TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION
Town Hall – 50 Church Street
Windsor Locks, CT 06096

APPLICATION FORM

TYPE OF REQUEST

Please check all that apply:

- X Special Use Permit with Site Plan Review (public hearing required, please pick up signs)
- ____ Site Plan Review Only
- ____ Site Plan Modification Only
- ____ Liquor Permit
- ____ Zone Change
- ____ Subdivision
- ____ Re-subdivision
- ____ Amendment to Zoning Regulations
- ____ Amendment to Subdivision Regulations
- ____ Other

Description of Request: Recontruct existing service station and convenience store.

PROPERTY DESCRIPTION

Location: 80 Ella T Grasso Tpk
Windsor Locks, CT 06096

Deed Reference: Volume: 360 Page: 545

Assessor's Block No. 039-001-014

Zone:

- ____ Residential AA
- ____ Residential A
- ____ Residential B
- ____ R-DRD
- ____ MFSD
- X Business 1
- ____ Business 2
- ____ B-DRD
- ____ Industrial 1
- ____ Industrial 2
- ____ Industrial 3

APPLICANT INFORMATION

Name: United Petroleum LLC

Home
Address:

Phone:
Fax:

Email:

Business
Address: 530 Silas Deane Hwy
Wethersfield, CT 06109

Phone: 860-983-4847
Fax:

Email: t.choudhry@unitedenergycompany.com

PROPERTY OWNER INFORMATION (IF DIFFERENT FROM THE APPLICANT)

Name: United Petroleum LLC

Home
Address:

Phone:
Fax:

Email:

Business
Address: Same as Above

Phone:
Fax:

Email:

The undersigned warrants the truth of all statements contained herein according to the best of his or her knowledge and hereby grants permission for this Commission to inspect the property address listed in this application.

SIGNED: Tahir Choudhry, Member / Delly DATE: 12/21/2025
Applicant's Printed Name / Applicant's Signature

SIGNED: Tahir Choudhry, Member / Delly DATE: 12/21/2025
Property Owner's Printed Name / Property Owner's Signature (if different than applicant)

SMITH & BISHOP LLC
ATTORNEYS AT LAW
P.O. BOX 338
27 SOUTH MAIN STREET
WINDSOR LOCKS, CONNECTICUT 06096
(860) 627-0513
FAX (860) 623-1026
e-mail – attorneypaulsmith@hotmail.com

Paul W. Smith
P. Timothy Smith
Gwendolyn S. Bishop-*Retired*

December 22, 2025

Ms. Peggy Sayers, Chairperson
Planning and Zoning Commission
Town of Windsor Locks
50 Church Street, Town Hall
Windsor Locks, CT 06096

RE: United Petroleum LLC
Special Use/ Site Plan Application
80 Ella T. Grasso Turnpike, Windsor Locks, CT 06096

Dear Chairperson Sayers and Members of the Planning and Zoning Commission:

This firm represents United Petroleum LLC the Owner and Applicant for the enclosed Application for Special Use and Site Plan Approval to reconstruct the existing fuel service station and convenience store for the property of 80 Ella T. Grasso Turnpike, Windsor Locks, CT 06096.

Please find enclosed the following materials in support of the Application:

1. Application form (11 copies).
2. Cover letter
3. Site plans for reconstruction (11 sets).
4. Drainage study.
5. Application fee special use permit $310.00.

We respectfully request that the Commission receive this Application at its next regularly scheduled meeting and schedule a public hearing as soon as possible. Thank you for your consideration of this matter.

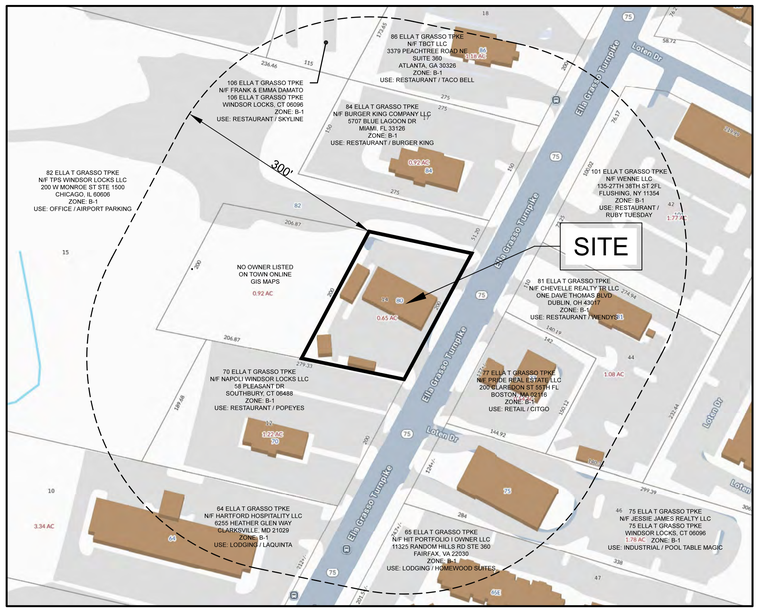
Respectfully submitted
United Petroleum LLC

Paul W. Smith Its Attorney and Authorized Agent
Smith & Bishop LLC

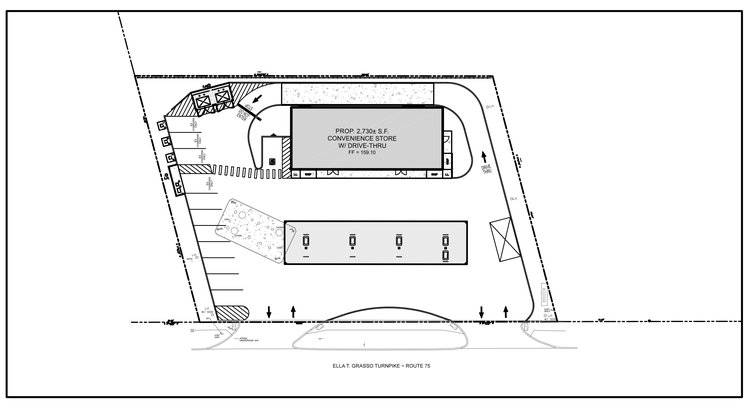
UNITED PETROLEUM
PROPOSED FILLING STATION RECONSTRUCTION

#80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096
039-001-014

OWNER
UNITED PETROLEUM, LLC 530 SILAS DEANE HIGHWAY, SUITE 209 WETHERSFIELD, CT 06109
PREPARED FOR
UNITED PETROLEUM, LLC 530 SILAS DEANE HIGHWAY, SUITE 209 WETHERSFIELD, CT 06109



LOCUS MAP
APPROXIMATE SCALE: 1" = 100'



LOCATION PLAN
APPROXIMATE SCALE: 1" = 40'

SHEET #	SHEET NAME
T-1.0	TITLE SHEET
N-1.0	GENERAL NOTES SHEET
1 OF 1	EXISTING CONDITIONS (BY OTHERS)
D-1.0	DEMOLITION PLAN
C-1.0	SITE LAYOUT PLAN
C-2.0	GRADING & DRAINAGE PLAN
C-3.0	UTILITY PLAN
C-4.0	EROSION & SEDIMENT CONTROL PLAN
C-5.0	CONSTRUCTION DETAILS
C-5.1	CONSTRUCTION DETAILS
C-5.2	CONSTRUCTION DETAILS
C-6.0	TRUCK TURN PLAN
L-1.0	LANDSCAPE PLAN
L-2.0	LANDSCAPE DETAILS
1 OF 1	LIGHTING PLAN (BY OTHERS)
A-101	PROPOSED CONCEPTUAL BASEMENT AND MAIN LEVEL FLOOR PLANS (BY OTHERS)
A-201	PROPOSED CONCEPTUAL BUILDING ELEVATIONS (BY OTHERS)
A-202	PROPOSED CONCEPTUAL BUILDING ELEVATIONS (BY OTHERS)
A-203	PROPOSED CONCEPTUAL FUELING CANOPY ELEVATIONS (BY OTHERS)
A-204	PROPOSED CONCEPTUAL FUELING CANOPY ELEVATIONS (BY OTHERS)

TO THE BEST OF MY KNOWLEDGE AND BELIEF
THIS PLAN CONFORMS TO THE CONDITIONS
AND REQUIREMENTS SET FORTH IN THE APPROVAL
GRANTED BY THE TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

CIVIL ENGINEER:

CMG ENVIRONMENTAL, INC.
67 HALL ROAD
STURBRIDGE, MA 01566
CONTACT: MARK SMITH, P.E.
(774) 241 - 0901

SURVEYOR:

DENNO LAND SURVEYING & CONSULTING, LLC
2 TUNXIS ROAD, SUITE 214
TARIFFVILLE, CT 06081
(860) 408 - 9167

ARCHITECT:

RAMIZ KHODA CONSULTING & DESIGN, LLC
19046 BRUCE B DOWNS BOULAVARD, SUITE 167
TAMPA, FL 33647
(860) 880 - 1786

REVISIONS

NO.	DATE	DESCRIPTION	BY	CKD
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

PROFESSIONAL SEAL
STATE OF CONNECTICUT · MARK G. SMITH · No. 18011 · LICENSED PROFESSIONAL ENGINEER
SealPact 2025-12-17 11:53:34 EST
Click seal or scan QR Code for verification; otherwise not valid.

PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM CHECKED BY: MS
SCALE: AS NOTED
PROJECT NO.: 2020-158

TITLE SHEET

T-1.0

GENERAL NOTES:

1. CONTRACTOR SHALL ADHERE TO AND IS RESPONSIBLE FOR COMPLIANCE WITH ALL DETAILS, NOTES, PLANS AND SPECIFICATIONS CONTAINED HEREIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL WORK PERFORMED BY THEIR SUBCONTRACTORS IS IN FULL COMPLIANCE WITH THESE REQUIREMENTS. THE FOLLOWING DOCUMENTS ARE INCORPORATED BY REFERENCE AS PART OF THIS SITE PLAN:

   - "EXISTING CONDITIONS, PREPARED FOR YALE OIL LLC, 80 ELLA T GRASSO TURNPIKE, WINDSOR LOCKS, CONNECTICUT", PREPARED BY DENNO LAND SURVEYING & CONSULTING, LLC, 2 TUNXIS RD. STE. 214 TARIFFVILLE, CT 06081, DATED XXXX.

2. THE CONTRACTOR MUST HAVE COPIES OF ALL PERMITS AND APPROVALS ON SITE AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED PRIOR TO PERFORMING ANY WORK ON-SITE OR OFF-SITE. THE CONTRACTOR SHALL THOROUGHLY REVIEW AND UNDERSTAND ALL PERMITS AND PERMIT CONDITIONS, AND NOTIFY THE ENGINEER OF ANY CONFLICT WITH THE DESIGN PLAN PRIOR TO FABRICATION OF ANY MATERIALS OR PRODUCTS TO BE USED AS PART OF THE PROJECT.

3. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH THESE PLANS, THE PROJECT'S SPECIFICATIONS, CONDITIONS OF APPROVALS AND PERMITS, AND ALL APPLICABLE RULES, REGULATIONS, CODES, LAWS AND STANDARDS OF ALL AUTHORITIES HAVING JURISDICTION OVER THE PROJECT.

4. THE GEOTECHNICAL REPORT AND RECOMMENDATIONS, IF AVAILABLE, SHALL BE PART OF THE CONSTRUCTION PLANS AND DOCUMENTS. IF DISCREPANCY OR AMBIGUITY EXISTS, THE MORE STRINGENT REQUIREMENTS AND/OR RECOMMENDATIONS CONTAINED IN THE PLANS AND THE GEOTECHNICAL REPORT GOVERN. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING SHOULD ANY CONFLICTS BE IDENTIFIED PRIOR TO COMMENCING WITH ANY ADDITIONAL WORK. IN THE ABSENSE OF A GEOTECHNICAL REPORT THE STANDARD DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST ADDITION) SHALL GOVERN.

5. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND PROPOSED LAYOUT DIMENSIONS AND MUST NOTIFY CMG ENVIRONMENTAL, INC. IN WRITING IMMEDIATELY IF ACTUAL SITE CONDITIONS DIFFER OR ARE IN CONFLICT WITH THE PROPOSED WORK. NO COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ADDITIONAL WORK THAT HAS TO BE REDONE OR REPAIRED DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS UNLESS THE CONTRACTOR RECEIVES WRITTEN PERMISSION FROM CMG.

6. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL/ BUILDING PLANS FOR ALL BUILDING AND ADJACENT APPURTENANCES FOR EXACT LOCATIONS AND DIMENSIONS SUCH AS ENTRY/ EXIT DOOR LOCATIONS, ELEVATIONS, BUILDING DIMENSIONS, AND EXACT UTILITY CONNECTION LOCATIONS.

7. PRIOR TO PERFORMING ANY WORK ONSITE, THE CONTRACTOR SHALL REVIEW ALL CONSULTANTS PLANS AND SPECIFICATIONS INCLUDING THE ENTIRE SITE PLAN AND THE LATEST ARCHITECTURAL PLANS (INCLUDING, BUT NOT LIMITED TO, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE SUPPRESSION PLAN, WHERE APPLICABLE). CONTRACTOR MUST IMMEDIATELY NOTIFY ARCHITECT AND SITE ENGINEER IN WRITING OF ANY CONFLICTS, DISCREPANCIES, OR AMBIGUITIES WHICH EXIST.

8. DEBRIS MUST NOT BE BURNED OR BURIED ON SITE AND ALL UNSUITABLE EXCAVATED MATERIAL AND DEBRIS (SOLID WASTE) MUST BE DISPOSED OF IN ACCORDANCE WITH THE PROJECT'S SPECIFICATIONS AND PLANS, AND ALL LOCAL STATE, AND FEDERAL RULES AND REGULATIONS.

9. THE CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATIONS AND THE DESIGN AND INSTALLATION OF ANY SHORING THAT MAY BE REQUIRED, ALL OF WHICH SHALL BE IN ACCORDANCE WITH CURRENT OSHA STANDARDS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR IMPLEMENTING ANY ADDITIONAL PRECAUTIONS TO PROTECT AND ASSURE STABILITY OF ADJACENT, NEARBY AND CONTIGUOUS STRUCTURES AND PROPERTIES.

10. THE CONTRACTOR SHALL PROTECT AND ASSURE STABILITY OF STRUCTURES (SIDEWALKS AND PAVEMENT, UTILITIES, BUILDINGS, AND INFRASTRUCTURE) ADJACENT TO THE WORK AREA THAT ARE TO REMAIN, AND IMPLEMENT ANY APPROPRIATE MEASURES REQUIRED TO ENSURE STRUCTURAL STABILITY OF THE SAME. CONTRACTOR SHALL ASSURE A SAFE WORK AREA FOR WORKERS, PEDESTRIANS, ANY THIRD PARTY, AND ABUTTING PROPERTIES.

11. THE CONTRACTOR IS RESPONSIBLE FOR ALL "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING OR PROPOSED STRUCTURES (INCLUDING BUT NOT LIMITED TO DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC.) AND ANY OTHER IMPROVEMENTS THAT ARE TO REMAIN AND SHALL BEAR ANY AND ALL COSTS THAT MAY BE ASSOCIATED WITH THE SAME. IF ANY EXISTING STRUCTURES THAT ARE TO REMAIN ARE DAMAGED DURING DEMOLITIONS, REPAIRS SHALL BE MADE USING NEW PRODUCT/ MATERIALS RESULTING IN A PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND NOTIFY THE OWNER AND THE CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.

12. ALL CONCRETE MUST BE AIR ENTRAINED WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS UNLESS OTHERWISE SPECIFIED ON THE PLANS, DETAILS, AND/OR GEOTECHNICAL REPORT, OR IN IT'S ABSENCE, THE STANDARD STATE DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST ADDITION) SHALL GOVERN.

13. CMG ENVIRONMENTAL, INC. HAS NO RESPONSIBILITY REGARDING JOB SAFETY AND/OR OVERSIGHT/ SUPERVISION, OR ANYTHING RELATED TO THE SAME, LEGALLY NOR CONTRACTUALLY. AT ANY TIME, CMG ENVIRONMENTAL, INC. IS NOT RESPONSIBLE TO IDENTIFY OR REPORT ANY JOB SAFETY ISSUES.

14. CMG ENVIRONMENTAL, INC. WILL REVIEW CONTRACTOR SUBMITTALS WHICH THE CONTRACTOR IS REQUIRED TO SUBMIT, BUT ONLY FOR THE SOLE PURPOSE OF CHECKING FOR CONFORMANCE WITH THE INTENT OF THE DESIGN AND CONTRACT DOCUMENTS. CMG ENVIRONMENTAL, INC. IS NOT RESPONSIBLE FOR ANY DEVIATION FROM THE CONSTRUCTION DOCUMENTS UNLESS CONTRACTOR RECEIVED EXPLICIT DIRECTION TO DO SO, IN WRITING, FROM CMG ENVIRONMENTAL, INC.

15. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING A TRAFFIC PROTECTION PLAN FOR ALL WORK THAT AFFECTS PUBLIC TRAVEL EITHER ON AND/OR OFF-SITE. THE COST ASSOCIATED WITH THE PREPARATION AND IMPLEMENTATION OF SAID PLAN SHALL BE INCLUDED IN THE BASE BID/ CONTRACT COST.

16. ALL ONSITE AND OFF-SITE SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES OR LOCAL APPROVAL REQUIREMENTS.

17. THE CONTRACTOR SHALL INSTALL AND/OR CONSTRUCT ALL ASPECTS OF THE PROJECT IN STRICT COMPLIANCE WITH AND ACCORDANCE WITH MANUFACTURER'S INSTALLATION STANDARDS, RECOMMENDATIONS AND SPECIFICATIONS, AND IN CASE OF CONFLICT, THE MORE RESTRICTIVE SHALL GOVERN.

GENERAL DEMOLITION NOTES:

1. THE DEMOLITION PLAN IS INTENDED TO PROVIDE ONLY GENERAL INFORMATION REGARDING ITEMS TO BE DEMOLISHED AND/OR REMOVED.

2. THIS PLAN REFERENCES MATERIALS AND DOCUMENTS NOTED HEREIN, IN PARTICULAR BUT NOT LIMITED TO THOSE LISTED IN THE GENERAL NOTES SECTION.

3. CONTRACTOR MUST NOTIFY, IN WRITING, CMG ENVIRONMENTAL, INC., IF THEY HAVE ANY QUESTIONS CONCERNING THE ACCURACY OR INTENT OF THESE PLANS, RELATED SPECIFICATIONS, ANY APPLICABLE SAFETY STANDARDS, OR THE SAFETY OF THE CONTRACTOR OR THIRD PARTIES IN PERFORMING THE WORK ON THIS PROJECT. IF SUCH NOTIFICATION IS GIVEN, NO DEMOLITION OR SITE ACTIVITY MAY BEGIN UNTIL SUCH TIME THAT CMG ENVIRONMENTAL, INC. PROVIDES A WRITTEN RESPONSE TO SAME. ALL DEMOLITION WORK MUST BE PERFORMED IN ACCORDANCE WITH THESE PLANS, THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.

4. CONTRACTOR SHALL PERFORM ALL WORK IN A SYSTEMATIC AND SAFE MANNER AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, (29 U.S.C. 651 ET SEQ.), AMENDMENTS TO AND/OR REVISIONS TO SAME.

5. PRIOR TO STARTING ANY SITE ACTIVITY OR DEMOLITION, THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS (LOCAL, STATE, AND/OR FEDERAL) AND MAINTAIN SAME ON SITE FOR REVIEW BY THE ENGINEER AND OTHER REGULATORY AGENCIES THROUGHOUT THE DURATION OF THE PROJECT.

6. PRIOR TO STARTING ANY SITE ACTIVITY OR DEMOLITION, THE CONTRACTOR SHALL NOTIFY, AT A MINIMUM, THE BUILDING OFFICIAL AND CITY ENGINEER, 72 HOURS PRIOR TO THE START OF WORK.

7. PRIOR TO STARTING ANY SITE ACTIVITY OR DEMOLITION, THE CONTRACTOR SHALL IMPLEMENT THE SOIL EROSION AND SEDIMENT CONTROL MEASURES AS NOTED ON THE PLANS AND PRIOR TO ANY SITE DISTURBANCE.

8. PRIOR TO STARTING ANY SITE ACTIVITY OR DEMOLITION, THE CONTRACTOR SHALL "CALL BEFORE YOU DIG" AND/OR THE APPLICABLE STATE DAMAGE CONTROL SYSTEM FOR THE REQUIRED UTILITY MARK OUTS IN ADVANCE OF ANY EARTH DISTURBANCE. IN ADDITION TO THIS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AL EXISTING ONSITE UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY, AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN AND ADJACENT TO THE LIMITS OF THE WORK.

9. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SECURE THE SITE AS NECESSARY TO PERFORM THE DEMOLITION IN A MANNER AS TO PREVENT THE ENTRY OF UNAUTHORIZED PERSONS.

10. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE OPERATION AND SERVICE OF ALL ACTIVE UTILITIES AND SYSTEMS THAT ARE NOT BEING REMOVED DURING ALL DEMOLITION ACTIVITIES. SHOULD A TEMPORARY INTERRUPTION OF UTILITY SEVRICES BE REQUIRED AS PART OF THE PROPOSED CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES AND THE AFFECTED END USER TO MINIMIZE IMPACT AND SERVICE INTERRUPTION.

11. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES FOR THE TEMPORARY AND PERMANENT TERMINATION OF ANY AND ALL SERVICES THAT ARE REQUIRED FOR THE PROPERTY WHETHER SHOWN ON THE SITE PLANS OR NOT. TERMINATION OF UTILITIES SHALL BE PERFORMED IN COMPLIANCE WITH ALL LOCAL, STATE, AND/OR FEDERAL REGULATIONS.

12. SHOULD HAZARDOUS MATERIAL BE DISCOVERED/ ENCOUNTERED, WHICH WAS NOT ANTICIPATED AND/OR ADDRESSED IN THE PROJECT PLANS AND SPECIFICATIONS, CEASE ALL WORK IMMEDIATELY AND NOTIFY OWNER AND ENGINEER OF RECORD REGARDING THE DISCOVERY OF SAME.

13. CMG ENVIRONMENTAL, INC. HAS NO RESPONSIBILITY REGARDING JOB SAFETY AND/OR OVERSIGHT AND SUPERVISION, OR ANYTHING RELATED TO SAME, LEGALLY NOR CONTRACTUALLY.

14. THE CONTRACTOR IS RESPONSIBLE FOR ALL "MEANS AND METHODS" NECESSARY TO PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF EXISTING STRUCTURES, AND ANY OTHER IMPROVEMENTS THAT ARE TO REMAIN. IF ANY EXISTING STRUCTURES THAT ARE TO REMAIN ARE DAMAGED DURING DEMOLITION, REPAIRS SHALL BE MADE USING NEW PRODUCT/ MATERIALS RESULTING IN A PRE-DEMOLITION CONDITION, OR BETTER. CONTRACTOR IS RESPONSIBLE FOR ALL REPAIR COSTS.

15. ALL BACKFILLING REQUIRED AS A RESULT OF DEMOLITION SHALL BE PERFORMED IN COMPLIANCE WITH THE RECOMMENDATIONS AND GUIDANCE OF THE OF THE GEOTECHNICAL REPORT, OR IN ITS ABSENCE, THE STANDARD STATE DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST EDITION) SHALL GOVERN.

16. THE USE OF EXPLOSIVES FOR THE PURPOSE OF DEMOLITION OR ROCK REMOVAL MUST BE IN COMPLIANCE OF ALL LOCAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR SHALL OBTAIN ALL PERMITS THAT ARE REQUIRED BY THE FEDERAL, STATE, AND FEDERAL REGULATIONS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR ALL INSPECTIONS, MONITORING, OR TESTING AS MAY BE REQUIRED BY ANY AND ALL PERMITS AND REGULATIONS.

17. CONTRACTOR SHALL CONTROL TRAFFIC ON AND OFFSITE IN CONFORMANCE WITH THE CURRENT FHWA "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), AND THE FEDERAL, STATE, AND LOCAL REGULATIONS FOR ALL ASPECTS OF DEMOLITION AND SITE WORK.

18. CMG ENVIRONMENTAL, INC. IS NOT RESPONSIBLE FOR THE MEANS, METHOD, AND/OR PROCEDURES TO BE IMPLEMENTED FOR THE PROJECT. ALL WORK MUST BE IN STRICT ACCORDANCE WITH ALL STATE, FEDERAL, LOCAL, AND JURISDICTIONAL REQUIREMENTS.

19. DEBRIS SHALL NOT BE BURIED ON SITE. ALL DEMOLITION MATERIALS TO BE DISPOSED OF SHALL BE DONE SO IN ACCORDANCE WITH ALL MUNICIPAL, COUNTY, STATE, AND FEDERAL LAWS AND APPLICABLE CODES. THE CONTRACTOR MUST MAINTAIN RECORDS OF ALL DISPOSAL AND TRANSPORT ACTIVITIES INCLUDING DEBRIS AND SOIL REMOVAL.

20. CONTRACTOR MUST PREPARE RECORD DRAWINGS OF ALL SUBTERRANEAN UTILITIES PRIOR TO BURIAL DEPICTING THE LOCATION OF EXISTING UTILITIES THAT ARE CAPPED, ABANDONED IN PLACE, OR RELOCATED AS WELL AS NEW UTILITY SERVICES AND PROVIDE TO THE PROPERTY OWNER AND THE ENGINEER OF RECORD.

GENERAL GRADING & UTILITY NOTES:

1. PRIOR TO STARTING ANY SITE ACTIVITY OR DEMOLITION, THE CONTRACTOR SHALL "CALL BEFORE YOU DIG", "DIG SAFE" AND/OR APPLICABLE STATE DAMAGE CONTROL SYSTEM FOR THE REQUIRED UTILITY MARK OUTS IN ADVANCE OF ANY EARTH DISTURBANCE. IN ADDITION TO THIS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING ONSITE UTILITIES INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN AND ADJACENT TO THE LIMITS OF THE PROJECT ACTIVITIES. LOCATIONS OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE INDEPENDENTLY CONFIRMED WITH LOCAL UTILITY COMPANIES AND THE CONTRACTOR. WATER, SANITARY SEWER, AND ALL OTHER UTILITY SERVICE CONNECTION POINTS MUST BE INDEPENDENTLY CONFIRMED BY THE CONTRACTOR IN THE FIELD PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES MUST IMMEDIATELY BE REPORTED IMMEDIATELY IN WRITING TO THE ENGINEER.

2. CONSTRUCTION SHALL BEGIN AT THE LOWEST ELEVATION AND/OR INVERT (POINT OF CONNECTION) AND PROGRESS UPGRADIENT. WHERE UTILITIES ARE PROPOSED TO CROSS/ TRAVERSE EXISTING UNDERGROUND UTILITIES, THE ELEVATIONS OF THE EXISTING UTILITIES SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION BY EXCAVATING A TEST PIT AT THE PROPOSED UTILITY CROSSING POINT TO VERIFY EXISTING UTILITY LOCATIONS, ELEVATIONS, AND/OR INVERTS. SHOULD THE FIELD VERIFIED EXISTING UTILITY BE IN CONFLICT WITH THE PROPOSED SITE DESIGNS, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IN WRITING AND SHALL NOT PROCEED WITH SAID UTILITY CONSTRUCTION UNTIL FURTHER DIRECTION IS GIVEN FROM THE DESIGN ENGINEER.

3. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION, AT NO COST TO THE OWNER. CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION.

4. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL CONSTRUCTION AND CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL OF THE PERMITS AND CONDITIONS, DRAWINGS, REPORTS AND SPECIFICATIONS ASSOCIATED WITH THE PROJECT PRIOR TO MOBILIZATION FOR AND COMMENCEMENT OF CONSTRUCTION. SHOULD THERE BE ANY CONFLICT AND/OR DISCREPANCY BETWEEN ANY OF THE DOCUMENTS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE DESIGN ENGINEER IN WRITING OUTLINING SAID CONFLICT AND/OR DISCREPANCY PRIOR TO THE START OF CONSTRUCTION.

5. THE CONTRACTOR MUST INSTALL ALL UTILITIES THAT FUNCTION BY GRAVITY, INCLUDING STORM SEWER AND SANITARY SEWER COMPONENTS, PRIOR TO THE INSTALLATION OF ALL OTHER UTILITIES.

6. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DESIGN FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS AND SERVICE SIZES, GREASE TRAP REQUIREMENTS/ DETAILS, DOOR ACCESS, AND EXTERIOR GRADING AND REPORT CONFLICT WITH THE SITE PLAN TO THE ENGINEER.

7. THE CONTRACTOR MUST COORDINATE INSTALLATION OF ALL UTILITY'S SERVICES WITH THE INDIVIDUAL SERVICE PROVIDER TO ASSURE INDIVIDUAL INSTALLATION REQUIREMENTS ARE MET. THE CONTRACTOR SHALL ENSURE THAT INSTALLATION OF ALL IMPROVEMENTS COMPLIES WITH ALL UTILITY REQUIREMENTS SET FORTH BY THE JURISDICTION HAVING AUTHORITY AND CONTROL OF SAID UTILITY.

8. WATER SERVICE AND WATER MAIN INSTALLATIONS SHALL BE PER THE SPECIFICATIONS OF THE LOCAL UTILITY COMPANY HAVING JURISDICTION OF THE UTILITY INCLUDING, BUT NOT LIMITED TO PRODUCT MATERIALS AND BURIAL DEPTHS. CONTRACTOR SHALL COORDINATE WITH THE WATER UTILITY COMPANY AND THE ARCHITECT TO ASSURE PROPER WATER METER SIZING PRIOR TO CONSTRUCTION.

9. SERVICES FOR ELECTRICAL, CABLE TV, FIBER OPTIC, TELEPHONE, ETC. SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE NOTED ON THE PLANS AND INSTALLED IN ACCORDANCE WITH THE UTILITY SERVICE PROVIDER'S SPECIFICATIONS AND STANDARDS.

10. SITE GRADING, EXCAVATION, FILL, COMPACTION AND MATERIALS USED FOR EARTH WORK AND UTILITY INSTALLATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND THE REQUIREMENTS SET FORTH IN GEOTECHNICAL REPORT REFERENCED FOR THIS PROJECT OR THE APPROPRIATE UTILITY COMPANY'S SPECIFICATIONS, WHEN GEOTECHNICAL REPORT OR RECOMMENDATIONS HAVE NOT BEEN DEVELOPED. ALL SOILS/ MATERIALS, FILLS, AND COMPACTION SHALL COMPLY WITH THE STANDARD STATE DOT SPECIFICATIONS FOR ROADWAY CONSTRUCTION (LATEST EDITION) AND ANY AMENDMENTS OR REVISIONS THERETO. CMG ENVIRONMENTAL, INC. SHALL HAVE NO LIABILITY OR RESPONSIBILITY FOR OR AS RELATED TO FILL, COMPACTION, AND BACKFILL.

11. THE CONTRACTOR SHALL COMPLY WITH THE LATEST OSHA STANDARD AND REGULATIONS, AS WELL AS ANY LOCAL AUTHORITY THAT MAY HAVE JURISDICTION OVER TRENCHING PROCEDURES. CMG ENVIRONMENTAL, INC. IS NOT RESPONSIBLE FOR ANY MEANS AND METHODS OR PERFORMANCE CRITERIA ASSOCIATED WITH EXCAVATION TRENCHING AND IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR APPROPRIATE PROCEDURES ARE ADHERED TO.

12. CONTRACTOR SHALL ADJUST FRAMES, COVERS, AND GRATES OF ALL EXISTING MANHOLES, INLET STRUCTURES, WATER GATE BOXES, AND SANITARY CLEANOUT RISERS AS NECESSARY, TO MATCH PROPOSED GRADES.

13. STORM SEWER PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) CLASS III WITH SILT TIGHT JOINTS. IF HIGH DENSITY POLYETHYLENE PIPE (HDPE) IS SPECIFIED ON THE PLANS, IT MUST CONFORM TO AASHTO M294 AND TYPE S (SMOOTH INTERIOR WITH ANGULAR CORRUGATIONS) WITH GASKET FOR SILT TIGHT JOINT. ROOF DRAINS MUST BE PVC SDR 26 OR SCHEDULE 40 UNLESS INDICATED OTHERWISE.

14. SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 EXCEPT WHERE INDICATED OTHERWISE. SANITARY SEWER LATERAL MUST BE PVC SCHEDULE 40 OR PVC SDR 26 UNLESS INDICATED, IN WRITING, OTHERWISE.

15. PIPE LENGTHS INDICATED FOR SANITARY AND STORM SEWERS ARE MEASURED CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

16. ROOF DRAIN LOCATIONS ARE APPROXIMATE; IT IS THE CONTRACTOR'S RESPONSIBILITY FOR COORDINATING THE RROF CONNECTIONS WITH FINAL ARCHITECTURAL PLAN LOCATIONS.

17. WATER MAIN AND WATER SERVICE PIPING SHALL BE INSTALLED PER THE LOCAL WATER COMPANY'S OR THE AUTHORITY HAVING JURISDICTION SPECIFICATIONS. IN THE ABSENCE OF SUCH SPECIFICATIONS, WATER MAIN PIPING MUST BE CEMENT-LINED DUCTILE IRON (DIP) MINIMUM CLASS 52 THICKNESS MUST COMPLY WITH THE APPLICABLE AWWA STANDARDS IN EFFECT AT THE TIME OF CONSTRUCTION.

18. THE CONTRACTOR SHALL ENSURE THAT ANY AND ALL WORK LOCATED IN THE EXISTING PAVED ROADWAYS AND/OR STREETS BE REPAIRED IN ACCORDANCE WITH THE REFERENCED MUNICIPAL, COUNTY, AND/OR DOT DETAILS AS APPLICABLE. CONTRACTOR IS RESPONSIBLE TO COORDINATE THE PERMITTING, INSPECTION, AND APPROVAL OF COMPLETED WORK WITH THE AGENCY HAVING JURISDICTION OVER THE PROPOSED WORK.

19. THE RELOCATION OF EXISTING AND/OR THE INSTALLATION OF NEW UTILITY POLES AND TRANSFORMERS ARE AT THE SOLE DISCRETION OF UTILITY COMPANIES TO FINALIZE ALL UTILITY SERVICES AND/OR RELOCATIONS TO ASSURE NO CONFLICT WITH THE DESIGN PLANS. SHOULD A CONFLICT ARISE DUE TO THE FINAL DESIGNS OF THE UTILITY COMPANY, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IN WRITING AND AWAIT A WRITTEN RESOLUTION PRIOR TO PROCEEDING WITH FURTHER UTILITY INSTALLATIONS.

ADA INSTRUCTIONS TO CONTRACTOR:

1. THE CONTRACTOR SHALL REVIEW THE PROPOSED CONSTRUCTION WITH THE LOCAL BUILDING OFFICIAL PRIOR TO THE START OF CONSTRUCTION.

2. CONTRACTORS SHALL BE PRECISE IN THE CONSTRUCTION OF AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBLE PARKING, COMPONENTS, AND ACCESS ROUTES FOR THE PROJECT. THESE COMPONENTS SHALL COMPLY WITH ALL APPLICABLE STATE AND LOCAL ACCESSIBILITY LAWS AND REGULATIONS AND THE CURRENT ADA REGULATIONS AND CONSTRUCTION STANDARDS. THESE COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
   - PARKING SPACES AND PARKING AISLES SHALL NOT EXCEED A 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) SLOPE IN ANY DIRECTION
   - CURB RAMPS SHALL NOT EXCEED A 1:12 (8.3%) SLOPE FOR A MAXIMUM LENGTH OF SIX (6) FEET
   - RAMPS SHALL BE EQUIPPED WITH LANDINGS AT EACH END, SHALL NOT EXCEED 1:50 (2.0%) IN ANY DIRECTION, AND HAVE POSITIVE DRAINAGE AWAY FROM THE LANDING.
   - ACCESSIBLE ROUTES SHALL BE A MINIMUM OF 36" WIDE (UNOBSTRUCTED). HANDRAILS AND CAR OVERHANGS MAY NOT OBSTRUCT THESE AREAS. LONGITUDINAL SLOPES (DIRECTION OF TRAVEL) SHALL NOT EXCEED 1:20 (5.0%) AND SHALL HAVE A CROSS SLOPE NO GREATER THAN 1:50 (2.0%)
   - ACCESSIBLE ROUTES EXCEEDING 1:20 (5.0%) SHALL BE CONSIDERED A "RAMP". MAXIMUM SLOPES OF A RAMP SHALL BE 1:12 (8.3%) IN THE DIRECTION OF TRAVEL, AND A CROSS SLOPE OF 1:50 (2.0%). RAMPS SHALL HAVE MAXIMUM RISE OF 2.5 FEET, SHALL BE EQUIPPED WITH HAND RAILS AND LANDINGS AT THE TOPS AND BOTTOM OF THE RAMP. LANDINGS SHALL NOT EXCEED 1:50 (2.0%) IN ANY DIRECTION AND HAVE POSITIVE DRAINAGE AWAY FOR THE LANDING.
   - A LANDING SHALL BE PROVIDED AT THE EXTERIOR OF ALL DOORS. LANDINGS SHALL NOT EXCEED 1:50 (2.0%) IN ANY DIRECTION AND HAVE POSITIVE DRAINAGE AWAY FOR THE LANDING. THE LANDING SHALL BE NO LESS THAN 60 INCHES LONG UNLESS PERMITTED OTHERWISE PER THE ADA REGULATIONS.

3. THE CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS SHOWN ON THE PLAN IN AREAS OF EXISTING DOORWAYS, ACCESSIBLE ROUTES OR OTHER AREAS WHERE RE-CONSTRUCTION IS PROPOSED. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER OF ANY FIELD CONDITIONS THAT DIFFER IN ANY MANNER FROM WHAT IS SHOWN ON THE PLANS, IN WRITING, BEFORE COMMENCEMENT OF WORK

TYPICAL ABBREVIATIONS

PROP.	PROPOSED	E.O.P.	EDGE OF PAVEMENT	VAC.	VACUUM
EX.	EXISTING	V.G.C.	VERTICAL GRANITE CURB	TRANS.	TRANFORMER
N/F	NOW OR FORMERLY	S.G.C.	SLOPED GRANITE CURB	GEN.	GENERATOR
ND	NOT DETERMINED	C.C.B.	CAPE COD BERM	APPROX. LOC.	APPROXIMATE LOCATION
TBR	TO BE REMOVED	B.C.C.	BITUMINOUS CONCRETE CURB	INV.	INVERT
CONC.	CONCRETE	C.C.	CONCRETE CURB	TBD	TO BE DETERMINED
BIT.	BITUMINOUS	W.G.	WATER GATE	FF	FINISH FLOOR ELEVATION
UP	UTILITY POLE	G.G.	GAS GATE	TF	TOP OF FOUNDATION ELEVATION
L.S.A.	LANDSCAPE AREA	M.E.	MATCH EXISTING	OHD	OVERHEAD DOOR

LEGEND

EXISTING		PROPOSED
	PROPERTY LINE	
	ABUTTING PROPERTY LINE	
	MONUMENT	
	IRON PIPE	
	UTILITY POLE	
	SIGN	
	FIRE HYDRANT	
MW	MONITORING WELL	MW
W.G.	WATER GATE	W.G.
W W	WATER LINE	W W
G.G.	GAS VALVE	G.G.
G	GAS LINE	G
	CATCH BASIN	
	TYPE" C-L" CATCH BASIN	
	TYPE" C" CATCH BASIN	
MH	DRAINAGE MAINHOLE	MH
	DRAINAGE LINE	
S	SEWER MANHOLE	S
S	SEWER LINE	S
OHW	OVERHEAD ELECTRIC	OHW
UGE	UNDERGROUND ELECTRIC	UGE
	AREA LIGHT	
50	CONTOUR LINE	150
	SOIL TEST PIT	
	FENCE	
	TREELINE	
	BOLLARD	
	EROSION CONTROL BARRIER	
	CATCH BASIN PROTECTION	
	CONSTRUCTION LIMIT LINE	CLL
	DRAINAGE DIRECTION	

NO.	DATE	DESCRIPTION	BY	CKD
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

REVISIONS

PROFESSIONAL SEAL

STATE OF CONNECTICUT · MARK G. SMITH · No. 16811 · LICENSED PROFESSIONAL ENGINEER

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PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

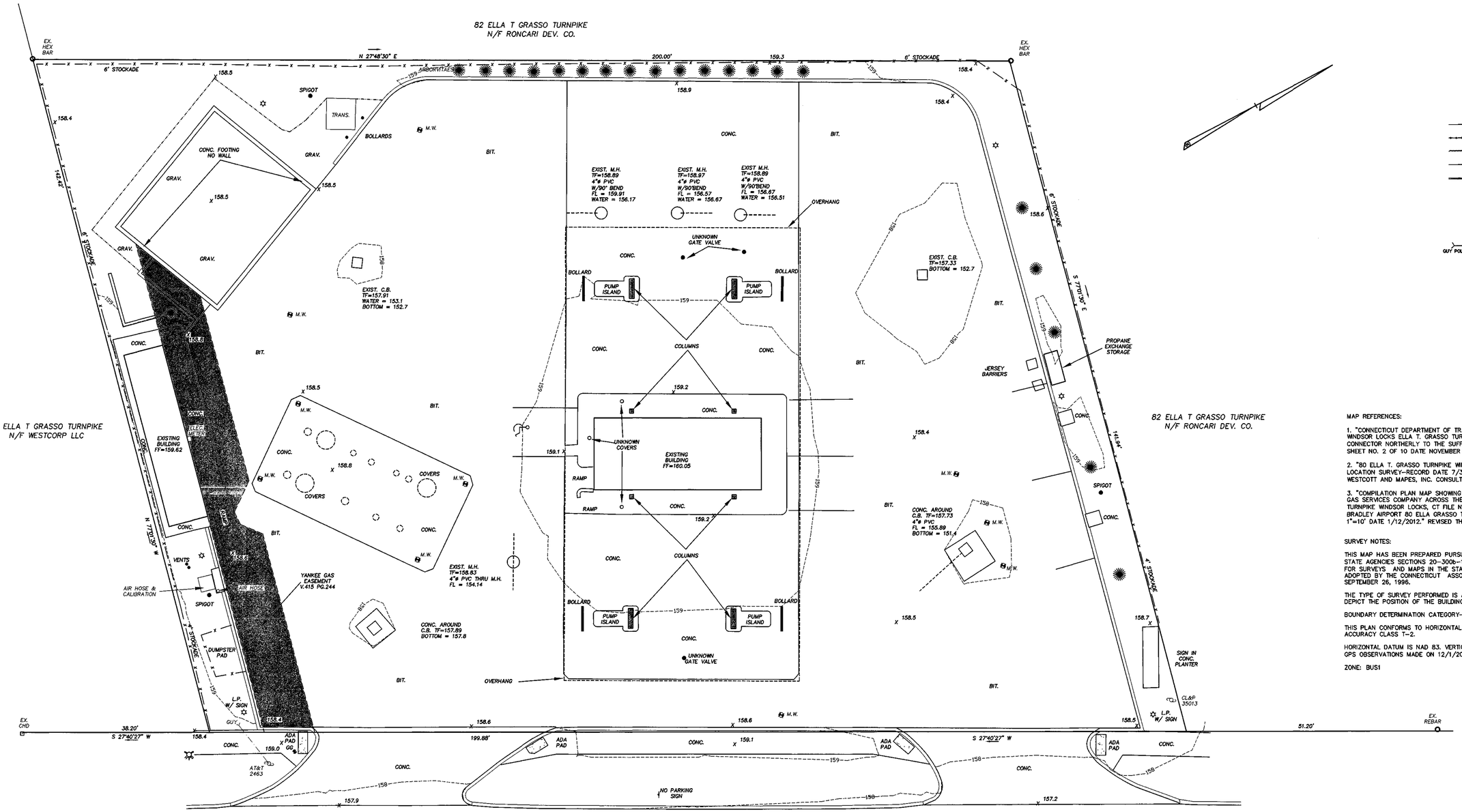
ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM | CHECKED BY: MS
SCALE: NONE
PROJECT NO.: 2020-158

GENERAL NOTES SHEET

N-1.0



LEGEND

- PROPERTY LINE
- CHAINLINK FENCE
- TREE/VEGETATION LINE
- BITUMINOUS PAVEMENT
- BITUMINOUS/CONCRETE CURB
- MH ○ YD — MANHOLE OR YARD DRAIN
- CATCH BASIN
- FIRE HYDRANT
- WG — WATER GATE
- GUY POLE/WIRE POLE No. — UTILITY POLE
- CONC. — CONCRETE
- BIT. — BITUMINOUS
- MON. — MONUMENT
- FF — FINISH FLOOR
- FL — FLOW LINE
- TF — TOP OF FRAME
- LIGHT

MAP REFERENCES:

1. "CONNECTICUT DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP TOWN OF WINDSOR LOCKS ELLA T. GRASSO TURNPIKE FROM BRADLEY INTERNATIONAL AIRPORT CONNECTOR NORTHERLY TO THE SUFFIELD TOWN LINE SCALE 1"=40' NUMBER 165-09 SHEET NO. 2 OF 10 DATE NOVEMBER 26, 1990 ROBERT W GUBALA CHIEF ENGINEER."

2. "80 ELLA T. GRASSO TURNPIKE WINDSOR LOCKS, CONNECTICUT IMPROVEMENT LOCATION SURVEY-RECORD DATE 7/30/2012 SCALE 1"=10' SHEET NO. 1 OF 1 WESTCOTT AND MAPES, INC. CONSULTING ENGINEERS NEW HAVEN, CT."

3. "COMPILATION PLAN MAP SHOWING EASEMENT AREA TO BE GRANTED TO YANKEE GAS SERVICES COMPANY ACROSS THE PROPERTY OF YALE OIL, LLC 80 ELLA GRASSO TURNPIKE WINDSOR LOCKS, CT FILE NO. E110" "CNG FUELING STATION HARTFORD BRADLEY AIRPORT 80 ELLA GRASSO TURNPIKE WINDSOR LOCKS, CT 06096" SCALE 1"=10' DATE 1/12/2012." REVISED THROUGH 1/30/12

SURVEY NOTES:

THIS MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS PREPARED AND ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

THE TYPE OF SURVEY PERFORMED IS A TOPOGRAPHIC SURVEY, AND IS INTENDED TO DEPICT THE POSITION OF THE BUILDING, VISIBLE UTILITIES, DRIVEWAY AND CONTOURS.

BOUNDARY DETERMINATION CATEGORY-RESURVEY BASED ON A DEPENDENT RESURVEY.

THIS PLAN CONFORMS TO HORIZONTAL ACCURACY CLASS A-2, AND VERTICAL ACCURACY CLASS T-2.

HORIZONTAL DATUM IS NAD 83. VERTICAL DATUM IS NAVD 88. BOTH TAKEN FROM GPS OBSERVATIONS MADE ON 12/1/20.

ZONE: BUS1

ELLA T GRASSO TURNPIKE - RTE. 75

UTILITY STATEMENT

UNDERGROUND UTILITY, STRUCTURE AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO THIS SURVEYOR. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION. CALL BEFORE YOU DIG 1-800-922-4455.

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

STATE OF CONNECTICUT BRIAN E. DENNO No. 70084 LICENSED LAND SURVEYOR

REVISIONS:

TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

NOT VALID UNLESS LIVE SIGNATURE AND EMBOSSED SEAL IS AFFIXED

DENNO LAND SURVEYING & CONSULTING, LLC
2 TUNXIS RD STE. 214 TARIFFVILLE, CT 06081

EXISTING CONDITIONS
PREPARED FOR
YALE OIL LLC
80 ELLA T GRASSO TURNPIKE
WINDSOR LOCKS, CONNECTICUT

SCALE	DATE	SHEET NO.
1"=10'	XXXX	1 OF 1

EXISTING ELECTRIC TRANSFORMER AND UNDERGROUND ELECTRIC CONDUITS TO BE REMOVED. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY

EXISTING LIGHTPOLE TO BE REMOVED AND RELOCATED (SEE SHEET C-3.0)

N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782

EXISTING ABORVITAE ROW TO BE REMOVED

OLD CARWASH RECLAIM SYSTEM TO BE REMOVED

EXISTING CONCRETE PAD TO BE REMOVED

EXISTING WOOD STOCKADE FENCE TO BE REMOVED

EXISTING DRYWELL TO REMAIN REMOVE AND REPLACE EXISTING CATCH BASIN GRATE (SEE SHEET C-2.0)

REMOVE EXISTING PIPING ASSOCIATED WITH DRYWELL

EXISTING CONCRETE FOOTING TO BE REMOVED

EXISTING WOOD STOCKADE FENCE TO BE REMOVED

EXISTING LIGHTPOLE TO BE REMOVED AND RELOCATED (SEE SHEET C-3.0)

EXISTING CONCRETE WALKS AND RAMP TO BE REMOVED

EXISTING C-STORE & CANOPY AND ASSOCIATED UTILITIES TO BE DEMOLISHED IN ACCORORDANCE WITH ALL APPLICABLE REGULATIONS

N/F
NAPOLI WINDSOR LOCKS, LLC
MAP ID: 039-001-012
#70 ELLA T. GRASSO TPK
VOL 477 PG 1079

EXISTING MANHOLE AND PIPING TO BE REMOVED

EXISTING 1 STORY BUILDING AND ASSOCIATED UTILITIES TO BE DEMOLISHED IN ACCORORDANCE WITH ALL APPLICABLE REGULATIONS

EXISTING UNDERGROUND GASOLINE STORAGE TANKS AND CONCRETE MAT TO REMAIN

EXISTING LIGHTPOLE TO REMAIN

EXISTING UST VENTS TO REMAIN

EXISTING AIR HOSE & CALIBRATION TO BE REMOVED

EXISTING CONCRETE DUMPSTER PAD AND FENCING TO BE REMOVED

EXISTING GAS SERVICE TO BE REMOVED. CONTRACTOR TO COORDINATE WITH LOCAL GAS COMPANY

ALL ONSITE BIT. PAVING AND CURBING TO BE REMOVED

EXISTING LIGHTPOLE WITH SIGN TO REMAIN

EXISTING GAS SERVICE TO BE CUT AND REUSED FOR PROPOSED BUILDING. CONTRACTOR TO COORDINATE WITH LOCAL GAS COMPANY

EXISTING CONCRETE APRON TO REMAIN

EXISTING WATER SERVICE TO BE CUT AND REUSED FOR PROPOSED BUILDING. CONTRACTOR TO COORDINATE WITH CONNECTICUT WATER

EXISTING CONCRETE SIDEWALK AND CONCRETE CURB TO REMAIN

ELLA T. GRASSO TURNPIKE ~ ROUTE 75

EXISTING CONCRETE PAD TO BE REMOVED

EXISTING SEWER LATERAL TO BE CUT AND REUSED FOR PROPOSED BUILDING. CONTRACTOR TO COORDINATE WITH WINDSOR LOCKS WPCA

REMOVE EXISTING EXISTING PUMP ISLANDS (4) AND ASSOCIATED PIPING

EXISTING LIGHTPOLE TO REMAIN

REMOVE EXISTING PIPING ASSOCIATED WITH DRYWELL

EXISTING WOOD STOCKADE FENCE TO BE REMOVED

EXISTING DRYWELL TO BE REMOVED

APPROX. UNDERGROUND ELECTRIC & TELEPHONE

EXISTING SHRUBS TO BE REMOVED

ALL ONSITE BIT. PAVING AND CURBING TO BE REMOVED

EXISTING PROPANE EXCHANGE AND JERSEY BARRIERS TO BE REMOVED

N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782

EXISTING LIGHTPOLE TO REMAIN

EXISTING CONCRETE PADS TO BE REMOVED

EXISTING SEWER MANHOLE AND ASSOCIATED PIPING TO BE REMOVED

REMOVE EXISTING PIPING ASSOCIATED WITH DRYWELL

EXISTING DRYWELL TO BE REMOVED

EXISTING SIGN IN CONCRETE PLANTER TO REMAIN

EXISTING UNDERGROUND ELECTRIC CONDUITS TO BE REMOVED. CONTRACTOR TO COORDINATE WITH LOCAL UTILITY COMPANY

EXISTING LIGHTPOLE WITH SIGN TO REMAIN

EXISTING CONCRETE CURB TO REMAIN

EXISTING CONCRETE APRON TO REMAIN

REFER TO GENERAL NOTE SHEET FOR DEMOLITION NOTES

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

DIG SAFE NOTE (1-888-344-7233):
CONTRACTOR REQUIRED TO NOTIFY "DIG SAFE" 72 HOURS PRIOR TO ANY ON-SITE EXCAVATION OR CONSTRUCTION AT 1-888-344-7233. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER AND SEWER DEPARTMENTS TO MARK OUT THEIR UTILITIES.

REVISIONS

NO.	DATE	DESCRIPTION	BY	CKD
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

STATE OF CONNECTICUT
MARK G. SMITH
No. 18811
LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

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PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM | CHECKED BY: MS
SCALE: 1" = 10'
PROJECT NO.: 2020-158

DEMOLITION PLAN

D-1.0

PAVEMENT STRIPING LEGEND:

- 4" WIDE WHITE PARKING STALL LINE
- 4" WIDE @ 3'o.c. WHITE STRIPING
- WHITE LEGEND (3.67' / 3')
- 12" WIDE WHITE CROSS- WALK STRIPE & STOP BAR
- PAINTED TRAFFIC FLOW ARROWS
- WHITE LEGEND (R, 3' / 6' / 2')

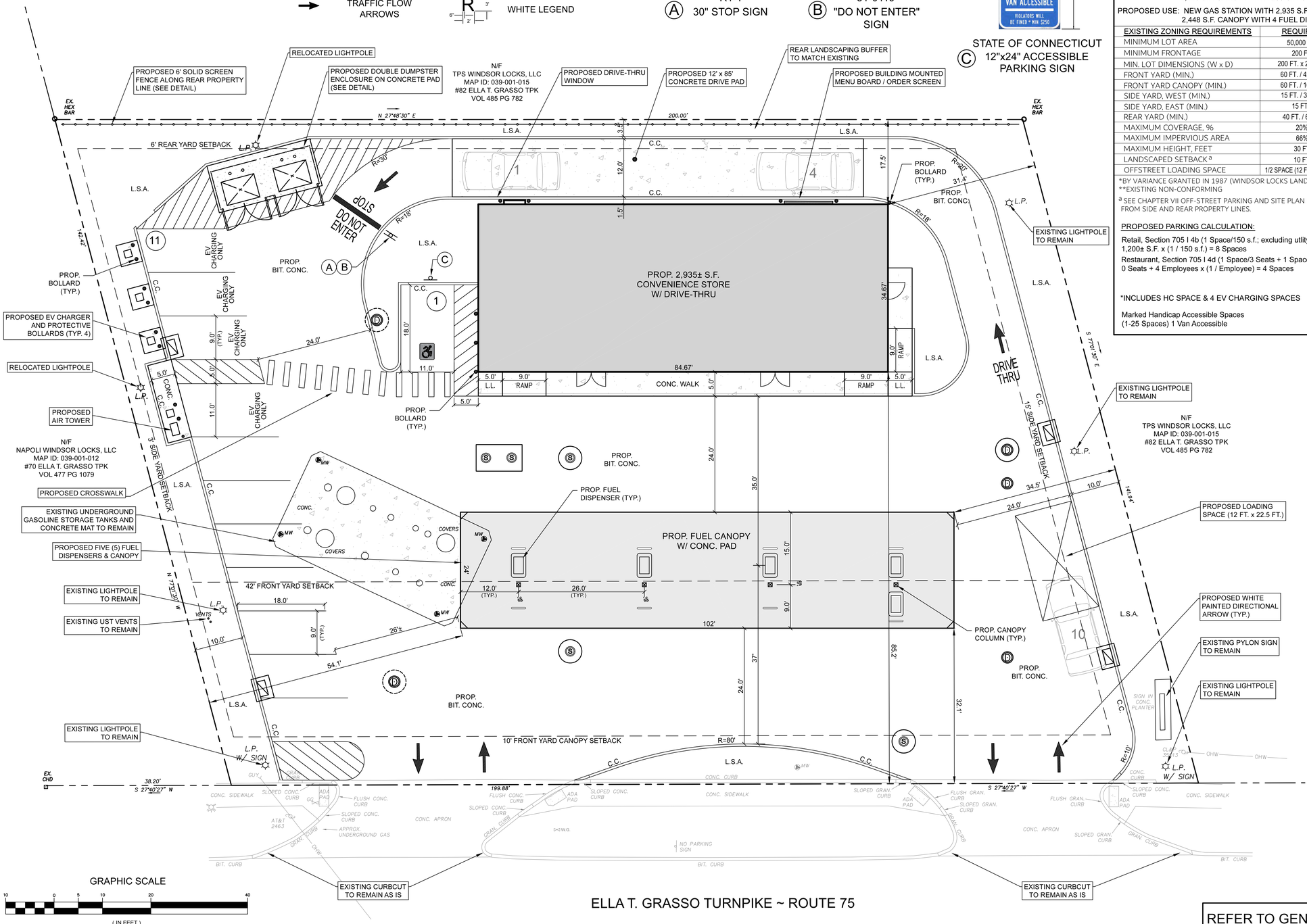
SIGN LEGEND:

Ⓐ R1-1 30" STOP SIGN

Ⓑ 31-0119 "DO NOT ENTER" SIGN

Ⓒ STATE OF CONNECTICUT 12"x24" ACCESSIBLE PARKING SIGN





ZONING INFORMATION TABLE - WINDSOR LOCKS, CT

#80 ELLA T. GRASSO TURNPIKE

PREPARED FOR / OWNER: UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

ASSESSOR'S MAP ID: 039-001-014 DEED: VOL 479 PG 560

EXISTING ZONE: BUSINESS 1 (B-1)

EXISTING USE: GAS STATION WITH 476 S.F. CONVENIENCE STORE AND 6 FUEL DISPENSERS UNDER A 4,440 S.F. CANOPY WITH 288 S.F. UTILITY SHED

PROPOSED USE: NEW GAS STATION WITH 2,935 S.F. CONVENIENCE STORE / DRIVE THRU AND 2,448 S.F. CANOPY WITH 4 FUEL DISPENSERS

EXISTING ZONING REQUIREMENTS	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	50,000 S.F.	27,489 S.F. (0.63 Acres)**	27,489 S.F. (0.63 Acres)**
MINIMUM FRONTAGE	200 FT.	199.88 FT.**	199.88 FT.**
MIN. LOT DIMENSIONS (W x D)	200 FT. x 250 FT.	200 FT. x 142 FT.**	200 FT. x 142 FT.**
FRONT YARD (MIN.)	60 FT. / 42 FT.*	42.9± FT. (SEE DEMO PLAN)	85.2 FT.
FRONT YARD CANOPY (MIN.)	60 FT. / 10 FT.*	10.1± FT. (SEE DEMO PLAN)	32.1 FT.
SIDE YARD, WEST (MIN.)	15 FT. / 3 FT.*	2.6± FT.** (SEE DEMO PLAN)	54.1 FT.
SIDE YARD, EAST (MIN.)	15 FT.	50.1± FT. (SEE DEMO PLAN)	31.4 FT.
REAR YARD (MIN.)	40 FT. / 6 FT.*	34.1± FT. (SEE DEMO PLAN)	17.5 FT.
MAXIMUM COVERAGE, %	20%	4,760 S.F. (17%)	5,383 S.F. (19.6%)
MAXIMUM IMPERVIOUS AREA	66%	24,098 S.F. (87.7%)**	22,687 S.F. (82.5%)
MAXIMUM HEIGHT, FEET	30 FT.	< 30 FT.	< 30 FT.
LANDSCAPED SETBACK [a]	10 FT.	3± FT.**	3.5 FT.
OFFSTREET LOADING SPACE	1/2 SPACE (12 FT. x 22.5 FT.)	1/2 SPACE (12 FT. x 22.5 FT.)	1/2 SPACE (12 FT. x 22.5 FT.)

*BY VARIANCE GRANTED IN 1987 (WINDSOR LOCKS LAND RECORDS VOL 173 PAGE 443 & VOL 174 PAGE 105)
**EXISTING NON-CONFORMING
[a] SEE CHAPTER VII OFF-STREET PARKING AND SITE PLAN DESIGN REGULATIONS, SECTION 705 E: SETBACK FROM SIDE AND REAR PROPERTY LINES.

PROPOSED PARKING CALCULATION:	REQUIRED	PROPOSED
Retail, Section 705 I 4b (1 Space/150 s.f.; excluding utlity & storage areas) 1,200± S.F. x (1 / 150 s.f.) = 8 Spaces	8 Spaces	8 Spaces
Restaurant, Section 705 I 4d (1 Space/3 Seats + 1 Space/Employee/Shift) 0 Seats + 4 Employees x (1 / Employee) = 4 Spaces	4 Spaces	4 Spaces
Total Spaces	12 Spaces	12 Spaces*
*INCLUDES HC SPACE & 4 EV CHARGING SPACES		
Marked Handicap Accessible Spaces (1-25 Spaces) 1 Van Accessible	1 HC Space	1 HC Space

NO.	DATE	DESCRIPTION	BY	CKD
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REVISIONS

PROFESSIONAL SEAL
STATE OF CONNECTICUT
MARK G. SMITH
No. 18811
LICENSED PROFESSIONAL ENGINEER
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WINDSOR LOCKS, CT 06096

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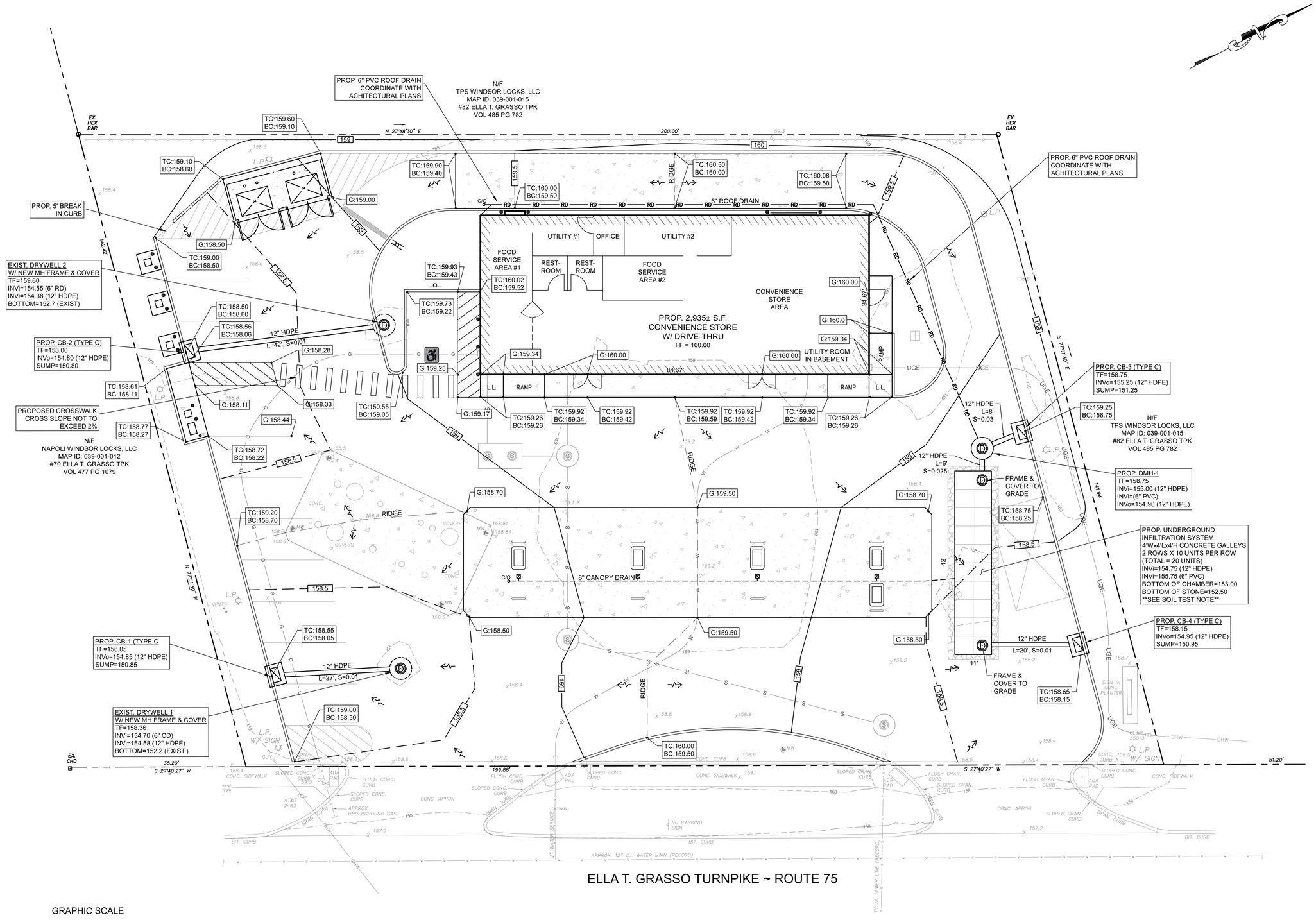
ISSUE DATE: 12/8/2025
DRAWN BY: MM CHECKED BY: MS
SCALE: 1" = 10'
PROJECT NO.: 2020-158

SITE LAYOUT PLAN

C-1.0

REFER TO GENERAL NOTE SHEET FOR SITE NOTES

DIG SAFE NOTE (1-888-344-7233):
CONTRACTOR REQUIRED TO NOTIFY "DIG SAFE" 72 HOURS PRIOR TO ANY ON-SITE EXCAVATION OR CONSTRUCTION AT 1-888-344-7233. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER AND SEWER DEPARTMENTS TO MARK OUT THEIR UTILITIES.



GRAPHIC SCALE

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(IN FEET)
1 inch = 10 ft.

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SOIL TEST NOTE

CONTRACTOR TO DIG TEST PITS IN THE VICINITY OF THE PROPOSED INFILTRATION SYSTEM PRIOR TO INSTALLATION AND NOTIFY DESIGN ENGINEER OF RESULTS TO DETERMINE IF CHANGES IN DESIGN ARE NEEDED.

REFER TO GENERAL NOTE SHEET FOR GRADING & DRAINAGE NOTES

NO.	DATE	DESCRIPTION	BY	CKD
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

REVISIONS

PROFESSIONAL SEAL

STATE OF CONNECTICUT
MARK G. SMITH
No. 18811
REGISTERED
PROFESSIONAL ENGINEER

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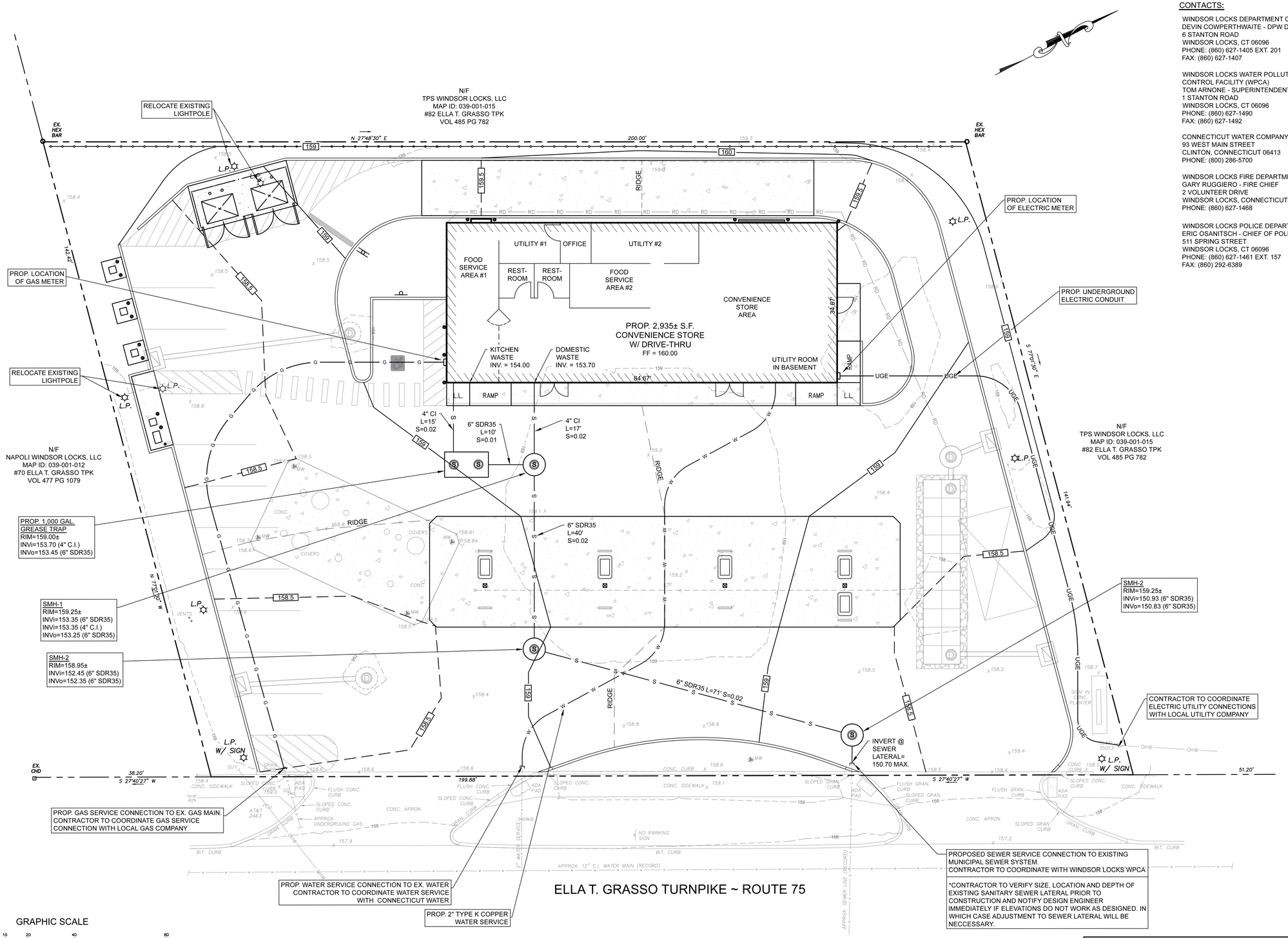
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67 Hall Road
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Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

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GRADING & DRAINAGE PLAN

C-2.0



DIG SAFE NOTE (1-888-344-7233):
CONTRACTOR REQUIRED TO NOTIFY "DIG SAFE" 72 HOURS PRIOR TO ANY ON-SITE EXCAVATION OR CONSTRUCTION AT 1-888-344-7233. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER AND SEWER DEPARTMENTS TO MARK OUT THEIR UTILITIES.

REFER TO GENERAL NOTE SHEET FOR UTILITY NOTES

CONTACTS:

WINDSOR LOCKS DEPARTMENT OF PUBLIC WORKS
DEVIN COWPERTHWAITE - DPW DIRECTOR
6 STANTON ROAD
WINDSOR LOCKS, CT 06096
PHONE: (860) 627-1405 EXT. 201
FAX: (860) 627-1407

WINDSOR LOCKS WATER POLLUTION CONTROL FACILITY (WPCA)
TOM ARNONE - SUPERINTENDENT
1 STANTON ROAD
WINDSOR LOCKS, CT 06096
PHONE: (860) 627-1490
FAX: (860) 627-1492

CONNECTICUT WATER COMPANY
93 WEST MAIN STREET
CLINTON, CONNECTICUT 06413
PHONE: (800) 286-5700

WINDSOR LOCKS FIRE DEPARTMENT
GARY RUGGIERO - FIRE CHIEF
2 VOLUNTEER DRIVE
WINDSOR LOCKS, CONNECTICUT 06096
PHONE: (860) 627-1468

WINDSOR LOCKS POLICE DEPARTMENT
ERIC OSANITSCH - CHIEF OF POLICE
511 SPRING STREET
WINDSOR LOCKS, CT 06096
PHONE: (860) 627-1461 EXT. 157
FAX: (860) 292-6389

NO.	DATE	DESCRIPTION	BY	CKD
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

REVISIONS

STATE OF CONNECTICUT
MARK G. SMITH
No. 18811
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

SealPact 2025-12-17 11:53:34 EST
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PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

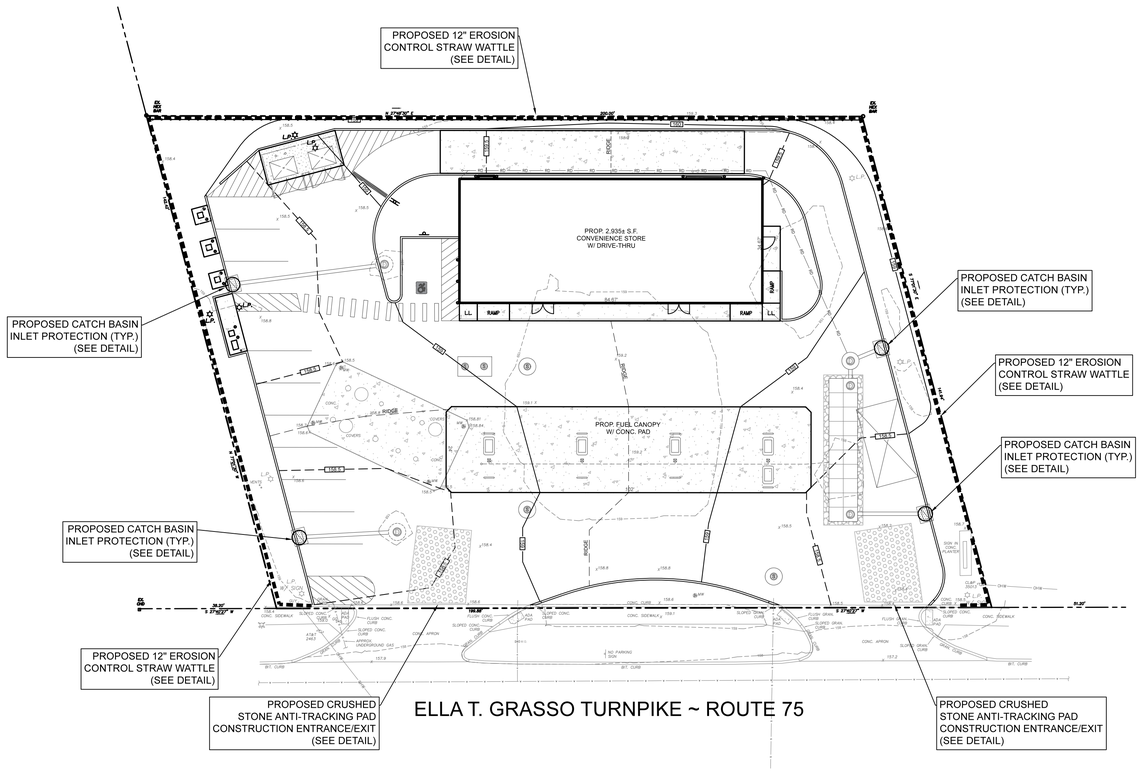
ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM | CHECKED BY: MS
SCALE: 1" = 20'
PROJECT NO.: 2020-158

UTILITY PLAN

C-3.0



RESPONSIBILITIES OF OWNER/PERMITEE

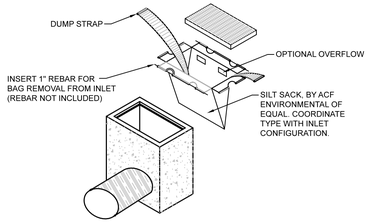
THE OWNER/PERMITEE SHALL:

A. PROVIDE THE CONTRACTOR WITH COPIES OF LAND-USE PERMITS THAT OWNER HAS ACQUIRED.
B. INFORM ALL PARTIES INVOLVED WITH THE PROPSOED SITE WORK OF THIS PLAN'S OBJECTIVES AND REQUIREMENTS.

RESPONSIBILITIES OF CONTRACTOR

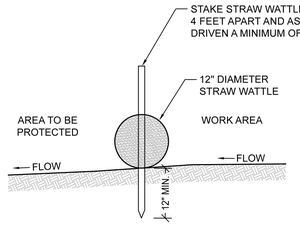
THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING EROSION OF THE SITE AND FOR PROTECTING ADJACENT STORM SEWERS AND WATERWAYS FROM SEDIMENTATION.

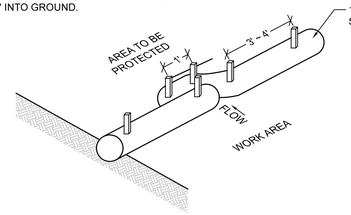
A. INSTALL, MONITOR, AND MAINTAIN OF THE SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN ON THIS PLAN.
B. COMPLY WITH ALL PERMIT REQUIREMENTS.



SILT SACK DETAIL

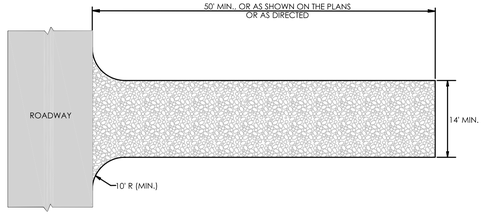
NOT TO SCALE



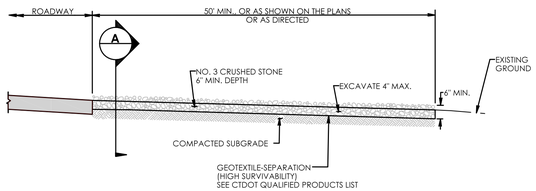


STRAW WATTLE DETAIL

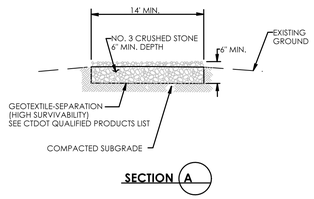
NOT TO SCALE



PLAN



ELEVATION



ANTI - TRACKING PAD DETAIL

NOT TO SCALE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

DIG SAFE NOTE (1-888-344-7233):
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GENERAL CONDITIONS:

1. IF EROSION CONTROL MEASURES ARE DAMAGED BY CONSTRUCTION VEHICLES, ACTS OF VANDALISM, OR SEVERE WEATHER CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY REMOVE SEDIMENT IN THE VICINITY OF THE EROSION CONTROL MEASURES AND REPAIR THESE MEASURES TO A FUNCTIONAL CONDITION.
2. IF, DURING OR AFTER CONSTRUCTION, IT BECOMES APPARENT THAT EXISTING EROSION CONTROL MEASURES ARE INCAPABLE OF CONTROLLING EROSION, THE ENGINEER OR THE CITY MAY REQUIRE ADDITIONAL CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO; ADDITIONAL WATTLES, SILT FENCE, SEDIMENT BASINS, MECHANICALLY ANCHORED MULCH, OR ENHANCED DEWATERING FILTRATION.
3. NO CONSTRUCTION SHALL PROCEED UNTIL A WRITTEN PROPOSAL OF METHODS TO PREVENT CONSTRUCTION DEBRIS, PAINT, SPENT BLAST MATERIALS, OR OTHER MATERIALS FROM ENTERING A STORM SEWER, THE WETLAND, OR WATERCOURSE HAS BEEN SUBMITTED BY THE CONTRACTOR TO THE OWNER AND APPROVED BY THE OWNER, AND SUCH METHODS HAVE BEEN IMPLEMENTED AS THE OWNER DIRECTS. THESE MATERIALS SHALL BE COLLECTED AND DISPOSED OF IN AN ENVIRONMENTALLY SAFE MANNER IN ACCORDANCE WITH ALL APPLICABLE FEDERAL AND STATE LAWS AND REGULATIONS. THE OWNER MAY ORDER THE CONTRACTOR TO CEASE SUCH ACTIVITY TEMPORARILY IF, IN THE JUDGEMENT OF THE OWNER, WIND OR STORM CONDITIONS THREATEN TO CAUSE THE DEPOSIT OF SUCH MATERIALS INTO A WATERWAY.
4. ALL TEMPORARILY FILL SHALL BE STABILIZED DURING USE TO PREVENT EROSION AND SHALL BE SUITABLY CONTAINED TO PREVENT SEDIMENT OR OTHER PARTICULATE MATTER FROM RENTERING A WETLAND OR WATERCOURSE. ALL AREAS AFFECTED BY TEMPORARY FILLS MUST BE RESTORED TO THEIR ORIGINAL CONTOURS OR AS DIRECTED BY THE OWNER, AND REVEGETATED. THE AREAL EXTENT OF TEMPORARY FILL OR EXCAVATION SHALL BE CONFINED TO THAT AREA NECESSARY TO PERFORM THE WORK, AS APPROVED BY THE OWNER.
5. DUMPING OF OIL, CHEMICALS OR OTHER DELETERIOUS MATERIALS ON THE GROUND IS FORBIDDEN. THE CONTRACTOR SHALL PROVIDE A MEANS OF CATCHING, RETAINING, AND PROPERLY DISPOSING OF DRAINED OIL, REMOVED OIL FILTERS, OR OTHER DELETERIOUS MATERIAL. ALL SPILLS OF SUCH MATERIALS SHALL BE REPORTED IMMEDIATELY BY THE CONTRACTOR TO APPROPRIATE CITY AND STATE AGENCIES.
6. EPA-NPDES STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR CONSTRUCTION ACTIVITIES NOT REQUIRED.
7. INSPECTIONS: EROSION CONTROL SHALL BE INSPECTED WEEKLY OR AFTER A STORM EVENT WITH 0.25" PRECIPITATION ACCUMULATION. INSPECTION SHALL BE RECORDED IN A LOG ALONG WITH TIME AND DATE. LOG SHALL BE AVAILABLE FOR INSPECTION BY THE TOWN OFFICIALS UPON REQUEST.

REVISIONS

NO.	DATE	DESCRIPTION	BY	CKD
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

STATE OF CONNECTICUT · MARK G. SMITH · No. 18011 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

SealPact 2025-12-17 11:53:34 EST
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PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

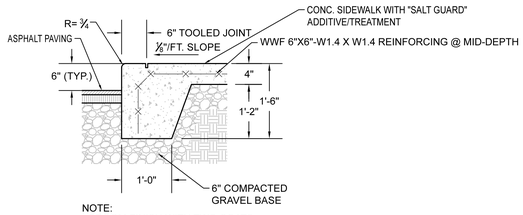
ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM | CHECKED BY: MS
SCALE: 1" = 20'
PROJECT NO.: 2020-158

EROSION & SEDIMENT CONTROL PLAN

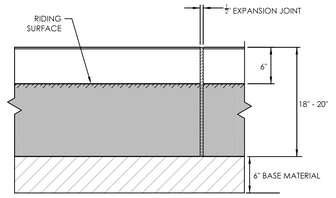
C-4.0



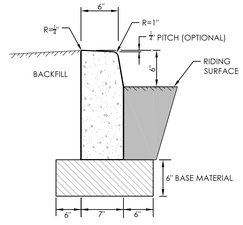
NOTE:
- BROOM FINISH WITH TWO COATS SEALING/CURING COMPOUND.

CONCRETE WALK W/ INTEGRAL CURB

NOT TO SCALE



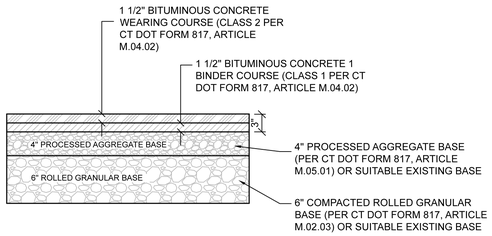
FRONT ELEVATION



SECTION

CTDOT CONCRETE CURBING

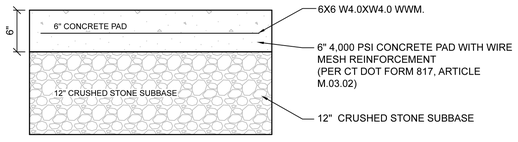
NOT TO SCALE



NOTE:
STANDARD ASPHALT PAVING TO BE USED FOR ALL ON-SITE PAVEMENT.

STANDARD ASPHALT PAVEMENT

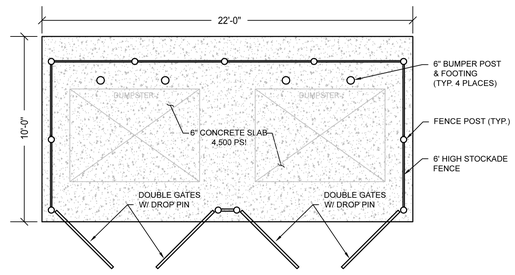
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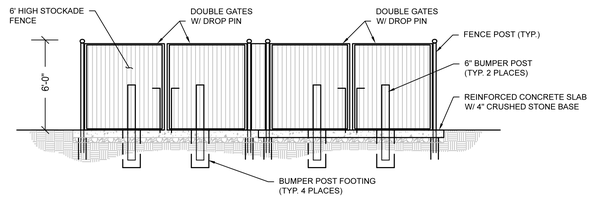
NOTE:
DRIVE PAD TO BE USED FROM ORDER SCREEN TO PICK UP WINDOW.
SEE SHEET C-1.0 SITE LAYOUT PLAN FOR LOCATION.

DRIVE-THRU CONCRETE DRIVE PAD

NOT TO SCALE

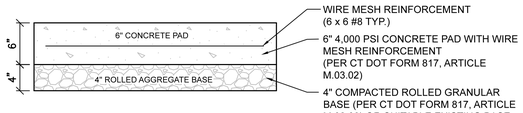


PLAN



DOUBLE DUMPSTER ENCLOSURE

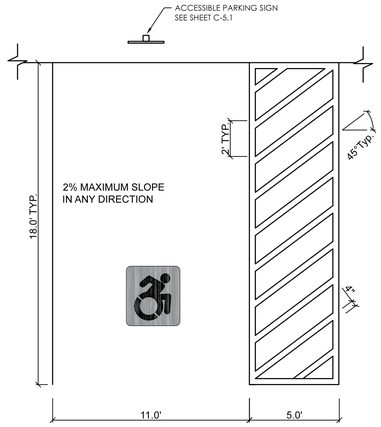
NOT TO SCALE



NOTES:
1. CONCRETE SHALL HAVE MINIMUM STRENGTH OF 4,000 PSI
2. WELDED WIRE FABRIC MATS WITH REINFORCEMENT AT CLOSER SPACING MAY BE USE

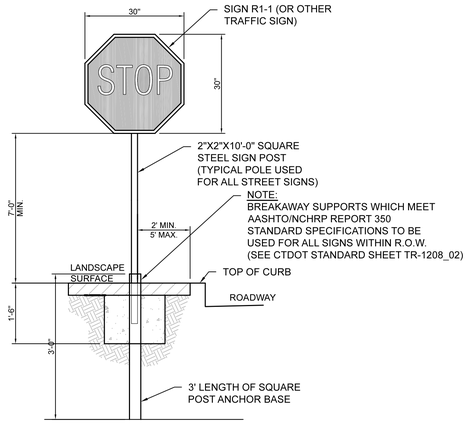
CONCRETE DUMPSTER PAD DETAIL

NOT TO SCALE



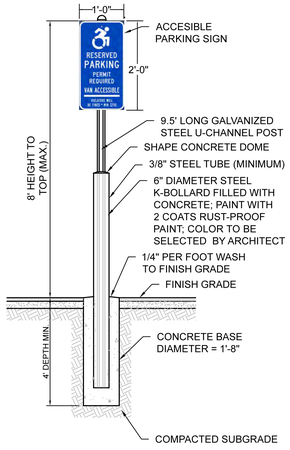
ACCESSIBLE PARKING SPACE

NOT TO SCALE



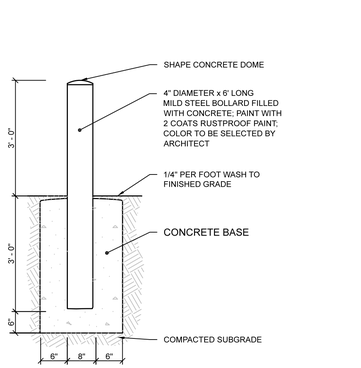
TYPICAL TRAFFIC SIGNS

NOT TO SCALE



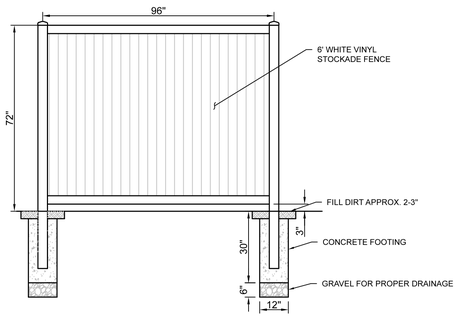
ACCESIBLE PARKING SIGN

NOT TO SCALE



STEEL PIPE BOLLARD

NOT TO SCALE



NOTE:
GENERAL CONTRACTOR TO SUBMIT SHOP DRAWING TO ARCHITECT/ ENGINEER FOR APPROVAL

VINYL STOCKADE FENCE DETAIL

NOT TO SCALE

REVISIONS			
NO.	DATE	DESCRIPTION	BY	CKD
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PROFESSIONAL SEAL

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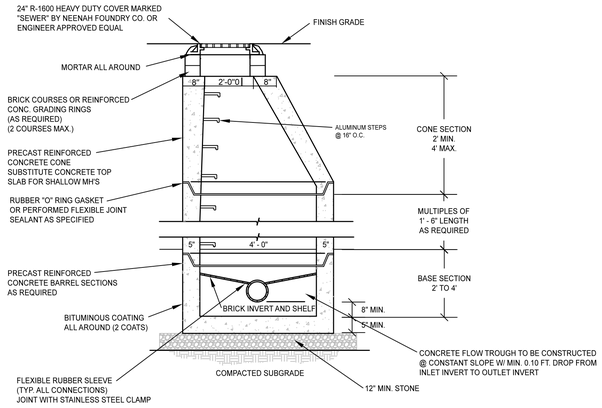
ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
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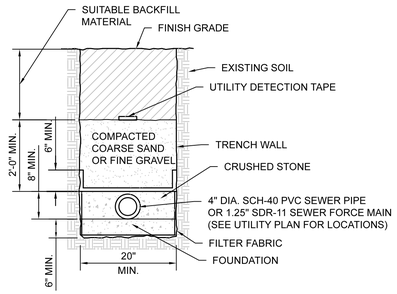
CONSTRUCTION DETAILS

C-5.0



PRECAST SEWER MANHOLE DETAIL

NOT TO SCALE

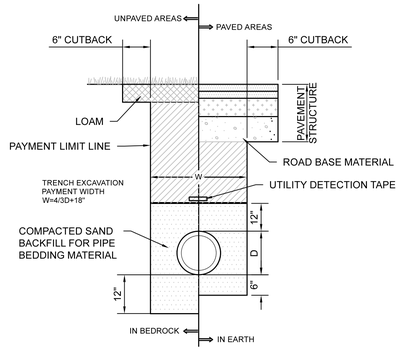


NOTES

1) THE CRUSHED STONE FOUNDATION SHALL BE A MAXIMUM 3/4 INCH IN SIZE AND SHALL BE PLACED 6" UNDER THE PIPE AND UP TO THE PIPE GRADE.
2) THE CRUSHED STONE HAUNCHING SHALL BE 3/4 INCH MAXIMUM IN SIZE AND SHALL BE BROUGHT TO A LEVEL GRADE AT THE TOP OF THE PIPE.
3) BACKFILL MATERIALS AND COMPACTION PROCESSES SHALL MEET CITY SPECIFICATIONS AND REQUIREMENTS.

SEWER TRENCH

NOT TO SCALE



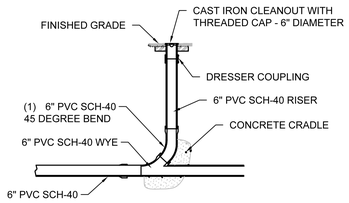
NOTES:

1. THIS DETAIL APPLIES TO CONSTRUCTION OF WATER, GAS, TELEPHONE, ELECTRIC, AND CABLE TELEVISION UTILITIES. UNLESS DIRECTED OTHERWISE BY APPLICABLE UTILITY COMPANIES.

2. PROVIDE 5' MINIMUM COVER OVER WATER SERVICE LINE UNLESS DIRECTED OTHERWISE BY WATER COMPANY.

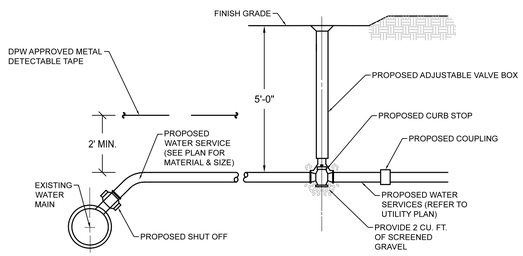
UTILITY TRENCH (TYP.)

NOT TO SCALE



ROOF/CANOPY DRAIN CLEANOUT

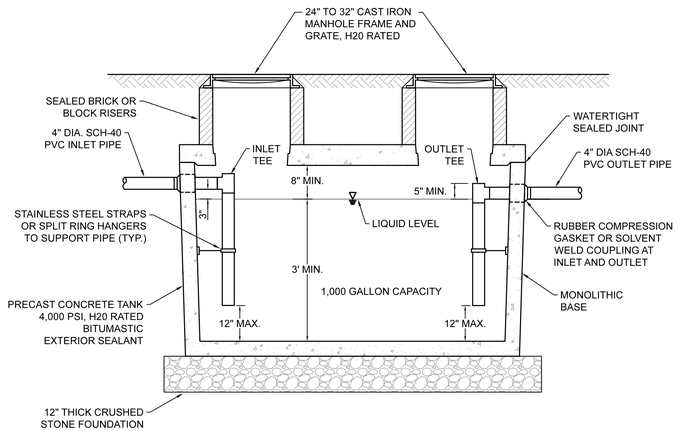
NOT TO SCALE



NOTE: CONTRACTOR TO COORDINATE WITH WATER COMPANY PRIOR TO INSTALLATION.

WATER SERVICE CONSTRUCTION

NOT TO SCALE



CT DEEP COMPLIANT GREASE TRAP

NOT TO SCALE

NO.	DATE	DESCRIPTION	BY	CK'D
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REVISIONS

STATE OF CONNECTICUT · MARK G. SMITH · No. 16011 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

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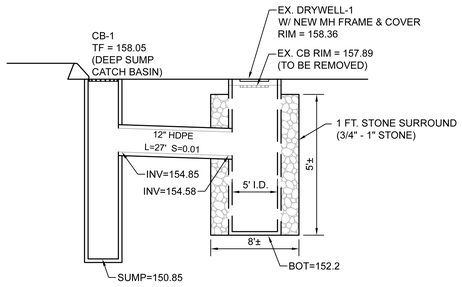
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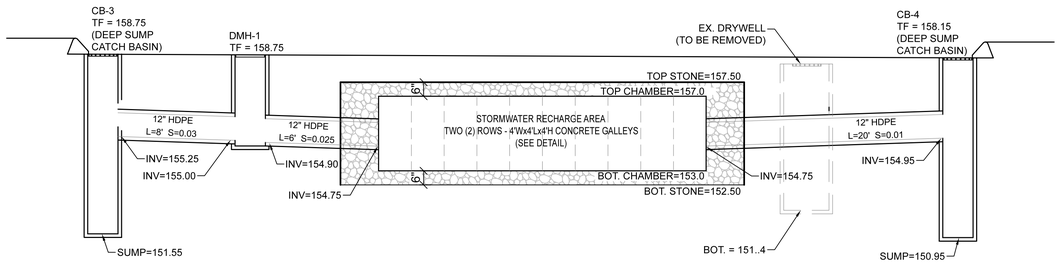
CONSTRUCTION DETAILS

C-5.1



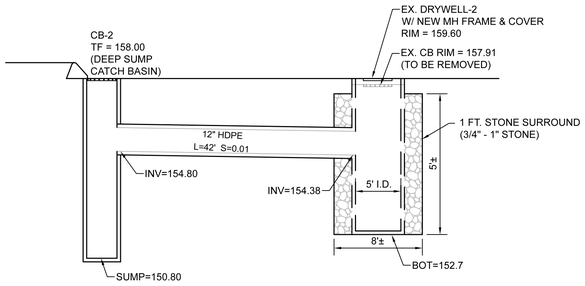
CROSS-SECTION DETAIL OF DRYWELL-1 STORMWATER RECHARGE

NOT TO SCALE



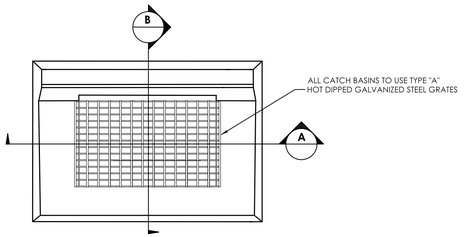
CROSS-SECTION DETAIL OF UNDERGROUND INFILTRATION SYSTEM STORMWATER RECHARGE

NOT TO SCALE

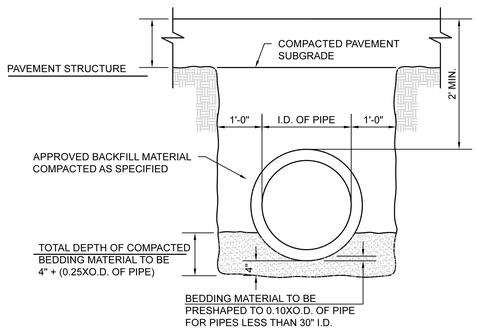


CROSS-SECTION DETAIL OF DRYWELL-2 STORMWATER RECHARGE

NOT TO SCALE

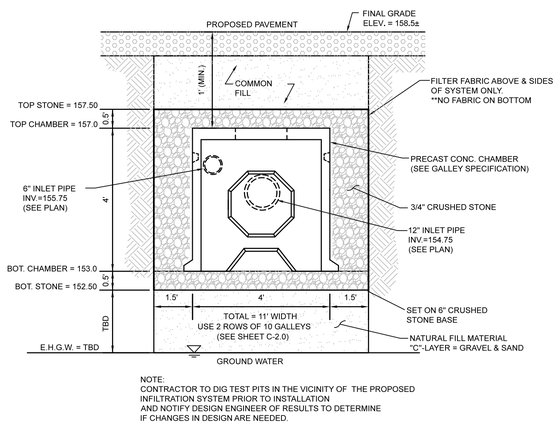


TYPE "C" CATCH BASIN TOP PLAN



STORM DRAIN TRENCH

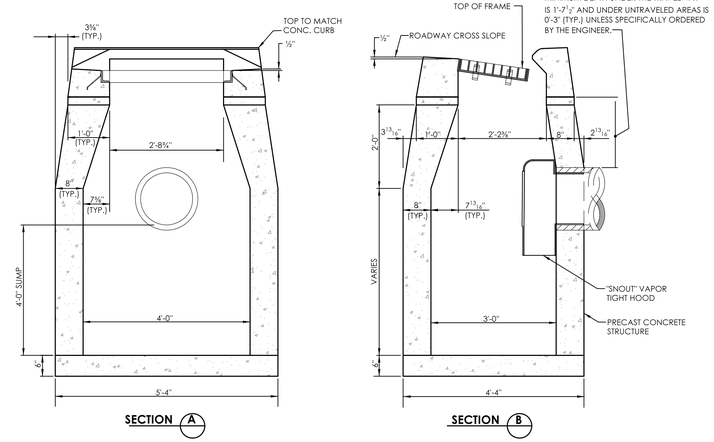
NOT TO SCALE



NOTE:
CONTRACTOR TO DIG TEST PITS IN THE VICINITY OF THE PROPOSED INFILTRATION SYSTEM PRIOR TO INSTALLATION AND NOTIFY DESIGN ENGINEER OF RESULTS TO DETERMINE IF CHANGES IN DESIGN ARE NEEDED.

UNDERGROUND INFILTRATION GALLEY DETAIL

NOT TO SCALE



CTDOT TYPE "C" CATCH BASIN

NOT TO SCALE

NO.	DATE	DESCRIPTION	BY	CK'D
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

REVISIONS

PROFESSIONAL SEAL

STATE OF CONNECTICUT · MARK G. SMITH · No. 18811 · REGISTERED PROFESSIONAL ENGINEER

SealPact 2025-12-17 11:53:34 EST
Click seal or scan QR Code for verification; otherwise not valid.

PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

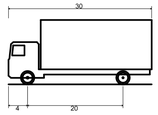
ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM | CHECKED BY: MS
SCALE: NTS
PROJECT NO.: 2020-158

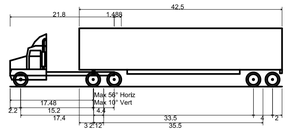
CONSTRUCTION DETAILS

C-5.2



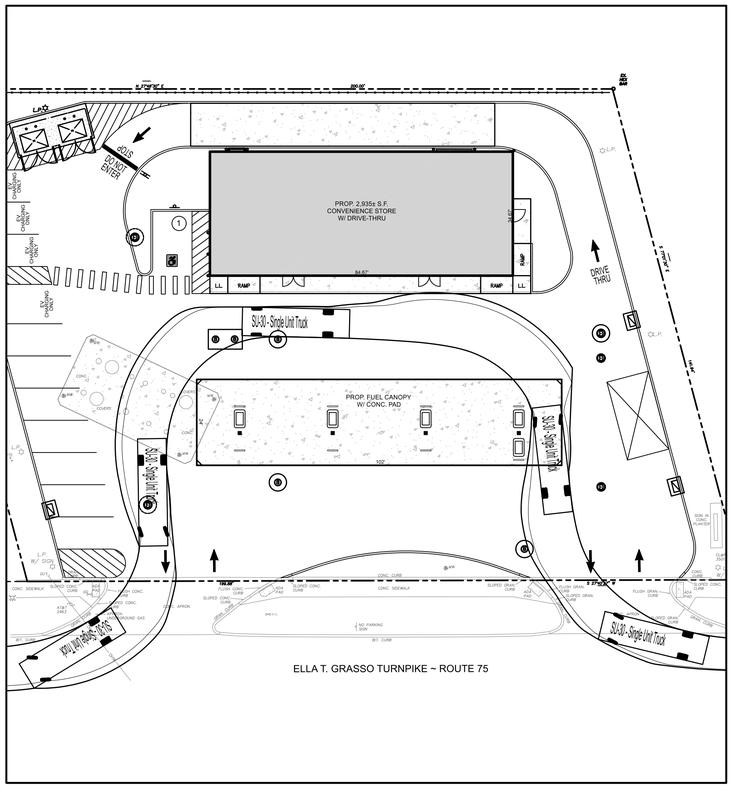
SU-30 - Single Unit Truck

Overall Length	30.000ft
Overall Width	8.000ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.367ft
Track Width	8.000ft
Lock-to-lock time	5.00s
Max Steering Angle (Virtual)	31.80°

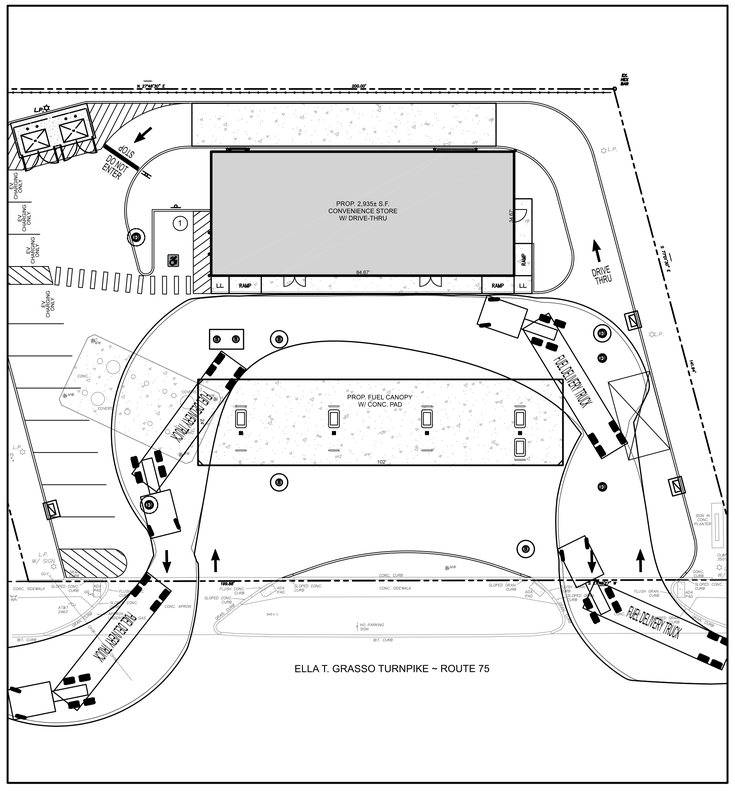


FUEL DELIVERY TRUCK

Overall Length	56.980ft
Overall Width	8.500ft
Overall Body Height	12.227ft
Min Body Ground Clearance	1.422ft
Track Width	8.500ft
Lock-to-lock time	6.00s
Max Wheel Angle	65.00°



SU-30 SINGLE UNIT TRUCK PATH ENTERING FROM SOUTHBOUND OFF RTE 75



FUEL DELIVERY TRUCK PATH ENTERING FROM SOUTHBOUND OFF RTE 75

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

REVISIONS

NO.	DATE	DESCRIPTION	BY	CK'D
1.	12/17/2025	STORMWATER DRYWELL REVISION	MM	MS

STATE OF CONNECTICUT
MARK G. SMITH
No. 18811
LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

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PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
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Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM | CHECKED BY: MS
SCALE: 1" = 20'
PROJECT NO.: 2020-158

TRUCK TURN PLAN

C-6.0

Plant Schedule					
Symbol	**Quantity**	**Botanical Name**	**Common Name**	**Size**	**Mature Size**
A	1	ACER RUBRUM "AUTUMN BLAZE"	AUTUMN BLAZE MAPLE	2 1/2"–3" CALIPER	30'W x 40'H
B	1	TILIA CORDATA "GREENSPIRE"	LITTLE LEAF LINDEN	2 1/2" CALIPER	20'W x 30'H
C	50	HEMEROCALLIS STELLA D'ORO	STELLA D'ORO DAYLILLY	1 GALLON	24"H
D	21	JUNIPERUS HORIZONTALIS "BAR HARBOR"	BAR HARBOR JUNIPER	18" – 24"	6'W x 1'H
E	1	MALUS "SPRING SNOW"	SPRING SNOW CRABAPPLE	2 1/2"–3" CALIPER	25"W x 20'H

N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782

N/F
NAPOLI WINDSOR LOCKS, LLC
MAP ID: 039-001-012
#70 ELLA T. GRASSO TPK
VOL 477 PG 1079

N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782

EX. HEX BAR
N 27°48'30" E
200.00'
EX. HEX BAR
LAWN
L.P.
STOP
DO NOT ENTER
EV. CHARGING ONLY
EV. CHARGING ONLY
EV. CHARGING ONLY
EV. CHARGING ONLY
PROP. 2,935± S.F.
CONVENIENCE STORE
W/ DRIVE-THRU
34.67'
84.67'
RAMP
L.L.
RAMP
RAMP
L.L.
UGE
DRIVE THRU
N 77°10'30" E
141.94'
N 77°10'30" W
211.21'
MW
CONC.
COVERS
PROP. FUEL CANOPY
W/ CONC. PAD
24'
102'
VENT
L.P. W/ SIGN
1 A
1 B
1 E
5 D
5 D
11 D
50 C
EDGE OF MULCH BED
EDGE OF MULCH BED
38.20'
S 27°40'27" W
199.88'
S 27°40'27" W
EX. CHD
AT&T 2463
APPROX. UNDERGROUND GAS
OHW
OHW
OHW
OHW
W.G.

ELLA T. GRASSO TURNPIKE ~ ROUTE 75

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

DIG SAFE NOTE (1-888-344-7233):
CONTRACTOR REQUIRED TO NOTIFY "DIG SAFE" 72 HOURS PRIOR TO ANY ON-SITE EXCAVATION OR CONSTRUCTION AT 1-888-344-7233. CONTRACTOR SHALL ALSO NOTIFY LOCAL WATER AND SEWER DEPARTMENTS TO MARK OUT THEIR UTILITIES.

REVISIONS			
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STATE OF CONNECTICUT
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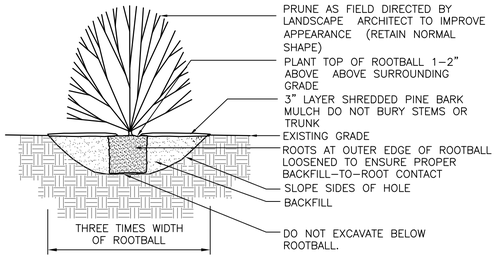
ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
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Sturbridge, MA 01566
Phone: 774-241-0901
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DRAWN BY: MM | CHECKED BY: MS
SCALE: 1" = 10'
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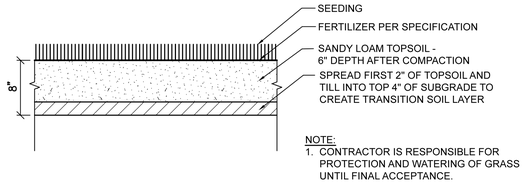
LANDSCAPE PLAN

L-1.0



1 L-2 **SHRUB PLANTING**

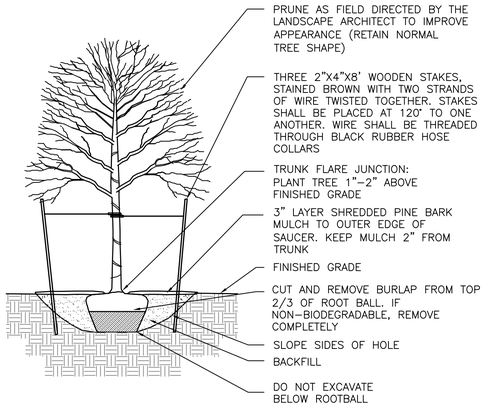
NOT TO SCALE



NOTE:
1. CONTRACTOR IS RESPONSIBLE FOR PROTECTION AND WATERING OF GRASS UNTIL FINAL ACCEPTANCE.

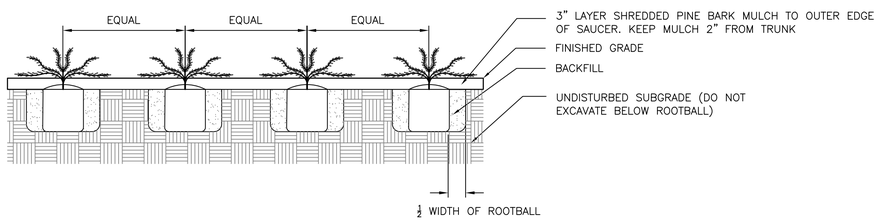
4 L-2 **TOPSOIL / LAWN**

NOT TO SCALE



2 L-2 **TREE PLANTING**

NOT TO SCALE



3 L-2 **PERENNIAL PLANTING**

NOT TO SCALE

PLANTING NOTES:

1. ALL PLANTING MATERIAL TO BE NURSERY GROWN STOCK SUBJECT TO APPLICABLE A.A.N. STANDARDS.
2. THE CONTRACTOR SHALL SUPPLY ALL PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT SCHEDULE. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT SCHEDULE AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER NUMBER SHALL APPLY.
3. ALL PLANTS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION AND SHALL BE LOCATED AT THE GROWING SITE BY THE CONTRACTOR, FOR THE APPROVAL OF THE LANDSCAPE ARCHITECT. ANY INSTALLATIONS WHICH WERE NOT APPROVED BY THE LANDSCAPE ARCHITECT AND WHICH ARE SUBSEQUENTLY REQUESTED TO BE REMOVED, WILL BE DONE AT THE CONTRACTORS EXPENSE.
4. PRECISE LOCATION OF ITEMS NOT DIMENSIONED ON THE PLAN ARE TO BE FIELD STAKED BY THE CONTRACTOR AND SHALL BE SUBJECT TO THE REQUIREMENTS SPECIFIED IN THE PREVIOUS NOTE.
5. ALL SHRUB AND TREE PITS SHALL BE MULCHED TO A DEPTH OF 3" WITH SHREDDED PINE BARK MULCH.
6. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGED VEGETATION AND SHALL REPLACE OR REPAIR ANY DAMAGE AT HIS OWN EXPENSE.
7. ALL SHRUB AND GROUND COVER PLANTING AREAS SHALL HAVE CONTINUOUS BEDS OF TOPSOIL, 8" DEEP.
8. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES IN THE FIELD. WHERE PLANT MATERIAL MAY INTERFERE WITH UTILITIES, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT TO COORDINATE THEIR INSTALLATION.
9. PLANTINGS INSTALLED IN THE DRY SUMMER MONTHS AND/OR LAWN SEEDED OUT OF SPRING OR FALL PERIODS, IF ALLOWED BY OWNER, WILL REQUIRE AGGRESSIVE IRRIGATION PROGRAMS AT THE CONTRACTORS EXPENSE, UNLESS OTHERWISE DIRECTED BY THE OWNER.
10. SUBSTITUTIONS PERMITTED ONLY UPON WRITTEN APPROVAL OF THE OWNERS REPRESENTATIVE.
11. PLANT TAGS TO REMAIN ON ALL PLANT MATERIAL UNTIL FINAL ACCEPTANCE. CONTRACTOR TO THEN REMOVE ALL PLANT TAGS.
12. WHERE A SIZE RANGE IS GIVEN IN THE PLANT SCHEDULE, AT LEAST 50% OF THE PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.
13. CONTRACTOR TO GUARANTEE ALL PLANT MATERIAL FOR ONE YEAR AFTER DATE OF FINAL ACCEPTANCE.
14. CONTRACTOR TO MAINTAIN ALL PLANT MATERIAL UNTIL 60 DAYS AFTER FINAL ACCEPTANCE UNLESS NOTED OTHERWISE IN SPECS.
15. TOPSOIL AND SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AND NOT COVERED BY OTHER SITE IMPROVEMENTS.

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REVISIONS

NO.	DATE	DESCRIPTION	BY	CKD
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STATE OF CONNECTICUT · MARK G. SMITH · No. 18011 · LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

SealPact 2025-12-17 11:53:34 EST
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PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

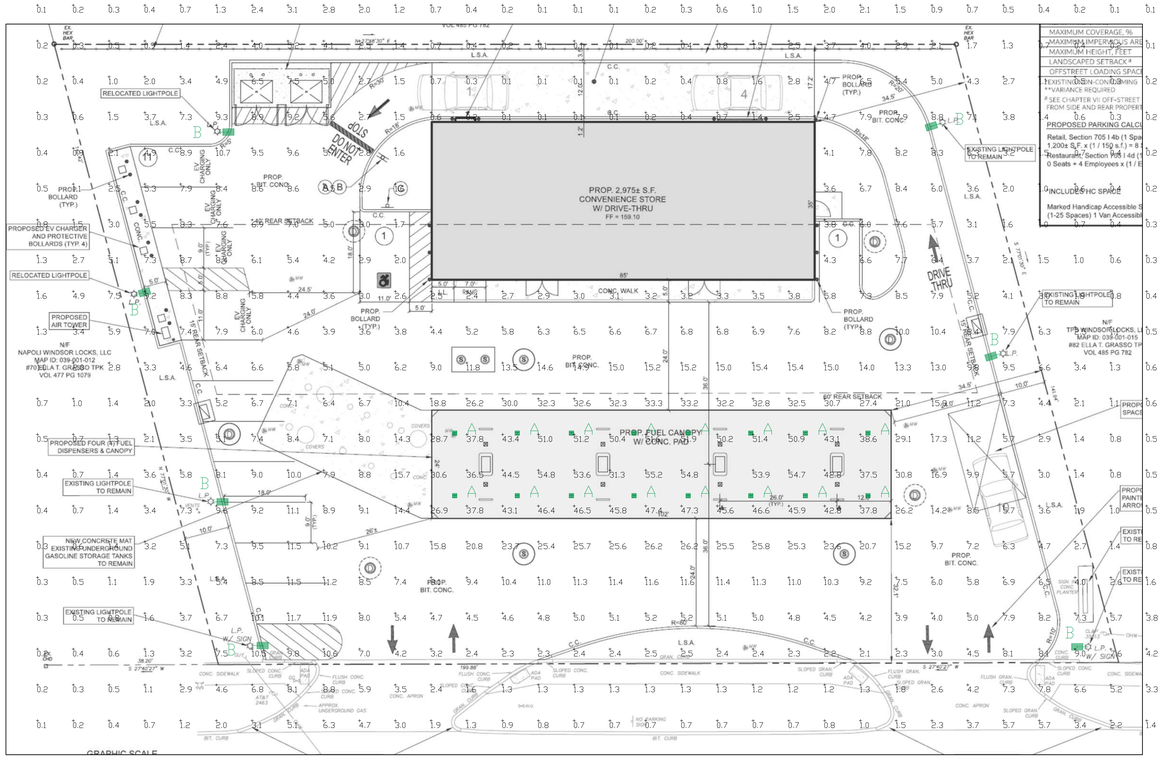
ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

CMG EST. 2002

ISSUE DATE: 12/8/2025
DRAWN BY: MM | CHECKED BY: MS
SCALE: AS NOTED
PROJECT NO.: 2020-158

LANDSCAPE DETAILS

L-2.0







Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Z
ALL CALC POINTS	Illuminance	Fc	7.93	55.2	0.1	79.30	552.00	0
CANOPY	Illuminance	Fc	45.01	55.2	26.9	1.67	2.05	
INSIDE CURB	Illuminance	Fc	9.35	33.3	0.1	93.50	333.00	

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	Mounting Height	LLF	Arr. Lum. Lumens	Arr. Watts	BUG Rating
	16	A	Single	CRUS-SC-SS-50	15'-6"	1.000	13980	93	B3-U0-G1
	7	B	Single	SLM-LED-18L-SIL-FT-50-70CRI	16' EXISTING	0.900	18904	135	B3-U0-G3

PHOTOMETRIC EVALUATION
NOT FOR CONSTRUCTION

Based on the information provided, all dimensions and luminaire locations shown represent recommended positions. The engineer and/or architect must determine the applicability of the layout to existing or future field conditions.

This lighting plan represents illumination levels calculated from laboratory data taken under controlled conditions in accordance with The Illuminating Engineering Society (IES) approved methods. Actual performance of any manufacturer's luminaires may vary due to changes in electrical voltage, tolerance in lamps/LED's and other variable field conditions. Calculations do not include obstructions such as buildings, curbs, landscaping, or any other architectural elements unless noted. Fixture nomenclature noted does not include mounting hardware or poles. This drawing is for photometric evaluation purposes only and should not be used as a construction document or as a final document for ordering product.

The IES no longer uses the Cutoff Classification System for LED fixtures. The IES classifies LED fixtures with the BUG rating which refers to the Backlight-Uplight-Glare system. An Uplight of "U0" most closely matches the old Full Cutoff rating.

Dimensions of drawings that have been scaled or converted from PDF files or scanned /submitted images are approximate.

Total Project Watts
Total Watts = 2433

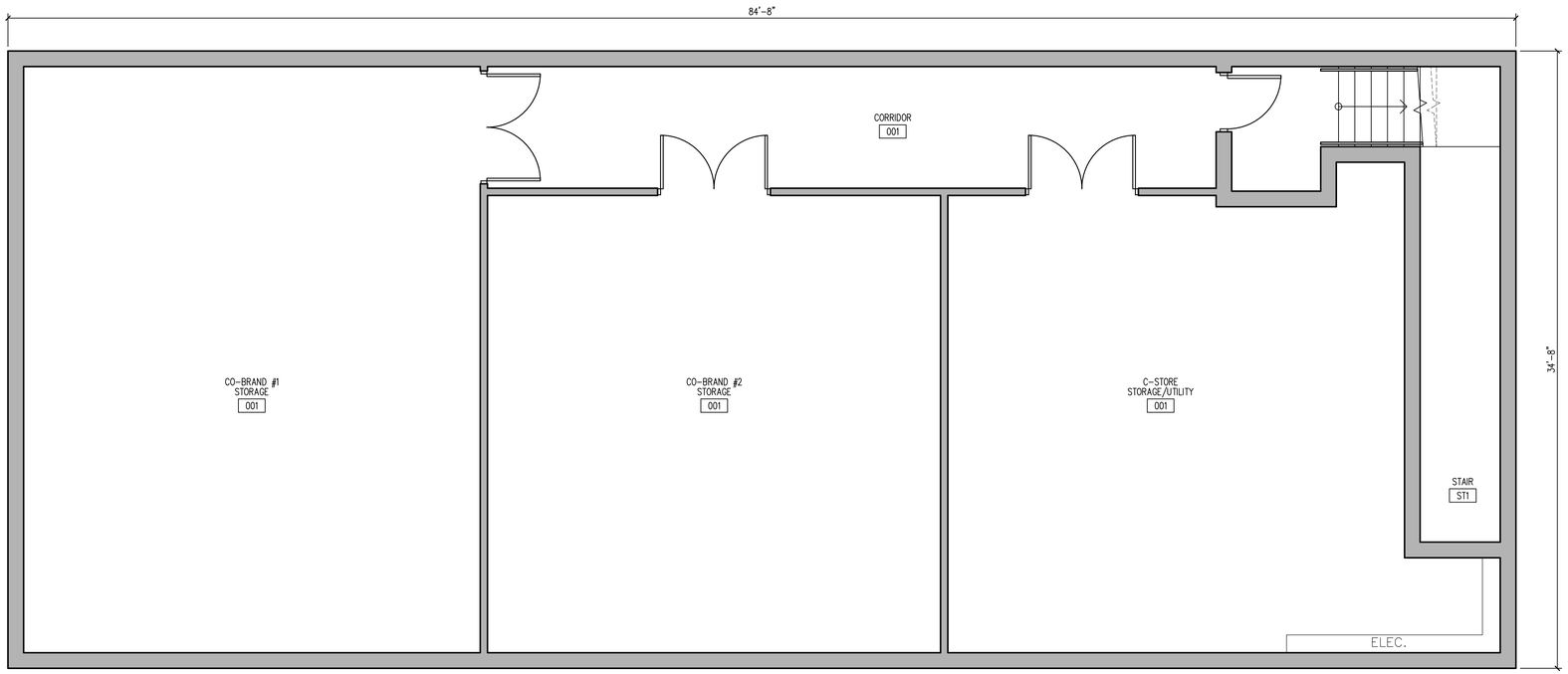
1000 ALLIANCE RD. CINCINNATI, OHIO 45242 USA
(513) 793-3200 ▪ FAX (513) 793-6023

LIGHTING PROPOSAL LD-163550-1

C-STORE
80 ELLA GRASSO TURNPIKE
WINDSOR LOCKS,CT

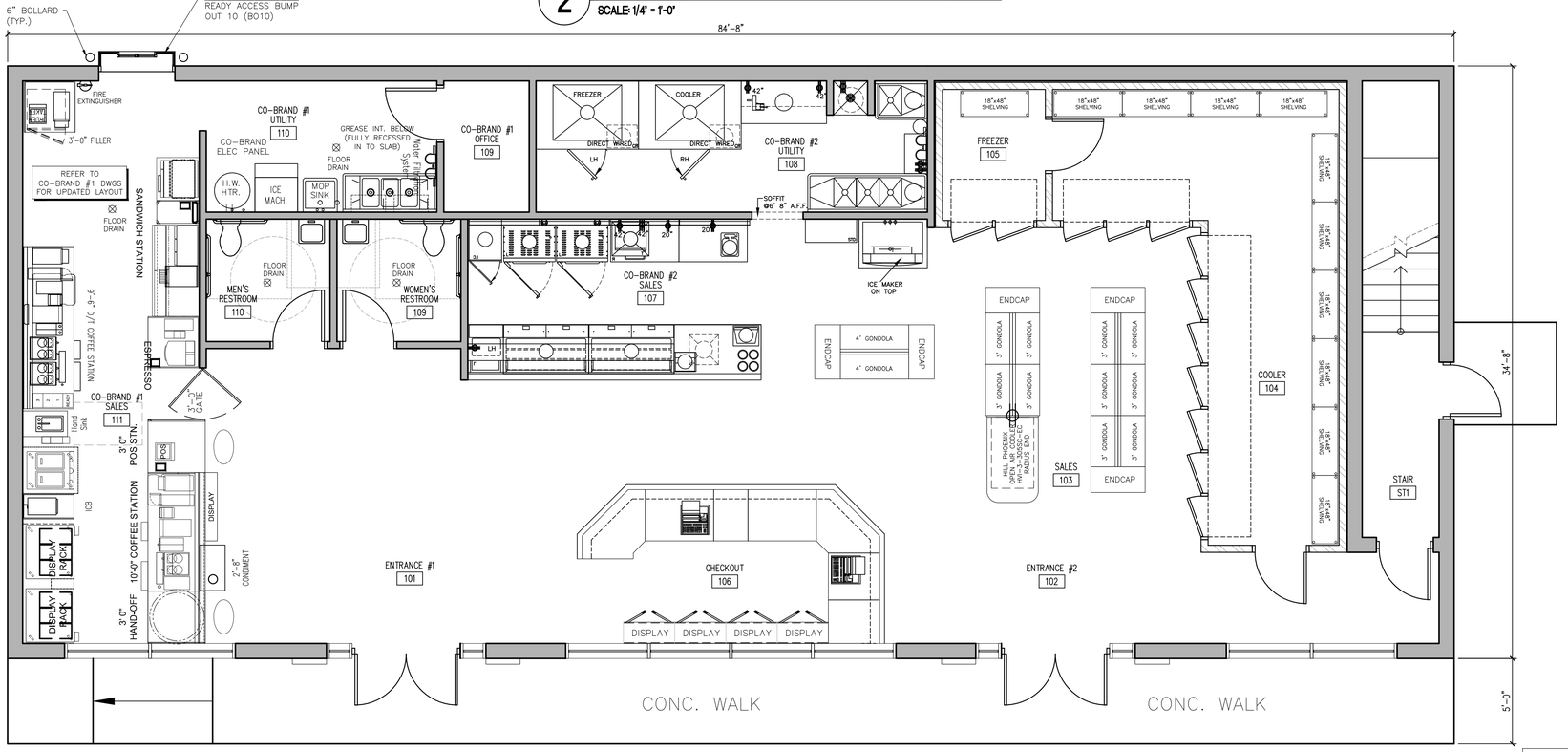
BY:MVE	DATE:11-07-25	REV:11-21-25	SHEET 1 OF 1

SCALE: 1"=16' ARCH D 0 16



2 PROPOSED CONCEPTUAL BASEMENT LEVEL FLOOR PLAN

SCALE: 1/4" = 1'-0"



1 PROPOSED CONCEPTUAL MAIN LEVEL FLOOR PLAN

SCALE: 1/4" = 1'-0"

THIS DRAWING IS TO BE UTILIZED FOR CONCEPT PLANNING PURPOSES ONLY AND IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. THIS DRAWING IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

DRAWN: RK | CHECKED: RK

NOTES:

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NO.	REVISION/ISSUE	DATE

SEALS:

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

ARCHITECT:

RK
Ramiz Khoda
Consulting & Design, LLC
19046 BRUCE B DOWNS BLVD - SUITE #167
TAMPA, FL 33647
TEL.: (860) 880-1786

OWNER:

UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY #209
WETHERSFIELD, CT 06109
(860) 436-6145

APPLICANT:

UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY #209
WETHERSFIELD, CT 06109
(860) 436-6145

PROJECT:

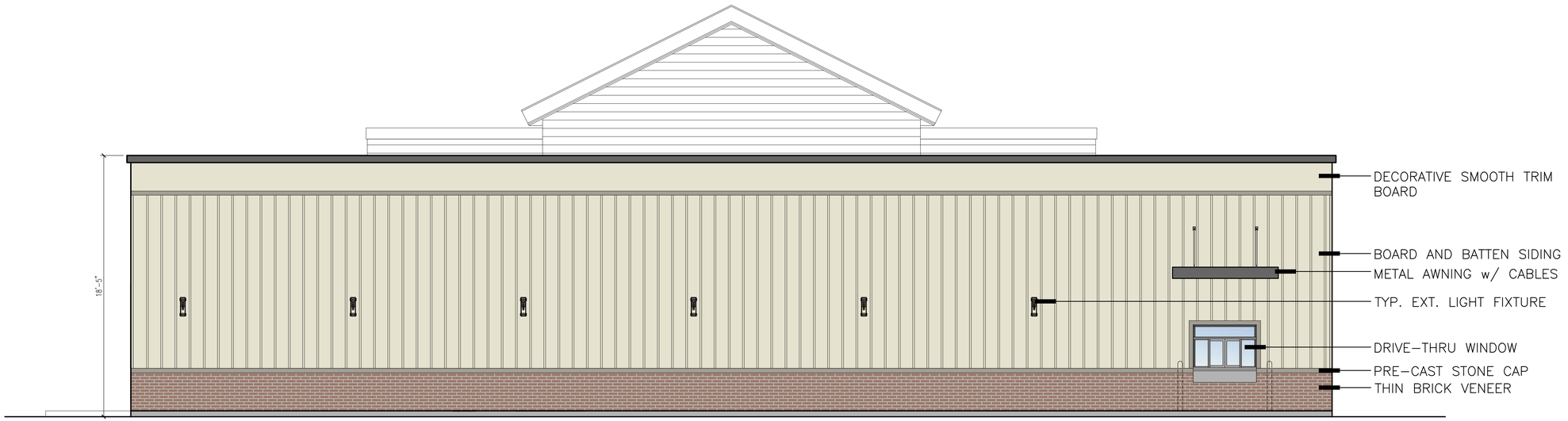
FUELING STATION AND CONVENIENCE STORE RECONSTRUCTION

80 ELLA GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

DRAWING TITLE:

PROPOSED CONCEPTUAL BASEMENT AND MAIN LEVEL FLOOR PLANS

RKCD PROJECT # :	*DRAWING NO.*
25-17	A-101
ISSUE DATE: 10/31/2025	
SCALE: AS NOTED	



1 PROPOSED EAST BUILDING ELEVATION (FRONT)
SCALE: 1/4" = 1'-0"



2 PROPOSED WEST BUILDING ELEVATION (REAR)
SCALE: 1/4" = 1'-0"

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PROJECT:

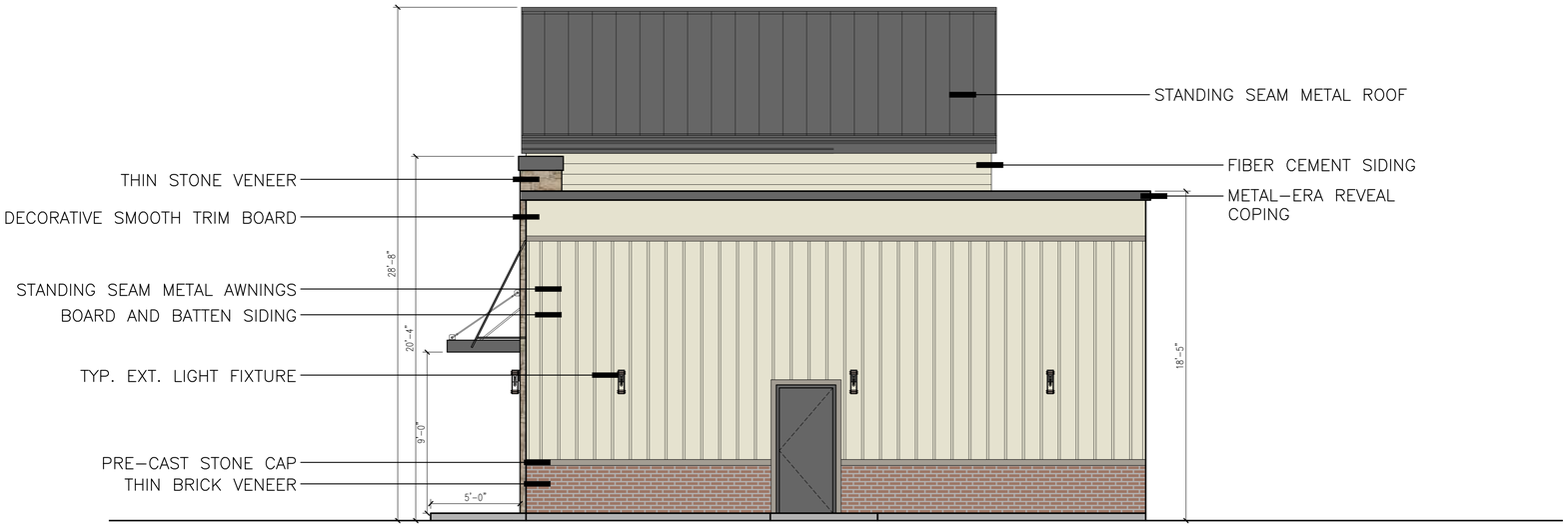
FUELING STATION AND CONVENIENCE STORE RECONSTRUCTION

80 ELLA GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

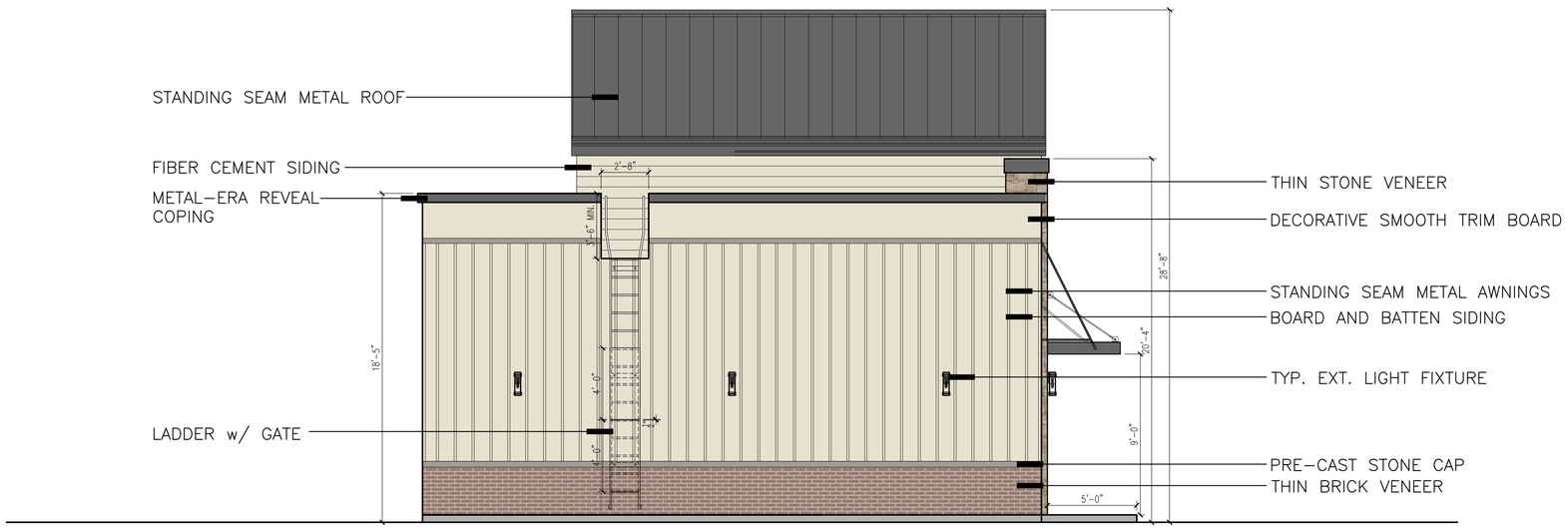
DRAWING TITLE:

PROPOSED CONCEPTUAL BUILDING ELEVATIONS

RKCD PROJECT # :	DRAWING NO.
25-17	A-201
ISSUE DATE: 10/31/2025	
SCALE: AS NOTED	



1 PROPOSED NORTH BUILDING ELEVATION (RIGHT)
SCALE: 1/4" = 1'-0"



2 PROPOSED SOUTH BUILDING ELEVATION (LEFT)
SCALE: 1/4" = 1'-0"

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DRAWN: RK	CHECKED: RK

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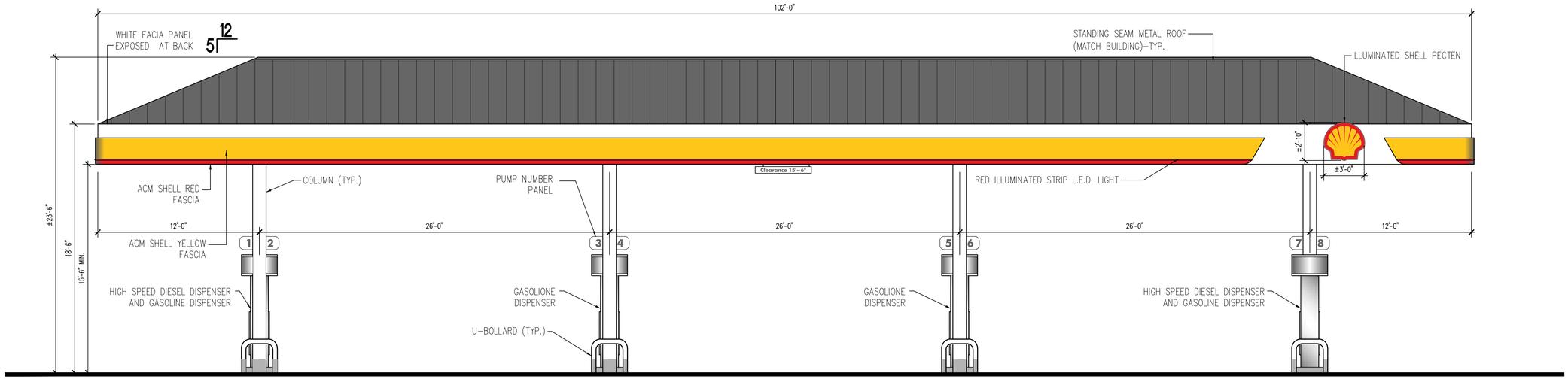
FUELING STATION AND CONVENIENCE STORE RECONSTRUCTION

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WINDSOR LOCKS, CT 06096

DRAWING TITLE:

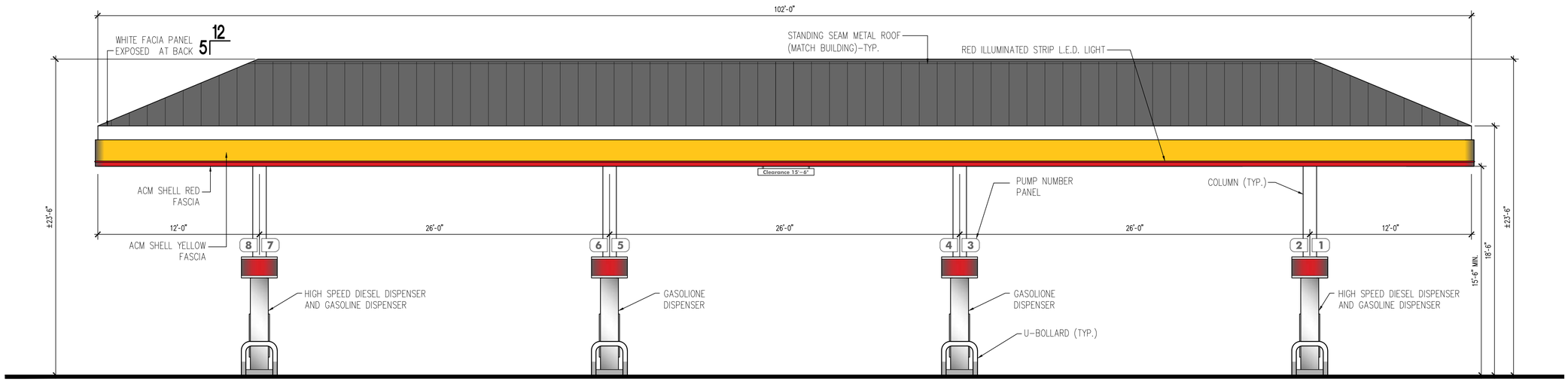
PROPOSED CONCEPTUAL BUILDING ELEVATIONS

RKCD PROJECT # :	DRAWING NO.
25-17	A-202
ISSUE DATE: 10/31/2025	
SCALE: AS NOTED	



1 **PROPOSED CONCEPTUAL FUELING CANOPY EAST ELEVATION (FRONT)**

SCALE: 1/4" = 1'-0"



2 **PROPOSED CONCEPTUAL FUELING CANOPY WEST ELEVATION (REAR)**

SCALE: 1/4" = 1'-0"

THIS DRAWING IS TO BE UTILIZED FOR CONCEPT PLANNING PURPOSES ONLY AND IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. THIS DRAWING IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

DRAWN: RK | CHECKED: RK

NOTES:

This conceptual plan is prepared for conceptual presentation purposes only and is not intended for utilization as a zoning and/or construction document. The existing conditions shown hereon are based upon information that was supplied at the time of plan preparation and may be subject to change upon performance of additional due diligence.

NO.	REVISION/ISSUE	DATE

SEALS:

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

ARCHITECT:

RK
Ramiz Khoda
Consulting & Design, LLC
19046 BRUCE B DOWNS BLVD - SUITE #167
TAMPA, FL 33647
TEL.: (860) 880-1786

OWNER:

UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY #209
WETHERSFIELD, CT 06109
(860) 436-6145

APPLICANT:

UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY #209
WETHERSFIELD, CT 06109
(860) 436-6145

PROJECT:

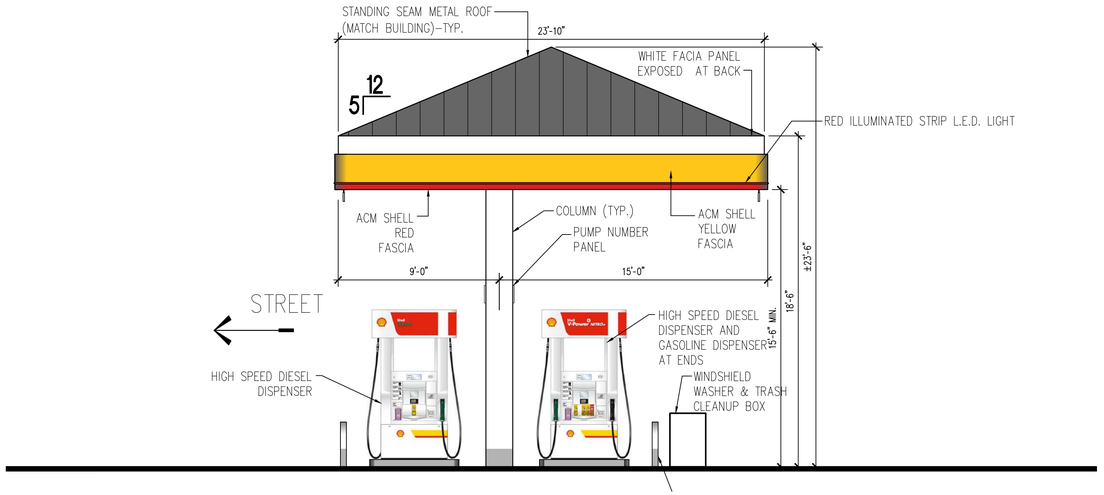
FUELING STATION AND CONVENIENCE STORE RECONSTRUCTION

80 ELLA GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

DRAWING TITLE:

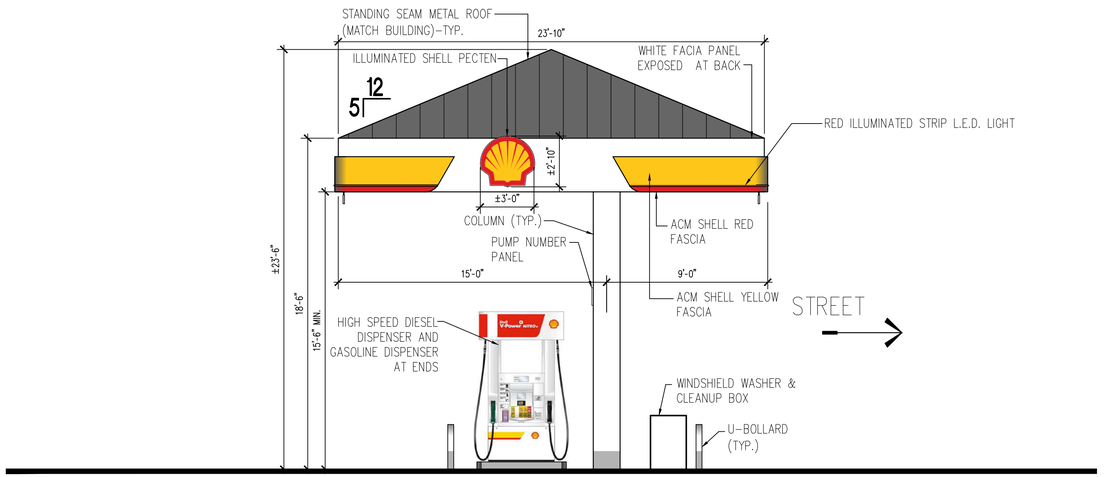
PROPOSED CONCEPTUAL FUELING CANOPY ELEVATIONS

RKCD PROJECT # :	*DRAWING NO.*
25-17	A-203
ISSUE DATE: 10/31/2025	
SCALE: AS NOTED	



1 **PROPOSED CONCEPTUAL FUELING CANOPY NORTH ELEVATION (RIGHT)**

SCALE: 1/4" = 1'-0"



2 **PROPOSED CONCEPTUAL FUELING CANOPY SOUTH ELEVATION (LEFT)**

SCALE: 1/4" = 1'-0"

THIS DRAWING IS TO BE UTILIZED FOR CONCEPT PLANNING PURPOSES ONLY AND IS INTENDED FOR MUNICIPAL AND/OR AGENCY REVIEW AND APPROVAL. THIS DRAWING IS NOT INTENDED AS A CONSTRUCTION DOCUMENT UNLESS INDICATED OTHERWISE.

DRAWN: RK	CHECKED: RK

NOTES:

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TEL.: (860) 880-1786

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UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY #209
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(860) 436-6145

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UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY #209
WETHERSFIELD, CT 06109
(860) 436-6145

PROJECT:

FUELING STATION AND CONVENIENCE STORE RECONSTRUCTION

80 ELLA GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

DRAWING TITLE:

PROPOSED CONCEPTUAL FUELING CANOPY ELEVATIONS

RKCD PROJECT # :	*DRAWING NO.*
25-17	A-204
ISSUE DATE: 10/31/2025	
SCALE: AS NOTED	

ENVIRONMENTAL SERVICES

CMG EST. 2002

ENGINEERING SERVICES

STORMWATER REPORT

"UNITED FOOD MART"
FUELING STATION & CONVENIENCE STORE RECONSTRUCTION
80 ELLA GRASSO TURNPIKE (ROUTE 75)
WINDSOR LOCKS, CT

DECEMBER 17, 2025

PREPARED FOR:

UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY #209
WETHERSFIELD, CT 06109

PREPARED BY:

CMG ENVIRONMENTAL, INC.
CMG ID 2020-158



67 HALL ROAD
STURBRIDGE, MA 01566

PHONE (774) 241-0901
FAX (774) 241-0906

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Appendix B NRCS Soils Data & Rawls Rate Table

Appendix C Pre-Development Drainage Calculations

Appendix D Post-Development Drainage Calculations

Appendix E Long Term Operation & Maintenance Plan

STORMWATER MANAGEMENT NARRATIVE

UNITED PETROLEUM, LLC
Filling Station / Convenience Store Expansion
80 Ella Grasso Turnpike (Route 75)
Windsor Locks, CT

This letter report summarizes our hydrologic analysis of site runoff conditions and proposed stormwater drainage system design for the site located at #80 Ella Grasso Turnpike (Rte. 75) in Windsor Locks, CT (the "Site").

Project Description

The approximately 0.63 +/- Acre Site is currently occupied by an existing gasoline filling station/ convenience store, associated pump islands, and paved parking. Site is located in a B-1 Business Zoning District and is serviced by Town water and sanitary sewer services.

The project Applicant, *UNITED PETROLEUM, LLC*, is proposing to demolish the existing filling station /convenience store and reconfigure the Site with construction of a new 2,935 +/- SF convenience store building with drive-thru window and four (4) fuel dispenser islands with overhead canopy. Project is considered a "re-development" and will decrease existing Site impervious area by approximately -1,651 +/- SF.

Hydrologic Calculation Methodology

Hydrology

Computer Model: HydroCAD 10.10 © 1986-2020 Applied Microcomputer Systems, drainage modeling software;

Hydrologic Methodology: TR-20 & TR-55 Methodology is used in order to model the effects of the existing & proposed on-site stormwater systems. A minimum 5-minute time of concentration is assumed in the included calculations.

Surface Runoff Conditions

Rainfall Intensity: NOAA Atlas 14, Volume 10, Version 3 – Windsor Locks, CT Point Precipitation Frequency Estimates

2-Year Storm = 3.21 in.
10-Year Storm = 5.13 in
25-Year Storm = 6.32 in.
100-Year Storm = 8.16 in.

Watershed Areas: Watershed areas are calculated using AutoCAD software based on the subcatchment areas delineated on the enclosed "Existing Drainage Areas" Sheet D-1 and "Proposed Drainage Areas" Sheet D-2. The subcatchment areas shown, times of concentration and runoff coefficients are consistent with the Hydrologic Methodology discussed above.

Flood Plain

The Site is not located within a designated Special Flood Hazard Area zone as shown on Flood Insurance Rate Map (FIRM) Town of Windsor Locks, CT Community Panel Number 09003C0216F, Revise Date September 26, 2008.

Appendix A includes a copy of Site USGS Site Location Map, FEMA Flood Insurance Mapping, and NOAA rainfall data.

Soils & Topography

According to the Natural Resources Conservation Service's online mapping the Site's soil types are classified as:

- Urban land (307). Site soils are categorized as Hydrologic Soil Group "D".
- Hinckley loamy sand (38E), 15 to 45 percent slopes categorized as Hydrologic Soil Group "A".

CMG is assuming Site soils are Hydrologic Group "A" based on the mapped presence of Hinckley loamy sand at the rear of the Site and Mark Smith, PE's (CMG) limited site inspection of the existing drywells.

CMG understands the existing Property Owner notes there have been no observed drainage problems at the Site or issues of surface ponding at any of the four (4) existing drywell locations.

Soil Permeability (k):

Based upon observed permeability and abutting soil (38E – Hinckley loamy sand (Hydrologic Soil Group: A)), Site subsurface soils within the development area are classified as a "sand".

Design permeability (k) value:

***k* = 8.27 in / hr** (Rawls Rate: Sand 8.27 in/hr)

Estimated Seasonal High Groundwater (ESHGW) Elevation = Unknown

Appendix B includes a copy of NRCS soil data and the CT Stormwater Quality Manual "Default (Rawls) Infiltration Rates" Table for reference.

NOTE: CMG recommends confirmatory soil testing be performed in the vicinity of the existing and proposed Site drywells to confirm actual Soil Type and ESHGW information. Additionally, all existing and proposed drywells are to be cleaned of any existing debris and silt upon completion of construction.

Existing Conditions

Stormwater runoff from the Site's pavement areas is collected by four (4) separate drywell catch basins. Each drywell consists of a 6 FT diameter x 5 FT depth concrete drywell structure assumed to be surrounded by 1 FT of crushed stone. CMG confirmed via camera inspection that the existing filling station canopy is piped directly into catch basins CB#2 and CB#4. There are no other visible stormwater structures present on-site.

OUTFALL (1S) – South Curbcut to Ella Grasso Turnpike (Route 75) Right-of-Way

Outfall 1S consists of the Site's southernmost curbcut in the vicinity of drywell catch basin CB#1. Catch basin #1 is a drywell catch basin with paved ponding area surrounding its immediate vicinity. Site topography is very flat and only varies by less than 1 FT across the entire Site. In the event there was more rainfall than the drywell can handle, the ponding area would be predicted to overflow across the south curbcut to the Route 75 gutter line. Pre-Development hydrology calculations predict this may only occur during the 100-year storm event.

OUTFALL (2S) – North Curbcut to Ella Grasso Turnpike (Route 75) Right-of-Way

Outfall 2S consists of the Site's northern most curbcut in the vicinity of drywell catch basin CB#2. This watershed area consists of the northern half of the Site which drains to two (2) of the drywell catch basins; CB#2 and CB#4. The Sites entire canopy roof area is directly piped to these two drywell catch basins along with runoff from the northern half of Site pavement areas. Similar to Outfall 1S these two (2) drywells share a surface ponding area which would be predicted to overflow the Site's northern most curbcut to the Route 75 gutter line. Pre-Development hydrology calculations predict this may occur during the 10-year, 25-year, and 100-year storm events.

OUTFALL (3S) – Southwest Corner of Site

Outfall 3S consists of the Site's southwest corner near the remains of a former Site out building (only foundation remaining) in the vicinity of drywell catch basin CB#3. This drywell collects runoff from the southwest corner of the Site. In the event there was more rainfall than the drywell can handle, the ponding area would be predicted to overflow through an existing 6 FT wide opening in the curbing towards the southwest corner of the Site via overland flow. Pre-Development hydrology calculations predict this may occur during the 10-year, 25-year, and 100-year storm events.

There is currently no stormwater treatment provided as on-site catch basin grates are placed directly on top of the drywell structures.

The **"Pre-Development Drainage Map" (Sheet D-1)** and associated HydroCAD calculations are included as **Appendix C.**

Proposed Drainage Improvements

The project Applicant, *United Petroleum, LLC* is proposing to incorporate on-site stormwater design improvements to collect and pretreat the Site's storm water runoff to the "maximum extent achievable" given existing site conditions.

The following design elements will be incorporated into the proposed development's storm water management system:

OUTFALL (1S) – South Curbcut to Ella Grasso Turnpike (Route 75) Right-of-Way

- The existing drywell will be retrofitted and attached to a new deep sump hooded catch basin CB#1 to provide pre-treatment prior to discharge to the existing drywell.
- On-site ponding area and Outfall 1S will be maintained with no proposed increase to off-site runoff.

OUTFALL (2S) – North Curbcut to Ella Grasso Turnpike (Route 75) Right-of-Way

- A new twenty (20) unit 4 FT x 4FT x 4FT concrete galley drywell system is proposed for this area of the Site.
- The building and canopy roof drains will be directly piped to this expanded drywell.
- Two (2) new deep sump hooded catch basins are proposed CB#2 & CB#4 to provide pre-treatment of parking lot runoff prior to discharge to the drywell.
- On-site ponding area and Outfall 2S will be maintained with no proposed increase to off-site runoff.

OUTFALL (3S) – Southwest Corner of Site

- The existing drywell will be retrofitted and attached to a new deep sump hooded catch basin CB#3 to provide pre-treatment prior to discharge to the existing drywell.
- On-site ponding area and Outfall 3S will be maintained with no proposed increase to off-site runoff.

In addition, the Project will result in a small decrease of approximately -1,651 SF in impervious area.

The **"Post-Development Drainage Map" (Sheet D-2)** and associated calculations are included as **Appendix D.**

A **Long-Term Operation and Maintenance Plan** for the Site's stormwater system is also provided as **Appendix E**.

CT DEEP 2024 STORMWATER MANAGEMENT STANDARDS

STANDARD 1: (Runoff Volume and Pollutant Reduction):

Preserve pre-development hydrology and pollutant loads to protect water quality and maintain groundwater recharge.

Proposed Compliance to the "maximum extent achievable":

- **Existing Site hydrology is to be preserved to maximum extent achievable. Combination of existing and proposed drywells provide for on-site retaining of greater than 1.3" of runoff. The proposed stormwater system will retain the 2-year design storm equivalent to 3.21" of runoff.**
- **Stormwater pre-treatment improvements include four (4) new deep sump hooded catch basins to collect Site parking lot runoff prior to discharge to the on-site drywells.**
- **Site is a "re-development" and a land use high potential pollutant load (LUHPPL).**

STANDARD 2: (Stormwater Runoff Quantity Control):

Do not exceed pre-development peak flow rates and manage the volume and timing of runoff to prevent downstream flooding, channel erosion, and other adverse impacts, and safely convey flows into, through, and from structural stormwater BMPs.

Proposed Compliance:

- **There is no proposed increase to Post-development Site peak runoff;**
- **Site is not located within the 100-year flood plain.**

STANDARD 3: (Construction Soil Erosion and Sediment Control):

Design, install, and maintain effective soil erosion and sedimentation control measures during construction and land disturbance activities. Consideration for final site stabilization should also be included during the development of a SESC Plan.

Proposed Compliance:

- **Site construction will fully comply with all state and municipal erosion and sediment control requirements. The proposed erosion and sedimentation controls and details are included on Sheet C-4.0 title "Erosion and Sedimentation Control Plan" in the Plan Set.**

STANDARD 4: (Post-Construction Operation and Maintenance):

Perform long-term maintenance of structural stormwater management systems to ensure that they continue to function as designed and implement operational source control and pollution prevention measures.

Proposed Compliance:

- **A long-term post-construction operation and maintenance plan for the Site is attached as Appendix E.**

STANDARD 5: (Stormwater Management Plan):

Document how the proposed stormwater management measures meet the stormwater management standards, performance criteria, and design guidelines.

Proposed Compliance:

- **CMG is providing this report in compliance with state requirements and includes the following**
    - **Stormwater Management Narrative.**
    - **Design Calculations.**
    - **A Soil Erosion and Sediment Control Plan.**
    - **A Long-term Operation and Maintenance Plan.**
    - **Other Applicable Supporting Documentation.**

CMG's design achieves a reduction in sediment & nutrient pollutant loading through the introduction of stormwater pretreatment before entering the existing underground infiltration system, a reduction in total impervious surface, and the preservation of pre-development site hydrology to maximum extent achievable.

The proposed planting plan will reduce soil erosion from stormwater runoff in compliance with state and municipal stormwater regulations to the maximum extent achievable through the use of low maintenance plantings and seed mixes.

Details of the complete storm water management system design are provided on the **Site Plan Set entitled "United Petroleum Proposed Filling Station Reconstruction, #80 Ella T. Grasso Turnpike Windsor Locks, CT 06096" prepared by CMG, revise date December 17, 2025.**

The Site's "Long Term Operation and Maintenance Plan" is included as **Appendix E**.

Table No. 1 shows the proposed stormwater design improvements will result in no increase to off-site runoff at each of the three Site stormwater outfalls during all design storm events.

Table No. 2 provides a summary of the Pre- and Post-Development drainage areas.

TABLE NO. 1

12/16/2025

STORMWATER RUNOFF AND VOLUME SUMMARY
FUELING STATION AND CONVENIENCE STORE RECONSTRUCTION
#80 ELLA T. GRASSO TURNPIKE WINDSOR LOCKS, CT

Pre-Site Development (Fig D1) Conditions					
		2-Year	**10-Year**	**25-Year**	**100-Year**
1S - SOUTH CURBCUT	***Peak Flow (cfs)***	***0.00***	***0.00***	***0.00***	***0.30***
	Runoff Volume (cf)	*0*	*0*	*0*	*268*
2S - NORTH CURBCUT	***Peak Flow (cfs)***	***0.00***	***0.27***	***0.88***	***1.89***
	Runoff Volume (cf)	*0*	*232*	*813*	*1,764*
3S - SOUTHWEST CORNER	***Peak Flow (cfs)***	***0.00***	***0.34***	***0.68***	***1.15***
	Runoff Volume (cf)	*0*	*510*	*974*	*1,755*

Post-Site Development (Fig D2) Conditions					
		2-Year	**10-Year**	**25-Year**	**100-Year**
1S - SOUTH CURBCUT	***Peak Flow (cfs)***	***0.00***	***0.00***	***0.00***	***0.30***
	Runoff Volume (cf)	*0*	*0*	*0*	*267*
2S - NORTH CURBCUT	***Peak Flow (cfs)***	***0.00***	***0.00***	***0.20***	***1.75***
	Runoff Volume (cf)	*0*	*0*	*75*	*999*
3S - SOUTHWEST CORNER	***Peak Flow (cfs)***	***0.00***	***0.32***	***0.65***	***1.06***
	Runoff Volume (cf)	*0*	*418*	*823*	*1,508*

TABLE NO. 2

DRAINAGE AREA CALCULATIONS
UNITED PETROLEUM - #80 ELLA GRASSO TURNPIKE
WINDSOR LOCKS, CT

PRE-DEVELOPMENT DRAINAGE AREAS (s.f.)

Area	Bit. Pavement Impervious	Existing Roof Area	Gravel Impervious	Soil Type A Grass/Ldscp	Watershed Total
1	3,940			362	4,302
2	8,050	4,464		1,443	13,957
3	6,077	297	1,270	1,586	9,230
					Total
	18,067	4,761	1,270	3,391	**27,489 s.f.**
				Total Site Area= 27,489 s.f.	**0.63** Ac
	Total Impervious=		**24,098 s.f.**	0.63 Ac	
	Total Open Space =		**3,391 s.f.**		

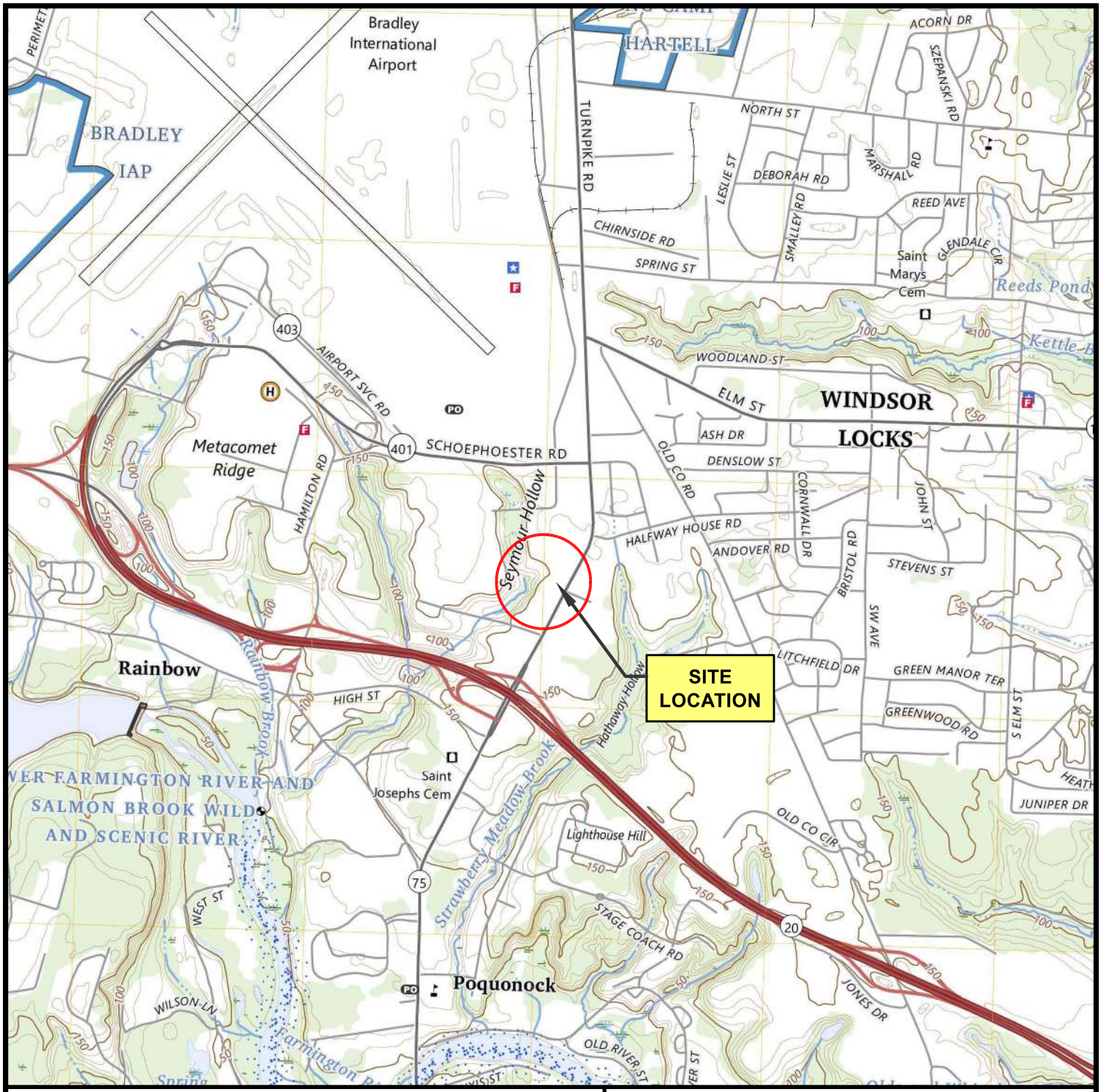
POST-DEVELOPMENT DRAINAGE AREAS (s.f.)

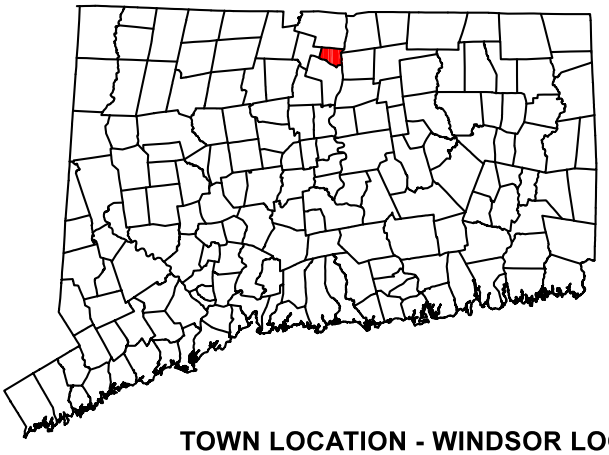
Area	Bit. Pavement Impervious	Proposed Roof Area	Gravel Impervious	Soil Type A Grass/Ldscp	Watershed Total
1A	3,667			492	4,159
2A	6,996			2,406	9,402
2B		2,448			2,448
2C		2,936			2,936
3A	6,400			2,144	8,544
					0
					Total
	17,063	5,384	0	5,042	***27,489 s.f.***
				Total Site Area= 27,489 s.f.	**0.63** Ac
	Total Impervious=		**22,447 s.f.**	0.63 Ac	
	Total Open Space =		**5,042 s.f.**		

Note:
[1] All Drainage Areas are calculated using CAD Software based on Pre- & Post Development Drainage Plans prepared by CMG date 12/16/25

Appendix A

USGS Site Location Map
&
FEMA Flood Plain Mapping
&
NOAA Precipitation Frequency Estimates





TOWN LOCATION - WINDSOR LOCKS, CT

FIGURE 1 - SITE LOCATION

80 ELLA GRASSO TURNPIKE (ROUTE 75)
WINDSOR LOCKS, CT 06096
CMG ID 2020-158

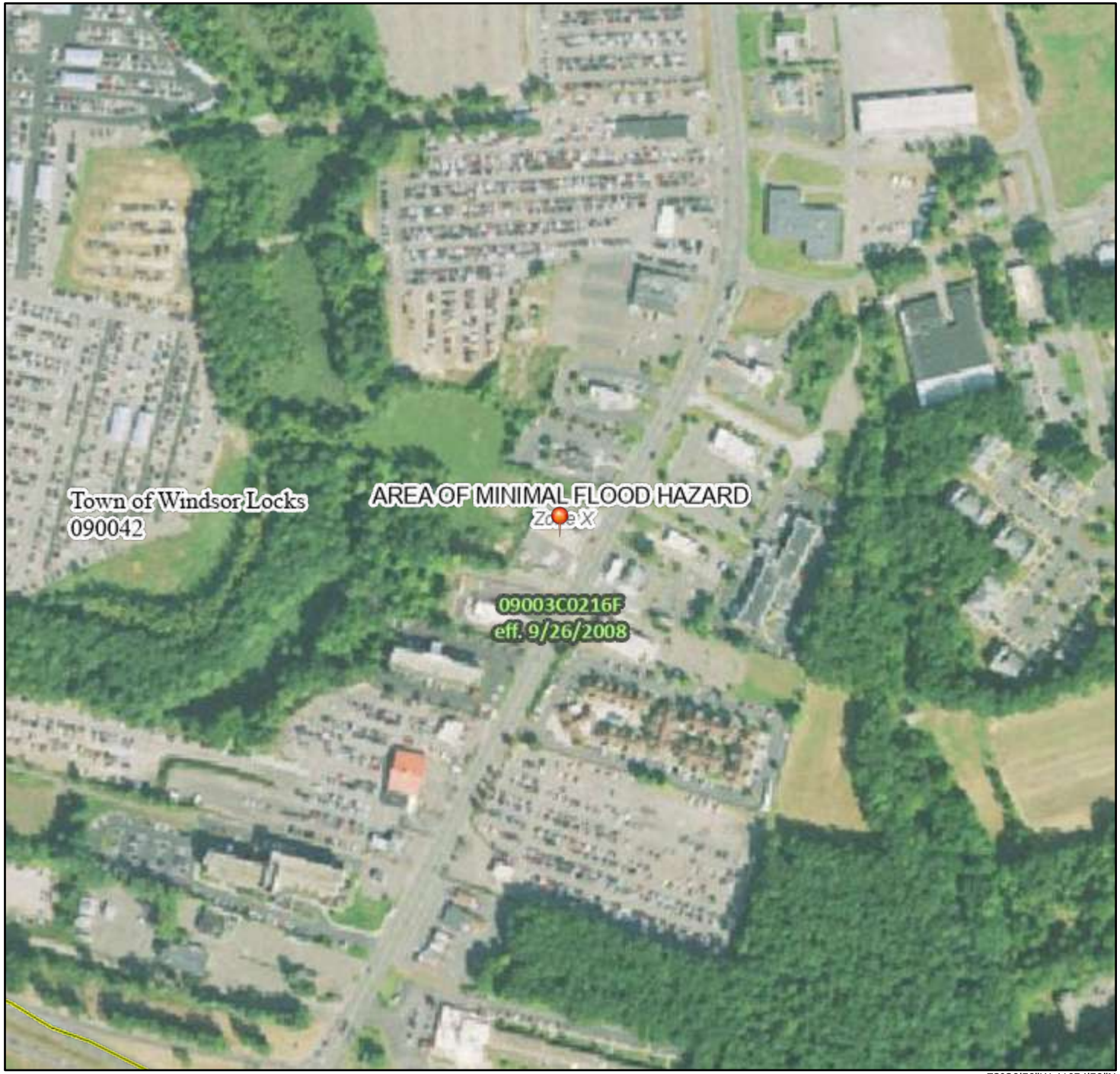
SCALE: 1" = 2000'

2000 FT. 0 2000 FT.

ENVIRONMENTAL SERVICES
CMG EST. 2002
ENGINEERING SERVICES
67 HALL ROAD. STURBRIDGE MA 01566

National Flood Hazard Layer FIRMette

72°40'37"W 41°55'26"N



72°39'59"W 41°54'59"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/16/2025 at 9:27 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOAA Atlas 14, Volume 10, Version 3
Location name: Windsor Locks, Connecticut, USA*
Latitude: 41.9202°, Longitude: -72.6716°
Elevation: 159 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.347** (0.265-0.454)	**0.417** (0.318-0.545)	**0.531** (0.404-0.697)	**0.625** (0.473-0.825)	**0.754** (0.555-1.04)	**0.852** (0.616-1.20)	**0.954** (0.671-1.39)	**1.07** (0.716-1.60)	**1.23** (0.798-1.91)	**1.37** (0.866-2.16)
10-min	**0.492** (0.376-0.643)	**0.590** (0.450-0.772)	**0.751** (0.571-0.986)	**0.884** (0.670-1.17)	**1.07** (0.786-1.47)	**1.21** (0.872-1.70)	**1.35** (0.951-1.97)	**1.51** (1.01-2.26)	**1.75** (1.13-2.70)	**1.94** (1.23-3.06)
15-min	**0.579** (0.442-0.756)	**0.694** (0.530-0.908)	**0.883** (0.672-1.16)	**1.04** (0.788-1.37)	**1.26** (0.924-1.73)	**1.42** (1.02-2.00)	**1.59** (1.12-2.32)	**1.78** (1.19-2.66)	**2.06** (1.33-3.18)	**2.28** (1.44-3.60)
30-min	**0.776** (0.593-1.01)	**0.936** (0.715-1.22)	**1.20** (0.913-1.57)	**1.42** (1.07-1.87)	**1.72** (1.26-2.37)	**1.94** (1.40-2.74)	**2.18** (1.53-3.18)	**2.44** (1.64-3.65)	**2.82** (1.82-4.37)	**3.13** (1.98-4.94)
60-min	**0.973** (0.743-1.27)	**1.18** (0.900-1.54)	**1.51** (1.15-1.99)	**1.79** (1.36-2.37)	**2.18** (1.60-3.00)	**2.47** (1.78-3.48)	**2.77** (1.95-4.05)	**3.11** (2.08-4.64)	**3.59** (2.32-5.55)	**3.98** (2.52-6.28)
2-hr	**1.26** (0.967-1.63)	**1.51** (1.16-1.97)	**1.93** (1.48-2.52)	**2.28** (1.74-3.00)	**2.76** (2.05-3.79)	**3.12** (2.27-4.38)	**3.50** (2.49-5.12)	**3.95** (2.65-5.86)	**4.60** (2.99-7.08)	**5.16** (3.27-8.09)
3-hr	**1.45** (1.12-1.87)	**1.74** (1.35-2.26)	**2.23** (1.71-2.90)	**2.63** (2.01-3.44)	**3.18** (2.37-4.36)	**3.59** (2.63-5.03)	**4.03** (2.88-5.89)	**4.56** (3.07-6.75)	**5.35** (3.48-8.20)	**6.03** (3.83-9.42)
6-hr	**1.82** (1.41-2.34)	**2.20** (1.71-2.84)	**2.83** (2.19-3.66)	**3.36** (2.58-4.36)	**4.08** (3.05-5.56)	**4.60** (3.39-6.43)	**5.18** (3.74-7.56)	**5.89** (3.98-8.67)	**6.99** (4.55-10.6)	**7.93** (5.06-12.3)
12-hr	**2.22** (1.74-2.84)	**2.73** (2.13-3.49)	**3.56** (2.77-4.56)	**4.25** (3.29-5.47)	**5.19** (3.92-7.05)	**5.89** (4.37-8.19)	**6.65** (4.84-9.67)	**7.61** (5.16-11.1)	**9.10** (5.95-13.8)	**10.4** (6.66-16.0)
24-hr	**2.57** (2.02-3.26)	**3.21** (2.52-4.08)	**4.26** (3.34-5.42)	**5.13** (4.00-6.56)	**6.32** (4.80-8.55)	**7.20** (5.38-9.98)	**8.16** (5.99-11.9)	**9.41** (6.40-13.7)	**11.4** (7.48-17.2)	**13.2** (8.45-20.2)
2-day	**2.86** (2.26-3.60)	**3.62** (2.87-4.56)	**4.87** (3.84-6.16)	**5.91** (4.64-7.52)	**7.34** (5.62-9.89)	**8.37** (6.32-11.6)	**9.54** (7.08-13.9)	**11.1** (7.57-16.0)	**13.7** (8.98-20.4)	**15.9** (10.3-24.3)
3-day	**3.12** (2.48-3.91)	**3.96** (3.14-4.97)	**5.34** (4.22-6.72)	**6.48** (5.10-8.21)	**8.05** (6.19-10.8)	**9.19** (6.96-12.7)	**10.5** (7.81-15.2)	**12.2** (8.35-17.6)	**15.1** (9.94-22.5)	**17.7** (11.4-26.8)
4-day	**3.36** (2.68-4.20)	**4.26** (3.40-5.34)	**5.74** (4.56-7.21)	**6.97** (5.50-8.80)	**8.66** (6.67-11.6)	**9.88** (7.50-13.6)	**11.3** (8.41-16.3)	**13.1** (8.99-18.8)	**16.2** (10.7-24.1)	**19.0** (12.3-28.7)
7-day	**4.05** (3.24-5.03)	**5.08** (4.07-6.32)	**6.77** (5.40-8.46)	**8.17** (6.48-10.3)	**10.1** (7.82-13.4)	**11.5** (8.76-15.7)	**13.1** (9.78-18.8)	**15.2** (10.4-21.7)	**18.6** (12.3-27.5)	**21.8** (14.1-32.7)
10-day	**4.72** (3.80-5.85)	**5.82** (4.68-7.22)	**7.62** (6.10-9.49)	**9.11** (7.26-11.4)	**11.2** (8.66-14.8)	**12.7** (9.66-17.2)	**14.3** (10.7-20.4)	**16.5** (11.4-23.5)	**20.1** (13.3-29.6)	**23.3** (15.1-35.0)
20-day	**6.83** (5.53-8.40)	**7.99** (6.46-9.84)	**9.88** (7.97-12.2)	**11.5** (9.18-14.2)	**13.6** (10.6-17.8)	**15.2** (11.6-20.4)	**17.0** (12.6-23.7)	**19.1** (13.3-27.0)	**22.5** (15.0-32.9)	**25.5** (16.6-38.0)
30-day	**8.62** (7.01-10.6)	**9.80** (7.96-12.0)	**11.7** (9.49-14.4)	**13.3** (10.7-16.5)	**15.5** (12.1-20.1)	**17.2** (13.1-22.7)	**18.9** (14.0-26.0)	**21.0** (14.6-29.4)	**24.1** (16.1-34.9)	**26.6** (17.4-39.5)
45-day	**10.9** (8.88-13.3)	**12.1** (9.86-14.8)	**14.1** (11.4-17.3)	**15.7** (12.7-19.4)	**18.0** (14.0-23.1)	**19.7** (15.0-25.8)	**21.5** (15.8-29.1)	**23.4** (16.4-32.6)	**26.0** (17.4-37.5)	**28.0** (18.3-41.4)
60-day	**12.8** (10.5-15.6)	**14.0** (11.5-17.1)	**16.1** (13.1-19.7)	**17.8** (14.4-21.9)	**20.2** (15.8-25.7)	**22.0** (16.8-28.6)	**23.8** (17.4-31.8)	**25.6** (17.9-35.5)	**27.8** (18.7-39.9)	**29.3** (19.2-43.2)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

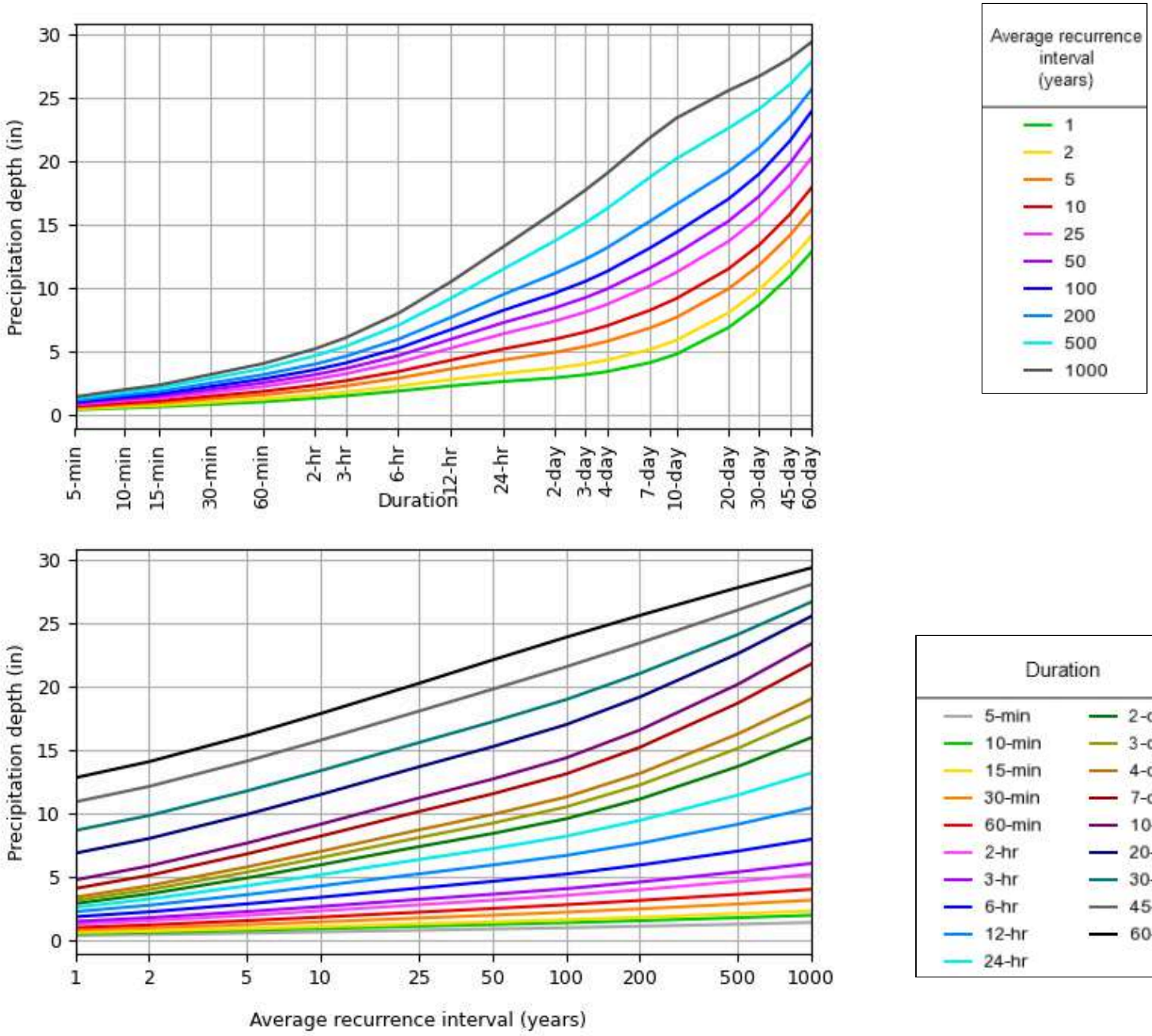
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.9202°, Longitude: -72.6716°



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Fri Oct 31 16:51:11 2025

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Maps & aerials

Small scale terrain

Appendix B

NCRS Soil Mapping
&
Rawls Rate Table



Map Scale: 1:847 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 6, Sep 16, 2025

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

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
38E	Hinckley loamy sand, 15 to 45 percent slopes	0.1	3.6%
307	Urban land	3.2	96.4%
Totals for Area of Interest		**3.4**	**100.0%**

State of Connecticut, Western Part

307—Urban land

Map Unit Setting

National map unit symbol: 9lmh
Elevation: 0 to 2,000 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 120 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Typical profile

H - 0 to 6 inches: material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Udorthents, wet substratum

Percent of map unit: 10 percent
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Unnamed, undisturbed soils

Percent of map unit: 10 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 6, Sep 16, 2025

State of Connecticut, Western Part

38E—Hinckley loamy sand, 15 to 45 percent slopes

Map Unit Setting

National map unit symbol: 2svmj
Elevation: 0 to 1,280 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Hinckley

Setting

Landform: Eskers, kames, outwash deltas, outwash terraces, moraines, outwash plains, kame terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 15 to 45 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 5 percent
Landform: Eskers, kames, moraines, outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Outwash plains, outwash terraces, moraines, eskers, kames
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Agawam

Percent of map unit: 3 percent
Landform: Eskers, kame terraces, outwash deltas, outwash terraces, moraines, kames, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, riser
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent
Landform: Kames, eskers, outwash deltas, outwash plains, kame terraces, outwash terraces, moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave

Hydric soil rating: No

Data Source Information

Soil Survey Area: State of Connecticut, Western Part
Survey Area Data: Version 6, Sep 16, 2025

Table 10- 2 Default (Rawls) Infiltration Rates for Use as Design Infiltration Rates with Static Method Sizing

USDA Soil Textural Class[1]	Hydrologic Soil Group	Default Infiltration Rate (inches/hour)
Sand	A	8.27
Loamy Sand	A	2.41
Sandy Loam	A	1.02
Loam	B	0.52
Silt Loam	B	0.27
Sandy Clay Loam	C	50% of Slowest Field Measured Infiltration Rate Determined from Field Infiltration Testing
Clay Loam	D	50% of Slowest Field Measured Infiltration Rate Determined from Field Infiltration Testing
Silty Clay Loam	D	50% of Slowest Field Measured Infiltration Rate Determined from Field Infiltration Testing
Sandy Clay	D	50% of Slowest Field Measured Infiltration Rate Determined from Field Infiltration Testing
Silty Clay	D	50% of Slowest Field Measured Infiltration Rate Determined from Field Infiltration Testing
Clay	D	50% of Slowest Field Measured Infiltration Rate Determined from Field Infiltration Testing

Source: The infiltration rates shown in this table are saturated hydraulic conductivities for uncompacted soils adapted from Rawls, Brakensiek, and Saxton (1982).[72]

Notes:
[1] Soil textural class as determined from field soil evaluation described in Soil Evaluation Guidance.

[72] Rawls, W. I., D. L. Brakensiek, and K. E. Saxton. 1982. Soil water characteristics. Transactions of the American Society of Agricultural Engineers, 25(5):13l6-1328.

Appendix C

Pre-Development Drainage Calculations

LEGEND

- 100 — EXISTING CONTOURS
- 100 — PROPOSED CONTOURS
- 100x0 — SPOT GRADE
- SURFACE RUNOFF FLOW DIRECTION
- 2 — WATERSHED SUBCATCHMENT
- 1P — POND AREA
- 1S — OFF-SITE STORMWATER OUTFALL LOCATION
- WATERSHED BOUNDARY
- TIME OF CONCENTRATION FLOW PATH

N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782

N/F
NAPOLI WINDSOR LOCKS, LLC
MAP ID: 039-001-012
#70 ELLA T. GRASSO TPK
VOL 477 PG 1079

N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782

3S

EXIST. M.H.
TF=158.89
4"Ø PVC
W/90° BEND
FL. = 159.91
WATER = 156.17

EXIST. M.H.
TF=158.89
4"Ø PVC
W/90°BEND
FL. = 156.67
WATER = 156.51

3

6" PVC ROOF DRAIN (APPROX.)

EXIST. C.B.#3
DRYWELL
TF=157.91
WATER = 153.1
BOTTOM = 152.7

6" PVC CANOPY DRAIN (APPROX.)

6" PVC UNKNOWN
(PLUGGED AT 15')

EXIST. C.B.#4
DRYWELL
TF=157.33
BOTTOM = 152.7

6" PVC
(PLUGGED AT 17')

LL. RAMP

RAMP

RAMP

APPROX. SEWER LINE (RECORD)

EXISTING
BUILDING
FF=160.05

2

1

EXIST. M.H.
TF=158.83
4"Ø PVC THRU M.H.
FL. = 154.14

EXIST. C.B.#1
DRYWELL
TF=157.89
BOTTOM = 152.2

APPROX. 2" WATER SERVICE

APPROX. SEWER LINE (RECORD)

APPROX. SMH
(RECORD)

6" PVC CANOPY DRAIN (APPROX.)

EXIST. C.B.#2
DRYWELL
TF=157.73
4"Ø PVC
FL. = 155.89
BOTTOM = 151.4

6" PVC
(PLUGGED AT 35')

COVERS

CONC.

L.P.

L.P. W/ SIGN

VENTS

GUY

GRAN. CURB

CONC. SIDEWALK

SLOPED CONC. CURB

ADA PAD

FLUSH CONC. CURB

AT&T
2463

APPROX. UNDERGROUND GAS

1S

2S

CONC. APRON

SLOPED GRAN. CURB

FLUSH GRAN. CURB

NO PARKING
SIGN

BIT. CURB

APPROX. 12" C.I. WATER MAIN (RECORD)

2" WATER SERVICE

SEWER LINE (RECORD)

CONC. CURB

SIGN IN
CONC.
PLANTER

CL&P
35013

OHW

EX.
CMD

38.20'
S 27°40'27" W

S 17°01'30" E

ELLA T. GRASSO TURNPIKE ~ ROUTE 75

GRAPHIC SCALE

20 0 10 20 40

(IN FEET)

1 inch = 20 ft.

STATE OF CONNECTICUT
DAVID T. FAIN
No. 19712
LICENSED
PROFESSIONAL ENGINEER

CMG EST. 2002

NO.	DATE	DESCRIPTION	BY	CK'D
		REVISIONS		

PROJECT:
FILLING STATION RECONSTRUCTION
80 ELLA T. GRASSO TURNPIKE
WINDSOR LOCKS, CT 06096

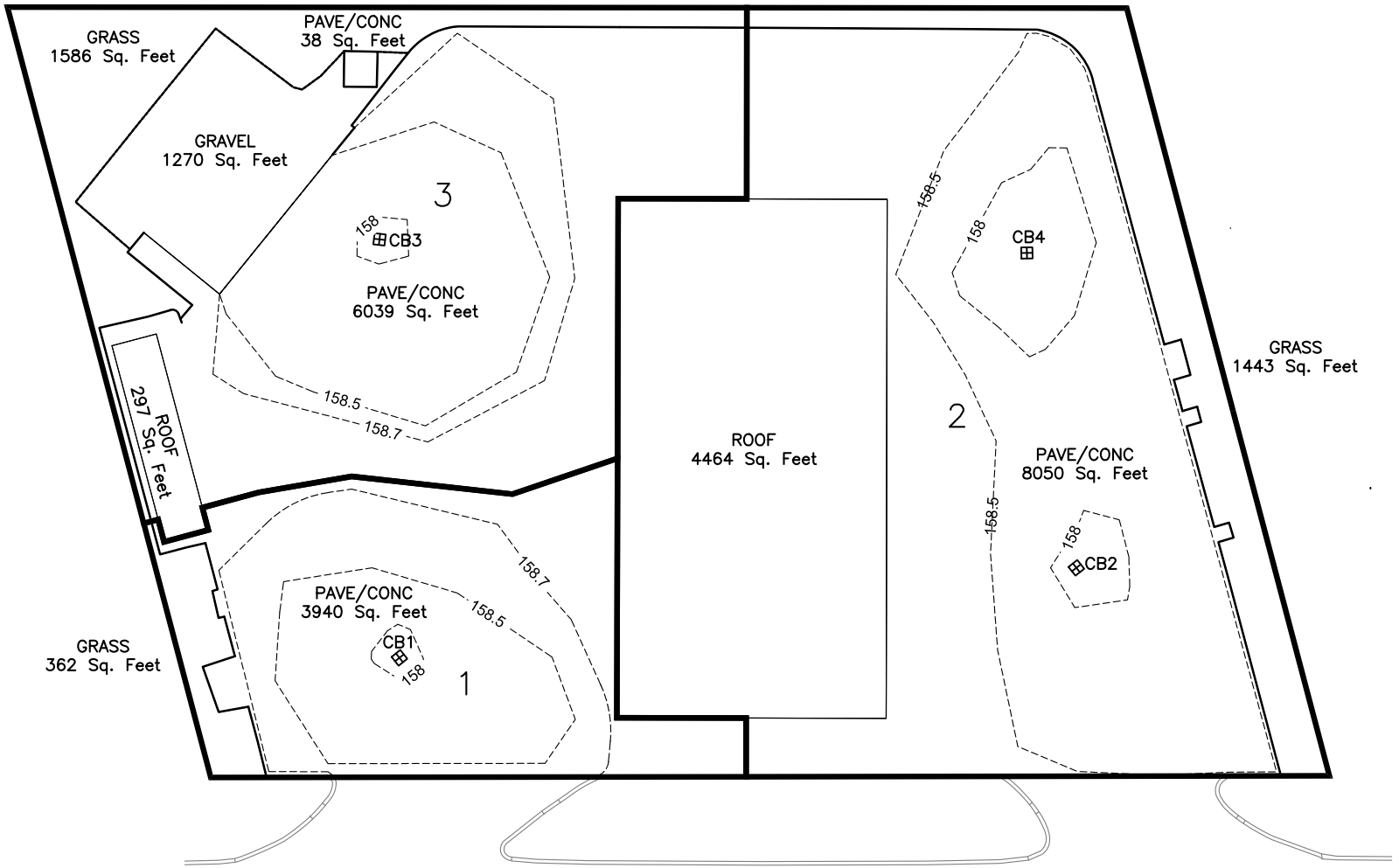
PREPARED FOR:
UNITED PETROLEUM, LLC
530 SILAS DEANE HIGHWAY, SUITE 209
WETHERSFIELD, CT 06109

ENGINEERING SERVICES
ENVIRONMENTAL SERVICES
67 Hall Road
Sturbridge, MA 01566
Phone: 774-241-0901
fax: 774-241-0906

ISSUE DATE:	12/15/2025
DRAWN BY:	MM
CHECKED BY:	DF
SCALE:	1'=20'
PROJECT NO.:	2020-158

PRE-DEVELOPMENT
DRAINAGE MAP

D - 1.0

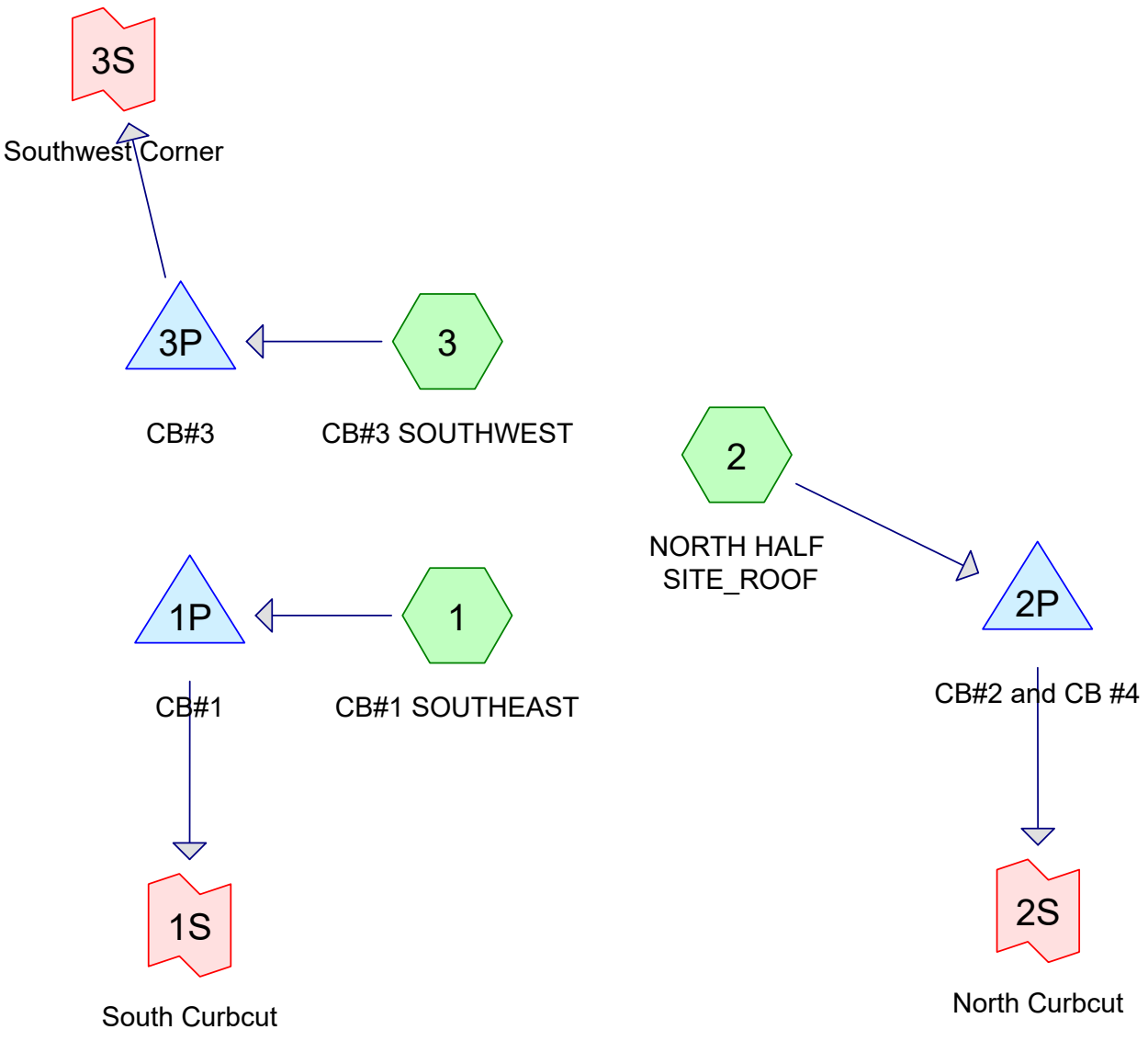


	PAVE/CONC	ROOF	GRASS	GRAVEL	TOTAL
AREA 1	3,940 S.F.	N/A	362 S.F.	N/A	4,302 S.F.
AREA 2	8,050 S.F.	4,464 S.F.	1,443 S.F.	N/A	13,957 S.F.
AREA 3	6,077 S.F.	297 S.F.	1,586 S.F.	1,270 S.F.	9,230 S.F.
	18,067 S.F.	4,761 S.F.	3,391 S.F.	1,270 S.F.	27,489 S.F.

CB1	AREA	PERIM.
EL. 158	56 S.F.	28 L.F.
EL. 158.5	1,454 S.F.	148 L.F.
EL. 158.7	2,800 S.F.	203 L.F.

CB2&4	AREA	PERIM.
EL. 158	767 S.F.	147 L.F.
EL. 158.5	4,747 S.F.	330 L.F.

CB3	AREA	PERIM.
EL. 158	62 S.F.	30 L.F.
EL. 158.5	2,153 S.F.	171 L.F.
EL. 158.7	3,111 S.F.	214 L.F.



Subcat Reach Pond Link

Routing Diagram for 2020-158_80EllaGrassoTpke-PRE-1
Prepared by CMG, Printed 12/16/2025
HydroCAD® 10.10-6a s/n 11413 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: CB#1 SOUTHEAST Runoff Area=4,302 sf 91.59% Impervious Runoff Depth=2.46"
Tc=5.0 min CN=93 Runoff=0.29 cfs 880 cf

Subcatchment 2: NORTH HALF Runoff Area=13,957 sf 89.66% Impervious Runoff Depth=2.36"
Tc=5.0 min CN=92 Runoff=0.90 cfs 2,745 cf

Subcatchment 3: CB#3 SOUTHWEST Runoff Area=9,230 sf 69.06% Impervious Runoff Depth=2.01"
Tc=5.0 min CN=88 Runoff=0.51 cfs 1,543 cf

Pond 1P: CB#1 Peak Elev=158.16' Storage=227 cf Inflow=0.29 cfs 880 cf
Discarded=0.09 cfs 880 cf Primary=0.00 cfs 0 cf Outflow=0.09 cfs 880 cf

Pond 2P: CB#2 and CB #4 Peak Elev=158.18' Storage=700 cf Inflow=0.90 cfs 2,745 cf
Discarded=0.27 cfs 2,745 cf Primary=0.00 cfs 0 cf Outflow=0.27 cfs 2,745 cf

Pond 3P: CB#3 Peak Elev=158.43' Storage=505 cf Inflow=0.51 cfs 1,543 cf
Discarded=0.10 cfs 1,543 cf Primary=0.00 cfs 0 cf Outflow=0.10 cfs 1,543 cf

Link 1S: South Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 2S: North Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 3S: Southwest Corner Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 27,489 sf Runoff Volume = 5,168 cf Average Runoff Depth = 2.26"
16.96% Pervious = 4,661 sf 83.04% Impervious = 22,828 sf

Summary for Subcatchment 1: CB#1 SOUTHEAST

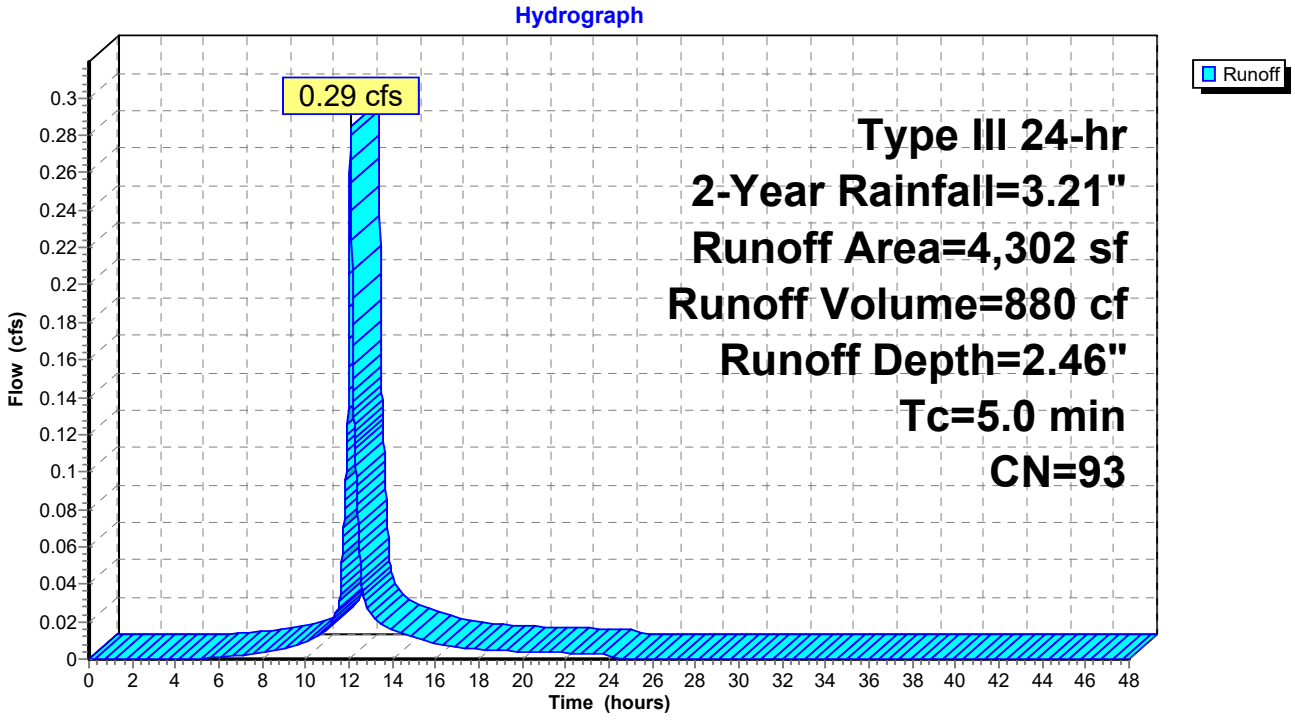
Runoff = 0.29 cfs @ 12.07 hrs, Volume= 880 cf, Depth= 2.46"
Routed to Pond 1P : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
3,940	98	Paved parking, HSG A
362	39	>75% Grass cover, Good, HSG A
4,302	93	Weighted Average
362		8.41% Pervious Area
3,940		91.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1: CB#1 SOUTHEAST



Summary for Subcatchment 2: NORTH HALF SITE_ROOF

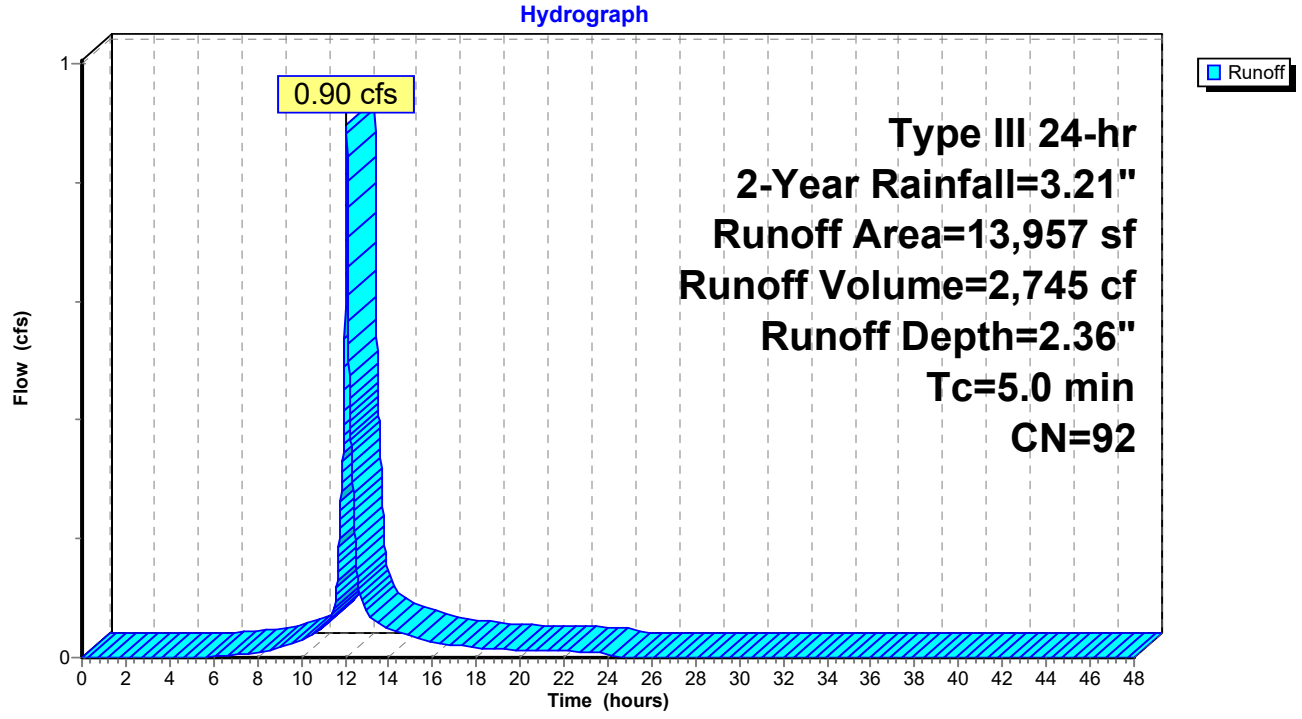
Runoff = 0.90 cfs @ 12.07 hrs, Volume= 2,745 cf, Depth= 2.36"
Routed to Pond 2P : CB#2 and CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
4,464	98	Roofs, HSG A
8,050	98	Paved parking, HSG A
1,443	39	>75% Grass cover, Good, HSG A
13,957	92	Weighted Average
1,443		10.34% Pervious Area
12,514		89.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2: NORTH HALF SITE_ROOF



Summary for Subcatchment 3: CB#3 SOUTHWEST

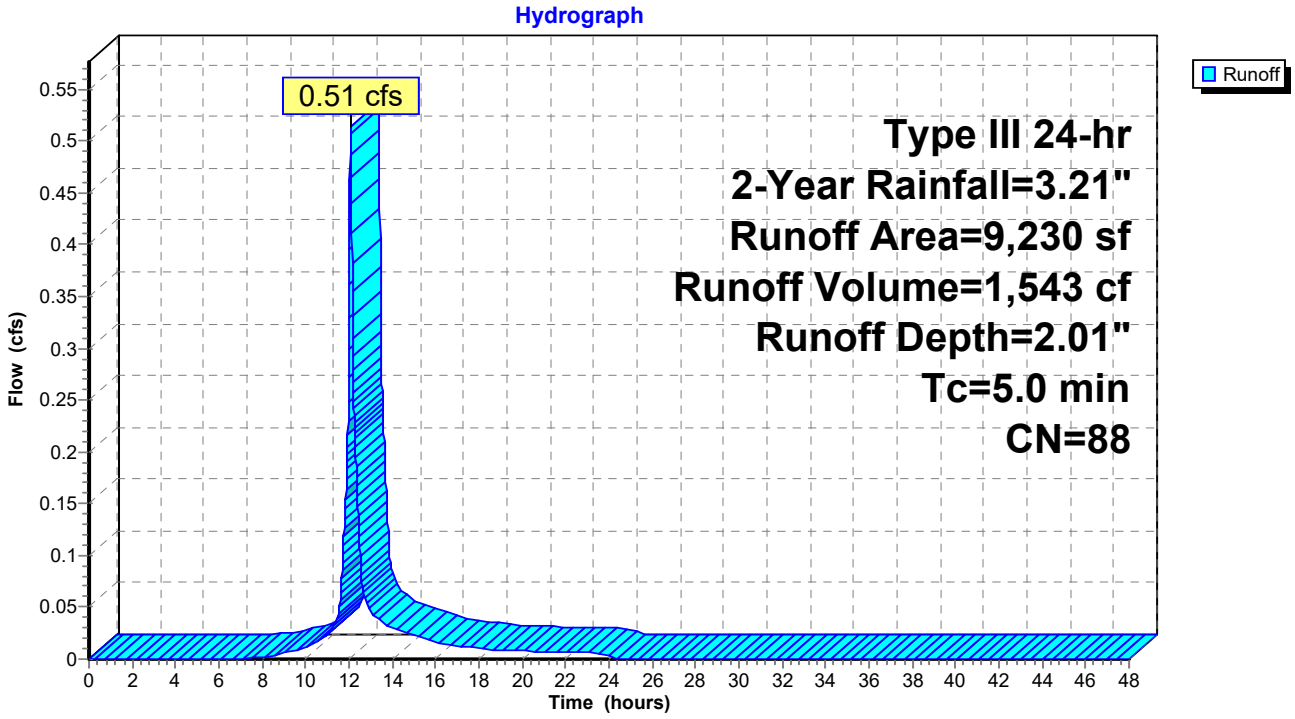
Runoff = 0.51 cfs @ 12.07 hrs, Volume= 1,543 cf, Depth= 2.01"
Routed to Pond 3P : CB#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
297	98	Roofs, HSG A
6,077	98	Paved parking, HSG A
1,270	96	Gravel surface, HSG A
1,586	39	>75% Grass cover, Good, HSG A
9,230	88	Weighted Average
2,856		30.94% Pervious Area
6,374		69.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3: CB#3 SOUTHWEST



Summary for Pond 1P: CB#1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=384)

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 2.46" for 2-Year event
Inflow = 0.29 cfs @ 12.07 hrs, Volume= 880 cf
Outflow = 0.09 cfs @ 12.35 hrs, Volume= 880 cf, Atten= 67%, Lag= 16.7 min
Discarded = 0.09 cfs @ 12.35 hrs, Volume= 880 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.16' @ 12.35 hrs Surf.Area= 50 sf Storage= 227 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 676 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 24.5 min (816.1 - 791.6)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	723 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		919 cf	Total Available Storage

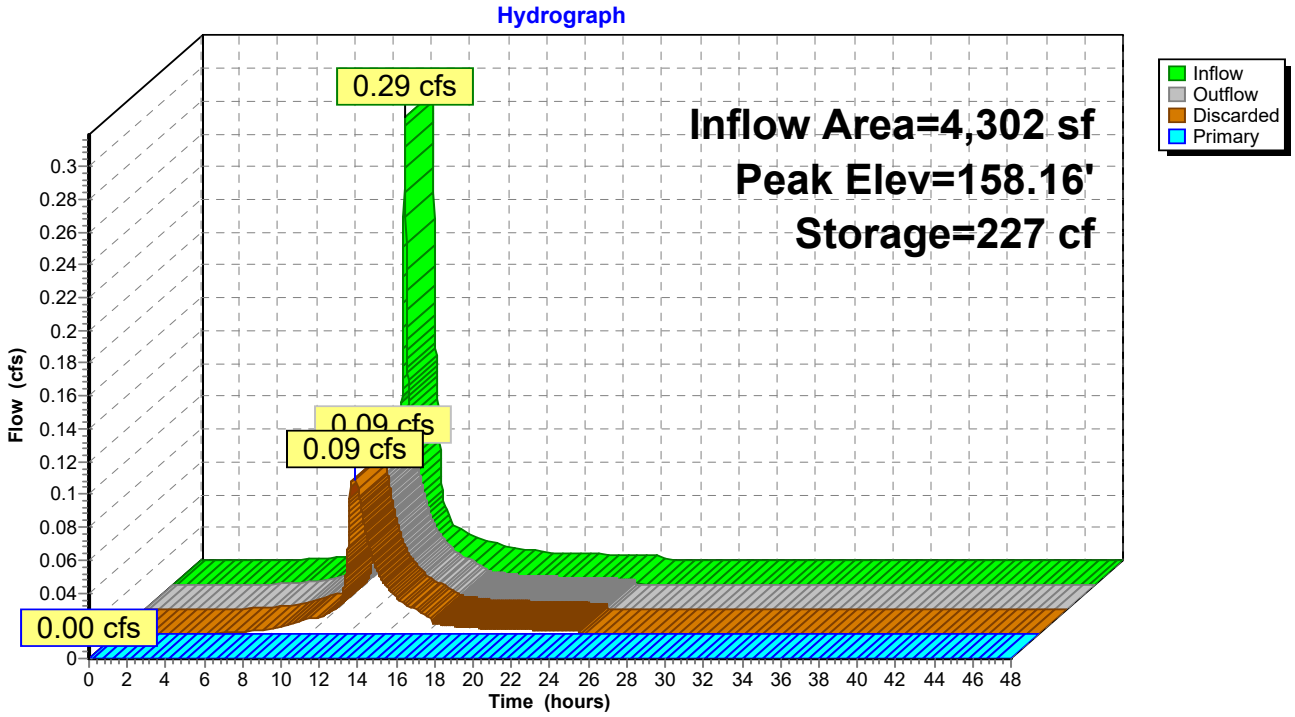
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	56	28.0	3	6	68
158.50	1,454	148.0	299	305	1,749
158.70	2,800	203.0	418	723	3,286

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.09 cfs @ 12.35 hrs HW=158.16' (Free Discharge)
1=Exfiltration - Sand (Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: CB#1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.29 cfs
0.09 cfs
0.09 cfs
0.00 cfs
Inflow Area=4,302 sf
Peak Elev=158.16'
Storage=227 cf
Flow (cfs)
0 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond 2P: CB#2 and CB #4

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 2.36" for 2-Year event
Inflow = 0.90 cfs @ 12.07 hrs, Volume= 2,745 cf
Outflow = 0.27 cfs @ 12.38 hrs, Volume= 2,745 cf, Atten= 69%, Lag= 18.4 min
Discarded = 0.27 cfs @ 12.38 hrs, Volume= 2,745 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.18' @ 12.38 hrs Surf.Area= 101 sf Storage= 700 cf
Flood Elev= 158.40' Surf.Area= 101 sf Storage= 1,287 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 23.4 min (820.1 - 796.7)

Volume	Invert	Avail.Storage	Storage Description
#1	150.90'	108 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** x 2 553 cf Overall - 283 cf Embedded = 270 cf x 40.0% Voids
#2	151.40'	283 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** x 2 Inside #1
#3	156.40'	1,317 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,708 cf	Total Available Storage

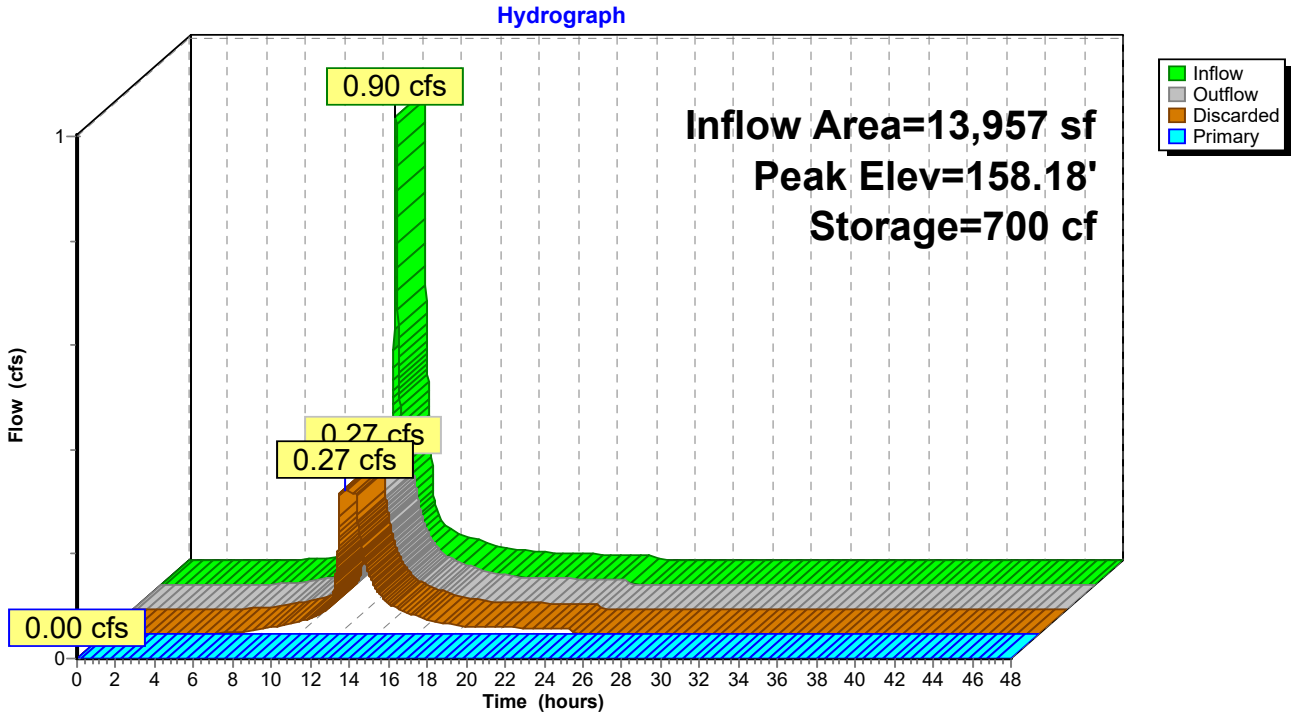
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.40	4	8.0	0	0	4
157.73	4	8.0	5	5	15
158.00	767	147.0	74	80	1,729
158.50	4,747	330.0	1,237	1,317	8,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.90'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.27 cfs @ 12.38 hrs HW=158.18' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.27 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=150.90' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: CB#2 and CB #4



Summary for Pond 3P: CB#3

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 2.01" for 2-Year event
Inflow = 0.51 cfs @ 12.07 hrs, Volume= 1,543 cf
Outflow = 0.10 cfs @ 12.52 hrs, Volume= 1,543 cf, Atten= 81%, Lag= 26.7 min
Discarded = 0.10 cfs @ 12.52 hrs, Volume= 1,543 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.43' @ 12.52 hrs Surf.Area= 50 sf Storage= 505 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 632 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 43.2 min (857.2 - 814.0)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	960 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,155 cf	Total Available Storage

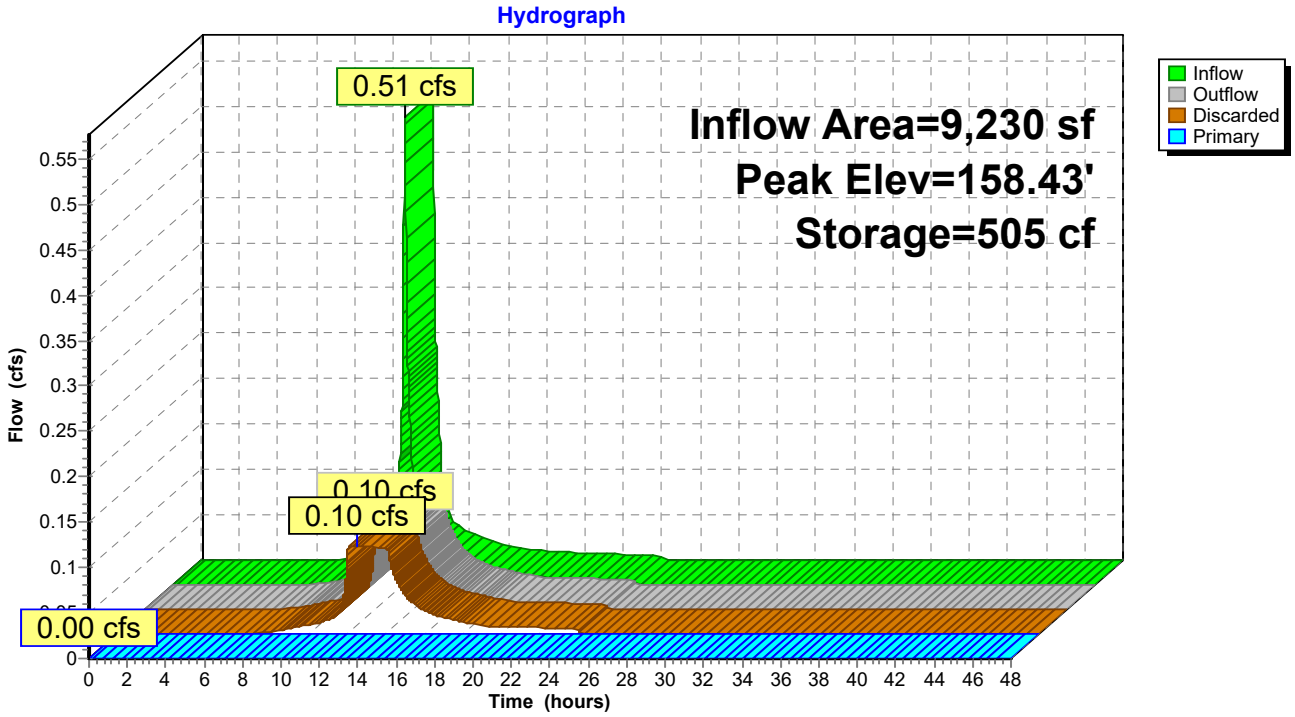
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	62	30.0	3	6	77
158.50	2,153	171.0	430	436	2,333
158.70	3,111	214.0	523	960	3,651

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**6.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.10 cfs @ 12.52 hrs HW=158.43' (Free Discharge)
↑**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: CB#3

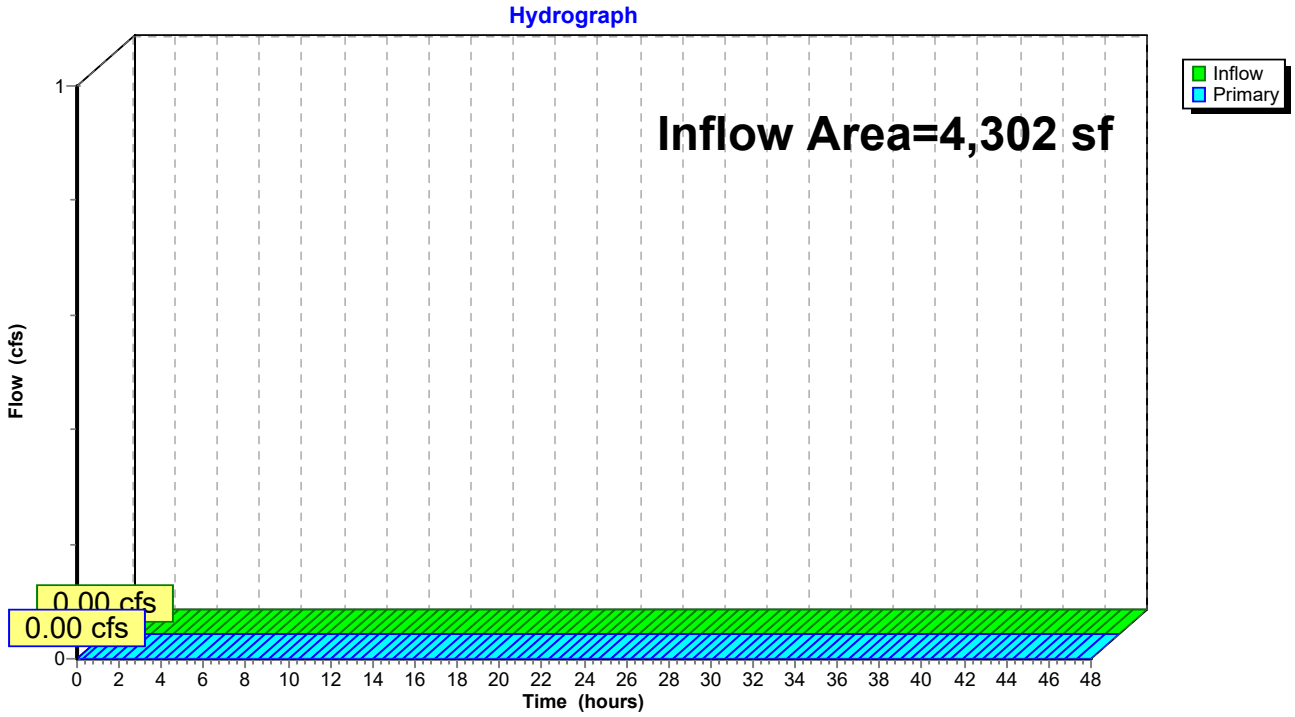

Hydrograph
Inflow Area=9,230 sf
Peak Elev=158.43'
Storage=505 cf
0.51 cfs
0.10 cfs
0.10 cfs
0.00 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 1S: South Curbcut

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

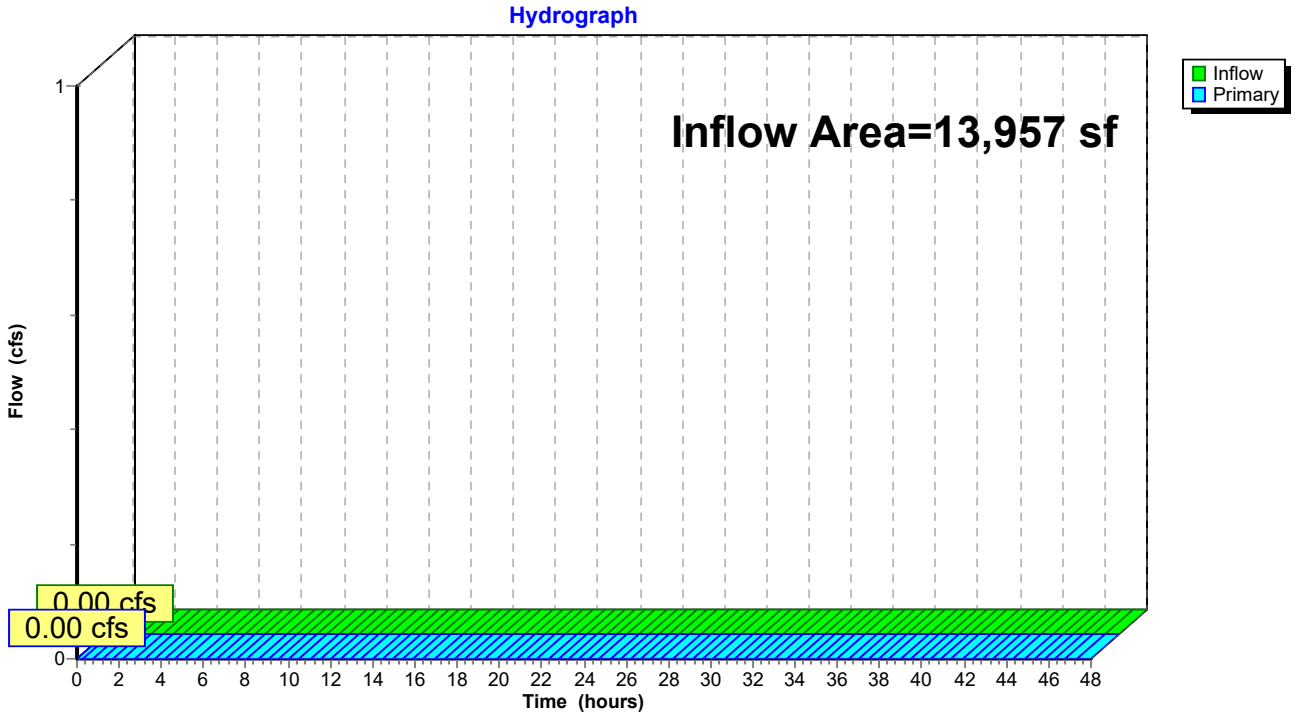


Summary for Link 2S: North Curbcut

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

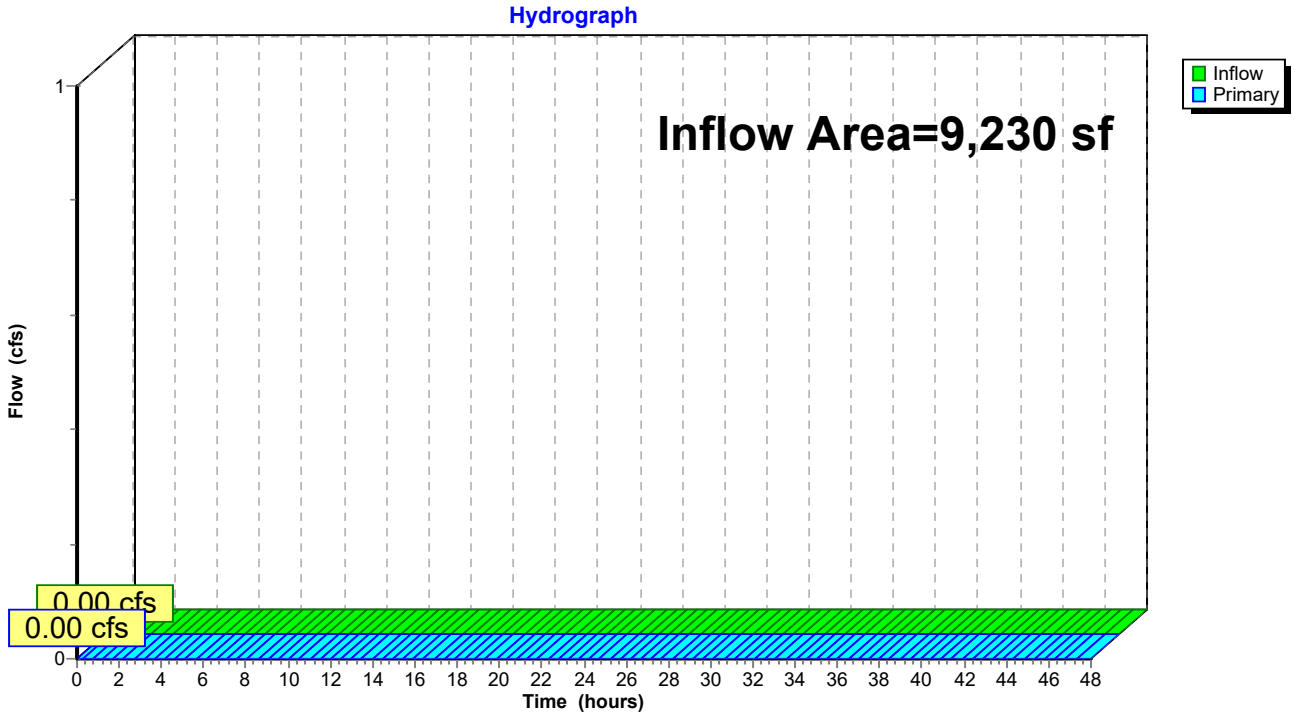


Summary for Link 3S: Southwest Corner

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3S: Southwest Corner



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: CB#1 SOUTHEAST Runoff Area=4,302 sf 91.59% Impervious Runoff Depth=4.33"
Tc=5.0 min CN=93 Runoff=0.49 cfs 1,551 cf

Subcatchment 2: NORTH HALF Runoff Area=13,957 sf 89.66% Impervious Runoff Depth=4.22"
Tc=5.0 min CN=92 Runoff=1.55 cfs 4,904 cf

Subcatchment 3: CB#3 SOUTHWEST Runoff Area=9,230 sf 69.06% Impervious Runoff Depth=3.79"
Tc=5.0 min CN=88 Runoff=0.95 cfs 2,917 cf

Pond 1P: CB#1 Peak Elev=158.49' Storage=484 cf Inflow=0.49 cfs 1,551 cf
Discarded=0.10 cfs 1,551 cf Primary=0.00 cfs 0 cf Outflow=0.10 cfs 1,551 cf

Pond 2P: CB#2 and CB #4 Peak Elev=158.42' Storage=1,371 cf Inflow=1.55 cfs 4,904 cf
Discarded=0.28 cfs 4,672 cf Primary=0.27 cfs 232 cf Outflow=0.55 cfs 4,904 cf

Pond 3P: CB#3 Peak Elev=158.58' Storage=809 cf Inflow=0.95 cfs 2,917 cf
Discarded=0.10 cfs 2,407 cf Primary=0.34 cfs 510 cf Outflow=0.44 cfs 2,917 cf

Link 1S: South Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 2S: North Curbcut Inflow=0.27 cfs 232 cf
Primary=0.27 cfs 232 cf

Link 3S: Southwest Corner Inflow=0.34 cfs 510 cf
Primary=0.34 cfs 510 cf

Total Runoff Area = 27,489 sf Runoff Volume = 9,372 cf Average Runoff Depth = 4.09"
16.96% Pervious = 4,661 sf 83.04% Impervious = 22,828 sf

Summary for Subcatchment 1: CB#1 SOUTHEAST

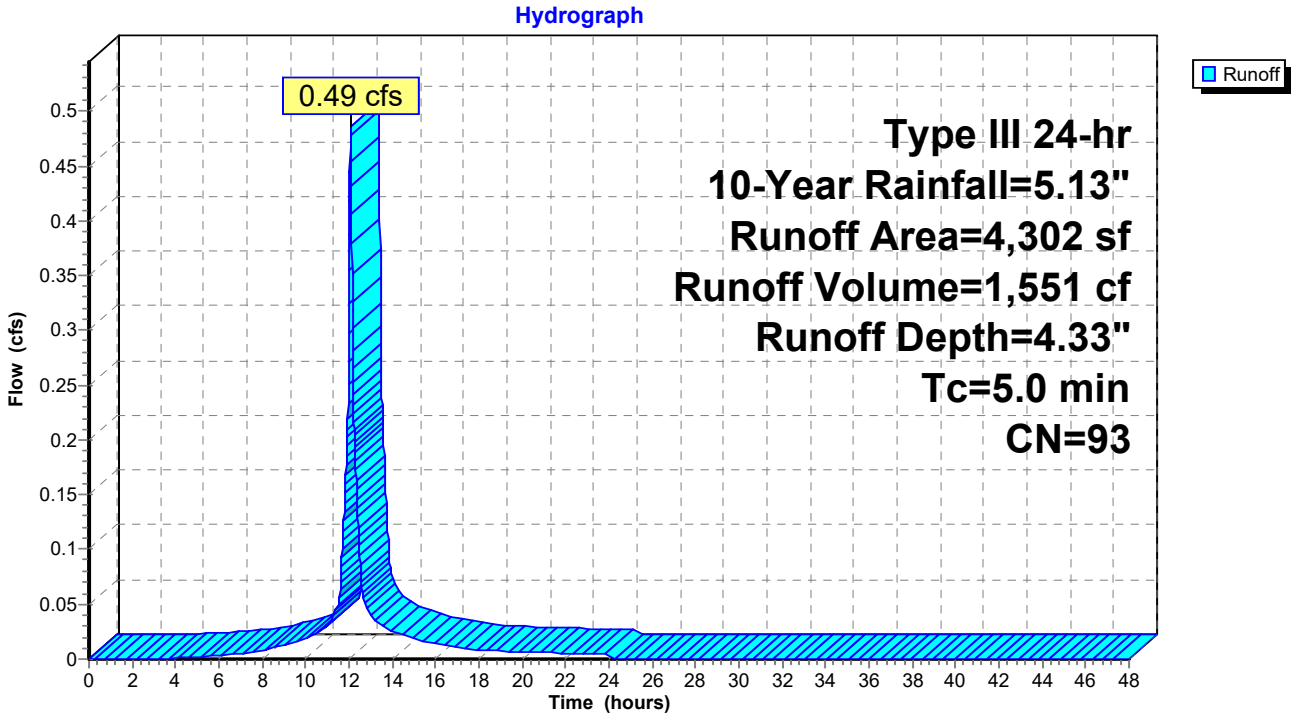
Runoff = 0.49 cfs @ 12.07 hrs, Volume= 1,551 cf, Depth= 4.33"
Routed to Pond 1P : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

Area (sf)	CN	Description
3,940	98	Paved parking, HSG A
362	39	>75% Grass cover, Good, HSG A
4,302	93	Weighted Average
362		8.41% Pervious Area
3,940		91.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1: CB#1 SOUTHEAST



Summary for Subcatchment 2: NORTH HALF SITE_ROOF

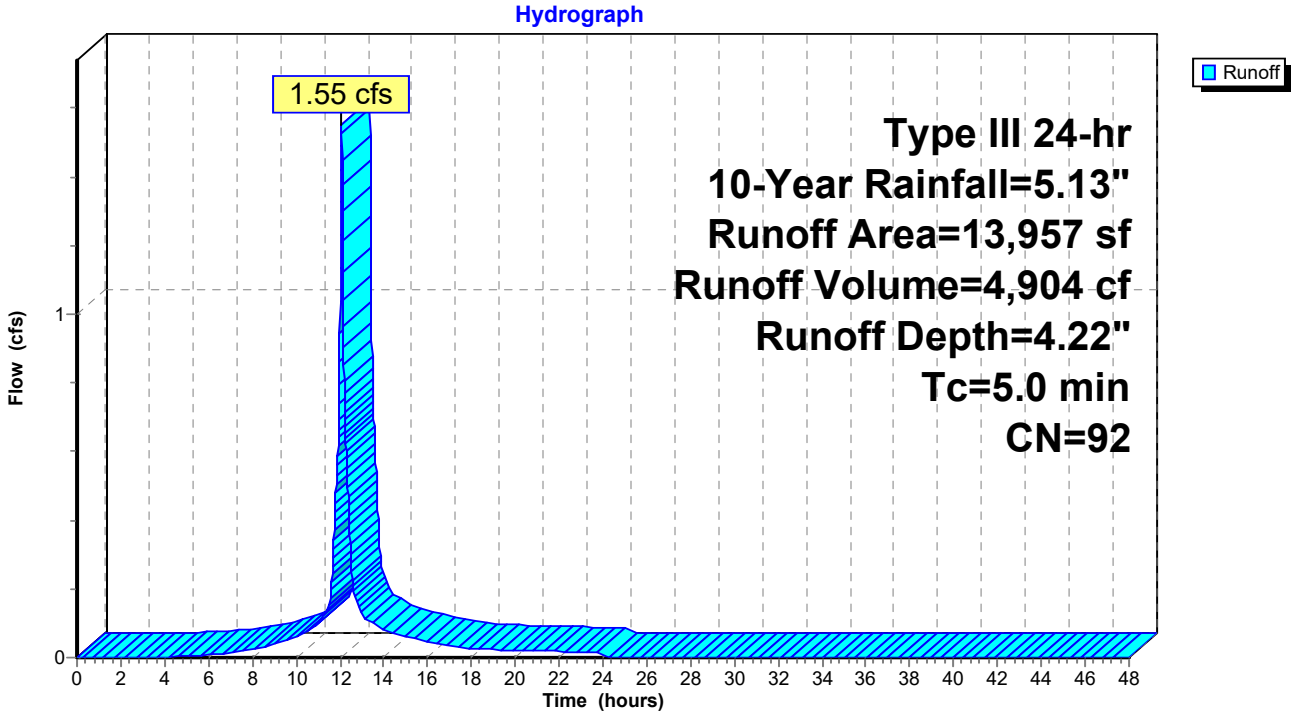
Runoff = 1.55 cfs @ 12.07 hrs, Volume= 4,904 cf, Depth= 4.22"
Routed to Pond 2P : CB#2 and CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

Area (sf)	CN	Description
4,464	98	Roofs, HSG A
8,050	98	Paved parking, HSG A
1,443	39	>75% Grass cover, Good, HSG A
13,957	92	Weighted Average
1,443		10.34% Pervious Area
12,514		89.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2: NORTH HALF SITE_ROOF



Summary for Subcatchment 3: CB#3 SOUTHWEST

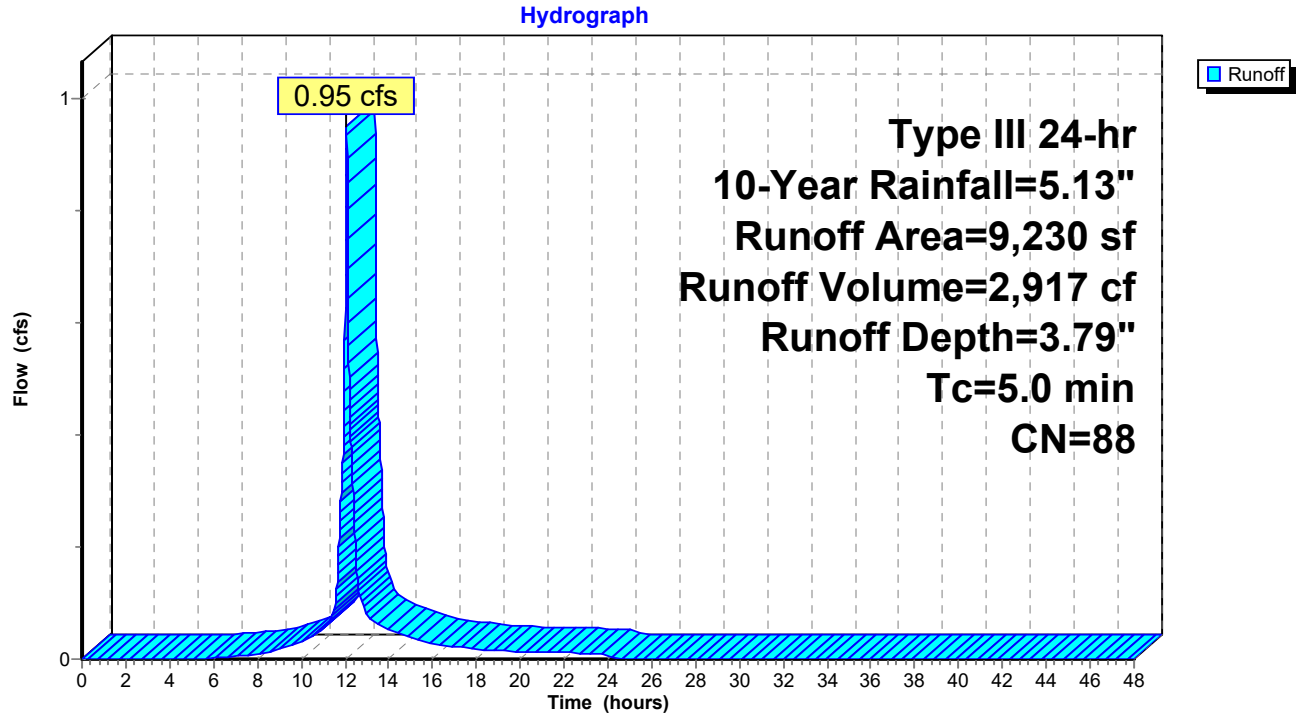
Runoff = 0.95 cfs @ 12.07 hrs, Volume= 2,917 cf, Depth= 3.79"
Routed to Pond 3P : CB#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

Area (sf)	CN	Description
297	98	Roofs, HSG A
6,077	98	Paved parking, HSG A
1,270	96	Gravel surface, HSG A
1,586	39	>75% Grass cover, Good, HSG A
9,230	88	Weighted Average
2,856		30.94% Pervious Area
6,374		69.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3: CB#3 SOUTHWEST



Summary for Pond 1P: CB#1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=14)

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 4.33" for 10-Year event
Inflow = 0.49 cfs @ 12.07 hrs, Volume= 1,551 cf
Outflow = 0.10 cfs @ 12.49 hrs, Volume= 1,551 cf, Atten= 80%, Lag= 25.0 min
Discarded = 0.10 cfs @ 12.49 hrs, Volume= 1,551 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.49' @ 12.49 hrs Surf.Area= 50 sf Storage= 484 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 676 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 39.6 min (816.2 - 776.6)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	723 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		919 cf	Total Available Storage

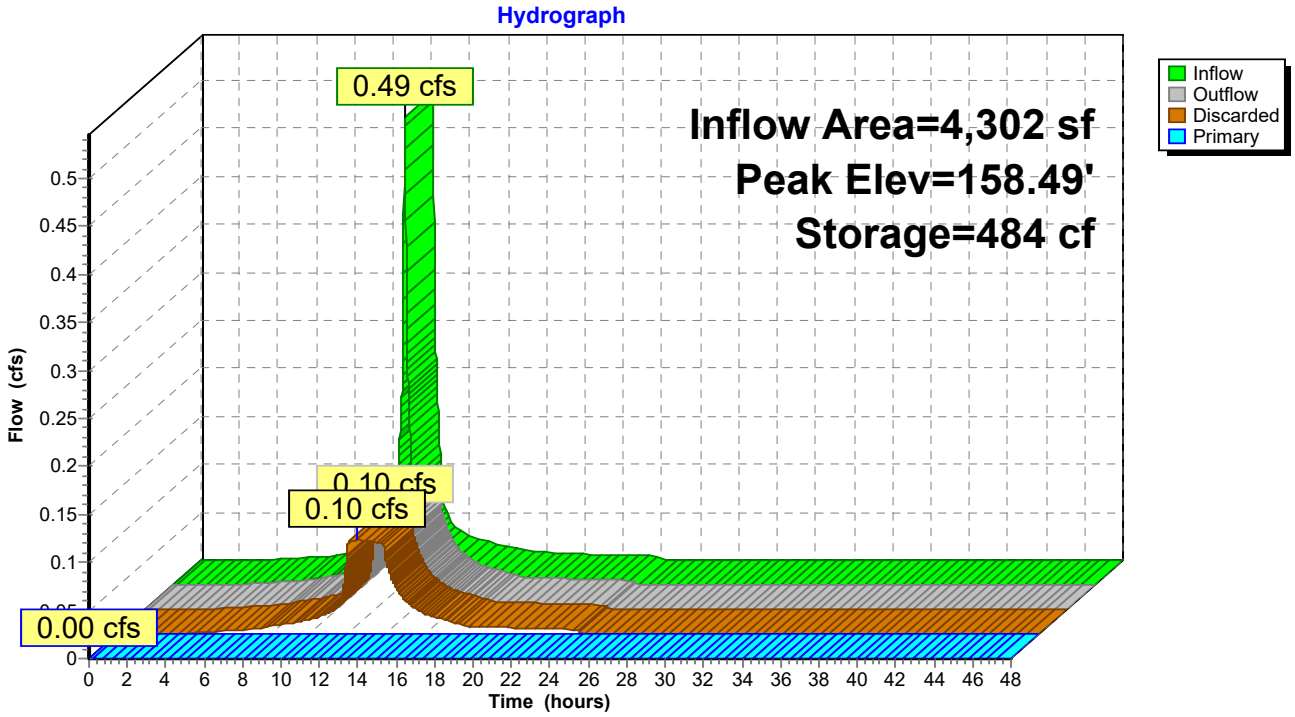
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	56	28.0	3	6	68
158.50	1,454	148.0	299	305	1,749
158.70	2,800	203.0	418	723	3,286

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.10 cfs @ 12.49 hrs HW=158.49' (Free Discharge)
1=Exfiltration - Sand (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: CB#1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.49 cfs
0.10 cfs
0.10 cfs
0.00 cfs
Inflow Area=4,302 sf
Peak Elev=158.49'
Storage=484 cf
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond 2P: CB#2 and CB #4

[58] Hint: Peaked 0.02' above defined flood level

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 4.22" for 10-Year event
Inflow = 1.55 cfs @ 12.07 hrs, Volume= 4,904 cf
Outflow = 0.55 cfs @ 12.32 hrs, Volume= 4,904 cf, Atten= 64%, Lag= 14.6 min
Discarded = 0.28 cfs @ 12.32 hrs, Volume= 4,672 cf
Primary = 0.27 cfs @ 12.32 hrs, Volume= 232 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.42' @ 12.32 hrs Surf.Area= 101 sf Storage= 1,371 cf
Flood Elev= 158.40' Surf.Area= 101 sf Storage= 1,287 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 35.5 min (816.4 - 781.0)

Volume	Invert	Avail.Storage	Storage Description
#1	150.90'	108 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** x 2 553 cf Overall - 283 cf Embedded = 270 cf x 40.0% Voids
#2	151.40'	283 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** x 2 Inside #1
#3	156.40'	1,317 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,708 cf	Total Available Storage

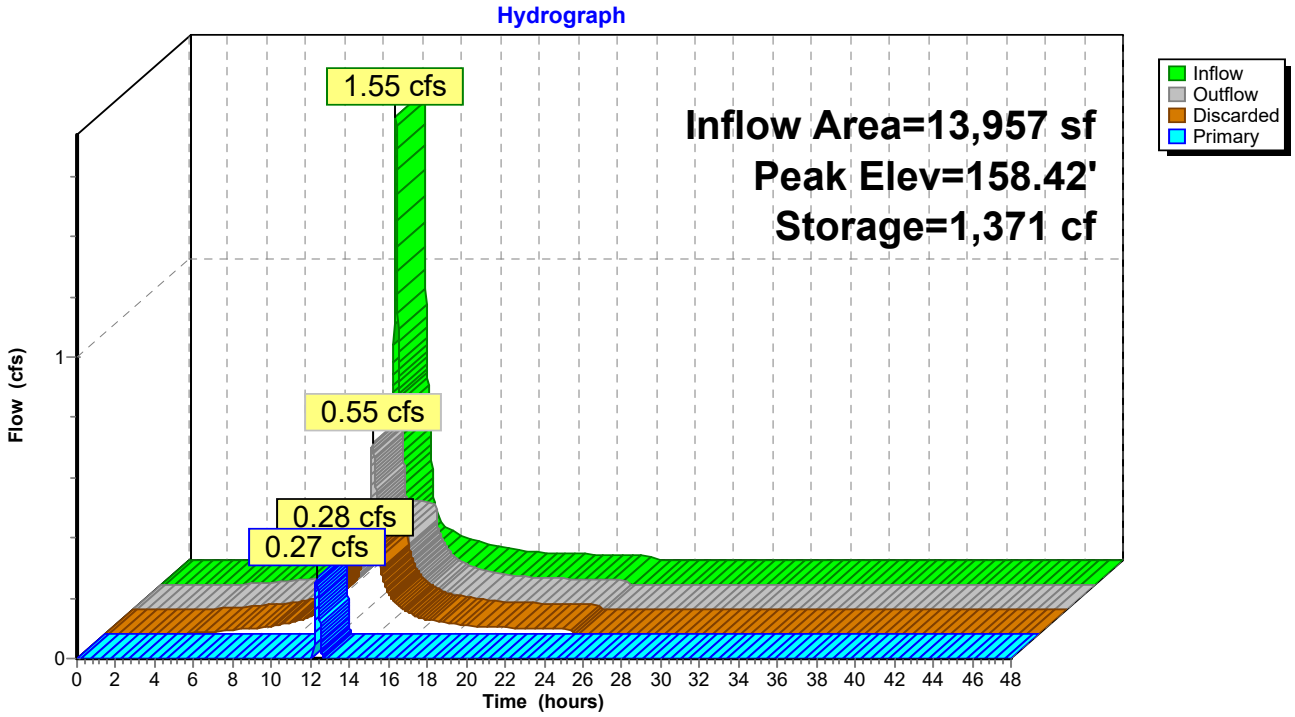
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.40	4	8.0	0	0	4
157.73	4	8.0	5	5	15
158.00	767	147.0	74	80	1,729
158.50	4,747	330.0	1,237	1,317	8,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.90'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.28 cfs @ 12.32 hrs HW=158.42' (Free Discharge)
1=Exfiltration - Sand (Controls 0.28 cfs)

Primary OutFlow Max=0.27 cfs @ 12.32 hrs HW=158.42' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.27 cfs @ 0.35 fps)

Pond 2P: CB#2 and CB #4



Summary for Pond 3P: CB#3

[58] Hint: Peaked 0.08' above defined flood level

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 3.79" for 10-Year event
Inflow = 0.95 cfs @ 12.07 hrs, Volume= 2,917 cf
Outflow = 0.44 cfs @ 12.23 hrs, Volume= 2,917 cf, Atten= 54%, Lag= 9.3 min
Discarded = 0.10 cfs @ 12.23 hrs, Volume= 2,407 cf
Primary = 0.34 cfs @ 12.23 hrs, Volume= 510 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.58' @ 12.23 hrs Surf.Area= 50 sf Storage= 809 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 632 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 49.9 min (845.9 - 796.0)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	960 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,155 cf	Total Available Storage

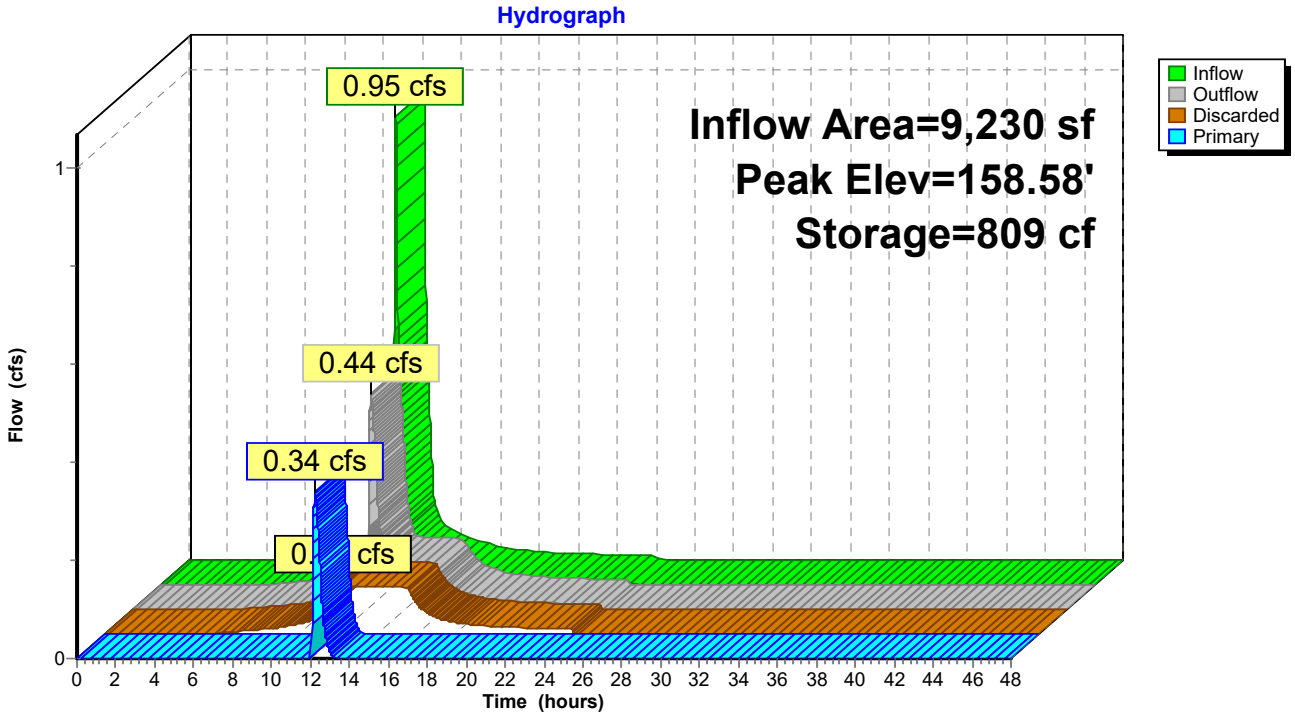
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	62	30.0	3	6	77
158.50	2,153	171.0	430	436	2,333
158.70	3,111	214.0	523	960	3,651

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**6.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.10 cfs @ 12.23 hrs HW=158.58' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.34 cfs @ 12.23 hrs HW=158.58' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.34 cfs @ 0.74 fps)

Pond 3P: CB#3

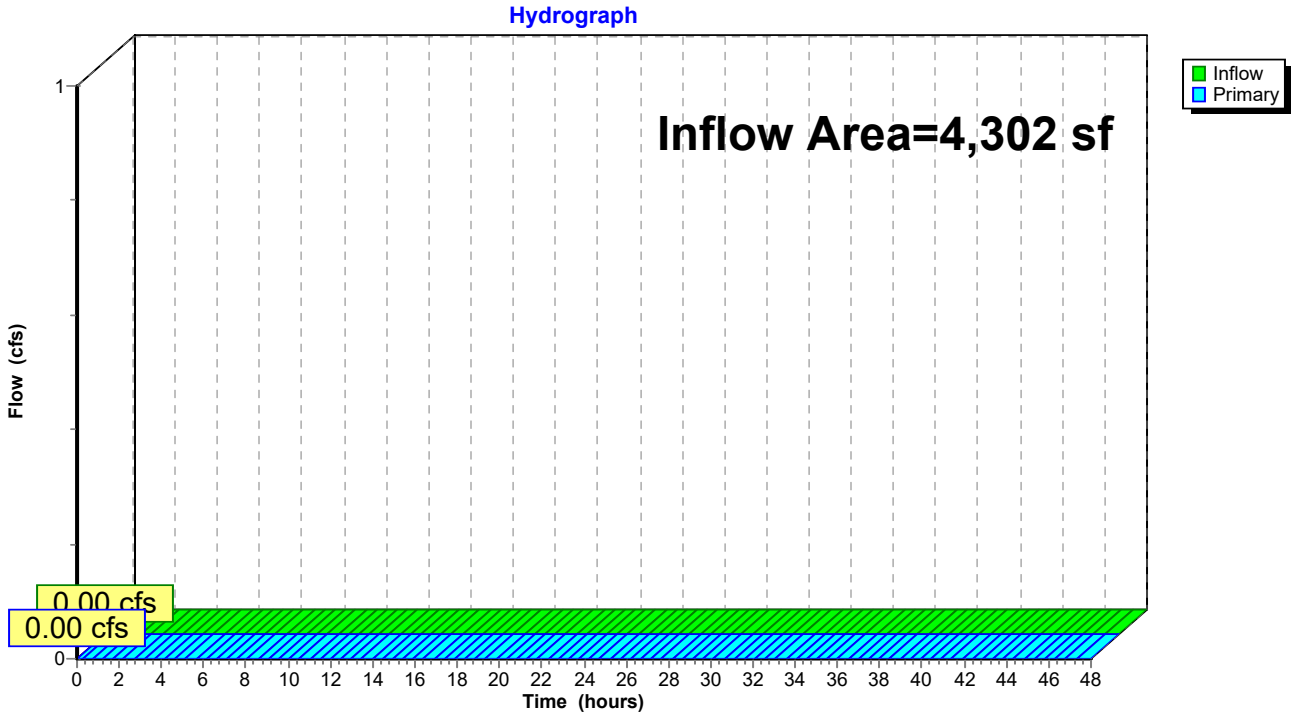

Hydrograph
Inflow Area=9,230 sf
Peak Elev=158.58'
Storage=809 cf
0.95 cfs
0.44 cfs
0.34 cfs
0 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 1S: South Curbcut

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

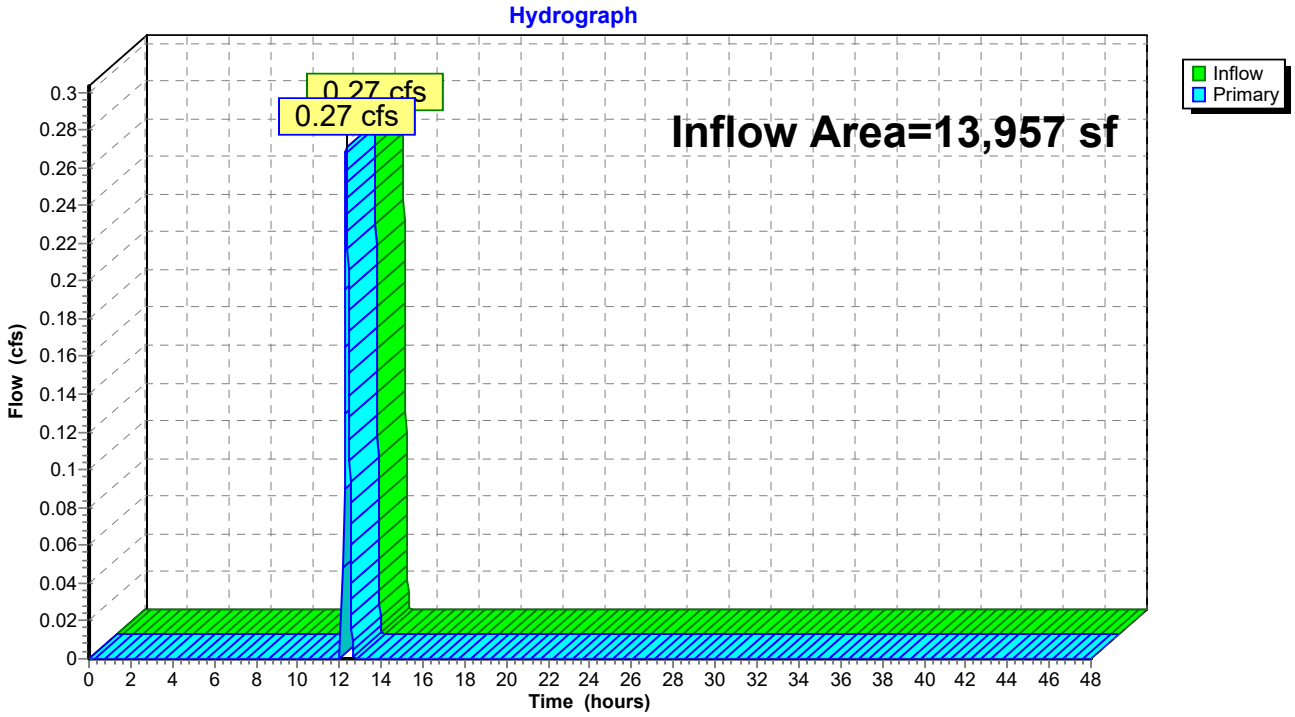


Summary for Link 2S: North Curbcut

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 0.20" for 10-Year event
Inflow = 0.27 cfs @ 12.32 hrs, Volume= 232 cf
Primary = 0.27 cfs @ 12.32 hrs, Volume= 232 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

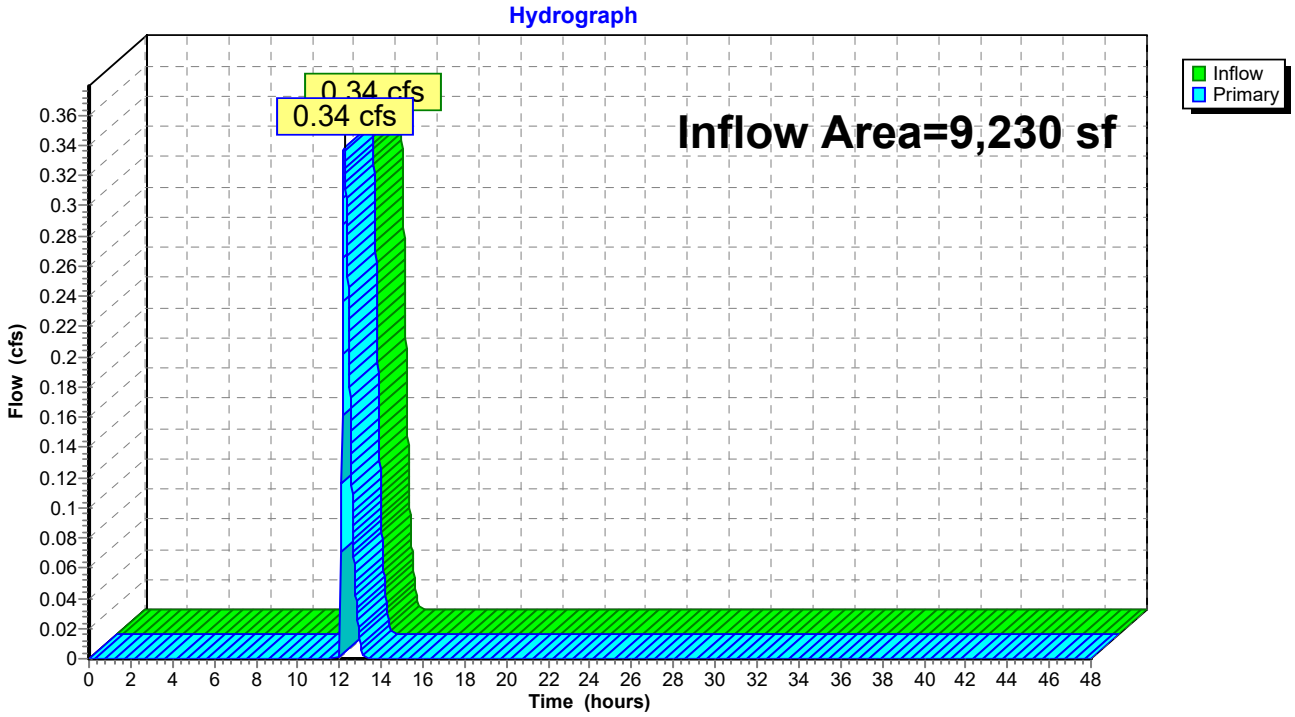


Summary for Link 3S: Southwest Corner

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 0.66" for 10-Year event
Inflow = 0.34 cfs @ 12.23 hrs, Volume= 510 cf
Primary = 0.34 cfs @ 12.23 hrs, Volume= 510 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3S: Southwest Corner



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: CB#1 SOUTHEAST Runoff Area=4,302 sf 91.59% Impervious Runoff Depth=5.50"
Tc=5.0 min CN=93 Runoff=0.61 cfs 1,971 cf

Subcatchment 2: NORTH HALF Runoff Area=13,957 sf 89.66% Impervious Runoff Depth=5.38"
Tc=5.0 min CN=92 Runoff=1.96 cfs 6,262 cf

Subcatchment 3: CB#3 SOUTHWEST Runoff Area=9,230 sf 69.06% Impervious Runoff Depth=4.93"
Tc=5.0 min CN=88 Runoff=1.22 cfs 3,795 cf

Pond 1P: CB#1 Peak Elev=158.59' Storage=661 cf Inflow=0.61 cfs 1,971 cf
Discarded=0.10 cfs 1,971 cf Primary=0.00 cfs 0 cf Outflow=0.10 cfs 1,971 cf

Pond 2P: CB#2 and CB #4 Peak Elev=158.45' Storage=1,479 cf Inflow=1.96 cfs 6,262 cf
Discarded=0.28 cfs 5,449 cf Primary=0.88 cfs 813 cf Outflow=1.17 cfs 6,262 cf

Pond 3P: CB#3 Peak Elev=158.62' Storage=925 cf Inflow=1.22 cfs 3,795 cf
Discarded=0.10 cfs 2,822 cf Primary=0.68 cfs 974 cf Outflow=0.77 cfs 3,796 cf

Link 1S: South Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 2S: North Curbcut Inflow=0.88 cfs 813 cf
Primary=0.88 cfs 813 cf

Link 3S: Southwest Corner Inflow=0.68 cfs 974 cf
Primary=0.68 cfs 974 cf

Total Runoff Area = 27,489 sf Runoff Volume = 12,029 cf Average Runoff Depth = 5.25"
16.96% Pervious = 4,661 sf 83.04% Impervious = 22,828 sf

Summary for Subcatchment 1: CB#1 SOUTHEAST

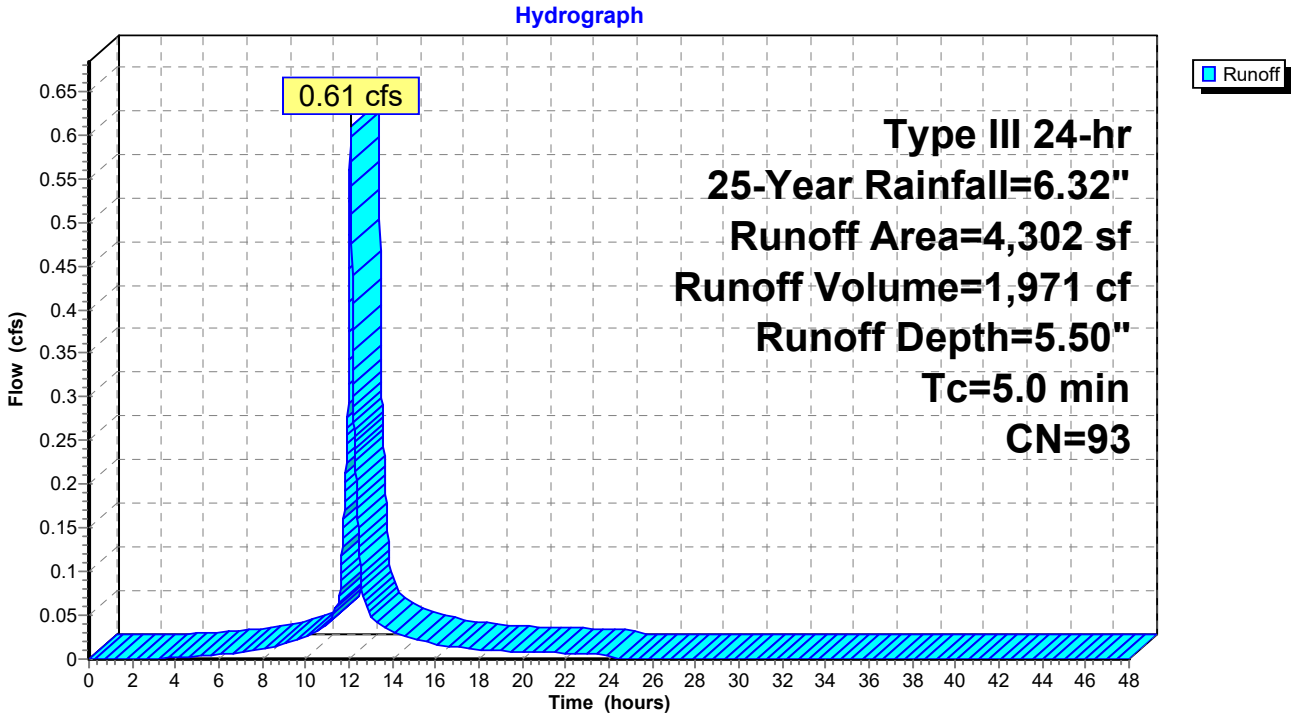
Runoff = 0.61 cfs @ 12.07 hrs, Volume= 1,971 cf, Depth= 5.50"
Routed to Pond 1P : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

Area (sf)	CN	Description
3,940	98	Paved parking, HSG A
362	39	>75% Grass cover, Good, HSG A
4,302	93	Weighted Average
362		8.41% Pervious Area
3,940		91.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1: CB#1 SOUTHEAST



Summary for Subcatchment 2: NORTH HALF SITE_ROOF

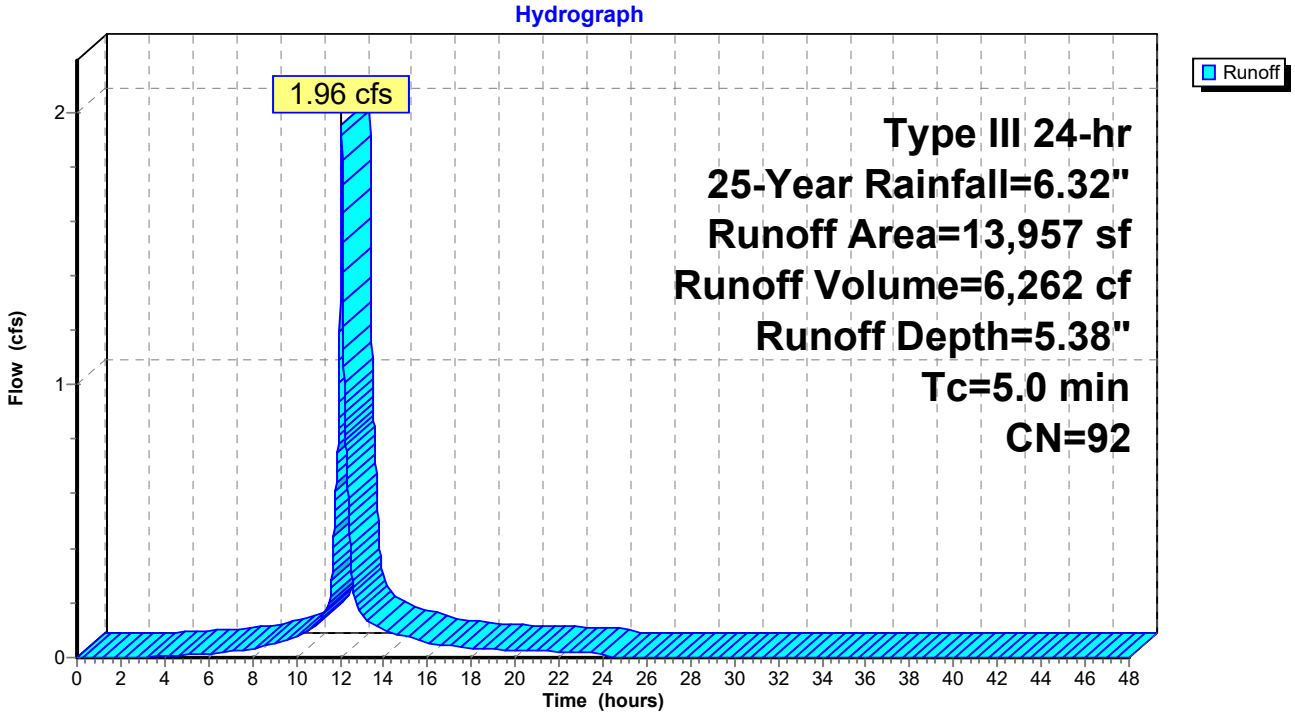
Runoff = 1.96 cfs @ 12.07 hrs, Volume= 6,262 cf, Depth= 5.38"
Routed to Pond 2P : CB#2 and CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

Area (sf)	CN	Description
4,464	98	Roofs, HSG A
8,050	98	Paved parking, HSG A
1,443	39	>75% Grass cover, Good, HSG A
13,957	92	Weighted Average
1,443		10.34% Pervious Area
12,514		89.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2: NORTH HALF SITE_ROOF



Summary for Subcatchment 3: CB#3 SOUTHWEST

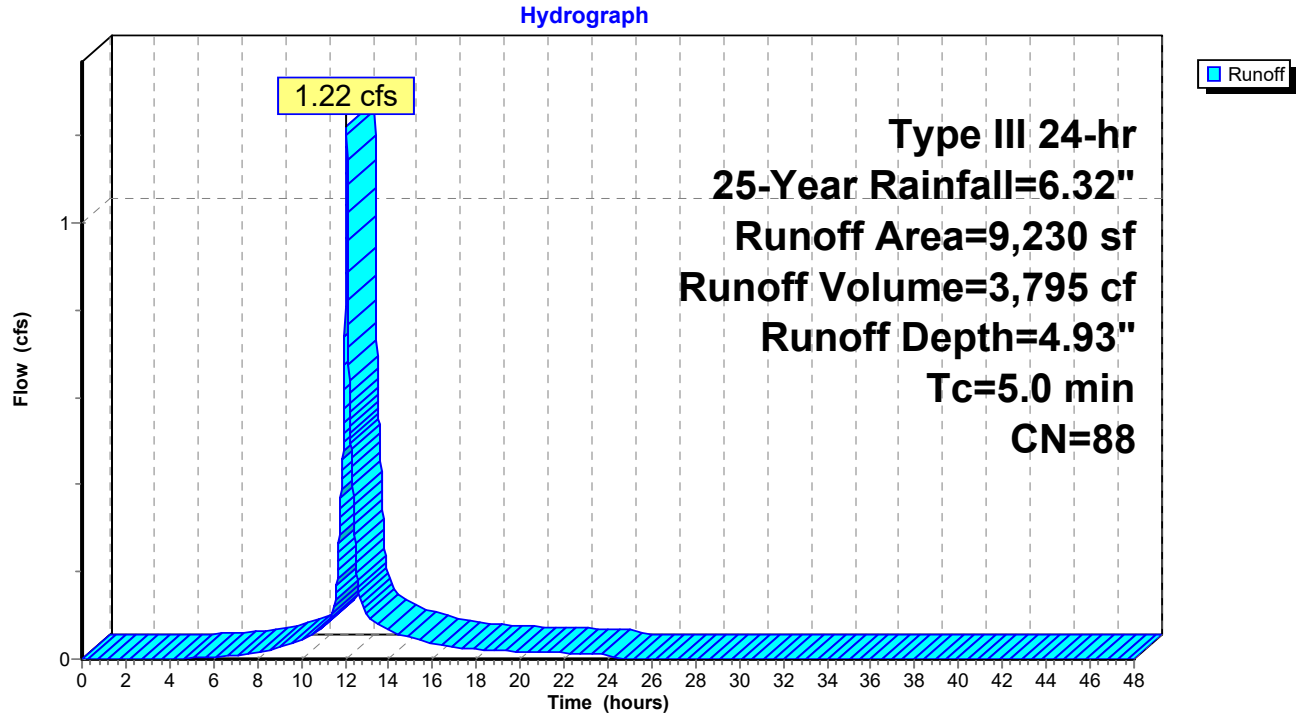
Runoff = 1.22 cfs @ 12.07 hrs, Volume= 3,795 cf, Depth= 4.93"
Routed to Pond 3P : CB#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

Area (sf)	CN	Description
297	98	Roofs, HSG A
6,077	98	Paved parking, HSG A
1,270	96	Gravel surface, HSG A
1,586	39	>75% Grass cover, Good, HSG A
9,230	88	Weighted Average
2,856		30.94% Pervious Area
6,374		69.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3: CB#3 SOUTHWEST



Summary for Pond 1P: CB#1

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 5.50" for 25-Year event
Inflow = 0.61 cfs @ 12.07 hrs, Volume= 1,971 cf
Outflow = 0.10 cfs @ 12.53 hrs, Volume= 1,971 cf, Atten= 84%, Lag= 27.6 min
Discarded = 0.10 cfs @ 12.53 hrs, Volume= 1,971 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.59' @ 12.53 hrs Surf.Area= 50 sf Storage= 661 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 676 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 51.7 min (822.3 - 770.6)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	723 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		919 cf	Total Available Storage

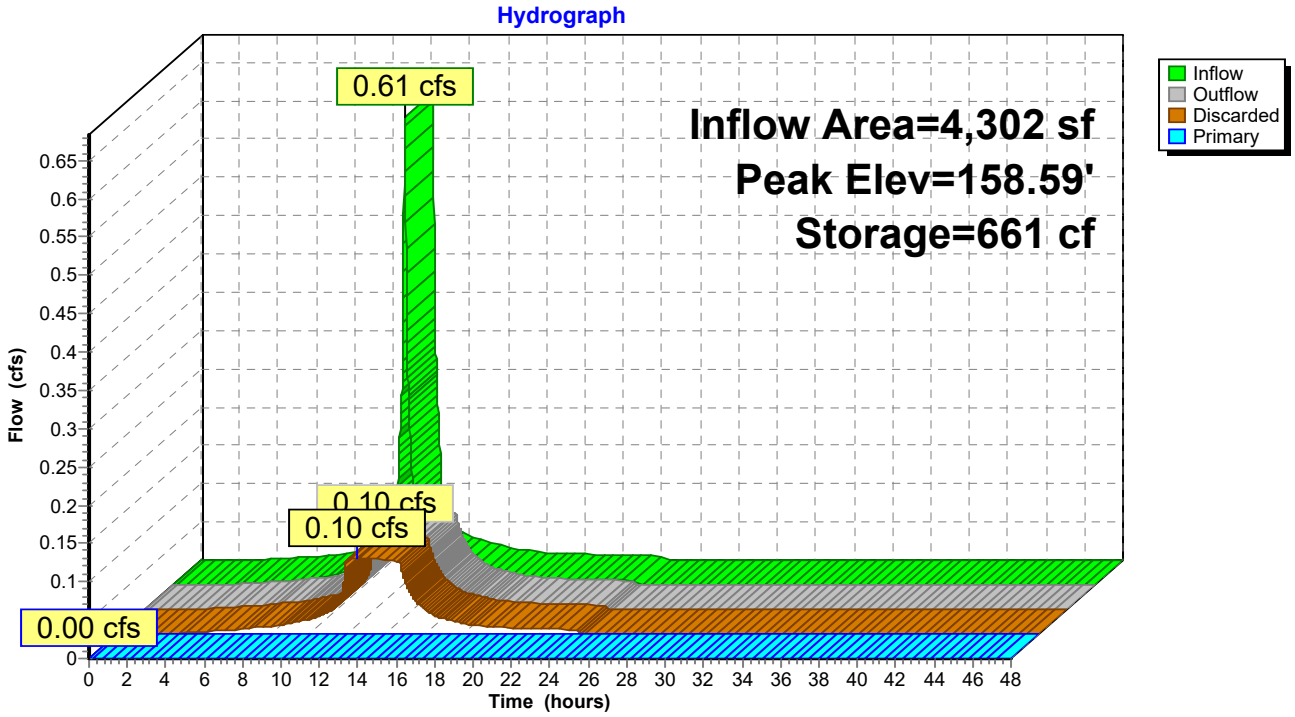
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	56	28.0	3	6	68
158.50	1,454	148.0	299	305	1,749
158.70	2,800	203.0	418	723	3,286

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.10 cfs @ 12.53 hrs HW=158.59' (Free Discharge)
1=Exfiltration - Sand (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: CB#1


Hydrograph
Inflow
Outflow
Discarded
Primary
0.61 cfs
0.10 cfs
0.10 cfs
0.00 cfs
Inflow Area=4,302 sf
Peak Elev=158.59'
Storage=661 cf
Flow (cfs)
0 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65
Time (hours)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond 2P: CB#2 and CB #4

[58] Hint: Peaked 0.05' above defined flood level

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 5.38" for 25-Year event
Inflow = 1.96 cfs @ 12.07 hrs, Volume= 6,262 cf
Outflow = 1.17 cfs @ 12.17 hrs, Volume= 6,262 cf, Atten= 40%, Lag= 5.7 min
Discarded = 0.28 cfs @ 12.17 hrs, Volume= 5,449 cf
Primary = 0.88 cfs @ 12.17 hrs, Volume= 813 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.45' @ 12.17 hrs Surf.Area= 101 sf Storage= 1,479 cf
Flood Elev= 158.40' Surf.Area= 101 sf Storage= 1,287 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 33.6 min (808.3 - 774.7)

Volume	Invert	Avail.Storage	Storage Description
#1	150.90'	108 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** x 2 553 cf Overall - 283 cf Embedded = 270 cf x 40.0% Voids
#2	151.40'	283 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** x 2 Inside #1
#3	156.40'	1,317 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,708 cf	Total Available Storage

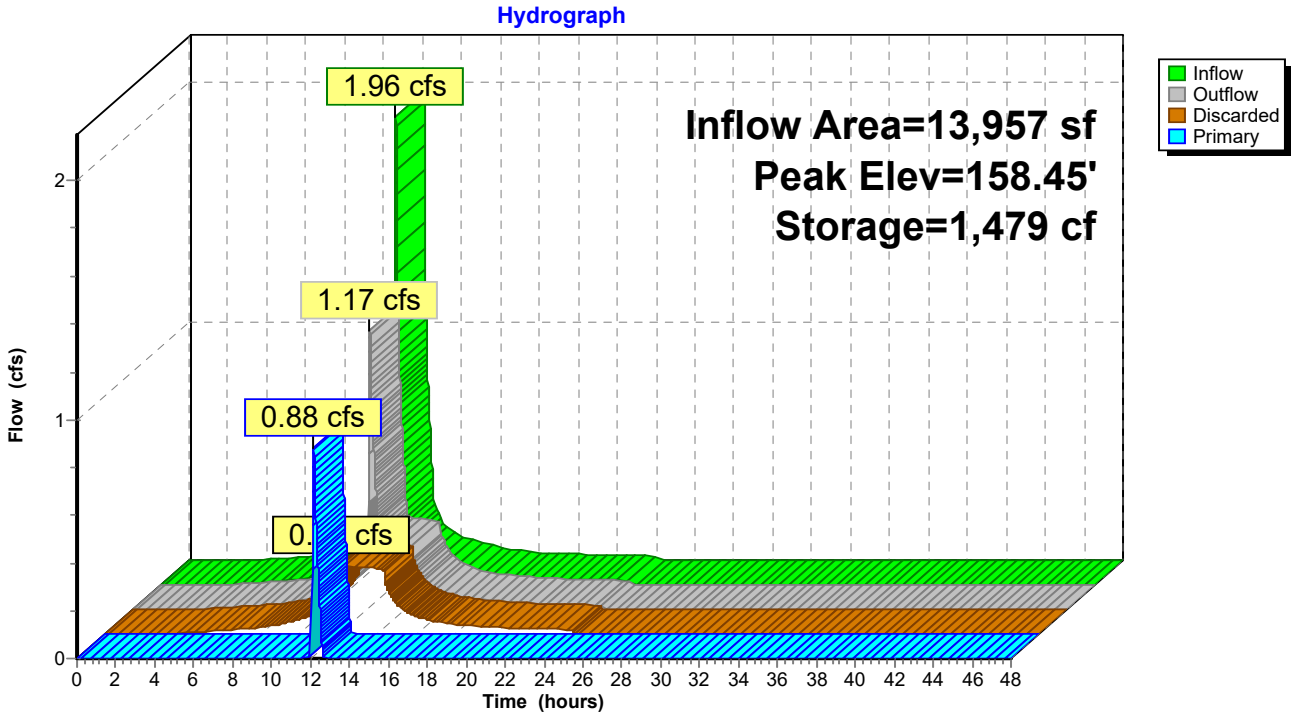
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.40	4	8.0	0	0	4
157.73	4	8.0	5	5	15
158.00	767	147.0	74	80	1,729
158.50	4,747	330.0	1,237	1,317	8,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.90'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.28 cfs @ 12.17 hrs HW=158.45' (Free Discharge)
1=Exfiltration - Sand (Controls 0.28 cfs)

Primary OutFlow Max=0.88 cfs @ 12.17 hrs HW=158.45' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.88 cfs @ 0.52 fps)

Pond 2P: CB#2 and CB #4



Summary for Pond 3P: CB#3

[58] Hint: Peaked 0.12' above defined flood level

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 4.93" for 25-Year event
Inflow = 1.22 cfs @ 12.07 hrs, Volume= 3,795 cf
Outflow = 0.77 cfs @ 12.16 hrs, Volume= 3,796 cf, Atten= 37%, Lag= 5.3 min
Discarded = 0.10 cfs @ 12.16 hrs, Volume= 2,822 cf
Primary = 0.68 cfs @ 12.16 hrs, Volume= 974 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.62' @ 12.16 hrs Surf.Area= 50 sf Storage= 925 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 632 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 47.4 min (836.2 - 788.8)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	960 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,155 cf	Total Available Storage

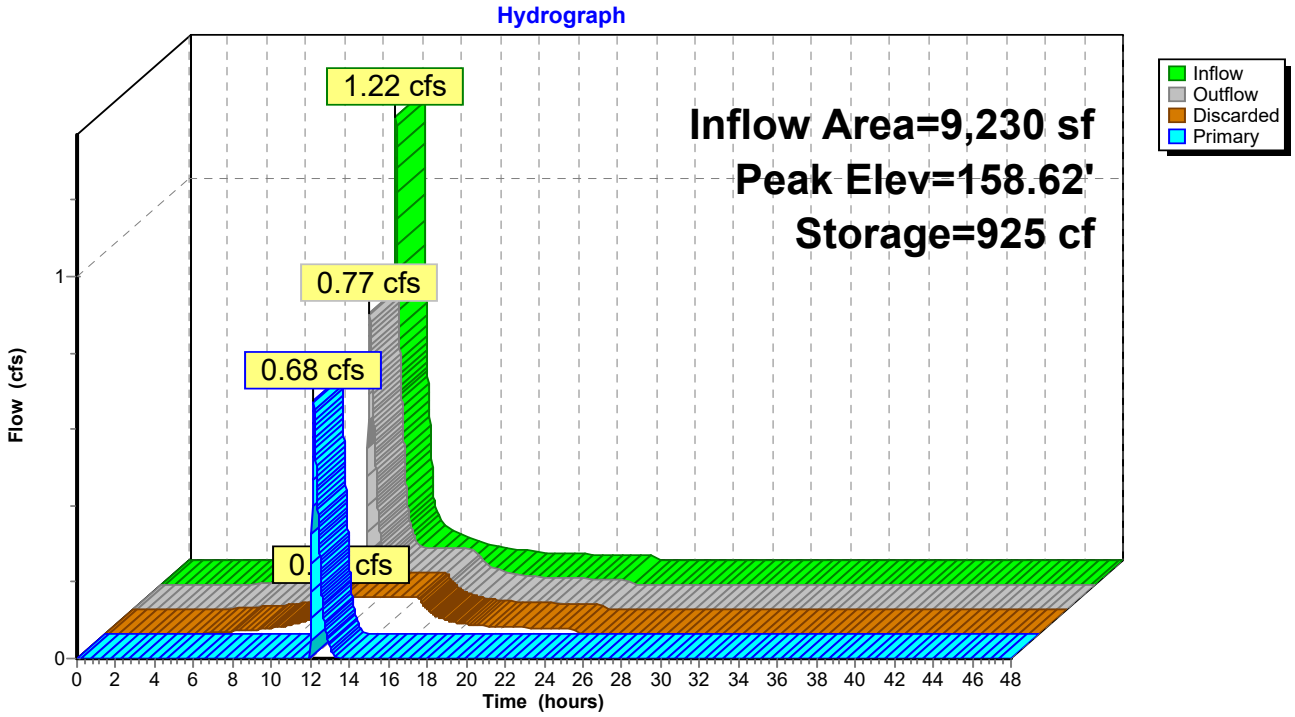
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	62	30.0	3	6	77
158.50	2,153	171.0	430	436	2,333
158.70	3,111	214.0	523	960	3,651

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**6.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.10 cfs @ 12.16 hrs HW=158.62' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.68 cfs @ 12.16 hrs HW=158.62' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.68 cfs @ 0.93 fps)

Pond 3P: CB#3

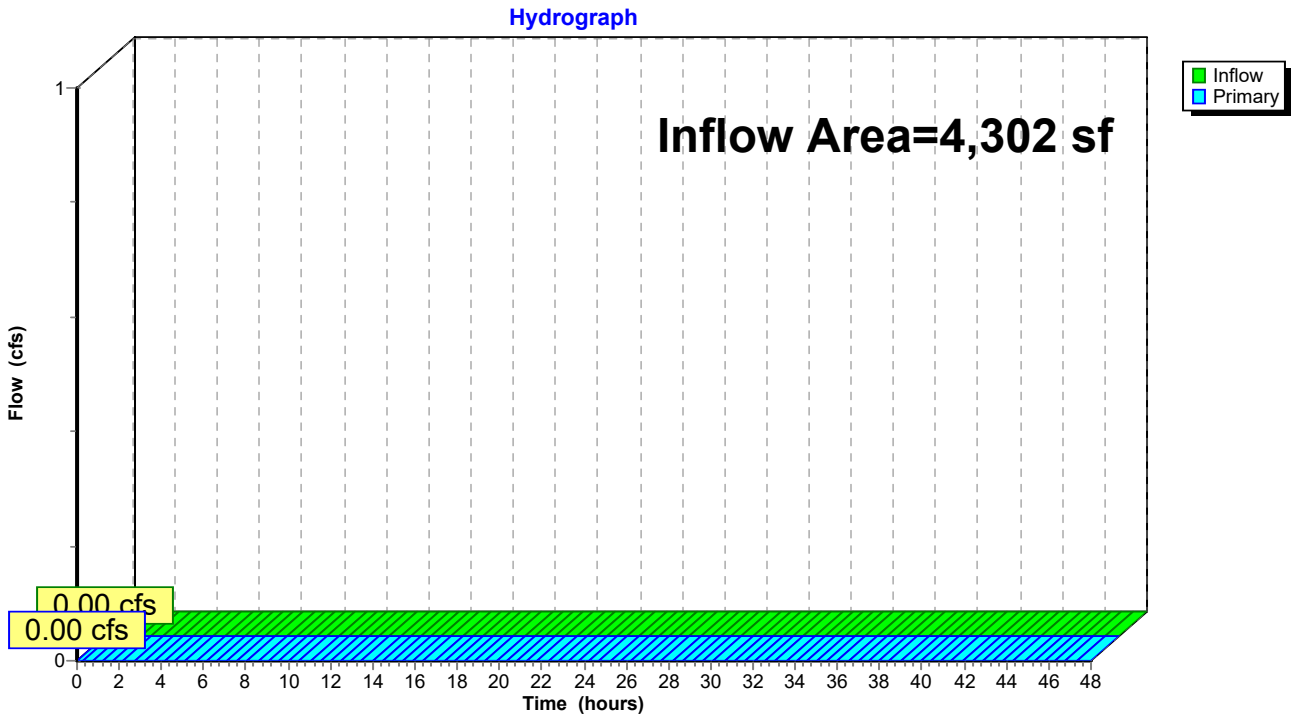

Hydrograph
Inflow Area=9,230 sf
Peak Elev=158.62'
Storage=925 cf
1.22 cfs
0.77 cfs
0.68 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 1S: South Curbcut

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 0.00" for 25-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

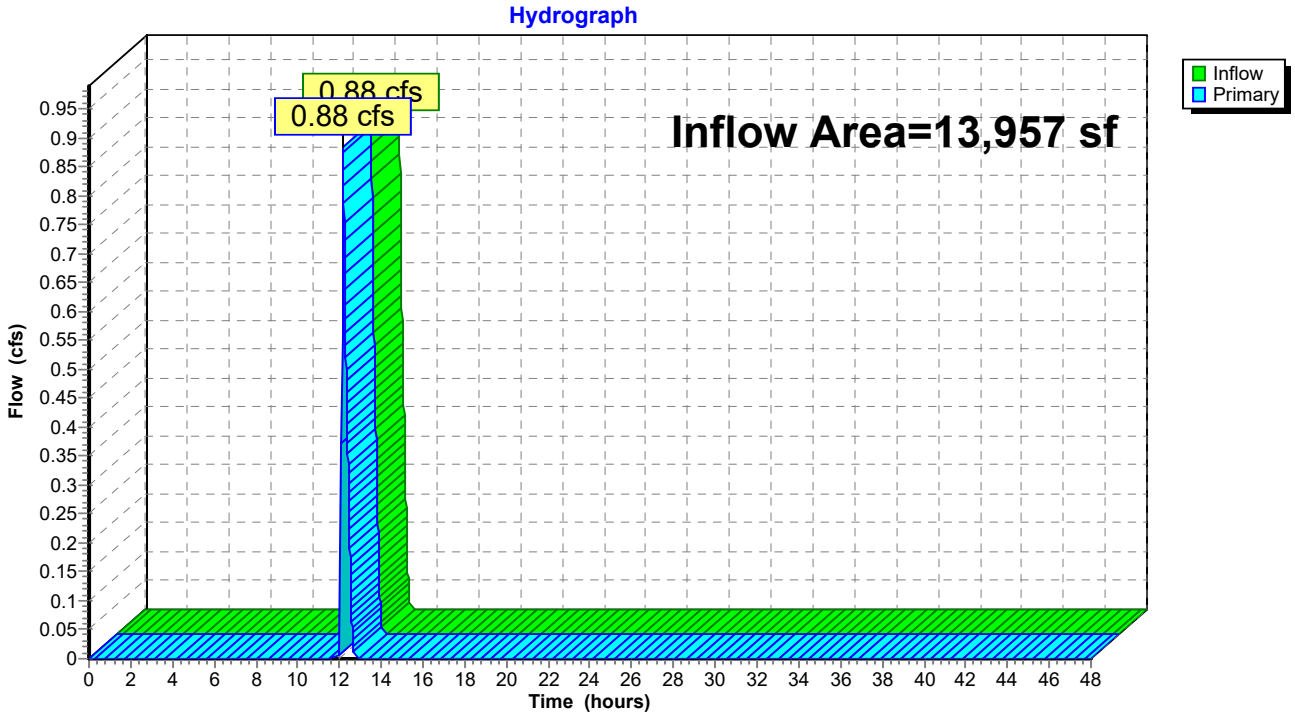


Summary for Link 2S: North Curbcut

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 0.70" for 25-Year event
Inflow = 0.88 cfs @ 12.17 hrs, Volume= 813 cf
Primary = 0.88 cfs @ 12.17 hrs, Volume= 813 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

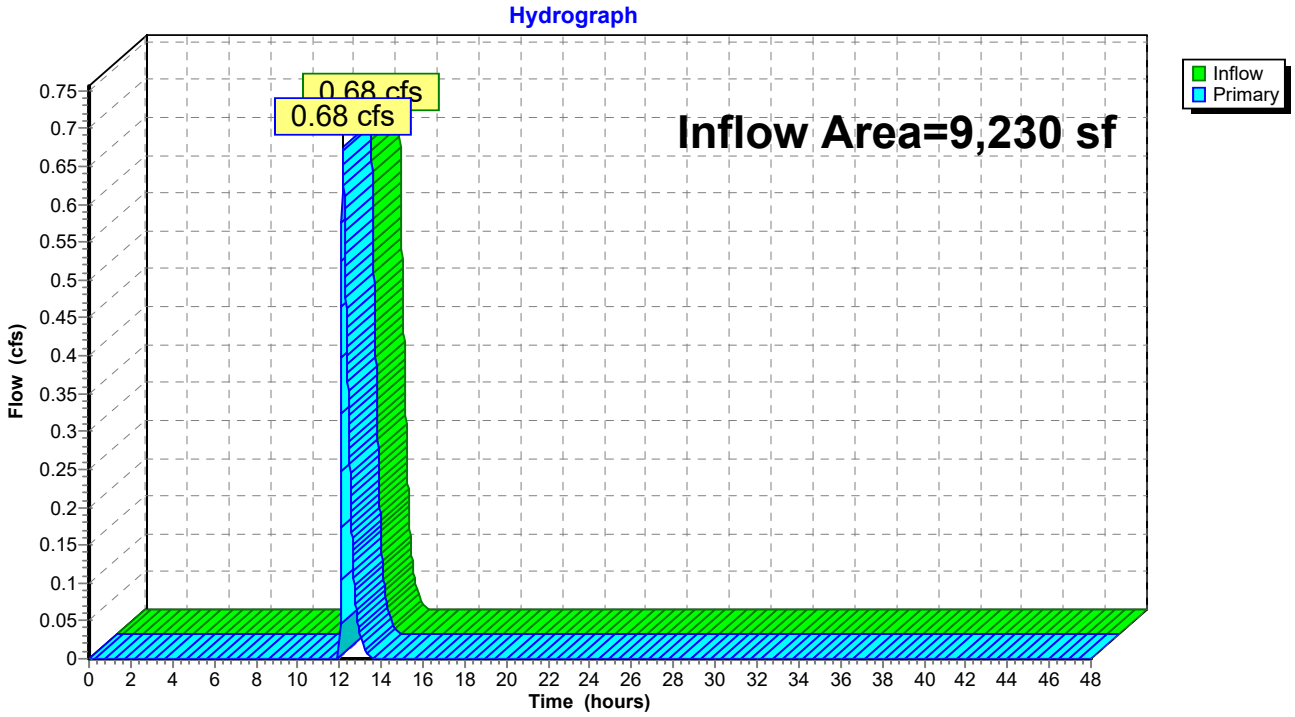


Summary for Link 3S: Southwest Corner

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 1.27" for 25-Year event
Inflow = 0.68 cfs @ 12.16 hrs, Volume= 974 cf
Primary = 0.68 cfs @ 12.16 hrs, Volume= 974 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3S: Southwest Corner



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: CB#1 SOUTHEAST Runoff Area=4,302 sf 91.59% Impervious Runoff Depth=7.32"
Tc=5.0 min CN=93 Runoff=0.80 cfs 2,625 cf

Subcatchment 2: NORTH HALF Runoff Area=13,957 sf 89.66% Impervious Runoff Depth=7.20"
Tc=5.0 min CN=92 Runoff=2.58 cfs 8,376 cf

Subcatchment 3: CB#3 SOUTHWEST Runoff Area=9,230 sf 69.06% Impervious Runoff Depth=6.72"
Tc=5.0 min CN=88 Runoff=1.64 cfs 5,172 cf

Pond 1P: CB#1 Peak Elev=158.62' Storage=719 cf Inflow=0.80 cfs 2,625 cf
Discarded=0.10 cfs 2,357 cf Primary=0.30 cfs 268 cf Outflow=0.40 cfs 2,625 cf

Pond 2P: CB#2 and CB #4 Peak Elev=158.48' Storage=1,620 cf Inflow=2.58 cfs 8,376 cf
Discarded=0.28 cfs 6,612 cf Primary=1.89 cfs 1,764 cf Outflow=2.18 cfs 8,377 cf

Pond 3P: CB#3 Peak Elev=158.67' Storage=1,070 cf Inflow=1.64 cfs 5,172 cf
Discarded=0.10 cfs 3,417 cf Primary=1.15 cfs 1,755 cf Outflow=1.25 cfs 5,173 cf

Link 1S: South Curbcut Inflow=0.30 cfs 268 cf
Primary=0.30 cfs 268 cf

Link 2S: North Curbcut Inflow=1.89 cfs 1,764 cf
Primary=1.89 cfs 1,764 cf

Link 3S: Southwest Corner Inflow=1.15 cfs 1,755 cf
Primary=1.15 cfs 1,755 cf

Total Runoff Area = 27,489 sf Runoff Volume = 16,174 cf Average Runoff Depth = 7.06"
16.96% Pervious = 4,661 sf 83.04% Impervious = 22,828 sf

Summary for Subcatchment 1: CB#1 SOUTHEAST

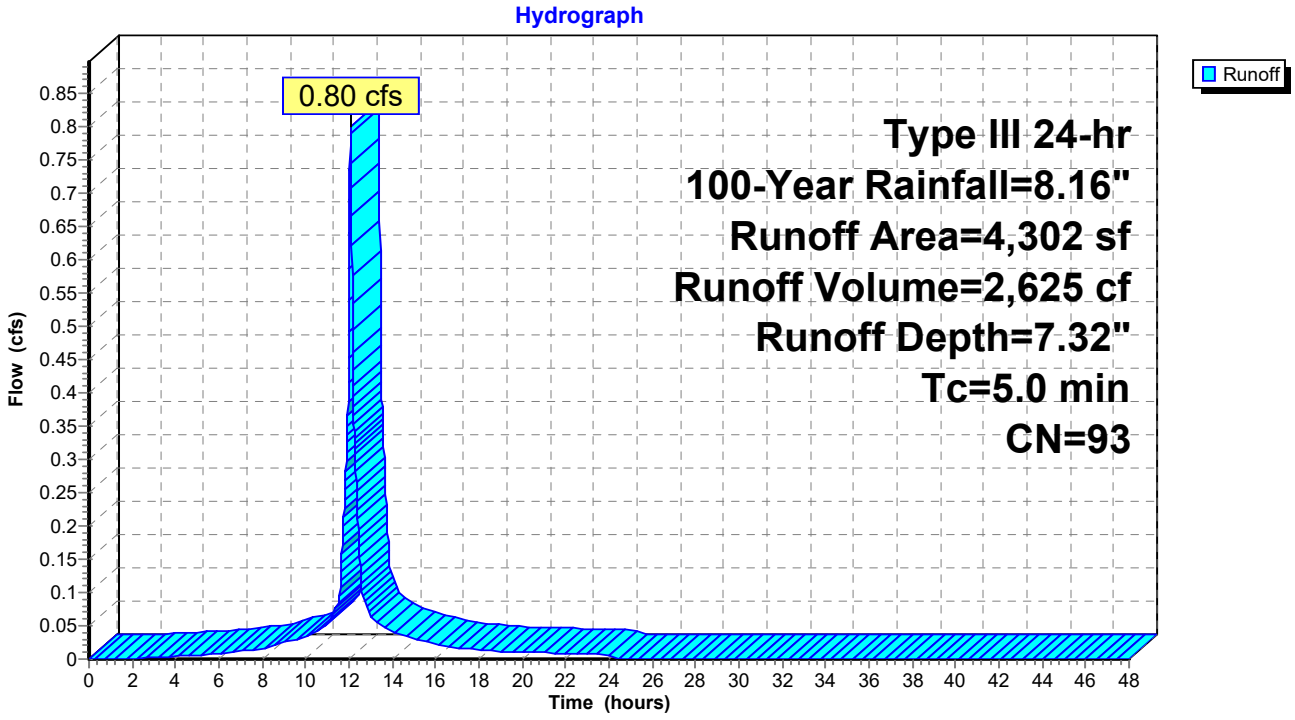
Runoff = 0.80 cfs @ 12.07 hrs, Volume= 2,625 cf, Depth= 7.32"
Routed to Pond 1P : CB#1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

Area (sf)	CN	Description
3,940	98	Paved parking, HSG A
362	39	>75% Grass cover, Good, HSG A
4,302	93	Weighted Average
362		8.41% Pervious Area
3,940		91.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1: CB#1 SOUTHEAST



Summary for Subcatchment 2: NORTH HALF SITE_ROOF

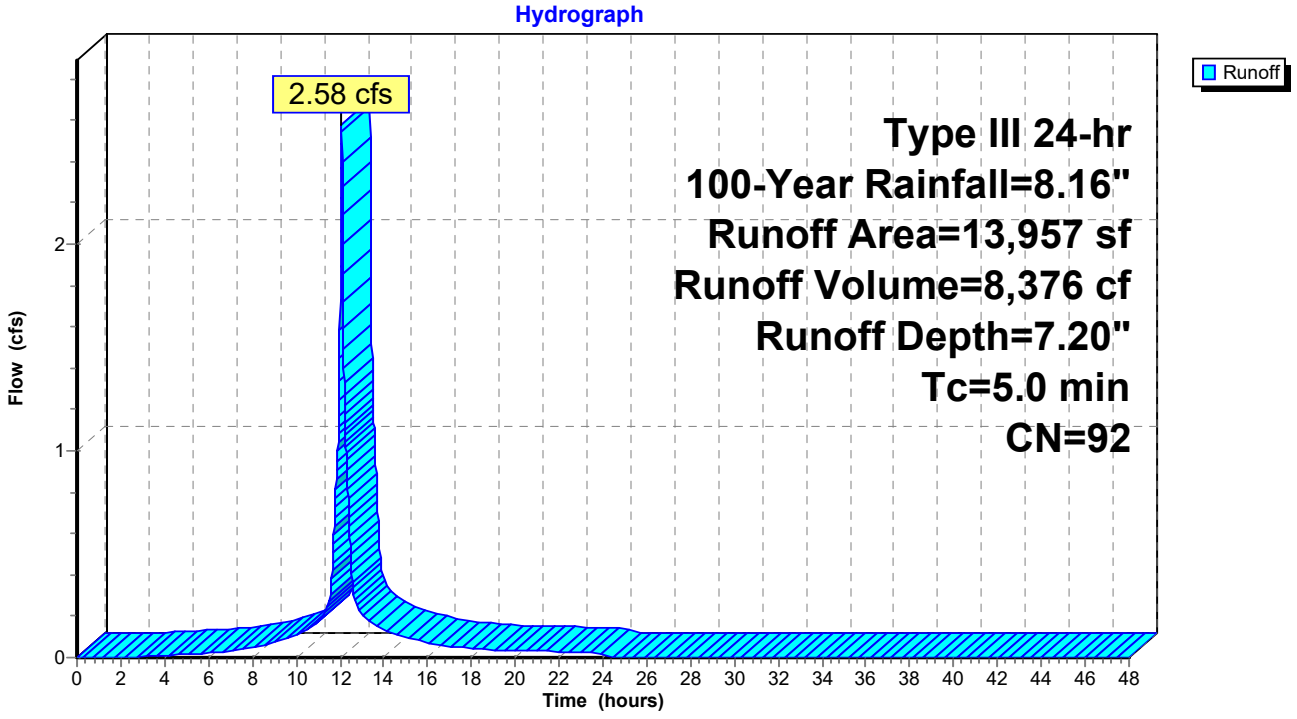
Runoff = 2.58 cfs @ 12.07 hrs, Volume= 8,376 cf, Depth= 7.20"
Routed to Pond 2P : CB#2 and CB #4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

Area (sf)	CN	Description
4,464	98	Roofs, HSG A
8,050	98	Paved parking, HSG A
1,443	39	>75% Grass cover, Good, HSG A
13,957	92	Weighted Average
1,443		10.34% Pervious Area
12,514		89.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2: NORTH HALF SITE_ROOF



Summary for Subcatchment 3: CB#3 SOUTHWEST

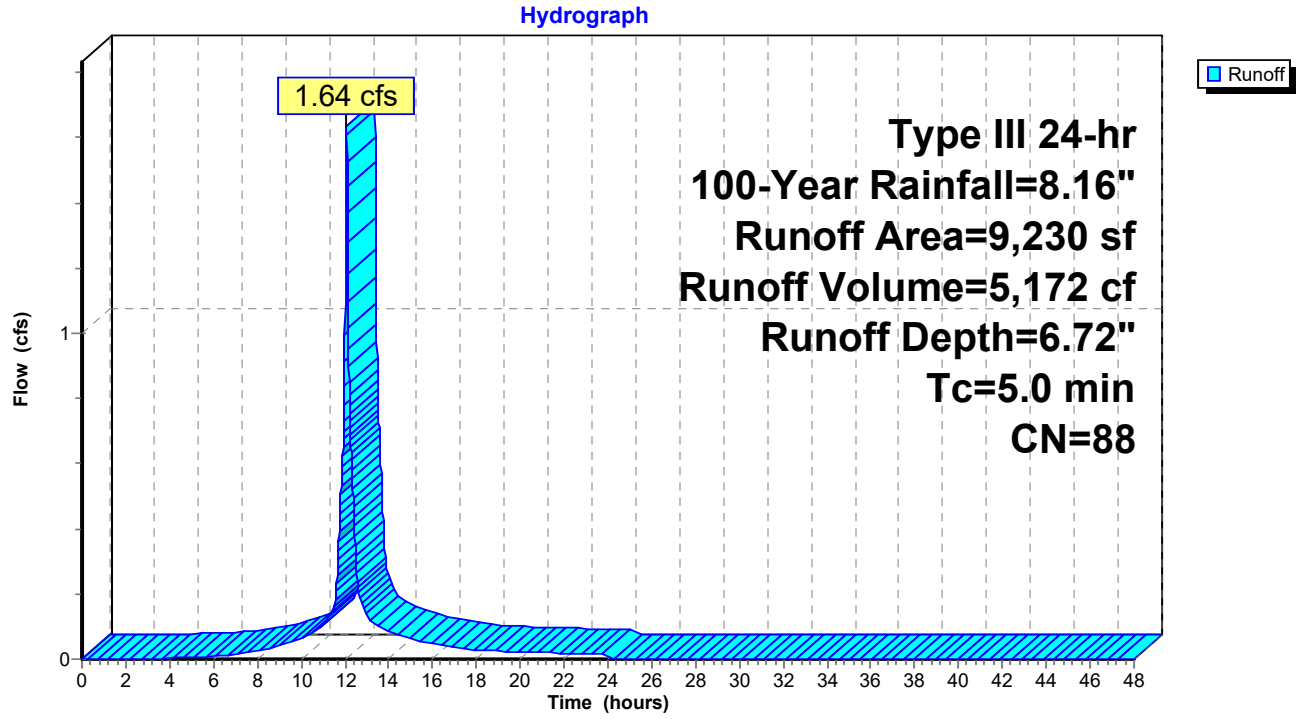
Runoff = 1.64 cfs @ 12.07 hrs, Volume= 5,172 cf, Depth= 6.72"
Routed to Pond 3P : CB#3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

Area (sf)	CN	Description
297	98	Roofs, HSG A
6,077	98	Paved parking, HSG A
1,270	96	Gravel surface, HSG A
1,586	39	>75% Grass cover, Good, HSG A
9,230	88	Weighted Average
2,856		30.94% Pervious Area
6,374		69.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3: CB#3 SOUTHWEST



Summary for Pond 1P: CB#1

[58] Hint: Peaked 0.02' above defined flood level

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 7.32" for 100-Year event
Inflow = 0.80 cfs @ 12.07 hrs, Volume= 2,625 cf
Outflow = 0.40 cfs @ 12.20 hrs, Volume= 2,625 cf, Atten= 50%, Lag= 7.7 min
Discarded = 0.10 cfs @ 12.20 hrs, Volume= 2,357 cf
Primary = 0.30 cfs @ 12.20 hrs, Volume= 268 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.62' @ 12.20 hrs Surf.Area= 50 sf Storage= 719 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 676 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 49.8 min (813.7 - 763.9)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	723 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		919 cf	Total Available Storage

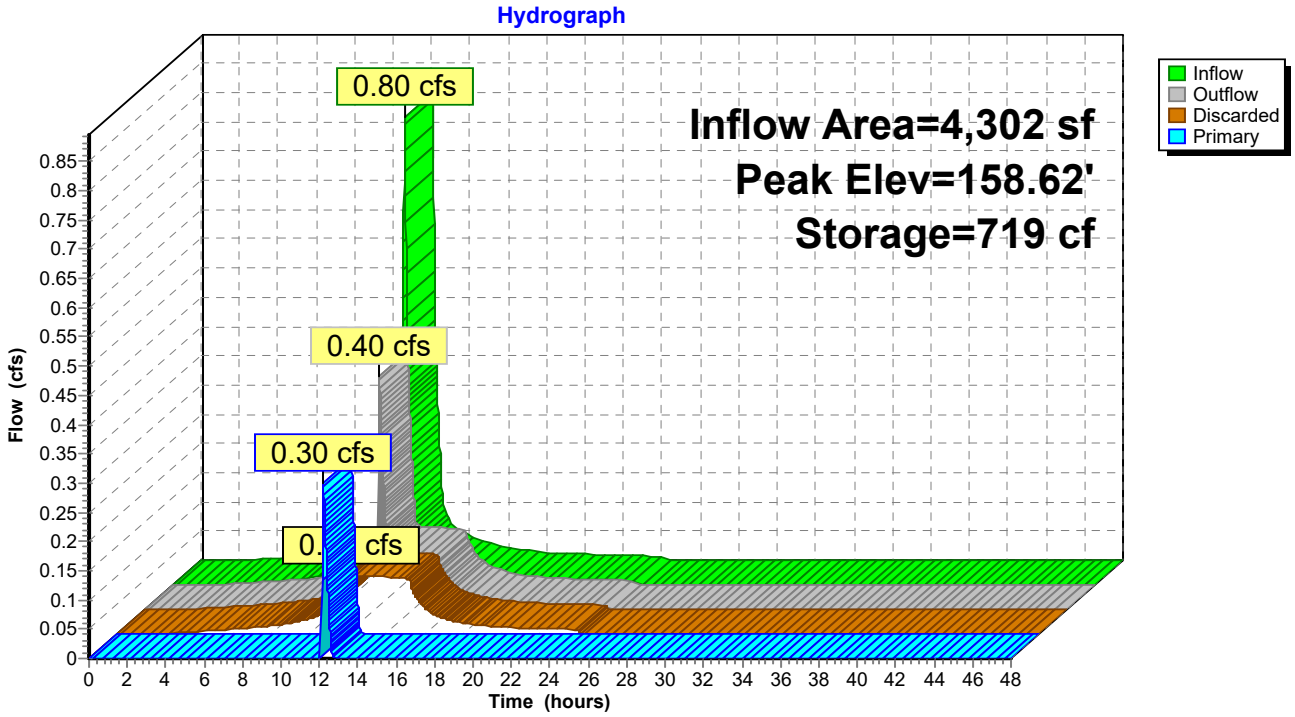
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	56	28.0	3	6	68
158.50	1,454	148.0	299	305	1,749
158.70	2,800	203.0	418	723	3,286

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.10 cfs @ 12.20 hrs HW=158.62' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.30 cfs @ 12.20 hrs HW=158.62' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 0.33 fps)

Pond 1P: CB#1


Hydrograph
Inflow Area=4,302 sf
Peak Elev=158.62'
Storage=719 cf
0.80 cfs
0.40 cfs
0.30 cfs
cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 0.05 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75 0.8 0.85
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond 2P: CB#2 and CB #4

[58] Hint: Peaked 0.08' above defined flood level

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 7.20" for 100-Year event
Inflow = 2.58 cfs @ 12.07 hrs, Volume= 8,376 cf
Outflow = 2.18 cfs @ 12.12 hrs, Volume= 8,377 cf, Atten= 15%, Lag= 2.9 min
Discarded = 0.28 cfs @ 12.12 hrs, Volume= 6,612 cf
Primary = 1.89 cfs @ 12.12 hrs, Volume= 1,764 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.48' @ 12.12 hrs Surf.Area= 101 sf Storage= 1,620 cf
Flood Elev= 158.40' Surf.Area= 101 sf Storage= 1,287 cf

Plug-Flow detention time= 32.0 min calculated for 8,375 cf (100% of inflow)
Center-of-Mass det. time= 32.0 min (799.6 - 767.6)

Volume	Invert	Avail.Storage	Storage Description
#1	150.90'	108 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** x 2 553 cf Overall - 283 cf Embedded = 270 cf x 40.0% Voids
#2	151.40'	283 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** x 2 Inside #1
#3	156.40'	1,317 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,708 cf	Total Available Storage

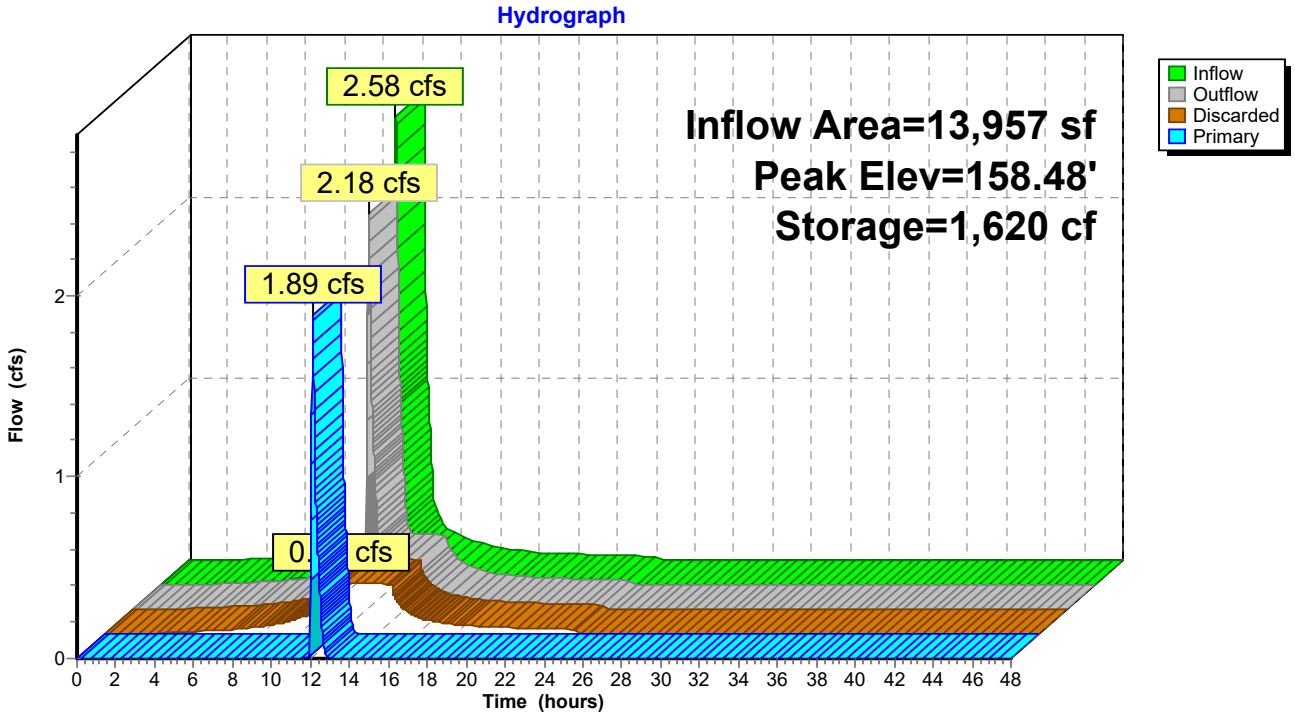
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.40	4	8.0	0	0	4
157.73	4	8.0	5	5	15
158.00	767	147.0	74	80	1,729
158.50	4,747	330.0	1,237	1,317	8,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	150.90'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.28 cfs @ 12.12 hrs HW=158.48' (Free Discharge)
1=Exfiltration - Sand (Controls 0.28 cfs)

Primary OutFlow Max=1.89 cfs @ 12.12 hrs HW=158.48' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 1.89 cfs @ 0.67 fps)

Pond 2P: CB#2 and CB #4



Summary for Pond 3P: CB#3

[58] Hint: Peaked 0.17' above defined flood level

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 6.72" for 100-Year event
Inflow = 1.64 cfs @ 12.07 hrs, Volume= 5,172 cf
Outflow = 1.25 cfs @ 12.13 hrs, Volume= 5,173 cf, Atten= 24%, Lag= 3.8 min
Discarded = 0.10 cfs @ 12.13 hrs, Volume= 3,417 cf
Primary = 1.15 cfs @ 12.13 hrs, Volume= 1,755 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.67' @ 12.13 hrs Surf.Area= 50 sf Storage= 1,070 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 632 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 44.9 min (825.4 - 780.5)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	960 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		1,155 cf	Total Available Storage

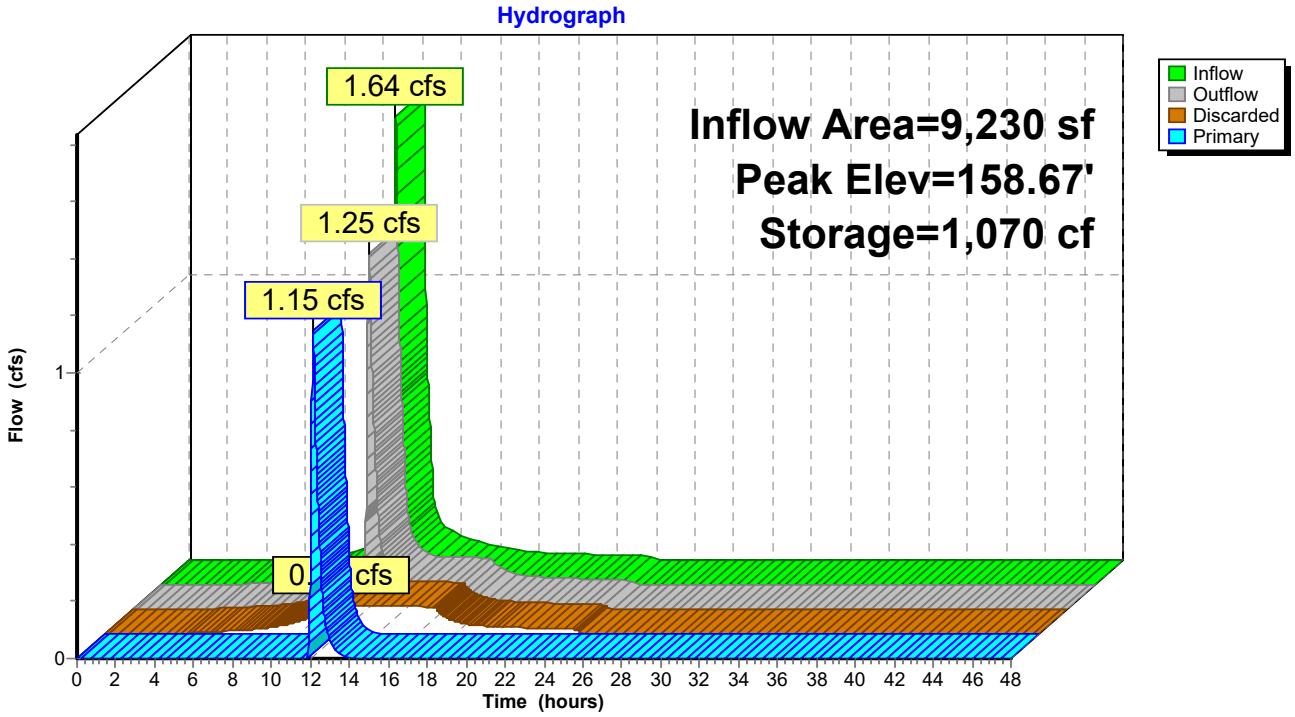
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
157.89	4	8.0	3	3	10
158.00	62	30.0	3	6	77
158.50	2,153	171.0	430	436	2,333
158.70	3,111	214.0	523	960	3,651

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**6.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.10 cfs @ 12.13 hrs HW=158.67' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=1.15 cfs @ 12.13 hrs HW=158.67' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.15 cfs @ 1.11 fps)

Pond 3P: CB#3

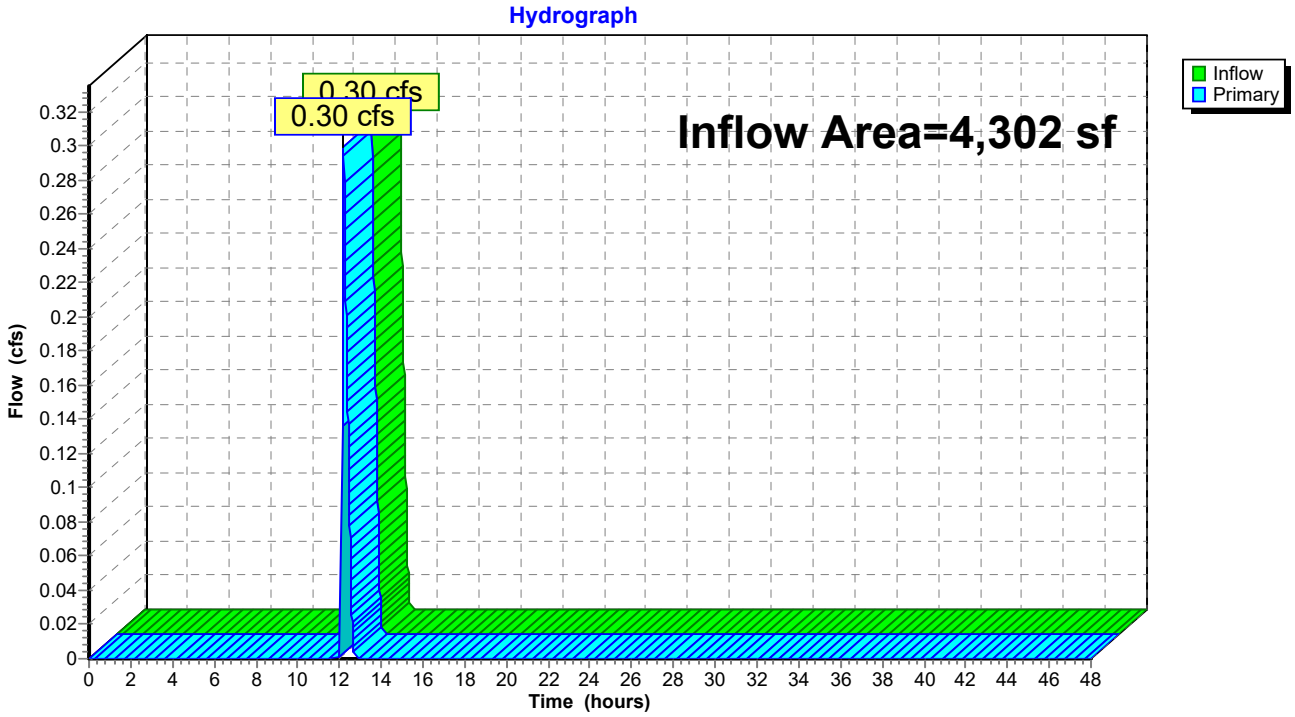

Hydrograph
Inflow
Outflow
Discarded
Primary
1.64 cfs
1.25 cfs
1.15 cfs
0 cfs
Inflow Area=9,230 sf
Peak Elev=158.67'
Storage=1,070 cf
Flow (cfs)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Link 1S: South Curbcut

Inflow Area = 4,302 sf, 91.59% Impervious, Inflow Depth = 0.75" for 100-Year event
Inflow = 0.30 cfs @ 12.20 hrs, Volume= 268 cf
Primary = 0.30 cfs @ 12.20 hrs, Volume= 268 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

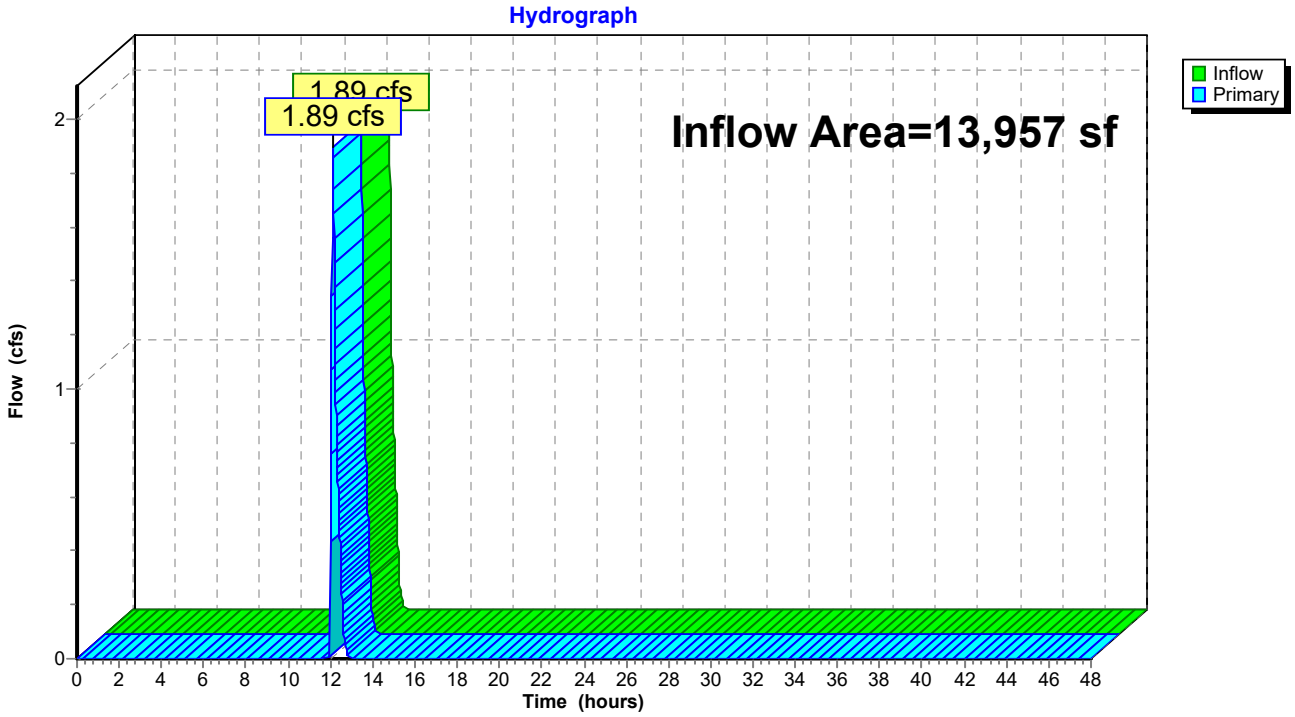


Summary for Link 2S: North Curbcut

Inflow Area = 13,957 sf, 89.66% Impervious, Inflow Depth = 1.52" for 100-Year event
Inflow = 1.89 cfs @ 12.12 hrs, Volume= 1,764 cf
Primary = 1.89 cfs @ 12.12 hrs, Volume= 1,764 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

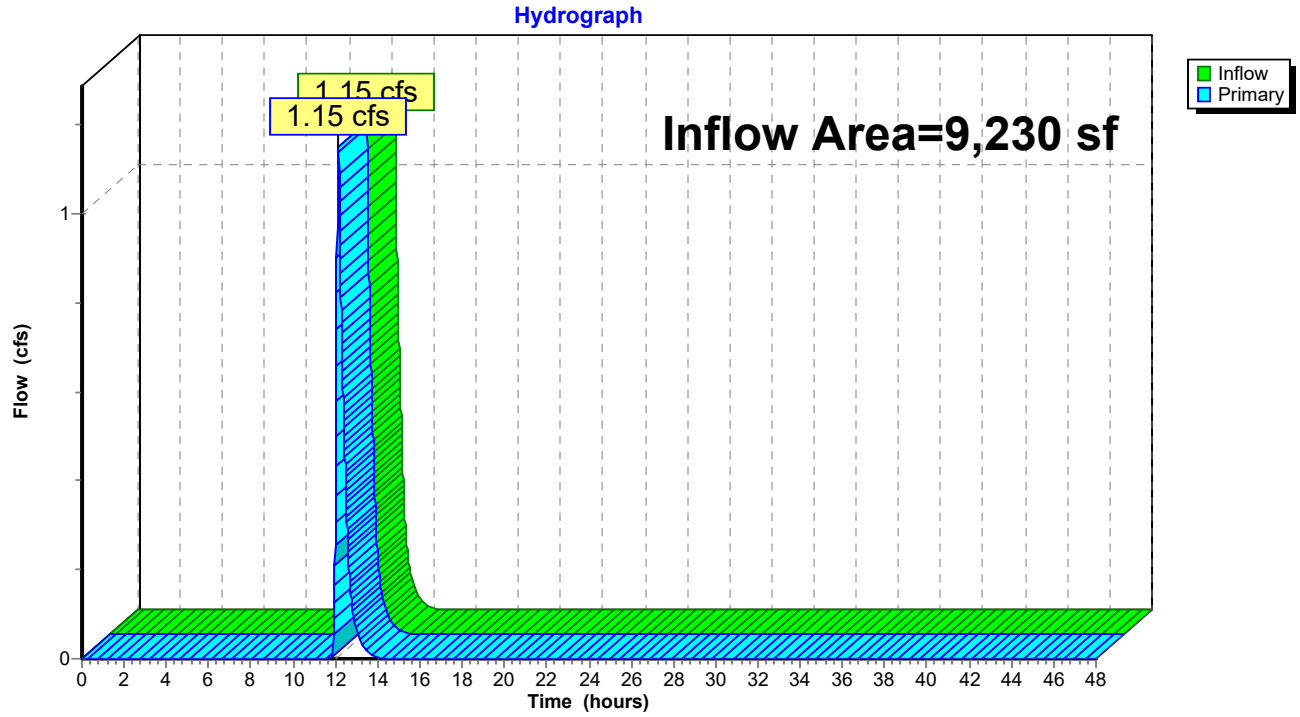


Summary for Link 3S: Southwest Corner

Inflow Area = 9,230 sf, 69.06% Impervious, Inflow Depth = 2.28" for 100-Year event
Inflow = 1.15 cfs @ 12.13 hrs, Volume= 1,755 cf
Primary = 1.15 cfs @ 12.13 hrs, Volume= 1,755 cf, Atten= 0%, Lag= 0.0 min

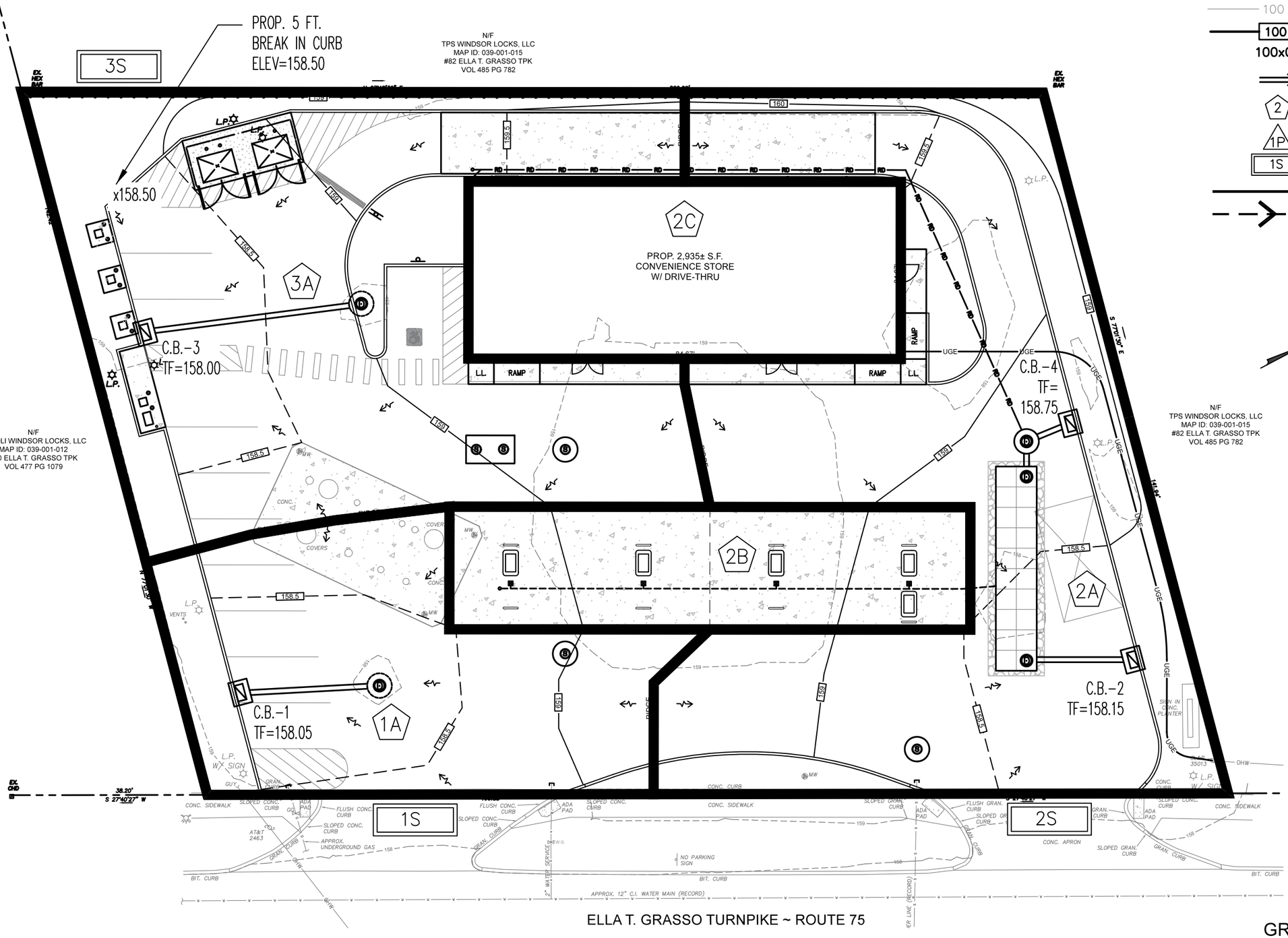
Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

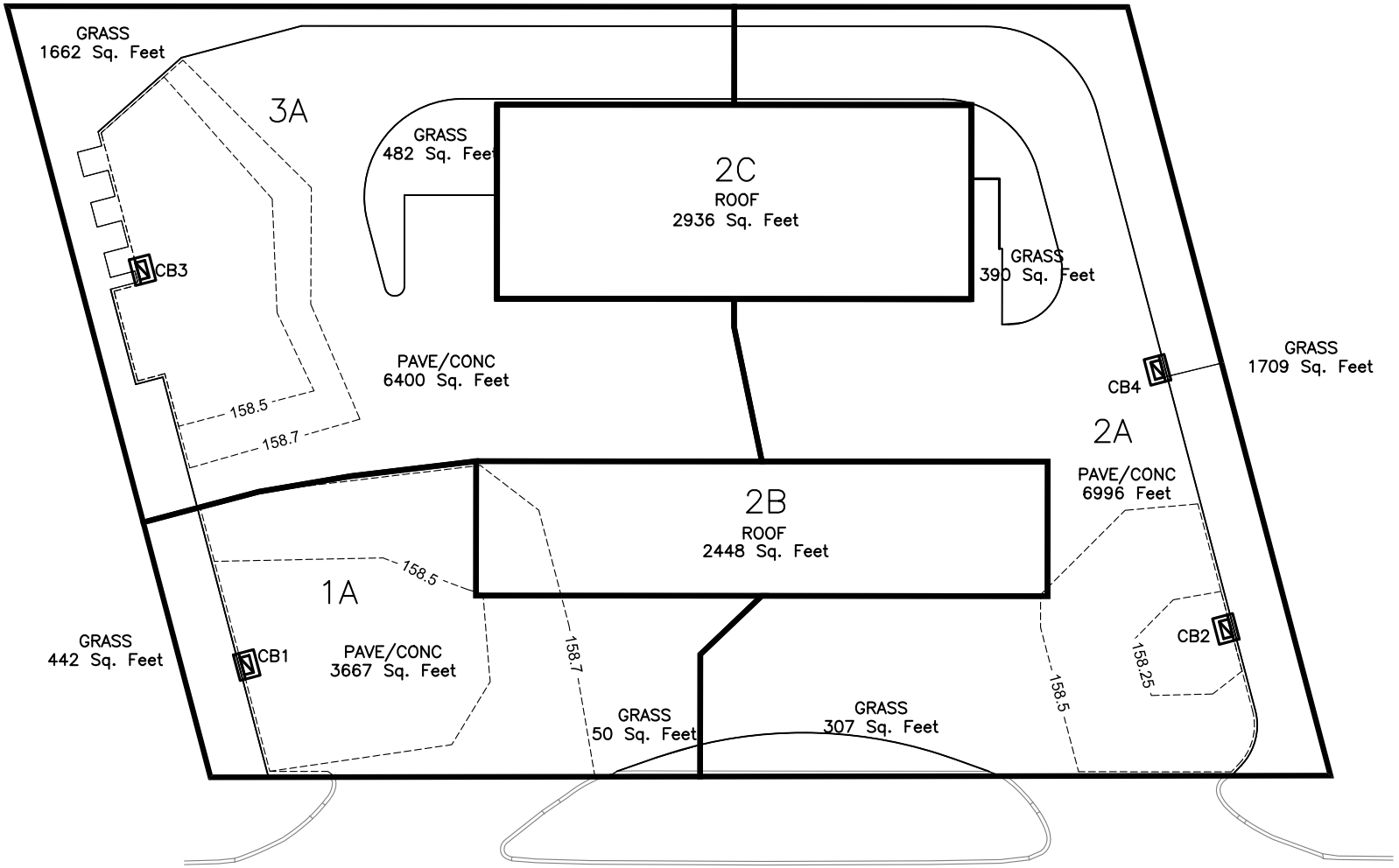
Link 3S: Southwest Corner



Appendix D

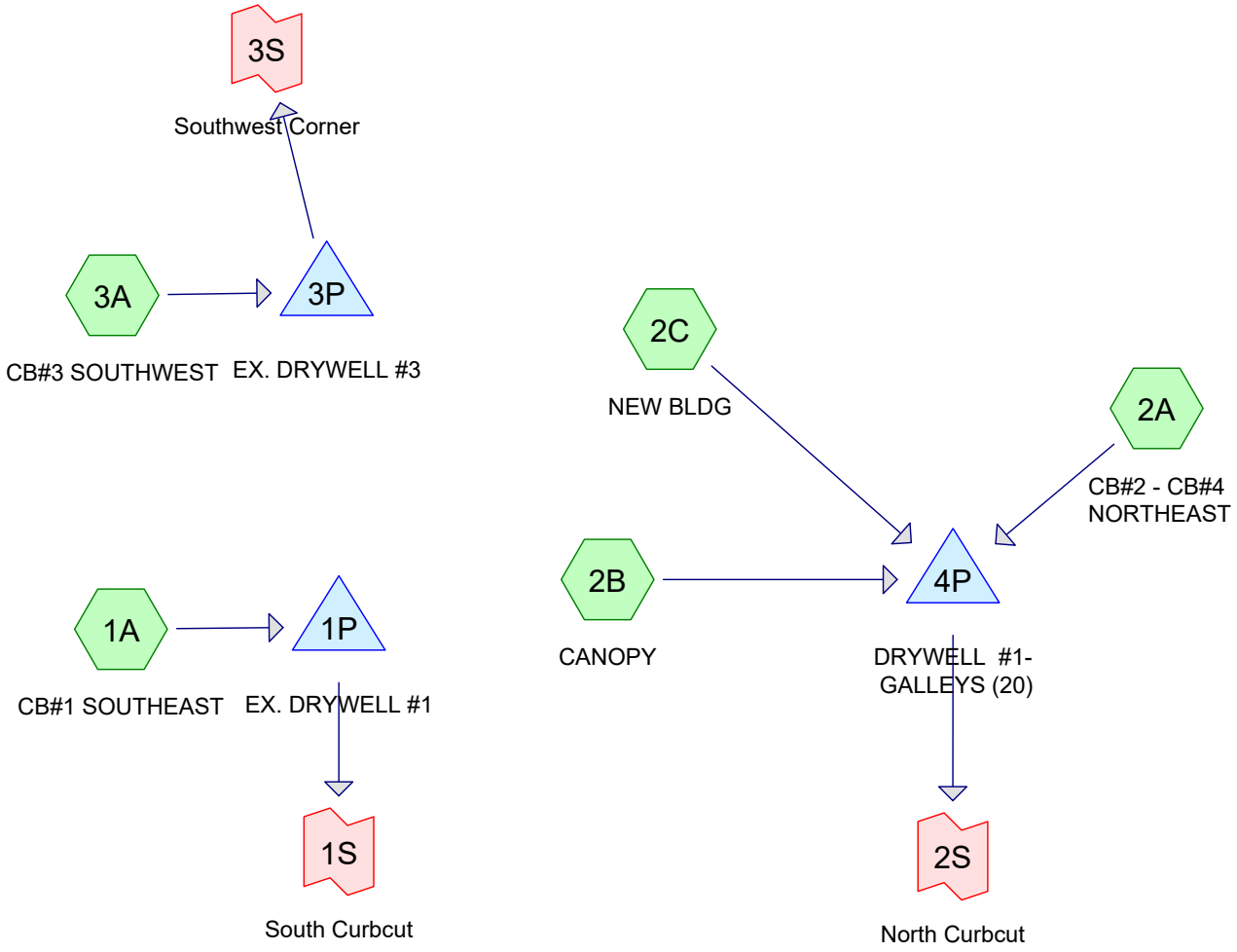
Post-Development Drainage Calculations


PROP. 5 FT.
BREAK IN CURB
ELEV=158.50
3S
N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782
EX. HEX BAR
x158.50
2C
PROP. 2,935± S.F.
CONVENIENCE STORE
W/ DRIVE-THRU
3A
C.B.-3
TF=158.00
RAMP
LL.
C.B.-4
TF=
158.75
2B
2A
1A
C.B.-1
TF=158.05
C.B.-2
TF=158.15
1S
2S
N/F
NAPOLI WINDSOR LOCKS, LLC
MAP ID: 039-001-012
#70 ELLA T. GRASSO TPK
VOL 477 PG 1079
N/F
TPS WINDSOR LOCKS, LLC
MAP ID: 039-001-015
#82 ELLA T. GRASSO TPK
VOL 485 PG 782
S 77°01'30" E
N 77°01'30" W
38.20'
S 27°40'27" W
CONC. SIDEWALK
SLOPED CONC. CURB
FLUSH CONC. CURB
ADA PAD
GRAN. CURB
CONC. CURB
SLOPED GRAN. CURB
CONC. APRON
BIT. CURB
NO PARKING SIGN
2" WATER SERVICE
APPROX. 12" C.I. WATER MAIN (RECORD)
APPROX. UNDERGROUND GAS
AT&T 2463
UGE
OHW
L.P.
MW
CONC.
COVERS
VENTS
GUY
WV
SIGN
SIGN IN CONC. PLANTER
ELECTRIC MANHOLE
35013
ELECTRIC MANHOLE
ELECTRIC MANHOLE
ELECTRIC MANHOLE



	PAVE/CONC	ROOF	GRASS	GRAVEL	TOTAL
AREA 1A	3,667 S.F.	N/A	492 S.F.	N/A	4,159 S.F.
AREA 2A	6,996 S.F.	N/A	2,406 S.F.	N/A	9,402 S.F.
AREA 2B	N/A	2,448 S.F.	N/A	N/A	2,448 S.F.
AREA 2C	N/A	2,936 S.F.	N/A	N/A	2,936 S.F.
AREA 3A	6,400 S.F.	N/A	2,144 S.F.	N/A	8,544 S.F.
	17,063 S.F.	5,384 S.F.	5,042 S.F.	N/A	27,489 S.F.

CB1	AREA	PERIM.
EL. 158.50	1,454 S.F.	111 L.F.
EL. 158.70	3,110 S.F.	220 L.F.
CB2	AREA	PERIM.
EL. 158.25	260 S.F.	62 L.F.
EL. 158.50	1,396 S.F.	145 L.F.
CB3	AREA	PERIM.
EL. 158.50	1,396 S.F.	169 L.F.
EL. 158.70	2,016 S.F.	198 L.F.



Subcat Reach Pond Link

Routing Diagram for 2020-158_80EllaGrassoTpke-POST-1
Prepared by CMG, Printed 12/16/2025
HydroCAD® 10.10-6a s/n 11413 © 2020 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: CB#1 SOUTHEAST Runoff Area=4,159 sf 88.17% Impervious Runoff Depth=2.27"
Tc=5.0 min CN=91 Runoff=0.26 cfs 786 cf

Subcatchment 2A: CB#2 - CB#4 Runoff Area=9,402 sf 74.41% Impervious Runoff Depth=1.62"
Tc=5.0 min CN=83 Runoff=0.42 cfs 1,267 cf

Subcatchment 2B: CANOPY Runoff Area=2,448 sf 100.00% Impervious Runoff Depth=2.98"
Tc=5.0 min CN=98 Runoff=0.18 cfs 607 cf

Subcatchment 2C: NEW BLDG Runoff Area=2,936 sf 100.00% Impervious Runoff Depth=2.98"
Tc=5.0 min CN=98 Runoff=0.22 cfs 728 cf

Subcatchment 3A: CB#3 SOUTHWEST Runoff Area=8,544 sf 74.91% Impervious Runoff Depth=1.62"
Tc=5.0 min CN=83 Runoff=0.39 cfs 1,152 cf

Pond 1P: EX. DRYWELL #1 Peak Elev=158.10' Storage=200 cf Inflow=0.26 cfs 786 cf
Discarded=0.09 cfs 786 cf Primary=0.00 cfs 0 cf Outflow=0.09 cfs 786 cf

Pond 3P: EX. DRYWELL #3 Peak Elev=158.40' Storage=329 cf Inflow=0.39 cfs 1,152 cf
Discarded=0.10 cfs 1,152 cf Primary=0.00 cfs 0 cf Outflow=0.10 cfs 1,152 cf

Pond 4P: DRYWELL #1 - GALLEYS (20) Peak Elev=154.48' Storage=641 cf Inflow=0.82 cfs 2,603 cf
Discarded=0.20 cfs 2,604 cf Primary=0.00 cfs 0 cf Outflow=0.20 cfs 2,604 cf

Link 1S: South Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 2S: North Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 3S: Southwest Corner Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Total Runoff Area = 27,489 sf Runoff Volume = 4,541 cf Average Runoff Depth = 1.98"
18.34% Pervious = 5,042 sf 81.66% Impervious = 22,447 sf

Summary for Subcatchment 1A: CB#1 SOUTHEAST

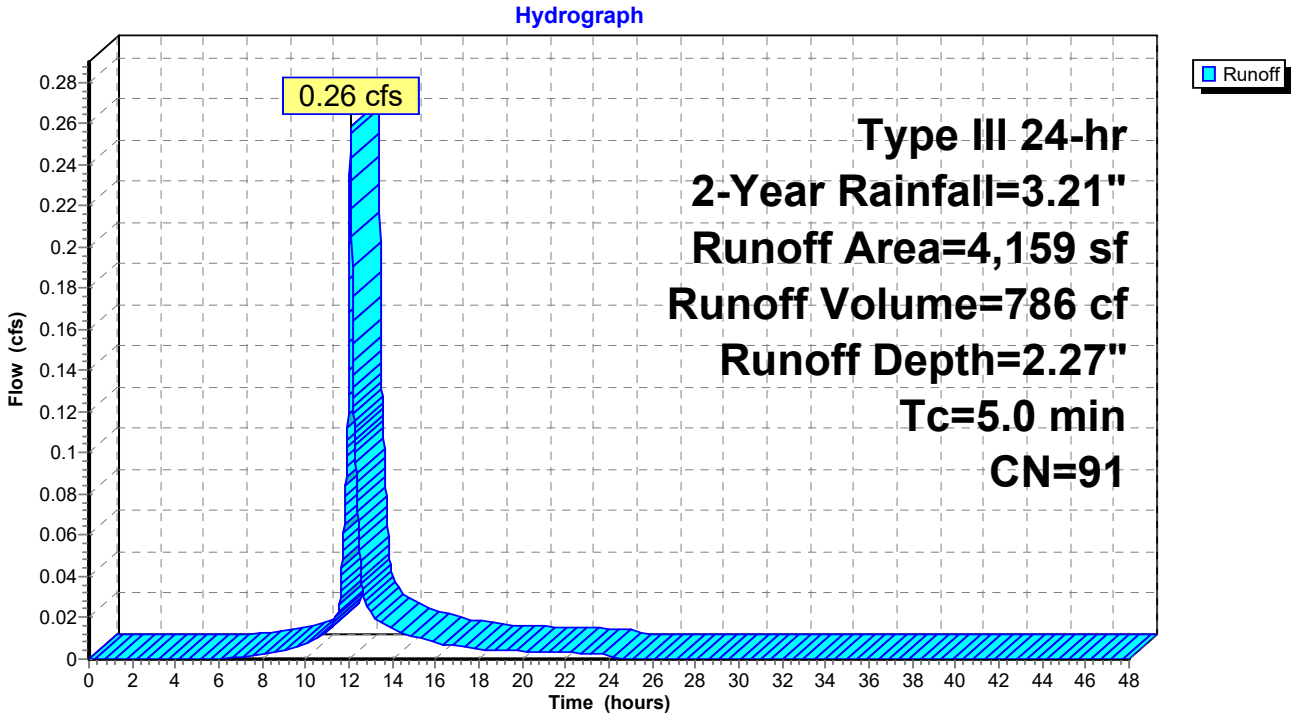
Runoff = 0.26 cfs @ 12.07 hrs, Volume= 786 cf, Depth= 2.27"
Routed to Pond 1P : EX. DRYWELL #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
3,667	98	Paved parking, HSG A
492	39	>75% Grass cover, Good, HSG A
4,159	91	Weighted Average
492		11.83% Pervious Area
3,667		88.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1A: CB#1 SOUTHEAST



Summary for Subcatchment 2A: CB#2 - CB#4 NORTHEAST

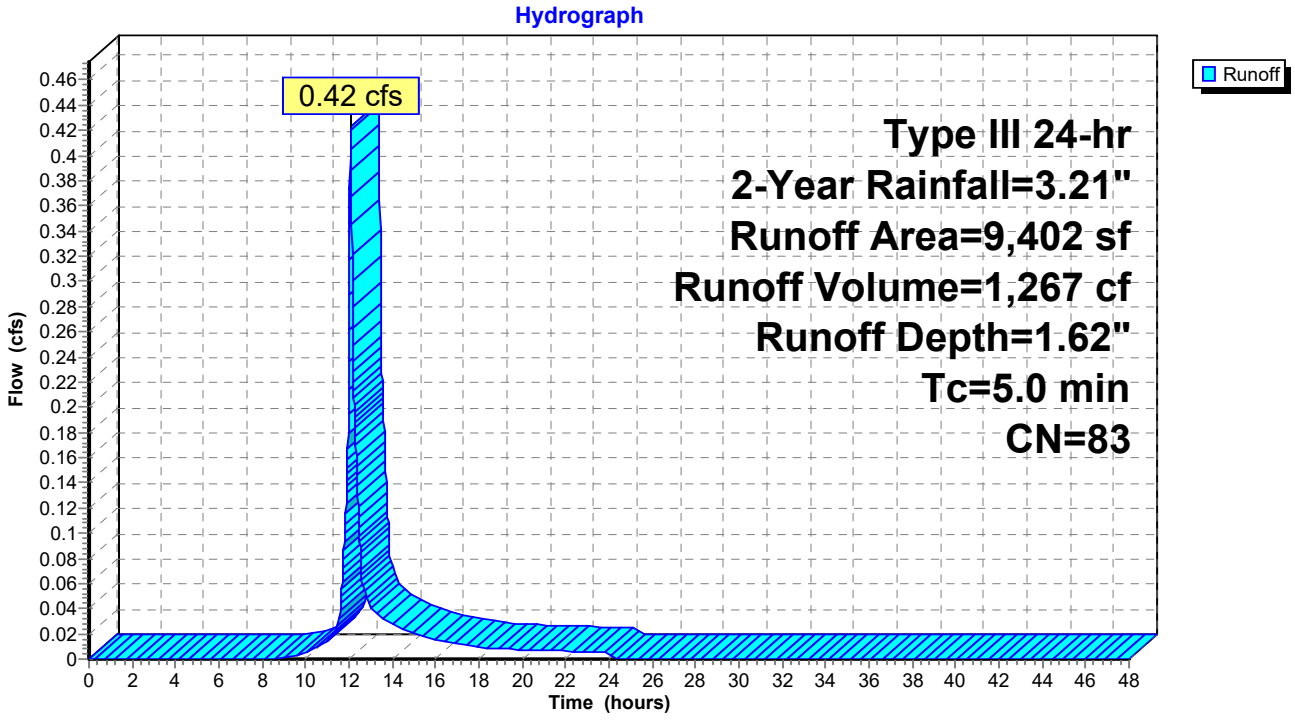
Runoff = 0.42 cfs @ 12.08 hrs, Volume= 1,267 cf, Depth= 1.62"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
6,996	98	Paved parking, HSG A
2,406	39	>75% Grass cover, Good, HSG A
9,402	83	Weighted Average
2,406		25.59% Pervious Area
6,996		74.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2A: CB#2 - CB#4 NORTHEAST



Summary for Subcatchment 2B: CANOPY

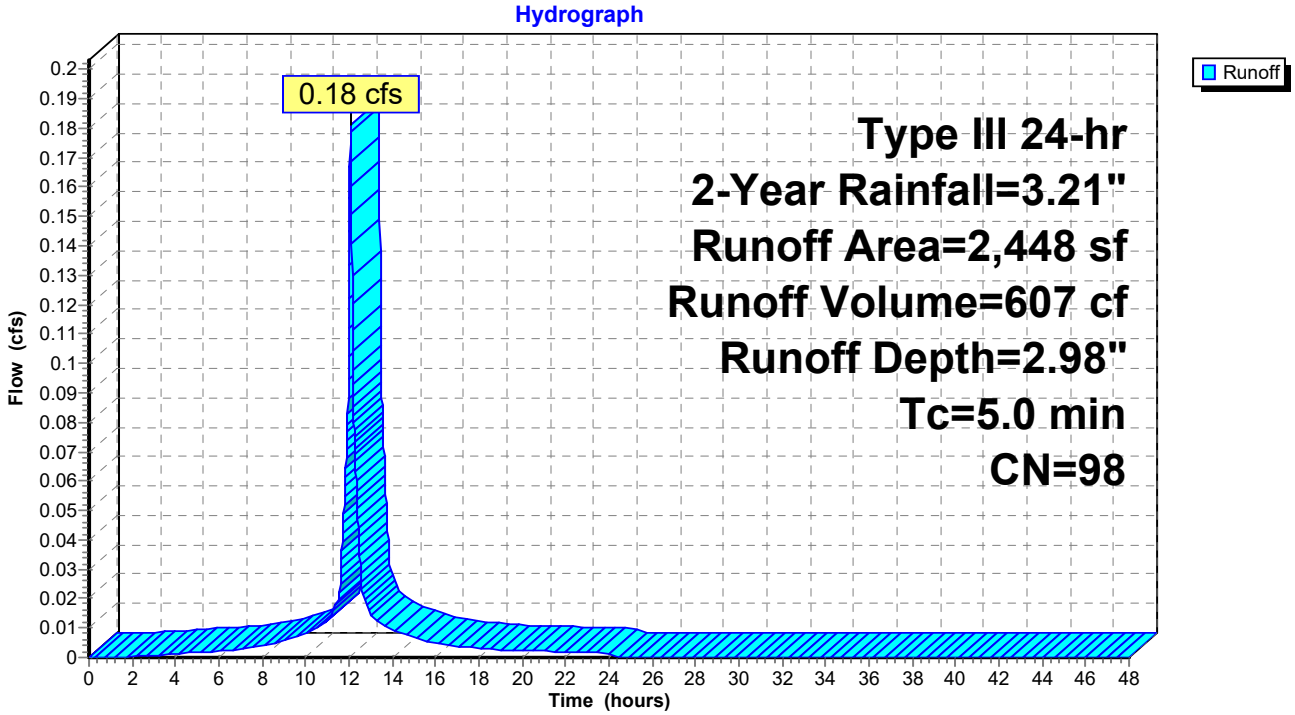
Runoff = 0.18 cfs @ 12.07 hrs, Volume= 607 cf, Depth= 2.98"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

	Area (sf)	CN	Description
*	2,448	98	Canopy
	2,448		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2B: CANOPY



Summary for Subcatchment 2C: NEW BLDG

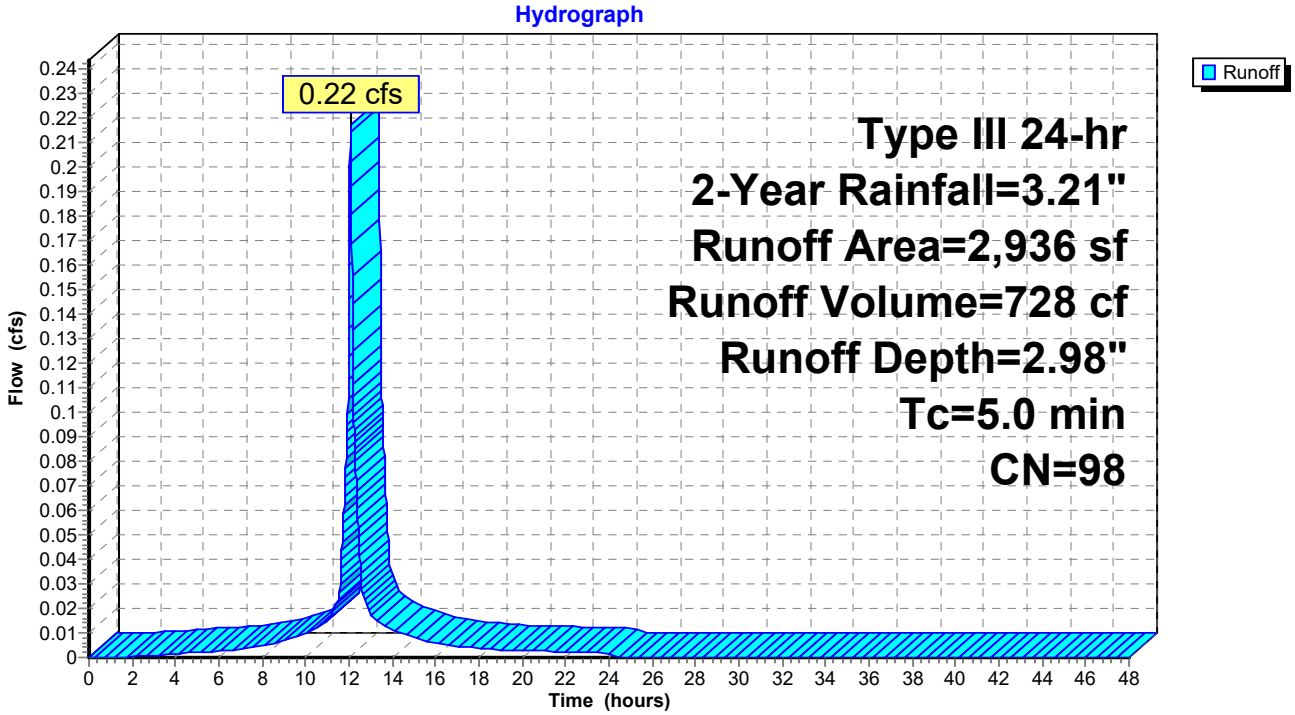
Runoff = 0.22 cfs @ 12.07 hrs, Volume= 728 cf, Depth= 2.98"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

	Area (sf)	CN	Description
*	2,936	98	Building Roof
	2,936		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2C: NEW BLDG



Summary for Subcatchment 3A: CB#3 SOUTHWEST

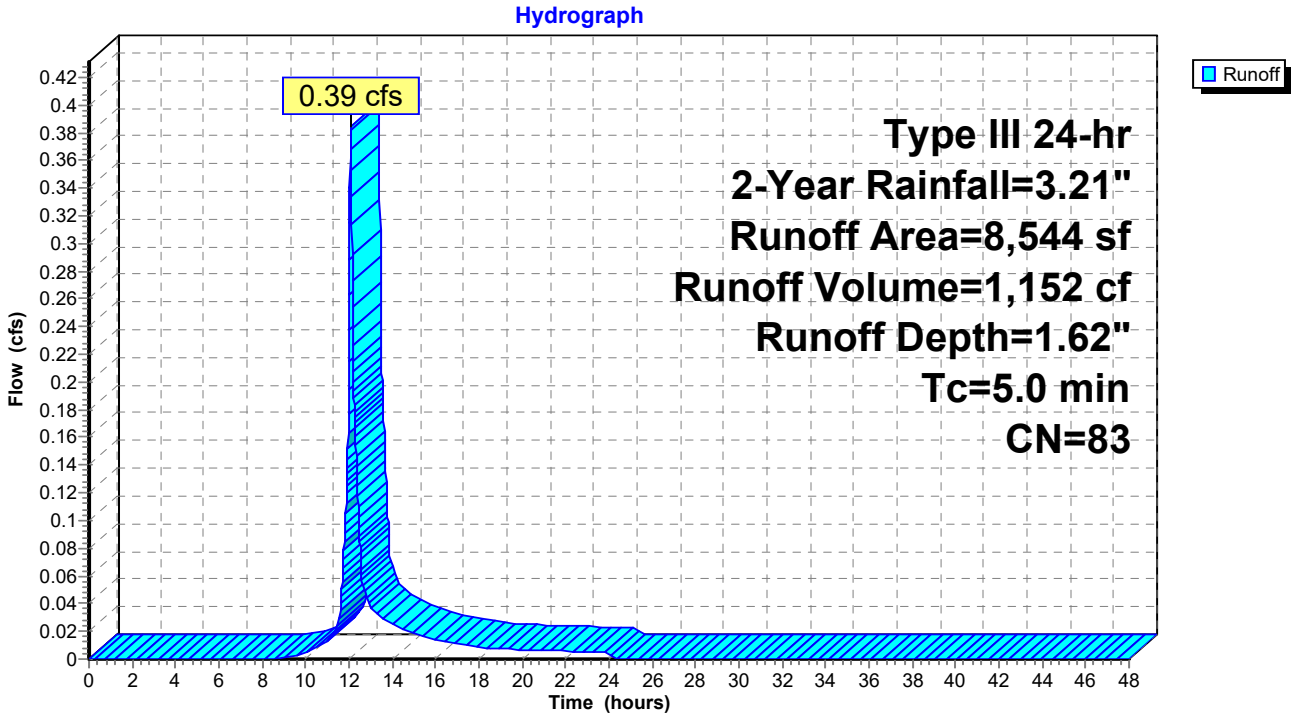
Runoff = 0.39 cfs @ 12.08 hrs, Volume= 1,152 cf, Depth= 1.62"
Routed to Pond 3P : EX. DRYWELL #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.21"

Area (sf)	CN	Description
6,400	98	Paved parking, HSG A
2,144	39	>75% Grass cover, Good, HSG A
8,544	83	Weighted Average
2,144		25.09% Pervious Area
6,400		74.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3A: CB#3 SOUTHWEST



Summary for Pond 1P: EX. DRYWELL #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=394)

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 2.27" for 2-Year event
Inflow = 0.26 cfs @ 12.07 hrs, Volume= 786 cf
Outflow = 0.09 cfs @ 12.32 hrs, Volume= 786 cf, Atten= 64%, Lag= 15.0 min
Discarded = 0.09 cfs @ 12.32 hrs, Volume= 786 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.10' @ 12.32 hrs Surf.Area= 50 sf Storage= 200 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 611 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 23.8 min (825.2 - 801.4)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	680 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		875 cf	Total Available Storage

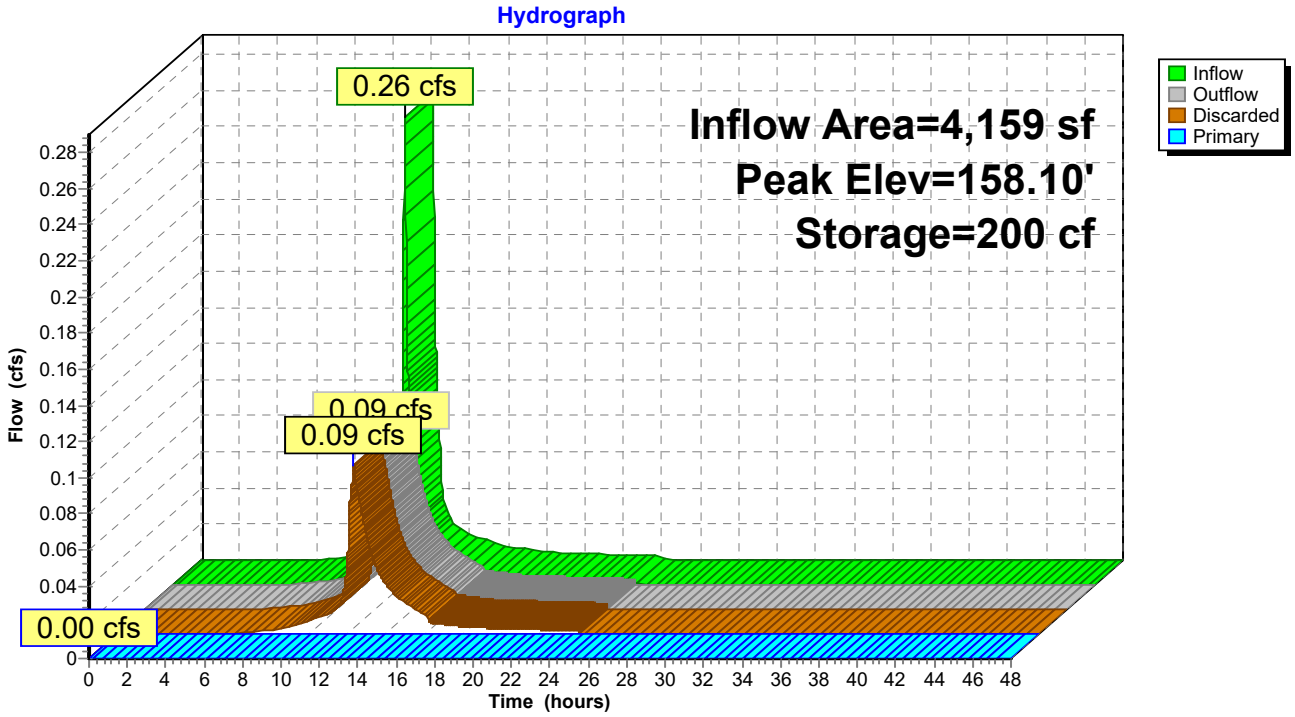
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.05	4	8.0	4	4	12
158.50	1,454	111.0	230	234	987
158.70	3,110	220.0	446	680	3,859

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.09 cfs @ 12.32 hrs HW=158.10' (Free Discharge)
↑**1=Exfiltration - Sand** (Controls 0.09 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: EX. DRYWELL #1



Summary for Pond 3P: EX. DRYWELL #3

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=16)

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 1.62" for 2-Year event
Inflow = 0.39 cfs @ 12.08 hrs, Volume= 1,152 cf
Outflow = 0.10 cfs @ 12.47 hrs, Volume= 1,152 cf, Atten= 75%, Lag= 23.6 min
Discarded = 0.10 cfs @ 12.47 hrs, Volume= 1,152 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.40' @ 12.47 hrs Surf.Area= 50 sf Storage= 329 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 445 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 31.6 min (863.4 - 831.9)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	589 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		784 cf	Total Available Storage

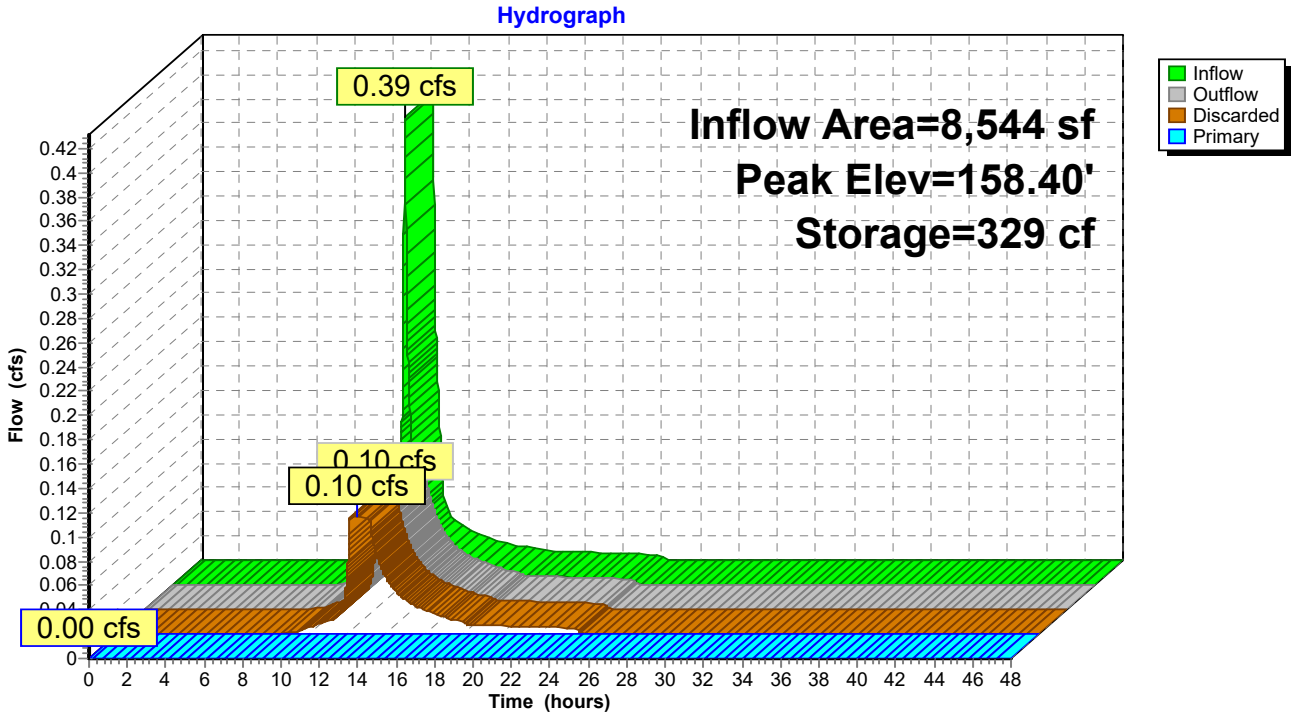
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.00	4	8.0	4	4	11
158.50	1,396	169.0	246	249	2,279
158.70	2,016	198.0	339	589	3,127

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.10 cfs @ 12.47 hrs HW=158.40' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: EX. DRYWELL #3



Summary for Pond 4P: DRYWELL #1- GALLEYS (20)

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=472)

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 2.11" for 2-Year event
Inflow = 0.82 cfs @ 12.07 hrs, Volume= 2,603 cf
Outflow = 0.20 cfs @ 12.46 hrs, Volume= 2,604 cf, Atten= 75%, Lag= 22.9 min
Discarded = 0.20 cfs @ 12.46 hrs, Volume= 2,604 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 154.48' @ 12.46 hrs Surf.Area= 462 sf Storage= 641 cf
Flood Elev= 158.40' Surf.Area= 462 sf Storage= 1,762 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 21.2 min (813.8 - 792.6)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	1,280 cf	**4.00'W x 4.00'L x 4.00'H DRYWELL 4x4x4 Galleys** x 20 Inside #2
#2	152.50'	391 cf	**11.00'W x 42.00'L x 5.00'H Prismatoid** 2,310 cf Overall - 1,280 cf Embedded = 1,030 cf x 38.0% Voids
#3	157.50'	201 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) -Impervious
		1,872 cf	Total Available Storage

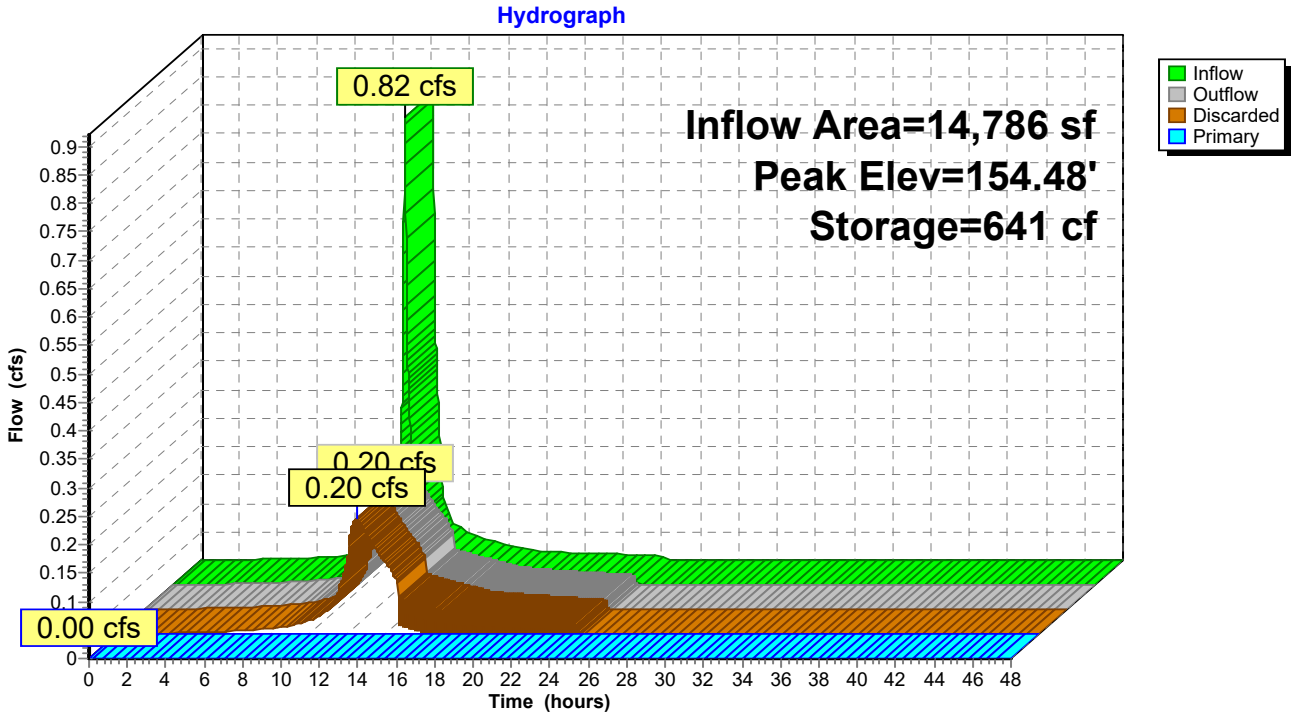
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.50	4	8.0	0	0	4
158.15	4	8.0	3	3	9
158.25	260	62.0	10	12	310
158.50	1,396	145.0	188	201	1,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.50'	**8.270 in/hr Exfiltration - Sand Rawls Rate over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.20 cfs @ 12.46 hrs HW=154.48' (Free Discharge)
1=Exfiltration - Sand Rawls Rate (Controls 0.20 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=152.50' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: DRYWELL #1- GALLEYS (20)

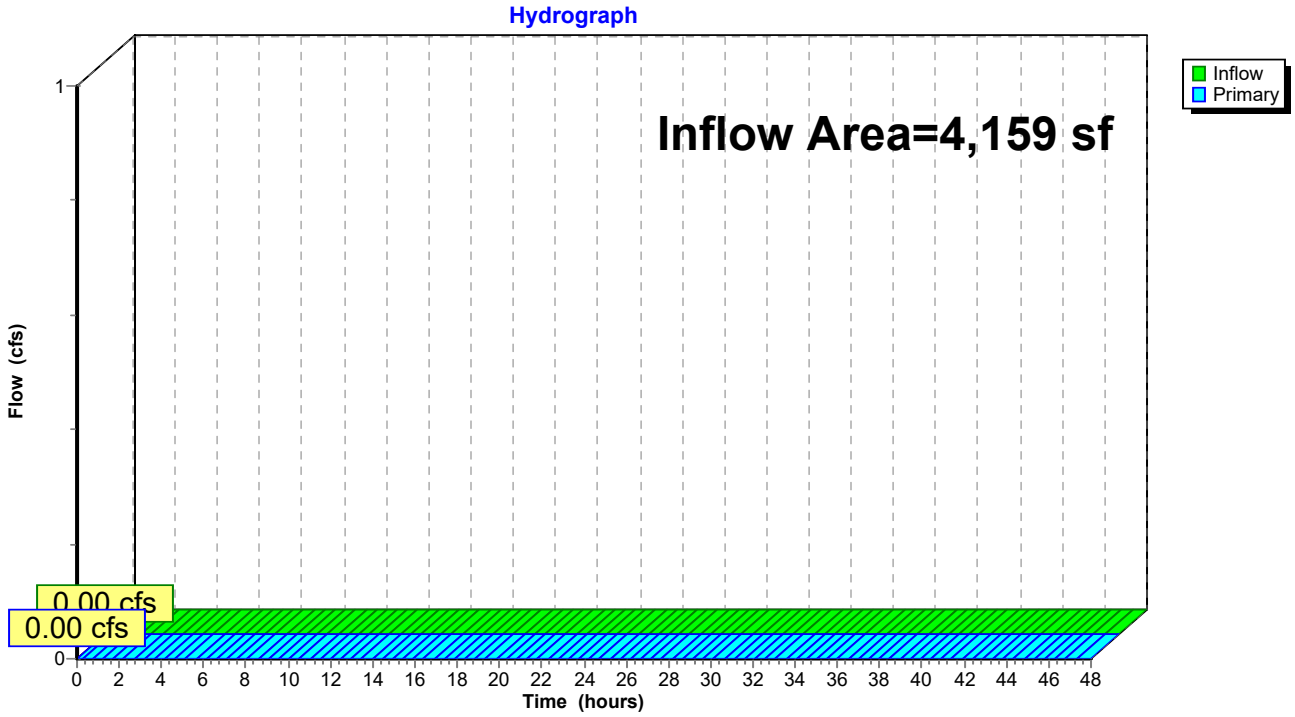


Summary for Link 1S: South Curbcut

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

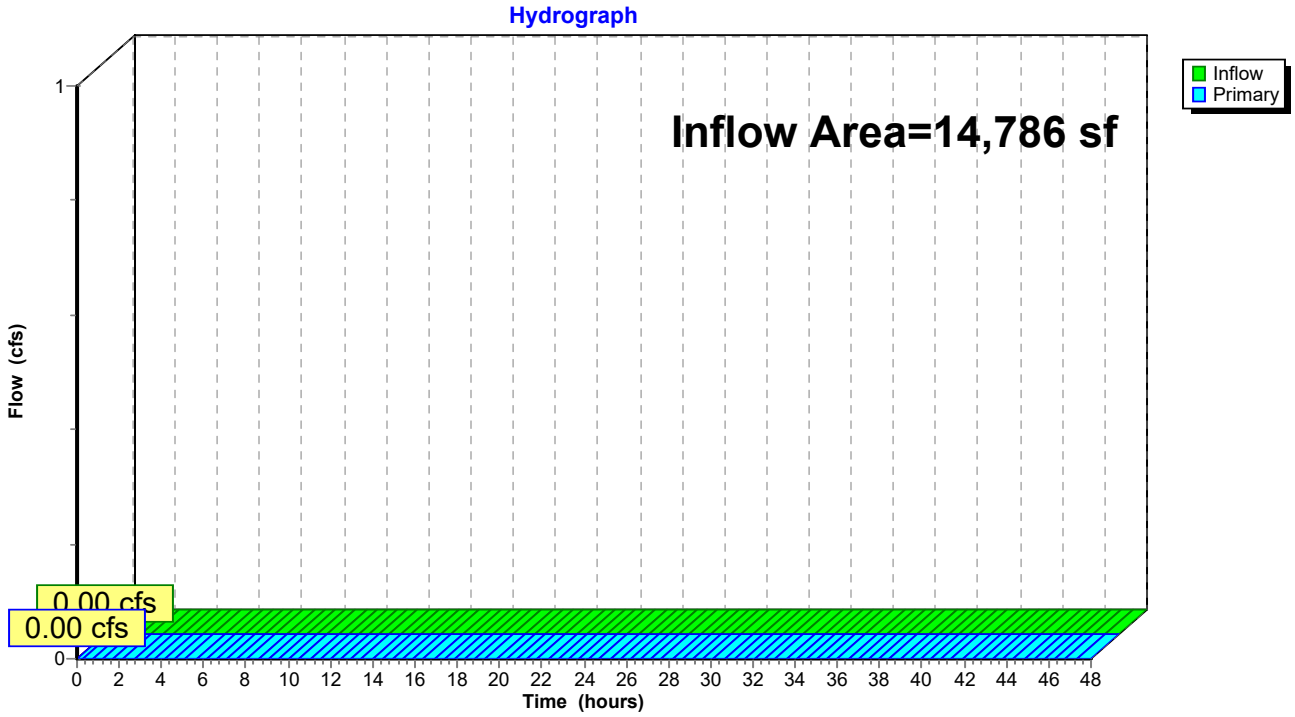


Summary for Link 2S: North Curbcut

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

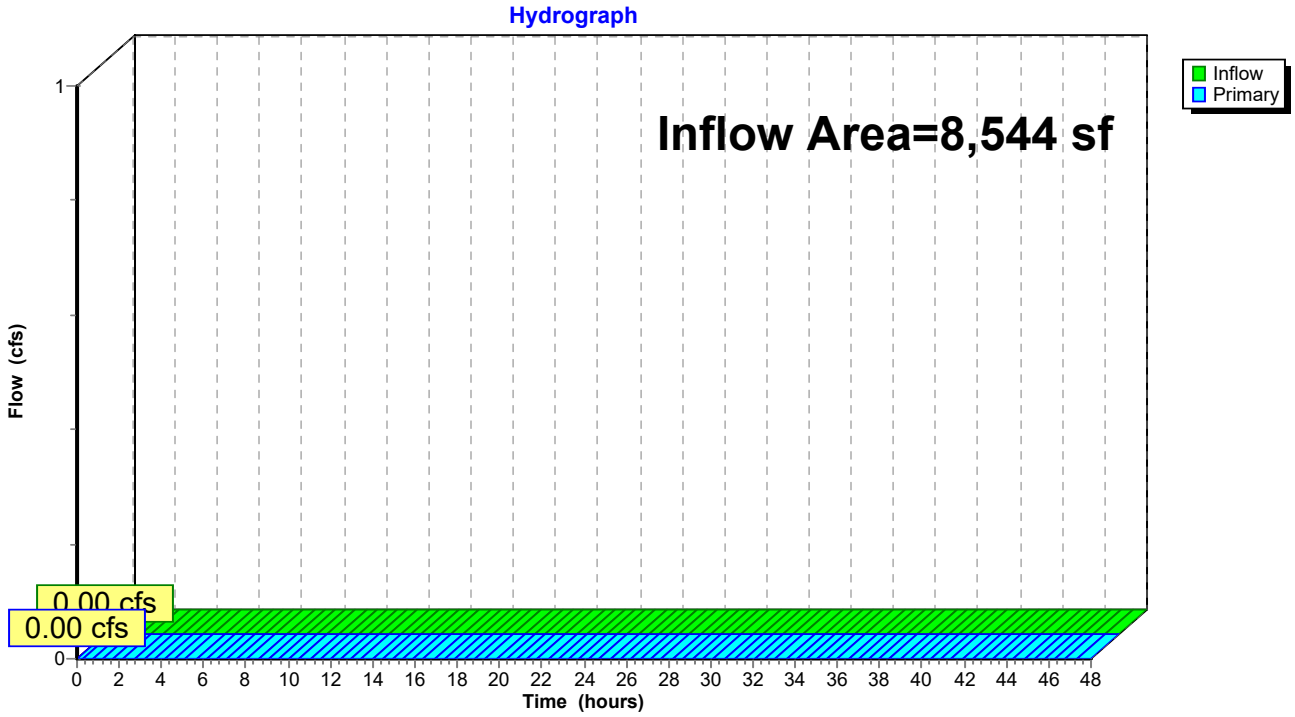


Summary for Link 3S: Southwest Corner

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3S: Southwest Corner



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: CB#1 SOUTHEAST Runoff Area=4,159 sf 88.17% Impervious Runoff Depth=4.11"
Tc=5.0 min CN=91 Runoff=0.46 cfs 1,424 cf

Subcatchment 2A: CB#2 - CB#4 Runoff Area=9,402 sf 74.41% Impervious Runoff Depth=3.29"
Tc=5.0 min CN=83 Runoff=0.86 cfs 2,579 cf

Subcatchment 2B: CANOPY Runoff Area=2,448 sf 100.00% Impervious Runoff Depth=4.89"
Tc=5.0 min CN=98 Runoff=0.29 cfs 998 cf

Subcatchment 2C: NEW BLDG Runoff Area=2,936 sf 100.00% Impervious Runoff Depth=4.89"
Tc=5.0 min CN=98 Runoff=0.35 cfs 1,197 cf

Subcatchment 3A: CB#3 SOUTHWEST Runoff Area=8,544 sf 74.91% Impervious Runoff Depth=3.29"
Tc=5.0 min CN=83 Runoff=0.78 cfs 2,344 cf

Pond 1P: EX. DRYWELL #1 Peak Elev=158.51' Storage=437 cf Inflow=0.46 cfs 1,424 cf
Discarded=0.10 cfs 1,424 cf Primary=0.00 cfs 0 cf Outflow=0.10 cfs 1,424 cf

Pond 3P: EX. DRYWELL #3 Peak Elev=158.59' Storage=579 cf Inflow=0.78 cfs 2,344 cf
Discarded=0.10 cfs 1,926 cf Primary=0.32 cfs 418 cf Outflow=0.42 cfs 2,344 cf

Pond 4P: DRYWELL #1 - GALLEYS (20) Peak Elev=156.47' Storage=1,387 cf Inflow=1.50 cfs 4,775 cf
Discarded=0.33 cfs 4,775 cf Primary=0.00 cfs 0 cf Outflow=0.33 cfs 4,775 cf

Link 1S: South Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 2S: North Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 3S: Southwest Corner Inflow=0.32 cfs 418 cf
Primary=0.32 cfs 418 cf

Total Runoff Area = 27,489 sf Runoff Volume = 8,542 cf Average Runoff Depth = 3.73"
18.34% Pervious = 5,042 sf 81.66% Impervious = 22,447 sf

Summary for Subcatchment 1A: CB#1 SOUTHEAST

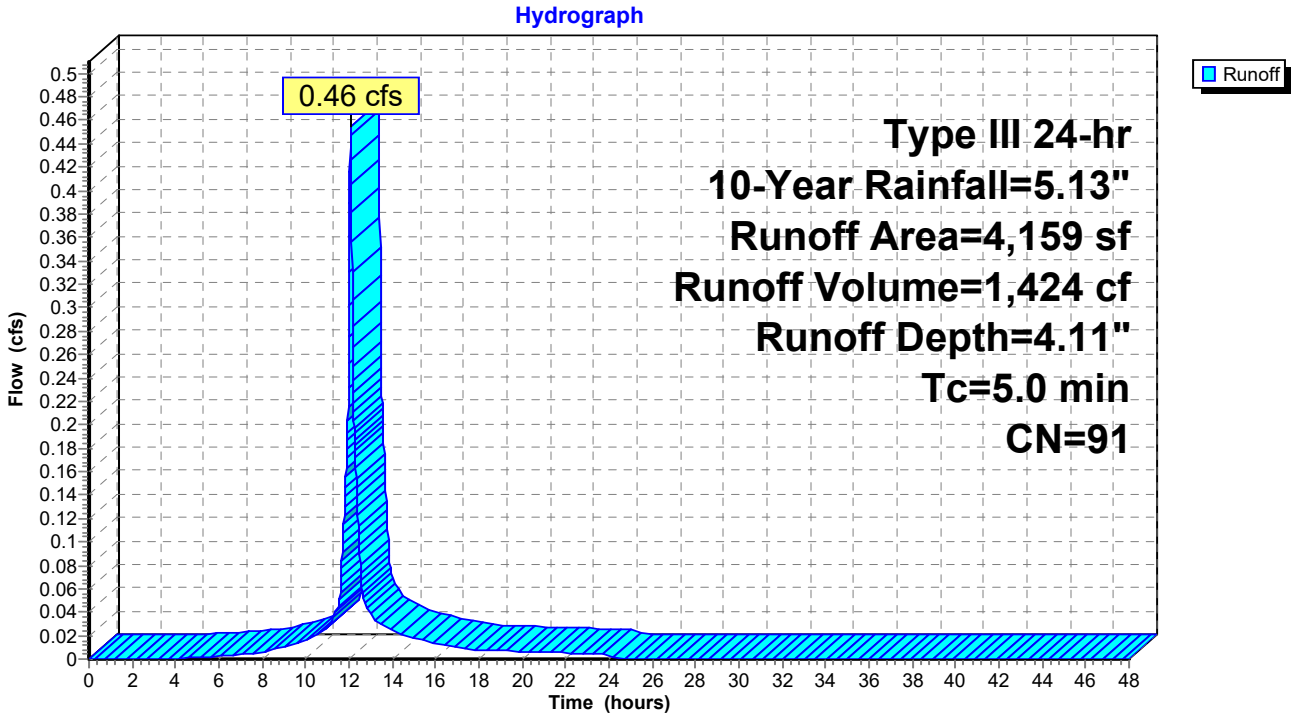
Runoff = 0.46 cfs @ 12.07 hrs, Volume= 1,424 cf, Depth= 4.11"
Routed to Pond 1P : EX. DRYWELL #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

Area (sf)	CN	Description
3,667	98	Paved parking, HSG A
492	39	>75% Grass cover, Good, HSG A
4,159	91	Weighted Average
492		11.83% Pervious Area
3,667		88.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1A: CB#1 SOUTHEAST



Summary for Subcatchment 2A: CB#2 - CB#4 NORTHEAST

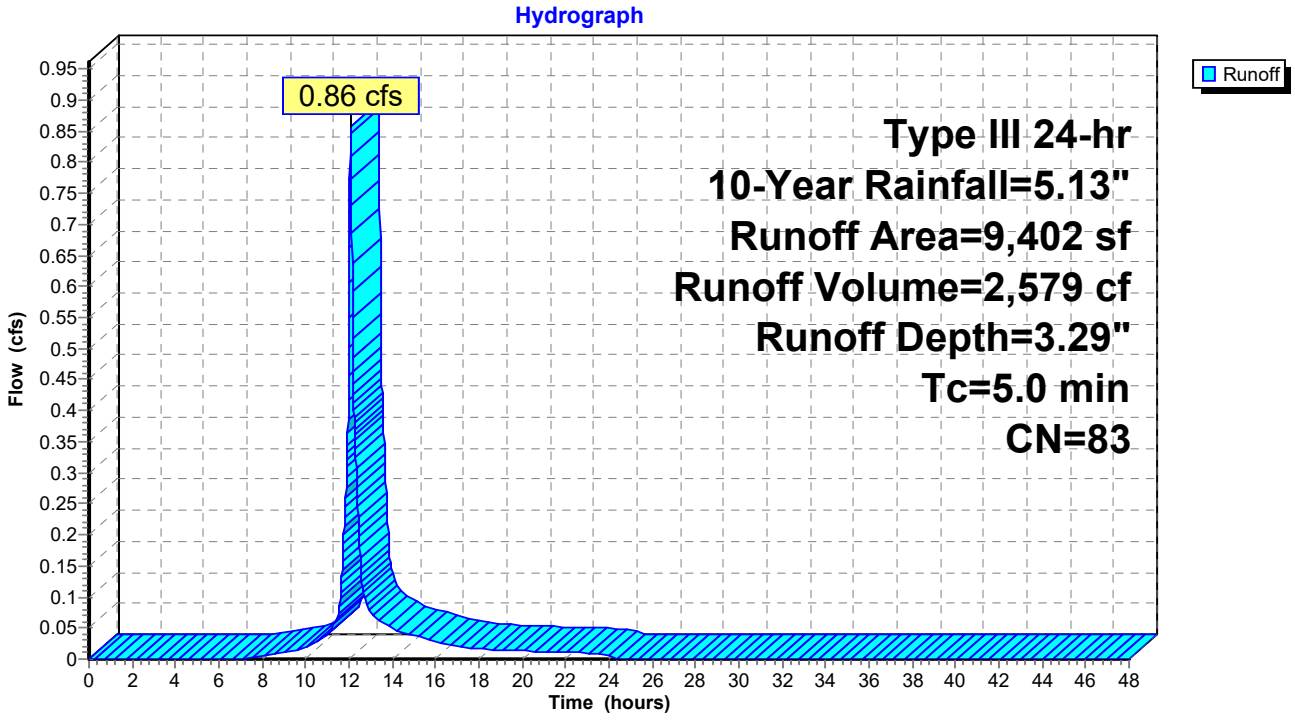
Runoff = 0.86 cfs @ 12.07 hrs, Volume= 2,579 cf, Depth= 3.29"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

Area (sf)	CN	Description
6,996	98	Paved parking, HSG A
2,406	39	>75% Grass cover, Good, HSG A
9,402	83	Weighted Average
2,406		25.59% Pervious Area
6,996		74.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2A: CB#2 - CB#4 NORTHEAST



Summary for Subcatchment 2B: CANOPY

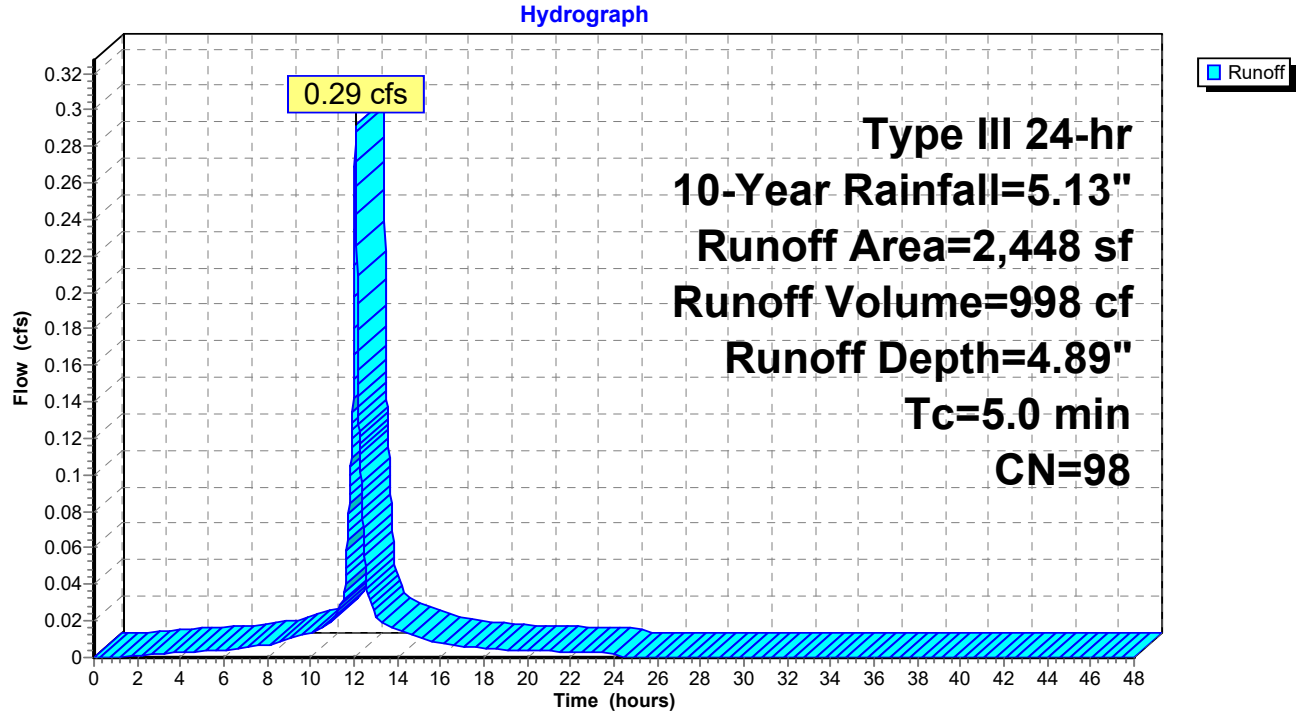
Runoff = 0.29 cfs @ 12.07 hrs, Volume= 998 cf, Depth= 4.89"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

	Area (sf)	CN	Description
*	2,448	98	Canopy
	2,448		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2B: CANOPY



Summary for Subcatchment 2C: NEW BLDG

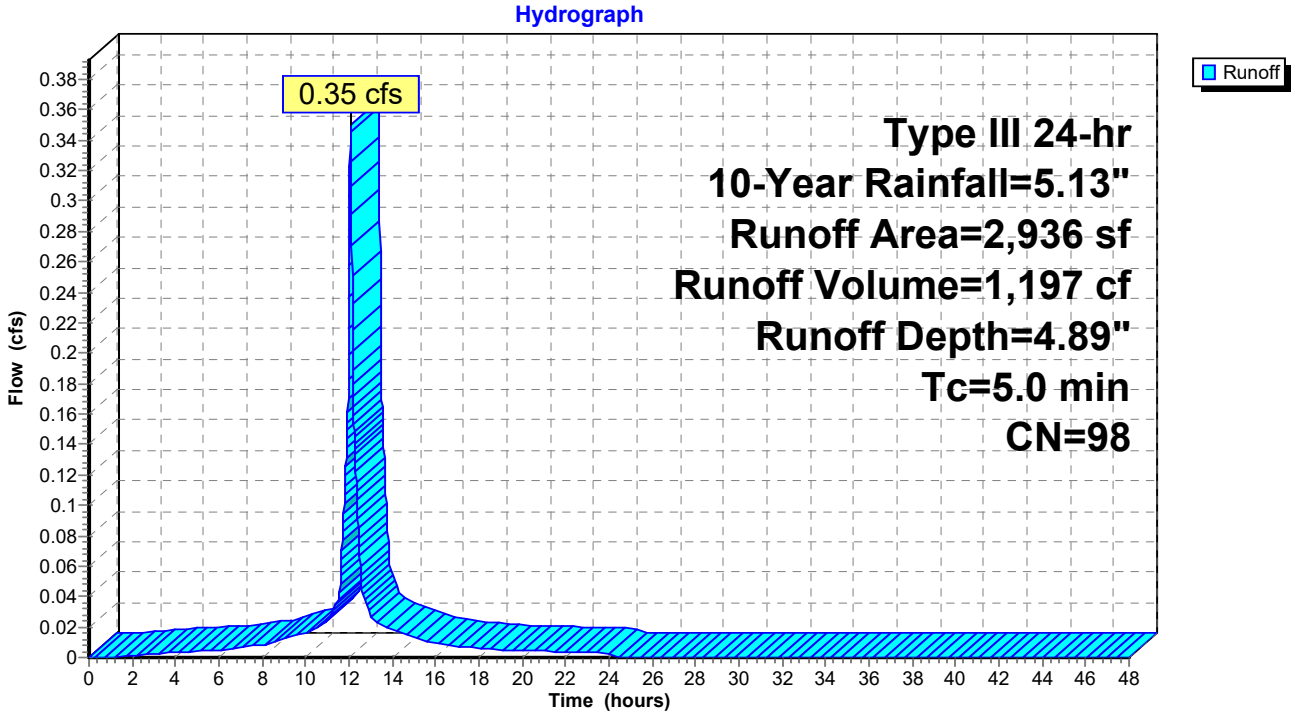
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,197 cf, Depth= 4.89"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

	Area (sf)	CN	Description
*	2,936	98	Building Roof
	2,936		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2C: NEW BLDG



Summary for Subcatchment 3A: CB#3 SOUTHWEST

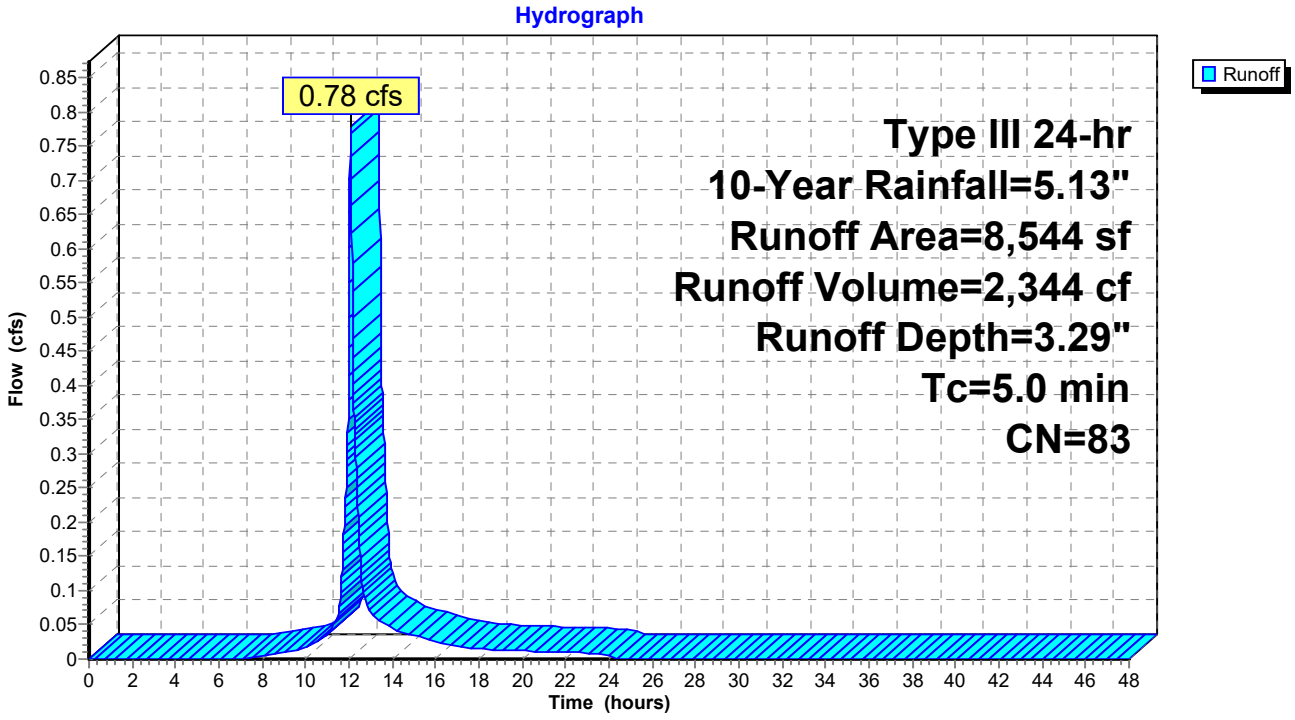
Runoff = 0.78 cfs @ 12.07 hrs, Volume= 2,344 cf, Depth= 3.29"
Routed to Pond 3P : EX. DRYWELL #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.13"

Area (sf)	CN	Description
6,400	98	Paved parking, HSG A
2,144	39	>75% Grass cover, Good, HSG A
8,544	83	Weighted Average
2,144		25.09% Pervious Area
6,400		74.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3A: CB#3 SOUTHWEST



Summary for Pond 1P: EX. DRYWELL #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=302)

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 4.11" for 10-Year event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 1,424 cf
Outflow = 0.10 cfs @ 12.47 hrs, Volume= 1,424 cf, Atten= 78%, Lag= 24.2 min
Discarded = 0.10 cfs @ 12.47 hrs, Volume= 1,424 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.51' @ 12.47 hrs Surf.Area= 50 sf Storage= 437 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 611 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 36.7 min (821.7 - 785.1)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	680 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		875 cf	Total Available Storage

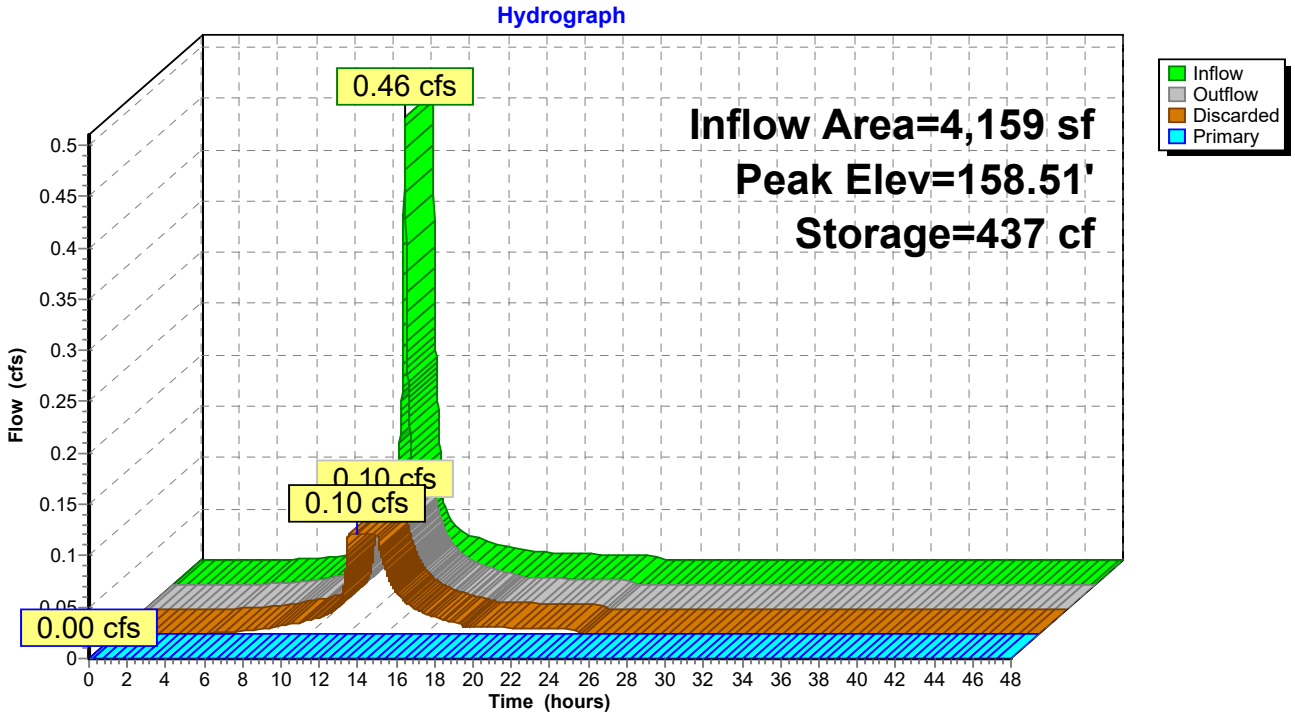
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.05	4	8.0	4	4	12
158.50	1,454	111.0	230	234	987
158.70	3,110	220.0	446	680	3,859

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.10 cfs @ 12.47 hrs HW=158.51' (Free Discharge)
1=Exfiltration - Sand (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: EX. DRYWELL #1



Summary for Pond 3P: EX. DRYWELL #3

[58] Hint: Peaked 0.09' above defined flood level

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 3.29" for 10-Year event
Inflow = 0.78 cfs @ 12.07 hrs, Volume= 2,344 cf
Outflow = 0.42 cfs @ 12.19 hrs, Volume= 2,344 cf, Atten= 46%, Lag= 7.0 min
Discarded = 0.10 cfs @ 12.19 hrs, Volume= 1,926 cf
Primary = 0.32 cfs @ 12.19 hrs, Volume= 418 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.59' @ 12.19 hrs Surf.Area= 50 sf Storage= 579 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 445 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 36.8 min (848.3 - 811.5)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	589 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		784 cf	Total Available Storage

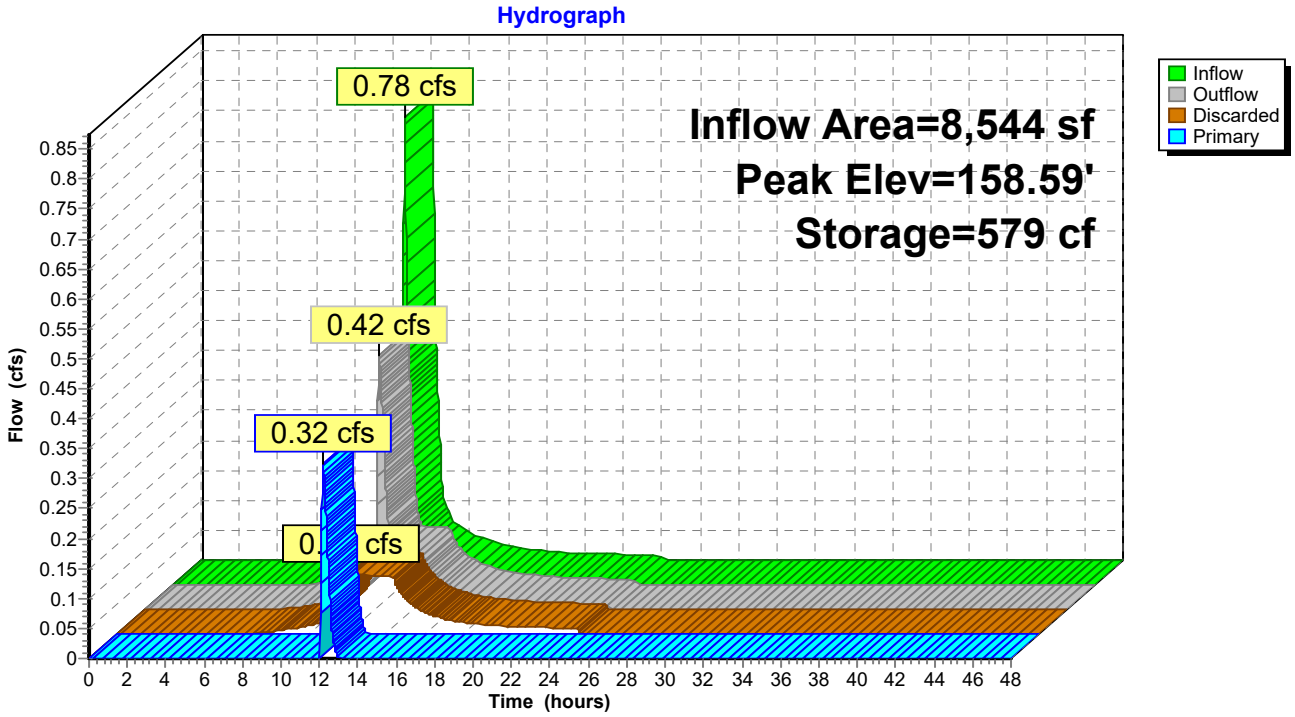
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.00	4	8.0	4	4	11
158.50	1,396	169.0	246	249	2,279
158.70	2,016	198.0	339	589	3,127

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.10 cfs @ 12.19 hrs HW=158.59' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.32 cfs @ 12.19 hrs HW=158.59' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.32 cfs @ 0.74 fps)

Pond 3P: EX. DRYWELL #3



Summary for Pond 4P: DRYWELL #1- GALLEYS (20)

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=397)

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 3.87" for 10-Year event
Inflow = 1.50 cfs @ 12.07 hrs, Volume= 4,775 cf
Outflow = 0.33 cfs @ 12.47 hrs, Volume= 4,775 cf, Atten= 78%, Lag= 24.0 min
Discarded = 0.33 cfs @ 12.47 hrs, Volume= 4,775 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 156.47' @ 12.47 hrs Surf.Area= 462 sf Storage= 1,387 cf
Flood Elev= 158.40' Surf.Area= 462 sf Storage= 1,762 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 34.7 min (816.4 - 781.7)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	1,280 cf	**4.00'W x 4.00'L x 4.00'H DRYWELL 4x4x4 Galleys** x 20 Inside #2
#2	152.50'	391 cf	**11.00'W x 42.00'L x 5.00'H Prismatoid** 2,310 cf Overall - 1,280 cf Embedded = 1,030 cf x 38.0% Voids
#3	157.50'	201 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) -Impervious
		1,872 cf	Total Available Storage

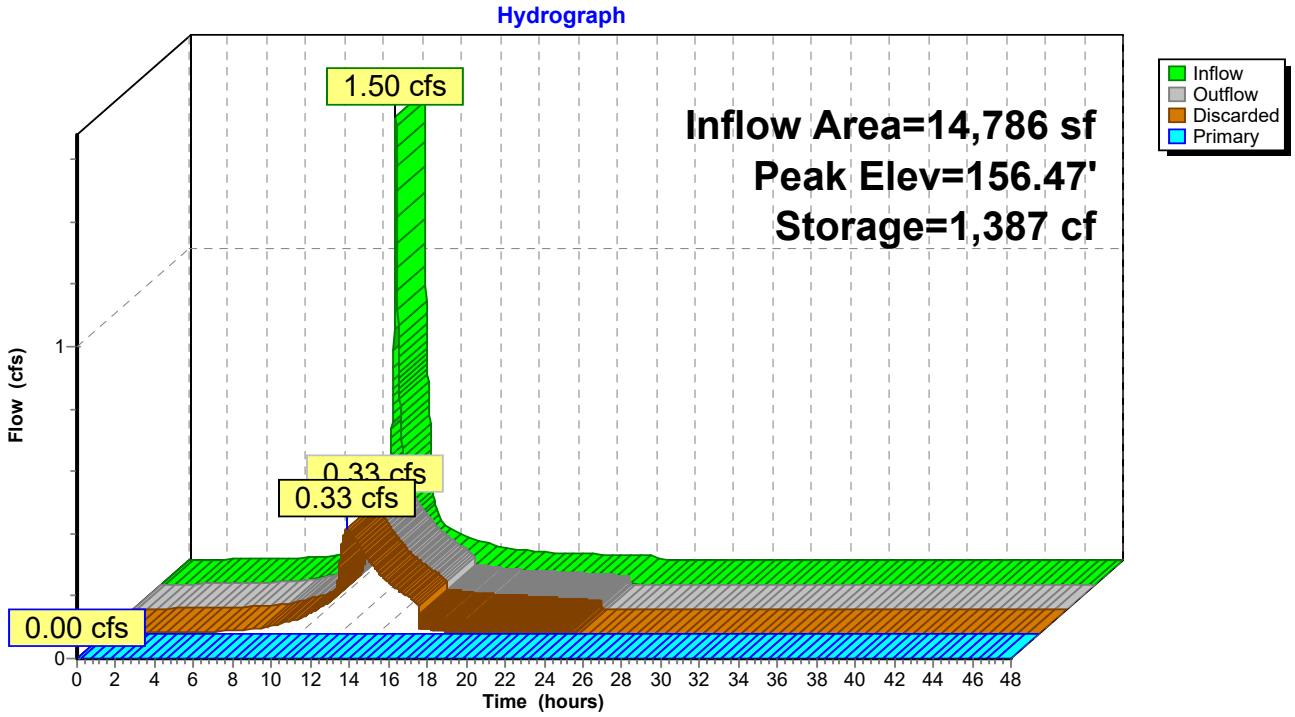
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.50	4	8.0	0	0	4
158.15	4	8.0	3	3	9
158.25	260	62.0	10	12	310
158.50	1,396	145.0	188	201	1,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.50'	**8.270 in/hr Exfiltration - Sand Rawls Rate over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.33 cfs @ 12.47 hrs HW=156.47' (Free Discharge)
1=Exfiltration - Sand Rawls Rate (Controls 0.33 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=152.50' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: DRYWELL #1- GALLEYS (20)

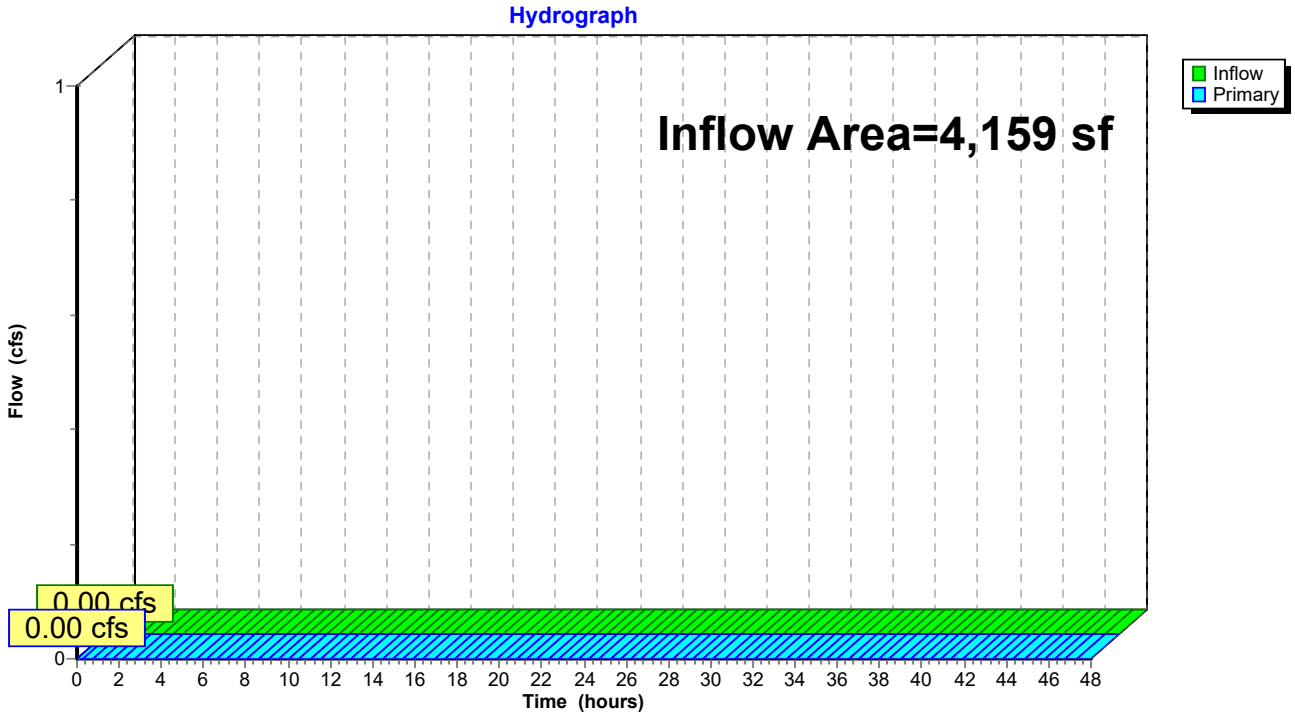


Summary for Link 1S: South Curbcut

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

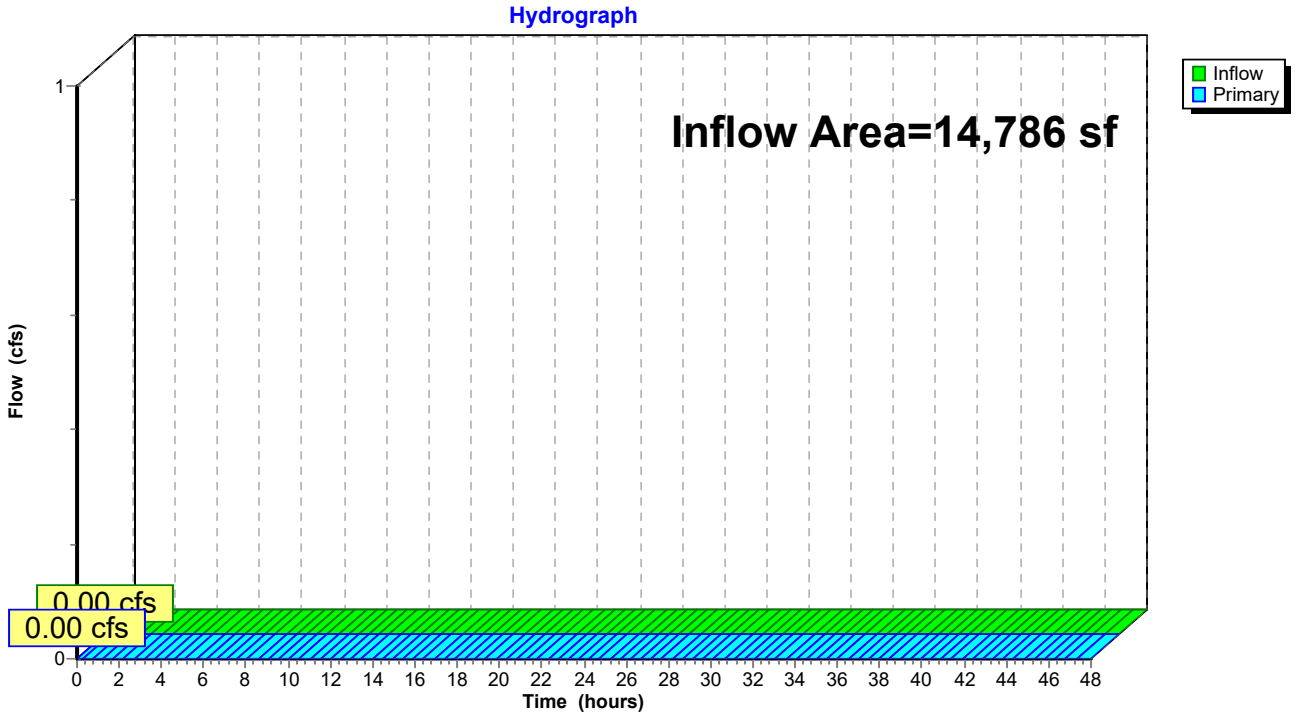


Summary for Link 2S: North Curbcut

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

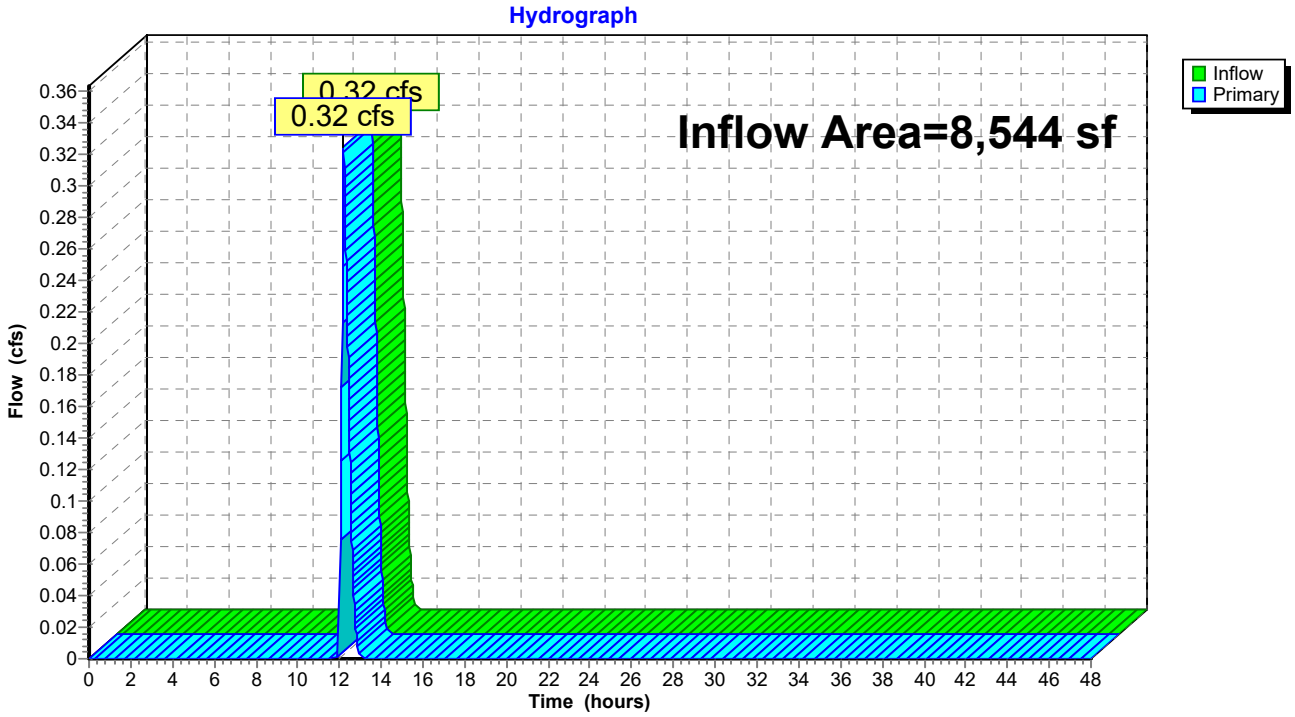


Summary for Link 3S: Southwest Corner

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 0.59" for 10-Year event
Inflow = 0.32 cfs @ 12.19 hrs, Volume= 418 cf
Primary = 0.32 cfs @ 12.19 hrs, Volume= 418 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3S: Southwest Corner



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: CB#1 SOUTHEAST Runoff Area=4,159 sf 88.17% Impervious Runoff Depth=5.27"
Tc=5.0 min CN=91 Runoff=0.58 cfs 1,827 cf

Subcatchment 2A: CB#2 - CB#4 Runoff Area=9,402 sf 74.41% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=83 Runoff=1.14 cfs 3,439 cf

Subcatchment 2B: CANOPY Runoff Area=2,448 sf 100.00% Impervious Runoff Depth=6.08"
Tc=5.0 min CN=98 Runoff=0.36 cfs 1,241 cf

Subcatchment 2C: NEW BLDG Runoff Area=2,936 sf 100.00% Impervious Runoff Depth=6.08"
Tc=5.0 min CN=98 Runoff=0.43 cfs 1,488 cf

Subcatchment 3A: CB#3 SOUTHWEST Runoff Area=8,544 sf 74.91% Impervious Runoff Depth=4.39"
Tc=5.0 min CN=83 Runoff=1.03 cfs 3,125 cf

Pond 1P: EX. DRYWELL #1 Peak Elev=158.60' Storage=606 cf Inflow=0.58 cfs 1,827 cf
Discarded=0.10 cfs 1,827 cf Primary=0.00 cfs 0 cf Outflow=0.10 cfs 1,827 cf

Pond 3P: EX. DRYWELL #3 Peak Elev=158.64' Storage=668 cf Inflow=1.03 cfs 3,125 cf
Discarded=0.10 cfs 2,302 cf Primary=0.65 cfs 823 cf Outflow=0.75 cfs 3,125 cf

Pond 4P: DRYWELL #1- GALLEYS (20) Peak Elev=158.42' Storage=1,778 cf Inflow=1.93 cfs 6,168 cf
Discarded=0.46 cfs 6,093 cf Primary=0.20 cfs 75 cf Outflow=0.66 cfs 6,168 cf

Link 1S: South Curbcut Inflow=0.00 cfs 0 cf
Primary=0.00 cfs 0 cf

Link 2S: North Curbcut Inflow=0.20 cfs 75 cf
Primary=0.20 cfs 75 cf

Link 3S: Southwest Corner Inflow=0.65 cfs 823 cf
Primary=0.65 cfs 823 cf

Total Runoff Area = 27,489 sf Runoff Volume = 11,120 cf Average Runoff Depth = 4.85"
18.34% Pervious = 5,042 sf 81.66% Impervious = 22,447 sf

Summary for Subcatchment 1A: CB#1 SOUTHEAST

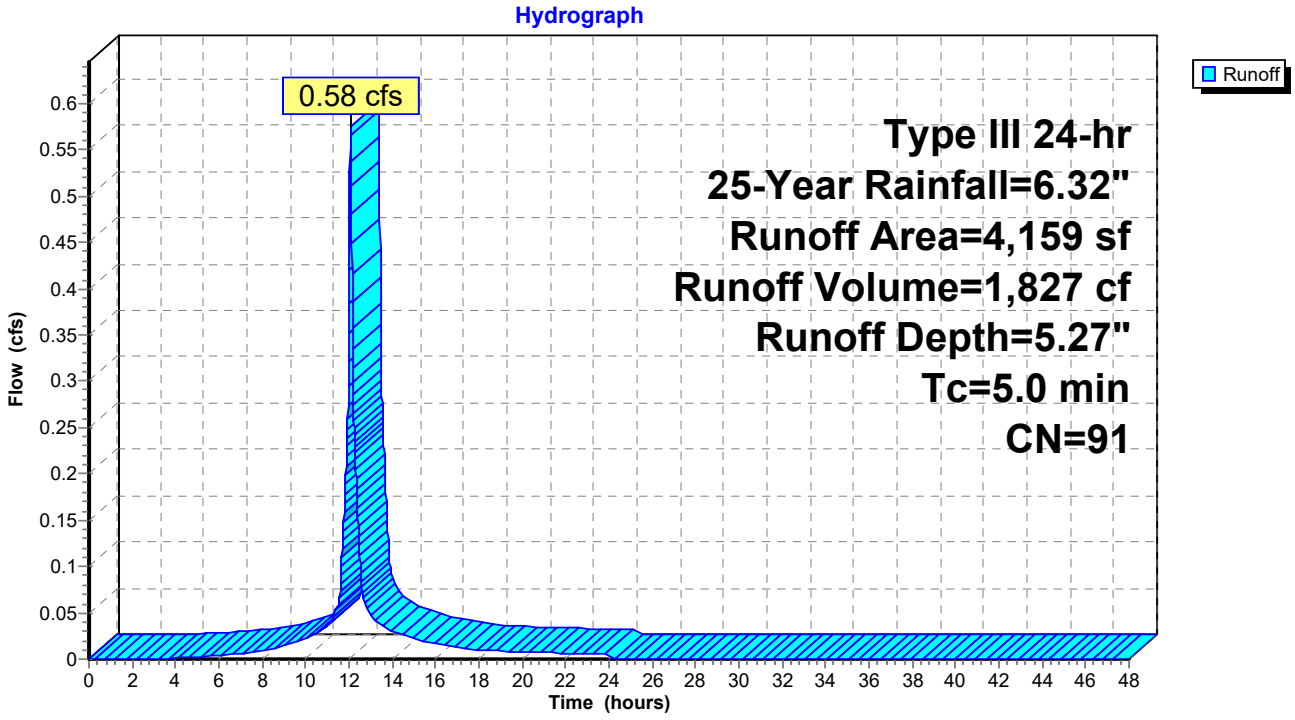
Runoff = 0.58 cfs @ 12.07 hrs, Volume= 1,827 cf, Depth= 5.27"
Routed to Pond 1P : EX. DRYWELL #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

Area (sf)	CN	Description
3,667	98	Paved parking, HSG A
492	39	>75% Grass cover, Good, HSG A
4,159	91	Weighted Average
492		11.83% Pervious Area
3,667		88.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1A: CB#1 SOUTHEAST



Summary for Subcatchment 2A: CB#2 - CB#4 NORTHEAST

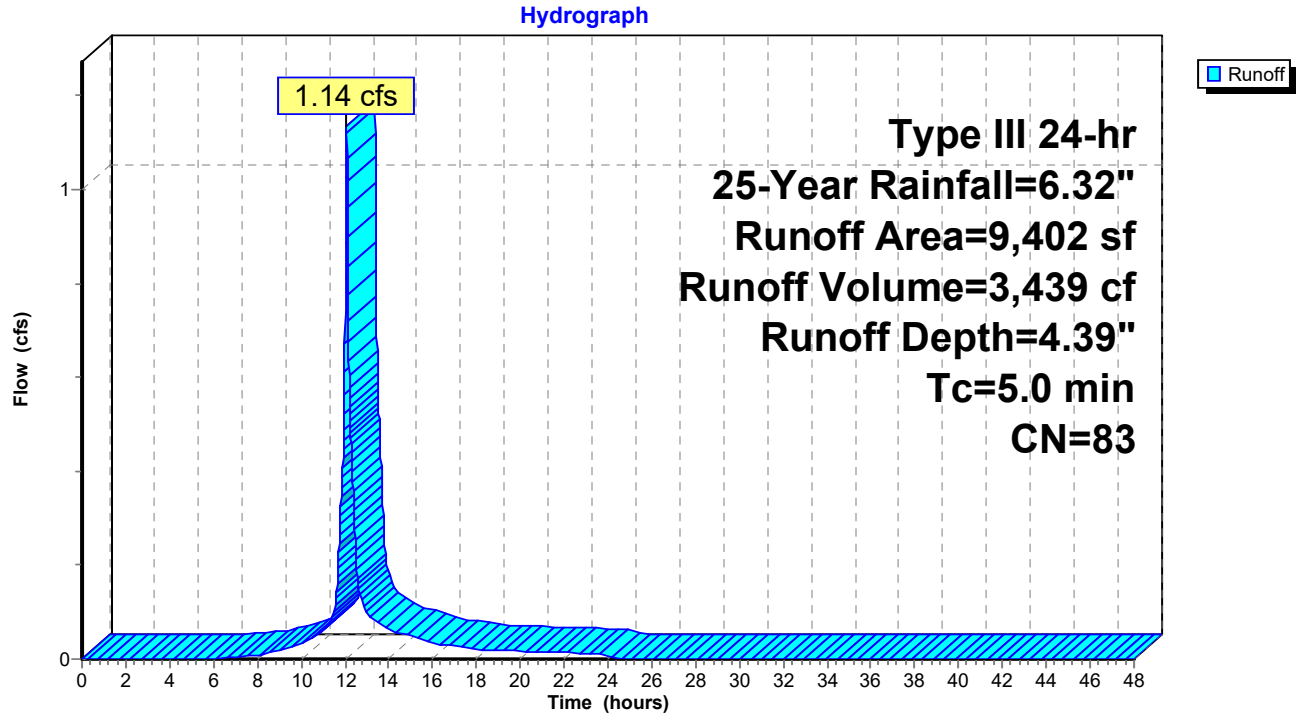
Runoff = 1.14 cfs @ 12.07 hrs, Volume= 3,439 cf, Depth= 4.39"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

Area (sf)	CN	Description
6,996	98	Paved parking, HSG A
2,406	39	>75% Grass cover, Good, HSG A
9,402	83	Weighted Average
2,406		25.59% Pervious Area
6,996		74.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2A: CB#2 - CB#4 NORTHEAST



Summary for Subcatchment 2B: CANOPY

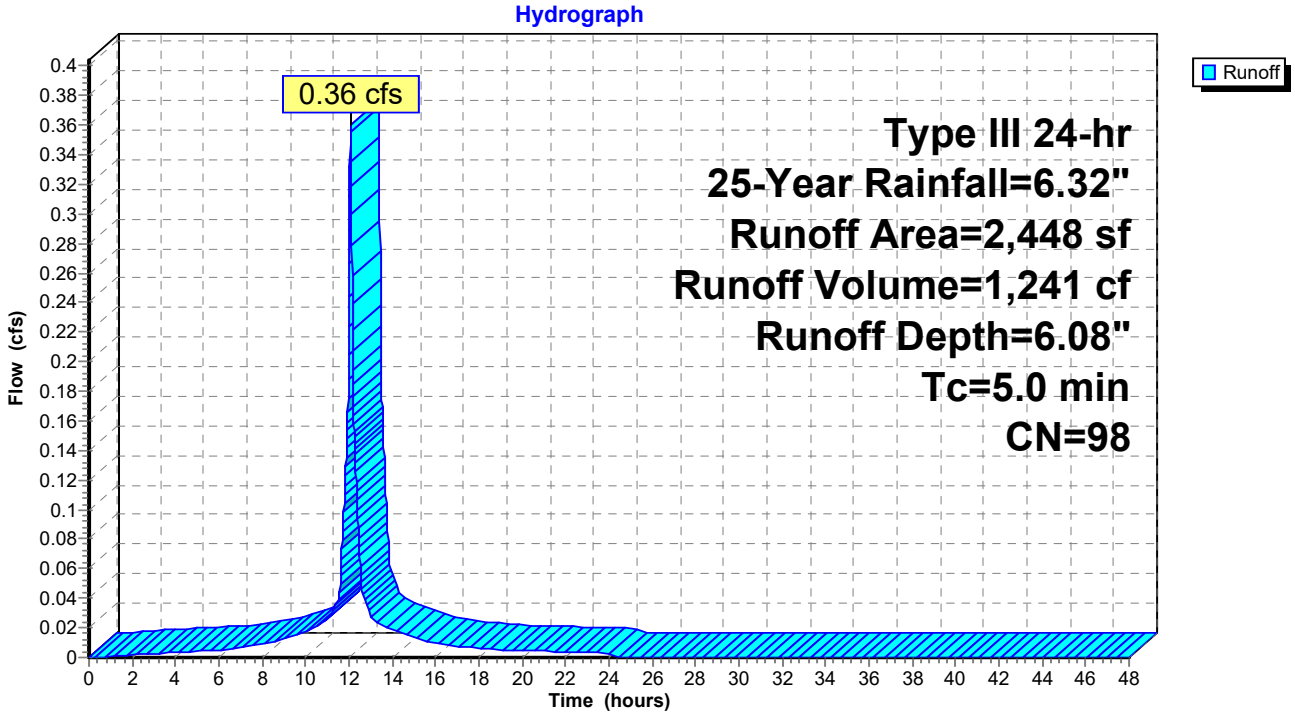
Runoff = 0.36 cfs @ 12.07 hrs, Volume= 1,241 cf, Depth= 6.08"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

	Area (sf)	CN	Description
*	2,448	98	Canopy
	2,448		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2B: CANOPY



Summary for Subcatchment 2C: NEW BLDG

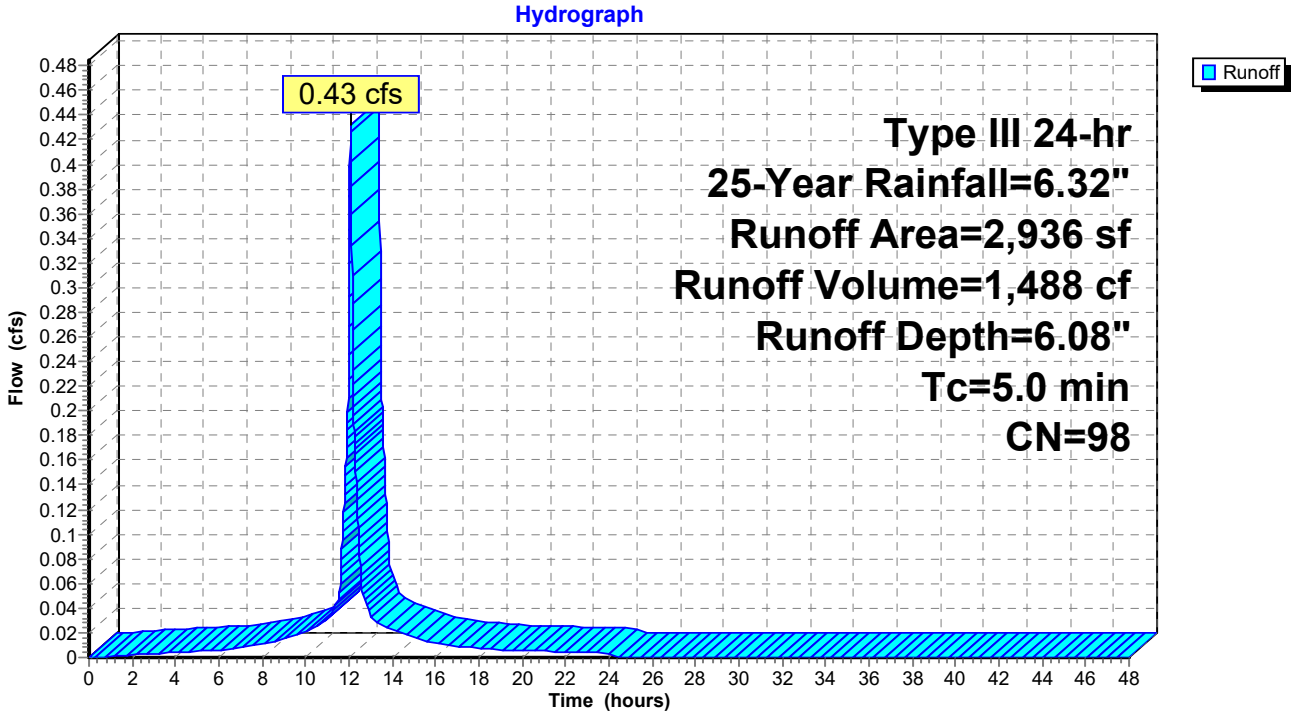
Runoff = 0.43 cfs @ 12.07 hrs, Volume= 1,488 cf, Depth= 6.08"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

	Area (sf)	CN	Description
*	2,936	98	Building Roof
	2,936		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2C: NEW BLDG



Summary for Subcatchment 3A: CB#3 SOUTHWEST

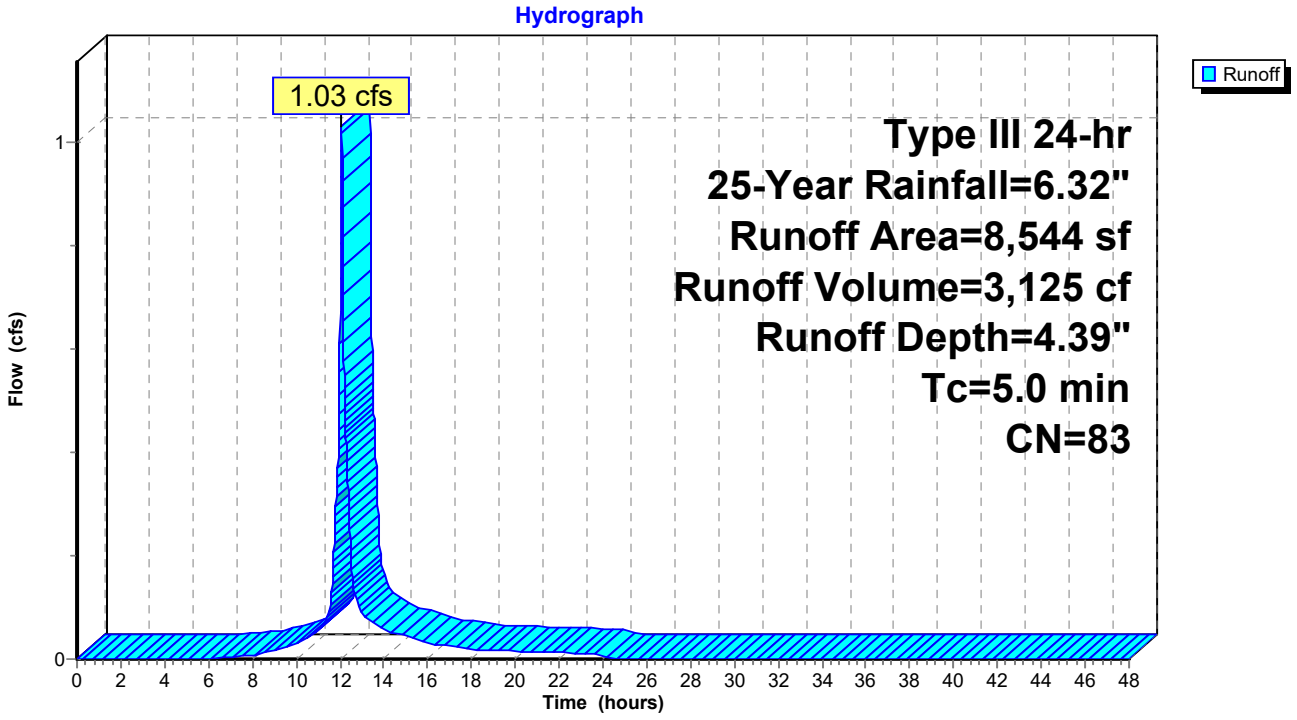
Runoff = 1.03 cfs @ 12.07 hrs, Volume= 3,125 cf, Depth= 4.39"
Routed to Pond 3P : EX. DRYWELL #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.32"

Area (sf)	CN	Description
6,400	98	Paved parking, HSG A
2,144	39	>75% Grass cover, Good, HSG A
8,544	83	Weighted Average
2,144		25.09% Pervious Area
6,400		74.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3A: CB#3 SOUTHWEST



Summary for Pond 1P: EX. DRYWELL #1

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 5.27" for 25-Year event
Inflow = 0.58 cfs @ 12.07 hrs, Volume= 1,827 cf
Outflow = 0.10 cfs @ 12.52 hrs, Volume= 1,827 cf, Atten= 83%, Lag= 27.0 min
Discarded = 0.10 cfs @ 12.52 hrs, Volume= 1,827 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.60' @ 12.52 hrs Surf.Area= 50 sf Storage= 606 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 611 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 48.0 min (826.6 - 778.5)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	680 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		875 cf	Total Available Storage

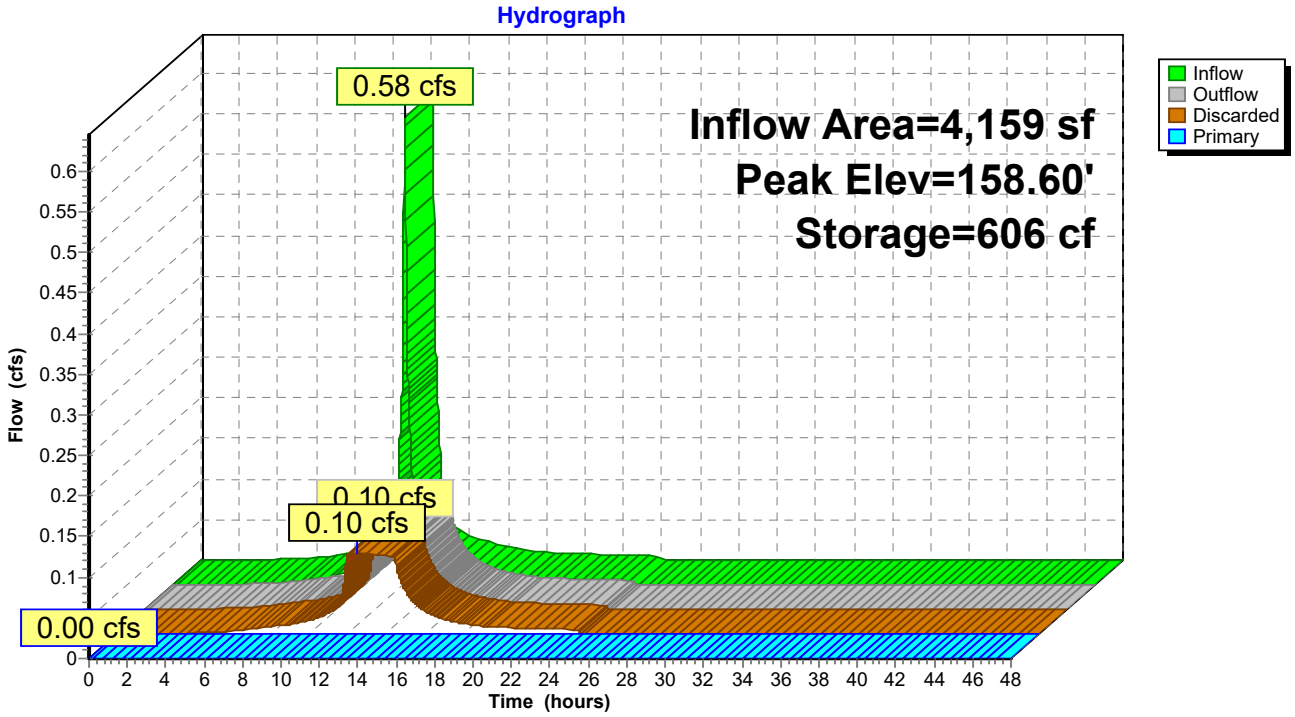
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.05	4	8.0	4	4	12
158.50	1,454	111.0	230	234	987
158.70	3,110	220.0	446	680	3,859

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.10 cfs @ 12.52 hrs HW=158.60' (Free Discharge)
↑**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=151.70' TW=0.00' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: EX. DRYWELL #1



Summary for Pond 3P: EX. DRYWELL #3

[58] Hint: Peaked 0.14' above defined flood level

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 4.39" for 25-Year event
Inflow = 1.03 cfs @ 12.07 hrs, Volume= 3,125 cf
Outflow = 0.75 cfs @ 12.14 hrs, Volume= 3,125 cf, Atten= 28%, Lag= 4.2 min
Discarded = 0.10 cfs @ 12.14 hrs, Volume= 2,302 cf
Primary = 0.65 cfs @ 12.14 hrs, Volume= 823 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.64' @ 12.14 hrs Surf.Area= 50 sf Storage= 668 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 445 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 35.2 min (838.5 - 803.3)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	589 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		784 cf	Total Available Storage

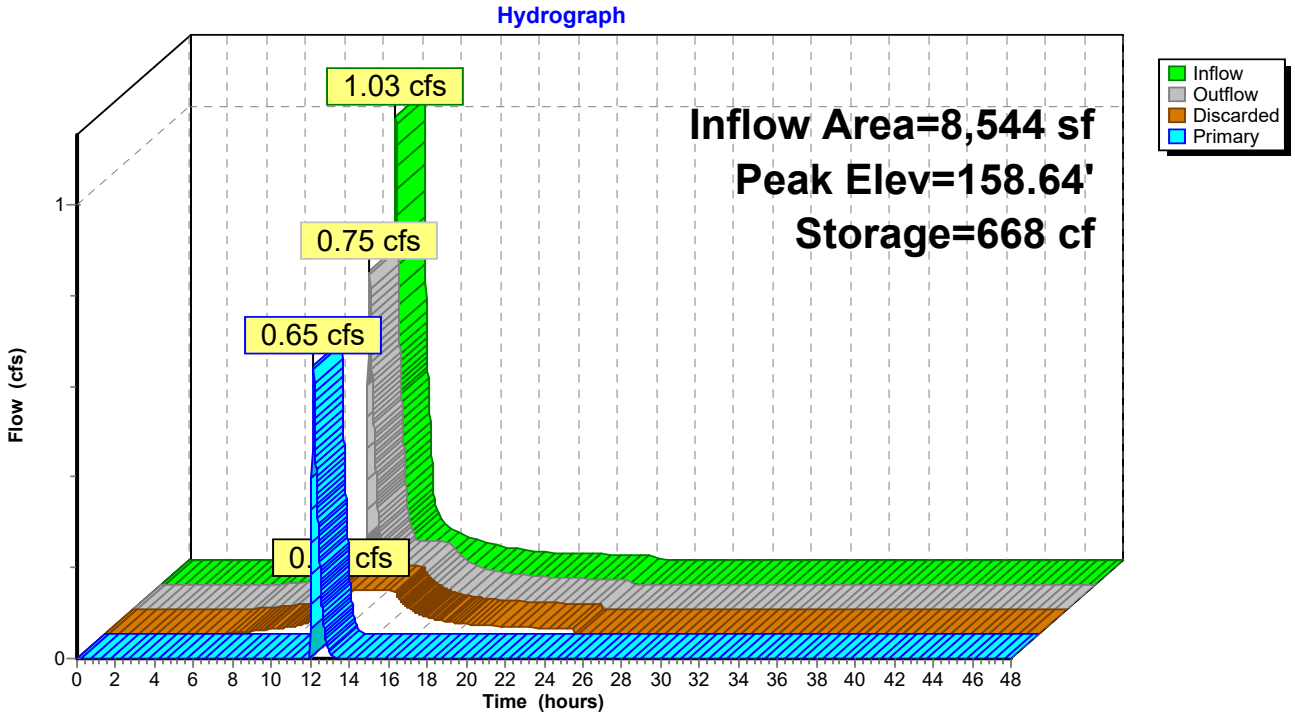
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.00	4	8.0	4	4	11
158.50	1,396	169.0	246	249	2,279
158.70	2,016	198.0	339	589	3,127

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.10 cfs @ 12.14 hrs HW=158.64' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=0.65 cfs @ 12.14 hrs HW=158.64' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.65 cfs @ 0.93 fps)

Pond 3P: EX. DRYWELL #3



Summary for Pond 4P: DRYWELL #1- GALLEYS (20)

[58] Hint: Peaked 0.02' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=365)

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 5.01" for 25-Year event
Inflow = 1.93 cfs @ 12.07 hrs, Volume= 6,168 cf
Outflow = 0.66 cfs @ 12.34 hrs, Volume= 6,168 cf, Atten= 66%, Lag= 16.0 min
Discarded = 0.46 cfs @ 12.34 hrs, Volume= 6,093 cf
Primary = 0.20 cfs @ 12.34 hrs, Volume= 75 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.42' @ 12.34 hrs Surf.Area= 462 sf Storage= 1,778 cf
Flood Elev= 158.40' Surf.Area= 462 sf Storage= 1,762 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 38.0 min (814.8 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	1,280 cf	**4.00'W x 4.00'L x 4.00'H DRYWELL 4x4x4 Galleys** x 20 Inside #2
#2	152.50'	391 cf	**11.00'W x 42.00'L x 5.00'H Prismatoid** 2,310 cf Overall - 1,280 cf Embedded = 1,030 cf x 38.0% Voids
#3	157.50'	201 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) -Impervious
		1,872 cf	Total Available Storage

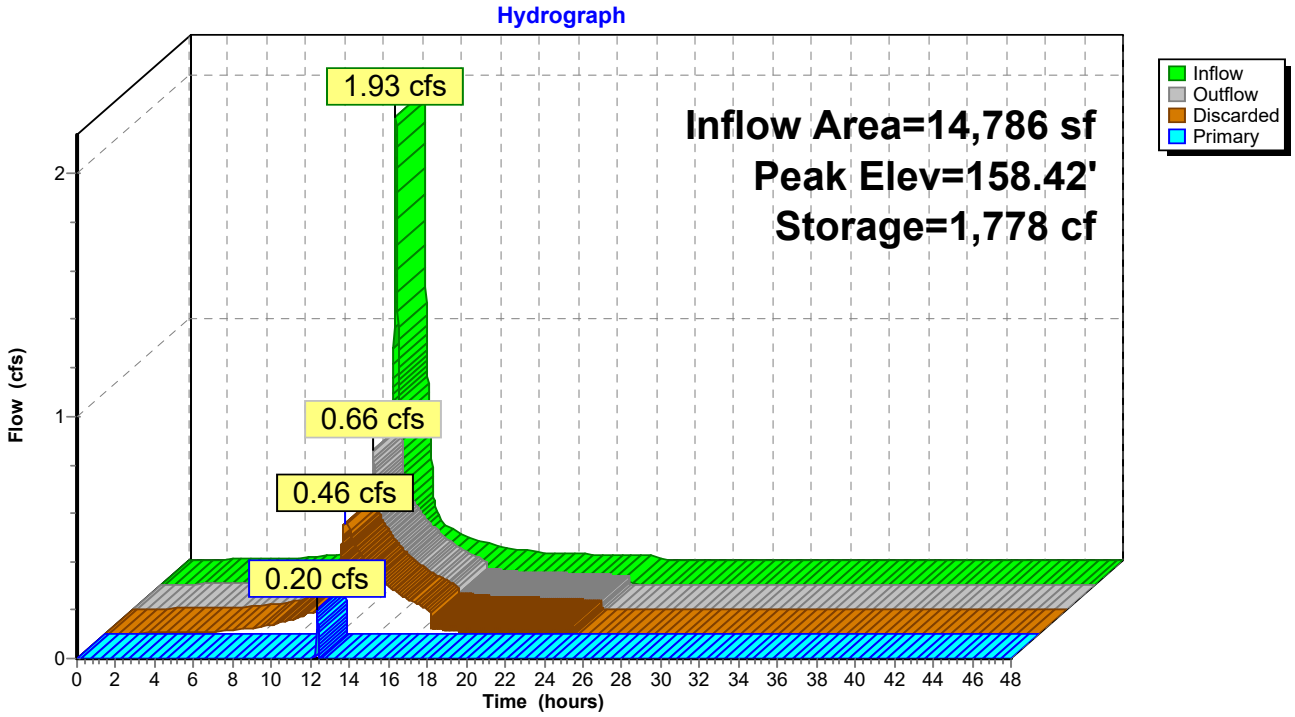
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.50	4	8.0	0	0	4
158.15	4	8.0	3	3	9
158.25	260	62.0	10	12	310
158.50	1,396	145.0	188	201	1,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.50'	**8.270 in/hr Exfiltration - Sand Rawls Rate over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.46 cfs @ 12.34 hrs HW=158.42' (Free Discharge)
1=Exfiltration - Sand Rawls Rate (Controls 0.46 cfs)

Primary OutFlow Max=0.20 cfs @ 12.34 hrs HW=158.42' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.20 cfs @ 0.31 fps)

Pond 4P: DRYWELL #1- GALLEYS (20)

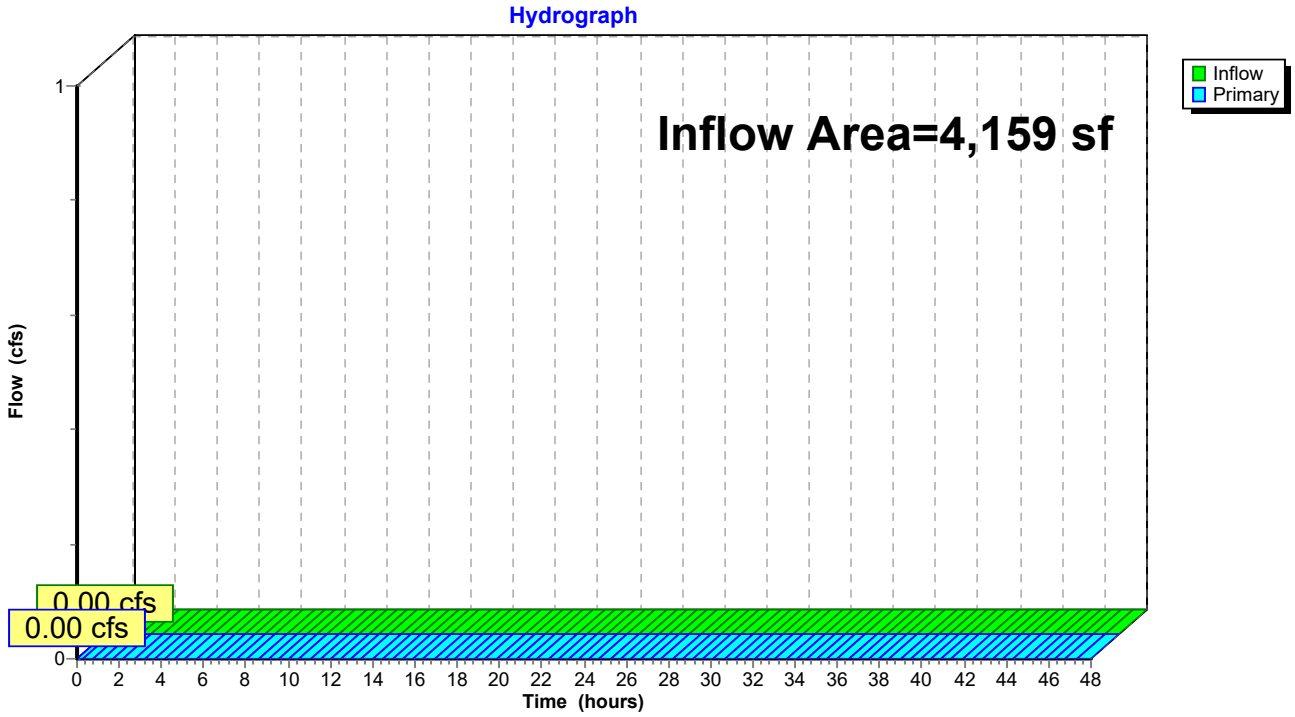


Summary for Link 1S: South Curbcut

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 0.00" for 25-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

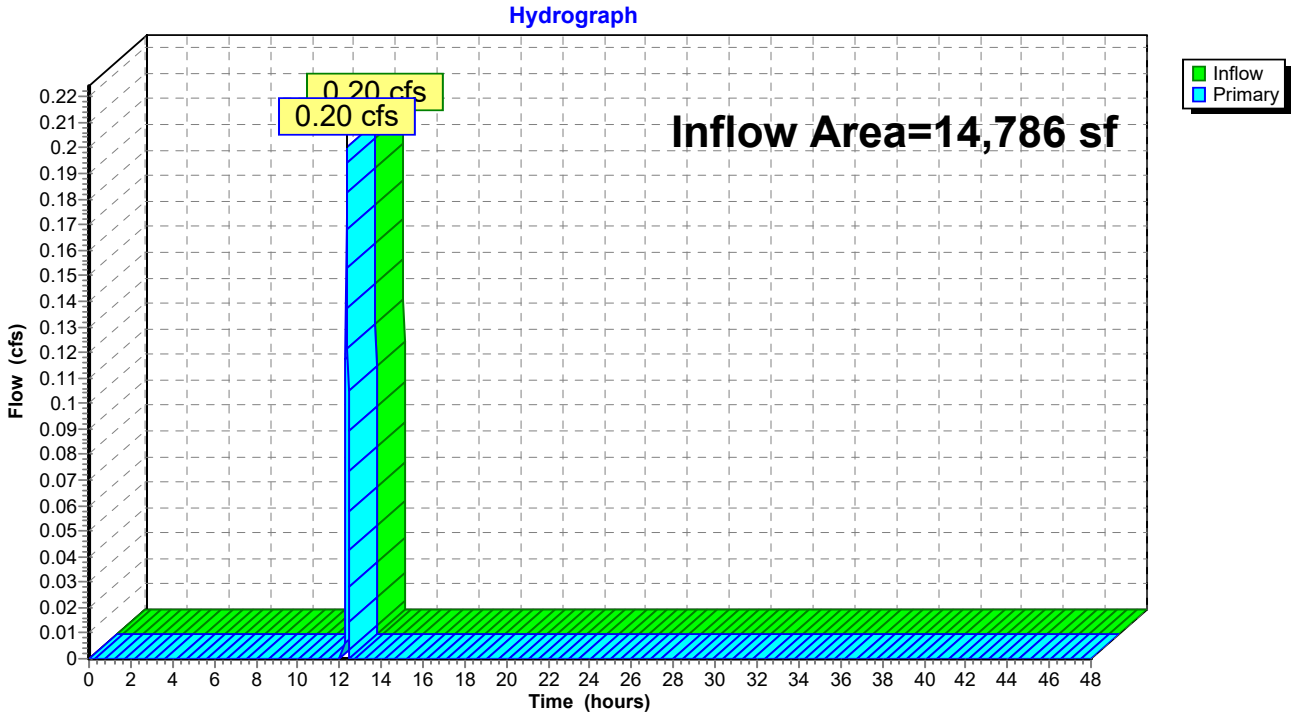


Summary for Link 2S: North Curbcut

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 0.06" for 25-Year event
Inflow = 0.20 cfs @ 12.34 hrs, Volume= 75 cf
Primary = 0.20 cfs @ 12.34 hrs, Volume= 75 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

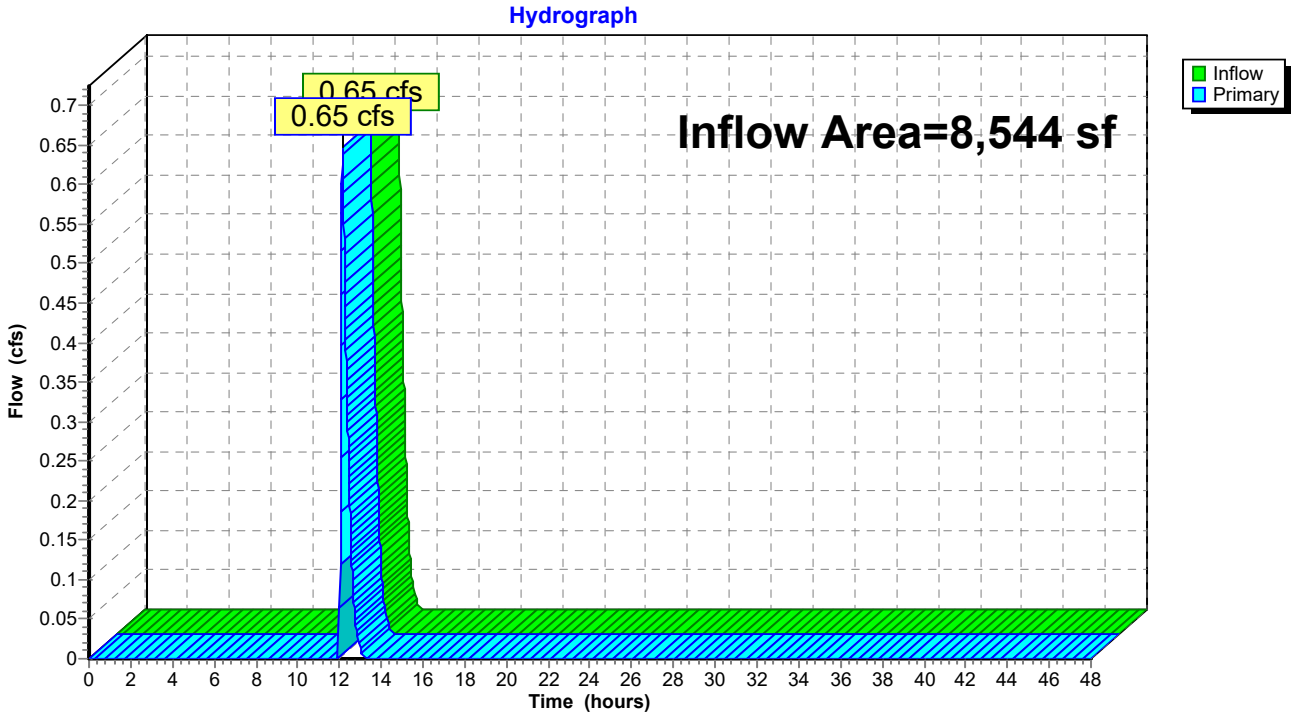


Summary for Link 3S: Southwest Corner

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 1.16" for 25-Year event
Inflow = 0.65 cfs @ 12.14 hrs, Volume= 823 cf
Primary = 0.65 cfs @ 12.14 hrs, Volume= 823 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3S: Southwest Corner



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1A: CB#1 SOUTHEAST Runoff Area=4,159 sf 88.17% Impervious Runoff Depth=7.08"
Tc=5.0 min CN=91 Runoff=0.76 cfs 2,455 cf

Subcatchment 2A: CB#2 - CB#4 Runoff Area=9,402 sf 74.41% Impervious Runoff Depth=6.13"
Tc=5.0 min CN=83 Runoff=1.56 cfs 4,803 cf

Subcatchment 2B: CANOPY Runoff Area=2,448 sf 100.00% Impervious Runoff Depth=7.92"
Tc=5.0 min CN=98 Runoff=0.47 cfs 1,616 cf

Subcatchment 2C: NEW BLDG Runoff Area=2,936 sf 100.00% Impervious Runoff Depth=7.92"
Tc=5.0 min CN=98 Runoff=0.56 cfs 1,938 cf

Subcatchment 3A: CB#3 SOUTHWEST Runoff Area=8,544 sf 74.91% Impervious Runoff Depth=6.13"
Tc=5.0 min CN=83 Runoff=1.42 cfs 4,365 cf

Pond 1P: EX. DRYWELL #1 Peak Elev=158.62' Storage=657 cf Inflow=0.76 cfs 2,455 cf
Discarded=0.10 cfs 2,187 cf Primary=0.30 cfs 267 cf Outflow=0.40 cfs 2,455 cf

Pond 3P: EX. DRYWELL #3 Peak Elev=158.69' Storage=772 cf Inflow=1.42 cfs 4,365 cf
Discarded=0.10 cfs 2,857 cf Primary=1.06 cfs 1,508 cf Outflow=1.16 cfs 4,365 cf

Pond 4P: DRYWELL #1 - GALLEYS (20) Peak Elev=158.48' Storage=1,842 cf Inflow=2.59 cfs 8,357 cf
Discarded=0.46 cfs 7,358 cf Primary=1.75 cfs 999 cf Outflow=2.21 cfs 8,357 cf

Link 1S: South Curbcut Inflow=0.30 cfs 267 cf
Primary=0.30 cfs 267 cf

Link 2S: North Curbcut Inflow=1.75 cfs 999 cf
Primary=1.75 cfs 999 cf

Link 3S: Southwest Corner Inflow=1.06 cfs 1,508 cf
Primary=1.06 cfs 1,508 cf

Total Runoff Area = 27,489 sf Runoff Volume = 15,176 cf Average Runoff Depth = 6.62"
18.34% Pervious = 5,042 sf 81.66% Impervious = 22,447 sf

Summary for Subcatchment 1A: CB#1 SOUTHEAST

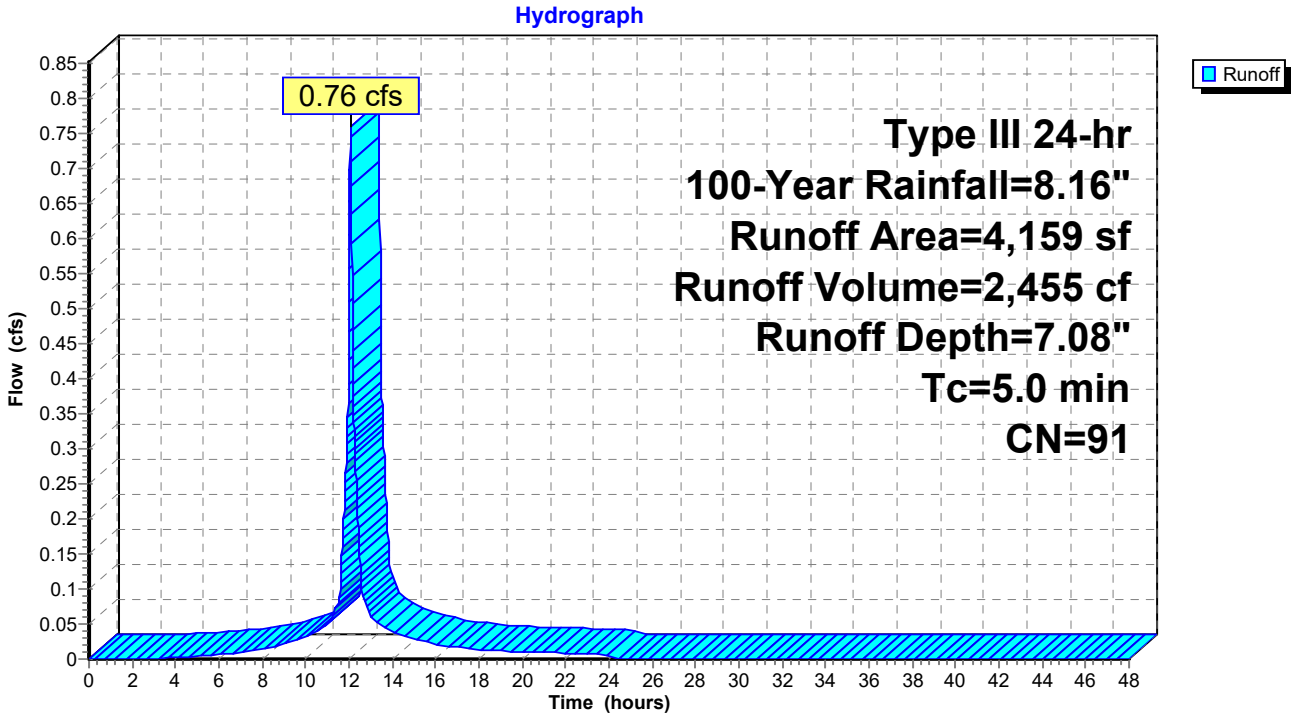
Runoff = 0.76 cfs @ 12.07 hrs, Volume= 2,455 cf, Depth= 7.08"
Routed to Pond 1P : EX. DRYWELL #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

Area (sf)	CN	Description
3,667	98	Paved parking, HSG A
492	39	>75% Grass cover, Good, HSG A
4,159	91	Weighted Average
492		11.83% Pervious Area
3,667		88.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 1A: CB#1 SOUTHEAST



Summary for Subcatchment 2A: CB#2 - CB#4 NORTHEAST

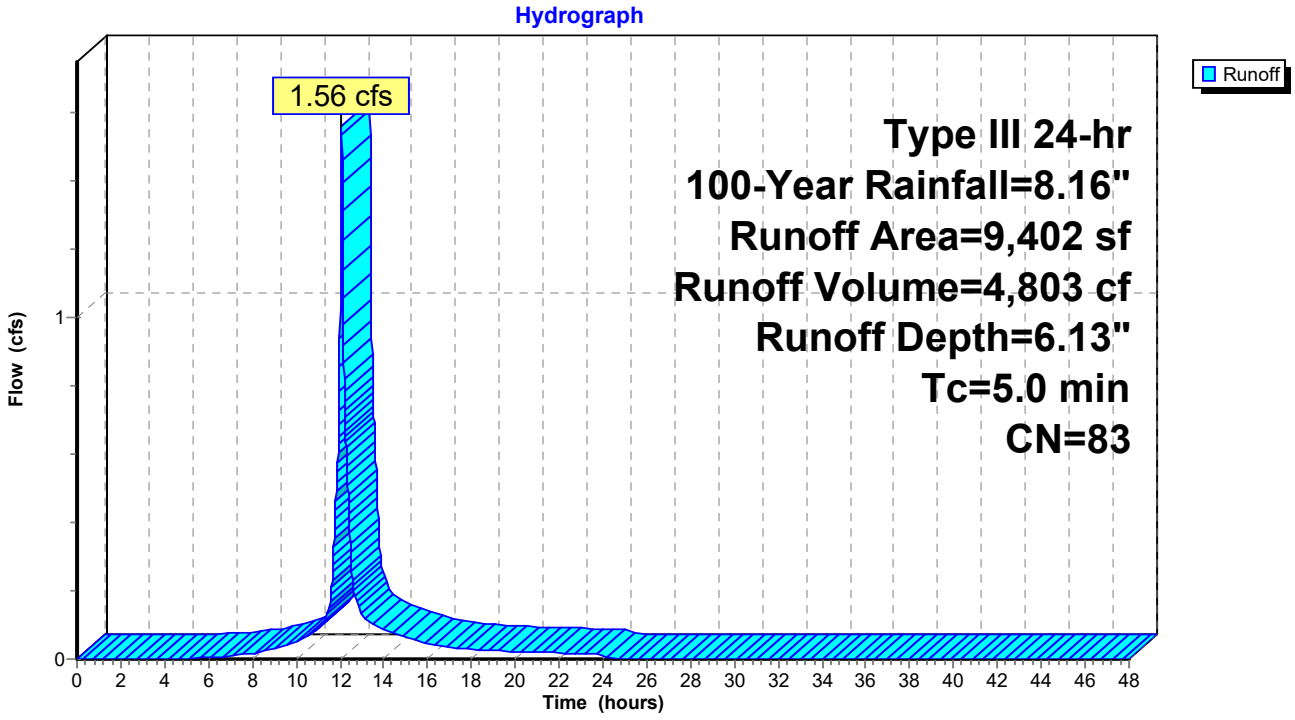
Runoff = 1.56 cfs @ 12.07 hrs, Volume= 4,803 cf, Depth= 6.13"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

Area (sf)	CN	Description
6,996	98	Paved parking, HSG A
2,406	39	>75% Grass cover, Good, HSG A
9,402	83	Weighted Average
2,406		25.59% Pervious Area
6,996		74.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2A: CB#2 - CB#4 NORTHEAST



Summary for Subcatchment 2B: CANOPY

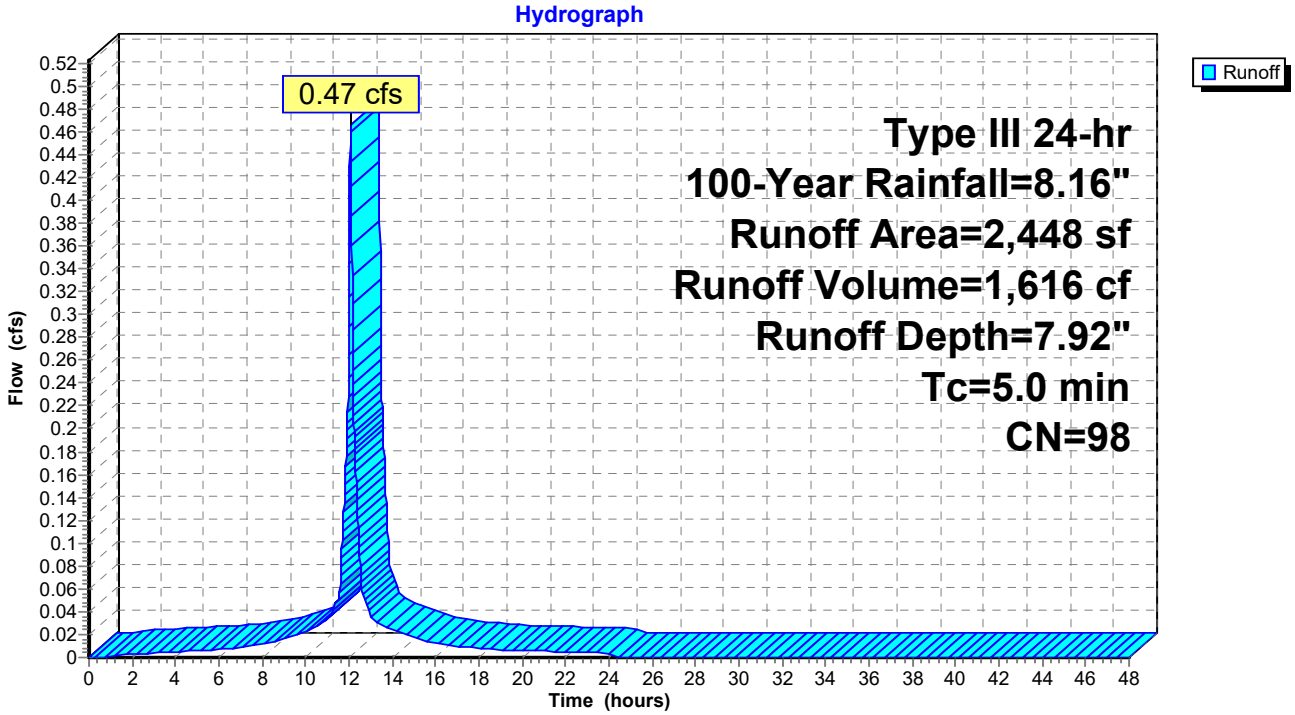
Runoff = 0.47 cfs @ 12.07 hrs, Volume= 1,616 cf, Depth= 7.92"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

	Area (sf)	CN	Description
*	2,448	98	Canopy
	2,448		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2B: CANOPY



Summary for Subcatchment 2C: NEW BLDG

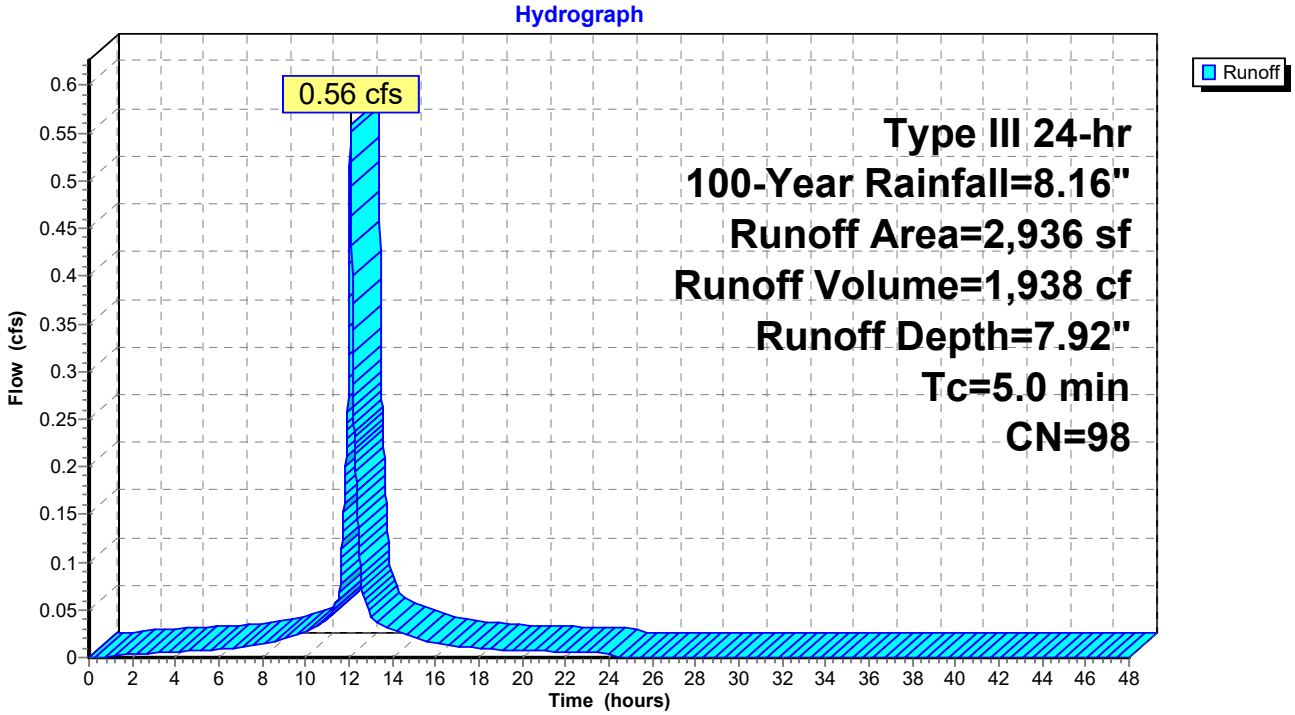
Runoff = 0.56 cfs @ 12.07 hrs, Volume= 1,938 cf, Depth= 7.92"
Routed to Pond 4P : DRYWELL #1- GALLEYS (20)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

	Area (sf)	CN	Description
*	2,936	98	Building Roof
	2,936		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 2C: NEW BLDG



Summary for Subcatchment 3A: CB#3 SOUTHWEST

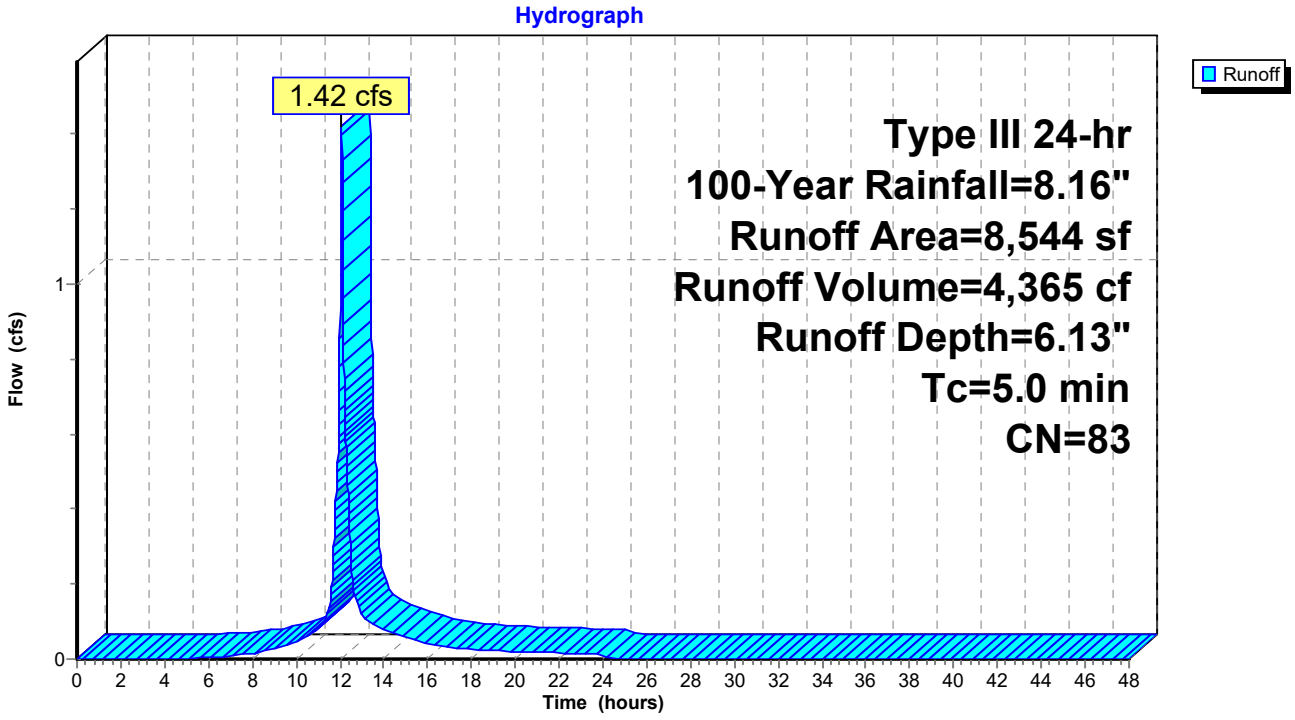
Runoff = 1.42 cfs @ 12.07 hrs, Volume= 4,365 cf, Depth= 6.13"
Routed to Pond 3P : EX. DRYWELL #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.16"

Area (sf)	CN	Description
6,400	98	Paved parking, HSG A
2,144	39	>75% Grass cover, Good, HSG A
8,544	83	Weighted Average
2,144		25.09% Pervious Area
6,400		74.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minimum Tc = 5 min.**

Subcatchment 3A: CB#3 SOUTHWEST



Summary for Pond 1P: EX. DRYWELL #1

[58] Hint: Peaked 0.02' above defined flood level

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 7.08" for 100-Year event
Inflow = 0.76 cfs @ 12.07 hrs, Volume= 2,455 cf
Outflow = 0.40 cfs @ 12.19 hrs, Volume= 2,455 cf, Atten= 47%, Lag= 7.0 min
Discarded = 0.10 cfs @ 12.19 hrs, Volume= 2,187 cf
Primary = 0.30 cfs @ 12.19 hrs, Volume= 267 cf
Routed to Link 1S : South Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.62' @ 12.19 hrs Surf.Area= 50 sf Storage= 657 cf
Flood Elev= 158.60' Surf.Area= 50 sf Storage= 611 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 45.4 min (816.5 - 771.1)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	680 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		875 cf	Total Available Storage

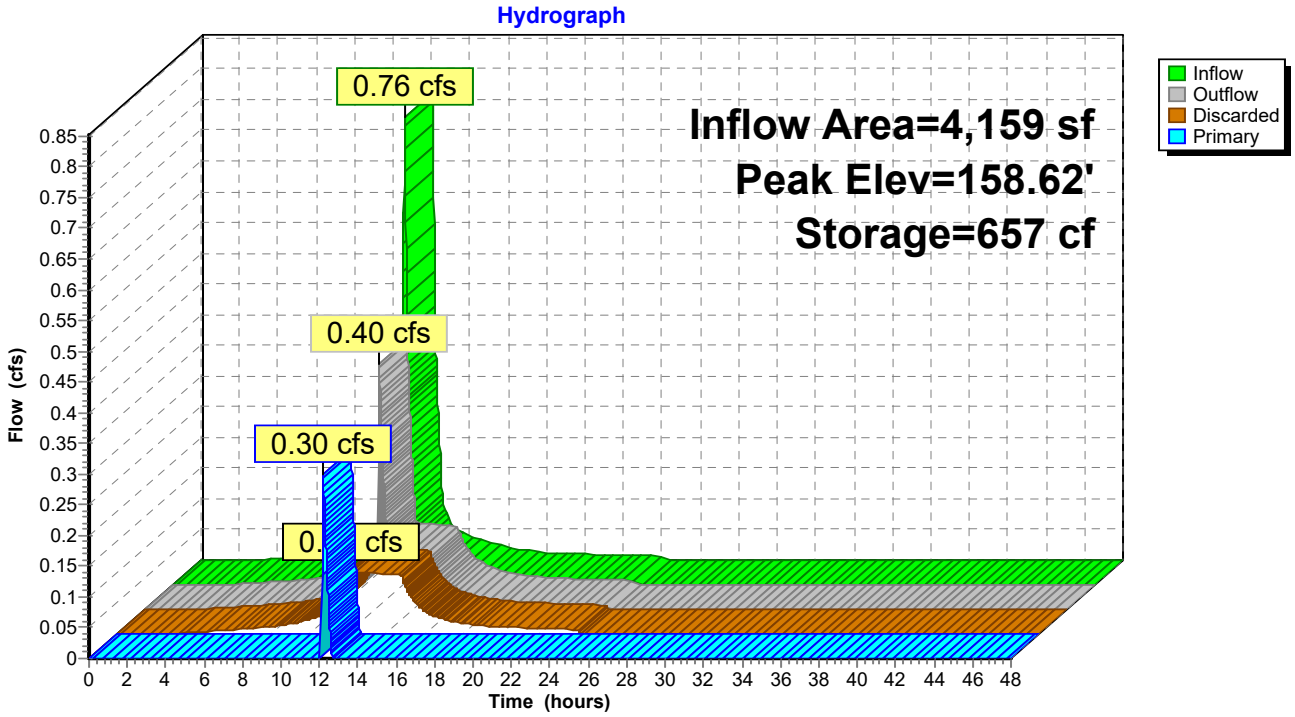
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.05	4	8.0	4	4	12
158.50	1,454	111.0	230	234	987
158.70	3,110	220.0	446	680	3,859

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.60'	**45.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.10 cfs @ 12.19 hrs HW=158.62' (Free Discharge)
1=Exfiltration - Sand (Controls 0.10 cfs)

Primary OutFlow Max=0.30 cfs @ 12.19 hrs HW=158.62' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.30 cfs @ 0.33 fps)

Pond 1P: EX. DRYWELL #1



Summary for Pond 3P: EX. DRYWELL #3

[58] Hint: Peaked 0.19' above defined flood level

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 6.13" for 100-Year event
Inflow = 1.42 cfs @ 12.07 hrs, Volume= 4,365 cf
Outflow = 1.16 cfs @ 12.12 hrs, Volume= 4,365 cf, Atten= 18%, Lag= 3.2 min
Discarded = 0.10 cfs @ 12.12 hrs, Volume= 2,857 cf
Primary = 1.06 cfs @ 12.12 hrs, Volume= 1,508 cf
Routed to Link 3S : Southwest Corner

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.69' @ 12.12 hrs Surf.Area= 50 sf Storage= 772 cf
Flood Elev= 158.50' Surf.Area= 50 sf Storage= 445 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 33.9 min (827.9 - 794.0)

Volume	Invert	Avail.Storage	Storage Description
#1	151.70'	54 cf	**8.00'D x 5.50'H Vertical Cone/Cylinder** 276 cf Overall - 141 cf Embedded = 135 cf x 40.0% Voids
#2	152.20'	141 cf	**6.00'D x 5.00'H Vertical Cone/Cylinder** Inside #1
#3	157.10'	589 cf	**Surface Ponding / Parking (Irregular)** Listed below (Recalc) -Impervious
		784 cf	Total Available Storage

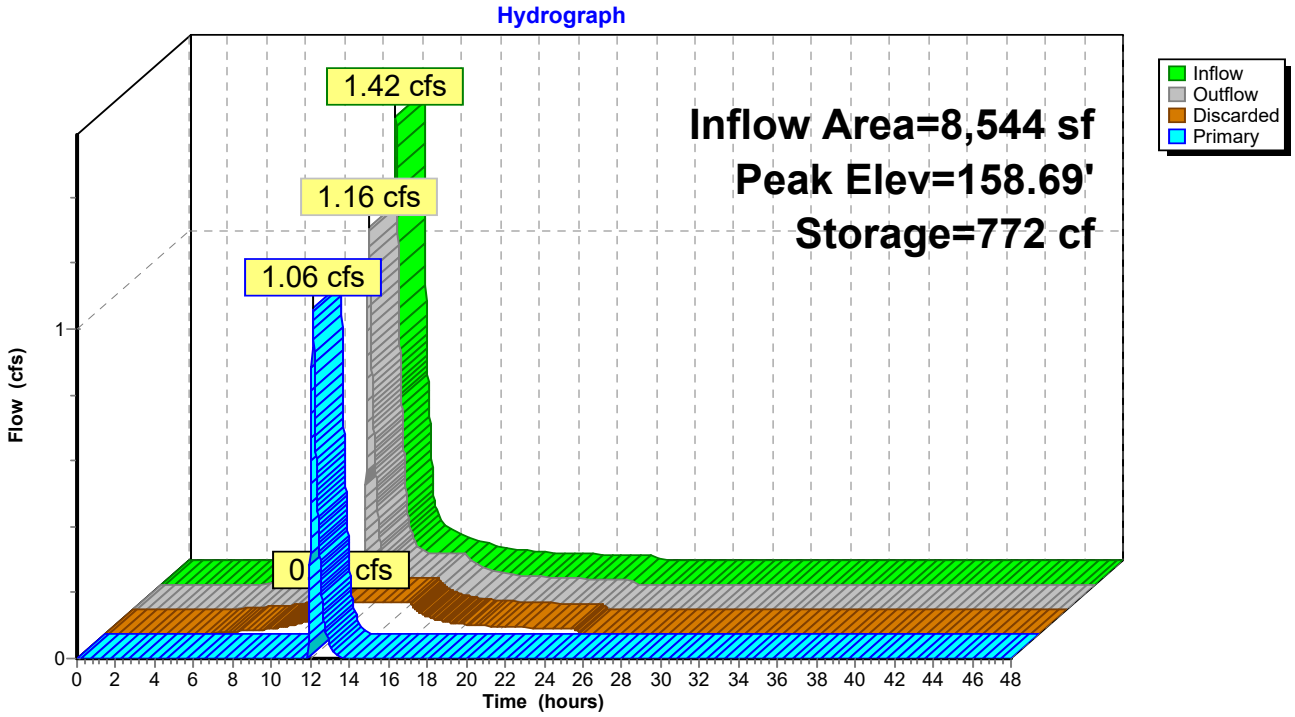
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.10	4	8.0	0	0	4
158.00	4	8.0	4	4	11
158.50	1,396	169.0	246	249	2,279
158.70	2,016	198.0	339	589	3,127

Device	Routing	Invert	Outlet Devices
#1	Discarded	151.70'	**8.270 in/hr Exfiltration - Sand over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.50'	**5.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.10 cfs @ 12.12 hrs HW=158.69' (Free Discharge)
↑—**1=Exfiltration - Sand** (Controls 0.10 cfs)

Primary OutFlow Max=1.06 cfs @ 12.12 hrs HW=158.69' TW=0.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.06 cfs @ 1.10 fps)

Pond 3P: EX. DRYWELL #3



Summary for Pond 4P: DRYWELL #1- GALLEYS (20)

[58] Hint: Peaked 0.08' above defined flood level
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=329)

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 6.78" for 100-Year event
Inflow = 2.59 cfs @ 12.07 hrs, Volume= 8,357 cf
Outflow = 2.21 cfs @ 12.12 hrs, Volume= 8,357 cf, Atten= 15%, Lag= 2.9 min
Discarded = 0.46 cfs @ 12.12 hrs, Volume= 7,358 cf
Primary = 1.75 cfs @ 12.12 hrs, Volume= 999 cf
Routed to Link 2S : North Curbcut

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 158.48' @ 12.12 hrs Surf.Area= 462 sf Storage= 1,842 cf
Flood Elev= 158.40' Surf.Area= 462 sf Storage= 1,762 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 34.7 min (805.7 - 771.1)

Volume	Invert	Avail.Storage	Storage Description
#1	153.00'	1,280 cf	**4.00'W x 4.00'L x 4.00'H DRYWELL 4x4x4 Galleys** x 20 Inside #2
#2	152.50'	391 cf	**11.00'W x 42.00'L x 5.00'H Prismatoid** 2,310 cf Overall - 1,280 cf Embedded = 1,030 cf x 38.0% Voids
#3	157.50'	201 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) -Impervious
		1,872 cf	Total Available Storage

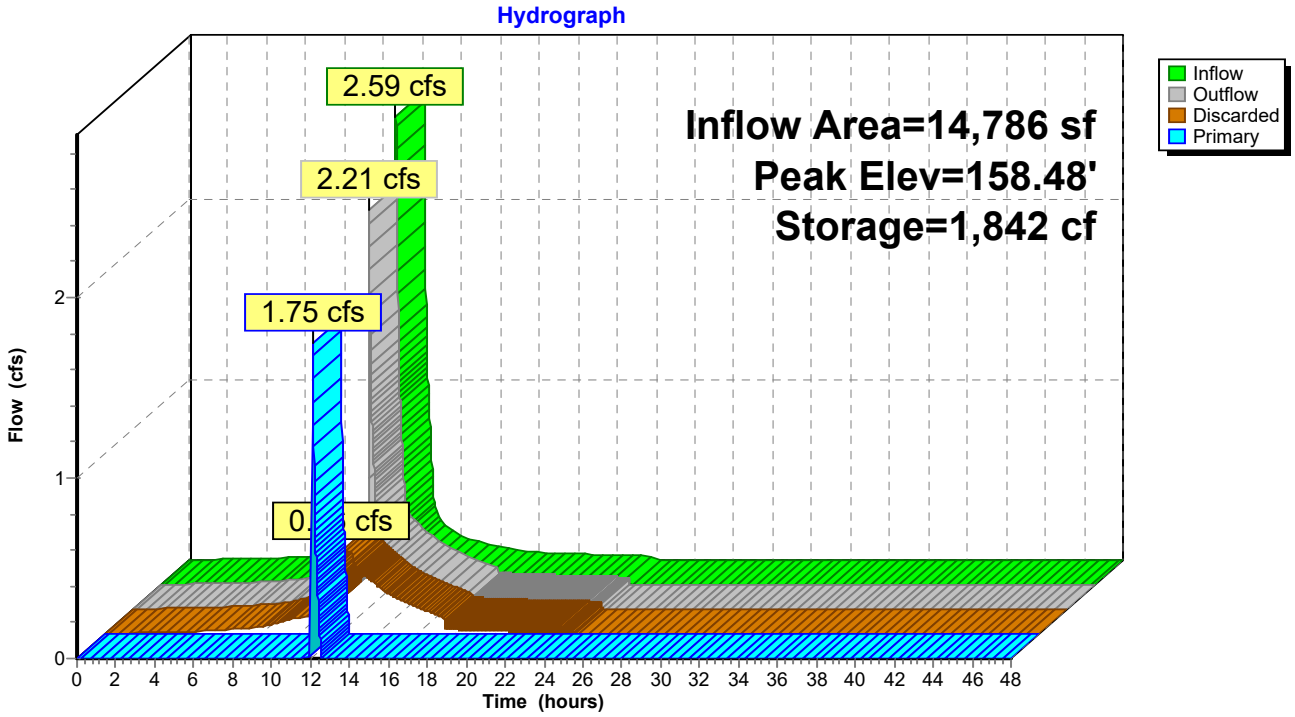
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.50	4	8.0	0	0	4
158.15	4	8.0	3	3	9
158.25	260	62.0	10	12	310
158.50	1,396	145.0	188	201	1,677

Device	Routing	Invert	Outlet Devices
#1	Discarded	152.50'	**8.270 in/hr Exfiltration - Sand Rawls Rate over Wetted area** Conductivity to Groundwater Elevation = 149.70'
#2	Primary	158.40'	**35.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Discarded OutFlow Max=0.46 cfs @ 12.12 hrs HW=158.48' (Free Discharge)
1=Exfiltration - Sand Rawls Rate (Controls 0.46 cfs)

Primary OutFlow Max=1.74 cfs @ 12.12 hrs HW=158.48' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 1.74 cfs @ 0.65 fps)

Pond 4P: DRYWELL #1- GALLEYS (20)

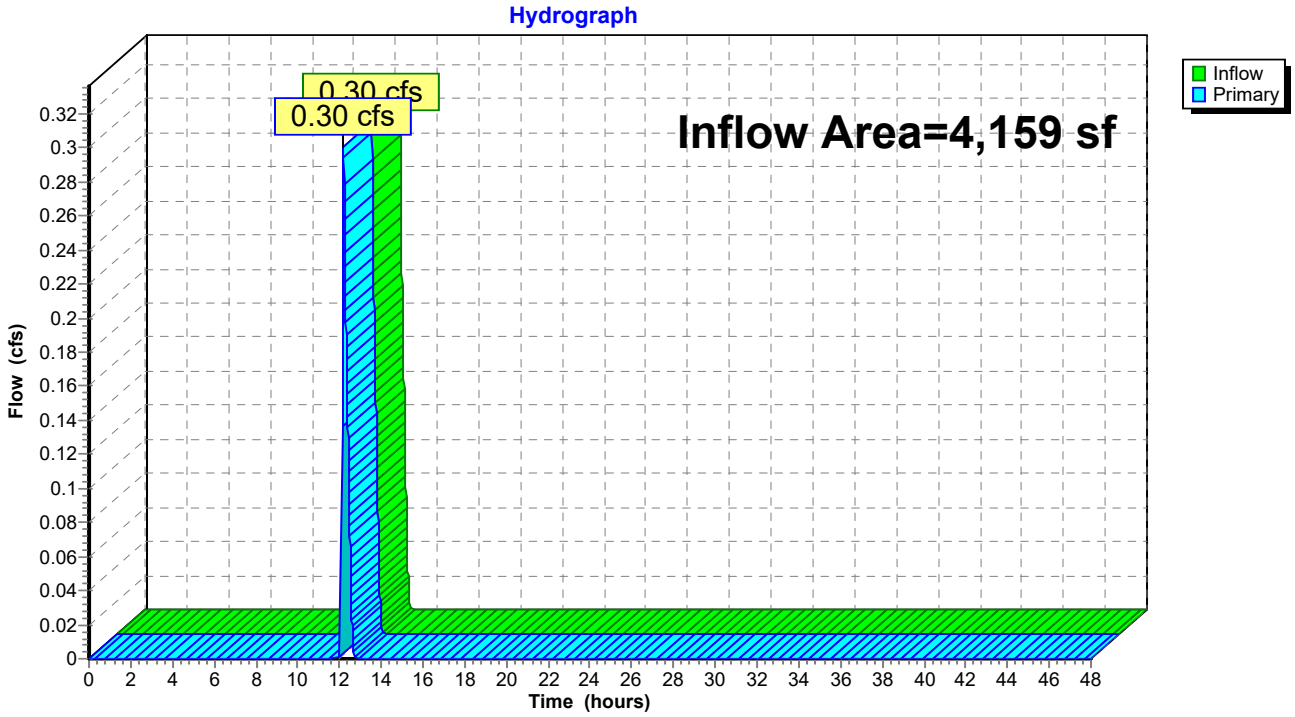


Summary for Link 1S: South Curbcut

Inflow Area = 4,159 sf, 88.17% Impervious, Inflow Depth = 0.77" for 100-Year event
Inflow = 0.30 cfs @ 12.19 hrs, Volume= 267 cf
Primary = 0.30 cfs @ 12.19 hrs, Volume= 267 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 1S: South Curbcut

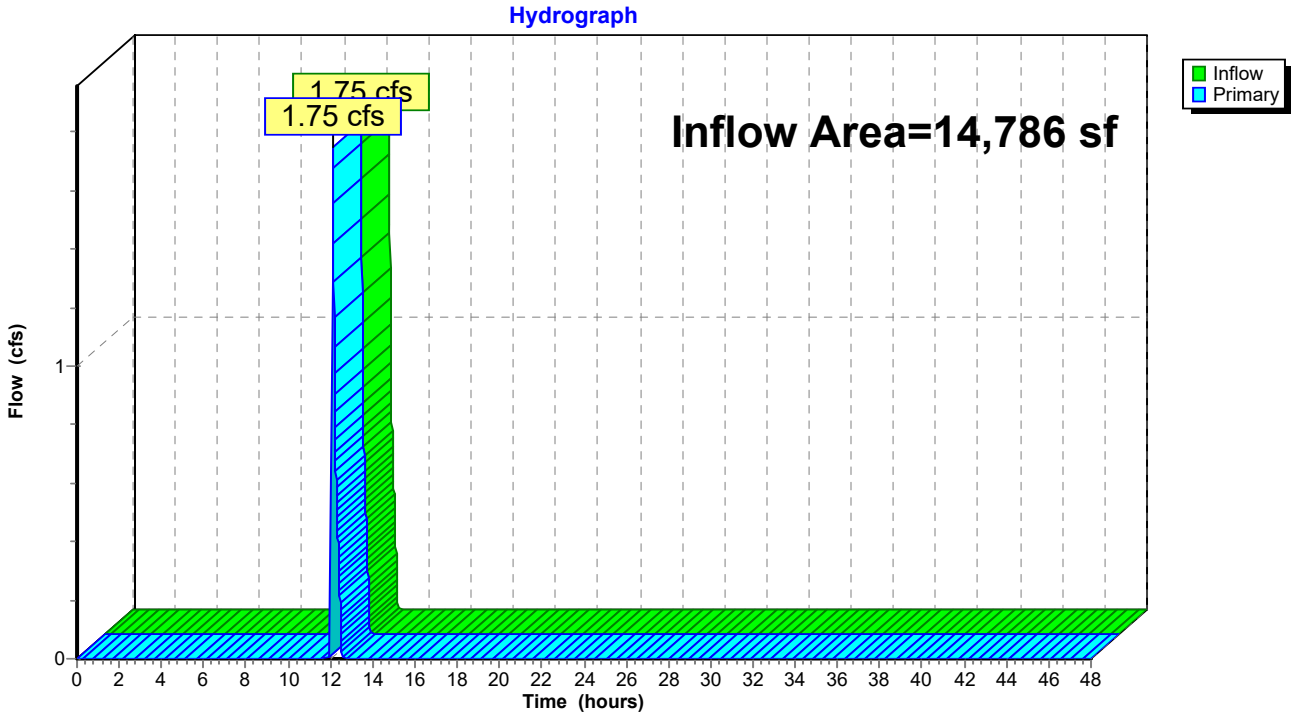


Summary for Link 2S: North Curbcut

Inflow Area = 14,786 sf, 83.73% Impervious, Inflow Depth = 0.81" for 100-Year event
Inflow = 1.75 cfs @ 12.12 hrs, Volume= 999 cf
Primary = 1.75 cfs @ 12.12 hrs, Volume= 999 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 2S: North Curbcut

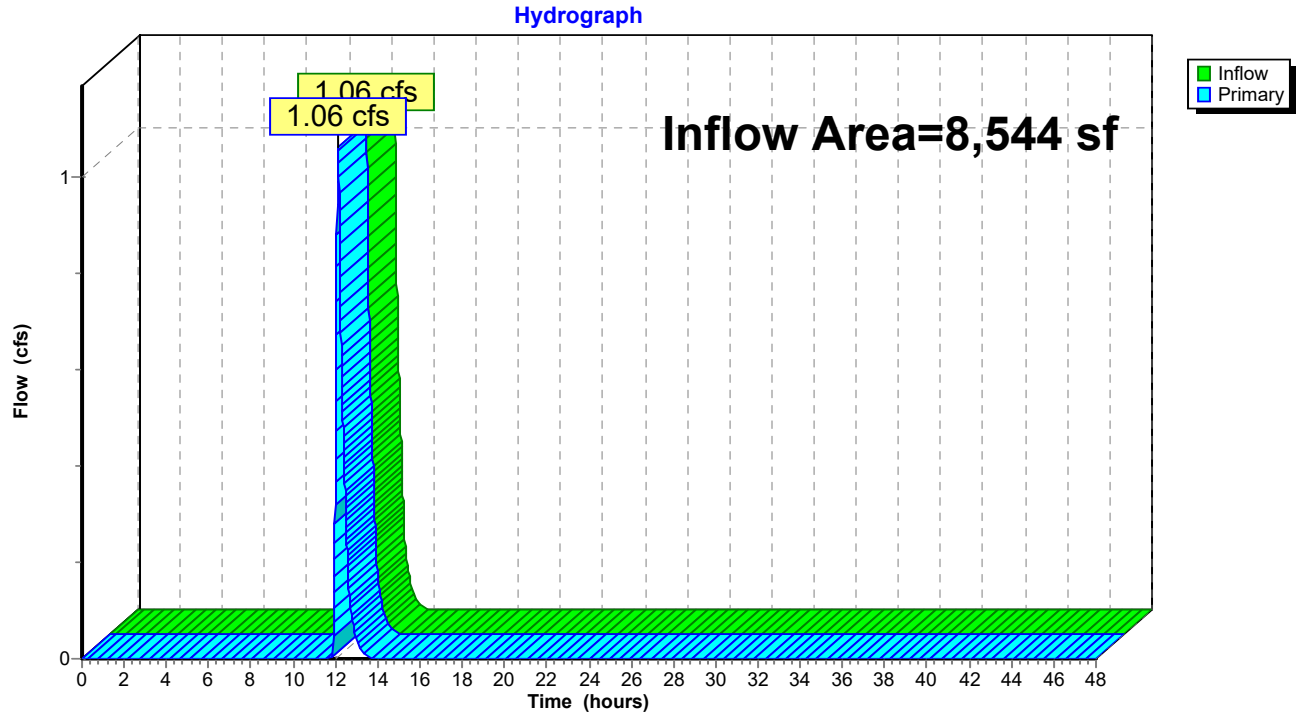


Summary for Link 3S: Southwest Corner

Inflow Area = 8,544 sf, 74.91% Impervious, Inflow Depth = 2.12" for 100-Year event
Inflow = 1.06 cfs @ 12.12 hrs, Volume= 1,508 cf
Primary = 1.06 cfs @ 12.12 hrs, Volume= 1,508 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Link 3S: Southwest Corner



Appendix E

Stormwater Long Term
Operation & Maintenance Plan

STORM WATER MANAGEMENT SYSTEM
LONG-TERM OPERATION & MAINTENANCE PLAN

December 2025

"United Food Mart"
Filling Station / Convenience Store
80 Ella Grasso Turnpike (Route 75)
Windsor Locks, Connecticut

Prepared For:
United Petroleum, LLC
530 Silas Deane Highway #209
Wethersfield, CT 06109

Prepared By:
CMG
67 Hall Road
Sturbridge, MA 01566
Phone: (774) 241-0901

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Long Term Operation & Maintenance Plan
Site Stormwater Management System
"UNITED FOOD MART" FILLING STATION / CONVENIENCE STORE
#80 ELLA GRASSO TURNPIKE (ROUTE 75)
WINDSOR LOCKS, CT

Operation and Maintenance (O&M) Plan

The purpose of this Stormwater Management System Operation and Maintenance Plan is to prevent erosion, sedimentation, pollution or other deterioration of the stormwater management system and resource areas located on and adjacent to the site property located at **80 Ella Grasso Turnpike in Windsor Locks, CT** (the "Site"). The stormwater management system shall be maintained properly to assure its continued performance

Property Owner / Responsible Party: **UNITED PETROLEUM, LLC**
530 Silas Deane Highway #209
Wethersfield, CT 06109
Attn: Tahir Choudhry
p. (860) 577-7942

Stormwater Management System Owner: **(same as above)**

Site subject to Wetlands Protection Act: **NO**

The "Responsible Party" Shall:

- Implement the routine and non-routine operation, maintenance, and inspection tasks in accordance with the procedures specified in this document to ensure that all stormwater management systems function as designed;
- Maintain a log of all operation and maintenance (O & M) activities for the last three (3) years, including inspections, repairs, replacement and disposal (for disposal, the log shall indicate the type of material and disposal location);

UNITED PETROLEUM, LLC maintains a contract with the following companies:

Landscaping & Pavement Maintenance: _____

Snow Removal & Plowing: _____

Stormwater System Maintenance: _____

Table No. 1
"UNITED FOOD MART" FILLING STATION / CONVENIENCE STORE
#80 ELLAS GRASSO TURNPIKE (ROUTE 75), WINDSOR LOCKS, CT

STORMWATER SYSTEM INSPECTION AND MAINTENANCE SCHEDULE		
Best Management Practice (BMP)	**Inspection Frequency**	**Maintenance Frequency**
STRUCTURAL BMPs		
CATCH BASIN DEEP SUMP W/ HOOD	Four (4) Times / Year	Remove Sediment Four (4) Times / Year (Including End of Foliage & Snow Removal Seasons)
DRYWELL SYSTEMS Parking Lot & Building	Bi-Annual (Early Spring & Late Fall)	As Needed
NON-STRUCTURAL STORMWATER CONTROLS		
SPILL KIT	Four (4) Times / Year	Replenish Spill Kit As Needed
Landscaping	Four (4) Times / Year	Seasonally As Needed
Roadway / Driveway Sweeping	Two (2) Times /Year	Seasonally As Needed
Snow Removal	Seasonally As Needed	Seasonally As Needed

STRUCTURAL STORMWATER BMP MAINTENANCE:
Deep Sump Catch Basin(s):

- Inspect or clean catch basin(s) at least four (4) times per year, including the end of the foliage and snow removal seasons.
- Inspection shall occur by probing the structure with a rod to determine the depth of accumulated sediment.
- Sediments must be removed four (4) times per year or whenever the depth of sediment is greater than or equal to one half of the depth from the bottom of the invert of the lowest pipe in the basin.
- The structure will be cleaned of water and sand/debris with the use of a vacuum truck. Material removed from the structure will be disposed of legally off-site by the vendor.
- Unless there is evidence that they have been contaminated by a spill or other means, catch basin cleanings may be taken to a landfill or other facility permitted by MassDEP to accept solid waste.

Drywell Infiltration Structure(s):

- Inspect inlet at least twice a year and remove any debris that might clog the system.

NON- STRUCTURAL STORMWATER MANAGEMENT CONTROLS:

Non-Structural Control Measures

- **SPILL KIT** - a minimum of one (1) 55 gallon overpack drum, spill response equipment, and oil absorbents need to be located on-site in an accessible location within the building.

Landscape & Pavement Maintenance:

- **No debris, refuse or other materials,** including but not limited to landscaping debris, leaves, shrubs and tree trimmings, logs, bricks, stone or trash shall be deposited within the vegetated wetland.
- The use of pesticides, herbicides, and fertilizers on the site shall be minimized to the extent practicable and shall be applied in accordance with manufacture recommendations by experienced and if applicable, licensed personnel.
- Pavement areas will be swept seasonally as necessary to remove accumulated winter sand and salt and fall leaves, and shall be swept as required to remove litter. Collected material will be properly disposed of off-site.

Trash Removal

- Inspect on-site area for litter and trash as needed. Any accumulated trash, litter, and discarded materials in this area will be removed and will be disposed of at a suitable location on a weekly basis.

SNOW MANAGEMENT PLAN:

- No snow storage shall be located within or "deposited" within wetland resource areas on or off-site.

- No salt shall be used to treat unpaved areas during snow and ice conditions. The storage of all "de-icing" chemicals and treatment products is to be inside the building.

- If Site snow storage interferes with driveway maneuvers or sight distances (i.e. blocking of travel aisles, sight distance, or parking) the snow pile will be either removed or reduced legally in a legal manner by the snow plow vendor within 24-hours.

- Pavement areas will be swept seasonally as necessary to remove accumulated winter sand and salt and fall leaves, and shall be swept as required to remove litter. Collected material will be properly disposed of off-site.

INSPECTIONS / RECORDKEEPING:

Routine Inspections:
Routine inspections and maintenance to be conducted with the frequency described in this Operation and Maintenance Plan. An example inspection form is provided in **Attachment 2**.

Recordkeeping
Records of all drainage system inspections and maintenance shall be kept on file for a period of at least **three (3) years.**

PUBLIC SAFETY FEATURES:

- All cast iron stormwater structure grates and covers shall be kept in good condition and kept closed at all times. Any damaged or broken structures will be replaced immediately upon discovery;

- A safety grate shall be installed at flared end sections as required.

OPERATION & MAINTENANCE BUDGET ESTIMATE:

- **The responsible party, UNITED PETROLEUM, LLC,** agrees to maintain an adequate annual budget to provide for the routine maintenance activities detailed in this document including but not limited to:

    - Landscape Maintenance;
    - Stormwater Management System Inspection & Maintenance;
    - Snow Plowing & Removal.

Attachment #1

Stormwater Management System
Biannual Inspection Form

Inspection Form - Stormwater Management System
"UNITED FOOD MART" Filling Station / Convenience Store
#80 Ella Grasso Turnpike (Route 75), Windsor Locks, Connecticut

BIANNUAL INSPECTION AND MAINTENANCE REPORT

Spring _____ Fall_____

Note: This Log should be copied prior to use. Note Additional Comments on back of Form.

Inspector's Name: _____ Date: _____ Time: _____ am/pm

Inspector's Qualifications: _____

Days Since Last Rainfall:_____ Amount of Last Rainfall:_____ inches

Item/Condition to be Checked	Maintenance Required		Corrective Action & Date
	No	Yes	
FOUR (4) CATCH BASINS DEEP SUMP W/ HOOD			*Clean when sediment Depth > 24 in. or sheen present
THREE (3) STORMWATER DRYWELLS			
SPILL KIT			
Parking Lot / Driveway Sweeping			*Sweep Seasonally – As Needed
Landscaping / Trash Removal			
Snow Removal (seasonal)			*All De-icing chemical storage to be inside building

Additional Comments:_____


Wendy's
QUALITY
BREAKFAST
These Premises Will
Be The Subject Of A
PUBLIC HEARING
Date: 2-9-26 6:00 pm
TOWN HALL
860-627-1447
LOTTERY
KENO
CT
PLAY
HERE
CT Lottery


Food Mart
ATM
Wendy's
QUALITY
BREAKFAST
LOTTERY
KENO
PLAY
HERE
These Premises Will
Be The Subject Of A
PUBLIC HEARING
Date: 2-9-26 6:00 pm
TOWN HALL
860-627-1447


These Premises Will
Be The Subject Of A
PUBLIC HEARING
Date: 2-9-26 6:00 pm
TOWN HALL
860-627-1447
LOTTERY
KENO
PLAY
HERE

Memo

To: Windsor Locks Planning and Zoning Commission

From: Justin LaFountain, AICP, Town Planning Consultant

Date: February 6, 2026

Re: 80 Ella Grasso Turnpike: Gas Station Reconstruction

Background:

The Windsor Locks Planning and Zoning Commission has received a Special Permit application from United Petroleum LLC to allow for the reconstruction of an existing gas station at 80 Ella Grasso Turnpike. The application requires a public hearing, which is scheduled for February 9, 2026.

Application Analysis:

There is currently a Shell gas station with a small convenience store located on the subject site. The applicant wishes to demolish the existing structures, including gas pumps both in front of and behind the existing convenience store, construct a larger convenience store with a drive-thru at the rear of the property, and an updated canopy and pumps in the front of the property.

The subject site is located within the Business 1 Zoning District and is approximately .65 acres. There is currently minimal landscaping on-site, with most of the property being impervious surface (87.7%). The new site design proposes a reduction of impervious coverage to 82.5%.

Historically, a car wash was approved at the rear of the property. The proposed drive-thru land will be located approximately 3.5 feet from the property line, which is in keeping with the pavement currently in place from the car wash entrance. As the pavement will not extend any closer to the property line, and the abutting property is also in the Business 1 Zone, I do not see an issue with the placement.

There are two wall signs shown on the building which appear to be in compliance with the Zoning Regulations (2 square feet of wall signage is permitted for each linear foot of building frontage, which in this case totals to approximately 170 square feet of signage). There is currently a

freestanding sign on the site, which is shown on the plans. If the sign is to be replaced, further details will be required for a sign permit. If the signage remains the same, there is no issue.

Lighting for the site is shown and a photometric plan is provided. The Regulations place a maximum of 25 footcandles for parking areas. While the lighting under the canopy is in excess of the 25 footcandle limit, I do not view this as a parking area, but instead an automotive use. I have requested that the applicant reduce the lighting so any bleedout from the canopy is limited to 25 footcandles. In addition, the wall lighting from the building is not incorporated into the photometric plan. If it is beyond decorative, the photometric plan should be revised accordingly.

Landscaping in excess of what is currently on the site is shown on the plans. However, an additional tree should be required based on the frontage of the site, and the hatched areas at the ends of the parking areas should be landscaped instead of paved. This should be made a condition of approval.

The parking that is proposed is in compliance with the requirements in the Regulations, however, four spaces are noted as "EV Charging Only." As these spaces are a part of the minimum parking required, the restricted painting should be removed to ensure all spaces can be used by any vehicle.

Overall, this proposal is a significant improvement to the existing site, with added landscaping, reduced impervious surface, and building beautification.

Commission Action:

The Planning and Zoning Commission may approve this Special Permit if it finds that it is in compliance with the following Special Permit criteria:

1. The location and size of the use, the nature and intensity of the operations connected with it, the size of the lot in relation to it, the location of the lot with respect to streets giving access to it, are such that it will be in harmony with the appropriate and orderly development of the district in which it is located.

2. The kind, location and height of all structures and the nature and extent of the landscaping on the lot are such that the use will not hinder or discourage the appropriate development and use of adjacent properties.

3. The parking and loading facilities are adequate and properly located for the proposed use and the entrance and exit driveways shall be laid out so as to achieve maximum safety. Recommendations of the Windsor Locks Police Commission shall be considered.

Staff would recommend adding the following conditions (along with those addressing the Town Engineer's report) to any approval, if desired:

1. The notations regarding “EV Charging Only” are to be removed from the four westernmost parking spaces.
2. The islands to the west and east of the parking row should be landscaped instead of paved. Such revision can be approved by staff.
3. At least one additional tree shall be added to the site to be in compliance with the landscaping regulations.
4. The lighting plan shall be revised to reduce bleedout from the canopy to a maximum of 25 footcandles, and to address any building-mounted lighting.
5. All building code and fire safety requirements must be met.
6. Any proposed signage for the site must conform to the Zoning Regulations and follow the Town approval processes. If a new freestanding sign is proposed, new approvals must be obtained.
7. Any additional required federal, state, or local permits must be obtained in advance of occupation.

January 30, 2026

Planning & Zoning Commission
Town of Windsor Locks
50 Church Street
Windsor Locks, CT 06096

Re: United Petroleum, LLC
Fueling Station & Convenience Store Reconstruction
80 Ella Grasso Tpk

Dear Commissioners,

I have reviewed the plans and supporting documents by CMG Environmental, Inc. for the above referenced project including:

- Site Plan including 20 sheets dated 12/17/25
- Stormwater Report including 154 pages dated 12/17/25

The applicant proposes to remove the existing fuel pumps, convenience store and canopies and construct a smaller canopy and a larger convenience store with drive-thru and stormwater improvements. Deep sump catch basins with hoods are proposed to provide pre-treatment prior to discharge to the drywells. This is an improvement to existing conditions which appear to have provided no pre-treatment. The proposed redevelopment reduces impervious coverage and improves stormwater management.

The plan notes soil testing and investigations are required to verify the stormwater design and sewer design are adequate.

I recommend the following conditions of approval:

1. Provide LS stamp on sheets C-1, C-2 and C-3 in accordance with section 1102.A

2. Increase grease and sewer lines from 4" diameter to 6" diameter per WPCA standards. Adjust Grease Trap detail accordingly.

3. Prior to start of construction, submit 2 complete sets of plans addressing conditions of approval and Mylar of Existing Conditions Plan as well as Mylar of the Layout Plan (C-

1.0) and Grading Plan (C-2.0) for signature by the Commission prior to filing in the Clerk's office.

4. Prior to start of construction, submit an Erosion Control Bond estimate to the Town Engineer for review and an E&S Bond to the Town Treasure in an amount acceptable to the Town Engineer.

5. Prior to construction of the stormwater and sewer systems, provide test results confirming adequacy of the design and submit any required design changes to staff for review and approval prior to proceeding with construction.

6. Prior to Certificate of Occupancy, submit an as-built survey in accordance with section 1102.G.

I plan to attend Monday's meeting but if you have any questions prior to the meeting, you can reach me at 860-623-0569 or dsteele@jrrusso.com.

Sincerely,

Windsor Locks Town Engineer



Dana Steele, P.E.
J.R. Russo & Associates, LLC

TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION
Town Hall – 50 Church Street
Windsor Locks, CT 06096

APPLICATION FORM

TYPE OF REQUEST

Please check all that apply:

_____ Special Use Permit with Site Plan Review (public hearing required, please pick up signs)
_____ Site Plan Review Only
__X__ Site Plan Modification Only
_____ Liquor Permit
_____ Zone Change
_____ Subdivision
_____ Re-subdivision
_____ Amendment to Zoning Regulations
_____ Amendment to Subdivision Regulations
_____ Other

Description of Request:
Hamilton Road entrance improvements project providing separated employee, visitors, and delivery entrance and new visitors center.

PROPERTY DESCRIPTION

Location: 21 Hamilton Road
Windsor Locks, CT 06096

Deed Reference: Volume: 275 Page: 211

Assessor's Block No. 011-001-017

Zone:

_____Residential AA	_____Business 1
_____Residential A	_____Business 2
_____Residential B	_____B-DRD
_____R-DRD	__X__Industrial 1
_____MFSD	_____Industrial 2
	_____Industrial 3

APPLICANT INFORMATION

Name: Nicholas Balboni, PE | Facilities Engineering Manager

Home
Address:

Phone:
Fax:

Email:

Business
Address: Hamilton Sundstrand Corporation
1 Hamilton Road, Windsor Locks, CT 06096

Phone: 860-654-0339
Fax:

Email: Nicholas.Balboni@rtx.com

PROPERTY OWNER INFORMATION (IF DIFFERENT FROM THE APPLICANT)

Name: _____

Home
Address:

Phone:
Fax:

Email:

Business
Address:

Phone:
Fax:

Email:

The undersigned warrants the truth of all statements contained herein according to the best of his or her knowledge and hereby grants permission for this Commission to inspect the property address listed in this application.

SIGNED: _____ / _____ DATE: _____
Applicant's Printed Name Applicant's Signature

SIGNED: _____ / _____ DATE: _____
Property Owner's Printed Name Property Owner's Signature (if different than applicant)

TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION
Town Hall – 50 Church Street
Windsor Locks, CT 06096

APPLICATION FORM

TYPE OF REQUEST

Please check all that apply:

- ____ Special Use Permit with Site Plan Review (public hearing required, please pick up signs)
- ____ Site Plan Review Only
- __X__ Site Plan Modification Only
- ____ Liquor Permit
- ____ Zone Change
- ____ Subdivision
- ____ Re-subdivision
- ____ Amendment to Zoning Regulations
- ____ Amendment to Subdivision Regulations
- ____ Other

Description of Request:
Hamilton Road entrance improvements project providing separated employee, visitors, and delivery entrance and new visitors center.

PROPERTY DESCRIPTION

Location: 21 Hamilton Road
Windsor Locks, CT 06096

Deed Reference: Volume: 275 Page: 211

Assessor's Block No. 011-001-017

Zone:

- ____Residential AA
- ____Residential A
- ____Residential B
- ____R-DRD
- ____MFSD
- ____Business 1
- ____Business 2
- ____B-DRD
- __X__Industrial 1
- ____Industrial 2
- ____Industrial 3

APPLICANT INFORMATION

Name: Nicholas Balboni, PE | Facilities Engineering Manager

Home
Address:

Phone:
Fax:

Email:

Business Hamilton Sundstrand Corporation
Address: 1 Hamilton Road, Windsor Locks, CT 06096

Phone: 860-654-0339
Fax:

Email: Nicholas.Balboni@rtx.com

PROPERTY OWNER INFORMATION (IF DIFFERENT FROM THE APPLICANT)

Name: _____

Home
Address:

Phone:
Fax:

Email:

Business
Address:

Phone:
Fax:

Email:

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SIGNED: _____ / _____ DATE: _____
Applicant's Printed Name — Applicant's Signature

SIGNED: Nicholas Balboni / _____ DATE: 1/14/2026
Property Owner's Printed Name — Property Owner's Signature (if different than applicant)

HAMILTON ROAD ENTRANCE IMPROVEMENTS PROJECT

COLLINS AEROSPACE · WINDSOR LOCKS CAMPUS · CONNECTICUT

PLANNING REVIEW SET

DECEMBER 12, 2025

PROJECT TEAM

SURVEY:

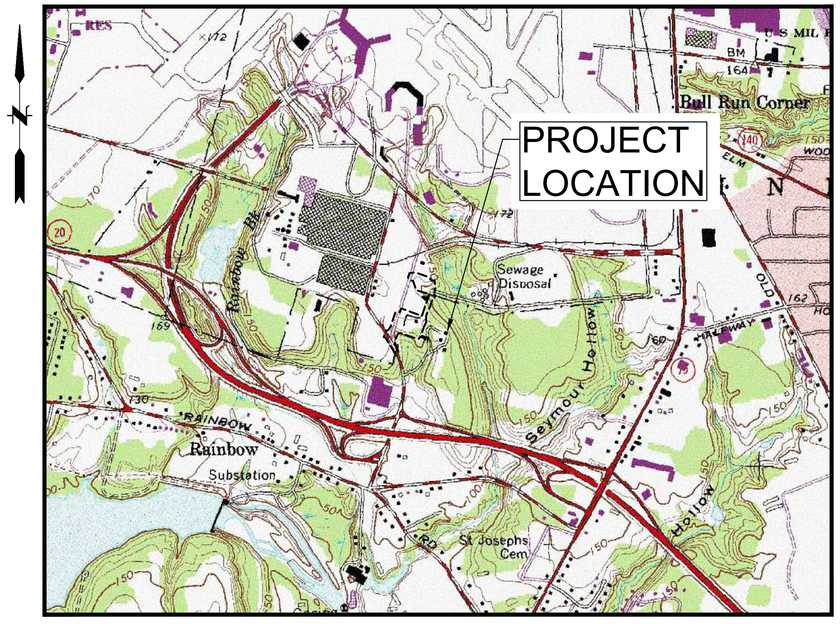
DESIGN PROFESSIONALS, INC.
21 JEFFREY DRIVE
SOUTH WINDSOR, CT 06074

ARCHITECT:

CHK ARCHITECTS, PLLC
573 HOPMEADOW STREET
SIMSBURY, CT 06070

SHEET INDEX

Sheet no.	Sheet Title
G-001	COVER SHEET
V-101	TOPOGRAPHIC SURVEY
V-102	TOPOGRAPHIC SURVEY
C-001	CIVIL GENERAL NOTES
C-100	OVERALL PLAN
CP-101	SITE PREPARATION PLAN
CP-102	SITE PREPARATION PLAN
CE-101	SITE EROSION & SEDIMENT CONTROL PLAN
CE-102	SITE EROSION & SEDIMENT CONTROL PLAN
CS-101	SITE LAYOUT PLAN
CS-102	SITE LAYOUT PLAN
CG-101	SITE GRADING, DRAINAGE & UTILITY PLAN
CG-102	SITE GRADING, DRAINAGE & UTILITY PLAN
CU-101	SITE UTILITY PLAN
CU-102	SITE UTILITY PLAN
LUM-101	SITE PHOTOMETRICS PLAN
LUM-102	SITE PHOTOMETRICS PLAN
CD-501	SITE DETAILS
CD-502	SITE DETAILS
CD-503	SITE DETAILS
CD-504	SITE DETAILS
CD-505	SITE DETAILS
CD-506	SITE DETAILS
CD-507	SITE DETAILS
CD-508	SITE DETAILS
CD-509	SITE DETAILS
CD-510	SEPTIC PLAN AND DETAILS
LP-101	LANDSCAPE PLAN
A101	CONSTRUCTION PLAN
A201	EXTERIOR ELEVATIONS



LOCATION MAP
SCALE: 1" = 1,000'

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

PREPARED BY

FUSS & O'NEILL

ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

PREPARED FOR

COLLINS AEROSPACE
1 HAMILTON ROAD
WINDSOR LOCKS, CT 06096

STATE OF CONNECTICUT · RONALD E. DOMEY · No. 24923 · LICENSED PROFESSIONAL ENGINEER

PROJ. No.: 20170430.H70
DATE: 12/12/2025

G-001

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TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

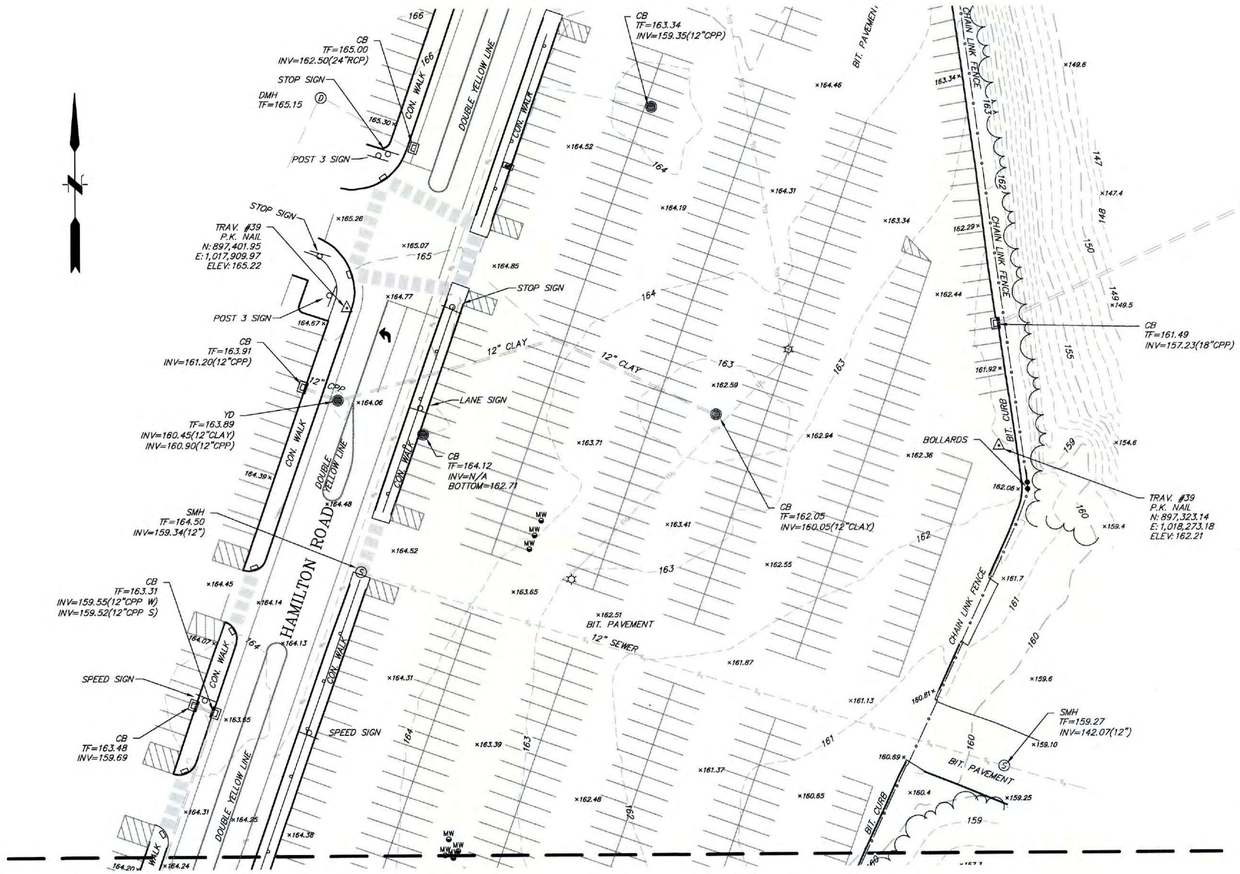
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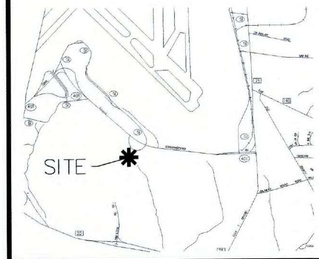
APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE





LOCATION PLAN
1"=2000'

LEGEND

EXISTING	DESCRIPTION
COMMUNICATION	
——— C_x ———	OVERHEAD COMM. LINES (CABLE, TEL, ETC.)
— — — C_x — — — C_x —	APPROX. UNDERGROUND COMMUNICATION LINES
CONTROL POINTS	
	BENCHMARK
DOMESTIC WATER	
— — — W_x — — — W_x —	APPROX. WATER MAIN
— — — WS_x — — — WS_x —	APPROX. WATER SERVICE
	WATER VALVE
	FIRE HYDRANT
LIGHTING	
	POLE MOUNTED LIGHT
NATURAL GAS	
	GAS VALVE
— — — G_x — — — G_x —	APPROX. GAS MAIN
— — — GS_x — — — GS_x —	APPROX. GAS SERVICE LINE
POWER	
	TRAFFIC SIGNAL POLE
	ELECTRIC MANHOLE
——— EO_x ———	ELECTRICAL LINES, OVERHEAD
— — — EU_x — — — EU_x —	APPROX. ELECTRICAL LINES, UNDERGROUND
	UTILITY POLE
	UTILITY POLE WITH LIGHT
	UTILITY POLE WITH TRANSFORMER
PROPERTY	
——— — — ———	PROPERTY LINE
——— — — ———	EASEMENT LINE
	IRON PIPE
	IRON ROD
	MONUMENT
ROADS	
	GUARD RAIL
OR	SIGN
SITE FEATURES	
	EDGE OF WATER
— x — x — x — x —	BARBED WIRE FENCE
— + — + — + — + —	CHAIN LINK FENCE
— ▪ — ▪ — ▪ — ▪ —	RAIL FENCE
— o — o — o — o —	STOCKADE FENCE
— ▾ — ▾ — ▾ — ▾ —	WIRE FENCE
	STONE WALL
on	TREE
	TREE LINE
SANITARY SEWER	
— — — S_x — — — S_x —	APPROX. SANITARY SEWER MAIN
— — — SS_x — — — SS_x —	APPROX. SANITARY SEWER SERVICE LINE
	SANITARY SEWER MANHOLE
STORM SEWER	
	APPROX. STORM DRAIN PIPE
	STORM DRAIN MANHOLE
	CURB INLET
	CATCH BASIN
TOPOGRAPHY	
95	CONTOUR
×61.95	SPOT ELEVATION
WETLANDS	
	WETLANDS LINE

Design Professionals
21 JEFFREY DRIVE
P.O. BOX 1167
SOUTH WINDSOR, CT 06074
860-291-8755 - T
860-291-8757 - F
www.designprofessionalsinc.com

SURVEY NOTES:

THIS SURVEY AND MAP HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THRU 20-300b-20 AND THE "STANDARDS SUGGESTED METHODS AND PROCEDURES FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON AUGUST 29, 2019.

- TYPE OF SURVEY IS A TOPOGRAPHIC SURVEY AND IS INTENDED TO DEPICT THE LOCATION OF EXISTING CONDITIONS RELATIVE TO PROPERTY LINES.
- NO BOUNDARY DETERMINATION IS EXPRESSED OR IMPLIED BY THE ISSUANCE OF THE SURVEY.
- VERTICAL ACCURACY MEETS CLASS V-2 STANDARDS. TOPOGRAPHICAL ACCURACY MEETS CLASS T-2 STANDARDS.

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

LAWRENCE R. GEISSLER, JR., L.S.

STATE OF CONNECTICUT — LAWRENCE R. GEISSLER, JR. — No. 15923 — REGISTERED LAND SURVEYOR

NOTES:

1. HORIZONTAL DATUM IS BASED ON NAD83. VERTICAL DATUM IS BASED ON NAVD88.
2. LOCATION OF UNDERGROUND UTILITIES IS BASED ON FIELD MARK OUTS BY CORBUILT, LLC, A UTILITY MARK OUT COMPANY & FIELD LOCATED BY DESIGN PROFESSIONALS, INC.
3. UNDERGROUND UTILITY, STRUCTURE, AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART, FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE UTILITY COMPANIES OR GOVERNMENTAL AGENCIES, FROM PAROL TESTIMONY AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE OF WHICH ARE UNKNOWN TO DESIGN PROFESSIONALS, INC. THE SIZE, LOCATION AND EXISTENCE OF ALL SUCH FEATURES MUST BE FIELD DETERMINED AND VERIFIED BY THE APPROPRIATE AUTHORITIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" FOR UNDERGROUND UTILITY MARKING AT LEAST TWO FULL WORKING DAYS PRIOR TO START OF CONSTRUCTION: 1-800-922-4455 OR WWW.CBYD.COM.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SCALE: HORZ.: 1"=40'
VERT.:
DATUM: HORZ.: NAD 83
VERT.: NAD 88
GRAPHIC SCALE 40 0 20 40

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
860.646.2469
www.fando.com

COLLINS AEROSPACE

TOPOGRAPHIC SURVEY

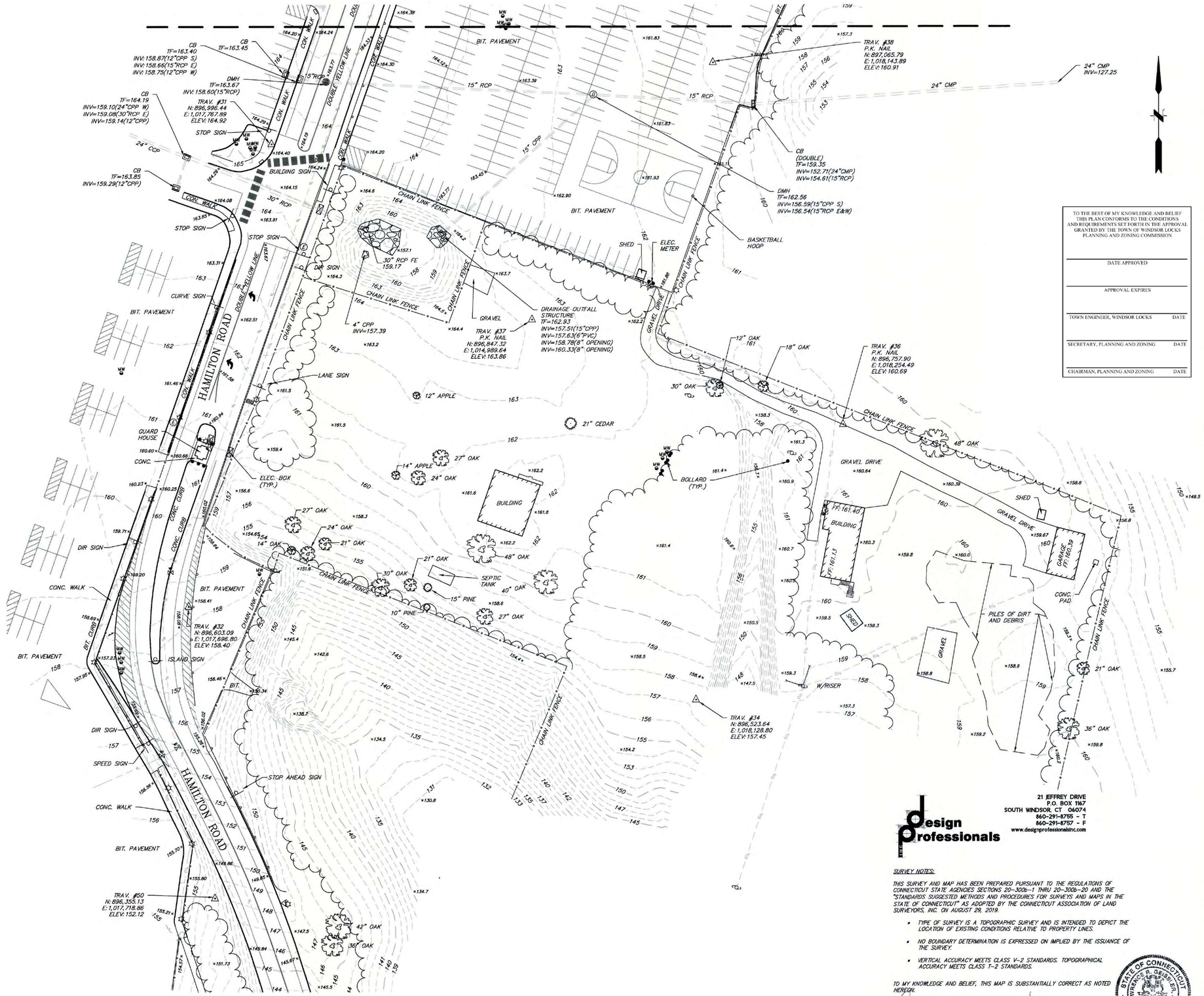
HAMILTON ROAD ENTRANCE IMPROVEMENTS

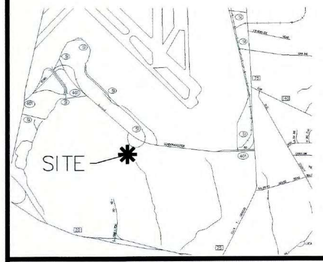
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 20170430.H52
DATE: JULY 2021

V-101

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MS VIEW: LAYER STATE: Plotter: KIP 860 GRAY CTB File: DPI.STB





LOCATION PLAN
1"=2000'

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DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

LEGEND

EXISTING	DESCRIPTION
COMMUNICATION	
C_X	OVERHEAD COMM. LINES (CABLE, TEL, ETC.)
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CONTROL POINTS	
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WS_X	APPROX. WATER SERVICE
MW	WATER VALVE
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LIGHTING	
	POLE MOUNTED LIGHT
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	GAS VALVE
G_X	APPROX. GAS MAIN
GS_X	APPROX. GAS SERVICE LINE
POWER	
	TRAFFIC SIGNAL POLE
	ELECTRIC MANHOLE
EL_X	ELECTRICAL LINES, OVERHEAD
EL_X — EL_X	APPROX. ELECTRICAL LINES, UNDERGROUND
	UTILITY POLE
	UTILITY POLE WITH LIGHT
	UTILITY POLE WITH TRANSFORMER
PROPERTY	
	PROPERTY LINE
	EASEMENT LINE
	IRON PIPE
	IRON ROD
	MONUMENT
ROADS	
	GUARD RAIL
OR	SIGN
SITE FEATURES	
	EDGE OF WATER
x x x x	BARBED WIRE FENCE
	CHAIN LINK FENCE
	RAIL FENCE
	STOCKADE FENCE
	WIRE FENCE
	STONE WALL
OR	TREE
	TREE LINE
SANITARY SEWER	
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SS_X	APPROX. SANITARY SEWER SERVICE LINE
	SANITARY SEWER MANHOLE
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	WETLANDS LINE

design professionals

21 JEFFREY DRIVE
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860-291-8755 - T
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LAWRENCE R. GEISSLER, JR., L.S. 12327 LIC. NO.

STATE OF CONNECTICUT — LAWRENCE R. GEISSLER, JR. — No. 12327 — REGISTERED LAND SURVEYOR

NOTES:

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

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VERT.:
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40 20 0 40
GRAPHIC SCALE

FUSS & O'NEILL
146 HARTFORD ROAD
MANCHESTER, CONNECTICUT 06040
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COLLINS AEROSPACE

TOPOGRAPHIC SURVEY

HAMILTON ROAD ENTRANCE IMPROVEMENTS

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 20170430.H52
DATE: JULY 2021

V-102

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DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

CIVIL GENERAL NOTES

GENERAL

1. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SHOWN ON THE DRAWINGS TO SCALE OR TO THEIR ACTUAL DIMENSION OR LOCATION. COORDINATE DETAIL SHEET DIMENSIONS, MANUFACTURERS' LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
2. DO NOT RELY SOLELY ON ELECTRONIC VERSIONS OF DRAWINGS, SPECIFICATIONS, AND DATA FILES THAT ARE PROVIDED BY THE ENGINEER. FIELD VERIFY LOCATION OF PROJECT FEATURES.
3. PERFORM NECESSARY CONSTRUCTION NOTIFICATIONS, APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK AS REQUIRED BY THE CONTRACT DOCUMENTS.
4. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDINGS AND ADJACENT SITE ELEMENTS INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING DOCKS, BOLLARDS, ETC.
5. BASE PLAN:
   - 5.1. THE TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON AN ACTUAL FIELD SURVEY ENTITLED "TOPOGRAPHIC SURVEY, HAMILTON ROAD ENTRANCE IMPROVEMENTS, COLLINS AEROSPACE, WINDSOR LOCKS, CONNECTICUT, DRAWINGS V-101 & V-102" DATED JULY 2021 SCALE 1" = 40' PREPARED BY DESIGN PROFESSIONALS, INC., 21 JEFFREY DRIVE, SOUTH WINDSOR, CT.
   - 5.2. SUPPLEMENTARY TOPOGRAPHY AND PHYSICAL FEATURES ARE BASED ON DESIGN DRAWINGS ENTITLED "PARKING LOT H IMPROVEMENTS, 1 HAMILTON ROAD, WINDSOR LOCKS, CONNECTICUT PREPARED FOR COLLINS AEROSPACE" DATED 07/23/2019 PREPARED BY LOUREIRO ENGINEERING ASSOCIATES, INC., 100 NORTHWEST DRIVE, PLAINVILLE, CONNECTICUT 06062.
   - 5.3. THE PROPERTY BOUNDARY LINES ARE BASED ON "LOTS 1 & 2 MERGER MAP, 1 HAMILTON ROAD, WINDSOR LOCKS, CONNECTICUT PREPARED FOR COLLINS AEROSPACE SYSTEMS" DATED 6/2/2022 BY LOUREIRO ENGINEERING ASSOCIATES, INC., 100 NORTHWEST DRIVE, PLAINVILLE, CONNECTICUT 06062.
6. TOPOGRAPHIC ELEVATIONS ARE BASED ON NAVD 88 DATUM.

WORK RESTRICTIONS

1. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, FIRE HYDRANTS, AND UTILITIES WITHOUT APPROPRIATE PERMITS.
2. WORK IS RESTRICTED TO THE HOURS OF TO THE HOURS 7:00AM TO 5:00PM ON MONDAY THROUGH FRIDAY.

REGULATORY REQUIREMENTS

1. WITHIN LOCAL RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS.
2. WITHIN STATE RIGHTS-OF-WAY, PERFORM THE WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS AND ISSUED REVISIONS/SUPPLEMENTS.
3. PROVIDE TRAFFIC SIGNAGE AND PAVEMENT MARKINGS IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
5. DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.

EROSION AND SEDIMENT CONTROL

1. INSTALL EROSION CONTROL MEASURES PRIOR TO STARTING ANY WORK ON THE SITE. REFER TO THE EROSION AND SEDIMENT CONTROL DRAWINGS.
2. IMPLEMENT ALL NECESSARY MEASURES REQUIRED TO CONTROL STORMWATER RUNOFF, DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE. PERFORM CORRECTIVE ACTION AS NEEDED FOR EROSION CLEANUP AND REPAIRS TO OFF SITE AREAS, IF ANY, AT NO COST TO OWNER.
3. INSPECT AND MAINTAIN EROSION CONTROL MEASURES PER THE SCHEDULE IN THE EROSION AND SEDIMENT CONTROL DRAWINGS. DISPOSE OF SEDIMENT IN AN UPLAND AREA. DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
4. PERFORM CONSTRUCTION SEQUENCING IN SUCH A MANNER TO CONTROL EROSION AND TO MINIMIZE THE TIME THAT EARTH MATERIALS ARE EXPOSED BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED.
5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROL MEASURES. CLEAN SEDIMENT AND DEBRIS FROM TEMPORARY MEASURES AND FROM PERMANENT STORM DRAIN AND SANITARY SEWER SYSTEMS.

DEMOLITION

1. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS, UNLESS OTHERWISE NOTED.
2. THE DEMOLITION PLANS ARE PROVIDED FOR INFORMATION ONLY AND MAY NOT INDICATE ALL ITEMS REQUIRED TO BE DEMOLISHED. PERFORM A PRE-BID SITE INSPECTION. COORDINATE DEMOLITION OF UNIDENTIFIED UTILITIES OR STRUCTURES WITH OWNER. DEMOLISH STRUCTURES, SITE IMPROVEMENTS, UTILITIES, ETC. AS REQUIRED TO CONSTRUCT PROPOSED FACILITY AND UTILITY SERVICES.

CONSTRUCTION LAYOUT

1. PROVIDE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED SITE IMPROVEMENTS. FIELD VERIFY EXISTING PAVEMENT AND GROUND ELEVATIONS AT THE INTERFACE WITH PROPOSED PAVEMENTS AND DRAINAGE STRUCTURES BEFORE START OF CONSTRUCTION.
2. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, FIELD VERIFY PROPOSED UTILITY ROUTES AND IDENTIFY ANY INTERFERENCES OR OBSTRUCTIONS WITH EXISTING UTILITIES OR PUBLIC RIGHTS-OF-WAY.
3. IMMEDIATELY INFORM THE ENGINEER IN WRITING IF EXISTING UTILITY CONDITIONS CONFLICT OR DIFFER FROM THAT INDICATED AND IF THE WORK CANNOT BE COMPLETED AS INDICATED.
4. DIMENSIONS ARE FROM FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS NOTED OTHERWISE.
5. BOUNDS OR MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED SURVEYOR.

EARTHWORK

1. NOTIFY UTILITY LOCATOR SERVICE AT LEAST 72 HOURS BEFORE STARTING EXCAVATION. "CALL BEFORE YOU DIG" AT 1-800-922-4455.
2. STOP WORK IN THE VICINITY OF SUSPECTED CONTAMINATED SOIL, GROUNDWATER OR OTHER MEDIA. IMMEDIATELY NOTIFY THE OWNER SO THAT APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN. RESUME WORK IN THE IMMEDIATE VICINITY ONLY UPON DIRECTION BY THE OWNER.
3. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, PERFORM EARTHWORK OPERATIONS TO SUBGRADE ELEVATIONS. SEE DRAWINGS BY OTHERS FOR WORK ABOVE SUBGRADE.

UTILITIES

1. TERMINATE EXISTING UTILITIES IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. COORDINATE UTILITY SERVICE DISCONNECTS WITH UTILITY REPRESENTATIVES.
2. THE TYPE, SIZE AND LOCATION OF DEPICTED UNDERGROUND UTILITIES ARE APPROXIMATE REPRESENTATIONS OF INFORMATION OBTAINED FROM FIELD LOCATIONS OF VISIBLE FEATURES, EXISTING MAPS AND PLANS OF RECORD, UTILITY MAPPING, AND OTHER SOURCES OF INFORMATION OBTAINED BY THE ENGINEER. ASSUME NO GUARANTEE AS TO THE COMPLETENESS, SERVICEABILITY, EXISTENCE, OR ACCURACY OF UNDERGROUND FACILITIES. FIELD VERIFY THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OF THE POINTS OF CONNECTIONS TO EXISTING UTILITIES.
3. PAY ALL FEES AND COSTS ASSOCIATED WITH UTILITY MODIFICATIONS AND CONNECTIONS, REGARDLESS OF THE ENTITY THAT PERFORMS THE WORK.
4. COORDINATE THE WORK AND WORK SCHEDULE WITH UTILITY COMPANIES. PROVIDE ADEQUATE NOTICE TO UTILITIES TO PREVENT DELAYS IN CONSTRUCTION.
5. INTERIOR DIAMETERS OF STORM DRAIN AND SANITARY SEWER STRUCTURES SHALL BE DETERMINED BY THE PRECAST MANUFACTURER, BASED ON THE INDICATED PIPE SYSTEM LAYOUT AND LOCAL MUNICIPAL STANDARDS.

   MINIMUM INTERIOR DIAMETERS:
   0 TO 20 FEET DEEP; 4 FEET.
   20 FEET OR GREATER; 5 FEET.
6. RIM ELEVATIONS FOR MANHOLES, VALVE COVERS, GATE AND PULL BOXES, AND OTHER STRUCTURES ARE APPROXIMATE. SET OR RESET RIM ELEVATIONS AS FOLLOWS:

   IN PAVEMENTS AND CONCRETE SURFACES: FLUSH
   IN SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
   IN LANDSCAPE, SEEDED, AND OTHER EARTH SURFACE AREAS:
   1 INCH ABOVE SURROUNDING AREA; TAPER EARTH TO RIM ELEVATION.
7. INSTALL PROPOSED PRIVATE UTILITY SERVICES ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY THE AUTHORITY HAVING JURISDICTION (WATER, SEWER, GAS, TELEPHONE, ELECTRIC, FIRE ALARM, ETC.). COORDINATE FINAL DESIGN LOADS AND LOCATIONS WITH OWNER AND ARCHITECT.

PAVEMENT

1. AT A MINIMUM, CONSTRUCT ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).

SITE RESTORATION

1. PROVIDE 6 INCHES OF TOPSOIL AND SEED TO AREAS DISTURBED DURING CONSTRUCTION AND NOT DESIGNATED TO BE RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) UNLESS OTHERWISE NOTED.
2. REPAIR DAMAGES RESULTING FROM CONSTRUCTION LOADS, AT NO ADDITIONAL COST TO OWNER.
3. RESTORE AREAS DISTURBED BY CONSTRUCTION OPERATIONS TO THEIR ORIGINAL CONDITION OR BETTER, AT NO ADDITIONAL COST TO OWNER.

OPERATIONS AND MAINTENANCE OF STORMWATER SYSTEMS

DEEP SUMP CATCH BASINS

- REMOVE SEDIMENT AND DEBRIS USING A VACUUM TRUCK ANNUALLY, AT A MINIMUM, AFTER THE SNOW AND ICE REMOVAL SEASON IS OVER, AND AS SOON AS POSSIBLE BEFORE SPRING RAINFALL EVENTS.
- CATCH BASINS SHOULD BE CLEANED IF THE DEPTH OF DEPOSITS ARE GREATER THAN OR EQUAL TO ONE-HALF THE DEPTH FROM THE BOTTOM OF THE BASIN TO THE INVERT OF THE LOWEST PIPE IN THE BASIN.
- IF A CATCH BASIN EXCEEDS THIS ONE-HALF DEPTH STANDARD DURING THE ANNUAL INSPECTION, THEN IT SHOULD BE CLEANED MORE FREQUENTLY.
- POLLUTED WATER OR SEDIMENT REMOVED FROM CATCH BASINS SHOULD BE PROPERLY HANDLED AND DISPOSED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. BEFORE DISPOSAL, AN APPROPRIATE CHEMICAL ANALYSIS OF THE MATERIAL SHOULD BE PERFORMED TO DETERMINE PROPER METHODS FOR STORAGE AND DISPOSAL.

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT, DONALD E. BONDI, No. 24823, LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: NOT TO SCALE; VERT.:
DATUM: HORZ.: -; VERT.: -

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ONE FINANCIAL PLAZA, 15th FLOOR
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860.646.2469
www.fando.com

COLLINS AEROSPACE
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

CIVIL GENERAL NOTES

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

C-001

File: \\private\DFS\CadProj\DWG\P2017\0430\H70\Civil\Plan\20170430H70_DET01.dwg Layout: C-001 Plotted: 2025-12-11 12:31 PM Saved: 2025-12-11 12:15 PM User: Daniel.Chiburis
MS VIEW: | LAYER STATE: | PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB

TO THE BEST OF MY KNOWLEDGE AND BELIEF
THIS PLAN CONFORMS TO THE CONDITIONS
AND REQUIREMENTS SET FORTH IN THE APPROVAL
GRANTED BY THE TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL
STATE OF CONNECTICUT
DONALD E. BOMBARA
No. 24823
LICENSED
PROFESSIONAL ENGINEER

SCALE: HORZ.: 250 VERT.: -
DATUM: HORZ.: - VERT.: -
0 125 250 500
GRAPHIC SCALE

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OVERALL PLAN

HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

C-100

File: J:\DWG\P2017\0430\H70\Civil\Plan\20170430H70_GEN02.dwg Layout: C-100 Plotted: 2025-12-11 12:44 PM Saved: 2025-12-11 12:01 PM User: Daniel Chiburis
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MS VIEW: | LAYER STATE: | PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB



NOTES:

1. COORDINATE REMOVAL OF PERIMETER FENCES AND GATES WITH OWNER PRIOR TO REMOVAL.

LEGEND

- EXISTING GRAVEL SURFACE TO BE DEMOLISHED
- EXISTING PAVEMENT MARKINGS TO BE REMOVED
- EXISTING HARDSCAPE SURFACE TO BE DEMOLISHED
- EXISTING VEGETATED AREA TO BE CLEARED AND GRUBBED
- MILL & OVERLAY PAVEMENT
- LIMIT OF WORK
- SAWCUT PAVEMENT

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

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TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL: STATE OF CONNECTICUT · RONALD E. BOMBARA · No. 24823 · LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30' VERT.: -
DATUM: HORZ.: - VERT.: -
GRAPHIC SCALE 0 15' 30' 60'

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COLLINS AEROSPACE
SITE PREPARATION PLAN
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CP-101

SEE SHEET CP-101

HAMILTON ROAD

- EXISTING FENCE TO REMAIN
- PROTECT ELECTRICAL CONDUITS AND CONDUCTORS TO REMAIN
- LIMIT OF FENCE REMOVAL
- REMOVE UTILITY POLE
- PROTECT EXISTING TREE TO REMAIN
- PROTECT EXISTING MONITORING WELLS TO REMAIN
- ELEC. MH. TO REMAIN
- HANDHOLE TO REMAIN
- REMOVE LIGHT POLE AND ASSOCIATE HANDHOLE
- LIMIT OF FENCE REMOVAL
- REMOVE EXISTING RISING BARRIER. RETURN RISING BARRIER TO OWNER.
- MILL & OVERLAY PAVEMENT
- SAWCUT (TYP.)
- LIMIT OF FENCE REMOVAL
- FORMER BUILDING DEMOLISHED BY OTHERS
- EXISTING UTILITY POLE TO REMAIN
- PROTECT EXISTING MONITORING WELL TO REMAIN
- EXISTING FENCE TO REMAIN
- EXISTING FENCE TO REMAIN
- DEMOLISH SEPTIC TANK, COORDINATE WITH LOCAL HEALTH DEPARTMENT FOR PERMITS OR INSPECTIONS
- LIMIT OF WORK (TYP)
- PROTECT EXISTING MONITORING WELLS TO REMAIN
- PROTECT ELECTRICAL CONDUITS FEEDING SITE LIGHTING TO REMAIN
- REMOVE EXISTING SITE FEATURES WITHIN THE LIMIT OF WORK UNLESS OTHERWISE NOTED
- PROTECT EXISTING CAMPUS SWING GATE TO REMAIN
- EXISTING FENCE TO REMAIN
- SIGN TO BE SALVAGED. COORDINATE WITH OWNER.

NOTES:

1. COORDINATE REMOVAL OF PERIMETER FENCES AND GATES WITH OWNER PRIOR TO REMOVAL.

LEGEND

- EXISTING GRAVEL SURFACE TO BE DEMOLISHED
- EXISTING PAVEMENT MARKINGS TO BE REMOVED
- EXISTING HARDSCAPE SURFACE TO BE DEMOLISHED
- EXISTING VEGETATED AREA TO BE CLEARED AND GRUBBED
- MILL & OVERLAY PAVEMENT
- LIMIT OF WORK
- SAWCUT PAVEMENT

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL: STATE OF CONNECTICUT · RONALD E. BOMBARA · 12/12/2025 · No. 24823 · LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30' VERT.: -

DATUM: HORZ.: - VERT.: -

GRAPHIC SCALE 0 15' 30' 60'

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ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
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COLLINS AEROSPACE

SITE PREPARATION PLAN

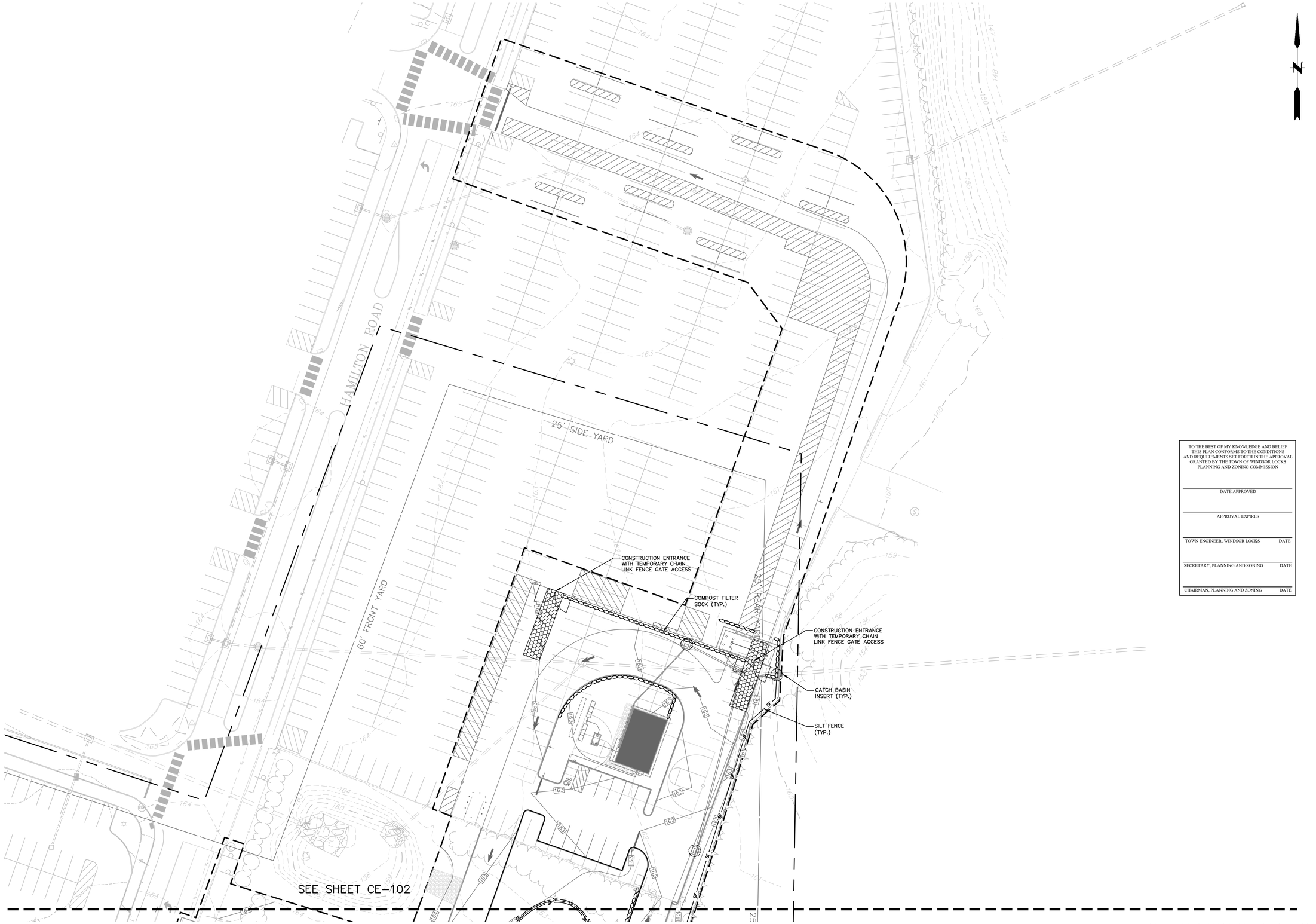
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CP-102

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SEAL
STATE OF CONNECTICUT
DONALD E. BOMBARA
No. 24823
LICENSED PROFESSIONAL ENGINEER

SCALE:
HORZ.: 1" = 30'
VERT.: -

DATUM:
HORZ.: -
VERT.: -

GRAPHIC SCALE
0 15' 30' 60'

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COLLINS AEROSPACE

SITE EROSION & SEDIMENT CONTROL PLAN

HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT

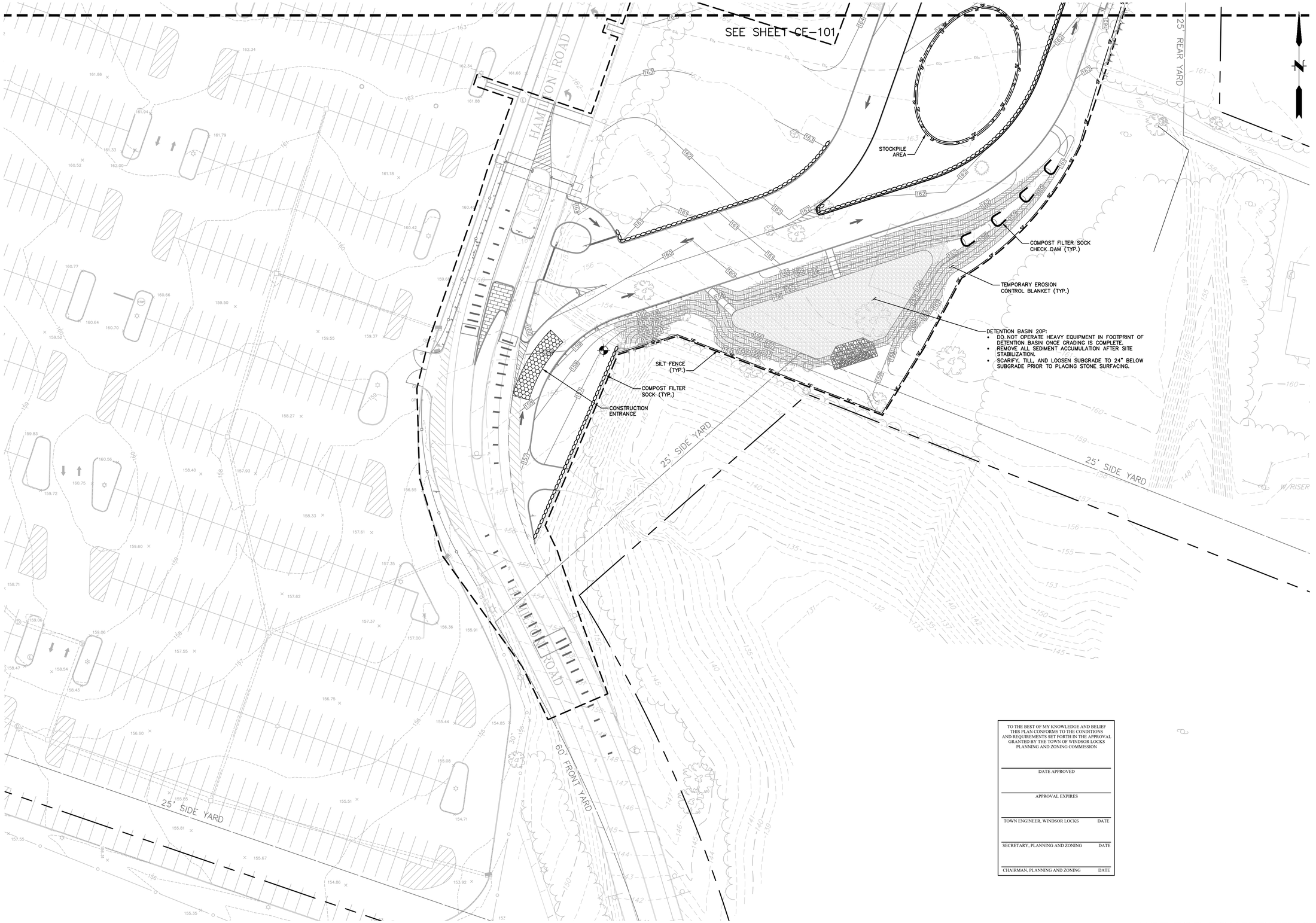
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CE-101

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SEAL: STATE OF CONNECTICUT · DONALD E. BONNER · No. 24823 · LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30' VERT.: -
DATUM: HORZ.: - VERT.: -
GRAPHIC SCALE 0 15' 30' 60'

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SITE EROSION & SEDIMENT CONTROL PLAN

HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CE-102

ZONING BULK REQUIREMENTS TABLE

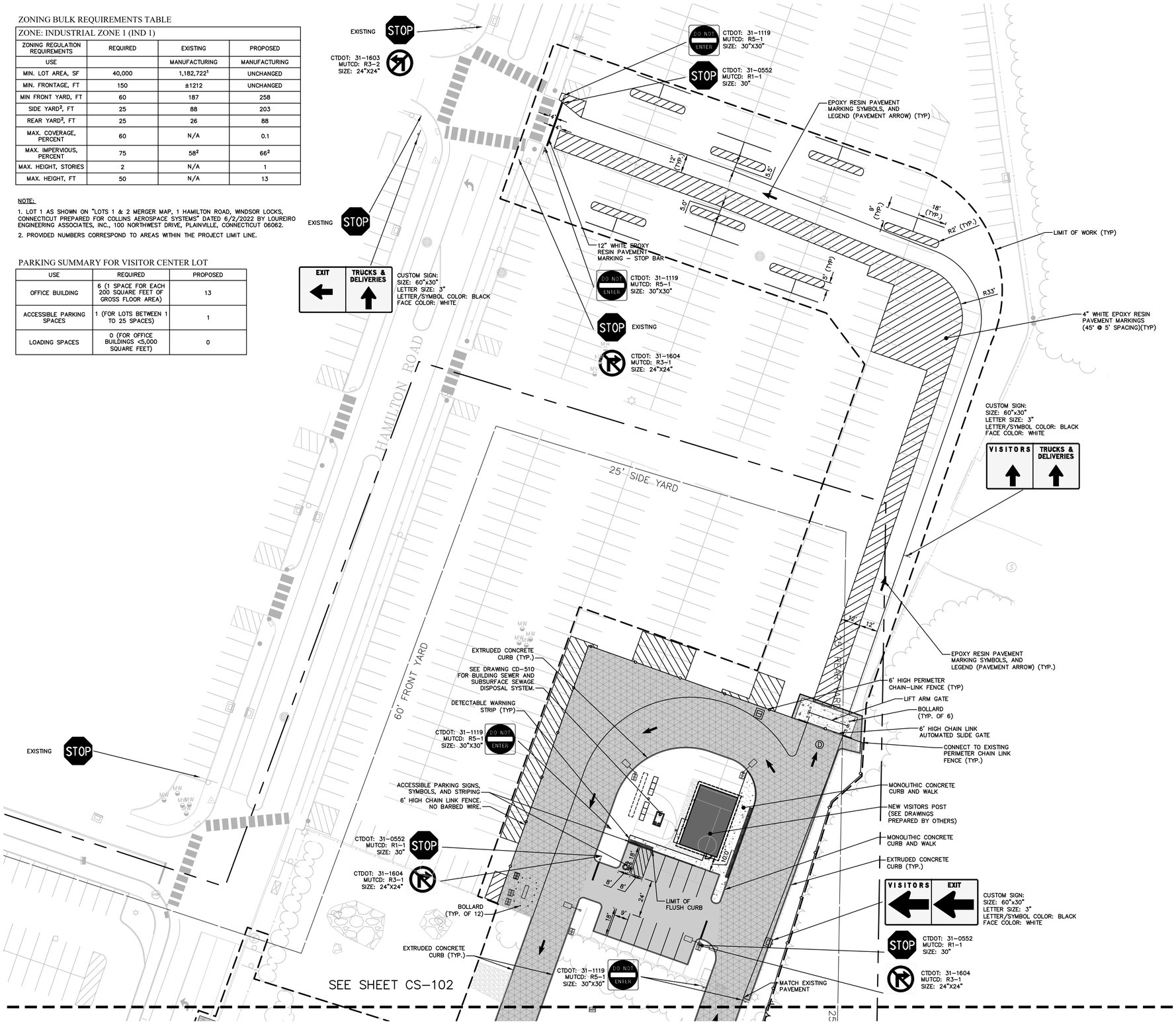
ZONE: INDUSTRIAL ZONE 1 (IND 1)			
ZONING REGULATION REQUIREMENTS	REQUIRED	EXISTING	PROPOSED
USE		MANUFACTURING	MANUFACTURING
MIN. LOT AREA, SF	40,000	1,182,722[1]	UNCHANGED
MIN. FRONTAGE, FT	150	±1212	UNCHANGED
MIN FRONT YARD, FT	60	187	258
SIDE YARD[2], FT	25	88	203
REAR YARD[2], FT	25	26	88
MAX. COVERAGE, PERCENT	60	N/A	0.1
MAX. IMPERVIOUS, PERCENT	75	58[2]	66[2]
MAX. HEIGHT, STORIES	2	N/A	1
MAX. HEIGHT, FT	50	N/A	13

NOTE:

1. LOT 1 AS SHOWN ON "LOTS 1 & 2 MERGER MAP, 1 HAMILTON ROAD, WINDSOR LOCKS, CONNECTICUT PREPARED FOR COLLINS AEROSPACE SYSTEMS" DATED 6/2/2022 BY LOUREIRO ENGINEERING ASSOCIATES, INC., 100 NORTHWEST DRIVE, PLAINVILLE, CONNECTICUT 06062.
2. PROVIDED NUMBERS CORRESPOND TO AREAS WITHIN THE PROJECT LIMIT LINE.

PARKING SUMMARY FOR VISITOR CENTER LOT

USE	REQUIRED	PROPOSED
OFFICE BUILDING	6 (1 SPACE FOR EACH 200 SQUARE FEET OF GROSS FLOOR AREA)	13
ACCESSIBLE PARKING SPACES	1 (FOR LOTS BETWEEN 1 TO 25 SPACES)	1
LOADING SPACES	0 (FOR OFFICE BUILDINGS <5,000 SQUARE FEET)	0



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STOP BAR NOTES:
1) STOP BARS TO BE WHITE AND 12" MINIMUM UNLESS OTHERWISE NOTED ON PLANS.
2) STOP BARS AND CENTERLINE (WHEN SIDE STREET WIDTHS ARE 16' OR MORE) ARE TO BE MARKED ON SIDE STREETS WITHIN THE LIMITS OF CONSTRUCTION, UNLESS OTHERWISE INDICATED OR DIRECTED.

CROSSWALK NOTES:
1) AT LOCATIONS WHERE THE CROSSWALK IS SKEWED, BARS ARE TO BE PARALLEL TO THE CENTERLINE AND ENDS OF BARS ARE TO BE PARALLEL.
2) BARS SHALL NORMALLY BE NO CLOSER THAN 2' FROM CURB LINE/EDGE OF ROAD. WHERE EXCESS SPACE MAY DEVELOPE, THIS DISTANCE MAY DECREASE TO 1'.
3) ONLY FULL LENGTH BARS ARE TO BE INSTALLED AT CORNERS.
4) 16" WIDE BARS ARE TO BE CENTERED ON YELLOW CENTERLINE, FOR 2' WIDE BARS, CENTER SPACE BETWEEN BARS ON YELLOW CENTERLINE.
5) CROSSWALK BARS SHALL BE WHITE.

LEGEND

- BITUMINOUS CONCRETE PAVEMENT (STD. DUTY)
- BITUMINOUS CONCRETE PAVEMENT (HEAVY DUTY)
- MOUNTABLE GRANITE CURB AND PAVEMENT
- 2" DEPTH MILL AND OVERLAY
- CONCRETE SIDEWALK
- LIMIT OF WORK

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT, DONALD E. BOMBARA, No. 24823, LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30' VERT.: -
DATUM: HORZ.: - VERT.: -
GRAPHIC SCALE 0 15' 30' 60'

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860.646.2469
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COLLINS AEROSPACE
SITE LAYOUT PLAN
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CS-101

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SEE SHEET CS-101

4" DOUBLE YELLOW LINE EPOXY PAVEMENT MARKING (TYP.)

4" YELLOW EPOXY PAVEMENT MARKINGS (45° @ 5' SPACING) (TYP)

LIFT ARM GATE

RELOCATED EXISTING CARD READER

BASE BID: DECORATIVE METAL FENCE
ALTERNATE #1: DECORATIVE METAL FENCE "INVINCIBLE SERIES"

CTDOT: 31-1526
MUTCD: R4-7
SIZE: 24"x30"

SPEED HUMP PAVEMENT MARKINGS (TYP)

CUSTOM SIGN:
SIZE: 60"x30"
LETTER SIZE: 3"
LETTER/SYMBOL COLOR: BLACK
FACE COLOR: WHITE

EXIT | VISITORS

CTDOT: 31-1604
MUTCD: R3-1
SIZE: 24"X24"

4" SINGLE YELLOW LINE EPOXY PAVEMENT MARKING (TYP.)

CTDOT: 31-1604
MUTCD: R3-1
SIZE: 24"X24"

MOUNTABLE CONCRETE CURB WITH STAMPED AND COLORED CONCRETE.

R-B MASH GUIDERAIL (SINGLE-SIDED) WITH ROUNDED W-BEAM END SECTIONS (TYP)

26' WIDE DOUBLE LEAF SWING GATE
BASE BID: DECORATIVE METAL FENCE
ALTERNATE #1: DECORATIVE METAL FENCE INVINCIBLE SERIES

EXIT TO ROUTE 20

CUSTOM SIGN:
SIZE: 30"x30"
LETTER SIZE: 3"
LETTER/SYMBOL COLOR: BLACK
FACE COLOR: WHITE

BASE BID: DECORATIVE METAL FENCE
ALTERNATE #1: DECORATIVE METAL FENCE "INVINCIBLE SERIES"

CONNECT TO EXISTING PERIMETER FENCE

6' HIGH PERIMETER CHAIN-LINK FENCE. CONNECT TO EXISTING.

5' SINGLE SWNG GATE

DO NOT ENTER

CTDOT: 31-1119
MUTCD: R5-1
SIZE: 30"X30"

STOP

CTDOT: 31-0552
MUTCD: R1-1
SIZE: 30"

EPOXY RESIN PAVEMENT MARKING SYMBOLS, AND LEGEND (PAVEMENT ARROW) (TYP.)

STOP

CTDOT: 31-0552
MUTCD: R1-1
SIZE: 30"

DO NOT ENTER

CTDOT: 31-1119
MUTCD: R5-1
SIZE: 30"X30"

EXTRUDED CONCRETE CURB (TYP.)

TREELINE

CONNECT TO EXISTING PERIMETER CHAIN LINK FENCE (TYP.)

25' REAR YARD

TREELINE

MONITORING WELL STANDPIPE

DO NOT ENTER

CTDOT: 31-1119
MUTCD: R5-1
SIZE: 30"X30"

1-1/4" CRUSHED STONE SURFACING

MD-B GUIDERAIL WITH TYPE I END ANCHORAGE ON EACH END

VISITORS | EXIT

CUSTOM SIGN:
SIZE: 60"x30"
LETTER SIZE: 3"
LETTER/SYMBOL COLOR: BLACK
FACE COLOR: WHITE

6' HIGH PERIMETER CHAIN-LINK FENCE. CONNECT TO EXISTING.

EMPLOYEES | ALL VISITORS TRUCKS & DELIVERIES

CUSTOM SIGN:
SIZE: 60"x30"
LETTER SIZE: 3"
LETTER/SYMBOL COLOR: BLACK
FACE COLOR: WHITE

LIMIT OF EXTRUDED CONCRETE CURB, MATCH EXISTING CURB TO REMAIN

EMPLOYEES | ALL VISITORS TRUCKS & DELIVERIES

CUSTOM SIGN:
SIZE: 60"x30"
LETTER SIZE: 3"
LETTER/SYMBOL COLOR: BLACK
FACE COLOR: WHITE

12' SPEED HUMP

HAMILTON ROAD

25' SIDE YARD

25' SIDE YARD

25' SIDE YARD

60' FRONT YARD

W/RISER

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

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TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

LEGEND

- BITUMINOUS CONCRETE PAVEMENT (STD. DUTY)
- BITUMINOUS CONCRETE PAVEMENT (HEAVY DUTY)
- MOUNTABLE GRANITE CURB AND PAVEMENT
- 2" DEPTH MILL AND OVERLAY
- CONCRETE SIDEWALK
- LIMIT OF WORK

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SEAL
STATE OF CONNECTICUT
DONALD E. BOMBARA
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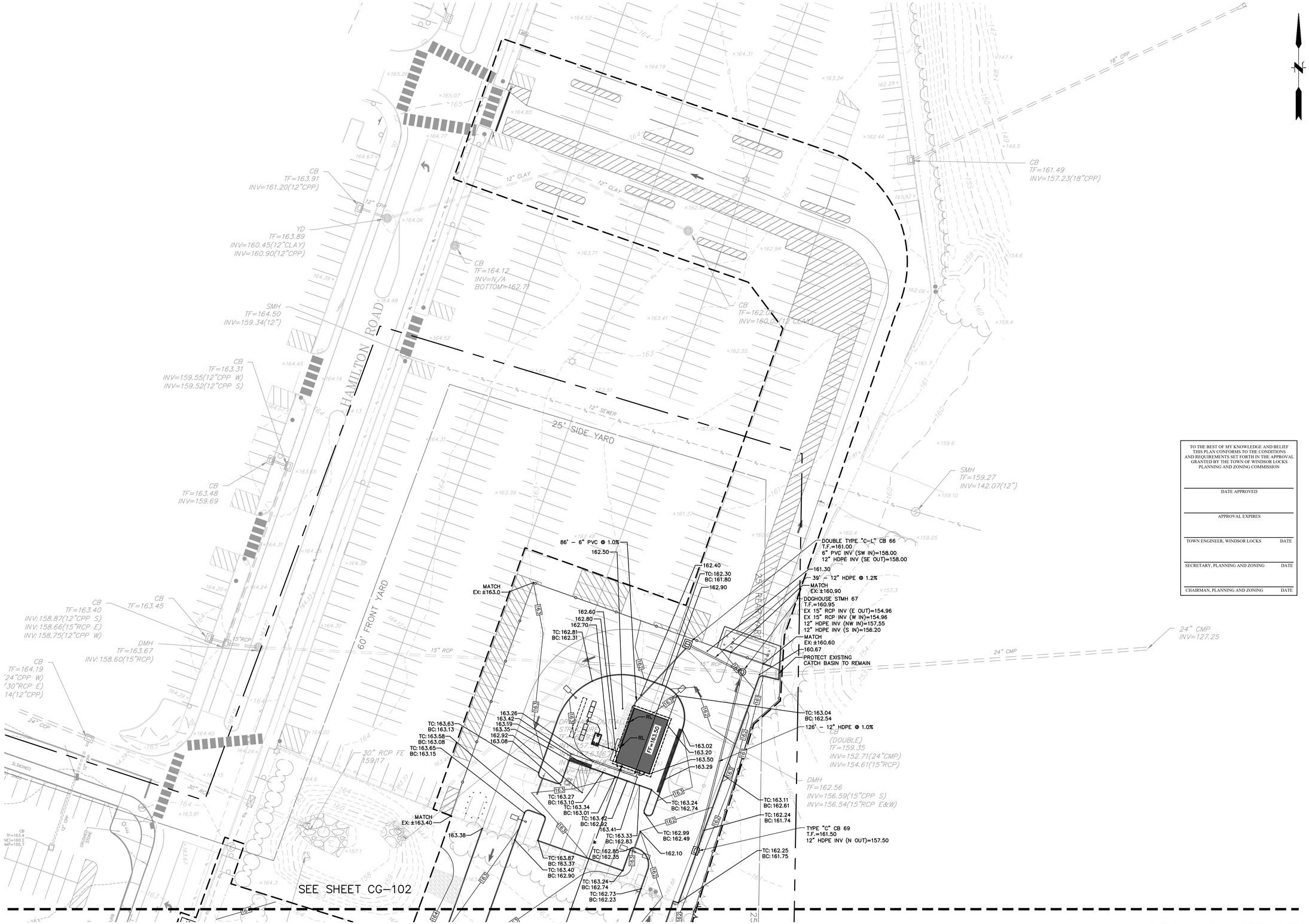
COLLINS AEROSPACE
SITE LAYOUT PLAN
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CS-102

File: \\private\DFS\CadProj\DWG\P2017\0430\H70\Civil\Plan\20170430H70_STP01.dwg Layout: CS-102 Plotted: 2025-12-11 12:32 PM Saved: 2025-12-11 12:01 PM User: Daniel.Chiburis
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:

File: \\private\DFS\Cad\Proj\DWG\P2017\0430\H70\Civil\Plan\20170430H70_GRD001.dwg Layout: CG-101 Plotted: 2025-12-11 12:32 PM Saved: 2025-12-11 12:01 PM User: Daniel.Chiburis
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:



TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL
STATE OF CONNECTICUT
DONALD E. BONNEVILLE
No. 24823
LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30'
VERT.: -
DATUM: HORZ.: -
VERT.: -
0 15' 30' 60'
GRAPHIC SCALE

FUSS & O'NEILL
ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

COLLINS AEROSPACE
SITE GRADING & DRAINAGE PLAN
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CG-101

SEE SHEET CG-101

HAMILTON ROAD

4" CPP
INV=157.39

TC: 160.90
BC: 160.40

TC: 160.91
BC: 160.41

TC: 160.92
BC: 160.42

TC: 161.58
BC: 161.08

TC: 161.44
BC: 160.94

TC: 160.83
BC: 160.33

TC: 160.28
BC: 159.95

TC: 160.21
BC: 159.88

TC: 161.12
BC: 160.62

TC: 160.50
BC: 160.00

TC: 160.58
BC: 160.08

TC: 160.07
BC: 159.57

TC: 159.79
BC: 159.29

TC: 159.50
BC: 159.0

TC: 160.22
BC: 159.72

TC: 162.90
BC: 162.40

TC: 162.36
BC: 161.86

TC: 162.74
BC: 162.24

TC: 162.26
BC: 161.76

TC: 162.50
BC: 162.00

BC: 162.23

PAVED LEAKOFF
LP: 161.30

PAVED LEAKOFF
LP: 161.30

PAVED
LEAKOFF
LP: 159.30

PRETREATMENT SWALE
LENGTH: 130'
SLOPE: 3.8%
BOTTOM WIDTH: 5'
SIDE SLOPE: 3H:1V

DETENTION BASIN 20P

157.80

157.80

LEVEL SPREADER
LENGTH: 20'
TC: 157.30

25' REAR YARD

25' SIDE YARD

25' SIDE YARD

60' FRONT YARD

W/RISER

CB
TF=161.0
INV(S)=157.2
SUMP=153.7

ELEC MH
TF=161.9

CB
TF=159.0
INV(N)=155.4
INV(S)=151.9
INV(E)=152.9
SUMP=148.4

CB
TF=159.0
INV(W)=153.0
SUMP=149.5

CB
TF=157.6
INV(N)=150.6
INV(SE)=150.2
SUMP=149.0

DMH
TF=159.0
INV(W)=146.8
INV(S)=146.8

ELEC MH
TF=159.3

DMH
SEPERATOR
TF=157.0
INV(NW)=145.3
INV(SE)=145.4

CB
TF=156.8
INV(N)=145.4
INV(E)=145.5
INV(W)=145.4
SUMP=147.1

CB
TF=155.7
INV(N)=146.7
INV(E)=146.8
INV(W)=146.4
SUMP=142.8

CB
TF=157.0
INV(N)=148.7
INV(S)=148.0
INV(E)=149.3
SUMP=144.4

CONC. CURB
BIT. PARKING
CRUSHED STONE
GRASS
MW
TREE LINE

NOT FOR CONSTRUCTION

TO THE BEST OF MY KNOWLEDGE AND BELIEF
THIS PLAN CONFORMS TO THE CONDITIONS
AND REQUIREMENTS SET FORTH IN THE APPROVAL
GRANTED BY THE TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION

DATE APPROVED

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TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL
STATE OF CONNECTICUT
DONALD E. BONNEY JR.
No. 24823
LICENSED
PROFESSIONAL ENGINEER

SCALE:
HORZ.: 1" = 30'
VERT.: -

DATUM:
HORZ.: -
VERT.: -

0 15' 30' 60'
GRAPHIC SCALE

FUSS & O'NEILL
ONE FINANCIAL PLAZA, 15th FLOOR
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860.646.2469
www.fando.com

COLLINS AEROSPACE

SITE GRADING & DRAINAGE PLAN

HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CG-102

File: J:\DWG\P2017\0430\H70\Civil\Plan\20170430H70_GRDO01.dwg Layout: CG-102 Plotted: 2025-12-12 11:39 AM Saved: 2025-12-12 11:24 AM User: Nicholas.Roy
PC3: DWG TO PDF.PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:

GENERAL NOTES:

1. SEE CD-509 FOR BURIED CONDUIT DETAIL (TYP)
2. SITE LIGHTING FIXTURE (TYP) SEE CD-509 FOR LIGHT FIXTURE SCHEDULE, POLE BASE AND POLE DETAILS

STREET LIGHTING POLE IDENTIFIER	
POLE 1	INDICATES POLE NUMBER
B-1	INDICATED LIGHT POLE TYPE. REFER TO LUMINAIRE SCHEDULE
PP-H-2	LIGHTING CIRCUIT NUMBER

LINETYPE LEGEND

——T—— TELECOMMUNICATION

——E—— POWER



TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

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SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT, DONALD E. BONNEVILLE, No. 24823, LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30' VERT.: -

DATUM: HORZ.: - VERT.: -

GRAPHIC SCALE 0 15' 30' 60'

FUSS & O'NEILL
ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

COLLINS AEROSPACE

SITE UTILITY PLAN

HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75

DATE: 12/12/2025

CU-101

File: \\private\DFS\CadProj\DWG\P2017\04300H70\Civil\Plan\20170430H70_UTL01.dwg Layout: CU-101 Plotted: 2025-12-11 12:33 PM Saved: 2025-12-11 12:27 PM User: Daniel.Chiburis
MS VIEW: LAYER STATE: PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB

GENERAL NOTES:

1. SEE CD-509 FOR BURIED CONDUIT DETAIL (TYP)
2. SITE LIGHTING FIXTURE (TYP) SEE CD-509 FOR LIGHT FIXTURE SCHEDULE, POLE BASE AND POLE DETAILS

STREET LIGHTING POLE IDENTIFIER	
POLE /1	INDICATES POLE NUMBER
B-1/	INDICATED LIGHT POLE /TYPE. REFER TO LUMINAIRE SCHEDULE
PP-H-2	LIGHTING CIRCUIT NUMBER

LINETYPE LEGEND

—T— TELECOMMUNICATION

—E— POWER

APPROXIMATE LOCATION OF EXISTING SPARE ELECTRICAL CONDUITS TO PANEL LL3E BUILDING 2. SEE C-100 FOR BUILDING LOCATION

APPROXIMATE LOCATION OF EXISTING SPARE COMMUNICATIONS CONDUITS TO BUILDING 2. SEE C-100 FOR BUILDING LOCATION

CONNECT SPARE CONDUITS TO EXISTING DATA HANDHOLE

CONNECT TO EXISTING ELECTRICAL HANDHOLE, EXTEND CONDUIT TO NEW GUARD POST (SEE ELECTRICAL DRAWINGS)

LIFT ARM GATE

REFEED EXISTING GUARD HOUSE POWER FROM NEW GUARD POST, (SEE ELECTRICAL DRAWINGS)

LIGHT POLE (TYP) (SEE SITE PHOTOMETRICS PLAN)

4" TAP ON EXISTING METERED WATER LINE

4" CLASS 54 DI COMBINATION WATER SERVICE

SEE SHEET CU-101

HAMILTON ROAD

CL GATE

ELEC BOX

W/RISER

B1-3024'

25' SIDE YARD

25' REAR YARD

60' FRONT YARD

CON. WALK

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

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CHAIRMAN, PLANNING AND ZONING DATE

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SEAL
STATE OF CONNECTICUT
DONALD E. BONDI
No. 24823
LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30'
VERT.: -
DATUM: HORZ.: -
VERT.: -
GRAPHIC SCALE 0 15' 30' 60'

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COLLINS AEROSPACE

SITE UTILITY PLAN

HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

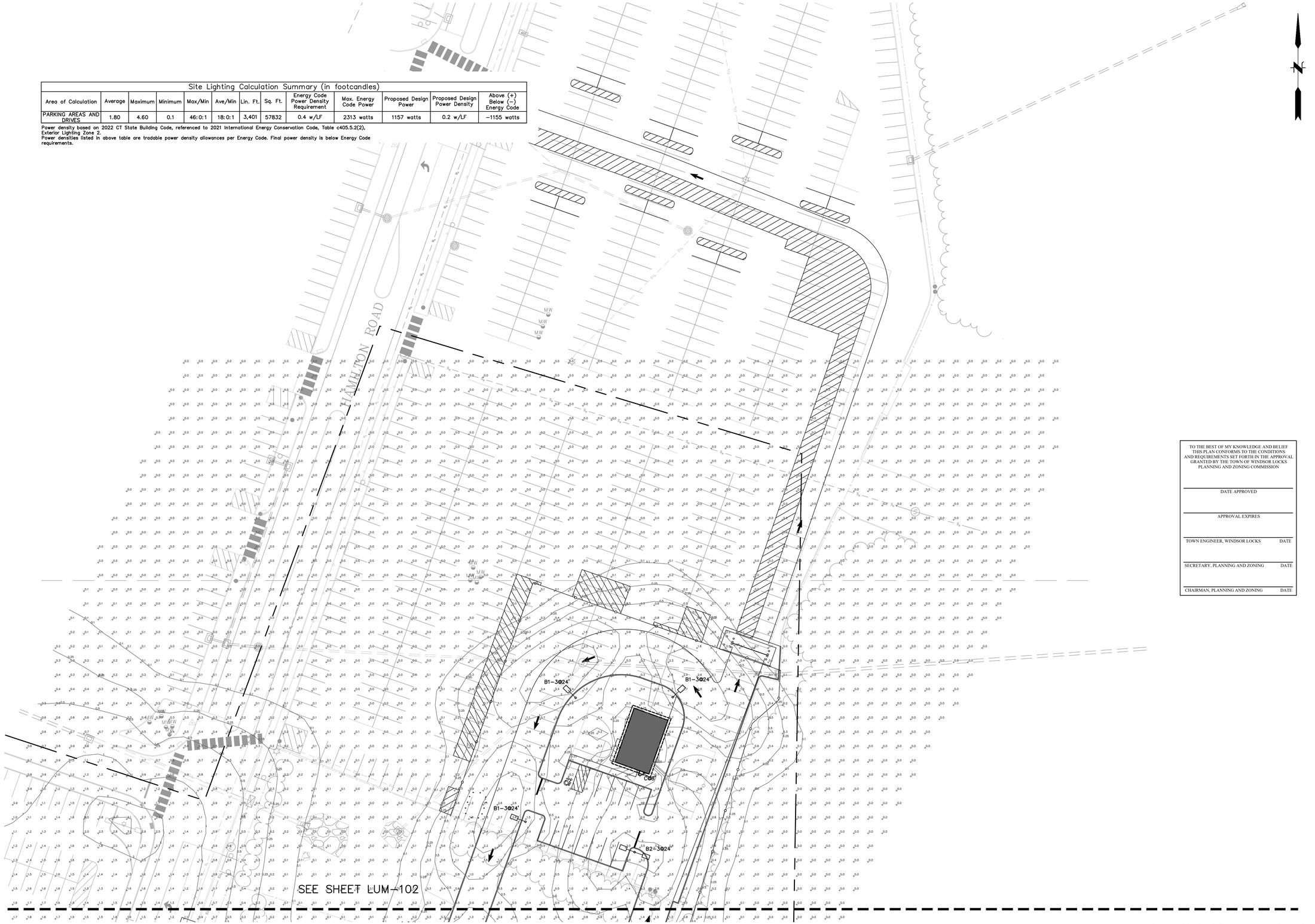
CU-102

File: \\private\DFS\Cad\Proj\DWG\P2017\0430\H70\Civil\Plan\20170430H70_UTL01.dwg Layout: CU-102 Plotted: 2025-12-11 12:33 PM Saved: 2025-12-11 12:27 PM User: Daniel.Chiburis
MS VIEW: LAYER STATE: PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB

Site Lighting Calculation Summary (in footcandles)

Area of Calculation	Average	Maximum	Minimum	Max/Min	Ave/Min	Lin. Ft.	Sq. Ft.	Energy Code Power Density Requirement	Max. Energy Code Power	Proposed Design Power	Proposed Design Power Density	Above (+) Below (–) Energy Code
PARKING AREAS AND DRIVES	1.80	4.60	0.1	46:0:1	18:0:1	3,401	57832	0.4 w/LF	2313 watts	1157 watts	0.2 w/LF	–1155 watts

Power density based on 2022 CT State Building Code, referenced to 2021 International Energy Conservation Code, Table c405.5.2(2),
Exterior Lighting Zone 2.
Power densities listed in above table are tradable power density allowances per Energy Code. Final power density is below Energy Code requirements.



TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

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SEAL

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DATUM: HORZ.: -
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0 15' 30' 60'
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SITE PHOTOMETRICS PLAN
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

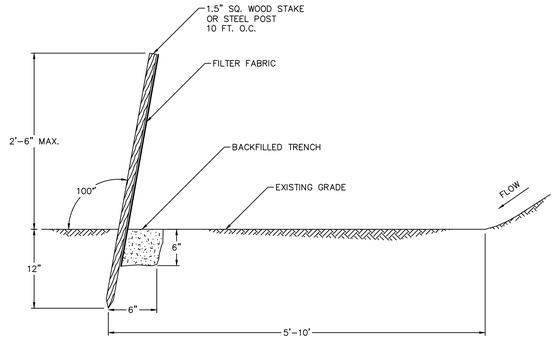
PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

LUM-101

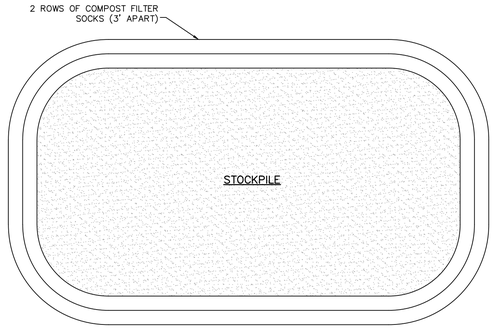
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MS VIEW:

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MS VIEW: | LAYER STATE: | PC3: DWG TO PDF.PC3 STB/CTB: FO.STB


HAMILTON ROAD
SEE SHEET LUM-101
BI-302x
BI-302x
BI-302x

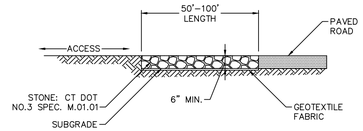


SILT FENCE
SCALE: NOT TO SCALE

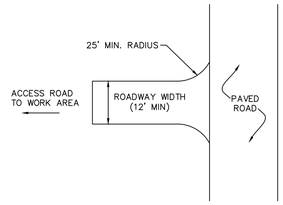


PLAN

STOCKPILE CONTAINMENT
NOT TO SCALE



SECTION



PLAN

CONSTRUCTION ENTRANCE
NOT TO SCALE

EROSION & SEDIMENT CONTROL NOTES

1. CONSTRUCTION STANDARDS – CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MOST RECENT EDITION OF THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL" (CT DEP BULLETIN 34). ALL MEASURES SHALL BE MAINTAINED AND UPGRADED TO ACHIEVE PROPER SEDIMENT CONTROL DURING CONSTRUCTION.

2. PLAN IMPLEMENTATION – IMPLEMENT THIS EROSION AND SEDIMENT CONTROL PLAN. THIS IMPLEMENTATION INCLUDES THE INSTALLATION AND MAINTENANCE OF CONTROL MEASURES UNTIL PERMANENT STABILIZATION IS ACHIEVED, INFORMING ALL SUBCONTRACTORS OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE PROPER MUNICIPAL AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLE FOR CONVEYING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN TO THE NEW OWNER IF THE TITLE OF THE LAND IS TRANSFERRED PRIOR TO ACHIEVING PERMANENT STABILIZATION.

3. INSTALLATION SCHEDULE – INSTALL THE CONSTRUCTION ENTRANCE BEFORE CONSTRUCTION TRAFFIC INTO AND OUT OF THE PROJECT AREA BEGINS. INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO STUMP REMOVAL AND CONSTRUCTION. INSTALL ADDITIONAL CONTROL MEASURES DURING THE CONSTRUCTION PERIOD, IF DEEMED NECESSARY BY THE OWNER, HIS AGENTS OR AGENTS OF THE MUNICIPALITY.

4. FUGITIVE DUST – CONTROL FUGITIVE DUST USING WATER SPRAYS OR CALCIUM CHLORIDE ON SOIL SURFACES, SWEEPING PAVED AREAS, TEMPORARY WINDBREAKS OR NON–ASPHALTIC SOIL TACKIFIERS.

5. STRAW BALE LIFE SPAN – INSTALL STRAW BALES WHERE PROTECTION AND EFFECTIVENESS IS REQUIRED FOR LESS THAN 90 DAYS. OTHERWISE, INSTALL SILT FENCE.

6. CATCH BASINS – PROTECT CATCH BASINS WITH PROPER CONTROLS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.

7. STOCKPILES – ENCIRCLE STOCKPILES OF ERODIBLE SOIL WITH A STRAW BALE OR SILT FENCE BARRIER. THE SIDE SLOPES OF ERODIBLE STOCKPILED MATERIAL SHALL BE NO STEEPER THAN 2:1. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER THEY ARE FORMED.

8. TOE OF SLOPE – ESTABLISH AN EROSION CONTROL BARRIER (SILT FENCE OR STRAW BALE BARRIER) APPROXIMATELY 5 TO 10 FEET FROM THE PROPOSED TOE OF THE CUT OR FILL AREA PRIOR TO BEGINNING EARTHWORK.

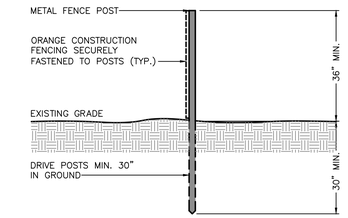
9. SEDIMENT REMOVAL – SEDIMENT REACHING ½ THE HEIGHT OF THE EROSION CONTROL BARRIER SHALL BE REMOVED. REMOVE AND DISPOSE OF SEDIMENT IN A MANNER CONSISTENT WITH THE INTENT OF THE PLAN.

10. SOIL STABILIZATION SCHEDULE – APPLY PERMANENT SOIL STABILIZATION MEASURES TO ALL GRADED AREAS WITHIN 7 DAYS OF ESTABLISHING FINAL GRADE. APPLY TEMPORARY SOIL STABILIZATION MEASURES IF FINAL GRADING IS TO BE DELAYED MORE THAN 30 DAYS.

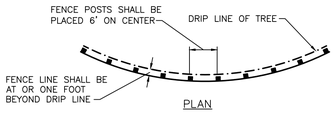
11. TEMPORARY SEEDING – TEMPORARILY SEED ERODIBLE SOILS THAT WILL BE EXPOSED GREATER THAN 1 BUT LESS THAN 12 MONTHS WITHIN THE FIRST 7 DAYS OF SUSPENDING GRADING OPERATIONS. APPLY LIME AT A RATE OF 90 LBS/1000 SQ. FT. APPLY 10–10–10 FERTILIZER AT A RATE OF 7 ½ LBS/1000 SQ. FT. APPLY PERENNIAL RYE GRASS AT A RATE OF 2 LBS/1000 SQ. FT. TO A DEPTH OF ½ INCH. OPTIMUM SEEDING DATES ARE APRIL 1 TO JUNE 15 AND AUGUST 15 TO OCTOBER 1. MULCH FOR SEED APPLIED WITHIN THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 80%–95% SOIL COVERAGE. MULCH FOR SEED APPLIED OUTSIDE OF THE OPTIMUM SEEDING DATES SHALL BE APPLIED EVENLY SUCH THAT IT PROVIDES 95%–100% COVERAGE.

12. PERMANENT SEEDING – SEED PERMANENT LAWN AREAS IN ACCORDANCE WITH THE SPECIFICATIONS.

13. INSPECTION – THE ENGINEER WILL VERIFY IN THE FIELD THAT THE CONTROLS REQUIRED BY THIS PLAN ARE PROPERLY INSTALLED AND MAINTAINED. THESE INSPECTIONS SHALL BE NOT LESS FREQUENTLY THAN WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM HAVING A RAINFALL AMOUNT OF 0.1 INCH OR GREATER. FOLLOWING THESE INSPECTIONS, A WRITTEN REPORT SHALL BE PREPARED, INFORMING THE OWNER OR HIS AGENT NOT LESS FREQUENTLY THAN WEEKLY AND THE MUNICIPALITY NOT LESS FREQUENTLY THAN MONTHLY OF OBSERVATIONS, MAINTENANCE, AND CORRECTIVE ACTIVITIES UNDERTAKEN.



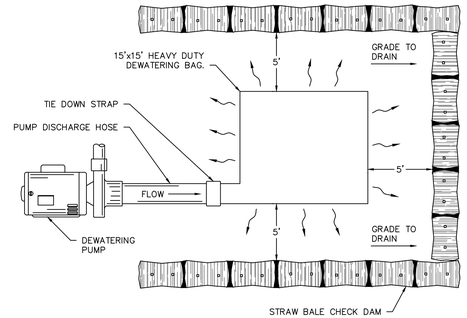
SECTIONAL ELEVATION



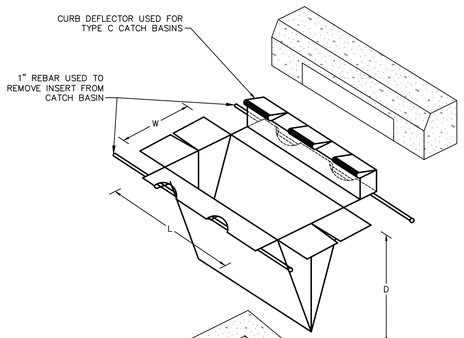
PLAN

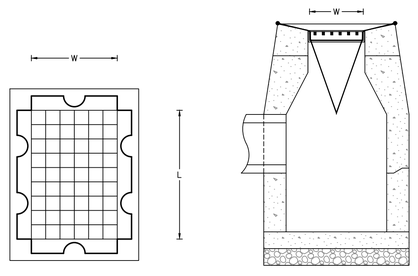
NOTE:
SEE LANDSCAPING PLAN FOR ADDITIONAL TREE PROTECTION NOTES.

TREE PROTECTION FENCING
NOT TO SCALE



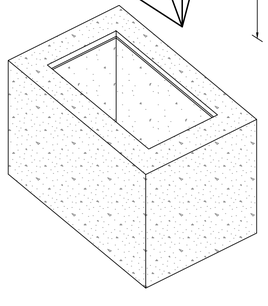
DEWATERING BAG
NOT TO SCALE

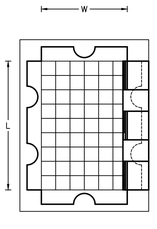




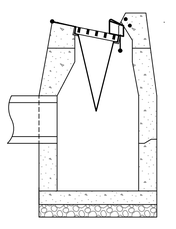
TYPE CL PLAN

TYPE CL SIDE ELEVATION

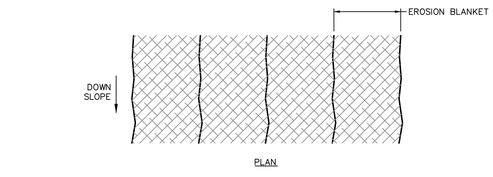




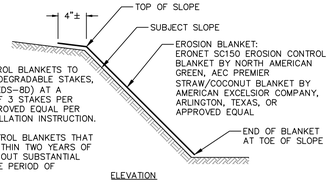
TYPE C PLAN



TYPE C SIDE ELEVATION



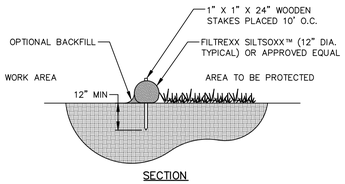
PLAN



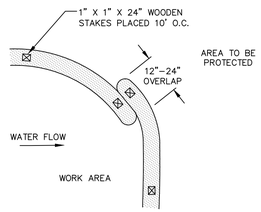
NOTES:

1. STAPLE EROSION CONTROL BLANKETS TO SLOPE. PROVIDE 100% DEGRADABLE STAKES, 8" ECODUITY STAKES (EDS–8D) AT A MINIMUM FREQUENCY OF 3 STAKES PER SQUARE YARD OR APPROVED EQUAL PER MANUFACTURERS INSTALLATION INSTRUCTION.
2. PROVIDE EROSION CONTROL BLANKETS THAT ARE BIODEGRADABLE WITHIN TWO YEARS OF INSTALLATION BUT WITHOUT SUBSTANTIAL DEGRADATION OVER THE PERIOD OF INTENDED USAGE.

ELEVATION



SECTION



NOTES:

1. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.
2. FILTER MEDIA FILL TO MEET APPLICATION REQUIREMENTS.
3. DISPERSE COMPOST MATERIAL ON SITE.

COMPOST FILTER SOCK
NOT TO SCALE

TEMPORARY EROSION CONTROL BLANKET
NOT TO SCALE

SILT SACK CATCH BASIN INSERT
NOT TO SCALE

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS — DATE

SECRETARY, PLANNING AND ZONING — DATE

CHAIRMAN, PLANNING AND ZONING — DATE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT · DONALD E. BONETTI · No. 24823 · LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: NOT TO SCALE; VERT.:
DATUM: HORZ.: -; VERT.: -

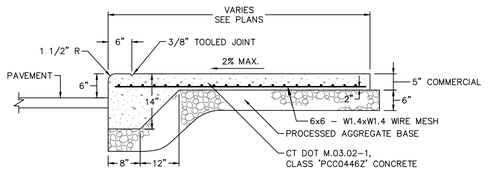
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ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

COLLINS AEROSPACE
SITE DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

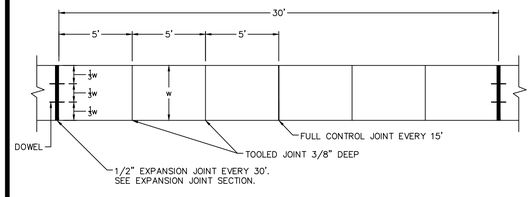
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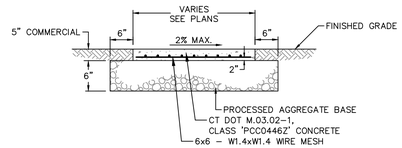


MONOLITHIC CONCRETE CURB AND WALK

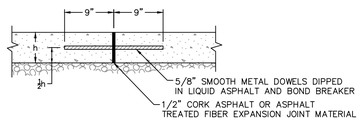
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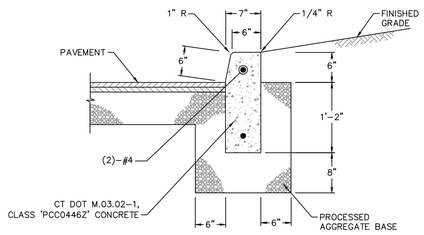
PLAN



SIDEWALK SECTION



EXPANSION JOINT SECTION

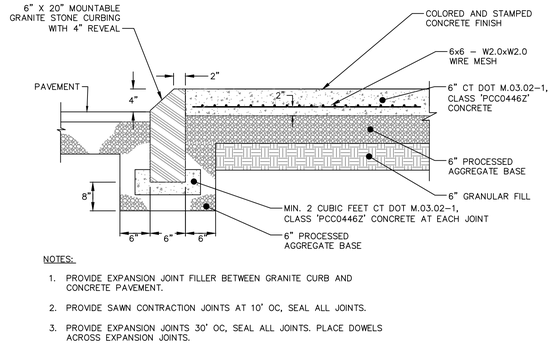


NOTES

1. 1 INCH DEEP BEVELED JOINT AT TOP AND FACE OF CURB EVERY 10 FEET.

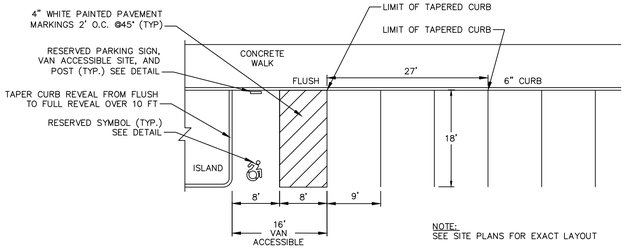
EXTRUDED CONCRETE CURB

NOT TO SCALE



NOTES:

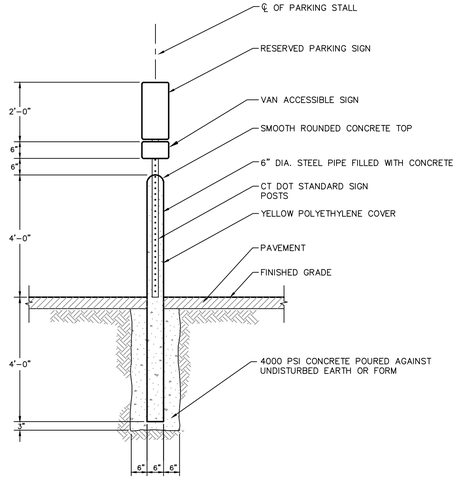
1. PROVIDE EXPANSION JOINT FILLER BETWEEN GRANITE CURB AND CONCRETE PAVEMENT.
2. PROVIDE SAWN CONTRACTION JOINTS AT 10' OC, SEAL ALL JOINTS.
3. PROVIDE EXPANSION JOINTS 30' OC, SEAL ALL JOINTS. PLACE DOWELS ACROSS EXPANSION JOINTS.

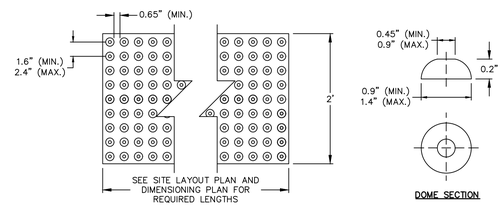


NOTE:
SEE SITE PLANS FOR EXACT LAYOUT

RESERVED PARKING SPACES ALONG WALK

NOT TO SCALE





DETECTABLE WARNING STRIP

NOT TO SCALE



NOTE:
RESERVED SYMBOL SHALL CONFORM TO THE 2018 CONNECTICUT STATE BUILDING CODE SECTION 703.6.3.1 INTERNATIONAL SYMBOL OF ACCESSIBILITY.

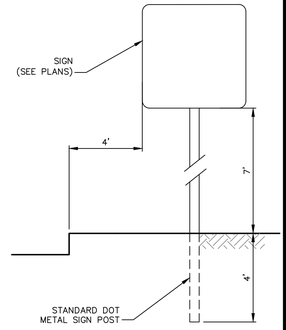
RESERVED SYMBOL

NOT TO SCALE



NOTES

CDOT NUMBER: R7–(CT) AND R7–8P
ALUMINUM THICKNESS: .080"
BACKGROUND: BLUE (REF.)
LEGEND: SILVER (REF.)
POSTS: SEE "RESERVED PARKING SIGN AND POST" DETAIL



NOTE:
TYPICAL SIGN DETAIL; SEE PLANS FOR SIGN TYPES AND LOCATIONS. REFER TO CTDOT STANDARD SHEET – METAL SIGN POST AND SIGN MOUNTING DETAILS TR-1208_02

SIGN

SCALE: NOT TO SCALE

CONCRETE SIDEWALK

NOT TO SCALE

MOUNTABLE GRANITE CURB AND CONCRETE PAVEMENT

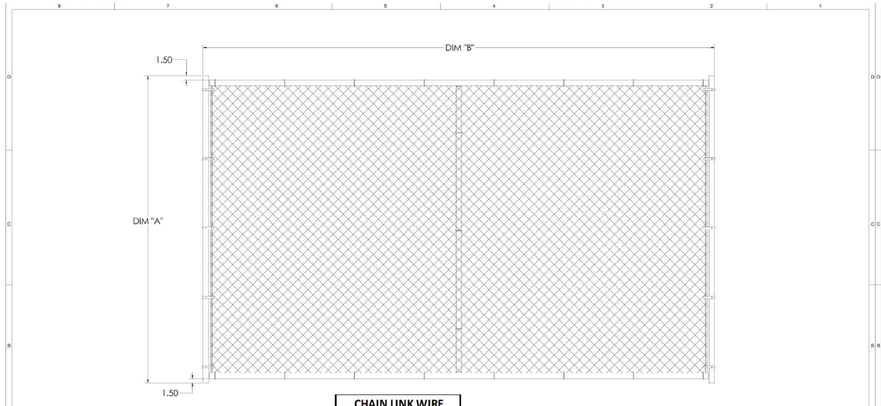
NOT TO SCALE

RESERVED PARKING SIGN POST

NOT TO SCALE

RESERVED PARKING SIGN

NOT TO SCALE

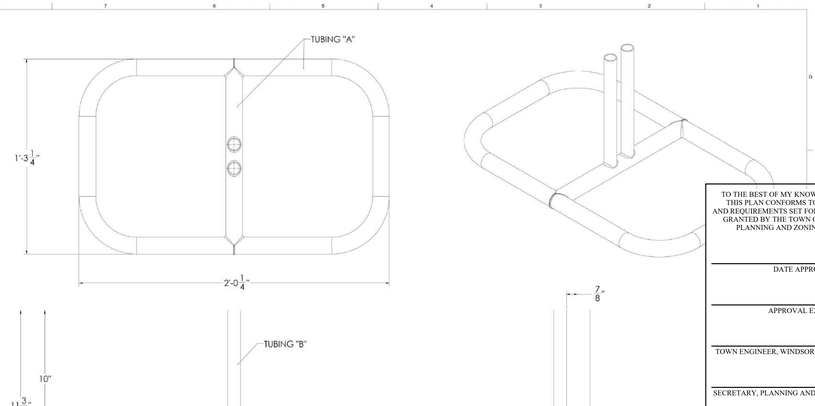


PART NUMBER	DIM. "A"	DIM. "B"	TUBING MATERIAL	CHAIN LINK WIRE GAUGE	CHAIN LINK WIRE DIAMOND SIZE
071050	6'	10'	1-3/8" x 16 Gauge	11.5	2-1/4"
071051	6'	12'	1-3/8" x 16 Gauge	11.5	2-1/4"
~~071053~~	~~8'~~	~~10'~~	~~1-3/8" x 16 Gauge~~	~~11.5~~	~~2-1/4"~~
~~071072~~	~~6'~~	~~10'~~	~~1-3/8" x 16 Gauge~~	~~12.5~~	~~2-3/8"~~
~~071073~~	~~6'~~	~~12'~~	~~1-3/8" x 16 Gauge~~	~~12.5~~	~~2-3/8"~~
~~071077~~	~~6'~~	~~10'~~	~~1-3/8" x 16 Gauge~~	~~11.5~~	~~2-3/8"~~
~~071078~~	~~6'~~	~~12'~~	~~1-3/8" x 16 Gauge~~	~~11.5~~	~~2-3/8"~~

RELEASE STAMP - ORIGINAL IN BLUE

MASTER HALCO

TEMP PANEL - HARDWARE



PART NUMBER	TUBING "A"	TUBING "B"
071074	1-3/8" x 16 Gauge	1" x 16 Gauge

RELEASE STAMP - ORIGINAL IN BLUE

MASTER HALCO

TEMP PANEL STAND

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

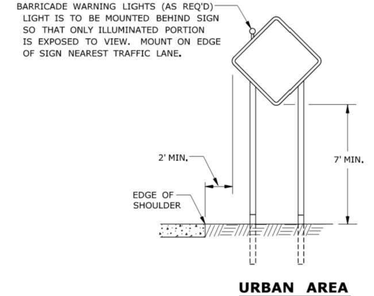
DATE APPROVED

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TOWN ENGINEER, WINDSOR LOCKS — DATE

SECRETARY, PLANNING AND ZONING — DATE

CHAIRMAN, PLANNING AND ZONING — DATE



URBAN AREA

PLACEMENT OF CONSTRUCTION SIGNS

TYPICAL LONG TERM INSTALLATION

NOTES:

SUPPORTS SHALL BE METAL SIGN POSTS AND HAVE BREAK-AWAY FEATURES.

SEE TYPICAL SHEETS:
"TYPICAL SIGN SUPPORT AND SIGN PLACEMENT DETAILS-GORE EXIT SIGN"
"TYPICAL METAL SIGN POSTS AND SIGN MOUNTING DETAILS"

TEMPORARY CONSTRUCTION FENCE

NOT TO SCALE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL
STATE OF CONNECTICUT
RONALD E. BONDI
No. 24823
LICENSED
PROFESSIONAL ENGINEER

SCALE:
HORZ.: NOT TO SCALE
VERT.:
DATUM:
HORZ.: -
VERT.: -

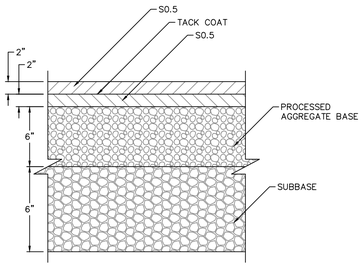
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COLLINS AEROSPACE
SITE DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

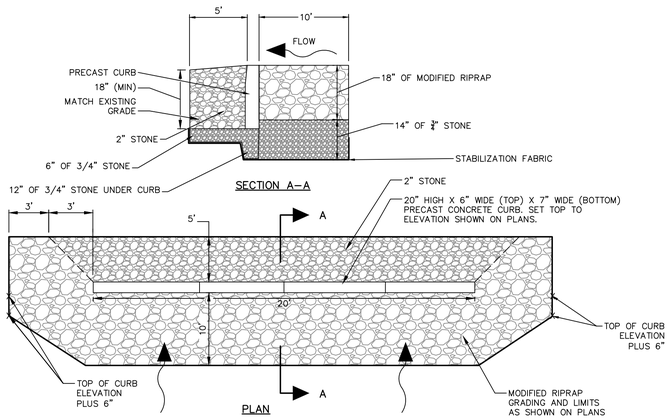
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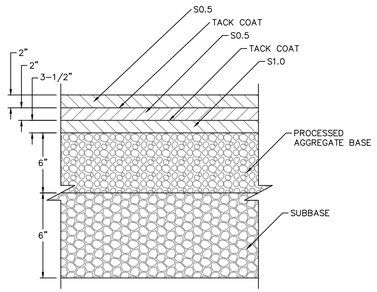
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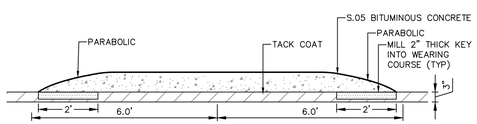
BITUMINOUS CONCRETE PAVEMENT (STD. DUTY)
NOT TO SCALE





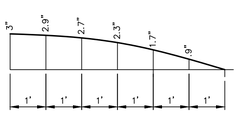
BITUMINOUS CONCRETE PAVEMENT (HEAVY DUTY)
NOT TO SCALE

SPEED HUMP PAVEMENT MARKINGS
SCALE: N.T.S.



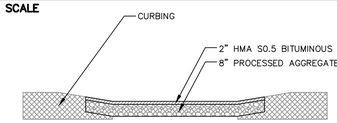
DETAIL A

12' SPEED HUMP CROSS SECTION

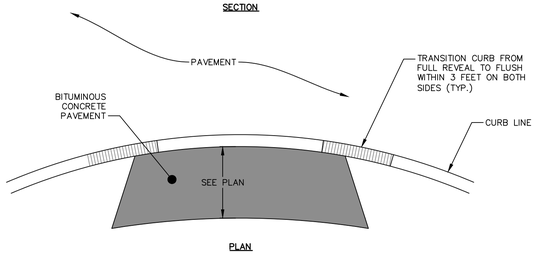


12' SPEED HUMP
SCALE: N.T.S.

LEVEL SPREADER
NOT TO SCALE

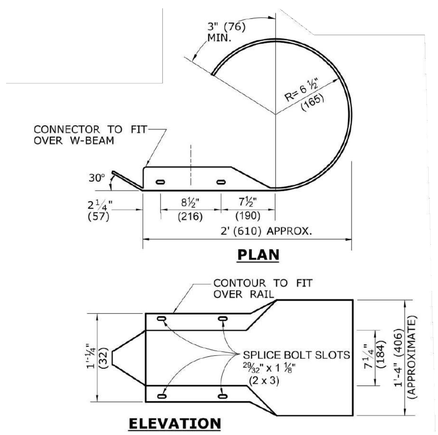


SECTION

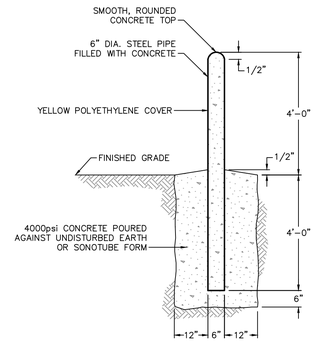


PLAN

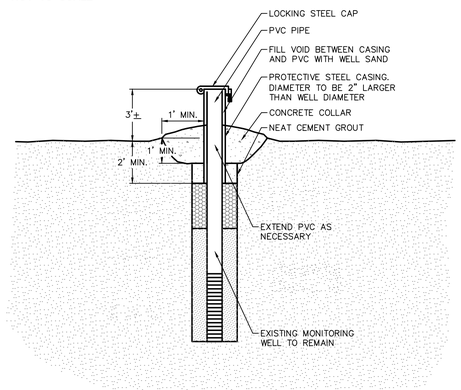
PAVED LEAKOFF
NOT TO SCALE



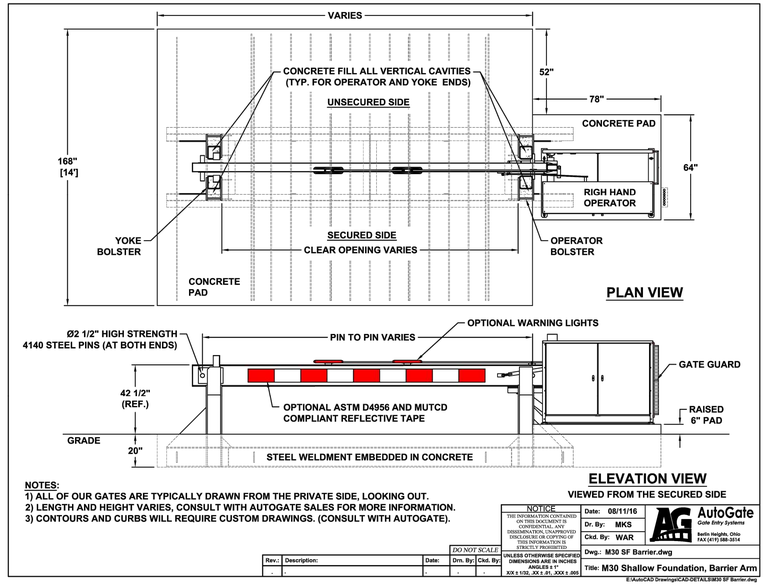
ROUNDED W-BEAM END SECTION
NOT TO SCALE



UTILITY BOLLARD
NOT TO SCALE



MONITORING WELL STANDPIPE
NOT TO SCALE



NOTES:
1) ALL OF OUR GATES ARE TYPICALLY DRAWN FROM THE PRIVATE SIDE, LOOKING OUT.
2) LENGTH AND HEIGHT VARIES, CONSULT WITH AUTOGATE SALES FOR MORE INFORMATION.
3) CONTOURS AND CURBS WILL REQUIRE CUSTOM DRAWINGS. (CONSULT WITH AUTOGATE).

NOTICE
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Date: 08/11/16
Dr. By: MKS
Ckd. By: WAR

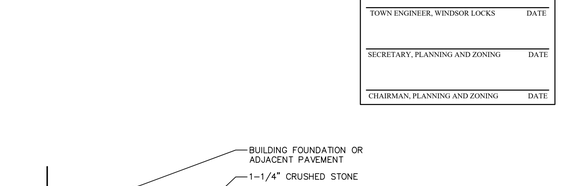
AutoGate
Gate Entry Systems
Iselin Heights, Ohio
TAX (317) 580-3314

Dwg.: M30 SF Barrier.dwg
Title: M30 Shallow Foundation, Barrier Arm
E:\AutoCAD Drawings\CAD-DETAILS\M30 SF Barrier.dwg

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
-			-	-

DO NOT SCALE
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES ANGLES ± 1° XX ± 1/32, .XX ± .01, .XXX ± .005

LIFT ARM GATE
SCALE: NOT TO SCALE



LANDSCAPE EDGING NOTES:
1. MANUFACTURER: SURE-LOC (OR APPROVED EQUAL)
 1.1. PRODUCT 1/8" X 5-1/2" ALUMINUM EDGE RESTRAINT; 12" ALUMINUM STAKE
 1.2. WWW.SURELOCEDGING.COM
 1.3. 1-800-787-3562
2. 16'-0" SECTIONS TO INCLUDE FIVE (5) 12" STAKES
3. 8'-0" SECTIONS TO INCLUDE THREE (3) 12" STAKES
4. COMPACT GRADES ADJACENT TO EDGING TO MINIMIZE SETTLING
5. CORNERS – CUT BASE OF EDGING HALF WAY AND FORM A CONTINUOUS CORNER.

CRUSHED STONE SURFACING
SCALE: NOT TO SCALE

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

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SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

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SEAL
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LICENSED PROFESSIONAL ENGINEER

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CD-503

File: \\private\DFS\CadProj\DWG\P2017\0430\H70\Civil\Plan\20170430H70_DET01.dwg Layout: CD-503 Plotted: 2025-12-11 12:34 PM Saved: 2025-12-11 12:15 PM User: Daniel.Chburns
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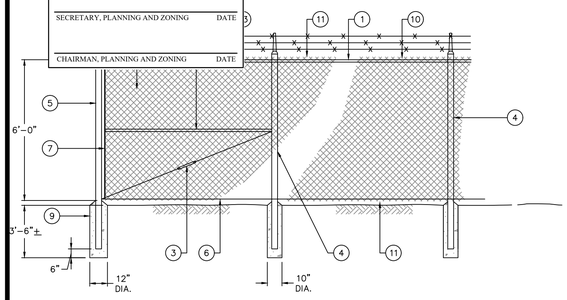
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TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE



ELEVATION

NOTES

1. FOOTING DESIGN TO BE CHECKED BY AN ENGINEER FOR WIND LOADS IF SLATS ARE USED OR IF POOR SOIL CONDITIONS EXIST.
2. STRAIGHT RUNS BETWEEN BRACED POSTS SHALL NOT EXCEED 500 FT.
3. FENCE DETAILS ARE INTENDED AS A GUIDE ONLY. ALL FENCE MATERIALS AND CONSTRUCTION METHODS SHALL BE APPROVED BY THE ENGINEER AND FENCE MANUFACTURER.

CHAIN LINK FENCE LEGEND

1. 1 5/8" O.D. TOP RAIL ATTACH FABRIC WITH 9 GUAGE WIRE CLIP EVERY 24"
2. 1 5/8" O.D. BRACE FOR RAIL FENCES OVER 6 FEET HIGH AND ALL FENCES WITHOUT TOP RAIL
3. 5/16" TRUSS ROD AND TURNBUCKLE
4. INTERMEDIATE POST

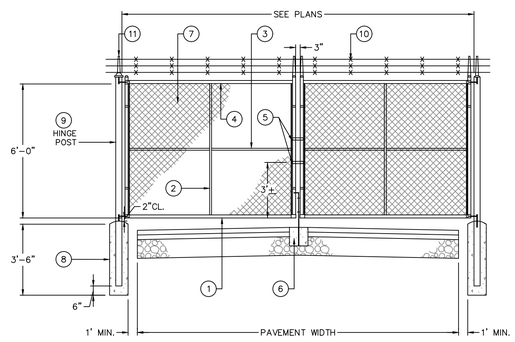
FENCE HEIGHT	SQUARE POST	ROUND POST
6 FEET AND LESS	1 7/8"	2"
OVER 6 FEET	2 1/4"	2 1/2"

ATTACH TO C.L. FABRIC WITH CLIPS EVERY 15"

5. END OR CORNER POST

FENCE HEIGHT	SQUARE POST	ROUND POST
6 FEET AND LESS	2"	2 1/2"
OVER 6 FEET	2 1/2"	3"

6. 6 GAUGE BOTTOM TENSION WIRE ATTACH TO FABRIC WITH HOG RING AT 24" C.C.
7. TENSION ROD ATTACHED TO END OR CORNER POST
8. RESERVED
9. CONCRETE FOOTING 36" DEEP WITH 12" DIA. AT END POST AND 10" DIA. AT INTERMEDIATE POST. HOLE CORE IN UNDISTURBED OR COMPACTED SOIL. (SEE NOTE NO. 1)
10. 6 GAUGE TENSION WIRE WHEN TOP RAIL IS NOT USED.
11. FABRIC SELVAGE:
    UNDER 6 FEET SHALL BE KNUCKLED TOP AND BOTTOM
    6 FEET AND OVER SHALL BE KNUCKLED BOTTOM AND TWISTED ON THE TOP
    RECREATIONAL FENCING, REGARDLESS OF HEIGHT, SHALL BE KNUCKLED TOP AND BOTTOM
12. 9 GAUGE 2" WIRE MESH FABRIC (COMMERCIAL) BLACK VINYL COATED.
13. 3 STRAND BARB WIRE
14. SINGLE EXTENSION ARM CONFIGURATION

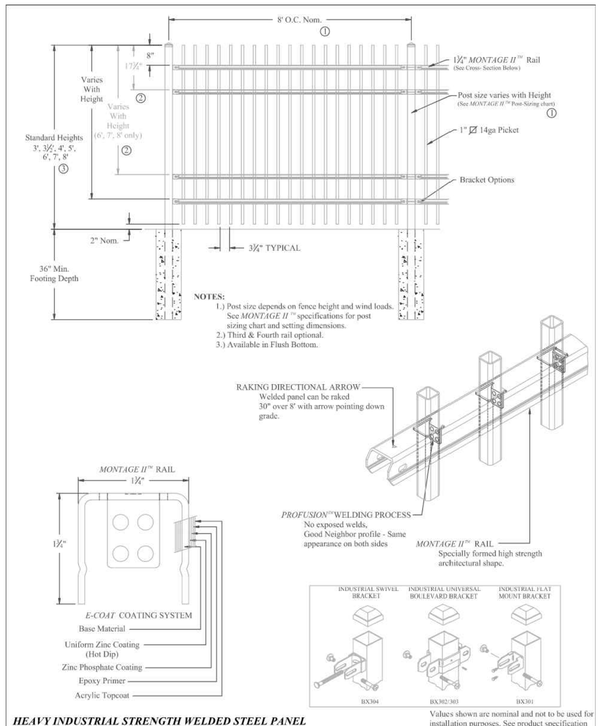


CHAIN LINK DOUBLE LEAF SWING GATE LEGEND

1. 2" SQUARE FRAME WELDED TO FORM FOUR SIDES OF LEAF
2. 1 1/4" SQUARE UPRIGHT BRACING WELDED TO FRAME
3. 1 1/4" SQUARE HORIZONTAL BRACING WELDED TO FRAME
4. TENSION BAR ATTACHED TO FRAME ON ALL FOUR SIDES WITH HOOK BOLTS
5. PADLOCK AND LATCH DEVICE
6. 12" DIA. x 12" DEEP CONC. COLLAR WITH STEEL PIPE FOR SET PIN. COLLAR AND PIPE SET FLUSH WITH PAVEMENT. PIPE TO DRAIN INTO GRAVEL BASE.
7. 9 GAUGE 2" WIRE MESH BLACK VINYL COATED FABRIC.
8. HINGE POST FOOTING SHALL BE 4000 PSI CONCRETE. DIAMETER SHALL BE 4 TIMES POST WIDTH (MIN.)
9. SEE GATE TABLE
10. 3 STRAND BARB WIRE
11. SINGLE EXTENSION ARM CONFIGURATION

GATE TABLE	
OPENING	HINGE POST
8'–0" – 12'–0"	2 1/2" SQUARE
14'–0" – 24'–0"	3" SQUARE
26'–0" – 36'–0"	6" SQUARE
38'–0" – 40'–0"	8" SQUARE

CHAIN LINK FENCE
SCALE: N.T.S.



HEAVY INDUSTRIAL STRENGTH WELDED STEEL PANEL
PRE-ASSEMBLED

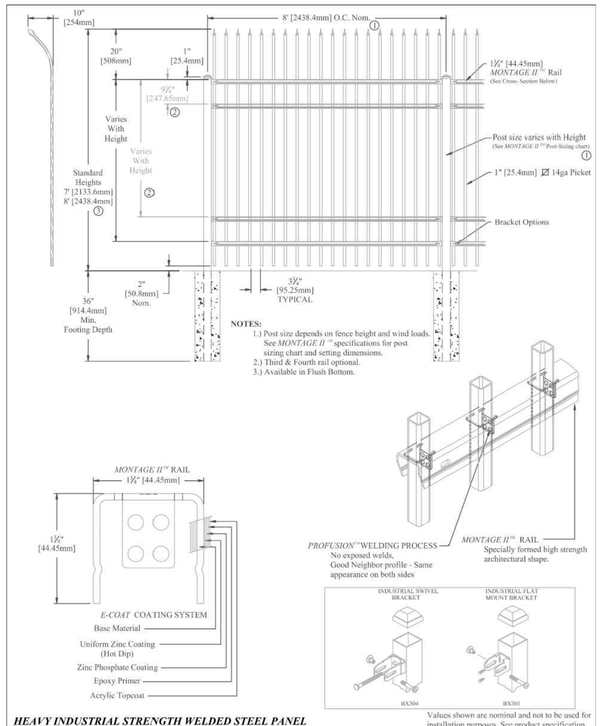
Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

2HGISO

MONTAGE II GENESIS 2/3/4-RAIL			
DR: RTM	SH . 1of 1	SCALE: DO NOT SCALE	
CK: ME	Date 6/25/10		REV: b

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Tulsa, OK 74116
1-888-333-3422
www.ameristarfence.com

DECORATIVE METAL FENCE
SCALE: NOT TO SCALE



HEAVY INDUSTRIAL STRENGTH WELDED STEEL PANEL
PRE-ASSEMBLED

Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

2HIISO

MONTAGE II INVINCIBLE 2/3/4-RAIL			
DR: LJM	SH . 1of 1	SCALE: DO NOT SCALE	
CK: PB	Date 04/04/2022		REV: D

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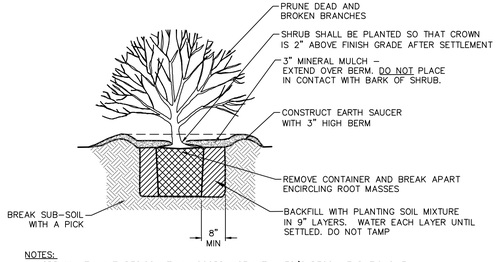
DECORATIVE METAL FENCE (ALTERNATE #1)
SCALE: NOT TO SCALE

CHAIN LINK DOUBLE LEAF SWING GATE
SCALE: N.T.S.

TREE PLANTING
SCALE: NOT TO SCALE

NOTES:
REMOVE TREE WRAP, WIRE, STAKES, ANY SYNTHETIC MATERIAL. CUT AWAY MINIMUM OF TOP HALF OF BURLAP &/OR WIRE BASKET. SCARIFY ALL PLANT PITS PRIOR TO PLANTING

CONTAINERIZED PLANT MATERIAL
NOT TO SCALE



NOTES:
1. SPRAY WITH ANTI DESICCANT IN ACCORDANCE WITH MFG.'S RECOMMENDATIONS IF FOLIAGE IS PRESENT.
2. FOR CONTAINER GROWN SHRUBS, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL; THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
3. INCORPORATE COMMERCIALLY PREPARED MYCORRHIZA SPORES IN THE SOIL IMMEDIATELY AROUND THE ROOT BALL AT RATES SPECIFIED BY THE MANUFACTURER.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT · DONALD E. BOMBARA · No. 24823 · LICENSED PROFESSIONAL ENGINEER

SCALE:
HORZ.: NOT TO SCALE
VERT.:
DATUM:
HORZ.: -
VERT.: -

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COLLINS AEROSPACE
SITE DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CD-504

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LAYER STATE:
MS VIEW:

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THIS PLAN CONFORMS TO THE CONDITIONS
AND REQUIREMENTS SET FORTH IN THE APPROVAL
GRANTED BY THE TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION

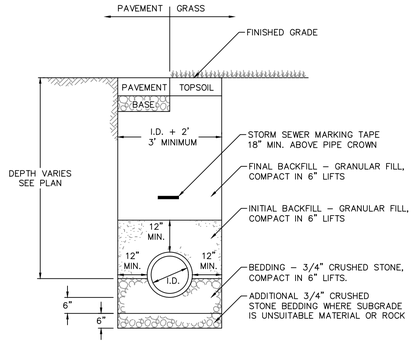
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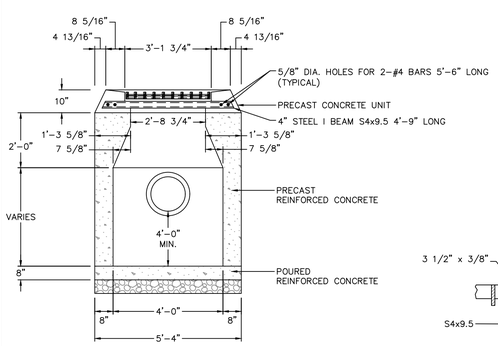
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SECRETARY, PLANNING AND ZONING DATE

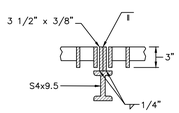
CHAIRMAN, PLANNING AND ZONING DATE



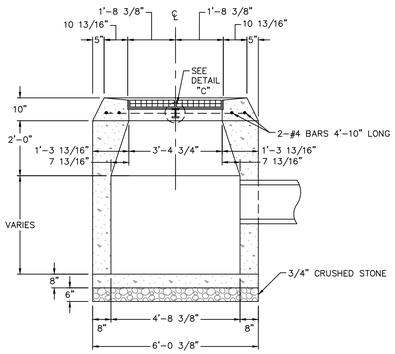
STORM SEWER TRENCH
NOT TO SCALE



FRONT ELEVATION

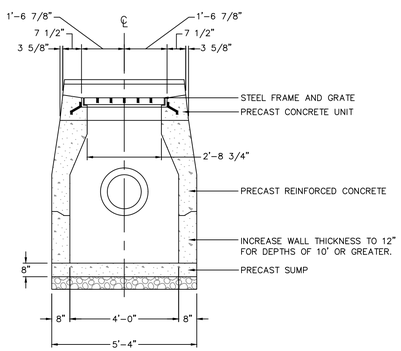


DETAIL "C"

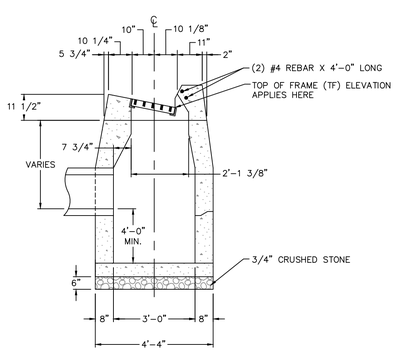


SIDE ELEVATION

TYPE "C-L" CATCH BASIN DOUBLE GRATE TYPE I
NOT TO SCALE

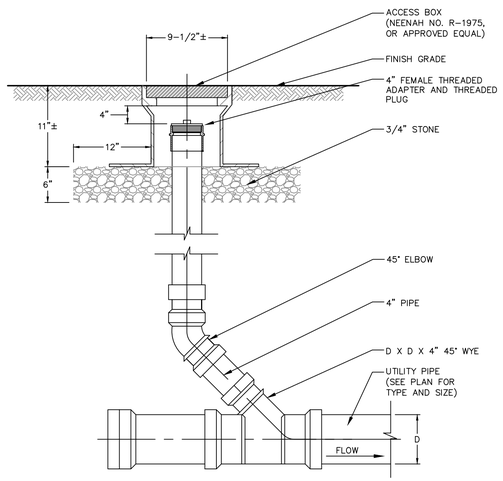


FRONT ELEVATION



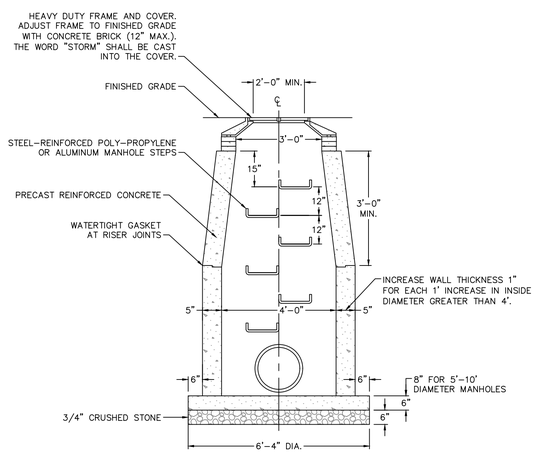
SIDE ELEVATION

TYPE "C" CATCH BASIN
NOT TO SCALE



NOTES:
1. CLEANOUT PIPING SHALL SCH. 40 PVC OR MATCH UTILITY PIPE MATERIAL.
2. SOLVENT WELD ALL JOINTS
3. WHERE CLEANOUT IS PLACED AT THE END OF A PIPE RUN, INSTALL A 45° BEND (BELL X BELL) & APPROPRIATE REDUCER IN PLACE OF 45° WYE.

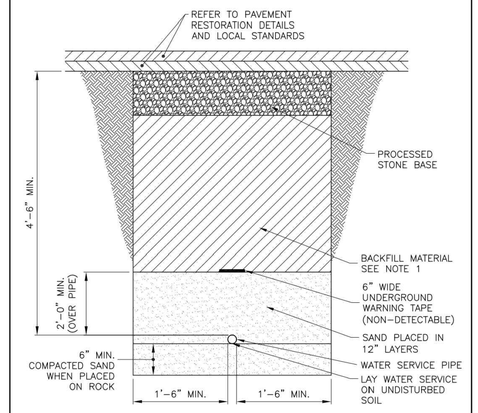
CLEANOUT
NOT TO SCALE



STORM MANHOLE
NOT TO SCALE

THE METROPOLITAN DISTRICT
WATER STANDARD DETAILS

MDC



NOTE:

1. BACKFILL MATERIAL SHALL BE BANK-RUN GRAVEL IN PAVED AREAS (INCLUDING SIDEWALKS AND DRIVEWAYS) OR COMMON FILL IN NON-PAVED AREAS.

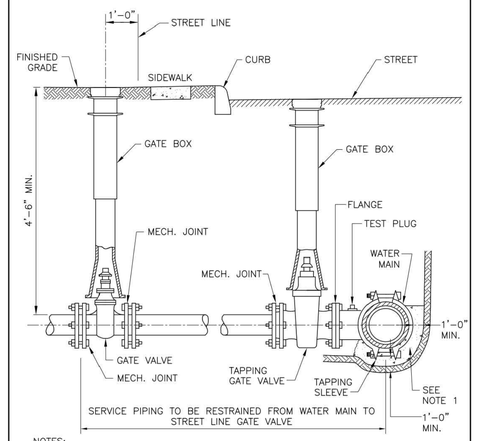
WATER SERVICE TRENCH
DETAIL W-4
NTS

FILE: W-4 Water Service Trench.dwg Latest Revision: JANUARY 2017

PAGE 52

THE METROPOLITAN DISTRICT
WATER STANDARD DETAILS

MDC



NOTES:

1. POURED CONCRETE THRUST BLOCK TO BE INSTALLED AFTER TAP IS MADE. PROTECT NUTS FROM CONCRETE WITH 6 MIL POLY COVER OR EQUAL.

SERVICES 4-INCH THROUGH 8-INCH
DETAIL W-10
NTS

File: W-10 Services 4-inch Through 8-inch.dwg Latest Revision: JANUARY 2017

PAGE 58

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL
STATE OF CONNECTICUT
DONALD E. BONNEY
No. 24823
LICENSED
PROFESSIONAL ENGINEER

SCALE: HORZ.: NOT TO SCALE VERT.:
DATUM: HORZ.: - VERT.: -

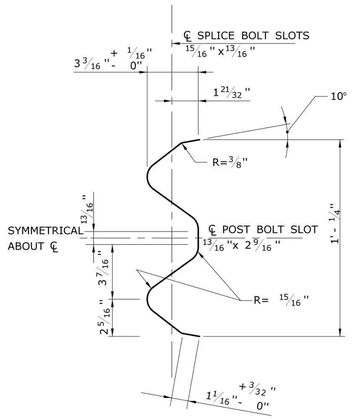
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SITE DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

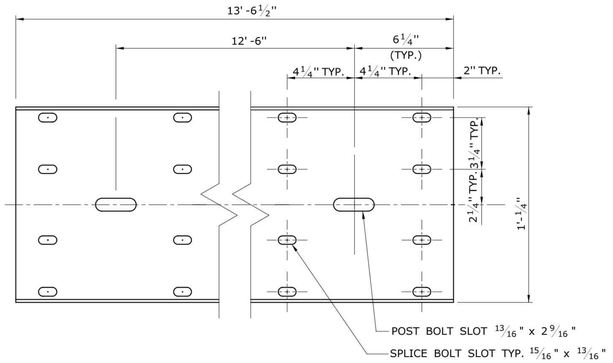
PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CD-505

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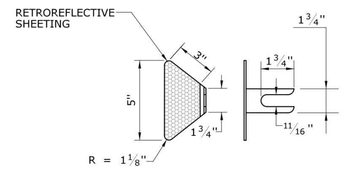


SECTION VIEW



ELEVATION VIEW

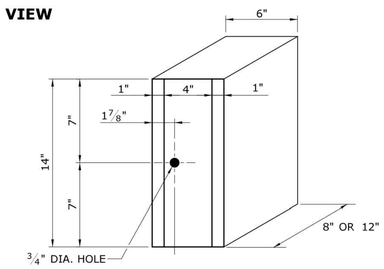
TYPICAL W-BEAM RAIL ELEMENT



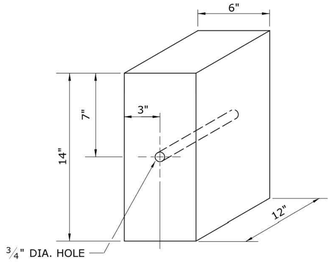
W-BEAM DELINEATOR

GENERAL NOTES:

1. W6 x 9 POSTS MAY BE USED IN PLACE OF W6 x 8.5 POSTS.
2. W-BEAM GUIDERAIL SHALL USE CLASS A (12 GAUGE), TYPE II W-BEAM RAIL ELEMENTS.
3. SEVEN FOOT LONG STEEL POSTS (W6 X 8.5) ARE TO BE INSTALLED WHERE INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
4. ALL DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES



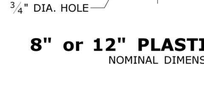
8" or 12" PLASTIC BLOCKOUT
NOMINAL DIMENSIONS



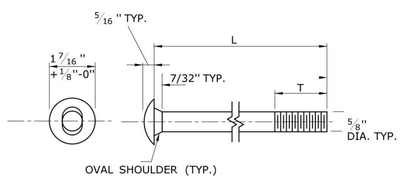
12" WOOD BLOCKOUT

W-BEAM DELINEATOR INSTALLATION NOTES:

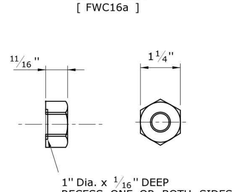
1. INSTALL W-BEAM DELINEATORS ON RAIL THAT IS PARALLEL TO AND NOT GREATER THAN 8' FROM THE EDGE OF THE ROADWAY. A MINIMUM OF THREE W-BEAM DELINEATORS SHALL BE INSTALLED ON ANY LENGTH OF GUIDERAIL.
2. THE SPACING OF W-BEAM DELINEATORS IS 50 FEET, INSTALLED AT RAIL SPLICE LOCATIONS. SPACING IS 25 FEET ON RADII LESS THAN 300 FEET.
3. NO W-BEAM DELINEATORS ARE PERMITTED WITHIN 75 FEET OF THE IMPACT HEAD OF ANY TANGENTIAL OR FLARED IMPACT ATTENUATION SYSTEM.
4. RETROREFLECTIVE SHEETING SHALL BE WHITE EXCEPT ON THE LEFT SIDE OF DIVIDED STREETS, HIGHWAYS, RAMPS, AND ONE WAY ROADS IN THE DIRECTION OF TRAVEL WHERE IT SHALL BE YELLOW.



WASHER
[FWC16a]



BUTTONHEAD BOLT

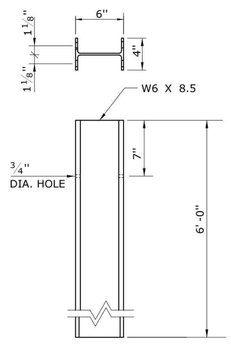


HEX NUT

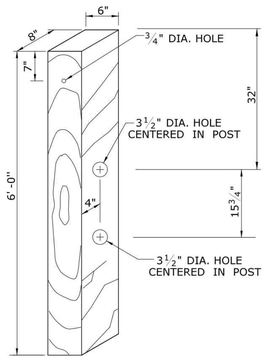
DESIGNATOR	L	T	INTENDED USE
FBB01	1-1/4"	1-1/8"	RAIL SPLICE BOLTS
FBB02	2"	1-3/4"	RUB RAIL BOLTS
FBB03	10"	4"	POST BOLTS (8" BLOCK OUTS)
	14"	4"	POST BOLT (12" BLOCK OUTS)
FBB04	18"	4"	POST BOLTS (2- 8"BLOCK OUTS)
	22"	4"	POST BOLT (CRT WOOD POST SYSTEM)

5/8" BUTTON HEAD BOLT(S) AND RECESSED NUT(S)

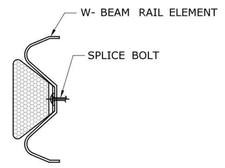
NOTE: AFTER GALVANIZING, THE NUT SHALL BE FREE RUNNING ON THE BOLT. DIAMETER SHOWN IS TYPICAL FOR ALL GUIDERAIL BOLTS. SEE DETAILS ABOVE FOR SPECIFIC LENGTHS.



STEEL POST
6'-0" LONG



CONTROL RELEASE TIMBER (CRT) POST
6' - 0" LONG



W-BEAM DELINEATOR INSTALLATION

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS — DATE

SECRETARY, PLANNING AND ZONING — DATE

CHAIRMAN, PLANNING AND ZONING — DATE

NOT TO SCALE	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 10:22:13-04'00'	APPROVED BY: James Fallon, P.E. 2020.07.15 10:16:08-04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: MASH W-BEAM HARDWARE	STANDARD SHEET NO.: HW-910_20

PLOTTED DATE: 7/1/2020

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT — DONALD E. BOMBARA — 12/12/2025 — No. 24823 — LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: NOT TO SCALE VERT.:
DATUM: HORZ.: - VERT.: -

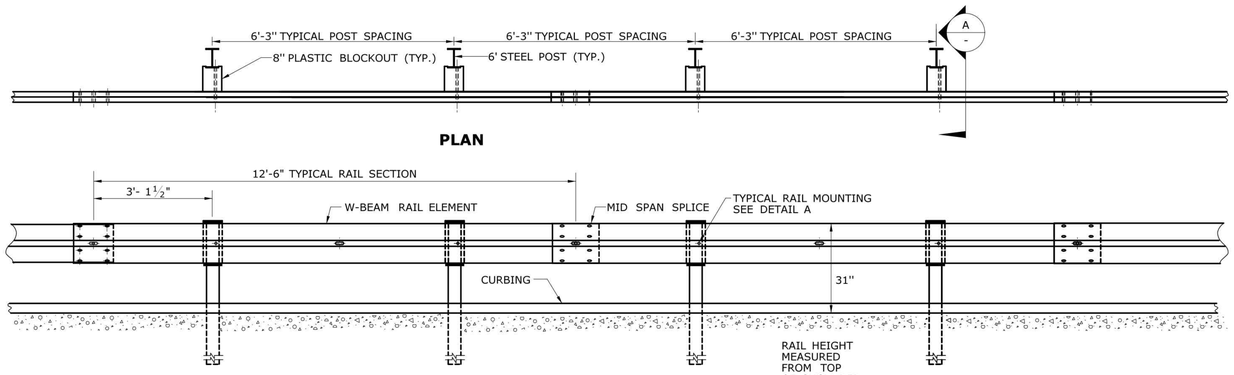
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COLLINS AEROSPACE
SITE DETAILS
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WINDSOR LOCKS — CONNECTICUT

PROJ. No.: 120.0170430.H75
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CD-506

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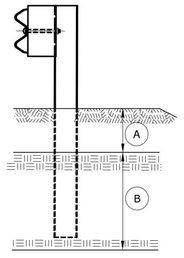


PLAN

ELEVATION
METAL BEAM RAIL (R-B MASH) GUIDERAIL

GENERAL NOTES:

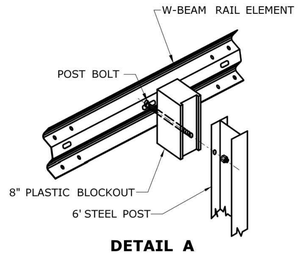
1. SEE SHEET HW-910_20 FOR MASH W-BEAM HARDWARE AND W-BEAM DELINEATOR DETAILS.
2. THREE BLOCKOUTS MAY BE USED FOR ONE POST ONLY. TWO BLOCKOUTS MAY BE USED FOR A SERIES OF POSTS. THE COST OF ADDITIONAL BLOCKOUTS AND LONGER BOLTS SHALL BE INCLUDED IN THE PRICE PER FOOT OF GUIDERAIL. EXTRA BLOCKOUTS AT TRANSITIONS TO BRIDGE PARAPETS SHOULD BE AVOIDED. DO NOT USE ADDITIONAL BLOCKS IF IT CAUSES THE POST TO BE DRIVEN BEYOND AN EMBANKMENT HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.
3. IF BLOCKOUTS DO NOT AVOID POST FROM OBSTRUCTION, ONE POST MAY BE OMITTED IF 50 FEET OF GUIDERAIL EXISTS ON BOTH SIDES OF LOCATION. USE METAL BEAM RAIL SPAN SECTION TYPE II OR III FOR MORE THAN ONE CONSECUTIVE OMITTED POST, SEE SHEET HW-910_24.
4. W-BEAM GUIDERAIL MAY BE PLACED 1' OR MORE FROM THE EDGE OF PAVEMENT ONLY ON SLOPES 10:1 OR FLATTER AND WITHOUT CURBING.
5. IF THE RAIL IS INSTALLED WITHIN 2' OF THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE SHOULDER SLOPE EXTENDED TO THE RAIL. IF THE RAIL IS INSTALLED BEYOND 2' FROM THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE GROUND DIRECTLY BELOW THE RAIL.
6. RAIL HEIGHT CONSTRUCTION TOLERANCE IS +/- 1 INCH.



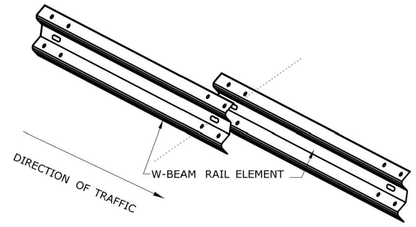
ELEVATION

CONDITION 1 :
IF SOIL DEPTH IS ≤ 18" DEEP (A) DRILL 20" DIA. HOLE 24" INTO LEDGE. (B)

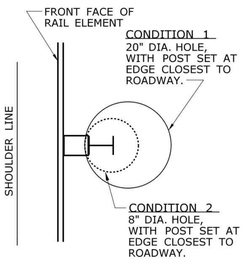
CONDITION 2 :
IF SOIL DEPTH IS > 18" DEEP (A) DRILL 8" DIA. HOLE 12" INTO LEDGE (B) OR TO THE DEPTH OF FULL EMBEDMENT WHICHEVER IS LESS.



DETAIL A
RAIL MOUNTING

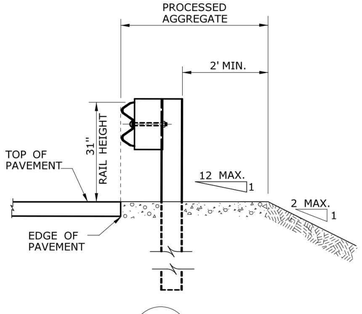


LAP W-BEAM RAIL SECTIONS
NOTE: EIGHT (8) SPLICE BOLTS PER JOINT



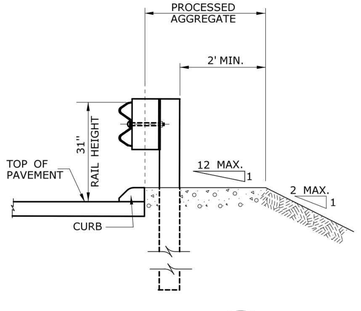
PLAN

GUIDERAIL POSTS IN ROCK



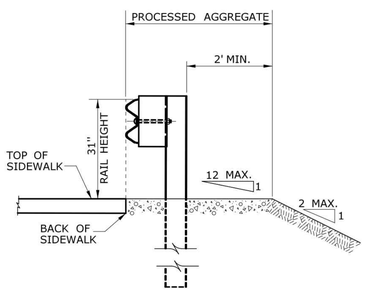
SECTION A -

NO CURB APPLICATION



SECTION A -

CURB APPLICATION



SECTION A -

SIDEWALK APPLICATION

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS — DATE

SECRETARY, PLANNING AND ZONING — DATE

CHAIRMAN, PLANNING AND ZONING — DATE

NOT TO SCALE ###	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 10:22:41-04'00'	APPROVED BY: James Fallon, P.E. 2020.07.15 10:16:41-04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: METAL BEAM RAIL (R-B MASH) GUIDERAIL	STANDARD SHEET NO.: HW-910_21

PLOTTED DATE: 7/1/2020

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT — DONALD E. BONNER — No. 24823 — LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: NOT TO SCALE; VERT.:
DATUM: HORZ.: -; VERT.: -

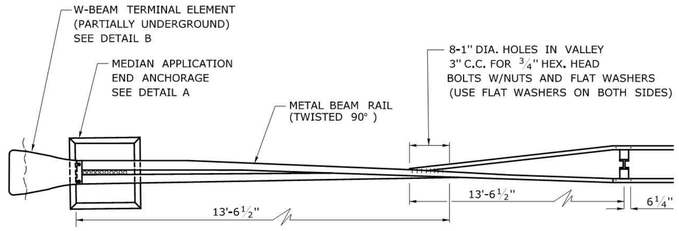
FUSS & O'NEILL
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HARTFORD, CT 06103
860.646.2469
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COLLINS AEROSPACE
SITE DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS — CONNECTICUT

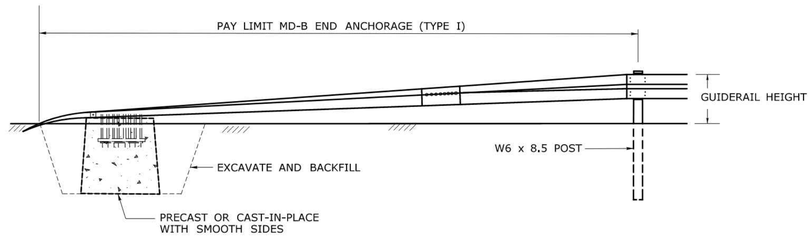
PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CD-507

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PLAN

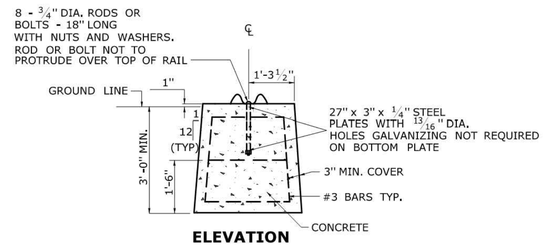


ELEVATION

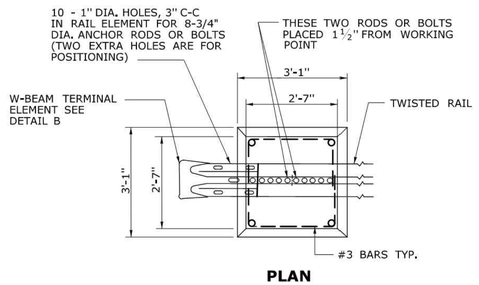
MD-B END ANCHORAGE TYPE I

GENERAL NOTE:

1. J-HOOK BOLTS MAY BE SUBSTITUTED FOR BOTTOM PLATE ANCHORAGE IN CONCRETE END ANCHORS HOUSING THE SAME SIZE, STRENGTH, AND LENGTH AS NOTED ON THE PLANS.



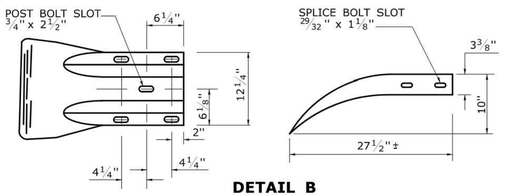
ELEVATION



PLAN

DETAIL A

CONCRETE END ANCHOR FOR MEDIAN RAIL



DETAIL B

W-BEAM TERMINAL ELEMENT

TO THE BEST OF MY KNOWLEDGE AND BELIEF
THIS PLAN CONFORMS TO THE CONDITIONS
AND REQUIREMENTS SET FORTH IN THE APPROVAL
GRANTED BY THE TOWN OF WINDSOR LOCKS
PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

	NOT TO SCALE ###	SIGNATURE BLOCK: OFFICE OF ENGINEERING 2800 BERLIN TURNPIKE NEWINGTON, CT 06111	SUBMITTED BY: Leo Fontaine, P.E. 2020.07.08 10:28:40-04'00'	APPROVED BY: James Fallon, P.E. 2020.07.15 10:19:46-04'00'	STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION	CTDOT STANDARD SHEET	STANDARD SHEET TITLE: MD-B END ANCHORAGE TYPE I	STANDARD SHEET NO.: HW-911_02

PLOTTED DATE: 7/1/2020

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT · DONALD E. BOMBARA · No. 24823 · LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: NOT TO SCALE VERT.:
DATUM: HORZ.: - VERT.: -

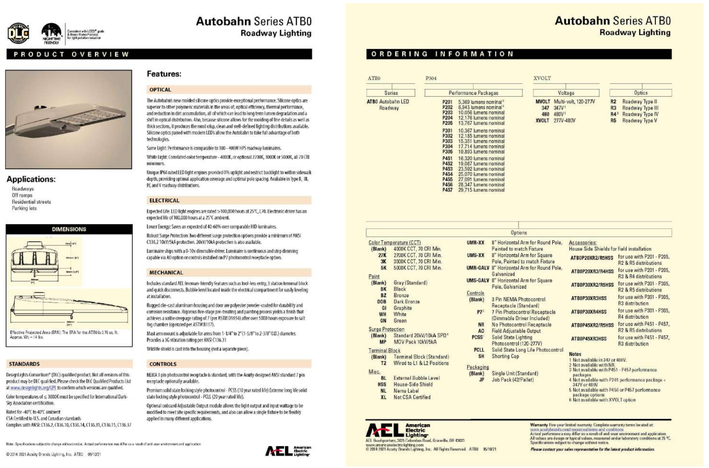
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SITE DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

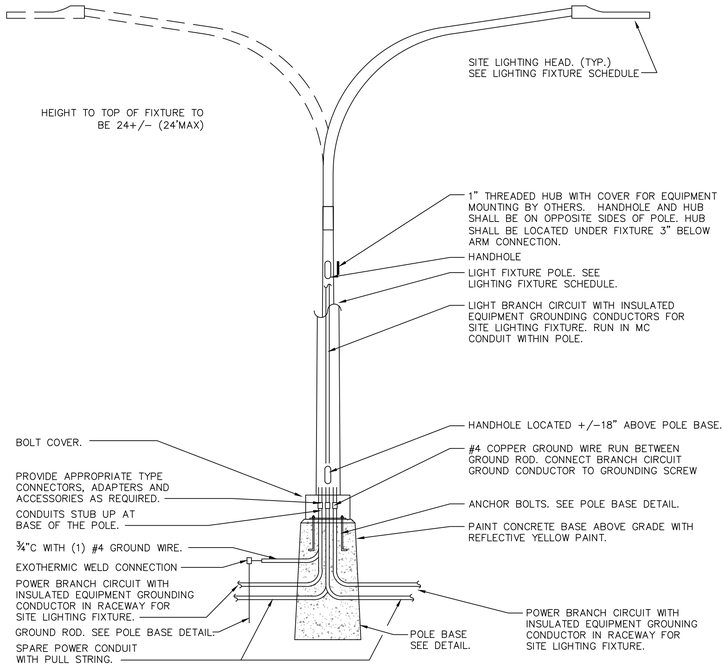
CD-508

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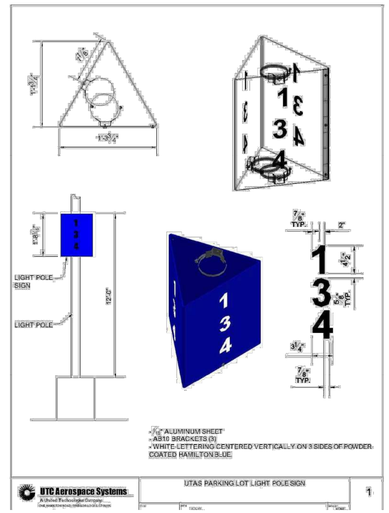


NOTES:
- POLE FOR FIXTURE TYPE B SHALL BE ROUND TAPERED ALUMINUM WITH BRACKET ARM DC6
  - PROVIDE VIBRATION DAMPERS
  - POLES SHALL RATED FOR 110 MPH WIND SPEED W/3 SECOND GUST FACTOR WITH TWO ARMS AND FIXTURES
  - TOTAL MOUNTING HEIGHT FROM GRADE TO LIGHT SOURCE MAXIMUM OF 24'
- TYPE B FIXTURES SHALL BE AEL AUTOBAHN SERIES ATBO P204 MVOLT (OPTICS BELOW) 4,000K
  - TYPE B1–3, TYPE 3 DISTRIBUTION, INSTALLED WITH ONE 6' BRACKET ARM AND FIXTURE
  - TYPE B2–3, TYPE 3 DISTRIBUTION, INSTALLED WITH TWO 6' BRACKET ARMS AND FIXTURES 180 DEG APART
  - TYPE YE2–4 IS EXISTING FIXTURE EQUAL TO AEL AUTOBAHN SERIES ATBO P304 AND MODELED IN THE PHOTOMETRIC CALCULATIONS AT 32' WITH 8' ARMS

FIXTURE DETAIL
SCALE: N.T.S.

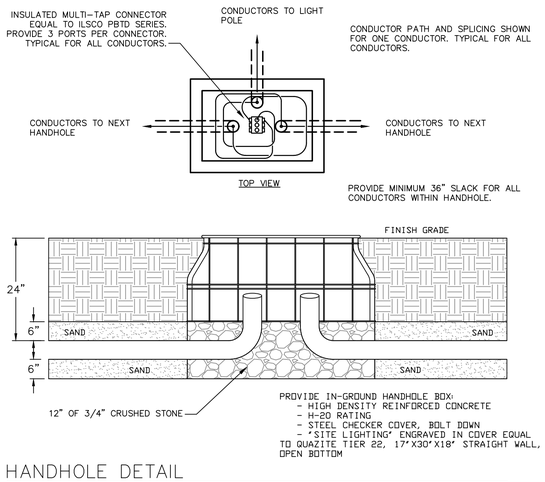


POLE DETAIL
SCALE: N.T.S.

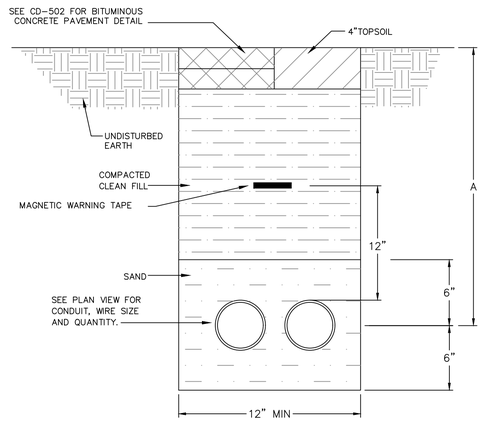


LIGHT POLE SIGN DETAIL
SCALE: NONE

LIGHT POLE SIGN DETAIL
SCALE: N.T.S.



HANDHOLE DETAIL
SCALE: N.T.S.



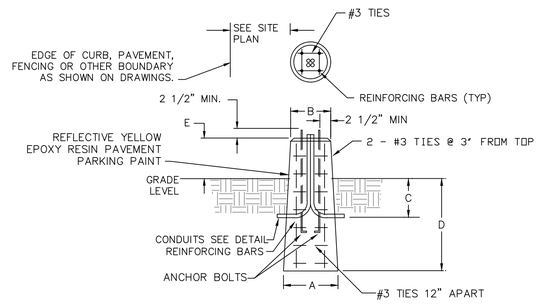
CONDUIT DEPTHS	
SERVICE	DIM "A"
SITE LIGHTING	24"
POWER	24"
DATA	24"

NOTE:
WHEN MULTIPLE CONDUITS ARE BURIED TOGETHER THERE SHALL BE A MINIMUM OF 2" CLEARANCE BETWEEN CONDUITS

BURIED CONDUIT DETAIL
SCALE: N.T.S.

LIGHTING FIXTURE SCHEDULE								
Symbol	Label	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
▫□	B1–3	AMERICAN ELECTRIC LIGHTING	ATB0 P204 MVOLT R3 4K	AUTOBAHN SMALL P204 PACKAGE ROADWAY TYPE III 4000K/5000K	1	12,470	.84	88.0
□▫□	B2–3	AMERICAN ELECTRIC LIGHTING	ATB0 P204 MVOLT R3 4K	AUTOBAHN SMALL P204 PACKAGE ROADWAY TYPE III 4000K/5000K	2	12,470	.84	176.0

LIGHT FIXTURE SCHEDULE
SCALE: NOT TO SCALE



1) NUMBER, PATTERN AND SIZE OF ANCHOR BOLTS TO BE SPECIFIED BY LIGHTING POLE MANUFACTURER.

2) 3,000 PSI CONCRETE CURED FOR 7 DAYS PRIOR TO BACKFILL.

3) SONITUBES SHALL BE CUT AND REMOVED DOWN TO SUBGRADE.

4) NO. 6 REINFORCING BARS, ASTM A 615, GRADE 60 WITH MINIMUM 2" COVER.

5) EACH LIGHTING POLE SHALL BE GROUNDED WITH 8' LONG 3/4" DIAMETER COPPER GROUNDING ROD AND #6 AWG BAR COPPER CONDUCTOR. TOP OF GROUNDING ROD SHALL BE 6" BELOW GRADE.

ROUND POLE BASE DIMENSIONS					
FIXTURE TYPE	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"	DIMENSION "D"	DIMENSION "E"
ALL	30"	30"	24"	60"	36"

POLE BASE DETAIL
SCALE: N.T.S.

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS — DATE

SECRETARY, PLANNING AND ZONING — DATE

CHAIRMAN, PLANNING AND ZONING — DATE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT — DONALD E. BONEY — No. 24023 — LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: NOT TO SCALE; VERT.:
DATUM: HORZ.: -; VERT.: -

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ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
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COLLINS AEROSPACE
SITE DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CD-509

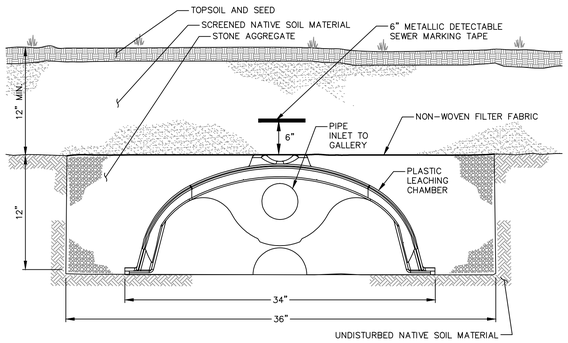
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LAYER STATE:
MS VIEW:
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB

SUBSURFACE SEWAGE DISPOSAL SYSTEM NOTES:

1. ASSESSORS MAP ID: 011–001–017 (LEGACY LOT 1) AND 011–001–019 (LEGACY LOT 2) MERGED AS SHOWN ON MAP #1867 FILED WITH THE WINDSOR LOCKS TOWN CLERK.
2. STAKEOUT: RETAIN A PROFESSIONAL LICENSED SURVEYOR TO COMPLETE STAKEOUT OF THE FOLLOWING PRIOR TO CONSTRUCTION AND TEST PIT EXCAVATION:
   A. LOT 1 PROPERTY BOUNDARIES AS DEPICTED ON MAP #1867 REFERENCED ABOVE.
   B. NEW VISITORS POST LOCATION AND FINISH FLOOR ELEVATION.
   C. TEST PIT AND PERCOLATION TEST HOLE LOCATIONS.
   D. SEPTIC TANK LOCATION AND ELEVATION.
   E. PRIMARY AND RESERVE LEACHING FIELD AND ELEVATION.
3. TEST PITS: EXCAVATE AT LEAST 2 TEST PITS UP TO 10–FEET DEEP FOR OBSERVATION BY THE ENGINEER AND NORTH CENTRAL DISTRICT HEALTH DEPARTMENT.
4. PERCOLATION TESTS: EXCAVATE AT LEAST 2 PERCOLATION TEST HOLES FOR OBSERVATION BY THE ENGINEER AND NORTH CENTRAL DISTRICT HEALTH DEPARTMENT.
   A. TYPICAL PERCOLATION TEST HOLES ARE 36" DEEP AND EXCAVATED BY HAND WITH A POST HOLE DIGGER OR LONG HANDLE SHOVEL.
   B. PROVIDE SUFFICIENT WATER SUPPLY IN SUITABLE, CLEAN CONTAINERS FOR ENGINEER TO CONDUCT THE TEST.
5. DESIGN BASED ON A 6–EMPLOYEE OFFICE (1,007 SF BUILDING/200 SF PER EMPLOYEE) X (20 GPD/EMPLOYEE)
   A. DESIGN FLOW: 6 EMPLOYEES X 20 GPD/EMPLOYEE = 120 GPD.
6. PROVIDE A 1,000 GALLON 2–COMPARTMENT SEPTIC TANK AND 1 ROW OF PLASTIC LEACHING CHAMBERS (QUICK4 STANDARD CHAMBER BY INFILTRATOR WATER TECHNOLOGIES, LLC.)
   A. PROVIDE A CONCRETE SEPTIC TANK FROM THE CT APPROVED CONCRETE SEPTIC TANK SUPPLIERS LIST.
   B. EXTEND SEPTIC TANK ACCESS COVERS TO GRADE. PROVIDE DUCTILE IRON FRAMES AND COVERS WITH AN AASHTO H–20 LOAD RATING.
7. NUMBER OF CHAMBERS REQUIRED:
   A. ASSUMED PERCOLATION RATE[1] = < 10.1 MINUTES PER INCH (MPI).
   B. INFILTRATOR QUICK4 STANDARD EFFECTIVE LEACHING AREA (ELA) = 3.6 SF/LF.
   C. APPLICATION RATE = 1.5 (FOR PERC RATE < 10.1 MPI).
   D. REQUIRED ELA = DESIGN FLOW/APPLICATION RATE = 120 GPD / 1.5 = 80.0
   E. LEACHING CHAMBERS REQUIRED = 80.0 ELA / 3.6 SF/LF = 22.2 LF OR 6 QUICK4 CHAMBERS (4.0FT LENGTH PER CHAMBER) = 24.0FT TOTAL SYSTEM LENGTH.
   F. LEACHING SYSTEM CENTER TO CENTER (C TO C) SPACING: ELA RATING OF 5.0 SF/LF OR LESS: 7 FEET MINIMUM AND AT LEAST 4 FEET LEACHING ROW EDGE TO EDGE.
8. REFER TO BUILDING PLUMBING DRAWINGS FOR BUILDING SEWER CONNECTION.
9. BUILDING SEWER PIPE FROM BUILDING TO SEPTIC TANK: AWWA C900 DR 18 PVC.
10. EFFLUENT DISTRIBUTION PIPE AFTER SEPTIC TANK: SDR–35 PVC.
11. RECORD PLAN: RETAIN A PROFESSIONAL LICENSED SURVEYOR TO COMPLETE A RECORD PLAN OF THE INSTALLED SUBSURFACE SEWAGE DISPOSAL SYSTEM.

NOTES:

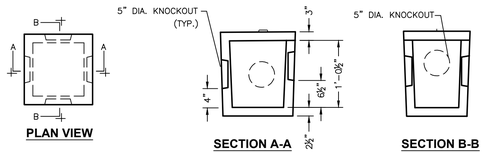
1. PERCOLATION RATE TO BE VERIFIED PRIOR TO CONSTRUCTION.



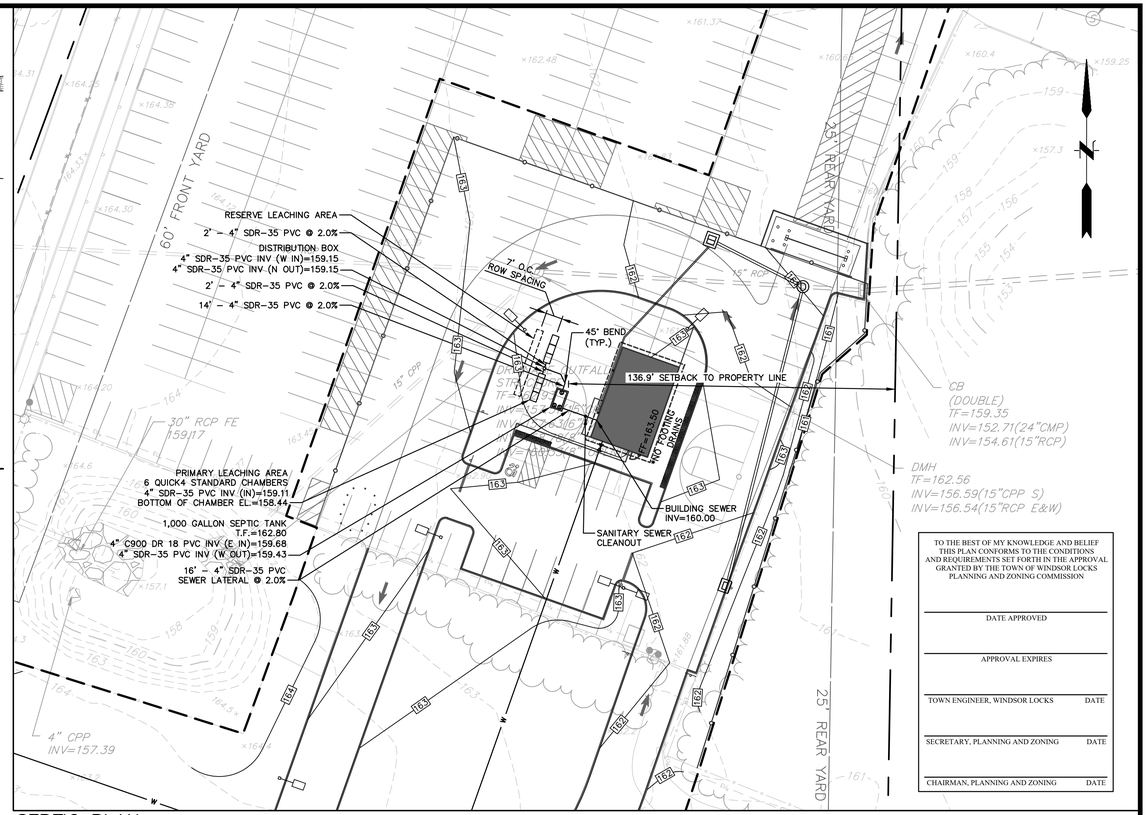
NOTE
1. MINIMUM LOADING: AASHTO H–10 LOADING.
2. PROVIDE WITH END CAPS.
3. HEIGHT OF INVERT ABOVE BOTTOM OF UNIT MAY VARY BY MANUFACTURER. A MINIMUM OF 2.0 FEET BETWEEN BOTTOM OF LEACHING SYSTEM AND SEASONAL HIGH GROUNDWATER IS REQUIRED.

12" LEACHING CHAMBER
NOT TO SCALE

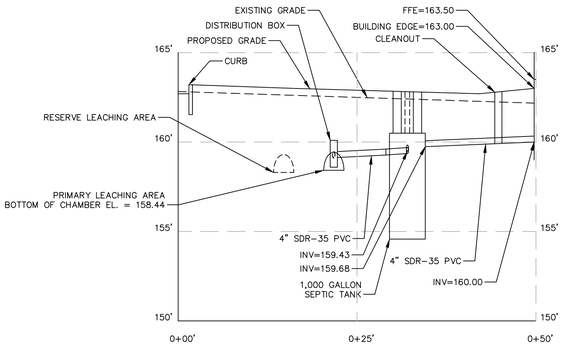
NOTES:
1. INSTALL BOXES LEVEL.
2. PROVIDE SPEED LEVELERS ON OUTLET PIPES TO LEACHING FIELD.
3. NUMBER OF OUTLET KNOCKOUTS MAY VARY BASED ON INSTALLATION LOCATION.
4. DIMENSIONS ARE BASED ON AN INDIVIDUAL MANUFACTURER. PRODUCTS FROM OTHER MANUFACTURERS MAY HAVE VARYING DIMENSIONS.



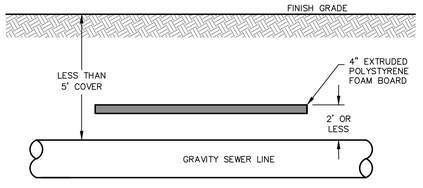
DISTRIBUTION BOX
NOT TO SCALE



SEPTIC PLAN
SCALE: 1"=30'

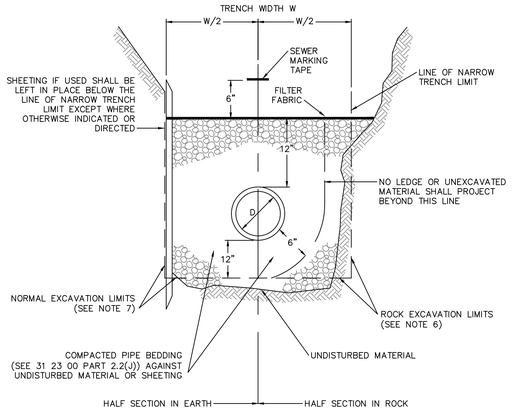


SEPTIC PROFILE
HORIZONTAL SCALE: 1"=10', VERTICAL SCALE: 1"=4'



NOTES:
1. THE WIDTH OF THE INSULATION SHALL EXTEND 1 PIPE DIAMETER BEYOND THE EDGE OF PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER. LENGTH OF THE INSULATION SHALL EXTEND 2' BEYOND THE PIPE TO BE COVERED.
2. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1" PIECE OF INSULATION CENTERED OVER SEAMS.

SEWER PIPE INSULATION
NOT TO SCALE



TYPICAL SEWER TRENCH
NOT TO SCALE

SANITARY SEWER PIPE TRENCH NOTES

1. DEPTH OF SEWER SHALL BE AS SHOWN ON DRAWINGS.
2. SEWER TRENCHES MAY BE EXCAVATED WIDER THAN TRENCH WIDTH W ABOVE THE "LINE OF NARROW TRENCH LIMIT." AT THE CONTRACTORS EXPENSE.
3. BELOW THE "LINE OF NARROW TRENCH LIMIT" THE TRENCH SHALL NOT BE EXCAVATED BEYOND THE TRENCH WIDTH W.
4. IF EXCAVATION AND BACKFILL BELOW NORMAL DEPTH IS REQUIRED, SHEETING MAY BE ORDERED.
5. SHEETING, IF USED, IN ALL CASES SHALL BE LEFT IN PLACE BELOW A LINE 1'–0" ABOVE THE TOP OF THE SEWER PIPE, UNLESS OTHERWISE INDICATED OR DIRECTED BY THE ENGINEER.
6. ALL ROCK WITHIN 3'–0" HORIZONTALLY OF THE ENDS OF BUILDING CONNECTIONS, BRANCHES AND STUBS, AND DOWN TO A HORIZONTAL PLANE 6" BELOW THE BOTTOMS OF SUCH ITEMS SHALL BE REMOVED.
7. TRENCH WIDTHS SHALL BE AS FOLLOWS:

NUMBER OF PIPE IN TRENCH	DIAMETER PIPE "D"	TRENCH WIDTH "W"	TRENCH LIMIT
ONE	12" AND SMALLER	4'–0"	4'–0"
TWO	12" AND SMALLER	7'–0"	7'–0"

8. SEWER MARKING TAPE SHALL BE INSTALLED A MINIMUM OF 18" ABOVE THE SANITARY SEWER, FORCE MAIN AND SERVICE CONNECTION PIPE.
9. SANITARY SEWER PIPE AND SERVICE CONNECTION PIPE SHALL HAVE FILTER FABRIC INSTALLED ON TOP OF THE PIPE BEDDING AS SHOWN ON THE DETAILS.

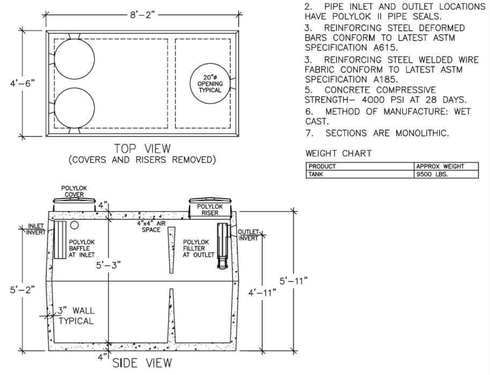
1000 GALLON REGULAR SEPTIC TANK

TANK DESIGN SPECIFICATION CONFORMS TO LATEST: ASTM DESIGNATION C1227

NOTES:
1. JOINT SEALANT IS BUTYL RUBBER MASTIC TYPE SEAL THAT CONFORMS TO LATEST AASHTO SPECIFICATION M–198. MEETS FEDERAL SPECIFICATION SS–S–0021(210–A).
2. PIPE INLET AND OUTLET LOCATIONS HAVE POLYLOK II PIPE SEALS.
3. REINFORCING STEEL DEFORMED BARS CONFORM TO LATEST ASTM SPECIFICATION A615.
3. REINFORCING STEEL WELDED WIRE FABRIC CONFORM TO LATEST ASTM SPECIFICATION A185.
5. CONCRETE COMPRESSIVE STRENGTH– 4000 PSI AT 28 DAYS.
6. METHOD OF MANUFACTURE: WET CAST.
7. SECTIONS ARE MONOLITHIC.

WEIGHT CHART

PRODUCT	APPROX. WEIGHT
TANK	9500 LBS.



UNITED CONCRETE PRODUCTS INC.
173 CHURCH STREET TEL. 800 234–3119 FAX. (203) 265–4941
YALESVILLE, CT 06492 (203) 269–3119

1,000 GALLON SEPTIC TANK
NOT TO SCALE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT, DONALD E. BONOMO, No. 24823, LICENSED PROFESSIONAL ENGINEER

TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

SCALE: HORZ.: AS NOTED VERT.:
DATUM: HORZ.: - VERT.: -
LAYER STATE:

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ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
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COLLINS AEROSPACE
SEPTIC PLAN AND DETAILS
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

CD-510

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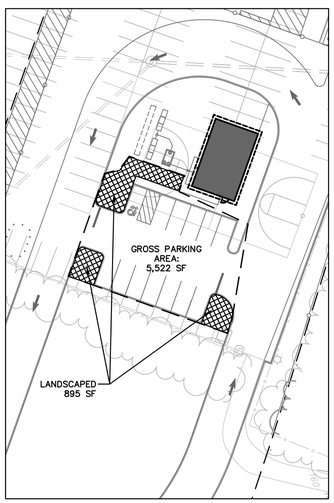
TABLE OF LANDSCAPE REGULATIONS			
SECTION	DESCRIPTION	REQUIRED	PROVIDED
705.F.7 PARKING LOT LANDSCAPING	ANY PARKING AREA SHALL HAVE AT LEAST 15% OF ITS GROSS PARKING LOT AREA, AS DETERMINED BY THE COMMISSION, IN LANDSCAPED AREAS.	15% LANDSCAPED AREAS 5,522 SF GROSS PARKING LOT AREA X 0.15 = 828 SF	20.0% (1,156 SF)
	AT LEAST ONE CANOPY TREE WITH A MIN. SIZE OF 2-1/2" CALIPER SHALL BE PROVIDED FOR EACH 10 PARKING SPACES.	1 TREE 13 SPACES/10 = 1.3	2 TREES

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QTY.	SIZE
	TREES			
QR	QUERCUS RUBRA	RED OAK	2	2½ – 3"
	SHRUBS			
AA	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	RED CHOKEBERRY	11	2.5 –3'
IG	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	6	2.5 –3'
HO	HYDRANGEA 'THE ORIGINAL'	THE ORIGINAL HYDRANGEA	7	2.5 –3'
RA	RHUS AROMATICA 'GRO LOW'	GROW-LOW SUMAC	25	18" SPRD
RW	ROSA 'WHITE 'MEIDILAND'	WHITE GROUNDCOVER ROSE	42	18" SPRD

PLANTING NOTES:

1. ALL PLANTING MATERIAL TO BE NURSERY GROWN STOCK SUBJECT TO A.A.N. STANDARDS
2. PROVIDE ALL PLANTS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWINGS AND LISTED IN THE PLANT LIST. IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT LIST AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER NUMBER SHALL APPLY.
3. ALL PLANTS SHALL BE APPROVED PRIOR TO INSTALLATION AND SHALL BE LOCATED ON SITE BY THE CONTRACTOR FOR THE APPROVAL OF THE OWNER. ANY INSTALLATIONS WHICH WERE NOT APPROVED BY THE OWNER AND WHICH ARE SUBSEQUENTLY REQUESTED TO BE MOVED WILL BE DONE AT THE CONTRACTORS EXPENSE.
4. PRECISE LOCATION OF ITEMS NOT DIMENSIONED ON THE PLAN ARE TO BE FIELD STAKED AND SHALL BE SUBJECT TO THE REQUIREMENTS SPECIFIED IN THE PREVIOUS NOTE.
5. ALL SHRUB MASSINGS AND TREE PITS SHALL BE MULCHED TO A DEPTH OF 3" WITH MULCH.
6. TREES SHALL NOT BE STAKED UNLESS OTHERWISE NOTED.
7. BE RESPONSIBLE FOR ANY DAMAGED VEGETATION AND SHALL REPLACE OR REPAIR ANY DAMAGED MATERIAL, AT THEIR OWN EXPENSE. CONTACT "CALL BEFORE YOU DIG" AT 1-800-922-4455 PRIOR TO CONSTRUCTION.
8. ALL SHRUB AND GROUNDCOVER PLANTING AREAS SHALL HAVE CONTINUOUS BEDS OF TOPSOIL 12" DEEP. ALL SOD AND HYDROSEED AREAS SHALL HAVE A MINIMUM TOPSOIL BED OF 6".
9. LOCATE ALL UTILITIES IN THE FIELD. WHERE PLANT MATERIAL MAY INTERFERE WITH UTILITIES, NOTIFY THE LANDSCAPE ARCHITECT TO COORDINATE THEIR INSTALLATION.
10. FOR PLANTING SOIL MIX, SEE SPECIFICATIONS OR PLANTING DETAILS.
11. ALL EXISTING RILL, GULLY OR CHANNEL EROSION SHALL BE FILLED WITH APPROPRIATE BACKFILL MATERIAL, FINE RAKED, SCARIFIED AND STABILIZED WITH APPROPRIATE VEGETATIVE MATERIAL AND / OR APPROPRIATE SEDIMENTATION AND EROSION CONTROL MEASURES.
12. ADJUSTMENTS IN THE LOCATION OF THE PROPOSED PLANT MATERIAL AS A RESULT OF EXISTING VEGETATION TO REMAIN SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
13. PROVIDE ALL MAINTENANCE REPAIR AND REPLACEMENT OF PLANT MATERIAL, AS REQUIRED, FOR THE DURATION OF THE PROJECT AND SUBSEQUENT WARRANTY PERIOD.
14. PLANTINGS INSTALLED IN THE DRY SUMMER MONTHS AND / OR LAWN SEEDED OUT OF SPRING OR FALL PERIODS, IF ALLOWED BY OWNER, WILL REQUIRE AGGRESSIVE IRRIGATION PROGRAMS AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED BY THE OWNER.
15. UPON COMPLETION OF PLANTING, REMOVE FROM SITE ALL EXCESS SOIL, MULCH, AND MATERIALS AND DEBRIS RESULTING FROM WORK OPERATIONS. CLEAN UP SHOULD BE COMPLETED AT THE END OF EACH WORKING DAY. RESTORE TO ORIGINAL CONDITIONS ALL DAMAGED PAVEMENTS, PLANTING AREAS, STRUCTURES AND LAWN AREAS RESULTING FROM LANDSCAPING OPERATIONS.
16. SURVEY, LOCATE, AND PROTECT ALL TREES WITHIN AREAS SHOWN AS "EXISTING VEGETATION TO REMAIN" WITHIN THE DEVELOPMENT ENVELOPE FOR REVIEW BY THE LANDSCAPE ARCHITECT PRIOR TO CLEARING OPERATIONS.
17. RESEED ALL DISTURBED AREAS.



PARKING AREA CALCULATION:

SCALE: 1" = 40'



TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS PLAN CONFORMS TO THE CONDITIONS AND REQUIREMENTS SET FORTH IN THE APPROVAL GRANTED BY THE TOWN OF WINDSOR LOCKS PLANNING AND ZONING COMMISSION

DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE

NOT FOR CONSTRUCTION

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
0	12/12/2025	SITE PLAN MODIFICATION SUBMISSION	DC	NR

SEAL: STATE OF CONNECTICUT, DONALD E. BONNER, No. 24823, LICENSED PROFESSIONAL ENGINEER

SCALE: HORZ.: 1" = 30' VERT.: -
DATUM: HORZ.: - VERT.: -
GRAPHIC SCALE 0 15' 30' 60'

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ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
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COLLINS AEROSPACE
LANDSCAPE PLAN
HAMILTON ROAD ENTRANCE IMPROVEMENT PROJECT
WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: 12/12/2025

LP-101

File: \\private\DFS\CadProj\DWG\P2017\04300\H70\Civil\Plan\20170430H70_LND01.dwg Layout: LP-101 Plotted: 2025-12-11 12:35 PM Saved: 2025-12-09 11:54 AM User: Daniel Chiburis
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:

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PLANNING AND ZONING COMMISSION

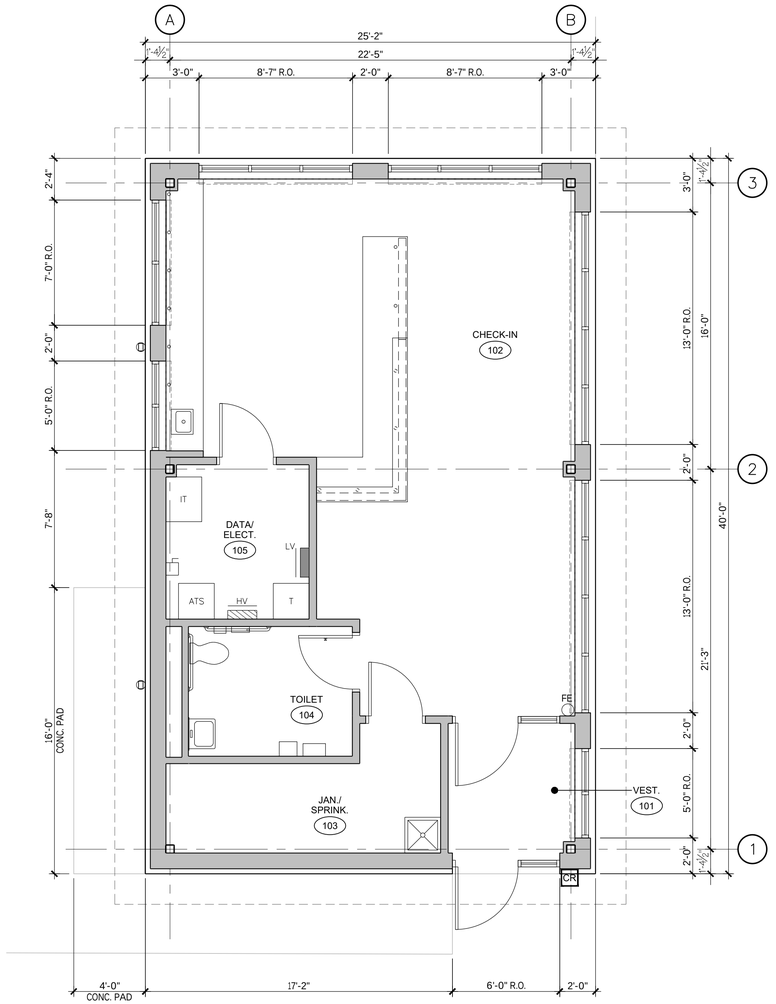
DATE APPROVED

APPROVAL EXPIRES

TOWN ENGINEER, WINDSOR LOCKS DATE

SECRETARY, PLANNING AND ZONING DATE

CHAIRMAN, PLANNING AND ZONING DATE



1 CONSTRUCTION PLAN
SCALE: 1/4" = 1'-0"

N

CHK
Architects

Greystone Court West
573 Hopmeadow Street
PO Box 95
Simsbury, CT 06070

P: 860-651-3777
F: 860-651-7316
E: info@chkarch.com

ARCHITECTURE - INTERIOR DESIGN

Consultants

MEP ENGINEERS
INNOVATIVE ENGINEERING SERVICES
203-467-4370

STRUCTURAL ENGINEERS
SZEWCZAK, KILTY & FLUHR, P.C.
860-677-4570

COLLINS AEROSPACE
NEW VISTORS POST

1 HAMILTON ROAD
WINDSOR LOCKS, CONNECTICUT

Revisions

No.	Date	Description

Date	12/12/25
Scale	1/4" = 1'-0"
Project Number	25115
Drawn By	EdeL

CONSTRUCTION PLAN

A101

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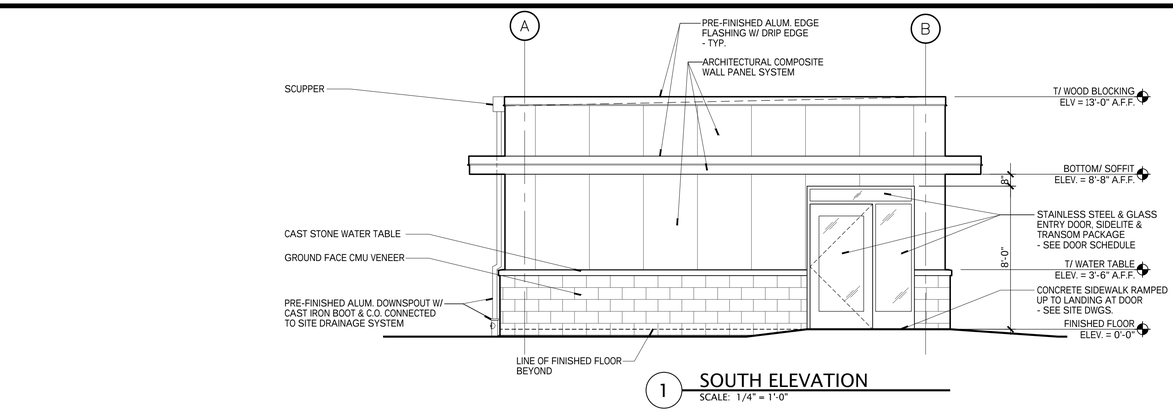
DATE APPROVED

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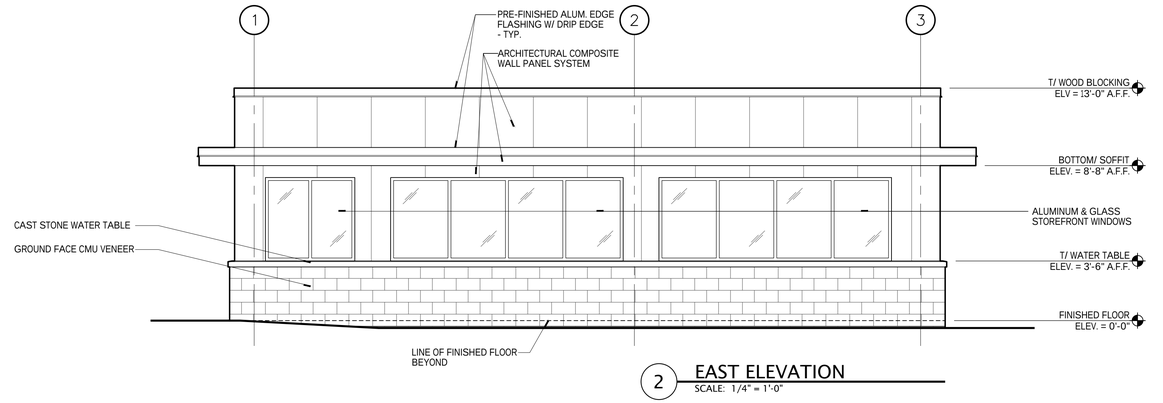
TOWN ENGINEER, WINDSOR LOCKS — DATE

SECRETARY, PLANNING AND ZONING — DATE

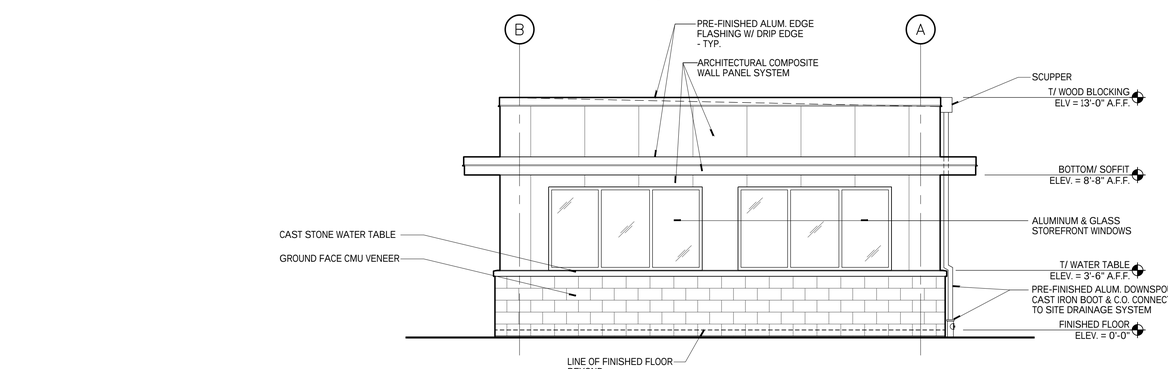
CHAIRMAN, PLANNING AND ZONING — DATE



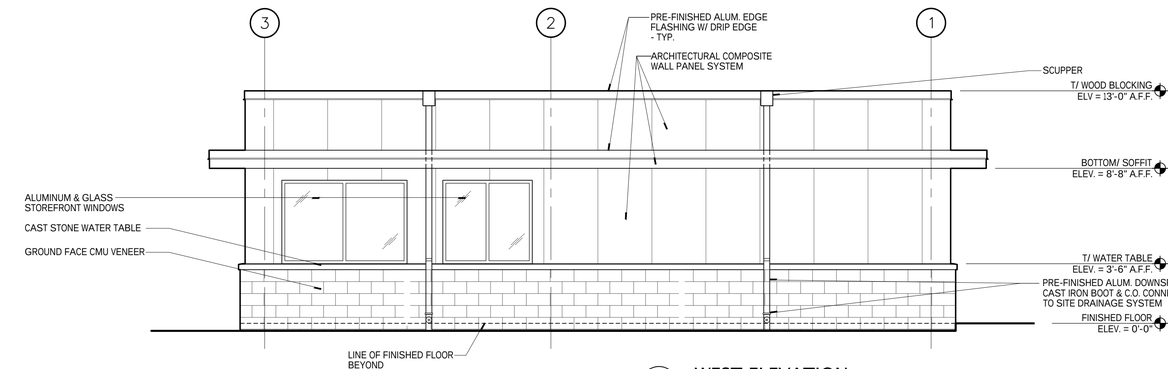
1 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



2 EAST ELEVATION
SCALE: 1/4" = 1'-0"



3 NORTH ELEVATION
SCALE: 1/4" = 1'-0"



4 WEST ELEVATION
SCALE: 1/4" = 1'-0"

CHK Architects
Greystone Court West
573 Hopmeadow Street
PO Box 95
Simsbury, CT 06070

P: 860-651-3777
F: 860-651-7316
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COLLINS AEROSPACE NEW VISTORS POST

1 HAMILTON ROAD
WINDSOR LOCKS, CONNECTICUT

ARCHITECTURE - INTERIOR DESIGN

Revisions

No.	Date	Description

Date	12/12/25
Scale	1/4" = 1'-0"
Project Number	25115
Drawn By	EdeL

EXTERIOR ELEVATIONS

A201

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One Financial Plaza, 15th Floor
Hartford, CT 06103
860.646.2469
www.fando.com

Stormwater Management Report

Hamilton Road Entrance Improvements Project

Collins Aerospace
Windsor Locks Campus

December 2025

Prepared for:

Collins Aerospace
1 Hamilton Road
Windsor Locks, CT 06096

Project No. 120.0170430.H75

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Connecticut College Pedestrian Bridge

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2 Existing & Proposed Watershed Results

3 Runoff Curve Numbers

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1 Site Location Map

2 NRCS Web Soil Survey Map

3 FEMA Flood Insurance Rate Map

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B Hydrologic Model Analysis – Existing & Proposed Conditions

C Proposed Catchment Areas

D Water Quality Calculations

1 Executive Summary

Collins Aerospace plans to construct a new visitor post to be located off of Hamilton Road in Windsor Locks, CT. The project will also include associated site improvements including visitor entrance, employee entrance, inspection station, dedicated truck lanes, and visitors parking lot.

The proposed project area is within Industrial Zone 3 (I-3) in Windsor Locks. Within the Collins Aerospace campus, the project area is bounded by Hamilton Road to the west, parking lots to the north, and lightly wooded areas to the east and south. Existing land coverage of the 12.80-acre design area includes paved parking, roads, sidewalks, lawn, and woods. A site location map for the project site can be found in *Figure 1*.

Overall drainage patterns of the site will remain consistent with existing conditions. In the proposed condition, stormwater near the new visitor post will be collected through catch basins and conveyed through a pipe network that discharges to existing onsite stormwater infrastructure. Curb leak offs and drainage swales will convey roadway runoff to an at grade detention basin to mitigate the increase in impervious area.

Existing and proposed hydrologic conditions (*Appendix A)* for the design area were evaluated. Stormwater runoff generated by the existing site within the project area, drains to two design points. Existing stormwater infrastructure routes eastward and existing overland runoff flows south and east into the adjacent wooded areas. To maintain existing drainage patterns, the proposed site and detention basin will continue to drain towards the same two design points.

The evaluation demonstrates that stormwater peak discharge flowrates of the proposed site conditions for the 2-, 10-, 25-, and 100-year storm events are reduced when compared to existing conditions. Attenuation in stormwater peak discharge was achieved with the implementation of the proposed detention basin. Additionally, proposed stormwater piping is adequately sized to convey stormwater for the 10-year design storm.

2 Existing Conditions

The project area in the existing condition consists of existing paved parking, lawn, and woods on the east side of Hamilton Road on the Collins Aerospace campus. Overall, the project area is relatively flat, then moderate to steep slopes to the south and east within the adjacent wooded areas. The total impervious area within the design area is 6.69-acres (52.3%).

An existing stormwater detention basin is located within the project area. This basin was constructed during a previous project: Parking Area Pavement Improvements, Lots G & H, Hamilton Sundstrand Corporation, Windsor Locks, Connecticut dated July 25, 2014, prepared by Fuss & O'Neill, Inc. An area of approximately 1.23 acres was planned to function as paved parking in the previous project, however, was never paved due to environmental restrictions. This indicates that the existing detention basin was designed for a larger flow than it will be receiving. No infiltration is assumed at the existing detention basin.

Currently, stormwater runoff is captured on-site with an existing stormwater drainage conveyance network, which ultimately discharges eastwards. Existing onsite stormwater infrastructure includes manholes, catch basins, piping, and an existing at grade detention basin, which functions as an on-site water-quality measure to treat stormwater runoff.

The existing hydrologic evaluation, included in *Appendix A,* determined that the project's 12.80-acre design watershed area is comprised of three (3) subcatchment areas, which drain to two (2) design points. The design points are as follows:

- **Design Point 10L** is a 24" corrugated metal pipe located at the east edge of the project area that drains eastwards. Catch basins within the existing parking areas and the overflow structure for the existing detention basin are conveyed to this design point.

- **Design Point 20L** is a wooded hillside at the southeast corner of the project area. Any overland runoff that is not captured by the onsite stormwater system ultimately ends up flowing down this hillside in a southward direction.

Existing conditions, drainage characteristics, and discharge locations for the subcatchments are described below. The subcatchment areas are illustrated on sheet DR-101, which is included in *Appendix A*.

- **Subcatchment 10S** is a paved parking lot to the northwest of the project area that drains via catch basins and pipes to the existing detention basin (Pond 10P) which ultimately routes to Design Point 10L. A portion of Subcatchment 10S was planned to be paved but never was due to environmental restrictions.

- **Subcatchment 11S** is a paved parking lot to the northeast of the project area that drains via catch basins and pipes to Design Point 10L.

- **Subcatchment 20S** is a sparsely developed area to the southeast of the project area featuring lawn, woods, and a portion of Hamilton Road. Subcatchment 20S drains southward and eastward downhill to Design Point 20L.

The existing detention basin system is described below:

- **Pond 10P** is an existing at grade detention basin located at the east edge of Hamilton Road. The detention basin features an overflow catch basin inlet structure that conveys excess stormwater to Design Point 10L. Pond 10P was sized to attenuate an additional 1.23 acres of planned parking area within Subcatchment 10S, which was never paved due to environmental restrictions.

The Natural Resources Conservation Service (NCRS) characterizes the site with the Hydrological Soil Types presented in Table 1. Most of the design area features soil rating A in undeveloped areas to the east and south, and soil rating D underneath parking and Hamilton Road to the west and north. Soil rating B is sparsely present at the northeast edge. The relevant NRCS Soil Survey Map is included as *Figure 2.*

Table 1
Hydrological Soil Types

Map Unit Symbol	Map Unit Name	Soil Rating
36A	Windsor loamy sand, 0 to 3 percent slopes	A
38E	Hinckley loamy sand, 15 to 45 percent slopes	A
306	Udorthents-Urban land complex	B
307	Urban land	D

Federal Emergency Management Agency (FEMA) mapping shows that no portion of the project site lies within the 500-year flood plain, denoted as "Zone X". A portion of the relevant FEMA – Flood Insurance Rate Map for Town of Windsor Locks, Connecticut (Panel Number 09003C0216F, Effective Date: September 26, 2008) is presented as *Figure 3*.

The site is located within the Farmington Regional Basin of the Connecticut Major Basin, specifically within the Farmington River (4300) sub-basin area as indicated within *Figure 4*.

3 Proposed Conditions

Under proposed conditions, a new visitor entrance, employee entrance, inspection station, dedicated truck lanes, and visitors parking lot will be constructed along the existing Hamilton Road entrance and parking lot. Runoff from the proposed building and parking lots will be captured by a network of catch basins and will continue to drain eastward to the existing 24" corrugated metal pipe (designated as Design Point 10L). Runoff from onsite roadways will flow through paved leakoffs and a lawn swale to be detained within a proposed at grade detention basin. This runoff will then be conveyed southward and released using a level spreader down the hillside designated as Design Point 20L, consistent with existing conditions. Proposed drainage improvements include catch basins, lawn swales, paved leak offs, and an at grade detention basin.

The project area was analyzed to evaluate proposed hydrologic conditions. The proposed watershed analysis design points are consistent with the existing watershed analysis. Construction of the proposed site improvements will result in an increase of approximately 0.28 acres of impervious areas within the analyzed portion of the watershed resulting in 6.97 total acres of impervious area (54.5%). Due to the expansion of the impervious area, it will be necessary to detain and attenuate peak flowrates and water quality volume. Attenuation of peak flows and water quality treatment will be achieved using one (1) proposed at grade detention basin with level spreader.

The proposed hydrologic evaluation, included in *Appendix A*, determined that the project area is comprised of five (5) subcatchment areas, which drain to either existing detention basin (Pond 10P), proposed detention basin (Pond 20P), directly to the existing 24" corrugated metal pipe that routes eastward (Design Point 10L), or directly to the wooded hillside that drains southward (Design Point 20L). All subcatchment areas ultimately discharge to the same two (2) design points as the existing conditions analysis, Design Point 10L and Design Point 20L. Each at grade detention basin is described below:

- **Pond 10P** is an existing at grade detention basin located at the east edge of Hamilton Road. The detention basin features an overflow catch basin inlet structure that conveys discharged stormwater to Design Point 10L. Pond 10P was sized to attenuate an additional 1.23 acres of planned parking area within Subcatchment 10S, which was never paved due to environmental restrictions.

- **Pond 20P** is a proposed at grade stone bottom detention basin to be located at the southern edge of the project area adjacent to the proposed entry roadways. The detention basin features an overflow curb weir with level spreader that conveys discharged stormwater to Design Point 20L.

The evaluated subcatchment areas are depicted on the Proposed Watershed Analysis Map found in *Appendix A.* The design points remain consistent with existing conditions as follows:

- **Design Point 10L** is a 24" corrugated metal pipe located at the east edge of the project area that drains eastwards. Catch basins within the existing parking areas and the overflow structure for the existing detention basin are conveyed to this design point.

- **Design Point 20L** is a wooded hillside at the southeast corner of the project area. Any overland runoff that is not captured by the onsite stormwater system ultimately ends up flowing down this hillside in a southward direction.

Proposed conditions, drainage characteristics, and discharge locations for the subcatchments are as follows:

- **Subcatchment 10S** is a paved parking lot to the northwest of the project area that drains via catch basins and pipes to the existing detention basin (Pond 10P) which ultimately routes to Design Point 10L. A portion of Subcatchment 10S was planned to be paved but never was due to environmental restrictions.

- **Subcatchment 11S** is a paved parking lot to the northeast of the project area that drains via catch basins and pipes to Design Point 10L. The proposed visitor post and parking lot will be situated within this subcatchment area.

- **Subcatchment 20S** is a sparsely developed area to the southeast of the project area featuring lawn, woods, and a portion of Hamilton Road. Subcatchment 20S drains southward and eastward downhill to Design Point 20L. This subcatchment will reduce in size from existing conditions to accommodate the proposed entry roadways and detention basin.

- **Subcatchment 21S** is the area of proposed lawn and entry roadways that drains through paved leakoffs to proposed detention basin (Pond 20P). Excess runoff within Pond 20P will be controlled by an overflow curb weir with level spreader that discharges to Design Point 20L.

- **Subcatchment 21.1S** is the area of proposed lawn and entry roadways that drains through paved leakoff to proposed detention basin (Pond 20P), similar to Subcatchment 21S. However, this Subcatchment features a lawn swale and is designated separately for swale sizing purposes. Excess runoff within Pond 20P will be controlled by an overflow curb weir with level spreader that discharges to Design Point 20L.

Results from modeling of pre- and post-development peak flowrates at Design Point 10L and Design Point 20L are shown in the table below. These results are taken from the HydroCAD models of existing and proposed conditions found in *Appendix B.*

Table 2
Existing & Proposed Watershed Results

Storm Event	Design Point – 10L			Design Point – 20L		
	Peak Flowrate Discharge (cfs)			Peak Flowrate Discharge (cfs)		
	Existing	Proposed	Delta	Existing	Proposed	Delta
2	17.38	14.64	-2.74	0.02	0.01	-0.01
10	27.62	23.50	-4.12	0.38	0.32	-0.06
25	34.56	28.90	-5.66	1.67	1.58	-0.09
100	44.46	37.20	-7.26	4.85	4.54	-0.31

When compared to existing conditions, the proposed watershed modeling indicates that the development will decrease peak flow rates at both Design Point 10L and Design Point 20L for all design storm events. In addition to decreasing peak flow rates for each design storm, the 2023 Connecticut Stormwater Quality Manual recommends to reduce the 2-year post-development peak flow rate to 50% of the 2-year pre-development peak flow rate. The 2-year peak flow rate at Design Point 20L will be reduced by 50%, from 0.02 cfs to 0.01 cfs. The 2-year peak flow rate at Design Point 10L will be reduced by 15%. Due to the nature of the limited project area, meeting the 50% 2-year peak flow rate reduction at Design Point 10L is not practical, as most of the contributing runoff area is outside the limit of work.

4 Construction Stormwater Management and Soil Erosion and Sedimentation Control

A detailed Erosion and Sedimentation (E&S) control plan has been prepared for the site. During construction, measures will be taken to reduce erosion and manage sedimentation from disturbed surfaces. The following Best Management Practices (BMPs) will be employed:

- Stormwater inlet protection will be installed at all stormwater collection structures to remove sediments from the run-off prior to entering the receiving drainage systems.
- Silt fence and compost filter socks will be installed at clearing limits and the down-gradient perimeter of the disturbed portion of the work area.
- Temporary compost filter sock check dams will be installed within proposed swales during construction.
- Crushed stone construction entrances will be installed at main points of entry to prevent tracking of sediment into existing roadways.
- Erosion control matting will be installed on slopes steeper than 3(H):1(V) and in areas predicted to experience high stormwater flows.

These BMPs will protect downstream stormwater collection systems following construction. The plan has been prepared in accordance with the 2023 Erosion and Sedimentation Control Guidelines. Erosion and sedimentation control (E&S) details and narratives for construction periods are provided in the site plans. E&S details and procedures are consistent with the 2023 Guidelines for Soil Erosion and Sedimentation Control, and local requirements.

5 Post-Construction Stormwater Management

The water quality of stormwater runoff from the developed site will be improved using Best Management Practices (BMP's). In addition to the existing detention basin, one (1) proposed at grade detention basin will be used to achieve the removal of 90% of Total Suspended Solids that may be present in the stormwater runoff.

The design meets the requirements of the Connecticut General Permit of the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and the Connecticut Stormwater Quality Manual (CT SWQM). The proposed detention basin has adequate capacity to contain the contributing Water Quality Volume (WQV). This storage will be provided beneath the elevation of the lowest outlet of the proposed detention basin. WQV is equivalent to the first 1.3 inches of rainfall in any storm event that should be captured and treated to remove a majority of the stormwater pollutants on an annual basis. Water quality calculations based on Chapter 4 of the CT SWQM are provided in *Appendix D*.

To ensure these measures continue to operate adequately over time, the following maintenance procedures should be followed:

- **Inlet Sumps** - Catch basin sumps must be inspected at regular intervals and cleaned when necessary. At a minimum, inspections should be conducted twice per year, once in the Spring and again in the Fall. More inspections may be required during winter months, when heavy sanding operations may lead to rapid sediment accumulation within the structure. Cleaning operations are typically done using a vacuum truck.

- **Detention Basin** – Inspect after major storms (1 inch or more of precipitation) in the first few months following construction. Remove trash and organic debris (leaves) in the Spring and Fall. Remove sediment from the basin when the basin volume has become reduced significantly. Remove vegetation within the basin and within 25 feet of spillway and downstream embankments that may hold back water. Maintenance activities such as sediment removal, mowing, and repairs should be performed with rakes and light-weight equipment rather than heavy construction equipment to avoid soil compaction. Heavy equipment may be used for sediment removal and other maintenance activities if the equipment is positioned outside the limits of the system. Heavy construction equipment should not be allowed within the limits of the system for maintenance purposes

The design measures incorporate commonly used Best Management Practices and follow the Connecticut Stormwater Quality Manual and the Connecticut and federal stormwater regulations.

6 Methods

The drainage analysis for the proposed development was completed using the HydroCAD Software Solutions computer program. The HydroCAD program runoff method selected for the watershed modeling is based on

NRCS TR-20 methods. The hydrology for both existing and proposed conditions was modeled using a NOAA10 24-hour storm duration with storm curve D and the NOAA Atlas-14 rainfall data for Windsor Locks.
The following curve numbers were used to model the impervious and pervious surfaces, and are acceptable for surfaces over the applicable hydrological soil groups per the NRCS TR-55 Drainage Manual:

Table 3
Runoff Curve Numbers

Cover Type	Curve Number (Hydrologic Soil Group A)	Curve Number (Hydrologic Soil Group D)
Pavement / Roofs	98	98
Gravel	96	96
>75% Grass Cover, Good	39	80
Woods, Good	-	77
Woods, Fair	36	-

Times of concentration vary across site from 5.0 to 20.8 minutes. Shorter times of concentration were assumed to be the minimum allowable time of five (5) minutes. The methods described in the NRCS TR-55 manual were followed to calculate the time of concentration input data for this model. Proposed stormwater piping will have adequate capacity to convey and drain the 10-year design storm.

The drainage analysis for the proposed stormwater management systems was completed using Bentley System's StormCAD computer program. Input information for the model was derived using the Rational Formula and times of concentration for paved areas were assumed to be the minimum allowable time of 5 minutes. Precipitation intensity estimates for storm events were obtained from the NOAA Atlas-14 rainfall data specific to the project site.

An exfiltration rate of 2.41in/hr (Loamy Sand – Hydrologic Soil Group – 'A') was selected from the CT SWQM to be used to model drainage discarded from the proposed detention basin. No exfiltration was modeled at the existing detention basin.

7 Summary

The proposed development has been designed to effectively maintain the peak discharge flowrates leaving the site as compared to the existing conditions for the 2-, 10-, 25-, and 100-year design storm events. One (1) proposed at grade detention basin has been designed to attenuate the increase in peak flowrates from the project area. Proposed stormwater piping is adequate to convey the 10-year design storm.

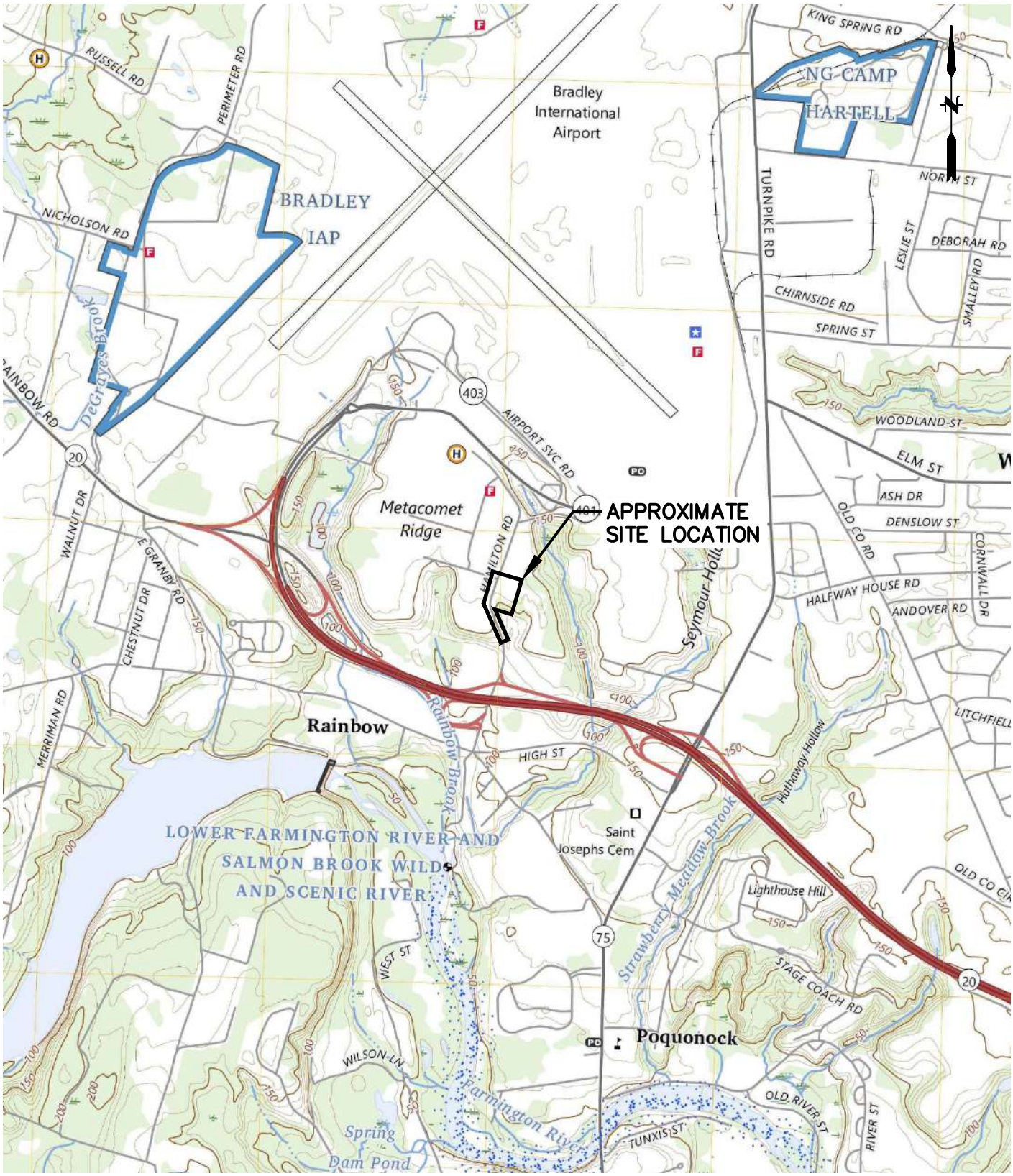
Post-construction water quality improvement for the stormwater runoff will be achieved by the use of BMPs designed to remove 90% of Total Suspended Solids that may be present in runoff from the site.

The stormwater management design meets the intent of the Connecticut Stormwater Quality Manual (CT SWQM), Connecticut General Permit of the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, as well as the requirements of the Town of Windsor Locks.

Based on the results of the foregoing analysis, it is the professional opinion of Fuss & O'Neill that the proposed development will not have an adverse impact on receiving watersheds.

Figures

1 Site Location Map
2 NRCS Web Soil Survey Map
3 FEMA Flood Insurance Rate Map
4 Drainage Basin Map



MAP REFERENCE:
THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5 MINUTE USGS TOPOGRAPHICAL MAP:
WINDSOR LOCKS QUADRANGLE, CONNECTICUT – CAPITOL PLANNING REGION, 2024

SCALE:	
HORZ.:	1" = 2000'
VERT.:	-
DATUM:	
HORZ.:	-
VERT.:	-

0 1000' 2000'
GRAPHIC SCALE

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860.646.2469
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COLLINS AEROSPACE

SITE LOCATION MAP

HAMILTON ROAD ENTRANCE IMPROVEMENTS

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 20170430.H70
DATE: 10/17/2025

FIGURE 1

File: J:\DWG\P2017\0430\H70\C\vilPlan\20170430H70_LOC01.dwg Layout: FIGURE 1 Plotted: 2025-10-17 10:37 AM Saved: 2025-10-17 10:37 AM User: Daniel.Chiburis
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB
LAYER STATE:
MS VIEW:

Custom Soil Resource Report
Map—Hydrologic Soil Group

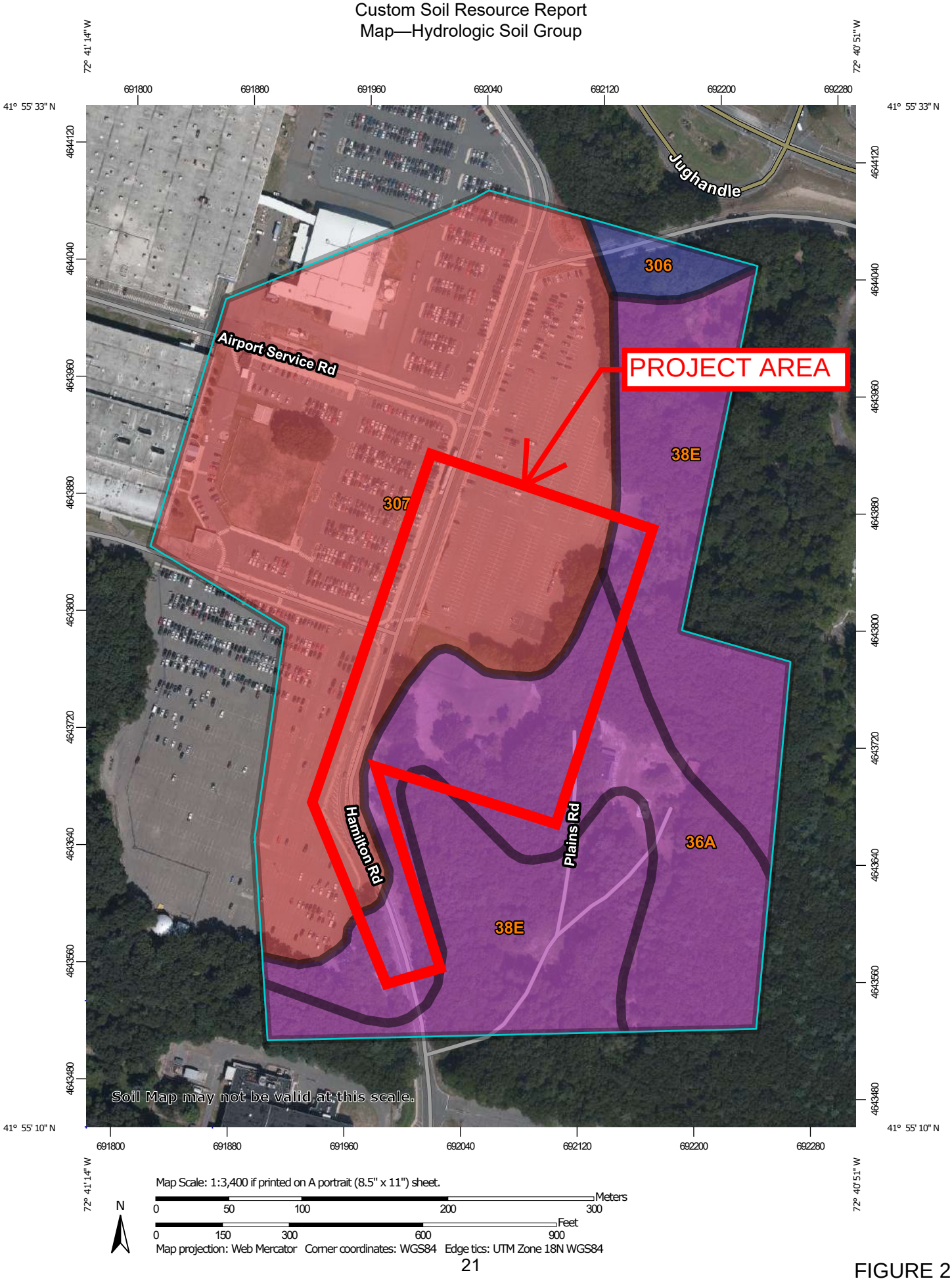


FIGURE 2

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 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 21, Sep 7, 2021

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

Date(s) aerial images were photographed: Aug 24, 2019—Oct 24, 2019

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.

FIGURE 2

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
36A	Windsor loamy sand, 0 to 3 percent slopes	A	10.5	22.0%
38E	Hinckley loamy sand, 15 to 45 percent slopes	A	12.5	26.2%
306	Udorthents-Urban land complex	B	0.9	1.9%
307	Urban land	D	23.7	49.9%
Totals for Area of Interest			**47.6**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be

FIGURE 2

considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

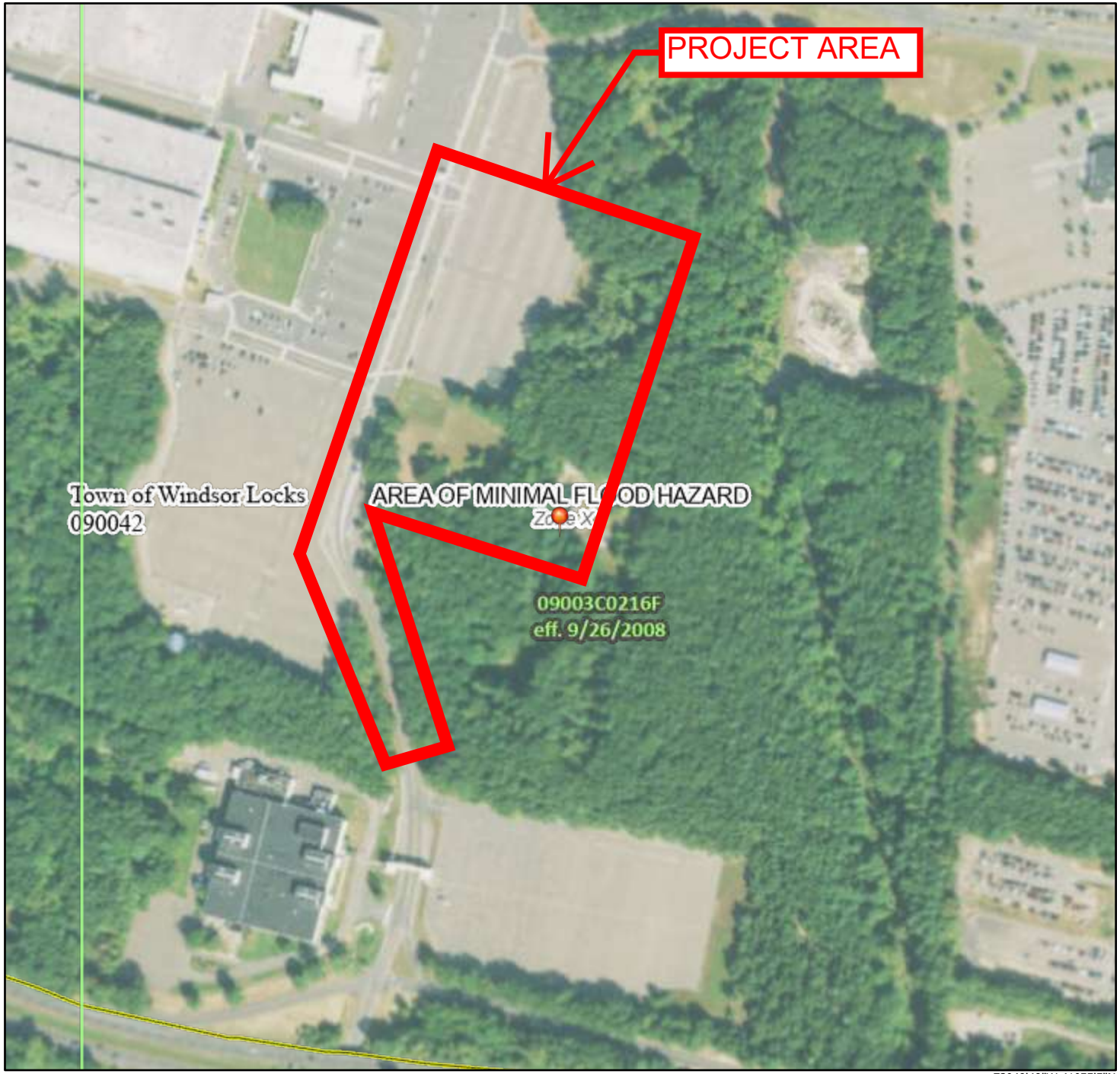
The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

FIGURE 2

National Flood Hazard Layer FIRMette

FEMA

72°41'18"W 41°55'31"N



72°40'40"W 41°55'5"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

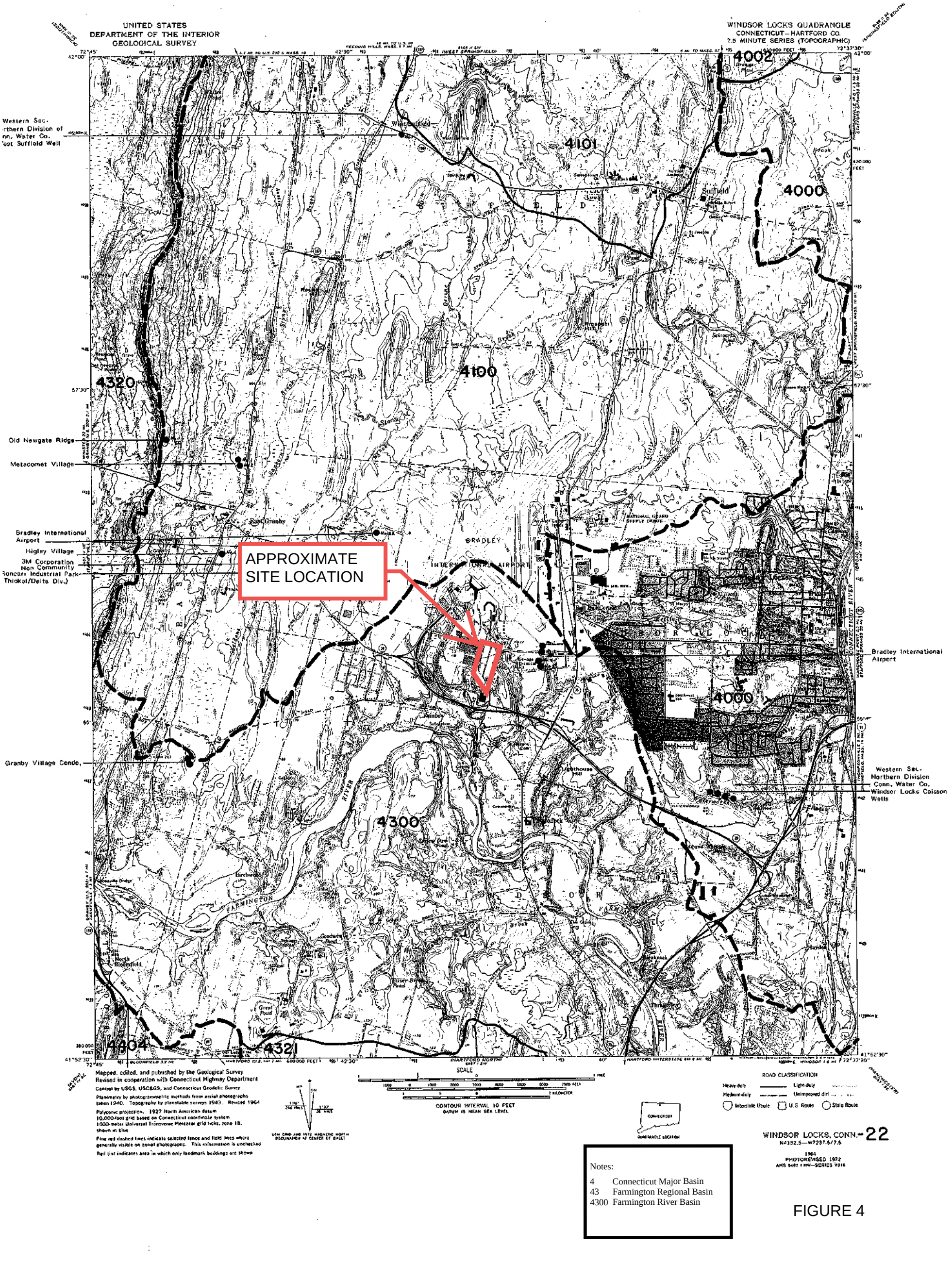
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/8/2021 at 3:19 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

FIGURE 3



Notes:

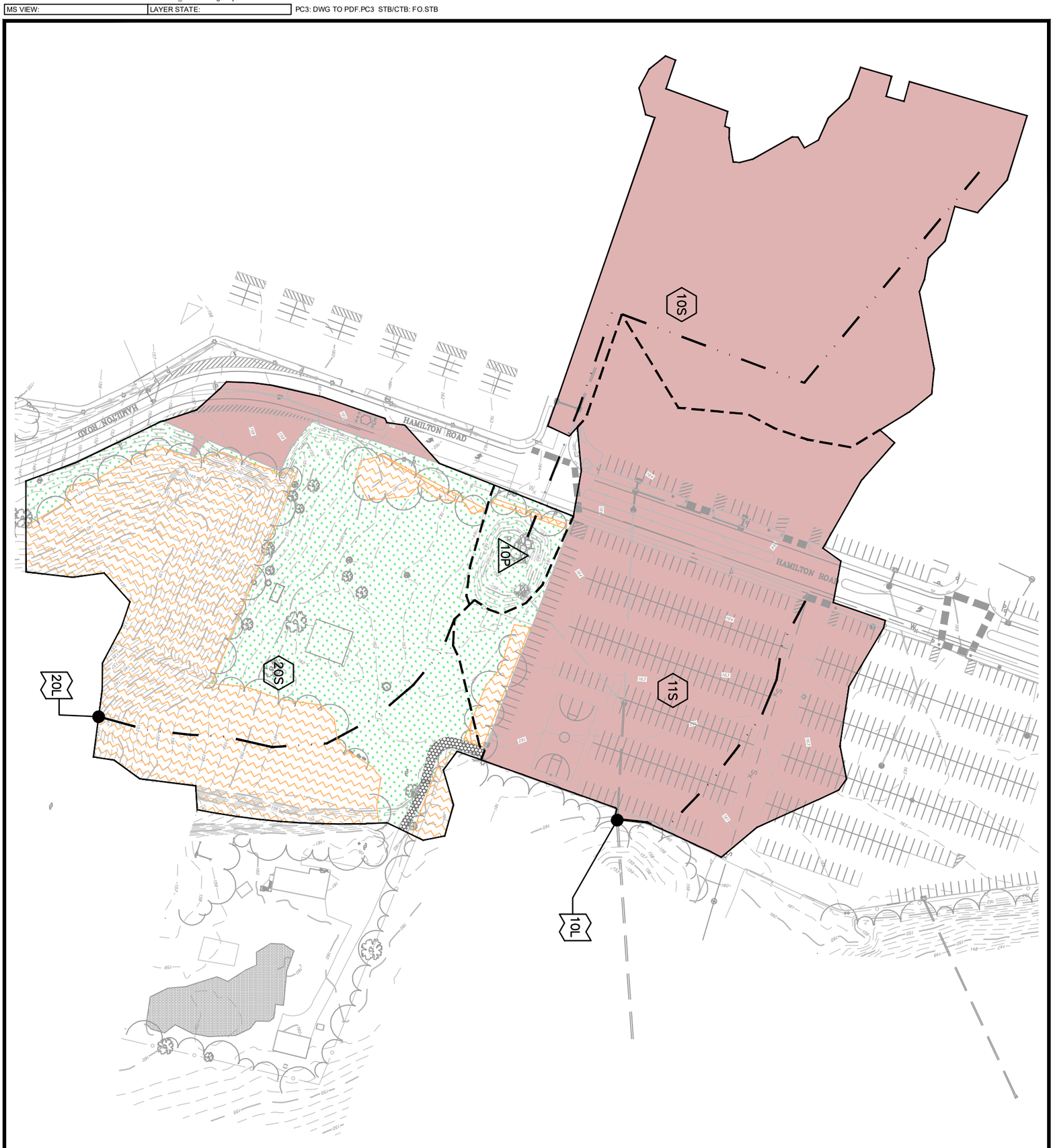
4 Connecticut Major Basin
43 Farmington Regional Basin
4300 Farmington River Basin

FIGURE 4

Appendix A

Watershed Model Mapping - Existing & Proposed Conditions

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MS VIEW: | LAYER STATE: | PC3: DWG TO PDF.PC3 STB/CTB: FO.STB



LEGEND

- OVERALL WATERSHED BOUNDARY
- WATERSHED BOUNDARY
- TIME OF CONCENTRATION PATH
- IMPERVIOUS SURFACE – PAVED
- IMPERVIOUS SURFACE – ROOF
- PERVIOUS SURFACE – GRASS
- PERVIOUS SURFACE – WOODS
- PERVIOUS SURFACE – GRAVEL ROAD

N

DR-101

PROJ. No.: 120.0170430.H70
DATE: DECEMBER 2025

COLLINS AEROSPACE

EXISTING WATERSHED ANALYSIS

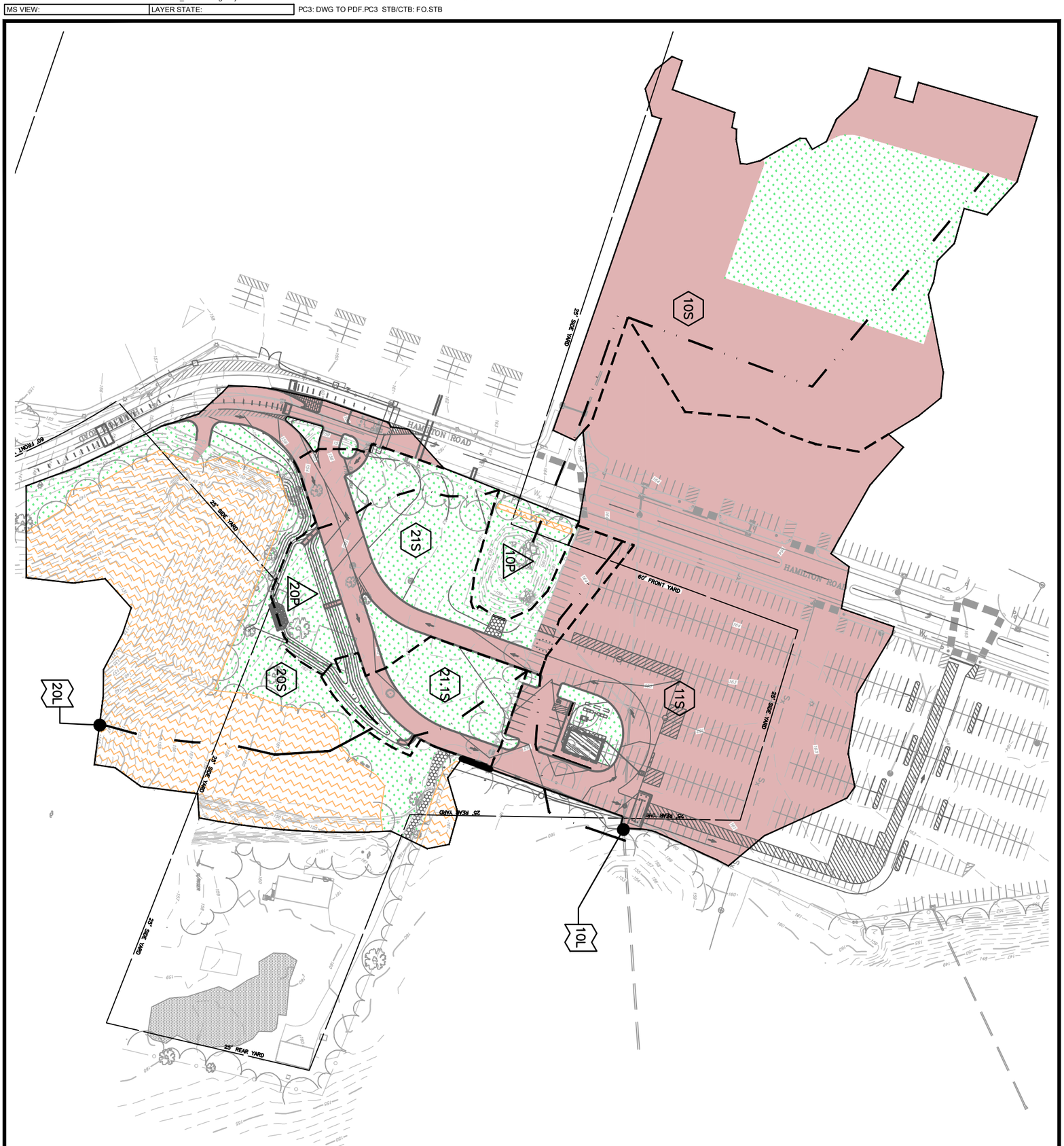
HAMILTON ROAD ENTRANCE IMPROVEMENTS

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HARTFORD, CT 06103
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SCALE:
HORZ.: 1" = 120'
VERT.: -
DATUM:
HORZ.: -
VERT.: -
0 60' 120'
GRAPHIC SCALE

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LEGEND

- OVERALL WATERSHED BOUNDARY
- WATERSHED BOUNDARY
- TIME OF CONCENTRATION PATH
- IMPERVIOUS SURFACE – PAVED
- IMPERVIOUS SURFACE – ROOF
- PERVIOUS SURFACE – GRASS
- PERVIOUS SURFACE – WOODS
- PERVIOUS SURFACE – GRAVEL ROAD

N

DR-102

PROJ. No.: 120.0170430.H70
DATE: DECEMBER 2025

COLLINS AEROSPACE

PROPOSED WATERSHED ANALYSIS

HAMILTON ROAD ENTRANCE IMPROVEMENTS

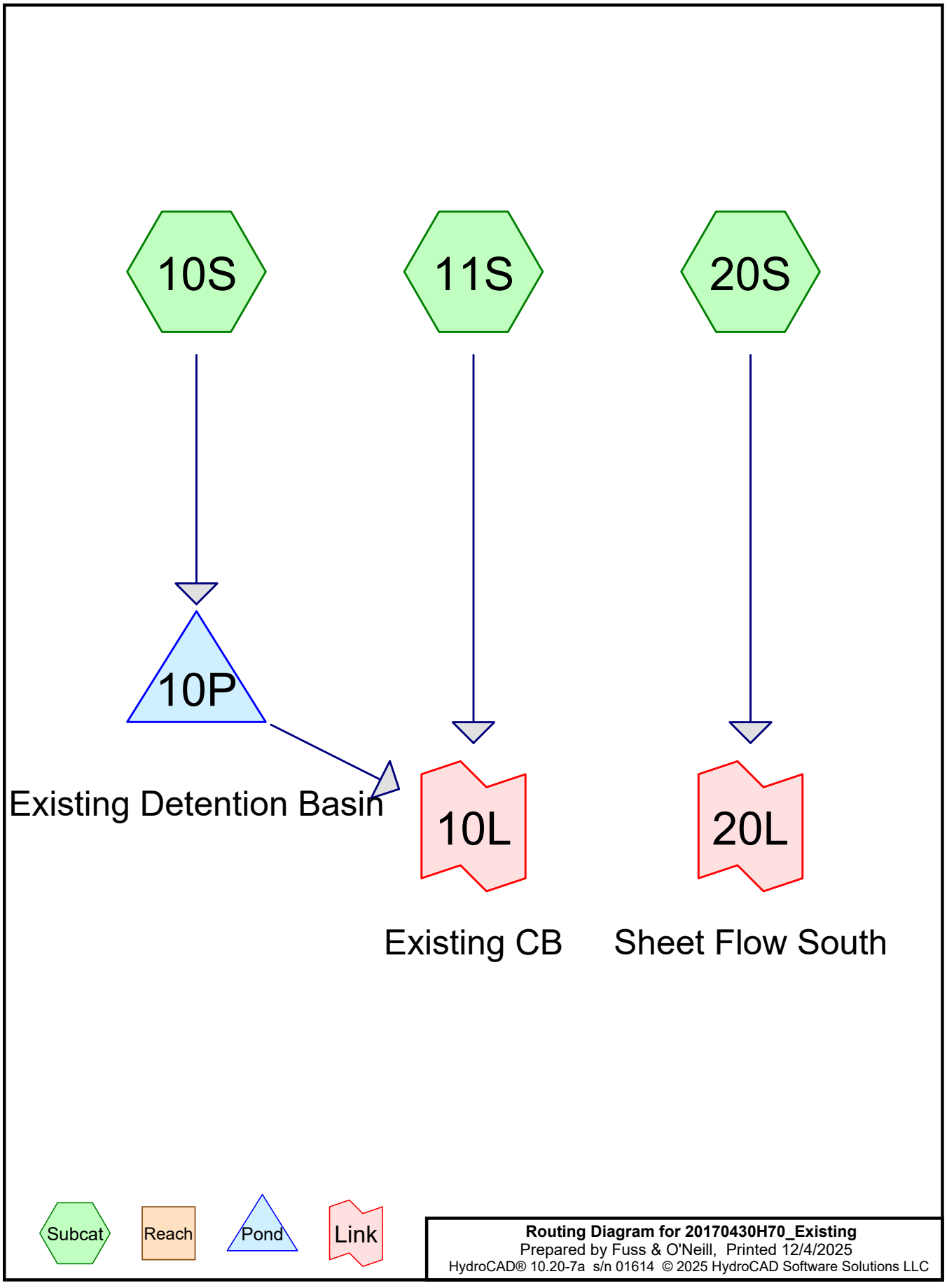
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SCALE:
HORZ.: 1" = 120'
VERT.: -
DATUM:
HORZ.: -
VERT.: -
0 60' 120'
GRAPHIC SCALE

Appendix B

Hydrologic Model Analysis - Existing & Proposed Conditions



Routing Diagram for 20170430H70_Existing
Prepared by Fuss & O'Neill, Printed 12/4/2025
HydroCAD® 10.20-7a s/n 01614 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NOAA10 24-hr	D	Default	24.00	1	3.22	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	5.14	2
3	25-Year	NOAA10 24-hr	D	Default	24.00	1	6.34	2
4	100-Year	NOAA10 24-hr	D	Default	24.00	1	8.20	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.237	39	>75% Grass cover, Good, HSG A (10S, 11S, 20S)
0.316	80	>75% Grass cover, Good, HSG D (10S, 11S, 20S)
0.040	96	Gravel surface, HSG A (20S)
0.121	98	Paved parking, HSG A (20S)
7.699	98	Paved parking, HSG D (10S, 11S, 20S)
2.296	36	Woods, Fair, HSG A (20S)
0.077	79	Woods, Fair, HSG D (11S, 20S)
0.012	77	Woods, Good, HSG D (10S)
12.798	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
4.694	HSG A	10S, 11S, 20S
0.000	HSG B	
0.000	HSG C	
8.104	HSG D	10S, 11S, 20S
0.000	Other	
12.798		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
2.237	0.000	0.000	0.316	0.000	2.553	>75% Grass cover, Good	10S, 11S, 20S
0.040	0.000	0.000	0.000	0.000	0.040	Gravel surface	20S
0.121	0.000	0.000	7.699	0.000	7.820	Paved parking	10S, 11S, 20S
2.296	0.000	0.000	0.077	0.000	2.373	Woods, Fair	11S, 20S
0.000	0.000	0.000	0.012	0.000	0.012	Woods, Good	10S
4.694	**0.000**	**0.000**	**8.104**	**0.000**	**12.798**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	10P	157.51	154.61	311.0	0.0093	0.013	0.0	15.0	0.0	

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 92.59% Impervious Runoff Depth=2.66"
Tc=5.0 min CN=95 Runoff=11.82 cfs 0.816 af

Subcatchment11S: Runoff Area=187,559 sf 94.74% Impervious Runoff Depth=2.77"
Flow Length=379' Tc=5.0 min CN=96 Runoff=14.13 cfs 0.994 af

Subcatchment20S: Runoff Area=209,781 sf 7.00% Impervious Runoff Depth=0.02"
Flow Length=488' Tc=19.3 min CN=43 Runoff=0.02 cfs 0.009 af

Pond 10P: Existing Detention Basin Peak Elev=160.00' Storage=7,176 cf Inflow=11.82 cfs 0.816 af
Outflow=3.69 cfs 0.805 af

Link 10L: Existing CB Inflow=17.38 cfs 1.799 af
Primary=17.38 cfs 1.799 af

Link 20L: Sheet Flow South Inflow=0.02 cfs 0.009 af
Primary=0.02 cfs 0.009 af

Total Runoff Area = 12.798 ac Runoff Volume = 1.819 af Average Runoff Depth = 1.71"
38.90% Pervious = 4.978 ac 61.10% Impervious = 7.820 ac

Summary for Subcatchment 10S:

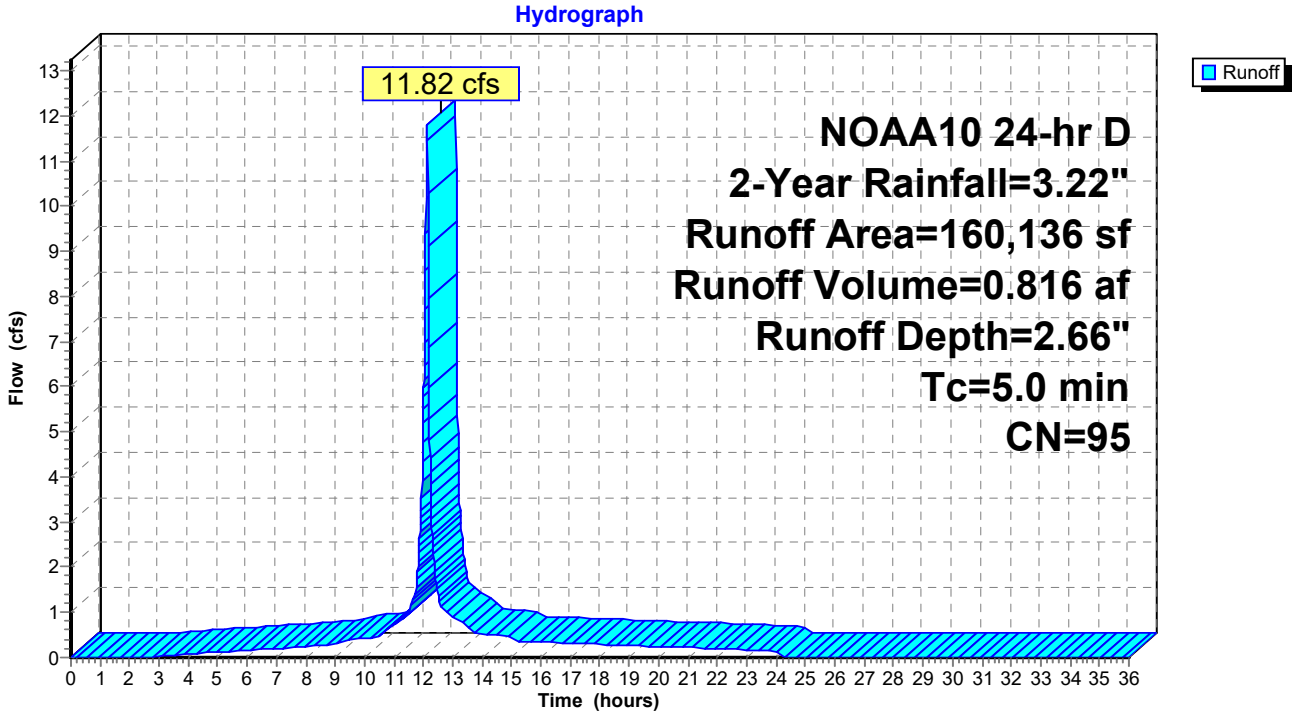
Runoff = 11.82 cfs @ 12.12 hrs, Volume= 0.816 af, Depth= 2.66"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
148,271	98	Paved parking, HSG D
3,726	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	95	Weighted Average
11,865		7.41% Pervious Area
148,271		92.59% Impervious Area

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

Subcatchment 10S:



Summary for Subcatchment 11S:

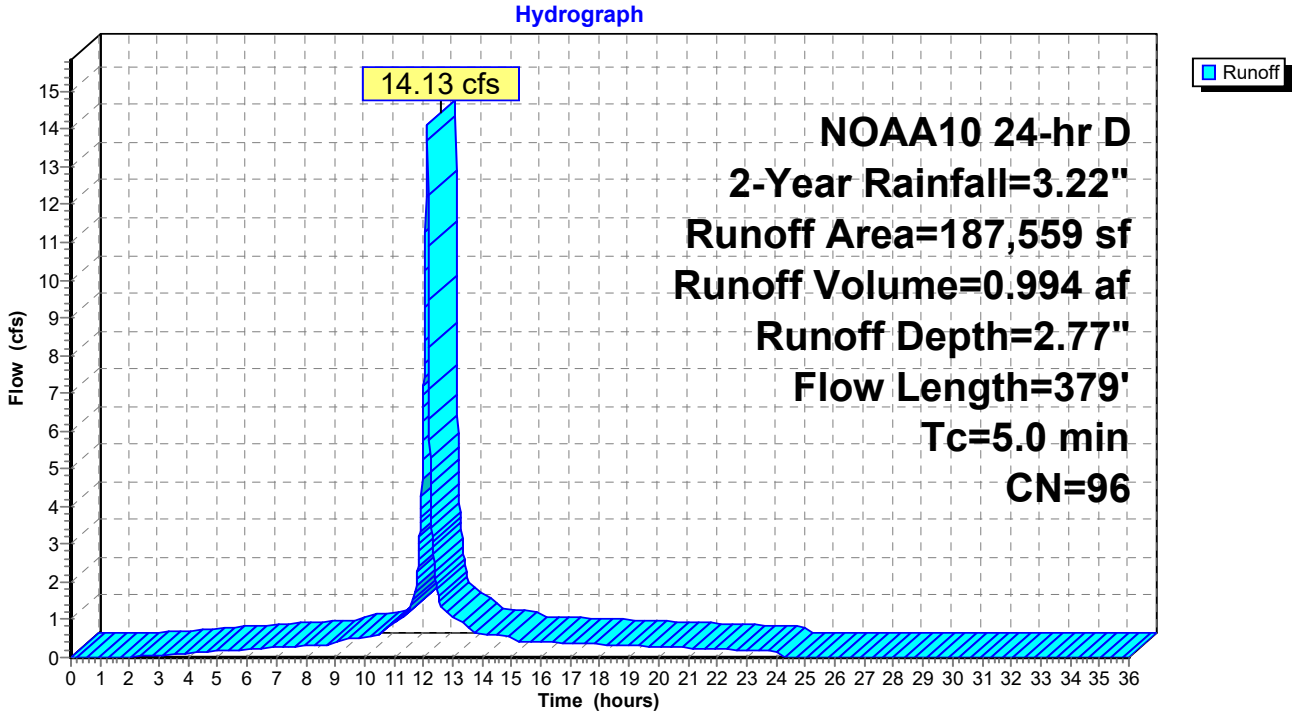
Runoff = 14.13 cfs @ 12.12 hrs, Volume= 0.994 af, Depth= 2.77"
Routed to Link 10L : Existing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
177,685	98	Paved parking, HSG D
4,003	80	>75% Grass cover, Good, HSG D
2,738	79	Woods, Fair, HSG D
3,133	39	>75% Grass cover, Good, HSG A
187,559	96	Weighted Average
9,874		5.26% Pervious Area
177,685		94.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	379		1.26		**Direct Entry,**

Subcatchment 11S:



Summary for Subcatchment 20S:

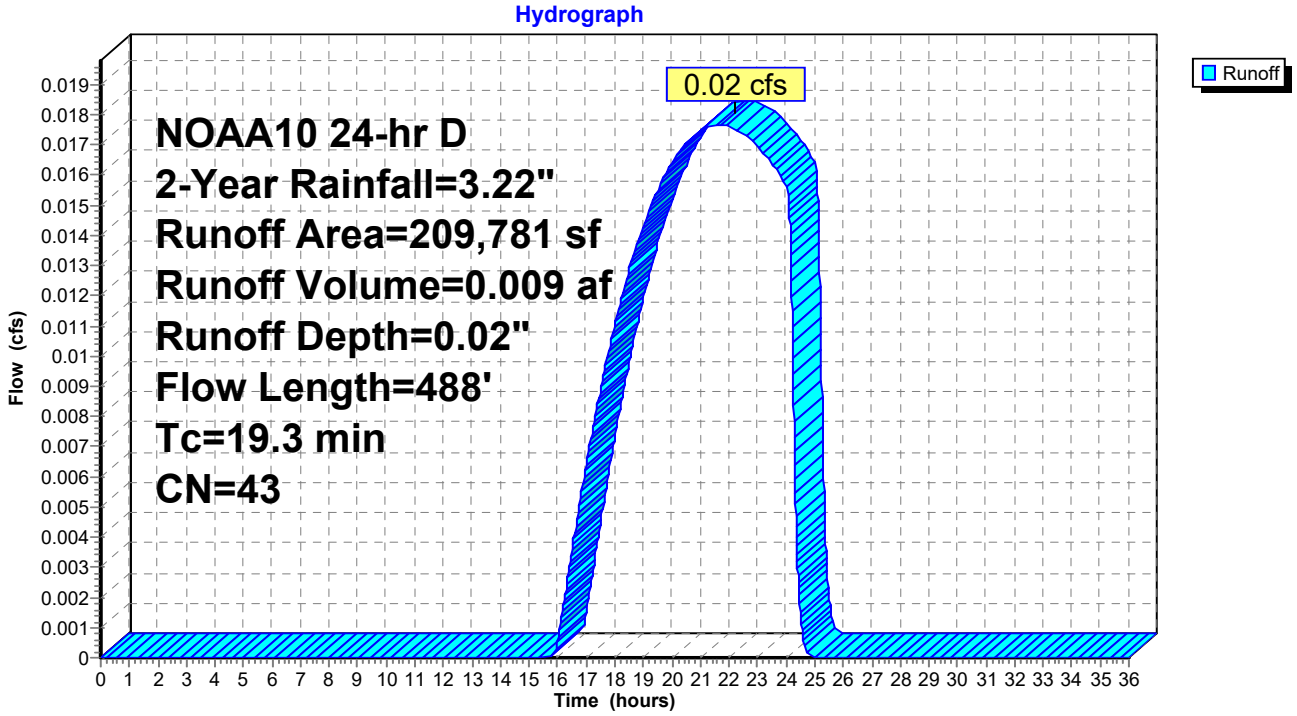
Runoff = 0.02 cfs @ 21.68 hrs, Volume= 0.009 af, Depth= 0.02"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
5,276	98	Paved parking, HSG A
86,709	39	>75% Grass cover, Good, HSG A
1,736	96	Gravel surface, HSG A
9,407	98	Paved parking, HSG D
6,024	80	>75% Grass cover, Good, HSG D
626	79	Woods, Fair, HSG D
100,003	36	Woods, Fair, HSG A
209,781	43	Weighted Average
195,098		93.00% Pervious Area
14,683		7.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0249	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.8	102	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	208	0.0770	1.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	488	Total			

Subcatchment 20S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 92.59% Impervious, Inflow Depth = 2.66" for 2-Year event
Inflow = 11.82 cfs @ 12.12 hrs, Volume= 0.816 af
Outflow = 3.69 cfs @ 12.25 hrs, Volume= 0.805 af, Atten= 69%, Lag= 7.5 min
Primary = 3.69 cfs @ 12.25 hrs, Volume= 0.805 af
Routed to Link 10L : Existing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 160.00' @ 12.25 hrs Surf.Area= 3,827 sf Storage= 7,176 cf

Plug-Flow detention time= 40.9 min calculated for 0.805 af (99% of inflow)
Center-of-Mass det. time= 32.4 min (823.4 - 791.0)

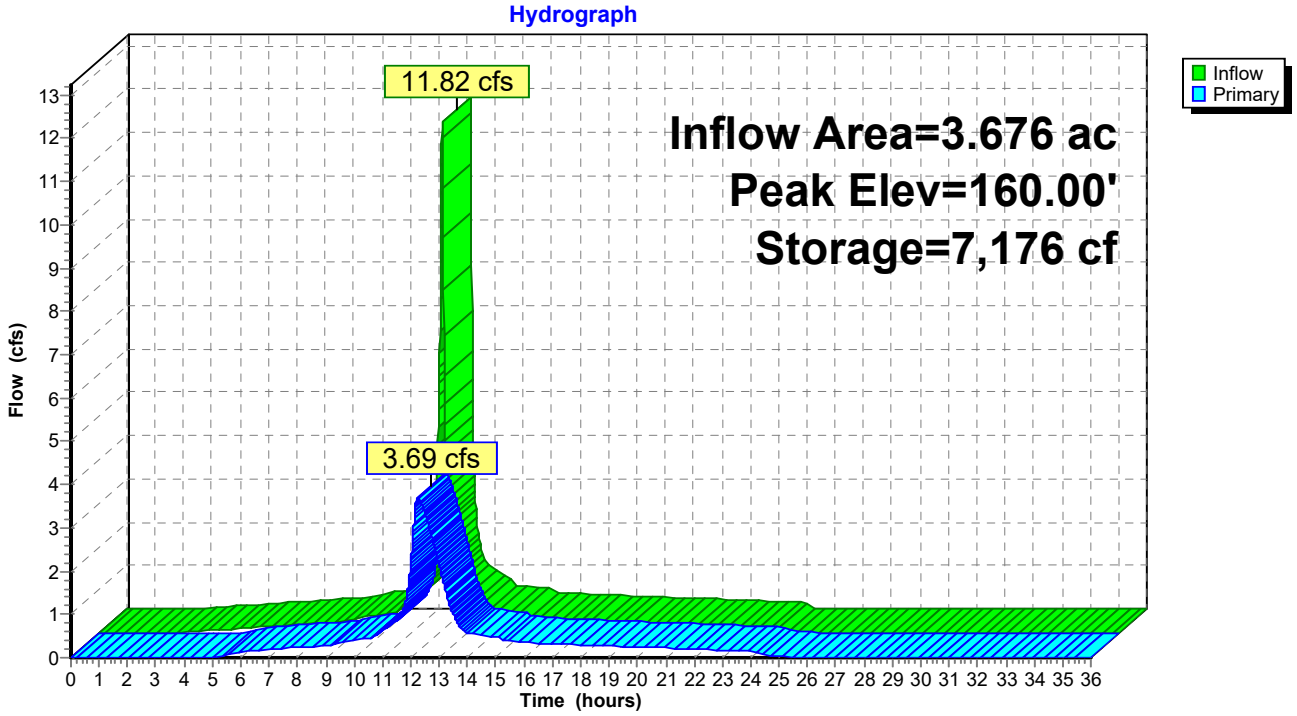
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

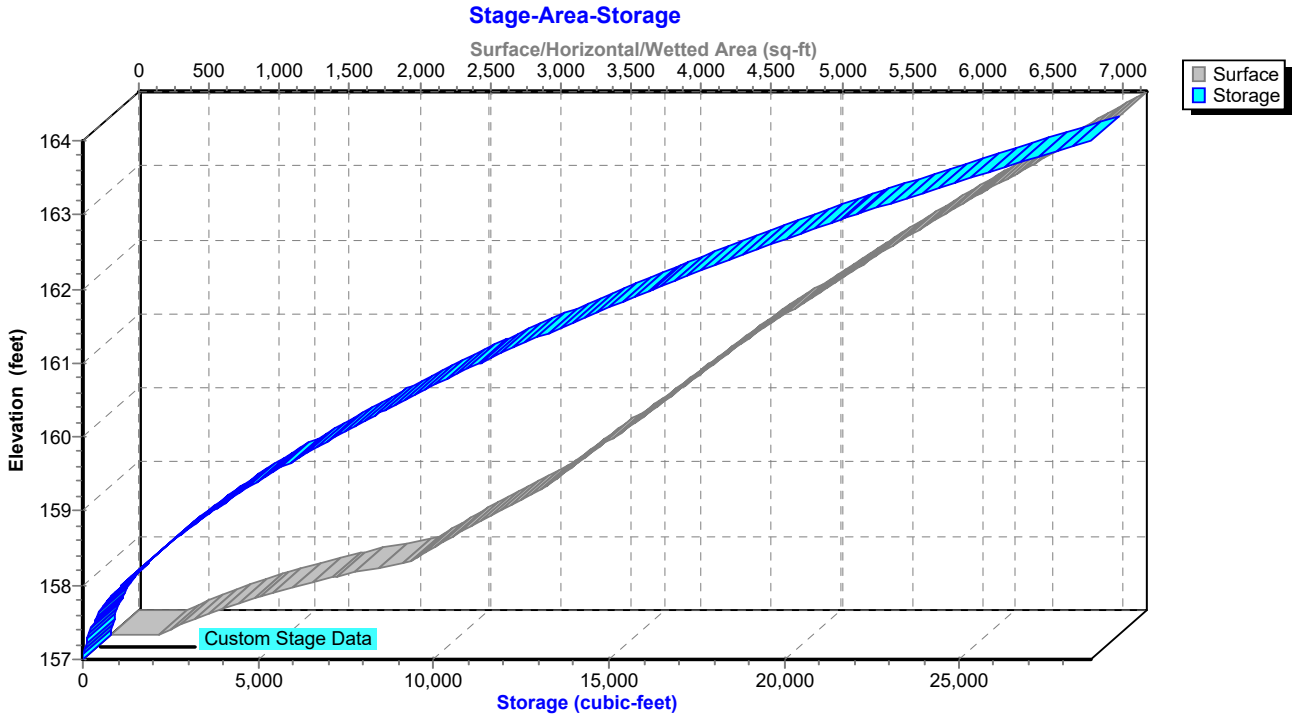
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.69 cfs @ 12.25 hrs HW=160.00' (Free Discharge)
└**1=Culvert** (Passes 3.69 cfs of 6.06 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.38 cfs @ 7.01 fps)
  ├**3=Orifice/Grate** (Orifice Controls 2.31 cfs @ 6.62 fps)
  ├**4=Orifice/Grate** (Controls 0.00 cfs)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

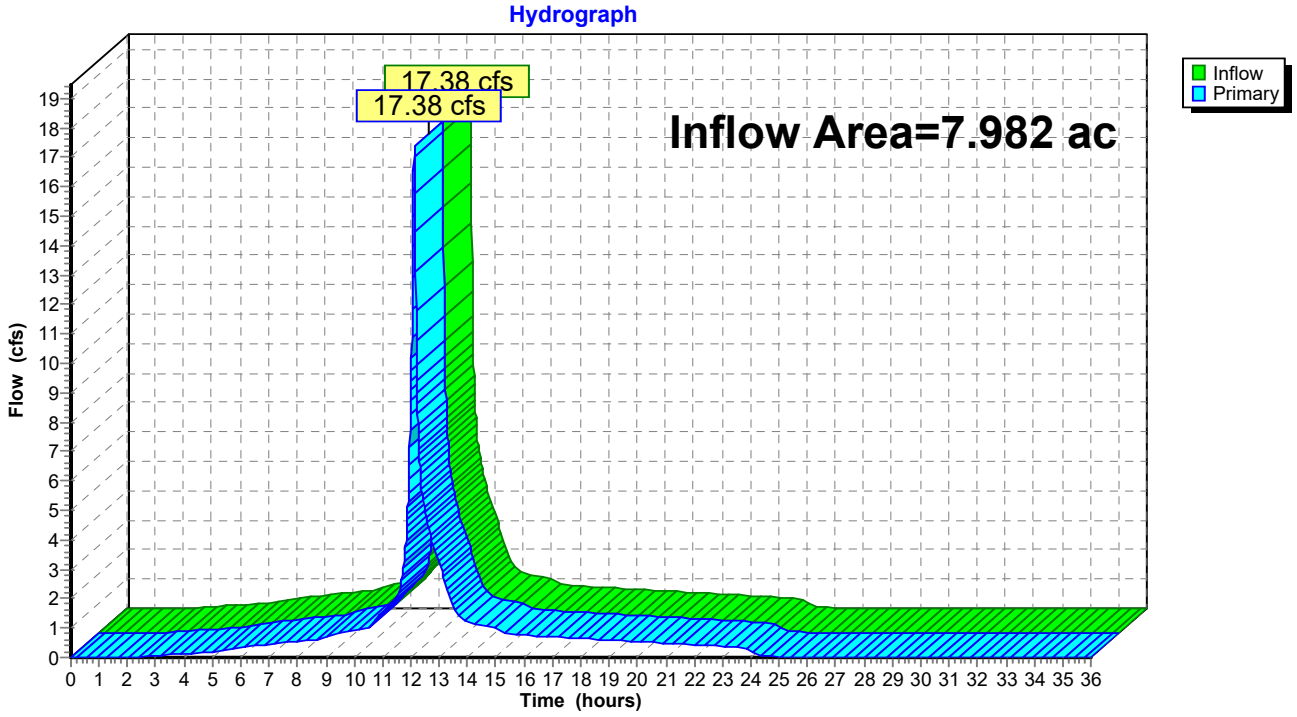
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Link 10L: Existing CB

Inflow Area = 7.982 ac, 93.75% Impervious, Inflow Depth = 2.70" for 2-Year event
Inflow = 17.38 cfs @ 12.12 hrs, Volume= 1.799 af
Primary = 17.38 cfs @ 12.12 hrs, Volume= 1.799 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: Existing CB

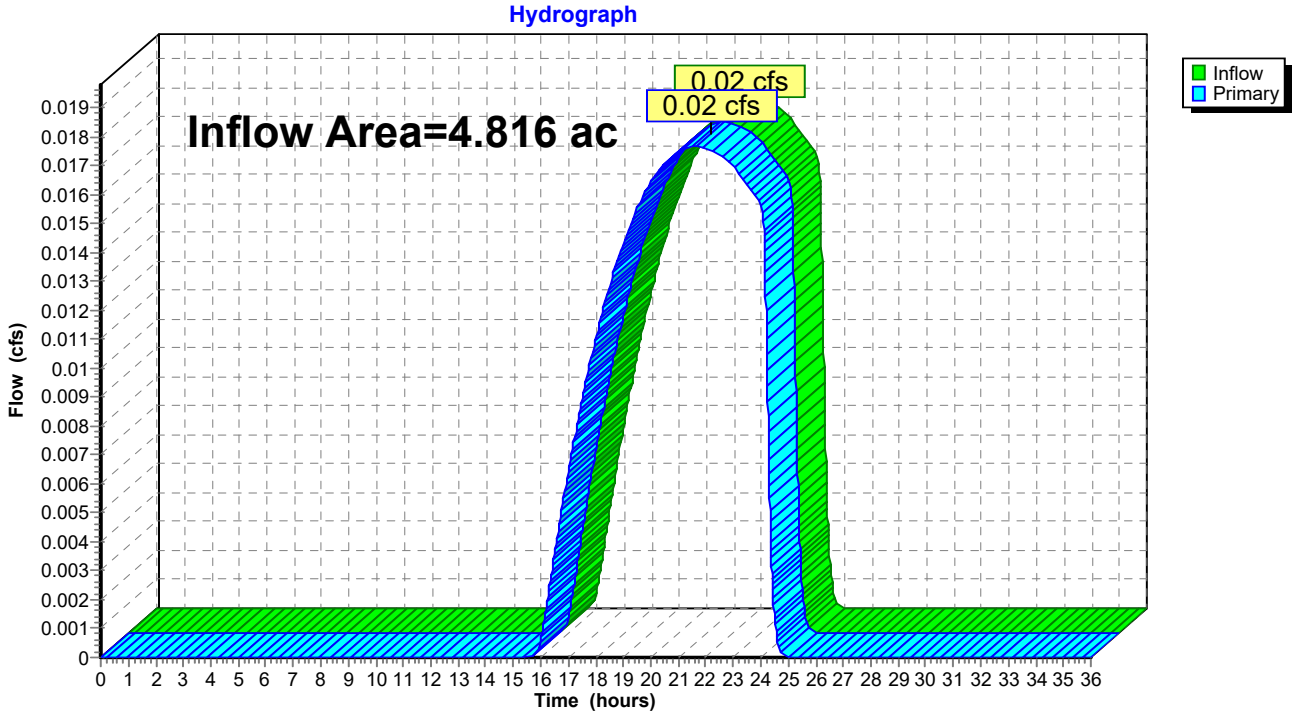


Summary for Link 20L: Sheet Flow South

Inflow Area = 4.816 ac, 7.00% Impervious, Inflow Depth = 0.02" for 2-Year event
Inflow = 0.02 cfs @ 21.68 hrs, Volume= 0.009 af
Primary = 0.02 cfs @ 21.68 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 20L: Sheet Flow South



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 92.59% Impervious Runoff Depth=4.56"
Tc=5.0 min CN=95 Runoff=19.54 cfs 1.396 af

Subcatchment11S: Runoff Area=187,559 sf 94.74% Impervious Runoff Depth=4.67"
Flow Length=379' Tc=5.0 min CN=96 Runoff=23.11 cfs 1.676 af

Subcatchment20S: Runoff Area=209,781 sf 7.00% Impervious Runoff Depth=0.39"
Flow Length=488' Tc=19.3 min CN=43 Runoff=0.38 cfs 0.158 af

Pond 10P: Existing Detention Basin Peak Elev=161.23' Storage=12,386 cf Inflow=19.54 cfs 1.396 af
Outflow=5.95 cfs 1.385 af

Link 10L: Existing CB Inflow=27.62 cfs 3.062 af
Primary=27.62 cfs 3.062 af

Link 20L: Sheet Flow South Inflow=0.38 cfs 0.158 af
Primary=0.38 cfs 0.158 af

Total Runoff Area = 12.798 ac Runoff Volume = 3.231 af Average Runoff Depth = 3.03"
38.90% Pervious = 4.978 ac 61.10% Impervious = 7.820 ac

Summary for Subcatchment 10S:

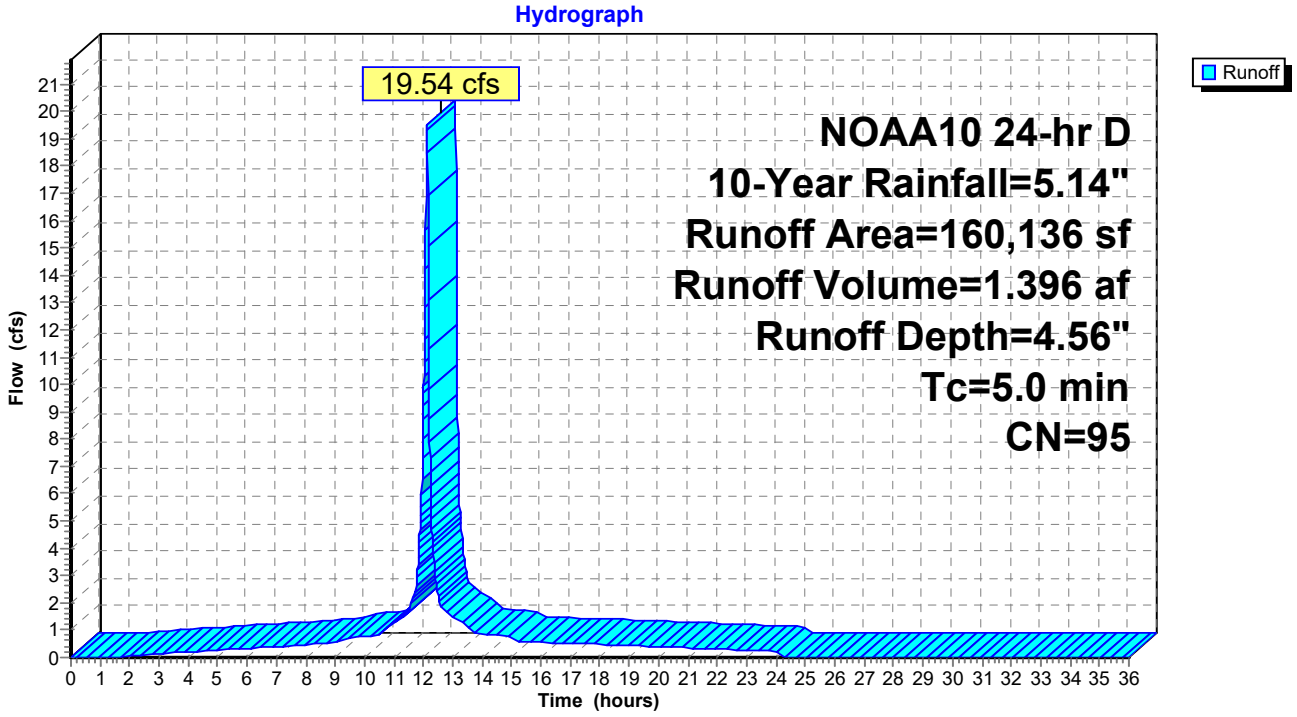
Runoff = 19.54 cfs @ 12.12 hrs, Volume= 1.396 af, Depth= 4.56"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
148,271	98	Paved parking, HSG D
3,726	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	95	Weighted Average
11,865		7.41% Pervious Area
148,271		92.59% Impervious Area

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

Subcatchment 10S:



Summary for Subcatchment 11S:

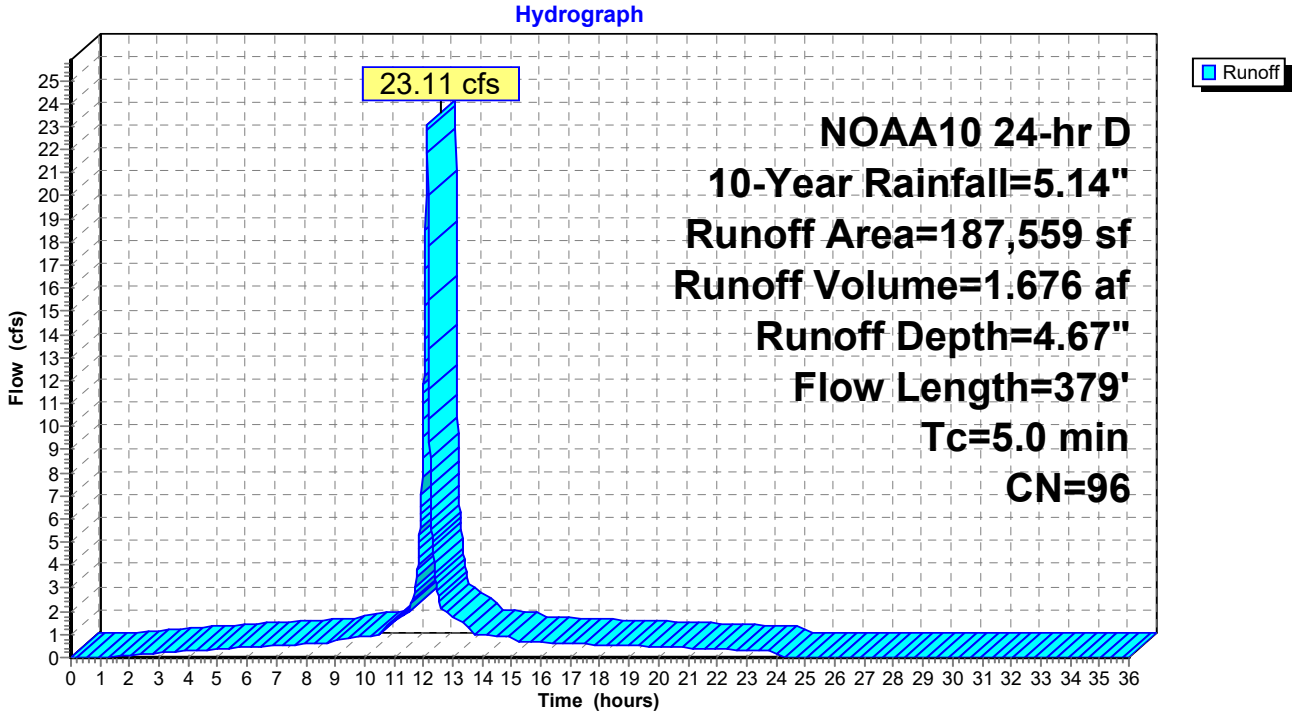
Runoff = 23.11 cfs @ 12.12 hrs, Volume= 1.676 af, Depth= 4.67"
Routed to Link 10L : Existing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
177,685	98	Paved parking, HSG D
4,003	80	>75% Grass cover, Good, HSG D
2,738	79	Woods, Fair, HSG D
3,133	39	>75% Grass cover, Good, HSG A
187,559	96	Weighted Average
9,874		5.26% Pervious Area
177,685		94.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	379		1.26		**Direct Entry,**

Subcatchment 11S:



Summary for Subcatchment 20S:

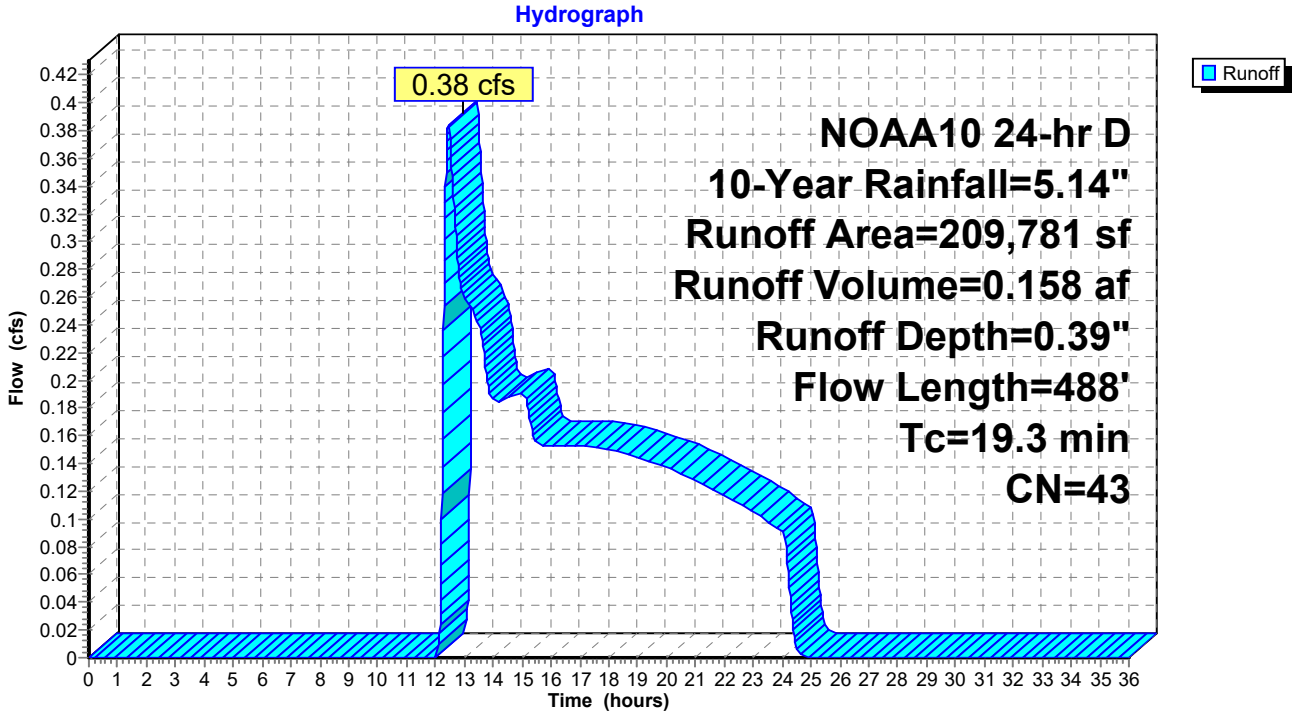
Runoff = 0.38 cfs @ 12.44 hrs, Volume= 0.158 af, Depth= 0.39"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
5,276	98	Paved parking, HSG A
86,709	39	>75% Grass cover, Good, HSG A
1,736	96	Gravel surface, HSG A
9,407	98	Paved parking, HSG D
6,024	80	>75% Grass cover, Good, HSG D
626	79	Woods, Fair, HSG D
100,003	36	Woods, Fair, HSG A
209,781	43	Weighted Average
195,098		93.00% Pervious Area
14,683		7.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0249	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.8	102	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	208	0.0770	1.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	488	Total			

Subcatchment 20S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 92.59% Impervious, Inflow Depth = 4.56" for 10-Year event
Inflow = 19.54 cfs @ 12.12 hrs, Volume= 1.396 af
Outflow = 5.95 cfs @ 12.25 hrs, Volume= 1.385 af, Atten= 70%, Lag= 7.6 min
Primary = 5.95 cfs @ 12.25 hrs, Volume= 1.385 af
Routed to Link 10L : Existing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 161.23' @ 12.25 hrs Surf.Area= 4,716 sf Storage= 12,386 cf

Plug-Flow detention time= 34.5 min calculated for 1.385 af (99% of inflow)
Center-of-Mass det. time= 29.4 min (803.1 - 773.7)

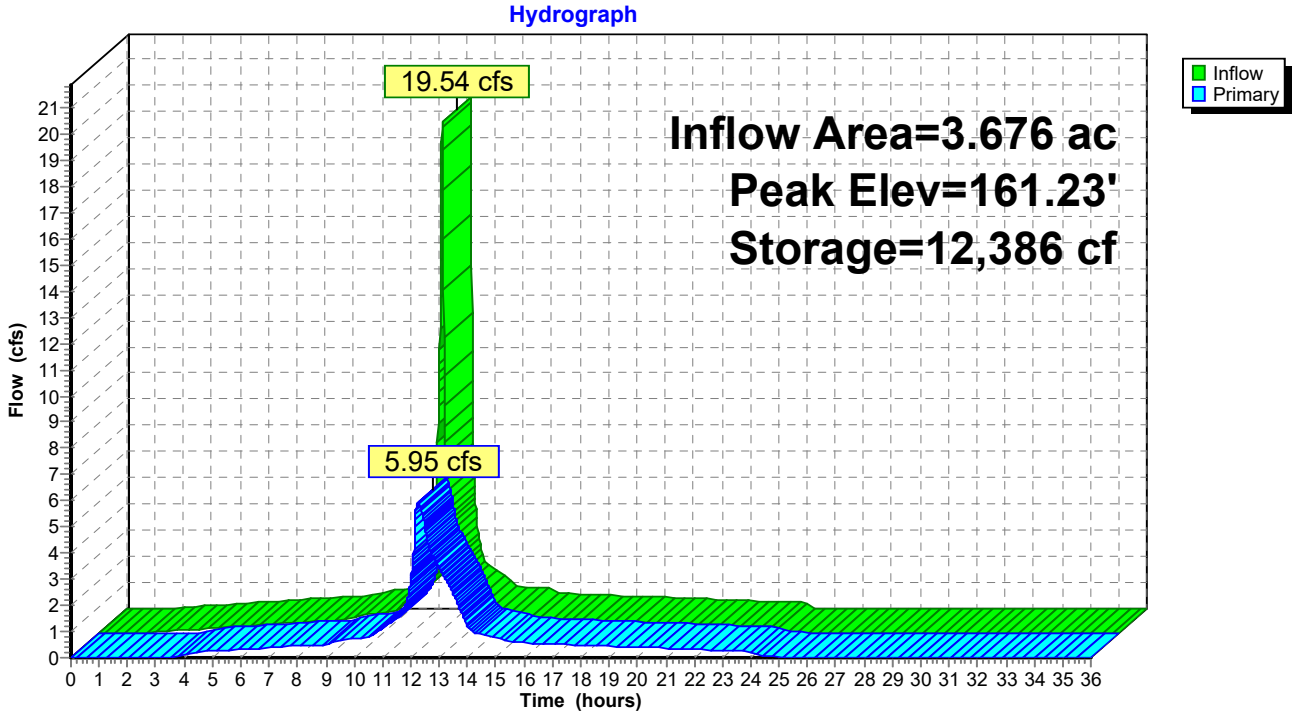
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

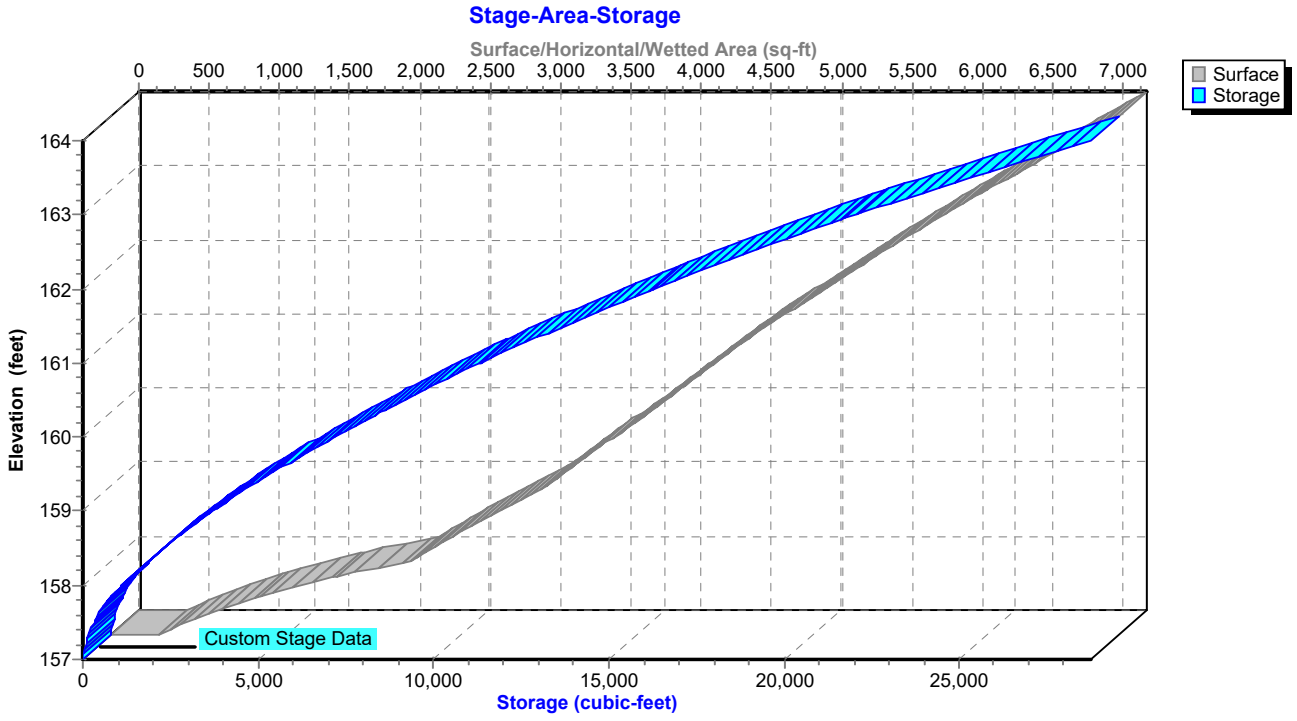
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.95 cfs @ 12.25 hrs HW=161.23' (Free Discharge)
└**1=Culvert** (Passes 5.95 cfs of 7.50 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.73 cfs @ 8.81 fps)
  ├**3=Orifice/Grate** (Orifice Controls 2.96 cfs @ 8.49 fps)
  ├**4=Orifice/Grate** (Orifice Controls 1.26 cfs @ 3.61 fps)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

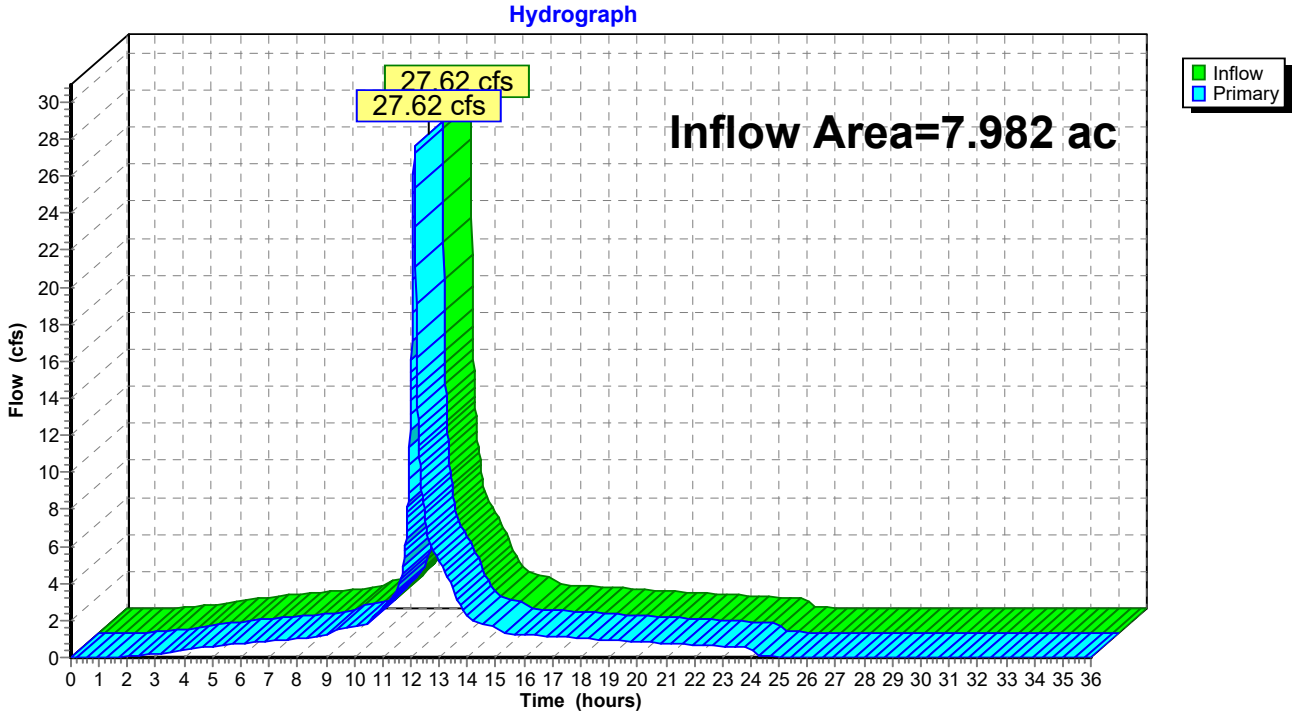
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Link 10L: Existing CB

Inflow Area = 7.982 ac, 93.75% Impervious, Inflow Depth = 4.60" for 10-Year event
Inflow = 27.62 cfs @ 12.13 hrs, Volume= 3.062 af
Primary = 27.62 cfs @ 12.13 hrs, Volume= 3.062 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: Existing CB

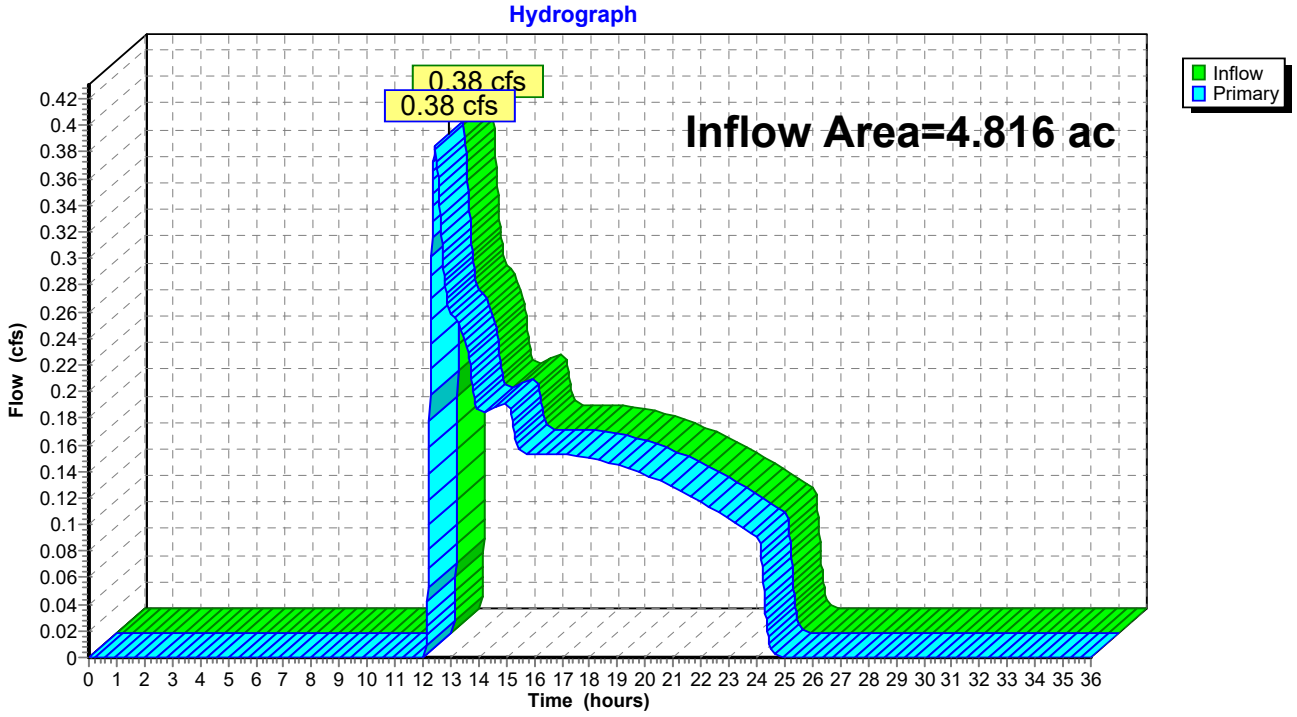


Summary for Link 20L: Sheet Flow South

Inflow Area = 4.816 ac, 7.00% Impervious, Inflow Depth = 0.39" for 10-Year event
Inflow = 0.38 cfs @ 12.44 hrs, Volume= 0.158 af
Primary = 0.38 cfs @ 12.44 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 20L: Sheet Flow South



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 92.59% Impervious Runoff Depth=5.75"
Tc=5.0 min CN=95 Runoff=24.31 cfs 1.761 af

Subcatchment11S: Runoff Area=187,559 sf 94.74% Impervious Runoff Depth=5.87"
Flow Length=379' Tc=5.0 min CN=96 Runoff=28.67 cfs 2.105 af

Subcatchment20S: Runoff Area=209,781 sf 7.00% Impervious Runoff Depth=0.80"
Flow Length=488' Tc=19.3 min CN=43 Runoff=1.67 cfs 0.322 af

Pond 10P: Existing Detention Basin Peak Elev=161.91' Storage=15,783 cf Inflow=24.31 cfs 1.761 af
Outflow=7.04 cfs 1.750 af

Link 10L: Existing CB Inflow=34.56 cfs 3.855 af
Primary=34.56 cfs 3.855 af

Link 20L: Sheet Flow South Inflow=1.67 cfs 0.322 af
Primary=1.67 cfs 0.322 af

Total Runoff Area = 12.798 ac Runoff Volume = 4.188 af Average Runoff Depth = 3.93"
38.90% Pervious = 4.978 ac 61.10% Impervious = 7.820 ac

Summary for Subcatchment 10S:

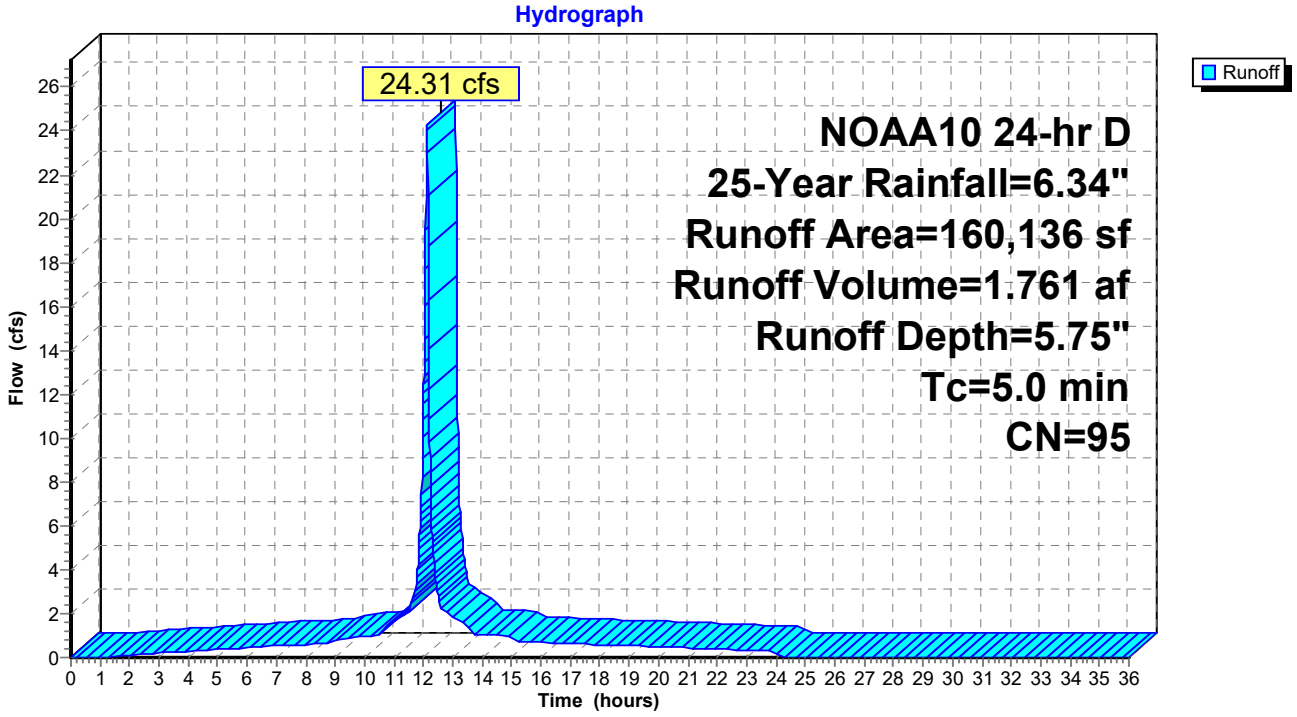
Runoff = 24.31 cfs @ 12.12 hrs, Volume= 1.761 af, Depth= 5.75"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
148,271	98	Paved parking, HSG D
3,726	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	95	Weighted Average
11,865		7.41% Pervious Area
148,271		92.59% Impervious Area

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

Subcatchment 10S:



Summary for Subcatchment 11S:

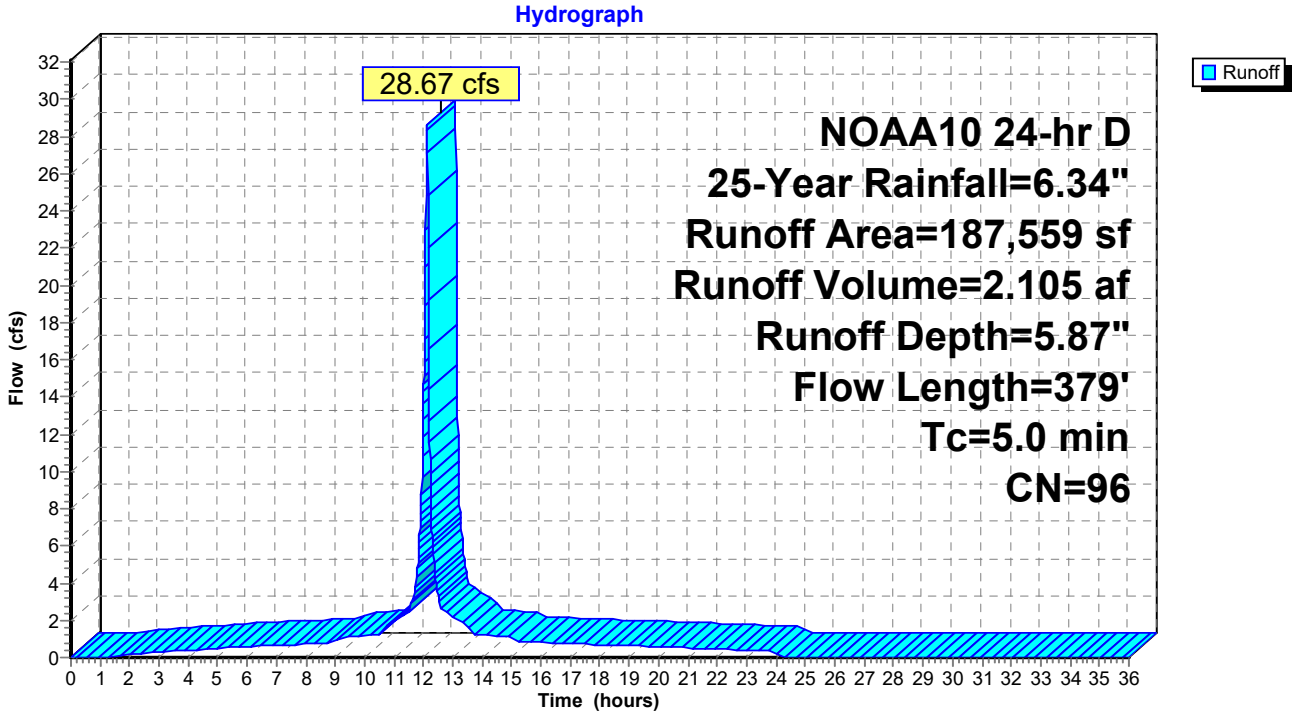
Runoff = 28.67 cfs @ 12.12 hrs, Volume= 2.105 af, Depth= 5.87"
Routed to Link 10L : Existing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
177,685	98	Paved parking, HSG D
4,003	80	>75% Grass cover, Good, HSG D
2,738	79	Woods, Fair, HSG D
3,133	39	>75% Grass cover, Good, HSG A
187,559	96	Weighted Average
9,874		5.26% Pervious Area
177,685		94.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	379		1.26		**Direct Entry,**

Subcatchment 11S:



Summary for Subcatchment 20S:

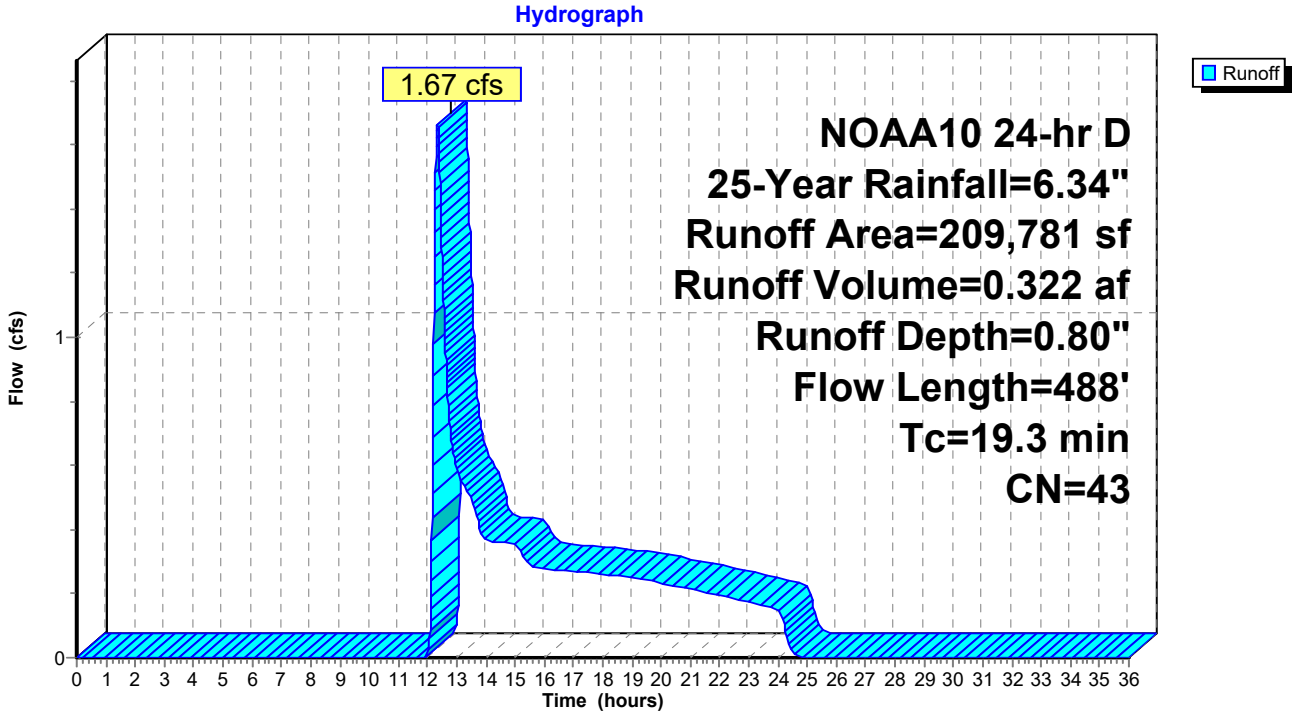
Runoff = 1.67 cfs @ 12.34 hrs, Volume= 0.322 af, Depth= 0.80"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
5,276	98	Paved parking, HSG A
86,709	39	>75% Grass cover, Good, HSG A
1,736	96	Gravel surface, HSG A
9,407	98	Paved parking, HSG D
6,024	80	>75% Grass cover, Good, HSG D
626	79	Woods, Fair, HSG D
100,003	36	Woods, Fair, HSG A
209,781	43	Weighted Average
195,098		93.00% Pervious Area
14,683		7.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0249	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.8	102	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	208	0.0770	1.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	488	Total			

Subcatchment 20S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 92.59% Impervious, Inflow Depth = 5.75" for 25-Year event
Inflow = 24.31 cfs @ 12.12 hrs, Volume= 1.761 af
Outflow = 7.04 cfs @ 12.25 hrs, Volume= 1.750 af, Atten= 71%, Lag= 8.0 min
Primary = 7.04 cfs @ 12.25 hrs, Volume= 1.750 af
Routed to Link 10L : Existing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 161.91' @ 12.25 hrs Surf.Area= 5,265 sf Storage= 15,783 cf

Plug-Flow detention time= 32.8 min calculated for 1.750 af (99% of inflow)
Center-of-Mass det. time= 28.7 min (795.8 - 767.1)

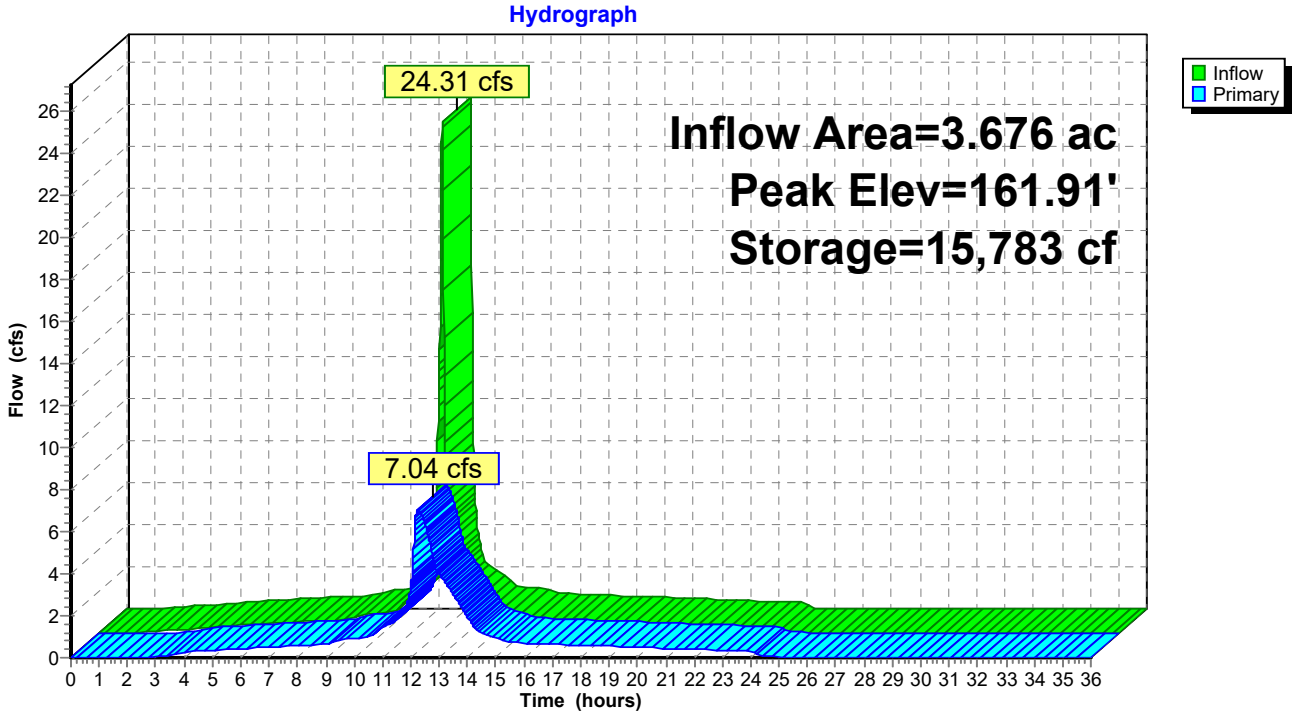
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

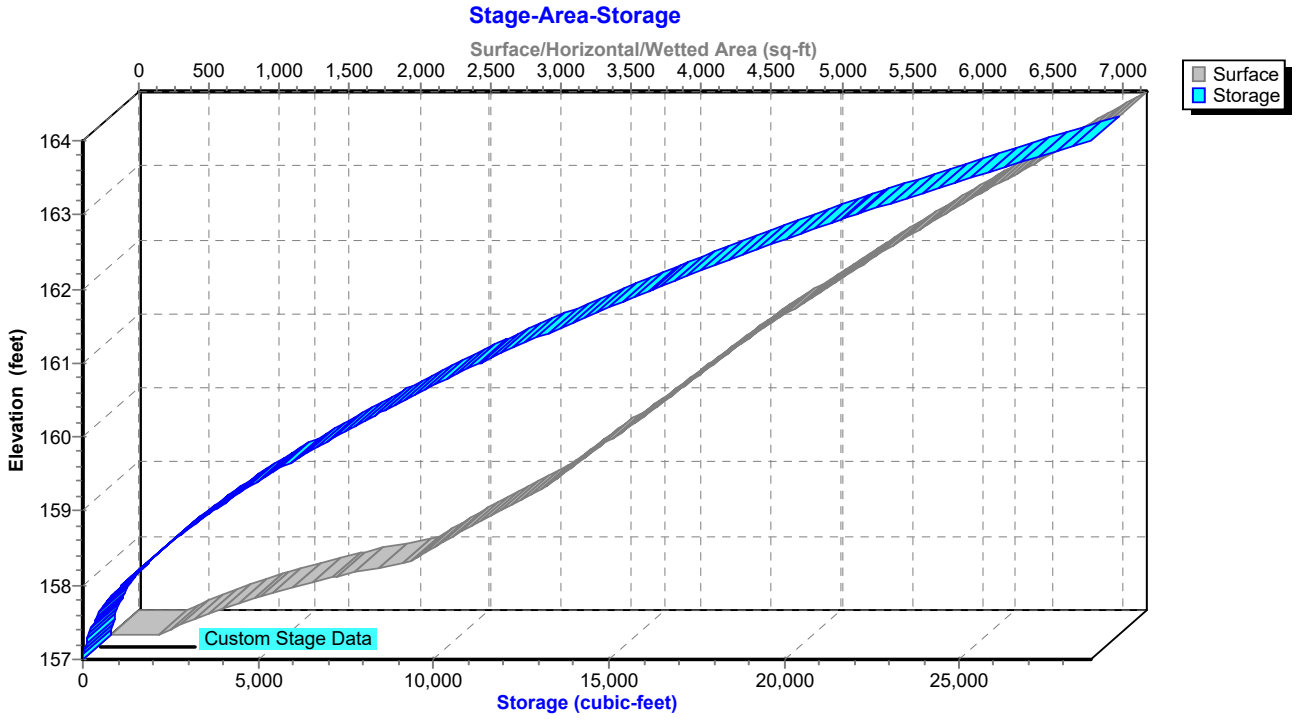
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.04 cfs @ 12.25 hrs HW=161.91' (Free Discharge)
└**1=Culvert** (Passes 7.04 cfs of 7.96 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.90 cfs @ 9.66 fps)
  ├**3=Orifice/Grate** (Orifice Controls 3.27 cfs @ 9.38 fps)
  ├**4=Orifice/Grate** (Orifice Controls 1.87 cfs @ 5.37 fps)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

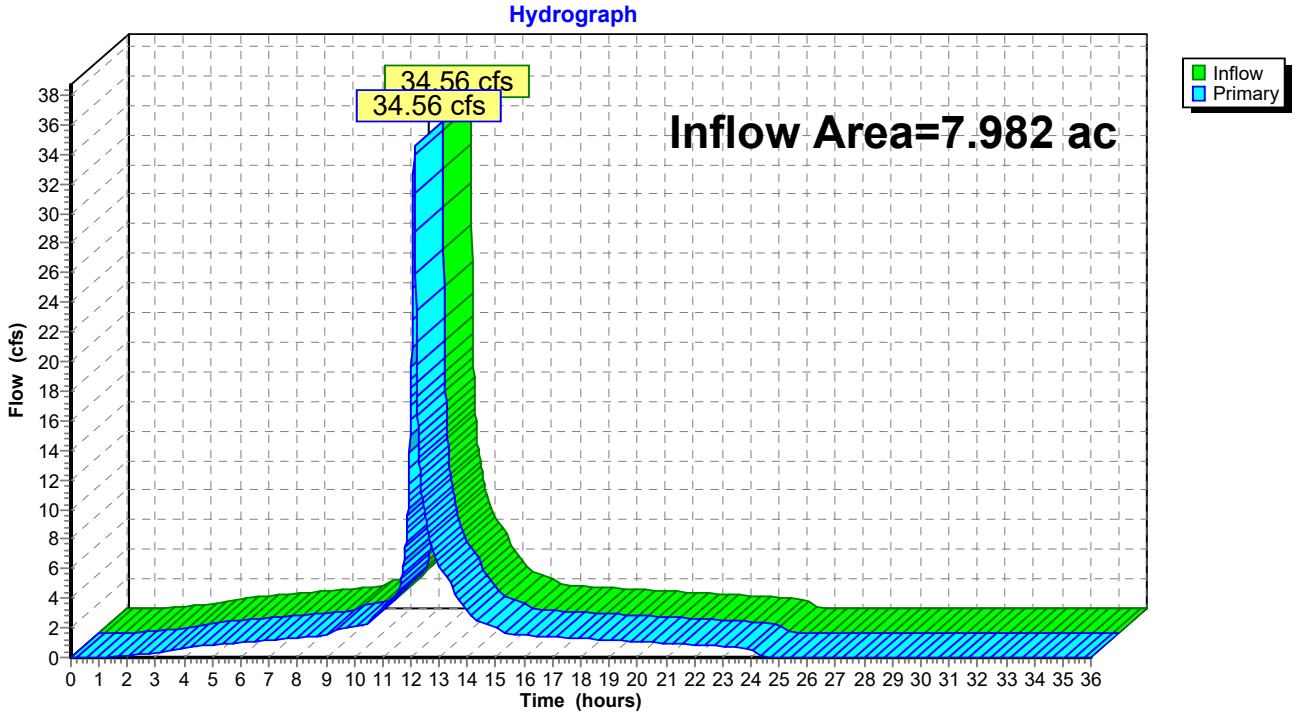
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Link 10L: Existing CB

Inflow Area = 7.982 ac, 93.75% Impervious, Inflow Depth = 5.80" for 25-Year event
Inflow = 34.56 cfs @ 12.12 hrs, Volume= 3.855 af
Primary = 34.56 cfs @ 12.12 hrs, Volume= 3.855 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: Existing CB

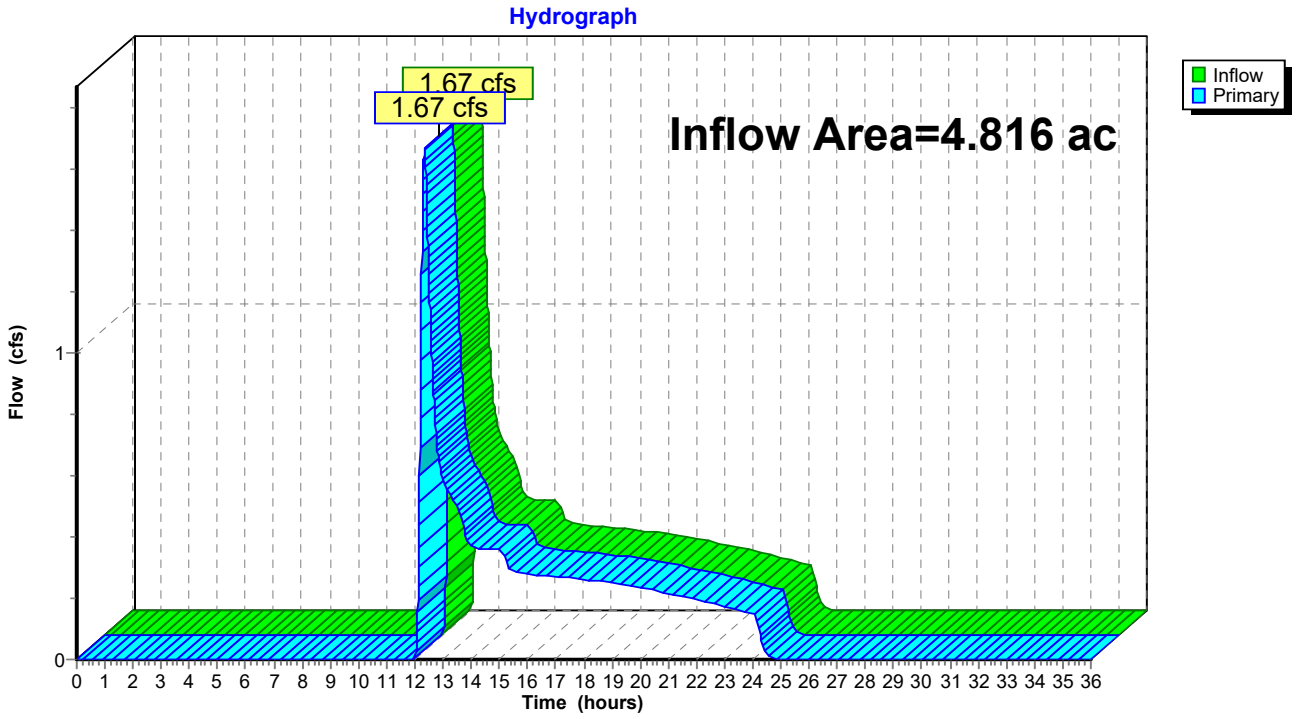


Summary for Link 20L: Sheet Flow South

Inflow Area = 4.816 ac, 7.00% Impervious, Inflow Depth = 0.80" for 25-Year event
Inflow = 1.67 cfs @ 12.34 hrs, Volume= 0.322 af
Primary = 1.67 cfs @ 12.34 hrs, Volume= 0.322 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 20L: Sheet Flow South



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 92.59% Impervious Runoff Depth=7.60"
Tc=5.0 min CN=95 Runoff=31.68 cfs 2.328 af

Subcatchment11S: Runoff Area=187,559 sf 94.74% Impervious Runoff Depth=7.72"
Flow Length=379' Tc=5.0 min CN=96 Runoff=37.27 cfs 2.770 af

Subcatchment20S: Runoff Area=209,781 sf 7.00% Impervious Runoff Depth=1.64"
Flow Length=488' Tc=19.3 min CN=43 Runoff=4.85 cfs 0.657 af

Pond 10P: Existing Detention Basin Peak Elev=162.90' Storage=21,438 cf Inflow=31.68 cfs 2.328 af
Outflow=8.31 cfs 2.317 af

Link 10L: Existing CB Inflow=44.46 cfs 5.087 af
Primary=44.46 cfs 5.087 af

Link 20L: Sheet Flow South Inflow=4.85 cfs 0.657 af
Primary=4.85 cfs 0.657 af

Total Runoff Area = 12.798 ac Runoff Volume = 5.756 af Average Runoff Depth = 5.40"
38.90% Pervious = 4.978 ac 61.10% Impervious = 7.820 ac

Summary for Subcatchment 10S:

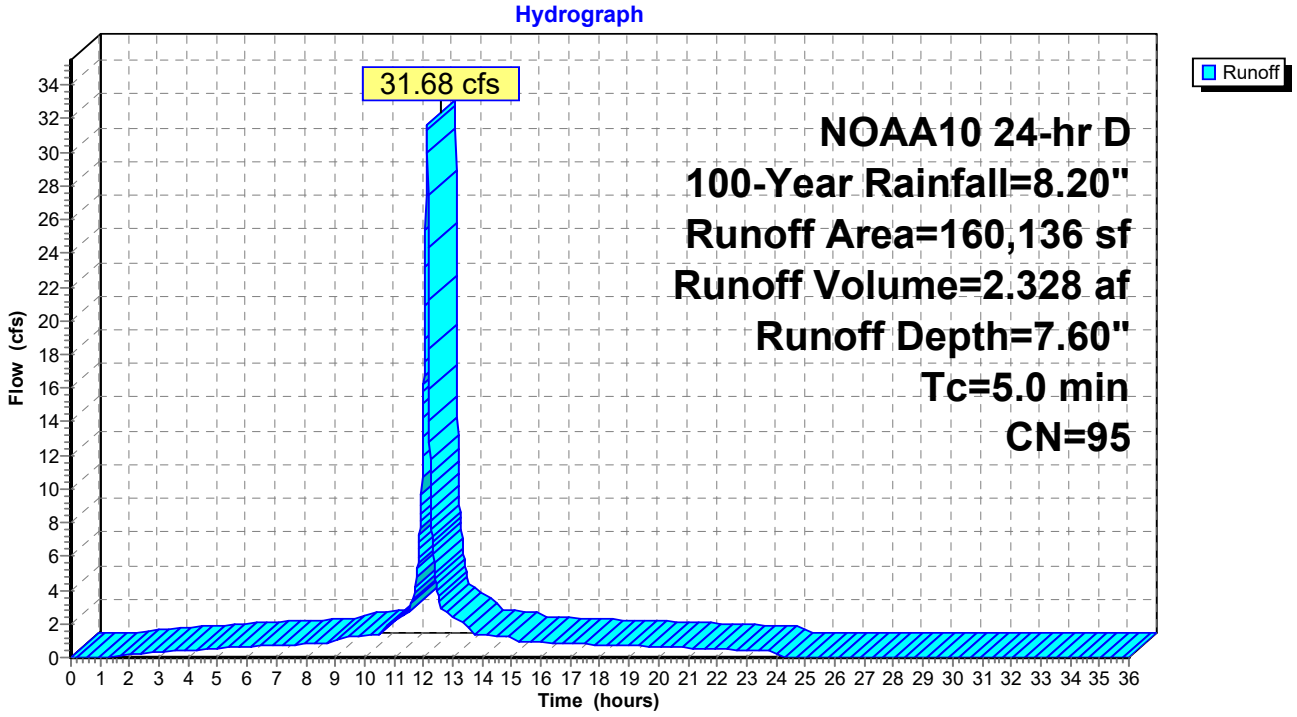
Runoff = 31.68 cfs @ 12.12 hrs, Volume= 2.328 af, Depth= 7.60"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
148,271	98	Paved parking, HSG D
3,726	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	95	Weighted Average
11,865		7.41% Pervious Area
148,271		92.59% Impervious Area

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

Subcatchment 10S:



Summary for Subcatchment 11S:

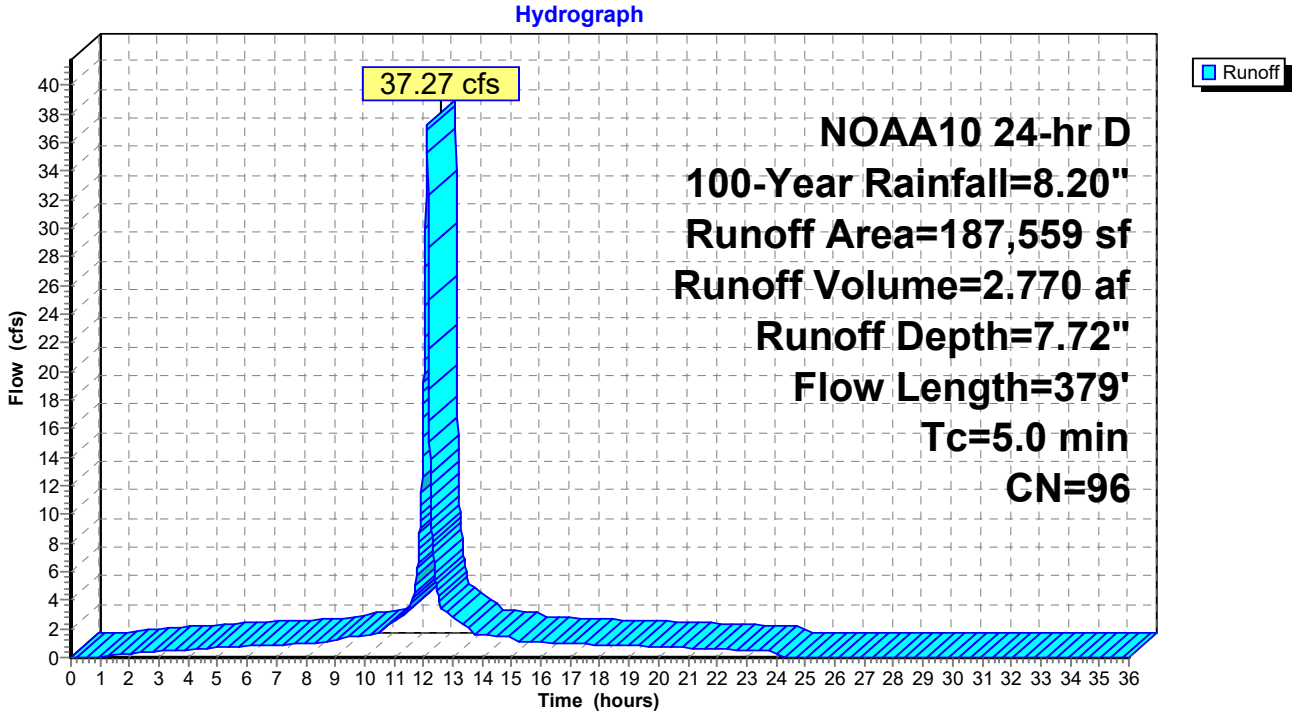
Runoff = 37.27 cfs @ 12.12 hrs, Volume= 2.770 af, Depth= 7.72"
Routed to Link 10L : Existing CB

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
177,685	98	Paved parking, HSG D
4,003	80	>75% Grass cover, Good, HSG D
2,738	79	Woods, Fair, HSG D
3,133	39	>75% Grass cover, Good, HSG A
187,559	96	Weighted Average
9,874		5.26% Pervious Area
177,685		94.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	379		1.26		**Direct Entry,**

Subcatchment 11S:



Summary for Subcatchment 20S:

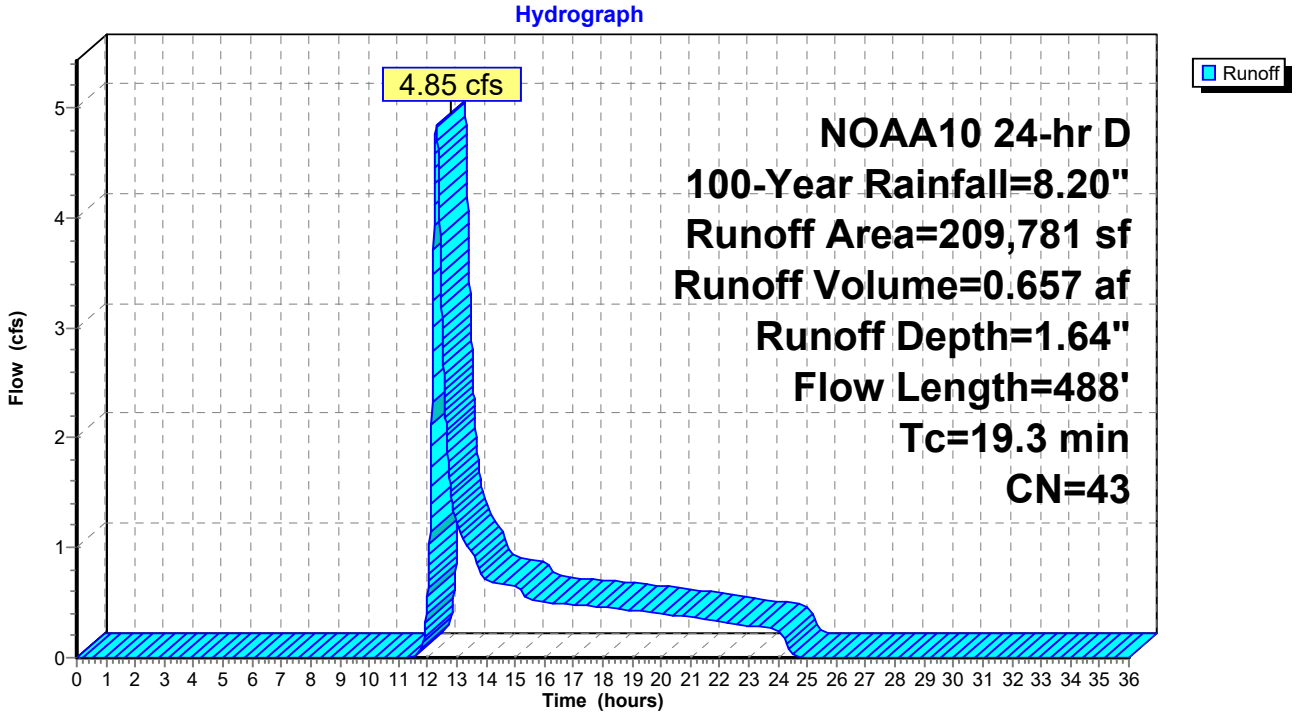
Runoff = 4.85 cfs @ 12.31 hrs, Volume= 0.657 af, Depth= 1.64"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
5,276	98	Paved parking, HSG A
86,709	39	>75% Grass cover, Good, HSG A
1,736	96	Gravel surface, HSG A
9,407	98	Paved parking, HSG D
6,024	80	>75% Grass cover, Good, HSG D
626	79	Woods, Fair, HSG D
100,003	36	Woods, Fair, HSG A
209,781	43	Weighted Average
195,098		93.00% Pervious Area
14,683		7.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0249	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.8	102	0.0200	2.12		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.5	208	0.0770	1.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.3	488	Total			

Subcatchment 20S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 92.59% Impervious, Inflow Depth = 7.60" for 100-Year event
Inflow = 31.68 cfs @ 12.12 hrs, Volume= 2.328 af
Outflow = 8.31 cfs @ 12.27 hrs, Volume= 2.317 af, Atten= 74%, Lag= 8.8 min
Primary = 8.31 cfs @ 12.27 hrs, Volume= 2.317 af
Routed to Link 10L : Existing CB

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 162.90' @ 12.27 hrs Surf.Area= 6,137 sf Storage= 21,438 cf

Plug-Flow detention time= 31.9 min calculated for 2.317 af (99% of inflow)
Center-of-Mass det. time= 28.8 min (788.7 - 760.0)

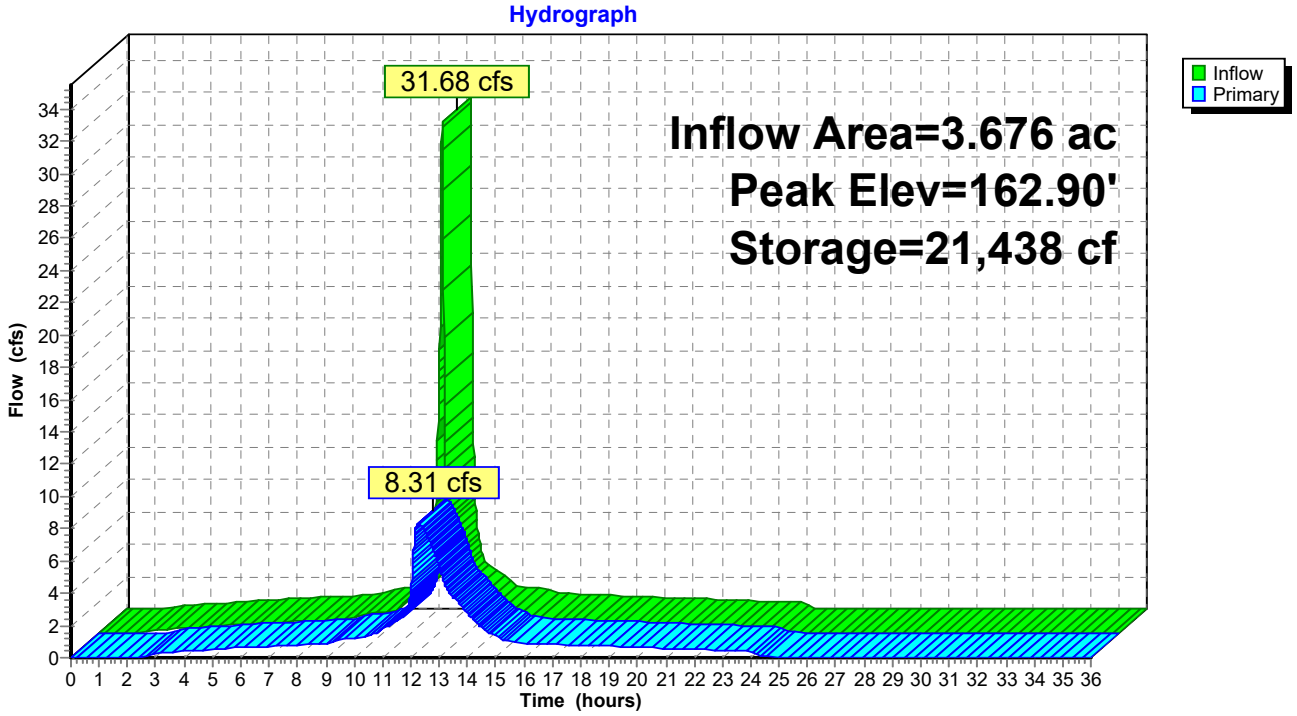
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

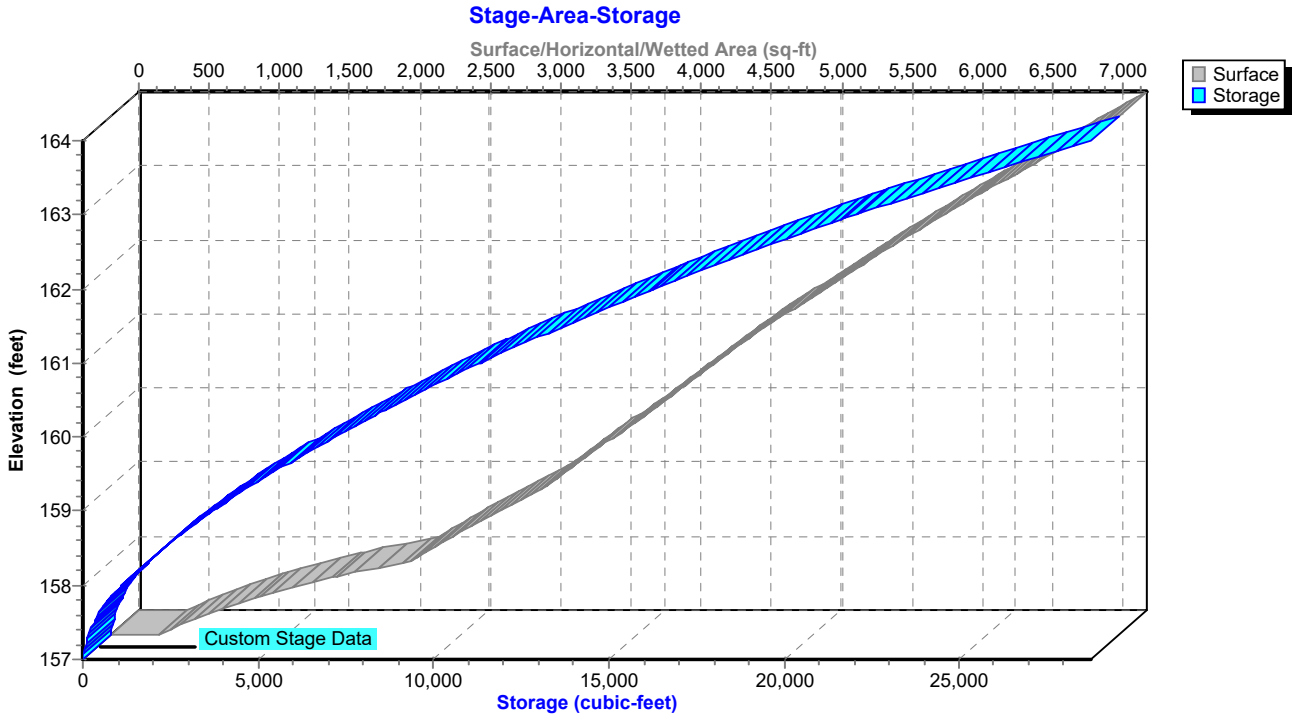
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=8.31 cfs @ 12.27 hrs HW=162.90' (Free Discharge)
└**1=Culvert** (Passes 8.31 cfs of 8.59 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 2.12 cfs @ 10.79 fps)
  ├**3=Orifice/Grate** (Orifice Controls 3.68 cfs @ 10.53 fps)
  ├**4=Orifice/Grate** (Orifice Controls 2.51 cfs @ 7.20 fps)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

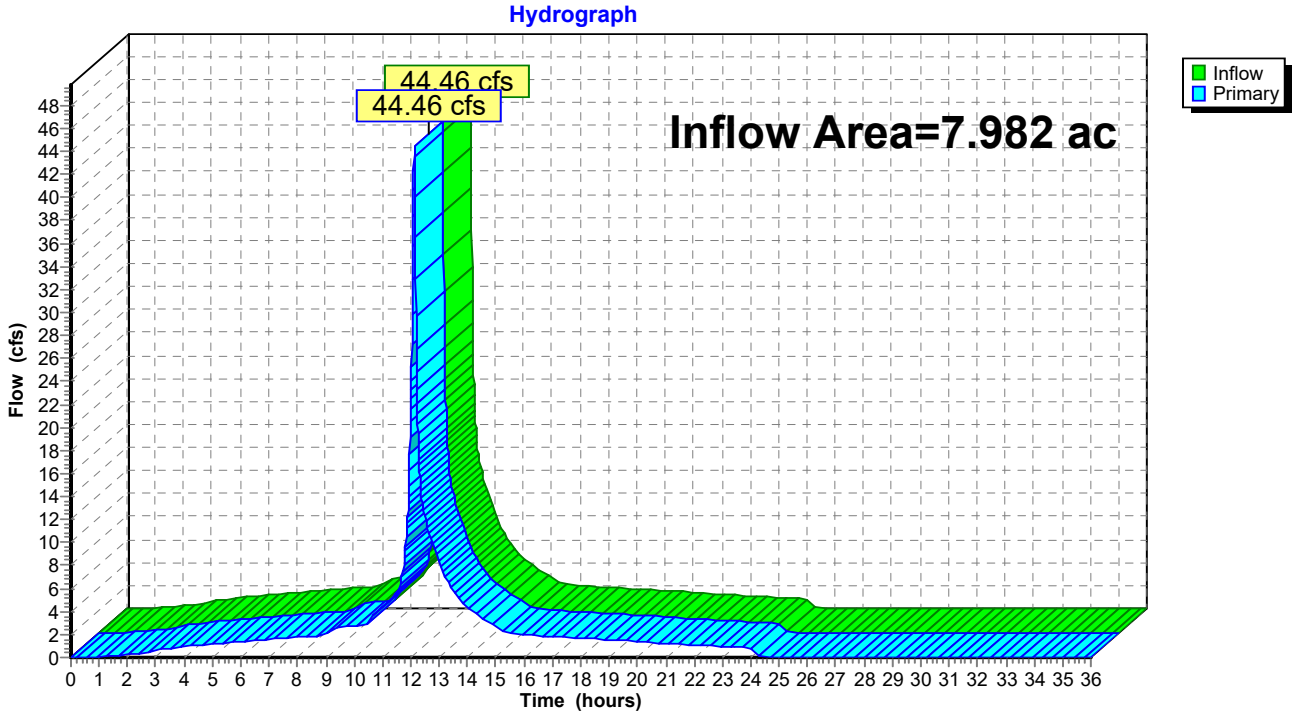
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Link 10L: Existing CB

Inflow Area = 7.982 ac, 93.75% Impervious, Inflow Depth = 7.65" for 100-Year event
Inflow = 44.46 cfs @ 12.12 hrs, Volume= 5.087 af
Primary = 44.46 cfs @ 12.12 hrs, Volume= 5.087 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: Existing CB

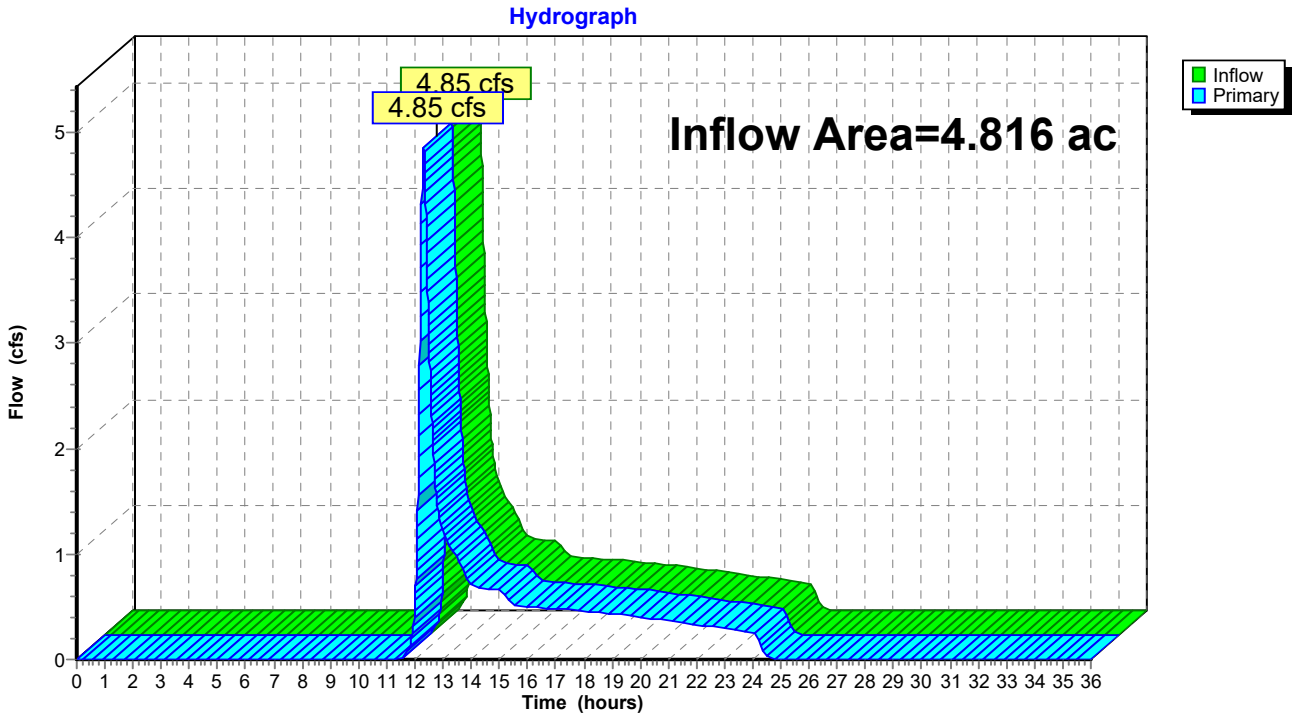


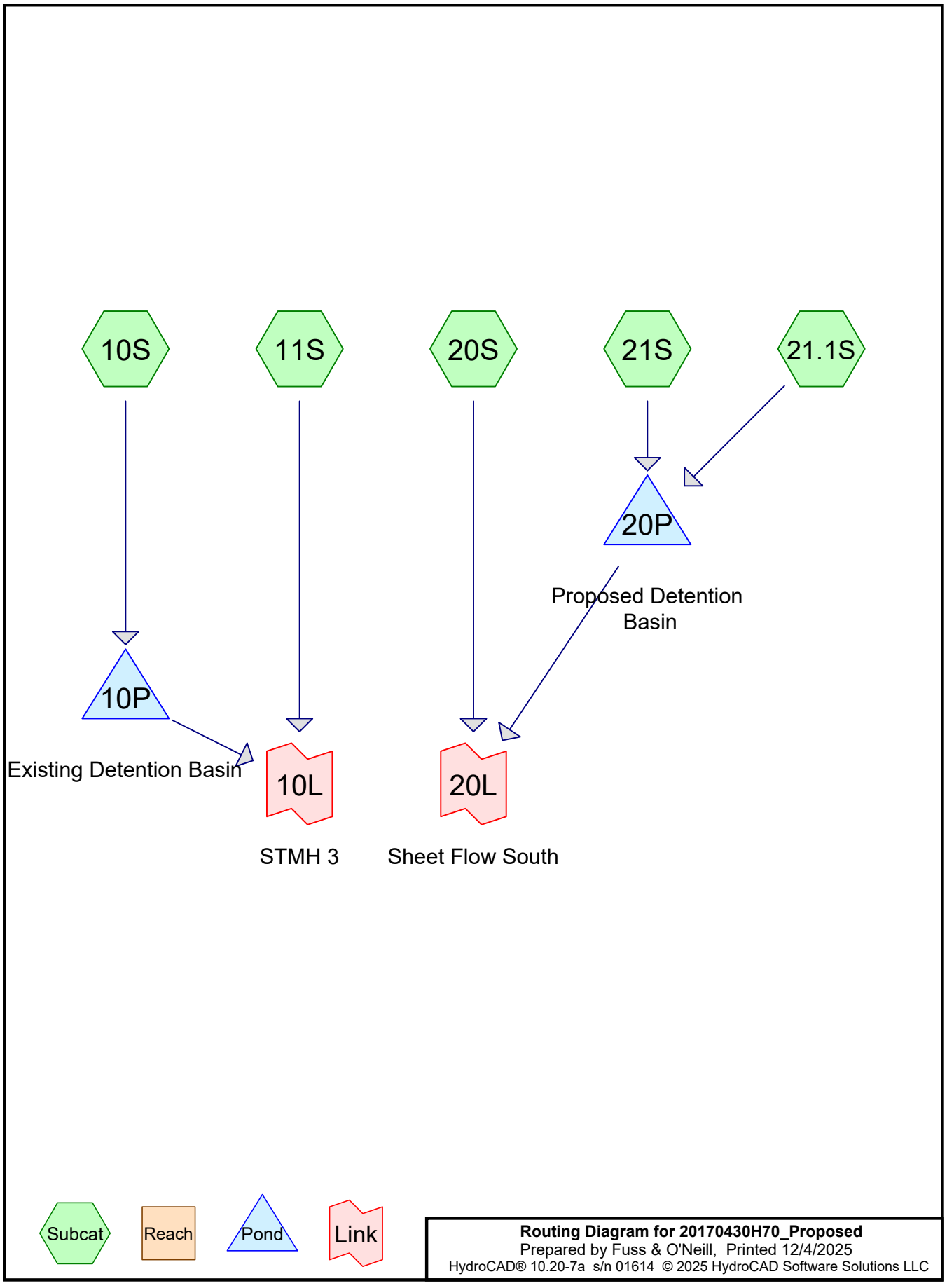
Summary for Link 20L: Sheet Flow South

Inflow Area = 4.816 ac, 7.00% Impervious, Inflow Depth = 1.64" for 100-Year event
Inflow = 4.85 cfs @ 12.31 hrs, Volume= 0.657 af
Primary = 4.85 cfs @ 12.31 hrs, Volume= 0.657 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 20L: Sheet Flow South





Routing Diagram for 20170430H70_Proposed
Prepared by Fuss & O'Neill, Printed 12/4/2025
HydroCAD® 10.20-7a s/n 01614 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NOAA10 24-hr	D	Default	24.00	1	3.22	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	5.14	2
3	25-Year	NOAA10 24-hr	D	Default	24.00	1	6.34	2
4	100-Year	NOAA10 24-hr	D	Default	24.00	1	8.20	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.948	39	>75% Grass cover, Good, HSG A (10S, 20S, 21.1S, 21S)
1.604	80	>75% Grass cover, Good, HSG D (10S, 11S, 20S, 21.1S, 21S)
0.027	96	Gravel surface, HSG A (20S)
0.006	96	Gravel surface, HSG D (11S)
0.506	98	Paved parking, HSG A (20S, 21.1S, 21S)
6.463	98	Paved parking, HSG D (10S, 11S, 20S, 21.1S, 21S)
0.029	98	Unconnected roofs, HSG D (11S)
2.214	36	Woods, Fair, HSG A (20S)
0.012	77	Woods, Good, HSG D (10S)
12.810	**76**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
4.695	HSG A	10S, 20S, 21.1S, 21S
0.000	HSG B	
0.000	HSG C	
8.115	HSG D	10S, 11S, 20S, 21.1S, 21S
0.000	Other	
12.810		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.948	0.000	0.000	1.604	0.000	3.553	>75% Grass cover, Good	10S, 11S, 20S, 21.1S, 21S
0.027	0.000	0.000	0.006	0.000	0.033	Gravel surface	11S, 20S
0.506	0.000	0.000	6.463	0.000	6.969	Paved parking	10S, 11S, 20S, 21.1S, 21S
0.000	0.000	0.000	0.029	0.000	0.029	Unconnected roofs	11S
2.214	0.000	0.000	0.000	0.000	2.214	Woods, Fair	20S
0.000	0.000	0.000	0.012	0.000	0.012	Woods, Good	10S
4.695	**0.000**	**0.000**	**8.115**	**0.000**	**12.810**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	10S	0.00	0.00	387.0	0.0500	0.013	0.0	24.0	0.0	
2	11S	0.00	0.00	46.0	0.0140	0.011	0.0	15.0	0.0	
3	10P	157.51	154.61	311.0	0.0093	0.013	0.0	15.0	0.0	

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 61.92% Impervious Runoff Depth=2.10"
Flow Length=679' Tc=20.8 min CN=89 Runoff=5.62 cfs 0.643 af

Subcatchment11S: Runoff Area=169,564 sf 97.62% Impervious Runoff Depth=2.99"
Flow Length=399' Tc=5.0 min CN=98 Runoff=13.18 cfs 0.969 af

Subcatchment20S: Runoff Area=143,425 sf 8.19% Impervious Runoff Depth=0.02"
Flow Length=329' Tc=10.8 min CN=43 Runoff=0.01 cfs 0.006 af

Subcatchment21.1S: Runoff Area=22,049 sf 20.60% Impervious Runoff Depth=0.38"
Flow Length=168' Tc=19.3 min CN=59 Runoff=0.08 cfs 0.016 af

Subcatchment21S: Runoff Area=62,835 sf 38.01% Impervious Runoff Depth=0.65"
Flow Length=224' Slope=0.0180 '/' Tc=15.8 min CN=66 Runoff=0.65 cfs 0.079 af

Pond 10P: Existing Detention Basin Peak Elev=159.36' Storage=4,887 cf Inflow=5.62 cfs 0.643 af
Outflow=3.03 cfs 0.632 af

Pond 20P: Proposed Detention Basin Peak Elev=156.08' Storage=427 cf Inflow=0.72 cfs 0.095 af
Discarded=0.30 cfs 0.095 af Primary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.095 af

Link 10L: STMH 3 Inflow=14.64 cfs 1.601 af
Primary=14.64 cfs 1.601 af

Link 20L: Sheet Flow South Inflow=0.01 cfs 0.006 af
Primary=0.01 cfs 0.006 af

Total Runoff Area = 12.810 ac Runoff Volume = 1.713 af Average Runoff Depth = 1.61"
45.37% Pervious = 5.812 ac 54.63% Impervious = 6.999 ac

Summary for Subcatchment 10S:

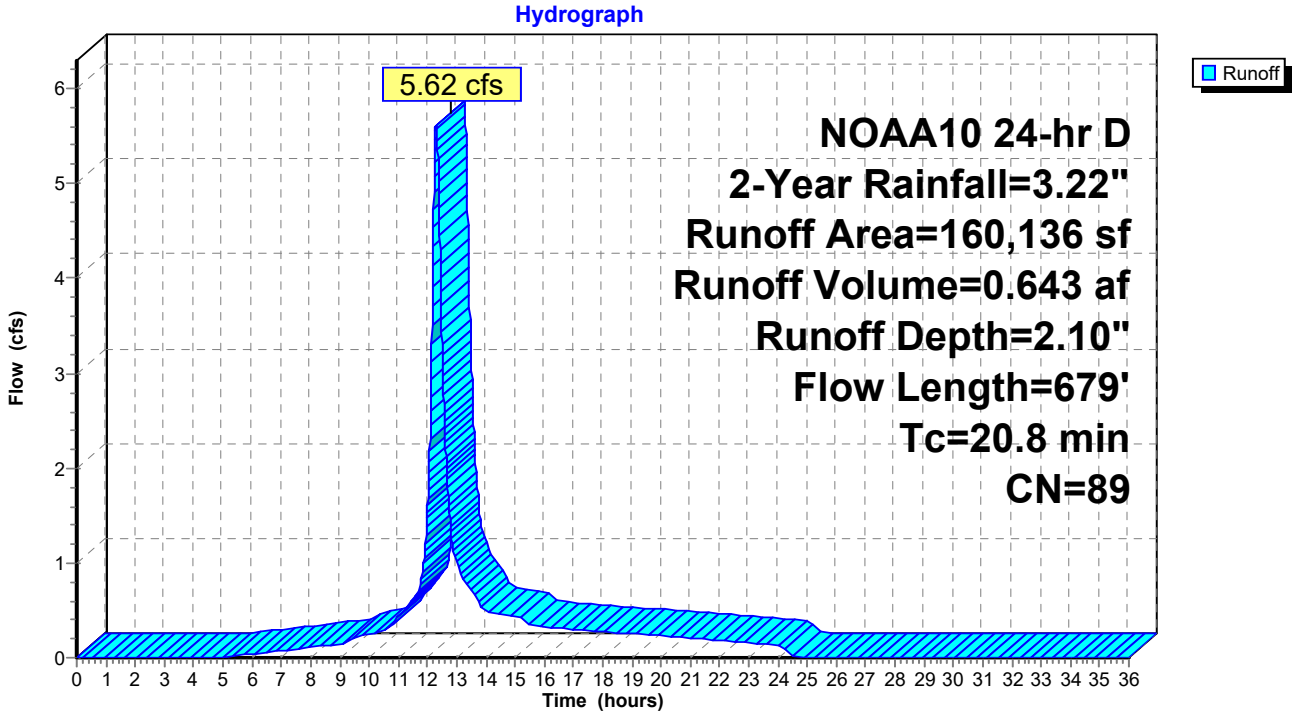
Runoff = 5.62 cfs @ 12.30 hrs, Volume= 0.643 af, Depth= 2.10"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
99,158	98	Paved parking, HSG D
52,839	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	89	Weighted Average
60,978		38.08% Pervious Area
99,158		61.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.9	85	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.7	107	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	387	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
20.8	679	Total			

Subcatchment 10S:



Summary for Subcatchment 11S:

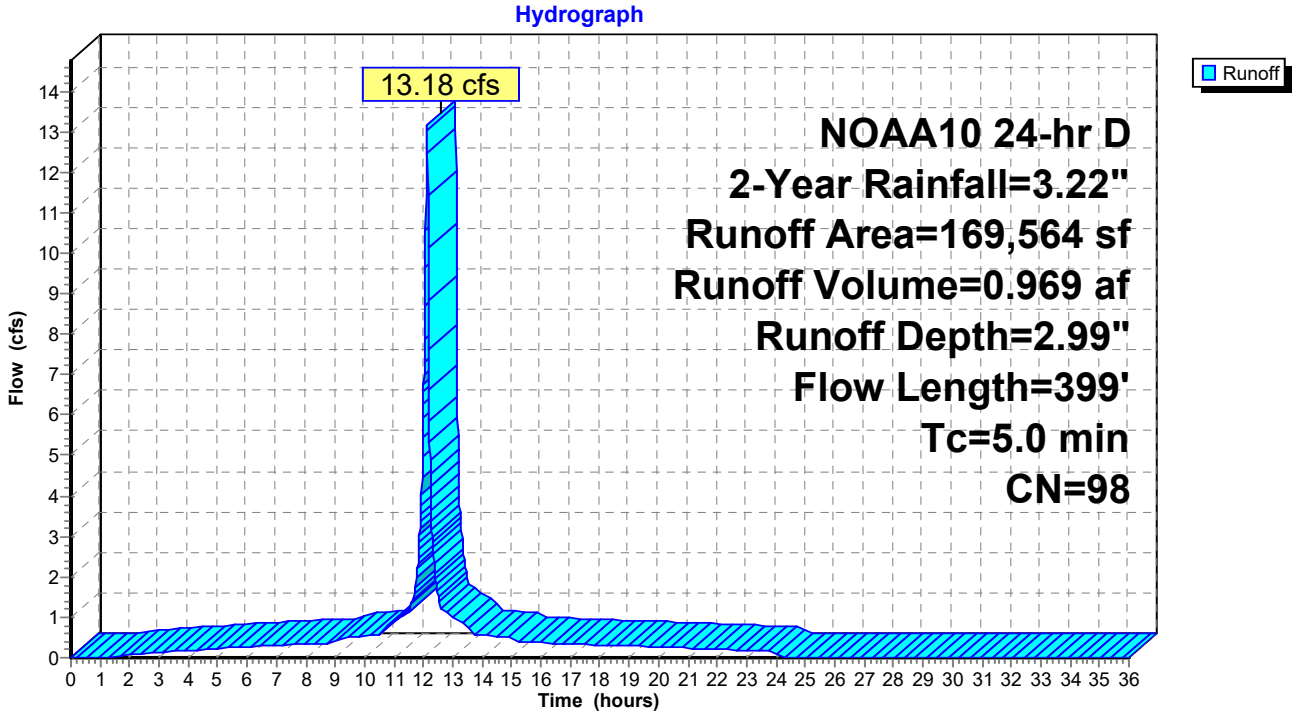
Runoff = 13.18 cfs @ 12.12 hrs, Volume= 0.969 af, Depth= 2.99"
Routed to Link 10L : STMH 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
164,246	98	Paved parking, HSG D
3,772	80	>75% Grass cover, Good, HSG D
1,278	98	Unconnected roofs, HSG D
268	96	Gravel surface, HSG D
169,564	98	Weighted Average
4,040		2.38% Pervious Area
165,524		97.62% Impervious Area
1,278		0.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0150	1.23		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.8	253	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	46	0.0140	7.36	9.03	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
3.3	399	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 11S:



Summary for Subcatchment 20S:

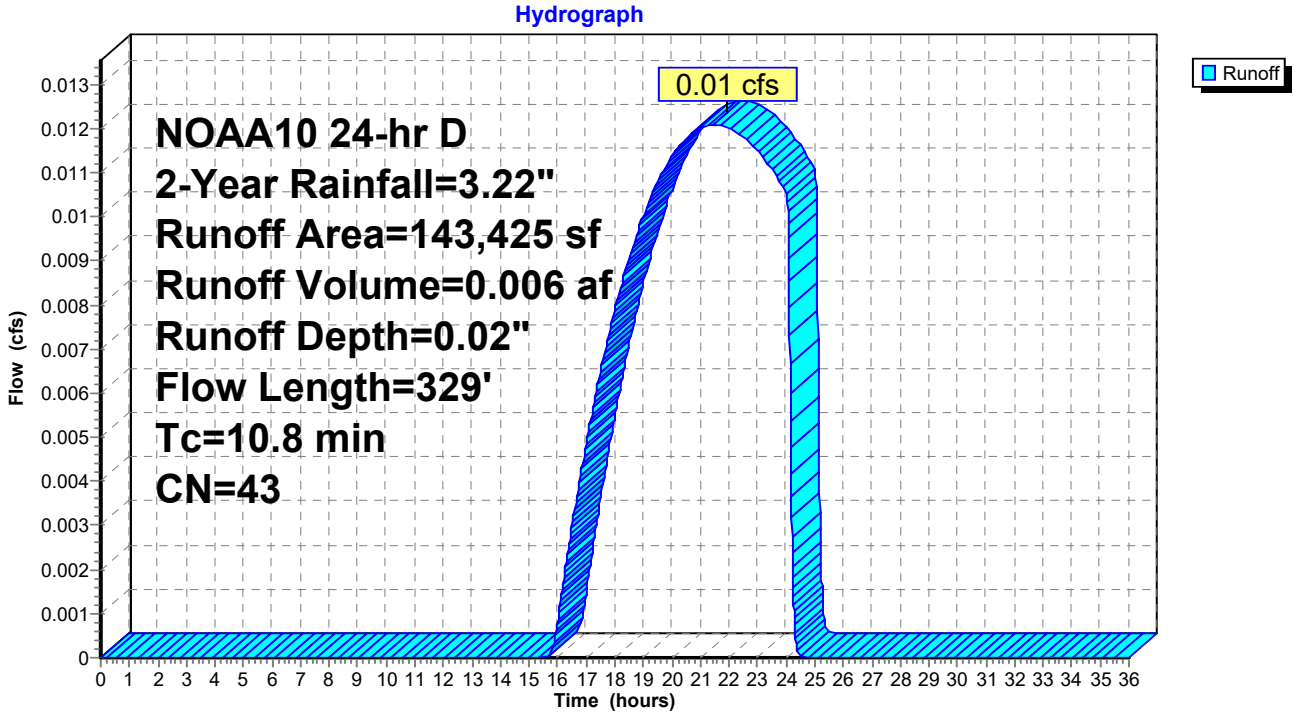
Runoff = 0.01 cfs @ 21.42 hrs, Volume= 0.006 af, Depth= 0.02"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
31,169	39	>75% Grass cover, Good, HSG A
2,577	98	Paved parking, HSG A
96,448	36	Woods, Fair, HSG A
2,899	80	>75% Grass cover, Good, HSG D
9,169	98	Paved parking, HSG D
1,163	96	Gravel surface, HSG A
143,425	43	Weighted Average
131,679		91.81% Pervious Area
11,746		8.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	43	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	208	0.0770	5.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.8	329	Total			

Subcatchment 20S:



Summary for Subcatchment 21.1S:

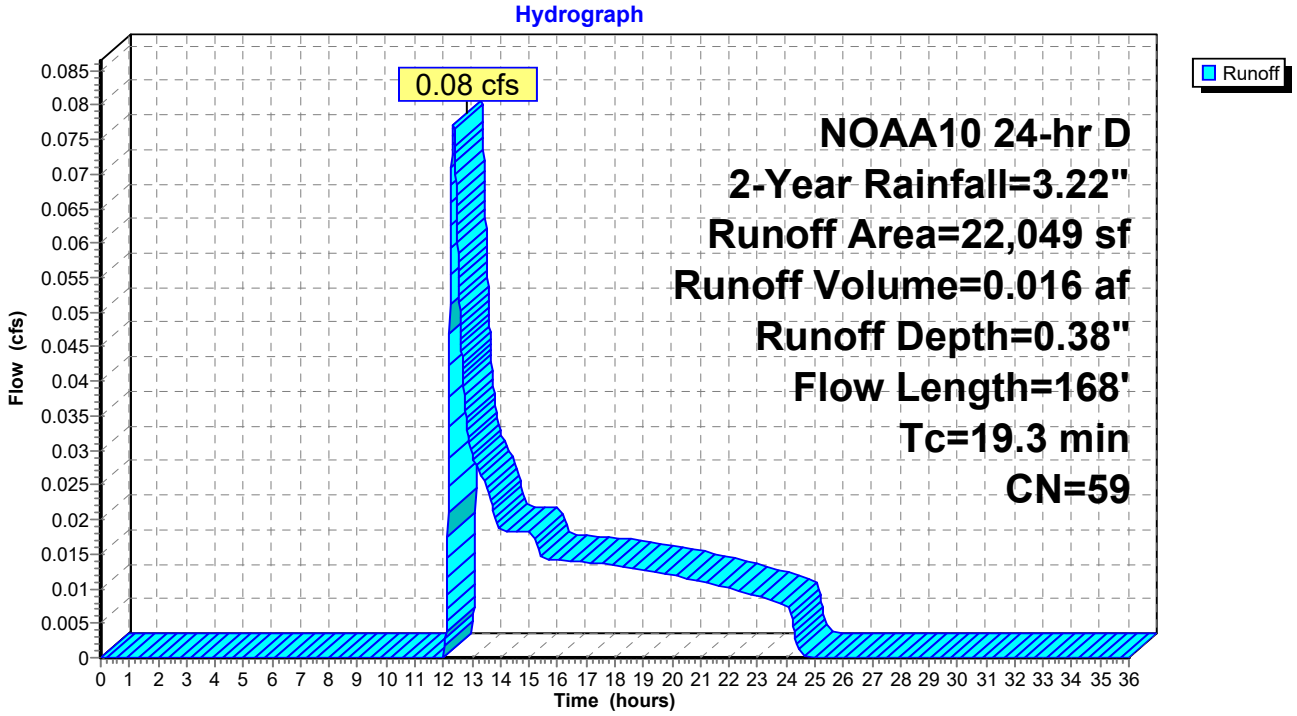
Runoff = 0.08 cfs @ 12.35 hrs, Volume= 0.016 af, Depth= 0.38"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
3,929	98	Paved parking, HSG A
13,391	39	>75% Grass cover, Good, HSG A
614	98	Paved parking, HSG D
4,115	80	>75% Grass cover, Good, HSG D
22,049	59	Weighted Average
17,506		79.40% Pervious Area
4,543		20.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.2	16	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	52	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	168	Total			

Subcatchment 21.1S:



Summary for Subcatchment 21S:

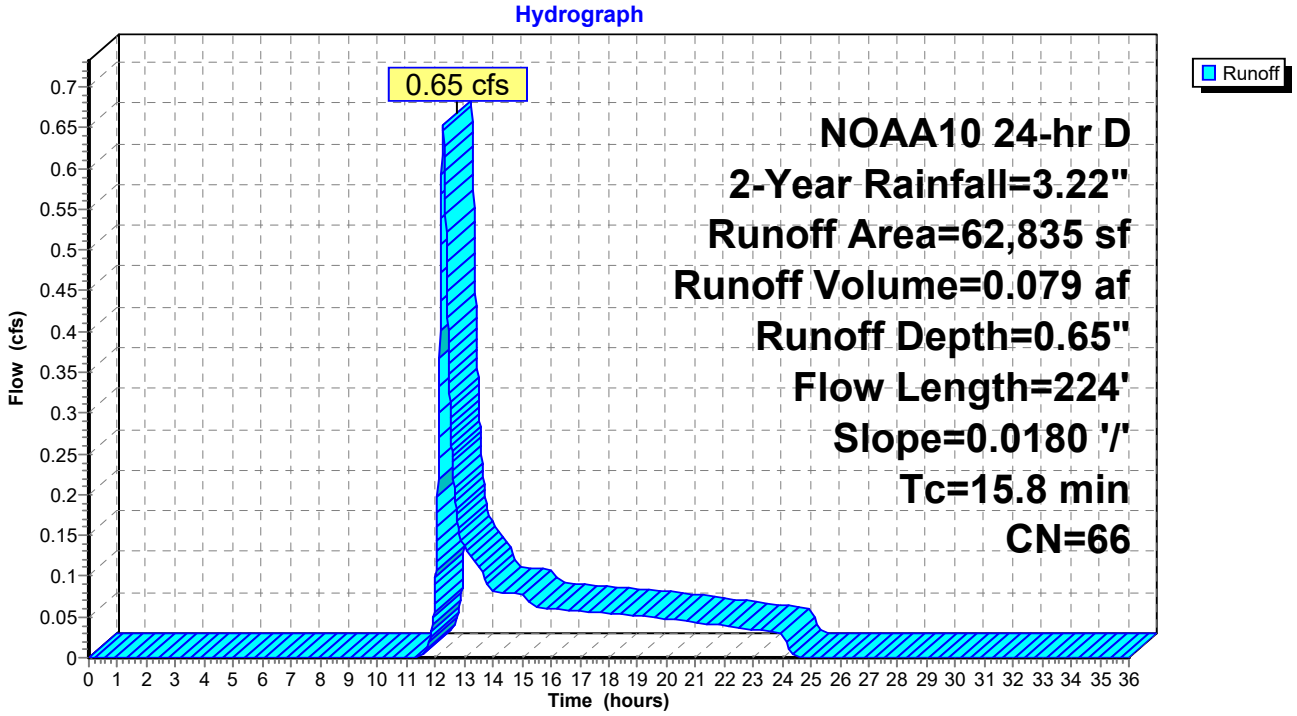
Runoff = 0.65 cfs @ 12.27 hrs, Volume= 0.079 af, Depth= 0.65"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 2-Year Rainfall=3.22"

Area (sf)	CN	Description
15,544	98	Paved parking, HSG A
32,688	39	>75% Grass cover, Good, HSG A
8,341	98	Paved parking, HSG D
6,262	80	>75% Grass cover, Good, HSG D
62,835	66	Weighted Average
38,950		61.99% Pervious Area
23,885		38.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.6	74	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	50	0.0180	2.72		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.8	224	Total			

Subcatchment 21S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 61.92% Impervious, Inflow Depth = 2.10" for 2-Year event
Inflow = 5.62 cfs @ 12.30 hrs, Volume= 0.643 af
Outflow = 3.03 cfs @ 12.52 hrs, Volume= 0.632 af, Atten= 46%, Lag= 13.6 min
Primary = 3.03 cfs @ 12.52 hrs, Volume= 0.632 af
Routed to Link 10L : STMH 3

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 159.36' @ 12.52 hrs Surf.Area= 3,354 sf Storage= 4,887 cf

Plug-Flow detention time= 42.2 min calculated for 0.632 af (98% of inflow)
Center-of-Mass det. time= 32.1 min (878.7 - 846.6)

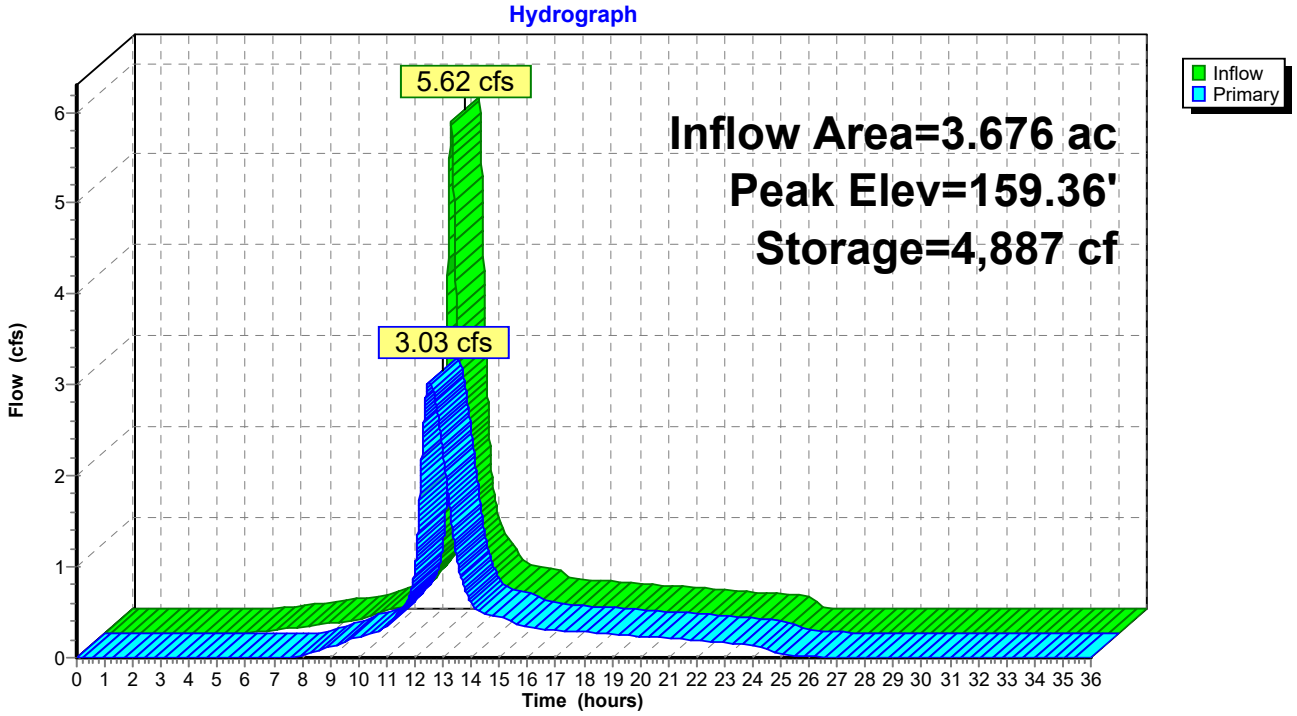
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

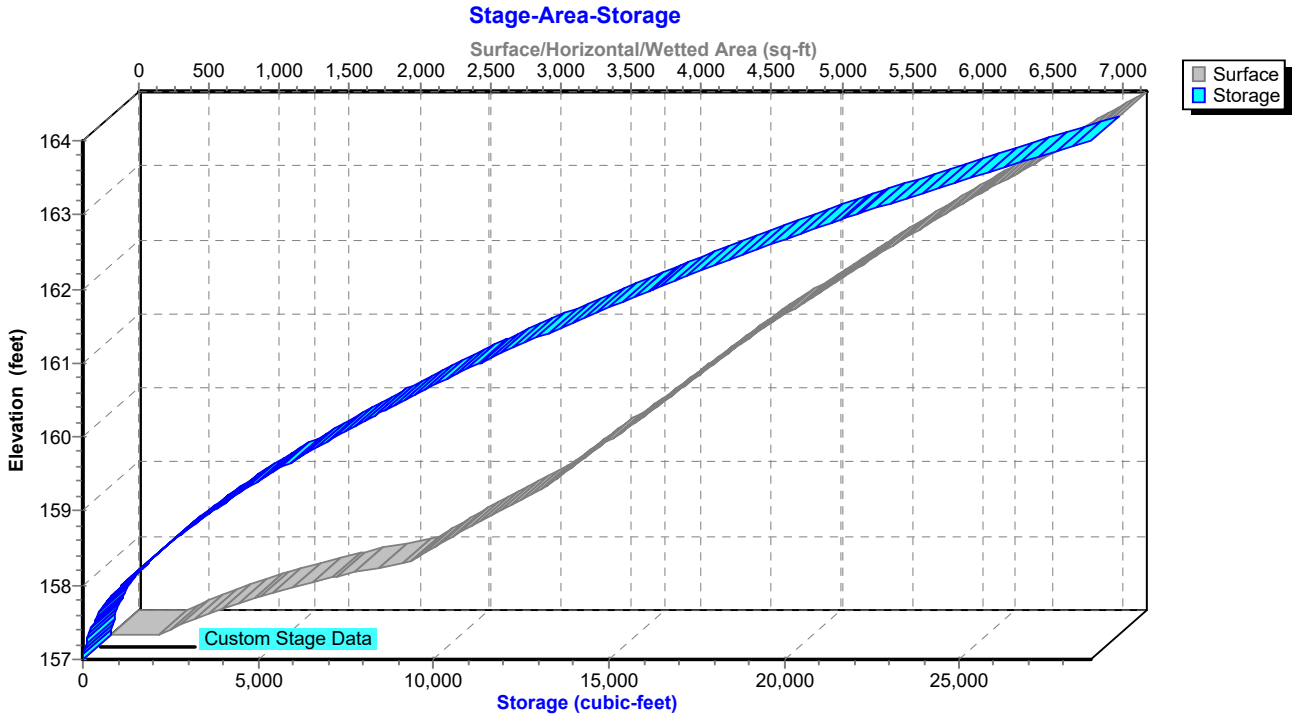
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.03 cfs @ 12.52 hrs HW=159.36' (Free Discharge)
└**1=Culvert** (Passes 3.03 cfs of 4.91 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.15 cfs @ 5.87 fps)
  ├**3=Orifice/Grate** (Orifice Controls 1.88 cfs @ 5.39 fps)
  ├**4=Orifice/Grate** (Controls 0.00 cfs)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Pond 20P: Proposed Detention Basin

Inflow Area = 1.949 ac, 33.49% Impervious, Inflow Depth = 0.58" for 2-Year event
Inflow = 0.72 cfs @ 12.27 hrs, Volume= 0.095 af
Outflow = 0.30 cfs @ 12.57 hrs, Volume= 0.095 af, Atten= 58%, Lag= 18.2 min
Discarded = 0.30 cfs @ 12.57 hrs, Volume= 0.095 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 20L : Sheet Flow South

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 156.08' @ 12.57 hrs Surf.Area= 5,399 sf Storage= 427 cf

Plug-Flow detention time= 8.8 min calculated for 0.095 af (100% of inflow)
Center-of-Mass det. time= 8.8 min (964.9 - 956.1)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,355 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

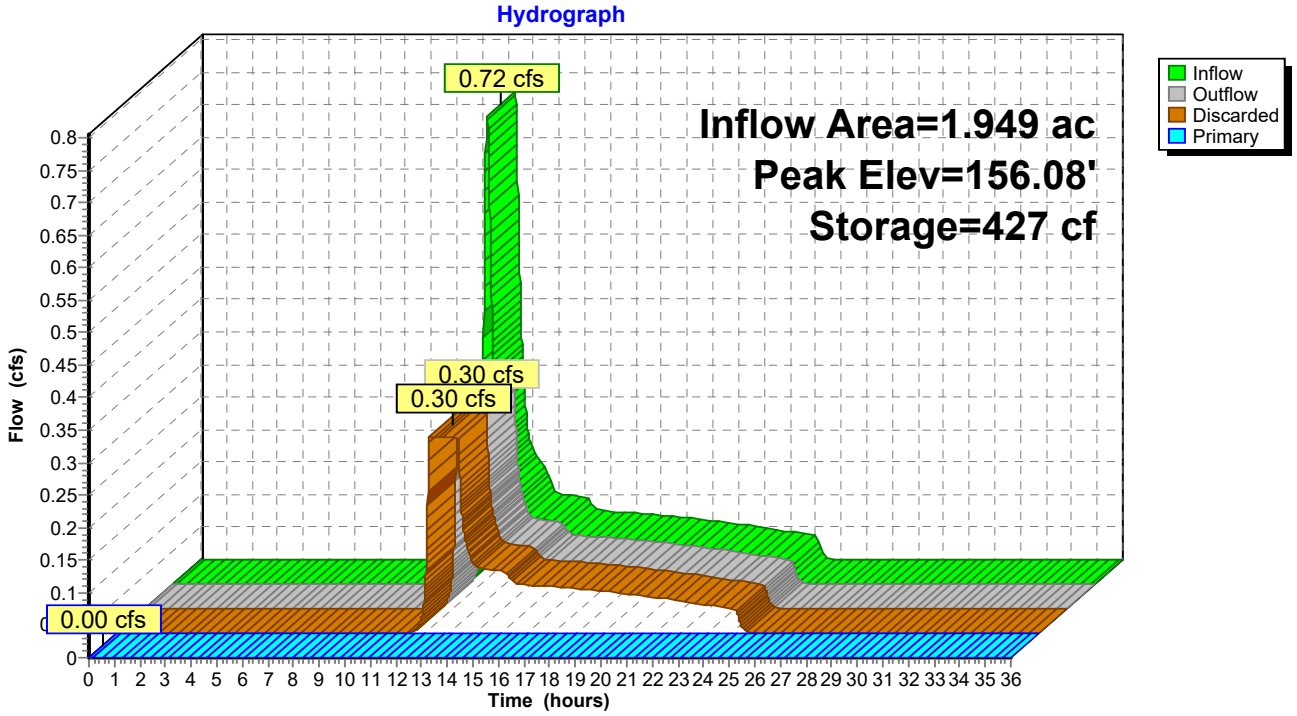
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	5,399	336.0	0.0	0	0	5,399
156.10	5,399	336.0	100.0	540	540	5,433
157.00	6,438	355.0	100.0	5,320	5,860	6,523
157.80	7,310	370.0	100.0	5,496	11,355	7,435

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Discarded	156.00'	**2.410 in/hr Exfiltration over Wetted area**

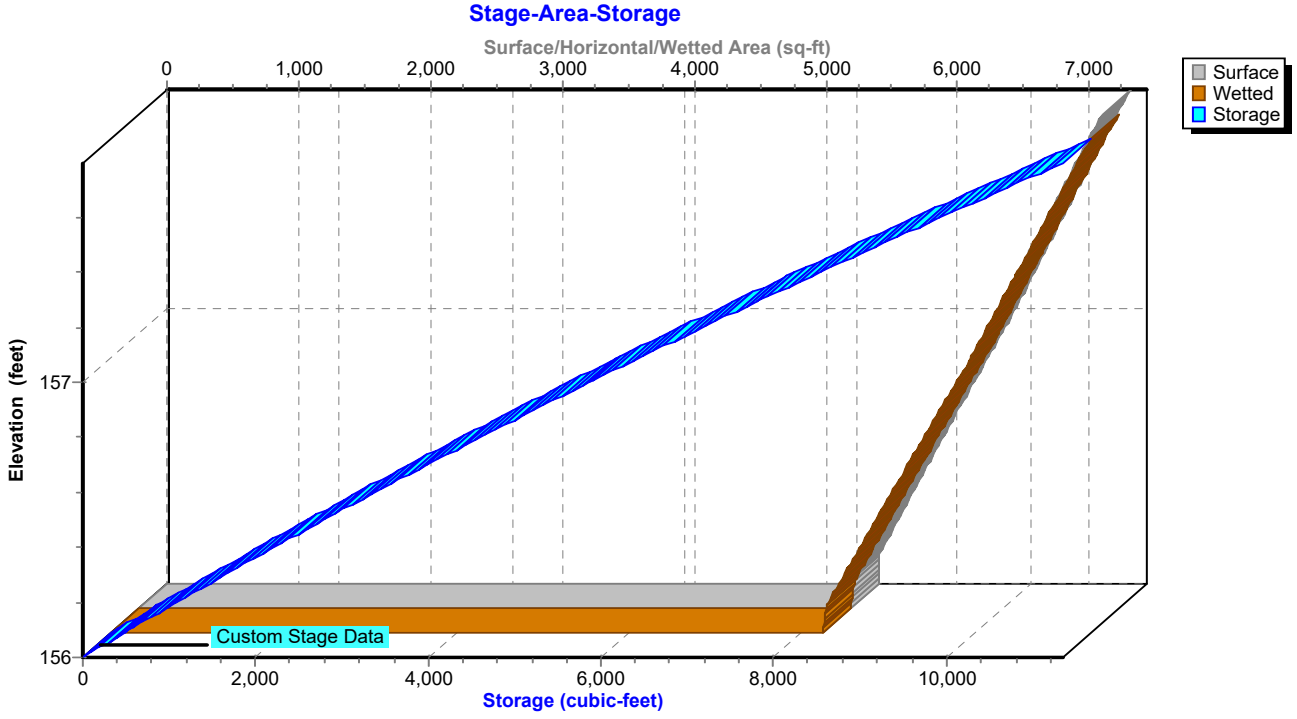
Discarded OutFlow Max=0.30 cfs @ 12.57 hrs HW=156.08' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=156.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 20P: Proposed Detention Basin



Pond 20P: Proposed Detention Basin



Stage-Area-Storage for Pond 20P: Proposed Detention Basin

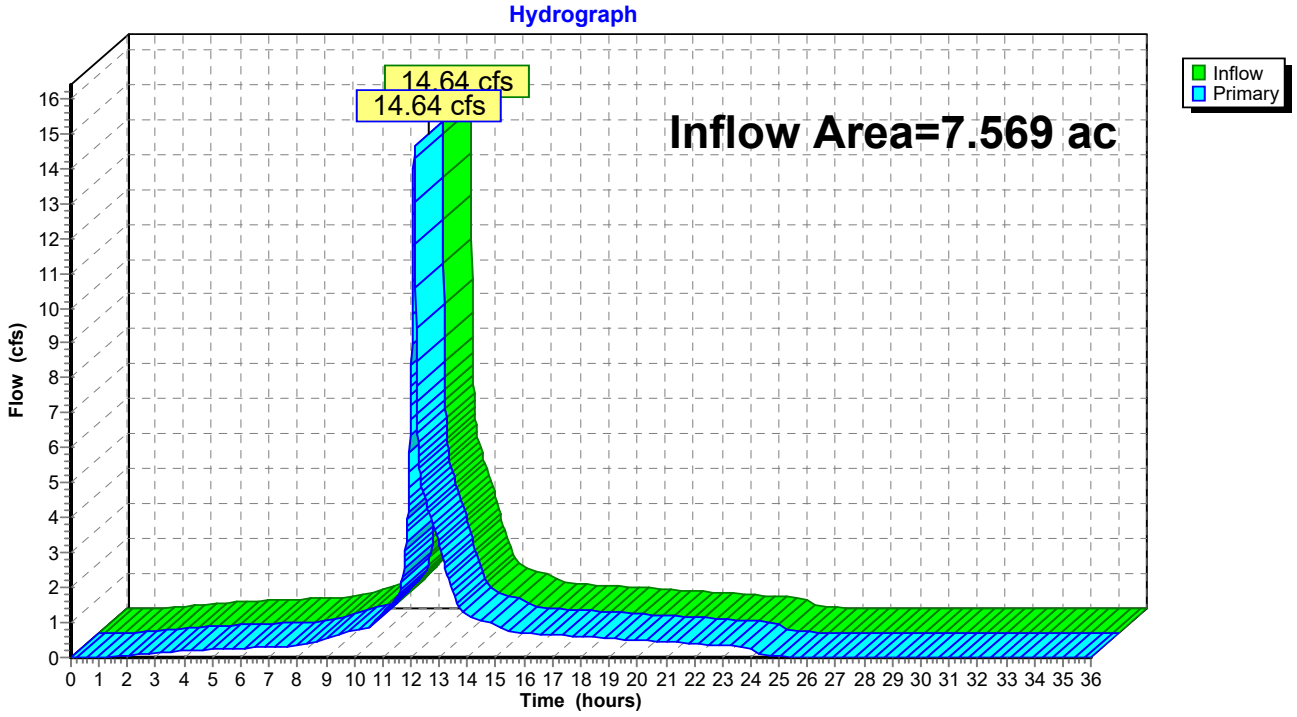
Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
156.00	5,399	5,399	0
156.05	5,399	5,416	270
156.10	5,399	5,433	540
156.15	5,454	5,492	811
156.20	5,510	5,551	1,085
156.25	5,566	5,610	1,362
156.30	5,622	5,670	1,642
156.35	5,678	5,729	1,924
156.40	5,735	5,789	2,210
156.45	5,792	5,849	2,498
156.50	5,849	5,910	2,789
156.55	5,907	5,970	3,083
156.60	5,965	6,031	3,380
156.65	6,023	6,092	3,679
156.70	6,082	6,153	3,982
156.75	6,140	6,214	4,288
156.80	6,199	6,275	4,596
156.85	6,258	6,337	4,907
156.90	6,318	6,399	5,222
156.95	6,378	6,461	5,539
157.00	6,438	6,523	5,860
157.05	6,491	6,579	6,183
157.10	6,544	6,635	6,509
157.15	6,597	6,691	6,837
157.20	6,651	6,747	7,169
157.25	6,705	6,804	7,502
157.30	6,759	6,861	7,839
157.35	6,813	6,917	8,178
157.40	6,867	6,974	8,520
157.45	6,922	7,031	8,865
157.50	6,977	7,089	9,212
157.55	7,032	7,146	9,563
157.60	7,087	7,204	9,916
157.65	7,142	7,261	10,271
157.70	7,198	7,319	10,630
157.75	7,254	7,377	10,991
157.80	**7,310**	**7,435**	**11,355**

Summary for Link 10L: STMH 3

Inflow Area = 7.569 ac, 80.28% Impervious, Inflow Depth = 2.54" for 2-Year event
Inflow = 14.64 cfs @ 12.12 hrs, Volume= 1.601 af
Primary = 14.64 cfs @ 12.12 hrs, Volume= 1.601 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: STMH 3

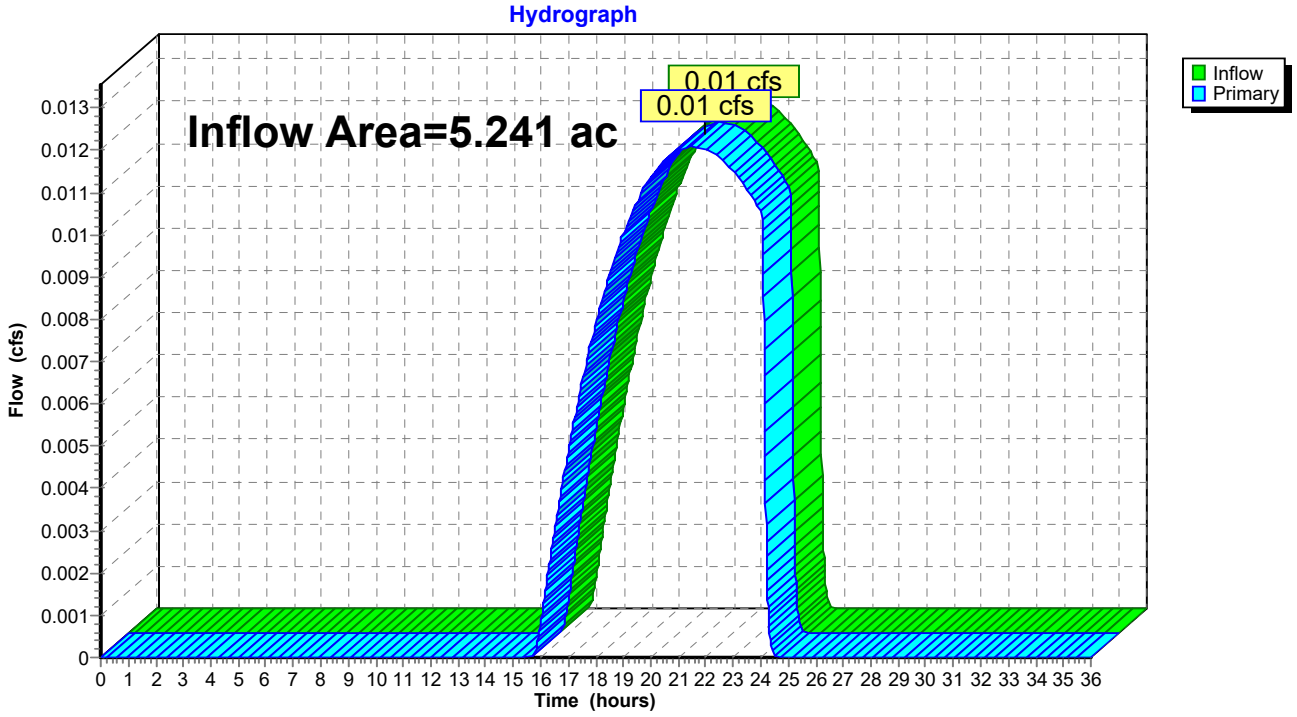


Summary for Link 20L: Sheet Flow South

Inflow Area = 5.241 ac, 17.60% Impervious, Inflow Depth = 0.01" for 2-Year event
Inflow = 0.01 cfs @ 21.42 hrs, Volume= 0.006 af
Primary = 0.01 cfs @ 21.42 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 20L: Sheet Flow South



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 61.92% Impervious Runoff Depth=3.91"
Flow Length=679' Tc=20.8 min CN=89 Runoff=10.21 cfs 1.197 af

Subcatchment11S: Runoff Area=169,564 sf 97.62% Impervious Runoff Depth=4.90"
Flow Length=399' Tc=5.0 min CN=98 Runoff=21.18 cfs 1.590 af

Subcatchment20S: Runoff Area=143,425 sf 8.19% Impervious Runoff Depth=0.39"
Flow Length=329' Tc=10.8 min CN=43 Runoff=0.32 cfs 0.108 af

Subcatchment21.1S: Runoff Area=22,049 sf 20.60% Impervious Runoff Depth=1.31"
Flow Length=168' Tc=19.3 min CN=59 Runoff=0.45 cfs 0.055 af

Subcatchment21S: Runoff Area=62,835 sf 38.01% Impervious Runoff Depth=1.82"
Flow Length=224' Slope=0.0180 '/' Tc=15.8 min CN=66 Runoff=2.16 cfs 0.219 af

Pond 10P: Existing Detention Basin Peak Elev=160.68' Storage=9,930 cf Inflow=10.21 cfs 1.197 af
Outflow=4.65 cfs 1.186 af

Pond 20P: Proposed Detention Basin Peak Elev=156.61' Storage=3,432 cf Inflow=2.58 cfs 0.275 af
Discarded=0.34 cfs 0.275 af Primary=0.00 cfs 0.000 af Outflow=0.34 cfs 0.275 af

Link 10L: STMH 3 Inflow=23.50 cfs 2.776 af
Primary=23.50 cfs 2.776 af

Link 20L: Sheet Flow South Inflow=0.32 cfs 0.108 af
Primary=0.32 cfs 0.108 af

Total Runoff Area = 12.810 ac Runoff Volume = 3.170 af Average Runoff Depth = 2.97"
45.37% Pervious = 5.812 ac 54.63% Impervious = 6.999 ac

Summary for Subcatchment 10S:

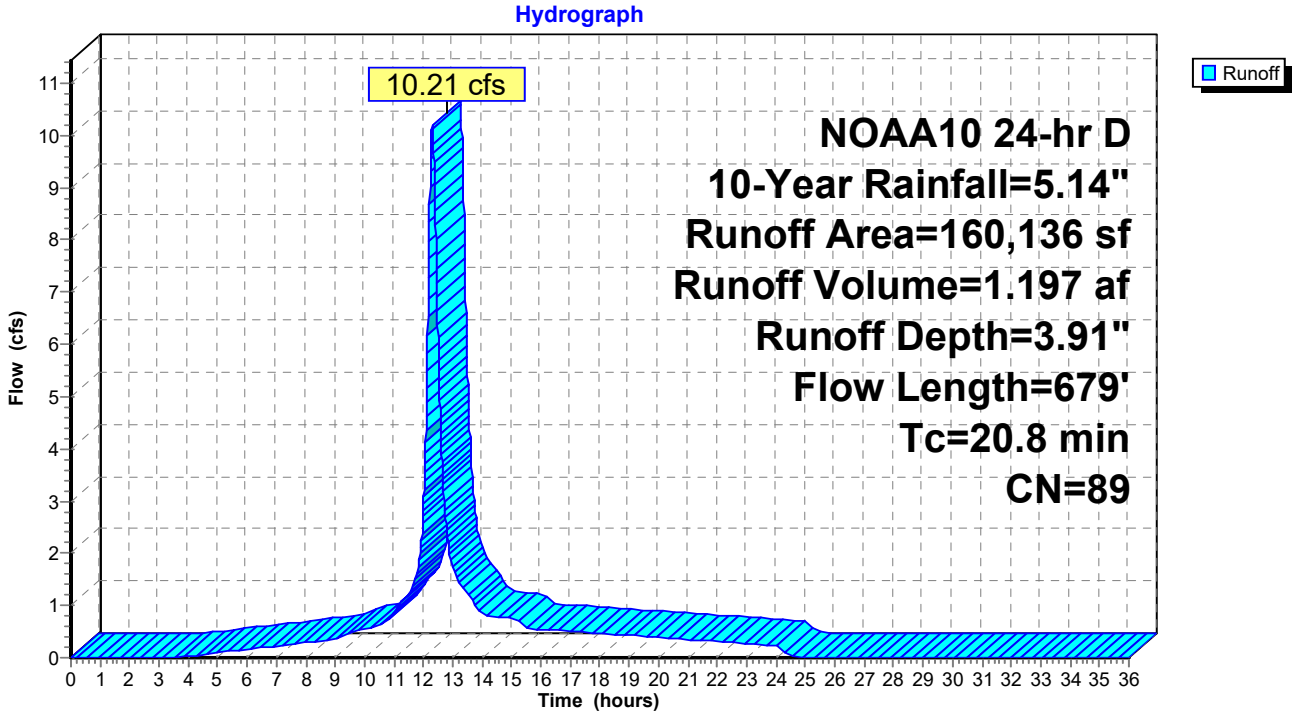
Runoff = 10.21 cfs @ 12.30 hrs, Volume= 1.197 af, Depth= 3.91"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
99,158	98	Paved parking, HSG D
52,839	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	89	Weighted Average
60,978		38.08% Pervious Area
99,158		61.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.9	85	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.7	107	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	387	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
20.8	679	Total			

Subcatchment 10S:



Summary for Subcatchment 11S:

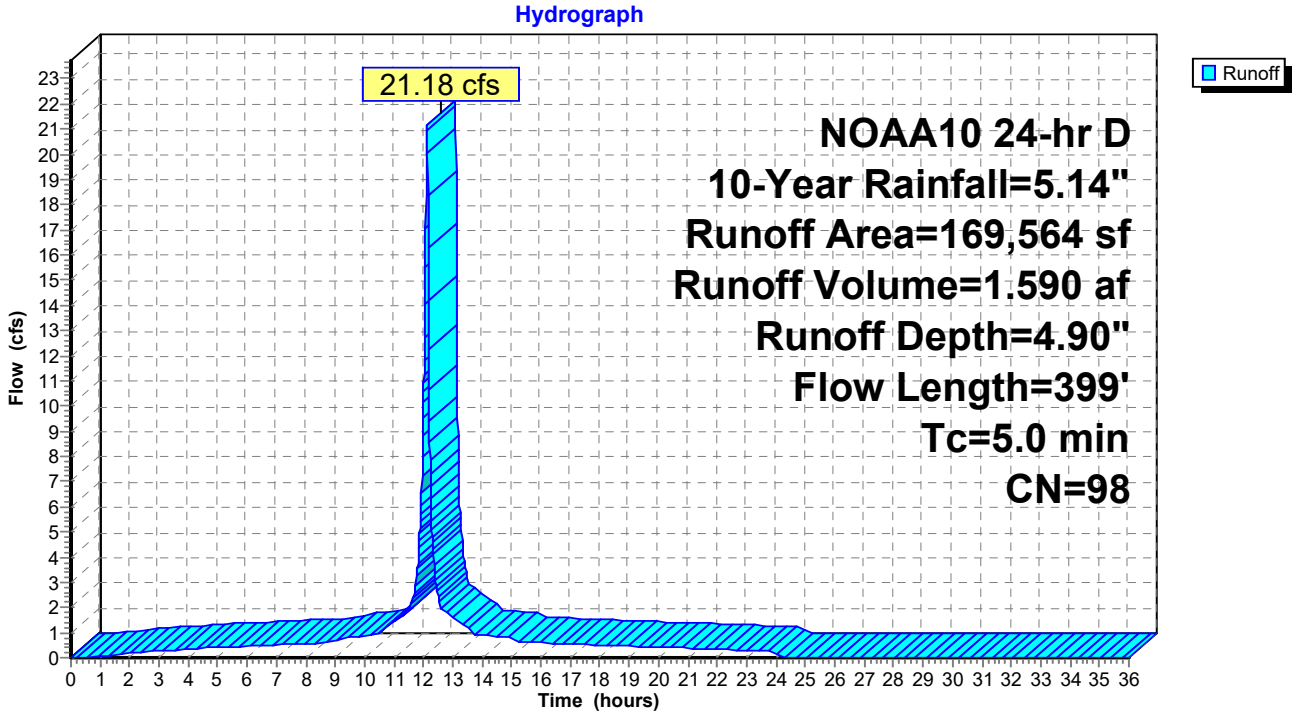
Runoff = 21.18 cfs @ 12.12 hrs, Volume= 1.590 af, Depth= 4.90"
Routed to Link 10L : STMH 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
164,246	98	Paved parking, HSG D
3,772	80	>75% Grass cover, Good, HSG D
1,278	98	Unconnected roofs, HSG D
268	96	Gravel surface, HSG D
169,564	98	Weighted Average
4,040		2.38% Pervious Area
165,524		97.62% Impervious Area
1,278		0.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0150	1.23		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.8	253	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	46	0.0140	7.36	9.03	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
3.3	399	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 11S:



Summary for Subcatchment 20S:

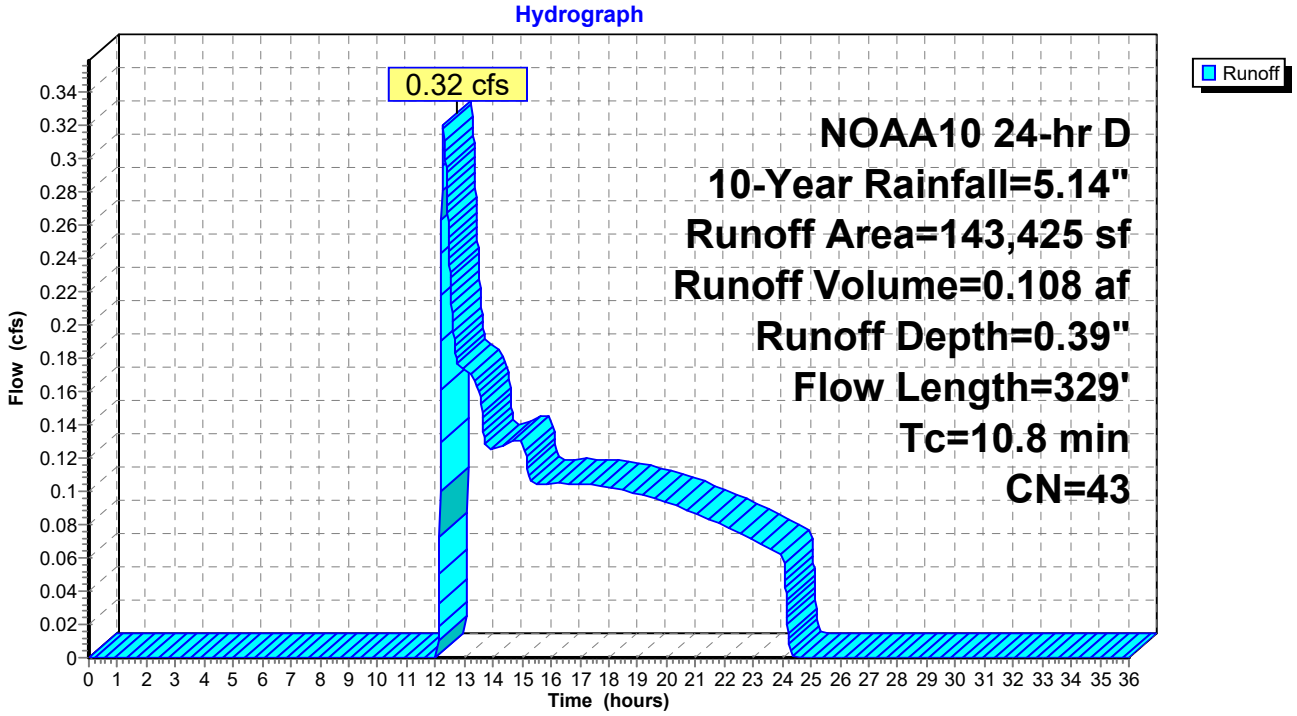
Runoff = 0.32 cfs @ 12.27 hrs, Volume= 0.108 af, Depth= 0.39"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
31,169	39	>75% Grass cover, Good, HSG A
2,577	98	Paved parking, HSG A
96,448	36	Woods, Fair, HSG A
2,899	80	>75% Grass cover, Good, HSG D
9,169	98	Paved parking, HSG D
1,163	96	Gravel surface, HSG A
143,425	43	Weighted Average
131,679		91.81% Pervious Area
11,746		8.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	43	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	208	0.0770	5.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.8	329	Total			

Subcatchment 20S:



Summary for Subcatchment 21.1S:

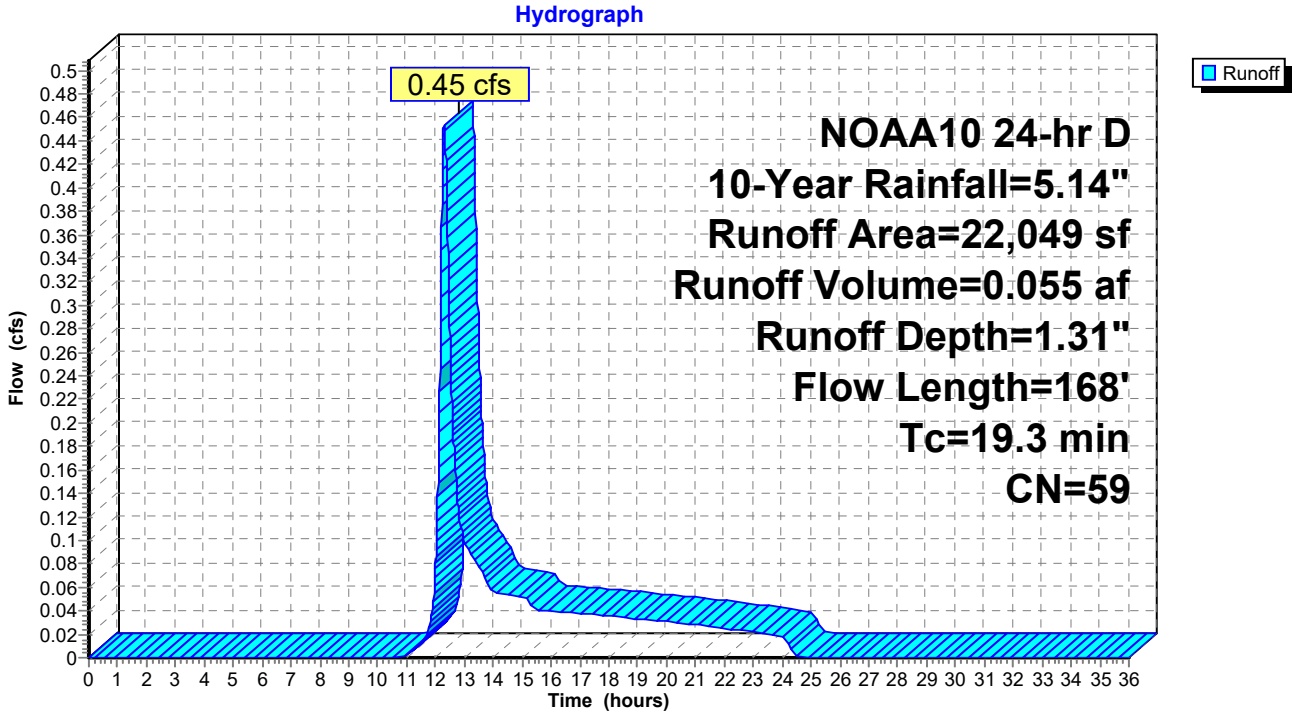
Runoff = 0.45 cfs @ 12.29 hrs, Volume= 0.055 af, Depth= 1.31"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
3,929	98	Paved parking, HSG A
13,391	39	>75% Grass cover, Good, HSG A
614	98	Paved parking, HSG D
4,115	80	>75% Grass cover, Good, HSG D
22,049	59	Weighted Average
17,506		79.40% Pervious Area
4,543		20.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.2	16	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	52	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	168	Total			

Subcatchment 21.1S:



Summary for Subcatchment 21S:

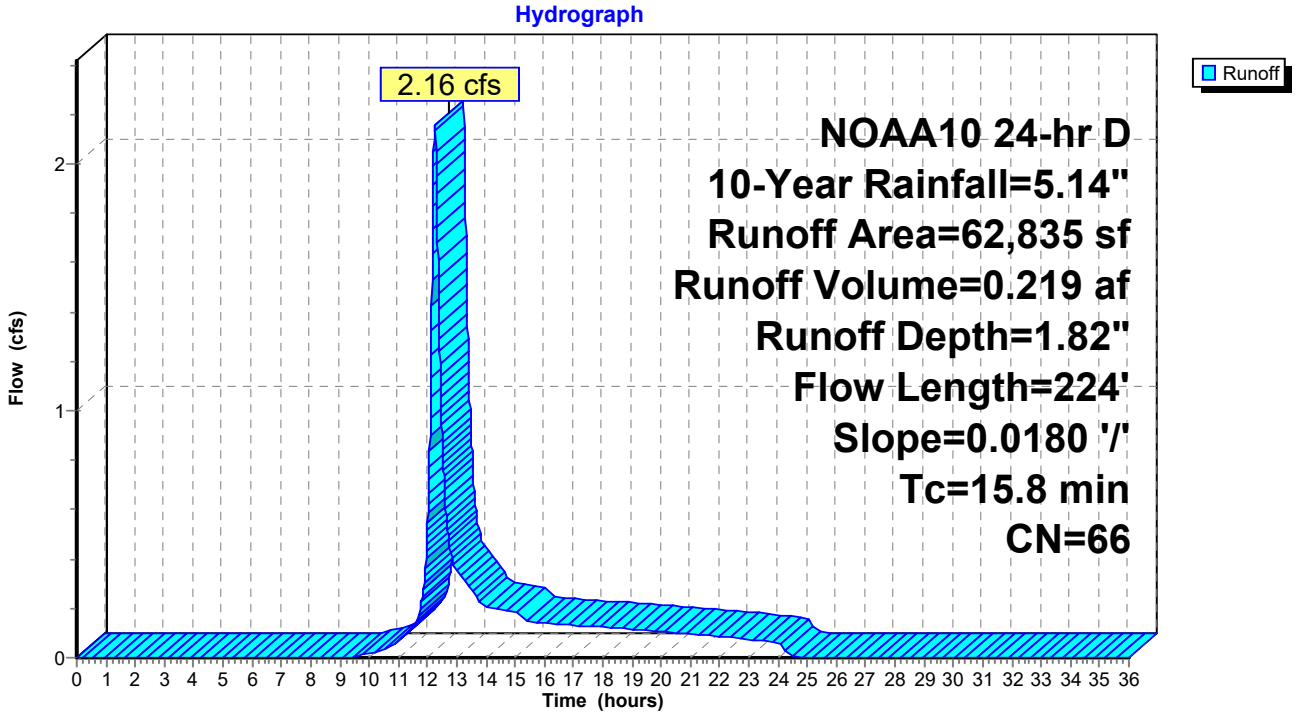
Runoff = 2.16 cfs @ 12.24 hrs, Volume= 0.219 af, Depth= 1.82"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 10-Year Rainfall=5.14"

Area (sf)	CN	Description
15,544	98	Paved parking, HSG A
32,688	39	>75% Grass cover, Good, HSG A
8,341	98	Paved parking, HSG D
6,262	80	>75% Grass cover, Good, HSG D
62,835	66	Weighted Average
38,950		61.99% Pervious Area
23,885		38.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.6	74	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	50	0.0180	2.72		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.8	224	Total			

Subcatchment 21S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 61.92% Impervious, Inflow Depth = 3.91" for 10-Year event
Inflow = 10.21 cfs @ 12.30 hrs, Volume= 1.197 af
Outflow = 4.65 cfs @ 12.57 hrs, Volume= 1.186 af, Atten= 54%, Lag= 16.3 min
Primary = 4.65 cfs @ 12.57 hrs, Volume= 1.186 af
Routed to Link 10L : STMH 3

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 160.68' @ 12.57 hrs Surf.Area= 4,306 sf Storage= 9,930 cf

Plug-Flow detention time= 35.5 min calculated for 1.185 af (99% of inflow)
Center-of-Mass det. time= 29.8 min (852.5 - 822.7)

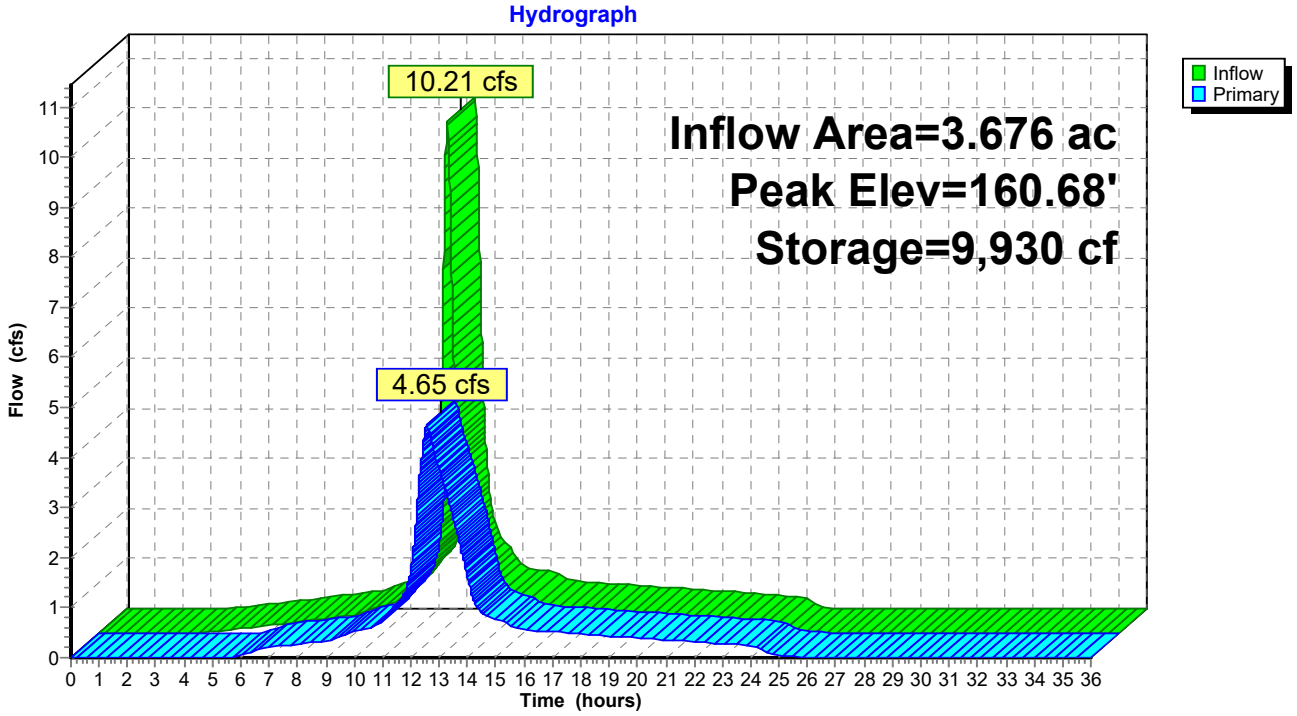
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

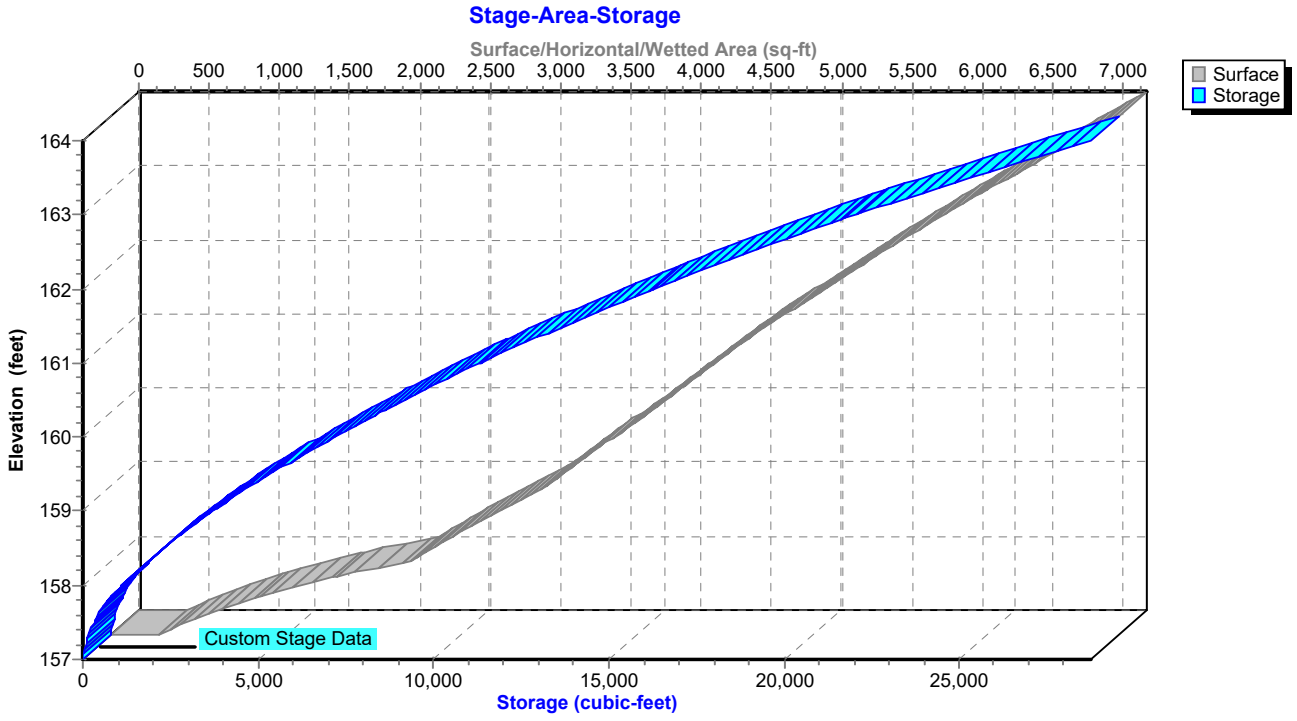
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.65 cfs @ 12.57 hrs HW=160.68' (Free Discharge)
└**1=Culvert** (Passes 4.65 cfs of 7.07 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 1.58 cfs @ 8.06 fps)
├**3=Orifice/Grate** (Orifice Controls 2.69 cfs @ 7.71 fps)
├**4=Orifice/Grate** (Orifice Controls 0.37 cfs @ 2.02 fps)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Pond 20P: Proposed Detention Basin

Inflow Area = 1.949 ac, 33.49% Impervious, Inflow Depth = 1.69" for 10-Year event
Inflow = 2.58 cfs @ 12.25 hrs, Volume= 0.275 af
Outflow = 0.34 cfs @ 13.61 hrs, Volume= 0.275 af, Atten= 87%, Lag= 81.6 min
Discarded = 0.34 cfs @ 13.61 hrs, Volume= 0.275 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 20L : Sheet Flow South

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 156.61' @ 13.61 hrs Surf.Area= 5,975 sf Storage= 3,432 cf

Plug-Flow detention time= 89.3 min calculated for 0.275 af (100% of inflow)
Center-of-Mass det. time= 89.3 min (999.6 - 910.3)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,355 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

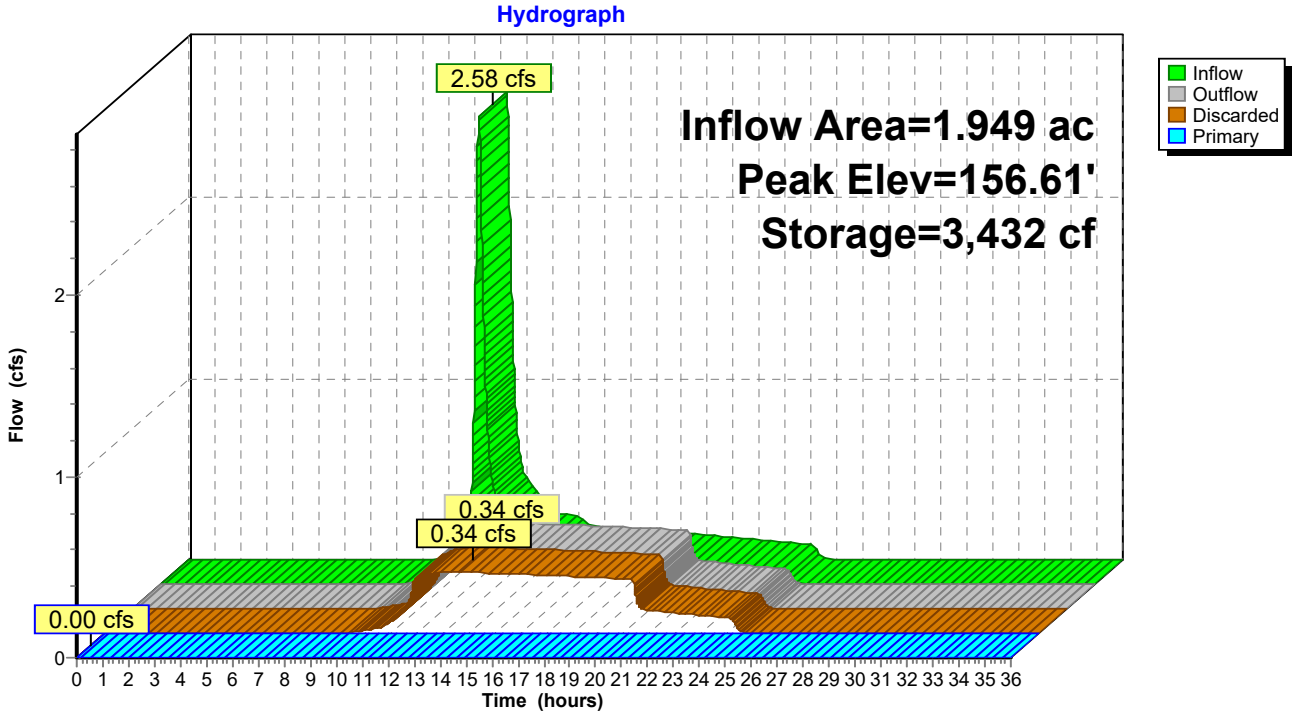
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	5,399	336.0	0.0	0	0	5,399
156.10	5,399	336.0	100.0	540	540	5,433
157.00	6,438	355.0	100.0	5,320	5,860	6,523
157.80	7,310	370.0	100.0	5,496	11,355	7,435

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Discarded	156.00'	**2.410 in/hr Exfiltration over Wetted area**

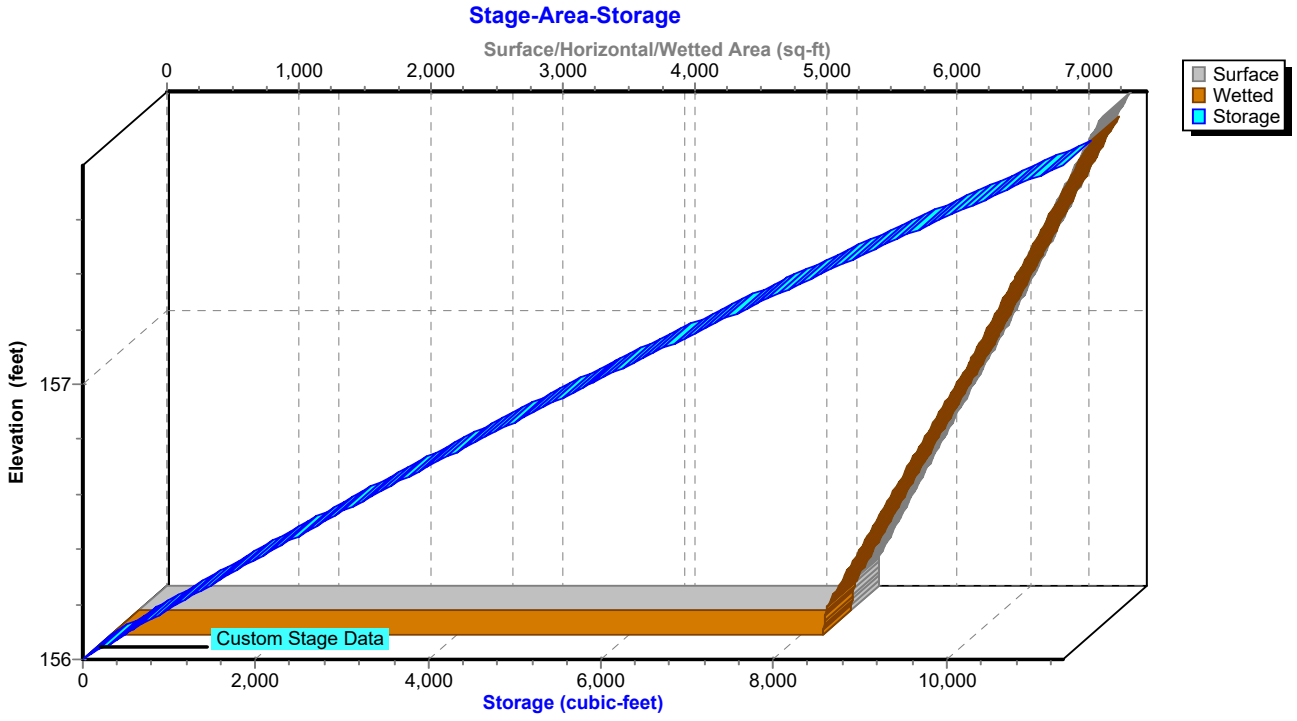
Discarded OutFlow Max=0.34 cfs @ 13.61 hrs HW=156.61' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.34 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=156.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 20P: Proposed Detention Basin



Pond 20P: Proposed Detention Basin



Stage-Area-Storage for Pond 20P: Proposed Detention Basin

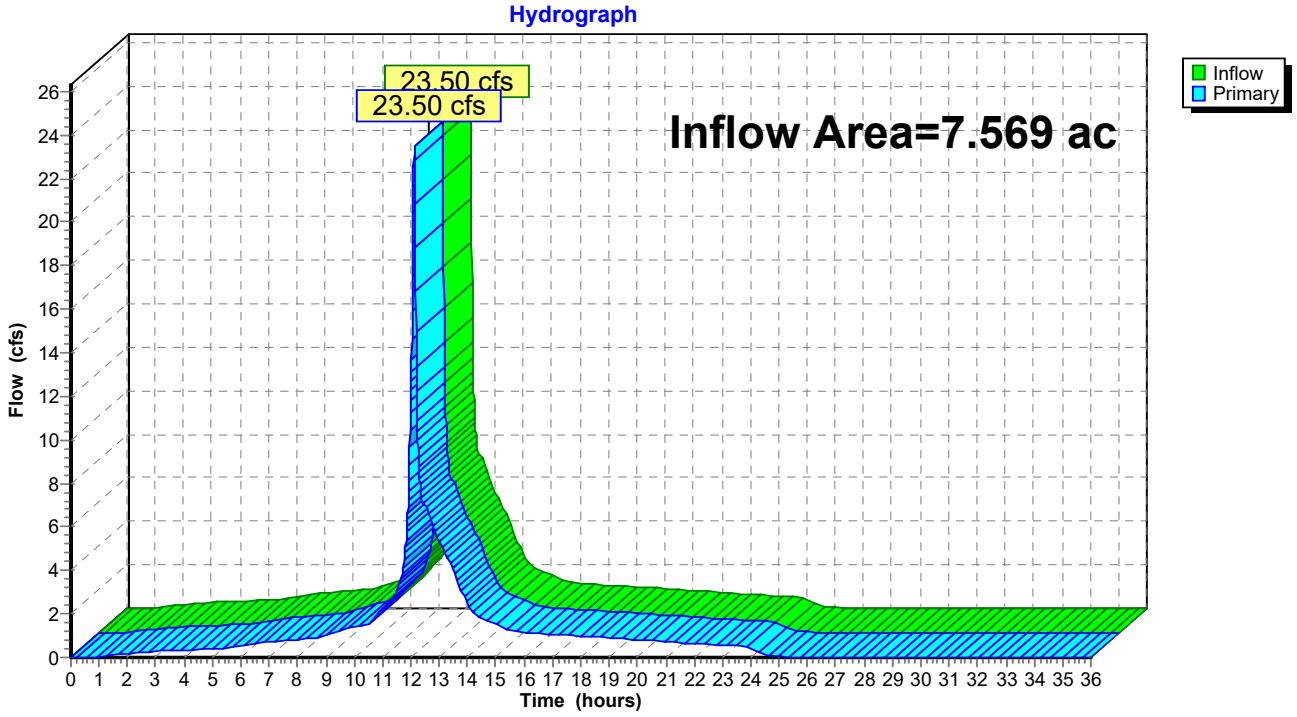
Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
156.00	5,399	5,399	0
156.05	5,399	5,416	270
156.10	5,399	5,433	540
156.15	5,454	5,492	811
156.20	5,510	5,551	1,085
156.25	5,566	5,610	1,362
156.30	5,622	5,670	1,642
156.35	5,678	5,729	1,924
156.40	5,735	5,789	2,210
156.45	5,792	5,849	2,498
156.50	5,849	5,910	2,789
156.55	5,907	5,970	3,083
156.60	5,965	6,031	3,380
156.65	6,023	6,092	3,679
156.70	6,082	6,153	3,982
156.75	6,140	6,214	4,288
156.80	6,199	6,275	4,596
156.85	6,258	6,337	4,907
156.90	6,318	6,399	5,222
156.95	6,378	6,461	5,539
157.00	6,438	6,523	5,860
157.05	6,491	6,579	6,183
157.10	6,544	6,635	6,509
157.15	6,597	6,691	6,837
157.20	6,651	6,747	7,169
157.25	6,705	6,804	7,502
157.30	6,759	6,861	7,839
157.35	6,813	6,917	8,178
157.40	6,867	6,974	8,520
157.45	6,922	7,031	8,865
157.50	6,977	7,089	9,212
157.55	7,032	7,146	9,563
157.60	7,087	7,204	9,916
157.65	7,142	7,261	10,271
157.70	7,198	7,319	10,630
157.75	7,254	7,377	10,991
157.80	**7,310**	**7,435**	**11,355**

Summary for Link 10L: STMH 3

Inflow Area = 7.569 ac, 80.28% Impervious, Inflow Depth = 4.40" for 10-Year event
Inflow = 23.50 cfs @ 12.12 hrs, Volume= 2.776 af
Primary = 23.50 cfs @ 12.12 hrs, Volume= 2.776 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: STMH 3

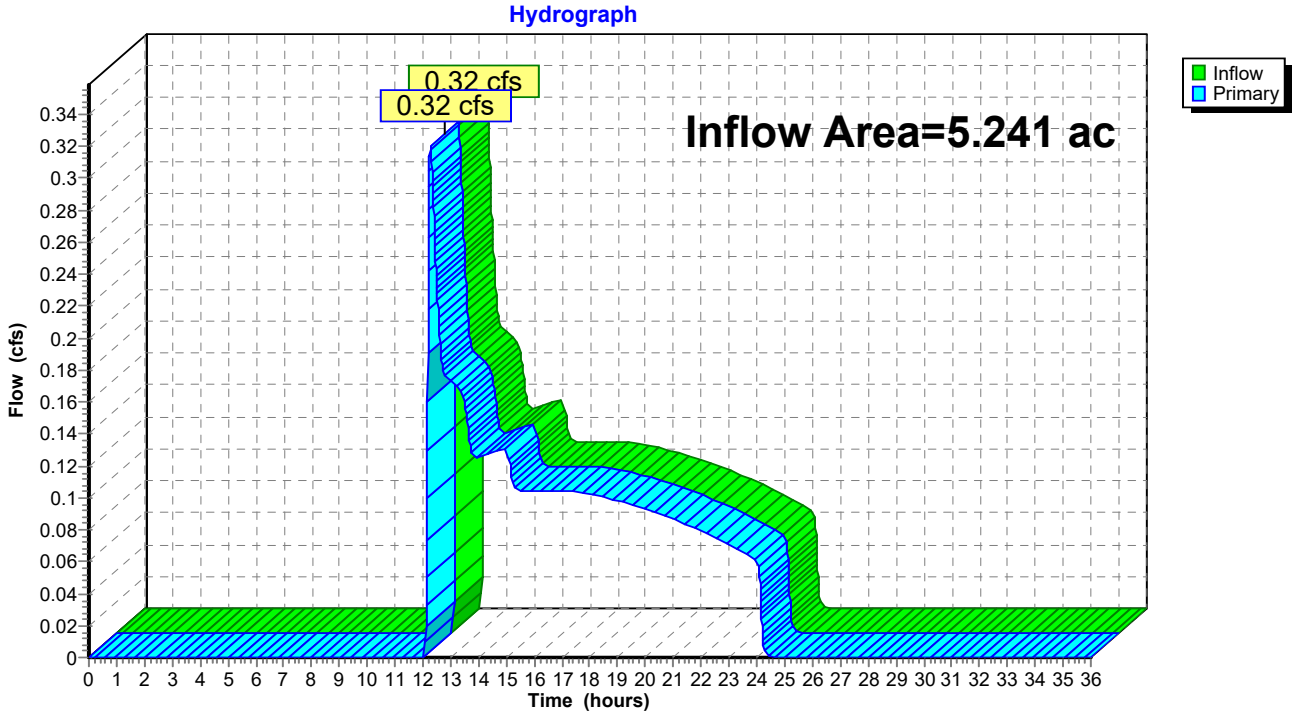


Summary for Link 20L: Sheet Flow South

Inflow Area = 5.241 ac, 17.60% Impervious, Inflow Depth = 0.25" for 10-Year event
Inflow = 0.32 cfs @ 12.27 hrs, Volume= 0.108 af
Primary = 0.32 cfs @ 12.27 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 20L: Sheet Flow South



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 61.92% Impervious Runoff Depth=5.07"
Flow Length=679' Tc=20.8 min CN=89 Runoff=13.07 cfs 1.552 af

Subcatchment11S: Runoff Area=169,564 sf 97.62% Impervious Runoff Depth=6.10"
Flow Length=399' Tc=5.0 min CN=98 Runoff=26.17 cfs 1.979 af

Subcatchment20S: Runoff Area=143,425 sf 8.19% Impervious Runoff Depth=0.80"
Flow Length=329' Tc=10.8 min CN=43 Runoff=1.58 cfs 0.220 af

Subcatchment21.1S: Runoff Area=22,049 sf 20.60% Impervious Runoff Depth=2.06"
Flow Length=168' Tc=19.3 min CN=59 Runoff=0.76 cfs 0.087 af

Subcatchment21S: Runoff Area=62,835 sf 38.01% Impervious Runoff Depth=2.69"
Flow Length=224' Slope=0.0180 '/' Tc=15.8 min CN=66 Runoff=3.26 cfs 0.324 af

Pond 10P: Existing Detention Basin Peak Elev=161.32' Storage=12,824 cf Inflow=13.07 cfs 1.552 af
Outflow=6.12 cfs 1.541 af

Pond 20P: Proposed Detention Basin Peak Elev=157.06' Storage=6,262 cf Inflow=3.98 cfs 0.411 af
Discarded=0.37 cfs 0.411 af Primary=0.00 cfs 0.000 af Outflow=0.37 cfs 0.411 af

Link 10L: STMH 3 Inflow=28.90 cfs 3.520 af
Primary=28.90 cfs 3.520 af

Link 20L: Sheet Flow South Inflow=1.58 cfs 0.220 af
Primary=1.58 cfs 0.220 af

Total Runoff Area = 12.810 ac Runoff Volume = 4.162 af Average Runoff Depth = 3.90"
45.37% Pervious = 5.812 ac 54.63% Impervious = 6.999 ac

Summary for Subcatchment 10S:

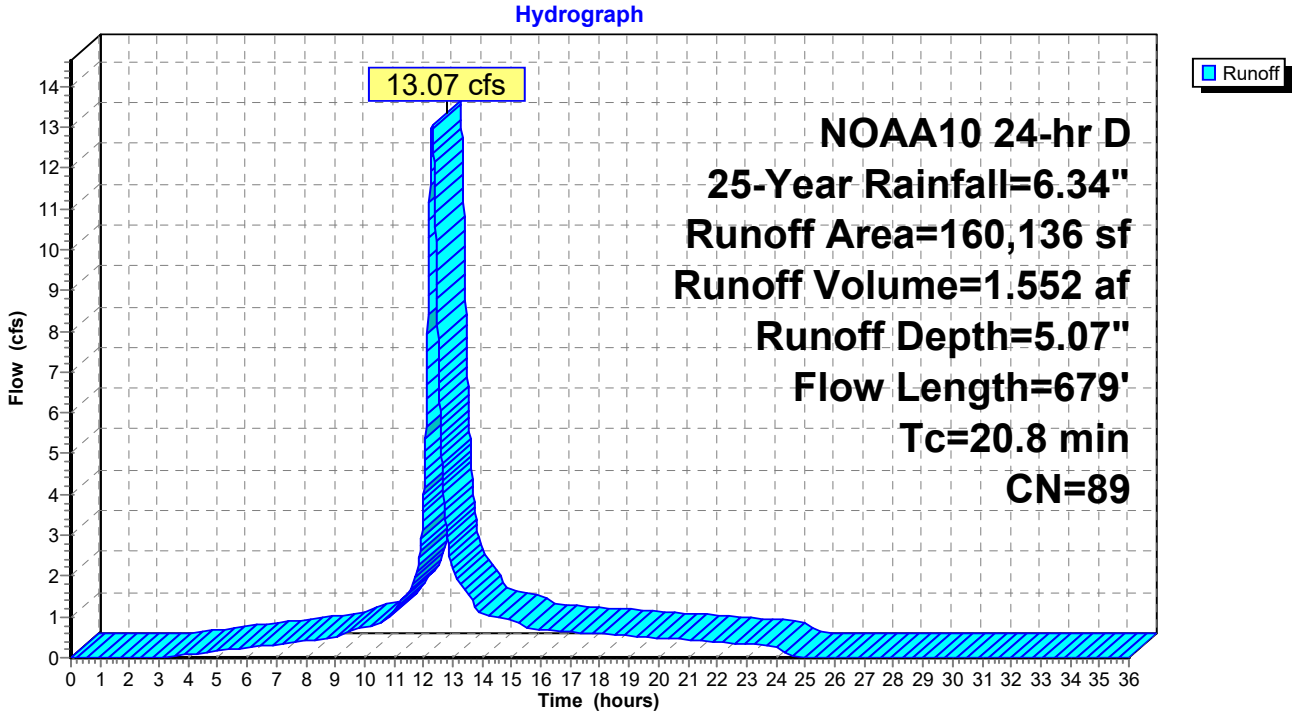
Runoff = 13.07 cfs @ 12.29 hrs, Volume= 1.552 af, Depth= 5.07"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
99,158	98	Paved parking, HSG D
52,839	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	89	Weighted Average
60,978		38.08% Pervious Area
99,158		61.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.9	85	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.7	107	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	387	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
20.8	679	Total			

Subcatchment 10S:



Summary for Subcatchment 11S:

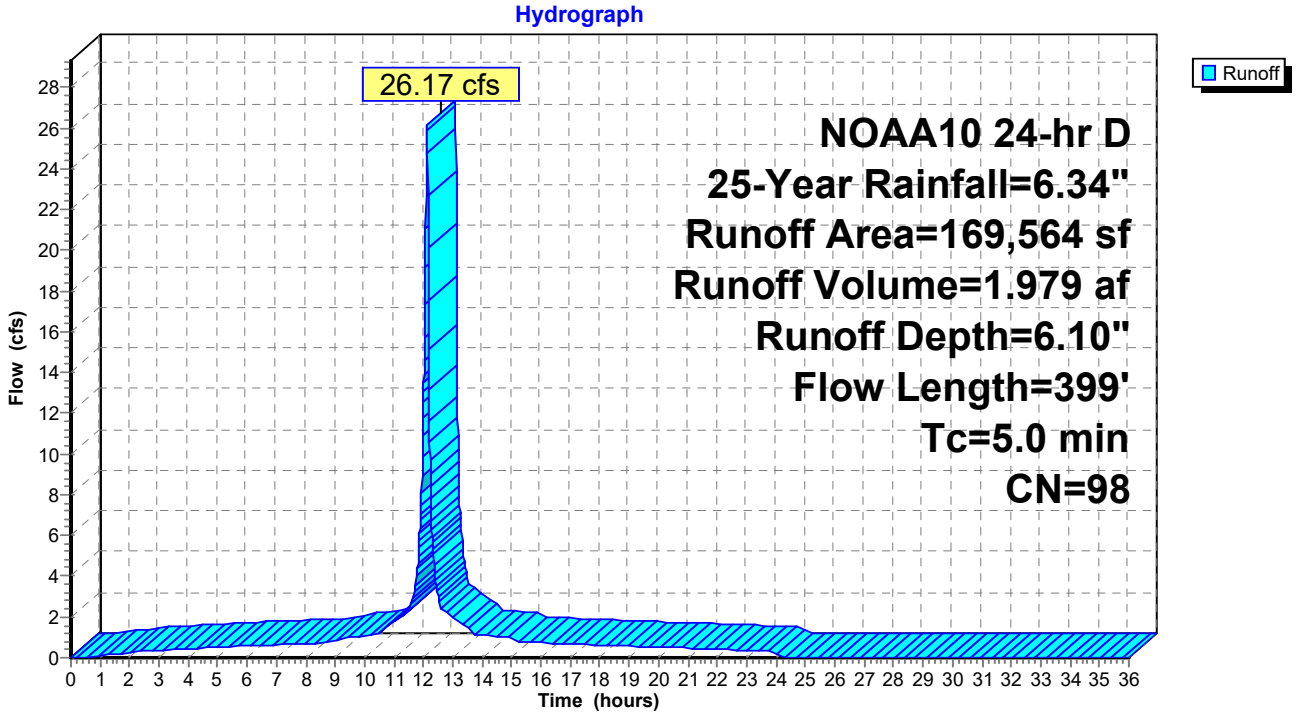
Runoff = 26.17 cfs @ 12.12 hrs, Volume= 1.979 af, Depth= 6.10"
Routed to Link 10L : STMH 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
164,246	98	Paved parking, HSG D
3,772	80	>75% Grass cover, Good, HSG D
1,278	98	Unconnected roofs, HSG D
268	96	Gravel surface, HSG D
169,564	98	Weighted Average
4,040		2.38% Pervious Area
165,524		97.62% Impervious Area
1,278		0.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0150	1.23		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.8	253	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	46	0.0140	7.36	9.03	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
3.3	399	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 11S:



Summary for Subcatchment 20S:

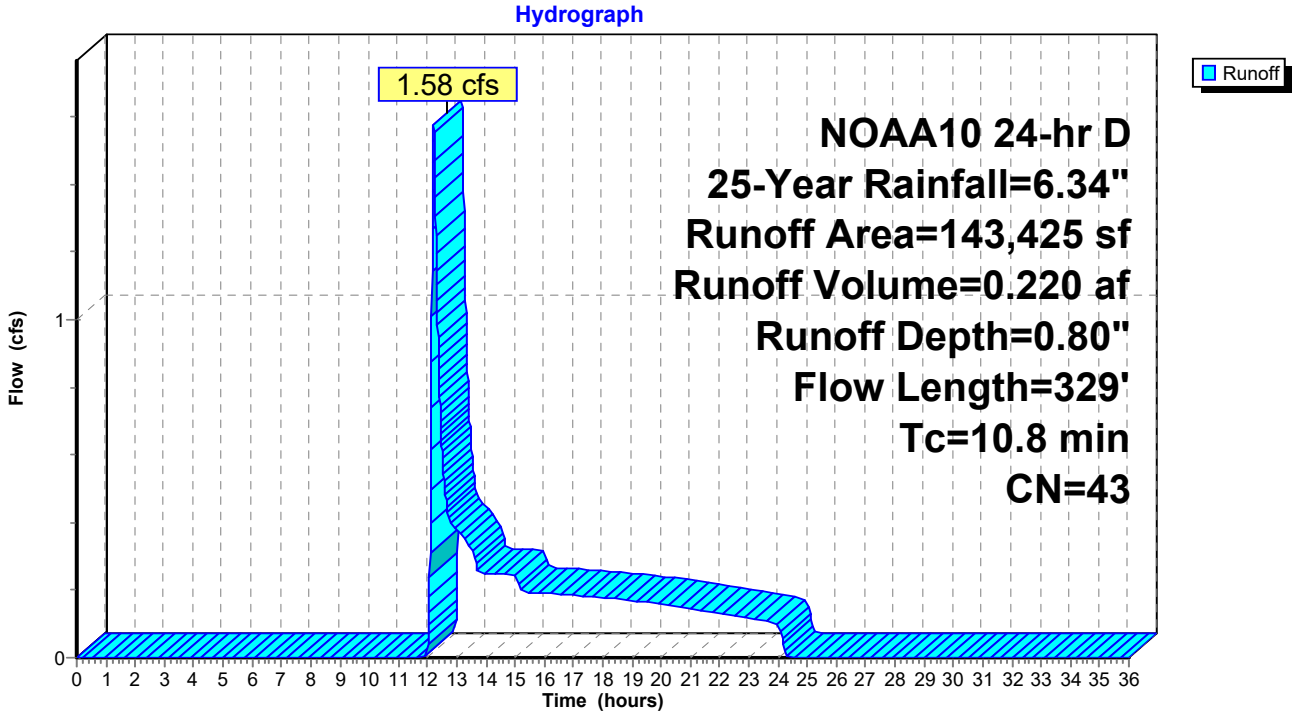
Runoff = 1.58 cfs @ 12.21 hrs, Volume= 0.220 af, Depth= 0.80"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
31,169	39	>75% Grass cover, Good, HSG A
2,577	98	Paved parking, HSG A
96,448	36	Woods, Fair, HSG A
2,899	80	>75% Grass cover, Good, HSG D
9,169	98	Paved parking, HSG D
1,163	96	Gravel surface, HSG A
143,425	43	Weighted Average
131,679		91.81% Pervious Area
11,746		8.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	43	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	208	0.0770	5.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.8	329	Total			

Subcatchment 20S:



Summary for Subcatchment 21.1S:

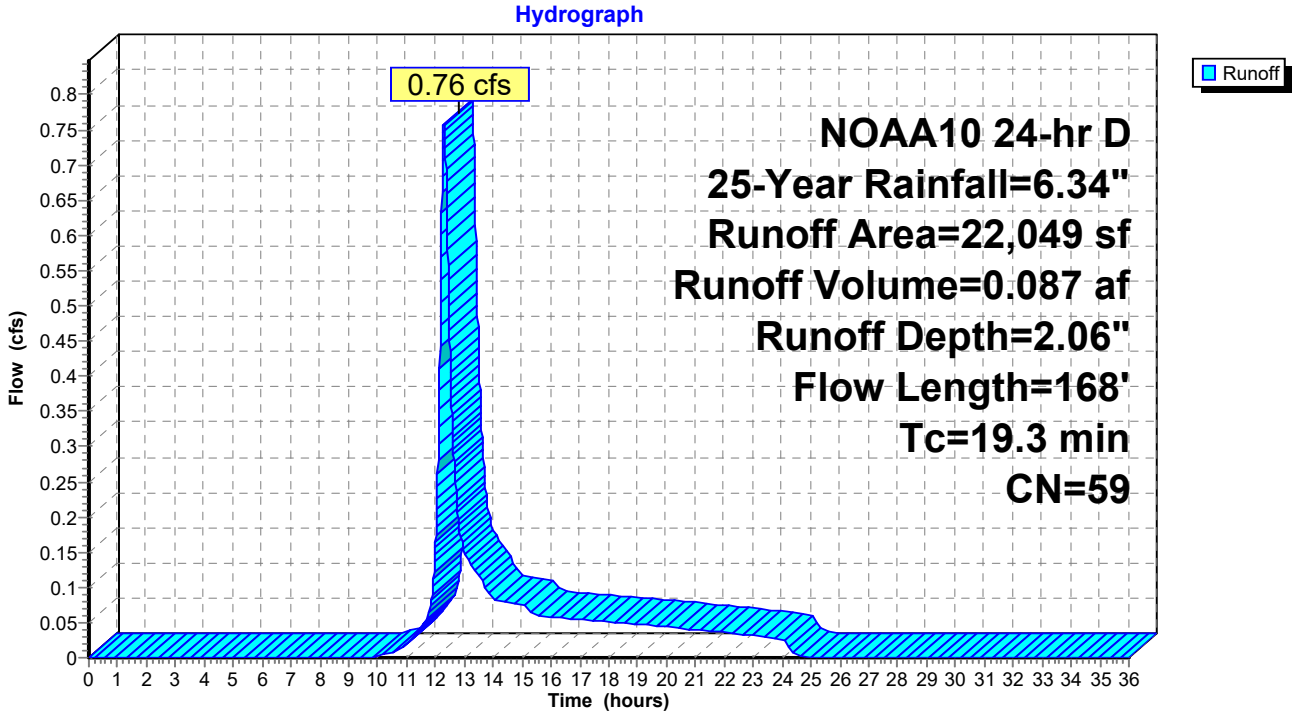
Runoff = 0.76 cfs @ 12.29 hrs, Volume= 0.087 af, Depth= 2.06"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
3,929	98	Paved parking, HSG A
13,391	39	>75% Grass cover, Good, HSG A
614	98	Paved parking, HSG D
4,115	80	>75% Grass cover, Good, HSG D
22,049	59	Weighted Average
17,506		79.40% Pervious Area
4,543		20.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.2	16	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	52	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	168	Total			

Subcatchment 21.1S:



Summary for Subcatchment 21S:

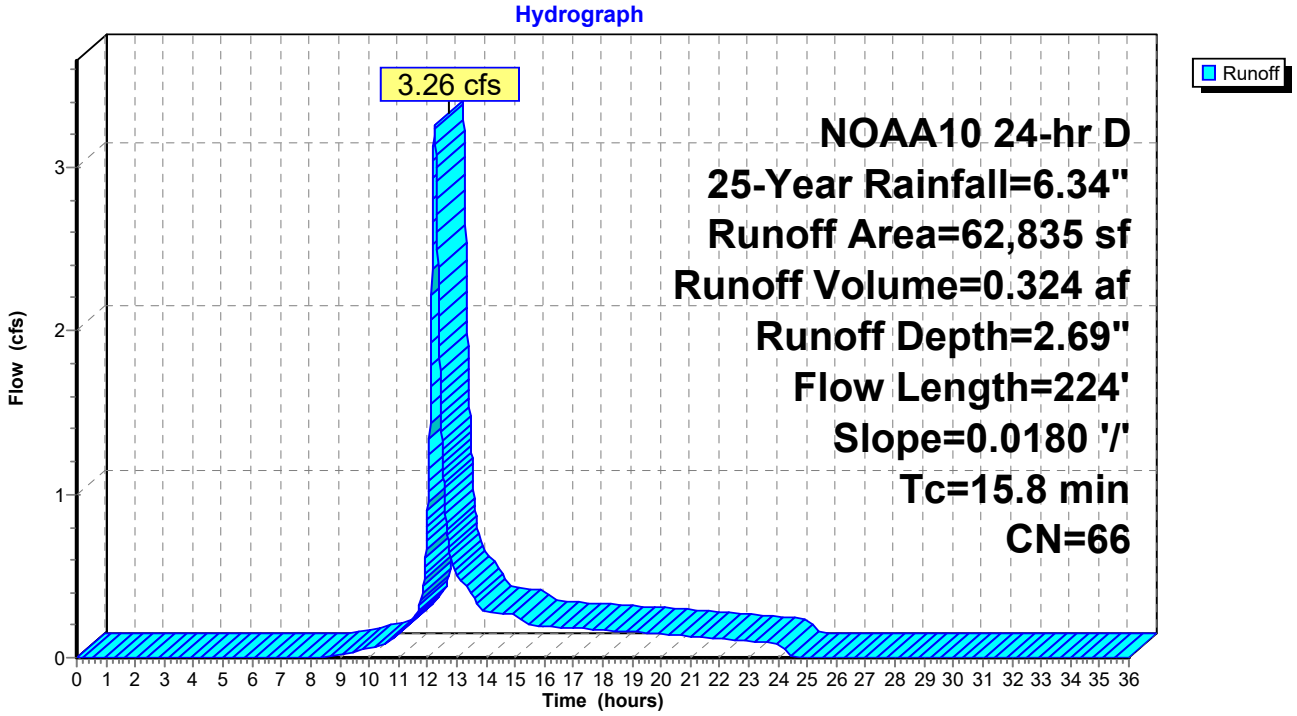
Runoff = 3.26 cfs @ 12.24 hrs, Volume= 0.324 af, Depth= 2.69"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 25-Year Rainfall=6.34"

Area (sf)	CN	Description
15,544	98	Paved parking, HSG A
32,688	39	>75% Grass cover, Good, HSG A
8,341	98	Paved parking, HSG D
6,262	80	>75% Grass cover, Good, HSG D
62,835	66	Weighted Average
38,950		61.99% Pervious Area
23,885		38.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.6	74	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	50	0.0180	2.72		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.8	224	Total			

Subcatchment 21S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 61.92% Impervious, Inflow Depth = 5.07" for 25-Year event
Inflow = 13.07 cfs @ 12.29 hrs, Volume= 1.552 af
Outflow = 6.12 cfs @ 12.56 hrs, Volume= 1.541 af, Atten= 53%, Lag= 15.8 min
Primary = 6.12 cfs @ 12.56 hrs, Volume= 1.541 af
Routed to Link 10L : STMH 3

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 161.32' @ 12.56 hrs Surf.Area= 4,789 sf Storage= 12,824 cf

Plug-Flow detention time= 33.3 min calculated for 1.540 af (99% of inflow)
Center-of-Mass det. time= 28.8 min (842.0 - 813.2)

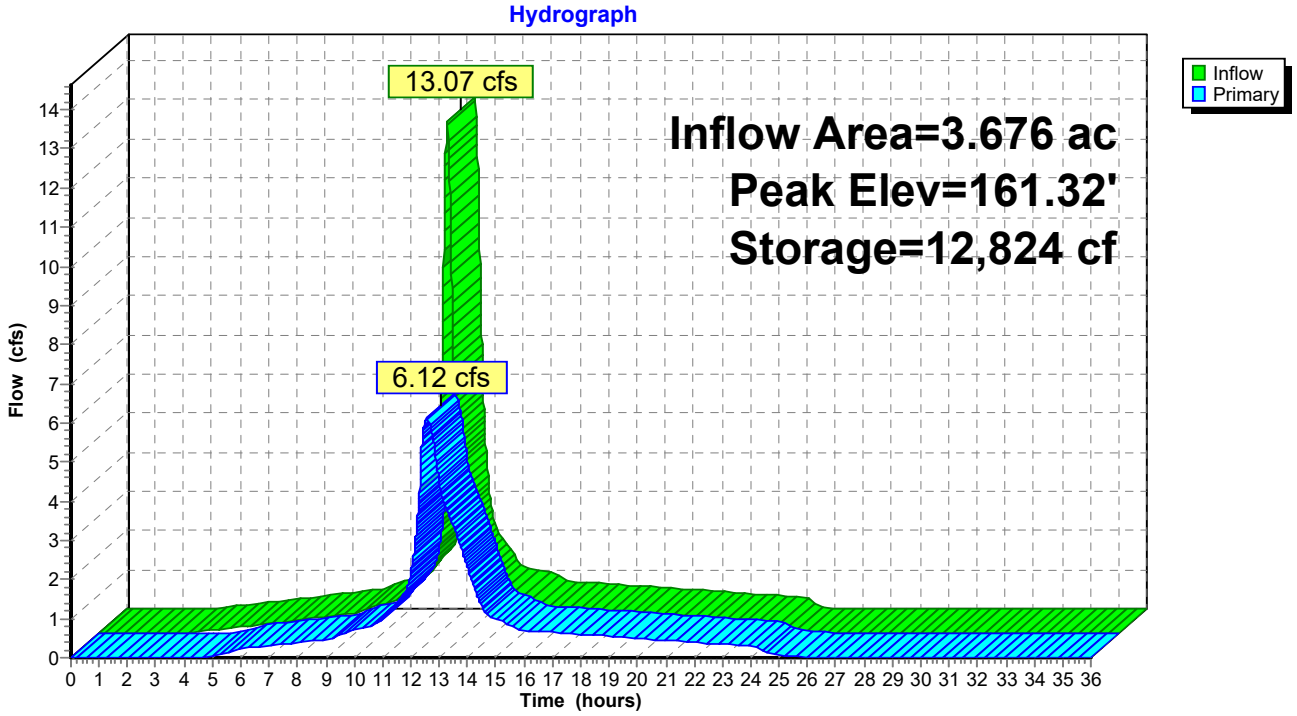
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

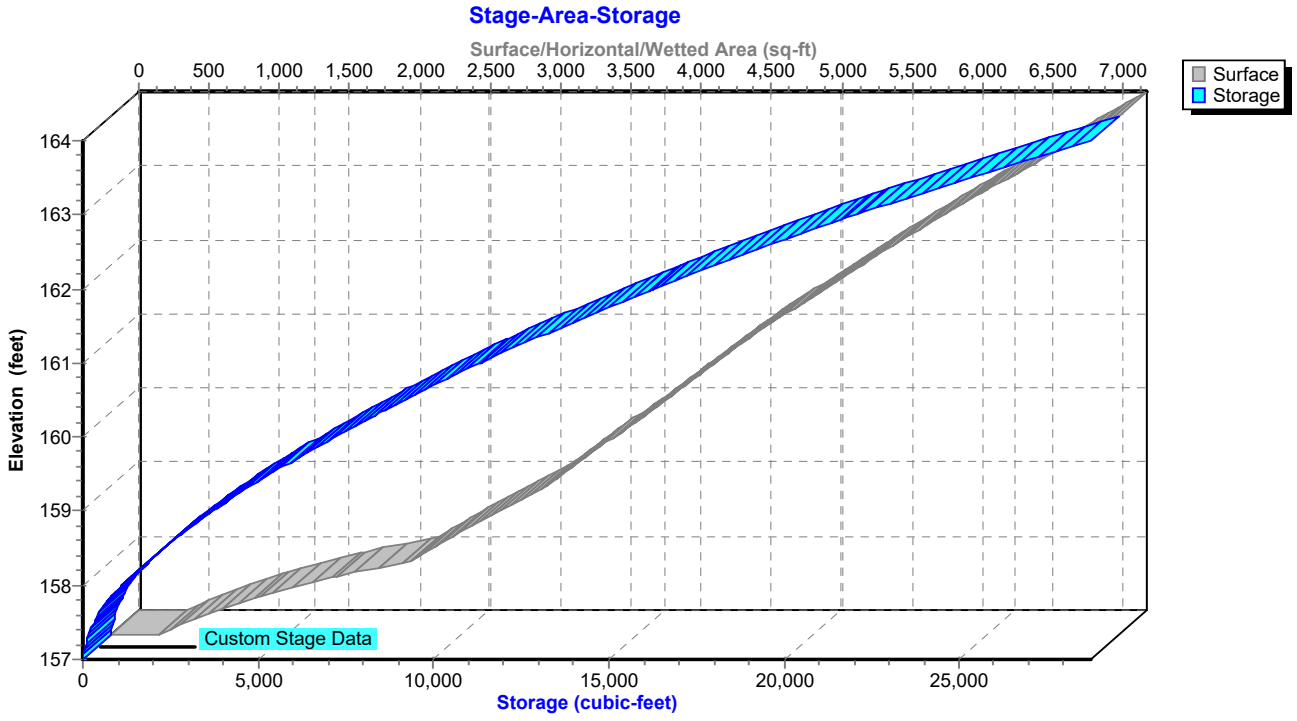
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.12 cfs @ 12.56 hrs HW=161.32' (Free Discharge)
└**1=Culvert** (Passes 6.12 cfs of 7.56 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.75 cfs @ 8.93 fps)
  ├**3=Orifice/Grate** (Orifice Controls 3.01 cfs @ 8.62 fps)
  ├**4=Orifice/Grate** (Orifice Controls 1.36 cfs @ 3.89 fps)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Pond 20P: Proposed Detention Basin

Inflow Area = 1.949 ac, 33.49% Impervious, Inflow Depth = 2.53" for 25-Year event
Inflow = 3.98 cfs @ 12.25 hrs, Volume= 0.411 af
Outflow = 0.37 cfs @ 13.97 hrs, Volume= 0.411 af, Atten= 91%, Lag= 103.4 min
Discarded = 0.37 cfs @ 13.97 hrs, Volume= 0.411 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 20L : Sheet Flow South

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 157.06' @ 13.97 hrs Surf.Area= 6,504 sf Storage= 6,262 cf

Plug-Flow detention time= 182.0 min calculated for 0.411 af (100% of inflow)
Center-of-Mass det. time= 182.0 min (1,076.2 - 894.2)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,355 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

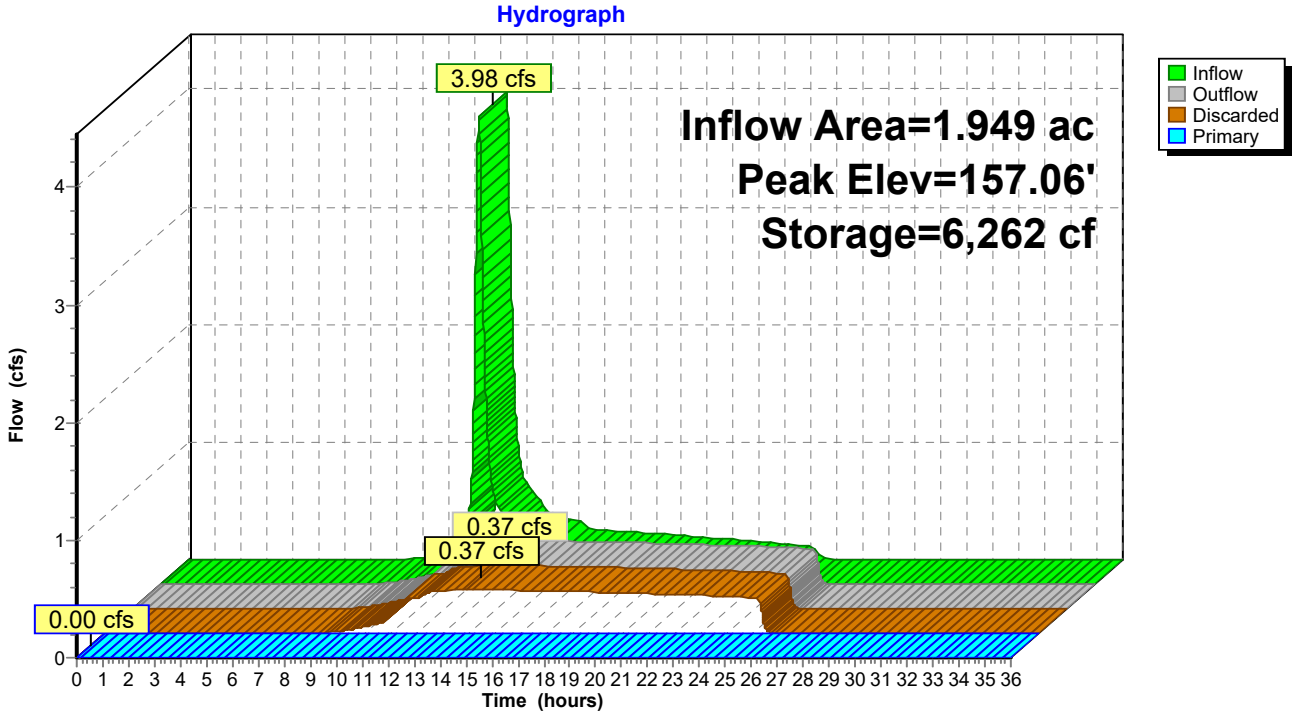
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	5,399	336.0	0.0	0	0	5,399
156.10	5,399	336.0	100.0	540	540	5,433
157.00	6,438	355.0	100.0	5,320	5,860	6,523
157.80	7,310	370.0	100.0	5,496	11,355	7,435

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Discarded	156.00'	**2.410 in/hr Exfiltration over Wetted area**

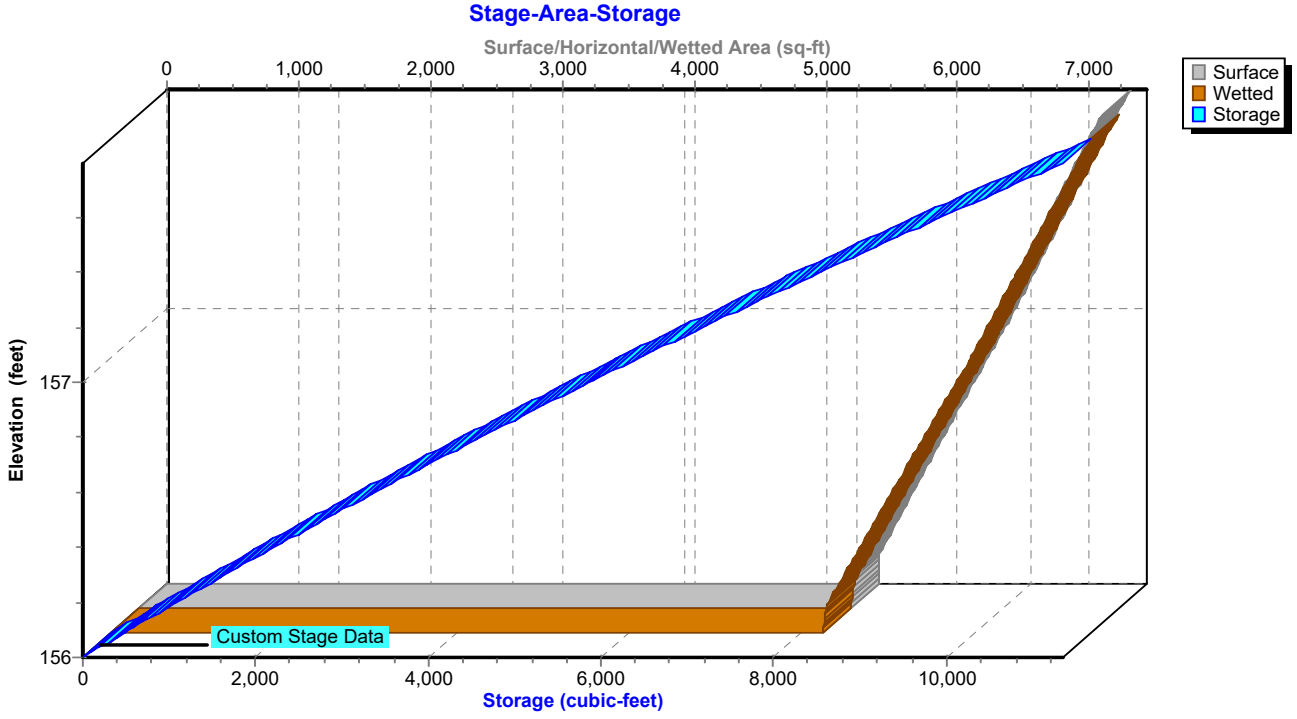
Discarded OutFlow Max=0.37 cfs @ 13.97 hrs HW=157.06' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=156.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 20P: Proposed Detention Basin



Pond 20P: Proposed Detention Basin



Stage-Area-Storage for Pond 20P: Proposed Detention Basin

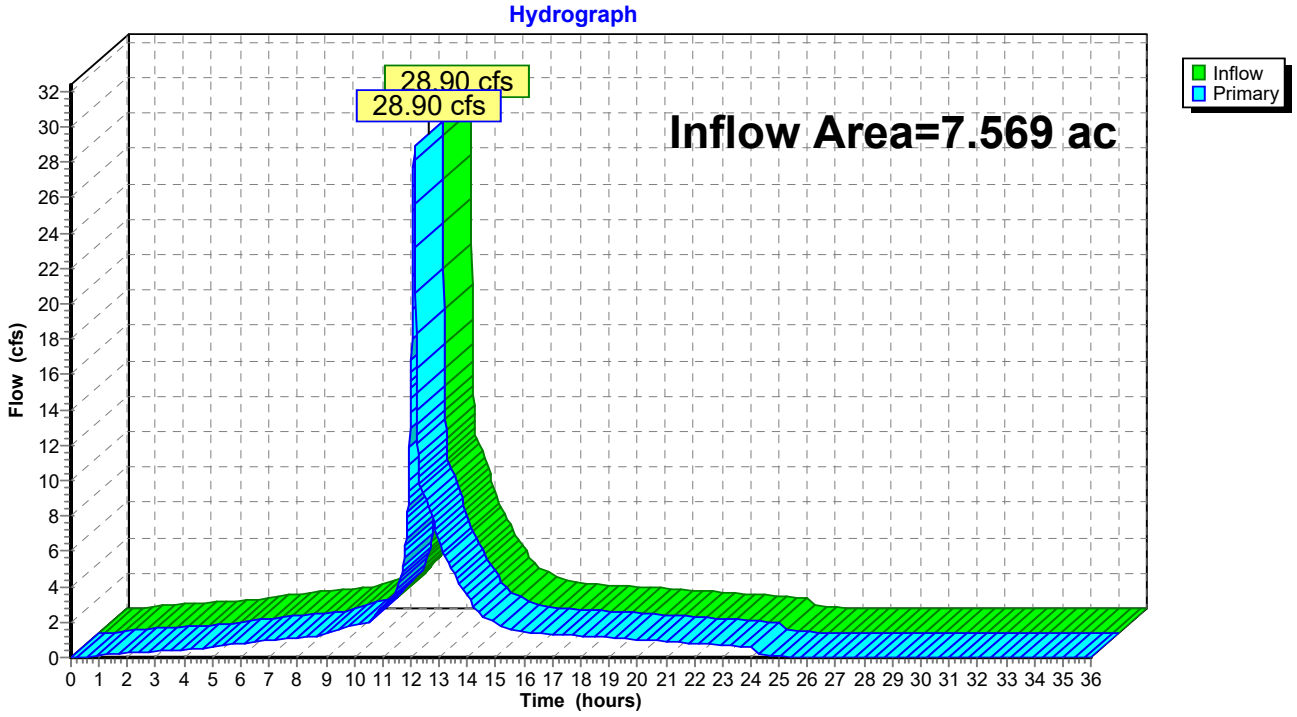
Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
156.00	5,399	5,399	0
156.05	5,399	5,416	270
156.10	5,399	5,433	540
156.15	5,454	5,492	811
156.20	5,510	5,551	1,085
156.25	5,566	5,610	1,362
156.30	5,622	5,670	1,642
156.35	5,678	5,729	1,924
156.40	5,735	5,789	2,210
156.45	5,792	5,849	2,498
156.50	5,849	5,910	2,789
156.55	5,907	5,970	3,083
156.60	5,965	6,031	3,380
156.65	6,023	6,092	3,679
156.70	6,082	6,153	3,982
156.75	6,140	6,214	4,288
156.80	6,199	6,275	4,596
156.85	6,258	6,337	4,907
156.90	6,318	6,399	5,222
156.95	6,378	6,461	5,539
157.00	6,438	6,523	5,860
157.05	6,491	6,579	6,183
157.10	6,544	6,635	6,509
157.15	6,597	6,691	6,837
157.20	6,651	6,747	7,169
157.25	6,705	6,804	7,502
157.30	6,759	6,861	7,839
157.35	6,813	6,917	8,178
157.40	6,867	6,974	8,520
157.45	6,922	7,031	8,865
157.50	6,977	7,089	9,212
157.55	7,032	7,146	9,563
157.60	7,087	7,204	9,916
157.65	7,142	7,261	10,271
157.70	7,198	7,319	10,630
157.75	7,254	7,377	10,991
157.80	**7,310**	**7,435**	**11,355**

Summary for Link 10L: STMH 3

Inflow Area = 7.569 ac, 80.28% Impervious, Inflow Depth = 5.58" for 25-Year event
Inflow = 28.90 cfs @ 12.12 hrs, Volume= 3.520 af
Primary = 28.90 cfs @ 12.12 hrs, Volume= 3.520 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: STMH 3

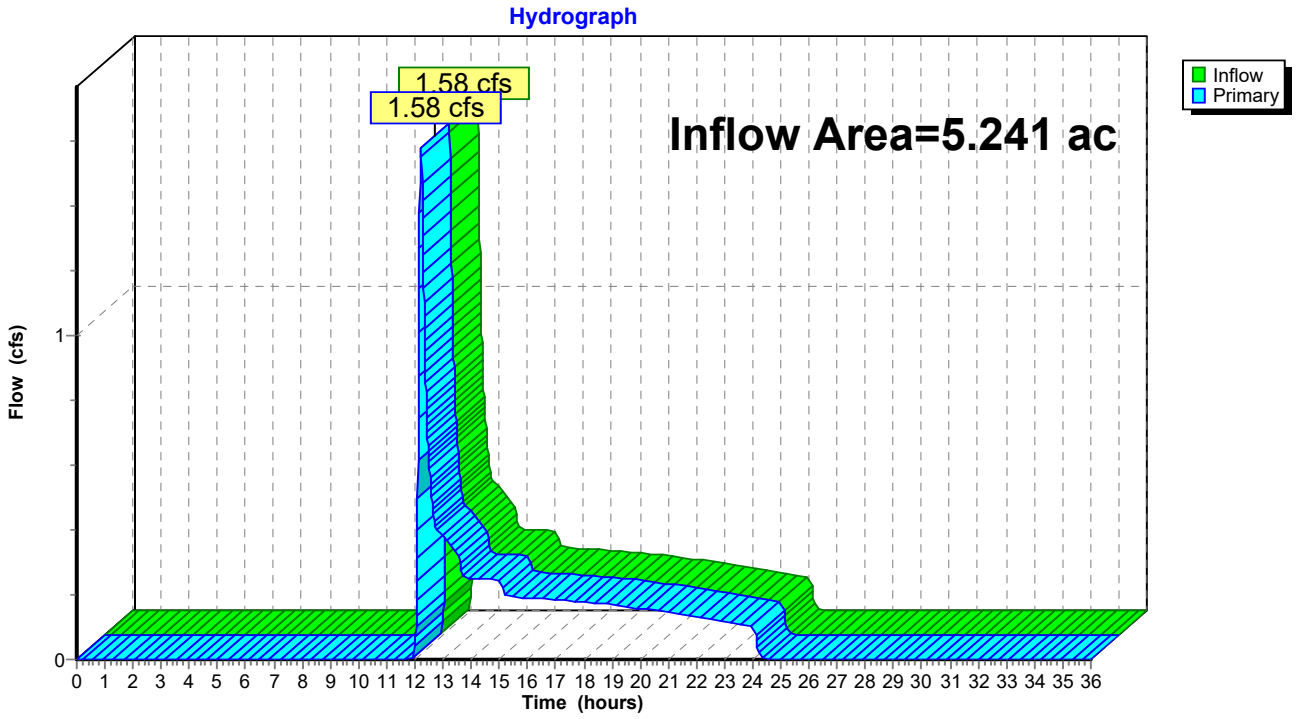


Summary for Link 20L: Sheet Flow South

Inflow Area = 5.241 ac, 17.60% Impervious, Inflow Depth = 0.50" for 25-Year event
Inflow = 1.58 cfs @ 12.21 hrs, Volume= 0.220 af
Primary = 1.58 cfs @ 12.21 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 20L: Sheet Flow South



Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment10S: Runoff Area=160,136 sf 61.92% Impervious Runoff Depth=6.88"
Flow Length=679' Tc=20.8 min CN=89 Runoff=17.45 cfs 2.109 af

Subcatchment11S: Runoff Area=169,564 sf 97.62% Impervious Runoff Depth=7.96"
Flow Length=399' Tc=5.0 min CN=98 Runoff=33.90 cfs 2.582 af

Subcatchment20S: Runoff Area=143,425 sf 8.19% Impervious Runoff Depth=1.64"
Flow Length=329' Tc=10.8 min CN=43 Runoff=4.54 cfs 0.449 af

Subcatchment21.1S: Runoff Area=22,049 sf 20.60% Impervious Runoff Depth=3.37"
Flow Length=168' Tc=19.3 min CN=59 Runoff=1.29 cfs 0.142 af

Subcatchment21S: Runoff Area=62,835 sf 38.01% Impervious Runoff Depth=4.17"
Flow Length=224' Slope=0.0180 '/' Tc=15.8 min CN=66 Runoff=5.10 cfs 0.502 af

Pond 10P: Existing Detention Basin Peak Elev=162.30' Storage=17,907 cf Inflow=17.45 cfs 2.109 af
Outflow=7.57 cfs 2.098 af

Pond 20P: Proposed Detention Basin Peak Elev=157.39' Storage=8,470 cf Inflow=6.32 cfs 0.644 af
Discarded=0.39 cfs 0.543 af Primary=1.59 cfs 0.101 af Outflow=1.97 cfs 0.644 af

Link 10L: STMH 3 Inflow=37.20 cfs 4.680 af
Primary=37.20 cfs 4.680 af

Link 20L: Sheet Flow South Inflow=4.54 cfs 0.550 af
Primary=4.54 cfs 0.550 af

Total Runoff Area = 12.810 ac Runoff Volume = 5.784 af Average Runoff Depth = 5.42"
45.37% Pervious = 5.812 ac 54.63% Impervious = 6.999 ac

Summary for Subcatchment 10S:

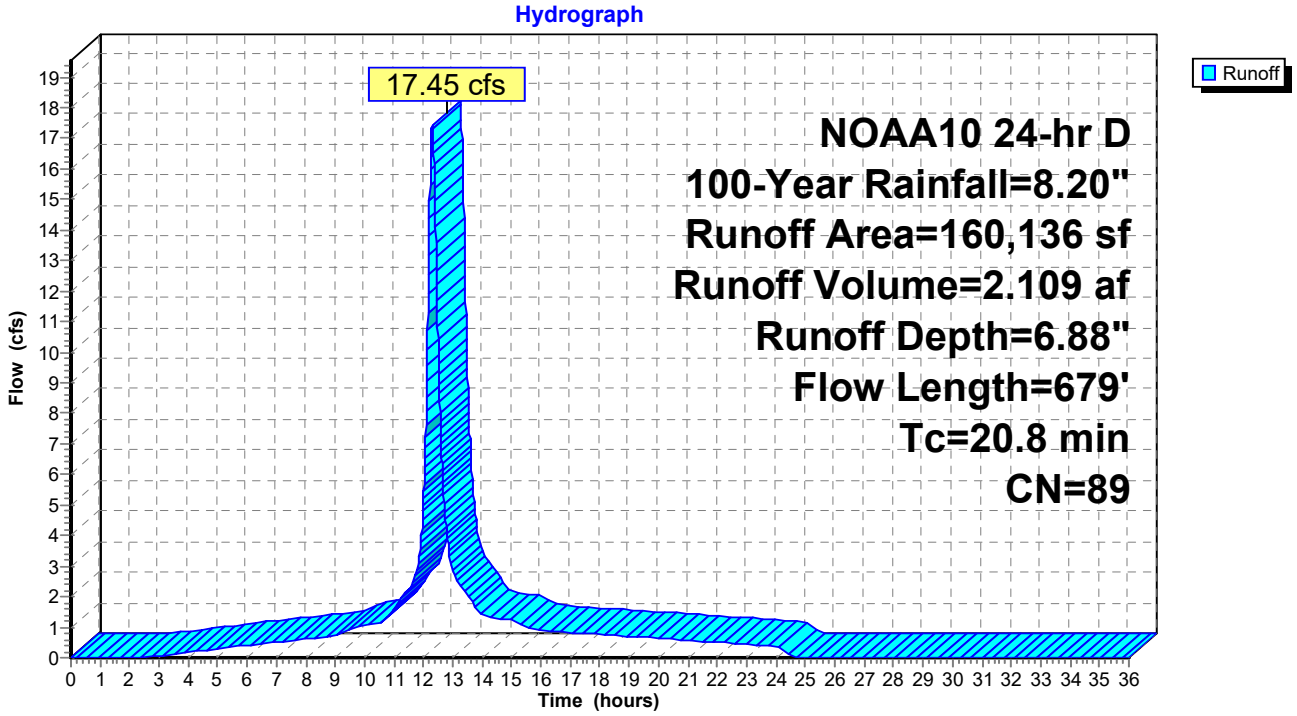
Runoff = 17.45 cfs @ 12.29 hrs, Volume= 2.109 af, Depth= 6.88"
Routed to Pond 10P : Existing Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
99,158	98	Paved parking, HSG D
52,839	80	>75% Grass cover, Good, HSG D
7,619	39	>75% Grass cover, Good, HSG A
520	77	Woods, Good, HSG D
160,136	89	Weighted Average
60,978		38.08% Pervious Area
99,158		61.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.9	85	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.7	107	0.0150	2.49		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.4	387	0.0500	16.10	50.59	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013 Corrugated PE, smooth interior
20.8	679	Total			

Subcatchment 10S:



Summary for Subcatchment 11S:

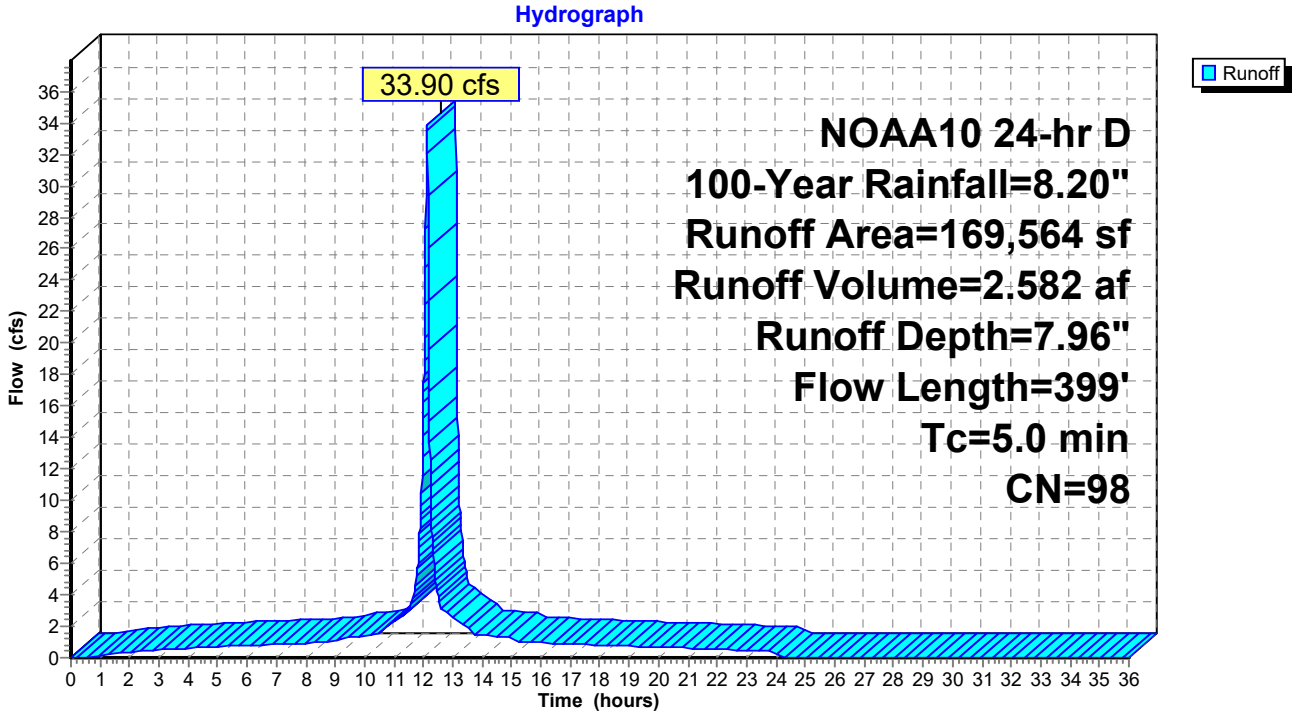
Runoff = 33.90 cfs @ 12.12 hrs, Volume= 2.582 af, Depth= 7.96"
Routed to Link 10L : STMH 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
164,246	98	Paved parking, HSG D
3,772	80	>75% Grass cover, Good, HSG D
1,278	98	Unconnected roofs, HSG D
268	96	Gravel surface, HSG D
169,564	98	Weighted Average
4,040		2.38% Pervious Area
165,524		97.62% Impervious Area
1,278		0.77% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	100	0.0150	1.23		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.8	253	0.0140	2.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.1	46	0.0140	7.36	9.03	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.011 Concrete pipe, straight & clean
3.3	399	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 11S:



Summary for Subcatchment 20S:

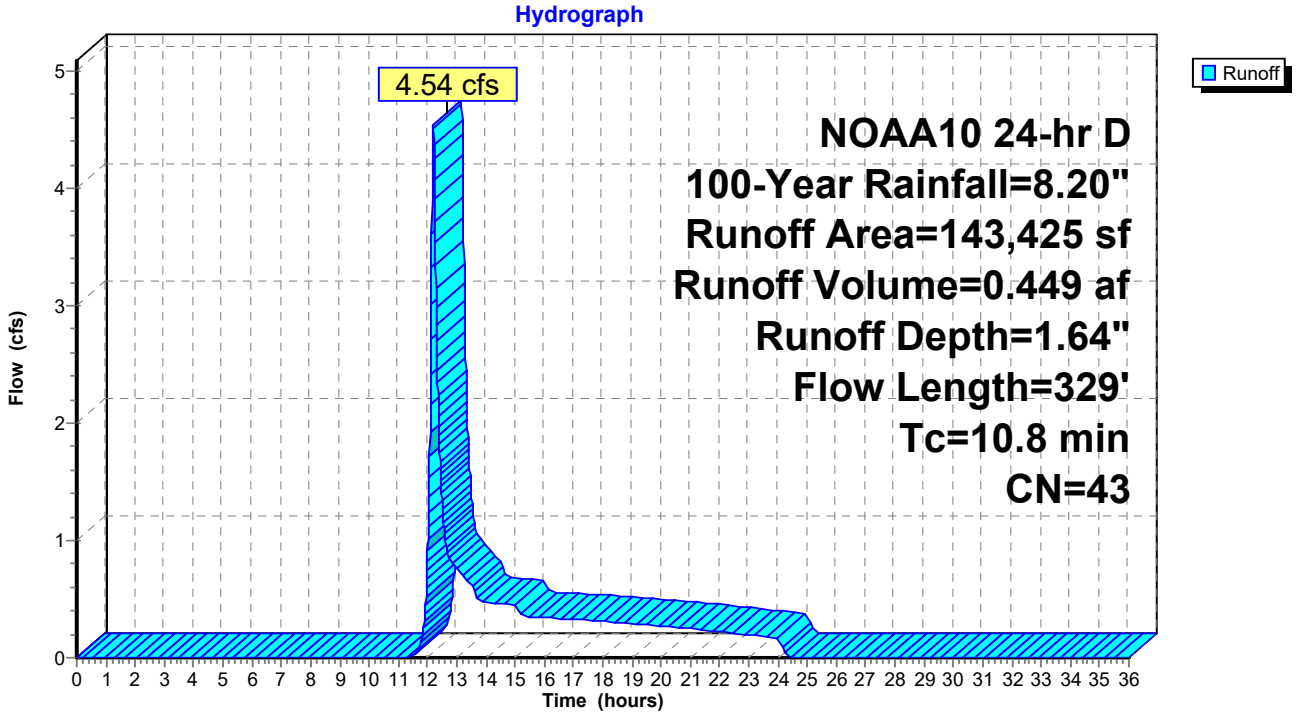
Runoff = 4.54 cfs @ 12.20 hrs, Volume= 0.449 af, Depth= 1.64"
Routed to Link 20L : Sheet Flow South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
31,169	39	>75% Grass cover, Good, HSG A
2,577	98	Paved parking, HSG A
96,448	36	Woods, Fair, HSG A
2,899	80	>75% Grass cover, Good, HSG D
9,169	98	Paved parking, HSG D
1,163	96	Gravel surface, HSG A
143,425	43	Weighted Average
131,679		91.81% Pervious Area
11,746		8.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	43	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
2.9	78	0.0081	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	208	0.0770	5.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
10.8	329	Total			

Subcatchment 20S:



Summary for Subcatchment 21.1S:

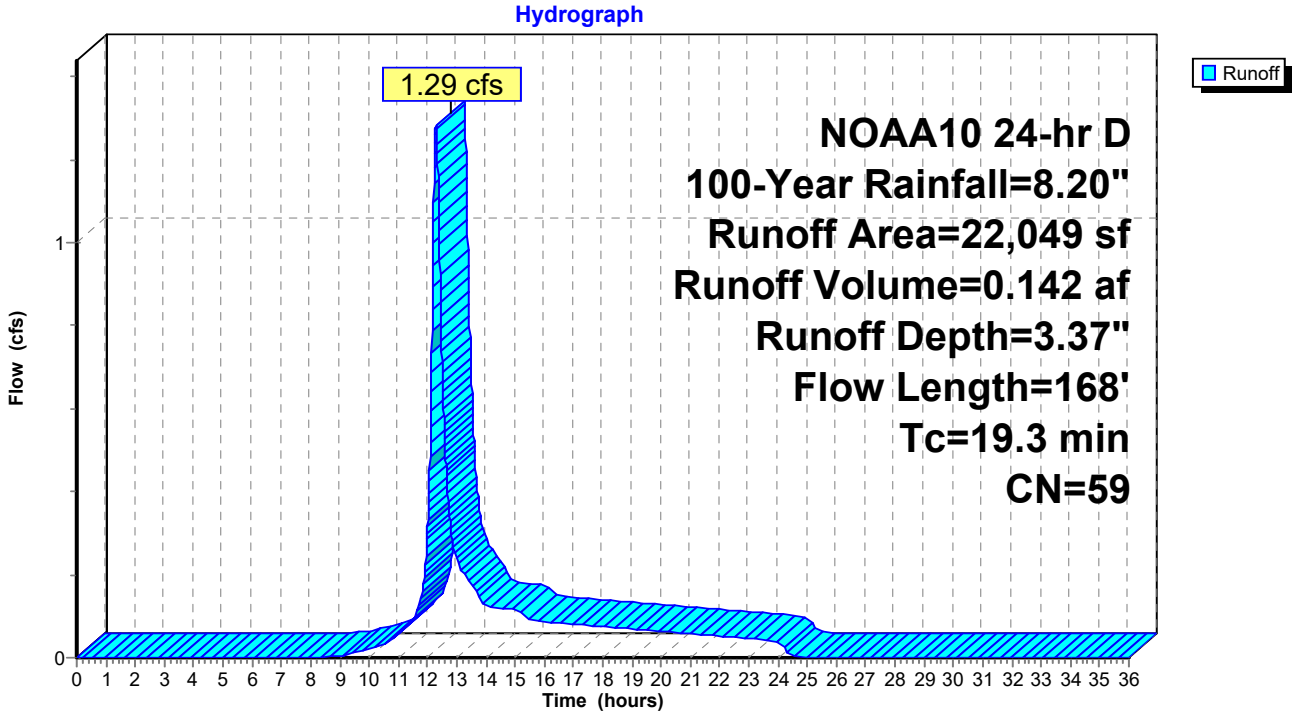
Runoff = 1.29 cfs @ 12.29 hrs, Volume= 0.142 af, Depth= 3.37"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
3,929	98	Paved parking, HSG A
13,391	39	>75% Grass cover, Good, HSG A
614	98	Paved parking, HSG D
4,115	80	>75% Grass cover, Good, HSG D
22,049	59	Weighted Average
17,506		79.40% Pervious Area
4,543		20.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	100	0.0100	0.09		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.2	16	0.0100	1.50		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	52	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	168	Total			

Subcatchment 21.1S:



Summary for Subcatchment 21S:

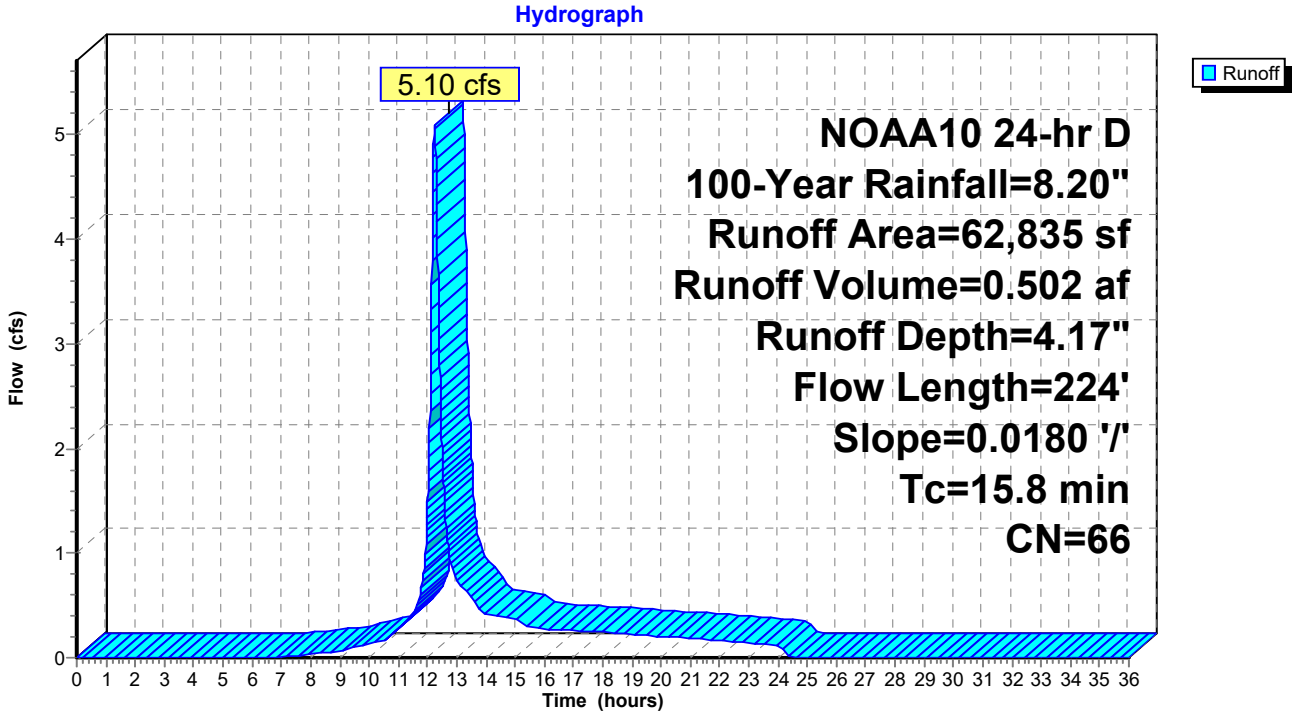
Runoff = 5.10 cfs @ 12.24 hrs, Volume= 0.502 af, Depth= 4.17"
Routed to Pond 20P : Proposed Detention Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
NOAA10 24-hr D 100-Year Rainfall=8.20"

Area (sf)	CN	Description
15,544	98	Paved parking, HSG A
32,688	39	>75% Grass cover, Good, HSG A
8,341	98	Paved parking, HSG D
6,262	80	>75% Grass cover, Good, HSG D
62,835	66	Weighted Average
38,950		61.99% Pervious Area
23,885		38.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.6	74	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.3	50	0.0180	2.72		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.8	224	Total			

Subcatchment 21S:



Summary for Pond 10P: Existing Detention Basin

Inflow Area = 3.676 ac, 61.92% Impervious, Inflow Depth = 6.88" for 100-Year event
Inflow = 17.45 cfs @ 12.29 hrs, Volume= 2.109 af
Outflow = 7.57 cfs @ 12.58 hrs, Volume= 2.098 af, Atten= 57%, Lag= 17.1 min
Primary = 7.57 cfs @ 12.58 hrs, Volume= 2.098 af
Routed to Link 10L : STMH 3

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 162.30' @ 12.58 hrs Surf.Area= 5,600 sf Storage= 17,907 cf

Plug-Flow detention time= 32.2 min calculated for 2.098 af (99% of inflow)
Center-of-Mass det. time= 28.7 min (831.1 - 802.4)

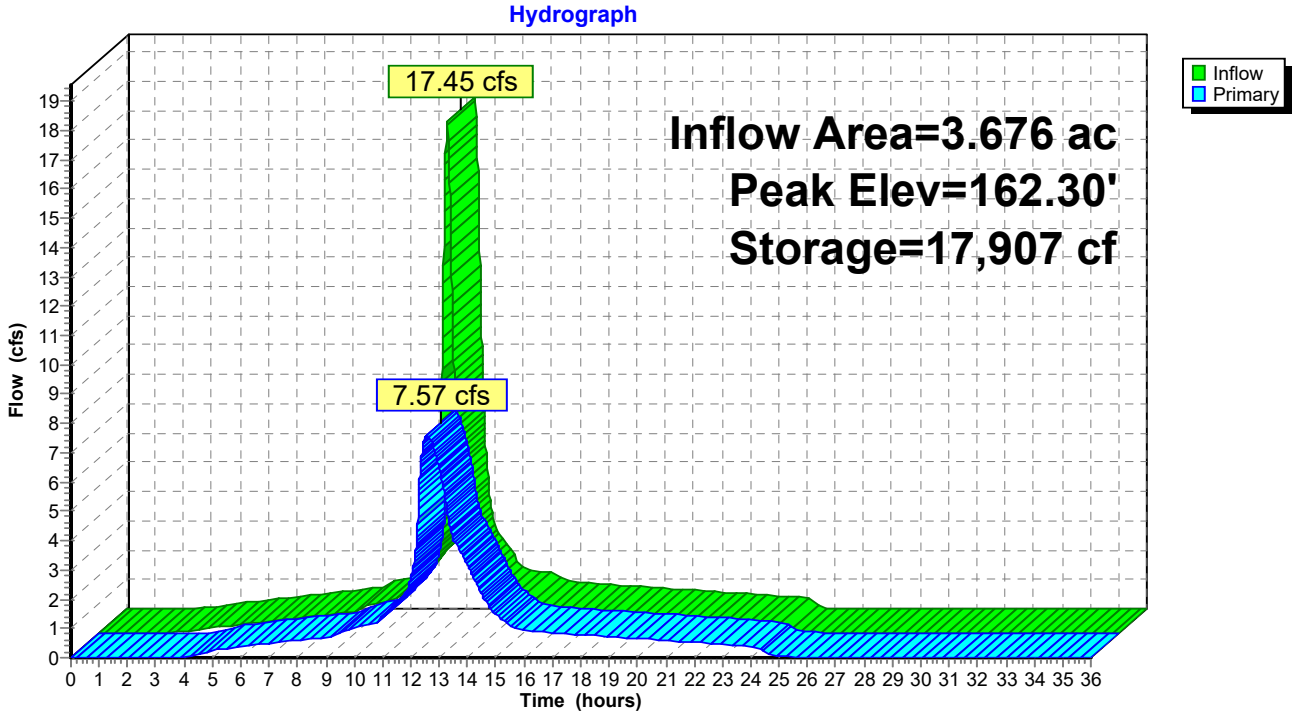
Volume	Invert	Avail.Storage	Storage Description
#1	157.00'	28,753 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
157.00	345	77.9	0	0	345
158.00	2,130	192.9	1,111	1,111	2,827
159.00	3,098	216.6	2,599	3,710	3,626
160.00	3,825	235.1	3,455	7,165	4,328
161.00	4,541	254.7	4,178	11,343	5,130
162.00	5,343	275.6	4,937	16,279	6,051
163.00	6,229	295.2	5,780	22,060	6,986
164.00	7,169	313.1	6,693	28,753	7,905

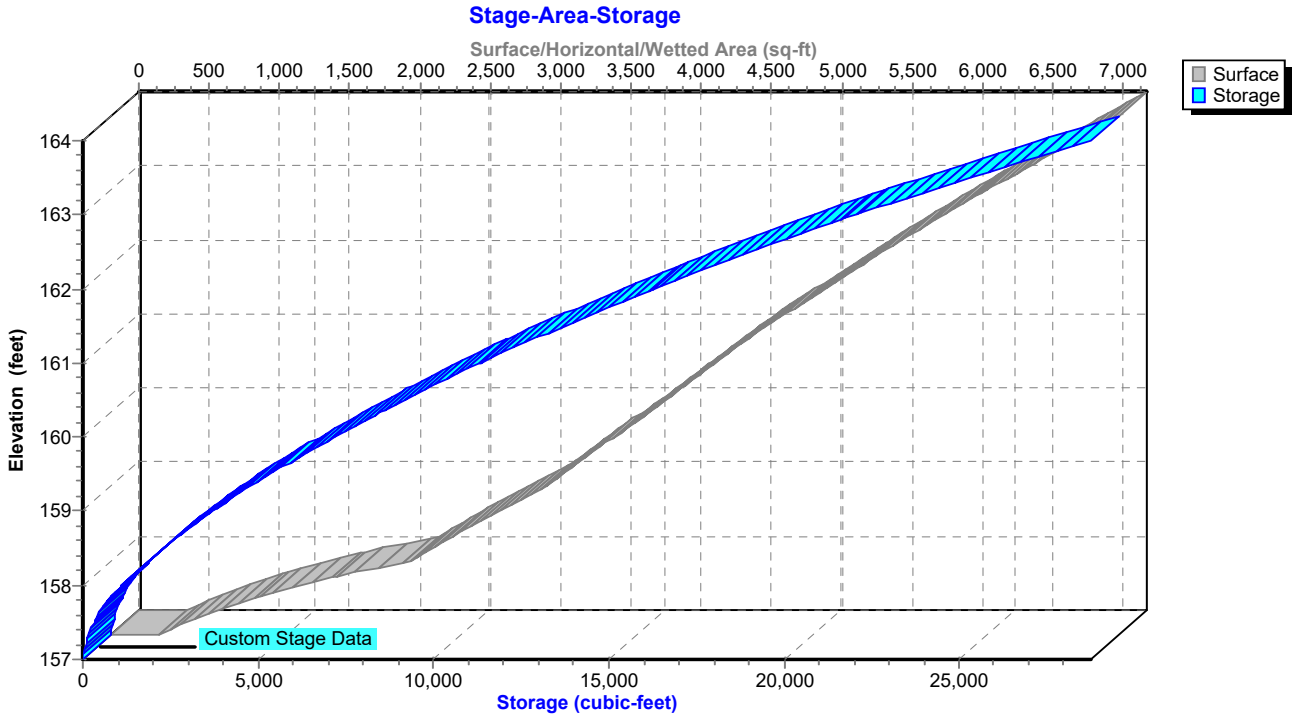
Device	Routing	Invert	Outlet Devices
#1	Primary	157.51'	**15.0" Round Culvert** L= 311.0' Ke= 1.000 Inlet / Outlet Invert= 157.51' / 154.61' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	157.63'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	157.78'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	160.33'	**8.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#5	Device 1	162.93'	**18.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.57 cfs @ 12.58 hrs HW=162.30' (Free Discharge)
└**1=Culvert** (Passes 7.57 cfs of 8.21 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 1.99 cfs @ 10.12 fps)
├**3=Orifice/Grate** (Orifice Controls 3.44 cfs @ 9.85 fps)
├**4=Orifice/Grate** (Orifice Controls 2.15 cfs @ 6.15 fps)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Pond 10P: Existing Detention Basin



Pond 10P: Existing Detention Basin



Stage-Area-Storage for Pond 10P: Existing Detention Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
157.00	345	0
157.10	455	40
157.20	580	92
157.30	721	156
157.40	876	236
157.50	1,047	332
157.60	1,233	446
157.70	1,435	579
157.80	1,651	734
157.90	1,883	910
158.00	2,130	1,111
158.10	2,219	1,328
158.20	2,309	1,555
158.30	2,401	1,790
158.40	2,496	2,035
158.50	2,591	2,289
158.60	2,689	2,553
158.70	2,789	2,827
158.80	2,890	3,111
158.90	2,993	3,405
159.00	3,098	3,710
159.10	3,167	4,023
159.20	3,237	4,343
159.30	3,308	4,670
159.40	3,380	5,005
159.50	3,452	5,346
159.60	3,525	5,695
159.70	3,599	6,051
159.80	3,673	6,415
159.90	3,749	6,786
160.00	3,825	7,165
160.10	3,894	7,551
160.20	3,963	7,944
160.30	4,033	8,343
160.40	4,104	8,750
160.50	4,175	9,164
160.60	4,247	9,585
160.70	4,320	10,014
160.80	4,393	10,449
160.90	4,467	10,892
161.00	4,541	11,343
161.10	4,618	11,801
161.20	4,696	12,266
161.30	4,775	12,740
161.40	4,854	13,221
161.50	4,934	13,711
161.60	5,014	14,208
161.70	5,096	14,714
161.80	5,177	15,227
161.90	5,260	15,749
162.00	5,343	16,279
162.10	5,429	16,818
162.20	5,515	17,365
162.30	5,602	17,921
162.40	5,689	18,485
162.50	5,778	19,059
162.60	5,866	19,641
162.70	5,956	20,232
162.80	6,046	20,832
162.90	6,137	21,441
163.00	6,229	22,060
163.10	6,320	22,687
163.20	6,412	23,324
163.30	6,504	23,969
163.40	6,597	24,624
163.50	6,691	25,289
163.60	6,785	25,963
163.70	6,880	26,646
163.80	6,976	27,339
163.90	7,072	28,041
164.00	**7,169**	**28,753**

Summary for Pond 20P: Proposed Detention Basin

Inflow Area = 1.949 ac, 33.49% Impervious, Inflow Depth = 3.96" for 100-Year event
Inflow = 6.32 cfs @ 12.25 hrs, Volume= 0.644 af
Outflow = 1.97 cfs @ 12.59 hrs, Volume= 0.644 af, Atten= 69%, Lag= 20.7 min
Discarded = 0.39 cfs @ 12.59 hrs, Volume= 0.543 af
Primary = 1.59 cfs @ 12.59 hrs, Volume= 0.101 af
Routed to Link 20L : Sheet Flow South

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 157.39' @ 12.59 hrs Surf.Area= 6,859 sf Storage= 8,470 cf

Plug-Flow detention time= 203.9 min calculated for 0.644 af (100% of inflow)
Center-of-Mass det. time= 203.9 min (1,080.5 - 876.6)

Volume	Invert	Avail.Storage	Storage Description
#1	156.00'	11,355 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

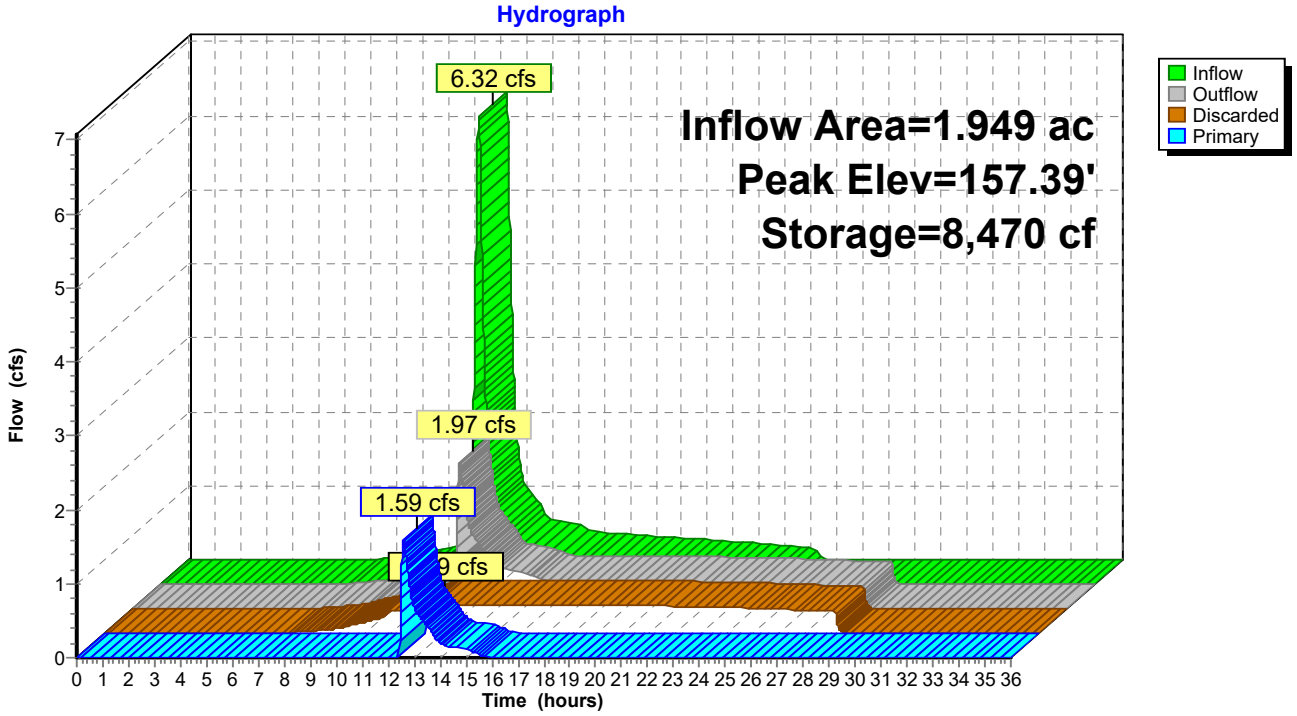
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
156.00	5,399	336.0	0.0	0	0	5,399
156.10	5,399	336.0	100.0	540	540	5,433
157.00	6,438	355.0	100.0	5,320	5,860	6,523
157.80	7,310	370.0	100.0	5,496	11,355	7,435

Device	Routing	Invert	Outlet Devices
#1	Primary	157.30'	**20.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#2	Discarded	156.00'	**2.410 in/hr Exfiltration over Wetted area**

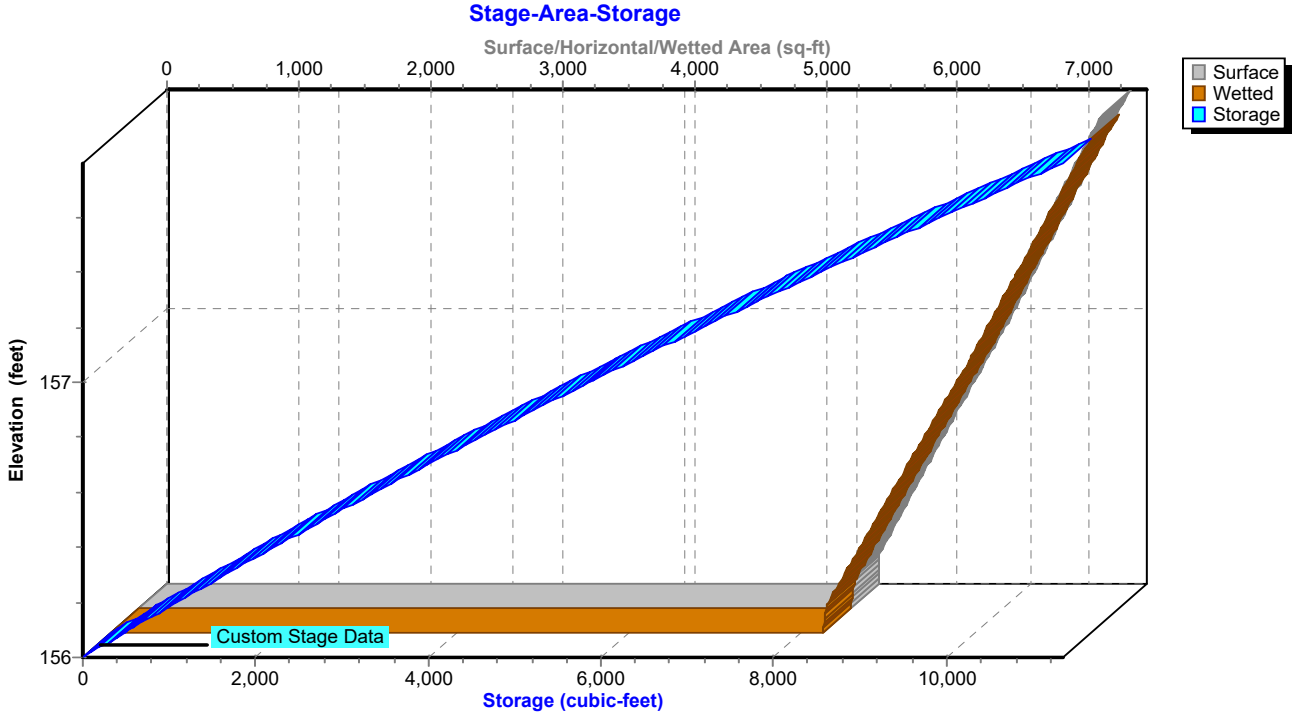
Discarded OutFlow Max=0.39 cfs @ 12.59 hrs HW=157.39' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.39 cfs)

Primary OutFlow Max=1.58 cfs @ 12.59 hrs HW=157.39' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.58 cfs @ 0.85 fps)

Pond 20P: Proposed Detention Basin



Pond 20P: Proposed Detention Basin



Stage-Area-Storage for Pond 20P: Proposed Detention Basin

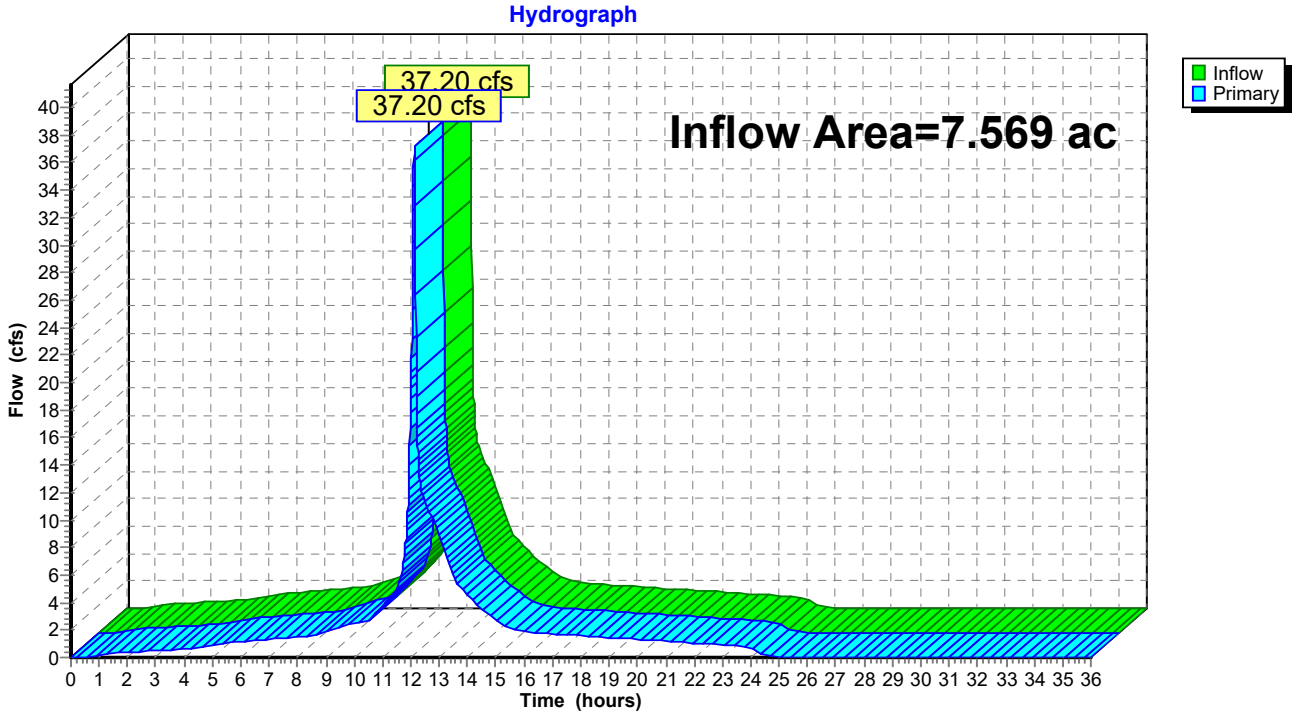
Elevation (feet)	Surface (sq-ft)	Wetted (sq-ft)	Storage (cubic-feet)
156.00	5,399	5,399	0
156.05	5,399	5,416	270
156.10	5,399	5,433	540
156.15	5,454	5,492	811
156.20	5,510	5,551	1,085
156.25	5,566	5,610	1,362
156.30	5,622	5,670	1,642
156.35	5,678	5,729	1,924
156.40	5,735	5,789	2,210
156.45	5,792	5,849	2,498
156.50	5,849	5,910	2,789
156.55	5,907	5,970	3,083
156.60	5,965	6,031	3,380
156.65	6,023	6,092	3,679
156.70	6,082	6,153	3,982
156.75	6,140	6,214	4,288
156.80	6,199	6,275	4,596
156.85	6,258	6,337	4,907
156.90	6,318	6,399	5,222
156.95	6,378	6,461	5,539
157.00	6,438	6,523	5,860
157.05	6,491	6,579	6,183
157.10	6,544	6,635	6,509
157.15	6,597	6,691	6,837
157.20	6,651	6,747	7,169
157.25	6,705	6,804	7,502
157.30	6,759	6,861	7,839
157.35	6,813	6,917	8,178
157.40	6,867	6,974	8,520
157.45	6,922	7,031	8,865
157.50	6,977	7,089	9,212
157.55	7,032	7,146	9,563
157.60	7,087	7,204	9,916
157.65	7,142	7,261	10,271
157.70	7,198	7,319	10,630
157.75	7,254	7,377	10,991
157.80	**7,310**	**7,435**	**11,355**

Summary for Link 10L: STMH 3

Inflow Area = 7.569 ac, 80.28% Impervious, Inflow Depth = 7.42" for 100-Year event
Inflow = 37.20 cfs @ 12.12 hrs, Volume= 4.680 af
Primary = 37.20 cfs @ 12.12 hrs, Volume= 4.680 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Link 10L: STMH 3

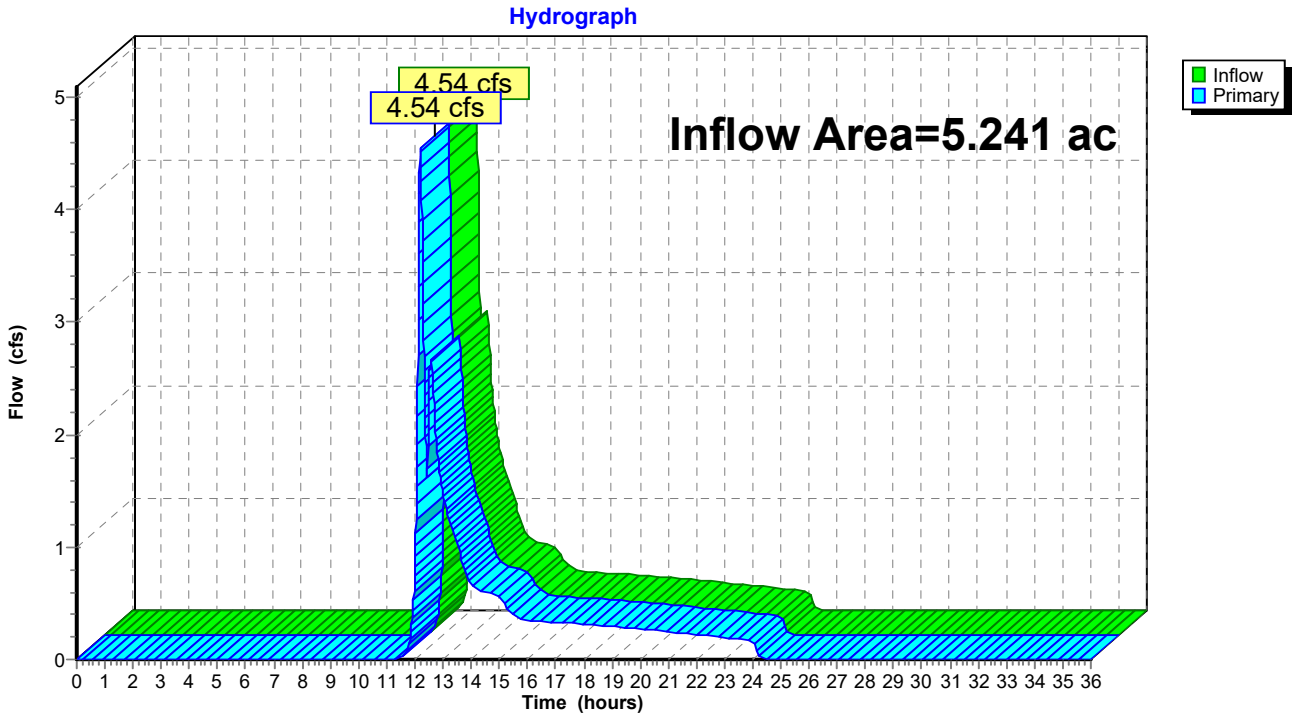


Summary for Link 20L: Sheet Flow South

Inflow Area = 5.241 ac, 17.60% Impervious, Inflow Depth = 1.26" for 100-Year event
Inflow = 4.54 cfs @ 12.20 hrs, Volume= 0.550 af
Primary = 4.54 cfs @ 12.20 hrs, Volume= 0.550 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

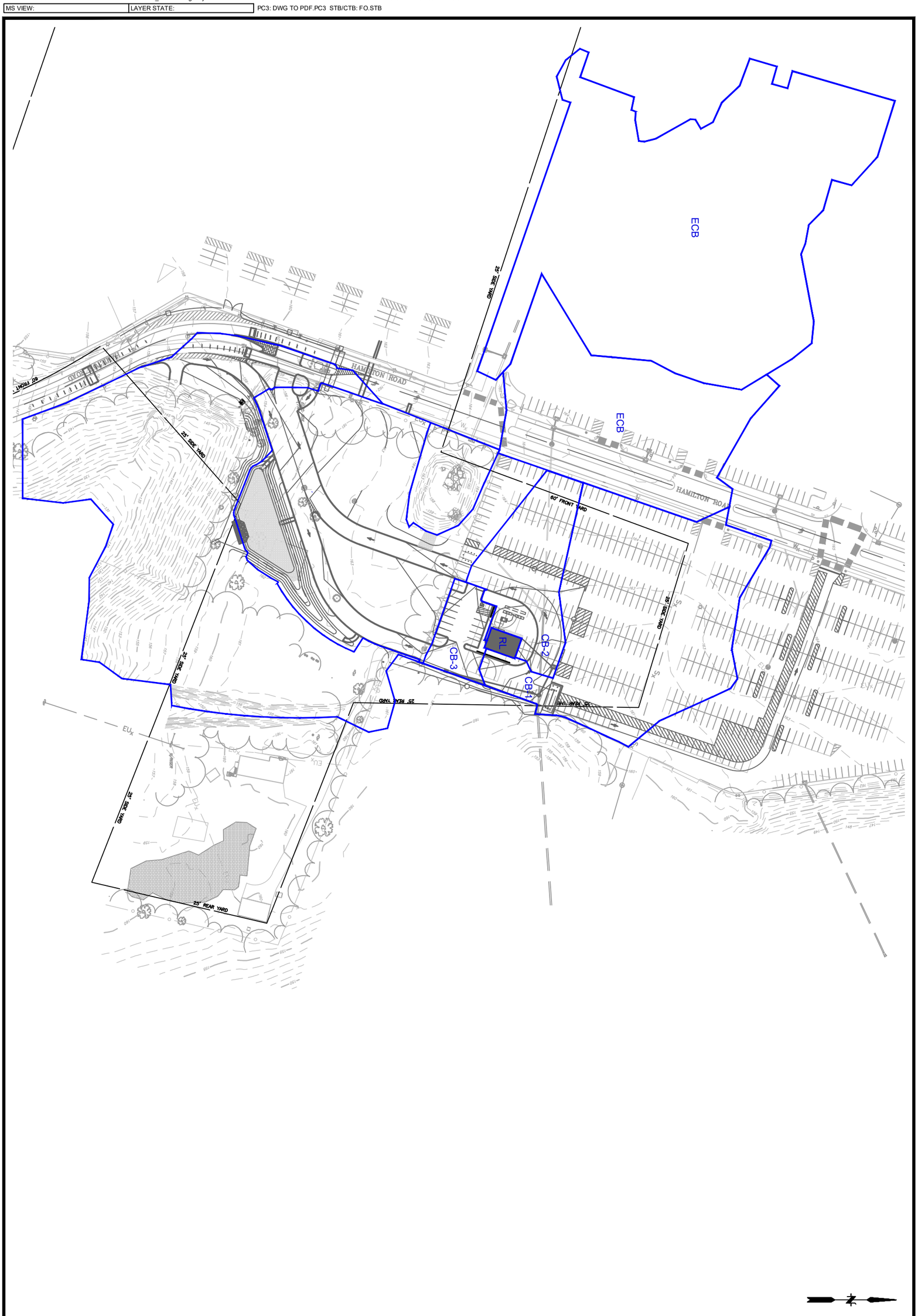
Link 20L: Sheet Flow South



Appendix C

Proposed Catchment Areas

File: J:\DWG\P2017\0430\H70\Civil\Plan\20170430H70_DRA03.dwg Layout: DR-103 Plotted: 2025-12-11 11:29 AM Saved: 2025-12-11 11:09 AM User: Daniel.Chiburis
MS VIEW: | LAYER STATE: | PC3: DWG TO PDF.PC3 STB/CTB: FO.STB



DR-103

PROJ. No.: 120.0170430.H25
DATE: DECEMBER 2025

COLLINS AEROSPACE

PROPOSED CATCHMENT AREAS

HAMILTON ROAD IMPROVEMENTS

WINDSOR LOCKS CONNECTICUT

FUSS & O'NEILL
ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

SCALE:
HORZ.: 1" = 120'
VERT.: -
DATUM:
HORZ.: -
VERT.: -
0 60' 120'
GRAPHIC SCALE

Scenario: 10-Year



FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (%)	Diameter (in)	System Intensity (in/h)	System CA (ft²)	System Rational Flow (cfs)	Capacity (Full Flow) (cfs)	Velocity (ft/s)	Hydraulic Grade Line (In) (ft)	Elevation Ground (Start) (ft)	Hydraulic Grade Line (Out) (ft)	Elevation Ground (Stop) (ft)
CO-1	CB-1	152.71	O-1	127.25	260.0	9.79	24.0	4.252	94,543	9.30	38.34	10.06	153.80	159.35	127.92	129.25
CO-MH-1	MH-1	154.96	CB-1	154.61	24.8	1.41	15.0	4.269	27,168	2.68	7.67	5.69	155.62	160.95	155.13	159.35
CO-3	CB-3	157.50	MH-1	156.20	129.8	1.00	12.0	7.490	7,037	1.22	4.64	4.98	157.97	161.50	156.55	160.95
CO-2	CB-2	158.00	MH-1	157.55	43.0	1.05	12.0	4.297	20,131	2.00	4.74	5.78	158.60	161.00	158.01	160.95
CO-T-1	T-1	158.86	CB-2	158.00	86.6	0.99	8.0	7.490	1,117	0.19	1.57	3.05	159.06	163.00	158.60	161.00
CO-MH-2	MH-2	156.54	MH-1	154.96	112.0	1.41	15.0	7.490	0	0.00	7.67	0.00	156.54	162.56	155.62	160.95

FlexTable: Catch Basin Table

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Downstream Conduit	Local Rational Flow (cfs)	Capture Efficiency (Calculated) (%)	Carryover Rational Flow (cfs)	Flow (Captured) (cfs)	Bypassed Rational Flow (cfs)	Hydraulic Grade Line (In) (ft)	Flow (Total Out) (cfs)	Depth (Gutter) (in)	Spread / Top Width (ft)
CB-1	159.35	159.35	152.71	CO-1	11.68	100.0	0.00	11.68	0.00	153.80	9.30	6.5	23.2
CB-2	161.00	161.00	158.00	CO-2	1.89	100.0	0.00	1.89	0.00	158.60	2.00	2.5	10.3
CB-3	161.50	161.50	157.50	CO-3	1.22	100.0	0.00	1.22	0.00	157.97	1.22	2.6	6.6

FlexTable: Manhole Table

Label	Elevation (Ground) (ft)	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Flow (Known) (cfs)	Flow (Total Out) (cfs)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
MH-1	160.95	160.95	154.96	0.00	2.68	155.62	155.62
MH-2	162.56	162.56	156.54	0.00	0.00	156.54	156.54

FlexTable: Catchment Table

Label	Outflow Element	Area (User Defined) (ft²)	Runoff Coefficient (Rational)	Catchment CA (ft²)	Time of Concentration (min)	Catchment Intensity (in/h)	Catchment Rational Flow (cfs)
CM-3	CB-3	8,183	0.860	7,037	5.0	7.490	1.22
CM-2	CB-2	23,767	0.800	19,014	14.4	4.297	1.89
RL	T-1	1,241	0.900	1,117	5.0	7.490	0.19
CM-1	CB-1	74,861	0.900	67,375	5.0	7.490	11.68

Appendix D

Water Quality Calculations



SCALE: HORZ.: 1" = 60'
VERT.: -
DATUM: HORZ.: -
VERT.: -
0 30' 60'
GRAPHIC SCALE

FUSS & O'NEILL
ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

COLLINS AEROSPACE

PROPOSED WATER QUALITY AREA

HAMILTON ROAD ENTRANCE IMPROVEMENTS

WINDSOR LOCKS CONNECTICUT

PROJ. No.: 120.0170430.H75
DATE: DECEMBER 2025

DR-104

File: J:\DWG\P20170430\H70\Civil\Plan\20170430H70_DRA04.dwg Layout: DR-104 Plotted: 2025-12-11 11:37 AM Saved: 2025-12-09 12:28 PM User: Daniel.Chiburis
PC3: DWG TO PDF.PC3 STB/CTB: FO.STB
MS VIEW: LAYER STATE:

FUSS & O'NEILL

Water Quality Volume & Flow Calculations
Collins Aerospace
Windsor Locks, Connecticut

Proposed Detention Basin

	Description	Symbol	Unit of Measure	Quantity
Water Quality Volume (WQV)	**Input**			
	Upstream Drainage Area	A	AC	1.949
	Percent Impervious Cover	I	%	33%
	Volumetric Runoff Coefficient	R		0.351
	Water Quality Volume	WQV	ac-ft	**0.074**
Date: 12/9/2025		Prepared By: DC		

Notes:
1. All water quality calculations based on 2023 Connecticut Stormwater Quality Manual.
2. Shaded cells indicate numbers inputted from other sources.

FUSS & O'NEILL

Solve better. Go further.



Collins Aerospace – Hamilton Road Entrance

February 9, 2026

Collins Aerospace

An RTX Business

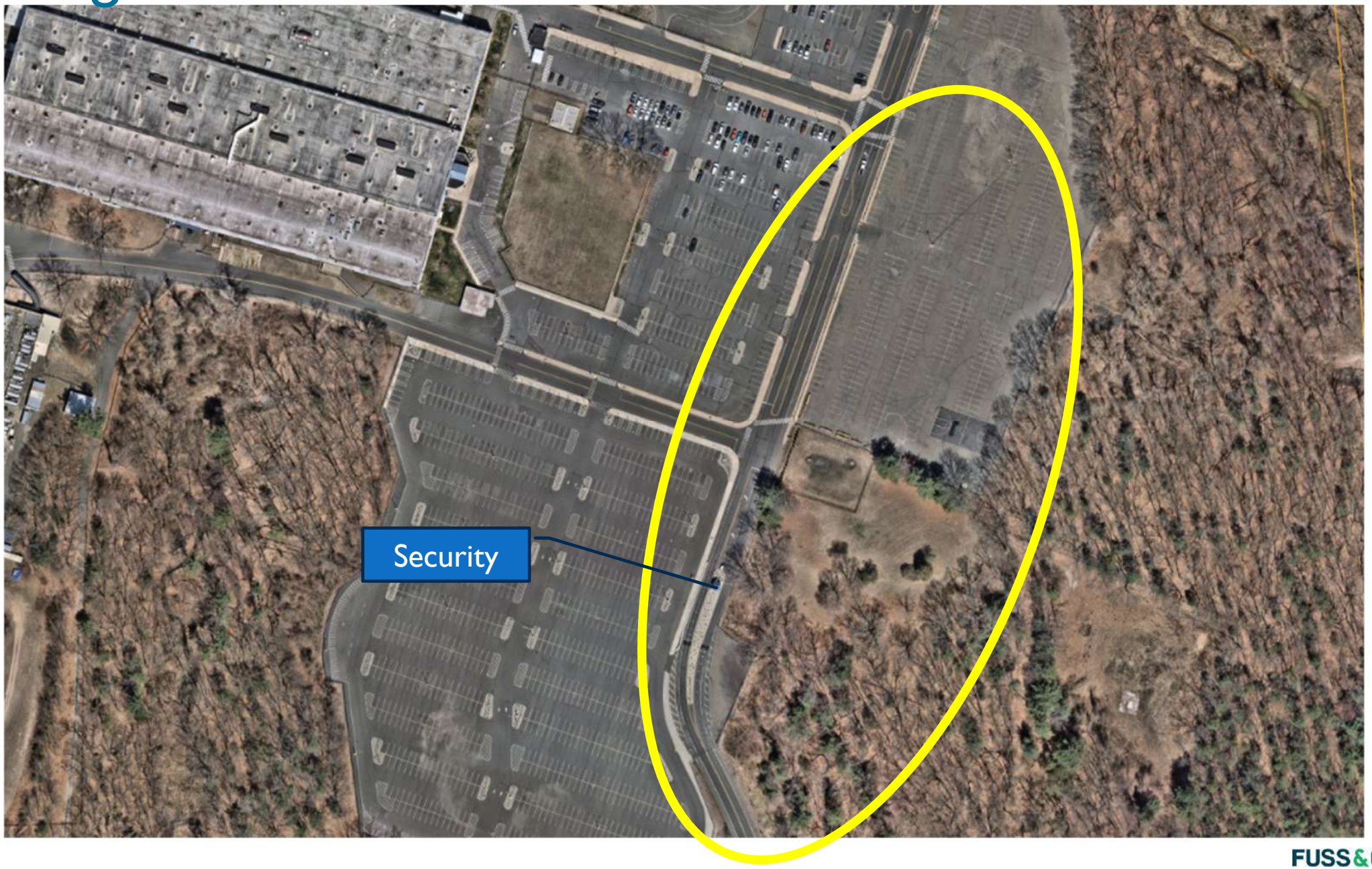
Agenda

- Permits
- Existing Conditions
- Description of Improvements
- Questions?

Existing

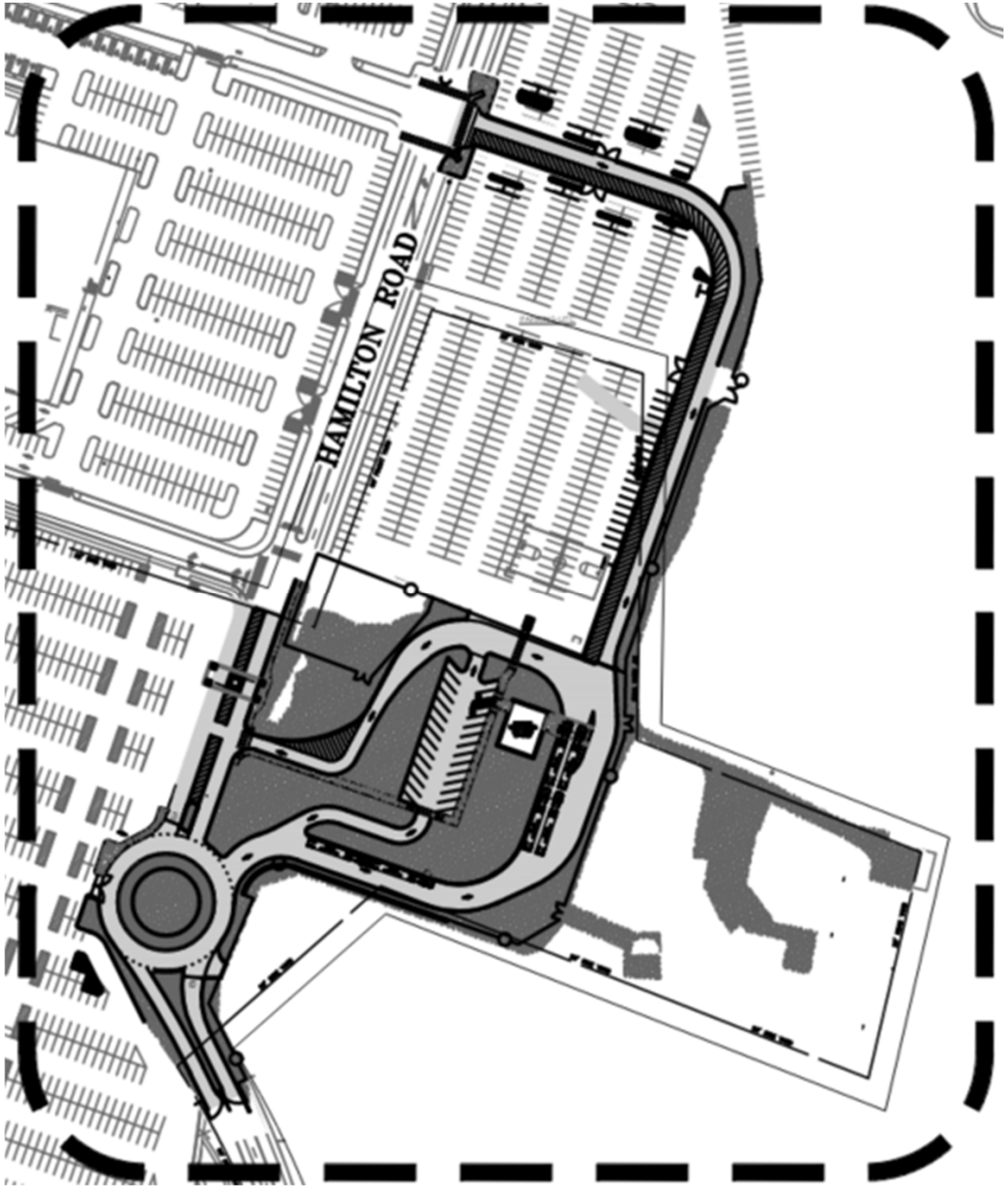


Existing



FUSS & O'NEILL

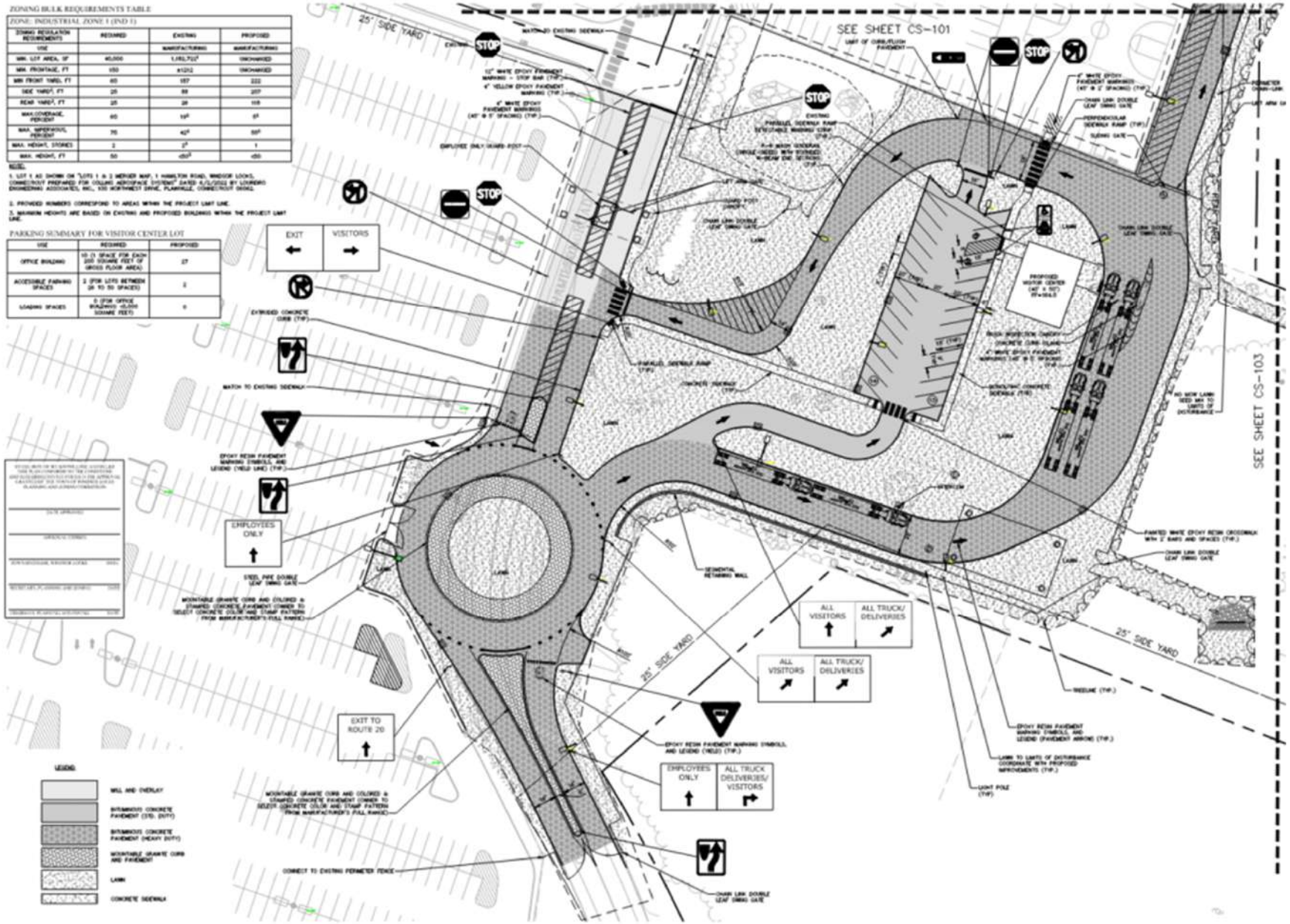
Current Approval - 2022



- Special Use Permit #2022-01
- Site Plan Review #2022-01

FUSS&O'NEILL

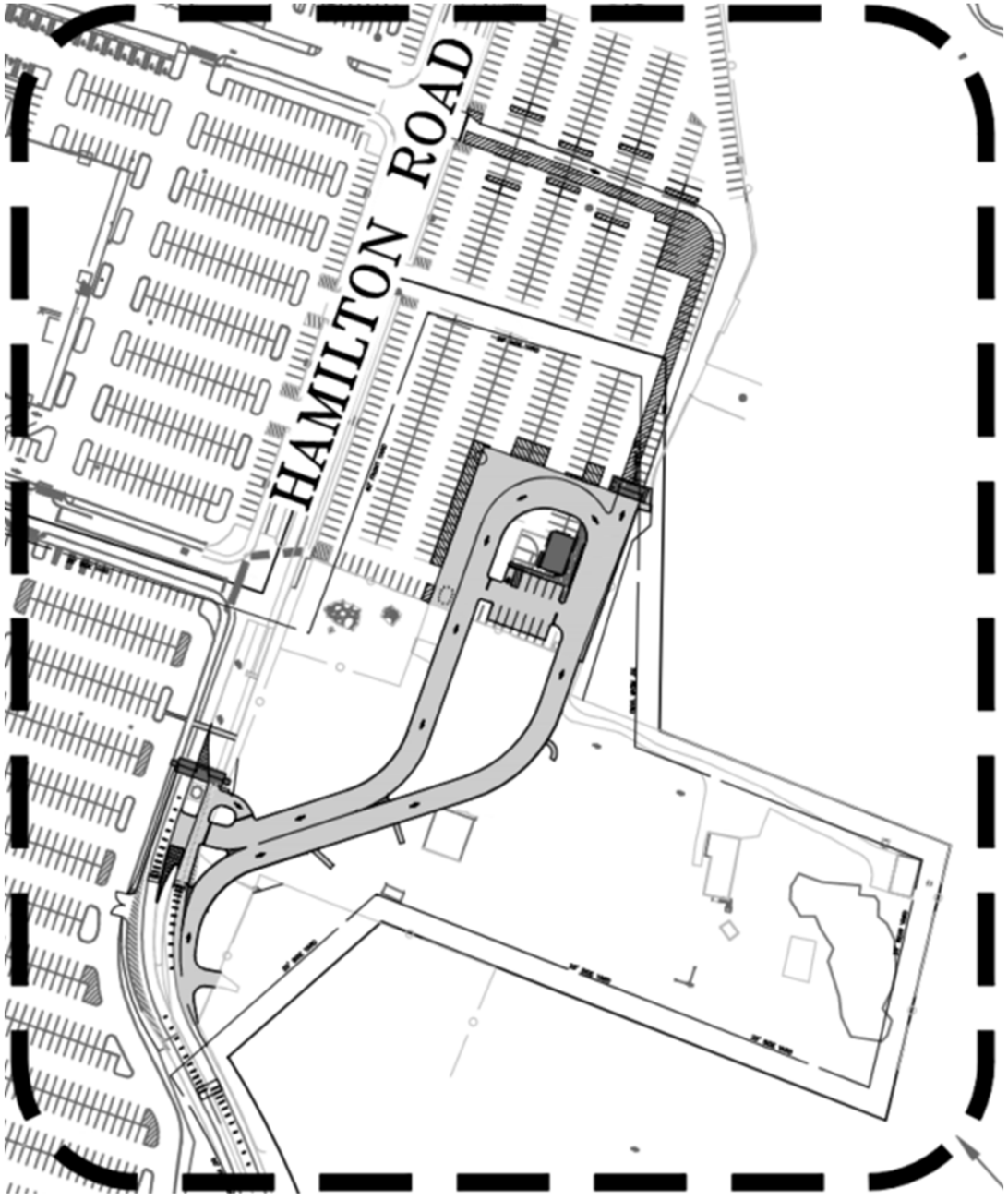
Current Approval - 2022



- 2,000 S.F. Visitor Post
- 29 Parking Spaces
- Separation of Delivery Trucks from Passenger Vehicles

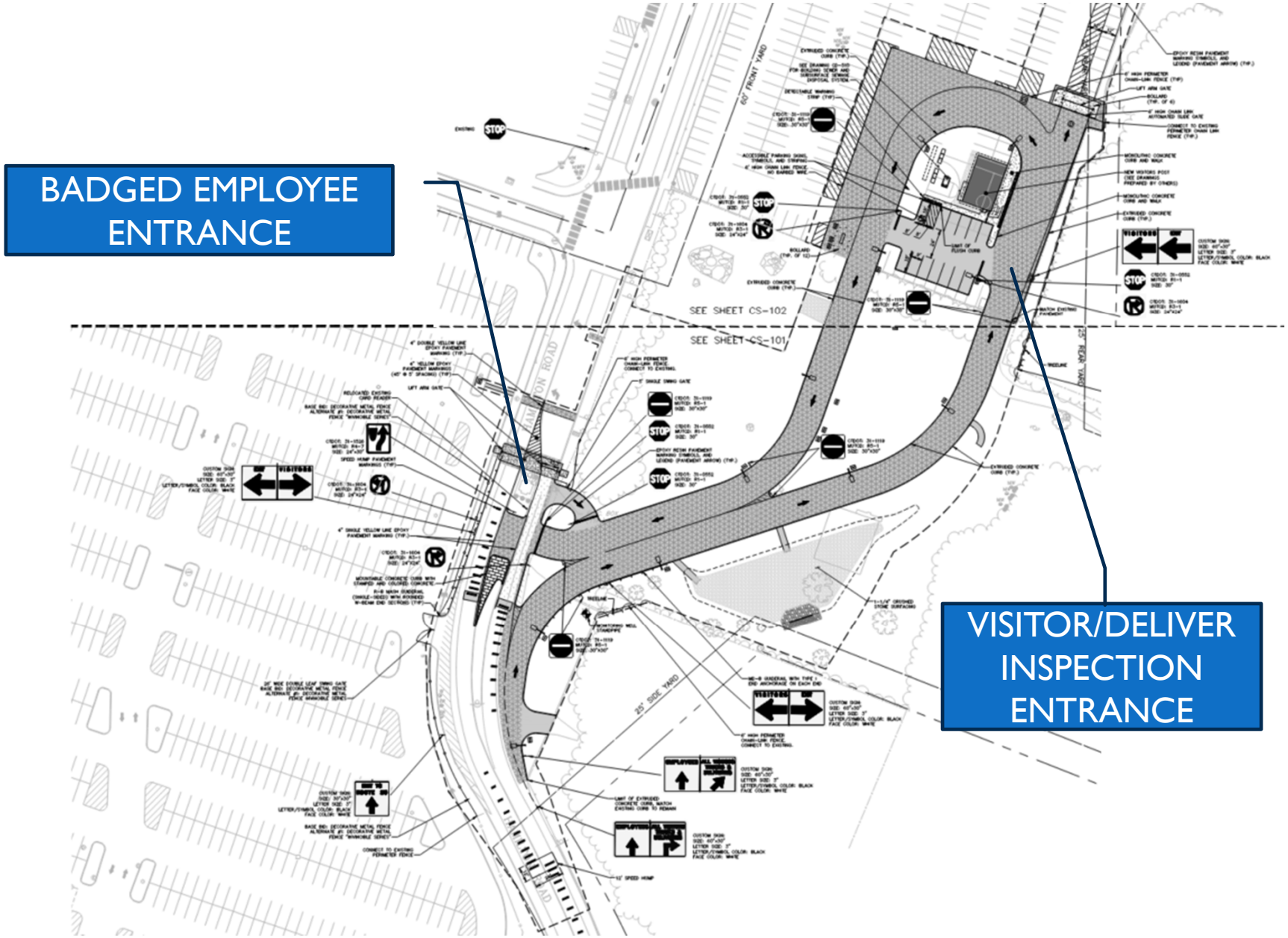
FUSS & O'NEILL

Proposed Improvements - 2026



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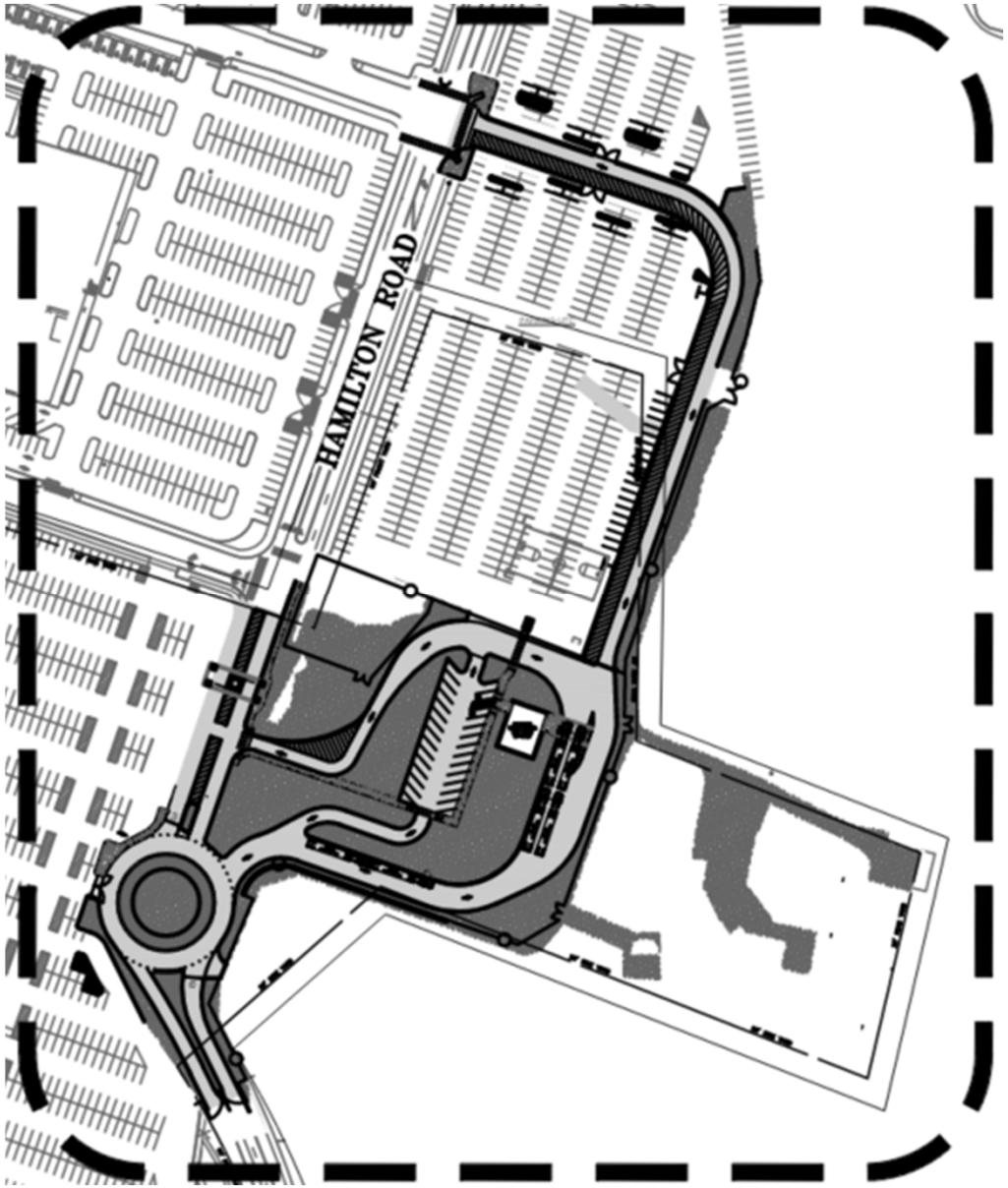
Proposed Improvements - 2026

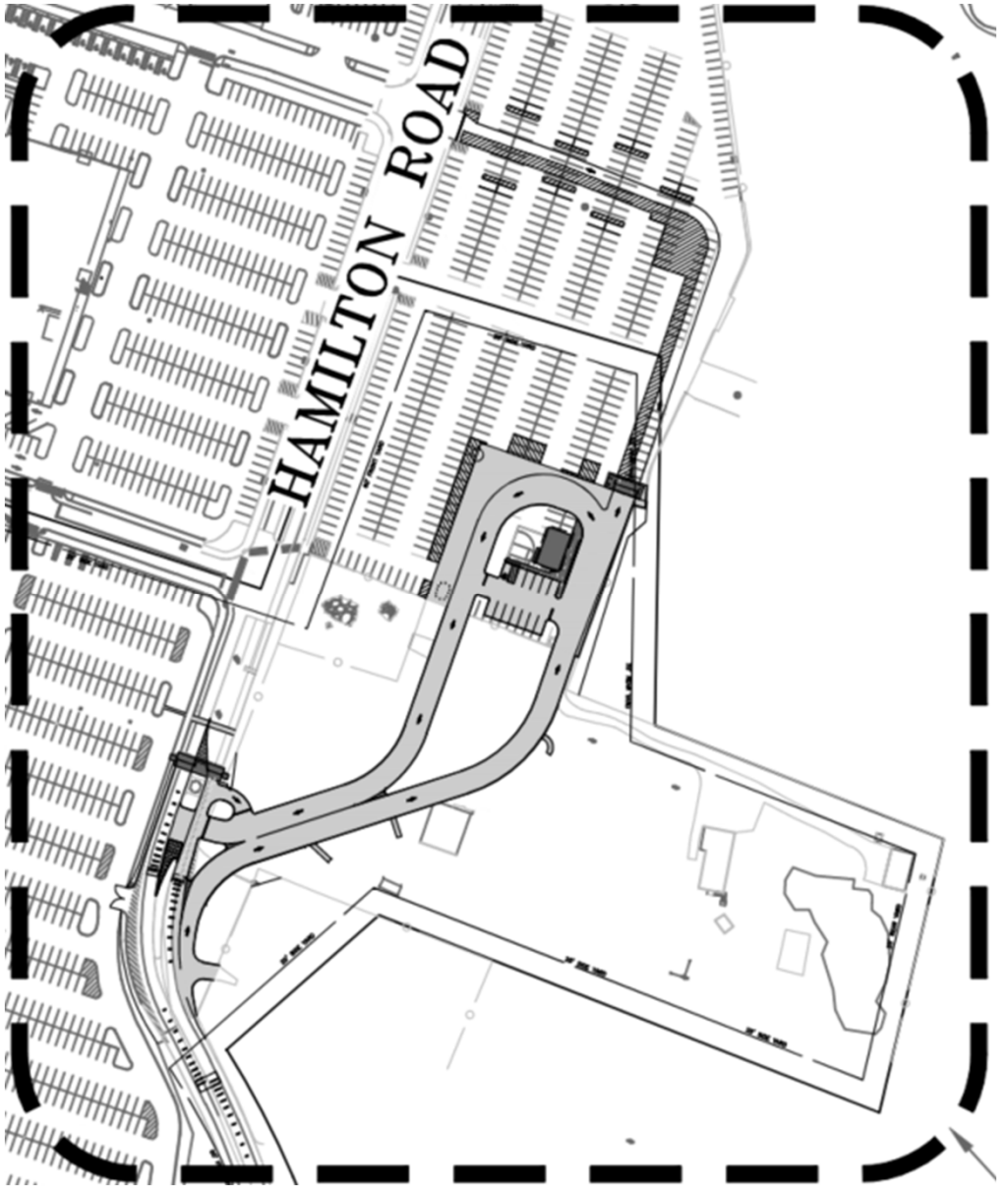


- Collins Aerospace decided to reduce the overall program
- 1,000 S.F. Visitor Post
- 14 Parking Spaces
- Using Existing Impervious Lot
- Total Disturbance of 3.0 acres instead of 5.2 acres
- All badged employees will continue to enter the campus as they do today

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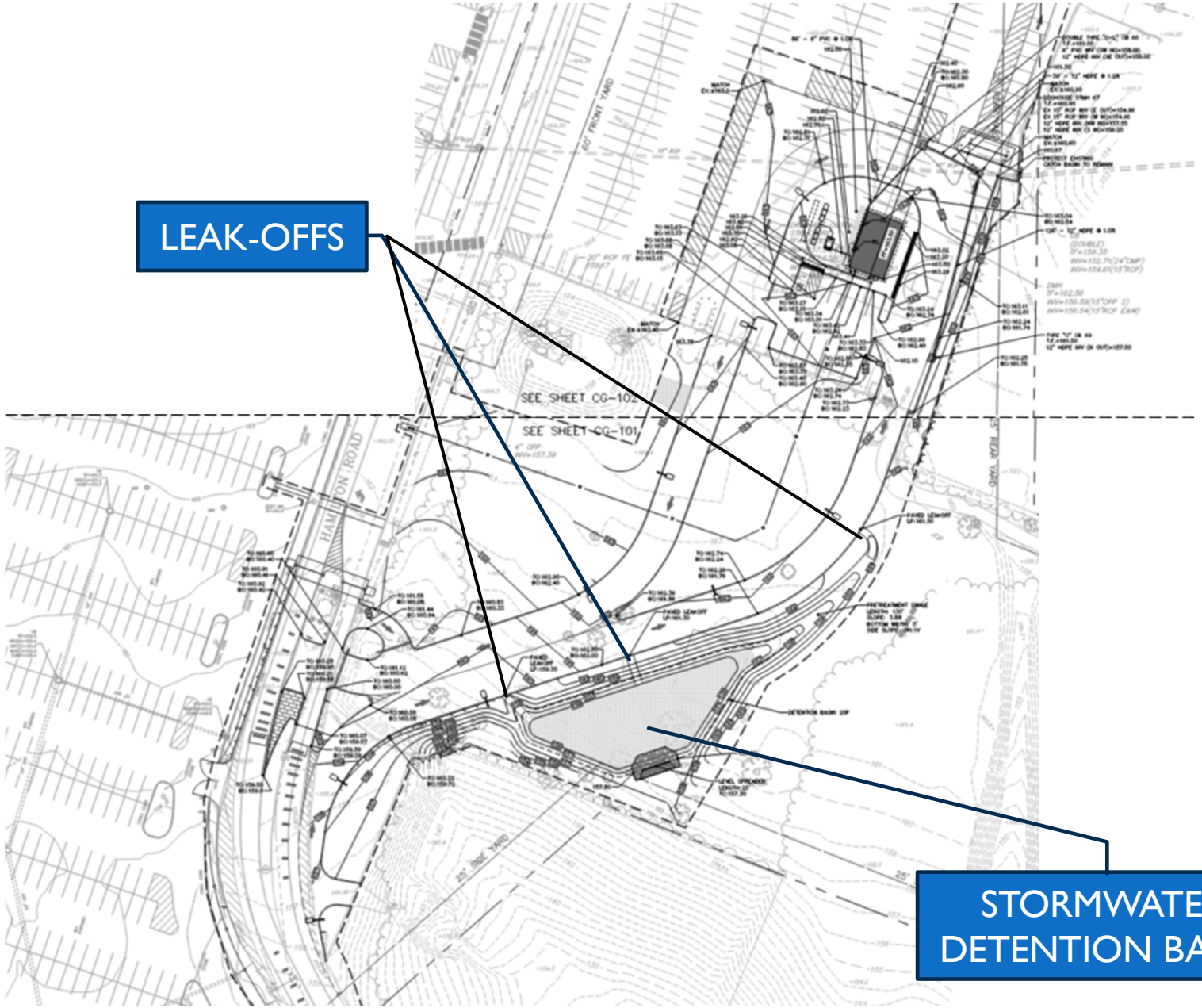
2022/2026 Comparison





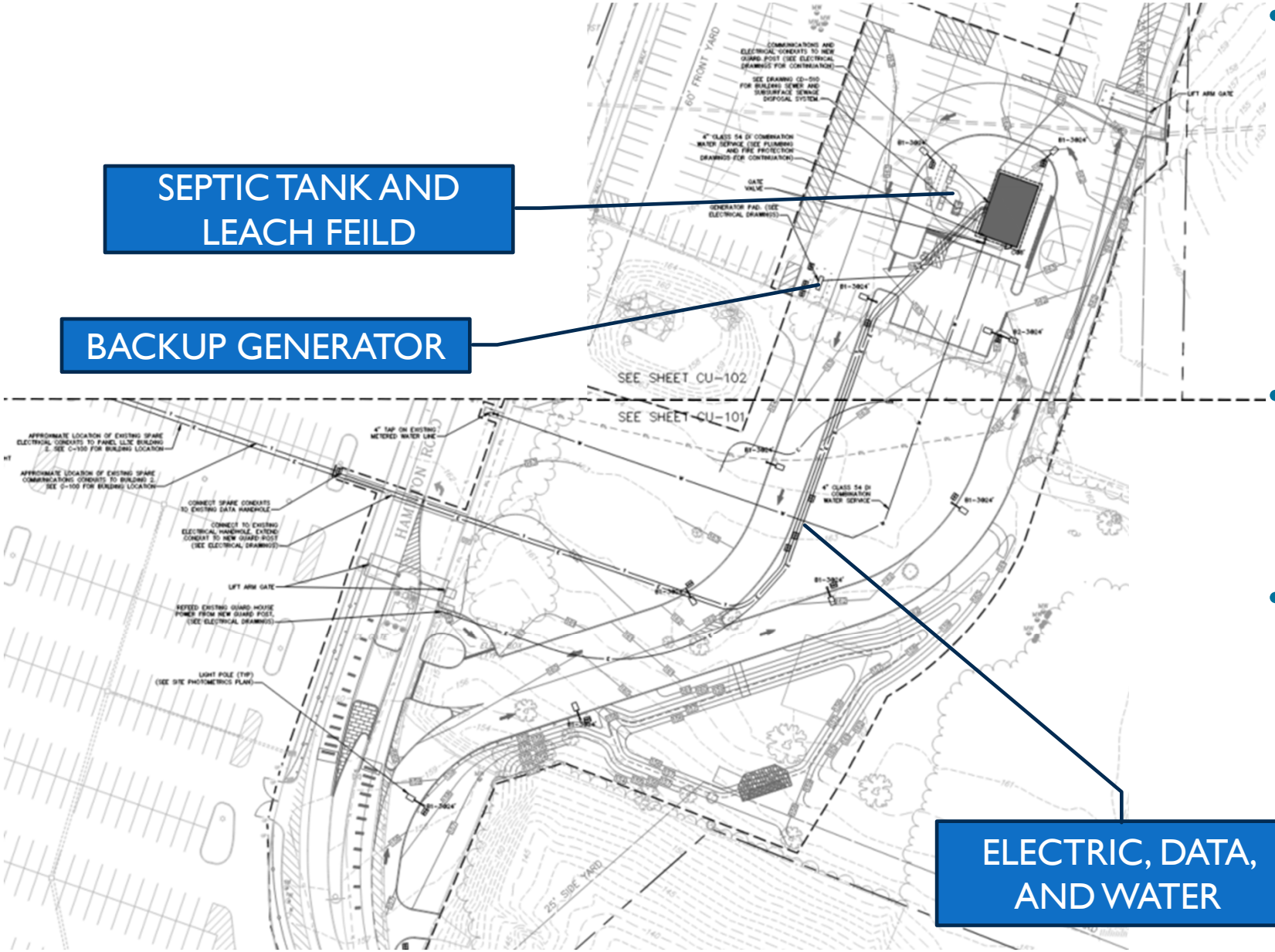
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Proposed Improvements - Stormwater



- Drainage patterns remain consistent with existing conditions
- Runoff from visitor center area is collected in drains and conveyed to the existing stormwater infrastructure
- Runoff from the entry driveway is conveyed via overland flow to leak-offs that enter a proposed detention basin

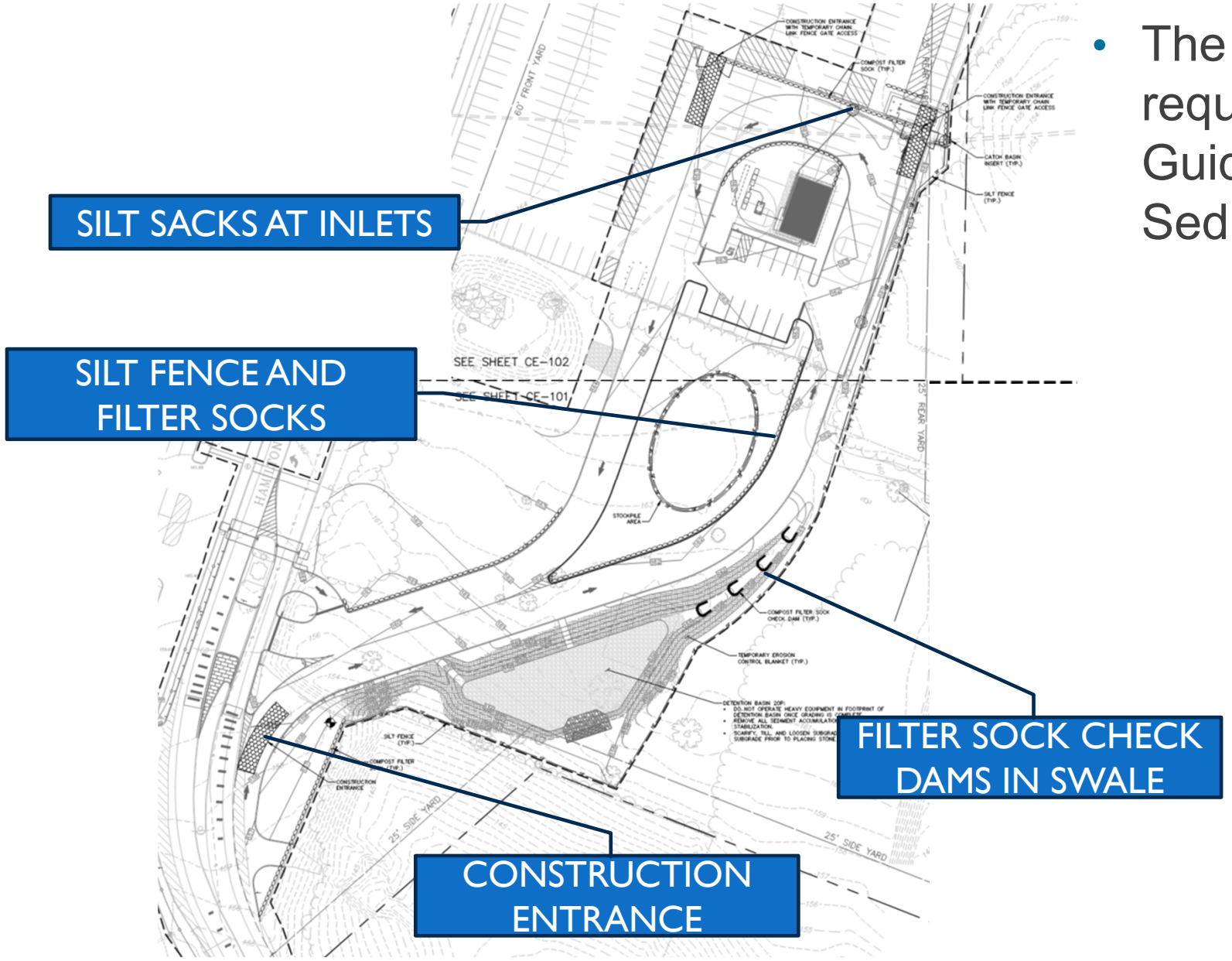
Proposed Improvements - Utilities



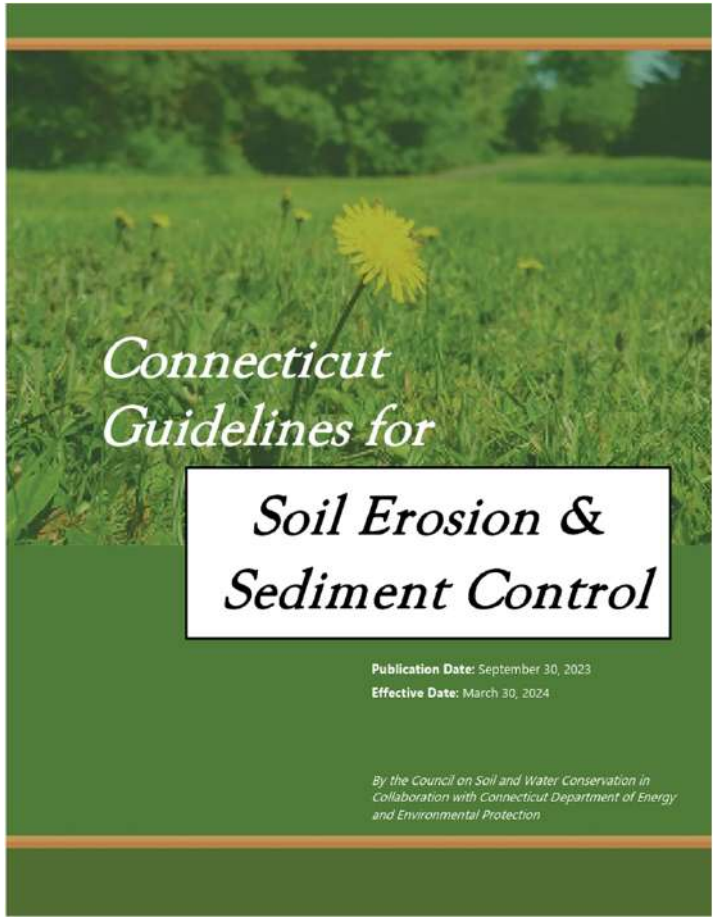
- Subsurface sewage disposal system installed in accordance with the North Central District Health Department and State regulations
- Electric, data, and water will all connect to existing infrastructure on campus
- Diesel generator provides backup power to the visitor post

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Proposed Improvements – Erosion & Sediment Controls



- The design meets the requirements of the Connecticut Guidelines for Soil Erosion and Sediment Control.



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Proposed Improvements – Landscape and Lighting



- Lawn areas adjacent to and between proposed visitor/delivery driveways
- Ground covers proposed in landscape islands by connection with Hamilton Road
- 2-Red Oak and Inkberry Shamrock by visitor parking
- In 2022 a Special Permit was granted for the use of 24-foot tall lighting fixtures.
  - The same fixtures are currently still proposed to enhance security and provide safe operations

Thank You

www.fando.com

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Solve better. Go further.

January 6, 2026

Planning & Zoning Commission
Town of Windsor Locks
50 Church Street
Windsor Locks, CT 06096

Re: Collins Aerospace Hamilton Road Entrance Improvements
1 Hamilton Road

Dear Commissioners,

I have reviewed the plans and calculations for the above referenced project prepared by Fuss & O'Neil including plans dated 12/12/25 and a Stormwater Management Narrative dated December 2025. The applicant obtained approval in 2022 for a similar project which included a round-about and more parking spaces. This is a modification of that proposal. My comments are as follows:

1. The 24' high light poles require a special permit approval per section 705.F.4.b.vi.

2. Health Department approval is required for the on-site septic system. The applicant should provide confirmation that the Health Department agrees the on-site soils are suitable for a septic system.

3. The previous plan included guide rails on both sides of the vehicle path north of the security gate to contain traffic. The current plan relies on the pavement markings to contain traffic. A directional sign is proposed within the existing pavement area with no protection from vehicles. It appears pavement could be removed to further contain and direct traffic and protect the signage and reduce coverage. Converting some of the proposed pavement hatching areas to landscaping would also bring the site into closer conformance with the parking lot interior landscaping requirements. The commission has some discretion in regard to layout and landscaping and may wish to discuss this with the applicant.

4. Section 1102A requires an LS stamp on the site plan to confirm the existing boundaries and topography shown conform to the submitted survey.

5. Include the stormwater maintenance notes from the Stormwater Report on the site grading and drainage plan. Revise the maintenance notes to indicate cleaning frequency for sumps shall maintain at least 50% capacity at all times. Also include provisions for unclogging the detention basins if they do not drain within 48 hours and include maintenance requirements for the basin.

6. Provide a detail cross section of the new stormwater basin. Consider a vegetated surface rather than stone.

7. Submit 2 paper copies and a PDF copy of the final plans incorporating all conditions of approval, along with a mylar of sheets V101-102, CS-101-102, CG-101-102, and CU-101-102 to the commission for signature prior to start of construction.

8. Engineer shall submit an E&S bond estimate to the Town Engineer and shall submit an E&S bond to the Town Treasurer in an amount acceptable to the Town Engineer, prior to start of construction.

9. Engineer shall confirm the soil type and depth to seasonal high-water table in the area of the new stormwater basin prior to start of construction of the stormwater basin.

10. Prior to operation of the improvements and occupancy of the building, submit an as-built survey to the Town Engineer in accordance section 1102.G.

If you have any questions, you can reach me at 860-623-0569 or dsteele@jrrusso.com.

Sincerely,

Windsor Locks Town Engineer



Dana Steele, P.E.
J.R. Russo & Associates, LLC