pavement Elevations.

All Curb Ramps And Landings Within Public Right-Of-Way Shall Be Constructed Per COC Std Dwg 2319 And Shall Be Constructed Using COC 6 Concrete. Detectable Warnings Within Public Right-Of-Way Shall Be Type A And Shall Be Installed Per COC Std. Dwg. 2319. Material Shall Be Pre-Cast Manufactured 4"x8"x2.25" Red Clay Brick.

LEGEND

EXISTING	
Contours	749 / 750
Spot Elevation	× 20.00
Storm Sewer	STM
PROPOSED	
Contours	749 / 750
Spot Elevation	× 20.00
Storm Sewer	STM
Roof Drain	RD

GRAPHIC SCALE

0 5 10 20

1 inch = 10 feet

REVISIONS

MARK	DATE	DESCRIPTION
	4/5/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
GRADING DETAILS

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
JANUARY 22, 2022

SCALE
1" = 10'

JOB NO.
2021-0460

SHEET
26/40

NOTES:

All Spot Grades Represent Face of Curb Or Top of Pavement Unless Otherwise Noted.

To Obtain Proposed Elevations on USGS NAVD88 Datum, Add 1100 to All Elevations Between 0.00 and 99.00. Elevations Shown Represent Final Pavement Elevations.

Curb Ramp Per COC Std Dwg 2319. All Ramps And Landings Within Public Right-Of-Way Shall Be Constructed Using COC 6 Concrete. Detectable Warnings Within Public Right-Of-Way Shall Be Type A And Shall Be Installed Per COC Std. Dwg. 2319. Material Shall Be Pre-Cast Manufactured 4"x8"x2.25" Red Clay Brick.

LEGEND

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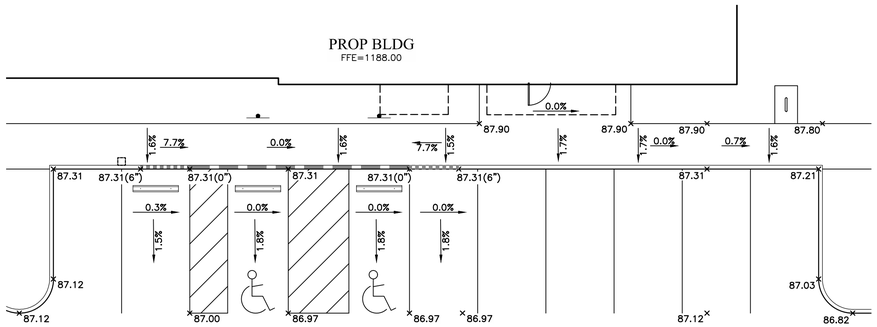
Transition Curb		TC	Top of Curb
Bullnose Curb	*	TW	Top of Wall
		BW	Bottom of Wall

(X") Height of adjacent curb. If 0", curb is flush with adjacent pavement and or sidewalk. If 6", add 0.5' to pavement elevation to obtain the top of curb elevation.

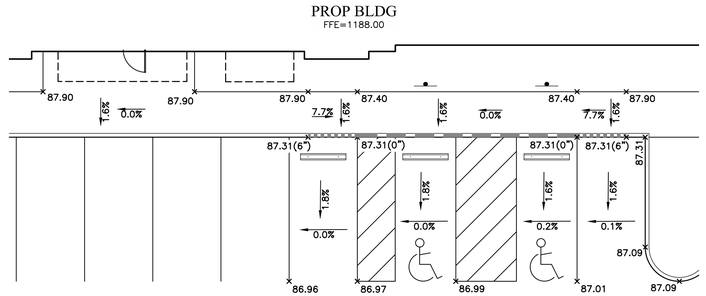
LEGEND

EXISTING	
Contours	749 / 750
Spot Elevation	× 20.00
Storm Sewer	— STM —
PROPOSED	
Contours	749 / 750
Spot Elevation	× 20.00
Storm Sewer	STM
Roof Drain	RD



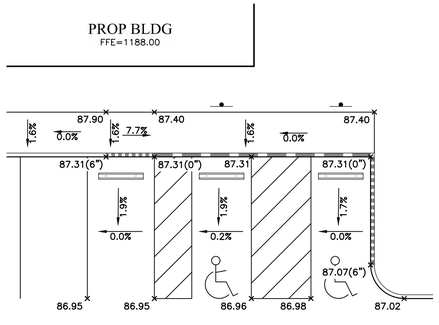
G DETAIL
ADA PARKING DETAIL A

1" = 10'



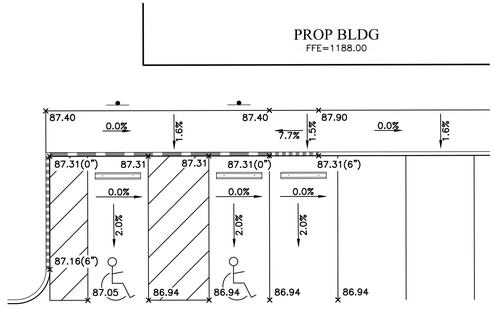
H DETAIL
ADA PARKING DETAIL B

1" = 10'



I DETAIL
ADA PARKING DETAIL C

1" = 10'



J DETAIL
ADA PARKING DETAIL D

1" = 10'

MARK	DATE	DESCRIPTION
	4/3/23	Revised As Constructed

REVISIONS

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY

GRADING DETAILS

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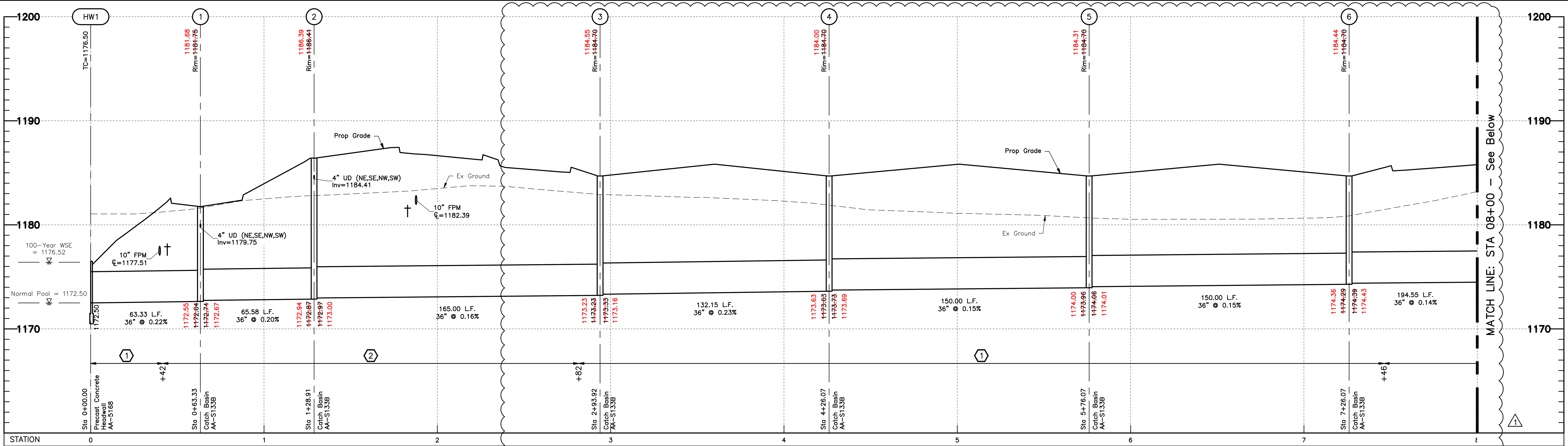
Phone: 614.775.4500 Toll free: 888.775.3648
emht.com

DATE
JANUARY 22, 2022

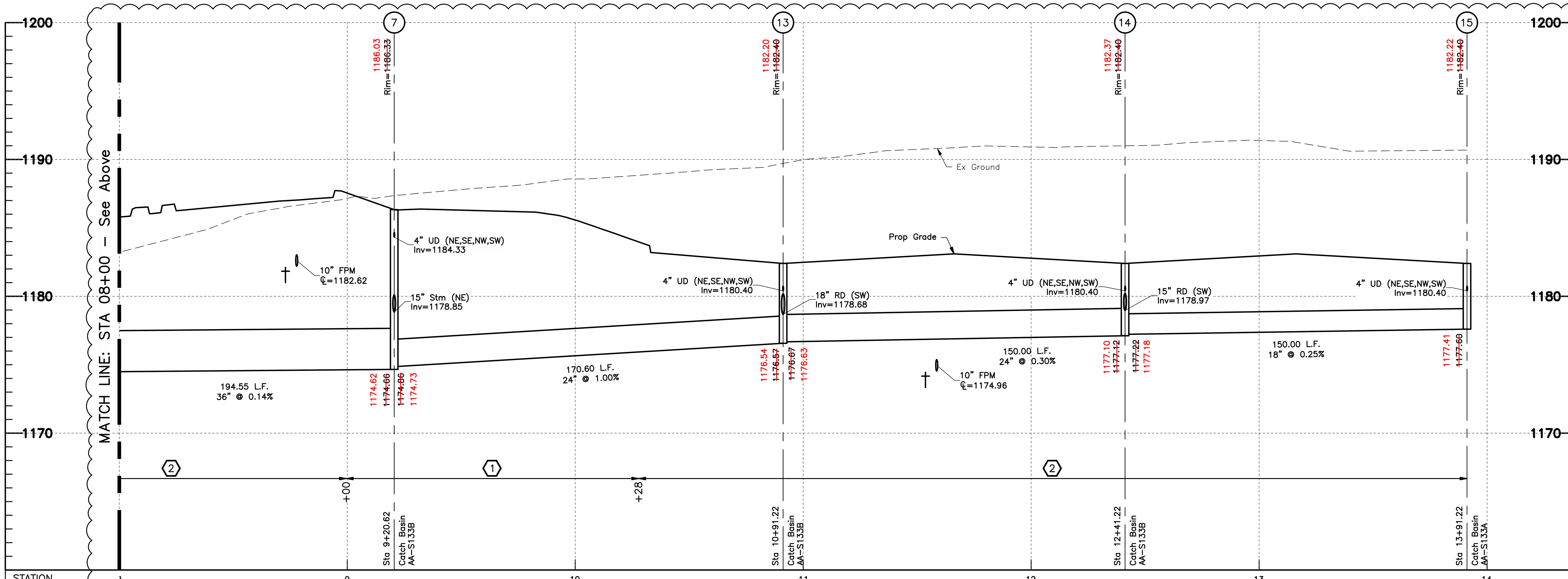
SCALE
1" = 10'

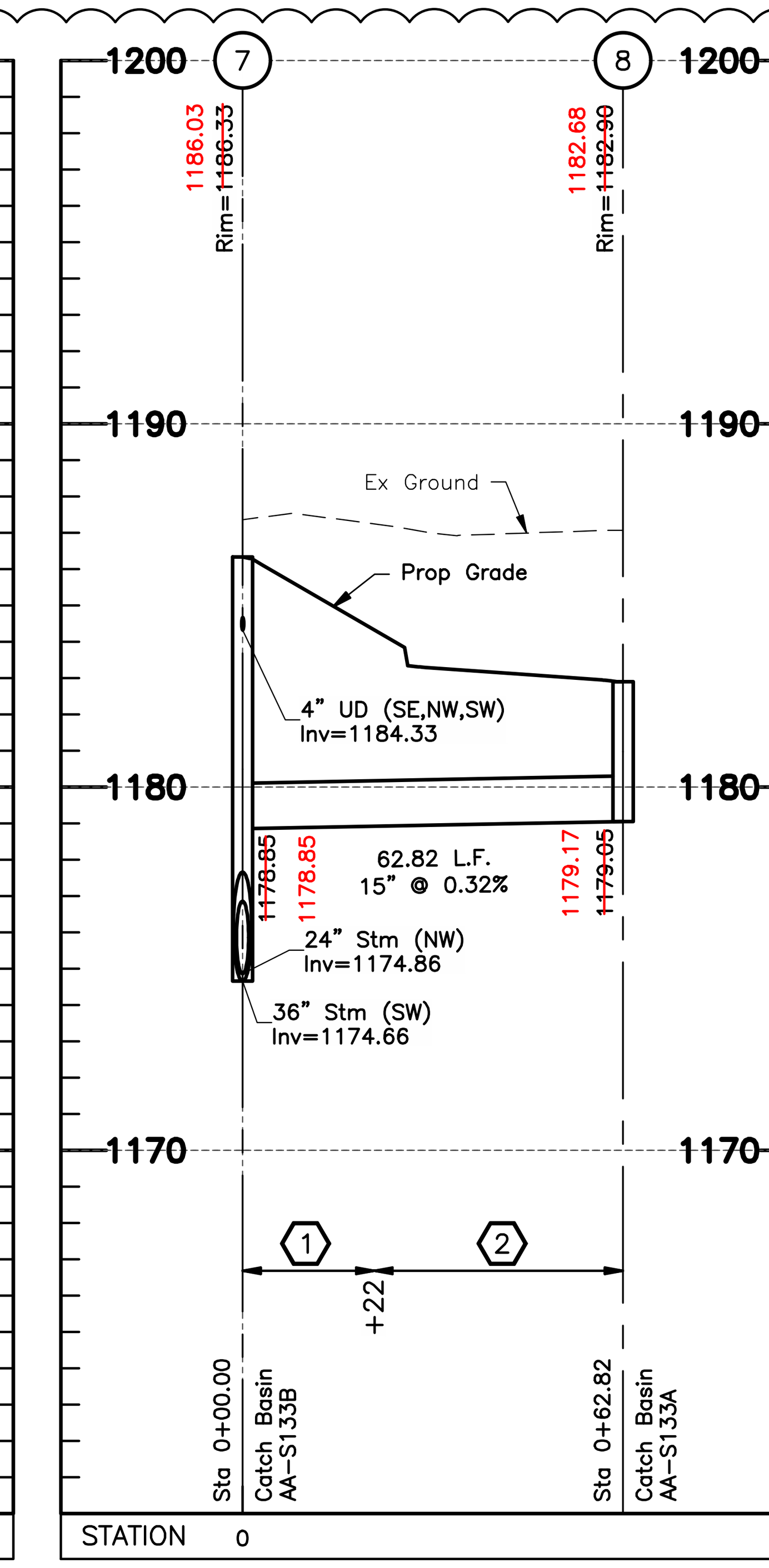
JOB NO.
2021-0460

SHEET
27/40



STORM PROFILE A
Scale: Horiz. 1"=30'
Vert. 1"=5'





STORM PROFILE B
Scale: Horiz. 1"=30'
Vert. 1"=5'

NOTES

All Elevations On This Plan Are Based On NAVD 1988 Datum Unless Otherwise Noted.

All Street Crossings Shown In Profiles Are Private Streets

All Existing Utility Crossings Shall Be Potholed Prior To Construction And The Engineer Shall Be Notified In Advance If Any Conflicts Arise

Class A Concrete Encasement Is Required Where Depth Of Cover Is 30" Or Less

Provide Trenches, Bedding And Backfill In Accordance With The CMS And City Of Columbus DOSD Standard Construction Drawings As Modified By The Geotechnical Report.

† Contractor Shall Maintain A 1.5' Minimum Vertical Clearance From Outside Of Pipe To Out Side Of Pipe For All Utility Crossings Unless Otherwise Noted.

Backfill Shall Be Placed In Lifts Of 6" Or Less In Accordance With CCMS 901.17

All Fills Are To Be Placed A Minimum Of 2.5' Above The Proposed Storm Sewer Prior To The Start Of Sewer Construction Per Item 203 of CMSC.

Denoted Thus:

CODED NOTES

1. Compacted Backfill, Per Item 911 As Modified By The Geotechnical Report.
2. Compacted Granular Backfill, Per Item 912. (type 1 Only)
3. Pipe And Joints Are To Be Sanitary Grade Watertight Per City Of Columbus Construction And Material Specification 901.15. This Applies To Full Pipe Length From Structure To Structure.
4. Structure To Be Water Tight. Pipe Entrances Shall Be Flexible Water Tight Joint In Accordance With 706.16.

HORIZ 1 inch = 30 Feet (0 15 30 60)
VERT 1 inch = 5 Feet (0 2.5 5 10)

REVISIONS

MARK	DATE	DESCRIPTION
	2/25/22	Revision 1
1	4/3/23	Revised As Constructed

VANTRUST

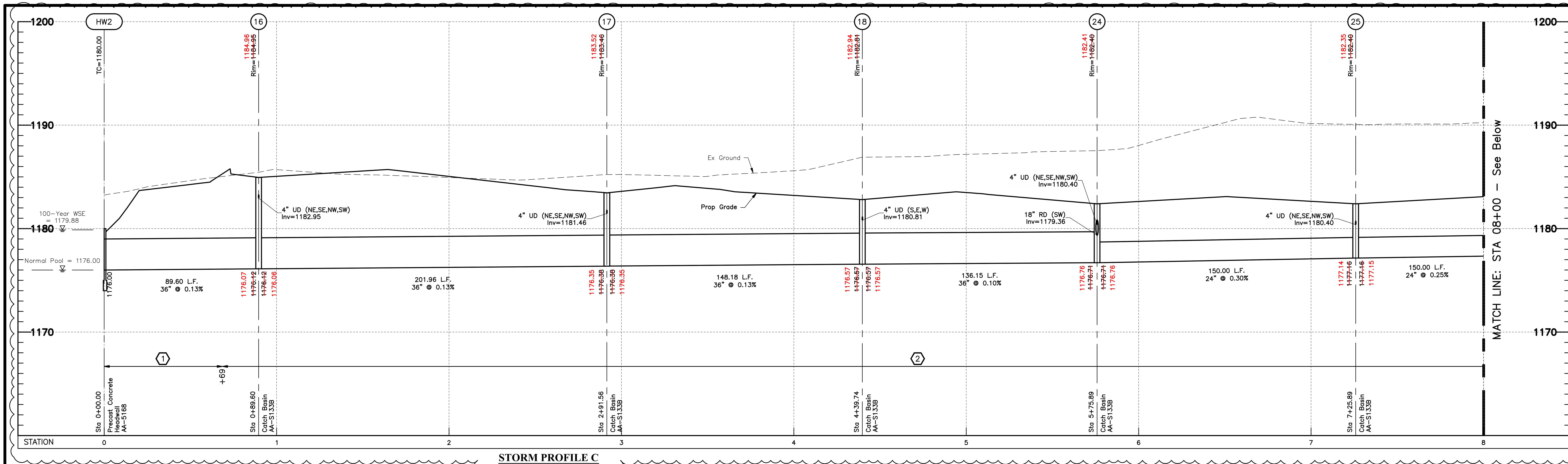
CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
STORM PROFILES

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE: JANUARY 22, 2022

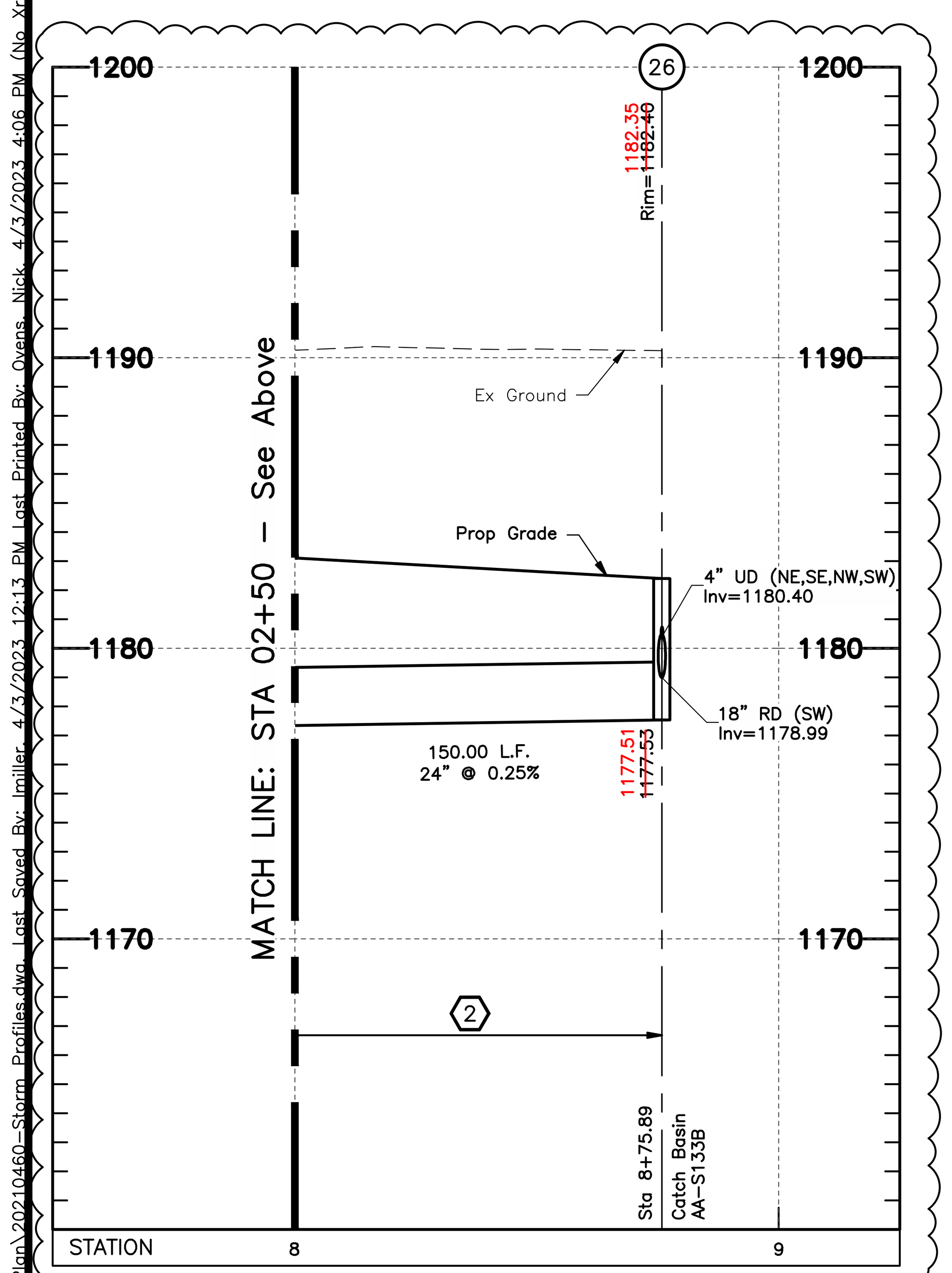
SCALE: Horiz: 1" = 30' Vert: 1" = 5'

JOB NO. 2021-0460



STORM PROFILE C

Scale: Horiz. 1"=30'
Vert. 1"=5'



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4. Structure To Be Water Tight. Pipe Entrances Shall Be Flexible Water Tight Joint In Accordance With 706.16.

HORIZ 1 inch = 40 feet: 0, 20, 40, 80

VERT 1 inch = 5 feet: 0, 2.5, 5, 10

REVISIONS

MARK	DATE	DESCRIPTION
	2/25/22	Revision 1
	4/3/23	Revised As Constructed

VANTRUST

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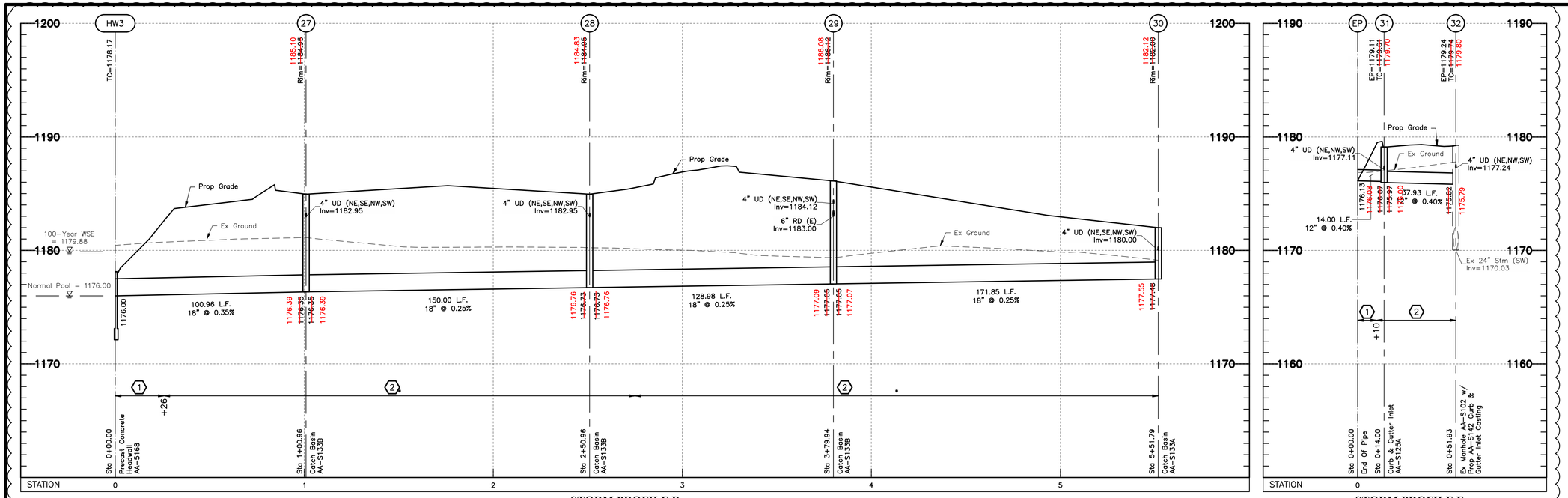
emht.com

DATE: JANUARY 22, 2022

SCALE: As Noted

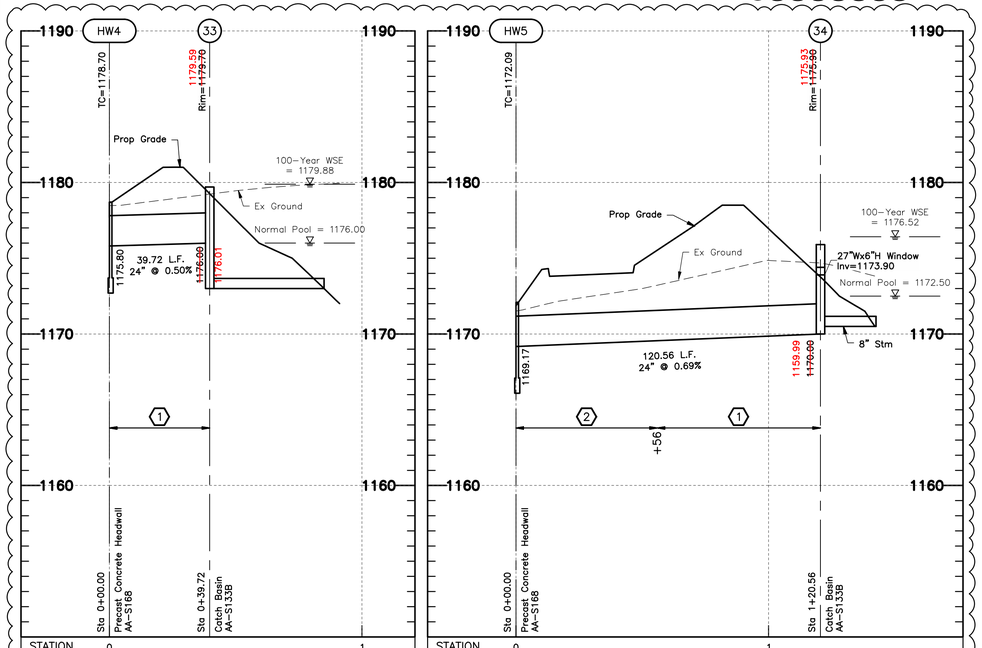
JOB NO. 2021-0460

SHEET 29/40



STORM PROFILE D
Scale: Horiz. 1"=30'
Vert. 1"=5'

STORM PROFILE E
Scale: Horiz. 1"=30'
Vert. 1"=5'



STORM PROFILE F
Scale: Horiz. 1"=30'
Vert. 1"=5'

STORM PROFILE G
Scale: Horiz. 1"=30'
Vert. 1"=5'

NOTES

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4. Structure To Be Water Tight. Pipe Entrances Shall Be Flexible Water Tight Joint In Accordance With 706.16.

HORIZ 1 inch = 40 feet: 0 20 40 80
VERT 1 inch = 5 feet: 0 2.5 5 10

REVISIONS

MARK	DATE	DESCRIPTION
1	3/15/23	Revision 1
	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
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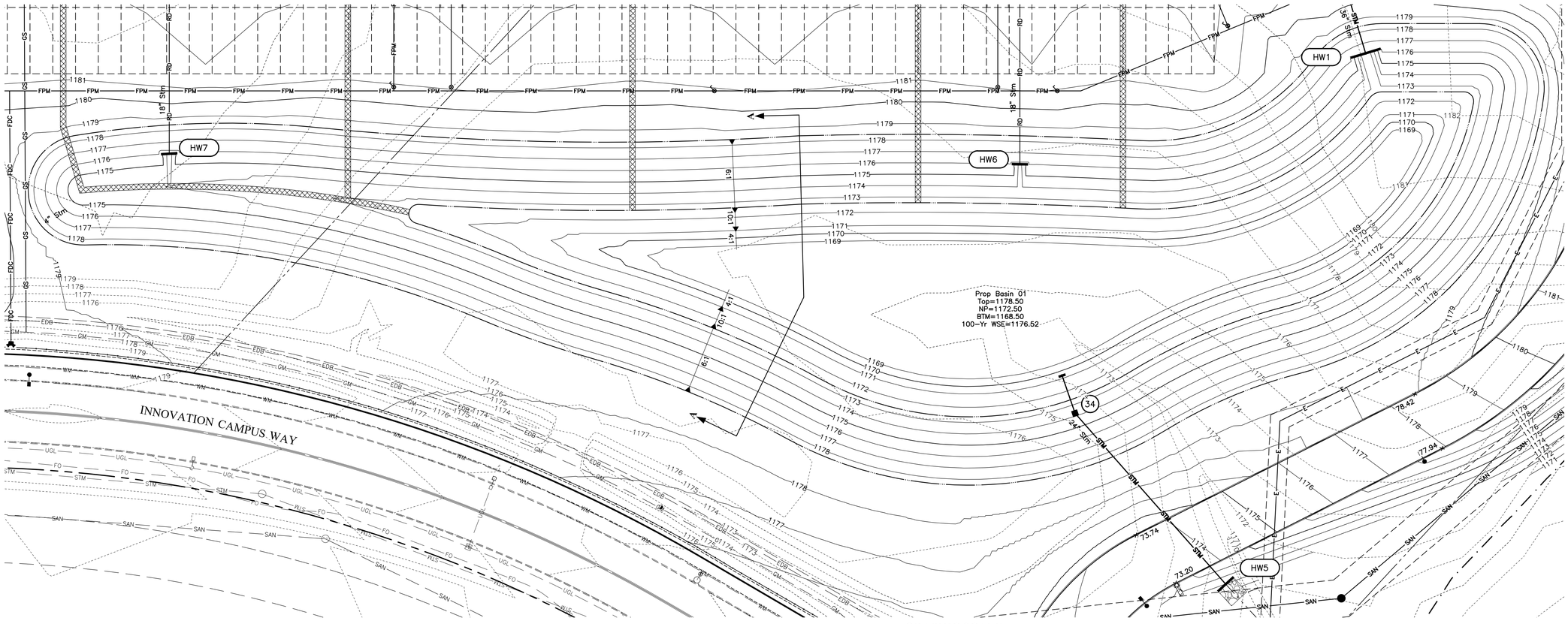
DATE
JANUARY 22, 2022

SCALE
As Noted

JOB NO.
2021-0460

SHEET
30/40



BASIN 01 DETAIL

Scale: 1" = 30'

GRAPHIC SCALE

0 15 30 60

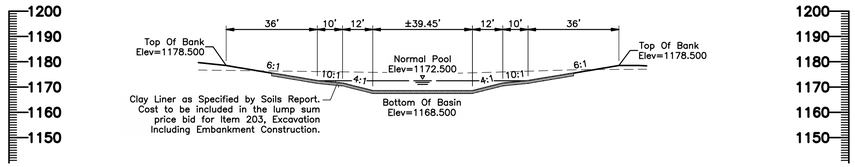
1 inch = 30 feet

WET BASIN INSPECTION & MAINTENANCE		
Inspection Item	Maintenance Procedures	Frequency of Inspection
Outlet Structure & Side Slopes	Do not fertilize vegetation surrounding basin. Remove accumulated sediment and debris from inlet and outlet structure. Mow side slopes.	Monthly
Basin Embankment	Repair undercut/eroded areas and stabilize.	Every 6 months
Storm Sewer System	Remove debris from the sewer system to ensure positive flow through the system.	Every 6 months
Stormwater Basin	Inspect for damage, paying particular attention to the outlet control structure. Check for signs of eutrophic conditions (algae buildup) Note signs of hydrocarbon build-up, remove appropriately. Monitor sediment accumulation in facility. Examine to ensure inlet and outlet devices are free of debris and operational. Inspect for invasive vegetation if wetland components included.	Annually

The Owner shall be responsible for the inspection and maintenance of the stormwater basin, associated outlet structure and all other maintenance procedures listed above. Inspections and maintenance that are conducted shall be documented and filed for future reviews by the City of New Albany.

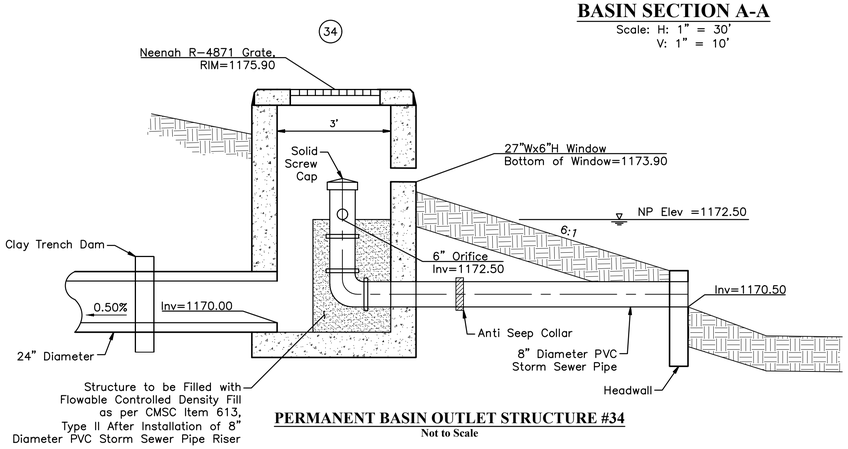
Stormwater Basins treat incoming stormwater runoff by physical, biological, and chemical processes. The primary removal mechanism is the gravitational settling of particulates, organic matter, metals, bacteria and organics as stormwater runoff resides in the forebay and micropool. Another mechanism for pollutant removal is uptake by algae and wetland plats in the micropool, particularly removing nutrients. Other contaminants such as hydrocarbons are broken down and eliminated by volatilization and chemical activity. Stormwater Basins are utilized to remove 80% of the total suspended solids load in typical urban post-development runoff when designed and maintained properly.

Stormwater basins naturally collect sediment, including gravel, sand, and mud, as well as other debris like litter. To maintain its capacity and function, a basin should be kept free of excessive debris, littler, and sediment. The micropool for the proposed basin is designed to be 3 feet. This design depth should be verified every 3-7 years to ensure that the basin will continue to function properly. Property owners or contracted personnel shall position themselves in the middle of the stormwater basin and several measurements around center of the stormwater basin shall be taken using a Stadia Rod to determine the depth. It is recommended that sediment excavated from stormwater basins be tested prior to sediment disposal. Sediment removed from the stormwater basin should be stored properly until disposal to ensure no exposure to stormwater runoff.



BASIN SECTION A-A

Scale: H: 1" = 30'
V: 1" = 10'



PERMANENT BASIN OUTLET STRUCTURE #34

Not to Scale

REVISIONS

MARK	DATE	DESCRIPTION

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLANS
FOR

NEW ALBANY 525 BUILDING
INNOVATION CAMPUS WAY
BAISN 01 DETAILS

EMH&T
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emht.com

DATE
JANUARY 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

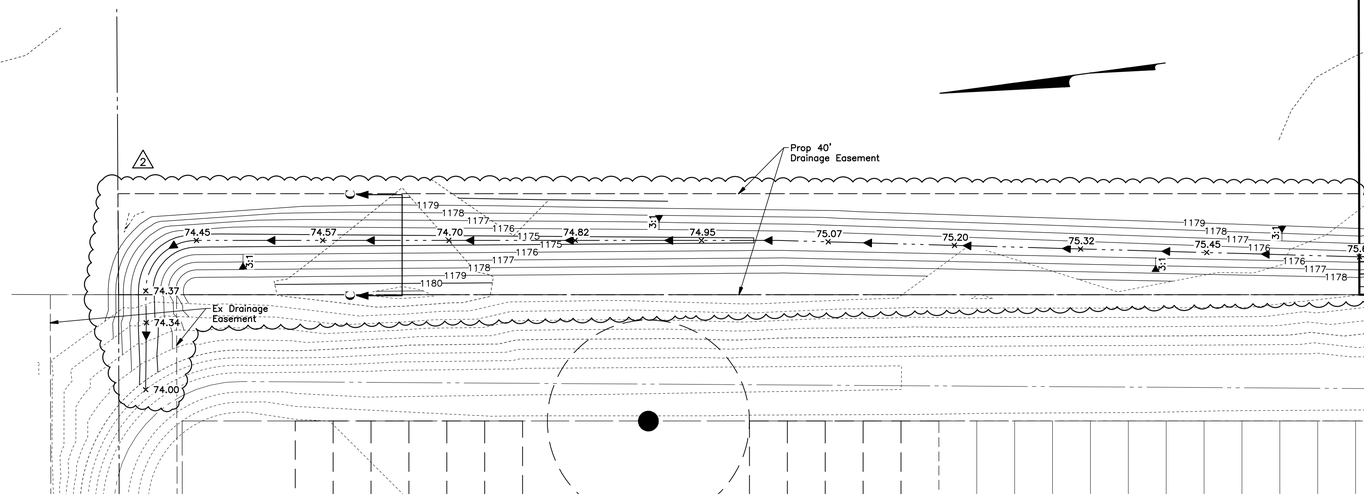
SHEET
31/40

STRUCTURE COORDINATES AS-BUILT		
STRUCTURE #	NORTHING	EASTING
HW6	760034.2056	1906019.5451
HW7	760385.7023	1905741.2521
HW4	761289.0767	1905665.2540
HW3	761076.6618	1905743.8762
HW1	759929.5466	1906179.9317
HW5	759810.2620	1905916.3903
HW2	761167.1377	1905872.1570
1	759981.9747	1906215.4621
2	759971.5218	1906280.2033
3	759912.4116	1906434.2563
4	759995.7203	1906536.8437
5	760090.2798	1906653.2856
6	760184.8385	1906769.7264
7	760373.3453	1906817.8446
8	760415.5099	1906864.4107
13	760518.6264	1906728.4219
14	760635.0677	1906633.8628
18	761236.3268	1906242.3078
24	761100.8329	1906255.6265
25	760984.3916	1906350.1856
26	760867.9503	1906444.7447
27	761008.6105	1905818.4554
28	760914.0514	1905702.0140
29	760794.9253	1905652.5750
30	760623.4559	1905641.1898

STRUCTURE COORDINATES AS-BUILT		
STRUCTURE #	NORTHING	EASTING
31	760481.1935	1905562.7417
32	760453.3503	1905588.5019
33	761258.5717	1905690.6869
34	759929.1635	1905936.3282

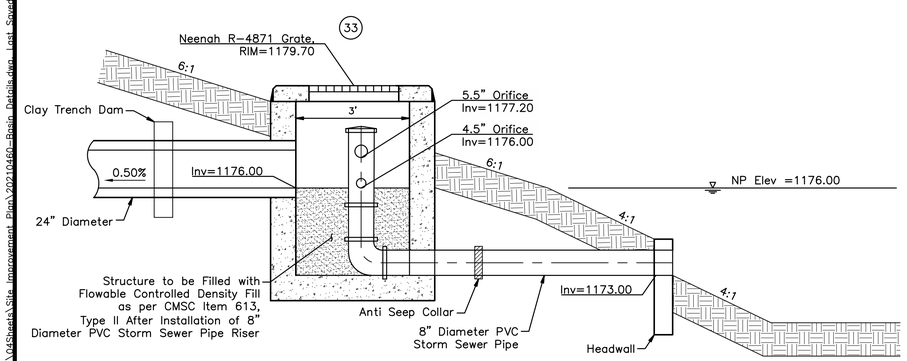
STORM SEWER TABLE			
LINE	BEARING	LENGTH	SIZE
1–2	S80°49'42"E	65.58'	36"
2–3	S69°00'29"E	165.00'	36"
3–4	N50°55'15"E	132.15'	36"
4–5	N50°55'15"E	150.00'	36"
5–6	N50°55'15"E	150.00'	36"
6–7	N14°19'10"E	194.55'	36"
7–8	N47°50'24"E	62.82'	15"
7–13	N31°36'47"W	170.60'	24"
13–14	N39°04'45"W	150.00'	24"
14–15	N39°04'45"W	150.00'	18"
16–17	N52°10'25"E	201.96'	36"
17–18	N86°24'05"E	148.18'	36"
18–24	S05°36'50"E	136.15'	36"
24–25	S39°04'45"E	150.00'	24"
25–26	S39°04'45"E	150.00'	24"
27–28	S50°55'15"W	150.00'	18"
28–29	S22°32'21"W	128.98'	18"
29–30	S03°47'55"W	171.85'	18"
31–32	S42°46'29"E	37.93'	12"
EP–31	S42°46'29"E	14.00'	12"

STORM SEWER TABLE			
LINE	BEARING	LENGTH	SIZE
HW1–1	N34°07'31"E	63.33'	36"
HW2–16	S44°26'42"E	89.60'	36"
HW3–27	S47°37'14"E	100.96'	18"
HW4–33	S39°49'08"E	39.72'	24"
HW5–34	N09°31'09"E	120.56'	24"



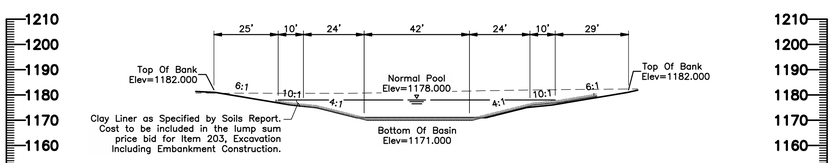
BASIN 02 DETAIL
Scale: 1" = 30'

GRAPHIC SCALE
0 15 30 60
1 inch = 30 feet

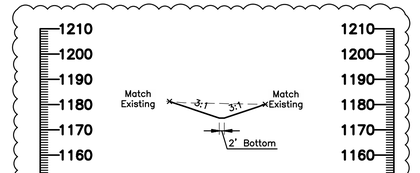


Note: Orifices not to be installed until after sediment basin phase.

PERMANENT BASIN OUTLET STRUCTURE #33
Not to Scale



BASIN SECTION B-B
Scale: H: 1" = 30'
V: 1" = 30'



DITCH SECTION C-C
Scale: H: 1" = 30'
V: 1" = 30'

REVISIONS

MARK	DATE	DESCRIPTION
1	7/19/22	Revision 2
2	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
INNOVATION CAMPUS WAY
BASIN 02 DETAILS

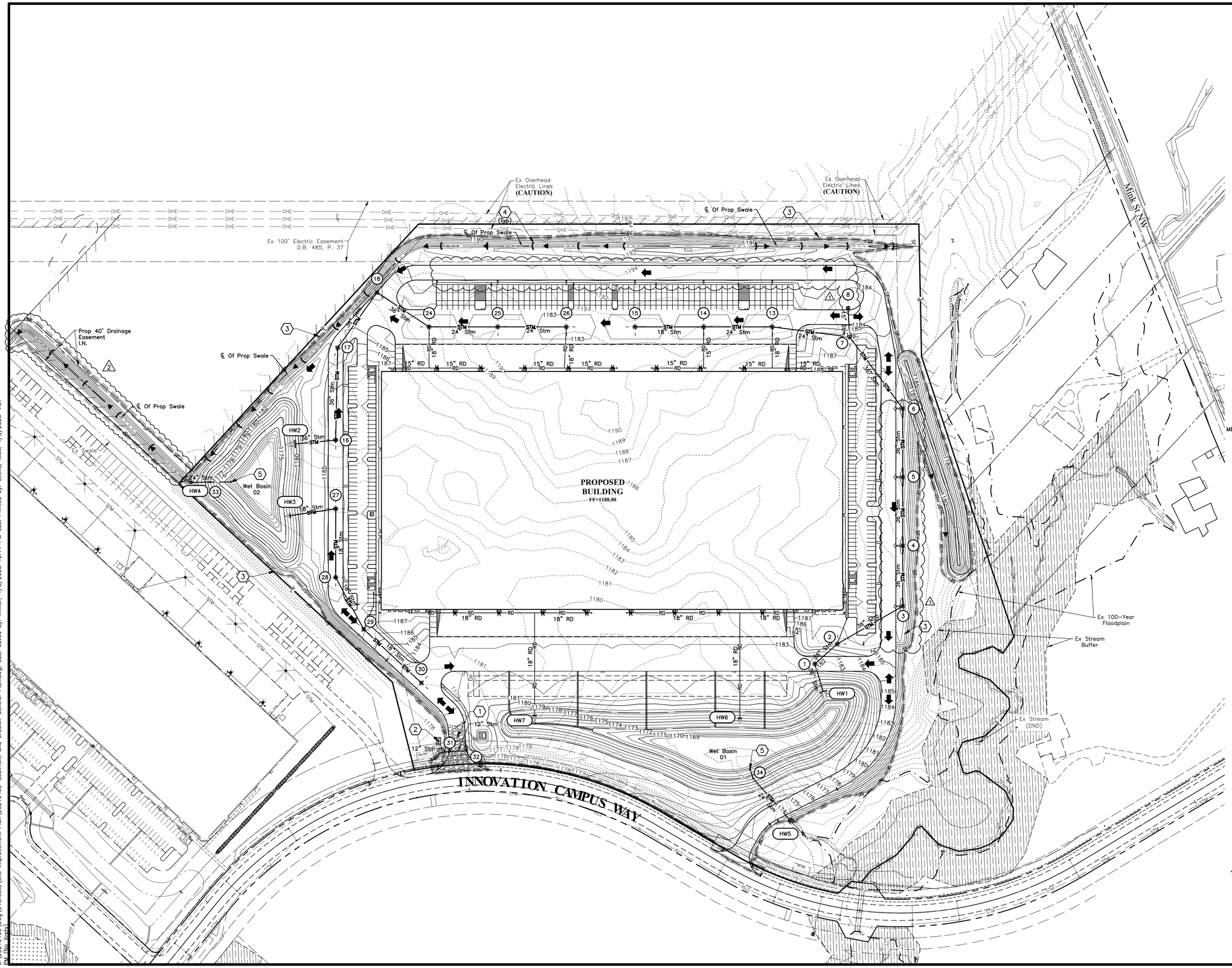
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
JANUARY 22, 2022

SCALE
1" = 30'

JOB NO.
2021-0460

SHEET
32/40



EXISTING

- Contours
- Edge Of Pavement
- Curb
- Sidewalk
- Tree Line
- Storm Sewer
- Roof Drain
- Sanitary Sewer
- Water Main
- Fire Hydrant Lead
- Gas Main
- Overhead Electric Line
- Underground Electric Line
- Utility Duct Bank
- Fiber Duct Bank
- Underground Lighting Conduit
- Preservation Buffer
- Fire Hydrant
- Water Valve
- Light Pole
- Utility Poles
- Manhole
- Catch Basin
- Curb Inlet
- Signal Pole

PROPOSED

- Contours
- Storm Sewer
- Diversion Swale
- Sediment Fence
- Tree Protection Fence
- Construction Entrance
- Limits Of Disturbance
- Flow Routes
- Manhole
- Catch Basin
- Concrete Washout
- ME81.00x Match Existing
- Major Flood Routing
- Headwall
- Inlet Protection
- Rock Check Dam
- 81.00x Spot Elevation

CODED NOTES:

1. Proposed Construction Entrance, See Detail A, Sheet 34.
2. Proposed Concrete Washout, See Detail B, Sheet 34.
3. Proposed Sediment Fence, See Detail C, Sheet 34.
4. Proposed Rock Check Dam, See Detail D, Sheet 34.
5. Temporary Skimmer Installed During Mass Excavation Plan. See Mass Excavation Plan For Details.

NOTES:

Tree Protection Or Sediment Fence Shall Not Be Removed Or Relocated Without Coordination With The Engineer.

Direct discharge of sediment laden water to the City's sewer system or a receiving stream is a violation of Ohio EPA regulations. The contractor will be held liable for the violation and subsequent fines.

GRAPHIC SCALE
0 50 100 200
1 inch = 100 feet

REVISIONS

MARK	DATE	DESCRIPTION
1	2/25/23	Revision 1
2	7/19/23	Revision 2
3	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
SEDIMENT AND EROSION CONTROL PLAN

EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 100'

JOB NO.
2021-0460

SHEET
33/40

Erosion & Sediment Control Narrative

Plan Engineer:	Evans, Mechwart, Hambleton & Tilton, Inc. 5500 New Albany Road Columbus, OH 43054 Phone: (614) 775-4500 Fax: (614) 775-4800
Property Developer/Site Contact:	VanTrust Real Estate, LLC Pete Gray 950 Goodale Boulevard, Suite 100 Columbus, Ohio 43212 Tel: (614) 745-0610 Email: pete.gray@vantrustre.com
Ohio EPA NOI#:	4GC08162*AG
Existing Site Description:	±36.38 acre disturbed area
Existing Site Drainage Condition:	The existing site drains west into existing offsite ditch and partially east into an existing stream.
Adjacent Areas:	The site is bound by undeveloped greenspace to the North, developed site and Innovation Campus Way to the West, and by residential lots to the East and South.
Watershed:	The site is tributary to South Fork Licking River.
Erosion & Sediment Control Measures:	Prior to Construction Operations in a particular area, all sedimentation and erosion control features shall be in place. Field adjustments with respect to locations and dimensions may be made by the Engineer. It may become necessary to remove portions of the barrier during construction to facilitate the grading operations in certain areas. However, the barrier shall be in place in the evening or during any inclement weather. The limits of seeding and mulching have been established as 5'-0" outside the grading limits or 20'-0" beyond the right-of-way, whichever is greater. All areas not designated to be seeded shall remain under natural ground cover. Those areas disturbed outside the seeding limits shall be seeded and mulched at the Contractor's expense. "Temporary seeding" No area for which grading has been completed shall be left unseeded or unmulched for longer than 14 days. If permanent seed is not applied at this time, temporary seeding shall be done at the following rates: March 1 to August 15 Seed: Oats — 2 lbs./1,000 Sq.Ft. Fertilizer: (12:12:12) — 12 1/2 lbs./1,000 Sq.Ft. Mulch:(Straw or Hay) — 2 tons/acre August 15 to November 1 Seed: Annual Rye — 2 lbs./1,000 Sq.Ft. Fertilizer: (12:12:12) — 12 1/2 lbs./1,000 Sq.Ft. Mulch:(Straw or Hay) — 2 tons/acre November 1 to March 1 Mulch (ONLY):(Straw or Hay) — 2 tons/acre "Permanent seeding" shall be done between March 15 and October 15. If seeding is done between October 15 and March 15, it shall be classified as "Temporary Seeding." Permanent seed shall be 40% Kentucky Bluegrass, 40% Creeping Red Fescue, 20% Annual Ryegrass. Permanent seeding shall consist of fertilizing, watering and seeding rates indicated under Item 659. Seeding shall be applied within two(2) days after final grading or following seed bed preparation. Rates of application of Item 659: Seed: — 4 lbs./1,000 Sq.Ft. Fertilizer: (12:12:12) — 25 lbs./1,000 Sq.Ft. Mulch:(Straw or Hay) — 2 tons/acre The cost for temporary channels, sediment dams, sediment basins, and other appurtenant earthmoving operations shall be included in the price bid for erosion and sedimentation control quantities.

MAINTENANCE:

It is the Contractor's responsibility to maintain the sediment control features used on this project. The site shall be inspected at a minimum of once per every 7 days and within 24 hours of 0.5" or greater rain event over a 24 hour period. Records of these inspections shall be kept and made available to jurisdictional agencies if requested. Any sediment or debris which has reduced the efficiency of a structure shall be removed immediately. Should a structure or feature become damaged, the Contractor shall repair or replace at no additional cost to the Owner. Not all details shown on this sheet may be required for this project,

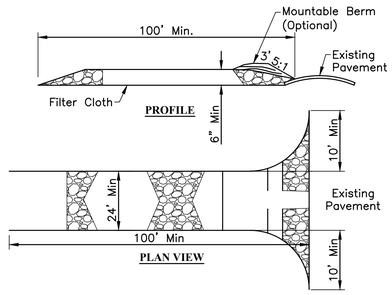
CONSTRUCTION SEQUENCE:

1. Provide construction entrance ahead signage in accordance with the OMUTCD.
2. Install construction entrance.
3. Install sediment fence and tree protection fence.
4. Install sediment basin, temporary rise, and skimmer.
5. Commence grading operations.
6. Installation of drainage swales.
7. Establish concrete washout.
8. Install site utilities.
9. Commence construction of proposed drives, buildings, and parking. Utilize a dewatering filter bag for any muddy water encountered.
10. Fine grade the disturbed areas and permanently stabilize. Upon permanent stabilization, remove temporary erosion and sediment controls. Unblock permanent outlet structure features after temporary outlet structure is removed.

CONTRACTOR RESPONSIBILITY: Details have been provided on the plans in an effort to help the Contractor provide erosion and sedimentation control. The details shown on the plan shall be considered a minimum. Additional or alternate details may be found in the O.D.N.R. Manual "Rainwater and Land Development." The Contractor shall be solely responsible for providing necessary and adequate measures for proper control of erosion and sediment runoff from the site along with proper maintenance and inspection in compliance with the NPDES General Permit for Storm Water Discharges Associated with Construction Activity.

All Erosion & Sediment Control practices are subject to Field Modification at the direction of the City Of New Albany and/or Ohio EPA.

NOTES: This plan must be posted on-site. A copy of the SWPPP plan and the approved EPA Stormwater Permit shall be kept on-site at all times.

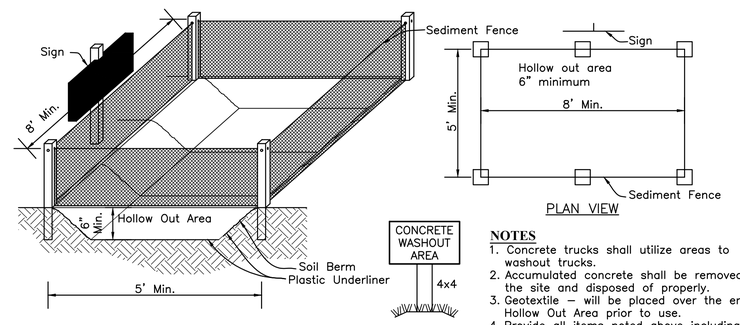


CONSTRUCTON SPECIFICATION NOTES

1. Stone Size – Use 2" stone, or reclaimed or recycled concrete equivalent. Item 304 shall not be used to choke down stone.
2. Length – One-Hundred (100) foot minimum.
3. Thickness – Not less than six (6) inches.
4. Width – Twenty (24) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Geotextile – will be placed over the entire area prior to placing of stone.
6. Surface Water – All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted. Cost of pipe shall be included in the price bid for the Stabilized Construction Entrance.
7. Maintenance – The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing – Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-ways. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device. The Contractor's bid shall include costs associated with manning and operating the wheel wash station.
9. Periodic inspection and needed maintenance shall be provided after each rain.
10. Contractor shall perform vacuum street sweeping at not expense to the City as directed by the City Engineer when sediment becomes discharged to public streets.

A DETAIL
STABILIZED CONSTRUCTION ENTRANCE

Not to Scale



NOTES

1. Concrete trucks shall utilize areas to washout trucks.
2. Accumulated concrete shall be removed from the site and disposed of properly.
3. Geotextile – will be placed over the entire Hollow Out Area prior to use.
4. Provide all items noted above including removal of concrete washout upon completion of the project in Item 207 Concrete Washout, As Per Plan.

B DETAIL
CONCRETE WASHOUT AREA

Not to Scale

GENERAL NOTES

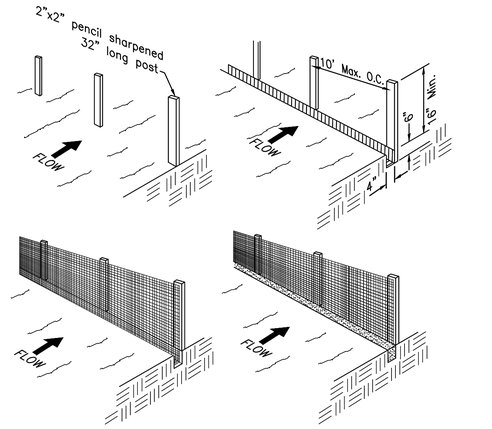
1. The height of a silt fence shall not exceed 16-inches (higher fences may impound volumes of water sufficient to cause failure of the structure).
2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum of a 6 inch overlap, and securely sealed.
3. Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches).
4. A trench shall be excavated approximately 4 inches wide and 6 inches deep along the line of posts and upslope from the barrier.
5. The standard strength filter fabric shall be stapled or wired to the fence, and 8 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 16 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
6. The trench shall be backfilled and soil compacted over the filter fabric.
7. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

MAINTENANCE NOTES

1. Silt fences and filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly.
2. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier.
3. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

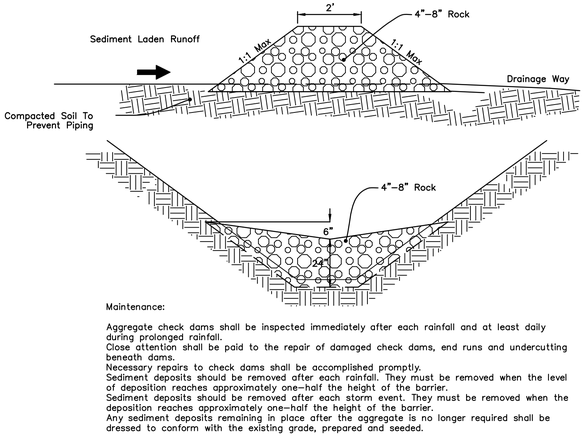
NOTES

-Additionally, the use of compost filter socks (minimum 12" diameter) an acceptable alternative BMP per the Ohio EPA. Compost filter socks may be substituted for silt fence.



C DETAIL
SEDIMENT FENCE

Not to Scale



Maintenance:

Aggregate check dams shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
Close attention shall be paid to the repair of damaged check dams, end runs and undercutting beneath dams.
Necessary repairs to check dams shall be accomplished promptly.
Sediment deposits should be removed after each rainfall. They must be removed when the level of deposition reaches approximately one-half the height of the barrier.
Sediment deposits should be removed after each storm event. They must be removed when the deposition reaches approximately one-half the height of the barrier.
Any sediment deposits remaining in place after the aggregate is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

D DETAIL
ROCK CHECK DAM

Not to Scale

Not To Scale

Notice:
The pumping or direct discharge of sediment-laden (muddy) water to the City's sewer system or a receiving stream is a violation of Ohio EPA and City of New Albany regulations.

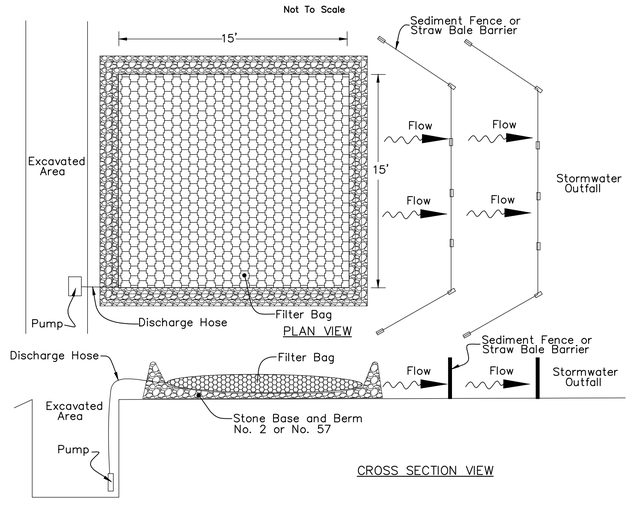
All inlets receiving flow from runoff, pumping activities, or other direct discharges shall be fitted with an inlet protection device that is properly sized and secured to reduce the discharge of sediment into the storm sewer system and receiving stream. Inlet protection is required on all inlets receiving discharge regardless of whether or not the inlet is tributary to any downstream erosion and sediment controls.

Discharge hoses used during pumping activities shall be fitted with sediment bags that are properly sized per manufacturer's recommendations regardless of what other sediment controls are in place further downstream. Sediment bags must be properly secured to the discharge hose and placed over vegetated areas, where feasible, during discharge. See detail belwow of a typical sediment bag installation.

Installation:
The Contractor shall pump muddy water encountered within excavated areas that are not tributary to sediment basins into a filter fabric bag. The bag shall be placed within a level undisturbed area as far away from the stormwater outfall as possible. The bag shall be placed on top of a aggregate pad. Additionally, a perimeter aggregate berm shall be constructed around the bag. Perimeter controls such as straw bale barriers or sediment fence shall be utilized along the downstream side of the bag. The perimeter controls shall be installed to ensure that the water flowing out of the bag does not flow around the ends of the controls. Upon completion, the bag shall be removed to an area away from the stormwater outfall and opened. The accumulated sediment shall be spread out to allow to dry and mix with onsite topsoil stockpile. Filterbag shall be JMD Enviro-Protection Filter Bag, size is based upon the pumping inflow rate.

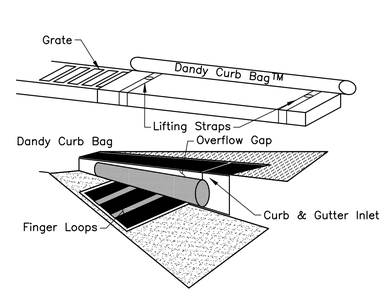
Maintenace:
The filter bag shall be replaced when the bag is half filled with sediment.

The Contractor shall contact the Owner/Engineer for consultative services if dewatering activities overwhelm the filter bag and perimeter controls.



E DETAIL
DEWATERING FILTER BAG

Not to Scale



INSTALLATION NOTE:

1. Stand grate on end. Slide the Dandy Curb Bag on with Dam on top of the grate. Pull all excess down. Lay unit on its side. Carefully tuck flap in. Press Velcro strips together. Install the unit making sure front edge of grate is inserted in frame first then lower back into place. Press Velcro dots together which are located under lifting straps. This insures straps remain flush with gutter.

MAINTENANCE NOTE:

1. With a stiff bristle broom or square point shovel, remove silt and other debris off surface after each event.

F DETAIL
CURB INLET PROTECTION

Not to Scale

REVISIONS			
MARK	DATE	DESCRIPTION	

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
8950 SMITH'S MILL ROAD N
SEDIMENT AND EROSION DETAILS

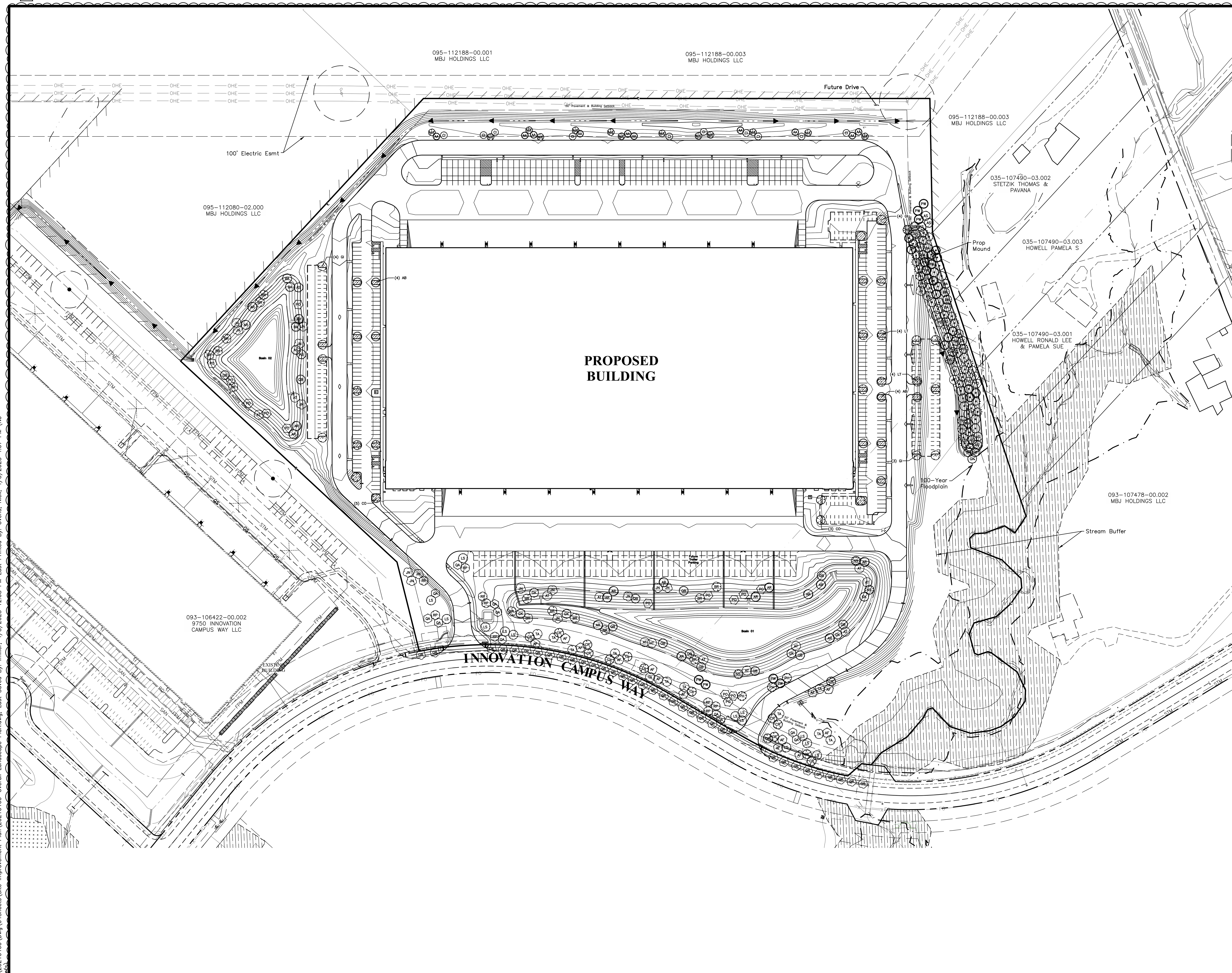
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
JANUARY 22, 2022

SCALE
None

JOB NO.
2020-0360

SHEET
34/40



Landscape Calculations

Street Tree Requirements:
1 Tree per 30 LF of Frontage

Innovation Campus Way
±1,025 L.F. of frontage
Street Trees placed 30 L.F. on center
34 Trees Required
34 Trees Provided

1171.05(c) Buffering and Screening
52 Evergreen Trees Provided

1171.05(e) – Landscape Screening–Minimum Trees:

Total ground coverage for over 50,000 S.F. of building & vehicular use area. 1 tree per 5,000 S.F. of coverage and a total tree planting equal to 25" caliper plus 1/2" caliper for every 4,000 S.F. over 50,000 S.F. in ground coverage.

±934,820 S.F. Total Ground Coverage
±934,820 / 5000 = 187 Trees

±934,820 – 50,000 = ±884,820
±884,820 / 4000 x .5" = 110.60"+25" = 135.60"

187 Trees and 135.60" Required
187 Trees and 467.5" Provided

1171.06 – Parking Lot Landscaping:

1171.06(a)(2): 5% of the parking area shall be landscaped:

±105,592 S.F. parking area x .05 =
±5,280 S.F. landscape required
±6,740 S.F. landscape provided

1171.06(a)(3): 1 deciduous canopy tree for every 10 parking spaces:

342 Total Parking Spaces/10 =
35 Trees Required
35 Trees Provided

REVISIONS

MARK	DATE	DESCRIPTION
	3/24/22	Permit Corrections
	5/25/22	Revised per City comments
2	7/19/22	Revision 2
3	7/29/22	Revised Tree Quantities

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
OVERALL LANDSCAPE PLAN

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

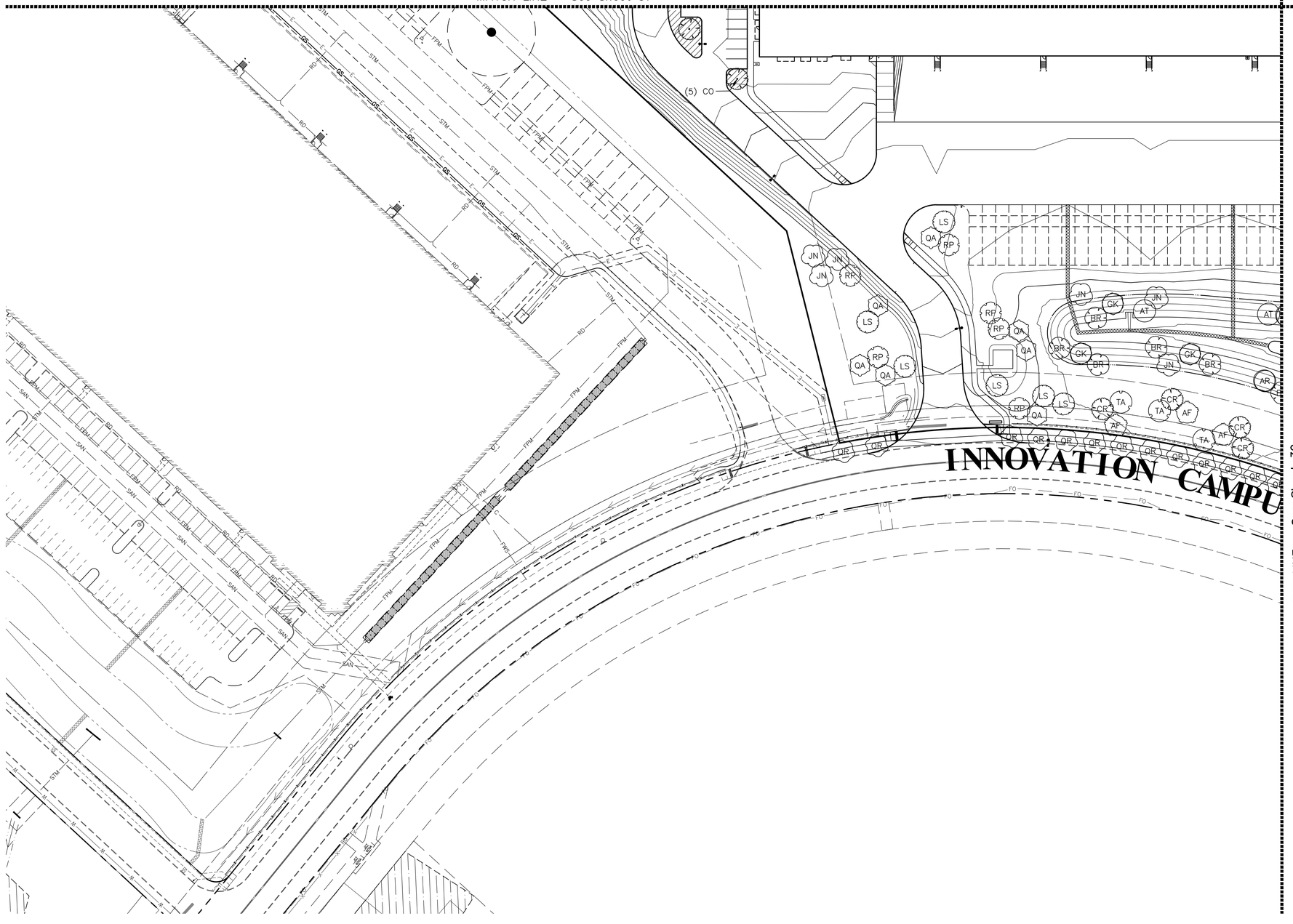
DATE
January 22, 2022

SCALE
1" = 100'

JOB NO.
2021-0460

SHEET
35/40

MATCH LINE – See Sheet 37



PLANT SCHEDULE SECTION A

COVERAGE TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AR	AR	1	Acer rubrum Red Maple	2.5" Cal.	B&B
AT	AT	1	Asimina triloba Pawpaw	2.5" Cal.	B&B
BR	BR	5	Betula nigra River Birch	2.5" Cal.	B&B
GK	GK	3	Gymnocladus dioica Kentucky Coffeetree	2.5" Cal.	B&B
JN	JN	6	Juglans nigra Black Walnut	2.5" Cal.	B&B

FRONTAGE TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AF	AF	3	Aesculus flava Yellow Buckeye	2.5" Cal.	B&B
CR	CR	4	Carya ovata Shagbark Hickory	2.5" Cal.	B&B
LS	LS	6	Liquidambar styraciflua Sweet Gum	2.5" Cal.	B&B
QA	QA	7	Quercus alba White Oak	2.5" Cal.	B&B
RP	RP	5	Robinia pseudoacacia Black Locust	2.5" Cal.	B&B
TA	TA	3	Tilia americana American Linden	2.5" Cal.	B&B

PARKING LOT TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
CO	CO	2	Celtis occidentalis Common Hackberry	2.5" Cal.	B&B

STREET TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
QR	QR	12	Quercus rubra Red Oak	3" Cal.	B&B

GRAPHIC SCALE

0 25 50 100

1 inch = 50 feet

REVISIONS

MARK	DATE	DESCRIPTION
	3/24/22	Permit Corrections
	5/25/22	Revised per City comments
2	7/19/22	Revision 2
3	7/29/22	Revised Tree Quantities

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
LANDSCAPE PLAN A

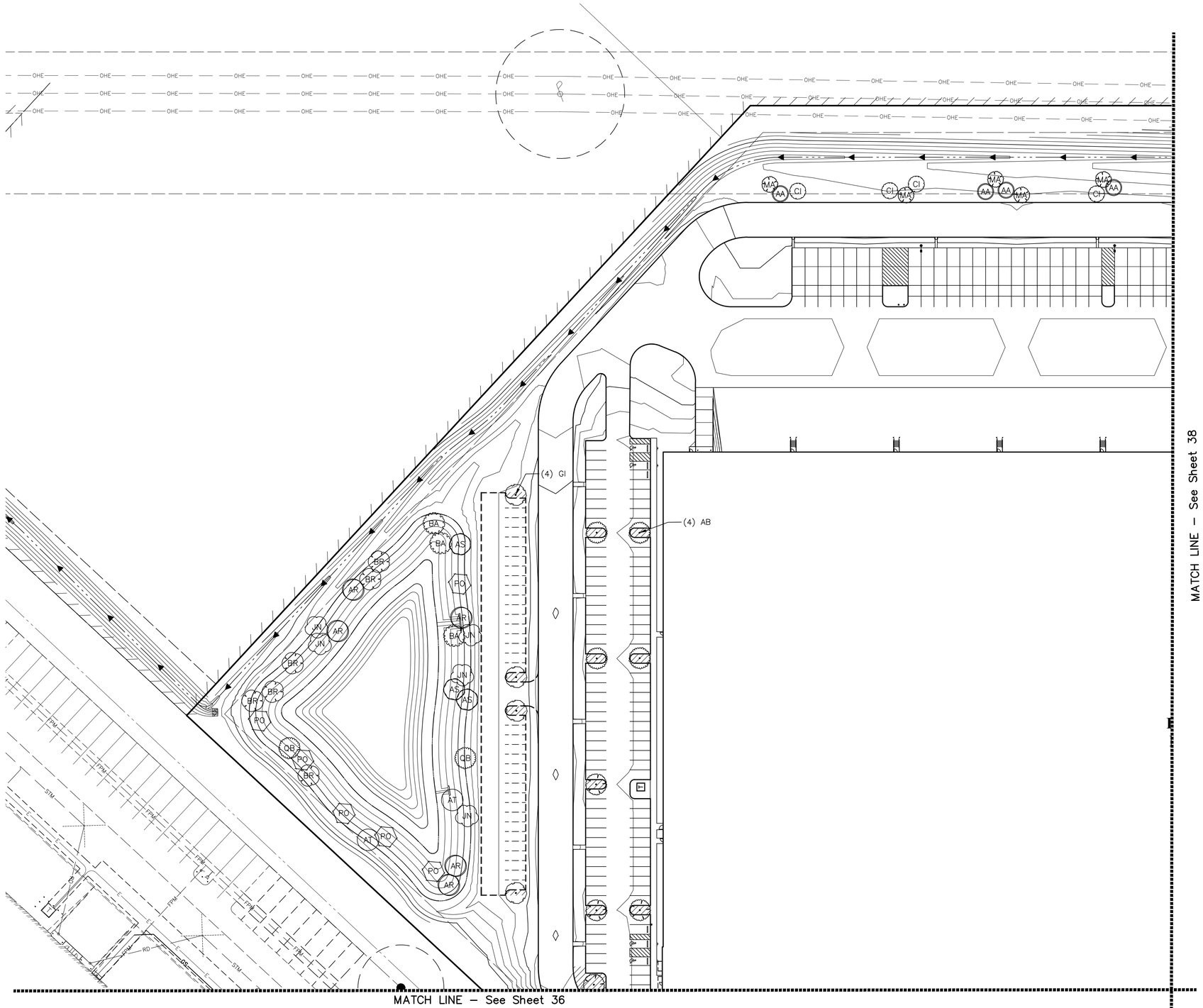
EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
January 22, 2022

SCALE
1" = 50'

JOB NO.
2021-0460

SHEET
36/40



PLANT SCHEDULE SECTION B

COVERAGE TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AR	AR	5	Acer rubrum Red Maple	2.5" Cal.	B&B
AS	AS	3	Acer saccharum Sugar Maple	2.5" Cal.	B&B
AT	AT	2	Asimina triloba Pawpaw	2.5" Cal.	B&B
BA	BA	3	Betula alleghaniensis Yellow Birch	2.5" Cal.	B&B
BR	BR	6	Betula nigra River Birch	2.5" Cal.	B&B
JN	JN	5	Juglans nigra Black Walnut	2.5" Cal.	B&B
PO	PO	6	Platanus occidentalis American Sycamore	2.5" Cal.	B&B
QB	QB	2	Quercus bicolor Swamp White Oak	2.5" Cal.	B&B

ORNAMENTAL TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AA	AA	4	Amelanchier arborea Downy Serviceberry	2.5" Cal.	B&B
CI	CI	4	Crataegus crus–galli inermis Thornless Cockspur Hawthorn	2.5" Cal.	B&B
MA	MA	5	Magnolia virginiana australis Sweetbay Magnolia	2.5" Cal.	B&B

PARKING LOT TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
	AB	4	Acer nigrum Black Maple	2.5" Cal.	B&B
	CO	3	Celtis occidentalis Common Hackberry	2.5" Cal.	B&B
	GI	4	Gleditsia triacanthos inermis Thornless Honey Locust	2.5" Cal.	B&B

GRAPHIC SCALE

0 25 50 100

1 inch = 50 feet

REVISIONS

MARK	DATE	DESCRIPTION
	3/24/22	Permit Corrections
	5/25/22	Revised per City comments
1	7/19/22	Revision 2
2	7/29/22	Revised Tree Quantities

VANTRUST

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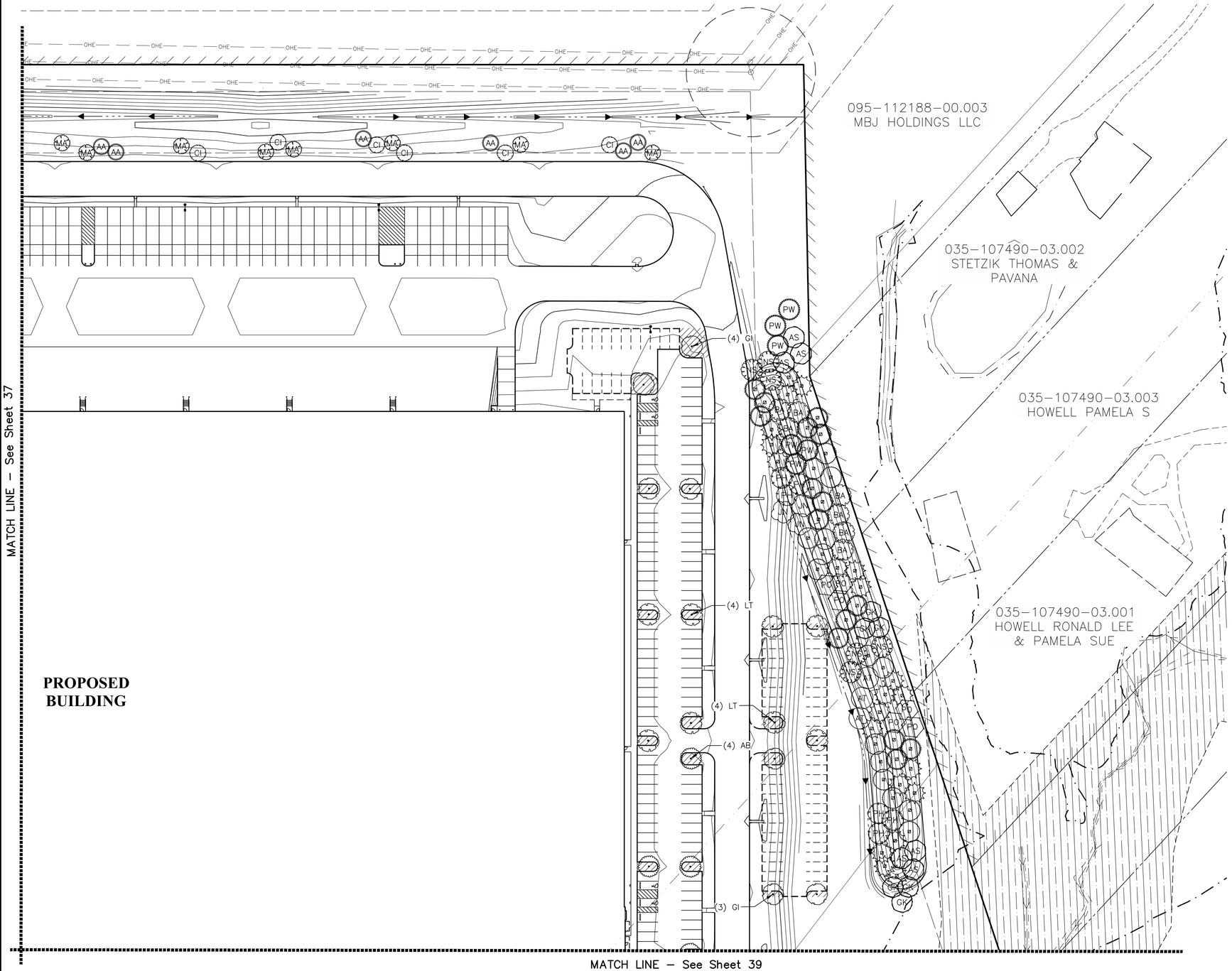

PLANT SCHEDULE SECTION C

COVERAGE TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AS	AS	6	Acer saccharum Sugar Maple	2.5" Cal.	B&B
AT	AT	3	Asimina triloba Pawpaw	2.5" Cal.	B&B
BA	BA	7	Betula alleghaniensis Yellow Birch	2.5" Cal.	B&B
GK	GK	6	Gymnocladus dioica Kentucky Coffeetree	2.5" Cal.	B&B
JN	JN	3	Juglans nigra Black Walnut	2.5" Cal.	B&B
NS	NS	6	Nyssa sylvatica Tupelo	2.5" Cal.	B&B
PO	PO	6	Platanus occidentalis American Sycamore	2.5" Cal.	B&B
PH	PH	6	Populus deltoides Eastern Cottonwood	2.5" Cal.	B&B
PW	PW	6	Prunus serotina Wild Black Cherry	2.5" Cal.	B&B

BUFFER TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
	PA	21	Picea abies Norway Spruce	6' Ht.	B&B
	PM	15	Picea omorika Serbian Spruce	6' Ht.	B&B
	PS	16	Pinus strobus White Pine	6' Ht.	B&B

ORNAMENTAL TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AA	AA	6	Amelanchier arborea Downy Serviceberry	2.5" Cal.	B&B
CI	CI	6	Crataegus crus–galli inermis Thornless Cockspur Hawthorn	2.5" Cal.	B&B
MA	MA	8	Magnolia virginiana australis Sweetbay Magnolia	2.5" Cal.	B&B

PARKING LOT TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
	AB	3	Acer nigrum Black Maple	2.5" Cal.	B&B
	GI	7	Gleditsia triacanthos inermis Thornless Honey Locust	2.5" Cal.	B&B
	LT	8	Liriodendron tulipifera Tulip Poplar	2.5" Cal.	B&B

GRAPHIC SCALE
0 25 50 100
1 inch = 50 feet

REVISIONS

MARK	DATE	DESCRIPTION
	3/24/22	Permit Corrections
	5/25/22	Revised per City comments
2	7/19/22	Revision 2

VANTRUST

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PRIVATE SITE IMPROVEMENT PLANS
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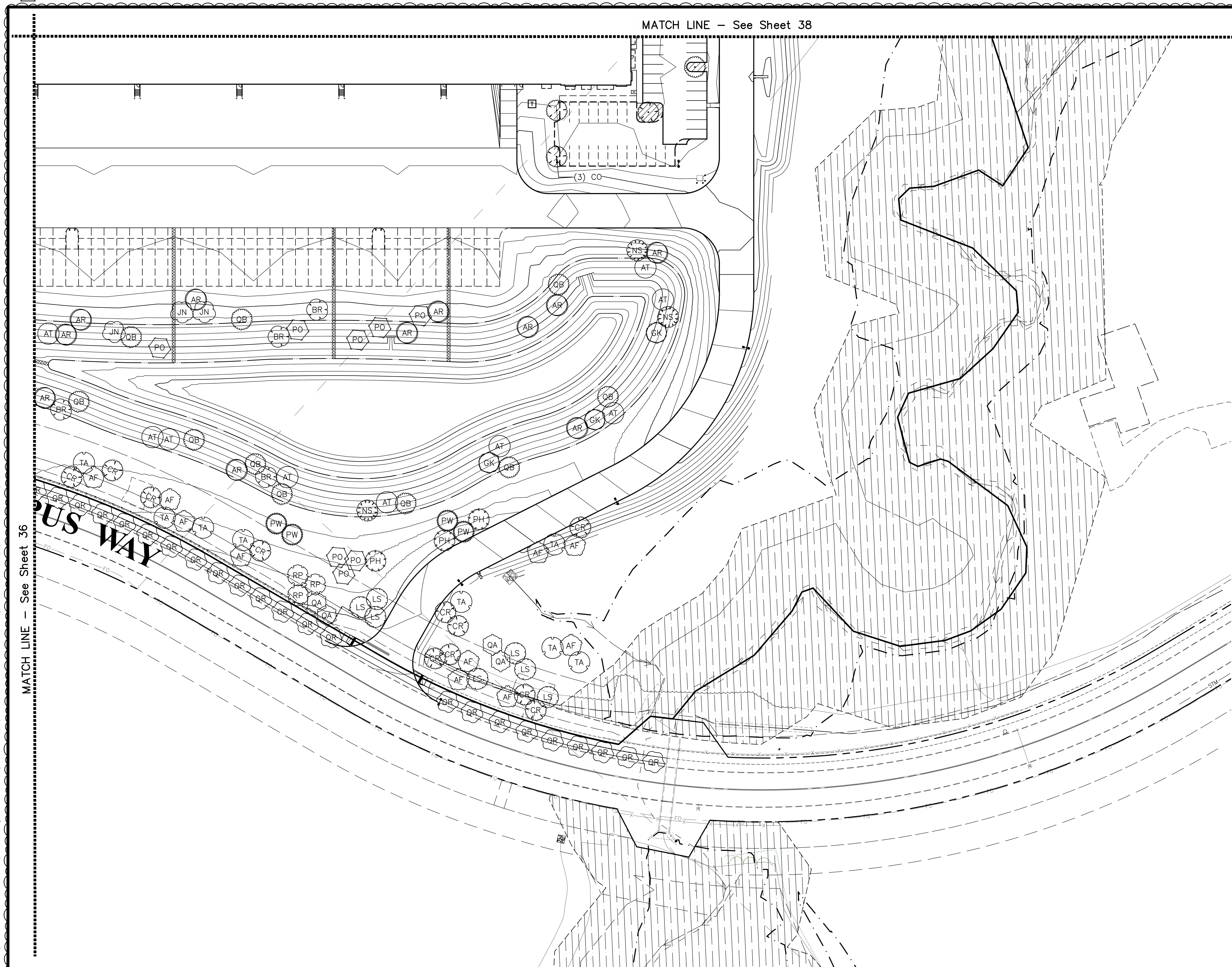
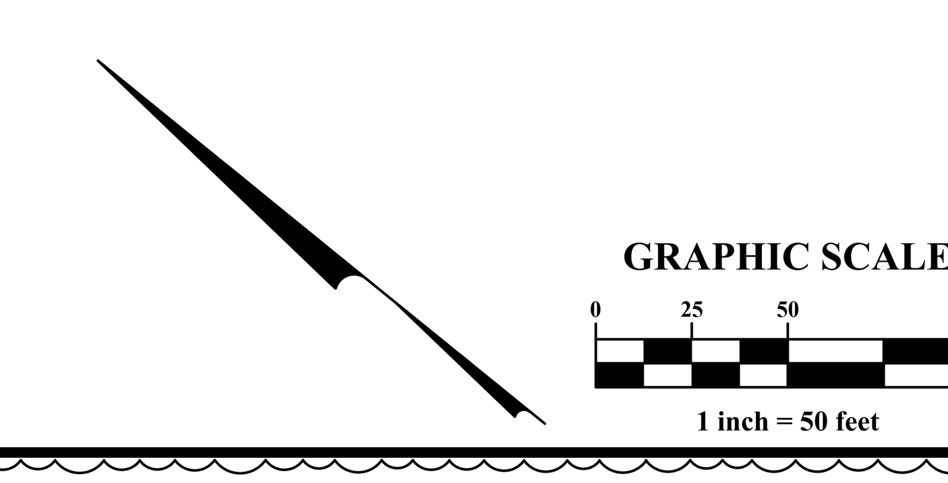


PLANT SCHEDULE SECTION D

COVERAGE TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AR	AR	10	Acer rubrum Red Maple	2.5" Cal.	B&B
AT	AT	10	Asimina triloba Pawpaw	2.5" Cal.	B&B
BR	BR	4	Betula nigra River Birch	2.5" Cal.	B&B
GK	GK	3	Gymnocladus dioica Kentucky Coffeetree	2.5" Cal.	B&B
JN	JN	3	Juglans nigra Black Walnut	2.5" Cal.	B&B
NS	NS	2	Nyssa sylvatica Tupelo	2.5" Cal.	B&B
PO	PO	8	Platanus occidentalis American Sycamore	2.5" Cal.	B&B
PH	PH	3	Populus deltoides Eastern Cottonwood	2.5" Cal.	B&B
PW	PW	4	Prunus serotina Wild Black Cherry	2.5" Cal.	B&B
QB	QB	10	Quercus bicolor Swamp White Oak	2.5" Cal.	B&B
FRONTAGE TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**CONDITION**
AF	AF	10	Aesculus flava Yellow Buckeye	2.5" Cal.	B&B
CR	CR	11	Carya ovata Shagbark Hickory	2.5" Cal.	B&B
LS	LS	7	Liquidambar styraciflua Sweet Gum	2.5" Cal.	B&B
QA	QA	4	Quercus alba White Oak	2.5" Cal.	B&B
RP	RP	3	Robinia pseudoacacia Black Locust	2.5" Cal.	B&B
TA	TA	8	Tilia americana American Linden	2.5" Cal.	B&B
PARKING LOT TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**CONDITION**
	AB	1	Acer nigrum Black Maple	2.5" Cal.	B&B
	CO	3	Celtis occidentalis Common Hackberry	2.5" Cal.	B&B
STREET TREES	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**CONDITION**
QR	QR	22	Quercus rubra Red Oak	3" Cal.	B&B



REVISIONS

MARK	DATE	DESCRIPTION
	3/24/22	Permit Corrections
	5/25/22	Revised per City comments
2	7/19/22	Revision 2
3	7/29/22	Revised Tree Quantities
	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
LANDSCAPE PLAN D

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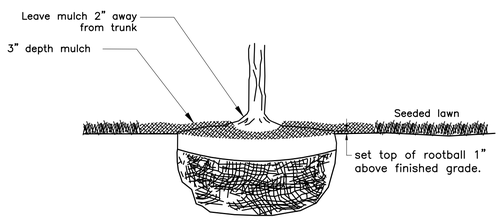

Rootball Setting
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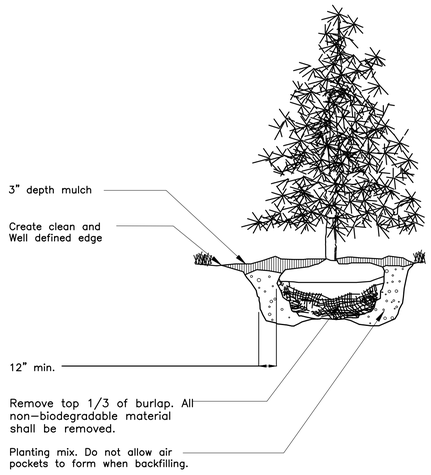

Evergreen Tree Planting
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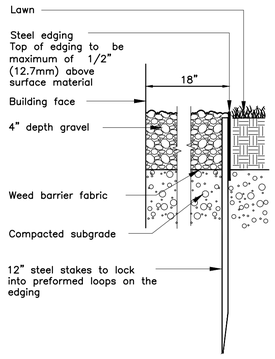

GRAVEL EDGE AT BUILDING
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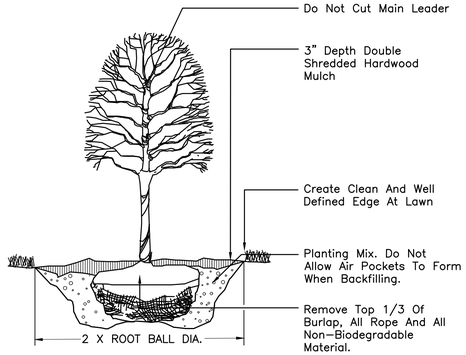

Deciduous Tree Planting
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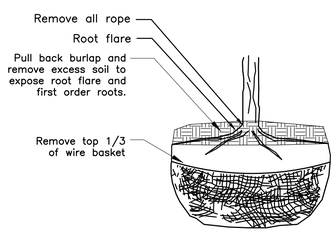

Rootball Preparation
No Scale

PLANT SCHEDULE SITE PLANTING

COVERAGE TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AR	AR	16	Acer rubrum Red Maple	2.5" Cal.	B&B
AS	AS	9	Acer saccharum Sugar Maple	2.5" Cal.	B&B
AT	AT	15	Asimina triloba Pawpaw	2.5" Cal.	B&B
BA	BA	10	Betula alleghaniensis Yellow Birch	2.5" Cal.	B&B
BR	BR	15	Betula nigra River Birch	2.5" Cal.	B&B
GK	GK	12	Gymnocladus dioica Kentucky Coffeetree	2.5" Cal.	B&B
JN	JN	17	Juglans nigra Black Walnut	2.5" Cal.	B&B
NS	NS	9	Nyssa sylvatica Tupelo	2.5" Cal.	B&B
PO	PO	20	Platanus occidentalis American Sycamore	2.5" Cal.	B&B
PH	PH	9	Populus deltoides Eastern Cottonwood	2.5" Cal.	B&B
PW	PW	10	Prunus serotina Wild Black Cherry	2.5" Cal.	B&B
QB	QB	12	Quercus bicolor Swamp White Oak	2.5" Cal.	B&B

BUFFER TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
	PA	21	Picea abies Norway Spruce	6' Ht.	B&B
	PM	15	Picea omorika Serbian Spruce	6' Ht.	B&B
	PS	16	Pinus strobus White Pine	6' Ht.	B&B

FRONTAGE TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AF	AF	13	Aesculus flava Yellow Buckeye	2.5" Cal.	B&B
CR	CR	15	Carya ovata Shagbark Hickory	2.5" Cal.	B&B
LS	LS	13	Liquidambar styraciflua Sweet Gum	2.5" Cal.	B&B
QA	QA	11	Quercus alba White Oak	2.5" Cal.	B&B
RP	RP	9	Robinia pseudoacacia Black Locust	2.5" Cal.	B&B
TA	TA	11	Tilia americana American Linden	2.5" Cal.	B&B

ORNAMENTAL TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
AA	AA	10	Amelanchier arborea Downy Serviceberry	2.5" Cal.	B&B
CI	CI	10	Crataegus crus-galli inermis Thornless Cockspur Hawthorn	2.5" Cal.	B&B
MA	MA	13	Magnolia virginiana australis Sweetbay Magnolia	2.5" Cal.	B&B

PARKING LOT TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
	AB	8	Acer nigrum Black Maple	2.5" Cal.	B&B
	CO	8	Celtis occidentalis Common Hackberry	2.5" Cal.	B&B
	GI	11	Gleditsia triacanthos inermis Thornless Honey Locust	2.5" Cal.	B&B
	LT	8	Liriodendron tulipifera Tulip Poplar	2.5" Cal.	B&B

STREET TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
QR	QR	34	Quercus rubra Red Oak	3" Cal.	B&B

GENERAL NOTES

1. Prior to installation, the landscape contractor shall inspect the general site conditions and verify the subgrade, elevations, utility locations and topsoil provided by general contractor. The landscape contractor shall notify the general contractor of any unsatisfactory conditions and work shall not proceed until such conditions have been corrected and are acceptable to the landscape contractor.
2. All plants shall meet or exceed standards set in the American Standard for Nursery Stock, ANSI Z60.1, current edition. All plants shall equal or exceed the measurements and sizes specified in the schedule.
3. Substitutions shall only be permitted with notification and written approval from the Owner. Substituted material shall be equivalent or greater in size than the specified plant. Substituted plants shall have the same essential characteristics and growth habit of the specified plant.
4. Confirm location of all utilities and subsurface drain lines prior to plant installation.
5. A pre-installation conference shall be conducted prior to planting operations with Owner and Contractor present.
6. Contractor may slightly field adjust plant locations as necessary to avoid utilities. Finished planting beds shall be graded to provide positive drainage.
7. Irrigation system, if applicable, shall be complete and operational prior to landscape planting.
8. Contractor shall repair all lawn areas disturbed during construction with seed and warrant a healthy, weed free lawn prior to project acceptance.
9. Seed all areas within contract limits that are not covered by paving, buildings or planting beds unless otherwise noted. Seeding shall not begin until area has received topsoil and finished grade.
10. Mulch planting beds with shredded hardwood mulch of uniform dark brown color. It shall be free of twigs, leaves, disease, pest or other material unsightly or injurious to plants. Average applied thickness shall be 3" depth. Mulch hedges in a continuous bed.
11. Planting beds shall be covered with pre-emergent herbicide applied at product specified rate unless otherwise noted.
12. Bed edge shall be smooth, consistent, hand trenched 4" deep and "V" shaped unless otherwise noted. All excavated material shall be removed from the bed edge and planting bed.
13. All planting bed edges to be smooth flowing arcs or straight lines as shown on plan. Plant locations and layout of beds shall be located by Contractor and approved by Landscape Architect prior to planting.
14. Install all plants in accordance with planting details and specifications.
15. Parking lot and street trees shall have a clear canopy height of 6' min.
16. Trees shall be placed a minimum of 3' from sidewalks and curbs.
17. Planting Mix shall be blended, manufactured soil consisting of three (3) parts topsoil, one (1) part compost, one (1) part sand. Topsoil shall be per ASTM D5268, ph range of 5.5 to 7, min. 4 percent organic material, free of stones and soil clumps 3/4 inch and larger. Compost shall be yard waste compost from an EPA rated Class IV compost facility or Cam-Ti compost from City of Columbus Department of Public Utilities. Sand shall be per Item ASTM C33. Proprietary manufactured Planting Mix such as Kurtz Bros. Professional Blend or Jones SuperSoil may be used. Submit product data for review by Owner. Place Planting Mix in settled 6 inch lifts.
18. Mix Mycorrhizal Fungi into Planting Mix during placement of Planting Mix. Application rate shall be according to manufacturer's written recommendations. Mycorrhizal Fungi shall be a dry, granular inoculant containing vesicular-arbuscular mycorrhizal fungi and ectomycorrhizal fungi.
19. Excavate planting beds to a depth of 12 inches, unless otherwise indicated. Roto-til subgrade of excavation to a depth of 4 inches, unless otherwise indicated. Incorporate a 6 inch lift of planting mix into subrade. Place remaining Planting Mix in settled 6 inch lifts.
20. Planting beds, including mulch, shall be no higher than 6 inches above adjacent grade and shall not impede surface drainage.
21. Lawn areas shall be backfilled with Planting Mix to a minimum settled thickness of 6 inches. Roto-Til subgrade below lawns to a depth of 4 inches, unless otherwise indicated, prior to placement of Planting Mix.
22. All trees and shrubs shall be fertilized with controlled release tablets of 20-10-5 composition. Size and number of tablets shall be per manufacturer's instructions.
23. Composition and application rate of lawn fertilizer shall be sufficient to amend soil according to recommendations of a qualified soil testing agency. Submit soil test results and amendment recommendations to Owner. Lawn fertilizer shall be in a dry granular form.
24. Contractor to determine plant list quantities from the plan. Graphic representation on plan supersedes in case of discrepancy with quantities on schedule.
25. Any item or areas damaged during construction shall be repaired or replaced to its original condition at the contractor expense.
26. Contractor shall thoroughly water all plants at time of installation and as needed until project acceptance by owner. Contractor shall guarantee all plants installed for one full year from date of acceptance by the Owner. All plants shall be alive and at a vigorous rate of growth at the end of the guarantee period.
27. All annuals to be provided by Contractor from available seasonal stock.
28. Lawn seed mix shall proportioned by weight as follows: 10 percent NuBlue or Blue Chip Kentucky Bluegrass; 10 percent Caddieshack or GoalKeeper Perennial Ryegrass; 80 percent Quest, Inferno, Arid 3 and/or Pixie Tall Fescue (select 2). Sodded lawns shall match seeded lawns. Seeding rate shall be 8 to 10 pounds per 1000 square feet.
29. Lawn seed shall not have less than 98 percent purity and shall not have less than 90 percent germination.

REVISIONS

MARK	DATE	DESKRIPTION
	3/24/22	Permit Corrections
	5/25/22	Revised per City comments
	7/19/22	Revision 2
1	7/29/22	Revised Tree Quantities
2	4/3/23	Revised As Constructed

VANTRUST

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE SITE IMPROVEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
DETAILS

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Engineers, Surveyors, Planners, Scientists
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Job Number: 2021-0460

NEW ALBANY 525 BUILDING

Stormwater Management Plan (SWMP)

Prepared For: Vantrust

December 15, 2021

emht.com

EMHT

PROJECT SUMMARY

Project:	New Albany 525 Building
Location:	City of New Albany, Ohio
Type:	Stormwater Management Plan
Reviewing Agency:	City of New Albany, Ohio EPA

HYDROLOGIC SUMMARY

Rainfall Data: NOAA Atlas 14, Volume 2, Version 3, 2004

1-yr	2.20”
2-yr	2.63”
5-yr	3.24”
10-yr	3.74”
25-yr	4.44”
50-yr	5.02”
100-yr	5.63”

Rainfall Distribution:	NRCS Type II 24 hour
Detention Policy:	City of New Albany
Water Quality:	City of New Albany, Ohio EPA
Hydrology Modeling Program:	HydroCAD 10.10

DESIGN SUMMARY

Detention:	Wet Basins
Water Quality:	Wet Basins
Receiving Water Body:	South Fork Licking River

REVISIONS

EMHT

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2.0 Hydrologic Analysis 1
3.0 Pre-Developed Analysis 2
4.0 Post-Developed Analysis 2
5.0 Outlet Design 4
6.0 Water Quality 5
7.0 Sediment Basin Calculations 5
8.0 Conclusion 5

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Table 2 - Pre-developed Peak Flow Rates 2
Table 3 - Post-developed Subarea Characteristics 3
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Table 6 - Water Quality Calculations 5
Table 7 - Sediment Basin Calculations 5

APPENDICES

Appendix A: USDA Soils Report
Appendix B: Storm Sewer Calculations
Appendix C: Water Quality and Sediment Basin Calculations
Appendix D: HydroCAD Output
Appendix E: Exhibits

1.0 INTRODUCTION

The following report provides a detailed analysis and design of the Stormwater Management Plan for New Albany 525 Building. The proposed site is located north of Innovation Campus Way and west of Mink Street NW. The proposed project area involves the development of an open field and wooded area into a commercial development. The Stormwater Management Plan was prepared in accordance with the requirements of both the City of New Albany and the Ohio EPA. The runoff from this site will be routed through two wet basins for quantity and quality control before discharging to South Fork Licking River.

Figure 1 – Site Location Map

2.0 HYDROLOGIC ANALYSIS

Hydrologic parameters such as Runoff Curve Number (RCN) and Time of Concentration were determined using standard Natural Resources Conservation Service (NRCS) methodology. The 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storm event discharge amounts were calculated using the NRCS TR-55 method. This analysis reflects the NRCS Type II distribution, 24-hr storm duration. Rainfall depths were obtained from NOAA Atlas 14, Volume 2, Version 3, 2004. The peak flow rates were computed using the HydroCAD 10.10 computer program.

3.0 PRE-DEVELOPED ANALYSIS

The pre-developed condition, as seen on Exhibit 1 in Appendix E, consists of open field and wooded area in good condition in Type "C" soils (Bennington Silt Loam) which corresponds to a Runoff Curve Number of 75. Pre-developed 01 naturally drains to the southeast to the South Fork Licking River. Pre-developed 02 naturally drains to the southwest to the South Fork Licking River.

All pre-developed subarea characteristics are summarized in Table 1. Pre-developed peak flow rates are provided in Table 2. All time of concentration calculations can be found in the HydroCAD output in Appendix D.

Table 1 -Pre-developed Subarea Characteristics

Subarea Identifier	Tributary Area (acres)	Land Usage	Runoff Curve Number	% Impervious (%)	Time of Concentration (min)	1-year Runoff Volume (ac-ft)
Pre-developed 01	12.20	Open Space, Impervious cover	77	0%	30.7	0.989
Pre-developed 02	21.20	Open Space, Impervious cover	72	0%	41.8	0.387
Total	**33.40**	**-**	**75**	**0%**	**-**	**1.376**

Table 2 -Pre-developed Peak Flow Rates

Storm Event (year)	Pre-developed 01 Peak Flow Rates (cfs)	Pre-developed 02 Peak Flow Rates (cfs)
1	8.77	2.32
2	13.74	4.13
5	21.61	7.24
10	28.60	10.14
25	38.90	14.51
50	47.77	18.35
100	57.31	22.55

4.0 POST-DEVELOPED ANALYSIS

Exhibit 2, provided within Appendix E, shows the post-developed condition. The New Albany 525 Building project will utilize two wet basins to provide quantity and quality control for the proposed development. Subarea 01 will drain to Basin 01 which discharges to Outfall 01. Subarea 02 will drain to Basin 02 which discharges to Outfall 02.

The post-developed subarea characteristics are summarized in Table 3. The post-developed allowable release rates and proposed release rates can be found in Tables 4 and 5.

Table 3 -Post-developed Subarea Characteristics

Subarea Identifier	Tributary Area (acres)	Land Usage	Runoff Curve Number	% Impervious (%)	Time of Concentration (min)	1-year Runoff Volume (ac-ft)
Subarea 01	10.50	Commercial	94	85%	10.0	3.023
Subarea 02	22.90	Commercial	94	85%	10.0	1.386
Total	**33.40**	**-**	**94**	**85%**	**-**	**4.409**

Outfall 01

The 1-year runoff volume for the post-developed site increases to 3.023 ac-ft, an increase of 205.66% from the existing condition, which results in 25-year critical storm event.

% Increase = [(3.023 – 0.989)/0.989] x 100 = 205.66%
25-Yr Critical Storm

Table 4 - Outfall 01 Allowable vs Proposed Release Rates

Storm Event (yr.)	Pre-developed 01 Peak Flow Rates (cfs.)	Allowable Release Rates (cfs.)	Basin 01 Proposed Release Rates (cfs.)	Maximum W.S.E., T.O.B. = 1178.50 (feet)	Storage Volume Utilized (ac-ft)
1	8.77	8.77	2.57	1,174.24	1.892
2	13.74	8.77	4.52	1,174.53	2.274
5	21.61	8.77	6.35	1,174.99	2.917
10	28.60	8.77	7.47	1,175.36	3.474
25	38.90	8.77	8.75	1,175.86	4.276
50	47.77	47.77	13.91	1,176.18	4.820
100	57.31	57.31	17.24	1,176.52	5.404

Storage Utilized (100-yr event): 5.404 ac-ft
Storage Provided (Top of Bank = 1178.50 ft.): 9.461 ac-ft

Outfall 02

The 1-year runoff volume for the post-developed site increases to 1.386 ac-ft, an increase of 258.14% from the existing condition, which results in 50-year critical storm event.

% Increase = [(1.386 – 0.387)/0.387] x 100 = 258.14%
50-Yr Critical Storm

Table 5 -Outfall 02 Allowable vs Proposed Release Rates

Storm Event (yr.)	Pre-developed 02 Peak Flow Rates (cfs.)	Allowable Release Rates (cfs.)	Basin 02 Proposed Release Rates (cfs.)	Maximum W.S.E., T.O.B. = 1181.00 (feet)	Storage Volume Utilized (ac-ft)
1	2.32	2.32	0.91	1177.56	0.891
2	4.13	2.32	1.23	1177.88	1.108
5	7.24	2.32	1.55	1178.35	1.444
10	10.14	2.32	1.75	1178.73	1.730
25	14.51	2.32	2.00	1179.24	2.142
50	18.35	2.32	2.17	1179.64	2.491
100	22.55	22.55	4.50	1179.88	2.704

Storage Utilized (100-yr event): 2.704 ac-ft
Storage Provided (Top of Bank = 1181.00 ft.): 3.809 ac-ft

5.0 OUTLET DESIGN

The outlet structure for Basin 01 will be located on the west side of the basin. The outlet structure for Basin 02 will be located on the south side of the basin. The location of these structures can be seen on Exhibit 2 in Appendix D.

Basin 01 - Outlet Control Structure

- Bottom of Basin –1168.50 ft.
- Normal Pool –1172.50 ft.
- Top of Bank – 1178.50 ft.
- 1st stage outlet – 6.0-inch orifice, cut into submerged riser pipe, invert at 1172.50 ft.
- 2nd stage outlet – 27-inch wide by 6-inch high window, invert at 1173.90 ft.
- 3rd stage outlet – Neenah R-4871 grate, top of casting at 1175.90 ft.
- Tailwater Control – 24-inch outlet pipe with 0.69% slope, invert at 1170.00 ft. (controls 1st through 3rd stage outlets)

Basin 02 - Outlet Control Structure

- Bottom of Basin –1171.00 ft.
- Normal Pool –1176.00 ft.
- Top of Bank – 1181.00 ft.
- 1st stage outlet – 4.5-inch orifice, cut into submerged riser pipe, invert at 1176.00 ft.
- 2nd stage outlet – 5.5-inch orifice, cut into submerged riser pipe, invert at 1177.20 ft.

- 3rd stage outlet – Neenah R-4871 grate, top of casting at 1179.7.00 ft.
- Tailwater Control – 24-inch outlet pipe with 0.50% slope, invert at 1176.00 ft. (controls 1st through 3rd stage outlets)

6.0 WATER QUALITY

The Ohio EPA requires that the water quality volume for wet basins be detained for a period of 24 hours while not discharging more than the first half of the water quality volume in less than 8 hours. Water quality drawdown for the basin will be provided by the basin's 1st stage outlet listed in Section 5.0.

Table 6 -Water Quality Calculations

Basin Identifier	Tributary area (acres)	Percent Impervious (%)	Water Quality Volume (ac-ft)	Water Quality Elevation (feet)
Basin 01	22.90	85%	1.400	1173.84
Basin 02	10.50	85%	0.642	1177.17

7.0 SEDIMENT BASIN CALCULATIONS

The Ohio EPA requires that during construction a site must provide a means by which to control the sediment laden runoff from the construction site. For each acre of drainage area that is tributary to the sediment basin, a drawdown volume of 67 yd^3 is provided above the normal pool elevation. The basin will additionally provide more than the required 37 yd^3 of settling volume below the normal pool elevation for each acre of disturbed area tributary to the basin.

Basin 01 and Basin 02 will be used as a sediment basin during construction. Sediment Basin Calculations are described in Table 7 below and provided within Appendix B.

Table 7 -Sediment Basin Calculations

Basin Identifier	Tributary area (acres)	Disturbed area (acres)	Required Dewatering Volume (ac-ft)	Provided Dewatering Volume (ac-ft)	Required Sediment Storage Volume (ac-ft)	Provided Sediment Storage Volume (ac-ft)	Skimmer Orifice Size (inches)
Basin 01	22.90	22.90	0.95	0.95	0.53	2.26	4.0"
Basin 02	10.50	10.50	0.44	0.44	0.24	1.41	3.0"

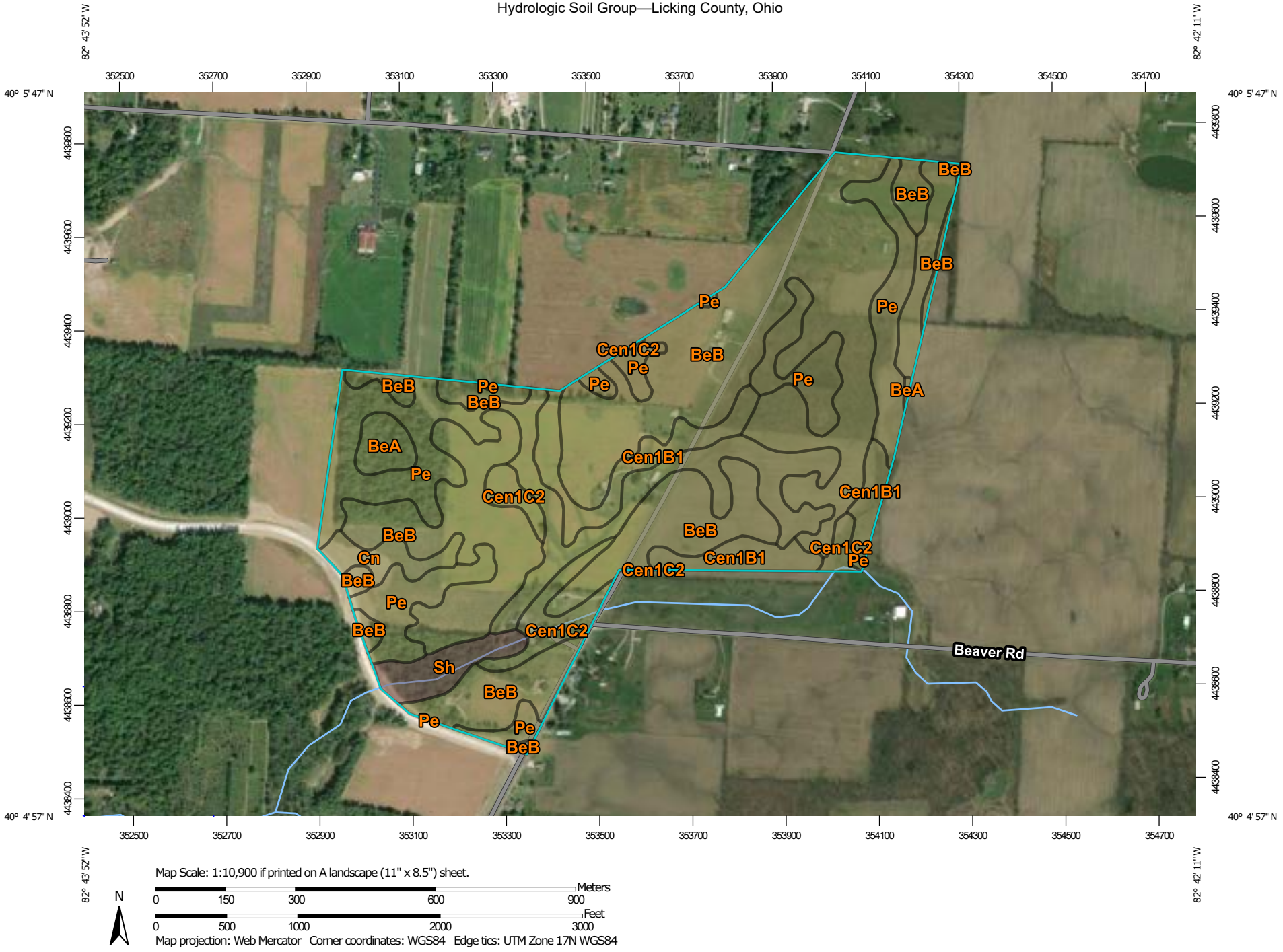
8.0 CONCLUSION

The proposed stormwater management plan for New Albany 525 Building meets all requirements for detention and water quality as set forth by the City of New Albany and the Ohio EPA.

EMHT

APPENDIX A:

USDA Soils Report


82° 43' 52" W
82° 42' 11" W
40° 5' 47" N
40° 4' 57" N
352500
352700
352900
353100
353300
353500
353700
353900
354100
354300
354500
354700
4439800
4439600
4439400
4439200
4439000
4438800
4438600
4438400
BeB
BeA
Pe
Cen1C2
Cen1B1
Cn
Sh
Beaver Rd
Map Scale: 1:10,900 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 150 300 600 900
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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: Licking County, Ohio
Survey Area Data: Version 18, Jun 11, 2020

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

Date(s) aerial images were photographed: Jul 31, 2010—Oct 2, 2017

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeA	Bennington silt loam, 0 to 2 percent slopes	C/D	3.4	1.6%
BeB	Bennington silt loam, 2 to 6 percent slopes	C/D	111.0	52.1%
Cen1B1	Centerburg silt loam, 2 to 6 percent slopes	C/D	16.0	7.5%
Cen1C2	Centerburg silt loam, 6 to 12 percent slopes, eroded	C/D	14.2	6.6%
Cn	Condit silt loam, 0 to 1 percent slopes	C/D	4.0	1.9%
Pe	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	C/D	58.9	27.6%
Sh	Shoals silt loam, 0 to 2 percent slopes, occasionally flooded	B/D	5.7	2.7%
Totals for Area of Interest			**213.3**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

EMHT

APPENDIX B:

Storm Sewer Calculations

EMH&T
Engineers, Surveyors, Planners, Scientists

STORM SEWER COMPUTATION SHEET

SHT 1

Project: New Albany 525 Building
Job No.: 2021-0460
Intensity Reference: Columbus

Date: 12/16/21
By: JAO
Checked: NAO

Revised:
Revised:

2 Yr Design Storm n= 0.012

Struc.	Struc. Index	Sta.	Drainage Area Trib	Cumul.	C	Cumul CA	Time Delta t Min.	Sum t Min.	Intensity in/hr	Des Q CFS	Length ft.	Dia. In	Slope%	Vel	Cap. Flowing Full	Status	In	Out	TC	Remarks	5 YEAR HYDRAULIC GRADE LINE 5 Yr Rainfall Intensity	Discharge Q	Slope %	Minor Losses	5 Yr HGL w/o minor losses
12	CB2	14+35.82	0.17	0.17	0.90		5.00	5.00	5.03	0.77							1178.20		1182.50						
Std. Catch Basin			0.00		0.90	0.15					100.00	12	0.40%	3.1	2.4	OK				3.13 ft. cover	6.12	0.94	0.0586	-	1180.45
AA-S133A																				4.30 ft. depth					ok
11	CB2	13+35.82	0.17	0.34	0.90		0.53	5.53	4.88	1.49							1177.70	1177.80	1182.50	0.10 DROP					
Std. Catch Basin			0.00		0.90	0.31					100.00	12	0.40%	3.1	2.4	OK				3.53 ft. cover	5.93	1.82	0.2201	-	1180.39
AA-S133A																				4.80 ft. depth					ok
10	CB2	12+35.82	0.17	0.51	0.90		0.53	6.07	4.73	2.17							1177.20	1177.30	1182.50	0.10 DROP					
Std. Catch Basin			0.00		0.90	0.46					100.00	12	0.40%	3.1	2.4	OK				4.03 ft. cover	5.76	2.64	0.4660	-	1180.17
AA-S133A																				5.30 ft. depth					ok
9	CB2	11+35.82	0.34	0.85	0.90		0.53	6.60	4.60	3.52							1176.70	1176.80	1182.50	0.10 DROP					
Std. Catch Basin			0.00		0.90	0.77					100.00	12	0.85%	4.5	3.6	OK				4.53 ft. cover	5.59	4.28	1.2209	-	1179.70
AA-S133A																				5.80 ft. depth					ok
8	CB3	10+35.82	0.58	1.43	0.90		0.37	6.97	4.51	5.81							1175.75	1175.85	1182.50	0.10 DROP					
Std. Catch Basin			0.00		0.90	1.29					140.75	15	0.70%	4.8	5.9	OK				5.31 ft. cover	5.48	7.06	1.0110	-	1178.48
AA-S133B																				6.75 ft. depth					ok
7	CB3	8+95.07	0.00	6.60	0.90		0.49	7.46	4.40	26.14							1174.66	1174.76	1186.31	0.10 DROP					
Std. Catch Basin			5.17		0.90	5.94					177.82	36	0.15%	4.0	28.1	OK				8.32 ft. cover	5.35	31.75	0.1920	-	1177.06
AA-S133B																				11.65 ft. depth					ok
6	CB3	7+17.25	0.45	7.05	0.90		0.75	8.21	4.24	26.92							1174.29	1174.39	1184.95	0.10 DROP					
Std. Catch Basin			0.00		0.90	6.35					150.00	36	0.15%	4.0	28.1	OK				7.23 ft. cover	5.15	32.68	0.2035	-	1176.69
AA-S133B																				10.66 ft. depth					ok
5	CB3	5+67.25	0.36	7.41	0.90		0.63	8.84	4.12	27.46							1173.96	1174.06	1184.95	0.10 DROP					
Std. Catch Basin			0.00		0.90	6.67					150.00	36	0.15%	4.0	28.1	OK				7.56 ft. cover	5.00	33.34	0.2118	-	1176.36
AA-S133B																				10.99 ft. depth					ok
4	CB3	4+17.25	0.35	7.76	0.90		0.63	9.47	4.00	27.94							1173.63	1173.73	1184.95	0.10 DROP					
Std. Catch Basin			0.00		0.90	6.98					150.00	36	0.20%	4.6	32.4	OK				7.89 ft. cover	4.86	33.92	0.2192	-	1176.03
AA-S133B																				11.32 ft. depth					ok
3	CB3	2+67.25	0.36	8.12	0.90		0.55	10.01	3.90	28.54							1173.23	1173.33	1184.95	0.10 DROP					
Std. Catch Basin			0.00		0.90	7.31					129.23	36	0.20%	4.6	32.4	OK				8.29 ft. cover	4.74	34.65	0.2288	-	1175.63
AA-S133B																				11.72 ft. depth					ok
2	CB3	1+38.02	0.16	8.28	0.90		0.47	10.48	3.83	28.51							1172.87	1172.97	1186.41	0.10 DROP					
Std. Catch Basin			0.00		0.90	7.45					65.58	36	0.20%	4.6	32.4	OK				10.11 ft. cover	4.65	34.63	0.2285	-	1175.32
AA-S133B																				13.54 ft. depth					ok
1	CB3	0+72.44	0.36	8.64	0.90		0.24	10.72	3.79	29.45							1172.64	1172.74	1181.75	0.10 DROP					
Std. Catch Basin			0.00		0.90	7.78					72.44	36	0.20%	4.6	32.4	OK				5.68 ft. cover	4.60	35.77	0.2438	-	1175.17
AA-S133B																				9.11 ft. depth					ok
HW1	HW4	0+00.00	0.00	8.64	0.90		0.26	10.98	3.75	29.12							1172.50	1172.50	1176.17	0.00 DROP					
Headwall			0.00		0.90	7.78					0.00	36	0.20%	4.6	32.4	OK				0.33 ft. cover	4.55	35.38	0.2385	-	1174.99
AA-S168																				3.67 ft. depth					ok

EMH&T
Engineers, Surveyors, Planners, Scientists

STORM SEWER COMPUTATION SHEET

SHT 2

Project: **New Albany 525 Building**
Job No.: **2021-0460**
Intensity Reference: Columbus

Date: 12/16/21
By: JAO
Checked:

Revised:
Revised:

2 Yr Design Storm n= **0.012**

Struc.	Struc. Index	Sta.	Drainage Area Trib	Cumul.	C	Cumul CA	Time Delta t Min.	Sum t Min.	Intensity in/hr	Des Q CFS	Length ft.	Dia. In	Slope%	Vel	Cap. Flowing Full	Status	In	Out	TC	Remarks	5 YEAR HYDRAULIC GRADE LINE: 5 Yr Rainfall Intensity	Discharge Q	Slope %	Minor Losses	5 Yr HGL w/o minor losses
15	CB2	4+70.60	0.65	0.65	0.90		5.00	5.00	5.03	2.94							1177.60		1182.40						
Std. Catch Basin			0.00		0.90	0.59					150.00	18	0.25%	3.2	5.7	OK				3.09 ft. cover	6.12	3.58	0.0986	-	1180.04
AA-S133A																				4.80 ft. depth					ok
14	CB3	3+20.60	0.65	2.80	0.90		0.77	5.77	4.81	12.85							1177.12	1177.22	1182.40	0.10 DROP					
Std. Catch Basin			1.50		1.00	2.67					150.00	24	0.30%	4.3	13.5	OK				3.03 ft. cover	5.85	15.63	0.4044	-	1179.89
AA-S133B																				5.28 ft. depth					ok
13	CB3	1+70.60	0.87	5.17	0.90		0.58	6.36	4.66	23.09							1176.57	1176.67	1182.40	0.10 DROP					
Std. Catch Basin			1.50		1.00	4.95					170.60	24	1.00%	7.8	24.6	OK				3.48 ft. cover	5.66	28.06	1.3037	-	1179.28
AA-S133B																				5.83 ft. depth					ok
7	CB3	0+00.00	0.00	5.17	0.90		0.36	6.72	4.57	22.65							1174.76	1174.86	1186.31	0.10 DROP					
Std. Catch Basin			0.00		0.90	4.95					0.00	36	0.15%	4.0	28.1	OK				8.22 ft. cover	5.55	27.51	0.1442	-	1177.06
AA-S133B																				11.55 ft. depth					ok

STORM SEWER COMPUTATION SHEET

SHT 3

Project: **New Albany 525 Building** | Date: 12/16/21
Job No.: **2021-0460** | By: JAO
Intensity Reference: Columbus | Checked:
Revised:
Revised:

2 Yr Design Storm n= **0.012**

Struc.	Struc. Index	Sta.	Drainage Area Trib	Cumul.	C	Cumul CA	Time Delta t Min.	Sum t Min.	Intensity in/hr	Des Q CFS	Length ft.	Dia. In	Slope%	Vel	Cap. Flowing Full	Status	In	Out	TC	Remarks	5 YEAR HYDRAULIC GRADE LINE: 5 Yr Rainfall Intensity	Discharge Q	Slope %	Minor Losses	5 Yr HGL w/o minor losses
23	CB2	9+75.09	0.17	0.17	0.90		5.00	5.00	5.03	0.77							1178.43		1182.50						
Std. Catch Basin			0.00		0.90	0.15					100.00	12	0.40%	3.1	2.4	OK				2.90 ft. cover	6.12	0.94	0.0586	-	1180.35
AA-S133A																				4.07 ft. depth					ok
22	CB2	8+75.09	0.17	0.34	0.90		0.53	5.53	4.88	1.49							1178.03	1178.03	1182.50	0.00 DROP					
Std. Catch Basin			0.00		0.90	0.31					100.00	12	0.40%	3.1	2.4	OK				3.30 ft. cover	5.93	1.82	0.2201	-	1180.29
AA-S133A																				4.47 ft. depth					ok
21	CB2	7+75.09	0.17	0.51	0.90		0.53	6.07	4.73	2.17							1177.63	1177.63	1182.50	0.00 DROP					
Std. Catch Basin			0.00		0.90	0.46					100.00	12	0.40%	3.1	2.4	OK				3.70 ft. cover	5.76	2.64	0.4660	-	1180.07
AA-S133A																				4.87 ft. depth					ok
20	CB2	6+75.09	0.17	0.68	0.90		0.53	6.60	4.60	2.82							1177.23	1177.23	1182.50	0.00 DROP					
Std. Catch Basin			0.00		0.90	0.61					100.00	15	0.32%	3.2	4.0	OK				3.83 ft. cover	5.59	3.42	0.2377	-	1179.60
AA-S133A																				5.27 ft. depth					ok
19	CB2	5+75.09	0.34	1.02	0.90		0.52	7.12	4.48	4.11							1176.91	1176.91	1182.50	0.00 DROP					
Std. Catch Basin			0.00		0.90	0.92					135.35	18	0.25%	3.2	5.7	OK				3.88 ft. cover	5.44	4.99	0.1915	-	1179.37
AA-S133A																				5.59 ft. depth					ok
18	CB3	4+39.74	0.23	6.21	0.90		0.70	7.82	4.32	24.17							1176.57	1176.57	1182.81	0.00 DROP					
Std. Catch Basin			4.96		0.90	5.59					148.18	36	0.13%	3.7	26.1	OK				2.91 ft. cover	5.25	29.34	0.1640	-	1179.11
AA-S133B																				6.24 ft. depth					ok
17	CB3	2+91.56	0.33	6.54	0.90		0.67	8.49	4.19	24.64							1176.38	1176.38	1183.46	0.00 DROP					
Std. Catch Basin			0.00		0.90	5.89					201.96	36	0.13%	3.7	26.1	OK				3.75 ft. cover	5.08	29.92	0.1705	-	1178.86
AA-S133B																				7.08 ft. depth					ok
16	CB3	0+89.60	0.36	6.90	0.90		0.91	9.40	4.01	24.92							1176.12	1176.12	1184.95	0.00 DROP					
Std. Catch Basin			0.00		0.90	6.21					89.60	36	0.13%	3.7	26.1	OK				5.50 ft. cover	4.87	30.26	0.1744	-	1178.52
AA-S133B																				8.83 ft. depth					ok
HW2	HW4	0+00.00	0.00	6.90	0.90		0.40	9.80	3.94	24.48							1176.00	1176.00	1179.67	0.00 DROP					
Headwall			0.00		0.90	6.21					0.00	36	0.13%	3.7	26.1	OK				0.33 ft. cover	4.79	29.72	0.1683	-	1178.35
AA-S168																				3.67 ft. depth					ok

STORM SEWER COMPUTATION SHEET

EMH&T — Engineers, Surveyors, Planners, Scientists

SHT 4

Project: **New Albany 525 Building**
Job No.: **2021-0460**
Intensity Reference: Columbus

Date: 12/16/21
By: JAO
Checked:

Revised:
Revised:

2 Yr Design Storm n= **0.012**

Struc.	Struc. Index	Sta.	Drainage Area Trib	Cumul.	C	Cumul CA	Time Delta t Min.	Sum t Min.	Intensity in/hr	Des Q CFS	Length ft.	Dia. In	Slope%	Vel	Cap. Flowing Full	Status	In	Out	TC	Remarks	5 YEAR HYDRAULIC GRADE LINE: 5 Yr Rainfall Intensity	Discharge Q	Slope %	Minor Losses	5 Yr HGL w/o minor losses
26	CB3	4+36.15	0.65	2.15	0.90		5.00	5.00	5.03	9.73							1177.53		1182.40						
Std. Catch Basin			1.50		0.90	1.94					150.00	24	0.25%	3.9	12.2	OK				2.62 ft. cover	6.12	11.85	0.2326	-	1180.17
AA-S133B																				4.87 ft. depth					ok
25	CB3	2+86.15	0.65	2.80	0.90		0.64	5.64	4.85	12.22							1177.16	1177.16	1182.40	0.00 DROP					
Std. Catch Basin			0.00		0.90	2.52					150.00	24	0.30%	4.3	13.5	OK				2.99 ft. cover	5.90	14.86	0.3657	-	1179.82
AA-S133B																				5.24 ft. depth					ok
24	CB3	1+36.15	0.66	4.96	0.90		0.58	6.23	4.69	20.96							1176.71	1176.71	1182.40	0.00 DROP					
Std. Catch Basin			1.50		0.90	4.46					136.15	36	0.10%	3.2	22.9	OK				2.36 ft. cover	5.71	25.47	0.1236	-	1179.28
AA-S133B																				5.69 ft. depth					ok
18	CB3	0+00.00	0.00	4.96	0.90		0.70	6.93	4.52	20.19							1176.57	1176.57	1182.81	0.00 DROP					
Std. Catch Basin			0.00		0.90	4.46					0.00	36	0.13%	3.7	26.1	OK				2.91 ft. cover	5.49	24.53	0.1146	-	1179.11
AA-S133B																				6.24 ft. depth					ok

EMH&T
Engineers, Surveyors, Planners, Scientists

STORM SEWER COMPUTATION SHEET

SHT 5

Project: **New Albany 525 Building**
Job No.: **2021-0460**
Intensity Reference: Columbus

Date: 12/16/21
By: JAO
Checked:

Revised:
Revised:

2 Yr Design Storm n= **0.012**

Struc.	Struc. Index	Sta.	Drainage Area Trib	Cumul.	C	Cumul CA	Time Delta t Min.	Sum t Min.	Intensity in/hr	Des Q CFS	Length ft.	Dia. In	Slope%	Vel	Cap. Flowing Full	Status	In	Out	TC	Remarks	5 YEAR HYDRAULIC GRADE LINE: 5 Yr Rainfall Intensity	Discharge Q	Slope %	Minor Losses	5 Yr HGL w/o minor losses
30	CB2	5+51.79	0.71	0.71	0.90		5.00	5.00	5.03	3.21							1177.48	1177.48	1182.00	0.00 DROP					
Std. Catch Basin			0.00		0.90	0.64					171.85	18	0.25%	3.2	5.7	OK				2.81 ft. cover	6.12	3.91	0.1176	-	1179.53
AA-S133A																				4.52 ft. depth					ok
29	CB3	3+79.94	0.06	0.77	0.90		0.89	5.89	4.78	3.31							1177.05	1177.05	1186.12	0.00 DROP					
Std. Catch Basin			0.00		0.90	0.69					128.98	18	0.25%	3.2	5.7	OK				7.36 ft. cover	5.82	4.03	0.1247	-	1179.32
AA-S133B																				9.07 ft. depth					ok
28	CB3	2+50.96	0.32	1.09	0.90		0.67	6.55	4.61	4.53							1176.73	1176.73	1184.95	0.00 DROP					
Std. Catch Basin			0.00		0.90	0.98					150.00	18	0.25%	3.2	5.7	OK				6.51 ft. cover	5.61	5.50	0.2322	-	1179.16
AA-S133B																				8.22 ft. depth					ok
27	CB3	1+00.96	0.51	1.60	0.90		0.77	7.33	4.43	6.38							1176.35	1176.35	1184.95	0.00 DROP					
Std. Catch Basin			0.00		0.90	1.44					100.96	18	0.35%	3.8	6.8	OK				6.89 ft. cover	5.38	7.75	0.4613	-	1178.82
AA-S133B																				8.60 ft. depth					ok
HW3	HW4	0+00.00	0.00	1.60	0.90		0.44	7.77	4.33	6.24							1176.00	1176.00	1178.17	0.00 DROP					
Headwall			0.00		0.90	1.44					0.00	18	0.35%	3.8	6.8	OK				0.46 ft. cover	5.26	7.58	0.4412	-	1178.35
AA-S168																				2.17 ft. depth					problem

EMH&T
Engineers, Surveyors, Planners, Scientists

STORM SEWER COMPUTATION SHEET

SHT 6

Project: **New Albany 525 Building**
Job No.: **2021-0460**
Intensity Reference: Columbus

Date: 12/16/21
By: JAO
Checked:

Revised:
Revised:

2 Yr Design Storm n= **0.012**

Struc.	Struc. Index	Sta.	Drainage Area Trib	Cumul.	C	Cumul CA	Time Delta t Min.	Sum t Min.	Intensity in/hr	Des Q CFS	Length ft.	Dia. In	Slope%	Vel	Cap. Flowing Full	Status	In	Out	TC	Remarks	5 YEAR HYDRAULIC GRADE LINE: 5 Yr Rainfall Intensity	Discharge Q	Slope %	Minor Losses	5 Yr HGL w/o minor losses
EP	STUB	0+51.93	0.55	0.55	0.40		5.00	5.00	5.03	1.11							1176.13		1177.13						
Stub			0.00		0.40	0.22					14.00	12	0.43%	3.2	2.5	OK				-0.17 ft. cover	6.12	1.35	0.1212	-	
0																				1.00 ft. depth					
31	CI2	0+37.93	0.05	0.60	0.90		0.07	5.07	5.01	1.33							1175.97	1176.07	1179.61	0.10 DROP					
C&G Inlet			0.00		0.90	0.27					37.93	12	0.40%	3.1	2.4	OK				2.37 ft. cover	6.10	1.62	0.1743	-	
AA-S125A																				3.64 ft. depth					
32	CI9	0+00.00	0.05	0.65	0.90		0.20	5.28	4.95	1.53							1170.03	1175.82	1179.74	5.79 DROP					
MH Type C DCED-S102			0.00		0.90	0.31					0.00	24	0.56%	5.9	18.4	OK				2.75 ft. cover	6.02	1.87	0.0058	-	
w/ DCED S-108 Mod. & DCED-S																				9.71 ft. depth					

EMHT

APPENDIX C:

Water Quality and Sediment Basin Calculations

EMH&T

A legacy of **experience**. A reputation for **excellence**.

NEW ALBANY 525 BUILDING

WATER QUALITY VOLUME CALCULATIONS

BMP	Subarea Identifier	Area (acres)	Percent Impervious (%)	Rv	Water Quality Volume (ac-ft)	Water Quality Volume Elevation (feet)
Basin 01	Subarea 01	22.90	85%	0.82	**1.400**	1173.84
Basin 02	Subarea 02	10.50	85%	0.82	**0.642**	1177.17

Required Permanent Pool Volume =	73168	cu-ft
Provided Permanent Pool Volume =	98271	cu-ft
Required Permanent Pool Volume =	33549	cu-ft
Provided Permanent Pool Volume =	61245	cu-ft

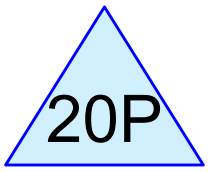
Water Quality Volume calculated using the Ohio EPA formula:

$$WQ_v = \frac{R_v \times P \times A}{12}$$

where:
A = area draining into the BMP (acres)
P = 0.90" precipitation depth
Rv = the volumetric runoff coefficient
Rv = 0.05+0.9i
Where i = fraction of post-construction impervious surface

SEDIMENT BASIN CALCULATIONS

BMP	Tributary Area (acres)	Disturbed Area (acres)	Required Dewatering Volume (67 CY/Tributary Acre) (ac-ft)	Dewatering Volume Elevation (feet)	Required Sediment Storage Volume (37 CY/Disturbed Acre) (ac-ft)
Basin 01	22.90	22.90	0.95	1173.45	0.53
Basin 02	10.50	10.50	0.44	1176.83	0.24



Basin 01 WQ

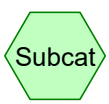
Basin 02 WQ

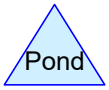
Basin 01 Skimmer

Basin 02 Skimmer

Basin 01 Below NP

Basin 02 Below NP





Project Notes

Rainfall events imported from "2018-1147 - Phase 1 North - Rev.hcp"

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	2.20	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	**0**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.000		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	20P	1,170.00	1,169.21	115.0	0.0069	0.013	0.0	24.0	0.0
2	22P	1,170.00	1,169.21	115.0	0.0069	0.013	0.0	24.0	0.0
3	23P	1,176.00	1,175.85	30.0	0.0050	0.013	0.0	24.0	0.0
4	24P	1,176.00	1,175.85	30.0	0.0050	0.013	0.0	24.0	0.0

Time span=0.00-50.00 hrs, dt=0.01 hrs, 5001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Pond 20P: Basin 01 WQ Peak Elev=1,173.84' Storage=1.402 af Inflow=0.00 cfs 0.000 af
Outflow=0.99 cfs 1.314 af

Pond 22P: Basin 01 Skimmer Peak Elev=1,173.45' Storage=0.956 af Inflow=0.00 cfs 0.000 af
Outflow=0.31 cfs 0.949 af

Pond 23P: Basin 02 WQ Peak Elev=1,177.17' Storage=0.645 af Inflow=0.00 cfs 0.000 af
Outflow=0.53 cfs 0.617 af

Pond 24P: Basin 02 Skimmer Peak Elev=1,176.83' Storage=0.443 af Inflow=0.00 cfs 0.000 af
Outflow=0.16 cfs 0.419 af

Pond 25P: Basin 01 Below NP Peak Elev=0.00' Storage=0.000 af

Pond 26P: Basin 02 Below NP Peak Elev=0.00' Storage=0.000 af

Summary for Pond 20P: Basin 01 WQ

Inflow	=	0.00 cfs @	0.00 hrs,	Volume=	0.000 af
Outflow	=	0.99 cfs @	0.00 hrs,	Volume=	1.314 af, Atten= 0%, Lag= 0.0 min
Primary	=	0.99 cfs @	0.00 hrs,	Volume=	1.314 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Starting Elev= 1,173.84' Surf.Area= 1.189 ac Storage= 1.402 af
Peak Elev= 1,173.84' @ 0.00 hrs Surf.Area= 1.189 ac Storage= 1.402 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

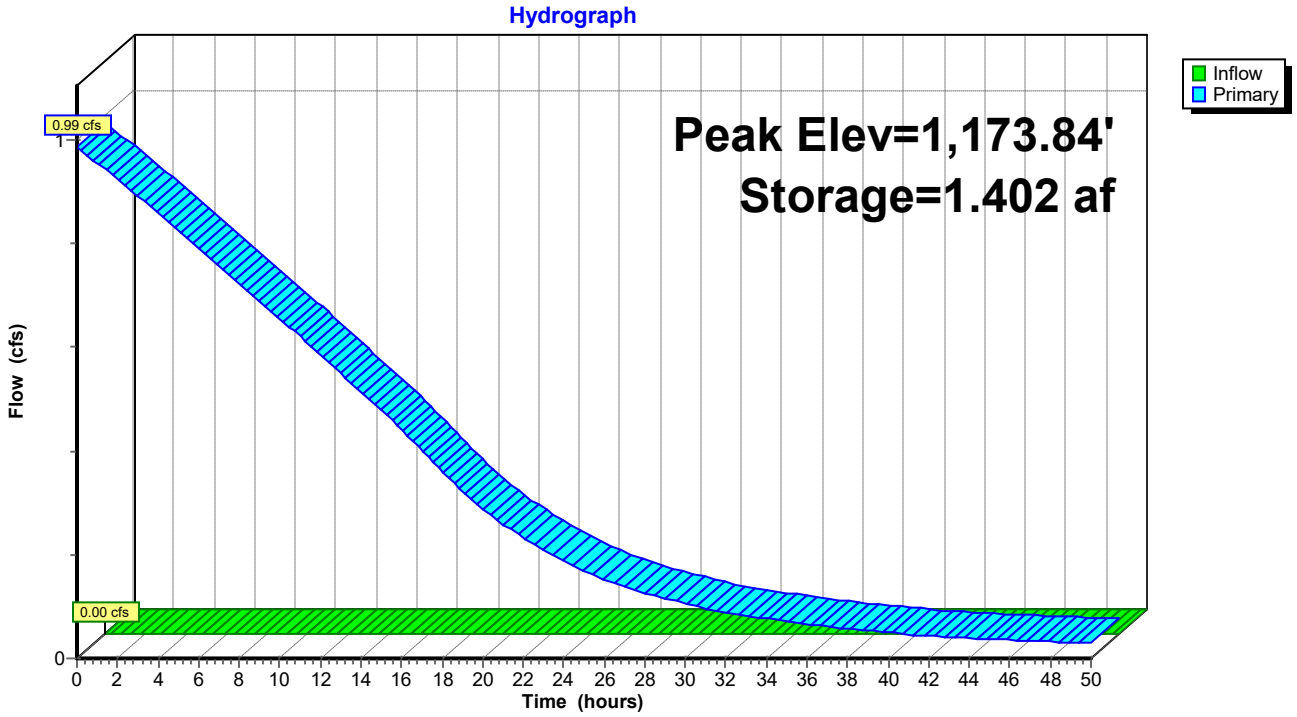
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.99 cfs @ 0.00 hrs HW=1,173.84' (Free Discharge)
↑**1=RCP_Round 24"** (Passes 0.99 cfs of 23.87 cfs potential flow)
↑**2=WQ Orifice** (Orifice Controls 0.99 cfs @ 5.03 fps)
3=Window (Controls 0.00 cfs)
4=Grate (Controls 0.00 cfs)

Pond 20P: Basin 01 WQ



Hydrograph for Pond 20P: Basin 01 WQ

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	**1.402**	**1,173.84**	**0.99**
1.00	0.00	1.321	1,173.77	0.96
2.00	0.00	1.244	1,173.71	0.92
3.00	0.00	1.169	1,173.64	0.89
4.00	0.00	1.096	1,173.58	0.86
5.00	0.00	1.027	1,173.51	0.83
6.00	0.00	0.960	1,173.45	0.79
7.00	0.00	0.896	1,173.40	0.76
8.00	0.00	0.834	1,173.34	0.73
9.00	0.00	0.776	1,173.28	0.69
10.00	0.00	0.720	1,173.23	0.66
11.00	0.00	0.667	1,173.18	0.62
12.00	0.00	0.618	1,173.13	0.59
13.00	0.00	0.571	1,173.09	0.55
14.00	0.00	0.527	1,173.05	0.51
15.00	0.00	0.486	1,173.00	0.48
16.00	0.00	0.448	1,172.97	0.44
17.00	0.00	0.413	1,172.93	0.40
18.00	0.00	0.381	1,172.90	0.36
19.00	0.00	0.353	1,172.87	0.32
20.00	0.00	0.327	1,172.85	0.29
21.00	0.00	0.305	1,172.82	0.26
22.00	0.00	0.284	1,172.80	0.23
23.00	0.00	0.266	1,172.78	0.21
24.00	0.00	0.250	1,172.77	0.19
25.00	0.00	0.235	1,172.75	0.17
26.00	0.00	0.222	1,172.74	0.15
27.00	0.00	0.210	1,172.72	0.14
28.00	0.00	0.199	1,172.71	0.13
29.00	0.00	0.189	1,172.70	0.12
30.00	0.00	0.180	1,172.69	0.11
31.00	0.00	0.171	1,172.68	0.10
32.00	0.00	0.164	1,172.68	0.09
33.00	0.00	0.157	1,172.67	0.08
34.00	0.00	0.150	1,172.66	0.08
35.00	0.00	0.144	1,172.66	0.07
36.00	0.00	0.138	1,172.65	0.07
37.00	0.00	0.133	1,172.64	0.06
38.00	0.00	0.128	1,172.64	0.06
39.00	0.00	0.123	1,172.63	0.05
40.00	0.00	0.119	1,172.63	0.05
41.00	0.00	0.115	1,172.62	0.05
42.00	0.00	0.111	1,172.62	0.04
43.00	0.00	0.108	1,172.62	0.04
44.00	0.00	0.105	1,172.61	0.04
45.00	0.00	0.101	1,172.61	0.04
46.00	0.00	0.098	1,172.61	0.04
47.00	0.00	0.096	1,172.60	0.03
48.00	0.00	0.093	1,172.60	0.03
49.00	0.00	0.090	1,172.60	0.03
50.00	0.00	0.088	1,172.60	0.03

Summary for Pond 22P: Basin 01 Skimmer

Inflow	=	0.00 cfs @	0.00 hrs,	Volume=	0.000 af
Outflow	=	0.31 cfs @	0.00 hrs,	Volume=	0.949 af, Atten= 0%, Lag= 0.0 min
Primary	=	0.31 cfs @	0.00 hrs,	Volume=	0.949 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Starting Elev= 1,173.45' Surf.Area= 1.100 ac Storage= 0.956 af
Peak Elev= 1,173.45' @ 0.00 hrs Surf.Area= 1.100 ac Storage= 0.956 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

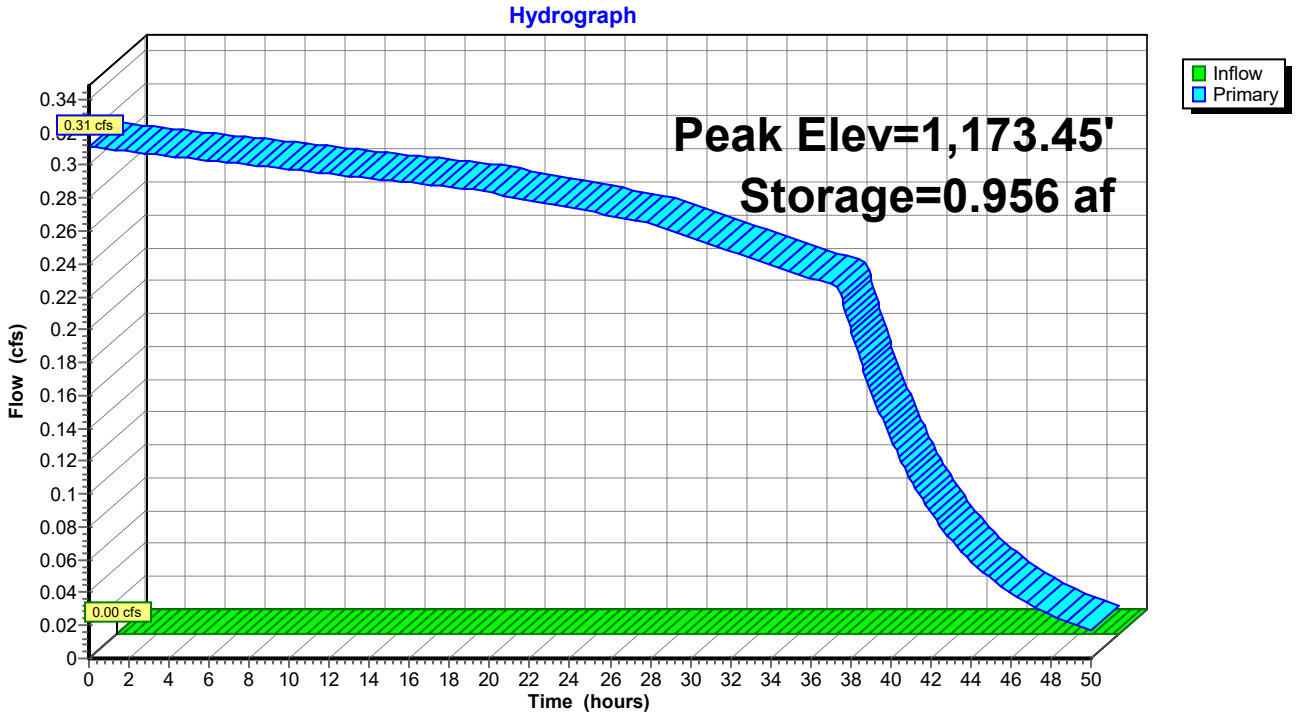
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**Marlee Float 4 in - 4 in orifice**

Primary OutFlow Max=0.31 cfs @ 0.00 hrs HW=1,173.45' (Free Discharge)
↑—**1=RCP_Round 24"** (Passes 0.31 cfs of 22.03 cfs potential flow)
↑—**2=Marlee Float 4 in - 4 in orifice** (Custom Controls 0.31 cfs)

Pond 22P: Basin 01 Skimmer



Hydrograph for Pond 22P: Basin 01 Skimmer

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	**0.956**	**1,173.45**	**0.31**
1.00	0.00	0.930	1,173.43	0.31
2.00	0.00	0.905	1,173.40	0.31
3.00	0.00	0.879	1,173.38	0.31
4.00	0.00	0.854	1,173.36	0.31
5.00	0.00	0.829	1,173.33	0.30
6.00	0.00	0.804	1,173.31	0.30
7.00	0.00	0.779	1,173.29	0.30
8.00	0.00	0.754	1,173.26	0.30
9.00	0.00	0.729	1,173.24	0.30
10.00	0.00	0.704	1,173.22	0.30
11.00	0.00	0.680	1,173.19	0.30
12.00	0.00	0.655	1,173.17	0.29
13.00	0.00	0.631	1,173.15	0.29
14.00	0.00	0.607	1,173.12	0.29
15.00	0.00	0.583	1,173.10	0.29
16.00	0.00	0.559	1,173.08	0.29
17.00	0.00	0.535	1,173.05	0.29
18.00	0.00	0.511	1,173.03	0.29
19.00	0.00	0.487	1,173.01	0.29
20.00	0.00	0.464	1,172.98	0.28
21.00	0.00	0.441	1,172.96	0.28
22.00	0.00	0.417	1,172.94	0.28
23.00	0.00	0.395	1,172.91	0.28
24.00	0.00	0.372	1,172.89	0.27
25.00	0.00	0.349	1,172.87	0.27
26.00	0.00	0.327	1,172.85	0.27
27.00	0.00	0.305	1,172.82	0.27
28.00	0.00	0.283	1,172.80	0.27
29.00	0.00	0.261	1,172.78	0.26
30.00	0.00	0.240	1,172.76	0.26
31.00	0.00	0.219	1,172.73	0.25
32.00	0.00	0.198	1,172.71	0.25
33.00	0.00	0.178	1,172.69	0.24
34.00	0.00	0.158	1,172.67	0.24
35.00	0.00	0.138	1,172.65	0.24
36.00	0.00	0.119	1,172.63	0.23
37.00	0.00	0.100	1,172.61	0.23
38.00	0.00	0.082	1,172.59	0.20
39.00	0.00	0.067	1,172.57	0.16
40.00	0.00	0.054	1,172.56	0.13
41.00	0.00	0.044	1,172.55	0.11
42.00	0.00	0.036	1,172.54	0.09
43.00	0.00	0.030	1,172.53	0.07
44.00	0.00	0.024	1,172.53	0.06
45.00	0.00	0.020	1,172.52	0.05
46.00	0.00	0.016	1,172.52	0.04
47.00	0.00	0.013	1,172.51	0.03
48.00	0.00	0.011	1,172.51	0.03
49.00	0.00	0.009	1,172.51	0.02
50.00	0.00	0.007	1,172.51	0.02

Summary for Pond 23P: Basin 02 WQ

Inflow	=	0.00 cfs @	0.00 hrs,	Volume=	0.000 af
Outflow	=	0.53 cfs @	0.00 hrs,	Volume=	0.617 af, Atten= 0%, Lag= 0.0 min
Primary	=	0.53 cfs @	0.00 hrs,	Volume=	0.617 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Starting Elev= 1,177.17' Surf.Area= 0.611 ac Storage= 0.645 af
Peak Elev= 1,177.17' @ 0.00 hrs Surf.Area= 0.611 ac Storage= 0.645 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

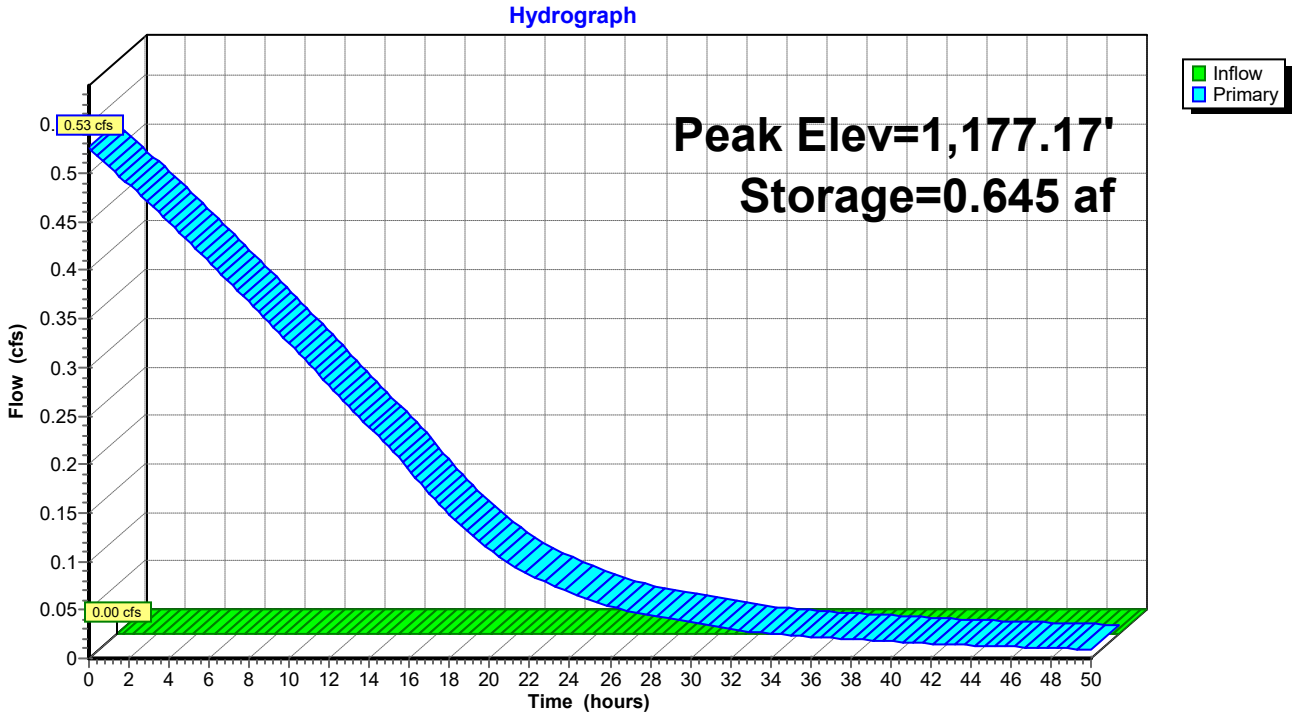
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.53 cfs @ 0.00 hrs HW=1,177.17' (Free Discharge)
└─**1=RCP_Round 24"** (Passes 0.53 cfs of 5.11 cfs potential flow)
  ├─**2=WQ Orifice** (Orifice Controls 0.53 cfs @ 4.77 fps)
  ├─**3=Orifice** (Controls 0.00 cfs)
  └─**4=Grate** (Controls 0.00 cfs)

Pond 23P: Basin 02 WQ



Hydrograph for Pond 23P: Basin 02 WQ

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	**0.645**	**1,177.17**	**0.53**
1.00	0.00	0.602	1,177.10	0.51
2.00	0.00	0.561	1,177.03	0.49
3.00	0.00	0.521	1,176.96	0.47
4.00	0.00	0.483	1,176.90	0.45
5.00	0.00	0.447	1,176.84	0.43
6.00	0.00	0.413	1,176.78	0.41
7.00	0.00	0.380	1,176.72	0.39
8.00	0.00	0.349	1,176.66	0.37
9.00	0.00	0.319	1,176.61	0.35
10.00	0.00	0.291	1,176.56	0.32
11.00	0.00	0.266	1,176.51	0.30
12.00	0.00	0.241	1,176.47	0.28
13.00	0.00	0.219	1,176.43	0.26
14.00	0.00	0.198	1,176.39	0.24
15.00	0.00	0.180	1,176.35	0.22
16.00	0.00	0.163	1,176.32	0.19
17.00	0.00	0.148	1,176.29	0.17
18.00	0.00	0.135	1,176.27	0.15
19.00	0.00	0.123	1,176.24	0.13
20.00	0.00	0.113	1,176.23	0.11
21.00	0.00	0.105	1,176.21	0.10
22.00	0.00	0.097	1,176.19	0.09
23.00	0.00	0.090	1,176.18	0.08
24.00	0.00	0.084	1,176.17	0.07
25.00	0.00	0.079	1,176.16	0.06
26.00	0.00	0.074	1,176.15	0.05
27.00	0.00	0.070	1,176.14	0.05
28.00	0.00	0.066	1,176.13	0.04
29.00	0.00	0.063	1,176.13	0.04
30.00	0.00	0.060	1,176.12	0.04
31.00	0.00	0.057	1,176.11	0.03
32.00	0.00	0.054	1,176.11	0.03
33.00	0.00	0.052	1,176.10	0.03
34.00	0.00	0.049	1,176.10	0.03
35.00	0.00	0.047	1,176.10	0.02
36.00	0.00	0.046	1,176.09	0.02
37.00	0.00	0.044	1,176.09	0.02
38.00	0.00	0.042	1,176.08	0.02
39.00	0.00	0.040	1,176.08	0.02
40.00	0.00	0.039	1,176.08	0.02
41.00	0.00	0.038	1,176.08	0.02
42.00	0.00	0.036	1,176.07	0.02
43.00	0.00	0.035	1,176.07	0.01
44.00	0.00	0.034	1,176.07	0.01
45.00	0.00	0.033	1,176.07	0.01
46.00	0.00	0.032	1,176.06	0.01
47.00	0.00	0.031	1,176.06	0.01
48.00	0.00	0.030	1,176.06	0.01
49.00	0.00	0.029	1,176.06	0.01
50.00	0.00	0.028	1,176.06	0.01

Summary for Pond 24P: Basin 02 Skimmer

Inflow	=	0.00 cfs @	0.00 hrs,	Volume=	0.000 af
Outflow	=	0.16 cfs @	0.00 hrs,	Volume=	0.419 af, Atten= 0%, Lag= 0.0 min
Primary	=	0.16 cfs @	0.00 hrs,	Volume=	0.419 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Starting Elev= 1,176.83' Surf.Area= 0.576 ac Storage= 0.443 af
Peak Elev= 1,176.83' @ 0.00 hrs Surf.Area= 0.576 ac Storage= 0.443 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

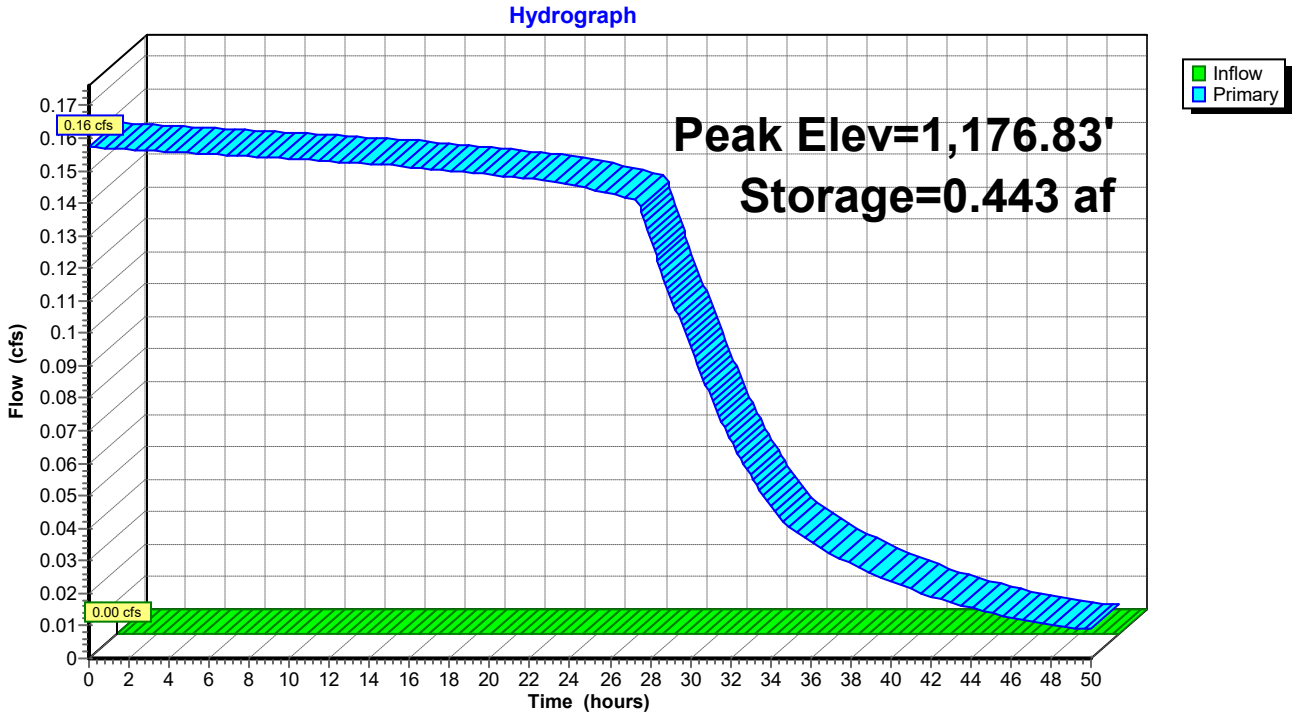
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**Marlee Float 4 in - 3.0 in orifice**

Primary OutFlow Max=0.16 cfs @ 0.00 hrs HW=1,176.83' (Free Discharge)
↑—**1=RCP_Round 24"** (Passes 0.16 cfs of 2.76 cfs potential flow)
↑—**2=Marlee Float 4 in - 3.0 in orifice** (Custom Controls 0.16 cfs)

Pond 24P: Basin 02 Skimmer



Hydrograph for Pond 24P: Basin 02 Skimmer

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	**0.443**	**1,176.83**	**0.16**
1.00	0.00	0.430	1,176.81	0.16
2.00	0.00	0.417	1,176.78	0.16
3.00	0.00	0.404	1,176.76	0.16
4.00	0.00	0.391	1,176.74	0.16
5.00	0.00	0.379	1,176.72	0.16
6.00	0.00	0.366	1,176.69	0.16
7.00	0.00	0.353	1,176.67	0.15
8.00	0.00	0.340	1,176.65	0.15
9.00	0.00	0.327	1,176.63	0.15
10.00	0.00	0.315	1,176.60	0.15
11.00	0.00	0.302	1,176.58	0.15
12.00	0.00	0.289	1,176.56	0.15
13.00	0.00	0.277	1,176.53	0.15
14.00	0.00	0.264	1,176.51	0.15
15.00	0.00	0.252	1,176.49	0.15
16.00	0.00	0.239	1,176.46	0.15
17.00	0.00	0.227	1,176.44	0.15
18.00	0.00	0.214	1,176.42	0.15
19.00	0.00	0.202	1,176.39	0.15
20.00	0.00	0.189	1,176.37	0.15
21.00	0.00	0.177	1,176.35	0.15
22.00	0.00	0.165	1,176.32	0.15
23.00	0.00	0.153	1,176.30	0.15
24.00	0.00	0.141	1,176.28	0.15
25.00	0.00	0.129	1,176.25	0.14
26.00	0.00	0.117	1,176.23	0.14
27.00	0.00	0.105	1,176.21	0.14
28.00	0.00	0.094	1,176.19	0.13
29.00	0.00	0.084	1,176.17	0.11
30.00	0.00	0.075	1,176.15	0.10
31.00	0.00	0.068	1,176.14	0.08
32.00	0.00	0.062	1,176.12	0.07
33.00	0.00	0.057	1,176.11	0.06
34.00	0.00	0.052	1,176.11	0.05
35.00	0.00	0.049	1,176.10	0.04
36.00	0.00	0.046	1,176.09	0.04
37.00	0.00	0.043	1,176.09	0.03
38.00	0.00	0.040	1,176.08	0.03
39.00	0.00	0.038	1,176.08	0.03
40.00	0.00	0.036	1,176.07	0.02
41.00	0.00	0.034	1,176.07	0.02
42.00	0.00	0.032	1,176.07	0.02
43.00	0.00	0.031	1,176.06	0.02
44.00	0.00	0.030	1,176.06	0.02
45.00	0.00	0.028	1,176.06	0.01
46.00	0.00	0.027	1,176.06	0.01
47.00	0.00	0.026	1,176.05	0.01
48.00	0.00	0.025	1,176.05	0.01
49.00	0.00	0.025	1,176.05	0.01
50.00	0.00	0.024	1,176.05	0.01

Summary for Pond 25P: Basin 01 Below NP

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	1,068.50'	2.256 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,068.50	0.360	0.000	0.000
1,069.50	0.440	0.400	0.400
1,070.50	0.540	0.490	0.890
1,071.50	0.640	0.590	1.480
1,072.50	0.912	0.776	2.256

Summary for Pond 26P: Basin 02 Below NP

[43] Hint: Has no inflow (Outflow=Zero)

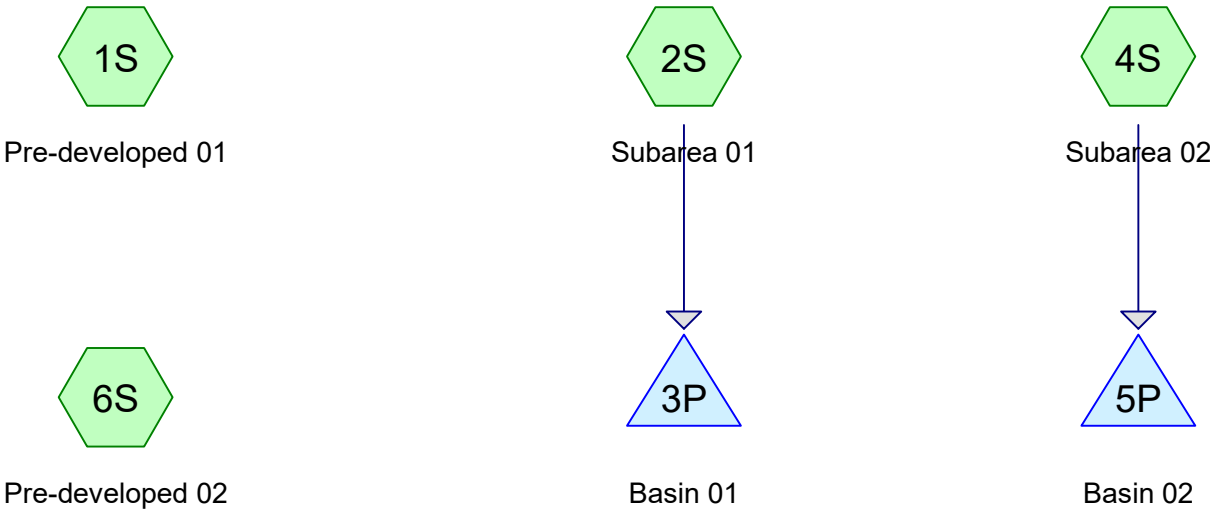
Volume	Invert	Avail.Storage	Storage Description
#1	1,171.00'	1.406 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,171.00	0.160	0.000	0.000
1,172.00	0.200	0.180	0.180
1,173.00	0.250	0.225	0.405
1,174.00	0.290	0.270	0.675
1,175.00	0.340	0.315	0.990
1,176.00	0.492	0.416	1.406

EMHT

APPENDIX D:

HydroCAD Output



Subcat Reach Pond Link

Routing Diagram for 2021-0460
Prepared by EMH&T, Printed 12/15/2021

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	Type II 24-hr		Default	24.00	1	2.20	2
2	2-Year	Type II 24-hr		Default	24.00	1	2.63	2
3	5-Year	Type II 24-hr		Default	24.00	1	3.24	2
4	10-Year	Type II 24-hr		Default	24.00	1	3.74	2
5	25-Year	Type II 24-hr		Default	24.00	1	4.44	2
6	50-Year	Type II 24-hr		Default	24.00	1	5.02	2
7	100-Year	Type II 24-hr		Default	24.00	1	5.63	2

Summary for Subcatchment 1S: Pre-developed 01

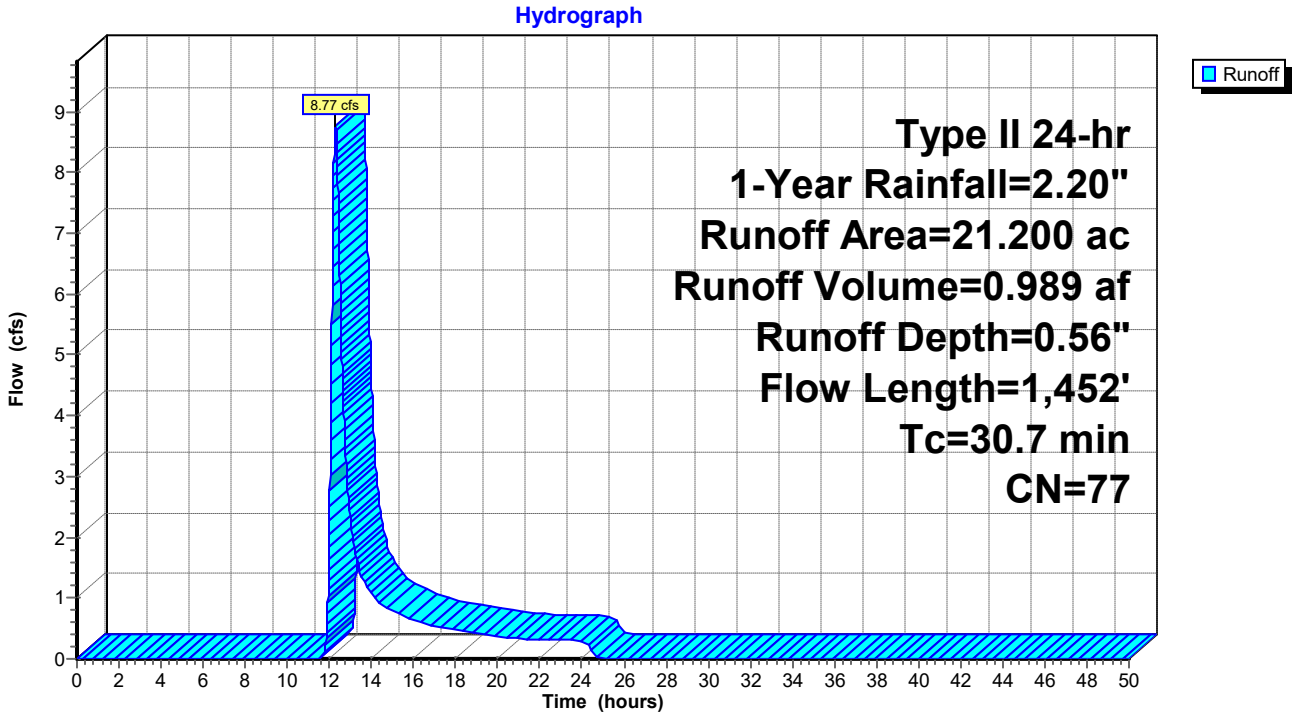
Runoff = 8.77 cfs @ 12.28 hrs, Volume= 0.989 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
18.720	78	Small grain, C&T, Good, HSG C
2.480	70	Woods, Good, HSG C
21.200	77	Weighted Average
21.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0230	0.15		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
19.4	1,352	0.0166	1.16		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.7	1,452	Total			

Subcatchment 1S: Pre-developed 01



Summary for Subcatchment 2S: Subarea 01

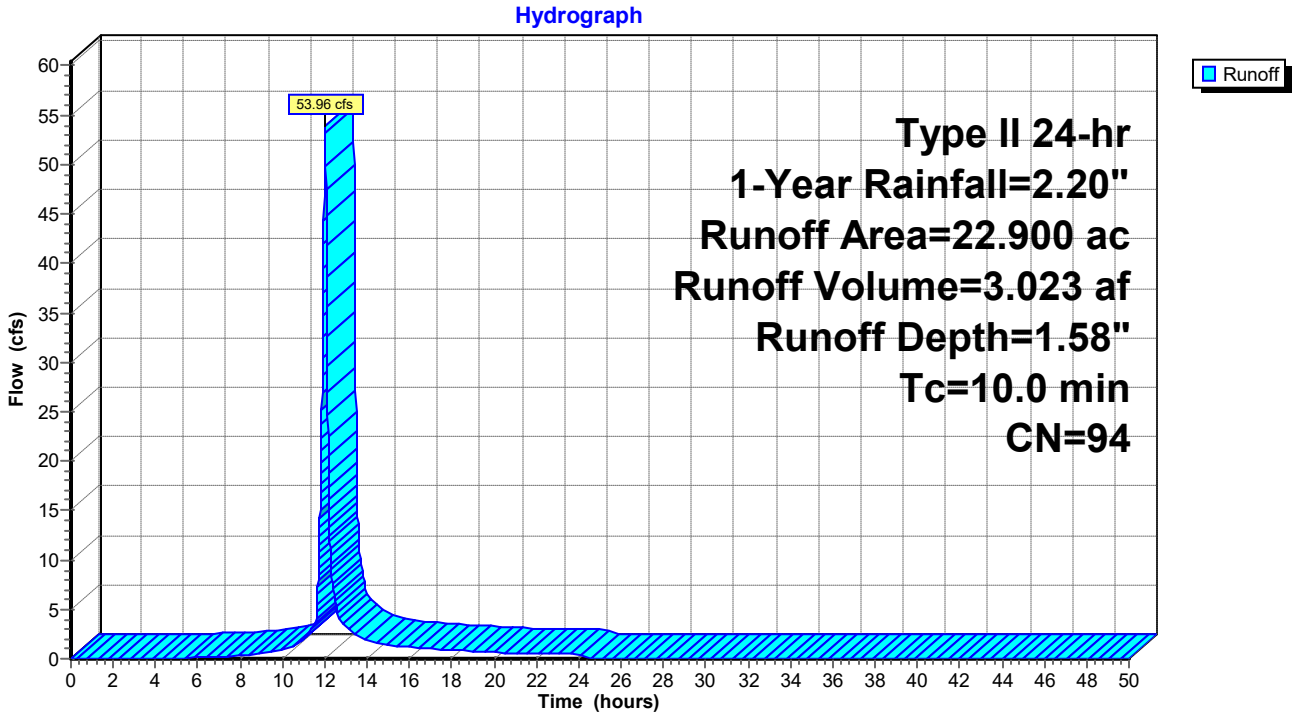
Runoff = 53.96 cfs @ 12.01 hrs, Volume= 3.023 af, Depth= 1.58"
Routed to Pond 3P : Basin 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
22.900	94	Urban commercial, 85% imp, HSG C
3.435		15.00% Pervious Area
19.465		85.00% Impervious Area

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

Subcatchment 2S: Subarea 01



Summary for Subcatchment 4S: Subarea 02

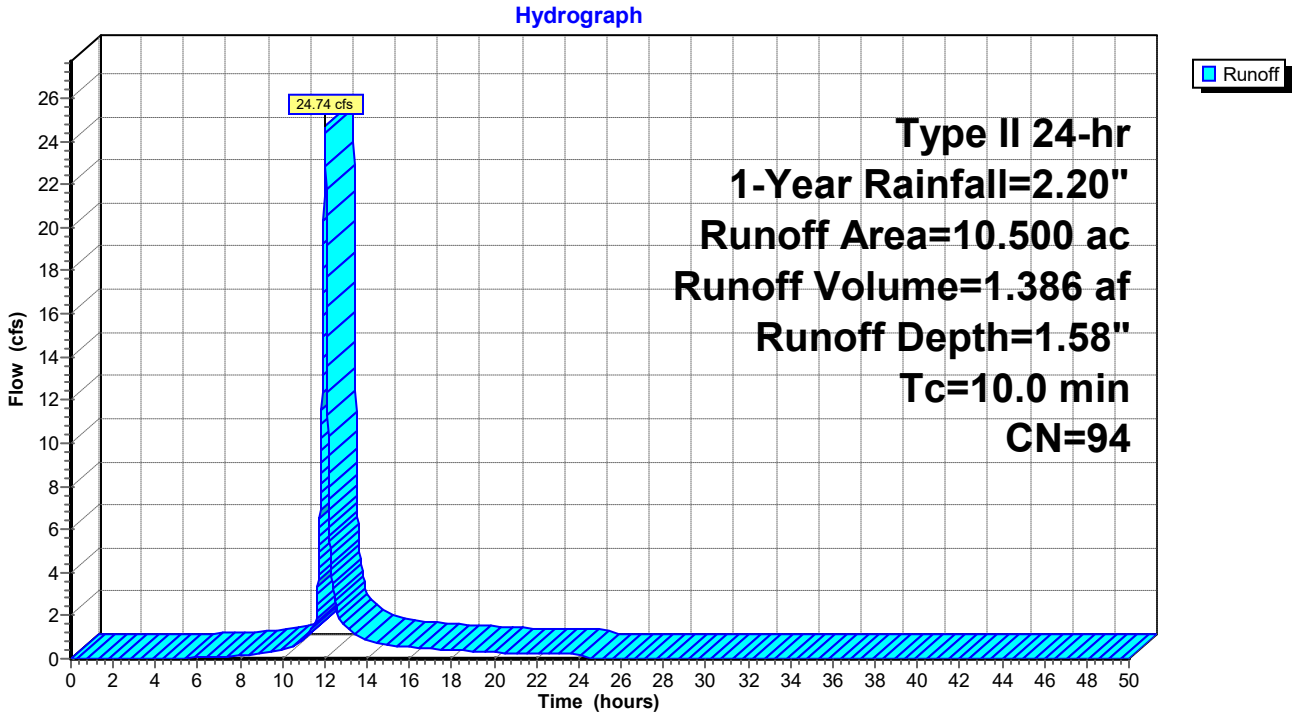
Runoff = 24.74 cfs @ 12.01 hrs, Volume= 1.386 af, Depth= 1.58"
Routed to Pond 5P : Basin 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
10.500	94	Urban commercial, 85% imp, HSG C
1.575		15.00% Pervious Area
8.925		85.00% Impervious Area

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

Subcatchment 4S: Subarea 02



Summary for Subcatchment 6S: Pre-developed 02

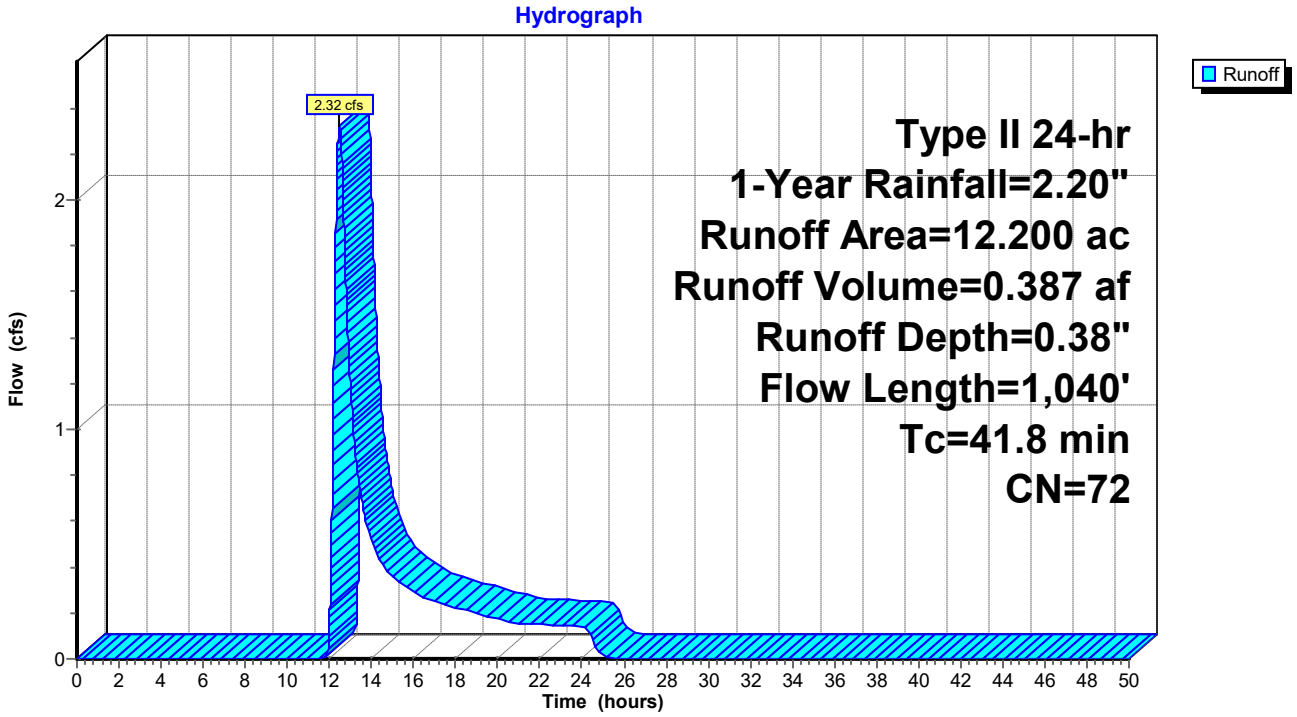
Runoff = 2.32 cfs @ 12.49 hrs, Volume= 0.387 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-Year Rainfall=2.20"

Area (ac)	CN	Description
3.310	78	Small grain, C&T, Good, HSG C
8.890	70	Woods, Good, HSG C
12.200	72	Weighted Average
12.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0178	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
29.3	940	0.0114	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.8	1,040	Total			

Subcatchment 6S: Pre-developed 02



Summary for Pond 3P: Basin 01

Inflow Area = 22.900 ac, 85.00% Impervious, Inflow Depth = 1.58" for 1-Year event
Inflow = 53.96 cfs @ 12.01 hrs, Volume= 3.023 af
Outflow = 2.57 cfs @ 13.37 hrs, Volume= 2.801 af, Atten= 95%, Lag= 81.3 min
Primary = 2.57 cfs @ 13.37 hrs, Volume= 2.801 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,174.24' @ 13.37 hrs Surf.Area= 1.280 ac Storage= 1.892 af

Plug-Flow detention time= 671.1 min calculated for 2.801 af (93% of inflow)
Center-of-Mass det. time= 630.9 min (1,431.6 - 800.7)

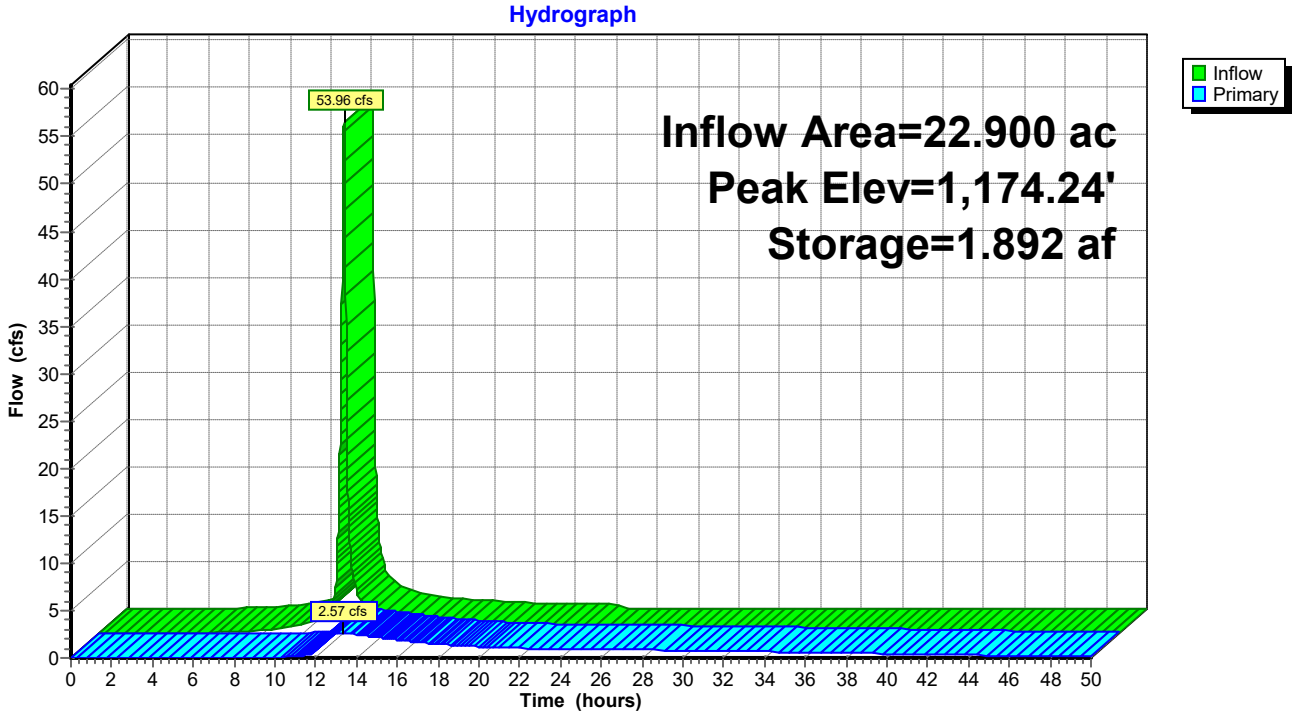
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=2.57 cfs @ 13.37 hrs HW=1,174.24' (Free Discharge)
└**1=RCP_Round 24"** (Passes 2.57 cfs of 25.61 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.15 cfs @ 5.87 fps)
  ├**3=Window** (Orifice Controls 1.42 cfs @ 1.86 fps)
  └**4=Grate** (Controls 0.00 cfs)

Pond 3P: Basin 01



Summary for Pond 5P: Basin 02

Inflow Area = 10.500 ac, 85.00% Impervious, Inflow Depth = 1.58" for 1-Year event
Inflow = 24.74 cfs @ 12.01 hrs, Volume= 1.386 af
Outflow = 0.91 cfs @ 13.90 hrs, Volume= 1.311 af, Atten= 96%, Lag= 113.0 min
Primary = 0.91 cfs @ 13.90 hrs, Volume= 1.311 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,177.56' @ 13.90 hrs Surf.Area= 0.653 ac Storage= 0.891 af

Plug-Flow detention time= 678.1 min calculated for 1.311 af (95% of inflow)
Center-of-Mass det. time= 647.1 min (1,447.8 - 800.7)

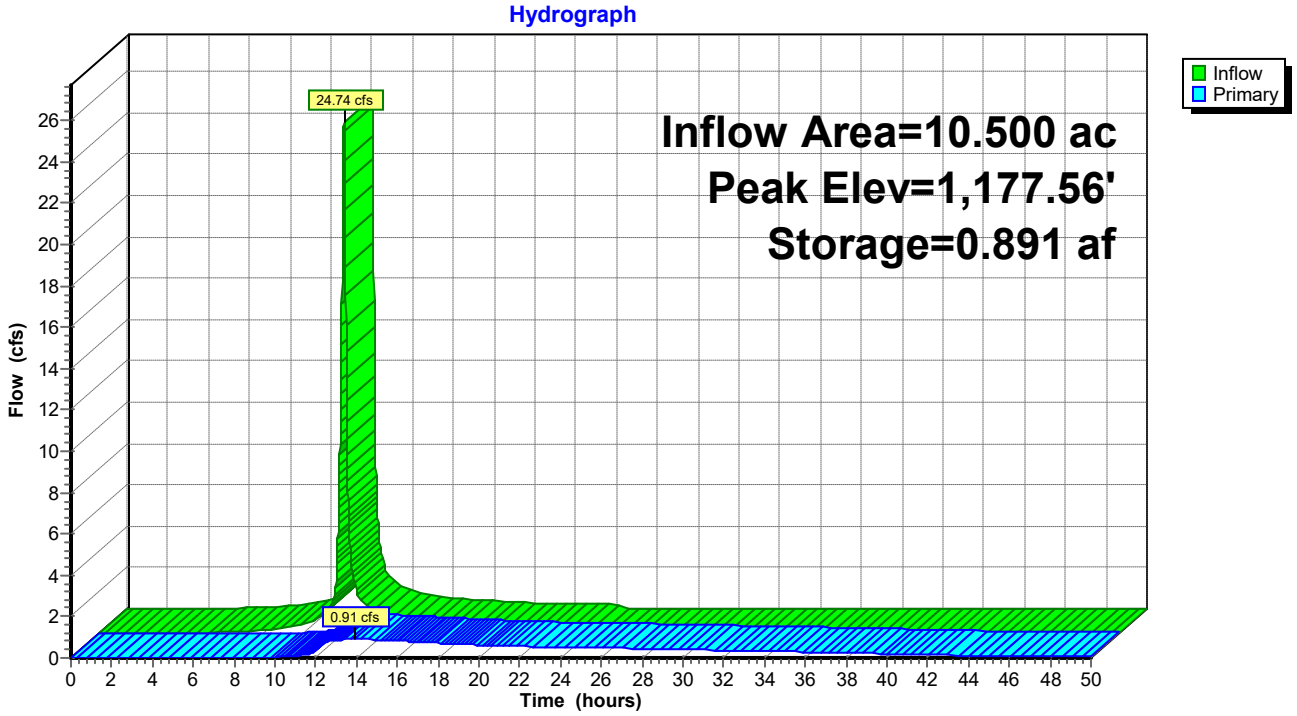
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.91 cfs @ 13.90 hrs HW=1,177.56' (Free Discharge)
└**1=RCP_Round 24"** (Passes 0.91 cfs of 8.32 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 0.62 cfs @ 5.64 fps)
  ├**3=Orifice** (Orifice Controls 0.28 cfs @ 2.04 fps)
  └**4=Grate** (Controls 0.00 cfs)

Pond 5P: Basin 02



Summary for Subcatchment 1S: Pre-developed 01

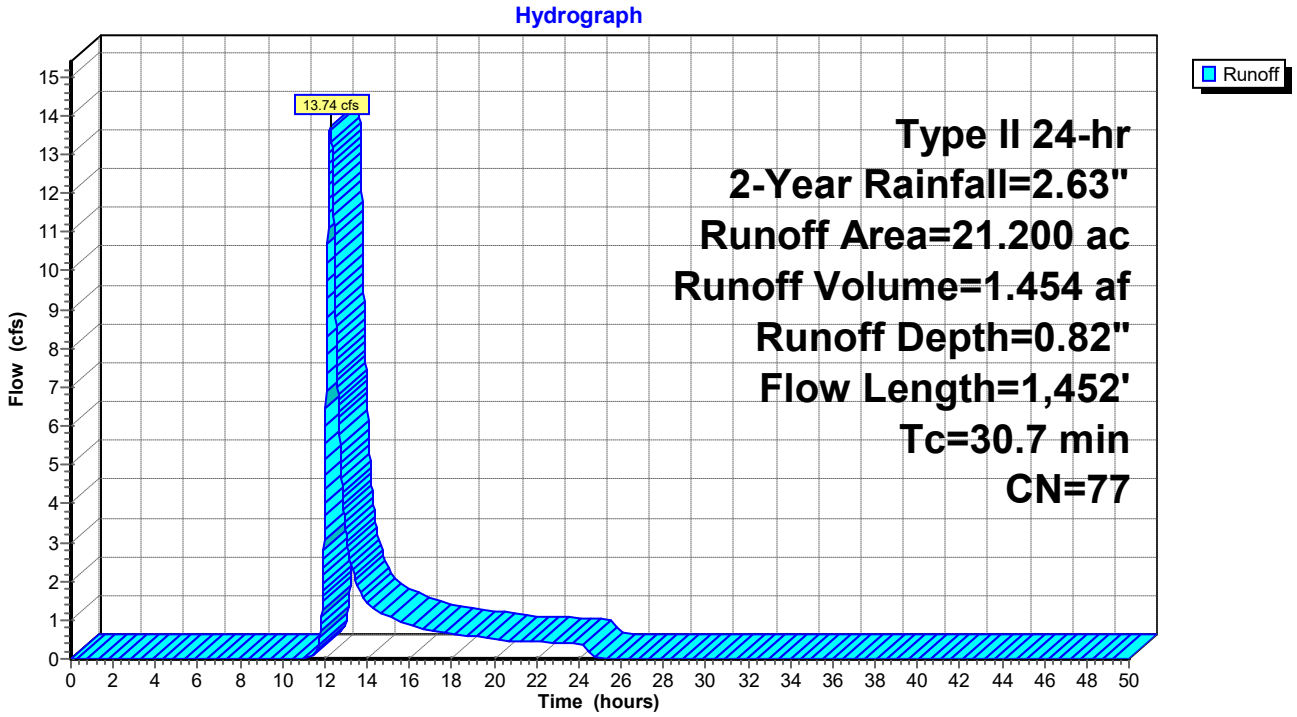
Runoff = 13.74 cfs @ 12.28 hrs, Volume= 1.454 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.63"

Area (ac)	CN	Description
18.720	78	Small grain, C&T, Good, HSG C
2.480	70	Woods, Good, HSG C
21.200	77	Weighted Average
21.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0230	0.15		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
19.4	1,352	0.0166	1.16		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.7	1,452	Total			

Subcatchment 1S: Pre-developed 01



Summary for Subcatchment 2S: Subarea 01

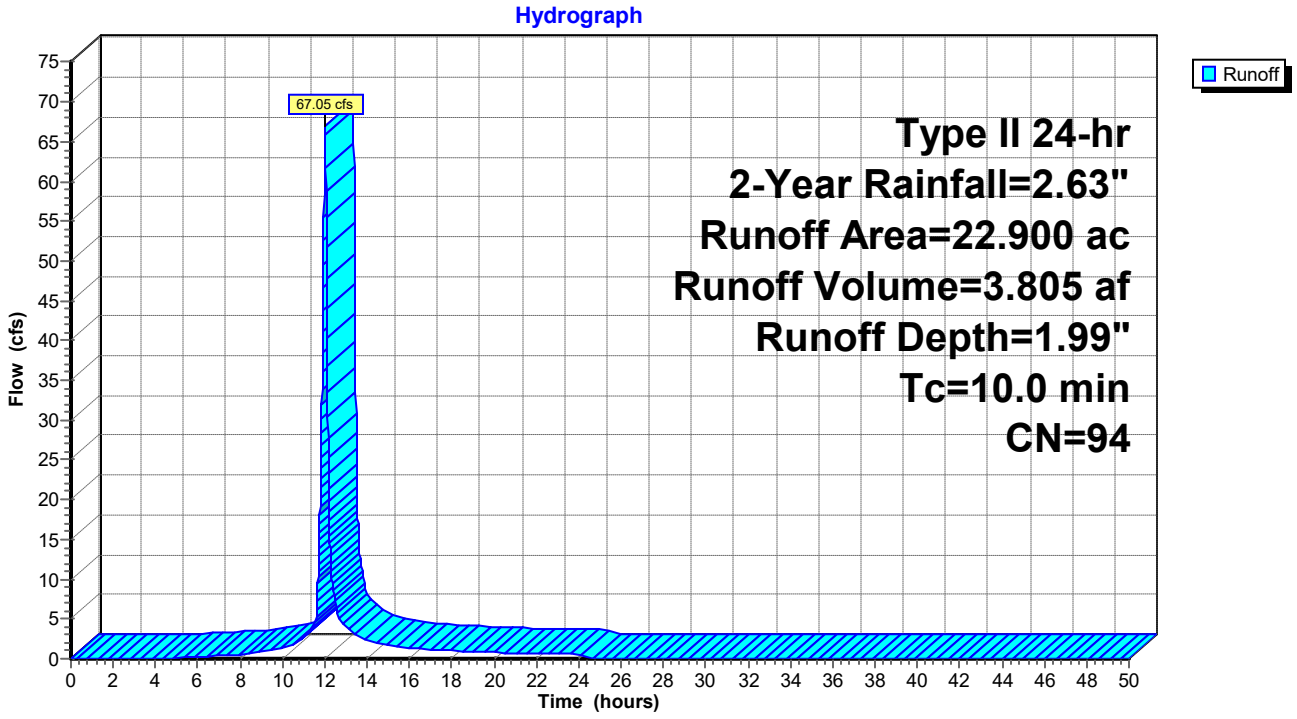
Runoff = 67.05 cfs @ 12.01 hrs, Volume= 3.805 af, Depth= 1.99"
Routed to Pond 3P : Basin 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.63"

Area (ac)	CN	Description
22.900	94	Urban commercial, 85% imp, HSG C
3.435		15.00% Pervious Area
19.465		85.00% Impervious Area

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

Subcatchment 2S: Subarea 01



Summary for Subcatchment 4S: Subarea 02

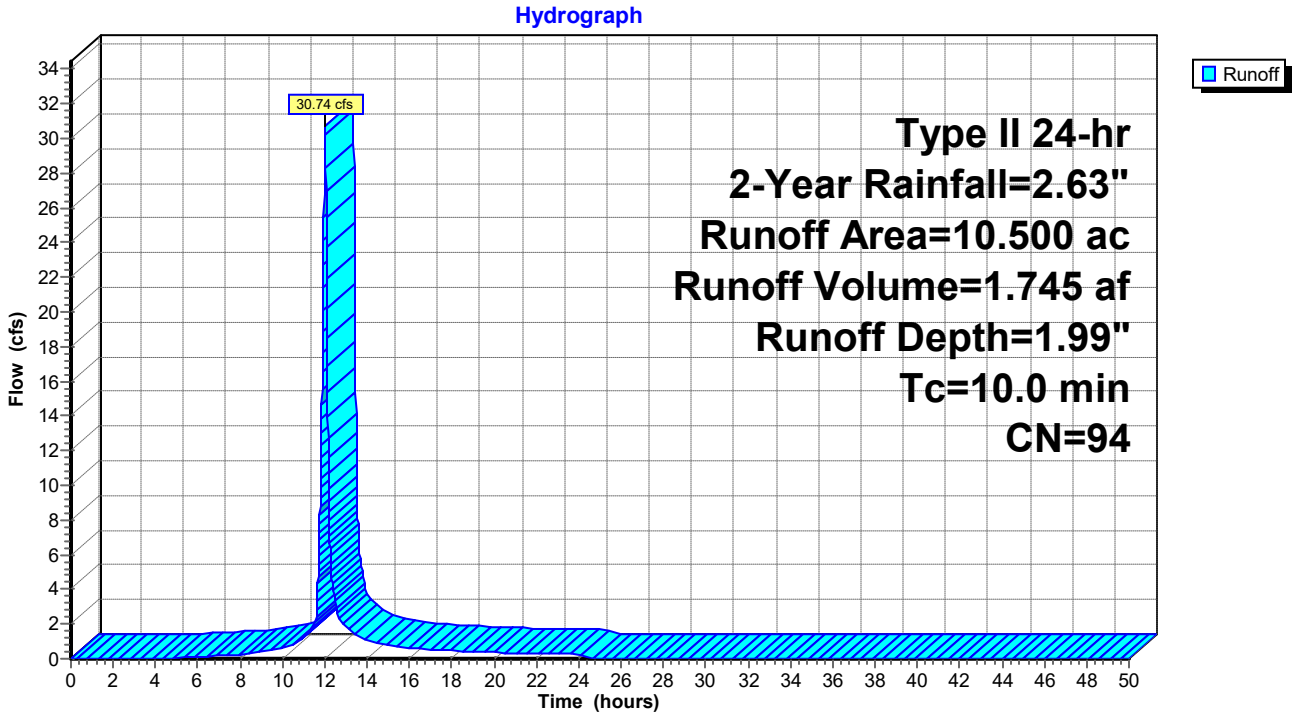
Runoff = 30.74 cfs @ 12.01 hrs, Volume= 1.745 af, Depth= 1.99"
Routed to Pond 5P : Basin 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.63"

Area (ac)	CN	Description
10.500	94	Urban commercial, 85% imp, HSG C
1.575		15.00% Pervious Area
8.925		85.00% Impervious Area

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

Subcatchment 4S: Subarea 02



Summary for Subcatchment 6S: Pre-developed 02

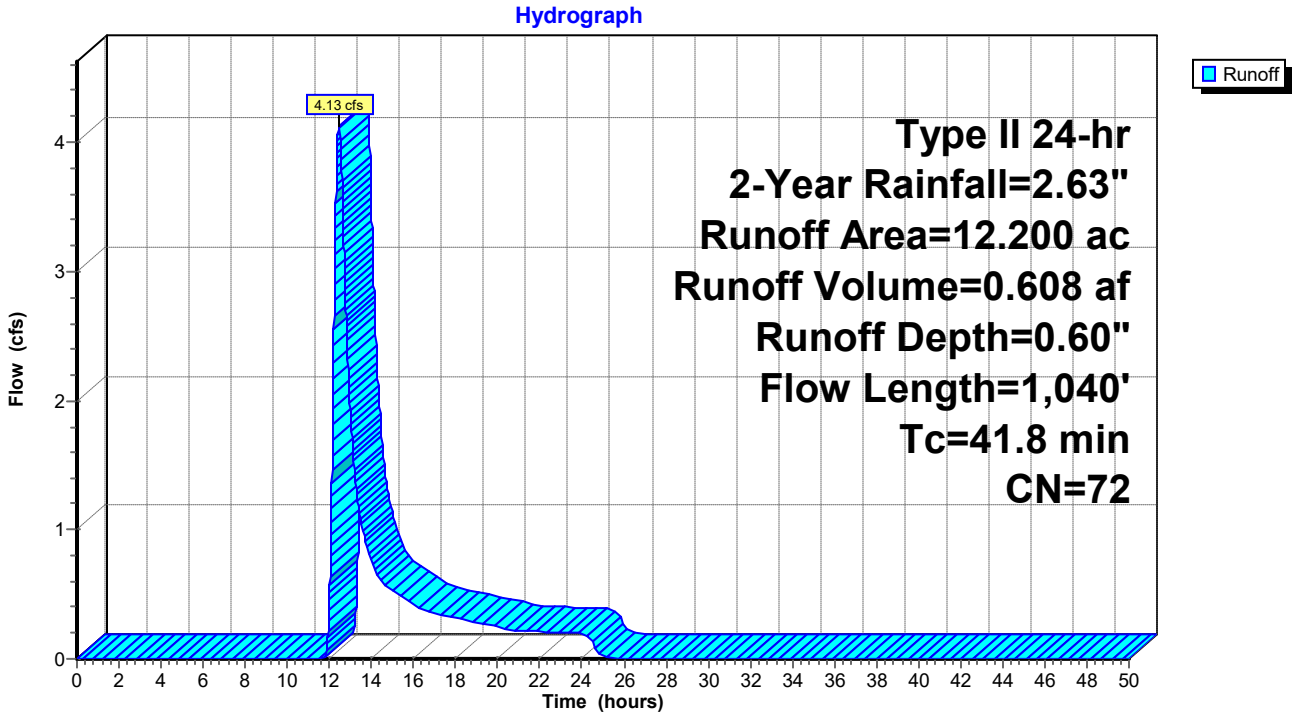
Runoff = 4.13 cfs @ 12.45 hrs, Volume= 0.608 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-Year Rainfall=2.63"

Area (ac)	CN	Description
3.310	78	Small grain, C&T, Good, HSG C
8.890	70	Woods, Good, HSG C
12.200	72	Weighted Average
12.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0178	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
29.3	940	0.0114	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.8	1,040	Total			

Subcatchment 6S: Pre-developed 02



Summary for Pond 3P: Basin 01

Inflow Area = 22.900 ac, 85.00% Impervious, Inflow Depth = 1.99" for 2-Year event
Inflow = 67.05 cfs @ 12.01 hrs, Volume= 3.805 af
Outflow = 4.52 cfs @ 12.80 hrs, Volume= 3.570 af, Atten= 93%, Lag= 47.5 min
Primary = 4.52 cfs @ 12.80 hrs, Volume= 3.570 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,174.53' @ 12.80 hrs Surf.Area= 1.347 ac Storage= 2.274 af

Plug-Flow detention time= 578.6 min calculated for 3.570 af (94% of inflow)
Center-of-Mass det. time= 543.7 min (1,338.0 - 794.3)

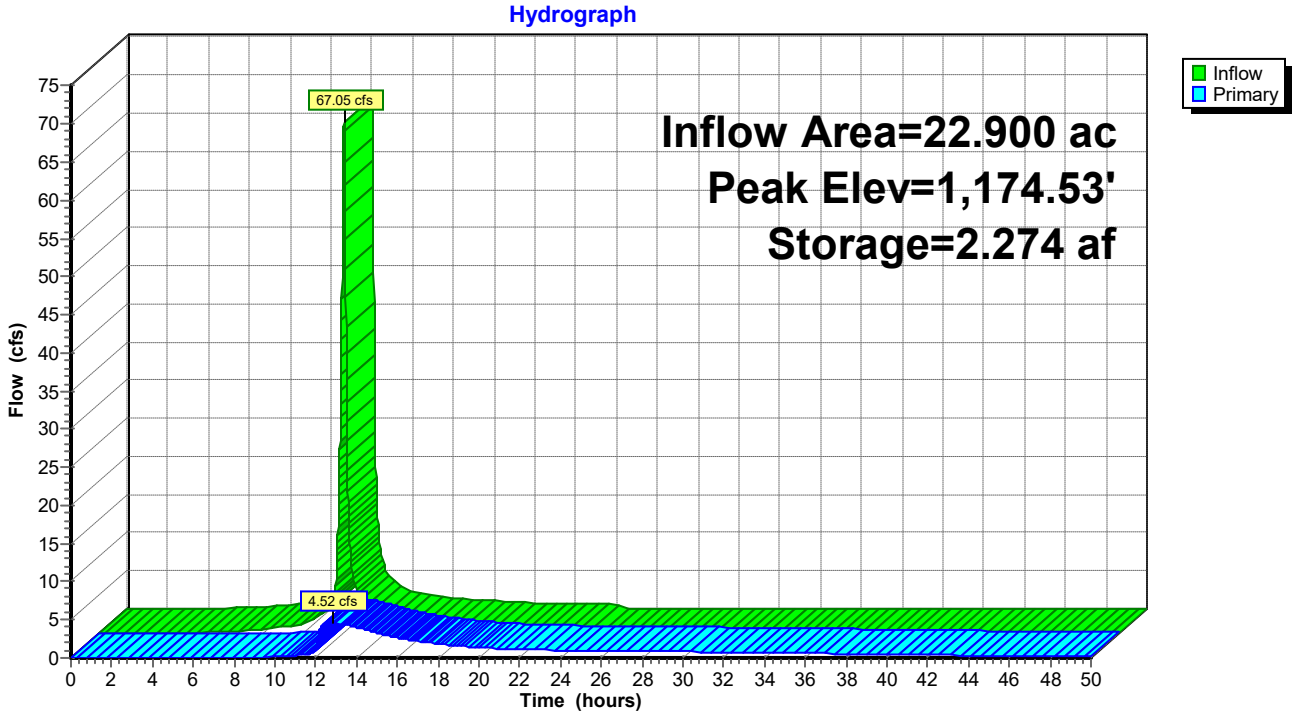
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=4.52 cfs @ 12.80 hrs HW=1,174.53' (Free Discharge)
└**1=RCP_Round 24"** (Passes 4.52 cfs of 26.81 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.26 cfs @ 6.42 fps)
  ├**3=Window** (Orifice Controls 3.26 cfs @ 2.90 fps)
  └**4=Grate** (Controls 0.00 cfs)

Pond 3P: Basin 01



Summary for Pond 5P: Basin 02

Inflow Area = 10.500 ac, 85.00% Impervious, Inflow Depth = 1.99" for 2-Year event
Inflow = 30.74 cfs @ 12.01 hrs, Volume= 1.745 af
Outflow = 1.23 cfs @ 13.67 hrs, Volume= 1.660 af, Atten= 96%, Lag= 99.4 min
Primary = 1.23 cfs @ 13.67 hrs, Volume= 1.660 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,177.88' @ 13.67 hrs Surf.Area= 0.688 ac Storage= 1.108 af

Plug-Flow detention time= 641.4 min calculated for 1.659 af (95% of inflow)
Center-of-Mass det. time= 613.2 min (1,407.5 - 794.3)

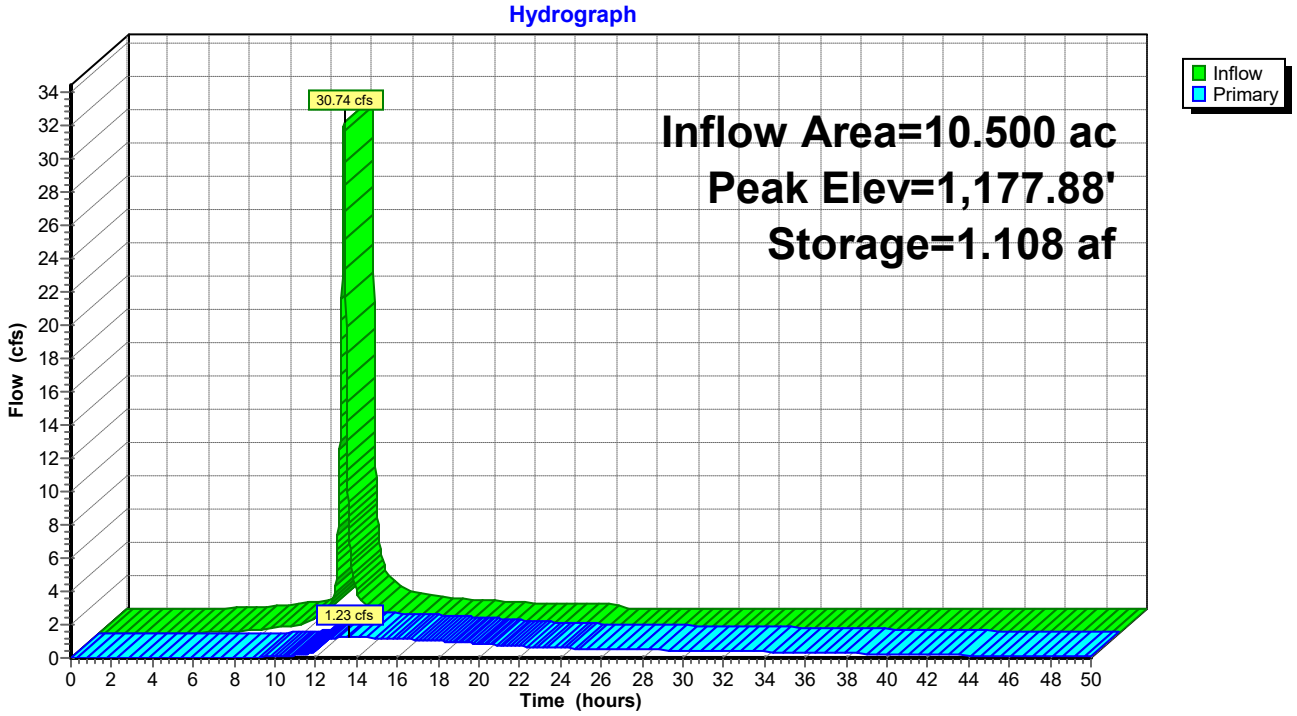
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.23 cfs @ 13.67 hrs HW=1,177.88' (Free Discharge)
└─**1=RCP_Round 24"** (Passes 1.23 cfs of 11.19 cfs potential flow)
  ├─**2=WQ Orifice** (Orifice Controls 0.69 cfs @ 6.27 fps)
  ├─**3=Orifice** (Orifice Controls 0.54 cfs @ 3.25 fps)
  └─**4=Grate** (Controls 0.00 cfs)

Pond 5P: Basin 02



Summary for Subcatchment 1S: Pre-developed 01

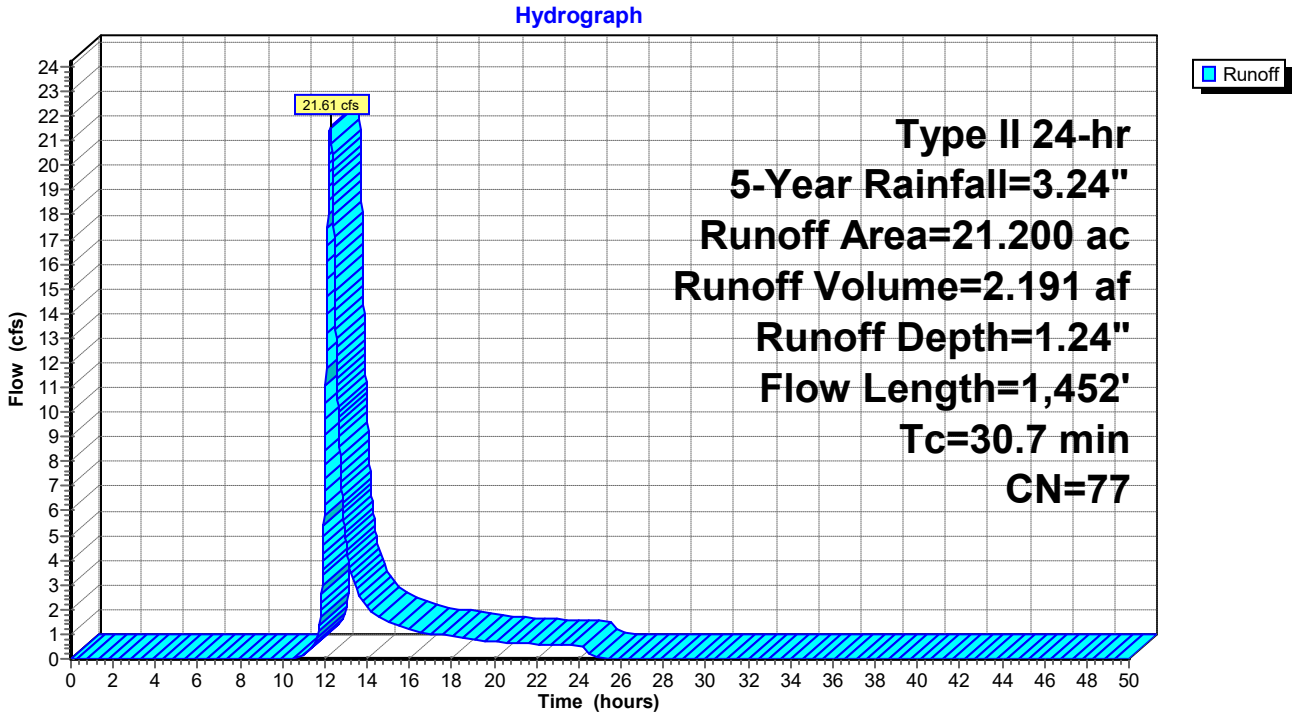
Runoff = 21.61 cfs @ 12.25 hrs, Volume= 2.191 af, Depth= 1.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=3.24"

Area (ac)	CN	Description
18.720	78	Small grain, C&T, Good, HSG C
2.480	70	Woods, Good, HSG C
21.200	77	Weighted Average
21.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0230	0.15		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
19.4	1,352	0.0166	1.16		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.7	1,452	Total			

Subcatchment 1S: Pre-developed 01



Summary for Subcatchment 2S: Subarea 01

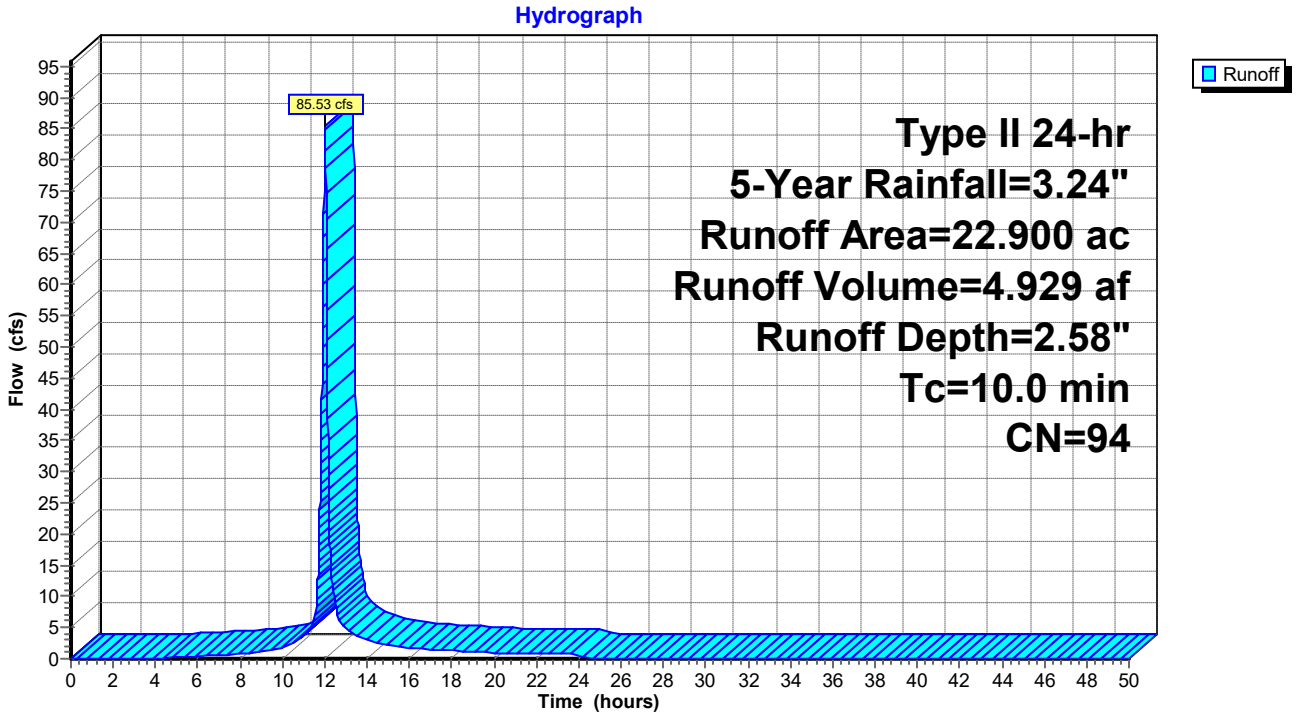
Runoff = 85.53 cfs @ 12.01 hrs, Volume= 4.929 af, Depth= 2.58"
Routed to Pond 3P : Basin 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=3.24"

Area (ac)	CN	Description
22.900	94	Urban commercial, 85% imp, HSG C
3.435		15.00% Pervious Area
19.465		85.00% Impervious Area

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

Subcatchment 2S: Subarea 01



Summary for Subcatchment 4S: Subarea 02

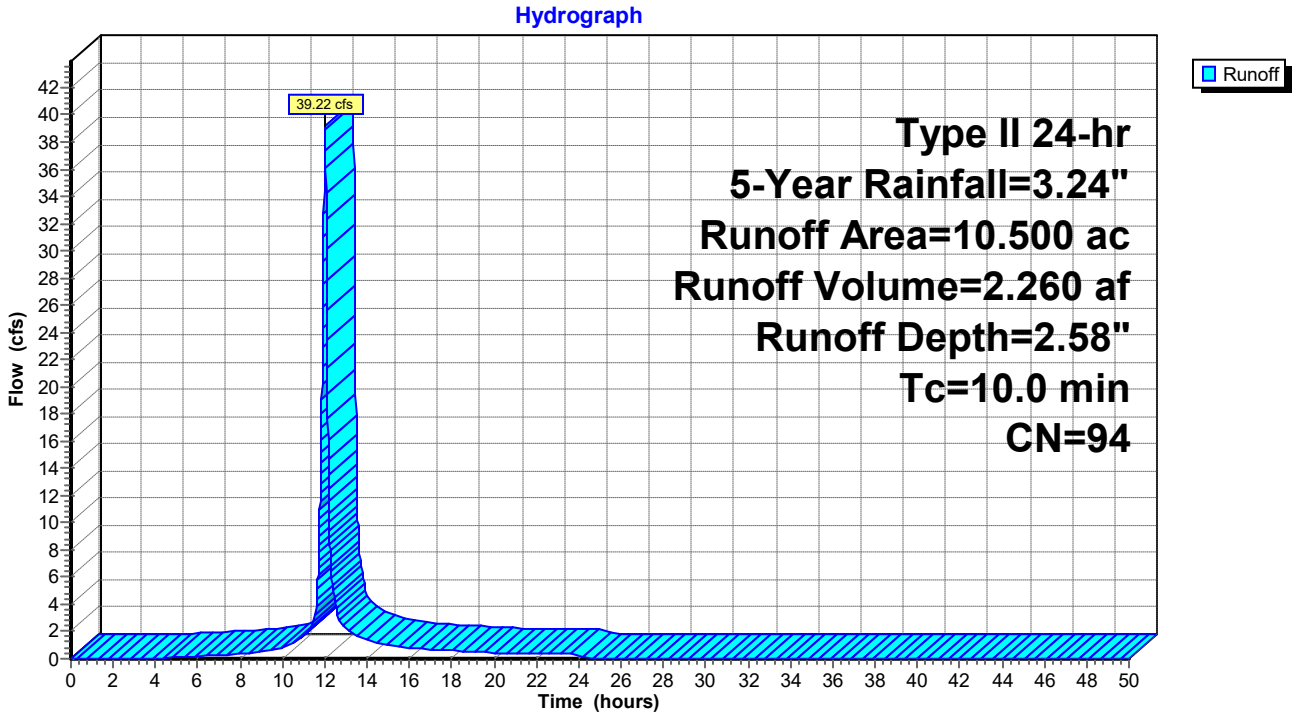
Runoff = 39.22 cfs @ 12.01 hrs, Volume= 2.260 af, Depth= 2.58"
Routed to Pond 5P : Basin 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=3.24"

Area (ac)	CN	Description
10.500	94	Urban commercial, 85% imp, HSG C
1.575		15.00% Pervious Area
8.925		85.00% Impervious Area

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

Subcatchment 4S: Subarea 02



Summary for Subcatchment 6S: Pre-developed 02

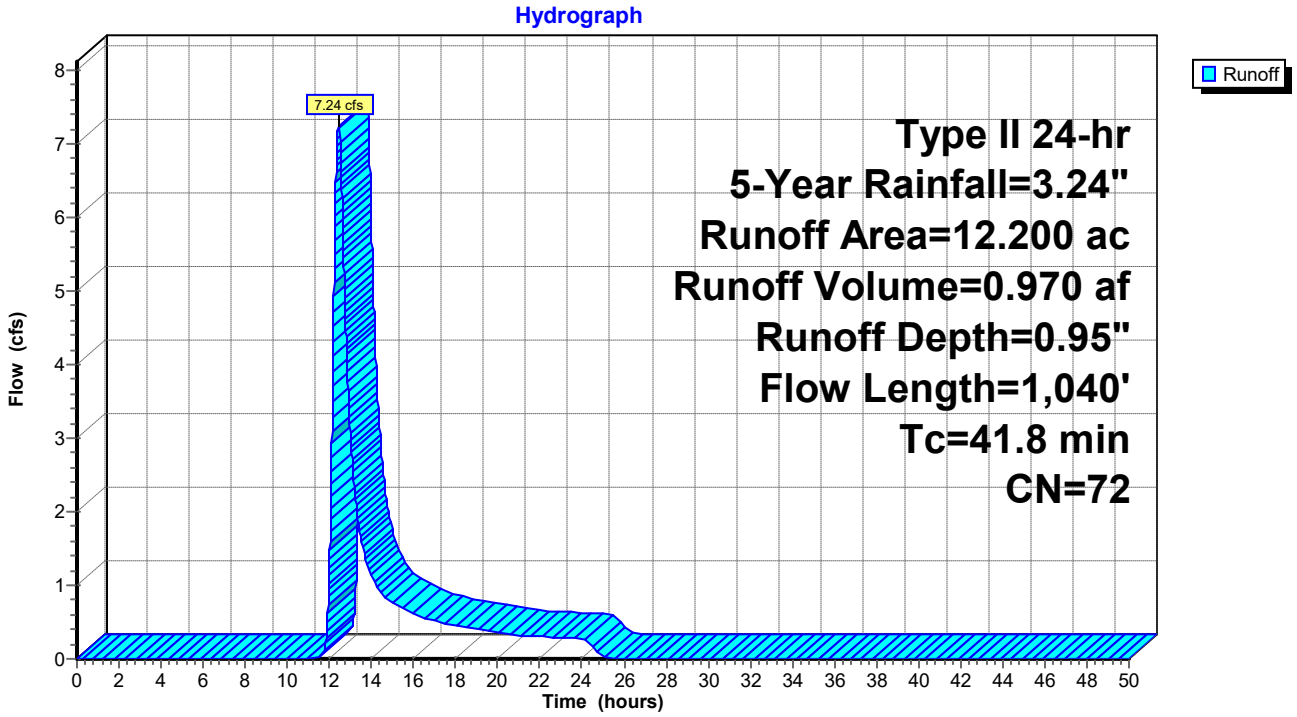
Runoff = 7.24 cfs @ 12.41 hrs, Volume= 0.970 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-Year Rainfall=3.24"

Area (ac)	CN	Description
3.310	78	Small grain, C&T, Good, HSG C
8.890	70	Woods, Good, HSG C
12.200	72	Weighted Average
12.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0178	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
29.3	940	0.0114	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.8	1,040	Total			

Subcatchment 6S: Pre-developed 02



Summary for Pond 3P: Basin 01

Inflow Area = 22.900 ac, 85.00% Impervious, Inflow Depth = 2.58" for 5-Year event
Inflow = 85.53 cfs @ 12.01 hrs, Volume= 4.929 af
Outflow = 6.35 cfs @ 12.68 hrs, Volume= 4.681 af, Atten= 93%, Lag= 40.0 min
Primary = 6.35 cfs @ 12.68 hrs, Volume= 4.681 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,174.99' @ 12.68 hrs Surf.Area= 1.452 ac Storage= 2.917 af

Plug-Flow detention time= 500.1 min calculated for 4.680 af (95% of inflow)
Center-of-Mass det. time= 470.9 min (1,258.1 - 787.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

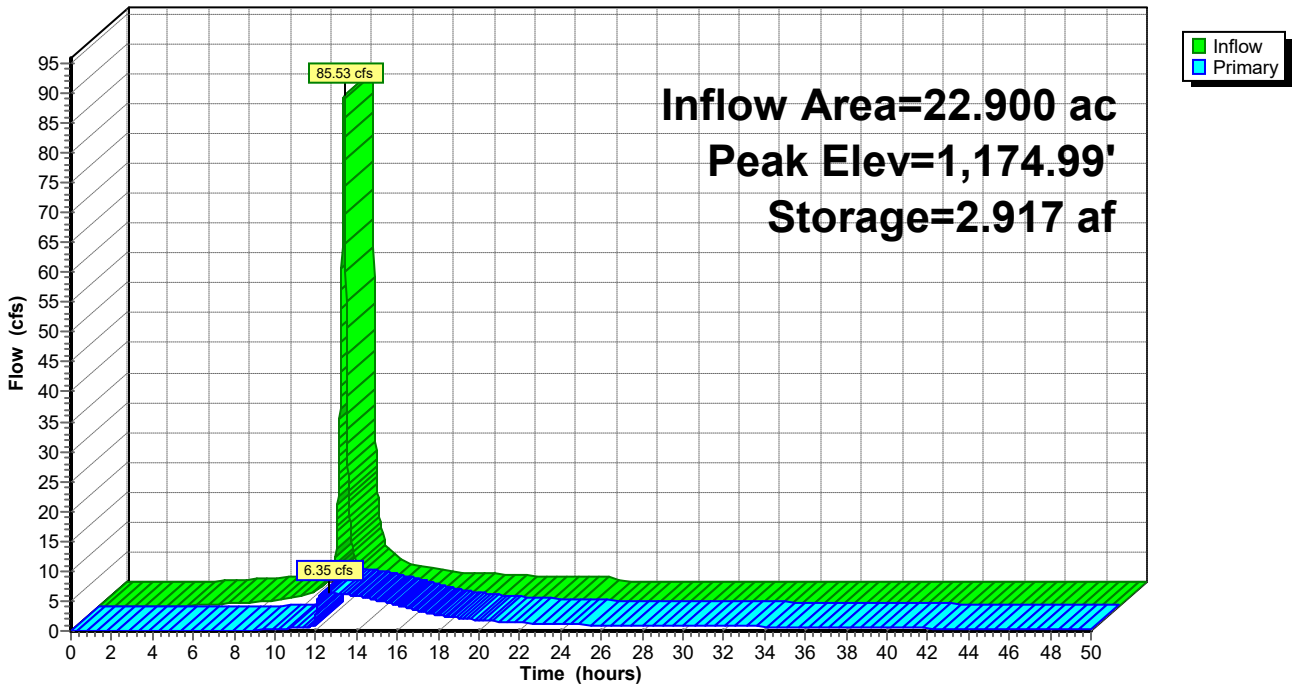
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=6.35 cfs @ 12.68 hrs HW=1,174.99' (Free Discharge)
└**1=RCP_Round 24"** (Passes 6.35 cfs of 28.61 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.41 cfs @ 7.20 fps)
  ├**3=Window** (Orifice Controls 4.94 cfs @ 4.39 fps)
  └**4=Grate** (Controls 0.00 cfs)

Pond 3P: Basin 01

Hydrograph



Summary for Pond 5P: Basin 02

Inflow Area = 10.500 ac, 85.00% Impervious, Inflow Depth = 2.58" for 5-Year event
Inflow = 39.22 cfs @ 12.01 hrs, Volume= 2.260 af
Outflow = 1.55 cfs @ 13.66 hrs, Volume= 2.159 af, Atten= 96%, Lag= 99.0 min
Primary = 1.55 cfs @ 13.66 hrs, Volume= 2.159 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,178.35' @ 13.66 hrs Surf.Area= 0.741 ac Storage= 1.444 af

Plug-Flow detention time= 627.0 min calculated for 2.159 af (96% of inflow)
Center-of-Mass det. time= 600.5 min (1,387.6 - 787.1)

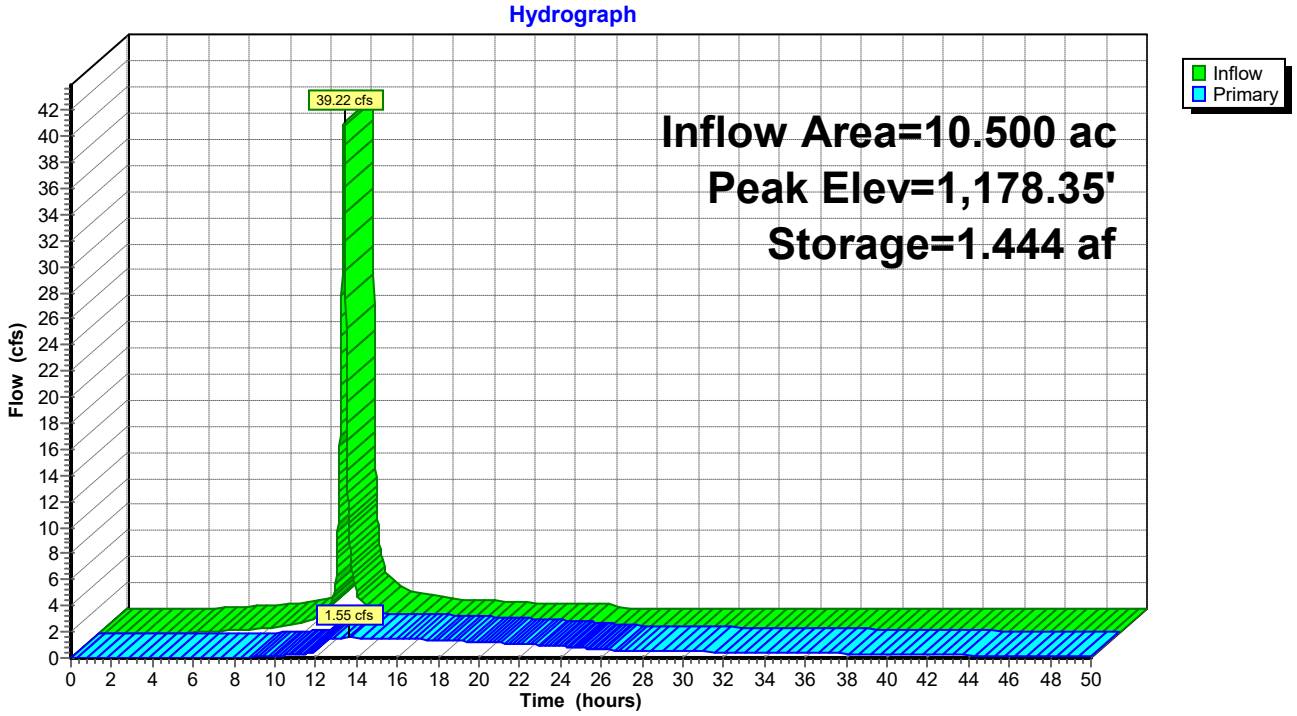
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.55 cfs @ 13.66 hrs HW=1,178.35' (Free Discharge)
└─**1=RCP_Round 24"** (Passes 1.55 cfs of 15.11 cfs potential flow)
  ├─**2=WQ Orifice** (Orifice Controls 0.78 cfs @ 7.09 fps)
  ├─**3=Orifice** (Orifice Controls 0.76 cfs @ 4.63 fps)
  └─**4=Grate** (Controls 0.00 cfs)

Pond 5P: Basin 02



Summary for Subcatchment 1S: Pre-developed 01

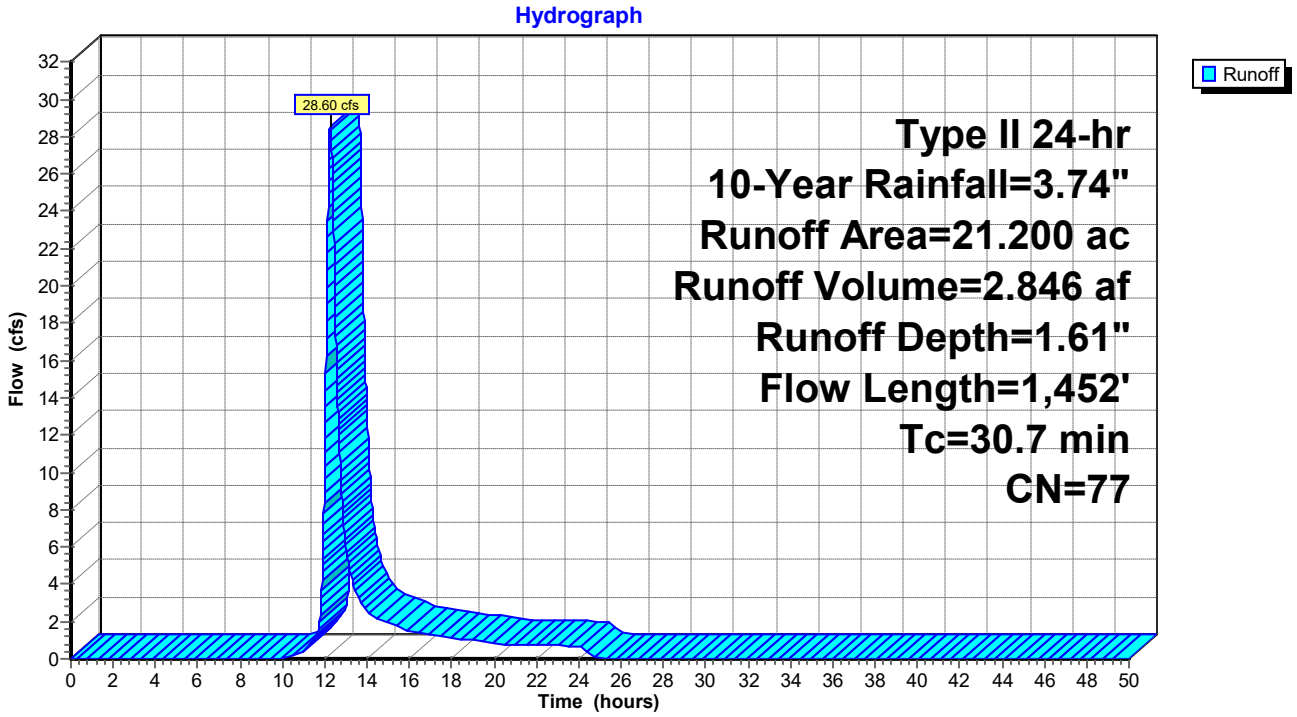
Runoff = 28.60 cfs @ 12.25 hrs, Volume= 2.846 af, Depth= 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.74"

Area (ac)	CN	Description
18.720	78	Small grain, C&T, Good, HSG C
2.480	70	Woods, Good, HSG C
21.200	77	Weighted Average
21.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0230	0.15		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
19.4	1,352	0.0166	1.16		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.7	1,452	Total			

Subcatchment 1S: Pre-developed 01



Summary for Subcatchment 2S: Subarea 01

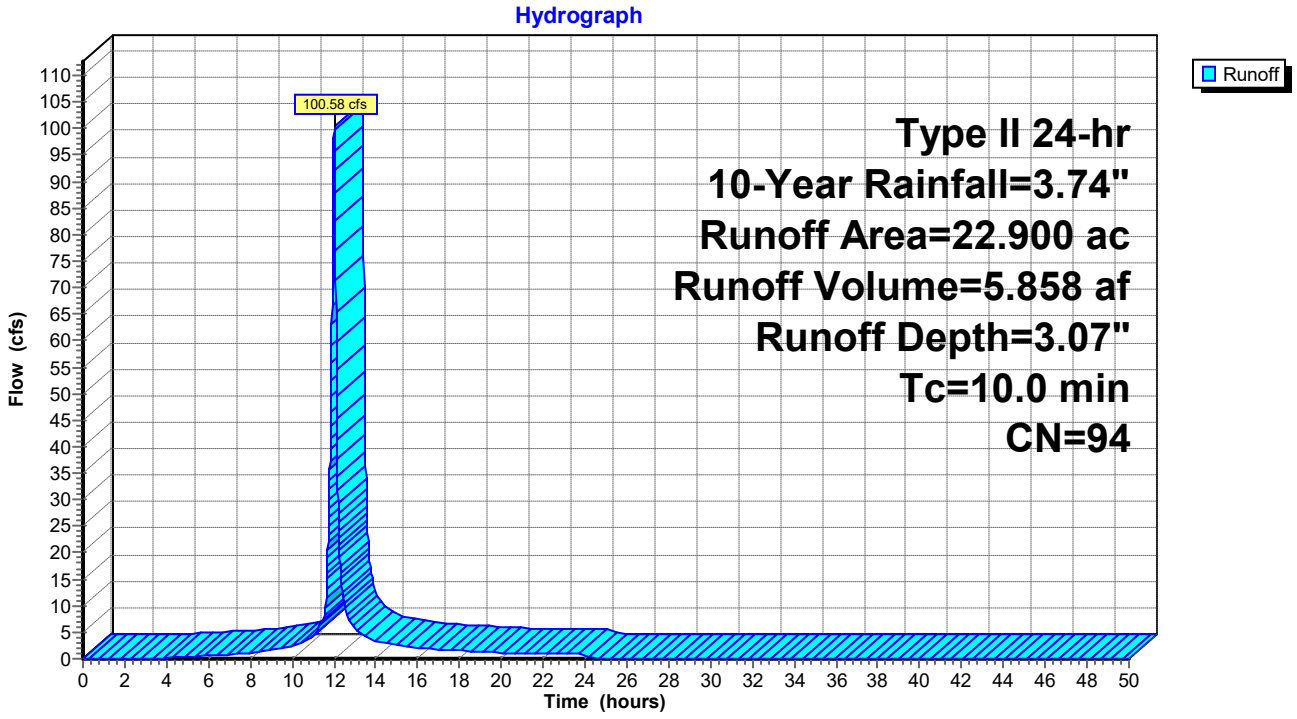
Runoff = 100.58 cfs @ 12.01 hrs, Volume= 5.858 af, Depth= 3.07"
Routed to Pond 3P : Basin 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.74"

Area (ac)	CN	Description
22.900	94	Urban commercial, 85% imp, HSG C
3.435		15.00% Pervious Area
19.465		85.00% Impervious Area

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

Subcatchment 2S: Subarea 01



Summary for Subcatchment 4S: Subarea 02

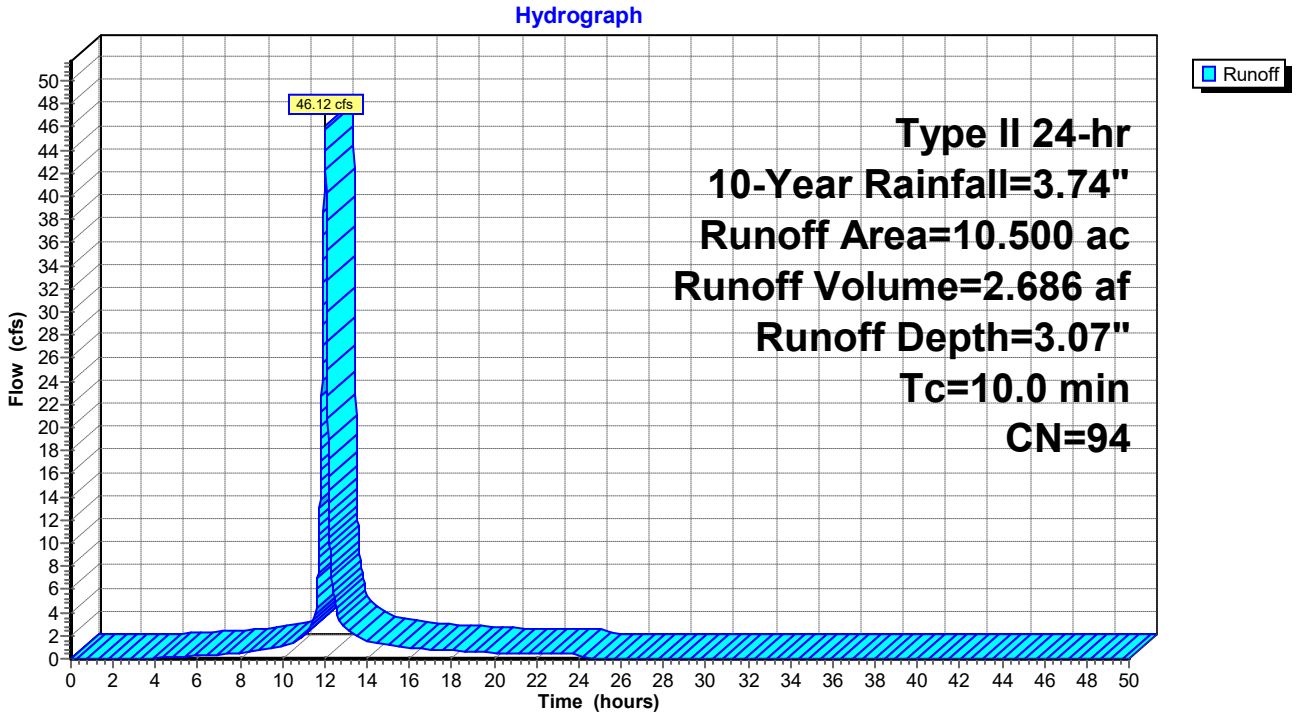
Runoff = 46.12 cfs @ 12.01 hrs, Volume= 2.686 af, Depth= 3.07"
Routed to Pond 5P : Basin 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.74"

Area (ac)	CN	Description
10.500	94	Urban commercial, 85% imp, HSG C
1.575		15.00% Pervious Area
8.925		85.00% Impervious Area

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

Subcatchment 4S: Subarea 02



Summary for Subcatchment 6S: Pre-developed 02

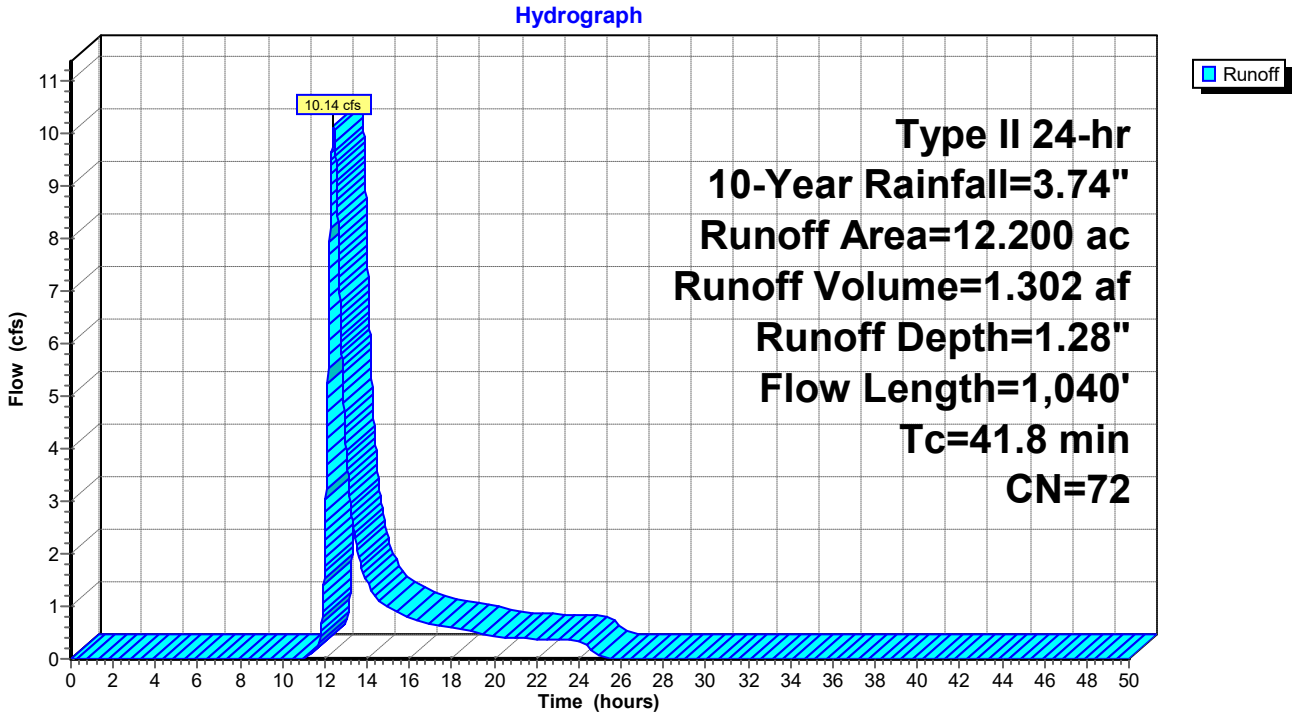
Runoff = 10.14 cfs @ 12.40 hrs, Volume= 1.302 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-Year Rainfall=3.74"

Area (ac)	CN	Description
3.310	78	Small grain, C&T, Good, HSG C
8.890	70	Woods, Good, HSG C
12.200	72	Weighted Average
12.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0178	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
29.3	940	0.0114	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.8	1,040	Total			

Subcatchment 6S: Pre-developed 02



Summary for Pond 3P: Basin 01

Inflow Area = 22.900 ac, 85.00% Impervious, Inflow Depth = 3.07" for 10-Year event
Inflow = 100.58 cfs @ 12.01 hrs, Volume= 5.858 af
Outflow = 7.47 cfs @ 12.67 hrs, Volume= 5.602 af, Atten= 93%, Lag= 39.6 min
Primary = 7.47 cfs @ 12.67 hrs, Volume= 5.602 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,175.36' @ 12.67 hrs Surf.Area= 1.537 ac Storage= 3.474 af

Plug-Flow detention time= 463.6 min calculated for 5.602 af (96% of inflow)
Center-of-Mass det. time= 437.4 min (1,219.9 - 782.5)

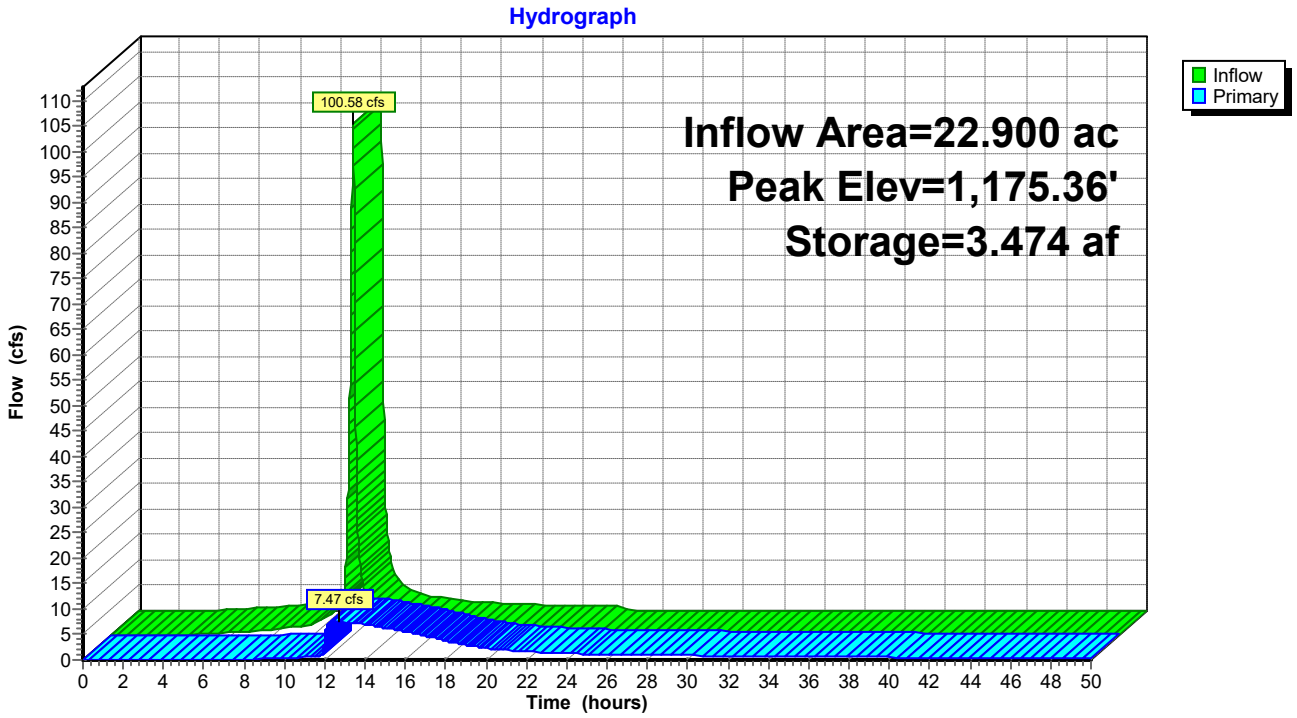
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=7.48 cfs @ 12.67 hrs HW=1,175.36' (Free Discharge)
└**1=RCP_Round 24"** (Passes 7.48 cfs of 29.99 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.53 cfs @ 7.78 fps)
  ├**3=Window** (Orifice Controls 5.95 cfs @ 5.29 fps)
  └**4=Grate** (Controls 0.00 cfs)

Pond 3P: Basin 01



Summary for Pond 5P: Basin 02

Inflow Area = 10.500 ac, 85.00% Impervious, Inflow Depth = 3.07" for 10-Year event
Inflow = 46.12 cfs @ 12.01 hrs, Volume= 2.686 af
Outflow = 1.75 cfs @ 13.72 hrs, Volume= 2.567 af, Atten= 96%, Lag= 102.5 min
Primary = 1.75 cfs @ 13.72 hrs, Volume= 2.567 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,178.73' @ 13.72 hrs Surf.Area= 0.783 ac Storage= 1.730 af

Plug-Flow detention time= 632.6 min calculated for 2.566 af (96% of inflow)
Center-of-Mass det. time= 606.3 min (1,388.8 - 782.5)

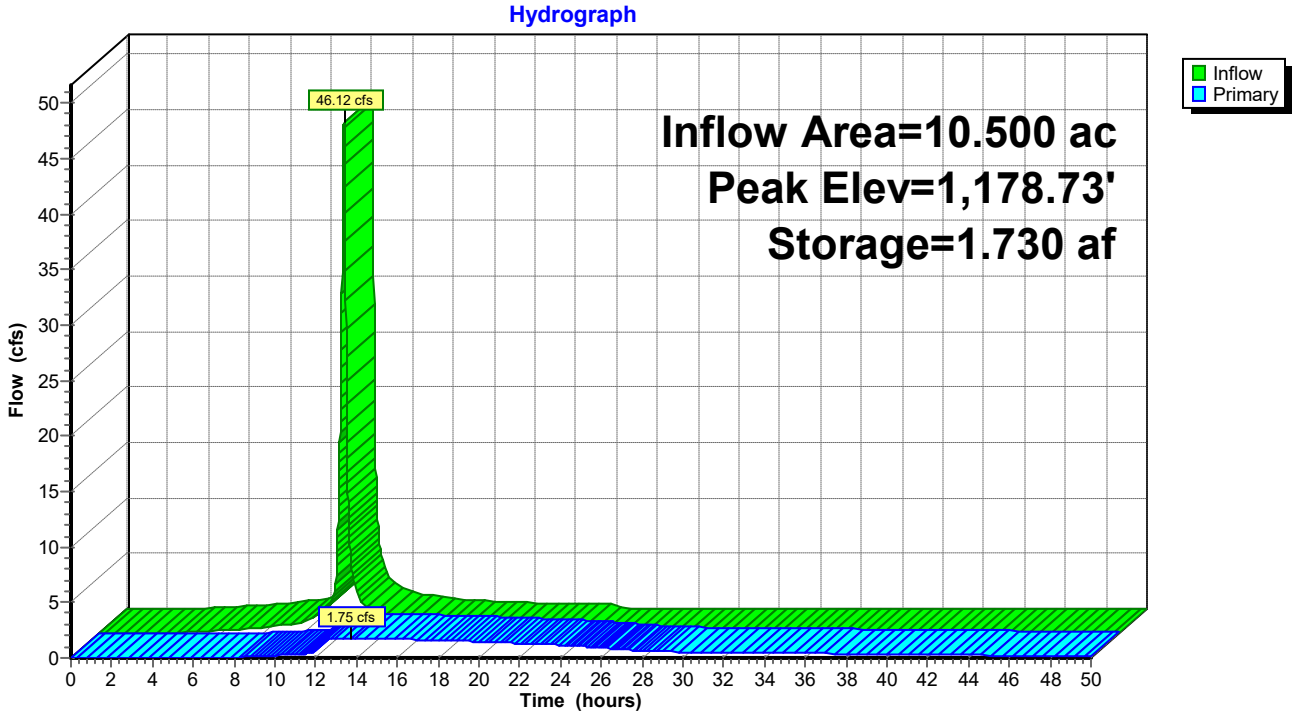
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.75 cfs @ 13.72 hrs HW=1,178.73' (Free Discharge)
└─**1=RCP_Round 24"** (Passes 1.75 cfs of 17.27 cfs potential flow)
  ├─**2=WQ Orifice** (Orifice Controls 0.85 cfs @ 7.68 fps)
  ├─**3=Orifice** (Orifice Controls 0.91 cfs @ 5.49 fps)
  └─**4=Grate** (Controls 0.00 cfs)

Pond 5P: Basin 02



Summary for Subcatchment 1S: Pre-developed 01

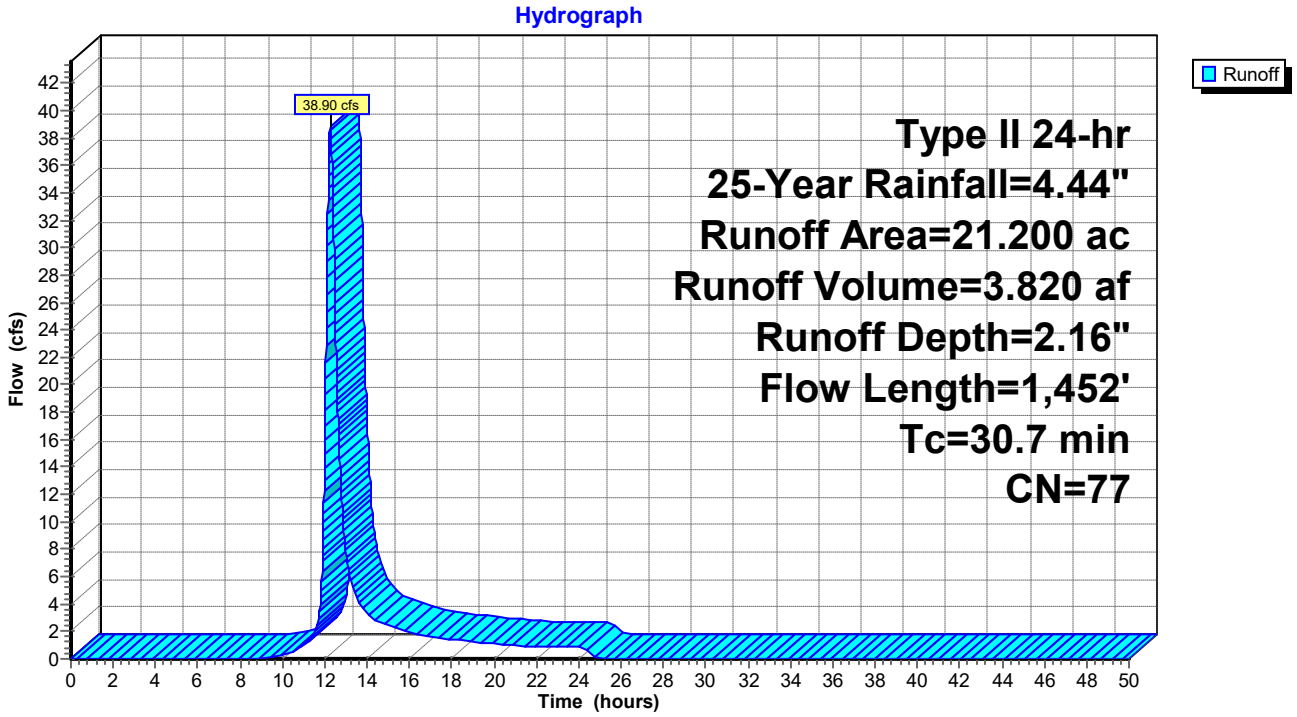
Runoff = 38.90 cfs @ 12.25 hrs, Volume= 3.820 af, Depth= 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.44"

Area (ac)	CN	Description
18.720	78	Small grain, C&T, Good, HSG C
2.480	70	Woods, Good, HSG C
21.200	77	Weighted Average
21.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0230	0.15		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
19.4	1,352	0.0166	1.16		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.7	1,452	Total			

Subcatchment 1S: Pre-developed 01



Summary for Subcatchment 2S: Subarea 01

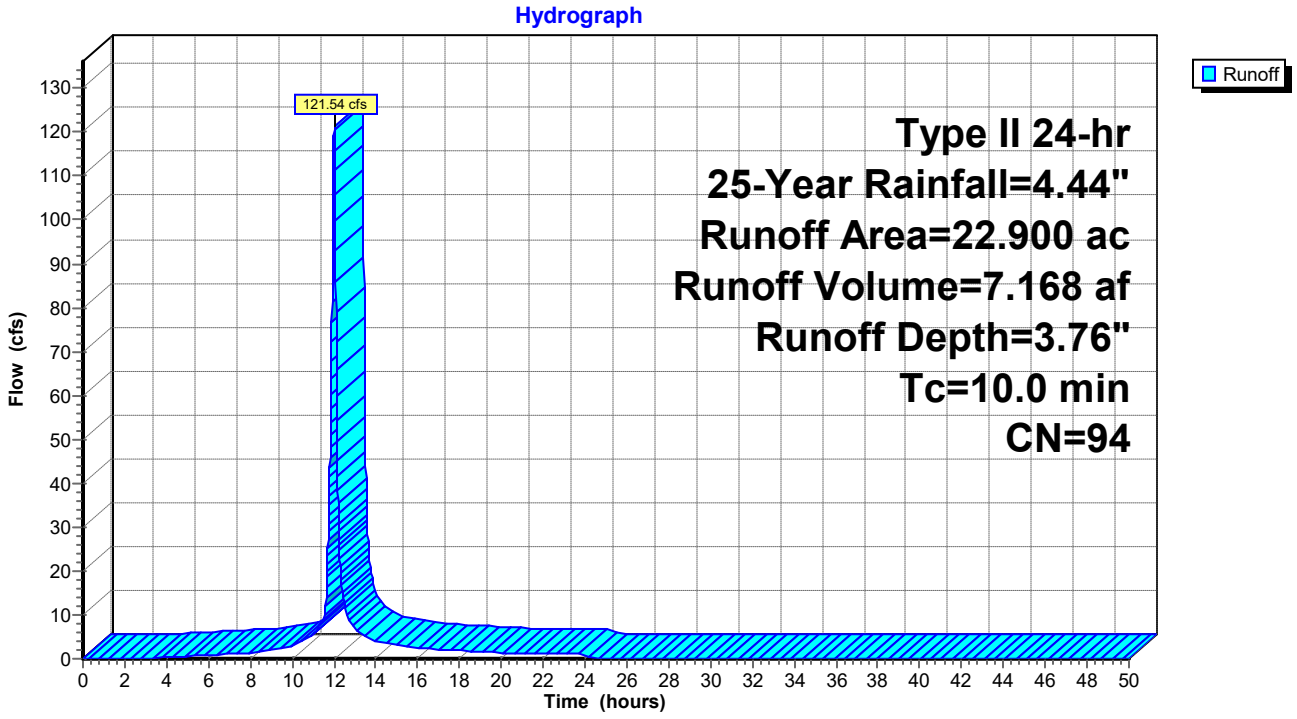
Runoff = 121.54 cfs @ 12.01 hrs, Volume= 7.168 af, Depth= 3.76"
Routed to Pond 3P : Basin 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.44"

Area (ac)	CN	Description
22.900	94	Urban commercial, 85% imp, HSG C
3.435		15.00% Pervious Area
19.465		85.00% Impervious Area

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

Subcatchment 2S: Subarea 01



Summary for Subcatchment 4S: Subarea 02

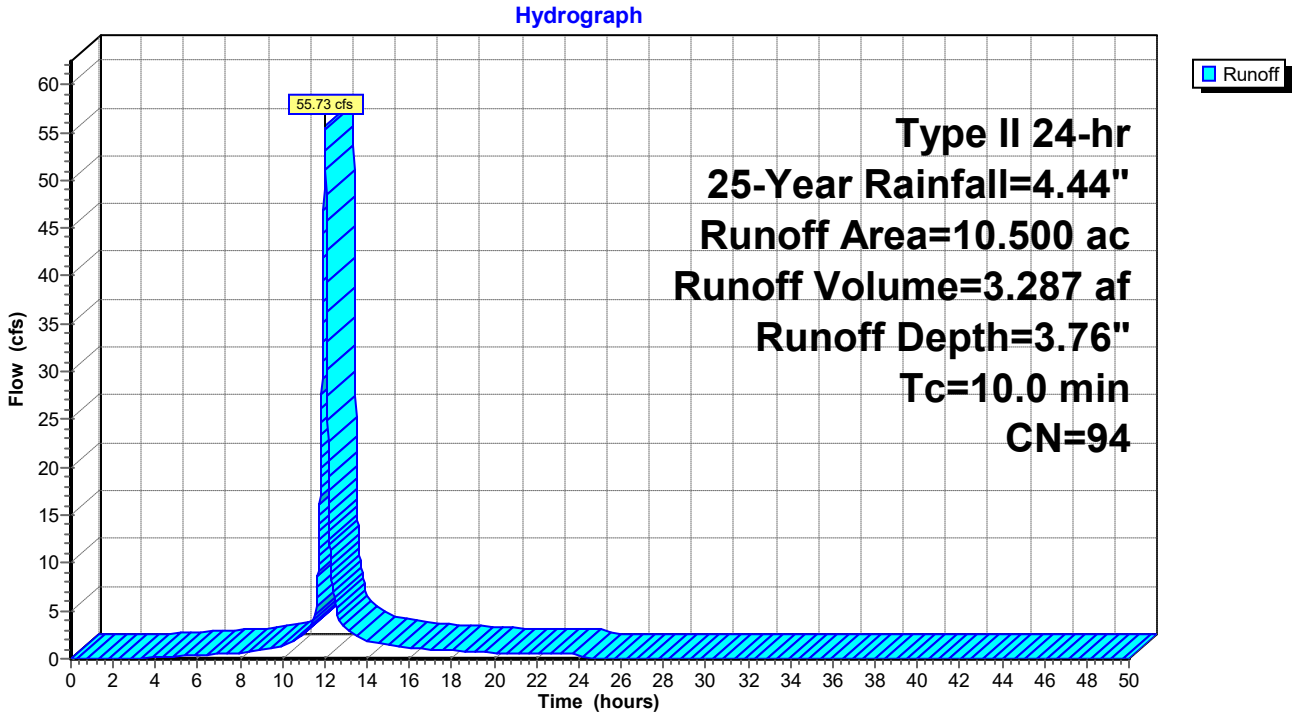
Runoff = 55.73 cfs @ 12.01 hrs, Volume= 3.287 af, Depth= 3.76"
Routed to Pond 5P : Basin 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.44"

Area (ac)	CN	Description
10.500	94	Urban commercial, 85% imp, HSG C
1.575		15.00% Pervious Area
8.925		85.00% Impervious Area

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

Subcatchment 4S: Subarea 02



Summary for Subcatchment 6S: Pre-developed 02

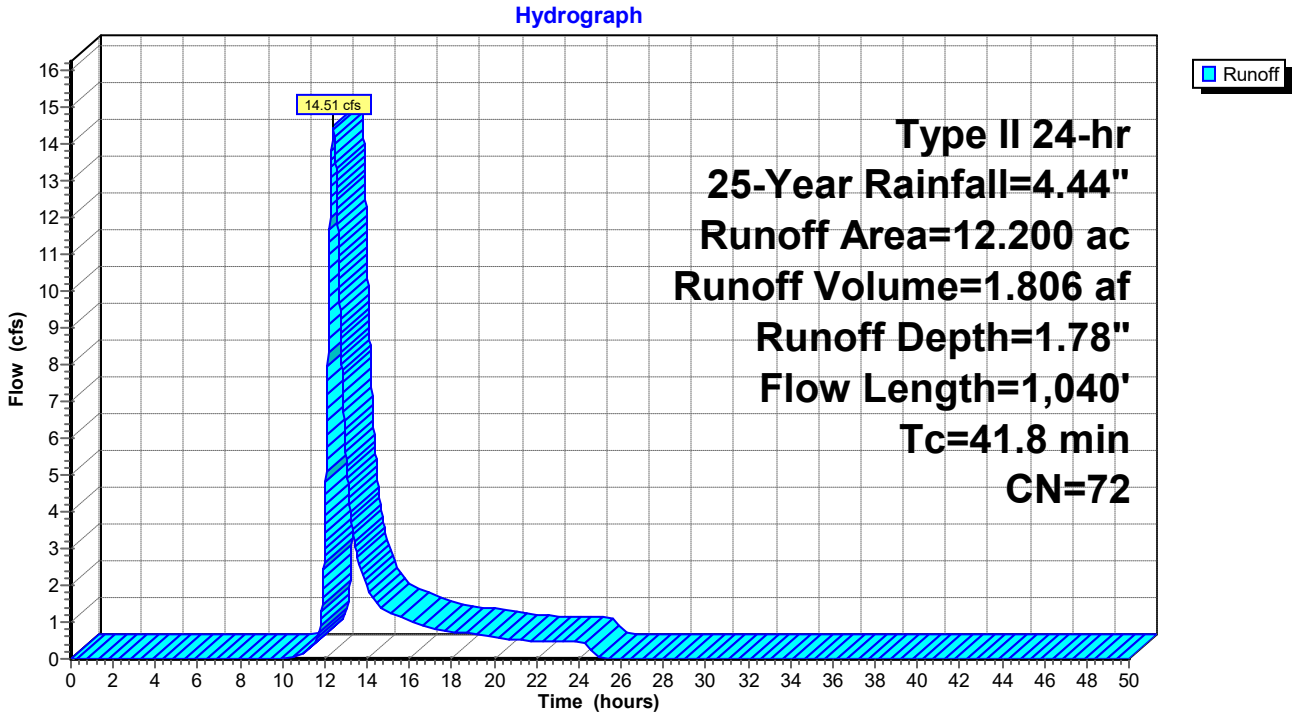
Runoff = 14.51 cfs @ 12.40 hrs, Volume= 1.806 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-Year Rainfall=4.44"

Area (ac)	CN	Description
3.310	78	Small grain, C&T, Good, HSG C
8.890	70	Woods, Good, HSG C
12.200	72	Weighted Average
12.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0178	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
29.3	940	0.0114	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.8	1,040	Total			

Subcatchment 6S: Pre-developed 02



Summary for Pond 3P: Basin 01

Inflow Area = 22.900 ac, 85.00% Impervious, Inflow Depth = 3.76" for 25-Year event
Inflow = 121.54 cfs @ 12.01 hrs, Volume= 7.168 af
Outflow = 8.75 cfs @ 12.69 hrs, Volume= 6.900 af, Atten= 93%, Lag= 40.9 min
Primary = 8.75 cfs @ 12.69 hrs, Volume= 6.900 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,175.86' @ 12.69 hrs Surf.Area= 1.654 ac Storage= 4.276 af

Plug-Flow detention time= 434.5 min calculated for 6.900 af (96% of inflow)
Center-of-Mass det. time= 411.7 min (1,188.9 - 777.2)

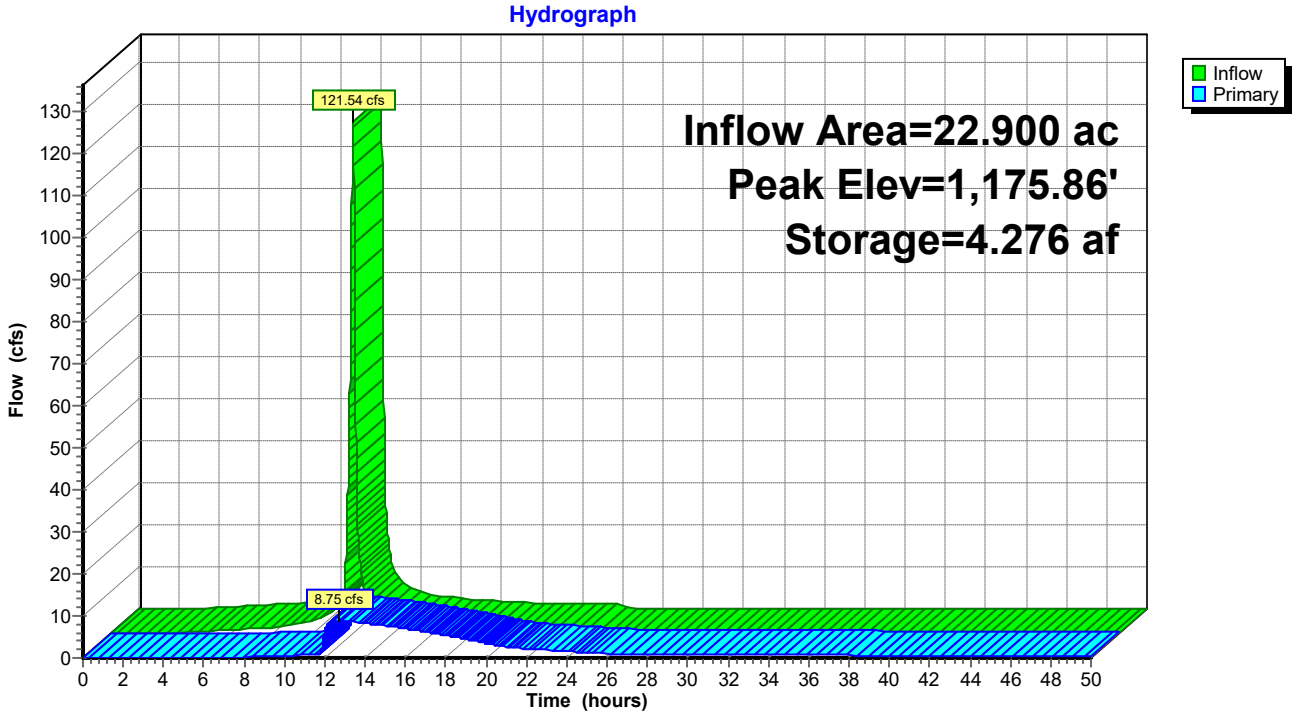
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=8.75 cfs @ 12.69 hrs HW=1,175.86' (Free Discharge)
└**1=RCP_Round 24"** (Passes 8.75 cfs of 31.75 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.67 cfs @ 8.49 fps)
  ├**3=Window** (Orifice Controls 7.08 cfs @ 6.30 fps)
  └**4=Grate** (Controls 0.00 cfs)

Pond 3P: Basin 01



Summary for Pond 5P: Basin 02

Inflow Area = 10.500 ac, 85.00% Impervious, Inflow Depth = 3.76" for 25-Year event
Inflow = 55.73 cfs @ 12.01 hrs, Volume= 3.287 af
Outflow = 2.00 cfs @ 13.83 hrs, Volume= 3.134 af, Atten= 96%, Lag= 109.1 min
Primary = 2.00 cfs @ 13.83 hrs, Volume= 3.134 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,179.24' @ 13.83 hrs Surf.Area= 0.841 ac Storage= 2.142 af

Plug-Flow detention time= 650.6 min calculated for 3.133 af (95% of inflow)
Center-of-Mass det. time= 623.2 min (1,400.4 - 777.2)

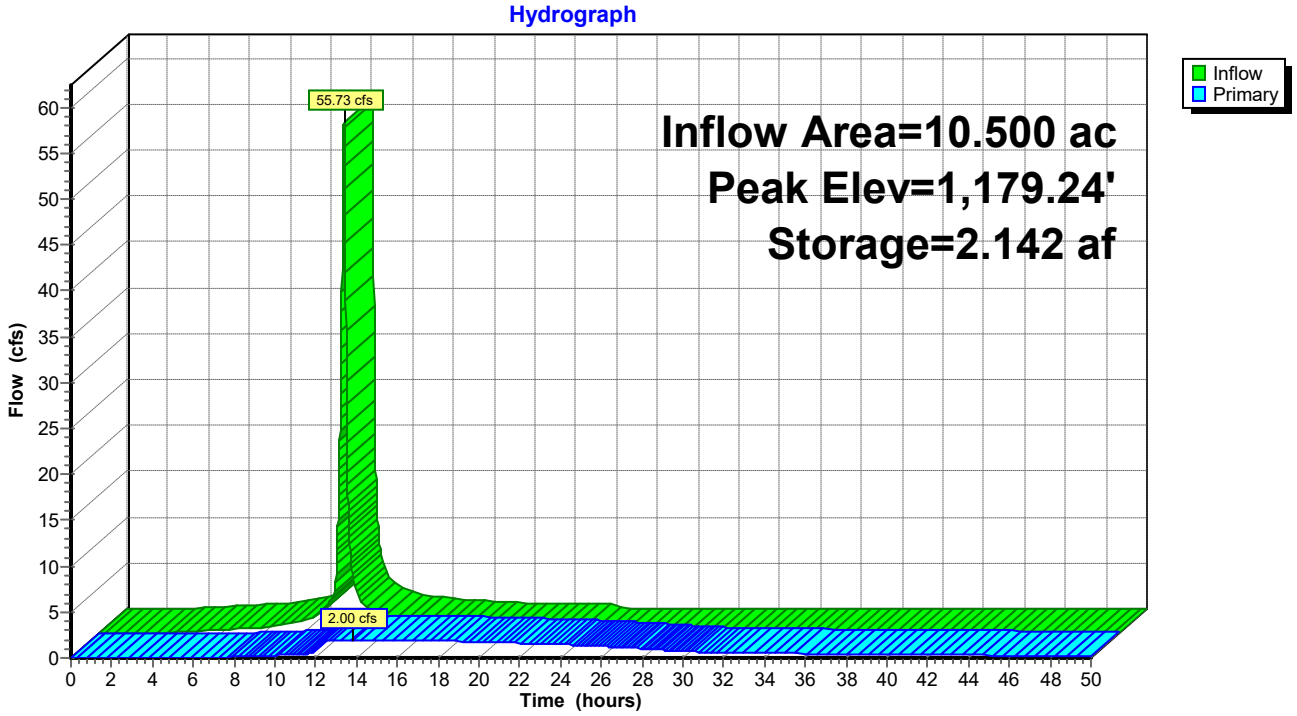
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=2.00 cfs @ 13.83 hrs HW=1,179.24' (Free Discharge)
└─**1=RCP_Round 24"** (Passes 2.00 cfs of 21.69 cfs potential flow)
  ├─**2=WQ Orifice** (Orifice Controls 0.93 cfs @ 8.41 fps)
  ├─**3=Orifice** (Orifice Controls 1.07 cfs @ 6.47 fps)
  └─**4=Grate** (Controls 0.00 cfs)

Pond 5P: Basin 02



Summary for Subcatchment 1S: Pre-developed 01

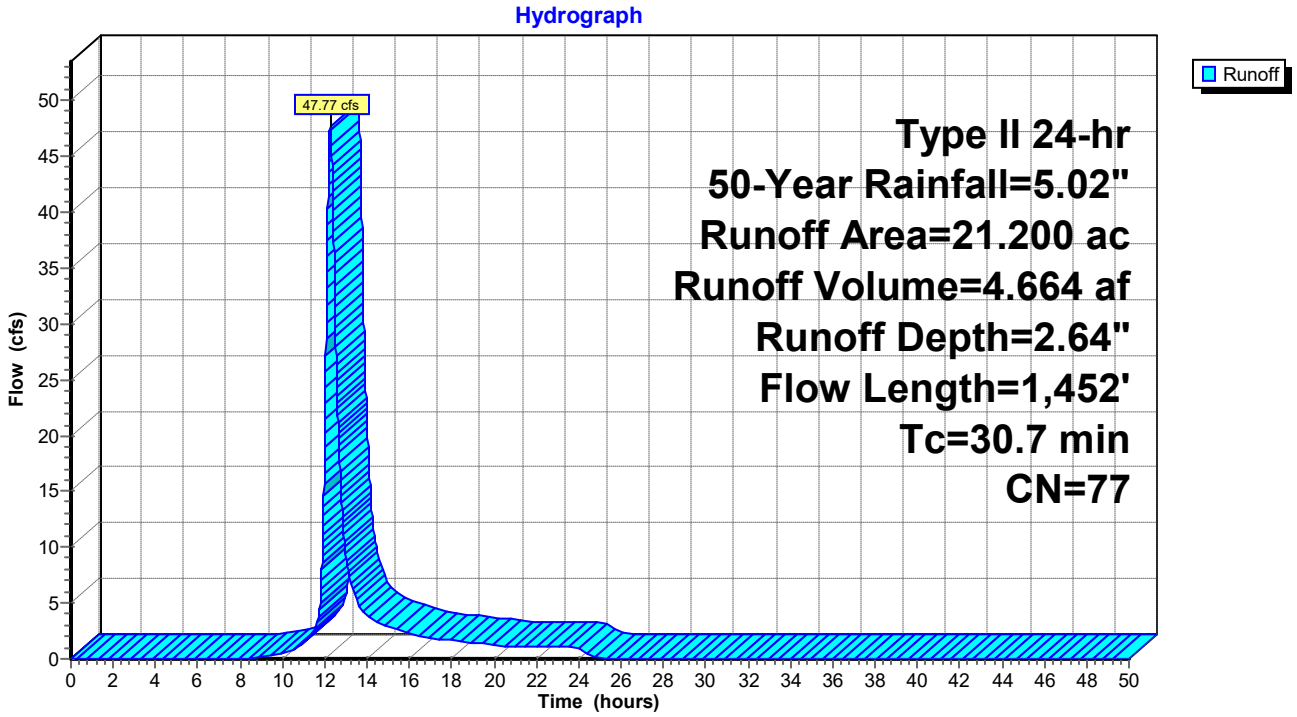
Runoff = 47.77 cfs @ 12.25 hrs, Volume= 4.664 af, Depth= 2.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.02"

Area (ac)	CN	Description
18.720	78	Small grain, C&T, Good, HSG C
2.480	70	Woods, Good, HSG C
21.200	77	Weighted Average
21.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0230	0.15		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
19.4	1,352	0.0166	1.16		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.7	1,452	Total			

Subcatchment 1S: Pre-developed 01



Summary for Subcatchment 2S: Subarea 01

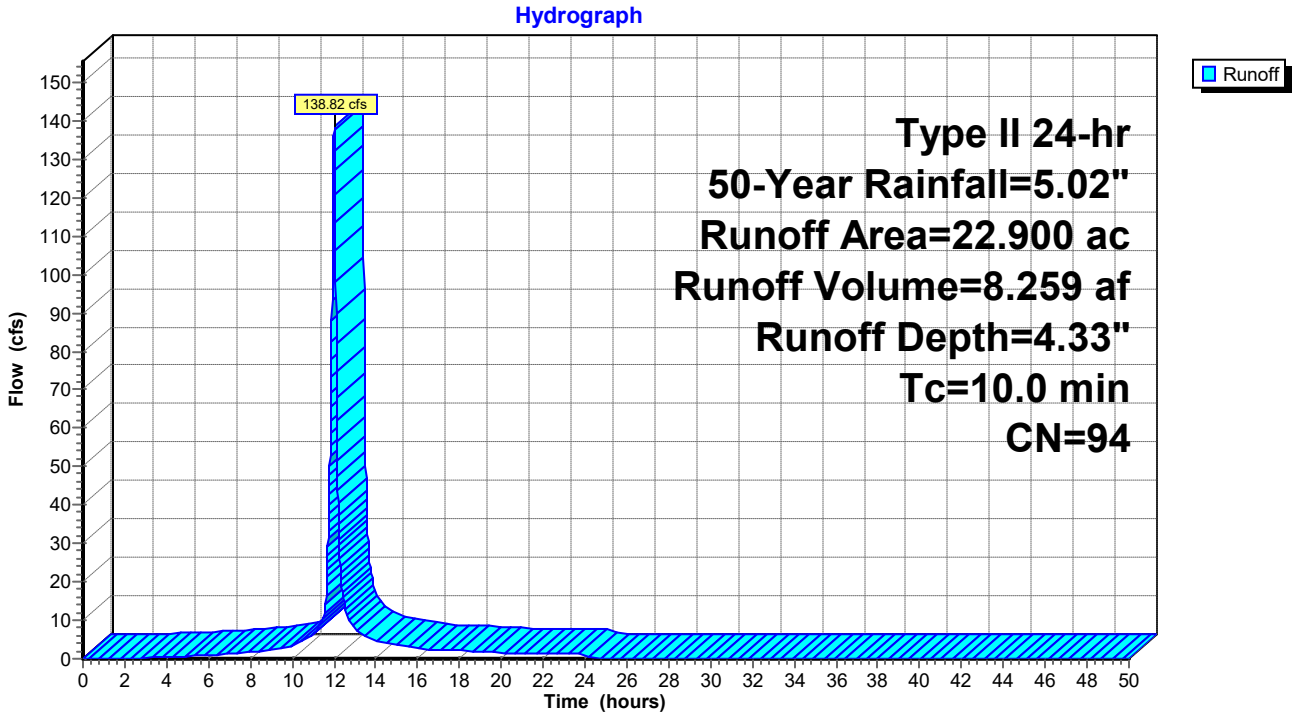
Runoff = 138.82 cfs @ 12.01 hrs, Volume= 8.259 af, Depth= 4.33"
Routed to Pond 3P : Basin 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.02"

Area (ac)	CN	Description
22.900	94	Urban commercial, 85% imp, HSG C
3.435		15.00% Pervious Area
19.465		85.00% Impervious Area

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

Subcatchment 2S: Subarea 01



Summary for Subcatchment 4S: Subarea 02

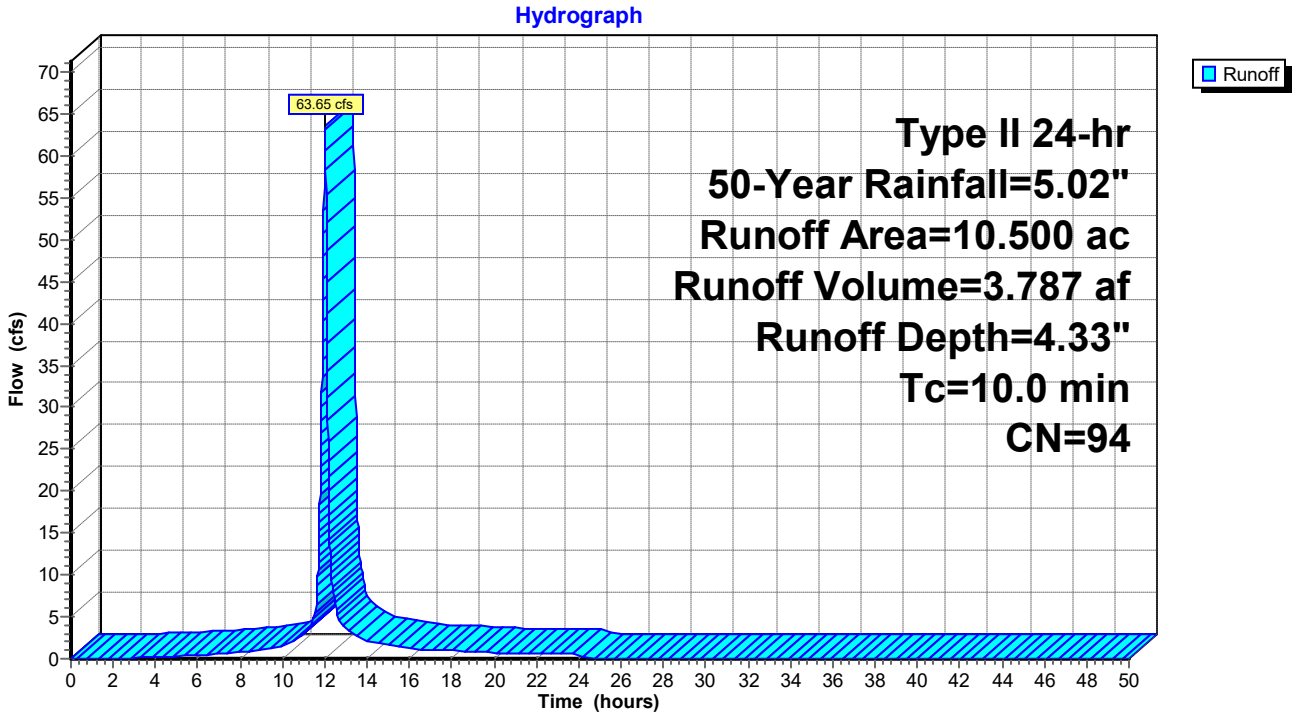
Runoff = 63.65 cfs @ 12.01 hrs, Volume= 3.787 af, Depth= 4.33"
Routed to Pond 5P : Basin 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.02"

Area (ac)	CN	Description
10.500	94	Urban commercial, 85% imp, HSG C
1.575		15.00% Pervious Area
8.925		85.00% Impervious Area

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

Subcatchment 4S: Subarea 02



Summary for Subcatchment 6S: Pre-developed 02

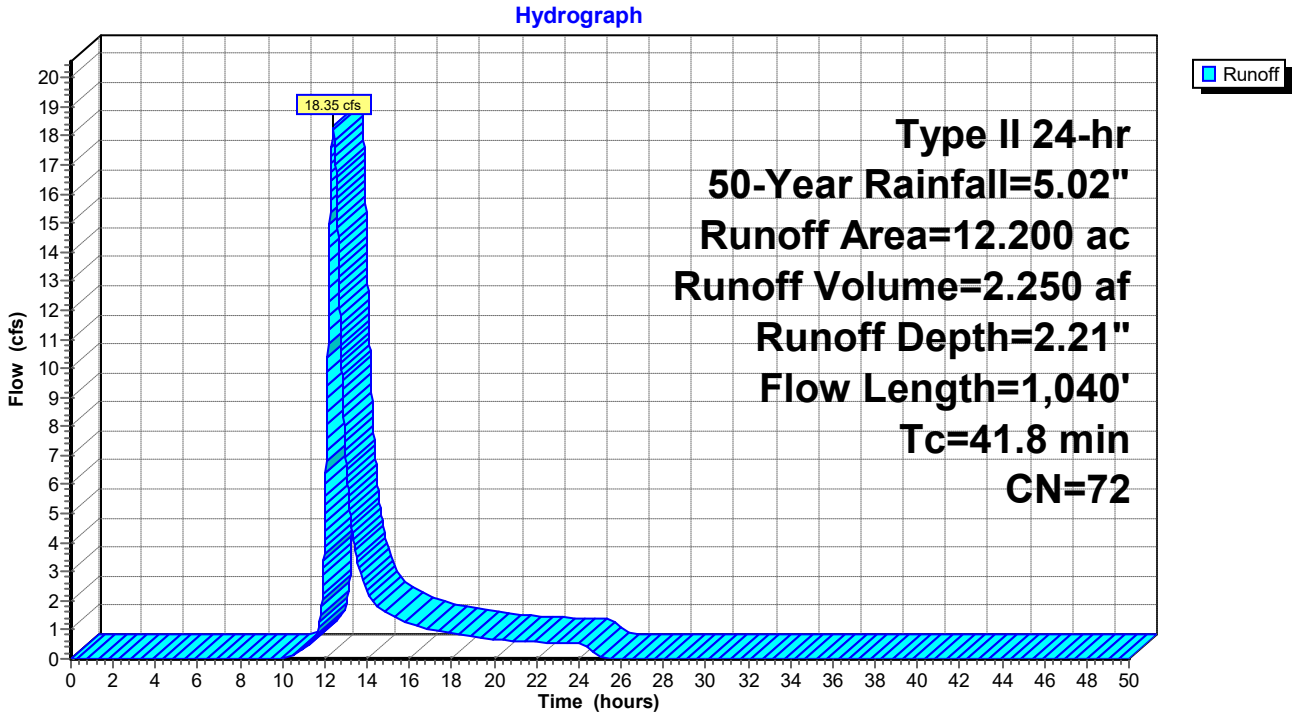
Runoff = 18.35 cfs @ 12.40 hrs, Volume= 2.250 af, Depth= 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-Year Rainfall=5.02"

Area (ac)	CN	Description
3.310	78	Small grain, C&T, Good, HSG C
8.890	70	Woods, Good, HSG C
12.200	72	Weighted Average
12.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0178	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
29.3	940	0.0114	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.8	1,040	Total			

Subcatchment 6S: Pre-developed 02



Summary for Pond 3P: Basin 01

Inflow Area = 22.900 ac, 85.00% Impervious, Inflow Depth = 4.33" for 50-Year event
Inflow = 138.82 cfs @ 12.01 hrs, Volume= 8.259 af
Outflow = 13.91 cfs @ 12.50 hrs, Volume= 7.983 af, Atten= 90%, Lag= 29.3 min
Primary = 13.91 cfs @ 12.50 hrs, Volume= 7.983 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,176.18' @ 12.50 hrs Surf.Area= 1.729 ac Storage= 4.820 af

Plug-Flow detention time= 407.3 min calculated for 7.982 af (97% of inflow)
Center-of-Mass det. time= 386.8 min (1,160.4 - 773.6)

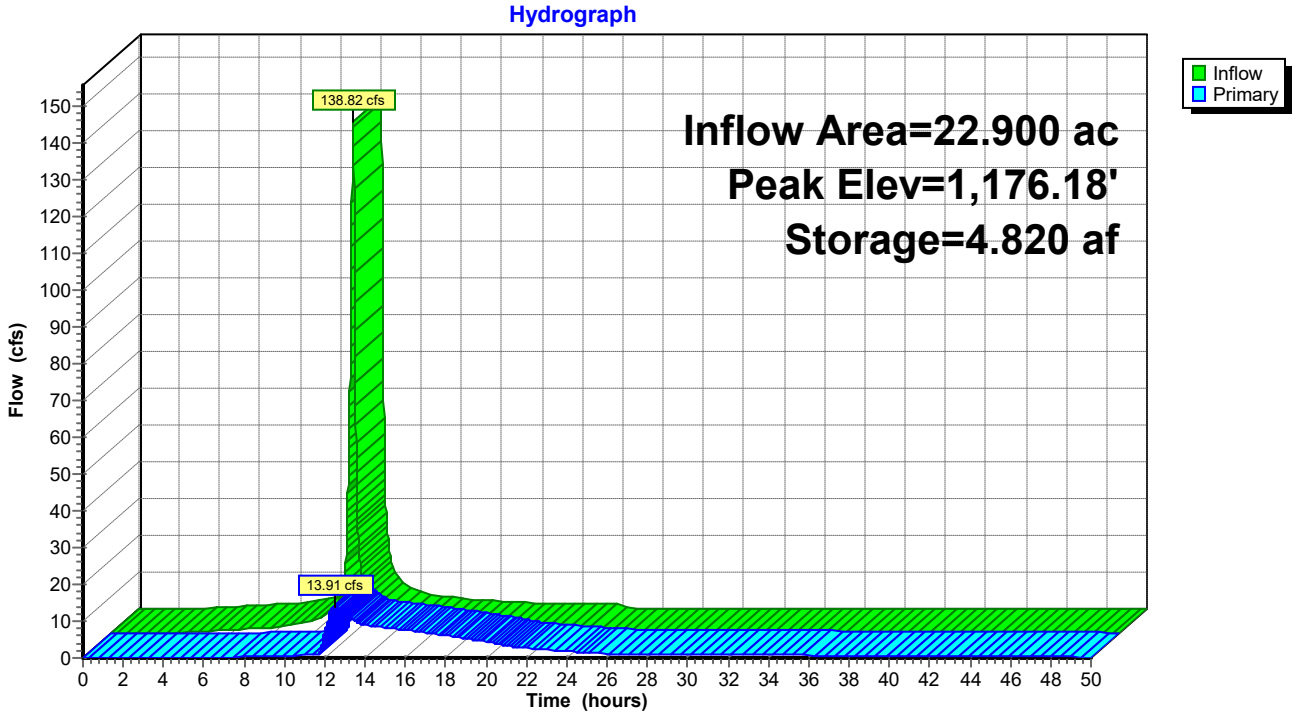
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=14.03 cfs @ 12.50 hrs HW=1,176.18' (Free Discharge)
└**1=RCP_Round 24"** (Passes 14.03 cfs of 32.83 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.75 cfs @ 8.92 fps)
  ├**3=Window** (Orifice Controls 7.72 cfs @ 6.86 fps)
  └**4=Grate** (Weir Controls 4.55 cfs @ 1.74 fps)

Pond 3P: Basin 01



Summary for Pond 5P: Basin 02

Inflow Area = 10.500 ac, 85.00% Impervious, Inflow Depth = 4.33" for 50-Year event
Inflow = 63.65 cfs @ 12.01 hrs, Volume= 3.787 af
Outflow = 2.17 cfs @ 13.92 hrs, Volume= 3.598 af, Atten= 97%, Lag= 114.8 min
Primary = 2.17 cfs @ 13.92 hrs, Volume= 3.598 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,179.64' @ 13.92 hrs Surf.Area= 0.888 ac Storage= 2.491 af

Plug-Flow detention time= 669.6 min calculated for 3.598 af (95% of inflow)
Center-of-Mass det. time= 640.0 min (1,413.6 - 773.6)

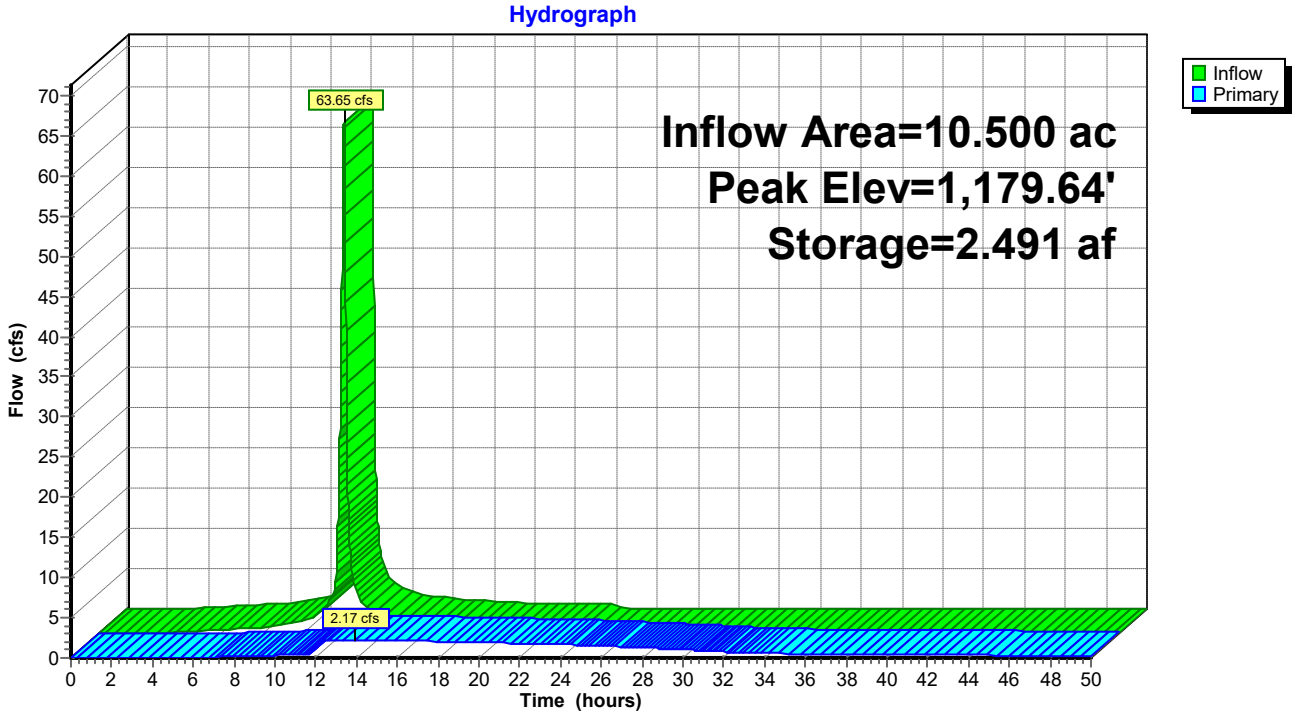
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=2.17 cfs @ 13.92 hrs HW=1,179.64' (Free Discharge)
└─**1=RCP_Round 24"** (Passes 2.17 cfs of 24.58 cfs potential flow)
  ├─**2=WQ Orifice** (Orifice Controls 0.99 cfs @ 8.95 fps)
  ├─**3=Orifice** (Orifice Controls 1.18 cfs @ 7.16 fps)
  └─**4=Grate** (Controls 0.00 cfs)

Pond 5P: Basin 02



Summary for Subcatchment 1S: Pre-developed 01

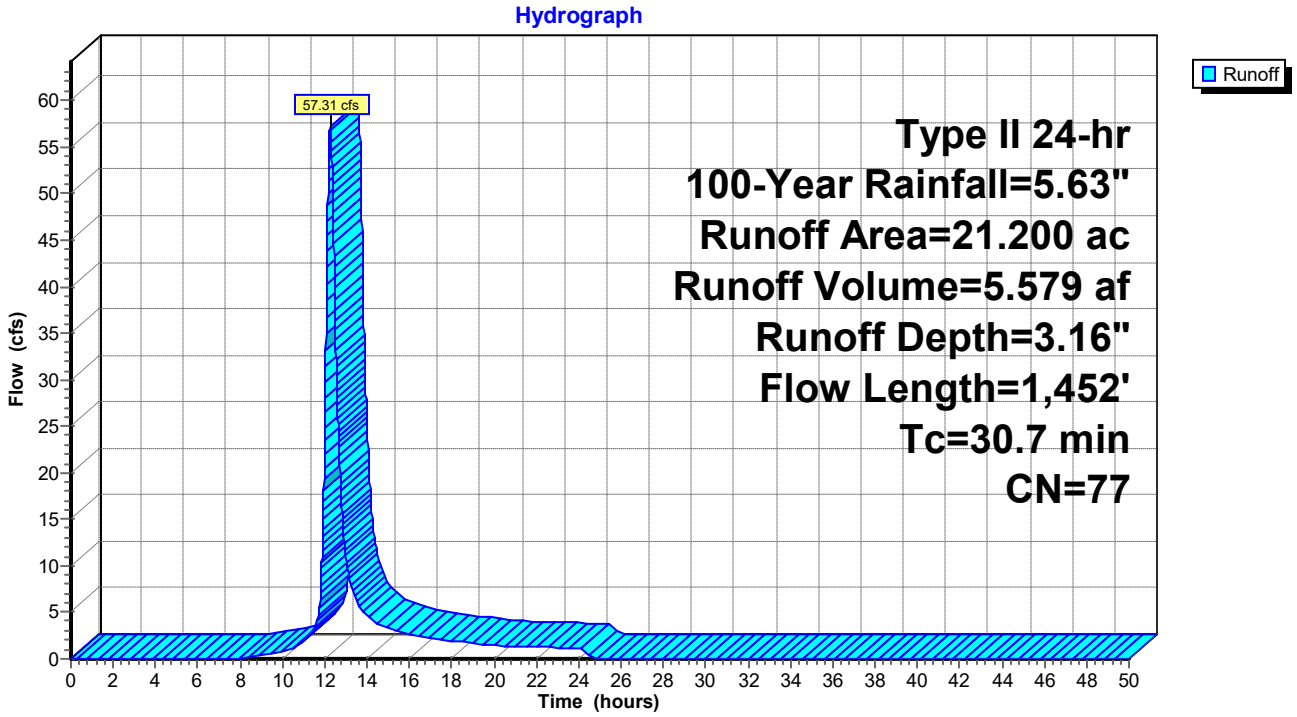
Runoff = 57.31 cfs @ 12.25 hrs, Volume= 5.579 af, Depth= 3.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.63"

Area (ac)	CN	Description
18.720	78	Small grain, C&T, Good, HSG C
2.480	70	Woods, Good, HSG C
21.200	77	Weighted Average
21.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.3	100	0.0230	0.15		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
19.4	1,352	0.0166	1.16		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.7	1,452	Total			

Subcatchment 1S: Pre-developed 01



Summary for Subcatchment 2S: Subarea 01

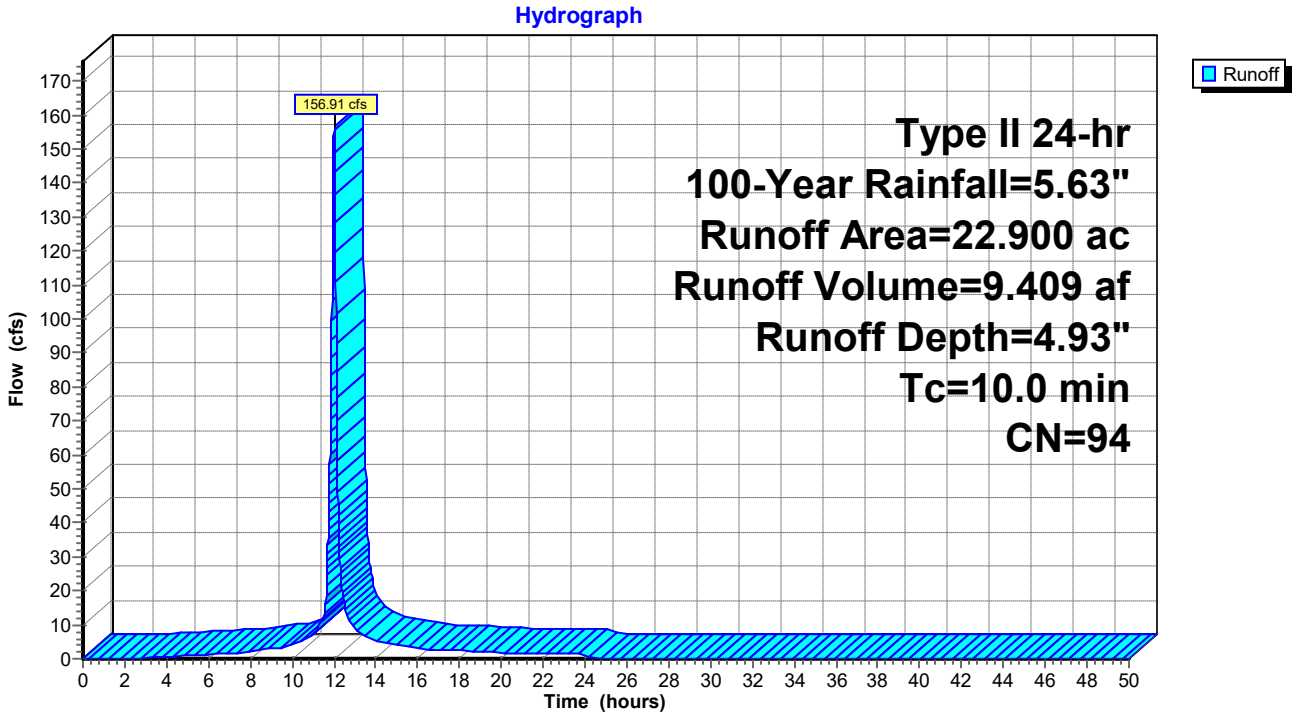
Runoff = 156.91 cfs @ 12.01 hrs, Volume= 9.409 af, Depth= 4.93"
Routed to Pond 3P : Basin 01

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.63"

Area (ac)	CN	Description
22.900	94	Urban commercial, 85% imp, HSG C
3.435		15.00% Pervious Area
19.465		85.00% Impervious Area

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

Subcatchment 2S: Subarea 01



Summary for Subcatchment 4S: Subarea 02

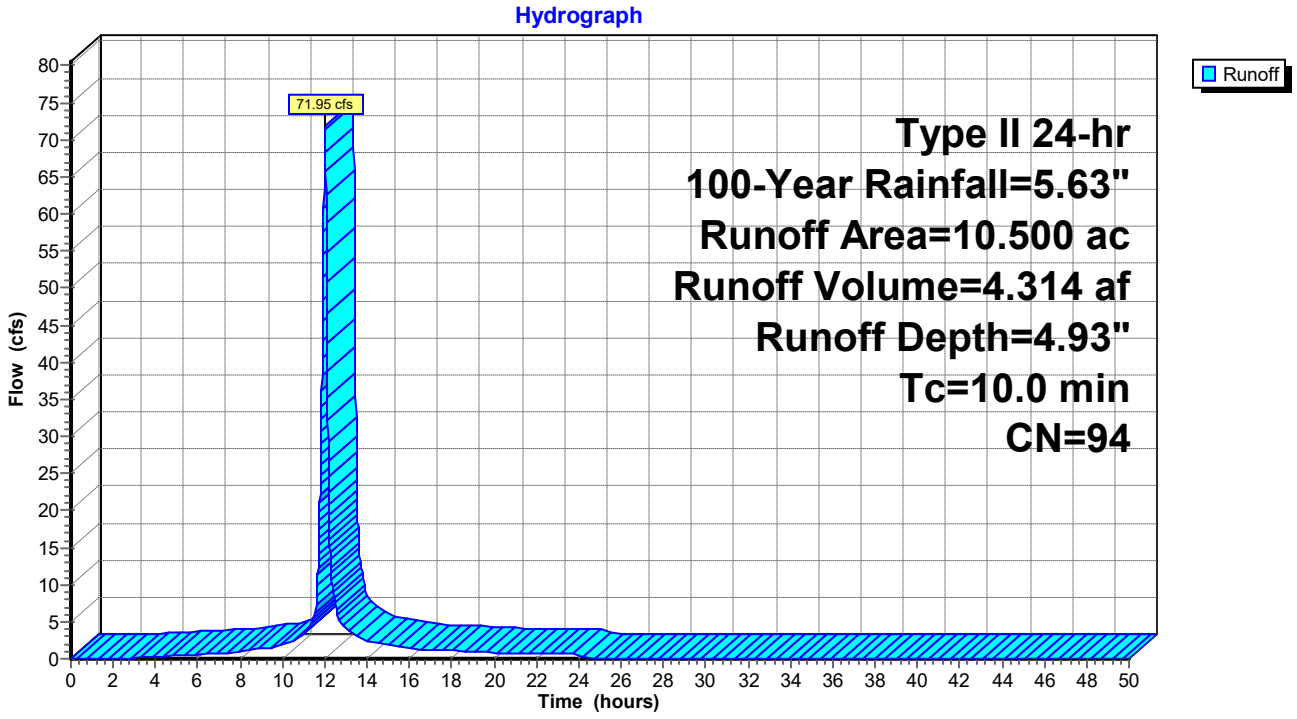
Runoff = 71.95 cfs @ 12.01 hrs, Volume= 4.314 af, Depth= 4.93"
Routed to Pond 5P : Basin 02

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.63"

Area (ac)	CN	Description
10.500	94	Urban commercial, 85% imp, HSG C
1.575		15.00% Pervious Area
8.925		85.00% Impervious Area

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

Subcatchment 4S: Subarea 02



Summary for Subcatchment 6S: Pre-developed 02

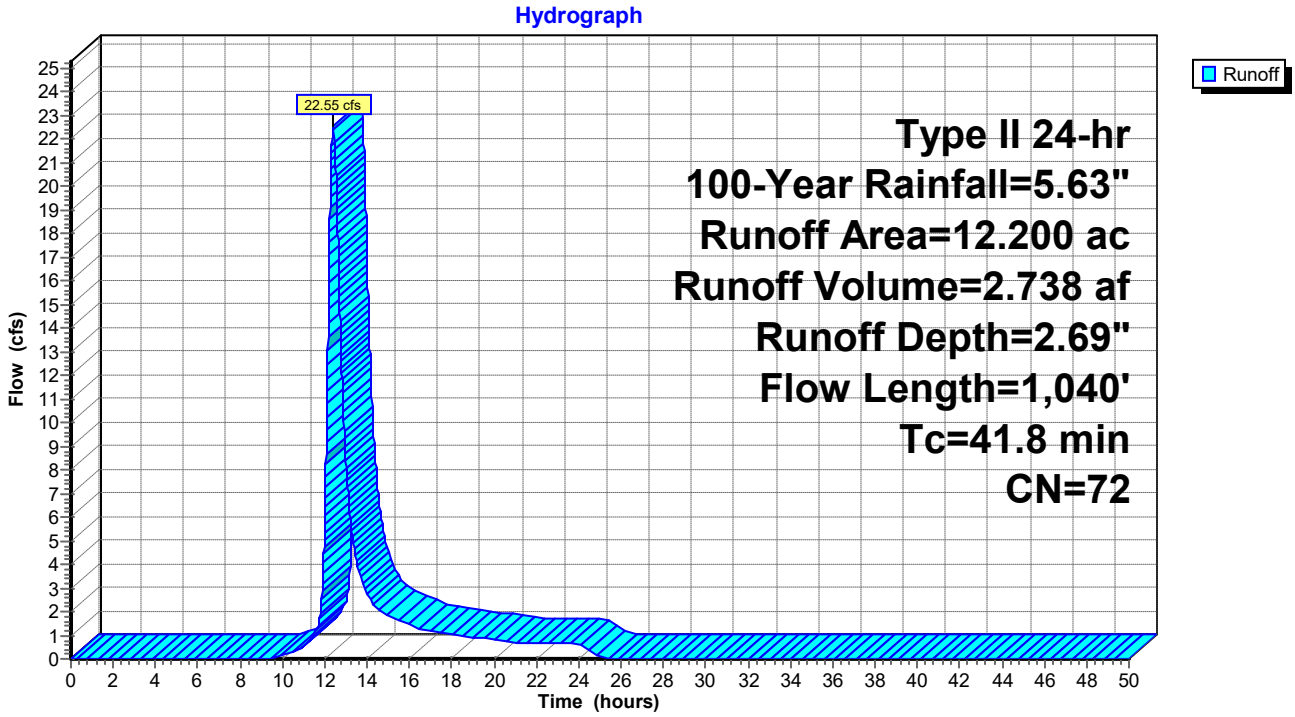
Runoff = 22.55 cfs @ 12.40 hrs, Volume= 2.738 af, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-Year Rainfall=5.63"

Area (ac)	CN	Description
3.310	78	Small grain, C&T, Good, HSG C
8.890	70	Woods, Good, HSG C
12.200	72	Weighted Average
12.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	100	0.0178	0.13		**Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 2.63"
29.3	940	0.0114	0.53		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.8	1,040	Total			

Subcatchment 6S: Pre-developed 02



Summary for Pond 3P: Basin 01

Inflow Area = 22.900 ac, 85.00% Impervious, Inflow Depth = 4.93" for 100-Year event
Inflow = 156.91 cfs @ 12.01 hrs, Volume= 9.409 af
Outflow = 17.24 cfs @ 12.45 hrs, Volume= 9.127 af, Atten= 89%, Lag= 26.5 min
Primary = 17.24 cfs @ 12.45 hrs, Volume= 9.127 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,176.52' @ 12.45 hrs Surf.Area= 1.806 ac Storage= 5.404 af

Plug-Flow detention time= 380.8 min calculated for 9.125 af (97% of inflow)
Center-of-Mass det. time= 362.2 min (1,132.6 - 770.3)

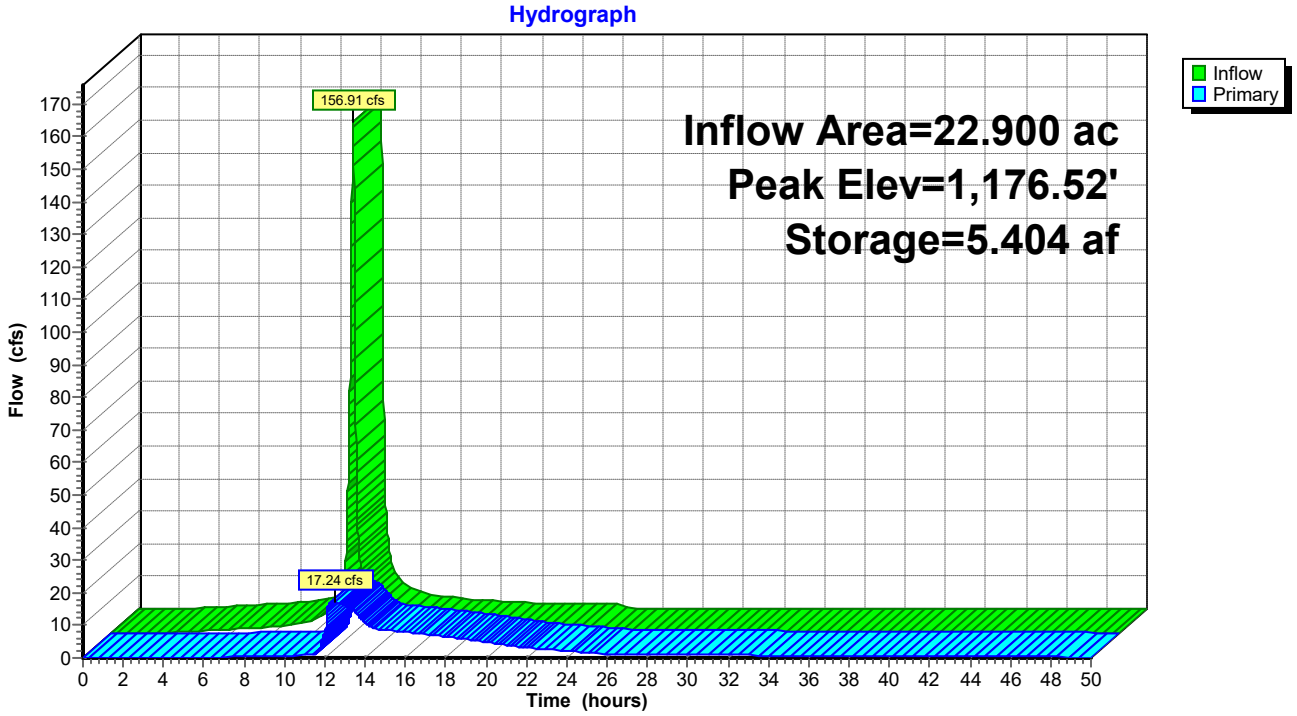
Volume	Invert	Avail.Storage	Storage Description
#1	1,172.50'	9.461 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,172.50	0.912	0.000	0.000
1,173.50	1.110	1.011	1.011
1,174.50	1.341	1.225	2.236
1,175.50	1.569	1.455	3.691
1,176.50	1.802	1.686	5.377
1,177.50	2.041	1.922	7.299
1,178.50	2.284	2.162	9.461

Device	Routing	Invert	Outlet Devices
#1	Primary	1,170.00'	**24.0" Round RCP_Round 24"** L= 115.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,170.00' / 1,169.21' S= 0.0069 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,172.50'	**6.0" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,173.90'	**27.0" W x 6.0" H Vert. Window** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,175.90'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=17.24 cfs @ 12.45 hrs HW=1,176.52' (Free Discharge)
└**1=RCP_Round 24"** (Passes 17.24 cfs of 33.91 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.83 cfs @ 9.34 fps)
  ├**3=Window** (Orifice Controls 8.33 cfs @ 7.40 fps)
  └**4=Grate** (Orifice Controls 7.08 cfs @ 3.78 fps)

Pond 3P: Basin 01



Summary for Pond 5P: Basin 02

Inflow Area = 10.500 ac, 85.00% Impervious, Inflow Depth = 4.93" for 100-Year event
Inflow = 71.95 cfs @ 12.01 hrs, Volume= 4.314 af
Outflow = 4.50 cfs @ 12.85 hrs, Volume= 4.107 af, Atten= 94%, Lag= 50.7 min
Primary = 4.50 cfs @ 12.85 hrs, Volume= 4.107 af

Routing by Stor-Ind method, Time Span= 0.00-50.00 hrs, dt= 0.01 hrs
Peak Elev= 1,179.88' @ 12.85 hrs Surf.Area= 0.916 ac Storage= 2.704 af

Plug-Flow detention time= 631.9 min calculated for 4.107 af (95% of inflow)
Center-of-Mass det. time= 603.2 min (1,373.6 - 770.3)

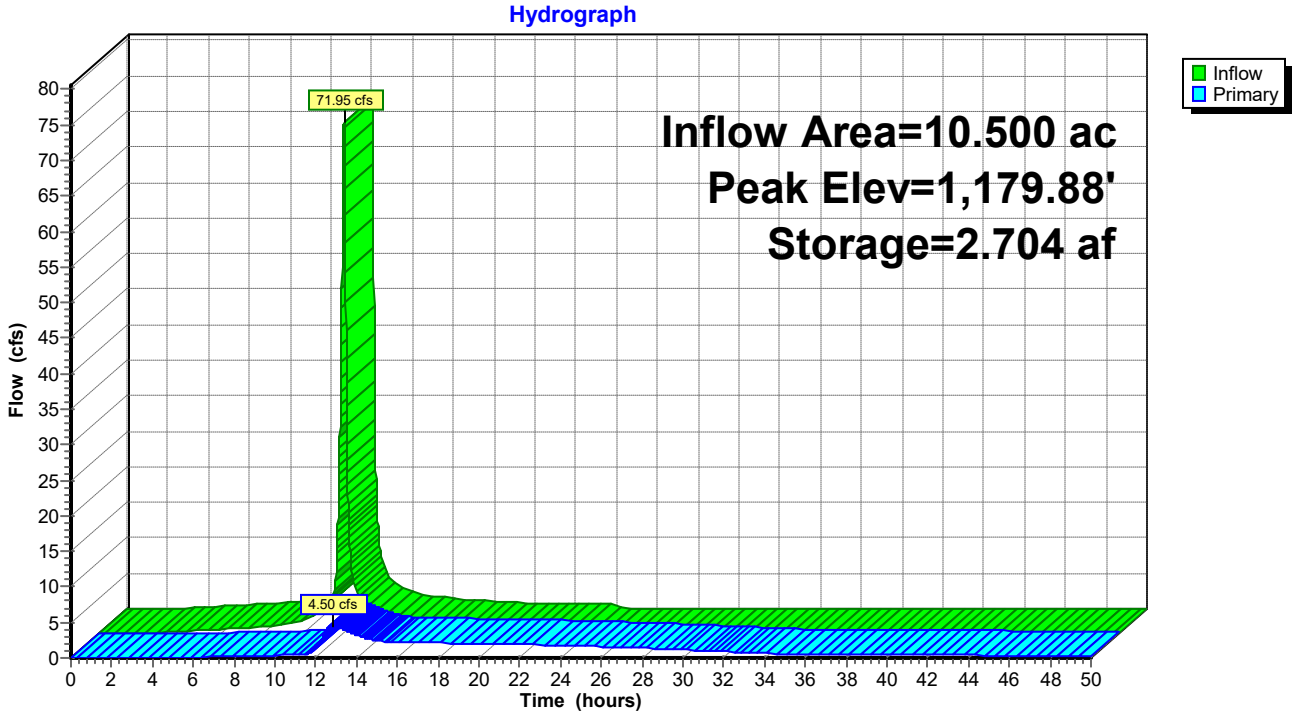
Volume	Invert	Avail.Storage	Storage Description
#1	1,176.00'	3.809 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,176.00	0.492	0.000	0.000
1,177.00	0.593	0.543	0.543
1,178.00	0.701	0.647	1.190
1,179.00	0.813	0.757	1.947
1,180.00	0.930	0.871	2.818
1,181.00	1.052	0.991	3.809

Device	Routing	Invert	Outlet Devices
#1	Primary	1,176.00'	**24.0" Round RCP_Round 24"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,176.00' / 1,175.85' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	1,176.00'	**4.5" Vert. WQ Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	1,177.20'	**5.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	1,179.70'	**1.5" x 5.0" Horiz. Grate X 9.00 columns** X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=4.48 cfs @ 12.85 hrs HW=1,179.88' (Free Discharge)
└**1=RCP_Round 24"** (Passes 4.48 cfs of 25.65 cfs potential flow)
  ├**2=WQ Orifice** (Orifice Controls 1.02 cfs @ 9.25 fps)
  ├**3=Orifice** (Orifice Controls 1.24 cfs @ 7.53 fps)
  └**4=Grate** (Weir Controls 2.21 cfs @ 1.37 fps)

Pond 5P: Basin 02



Events for Subcatchment 1S: Pre-developed 01

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	2.20	8.77	0.989	0.56
2-Year	2.63	13.74	1.454	0.82
5-Year	3.24	21.61	2.191	1.24
10-Year	3.74	28.60	2.846	1.61
25-Year	4.44	38.90	3.820	2.16
50-Year	5.02	47.77	4.664	2.64
100-Year	**5.63**	**57.31**	**5.579**	**3.16**

Events for Subcatchment 2S: Subarea 01

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	2.20	53.96	3.023	1.58
2-Year	2.63	67.05	3.805	1.99
5-Year	3.24	85.53	4.929	2.58
10-Year	3.74	100.58	5.858	3.07
25-Year	4.44	121.54	7.168	3.76
50-Year	5.02	138.82	8.259	4.33
100-Year	**5.63**	**156.91**	**9.409**	**4.93**

Events for Subcatchment 4S: Subarea 02

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	2.20	24.74	1.386	1.58
2-Year	2.63	30.74	1.745	1.99
5-Year	3.24	39.22	2.260	2.58
10-Year	3.74	46.12	2.686	3.07
25-Year	4.44	55.73	3.287	3.76
50-Year	5.02	63.65	3.787	4.33
100-Year	**5.63**	**71.95**	**4.314**	**4.93**

Events for Subcatchment 6S: Pre-developed 02

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	2.20	2.32	0.387	0.38
2-Year	2.63	4.13	0.608	0.60
5-Year	3.24	7.24	0.970	0.95
10-Year	3.74	10.14	1.302	1.28
25-Year	4.44	14.51	1.806	1.78
50-Year	5.02	18.35	2.250	2.21
100-Year	**5.63**	**22.55**	**2.738**	**2.69**

Events for Pond 3P: Basin 01

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1-Year	53.96	2.57	1,174.24	1.892
2-Year	67.05	4.52	1,174.53	2.274
5-Year	85.53	6.35	1,174.99	2.917
10-Year	100.58	7.47	1,175.36	3.474
25-Year	121.54	8.75	1,175.86	4.276
50-Year	138.82	13.91	1,176.18	4.820
100-Year	**156.91**	**17.24**	**1,176.52**	**5.404**

Events for Pond 5P: Basin 02

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1-Year	24.74	0.91	1,177.56	0.891
2-Year	30.74	1.23	1,177.88	1.108
5-Year	39.22	1.55	1,178.35	1.444
10-Year	46.12	1.75	1,178.73	1.730
25-Year	55.73	2.00	1,179.24	2.142
50-Year	63.65	2.17	1,179.64	2.491
100-Year	**71.95**	**4.50**	**1,179.88**	**2.704**

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EMHT

APPENDIX E:

Exhibits

Pre-developed 02
Area = 12.20 acres
RCN = 72
TC = 41.8 minutes

Pre-developed 01
Area = 21.20 acres
RCN = 77
TC = 30.7 minutes

GRAPHIC SCALE
0 50 100 200
1 inch = 100 feet

REVISIONS

MARK	DATE	DESCRIPTION

VAN TRUST

CITY OF NEW ALBANY, LICKING COUNTY, OHIO
STORMWATER MANAGEMENT PLAN
FOR
NEW ALBANY 525 BUILDING
POST-DEVELOPED STORMWATER TRIBUTARY MAP

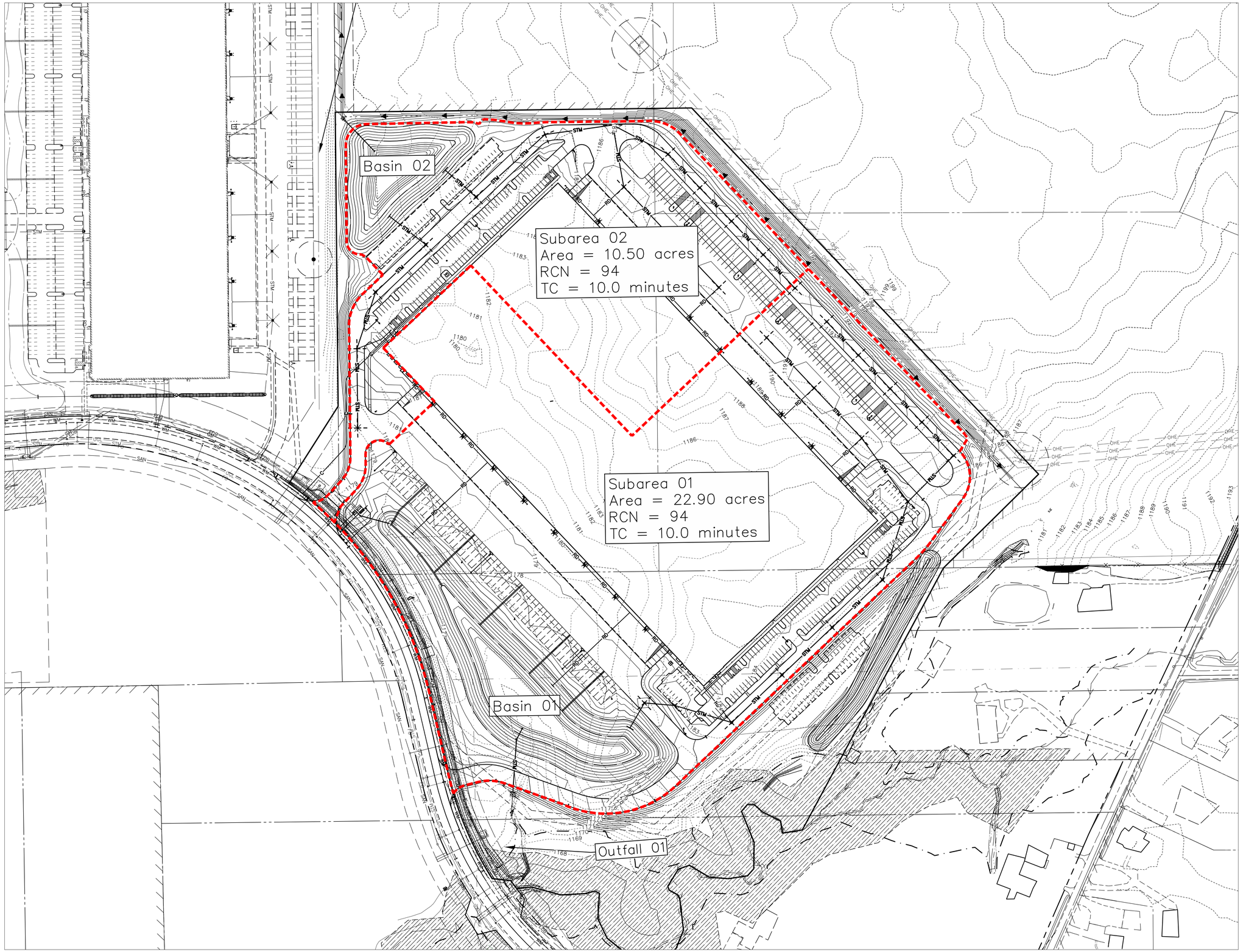
EMHT
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

DATE
10/29/2021

SCALE
1" = 100'

JOB NO.
2021-0460

SHEET
1/1



GRAPHIC SCALE

0 100 200 400

1 inch = 200 feet

REVISIONS

MARK	DATE	DESCRIPTION

VAN TRUST

CITY OF NEW ALBANY, LICKING COUNTY, OHIO
STORMWATER MANAGEMENT PLAN
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DATE
10/29/2021

SCALE
1" = 100'

JOB NO.
2021-0460

SHEET
1/2

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

Dec 01, 2021

Pepper Construction of Ohio
Matt Heater
5185 Blazer Parkway, Suite 101
Dublin, OH 43017

Re: Approval Under Ohio EPA National Pollutant Discharge Elimination System (NPDES) - Construction Site Stormwater General Permit - OHC000005

Dear Applicant,

Your NPDES Notice of Intent (NOI) application is approved for the following facility/site. Please use your Ohio EPA Facility Permit Number in all future correspondence.

Facility Name:	New Albany 525 Building
Facility Location:	N of Innovation Campus Way, W of Mink St
City:	New Albany
County:	Licking
Township:	
Ohio EPA Facility Permit Number:	4GC08162*AG
Permit Effective Date:	Dec 01, 2021

Please read and review the permit carefully. The permit contains requirements and prohibitions with which you must comply. Coverage under this permit will remain in effect until a renewal of the permit is issued by the Ohio EPA.

If more than one operator (defined in the permit) will be engaged at the site, each operator shall seek coverage under the general permit. Additional operator(s) shall submit a Co-Permittee NOI to be covered under this permit. There is no fee associated with the Co-Permittee NOI form.

Please be aware that this letter only authorizes discharges in accordance with the above referenced NPDES CGP. The placement to fill into regulated waters of the state may require a 401 Water Quality Certification and/or Isolated Wetlands Permit from Ohio EPA. Also, a Permit-To-Install (PTI) is required for the construction of sanitary or industrial wastewater collection, conveyance, storage, treatment, or disposal facility; unless a specific exemption by rule exists. Failure to obtain the required permits in advance is a violation of Ohio Revised Code 6111 and potentially subjects you to enforcement and civil penalties.

To view your electronic submissions and permits please Logon in to the Ohio EPA's eBusiness Center at http://ebiz.epa.ohio.gov.

If you need assistance or have questions please call (614) 644-2001 and ask for Construction Site Stormwater General Permit support or visit our website at http://www.epa.ohio.gov.

Sincerely,

Laurie A. Stevenson
Director

Mike DeWine, Governor
Jon Husted, Lt. Governor
Laurie A. Stevenson, Director

April 05, 2022

COI New Albany 525, LLC
Attn: Pete Gray

950 Goodale Blvd., Ste 100
Columbus, OH 43212

RE: COI New Albany 525, LLC
Permit-Long Term
Approval
Surface Water Permit to Install
Licking
DSWPTI1474372

Subject: New Albany 525 building-Private - 998 ft of sanitary sewer, 3 manholes, Jersey Twp
Plans Received on February 03, 2022
Plans Revised on April 4, 2022
From: EMH&T

Ladies and Gentlemen:

Enclosed is an approved Ohio EPA Permit to Install. This permit contains several conditions and restrictions; I urge you to read it carefully. A general condition of your permit states that issuance of the permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations. You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Treasurer State of Ohio", which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address: Environmental Review Appeals Commission, 30 East Broad Street, 4th Floor, Columbus, OH 43215. If you have any questions, please contact the Ohio EPA District Office.

Ohio EPA has developed a customer service survey to get feedback from regulated entities that have contacted Ohio EPA for regulatory assistance, or worked with the Agency to obtain a permit, license or other authorization. Ohio EPA's goal is to provide our customers with the best possible customer service, and your feedback is important to us in meeting this goal. Please take a few minutes to complete this survey and share your experience with us at http://www.surveymonkey.com/s/ohioepacustomersurvey. If you have any questions, please contact the Ohio EPA district office to which you submitted your application.

Sincerely,

Kevin J. Fowler, Supervisor
Permit Processing Unit, Division of Surface Water

KJF/bd

Enclosure
cc: Central District Office
Doug Holz
EMH&T
City of Columbus Sewers and Drains
New Albany

Ohio Environmental Protection Agency

4/5/2022

Permit to Install

Application No: 1474372

Applicant Name:	COI New Albany 525, LLC
Address:	950 Goodale Blvd., Ste 100
City:	Columbus
State Zip:	OH 43212
Person to Contact:	Pete Gray
Telephone:	614-745-0610

Description of Proposed Source: New Albany 525 building-Private - 998 ft of sanitary sewer, 3 manholes, Jersey Twp, Licking

Issuance Date: April 05, 2022
Effective Date: April 05, 2022

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter 3745-42 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable state and federal laws and regulations. Issuance of this permit does not constitute expressed or implied assurance that, if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto.

Ohio Environmental Protection Agency

Laurie A. Stevenson
Director
P.O. Box 1049
50 West Town Street, Suite 700
Columbus, OH 43216-1049

This permit shall expire if construction has not been initiated by the applicant within eighteen months of the effective date of this permit. By accepting this permit, the applicant acknowledges that this eighteen month period shall not be considered or construed as extending or having any effect whatsoever on any compliance schedule or deadline set forth in any administrative or court order issued to or binding upon the permit applicant, and the applicant shall abide by such compliance schedules or deadlines to avoid the initiation of additional legal action by the Ohio EPA.

The director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, examining records, or reports pertaining to the construction, modification, or installation of the above described source of environmental pollutants.

Issuance of this permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

Any well, well point, pit or other device installed for the purpose of lowering the ground water level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of Section 3745-9-10 of the Ohio Administrative Code or in accordance with the provisions of this plan or as directed by the Director or his representative. For more information please contact: Division of Drinking and Ground Water - Lazarus Government Center, 50 West Town Street, Suite 700, Columbus, Ohio 43215 (614) 644-2752.

Any person installing any well, well point, pit or other device used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report form with the Ohio Department of Natural Resources, Division of Water, within 30 days of the well completion in accordance with the Ohio Revised code Section 1521.01 and 1521.05. In addition, any such facility that has a capacity to withdraw waters of the state in an amount greater than 100,000 gallons per day from all sources shall be registered by the owner with the chief of the Division of Water, Ohio Department of Natural Resources, within three months after the facility is completed in accordance with Section 1521.16 of the Ohio Revised Code. For copies of the necessary well log, drilling report, or registration forms, please contact:

Ohio Department of Natural Resources
2045 Morse Road Bldg. E
Columbus, OH 43229-6693
(614) 265-6717

1. The proposed wastewater disposal system shall be constructed in strict accordance with the plans and application approved by the director of the Ohio Environmental Protection Agency. There shall be no deviation from these plans without the prior express, written approval of the agency. Any deviations from these plans or the above conditions may lead to such sanctions and penalties as provided for under Ohio law. Approval of these plans and issuance of this permit does not constitute an assurance by the Ohio Environmental Protection Agency that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

2. If the construction area for this project is one acre or more, or is part of a larger development that is one acre or more, the applicant must submit a Notice of Intent (NOI) for coverage under the general construction stormwater permit to Ohio EPA at least 21 days prior to the start of construction of this project.

3. For projects involving construction or placement of fill in a stream or wetland, the applicant shall contact the appropriate district of the U.S. Army Corps of Engineers for a determination regarding potential impacts to water of the state as well as the requirements for obtaining, if necessary, certification. The applicant shall acquire a Section 404 permit and 401 water quality certification, if needed, before impacting any waters of the state as part of this project.

4. COI New Albany 525, LLC shall be responsible for proper operation and maintenance of the sewerage system.

5. For parallel installation, a minimum horizontal separation of 10 feet between gravity sanitary sewers and any existing or proposed potable water mains shall be maintained. The distance shall be measured edge to edge.

6. Where gravity sewer lines cross existing or proposed water mains, the gravity sewer lines shall be laid below the water mains to provide a separation of at least 18 inches between the invert of the water main and the crown of the gravity sewer. The lines shall be laid so that the gravity sewer line joints are as far as possible from the water main joints.

7. This permit to install applies only to the wastewater disposal system listed above. The installation of drinking water supplies, air contaminant sources, or solid waste disposal facilities will require the submittal of a separate application to the director.

8. Roof drains, foundation drains, and other clean water connections to the sanitary sewer shall be prohibited by enforcement of legally adopted rules by the authority regulating the use of sanitary sewers.

9. Sewer and manhole construction joints shall conform to standards of the Ohio Environmental Protection Agency.

10. When flexible pipe (PVC, ABS, HDPE, etc.) is used it must be tested for maximum deflection of 5 percent after the final backfill has been in place no less than 30 days to permit stabilization of the soil-pipe system. Pipe with a stiffness of 200 p.s.i. or greater need not be tested for deflection if all pipe between manholes is less than 12 feet below final grade.

The rigid ball or mandrel used for the deflection test shall have a diameter not less than 95 percent of the base inside diameter or average inside diameter of the pipe depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured. The test shall be performed without mechanical pulling devices.

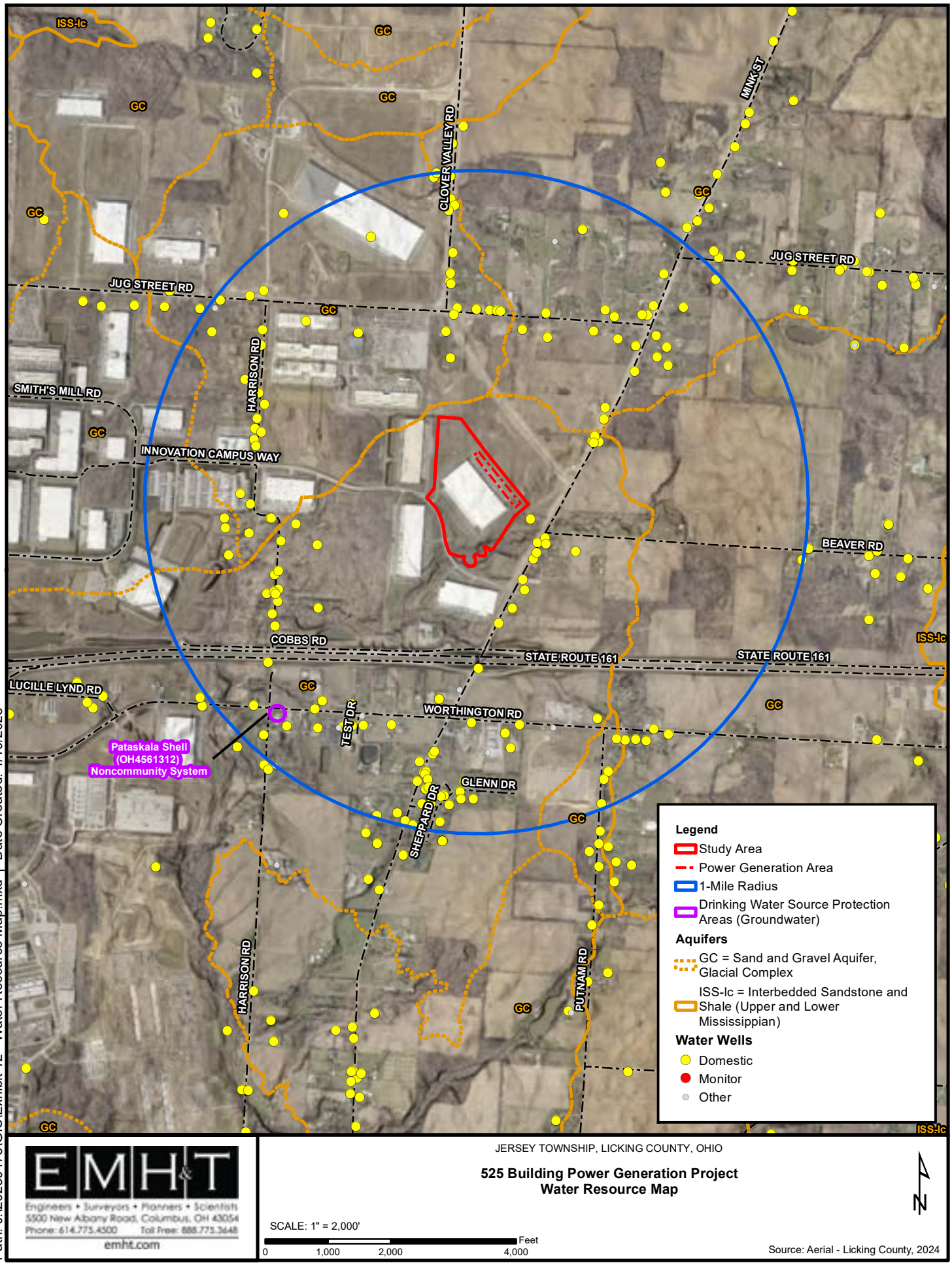
All pipe, flexible and rigid, shall be subject to a leakage test. The leakage exfiltration/infiltration test shall be a hydrostatic or air test. The hydrostatic leakage test shall not exceed 100 gallons per inch of pipe diameter per mile per day for any section of the system. If an air test is used, the test shall conform to the test procedure outlined in the ASTM standards for the material of pipe used.

The leakage and deflection test shall be conducted under the supervision of a professional engineer. A representative of the professional engineer may supervise the deflection and leakage tests, but the professional engineer must sign off on the results of the deflection and leakage tests. Results of the deflection and leakage tests shall be kept on file at least 180 days by the entity responsible for the sewerage system, and shall be available upon request by the Ohio Environmental Protection Agency. Any lines which fail the deflection or leakage test must be repaired and retested until they meet the requirements which have been set forth within this condition.

11. All gravity sanitary sewers which are located in well field areas shall comply with and be tested as specified in Ohio Environmental Protection Agency Guideline, Gravity Sewers in Well Field Areas, February 1983.

12. The permit to install is not an authorization to discharge pollutants to waters of the state. Pursuant to Chapter 6111 of the Ohio Revised Code, the applicant shall apply for a permit to discharge (NPDES) 180 days prior to any discharge of pollutants to waters of the state.

13. Fugitive dust generated by this sewer construction project shall be controlled as specified in OAC 3745-17-08 (B).



Path: J:\20250173\GIS\Exhibit 12 - Water Resource Map.mxd | Date Created: 4/10/2025

EMH&T
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

JERSEY TOWNSHIP, LICKING COUNTY, OHIO

525 Building Power Generation Project
Water Resource Map

SCALE: 1" = 2,000'

0 1,000 2,000 4,000 Feet

Source: Aerial - Licking County, 2024

CITY OF NEW ALBANY, LICKING COUNTY, OH
PRIVATE WATER SERVICE PLAN
FOR
NEW ALBANY 525 BUILDING
2022

BENCH MARKS
(NAVD 1988)

BM#90 Chiseled square on the south corner of a concrete light pole base, located east of Innovation Campus Way and being the seventh light pole west of the intersection of Innovation Campus Way and Mink Street.
N: 760419.8718 E: 1905563.6443 Elev. = 1178.97

BM#91 Chiseled square on the south corner of a concrete light pole base, located east of Innovation Campus Way and being the fourth light pole west of the intersection of Innovation Campus Way and Mink Street.
N: 759555.0367 E: 1905894.3184 Elev. = 1172.44

BM#92 Chiseled square on the southeast corner of a concrete light pole base, located north of Innovation Campus Way and being the second light pole west of the intersection of Innovation Campus Way and Mink Street.
N: 759231.5868 E: 1906380.5514 Elev. = 1177.31

BM#68 Railroad spike in the north side of a wooden utility pole being the first utility pole east of the intersection of Beaver Road and Mink Street, On the south side of Beaver Road.
N: 759918.8500 E: 1907408.0155 Elev. = 1185.01

HORIZONTAL REFERENCE POINTS (OHIO SOUTH ZONE)*

POINT	DESCRIPTION	NORTHING	EASTING
▲ #68	1157 IRSw/cap	759287.1507	1906989.3440
▲ #97	1157 IRSw/cap	760097.1161	1906981.2430
▲ #98	1157 IRSw/cap	760070.2048	1907117.4980
▲ #293	1157 IRSw/cap	760036.5689	1905720.3080

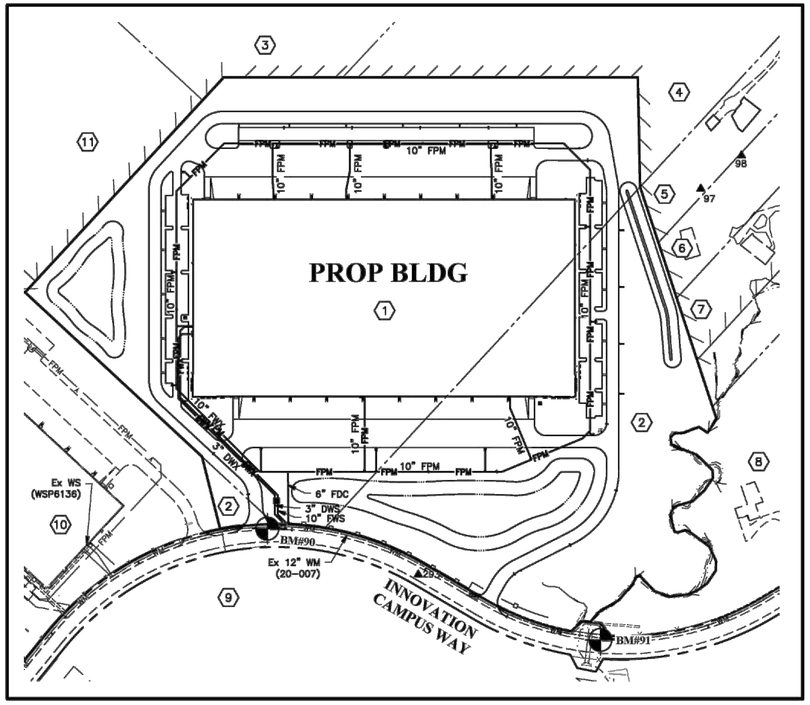
* Horizontal reference datum = NAD 83 (1986 adj)
(See Index Map for reference point locations)

VERTICAL DATUM

The Vertical Datum is based on the elevations established by the Franklin County Engineering Department, at monument A14RESET being 1019.434 feet in elevation, at monument A16 being 1071.594 feet in elevation, at monument D2RESET, being 1078.946 feet in elevation, at monument D8RESET, being 1089.268 feet in elevation, at monument FCGS1213, being 1077.648 feet in elevation, at monument FCGS6612, being 1072.592 feet in elevation, at monument NA-8, being 1078.899 feet in elevation, at monument NA-9, being 1070.241 feet in elevation, and at monument Z46 being 1071.678 feet in elevation. The said elevations were transferred from said Franklin County Engineering Department monuments using static GPS procedures (03 GEOID) and differential leveling to the site. The said monuments being source bench marks with elevations that are based on the North American Vertical Datum of 1988.

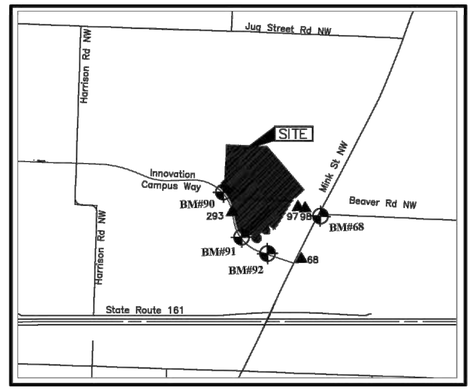
HORIZONTAL DATUM

The coordinates shown on this map are based on the Ohio State Plane Coordinate System, South Zone, NAD 83 (1986). Said coordinates originated from a field traverse which was tied (referenced) to said coordinate system by field traverse through point numbers 18, 19, 21, 22, 23, and 32 from Sight Survey file White\S6725trv.zak, by field traverse through point numbers 101, 102, 103, 104, 105, 106, 107, 111, 501, 502, 503, 504, 505, 506, 507, 508, 509, and 510 from Sight Survey file White\19991507.zak.



INDEX MAP
Scale: 1" = 200'

GRAPHIC SCALE
0 100 200 400
1 inch = 200 feet



LOCATION MAP
Not to Scale

OWNERSHIP LEGEND

1. COI NEW ALBANY 525 LLC
APN: 095-112080-02.001
9850 INNOVATION CAMPUS WAY
27.49 AC
2. COI NEW ALBANY 525 LLC
APN: 093-107490-00.002
9850 INNOVATION CAMPUS WAY
14.78 AC
3. MBJ HOLDINGS, LLC
APN: 037-112188-00.001
2275 MINK ST NW
21.07 AC
4. MBJ HOLDINGS, LLC
APN: 037-112188-00.003
2275 MINK ST NW
21.07 AC
5. STETZIK THOMAS & PAVANA
APN: 035-107490-03.002
2001 MINK ST NW
1.94 AC
6. HOWELL PAMELA S
APN: 035-107490-03.003
MINK ST NW
1.97 AC
7. HOWELL RONALD LEE & PAMELA SUE
APN: 035-107490-03.001
1921 MINK ST NW
2.23 AC
8. MBJ HOLDINGS, LLC
APN: 093-107478-00.002
1825 MINK ST NW
10.82 AC
9. SCANNEL PROPERTIES #538, LLC
APN: 093-107490-00.001
INNOVATION CAMPUS WAY
33.05 AC
10. 9750 INNOVATION CAMPUS WAY LLC
APN: 093-106422-00.002 9750
INNOVATION CAMPUS WAY 21.34 AC
11. MBJ HOLDINGS, LLC
APN: 037-112080-02.000
12455 JUG STREET
21.63 AC

SHEET INDEX

Title Sheet	1
Water Service Plan & Profile	2
Water Service Details	3

DEVELOPER/OWNER
VanTrust
Pete Gray
950 Goodale Boulevard, Suite 100
Columbus, OH 43212
Tel: (614) 745-0610
Email: pete.gray@vantrustre.com

ENGINEER
EMHT Inc.
Amy Nagy
5500 New Albany Road
Columbus, Ohio 43054
Tel: (614) 775-4376
Email: anagy@emht.com

OHIO811.org Before You Dig

STANDARD CONSTRUCTION DRAWINGS

The Standard Drawings listed on these plans shall be considered a part thereof:

City of Columbus

L-6306	L-6312	L-6640
L-6309	L-6316	L-9002G
L-6310	L-6317A&B	
L-6311	L-6637	

TRANSFER RESTRICTION

The Two Parcels Cannot Be Combined Due To A School District Boundary. A Transfer Restriction Restricting The Two Parcels To Never Be Sold Under Separate Ownership Has Been Recorded With The Licking County Recorder's Office, Instrument Numbers 202206080014301 & 202205050011272.

EASEMENT REFERENCE	REVISIONS

EMH&T
Evans, Mechwart, Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

STATE OF OHIO — AMY MARIE NAGY — E-77298 — REGISTERED ENGINEER — PROFESSIONAL ENGINEER
E-77298 NO. 3/15/2022 DATE

APPROVED FOR
GENERAL ARRANGEMENTS ONLY
DIVISION OF WATER
CITY OF COLUMBUS

ge 6/27/2022

NEW ALBANY 525 BUILDING
9850 INNOVATION CAMPUS WAY
PID: 095-112080-02.001
PID: 093-107490-00.002
WATER SERVICE TITLE SHEET

WSP 6819

SHEET: 1 / 3

J:\20210460\Dwg\04Sheets\Site_Improvement_Plan\20210460-Water_Service_Plan.dwg, Last Saved By: rowers, 6/24/2022 8:14 AM Last Printed By: Owens, Nick, 6/24/2022 9:15 AM (No Hreds)

CITY OF COLUMBUS WATER SERVICE PLAN NOTES

NO WATER SERVICE CONSTRUCTION, BEFORE OR AFTER THE WATER METER(S), SHALL BEGIN PRIOR TO FEE PAYMENT TO THE UTILITY PERMITS OFFICE AT 111 N. FRONT STREET (614-645-7330).

THE CITY OF COLUMBUS, CONSTRUCTION AND MATERIAL SPECIFICATIONS (CMSC), 2018 EDITION AND ALL REVISIONS, INCLUDING SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN THIS IMPROVEMENT, UNLESS OTHERWISE NOTED.

ALL WATER LINE MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT APPROVED MATERIALS LIST AND RULES AND REGULATIONS OF THE CITY OF COLUMBUS, DIVISION OF WATER, UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE CITY OF COLUMBUS DIVISION OF WATER. ONLY PRODUCTS LISTED ON THE CURRENT APPROVED MATERIALS LIST WILL BE PERMITTED TO BE INSTALLED.

IT SHALL BE UNLAWFUL FOR ANY PERSON TO PERFORM ANY WORK ON THE PUBLIC WATER DISTRIBUTION SYSTEM WITHOUT FIRST SECURING A LICENSE TO ENGAGE IN SUCH WORK, AS INDICATED IN COLUMBUS CITY CODE SECTIONS 1103.02 AND 1103.06. THIS WORK INCLUDES ANY ATTACHMENTS, ADDITIONS TO OR ALTERATIONS IN ANY CITY SERVICE PIPE OR APPURTENANCES (INCLUDING WATER SERVICE LINES AND WATER SERVICE TAPS). THIS REQUIREMENT MAY BE MET BY UTILIZATION OF A SUBCONTRACTOR WHO POSSESSES A CITY OF COLUMBUS WATER CONTRACTOR LICENSE OR A COMBINED WATER/SEWER CONTRACTOR LICENSE TO PERFORM THIS WORK. UTILIZATION OF A SUBCONTRACTOR MUST MEET THE LICENSING REQUIREMENTS OF CITY OF COLUMBUS BUILDING CODE, IN PARTICULAR SECTIONS 4114.119 AND 4114.529.

FOR ANY EMERGENCIES THAT OCCUR AFTER NORMAL WORKING HOURS INVOLVING THE WATER DISTRIBUTION SYSTEM, PLEASE CONTACT THE DIVISION OF WATER DISTRIBUTION MAINTENANCE OFFICE AT 614-645-7788.

SITE UTILITY CONTRACTOR SHALL OBTAIN A RIGHT OF WAY PERMIT PRIOR TO THE START OF ANY WATER SERVICE LINE AND/OR WATER SERVICE TAP INSTALLATION OR ANY PLACEMENT OF WATER SERVICE MATERIALS INTO THE PUBLIC RIGHT OF WAY.

THERE SHALL BE A 10 FOOT MINIMUM HORIZONTAL AND 18 INCH VERTICAL SEPARATION BETWEEN WATER SERVICE TAP(S), WATER SERVICE LINE(S), PRIVATE WATER SYSTEMS AND ANY SANITARY AND/OR STORM SEWER SYSTEMS.

EXISTING RIGHT OF WAY LINE(S), PROPOSED RIGHT OF WAY LINE(S) AND/OR WATER MAIN EASEMENT LINES SHALL BE STAKED AT 10 FOOT INCREMENTS BY A STATE OF OHIO LICENSED SURVEYOR WHEN THE WATER SERVICE TAP(S) AND/OR WATER SERVICE(S) ARE INSTALLED AND INSPECTED BY THE COLUMBUS DIVISION OF WATER.

ALL INSPECTIONS REQUIRE A 24 HOUR ADVANCE NOTICE.

SITE UTILITY CONTRACTOR SHALL FLUSH ALL WATER SERVICES PRIOR TO ANY WATER METER INSTALLATION. THE CITY OF COLUMBUS IS NOT RESPONSIBLE FOR ANY CITY WATER METER DAMAGE CAUSED BY NON-FLUSHING.

SITE UTILITY CONTRACTOR SHALL CALL COLUMBUS DIVISION OF WATER AT 614-645-7330 FOR INSPECTION AND HYDROSTATIC TEST OF 3" AND LARGER WATER SERVICE TAPS FROM THE WATER MAIN THRU THE CONTROL VALVE AND WATER SERVICES FROM THE CONTROL VALVE THRU THE WATER METER SETTING. HYDROSTATIC TEST SHALL BE PER CMSC ITEM 801.14 AND SHALL BE PERFORMED FROM THE WATER MAIN THRU THE WATER METER SETTING.

ALL 3" THRU 12" WATER SERVICE PIPE SHALL BE ONLY DUCTILE IRON FROM THE CITY WATER MAIN THRU THE CITY WATER METER SETTING(S) INCLUDING THE METER BYPASS.

ALL EXPOSED WATER MAIN AND ALL WATER SERVICE PIPE 3" AND LARGER SHALL BE POLYWRAPPED PER CMSC ITEM 801.03 TO A POINT 10 FOOT BEYOND THE RIGHT OF WAY VALVE(S).

3" AND LARGER METER SETTING(S) SHALL BE PER COLUMBUS DIVISION OF WATER STANDARD DETAIL DRAWINGS L-6317 A-E.

2" AND LARGER METERS SHALL BE PURCHASED AT THE UTILITY PERMITS OFFICE AT 111 N. FRONT STREET AND PICKED UP AT UTILITY METERING SERVICES AT 3568 INDIANOLA AVENUE.

BACKFLOW PREVENTION ASSEMBLY(S) SHALL BE INSTALLED, WHERE REQUIRED, PER COLUMBUS DIVISION OF WATER STANDARD DETAIL DRAWINGS L-9002 A THRU G. CONTRACTOR(S) SHALL CALL 614-645-6674 WITH BACKFLOW PREVENTION QUESTIONS. CONTRACTOR(S) SHALL CALL 614-645-5781 TO SCHEDULE BACKFLOW PREVENTION INSPECTION REQUESTS.

DOMESTIC WATER SERVICE BACKFLOW PREVENTER(S) SHALL MEET THE ASSE #1013 APPROVAL/STANDARD AND SHALL BE SIZED TO MATCH THE CITY WATER METER.

THE FIRE WATER SERVICE BACKFLOW PREVENTER(S) SHALL MEET THE APPROPRIATE ASSE APPROVAL/STANDARD AND SHALL BE EQUIPPED WITH A DETECTOR METER THAT IS ITRON 100W (TOWER) OR 100R (REMOTE) COMPATIBLE, MEASURES IN CUBIC FEET AND MEETS THE AWWA C-700 STANDARD. FIRE WATER BACKFLOW PREVENTER(S) SHALL BE SIZED TO MATCH THE FIRE WATER SERVICE SIZE AND EQUIPPED WITH O.S.&Y. VALVES.

IF DOMESTIC AND/OR FIRE WATER SERVICE METER(S) AND THEIR BACKFLOW PREVENTER(S) ARE TO BE LOCATED IN A METER ROOM INSIDE A BUILDING, THERE WILL BE A WALL OR CEILING MOUNTED GAS OR ELECTRIC THERMOSTATICALLY OPERATED HEATER. THE HEATER SHALL BE SIZED PER THE HEATER MANUFACTURER SPECS TO MAINTAIN A 40 DEGREE FAHRENHEIT INSIDE TEMPERATURE AT AN OUTSIDE TEMPERATURE OF MINUS 30 DEGREE FAHRENHEIT.

BACKFLOW PREVENTION DEVICES MUST BE TESTED AT THE TIME OF INSTALLATION BY A TESTER APPROVED BY THE DIVISION OF WATER BACKFLOW COMPLIANCE OFFICE. A COMPLETE LIST OF APPROVED TESTERS CAN BE FOUND AT WWW.COLUMBUS.GOV/BACKFLOW/CONSUMERS. RESULTS MUST BE SUBMITTED THROUGH THE ONLINE WEB SUBMITTAL SYSTEM AT WWW.COLUMBUS.TOKAYTEST.COM.

UNDERGROUND PRIVATE WATER SYSTEM(S) BEYOND METER(S)

SITE UTILITY CONTRACTOR SHALL CALL CITY OF NEW ALBANY FOR INSPECTION OF UNDERGROUND PRIVATE DOMESTIC AND/OR FIRE WATER SYSTEM(S) AFTER THE CITY WATER METER(S). THIS WILL INCLUDE DOMESTIC WATER LOOPS AND FIRE WATER LOOPS INCLUDING PRIVATE FIRE HYDRANTS THRU THE SITE BEFORE COVERING.

SITE UTILITY CONTRACTOR SHALL CALL CITY OF NEW ALBANY FOR FLUSHING AND/OR PRESSURE TEST INSPECTION OF PRIVATE FIRE SYSTEM AFTER THE CITY FIRE WATER SERVICE METER AND BACKFLOW PREVENTER.

4" AND LARGER PIPE MATERIAL FOR THE UNDERGROUND PRIVATE WATER SYSTEM AFTER THE CITY WATER METER SHALL BE DUCTILE IRON, C-900 OR C-909 PIPE ONLY TO A POINT 5' OUTSIDE THE BUILDING FOOTPRINT.

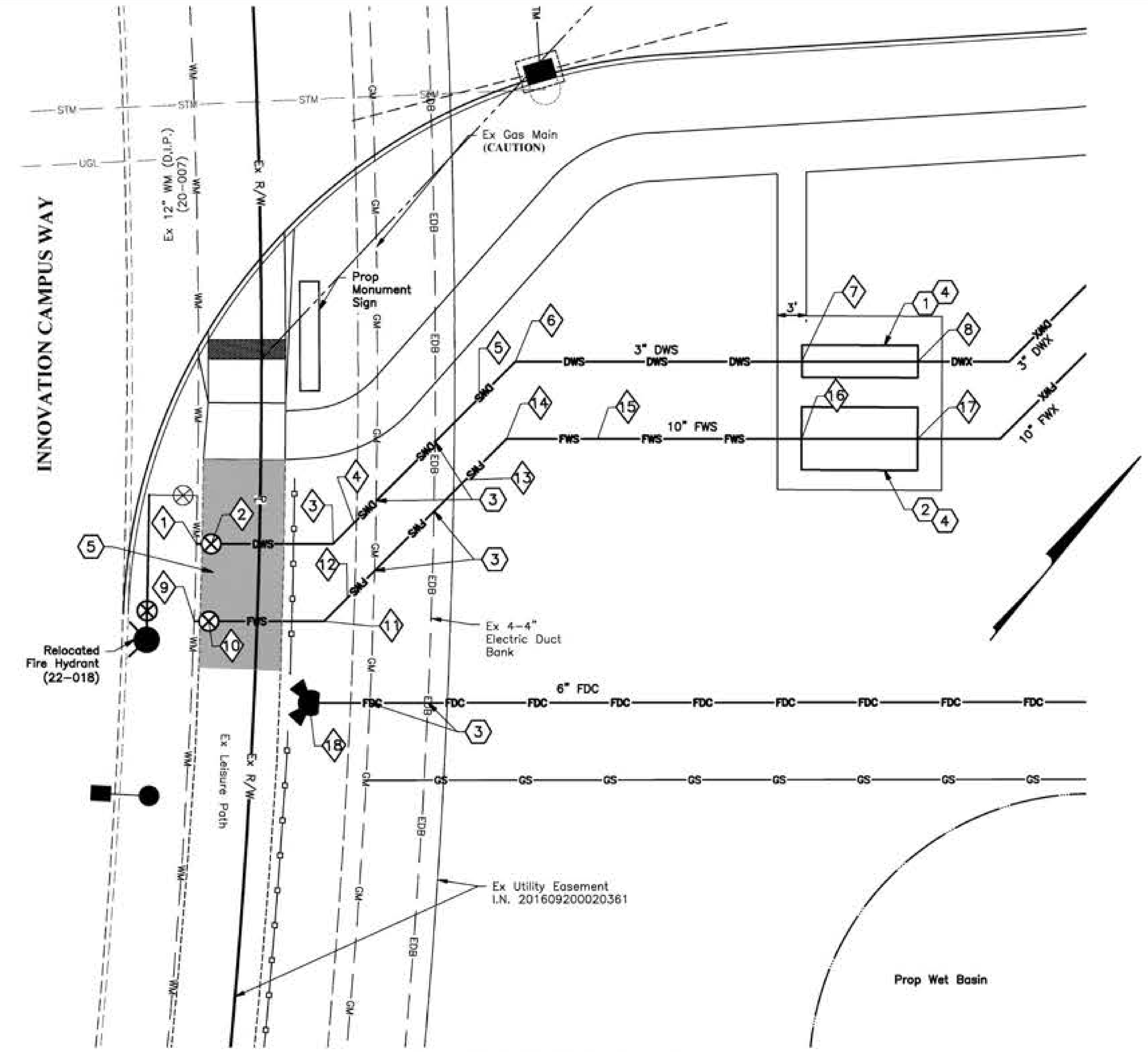
3" PIPE MATERIAL FOR THE UNDERGROUND PRIVATE WATER SYSTEM AFTER CITY WATER METER SHALL BE DUCTILE IRON OR SDR-21 PIPE ONLY TO A POINT 5' OUTSIDE THE BUILDING FOOTPRINT.

SURVEY COORDINATE TABLE

REF	ITEM	NORTHING	EASTING
1	12"x3" Tapping Sleeve	760393.06	1905591.99
2	3" Valve	760394.02	1905593.16
3	3" 45° Horizontal & 45° Vertical Bend	760402.01	1905602.92
4	3" 45° Vertical Bend	760405.06	1905603.23
5	3" 45° Vertical Bend	760423.27	1905605.04
6	3" 45° Horizontal & 45° Vertical Bend	760428.56	1905605.56
7	3" Heated Enclosure Entry	760447.35	1905628.49
8	3" Heated Enclosure Exit	760454.95	1905637.77
9	12"x10" Tapping Sleeve	760386.72	1905596.88
10	10" Valve	760387.67	1905598.04
11	10" 45° Horizontal & 45° Vertical Bend	760395.23	1905607.27
12	10" 45° Horizontal Bend	760398.62	1905607.61
13	10" 22.5° Vertical Bend	760415.83	1905609.32
14	10" 45° Horizontal Bend	760421.79	1905609.91
15	10" 22.5° Vertical Bend	760427.76	1905617.20
16	10" Heated Enclosure Entry	760441.14	1905633.53
17	10" Heated Enclosure Exit	760448.74	1905642.82
18	Fire Department Connection	760387.82	1905611.57

CODED NOTES:

1. Proposed Safe-T-Cover Model 800DS-AL Or Approved Equal With 3" ASSE #1013 Approved Backflow Preventer Per COC Std. Dwg. L-9002G. Enclosure Shall Meet ASSE #1060 Class 1 Approval. Color To Be Determined By The Property Owner. Concrete Slab To Be Increased 24" Over The Manufacturer's Specifications. Access Doors Shall Face The Site Driveway. See Sheet 3 For Additional Details.
2. Proposed Safe-T-Cover Model 1000T-AL Or Approved Equal With 10" ASSE #1048 Approved Backflow Preventer Per COC Std. Dwg. L-9002G. Enclosure Shall Meet ASSE #1060 Class 1 Approval. Color To Be Determined By The Property Owner. Concrete Slab To Be Increased 24" Over The Manufacturer's Specifications. Access Doors Shall Face The Site Driveway. See Sheet 3 For Additional Details.
3. Existing Utilities Shall Be Potholed Prior To Start Of Construction. Contractor Shall Notify Engineer Of Any Necessary Modifications With Appropriate Time To Make Any Necessary Revisions
4. Contractor Shall Provide Combination Padlocks For Enclosure Access Doors And Provide Combination To The Division Of Water
5. Path Replacement Per Detail U, See Sheet 5 Of The Site Improvement Plan



WATER SERVICE PLAN DETAIL
Scale: 1" = 10'

LEGEND

EXISTING

- STM — Storm Sewer
- SAN — Sanitary Sewer
- WM — Water Main
- UGL — Lighting Conduit
- E — Electric Duct Bank
- OHE — Overhead Electric Lines
- FO — Fiber Optic Duct Bank
- UDB — Utility Duct Bank
- Fire Hydrant
- Water Valve
- Light Pole
- Communication Manhole
- Manhole
- Catch Basin
- Electric Duct Bank Manhole

PROPOSED

- STM — Storm Sewer
- Underdrain
- FWS — Public Fire Water Service
- DWS — Public Domestic Water Service
- FWX — Private Fire Water Service
- DWX — Private Domestic Water Service
- FDC — Fire Department Connection
- Catch Basin
- Manhole (Mh)
- Yard Drain
- Cleanout
- Curb & Gutter Inlet
- Fire Hydrant (FH)
- Water Valve
- Fire Deparment connection (FDC)
- Site Light Pole (See MEP Plan)
- (BSP) By Separate Plan
- (BO) By Others

NOTES:

All Private Fire Hydrants shown include 6" Valve with Standard Valve Boxes unless otherwise noted.

All Valves include Standard Valve Boxes unless otherwise noted.

10' Typical Separation (Out-to-Out) Between DWS and FWS

Private Fire Hydrants Shall be used for Fire protection only.

Private Fire Hydrant Maintenance shall be the property owner's responsibility.

All streets in this development are privately owned and maintained, and located within the City of New Albany.

Water stationing based on ℄ Domestic Water System (DWS).

All private fire hydrants to be set 2'-0" from back of curb.

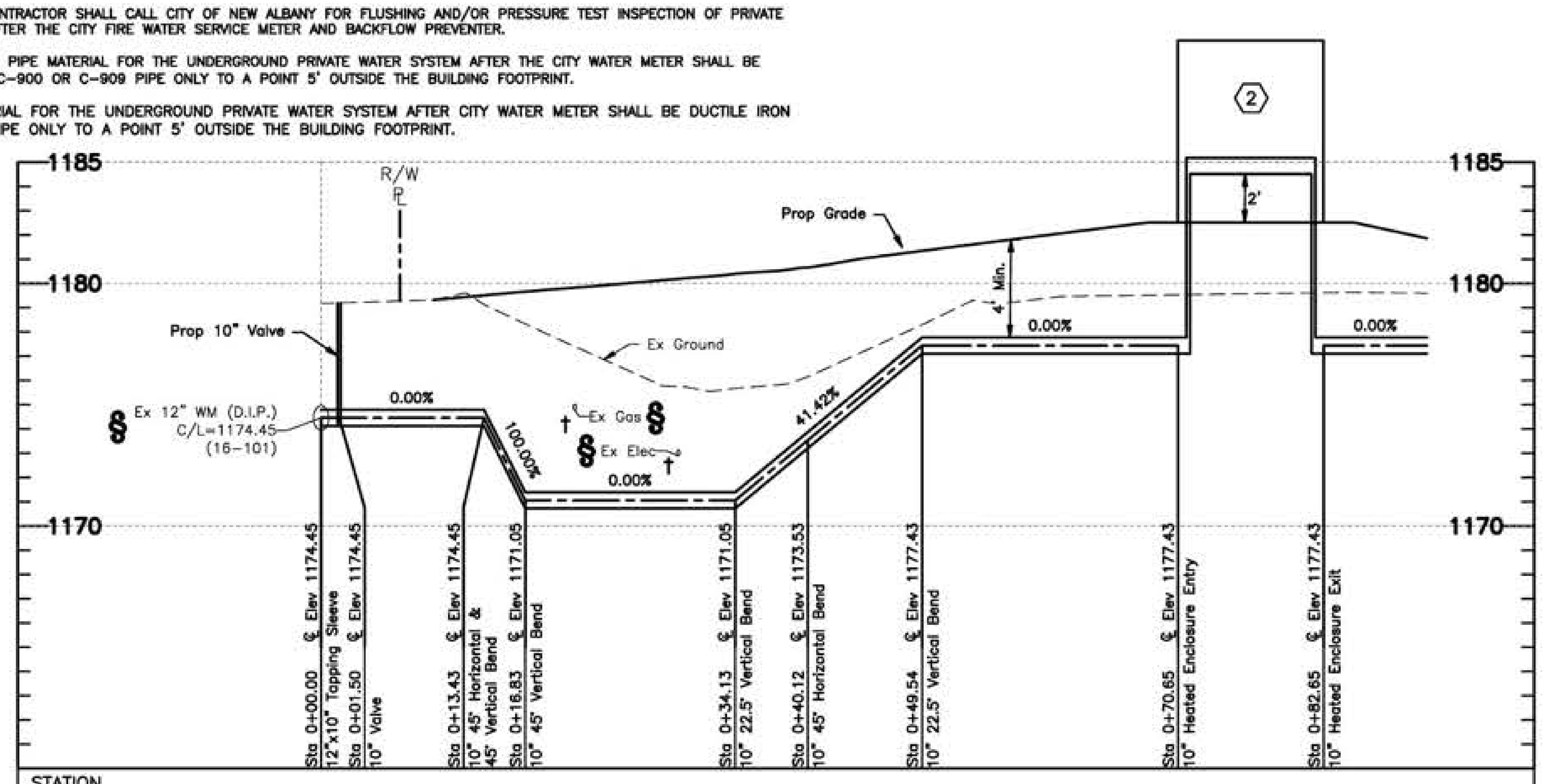
DWS	Domestic Water Service Before Meter
DWX	Domestic Water Service After Meter
FWS	Fire Water Service Before Meter
FWX	Fire Water Service After Meter
PFH	Private Fire Hydrant
FDC	Fire Department Connection
FPM	Fire Protection Main

All Backfill within Right-Of-Way shall Be CDF.

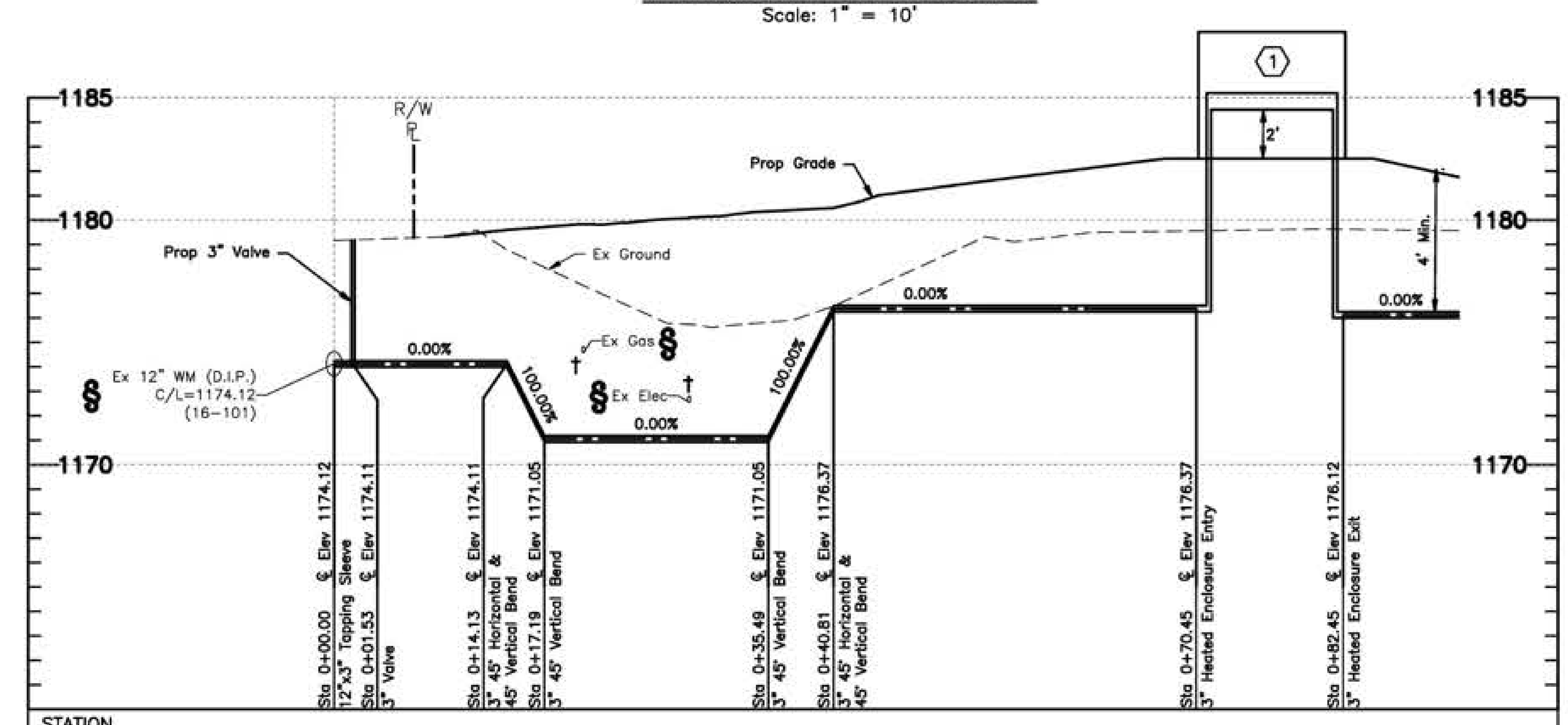
† Water Service and Water line to be lowered a minimum of 1.5' below storm sewer/underdrain in case of conflict. See COC Std Detail L-7401.

§ Contractor to verify elevation and location of existing utility before construction.

HORIZ 1 inch = 10 Feet (0, 5, 10, 20)
VERT 1 inch = 5 Feet (0, 2.5, 5, 10)



FIRE WATER SERVICE PROFILE
Scale: H: 1" = 10'
V: 1"=5'



DOMESTIC WATER SERVICE PROFILE
Scale: H: 1" = 10'
V: 1"=5'

EASEMENT REFERENCE	REVISIONS

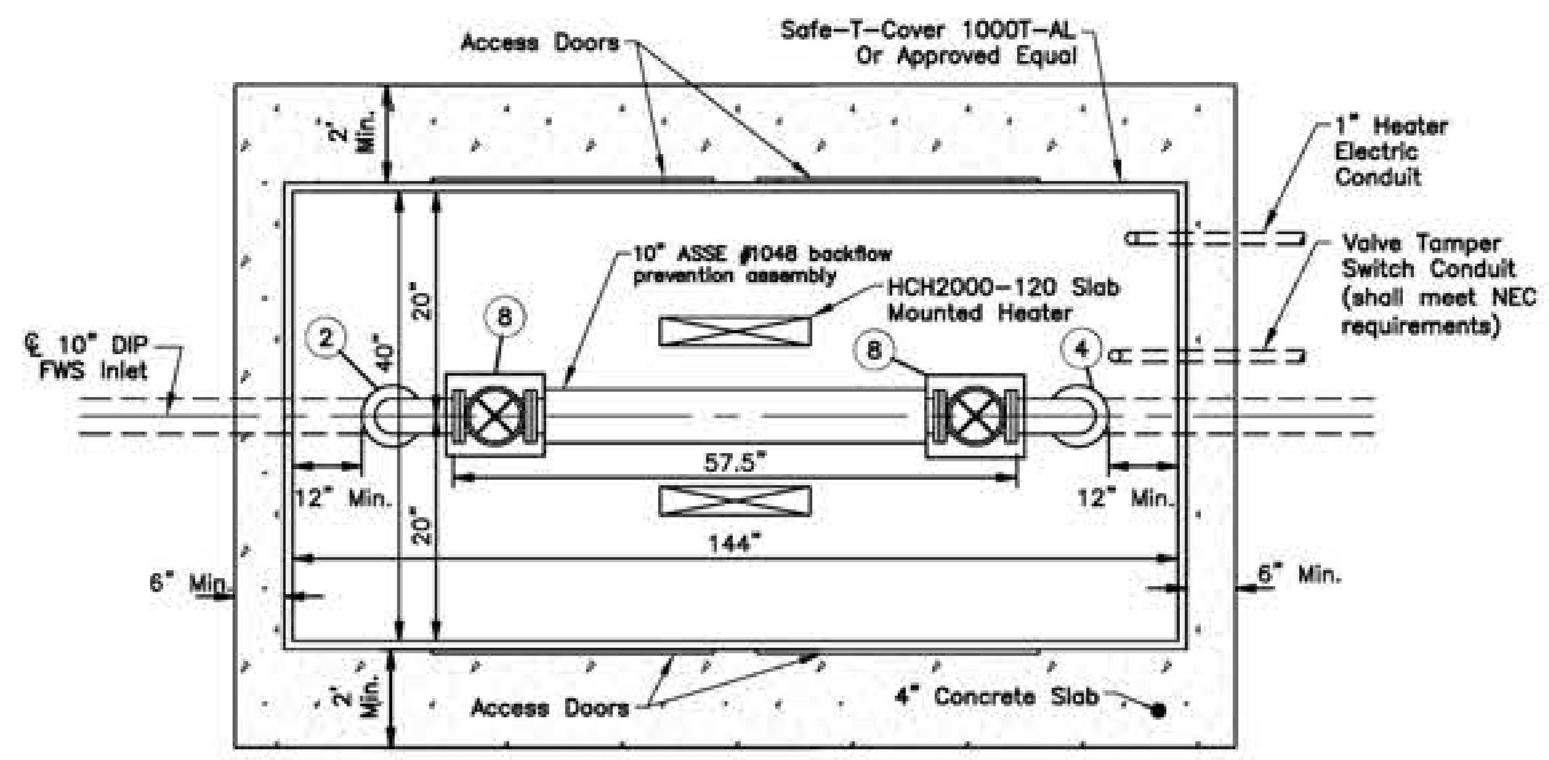
PRIVATE WATER SERVICE PLAN

NEW ALBANY 525 BUILDING

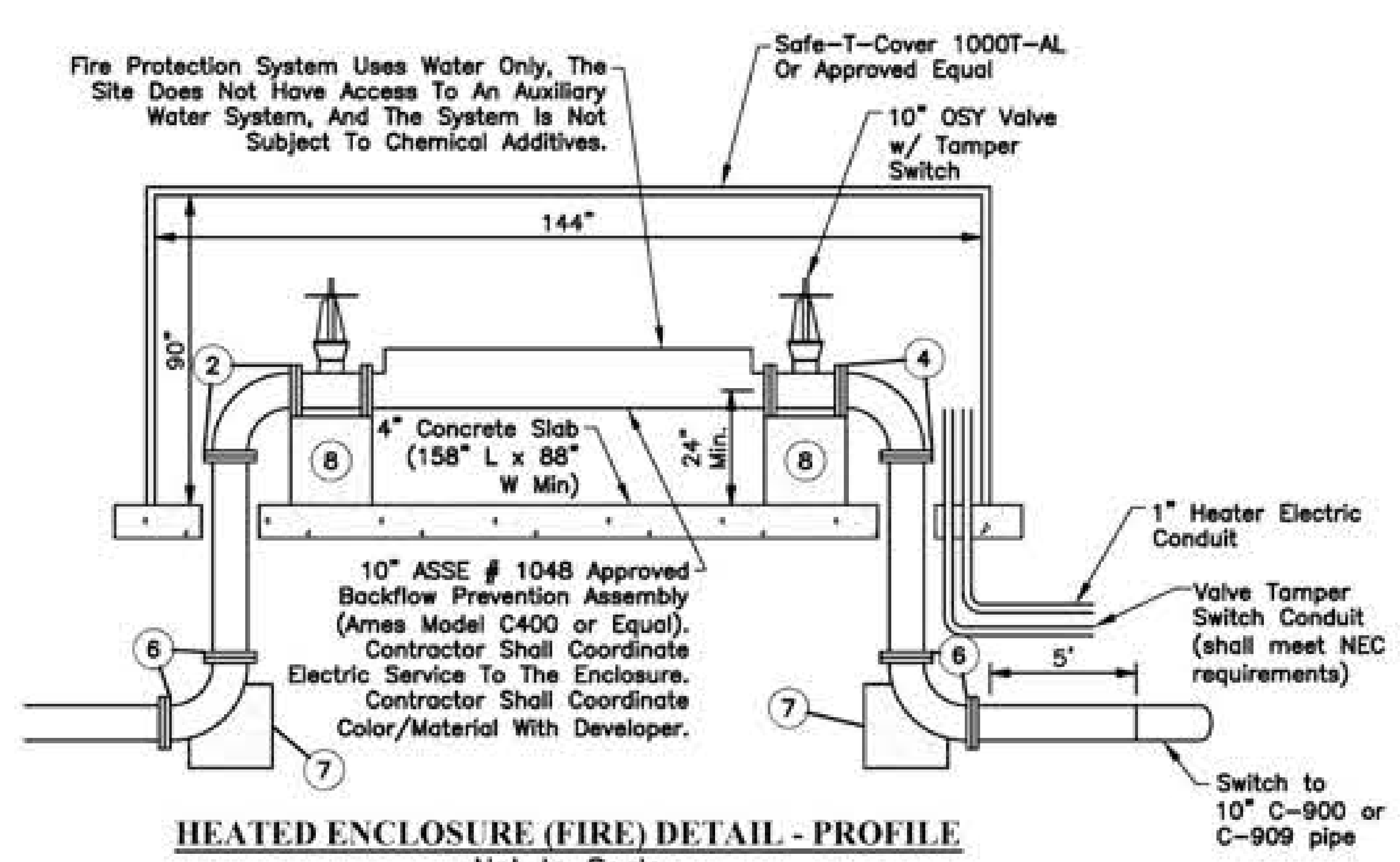
9850 INNOVATION CAMPUS WAY
PID: 095-112080-02.001
PID: 093-107490-00.002
WATER SERVICE PLAN AND PROFILE

WSP 6819

SHEET:



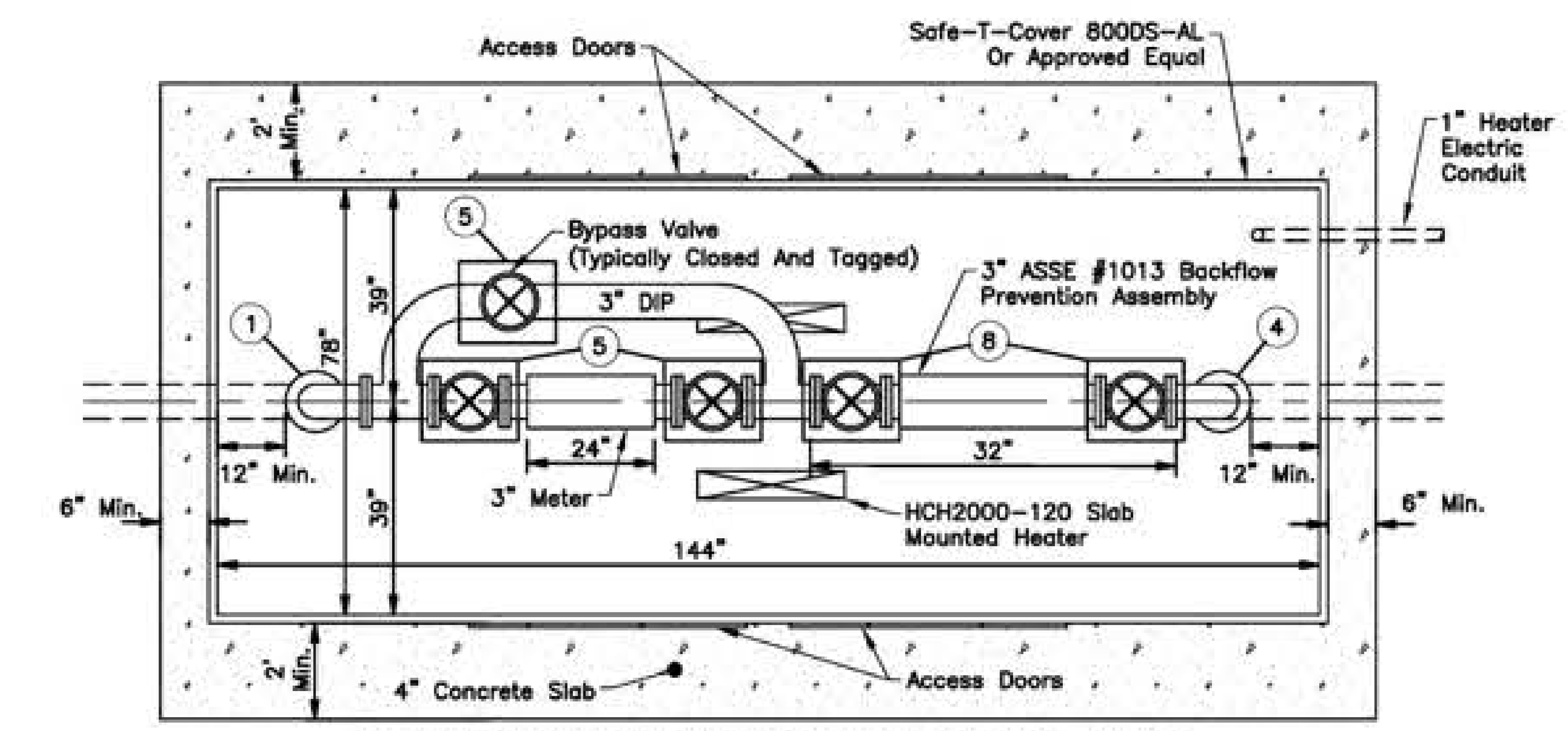
HEATED ENCLOSURE (FIRE) DETAIL - PLAN
Not to Scale



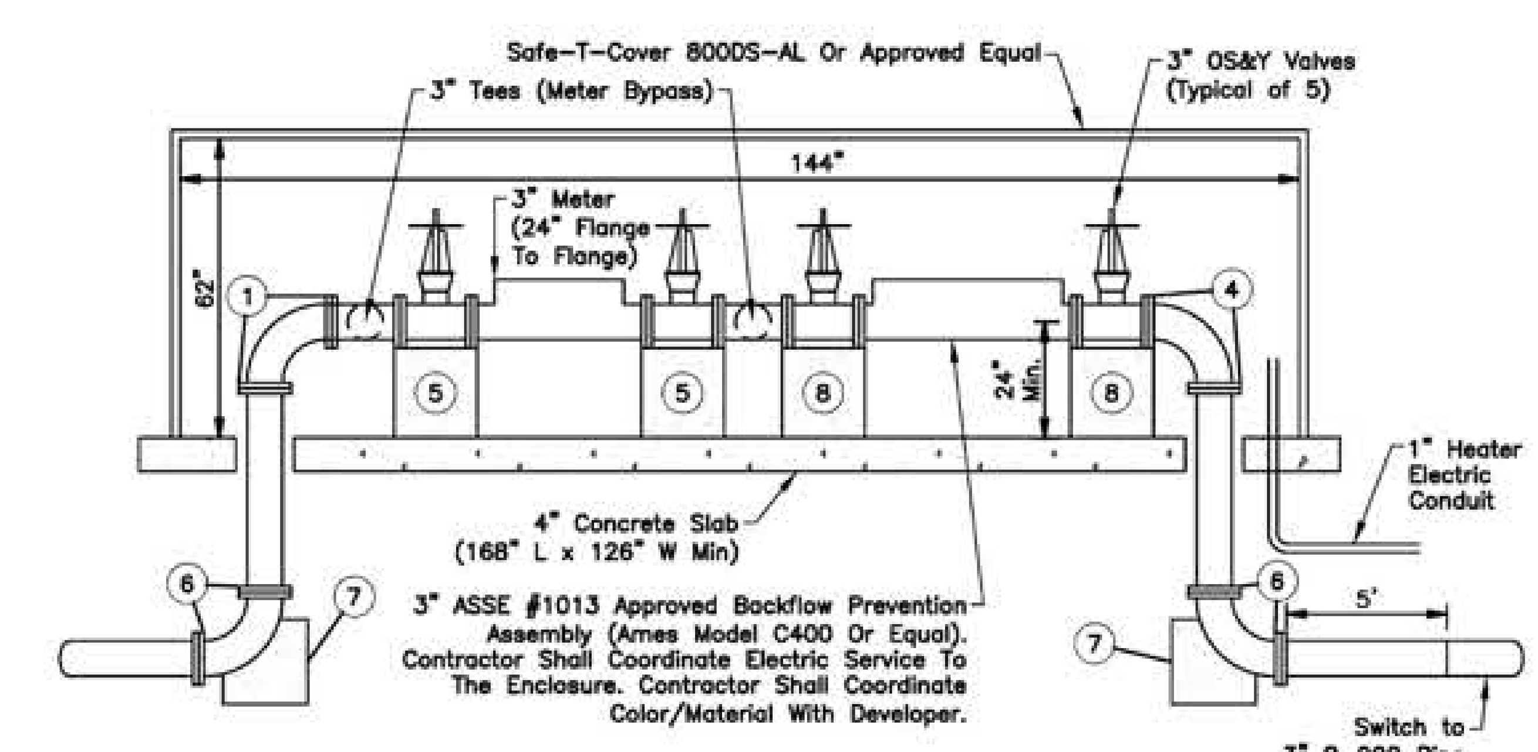
HEATED ENCLOSURE (FIRE) DETAIL - PROFILE
Not to Scale

CODED NOTES:

1. Service Inlet With Fixed Flanges Per L-6317C (dated 5/17/21)
2. Service Inlet With Fixed Flanges Per L-9002G (dated 5/20/21)
3. Service Outlet With Fixed Flanges Per L-6317C (dated 5/17/21)
4. Service Outlet With Fixed Flanges Per L-9002G (dated 5/20/21)
5. Concrete Valve Supports Per L-6317C (dated 5/17/21)
6. Mechanical Joint Wedge Action Restraining Gland Per L-9002G (dated 5/20/21)
7. Concrete Blocking Per L-9002G (dated 5/20/21)
8. Concrete Valve Supports Per L-9002G (dated 5/20/21)



HEATED ENCLOSURE (DOMESTIC) DETAIL - PLAN
Not to Scale



HEATED ENCLOSURE (DOMESTIC) DETAIL - PROFILE
Not to Scale

EASEMENT REFERENCE	REVISIONS		PRIVATE WATER SERVICE PLAN	NEW ALBANY 525 BUILDING 9850 INNOVATION CAMPUS WAY PID: 095-112080-02.001 PID: 093-107490-00.002 WATER SERVICE DETAILS	WSP 6819 SHEET: 3 / 3